Glossary of Judicial Claim Constructions in the Mechanical, Electro-Mechanical and Medical Devices Arts

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"a body" — "each patented lure has only a single body, which may consist of one or more elements." Nichols, et al. v. Strike King Lure Co., et al., 2000 U.S. Dist. LEXIS 15781 (N.D. Tex., Oct. 25, 2000).

"a cable linking" — "the patent contemplates a single cable that links the arms and resistance assembly." Free Motion Fitness, Inc. v. Cybex International, Inc., et al., 311 F. Supp. 2d 1297 (D. Utah 2003).

"a ... continuous ... chamber" — "one or more continuous chambers." KCJ Corp. v. Kinetic Concepts, Inc., et al., 223 F.3d 1351, 1356 (Fed. Cir. 2000).

"a cup"; "the cup" — "claim 1 refers to 'a cup' and 'the cup' repeatedly, suggesting that only one cup is involved. ... [T]he only correct and indeed the reasonable interpretation of claim 1 limits the scope of that claim to a process using only one vacuum cup." Insituform Technologies, Inc., et al. v. Cat Contracting, Inc., et al., 99 F.3d 1098 (Fed. Cir. 1996).

"a ... currency evaluation device"; "a transport path" — "do not limit the claims to a device that contains only one output pocket and one transport path." Cummins-Allison Corp. v. Glory, Ltd., et al., 2005 U.S. Dist. LEXIS 6150 (N.D. Ill., Mar. 28, 2005).

"[b] discharging material from said common hopper to said processing machine at a discharge rate, ... [d] determining the material processing rate of the processing machine from the sum of the material discharge rates of the ingredients to the common hopper and the discharge rate of the material from the common hopper to the processing machine" — "Our conclusion that the occurrences of ‘discharge rate’ in clauses [b] and [d] of claim 1 are to be interpreted as referring to the same rate has the following implication for clause [d]. It cannot be disputed that the ‘material processing rate of the processing machine’ is identical to the ‘discharge rate of the material from the common hopper to the processing machine.’ ... As a result of our claim construction, clause [d] does not make 'sense' as HydReclaim itself realizes and concedes." Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350 (Fed. Cir. 1999).

"a line" — "a single straight line that is the intersection of two planes." Synvasive Corp. v. Stryker Corp., 425 F. Supp. 2d 1105 (E.D. Cal. 2006).

[the step of selecting or limiting] "a depth of cut," "a maximum depth of cut," [or] "a cutter exposure" [for the plurality of cutters] — "the selecting or limiting a depth of cut, a maximum depth of cut, or a cutter exposure for the plurality of cutters terms do not require a single depth of cut, maximum depth of cut, or cutter exposure for all cutters in the plurality." Reehycatalog UK, Ltd. et al. v. Baker Hughes Oilfield Operations, Inc., et al., 2007 U.S. Dist. LEXIS 76125 (E.D. Tex., Oct. 12, 2007).


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"a pair of linear actuators mounted on [the] frame and connected to [the] levers for swinging said levers and thus tilting [the] cradle about its pivots from the said first position through a second position, wherein the pot is raised from the ground but held substantially level and to a third position where in the pot is tipped by abutting an abutment on the cradle and is at least partially inverted into a dumping position" — "is limited to carriers that use only a pair of linear actuators which produce three different positions of the cradle." Kress Corp. v. Alexander Services, Inc., et al., 991 F. Supp. 740 (W.D. Pa. 1997).


"a solid film ream wrapper [with a coating having a] recurring pattern" — "is not limited to describing a single wrapper with a recurring pattern; it describes, instead, a continuous sheet of film ream wrapper." Coating Excellence International, LLC v. Thilmany LLC, 500 F. Supp. 2d 1123 (E.D. Wis. 2007).

"a tip" — "refers to one or more tips at the distal end of a tooth." Synvasive Corp. v. Stryker, Corp., 425 F. Supp. 2d 1105 (E.D. Cal. 2006).

"being ablated only partially" — "a portion, but not all, of the third layer decomposes into gases and volatile fragments." Presstek, Inc. v. Creo, Inc., et al., 2007 U.S. Dist. LEXIS 24126 (D.N.H., Mar. 30, 2007).

"about" — "the 'about' terms should be construed to include all values less than a full increment and greater than a full decrement of the least significant digit claimed." Sta-Rite Industries, et al. v. ITT Corp., et al., 2010 U.S. Dist. LEXIS 10790 (E.D. Tex., Jan. 19, 2010).


"about" — "means plus or minus five seconds (15 to 25 seconds) in claim 8 and plus or minus five minutes (15 to 25 minutes) in claim 11." Fisher-Barton Blades, Inc. v. Blount, Inc., et al., 2006 U.S. Dist. LEXIS 76965 (E.D. Wis., Oct. 19, 2006).


"the sidewalls flanking the lumen has [sic] a combined thickness of about 0.025 inch" — "the sidewalls opposing each other across the lumen have a combined thickness of about 0.025 inch, encompassing a range of thicknesses no greater than 0.0245 to 0.0255 inches." Ideal Instruments, Inc. v. Rivard Instruments, Inc., et al., 498 F. Supp. 2d 1131 (N.D. Iowa 2007).

"the needle has an inside diameter of about 0.046 inch and an outside diameter of 0.018 inch" — "the needle has a lumen diameter of about 0.046 inch, encompassing a range of diameters no greater than 0.0445 to 0.0475 inch, and an outside diameter of 0.018 inch." Ideal Instruments, Inc. v. Rivard Instruments, Inc., et al., 498 F. Supp. 2d 1131 (N.D. Iowa 2007).
"no more than about 0.6 square inches" — "at best, the 'no more than about 0.6 square inches' limitation does not cover any diaper with a CSB that, when rounded off to a single digit, exceeds 0.6 square inches." Procter & Gamble Co. v. Paragon Trade Brands, Inc., 989 F. Supp. 547 (D. Del. 1997).

"a density below about 0.91 g/cm³" — "a number between 0.905 and 0.914." Viskase Corp. v. American National Can Co., 947 F. Supp. 1200 (N.D. Ill., Oct. 10, 1996).

"about 5:1 to about 7:1" — "did not include the ratio of 4:1." Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211 (Fed. Cir. 1995).


"about a 75 degree arc" — "cannot mean something that includes a 360 degree arc." Clinical Innovations, LLC v. Utah Medical Products, Inc., 2007 U.S. Dist. LEXIS 67624 (D. Utah., Sept. 11, 2007).

"about a center line" — "means that the stent elements must be uniformly distributed about a center line on each periodic cycle. This is consistent with the plain meaning of 'center line.'" Medinol Ltd. v. Guidant Corp., et al., 417 F. Supp. 2d 280 (S.D.N.Y. 2006).


"about the perimeter" — "the term 'about' in this context is not limited to 'completely around.'" Real v. Bunn-O-Matic Corp., 100 F. Supp. 2d 844 (N.D. Ill. 2000).

"about three millimeters" — "could be more definite, but ... the Court finds that one skilled in the art would know where to make the second incision." Young v. Lumenis, Inc., 2005 U.S. Dist. LEXIS 27792 (S.D. Ohio, Nov. 1, 2005).


"above" — "means neither 'directly above' nor simply 'at a higher place than.' Instead it means 'at a place higher than the high side wall such that a sufficient space is formed laterally inward from that side wall and vertically between that wall and the stepped portion of the upper rack to enable the washing of oversized articles.'" Maytag Corp. v. Whirlpool Corp., 88 F. Supp. 2d 894 (N.D. Ill. 2000).


"abrasion resistant transparent coating layer" — "any transparent coating material designed to provide abrasion resistance." *Avery Dennison Corp. v. Whitlam Label Co., Inc.*, 2003 U.S. Dist. LEXIS 27836 (N.D. Ohio, Sept. 24, 2003).[^39]

"heating ... in the absence of pressure or shear sufficient to convert the binder particles" — "any pressure and shear applied to the mixture must not be sufficient to convert the mixture to a continuous web matrix or forced point-bonds until the mixture has been heated to a temperature substantially above the softening temperature of the binder." *KX Industries, L.P., et al. v. Culligan Water Technologies, Inc., et al.*, 90 F. Supp. 2d 461 (D. Del. 1999).[^40]

"absorbable plug" — "an object or material used to fill or seal an opening that is capable of being assimilated or broken down by the human body." *Lamoureux, et al. v. Anazao Health Corp., et al.*, 2009 U.S. Dist. LEXIS 103846 (D. Conn., Nov. 5, 2009).[^41]

"an absorbent core" — "a portion of the absorbent article containing a liquid permeable cover, a liquid permeable baffle, and an absorbent layer therebetween." *Kimberly-Clark Worldwide, Inc. v. First Quality Baby Products, LLC, et al.*, 2010 U.S. Dist. LEXIS 104762 (M.D. Pa., Sep. 30, 2010).[^42]

"absorbent panel" — "include[s] a wicking layer, if one is present, regardless of whether this layer is separate from or attached to the diaper's storage core." *Procter & Gamble Co. v. Paragon Trade Brands, Inc.*, 989 F. Supp. 547 (D. Del. 1997).[^43]

"abutment" — "a dimple that protrudes into the path of the arm a sufficient amount so as to restrict motion, but not necessarily so much so as to extend over the entire arm like a bar or even to protrude out like tabs." *Penn Fabrication (U.S.A.) Inc. v. El-Com Hardware, Inc., et al.*, 1999 U.S. Dist. LEXIS 21955 (C.D. Cal., Dec. 27, 1999).[^44]

"abuts" — "to be adjacent to, or to touch or join one another." *MacLean-Fogg Co. v. Eaton Corp.*, 2009 U.S. Dist. LEXIS 72435 (E.D. Tex., Aug. 14, 2009).[^45]

"abuts" — "touching (i.e., having direct contact)." *Taltech Ltd. v. Esquel Enterprises Ltd.*, 410 F. Supp. 2d 977 (W.D. Wash. 2006).[^46]

"an access cover, mounted on the top of said riser extension over said upper opening and including an aperture therein, for enabling access to the interior of said sump apparatus" — "a gasket does not satisfy the access cover limitation, either literally or under the doctrine of equivalents." *Total Containment, Inc. v. Environ Products, Inc., et al.*, 921 F. Supp. 1355 (E.D. Pa. 1995).[^47]

"accessory" — "a device which is not necessary to the operation of a video game but which can be used by a player in conjunction with a video game controller." *JVW Enterprises, Inc. v. Interact Accessories, Inc., et al.*, 2002 U.S. Dist. LEXIS 27885 (D. Md., Feb. 1, 2002).[^48]

"predetermined accurate work position" — "the fixed placement of the tool in the tool holder. This placement is achieved by precisely measuring the distance from the surface of the cutting tool's center axis to the appropriate surfaces of the tool holder in advance, such that the flat mounting surfaces of the cutting tool directly contact the corresponding surfaces of the tool holder, thereby maintaining the cutting tool's original placement until the tool is removed." Utica Enterprises, Inc. v. Federal Broach and Machine Co., 109 Fed. Appx. 403 (Fed. Cir., Aug. 19, 2004) (unpublished). 50


"transferring said bag and its integral pocket across said common header from said first station to said second station at which the free edge is sealed" — "mean[s] that the individual bag is transferred across and over the header of the wicket." MHB Industries v. Dennis Garberg & Associates, Inc., et al., 1996 U.S. Dist. LEXIS 11638 (D. Mass., July 26, 1996). 53 "The district court ... state[d] that the claim required that a bag be transferred 'across and over' the header, apparently distinguishing the situation in which the bags are transferred under the header. We agree ... that the claim does not require a distinction between over, as in above, and under the header. Simply, the claim requires that the bag be transferred across or, in other words, from one side of the header to the other." Id., 1997 U.S. App. LEXIS 19508 (Fed. Cir., Jul. 29, 1997) (unpublished). 54

"cover means associated with said receptacle across said openings of said cavities" — "In this context, the pertinent definition of 'across' is 'over,' requiring the cover to lay over the two openings." Contempo Tobacco Products, Inc., et al. v. McKinnie, 1997 U.S. Dist. LEXIS 22576 (N.D. Ill., Apr. 8, 1997). 55

"across said tongue" — "mean[s] that the ridge must reach from one side of the tongue to the other." Pehr v. Rubbermaid, Inc., 87 F. Supp. 2d 1222 (D. Kan. 2000). 56

"across substantially the entire crotch area" — "a triangular area, similar in size and shape to the connecting sections 30 and 48 in Figs. 1 and 2." Orr v. Patagonia, Inc., et al., 2006 U.S. Dist. LEXIS 73739 (N.D. Tex., Sept. 26, 2006). 57

"shape memory activation temperature" — "the crystallization point of a given thermoplastic, calculated according to the following formula: $T_c \approx (T_m + T_g)/2$ where $T_c$ is the crystallization temperature, $T_m$ is the melting temperature and $T_g$ is the glass transition temperature." Pipe Liners, Inc., et al. v. Pipelining Products, Inc., 1999 U.S. Dist. LEXIS 17271 (D. Del., Oct. 22, 1999). 58
"a conductive wire assembly passing through the elongate internal passageway and having left
and right lengths of wire exiting through the left and right apertures, respectively, wherein
at least a portion of the conductive wire assembly is slideable within the passageway, and
acts as a drawstring for the hood" — "The wire must be used to tighten or close the hood
opening. Moveable wiring within the drawstring passageway is not necessarily wiring that acts as
Dist. LEXIS 108173 (D. Utah, Oct. 8, 2010).†
"actuating means" — "is a means-plus-function claim limitation which is to be construed to
include an actuating handle." Atlantic Research Marketing Systems, Inc. v. Austin Precision
"actuating mechanism for setting and releasing the wheel braking device, the actuating
mechanism being capable of operating in a first mode to set the brake and in a second mode
to release the brake" — "a component of the brake system that may operate in a first mode to
set the brake and in a second mode to release the brake." Graham-White Manufacturing Co. v.
"actuating member" and "plurality of projections" — "need not refer to two separate
elements, ... but are properly interpreted to allude to the two functions of the projections." Minuteman International, Inc. v. Critical-Vac Filtration Corp., et al., 1997 U.S. Dist. LEXIS
4674 (N.D. Ill., Apr. 4, 1997).
"actuation means" — "is not a means-plus-function limitation." Searfoss v. Pioneer Consolidated
Corp., 374 F.3d 1142 (Fed. Cir. 2004).
"actuator" — "a device that activates the memory storage means." General Creation LLC, et al. v.
"adapted ... for" and "adapted ... to" [clauses of the preamble] — "are not means-plus-function
"adapted for" — "is [] construed as 'physical modification of a structure specifically for the use as
further set forth in the claim.'" TouchTunes Music Corp. v. Rowe International Corp., et al., 2010
"the leading edge of the channeling structure being adapted for positioning immediately below
the shrimp eggs at the water surface" — "The examples and discussion of constantly and
immediately positioning the leading edge of the skimmer are examples of embodiments of the
invention found in the specification, not fundamental principles to the invention, and therefore
will not be read into the claims. ... This court declines to read a constant or immediate
adjustability limitation from the specification." Sanders Brine Shrimp Co.. v. Bonneville Artemia
"said separate switches are adapted for simultaneously operating said camera for capturing
continuing images and operating said microphone for capturing sounds with the continuing
images" — "the independent switch for operating the camera and the independent switch for
operating the microphone configured such that they allow the camera and microphone to operate
at the same time." Minerva Industries, Inc. v. Motorola, Inc. et al., 2010 U.S. Dist. LEXIS 9329


"each of said different sets of elements being adapted to at least assist in holding one of a plurality of differently configured pumps to the housing" — "each different set of elements is designed or configured to assist in holding one of the differently configured pumps to the housing." Sta-Rite Industries, et al. v. ITT Corp., et al., 2010 U.S. Dist. LEXIS 10790 (E.D. Tex., Jan. 19, 2010).  

"graft [structure] which is adapted to be anchored within one of the flow lumens" — "an intraluminal graft that includes malleable wires located proximal to at least one end of the graft [structure], which enable the intraluminal graft to be secured or attached to one of the flow lumens of the bifurcated base [graft] structure in an overlapping relationship." Edwards Lifesciences, LLC, et al. v. Cook Inc., et al., 2007 U.S. Dist. LEXIS 55634 (N.D. Cal., July 23, 2007).  

"adapted to be deformed during said seaming operation" — "adapted to have its shape altered during the seaming operation." Crown Packaging Technology, Inc., et al. v. Rexam Beverage Can Co., 486 F. Supp. 2d 366 (D. Del. 2007).  

"a third periphery surface adapted to be disposed adjacent and spaced from the back of the knee of the person" — "The Court construes the claim language to allow, but not require, the third periphery surface to be perpendicular to the major longitudinal axis. The claim language precludes a pad enclosure in the shape of a true triangle with an apex facing the back of the knee, but allows for a pad enclosure with two substantially quadrilaterally shaped sides and four periphery surfaces, where the third periphery surface is very narrow. Finally, the pad enclosure need not touch the knee, as the parties agree." Farrago v. Rawlings Sporting Goods Co., Inc., 2007 U.S. Dist. LEXIS 38036 (E.D. Mo., May 24, 2007).  

"adapted to be formed into a portion of said double seam during said seaming operation" — "adapted to be formed into a portion of the double seaming during the seaming operation." Crown Packaging Technology, Inc., et al. v. Rexam Beverage Can Co., 486 F. Supp. 2d 366 (D. Del. 2007).  

"adapted to be in pressure contact with a portion of the skin surface" — "the phrase 'adapted to be' requires that the applicator be designed to be in pressure contact with the skin." Palomar Medical Technologies, Inc., et al. v. Candela Corp., 2007 U.S. Dist. LEXIS 83159 (D. Mass., Nov. 8, 2007).  

"wing section adapted to be out of a strain path" — "wing section is a portion of the substrate contiguous with the center section but does not flex in response to a force transmitted to the center section by the step section." TK Holdings, Inc. v. CTS Corp., et al., 2010 U.S. Dist. LEXIS 95487 (E.D. Mich., Sep. 14, 2010).
"wing section adapted to be out of the path of the weight and not to flex" — "a portion of the substrate contiguous with the center section, but does not flex in response to stress transmitted to the center section by the step section." TK Holdings, Inc. v. CTS Corp., et al., 2010 U.S. Dist. LEXIS 95487 (E.D. Mich., Sep. 14, 2010).  

"a conductive electrode comprising a surface adapted to be placed in a fixed position in proximity to a surface of said pin" — "The term 'in proximity' denotes nearness or, as applied to the location of a conductive electrode, almost touching. ... The claimed language therefore suggests an arrangement whereby two surfaces lie near each other (i.e., 'in proximity') albeit not in direct contact." Hewlett-Packard Co. v. GenRad, Inc., 897 F. Supp. 1479 (D. Mass. 1995).  

"heel brace adapted to be positioned behind and bear against the rear surface of the heels" — "defines a structure fit to be positioned 'behind and bearing against the rear surface of the heels' and fit for performing the function of 'restraining upward movement of the heels.'" Mattox v. Infotopia, Inc., et al., 136 Fed. Appx. 366 (Fed. Cir., May 23, 2005) (unpublished).  


"step section adapted to concentrate the weight applied thereon onto the center section" — "the step section causes a stress concentration in the mid-portion of the substrate contiguous with the step section and capable of flexing in response to a force transmitted by the step section when the substrate experiences stress." TK Holdings, Inc. v. CTS Corp., et al., 2010 U.S. Dist. LEXIS 95487 (E.D. Mich., Sep. 14, 2010).  


"adapted to contact" — "designed or configured to functionally engage." Sta-Rite Industries, et al. v. ITT Corp., et al., 2010 U.S. Dist. LEXIS 10790 (E.D. Tex., Jan. 19, 2010).  

"adapted to contact tissue ... and adapted to conform the tissue" — "the expandable surface element is capable of contacting the tissue and capable of conforming the tissue. This does not require that the expandable outer surface actually contact or conform the tissue." Hologic, Inc., et al. v. SenoRx, Inc., 2009 U.S. Dist. LEXIS 12274 (N.D. Cal., Feb. 18, 2009).  

"said arms and said pair of magnetic members adapted to extend across respective side portions of a primary spectacle frame so that said pair of magnetic members can engage corresponding magnetic members on a primary spectacle frame" — "the arms and the pair of auxiliary frame magnetic members are capable or suitable for reaching from one side to the other of the respective side portions of the primary spectacle frame so that said pair of magnetic members can either contact the corresponding surfaces of the primary spectacle frame magnetic members or magnetically attract those corresponding surfaces of the primary spectacle frame magnetic members without actual contact to attach the auxiliary spectacle frame to the primary spectacle frame." Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc., 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003).
"adapted to guide the electrolyte" — "means that the tapered shape of the second electrode guides or positions the electrolyte as it is inserted into the electrode during the assembly of the probe." *Blumenthal, et al. v. Barber-Colman Holdings Corp., et al.*, 1995 U.S. App. LEXIS 25671 (Fed. Cir., July 31, 1995) (unpublished).87


"a central portion adapted to nest within and below the rim of a container" — "[does not] require that all of the structures on the central portion to nest 'below the rim of a container.'" *Bailey v. Dart Container Corp., et al.*, 157 F. Supp. 2d 110 (D. Mass. 2001).91

"graft which is adapted to overlap and be attached to one of the flow lumens" — "an intraluminal graft that includes malleable wires located proximal to at least one end of the graft structure, which enable the intraluminal graft to be secured or attached to one of the flow lumens of the bifurcated base graft structure in an overlapping relationship." *Edwards Lifesciences, LLC, et al. v. Cook Inc., et al.*, 2007 U.S. Dist. LEXIS 55634 (N.D. Cal., July 23, 2007).92

"adapted to receive at least one femoral surface modifying instrument in proper alignment with respect to said handle" — "The handle's being 'adapted to receive' an instrument 'in proper alignment with respect to said handle' implies what the preferred embodiment makes clearer—that any rotation alignment is fixed by the handle." *Dow Corning Wright Corp. v. Osteonics Corp.*, 939 F. Supp. 65 (D. Mass. 1996).93


"adapting the expandable surface to contact tissue surrounding the resection cavity to conform the tissue" — "no construction necessary." *Xoft, Inc. v. Cytyc Corp., et al.*, 2007 U.S. Dist. LEXIS 34468 (N.D. Cal., April 27, 2007).95
"adaptor" — "an interconnector between the catheter and another fluid line, wherein the adaptor is not integral with the catheter." Venetec International, Inc. v. Medical Device Group, Inc., 2007 U.S. Dist. LEXIS 56770 (S.D. Cal., Aug. 3, 2007).

"added"; "adding" — "to join or unite so as to bring about an increase or improvement." Green Edge Enterprises, LLC v. Rubber Mulch Etc., LLC, et al., 2007 U.S. Dist. LEXIS 38799 (E.D. Mo., May 29, 2007).

"adding increasing amounts of liquid water ... to the working fluid acquired by the compressor" — "adding water in stepped increments or in a smooth ramping fashion, or by a combination of the two." Dow Chemical Co. v. Mee Industries, et al., 2001 U.S. Dist. LEXIS 26229 (M.D. Fla., Aug. 17, 2001).

"adhere" — "items are adhered if they are held together." Winn, Inc., et al. v. Compgrip USA Corp., et al., 2007 U.S. Dist. LEXIS 38051 (C.D. Cal., April 23, 2007).


"adhered to" — "should not be limited in the ways Defendants suggest. A reading of the Patent's specification makes clear that 'adhered to' should be construed to include the use of an adhesive that contains air gaps, and should not, as a matter of law, be limited solely to the type of adhesive disclosed in the '971 Patent's embodiment." Winn, Inc., et al. v. Compgrip USA Corp., et al., 2007 U.S. Dist. LEXIS 38051 (C.D. Cal., April 23, 2007).

"adhered to and abutting" — "Adhered to means to 'hold fast.' Abutting is commonly defined as touching, lying adjacent to or bordering upon." Winn Inc., et al. v. Eaton Corp., et al., 272 F. Supp. 2d 968 (C.D. Cal. 2003).

"adhering material" — "the district court unduly restricted the limitation of 'adhering material' to 'a layer of adhesive, such as a glue or epoxy, which bonds the plate to the tie.'" Pandrol USA, LP, et al. v. Airboss Railway Products, Inc., et al., 10 Fed. Appx. 837 (Fed. Cir., Mar. 27, 2001) (unpublished). "The defendants essentially argue that our earlier claim construction was incorrect. Even if that claim construction were not binding as the law of the case, it was clearly correct." Id., 320 F.3d 1354 (Fed. Cir. 2003).


"adhesive" — "a substance used to bond two or more solids so that they act or can be used as a single piece." Advanced Fiber Technologies Trust v. J&L Fiber Services, Inc., 2010 U.S. Dist. LEXIS 95032 (N.D.N.Y., Sep. 13, 2010).

"adhesive" — "Since 'adhesive' in Claim 1 is not limited by any other language, and to be useful, only requires that the material stick to the metal strip, at a minimum, throughout the process of shaping the strip into spacer stock and fixing glass to the spacer, the Court will not limit it further." Lockformer Co. v. PPG Industries, Inc., et al., 2001 U.S. Dist. LEXIS 12580 (N.D. Ill., Aug. 15, 2001).

"adhesive coating" — "a substance such as a glue or gum, which is capable of holding materials together by surface attachment. It does not include magnetic materials that affix a label to a metal surface." MPT, Inc. v. Marathon Labels, Inc., et al., 2006 U.S. Dist. LEXIS 4612 (N.D. Ohio, Feb. 7, 2006).\textsuperscript{111}


"adjacent" — "next to or adjoining with no intervening structure between the elongate members and the fluid receptacle." Millipore Corp. v. W.L. Gore & Associates, Inc., 2010 U.S. Dist. LEXIS 99704 (D. Mass., Sep. 20, 2010).\textsuperscript{113}


"adjacent" — "close to or nearby, but not separated by another item of the same type." Great Dane Limited Partnership v. Stoughton Trailers, LLC, et al., 2009 U.S. Dist. LEXIS 119573 (M.D. Ga., Dec. 23, 2009).\textsuperscript{115}

"adjacent" — "does not require that no other structure be between the two structures described as 'adjacent.'" Aero Industries, Inc. v. Quick Draw Tarpaulin Systems, Inc., 2009 U.S. Dist. LEXIS 25978 (S.D. Ind., Mar. 27, 2009).\textsuperscript{116}

"adjacent" — "close to." Flo Healthcare Solutions, LLC v. Rioux Vision, Inc., 2007 U.S. Dist. LEXIS 85234 (N.D. Ga., Nov. 16, 2007).\textsuperscript{117}

"adjacent" — "in close proximity to' or 'not distant.'" Herman Miller, Inc. v. Teknion Corp., et al., 504 F. Supp. 2d 360 (N.D. Ill. 2007).\textsuperscript{118}

"adjacent" — "next to." MBO Laboratories, Inc. v. Becton, Dickinson & Co., 474 F.3d 1323 (Fed. Cir. 2007).\textsuperscript{119}

"adjacent" — "relatively near, or nearby." Ricoh Co., Ltd., et al. v. Katun Corp., et al., 380 F. Supp. 2d 418 (D.N.J. 2005).\textsuperscript{120}


"adjacent" — "objects may or may not be in contact, but are not adjacent to each other where there is another object between them." Free Motion Fitness, Inc. v. Cybex International, Inc., et al., 311 F. Supp. 2d 1297 (D. Utah 2003).\textsuperscript{122}

"adjacent" — "close to, lying near, next to, or adjoining." Smith & Nephew, Inc. v. Arthrocare Corp., 2004 U.S. Dist. LEXIS 31057 (W.D. Tenn. 2004).\textsuperscript{123}


"adjacent" — "not far off." General American Transportation Corp. v. Cryo-Trans, Inc., 893 F. Supp. 774 (N.D. Ill. 1995).\textsuperscript{125}

"adjacent" — "contiguous or connected with the front surface of the body." MBO Laboratories, Inc. v. Becton, Dickson & Co., 385 F. Supp. 2d 88 (D. Mass. 2005).\textsuperscript{126}
"adjacent" — "close to; lying near; near or close to but not necessarily touching."  


"The Court declines to revise its prior construction of the term 'adjacent.'"  


"adjacent" — "mean[s] that the mating connector is located nearby but not touching the side edge (as defined below) of the motherboard."  


"adjacent" — "'near' or 'close.' Hence an intervening design element does not prevent two other elements from being 'adjacent' to one another."  


"passing from the frangible panel into said adjacent area of the central panel" — "portion of the central panel near the hinge segment."  


"openings ... adjacent each of said side walls and end walls" — "we construe the phrase 'openings ,, adjacent each of said side walls and end walls' as referring to structurally distinct openings that are provided adjacent to each of the railcar's four walls. Each opening is 'adjacent' to only one wall, the nearest one to which it directs the downward flow of CO2 gas. Thus, an opening 'adjacent' to a side wall cannot also be an opening 'adjacent' to an end wall. The patent does not contemplate the openings performing double duty in this manner."  


"adjacent insert track" — "does not require construction."  


"adjacent longitudinal co-extensive lateral recesses" — "recesses that are directly across from each other and not offset."  


"an opening adjacent one end to the exterior of the bag through which contents are discharged" — "an opening to the exterior of the bag through which contents are dischargeable that is near one end of the bag."  


"adjacent portions" — "The plain meaning of the term 'adjacent portions' cannot seriously be disputed. 'Adjacent' means 'next to' and 'portion' means 'a part of a whole.'"  


"adjacent relationship"; "juxtaposed relationship" — "next to but not necessarily touching."  


"adjacent said detent plate structure" — "positioned near the detent plate structure."  


"adjacent the handle assembly" — "nothing in the intrinsic evidence of the '286 Patent requires the adoption defendant's more restrictive definition, 'directly next to,' and thus the Court adopts plaintiff's construction, 'near,' as guided by the [Federal Circuit's] decision in Free Motion."

"adjacent the plug receiving opening" — "means that the light emitting device is situated close to the plug receiving opening such that (1) both the plug receiving opening and the light emitting device are in close proximity and are easily visible to the observer simultaneously; and (2) the observer could discern a relation between the plug receiving opening and the nearby lights. 'Adjacent' was intended to signify not remote." Amphenol, Corp., et al. v. Maxconn, Inc., et al., 2000 U.S. Dist. LEXIS 20221 (N.D. Cal., Mar. 7, 2000).140

"adjacent to and above" — "adjacent to and above." Vita-Mix Corp. v. Basic Holdings, Inc., et al., 514 F. Supp. 2d 990 (N.D. Ohio 2007).141

"located adjacent to said battery" — "located adjacent to' is properly construed as 'close to,' as in 'located close to the battery so that it may sense the temperature of the battery.'" Cardiac Science, Inc. v. Koninklijke Philips Electronics N.V., et al., 2006 U.S. Dist. LEXIS 22267 (D. Minn., April 20, 2006).142


"[an open space] adjacent to the distal end of the cannula" — "an open space next to, but not occupied by, the expanded portion of the cannula." General Surgical Innovations, Inc. v. Origin Medsystems, Inc., 1998 U.S. Dist. LEXIS 22958 (N.D. Cal., May 15, 1998).144

"adjoining" — "There is nothing in the language of the claims or in the ordinary and customary meaning of the word 'adjoining' to require that adjoining regions touch over any particular expanse, only that they are 'touching or bounding at a point or line.' The broad definition of the term 'adjoining' is entirely consistent with the written description and does not exclude the preferred embodiment." International Rectifier Corp. v. IXYS Corp., 361 F.3d 1363 (Fed. Cir. 2004).145


"adjustable" — "mean[s] the protected device is capable of changing the bias force exerted on the sliding gate by the dynamic, live loaded seat. This term is not limited by any time, place, manner, or means of adjustment and does not necessitate any external adjustment mechanism." Curtiss-Wright Flow Control Corp. v. Velan, Inc., 2005 U.S. Dist. LEXIS 46413 (W.D. Tex., Apr. 15, 2005).147 "[T]he district court ... went too far in completely eliminating any constraints on the 'adjustable' limitation. ... if 'adjustable' means adjustable at any time and in any way, it is hard to imagine any meaning for the term because without limitations on time or manner of adjustment, all structures are 'adjustable.'" Id., 438 F.3d 1374 (Fed. Cir. 2006).148

"adjustable straps" — "narrow strips of leather or other suitable flexible material that are capable of being changed so that the chest protector fits." Everything Baseball Limited, LLC v. Team Athletic Goods, Inc., 2007 U.S. Dist. LEXIS 66191 (N.D. Ill., Sept. 4, 2007).149

[i] "adjusting the pressure in the control volume in accordance with the measured pressure"; [ii] "adjusting the pressure in accordance with the measured pressure"; [iii] "adjusting the fluid pump pressure in accordance with the relative elevation to obtain a desired pressure at the distal end" — [i] "adjusting the pressure in the control volume in accordance with the measured pressure"; [ii] "adjusting the pressure in accordance with the measured pressure"; [iii] "adjusting the fluid pump pressure in accordance with the relative elevation to obtain a desired pressure at the distal end." Baxter Healthcare Corp. v. Fresenius Medical Care Holdings, Inc., et al., 2009 U.S. Dist. LEXIS 14842 (N.D. Cal., Feb. 10, 2009).151


"an auxiliary body support adjustably coupled to the user support and extending from the second end of the user support adjacent the second end of the body pad" — "does not require construction." Fitness Quest Inc. v. J. Monti, 2007 U.S. Dist. LEXIS 60195 (N.D. Ohio, Aug. 16, 2007).153


"sufficient aeration ... to enhance sensitivity" — "is understood by those of ordinary skill in the art to include both interstitial and porous air." Atlas Powder Co., et al. v. Ireco Inc., et al., 190 F.3d 1342 (Fed. Cir. 1999).155


"a quantity of stannous chloride affixed to at least a portion of said tin between said tin and the skin of a patient"; "a chloride of said electrically conductive metal being affixed to said outer surface of said metal to provide enhanced monitoring capability through the same electrode used for stimulation" — "'affixed' as used in the asserted claims describes stannous chloride that attached or bonded with the tin plate, and does not describe only stannous chloride separably applied onto the tin surface." R2 Medical Systems, Inc., et al. v. Katecho, Inc., et al., 931 F. Supp. 1397 (N.D. Ill. 1996).158

"a bond affixing the retention structure to the resilient body" — "a bond affixing the retention structure to the resilient body, where without the bond, the retention structure and resilient body would be unaffixed components." Conceptus, Inc. v. Hologic, Inc., 2010 U.S. Dist. LEXIS 24247 (N.D. Cal., Mar. 16, 2010).159

"pacing means for pacing the ventricles of the heart at a controlled decreasing rate from a base rate to a final rate lower than said base rate after said cardioverting means applies said cardioverting electrical energy to the atria of the heart" — "the Court concludes that 'after' means that the pacing occurs when the microprocessor determines that the shock was successful in stopping atrial fibrillation." Medtronic, Inc., et al. v. Guidant Corp., et al., 2004 U.S. Dist. LEXIS 10020 (D. Minn., May 25, 2004).160

"said load is agitated" — "moving the wash load to and fro." Whirlpool Corp., et al. v LG Electronics, Inc., et al., 2005 U.S. Dist. LEXIS 44479 (W.D. Mich., Nov. 8, 2005).162

[i] "air boost device"; [ii] "turbocharger" — [i] "an apparatus, such as a turbocharger, used to increase air throughput and density"; [ii] "an air boost device driven by a turbine which is powered by exhaust gases." Borg Warner Inc., et al. v. Honeywell International, Inc., 2009 U.S. Dist. LEXIS 13391 (W.D.N.C., Feb. 20, 2009).163


"air circulating means associated with said dryer housing for circulating air through said reel, the air circulating means including means for drawing air from the interior of the reel into said housing in order to provide positive air flow through the apparatus" — "we agree with Wenger that the district court erred in interpreting the 'air circulation means' limitation as requiring structure capable of recirculating air." Wenger Manufacturing, Inc. v. Coating Machinery Systems, Inc., et al., 239 F.3d 1225 (Fed. Cir. 2001).165

"air inlet path" — "an unoccupied space receiving air flow from the opening in the cover plate to the second surface of the top plate." ICHL, LLC v. NEC Corp. of America, et al., 2010 U.S. Dist. LEXIS 38942 (E.D. Tex., Apr. 20, 2010).166


"a set of air springs extending between said axle seats and said primary frame members" — "a number of air cushions reaching across the distance between the axle seats and primary frame members." Watson & Chalin Manufacturing, Inc. v. Boler Co., 227 F. Supp. 2d 633 (E.D. Tex. 2002).169

"an air supply for supplying compressed air" — "either one or more storage vessels of compressed air or an oil-free air compressor. The limitation is further narrowed by specifying a function for the element, namely to supply compressed air." Undersea Breathing Systems, Inc. v. Nitrox Technologies, Inc., 985 F. Supp. 752 (N.D. Ill. 1997).170

"at least one pressurizable air/water storage tank" — "The plain language of the 987 patent indicates that the tank must store water and air. Otherwise, it would read an 'air and/or water storage tank.'" Larami Ltd. v. Ohio Art Co., 270 F. Supp. 2d 555 (D.N.J. 2003).171
"the longitudinal portions are aligned in a spaced relationship parallel to a stent longitudinal axis" — "the longitudinal portions are spaced from each other along a line parallel to an imaginary straight line running lengthwise in the center of the stent." Medtronic Vascular, Inc., et al. v. Abbott Cardiovascular Systems, Inc., et al., 2007 U.S. Dist. LEXIS 95430 (N.D. Cal., Dec. 21, 2007).172


"aligning ... in registration" — "moving the robotic assembly in the machine into a position vertically aligned with a customer selected one of said beverage container queues." Crane Co., et al. v. Sandenvendo America, Inc., et al., 2009 U.S. Dist. LEXIS 47509 (E.D. Tex., Jun. 5, 2009).174

"alignment mark" — "a pattern used for accurate positioning and connection of flexible printed circuit boards." LG Display Co., Ltd. v. AU Optronics Corp., et al., 2010 U.S. Dist. LEXIS 12969 (D. Del., Feb. 16, 2010).175

"said retaining member allowing said female fastener to move along said first axis" — "there is no need to construe this phrase." American Seating Co. v. Freedman Seating Co., 450 F. Supp. 2d 765 (W.D. Mich. 2006).176

"allowing said napkin edges to fold upward"; "adapted to be activated by the thighs of the wearer to allow the absorbent edges to fold upward" — "allowing said napkin edges to fold upward"; "adapted to be activated by the thighs of the wearer to allow the absorbent edges to fold upward." Kimberly-Clark Corp., et al. v. Tyco Healthcare Retail Group, 456 F. Supp. 2d 998 (E.D. Wis. 2006).177

"allowing the bar or pin to be placed in said passage by pressure in a direction perpendicular" — "the bar, pin or rod may be inserted into the passageway by at least some pressure applied in a perpendicular direction with respect to both the axis of the shaft and the transverse direction." Stryker Trauma S.A., et al. v. Synthes (USA), 2004 U.S. Dist. LEXIS 30810 (D.N.J., Apr. 12, 2004).178

"the first and second legs allowing the hangers to accommodate various sizes" — "[is] clear on its face and not in need of construction." Andrew Corp. v. Beverly Manufacturing Co., 479 F. Supp. 2d 766 (N.D. Ill. 2006).179

"allowing the microorganisms within the fluid to biodegrade the hydrocarbons"; "retaining the hydrocarbons within the fluid in the tank while the microorganisms biodegrade the hydrocarbons" — "let or permit the microorganisms within the cleaning fluid to biodegrade the hydrocarbons"; "the hydrocarbons remain in the cleaning fluid while the microorganisms biodegrade them." ChemFree Corp. v. J. Walter, Inc., et al., 2007 U.S. Dist. LEXIS 51677 (N.D. Ga., July 17, 2007).180

"along" — "does not require that a first item abut a second item, but rather can be 'near' the second item." Moore U.S.A., Inc. v. Standard Register Co., 229 F.3d 1091 (Fed. Cir. 2000).181

"along" — "on a line or course parallel and close to; continuously beside; for example: rowed along the shore; the trees along the avenue." Smith & Nephew, Inc. v. Arthrocare Corp., 2004 U.S. Dist. LEXIS 31057 (W.D. Tenn. 2004).182
"along a line" — "contacting the aorta inner wall with a portion of the tube body such that when the end of the catheter lodges within the opening in the coronary artery, an about 1.5 cm or greater length of the tube body bears upon the wall of the aorta opposite the opening." Voda v. Cordis Corp., 506 F. Supp. 2d 868 (W.D. Okla. 2007).

"along one of the side edges"; "along one vertical corner of said structure" — "over the length of or on a line or course parallel and close to one of the side edges of a wall of the blind"; "over the length of or on a line or course parallel and close to the vertical line formed where two side walls of the blind meet at an angle." Stumbo v. Eastman Outdoors, Inc., 2007 U.S. Dist. LEXIS 5444 (D. Colo., Jan. 25, 2007).


"altering" — "one or more techniques selected from the group consisting of adding, removing, isolating and shielding a known fraction of said initial amount." Travanti Pharma, Inc. v. Iomed, Inc., 2006 U.S. Dist. LEXIS 2646 (D. Minn., Jan. 11, 2006).


"an upstanding feed tube ... to provide a hygienic flow path for delivering liquid from ... and admitting air ... into said container" — "is properly interpreted to refer to a single feed tube with a single flow path for both liquid and air." Elkay Manufacturing Co. v. Ebco Manufacturing Co., et al., 192 F.3d 973 (Fed. Cir. 1999).

"an anatomic space" — "an open working space for the performance of a surgical procedure, which is not occupied by a bladder or other device, or by tissue." General Surgical Innovations, Inc. v. Origin Medsystems, Inc., 1998 U.S. Dist. LEXIS 22958 (N.D. Cal., May 15, 1998).


"an illumination apparatus"; "illuminating" — "encompass one or more illumination sources." Scanner Technologies Corp. v. ICOS Vision Systems Corp., N.V., 365 F.3d 1299, 1304 (Fed. Cir. 2004).

"an opening" [and] "the opening" — "the court finds that Jones' invention comprises a dual compartment bag that is separated by a single throat." Jones v. Argee Corp., 1998 U.S. Dist. LEXIS 21765 (N.D. Ill. 1998).

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"an opening formed therein" — "this opening must be a permanent part of the sleeve structure. ... when the patent claims 'an' opening in the sleeve, the Court reads this to disclose a single opening in the sleeve and no more." Brita Wasser-Filter-Systeme GmbH, et al. v. Recovery Engineering, Inc., 1998 U.S. Dist. LEXIS 12491 (N.D. Ill., Aug. 6, 1998). 197

"lowering said body into the well bore and imparting rotation to said tool body, thereby creating a magnetic field" — "both steps are required, that is lowering the tool into the well bore, and subsequently rotating the tool, to create the magnetic field described in the language of the claim. In each case, the language of the claim calls for lowering and rotating; the use of the conjunctive 'and' does not provide the option of not rotating the tool." Rattler Tools, Inc. v. Bilco Tools, Inc., et al., 2007 U.S. Dist. LEXIS 49124 (E.D. La., July 6, 2007). 198

"detaching said distal tip from said guidewire to leave said distal tip within said vascular cavity and said occlusion being formed within said vascular cavity" — "detaching the distal tip after the formation of an occlusion has started under circumstances where continuation of formation of the occlusion can take place after detachment." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007). 199


"anesthetizing the portion of the eye lid" — "The district court, following what it perceived as the 'ordinary meaning' of the term, held that ... the limitation 'anesthetizing the portion of the eye lid ...' does not encompass 'freezing' or application of 'cold water.' ... the district court correctly construed the claims." Giora George Angres, Ltd. v. Tinny Beauty and Figure, Inc., et al., 1997 U.S. App. LEXIS 15342 (Fed. Cir., Jun. 26, 1997) (unpublished). 201

"balloon angioplasty catheter" — "the entire record in this case reveals that 'angioplasty' is, in fact, a structural limitation of Rowe's claims." Rowe v. Dror; et al., 112 F.3d 473 (Fed. Cir. 1997). 202

"angle" — "a geometric figure or arithmetic quantity defined by two rays emanating from a common point or by two planes emanating from a common line." Floe International, Inc. v. Newmans' Manufacturing Inc., 2006 U.S. Dist. LEXIS 42114 (D. Minn., June 21, 2006). 203

"angle less than ninety degrees" — "the Court construes this phrase as 'a geometric figure or arithmetic quantity defined by two rays emanating from a common point or by two planes emanating from a common line, where the measured angle between the two rays or two planes is less than ninety degrees.' The Court recognizes, however, that the prosecution history does not foreclose the possibility that a zero degrees angle could fall within the confines of the claim language." Floe International, Inc. v. Newmans' Manufacturing Inc., 2006 U.S. Dist. LEXIS 42114 (D. Minn., June 21, 2006). 204

"angle of the common plane of the coupled panels" — "refers to the angle of the common plane of the coupled panels with the common plane of tangency which is other than 90°"; OR "refers to the angle of the coupled panels that, with respect to the lower lip, is inclined at the angle of 30° to 70° relative to the coupled panels." Alloc, Inc. v. Unilin Decor N.V., et al., 2007 U.S. Dist. LEXIS 16743 (E.D. Wis., Mar. 6, 2007). 205
"angled cutter" — "[a]n angled structure that cuts, in which 'angled' means that at least one edge of the angled structure is oriented other than perpendicularly to the material to be cut." *Kothmann Enterprises, Inc. v. Trinity Industries, Inc.*, 394 F. Supp. 2d 923 (S.D. Tex. 2005).206

"driving surfaces having an upper edge and a lower edge and being angled from said upper edge downward toward said lower edge and in said selected direction of travel"; "[driving surfaces] having an upper edge and a lower edge and extending downward from said upper edge toward said lower edge and in said selected direction of travel"; "at least a portion of the driving surfaces extend downwardly toward the bottom surface and in the direction of intended travel" — "are limited to modules having angled, planar driving surfaces." *Laitram Corp., et al. v. Morehouse Industries, Inc., et al.*, 1997 U.S. Dist. LEXIS 23026 (E.D. Cal., Apr. 23, 1997).207 "The district court's interpretation of the 'driving surface' limitation was not erroneous." *Id.*, 143 F.3d 1456 (Fed. Cir. 1998).208

"angularly offset" — "the axes of the three holes are spaced apart from each other, an angle is formed by the axes of any two such holes when viewed in two dimensions from the butt end or from the side, and the axes are not aligned in a parallel orientation." *Acumed LLC v. Stryker Corp., et al.*, 483 F.3d 800 (Fed. Cir. 2007).209


"the collection elements and conduit being angularly spaced from each other" — "requir[es] two angles--an angle between the conduit and collection elements and an angle between each of the collection elements." *Knopik v. Amoco Corp., et al.*, 96 F. Supp. 2d 892 (D. Minn. 2000).212

"annular" — "of or relating to an area formed by two concentric circular or curved regions." *Wilson Sporting Goods Co. v. Hillerich & Bradby Co.*, 442 F.3d 1322 (Fed. Cir. 2006).213


"annular channel"; "annular lip" — "a ring-like gutter, groove or furrow which is large enough to receive displaced septum material"; "a septum-supporting ridge which also serves as one wall of the annular channel." *Baxter International Inc., et al. v. McGaw, Inc.*, 1996 U.S. Dist. LEXIS 1527 (N.D. Ill., Feb. 8, 1996).216

"an angular medial surface for supporting the three remaining ulnar fingers in a wrapped configuration with flexion of the distal, middle, and proximal phalanges of said ulnar fingers" — "merely requires an angled surface that supports the middle, ring, and small fingers in a folded position such that the distal, middle and proximal bones of the fingers are partially bent over that angled surface." *Gart v. Logitech, Inc.*, 254 F.3d 1334 (Fed. Cir. 2001).217
"annular extension" — "the district court interpreted the claims of the '657 patent to require that the annular extensions inhibit radial expansion of the sealing ring. That interpretation, however, is not supported by the language of the claim. Claim 1 defines the 'annular extensions' in purely structural terms. ... We find nothing in the claim language itself that requires the annular extensions to perform the function of inhibiting radial expansion of the sealing ring." Schwing GmbH v. Putzmeister Aktiengesellschaft, et al., 305 F.3d 1318 (Fed. Cir. 2002). 218

"annular inner surface" — "so long as an inner surface, when viewed from above, surrounds an interior space or cavity, that surface will be considered 'annular.'" CCPI Inc. v. American Premier, Inc., 966 F. Supp. 276 (D. Del. 1997). 219


"annular member" — "a member with expanded dimensions in the direction perpendicular to the major axis of the paddle support arm, which member may be, but need not necessarily be, circular or oval in shape." Agere Systems Inc. v. Atmel Corp., 2003 U.S. Dist. LEXIS 9823 (E.D. Pa., May 23, 2003). 221

"annular peripheral zone" — "may include circular or round configurations, but are not necessarily limited to such." Produits Berger S.A., et al. v. Schemenauer, et al., 2007 U.S. Dist. LEXIS 10294 (E.D. Tex., Feb. 14, 2007). 222

"annular reinforcing bead" — "an outwardly concave generally 'U' shaped groove (also called a countersink or anti peaking bead) that is located inwards from the bottom of the wall (chuck wall) when looking at a cross section of the can end, which encircles and supports the center panel of the can end." Crown Packaging Technology, Inc., et al. v. Rexam Beverage Can Co., 486 F. Supp. 2d 366 (D. Del. 2007). 223


"annular sidewall ... diverging radially outwardly to an upper terminal edge" — "a sidewall shaped like a ring ... continuously increasing in radius from the central axis moving from the base wall to the edge of the sidewall at the open end of the washing machine basket." Maytag Corp. v. Electrolux Home Products, Inc., 411 F. Supp. 2d 1008 (N.D. Iowa 2006). 225

"spaced annularly around a periphery of the hub at known intervals" — "positioned on an annular path around the hub's end face." Fargo Electronics, Inc. v. Iris Ltd, Inc., 2005 U.S. Dist. LEXIS 34493 (D. Minn., Nov. 30, 2005). 226

"another movement" — "is a broad term and cannot be interpreted to exclude a reciprocating movement without varying the claim limitations. A reciprocating movement is another movement." Haney v. Timesavers, Inc., et al., 900 F. Supp. 1375 (D. Or. 1995). 227

"any standard meter"; "any standard electric meter" — "the court construes 'any' to mean 'every' or 'all.'" Cellnet Data Systems, Inc. v. Itron, Inc., 17 F. Supp. 2d 1100 (N.D. Cal. 1998). 228

"aperture" — "a two-dimensional, rectangular space." Display Technologies, Inc. v. Paul Flum Ideas, Inc., 282 F.3d 1340 (Fed. Cir. 2002). 229
"aperture" — "an opening, such as a hole, gap, or slit." *Fargo Electronics, Inc. v. Iris Ltd, Inc.*, 2005 U.S. Dist. LEXIS 34493 (D. Minn., Nov. 30, 2005).230


"aperture" — "there is no reason in evidence intrinsic to the patent to require ... that the 'aperture' be 'fully enclosed.' The patent fairly contemplates and covers any shape with the requisite 'spatial relationship[s]' ... between the cam member, cavity, and aperture, and is not limited to the embodiment shown in Figs. 5 and 7, so long as the cam is contained within the device as a result of the spatial configuration of the aperture." *Quickie, LLC v. Medtronic, Inc.*, 226 F. Supp. 2d 481 (S.D.N.Y. 2002).233


"aperture" — "Plaintiff asserts that the 'aperture' ... includes a recess. ... A review of the claim language and specification leads to the inescapable conclusion that the aperture does not include the recess." *Intermatic Inc. v. Lamson & Sessions Co.*, 1999 U.S. Dist. LEXIS 1997 (N.D. Ill., Feb. 9, 1999).235


"apertures" — "discrete, arrangeable, openings through a solid material that allow a gas to flow from one side to the other." *ASM America, Inc., et al. v. Genus, Inc.*, 260 F. Supp. 2d 827 (N.D. Cal. 2002).237


"the appearance of smoothed edges" — "means avoiding roughened edges and improving character formation so that the generated shapes have less of an uneven appearance or less 'jaggies' than under prior printing methods." *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 141 F. Supp. 2d 288 (D. Conn. 2001).241

"application unit" — "a mechanical mechanism that multiplies an input force using a lever to provide a greater output force that presses the brake shoes against the brake disk." *Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp., et al.*, 133 F. Supp. 2d 833 (E.D. Va. 2001).242

"applying a compressive force against said terminal by said electrodes" — "using the electrodes to apply additional pressure against the terminal after the insulation has been removed from the armature wire." Joyal Products, Inc. v. Johnson Electric North America, et al., 2007 U.S. Dist. LEXIS 79522 (D.N.J., Oct. 25, 2007).244


"applying an external physical pressure" — "the application of force to the label(s) and container by holding and pressing apparatus that arises or acts from the outside; i.e., separate and independent from the labels and container." Stephen Key Design, LLC, et al. v. Lego Systems, Inc., et al., 261 F. Supp. 2d 1196 (N.D. Cal. 2003).246

"applying an overprinting layer over at least the scratch-off layer" — "printing an overprinting layer over the scratch-off layer and optionally printing the overprinting layer over a portion of the non-scratch-off layer." Scientific Games International, Inc. v. Oberthur Gaming Technologies, 2005 U.S. Dist. LEXIS 34772 (N.D. Ga., Dec. 5, 2005).247


"applying axially directed forces to the septum to form an outwardly, easily wipable exterior peripheral surface"; "applying axially directed forces to the septum to form an outwardly curved, easily wipable exterior peripheral surface"; "applying axially directed forces to the septum to form a curved, easily wipable exterior peripheral surface" — "each of these phrases has the same meaning, regardless of the discrepancies in language. Furthermore, the court concludes that the 'axially directed forces' have as their sole purpose the forming of the surface of the septum. That surface is formed by these forces as outwardly curved or domed. The court also concludes that the 'exterior peripheral surface' is that part of the septum not covered by the housing, and thus easily wipable because it is exposed." Baxter International Inc., et al. v. McGaw, Inc., 1996 U.S. Dist. LEXIS 1527 (N.D. Ill., Feb. 8, 1996).249


"applying fluid pressure to the diaphragm to operate the pump chamber" — "applying pressure through a gas or liquid to the diaphragm to operate the pump chamber." Baxter Healthcare Corp. v. Fresenius Medical Care Holdings, Inc., et al., 2009 U.S. Dist. LEXIS 14842 (N.D. Cal., Feb. 10, 2009).251

"thereafter applying pressure and shear to the heated mixture sufficient immediately to convert at least a portion of the binder material" — "mean[s] applying pressure greater than 40 psi and shear sufficient to convert at least a portion of the binder materials after the entire mixture has been heated to a temperature above the softening temperature of the binder." KX Industries, L.P., et al. v. Culligan Water Technologies, Inc., et al., 90 F. Supp. 2d 461 (D. Del. 1999).253

"applying radial loads to said inner and outer sealing lips" — "To apply a radial load, the wedge must contact the lip. Claim 1, by its own language, calls for a seal assembly in which the wedge contacts both lips." Hydraflo v. Enidine Inc., 907 F. Supp. 639 (W.D.N.Y. 1995).254

"applying radially directed forces to the septum to reseal the slit therein"; "applying sufficient radially directed forces to the septum to reseal the slit therein preventing fluid flow therethrough" — "because the purpose of the radially directed forces in all three claims is to reseal, the radially directed forces must be strong enough to affect the center of the septum, thus causing the slit to reseal and not leak." Baxter International Inc., et al. v. Mcgaw, Inc., 1996 U.S. Dist. LEXIS 1527 (N.D. Ill., Feb. 8, 1996).255


"less than approximately"; "greater than approximately" — "Hamilton has succeeded in carrying its burden to establish by clear and convincing evidence that the '621 patent is indefinite." Hamilton Products, Inc. v. O'Neil, et al., 492 F. Supp. 2d 1328 (M.D. Fla. 2007).258

"approximately coplanar" — "[i] limited to the roller axes of rotation being in the same plane as the face of the driven member plate within a relatively small tolerance corresponding to the machine tolerances of a few thousandths or ten thousandths of an inch." Lencco Racing Co., Inc. v. James Jolliffe and Micro Belmont Engineering, Artco, Inc., et al., 2000 U.S. Dist. LEXIS 121 (S.D. Mich., Jan. 5, 2000).259


[i] "approximately one and one half inches"; [ii] "approximately nine and one half inches"; [iii] "approximately one fourth inch"; [iv] "approximately eleven and one fourth inches" — [i] "no less than one and three-eighths inches and no greater than one and five-eighths inches"; [ii] "no less than nine and three-eighths inches and no greater than nine and five-eighths inches"; [iii] "no less than one eighth of an inch and no greater than three eighths of an inch"; [iv] "no less than eleven and one-eighth inches and no greater than eleven and three-eighths inches." Messer v. Ho Sports Co., Inc., et al., 2007 U.S. Dist. LEXIS 50081 (D. Or., July 9, 2007).262
[i] "approximately one fourth to one fifth"; [ii] "approximately three fourths to four fifths" — "[i] "no less than fifteen and no more than thirty percent"; [ii] "no less than seventy and no more than eighty-five percent." Messer v. Ho Sports Co., Inc., et al., 2007 U.S. Dist. LEXIS 50081 (D. Or., July 9, 2007).363

"wherein said film is stretched approximately 200%" — "the plastic film is stretched 200 percent, plus or minus standard manufacturing tolerances." Pliant Corp. v. MSC Marketing and Technology, Inc., 416 F. Supp. 2d 632 (N.D. Ill. 2006).364


"arc chamber" — "a pair of spaced-apart electrodes ... in which electric arcs are to be formed." Thermal Dynamics Corp. v. TATRAS, Inc., 2004 U.S. Dist. LEXIS 24954 (D.N.H., Dec. 9, 2004).


"arcuate" — "the term 'arcuate' includes, but is not limited to, elliptical cross-sections." C.M.L. s.r.l. v. Ineco Industrial Navarra de Equipos y Comercio, S.A., et al., 177 F. Supp. 2d 442 (D. Md. 2001).


"wherein the lining has an arcuate opening through which the spring operates on the blade" — "wherein the lining has a curved opening through which the spring operates on the blade." Kai U.S.A., Ltd. v. Buck Knives, Inc., 2006 U.S. Dist. LEXIS 24924 (D. Or., Feb. 9, 2006).

"arcuate path" — "a circular oval or other such closed, curved path of travel." Precor Inc., et al. v. Fitness Quest, Inc., et al., 2006 U.S. Dist. LEXIS 63244 (W.D. Wash., Aug. 23, 2006).


"an arm extended therefrom for extending beyond said rear side" — "an arm which extends back from the auxiliary spectacle frame over the rear side of the side portion extension of the primary frame but not past the rear edge of the projection containing the magnetic members of the primary frame." *Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc.*, 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003).277

"an arm extended therefrom for extending toward and beyond said rear side" — "an arm which extends back from the auxiliary spectacle frame over the rear side of the side portion extension of the primary frame but not past the rear edge of the projection containing the magnetic members of the primary frame." *Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc.*, 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003).278

"arm means supporting one of said sealing and stripping means" — "is written in means-plus-function format. The element recites the function of supporting the sealing/stripping means but does not describe any particular structure which performs this function." *Ishida Co., Ltd., et al. v. Taylor, et al.*, 1998 U.S. Dist. LEXIS 22957 (N.D. Cal., Nov. 23, 1998).279

"an arm pivotally connected to each of said hangers" — "an arm-like structure pivotally attached to each of said structures or things." *Watson & Chalin Manufacturing, Inc. v. Boler Co.*, 227 F. Supp. 2d 633 (E.D. Tex. 2002).280


"an armrest guard encircling the second cushion position when unfolded substantially parallel therewith and substantially vertical when folded" — "an armrest guard which folds down from a vertical position and encircles the child, once such child is placed in the pulled down seat." *Hassell, et al. v. Chrysler Corp., et al.*, 982 F. Supp. 515 (S.D. Ohio 1997).282

"arms" — "structures that are generally parallel, form a channel between them for receiving the upper extremity of a boat windshield, and have means along the channel for gripping the windshield." *Nelson A. Taylor Co., Inc., et al. v. Ameritex Technologies, Inc., et al.*, 2006 U.S. Dist. LEXIS 68004 (D.S.C., Sept. 20, 2006).283

"arms having a rearwardly directed end for securing a magnetic member" — "arms which extend backward from the side portions of the auxiliary spectacle frame but not past the rear edge of the projection of the primary frame and which include an end for securing a permanent magnet or a ferromagnetic member." *Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc.*, 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003).284

"around" — "on all four sides or on less than all four sides." *PODS, Inc. v. Porta Stor Inc., et al.*, 2006 U.S. Dist. LEXIS 36486 (M.D. Fla., June 5, 2006).285 "Thus, since we construe the term 'carrier frame' in claim 29 to require a four-sided structure, we necessarily construe the term 'around' to require the frame to be on all sides of the container." *Id.*, 484 F.3d 1359 (Fed. Cir. 2007).286

"cords are arranged in spaced relation to each other" — "cords are positioned at predetermined positions relative to each other." Schindler Elevator Corp. v. Otis Elevator Co., 2010 U.S. Dist. LEXIS 2463 (D.N.J., Jan. 13, 2010).288 "[T]he Court will reconsider its construction of the term 'arranged in spaced relation' in Claim 18. The phrase 'cords are arranged in spaced relation to each other' in Claim 18 will be defined as 'cords are positioned at predetermined positions spaced relative to each other.'" Id., 2010 U.S. Dist. LEXIS 78002 (D.N.J., Aug. 3, 2010).289

"a first set of elements arranged on the first side of said printed circuit board" — "a well defined collection of memory elements arranged in a logical fashion on one side of the printed circuit board." Sun Microsystems, Inc. v. Dataram Corp., 1997 U.S. Dist. LEXIS 18363 (N.D. Cal., Aug. 29, 1997).290


"arranging a weight sensor in connection with the seat such that the at least one morphological characteristic is the weight of the occupant" — "sensing the weight of the occupant by placing a weight sensor in the seat." Automotive Technologies International, Inc. v. Delphi Corp., 2009 U.S. Dist. LEXIS 83187 (E.D. Mich., Sep. 11, 2009).294


"arrayed on a line" — "positioned on a single line." Synvasive Corp. v. Stryker; Corp., 425 F. Supp. 2d 1105 (E.D. Cal. 2006).299

"article" — "is intended to refer to something other than a human being." Worldwide Innovations & Technologies, Inc., et al. v. Microtek Medical, Inc., et al., 2007 U.S. Dist. LEXIS 69076 (E.D. Miss., Sept. 17, 2007).300

"article feeder means" — "is not governed by Section 112, paragraph 6." Gross International Americas, Inc. v. K&M Newspaper Services, Inc., 469 F. Supp. 2d 547 (N.D. Ill. 2006).301
"as the engineer adjusts design parameters" — "the word 'as' is incapable of simplification or more precise definition." Haliburton Services v. Smith International Inc., 2004 U.S. Dist. LEXIS 2320 (E.D. Tex., Feb. 18, 2004).  

"end cap assembly" — "a collection of components including or comprising at least a flat annular end cap and separate annular end piece." Parker-Hannifin Corp., et al. v. Baldwin Filters, Inc., et al., 2010 U.S. Dist. LEXIS 68906 (N.D. Ohio, Jul. 9, 2010).  

"retaining assembly" — "a structure that consists of more than one part." Lifetime Products, Inc. v. GSC Technology Corp., et al., 321 F. Supp. 2d 938 (N.D. Ill. 2004).  

"blade assembly comprising at least two blades" — "a set of parts, put together to make a completed product, in which said set of parts includes among its members either (1) at least two parts that each are the flat cutting part of a sharpened weapon; or (2) one part that has at least two flat cutting parts of a sharpened weapon." Muzzy Products, Corp. v. Sullivan Industries, Inc., et al., 194 F. Supp. 2d 1360 (N.D. Ga. 2002).  

"assembly means" — "Defendant argues that 'assembly means' ... is a mean-plus-function [limitation] ... I will disregard this proposed construction." Sunbeam Products, Inc., et al. v. HoMedics, Inc., 2009 U.S. Dist. LEXIS 56883 (W.D. Wis., Jul. 6, 2009).  

[i] "a first food preparation assembly operable to prepare raw food product using steam and at least one of radiating heat and forced air convection"; [ii] "a smoking assembly configured to deliver heat to an aromatic smoke producing media that emits smoke into the heating cavity in response to the delivered heat"; [iii] "a steam assembly selectively providing steam into the interior to prepare food . . . the steam assembly comprising a steam producing assembly capable of delivering liquid across the heating element that transforms the liquid into steam that is delivered to the interior of the heating cavity"; [iv] "a smoking assembly selectively delivering smoke into the interior independently of the first food preparation assembly" — [i] "a number of component pieces fitted together to form a whole capable of cooking food using one cooking process -- in this case convection heat, steam, and/or radiant heat -- before a second food preparation process, such as smoke, is engaged to continue the cooking process"; [ii] "a number of component pieces fitted together to form a whole capable of delivering heat to an aromatic smoke producing media"; [iii] "a. 'a steam assembly' -- 'a number of component pieces fitted together to form a whole capable of providing steam into the interior to prepare food;' and b. 'steam producing assembly' -- 'a number of component pieces fitted together to form a whole capable of delivering liquid across the heating element which transforms the liquid into steam.'"; [iv] "a number of component pieces fitted together to form a whole capable of selectively delivering smoke into the interior independently of the first food preparation assembly." Alto-Shaam, Inc. v. Cleveland Range, LLC, et al., 2010 U.S. Dist. LEXIS 56857 (N.D. Tex., Jun. 7, 2010).  

"an associated value representing a desired quality of result" — "One value from a range of values representing the quality of a cut. This value is inputted into an equation containing other values that reflect characteristics of the task that will impact the quality of the cut, such as material type." Omax Corp. v. Flow International Corp., 2006 U.S. Dist. LEXIS 81914 (W.D. Wash., Nov. 7, 2006).309


"a gantry at each treatment station" — "a gantry at every treatment center in a system where there is a plurality or more than one treatment station." Optivus Technology, Inc., et al. v. Ion Beam Applications S.A., 2004 U.S. Dist. LEXIS 30314 (C.D. Cal., Aug. 31, 2004).314

"at 50 °C for 144 hours as defined by ... Arrhenius' equation (14)" — "construction of this phrase is not required at this time, because it clearly refers to Arrhenius' equation as it is defined by equation 14 in the '934, '814, and '308 Patent specifications." Howmedica Osteonics Corp. v. Zimmer, Inc., et al., 2007 U.S. Dist. LEXIS 29991 (D.N.J., April 23, 2007).315

"at least a portion of a breathing cycle" — "anywhere from a part of either the inspiratory or expiratory phase of the breathing cycle to an entire two-phase breathing cycle, and anything in between." Respironics, Inc., et al. v. Invacare Corp., 2006 U.S. Dist. LEXIS 62233 (W.D. Pa., Aug. 30, 2006).316


"at least about 16º"; "at least a portion of said portion of said can end wall bent upwardly during said seaming operation is bent upward through an angle of at least about 16º" — "at least part of the first portion of the can end wall is turned upwardly through an angle of at least about 16º." Crown Packaging Technology, Inc., et al. v. Rexam Beverage Can Co., 486 F. Supp. 2d 366 (D. Del. 2007).318

"at least 0.1 mm" — "is not limited to a minimum of 0.1 mm." Reehydcalog UK. Ltd., et al. v. United Diamond Drilling Services, Inc., et al., 2009 U.S. Dist. LEXIS 32959 (E.D. Tex., Apr. 15, 2009).319

"at least approximately 600 tpi" — "defines an open-ended range starting slightly below 600." Quantum Corp. v. Rodime, PLC, 65 F.3d 1577 (Fed. Cir. 1995).320
"at least long enough to receive most of said external threads from said similar adjacent PVC pipe therein" — "said second enlarged interior diameter is long enough to receive most of the external threads from said similar adjacent PVC pipe which mate with the internal threads of a similar adjacent PVC pipe, before any of the external threads at the male end are interlocked with the interior threads in the first enlarged interior diameter of the female end." CertainTeed Corp. v. Modern Products Industries, Inc. et al., 2005 U.S. Dist. LEXIS 7638 (E.D. Pa., May 2, 2005).321

"at least one contact" — "one or more electrically conductive elongated contact arms." Invisible Fence, Inc. v. Perimeter Technologies, Inc., 2006 U.S. Dist. LEXIS 33792 (N.D. Ind., May 25, 2006).322


"at least one light source" — "cover[s] a device that has only one light source or a device that has more than one light source." Rhine v. Casio, Inc., et al., 183 F.3d 1342 (Fed. Cir. 1999).324

"further comprising a step of setting at least one of a magnitude and a duration of said pressure profile" — "further comprising the step of setting a magnitude, a duration, or both, of said pressure profile." Respironics, Inc., et al. v. Invacare Corp., 2006 U.S. Dist. LEXIS 62233 (W.D. Pa., Aug. 30, 2006).325

"at least one of the side edge of both pairs of the side edges" — "[requires] that only one of the two grooves previously identified in the claim needs to have an upper lip above the groove." Alloc, Inc. v. Unilin Decor N.V., et al., 2007 U.S. Dist. LEXIS 16743 (E.D. Wis., Mar. 6, 2007).326

"a cellular pleated shade member having a plurality of cells, at least one of the cells comprising ..."; "a cellular pleated shade member having a plurality of interconnected cells, at least one of the cells comprising ..." — "only require a 'member' of a cellular pleated shade, not a complete cellular pleated shade. The claims also only require one cell within this member to have the described physical characteristics." Newell Window Furnishings, Inc., et al. v. Springs Window Fashions Division, Inc., 15 Fed. Appx. 836 (Fed. Cir., Jul. 2, 2001) (unpublished).327

"at least partially compacting the particulate articles in the temperature maintenance zone" — "the partial compacting or compressing of the particulate articles to any degree while they are in the area where the disinfecting or sterilizing temperature is maintained." Sanitec Industries v. Micro-Waste Corp., 2006 U.S. Dist. LEXIS 86803 (S.D. Tex., Nov. 28, 2006).328

"said cutting head assembly being structured and disposed to be at least partially received in said guide means" — "a portion of the cutting head assembly that goes inside the guide means." Bausch & Lomb Inc. v. Moria S.A., et al., 222 F. Supp. 2d 616 (E.D. Pa. 2002).329

"at one corner of said enclosure" — "in, on, or near the point where three areas or surfaces of the enclosure meet or intersect." Inpro II Licensing, S.A.R.L. v. T-Mobile USA, Inc., et al., 2004 U.S. Dist. LEXIS 29773 (D. Del., Nov. 29, 2004).

"a nozzle ... at one end of the housing and a mouthpiece at the other end of the housing" — "the Court construes 'at one end' as 'the portion of the housing where the nozzle is located or attached' and 'at the other end of the housing' as 'that portion of the housing where the mouthpiece is located or attached.' P & M Products, Ltd., et al. v. Rose Art Industries, 2002 U.S. Dist. LEXIS 5008 (E.D. Pa., Mar. 25, 2002).


"a chimney damper attachable to a chimney flue" — "the chimney damper ... must be separate from the chimney flue." Bernard Dalsin Manufacturing v. RMR Products, Inc., 1999 U.S. Dist. LEXIS 22648 (D. Minn., Sept. 14, 1999).

"attachable to the skin by a self adhesive plaster" — "the 'attachable' limitation requires the magnetic sheet itself to be 'attachable to the skin by a self adhesive plaster' without the addition of other means for attaching and therefore requires the magnetic sheet to include a self-adhesive plaster." Nikken USA, Inc. v. Robinsons-May, Inc., et al., 51 Fed. Appx. 874 (Fed. Cir., Nov. 20, 2002) (unpublished).

"attached" — "the ordinary meaning of the word 'attached' includes components attached to a fixed structure via another component." M-B-W, Inc., et al. v. Multiquip, Inc., et al., 2009 U.S. Dist. LEXIS 90418 (E.D. Wis., Sep. 29, 2009).

"attached" — "a connection or joining of two components, whether or not the connection involves an intermediate component." SRAM Corp. v. Formula S.R.L., et al., 2009 U.S. Dist. LEXIS 29100 (N.D. Ill., Apr. 3, 2009).


"each adjustable strap attached at one end to the abdomen portion of the main pad and at the other end to the back portion of the shoulder guard" — "each strap is attached to the abdomen portion of the main pad and back portion of the shoulder guard either directly, or indirectly through another strap." Everything Baseball Limited, LLC v. Team Athletic Goods, Inc., 2007 U.S. Dist. LEXIS 66191 (N.D. Ill., Sept. 4, 2007).345

"a single weight member formed on and attached solely to said rear wall within said cavity" — "the claim language at issue is interpreted to mean what it says. The weight member must be attached solely (i.e. only) to the rear wall (backside of the striking surface) and not attached also to the peripheral mass within the cavity." Antonious v. Spalding & Evenflo Cos., Inc., et al., 1998 U.S. Dist. LEXIS 10740 (D. Md., Apr. 27, 1998).346 "[W]e construe the phrase 'a single weight member formed on and attached solely to said rear wall' to mean that the weight member cannot be fastened to any portion of the golf club except the rear wall; we further conclude that the peripheral mass is not part of the rear wall." Id., 1999 U.S. App. LEXIS 22984 (Fed. Cir., Aug. 31, 1999) (unpublished).347

"attached thereto and in sliding engagement therewith" — "loosely attached to the ligature material in a manner that allows the ligature material to slide through the grommet." Callicrate v. New Age Industrial Corp., Inc., 2005 U.S. Dist. LEXIS 8934 (D. Kan., Apr. 27, 2005).348

"wherein said elastomeric ear further comprises a non-elastomeric extension member attached to said distal edge" — "wherein the elastomeric ear further comprises a non-elastomeric extension member attached to the distal edge along a seam." Kimberly-Clark Worldwide, Inc. v. First Quality Baby Products, LLC, et al., 2010 U.S. Dist. LEXIS 77063 (M.D. Pa., Jul. 29, 2010).349


"a vertical support portion constructed of a length of copper pipe and attached to said torch portion by a copper pipe reducer element" — "The best interpretation is that the element does not have to be a separate piece; the element can be one with another part of the torch, or it may be a separate element." Gardendance, Inc. v. Woodstock Copperworks, Ltd., et al., 392 F. Supp. 2d 717 (M.D.N.C. 2005).351

"two frames are attached together" — "two eyeglass devices, which include, at least, a bridge and rims, are fastened or connected by magnetic attraction." Aspex Eyewear, Inc., et al. v. Altair Eyewear, Inc., 386 F. Supp. 2d 526 (S.D.N.Y. 2005).352

"attaching portion attachable to a portion of said frame of said pair of eyeglasses" — "the trial court erred by applying § 112, P 6 to this claim element." Al-Site Corp., et al. v. VSI International, Inc., et al., 174 F.3d 1308 (Fed. Cir. 1999).353

"attenuating effect of said plates is immediately called into play when said closure member is first opened"; "attenuating effect thereof is great during initial opening" — "1) 'immediately' means that there is no time lapse between the opening of the valve and the attenuation or lessening of noise, 2) 'first' in the phrase 'first opened' merely emphasizes the absence of temporal delay in attenuation and 3) 'great during initial opening' is used for contrast with the diminished attenuation as the valve opens farther." Neles-Jamesbury, Inc. v. Fisher Controls International, Inc., et al., 989 F. Supp. 393 (D. Mass. 1998).354

"austempering" — "heated to a temperature within the austenizing range, usually 790 to 915 °C (1450 ° to 1675 °F); quenched in a bath maintained at a constant temperature, usually in the range of 260 ° to 400 °C (500 ° to 750 °F); allowed to transform isothermally to bainite in this bath; and, cooled to room temperature." *Fisher-Barton Blades, Inc. v. Blount, Inc., et al.*, 2006 U.S. Dist. LEXIS 76965 (E.D. Wis., Oct. 19, 2006).356

"automatically" — "the district court did not err in construing the term 'automatically' to mean that the claimed apparatus is 'capable of performing multiple, autonomous east-west changes in position over a substantial period of time without ground transmissions concerning the parameters of such movements.'" *Space Systems/Loral, Inc. v. Lockheed Martin Corp.*, 2000 U.S. App. LEXIS 21414 (Fed. Cir., Aug. 23, 2000).357


"automatically denominating" — "includes any method for automatic denomination known to those skilled in the art at the time the '806 Patent was filed." *Cummins-Allison Corp. v. Glory, Ltd., et al.*, 457 F. Supp. 2d 843 (N.D. Ill. 2006).360


"automatically ... positioning" — "a jury will understand this without the need for any construction by the Court." *Regents of the University of Minnesota v. AGA Medical Corp.*, 2009 U.S. Dist. LEXIS 90289 (D. Minn., Sep. 29, 2009).362


"the auxiliary body support including a pivotally mounted pad assembly adapted for engaging different body parts in various orientations" — "does not require construction." *Fitness Quest Inc. v. J. Monti*, 2007 U.S. Dist. LEXIS 60195 (N.D. Ohio, Aug. 16, 2007).364


"auxiliary spectacle frame" — "the entirety of the auxiliary frame with the exception of the lenses and including the lens rims (if provided), the auxiliary frame magnetic members, the nose bridge, and the arms which secure the auxiliary frame magnetic members." *Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc.*, 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003).366
"auxiliary strap means [which includes] first and second separate end sections made of a relatively non-stretchable material [and] a separate center section made of material which is longitudinally stretchable" — "require[s] three separate pieces of material that are attached to one another: a stretchable center section and two relatively non-stretchable end sections on either end of the center section. The center section must be made of a stretchable material that is different from the relatively non-stretchable material that comprises the end sections." Wleklnski v. Targus, Inc., 2007 U.S. App. LEXIS 29409 (Fed. Cir., Dec. 19, 2007) (unpublished).

"average consumer" — "an individual that purchases supplies for a home improvement task from a retail outlet and performs the home improvement task himself or herself, regardless of whether the individual has any training in that task." Romala Stone, Inc. v. Home Depot U.S.A., Inc., 2007 U.S. Dist. LEXIS 73098 (N.D. Ga., Sept. 28, 2007).


"axial peripheral lip" — "that uncovered surface of the composite wheel that starts at the edge of the cladding, goes up and over the top of the projecting rim lip, and ends where the outer side of the rim lip merges with the tire mounting surface of the wheel rim." Lacks Industries, Inc. v. McKechnie Vehicle Components USA, Inc., et al., 55 F. Supp. 2d 702 (E.D. Mich. 1999).

"[T]he weight of the intrinsic evidence supports the district court's construction and we therefore uphold the district court's construction of 'axial peripheral lip.'" Id., 322 F.3d 1335 (Fed. Cir. 2003). "I would reverse the district court's claim construction as to 'axial peripheral lip,' interpreting it instead as either the outer terminal edge or, alternatively, the highest point on the wheel rim." Id. (Clevenger, J., dissenting-in-part).

"axial symmetry" — "A geometric figure possesses axial symmetry if it is unchanged when rotated about a given line, such as a circle rotated around its axis." ASM America, Inc., et al. v. Genus, Inc., 260 F. Supp. 2d 827 (N.D. Cal. 2002).

"annular surfaces axially confronting each other" — "mean[s] that the surfaces are fully engaged, i.e., abutting, so that a precise axial rest position is achieved." Renishaw plc v. Marposs Societa' per Azioni, et al., 974 F. Supp. 1056 (E.D. Mich. 1997).

"axially spaced" — "the term 'axially spaced' does not require that the strap attachment points remain fixed on the axis line. Instead, as it is used in the patent, the term allows for the straps to move circumferentially off the axis, and around the circumference of the bag, during use." Izzo Golf, Inc. v. King Par Golf, Inc., 2006 U.S. Dist. LEXIS 51199 (W.D.N.Y., July 26, 2006).

"a first axially symmetric region" — "a region that is symmetric about the central axis of the wafer." MEMC Electronic Materials, Inc. v. Mitsubishi Materials Silicon Corp., et al., 2006 U.S. Dist. LEXIS 9353 (N.D. Cal., Feb. 24, 2006).

"axial direction" — "a direction related to, characterized, or forming an axis." Hydro-Thermal Corp. v. Pro-Sonix, LLC, et al., 2009 U.S. Dist. LEXIS 90148 (E.D. Wis., Sep. 9, 2009). "[T]he court rejects the defendants' contention that the '712 patent requires entirely axial flow." Id., 2010 U.S. Dist. LEXIS 10040 (E.D. Wis., Feb. 5, 2010).

"the inserting step comprises axially centering said support member on said catalyst such that axial extensions of the support member are axially inward from each axial end face of the catalyst" — "during the inserting step, the support member is wrapped around the substrate such that it covers the middle point of the substrate and does not extend to the substrate ends." Tenneco Automotive Operating Co. Inc. v. Visteon Corp., 2005 U.S. Dist. LEXIS 12738 (D. Del., Jun. 28, 2005).380


"axle seat" — "is unambiguous and may be defined by the ordinary meaning of the words that make up the term." Watson & Chalin Manufacturing, Inc. v. Boler Co., 227 F. Supp. 2d 633 (E.D. Tex. 2002); "the portion of the device in contact with the outer surface of the axle." Id., 229 F. Supp. 2d 630 (E.D. Tex. 2002).382

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"BNC connector" — "a type of bayonet connector with a slot or slots conforming to military specification." Synergetics, Inc. v. Peregrine Surgical, Ltd., et al., 427 F. Supp. 2d 537 (E.D. Pa. 2006).384

"back portion" — "the part of the shoulder guard that extends from the top portion and covers at least a portion of the back of the shoulder." Everything Baseball Limited, LLC v. Team Athletic Goods, Inc., 2007 U.S. Dist. LEXIS 66191 (N.D. Ill., Sept. 4, 2007).385

"back pressure mode" — "a mode of operation wherein fluid flow is permitted in a direction away from the starting position of the wellbore but obstructed from flowing toward the starting position of the wellbore by flapper valves." Davis-Lynch, Inc. v. Weatherford International, Inc., 2009 U.S. Dist. LEXIS 33414 (E.D. Tex., Apr. 20, 2009).386

"back surface" — "include[s] the characteristic of 'spanning the full width of the block.'" Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc., et al., 252 F. Supp. 2d 838 (D. Minn. 2002).387 "[W]e hold that the proper construction of 'back surface' is a surface at the back of the block." Id., 340 F.3d 1298 (Fed. Cir. 2003).388

"back surface tool including a first surface portion in the general shape of a posterior face of a contact lens and a convexly curved second surface portion circumscribing the first surface portion"; "the surface of the tool including a first surface portion in the general shape of a posterior face of a contact lens and a second surface portion defining a convex curved outer peripheral edge surface of the insert" — "Back surface tool including a first surface portion in the general shape of a posterior face of a contact lens and a second surface portion defined by an the outer peripheral edge surface of the insert. The second surface portion is an outward facing curved surface created from a continuous curve, a series of small flats (i.e., straight segments) that approximate a continuous curve, or a combination of curves and small flats that approximate a continuous curve." Coopervision, Inc. v. Ciba Vision Corp., 2007 U.S. Dist. LEXIS 51432 (E.D. Tex., July 16, 2007).389


"backlight unit" — "[t]he layers of the flat-panel display device which illuminate the flat-panel (or liquid crystal) display from behind." LG Philips Co., Ltd. v. Tatung Co., et al., 2007 U.S. Dist. LEXIS 43557 (D. Del., June 15, 2007).


"backswept aerodynamic blades" — "blades that have an end portion angled backward (i.e., opposite the direction of rotation) from the radial direction and which are designed to reduce or minimize the drag caused by air that strikes and flows around the blades." BorgWarner Inc., et al. v. Honeywell International, Inc., 2009 U.S. Dist. LEXIS 13391 (W.D.N.C., Feb. 20, 2009).

"backward titled position"; "defined by the rear end of the keyboard being disposed below the front of the keyboard" — "mean[s] that the support device permits the bottom of a keyboard to be tilted backward (i.e., at any angle of less than 0 degrees)." Ambrose, et al. v. Steelcase, Inc., et al., 2003 U.S. Dist. LEXIS 26035 (W.D. Mich., Nov. 10, 2003).

"baffle" — "we conclude that a person of skill in the art would not interpret the disclosure and claims of the '798 patent to mean that a structure extending inward from one of the wall faces is a 'baffle' if it is at an acute or obtuse angle, but is not a 'baffle' if it is disposed at a right angle." Phillips v. AWH Corp., et al., 415 F.3d 1303 (Fed. Cir. 2005) (en banc); "while I wholeheartedly join the majority opinion in its discussion and resolution of the 'specification v. dictionaries' issue, I would affirm the decision below." Id. (Lourie, J., dissenting).


"baffle having heat absorbing and insulating means thereon" — "an object placed in an appliance to change the direction or retard the flow of air, air fuel mixtures, or fuel gases, with the heat absorbing and insulating means on top of the aforesaid object." Travis Industries, Inc. v. Hearth & Home Technologies, Inc., et al., 2004 U.S. Dist. LEXIS 31059 (W.D. Wash., Oct. 18, 2004).
"second baffle means having at least one air deflecting surface for directing the air passing radially outwardly from said centrifugal fan inwardly of the plenum chamber and toward said filter means" — "The 'means' term in a means-plus-function limitation essentially is a generic reference to the corresponding structure disclosed in the specification, so a determination of corresponding structure is a determination of the meaning of the 'means' term in the claim and is also a matter of claim construction." Envirco Corp. v. Clestra Cleanroom Inc., 1998 U.S. Dist. LEXIS 18386 (N.D.N.Y., Nov. 3, 1998). "Because the 'second baffle means' element does not qualify for § 112, P 6 treatment, it is not limited to the structure corresponding to the claimed function as 'described in the specification and equivalents thereof.' 35 U.S.C. § 112, P 6." Id., 209 F.3d 1360 (Fed. Cir. 2000).

"bag" — "a flexible container sealed on all sides but one." MHB Industries v. Dennis Garberg & Associates, Inc., et al., 1996 U.S. Dist. LEXIS 11638 (D. Mass., July 26, 1996). "Claim I ... uses the specific term 'bag,' which is used in the specification in its ordinary sense, i.e., to mean 'a container ... closed on all sides except for an opening that may be closed.'" Id., 1997 U.S. App. LEXIS 19508 (Fed. Cir., Jul. 29, 1997) (unpublished).

"bag-like device" — "an item similar to, or characteristic of, an inflatable container composed of flexible material having the capability to stretch that is made, or adapted, to perform a function." Fitzgerald v. Eico, Inc., et al., 2006 U.S. Dist. LEXIS 57424 (S.D. W.Va., Aug. 10, 2006).


"a bail" — "a hinged band that secures the grounding clip to the electrical conductor." Andrew Corp. v. Beverly Manufacturing Co., 479 F. Supp. 2d 766 (N.D. Ill. 2006).


"ballast portion" — "the portion of the lens with ballast. Ballast is a surface contour of the lens that has elevated surfaces that interact with the blinking action of the eyelids to re-orient the lens." Coopervision, Inc. v. Ciba Vision Corp., 2007 U.S. Dist. LEXIS 51432 (E.D. Tex., July 16, 2007).


"bar" — "a piece of solid material with one or two ends and with sufficient rigidity to bias in response to force." Insight Technology Inc. v. SureFire, LLC, 2006 U.S. Dist. LEXIS 11762 (D.N.H., Feb. 28, 2006).

"transparent bar" — "a transparent and straight, cylindrical, rod-like piece that is considerably longer than it is wide." Irwin Industrial Tool Co. v. Orosz, et al., 2004 U.S. Dist. LEXIS 14325 (N.D. Ill., Jul. 26, 2004).416

"back bar mass" — "The Defendants seek a broader definition of the word 'bar' so as to exclude the requirement that the bar mass has a length greater than its width. Defendants say, for example, that a 'bar' could be shaped as a square. ... The Court does not find it appropriate to take the shape limitation inherent in the word 'bar' out of the claim." Antonious v. Spalding & Evenflo Cos., Inc., et al., 1998 U.S. Dist. LEXIS 10740 (D. Md., Apr. 27, 1998).417

"barb means integrally connected to said shaft portion to aid in insertion of said shaft portion into said tissue and to lock said shaft portion into said tissue" — "the barb means comprises not only the projection from the shaft which locks the shaft in place, but also the pointed tip of the shaft." Bionx Implants, Inc., et al. v. Innovative Devices, Inc., 45 F. Supp. 2d 75 (D. Mass. 1999).418


"base" — "because its ordinary and customary meaning is clear to one skilled in the art, the Court declines to construe the phrase." Joyal Products, Inc. v. Johnson Electric North America, et al., 2007 U.S. Dist. LEXIS 79522 (D.N.J., Oct. 25, 2007).423

"base" — "the structure which supports all of the other claimed structures of the snowmobile ski, and upon which all of the other claimed structures of the snowmobile ski stand or are mounted." Simmons, Inc. v. Bombardier Inc., et al., 328 F. Supp. 2d 1188 (D. Utah 2004).424


"base" — "the bottom support of the operator; the piece (or multiple pieces) that support the remainder of the operator and/or permit the operator to be mounted to a window frame." Ashland Products, Inc. v. Truth Hardware Corp., 2002 U.S. Dist. LEXIS 9822 (N.D. Ill., May 29, 2002).426

"base" — "does include the components listed above, but does not require that these components be 'floor-supported' as plaintiff suggests." Nautilus Group, Inc. v. Icon Health & Fitness, Inc., 2005 U.S. Dist. LEXIS 46877 (W.D. Wash., Feb. 16, 2005).427
"base"; [ii] "base end" — [i] "the general area that lies beneath the face member of each wing or side where the flexing occurs, rather than a structurally distinguishable finite section of each wing"; [ii] "a general area of each side, rather than a structurally distinguishable finite section of each side." Arlington Industries, Inc. v. Bridgeport Fittings, Inc., 345 F.3d 1318 (Fed. Cir. 2003).


"a base member having a lower edge for seating freely on the ground, the lower edge lying in a substantially flat plane and having no protrusions projecting downward from said plane" — "a supporting structural unit having a flat lower edge for sitting on, unsecured to, the ground in a mostly horizontal position. This unit shall have no parts extending downward from its lower edge." Robinson v. Advanced Decoy Research, Inc., et al., 519 F. Supp. 2d 1087 (S.D. Cal. 2007).


"[a] modular prosthesis system comprising a prosthetic base portion ... and a stem extension" — "requir[es] a standardized prosthesis system including a prosthetic base portion ... and a stem extension, that are located on the same side of a joint." Zimmer Technology, Inc., et al. v. Howmedica Osteonics Corp., 397 F. Supp. 2d 974 (N.D. Ind. 2005).


"[determining or measuring] an elapsed time period based on a time at which the characteristic appeared in the signal" — "using the point at which the characteristic appears to determine or measure an interval of time." Nike, Inc. v. Adidas America, Inc., et al., 2006 U.S. Dist. LEXIS 91011 (E.D. Tex., Dec. 18, 2006).

"bat frame" — "we conclude that 'frame' as modified by the term 'bat' and used in claims 1 and 18 means a tubular structure having a large-diameter impact portion, a tapered portion and a small-diameter handle, all of which are connected when the bat is fully constructed for its intended use." DeMarini Sports, Inc. v. Worth, Inc., 239 F.3d 1314 (Fed. Cir. 2001).

"beads" — "small frozen droplets ... which have a smooth, spherical (round or ball shaped) appearance." Dippin' Dot's, Inc., et al. v. Mosey, et al., 476 F.3d 1337 (Fed. Cir. 2007).
"beam" — "In claim 16 ..., ... mean[s] an integral elongated structural member in a suspension system and attached at the other end by a rigid connection to an axle and equivalents thereto."; "In claim 17 ..., ... mean[s] an integral elongated structural member in a suspension system without any distinct means, structure, or component to attach the suspension system's axle to the beam, such as U-bolts, brackets, sleeves or welds and equivalents thereto."  Boler Co. v. Neway Anchorlok, International, Inc., 92 F. Supp. 2d 671 (N.D. Ohio 2000).446

"beam transport configuration system" — "the arrangement of all the interacting elements and components used to convey the beam."  Optivus Technology, Inc., et al. v. Ion Beam Applications S.A., 2004 U.S. Dist. LEXIS 30314 (C.D. Cal., Aug. 31, 2004).441


"bearing against said wall structure near said opening to seal said opening" — "the seal is situated in contact with the wall structure [of the housing] near the opening of the proximal end of the housing to make the opening fluid tight."  ICU Medical, Inc. v. Alaris Medical Systems, Inc., 2006 U.S. Dist. LEXIS 96077 (C.D. Cal., July 17, 2006).443

"a spring bearing directly against the memory card when in place in the memory card socket for urging the replaceable memory card out of the socket" — "a spring that is compressed and directly contacted by the memory card when the memory card is inserted in the socket, and which pushes the memory card out of the socket."  Minerva Industries, Inc. v. Motorola, Inc. et al., 2010 U.S. Dist. LEXIS 9329 (E.D. Tex., Feb. 3, 2010).444

"bearing plate" — "a plate designed to be used with a single mine roof bolt to provide mine roof support."  Jennmar Corp. v. Excel Mining Systems, LLC, 2009 U.S. Dist. LEXIS 60836 (W.D. Pa., Jul. 16, 2009).445


[i] "the polymeric material ... becomes flowable, tacky and adherent upon the application of heat"; [ii] "the heat bondable material ... becomes flowable, tacky and adherent upon the application of heat" — [i] "the polymeric material is bonded to the implant by the application of heat sufficient to cause the polymeric material to become flowable, tacky and adherent"; [ii] "the heat bondable material is bonded to the tubular member by the application of heat sufficient to cause the heat bondable material to become flowable, tacky and adherent."  MarcTec, LLC v. Johnson & Johnson, et al., 2009 U.S. Dist. LEXIS 27011 (N.D. Ill., Mar. 31, 2009).447

"said second graft body inlet end being attachable in an overlapping relationship with said first graft body outlet end while inside of a vessel" — "the inlet end of the second graft body includes a malleable wire structure that permits it to be intravascularly docked to or coupled with the outlet end of the first graft body in an overlapping relationship."  Edwards Lifesciences, LLC, et al. v. Cook Inc., et al., 2007 U.S. Dist. LEXIS 55634 (N.D. Cal., July 23, 2007).448

"the device being capable of substantially restricting the through passage of at least one type of macromolecule therethrough" — "needs no construction."  Saffran v. Johnson & Johnson, et al., 2010 U.S. Dist. LEXIS 98537 (E.D. Tex., Sep. 20, 2010).449
"said back region of said shoulder strap being coupled to said back section of said elastic chest band" — "there can be a direct or indirect connection within the nursing bra of the nursing garment between the back region of the shoulder strap to the back section of the elastic chest band." Line Rothman v. Target Corp., et al., 2007 U.S. Dist. LEXIS 15615 (D.N.J., Mar. 5, 2007). 450

"the free end being defined as the portion of the cap most remote from the end section of the cap" — "the free end is the portion most remote from the end section of the cap, and said free end may extend slightly beyond the circumferential edge." MVS Royal Oak, LLC v. HTG-Tiffin, LLC, et al., 2006 U.S. Dist. LEXIS 84691 (E.D. Mich., Nov. 9, 2006). 451

"the free end being defined as the portion of the cap most remote from the end section of the cap" — "the free end is the portion of the cap most remote from the end section of the cap, and said free end may extend slightly beyond the circumferential edge." MVS Royal Oak, LLC v. HTG-Tiffin, LLC, et al., 2006 U.S. Dist. LEXIS 76159 (E.D. Mich., Oct. 11, 2006). 452

"said stylet means being detachable from said cannula" — "the stylet is capable of being separated or withdrawn from the cannula without loss or damage." Baran v. Medical Device Technologies, Inc., et al., 519 F. Supp. 2d 698 (N.D. Ohio 2007). 453 "The patentee used the term 'detachably' in the specification to draw a direct contrast between the removable components of the reusable embodiment and the adhesively bonded components of the single-use embodiment. That usage effectively concedes that adhesively bonded components--including the single-use embodiment--are not 'detachable' components within the meaning of the patent. We agree with the district court that '[t]his distinction suggests that the patentee intended "detachable" to mean capable of removal or separation without breaking or causing damage through the necessary use of undue force.'" Id., 2010 U.S. App. LEXIS 16678 (Fed. Cir., Aug. 12, 2010). 454

"said first end of said supplemental graft body being dockable to said second portion of said primary graft body while inside of a vessel" — "the first end of the supplemental graft body includes a malleable wire structure that permits it to be intravascularly docked to or coupled with the second portion of the primary graft body." Edwards Lifesciences, LLC, et al. v. Cook Inc., et al., 2007 U.S. Dist. LEXIS 55634 (N.D. Cal., July 23, 2007). 455

"the combination of the hook, the hole and the pin being effective to hold the pump received by the hook to the housing" — "The claim language is clear and understandable to the fact finder and does not require construction beyond its plain and ordinary meaning." Sta-Rite Industries, et al. v. ITT Corp., et al., 2010 U.S. Dist. LEXIS 10790 (E.D. Tex., Jan. 19, 2010). 456

"said gussets along each of said edges being fitted together" — "said gussets along each of said edges having an arrangement that conforms to the arrangement of gussets on the opposite edge, such as an arrangement in which the gussets on one edge can occupy the spaces between the gussets on the opposing edge." Laboratories Perouse S.A.S. v. W.L. Gore & Associates, Inc., 528 F. Supp. 2d 362 (S.D.N.Y. 2007). 457

"being selected" — "the Court declines to construe the phrase." Medtronic AVE, Inc. v. Cordis Corp., 516 F. Supp. 2d 741 (E.D. Tex. 2007). 458
"said second cavity **being shallower than said first cavity**" — "simply means that the first cavity which holds the pipe must be deeper than the second cavity which holds the tobacco." Contempo Tobacco Products, Inc., et al. v. McKinnie, 1997 U.S. Dist. LEXIS 22576 (N.D. Ill., Apr. 8, 1997).459

"said latch being ring-shaped and **being slidably received in said channel of said barrel for slidably receiving said tube therein**" — "the components making up the latch cannot include the barrel, which is a 'separate and distinct' element." Windbrella Products Corp. v. Taylor Made Golf Co., 2006 U.S. Dist. LEXIS 19687 (S.D.N.Y., April 10, 2006).460

"distal ends ... of the arms **being structured to be urged toward each other and to lock into a common opening**" — "does not overcome the strong presumption of the inapplicability of § 112, P 6 to the disputed phrase." Andrew Corp. v. Beverly Manufacturing Co., 479 F. Supp. 2d 766 (N.D. Ill. 2006).461

"the two opposite outermost side edges **being thicker than the remainder of said stretched film for strengthening the outermost edges of the film**" — "is construed to exclude thickening that results from 'neck down.'" Pliant Corp. v. MSC Marketing and Technology, Inc., 416 F. Supp. 2d 632 (N.D. Ill. 2006).462

"below limits for imparting smoke flavoring to food" — "The Court here agrees with HISI that the numerical ranges described in the background art may not be read into this particular limitation." Tuna Processors, Inc. v. Hawai‘i International Seafood, Inc., et al., 2007 U.S. Dist. LEXIS 77396 (D. Haw., Oct. 17, 2007).463


"below the disc"; "beneath the disc" — "the disclosed housing of the claimed device must be located completely or entirely below the horizontal plane of the meter disc." Cellnet Data Systems, Inc. v. Itron, Inc., 17 F. Supp. 2d 1100 (N.D. Cal. 1998).465

"below the open top and above the drain opening to form a drain" — "below the open top of the erosion-control housing and above the drain opening to form a drain." WIMCO, LLC v. Lange Industries, Inc., 2007 U.S. Dist. LEXIS 92502 (D. Minn., Dec. 14, 2007).466

"belt" — "radius conveyer belt without any limitation as to the size of the pitch." Habasit Belting Inc. v. Rexnord Industries, Inc., et al., 340 F. Supp. 2d 518 (D. Del. 2004).467

"bending a wire in a zig-zag pattern; and winding the wire around a form in a coil"; "wherein the step of bending includes forming the zig-zag pattern in the wire generally in a plane and the step of winding the wire includes winding with the zig-zag pattern flat against the form"; "forming a wire into a sinusoidal shape; forming the wire into a coil having a first diameter and a first longitudinal length, so that later radial outward deformation of the cylinder to a second larger diameter does not significantly alter the longitudinal length" — "the steps of the method claims in dispute need not be performed separately or in a particular order." Medtronic, Inc., et al. v. W.L. Gore & Associates, Inc., 2007 U.S. Dist. LEXIS 80038 (N.D. Cal., Oct. 19, 2007).468
"bent back toward the distal end of said catheter" — "means that the tubes must be bent toward (i.e., in the direction of) the distal end of the catheter." Mahurkar, et al. v. Arrow International, Inc., 160 F. Supp. 2d 927 (N.D. Ill. 2001).469

"between" — "I will not limit the term 'between' to meaning that the objects at issue must be co-planar." Semiconductor Energy Laboratory Co., Ltd. v. Samsung Electronics Co., Ltd., et al., 2010 U.S. Dist. LEXIS 45107 (W.D. Wis., May 7, 2010).470

"between" — "is clear, has an ordinary meaning, and requires no construction." Jennmar Corp. v. Excel Mining Systems, LLC, 2009 U.S. Dist. LEXIS 60836 (W.D. Pa., Jul. 16, 2009).471

"between" — "refers to the movement from the retracted position to the deployed position and from the deployed position back to the retracted position." Ellison Co., Inc., et al. v. Transpec, Inc., 445 F. Supp. 2d 566 (M.D. N.C. 2006).472


"between said frame and said deck member" — "the meaning of the disputed claim element is apparent on its face. 'Frame' and 'deck member' are clearly defined within the patent. 'Between' has an ordinary meaning, and requires no further construction." Precor Inc. v. Brunswick Corp., et al., 2001 U.S. Dist. LEXIS 26341 (W.D. Wash., Jul. 31, 2001).478

"disposed between said lower covering and said main panel at said rim" — "located within the space above the lower covering and below the main panel at the rim." totes Isotoner Corp. v. Panther Vision, LLC, 2010 U.S. Dist. LEXIS 14 (N.D. Ill., Jan. 4, 2010).479

"an elongated cuttable member horizontally mounted between two parallel guardrails" — "mean[s] that the elongated cuttable member must be horizontally mounted in the space that separates two parallel guardrails." Kothmann Enterprises, Inc. v. Trinity Industries, Inc., 394 F. Supp. 2d 923 (S.D. Tex. 2005).480


"beveled tip portion ... formed at an acute angle ... to facilitate entry" — "does not warrant importation of a numerical limitation. To the contrary, it implies that, so long as the tip 'facilitate[s] entry,' the angle is acute enough." Grayzel v. St. Jude Medical, Inc., 345 F. Supp. 2d 466 (D.N.J. 2004).482

"bias exerting mechanism" — "a portion of the device which exerts a force against the filter cover." Aqua-Lung America, Inc. v. American Underwater Products, Inc., et al., 2009 U.S. Dist. LEXIS 18172 (N.D. Cal., Feb. 26, 2009).

"biased in a direction normal to the top surface of the housing"; "biased to move in a direction normal to the top surface of the housing" — "forced by a biasing spring or biased in a direction that is perpendicular to the top surface of the housing and forced to move, by a biasing spring, in a direction that is perpendicular to the top surface of the housing, although no specific angle of perpendicularity is required." Insight Technology Inc. v. SureFire, LLC, 2006 U.S. Dist. LEXIS 11762 (D.N.H., Feb. 28, 2006).

"biased to tension said membrane" — "the flexible member is pushed in a direction to impart or store spring tension in that member before the attachment of the membrane to the flexible member." Polyvision Corp. v. Smart Technologies, Inc., et al., 501 F. Supp. 2d 1042 (W.D. Mich. 2007). PolyVision contends that reconsideration of the Court's construction of the claim terms 'pretensioned' and 'biased to tension' is required under the Federal Circuit's decision in Andersen ... The Court has read Andersen and, for the reasons set forth below, disagrees with PolyVision that Andersen compels a different result." Id., 2007 U.S. Dist. LEXIS 66492 (W.D. Mich., Sept. 7, 2007).


"biasing mechanism"; "biasing means" — "The Court also agrees with Deere that the force being generated by the biasing mechanism or means is not limited to compressive force." Deere & Co. v. Toro Co., 2001 U.S. Dist. LEXIS 25305 (N.D. Ill., Jul. 11, 2001).


"bifurcated base structure"; "bifurcated base graft structure" — "an intraluminal graft that has one opening at its upstream end and two openings at its downstream end and which includes at least one malleable wire." Edwards Lifesciences, LLC, et al. v. Cook Inc., et al., 2007 U.S. Dist. LEXIS 55634 (N.D. Cal., July 23, 2007).

"bingo cards" — "The court finds that even if the term 'bingo cards' does encompass cards in formats other than the traditional printed paper, cardboard, etc., the 151 Patent does not contemplate managing them. In light of the consistency with which the specifications refer to the sub-group of bingo cards the device is designed to manage, the court would improperly expand the scope of the claims if it were to read virtual bingo cards into the claims." Bingo Brain, Inc. v. California Concepts, Inc., et al., 2002 U.S. Dist. LEXIS 1209 (N.D. Ill., Jan. 24, 2002).


"biopsy actuator" — "a mechanism for putting the biopsy instrument in operating motion, other than by hand." Baran v. Medical Device Technologies, Inc., et al., 519 F. Supp. 2d 698 (N.D. Ohio 2007).


"blade" — "a broad, flat structure, specifically a shape limitation. The structure could come in a variety of widths and still meet this requirement." Suncast Corp. v. Avon Plastics Inc., 1999 U.S. Dist. LEXIS 15222 (N.D. Ill., Sept. 21, 1999).


"a blade extending perpendicular to a side surface" — "mean[s] that the blade was directly connected, at a right angle to one of the barrier's side surfaces." Suncast Corp. v. Avon Plastics Inc., 1999 U.S. Dist. LEXIS 15222 (N.D. Ill., Sept. 21, 1999).


"blank paper" — "paper which may have background color or printing or distinctive watermarks or other overall indicia for security purposes but which otherwise contains no pre-existing information." Southwest Efuel Network, L.L.C. v. Transaction Tracking Technologies, Inc., 2009 U.S. Dist. LEXIS 103395 (E.D. Tex., Oct. 23, 2009).

"blends smoothly" — "free from irregularities such that it would not show if worn under sheer or thin clothing." Black v. Ce Soir Lingerie Co., Inc, et al., 2007 U.S. Dist. LEXIS 90962 (E.D. Tex., Dec. 10, 2007).

"blind socket" — "a hole that does not pass completely through a workpiece and into which an inserted part is designed to fit, and ... [is] blind at the time one calls it a blind socket." Nibco, Inc. v. Tyco International (USA), Inc., et al., 2005 U.S. Dist. LEXIS 28556 (N.D. Ind., Sept. 30, 2005).
"blocking element" — "is a cantilever arm formed as an integral part of the lever which blocks movement of the lever." *Mas-Hamilton Group v. LaGard, Inc.*, 21 F. Supp. 2d 700 (E.D. Ky. 1997).  

"blocks [the] passage of liquids and solids"; "resists passage of liquids and solids" — "mean that the shield material 'substantially blocks' or 'substantially resists' the passage of liquids and solids. ... The material is not required to 'block' or 'resist' absolutely the passage of liquids and solids." *Protective Optics, Inc. v. Panoptx, Inc.*, 458 F. Supp. 2d 1053 (N.D. Cal. 2006).


"blunt distal end" — "blunt is a general term and in this context indicates simply that the distal end is not sharp." *Mahurkar v. C.R. Bard, Inc., et al.*, 2003 U.S. Dist. LEXIS 25924 (N.D. Ill., May 13, 2003).


"locking body for engaging said locking recess" — "the portion of the locking shutter or clip that is capable of coming together with or fitting into the locking recess." *OrthoArm, Inc., et al. v. Forestadent USA, Inc., et al.*, 502 F. Supp. 2d 968 (E.D. Mo. 2007).


"body portion" — "of the claimed tray insert consists of the lower surface or floor of the tray insert's cavity, the outer wall(s) of the insert's cavity rising no further than the level of the support's rim, and any interior ridges or walls forming pockets within the insert's cavity. Furthermore, to the extent that an insert tray includes areas extending outward from its outer cavity wall(s), such areas are not part of the body portion." *Fisher-Price, Inc., et al. v. Evenflo Co., Inc.*, 2006 U.S. Dist. LEXIS 42982 (W.D.N.Y., June 26, 2006).
"a boiling liquid reservoir defined by the base" — "a reservoir inside which the liquid is brought to boil." "HP Intellectual Corp., et al. v. Sunbeam Products, Inc., 1999 U.S. Dist. LEXIS 9569 (N.D. Ill., May 12, 1999)." 519

"thermostat means ... for switching off the heater when all the liquid in the boiling water reservoir has evaporated therefrom" — "The word 'therefrom' makes it clear that the expression 'boiling water reservoir' means that the water boils in the reservoir." "Rival Co. v. Sunbeam Corp., et al., 1999 U.S. App. LEXIS 2768 (Fed. Cir., Feb. 23, 1999) (unpublished)." 520

"a boiling water reservoir defined by the base" — "a receptacle that holds boiling water. The water may be at one time fresh, non-boiling water, but the water must actually come to a boil in the reservoir. To be defined by the base, the base must create or form the outline of the shape of the boiling water reservoir." "Rival Co. v. Sunbeam Corp., et al., 987 F. Supp. 1167 (W.D. Mo. 1997)." 521 "[T]he court correctly construed the expression 'defined by the base' to mean that the base 'creates or forms the outline of the shape of' both the condensate trough and the boiling water reservoir." "Id., 1999 U.S. App. LEXIS 2768 (Fed. Cir., Feb. 23, 1999) (unpublished)." 522

"said bonded diamonds exhibit a thermal characteristic such that a 950 degree C. temperature at the working surface results in a temperature of less than 750 degrees C. at the depth" — "The Court construes 'bonded diamonds' in the '662 patent as 'a plurality of diamond or diamond-like crystals.' The rest of the phrase needs no construction." "ReedHycalog UK, Ltd., et al. v. Baker Hughes Oilfield Operations, Inc., et al., 2007 U.S. Dist. LEXIS 67109 (E.D. Tex., Sept. 10, 2007)." 523

"bonded to" — "must be construed broader than adhesive, yet not inclusive of affixing agents that require a process by which material used to fabricate the window covering melts at the point of connection, are difficult to apply in straight lines, or cannot be used in a commercial setting. Simply stated, given the extant facts presented here, the 'bonded to' limitation does not incorporate 'welded to.'" "Hunter Douglas, Inc. v. Comfortex Corp., 1998 U.S. Dist. LEXIS 22220 (N.D.N.Y., Dec. 23, 1998)." 524

"bonded to said second surface" — "affixed to the second surface using a thermally-conductive bondant." "ICHLL, LLC v. NEC Corp. of America, et al., 2010 U.S. Dist. LEXIS 38942 (E.D. Tex., Apr. 20, 2010)." 525

[i] "a polymeric material bonded to the implant"; [iii] "a first component bonded to at least a portion of the tubular member" — [i] "a polymeric material is bonded to the implant by the application of heat"; [ii] "a material is bonded to the tubular member by the application of heat." "MarcTec, LLC v. Johnson & Johnson, et al., 2009 U.S. Dist. LEXIS 27011 (N.D. Ill., Mar. 31, 2009)." 526 "We affirm the district court's construction that 'bonded' means bonded by the application of heat." "Id., 2010 U.S. App. LEXIS 16608 (Fed. Cir., Aug. 4, 2010)." 527

"bonded wood particles" — "does not include fibers or fiberboard." "Alloc, Inc., et al. v. Pergo, Inc., et al., 2007 U.S. Dist. LEXIS 5183 (E.D. Wis., Jan. 24, 2007)." 528

"a bonding element" — "one or more substances or constituents of a whole that bind, fasten, fuse, confine, or hold together." Taltech Ltd. v. Esquel Enterprises Ltd., 410 F. Supp. 2d 977 (W.D. Wash. 2006).530

"bonding said braid and thin foil" — "means that the braid and foil are attached together by an outside agent resulting in the braid and foil being permanently affixed or attached to one another." Belden Wire & Cable v. Cable Design, 2001 U.S. Dist. LEXIS 25800 (N.D. Ill., Mar. 23, 2001).531


"border" — "nothing in the prosecution history, or elsewhere in the prior art of record, renders proper a construction that limits the claimed 'border' to a single, horizontal layer." Tate Access Floors, Inc., et al. v. Interface Architectural Resources, Inc., 279 F.3d 1357 (Fed. Cir. 2002).535


"bore"; "head" — "[a structure that is] formed by a cylindrical wall extending from one side of the neck around to the other side of the neck"; "the 'head' was the entire enlarged area completely surrounding the bore at the end of the neck." Young Dental Manufacturing Co., Inc. v. Q3 Special Products, Inc., et al., 112 F.3d 1137 (Fed. Cir. 1997).539

"axial bore for receiving said curvate head" — "this Court does not perceive why the curvate head cannot be received from the bottom hole as well as the top one." Fastenetix, LLC v. Medtronic Sofamor Danek, Inc., et al., 2007 U.S. Dist. LEXIS 53665 (D.N.J., July 25, 2007).540


"boss" — "a three dimensional body or structure extending from the planar body." Sta-Rite Industries, et al. v. ITT Corp., et al., 2010 U.S. Dist. LEXIS 10790 (E.D. Tex., Jan. 19, 2010).543
"wherein both cover portions extend across the cover" — "wherein both the limited expansion portion and the differential expansion portion of the cover reach from one side of the device adjoining the base to the other side of the device adjoining the base." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006).544

"bottom" — "the lower or lowest part." TI Group Automotive Systems (North America), Inc. v. VDO North America, L.L.C., et al., 375 F.3d 1126 (Fed. Cir. 2004).546


"being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof" — "being disposed at the lowest part and inside the dump body and extending from the front wall to the back wall." Highway Equip. Co., Inc. v. Cives Corp., et al., 476 F. Supp. 2d 1079 (N.D. Iowa 2007).547

"bottom plane" — "does require a physical surface." CAE Screenplates Inc. v. Heinrich Fiedler GMBH & Co. KG, 224 F.3d 1308 (Fed. Cir. 2000).548

"bottom sole" — "the outsole of a shoe, which is the part of the shoe that contacts the ground and is also the lowest part of the sole." Lawlor v. Nike, Inc., et al., 2005 U.S. Dist. LEXIS 12001 (D. Mass., Jun. 20, 2005).549

"bow"; "bow-shaped"; "bowed section" — "the bowed section of the backrest frame side members is the curved portion of the frame created by the connection of an upper section and a lower section." Herman Miller, Inc. v. Teknion Corp., et al., 504 F. Supp. 2d 360 (N.D. Ill. 2007).550

"bows" — "members that are either curved or straight and have any cross-sectional shape." Sundance, Inc. v. De Monte Fabricating, Ltd., 485 F. Supp. 2d 805 (E.D. Mich. 2007).551


"bracket"; "bracket means"; "bracket member" — "a rigid fixture, which can be mounted in a stationary position at a fixed point on the wheelchair frame in order to establish a fixed angular relationship between the occupant lap and rear wheelchair restraint belts." Queen's University at Kingston, et al. v. Kinedyne Corp., 910 F. Supp. 527 (D. Kan. 1995).553

"braid" — "three or more wire strands woven together in a way that no two wire strands are twisted around one another." Bird Barrier America, Inc. v. Bird-B-Gone, Inc., 2009 U.S. Dist. LEXIS 117441 (C.D. Cal., Dec. 16, 2009).554

"braking means" — "This Court concludes that unlike Cole and Envirco, the claims of the patent at issue do not disclose sufficient structure to overcome the presumption of a means plus function patent." Air Turbine Technology, Inc. v. Atlas Copco AB, et al., 295 F. Supp. 2d 1327 (S.D. Fla. 2003).555


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"a second breather chamber placed in the vicinity of the intake system on the side approximately opposite to the first breather chamber relative to the axis of the cylinder bore" — "a second enclosed space for breather gas situated near the intake system on the side of the engine body approximately across the axis of the cylinder bore from the first enclosed space for breather gas." American Honda Motor Co., Inc. v. Coast Distribution System, Inc., 609 F. Supp. 2d 1032 (N.D. Cal. 2009).559


"bringing, respectively" — "mean[s] that force is applied to both the removable article and the device's electrically conductive elements such that the removable article is moved first followed by motion of the device's conductive elements until they are brought into a contacting relationship." Thomson Consumer Electronics, Inc. v. Innovatron, S.A., 43 F. Supp. 2d 26 (D.D.C. 1999).561

"said depression defining an essentially vertical depending straight wall bridging the interior ends of said tear impressions" — "one skilled in the art would understand the term 'bridging' to require the tear impressions to intersect or touch the essentially vertical depending straight wall." Bailey v. Dart Container Corp., et al., 157 F. Supp. 2d 110 (D. Mass. 2001).562


"brush track" — "the area of the commutator bar which is slidingly engaged by the brushes of the dynamoelectric device." Joyal Products, Inc. v. Johnson Electric North America, et al., 2007 U.S. Dist. LEXIS 79522 (D.N.J., Oct. 25, 2007).565

"buckling" — "the planned failure or collapse of a column wall resulting in redistribution or lessening of the load carried by the column." Edizone, LC v. Cloud Nine, LLC, et al.,2006 U.S. Dist. LEXIS 68069 (D. Utah, Sept. 21, 2006).566


"bulbous" — "In order to infringe, the accused device thus must have an element mounted on the distal end region of the laser energy transmitting conduit that is enlarged vis-a-vis the conduit and has a generally rounded distal end." Trimedyne, Inc., et al. v. Surgical Laser Technologies, Inc., 1998 U.S. App. LEXIS 16303 (Fed. Cir., Jul. 10, 1998) (unpublished).568

"bulge" — "is not simply a 'curve' but is a curve-like protuberance." STX, Inc. v. Brine, Inc., et al., 37 F. Supp. 2d 740 (D. Md. 1999).569
"bulk volume" — "is amenable to construction and is not indefinite. The court construes 'bulk volume' as the mathematical inverse of bulk density, and 'bulk density' as the mass of a unit volume of a powder including its pore volume and inter-particle voids, measured in its loose state using a Scott volumeter." Superior Graphite Co. v. Timcal SA, et al., 2006 U.S. Dist. LEXIS 29935 (N.D. Ill., May 8, 2006).570


"bulkhead" — "a vertical partition generally extending the full width of a car and usually used to restrain lading." National Steel Car, Ltd. v. Canadian Pacific Railway, Ltd., et al., 254 F. Supp. 2d 527 (E.D. Pa. 2003).573


"burner pan" — "a substantially flat metal plate having a gas inlet aperture, and which may or may not have perpendicular perimeter sides." Travis Industries, Inc. v. Hearth & Home Technologies, Inc., et al., 2004 U.S. Dist. LEXIS 31059 (W.D. Wash., Oct. 18, 2004).575

"burning a smoking material at 250 ° to 400 ° C" — "burning a smoking material in a chamber or other medium heated to a temperature between 250 ° and 400 ° C." Tuna Processors, Inc. v. Hawaii International Seafood, Inc., et al., 2007 U.S. Dist. LEXIS 77396 (D. Haw., Oct. 17, 2007).576

"burrs at the apertures" — "rough areas at the apertures remaining after material is shaped, cut, cast, or drilled." Maytag Corp. v. Electrolux Home Products, Inc., 411 F. Supp. 2d 1008 (N.D. Iowa 2006).577


"butterflying"; "bisecting" — "are to be understood as having the meaning stated above, namely, cutting the tongue in half, parallel to the flat surfaces, and either leaving the 'mirror image' portions connected at one edge or separating them. Although the latter option might not ordinarily be understood as the result of butterflying (because the pieces are not connected), I conclude that the specification and the claims themselves plainly include this as part of the claim limitations." Rome v. Galilean Seafoods, Inc., 974 F. Supp. 97 (D. Mass. 1997).580 "We agree and adopt the court's claim construction and attendant reasoning." Id., 1998 U.S. App. LEXIS 20860 (Fed. Cir., Aug. 24, 1998) (per curiam).581


"adapted such that liquid may be drawn from or through said article by sole application of suction" — "it is possible for the user to draw the drink from the vessel using only suction." Haberman v. Gerber Products Co., 2007 U.S. Dist. LEXIS 78937 (W.D. Wis., Oct. 18, 2007). 584

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"calculating"; "determining" — "to determine by mathematical equation." Transonic Systems Inc. v. Non-Invasive Medical Technologies Corp., 1999 U.S. Dist. LEXIS 22687 (D. Utah, Dec. 13, 1999). 586 "[A]s far as the 'calculating' and 'determining' limitations are concerned, we believe that the district court's construction was too broad. ... [T]he claim terms 'calculating' and 'determining' must be construed as requiring the use of at least one of the equations set forth in the specification of the '989 patent." Id., 10 Fed. Appx. 928 (Fed. Cir., May 29, 2001) (unpublished). 587

"caliper" — "a structure composed of those housing portions that engage about the brake disk and contain a brake application unit." Knorr-Bremse Systeme Fuier Nutzfahrzeuge GmbH v. Dana Corp., et al., 133 F. Supp. 2d 833 (E.D. Va. 2001). 588

"cam" — "a cylinder or eccentric wheel having an irregular form such that its motion, usually rotary, gives to a part or parts in contact with it a specific rocking or reciprocating motion." Rutherford Controls Int'l Corp., et al. v. Alarm Controls Corp., et al., 2009 U.S. Dist. LEXIS 69115 (E.D. Va., Aug. 6, 2009). 589


"cam members" — "the follower parts of the cam mechanism that are imparted motion by the cam slots and whose motion is guided by the cam slots." Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F. Supp. 2d 93 (D. Conn. 2006). 591

"cam slot" — "opening or groove that imparts motion to and guides the camming member." Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F. Supp. 2d 93 (D. Conn. 2006). 592 "[T]he Court amends its construction of the term 'cam slot' ... to: 'opening or groove that imparts motion to and guides the motion of the camming member.'" Id., 440 F. Supp. 2d 120 (D. Conn. 2006). 593

"camera" — "a self-contained, portable electronic camera, with the capability to take still pictures, the components of which are contained in a single housing." St. Clair Intellectual Property Consultants, Inc. v. Canon Inc., et al., 2004 U.S. Dist. LEXIS 17489 (D. Del., Aug. 31, 2004). 594


"camming members" — "the follower parts of the cam mechanism that are imparted motion by the cam slots and whose motion is guided by the cam slots." Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F. Supp. 2d 93 (D. Conn. 2006). 597


"wherein the memory alloy element can be extruded from the hollow placement device by the guide wire" — "the device or memory alloy element is forced out of the hollow placement device by the guide wire, which is a device that assists in positioning another device." Medtronic, Inc., et al. v. W.L. Gore & Associates, Inc., 2007 U.S. Dist. LEXIS 80038 (N.D. Cal., Oct. 19, 2007). 599

"electrothrombosis can be performed" — "electrothrombosis is able to be performed." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007). 600

"position ... relative to the housing can be varied" — "the locations of the mouthpiece [or nozzle] and housing can differ with respect to one another." P & M Products, Ltd., et al. v. Rose Art Industries, 2002 U.S. Dist. LEXIS 5008 (E.D. Pa., Mar. 25, 2002). 601

"a cannula mount affixing the cannula to the guide" — "a structure or support which attaches or connects the cannula to the guide." Baran v. Medical Device Technologies, Inc., et al., 519 F. Supp. 2d 698 (N.D. Ohio 2007). 602

"cantilevered fashion" — "It is clear to the Court that the claim language and intrinsic evidence describe rods mounted on a base with one fixed end and one free end, and not rods balanced or attached to a base in their center." Nautilus Group, Inc. v. Icon Health and Fitness, Inc., 308 F. Supp. 2d 1198 (W.D. Wash. 2003). 603 "This court [] construes the limitation 'in cantilevered fashion with one end of each of the rods being free' to mean that the rods are mounted with one or both ends free such that the rods have the structure of a single or double cantilever." Id., 82 Fed. Appx. 691 (Fed. Cir., Nov. 18, 2003) (unpublished). 604

"cantilevered leg"; "cantilevered |] arm" — "a leg or arm that is supported by the main body of the insert and has a free end." RFR Industries, Inc. v. Century Steps, Inc., et al., 1999 U.S. Dist. LEXIS 15212 (N.D. Tex., Sept. 23, 1999). 605


"the interior portion of the plate is capable of being deflected relative to the peripheral portions in a direction substantially perpendicular to the major axis of the shoe" — "the portions of the flexible plate close to the center are able to be curved, as compared to the peripheral portions of the flexible plate, in any direction that is substantially at a right angle to a heel-to-toe axis of the shoe, including the medial-to-lateral and vertical directions." Akeva L.L.C. v. Adidas America, Inc., 2005 U.S. Dist. LEXIS 11213 (M.D.N.C., May 17, 2005).

"capable of being ... forcibly expanded" — "capable of increasing from one diameter to another by application of force to overcome the resistance to expand." Medtronic Vascular, Inc., et al. v. Advanced Cardiovascular Systems, Inc., et al., 2005 U.S. Dist. LEXIS 822 (D. Del., Jan. 5, 2005).

"capable of deflection" — "the central plate is capable of deviation from a starting position between the conductive surfaces of the drive plates." Hysitron Inc. v. MTS Systems Corp., 2009 U.S. Dist. LEXIS 36108 (D. Minn., Apr. 28, 2009).

"wherein the actuating mechanism is capable of electronically switching between the first mode and the second mode to set and release the brake without manual readjustment of the gearing means" — "whereby the actuating mechanism can electrically set the wheel brake device and then electrically release the brake device, or vice versa, without having to manually reset the gearing means." Graham-White Manufacturing Co. v. Ellcon-National, Inc., 2007 U.S. Dist. LEXIS 89126 (D.S.C., Dec. 4, 2007).


"capturing bracket" — "a bracket (1) into which the lower end of the leg support fits and (2) that prevents significant downward or lateral movement of the lower end of the leg support." Warner Manufacturing Co. v. Armstrong, et al., 504 F. Supp. 2d 589 (D. Minn. 2007).

"said mounting including a capturing bracket for engaging the lower end of said leg support" — "the mounting includes a bracket into which the lower end of the leg support may be positionally fixed to prevent movement downward below the bracket or laterally in any direction." Forest Group, Inc. v. Bon Tool Co., et al., 2007 U.S. Dist. LEXIS 10487 (S.D. Tex., Feb. 15, 2007).

"electronic multi-function card" — "the ordinary meaning of the word 'card' . . ., as used in the phrase 'electronic multi-function card,' is the proper construction ... -- namely, a 'flat rectangular piece of stiff material.'" E-Pass Technologies, Inc. v. 3COM Corp., et al., 473 F.3d 1213 (Fed. Cir. 2007).


"cardioverting device" — "a device capable of correcting high-rate arrhythmic heart conditions by applying non-pacing electrical shocks to the heart. Such heart conditions include atrial arrhythmias and/or ventricular arrhythmias." Cardiac Pacemakers, Inc., et al. v. St. Jude Medical, Inc., et al., 2000 U.S. Dist. LEXIS 17352 (S.D. Ind., Nov. 29, 2000).621

"carriage" — "a moveable part of a seat belt tension sensor that has an enclosed hole in it for receiving a portion of seat belt webbing and moves a distance that corresponds to the amount of tension applied to the seat belt webbing." TK Holdings, Inc. v. CTS Corp., et al., 2010 U.S. Dist. LEXIS 51667 (E.D. Mich., May 26, 2010).622

"carried on" — "mean[s] that the weight of the adaptor is supported in some manner by the intermediate portion of the connector." Arlington Industries, Inc. v. Bridgeport Fittings, Inc., 290 F. Supp. 2d 508 (M.D. Pa. 2003).623

"a support band carried on the upper rim of the midsole and secured about the sidewalls of the heel cup" — "we agree with the district court's claim construction that 'the support band and the midsole may be unitary or in two separate parts.'" Hockerson-Halberstadt, Inc. v. Propet USA, Inc., et al., 62 Fed. Appx. 322 (Fed. Cir., Apr. 1, 2003) (unpublished).624

"carrier frame" — "a four-sided or rectangular shape." PODS, Inc. v. Porta Stor Inc., et al., 484 F.3d 1359 (Fed. Cir. 2007).625

"carrier portion interconnecting the plurality of user interface key caps" — "material connecting at least two user interface key caps." Motorola, Inc. v. VTech Communications, Inc., et al., 2009 U.S. Dist. LEXIS 59226 (E.D. Tex., Jul. 6, 2009).626

"carrier sheet" — "a paper, polymer film, or combination thereof upon which a number of additional layers of a laminate are at least temporarily disposed." Avery Dennison Corp. v. Whitlam Label Co., Inc., 2003 U.S. Dist. LEXIS 27836 (N.D. Ohio, Sept. 24, 2003).627

"carrier web" — "a material with at least one surface that carries, can carry, or has carried another material." 3M Innovative Properties Co., et al. v. Avery-Dennison Corp., 2005 U.S. Dist. LEXIS 12149 (D. Minn., Jun. 20, 2005).628


"catheter" — "a tubular device for withdrawing fluids from, or introducing fluids into, a cavity of the body, such as a blood vessel."  Mahurkar v. C.R. Bard, Inc., et al., 2003 U.S. Dist. LEXIS 25924 (N.D. Ill., May 13, 2003). 634


"a catheter for detecting changes in pressure within a body comprising ... a structure for detecting changes in fluid pressure"; "an interuterine pressure catheter comprising ... a pressure detection device"; "a pressure catheter for detecting changes in pressure within a body comprising ... a pressure detection device" — "The Court agrees ... that the claims do not require an integral connection between the elongated tube and the structure for detecting changes in fluid pressure' and do 'not require an integral connection between the elongated tube and the housing."  Clinical Innovations, LLC v. Utah Medical Products, Inc., 2007 U.S. Dist. LEXIS 67624 (D. Utah., Sept. 11, 2007). 636

"a catheter having a working end" — "a tubular, flexible, surgical instrument, including, but not limited to, a sheath, having an end directed toward the treatment site in the patient."  Vnus Medical Technologies, Inc. v. Diomed Holdings, Inc., 2006 U.S. Dist. LEXIS 88580 (N.D. Cal., Nov. 22, 2006). 637

"a catheter having a working end with an energy application device at the working end" — "a tubular, flexible, surgical instrument, including, but not limited to, a sheath, having an end directed toward the treatment site in the patient, with a device at that end for delivering energy, such energy including, but not limited to, RF energy, microwaves, ultrasound, direct current, circulating heated fluid, radiant light, laser, and thermal energy."  Vnus Medical Technologies, Inc. v. Diomed Holdings, Inc., 2006 U.S. Dist. LEXIS 88580 (N.D. Cal., Nov. 22, 2006). 638

"whereby liquid in said tank will be caused by gravity to flow into said bend and along said bend to said discharge opening" — "Hoover argues that liquid can flow by gravity 'into' an upwardly extending bend if the meaning of the word 'into' is taken to include 'in the direction of' or 'so as to strike.' ... We conclude that claim 1 of the '958 patent requires the bend in the bottom of the tank to extend in the downward direction, to form a trough whereby gravity will cause liquid to flow into and along the bend to the discharge opening."  Hoover Group, Inc. v. Custom Metalcraft, Inc., 66 F.3d 299 (Fed. Cir. 1995). 639

"causing contact with the work platform two or more times"; "causing contact with the work platform two or more times in a particular sequence" — "causing contact with the work platform two or more times"; "causing contact with the work platform two or more times in a particular sequence."  Tinkers & Chance v. Leapfrog Enterprises, Inc., 2007 U.S. Dist. LEXIS 43871 (E.D. Tex., June 18, 2007). 640

"wherein the expandable outer surface is sufficiently rigid to deform the target tissue into the shape of the expandable outer surface, causing the predetermined asymmetric isodose curves to penetrate the target tissue to a prescribed depth" — "the plain meaning of'causing' would be easily understood by the jury."  Hologic, Inc. v. SenoRx, Inc., et al., 2009 U.S. Dist. LEXIS 109841 (N.D. Cal., Nov. 24, 2009). 641
"cavity" — "a hollow space in the raised periphery surrounding the playing surface that holds batteries and wires." Innoverion Toys, LLC v. MGA Entertainment, Inc., et al., 2009 U.S. Dist. LEXIS 48386 (E.D. La., May 21, 2009). 642


"cavity" — "an opening in the aperture -- regardless of whether the aperture is fully enclosed -- which houses the cam member and whose width is larger than the opening of aperture to prevent the cam member from falling out." Quickie, LLC v. Medtronic, Inc., 226 F. Supp. 2d 481 (S.D.N.Y. 2002). 644


"cavity"; "phosphor layer" — "the court declines to impose any additional limitations on 'cavity' or 'phosphor layer.'" Hitachi Plasma Patent Licensing Co., Ltd. v. LG Electronics, Inc., et al., 2009 U.S. Dist. LEXIS 38738 (E.D. Tex., May 7, 2009). 646

"cavity cover member" — "a part of the molding apparatus that is spaced about an end of the mold core and abutting the cavity sidewall members so as to define a cavity between the mold core and both the cavity cover member and the cavity sidewall members." Maytag Corp. v. Electrolux Home Products, Inc., 411 F. Supp. 2d 1008 (N.D. Iowa 2006). 647

"cavity situated internally to the boundaries of the parting surface" — "a hollow space that is surrounded by a parting surface." In re: Turn-Key-Tech Matters, 2002 U.S. Dist. LEXIS 25583 (C.D. Cal., Jan. 8, 2002). 648


"cell analysis instrument" — "a device, not including a microscope station, that performs measurement or analysis of at least one cell feature on a specimen preparation, such as a specimen slide." Cytyc Corp. v. Tripath Imaging, Inc., et al., 2005 U.S. Dist. LEXIS 29850 (D. Mass, Nov. 28, 2005). 651

"center beam" — "a structure that runs lengthwise in a rail car and serves two functions. First, it strengthens the bed of the car allowing for the use of a lighter underframe. Second, it provides a structure to secure the load to the car." National Steel Car, Ltd. v. Canadian Pacific Railway, Ltd., et al., 254 F. Supp. 2d 527 (E.D. Pa. 2003). 652

"center of gravity" — "The Court construes the claim language 'center of gravity' in the claim to have the ordinary, in context, meaning of that particular term. That is, the point on the striking face of the club head at which the club head would be in static balance on a pivot point and not the literal three dimensional center of gravity." Antonious v. Spalding & Evenflo Cos., Inc., et al., 1998 U.S. Dist. LEXIS 10740 (D. Md., Apr. 27, 1998). 653


"central longitudinal groove" — "require[s] that the width of the groove must be less than the combined width of the fins." Hockerson-Halberstadt, Inc., et al. v. Avia Group International, Inc., et al., 222 F.3d 951 (Fed. Cir. 2000).

"upwardly open central play area" — "the area where one or more users can ... enter the play area and jump, bounce, or crawl on the bottom wall." Intex Recreation Corp. v. Hasbro, Inc., 1998 U.S. Dist. LEXIS 17262 (C.D. Cal., Jan. 13, 1998).

"central portion" — "at or near the geometric center of the bill." Cummins-Allison Corp. v. Glory, Ltd., et al., 457 F. Supp. 2d 843 (N.D. Ill. 2006).

"centrifugal unit" — "with the exception of its use in the first line of Claim 16 in which 'centrifugal unit' is defined as comprising various components, the phrase 'centrifugal unit', as used in Claim 16 and its dependent claims, will be construed as referring exclusively to the vessel itself." Haemonetics Corp. v. Baxter Healthcare Corp., et al., 517 F. Supp. 2d 514 (D. Mass. 2007). "We [] reverse the district court's claim construction and hold that 'centrifugal unit' in claim 16 consistently means a vessel and a plurality of tubes, irrespective of its meaning in claim 1." Id., 2010 U.S. App. LEXIS 11122 (Fed. Cir., Jun. 2, 2010).


"chamfer backrake angle" — "the angle between a line oriented perpendicular to the subterranean formation to be engaged by a cutter and the portion(s) of the chamfer that engages the formation during drilling, measured in the direction of intended bit rotation, labeled β in Fig. 11 of the '715 Patent." Reedhycalog UK, Ltd, et al. v. Baker Hughes Oilfield Operations, Inc., et al., 2007 U.S. Dist. LEXIS 76125 (E.D. Tex., Oct. 12, 2007).

"changeable or adjustable shoulder supporting members for securing said structure on the shoulders of a user" — "the adjustable or changeable pieces of the device that rest on the user's shoulders and perform the function of supporting the balance of the device and which connect the back member, situated against the user's back, with the upper portion of the device that rests on the user's chest." Randall May International, Inc., et al. v. DÉG Music Products, Inc., et al., 2010 U.S. App. LEXIS 9586 (Fed. Cir., May 11, 2010) (unpublished).


"channel" — "an individual u-shaped bar or structural element, not simply any u-shape that can be imagined to exist within a unitary structure." ABC Industries, Inc. v. Kason Industries, Inc., et al., 30 F. Supp. 2d 331 (E.D.N.Y. 1998). 668

"channel" — "an interior sleeve where the fluorescent tube or electrical components are contained." Lampi Corp. v. American Power Products, Inc., 1997 U.S. Dist. LEXIS 9942 (N.D. Ill., Jul. 7, 1997). 669 "We conclude that the district court did not err in deciding that the translucent cover cannot be a part of the first interior channel, although our reasoning differs from that of the district court." Id., 228 F.3d 1365 (Fed. Cir. 2000). 670

"a channel" — "is not limited to one channel ... need not have particular fluid-impeding or pooling properties ... [and] is not a groove." Kimberly-Clark Corp., et al. v. Tyco Healthcare Retail Group, 456 F. Supp. 2d 998 (E.D. Wis. 2006). 671

"channel for injecting fluids" — "lengthwise running conduit or passageway (including the central lumen of the guide tube) through which liquids or gases can be forced." Laboratories Perouse S.A.S. v. W.L. Gore & Associates, Inc., 528 F. Supp. 2d 362 (S.D.N.Y. 2007). 672

"channel member" — "a groove formed along at least one side of positioning ring into which a portion of the cutting head assembly fits." Bausch & Lomb Inc. v. Moria S.A., et al., 222 F. Supp. 2d 616 (E.D. Pa. 2002). 673

"channeling structure being adapted to channel the entrained eggs toward the feeding end" — "This court declines to read language such as 'controlled manner' and slurry 'falling by gravity' in the specification as limitations on the claims." Sanders Brine Shrimp Co. v. Bonneville Artemia International, Inc., 970 F. Supp. 892 (D. Utah 1997). 674


"a plurality of chocks mounted to and extending downward from said primary frame members for contacting each of said cantilever sections of said arms and for transferring load from said primary frame members to said arms during dumping operations" — "more than one block or wedge placed under a vehicular frame to keep it from moving, mounted on or attached to and extending below the primary vehicular framework members, adapted for touching the cantilever section of the arms, for stabilizing a vehicle by shifting or transferring the weight that a vehicle bears from the vehicular framework members to the arms." Watson & Chalin Manufacturing, Inc. v. Boler Co., 227 F. Supp. 2d 633 (E.D. Tex. 2002).

"circuit boards" — "a single workpiece could embrace multiple circuit boards. Or, in other words, the 'circuit boards' need not be separate during processing." Electro Scientific Industries, Inc. v. Dynamic Details, Inc., et al., 307 F.3d 1343 (Fed. Cir. 2002).

"circular" — "refer[s] to a shape perceivable to the ordinary eye as a circle, and not merely any shape which proceeds around an empty center." Mezzalingua Associates Inc. v. Cabel-Con, Inc., 1997 U.S. Dist. LEXIS 4595 (N.D.N.Y., Apr. 7, 1997).


"at least one radially inwardly extending inward-groove circularly surrounding said central-axis" — "Although the parties have concentrated on the meaning of 'circularly,' each finding support in dictionary definitions for its interpretation, they have not apparently considered the effect of 'circularly surrounding,' which makes plain that the groove, in the form of a circle, is 'to enclose on all sides' the inner tube." Dethmers Manufacturing Co., Inc. v. Automatic Equipment Mfg. Co., 23 F. Supp. 2d 974 (N.D. Iowa 1998).

"circumferential array of vanes" — "a number of flat or curved surfaces arranged around the outer part of the impeller, which is generally circular in shape." Performance Aftermarket Parts Group, Inc., et al. v. TI Group Automotive Systems, Inc., 2006 U.S. Dist. LEXIS 92686 (S.D. Tex., Dec. 22, 2006).


"circumferentially extending wall extending from said seaming panel to said reinforcing bead" — "can end wall encircling the center of the can end and extending from the seaming panel." Crown Packaging Technology, Inc., et al. v. Rexam Beverage Can Co., 486 F. Supp. 2d 366 (D. Del. 2007).

"circumferentially reinforced at locations along its length by a plurality of separately spaced apart wires" — "the graft body or bifurcated base structure is strengthened by at least two malleable wires that do not contact or touch one another and that are placed circumferentially along the length of the material forming the graft body or bifurcated base structure." Edwards Lifesciences, LLC, et al. v. Cook Inc., et al., 2007 U.S. Dist. LEXIS 55634 (N.D. Cal., July 23, 2007).
"each having at least two circumferentially spaced teeth"; "each disk having at least two circumferentially spaced teeth" — "each cutting disk has at least two teeth for cutting that are spaced apart in the direction of rotation." Fellowes, Inc. v. Michelin Prosperity Co., Ltd., et al., 2006 U.S. Dist. LEXIS 90648 (E.D. Va., Dec. 15, 2006).91


"clamp" — "a device that can grip or bind a keyboard by at least two opposing points to stop it from falling off when the keyboard is tilted backwards." Ambrose, et al. v. Steelcase, Inc., et al., 2003 U.S. Dist. LEXIS 26035 (W.D. Mich., Nov. 10, 2003).94

"clamp means for automatically clamping an attachment end when in said predetermined alignment" — "fails to recite sufficient structure, material, or acts for performing the function of clamping. ... The presumption that § 112, P 6 applies is not rebutted." ADC Telecommunications, Inc. v. Panduit Corp., 200 F. Supp. 2d 1022 (D. Minn. 2002).95

"clamp member" — "a part configured to hold, grasp, or apply pressure to tissue, that is movable, that works with a component of the instrument (e.g. the cutting jaw), and which is separate and distinct from the tissue contact surface." Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F. Supp. 2d 93 (D. Conn. 2006).96 "[T]he Court amends its construction of 'clamp member' ... to: 'A part configured to hold, grasp, or apply pressure to tissue, that is movable and that works with a component of the instrument (e.g. the cutting jaw).'" Id., 440 F. Supp. 2d 120 (D. Conn. 2006).97


"clamping device" — "as an elongated C-shaped clamp wherein the base is longer than one of the sides of the hollow metal box enclosure and having a pair of opposed arms so that the arms are connectable to the box on opposite sides of the box. The base of the clamp is substantially longer than the arms." Senior Industries, Inc. v. Thomas & Betts Corp., et al., 2001 U.S. Dist. LEXIS 16901 (N.D. Ill., Sept. 27, 2001).99

"clamping engagement" — "tight, high-pressure electrical contact maintained indefinitely." Andrew Corp. v. Beverly Manufacturing Co., 479 F. Supp. 2d 766 (N.D. Ill. 2006).100

"clamping force being sufficient to prevent sheet material from being drawn laterally inwards towards the rivet" — "significantly restrict the inward, lateral flow of sheet material that is subject to the clamping force." Henrob Ltd. v. Bollhoff Systemtechnick GmbH & Co., 2007 U.S. Dist. LEXIS 88014 (E.D. Mich., Nov. 30, 2007).101

"cleaning" — "the separation or removal of foreign matter from the coins in a manner that helps to prevent damage to the machine." Coinstar, Inc. v. CoinBank Automated Systems, Inc., 998 F. Supp. 1109 (N.D. Cal. 1998). [703]


"cleaning section" — "a thickened integral compressible section attached to the gun barrel cleaning device sized and shaped to contact evenly when cleaning the inner surface of the gun barrel, and which is ready to use and does not require changing of cloths or patches to use. It has no length limit, but cannot encompass the entire device, and can include, but is not limited to, a fabric sheath folded in on itself." Michaels of Oregon Co. v. Clean Gun, LLC, 2002 U.S. Dist. LEXIS 20371 (D. Or., Jul. 9, 2002). [705]


"clear" — "transparent or ‘having the property of transmitting light without appreciable scattering so that bodies lying beyond are seen clearly.’" Terlep v. Brinkmann Corp., 2004 U.S. Dist. LEXIS 28453 (W.D. Ark., Mar. 23, 2004). [707] "We conclude that the district court correctly construed the term ‘clear’ to mean ‘transparent or having the property of transmitting light without appreciable scattering so that bodies lying beyond are seen clearly,’ and that nothing in the claims or the written description warranted giving the term ‘clear’ an expansive meaning that would cover ‘translucent’ holders." Id., 418 F.3d 1379 (Fed. Cir. 2005). [708]

"clip" — "a structure that provides the dual functions of disposing the clip around and holding the female member through the slots in the female member and extending through the slots into the groove in the male member to lock the members together." Teleflex, Inc. v. Ficosa North America Corp., et al., 299 F.3d 1313 (Fed. Cir. 2002). [709]

[i] "clips"; [ii] "cavity clip" — [i] "devices that assist in holding something by gripping it or pushing against it"; [ii] "a device within a cavity that assists in holding something by gripping it or pushing against it." Sta-Rite Industries, et al. v. ITT Corp., et al., 2010 U.S. Dist. LEXIS 10790 (E.D. Tex., Jan. 19, 2010). [710]

"a closable vertical opening" — "a slit-like opening that runs straight up and down or perpendicular to the plane of the horizon." Stumbo v. Eastman Outdoors, Inc., 2007 U.S. Dist. LEXIS 5444 (D. Colo., Jan. 25, 2007). [711] "We agree with the district court that the term ‘a closable vertical opening’ is properly construed as ‘a slit-like opening that runs straight up and down or perpendicular to the plane of the horizon.’" Id., 508 F.3d 1358 (Fed. Cir. 2007). [712]

"close said throat portions" — "means that the removable mulcher baffles close the space between the first and second flow control baffles so that grass clippings are generally confined to the defined area of the cutting chamber for each cutting blade of the mower." Toro Co., et al. v. Scag Power Equipment, Inc., et al., 2002 U.S. Dist. LEXIS 14428 (D. Neb., Aug. 5, 2002).

"closed by pressing the bottom of the elements together first and then rolling the elements to a closed position toward the top thereof" — "not only require[s] the presence of rolling, but also that the profile be 'closed . . . by rolling.' The non- incidental rolling requirement gives meaning to this claim limitation; the district court properly construed the claim in accordance with its plain language." Pactiv Corp. v. S.J. Johnson & Son, Inc., et al., 26 Fed. Appx. 943 (Fed. Cir., Jan. 4, 2002).

"closed chamber ... adapted to retain a quantity of fluid" — "an enclosed cavity defined by the inner surfaces of the first and second substrates, from which there is no egress of fluid." Agilent Technologies, Inc. v. Affymetrix, Inc., 567 F.3d 1366 (Fed. Cir. 2009).

"in a closed circulation process stream" — "refers to the flow of process fluids in a closed manner into a vessel from a source, or inlet, and out of a vessel through a drain, or outlet, but the phrase does not require that fluids travel in a complete loop or circle, or that they re-circulate." CFMT, Inc., et al. v. YieldUP International Corp., 92 F. Supp. 2d 359 (D. Del. 2000).

"closed on one end and open on its other end" — "describes the housing element before it is assembled with the other elements of the inflator, such that a housing with an opening through which another element of the inflator is inserted during assembly is 'open' on the end with the opening." HBB Limited Partnership v. Ford Motor Company, et al., 1996 U.S. Dist. LEXIS 4047 (N.D. Ill., March 29, 1996).

"closely disposed about said outer periphery exhaust region" — "placed near to the outside perimeter of the area of the fan where the working air is let out of the fan." Johnson Electric Industrial Manufacturing, Ltd., et al. v. Ametek, Inc., 2005 U.S. Dist. LEXIS 19300 (D. Conn., Aug. 24, 2005).


"closely fit in and extend through" — "the district court did not err in construing the words 'closely fit' to require a tight or snug fit between the rod and the isthmus of the femur or in construing the words 'extend through' to require that the rod pass through the entire length of the isthmus." Wright Medical Technology, Inc., et al. v. Osteonics Corp., 122 F.3d 1440 (Fed. Cir. 1997).

"an electrical connector closing said connector end of said tube" — "we construe 'closing' to mean 'spanning the diameter of the tube, regardless of whether there are or are not openings in the connector into the internal cavity of the conductive tube.'" Heraeus Electro-Nite Co. v. Midwest Instrument Co., 2007 U.S. Dist. LEXIS 81685 (E.D. Pa., Nov. 1, 2007).

"closure device" — "The '689 patent does not use the term 'closure means' but instead uses the term 'closure device.' However, the '689 patent's prosecution history establishes that the two terms must be understood to be synonymous." Kensey Nash Corp., et al. v. Perclose, Inc., 2000 U.S. Dist. LEXIS 18393 (E.D. Pa., Dec. 21, 2000).

"closure means pivotably associated with said plate means and being movable with respect to said slot means for controlling access thereto"; "movable closure means pivotably associating with said cap means at pivot means thereof, said movable closure means being selectively movable between an open access and closed access position with respect to said slot means" — "invoke the interpretation regimens of section 112, paragraph 6." Sage Products, Inc. v. Devon Industries, Inc., 126 F.3d 1420 (Fed. Cir. 1997). 725

"a closure means fastenable at the surface of the backrest" — "a closure device fastenable at the surface which, through use of a zipper, buttons, hooks, or similar device, physically connects the surface of the backrest to the surface of the second cushion used as the foldable child's seat." Hassell, et al. v. Chrysler Corp., et al., 982 F. Supp. 515 (S.D. Ohio 1997). 726

"closure member for selectively closing said drinking hole" — "a structure adapted to cover the drinking hole to an extent that the user may select, including fully open and fully closed, and which may allow the user to select a degree of opening somewhere between fully open and fully closed." Sunbeam Products, Inc. v. Hamilton Beach Brands, Inc., et al., 2010 U.S. Dist. LEXIS 85281 (E.D. Va., Aug. 19, 2010). 727

"closure member releasably secured" — "something whose purpose is to cause other parts either to fit tightly together, or to fit together such that the parts have little or no space between them; and whose configuration is such that the parts can be freed from being fit together." Muzzy Products, Corp. v. Sullivan Industries, Inc., et al., 194 F. Supp. 2d 1360 (N.D. Ga. 2002). 728


"modulating clutch means" — "while 'modulating clutch' may have a well understood meaning in the art, it is not a sufficient structure to perform the recited function. Accordingly, we find that § 112, P 6 is applicable." BorgWarner, Inc., et al. v. New Venture Gear, Inc., 237 F. Supp. 2d 919 (N.D. Ill. 2002). 731

"a pair of actuators that ... co-act with the wings" — "a pair of actuators that interact with the wings." WesternGeco LLC v. ION Geophysical Corp., 2010 U.S. Dist. LEXIS 71875 (S.D. Tex., Jul. 16, 2010). 732

"co-extrusion ... within"; "co-extruding ... within" — "a technique where two dissimilar materials are combined by means of two extruders or an extruder and a pump to form a product wherein one material is contained within the other." Kal Kan Foods, Inc. v. H.J. Heinz Company, L.P., et al., 2004 U.S. Dist. LEXIS 16808 (C.D. Cal., Feb. 5, 2004). 733

"coalescence"; "completion of coalescence" — "'coalescence' is the process of forming a uniform, homogeneous body, or combining into one body or growing together, through the merger of smaller particles of the same material. 'Coalescence' is 'complete' when it has all necessary parts, elements or steps, or is fully carried out." Old Town Canoe Co. v. Azjs, Inc., et al., 2004 U.S. Dist. LEXIS 29735 (D. Or., Mar. 2, 2004). 734

"at least one coating" — "a coating of one or more layers." Tailored Lighting, Inc. v. Osram Sylvania Products, Inc., 514 F. Supp. 2d 417 (W.D.N.Y. 2007).736

"coating at least one of said outer surfaces of said core with a layer of ink" — "covering at least one of said outer surfaces of said core with a finishing layer of ink." Leighton Technologies LLC v. Oberthur Card Systems, S.A., 358 F. Supp. 2d 361 (S.D.N.Y. 2005).737

"coating layer" — "a layer of material that substantially surrounds, encases or encapsulates the cords, and defines an engagement surface for engaging a sheave." Schindler Elevator Corp. v. Otis Elevator Co., 2010 U.S. Dist. LEXIS 2463 (D.N.J., Jan. 13, 2010).738

"coating of one or more inks forming a design on the lower surface and adapted to show through the plastic sheet to be seen through the top surface" — "coating of one or more inks forming a design on the lower surface and adapted to show through the plastic sheet to be seen through the top surface." Microthin.com, Inc. v. SiliconeZone USA, LLC, 615 F. Supp. 2d 754 (N.D. Ill. 2009).739


"cockpit" — "the depression toward the center of the watercraft in or on which the paddler or paddlers sit." Old Town Canoe Co. v. Glenwa, Inc., 229 F. Supp. 2d 1151 (D. Or. 2001).741

"reduced coefficients of friction" — "a ratio of the force that maintains contact between an object and a surface, and the frictional force that resists the motion of the object in the static state and in the dynamic state." Greene, Tweed of Delaware, Inc. v. Dupont Dow Elastomers, L.L.C., et al., 2002 U.S. Dist. LEXIS 23554 (E.D. Pa., Nov. 18, 2002).742

"coextrudate of cojoined layers" — "cover[s] a coextrudate which is a facestock, or plastic film, formed solely by simultaneous, or joint, extrusion of several materials through a die. The immediate result of this simultaneous extrusion, or coextrusion, is a multilayer film wherein the layers are firmly adhered to one another in a permanently combined state, i.e., the patented coextrudate. A facestock formed by adhering preformed layers is not within the scope of claims." Avery Dennison Corp. v. UCB Films PLC., 1997 U.S. Dist. LEXIS 13594 (N.D. Ill., Sept. 3, 1997).743 "We have carefully considered all of the arguments and authorities presented by Avery, and conclude that the district court's judgment is correct." Id., 15 Fed. Appx. 882 (Fed. Cir., Jul. 18, 2001) (unpublished).744

"coil segment" — "a connecting segment that is a coil, at least a portion of which can be corroded electrolytically." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007).745


"leading surface being planar and coincident with a plane, the plane intersecting the handle portion" — "the leading surface is flat and occupies part of the same place or plane, the plane intersecting the handle portion." FURminator, Inc. v. Munchkin, Inc., et al., 2009 U.S. Dist. LEXIS 104429 (E.D. Mo., Nov. 9, 2009).747

"cold purge process" — "The district court correctly placed the term 'cold purge process' in the context of the state of the art when the '389 invention was made. This context requires construing the literal meaning of the claims as limited to the process wherein electrostatic contamination is formed and removed." Applied Materials, Inc. v. Advanced Semiconductor Materials America, Inc., et al., 98 F.3d 1563 (Fed. Cir. 1996).

"cold UV" — "a UV light source which: (i) employs selected wavelengths to limit; or (ii) has been adapted to selectively reduce the amount of; radiation (and thus heat) that impinges upon a substrate." Leggett & Platt, Inc., et al. v. Vutek, Inc., 2006 U.S. Dist. LEXIS 33383 (E.D. Mo., May 25, 2006).


"wherein the liner collapses when fluid is withdrawn from within the liner during operation of the gun" — "wherein the liner distorts without being ruptured when fluid is withdrawn from within the liner during operation of the gun." 3M Innovative Properties Co. v. Illinois Tool Works, Inc., et al., 2007 U.S. Dist. LEXIS 78695 (D. Minn., Oct. 23, 2007).


"collecting light scattered along said path for detecting anomalies" — "[does not] requir[e] collection of light and detection of anomalies to occur within the same instrument or device such that the two operations are inseparable." ADE Corp. v. KLA-Tencor Corp., 220 F. Supp. 2d 303 (D. Del. 2002).

"collection elements" — "two or more perforated structures with a wall that defines a closed-end tube that has one end open to a chamber. The perforations in the structure should be large enough to permit vapor entry but not so large as to permit substantial soil entry." Knopik v. Amoco Corp., et al., 96 F. Supp. 2d 892 (D. Minn. 2000).


"colored textured material" — "rubber particles with a specific combination of hue, saturation, and lightness or brightness that has the visual or tactile surface characteristics and appearance of pea gravel, tree bark, wood chips, and other natural mulches." Green Edge Enterprises, LLC v. Rubber Mulch Etc., LLC, et al., 2007 U.S. Dist. LEXIS 38799 (E.D. Mo., May 29, 2007).

"combination" — "an ordered sequence of letters or numbers which must be entered to open the lock. This term cannot be construed merely to cover a single switch closure." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997).

"combining region" — "the area within the heater body, which may or may not be a structure separate from the heater body, where the fluid to be heated mixes with the high pressure steam." Hydro-Thermal Corp. v. Pro-Sonix, LLC, et al., 2009 U.S. Dist. LEXIS 90148 (E.D. Wis., Sep. 9, 2009).
"combining the associated value and the additional parameter to determine motion control commands" — "a computerized, mathematical combination of the associated value and the additional parameter to determine motion control commands provided to the machine tool to automatically adjust velocity or acceleration to achieve the desired quality of result."  Omax Corp. v. Flow International Corp., 2006 U.S. Dist. LEXIS 81914 (W.D. Wash., Nov. 7, 2006).

"commensurate" — "mean[s] that the diameter of the first internal bore of the compression ring is 'large enough to extend over the cylindrical sleeve while compressing the deformable rear end portion of the cylindrical sleeve.'"  John Mezzalingua Associates, Inc. v. Arris International, Inc., 2003 U.S. Dist. LEXIS 24730 (W.D. Wis., Nov. 14, 2003).

"common front planar surface portion"; "common rear planar surface portion" — "the corner piece corner section has a front surface in the same plane as the plane of the front surfaces of the legs which contact the inside front wall of the flange. The Court finds that surfaces displaced out of that common front planar surface, except surface displacements that result from normal manufacturing tolerances, are not surfaces in that plane."; "the corner piece corner section has a rear surface in the same plane as the plane of the rear surfaces of the legs. The Court finds that surfaces displaced out of that common rear planar surface, except surface displacements that result from normal manufacturing tolerances, are not surfaces in that plane."  Ductmate Industries, Inc. v. Famous Supply Corp., et al., 55 F. Supp. 2d 777 (N.D. Ohio 1999).

"common plane of tangency" — "a plane that is tangent to a contact surface of the lower lip at a point of contact with a contact surface of the tongue."  Alloc, Inc. v. Unilin Decor N.V., et al., 2007 U.S. Dist. LEXIS 16743 (E.D. Wis., Mar. 6, 2007).

"common surface" — "the same surface, which surface may be either continuous or divided."  Celerity, Inc. v. Ultra Clean Technology Systems & Service, Inc., et al., 2007 U.S. Dist. LEXIS 44490 (N.D. Cal., June 1, 2007).


"an aperture communicating between ..."; "second opening communicating between ..." — "an opening through the housing where the housing drive surface is aligned with the recess"; "an opening through the housing where the housing drive surface is axially aligned with the recess."  National Products, Inc. v. Palmetto West Trading Co., LLC, 2006 U.S. Dist. LEXIS 28682 (W.D. Wash., May 4, 2006).


"a fuel return line communicating with said return line opening and said fuel tank for delivery of air and fuel to said fuel tank" — "a fuel return line provides communication or transfer between the return line opening and the fuel tank for delivering air and fuel from the opening to the fuel tank."  Ekstam v. Ekstam, 2006 U.S. Dist. LEXIS 12937 (E.D. Mo., March 7, 2006).

"compacting" — "extrusion under pressure, pressure rolling, prilling or other techniques which compact the agglomerated material into a form which has some degree of structural integrity, and which, following drying, can maintain its shape or be comminuted appropriately." Profile Products LLC v. Encap, LLC, 2009 U.S. Dist. LEXIS 60282 (W.D. Wis., Jul. 15, 2009). 771

"comparing a reference value with a difference between a slow spinning speed and a fast spinning speed of the drum" — "subtracting a slow spinning speed from a fast spinning speed of the drum and comparing the result with a reference value." LG Electronics U.S.A., Inc., et al. v. Whirlpool Corp., 2007 U.S. Dist. LEXIS 24056 (D.N.J., April 2, 2007). 772

"comparing the fluorescence polarization in the second mixture relative to the first mixture" — "comparing the fluorescence polarization of emitted light from the second mixture with the fluorescence polarization of the emitted light from the first mixture, which may be either measured or may be a known value." Caliper Technologies Corp. v. Molecular Devices Corp., 2003 U.S. Dist. LEXIS 27842 (N.D. Cal., Sept. 3, 2003). 773

"battery compartment" — "a section within the defibrillator case that contains the battery or batteries." Cardiac Science, Inc. v. Koninklijke Philips Electronics N.V., et al., 2006 U.S. Dist. LEXIS 22267 (D. Minn., April 20, 2006). 774


"so as to compensate for thermal expansion of said chip"; "to compensate for differential thermal expansion of the chip and substrate" — "to appreciably accommodate the thermally induced stresses (strains) caused by the difference in thermal expansion of the chip and the substrate." Samsung Electronics Co., Ltd. v. Tessera Technologies, Inc., 2004 U.S. Dist. LEXIS 31074 (N.D. Cal., Jan. 8, 2004). 776

"complementary coupling part" — "a completing component that cooperates with another completing component to connect two panels together in the vertical and horizontal directions." Alloc, Inc. v. Unilin Decor N.V., et al., 2007 U.S. Dist. LEXIS 16743 (E.D. Wis., Mar. 6, 2007). 777

"said clipholder having an external face complementary in shape with said locking element to provide a wedge-like interfitting, the complementary shape being in the form of a U wherein the corners of the U have a radius of curvature sufficient to provide a wedging action" — "we hold that the district court did not err when it construed claim 1 so as to require both the locking element and the clip holder to possess 'the shape of a U with curved corners.'" Pandrol USA, LP, et al. v. Airboss Railway Products, Inc., et al., 10 Fed. Appx. 837 (Fed. Cir., Mar. 27, 2001) (unpublished). 778

"complete hermetic seal" — "a seal that does not require any additional parts to retain nearly or largely all of the air in the bed." Aero Products International, Inc., et al. v. Intex Recreation Corp., et al., 466 F.3d 1000 (Fed. Cir. 2006).781

"said skirt being completely free with respect to the pan with the exception of a ring which joins only the top edge of the top edge of the pan and to which the latter is attached" — "means that the outer plastic skirt is thermally insulated from the hot oil frying pan. In other words, claim 1 means there are no thermal bridges between the skirt and the pan." SEB S.A. v. Montgomery Ward & Co., Inc., et al., 77 F. Supp. 2d 399 (S.D.N.Y. 1999).782 "this court detects no reversible error in the district court's claim construction." Id., 2010 U.S. App. LEXIS 2454 (Fed. Cir., Feb. 5, 2010) (unpublished).783

"completion of coalescence" — "we affirm the district court's construction that 'coalescence' is 'complete' when the process of forming a uniform, homogeneous body has all necessary parts, elements or steps, or is fully carried out, i.e., the layer formed from the particulate reaches its optimum state." Old Town Canoe Co. v. Confluence Holdings Corp., 448 F.3d 1309 (Fed. Cir. 2006).784


"a compliant layer"; "compliant material" — "a layer/material that is appreciably compressible in a direction perpendicular to its surface." Tessera, Inc. v. Micron Technology, Inc., 423 F. Supp. 2d 624 (E.D. Tex. 2006).787

"male and female elements having complimentary cross sectional shapes such that they are closed by pressing the bottom of the elements together first and then rolling the elements to a closed position toward the top thereof" — "Tenneco argues that the patent would cover any shape, as long as the shapes allow the elements to close most easily 'by first pressing the bottoms of the elements together and then rolling the tops of the elements together.' The Court agrees with Tenneco." Tenneco Packaging Specialty and Consumer Products, Inc. v. S.C. Johnson & Son, Inc., et al., 1999 U.S. Dist. LEXIS 17937 (N.D. Ill., Nov. 12, 1999).788

"component" — "a single- or multiple-part structure having a cross-section in the shape of a triangle or wedge." Robert Bosch, LLC. v. Pylon Manufacturing Corp., 2010 U.S. Dist. LEXIS 30451 (D. Del., Mar. 30, 2010).789


"composite compositions" — "must be in the form of either pellets or the linear extrudate from which pellets may be cut." Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361 (Fed. Cir. 2007).791

"composite structural member" — "a polymer and wood article having load bearing capability, which can be obtained through a direct extrusion process or made from a composite material without a particular form." Andersen Corp. v. Fiber Composites, LLC, 2002 U.S. Dist. LEXIS 6233 (D. Minn., Apr. 9, 2002).792
"compressed position" — "the position of the flexible element when it is under axial compression from a medical implement and opens the valve."  

[i] "compressed state"; [ii] "decompressed state" — [i] "the state of the seal when a medical implement causes axial compression"; [ii] "the state of the seal when a medical implement is not causing axial compression."  

"mold comprises two parts" — "The Court agrees with Defendants that though the mold halves can possess component parts, the 'mold comprises two parts' language should be interpreted as 'referring to the two mating halves of the mold as wholes, and not to their individual components.'"  

"comprising" — "including but not limited to."  

"comprising" — "including, but not limited to."  

"a multiple-ply material comprising: a first layer ...; a second layer ...; a third layer ..." — "We therefore concur with the district court's construction that the claims are not limited to three layers and can include an additional layer or layers."  

"concave" — "hollowed or rounded inward like the inside of a bowl."  

"conductive elastomeric seal" — "a seal consisting of a rubberlike silicone (or plastic) material which is conductive."  

"a conductive member leading to said electrical plane" — "any electrically conductive part or component--whether or not part of the fuel injection system--that forms at least part of the electrically conductive path that leads directly or indirectly to the electrical plane, which is any electrically conductive mass that can be maintained at a common electrical potential, including, without limitation, the body of an automotive vehicle."  

"discharge conduit" — "discharge passageway or channel."  

"configurable" — "flexible enough to be formed or arranged."  

"configured to fit" — "designed to fit."  
"front end configured to operate the retraction mechanism" — "the portion of the plunger closer to the injection end of the syringe that operates the retraction mechanism." Retractable Technologies v. New Medical Technologies, 2004 U.S. Dist. LEXIS 3855 (E.D. Tex., Mar. 1, 2004).805


"confined space" — "Sevenson contends that the district court erroneously construed 'confined space' as only confining the reaction product of calcium oxide and sludge. Sevenson argues that the claims themselves, the written description, and the prosecution history establish that the 'confined space' must confine steam. ... We agree." Manchak, Jr. v. Chemical Waste Management, Inc., et al., 1999 U.S. App. LEXIS 32001 (Fed. Cir., Dec. 6, 1999) (unpublished).807

"surface of said hollow plug being conformable" — "requires pre-formed pleats which render the plug 'extremely pliable, allowing localized portions of the hollow plug to adapt to irregularities in the tissue or muscle wall defect.'" C.R. Bard, Inc., et al. v. United States Surgical Corp., 102 F. Supp. 2d 199 (D. Del. 2000).808 "[W]e affirm the district court's claim construction requiring 'pre-formed pleats.'" Id., 388 F.3d 858 (Fed. Cir. 2004).809

"conformable part" — "a material that can be reconfigured into a plurality of different shapes and maintains itself in the plurality of different shapes independent of the article to which it is attached." Se-Kure Controls, Inc. v. Hinnom Productions, Inc., et al., 2002 U.S. Dist. LEXIS 4048 (N.D. Ill., Mar. 12, 2002).810


"connectable" — "capable of being connected together; it does not require that the hanging means be removable." Bed-Check Corp. v. Ultimate Safety, Inc., 2003 U.S. Dist. LEXIS 27845 (N.D. Okla., Nov. 24, 2003).813


"a body connectable to the underwater cable" — "a body attached externally to the underwater cable." *WesternGeco LLC v. ION Geophysical Corp.*, 2010 U.S. Dist. LEXIS 71875 (S.D. Tex., Jul. 16, 2010). 819

"connecting" — "the district court was correct in interpreting 'connecting' as used in this patent to include only direct, rigid, pivotal connections." *Searfoss v. Pioneer Consolidated Corp.*, 374 F.3d 1142 (Fed. Cir. 2004). 820

"connection segment" — "members of the face guard made of wire or other material that engage the connector on the helmet." *Riddell, Inc. v. Schutt Sports, Inc.*, 2009 U.S. Dist. LEXIS 58961 (W.D. Wis., Jul. 10, 2009) 821


"connector" — "a structure that electrically links the electrode terminal to the high frequency power supply." *Arthrocare Corp. v. Smith & Nephew, Inc.*, 2003 U.S. Dist. LEXIS 5976 (D. Del., Apr. 9, 2003). 823

"a first connector ... being removable and interchangeable ... defining a parallel flow configuration" — "a one-piece or multi-piece structure that can: (a) physically, releasably, and fluidly couple a pair of fluid ports on the first fluid treatment module to a corresponding pair of fluid ports on the second fluid treatment module, (b) be installed in the same connection location as the second connector without changing the spatial relationship of the fluid ports on the first head relative to the fluid ports on the second head, and (c) by itself (notwithstanding any plugs necessary to close the system) physically and fluidly connect the first and second fluid treatment modules such that the stream of fluid entering the system is split into two distinct streams with one of the streams passing through only one of the fluid treatment modules, the other stream passing through only the other fluid treatment module, and the two streams recombining into one output stream after exiting the treatment modules." *Everpure, LLC v. Selecto, Inc.*, 2010 U.S. Dist. LEXIS 61072 (C.D. Cal., Jun. 3, 2010). 824

"a second connector ... being removable and interchangeable ... defining a series flow configuration" — "a one-piece or multi-piece structure that can: (a) physically, releasably, and fluidly couple a pair of fluid ports on the first fluid treatment module to a corresponding pair of fluid ports on the second fluid treatment module or plug one or more of these ports, (b) be installed in the same connection location as the first connector without changing the spatial relationship of the fluid ports on the first head relative to the fluid ports on the second head, and (c) by itself (notwithstanding any plugs necessary to close the system) physically and fluidly connect the first and second fluid treatment modules such that the stream of fluid entering the system passes first through one of the fluid treatment modules and upon exiting this treatment module the stream passes through the other fluid treatment module." *Everpure, LLC v. Selecto, Inc.*, 2010 U.S. Dist. LEXIS 61072 (C.D. Cal., Jun. 3, 2010). 825

"consisting essentially of" — "having only the following material elements, but may also include additional nonmaterial items." *Callicrate v. New Age Industrial Corp., Inc.*, 2005 U.S. Dist. LEXIS 8934 (D. Kan., Apr. 27, 2005). 826
"consists of a mixture containing a major portion of silica together with a minor portion of titanium dioxide" — "does not require that the ingredients of the mixture be limited only to those ingredients listed in the claim." *ITP, Inc., et al. v. BP Corp. North America, Inc.*, 2005 U.S. Dist. LEXIS 39078 (S.D. Tex., May 2, 2005). 827

"in constant fluid communication with substantially the entire contained chlorine supply"; "in continuous communication with substantially the entire amount of chlorine supply" — "allowing liquid or gas access at all times to substantially the entire contained chlorine supply." *Cecil's On-Site Products, Inc. v. Chaffin*, 2009 U.S. Dist. LEXIS 10095 (S.D. Tex., Feb. 11, 2009). 828


"contact" — "The district court properly construed the term, according to its ordinary meaning, to mean 'touching.' Whether so-called 'indirect contact' could give rise to infringement is an issue of equivalency." *TurboCare Division of Demag Delaval TurboMachinery Corp. v. General Electric Co.*, 264 F.3d 1111 (Fed. Cir. 2001). 831


"does not contact" — "should be construed ... according to its plain meaning without the additional temperature and thermal contraction and expansion limitations." *LG Display Co., Ltd. v. AU Optronics Corp., et al.*, 2010 U.S. Dist. LEXIS 12969 (D. Del., Feb. 16, 2010). 833

"contact surfaces" — "a surface on a locking element that comes into contact with a corresponding surface on an opposing locking element that prevents a significantly large separation." *Alloc, Inc. v. Unilin Decor N.V., et al.*, 2007 U.S. Dist. LEXIS 16743 (E.D. Wis., Mar. 6, 2007). 834


"contain" — "to have within." *Ecolab Inc. v. Paraclipse, Inc.*, 285 F.3d 1362 (Fed. Cir. 2002). 837

"an ion conductive electrolyte contained within an electrolyte chamber formed in said third frame member" — "the ion conductive electrolyte is within the fixed limits of an electrolyte chamber formed in the third frame member and not beyond." *Dicon Global Inc. v. Senco Sensors, Inc., et al.*, 2004 U.S. Dist. LEXIS 23758 (N.D. Ill., Nov. 18, 2004). 838
"beverage container capture system ..."; "container holder ..." — "the court concludes that the terms are not subject to § 112, P 6." Crane Co., et al. v. Sandenvendo America, Inc., et al., 2009 U.S. Dist. LEXIS 47509 (E.D. Tex., Jun. 5, 2009). 839

"contiguous" — "the district court's claim construction was unduly restrictive. There are several possible structures that permit the transparent member to be contiguous to the chip and the mask to be contiguous to the transparent member even though the mask is not located on top of the transparent member." Honeywell Inc. v. Victor Co. of Japan, Ltd., 298 F.3d 1317 (Fed. Cir. 2002). 840


"continuous air flow generator" — "a mechanism that is used to supply and maintain a user-selected air pressure in the air chamber, thus compensating for leaks in the system and for repeated inhalation and exhalation of the user. Together with the pressure compensation feedback system, the continuous air flow generator provides dynamic adjustments in order to maintain such a user-selected air pressure." Advanced Respiratory, Inc. v. Electromed, Inc., 2003 U.S. Dist. LEXIS 823 (D. Minn., Jan. 10, 2003). 842

"said array of light emitting diodes focused/configured to form a contiguous beam" — "the array of light emitting diodes is arranged to project what appears to be a single, unbroken beam of light." totes Isotoner Corp. v. Panther Vision, LLC, 2010 U.S. Dist. LEXIS 14 (N.D. Ill., Jan. 4, 2010). 843

"continuous retainer member surrounding the inner head" — "a non-retractable part of the retraction mechanism that encircles the inner head of the needle holder and uses some clamping or frictional force to keep the needle in the projecting position until released." Retractable Technologies, Inc., et al. v. Becton Dickinson & Co., 2009 U.S. Dist. LEXIS 73301 (E.D. Tex., Jan. 20, 2009). 844

"continuous slice" — "The accepted meaning of 'continuous' is: 'marked by uninterrupted extension in space, time, or sequence.' ... The specification does not preclude any creases in a 'continuous slice.' Accordingly, this court reverses the district court's construction of the term 'continuous.'" Schreiber Foods, Inc. v. Beatrice Cheese, Inc., et al., 31 Fed. Appx. 727 (Fed. Cir., Feb. 27, 2002) (unpublished). 845

"continuous webbing structure" — "a thin, substantially continuous film or 'web' which may have a large volume of pores or voids, and which has the purpose to create a self-supporting structure for the primary materials, and which is convertible into fibers." KX Industries, L.P., et al. v. Culligan Water Technologies, Inc., et al., 90 F. Supp. 2d 461 (D. Del. 1999). 846

"a control for activating said global positioning system for transmitting the position of said cellphone to the remotely located telephone or the Internet" — "a button or switch for activating said global positioning system for transmitting the position of said cellphone to the remotely located telephone or the Internet." Minerva Industries, Inc. v. Motorola, Inc. et al., 2010 U.S. Dist. LEXIS 9329 (E.D. Tex., Feb. 3, 2010).849

"control structure" — "the Court does not construe the claim term 'control structure' as a means-plus-function limitation ... the Court finds that term 'control structure' in the '946 patent means 'control structure including a single lever at one end of the mechanism, a travel bar, and two connecting links' ... the Court finds that 'control structure' in the '685 patent means 'the control structure including a hinge pin, a spring, and a travel bar.'" World Wide Stationery Manufacturing Co., Ltd. v. U.S. Ring Binder; L.P., 2009 U.S. Dist. LEXIS 27873 (E.D. Mo., Mar. 31, 2009).850 "'[C]ontrol structure' in the '946 patent means 'control structure including a travel bar, hinge plates, and a spring.' ... 'control structure' in the '685 patent means 'the control structure including a hinge pin, a spring, and a travel bar.'" Id., 2009 U.S. Dist. LEXIS 83999 (E.D. Mo., Sep. 14, 2009).851

"control volume" — "a volume of gas or liquid used in regulating and guiding the fluid flow control system." Baxter Healthcare Corp. v. Fresenius Medical Care Holdings, Inc., et al., 2009 U.S. Dist. LEXIS 14842 (N.D. Cal., Feb. 10, 2009).852


"controlling the operation of said heater in response to information received from said tag" — "the Court rejects defendants' proposed construction of this term and concludes that no further construction of the term is warranted." Thermal Solutions, Inc. v. Imura International U.S.A., Inc., et al., 2009 U.S. Dist. LEXIS 90513 (D. Kan., Sep. 29, 2009).855


"said arms and said first and second magnetic members cooperating to stably support said auxiliary spectacle frame on said primary spectacle frame" — "said arms and said first and second magnetic members working together to maintain in position said auxiliary spectacle frame on said primary spectacle frame by resisting sudden change of position." Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc., 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003).857

"core member" — "a fairly rigid core member with an annular band or ring at its base that can fit into the band or ring of the outer housing." Hemphill v. McNeil-PPC, Inc., 25 Fed. Appx. 915 (Fed. Cir., Nov. 27, 2001) (unpublished).858


"correct combination" — "the proper ordered sequence of letters or numbers which must be entered to open the lock." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997).860
"compressed state"; "compressed position"; "decompressed state"; "decompressed position" — "a state (i.e. condition) of axial compression"; "a state (i.e. condition) of no axial compression." ICU Medical, Inc. v. Alaris Medical Systems, Inc., 2006 U.S. Dist. LEXIS 96077 (C.D. Cal., July 17, 2006).861


"compression locked" — "the ordinary meaning of 'compression locking’ is the locking of two elements through the application of pressure." Fastenetix, LLC v. Medtronic Sofamor Danek, Inc., et al., 2007 U.S. Dist. LEXIS 53665 (D.N.J., July 25, 2007).863

"compression mechanism" — "a mechanism that provides the same action as a spring; i.e., the mechanism itself is sufficiently compressible to easily allow users to adjust the placement of the curtain mount, and when compressed generates an outward force." Zipwall, LLC v. Fastcap, LLC, 482 F. Supp. 2d 141 (D. Mass. 2007).864

"compression member" — "we reject Medtronic's argument that the district court erred in not construing 'compression member' as a means-plus-function limitation." Depuy Spine, Inc., et al. v. Medtronic Sofamor Danek, Inc., et al., 469 F.3d 1005 (Fed. Cir. 2006).865

"compressive strength [of the formation]"; "failure of the formation" — "the confined (in situ) compressive strength"; "crush or indent any portion of (i.e. exceed the in situ compressive strength of) the particular subterranean formation." Reedhycalog UK, Ltd, et al. v. Baker Hughes Oilfield Operations, Inc., et al., 2007 U.S. Dist. LEXIS 76125 (E.D. Tex., Oct. 12, 2007).866

"a compressor" — "a compressor, either oil-free or oil-lubricated, capable of compressing and delivering air at least at 3000 p.s.i.g." Undersea Breathing Systems, Inc. v. Nitrox Technologies, Inc., 985 F. Supp. 752 (N.D. Ill. 1997).867

"comprised of" — "Correctly construed, 'comprised of' does not of itself exclude the possible presence of additional elements or steps." CIAS, Inc. v. Alliance Gaming Corp., et al., 504 F.3d 1356 (Fed. Cir. 2007).868

"comprising" — "raises a presumption that the list of elements is nonexclusive. ... [However,] the presumption raised by the term 'comprising' does not reach into each of the six steps to render every word and phrase therein open-ended." Dippin’ Dots, Inc., et al. v. Mosey, et al., 476 F.3d 1337 (Fed. Cir. 2007).869

"comprising"; "group of" — "the terms 'comprising' and 'group of' [are] 'presumptively open-ended' and thus ... the addition of elements not recited in the claim cannot defeat infringement." Gillette Co. v. Energizer Holdings, Inc., et al., 2005 U.S. Dist. LEXIS 34122 (D. Mass., Dec. 19, 2005).870

"comprising an elongated body including one or more longitudinal slots for slidably receiving one or more longitudinal pusher bars comprising a firing mechanism of said surgical stapler" — "indicate[s] that the pusher bars are outside the staple cartridge. When elements are specifically described in a claim as separate and distinct, it would be inconsistent to assume that the author intended the one to be included in the other." Ethicon Endo-Surgery v. United States Surgical Corp., 900 F. Supp. 172 (S.D. Ohio, Aug. 30, 1995).871
"comprising the step[s] of" — "one could envision a situation where the surgeon may sever the edges of the expended layer in order to facilitate the removal process. Therefore, the court interprets this claim as not requiring steps (e) and (f) to be performed in the stated order." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006).

"comprising the steps of" — "does not convert the elements of this method claim into steps-for-function. Thus, the steps of the method (seating, suspending, and driving) are construed the same as any other claim element." Robinson v. Advanced Decoy Research, Inc., et al., 519 F. Supp. 2d 1087 (S.D. Cal. 2007).

"a method ... comprising the steps" — "Claim 1 of the 779 Patent recites a method requiring that step (c) be performed after steps (a) and (b), that steps (d) and (e) be performed after step (b), that step (f) be performed after step (c), and that step (g) be performed after step (e). Claim 1 of the 615 Patent recites a method requiring that step (d) be performed after steps (a), (b) and (c), that step (e) be performed after step (d), and that steps (f) and (g) be performed after step (e)." Taltech Ltd. v. Esquel Enterprises Ltd., 410 F. Supp. 2d 977 (W.D. Wash. 2006).

"apparatus for control of a dangerous prisoner to prevent unpredictable dangerous actions by said dangerous prisoner while in social context situations while nevertheless concealing such apparatus from public view, comprising: ... said mounting means being adapted for concealment beneath garments ordinarily worn by ordinary persons in said social context to prevent said prisoner from being marked by observers in said social context as a person under restraint"; "nonobvious prisoner control apparatus for operation by a controlling authority located remotely from a prisoner, while said prisoner is in clothing both appropriate to a public situation, and permitting normal functions of movement by said prisoner comprising: ... means concealable beneath said appropriate clothing of said prisoner to be controlled" — "The district court correctly determined that these claims require only that an ordinary observer would not identify the apparatus as a prisoner control device when worn under ordinary clothing." R.A.C.C. Industries, Inc., et al. v. Stun-Tech, Inc., 1998 U.S. App. LEXIS 30769 (Fed. Cir., Dec. 2, 1998) (unpublished).

"concurrently" — "The use of 'concurrently' in the preamble cannot be read as meaning that all steps in the process occur at the same time or in no particular order." United States Gypsum Co., et al. v. LaFarge North America, Inc., et al., 508 F. Supp. 2d 601 (N.D. Ill. 2007).

"a condensate trough, defined by the base" — "a receptacle for collecting condensate. To be defined by the base, the base must create or form the outline of the shape of the condensate trough." Rival Co. v. Sunbeam Corp., et al., 987 F. Supp. 1167 (W.D. Mo. 1997).

"conductive liquid-like medium" — "a medium sufficiently conductive to perform its function as a variable capacitor plate." Ekchian v. Home Depot, Inc., et al., 104 F.3d 1299 (Fed. Cir. 1997).

"conduit" — "a channel through which the contaminant vapors are conveyed; the conduit may be a pipe in the shaft or the shaft itself." Knopik v. Amoco Corp., et al., 96 F. Supp. 2d 892 (D. Minn. 2000).

"conduit" — "a connecting passage which connects the area containing the tube (first interior channel) with the area containing the electrical components (second interior channel) and allows the wiring to pass from the first channel to the second channel." Lampi Corp. v. American Power Products, Inc., 1997 U.S. Dist. LEXIS 9942 (N.D. Ill., Jul. 7, 1997).

"cone", "cone region" — "radially innermost region, defined by the blades of the bit, located radially between the nose and the center longitudinal axis of the bit, labeled 230 in Fig. 10 of the '249 and '715 Patents." Reedhycalog UK, Ltd, et al. v. Baker Hughes Oilfield Operations, Inc., et al., 2007 U.S. Dist. LEXIS 76125 (E.D. Tex., Oct. 12, 2007).

"cone"; "smooth conical tapered tip" — "both ... mean a shape with a circular base tapering to a point as in either a centered (right circular) cone or an off-center (oblique circular) cone." Mahurkar, et al. v. Arrow International, Inc., 160 F. Supp. 2d 927 (N.D. Ill. 2001).

"an analyte sensor configured and arranged to determine the concentration of the analyte from 500 nL or less of body fluid" — "a device designed to measure the concentration of an analyte given a sample of 500 nL or less of body fluid." Therasense, Inc. v. Becton, Dickinson and Co., 2006 U.S. Dist. LEXIS 66437 (N.D. Cal., Aug. 31, 2006).

"configured for being manipulated into an erected position for containing a product placed therein during shipment and for subsequently being manipulated into a collapsed position for reducing the size of the container for return" — "having a structure, design, arrangement, or shape that can be manipulated into an erected position for containing a product placed therein during shipment and for subsequently being manipulated into a collapsed position for reducing the size of the container so the container can be sent back while in the collapsed position." Bradford Co. v. Afco Manufacturing, et al., 2006 U.S. Dist. LEXIS 88547 (S.D. Ohio, Dec. 5, 2006).

"configured for being moveable between an erected position for containing a product placed in the container and a collapsed position for reducing the size of the container for return" — "having a structure, design, arrangement, or shape that can be moved between an erected position for containing a product placed in the container and a collapsed position for reducing the size of the container so the container can be sent back while in the collapsed position." Bradford Co. v. Afco Manufacturing, et al., 2006 U.S. Dist. LEXIS 88547 (S.D. Ohio, Dec. 5, 2006).

"an outer surface configured for receiving and supporting the dental prosthesis" — "the phrase 'configured for' has not been treated as a means-plus-function element by the Federal Circuit. For example, in National Presto Industries, Inc. v. The West Bend Company, 76 F.3d 1185, 1189 (Fed. Cir. 1996), the Court did not treat the phrase 'retention chamber which is configured for reception within the retention compartment' as a means-plus-function element. In this case, the angulated portion is defined in terms of its structural features." Implant Innovations, Inc. v. Nobelpharma AB, 1998 U.S. Dist. LEXIS 15794 (N.D. Ill., Sept. 30, 1998).

"a bridge configured to connect two retaining mechanisms and hold them together" — "the middle part of the eyeglasses spanning the nose designed to connect the rims." Aspex Eyewear, Inc., et al. v. Altair Eyewear, Inc., 386 F. Supp. 2d 526 (S.D.N.Y. 2005).

"locking cap including a first portion configured to engage an interior surface of [a] head portion" — "requires a camming engagement between the first portion of the locking cap and the interior surface of the head portion." Pioneer Laboratories, Inc., et al. v. Stryker Corp., et al., 395 F. Supp. 2d 612 (W.D. Mich. 2005).
"tang portions configured to nest between the sprocket teeth" — "the tangs are sized to be closely received such that they fit between the sprocket teeth." Blount Inc., et al. v. Trilink Saw Chain, LLC, et al., 2007 U.S. Dist. LEXIS 42617 (D. Or., June 8, 2007).

"the inner and outer spatial volumes are configured to provide a minimum prescribed absorbed dose"; "the inner and outer spatial volumes are configured to provide a minimum prescribed absorbed dose" — "no construction necessary." Xaft, Inc. v. Cytyc Corp., et al., 2007 U.S. Dist. LEXIS 34468 (N.D. Cal., April 27, 2007).

"conforming generally to the shape of said food item" — "generally enveloping the food item to take the shape of the food item's exterior, conforming to almost the entire surface of the food item." General Mills, Inc. v. Hunt-Wesson, Inc., 103 F.3d 978 (Fed. Cir. 1997).

"flexible wrapping material [which] conforms generally [to the shape of the food item]" — "At a minimum, these limitations require that the shape of the putative 'wrapping material' be dictated by the shape of the item." General Mills v. Hunt-Wesson, Inc., 917 F. Supp. 663 (D. Minn. 1996).

"a movable member to which a stylus is connectable" — "mean[s] a rigid connection between the stylus and a movable member." Renishaw plc v. Marposs Societa’ per Azioni, et al., 974 F. Supp. 1056 (E.D. Mich. 1997).


"connected to" — "mean[s] that the lockout is directly and functionally connected to the longitudinal slots." Ethicon Endo-Surgery v. United States Surgical Corp., 900 F. Supp. 172 (S.D. Ohio, Aug. 30, 1995).

"connected to a source of water" — "the term 'connected to,' as used in Claims 1 and 7, does not require the source of the water to be proximate, or in direct contact with, the first inlet port. Instead, the water source can be located elsewhere, with the source and the inlet port being connected by an intermediate means of transmission." Sulfur-Tech Water Systems, Inc. v Kohlenberg, et al., 162 F. Supp. 2d 743 (N.D. Ohio 2001).

"connected to and aligned with the length of the gun barrel cleaning device" — "the cleaning section is coupled to the pull cord and extends longitudinally in alignment with the rest of the gun barrel cleaning device." Michaels of Oregon Co. v. Clean Gun, LLC, 2002 U.S. Dist. LEXIS 20371 (D. Or., Jul. 9, 2002).
"supporting members connected to and projecting from the hanger bar that slidably guide the retainer bar" — "It is clear from this language that Plaintiff's Patent describes a device wherein the pins or supporting members are affixed -- like blocks of wood with glue rather than links of chain -- to the hanger bar, as opposed to the retainer bar." Interstore Transfer Systems, Ltd. v. Hanger Management Inc., et al., 1996 U.S. Dist. LEXIS 16801 (N.D. Ill., Nov. 7, 1996). "[T]his Court, as a matter of law, construes the patented claim that the supporting members are connected to and project from the hanger bar to mean that the supporting members must be affixed to the hanger bar." Id., 1997 U.S. Dist. LEXIS 1497 (N.D. Ill., Feb. 7, 1997). 903

"connected to form a generally cylindrical drum shell" — "'connected' ... means linked together with the use of pins embedded in the rings." Lovelett v. Peavey Electronics Corp., et al., 1996 U.S. Dist. LEXIS 15210 (S.D.N.Y., Oct. 15, 1996). 904

"connecting a detachable tip to the handpiece ... the tip comprising an irrigation tube ... and a suction tube for aspirating irrigation fluid from the irrigation site ... aspirating spent irrigation fluid from the irrigation site through the suction tube of the tip and directing the aspirated irrigation fluid along a path that is disposed exteriorly of the handpiece ..." — "must be read in a manner consistent with the language in claims 9 and 30 and [] a person of ordinary skill in the art would conclude that the language of claim 10 requires that the tip include a bypass path." C.R. Bard, et al. v. Stryker Corp., 2006 U.S. Dist. LEXIS 16659 (D.R.I., April 4, 2006). 905

"connecting a plurality of intraluminal grafts" — "To 'connect' means to join or fasten together. ... A 'plurality' means at least two. ... 'Intraluminal' means within the inner open space of a tubular organ such as a blood vessel or other body passageway. ... A 'graft' is a structure that is 'implanted ... surgically ... to compensate for a defect' in a body organ or tissue. ... Therefore, an 'intraluminal graft' is a structure designed for use within the lumen of a body passageway to compensate for a defect in said passageway. ... each such 'graft' must be functional, as would be expected in a method claim" Cordis Corp., et al. v. Advanced Cardiovascular Systems, Inc., et al., 1998 U.S. Dist. LEXIS 11342 (D. Del., Jul. 17, 1998). "The court continues to hold that each such 'graft' must be functional; i.e., once it has 'expanded and deformed,' it must be capable of 'serving to prevent a body passageway from collapsing.'" Id., 1999 U.S. Dist. LEXIS 387 (D. Del., Jan. 15, 1999).

"connecting device" — "a device, such as a rivet, screw, or resilient tabs, that connects the balance shoe to the U-shaped channel of the inverted window balance." Amesbury Group, Inc., et al. v. Caldwell Manufacturing Co., 2006 U.S. Dist. LEXIS 2175 (D. Mass., Jan. 20, 2006). 908

"connecting elements"; "interconnected"; "connecting members"; "struts for connecting" — "The district court erred in construing the claim terms 'connecting elements,' 'interconnected,' 'connecting members,' and 'struts for connecting' as requiring connecting members to run parallel both to each other and to the longitudinal axis of the stent." Advanced Cardiovascular Systems, Inc., et al. v. SciMed Life Systems, Inc., et al., 261 F.3d 1329 (Fed. Cir. 2001).


"a connecting loop at the free end of said elongate member" — "will not be construed with the limitation Defendants suggest." Robinson v. Advanced Decoy Research, Inc., et al., 519 F. Supp. 2d 1087 (S.D. Cal. 2007). 912

"connecting said adjacent panels at a first pivot axis, and at least one center hinge assembly connecting said adjacent panels at a second pivot axis offset from said first pivot axis" — "will be accorded its ordinary and customary meaning to one skilled in the art and the proposed limitation on the language will not be added." Wayne-Dalton Corp. v. Amarr Co., 2007 U.S. Dist. LEXIS 65382 (N.D. Ohio, Sept. 5, 2007). 913

"connecting segment" — "a segment of the guidewire that is attached at one of its ends to the core wire and is attached at its other end to the distal tip. The connecting segment is capable of being operated on to detach the distal tip from the remainder of the guidewire." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007). 914

"connecting the outer ends of said spokes to said rim" — "Because Claim 6(c) can be construed to contain an act, it is not a step-plus function claim subject to the requirements of § 112, paragraph 6." Hayes Lemmerz International, Inc. v. Kuhl Wheels, LLC, et al., 2007 U.S. Dist. LEXIS 30298 (S.D. Mich., April 25, 2007). 915


"connector" — "This Court sees no need as part of the threshold Markman procedure to provide a construction other than the normal reading of the term 'connector.'" Zip Dee, Inc. v. Dometic Corp., 63 F. Supp. 2d 868 (N.D. Ill. 1998). 917


"connector assembly" — "any device which can be used to connect two elements together." Pandora Jewelry, LLC v. Chamilia, LLC, 2007 U.S. Dist. LEXIS 74092 (D. Md., Sept. 27, 2007). 919

"a connector assembly for connecting each pair of adjacent support members" — "is not in means-plus-function form." Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354 (Fed. Cir. 2004). 920
"said biopsy actuator comprising a second connector means for releasably and fixedly engaging the first connector means" — "the Court first concludes that 'second connector means' recites sufficient structure to perform the stated functions, thereby rebutting the means-plus-function presumption." Baran v. Medical Device Technologies, Inc., et al., 519 F. Supp. 2d 698 (N.D. Ohio 2007).921 "We also agree with the district court that the terms 'releasably' and 'detachable' have the same meaning in the '798 patent." Id., 2010 U.S. App. LEXIS 16678 (Fed. Cir., Aug. 12, 2010).922

"said proximal end having a first connector means secured thereto" — "said proximal end having a first connector, which is anything that can connect and be released without loss or damage, secured thereto." Baran v. Medical Device Technologies, Inc., et al., 519 F. Supp. 2d 698 (N.D. Ohio 2007).923

"connects" — "means that the base part and the vertical portion join or associate together." Gardendance, Inc. v. Woodstock Copperworks, Ltd., et al., 392 F. Supp. 2d 717 (M.D.N.C. 2005).924

"considerable fuel saving" — "does not reasonably apprise those skilled in the art as to the scope of Semmler's claim, nor is it as precise as the subject matter permits. Semmler could have measured the fuel savings obtained by his device and expressed the limitation in terms of a percentage or range of percentages. The Court finds that this limitation of the Semmler patent does not satisfy the definiteness requirement of 35 U.S.C. § 112." Semmler v. American Honda Motor Co., Inc., et al., 990 F. Supp. 967 (S.D. Ohio 1997).925

"consisting essentially of" — "exclud[es] any element, if added to the device would constitute more than 10 percent club head weight, because such an element would materially alter the novel property of the invention." Momentus Golf, Inc. v. Swingrite Golf Corp., et al., 312 F. Supp. 2d 1134 (S.D. Iowa 2004).926

"console" — "The prosecution history indicates that the term 'console' is not met by a sofa section having a seat back that folds down to serve as a table top." Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473 (Fed. Cir. 1998).927

"the heater is constructed and arranged to add heat to the fluid while the fluid is disposed within the tank" — "the heater warms the cleaning fluid while the cleaning fluid is in the tank." ChemFree Corp. v. J. Walter, Inc., et al., 2007 U.S. Dist. LEXIS 51677 (N.D. Ga., July 17, 2007).928

"consumer service station beverage tapping mechanism" — "a mechanism located in the customer service station through which refrigerated source liquids are dispensed." Foodie Partners v. Jamba Juice Co., 2007 U.S. Dist. LEXIS 80345 (E.D. Tex., Oct. 30, 2007).929

"said wall means including an expandable cover in contact with the layer of skin and subcutaneous tissue when the device is implanted" — "a portion of the wall means that can be increased in size which would face the layer of skin and subcutaneous tissue when implanted." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006).930

"contacting" — "the coming together or touching of two objects or surfaces."  Becton, Dickinson and Co. v. Inverness Medical Technology, Inc., 176 F. Supp. 2d 258 (D. Del. 2001).932

"a contactor" — "To form 'a contactor,' the spring and contact arm(s) are not required to be connected." Invisible Fence, Inc. v. Perimeter Technologies, Inc., 2006 U.S. Dist. LEXIS 33792 (N.D. Ind., May 25, 2006).933

"to contain a combustible liquid" — "the Court finds that the 'liquid' referenced in claim 7 is itself part of the claimed invention and is, therefore, a required limitation of the claim."  Produits Berger S.A., et al. v. Schemenauer, et al., 2007 U.S. Dist. LEXIS 10294 (E.D. Tex., Feb. 14, 2007).934

"container"; "canister" — "because the patentee used language that did not limit the term 'container' to a specific 'unitary structure,' a container ... shall include any suitable design that allows dispensing of countable oral solid drugs."  AutoMed Technologies, Inc. v. Microfil, LLC, et al., 2005 U.S. Dist. LEXIS 26032 (N.D. Ill., Oct. 26, 2005).935 "We accordingly affirm the district court's construction of these terms."  Id., 2007 U.S. App. LEXIS 16956 (Fed. Cir., July 16, 2007) (unpublished).936


"contains" — "describes a product in which the FM transmitter and the power supply/charging assembly are 'enclosed,' 'bound,' or 'kept within' the same housing unit."  Netalog, Inc. v. Griffin Technology, Inc., 2006 U.S. Dist. LEXIS 39089 (M.D.N.C., June 12, 2006).938

"contaminated underground area" — "the plain language of the claim leads to the Court to conclude that the underground areas are not limited to soil, and that such areas must be contaminated."  Knopik v. Amoco Corp., et al., 96 F. Supp. 2d 892 (D. Minn. 2000).939

"said visor being adjustably rotated into contiguous relation with said sheet rear surface" — "means that the vehicle visor is rotated so that it contacts the rear surface of the sunshade. When in operation, the visor is 'contiguous' in that it lies flat against the rear surface of the sunshade, touching the sunshade."  Huang, et al. v. Autoshade, et al., 950 F. Supp. 1016 (C.D. Cal. 1997).940


"contoured" — "a surface shaped to fit the outline or form of something." *Old Town Canoe Co. v. Glenwa, Inc.*, 229 F. Supp. 2d 1151 (D. Or. 2001).\(^947\)

"contoured to complement" — "shaped to guide engagement of the tension member with the sheave." *Schindler Elevator Corp. v. Otis Elevator Co.*, 2010 U.S. Dist. LEXIS 2463 (D.N.J., Jan. 13, 2010).\(^948\)

"control apparatus" — "The phrase 'control apparatus' in the preamble merely gives a descriptive name to the set of limitations in the body of the claim that completely set forth the invention. Its use does not limit the claims, as Haas contends, to a control apparatus that is separate from the machine tool." *IMS Technology, Inc. v. Haas Automation, Inc., et al.*, 206 F.3d 1422 (Fed. Cir. 2000).\(^949\)

"control button" — "a structure that activates a beam emitting device." *Innovention Toys, LLC v. MGA Entertainment, Inc., et al.*, 2009 U.S. Dist. LEXIS 48386 (E.D. La., May 21, 2009).\(^950\)

"control head" — "a control panel that is located within the vehicle and is accessible to the vehicle operator, and that provides a means for remotely operating the video recorder." *P.A.T., Co., et al. v. Ultrak, Inc.*, 948 F. Supp. 1506 (D. Kan. 1996).\(^951\)


"speed control means including a control panel" — "The Court recognizes that the use of the word 'means' in this disputed claim element creates a presumption of means-plus-function format. However, the Court finds that the phrase 'control panel' discloses sufficient structure to overcome this presumption." *Precor Inc. v. Brunswick Corp., et al.*, 2001 U.S. Dist. LEXIS 26341 (W.D. Wash., Jul. 31, 2001).\(^953\)

"control mechanism for controlling the operation of said valve and the movement of said frame over the turn to be treated such that ..." — "there is no means-plus-function language invoked by this clause." *Toro Co. v. John Deere & Co.*, 143 F. Supp. 2d 1122 (D. Minn. 2001).\(^954\)

"fluid circulation control unit"; "controlling fluid flow between" — "Fox has failed to overcome the presumption that § 112, P 6 does not apply." *SRAM Corp. v. Fox Factory, Inc.*, 2005 U.S. Dist. LEXIS 29164 (N.D. Ill., Nov. 18, 2005).\(^955\)

"controlled" — "we decline to restrict the claimed function of 'controlled' to either static or dynamic control." *Generation II Orthotics Inc., et al. v. Medical Technology Inc.*, 263 F.3d 1356 (Fed. Cir. 2001).\(^956\)
[i] "controlled dose"; [ii] "to reduce or prevent necrosis in healthy tissue proximate to the expandable surface"; [iii] "providing a controlled dose at the outer spatial volume expandable surface to reduce or prevent necrosis in healthy tissue" — [i] "no separate construction necessary"; [ii] "no separate construction necessary"; [iii] "controlling the ratio of the dose at the expandable surface of the outer spatial volume to the prescribed dose at the depth of interest in the target issue so that the dose at the expandable surface is not so high that it lethally damages cells in healthy tissue in contact with the expandable surface." Xoft, Inc. v. Cytec Corp., et al., 2007 U.S. Dist. LEXIS 34468 (N.D. Cal., April 27, 2007).957

"controller" — "while the patentee did not modify the term controller with the word single, the specification indicates that a single control system regulates the entire process." AutoMed Technologies, Inc. v. Microfil, LLC, et al., 2005 U.S. Dist. LEXIS 26032 (N.D. Ill., Oct. 26, 2005).958 "[W]hile we affirm the district court's initial construction of 'controller' to mean a 'single control system that regulates the entire process,' we clarify that the controller need not be limited to a single device, nor to any particular hardware or software." Id., 2007 U.S. App. LEXIS 16956 (Fed. Cir., July 16, 2007) (unpublished).959

"controlling" — "is well understood as 'exercising restraining or directing influence over.' This meaning is unambiguous and clear from the claim." Applera Corp., MDS Inc., et al. v. Micromass UK Ltd., et al., 186 F. Supp. 2d 487 (D. Del. 2002).960

"controlling a parameter of the light beams" — "includes controlling the length of time that the beam of light remains in contact with the photoreceptor." Pitney Bowes, Inc. v. Hewlett-Packard Co., 141 F. Supp. 2d 288 (D. Conn. 2001).961

"controlling a pressure of the flow of breathing gas delivered to a patient based on a product of the expiratory gain and the fluid characteristic during at least a portion of an expiratory phase of such a patient's breathing cycle, so that a pressure of the flow of breathing gas delivered to the patient during at least a portion of the expiratory phase varies with fluctuations of the fluid characteristic" — "controlling the pressure of breathing gas delivered to a patient during at least part of the expiratory phase so that it fluctuates in relation to the patient's flow rate, by multiplying the constant expiratory gain value by the flow rate." Respironics, Inc., et al. v. Invacare Corp., 2006 U.S. Dist. LEXIS 62233 (W.D. Pa., Aug. 30, 2006).962

"controlling said supply of gas ... based on said fluid characteristic signal and said first gain" — "The supply of gas is controlled based on the flow rate signal and a constant value that is applied to either boost or reduce the delivered pressure." Respironics, Inc., et al. v. Invacare Corp., 2006 U.S. Dist. LEXIS 62233 (W.D. Pa., Aug. 30, 2006).963


"controlling the temperature of the substrate" — "no construction is necessary." ASM America, Inc. v. Genus, Inc., 2002 U.S. Dist. LEXIS 15348 (N.D. Cal., Aug. 15, 2002).965


"conveyor" — "refers to an operative device or structure which would ordinarily be considered a conveyor. A conveyor necessarily includes components such as belts, slider plates, and drives, in addition to a moving surface."  *Lantech, Inc. v. Keip Machine Co.*, 32 F.3d 542 (Fed. Cir. 1994). 98


"convex top surface" — "an upper surface that curves or bulges outward, as the exterior of a sphere."  *Nystrom v. Trex Co., Inc., et al.*, 424 F.3d 1136 (Fed. Cir. 2005). 971


"cooperating to provide a desired three dimensional and/or topographic structure" — "has a meaning that is readily understandable and no construction is necessary."  *Synovis Life Technologies, Inc. v. W.L. Gore & Associates, Inc.*, 2009 U.S. Dist. LEXIS 4870 (D. Minn., Jan. 23, 2009). 973


"hub legs collapsible by pivoting from coplanar spread configuration to non-coplanar configuration" — "the terms 'coplanar' and 'noncoplanar' refer to whether or not all of the hub legs lie in the same plane. In other words, all of the hub legs lie within the same plane, or are coplanar, when the lower frame assembly is in the spread configuration, and all of the hub legs do not lie within the same plane, or are non-coplanar, when in the collapsed position."  *Graco Children's Products, Inc. v. Regalo International LLC*, 2000 U.S. Dist. LEXIS 11133 (E.D. Pa., Aug. 8, 2000). 975

"coplanar with each tubular member" — "The specification nevertheless describes three embodiments which presumably fall within the scope of the disputed claim language: (1) the connector member is as thick as the tubular member and so is aligned with both its inner and outer walls; (2) the connector member is thinner than the tubular member and lies within (i.e., is aligned with neither) its inner and outer walls; and (3) the connector member is thinner than the tubular member and is aligned with its outer wall. The court agrees ... that the word 'coplanar' should be given the broader scope provided for in the specification."  *Cordis Corp., et al. v. Advanced Cardiovascular Systems, Inc., et al.*, 1999 U.S. Dist. LEXIS 387 (D. Del., Jan. 15, 1999). 976

"core" — "the singular component of the golf ball that occupies the geometric center of the sphere of the golf ball." Callaway Golf Co. v. Acushnet Co., 2007 U.S. Dist. LEXIS 85597 (D. Del., Nov. 20, 2007).978


"core"; "cover" — "The claim construction dispute centers around the classification of wrapped strands as either part of the 'core' or part of the 'cover' within the meaning of the claims of the patent. ... Taken as a whole, the intrinsic evidence requires a claim construction that would designate a strand wrapped around a central fiberglass strand as part of the cover and not the core of the yarn. While the claims and the specification do not state this explicitly, the patent when read as a whole can only lead to this construction of the claims." Kolmes, et al. v. World Elastic Corp., et al., 1998 U.S. App. LEXIS 9407 (Fed. Cir., May 6, 1998) (unpublished).980

"core pins forcing the plastic washing machine basket to shift relative to the mold core" — "is unambiguous, so that no further construction is required." Maytag Corp. v. Electrolux Home Products, Inc., 411 F. Supp. 2d 1008 (N.D. Iowa 2006).981

"core wire" — "the guidewire of the invention, except for the elongate distal tip." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007).982

"corners connecting said side edges of said sides which are adjacent one another with said sides furthermore capable of having their corners removed to increase the degree of flexing about said base toward said axis through said face member to increase the amount of flexibility" — "The word corners in Claim 15 refers to the meeting place of two lines or surfaces. They are capable of being removed to increase flexing. The corners can be removed but need not be removed. The corners are removable, but there is no requirement that the corners contain cut lines, score lines, or other physical features indicating that the corners are intended to be removed." Arlington Industries, Inc. v. Bridgeport Fittings, Inc., 345 F.3d 1318 (Fed. Cir. 2003).983

"corners of the first frame" — "the places at the rear surface of the first frame near the intersection of any two side edges of the first frame." LG Philips LCD Co., Ltd. v. Tatung Co., et al., 2007 U.S. Dist. LEXIS 43557 (D. Del., June 15, 2007).984

"corona means" — "is in means plus function form, and thus is subject to the requirements of 35 U.S.C. § 112, paragraph six." BBA Nonwovens Simpsonville, Inc., et al. v. Superior Nonwovens, LLC, et al., 303 F.3d 1332 (Fed. Cir. 2002).985

"corona treatment" — "the discharge of a high voltage field onto a surface to raise the surface energy of the surface treated." Avery Dennison Corp. v. Whitlam Label Co., Inc., 2003 U.S. Dist. LEXIS 27836 (N.D. Ohio, Sept. 24, 2003).986

"correlated set of iron-type golf clubs" — "a 'correlated set' comprises two or more clubs which contain the same design characteristics. While a single club can not constitute a correlated set, a short set, a set of wedges, or even a set comprised of a 1 and 2 iron may constitute a correlated set if all of clubs possess the same design characteristics and they are sold together as a set." Karsten Manufacturing Corp. v. Cleveland Golf Co., 1998 U.S. Dist. LEXIS 23148 (D. Ariz., Dec. 4, 1998).988 "The district court correctly defined the term 'correlated set' in the context of the specification and the evidence of customary usage." Id., 242 F.3d 1376 (Fed. Cir. 2001).989

"corresponding contact surfaces" — "more than one contact surface, but not necessarily all contact surfaces." Thomson Consumer Electronics, Inc. v. Innovatron, S.A., 43 F. Supp. 2d 26 (D.D.C. 1999).990

"corresponding to" — "requires no definition and is unambiguous and readily comprehensible." U.S. Ring Binder; LP v. Staples the Office Superstore LLC, et al., 2009 U.S. Dist. LEXIS 21783 (E.D. Mo., Mar. 18, 2009).991

"a second bowed section corresponding to said first bowed section" — "contemplate[s] the bowed shape portion of the membrane to maintain general agreement with the shape of the first bowed shaped section." Herman Miller, Inc. v. Teknion Corp., et al., 504 F. Supp. 2d 360 (N.D. Ill. 2007).992

"corrugated" — "formed into or having a series of either straight or rounded ridges and valleys." Habasit Belting Inc. v. Rexnord Industries, Inc., et al., 340 F. Supp. 2d 518 (D. Del. 2004).993

"counterbalance weight" — "a mass that provides significant dynamic balance by countering forces associated with the movement of a piston." Briggs & Stratton Corp. v. Kohler Co., 398 F. Supp. 2d 925 (W.D. Wis. 2005).994

"counterbalanced" — "mean[s] that the weights oppose or act against each other. The Court does not infer from this term that the weights ... must be equal or must balance on a fulcrum between the weights." Momentus Golf, Inc. v. Concept Sports, Inc., 2002 U.S. Dist. LEXIS 10901 (S.D. Iowa, Jun. 5, 2002).995

"a counterbore formed in each end of the roller and substantially concentric with the axial bore" — "a counterbore formed in each end of the roller and substantially concentric with the axial bore." Caputo v. Sealed Air Corp., 60 Fed. Appx. 822 (Fed. Cir., Apr. 8, 2003) (unpublished).996

"coupled" — "is not limited to a mechanical or physical coupling." Johnson Worldwide Associates, Inc. v. Zebco Corp., et al., 175 F.3d 985 (Fed. Cir. 1999).997

"coupled" — "connected without an intervening valve that may impede flow to the first condenser during normal operation." Desert Aire Corp. v. AAON, Inc., 461 F. Supp. 2d 369 (D. Md. 2006).998


"coupled to" — "should be construed broadly so as to allow an indirect attachment." Bradford Co. v. ConTeyor North America, Inc., et al., 2010 U.S. App. LEXIS 8869 (Fed. Cir., Apr. 29, 2010).


"a drive shaft coupled to"; "a drive shaft coupled at one end to a suction cup" — "a drive shaft linked with"; "a drive shaft with an end portion linked to a suction cup." National Products, Inc. v. Palmetto West Trading Co., LLC, 2006 U.S. Dist. LEXIS 28682 (W.D. Wash., May 4, 2006).

"electrocardiograph module coupled to a handheld module by a cable" — "electrocardiograph (ECG) module that is external to and attached to the handheld module by a cable." General Electric Co., et al. v. Sonosite, Inc., 2008 U.S. Dist. LEXIS 33223 (W.D. Wis., Jan. 8, 2008).

"a side cover is coupled to an outer side surface of said engine block" — "a cover that is removably attached to a generally exterior side surface of the engine block." American Honda Motor Co., Inc. v. Coast Distribution System, Inc., 609 F. Supp. 2d 1032 (N.D. Cal. 2009).

"coupled to said crown" — "attached to the crown, as distinct from the brim or the sweatband, of the headgear." totes Isotoner Corp. v. Panther Vision, LLC, 2010 U.S. Dist. LEXIS 14 (N.D. Ill., Jan. 4, 2010).

[i] "the handle coupled to the contraceptive device by an elongate body"; [ii] "a deployment shaft having a proximal end and a distal end releasably coupled to the contraceptive device" — [i] "the handle mechanically and/or electronically connected to the contraceptive device by the elongate body"; [ii] "a deployment shaft having a proximal end and a distal end that is mechanically and/or electronically configured to attach to and detach from the contraceptive device." Conceptus, Inc. v. Hologic, Inc., 2010 U.S. Dist. LEXIS 24247 (N.D. Cal., Mar. 16, 2010).

"wherein the wings are coupled to the first and second actuators" — "wherein the wings are linked to the first and second actuators." WesternGeco LLC v. ION Geophysical Corp., 2010 U.S. Dist. LEXIS 71875 (S.D. Tex., Jul. 16, 2010).

"coupled to the independent poles and rebounding mat" — "connected to the independent poles and to the rebounding mat, either directly or through a discrete coupling device that is not an element of the trampoline or enclosure." Jumpsport, Inc. v. Jumpking, Inc., et al., 2003 U.S. Dist. LEXIS 27261 (N.D. Cal., Jun. 2, 2003).

"a printer ... coupled to the money order dispenser" — "cover[s] a printer that is mechanically or physically connected to the dispenser, rather than merely electrically connected." Travelers Express Company, Inc. v. Transaction Tracking Technologies, Inc., 2005 U.S. Dist. LEXIS 46009 (D. Minn., May 2, 2005).

"coupling member" — "None of these definitions indicate that the term would call to mind for those skilled in the art a range of structures sufficient to escape a means-plus-function analysis. To hold otherwise, would be to include every conceivable device."  Bausch & Lomb Inc. v. Moria S.A., et al., 222 F. Supp. 2d 616 (E.D. Pa. 2002).  

"coupling in a common plane" — "describes the position of the panels in relation to each other after they are coupled."  Alloc, Inc. v. Unilin Decor N.V., et al., 2007 U.S. Dist. LEXIS 16743 (E.D. Wis., Mar. 6, 2007).  

"coupling" — "a connecting device that connects the implant to the pusher and that can be selectively operated by the user."  Boston Scientific Corp. v. Cordis Corp., 422 F. Supp. 2d 1102 (N.D. Cal. 2006).  

"coupling assembly" — "given that 'coupling assembly' is followed by a fairly lengthy description of the two parts which comprise it, this Court does not see at this point why any construction of the phrase is needed."  Fastenex, LLC v. Medtronic Sofamor Danek, Inc., et al., 2007 U.S. Dist. LEXIS 53665 (D.N.J., July 25, 2007).  

"detaching a coupling between said distal tip and said wire" — "detaching the distal tip from the wire."  Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007).  


"a first and second coupling member, each associated with a respective one of said foot links for pivotally coupling said foot link to said pivot axis at a predetermined distance therefrom" — "a first and a second structural unit which couples, each associated with a foot link, that attaches its associated foot link to the pivot axis at a distance from the axis that is not necessarily unvarying while the machine is in use, but is determined beforehand."  Precor Inc., et al. v. Fitness Quest, Inc., et al., 2006 U.S. Dist. LEXIS 63244 (W.D. Wash., Aug. 23, 2006).  


"cover" — "includes the entire cover assembly and not only the air inlet lid."  The Toro Co. v. White Consolidated Industries, Inc., et al., 920 F. Supp. 1008 (D. Minn. 1996).  

"second removable cover for selectively covering said open top portion" — "a cap that either allows the user to cover the drinking hole, through a mechanism such as a closure member to an extent that the user may select, including fully open and fully closed, and which may allow the user to select a degree of opening somewhere between fully open and fully closed; or a cap that may be screwed onto the beverage container by the user and which covers some or all of the open top portion."  Sunbeam Products, Inc. v. Hamilton Beach Brands, Inc., et al., 2010 U.S. Dist. LEXIS 85281 (E.D. Va., Aug. 19, 2010).
"cover layer having a Shore D hardness" — "This limitation requires that Shore D hardness be measured 'on the ball.'" Callaway Golf Co. v. Acushnet Co., 2007 U.S. Dist. LEXIS 85597 (D. Del., Nov. 20, 2007). 1023 "The district court did not err in holding that the phrase 'cover layer having a Shore D hardness' refers to an on-the-ball hardness measurement." Id., 576 F.3d 1331 (Fed. Cir. 2009). 1024

"said cover means movable to alternatively close or expose one or both of said cavities" — "While the position of the cover means is described, its meaning truly lies in the function assigned to it. Thus, it must be considered a means-plus-function element under section 112, paragraph 6." Contempo Tobacco Products, Inc., et al. v. McKinnie, 1997 U.S. Dist. LEXIS 22576 (N.D. Ill., Apr. 8, 1997). 1025

"said cover member being removably integratable into said storage structure to improve the structural integrity of the storage structure" — "does not need construction." GSI Group, Inc. v. Sukup Manufacturing Co., 2006 U.S. Dist. LEXIS 70100 (C.D. Ill., Sept. 27, 2006). 1026

"cover plate partially enclosing said fin structures" — "a flat member positioned to partially enclose the fin structures." ICHL, LLC v. NEC Corp. of America, et al., 2010 U.S. Dist. LEXIS 38942 (E.D. Tex., Apr. 20, 2010). 1027

"said magnetic member is covered with a non-ferromagnetic material" — "the magnet is covered with a film layer of non-ferromagnetic material." Advanced Magnetic Closure, Inc. v. Rome Fastener Corp., et al., 2005 U.S. Dist. LEXIS 10016 (S.D.N.Y., May 11, 2005). 1028


"cable covering" — "a means to insulate and protect the cable that is exterior to the interior support and insulated conductors disposed in the open spaces of the interior support." Belden Technologies Inc., et al. v. Superior Essex Communications LP, et al., 2010 U.S. Dist. LEXIS 86833 (D. Del., Aug. 24, 2010). 1030

"covering a majority surface area of said tool body" — "means the actual, physical magnet (or assembly) takes up more than half of the exterior of the tool body. To put it another way, at least half of the outer surface area of the tool body contains the physical magnetic material itself rather than the undefined magnetic field created by the magnets." Rattler Tools, Inc. v. Bilco Tools, Inc., et al., 2007 U.S. Dist. LEXIS 49124 (E.D. La., July 6, 2007). 1031

"covering each food portion with an unbaked dough section of sufficient dimensions to cover said food portion thereby forming a separate closed pocket about each food portion" — "the 'forming' step is an affirmative step separate from 'covering,' and requires pinching dough areas to the dough base, including in between food portions. Merely draping the dough over the filling is insufficient to perform the claim." Angelo Mongiello's Children, LLC v. Pizza Hut, Inc., 70 F. Supp. 2d 196 (E.D.N.Y. 1999). 1032


"covers" — "the Court [] construes the term 'covers' to mean 'overlays' and declines to read the word 'completely' into the term." Great Dane Limited Partnership v. Stoughton Trailers, LLC, et al., 2009 U.S. Dist. LEXIS 119573 (M.D. Ga., Dec. 23, 2009). 1034


"crease" — "a line, a groove, or a ridge made by folding a pliable substance and not a hinge." *Craig v. Foldfast, Inc., et al.*, 487 F. Supp. 2d 1364 (S.D. Fla. 2007).1038


"crimp" — "a portion of the needle which is sufficiently small to allow the needle to move axially along the catheter but which is greater in width than the opening." *B. Braun Melsungen AG, et al. v. Terumo Medical Corporation, et al.*, 2010 U.S. Dist. LEXIS 54480 (D. Del., Jun. 3, 2010).1040

"cross brace member" — "a long thin device that: (1) is longer than it is wide; (2) is used as part of the structure that connects the table legs to the table top; (3) imparts strength to the table; (4) lies transverse to, and some distance across, the underside of the table top; and (5) cannot be the bracket and pin arrangement of the '576 Patent to Cobos." *Lifetime Products, Inc. v. Correll, Inc.*, 323 F. Supp. 2d 1129 (D. Utah 2004).1041

"a cross-cutting cylinder" — "a device for cutting paper that has a generally cylindrical overall shape and cuts materials into a number of small pieces both lengthwise and widthwise." *Fellowes, Inc. v. Michelin Prosperity Co., Ltd., et al.*, 2006 U.S. Dist. LEXIS 90648 (E.D. Va., Dec. 15, 2006).1042

"cross-laminated section" — "a section of the injection molded plastic product that contains both a first and a second plastic layer, where the first and second plastic layers have positively different flow records--meaning that the flow records of the two layers are definitely not alike." *Koito Manufacturing Co., Ltd, et al. v. Turn-Key-Tech, L.L.C., et al.*, 234 F. Supp. 2d 1139 (S.D. Cal. 2002).1043

"cross support structured for support of the person's leg" — "a support that supports the leg by contacting the foot, ankle or leg, but does not necessarily require contact with the leg." *Brike International, Ltd. v. Invacare Corp.*, 2007 U.S. Dist. LEXIS 44003 (D. Or., June 14, 2007).1044


"cup shaped" — "mean[s] a hollow structure that is 'generally round' or 'generally rectangular, star shaped or another preferred shape.'" *U.S. Can. Co., Inc. v. Limited Brands, Inc., et al.*, 2006 U.S. Dist. LEXIS 21010 (N.D. Ill., April 19, 2006).1046
"curved along the longitudinal axis" — "deviating from a straight line along the lengthwise dimension." Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F. Supp. 2d 93 (D. Conn. 2006). 1047 "[T]he Court withdraws its comments regarding whether the blade surface could curve 'side to side' as impermissible importing a limitation from the specification into the claim language. The language of the claim provides a curve 'along the longitudinal axis,' and the Court's construction - 'deviating from a straight line along the lengthwise dimension' - should not be read to limit that curvature to surfaces curving only up or down." Id., 440 F. Supp. 2d 120 (D. Conn. 2006). 1048

"curved blade surface" — "blade surface that has a deviation from a straight line." Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F. Supp. 2d 93 (D. Conn. 2006). 1049

"curved in a non-radial direction of the stent"; "curving in a non-radial direction of the stent" — "curved or curving such that the [arcuate U-shape or flexure member curved portion] does not extend substantially outside the outer surface or inside the inner surface of the tubular wall." Medtronic Vascular, Inc., et al. v. Abbott Cardiovascular Systems, Inc., et al., 2007 U.S. Dist. LEXIS 95430 (N.D. Cal., Dec. 21, 2007). 1050


"curved shank" — "has a bend or deviation from a straight line without sharp corners or sharp angles." Acumed LLC v. Stryker Corp., et al., 483 F.3d 800 (Fed. Cir. 2007). 1052

"said arm curves forwardly slightly towards said base unit as it proceeds upwardly away from said longitudinal axis of said handle" — "simply permit[s] the graspable arm to have a small curvature along its length in the direction of the base unit." Oreck Holdings, LLC, et al. v. Dyson, Inc., 434 F. Supp. 2d 385 (E.D. La. 2006). 1053

"buttons curving from the front of the top surface to the top of the front surface" — "The Court finds the claim language to be sufficiently clear and self-explanatory, especially considering the detailed drawings contained in the specification, so that no further definition is necessary." Goldtouch Technologies, Inc. v. Microsoft Corp., 2000 U.S. Dist. LEXIS 3370 (W.D. Tex., Jan. 14, 2000). 1054

"cushion" — "a structure that provides basic support and comfort." Hill-Rom Co., Inc. v. Kinetic Concepts, Inc., et al., 209 F.3d 1337 (Fed. Cir. 2000). 1055


"a second cushioning means defined in said body member to be located between said flanges" — "Infanti's definition of the function performed by the second cushioning means improperly reads in a function not recited by the disputed claims. Claims 1-4 call for merely a structure that performs a cushioning function." Gasser Chair Co., Inc., et al. v. Infanti Chair Manufacturing Corp., et al., 1998 U.S. App. LEXIS 6308 (Fed. Cir., Mar. 27, 1998) (unpublished). 1058
"customer service station" — "a station from which a customer can be served, and includes a cold pan, a drip pan, a breath guard, at least one refrigerated source liquid conduit line, and the refrigerated source liquid conduct line connecting said refrigerated source liquid and said consumer service station beverage tapping mechanism." Foodie Partners v. Jamba Juice Co., 2007 U.S. Dist. LEXIS 80345 (E.D. Tex., Oct. 30, 2007).1059

"cut-on filter" — "an optical filter that substantially blocks all wavelengths shorter than the cut-on wavelength and substantially transmits all wavelengths that are longer than the cut-on wavelength. The cut-on wavelength is that wavelength in the transition zone at which the transmission is 1%." Suntiger, Inc. v. Sunglass Products of California, 2006 U.S. Dist. LEXIS 1076 (C.D. Cal., Jan. 10, 2006).1060


"cutting disks" — "generally round or ring-shaped elements that are designed for cutting paper." Fellowes, Inc. v. Michilin Prosperity Co., Ltd., et al., 2006 U.S. Dist. LEXIS 90648 (E.D. Va., Dec. 15, 2006).1063


"cutting section" — "the structure(s) or part(s) of a structure in which cutting occurs, including the cutting means." Kothmann & Kothmann, Inc. v. Trinity Industries, Inc., 287 F. Supp. 2d 699 (S.D. Tex. 2002).1065

"cylinder" — "'a surface bounded by parallel planes and generated by a straight line moving parallel to the given planes and tracing a curve bounded by the planes and lying in a plane perpendicular or oblique to them.' There is nothing in the definition or the common understanding of the term which mandates the 'curve traced' must be perfectly circular." Robinson v. Cannondale Corp., et al., 2002 U.S. Dist. LEXIS 6797 (C.D. Cal., Jan. 29, 2002).1066

"cylindrical housing" — "a housing that is generally cylindrical in shape." MHL TEK, LLC v. Nissan Motor Co., et al., 2009 U.S. Dist. LEXIS 77578 (E.D. Tex., Aug. 28, 2009).1067

"an inner contour of said scroll plate means having a cylindrical configuration in a vicinity of an axial median plane of the fan and extending towards an inlet side of the fan" — "the inner contour of the fan housing must form a surface that is parallel to the axis of rotation of the fan at the mid-point between the inlet and outlet sides of the fan. Additionally, the cylindrical configuration must extend from the mid-point towards the inlet side of the fan." Papst Licensing GmbH and Co. KG v. Sunonwealth Electric Machine Industrial Co., Ltd., et al., 2004 U.S. Dist. LEXIS 4402 (N.D. Ill., Mar. 18, 2004).1068

"cylindrical element"; "cylindrically shaped element"; "cylindrical ring" — "a radially expandable segment of a stent having a longitudinal length less than its diameter with a circumferential undulating pattern. Furthermore, cylindrical rings are not in and of themselves, stents." Medtronic Vascular, Inc., et al. v. Advanced Cardiovascular Systems, Inc., et al., 2005 U.S. Dist. LEXIS 824 (D. Del., Jan. 5, 2005). 1070

"cylindrical outer surface constantly in surface-to-surface contact with a cylindrical inner surface of the drum" — "a cylindrical outer surface in physical contact at all times but in a varying number of points with a cylindrical inner surface of the drum." Warn Industries, Inc. v. Ramsey Winch Co., 2006 U.S. Dist. LEXIS 61639 (D. Or., Aug. 11, 2006). 1071

"cylindrical portion" — "a portion that has the substantial shape of a cylinder including slight variations in diameter along the length of the cylinder." Nobel Biocare USA, LLC, et al. v. Blue Sky Bio, LLC, et al., 2009 U.S. Dist. LEXIS 100408 (C.D. Cal., Oct. 14, 2009). 1073


-said handle comprising a D-shaped portion" — "a portion of the handle is formed in the shape of the letter 'D.'" One World Technologies, Ltd., et al. v. Rexon Industrial Corp., Ltd., et al., 2006 U.S. Dist. LEXIS 25324 (N.D. Ill., May 2, 2006). 1074

"damaged tissue" — "tissue that has been injured by trauma as well as tissue that is abnormal because of disease, infection, or other soft tissue metastases." Saffran v. Boston Scientific Corp., 2007 U.S. Dist. LEXIS 76135 (E.D. Tex., Sept. 28, 2007). 1075

"dark color" — "a color that is absorptive of the sun's heat rays to one of ordinary skill in the art." Midwest Canvas Corp. v. Cantar/Polyair Corp., et al., 2003 U.S. Dist. LEXIS 15294 (N.D. Ill., Sept. 2, 2003). 1076

"data surface" — "a writing surface such as paper or other material upon which the stylus can be used to form marks or to write a message and from which an instant original hard copy can be obtained without first requiring data processing and printing." Anoto AB v. Sekendur, 2004 U.S. Dist. LEXIS 7950 (N.D. Ill., May 4, 2004). 1077

"dead band" — "the space within the cylinder before the leading edge of the seal engages and then passes the timing port, thus pressurizing the hydraulic fluid and engaging the brake." SRAM Corp. v. Formula S.R.L., et al., 2009 U.S. Dist. LEXIS 29100 (N.D. Ill., Apr. 3, 2009). 1078


"deck support structure" — "will be given its ordinary meaning. The Court declines to read any additional or limiting meaning into this language." Precor Inc. v. Brunswick Corp., et al., 2001 U.S. Dist. LEXIS 26341 (W.D. Wash., Jul. 31, 2001). 1080
"wherein the thickness of the differential expansion portion decreases in a direction away from the limited expansion portion" — "wherein the differential expansion portion has a lesser thickness at a point further from the limited expansion portion than it does at a point closer to the limited expansion portion." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006). \[1081\]


"an air channel of a cross-sectional size defined by a member associated with the blades" — "an air channel of a cross-sectional size defined by a member associated with the blades." Vita-Mix Corp. v. Basic Holdings, Inc., et al., 514 F. Supp. 2d 990 (N.D. Ohio 2007). \[1083\]

"drain opening defined by the erosion control housing" — "A drain opening is 'defined by the erosion control housing' if it is an opening whose boundaries are formed by, and found within, the erosion-control housing." WIMCO, LLC v. Lange Industries, Inc., 2007 U.S. Dist. LEXIS 92502 (D. Minn., Dec. 14, 2007). \[1084\]

"wherein, when in use, said second connecting edge defines at least a portion of a leg opening" — "wherein, when in use, the second connecting edge defines at least a portion of a leg opening." Kimberly-Clark Worldwide, Inc. v. First Quality Baby Products, LLC, et al., 2010 U.S. Dist. LEXIS 77063 (M.D. Pa., Jul. 29, 2010). \[1085\]


"said frontal surface defining a lower vertical portion normal to said bottom" — "the frontal surface has a lower vertical portion which is normal to (i.e., abuts to form a right angle with) the bottom surface." Allan Block Corp. v. County Materials Corp., et al., 502 F. Supp. 2d 845 (D. Minn. 2007). \[1087\]

"said first end cap defining an air inlet aperture" — "the Court declines to construe this phrase." Donaldson Co., Inc. v. Baldwin Filters, Inc., 481 F. Supp. 2d 974 (D. Minn. 2007). \[1088\]

"a second, larger wall thickness defining the head" — "the wall thickness of the head is thicker than the wall thickness of the stem; the thicker wall defines the head as distinct from the stem." Smith & Nephew, Inc. v. Synthes (U.S.A.), et al., 2005 U.S. Dist. LEXIS 34896 (W.D. Tenn., Aug. 26, 2005). \[1089\]

"deform" — "is used broadly to include both in-plane and out-of-plane changes to the substrate." Leggett & Platt, Inc., et al. v. Vutek, Inc., 2006 U.S. Dist. LEXIS 33383 (E.D. Mo., May 25, 2006). \[1090\] "I conclude that the ordinary meaning of 'deform' to one of ordinary skill in the art only includes those changes in a substrate which degrade print quality such that the print is unacceptable for its intended purpose." Id. \[1091\] "Vutek contends that an additional limitation should be included in the construction of 'deform' which would provide that 'deformation must be determined without use of a vacuum or other mechanical restraint to control deformation.' ... I conclude that a person of ordinary skill the art would not interpret the '518 Patent to preclude the use of a vacuum when determining whether a deformation has occurred." Id. \[1092\]
"deformable base" — "a portion of a syringe that is made of a material that can move down around a needle head when pressure is applied against it, that substantially houses, matingly engages or locks a portion of a syringe needle head, and that forms a liquid-tight seal between the needle and the syringe barrel." Syringe Development Partners L.L.C., et al. v. New Medical Technology, Inc., et al., 2001 U.S. Dist. LEXIS 2843 (S.D. Ind., Feb. 9, 2001).


"degrade"; "degradability" — "are most synonymous with 'partially disintegrate' or 'partially dissolve,' and their adjective forms, but also encompass, e.g., dissolve and disintegrate. They cannot be taken to mean what was demonstrated to this Court to be the bursting of a closed envelope via the eruption of inner forces." Multiform Desiccants, Inc. v. Medzam, Ltd., 1995 U.S. Dist. LEXIS 18548 (W.D.N.Y., Dec. 7, 1995). "We conclude that the meaning of 'degradable' ... is limited to the dissolution/degradation of the envelope as described in the specification. The [district] court correctly excluded the meaning whereby the envelope 'degrades' by bursting instead of dissolving, and correctly held that 'degradable' means that there must be at least partial dissolution of the envelope." Id., 133 F.3d 1473 (Fed. Cir. 1998).


"at least one controlled degree of freedom" — "the robotic manipulator has at least one, but may have more than one, controlled degree of freedom. Usually the number of degrees of freedom the robot manipulator has corresponds to the number of independent motorized joints the robot manipulator has." Intuitive Surgical, Inc., et al. v. Computer Motion, Inc., 2002 U.S. Dist. LEXIS 14752 (D. Del., Jul. 12, 2002).


"delivering fluid pressure through the pusher such that the implant detaches from the pusher by the fluid pressure" — "plain and ordinary meaning applies, no specific construction by the Court." Boston Scientific Corp. v. Cordis Corp., 422 F. Supp. 2d 1102 (N.D. Cal. 2006).

"density" — "a value that represents the quantity of something per unit of measure, especially per unit of length, area, or volume." Rosen's, Inc., et al. v. Van Diest Supply Co., et al., 2004 U.S. Dist. LEXIS 5435 (D. Minn., Mar. 30, 2004).1106

"barrier means depending vertically downwardly from the top of said tank" — "the barrier means hangs vertically downward from, and is attached to, the top of the tank." Highland Tank & Mfg. Co. v. PS International, Inc., 2010 U.S. Dist. LEXIS 99423 (W.D. Pa., Sep. 21, 2010).1107

"deploying the filter"; "filter ... deployment capabilities" — "expanding the filter from a smaller collapsed size to a larger open size"; "the ability to have the filter expand from a smaller collapsed size to a larger open size." Boston Scientific SciMed, Inc., et al. v. ev3 Inc., 502 F. Supp. 2d 931 (D. Minn. 2007).1108

"depression means"; "depression"; "indentation" — "although claims 25, 41 and 45 omit reference as to how the depression is formed, a review of both the specification and the figures depicting the panty make clear that the depression is formed by creating a trough within the absorbent layer itself." Solomon v. Kimberly-Clark Corp., 1997 U.S. Dist. LEXIS 23312 (D. Ariz., Jul. 17, 1997).1109 "[W]e agree with the district court that the term 'depression' as used in the specification is formed by surrounding a region of substantially thinner material with a region of thicker material." Id., 1998 U.S. App. LEXIS 10416 (Fed. Cir., May 26, 1998) (unpublished).1110


"said load locks having a depth sufficient to anchor a structure positioned and supported in the cargo bed" — "contains no height limitation referenced to the height of the sidewall. Instead, claim 32 keys the load lock to the depth 'sufficient to anchor the structure.' Therefore, the district court erred by reading the height limitation from claim 1 into claim 32." York Products, Inc. v. Central Tractor Farm & Family Center, et al., 99 F.3d 1568 (Fed. Cir. 1996).1113

"dermis" — "the sensitive connective tissue layer of the skin located below the epidermis, containing nerve endings, sweat and sebaceous glands, and blood and lymph vessels." Naturopathic Labs. International, Inc. v. Dermal Research Laboratories, Inc., 415 F. Supp. 2d 1007 (W.D. Mo. 2006).1114

"outer surface designed and dimensioned to look like natural mulch selected from the group consisting of pea gravel, wood chips, and tree bark" — "having the size and outer surface texture of pea gravel (a smooth surface with a few rough edges, as in figure 2), wood chips (a surface with only a few ridges), or tree bark (a rough surface with numerous ridges and valleys of differing heights and depths, as in figure 1), but not a combination of any of the three." Green Edge Enterprises, LLC v. Rubber Mulch Etc., LLC, et al., 2007 U.S. Dist. LEXIS 38799 (E.D. Mo., May 29, 2007).1115

"a plurality of radioactive solid particles placed at predetermined locations within the inner spatial volume to provide a desired composite radiation profile" — "no construction needed." Xoft, Inc. v. Cytex Corp., et al., 2007 U.S. Dist. LEXIS 34468 (N.D. Cal., April 27, 2007) 1116
"desired prescriptive correction" — "should be interpreted according to its ordinary meaning to describe that the 'correction' that is 'desired' relates to a doctor's prescription for improving a patient's visual acuity." Koepnick Medical & Education Research Foundation, L.L.C. v. Alcon Laboratories, Inc., et al., 347 F. Supp. 2d 731 (D. Ariz. 2004).\textsuperscript{1117}

"desired shape of the expandable surface element" — "no construction necessary." Xoft, Inc. v. Cytyc Corp., et al., 2007 U.S. Dist. LEXIS 34468 (N.D. Cal., April 27, 2007).\textsuperscript{1116}

"the soft padding member including a material formed from a soft substance presenting a soft surface along at least a portion of said inside of the diaper waistband portion despite said plastic layer edge" — "we interpret 'despite said plastic layer edge' to mean that the plastic layer edge would be otherwise more exposed to the wearer's skin but for the padding member there between." Arquest, Inc. v. Tracy, 2002 U.S. Dist. LEXIS 23412 (N.D. Ill., Dec. 4, 2002).\textsuperscript{1119}

"no destructive lesion" — "no ruinous change to the structure of tissue on a disc." Smith & Nephew, Inc. v. Arthrocare Corp., 2004 U.S. Dist. LEXIS 31057 (W.D. Tenn. 2004).\textsuperscript{1120}

"destructive thermal stresses" — "forces, induced by heat, which have a tendency to destroy, or ruin the structure of, a body." Dow Chemical Co. v. Mee Industries, et al., 264 F. Supp. 2d 1018 (M.D. Fla. 2002).\textsuperscript{1121}

"said retainer being detachably cooperative with the tabs to rotate the disc and a tie rod engaged therewith" — "rotation of the retainer and the tabs can result in separation or disengagement or it can result in rotation of the disc and a tie rod that is interlocked with the disc." Lisle Corp. v. A.J. Manufacturing Co., 2003 U.S. Dist. LEXIS 10744 (N.D. Ill., Jun. 19, 2003).\textsuperscript{1123} "The Court, sua sponte, reconsidered its claim construction and enters the following amended construction of the term 'said retainer being detachably cooperative with the tabs to rotate the disc and a tie rod engaged therewith' to mean: Rotation of the retainer can result in separation or disengagement or it can result in rotation of the disc and a tie rod that is interlocked with the disc." Id., 289 F. Supp. 2d 1048 (N.D. Ill. 2003).\textsuperscript{1124} "Given this disclosure, the meaning of the disputed claim limitation becomes apparent: the wrench disc is detachable from the body of the tool, but when not detached, the tabs of the wrench disc and the retainer work together to rotate the wrench disc and the tie rod that is interlocked with the wrench disc." Id., 398 F.3d 1306 (Fed. Cir. 2005).\textsuperscript{1124}

"detachably non-rotatable securing each of said magnet members on said tool body" — "each magnet is secured to the tool body in a fashion that prevents it from being able to rotate except with the tool as the tool rotates, but that allows the individual magnet to be removed and replaced, if damaged." Rattler Tools, Inc. v. Bilco Tools, Inc., et al., 2007 U.S. Dist. LEXIS 49124 (E.D. La., July 6, 2007).\textsuperscript{1125}

"detector" — "refers to a device for detecting the presence of electromagnetic waves and is not confined to the detection component of a laser interferometer." Applied Material, Inc. v. Tokyo Seimitsu, Co., 446 F. Supp. 2d 525 (E.D. Va. 2006).\textsuperscript{1126}

"detector operable to detect a fluorescence optical signal" — "is perfectly clear on its face." Applera Corp. v. Stratagene Corp., 2007 U.S. Dist. LEXIS 17154 (D. Conn., Mar. 9, 2007).\textsuperscript{1127}

"detent" — "a mechanical stop or catch." A&E Products Group, L.P. v. Mainetti USA Inc., et al., 2002 U.S. Dist. LEXIS 24280 (S.D.N.Y., Dec. 28, 2002).\textsuperscript{1128}
"detent" — "a separate spring-biased element such as a ball, which is movable from one position to another and that goes into a mating hole, slot or ridge in the blocking element and is capable of being driven by the solenoid into a position where it can contact the detent engaging member on the cam." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997).

"detent engaging member" — "a member located on the cam wherein rotation of the dial drives the member against a detent which has been moved to the detented position." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997).


"a cooperating detent mechanism defining the conjoint rotation of said shafts in predetermined intervals" — "is functional and therefore governed by 35 U.S.C. § 112, P6." Greenberg v. Ethicon Endo-Surgery, Inc., 1995 U.S. Dist. LEXIS 22411 (E.D.N.Y., Sept. 25, 1995). "Because we conclude that the district court erred by holding that the 'detent mechanism' element of claim 1 of the '501 patent is governed by the rule of construction set forth in section 112(6), we vacate the district court's order granting summary judgment to Ethicon and remand the case for further proceedings." Id., 91 F.3d 1580 (Fed. Cir. 1996).

"detent plate structure defining a plurality of gear positions" — "a structure of irregular notches positioned on a lower edge of the center flange for engagement by the shift lever that correspond to the PRNDL shift positions of an automatic transmission. The structure can be molded as part of the rear section of the center flange or a separate plate attached to the center flange." Grand Haven Stamped Products Co. v. Dura Automotive System, Inc., 2004 U.S. Dist. LEXIS 31087 (W.D. Mich., Jun. 28, 2004).

"detented position" — "the location that the detent extends, projects or protrudes to by the solenoid by entry of the combination so that the detent can be contacted by the detent engaging member on the cam." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997).


"detent tooth that protrudes from the long side of the support element" — "a protrusion, one surface of which defines a detent shoulder." Robert Bosch, LLC. v. Pylon Manufacturing Corp., 2010 U.S. Dist. LEXIS 30451 (D. Del., Mar. 30, 2010).

"determining and generating motion instructions that are adjusted to compensate for lead or taper errors" — "Creating movement directives that compensate for lead and taper errors. Adjusting does not require readjusting after the motion control commands have been determined and generated (e.g. after the program is built and sent for execution)." Omax Corp. v. Flow International Corp., 2006 U.S. Dist. LEXIS 81914 (W.D. Wash., Nov. 7, 2006).
"determining the glucose concentration in the sample" — "The claim requires determining the glucose concentration of the blood sample; the blood sample can have only one glucose concentration. The intermediate measurements that Lifescan seeks to encompass within 'glucose concentration' are not measurements of the glucose in the sample; they are measurements of the rate of reaction of the glucose in the sample with the chemicals found on the testing strip." Home Diagnostics Inc. v. Lifescan, Inc., 37 Fed. Appx. 516 (Fed. Cir., May 29, 2002) (unpublished).1139

"device" — "a device having the limitations called out by the body of the claim." Saffran v. Johnson & Johnson, et al., 2010 U.S. Dist. LEXIS 98537 (E.D. Tex., Sep. 20, 2010).1140


"device" — "as used in the preamble of claim 23, does not limit the scope of claim 23." Swimways Corp. v. Overbreak, LLC, 354 F. Supp. 2d 637 (E.D. Va. 2005).1142

"device acting between said stylus holder and said housing for constraining said stylus holder ... the device including a seating and at least one constraining spring distinct from the biasing ... means ... and providing lateral constraint from the axial biasing" — "mean[s] (1) a separate mechanical device ('a device acting between') located between the stylus holder and housing, (2) the device having a 'seating,' and (3) the device having at least one constraining 'spring' distinct from the bias spring to constrain the stylus holder against lateral movement." Renishaw plc v. Marposs Societa' per Azioni, et al., 974 F. Supp. 1056 (E.D. Mich. 1997).1143

"a device for the amusement of pet animals free and untethered to the device" — "a device for the amusement of an animal kept for pleasure or companionship, rather than solely for utility, in which the animal is free and untethered to the device." Robinson v. Advanced Decoy Research, Inc., et al., 519 F. Supp. 2d 1087 (S.D. Cal. 2007).1144

"low and high liquid level responsive switching devices" — "is not limited to two physically separate liquid level responsive switching devices." Real v. Bunn-O-Matic Corp., 100 F. Supp. 2d 844 (N.D. Ill. 2000).1145


"dial" — "cannot be construed to cover knobs lacking divisions, and we affirm the court's construction of this limitation." Masco Corp. v. United States, et al., 303 F.3d 1316 (Fed. Cir. 2002).1147

"diameter" — "a straight line passing through the center of a circle and meeting the circumference or surface at each end." ICU Medical, Inc. v. B. Braun Medical, Inc., 344 F. Supp. 2d 663 (N.D. Cal. 2004).1148

"diaphragm disposed in the body" — "We agree with Cannon that the district court improperly added the limitation 'entirely' in its interpretation of the claim limitation 'diaphragm disposed in the body.'" Cannon Rubber Ltd., et al. v. First Years Inc., 163 Fed. Appx. 870 (Fed. Cir., Dec. 28, 2005) (unpublished).1149

"a second plastic material having different characteristics than the first plastic material" — "the prosecution history does not disavow the broad scope of the claim language and specification that permit any difference in characteristics, including color. ... The claim thus excludes no specific differences in characteristics, and in particular differences in color, in the molded materials." Sorensen, et al. v. U.S. International Trade Commission, et al., 427 F.3d 1375 (Fed. Cir. 2005). \[1151\]

"different from"; "different than" — "not equal to." Dayco Products, Inc. v. Total Containment, Inc., 258 F.3d 1317 (Fed. Cir. 2001). \[1152\]

"performing a second step of cleaning said coins, different from said first step of cleaning, while said coins are in said second location" — "the only limitations upon the construction of this claim is that (1) separation of liquid or debris must take place while the coins are in the second location of the apparatus but before the coins reach the sorter; (2) separation must occur in a manner that will prevent damage to the machine; and (3) the method of cleaning must be different from the first step of cleaning." Coinstar, Inc. v. CoinBank Automated Systems, Inc., 998 F. Supp. 1109 (N.D. Cal. 1998). \[1153\]

"arms of different lengths"; "arms have dissimilar lengths"; "the at least one and the second arm have dissimilar lengths" — "arms which have different ending points on the axial dimension." B. Braun Melsungen AG, et al. v. Terumo Medical Corporation, et al., 2010 U.S. Dist. LEXIS 54480 (D. Del., Jun. 3, 2010). \[1154\]

"a plurality of different sets of elements" — "two or more sets of elements where no two sets are the same." Sta-Rite Industries, et al. v. ITT Corp., et al., 2010 U.S. Dist. LEXIS 10790 (E.D. Tex., Jan. 19, 2010). \[1155\]

"different size and shape" — "not the same size and shape." Depuy, Inc. v. Zimmer Holdings, Inc., 276 F. Supp. 2d 910 (N.D. Ill. 2003). \[1156\]

"a second differential expansion portion adjacent said limited expansion portion expandable by said initial injected fluid with the limited expansion portion above the collapsed implantation position" — "another portion of the cover, joined to the limited expansion portion either directly or through a tapered portion, capable of expanding differently from but expandable with the limited expansion portion by the initial injected fluid above the collapsed position." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006). \[1157\]


"diluting and tumbling again after the first period of time" — "does not require the tumbling to stop between steps. The claim includes a scenario where clothes continuously tumble without interruption." Whirlpool Corp., et al. v. LG Electronics, Inc., et al., 423 F. Supp. 2d 730 (W.D. Mich. 2004). \[1159\]

"dimensionally stable" — "A flexible polymeric substrate whose dimensional stability has been controlled through a special annealing process, namely an annealing process that: (1) is in addition and subsequent to the heat treating steps associated with manufacturing the polymeric film, (2) is not the process of bonding the photosensitive elastomer layer to the polymeric substrate, and (3) comprises: (i) heating the substrate to a temperature above its glass transition temperature but below its melting temperature and at or greater than the temperature to which the substrate is later subjected during thermal development, (ii) at tensions of less than 200 psi, and (iii) for a time greater than the time required to bring the film to the annealing temperature, such that a specially annealed substrate has less thermally induced distortion than a non-specially annealed substrate."  

"a dimensionally stable base" — "a lower or bottom part that is resistant to sudden change in width or length."  

"each said opening being dimensioned for the passage therethrough of a main body portion of a second identical tie down strap for the redirection of the second identical tie down strap when the elastic main body portion defining said opening is elongated" — "mean[s] that upon elongation of the first tie down strap, the plurality of openings in the strap become dimensioned for the passage therethrough of a main body portion of a second identical tie down strap, thus permitting redirection of the second identical tie down strap."  
Precision Links, Inc. v. USA Products Group, et al., 2009 U.S. Dist. LEXIS 86760 (W.D.N.C., Sep. 22, 2009).

"a second end formed with tapered external threads dimensioned such that one such joint may be sealingly connected directly with another such joint" — "is not a means-plus-function limitation."  

"dipping" — "association by immersion until saturated."  

"direct" — "is not a technical term, and its meaning in the context of the patent claim is 'without engaging any intervening gears.'"  

"direct fracture of metal of said hinge segment in a direction away from said second end of the score" — "the second score is near the second end of the primary score and near the hinge segment to provide a path for a fracture of the hinge segment along the second score."  

"directional flow" — "the orientation and guidance in a particular direction."  

"directly" — "in a direct line or straight' above and 'in immediate proximity."  

"directly attaching" — "directly' requires that the brake chamber and the S-cam bearing be attached 'without any intervening space.'"  
"directly behind" — "nothing in the claims or the specification of the '057 patent requires that the second plate be in a contacting or an abutting relationship with the rear end of the front plate." Sandt Technology, Ltd. v. Resco Metal and Plastics Corp., et al., 264 F.3d 1344 (Fed. Cir. 2001).\textsuperscript{1171}

"directly between said first and second plastic core sheets" — "'directly' [] mean[s] 'in immediate physical contact." Leighton Technologies LLC v. Oberthur Card Systems, S.A., 358 F. Supp. 2d 361 (S.D.N.Y. 2005).\textsuperscript{1172}

"directly conducts cooling air" — "transmits cooling air without substantial contamination by internal sources of heat." Seiko Epson Corp., et al. v. Coretronic Corp., et al., 2010 U.S. App. LEXIS 10270 (Fed. Cir., May 20, 2010) (nonprecedential).\textsuperscript{1173}

"a toy object secured to the opposite end of said connecting line for suspension directly downwardly from the free end of said elongate member" — "is readily understood. Thus, the term shall not be construed." Robinson v. Advanced Decoy Research, Inc., et al., 519 F. Supp. 2d 1087 (S.D. Cal. 2007).\textsuperscript{1174}


"discharge conduit" — "the conduit through which water is discharged from the cleaner." Aqua Products, Inc. v. Intex Recreation Corp., 2007 U.S. Dist. LEXIS 41496 (S.D.N.Y., June 5, 2007).\textsuperscript{1176}

"discrete region(s)" — "finite areas that do not overlap." Eppendorf AG, et al. v. Nanosphere Inc., 2010 U.S. Dist. LEXIS 69072 (D. Del., Jul. 12, 2010).\textsuperscript{1177}

"discrete sites" — "sites that do not touch another site." Illumina, Inc. v. Affymetrix, Inc., 2010 U.S. Dist. LEXIS 70549 (W.D. Wis., Jul. 14, 2010).\textsuperscript{1178}

"discrete support elements" — "support elements that are individually distinct, and which are separated from each other, though they may be connected at the top, the bottom, or both." Nike, Inc. v. Adidas America, Inc., et al., 2006 U.S. Dist. LEXIS 91011 (E.D. Tex., Dec. 18, 2006).\textsuperscript{1179}

"plurality of discrete switches" — "two or more distinct and separate manual or mechanically actuated devices for making, breaking, or changing the connections in an electric circuit." NCR Corp. v. Palm, Inc., et al., 217 F. Supp. 2d 491 (D. Del. 2002).\textsuperscript{1180}

"dislodge" — "to be moved from a settled position." Retractable Technologies v. New Medical Technologies, 2004 U.S. Dist. LEXIS 3855 (E.D. Tex., Mar. 1, 2004).\textsuperscript{1181}

"dispensing" — "there is nothing in the record to suggest that a person of ordinary skill in the art would interpret the disclosure and claims of the '861 patent to mean that the term 'dispensing' is limited to 'direct dispensing.'" Ventana Medical Systems, Inc. v. Biogenex Laboratories, Inc., 473 F.3d 1173 (Fed. Cir. 2006).\textsuperscript{1182} "I would affirm the district court's claim construction." Id. (Lourie, J., dissenting).\textsuperscript{1183}

"dispensing protocol" — "a plan or regimen for the delivery of medication." Medtronic MiniMed Inc. v. Smiths Medical MD Inc., 2005 U.S. Dist. LEXIS 10583 (D. Del., Jun. 1, 2005).\textsuperscript{1184}

"dispersed in all directions" — "light is reflected from the coating at 'as many different angles ... as there are [glitter] particles.'" Nichols, et al. v. Strike King Lure Co., et al., 2000 U.S. Dist. LEXIS 15781 (N.D. Tex., Oct. 25, 2000).\textsuperscript{1185}
"displaceable" — "mean[s] 'that can be displaced,' i.e. 'that can be put out of place.'" Millipore Corp. v. W.L. Gore & Associates, Inc., 2010 U.S. Dist. LEXIS 99704 (D. Mass., Sep. 20, 2010). \[1186\]

"displacement"; "displacing"; "displaceable" — "the act of sliding movably; sliding movably; having the capability of sliding movably." Alloc, Inc., et al. v. Pergo, LLC, 2009 U.S. Dist. LEXIS 62881 (E.D. Wis., Jul. 2, 2009). \[1187\]

"displacing said corresponding contact surfaces relatively, in a direction tangential to said corresponding contact surfaces if said testing determines non-alignment and non-existence of correct electrical contact, and stopping the relative displacement of corresponding contact surfaces when said testing determines said alignment and existence of correct electrical contact" — "We agree with the Commission that 'displacing ... in a direction tangential' includes only relative movement of the corresponding contact surfaces when those surfaces are in contact. ... We also agree with the Commission that 'stopping the relative displacement' requires two things: the stopping must (1) result from a positive test for correct alignment and electrical contact and (2) occur nearly instantaneously after a successful test." Innovatron S.A. v. International Trade Commission, et al., 194 F.3d 1332 (Fed. Cir. 1999). \[1188\]

"display case"; "case" — "the portion of the housing onto which the flat-panel display device is arranged and attached." LG Philips LCD Co., Ltd. v. Tatung Co., et al., 2007 U.S. Dist. LEXIS 43557 (D. Del., June 15, 2007). \[1189\]


"said first and said second ends disposed a variable longitudinal distance from each other" — "the flexible compensating member or flexible link is positioned so that, upon expansion of the stent, the distance between its two ends changes along the stent's longitudinal axis." Scimed Life Systems, Inc., et al. v. Johnson & Johnson, 225 F. Supp. 2d 422 (D. Del. 2002). \[1191\]


"window disposed adjacent to the hole formed through the platen" — "encompasses windows that are both in and near the hole of the platen." Applied Material, Inc. v. Tokyo Seimitsu, Co., 446 F. Supp. 2d 525 (E.D. Va. 2006). \[1193\]

"disposed along the housing longitudinal axis" — "to be placed through, on, over, or continuously beside or on a line or course parallel and close to the lengthwise centerline of the housing." Advanced Medical Optics, Inc. v. Alcon Inc., et al., 361 F. Supp. 2d 370 (D. Del. 2005). \[1194\]

"disposed and adapted to cooperate so that upon expansion of said stent said first loops and said second loops change shape to compensate for the tendency of said stent to foreshorten when said stent is expanded" — "the two sets of loops must be oriented in different directions, one a generally vertical direction and one a generally horizontal or longitudinal direction. This limitation encompasses growth of one of the sets of loops in the longitudinal direction that is caused by expansion of the stent by a balloon or other mechanical means." Scimed Life Systems, Inc., et al. v. Johnson & Johnson, 225 F. Supp. 2d 422 (D. Del. 2002). \[1195\]
"disposed between" — "arranged or placed in the space that separates two structures or points."  

"disposed between" — "positioned in the space that separates structural elements."  

"inserting the preassembly into the tube such that the preassembly is disposed centrally relative to the longitudinal axis of the tube" — "introducing or placing the preassembly into the tubular body such that the preassembly includes the lengthwise middle point of the tube."  

"disposed circumferentially" — "does not describe an object that entirely fills the interior of a defined area even if it also occupies the perimeter portion."  
_Swimways Corp. v. Overbreak, LLC_, 354 F. Supp. 2d 637 (E.D. Va. 2005).\[1199\]

"disposed exteriorly about at least a portion of the perimeter of the bottom portion" — "These are non-technical words whose meanings to one skilled in the art are readily apparent: 'disposed' means 'to put in place,' and 'exteriorly' means external or situated at the outer surface. See Webster's Third New International Dictionary (1986). Thus, the term 'disposed exteriorly' explains that the bolster is positioned alongside the surface of the outer edge of the bottom cushion. 'Disposed exteriorly' is not a specific function; rather, it is a description of the location of a structure -- the bolster -- relative to other structures."  

"disposed generally opposite" — "the first and second loops, defined as horizontally-facing structural elements, are positioned across from each other and approximately aligned with each other along the longitudinal axis of the stent."  

"a thumb-associable cluster of input keys disposed generally over three mutually intersecting surfaces" — "the thumb key clusters must be spread over three distinct and separate surfaces, with each surface sharing an intersection with the other two surfaces."  

"smoking pipe means removably disposed in said first cavity" — "some part of the smoking pipe must be disposed within the first cavity so as to hold it in place there."  

"disposed in a known geometric orientation" — "arranged with respect to the frame of reference of the linear accelerator."  

"generating at least one two-dimensional ultrasound image of the lesion in the patient's body, with the ultrasound image generating means being disposed in a known geometric orientation for each ultrasound image generated" — "placing a conventional, commercially available ultrasound probe that generates a two-dimensional ultrasound image in a known geometric orientation when each ultrasound image is generated of the lesion in the patient's body."  
"filter means disposed in said third wall for filtering soil particles from said soil-laden portion of said wash liquid" — "this Court cannot punish Whirlpool's patent writer for poor drafting by disregarding what is actually disclosed. Instead it reads the language (strained though this may seem) as calling for the filter means 'disposed' (that is, positioned) in the third wall only in the sense that the cover is 'disposed over and secured to' the third wall." Maytag Corp. v. Whirlpool Corp., 95 F. Supp. 2d 888 (N.D. Ill. 2000).


"the lower side of the vibrating disc disposed in uniformly spaced relation to the inner surface to create a gap" — "the lower side of the vibrating disc disposed in uniformly spaced relation to the surface of the bottom wall to create a gap." LG Electronics U.S.A., Inc., et al. v. Whirlpool Corp., 2007 U.S. Dist. LEXIS 24056 (D.N.J., April 2, 2007).


"disposed on opposite sides of said chamber" — "placed across the chamber from one another on the outer portion of the chamber." Advanced Medical Optics, Inc. v. Alcon Inc., et al., 361 F. Supp. 2d 370 (D. Del. 2005).


"disposed over a portion" — "disposed over at least one portion." Crystal Semiconductor Corp. v. Tritech Microelectronics International, Inc., et al., 246 F.3d 1336 (Fed. Cir. 2001).

"a second opening disposed remote from said first opening" — "a second open space in the surface portion of the second container, bounded on all sides, that is located a sufficient distance away from the first opening to ensure that evaporation and the accumulation of salt and minerals do not occur adjacent to the growing plant." Laminations, Inc. v. Roma Direct Marketing LLC, et al., 516 F. Supp. 2d 404 (M.D. Pa. 2007).


"disposed within a void of a main panel of said brim" — "located within a cut-out, groove, or other opening of the main panel of the brim." totes Isotoner Corp. v. Panther Vision, LLC, 2010 U.S. Dist. LEXIS 14 (N.D. Ill., Jan. 4, 2010).
"disposing a light influencing material in said at least one opening" — "placing a light influencing material in at least one opening." Advanced Technology Incubator, Inc. v. Sharp Corp., et al., 2009 U.S. Dist. LEXIS 28456 (E.D. Tex., Mar. 11, 2009).

"disposing on the treatment table a means for generating an ultrasound image" — "arranging the means for generating an ultrasound image in physical contact with and supported by the treatment table." NOMOS Corp. v. BrainLAB, Inc., et al., 195 F. Supp. 2d 606 (D. Del. 2002).


[i] "distal end"; [ii] "proximal end" — [i] "the end situated away from the point of origin or attachment"; [ii] "the end situated toward the point of origin or attachment." Arthrocare Corp. v. Smith & Nephew, Inc., 2003 U.S. Dist. LEXIS 5976 (D. Del., Apr. 9, 2003).

"distal end portion" — "the farthest point from the proximal end portion, and may include a bladder inflatable from a contracted condition to an expandable condition." General Surgical Innovations, Inc. v. Origin Medsystems, Inc., 1998 U.S. Dist. LEXIS 22958 (N.D. Cal., May 15, 1998).

"said arm links having a first portion coupled to a corresponding foot link and a second distal portion coupled to said frame" — "said guide comprises arm links, said arm links having a first portion coupled to a corresponding foot link and a second portion, which is further away from said foot links, coupled to said frame." Precor Inc., et al. v. Fitness Quest, Inc., et al., 2006 U.S. Dist. LEXIS 63244 (W.D. Wash., Aug. 23, 2006).


"distal section" — "[is] sufficiently definite that those skilled in the art would understand what is claimed when the claim is read in light of the specification." Advanced Cardiovascular Systems, Inc. v. SciMed Life Systems, 96 F. Supp. 2d 1006 (N.D. Cal. 2000).

"the distance between the two adjacent disks"; "the distance between each adjacent disk" — "the linear distance of the space between the two cutting disks measured parallel to the shaft." Fellowes, Inc. v. Michilin Prosperity Co., Ltd., et al., 2006 U.S. Dist. LEXIS 90648 (E.D. Va., Dec. 15, 2006).

"distance sufficient" — "is not limited to the particular specifications of the IBM 3800 printer. We first note that the plain language of claim 1 recites a 'printer' generally, and nowhere mentions the IBM 3800 printer." Moore U.S.A., Inc. v. Standard Register Co., 229 F.3d 1091 (Fed. Cir. 2000).
"a distance sufficient to insure that the adhesive does not interfere with rollers" — "a distance sufficient so that the adhesive does not interfere with the rollers of the printer during processing. This distance must be, at minimum, greater than the impression area caused by the rollers of the particular printer used." Moore North America, Inc. v. Poser Business Forms, Inc., 2001 U.S. Dist. LEXIS 9037 (D. Del., Feb. 14, 2001).1230

"distensibility" — "a value calculated according to the equation [shown in the ’364 patent at 4:15] where measurements are taken at or about normal human body temperature." Medtronic Vascular Inc., et al. v. Boston Scientific Corp., et al., 526 F. Supp. 2d 613 (E.D. Tex. 2007).1231

"distributed manufacturing plant" — "a factory that makes a variety of products using machines in workstations throughout the plant." Information Technology Innovation, LLC v. Motorola, Inc., et al., 391 F. Supp. 2d 719 (N.D. Ill. 2005).1232

"whereby an air flow into said inlet between said two fin structures is divided, with a respective portion of said air flow being directed through each of said two fin structures" — "whereby an air flow into said inlet is divided, such that respective portions of the air flow are directed through separate fin structures." ICHL, LLC v. NEC Corp. of America, et al., 2010 U.S. Dist. LEXIS 38942 (E.D. Tex., Apr. 20, 2010).1233

"a filter element dividing said chamber into an inlet side and an outlet side, and providing means for preventing substantially all undesired gas in said fuel from passing through said outlet, said preventing means including said filter element separating said inlet side from said outlet side and having substantially no openings having a greater dimension than about 25 microns passing from said inlet side to said outlet side, said return line opening communicating with said chamber on said inlet side to receive air and fuel therefrom" — "A filter element divides the chamber into an inlet side and an outlet side, and provides a means for preventing substantially all undesired gas in the fuel from passing through the outlet. The filter element which separates the inlet side from the outlet side has substantially no openings greater than 25 microns. A return line opening is in communication with the chamber in the inlet side to receive air and fuel therefrom. 'Communication' means that the air and fuel can transfer from the inlet side to the return line opening." Ekstam v. Ekstam, 2006 U.S. Dist. LEXIS 12937 (E.D. Mo., March 7, 2006).1234

"dome-shaped region" — "The direction of the dome, either in reference to the interior of the cup or the direction of flow, is an additional limitation which would typically be described separately and is not inherent in the phrase dome-shaped region in any ordinary sense." Haberman v. Playtex Products, Inc., 403 F. Supp. 2d 708 (W.D. Wis. 2005).1235

"the control bars are supported such that the confined shape does not change as the control bars are moved and stopped closer to or farther from each other in their respective planes to vary the area of the confined shape at each of the plurality of different positions, whereby the movement of the control bars toward and away from each other changes the opening in the bag evenly from all sides and minimizes tearing stresses" — "Reading the patent as a whole ... leaves no doubt that the predetermined shape of the apparatus' opening should not change at all." Spiroflow Systems, Inc. v. Flexicon Corp., 2007 U.S. Dist. LEXIS 62715 (W.D.N.C., Aug. 24, 2007).1236
"a double-drive mechanism interposed between and connecting the platen and frame, where the double-drive mechanism imparts at least one translational orbital movement superimposed on another movement to the platen relative to the frame"; "a first drive mechanism interconnecting the platen and the subframe for moving the platen in a first motion"; "a second drive mechanism interconnecting the subframe and the frame for moving the subframe and the platen in a second motion, where the first and second drive mechanisms superimpose the first and second motions on the platen while they move the platen" — "none of the claims at issue in this case is subject to 35 U.S.C. § 112, paragraph 6." Haney v. Timesavers, Inc., et al., 1995 U.S. App. LEXIS 2535 (Fed. Cir., Feb. 10, 1995) (unpublished).


"disposed at a downward angle with respect to [another object]"; "formed at a downward angle with respect to [another object]" — "disposed in location below and to the left or right of the other object and having a greater angle of incline than the other object." TBC Consoles, Inc. v. Forecast Consoles, Inc., 2009 U.S. Dist. LEXIS 91653 (S.D.N.Y., Sep. 28, 2009).


"a drainage device including a mechanism for removing said plug from said opening to provide communication with said chamber and thereby drain the contents of said chamber" — "is written in means-plus-function format subject to 35 U.S.C. § 112, P 6, as the limitation describes a function to be performed rather than a definite structure." Bemis Manufacturing Co., et al. v. Dornoch Medical Systems, Inc., 2000 U.S. Dist. LEXIS 21768 (E.D. Wis., Aug. 30, 2000).

"drawing out at least a portion of the ambient atmosphere" — "removing at least some of the ambient atmosphere, such as air, from said area involved in fire after it has been sealed." US Foam, Inc, et al. v. On Site Gas Systems, Inc., 2010 U.S. Dist. LEXIS 79286 (E.D. Tex., Aug. 3, 2010).

"drill list data corresponding to positions on workpieces where holes should be drilled" — "data relating to the formation of holes in desired positions on a workpiece." Precision Automation, Inc., et al. v. Technical Services, Inc., et al., 2009 U.S. Dist. LEXIS 8187 (D. Or., Feb. 2, 2009).


"drilling a stepped endosseous orifice" — "creating a hole in the bone with at least two sudden, marked changes in the slope of the wall along its length, thus forming at least one step." Nobel Biocare USA, LLC, et al. v. Blue Sky Bio, LLC, et al., 2009 U.S. Dist. LEXIS 100408 (C.D. Cal., Oct. 14, 2009). 1248


"drinking cap" — "a cap which, when screwed onto the beverage container, allows a person to drink the contents of the beverage container." Sunbeam Products, Inc. v. Hamilton Beach Brands, Inc., et al., 2010 U.S. Dist. LEXIS 85281 (E.D. Va., Aug. 19, 2010). 1250

"drinking cap having a drinking hole" — "a cap which, when screwed onto the beverage container, allows a person to drink the contents of the beverage container through a hole in the cap." Sunbeam Products, Inc. v. Hamilton Beach Brands, Inc., et al., 2010 U.S. Dist. LEXIS 85281 (E.D. Va., Aug. 19, 2010). 1251


"to drive" — "to push." Masco Corp. v. United States, et al., 303 F.3d 1316 (Fed. Cir. 2002). 1253

"drive assembly" — "an assemblage of two or more parts that act together to impart motion to the flexible cover sections and substantially parallel supporting bows from an unspecified source." Sundance, Inc. v. De Monte Fabricating, Ltd., 485 F. Supp. 2d 805 (E.D. Mich. 2007). 1254


"a drive circuit for the motor" — "portion of a machine tool that receives motor commands and electronically controls motor functions. It may or may not include one or more controllers that interpret and adjust motor commands." Omax Corp. v. Flow International Corp., 2006 U.S. Dist. LEXIS 81914 (W.D. Wash., Nov. 7, 2006). 1257

"a drive mechanism connected to [the machine's] frame for moving [the machine] in a given direction, and at a controlled speed, over the turf to be treated" — "is not a means-plus-function clause. ... An ordinary interpretation and construction of this claim therefore must include two components: (1) a drive mechanism, i.e., some form of mechanized propulsion; that is (2) connected to the machine's frame for providing this propulsion." Toro Co. v. John Deere & Co., 143 F. Supp. 2d 1122 (D. Minn. 2001). 1258

"drive motor means" — "any type of electric motor that is used to drive a fan." Papst Licensing GmbH and Co. KG v. Sunonwealth Electric Machine Industrial Co., Ltd., et al., 2004 U.S. Dist. LEXIS 4402 (N.D. Ill., Mar. 18, 2004). 1259
"drive system assembly means" mounted on said plate in order to sum reciprocating motion into continuous and fluid rotary motion, said drive system assembly means having a right pedal sprocket, a left pedal sprocket and a drive sprocket, wherein said drive sprocket is driven by either said right sprocket or said left sprocket in one direction only and said right and left sprocket are free to overrun in the opposite direction; "drive system assembly means for summing motion into continuous and fluid rotary motion, said drive system assembly means having a right pedal sprocket, a left pedal sprocket and a drive means, wherein said drive means is driven by either said right sprocket or said left sprocket in one direction only and said right and left sprocket are free to overrun in the opposite direction" — "Because the Court finds the 'right pedal sprocket,' 'the left pedal sprocket,' and the 'drive sprocket' or 'drive means' is a clause reciting predominantly structure and capable of performing entirely the recited function of summing reciprocating motion into continuous and fluid rotary motion, application of the means-plus-function analysis is inappropriate for the 'drive system assembly means.'" Stairmaster Sports/Medical Products, Inc. v. Groupe Procycle, Inc., et al., 1998 U.S. Dist. LEXIS 8228 (D. Del., May 20, 1998).

"a drive to move the mask stage and the object stage" — "components used to move the mask stage and to move the object stage." Nikon Corp., et al. v. ASM Lithography B.V., 308 F. Supp. 2d 1039 (N.D. Cal. 2004).

"first drive units"; "second drive units" — "the assemblage of components responsible for rotating the tubes around the designating axis at an angular speed \( \omega \). The assemblage does not include the tubes or vessel"; "the assemblage of components responsible for rotating the centrifugal vessel (or centrifugal unit) around the designated axis at an angular speed \( 2\omega \)." Haemonetics Corp. v. Baxter Healthcare Corp., et al., 517 F. Supp. 2d 514 (D. Mass. 2007).

"driving the elongate member to rotate and move the toy object in a path around the base member" — "the Court declines to construe this element as requiring the object to be dragged on the ground." Robinson v. Advanced Decoy Research, Inc., et al., 519 F. Supp. 2d 1087 (S.D. Cal. 2007).

"drivingly engages" — "of Claim 1, Col. 8, lines 10 and 14 refers to a chain and sprocket mechanical engagement"; "of claim 7, Col. 9, lines 32 and 37, and claim 11, Col. 11, lines 30 and 35, refers to any type of mechanical engagement between a pedal means and a pedal sprocket or one way clutch that is capable of coming into contact, interlocking, or meshing with driving force or energy." Stairmaster Sports/Medical Products, Inc. v. Groupe Procycle, Inc., et al., 1998 U.S. Dist. LEXIS 8228 (D. Del., May 20, 1998).


"drum" — "the cylindrical part on which a cable is mounted." Warn Industries, Inc. v. Ramsey Winch Co., 463 F. Supp. 2d 1181 (D. Or. 2006).

"drum assembly" — "a collection of parts, including a drum and a stator, that rotate together with respect to the housing." Warn Industries, Inc. v. Ramsey Winch Co., 463 F. Supp. 2d 1181 (D. Or. 2006).
"plurality of annular shell rings ... connected to form a generally cylindrical drum shell" — "the term 'drum shell' ... includes both the stacking and the sounding rings." Lovelett v. Peavey Electronics Corp., et al., 1996 U.S. Dist. LEXIS 15210 (S.D.N.Y., Oct. 15, 1996).1269

dry physical dimension" — "linear dimension." Hoechst Celanese Corp. v. BP Chemicals Ltd., et al., 78 F.3d 1575 (Fed. Cir. 1996).1270

"replacing said rinsing fluid with said drying vapor" — "the district court construed the claim term 'drying vapor' as 'a vapor that facilitates the removal of liquid from a surface,' wherein a 'vapor' is 'the gaseous state of a substance that, under ordinary circumstances, is usually a liquid or solid.' Additionally, the court construed the claim term 'replacing' as 'taking the place of.' ... [W]e agree with these aspects of the district court's claim construction." CFMT, Inc., et al. v. Steag Microtech, Inc., 1999 U.S. App. LEXIS 9189 (Fed. Cir., May 13, 1999) (unpublished).1271

duct" — "a conduit formed in the housing that allows gas to pass through it." Aqua-Lung America, Inc. v. American Underwater Products, Inc., et al., 2009 U.S. Dist. LEXIS 18172 (N.D. Cal., Feb. 26, 2009).1272


dunnage structure" — "a number of flexible parts held or put together in a particular way for separating and protecting the products shipped in the container." Bradford Co. v. Afco Manufacturing, et al., 2006 U.S. Dist. LEXIS 88547 (S.D. Ohio, Dec. 5, 2006).1275

durably assume a diameter at least as small as the reduced diameter achieved in the step of pre-shaping" — "assumes and retains a compressed diameter after treatment smaller than pre-treatment." Vnus Medical Technologies, Inc. v. Diomed Holdings, Inc., 2006 U.S. Dist. LEXIS 88580 (N.D. Cal., Nov. 22, 2006).1276

durably assumes a smaller size"; "durably assumes a reduced size" — "assumes and retains a compressed diameter after treatment smaller than pre-treatment." Vnus Medical Technologies, Inc. v. Diomed Holdings, Inc., 2006 U.S. Dist. LEXIS 88580 (N.D. Cal., Nov. 22, 2006).1277


the gripping member having a different durometer characteristic than the resilient grip body" — "the gripping member has a different hardness than the resilient grip body." Colgate-Palmolive Co. v. Ranir, L.L.C., 2007 U.S. Dist. LEXIS 55258 (D. Del., July 31, 2007).1279

"dynamically" — "potentially changing activity or item, such as changing under variable process conditions, as contrasted with static." Omax Corp. v. Flow International Corp., 2006 U.S. Dist. LEXIS 81914 (W.D. Wash., Nov. 7, 2006).1280

"dynamically isolated" — "the two frames are sufficiently free of transferred vibrations and reaction forces that the photolithographic machine can perform accurately." Nikon Corp., et al. v. ASM Lithography B.V., 308 F. Supp. 2d 1039 (N.D. Cal. 2004).1281

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"each" — "'each' is 'every' when the word is used as an adjective, and 'each' is 'every one' when the word is used as a pronoun." Genlyte Thomas Group LLC v. Lutron Electronics Co., Inc., 2004 U.S. Dist. LEXIS 5311 (N.D. Tex., Mar. 31, 2004).  

"each" — "The ordinary meaning of the word 'each' is 'every one of two or more considered individually or one by one.'" Medtronic, Inc., et al. v. Guidant Corp., et al., 2004 U.S. Dist. LEXIS 10020 (D. Minn., May 25, 2004).  

"each cowl for shielding one of the holes" — "for a device to literally infringe on this patent, it must have one separate cowl for each hole." Bickerstaff v. Dr. Shrink, Inc., 1998 U.S. Dist. LEXIS 14722 (W.D. Mich., Aug. 13, 1998).  "The claim language here is clear; Mr. Bickerstaff claimed a one-to-one correspondence between cowls and holes. He cannot now discard that limitation. ... The district court concluded that not only must there be a one-to-one ratio of cowls to holes, but each cowl must be 'separate.' The record does not bear out this interpretation. Nothing in the claim language or prosecution history requires that the cowls cannot be adjacent or abutting." Id., 1999 U.S. App. LEXIS 21601 (Fed. Cir., Sept. 3, 1999) (unpublished).  

"wherein each crosspiece disposed at the end sections of the two spring strips is provided with a covering cap" — "crosspieces must be located at the terminal portions of the spring strips." Robert Bosch, LLC. v. Pylon Manufacturing Corp., 2010 U.S. Dist. LEXIS 30451 (D. Del., Mar. 30, 2010).  

"each extension including a rear end having a first flange extended downward" — "each extension includes a rear end, a portion of which reaches in a downward direction relative to the remaining portions of the extension and facilitates attachment of the auxiliary frame to the primary frame." Chic Optic, Inc., et al. v. E'Lite Optik, Inc., 524 F. Supp. 2d 794 (N.D. Tex. 2007).  

"each finger-associable cluster is elongate, and said keys therewithin are distributed along the length of the cluster with respective key-actuation axes that intersect normal to different angularly disposed planes, one plane for each key, which planes intersect one another along the length of the cluster in a mixed pattern of obtuse and reflex angles" — "mean[s] that for each cluster of finger keys, the angles between the adjacent keys must alternate between an obtuse angle (between 90 and 180 degrees) and a reflex angle (greater than 180 degrees), and that for each finger there must be at least two alternating angles between three keys." Motionless Keyboard Co. v. Microsoft Corp., et al., 2007 U.S. Dist. LEXIS 43215 (D. Or., May 6, 2007).
"each key in which is arranged facially to confront, in close proximity and in parallel planar relationship, one of various different, underside, finger-expanse portions of an associated, adjacent finger" — "each key of each finger cluster must be positioned parallel and in close proximity to the tip and the underside of the adjacent finger, and that the clusters be disposed along a concave surface." Motionless Keyboard Co. v. Microsoft Corp., et al., 2007 U.S. Dist. LEXIS 43215 (D. Or., May 6, 2007). 1290

"each of said flexible links including a plurality of portions with neighboring portions having an area of inflection there between" — "the flexible links are loops." Scimed Life Systems, Inc., et al. v. Johnson & Johnson, 225 F. Supp. 2d 422 (D. Del. 2002). 1291

"each side having an extension and each extension including a rear end having a first flange extended downward" — "each side having an extension and each extension including a rear end having a portion of the extension which protrudes from the rear end thereof and facilitates attachment of the auxiliary frame to the primary frame and where such portion of the extension reaches in a downward direction relative to the remaining portions of the extension." Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc., 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003). 1292

"each stud is extended over by one of the extensions, and can support that extension to prevent the auxiliary frame from moving downward relative to the primary frame" — "at least some portion of each of the extensions reaches above and across the corresponding stud, and is capable, with or without direct contact, of maintaining the corresponding extension in position so as to keep it from falling, sinking or slipping and thus prevent the auxiliary frame from moving downward relative to the primary frame." Chic Optic, Inc., et al. v. E'Lite Optik, Inc., 524 F. Supp. 2d 794 (N.D. Tex. 2007). 1293

"each tapered side diagonally approaching one of said second parallel sides" — "nothing in the claim, or in the patent as a whole, that supports a construction other than that the tapered sides of the resultant pocket are generally straight." Ethicon Endo-Surgery v. Tyco Healthcare Group LP, 2006 U.S. Dist. LEXIS 51187 (S.D. Ohio, July 26, 2006). 1294

"each within one compartment" — "mean[s] that each heating element must lie within a compartment, but if there is more than one compartment, not every compartment must contain a heating element. The claim requires two or more heating elements and one or more compartments, and each heating element must be within a compartment. If the heater's housing contains only one chamber, all of the heating elements lie within that chamber. If the heater's housing contains more than one chamber, all the heating elements must lie within a chamber, but not within every chamber." Seitz, et al. v. Envirotech Systems Worldwide Inc., et al., 2006 U.S. Dist. LEXIS 53084 (S.D. Tex., July 31, 2006). 1295

"eccentric weight portion" — "that portion of the counterweight that contributes to the eccentric moment of the counterweight. The portion is part of the whole counterweight, but need not be a separate component piece or part." American Piledriving Equipment, Inc. v. J & G Sales, Inc., et al., 2010 U.S. Dist. LEXIS 21326 (S.D. Tex., Mar. 9, 2010). 1296

"eccentric weight portion" — "that portion of the counterweight that extends either forward or rearward from the front or back face of the gear portion such that it shifts the center of gravity radially outward from the gear's rotational axis." American Piledriving Equipment, Inc. v. Geoquip, Inc., 2009 U.S. Dist. LEXIS 115486 (E.D. Va., Dec. 11, 2009). 1297
"eccentric weight portion" — "that portion of the counterweight that creates the eccentric moment of the counterweight by having unbalanced weight offset from the axis of rotation. The eccentric weight portion has one or more inset receiving areas." American Piledriving Equipment, Inc. v. Hydraulic Power Systems, Inc., et al., 2009 U.S. Dist. LEXIS 99009 (W.D. Wash., Oct. 13, 2009).

"eccentric weight portion" — "the portion of the counterweight, being made of a first metal, that provides unbalanced weight to the counterweight with respect to the counterweight's axis of rotation, and with at least one insert-receiving area." American Piledriving Equipment, Inc. v. Equipment Corp. of America, 2009 U.S. Dist. LEXIS 96910 (W.D. Pa., Aug. 3, 2009).

"eccentric weight portion" — "the bottom portion of the counterweight, which extends forward from the front face of the gear portion, containing more weight than the top portion due to its larger mass, including at least one insert-receiving area formed therein to receive at least one solid tungsten rod." American Piledriving Equipment, Inc. v. Bay Machinery Corp., 632 F. Supp. 2d 956 (N.D. Cal. 2009).


"top substantially slanted edge" — "The term 'edge' must mean the beginning or end of the shape itself and not some invisible line that may be imagined descending from one part of the shape to the other." Rhudy, et al. v. Dish Mount Products, LLC, 2004 U.S. Dist. LEXIS 29358 (W.D. Tex., Aug. 3, 2004).

"effective cutting face backrake angle(s)"; "negative effective cutting face backrake angle"; "effective backrake angle" — "angle(s) between a line oriented perpendicular to the subterranean formation to be engaged by a cutter and the portion(s) of the cutting face of the cutter that engages the formation during drilling, measured in the direction of intended bit rotation." Reedhycalog UK, Ltd, et al. v. Baker Hughes Oilfield Operations, Inc., et al., 2007 U.S. Dist. LEXIS 76125 (E.D. Tex., Oct. 12, 2007).

"effectively occlude" — "significantly reduce the flow of blood through the treated hollow anatomical structure, including, but not limited to, full-lumen closure." Vnus Medical Technologies, Inc. v. Diomed Holdings, Inc., 2006 U.S. Dist. LEXIS 88580 (N.D. Cal., Nov. 22, 2006).

"a vent means for venting either of said chambers to atmosphere" — "the Court finds that 'either' means that either the sample chamber or the expansion chamber is capable of being vented to atmosphere depending on the embodiment." Quantachrome Corp. v. Micromeritics Instrument Corp., 37 F. Supp. 2d 1354 (S.D. Fla. 1999).

"ejecting the plastic product into said guide conduit" — "require[s] that the plastic product be expelled or otherwise driven into the substantially enclosed conduit." *In re: Turn-Key-Tech Matters*, 2002 U.S. Dist. LEXIS 25583 (C.D. Cal., Jan. 8, 2002).

"ejecting the washing machine basket from the apparatus by separating the mold core and cavity cover member and shifting the cavity sidewall members away from the mold core" — "forcing the washing machine basket from the apparatus by separating the mold core and cavity cover member and shifting the cavity sidewall members away from the mold core." *Maytag Corp. v. Electrolux Home Products, Inc.*, 411 F. Supp. 2d 1008 (N.D. Iowa 2006).

"elastic" — "describe[s] any material, other than nylon, 'capable of returning to an initial state or form after deformation.'" *Salazar v. Procter & Gamble Co.*, 2003 U.S. Dist. LEXIS 26574 (N.D. Okla., Sept. 8, 2003). "[T]his court vacates the portion of the district court's claim construction excluding nylon from falling within the scope of the 'elastic' element. This court affirms the remaining portion of the district court's claim construction that 'elastic' means 'capable of returning to an initial state or form after deformation.'" *Id.*, 414 F.3d 1342 (Fed. Cir. 2005).


"elastic means" — "those lengths of rubber-like material, sewn into the lining cloths of the warmth-retaining means, which, when the sleeping bag is in use, compress the warmth-retaining means into closer contact with the user's body, reducing the cross-sectional area of the inner cavity so that the gap between the body and the inner cloth lining sheet is reduced, but also allowing less restricted movement within the bag." *Mont-Bell Co., Ltd. v. Mountain Hardware, Inc.*, 1997 U.S. Dist. LEXIS 22424 (N.D. Cal., Jul. 9, 1997).

"elastic stress response" — "a value calculated using the equation [shown in the '364 patent at 5:8] determined by inflating a balloon to about 5 bars at or about normal human body temperature and measuring the balloon's diameter. The balloon is then inflated to a pressure of about 10 bars in about 20 seconds and held for about an additional 20 seconds at or about normal human body temperature. The balloon's diameter is then measured. The internal pressure of the balloon is then decreased to about 5 bars and the 'new' 5 bar diameter of the balloons is determined." *Medtronic Vascular Inc., et al. v. Boston Scientific Corp., et al.*, 526 F. Supp. 2d 613 (E.D. Tex. 2007).


"elastically return to a predetermined shape" — "requires a membrane that elastically returns to a predetermined shape either through its own force or through some external force." *Regents of the University of Minnesota v. AGA Medical Corp.*, 2009 U.S. Dist. LEXIS 90289 (D. Minn., Sep. 29, 2009) (emphasis in original).
"3% elasticity" — "refer[s] to the behavior exhibited by a component which, when strained by a deforming force to a length in excess of 3% of its original length, springs back by at least 3% of its original length when the force is released." CVI/Beta Ventures, Inc. v. Tura LP, et al., 905 F. Supp. 1171 (E.D.N.Y. 1995). [1319] "[T]he district court erred in its claim construction. We conclude that ... the word 'elasticity' refers to the ability of an eyeglass frame component to return completely and spontaneously to its original shape after it is subjected to stress and the stress is removed, provided that the stress to which the component is subjected does not cause the component to exceed its elastic limit. We also conclude that the percentages appearing before the word 'elasticity' ... refer to the amount of strain to which the eyeglass frame component is subjected. Thus, 'greater than 3% elasticity' ... means that a 100 centimeter rod must fully return to its original shape when stretched to some length over 103 centimeters. By the same token, 'at least 3% elasticity' ... means that the same rod must fully return to its original shape when stretched to any length under 103 centimeters." Id., 112 F.3d 1146 (Fed. Cir. 1997). [1320]


"wherein the cover is formed of an elastomer material" — "wherein the cover is formed from a substance having the elastic properties of rubber." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006). [1323]


"elastomeric material" — "a material that is able to stretch or expand without breaking, and to return to its original dimensions." Boston Scientific SciMed, Inc., et al. v. Cordis Corp., et al., 2005 U.S. Dist. LEXIS 10735 (D. Del., Jun. 3, 2005). [1325]

"elastomeric material" — "a material that behaves like an elastomer, such as synthetic rubber, which can be stretched or deformed under stress, and after release of the stress, will return to its approximate original shape." Samsung Electronics Co., Ltd. v. Tessera Technologies, Inc., 2004 U.S. Dist. LEXIS 31074 (N.D. Cal., Jan. 8, 2004). [1326]

"processing ... to form an elastomeric seal" — "the elastomeric composition is formed into a seal and the seal is cured sufficiently to develop elastomeric properties." Greene, Tweed of Delaware, Inc. v. Dupont Dow Elastomers, L.L.C., et al., 2002 U.S. Dist. LEXIS 23554 (E.D. Pa., Nov. 18, 2002). [1327]

"electrical wallbox" — "a box of a size and design generally used by the electrical industry to contain electrical switches for residential and office application." Lutron Electronics Co., Inc. v. Control4 Corp., 2009 U.S. Dist. LEXIS 3562 (D. Utah, Jan. 20, 2009). [1328]

"electrically conductive fibers" — "We are not here modifying the district court's claim construction to limit its scope to stainless steel fibers. We only modify it to exclude carbon fibers from the scope of the '879 patent claims." Honeywell International, Inc., et al. v. ITT Industries, Inc., et al., 452 F.3d 1312 (Fed. Cir. 2006). 1330


"electrically conductive layer of a polymeric, film-forming, particulate binder material" — "The construction issue concerning this limitation therefore simplifies to this: in a claim which uses 'open' language (i.e., 'comprises'), is the 'electrically conductive layer of a polymeric, film-forming, particulate binder material' limitation met where paper is present in addition to a film-forming polymer that acts as a particulate binder? The answer must be affirmative, because an 'open' claim is infringed by a material that embodies all of the claim limitations even if the material includes additional elements." Charleswater Products, Inc. v. Nevamar Corp., 1998 U.S. App. LEXIS 31011 (Fed. Cir., Dec. 10, 1998) (unpublished). 1332

"electrically coupled to the motor of the shredder mechanism" — "the on/off switch transmits an electrical signal to the shredder mechanism's motor." Fellowes, Inc. v. Michelin Prosperity Co., Ltd., et al., 2006 U.S. Dist. LEXIS 90648 (E.D. Va., Dec. 15, 2006). 1333

"electromagnetic clutch" — "must be interpreted only as a disk-type clutch that can transfer different amounts of torque from the primary output shaft to the secondary output shaft and is actuated by the magnetic attraction between a current carrying coil and an armature." BorgWarner, Inc., et al. v. New Venture Gear, Inc., 237 F. Supp. 2d 919 (N.D. Ill. 2002). 1334

"electromechanical device" — "a device which imparts mechanical movement upon application of an electrical signal, such as a solenoid, to move the link element after entry of the combination." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997). 1335

"electronic chip" — "The district court provided the jury with the following construction ...: 'Chip' is not used in whatever technical sense it may have; here, it means the same thing as an electrical component, whether it is a complex integrated circuit of several subparts or a single resistor. A resistor itself is made of two leads, case, and resistant core, at a minimum, making it a packaged electronic component.' Although we do not agree with the district court's construction, for it appears from the definition given to the jury that the district court was confusing a 'packaged electronic component' (i.e., the claimed invention as a whole) with an 'electronic chip' (i.e., an element of the claimed invention), this aspect does not appear to have been material to the result, and any error appears to have been harmless." Strattec Security Corp. v. General Automotive Specialty Co., Inc., et al., 126 F.3d 1411 (Fed. Cir. 1997). 1336

"electronic combination lock" — "must be interpreted to form a limitation of each of the claims." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997). 1337

"electronically activated"; [ii] "electronically actuated" — [i] "is used to define how the lever moving element is activated to cooperate with the moving means"; [ii] "[t]he term 'electronically' has the same meaning ... [because] claim terms must be consistent throughout the patent." *Mash-Hamilton Group v. LaGard, Inc.*, 21 F. Supp. 2d 700 (E.D. Ky. 1997).

"electronically operated lock" — "should also be interpreted as a limitation to the claim." *Mash-Hamilton Group v. LaGard, Inc.*, 21 F. Supp. 2d 700 (E.D. Ky. 1997).

"electronics means for at least reading the signals of said electricity manipulating devices"; "electronics means further for reading said at least one of said electricity manipulating devices including means for creating an On/Off signal exclusively as an On/Off switch"; "electronics means is further for reading at least one of said electricity manipulating devices exclusively as an On/Off switch"; "electronics means also is for outputting to a game console information representing the signals"; "active electronic means for interpreting the analog output of said pressure-sensitive variable-conductance sensor"; "active electronic means for at least interpreting the outputs of said pressure-sensitive variable-conductance sensor"; "active electronic means for interpreting the electrical conductivity of said sensor" — "Because the four terms that begin with 'electronics means . . .' do not recite limited and definable structure, the court concludes that they are means-plus-function limitations. ... [However,] as with 'baffle' in *Envirco*, 'active electronic' imparts structure. The three claims that include 'active electronic means' are not means-plus-function clauses." *Anascape, Ltd. v. Microsoft Corp., et al.*, 2007 U.S. Dist. LEXIS 88248 (E.D. Tex., Nov. 30, 2007).


"elevator control" — "an existing device that controls the operation of the elevator - the identical elevator control that was in place before modernization." *Inventio AG v. ThyssenKrupp Elevator Americas Corp., et al.*, 2010 U.S. Dist. LEXIS 59020 (D. Del., Jun. 14, 2010).


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"ellipse having a major diameter" — "unambiguously connotes the geometric definition of 'ellipse', a shape defined by the formula: \( x^2/a^2 + y^2/b^2 = 1. \) Bose Corp. v. JBL, Inc., 98 F. Supp. 2d 80 (D. Mass. 2000).\(^{1349}\)

"elliptical cross-sectional shape" — "mean[s] a rounded oval shape, symmetrical about both the X and Y axes." Fenton Golf Trust v. Cobra Golf, Inc., 1999 U.S. Dist. LEXIS 10627 (N.D. Ill., Jun. 29, 1999).\(^{1350}\)

"elongate" [without a modifier] — "can mean both permanent and temporary elongation." Herr-Voss Corp. v. Delta Brands, Inc., et al., 900 F. Supp. 34 (N.D. Tex. 1995).\(^{1351}\)

"an elongate handle extending generally along a handle axis" — "a grooming tool having a handle portion of greater length than width that is stretched or spread out to greater or fullest length generally along a handle axis." Furminator, Inc. v. Ontel Products Corp., et al., 429 F. Supp. 2d 1153 (E.D. Mo. 2006).\(^{1352}\)

"at least one retractable elongate member" — "The court finds no support for Ken's proposition that the claimed elongate member connotes function without structure. Means-plus-function treatment of this element is inappropriate and denied." SDS USA, Inc. v. Ken Specialities, Inc., 107 F. Supp. 2D 574 (D.N.J. 2000).\(^{1353}\)


"working the multiple strands selectively by reverse bending between the same rolls, so as to reduce and elongate the thicker strands more than the thinner strands" — "the district court erred in its claim interpretation. We hold that the term 'elongate' in the claim refers to plastic, rather than elastic, deformation." Herr-Voss Corp. v. Delta Brands, Inc., et al., 1996 U.S. App. LEXIS 29585 (Fed. Cir., Nov. 8, 1996) (unpublished).\(^{1355}\)

"an elongate, rod-like member" — "a long, slender rod-like structure." Robinson v. Advanced Decoy Research, Inc., et al., 519 F. Supp. 2d 1087 (S.D. Cal. 2007).\(^{1356}\)


"elongated magnet member" — "the actual, physical magnets themselves are elongated, rather than that they may be arranged in an elongated fashion." Rattler Tools, Inc. v. Bilco Tools, Inc., et al., 2007 U.S. Dist. LEXIS 49124 (E.D. La., July 6, 2007).\(^{1359}\)

"elongated resilient member" — "long and thin component which returns to its original shape following a deformation in shape." McHugh v. Hillerich & Bradshy Co., 2009 U.S. Dist. LEXIS 33197 (N.D. Cal., Mar. 31, 2009).\(^{1360}\)

"elongated sheet" — "does not require the presence of material that covers the entire floor but instead can encompass material that covers less than the entire floor; nor does this claim element exclude a 'panel' of material otherwise meeting the limitations of the claims." Middleton, Inc. v. Minnesota Mining and Manufacturing Co., 1998 U.S. Dist. LEXIS 19428 (N.D. Ill., Nov. 24, 1998).\(^{1361}\)
"an elongated user support" — "a central support and stabilizing member that is longer than it is wide." Fitness Quest Inc. v. J. Monti, 2007 U.S. Dist. LEXIS 60195 (N.D. Ohio, Aug. 16, 2007).1362

"embedded" — "we adopt the dictionary definition advanced by the parties and hold that 'embed' means 'to fix securely in a surrounding mass.' ... We further hold that an object is 'embedded' in a material if the object is sufficiently surrounded by the material to be bonded to it." Heidelberg Harris, Inc. v. Mitsubishi Heavy Industries, Ltd., et al., 1998 U.S. Dist. LEXIS 964 (N.D. Ill., Jan. 27, 1998).1363

"embodied in a housing" — "This phrase does not involve technical terms and can be understood through its plain and ordinary meaning. It does not require construction." SmartDisk Corp. v. Archos S.A., et al., 2006 U.S. Dist. LEXIS 85999 (E.D. Tex., Nov. 28, 2006).1364

"at least one user interface key embodied in said housing" — "at least one user interface key permanently attached to the housing." SmartDisk Corp. v. Archos S.A., et al., 2006 U.S. Dist. LEXIS 85999 (E.D. Tex., Nov. 28, 2006).1365

"at least one of which is not embodied in the housing" — "this phrase requires no construction." SmartDisk Corp. v. Archos S.A., et al., 2006 U.S. Dist. LEXIS 85999 (E.D. Tex., Nov. 28, 2006).1366

"embossed" — "a topography created on material by impressing a corresponding inverse topography on its surface." 3M Innovative Properties Co., et al. v. Avery Dennison Corp., 185 F. Supp. 2d 1031 (D. Minn. 2002).1367 "The district court also erred when it defined the term 'embossed' by imposing a limitation related to the process by which the embossed surface is made." Id., 350 F.3d 1365 (Fed. Cir. 2003).1368

"outer surface that is embossed" — "the outside surface with ridges and valleys which will give the materials a rough feel." Green Edge Enterprises, LLC v. Rubber Mulch Etc., LLC, et al., 2007 U.S. Dist. LEXIS 38799 (E.D. Mo., May 29, 2007).1369


"embossments" — "depressions or bumps that separate and form a gap between at least some of the foil layers by point contact of the embossments with adjacent layers." ATD Corp. v. Lydall, Inc., 159 F.3d 534 (Fed. Cir. 1998).1371

"emitting ... laser energy into the blood vessel through said laser emitting section of said emitting means, thereby decreasing the diameter of the blood vessel" — "require[s] the maintaining of the tip-interior surface in physical contact with the vessel wall while laser energy is emitted to decrease the diameter of the blood vessel." Diomed, Inc. v. AngioDynamics, Inc., 2005 U.S. Dist. LEXIS 6189 (D. Mass., Apr. 12, 2005).1372

"emptying the blood vessel prior to emitting said laser energy" — "emptying most, but not necessarily all of the blood from the blood vessel." Diomed, Inc. v. AngioDynamics, Inc., 2005 U.S. Dist. LEXIS 6189 (D. Mass., Apr. 12, 2005).1373
"enabling flexing" — "allowing the stem shaft of the prosthesis to flex and move axially upwards, by the use of a distal tip secured to the distal end of the stem which (i) is of a larger diameter than the stem shaft, and (ii) is not affixed to the bone." Stryker Corp., et al. v. Intermedics Orthopedics, Inc., 891 F. Supp. 751 (E.D.N.Y. 1995). 1374


"encapsulant" — "a material used to seal up or cover and element or circuit for mechanical and environmental protection." Samsung Electronics Co., Ltd. v. Tessera Technologies, Inc., 2004 U.S. Dist. LEXIS 31074 (N.D. Cal., Jan. 8, 2004). 1376


"a release sleeve encircling said second cylindrical surface" — "The term 'encircling' shall be given its ordinary dictionary meaning 'to form a circle around or surround.'" Eaton Corp. v. Parker-Hannifin Corp., 2003 U.S. Dist. LEXIS 401 (D. Del., Jan. 10, 2003). 1380

"encircling the balloon on its end" — "requires that the sleeve encircle the balloon on a part at, toward or near an extremity of the catheter." Arlaine & Gina Rockey, Inc. v. Cordis Corp., 2004 U.S. Dist. LEXIS 30763 (S.D. Fla., Jan. 5, 2004). 1381


"enclosed spaces" — "the area enclosed by the structural elements of a cell." Medinol Ltd. v. Guidant Corp., et al., 2004 U.S. Dist. LEXIS 19705 (S.D.N.Y., Sept. 30, 2004). 1384

"enclosing said bed surface" — "mean[s] that the side rails surround the surface sufficiently to prevent the patient from falling off the bed surface." Pedicraft, Inc. v. Stryker Corp. of Michigan, et al., 2003 U.S. Dist. LEXIS 27837 (M.D. Fla., May 5, 2003). 1385

"enclosure" — "a structure which generally encloses at least the fin structures and the gap between said fin structures." ICHL, LLC v. NEC Corp. of America, et al., 2010 U.S. Dist. LEXIS 38942 (E.D. Tex., Apr. 20, 2010). 1386

"so that the heel portion of said user's foot travels in a path which does not encompass said pivot axis" — "so that the heel portion of said user's foot travels in a path which does not encompass or encircle said pivot axis." Precor Inc., et al. v. Fitness Quest, Inc., et al., 2006 U.S. Dist. LEXIS 63244 (W.D. Wash., Aug. 23, 2006). 1387
"end"; "high front end"; "low back end" — "one of the two opposite extremities either of an object having length or of a sloped surface"; "an end that has a height greater than the height of its opposite end"; "an end that has a height less than the height of its opposite end." Messer v. Ho Sports Co., Inc., et al., 2007 U.S. Dist. LEXIS 50081 (D. Or., July 9, 2007). 1388

"end"; "strap end" — "The Court finds that the term 'end' is used different ways at different times within the patent." Izzo Golf, Inc. v. King Par Golf, Inc., 2006 U.S. Dist. LEXIS 51199 (W.D.N.Y., July 26, 2006). 1389

"a first end, a second end" — "the limit or boundary of an object, or in other words, at the edge of the round table." Lifetime Products, Inc. v. Correll, Inc., 323 F. Supp. 2d 1129 (D. Utah 2004). 1390


"end" — "the portion having length, not limited to the terminus." Free Motion Fitness, Inc. v. Cybex International, Inc., et al., 311 F. Supp. 2d 1297 (D. Utah 2003). 1392

"end cap" — "a component at the back of the plunger, which may be contacted by the thumb during depression." Retractable Technologies, Inc., et al. v. Becton Dickinson & Co., 2009 U.S. Dist. LEXIS 73301 (E.D. Tex., Jan. 20, 2009). 1393


"a connection securing the first end of the length of hair strands to a portion of the elastic loop" — "I construe 'end' in claim one to mean either extremity of the entire length of hair. The claim refers to the end that is proximal to the elastic loop as the 'first end' and the extremity of the length of hair that is distal to the elastic loop is described as the 'second end'." Pony Pal, LLC v. Claire's Boutiques, Inc., 2006 U.S. Dist. LEXIS 72427 (S.D.N.Y., Oct. 2, 2006). 1395

"said first rod set being located end to end with said second rod set so that said first and second spaces are aligned" — "do[es] not prohibit the use of other intervening structures. ... the court will therefore adopt AB/Sciex's proposed construction of 'end to end' -- that the rod set (Claim 1) or space (claim 14) must be arranged in a manner that ions may be successfully transmitted from the end of the first rod set or space to the end of the second rod set or space." Applera Corp., MDS Inc., et al. v. Micromass UK Ltd., et al., 186 F. Supp. 2d 487 (D. Del. 2002). 1396

"end tract" — "The Court agrees with Defendants that the patent claims define the 'end tract' only as the tapered area marked by cross-hatched lines. The Court finds, however, that the 'end tract' as defined is entirely non-circular, but not purely elliptical." C.M.L. s.r.l. v. Ineco Industrial Navarra de Equipos y Comercio, S.A., et al., 177 F. Supp. 2d 442 (D. Md. 2001). 1397

"endless loop" — "restricts this term to loops without an end." Callicrate v. Wadsworth Manufacturing, Inc., 427 F.3d 1361 (Fed. Cir. 2005). 1398

"endless, moveable surface" — "can include a belt and/or a series of slats attached to a band." Precor Inc. v. Brunswick Corp., et al., 2001 U.S. Dist. LEXIS 26341 (W.D. Wash., Jul. 31, 2001). 1399

"endoscopic" — "would mean any device capable of being used with an endoscope, an instrument for visualizing the interior of a hollow organ or body cavity[,] ... [and] would not connote any size limitation, except perhaps the general limitation of a size sufficiently small to be able to be inserted into an orifice or incision in the human body." *Ethicon Endo-Surgery v. Richard-Allan Medical Industries, Inc.*, 885 F. Supp. 1073 (S.D. Ohio 1995). 1401


"energy absorbing suspension system" — "arrangement of suspension parts that absorbs energy." *SRAM Corp. v. Fox Factory, Inc.*, 2005 U.S. Dist. LEXIS 29164 (N.D. Ill., Nov. 18, 2005). 1403

"engage" — "to make contact with another part such that the resulting interaction can provide support." *Atlantic Research Marketing Systems, Inc. v. Troy, et al.*, 616 F. Supp. 2d 157 (D. Mass. 2009). 1404


"to engage said ridge, said cavity and said chamfer" — "The term 'engage' shall be given its ordinary dictionary meaning 'to interlock or cause to interlock.'" *Eaton Corp. v. Parker-Hannifin Corp.*, 2003 U.S. Dist. LEXIS 401 (D. Del., Jan. 10, 2003). 1408

"engage to form a positive stop to" — "contact each other and prevent." *Phoenix Closures, Inc. v. Silgan Plastics Corp.*, 2005 U.S. Dist. LEXIS 28825 (N.D. Ill., Nov. 15, 2005). 1409


"determining when the cruise control is engaged" — "one of ordinary skill in the art would know that a cruise control feature on a manual transmission vehicle could have six operational states: (1) activation switch off; (2) activation switch on; no vehicle speed set; (3) activation switch on and speed set, but the set speed is below a pre-programmed minimum set speed; (4) activation switch on and speed set above minimum, but operator pressed the clutch or the brake; (5) activation switch and speed set above minimum, but operator used throttle to exceed set speed; and (6) activation switch on, speed set above minimum, and operator neither presses brake or clutch, nor exceeds set speed through use of throttle. ... The cruise control is 'engaged,' i.e. controlling the vehicle speed, only in the final state." Caterpillar Inc. v. Detroit Diesel Corp., 961 F. Supp. 1249 (N.D. Ind. 1996).1415

"said lower end and said capturing bracket engaged by a fastener so as to remain engaged despite failure of said fastener" — "the lower end of the leg support and the capturing bracket are engaged by the fastener so that if the fastener fails to perform its function, the lower end of the leg support and the capturing bracket remain in place and the capturing bracket continues to hold the leg support." Forest Group, Inc. v. Bon Tool Co., et al., 2007 U.S. Dist. LEXIS 10487 (S.D. Tex., Feb. 15, 2007).1416 "The lower end of the leg support is inserted within the capturing bracket; a fastener connects the lower end and the capturing bracket to each other; and the lower end will remain within the capturing bracket even if the fastener breaks or fails." Warner Manufacturing Co. v. Armstrong, et al., 504 F. Supp. 2d 589 (D. Minn. 2007).1417

"engaged with" — "mean[s] any type of mechanical engagement capable of coming into contact, interlocking or meshing a drive means and transmission input or a transmission output and a brake." Stairmaster Sports/Medical Products, Inc. v. Groupe Procyle, Inc., et al., 1998 U.S. Dist. LEXIS 8228 (D. Del., May 20, 1998).1418

"engagement assembly" — "the structure that securely attaches to a curb side container." Heil Co. v. Curotto Can Co., 2004 U.S. Dist. LEXIS 23618 (N.D. Cal., Nov. 16, 2004).1419

"engagement position" — "the location that the detent extends, projects or protrudes to by the solenoid by entry of the combination so that the detent can be contacted by the detent engaging member on the cam." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997).1420

"the engagement surface of the tension member" — "the portion of the tension member that comes into contact with the corresponding surface of the sheave." Schindler Elevator Corp. v. Otis Elevator Co., 2010 U.S. Dist. LEXIS 2463 (D.N.J., Jan. 13, 2010).1421

"engagement tab" — "a locking tab or structure on the inside surface of the side walls that assists in the coupling of a hook arm to the connector." Robert Bosch, LLC. v. Pylon Manufacturing Corp., 2010 U.S. Dist. LEXIS 30451 (D. Del., Mar. 30, 2010).1422


"an upper portion of the height of the band extends above the upper edge of the pants or skirt and engages against the torso" — "an upper portion of the height of the band extends above the upper edge of the pants or skirt and engages against the torso; but the band need not be in direct contact with the woman's skin." Ingrid & Isabel, Inc. v. Baby be Mine, LLC, 2009 U.S. Dist. LEXIS 33649 (N.D. Cal., Apr. 3, 2009).1425

"the second end of the partition mount engages the floor" — "encompass a method where a sheet of paper or curtain is tucked between the partition mount and the floor." Zipwall, LLC v. Fastcap, LLC, 482 F. Supp. 2d 141 (D. Mass. 2007).1426

"engaging" — "coming together to form a seal." Felix v. American Honda Motor Co., et al., 562 F.3d 1167 (Fed. Cir. 2009).1427

"engaging" — "to come into contact with." Primos, Inc. v. Hunter's Specialties, Inc., et al., 451 F.3d 841 (Fed. Cir. 2006).1428

"engaging" — "fitting together." AcroMed Corp. v. Sofamor Danek Group, Inc., et al., 253 F.3d 1371 (Fed. Cir. 2001).1429


"a pusher member having ... a pair of flanges engaging said rails" — "a pusher member having two similar or corresponding projecting rims or edges that interlock or connect with the rails for the purpose of constraining and guiding the pusher member along the rails." RTC Industries, Inc. v. William Merit & Associates, Inc., 2004 U.S. Dist. LEXIS 13288 (N.D. Ill., Jul. 15, 2004).1432


"capable of engaging the support surface" — "while the word 'engaging' includes penetration, it does not require penetration." Bidco, Inc. v. Plastic Lumber Co., 2004 U.S. Dist. LEXIS 31066 (N.D. Cal., Nov. 10, 2004).1434

"to enhance traction"; "enhanced lateral stability and traction" — "for the outward angulation of the tooth traction surface to provide more lateral stability and traction than prior art teeth that are not outwardly angled." Greenkeepers of Delaware, LLC, et al. v. Softspikes, LLC, et al., 2010 U.S. Dist. LEXIS 10670 (E.D. Pa., Feb. 5, 2010).1435

"an elongated cylindrical body having a pair of enlarged diameter cylindrical end portions" — "a portion of each end of the elongated body has a larger diameter than the portion of the body containing the middle point of the body." Tenneco Automotive Operating Co. Inc. v. Visteon Corp., 2005 U.S. Dist. LEXIS 12738 (D. Del., Jun. 28, 2005).1436
"enlarged display portion" — "requires some kind of protrusion, bump, or protuberance on the hanger hook." Carlisle Plastics, Inc. v. Spotless Enterprises, Inc., et al., 984 F. Supp. 646 (E.D.N.Y. 1997). The district court construed the term 'enlarged display portion,' in accordance with the dictionary definition of the term 'enlarged,' to mean a display portion that is 'larger or greater than that formerly, usually, or normally present.' ... The district court's claim construction was correct." Id., 1999 U.S. App. LEXIS 937 (Fed. Cir., Jan. 26, 1999) (unpublished).  

"enlarged head" — "a head with a diameter larger than the diameter of the shank." Cross Medical Products, Inc. v. Medtronic Sofamor Danek, Inc., et. al., 2005 U.S. Dist. LEXIS 6545 (C.D. Cal., Apr. 8, 2005).  

"first enlarged interior diameter" — "a portion of the interior surface of the female end of the pipe which has an interior diameter greater than the predetermined interior diameter." CertainTeed Corp. v. Modern Products Industries, Inc. et al., 2005 U.S. Dist. LEXIS 7638 (E.D. Pa., May 2, 2005).  


"entire outer surface" — "mean[s] that the outer surface of the body of the lure must be completely covered by the coating. In other words, no part of the external surface may be left uncovered by the resin coating." Nichols, et al. v. Strike King Lure Co., et al., 2000 U.S. Dist. LEXIS 15781 (N.D. Tex., Oct. 25, 2000).  


"the envelope defined by the underwater cable" — "this Court is unable to assign any meaning or construction to this particular phrase as it is used in the claim in question. While Ion may be correct that this phrase was intended to refer to the physical boundary of the underwater cable, nothing in the claim language, the specification, or the prosecution history makes this meaning clear or even readily apparent. Moreover, even taking into account the many ways in which the term 'envelope' may ordinarily be understood, the Court is unable to point to any extrinsic evidence that would make the meaning of this term more clear. The Court therefore agrees with WG's expert that the meaning of this phrase cannot be determined with any degree of specificity or definiteness." WesternGeco LLC v. ION Geophysical Corp., 2010 U.S. Dist. LEXIS 71875 (S.D. Tex., Jul. 16, 2010).  

"epidermis" — "epidermis, as used throughout Claim 6, simply means 'skin,' and does not refer only to the skin's top layer." Young v. Lumenis, Inc., 2005 U.S. Dist. LEXIS 27792 (S.D. Ohio, Nov. 1, 2005).
"equal flexion and extension gaps" — "merely describes a purpose of the invention claimed in the '885 patent and does not act as structural limitation on the claimed invention." Depuy Orthopaedics, Inc. v. Androphy, et al., 2000 U.S. Dist. LEXIS 661 (N.D. Ill. 2000). 1448

"discrete facets being identically shaped and having equal surface areas"; "extension member facets being equal in surface area" — "discrete facets being identically shaped and having equal surface areas, without regard to negligible variances in surface area caused by indented indicia"; "extension member facets being equal in surface area, without regard to negligible variances in surface area caused by indented indicia." Bowling v. Hasbro, Inc., 490 F. Supp. 2d 262 (D.R.I., May 29, 2007). 1449


"fills essentially completely" — "fills all of or almost all of the cavity adjacent to the opening to prevent fluid from leaking between the seal and the wall structure." ICU Medical, Inc. v. RyMed Technologies, Inc., 2009 U.S. Dist. LEXIS 112546 (D. Del., Dec. 3, 2009). 1452


"positioned essentially in said air duct constructed portion" — "the Court finds that 'essentially' means: In or partially in." Dow Chemical Co. v. Mee Industries, et al., 2001 U.S. Dist. LEXIS 26229 (M.D. Fla., Aug. 17, 2001). 1454

"a structure that is essentially one piece" — "a structure that is basically, fundamentally, substantially, or virtually a single piece after being constructed or assembled with (1) screws and a waterproof glue type compound, (2) plastic, or (3) their equivalents." Rhino Associates, L.P. v. Berg Manufacturing and Sales Corp., et al., 482 F. Supp. 2d 537 (M.D. Pa. 2007). 1455

"essentially triangular cross-section" — "having a triangular or arrowhead shape in which a corner of the triangle or arrowhead has been cut off." A&E Products Group, L.P. v. Mainetti USA Inc., et al., 2002 U.S. Dist. LEXIS 24280 (S.D.N.Y., Dec. 28, 2002). 1456

"establishing continuous fluid communication between the interior drainage space of the basket and a treated water outlet conduit" — "to bring into existence or cause a stream of fluid without any interruptions breaking the stream into unconnected segments." Contech Stormwater Solutions, Inc. v. BaySaver Technologies, Inc., et al., 2007 U.S. Dist. LEXIS 71659 (D. Md., Sept. 25, 2007). 1457


"[T]he district court was on firm ground in ruling that the term evacuate refers to the removal of gases with a vacuum pump and does not encompass the use of an inert gas to push gases out of the chamber." Id., 401 F.3d 1340 (Fed. Cir. 2005). 1459
"evacuation" — "means removal by a vacuum pump, and does not include the use of inert gas to push the reactant gases out of the reaction space." ASM America, Inc. v. Genus, Inc., 2002 U.S. Dist. LEXIS 15348 (N.D. Cal., Aug. 15, 2002). We therefore agree with the district court's definition of evacuation. Id., 401 F.3d 1340 (Fed. Cir. 2005).

"evaluating" — "encompasses determining for each bill whether that bill's value can be determined." Cummins-Allison Corp. v. Glory, Ltd., et al., 457 F. Supp. 2d 843 (N.D. Ill. 2006).

"excessive manual force" — "the ordinary meaning of the word 'excessive' is sufficiently clear and definite for one skilled in the art." Sienna, LLC v. CVS Corp., et al., 2007 U.S. Dist. LEXIS 2 (S.D.N.Y., Jan. 3, 2007).


"exerting force on said layers with said inflated balloon" — "requires exerting force with the inflated balloon, other than by balloon inflation, to cause dissection beyond that caused by the step of balloon inflation to create the open working space, such as by the act of moving the inflated balloon." General Surgical Innovations, Inc. v. Origin Medsystems, Inc., 1998 U.S. Dist. LEXIS 22958 (N.D. Cal., May 15, 1998).

"exit station" — "a portion of the processing machine where wafers are moved after processing and from which said wafers exit the processing machine." Nova Measuring Instruments, Ltd. v. Nanometrics, Inc., 2006 U.S. Dist. LEXIS 90736 (N.D. Cal., Dec. 1, 2006).


"expands to conform to the shape and diameter of the inner lumen" — "the fragmentation member in the 191 and 551 patents and the distal end in the 704 patent expands and adjusts to remain in contact with the inner lumen in three dimensions along its length and width." Johns Hopkins University, et al. v. Datascope Corp., 2007 U.S. Dist. LEXIS 38408 (D. Md., May 25, 2007).

"expelling the anchor member" — "mean[s] that the anchor member is forced out, ejected, driven out or dislodged from the 'hollow member.'" Smith & Nephew, Inc., et al. v. Biomet, Inc., et al., 2005 U.S. Dist. LEXIS 31723 (D. Or., Nov. 21, 2005).1475

"at least a portion of said data-encoded strip is exposed and displaced externally remote from a portion of said outer perimeter of said first panel in a direction substantially parallel to the plane of said first card" — "the second subparagraph of Claim 12 requires, at a minimum, that a portion of the magnetic strip on the card be open to view, and that this magnetic strip be parallel to one of the edges of the package." Barry Fiala, Inc. v. Card USA, Inc., 292 F. Supp. 2d 1009 (W.D. Tenn. 2003).1476

"exposing said food product to infrared energy" — "cannot mean 'exposing all of the food product to infrared energy.' The Court further finds that the term 'infrared energy' does not require construction." Unitherm Food Systems, Inc. v. V.H. Cooper & Co., Inc., 2010 U.S. Dist. LEXIS 55911 (N.D. Okla., Jun. 4, 2010).1477

"exposure" — "Based on the intrinsic evidence, the Court finds that the term 'exposure' is ambiguous." Gillette Co. v. Energizer Holdings, Inc., et al., 2005 U.S. Dist. LEXIS 34122 (D. Mass., Dec. 19, 2005).1478

"smoking the tuna meat at extra-low temperatures by exposure to the smoke cooled to between 0 ° and 5 ° C" — "means that the smoke has already been cooled to a specific temperature, namely, to between 0 ° and 5 ° C." Tuna Processors, Inc. v. Hawaii International Seafood, Inc., et al., 2007 U.S. Dist. LEXIS 77396 (D. Haw., Oct. 17, 2007).1479 "We agree with HISI that to infringe the '619 patent, a method must cool the smoke before the smoke contacts the tuna." Id., 327 Fed. Appx. 204 (Fed. Cir., Apr. 23, 2009) (unpublished).1480

"conductive rail being adapted to extend the length of the fixed device part" — "the context and word choice of the claim language itself establishes that 'extend the length' means the length of the fixed device part." Intamin, Ltd. v. Magnetar Technologies, Corp., 483 F.3d 1328 (Fed. Cir. 2007).1481

"extend[] transversely between said opposing surfaces of said side members" — "The plate members are arranged in a transverse direction to the side members such that the plate members extend from a point of contact with the surface of each of the two members that faces or looks toward the corresponding surface of the other side member." IKN, Inc. v. CemProTec GmbH, 2005 U.S. Dist. LEXIS 29134 (E.D. Pa., Nov. 22, 2005).1482


"each stud is extended over by one of the extensions, and can support that extension to prevent the auxiliary frame from moving downward relative to the primary frame" — "at least some portion of each of the extensions reaches above and across the corresponding stud, and each stud is capable, with direct contact, of maintaining the corresponding extension in position so as to keep it from falling, sinking or slipping and thus prevent the auxiliary frame from moving downward relative to the primary frame." Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc., 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003).1484


"a plurality of legs extending about at least one side surface" — "two or more legs extending about one or more side surfaces." Zipwall, LLC v. Fastcap, LLC, 482 F. Supp. 2d 141 (D. Mass. 2007).\footnote{1487}

"extending above a top surface of one of said side walls" — "mean[s] that the column or recess must extend beyond above the topmost surface of one of the said side walls as opposed to simply extending beyond any top surface." Rehrig Pacific Co. v. Norseman Plastics Ltd. Inc., 2003 U.S. Dist. LEXIS 27566 (C.D. Cal., Sept. 29, 2003).\footnote{1488}

"extending across and along"; "extends/extend along at least a portion of a length of the ... side of the housing" — "With respect to the use of 'extending along' and 'extends along' to describe the structural members of the housing, the terms provide the location of those structures with reference to the housing. That is, the two structures are located on either side of the housing, opposite each other and substantially parallel to each other, and span at least part of the length of the side of the housing. Similarly with respect to the spring-biased mechanism, 'extending across and along a top surface of the housing' means that the mechanism both traverses the housing and is located on the top of the housing, although not necessarily in direct contact with the surface of the housing." Insight Technology Inc. v. SureFire, LLC, 2006 U.S. Dist. LEXIS 11762 (D.N.H., Feb. 28, 2006).\footnote{1489}

"extending along said electrode so as to provide a path for arcing" — "I decline to adopt either of defendant's proposed interpretations of 'along.'" Thermal Dynamics Corp. v. TATRAS, Inc., 2004 U.S. Dist. LEXIS 24954 (D.N.H., Dec. 9, 2004).\footnote{1490}

"relatively stiff members extending along said pair of sides and said bottom of said case"; "a relatively stiff member extending along all said sides and said bottom"; "a relatively stiff member extending along said side edges of said briefcase and said bottom edge of said briefcase" — "requires that the stiff plastic member extend along the bottom and both sides of the case." SAB Technology, LLC v. Port Inc., 2006 U.S. Dist. LEXIS 46886 (D. Conn., July 12, 2006).\footnote{1491}

"extending alongside said flow diversion means" — "means that the extension tubes can extend on either opposite sides or the same side of the Y-connector." Mahurkar, et al. v. Arrow International, Inc., 160 F. Supp. 2d 927 (N.D. Ill. 2001).\footnote{1492}

"extending axially from the second opening to the distal end of said cylindrical tube" — "material to run continuously from the inlet opening through the tip." Mahurkar, et al. v. Arrow International, Inc., 160 F. Supp. 2d 927 (N.D. Ill. 2001).\footnote{1493}

"extending between" — "stretching from one object to another object." Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F. Supp. 2d 93 (D. Conn. 2006).\footnote{1494}

"extending between said guidewire and said distal tip" — "mean[s] that the connecting segment is not only 'between' the guidewire and the distal tip but that it also 'extends' from the guidewire to the distal tip." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007).\footnote{1495}
"extending distally of"; "extend distally of" — "extending [or extend] in a distal direction away from the proximal wall, without the necessity of being attached to the proximal wall."  B. Braun Melsungen AG, et al. v. Terumo Medical Corporation, et al., 2010 U.S. Dist. LEXIS 54480 (D. Del., Jun. 3, 2010).1496

"side portion extending in the longitudinal direction and extending downward from the first edge" — "a structure forming at least part of a lateral side of the ski which extends from a higher to a lower position from the second lateral edge of the snowmobile ski base."  Simmons, Inc. v. Bombardier Inc., et al., 328 F. Supp. 2d 1188 (D. Utah 2004).1497

"extending from" — "means to 'protrude' from a 'starting point.' However, the definitions of 'extending' or 'from,' separately or in combination do not require that whatever is 'protruding' from the 'starting point' be 'integral' or 'mechanically connected' to the 'starting point.'"  Duhn Oil Tool, Inc. v. Cooper Cameron Corp., 474 F. Supp. 2d 1148 (E.D. Cal., 2007).1498

"a first and second opposing faceplate, each said faceplate return extending from said central faceplate at approximately ninety degree angles from said faceplate" — "two faceplate returns extending from opposite ends of the faceplate, each of the faceplate returns forming an angle of approximately 90 degrees with the faceplate."  JVI, Inc. v. Universal Holdings, Inc., et al., 464 F. Supp. 2d 758 (N.D. Ill. 2006).1499

"a first and second flattening bend, said first flattening bend extending from said first opposing faceplate return and said second flattening bend extending from said second faceplate return" — "first and second flattening bends that extend from the opposing faceplate returns."  JVI, Inc. v. Universal Holdings, Inc., et al., 464 F. Supp. 2d 758 (N.D. Ill. 2006).1500


"base also extending in a lateral direction between a first edge and a second edge thereof" — "the structure which supports all of the other claimed structures of the snowmobile ski (base) extends the width of the snowmobile ski in a direction approximately perpendicular to the longitudinal direction between first and second edges of the base. The term 'edge' means the end or outermost lateral boundary of the snowmobile ski base."  Simmons, Inc. v. Bombardier Inc., et al., 328 F. Supp. 2d 1188 (D. Utah 2004).1502

"said lever extending in a semicircle around said gear" — "For the word 'semicircle' to have any meaning (i.e., to avoid reading this term entirely out of the patent), the lever must contain at least part of a circle."  Robert Bosch GMBH, et al. v. Japan Storage Battery Co., 223 F. Supp. 2d 1159 (C.D. Cal. 2002).1503

"extending laterally" — "means that bristles extend perpendicularly from the wire twig."  American Permahedge, Inc. v. Barcana, Inc., et al., 901 F. Supp. 155 (S.D.N.Y. 1995).1504 "We [] conclude that the 'extending laterally' limitation simply means extending from the side, with no limitations on the angle."  Id., 105 F.3d 1441 (Fed. Cir. 1997).1505

"a projection extending laterally from a top wall of the offset power box" — "the claimed 'projection' is formed integrally with a top surface of the offset power box. The projection extends laterally toward the trunking duct."  Panduit Corp. v. HellermannTyton Corp., 2004 U.S. Dist. LEXIS 15879 (N.D. Ill., Aug. 10, 2004).1506
"a fixed attachment extending laterally from the attachment plate at the top of the knife body in the implement plane" — "no claim construction is necessary." Kai U.S.A., Ltd. v. Buck Knives, Inc., 2006 U.S. Dist. LEXIS 24924 (D. Or., Feb. 9, 2006).  


"receivers extending outwardly" — "members of the face guard made of wire or other material that extend rearwardly from the main body of the face guard." Riddell, Inc. v. Schutt Sports, Inc., 2009 U.S. Dist. LEXIS 58961 (W.D. Wis., Jul. 10, 2009).

"extending outwardly" — "mean[s] that the lower ridge must project from the tongue." Pehr v. Rubbermaid, Inc., 87 F. Supp. 2d 1222 (D. Kan. 2000).

"extending over said slot" — "require[s] that the first constriction be 'above' the elongated slot." Sage Products, Inc. v. Devon Industries, Inc., 126 F.3d 1420 (Fed. Cir. 1997).

"the cavity extending parallel to and spaced outwardly from the plane of travel of the blade" — "this term is clear on its face, requiring no construction." Kai U.S.A., Ltd. v. Buck Knives, Inc., 2006 U.S. Dist. LEXIS 24924 (D. Or., Feb. 9, 2006).


"wires, including conductor wires from said light emitting source, extending through one of said housing walls" — "mean[s] that a continuous wire extends from the light source out through the housing wall." Helifix Limited v. Blok-Lok, Ltd., et al., 26 F. Supp. 2d 294 (D. Mass. 1998).

"wherein there is a push rod extending through the cavity and connecting the blade to the spring" — "a push rod that has a portion of its length in the cavity and another portion outside the cavity so as to transmit the force of the spring to the blade. The push rod connects the spring to the blade." Kai U.S.A., Ltd. v. Buck Knives, Inc., 2006 U.S. Dist. LEXIS 24924 (D. Or., Feb. 9, 2006).


"said groove extends along the outer circumference of the base end of said chuck sleeve" — "the ordinary meaning of the word 'along' does not require the groove to touch the outer surface of the chuck sleeve." Lyndex Corp. v. Heartech Precision, Inc., et al., 2004 U.S. Dist. LEXIS 24 (N.D. Ill., Jan. 5, 2004).
"wherein said pin extends into said security slot" — "the term 'extends' is an intransitive verb as it is used in the '794 patent. [] Nothing in the claim term 'wherein said pin extends into said security slot' suggests that the verb 'extends' is active or contains a temporal scope." ACCO Brands, Inc., et al. v. PC Guardian Anti-Theft Products, Inc., et al., 2007 U.S. Dist. LEXIS 92052 (N.D. Cal., Dec. 5, 2007).1520

"a magnet protector that extends outwardly from an exterior of said tool body." — "each magnet protector extends beyond the outer circumference of the tool body in such a manner as to create an uneven surface on the exterior of the tool." Rattler Tools, Inc. v. Bilco Tools, Inc., et al., 2007 U.S. Dist. LEXIS 49124 (E.D. La., July 6, 2007).1521


"extension arm" — "include both the extension device and the casting which locks the extension arm in various positions." Free Motion Fitness, Inc. v. Cybex International, Inc., et al., 311 F. Supp. 2d 1297 (D. Utah 2003).1525

"two side portion extensions" — "those portions of the primary spectacle frame which extend outwardly and rearwardly of the lenses or lens rims (if provided) to pivotally connect to the legs." Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc., 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003).1526


"external threads" — "helical or spiral ribs or grooves on the outer surface of the male end of the PVC pipe which mate with corresponding helical or spiral ribs or grooves disposed within the interior surface of the female end of a similar adjacent pipe." CertainTeed Corp. v. Modern Products Industries, Inc. et al., 2005 U.S. Dist. LEXIS 7638 (E.D. Pa., May 2, 2005).1529

"externally mounted intercooler" — "a heat exchanger located outside the casing containing the low and high pressure compressors." Rice v. Honeywell International, Inc., et al., 2006 U.S. Dist. LEXIS 89235 (E.D. Tex., Nov. 21, 2006).1530
"extinguishing a fire" — "This is a rare case where the same claim term in two related patents does not share the same meaning. ... The Court construes 'extinguishing a fire,' as used in the '336 patent, to mean 'ceasing the burning of combustible material, as shown by mine surface temperatures of 90 degrees Fahrenheit or less.' The Court construes 'extinguishing a fire,' as used in the '965 patent, to mean 'ceasing the burning of combustible material.'" US Foam, Inc, et al. v. On Site Gas Systems, Inc., 2010 U.S. Dist. LEXIS 79286 (E.D. Tex., Aug. 3, 2010).

"detachable coil is extremely soft" — "The material composition, dimension and other configuration of the coil make it exceedingly deformable to the interior shape of the cavity with substantially no influence from any inherent shape." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007).


"eyeglass contacting member having an encircling portion adapted to encircle a part of said frame of said pair of eyeglasses to enable the temples of the frame to be selectively [opened and closed]"; "eyeglass contacting member having an attaching portion attachable to a portion of said frame of said eyeglasses" — "the district court erred by applying § 112, P 6 to these claim elements." Al-Site Corp., et al. v. VSI International, Inc., et al., 174 F.3d 1308 (Fed. Cir. 1999).

"eyeglass hanger member" — "the 'eyeglass hanger member' elements in the claims of both the '345 and the '726 patents do not invoke § 112, P 6." Al-Site Corp., et al. v. VSI International, Inc., et al., 174 F.3d 1308 (Fed. Cir. 1999).

"eyelet strip" — "a part of each flap that is comparatively long and narrow and has two or more eyelets." Mueller Sports Medicine, Inc. v. Core Products International, Inc., 2003 U.S. Dist. LEXIS 24617 (W.D. Wis., Mar. 3, 2003).

"facial features" — "pertaining to the face, including, but not limited to, a mouth feature and a nose feature, as shown in Figures 5 through 9 of the '972 patent." Hoodlums Welding Hoods, LLC v. Redtail International, LLC, 2009 U.S. Dist. LEXIS 100356 (E.D. Mo., Oct. 28, 2009).

"facilitate positioning" — "means only that the opening be large enough to 'allow' a spill collector to be positioned in the hole," Franklin Electric Co., Inc. v. Dover Corp., 2007 U.S. App. LEXIS 5083 (Fed. Cir., Mar. 1, 2007).

"facing": "facing one another" — "with the face oriented toward"; "with the faces oriented towards one another." ADC Telecommunications, Inc. v. Switchcraft, Inc., 2005 U.S. Dist. LEXIS 19593 (D. Minn., Sept. 9, 2005). 1542


"fastening element", "fastening part" — "an element that provides the capability for attaching firmly or fixing securely so as to be supported, one component to another component." LG Philips Co., Ltd. v. Tatung Co., et al., 2007 U.S. Dist. LEXIS 43557 (D. Del., June 15, 2007). 1544

"fastening hole" — "an opening, together with the material defining the opening, that provides the capability for attaching firmly or fixing securely so as to be supported, one component to another." LG Philips Co., Ltd. v. Tatung Co., et al., 2007 U.S. Dist. LEXIS 43557 (D. Del., June 15, 2007). 1545

"fastening tab" — "other parts of the shoe -- including the counter pocket, the shoe upper, the upper lining and the sock lining -- cannot be considered part of the 'fastening tab.'" Maxwell v. J. Baker, Inc., et al., 875 F. Supp. 1371 (D. Minn. 1995). 1546 "[T]he court properly construed the claims to require the fastening tab to be a separate piece from the counter pocket lining or other inside shoe lining." Id., 86 F.3d 1098 (Fed. Cir. 1996). 1547


"feather angle mode" — "a control mode that attempts to set and maintain each streamer in a straight line offset from the towing direction by a certain feather angle." WesternGeco LLC v. ION Geophysical Corp., 2010 U.S. Dist. LEXIS 71875 (S.D. Tex., Jul. 16, 2010). 1549

"feed assembly" — "a structure at the free end of the screen that helps to guide the screen in the screen tracks." Larson Manufacturing Co. of S.D., Inc. v. AluminArt Products, Ltd., et al., 504 F. Supp. 2d 759 (D.S.D. 2007). 1550


"feeding" — "'feeding' and 'increasing' are not limited temporally and do not require the performance of acts on an ongoing or habitual basis. ... the Court interprets the term 'feeding' in claim 1 as not limited to using MSM for nutritional purposes." MSM Investments Co., LLC v. Carolwood Corp., et al., 70 F. Supp. 2d 1044 (N.D. Cal. 1999). 1552


"a female fastener" — "a structure, female in form, that receives a stud, male in form, which together along with other elements, secures the insert to the seat." American Seating Co. v. Freedman Seating Co., 450 F. Supp. 2d 765 (W.D. Mich. 2006). 1554
"ferromagnetic" — "a material that exhibits ferromagnetism, but, in the absence of an applied external magnetic field, is not magnetized." Fargo Electronics, Inc. v. Iris Ltd, Inc., 2005 U.S. Dist. LEXIS 34493 (D. Minn., Nov. 30, 2005).

"fiberfill" — "synthetic or man-made fiber, most commonly polyester, that has a specified linear density, cut length, and crimp making it ideal for use as a filling material in various products." AquaTex Industries, Inc. v. Techniche Solutions, 387 F. Supp. 2d 755 (M.D. Tenn. 2004). "[B]ased upon the teachings of the specification, one of ordinary skill in the textile manufacturing industry would understand that commercial 'fiberfill batting material' is made of synthetic or polyester fibers." Id., 419 F.3d 1374 (Fed. Cir. 2005).


"fibrous absorbent layer" — "no construction of the term 'fibrous absorbent layer' is necessary or appropriate." Fort James Corp. v. J.H. McNairn, Ltd., 2006 U.S. Dist. LEXIS 36528 (N.D. Ga., April 4, 2006).


"field and commutation portions" — "The terms field and commutation portion mean axially displaced portions of an integral rotor magnet. The commutation portion takes the place of separate commutation magnets, and provides a magnetic field to effect commutation. The field portion takes the place of separate field magnets, and provides a magnetic field to effect rotation of the magnet. The field magnet is comprised in part of substantially unmagnetized sectors of substantial angular length." Comair Rotron, Inc. v. Nippon Densan Corp., et al., 154 F. Supp. 2d 326 (D. Conn. 2001).

"fills essentially completely" — "fills all of or almost entirely a portion of the cavity adjacent to the opening to prevent fluid from leaking between the seal and the wall structure." ICU Medical, Inc. v. Alaris Medical Systems, Inc., 2006 U.S. Dist. LEXIS 96077 (C.D. Cal., July 17, 2006).

"film" — "a thin layer of material. A film may have voids, cracks, or other discontinuities." OKI Electric Industry Co., Ltd. v. LG Semicon Co., Ltd., et al., 1999 U.S. Dist. LEXIS 22625 (N.D. Cal., Jul. 19, 1999).

"filter"; "porous material" — "the claims, specification, and the prosecution history all consistently use 'an' or 'a' or refer to 'the filter.' Such references are not enough to limit the claims to a unitary structure." Atlantic Construction Fabrics, Inc., et al. v. Dandy Products, Inc., 64 Fed. Appx. 757 (Fed. Cir., Apr. 23, 2003) (unpublished).

"filter" — "a porous material through which the cleaning fluid is passed in order to trap particulate matter while allowing the cleaning fluid, hydrocarbons, and microorganisms to pass through." ChemFree Corp. v. J. Walter, Inc., et al., 2007 U.S. Dist. LEXIS 51677 (N.D. Ga., July 17, 2007).
"filter" — "because 'filter' is readily understood, the Court declines to construe the term as it."

"filter"; "filter element" — "Because the claim language is not limited by the specification and creates no ambiguity as to the meaning of 'filter' or 'filter element,' the Court declines to construe the terms." *Boston Scientific SciMed, Inc., et al. v. ev3 Inc.*, 502 F. Supp. 2d 931 (D. Minn. 2007). 1568

"filter assembly" — "a device consisting of parts through which a gas or fluid can flow, but which prevents passage of particles or impurities." *Aqua-Lung America, Inc. v. American Underwater Products, Inc., et al.*, 2009 U.S. Dist. LEXIS 18172 (N.D. Cal., Feb. 26, 2009). 1569

"filter bed"; "first particulate filter media" — "the trial court improperly construed the claim terms 'filter bed' and 'first particulate filter media' as requiring multiple layers." *RF Delaware, Inc. v. Pacific Keystone Technologies, Inc., et al.*, 326 F.3d 1255 (Fed. Cir. 2003). 1570

"filter element support" — "include[s] the upper and lower potting material, but not support from the top by a structure descending from the housing cap." *C. R. Bard, Inc. v. Medtronic, Inc.*, 1998 U.S. Dist. LEXIS 23197 (D. Del., May 7, 1998). 1571 "[W]e construe the 'filter element support' limitation as requiring a structural support for the filter element (not just potting material) that is centrally disposed with respect to the toroidal flow path, at the top of the filter element." *Id.*, 2000 U.S. App. LEXIS 15316 (Fed. Cir., Jun. 29, 2000). 1572


"filter support to support a filter to filter water entering the open top and exiting the drain opening" — "does not need to be construed." *WIMCO, LLC v. Lange Industries, Inc.*, 2007 U.S. Dist. LEXIS 92502 (D. Minn., Dec. 14, 2007). 1574

"a filter supported in the basin below a top opening of the open top receptacle" — "a filter supported in the basin below the open top of the receptacle." *WIMCO, LLC v. Lange Industries, Inc.*, 2007 U.S. Dist. LEXIS 92502 (D. Minn., Dec. 14, 2007). 1575


"filtering" — "is a broadly-defined process including not only passing a gas or liquid through a porous material, but also the cooling and settling of the smoke." *Tuna Processors, Inc. v. Hawaii International Seafood, Inc., et al.*, 2007 U.S. Dist. LEXIS 77396 (D. Haw., Oct. 17, 2007). 1577


"finger" — "a member that projects from a first object to effect, direct, or restrain motion when brought into contact with a second object. A finger may be formed integrally with the first object or may be fitted thereto or therethrough." *TBC Consoles, Inc. v. Forecast Consoles, Inc.*, 2009 U.S. Dist. LEXIS 91653 (S.D.N.Y., Sep. 28, 2009). 1580
"finger placement indicia" — "Nothing in the claim limits its scope to both right and left handed indicia."  

"finger plate" — "the Court declines to define this unambiguous term."  

"plurality of fins extending inwardly from the casing interior" — "two or more long, narrow longitudinally-extending locating surfaces."  

"first"; "second" — "define the position, in the path of ion travel, of the elements in the invention relative to the similar elements also mentioned in the claims. Thus, 'first' is construed to mean 'an element.' 'Second' is construed to mean 'an element coming after, in the path of ion travel, the first such element.'"  

"a first and a second foot link, each having a foot engaging portion" — "a first and a second foot link, each having a foot engaging portion."  

"first and second impervious fluoropolymeric end caps" — "means that each end cap is a unitary structure that is applied to respective unsealed ends of a filter arrangement."  

"first and second longitudinal directions" — "mean simply opposing directions, and not anything more specific, such as 180-degree angles."  

"first and second position relative to the primary display" — "two different positions relative to the primary display."  

"first cylindrical stage" — "the horizontal connecting wall referred to in Claim 3 is part of the first cylindrical stage of the two-stage recess. This limited construction of 'first cylindrical stage' as including the horizontal connecting wall is also consistent with the claims of the '884 Patent. For the purpose of Defendants' Motion for Summary Judgment, it is unnecessary to further define the term 'first cylindrical stage.'"  

"first frame"; "second frame" — "the structure at the back of the flat-panel display device that together with the second frame structure sandwiches at least the flat display panel"; "the structure at the front of the flat-panel display device that together with the first frame structure sandwiches at least the flat display panel."  

[i] "first layer"; [iii] "second layer" — [i] "a first operative layer"; [ii] "second layer."  
"first location on said wall" — "the point on the wall of the can end that becomes the lowermost extent of the double seam." Crown Packaging Technology, Inc., et al. v. Rexam Beverage Can Co., 486 F. Supp. 2d 366 (D. Del. 2007).  


"first pivot point" — "the first chronological point about which the arm turns." Free Motion Fitness, Inc. v. Cybex International, Inc., et al., 311 F. Supp. 2d 1297 (D. Utah 2003).  

[i] "first portion"; [ii] "second portion" — [i] "a part of the whole, which is less than the whole, and is distinguishable from the 'second portion.'"; [ii] "a part of the whole, which is less than the whole, and is distinguishable from the 'first portion.'" Burns, Morris & Stewart L.P. v. Endura Products, Inc., 2005 U.S. Dist. LEXIS 46839 (E.D. Tex., May 11, 2005).  

"annular inner surface having at least a first portion extending inwardly and upwardly" — "the 'first portion extending inwardly and upwardly' ... must itself be annular." CCPI Inc. v. American Premier, Inc., 966 F. Supp. 276 (D. Del. 1997).  

"first position"; "second position" — "a first position means 'an initial position of a liquid crystal display unit' and a 'second position' means 'the position determined by reference to the angle of rotation between the first and second position.'" LG Display Co., Ltd. v. AU Optronics Corp., et al., 2010 U.S. Dist. LEXIS 12969 (D. Del., Feb. 16, 2010).  

"first pressure"; "first ram pressure"; "second pressure"; "third pressure" — "the terms are used to denote the relative order of the steps -- that is, their order vis-a-vis each other." Leighton Technologies LLC v. Oberthur Card Systems, S.A., 358 F. Supp. 2d 361 (S.D.N.Y. 2005).  

[i] "first region"; [ii] "second region"; [iii] "third region" — [i] "area or region defined by the blades of the bit, located generally on the center of the bit face or on the leading end of the bit radially closest to the centerline or longitudinal axis of the drill bit body, labeled 226 in Fig. 10 of the '249 Patent and Figs. 10, 12, and 13 of the '715 Patent'; [ii] "area or region defined by the blades of the bit, located generally radially distant or remote from the centerline or longitudinal axis of the drill bit body between the first region and the outer region at the maximum or outermost diameter of the face or leading end of the bit, labeled 228 in Fig. 10 of the '249 Patent and Figs. 10, 12, and 13 of the '715 Patent'; [iii] "area or region, if any, defined by the blades of the bit, located generally radially in between the first and second regions, labeled 226' in Figs. 12 and 13 of the '715 Patent." Reedhycalog UK, Ltd, et al. v. Baker Hughes Oilfield Operations, Inc., et al., 2007 U.S. Dist. LEXIS 76125 (E.D. Tex., Oct. 12, 2007).  

"a first rigid frame positioned at one end of said container" [and] "a second rigid frame positioned at the other end of said container" — "a separate skeletal structure designed to shape or support that is made up of parts fitted or joined together. The front frame must help support the weight of the container body." Heil Co. v. McNeilus Truck, et al., 1999 U.S. Dist. LEXIS 23371 (N.D. Ala., Aug. 5, 1999).
"first stitch"; "second stitch" — "the Court ... construes the term 'first stitch' to mean 'one stitch' and the term 'second stitch' to mean 'another stitch after the first stitch, but not necessarily the next stitch after the first stitch.' " Taltech Ltd. v. Esquel Enterprises Ltd., 410 F. Supp. 2d 977 (W.D. Wash. 2006). 1602


"fixation-resistant surface finish" — "the external peripheral surface finish must (i) be a smooth finish that comprises a polished finish, and (ii) be for the purpose of maintaining the distal tip unaffixed to the femur. The claim limitation language does not require that the surface actually be polished or 'very' smooth; only that it constitutes ('comprises') a polished surface." Stryker Corp., et al. v. Intermedics Orthopedics, Inc., 891 F. Supp. 751 (E.D.N.Y. 1995). 1606

"a first fixation system for fastening the plate and a first portion of the spinal column in a fixed position"; "a second fixation system for fastening the plate and a second portion of the spinal column in a translatable position" — "The[se] two claim limitations are means-plus-function limitations." Cross Medical Products, Inc. v. Medtronic Sofamor Danek, Inc. et. al., 2005 U.S. Dist. LEXIS 6566 (C.D. Cal., Apr. 8, 2005). 1607

"fixed" — "the term 'fixed' requires only that the console be rigidly secured to its two adjacent recliners." Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473 (Fed. Cir. 1998). 1608

"fixed" — "While it may be possible that the invention may allow for a base element that is securely fastened into the neck of the flask, if it is crimped around the neck as described above, it is not a requirement of the invention, and is certainly not required in the recitation of claim 12." Produits Berger S.A., et al. v. Schemenauer, et al., 2007 U.S. Dist. LEXIS 10294 (E.D. Tex., Feb. 14, 2007). 1609


"fixed handgrip on the end of the handlebar" — "a separate handgrip situated over a handlebar, and not a part of the handgrip space on the handlebar itself." SRAM Corp. v. AD-II Engineering, Inc., 465 F.3d 1351 (Fed. Cir. 2006). 1611

"a ... conical extension fixed to one end thereof" — "The court finds that terms 'fixed', 'fastened', and 'securely fastened' are synonyms for purposes of claim construction in regard to this limitation." Minco, Inc. v. Combustion Engineering, Inc., 903 F. Supp. 1204 (E.D. Tenn. 1995). 1613

"snowplow blade fixed to the A-frame" — "does not need construction because its plain and ordinary meaning is easily discernible from the claim language." Douglas Dynamics, LLC v. Buyers Products Co., 2010 U.S. Dist. LEXIS 18592 (W.D. Wis., Mar. 2, 2010). 1614

"fixed upon a solid support according to an array comprising discrete regions" — "attached or linked to a surface of a solid support." Eppendorf AG, et al. v. Nanosphere Inc., 2010 U.S. Dist. LEXIS 69072 (D. Del., Jul. 12, 2010). 1615


"fixedly attached" — "bands are connected to the strand by the manufacturer, at predetermined points selected by the manufacturer, with an intended degree of permanence that precludes a necklace wearer from (a) adding bands to a strand, (b) removing bands from a strand, or (c) in any way adjusting the bands' location along the strand, which in turn restricts the location of keepers." Pandora Jewelry, LLC v. Chamilia, LLC, 2007 U.S. Dist. LEXIS 74092 (D. Md., Sept. 27, 2007). 1617


"flange" — "a projecting rib or rim for attachment to another object." Great Dane Limited Partnership v. Stoughton Trailers, LLC, et al., 2009 U.S. Dist. LEXIS 119573 (M.D. Ga., Dec. 23, 2009). 1620

"flange" — "a raised or projecting edge." Waner v. Ford Motor Co., 331 F.3d 851 (Fed. Cir. 2003). 1621

"flange" — "a projecting rim, ring, collar, or edge attached to a structure to provide additional strength, stiffness, or supporting area or to provide a place for attachment of other objects." Stant Manufacturing, Inc. v. Gerdes, GmbH, 2004 U.S. Dist. LEXIS 27704 (S.D. Ind., Sept. 27, 2004). 1622


"the flanges are located behind the studs to further secure the auxiliary frame to the primary frame" — "the flanges are located behind the studs to further secure the auxiliary frame to the primary frame, either through contact or magnetic attraction between the magnetic materials within the flanges and studs." Chic Optic, Inc., et al. v. E'Lite Optik, Inc., 524 F. Supp. 2d 794 (N.D. Tex. 2007). 1624
"flank"; "flank region" — "region defined by the blades of the bit, located radially between the nose and the gage regions, labeled 234 in Fig. 10 of the '249 and '715 Patents." Reedhycalog UK, Ltd, et al. v. Baker Hughes Oilfield Operations, Inc., et al., 2007 U.S. Dist. LEXIS 76125 (E.D. Tex., Oct. 12, 2007).1625


"flat" — "having a surface which is 'horizontal or nearly so without significant curvature or inclination and without noteworthy elevations or depression,' level, smooth, or even." Craig v. Foldfast, Inc., et al., 487 F. Supp. 2d 1364 (S.D. Fla. 2007).1628

"flat" — "having a smooth or even surface, whether horizontal or not." Abraskin v. Entrecap Corp., 55 F. Supp. 2d 224 (S.D.N.Y. 1999).1629


"flat apex" — "an apex that is not curved or rounded." Medtronic Vascular, Inc., et al. v. Abbott Cardiovascular Systems, Inc., et al., 2007 U.S. Dist. LEXIS 95430 (N.D. Cal., Dec. 21, 2007).1631

"flat car" — "a freight car having a flat floor or deck laid on the underframe, with no sides, ends or roof, designed for handling commodities not requiring protection from the weather." National Steel Car, Ltd. v. Canadian Pacific Railway, Ltd., et al., 254 F. Supp. 2d 527 (E.D. Pa. 2003).1632


"a base plate with a flat leading edge at forward end of the channeling structure" — "This court ... interprets a 'flat' surface to mean 'relatively smooth or even.'" Sanders Brine Shrimp Co. v. Bonneville Artemia International, Inc., 970 F. Supp. 892 (D. Utah 1997).1635

"flat panel display device" — "[a] display device having at least a flat display panel sandwiched by the first and second frames." LG Philips Co., Ltd. v. Tatung Co., et al., 2007 U.S. Dist. LEXIS 43557 (D. Del., June 15, 2007).1636

"flat side walls" — "means that the tube structure is flat, as the specification states, and does not prohibit the presence of fins, webs, or other attachments to either the interior or exterior surfaces." Modine Manufacturing Co. v. United States International Trade Commission, et al., 75 F.3d 1545 (Fed. Cir. 1996).1637
"the compound in the region of reduced thickness has a substantially uniform, flattened configuration" — "a straightforward interpretation of this claim requires the slope or inclination of the tube to be noticeably reduced in this particular region, so that the surface of the tube (and the compound within it) becomes more horizontal and even." Dap Products, Inc. v. Sasheco, Inc., 1996 U.S. Dist. LEXIS 22529 (S.D. Ohio, July 17, 1996). 1638

"flattening and applying the tissue flap to a recipient area larger than the area of the separated layer" — "smoothing and applying the differentially expanded tissue flap to a recipient area larger than the area of separated tissue." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006). 1639


"flexible" — "Webster's Dictionary defines 'flexible' as 'pliant.' 'Pliant' is synonymous with 'pliable,' meaning 'supple enough to bend freely or repeatedly without breaking.' This definition is consistent with the term's usage in the patent." Innovative Design Enterprises, Inc. v. Circulair, Inc., 1997 U.S. Dist. LEXIS 12799 (N.D. Ill., Aug. 20, 1997). 1643

"flexible and resilient strip" — "one made out of a material that at the time of the invention was known to be capable of bending and then returning to its original shape and position." Alloc, Inc., et al. v. Pergo, LLC, 2009 U.S. Dist. LEXIS 62881 (E.D. Wis., Jul. 2, 2009). 1644

"flexible cell" — "an arrangement of structural elements that defines an enclosed space. The cells must be substantially flexible prior to expansion of the stent and substantially rigid after expansion of the stent. ... 'rigid' as used in my construction of 'flexible cell' means 'able to hold open the blood vessel at the desired inner diameter.'" Medinol Ltd. v. Guidant Corp., et al., 417 F. Supp. 2d 280 (S.D.N.Y. 2006). 1645

"flexible compensating member or flexible link" — "a structural element that is flexible with respect to the stent's longitudinal axis and must be aligned along the longitudinal axis of the stent. A 'flexible compensating member or flexible link' must connect adjacent cells, but the physical connection need not be made at points directly opposite each other." Scimed Life Systems, Inc., et al. v. Johnson & Johnson, 225 F. Supp. 2d 422 (D. Del. 2002). 1646

"a single flexible connecting device secured to the free end of said elongate member" — "As the Court has determined that § 112 P 6 does not apply, and the words of the phrase are commonly understood, the Court does not believe that 'flexible connecting device' requires any additional construction." Robinson v. Advanced Decoy Research, Inc., et al., 519 F. Supp. 2d 1087 (S.D. Cal. 2007). 1647
"by at least one flexible connector member disposed between adjacent grafts" — "Flexible' means capable of being bent or flexed. ... A 'connector member' is a structure disposed or particularly arranged between adjacent grafts in order to join them together. ... there is no requirement in the claim language that each individual graft be flexible, only that the connector member be flexible." Cordis Corp., et al. v. Advanced Cardiovascular Systems, Inc., et al., 1998 U.S. Dist. LEXIS 11342 (D. Del., Jul. 17, 1998). [A]gain, it is the connector member and not the adjacent structures which must provide flexibility." Id., 1999 U.S. Dist. LEXIS 387 (D. Del., Jan. 15, 1999).

"flexible diaphragm" — "we conclude that the patentee limited the term 'flexible' to encompass a physical property of the diaphragm to flex or give when the hovercraft encounters obstacles." McCreary, et al. v. United States, 1997 U.S. App. LEXIS 12063 (Fed. Cir., May 27, 1997) (unpublished).

"flexible element" — "a portion of the valve that is capable of being bent, usually without breaking." ICU Medical, Inc. v. B. Braun Medical, Inc., 344 F. Supp. 2d 663 (N.D. Cal. 2004).

"plate ..., which is flexible enough to be wound around the inner tube" — "a broad, thin piece of material that is sufficiently capable of bending that it can be wound around the inner tube without cracking or breaking." ITP, Inc., et al. v. BP Corp. North America, Inc., 2005 U.S. Dist. LEXIS 39078 (S.D. Tex., May 2, 2005).

"flexible joints between the units" — "a point or position in the interval or position separating the floatation units of the dock, which point or position is capable of bending or flexing." Ocean Innovations, Inc., et al. v. Archer, et al., 145 Fed. Appx. 366 (Fed. Cir., Aug. 19, 2005) (unpublished).

"flexible joint between the units" — "a point or position in the interval or position separating the floatation units of the dock, which point or position is capable of bending or flexing." Ocean Innovations, Inc. v. Archer, et al., 483 F. Supp. 2d 570 (N.D. Ohio 2007).


"flexible link" — "a structural element connecting adjacent cells that is flexible and aligned with respect to the stent's longitudinal axis." Medinol Ltd. v. Guidant Corp., et al., 2004 U.S. Dist. LEXIS 19705 (S.D.N.Y., Sept. 30, 2004).


"flexible pad" — "an object or base, where such object or base is capable of being noticeably flexed with ease, including, among other things, hand-held game pad controllers that are capable of being noticeably flexed with ease." Thorner, et al. v. Sony Computer Entertainment America LLC, et al., 2010 U.S. Dist. LEXIS 100410 (D.N.J., Sep. 22, 2010).

"flexible plate" — "a smooth, usually nearly flat, and relatively thin piece of metal or other material that is bendable." Akeva L.L.C. v. Adidas America, Inc., 2005 U.S. Dist. LEXIS 11213 (M.D.N.C., May 17, 2005).
"flexible wall means defining a fluid impervious chamber" — "a pliable barrier that demarcates an enclosed space and does not allow fluids to pass through." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006). 1660

"flexible web" — "a flat layer of elastic material." Motorola, Inc. v. VTech Communications, Inc., et al., 2009 U.S. Dist. LEXIS 59226 (E.D. Tex., Jul. 6, 2009). 1661

"flexibly coupled to the carrier portion" — "the key caps are coupled to the carrier portion so that the key caps flex in relation to the carrier portion when pressed." Motorola, Inc. v. V Tech Communications, Inc., et al., 2009 U.S. Dist. LEXIS 59226 (E.D. Tex., Jul. 6, 2009). 1662

"flexing" — "The district court's construction of 'flexing' as 'a generalized combination of cantilever bending and bowing about the general area of the base or base end' is consistent with the ordinary and customary meaning of 'flexing,' which is 'bending.' Because Bridgeport has not established that the district court's construction is in error based on the claim language, the written description, the prosecution history, or the prior art, we decline to disturb that construction on appeal." Arlington Industries, Inc. v. Bridgeport Fittings, Inc., 345 F.3d 1318 (Fed. Cir. 2003). 1663 "While confusing, the instruction appears to permit the jury to find that the 'capable of flexing' limitation is satisfied by mere bowing. To that extent the instruction was erroneous." Id. (Dyk, J., concurring-in-part, dissenting-in-part). 1664


"flight bars" — "The district court ... instructed the jury not to limit the term to the unitary structure found in the specification. We agree with that conclusion." Riverwood International Corp. v. R. A. Jones & Co., Inc., 324 F.3d 1346 (Fed. Cir. 2003). 1666

"flight shape" — "the shape of the projectile after it is propelled out of the weapon shell and during the course of its flight." Combined Tactical Systems, Inc. v. Defense Technology Corp. of America, et al., 426 F. Supp. 2d 140 (S.D.N.Y., April 4, 2006). 1667

"float equipment tubular" — "tube-shaped equipment typically positioned near or adjacent to the bottom of the tubular string (as defined herein), which contains valves." Davis-Lynch, Inc. v. Weatherford International, Inc., 2009 U.S. Dist. LEXIS 33414 (E.D. Tex., Apr. 20, 2009). 1668


"floatation unit" — "an airtight, individual structural constituent of a whole which is buoyed on water." Ocean Innovations, Inc. v. Archer, et al., 483 F. Supp. 2d 570 (N.D. Ohio 2007). 1670

"flooding said area of said mine shaft involved in the fire with water" — "covering the surfaces of the mine shaft that are on fire with water." US Foam, Inc., et al. v. On Site Gas Systems, Inc., 2010 U.S. Dist. LEXIS 79286 (E.D. Tex., Aug. 3, 2010). 1671

"floor" — "the layer of material which is placed on top of the underframe of a car and provides the direct support for the car contents." National Steel Car, Ltd. v. Canadian Pacific Railway, Ltd., et al., 254 F. Supp. 2d 527 (E.D. Pa. 2003). 1672

"floral holding material having an upper end, a lower end and an outer peripheral surface, the floral holding material being constructed of a material capable of receiving a portion of the floral grouping and supporting the floral grouping without any pot means" — "the terms of the phrase ... must be given their ordinary meaning." *Prima Tek II, L.L.C., et al. v. Polypap, S.A.R.L.*, 318 F.3d 1143 (Fed. Cir. 2003).  

"flowpath"; "flowpath ... between" — "the path taken by the cleaning fluid from the basin to the tank." *ChemFree Corp. v. J. Walter, Inc., et al.*, 2007 U.S. Dist. LEXIS 51677 (N.D. Ga., July 17, 2007).  

"flow channel" — "a portion of a mold cavity that is significantly thicker and wider than the adjacent mold cavity thickness for the purpose of directing the flow of injected plastic, and the claim further requires that the flow channel direct flow so that the plastic flows in the flow channel in at least one direction that is positively different from the predetermined general direction. Finally, 'significantly thicker and wider' means thick and wide enough relative to the adjacent cavity thickness to direct the flow of injected plastic as required by the claim." *Koito Manufacturing Co., Ltd, et al. v. Turn-Key-Tech, L.L.C., et al.*, 234 F. Supp. 2d 1139 (S.D. Cal. 2002).  

"soil/water flow channel" — "even though the word 'means' is absent from this claim element, it is nonetheless in means-plus-function form." *Maytag Corp. v. Whirlpool Corp.*, 95 F. Supp. 2d 888 (N.D. Ill. 2000).  


"flowing process fluids sequentially and continuously" — "means that process fluids flow past the wafers one after another and that the term 'continuously' requires an uninterrupted flow of the process fluids." *CFMT, Inc., et al. v. YieldUP International Corp.*, 92 F. Supp. 2d 359 (D. Del. 2000).  


"fluid communication" — "The term 'fluid' is an adjective describing the ability for the liquid and air to move within the catheter, and, depending on the pressure exerted by the amniotic fluid, communicate that pressure to the transducer. Thus, all this element requires is that the amniotic pressure has the means to communicate with the air pressure so that pressures are able to be transmitted from one end of the catheter to the other end." *Utah Medical Products, Inc. v. Clinical Innovations Associates, Inc., et al.*, 79 F. Supp. 2d 1290 (D. Utah 1999).


"secondary fuel filter means including an outlet in fluidic communication with said engine and an inlet in fluidic communication with said initial fuel filter means and located downstream therefrom for receiving fuel containing an undesired gas from said initial fuel filter means and separating substantially all of said undesired gas from fuel received therein prior to passage of said fuel through the outlet" — "The secondary fuel filter, which is located downstream from the initial fuel filter, includes an outlet in fluidic communication with the engine and an inlet in fluidic communication with the initial fuel filter. The secondary fuel filter receives fuel containing an undesired gas from the initial fuel filter and separates substantially all of said undesired gas prior to passage of the fuel through the outlet. Fluidic communication means that fluid can transfer from one element to another. Undesired gas is any undesired bubbles of entrained air or other vapors and gasses entrained or entrapped in the fuel." *Ekstam v. Ekstam*, 2006 U.S. Dist. LEXIS 12937 (E.D. Mo., March 7, 2006).  


"folded in half" — "is a clear and unambiguous description, and therefore requires no construction." *Craig v. Foldfast, Inc., et al.*, 487 F. Supp. 2d 1364 (S.D. Fla. 2007).
"a strip of shade material folded lengthwise to form an upper cell wall and a lower cell wall extending from a fold, each upper and lower cell wall having a free edge and a folded edge" — "Springs' interpretation would read 'folded' as a past participle, requiring that at some stage of manufacture a strip of shade material be folded to create one free edge and one folded edge. Plaintiffs would read 'folded' as an adjective, requiring merely that the final product contain a strip of material with a fold in it. ... The court concludes that neither claim contain[s] a process limitation. The court construes the claims-in-suit to extend to any cellular structure exhibiting the physical characteristics claimed therein." Newell Window Furnishings, Inc., et al. v. Springs Window Fashions Division, Inc., 1999 U.S. Dist. LEXIS 17273 (N.D. Ill., Oct. 7, 1999).1693


"foot and leg support at each side of the front wheel" — "a support that supports the leg by contacting the foot, ankle or leg, but does not necessarily require contact with the leg and overlapping at least a portion of the front wheel and on opposite sides of the plane defined by the front wheel." Brike International, Ltd. v. Invacare Corp., 2007 U.S. Dist. LEXIS 44003 (D. Or., June 14, 2007).1696

"foot portion" — "the lower part of a support pedestal." Lifetime Products, Inc. v. GSC Technology Corp., et al., 321 F. Supp. 2d 938 (N.D. Ill. 2004).1697


"footwell" — "within the patents, the term comprises a 'plurality of upwardly and forwardly slanted bracing surfaces' for a paddler's feet." Old Town Canoe Co. v. Glenwa, Inc., 229 F. Supp. 2d 1151 (D. Or. 2001).1699

"said arms respectively containing second magnetic members for cooperation with said first magnetic members" — "the arms include second magnetic members with horizontal orientation that cooperate together with the first magnetic members, such that the second magnetic members and first magnetic members magnetically engage either by direct contact of corresponding surfaces or by magnetically attracting corresponding surfaces without physical contact." Aspex Eyewear, Inc., et al. v. E'Lite Optik, Inc., 2007 U.S. Dist. LEXIS 76024 (N.D. Tex., Oct. 12, 2007).1700

"for connection to a floating vessel via an anchor line or chain" — "the Court declines to impose the limitation of a 'direct connection' on the claim phrase 'for connection to a floating vessel via an anchor line or chain.'" Advanced Production and Loading, Inc. v. Single Buoy Moorings, Inc., et al., 2004 U.S. Dist. LEXIS 31081 (S.D. Tex., Apr. 26, 2004).1701

"for deflecting the striking force of said metal particles" — "the magnet protector prevents debris from hitting the surface of the magnet member when the tool is rotated." Rattler Tools, Inc. v. Bilco Tools, Inc., et al., 2007 U.S. Dist. LEXIS 49124 (E.D. La., July 6, 2007).1702
"for each finger, a finger-associable cluster of input keys" — "for each of the four fingers, the device must include a separate group of multiple input keys that correspond to the associated finger." Motionless Keyboard Co. v. Microsoft Corp., et al., 2007 U.S. Dist. LEXIS 43215 (D. Or., May 6, 2007).  

"providing a magnet protector for each of said magnet members" — "each magnet has its own protector, that is, a one-to-one correspondence exists between magnets and their protectors." Rattler Tools, Inc. v. Bilco Tools, Inc., et al., 2007 U.S. Dist. LEXIS 49124 (E.D. La., July 6, 2007).  

"the orientation parameter for each of the two successive entities are the same" — "the orientation parameter is the same from one entity to the next." Omax Corp. v. Flow International Corp., 2006 U.S. Dist. LEXIS 81914 (W.D. Wash., Nov. 7, 2006).  

"for electrical connection" — "any combination of contact arm(s) and/or the spring makes the electrical connection with the first terminal of the battery." Invisible Fence, Inc. v. Perimeter Technologies, Inc., 2006 U.S. Dist. LEXIS 33792 (N.D. Ind., May 25, 2006).  

"having a lower surface for freely seating on a substantially flat surface" — "having a lower surface that sits on, but is not secured to, a mostly flat surface." Robinson v. Advanced Decoy Research, Inc., et al., 519 F. Supp. 2d 1087 (S.D. Cal. 2007).  

"downwardly extended end portions for hooking said auxiliary spectacle frame to said primary spectacle frame" — "each arm includes an end portion that extends downwardly relative to the remainder of the arm, and which is bent in a manner to connect or catch with the primary spectacle frame as if with a hook." Aspex Eyewear, Inc., et al. v. E’Lite Optik, Inc., 2007 U.S. Dist. LEXIS 76024 (N.D. Tex., Oct. 12, 2007).  

"first portion for increasing wettability" — "is not limited to the acrylic structure set out in Formula I or the '943 patent specification. It covers structures that are hydrophilic and include carbamate or amide sidechain functionality. This includes both vinyls and acrylics." Wesley Jessen Corp. v. Bausch & Lomb, Inc., 209 F. Supp. 2d 348 (D. Del. 2002).  

"a crane support mounted upon each said housing and removable conical extension for lifting and tilting the housing to remove the contents thereof" — "simply requires that there be a crane support mounted on the removable, detachably secured, conical extension ('dumping' end) and a crane support mounted on the remainder of the housing, with both such crane supports being involved in facilitating the lifting and tilting of the housing 'so that' the contents of the furnace (e.g., a fused silica ingot) can be removed out the detachably secured end." Minco, Inc. v. Combustion Engineering, Inc., 903 F. Supp. 1204 (E.D. Tenn. 1995).  

"spokes attached to the rings for supporting the rings" — "contemplat[es] different configurations of rings and spokes sharing the following common feature: in each configuration, whether the rings are bearing the weight of the spokes or the spokes are bearing the weight of the rings, the two sets of parts 'support' each other insofar as they hold each other in a fixed position necessary for the structural integrity of the overall chandelier frame." Schonbek Worldwide Lighting, Inc. v. American Lighting Fixture Corp., 2002 U.S. Dist. LEXIS 4761 (D. Mass., Mar. 19, 2002).\footnote{1713}

"for the continuous electric heating and/or fusion ..." — "the court finds that term 'continuous' modifies 'heating' and not 'fusion' for purposes of claim construction in regard to this limitation." Minco, Inc. v. Combustion Engineering, Inc., 903 F. Supp. 1204 (E.D. Tenn. 1995).\footnote{1714}

"a catheter wire for use in electrothrombosis" — "a catheter wire used with an electrical current to form a thrombus in a vascular cavity." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007).\footnote{1715}

"for use in sports and casual activities" — "does not limit the invention." Panoptx Inc. v. Protective Optics Inc., 2007 U.S. Dist. LEXIS 83462 (N.D. Cal., Nov. 9, 2007).\footnote{1716}

"foraminous hydrophobic water-vapor-permeable pellicle" — "a very thin and not necessarily continuous residue on fibers. This residue may be in, but is not limited to, the following forms: a distinct sublayer, a film, a coating, a crust, a deposit and a precipitate. This residue has holes or pores, repels water and permits water vapor to pass through it." Fort James Corp. v. J.H. McNairn, Ltd., 2006 U.S. Dist. LEXIS 36528 (N.D. Ga., April 4, 2006).\footnote{1717}

"force conversion" — "Nowhere in the specification is a set amount of horizontal force required to be converted into vertical force. The Court finds that there is no mandate that all horizontal force, or even most of it, be transferred via the force converting means into vertical forces." Pave Tech, Inc., et al. v. Snap Edge Corp., et al., 952 F. Supp. 1284 (N.D. Ill. 1996).\footnote{1718}

"force for centering" — "no construction is required." Saint Gobain Autover USA, Inc., et al. v. Xinyi Glass North America, Inc., et al., 2009 U.S. Dist. LEXIS 21288 (N.D. Ohio, Feb. 24, 2009).\footnote{1719}

"force producing assembly" — "Fitness Quest has not carried its burden of establishing that 'force producing assembly' is not a structure." Fitness Quest Inc. v. J. Monti, 2007 U.S. Dist. LEXIS 60195 (N.D. Ohio, Aug. 16, 2007).\footnote{1720}

"force sensor" — "a stacked configuration of five substrates consisting of a pair of drive plates found in the first and fifth substrate, a pair of insulating substrates found in the second and fourth substrate, and a third substrate sandwiched between the second and fourth substrate that includes a planar central plate which is suspended by spring-like members operatively located to measure the force between the sample and the probe tip." Hysitron Inc. v. MTS Systems Corp., 2009 U.S. Dist. LEXIS 36108 (D. Minn., Apr. 28, 2009).\footnote{1721}
"a spring operatively connected between the blade and the handle to force the blade to pivot toward an open position when the oversized tang portion of the blade is pushed into the handle until the blade reaches an equilibrium point" — "The spring, handle, and blade are arranged such that the spring operates to force the blade to an open position. The spring is activated when the oversized tang portion of the blade is pushed until the blade reaches an equilibrium point." Kai U.S.A., Ltd. v. Buck Knives, Inc., 2006 U.S. Dist. LEXIS 24924 (D. Or., Feb. 9, 2006).\footnote{1722}


"forces said metallic grounding clip into clamping engagement" — "The bail in its closed position, contacts the grounding clip and retains or forces the clip into tight engagement with the exposed portion of the conductor." Andrew Corp. v. Beverly Manufacturing Co., 479 F. Supp. 2d 766 (N.D. Ill. 2006).\footnote{1724}

"forcing said electrical conductor of said transmission cable through said axial opening" — "The electrical conductor must be forced or pressed into the axial opening defined by the clip." Andrew Corp. v. Beverly Manufacturing Co., 479 F. Supp. 2d 766 (N.D. Ill. 2006).\footnote{1725}

"forcing said grounding clip into clamping engagement" — "The bail, once in its closed position, forces or retains the clip in tight engagement with the exposed portion of the conductor." Andrew Corp. v. Beverly Manufacturing Co., 479 F. Supp. 2d 766 (N.D. Ill. 2006).\footnote{1726}

"forcing the cover against the separated tissue to expand the tissue layer substantially uniformly away from the underlying tissue" — "pushing the cover against the separated tissue to expand the tissue layer consistently, but with acceptable minor variations, from the underlying tissue." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006).\footnote{1727}

"foremost edge" — "the edge of a tab side farthest away from the face of the tab." A&E Products Group, L.P. v. Mainetti USA Inc., et al., 2002 U.S. Dist. LEXIS 24280 (S.D.N.Y., Dec. 28, 2002).\footnote{1728}

"first chamber means for defining a first volume which is in fluid communication with said liquid such that said liquid will enter said first chamber means and form a liquid column therein" — "In order to form a liquid column, the first chamber must be completely enclosed without any holes that would prevent a liquid column from functioning properly." Utah Medical Products, Inc. v. Clinical Innovations Associates, Inc., et al., 79 F. Supp. 2d 1290 (D. Utah 1999).\footnote{1729} "[W]e agree with Judge Benson, who construed the 'liquid column' limitation to require a continuum of liquid constrained by the first chamber." \textit{Id.}, 2000 U.S. App. LEXIS 31756 (Fed. Cir., Dec. 13, 2000) (unpublished).\footnote{1730}

"form an occlusive volume" — "form a space, or container, for the accumulation of fluids." Kimberly-Clark Corp., et al. v. Tyco Healthcare Retail Group, 456 F. Supp. 2d 998 (E.D. Wis. 2006).\footnote{1731}
"form set" — "a 'form set' is simply a set of forms, i.e., more than one form." Paymaster Technologies, Inc. v. United States, 180 Fed. Appx. 942 (Fed. Cir., May 4, 2006) (unpublished).1732 "[I]n my view, the 'present invention' language in the specification limits the term 'form set' in claim 10 to a group of multi-ply sheets." Id. (Dyk, J., dissenting).1733

"forward end formation" — "The district court correctly decided that the 'forward end formation' of the '679 patent is the same as the 'head.'" Young Dental Manufacturing Co., Inc. v. Q3 Special Products, Inc., et al., 112 F.3d 1137 (Fed. Cir. 1997).1734

"the formation of ligation material in a loop forwardly of a crimpable grommet" — "forming a loop of ligation material during the process of placing a linear length of bulk ligation material into the tool forward of a grommet." Callicrate v. Wadsworth Manufacturing, Inc., et al., 217 F. Supp. 2d 1101 (D. Mont. 2002).1735

"protrusions formed" — "means protrusions actually formed from the same piece of sheet metal as the holder, and does not mean protrusions that are attached to the holder." U.S. Can. Co., Inc. v. Limited Brands, Inc., et al., 2006 U.S. Dist. LEXIS 21010 (N.D. Ill., April 19, 2006).1736

"a cylindrical tube formed along an interior wall [of the catheter]" — "formed along' only requires that a circular tube run within the catheter parallel to the interior walls of the catheter." Utah Medical Products, Inc. v. Clinical Innovations Associates, Inc., et al., 79 F. Supp. 2d 1290 (D. Utah 1999).1737

"said trough formed between the actuating section of one louver member and closing section of an adjacent louver member" — "clearly contemplates the formation of a trough, defined on one side by the closing section of one louver and on the other side by the actuating section of the adjacent lower louver member." Industrias Metalicas Marva, Inc. v. Empresas Lausell, 1997 U.S. Dist. LEXIS 13773 (D.P.R., Aug. 27, 1997).1738

"the lens body formed by a process including cast molding using a first polymeric mold section having a surface in a general shape of a negative of the posterior face and a concave outer peripheral surface" — "the lens body formed by a process including cast molding using a polymeric mold section having a surface in a general shape of a negative of the posterior face of the lens and a concave curved peripheral surface. A concave curve is the negative image of a convex curve." Coopervision, Inc. v. Ciba Vision Corp., 2007 U.S. Dist. LEXIS 51432 (E.D. Tex., July 16, 2007).1739


"an opening formed in the abutment portion of the projection is in communication with an aperture formed in a side wall of the offset powerbox adjacent the duct" — "to be 'formed in' an abutment portion, the opening must be formed in an area that hangs down -- i.e., extends downward -- from a top portion of the projection. Second, the claim language requires that the opening be 'in communication' with an aperture formed in the side wall. We agree with the district court -- and the parties do not dispute -- that 'in communication' simply requires a passage through which wires may be routed." Panduit Corp. v. HellermanTyton Corp., 451 F.3d 819 (Fed. Cir. 2006).1745

"formed inside the central bridge" — "mean[s] that the duct is entirely within, and given form or shape by, the central bridge." Freni Brembo, S.p.A. v. Alcon Components, Ltd., 2005 U.S. Dist. LEXIS 11714 (N.D. Ill., May 31, 2005).1746

"is formed integrally with" — "describe[s] a nozzle that is constructed such that the housing and the nozzle are one piece." P & M Products, Ltd., et al. v. Rose Art Industries, 2002 U.S. Dist. LEXIS 5008 (E.D. Pa., Mar. 25, 2002).1747

"formed integrally within"; "integrally formed within" — "created or constructed within or as a part of the frame." Cedarapids, Inc. v. Johnson Crushers International, Inc., et al., 2005 U.S. Dist. LEXIS 37439 (M.D. Tenn., Aug. 26, 2005).1748

"a multiplicity of fluid-conducting passageways formed longitudinally and substantially parallel to the axis of said roll, each of these passageways open at each end to a counterbore" — "within the roller is another set of longitudinally formed water-conducting passageways that run substantially parallel to [the] axis of the roller." Caputo v. Sealed Air Corp., 60 Fed. Appx. 822 (Fed. Cir., Apr. 8, 2003) (unpublished).1749

"a plurality of integral spaced apart length indicators formed on the exterior surface of said body shaft portion" — "the exterior surface of the body shaft must be 'given a particular shape' for a particular purpose, i.e., to indicate length. By this construction, therefore, the mere presence of a physical feature on the exterior surface of the body shaft does not necessarily mean that the feature was 'formed' or 'given a particular shape' in order to indicate length." Dentsply International Inc., et al. v. Soft-Core Systems, Inc., 1999 U.S. Dist. LEXIS 13873 (D. Del., Aug. 18, 1999).1750

"the opposite face of the [toothbrush's] head have at least one groove formed therein" — "necessarily requires that such a groove must be 'in' the specified face. So, a 'groove' that is ... 'formed' during the manufacturing process but that is distinctly absent in the final product is not a 'groove formed therein' under the unambiguous language of the '158 patent." Smithkline Beecham Consumer Healthcare, L.P. v. Colgate-Palmolive Co., 1999 U.S. Dist. LEXIS 19422 (E.D. Pa., Dec. 22, 1999).1751
"a plurality of slots formed therein" — "although the phrase 'a plurality of slots formed therein' modifies the phrase 'wall surface' (arguably implying a manufacturing limitation), the court concludes that ... the structure of the product claimed is adequately described and does not implicate a manufacturing requirement." Cordis Corp., et al. v. Advanced Cardiovascular Systems, Inc., et al., 1999 U.S. Dist. LEXIS 387 (D. Del., Jan. 15, 1999). [1752] "[W]e conclude that the district court erred in construing the 'slots formed therein' limitation in the two patents to require that the slots be formed by removing material from a pre-existing wall surface." Cordis Corp. v. Medtronic AVE, Inc., et al., 339 F.3d 1352 (Fed. Cir. 2003). [1753]

"said stud having at least one hole formed therein proximal to said top end" — "means that a hole must be formed in the stud prior to insertion of the stud between the flanges so that the hole can be used to align the stud with the vertical slot before passing the attachment means through the vertical slot and into the stud." Slip Track Systems, Inc. v. Metal Lite, Inc., 113 Fed. Appx. 930 (Fed. Cir., Dec. 1, 2004) (unpublished). [1754]


"forming a contact lens member in the lens shaped cavity of the assembled mold sections"; "a tool useful in making a mold section for cast molding a contact lens" — "The court ... will not construe these phrases." Coopervision, Inc. v. Ciba Vision Corp., 2007 U.S. Dist. LEXIS 51432 (E.D. Tex., July 16, 2007). [1757]

"(a) forming a generally flat dough base; (b) forming a plurality of closed pockets each pocket enclosing a portion of food; (c) placing the closed pockets on portions of the dough base" — "requires that the dough pockets be formed separately from the dough base, and then placed upon that base." Angelo Mongiello's Children, LLC v. Pizza Hut, Inc., 70 F. Supp. 2d 196 (E.D.N.Y. 1999). [1758]

"a second portion of said wall extending from said first point to a second point forming a lowermost end of said wall" — "the specific place on the wall nearest the central panel (toward the bottom of the can)." Crown Packaging Technology, Inc., et al. v. Rexam Beverage Can Co., 486 F. Supp. 2d 366 (D. Del. 2007). [1759]

"forming a rigid connection between the lever and the knob with at least one substantially rigid member while maintaining the lever in a position where the protrusion cannot contact the surface of the cam wheel, in response to a receipt of an unlock signal" — "[requires] a rigid connection between all parts in the chain of parts between the lever and the knob during the unlocking procedure." Masco Corp. v. United States, et al., 303 F.3d 1316 (Fed. Cir. 2002). [1760]

"said wall and said reinforcing bead forming a transition therebetween" — "forming a place between two things at which one changes to the other." Crown Packaging Technology, Inc., et al. v. Rexam Beverage Can Co., 486 F. Supp. 2d 366 (D. Del. 2007). [1761]

"forming appendages extending from either side of said auxiliary eyeglasses" — "forming at least one appendage extending from each side of the auxiliary eyeglasses." Revolution Eyewear, Inc. v. Aspex Eyewear, Inc., et al., 2004 U.S. Dist. LEXIS 31065 (C.D. Cal., Aug. 12, 2004).\(^{1763}\)

"forming folds in said tubular sock-like projectile body" — "requires the deliberate and systematic creation of folds." Combined Systems, Inc. v. Defense Technology Corp. of America, et al., 350 F.3d 1207 (Fed. Cir. 2003).

"having four periphery surfaces" — "the pad structure has four periphery surfaces which meet, but not necessarily at corners; if the surfaces do meet at corners, the corners need not have any particular angle." Farrago v. Rawlings Sporting Goods Co., Inc., 2007 U.S. Dist. LEXIS 38036 (E.D. Mo., May 24, 2007).

"four-side-seal type bag body" — "requires the bag to have four side seals." Shield Pack, LLC v. CDF Corp., 2010 U.S. Dist. LEXIS 95044 (W.D. La., Sep. 13, 2010).

"fracture toughness" — "resistance to extension of a crack, often measured in terms of the stress-intensity factor (K) at which applying progressively greater stress to a structure that contains a pre-existing crack causes the onset of rapid catastrophic propagation of that crack." Pechiney Rhenalu v. Alcoa Inc., 224 F. Supp. 2d 773 (D. Del. 2002).

"fragile gel drilling fluid"; "fragile gel" — "The Court is unable to construe 'fragile gel drilling fluid' or 'fragile gel' such that those terms would have a meaning that is not purely subjective. Accordingly, the Court GRANTS M-I's Motion for Summary Judgment of Invalidity based on indefiniteness." Halliburton Energy Services, Inc. v. MI, L.L.C., 456 F. Supp. 2d 811 (E.D. Tex. 2006).

"frame" — "a basic structure, but excluding a substantially continuous surface (i.e., walls), that gives shape or support to the rack container." Bradford Co. v. Afco Manufacturing, et al., 2006 U.S. Dist. LEXIS 88547 (S.D. Ohio, Dec. 5, 2006).


"frame" — "the underlying structure of the cone crusher to which other constituent parts may be fitted, attached or integrated." Cedarapids, Inc. v. Johnson Crushers International, Inc., et al., 2005 U.S. Dist. LEXIS 37439 (M.D. Tenn., Aug. 26, 2005).

"frame" — "include[s] structures consisting only of side rails." Lifetime Products, Inc. v. GSC Technology Corp., et al., 321 F. Supp. 2d 938 (N.D. Ill. 2004).

"frame" — "Because 'frame' is commonly understood to refer to some structures that surround an object and other structures that connect parts but do not surround anything, the Court construes the patent to refer to both kinds of structures." Aspex Eyewear, Inc., et al. v. E'Lite Optik, Inc., 2004 U.S. Dist. LEXIS 27493 (D. Nev., May 28, 2004).

"frame" — "following a review of the patent's claim, specification, and prosecution history, the ordinary meaning of the word "frame" does not require the frame to have base supports and rocker arms." PMG, Inc. v. Stinger Spike Systems, Inc., 2002 U.S. Dist. LEXIS 17162 (N.D. W. Va., Mar. 28, 2002).\(^{1774}\)

"ear warmer frame" — "a structure that supports a device worn on or over the ears whose primary function is to keep ears warm." 180s, Inc., et al. v. Gordini U.S.A., Inc., 2010 U.S. Dist. LEXIS 30766 (D. Md., Mar. 30, 2010). 1776

"frame including a pair of generally disposed side rails" — "a structure formed of relatively slender pieces or parts, fitted or joined to the table, that may be side rails alone or end rails alone, and other components may also be added, but are not required." Lifetime Products, Inc. v. Correll, Inc., 323 F. Supp. 2d 1129 (D. Utah 2004). 1777

"a frame mountable to the open periphery of a chimney flue and having a superior portion oriented to extend above said flue opening" — "a frame (an inverted 'V' or otherwise) that is mountable to the periphery of a chimney flue having a superior (or upper) portion that extends above the flue opening." Bernard Dalsin Manufacturing v. RMR Products, Inc., 1999 U.S. Dist. LEXIS 22648 (D. Minn., Sept. 14, 1999). 1778

"frangible portion" — "a part of a whole that is capable of being broken." Stant Manufacturing, Inc. v. Gerdes, GmbH, 2004 U.S. Dist. LEXIS 27704 (S.D. Ind., Sept. 27, 2004). 1779

"free" — "the unsupported portion of the rod that is free to move about relative to the fixed mounting point so that the rod is able to bend in a bow-like fashion." Nautilus Group, Inc. v. Icon Health & Fitness, Inc., 2005 U.S. Dist. LEXIS 46877 (W.D. Wash., Feb. 16, 2005). 1780

"free along substantially their entire length" — "mean[s] that the edges are not connected to the garment along their length except in the waist area of the garment in the front and in the rear at or near the sides of the garment." Orr v. Patagonia, Inc., et al., 2006 U.S. Dist. LEXIS 73739 (N.D. Tex., Sept. 26, 2006). 1781

"a free distal end forming a handle spaced outwardly therefrom" — "a handle at the end of the arm assembly opposite the fixed end, and spaced away from the distal end." One World Technologies, Ltd., et al. v. Rexon Industrial Corp., Ltd., et al., 2006 U.S. Dist. LEXIS 25324 (N.D. Ill., May 2, 2006). 1782

"free edge" — "an edge which is not connected to the hanger body or hook." A&E Products Group, L.P. v. Mainetti USA Inc., et al., 2002 U.S. Dist. LEXIS 24280 (S.D.N.Y., Dec. 28, 2002). 1783

"free edge of material" — "mean[s] that the material that has a free edge is not connected to anything." Orr v. Patagonia, Inc., et al., 2006 U.S. Dist. LEXIS 73739 (N.D. Tex., Sept. 26, 2006). 1784

"a rearwardly directed free end for securing a magnetic member" — "a rearwardly directed end portion for connecting a magnetic member in a manner such that the connection is not likely to fail or give way." Aspex Eyewear, Inc., et al. v. E'Lite Optik, Inc., 2007 U.S. Dist. LEXIS 76024 (N.D. Tex., Oct. 12, 2007). 1785

"free from play" — "there are no spaces between the contact surfaces so that the panels are locked in the horizontal and vertical directions." Alloc, Inc. v. Unilin Decor N.V., et al., 2007 U.S. Dist. LEXIS 16743 (E.D. Wis., Mar. 6, 2007). 1786

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"free of dependent arms" — "the complete absence of any distinct structures that extend away from the ends of the earring's ornamental components and which serve to support fastening device." Friedrich Zettl GmbH v. Bloomingdales, Inc., et al., 2000 U.S. Dist. LEXIS 6747 (N.D. Ill., Feb. 24, 2000).1787

"free passageway" — "the open space that extends along the entire pipe section outside the microporous material and inside the outer tube." ITP, Inc., et al. v. BP Corp. North America, Inc., 2005 U.S. Dist. LEXIS 39078 (S.D. Tex., May 2, 2005).1788

"a free passageway to allow longitudinal gas flow, whereby low pressure is maintained throughout said annular space" — "the open space that extends along the entire pipe section outside the microporous material and inside the outer tube to allow the movement of air in the annular space lengthwise along an entire pipe section, preserving a low pressure within the annular space." ITP Interpipe, Inc., et al. v. Technip Offshore, Inc., 2007 U.S. Dist. LEXIS 7551 (S.D. Ala., Jan. 31, 2007).1789


"freeze the dots" — "sufficiently cure the dots of ink such that they will not spread, wick, or otherwise move on the substrate." Leggett & Platt, Inc., et al. v. Vutek, Inc., 2006 U.S. Dist. LEXIS 33383 (E.D. Mo., May 25, 2006).1791


"a releasable needle holder and needle frictionally held by the wall of the syringe body" — "a releasable needle holder and needle kept in the nose portion by friction with the syringe body." Retractable Technologies v. New Medical Technologies, 2004 U.S. Dist. LEXIS 3855 (E.D. Tex., Mar. 1, 2004).1793

"from different directions" — "at distinct and unshared angles of incidence." Nikon Corp., et al. v. ASM Lithography B.V., 308 F. Supp. 2d 1039 (N.D. Cal. 2004).1794

"front panel" — "a graphical user interface that is separate and apart from the associated data flow diagram and that displays inputs and output controls, where there is at least one input control and at least one output control in the front panel." National Instruments Corp. v. Mathworks, Inc., 2002 U.S. Dist. LEXIS 27577 (E.D. Tex., May 24, 2002).1795

"front plate" — "the plate situated in advance of the flow of ice from the receptacle." Maytag Corp. v. Whirlpool Corp., 2004 U.S. Dist. LEXIS 31091 (S.D. Iowa, Nov. 23, 2004).1796

"front side" — "The front side is the horizontal plane on the portion of the circumference of the reflector body that faces in the direction that the emitted light is traveling. Put another way, it is the surface of the edge of the rim of the reflector which faces in the same direction the light is traveling." U.S. Philips Corp. v. Iwasaki Electric Co., et al., 2006 U.S. Dist. LEXIS 106 (S.D.N.Y., Jan. 3, 2006).1797


"frustoconically tapered portion" — "a portion of an implant whose exterior is conically shaped over a region, but does not come all the way to a point in that region." Nobel Biocare USA, LLC, et al. v. Blue Sky Bio, LLC, et al., 2009 U.S. Dist. LEXIS 100408 (C.D. Cal., Oct. 14, 2009).


"fuel injection system component" — "is limited to a fuel filter." Honeywell International, Inc., et al. v. ITT Industries, Inc., et al., 452 F.3d 1312 (Fed. Cir. 2006).


"fusion-bonded"; "fusion-bonding" — "require the foam to melt and thereby form a bond with the sheath." Trilogy Communications, Inc. v. Times Fiber Communications, Inc., et al., 109 F.3d 739 (Fed. Cir. 1997).
"gage": "gage region" — "the outermost radius of the bit, labeled 207 in Fig. 7 of the '249 and '715 Patents"; "region at the outermost radius of the bit, labeled 322 in Fig. 14A of the '631 Patent." Reedhycalog UK, Ltd, et al. v. Baker Hughes Oilfield Operations, Inc., et al., 2007 U.S. Dist. LEXIS 76125 (E.D. Tex., Oct. 12, 2007).

"game board" — "a structure having a playing surface that can support game pieces and electronic components." Innovention Toys, LLC v. MGA Entertainment, Inc., et al., 2009 U.S. Dist. LEXIS 48386 (E.D. La., May 21, 2009).

"game piece" — "a mirrored or non-mirrored structure that can be placed on the game board and moved by the players during the course of game playing." Innovention Toys, LLC v. MGA Entertainment, Inc., et al., 2009 U.S. Dist. LEXIS 48386 (E.D. La., May 21, 2009).


"gap" — "a space along a concentric line where there is no bonding." Tyco Healthcare Retail Servs. AG v. Kimberly-Clark Corp., et al., 2007 U.S. Dist. LEXIS 53645 (E.D. Pa., July 24, 2007).


"a gap ... configured for receiving air flowing toward said second surface, dividing said air into two portions and directing each such portion through a separate fin structure" — "no construction is necessary, and the term shall be given its plain and ordinary meaning." ICHL, LLC v. NEC Corp. of America, et al., 2010 U.S. Dist. LEXIS 38942 (E.D. Tex., Apr. 20, 2010).


"garment component" — "a structural part of a garment, such as a front panel, yoke, rear panel, and sleeve. A bonding element, an interlining, and thread are not garment components." Taltech Ltd. v. Esquel Enterprises Ltd., 410 F. Supp. 2d 977 (W.D. Wash. 2006).

"gas flow orifice member" — "a device or obstruction placed in a gas-flow orifice that is positioned between two chamber portions, that effects the volume and rate of gas flow through the orifice." Travis Industries, Inc. v. Hearth & Home Technologies, Inc., et al., 2004 U.S. Dist. LEXIS 31059 (W.D. Wash., Oct. 18, 2004).


"gas outlet comprising a porous medium" — "the correct interpretation ... requires that the gas outlet porous medium be placed so as to serve [the] purpose [of] remov[ing] gas at the outlet of the system while retaining the blood and barring reentry of air." *Pall Corp. v. Hemasure Inc.*, 181 F.3d 1305 (Fed. Cir. 1999).1826


"gate" — "must be construed to be limited to gates whose additional horizontal members, if any, are positioned well below the upper edge of the mesh screen tensioned on the gate frame." *Guardian Pool Fence Systems, Inc. v. Baby Guard, Inc., et al.*, 228 F. Supp. 2d 1347 (S.D. Fla. 2002).1828

"gathering chamber" — "the space or cavity formed between the trailing ends of the vanes and the shroud wherein the trailing ends of the vanes are not positioned directly against the surface of the shroud." *Johnson Electric Industrial Manufacturing, Ltd., et al. v. Ametek, Inc.*, 2005 U.S. Dist. LEXIS 19300 (D. Conn., Aug. 24, 2005).1829

"gauge" — "a size measurement of needles determined by the outer diameter and the inner or lumen diameter." *Ideal Instruments, Inc. v. Rivard Instruments, Inc., et al.*, 498 F. Supp. 2d 1131 (N.D. Iowa 2007).1830

"gear" — "a toothed machine part, such as a wheel or cylinder, that meshes with another toothed part, to transmit motion or to change speed or direction, and which excludes a chain." *Bayer Healthcare LLC v. Abbott Laboratories*, 2005 U.S. Dist. LEXIS 21042 (D. Del., Sept. 26, 2005).1831


"gel"; "liquid" — "the term 'gel' is not subsumed within the term 'liquid.' ... nonflowing gels are not within the scope of the Sereboff patent claims." *Minnesota Mining & Manufacturing Co. v. Fellowes Manufacturing Co.*, 76 F. Supp. 2d 972 (D. Minn. 1999).1833

"geometry" — "configuration or shape." *Ormco Corp., et al. v. Align Technology, Inc.*, 463 F.3d 1299 (Fed. Cir. 2006).1834

"generally adjacent" — "means that the pedestals are located or situated close to, near, bordering, or in contact with the underside of the table." *Lifetime Products, Inc. v. Correll, Inc.*, 323 F. Supp. 2d 1129 (D. Utah 2004).1835

"generally arcuate segments" — "naturally separated divisions, portions or sections of the walls that are bent, curved like a bow or arc-shaped." *ICU Medical, Inc. v. RyMed Technologies, Inc.*, 2009 U.S. Dist. LEXIS 112546 (D. Del., Dec. 3, 2009).1836

"generally circular" — "there is no better way to define 'generally circular' than to simply say 'generally circular.' Accordingly, the Court declines to construe the term." *ASM America, Inc., et al. v. Genus, Inc.*, 260 F. Supp. 2d 827 (N.D. Cal. 2002).1837

"longitudinally disposed bands, wherein each band defines a generally continuous wave having a spatial frequency along a line segment parallel to the longitudinal axis" — "the stent has multiple elongated surfaces that run parallel to the stent's long axis, each of these surfaces having the undulating appearance of a continuous wave." Cordis Corp. v. Boston Scientific Corp., 2005 U.S. Dist. LEXIS 10750 (D. Del., Jun. 3, 2005).

"generally convex" — "We agree with the district court's conclusion that the applicant, through argument during the prosecution, disclaimed inner walls of the base portion having any concavity." North American Container, Inc. v. Plastipak Packaging, Inc., et al., 415 F.3d 1335 (Fed. Cir. 2005).


"generally corresponding to" — "is unambiguous and is readily comprehensible to the finder of fact." U.S. Ring Binder; LP v. Staples the Office Superstore LLC, et al., 2009 U.S. Dist. LEXIS 21783 (E.D. Mo., Mar. 18, 2009).

"a generally cylindrical end plug" — "an object or material generally having the form or shape of a cylinder used to fill or seal an opening." Lamoureux, et al. v. AnazaoHealth Corp., et al., 2009 U.S. Dist. LEXIS 103846 (D. Conn., Nov. 5, 2009).


"a thickness generally equal to circumferentially adjacent areas" — "a 25% variation between the pleats and the adjacent areas will be considered generally equal." James River Corp. of Virginia v. Hallmark Cards, Inc., 915 F. Supp. 968 (E.D. Wis. 1996).

"generally flat" — "a housing that is flat on the whole, but not necessarily exactly or perfectly flat." Sun Coast Merchandise Corp. v. CCL Products Enterprises, Inc., 2003 U.S. Dist. LEXIS 27316 (N.D. Cal., Apr. 30, 2003).

"generally flat aft keel" — "an aft keel that is mostly horizontal." Schoell v. Emerald City Harbor, Inc., et al., 1999 U.S. Dist. LEXIS 5459 (M.D. Fla., Mar. 11, 1999). "[W]e find the phrase 'mostly horizontal' to provide little more guidance than 'generally flat' in determining whether a twelve degree V-shaped keel is within the scope of the claims." Schoell v. Regal Marine Industries, Inc., et al., 247 F.3d 1202 (Fed. Cir. 2001).

"generally flush" — "flush within normal tolerances in the field and is flush as a rule, in conformity with regular practice." Donnelly Corp. v. Reitter & Schefenacker USA Limited Partnership, et al., 2002 U.S. Dist. LEXIS 23156 (W.D. Mich., Nov. 21, 2002).

"generally frustoconically shaped pylon" — "a structure that, for the most part, is in the shape of the frustrum of a solid having (1) a closed plane base and (2) a surface formed by line segments joining every point of the boundary of the base to a common vertex." EZ Dock, Inc. v. Schafer Systems, Inc., et al., 2003 U.S. Dist. LEXIS 1810 (D. Minn., Jan. 22, 2003).
"said end portion is formed into a generally hemispherical shape" — "the tubular body ends are formed, for the most part, by spherical segments."  

"a generally hexagonal shape" — "mean[s] that the staple pocket is perceived by a viewer to have six major sides that can have varying lengths."  

"spatially aligned so as to be generally in phase with one another" — "the bands generally undulate at the same rate, so as to run parallel to each other."  

"generally oblong cross section ... having a major axis within said common plane greater than a minor axis" — "the cross-section taught by Claim 19 is elliptical."  
*Alltrade Tools, LLC v. Olympia Group, Inc*, 2003 U.S. Dist. LEXIS 26248 (C.D. Cal., Oct. 8, 2003). "'Oblong' is understood to mean 'deviating from a square or circular form through elongation.' 'Generally oblong' is therefore a shape that is longer in one direction than the other, but not necessarily true to a specific geometrical shape, i.e., not a perfect oval or rectangle."  

"generally parallel" — "envisons some amount of deviation from exactly parallel."  

"generally parallel" — "encompass[es] a deviation from exactly parallel that is commonly provided in order to assist in removing the plastic from the mold."  

"generally parallel" — "the court accords 'generally parallel' its plain meaning; in the context of gathers, there is no requirement that they be 'mathematically' parallel, nor does the omission of 'generally' from the notation that they are oriented perpendicularly to the longitudinal direction require the fold lines of the gathers to be precisely straight or mathematical."  

"generally parallel connecting elements" — "the district court erred in construing claims 12-15, 17, 18, and 20 of the '154 patent as requiring connecting elements that run parallel to the longitudinal axis of the stent. These claims simply recite 'generally parallel connecting elements.' The claims contain no language explicitly requiring the connecting elements to be parallel to the longitudinal axis of the stent."  

"generally parallel connecting elements" — "two or more connecting elements that are generally parallel to each other."  

"generally parallel to the longitudinal axis" — "does not need construction because its plain and ordinary meaning is easily discernible from the claim language."  

"generally planar surface" — "a two-dimensional surface that is not narrow but has a width less than the feed increment of the trimmer head and is itself generally planar."  
"generally polyhedron shaped enclosure" — "the overall shape of the enclosure, when in a substantially filled state, must be that of a polyhedron, and the faces of the polyhedron need not be strictly or perfectly flat or planar, but must be generally flat or planar."  *Farrago v. Rawlings Sporting Goods Co., Inc.*, 2007 U.S. Dist. LEXIS 38036 (E.D. Mo., May 24, 2007).

"generally predetermined acceptable limit that prevents damage to the compressor" — "a boundary, generally recognized or appreciated by the manufacturer or operator in advance of operating the gas turbine."  *Dow Chemical Co. v. Mee Industries, et al.*, 2001 U.S. Dist. LEXIS 26229 (M.D. Fla., Aug. 17, 2001).


[i] "generally smooth"; [ii] "generally planar" — [i] having a surface which is for the most part free from roughness, irregularities, or projections"; [ii] "is construed to include irregular deviations from a mostly flat surface."  *Clipps, Inc. v. Cleaner's Supply Co.*, 2002 U.S. Dist. LEXIS 28231 (E.D. Mo., Aug. 13, 2002).


"generally U-shaped portion" — "include[s] those rounded fulcrums that have the characteristic that the initial curvature of the transition is in the direction opposite to the subsequent curvature."  *Alltrade Tools, LLC v. Olympia Group, Inc*, 2003 U.S. Dist. LEXIS 26248 (C.D. Cal., Oct. 8, 2003).

"first, generally uniform smaller wall thickness defining the stem" — "the wall thickness of the stem is thinner than the wall thickness of the head and that thickness does not vary significantly; the thinner wall and the uniformity define the stem as distinct from the head."  *Smith & Nephew, Inc. v. Synthes (U.S.A.), et al.*, 2005 U.S. Dist. LEXIS 34896 (W.D. Tenn., Aug. 26, 2005).

"generally V-shaped ribs" — "means two diagonal lines that extend at an angle but in opposite directions like the 'over-all' features of the letter 'V,' and does not require that the lines come to a point like the letter 'V.'"  *Von Holdt, et al. v. A-1 Tool Corp., et al.*, 636 F. Supp. 2d 726 (N.D. Ill. 2009).


"generated shapes" — "letters, numbers, or other characters formed with fewer jaggies than under the prior art methods." Pitney Bowes, Inc. v. Hewlett-Packard Co., 141 F. Supp. 2d 288 (D. Conn. 2001). 1874

"geographically dispersed" — "in separate geographic locations, either within a building or in different buildings." VISICU, Inc. v. iMDsoft, Ltd. et al., 2009 U.S. Dist. LEXIS 40033 (E.D. Pa., May 7, 2009). 1875

"said contributions management device being optionally geographically remote from a plurality of said electronic contributions accepting devices" — "Each contributions accepting device may be, but need not be, located in a geographically remote location from the contributions management device. In this context, 'geographically remote' means in a different area, separated significantly in space." Ziarno v. American National Red Cross, et al., 2000 U.S. Dist. LEXIS 22508 (N.D. Ill., Aug. 16, 2000). 1876


"the annular surface having an axial length extending for a given distance along the length of the hub" — "the axial length (in a direction parallel to the axis of rotation) of the 'annular surface' of the impeller hub defined by the reduced diameter portion corresponds to at least one-third of the total hub length." Papst Licensing GmbH & Co. KG v. Sunonwealth Electric Machine Industrial Co., Ltd., et al., 2004 U.S. Dist. LEXIS 4402 (N.D. Ill., Mar. 18, 2004). 1878

"a tubular cannula having a given internal diameter" — "a tubular cannula having an assumed or hypothetical internal diameter, i.e. one of no fixed or specific diameter." Ethicon Endo-Surgery v. Richard-Allan Medical Industries, Inc., 885 F. Supp. 1073 (S.D. Ohio 1995). 1879 "The patentee now argues that one skilled in the art would understand the phrase 'given internal diameter' to be limited to 10/11 millimeters; he asks us to accept that construction in order to avoid undisclosed prior art. We cannot do that." Id., 1996 U.S. App. LEXIS 5803 (Fed. Cir., March 4, 1996) (unpublished). 1880


"a glass mat-faced gypsum support surface" — "the term 'glass mat-faced' means 'glass mat surface reinforcing material.' Because USG's board is reinforced with fiberglass mats the court upheld the jury's finding that the 'faced' claims were infringed." Georgia-Pacific Corp. v. United States Gypsum Co., et al., 195 F.3d 1322 (Fed. Cir. 1999). 1882

"glide surface" — "a diverter shoe's inner surface that has some contact, but not necessarily complete contact, with the outer surface of the slat, and that need not contact all sides of the slat. We note that our construction of 'glide surface' is different from the ITC's construction, which did not require any contact at all. We believe the ITC's definition was overly broad. Indeed, the ITC's definition could conceivably embrace 'no-contact' technologies far beyond the patent's disclosure, such as a glide surface that rides above the slat on air currents, or a glide surface that is magnetized to repel the outer surface of the slat." Vanderlande Industries Nederland BV, et al. v. International Trade Commission, et al., 366 F.3d 1311 (Fed. Cir. 2004). 1883

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[i] "global alignment"; [ii] "globally aligning"; [iii] "globally positioned" — [i] "the initial positioning of the entire substrate according to substrate alignment marks"; [ii] "the process or act of positioning of the entire substrate according to substrate alignment marks"; [iii] "situated or located by reference to the entire substrate."  *Nikon Corp., et al. v. ASM Lithography B.V.*, 308 F. Supp. 2d 1039 (N.D. Cal. 2004).  


"glue layer" — "a layer, composed of one or more materials, which is deposited prior to the tungsten and which has good adhesion both to the underlying dielectric layer and to the tungsten."  *Agere Systems Inc. v. Atmel Corp.*, 2003 U.S. Dist. LEXIS 9823 (E.D. Pa., May 23, 2003).  


"graft"; "prosthesis" — "an intraluminal device that is used in unitary fashion to substitute, repair or replace a missing or defective part of a vessel."  *Edwards Lifesciences, LLC, et al. v. Cook Inc., et al.*, 2007 U.S. Dist. LEXIS 55634 (N.D. Cal., July 23, 2007).  


"the granules comprising a thermoplastic component and a thermoset plastic component" — "mean[s] that each individual granule must contain a combination of a thermoplastic component and a thermoset plastic component."  *Safas Corp. v. Etura Premier, L.L.C.*, 293 F. Supp. 2d 436 (D. Del. 2003).  

"granules of a coarse, permeable material" — "even a large 'granule' would be suitable so long as there would be enough fabric or bleach to create the random faded effect on the fabric. The size of a granule would be limited by practicalities such as the size of the tumbling machine and the machine's opening, as well as by the size of the fabric being processed. (If the granules were larger than the fabric being processed, the granules would not randomly contact the fabric to create the random faded effect, and uniform fading would occur.) ... The nature of the granules would be limited to material which was coarse and permeable and would include pumice, paper, foam and sponge as well as PVC pipe, diamonds, synthetics and selica gel, clay, salt and crushed powder pellets, dolomite, diatomaceous earth according to the claim prosecution history and plaintiff's prior testimony."  *Levi Strauss & Co. v. Golden Trade, S.r.L., et al.*, 1995 U.S. Dist. LEXIS 22145 (S.D.N.Y., Nov. 30, 1995).
"graphic print" — "a print of a graphic created by conventional photographic processes rather than by ink printing."  
Cles Bisker, LLC v. 3M Co., et al., 2009 U.S. Dist. LEXIS 110055 (E.D. Tex., Nov. 25, 2009).  

"graspable object" — "a physical thing (or item) that is capable of being grasped in a human hand."  

"grate" — "a framework of parallel or crossed bars or wires such as to allow for spillage to fall therethrough."  

"gravel" — "this Court adopts the ASTM definitions and construes the term 'gravel' as having a minimum particle size of 4.75 mm."  

"grazing angle" — "[that] angle [] necessary to generate varying magnitudes for the 'spot's' or ellipse's long axis and, thus, use that angle to change the dimensions of the ellipse as needed to effectuate a scan."  

"said chemically embossed portion has an emboss depth greater than the emboss depth of any portion of said mechanically embossed portion" — "mean[s] that mechanical embossing does not occur in the chemically embossed areas and that the mechanically emboss depth of those areas mechanically embossed does not exceed the depth of those areas that are chemically embossed when this depth is measured from the unembossed surface plane."  

"a weight on bit greater than the selected weight"; "a weight on bit in excess of that required"; "a weight on bit greater than the selected weight"; "greater weight on bit [than that required to cause the cutter to cut the formation]" — "the Court construes the excess weight on bit terms to require the weight to be neither abnormal nor unusual."  

"greatest elevation" — "is a comparative term referring only to the forefoot portion of the sole as designated by Figure 7 on Sheet 4 of the 882 patent, which cuts diagonally into and does not include, for example, the portion of the sole designated in the 663 patent as the midfoot portion."  

"grip means for gripping the wall of said element within said coupling" — "fails to recite sufficient structure to overcome the presumption that § 112, P 6 applies."  

"groove" — "a narrow depression, channel or trough in a surface."  


"groove-like constrictions"— "a longitudinal groove wherein the lateral defining surface opposite the lower band surface of the spring strips is circular."  **Robert Bosch, LLC v. Pylon Manufacturing Corp.**, 2010 U.S. Dist. LEXIS 30451 (D. Del., Mar. 30, 2010).1908

"grooves"; "channels" — "regions within the cable that are substantially physically separated from other regions within the cable by a pair separator; i.e., they are formed by, but need not be part of, the separator."  **Belden Technologies Inc., et al. v. Superior Essex Communications LP, et al.**, 2010 U.S. Dist. LEXIS 86833 (D. Del., Aug. 24, 2010).1909

"a ground mechanism" — "a ground mechanism which makes an electrical connection with earth' and is not limited to a sunken ground rod."  **Senior Industries, Inc. v. Thomas & Betts Corp., et al.**, 2001 U.S. Dist. LEXIS 16901 (N.D. Ill., Sept. 27, 2001).1910

"the needle holding portion is grounded on the annular shoulder" — "the needle holder is prevented from moving forward by a structure of reduced diameter within the syringe body prior to or during retraction."  **Retractable Technologies, Inc. v. Occupational & Medical Innovations, Ltd.**, 2009 U.S. Dist. LEXIS 69738 (E.D. Tex., Aug. 10, 2009).1911

"comprising ... a group of first, second, and third blades" — "excludes from its literal scope the possibility that the accused razor unit contain[s] four blades."  **Gillette Co. v. Energizer Holdings, Inc.**, 2004 U.S. Dist. LEXIS 28656 (D. Mass., Jan. 15, 2004).1912. "Based on the preliminary record before this court, the district court erred in limiting the claims of the '777 patent to encompass safety razors with solely three blades."  **Id., 405 F.3d 1367 (Fed. Cir. 2005).** 1913 "I would affirm the district court's claim construction and its denial of Gillette's motion for a preliminary injunction."  **Id. (Archer, J., dissenting).** 1914


"guide ions through" — "means simply that ions must be guided through the first space by the AC-only voltage between the rod means. The court will not adopt a more narrow construction of the phrase to require either that all ions be transmitted through the ion guide or that the ion guide not trap or hold any ions for any length of time."  **Applera Corp., MDS Inc., et al. v. Micromass UK Ltd., et al.**, 186 F. Supp. 2d 487 (D. Del. 2002).1916


"guide means for conducting a portion of wash liquid containing said concentrated soil particles from said pump chamber to said soil container" — "the term 'guide' cannot be viewed as sufficient structure (if it is indeed structure at all) to remove that language from the ambit of Paragraph 6."  **Maytag Corp. v. Whirlpool Corp.**, 95 F. Supp. 2d 888 (N.D. Ill. 2000).1918
"guide member" — "a structure that guides the directional movement of the user as the user performs the exercise." *Fitness Quest Inc. v. J. Monti*, 2007 U.S. Dist. LEXIS 60195 (N.D. Ohio, Aug. 16, 2007). 1919


"guiding and transporting the ejected product from between the mold parts through the guide conduit" — "require[s] the directing and carrying of the ejected plastic product from the space separating the mold parts to the end or to an exit of the guide conduit." *In re: Turn-Key-Tech Matters*, 2002 U.S. Dist. LEXIS 25583 (C.D. Cal., Jan. 8, 2002). 1924

[i] "guiding said eggs from said weighing stations first to a plurality of egg holding stations located downstream of said guide means"; [ii] "and then to a plurality of locations longitudinally spaced-apart from and substantially horizontally co-planar with said holding stations"; [iii] "guiding further eggs to said plurality of holding stations" — [i]"carrying eggs to holding stations"; [ii] "carrying eggs from the holding stations to the spaced-apart locations"; [iii] "carrying more eggs to the holding stations." *Moba, B.V., et al. v. Diamond Automaton, Inc.*, 1999 U.S. Dist. LEXIS 2847 (E.D. Pa., Mar. 4, 1999). 1925 [i] [ii] [iii] "Nowhere does the plain language of claim 24 require separate and consecutive performance of the various guiding steps. ... Hence, this court, like the district court as well, construes the guiding steps to include simultaneous performance." *Id.*, 325 F.3d 1306 (Fed. Cir. 2003). 1926

"gun barrel cleaning device" — "must be capable of cleaning the gun barrel as a single unit. It does not require any additional steps of taking sections apart and replacing various cleaning sections during the cleaning process." *Michaels of Oregon Co. v. Clean Gun, LLC*, 2002 U.S. Dist. LEXIS 20371 (D. Or., Jul. 9, 2002). 1927

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"hair brush" — "does not specify the kind of hair to be groomed by the claimed invention. Thus, the term may reasonably encompass not only scalp hair brushes but also facial hair brushes." *In re Bigio*, 381 F.3d 1320 (Fed. Cir. 2004). 1928
"half maximum fan speed" — "roughly fifty percent of the highest rated speed of the fan having in mind that fans supplied by different manufacturers may differ as to their highest rated fan speed."  Control Resources, Inc. v. Delta Electronics, Inc., et al., 133 F. Supp. 2d 121 (D. Mass. 2001).\(^{1929}\)

"half-shells" — "two equal or corresponding parts forming a hard or firm outer covering into which the housing of the fluorescent lamp is divided."  Lami Corp. v. American Power Products, Inc., 1997 U.S. Dist. LEXIS 9942 (N.D. Ill., Jul. 7, 1997).\(^{1930}\) "[W]e conclude that the district court erred in ruling that half-shells must be the only two elements that form the housing in claim 11. The proper interpretation of the 'housing having two half-shells' limitation is a 'housing having at least two equal or corresponding parts forming a hard or firm outer covering into which the housing of the fluorescent lamp is divided.'"  Id., 228 F.3d 1365 (Fed. Cir. 2000).\(^{1931}\)


"wireless handheld computing device" — "a wireless computing device that is sized to be held in one's hand."  Ameranth, Inc. v. Menusoft Systems Corp., et al., 2010 U.S. Dist. LEXIS 39338 (E.D. Tex., Apr. 21, 2010).\(^{1933}\)

"handheld module including a display, manual controls, and system circuitry for processing signals for display" — "a compact assembly designed to be carried in one hand that includes a display, manual controls, and system circuitry for processing signals for display."  General Electric Co., et al. v. Sonosite, Inc., 2008 U.S. Dist. LEXIS 33223 (W.D. Wis., Jan. 8, 2008).\(^{1934}\)

"handheld unit dimensioned for handheld grasping" — "the unit is designed to be of a size permitting it to be easily grasped and held in the hand of a human operator."  Khyber Technologies Corp. v. Casio, Inc., et al., 2004 U.S. Dist. LEXIS 15714 (D. Mass. 2004).\(^{1935}\)

"handle" — "the part of the instrument designed to be grasped by the hand."  Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F. Supp. 2d 93 (D. Conn. 2006).\(^{1936}\)

"a handle attached to said tube adjacent the proximal end of the tube for maneuvering said tube within said endoscope while said handle is outside said endoscope" — "the claimed 'handle' of the '675 patent is limited by its recited function of 'maneuvering' a tube within an endoscope."  Canady Technology, LLC, et al. v., Erbe Elektromedizin Gmbh, et al., 20 F. Supp. 2d 54 (D.D.C. 1998).\(^{1937}\)

"handle component" — "a grip."  Pedicraft, Inc. v. Stryker Corp. of Michigan, et al., 2003 U.S. Dist. LEXIS 27837 (M.D. Fla., May 5, 2003).\(^{1938}\)

"handle portion" — "portion of the grooming tool that the user holds and that secures the pet engageable portion."  FURminator, Inc. v. Munchkin, Inc., et al., 2009 U.S. Dist. LEXIS 104429 (E.D. Mo., Nov. 9, 2009).\(^{1939}\)

"a hanger extending downward from each side of said primary frame members" — "a structure or a thing, attached to the frame members, that extends toward a lower place."  Watson & Chalin Manufacturing, Inc. v. Boler Co., 227 F. Supp. 2d 633 (E.D. Tex. 2002).\(^{1940}\)

"hard facing"; "hard facing material" — "wear-resistant material that is harder than the material onto which it is applied."  Reedhycalog UK, Ltd, et al. v. Baker Hughes Oilfield Operations, Inc., et al., 2007 U.S. Dist. LEXIS 76125 (E.D. Tex., Oct. 12, 2007).\(^{1941}\)
"having ...") — "does not preclude the possibility that the apparatus may have gas flow apertures other than those described in the claims. As the gas flow apertures described in the claims are associated with the performance of particular processes, however, any additional gas flow apertures must not be necessary to perform the processes described in the claims, and also must not interfere with those processes." ASM America, Inc., et al. v. Genus, Inc., 260 F. Supp. 2d 827 (N.D. Cal. 2002).1942

"having" — "means to hold, include, or contain as a part or whole." Pehr v. Rubbermaid, Inc., 87 F. Supp. 2d 1222 (D. Kan. 2000).1943

"having a" — "having at least one." STI Holdings, Inc. v. Great Dane Limited Partnership, 2010 U.S. Dist. LEXIS 57789 (W.D. Wis., Jun. 11, 2010).1944

"the first and second legs having a compliant area, thus allowing the hanger to accommodate various size of transmission lines" — "requires no construction and can be given its ordinary meaning." Andrew Corp. v. Beverly Manufacturing Co., 479 F. Supp. 2d 766 (N.D. Ill. 2006).1945

"fastening means having a recessed protrusion protruding from the base" — "the words 'recessed protrusion' carry their plain meaning, with the caveat that the recessed protrusion must protrude toward the support surface. ... both the words of the claim and the prosecution history support the conclusion that the recessed protrusion is preexistent to application of the fastening means." Bidco, Inc. v. Plastic Lumber Co., 2004 U.S. Dist. LEXIS 31066 (N.D. Cal., Nov. 10, 2004).1946

"the high pressure compressor having an inlet flow area directly proportional to the outlet flow area of the low pressure compressor, and inversely proportional to the absolute temperature ratio between the high temperature air flow discharged from the low pressure compressor compared to the low temperature air flow from the intercooler passing to the inlet area of the high pressure compressor" — "a design rule applied to optimize the cross-sectional area of the air flow inlet of the high pressure compressor in relation to the cross-sectional area of the air flow outlet of the low pressure compressor for a predetermined operating condition of the intercooler (1) by having the areas increase or decrease together on a constant ratio basis between them and (2) by having the cross-sectional area of the air flow inlet of the high pressure compressor also increase or decrease in opposite to the ratio of the absolute temperature of the air flow at the cross-sectional area of the air flow outlet of the low pressure divided by the absolute temperature of the air flow at the cross-sectional area of the air flow inlet of the high pressure compressor (i.e., the area increases as the ratio gets smaller and decreases as the ratio gets larger), which can be expressed mathematically as: AHPC [proportional] ALPC / (TLPC/THPC)." Rice v. Honeywell International, Inc., et al., 2006 U.S. Dist. LEXIS 89235 (E.D. Tex., Nov. 21, 2006).1947

"said portion having been subject to work-hardening" — "require[s] only that frames have been subjected to minimal work-hardening." CVI/Beta Ventures, Inc., et al. v. Custom Optical Frames, Inc., et al., 893 F. Supp. 508 (D. Md. 1995).1948
"said portion having greater than 3% elasticity over a temperature range from -20 °C. to +40 °C." — "means that at every temperature within the indicated range, the frame portion will recover at least 3% of its original shape after being subjected to stress and then released. Thus, if a frame portion were stretched 4% beyond its original shape and upon release recovered more than 3% of its original shape, the '3% elasticity' element would be met despite the 1% residual strain." CVI/Beta Ventures, Inc., et al. v. Custom Optical Frames, Inc., et al., 893 F. Supp. 508 (D. Md. 1995).

"said faceplate having a longitudinal axis and having returns extending from the sides of each face plate that are angled to allow the faceplate to expand under extreme heat" — "two face plate returns extending from opposing ends of the face plate at an angle that allows the faceplate to expand when exposed to extreme heat (such as welding) without causing significant distress to the concrete in which the flange connector is embedded." JVI, Inc. v. Universal Holdings, Inc., et al., 464 F. Supp. 2d 758 (N.D. Ill. 2006).

"head opening" — "an opening which allows the user to enter and exit the inner cavity." Mont-Bell Co., Ltd. v. Mountain Hardware, Inc., 1997 U.S. Dist. LEXIS 22424 (N.D. Cal., Jul. 9, 1997).

"a head portion" — "the upper part of the female fastener fashioned in a manner to prevent it from passing through the seat shell." American Seating Co. v. Freedman Seating Co., 450 F. Supp. 2d 765 (W.D. Mich. 2006).

"heading signal" — "the ordinary and accustomed meaning of 'heading' connotes only direction, rather than being limited to the direction of the trolling motor. ... We therefore agree with the district court that the ordinary and accustomed meaning of 'heading signal' controls." Johnson Worldwide Associates, Inc. v. Zebco Corp., et al., 175 F.3d 985 (Fed. Cir. 1999).


"heat said terminal sufficient to remove said electrical insulation from said armature wire in contact with said terminal and to fuse said armature wire thereto" — "heat the terminal sufficiently to remove the insulation on the armature wire, such as by vaporizing it, and soften the terminal enough to permit the formation through pressure of a mechanical surface adhesion bond between the terminal and wire." Joyal Products, Inc. v. Johnson Electric North America, et al., 2007 U.S. Dist. LEXIS 79522 (D.N.J., Oct. 25, 2007).

"heating" — "HISI requests that 'heating' not be limited to any particular temperature range in Claims 1 and 67. ... TPI argues that HISI's claim is limited by what the Kowalski Patent has defined as the operable range of the invention. ... The specifications do not support the broad claim language of 'heating'; accordingly these claims are deemed invalid on this ground." *Tuna Processors, Inc. v. Hawaii International Seafood, Inc., et al.*, 2007 U.S. Dist. LEXIS 77396 (D. Haw., Oct. 17, 2007). 1958 "The Court's Claims Construction Order ... is hereby reconsidered and amended such that (1) the portion of the order invalidating the Kowalski Patent's Claims 1 and 67 is VACATED; and, (2) the Court clarifies that 'heating,' as used in Claims 1 and 67 is not limited to any specific numerical temperature range." *Id.*, 2007 U.S. Dist. LEXIS 84605 (D. Haw., Nov. 15, 2007). 1959


"heating said substantially uniform mixture within said die to a temperature substantially above the softening temperature of said binder material" — "mean[s] that the substantially uniform mixture is heated to a temperature substantially above the softening temperature of the binder while the mixture is in the die." *KX Industries, L.P., et al. v. Culligan Water Technologies, Inc., et al.*, 90 F. Supp. 2d 461 (D. Del. 1999). 1961

"heating station" — "a slide support and heating element capable of directly heating at least one microscope slide by conductive heating, e.g., direct contact of a heating surface to a portion of the microscope slide to be heated." *Cytologix Corp. v. Ventana Medical Systems, Inc.*, 424 F.3d 1168 (Fed. Cir. 2005). 1962


"hemispherical" — "a 'sphere' is defined as 'a body or space bounded by one surface all points of which are equally distant from a point within that constitutes its center.' ... A 'hemisphere,' in the geometrical sense, is 'either of two half spheres formed by a plane through a sphere's center.'" *Bai v. L & L Wings, Inc., et al.*, 1997 U.S. Dist. LEXIS 12649 (S.D.N.Y., Aug. 22, 1997). 1965


"high intensity mixing" — "the process employed to distribute solid and liquid components with the express purpose of dispensing them in a polymer resin." *Marley Mouldings Ltd. v. Mikron Industries, Inc.*, 282 F. Supp. 2d 847 (N.D. Ill. 2003). 1968
"high strength adhesive"; "bond strength sufficient to resist peeling of the fabric from the substrate" — [i] "an adhesive providing a bond strength sufficient to prevent a person from being able to manually peel the fabric from the substrate"; [ii] "the bond strength of the high strength adhesive is sufficient to prevent a person from being able to manually peel the fabric from the substrate." American Seating Co. v. Kustom Seating Unlimited, Inc., 2010 U.S. Dist. LEXIS 9377 (S.D. Mich., Feb. 4, 2010).1969


"high pressure power injector" — "the 'high pressure power injector' described in Claim 10 of the 669 patent is capable of performing angiographic as well as CT applications. As such, it operates at pressures ranging from 25 psi to in excess of 1200 psi." Liebel-Flarsheim Co. v. Medrad Inc., 2001 U.S. Dist. LEXIS 23096 (S.D. Ohio, Oct. 18, 2001).1971


"hinge segment" — "the segment of metal between the first end and the second end of the primary score that stays attached to the central panel of the can end under normal opening conditions." Crown Packaging Technology, Inc., et al. v. Rexam Beverage Can Co., 486 F. Supp. 2d 366 (D. Del. 2007).1973

"hinged joint" — "may encompass the 'universal' or 'swivel' 'joint 56,' depicted in Figures 3A and 5A." Zipwall, LLC v. Fastcap, LLC, 482 F. Supp. 2d 141 (D. Mass. 2007).1974

"holding a helical array of regularly disposed bristles" — "'holding a helical array' [] mean[s] that the bristles held by the core must be disposed in the form of a helix."; "regularly disposed' [] mean[s] evenly or harmoniously distributed along the length of the brush." L'Oreal S.A, et al. v. Revlon Consumer Products Corp., et al., 2000 U.S. Dist. LEXIS 3130 (D. Del., Feb. 24, 2000).1975

"holding station"; "spaced-apart location" — "'holding station' mean[s] a first location in space to which an egg is moved and at which the egg may maintain position until it is lifted simultaneously with an egg at a 'spaced-apart location.' The Court interprets the term 'spaced-apart locations' to mean a second location downstream from and substantially horizontally co-planar with the 'holding station.'" Moba, B.V., et al. v. Diamond Automaton, Inc., 1999 U.S. Dist. LEXIS 2847 (E.D. Pa., Mar. 4, 1999).1976 "In sum, the district court correctly construed the term 'holding.' The term 'holding station' also does not require lack of motion." Id., 325 F.3d 1306 (Fed. Cir. 2003).1977

"holding the sample in a non-flowing manner within the sample chamber" — "the sample is not moving in the sample chamber during the measurement." Therasense, Inc. v. Becton, Dickinson and Co., 2006 U.S. Dist. LEXIS 66437 (N.D. Cal., Aug. 31, 2006).1978

"holding the two retaining mechanisms together" — "supporting, or keeping from falling, the rims together." Aspex Eyewear, Inc., et al. v. Altair Eyewear; Inc., 386 F. Supp. 2d 526 (S.D.N.Y. 2005).1979


"homogenization" — "the formation of an alloy between substances, and in the case of the homogenization of metals and ceramics requiring the intimate mixing of at least two components to form an alloy between the components, but excluding polymerization techniques when the substances to be homogenized consist of polymers." Imagecube LLC v. Boeing Co., et al., 2006 U.S. Dist. LEXIS 19911 (N.D. Ill., April 17, 2006). 1987


"each of said ends further including a downwardly extended end portion for hooking onto a primary spectacle" — "each of said ends further including a portion that extends downward relative to the remainder of the arm and where that downward extending portion is bent in a manner to connect or catch with the primary spectacle frame as if with a hook." Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc., 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003). 1989

"a wash chamber rotatable about a horizontal axis ... such that said fabric will tumble in said wash chamber" — "These claim elements mean that the washer has a wash chamber that is rotated about an axis that is oriented primarily or predominantly parallel to the horizon such that the fabric will tumble when the wash chamber is rotated at a speed effecting less than one gravity of centrifugal force on the fabric. This limitation encompasses a wash chamber whose axis may be angled slightly (e.g., at 10 degrees), provided that the fabric will tumble when the wash chamber is rotated at a speed effecting less than one gravity of centrifugal force on the fabric." Whirlpool Corp., et al. v. LG Electronics, Inc., et al., 423 F. Supp. 2d 730 (W.D. Mich. 2004). 1990
"horizontal exhaust pipe" — "the exhaust pipe which is horizontal both at the point at which it exits the building and the point at which it is connected to the fireplace." *Fireplace Manufacturers, Inc. v. Hearth Technologies, Inc.*, 1997 U.S. Dist. LEXIS 21966 (D. Minn., Dec. 10, 1997).1991

"horizontal groove" — "at least one groove which is perpendicular to an axis defined by the proximal and distal ends." *ICU Medical, Inc. v. Alaris Medical Systems, Inc.*, 2006 U.S. Dist. LEXIS 96077 (C.D. Cal., July 17, 2006).1992


"housing" — "could include a front wall with a protrusion or extension above the point where the wall meets the top or bottom walls. The broadly written claim does not require that the LED lie wholly within the volume created by four walls of housing. The housing must be a supporting structure made of a single molded unit, with a front, top, bottom, and rear wall." *Amphenol Corp., et al. v. Maxconn, Inc., et al.*, 2000 U.S. Dist. LEXIS 20221 (N.D. Cal., Mar. 7, 2000).2003

"a housing configured to receive the anterior surface of the hand" — "a hand controller (which may be hollow or solid) that contains a part or mechanism while receiving the palm-side of the user's hand."  *Gart v. Logitech, Inc., et al.*, 254 F. Supp. 2d 1119 (C.D. Cal. 2003).


"a housing part for housing a self-expanding stent, said housing part provided at said distal end of said guide lube" — "an enclosure or covering that fits a self-expanding stent, regardless of whether the housing part actually covers the entirety of the stent or is even capable of doing so, said housing part located at the extremity of a guide tube away from the operator."  *Laboratories Perouse S.A.S. v. W.L. Gore & Associates, Inc.*, 528 F. Supp. 2d 362 (S.D.N.Y. 2007).

"a housing part opener for opening said housing part independent of the self-expanding stent" — "The Court concludes based on the intrinsic and extrinsic evidence that 'housing part opener' was not drafted as a means-plus-function element, and construes this language according to its ordinary meaning, 'a device that opens.' ... Accordingly, the Court construes the phrase, 'a housing part opener for opening said housing part independent of the self-expanding stent,' to mean 'a device that creates an opening or separation in the housing part, the device not using the self-expanding stent to create an opening or separation in the housing part.'"  *Laboratories Perouse S.A.S. v. W.L. Gore & Associates, Inc.*, 528 F. Supp. 2d 362 (S.D.N.Y. 2007).

"hull" — "the bottom portion of a sit-on-top kayak, with a bow and stern, generally V-shaped to create a deeper draft than a surfboard to obtain better tracking."  *Old Town Canoe Co. v. Glenwa, Inc.*, 229 F. Supp. 2d 1151 (D. Or. 2001). "We agree with the plaintiff that 'hull' refers to a structure that forms 'the bottom of the kayak' because it is consistent with the usage of the term in the patent itself."  *Id.*, 55 Fed. Appx. 918 (Fed. Cir., Jan. 14, 2003) (unpublished).

"a length no less than that of a human thigh" — "can reasonably be read as stating that the length of the pillow is not less than the length of the thickness of a typical human thigh."  *Banyan Licensing, L.C. v. Allied Foam & Packaging, Products, Inc., et al.*, 134 F. Supp. 2d 907 (N.D. Ohio 2001). "The district court held that the length of the longitudinal axis of the patented pillow corresponds to the length of a human thigh as measured from the front of a human (belly button side) to the back. The district court called this dimension the 'thickness' of the thigh. We conclude that this definition is consistent with the intrinsic record."  *Banyan Licensing, L.C. v. Orthosupport International, Inc.*, 34 Fed. Appx. 696 (Fed. Cir., Mar. 21, 2002).


"hydraulically full" — "completely filled with process fluid such that there are no blind spots, dead-ends, interior surface irregularities or the like where a process fluid or ambient atmosphere could be trapped."  *CFMT, Inc., et al. v. YieldUP International Corp.*, 92 F. Supp. 2d 359 (D. Del. 2000).

"hydrophobe precursor" — "a precursor is a material from which another material can be formed. A hydrophobe precursor may be, but is not limited to, any organic material combining a site reactive toward starch or cellulose with a long hydrophobic tail, as well as the specific hydrophobic precursors identified in the specification of the '693 patent and materials having the structure of the hydrophobe precursors disclosed in the specification of the '693 patent." Fort James Corp. v. J.H. McNairn, Ltd., 2006 U.S. Dist. LEXIS 36528 (N.D. Ga., April 4, 2006).

"hypotenuse" — "the edge of a triangular cutting surface tooth opposite the interior angle of the triangle that is closest to ninety degrees." Synvasive Corp. v. Stryker, Corp., 425 F. Supp. 2d 1105 (E.D. Cal. 2006).

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"identical" — "the same,' noting that such definition does not rule out minor machining variations." Alloc, Inc. v. Unilin Decor N.V., et al., 2007 U.S. Dist. LEXIS 16743 (E.D. Wis., Mar. 6, 2007).

"identical half shells": "half-shells identically shaped" — "the term 'identical,' when used in the context of 'identical half shells' or 'half-shells identically shaped,' means the same or exactly alike," Lampi Corp. v. American Power Products, Inc., 1997 U.S. Dist. LEXIS 9942 (N.D. Ill., Jul. 7, 1997).


"identification structure" — "indicia associated with a lock that signals to a luggage or baggage screener that the lock is subject to a special screening procedure." Travel Sentry, Inc. v. Tropp, 2009 U.S. Dist. LEXIS 87923 (E.D.N.Y., Sep. 24, 2009).


"a reserve vacuum assembly coupled to said positioning ring to sustain the vacuum within said cavity if operation of said vacuum pump is interrupted as the head moves across the aperture" — "the trigger for using the reserve vacuum assembly is interruption of the operation of the vacuum pump." Bausch & Lomb Inc. v. Moria S.A., et al., 222 F. Supp. 2d 616 (E.D. Pa. 2002).

"illuminating a subject's pupil and focusing an image of the subject's pupil on an image plane" — "causing light to reach the pupil portion of the eye of a person being tested and using equipment such as a lens to provide an image of the pupil to an image plane such as the image plane of a camera, for use in later steps of Claim 9." Pulse Medical Instruments, Inc. v. Drug Impairment Detection Services, Inc., 2009 U.S. Dist. LEXIS 55571 (D. Md., Mar. 20, 2009).

"illumination optical system" — "an optical component, or combination of optical components, that directs light from a light source onto and through a mask pattern." Nikon Corp., et al. v. ASM Lithography B.V., 308 F. Supp. 2d 1039 (N.D. Cal. 2004).


"image sensing module" — "a module that is controlled by electronic components located outside of the scanner, and that includes a one-dimensional image sensor, an optical system, and a first illumination source." *Plustek, Inc. v. Syscan, Inc., et al.*, 2009 U.S. Dist. LEXIS 122777 (N.D. Cal., Dec. 21, 2009).2028

"immediate proximity"; "proximity" — "requires that the needle tip be flush with the forward surface of the body. The same limitation applies with regard to the term 'proximity' found in reissue claims 27 and 28." *MBO Laboratories, Inc. v. Becton, Dickson & Co.*, 385 F. Supp. 2d 88 (D. Mass. 2005).2029


"immersing" — "to plunge into or place under a fluid." *Arthrocare Corp. v. Smith & Nephew, Inc.*, 2003 U.S. Dist. LEXIS 5976 (D. Del., Apr. 9, 2003).2031

"an elongated hollow electrically conductive tube, said tube having an immersion end and a connector end" — "We construe 'immersion end' to mean 'the region of the tube which is first inserted into molten metal' and 'connector end' to mean 'the region of the tube opposite the immersion end of the tube.'" *Heraeus Electro-Nite Co. v. Midwest Instrument Co.*, 2007 U.S. Dist. LEXIS 81685 (E.D. Pa., Nov. 1, 2007).2032


"impact head" — "a component of the terminal designed to receive the impact of an errant vehicle and spread the load of the impact over an impacting vehicle such that the safety device does not penetrate the body."


"impact resistant" — "is defined by the Specification as resisting the impact of bullets, exploding projectiles or bomb fragments." *Phillips v. AWH Corp., et al.*, 2002 U.S. Dist. LEXIS 27298 (D. Colo., Nov. 20, 2002).2035

"have substantially the same impact strength"; "the body with a substantially uniform impact strength" — "The Court ... construes 'impact strength' to mean 'resistance to impact.' The remainder of the phrase needs no construction." *ReedHycalog UK, Ltd., et al. v. Baker Hughes Oilfield Operations, Inc., et al.*, 2007 U.S. Dist. LEXIS 67109 (E.D. Tex., Sept. 10, 2007).2036

"impeller means" — "while the term 'means' is used in the 'impeller means' limitation, adequate structure is revealed by the term 'impeller,' such that section 112, paragraph 6 is not invoked." *Toro Co. v. Ariens Co.*, 2000 U.S. App. LEXIS 8253 (Fed. Cir., Apr. 27, 2000) (unpublished).2037

"steam and/or gas impermeable" — "having a low enough permeability or transmission rate to steam and/or gas to prevent a measurable loss of weight, flavor, and taste during customary production, cooking, and storage." Viskase Cos., Inc. v. World Pac International AG, et al., 2010 U.S. Dist. LEXIS 49720 (N.D. Ill., May 18, 2010).

"to an impermeable surface of a support" — "to a solid having a non-porous surface that does not permit diffusion through its substance." Oxford Gene Technology Ltd. v. Mergen Ltd., et al., 2004 U.S. Dist. LEXIS 19818 (D. Del., Sept. 29, 2004).

"implant"; "plug" — "The entirety of the intrinsic evidence reveals a consistent usage of the terms 'implant' and 'plug' and treats them as separate and distinct devices. Whatever meaning the terms may have in common usage, within the '270 and '959 patents, an 'implant' is a device that can pass through the punctum and into the canaliculus, and can be moved about within the canaliculus; a 'plug' is a device a portion of which is inserted through the punctum and into the canaliculus, but which cannot pass through the canaliculus. It is quite clear to the court, from the evidence presented regarding Herrick's prosecution of its '959 patent that it was tailored to exclude punctum plugs." Herrick Family Limited Partnership v. Odyssey Medical, Inc., 1999 U.S. Dist. LEXIS 23563 (C.D. Cal., Nov. 9, 1999).

"implant delivery assembly" — "an apparatus for delivery of occlusive devices, such as embolic coils that comprises three distinct components: a pusher, a coupling, and an implant." Boston Scientific Corp. v. Cordis Corp., 422 F. Supp. 2d 1102 (N.D. Cal. 2006).

"stent impregnated [with rapamycin]" — "a person of ordinary skill in the art would understand the term 'impregnated' ... to mean 'filled, imbued, saturated, diffused or permeated with another substance,' and the Court shall construe it as such." Wyeth, et al. v. Abbott Laboratories, et al., 2010 U.S. Dist. LEXIS 75893 (D.N.J., Jul. 27, 2010).

"an impressed textured surface to trap air so as to facilitate unwinding of said roll of stretched film" — "the plastic film has an embossed pattern that helps trap air and ease unwinding." Pliant Corp. v. MSC Marketing and Technology, Inc., 416 F. Supp. 2d 632 (N.D. Ill. 2006).

"an impression preform" — "a thermoplastic resin which serves as an impression material." Medtech Products Inc. v. Ranir, LLC, et al., 2009 U.S. Dist. LEXIS 103211 (S.D.N.Y., Nov. 5, 2009).


"improved eschar" — "an eschar (as defined above) that, when compared to electrosurgical fulguration made prior to this invention, is characterized by a shallower arc hole reticulum layer that has more uniform and smaller diameter holes evenly distributed over the surface of the tissue that is substantially free of charring and carbonization with thicker walls of tissue between adjacent arc holes and is shallower, and with a thermal desiccation layer that is relatively thin and more uniform in depth." Erbe Elektromedizin GmbH, et al. v. Canady Technology, LLC, et al., 512 F. Supp. 2d 297 (W.D. Pa. 2007).
"an improvement in a vehicle" — "a module that becomes part of a vehicle and is intended to remain part of the vehicle during use." Adrain v. Superchips, Inc., 2006 U.S. Dist. LEXIS 25212 (S.D. Tex., March 14, 2006). 2048


"in" — "The word 'in,' however, is not synonymous with the word 'on.' The two words denote different spacial relationships. The vial cap of Biomed's device is not at any time encompassed by the base unit." Biomedical Polymers, Inc. v. Evergreen Industries, Inc., 976 F. Supp. 98 (D. Mass. 1997). 2050

"in a chain saw" — "is not a Jepson-type limitation, but only describes an intended use for the invention." Blount Inc., et al. v. Trilink Saw Chain, LLC, et al., 2007 U.S. Dist. LEXIS 42617 (D. Or., June 8, 2007). 2051

"residing in a close proximal relation to ... said food item" — "refers to a positional relationship between the susceptor and food item in which the susceptor remains closely adjacent to the food item throughout the cooking process." General Mills, Inc. v. Hunt-Wesson, Inc., 103 F.3d 978 (Fed. Cir. 1997). 2052

"in a plane including the axis" — "in a plane including the axis." Eazypower Corp. v. Alden Corp., 509 F. Supp. 2d 737 (N.D. Ill. 2007). 2053

"elastic material attached to inelastic material in a plurality of spaced apart parallel lines of attachment" — "use of the term 'in' rather than 'by' or 'with' in the phrase 'elastic material attached to inelastic material in a plurality of spaced apart parallel lines of attachment' requires an elastic sewn into, not onto, an inelastic material; thus, it is clear that the elastic material must itself be the attaching mechanism." Louisville Bedding Co. v. Perfect Fit Industries, Inc., 151 F. Supp. 2d 818 (W.D. Ky. 2001). 2054


[i] "an airstream outlet opening in an upper portion"; [ii] "mounted in an upper portion" — [i] "the airstream outlet opening is located in the top half of the dirt separation housing and closer to the center than to the edge of the housing"; [ii] "attached in the upper half of the dirt separator housing." Bissell Homecare, Inc. v. Dyson, Inc., 2010 U.S. Dist. LEXIS 57603 (W.D. Mich., Jun. 10, 2010). 2057

"in communication with" — "the Court construes the term 'in communication with' ... according to its ordinary meaning. Whether this construction covers the disclosed embodiments is beside the point, because no other construction is reasonable in light of the evidence." Regents of the University of Minnesota v. AGA Medical Corp., 2009 U.S. Dist. LEXIS 90289 (D. Minn., Sep. 29, 2009).

"a hollow valve liner ... defining a first bore in communication with a source of relatively hotter liquid" — "The Court finds that Bradley's definition of in communication that limits the connection of the parts such that they must be adjacent to or directly connected to one another is not supported by the plain meaning of the claim language or the specification. In common usage, communication can occur directly or indirectly, for example, by face-to-face conversation or by tape-recorded-voice-to-person." Lawler Manufacturing Co., Inc. v. Bradley Corp., et al., 2000 U.S. Dist. LEXIS 20511 (S.D. Ind., Nov. 30, 2000).

"cooling said core in conjunction with the concurrent application of a third pressure" — "cooling said core while at the same time applying a third pressure." Leighton Technologies LLC v. Oberthur Card Systems, S.A., 358 F. Supp. 2d 361 (S.D.N.Y. 2005).

"airflow to and from said intercooler in counterflow with coolant" — "The parties do not dispute that 'counterflow' means flowing in an opposite direction. The essence of the dispute is whether the frame of reference for determining the counterflow is outside the intercooler (Rice) or within the intercooler where there is heat transfer between the air flow and the coolant (i.e., thermal contact). ... the Court adopts the construction proposed by Rolls-Royce." Rice v. Honeywell International, Inc., et al., 2006 U.S. Dist. LEXIS 89235 (E.D. Tex., Nov. 21, 2006).

"in dependence on an expected trajectory of said tooth through formation material" — "based on the expected path the drill tooth being adjusted takes through the formation." Haliburton Services v. Smith International Inc., 2004 U.S. Dist. LEXIS 2320 (E.D. Tex., Feb. 18, 2004).

"at least two electrodes in direct contact with the cell" — "the Court finds it unnecessary to provide certain examples of indirect contact because 'direct physical contact' provides sufficient guidance." Lifescan, Inc. v. Roche Diagnostics Corp., 2007 U.S. Dist. LEXIS 70283 (N.D. Cal., Sept. 11, 2007).

"in fixed relation adjacent a surface of said vehicle window" — "means that relative to one another, the sunshade and the window do not move when the sunshade is placed in use." Huang, et al. v. Autoshade, et al., 950 F. Supp. 1016 (C.D. Cal. 1997).

"in fluid communication" — "means that fluid makes the connection between the parts and areas specified, or that the parts so delineated are connected by fluid." Lawler Manufacturing Co., Inc. v. Bradley Corp., et al., 2000 U.S. Dist. LEXIS 20511 (S.D. Ind., Nov. 30, 2000).

"wherein the notch is in fluid communication with the cell" — "the notch is connected to the sample receiving cell in a way that the fluid flows through the notch and to or from the cell." Lifescan, Inc. v. Roche Diagnostics Corp., 2007 U.S. Dist. LEXIS 70283 (N.D. Cal., Sept. 11, 2007).

"a weathertight gasket mounted on said flange and engaging said lid in its closed position" — "does not require that it be construed as though the lid is closed and will remain closed." Felix v. American Honda Motor Co., 2007 U.S. Dist. LEXIS 78564 (D. Kan., Oct. 19, 2007).
"performs several functions in one pass" — "performing several cleaning functions completed in one pull through the gun barrel with mid-bore directional changes permitted. Nothing in the specification requires the use of only a single pass." Michaels of Oregon Co. v. Clean Gun, LLC, 2002 U.S. Dist. LEXIS 20371 (D. Or., Jul. 9, 2002).

"a holder for holding an end of said capillary tube in operative relation with one of the said cups" — "neither the written description nor the prosecution history provides any support for Beckman's assertion that the phrase 'in operative relation' in the holder limitation must be limited to vertical movement of the holder. Thus, the district court erred in its claim construction. The proper interpretation of the holder limitation is that 'in operative relation' encompasses both vertical movement of the holder as well as vertical movement of the sample cups and the table." Princeton Biochemicals, Inc. v. Beckman Instruments, Inc., 1999 U.S. App. LEXIS 19743 (Fed. Cir., Aug. 19, 1999) (unpublished).

"in parts (volume) ..." — "the proportional volumetric quantity of one material component to all other components." Marley Mouldings Ltd. v. Mikron Industries, Inc., 282 F. Supp. 2d 847 (N.D. Ill. 2003).


"in series" — "requires an orientation of thermostat portions that are connected in a chain such that one portion comes in contact with fluid in the mixing chamber at a different time than the other." Lawler Manufacturing Co., Inc. v. Bradley Corp., 2000 U.S. Dist. LEXIS 14197 (S.D. Ind., Apr. 26, 2000).


"in series" — "requires that the thermostat portions be arranged in a chain or sequentially such that one portion comes in contact with fluid in the mixing chamber at a different time than the other." Lawler Manufacturing Co., Inc. v. Bradley Corp., et al., 2000 U.S. Dist. LEXIS 20511 (S.D. Ind., Nov. 30, 2000).


"in the form of a briquette" — "the claim is only concerned with the shape of the additive and not how it is formed." Harsco Corp. v. North Star Bluescope Steel, LLC, 2007 U.S. Dist. LEXIS 55335 (N.D. Ohio, July 31, 2007).

"in the presence of optically visible hemoglobin" — "does not limit claim 1 to a strip in which the only hemoglobin optically visible is that which is in red blood cells filtered out and held at the surface of the test strip." LifeScan, Inc. v. Polymer Technology International Corp., 1995 U.S. Dist. LEXIS 4916 (W.D. Wash., Jan. 3, 1995).
"in the web" — "is capable of definition and, therefore, that it does not render invalid claim 1."  

"incidental heat loss" — "atmospheric or other ambient heat loss."  

"an inclination mechanism secured to said frame structure effective to permit selective inclination of said deck member by the user" — "is written in means-plus-function format."  

"the bin walls having an inclination that is sufficient to cause material which is to be spread when positioned thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion" — "The inclination of the bin walls above the horizontal must be sufficient to meet this requirement. Thus, the bin wall cannot have a flat horizontal portion adjacent the conveyor, or any curve that is not downwardly inclined toward the conveyor (i.e., as one travels inward along the bin wall, each point along the bin wall toward the conveyor must be lower than the points farther from the conveyor)."  

"a rear segment and a front segment inclined relative to the rear segment wherein the front segment is inclined relative to the rear segment at about 20 40 degrees thereby defining the inclined portion" — "the front segment of the gripping region is inclined at an angle of about 20 to about 40 degrees relative to the rear segment of the gripping region."  

"includes a plurality of sub-members" — "is composed of two or more sub-members."  

"includes the intensity level setting of the control device controlling the intensity level of the lamp" — "includes, but is not limited to, the intensity level setting of the control device that is directing the lamp's intensity level."  

"including" — "permanently affixed to and included as part of."  
"The term 'including,' in the context of the '528 patent, does not imply 'attachment,' and the claims of this patent should not be limited to the preferred embodiment with its attached restricting ring."  
*Id.* (Rader, J., dissenting).  

"including" — "to take in or comprise as a part of a whole."  

"a resilient and elongate latch tongue including pawl means forming a recess thereacross" — "the court construes the term 'including' as requiring both the upper and lower portions of the pawl means to be contained by, and therefore to comprise, as a part of the whole, the tongue structure in this case."  

"incompressible" — "refers to a material that does not change volume when subjected to pressure or force."  
"increased strength characteristic" — "an increase in the ultimate strength of the film." *Pliant Corp. v. MSC Marketing and Technology, Inc.*, 416 F. Supp. 2d 632 (N.D. Ill. 2006). 2093

"the thickness of the generally annular region increases as the region approaches the pumping member" — "the claim language is clear and understandable to the fact finder, and any substitute for the claim language is likely to cause confusion rather than aid. Thus, the Court declines to define this term." *Sta-Rite Industries, et al. v. ITT Corp., et al.*, 2010 U.S. Dist. LEXIS 10790 (E.D. Tex., Jan. 19, 2010). 2094

"increases in rigidity after expansion of the balloon" — "requires that the material contained in the sleeve or added to the sleeve during the procedure increase in rigidity after the balloon begins to expand." *Arlaine & Gina Rockey, Inc. v. Cordis Corp.*, 2004 U.S. Dist. LEXIS 30763 (S.D. Fla., Jan. 5, 2004). 2095

"said magnetic member creates a magnetic circuit which passes at least through a periphery of said first rivet of said female member, which said small hole in said one of said first and second rivets increasing the magnetic attraction of said magnetic member by modifying a resistance to said magnetic circuit at said first and second rivets" — "in which the magnet causes lines of magnetic flux to pass through at least the outer sides of the rivet in the female half; and the small hole(s) in one or both rivets modifies their resistance to the flux and thereby increases the magnetic attraction." *Advanced Magnetic Closure, Inc. v. Rome Fastener Corp., et al.*, 2005 U.S. Dist. LEXIS 10016 (S.D.N.Y., May 11, 2005). 2096


"indentation"; "hole" — "The term 'indentation' is not interchangeable with the term 'hole' in the '932 Patent. As summarized above, the term 'indentation' is consistently used to indicate a recess, while the term 'opening' is consistently used to refer to an area through which something can, and does, pass." *Joy MM Delaware Inc., et al. v. Cincinnati Mine Machinery Co.*, 2010 U.S. Dist. LEXIS 107871 (W.D. Pa., Oct. 8, 2010). 2100

"independent" — "any one cover section can be removed from the cover system without removing any other cover section." *Sundance, Inc. v. De Monte Fabricating, Ltd.*, 485 F. Supp. 2d 805 (E.D. Mich. 2007). 2101

"plural independent poles" — "more than one structurally supportive member that is elongated and often cylindrical (or pieces of the same that connect together to form one pole) wherein each pole is not connected to another pole above the surface of the mat in a substantively inflexible manner." *Jumpsport, Inc. v. Jumpking, Inc.*, 2003 U.S. Dist. LEXIS 27262 (N.D. Cal., Jul. 18, 2003). 2102

"at least some of the appliances are marked to indicate their order of use" — "the word 'indicate' in the claim language conveys there may be an inferential step between the markings and the order of use." Ormco Corp. v. Align Technology, Inc., 2004 U.S. Dist. LEXIS 29994 (C.D. Cal., Jun. 29, 2004). 2104

"indication device" — "a device providing at least one of a visual indication, an audible indication or a tactile indication." Medtronic MiniMed Inc. v. Smiths Medical MD Inc., 2005 U.S. Dist. LEXIS 10583 (D. Del., Jun. 1, 2005). 2105

"status indicator" — "a display element, such as an LED or screen, for indicating the status of the electrical device." Lutron Electronics Co., Inc. v. Control4 Corp., 2009 U.S. Dist. LEXIS 3562 (D. Utah, Jan. 20, 2009). 2106

"individual buttons"; "individual button" — "one or more buttons on a pressure-sensitive variable conductance analog sensor." Anascape, Ltd. v. Microsoft Corp., et al., 2007 U.S. Dist. LEXIS 88248 (E.D. Tex., Nov. 30, 2007). 2107

"individual hydraulic drive motors operatively engaged to each of the ground engaging wheels" — "a single hydraulic drive motor operatively engaged to each of the ground engaging wheels." Toro Co. v. Textron, Inc., et al., 502 F. Supp. 2d 904 (D. Minn. 2007). 2108


"said plate members each being constructed as individual structural parts" — "Every one of the plate members is an independent structural part, constructed separate and apart from every other plate member." IKN, Inc. v. CemProTec GmbH, 2005 U.S. Dist. LEXIS 29134 (E.D. Pa., Nov. 22, 2005). 2110


"infinitely adjustable" — "means that the tracking adjustment can be made at any location along the threaded portion of the control rods of the invention with full movement in clockwise and counterclockwise directions of an adjustment member." Toro Co., et al. v. Scag Power Equipment, Inc., et al., 2002 U.S. Dist. LEXIS 14428 (D. Neb., Aug. 5, 2002). 2113


"inflation input" — "the point at which air enters the passageway." Aero Products International, Inc., et al. v. Intex Recreation Corp., et al., 466 F.3d 1000 (Fed. Cir. 2006). 2115
"inhibiting compression"; "such that compression of said fork is inhibited" — "To the extent 'inhibit' requires construction, these phrases should be read as 'restraining compression' and 'such that compression of said fork is restrained.'" SRAM Corp. v. Fox Factory, Inc., 2005 U.S. Dist. LEXIS 29164 (N.D. Ill., Nov. 18, 2005). 2116

"an injection port communicating with the interior of the chamber for admitting fluid into the chamber to expand the chamber" — "a sealable opening, located either remote from or in the flexible wall means, connecting to the interior of the chamber allowing the entrance of fluid into the chamber to expand the chamber." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006). 2117

"an injector for transporting protons from the source to the accelerator" — "an apparatus that introduces protons from the proton source to the accelerator." Optivus Technology, Inc., et al. v. Ion Beam Applications S.A., 2004 U.S. Dist. LEXIS 30314 (C.D. Cal., Aug. 31, 2004). 2118

"ink delivery means positioned on opposite sides of said substrate, said ink delivery means fluidly communicating with an ink source" — "The magistrate [] correctly applied § 112, P 6 to the interpretation of this claim element." Signtech USA, Ltd. v. Vutek, Inc., 174 F.3d 1352 (Fed. Cir. 1999). 2119

"ink permeates through the sheet from said printed front surface to said back surface to provide the indicia in mirror image form on said back surface" — "We agree with the trial court's construction that ink must reside on or at the back surface of the sheet - but does not have to permeate through the back surface of the sheet." Paymaster Technologies, Inc. v. United States, 180 Fed. Appx. 942 (Fed. Cir., May 4, 2006) (unpublished). 2120

"inlet orifice" — "an orifice that provides an inlet into the claimed first vacuum chamber for the passage of ions and neutral gas molecules." Applera Corp., MDS Inc., et al. v. Micromass UK Ltd., et al., 186 F. Supp. 2d 487 (D. Del. 2002). 2121

"inner body portion" — "the term 'inner' merely denotes that the 'inner body portion' is located inside or within the decorative surface layer." Tate Access Floors, Inc., et al. v. Maxcess Technologies, Inc., 222 F.3d 958 (Fed. Cir. 2000). 2122

"inner chamber" — "that which is formed by the inner lining of the warmth-retaining means, whether in a relaxed, compressed, or expanded state. The Court declines to read the words 'normal cross-sectional area' into the patent claims." Mont-Bell Co., Ltd. v. Mountain Hardware, Inc., 1997 U.S. Dist. LEXIS 22424 (N.D. Cal., Jul. 9, 1997). 2123

"inner portion" — "a portion inward and toward the center of the product, discrete from any channel or channel portion." Kimberly-Clark Corp., et al. v. Tyco Healthcare Retail Group, 456 F. Supp. 2d 998 (E.D. Wis. 2006). 2124


"inner spatial volume" — "a region of space surrounded by an outer spatial volume and either enclosed by a polymeric film wall or defined by the outside surface of a solid radionuclide." Hologic, Inc., et al. v. SenoRx, Inc., 2009 U.S. Dist. LEXIS 12274 (N.D. Cal., Feb. 18, 2009). 2126
"inner spatial volume" — "a region of space surrounded by an outer spatial volume and either enclosed by a polymeric film wall or defined by the outside surface of a solid radionuclide sphere."  Xoft, Inc. v. Cytyc Corp., et al., 2007 U.S. Dist. LEXIS 34468 (N.D. Cal., April 27, 2007).  

"inner surface of said base" — "because its ordinary and customary meaning is clear to one skilled in the art, the Court declines to construe the phrase."  Joyal Products, Inc. v. Johnson Electric North America, et al., 2007 U.S. Dist. LEXIS 79522 (D.N.J., Oct. 25, 2007).  


"inner wall of the annulus" — "the young wall comprised primarily of fibrous material as well as the transition zone which includes both fibrous material and amorphous colloidal gels."  Smith & Nephew, Inc. v. Arthrocare Corp., 2004 U.S. Dist. LEXIS 31057 (W.D. Tenn. 2004).  

"an inner zone on the anterior face circumscribed by the peripheral zone and surrounding the optic zone"; "an inner zone circumscribed by the peripheral zone"; "the anterior face including an inner zone circumscribed by the peripheral zone, and an optic zone in the inner zone"; "a second zone circumscribing the optical zone" — "a zone or region on the anterior face of the lens located adjacent to the peripheral zone, and that circumscribes and is separated from the optic zone by either a curved or rounded transition or by a discrete boundary, discontinuity or corner."  CooperVision, Inc. v. Ciba Vision Corp., 2007 U.S. Dist. LEXIS 51432 (E.D. Tex., July 16, 2007).  


"insert-receiving area" — "a region of the eccentric weight portion that is capable of receiving an insert, as opposed to receiving material being poured into the region."  American Piledriving Equipment, Inc. v. J & G Sales, Inc., et al., 2010 U.S. Dist. LEXIS 21326 (S.D. Tex., Mar. 9, 2010).  

"insert-receiving area" — "a bore located, at least in part, within the eccentric weight portion that is shaped to hold securely a solid insert member."  American Piledriving Equipment, Inc. v. Geoquip, Inc., 2009 U.S. Dist. LEXIS 115486 (E.D. Va., Dec. 11, 2009).  

"insert-receiving area" — "a bore, formed in the eccentric weight portion of the counterweight, which is designed to receive and securely hold one solid insert member made of a second metal having a specific gravity higher than that of the first metal and a melting point temperature of 328º C or greater."  American Piledriving Equipment, Inc. v. Equipment Corp. of America, 2009 U.S. Dist. LEXIS 96910 (W.D. Pa., Aug. 3, 2009).
"insert-receiving area" — "a bore formed in the eccentric weight portion of the counterweight, which extends fully through the gear portion and fully through the eccentric weight portion of the counterweight, capable of receiving a solid tungsten rod."  *American Piledriving Equipment, Inc. v. Bay Machinery Corp.*, 632 F. Supp. 2d 956 (N.D. Cal. 2009).  

"insert within the aperture" — "the district court properly construed the 'insert within the aperture' limitation to exclude the flange and the raised ledge."  *Intermatic Inc. v. Lamson & Sessions Co.*, 273 F.3d 1355 (Fed. Cir. 2001).  

"insertable into and through the tissue" — "simply requires that the elongated anchor member go into and through tissue, and that the language of the claim is silent as to the means with which the anchor member does so."  *Smith & Nephew, Inc., et al. v. Biomet, Inc., et al.*, 2005 U.S. Dist. LEXIS 31723 (D. Or., Nov. 21, 2005).  

"said nail being insertable into the medullary canal of a femur" — "the nail is insertable into the canal of the femur called the medullary canal."  *Smith & Nephew, Inc. v. Zimmer, Inc.*, 2009 U.S. Dist. LEXIS 16691 (W.D. Tenn., Mar. 2, 2009).  

"insertable storage medium having information stored therein" — "require[s] that the storage medium is a physical device which itself stores information; and that the storage medium is itself inserted into the machine (rather than being connected in some other manner) in order to operate it."  *Rackman v. Microsoft Corp.*, 102 F. Supp. 2d 113 (S.D.N.Y. 2000).  

"inserting the preassembly into a tubular body of metal so as to be in centered, spaced, relation to the interior wall of said body" — "introducing or placing the preassembly into the tubular body so that the preassembly is not in contact with the interior wall of the body."  *Tenneco Automotive Operating Co. Inc. v. Visteon Corp.*, 2005 U.S. Dist. LEXIS 12738 (D. Del., Jun. 28, 2005).  


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"integral" — "we disagree with Warminster's interpretation of the term 'integral.' Warminster would like us to interpret the term 'integral' as meaning functionally as opposed to physically integral. Such a reading would be directly contrary to our earlier interpretation of the term 'integral' as defining a 'structural relationship.'" Warminster Fiberglass Co., Inc. v. Delta Fiberglass Structures, Inc., 1996 U.S. App. LEXIS 29577 (Fed. Cir., Nov. 14, 1996) (unpublished).


"said base and flexible sections are integral" — "the base and flexible sections are formed as a single piece." Polyvision Corp. v. Smart Technologies, Inc., et al., 501 F. Supp. 2d 1042 (W.D. Mich. 2007).


"integral contrasting border" — "an edge or trim formed by removing the edges of the decorative surface layer to uncover or reveal the inner body portion." Tate Access Floors, Inc., et al. v. Maxcess Technologies, Inc., 222 F.3d 958 (Fed. Cir. 2000).

"an integral perimeter wall extending rearwardly from and surrounding the face wall defining a cavity in the rear of the head" — "requires a wall extending back from and surrounding the perimeter of the club face." Vardon Golf Company, Inc. v. Golfsmith International, Inc., et al., 2000 U.S. Dist. LEXIS 14259 (N.D. Ill., Jun. 6, 2000).

"integral therewith" — "The dispositive issue of claim construction is whether the term 'integral therewith' requires that the product be made by co-extrusion. ... The district court ruled, on review of the '854 specification, the prosecution history, and a dictionary definition of 'integral,' that the claimed gasket shield is not limited to manufacture by co-extrusion. ... We conclude that the district court correctly construed claim 1." Vanguard Products Corp. v. Parker Hannifin Corp., 234 F.3d 1370 (Fed. Cir. 2000). "I would reverse. ... the term 'integral therewith' is properly construed to mean an inner and outer layer 'formed as a unit through a single step process.'" Id. (Mayer, C.J., dissenting).

"the interior surfaces of said pylons are integral with said interior lower wall portion" — "mean[s] that the interior portion of the pylons must form a unit with, or physically connect to, the lower wall portion." Rehrig Pacific Co. v. Norseman Plastics Ltd. Inc., 2003 U.S. Dist. LEXIS 27566 (C.D. Cal., Sept. 29, 2003).

"distal tip integral with the distal end of the stem" — "means that there is a tip secured to the distal end of the stem, such that the tip and stem act as one unitary piece." Stryker Corp., et al. v. Intermedics Orthopedics, Inc., 891 F. Supp. 751 (E.D.N.Y. 1995).


"integrially bonded ... free of adhesive" — "mean[s] that the ribs bond to the panels without the use of a separate adhesive layer between the ribs and the panels." Bell & Howell Document Management Products Co. v. Altek Systems, et al., 132 F.3d 701 (Fed. Cir. 1997).


"integrially connected" — "mean[s] that the pieces are joined to function as a single article, including, but not limited to, a molded unit." Paczonay v. American Recreation Products, Inc., et al., 2007 U.S. Dist. LEXIS 9773 (N.D. Cal., Jan. 30, 2007).

"integrially connecting" — "joined together so as to make up a single, complete, and substantially permanent piece or unit, such that the connected components become an essential part of the complete unit, and such that the complete unit is incapable of being easily dismantled without destroying the unit." Safety Rail Source, LLC v. Bilco Co., 2009 U.S. Dist. LEXIS 30969 (D.N.J., Apr. 8, 2009).


"integrially formed" — "connected together so as to make up a single complete piece or unit, or so as to work together as a single complete piece or unit, and so as to be incapable of being easily dismantled without destroying the integrity of the piece or unit." Burns, Morris & Stewart L.P. v. Endura Products, Inc., 2005 U.S. Dist. LEXIS 46839 (E.D. Tex., May 11, 2005).

"[C]onnected together so as to make up a single complete piece or unit, in such a way that the connection becomes part of, or is interconnected with, the piece or unit, as by gluing, an interconnecting joint, or internal screws. The connector is not merely attached to, or wrapped around, the outside surface of the piece or unit." Burns, Morris & Stewart L.P. v. Masonite International Corp., 401 F. Supp. 2d 692 (E.D. Tex. 2005).

"integrially formed"; "formed integrally" — "formed with material common to the rest of the unit, and the connection having no mechanical joints." Storus Corp. v. Restoration Hardware, Inc., et al., 2007 U.S. Dist. LEXIS 25953 (N.D. Cal., Mar. 22, 2007).
"integrally formed as a portion of" — "the examiner clearly ... interpreted the phrase 'integrally formed' to encompass devices that had a compliance area fixedly attached to a support member, as in Brown. The examiner reiterated this interpretation in the final rejection. 'It is the Examiner's position that the language "integrally formed as a portion of" (e.g. a selected area, the housing assembly or the support member) still reads on the acoustic compliance area 100 of Brown et al.' The Board also adopted this interpretation citing numerous cases in which the word 'integral' had been interpreted broadly to encompass multi-piece structures. We conclude that the PTO's interpretation is reasonable in light of all the evidence before the Board." In re Morris, et al., 127 F.3d 1048 (Fed. Cir. 1997).\textsuperscript{2177}

"integrally formed with" — "created or constructed within or in combination with the frame." Cedarapids, Inc. v. Johnson Crushers International, Inc., et al., 2005 U.S. Dist. LEXIS 37439 (M.D. Tenn., Aug. 26, 2005).\textsuperscript{2178}

"not integrally formed with the unit" — "that the reservoir is not required to be of a specific size or shape to be used with the unit." Innovative Design Enterprises, Inc. v. Circulair, Inc., 1997 U.S. Dist. LEXIS 12799 (N.D. Ill., Aug. 20, 1997).\textsuperscript{2179}

"integrally joined" — "connected together so as to make up a single complete piece or unit, or so as to work together as a single complete piece or unit, and so as to be incapable of being easily dismantled without destroying the integrity of the piece or unit." Burns, Morris & Stewart L.P. v. Endura Products, Inc., 2005 U.S. Dist. LEXIS 46839 (E.D. Tex., May 11, 2005).\textsuperscript{2180}


"at least one light emitting source integrally secured within said housing adjacent the plug receiving opening thereof to provide visual verification of the status of the electrical connection" — "The light emitting source is held in place in the housing of the connector near the opening in the front wall which receives the plug so that the light emitting source is a part of the connector unit." Helifix Limited v. Blok-Lok, Ltd., et al., 26 F. Supp. 2d 294 (D. Mass. 1998).\textsuperscript{2182}

"intelligent safe" — "a safe that can supervise and account for user transactions at another safe." Tidel Engineering L.P. v. Fire King International, Inc., et al., 613 F. Supp. 2d 823 (E.D. Tex. 2009).\textsuperscript{2183}

"pair of receptacle support strap straps [that] are interconnected" — "the straps may be connected at any position on the receptacle as long as when the straps are connected, the first end of the support surface is at an angle with respect to the second end of the support surface. The first end of the support surface is not required to rest against the straps at an angle with respect to the second end of the support surface." Fisher-Price, Inc. v. Safety 1st, Inc., et al., 109 Fed. Appx. 387 (Fed. Cir., Aug. 16, 2004) (unpublished).\textsuperscript{2184}

"said regions of high and low vision correction powers being interconnected in an optical sense by transition regions" — "the regions of high and low vision correction powers are connected by a transition region in a fashion to provide vision correction." Vision Advancement, LLC v. Johnson & Johnson Vision Care, Inc., 2007 U.S. Dist. LEXIS 5742 (E.D. Tex., Jan. 26, 2007).

"a liquid delivery system interconnected to [the] granular delivery system for supplying liquid material" — "the term 'interconnected' includes a liquid delivery system that is connected 'electronically, hydraulically, or mechanically' to the granular system." Bristol Co. L.P. v. Bosch Rexroth Inc., et al., 2010 U.S. Dist. LEXIS 12875 (D. Colo., Feb. 1, 2010).

"interconnected with" — "mean[s] a connection between two components, without regard to the form of the connection." Briggs & Stratton Corp. v. Kohler Co., 398 F. Supp. 2d 925 (W.D. Wis. 2005).

"interconnected with"; "securing" — "attaching ..., either directly or through another device or assembly." Caught Fish Enterprises, LLC, et al. v. Contek, Inc., 509 F. Supp. 2d 954 (D. Colo. 2007).

"interengagable notches" — "complementary concave or V-shaped cuts or indentations on the locking member and tubular member which are capable of engaging or interlocking with one another." Engineered Products Co. v. Donaldson Co., Inc., 165 F. Supp. 2d 836 (N.D. Iowa 2001).

"area of interference fit"; "band[s] of interference fit" — "An area of interference fit is the place where the outer surface of the sleeve and the inner surface of the bit holder meet. A band of interference fit is a specific type of structure used to create an area of interference it. A band of interference fit must be shorter than the entire length of the sleeve. One band creates one area of interference it. Two discrete bands create two different areas of interference fit." Joy MM Delaware, Inc., et al. v. Sandvik Mining and Construction USA LLC, 2007 U.S. Dist. LEXIS 40868 (W.D. Pa., June 4, 2007).


"interior surface" — "Medtronic has provided no basis for this Court to conclude that 'interior surface' should be construed as being inwardly tapered at the bottom." Fastenetix, LLC v. Medtronic Sofamor Danek, Inc., et al., 2007 U.S. Dist. LEXIS 53665 (D.N.J., July 25, 2007).

"wherein the insert body is interlocked to the inner sleeve to form a single fixed structure" — "a portion of the insert body is physically connected to a portion of the inner sleeve such that the insert body is incapable of any substantial movement relative to the inner sleeve." Fiber Systems International, Inc. v. Applied Optical Systems, Inc., 2009 U.S. Dist. LEXIS 62491 (E.D. Tex., Jul. 21, 2009).

"interlocking features" — "one or more portions of the lid and the rim of the main body that create an obstruction between each other as the lid and main body are engaged, resulting in a constraint that helps maintain the engagement of the lid and the main body." Learning Curve Brands, Inc. v. Munchkin, Inc., 2010 U.S. Dist. LEXIS 27277 (W.D. Wis., Mar. 22, 2010).

"interlocking ... members" — "distinct parts of a whole, not necessarily separate individual parts, which engage or interlace, one with another." Rhino Associates, L.P. v. Berg Manufacturing and Sales Corp., et al., 482 F. Supp. 2d 537 (M.D. Pa. 2007).
"intermediary" — "standing alone means a 'member between others.'"  *Intamin, Ltd. v. Magnetar Technologies, Corp.*, 483 F.3d 1328 (Fed. Cir. 2007).2197

"intermediate" — "the parties dispute whether the claim term 'intermediate' means 'midway' or 'somewhere between.' ... Although the specifications ... state that the sprocket recesses are 'located midway between the pivot axes,' such a statement does not operate to limit the scope of the asserted claims."  *Lairam Corp., et al. v. Morehouse Industries, Inc., et al.*, 1997 U.S. Dist. LEXIS 23026 (E.D. Cal., Apr. 23, 1997).2198

"said means for pivoting being positioned on the device and intermediate the first end and second end of the shaft" — "a pivoting means is intermediate the ends of the device's shaft, if, at least some point during the operation of the device, a length of shaft protrudes on either side of the pivoting means."  *Bidco, Inc. v. Plastic Lumber Co.*, 2004 U.S. Dist. LEXIS 31066 (N.D. Cal., Nov. 10, 2004).2199

"intermediate vision correction power"; "high vision correction power"; "low vision correction power"; "near vision correction power"; "far vision correction power"; "predetermined vision correction power" — "the Court concludes no further construction is necessary."  *Vision Advancement, LLC v. Johnson & Johnson Vision Care, Inc.*, 2007 U.S. Dist. LEXIS 5742 (E.D. Tex., Jan. 26, 2007).2200

"intermediate width" — "the width of the intermediate section at either the web portion or the corrugated portion."  *Habasit Belting Inc. v. Rexnord Industries, Inc., et al.*, 340 F. Supp. 2d 518 (D. Del. 2004).2201


[i] "non-tapered internal bore"; [ii] "constant diameter internal bore" — [i] "a bore that does not gradually diminish in one direction, subject to the inherent limitations of the materials and processes used in the manufacture of the compression ring."; [ii] "a bore with a diameter that does not vary, subject to the inherent limitations of the materials and processes used in the manufacture of the compression ring."  *John Mezzalingua Associates, Inc. v. Arris International, Inc.*, 2003 U.S. Dist. LEXIS 24730 (W.D. Wis., Nov. 14, 2003).2207

"internal threads" — "helical or spiral ribs or grooves disposed on the interior surface of the female end of the PVC pipe which mate with corresponding helical or spiral ribs or grooves on the outer surface of the male end of a similar adjacent PVC pipe." CertainTeed Corp. v. Modern Products Industries, Inc. et al., 2005 U.S. Dist. LEXIS 7638 (E.D. Pa., May 2, 2005).2009


"interrupting"; "disconnected" — "require a physical disconnection as this meaning is more consistent with the context of the specification." Inventio AG v. ThyssenKrupp Elevator Americas Corp., et al., 2010 U.S. Dist. LEXIS 59020 (D. Del., Jun. 14, 2010)2211

"movement interruption" — "any unscheduled occurrence which causes the spraying device and the conveying device to halt in non-specific terminal positions, i.e., the relative positions of the spraying device and conveying device may no longer be synchronized." Durr Systems, Inc. v. Fanuc, Ltd., et al., 463 F. Supp. 2d 663 (E.D. Mich. 2006).2212


"intersect" — "to have one or more points in common from at least one perspective." B. Braun Melsungen AG, et al. v. Terumo Medical Corporation, et al., 2010 U.S. Dist. LEXIS 54480 (D. Del., Jun. 3, 2010).2214


"interstitial"; "brachytherapy"; "interstitial brachytherapy" — "involving a surgically-created cavity in a body"; "radiation therapy delivered by a spatially-confined radioactive material inserted into the body at or near a tumor or other proliferative tissue disease site"; "no construction necessary." Xoft, Inc. v. Cytyc Corp., et al., 2007 U.S. Dist. LEXIS 34468 (N.D. Cal., April 27, 2007).2216

"intervening cooling procedure" — "cooling of the product between step (a) and step (b) or between step (b) and step (c) that is not 'incidental heat loss.'" Unitherm Food Systems, Inc. v. Foster Poultry Farms, Inc., 2010 U.S. Dist. LEXIS 34566 (N.D. Okla., Apr. 7, 2010).2217

"first intervening member"; "second intervening member" — "Medtronic has provided no basis for this Court to conclude that 'first intervening member' should be construed as 'the cap portion of the two-piece interlocking coupling element'"; "Medtronic has provided no basis for this Court to conclude that 'second intervening member' should be construed as 'the tapered and slotted socket portion of the two-piece interlocking coupling element, which completely encircles the curvate head.'" Fastenetix, LLC v. Medtronic Sofamor Danek, Inc., et al., 2007 U.S. Dist. LEXIS 53665 (D.N.J., July 25, 2007).2218

"intimate contact" — "The term is construed as requiring that there be intimate contact over 'substantially' the entire pleat height rather than imposing a limitation that there be no gaps within the pleats, in which case the claimed filter would not work and would be rendered useless." Pall Corp. v. Cuno Inc., 2001 U.S. Dist. LEXIS 16778 (E.D.N.Y., Sept. 7, 2001).2219
"in intimate contact with said second surface" — "in contact with, but distinct from the second surface." *ICHL, LLC v. NEC Corp. of America, et al.*, 2010 U.S. Dist. LEXIS 38942 (E.D. Tex., Apr. 20, 2010). 2220


"inventory" — "We agree with the trial court that the term 'inventory' refers, at least in part, to articles of clothing, contrary to Markman's contention that 'inventory' may be limited to just cash or inventory receipts." *Markman v. Westview Instruments, Inc., et al.*, 52 F.3d 967 (Fed. Cir. 1995) (en banc). 2224


"transporting multiple containers in an inverted stack to said collection site and lifting said first container from said inverted stack with said rotating fork lift truck" — "the court construes 'stack' to be a vertical arrangement of more than one container. ... the court construes 'inverted' as open end down, the reverse position from that in which a container functions as a container." *Caponey v. ADA Enterprises, Inc.*, 511 F. Supp. 2d 618 (D.S.C. 2007). 2226

"inverted trunnion" — "inward directed pins or pivots on which something can be rotated or mounted." *Molon Motor & Coil Corp. v. Merkle-Korff Industries, Inc.*, 2006 U.S. Dist. LEXIS 27575 (N.D. Ill., April 26, 2006). 2227

"inverting said first container such that said refuse enters a collection bin of a collection truck" — "reversing the position of first container from an open side up position to an open side down position to such a degree that refuse enters a collection bin." *Caponey v. ADA Enterprises, Inc.*, 511 F. Supp. 2d 618 (D.S.C. 2007). 2228


"a medical implant comprising an ultra-high molecular weight polyethylene ... irradiated and annealed" — "[is] not limited to the irradiation and annealing of finished implants." Howmedica Osteonics Corp. v. Zimmer, Inc., et al., 2007 U.S. Dist. LEXIS 29991 (D.N.J., April 23, 2007). 2232

"said stream is directed outwardly toward said annular inner surface and then redirected upwardly and inwardly toward the incoming ladle stream" — "is plain, and it means what it says." CCPI Inc. v. American Premier, Inc., 966 F. Supp. 276 (D. Del. 1997). 2233

"isolated from any exposure to said atmosphere" — "separated so that there is no exposure at all to the air being monitored to any degree or extent." Dicon Global Inc. v. Senco Sensors, Inc., et al., 2004 U.S. Dist. LEXIS 23758 (N.D. Ill., Nov. 18, 2004). 2234

"issue"; "issued"; "issuing" — "remove or decouple the tangible medium from the means that stores the information therein, so the tangible medium provides an independent record of a voting session." Avante International Technology Corp. v. Diebold Election Systems, et al., 2007 U.S. Dist. LEXIS 61011 (E.D. Mo., Aug. 20, 2007). 2235

"item"; "movie" — "As these are commonly-understood English words, they need no clarification." Netflix, Inc. v. Blockbuster, Inc., 2007 U.S. Dist. LEXIS 15047 (N.D. Cal., Feb. 20, 2007). 2236

"items containing information" — "physical items, such as video tapes, film, or computer disks, which contain audio information, video information or both." Acacia Media Technologies Corp. v. New Destiny Internet Group, et al., 2006 U.S. Dist. LEXIS 93710 (N.D. Cal., Dec. 14, 2006). 2237

- J -

"a jagged border separates said first and second portions" — "requires that the jagged border be uninterrupted. However, as stated supra, the patent merely requires that there take place a 'noticeable change of shade' at the border. It does not limit the 477 patent to one where elements of the first shade cannot appear throughout the iris." Wesley Jessen Corp. v. Coopervision, Inc., 2002 U.S. Dist. LEXIS 5172 (C.D. Cal., Mar. 14, 2002). 2238

"jarring" — "striking the beverage container with sufficient force to cause immediate effervescence and overflowing of carbonated beverages upon opening, or damage to a container/product such that the container or product is no longer suitable for consumption or sale." Crane Co., et al. v. Sandenvendo America, Inc., et al., 2009 U.S. Dist. LEXIS 47509 (E.D. Tex., Jun. 5, 2009). 2239

"a jaw mechanically interengaged with and carried by said bracket for movement between said first and second flanges" — "(1) either of two mechanical parts that open and close to grip or crush something, as in a monkey wrench or vise, (2) mechanically interengaged with and carried by said bracket (3) for movement in or through the space that separates the first and second flanges." Inner-Tite Corp. v. Dewalch Technologies, Inc., 2007 U.S. Dist. LEXIS 64586 (D. Mass., Aug. 31, 2007).

"jig" — "a device or tool that is different from the material on which the manufacturing work is performed that holds the elements created by the patented manufacturing process in the correct position during the manufacturing process." McDavid Knee Guard, Inc., et al. v. Nike USA, Inc., 2009 U.S. Dist. LEXIS 84921 (N.D. Ill., Sep. 17, 2009).


"joined"; "affixed"; "attached"; "connected" — "a person of ordinary skill in the art (or, for that matter, anyone of ordinary skill in the English language) would read the '291 patent as covering only a device made up of two physically separate disks that are attached to one another." Regents of the University of Minnesota v. AGA Medical Corp., 2009 U.S. Dist. LEXIS 90289 (D. Minn., Sep. 29, 2009).

"first and second printed circuit boards are joined by hot bar soldering" — "first and second printed circuit boards are joined by solder material." LG Display Co., Ltd. v. AU Optronics Corp., et al., 2010 U.S. Dist. LEXIS 12969 (D. Del., Feb. 16, 2010).

"first and second circumferentially extending walls, said second chuck wall depending from said first chuck wall so as to form a juncture therebetween" — "first and second walls encircling the chuck forming a place between them at which they meet." Crown Packaging Technology, Inc., et al. v. Rexam Beverage Can Co., 486 F. Supp. 2d 366 (D. Del. 2007).

"terminating the introduction of concentrated detergent solution into said wash chamber just after said fabric has reached a full saturation level at said spin speed" — "This claim step means that the introduction of concentrated detergent solution into the wash chamber is stopped shortly after the fabric reaches a full saturation level at the spin speed. Full saturation at the spin speed means that the fabric has absorbed an amount of detergent solution to come to equilibrium with respect to detergent solution retention at the particular spin speed. There is no requirement that the introduction is terminated for any particular reason." Whirlpool Corp., et al. v. LG Electronics, Inc., et al., 423 F. Supp. 2d 730 (W.D. Mich. 2004).


"first and second juxtaposed drain ports" — "two separate identifiable physical elements that are adjacent or near each other." Oatey Co. v. IPS Corp., 2006 U.S. Dist. LEXIS 9060 (N.D. Ohio, March 8, 2006).

- K -

"Kaufman-type ion beam source" — "any ion beam gun with the four stated components: a hot-wire cathode, an anode, grids, and magnets." Litton Systems, Inc. v. Honeywell, Inc., 140 F.3d 1449 (Fed. Cir. 1998). 2251

"keys" — "protrusions that unlock or release a latch device and also engage or actuate valve device." Parker-Hannifin Corp., et al. v. Baldwin Filters, Inc., et al., 2010 U.S. Dist. LEXIS 68906 (N.D. Ohio, Jul. 9, 2010). 2252


"knit lines" — "lines formed when two flow fronts of molten plastic meet during the molding operation." Maytag Corp. v. Electrolux Home Products, Inc., 411 F. Supp. 2d 1008 (N.D. Iowa 2006). 2254

- L -


"a flange portion ... with an L-shaped edge portion being offset at an angle less than 90 degrees from the corner section front surface so that said L-shaped edge extends rearwardly in a direction from said corner section front surface to said corner section rear surface" — "require[s] the L-shaped portion to extend rearwardly at an angle less than 90 degrees. Further, the L-shaped portion is to extend from the front surface of the corner section to the rear surface of the corner section." Ductmate Industries, Inc. v. Famous Supply Corp., et al., 55 F. Supp. 2d 777 (N.D. Ohio 1999). 2258

"L-shaped guide rod" — "an integral rod having two straight portions joined at approximately 90 degrees with respect to each other. One portion of the rod is elongated and used for insertion into the femur or the tibia and the other portion is used for receipt of a guide member." Depuy Orthopaedics, Inc. v. Androphy, et al., 2000 U.S. Dist. LEXIS 661 (N.D. Ill. 2000). 2259

"L-shaped magnet liner" — "the liner itself is in the actual shape of the letter 'L.'" Rattler Tools, Inc. v. Bilco Tools, Inc., et al., 2007 U.S. Dist. LEXIS 49124 (E.D. La., July 6, 2007). 2260

"laid-over state" — "a condition in which the pleats have leg surfaces in intimate contact and pleat heights that are greater than the distance between the outer and inner peripheries of the filter element." Pall Corp. v. Cuno Inc., 2007 U.S. Dist. LEXIS 59917 (E.D.N.Y., Aug. 14, 2007). 2261
"laminator apparatus" — "equipment that is used to unite two or more layers of material, such as the core, by the application of heat and pressure." Leighton Technologies LLC v. Oberthur Card Systems, S.A., 358 F. Supp. 2d 361 (S.D.N.Y. 2005).2262

"lamp support means" — "a structural support for a lamp located inside the reflector near the base end which performs the function of supporting two or more compact fluorescent lamps at an elevation between the base end of the reflector and the light emitting end of the reflector." Sportlite, Inc. v. Genlyte Thomas Group, LLC, et al., 2006 U.S. Dist. LEXIS 96638 (D. Ariz., Sept. 13, 2006).2263 "Because the Special Master properly applied and rejected the presumption of 112/6 raised by 'lamp support means,' the Court will overrule Defendants' objections to the Report and Recommendation in this respect." Id., 518 F. Supp. 2d 1122 (D. Ariz. 2007).2264

"lanced" — "a process in which one or more cuts are made in the metal of the adaptor to form a spring locking member, with or without the removal of additional material." Arlington Industries, Inc. v. Bridgeport Fittings, Inc., 290 F. Supp. 2d 508 (M.D. Pa. 2003).2265


"a large plurality" — "mean[s] that the coating must contain a sufficient number of glitter particles to reflect substantially all light incident on the portions of the body that are covered by the coating." Nichols, et al. v. Strike King Lure Co., et al., 2000 U.S. Dist. LEXIS 15781 (N.D. Tex., Oct. 25, 2000).2268

"largely closed"; "substantially closed" — "for the most part, to a large degree, or in the main closed." Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp., et al., 133 F. Supp. 2d 833 (E.D. Va. 2001).2269

"larger than said simple geometric figure" — "having a greater area than the area of the simple geometric figure of the first planarizing pattern." Matsushita Electric Industrial Co., Ltd. v. Mediatek, Inc., et al., 2006 U.S. Dist. LEXIS 84399 (N.D. Cal., Nov. 9, 2006).2270


"latching structure" — "a number of parts put together in a particular way for fastening, the combination of parts linked, connected, or joined to the body for fastening at least one of the side structures in an erected position." Bradford Co. v. Afco Manufacturing, et al., 2006 U.S. Dist. LEXIS 88547 (S.D. Ohio, Dec. 5, 2006).2273
"lateral": "side" — "refer more narrowly to angles that are 'transverse to the longitudinal axis of the surfboard between the front and the rear."

"lateral constraining device [which includes a] support element and inclined surface ... distinct from said skirt and second annular surface" — "mean[s] that the lateral constraint is distinct and independent from the axial constraint provided by the confronting annular surfaces of the patented probes." Renishaw plc v. Marposs Societa' per Azioni, et al., 974 F. Supp. 1056 (E.D. Mich. 1997).

"in at least one of the lateral edges thereof" — "in at least one of the edges on a side of the strip." Lifescan, Inc. v. Roche Diagnostics Corp., 2007 U.S. Dist. LEXIS 70283 (N.D. Cal., Sept. 11, 2007).


"lateral strength" — "the strength of connected PVC pipe which will resist forces exerted on the pipe in a direction perpendicular to the length of the pipe." CertainTeed Corp. v. Modern Products Industries, Inc. et al., 2005 U.S. Dist. LEXIS 7638 (E.D. Pa., May 2, 2005).

"latterly linked strands" — "strands that are connected at the sides." FieldTurf USA, Inc., et al. v. Sports Construction Group LLC, 499 F. Supp. 2d 907 (N.D. Ohio 2007).


"latterly sliding and snapping the cooperative coupling parts together" — "the panels are joined by moving them towards each other in substantially a common plane and coupled via a snap action." Alloc, Inc. v. Unilin Decor N.V., et al., 2007 U.S. Dist. LEXIS 16743 (E.D. Wis., Mar. 6, 2007).

"layer" — "The Southwall and AFG patents use 'layer' in different contexts. For example, the '532 patent appears to distinguish between 'layer,' a claim term, and 'interlayer,' which appears only in the written description. That distinction could be critical in this case. Therefore a precise and correct definition of 'layer' is needed." AFG Industries, Inc., et al. v. Cardinal IG Co., Inc., et al., 1999 U.S. App. LEXIS 653 (Fed. Cir., Jan. 5, 1999) (unpublished).


"layer" — "a region of material having a thickness and the composition of which is chosen to provide desired properties." Guardian Industries Corp., et al. v. AFG Industries, Inc., 2006 U.S. Dist. LEXIS 40589 (E.D. Mich., June 2, 2006). 2288


"colored sheet comprising a color layer and a flexible thermoplastic layer" — "the 'color layer' is not necessarily a second thermoplastic layer but rather can be the printed ink itself, which has thermoplastic properties." Baratto, et al. v. Brushstrokes Fine Art, Inc., 2010 U.S. Dist. LEXIS 28046 (W.D. Wis., Mar. 24, 2010). 2291

"the inner layer comprising fibers selected from the group consisting of woven fibers, fabrics, knits and fleece" — "a sheet-like material produced from woven fibers, knitted fibers, or non-woven matted fibers." Viskase Cos., Inc. v. World Pac International AG, et al., 2010 U.S. Dist. LEXIS 49720 (N.D. Ill., May 18, 2010). 2292


"a layer of flexible material that is minimally porous to macromolecules" — "The Court construes the term 'layer' as 'a single layer.' ... the phrase 'minimally porous to macromolecules' ... modifies the term 'material.'" Saffran v. Johnson & Johnson, et al., 2010 U.S. Dist. LEXIS 98537 (E.D. Tex., Sep. 20, 2010). 2294

"a first layer of foam" — "a layer of foam that is breathable as defined in this claim construction, and that includes, but is not limited to, reticulated foam and open-cell hydrophilic foam. Foams known by the trade names 'Aquazone' and 'Comfortemp' are specifically included." Baychar, Inc., et al. v. Frisby Technologies, Inc., et al., 230 F. Supp. 2d 75 (D. Me. 2002). 2295

"layer of material" — "The Court interprets 'layer of material' to mean exactly what it says and no more. The phrase does not restrict claim 12 to sterilization and heating 'an airtight package.'" Howmedica Osteonics Corp. v. Zimmer, Inc., et al., 2007 U.S. Dist. LEXIS 29991 (D.N.J., April 23, 2007). 2296


"lead shot-filled closed front end" — "the closed front end portion of the projectile body forward of the constriction/delineation that is filled with lead shot, some portion of which has a diameter that is less than the interior diameter of the 12 gauge shotgun shell at the time that the portion is inserted into the shotgun shell." Combined Tactical Systems, Inc. v. Defense Technology Corp. of America, et al., 426 F. Supp. 2d 140 (S.D.N.Y., April 4, 2006). 2300

"lead wire extending from the package" — "the insulated wires or leads start inside the envelope and extend from the inside to the outside of the envelope." Cardiac Science, Inc. v. Koninklijke Philips Electronics N.V., et al., 2006 U.S. Dist. LEXIS 22267 (D. Minn., April 20, 2006). 2301


"leaving said housing and said second flange intact to seal said neck" — "means that after the impact the 'case covering, protecting, or enclosing other parts of the fuel cap' and the second flange must remain complete enough to perform their function of sealing the filler neck to prevent fuel spillage." Stant Manufacturing, Inc. v. Gerdes, GmbH, 2004 U.S. Dist. LEXIS 27704 (S.D. Ind., Sept. 27, 2004). 2304


"leg" — "an appendage to the body of the flexure which extends downward, supporting the structure above it." Shum v. Intel Corp., et al., 2005 U.S. Dist. LEXIS 46461 (N.D. Cal., Jun. 21, 2005). 2306


"lens" — "a body that has two opposite regular surfaces, at least one of which is curved, that is structured and positioned to form an image by focusing a beam of electromagnetic radiation." International Automated Systems, Inc. v. Digital Persona, Inc., et al., 2008 U.S. Dist. LEXIS 445 (D. Utah, Jan. 2, 2008). 2311
"a lens body comprising a hydrogel material and having an anterior face, a posterior face, and a rounded outer peripheral edge surface..."; "a lens body comprising a hydrophilic silicone-containing material having an anterior face, a posterior face having a rounded outer peripheral edge surface..." — "a lens body comprising a hydrogel material and having an anterior face, a posterior face, and a substantially smooth, curved outer peripheral edge..."; "a lens body comprising a hydrophilic silicone-containing material having an anterior face and a posterior face having a substantially smooth, curved outer peripheral edge...". CooperVision, Inc. v. Ciba Vision Corp., 2007 U.S. Dist. LEXIS 51432 (E.D. Tex., July 16, 2007).


"less than a complete circle" — "mean[s] a rounded figure in which the circumferential line is divided or broken by any means." Arlington Industries, Inc. v. Bridgeport Fittings, Inc., 290 F. Supp. 2d 508 (M.D. Pa. 2003).

"a less viscous anticoagulant is allowed to coat the surface of the guide wire within the distal portion of the guide wire lumen" — "an anticoagulant composition, having less resistance to flow than blood, in the proximal portion of the guide wire tube is allowed to coat the surface of the guide wire in the distal portion of the guide wire tube." Medtronic AVE, Inc. v. Cordis Corp., 516 F. Supp. 2d 741 (E.D. Tex. 2007). "After carefully considering the arguments raised by the parties in this case, the court will not alter its construction from the Cordis case." Medtronic Vascular Inc., et al. v. Boston Scientific Corp., et al., 526 F. Supp. 2d 613 (E.D. Tex. 2007).

"a lever" — "a rigid member that pivots about one point and that is used to move an object at a second point by a force applied at a third." World Wide Stationery Manufacturing Co., Ltd. v. U.S. Ring Binder, L.P., 2009 U.S. Dist. LEXIS 27873 (E.D. Mo., Mar. 31, 2009).

"lever movement blocking element" — "has the same meaning as 'blocking element' defined above." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997).

"lever moving element" — "the term 'element' is synonymous with 'means'. Consequently, 'lever moving element' should be treated as the equivalent of 'lever operating means' and subject to § 112 P 6." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997). "[W]e hold that the district court was correct in applying section 112, P 6 to limit the 'lever moving element' to structures disclosed in the specification and equivalents thereof that perform the identical function." Id., 156 F.3d 1206 (Fed. Cir. 1998).

"a lever pivotally mounted on said tool body for deforming a grommet" — "a bar like structure (i.e. a lever) that is mounted on the tool body so that, when pivoted during operation, it is capable of deforming a grommet." Callicrate v. Wadsworth Manufacturing, Inc., 427 F.3d 1361 (Fed. Cir. 2005).

"library" — "The district court defined 'library' as a 'collection ... of places that store information, and you can have a single control or common handling system.' ... we conclude that the district court erred." Odetics, Inc. v. Storage Technology Corp., et al., 1997 U.S. App. LEXIS 15254 (Fed. Cir., Jun. 25, 1997) (unpublished).

"lid" — "an object which is movable so as to selectively open and close the toner cartridge." Ricoh Co., Ltd., et al. v. Katun Corp., et al., 486 F. Supp. 2d 395 (D.N.J. 2007).

"lid seal contactable with a throat flange" — "top or lid that forms a roughly air tight closure when it interacts with a protruding rim or edge of the container." Sunbeam Products, Inc. v. Delonghi America, Inc., et al., 2007 U.S. Dist. LEXIS 123 (D.N.J., Jan. 3, 2007).


"light" — "the spectrum of electromagnetic radiation which can be seen by the human eye and is not limited to lasers." Applied Material, Inc. v. Tokyo Seimitsu, Co., 446 F. Supp. 2d 525 (E.D. Va. 2006).


"light housing" — "the patentee clearly did not intend to limit the definition of 'light housing' in claim 1 in the manner suggested by the district court." Transmatic, Inc. v. Gulton Industries, Inc., 53 F.3d 1270 (Fed. Cir. 1995).

"the cover including a first limited expansion portion expandable by initial fluid injected through the port and into the chamber from a collapsed implantation position to a taut position above the collapsed position" — "the cover including a portion that is capable of increasing in size by the initial fluid injected through the port and into the chamber from collapsed implantation position to a taut position over the collapsed position' where 'collapsed,' at this time and without the knowledge of the 'conventional manner,' means the device is empty of fluid." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006).

"limiting structure" — "a structure that limits diaphragm excursion to allow the voice coil to reside at least partially in a gap mounted on the baffle without interfering with the normal range of motion of the diaphragm." Bose Corp. v. Lightspeed Aviation, Inc., 2010 U.S. Dist. LEXIS 40500 (D. Mass., Apr. 26, 2010).


"line segment" — "a space along a concentric line where the pad's layers are bonded together." Tyco Healthcare Retail Servs. AG v. Kimberly-Clark Corp., et al., 2007 U.S. Dist. LEXIS 53645 (E.D. Pa., July 24, 2007).
"linear magnetron-enhanced sputter device"; "linear magnetron-enhanced ion source" — "the court does not construe linear as interchangeable with the term planar. To the extent a device is planar, it must also be linear to infringe." Optical Coating Laboratory, Inc. v. Applied Vision, Ltd., 1996 U.S. Dist. LEXIS 1476 (N.D. Cal., Jan. 29, 1996).

"linear velocity" — "the rate of change of a body's position in a particular direction over time. ... a body can have linear velocity even if it does not continue moving in the same direction over time." Pace International, LLC, et al. v. Industrial Ventilation, Inc., et al., 2009 U.S. Dist. LEXIS 120554 (W.D. Wash., Dec. 7, 2009).


"liner" — "a material which has a layer that allows for the release of the liner from the adhesive on the back of the placard and is in contact with a pressure sensitive adhesive." MPT, Inc. v. Marathon Labels, Inc., et al., 2006 U.S. Dist. LEXIS 4612 (N.D. Ohio, Feb. 7, 2006).


"liner" — "a composite material that is permeable to water vapor and that conducts moisture via any one of number of water-transferring processes, including but not limited to wicking, absorbing, adsorbing, siphoning, capillary action and the like." Baychar, Inc., et al. v. Frisby Technologies, Inc., et al., 230 F. Supp. 2d 75 (D. Me. 2002).

"a second end cap sealing portion lining the outer annular surface of said second end cap" — "the Court declines to adopt Baldwin's proposed construction and does not construe the phrase." Donaldson Co., Inc. v. Baldwin Filters, Inc., 481 F. Supp. 2d 974 (D. Minn. 2007).

"link arms" — "components that couple the counterbalance weight to the crankshaft." Briggs & Stratton Corp. v. Kohler Co., 398 F. Supp. 2d 925 (W.D. Wis. 2005).

"a linking means, the linking means operably connecting the wheel braking device with the actuating mechanism to facilitate setting and releasing the wheel braking device" — "a chain or shaft that connects the wheel braking device with the actuating mechanism." Graham-White Manufacturing Co. v. Ellcon-National, Inc., 2007 U.S. Dist. LEXIS 89126 (D.S.C., Dec. 4, 2007).


"lip" — "must be near the periphery, but is not required to be exactly at the periphery, nor is it required to form the table edge." Lifetime Products, Inc. v. Correll, Inc., 323 F. Supp. 2d 1129 (D. Utah 2004).
"lip" — "an extension to the striking surface adjacent to the striking surface, reaching or spanning between the striking surface and mass region, with a vertical distance between the top edge of the striking surface and the top side of the mass region of about 1/8 inch and about 1/2 inch." Despoir, Inc. v. Nike USA, Inc., 2005 U.S. Dist. LEXIS 10845 (N.D. Ill., Feb. 9, 2005).


"liquid impermeable" — "a material which is designed to prevent the strikethrough of body exudates by retarding the movement of liquid body exudates through the BLC to the outer portion of the diaper." Procter & Gamble Co. v. Paragon Trade Brands, Inc., 989 F. Supp. 547 (D. Del. 1997).

"localize" — "to locate within a definite area, or to fix in a particular place." Medical Instrumentation and Diagnostics Corp. v. Elekta AB, et al., 2001 U.S. Dist. LEXIS 25448 (S.D. Cal., Apr. 4, 2001).

"localizing deformation" — "collecting, accumulating, or restricting to a limited area, namely the vicinity of the deformation absorbing member, the deformation (or alternation in form or shape) that occurs during paddle downsetting." Agere Systems Inc. v. Atmel Corp., 2003 U.S. Dist. LEXIS 9823 (E.D. Pa., May 23, 2003).

"located between the center of the spherical mass and the first elongate section" — "requires the second elongate section to be entirely located between the center of the spherical mass and the first elongate section." Zelinski, et al. v. Brunswick Corp., 996 F. Supp. 757 (N.D. Ill. 1997). "[C]laim 1 is satisfied if the bulk of the second elongate section is between the first elongate section and the center of the spherical mass, and the entire weight block is in the top half of the ball. Nevertheless, we conclude that at most the district court's narrower interpretation is harmless error because, as we explain below, even with a somewhat broader interpretation of 'located between,' Brunswick's StealthCore I and II balls do not literally infringe claim 1 of the '731 patent." Id., 185 F.3d 1311 (Fed. Cir. 1999).

"located between two adjacent disks" — "the spacer is positioned between two adjacent cutting disks." Fellowes, Inc. v. Michilin Prosperity Co., Ltd., et al., 2006 U.S. Dist. LEXIS 90648 (E.D. Va., Dec. 15, 2006).

"the flanges are located behind the studs to further secure the auxiliary frame to the primary frame" — "the flanges are located behind, but not necessarily in contact with, the rear surfaces of the studs to further fasten the auxiliary frame to the primary frame." Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc., 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003).

"said first portion is located generally on the outside of said iris section and said second portion is located generally on the inside of said iris section" — "As to the term 'located generally,' the term merely requires that the elements of the first shade are generally positioned on the outside of the iris. The term does not limit the elements of the first shade from appearing anywhere in the iris, so long as those elements are more prevalent near the outside." Wesley Jessen Corp. v. CooperVision, Inc., 2002 U.S. Dist. LEXIS 5172 (C.D. Cal., Mar. 14, 2002).
"located inside" — "the spring must be positioned completely within the battery holder and is not exposed outside of the battery holder." Invisible Fence, Inc. v. Perimeter Technologies, Inc., 2006 U.S. Dist. LEXIS 33792 (N.D. Ind., May 25, 2006).


"located sufficiently clear of said trough pooling space, so that if a transfer of feed material from the reservoir to the pooling space be effected to pool feed material in the trough, an animal has feeding access to pooled feed material in the trough" — "We agree with Mr. Wechsler and hold that claim 1 does not require a feed transfer-effecting mechanism." Wechsler v. Macke International Trade, Inc., et al., 56 Fed. Appx. 935 (Fed. Cir., Jan. 29, 2003) (unpublished).

"[a housing] having a barrel, a nozzle, a handle and a trigger located thereon" — "This implies that these components are not part of the housing, but are in some way attached to the housing." Larami Ltd. v. Ohio Art Co., 270 F. Supp. 2d 555 (D.N.J. 2003).


"first location" — "a point on the first conveyor just past the shingling nip where the sheets actually first shingle." Marquip, Inc. v. Fosber America, Inc., et al., 1997 U.S. Dist. LEXIS 22678 (W.D. Wis., May 21, 1997).


"location indicator" — "a device that indicates a proper or corresponding location of an identified compartment or component before placement of the compartment or component in that location." Aguayo, et al. v. Universal Instruments Corp., 2003 U.S. Dist. LEXIS 27846 (S.D. Tex., Jun. 9, 2003).

"predetermined locations"; "point-of-sale locations" — "a business establishment or kiosk which may be automated or staffed by one or more persons." TGIP, Inc. v. AT&T Corp., et al., 2007 U.S. Dist. LEXIS 17381 (E.D. Tex., March 12, 2007).


"locking barb" — "a locking device or detent that contacts an attachment surface at at least one point." Andrew Corp. v. Beverly Manufacturing Co., 479 F. Supp. 2d 766 (N.D. Ill. 2006).

"locking contact" — "the dispute concerns the question of whether such locking is limited to application of an inward radial force to squeeze and crush the retaining portion around the screw head. ... this Court ... finds no basis to limit construction of this phrase as Medtronic proposes." Fastenetix, LLC v. Medtronic Sofamor Danek, Inc., et al., 2007 U.S. Dist. LEXIS 53665 (D.N.J., July 25, 2007).
"locking component slidably receiving said vertical lock spindle" — "include[s] a lock fixed to the frame, a mounting arm, and a pair of grooves which slidably receives the vertical lock spindle discussed above." Pedicraft, Inc. v. Stryker Corp. of Michigan, et al., 2003 U.S. Dist. LEXIS 27837 (M.D. Fla., May 5, 2003). 2372

"locking device" — "a mechanism consisting of a locking element alone (as recited in the claim) or a locking element and a locking groove that together hold together two panels against separation such that play exists." Alloc, Inc., et al. v. Pergo, LLC, 2009 U.S. Dist. LEXIS 62881 (E.D. Wis., Jul. 2, 2009). 2373

"locking element" — "a portion of a coupling part having the structure as recited in the claim that allows for engagement and fastening." Alloc, Inc. v. Unilin Decor N.V., et al., 2007 U.S. Dist. LEXIS 16743 (E.D. Wis., Mar. 6, 2007). 2374

"locking element" — "a projection at the edge of the panel as recited in the claim that engages a locking groove on another panel such that a play exists between the locking element and the locking groove." Alloc, Inc., et al. v. Pergo, LLC, 2009 U.S. Dist. LEXIS 62881 (E.D. Wis., Jul. 2, 2009). 2375


"said rotatable joint comprising a locking mechanism cooperating with the central region for permitting selective rotation about said pivot axis and for maintaining a selected orientation of said handle portion relative to said central region during a cutting operation of the miter saw" — "a lock that allows the handle to be rotated to a position around the pivot axis and maintains, or fixes, the handle portion at a selected position relative to the central region during cutting operation of the miter saw." One World Technologies, Ltd., et al. v. Rexon Industrial Corp., Ltd., et al., 2006 U.S. Dist. LEXIS 25324 (N.D. Ill., May 2, 2006). 2378

"a locking mechanism for maintaining rotation of said shaft of said spindle fixed in said cavity relative to said housing" — "recites sufficient structure and that the defendant has failed to overcome the presumption that results from the failure to use the word 'means.' Therefore, the patentee is entitled to the full breadth of the definition of the term 'locking mechanism.'" Acco Brands, Inc. v. American Power Conversion Corp., 2003 U.S. Dist. LEXIS 27829 (E.D. Tex., Jul. 16, 2003). 2379

"lockout mechanism" — "a mechanical device that locks and unlocks." SRAM Corp. v. Fox Factory, Inc., 2005 U.S. Dist. LEXIS 29164 (N.D. Ill., Nov. 18, 2005). 2380

"locking said broach cutting tool member in said predetermined accurate work position, by imposing a locking force on said at least a portion of said third planar abutment surface of said broach cutting tool member, said locking force having a force component directed towards said two planar abutment surfaces of said broach cutting tool member and a force component directed downward from said top surface towards said intermediate surface of said broach tool holder to securely hold said broach cutting tool member in said broach tool holder" — "Since Claim 1 does not recite definite structures that will generate the locking force, the presumption that § 112, P6, applies is unrebutted. Therefore, the Court will construe the claim to cover the corresponding structures described in the specifications and their equivalents." 


"lodging the member within the hole by pressing the member with attached suture into the hole" — "does not bar the surgeon's tug and any ensuing small movement of the anchor after insertion." Smith & Nephew, Inc., et al. v. Ethicon, Inc., 276 F.3d 1304 (Fed. Cir. 2001). 2385 "To summarize, the specification (other than the claims themselves) does disclose the need to have 'tension' applied to the claimed suture in order to make the claimed anchor member ready for the attachment of tissue to the bone. But nowhere do any of these claims actually recite this step, meaning the patentee has dedicated it to the public. Ethicon, therefore, could reasonably conclude as such and could lawfully use that step in its accused method." Id. (Michel, J., dissenting). 2386

"long enough to provide said lateral strength" — "the second enlarged interior diameter section must be long enough so that, when connected to a similar adjacent pipe, the strength of the connected PVC pipe will resist forces exerted on the pipe in a direction perpendicular to the length of the pipe." CertainTeed Corp. v. Modern Products Industries, Inc. et al., 2005 U.S. Dist. LEXIS 7638 (E.D. Pa., May 2, 2005). 2387

"long transverse yield strength" — "the stress, applied across the width of a product, that a product can sustain before yielding or breaking." Pechiney Rhenalu v. Alcoa Inc., 224 F. Supp. 2d 773 (D. Del. 2002). 2388


"a longitudinal groove adapted to cooperatively receive a respective pair of said header rails" — "a recess formed along the exterior side of each of the side walls which receives a respective one of the opposed header rails along the length of the housing, wherein each of the recesses is defined by two spaced recess walls which cooperate to receive one of the header rails, and each of the recess walls is defined by one or more projections which extend substantially along the length of the side wall."  *Ashland Products, Inc. v. MEC Technologies, Inc.*, 1999 U.S. Dist. LEXIS 4087 (N.D. Ill., Mar. 22, 1999). 2394  
[U]pon consideration of the relevant intrinsic and extrinsic evidence, we adopt Ashland's proposed construction that requires -- as Judge Coar also has held -- that the projections 'extend substantially along the length of the side wall.' However, ... we emphasize that it is the projections themselves (and not the gaps between them) that literally create the groove, and that must extend substantially along the length of the side wall."  *Ashland Products, Inc. v Ro-Mai Industries, Inc.*, 1999 U.S. Dist. LEXIS 12944 (N.D. Ohio, Aug. 16, 1999). 2395

"longitudinal slot" — "a slot or channel formed within an extrusion or rail and extending along a length of the extrusion or rail."  *TBC Consoles, Inc. v. Forecast Consoles, Inc.*, 2009 U.S. Dist. LEXIS 91653 (S.D.N.Y., Sep. 28, 2009). 2396


"longitudinally adjustable along said longitudinal axis from a first position wherein the bone fastener can be fixed to said bone to a second position in which the bone fastener is locked into position by the locking plate" — "does not exclude the ability of the locking plate to be fixed in an intermediate position between the position where the bone fastener is fixed to the bone and the position where the bone fastener is locked into place."  *Cross Medical Products, Inc. v. Medtronic Sofamor Danek, Inc. et al.*, 2005 U.S. Dist. LEXIS 6564 (C.D. Cal., Apr. 8, 2005). 2398

"a longitudinally extending center flange" — "a single, vertically planar projecting rim or rib located along the middle part or the centerline of the support and extending along the longitudinal length of the vehicle on which the detent plate structure is formed or attached. This structure is not attached to the inside of a supporting sidewall or a walled arrangement."  *Grand Haven Stamped Products Co. v. Dura Automotive System, Inc.*, 2004 U.S. Dist. LEXIS 31087 (W.D. Mich., Jun. 28, 2004). 2399

"longitudinally extending cutting edge" — "the edge of the blade surface designed for cutting that extends along the lengthwise dimension."  *Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc.*, 411 F. Supp. 2d 93 (D. Conn. 2006). 2400

"longitudinally spaced" — "requiring a spacing surface providing at least enough separation between seating surfaces to enable a paddler seated on one seating surface to paddle without interfering with another paddler or passenger."  
Old Town Canoe Co. v. Glenwa, Inc., 229 F. Supp. 2d 1151 (D. Or. 2001).\textsuperscript{2403}

"longitudinally spaced" — "disposed above or below in reference to the first and second opposite, parallel longitudinal edges."  

"loop" — "a C- or U-shaped structure."  
Medinol Ltd. v. Guidant Corp., et al., 417 F. Supp. 2d 280 (S.D.N.Y. 2006).\textsuperscript{2404}

"loop" — "a structural element that turns back on itself."  

"first loop"; "second loop" — "horizontally-facing (or C-shaped) loops at the cell's two longitudinal ends."  

[i] "loose hair"; [ii] "non-loose hair" — [i] "hair that is inactive and not growing"; [ii] "hair that is active and growing."  
FURminator, Inc. v. Munchkin, Inc., et al., 2009 U.S. Dist. LEXIS 104429 (E.D. Mo., Nov. 9, 2009).\textsuperscript{2407}

"low modulus material" — "a material with low elastic modulus, which is a material property defined as the amount of stress needed to produce a given amount of strain (deformation)."  
Samsung Electronics Co., Ltd. v. Tessera Technologies, Inc., 2004 U.S. Dist. LEXIS 31074 (N.D. Cal., Jan. 8, 2004).\textsuperscript{2408}

"low flow rate" — "a rate of flow of less than about 1 liter/minute and producing flow velocities less than 19 km/hour such that the gas exiting through the distal end opening forms a non laminar inert gas atmosphere."  

"low pressure" — "any pressure below atmospheric pressure."  

"low pressure chemical vapor deposition" — "chemical vapor deposition that is carried out at pressures well below atmospheric pressure (760 torr), typically at pressures below approximately 2 or 3 torr."  

"low profile traction teeth"; "teeth that are low in profile" — "traction teeth that are shorter than conventional spikes as of 1996."  

"said return duct being configured for low radial flow return velocity to said high pressure compressor" — "the conduit conveying air back from the externally mounted intercooler being shaped and positioned to result in a velocity of air flowing toward the axis of the shafting that is lower than the velocity of that air when it enters the high pressure compressor."  
Rice v. Honeywell International, Inc., et al., 2006 U.S. Dist. LEXIS 89235 (E.D. Tex., Nov. 21, 2006).\textsuperscript{2413}

"lower end" — "the extreme or last part of the conduit located underground."  
Knopik v. Amoco Corp., et al., 96 F. Supp. 2d 892 (D. Minn. 2000).\textsuperscript{2414}

"lower substrate"; "conductive layer formed over said ... substrate" — "lower substrate' refers to the base or foundation on which the rest of the structure is built, and 'conductive layer formed over' the substrate means that the conductive layer covers the surface of the substrate." Laser Diode Array, Inc. v. Paradigm Lasers, Inc., et al., 114 F. Supp. 2d 167 (W.D.N.Y. 2000).

"lower surface" — "surface of the plastic sheet that faces or contacts the surface on which the mat or pad rests, the underside or bottom." Microthin.com, Inc. v. SiliconeZone USA, LLC, 615 F. Supp. 2d 754 (N.D. Ill. 2009).


"lower temperature"; "higher temperature" — "The temperature differential between the two measurements must be large enough to deduce the effects due to humidity and ambient temperature through a mathematical calculation, but this differential is not limited to the differential stated in the preferred embodiment." Quantum Group, Inc. v. American Sensor, Inc., et al., 1997 U.S. Dist. LEXIS 6314 (N.D. Ill., Apr. 29, 1997).


"lug" — "a projection or handle by which something may be grasped." Ricoh Co., Ltd., et al. v. Katun Corp., et al., 486 F. Supp. 2d 395 (D.N.J. 2007).


"the lumen having a first diameter for the distal portion of the guide wire tube and a second diameter larger than the first diameter for the proximal portion of the guide wire tube" — "no construction is needed." Medtronic Vascular Inc., et al. v. Boston Scientific Corp., et al., 526 F. Supp. 2d 613 (E.D. Tex. 2007).

"lumen-traversing region of the resilient structure" — "the region of the resilient structure that interacts with the wall of the fallopian tube lumen to permanently affix the resilient structure within the fallopian tube lumen." Conceptus, Inc. v. Hologic, Inc., 2010 U.S. Dist. LEXIS 24247 (N.D. Cal., Mar. 16, 2010).

"the luminal portion of the tunica mucosa" — "the lamina epithelialis mucosa (or transitional epithelium layer), the basement membrane, and the lamina propria." Cook Biotech, Inc., et al. v. Acell, Inc., et al., 460 F.3d 1365 (Fed. Cir. 2006).
"an attachment plate lying between the two implement-support plates" — "this language is clear on its face and requires no construction." Kai U.S.A., Ltd. v. Buck Knives, Inc., 2006 U.S. Dist. LEXIS 24924 (D. Or., Feb. 9, 2006).


"net supporters made of PFA, FEP or EPE" — "means that the net supporters must be made wholly of PFA, FEP or EPE, and cannot include any other fluorocarbon resin (e.g., PTFE) therein." Pall Corp. v. PTI Technologies Inc., et al., 1999 U.S. Dist. LEXIS 22893 (E.D.N.Y., Dec. 22, 1999).

"whereby said cutting edge surface is made thinner than a thickness of said cutter blade" — "the horizontal thickness of the cutting edge surface after formation of the recess is thinner than the original horizontal thickness of the cutter blade." Izumi Products Co. v. Koninklijke Philips Electronics N.V., et al., 2004 U.S. Dist. LEXIS 7992 (D. Del., Apr. 27, 2004).


"magnet liner" — "an individual separating device, distinct from the protector, which is inserted into a tool body recess, and then has a magnet placed into it." Rattler Tools, Inc. v. Bilco Tools, Inc., et al., 2007 U.S. Dist. LEXIS 49124 (E.D. La., July 6, 2007).

"magnetic member" — "a permanent magnet or a ferromagnetic member, but at least either the first or second magnetic members must be a permanent magnet." Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc., 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003).

"magnetic or magnetizable" — "is or is capable of becoming a permanent magnet or a residual magnet, that is, a magnet that retains its magnetic field for a period of time." Ideal Instruments, Inc. v. Rivard Instruments, Inc., et al., 498 F. Supp. 2d 1131 (N.D. Iowa 2007).

"[the needle] is rendered magnetic at [or to] a level that enables detection of the magnetism of the needle"; "the needle is magnetized to a level which enables detection of the magnetism of the needle" — "either prior to injecting the living animal or while in the flesh of the animal after slaughter, the needle is magnetized to become a permanent magnet or a residual magnet, that is, a magnet that retains its magnetic field for a period of time, to a level that makes it possible for the magnetism of the needle to be detected by a metal detector or magnetic detector." Ideal Instruments, Inc. v. Rivard Instruments, Inc., et al., 498 F. Supp. 2d 1131 (N.D. Iowa 2007).2439


"a core wire having a main body" — "the Court construes 'main body' to mean: the core wire not including the distal portion of the core wire." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007).2442

"main case" — "a compact case that houses the image sensing module and the motion mechanism." Syscan, Inc. v. Portable Peripheral Co., Ltd., et al., 2006 U.S. Dist. LEXIS 47824 (N.D. Cal., July 5, 2006), "a compact case that can be made of light but rigid plastic material and that houses only an image sensing module and a motion mechanism." Plustek, Inc. v. Syscan, Inc., et al., 2009 U.S. Dist. LEXIS 122777 (N.D. Cal., Dec. 21, 2009).2443

"main plateau" — "a portion of a panel." STI Holdings, Inc. v. Great Dane Limited Partnership, 2010 U.S. Dist. LEXIS 57789 (W.D. Wis., Jun. 11, 2010).2444

"main sealant" — "sealant material that encloses the display region' with the understanding that 'encloses' means 'to surround on all sides; to enclose or contain completely.'" LG Display Co., Ltd. v. AU Optronics Corp., et al., 2010 U.S. Dist. LEXIS 42546 (D. Del., Apr. 30, 2010).2445


"said protective barrier provides reduction of wind force sufficient to maintain the integrity of said structure" — "this claim term should be given its plain and ordinary meaning." Armor Screen Corp. v. Storm Catcher, Inc., et al., 2009 U.S. Dist. LEXIS 33407 (S.D. Fla., Mar. 10, 2009).2447


"such that said blunt-ended cylindrical shape is maintained during flight and prior to impact" — "maintained at least up to the point immediately before impact." Combined Tactical Systems, Inc. v. Defense Technology Corp. of America, et al., 426 F. Supp. 2d 140 (S.D.N.Y., April 4, 2006).2449
"wherein the handle is rotatable to the same extent that the arm is adjustable about the horizontal axis so as to enable the handle to be maintained in a horizontal orientation during a compound miter cut" — "the language is clear on its face and does not require any further construction. Whether a handle that deviates slightly from the horizontal falls within the scope of the claim - an argument alluded to by both parties - is a matter for the finder of fact to determine at a later stage of the litigation." One World Technologies, Ltd., et al. v. Rexon Industrial Corp., Ltd., et al., 2006 U.S. Dist. LEXIS 25324 (N.D. Ill., May 2, 2006). 2451

"maintaining"; "maintain" — "are used in their ordinary sense and require no further construction except to note that the use of these terms in claims 1(k) and 14(h) requires neither that (1) the kinetic energies of the ions never vary, nor (2) all ions satisfy this claim limitation." Applera Corp., MDS Inc., et al. v. Micromass UK Ltd., et al., 186 F. Supp. 2d 487 (D. Del. 2002). 2452


"maintaining desired physical characteristics" — "preserving the physical integrity of the paddle support arm." Agere Systems Inc. v. Atmel Corp., 2003 U.S. Dist. LEXIS 9823 (E.D. Pa., May 23, 2003). 2454


"maintaining said flow of gas perpendicular to said substrate" — "the gas flow apertures always direct the flow of gas in an initial direction that is perpendicular to the substrate." ASM America, Inc., et al. v. Genus, Inc., 260 F. Supp. 2d 827 (N.D. Cal. 2002). 2456

"maintaining said locked configuration by use of a pin" — "The dispute centers around the construction of the term 'maintaining' as 'keeping' or 'preventing.' ... the Court adopts plaintiff's construction as the claim term's plain and ordinary meaning and finds a heavy presumption in favor of defining 'maintaining' as 'keeping' or 'keeping in existing state.'" ACCO Brands, Inc., et al. v. PC Guardian Anti-Theft Products, Inc., et al., 2007 U.S. Dist. LEXIS 92052 (N.D. Cal., Dec. 5, 2007). 2457


"majority of abutting wooden surfaces in a building having a frame constructed from wooden components comprising said wooden surfaces" — "more than 50% of the total abutting length of all of the touching wooden surfaces in a building frame that are susceptible to outside air infiltration." Staples v. Johns Manville, Inc., et al., 2010 U.S. Dist. LEXIS 24040 (E.D. Mo., Mar. 16, 2010). 2459

"make selections by causing contact across a planar surface of the work platform" — "making selections by causing a maintained contact across the planar surface of the work platform." Tinkers & Chance v. Leapfrog Enterprises, Inc., 2007 U.S. Dist. LEXIS 43871 (E.D. Tex., June 18, 2007). 2460
"making available to consumers a special lock" — "causing the special lock to be available to consumers." *Travel Sentry, Inc. v. Tropp*, 2009 U.S. Dist. LEXIS 87923 (E.D.N.Y., Sep. 24, 2009). 2461


"a mandrel that carries said blades" — "a shaft on which a blade is mounted, held, or supported." *Muzzy Products, Corp. v. Sullivan Industries, Inc., et al.*, 194 F. Supp. 2d 1360 (N.D. Ga. 2002). 2463


"a manual actuator for adjusting the status of the electrical device" — "a mechanism, such as a button, knob, or touch screen sensor, for altering the condition of the electrical device." *Lutron Electronics Co., Inc. v. Control4 Corp.*, 2009 U.S. Dist. LEXIS 3562 (D. Utah, Jan. 20, 2009). 2468

"to allow the [axial] removal of said [cylindrical] sleeve from said aperture of said body portion by the manual application of force" — "to allow the removal of the sleeve from the bit holder using a tool which may be hand-powered by a worker in field conditions to generate forces of approximately 5,000-20,000 pounds." *Joy MM Delaware, Inc., et al. v. Sandvik Mining and Construction USA LLC*, 2007 U.S. Dist. LEXIS 40868 (W.D. Pa., June 4, 2007). 2469

"a manual valve operatively associated with said cap, in fluid communication with said tube of filtering material and manually movable between a position defining means for allowing liquid flow through said tube and a position defining means not allowing liquid flow through said tube" — "The district court ultimately construed that limitation to require the following: a valve mechanism that controls the flow of water through the valve by moving to an open position allowing flow of water through the valve and moving to a closed position that restricts the flow of water from the bottle, but which encompasses neither valve 156 nor the valve of Figure 7 of the Magnusson '649 patent. The district court's construction of the manual valve element is incorrect, because it impermissibly limits the literal scope of the claims to exclude bottles employing the valve depicted in Figure 7 of U.S. Patent No. 5,273,649 to Magnusson." *Innova/Pure Water, Inc. v. Aladdin Sales & Marketing, Inc., et al.*, 1999 U.S. App. LEXIS 10045 (Fed. Cir., May 24, 1999) (unpublished). 2470
"a manually operable charging member for moving the guide to the charged position against the urging of the coil spring" — "a manually operable charging member that is used to create a charge or stored energy, the charging member configured to move the guide to the charged position against the urging of the coil spring." *Baran v. Medical Device Technologies, Inc., et al.*, 519 F. Supp. 2d 698 (N.D. Ohio 2007).2471


"marketing" — "selling or promoting the sale' of the special lock to consumers in a manner that conveys to them that the lock is subject to a special screening procedure." *Travel Sentry, Inc. v. Tropp*, 2009 U.S. Dist. LEXIS 87923 (E.D.N.Y., Sep. 24, 2009).2473

"marking"; "marked" — "placing an external visual symbol or identification code on the object (carrier or container)." *Board of Regents of the University of Nebraska, et al. v. Siemens Healthcare Diagnostics, Inc.*, 2010 U.S. Dist. LEXIS 97353 (D. Neb., Sep. 16, 2010).2474

"marquenching" — "Quenching from the austenizing temperature into a hot fluid medium (hot oil, molten salt, molten metal or a fluidized particle bed) at a temperature usually above the martensite range (M[s] range); holding in the quenching medium until the temperature throughout the steel is substantially uniform; cooling (usually in the air) at a moderate rate to prevent large differences in temperature between the outside and the center of the section. After the parts have been cooled to room temperature, they are tempered in the same manner as though they had been conventionally quenched." *Fisher-Barton Blades, Inc. v. Blount, Inc., et al.*, 2006 U.S. Dist. LEXIS 76965 (E.D. Wis., Oct. 19, 2006).2475

"mass region" — "the body of a wood-type club head delimited by a sole plate, including the sole; a striking surface, though no higher than its top edge; a top side; a rear edge; a heel region; and a toe region." *Despoir, Inc. v. Nike USA, Inc.*, 2005 U.S. Dist. LEXIS 10845 (N.D. Ill., Feb. 9, 2005).2476

"master cylinder housing" — "refer[s] to the housing that contains the master cylinder, regardless of what other components may be included within or connected to that housing." *SRAM Corp. v. Formula S.R.L., et al.*, 2009 U.S. Dist. LEXIS 29100 (N.D. Ill., Apr. 3, 2009).2477

"master key" — "a key, including electronic or other sensor mechanisms, that can open the master key lock portion or locking mechanisms of the special locks described in the patent." *Travel Sentry, Inc. v. Tropp*, 2009 U.S. Dist. LEXIS 87923 (E.D.N.Y., Sep. 24, 2009).2478

"wherein a surface of said housing is prepared with a matching art which is substantially the same as that area of said poster art which appears on said portion of said poster that said housing covers when said housing is attached to said poster, such that said housing artistically blends in with the surrounding poster art that is not covered by said housing"; "applying matching art to said housing which is substantially the same as that area of said poster art which appears on said portion of said poster that said housing covers when said housing is attached to said poster, such that said housing artistically blends in with the surrounding poster art that is not covered by said housing" — "The practical effect of this limitation is that the housing unit is camouflaged. Only under these circumstances can it be said that the housing is prepared with 'matching art' such that it 'artistically blends in with the surrounding poster art that is not covered by said housing.'" *Clark, et al. v. Walt Disney Co., et al.*, 2009 U.S. Dist. LEXIS 94506 (S.D. Ohio, Oct. 9, 2009).2479
"mate" — "the proper construction of the claim term 'mate' must include the following limitations: (1) a close confinement of the protrusion within the inset(s) of one or more blocks; (2) an ability to secure the blocks in place; and (3) an interlocking of the protrusion with the insets." Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc., et al., 252 F. Supp. 2d 838 (D. Minn. 2002). 2480. "We ... hold that the proper construction of 'mate' is to join or fit together." Id., 340 F.3d 1298 (Fed. Cir. 2003). 2481.

"bottom tang portion mated for engagement with the rounded bottoms in said gullets" — "the tang portion is adapted to contact the gullet formation substantially along the rounded bottom region of the gullet to transmit operational forces to the bottom of the gullet." Blount Inc., et al. v. Trilink Saw Chain, LLC, et al., 2007 U.S. Dist. LEXIS 42617 (D. Or., June 8, 2007). 2482


"material for finishing the top surface of the floor" — "refers to a clear, uniform layer on the top surface of a floor that is the final treatment or coating of a surface. It is not any intermediate, temporary, or transitional layer." In re Suitco Surface, Inc., 2010 U.S. App. LEXIS 7620 (Fed. Cir., Apr. 14, 2010). 2484

"material having characteristics equivalent to glass" — "material that is non-porous, corrosion-resistant, and amenable to sterilization." Digital Angel Corp. v. Datamars, Inc., et al., 2006 U.S. Dist. LEXIS 32260 (D. Minn., May 22, 2006). 2485

"material object" — "a tangible medium or device in which information can be embodied, fixed, or stored, other than temporarily, and from which the information embodied therein can be perceived, reproduced, used or otherwise communicated, either directly or with the aid of another machine or device. A material object must be offered for sale, and be purchasable, at point of sale locations where at least one IMM [information manufacturing machine] is located. Further, a material object must be separate and distinct from the IMM, removed from the IMM after purchase, and intended for use on a device separate from the IMM either at the point of sale location or elsewhere. 'Material object' does not encompass the hard disk component of a home personal computer. Finally, a material object need not be offered for sale independently from the information that may be reproduced onto the material object, that is, as a blank." Interactive Gift Express, Inc. v. CompuServe, Inc., et al., 256 F.3d 1323 (Fed. Cir. 2001). 2486

"layer having material release means for release of an at least one treating material in a directional manner" — "the court construes the recited function as 'releasing a treating material toward the damaged tissue.' ... The court identifies the corresponding structure in the specification that is clearly linked to the claimed function to be chemical bonds and linkages." Saffran v. Boston Scientific Corp., 2007 U.S. Dist. LEXIS 76135 (E.D. Tex., Sept. 28, 2007). 2487


"means defining a plurality of separate product coating zones longitudinally spaced along said reel" — "CMS asserts that the function of 'defining' is the function that corresponds to the word 'means.' Even assuming that is correct, we agree with Wenger that § 112, P 6 does not apply because the claim recites sufficiently definite structure for performing the function of 'defining.' ... We therefore conclude that the district court did not err in concluding that the 'product coating zones' limitation was not subject to § 112, P 6." Wenger Manufacturing, Inc. v. Coating Machinery Systems, Inc., et al., 239 F.3d 1225 (Fed. Cir. 2001).


"means extending generally perpendicular to said bottom support means for defining front, rear and a first and a second side wall, said first side wall extending substantially higher than said front, rear and second side walls to define a protective barrier between a side panel of said washing chamber and various oversize articles placed adjacent said first side wall for washing" — "because lots of structure and little or no function is recited, the element does not come within the scope of Section 112 P6." Maytag Corp. v. Whirlpool Corp., 88 F. Supp. 2d 894 (N.D. Ill. 2000).

"means for containing the bulk substance to be analyzed" — "is not subject to § 112 P 6's limitations." Gamma-Metrics, Inc. v. Scantech Ltd., et al., 1998 U.S. Dist. LEXIS 22187 (Fed. Cir., May 19, 1998).

"means for driving said clinching element through a programmably determined path of travel substantially within a plane adjacent said lower surface in response to control signals to contact and bend one or more leads of said component adjacent said lower surface of said board" — "[means] that the pin has to stay in the same plane while it bends a lead, but ... does not exclude operations where the pin goes down and back up between leads. ... it can be read to mean that the path is in one plane only while the pin bends one lead." Chad Industries, Inc. v. Automation Tooling Systems, Inc., et al., 938 F. Supp. 601 (C.D. Cal. 1996).


"means for retaining said test pins in parallel alignment in said apparatus with said test pins extending through respective said through-bores in said mask plate, said means comprising an elastic plate formed of elastic material and mounted at a position spaced from said mask plate and extending parallel thereto, said test pins extending through said elastic plate in a manner such that said elastic material elastically contacts and grasps said test pins, whereby said test pins are maintained in said alignment due to the elasticity of said material" — "we conclude that the "means for retaining" element of claim 1 of the '908 patent is properly construed to cover elastic devices that are sufficiently rigid to independently maintain test pins in parallel alignment, and that the element does not cover flexible elastic devices that rely on guide plates to maintain the parallel alignment of the test pins. Thus, the district court's construction of claim 1 was both too broad and too narrow." Star Technology Group, Inc. v. Testerion, Inc., 1999 U.S. App. LEXIS 21389 (Fed. Cir., Sept. 7, 1999) (unpublished).

"means for securing a suture to said anchor to extend therefrom after said anchor is seated in the bone mass" — "a structure having a suture permanently attached to a retention disk positioned internally within the anchor." Mitek Surgical Products, Inc. v. Arthrex, Inc., 21 F. Supp. 2d 1309 (D. Utah 1998). "There was no error in the district court's construction of 'means for securing' because section 112 P 6 expressly restricts coverage of a means-plus-function claim to the structure disclosed in the specification and the equivalents of that structure. The internal retention disk is the only means for securing structure disclosed in the specification. Mitek argues that alternative embodiments of means for securing are disclosed in the prior art. These embodiments are irrelevant when attempting to outwardly expand claim scope as here. Structure in the prior art may be used to limit, but not broaden the scope of means-plus-function structures." Id., 2000 U.S. App. LEXIS 3146 (Fed. Cir., Feb. 22, 2000) (unpublished).

"means formed on the upwardly extending liner sidewall portions including a plurality of spaced apart, vertically extending ridge members protruding from the liner sidewall portions and forming load locks in gaps separating adjacent ones of the ridge members" — "this court construes this claim without reference to section 112, P 6." York Products, Inc. v. Central Tractor Farm & Family Center, et al., 99 F.3d 1568 (Fed. Cir. 1996).

"measuring ... of the substrate" — "determining and quantifying, by means of interferometers with an integrated mirror block, movement along either the X or Y axis or both, rotation around the Z axis, and tilts about the X and Y axes of the substrate." Nikon Corp., et al. v. ASM Lithography B.V., 308 F. Supp. 2d 1039 (N.D. Cal. 2004).

"sensor with a measurement center line located at a non-zero angle relative to said linear motion" — "the 'measurement center line' is the line between the center of the sensor and the target point." View Engineering, Inc. v. Robotic Vision Systems, Inc., 1997 U.S. App. LEXIS 16458 (Fed. Cir., Jul. 3, 1997).

"a measurement system for measuring the pressure in said at least one chamber" — "the court finds that this claim is properly construed in the means-plus-function format." Automotive Technologies International, Inc. v. Delphi Corp., 2009 U.S. Dist. LEXIS 83187 (E.D. Mich., Sep. 11, 2009).
measuring the temperature of the fluid, wherein the heating step is responsive to the step of measuring the temperature — "determining the temperature of the cleaning fluid, wherein the heating step reacts or is responsive to such temperature determination." ChemFree Corp. v. J. Walter, Inc., et al., 2007 U.S. Dist. LEXIS 51677 (N.D. Ga., July 17, 2007).


second mechanical connection — "the arrangement of the locking element projecting from the strip and the locking groove such that when the locking element is inserted into the locking groove the two panels are locked in the horizontal direction parallel to the principal plane of the panels and at right angles to the joint edges such that a play exists." Alloc, Inc., et al. v. Pergo, LLC, 2009 U.S. Dist. LEXIS 62881 (E.D. Wis., Jul. 2, 2009).


a mechanically embossed portion — "refer[s] to the raised areas of the surface covering (the areas that are not chemically embossed) that are mechanically imprinted with a surface texture to produce the desired effect." Mannington Mills, Inc., et al. v. Armstrong World Industries, Inc., et al., 2002 U.S. Dist. LEXIS 18641 (D. Del., Aug. 20, 2002).

money dispensing mechanism — "the defendant has failed to rebut the presumption that 'mechanism' should not be construed under § 112 P 6." Tidel Engineering L.P. v. Fire King International, Inc., et al., 613 F. Supp. 2d 823 (E.D. Tex. 2009).

a mechanism for moving said finger along a straight line into and out of said locating pin perpendicular to said axis A in response to said rectilinear movement of said locating pin — "the term 'mechanism' discloses a means-plus-function limitation governed by § 112 P 6." Welker Bearing Co. v. PHD, Inc., 528 F. Supp. 2d 683 (E.D. Mich. 2007).

a mechanism in said interior arranged to restrict flow of the fluid from one portion of said interior to another portion of said interior — "The court finds that means-plus-function construction is appropriate for this claim because 'mechanism' is the sort of generic term construed by the Federal Circuit to indicate a means-plus-function limitation." Automotive Technologies International, Inc. v. Delphi Corp., 2009 U.S. Dist. LEXIS 83187 (E.D. Mich., Sep. 11, 2009).

a media writing device ... whereby ... works ... can be written to a removable medium"; a media write unit ... for writing items ... to a removable medium" — "a media writing device for writing works to a medium removable from the media writing device." Premier International Associates v. Apple Computer, Inc., et al., 2007 U.S. Dist. LEXIS 37467 (E.D. Tex., May 23, 2007).

"member" — "as used in the referenced claims means 'blunt-nosed screw,' which may have either a unitary or multi-part structure." Caught Fish Enterprises, LLC, et al. v. Contek, Inc., 509 F. Supp. 2d 954 (D. Colo. 2007).\textsuperscript{2518}

"member" — "I am convinced that the word 'member' would be understood by those skilled in the relevant art to denote structure." Ravo v. Ethicon Endo-Surgery, Inc., 2005 U.S. Dist. LEXIS 28382 (W.D. Pa., Nov. 17, 2005).\textsuperscript{2519}

"member" — "the Federal Circuit has held the common definition of 'member' is 'distinct part of a whole.'" Apex Eyewear, Inc., et al. v. E'Lite Optik, Inc., 2004 U.S. Dist. LEXIS 27493 (D. Nev., May 28, 2004).\textsuperscript{2520}

"member" — "refers to the unit which embodies the patent." Craig v. Foldfast, Inc., et al., 487 F. Supp. 2d 1364 (S.D. Fla. 2007).\textsuperscript{2521}


"member" — "a piece or part of something else, regardless of whether that 'member' is made of one or more components." Engineered Products Co. v. Donaldson Co., Inc., 165 F. Supp. 2d 836 (N.D. Iowa 2001).\textsuperscript{2523}

"shoe attaching member"; "shoe mounting member"; "shoe attachment means"; "mounting member" — "are not means-plus-function terms." Greenkeepers of Delaware, LLC, et al. v. Softspikes, LLC, et al., 2010 U.S. Dist. LEXIS 10670 (E.D. Pa., Feb. 5, 2010).\textsuperscript{2524}

"flexible sealing member" — "is one in a set of sufficiently definite performing structures. The presumption against the term being a means-plus-function limitation, therefore, prevails, and this term carries [its] ordinary meaning." Thermal Technologies, Inc., et al. v. Dade Service Corp., 2004 U.S. Dist. LEXIS 27885 (M.D. Fla., Jun. 14, 2004).\textsuperscript{2525}

"fragmentation member" — "is a means-plus-function term because the claim does not create a sufficiently definite structure." Johns Hopkins University, et al. v. Datascope Corp., 2007 U.S. Dist. LEXIS 38408 (D. Md., May 25, 2007).\textsuperscript{2526}

"peripheral flexible member" — "a flexible structure or element (consisting of one or more components) that extends from the edge of the support structure which includes at least two independently flexible sections." Polyvision Corp. v. Smart Technologies, Inc., et al., 501 F. Supp. 2d 1042 (W.D. Mich. 2007).\textsuperscript{2527}

"flexible member" — "a flexible structure or element (consisting of one or more components) that is attached to the support structure." Polyvision Corp. v. Smart Technologies, Inc., et al., 501 F. Supp. 2d 1042 (W.D. Mich. 2007).\textsuperscript{2528}

"member having a longitudinal component" — "A 'member' is a structural element that has its ends at different longitudinal positions with respect to the stent's longitudinal axis. A member's 'longitudinal component' is the distance between the longitudinal positions of the first and second ends of the member." Scimed Life Systems, Inc., et al. v. Johnson & Johnson, 225 F. Supp. 2d 422 (D. Del. 2002).\textsuperscript{2529}

"membrane" — "a thin sheet or layer of material." Regents of the University of Minnesota v. AGA Medical Corp., 2009 U.S. Dist. LEXIS 90289 (D. Minn., Sep. 29, 2009).\textsuperscript{2530}


"memory selection second switch means being adapted to select a first position ... and ... a second position" — "the district court properly held 'memory selection second switch means' is a means-plus-function element under 35 U.S.C. § 112, P 6." Overhead Door Corp., et al. v. Chamberlain Group, Inc., 194 F.3d 1261 (Fed. Cir. 1999).  


"whereby the meniscus provides a constant flow of said chemical onto said substrate surface" — "The meniscus, i.e., the curved surface of the chemical created by the surface tension of the chemical when the chemical contacts a solid, supplies a constant flow of the chemical onto the substrate. The meniscus exists between the nozzle and the substrate. The meniscus cannot form unless the nozzle is positioned sufficiently close to the spinning coated wafer." OKI America, Inc., et al. v. Advanced Micro Devices, Inc., 2006 U.S. Dist. LEXIS 15254 (N.D. Cal., Feb. 14, 2006).  

"wherein the bottom side merges with at least a substantial portion of the bottom edge of the central portion of the front wall"; "a bottom side being planar as the bottom side extends away from the back wall and tapering upwards to merge with at least a substantial portion of the bottom edge of the central portion" — "we conclude that the limitation in claims 2 and 11 requiring that the bottom side merge with the bottom edge of the central portion of the front wall excludes the possibility that the bottom side also merges with the top edge. The claim term "comprising" cannot restore this excluded subject matter." Spectrum International, Inc. v. Sterilite Corp., 164 F.3d 1372 (Fed. Cir. 1998).  

"wherein, along a 180º meridian, the distance between the inner zone and the peripheral edge is less than 1.3mm"; "a superior distance A being defined along the vertical meridian and within the inner zone from the optic zone to the peripheral zone, and an inferior distance B being defined along the vertical meridian and within the inner zone from the optic zone to the peripheral zone, and wherein .33A ≤ B ≤ A" — "the distance between the outermost edge of the inner zone and the peripheral edge of the contact lens body, measured along the curve of the anterior face of the lens, is less than approximately 1.3mm along the meridian, which is found by starting with zero degrees at the 3:00 position and moving counterclockwise around the circle of the lens"; "where A is defined along the vertical meridian and within the inner zone from the optic zone to the peripheral zone, measured along the curve of the anterior face of the lens, and B is defined along the vertical meridian and within the inner zone from the optic zone to the peripheral zone, measured along the curve of the anterior face of the lens, then .33A ≤ B ≤ A." Coopervision, Inc. v. Ciba Vision Corp., 2007 U.S. Dist. LEXIS 51432 (E.D. Tex., July 16, 2007).  

"metal detector" — "the Court is unable to accept Mars' claim construction argument that 'metal detector' should be interpreted to mean a metal detector that is also capable of recognizing individual coins and other objects and distinguishing one from another." Mars, Inc. v. Coin Acceptors, Inc., 511 F. Supp. 2d 435 (D.N.J. 2007)


"a metal wood-type golf club head" — "refer[s] to a type of golf club that had traditionally been made of wood." Antonious v. Spalding & Evenflo Cos., Inc., et al., 1998 U.S. Dist. LEXIS 10740 (D. Md., Apr. 27, 1998)

"meter" — "a device that transports, feeds, or dispenses particulate matter at a controllable, determinable, or regular rate." Rosen's, Inc., et al. v. Van Diest Supply Co., et al., 2004 U.S. Dist. LEXIS 5435 (D. Minn., Mar. 30, 2004)


"method" — "mean[s] the steps described in claim one must be performed in the order listed in the claim, but that additional steps may be added." Caponey v. ADA Enterprises, Inc., 511 F. Supp. 2d 618 (D.S.C. 2007)


"method for monitoring the percentage of blood alcohol content of a human subject, said method comprising the [step] of ... measuring a percentage of alcohol expelled through the subject's skin into said measurement device and storing a measurement result" — "infringement of Claim 14 can occur only where a device not only measures the amount of alcohol being emitted from an individual's skin, but uses that measurement to calculate a percentage of blood alcohol content." Alcohol Monitoring Systems, Inc. v. Actsoft, Inc., 2009 U.S. Dist. LEXIS 39191 (D. Colo., Apr. 27, 2009)

"microscope station" — "equipment, not including a cell analysis instrument, at which a human operator performs analysis." Cytvc Corp. v. Tripath Imaging, Inc., et al., 2005 U.S. Dist. LEXIS 29850 (D. Mass, Nov. 28, 2005)

"mid-section" — "a portion of the substrate that is between the substrate ends but does not extend to the substrate ends, and includes the middle point of the substrate." Tenneco Automotive Operating Co. Inc. v. Visteon Corp., 2005 U.S. Dist. LEXIS 12738 (D. Del., Jun. 28, 2005)


"minimal felt draw" — "the felt draw is kept to a minimal length, requiring the adjacent rolls to be 'in close proximity.'" *J.M. Voith GmbH, et al. v. Beloit Corp.*, 1995 U.S. Dist. LEXIS 16905 (W.D. Wis., Mar. 23, 1995).\(^{2552}\)

"minimal first ram pressure" — "The word 'minimal' ... means, 'The smallest or least amount [of ram pressure] necessary to accomplish the designated step.'" *Leighton Technologies LLC v. Oberthur Card Systems, S.A.*, 358 F. Supp. 2d 361 (S.D.N.Y. 2005).\(^{2553}\)

"minimally sufficient pressure" — "a summation of the pressure necessary to prevent airway collapse in the absence of respiratory efforts (collapse due to airway structure, muscle tone, and body position) and the pressure necessary to overcome the collapsing and splinting effects of respiratory efforts." *Respironics, Inc., et al. v. Invacare Corp.*, 2006 U.S. Dist. LEXIS 62233 (W.D. Pa., Aug. 30, 2006).\(^{2554}\)

"minimize destruction of the foam" — "to reduce destruction of the foam as much as possible given the circumstances." *United States Gypsum Co. v. LaFarge North America, Inc., et al.*, 2009 U.S. Dist. LEXIS 101603 (N.D. Ill., Nov. 2, 2009).\(^{2555}\)

"a minimum distance outward from the outer spatial volume expandable surface" — "no construction necessary." *Xoft, Inc. v. Cytyc Corp., et al.*, 2007 U.S. Dist. LEXIS 34468 (N.D. Cal., April 27, 2007).\(^{2556}\)


"minimum prescribed absorbed dose" — "the total delivered dose to the target tissue." *Hologic, Inc. v. SenoRx, Inc., et al.*, 2009 U.S. Dist. LEXIS 109841 (N.D. Cal., Nov. 24, 2009).\(^{2558}\)

"mirror image" — "memory chips that are mounted on a circuit board in such a manner that the memory chips on the second side are located directly behind the chips on the first side and the pins or leads of the corresponding memory chips are matched. In other words, the memory chips are mirror images in both location on the board and lead location." *Sun Microsystems, Inc. v. Dataram Corp.*, 1997 U.S. Dist. LEXIS 18363 (N.D. Cal., Aug. 29, 1997).\(^{2559}\)


"mixing chamber" — "a chamber containing a means for agitating its contents." *United States Gypsum Co. v. LaFarge North America, Inc., et al.*, 2009 U.S. Dist. LEXIS 101603 (N.D. Ill., Nov. 2, 2009).\(^{2561}\)

"mixing said delivered blood with said shunt blood flow" — "the combining or putting together of two or more substances or things so that the constituents of each are diffused among those of the other(s)." *Transonic Systems Inc. v. Non-Invasive Medical Technologies Corp.*, 1999 U.S. Dist. LEXIS 22687 (D. Utah, Dec. 13, 1999).\(^{2562}\) "We discern no error in the district court's construction of the 'mixing' and 'changing' limitations." *Id.*, 10 Fed. Appx. 928 (Fed. Cir., May 29, 2001) (unpublished).\(^{2563}\)

"mobile, road-hauled" — "capable of being hauled over long distances on a road, with or without other devices." *Metso Minerals, Inc. v. Powerscreen International Distribution Ltd., et al.*, 2010 U.S. Dist. LEXIS 7099 (E.D.N.Y., Jan. 28, 2010).\(^{2564}\)
"mobile scanner" — "a portable scanner, so lightweight that it can be used in any conditions."  

"mobility ... is facilitated" — "the capacity to make movement easier."  

"a mode selector switch" — "does not require an activation switch that initiates the operation of the recording circuit in the selected mode and is distinct from the mode selector switch."  

"modernized"; "modernizing" — "a more or less complete exchange of components in an elevator installation."  

"modifying the diameter" — "changing the diameter of the plug by means such as by heat, by treating the plug with a solvent, or by mechanical distortion."  

"modular" — "the [district] court ultimately construed `modular' to mean `standardized units that may be conveniently removed and replaced without significant impact to other components.' We think that the district court improperly imported a limitation from the specification into its construction of `modular.'"  

"modular jack" — "the female portion of a modular connector in which wires of a circuit are connected at one end and into which a plug is inserted at the other end."  

"an inner moisture transfer material" — "any material that actively conducts moisture as described in this claim construction, including, but not limited to, those materials listed in column 3, lines 7-61 of the '810 patent specification."  

"molded bucket" — "does not depart from its ordinary meaning and does not require further construction."  

"said second end cap comprising molded polymeric material" — "Finding no support for Baldwin's proposed construction, the Court declines to construe the claim language."  

"molded prism ballast portion" — "a prism ballast portion that is manufactured primarily in a mold."  

"determining the existence of acceptable continuity and well interflow paths for the said region by generating a test flow of a solution of hydrogen peroxide from one of said wells and monitoring pH changes at each other of said wells as a function of time to detect a pH drop of at least 0.2" — "is read to require that pH be monitored for the particular purpose of determining the existence of acceptable continuity and well interflow paths."  
"monitoring the torque conditions during said step of sensing the torque to detect if a satisfactory threaded connection is obtained" — "We conclude that 'monitoring' as used in the '063 patent claims does not require the application of torque or exclude human participation during make-up of a connection." Frank's Casing Crew & Rental Tools, Inc., et al. v. PMR Technologies, Ltd., et al., 292 F.3d 1363 (Fed. Cir. 2002).

"monolithically formed head" — "a single piece of continuous material comprising the uppermost part of a compressor that includes head members that complete the inlet and exhaust chambers and a tube." Thomas Industries, Inc. v. Gast Manufacturing, Inc., 2005 U.S. Dist. LEXIS 11763 (W.D. Wis., Jun. 14, 2005).


"said separable elongate tip portion being more resistant to electrolytic disintegration in fluid than said electrolyzable core wire" — "an elongate tip portion of the invention which has attributes which make that portion more resistant to electrolytic disintegration than the electrolyzable core wire of the invention." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007).


"motion mechanism" — "a mechanism that is controlled by electronic components located outside of the scanner, and that is responsible for moving the scanning document so as to cause it to pass through the image sensing module at a steady speed." Plustek, Inc. v. Syscan, Inc., et al., 2009 U.S. Dist. LEXIS 122777 (N.D. Cal., Dec. 21, 2009).


"a body ... mountable to the underwater cable" — "a body attached externally to the underwater cable." WesternGeco LLC v. ION Geophysical Corp., 2010 U.S. Dist. LEXIS 71875 (S.D. Tex., Jul. 16, 2010).


"mounted" — "fixedly attached to." Innovation Toys, LLC v. MGA Entertainment, Inc., et al., 2009 U.S. Dist. LEXIS 48386 (E.D. La., May 21, 2009).
"mounted in an open configuration to said vehicle window frame" — "'mounting' does not require 'fastening.' Just as one can 'mount' a horse without being 'fastened' to the horse, so there is no requirement that the sunshade be 'fastened' to the window. There must merely be some means of holding the sunshade against at least a portion of the vehicle window." Huang, et al. v. AutoShade, et al., 950 F. Supp. 1016 (C.D. Cal. 1997). 2591

"mounted on" — "securely attached, affixed, or fastened to." Asyst Technologies, Inc. v. Emtrak, Inc., et al., 402 F.3d 1188 (Fed. Cir. 2005). 2592


"at least some of said clusters are mounted on said base for selective, relative positional adjustment" — "keys or key clusters must be mounted on a base so as to allow for selective adjustment of the keys or key clusters to accommodate different hand sizes." Motionless Keyboard Co. v. Microsoft Corp., et al., 2007 U.S. Dist. LEXIS 43215 (D. Or., May 6, 2007). 2594


"mounted to the frame" — "indicates that the patient support assembly is attached to the hospital bed frame." Safe Bed Technologies Co. v. KCI USA, Inc., et al., 2004 U.S. Dist. LEXIS 17773 (N.D. Ill., Sept. 2, 2004). 2598


"mounting" — "a Morse taper or equivalent structures capable of performing the claimed function of mounting the stem extension to the base." Zimmer Technology, Inc., et al. v. Howmedica Osteonics Corp., 397 F. Supp. 2d 974 (N.D. Ind. 2005). 2600

"mounting ... to" — "requires the exit trough to be affixed to and in contact with the top edge of the lateral trough section." ADC Telecommunications, Inc. v. Panduit Corp., 200 F. Supp. 2d 1022 (D. Minn. 2002). 2601


"mounting member" — "a platform, frame or support on which a video game controller is mounted by the means specified in the claim." JVW Enterprises, Inc. v. Interact Accessories, Inc., et al., 2002 U.S. Dist. LEXIS 27885 (D. Md., Feb. 1, 2002). 2603

"mounting member" — "a structure that is separate and distinct from the table top; a mounting member cannot be an integral part of the table top." Lifetime Products, Inc. v. GSC Technology Corp., et al., 321 F. Supp. 2d 938 (N.D. Ill. 2004). 2604

"mounting surface" — "the flat underside of the table top." Lifetime Products, Inc. v. GSC Technology Corp., et al., 321 F. Supp. 2d 938 (N.D. Ill. 2004). 2605

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"mouth feature" — "the part of the face through which food is taken, including, but not limited to, the mouth features shown in Figures 5 through 9 of the '972 patent." Hoodlums Welding Hoods, LLC v. Redtail International, LLC, 2009 U.S. Dist. LEXIS 100356 (E.D. Mo., Oct. 28, 2009).

"mouthpiece" — "that part of the apparatus which is placed in the mouth to introduce air into the housing where it moves over the pen and out the nozzle's outlet orifice." P & M Products, Ltd., et al. v. Rose Art Industries, 2002 U.S. Dist. LEXIS 5008 (E.D. Pa., Mar. 25, 2002).


"movable" — "capable of movement as called for by the rules of the game or game strategy." Innovation Toys, LLC v. MGA Entertainment, Inc., et al., 2009 U.S. Dist. LEXIS 95518 (E.D. La., Oct. 14, 2009).

"movable" — "in the operation of the assembly, the terminals are capable of being displaced relative to the chip by external loads applied to the terminals, to the extent that the displacement appreciably relieves mechanical stresses, such as those caused by differential thermal expansion which would be present in the electrical connections absent such displacement." Samsung Electronics Co., Ltd. v. Tessera Technologies, Inc., 2004 U.S. Dist. LEXIS 31074 (N.D. Cal., Jan. 8, 2004).

"movable bridge" — "at least one moveable arm that is always electrically connected to the first electrical conductor and that has the ability to create a parallel conductive path between the first, second, and third electrical conductors." Leviton Manufacturing Co. v. Zhejiang Dongzheng Electrical Co., et al., 506 F. Supp. 2d 646 (D.N.M. 2007).

"a moveable chassis" — "Any person skilled in the art would recognize that the workstation was meant to be wheeled around by practitioners. It is clear that the moveable chassis is indeed adapted for mobility, and not meant to be capable of being conveyed - by any means - from one place to another." Flo Healthcare Solutions, LLC v. Rioux Vision, Inc., 2007 U.S. Dist. LEXIS 85234 (N.D. Ga., Nov. 16, 2007).

"movable element" — "The 'element' is [] described in terms of what it does, i.e. its function, not in terms of what it is -- its mechanical structure -- thus bringing the claim limitation within § 112 P6." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997).

"movable link element" — "This limitation should be construed as a means-plus-function claim element for the same reasons as 'movable element'; the term 'element' is the equivalent of 'means'. There is no evidence that a 'movable link element' has any commonly understood meaning in the field." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997).

"movable link member" — "should be construed according to § 112 P6." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997).

"movable sealing baffle" — "a structure, operatively connected to the chamber and extending the height of the product, that deflects, checks, or regulates fluid flow by being positioned, as an entire unit, to create a seal between the chamber and the stored product." Thermal Technologies, Inc., et al. v. Dade Service Corp., 2004 U.S. Dist. LEXIS 27885 (M.D. Fla., Jun. 14, 2004).
"a collapsible support frame movably connected to the suspension frame assembly" — "the support frame is movably connected to the suspension assembly, but there is no requirement that the support frame move with respect to each part of the suspension assembly." *Fisher-Price, Inc. v. Safety 1st, Inc., et al.*, 109 Fed. Appx. 387 (Fed. Cir., Aug. 16, 2004) (unpublished). 2617

"moveably mounted"; "moveably suspended" — "the pick-up plate be mounted in a manner that enables it to move relative to the drive plate." *Hysitron Inc. v. MTS Systems Corp.*, 2009 U.S. Dist. LEXIS 36108 (D. Minn., Apr. 28, 2009). 2618


"movement by gravity" — "the court rejects the defendants' proposed construction that 'movement by gravity' means 'movement only by gravity.' The claim language needs no additional construction." *Crane Co., et al. v. Sandvenendo America, Inc., et al.*, 2009 U.S. Dist. LEXIS 47509 (E.D. Tex., Jun. 5, 2009). 2620

"movement of the person"; "movement of the foot of the person" — "The court finds no reason to construe 'movement of the person' in these claims"; "The term is non-technical language, used in its ordinary, everyday sense, and needs no further construction." *Nike, Inc. v. Adidas America, Inc., et al.*, 2006 U.S. Dist. LEXIS 91011 (E.D. Tex., Dec. 18, 2006). 2621


"the track incrementally moves longitudinally relative to the substrate" — "requires the 'track,' or 'bridge,' to move, not the substrate." *Leggett & Platt, Inc., et al. v. Vutek, Inc.*, 2006 U.S. Dist. LEXIS 33383 (E.D. Mo., May 25, 2006). 2623

"moving a pair of spaced apart heating electrodes against another surface of said terminal to form a current path between said electrodes through a portion of said terminal extending there between" — "moving two side-by-side heating electrodes into compression contact with a surface of the terminal (other than a surface in contact with the wire) with sufficient pressure to establish and maintain electrical continuity between the electrodes and the terminal to allow a flow of electrical current through the electrodes and the portion of the terminal between the electrodes." *Joyal Products, Inc. v. Johnson Electric North America, et al.*, 2007 U.S. Dist. LEXIS 79522 (D.N.J., Oct. 25, 2007). 2624


"moving the instrument in response to motor signals" — "the surgical instrument of the robotic surgical system is moved by the robot in response to signals received by drive mechanisms or motors/actuators in the robotic arm." *Intuitive Surgical, Inc., et al. v. Computer Motion, Inc.*, 2002 U.S. Dist. LEXIS 14752 (D. Del., Jul. 12, 2002). 2626

"moving the platform and a liquid dispenser relative to each other" — "moving both the moveable platform and a moveable liquid dispenser relative to each other." *Cytologix Corp. v. Ventana Medical Systems, Inc.*, 2006 U.S. Dist. LEXIS 40973 (D. Mass., June 20, 2006). 2627
"moving the rotating cutting cylinder along the road, and simultaneously, moving said
cylinder alternately up above the road surface and down into said road surface, to thereby
form a plurality of generally parallel grooves" — "mean[s] grooves which are arranged side
by side with their long sides parallel to each other and which are generally oriented transverse to
the travel direction of the road." Dickson Industries, Inc. v. Patent Enforcement Team, L.L.C.,

"mulch flakes" — "irregular platelets with a thickness which is less than the dimensions across the
15, 2009).

"multifocal ophthalmic lens" — "a multifocal ophthalmic lens (1) that has no segment of constant
(i.e., spherical) curvature except (optionally) at the center, and (2) that contains at least 2 cycles
in which vision correction power moves from Far to Near and back to Far (or vice versa from
Near to Far to Near), and (3) that has the same Near power in each cycle and the same Far power
23, 2009).

"multiple embossed pattern" — "sequential embossing patterns." 3M Innovative Properties Co.,
et al. v. Avery Dennison Corp., 185 F. Supp. 2d 1031 (D. Minn. 2002). "The district court
erred when it defined the term 'multiple embossed patterns' to include a limitation that the
patterns be created sequentially." Id., 350 F.3d 1365 (Fed. Cir. 2003).

"capable of being multiply folded upon itself"; "adapted to be multiply folded upon itself" —
"capable of being folded upon itself more than one time"; "adapted to be folded upon itself more
(N.D. Cal., Aug. 21, 2006).

"a multipurpose exercise apparatus adapted for providing an individual with support as a
user moves between an upper first position and a lower second position during performance
of an exercise" — "is not essential to an understanding of the language of the claim, and
therefore does not require construction." Fitness Quest Inc. v. J. Monti, 2007 U.S. Dist. LEXIS
60195 (N.D. Ohio, Aug. 16, 2007).

"narrow beam of light" — "a ray or shaft of light of slender width." One World Technologies,
Ltd., et al. v. Rexon Industrial Corp., et al., 2005 U.S. Dist. LEXIS 11711 (N.D. Ill., Jun. 3,
2005).

"narrowly confined scanning volume" — "a volume that is narrow, yet diverging, from the
transmission window of the scanner, which may take a pyramidal, conical, irregular, or similar
shape." Metrologic Instruments, Inc. v. PSC Inc., 2003 U.S. Dist. LEXIS 26636 (D.N.J., Aug. 26,
2003).
"natural tissue plane" — "the interface between one tissue and another tissue, where tissue may include, but is not limited to, nerves, blood vessels, muscles, tendons and bone." General Surgical Innovations, Inc. v. Origin Medsystems, Inc., 1998 U.S. Dist. LEXIS 22958 (N.D. Cal., May 15, 1998). 2637

"near" — "the Court finds the word 'near' indefinite." Young v. Lumenis, Inc., 2005 U.S. Dist. LEXIS 27792 (S.D. Ohio, Nov. 1, 2005). 2638 "We agree with Young that the district court erred in determining that the term 'near' is indefinite. ... The claim language and the specification make clear that the term 'near' means close to or at the most distal edge of the ungual crest." Id., 492 F.3d 1336 (Fed. Cir. 2007).


"a side nearest the light emission window" — "I will not construe 'a side nearest the light emission window' to be synonymous with 'front side'. I construe the term 'a side nearest the light emission window' to mean any side that is at or near the end of the light emitting end of the reflector body and includes the 'front side' as defined below, as well as the outer circumference of the reflector body at points closest to the light emitting end." U.S. Philips Corp. v. Iwasaki Electric Co., et al., 2006 U.S. Dist. LEXIS 106 (S.D.N.Y., Jan. 3, 2006).


"top surface having a negative slope from left to right" — "the entire top surface slopes downwardly from the left wall to the right wall so that no arch is present when viewed from the rear." Goldtouch Technologies, Inc. v. Microsoft Corp., 2000 U.S. Dist. LEXIS 3370 (W.D. Tex., Jan. 14, 2000). 2644 "After considering the prosecution history, the Court confirms its earlier determination that the term 'negative slope' requires an entirely negative slope." Id., 102 F. Supp. 2d 722 (W.D. Tex. 2000).


"nipple cover" — "an article for covering the nipple that extends beyond the nipple and areola; is unsupported by attached straps around the neck, back, shoulders, or arms; and does not replace or substantially enhance the apparent size of a woman's breast." Black v. Ce Soir Lingerie Co., Inc, et al., 2007 U.S. Dist. LEXIS 90962 (E.D. Tex., Dec. 10, 2007).
"a nominal radial interference between the first and second lips as the lid and main body are engaged" — "The first lip protrudes sufficiently from the inner surface of the groove and the second lip protrudes sufficiently from the outer surface of the rim so that, as the lid and the main body are engaged, the lips contact each other and a portion of at least one of the lips deflects." Learning Curve Brands, Inc. v. Munchkin, Inc., 2010 U.S. Dist. LEXIS 27277 (W.D. Wis., Mar. 22, 2010).

"a vertical barrier of nominal thickness" — "the 'nominal thickness' of the vertical barrier should be read to mean 'thin.'" Suncast Corp. v. Avon Plastics Inc., 1999 U.S. Dist. LEXIS 15222 (N.D. Ill., Sept. 21, 1999).

"non-conical and non-tapered distal end portion" — "mean[s] that 'the distal end portion of the catheter does not taper anywhere along its length' and that 'the distal end portion does not have a conical shape anywhere along its length.'" Mahurkar v. C.R. Bard, Inc., 2003 U.S. Dist. LEXIS 21518 (N.D. Ill., Nov. 26, 2003).

"non-electronic carrier" — "a holder used for electronic devices to protect them from physical damage, which device is not part of a circuit that utilizes a semiconductor device." Leighton Technologies LLC v. Oberthur Card Systems, S.A., 358 F. Supp. 2d 361 (S.D.N.Y. 2005).

[i] "the polymeric material ... is non-flowable and non-adherent at room temperature"; [ii] "the heat bondable material is non-flowable and non-adherent at room temperature" — [i] "the polymeric material cannot flow at room temperature and cannot adhere to the implant if placed on the implant at room temperature"; [ii] "the heat bondable material cannot flow at room temperature and cannot adhere to the tubular member if placed on the tubular member at room temperature." MarcTec, LLC v. Johnson & Johnson, et al., 2009 U.S. Dist. LEXIS 27011 (N.D. Ill., Mar. 31, 2009).


"said second connecting edge being non-parallel to said first connecting edge" — "the second connecting edge is non-parallel to the first connecting edge." Kimberly-Clark Worldwide, Inc. v. First Quality Baby Products, LLC, et al., 2010 U.S. Dist. LEXIS 77063 (M.D. Pa., Jul. 29, 2010).

"non-resilient" — "this term should be interpreted to exclude lever moving elements which are operated resiliently, i.e. by means of spring." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997).

"including a non-semiconductor element of the thin film to be formed" — "including an element that is not a semiconductor and that will be contained in the thin film to be formed." ASM America, Inc. v. Genus, Inc., 2002 U.S. Dist. LEXIS 15348 (N.D. Cal., Aug. 15, 2002).


"non-slip" — "reduces or prevents smooth sliding motion." Microthin.com, Inc. v. SiliconeZone USA, LLC, 615 F. Supp. 2d 754 (N.D. Ill. 2009). "We agree with the district court that the plain and ordinary meaning of 'non-slip' is 'reduces or prevents smooth sliding motion' and does not distinguish between sticky and non-sticky characteristics." Id., 2010 U.S. App. LEXIS 10275 (Fed. Cir., May 20, 2010).
"non-standard bulb socket"; "non-standard twinkle bulb" — "The defendants have not shown that the use of negatives in the definitions in the '909 Patent's specifications creates any ambiguity or otherwise requires a finding of invalidity." Sienna, LLC v. CVS Corp., et al., 2007 U.S. Dist. LEXIS 2 (S.D.N.Y., Jan. 3, 2007).


"non-thrombogenic material which provides long term non-thrombogenicity to the device portion during and after release of the biologically active material" — "a material that does not promote thrombosis for a period of time that extends both during and after release of the biologically active material." Boston Scientific SciMed, Inc., et al. v. Cordis Corp., et al., 2005 U.S. Dist. LEXIS 10735 (D. Del., Jun. 3, 2005). "We thus [] the district court's construction of the 'non-thrombogenic' limitation, including the 'long term' aspect." Id., 554 F.3d 982 (Fed. Cir. 2009).


"a non-volute pump chamber" — "is a pump chamber that is not a volute pump chamber. A volute pump chamber is . . . [a] three dimensional region wherein fluid is subjected to the force of an impeller, with a spiral casing, such that, when viewed circumferentially, the cross-sectional area of the chamber generally increases as the outlet of the pump chamber is approached. 'Viewed circumferentially,' means viewed along the path that the liquid in the chamber follows; i.e., rotating around the chamber, in the direction of the outlet. The 'cross-sectional area,' refers to the area defined that is between the pump chamber wall and the outer edge of the impeller. 'Generally increases,' does not mean that the increase must be constant; however, the 'widest' point must occur at the outlet of the pump, or as the outlet of the pump is approached, and the narrowest point occurs at the cutwater (or the other edge of the outlet)." Molten Metal Equipment Innovations, Inc. v. Metalucics Systems Co., L.P., 56 Fed. Appx. 475 (Fed. Cir., Jan. 30, 2003) (unpublished).

"a non-woven top sheet" — "a sheet, web or batt of fibers or filaments of wood pulp, rayon, cotton, polypropylene, polyester, lycra or a combination thereof that are bonded to each other by any of several means. Papers, wovens, knits and felts are specifically excluded." Baychar, Inc., et al. v. Frisby Technologies, Inc., et al., 230 F. Supp. 2d 75 (D. Me. 2002).

"the lower surface having no projections for connection to the seating surface" — "the lower surface having no parts extending outwardly for attachment or fastening to the seating surface." Robinson v. Advanced Decoy Research, Inc., et al., 519 F. Supp. 2d 1087 (S.D. Cal. 2007).


"a substantially enclosed vessel including a fuel inlet, a fuel outlet leading to the engine, and a fuel return line leading to said storage tank, said vessel including a normally upright tube presenting a substantially open upper margin defining an operating fuel level within said vessel, said vessel further including means in direct fluidic communication with said outlet for detachably mounting a cartridge thereon" — "a substantially enclosed vessel that includes a fuel inlet, a fuel outlet leading to the engine, and a fuel return line leading to the fuel storage tank. The vessel includes a normally upright overflow tube that presents a substantially open upper portion, which defines an operating fuel level with the vessel. The vessel further includes a threaded coupling or equivalents thereof for detachably mounting a cartridge which is in direct fluidic communication with such outlet, allowing fluid to travel directly between the cartridge and such outlet." Ekstam v. Ekstam, 2006 U.S. Dist. LEXIS 12937 (E.D. Mo., March 7, 2006).

"nose"; "nose region" — "region, defined by the blades of the bit, located radially between the cone and flank regions, and includes the leading-most point on the blades, labeled 232 in Fig. 10 of the '249 and '715 Patents." Redhycalog UK, Ltd, et al. v. Baker Hughes Oilfield Operations, Inc., et al., 2007 U.S. Dist. LEXIS 76125 (E.D. Tex., Oct. 12, 2007).

"nose feature" — "the part of the face used for breathing and smelling, including, but not limited to, the nose features shown in Figures 5 through 9 of the '972 patent." Hoodlums Welding Hoods, LLC v. Redtail International, LLC, 2009 U.S. Dist. LEXIS 100356 (E.D. Pa., Feb. 14, 2009).


"each flange itself not being a magnet, including a magnetic material" — "each flange is not a magnet, but it includes a permanent magnet or ferromagnetic material, and at least either the magnetic material in the primary frame or in the auxiliary frame is a permanent magnet." Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc., 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003).

"not cover said axial peripheral lip" — "mean[s] that the cladding panel cannot cover any portion of the 'axial peripheral lip.'" Lacks Industries, Inc. v. McKechnie Vehicle Components USA, Inc., et al., 55 F. Supp. 2d 702 (E.D. Mich. 1999).

"not directed, non laminar stream" — "a diverging gas stream which need not be specifically aimed at the tissue to be coagulated." Erbe Elektromedizin GmbH, et al. v. Canady Technology, LLC, et al., 512 F. Supp. 2d 297 (W.D. Pa. 2007).


"a number of apertures" — "Use of the plural form of aperture does imply that more than one aperture should be present, or implies a set of apertures, however, there is nothing that specifies that the number of aperture sets need be more than one."  Lawler Manufacturing Co., Inc. v. Bradley Corp., et al., 2000 U.S. Dist. LEXIS 20511 (S.D. Ind., Nov. 30, 2000).

"two woven nylon, hook and loop mating strips" — "I reject ... the argument that 'nylon' ... refers only to the mating strips without the hooks or loops."  Transco Products Inc. v. Performance Contracting, Inc., et al., 1996 U.S. Dist. LEXIS 4027 (N.D. Ill., March 29, 1996).  


"O-ring elements" — "portions having a circular outer surface that is wider at the middle than at the top or bottom."  ICU Medical, Inc. v. RyMed Technologies, Inc., 2009 U.S. Dist. LEXIS 112546 (D. Del., Dec. 3, 2009).


"an object to be magnetically heated including an induction heatable element and an RFID tag" — "a food delivery container to be magnetically heated that includes an induction heatable element and an RFID tag."  Thermal Solutions, Inc. v. Imura International U.S.A., Inc., et al., 2009 U.S. Dist. LEXIS 90513 (D. Kan., Sep. 29, 2009).

"objective lens means disposed on said surgical microscope positioned within said three-dimensional space" — "an objective lens positioned within stereotactic three-dimensional space."  Medical Instrumentation and Diagnostics Corp. v. Elekta AB, et al., 2001 U.S. Dist. LEXIS 25448 (S.D. Cal., Apr. 4, 2001).


"oblique zone" — "a collection zone that differs in polar angle from the central collection zone and that does not collect the same light being collected by the central zone but, instead, collects either forward or backward scattered light but does not collect both simultaneously."  ADE Corp. v. KLA-Tencor Corp., 252 F. Supp. 2d 40 (D. Del. 2003).
"obtaining a physiological specimen from said host" — "the court interprets 'obtain' in this context to mean take physical possession of the physiological specimen." Regents of the University of California, et al. v. Hansen, et al., 1999 U.S. Dist. LEXIS 21833 (E.D. Cal., Nov. 5, 1999).

"obtaining said sample" — "'obtaining' could include receiving a sample from someone else who collected it, and 'sample' need not be limited to blood and urine." PerkinElmer, Inc., et al. v. Intema Ltd., 2010 U.S. Dist. LEXIS 66452 (D. Mass., Jul. 2, 2010).

"an obtuse angle is formed between the strut and the guidewire" — "an angle of more than 90 degrees and less than 180 degrees formed between the strut and the guidewire." Boston Scientific SciMed, Inc., et al. v. ev3 Inc., 502 F. Supp. 2d 931 (D. Minn. 2007).

"occluding" — "blocking or obstructing." Regents of the University of Minnesota v. AGA Medical Corp., 2009 U.S. Dist. LEXIS 90289 (D. Minn., Sep. 29, 2009).

"forming an occlusion within a vascular cavity" — "forming a blockage within a vascular cavity. The vascular cavity does not have to be completely occupied by the blockage to be occluded." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007).

"case occupies substantially the entire drive bay slot" — "when installed, the case occupies almost entirely the slot leading to a drive bay." Comaper Corp. v. Antec, Inc., 2006 U.S. Dist. LEXIS 67363 (E.D. Pa., Sept. 13, 2006).

"occurrence of contact"; "occurrences of contact" — "the act of causing contact to occur at a location on the work platform." Tinkers & Chance v. Leapfrog Enterprises, Inc., 2007 U.S. Dist. LEXIS 43871 (E.D. Tex., June 18, 2007).

"of size to fit into the grate frame" — "the Court finds that the claimed basin is 'of size to fit into the grate frame' only if it fits reasonably accurately into the grate frame. This construction is admittedly not very precise, but it is as precise as the intrinsic evidence permits, and it serves to exclude from coverage those basins that fit so poorly within grate frames that they fail of their purpose." WIMCO, LLC v. Lange Industries, Inc., 2007 U.S. Dist. LEXIS 92502 (D. Minn., Dec. 14, 2007).

"of the patient" — "derived or coming from the patient; originating at or from the patient." Tehrani v. Hamilton Medical, Inc., et al., 331 F.3d 1355 (Fed. Cir. 2003).

"second trough defining means for defining a substantially vertical trough extending the height of said panel ... said vertical trough disposed offset from said horizontal trough defining means and located proximate said horizontal trough rear portion"; "means for defining a vertical trough ... said vertical trough-defining means lying in a plane parallel to and spaced apart from said horizontal trough-defining means" — "Defendants contend that this language, when read in the context of the patent specification, requires that there be absolutely no overlap between the space occupied by the vertical troughs and the space occupied by the intermediate horizontal troughs. The Court does not agree." ADC Telecommunications, Inc., Plaintiff, v. Thomas & Betts Corp., et al., 170 F. Supp. 2d 879 (D. Minn. 2001).


"on" — "so as to be attached to or unified with."  *Vectra Fitness, Inc. v. Icon Health & Fitness, Inc.*, 246 F. Supp. 2d 1111 (W.D. Wash. 2003). 2705

"depositing a titanium film containing nitrogen atoms on a semiconductor substrate";
"forming a titanium nitride film on the semiconductor substrate" — "The titanium film containing nitrogen atoms must be deposited directly on a semiconductor substrate."; "The titanium nitride film must be directly on the titanium silicide film, which in turn must be directly on the semiconductor substrate."  *OKI Electric Industry Co., Ltd. v. LG Semicon Co., Ltd., et al.*, 1999 U.S. Dist. LEXIS 22625 (N.D. Cal., Jul. 19, 1999). 2706

"provided on an exterior of the housing" — "the on/off switch is located at least in part outside the housing."  *Fellowes, Inc. v. Michilin Prosperity Co., Ltd., et al.*, 2006 U.S. Dist. LEXIS 90648 (E.D. Va., Dec. 15, 2006). 2707

"on at least one of said surfaces" — "on at least a portion of either or both the inside and outside enclosure surfaces."  *Tailored Lighting, Inc. v. Osram Sylvania Products, Inc.*, 514 F. Supp. 2d 417 (W.D.N.Y. 2007). 2708

"a shoulder means on one end of said auxiliary drum means" — "requires the shoulder means to contact the auxiliary drum."  *Somfy, S.A. v. Springs Window Fashions Division, Inc., et al.*, 41 F. Supp. 2d 833 (N.D. Ill. 1999). 2709

"on or in-line" — "is sufficiently clear that it needs no construction."  *WesternGeco LLC v. ION Geophysical Corp.*, 2010 U.S. Dist. LEXIS 71875 (S.D. Tex., Jul. 16, 2010). 2710

"sputter-coated film on said continuous glass sheet" — "The '728 patent claims contain no limitation that the interface between the metal film and the glass sheet be devoid of unintended intermediate material, oxide or otherwise. The presence of an intermediate oxide layer in the PPG products thus does not alone render the accused devices noninfringing."  *Shatterproof Glass Corp. v. PPG Industries, Inc.*, 1995 U.S. App. LEXIS 227 (Fed. Cir., Jan. 6, 1995) (unpublished). 2711

"means on said housing for supporting said blade holder proximate its open end" — "the correct interpretation is that the supporting means on the housing need not be a separate entity from the housing."  *National Presto Industries, Inc. v. Black & Decker (U.S.) Inc.*, 1995 U.S. App. LEXIS 15568 (Fed. Cir., June 20, 1995) (unpublished). 2712

"said labelled reagent is dry on said test strip"; "drying said labelled reagent onto a portion of said test strip" — "the plain meaning of the recitations 'on' and 'onto' must control, whereby disposition of the labelled reagent 'on' or 'onto' the test strip means disposition as a surface layer or within the test strip."  *Inverness Medical Switzerland GmbH, et al. v. Warner Lambert Co.*, 309 F.3d 1373 (Fed. Cir. 2002). 2713
"provided on the exterior of the housing" — "the switch lock's manually engageable portion is located at least in part outside the housing." Fellowes, Inc. v. Michilin Prosperity Co., Ltd., et al., 2006 U.S. Dist. LEXIS 90648 (E.D. Va., Dec. 15, 2006).  


"on the surface of said base material" — "does not exclude articles in which microcapsules are dispersed within the fabric, whether by impregnation or some other process. The limitation simply means that the coating (i.e., the mixture of microcapsules and polymeric binder) is dispersed on at least a portion of the surface of the base material, irrespective of whether the coating is also dispersed within the interstices of the base material." Outlast Technologies, Inc. v. Frisby Technologies, Inc., 128 Fed. Appx. 122 (Fed. Cir., Mar. 30, 2005) (unpublished).  

"printing a design or logo to show on the upper surface of the mat" — "printing a design or logo on the lower surface of the mat such that it can be seen through the mat on the upper surface." Microthin.com, Inc. v. SiliconeZone USA, LLC, 615 F. Supp. 2d 754 (N.D. Ill. 2009).  


"said energy-absorption terminal including one of the cutting section and cutable member" — "requir[es] that the energy-absorption terminal include either the cutting section or the cutable member, and that the terminal may include both the cutting section and the cutable member."  


"wherein a predefined one of the positions on the riser card has both ISA type and PCI type expansion connectors associated therewith" — "mean[s] that the riser card has a single expansion position having a single combi-connector." Tulip Computers, International B.V. v. Dell Computer Corp., 236 F. Supp. 2d 364 (D. Del. 2002).  

"one or more converters" — "one or more such detectors in optical communication and electrically connected to one or more corresponding collectors." ADE Corp. v. KLA-Tencor Corp., 252 F. Supp. 2d 40 (D. Del. 2003).  


"one-piece"; "one-piece holder" — "having no parts that separate from the unit during normal operation and containing no parts that are not integrally formed"; "a holder having no parts that separate from the unit during normal operation and containing no parts that are not integrally formed." Storus Corp. v. Restoration Hardware, Inc., et al., 2007 U.S. Dist. LEXIS 25953 (N.D. Cal., Mar. 22, 2007).  

"a one-piece connector means"; "a one-piece L-shaped connector member" — "requires that the connector, which provides lateral adjustability, be one piece, as distinguished from the two-piece and three-piece connectors disclosed in Frigg." AcroMed Corp. v. Sofamor Danek Group, Inc., et al., 1996 U.S. Dist. LEXIS 22703 (N.D. Ohio, April 16, 1996).2725

"one-way snap lock" — "a fastening device that closes with a catch and that once closed, cannot be opened by applying the reverse of the motion used to close the device." Alloc, Inc., et al. v. Pergo, LLC, 2009 U.S. Dist. LEXIS 62881 (E.D. Wis., Jul. 2, 2009).2726

[supplying a dose of respirating gas] "only for the duration T_1" — "this limitation, in particular, are clear and unambiguous, in view of the claim language itself and other intrinsic evidence." Sunrise Medical HHG, Inc. v. Airsep Corp., 95 F. Supp. 2d 348 (W.D. Pa. 2000).2727

"only four elements" — "to literally infringe ... an accused device must have only four elements." Strattec Security Corp. v. General Automotive Specialty Co., Inc., et al., 126 F.3d 1411 (Fed. Cir. 1997).2728

"for initiating the heating of said object only upon placement of said object proximal to said heater and in a position for RF communication between said tag and said reader" — "this term need not be construed further." Thermal Solutions, Inc. v. Imura International U.S.A., Inc., et al., 2009 U.S. Dist. LEXIS 90513 (D. Kan., Sep. 29, 2009).2729

"only within a zone extending between latitudes 30 degrees-45 degrees" — "The district court erred in its claim construction because it did not accord the claim language its ordinary meaning. ... When given their ordinary meaning, the terms 'only' and 'extending between' unambiguously limit claim 1 to gamma units with radiation sources and beam channels located in a zone stretching exclusively in the space separating the latitudes 30 degrees and 45 degrees." Elekta Instrument S.A. v. O.U.R. Scientific International, Inc., 214 F.3d 1302 (Fed. Cir. 2000).2730

"onto each other" — "projecting mask alignment marks and substrate alignment marks to a substantial degree of overlap." Nikon Corp., et al. v. ASM Lithography B.V., 308 F. Supp. 2d 1039 (N.D. Cal. 2004).2731

"introducing ... onto said fabric" — "is not limited to introducing solution to only the top of the fabric." Whirlpool Corp., et al. v. LG Electronics, Inc., et al., 423 F. Supp. 2d 730 (W.D. Mich. 2004).2732

"so that at least a portion of the fallopian tube is open" — "so that at least a portion of the fallopian tube is not completely occluded." Conceptus, Inc. v. Hologic, Inc., 2010 U.S. Dist. LEXIS 24247 (N.D. Cal., Mar. 16, 2010).2733

"said first end cap being an open airflow inlet" — "the Court declines to adopt Baldwin's proposed constructions and does not construe the phrase." Donaldson Co., Inc. v. Baldwin Filters, Inc., 481 F. Supp. 2d 974 (D. Minn. 2007).2734


"open-pore microporous material" — "material with an average interconnecting pore size comparable to or below the mean free path of air molecules at standard atmospheric pressure in which the intercommunicating open pores represent essentially all pores contained in the microporous material." *ITP, Inc., et al. v. BP Corp. North America, Inc.*, 2005 U.S. Dist. LEXIS 39078 (S.D. Tex., May 2, 2005). 2737

"open space" — "a space for the performance of a surgical procedure, which is not occupied by a bladder or other device, or by tissue." *General Surgical Innovations, Inc. v. Origin Medsystems, Inc.*, 1998 U.S. Dist. LEXIS 22958 (N.D. Cal., May 15, 1998). 2738

"open top portion" — "a portion of the container opposite the closed bottom portion of the container, said portion having an interface by which a cap screws onto the beverage container and an area that is not closed." *Sunbeam Products, Inc. v. Hamilton Beach Brands, Inc., et al.*, 2010 U.S. Dist. LEXIS 85281 (E.D. Va., Aug. 19, 2010). 2739

"opened" — "moved from a closed position such that the door has cleared the cassette so that ejecting the cassette will not interfere with the door." *Funai Electric Co., Ltd. v. Daewoo Electronics Corp., et al.*, 2010 U.S. App. LEXIS 18237 (Fed. Cir., Sep. 1, 2010) 2740


"opening" — "is not correctly construed to eliminate the sealing mechanism provided by the slitted diaphragm." *Hakim v. Cannon Avent Group, PLC, et al.*, 479 F.3d 1313 (Fed. Cir. 2007). 2742


"syringe receiving opening"; "opening" — "a circular width of a size to accommodate the back end of a syringe." *Liebel-Flarsheim Co. v. Medrad Inc.*, 2001 U.S. Dist. LEXIS 23096 (S.D. Ohio, Oct. 18, 2001). 2748 "In common usage, an opening is simply an aperture, and nothing in the '669 and '261 patents indicates that the term 'opening' should be understood to carry with it the requirement that it must always be located in the front of a pressure jacket." *Id.*, 358 F.3d 898 (Fed. Cir. 2004). 2749

"an opening"; "closed base" — "an opening of the battery holder at an end opposite the generally closed base"; "an end of the battery holder that is opposite the opening." *Invisible Fence, Inc. v. Perimeter Technologies, Inc.*, 2006 U.S. Dist. LEXIS 33792 (N.D. Ind., May 25, 2006). 2750
"opening for connecting the interior of the reservoir to the interior of the fuel tank" — "an aperture disposed adjacent to both the interior of the reservoir and the interior of the fuel tank, allowing fuel from the fuel tank to be entrained directly into the reservoir." VDO North America L.L.C. v. TI Group Automotive Systems (North America), Inc., 2001 U.S. Dist. LEXIS 19971 (D. Del., Dec. 3, 2001).2751 "The correct construction of ‘an opening for connecting the interior of the reservoir to the interior of the fuel tank’ requires only that the interior of the reservoir and the interior of the fuel tank be joined or linked by a hole, passage, or aperture." TI Group Automotive Systems (North America), Inc. v. VDO North America, L.L.C., et al., 375 F.3d 1126 (Fed. Cir. 2004).2752


"switch housing formed with an opening therein" — "the term 'opening' in claim 1 will be interpreted to mean the space within the switch housing and not a hole or slot that allows passage to the outside of the switch housing and will be construed as follows: An enclosed structure containing the three elements in subsection (i), (ii), and (iii) and also some vacant, unoccupied space." Ellison Co., Inc., et al. v. Transpec, Inc., 445 F. Supp. 2d 566 (M.D. N.C. 2006).2754


"openings"; "slots" — "openings or slots with widths less than 0.254 mm." Advanced Fiber Technologies Trust v. J&L Fiber Services, Inc., 2010 U.S. Dist. LEXIS 95032 (N.D.N.Y., Sep. 13, 2010).2756

"said coupling operable by fluid pressure so that when a sufficient amount of fluid pressure is applied to the coupling, the fluid pressure a user causes the occlusive implant to separate from the pusher" — "the coupling is a connecting device that can be operated by selectively applying fluid pressure to the coupling to separate the implant from the pusher, and the application of the fluid pressure by the user to the coupling causes the detachment of the implant at the coupling." Boston Scientific Corp. v. Cordis Corp., 422 F. Supp. 2d 1102 (N.D. Cal. 2006).2757

"operable for flexing transversely to said longitudinal axis to relax the dunnage structure when the side walls are moved to a collapsed position such that the relaxed dunnage structure is generally positioned in the reduced size container for return" — "being 'coupled to' the two 'side walls' such that moving the two 'side walls' causes bending or folding relative to said longitudinal axis to relax the 'dunnage structure' and occurs during the time that the two 'side walls' are being moved into a collapsed position such that the relaxed 'dunnage structure' is generally positioned in the reduced size container so that the container can be sent back while in the collapsed position." Bradford Co. v. Afco Manufacturing, et al., 2006 U.S. Dist. LEXIS 88547 (S.D. Ohio, Dec. 5, 2006).2758

"operable in response to" — "the words 'operable in response to' ... do not imply that a specific control means is being claimed. In other words, if the web sensor in [the] label system causes a response in the operation of the adhesive applicator, that adhesive applicator may be found to be operable in response to the web sensor." Instance v. On Serts Systems, Inc., et al., 1997 U.S. App. LEXIS 3080 (Fed. Cir., Feb. 21, 1997) (unpublished).2759
"lock spindle being operable to rotate between a lock position and a release position" — "simply means that it rotates about its axis in such a way that its lock pins are either resting on a catch to prevent movement of the side rails, or the pins are in a release position to allow clearance (and thus movement) of the side rails." Pedicraft, Inc. v. Stryker Corp. of Michigan, et al., 2003 U.S. Dist. LEXIS 27837 (M.D. Fla., May 5, 2003). 2760


"operably connected" — "mean[s] that one component is connected to another component in such a manner that the components may interact with each other." Advanced Respiratory, Inc. v. Electromed, Inc., 2003 U.S. Dist. LEXIS 823 (D. Minn., Jan. 10, 2003). 2762


"air-permeable secondary wall means above said chamber upper wall portion and operably coupled with said chamber-defining means" — "A person of ordinary skill in the art of air bed engineering would read 'operably coupled' to mean that two elements work in concert to create an inflatable chamber, e.g. one which is not air tight but can receive and hold air. Thus, whatever means is used to operably couple must create an inflatable chamber between the top wall and the secondary wall." KCJ Corp. v. Kinetic Concepts, Inc., et. al., 30 F. Supp. 2d 1319 (D. Kan. 1998). 2764

"the actuating mechanism is operated remotely by sending signals from a communication device" — "the actuating mechanism receives signals from a communication device that is not in contact with the actuating mechanism." Graham-White Manufacturing Co. v. Ellcon-National, Inc., 2007 U.S. Dist. LEXIS 89126 (D.S.C., Dec. 4, 2007). 2765

"wherein the spring operates on the blade through a cavity formed in the handle" — "this term is clear on its face and does not require construction." Kai U.S.A., Ltd. v. Buck Knives, Inc., 2006 U.S. Dist. LEXIS 24924 (D. Or., Feb. 9, 2006). 2766

"operative engagement" — "permitting movement (for example pivotability)." Spine Solutions, Inc., et al. v. Medronic Sofamor Danek USA, Inc., et al., 2010 U.S. App. LEXIS 18818 (Fed. Cir., Sep. 9, 2010). 2767

"operative position"; "inoperative position" — "a guard rail is an 'operative' position when it is producing its designed effect of preventing the patient from rolling off the bed; and a guard rail is in an 'inoperative' position when it would be ineffective at preventing a patient from rolling off the bed." Safe Bed Technologies Co. v. KCI USA, Inc., et al., 2004 U.S. Dist. LEXIS 17773 (N.D. Ill., Sept. 2, 2004). 2768


"a spring operatively connected between the handle and the blade to assist in the opening of the blade" — "the spring, handle, and blade are arranged such that the spring operates to assist in opening the blade." Kai U.S.A., Ltd. v. Buck Knives, Inc., 2006 U.S. Dist. LEXIS 24924 (D. Or., Feb. 9, 2006). 2772

"said tube operatively connected to said cap" — "a reading of the claims in view of the specification supports a construction of 'operatively connected' that requires affixing the tube to the cap." Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 289 F. Supp. 2d 1347 (M.D. Fla. 2003). 2773 

"a travel bar operatively connected to the hinge plates" — "the travel bar and hinge plates are arranged in a manner such that at least one connecting link operates to assist in moving the hinge plates between the closed and opened positions." World Wide Stationery Manufacturing Co., Ltd. v. U.S. Ring Binder, L.P., 2009 U.S. Dist. LEXIS 27873 (E.D. Mo., Mar. 31, 2009). 2775

"a travel bar operatively connected to the lever" — "the travel bar and the lever are arranged such that the intermediate connector operates to assist the pivoting movement of the lever that causes movement of the travel bar in translation relative to the housing from the first position in which the control structure locks the hinge plates in the closed position to the second position in which the hinge plates are free to pivot to the open position." World Wide Stationery Manufacturing Co., Ltd. v. U.S. Ring Binder, L.P., 2009 U.S. Dist. LEXIS 27873 (E.D. Mo., Mar. 31, 2009). 2776

"the lever being operatively connected to the travel bar" — "the lever and travel bar are arranged such that the intermediate connector operates to assist the pivoting motion of the lever to produce movement of the travel bar generally lengthwise of the elongate plate." World Wide Stationery Manufacturing Co., Ltd. v. U.S. Ring Binder, L.P., 2009 U.S. Dist. LEXIS 27873 (E.D. Mo., Mar. 31, 2009). 2777

"impeller assembly operatively coupled to said motor" — "a rotating impeller apparatus coupled directly or indirectly to the pump motor so that they are operable together." Sta-Rite Industries, et al. v. ITT Corp., et al., 2010 U.S. Dist. LEXIS 10790 (E.D. Tex., Jan. 19, 2010). 2778

"the clamp including a camming member which operatively engages the actuation member such that movement of the actuation member pivots the clamp between the open and clamped positions" — "the camming member of the clamp (follower) and the actuation member constitute a camming mechanism to pivot the clamp." Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F. Supp. 2d 93 (D. Conn. 2006). 2779

"an anchor seat means which has a lower bone interface operatively joined to said bone segment" — "Since the claim language concerns a surgical procedure, ... 'operative joinder' in this claim means to 'connect during a surgical procedure.'" Cross Medical Products, Inc. v. Medtronic Sofamor Danek, Inc., 2004 U.S. Dist. LEXIS 14183 (C.D. Cal., May 18, 2004). 2780
"operatively positioned at the surgeon's operating station" — "positioned at the surgeon's operating station within reach and view of the surgeon to allow control and monitoring of the pieces of surgical equipment." Karl Storz Endoscopy-America, Inc. v. Smith & Nephew, Inc., 2010 U.S. Dist. LEXIS 85036 (W.D. Tenn., Aug. 18, 2010).2781

"operator input to allow an operator to signal a desire to eliminate torque" — "Meritor's invention claims only the operator input to signal torque elimination without use of a clutch. It does not claim the further effecting of gear shift stemming from the initial operator signal. Once the torque is eliminated, the transmission may be shifted into neutral and thereafter, into a new gear. But, this requires further operator input." Meritor Transmission Corp. v. Eaton Corp., 2007 U.S. Dist. LEXIS 13166 (W.D.N.C., Feb. 23, 2007).2782

"side members which include opposing surfaces" — "side members, each having an inner surface that faces or looks toward the corresponding surface of the other side member." IKN, Inc. v. CemProTec GmbH, 2005 U.S. Dist. LEXIS 29134 (E.D. Pa., Nov. 22, 2005).2783

"opposite and directly below the free end of said member" — "on the opposite side of the connecting device from the elongate member, and also directly below the free end of said member." Robinson v. Advanced Decoy Research, Inc., et al., 519 F. Supp. 2d 1087 (S.D. Cal. 2007).2784

"opposite sides" — "the right and left sides of the calculator." Sun Coast Merchandise Corp. v. CCL Products Enterprises, Inc., 2003 U.S. Dist. LEXIS 27316 (N.D. Cal., Apr. 30, 2003).2785

"a deflector plate mounted on the axial shaft opposite the passages for preventing straight line impingement of gas therefrom on the bag" — "the phrase 'opposite the passages' [] mandat[es] that the deflector plate is not part of the element containing the gas passages." HBB Limited Partnership v. Ford Motor Company, et al., 1996 U.S. Dist. LEXIS 4047 (N.D. Ill., March 29, 1996).2786

"optical arrangement" — "a collection comprising two or more mirrors, lens, prisms, or other optical devices, placed in some specified configuration, which reflect, refract, dispense, absorb, polarize, or otherwise act on light. That definition allows for a combination of two or more different optical devices. Also, a mirror whether it is motorized or not, is an optical device." Erchonia Medical Inc., et al. v. Miki Smith, et al., 2006 U.S. Dist. LEXIS 38498 (D. Az., June 8, 2006).2787


"optical bench mounted in said compact housing" — "a rigid structure within the housing of the scanner to which optical components are mounted to prevent movement of the individual optical components relative to each other. There is no requirement that the optical bench be mounted to the compact housing by fasteners or brackets." Metrologic Instruments, Inc. v. PSC Inc., 2003 U.S. Dist. LEXIS 26636 (D.N.J., Aug. 26, 2003).2789

"an optical element collecting light scattered" — "means that one or more optical elements collects light." ADE Corp. v. KLA-Tencor Corp., 220 F. Supp. 2d 303 (D. Del. 2002).2791

"optical elements in a telescope" — "this Court rejects plaintiff's definition limiting the term 'optical elements in a telescope' to 'mirrors,' in favor of a broader definition which includes 'mirrors,' 'lenses,' and 'prisms.'" Lasermax, Inc. v. Glatter, 2005 U.S. Dist. LEXIS 17136 (S.D.N.Y., Aug. 17, 2005).2792

"optical measuring device" — "a device that can measure at least one property of electromagnetic radiation in the wavelength range including only infrared, visible, ultraviolet, and X rays." Precision Automation, Inc., et al. v. Technical Services, Inc., et al., 2009 U.S. Dist. LEXIS 8187 (D. Or., Feb. 2, 2009).2793

"an optically absorptive refractory transition metal" — "Because the dictionary definition of the term 'transition metal' does not indicate that this term refers to alloys, and because nothing in the intrinsic evidence suggests otherwise, the court concludes that the term 'an optically absorptive refractory transition metal' refers only to pure elemental metals, and does not include alloys. ... Since the plain language of the claim suggests no limitation on the degree of absorptivity of the transition metal layer, the court declines to construe the specification's description of the high relative absorptivity of this layer as a claim limitation." EMI Group North America, Inc. v. Cypress Semiconductor Corp., 68 F. Supp. 2d 421 (D. Del. 1999).2794


"optimize the orientation" — "to orient the teeth to achieve the desired design criteria using the information calculated in the previous step." Haliburton Services v. Smith International Inc., 2004 U.S. Dist. LEXIS 2320 (E.D. Tex., Feb. 18, 2004).2796


[enabling the insert to fit within the aperture] "in a first orientation and a second orientation" — "the terms 'first' and 'second' do not require that the orientations be separated by any specific degree of rotation, such as the ninety degree difference argued by Lamson. Rather, such language broadly claims an outlet cover with an aperture large enough to accommodate an insert placed in any two orientations, whether those orientations be separated by one hundred eighty degrees, ninety degrees, or any other degree of rotation." Intermatic Inc. v. Lamson & Sessions Co., 273 F.3d 1355 (Fed. Cir. 2001).2800
"oriented" — "mean[s], with reference to a polymeric material, 'heated and stretched to realign the molecular configuration, this stretching accomplished by a racking or blown bubble process.' Cryovac Inc. v. Pechiney Plastic Packaging, Inc., 2006 U.S. Dist. LEXIS 19144 (D. Del., April 13, 2006).

"each hypotenuse is oriented at least one of towards and away from the centrally positioned long axis" — "either all of the individual hypotenuses are oriented towards the centrally positioned long axis, or all of the individual hypotenuses are oriented away from the centrally positioned long axis." Synvasive Corp. v. Stryker, Corp., 425 F. Supp. 2d 1105 (E.D. Cal. 2006).

"oriented to direct light downwardly to a selected reading area under said body" — "to set or arrange to direct more light in a downward direction than in an upward or outward direction." Kenall Manufacturing Co. v. Genlyte Thomas Group LLC, 413 F. Supp. 2d 937 (N.D. Ill. 2006). 

"oriented toward a back of the shoe" — "directed toward or placed in the direction of a location at or near a back of the shoe." Akva L.L.C. v. Adidas America, Inc., 2005 U.S. Dist. LEXIS 11213 (M.D.N.C., May 17, 2005).

"orifice" — "a hole or opening through which something (axle and sleeve) may pass." Boler Co. v. Arvinmeritor, Inc., 2004 U.S. Dist. LEXIS 13365 (N.D. Ill., Jul. 16, 2004).


"outer bezel disposed over said antenna" — "an exterior structure that covers, at least in part, the antenna." Lutron Electronics Co., Inc. v. Control4 Corp., 2009 U.S. Dist. LEXIS 3562 (D. Utah, Jan. 20, 2009).


"outer covering" — "as an article for receiving and enclosing both the removable bottom cushion and the removable bolster within an interior space such that the two pillows communicate with each other." Flexi-Mat Corp. v. Dallas Manufacturing Co., et al., 2006 U.S. Dist. LEXIS 19528 (D. Mass., April 11, 2006).


"outer spatial volume" — "a region of space defined by an expandable surface element and surrounding an inner spatial volume." Xoft, Inc. v. Cytyc Corp., et al., 2007 U.S. Dist. LEXIS 34468 (N.D. Cal., April 27, 2007).
"having an outer surface defining a drive head that accepts a driving mechanism for rotating and linearly translating said bolt" — "mean[s] the drive collar has a surface outside and separate from the frusto-conical inner surface of the drive collar for defining a drive head capable of accepting a driving mechanism that can rotate and linearly translate the mine roof bolt. The drive head may be of any shape or configuration that accepts such a driving mechanism."


"[W]e do not agree that a person of ordinary mechanical skill would read the specification, the drawings, and the claims to construe 'outer surface' of the drive collar to include a collar whose interior, not exterior, accepts the drive tool."  Id., 501 F.3d 1285 (Fed. Cir. 2007). 2815

"an outer surface of one of said members" — "because its ordinary and customary meaning is clear to one skilled in the art, the Court declines to construe the phrase."  Joyal Products, Inc. v. Johnson Electric North America, et al., 2007 U.S. Dist. LEXIS 79522 (D.N.J., Oct. 25, 2007). 2816

"the outer surface of said sheathing being tapered towards the immersion end of said tube such that a minimum thickness of said sheathing is directly adjacent to and exposing said immersion end of said tube for minimizing trapped gases adjacent to the measuring head when immersed in a metal bath" — "no construction of this claim language is required."  Heraeus Electro-Nite Co. v. Midwest Instrument Co., 2007 U.S. Dist. LEXIS 81685 (E.D. Pa., Nov. 1, 2007). 2817


"a vertical wall surface outwardly adjacent from said body" — "a vertical wall surface next to or near either end of said body."  Kenall Manufacturing Co. v. Genlyte Thomas Group LLC, 413 F. Supp. 2d 937 (N.D. Ill. 2006). 2819

"outwardly angled traction surface"; "outer traction surface having an outward angulation"; "outer traction surface extending from said main body in a direction away from and at an angle to said axis AL" — "a surface facing away from the axis AL that provides traction, having an outward angle relative to the axis AL that is predetermined, such that it does not change significantly in use."  Greenkeepers of Delaware, LLC, et al. v. Softspikes, LLC, et al., 2010 U.S. Dist. LEXIS 10670 (E.D. Pa., Feb. 5, 2010). 2820

"outwardly extending blade disposed on a first side of said barrier"; "a second and third spaced apart outwardly extending blade disposed on a second side of said barrier" — "does not require the blade to extend directly from the barrier."  Suncast Corp. v. Avon Plastics Inc., 1999 U.S. Dist. LEXIS 15222 (N.D. Ill., Sept. 21, 1999). 2821


"over a substantial portion of the height of a pleat leg"; "over substantially the entire height of a pleat leg" — "largely but not necessarily wholly the height of a pleat leg including at least 50% of the leg height." Pall Corp. v. Cuno Inc., 2007 U.S. Dist. LEXIS 59917 (E.D.N.Y., Aug. 14, 2007). 2824


"over-center spring" — "a spring that biases a member toward a first stable position under a first set of mechanical conditions and toward a second stable position under a second set of mechanical conditions, with the member passing through an intermediate meta-stable position." Takata Corp. v. AlliedSignal Inc., et al., 1999 U.S. Dist. LEXIS 15037 (D. Del., Aug. 19, 1999). 2826

"overhang portion" — "a portion of the facer that extends more than a trifling amount beyond an edge of the backer." Great Dane Limited Partnership v. Stoughton Trailers, LLC, et al., 2009 U.S. Dist. LEXIS 119573 (M.D. Ga., Dec. 23, 2009). 2827

"overlapping edges" — "means two edges of a continuous piece of copper foil aligned to completely encircle a layer of dielectric material where there is no discontinuity of copper along the equatorial direction or circumference of the copper, and there is only discontinuity of copper in the axial direction of the cable." Belden Wire & Cable v. Cable Design, 2001 U.S. Dist. LEXIS 25800 (N.D. Ill., Mar. 23, 2001). 2828

"overlying" — "in a layered device formed on a substrate, a relationship between first and second layers wherein the second layer is above or over the first layer." IXYS Corp. v. Advanced Power Technology, Inc., 301 F. Supp. 2d 1065 (N.D. Cal. 2004). 2829

"overmolding" — "forming encapsulating material in a cavity of a defined shape over one or more components on only one side of a substrate." STMicroelectronics, Inc. v. Motorola, Inc., 327 F. Supp. 2d 687 (E.D. Tex. 2004). 2830


"an oversized tang portion of the blade that is sized to extend through the opening in the handle when the blade is stored in the handle so that the oversized tang portion is exposed for manipulation from the back of the handle" — "is clear on its face and does not require construction." Kai U.S.A., Ltd. v. Buck Knives, Inc., 2006 U.S. Dist. LEXIS 24924 (D. Or., Feb. 9, 2006). 2833

"overturned rim extending from the periphery of the side wall" — "The rim of the invention clearly must turn over, i.e. curve downward." James River Corp. of Virginia v. Hallmark Cards, Inc., 915 F. Supp. 968 (E.D. Wis. 1996). 2834

"oxidation index" — "the Court adopts the definition of 'oxidation index' expressed by the specification." Howmedica Osteonics Corp. v. Zimmer, Inc., et al., 2007 U.S. Dist. LEXIS 29991 (D.N.J., April 23, 2007). 2835
"package" — "a covering, wrapper or container capable of holding a product for the purposes of merchandising and display prior to purchase."  

"packaged together in sterile packaging means" — "packaged as a combination in a single sterile package."  

"packaging"; "packaged" — "mean placed or placing in a container."  

"pad assembly" — "one or more pads."  

"painted surface of a vehicle" — "any vehicle surface with paint."  

"a pair of connector legs" — "the two branches at the downstream end of the bifurcated base [graft] structure, each of which has an opening to which an additional graft may be connected."  

"a pair of flanges extending from opposite side edges of said housing in parallel spaced relationship" — "the phrase 'parallel spaced relationship' modifies the 'flanges,' not the 'opposite side edges.'"  

"pair of fuel injectors mounted in a fuel injector and throttle body" — "require[s] that the fuel injectors be mounted in the throttle body."  

"a pair of linear actuators mounted on said frame and connected to said levers for swinging said levers and thus tilting said cradle ... from said first position through a second position ... to a third position" — "The claims provide for no other actuators in the carrier to perform this lifting and dumping function. ... We hold that claim 1 of the '658 patent requires one pair of actuators to perform independently the lifting and dumping function."  

"pair of spaced members" — "because its ordinary and customary meaning is clear to one skilled in the art, the Court declines to construe the phrase."  
"panel" — "a discrete structure capable of being coupled to another discrete structure." *STI Holdings, Inc. v. Great Dane Limited Partnership*, 2010 U.S. Dist. LEXIS 57789 (W.D. Wis., Jun. 11, 2010). 2847

"at least one print receiving layer consisting of a paper, a synthetic paper or a coated film" — "the term 'paper' stands unmodified. It would be improper for this Court to impute a limiting modifier that would exclude coated paper from the scope of the general term 'paper.'" *Process Resources Corp., et al. v. Delta Air Lines, Inc.*, 2000 U.S. Dist. LEXIS 909 (S.D.N.Y., Jan. 29, 2000). 2848

"paper touch switch and disc touch switch" — "Because the claims state two separate switches, the appropriate locations must also be separate." *Michelin Prosperity Co. v. Fellowes Manufacturing Co.*, 450 F. Supp. 2d 35 (D.D.C. 2006). 2849


"parallel to a major surface of said conductive layer" — "requires that the surface of the conductive layer be substantially planar and that the plane of the emission face of the diodes be parallel to that surface." *Laser Diode Array, Inc. v. Paradigm Lasers, Inc., et al.*, 114 F. Supp. 2d 167 (W.D.N.Y. 2000). 2851

"to partially block the extrusion of said molten thermoplastic material from said first side passage" — "means that the plug prevents the extrusion of molten thermoplastic material through the first side passage only at the location on the circumference of the first side passage where the plug is disposed." *Poly-America, Inc. v. Serrot International, Inc.*, 2002 U.S. Dist. LEXIS 23437 (N.D. Tex., Dec. 5, 2002). 2852

"an intake passageway ... at least partially defined by said runner filler" — "In order to "at least partially define" the intake passageway, the runner filler must form only a portion of the intake passageway. It may do so by completely forming a segment of the intake passageway or by partially forming a segment of the intake passageway." *Briggs & Stratton Corp. v. Kohler Co.*, 398 F. Supp. 2d 925 (W.D. Wis. 2005). 2853

"partially overlapping said first gelatinous coating and forming a seam" — "extending over and covering part of, but not all of, the first gelatinous coating in a manner such that there is a transition of color and a transition of thickness." *McNeil-PPC, Inc. v. Bayer Corp.*, 2000 U.S. Dist. LEXIS 16431 (E.D. Pa., Nov. 7, 2000). 2854


"particles" — "means particles in its ordinary sense without limitation based on the size or shape of millet. Specifically, the court finds that the term 'particles' contemplates small specks of matter, including but not limited to, starch particles, microsphere particles, hard plastic or silicon beads and millet." *Sport Squeeze, Inc. v. Pro-Innovative Concepts, Inc. et al.*, 1999 U.S. Dist. LEXIS 16681 (S.D. Cal., Mar. 31, 1999). 2856
"particles that pass through a screen" — "The verb 'pass' describes the closest preceding noun: 'particles.' To paraphrase the meaning of this claim, the additive is made up of particles which are of a size small enough to pass through a screen with four inch square openings." *Harsco Corp. v. North Star Bluescope Steel, LLC*, 2007 U.S. Dist. LEXIS 55335 (N.D. Ohio, July 31, 2007). 2857

"particulate material which is loosely packed such that it is gas permeable" — "particles/particulate-material arranged such that gas may pass through it." *Heraeus Electro-Nite Co. v. Midwest Instrument Co.*, 2007 U.S. Dist. LEXIS 81685 (E.D. Pa., Nov. 1, 2007). 2858

"first and second case halves which are coupled to each other at a parting plane extending to obliquely intersect an axis of said first and second bearing portion" — "two crankcase portions connected together at a separation surface that crosses, at a slant, an axis for the supports for opposite ends of a crankshaft, the axis for the supports being a line coincident with the axis of rotation of the crankshaft." *American Honda Motor Co., Inc. v. Coast Distribution System, Inc.*, 609 F. Supp. 2d 1032 (N.D. Cal. 2009). 2859

"parting surface" — "signifies the faces of the two mold parts that either touch or lie adjacent when the mold parts are brought together in the 'combining' process described in Element (a). In applying the ordinary and customary meaning of 'combining' as the act of bringing into or joining in a close union or whole, the Court finds that not all of the faces of the two mold parts are required to actually touch each other; they need to be only in some proximity to each other." *In re: Turn-Key-Tech Matters*, 2002 U.S. Dist. LEXIS 25583 (C.D. Cal., Jan. 8, 2002). 2860

"a partition disposed in said interior chamber for defining an air plenum on one side of said partition" — "the partition must 'form' an air plenum on one side and a rack-receiving chamber on the other." *Elite Licensing, Inc. v. Thomas Plastics, Inc.*, 250 F. Supp. 2d 372 (S.D.N.Y. 2003). 2861


"passing an amount ... in excess of that necessary to saturate the wash load" — "continuously passing a concentrated detergent solution so that the total amount passed through would be greater than the amount necessary to saturate the wash load." *Whirlpool Corp., et al. v LG Electronics, Inc., et al.*, 2005 U.S. Dist. LEXIS 44479 (W.D. Mich., Nov. 8, 2005). 2866
"a first cable passing over one of said two floating pulleys" — "Pulleys, by virtue of their function, have a certain direction; if the cables are pointed upward, the tension is going up, and the cable is 'over' the pulley even if, from an earth-centered perspective, the cable is 'under' the pulley. In other words, the cable is 'over' the pulley relative to whether the tension is going upward or downward." *Vectra Fitness, Inc. v. Icon Health & Fitness, Inc.*, 246 F. Supp. 2d 1111 (W.D. Wash. 2003). 2867

"passing particulate articles from said microwave field to a temperature maintenance zone" — "the passing of the particulate articles from one area where microwave radiation exists to another area described as 'the temperature maintenance zone.'" *Sanitec Industries v. Micro-Waste Corp.*, 2006 U.S. Dist. LEXIS 86803 (S.D. Tex., Nov. 28, 2006). 2868


"said cord passing through each of said gussets along each of said edges such that said cord holds said edges together" — "said cord extending through each of said gussets along each of said edges such that said cord holds said edges near or in contact with one another." *Laboratories Perouse S.A.S. v. W.L. Gore & Associates, Inc.*, 528 F. Supp. 2d 362 (S.D.N.Y. 2007). 2870


"pattern, design, logo, or other marking" — "needs no further elaboration apart from the clarification that the coating need not be visible or have a decorative effect." *Coating Excellence International, LLC v. Thilmany LLC*, 500 F. Supp. 2d 1123 (E.D. Wis. 2007). 2875

"patterning the continuous layer of transparent conductive material" — "patterning the continuous layer of transparent conductive material on the second substrate. this patterning step may be done before or after the substrates are arranged such that they face each other." *Advanced Technology Incubator, Inc. v. Sharp Corp., et al.*, 2009 U.S. Dist. LEXIS 28456 (E.D. Tex., Mar. 11, 2009). 2876


"payload platform" — "the horizontal plate, piece or surface upon which the device (e.g., a camera) is directly mounted upon or affixed to." *Grober, et al. v. Mako Products, Inc. et al.*, 2009 U.S. Dist. LEXIS 51494 (C.D. Cal., Jun. 4, 2009). 2878


"peaks and valleys" — "the surface outside the point at which two slopes or curves meet is the peak, and the surface inside the point at which two slopes or curves meet is the valley." Medtronic Vascular, Inc., et al. v. Abbott Cardiovascular Systems, Inc., et al., 2007 U.S. Dist. LEXIS 95430 (N.D. Cal., Dec. 21, 2007). 2881

"material peculiarly responsive to a particular form of radiant energy not normally present in ambient light in amounts sufficient to cause said material to discolor" — "a substance which darkens or changes color when exposed to radiant energy (as previously defined by the court) of a type or intensity (or both) that is not ordinarily present in sunlight or normal indoor lighting." Flashmark Technologies, LLC, et al. v. GTECH Corp., et al., 2007 U.S. Dist. LEXIS 65317 (E.D. Tex., Sept. 2, 2007). 2882

"pen-light laser" — "a laser that is about as small and slender as a fountain pen; and the pen-light laser, consistent with the claim, may be part of a larger, portable laser unit." Irwin Industrial Tool Co. v. Orosz, et al., 2004 U.S. Dist. LEXIS 14325 (N.D. Ill., Jul. 26, 2004). 2883


"perforating" — "mean[s] using any device that creates 'channels' in the foam, which channels may be any cross-sectional shape, including rectangular, that allow for the accelerated release of a blowing agent." Dow Chemical Co. v. Astro-Valcour, Inc., 47 F. Supp. 2d 294 (N.D.N.Y. 1999). 2888

"perforation means" — "is not a means-plus-function element under § 112, P 6." Cole v. Kimberly-Clark Corp., 102 F.3d 524 (Fed. Cir. 1996). 2889 "I would honor the presumption and construe this claim under the statutory guidance of section 112." Id. (Rader, J., dissenting). 2890

"perimeter" — "the boundary or outer limit around a piece or product." Jenmar Corp. v. Excel Mining Systems, LLC, 2009 U.S. Dist. LEXIS 60836 (W.D. Pa., Jul. 16, 2009). 2891

"period of time" — "Since the 'desired effect' is a 'random faded effect,' the length of time is such to produce that effect." Levi Strauss & Co. v. Golden Trade, S.r.L., et al., 1995 U.S. Dist. LEXIS 22145 (S.D.N.Y., Nov. 30, 1995). \[2893\]

"a peripheral cover hook"; "a circumferentially extending peripheral cover hook" — "curved portion of the end that is to be formed into a portion of a double seam." Crown Packaging Technology, Inc., et al. v. Rexam Beverage Can Co., 486 F. Supp. 2d 366 (D. Del. 2007). \[2894\]

[i] "peripheral edge"; [ii] "peripheral edge extending theraround" — [i] "any edge of the face plate that is peripheral to the central opening of the face plate"; [ii] "a peripheral edge that extends entirely around the central opening." Hodak v. Jedco Products, Inc., et al., 2009 U.S. Dist. LEXIS 15400 (W.D. Pa., Feb. 25, 2009). \[2895\]

"a base wall including a peripheral portion from which extends an annular sidewall that diverges radially outwardly to a terminal edge" — "a base wall including a perimeter from which extends a sidewall shaped like a ring that continuously increases in radius from the central axis moving from the base wall to the edge of the sidewall at the open end of the washing machine basket." Maytag Corp. v. Electrolux Home Products, Inc., 411 F. Supp. 2d 1008 (N.D. Iowa 2006). \[2896\]

"peripheral region" — "any portion of the region that begins outside 70% of the radius of the third lens." Fujinon Corp. v. Motorola, Inc., 2009 U.S. Dist. LEXIS 83088 (D. Del., Sep. 11, 2009). \[2897\]

"peripheral side edge"; "the side edge" — "Because the court finds that word 'peripheral' is synonymous with the word 'edge' as a reference to the border of the motherboard, the court construes 'peripheral side edge' as having the same meaning as 'side edge,' the border of the motherboard which is not the front or rear of the motherboard." Tulip Computers, International B.V. v. Dell Computer Corp., 236 F. Supp. 2d 364 (D. Del. 2002). \[2898\]

"a peripheral zone being defined adjacent the peripheral edge of the anterior face that is tapered thinner toward the peripheral edge of the lens"; "a peripheral zone being defined adjacent the peripheral edge of the lens that tapers thinner toward the peripheral edge of the lens"; "a peripheral zone adjacent the peripheral edge of the anterior lens" — "a zone or region on the anterior face of the lens located adjacent to the peripheral edge, and thatcircumscribes and is separated from the inner zone by either a curved or rounded transition or by a discrete boundary, discontinuity or corner. The zone has a decreasing thickness toward the peripheral edge of the lens to provide comfort to the wearer." CooperVision, Inc. v. Ciba Vision Corp., 2007 U.S. Dist. LEXIS 51432 (E.D. Tex., July 16, 2007). \[2899\]

"permanently" — "affixed to an 'object' or 'container' such that a placard permanently attached or affixed to the substrate cannot be removed without damaging the placard or the 'object' or 'container.'" MPT, Inc. v. Marathon Labels, Inc., et al., 2006 U.S. Dist. LEXIS 4612 (N.D. Ohio, Feb. 7, 2006). \[2900\]

"permanently affixed" — "requires an unremovable connection between the bootie and the base." K-2 Corp. v. Salomon S.A., et al., 191 F.3d 1356 (Fed. Cir. 1999). \[2901\]

"permanently affixing the resilient structure within the fallopian tube" — "no construction is required for the phrase." Conceptus, Inc. v. Hologic, Inc., 2010 U.S. Dist. LEXIS 24247 (N.D. Cal., Mar. 16, 2010). \[2902\]


"a permeable membrane gas separation system for separating a nitrogen gas component and [a nitrox] component from said compressed air" — "a standard, commercially available, permeable membrane, nitrox and nitrogen gas separation system. The limitation is further narrowed by specifying a function for the element, namely to separate the compressed air into nitrogen and nitrox components." Undersea Breathing Systems, Inc. v. Nitrox Technologies, Inc., 985 F. Supp. 752 (N.D. Ill. 1997).

"permitting compression", "such that compression and rebound of said fork are permitted" — "To the extent that these phrases require construction, they should be read as 'allowing compression' and 'such that compression and expansion of said fork are allowed.'" SRAM Corp. v. Fox Factory, Inc., 2005 U.S. Dist. LEXIS 29164 (N.D. Ill., Nov. 18, 2005).


"personalized physical material" — "physical material bearing or containing information specific to an individual ticket holder." Flash Seats, LLC v. Paciolan, Inc., 2010 U.S. Dist. LEXIS 4181 (D. Del., Jan. 19, 2010).


"color photocopier" — "requires the ability both to print and photocopy subject matter with color." Trintec Industries, Inc. v. Top-U.S.A. Corp., 295 F.3d 1292 (Fed. Cir. 2002).

"photocopy machine" — "Because the patentee provided an explicit definition of 'photocopy machine' in the specification, and because no other intrinsic evidence casts doubt on that definition, the patentee's definition controls. Thus, a photocopy machine is defined to include not only conventional plain paper photocopy machines, but also systems with separate scanner and printing capabilities so long as the two parts function cooperatively with one-button operation to produce the effect of a plain paper photocopy machine." Jack Guttman, Inc. v. Kopykake Enterprises, Inc., 302 F.3d 1352 (Fed. Cir. 2002).

"photographic quality" — "having the qualitative properties -- for example resolution, clarity, and accuracy -- of a photograph." CIes Bisker, LLC v. 3M Co., et al., 2009 U.S. Dist. LEXIS 110055 (E.D. Tex., Nov. 25, 2009).


"extending pin"; "recess" — "the male component of a Morse taper"; "the female component of a Morse taper."  *Zimmer Technology, Inc., et al. v. Howmedica Osteonics Corp.,* 397 F. Supp. 2d 974 (N.D. Ind. 2005).  

"a pin, displaced laterally from said shaft" — "the terms used in this element are readily understandable and that no construction is necessary."  *Acco Brands, Inc. v. American Power Conversion Corp.,* 2003 U.S. Dist. LEXIS 27829 (E.D. Tex., Jul. 16, 2003).  


"pivot" — "According to Minebea, by construing the term 'pivot' to exclude sliding motion, the court did not give the term its ordinary meaning. ... We agree ... that the district court did not err in its construction of the claim term 'pivot.'"  *Minebea Co. v. Think Outside, Inc.,* 159 Fed. Appx. 197 (Fed. Cir., Jan. 25, 2006) (unpublished).  


"pivot axis" — "while technically correct, ... the pivot axis [cannot be] the imaginary line about which each louver member rotates as it closes and opens ..., because the claim expressly states that the longitudinal edge of each louver is supported by the pivot axis."  *Industrias Metalicas Marva, Inc. v. Empresas Lausell,* 1997 U.S. Dist. LEXIS 13773 (D.P.R., Aug. 27, 1997).  

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"pivot structure" — "a separate, functional structure located at the lower end of the post of the shift lever between the pivot flanges that pivotally attaches the shift lever to the pivot flanges and operationally couples the shift lever to the shifter." *Grand Haven Stamped Products Co. v. Dura Automotive System, Inc.*, 2004 U.S. Dist. LEXIS 31087 (W.D. Mich., Jun. 28, 2004). 2928

"a lock member pivotably attached to said second pivoting means" — "the claim limitation requires that the locking means be in physical proximity to the second pivoting means and that the 'interface' between the locking means and second pivoting means allow the locking means to pivot relative to the second pivoting means." *Apollo Corp. v. Mastercare Patient Equipment, Inc.*, 2003 U.S. Dist. LEXIS 11627 (D. Minn., Jul. 7, 2003). 2929

"swing arm, which is pivoted attached to the structure" — "a swing arm that is connected to the structure in a manner so that it can rotate about the connection, but cannot move excessively in the vertical direction and cannot oscillate excessively." *Deere & Co. v. Toro Co.*, 57 Fed. Appx. 442 (Fed. Cir., Feb. 4, 2003) (unpublished). 2930


"pivotally connected"; "pivotally connecting" — "attached (attaching) and capable of rotating or turning about the point of direct or indirect attachment." *World Wide Stationery Manufacturing Co., Ltd. v. U.S. Ring Binder, L.P.*, 2009 U.S. Dist. LEXIS 27873 (E.D. Mo., Mar. 31, 2009). 2932

[i] "pivotally connected to"; [ii] "movably connected to"; [iii] "rotatably connected to" — [i] "a connection between two bodies allowing the bodies to change positions relative to one another around or about at least one point"; [ii] "a connection between two bodies allowing the bodies to change positions relative to one another"; [iii] "a connection between two bodies allowing the movement of the bodies relative to one another around or about an axis." *Mass Engineered Design, Inc., et al. v. Ergotron, Inc., et al.*, No. 2:06-cv-00272-LED (E.D. Tex., Mar. 13, 2008). 2933


"without the necessity of pivotally moving said body greater than 90º from its non-dumping position" — "the court holds that the 90º limitation in claim 1 does not include frame twist or lean." *Circle R. Inc. v. Trail King Industries, Inc.*, 1999 U.S. Dist. LEXIS 23531 (D. Neb., Nov. 23, 1999). 2935


"pivoting discharge control member" — "refers to a structure which, in its normal position, covers the hopper car discharge opening to prevent discharge of material and which pivots to release material from the hopper car." *Union Pacific Railroad Co., et al. v. Herzog Contracting Corp.*, 2007 U.S. Dist. LEXIS 76143 (D. Neb., Oct. 4, 2007). 2937

"placing a collapsed soft tissue expander device in the pocket with the cover of the device facing the separated tissue layer" — "placing a collapsed soft tissue expander device in the pocket with the cover of the device facing the separated tissue layer,' where 'collapsed,' at this time and without the knowledge of the 'conventional manner,' means the device is empty of fluid." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006). 2939

"placing said laser emitting section of said emitting means into intraluminal contact with the blood vessel" — "deliberately putting the uncoated tip of the fiber optic line in physical contact with the wall of the blood vessel, which requires the drainage of blood and compression of the vein." Diomed, Inc. v. AngioDynamics, Inc., 2005 U.S. Dist. LEXIS 6189 (D. Mass., Apr. 12, 2005). 2940

"placing the patient in an operation site having a second coordinate system" — "placing the patient in a location at the operation site relative to a second coordinate system." NOMOS Corp. v. ZMED, Inc., 260 F. Supp. 2d 215 (D. Mass. 2002). 2941

"placing the patient with respect to a second coordinate system" — "placing the patient in a location relative to a second coordinate system." NOMOS Corp. v. ZMED, Inc., 260 F. Supp. 2d 215 (D. Mass. 2002). 2942

"planar" — "a surface that is flat." Old Town Canoe Co. v. Glenwa, Inc., 229 F. Supp. 2d 1151 (D. Or. 2001). 2943

"planar array" — "we agree with the district court's claim construction that the 'planar array' limitation refers to the filament means forming a flat plane before they are woven into the fence and not the overall look of the fence after the artificial greenery is woven into the fence." American Permahedge, Inc. v. Barcana, Inc., et al., 105 F.3d 1441 (Fed. Cir. 1997). 2944

"planar path" — "the Court construes the term 'planar' as 'flat or level.' However, 'planar path' does not mean 'precisely planar path' ... because the term 'precisely planar path' never appeared in any of the communications between the agency and the applicants or in the patent itself." Pregis Corp. v. Doll, et al., 2010 U.S. Dist. LEXIS 25582 (Mar. 16, 2010). 2945

"planar plate member" — "a perfectly flat sheet of a material of uniform thickness throughout." Leoutsakos v. Coll's Hospital Pharmacy, Inc., et al., 2003 DNH 109 (D.N.H., Jul. 8, 2003). 2946

"Because the written description of the '200 patent, the drawings of the '200 patent, and the dictionary definitions of 'planar' and 'plate' support the trial court's construction of 'planar plate member,' this court affirms its claim construction." Id., 98 Fed. Appx. 835 (Fed. Cir., May 4, 2004) (unpublished). 2947

"planar slot" — "a slot located within the guide member that can be used to position a saw used for resecting the bones that form the knee." Depuy Orthopaedics, Inc. v. Androphy, et al., 2000 U.S. Dist. LEXIS 661 (N.D. Ill. 2000). 2948

"top surface planarity deviation" — "the difference between the average height of the entire top surface and the point most removed from the average." STMicroelectronics, Inc. v. Motorola, Inc., 327 F. Supp. 2d 687 (E.D. Tex. 2004). 2949
[i] "the plane of the ridge regions"; [ii] "the plane of the trough regions" — [i] "the plane defined by the areas of the ridges"; [ii] "the plane defined by the areas of the troughs."

"plank" — "includes table tops whose length greatly exceeds their width." Lifetime Products, Inc. v. GSC Technology Corp., et al., 321 F. Supp. 2d 938 (N.D. Ill. 2004) 2955


"a plastic flow temperature above 120 degrees F" — "means that the adhesive must resist flow when exposed for 24 hours to 120 degrees F in both horizontal and vertical orientations." J.T. Eaton & Co., Inc. v. Atlantic Paste & Glue Co., 106 F.3d 1563 (Fed. Cir. 1997) 2953 Eaton submitted the declaration of Kenneth A. Nelson, the chemist who developed the claimed adhesive. Mr. Nelson's declaration disclosed a two-prong test for the claim requirement. That test requires, first, placing a 1/16 inch layer of adhesive upside-down in an oven preheated to 120 degrees F for sixteen hours. Second, the test requires that the adhesive be hung vertically in an oven at 77 degrees F for sixty-three hours. An adhesive meets Eaton's requirement if the glue does not flow from the tray during either of these tests. ... The district court properly used that claim interpretation. This court errs in departing from the full context of the administrative record, and importing a false limitation from the prosecution history." Id. (Rader, J., dissenting) 2954

"plastic foil" — "a self-supporting film or sheet of plastic." Viskase Cos., Inc. v. World Pac International AG, et al., 2010 U.S. Dist. LEXIS 49720 (N.D. Ill., May 18, 2010) 2955

"plastic material" — "To the extent that this construction requires 'plastic material' to be limited to elastomeric plastic, the contention is rejected." Genlyte Thomas Group LLC v. National Service Industries, Inc., et al., 262 F. Supp. 2d 747 (W.D. Ky. 2003) 2956

"rigid plate" — "a rigid, flat, comparatively thin piece of material of more or less uniform thickness and even surface with generally wide breadth." Briggs & Riley Travelware, LLC v. Paragon Luggage, Inc., 2002 U.S. Dist. LEXIS 24048 (S.D.N.Y., Dec. 6, 2002) 2957

"toe plate: "heel plate" — "structural elements that must be separate elements from the skate boot and have an actual and identifiable upper surface that is affixed to the sole surface of the skate boot." V-Formation, Inc. v. Benetton Group SpA, et al., 2002 U.S. Dist. LEXIS 22394 (S.D.N.Y., Nov. 19, 2002) 2958

"top plate" — "a flat member that is separate from the fin structures." ICHL, LLC v. NEC Corp. of America, et al., 2010 U.S. Dist. LEXIS 38942 (E.D. Tex., Apr. 20, 2010) 2959

"moving platform" — "is used in the claim in accordance with its plain and ordinary meaning to one skilled in the art and is not limited to a ground-based platform." Geospan Corp. v. Pictometry International Corp., 2010 U.S. Dist. LEXIS 74105 (D. Minn., Jul. 22, 2010) 2960

"play" — "space between the locking surfaces of interlocking panels such that the locking surfaces can be displaced relative to one another in the direction of their joined edges." Alloc, Inc., et al. v. Pergo, LLC, 2009 U.S. Dist. LEXIS 62881 (E.D. Wis., Jul. 2, 2009) 2961
"pneumatic cylinder" — "encompasses cylinders that do not use pressure activated seals," *Saunders Group, Inc. v. Comfortrac, Inc., et al.*, 492 F.3d 1326 (Fed. Cir. 2007).  

"forced point-bonding" — "means two or more primary particles joined together by an adhesive where the binder has been forced under pressure into some of the primary particle's macropores or exterior voids." *KX Industries, L.P., et al. v. PUR Water Purification Products, Inc.*, 108 F. Supp. 2D 380 (D. Del. 2000).  


"plate" — "a broad, flat piece of material." *Cortland Line Co., Inc. v. Orvis Co., Inc.*, 203 F.3d 1351 (Fed. Cir. 2000).  

"plate" — "a structure that is thinner than it is wide or long and that may be flat, curved or twisted and perforated such as a screen or net but that is not a tube." *Neles-Jamesbury, Inc. v. Fisher Controls International, Inc., et al.*, 989 F. Supp. 393 (D. Mass. 1998).  


"pleat" — "two legs which are joined to one another at a crown and to a leg of an adjacent pleat at a root." *Pall Corp. v. Cuno Inc.*, 2007 U.S. Dist. LEXIS 59917 (E.D.N.Y., Aug. 14, 2007).  

"pliable sheet material" — "a thin, flat bendable material, similar to a medical grade air permeable tissue, porous thin plastic sheet or a plastic mixed or impregnated paper tissue, having one side either coated or permeated with a light absorbing material and having a layer of pressure sensitive adhesive on its opposing side." *Mueller Sports Medicine, Inc. v. Beveridge Marketing, LLC, et al.*, 369 F. Supp. 2D 1028 (W.D. Wis. 2005).  

"pliable tubular body" — "a bendable tube shape structure having a single compartment that is formed by a closed front end and a rear edge that bounds an opening, through which opening an amount of lead shot is inserted prior to closing the opening." *Combined Tactical Systems, Inc. v. Defense Technology Corp. of America, et al.*, 426 F. Supp. 2d 140 (S.D.N.Y., April 4, 2006).  


"plunger" — "a device that can be inserted into a blender." Vita-Mix Corp. v. Basic Holdings, Inc., et al., 514 F. Supp. 2d 990 (N.D. Ohio 2007).

"plurality" — "at least two." York Products, Inc. v. Central Tractor Farm & Family Center, et al., 99 F.3d 1568 (Fed. Cir. 1996).

"plurality" — "connotes an indefinite numerical range. The range is bounded by two ... and ... infinity." Bilstad, et al. v. Wakalopulos, et al., 386 F.3d 1116 (Fed. Cir. 2004).


"a plurality of flexible sheet members enclosing the container" — "require[es] two or more flexible sheet members in the enclosing frame or outside walls, etc." Heil Co. v. McNeilus Truck, et al., 1999 U.S. Dist. LEXIS 23371 (N.D. Ala., Aug. 5, 1999).


"plurality ... of projections" — "we find no reason to give 'plurality ... of projections' any definition other than its ordinary definition of 'two or more.'" Dayco Products, Inc. v. Total Containment, Inc., 258 F.3d 1317 (Fed. Cir. 2001).


"pocket" — "a notch with an opening shaped to mate (i.e. 'to join or fit together') with a rivet, thereby aiding to secure the balance shoe within the U-shaped channel of the inverted window balance." Amesbury Group, Inc., et al. v. Caldwell Manufacturing Co., 2006 U.S. Dist. LEXIS 2175 (D. Mass., Jan. 20, 2006).

"point" — "the position where the scraping edges intersect"; "the position where the scraping edges and rearward edges intersect." Eazypower Corp. v. Alden Corp., 509 F. Supp. 2d 737 (N.D. Ill. 2007).

"touch point"; "approach point" — "a theoretical point at which the clutch plates just begin to touch"; "a point intermediate full disengagement and the touch point, preferably almost to the touch point." Eaton Corp. v. ZF Meritor LLC, et al., 504 F. Supp. 2d 217 (E.D. Mich. 2007).
"point of sale location" — "a location where a consumer goes to purchase material objects embodying predetermined or preselected information. This construction permits a home to be a point of sale location. A point of sale location need not have more than one blank material object and it need not have any material objects separately for sale as blanks." Interactive Gift Express, Inc. v. CompuServe, Inc., et al., 256 F.3d 1323 (Fed. Cir. 2001). 2989

"pointer element"; "point element" — "an indicator that points either unidirectionally or bidirectionally in two opposite directions." Kathrein-Werke KG v. Radiacion y Microondas S.A., et al., 2010 U.S. Dist. LEXIS 50468 (N.D. Ill., May 17, 2010). 2990

"polygon" — "a closed arrowhead shape made up of curved lines, straight lines, or a combination of curved and straight lines." Medtronic Vascular, Inc., et al. v. Abbott Cardiovascular Systems, Inc., et al., 2007 U.S. Dist. LEXIS 95430 (N.D. Cal., Dec. 21, 2007). 2991


"porous material" — "a material having small openings (or pores) that allow gases and liquids to pass through while sediment and other solids are substantially blocked from passing through." Atlantic Construction Fabrics, Inc., et al. v. Dandy Products, Inc., 64 Fed. Appx. 757 (Fed. Cir., Apr. 23, 2003) (unpublished). 2993

"a porous membrane of essentially uniform composition and a porosity gradient from one planar surface thereof to the other" — "We agree with the district court that 'porosity gradient', as used in the claims of the '192 patent, requires 'a gradual change in the porosity from one planar surface [of the membrane] to the other.' ... Claim 11 does not require the membrane to have a porosity gradient prior to chemical conditioning, but instead requires that the membrane of the chemically conditioned reagent system have a porosity gradient. In other words, the proper construction of claim 11 requires the membrane to have a porosity gradient, but does not require the gradient to be present prior to chemical conditioning." Technical Chemicals & Products, Inc., et al. v. Home Diagnostics, Inc., 1998 U.S. App. LEXIS 7163 (Fed. Cir., Apr. 9, 1998) (unpublished). 2994


"portable" — "a structure (upon which the bin, conduit, and meter are mounted) that is capable of being transported with an operationally significant amount of particulate matter in the bin." Rosen's, Inc., et al. v. Van Diest Supply Co., et al., 2004 U.S. Dist. LEXIS 5435 (D. Minn., Mar. 30, 2004). 2999
"portable case" — "a compact case that can be made of light but rigid plastic material and that houses only a color image sensing module and a motion mechanism." Plustek, Inc. v. Syscan, Inc., et al., 2009 U.S. Dist. LEXIS 122777 (N.D. Cal., Dec. 21, 2009).

"portable ultrasound diagnostic instrument" — "an ultrasonic diagnostic instrument used to evaluate a patient's condition or state and that by design is carried or moved about." General Electric Co., et al. v. Sonosite, Inc., 2008 U.S. Dist. LEXIS 33223 (W.D. Wis., Jan. 8, 2008).

"portion" — "we hold that the district court should have construed 'portion' broadly to contemplate parts that are either 'separate' or 'integral.'" Rexnord Corp. v. Laitram Corp., et al., 274 F.3d 1336 (Fed. Cir. 2001).


"non-perforated outside wall portion"; "perforated bottom portion"; "non-perforated inside wall portion" — "that portion of the trough structure which constitutes the inside wall"; "that portion of the trough structure which constitutes the bottom section"; "that portion of the trough structure which constitutes the outside wall." Kristar Enterprises, Inc. v. Revel Environmental Marketing, Inc., et al., 1999 U.S. Dist. LEXIS 1417 (N.D. Cal., Feb. 9, 1999).

"Based on the proper construction of the terms 'bottom portion' and 'inside wall portion' in claim 1, the district court was correct to grant summary judgment to Revel on the issue of literal infringement." Id., 2000 U.S. App. LEXIS 7351 (Fed. Cir., Apr. 24, 2000) (unpublished).

"upper portion"; "lower portion"; "center portion" — "can be either separate parts ... or parts of an integral whole." Spinmaster, Ltd., et al. v. Overbreak LLC, 404 F. Supp. 2d 1097 (N.D. Ill. 2005).

"the portion of open pores in the material forming said plate is 85 to 95% based on total pore volume" — "the above term needs no construction because it means what it says and is clear on its face." ITP Interpipe, Inc., et al. v. Technip Offshore, Inc., 2007 U.S. Dist. LEXIS 7551 (S.D. Ala., Jan. 31, 2007).

"a portion of said clearance is maintained irrespective of variations in the deflection of said panels" — "requires no construction." Wayne-Dalton Corp. v. Amarr Co., 2007 U.S. Dist. LEXIS 65382 (N.D. Ohio, Sept. 5, 2007).

"a first portion of the elements of said pattern are of a first shade and a second portion of the elements of said pattern are of a second shade different from said first shade" — "the specification does not require the complete absence of elements of the first shade from the second." Wesley Jessen Corp. v. Coopervision, Inc., 2002 U.S. Dist. LEXIS 5172 (C.D. Cal., Mar. 14, 2002).


"an implant, at least a portion of which is expandable" — "a portion, but not all of the implant, is expandable." MarcTec, LLC v. Johnson & Johnson, et al., 2009 U.S. Dist. LEXIS 27011 (N.D. Ill., Mar. 31, 2009).
"portion with a substantial longitudinal component" — "a part of a member that has ends at positions a discernable distance from each other with respect to the stent's longitudinal axis." Medinol Ltd. v. Guidant Corp., et al., 2004 U.S. Dist. LEXIS 19705 (S.D.N.Y., Sept. 30, 2004).  


"sensing position" — "We agree with Northfield that claim 1 of the '901 patent and claim 20 of the '280 patent, while not explicitly identifying the position of the coupon sensor, must be understood to have the sensor between the feed rolls and the positioning rolls." Unique Coupons, Inc. v. Northfield Corp., et al., 12 Fed. Appx. 928 (Fed. Cir., Jun. 13, 2001) (unpublished).  

"positionable between" — "able to be switched between." SRAM Corp. v. Fox Factory, Inc., 2005 U.S. Dist. LEXIS 29164 (N.D. Ill., Nov. 18, 2005).  

"base ... positionable on a surface so as to permit a video game player to stabilize said base by placing lower body weight on said base" — "a base that would permit (but would not require) a player to make it more stable by application of the player's lower body weight on the base." JVW Enterprises, Inc. v. Interact Accessories, Inc., et al., 2002 U.S. Dist. LEXIS 27885 (D. Md., Feb. 1, 2002).  

"member positionable within said hole" — "means the blunt-nosed screw, whether a unitary or multi-piece structure, is capable of being placed inside the hole that extends through the clamp to the slot surrounding the standing seam." Caught Fish Enterprises, LLC, et al. v. Contek, Inc., 509 F. Supp. 2d 954 (D. Colo. 2007).  


"positioned" — "[h]aving found 'positioned' does not carry an intent requirement, it is unnecessary to further construe the term." ADC Telecommunications, Inc. v. Switchcraft, Inc., 2005 U.S. Dist. LEXIS 19593 (D. Minn., Sept. 9, 2005).  

"positioned adjacent the jaw member" — "placed so as to be near the jaw member." Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F. Supp. 2d 93 (D. Conn. 2006).  


"a generally inelastic heel portion and an extendible region positioned between a toe region of the liner and the tongue" — "the only reasonable construction of the claim is that the extendible region of the liner must be positioned entirely between the toe region of the liner and the tongue." Benetton Sportsystem USA, Inc. v. First Team Sports, Inc., 2001 U.S. Dist. LEXIS 24375 (D.N.J., Aug. 9, 2001).  

"[T]he disputed phrase 'extendible region positioned between a toe region of the liner and the tongue' should be construed to cover a liner in which the 'extendible region' overlaps or entirely covers the 'toe region.'" Id., 38 Fed. Appx. 599 (Fed. Cir., Jun. 14, 2002) (unpublished).
"the opening at the distal end of the tube positioned longitudinally from the tube" — "the opening at the distal end of the tube that is perpendicular to the tube." Erbe Elektromedizin Gmbh, et al. v. Canady Technology, LLC, et al., 512 F. Supp. 2d 297 (W.D. Pa. 2007). 3025

"said opening and said source of light being positioned to prevent said beam of light from directly impinging on said side of said vehicle" — "preventing the 'beam of light' from 'directly impinging' means that no light directly from the source strikes the vehicle." Krippelz v. Ford Motor Co., 2003 U.S. Dist. LEXIS 2538 (N.D. Ill., Feb. 24, 2003). 3026

"being positioned to restrict fluid flow through said inner tubular flow path" — "the Court will not construe the term at issue." Davis-Lynch, Inc. v. Weatherford International, Inc., 2009 U.S. Dist. LEXIS 33414 (E.D. Tex., Apr. 20, 2009). 3027

"a manifold positioned within an open end [of an atomizing tank]" — "the atomizing nozzle and atomizing tank (i.e., outlet) tube (65), both of which are part of the manifold, are located in the open end of the atomizing tank. It is not necessary for any other portion of the manifold to occupy the opening, nor is it necessary that the nozzle and outlet tube take up the entire cavity formed by the opening and the open end of the atomizing tank." Sulfur-Tech Water Systems, Inc. v Kohlenberg, et al., 162 F. Supp. 2d 743 (N.D. Ohio 2001). 3028


"positioning a flexible strand in the knee such that the flexible strand extends from outside of the knee, through the transverse hole and into the opening in the femur through the first sidewall of the opening, out through the entrance of the opening and through a tunnel in the tibia, and, after forming a loop outside of the tibial tunnel, extending back into the tibial tunnel and into the opening through the entrance of the opening, and out of the knee through the transverse hole in the opposite sidewall of the opening"; "positioning a flexible strand in the knee such that the flexible strand extends from outside of the knee, through the transverse hole and into the opening in the femur through the first sidewall of the opening, out through the entrance of the opening and through a tunnel in the tibia, and, after forming a loop outside of the tibial tunnel, extending back into the tibial tunnel and into the opening through the entrance of the opening, and into the transverse hole in the opposite sidewall of the opening" — "positioning a flexible strand in the knee such that the flexible strand extends from outside of the knee, through the transverse tunnel on one side of the knee and into the opening in the femur. The flexible strand then extends out through the entrance of the opening and through and out of a tibial tunnel. The flexible strand then extends back into and through the tibial tunnel and into the opening, and into the transverse tunnel on the opposite sidewall of the opening. A loop exists where the flexible strand is at its furthest point outside the tibial tunnel." Arthrex, Inc. v. DePuy Mitek, Inc., 2006 U.S. Dist. LEXIS 95465 (M.D. Fla., Oct. 16, 2006). 3030


"positioning mechanism"; "positioning member" — "To avoid any confusion or inconsistency between the terms, both terms are construed to have the same agreed meaning." Insight Technology Inc. v. SureFire, LLC, 2006 U.S. Dist. LEXIS 11762 (D.N.H., Feb. 28, 2006). 3033

"positioning said protective barrier device in a juxtaposed relation to said frangible portions of said structure" — "the protective barrier device is positioned in front of the frangible portions, and is spaced apart from the frangible portions of the structure at a minimum calculable distance." Armor Screen Corp. v. Storm Catcher, Inc., et al., 2009 U.S. Dist. LEXIS 33407 (S.D. Fla., Mar. 10, 2009). 3034

"positive driving" — "is associated with pushing the lever into the cam wheel." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997). 3035


"means for positively engaging" — "we conclude, as did the district court, that 'positively engaging' requires (1) resisting axial movement by the interaction of a collar with a discontinuity or groove in the wall of a hole; and (2) introduction of an interference so that 'lock-up' is achieved." Koenig, et al. v. Fugro-McClelland (Southwest), Inc., et al., 2000 U.S. App. LEXIS 14607 (Fed. Cir., Jun. 2, 2000) (unpublished). 3038


"power source" — "mean[s] only parts of the patch that generate power, and parts of the patch that merely regulate the provision of power to the patch, but do not individually generate power, are not part of the 'power source'." Travanti Pharma, Inc. v. Iomed, Inc., 2006 U.S. Dist. LEXIS 2636 (D. Minn., Jan. 11, 2006). 3040


"predetermined accurate work position" — "the fixed placement of the tool in the tool holder. This placement is achieved by precisely measuring the distance from the surface of the center axis of the tool to the appropriate surfaces of the tool holder in advance, such that the flat mounting surfaces of the tool directly contact the corresponding surfaces of the tool holder, without any spaces in between, thereby maintaining the cutting tool's original placement until the tool is removed." Utica Enterprises, Inc. v. Federal Broach and Machine Co., 258 F. Supp. 2d 706 (E.D. Mich. 2003).

"predetermined asymmetric isodose curves" — "isodose curves determined before radiation is administered which are not substantially the same shape as the apparatus volume and/or not concentric with the apparatus volume." Hologic, Inc., et al. v. SenoRx, Inc., 2009 U.S. Dist. LEXIS 12274 (N.D. Cal., Feb. 18, 2009).

"predetermined bevelling or grooving path" — "is limited to storage, comparison and selection of a collection of paths that have been determined beforehand, i.e. they actually exist in the memory of the control means of the device and are not calculated from a combination of different values using equations." Essilor International v. Nidek Co., Ltd., et al., 1998 U.S. Dist. LEXIS 22960 (E.D.N.Y., Jul. 27, 1998).

"predetermined condition" — "the occurrence of a current imbalance from an actual or artificially induced ground fault." Leviton Manufacturing Co. v. Zhejiang Dongzheng Electrical Co., et al., 506 F. Supp. 2d 646 (D.N.M. 2007).

"maintaining the predetermined confined shape between the opposed members while changing the confined area thereof during said movement of the opposed members, whereby said movement of the members toward each other constricts the opening to restrict the discharge of material from within the bag and gathers the neck in such a way that the neck may be easily tied, and movement of said members away from each other allows the opening to enlarge such that the material from within the bag is discharged more freely, said engagement of the neck within the predetermined shape minimizing tearing stresses placed on the bag by the opposed members" — "the undersigned again finds that a 'predetermined confined shape' is properly construed in the context of this patent as describing a shape or contour that is preset by the apparatus and is not altered (or changed) by the functioning of the apparatus. In other words, the area of the shape created by the apparatus may enlarge or shrink with its movement, but the shape itself should remain constant." Spiroflow Systems, Inc. v. Flexicon Corp., 2007 U.S. Dist. LEXIS 62715 (W.D.N.C., Aug. 24, 2007).

"predetermined constant spacing"; "predetermined constant spacing between said inner spatial volume and radiation transparent wall" — "no construction necessary"; "spacing predetermined by one skilled in the art between the wall or edge of the inner spatial volume and the radiation transparent wall of the outer, closed, inflatable chamber, when inflated, which is constant in all directions if the outer chamber is spherical, or constant along a radial plane if the outer chamber is not spherical." Xoft, Inc. v. Čtyřc Corp., et al., 2007 U.S. Dist. LEXIS 34468 (N.D. Cal., April 27, 2007).
"the predetermined curvatures of the ends of said contact face displaying radii of curvature smaller than the distance from said center point of the contact surface to the outwardly-most extending ends of said bars" — "The outwardly-most extending ends define a contact face radius which is less than the distance from the wheel center to the outwardly-most extending ends of the contact face. The contact face radius must be the same as the bar radius, defined by the outwardly-most extending ends of the bars. Both the contact face radius and the bar radius must be predetermined (selected or determined prior to the forming operation of the hub). The outwardly-most extending ends of said bars are the points of the bars that are the furthest from the center of the hub."  

"predetermined direction along a predetermined path" — "a 'helical' path is the only interpretation the element 'predetermined path' can bear. The Weber patent teaches against changing the direction of the sheets, and therefore, requires a continuous rotational and axial movement, which results in a helical path. Although the patent does state that a helical path is 'preferable,' there is no other path that could be created by application of the Weber patent."  

"predetermined distance" — "a measurement that is specified or determined beforehand."  

"predetermined general direction" — "the prevalent direction of flow determined before injection of the liquid plastic into the mold."  

"predetermined incubation period" — "a time period determined in advance, which requires presetting the length of time of the incubation period, either directly or by reference to criteria such as glucose concentration. ... [T]his term mandates knowledge of the duration of the incubation period prior to the test."  

"predetermined minimum safety distance" — "the minimum distance to prevent an electrode from coming into contact with the tissue."  

"predetermined number of cardiac cycles" — "unless the specification clearly indicates that 'cardiac cycles' was intended to include the singular, the ordinary meaning will control. ... and the intrinsic evidence supports this ordinary meaning."  

"predetermined operations"; "predetermined expected response" — "reading 'predetermined' to mean 'determined beforehand' and 'expected' to mean 'predicted' is entirely consistent with the purpose of the method and the specification."  

"predetermined plunger performance" — "Predetermined in this context simply means determined beforehand, and may include performance that is normal or subject to correction." *Ferguson Beauregard/Logic Controls, et al. v. Mega Systems, LLC, et al.*, 350 F.3d 1327 (Fed. Cir. 2003).  

"control means for controlling said pressure controller so as to cause said breathing gas to be delivered to such a patient at a first pressure level during at least a portion of said inspiratory phase of said breathing cycle and in accordance with a predetermined pressure profile during said expiratory phase of said breathing cycle" — "predetermined pressure profile ... is not part of the means plus function language." *Respironics, Inc., et al. v. Invacare Corp.*, 2006 U.S. Dist. LEXIS 62233 (W.D. Pa., Aug. 30, 2006).  


"predetermined sequence" — "in independent claims 1, 14 and 25 means: the order in which eggs are released from the egg-carrying conveyor so that each released egg drops into the receiving station for the egg's particular grade, the order being defined before the eggs arrive at the locations from which they are released. ... in dependent claim 30 [ ] mean[s] an order that causes eggs to drop into particular receiving stations and that also effects an equal distribution of released eggs across the width of the receiving station." *Moba, B.V., et al. v. Diamond Automaton, Inc.*, 1999 U.S. Dist. LEXIS 1167 (E.D. Pa., Jan. 27, 1999).  

"predetermined spacing"; "a predetermined spacing is provided between said inner spatial volume and the expandable surface element"; "a predetermined spacing between said inner spatial volume and the expandable surface element" — "no construction necessary"; "the distance between the inner spatial volume and the expandable surface element is determined in advance." *Xoft, Inc. v. Cytyc Corp., et al.*, 2007 U.S. Dist. LEXIS 34468 (N.D. Cal., April 27, 2007).  

"applying a positive direct current to said distal tip for a predetermined time period" — "applying a positive direct current to the distal tip for a time period determined in advance of the initiation of the detachment process." *Regents of the University of California v. Micro Therapeutics, Inc., et al.*, 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007).  


"a preformed endless loop" — "a loop of ligation material, regardless of size, having either a unitary, circular structure, or formed by joining the ends of a linear length of ligation material." *Callicrate v. Wadsworth Manufacturing, Inc., et al.*, 217 F. Supp. 2d 1101 (D. Mont. 2002).
"preliminarily" — "The plain meaning of 'preliminarily' is 'at first' or 'prior to.'" Combined Tactical Systems, Inc. v. Defense Technology Corp. of America, et al., 426 F. Supp. 2d 140 (S.D.N.Y., April 4, 2006).

"a preselected segment of a central portion of each bill" — "a central, approximately two-inch portion of a bill scanned across the central portion of the narrow dimension of the bill." Cummins-Allison Corp. v. Glory Ltd., et al., 2005 U.S. Dist. LEXIS 38857 (E.D. Tex., Dec. 12, 2005).

"to preserve structural integrity" — "include[s] protecting, or keeping from harm or destruction, the parts and arrangement of components of the gas turbine engine." Dow Chemical Co. v. Mee Industries, et al., 264 F. Supp. 2d 1018 (M.D. Fla. 2002).


"preslit orifice"; "being preslit" — "an opening that is cut in the seal before the seal is axially compressed"; "having had an opening cut in the seal before the seal was axially compressed." ICU Medical, Inc. v. Alaris Medical Systems, Inc., 2006 U.S. Dist. LEXIS 96077 (C.D. Cal., July 17, 2006).

"pressed against" — "we conclude that 'hollow spherically-shaped portion' includes the edge of that portion and that the screw head is 'pressed against' the 'hollow spherically-shaped portion' if it presses against all or any part of that portion--including the edge." Depuy Spine, Inc., et al. v. Medtronic Sofamor Danek, Inc., et al., 469 F.3d 1005 (Fed. Cir. 2006).

"pressed meat" — "meat products that are formed from multiple joints of meat, that is, from pieces of meat that are separated from the bone and from one another into numerous small pieces, then reformed into a single conjoined meat product." Logan v. Smithfield Foods, Inc., et al., 2009 U.S. Dist. LEXIS 27635 (S.D. Tex., Mar. 31, 2009).


"pressure being applied to the applicator ... so as to cause the applicator to deform the skin region thereunder" — "pressure being applied to the applicator so as to cause the applicator to compress the area of skin under it." Palomar Medical Technologies, Inc., et al. v. Cutera, Inc., 2005 U.S. Dist. LEXIS 32117 (D. Mass., Dec. 12, 2005).

"pressure controlled valve ... to prevent liquid from exiting the carafe through the liquid passageway" — "a valve, moved between open and closed positions by pressure and/or gas and not by mechanical contact with any part or component by manipulation." Sunbeam Products, Inc. v. Delonghi America, Inc., et al., 2007 U.S. Dist. LEXIS 123 (D.N.J., Jan. 3, 2007). "As used herein, the term 'pressure controlled valve' means that the described valves are moved between opened and closed positions by pressure of liquid and/or gas, and not by moving mechanical contact with any part or component, or by manipulation." Id., 2007 U.S. Dist. LEXIS 33000 (D.N.J., May 2, 2007).


"pressure responsive element" — "an element of a device which can move from a first position where it prevents fluid flow into the device, to a second position, where it allows fluid flow into the device." Aqua-Lung America, Inc. v. American Underwater Products, Inc., et al., 2009 U.S. Dist. LEXIS 18172 (N.D. Cal., Feb. 26, 2009). 3084


"pressure-sensitive variable-conductance analog sensor"; "pressure-sensitive variable-conductance sensor"; "pressure-sensitive analog sensor"; "pressure-sensitive variable-conductance structural arrangement"; "pressure-sensitive variable-conductance structure"; "pressure-sensitive variable sensor"; "pressure-sensitive ... button sensor" — "an electricity manipulating device that uses pressure-sensitive variable conductance material to vary electrical output as varying physical force is applied." Anascape, Ltd. v. Microsoft Corp., et al., 2007 U.S. Dist. LEXIS 88248 (E.D. Tex., Nov. 30, 2007). 3087

"pressure-sensitive variable conductance material" — "a substance that changes in conductivity to allow a greater flow of electric current through it, as pressure is applied to it." Anascape, Ltd. v. Microsoft Corp., et al., 2007 U.S. Dist. LEXIS 88248 (E.D. Tex., Nov. 30, 2007). 3088

"pressure-sensitive variable conductance of one of said buttons" — "the conductivity of a pressure-sensitive variable-conductance sensor associated with one of said buttons." Anascape, Ltd. v. Microsoft Corp., et al., 2007 U.S. Dist. LEXIS 88248 (E.D. Tex., Nov. 30, 2007). 3089

"pressurized fluid generating means mounted on said frame" — "is not a means-plus-function clause. ... Any person of ordinary skill in the art would agree that this element merely refers to an apparatus for providing pressurized fluid, i.e., a pump." Toro Co. v. John Deere & Co., 143 F. Supp. 2d 1122 (D. Minn. 2001). 3090

"pretensioned" — "flexible member is pushed in a direction to impart or store spring tension in that member before the attachment of the membrane to the flexible member." Polyvision Corp. v. Smart Technologies, Inc., et al., 501 F. Supp. 2d 1042 (W.D. Mich. 2007). 3091 "PolyVision contends that reconsideration of the Court's construction of the claim terms 'pretensioned' and 'biased to tension' is required under the Federal Circuit's decision in Andersen ... The Court has read Andersen and, for the reasons set forth below, disagrees with PolyVision that Andersen compels a different result." Id., 2007 U.S. Dist. LEXIS 66492 (W.D. Mich., Sept. 7, 2007). 3092
"prevent airway collapse, wherein said minimally sufficient pressure is a summation of a pressure needed to prevent airway collapse and pressure needed to overcome respiratory effort" — "prevent airway collapse, wherein said minimally sufficient pressure is a summation of a pressure needed to prevent airway collapse and pressure needed to overcome respiratory effort." Respironics, Inc., et al. v. Invacare Corp., 2006 U.S. Dist. LEXIS 62233 (W.D. Pa., Aug. 30, 2006).

"prevent pivoting" — "means to hinder pivoting from the initial position to the ready position, by less than 45 degrees." Penn Fabrication (U.S.A.) Inc. v. El-Com Hardware, Inc., et al., 1999 U.S. Dist. LEXIS 21955 (C.D. Cal., Dec. 27, 1999).

"prevent the passage of solids and liquids" — "means to 'substantially stop the passage of solids and liquids.' ... The specification does not require the term to carry only the most restrictive meaning that the rearward edge of the shield 'not allow' the passage of liquids or solids." Protective Optics, Inc. v. Panoptx, Inc., 458 F. Supp. 2d 1053 (N.D. Cal. 2006).

"wall means ... for preventing passage of atmospheric air"; "mechanical shaft seal means ... for preventing the flow of atmospheric air" — "the court interprets the wall means to call for a virtual elimination of any air from passing through the seal. On the other hand, the shaft seal means requires a disruption of any smooth, continuous air travel, which could include something less than a virtual stoppage." Aqua-Aerobic Systems, Inc. v. Aerators, Inc., et al., 1998 U.S. Dist. LEXIS 8237 (N.D. Ill., Jun. 4, 1998) "The district court correctly rejected Aqua-Aerobic's proposal that the claim should not be limited by the amount of air that passes or flows through the system but instead should be construed to cover any downflow mixer that does not suffer cavitation at the propeller. That is not the invention described and claimed by the patentee." Id., 211 F.3d 1241 (Fed. Cir. 2000).

"preventing the formation of an air pocket" — "preventing the formation of an air pocket [around rotating blades positioned in a pitcher of a blender] but not including a method of stirring to disperse, dislodge, or break-up an air pocket after it has begun to form." Vita-Mix Corp. v. Basic Holdings, Inc., et al., 514 F. Supp. 2d 990 (N.D. Ohio 2007).


"primary metal particles settling area" — "the first and most important settling area, also implying there is more than one settling area." Rattler Tools, Inc. v. Bilco Tools, Inc., et al., 2007 U.S. Dist. LEXIS 49124 (E.D. La., July 6, 2007).

"primary spectacle frame" — "the entirety of the primary eyeglass frame with the exception of the lenses, the plastic nose pieces (which touch the upper sides of the wearers's nose), and the legs, which extend back over the wearers' ears; thus, the primary spectacle frame includes the lens rims (if provided), nose bridge, extensions, projections (if provided), the first magnetic member and conceivably rim-locks." Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc., 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003).

"printed board" — "a generally flat piece of material typically fabricated from insulating material that provides support and structural integrity for a plurality of electrically interconnected components comprising a circuit, with some or all of the conducting interconnection pattern formed on the board." Murata Manufacturing Co., Ltd. v. Bel Fuse Inc., 445 F. Supp. 2d 938 (N.D. Ill., July 28, 2006).
"printer" — "printer that retains no record of the data printed (including but not limited to a thermal jet printer, a dot matrix printer, an ink-jet printer, a bubble jet printer, a laser printer, and the like)." Avante International Technology Corp. v. Diebold Election Systems, et al., 2007 U.S. Dist. LEXIS 61011 (E.D. Mo., Aug. 20, 2007). 3103


"prior agreement" — "a prior arrangement between the luggage screening entity and another party to process special locks in accordance with the special procedure." Travel Sentry, Inc. v. Tropp, 2009 U.S. Dist. LEXIS 87923 (E.D.N.Y., Sep. 24, 2009). 3105

"prism" — "an optical element, made up of two or more planar or conical surfaces, capable of changing the direction or path of light." Nikon Corp., et al. v. ASM Lithography B.V., 308 F. Supp. 2d 1039 (N.D. Cal. 2004). 3106

"profile" — "radial cross-section or outline of the bit, defined by the blades of the bit, labeled 224 in Fig. 10 of the '715 Patent." Reedhycalog UK, Ltd, et al. v. Baker Hughes Oilfield Operations, Inc., et al., 2007 U.S. Dist. LEXIS 76125 (E.D. Tex., Oct. 12, 2007). 3107


"does not project laterally beyond the chassis" — "does not extend, in any amount, laterally beyond the chassis." Metso Minerals, Inc. v. Powerscreen International Distribution Ltd., et al., 2010 U.S. Dist. LEXIS 7099 (E.D.N.Y., Jan. 28, 2010). 3109


"projecting" — "means that the separate detent is caused to move so as to protrude above the upper surface of the solenoid housing." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997). 3111

"said housing including a plurality of projections projecting from said side walls" — "two or more projections extending from one or both side walls." ADC Telecommunications, Inc. v. Switchcraft, Inc., 2005 U.S. Dist. LEXIS 19593 (D. Minn., Sept. 9, 2005). 3112

"at least one leg projecting laterally from each side of the center flange" — "each side of the longitudinal length of the center flange must include at least one 'laterally projecting leg,' a term referring to a structure providing support for one side of the shifter support and having an attachment rim or rib projection extending outwardly from the side and fitted with a hole for receiving a fastener, such as a screw, to secure the support to the vehicle." Grand Haven Stamped Products Co. v. Dura Automotive System, Inc., 2004 U.S. Dist. LEXIS 31087 (W.D. Mich., Jun. 28, 2004). 3113

"projecting the corner edge portions of the duct section end portions beyond the corner section" — "require[s] an assembler to take some action to cause the offset portion of the corner section to be moved relative to the corner piece front surface." Ductmate Industries, Inc. v. Famous Supply Corp., et al., 55 F. Supp. 2d 777 (N.D. Ohio 1999). 3114

"projection" — "any portion of the auxiliary bridge which extends toward the primary bridge for the purpose of going over and engaging with the primary bridge." Aspex Eyewear, Inc., et al. v. Altair Eyewear, Inc., 386 F. Supp. 2d 526 (S.D.N.Y. 2005). 3116

"projection" — "the entire portion of the elongate member that extends from the base portion of the member up to and including any free end portions." Velcro Industries B.V., et al. v. Taiwan Paiho Ltd. (D.N.H., Oct. 13, 2005). 3117

"projection" — "a part which projects or juts out from the sidewall of the end cap." Innovative Office Products, Inc. v. SpaceCo, Inc., et al., 2007 U.S. Dist. LEXIS 62296 (E.D. Pa., Aug. 23, 2007). 3118


"projection near the terminal end" — "any part that juts out at or near a terminal end of the spring pin." Friedrich Zettl GmbH v. Bloomingdales, Inc., et al., 2000 U.S. Dist. LEXIS 6747 (N.D. Ill., Feb. 24, 2000). 3120

"projection optical system" — "a component or combination of components that transfers or translates a mask pattern onto a substrate." Nikon Corp., et al. v. ASM Lithography B.V., 308 F. Supp. 2d 1039 (N.D. Cal. 2004). 3121

"outwardly directed projections" — "means simply that bumps exist on the outer surface." Dayco Products, Inc. v. Total Containment, Inc., 258 F.3d 1317 (Fed. Cir. 2001). 3122

"the second end of the locking member projects from the second chamber through the opening in the second end of the housing" — "requires that the second end of the locking member protrude from the second chamber through an open place or gap in the second end of the housing." Engineered Products Co. v. Donaldson Co., Inc., 165 F. Supp. 2d 836 (N.D. Iowa 2001). 3123

"processing chamber" — "processing chamber should be interpreted to encompass the entire interior of the processing vessel." Semitool, Inc. v. Dynamic Micro Systems Semiconductor Equip. GmbH, 444 F.3d 1337 (Fed. Cir. 2006). 3124

"product finishing station" — "a station including at least one blending unit, an ice bin, at least one cup dispenser and foot or hand activated rinse sink with integrated or detached drain board." Foodie Partners v. Jamba Juice Co., 2007 U.S. Dist. LEXIS 80345 (E.D. Tex., Oct. 30, 2007). 3125


"projection" — "portion of the mode selector that fits into a slot in the holder." Rutherford Controls Int'l Corp., et al. v. Alarm Controls Corp., et al., 2009 U.S. Dist. LEXIS 69115 (E.D. Va., Aug. 6, 2009). 3128
"a proportional positive airway pressure apparatus" — "the inclusion of the term 'proportional' in the preamble of this claim is found to be in error and not to effect the claimed invention." Respironics, Inc., et al. v. Invacare Corp., 2006 U.S. Dist. LEXIS 62233 (W.D. Pa., Aug. 30, 2006).3129


"protecting a portion of the interior of a structure from the force of the wind and objects carried thereby" — "a protective barrier device configured to be quickly deployed on or within a portion of a structure for protecting an interior portion of the structure from the force of the wind and objects carried thereby." Armor Screen Corp. v. Storm Catcher, Inc., et al., 2009 U.S. Dist. LEXIS 33407 (S.D. Fla., Mar. 10, 2009).3131

"protecting back panel" — "has a special meaning. It refers to a relatively stiff structure that protects the food tray compartments from indentation and damage. It specifically does not include flexible, pressure-sensitive labels which the patent specification consistently distinguishes from back panels." Kraft Foods, Inc. v. International Trading Co., Ltd., 1999 U.S. Dist. LEXIS 21164 (W.D. Wis., Jan. 14, 1999).3132 "Notwithstanding Kraft's contentions, we agree with the district court that the written description and prosecution history overcome any presumption arising from the doctrine of claim differentiation, and thus approve the district court's construction of claim 2's 'protecting back panel' as one that must be relatively stiff. ... We [also] agree with the district court's construction of the word 'protecting,' as used in the phrase 'protecting back panel,' to mean protecting both the structural integrity of the food package and the tray compartment bottoms against indentation and damage." Id., 203 F.3d 1362 (Fed. Cir. 2000) (emphasis in original).3133

"a protective barrier device formed of a flexible mesh material" — "a protective barrier device in the form of one or more panels of a flexible textile material that acts as a barrier against wind and windborne objects." Armor Screen Corp. v. Storm Catcher, Inc., et al., 2009 U.S. Dist. LEXIS 33407 (S.D. Fla., Mar. 10, 2009).3134

"protruding portion"; "peg"; "stepped hole" — "a protuberance that extends away from the flat display panel"; "a small cylindrical or tapered protuberance"; "a countersunk hole." LG Philips Co., Ltd. v. Tatung Co., et al., 2007 U.S. Dist. LEXIS 43557 (D. Del., June 15, 2007).3135

"protruding surface" — "a surface projecting beyond another reference point or surface (e.g. between first and second flat socket surfaces)." MacLean-Fogg Co. v. Eaton Corp., 2009 U.S. Dist. LEXIS 72435 (E.D. Tex., Aug. 14, 2009).3136

"protrusion" — "[the specification] attaches the characteristic of having a central narrowed portion to the term 'protrusion.'" Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc., et al., 252 F. Supp. 2d 838 (D. Minn. 2002).3137 "[W]e hold that the proper construction of 'protrusion' is something that protrudes." Id., 340 F.3d 1298 (Fed. Cir. 2003).3138


"provided with: (a) a curved portion that bends inwardly towards the conveyor, commencing from a first height that is above the level of the conveyor, and terminating at a second, lower height that is also above the level of the conveyor; (b) a terminal region extending to the edge of the conveyor, such terminal region being upwardly angled, proceeding outwardly from the conveyor, at an inclination that is sufficient to cause material to be spread when contained thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion" — "a terminal region extending to the edge of the conveyor, such terminal region being upwardly angled, proceeding outwardly from the conveyor, at an inclination that is sufficient to cause material to be spread when contained thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion. The terminal region must be inclined to the point where the terminal region meets the curved portion is above the point where the terminal region meets the conveyor (with respect to the ground)." Highway Equip. Co., Inc v. Cives Corp., et al., 476 F. Supp. 2d 1079 (N.D. Iowa 2007). 3142


"providing a foundation support for the foundation at a plurality of positions along the foundation ..." — "There is nothing in the claims or specification which indicates that the metal bracket had to be physically attached to or located next to the foundation before the other steps in the method could proceed." Ruiz, et al v. A.B. Chance Co., 234 F.3d 654 (Fed. Cir. 2000). 3145

"providing a third device having a third coordinate system in the operation site and determining a first position of the third device with respect to the second image of the second imaging device, whereby the third coordinate system of the third device is positioned with respect to the second image of the second imaging device and thereby with respect to the at least one 3D first image from the first imaging device" — "providing a third device (e.g., a radiation transmission apparatus or an imaging device) having its own coordinate system and determining the position of the third device relative to the position of the second rendering and therefore the first rendering (and thus the organ or lesion)." NOMOS Corp. v. ZMED, Inc., 260 F. Supp. 2d 215 (D. Mass. 2002). 3146

"providing in the sleeve a material which increases in rigidity after expansion of said balloon" — "supplying in the sleeve a material that is separate and distinct from the sleeve itself." Rockey v. Cordis Corp., 175 Fed. Appx. 329 (Fed. Cir., March 16, 2006) (unpublished). 3147

"proximal and distal lips" — "portions of the shell which extend about the circumference at or near each end of the shell." Kwitek, et al v. Pilot Corp., et al., 516 F. Supp. 2d 709 (E.D. Tex. 2007). 3148
"proximal cylindrical portion" — "means that the proximal end of the catheter has a cross-section defined by a fixed curved surface, which can be either a circle or an oval shape." Mahurkar v. C.R. Bard, Inc., et al., 2003 U.S. Dist. LEXIS 25924 (N.D. Ill., May 13, 2003).

"proximal portion of a second length longer than the first length" — "no further construction is needed." Medtronic AVE, Inc. v. Cordis Corp., 516 F. Supp. 2d 741 (E.D. Tex. 2007). "After carefully considering the arguments raised by the parties in this case, the court is not persuaded to alter its decision from the Cordis case. Accordingly, the Court concludes that this term does not requires construction." Medtronic Vascular Inc., et al. v. Boston Scientific Corp., et al., 526 F. Supp. 2d 613 (E.D. Tex. 2007).


"pulling the handle portion generally along the handle axis" — "applying force to the handle portion so as to cause or tend to cause motion toward the source of the force generally in the direction of the long axis of the handle." Furminator, Inc. v. Ontel Products Corp., et al., 429 F. Supp. 2d 1153 (E.D. Mo. 2006).

"pumping means" — "While the use of the word 'means' gives rise to a presumption that § 112, paragraph 6 applies, the presumption is overcome by the recitation of the structure needed to perform the recited function." *TI Group Automotive Systems (North America), Inc. v. VDO North America, L.L.C., et al.*, 375 F.3d 1126 (Fed. Cir. 2004).


"pusher" — "any device or structure intended to push another device or structure." *Boston Scientific Corp. v. Cordis Corp.*, 422 F. Supp. 2d 1102 (N.D. Cal. 2006).


"pylon" — "a conical structure; that is, it is a structure having a closed plane base and a surface formed by line segments joining every point of the boundary of the base to a common vertex." *EZ Dock, Inc. v. Schafer Systems, Inc., et al.*, 2003 U.S. Dist. LEXIS 1810 (D. Minn., Jan. 22, 2003).

"pyramid shaped" — "In this case, HHI has assigned a clear meaning to the phrase 'pyramid shaped,' namely, the shape of the midsole in the prior art shoe of Fig. 2. By using the same phrase in the amended claim, HHI invoked the definition it assigned to that phrase in the written description." *Hockerson-Halberstadt, Inc. v. Converse Inc.*, 183 F.3d 1369 (Fed. Cir. 1999).


"quality of result"; "desired quality of result" — "Quality of result refers to any number of features or characteristics of a cut, including but not limited to surface finish, uniformity of cut surface, precision and dimensional accuracy. A user specifies his or her desired quality of result using an associated value." *Omax Corp. v. Flow International Corp.*, 2006 U.S. Dist. LEXIS 81914 (W.D. Wash., Nov. 7, 2006).

"at least one of the halogens Cl, Br or I is present in a quantity" — "I construe 'quantity' to mean a concentration--the amount per unit volume." *U.S. Philips Corp. v. Iwasaki Electric Co., et al.*, 2006 U.S. Dist. LEXIS 106 (S.D.N.Y., Jan. 3, 2006).

"a quantity between 10⁻⁶ and 10⁻⁴ μmol/mm³" — "means that the halogen is present in the envelope or bulb in a quantity between 1 divided by 1,000,000 and 1 divided by 10,000 micromoles per cubic millimeter." *U.S. Philips Corp. v. Iwasaki Electric Co., et al.*, 2006 U.S. Dist. LEXIS 106 (S.D.N.Y., Jan. 3, 2006).

"rack mounting structure supporting said second rack for movement into and out of said washing chamber" — "is governed by Section 112 P6 ... [because] the element is purely functional, with the words 'rack mounting' and 'structure' failing to connote sufficient structure." Maytag Corp. v. Whirlpool Corp., 88 F. Supp. 2d 894 (N.D. Ill. 2000). 3175

"radial" — "describe[s] the quality of radiating to or from, diverging from, or converging to a common point." SRAM Corp. v. Formula S.R.L., et al., 2009 U.S. Dist. LEXIS 29100 (N.D. Ill., Apr. 3, 2009). 3176

"may be inserted therein in a radial direction with respect to said groove" — "does not mean purely or solely perpendicular; but rather, indicates that the bar or pin is to be placed in the structure of the clamp in a generally perpendicular direction." Stryker Trauma S.A., et al. v. Synthes (USA), 2004 U.S. Dist. LEXIS 30810 (D.N.J., Apr. 12, 2004). 3177

"a radial positioning means comprising a compressed spring means biased against said ring segments to forcibly cause said segments to move to said large clearance position, while working fluid which is freely admitted to the annular space between said casing and said ring segments will urge said segments toward said small clearance position, whereby at low speed and small turbine loads the spring forces will predominate, while at high flows and high working fluid pressure the pressure forces will predominate" — "Because the term 'radial positioning means' uses the word 'means,' it is presumptively subject to section 112, paragraph 6. However, the claim recites sufficient structure to overcome that presumption." TurboCare Division of Demag Delaval TurboMachinery Corp. v. General Electric Co., 264 F.3d 1111 (Fed. Cir. 2001). 3178

"and which is radially compressible upon insertion into the defect from a first configuration which is larger than the defect into a second configuration which approximates the shape of the defect" — "the remark by the prosecuting attorney that the kinking buckling limitation 'is an element of each claim, except method claim 21' was an error. Because the erroneous statement was made in the context of an initial request for reexamination, rather than as a response to objections raised by the examiner, the court does not find that the claims, as allowed, should be construed in light of the attorney's statement. The court will adopt the existing language of this claim limitation." C.R. Bard, Inc., et al. v. United States Surgical Corp., 102 F. Supp. 2d 199 (D. Del. 2000). 3179

"radially extending member" — "a member extending in the direction of the radius, which is perpendicular to the longitudinal axis of the tubular body." Venetec International, Inc. v. Medical Device Group, Inc., 2007 U.S. Dist. LEXIS 56770 (S.D. Cal., Aug. 3, 2007). 3180


"a radiation cured adhesive material" — "an adhesive cured by radiation such as ultraviolet radiation." *Avery Dennison Corp. v. Whitlam Label Co., Inc.*, 2003 U.S. Dist. LEXIS 27836 (N.D. Ohio, Sept. 24, 2003). 3185


"rail" — "a bar that serves to direct substantially the motion of a component that slides along the axis of the rail." *Briggs & Stratton Corp. v. Kohler Co.*, 398 F. Supp. 2d 925 (W.D. Wis. 2005). 3189

"[A] bar supported along its length that serves to direct substantially the motion of a component that slides along the axis of the bar." *Id.*, 408 F. Supp. 2d 697 (W.D. Wis. 2006). 3190


"rail portion" — "the top portion of the header that is either a semi-circle or similar to a semi-circle. The top surface of the rail portion must curve." *Nelson A. Taylor Co., Inc., et al. v. Ameritex Technologies, Inc., et al.*, 2006 U.S. Dist. LEXIS 68004 (D.S.C., Sept. 20, 2006). 3192


"raised spine" — "a raised portion of the mounting element that resembles or suggests the spine of the mounting element, shaped to cooperate with the window jamb flanges to inhibit the rotational motion of the mounting means." *Amesbury Group, Inc., et al. v. Caldwell Manufacturing Co.*, 2006 U.S. Dist. LEXIS 2175 (D. Mass., Jan. 20, 2006). 3194


"ramp member" — "a structure that is joined to said deck support member in a cooperative relation that has a length substantially equal to said predetermined length, and includes three structural components: (1) a deck edge protecting surface extending upwardly from said deck support surface and having an upper edge, (2) a lower portion having a longitudinal edge, and (3) a ramp surface disposed between said upper edge and said longitudinal edge at a predetermined angle less than ninety degrees to said deck support surface." Floe International, Inc. v. Newmans' Manufacturing Inc., 2006 U.S. Dist. LEXIS 42114 (D. Minn., June 21, 2006). 3197


"random faded effect" — "fading on fabric or a made-up garment where (a) some areas are more faded than others, (b) some areas may not be faded at all, and (c) the placement of the faded areas is not uniform." Levi Strauss & Co. v. Golden Trade, S.r.l., et al., 1995 U.S. Dist. LEXIS 4899 (S.D.N.Y., April 14, 1995). 3199 Id., 1995 U.S. Dist. LEXIS 22145 (S.D.N.Y., Nov. 30, 1995). 3200

"random orientation" — "means bamboo segments which have random, not uniform lengths, and which are staggered or lapped along the length of the beam." Teragren, LLC v. Smith & Fong Co., 2009 U.S. Dist. LEXIS 62597 (W.D. Wash., May 5, 2009). 3201

"in rapid succession" — "one after another without any intentional delay or pause such as in the pause state." Good Sportsman Marketing LLC, et al. v. Non Typical, Inc., et al., 2009 U.S. Dist. LEXIS 69737 (E.D. Tex., Aug. 10, 2009). 3202


"reaching into the immediate vicinity and directly facing at least one radiator element" — "means that at least one outlet opening must extend into the proximate area of, and must point squarely toward, at least one radiator element." Freni Brembo, S.p.A. v. Alcon Components, Ltd., 2005 U.S. Dist. LEXIS 11714 (N.D. Ill., May 31, 2005). 3206

"reaction frame" — "a physical structure, separate and distinct from the structure supporting the precision components, that transfers reaction forces, caused by the movement of a stage drive, away from the precision components." Nikon Corp., et al. v. ASM Lithography B.V., 308 F. Supp. 2d 1039 (N.D. Cal. 2004). 3207
"reaction space" — "includes the reaction chamber as well as the gas inflow/outflow channels communicating immediately with the reaction chamber, and includes the entire volume to be evacuated between two successive vapor-phase pulses." ASM America, Inc. v. Genus, Inc., 2002 U.S. Dist. LEXIS 15348 (N.D. Cal., Aug. 15, 2002). 3208

"ready for mounting" — "leaving the veneer restoration ready to be fitted to and cemented on a patient's tooth for which it was custom-made." PSN Illinois, LLC v. Ivoclar Vivadent, Inc., 2006 U.S. Dist. LEXIS 88691 (N.D. Ill., Dec. 7, 2006). 3209 "[T]he construction of the phrase 'ready for mounting' ... remains, as it was in the Opinion." Id., 2007 U.S. Dist. LEXIS 38611 (N.D. Ill., May 29, 2007). 3210

"readily disengaged" — "It is difficult to conceive of a more clear way to convey the meaning of this phrase; accordingly, the Court does not construe 'readily disengaged.'" Litepanels, LLC, et al. v. Gekko Technology, Ltd., 2007 U.S. Dist. LEXIS 89756 (E.D. Tex., Dec. 6, 2007). 3211


"rear cavity" — "the cavity within the headphone cup structure that is farther from the user and attached to the rear of the baffle." Bose Corp. v. Lightspeed Aviation, Inc., 2010 U.S. Dist. LEXIS 40500 (D. Mass., Apr. 26, 2010). 3215

"rear edge" — "the edge of the tubular sock-like body [tubular body] in the projectile opposite the closed end that, in the unfilled state, forms the opening into which shot is filled." Combined Tactical Systems, Inc. v. Defense Technology Corp. of America, et al., 426 F. Supp. 2d 140 (S.D.N.Y., April 4, 2006). 3216

"rear edge" — "having a margin of intersection between the top and bottom surfaces of the blade in which at least some part of the surface boundary defined by that margin is at the rearmost point of the blade; there is no limitation on the shape of the surface boundary defined by the margin of intersection." Bausch & Lomb Inc. v. Moria S.A., et al., 222 F. Supp. 2d 616 (E.D. Pa. 2002). 3217

"rear end" — "a reference point defined by the rear edge of the tube." Research Plastics, Inc. v. Federal Packaging Corp., 421 F.3d 1290 (Fed. Cir. 2005). 3218

"rear mountable" — "a flat-panel display device that is capable of being mounted to a housing solely from the back of the first frame and that has no front or side mounting fastening elements." LG Philips LCD Co., Ltd. v. Tatung Co., et al., 2007 U.S. Dist. LEXIS 43557 (D. Del., June 15, 2007). 3219

"rearward area"; "end area" — "the area facing away from the brake disk." Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp., et al., 133 F. Supp. 2d 833 (E.D. Va. 2001). 3220
"receptacles" — "formations in the raised periphery surrounding the playing surface that contain batteries and wires." Innovention Toys, LLC v. MGA Entertainment, Inc., et al., 2009 U.S. Dist. LEXIS 48386 (E.D. La., May 21, 2009).


"respectively received in said recesses of said inner hose ... whereby the interior of said tubular hose is substantially sealed to the interior of said coupling" — "only require[s] that the insert means projections be received in the hose recesses such that a substantial fluid seal is formed between the interior of the hose and the interior of the coupling. Complete reception is neither explicitly nor implicitly required." Dayco Products, Inc. v. Total Containment, Inc., 258 F.3d 1317 (Fed. Cir. 2001).

"receiving an indication of a speed" — "to acquire a value indicating speed, such as supplied by a computer system." Omax Corp. v. Flow International Corp., 2006 U.S. Dist. LEXIS 81914 (W.D. Wash., Nov. 7, 2006).


"receiving portion" — "the part of the structural interconnection device which takes in the inserted end portion of an elongate member, and which holds or supports the end portion of the elongate member." Safety Rail Source, LLC v. Bilco Co., 2009 U.S. Dist. LEXIS 30969 (D.N.J., Apr. 8, 2009).

"first cable receiving said floating pulley units" — "does not require that both floating pulley units be in direct physical contact with the first cable. Instead, if a force exerted on either one of the floating pulley units responsively tensions the first cable and is resisted by the load, then the floating pulley units are 'received' by the cable." Vectra Fitness, Inc. v. Icon Health & Fitness, Inc., 246 F. Supp. 2d 1111 (W.D. Wash. 2003).


"the handle portion having a recess" — "the handle portion having an indentation." FURminator, Inc. v. Munchkin, Inc., et al., 2009 U.S. Dist. LEXIS 104429 (E.D. Mo., Nov. 9, 2009).

"locking recess" — "an indentation or small hollow that permits engagement by the locking body." OrthoArm, Inc., et al. v. Forestadent USA, Inc., et al., 502 F. Supp. 2d 968 (E.D. Mo. 2007).
"a recess comprising an indentation formed immediately beneath said cutting edge surface"; "a recess formed below said cutting edge surface" — "a cut out formed directly under the cutting edge surface and orientated in a horizontal direction parallel to the cutting edge surface." Izumi Products Co. v. Koninklijke Philips Electronics N.V., et al., 2004 U.S. Dist. LEXIS 7992 (D. Del., Apr. 27, 2004). 3234 "As an initial matter, we conclude that the court erred in construing the limitations 'recess ... formed immediately beneath' and 'recess formed below' to mean 'a cut out formed directly under the cutting edge surface and orientated in a horizontal direction, parallel to the cutting edge surface.' ... We are not, however, prepared to give Izumi the broad interpretation that it currently seeks." Id., 140 Fed. Appx. 236 (Fed. Cir., Jul. 7, 2005) (unpublished). 3235

"a recess located in a lower lip extending to a side edge and defining at least in part a lower side of said groove" — "it is the lower lip that must extend to a side edge and define at least in part a lower side of the groove." Alloc, Inc. v. Unilin Decor N.V., et al., 2007 U.S. Dist. LEXIS 16743 (E.D. Wis., Mar. 6, 2007). 3236


"reciprocating" — "can mean either moving back and forth or just simply returning, and as the embodiments described in the specification and claims contemplate both linear and rotary workpiece carriers, this court construes the term to be broad enough to include carriers that move in a circular rotation." Optical Coating Laboratory, Inc. v. Applied Vision, Ltd., 1996 U.S. Dist. LEXIS 1476 (N.D. Cal., Jan. 29, 1996). 3239

"reciprocating member" — "is not limited to a straight-bar structure comprising a single component only. ... the claim term 'reciprocating member' encompasses a multi-component, curved structure." CCS Fitness, Inc. v. Brunswick Corp., et al., 288 F.3d 1359 (Fed. Cir. 2002). 3240

"reciprocating path of travel" — "any back and forth path of travel which is repetitively traversed." Precor Inc., et al. v. Fitness Quest, Inc., et al., 2006 U.S. Dist. LEXIS 63244 (W.D. Wash., Aug. 23, 2006). 3241

"reciprocating slide plates" — "is not limited to plates that exhibit only linear motion, as opposed to the broader, ordinary meaning of that phrase. Thus, the disputed term literally encompasses rotating motion, such as that exhibited by the MAC mechanism." Virginia Panel Corp. v. MAC Panel Co., 133 F.3d 860 (Fed. Cir. 1997). 3242

"recirculation pipe" — "a tubular fluid pathway for returning a fluid to a starting point, with at least a portion of that pathway downstream from the venturi." Cecil's On-Site Products, Inc. v. Chaffin, 2009 U.S. Dist. LEXIS 10095 (S.D. Tex., Feb. 11, 2009). 3243

"rectangular" — "having four sides, with opposite sides parallel, and four right angles." Craig v. Foldfast, Inc., et al., 487 F. Supp. 2d 1364 (S.D. Fla. 2007). 3244

"applying glue to abutting wooden surfaces to ... reduce air infiltration to less than 0.7/0.5 air changes per hour" — "the Court finds the claim language itself requires that air infiltration be reduced to a level less than about 0.7/0.5 air changes per hour. Implicit within that language is the requirement that the level be greater than 0.7/0.5 air changes per hour before the application of glue." Staples v. Johns Manville, Inc., et al., 2010 U.S. Dist. LEXIS 24040 (E.D. Mo., Mar. 16, 2010). 3246

"reduced air content cleaning fabric" — "a fabric whose air content has been reduced by some method prior to being wound on a roll." Baldwin Graphic Systems, Inc. v. Siebert, Inc., 2007 U.S. Dist. LEXIS 20486 (N.D. Ill., Mar. 21, 2007). 3247

"reduced diameter annular ring" — "the wall of the metal body is radially deformed into a smaller diameter portion that is adjacent to at least one larger diameter portion." Tenneco Automotive Operating Co. Inc. v. Visteon Corp., 2005 U.S. Dist. LEXIS 12738 (D. Del., Jun. 28, 2005). 3248

"a reduced diameter cylindrical central portion" — "the portion of the tubular body that includes the middle point has a smaller diameter than adjacent portions of the tube." Tenneco Automotive Operating Co. Inc. v. Visteon Corp., 2005 U.S. Dist. LEXIS 12738 (D. Del., Jun. 28, 2005). 3249

"reference" — "a position or item relative to which displacement, location, or both can be measured." Nikon Corp., et al. v. ASM Lithography B.V., 308 F. Supp. 2d 1039 (N.D. Cal. 2004). 3250

"reflective inner coating" — "a thin film of highly reflective material spread over a correctly shaped glass surface to produce a mirror contained within the light transmission element." Yanova, Inc., et al. v. Johnson, et al., 2005 U.S. Dist. LEXIS 497 (S.D.N.Y., Jan. 11, 2005). 3251

"interior reflective surface"; "internal reflecting surface" — "a person of ordinary skill in the art would conclude that ... a black matte layer or surface inside the housing does not constitute a 'interior reflective surface' or an 'internal reflecting surface' within the meaning of the Ecolab patent claims." Ecolab Inc. v. Paraclipse, Inc., 1999 U.S. Dist. LEXIS 23136 (D. Neb., Aug. 18, 1999). 3252 "Instruction No. 11 excluding the black matte surface as an 'internal reflecting surface' was not erroneous." Id., 285 F.3d 1362 (Fed. Cir. 2002). 3253

"reflector means" — "encompass[es] either a totally reflective reflector, a partially reflective reflector, as well as a partially light transmissive reflector, with or without apertures or openings in the reflector itself, where the reflector is capable of radiating light through or out of the reflector in all directions, including both laterally and upwardly." Sportlite, Inc. v. Genlyte Thomas Group, LLC, et al., 2006 U.S. Dist. LEXIS 96638 (D. Ariz., Sept. 13, 2006). 3254 "[T]he Court will adopt the Special Masters' construction of 'reflector means.'" Id., 518 F. Supp. 2d 1122 (D. Ariz. 2007). 3255

"wherein during said seaming operation at least a portion of said can end wall first portion is reformed by bending upward by an angle of at least about 26"" — "the can end wall first portion is formed again by turning upward by an angle of at least about 26°." Crown Packaging Technology, Inc., et al. v. Rexam Beverage Can Co., 486 F. Supp. 2d 366 (D. Del. 2007). 3256
"at least three layers reformed into" — "the three layers retain separate identity only in the pleat before reformation; the densified regions cannot have three layers after reformation if the layers no longer have separate identities." James River Corp. of Virginia v. Hallmark Cards, Inc., 915 F. Supp. 968 (E.D. Wis. 1996). 3257


"relatively moved"; "slidably receiving"; "[and their cognates]" — "permit the needle and guard to slide in any manner." MBO Laboratories, Inc. v. Becton, Dickinson & Co., 474 F.3d 1323 (Fed. Cir. 2007). 3259

"a relatively smaller patch of web material" — "a piece of material that is at least somewhat smaller than the backsheet layer." Kimberly-Clark Worldwide, Inc. v. First Quality Baby Products, LLC, et al., 2010 U.S. Dist. LEXIS 104762 (M.D. Pa., Sep. 30, 2010). 3260

"comprising a relatively thick core or base layer" — "[is not] limited to a core composed of a single layer." Avery Dennison Corp. v. UCB Films PLC., 1997 U.S. Dist. LEXIS 13594 (N.D. Ill., Sept. 3, 1997). 3261

"relaxed condition" — "refers to a state in which the spring has no potential energy, i.e., is free from tension." Owen Mumford USA, Inc. v. Surgilance, Inc., et al., 137 Fed. Appx. 342 (Fed. Cir., Jun. 7, 2005) (unpublished). 3262


"releaseably installed by sliding engagement of said retainer member and said inwardly facing surface" — "installed by sliding the retainer member along the inwardly facing surface to engage it with the wall of the syringe, which creates a clamping or frictional force that can be released at a later time." Retractable Technologies, Inc., et al. v. Becton Dickinson & Co., 2009 U.S. Dist. LEXIS 73301 (E.D. Tex., Jan. 20, 2009). 3264

"a first region"; "a second region" — "are two different regions." Merit Industries, Inc. v. JVL Corp., 2007 U.S. Dist. LEXIS 63418 (E.D. Pa., Aug. 24, 2007). 3265

"region of interest" — "the location of a percutaneous procedure to be performed within a patient's vessel." Boston Scientific SciMed, Inc., et al. v. ev3 Inc., 502 F. Supp. 2d 931 (D. Minn. 2007). 3266


"reinforcement support member" — "a member that can be removed from the connector body without destroying the integrity of the connector in general or the contact wires in particular so as to facilitate inspection or repair of the contacts." Helifix Limited v. Blok-Lok, Ltd., et al., 26 F. Supp. 2d 294 (D. Mass. 1998). 3268

"relative movement" — "the Court finds that this term's ordinary and accustomed meaning controls, and no construction is necessary." Konami Corp. v. Roxor Games, Inc., et al., 445 F. Supp. 2d 725 (E.D. Tex. 2006).

"indicative of the relative position between the tool and the workpiece" — "must be construed to include systems that measure the location of the workpiece from some fixed point on the machine tool table." IMS Technology, Inc. v. Haas Automation, Inc., et al., 1998 U.S. Dist. LEXIS 22820 (E.D. Va., Sept. 23, 1998).

"relative sliding movement between the auxiliary device and weapon causes the inclined surface to cause the latching mechanism to overcome the biasing force of the spring-biased mechanism" — "additional construction is not necessary." Insight Technology Inc. v. SureFire, LLC, 2006 U.S. Dist. LEXIS 11762 (D.N.H., Feb. 28, 2006).

"being in relative spaced relation" — "positioned apart from and parallel to each other such that an unoccupied space is formed between the fin structures." ICHL, LLC v. NEC Corp. of America, et al., 2010 U.S. Dist. LEXIS 38942 (E.D. Tex., Apr. 20, 2010).

"identification of a position ... relative to the positional coordinates and other items of interest" — "denote[s] that the 'information transmitted to a user of the system displays the items of interest only relative to the positional coordinates' in an internal grid system, as opposed to absolutely, such as by reference to that item of interest's latitude and longitude." CIVIX-DDI, LLC v. Microsoft Corp., et al., 18 Fed. Appx. 892 (Fed. Cir., Aug. 22, 2001) (unpublished).

"relatively resilient end edge portion which temporarily deflects and subsequently rebounds to snap-secure" — "mean[s] that the end edge portion must be sufficiently resilient that it can temporarily deflect and subsequently rebound when glass is being inserted into the frame." Gemtron Corp. v. Saint-Gobain Corp., 572 F.3d 1371 (Fed. Cir. 2009).


"relatively short length" — "said mooring arm having a minimum length long enough to exert a significantly larger rotational torque on the turntable than if the mooring hawser were directly connected to the turntable and having a maximum length such that when in an essentially upright position from the buoyant body toward sea level, the mooring arm extends no further than to just below or just above sea level." Advanced Production and Loading, Inc. v. Single Buoy Moorings, Inc., et al., 2004 U.S. Dist. LEXIS 31081 (S.D. Tex., Apr. 26, 2004).

"relatively small" — "is not entitled to the range of up to 0.070 inch as sought by Modine. However, the Commission erred in literally restricting the hydraulic diameter range to an upper limit of exactly 0.040 inch, and in barring access to the doctrine of equivalents." Modine Manufacturing Co. v. United States International Trade Commission, et al., 75 F.3d 1545 (Fed. Cir. 1996).

"relatively small incision" — "Although the court finds that this indefiniteness argument is not a frivolous one, it concludes that defendant has not met its burden of showing that it will likely succeed on the merits of this claim at trial, and as such declines at this time to invalidate the 998 patent on the grounds of indefiniteness." Allergan Sales, Inc., et al. v. Pharmacia & Upjohn, Inc., 1996 U.S. Dist. LEXIS 21051 (S.D. Cal., Oct. 22, 1996).
"relatively thick layer" — "although the relatively thick layer can be 'substantially less than one eighth of an inch' and still be the relatively thick layer, it ceases to be so if it falls below 1/16th of an inch." *Solomon v. Kimberly-Clark Corp.*, 1997 U.S. Dist. LEXIS 23312 (D. Ariz., Jul. 17, 1997). Solomon v. Kimberly-Clark Corp., 1997 U.S. Dist. LEXIS 23312 (D. Ariz., Jul. 17, 1997) "The public is entitled to rely on the sole unequivocal statement by the patentee regarding the meaning of 'relatively thick' used throughout the specification. ... [W]hile the specification elsewhere makes clear that the thickness of the 'relatively thick' layer may be 'varied ... as desired,' it may only vary within the enumerated range." *Id.*, 1998 U.S. App. LEXIS 10416 (Fed. Cir., May 26, 1998) (unpublished). 3281

"relaying" — "nothing in the claim language requires or even suggests the use of pneumatically operated valves in performing the relaying step." *Varco, L.P. v. Pason Systems USA Corp.*, 436 F.3d 1368 (Fed. Cir. 2006). 3282


"a plurality of releasable fasteners for attachment of said protective barrier to said structure" — "The Court finds the ordinary and customary meaning of this claim language to be readily apparent such that additional construction is unwarranted." *Armor Screen Corp. v. Storm Catcher, Inc., et al.*, 2009 U.S. Dist. LEXIS 33407 (S.D. Fla., Mar. 10, 2009). 3284

"wherein the continuous retainer member is releasable from the inner head" — "the plunger releases the continuous retainer member from the inner head as the plunger is further depressed in the barrel." *Retractable Technologies, Inc., et al. v. Becton Dickinson & Co.*, 2009 U.S. Dist. LEXIS 73301 (E.D. Tex., Jan. 20, 2009). 3285

"releasable stopper" — "a member that seals or closes one end of the plunger and can be freed such that it no longer seals or closes." *Retractable Technologies v. New Medical Technologies*, 2004 U.S. Dist. LEXIS 3855 (E.D. Tex., Mar. 1, 2004). 3286

"releasably attached" — "means that the fastening element claimed in the Wrike patents must be easily removed and replaced." *V-Formation, Inc. v. Benetton Group SpA, et al.*, 2002 U.S. Dist. LEXIS 22394 (S.D.N.Y., Nov. 19, 2002). 3287 "[T]his court affirms the district court's claim construction defining 'releasably attaching' ... to mean that the fasteners 'must permit the sidewalls to be easily removed and replaced' and determining that 'those skilled in the art would not consider rivets ... to fall within the category of releasable fasteners.'” *Id.*, 401 F.3d 1307 (Fed. Cir. 2005). 3288


"releasably connectable" — "requir[es] each individual plate member to be 'connected directly to the opposing surfaces of the two side members in such a manner that it is capable of being freed from the opposing surfaces of the two side members.'” *IKN, Inc. v. CemProTec GmbH*, 2005 U.S. Dist. LEXIS 29134 (E.D. Pa., Nov. 22, 2005). 3290

"release" — "has the usual meaning of a mechanical arrangement of parts for holding or freeing a device or mechanism as required, or a setting free from restraint."  *Mas-Hamilton Group v. LaGard, Inc.*, 21 F. Supp. 2d 700 (E.D. Ky. 1997).\textsuperscript{3292}

"release coating"; "release coated" — "a covering that permits the easy and complete removal of pressure sensitive adhesive labels"; "a material having a 'release coating.'"  *MPT, Inc. v. Marathon Labels, Inc., et al.*, 2006 U.S. Dist. LEXIS 4612 (N.D. Ohio, Feb. 7, 2006).\textsuperscript{3293}

[i] "release element"; [ii] "retainer member" — [i] "a part that holds and later frees the needle holding member"; [ii] "a separable part that holds the needle holding member."  *Retractable Technologies v. New Medical Technologies*, 2004 U.S. Dist. LEXIS 3855 (E.D. Tex., Mar. 1, 2004).\textsuperscript{3294}

"a release lever" — "a rigid bar mounted at opposite ends of the cover or shield extending longitudinally of and coplanar with cover or shield sized to fit the finger of user and operable by user of ring binder to move leaves to open and close the binder. Each release lever includes a thumb or finger plate and a lever arm."  *U.S. Ring Binder, LP v. Staples the Office Superstore LLC, et al.*, 2009 U.S. Dist. LEXIS 21783 (E.D. Mo., Mar. 18, 2009).\textsuperscript{3295}

"remain at the specific size" — "maintain the predetermined smaller but non-zero diameter for a lasting (i.e., non-temporary) period without external compression."  *Vnus Medical Technologies, Inc. v. Diomed Holdings, Inc.*, 2006 U.S. Dist. LEXIS 88580 (N.D. Cal., Nov. 22, 2006).\textsuperscript{3296}

"remote home base" — "a location remote from the work site where the repair unit is operating."  *Key Energy Services, Inc. vs. C.C. Forbes, LLC, et al.*, 2010 U.S. Dist. LEXIS 67292 (E.D. Tex., Jul. 7, 2010).\textsuperscript{3297}

"remote location beyond a range of direct manual contact" — "a location outside the operating room where the patient undergoing surgery is located."  *Brookhill-Wilk I, L.L.C. v. Intuitive Surgical, Inc.*, 178 F. Supp. 2d 356 (S.D.N.Y. 2001).\textsuperscript{3298} "Brookhill challenges this interpretation, stating that the plain meaning of the claim term, the patent's written description, the prosecution history, and extrinsic evidence all support a broader reading that does not restrict the surgeon to a location outside of the operating room. ... We agree with Brookhill."  *Id.*, 334 F.3d 1294 (Fed. Cir. 2003).\textsuperscript{3299}

"remotely controllable surgical device" — "a device for use during a surgical procedure that can be controlled from a remote location."  *Karl Storz Endoscopy-America, Inc. v. Smith & Nephew, Inc.*, 2010 U.S. Dist. LEXIS 85036 (W.D. Tenn., Aug. 18, 2010).\textsuperscript{3300}

"a remotely located refrigeration unit" — "a structure for storing substances at temperatures below room temperature displaced from the customer service station."  *Foodie Partners v. Jamba Juice Co.*, 2007 U.S. Dist. LEXIS 80345 (E.D. Tex., Oct. 30, 2007).\textsuperscript{3301}

"removable"; "removably mounted"; "removing and replacing"; "replaceable" — "capable of being removed"; "mounted so as to be capable of being removed"; "taking away from a position and placing into a position"; "capable of being replaced."  *Fargo Electronics, Inc. v. Iris Ltd, Inc.*, 2005 U.S. Dist. LEXIS 34493 (D. Minn., Nov. 30, 2005).\textsuperscript{3302}

"removable pressure-sensitive adhesive layer" — "an adhesive that can stick to a layer, yet is removable." Avery Dennison Corp. v. Whitlam Label Co., Inc., 2003 U.S. Dist. LEXIS 27836 (N.D. Ohio, Sept. 24, 2003).3304

"removably" — "means detachable, i.e., detachable from the hamper." Allure Home Creation Co., Inc. v. Lamont Ltd., et al., 12 F. Supp. 2d 287 (S.D.N.Y. 1998).3305

"removably attached"; "removably secured" — "carry with them an implication that the detach mentor unsecuring process not do violence to the seat. The seat must therefore be usable as a seat upon separation from the base. In sum, the district court held that the claims cover a structure that includes a seat and base affixed together in a manner that contemplates that the seat may be removed from the base such that the seat remains functional. ... We thus discern no error in the district court's interpretation of the key claim terms." Dorel Juvenile Group, Inc. v. Graco Children's Products, Inc., 429 F.3d 1043 (Fed. Cir. 2005).3306 "The panel majority's interpretation of 'removably attached' and 'removably secured' as requiring only that the structure be 'capable' of disassembly, however laborious the mechanics, is contrary to the prior art, contrary to usage in the field, and contrary to federal regulation. ... I must, respectfully, dissent." Id. (Newman, C.J., dissenting).3307

"removably attached"; "removably secured" — "affixed together in a manner that contemplates that the seat may be removed from the base such that the seat remains functional." Dorel Juvenile Group, Inc. v. Graco Children's Products, Inc., 2004 U.S. Dist. LEXIS 20501 (S.D. Ind., Sept. 9, 2004).3308

"removably attached to a fluid dispenser" — "is unambiguous and therefore does not require construction." ICU Medical, Inc. v. B. Braun Medical, Inc., 344 F. Supp. 2d 663 (N.D. Cal. 2004).3309


"removably fastened" — "designed so as to be capable of being held secure to something else and designed so as also to be capable of being unsecured and taken away from." Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F. Supp. 2d 93 (D. Conn. 2006).3311

"removably securing" — "a removable secured cover as described by the '528 patent could take many forms, including hinged covers, tethered covers, covers rotated about a pivot and covers that are completely detachable from the blower housing such as the Toro model." The Toro Co. v. White Consolidated Industries, Inc., et al., 920 F. Supp. 1008 (D. Minn. 1996).3312

"removably supported" — "A component cannot be 'removably supported' if it is attached using fasteners that are meant to be permanent and not removed." Little Giant Pump Co. v. Diversitech Corp., 505 F. Supp. 2d 1107 (W.D. Okla. 2007).3313

"removing [an object]" — "means the purposeful application of motive force to change the location of the object, under circumstances where, without the application of such motive force, the object would tend to stay in its original place." MHB Industries v. Dennis Garberg & Associates, Inc., et al., 1996 U.S. Dist. LEXIS 11638 (D. Mass., July 26, 1996).3314
"removing contaminate vapors from contaminated underground areas" — "does not modify the word 'remove' with terms like 'completely' or 'substantially all.' Accordingly, ... as soon as the process disclosed in the '407 Patent is commenced, one is engaged in practicing the invention. It is not necessary to complete the process before one is said to be practicing the invention." Knopik v. Amoco Corp., et al., 96 F. Supp. 2d 892 (D. Minn. 2000). 3315


"repeating said injecting process until all of the plurality of openings have been filled" — "repeating said injecting process until all of the plurality of openings have been filed." Advanced Technology Incubator, Inc. v. Sharp Corp., et al., 2009 U.S. Dist. LEXIS 28456 (E.D. Tex., Mar. 11, 2009). 3317

"replaceable pliable sheet material patch" — "requires that the product be repositionable for the duration of an average game of football, baseball, basketball, tennis or golf." Mueller Sports Medicine, Inc. v. Beveridge Marketing, LLC, et al., 369 F. Supp. 2d 1028 (W.D. Wis. 2005). 3318

"replacing said specific link" — "is understood by its ordinary meaning alone." Blount Inc., et al. v. Trilink Saw Chain, LLC, et al., 2007 U.S. Dist. LEXIS 42617 (D. Or., June 8, 2007). 3319


"resile" — "to return to or tend to return to a prior or original position in a manner that contributes, at least in part, to the lodging of the member in the hole. Completely returning to a prior or original position, though included, is not required." Smith & Nephew, Inc., et al. v. Arthrex, Inc., 511 F. Supp. 2d 1046 (D. Or. 2007). 3323


"resilient" — "means that 'the information tab is made of material which recoils back to its original shape.'" A&E Products Group, L.P. v. Mainetti USA Inc., et al., 2002 U.S. Dist. LEXIS 24280 (S.D.N.Y., Dec. 28, 2002). 3325

"resilient and compressible material" — "a material that will change shape as force is applied by a foot, and which will return to substantially the same shape when the force is removed." Nike, Inc. v. Adidas America, Inc., et al., 2006 U.S. Dist. LEXIS 91011 (E.D. Tex., Dec. 18, 2006). 3326

"cantilevered resilient arm" — "is elastic enough to be pressed downward toward the rail web and under the rail head during installation, and has a tendency to spring back to its original shape after being pressed into position." RFR Industries, Inc. v. Century Steps, Inc., et al., 1999 U.S. Dist. LEXIS 15212 (N.D. Tex., Sept. 23, 1999). 3327
"means exhibiting resilient characteristics" — "The phrase 'exhibiting resilient characteristics' is not a second function performed by that 'means'; rather, the phrase further defines characteristics of that 'means.' It is therefore, appropriate, indeed mandatory under 35 U.S.C. § 112, P 6, to look to the corresponding structure in the specification to ascertain the meaning of the phrase. As already noted, that corresponding structure, 'a flexible rubber-like diaphragm,' '080 patent, col. 4, ll. 54-55, is 'resilient' in the sense that it tends to return to its original shape, not just its original position. We therefore conclude that the phrase 'exhibiting resilient characteristics' in the '080 patent requires initial shape deformation." Transclean Corp., et al. v. Bridgewood Services, Inc., 290 F.3d 1364 (Fed. Cir. 2002). 3328 "I would hold that the trial court properly adopted the common dictionary definition of 'resilient' as proffered by Transclean." Id. (Clevenger, J., dissenting-in-part). 3329

"resilient member" — "a member capable of returning to its original shape when deformed." JVW Enterprises, Inc. v. Interact Accessories, Inc., et al., 2002 U.S. Dist. LEXIS 27885 (D. Md., Feb. 1, 2002). 3330

"a resilient portion" — "an elastic or springy portion of the hinged money clip." Storus Corp. v. Restoration Hardware, Inc., et al., 2007 U.S. Dist. LEXIS 25953 (N.D. Cal., Mar. 22, 2007). 3331

"a resilient retaining member" — "an elastic or springy holding and securing member." Storus Corp. v. Restoration Hardware, Inc., et al., 2007 U.S. Dist. LEXIS 25953 (N.D. Cal., Mar. 22, 2007). 3332

[i] "resilient seal"; [ii] "resilient seal element" — [i] "wherein, upon compression, the structure changes shape and, upon removal of the compression, the structure returns to its original shape"; [ii] "a sealing structure wherein, upon compression, the structure changes shape and, upon removal of the compression, the structure returns to its original shape." ICU Medical, Inc. v. RyMed Technologies, Inc., 2009 U.S. Dist. LEXIS 112546 (D. Del., Dec. 3, 2009). 3333


"resilient support members" — "a partly elastic and rubber-like substance that returns freely to its previous position, shape or condition, and where the elastic rubber-like portion has the characteristic of a variable change in load per unit deflection." Precor Inc. v. Brunswick Corp., et al., 2001 U.S. Dist. LEXIS 26341 (W.D. Wash., Jul. 31, 2001). 3335

"first and second resiliently biased spring means carried on said coupling and disposed within said first and second pockets, respectively, and directed to urge an element wall against a wall of said coupling upon insertion of said element wall between said outer and inner walls" — "The language in claim 1 recites insufficient structure to rebut the presumption that § 112, P 6 applies." ADC Telecommunications, Inc. v. Panduit Corp., 200 F. Supp. 2d 1022 (D. Minn. 2002). 3336

"resiliently deformable sealing caps removably attached to said tubes" — "a sealing cap that can be compressed by pressure or stress and still bounce or spring back into shape after the pressure is removed." Applera Corp., et al. v. MJ Research Inc., et al., 292 F. Supp. 2d 348 (D. Conn. 2003). 3337
"resiliently lined yoke" — "a yoke or clamp lined with a material that is capable of being elastically or reversibly deformed." Forest Group, Inc. v. Bon Tool Co., et al., 2007 U.S. Dist. LEXIS 10487 (S.D. Tex., Feb. 15, 2007). 3339 "A yoke or clamp lined with a material that is capable of being elastically or reversibly deformed. The lining must be distinct from the yoke or clamp itself, but need not be made of a different material." Warner Manufacturing Co. v. Armstrong, et al., 504 F. Supp. 2d 589 (D. Minn. 2007). 3339

"resin coating" — "the term 'resin coating' is construed to mean that the coating thickness must be at least three times the maximum glitter particle dimension. ... the term 'resin coating' is properly interpreted as meaning a two-part mixture." Nichols, et al. v. Strike King Lure Co., et al., 2000 U.S. Dist. LEXIS 15781 (N.D. Tex., Oct. 25, 2000). 3340

"resistance assembly" — "the weight stack meaning weight stack 124 or weight stack 12 defined in the specification as support frame 34 with vertical support members 36 aligned to support the weight stack plates." Free Motion Fitness, Inc. v. Cybex International, Inc., et al., 311 F. Supp. 2d 1297 (D. Utah 2003). 3341

"said protective barrier device is resistant to ultra violet, biological, and chemical degradation" — "The words themselves are clear and any additional construction by the Court is unnecessary and unsupported by intrinsic evidence." Armor Screen Corp. v. Storm Catcher, Inc., et al., 2009 U.S. Dist. LEXIS 33407 (S.D. Fla., Mar. 10, 2009). 3342


"magnetic members respectively secured in the free ends of said arms" — "horizontally oriented magnetic members connected in the respective end portions of the auxiliary arms, in a manner such that the connection is not likely to fail or give way." Apex Eyewear, Inc., et al. v. E'Lite Optik, Inc., 2007 U.S. Dist. LEXIS 76024 (N.D. Tex., Oct. 12, 2007). 3345

"responsive to exhaust pressure" — "The Court [...] will not read the word 'only' into the claims of the '346 patent. ... A device that has a braking mechanism responsive to exhaust pressure falls within the '346 patent, whether or not such braking mechanism is responsive to something else at the same time." Air Turbine Technology, Inc. v. Atlas Copco AB, et al., 295 F. Supp. 2d 1327 (S.D. Fla. 2003). 3346


"resting on" — "To require a construction that the burner be in contact with the base is unsupported and inconsistent with the disclosure of the patent." Produits Berger S.A., et al. v. Schemenauer, et al., 2007 U.S. Dist. LEXIS 10294 (E.D. Tex., Feb. 14, 2007). 3350

"peripheral portions of the plate being restrained from movement relative to an interior portion of the plate in a direction substantially perpendicular to a major axis of the shoe" — "the peripheral portions of the flexible plate are prevented from changing their place or position as compared to a portion that is close to the center of the plate in any direction that is substantially at a right angle to a heel-to-toe axis of the shoe, including the medial-to-lateral and vertical directions." Akeva L.L.C. v. Adidas America, Inc., 2005 U.S. Dist. LEXIS 11213 (M.D.N.C., May 17, 2005). 3351


"resultant vibratory force" — "vector force in three dimensional space resulting from one or more forces that is applied to a vibratory trough of a conveyor." General Kinematics Corp. v. Carrier Vibrating Equipment, Inc., 2009 U.S. Dist. LEXIS 65081 (N.D. Ill., Jul. 27, 2009). 3353

"retain at least 2.0% and no more than 3.0% phosphorous by weight of fabric" — "The requirement that the fabric retain a certain amount of phosphorous refers solely to the state of the fabric after the wash and boil procedure, without any reference to the level of phosphorous existing before the procedure." Itex, Inc., et al. v. Westex, Inc., et al., 2010 U.S. Dist. LEXIS 72685 (N.D. Ill., Jul. 20, 2010). 3354

"retainably removing" — "removing the container from the container holder into the carriage frame assembly in a controlled manner." Crane Co., et al. v. Sandenvendo America, Inc., et al., 2009 U.S. Dist. LEXIS 47509 (E.D. Tex., Jun. 5, 2009). 3355


"retainer assembly" — "refers to (1) a device that retains all of the bone engaging fasteners and (2) a separate device that attaches the retaining device to the plate." Cross Medical Products, Inc. v. Medtronic Sofamor Danek, Inc. et. al., 2005 U.S. Dist. LEXIS 6566 (C.D. Cal., Apr. 8, 2005). 3359

"retainer means comprising at least one protrusion molded into the surface of the central portion of the lid opposite said access strip" — "recites sufficient structure to overcome the presumption that § 112, P 6 applies." Bailey v. Dart Container Corp., et al., 157 F. Supp. 2d 110 (D. Mass. 2001). 3360

"retainer means comprising at least one protrusion molded into the surface of the central portion of the lid opposite said access strip, said retainer means being shaped and located to capture and releasably maintain said access strip in the open position" — "is not a means plus function clause." Bailey v. Dart Container Corp., 980 F. Supp. 560 (D. Mass. 1996). 3361

"retaining a first portion of the cover in the expanded position and further forcing a second portion of the cover against the overlying portion of the separated tissue layer to further expand such overlying portion only" — "keeping the first portion of the cover in the expanded position and further pushing a second portion of the cover against the portion of the separated tissue that lies over it to further expand only such overlying tissue." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006).

"retaining assembly including a cross brace member" — "a machine part (or parts) that acts as a whole to retain the table legs, and that may consist of only a cross brace member, or there may be other parts in addition to the cross brace member." Lifetime Products, Inc. v. Correll, Inc., 323 F. Supp. 2d 1129 (D. Utah 2004).

"retaining device" — "a mechanism configured removably to secure the filter and other parts within the passageway." Aqua-Lung America, Inc. v. American Underwater Products, Inc., et al., 2009 U.S. Dist. LEXIS 18172 (N.D. Cal., Feb. 26, 2009).


"retaining member" — "a structural element separate and distinct from the female fastener adapted to come into physical contact with the legs of the female fastener to restrain the position of the head portion on the outer portion of the seat shell." American Seating Co. v. Freedman Seating Co., 450 F. Supp. 2d 765 (W.D. Mich. 2006).

"retaining one edge of the tissue flap connected to surrounding tissue, moving the flap away from the edge so that it overlies an adjacent recipient area and applying the flap to such area" — "keeping in position one line of intersection between the tissue flap and tissue that extends on all sides of and joins to the tissue flap, moving the flap in a direction other than towards the intact border so that it covers a receiving area near to the differentially expanded tissue flap and applying the flap to such area." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006).

"retaining said stand portions in face-to-face engagement with the underside of said platform and permitting limited displacement of said bearing members in a horizontal direction"; "retaining said bearing means in sliding engagement with the underside of said platform and permitting limited displacement of said bearing members in a horizontal plane" — "These terms do not contain a limitation that the bearing member cannot move in a non-horizontal direction." Sunbeam Products, Inc. v. HoMedics, Inc., 613 F. Supp. 2d 1041 (W.D. Wis. 2009).

"reticle image"; "reticle pattern" — "one of a series of lines, dots or crosshairs, capable of serving as a reference for centering or otherwise adjusting an optical element in a telescope." Lasermax, Inc. v. Glatter, 2005 U.S. Dist. LEXIS 17136 (S.D.N.Y., Aug. 17, 2005).
"retract" — "limit[s] the claims of the '283 patent to a stud that retracts until the tip of the stud is flush with the immediately surrounding surface of the sole or cleat." Chet's Shoes, Inc. v. Kastner, 2010 U.S. Dist. LEXIS 84212 (D. Vt., Aug. 16, 2010).

"retractable backing surface" — "a backing surface transverse to the table top which supports the stack of paper and withdraws, or draws back or in, to transfer the stack to the cart." Roll Systems, Inc. v. Wallace Computer Services, Inc., 901 F. Supp. 389 (D. Mass. 1995).

"retractable filter cover" — "an element of a device which can move from a first position where it prevents fluid flow into the device, to a second position, where it allows fluid flow into the device." Aqua-Lung America, Inc. v. American Underwater Products, Inc., et al., 2009 U.S. Dist. LEXIS 18172 (N.D. Cal., Feb. 26, 2009).


"return duct from said intercooler" — "conduit for conveying air back from the externally mounted intercooler (defined)." Rice v. Honeywell International, Inc., et al., 2006 U.S. Dist. LEXIS 89235 (E.D. Tex., Nov. 21, 2006).


"rib" — "an elongated structural element, running radially along the flange that axially extends to a height sufficient to engage a second flange's annular rim." Vandor Corp. v. Wilson, et al., 149 F. Supp. 2d 633 (S.D. Ind. 2001).


"ribbon stock" — "refers to the material from which the preferred-embodiment 'cutting blade' is constructed." SDS USA, Inc. v. Ken Specialties, Inc., 107 F. Supp. 2D 574 (D.N.J. 2000).


"riding mower" — "a mower on which a person can ride." Toro Co. v. Textron, Inc., et al., 502 F. Supp. 2d 904 (D. Minn. 2007).

"rigid" — "require[s] that the claimed suture be sufficiently rigid to be pushed through meniscus tissue without a pre-cut channel for the suture to follow." Bionx Implants, Inc., et al. v. Linvatec Corp., 299 F.3d 1378 (Fed. Cir. 2002).

"rigid" — "[requires] that the device be as firm as possible while still being sufficiently resilient to allow the device to be removed and replaced around the teeth and gingival." Dunhall Pharmaceuticals, Inc. v. Discus Dental, Inc., et al., 2000 U.S. App. LEXIS 26924 (Fed. Cir., Oct. 26, 2000) (unpublished).
"second rigid elongated member having a jaw end, a handle end, and an intermediate neck portion" — "requires a rigid member having two ends: one end ("the jaw end") that grasps a workpiece and another end ('the handle end') that receives a force to cause the jaw end to move in the manner specified in the claim." Applied Concepts, Inc. v. Olympia Industrial, Inc., 2000 U.S. Dist. LEXIS 22716 (W.D. Pa., Jun. 6, 2000). 

"a deep rigid heel seat to cup the calcaneus" — "a state of stiffness, or substantial inflexibility, that would not include 'semi-rigid.'" Schoenhaus, et al. v. Genesco, Inc., et al., 351 F. Supp. 2d 320 (E.D. Pa. 2005).

"rigid member" — "is unambiguous and therefore no construction is necessary." ICU Medical, Inc. v. B. Braun Medical, Inc., 344 F. Supp. 2d 663 (N.D. Cal. 2004).

"rigid mooring arm" — "is a clear and descriptive term that requires no further definition to one of ordinary skill in the relevant art. Moreover, the Court concludes that the term as used in Claim 1 is not limited to being 'separate' and 'hinged.'" Advanced Production and Loading, Inc. v. Single Buoy Moorings, Inc., et al., 2004 U.S. Dist. LEXIS 31081 (S.D. Tex., Apr. 26, 2004).

"rigid rim" — "requires that each flange be a separately identifiable 'rib or rim' that is used to attach the overall object to a separate object." HBB Limited Partnership v. Ford Motor Company, et al., 1996 U.S. Dist. LEXIS 4047 (N.D. Ill., March 29, 1996).

"rigidly attached" — "connected in a non-flexible, non-resilient manner (not necessarily entailing a continuous 360-degree weld or entire enclosure of the top and bottom portion of the axle)." Boler Co. v. Arvinmeritor, Inc., 2004 U.S. Dist. LEXIS 13365 (N.D. Ill., Jul. 16, 2004).

"rigidly connecting said axle to said beam" — "a) 'rigidly' means inflexibly, not resiliently, and b) 'connecting' is joining or fastening together." Boler Co. v. Arvinmeritor, Inc., 2004 U.S. Dist. LEXIS 13365 (N.D. Ill., Jul. 16, 2004).


"ring means"; "rigid"; "semi-rigid" — "'ring means' is nothing more than a ring, and that the remaining terms should simply be given their ordinary meanings. ... 'rigid' is taken to mean 'stiff' or 'not flexible'. Similarly, 'semi-rigid' is regarded to mean 'partly rigid' or 'somewhat flexible' (not 'substantially rigid')." Berry, et al. v. Sassy, Inc., 2006 U.S. Dist. LEXIS 86646 (M.D. Fla., Nov. 29, 2006).

"said latch being ring-shaped and being slidably received in said channel of said barrel for slidably receiving said tube therein" — "a curved band that encircles the tube." Windbrella Products Corp. v. Taylor Made Golf Co., Inc., 414 F. Supp. 2d 305 (S.D.N.Y. 2006).


"ring shaped support" — "uses plain words and the phrase has an ordinary meaning based on the constituent terms' general usage." ICU Medical, Inc. v. B. Braun Medical, Inc., 344 F. Supp. 2d 663 (N.D. Cal. 2004).

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"riser card" — "a printed circuit board extending perpendicularly from, and being electronically connected to, the motherboard and having a plurality of expansion connectors into which expansion boards may be inserted." Tulip Computers, International B.V. v. Dell Computer Corp., 236 F. Supp. 2d 364 (D. Del. 2002).

"rivet" — "a short rod having a head formed on one end and an opposite end formed into a second head to produce a permanent joining of two or more parts." Advanced Fiber Technologies Trust v. J&L Fiber Services, Inc., 2010 U.S. Dist. LEXIS 95032 (N.D.N.Y., Sep. 13, 2010).


"robot"; "robotic manipulator"; "robotic arm" — "the moving parts of a robotic system made of links and joints, where the joints typically have motors that operate through a drive mechanism to move the joints, and the motors are typically actuated by a computer controller." Intuitive Surgical, Inc., et al. v. Computer Motion, Inc., 2002 U.S. Dist. LEXIS 14752 (D. Del., Jul. 12, 2002).

"robotic assembly" — "a machine consisting of a pair of horizontally mounted rail/rack assemblies, a vertically oriented shuttle bar that rides along the horizontal rails in a horizontal direction, a carrier frame that moves in the vertical direction along the shuttle bar, and a transfer mechanism that is mounted to and moves with the carrier frame and operates to retrieve a selected product." Crane Co., et al. v. Sandenvendo America, Inc., et al., 2009 U.S. Dist. LEXIS 47509 (E.D. Tex., Jun. 5, 2009).


"roller" — "an elongated body with a central portion between the sidewalls of the channel and ends which extend outward of the sidewalls of the channel." Innovative Office Products, Inc. v. SpaceCo, Inc., et al., 2007 U.S. Dist. LEXIS 62296 (E.D. Pa., Aug. 23, 2007).


"rotatable joint" — "a place where the D-shaped portion of the handle and central region are joined and are capable of rotation." One World Technologies, Ltd., et al. v. Rexon Industrial Corp., Ltd., et al., 2006 U.S. Dist. LEXIS 25324 (N.D. Ill., May 2, 2006).

"rotatable output member"; "cam assembly" — "a ball and ramp device, comprising two opposing members each having a ramped surface, and at least one ball inserted in between the two ramped ramped surfaces." BorgWarner, Inc., et al. v. New Venture Gear; Inc., 237 F. Supp. 2d 919 (N.D. Ill. 2002).
"wherein the handle is rotatably adjustable between at least 0° and 30° from horizontal measured when the arm is lowered and the rotary spindle is horizontal" — "the handle can be rotated at least 0° to 30°, measured from horizontal." *One World Technologies, Ltd., et al. v. Rexon Industrial Corp., Ltd., et al.*, 2006 U.S. Dist. LEXIS 25324 (N.D. Ill., May 2, 2006). 3410

"rotatably engaging" — "holding the tubular post fast in place, while allowing the tube to rotate." *John Mezzalingua Associates, Inc. v. Arris International, Inc.*, 298 F. Supp. 2d 813 (W.D. Wis. 2003). 3411 "I adhere to the initial construction of 'rotatably engaging' to mean 'holding the tubular post fast in place, while allowing the tube to rotate." *Id.*, 2003 U.S. Dist. LEXIS 24730 (W.D. Wis., Nov. 14, 2003). 3412

"rotatably mounted" — "mounted in a way such that it is capable of being rotated." *Robinson v. Advanced Decoy Research, Inc., et al.*, 519 F. Supp. 2d 1087 (S.D. Cal. 2007). 3413


"rotatably therewith" — "supported by the cam shaft and turns on or with the cam shaft." *American Honda Motor Co., Inc. v. Coast Distribution System, Inc.*, 609 F. Supp. 2d 1032 (N.D. Cal. 2009). 3415

"rotating" — "is to be given its ordinary meaning. ... therefore ... the ITC was correct in interpreting the term 'rotating' to mean merely a phase shift in the desired waveform." *Enercon GmbH, et al. v. International Trade Commission*, 151 F.3d 1376 (Fed. Cir. 1998). 3416

"rotating each sanding member about its longitudinal axis in a preselected first direction during a first portion of each circle of revolution and rotating each sanding member in a second direction, opposite to the first direction, during a second portion of each circle of revolution" — "requires a finishing method whereby a sanding member must change direction twice when it is rotated through a circle of revolution, i.e., 360 degrees." *Development Center Hansen & Hundebol A/S, et al. v. QW, Inc., et al.*, 1995 U.S. Dist. LEXIS 18816 (N.D. Ga., May 23, 1995). 3417


"rotor rotation sensor" — "a device that detects the rotation of the rotor and provides a signal that the controller uses to determine when a desired amount of particulate matter has been released." *Rosen's, Inc., et al. v. Van Diest Supply Co., et al.*, 2004 U.S. Dist. LEXIS 5435 (D. Minn., Mar. 30, 2004). 3419


"contact lens having a rounded edge" — "contact lens whose posterior surface has a substantially smooth, curved outer peripheral edge." Coopervision, Inc. v. Ciba Vision Corp., 2007 U.S. Dist. LEXIS 51432 (E.D. Tex., July 16, 2007).

"runner filler" — "a component that partially fills the intake runner, thereby forming at least a portion of the intake passageway." Briggs & Stratton Corp. v. Kohler Co., 398 F. Supp. 2d 925 (W.D. Wis. 2005).


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"safety edge" — "edge positioned over one of the major surfaces and spaced from the perimeter." Jennmar Corp. v. Excel Mining Systems, LLC, 2009 U.S. Dist. LEXIS 60836 (W.D. Pa., Jul. 16, 2009).

"a safety wheel which is rotatably mounted to a free end of said supporting arm to support a front portion of said scooter body and prevent said scooter from being flipped over" — "a wheel, which is mounted to said supporting arm in a manner that allows the wheel to rotate, to support a front portion of said scooter body and prevent said scooter from being flipped over." PlaSmart, Inc. v. Wincell International, Inc., 2007 U.S. Dist. LEXIS 83707 (S.D.N.Y., Nov. 7, 2007).

"said"; "the" — "Where subsequent uses of a claim term within a claim make reference to the first usage as an antecedent (through the use of introductory definite articles such as 'said' or 'the'), the claim term must be interpreted consistently across all such uses." Microprocessor Enhancement Corp., et al. v. Texas Instruments Inc., 2007 U.S. Dist. LEXIS 23768 (C.D. Cal., Feb. 8, 2007).
"said bottom wall comprising an inner, and an outer bottom plenum below said combustion chamber" — "the limitation requires: a combustion chamber with a plate-like bottom of some sort that forms the boundary between the combustion chamber and the inner plenum, where the bottom plate is a thing separate from and below the burner and logs; an inner bottom plenum below the combustion chamber; and an outer bottom plenum below the combustion chamber." *Fireplace Manufacturers, Inc. v. Hearth Technologies, Inc.*, 1997 U.S. Dist. LEXIS 21966 (D. Minn., Dec. 10, 1997).3433


"said feed wheel" — "clearly is meant to be an inherent component of the 'feed section.'" *Maytag Corp. v. Whirlpool Corp.*, 2004 U.S. Dist. LEXIS 31091 (S.D. Iowa, Nov. 23, 2004).3435

"said first chamber being defined by said partition [containing the groove] and said back wall" — "Nu-Kote asserts that claim 1 cannot read on cartridges that contain more than one ink reservoir chamber, given the claim's precise definition of the first chamber. ... We agree with Canon that the claimed 'first chamber' may be subdivided into multiple ink chambers." *Canon Computer Systems, Inc., et al. v. Nu-Kote International, Inc.*, 134 F.3d 1085 (Fed. Cir. 1998).3436


"said linear hydraulic drive units transmitting downward forces from the transverse drive beams to the mounting frame members" — "requires no more than that the drive unit, taken as a whole, transmit the downward force. English syntax simply does not require that all the components, or even more than one of the specified components, contribute to the transmission of forces. As long as the downward forces flow from the drive units (or any portion of the drive units) downward, the claim language requires nothing more." *Foster v. Hallco Manufacturing Co., Inc., et al.*, 1997 U.S. App. LEXIS 18989 (Fed. Cir., Jul. 14, 1997) (unpublished).3438

"said lower joint member having a configuration to establish a clearance with the configuration of the upper joint member of an adjacent panel during angular articulation of said adjacent panels" — "requires no construction." *Wayne-Dalton Corp. v. Amarr Co.*, 2007 U.S. Dist. LEXIS 65382 (N.D. Ohio, Sept. 5, 2007).3439

"said napkin edges" — "the portion between the embossed channels and the outermost edges of the absorbent, alternatively referred to in the patent as the 'sides of the pad.'" *Kimberly-Clark Corp., et al. v. Tyco Healthcare Retail Group*, 456 F. Supp. 2d 998 (E.D. Wis. 2006).3440
"said operator signal requesting said engine control determine a zero torque parameter value for said engine output shaft that approximates a zero torque load on the connection between said engine and said transmission, and said engine control being operable to control said engine to achieve said zero torque parameter value" — "These phrases mean that the engine control actually determined a zero torque parameter value and also that the engine achieved the determined zero torque parameter value, assuming that there had been an operator signal to begin the process. This claim does not require that the condition of actual zero flywheel torque be achieved, but that the determined zero torque parameter value be reached. That is, a zero torque parameter value was first determined and then the engine was controlled and actually reached the 'determined' zero torque value. The claim specifically requires that the engine control be operable to achieve 'said' zero torque parameter value, which refers back to the determined zero torque parameter value, and not that the engine shall reach the condition of actual zero flywheel torque." Meritor Transmission Corp. v. Eaton Corp., 2007 U.S. Dist. LEXIS 13166 (W.D.N.C., Feb. 23, 2007).3441


"said pins are each comprised of a threaded bolt passing through a hole in said storage structure and a pin member positioned around said bolt such that said pin member is tightly engaged with a portion of the inside surface of said storage structure; said pin member having a generally cylindrical body portion and an inwardly extending tapered nose portion; the diameter of said cylindrical body portion being only slightly less than the diameter of a respective one of said bores to provide a snug fit between said body portion and said respective one of said bores; and the diameter of said bolt being less than the diameter of said hole in said storage structure to help relieve said bolt from shear forces exerted between said storage structure and said cover member" — "does not need construction." GSI Group, Inc. v. Sukup Manufacturing Co., 2006 U.S. Dist. LEXIS 70100 (C.D. Ill., Sept. 27, 2006).3443

"taking a first reflectance reading from a dry first surface of said porous matrix" — "The district court held that the claims can not be literally infringed when the dry reflectance reading is not taken from the same test strip that is used in the test, but is measured in advance at the factory. We conclude that the district court correctly interpreted the claims." Lifescan, Inc. v. Home Diagnostics, Inc., 76 F.3d 358 (Fed. Cir. 1996).3444

"a memory for storing characteristic signal samples produced by scanning said preselected segments of bills of different denominations with said scanning head" — "the characteristic signal samples must be produced and stored by the specific scanning head that is present in the device." Cummins-Allison Corp. v. Glory, Ltd., et al., 457 F. Supp. 2d 843 (N.D. Ill. 2006).3445
"said side walls curving downwardly and inwardly towards said conveyor means such that said dump body defines a substantially semi-circular cross-sectional configuration for guiding and evenly deflecting all of the materials within said body towards said conveyor means" — "This claim element requires that the side walls are curved, and that they curve downwardly and inwardly toward the conveyor of the dump body. The requirement that the 'dump body defines a substantially semi-circular cross-sectional configuration' means that the dump body, viewed from either end, is approximately in the shape of a semi-circle. 'Substantially' is used to mean 'approximately.' Thus, the cross section of the dump body must be approximately in the shape of a semi-circle. 'Deflect,' in its ordinary meaning, means to change course. A semi-circle is 'one half of a geometric shape having every point equidistant from a fixed center.'" Highway Equip. Co., Inc. v. Cives Corp., et al., 476 F. Supp. 2d 1079 (N.D. Iowa 2007).

"whereby a substantially tasteless super-purified smoke is created" and "treating meat having freezing point with said tasteless super-purified smoke" — "The use of 'said' makes it clear that 'said tasteless super-purified smoke' refers to the 'substantially tasteless super-purified smoke' that is a result of the processes previously described in the Kowalski Patent." Tuna Processors, Inc. v. Hawaii International Seafood, Inc., et al., 2007 U.S. Dist. LEXIS 77396 (D. Haw., Oct. 17, 2007).

"said zinc anode" — "Neither the Commission nor the Intervenors argued that they did not understand the intended scope because of the absence of an antecedent. The Commission erred in holding that the need to construe a claim, or the proffer of alternative constructions, renders the claim indefinite." Energizer Holdings, Inc., et al. v. International Trade Commission, et al., 435 F.3d 1366 (Fed. Cir. 2006).

"a drive for rotating the plate cylinder and the blanket cylinder at the same speed" — "we find that the 'same speed' element of the claim requires the use of a conventional, rather than harmonic drive which rotates the cylinders such that the surface speed at the nip is the same and which consequently does not produce any image migration." Heidelberg Harris, Inc. v. Mitsubishi Heavy Industries, Ltd., et al., 1998 U.S. Dist. LEXIS 964 (N.D. Ill., Jan. 27, 1998). "We begin by noting the parties' agreement that the phrase 'same speed' in the 'drive' limitation refers to 'same surface speed.' The critical question is whether 'same surface speed' also requires the absence of image migration, as Heidelberg argues and the magistrate judge held. We conclude that it does not." Id., 2000 U.S. App. LEXIS 23757 (Fed. Cir., Sept. 18, 2000) (unpublished).


"sample-receiving cell" — "the cavity into which the liquid sample enters -- and not including the walls surrounding the cavity." Lifescan, Inc. v. Roche Diagnostics Corp., 2007 U.S. Dist. LEXIS 70283 (N.D. Cal., Sept. 11, 2007).


"sample well" — "a container or reservoir for the sample." Roche Diagnostics Corp., et al. v. Apex Biotechnology Corp., et al., 455 F. Supp. 2d 840 (S.D. Ind. 2005).
"sandwich panel" — "The Defendants argue that the meaning of the term 'sandwich panel' does not include the understanding that such a structure can be formed as one piece, but only formed from the unification of different components. ... The Defendants' objection is denied." Martin Marietta Materials, Inc. v. Bedford Reinforced Plastics, Inc., et al., 2006 U.S. Dist. LEXIS 59219 (W.D. Pa., Aug. 18, 2006). 3455

"sandwiched between" — "mean[s] that the U-shaped structure extends at least partially 'over' (and 'under') the bridge." Aspex Eyewear, Inc., et al. v. Altair Eyewear, Inc., 386 F. Supp. 2d 526 (S.D.N.Y. 2005). 3456

"a set gypsum core sandwiched between two sheets of porous glass fiber mat" — "the district court's interpretation of 'sandwiched' as not precluding the flow through of the gypsum core on one of the fiberglass mats should have been applied to that term in [this] claim 11." Georgia-Pacific Corp. v. United States Gypsum Co., et al., 195 F.3d 1322 (Fed. Cir. 1999). 3457

"edge which is scalloped between projecting apices of the wire member/structure" — "the edge of the material may be scooped out or removed between or underneath each projecting crest of the wire." Edwards Lifesciences, LLC, et al. v. Cook Inc., et al., 2007 U.S. Dist. LEXIS 55634 (N.D. Cal., July 23, 2007). 3458

[i] "scan"; [ii] "scanner"; [iii] "scan a surface of the workpiece" — [i] "deflecting the beam of P-polarized light along a relatively narrow scan path"; [ii] "a component or combination of components employing a deflector such as an acousto-optical deflector for directing the beam of P-polarized light along a relatively narrow scan path"; [iii] "the surface of the workpiece is inspected by deflecting the beam of P-polarized light along a relatively narrow scan path." ADE Corp. v. KLA-Tencor Corp., 252 F. Supp. 2d 40 (D. Del. 2003). 3459

"scanning head" — "an assembly configured to cause the probe and sample to move relative to one another in three dimensions, including a back-and-forth scan in two dimensions." Hysitron Inc. v. MTS Systems Corp., 2009 U.S. Dist. LEXIS 36108 (D. Minn., Apr. 28, 2009). 3460

"scattered from the surface of the workpiece" — "diffused or dispersed from the surface of the workpiece." ADE Corp. v. KLA-Tencor Corp., 252 F. Supp. 2d 40 (D. Del. 2003). 3461


"scraping edges" — "the edges formed at the tip of a bit by the longitudinal scraping surfaces and relief surfaces, which edges dig into and engage the damaged fastener upon rotation." Eazypower Corp. v. Alden Corp., 509 F. Supp. 2d 737 (N.D. Ill. 2007). 3463


"screen printing" — "Because the appellant has not shown that, from the point of view of one of ordinary skill in the art, ink jet printing was a conventional method of printing images on foodstuffs at the time the application for the '394 patent was filed, 'screen printing' may not be construed to cover ink jet printing." Kopykake Enterprises, Inc. v. Lucks Co., 264 F.3d 1377 (Fed. Cir. 2001). 3465


"screw" — "is not limited to a unitary structure." *Caught Fish Enterprises, LLC, et al. v. Contek, Inc.*, 509 F. Supp. 2d 954 (D. Colo. 2007). 3468


"plurality of screw holes" — "is entitled to a broad interpretation, a meaning that encompasses all types of openings through which screws can be passed to attach a plate to the bone." *Synthes (U.S.A.) v. DePuy Ace Medical Co.*, 1999 U.S. Dist. LEXIS 18173 (E.D. Pa., Nov. 29, 1999). 3470


"to seal"; "a seal" — "to make contact with another surface so as to substantially stop the passage of solids and liquids"; "a means for substantially stopping the passage of liquids. ... The specification does not require the term to carry only the most restrictive meaning that the contact between the shield and face 'not allow' the passage of liquids or solids." *Protective Optics, Inc. v. Panoptx, Inc.*, 458 F. Supp. 2d 1053 (N.D. Cal. 2006). 3473


"to engage about and seal off said aperture to exclude entry of foreign matter"; "to seal off the spout and exclude entry of foreign matter" — "only require a 'substantial' seal resulting from the physical contact." *Scholle Corp. v. Packaging Systems, LLC*, 2001 U.S. App. LEXIS 11772 (Fed. Cir., Jun. 6, 2001) (unpublished). 3476

"sealed" — "the requirement in all of the claims ... that the lamp assembly have a 'sealed' lamp cavity or socket enclosure means that the socket enclosure and the lens that together form the lamp assembly must themselves be in sealed engagement." *GTY Industries v. The Genlyte Group, Inc.*, 1995 U.S. Dist. LEXIS 21085 (C.D. Cal., Dec. 18, 1995). 3477
"said second lumen being sealed at a distal end thereof to prevent fluid communication between [chamber 1] and said second lumen" — "The district court correctly concluded that this limitation requires an element that 'completely seals off the area between the chamber holding the amniotic fluid and the second lumen.' Utah Medical Products, Inc. v. Clinical Innovations Associates, Inc., et al., 2000 U.S. App. LEXIS 31756 (Fed. Cir., Dec. 13, 2000) (unpublished). 3478


"located in sealing relation with" — "located tightly or securely against." Parker-Hannifin Corp., et al. v. Baldwin Filters, Inc., et al., 2010 U.S. Dist. LEXIS 68906 (N.D. Ohio, Jul. 9, 2010). 3481

"sealing trough" — "a recess in the outer surface of the second end cap that forms a seal with a housing to inhibit the passage of water and other contaminants." Donaldson Co., Inc. v. Baldwin Filters, Inc., 481 F. Supp. 2d 974 (D. Minn. 2007). 3482

"sealingly bonded" — "held together tightly or securely by bonding." Parker-Hannifin Corp., et al. v. Baldwin Filters, Inc., et al., 2010 U.S. Dist. LEXIS 68906 (N.D. Ohio, Jul. 9, 2010). 3483

"seam" — "the place where at least two pieces of fabric are joined by at least two rows of stitches." Taltech Ltd. v. Esquel Enterprises Ltd., 410 F. Supp. 2d 977 (W.D. Wash. 2006). 3484


"seat" — "the structure intended to be sat in or on." Dorel Juvenile Group, Inc. v. Graco Children's Products, Inc., 2004 U.S. Dist. LEXIS 20501 (S.D. Ind., Sept. 9, 2004). 3487

"to seat" — "We agree with BASC that the district court did not err in construing the term 'to seat' as not requiring an engagement between the feet and the cover." Ball Aerosol and Specialty Container, Inc. v. Limited Brands, Inc., et al., 555 F.3d 984 (Fed. Cir. 2009). 3488

"seat assembly" — "exclude[s] swivel housing 254 and bracket 242." Bruno Independent Living Aids, Inc. v. Acorn Mobility Services Ltd., et al., 301 F. Supp. 2d 914 (W.D. Wis. 2003). 3489

"seated within the cavity" — "situated, positioned or located within the cavity." ICU Medical, Inc. v. Alaris Medical Systems, Inc., 2006 U.S. Dist. LEXIS 96077 (C.D. Cal., July 17, 2006). 3490

"first and second seating discrete surfaces" — "two seats that are distinct from other areas within the cockpit area, with each seat accommodating a paddler or occupant." Old Town Canoe Co. v. Glenwa, Inc., 229 F. Supp. 2d 1151 (D. Or. 2001). 3491 "The word 'discrete' as a modifier is consistent with this court's construction of 'seating surfaces' as a seat structurally distinct from the deck surface." Id., 55 Fed. Appx. 918 (Fed. Cir., Jan. 14, 2003) (unpublished). 3492
"seating surfaces" — "'177 patent: aft, middle and forward locations in the cockpit area that are contoured to provide comfortable seating areas and on which passengers are intended to sit, with the footwells associated with the aft seating surface straddling transversely the middle seating surface, and the footwell portions of the footwell associated with the middle seating surface straddling transversely the forward seating surface'; "'063 patent: locations in the cockpit area on which passengers are intended to sit, and separated longitudinally by a spacing surface, with any seat that is located behind another seat having footwells straddling transversely the forward seating surface." Old Town Canoe Co. v. Glenwa, Inc., 229 F. Supp. 2d 1151 (D. Or. 2001). The references to 'seating surfaces' in all three patents must be construed as clearly delineated areas on which passengers are intended to sit. The delineation must be through shape, material, or other differentiation from the surrounding deck such that the 'seating surfaces' are clearly different from the other surfaces on the top deck of the craft." Id., 55 Fed. Appx. 918 (Fed. Cir., Jan. 14, 2003) (unpublished).


"a second predetermined pressure above saido0 first predetermined pressure" — "a pressure, determined before the second pressurization stage begins, which is above the first predetermined pressure and which conforms the liner substantially precisely to the interior of the host pipe." Pipe Liners, Inc., et al. v. Pipelining Products, Inc., 1999 U.S. Dist. LEXIS 17271 (D. Del., Oct. 22, 1999).

"a second screw receiving opening in said head having its axis within the femoral neck, and a third screw receiving opening in said head having an axis generally transverse to the axis of the femoral neck and crossing the axis of the second opening" — "The nail includes a second opening for a screw in the head of the nail that has an axis, which in use can align with the femoral neck. The nail includes a third opening for a screw in the head of the nail that has an axis that is angled with respect to the axis of the femoral neck, and crosses with the axis of the second screw opening." Smith & Nephew, Inc. v. Zimmer, Inc., 2009 U.S. Dist. LEXIS 16691 (W.D. Tenn., Mar. 2, 2009).

"second transmission" — "a second compact, enclosed unit of gears or the like for the purpose of transference of force between machines or mechanisms, often with changes of torque and speed." Key Energy Services, Inc. vs. C.C. Forbes, LLC, et al., 2010 U.S. Dist. LEXIS 67292 (E.D. Tex., Jul. 7, 2010).

"a second wall disposed outwardly of said first upstanding annular wall and defining therebetween a guide chamber" — "to form a guide chamber 'therebetween,' the outwardly disposed second wall must be 'upstanding' and must surround the annular first wall. ... the second wall does not have to be 'annular.' Instead it may be square, or in the shape of a pentagon, or in any other shape that fulfills the in-all-events requirements that it must be upstanding and must completely surround the first upstanding annular wall." Maytag Corp. v. Whirlpool Corp., 95 F. Supp. 2d 888 (N.D. Ill. 2000).
"secondary display" — "a second display in a multi-display system."  

"central circulation section" — "a central high-pressure plenum."  

"upper section including an interface for receiving and retaining a firearm accessory" — 
"Severability is not implicit in the word 'section,' either as a matter of common English usage or as a matter of internal consistency within the '152 Patent. ... The court will construe 'upper section including an interface for receiving and retaining a firearm accessory' as 'part or portion of the accessory clamp that includes an interface for receiving and retaining a firearm accessory and which is higher in physical position than the lower section of the accessory clamp."  

"secured" — "as used in the '300 patent to mean shoes with rear soles that are secured to the shoe, but not permanently fixed."  

"secured" — "to be made fast or firm, as by attaching."  

"secured" — "encompasses more than a mechanism for holding together, but actually includes a security element. The Court construes the term as meaning 'to make safe.'"  

"secured across" — "The district court correctly construed the term 'secured across' in claim 1. There is nothing in the specification which indicates that the term 'secured across' requires a specific securing structure between the first and the second plate."  
Sandt Technology, Ltd. v. Resco Metal and Plastics Corp., et al., 264 F.3d 1344 (Fed. Cir. 2001).

"a rear side with a first magnetic member secured thereto" — "a first magnetic member with horizontal orientation is connected in a manner such that the connection is not likely to fail or give way to the side of the extension facing inward toward the wearer when the primary spectacle frame is worn."  

"said bottom surface having a filter secured thereto" — "mean[s] that the filter must be firmly attached to the bottom surface in some way, but does not require direct contact between the filter and the bottom surface, nor does it require the elimination of the filter housing."  

"secured to" — "attached using attachment means, such as an adhesive or mechanical type fasteners that might be used with material that is selected for the top cushion and foundation."  

"secured to" — "held fast."  

"secured to" — "held fast."  
"secured to said golf bag" — "means that a strap end is attached to the outer surface of the golf bag by a securing means." Izzo Golf, Inc. v. King Par Golf, Inc., 2006 U.S. Dist. LEXIS 51199 (W.D.N.Y., July 26, 2006). 3514

"secured to said rear side" — "mean[s] that each first magnetic member is connected to the rear side of the corresponding extension or to other portions of the primary spectacle frame in a manner such that the connection is not likely to fail or give away." Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc., 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003). 3515

"fixed opposite end portions which are secured to the mounting frame members" — "does not require 'secured' to mean a direct connection." Foster v. Hallco Manufacturing Co., Inc., et al., 1997 U.S. App. LEXIS 18989 (Fed. Cir., Jul. 14, 1997) (unpublished). 3516

"securely fastening said ligature material" — "means that the loop must be secured so as to retain the endless loop in a tensive condition." Callicrate v. New Age Industrial Corp., Inc., 2005 U.S. Dist. LEXIS 8934 (D. Kan., Apr. 27, 2005). 3517


"securing member" — "a structure that is separate and distinct from the table top; a securing member cannot be an integral part of the table top." Lifetime Products, Inc. v. GSC Technology Corp., et al., 321 F. Supp. 2d 938 (N.D. Ill. 2004).

"securing said protective barrier to said structure" — "connecting at least one edge of the protective barrier device to the structure." Armor Screen Corp. v. Storm Catcher, Inc., et al., 2009 U.S. Dist. LEXIS 33407 (S.D. Fla., Mar. 10, 2009). 3521

"securing the graft into the opening by advancing an implant transversely into the opening and under the graft" — "mean[s] to secure the graft by impacting and not by rotating a screw-in type implant." Arthrex, Inc. v. DePuy Mitek, Inc., 2006 U.S. Dist. LEXIS 95465 (M.D. Fla., Oct. 16, 2006). 3522

"select" — "the plain language of the claim when read in light of the specification is clear that the term 'select' does not merely require a 'preference' for certain signals. Signals are to be specifically chosen based on whether or not they pass through irregularities in the container." National Recovery Technologies, Inc. v. Magnetic Separation Systems, Inc., et al., 166 F.3d 1190 (Fed. Cir. 1999). 3523

"select starting position" — "the position of a particular component, as chosen by the rider." SRAM Corp. v. Formula S.R.L., et al., 2009 U.S. Dist. LEXIS 29100 (N.D. Ill., Apr. 3, 2009). 3524

"selectable" — "refers to intake passageway positions and inlets that can be altered without disturbing the function of the cylinder head." Briggs & Stratton Corp. v. Kohler Co., 398 F. Supp. 2d 925 (W.D. Wis. 2005). 3525
"selected and combined such that the storage tank is able to withstand an environment of at least 2000 degrees F. for a period of time of at least two hours" — "there is nothing in the '144 patent's specification or prosecution history ... which provides any indication that these terms necessarily entail an intent-to-achieve-fire-resistance limitation. Furthermore, in giving the term 'selected and combined' its ordinary meaning to one of ordinary skill in the art, there is no such intent limitation. Thus, U-Fuel's argument that there is an intent element inherent in the term 'selected and combined' must be rejected."  *U-Fuel, Inc. v. Highland Tank & Manufacturing Co., Inc., et al.*, 228 F. Supp. 2d 597 (E.D. Pa. 2002).3526

"selected articles" — "merely means, as the normal meaning of those words connotes, some articles that can fit into a front-to-rear gap created by placing the shelf laterally inward from the side wall."  *Maytag Corp. v. Whirlpool Corp.*, 88 F. Supp. 2d 894 (N.D. Ill. 2000).3527


"with the rubber selected from the group consisting of natural polymers and synthetic high polymers"; "with said rubber particles having an outer surface designed and dimensioned to look like natural mulch selected from the group consisting of pea gravel, wood chips, and tree bark ..."; "said rubber particles are preferably selected from the group consisting of waste rubber buffings and ground tires" — "Like the patent in Abbott Labs., 'the claims do not clearly embrace more than one member of the Markush group.' Therefore, the plain meaning of the claims ... 'limits them to a single [alternative] selected from the recited Markush group.'"  *Green Edge Enterprises, LLC v. Rubber Mulch Etc., LLC, et al.*, 2007 U.S. Dist. LEXIS 38799 (E.D. Mo., May 29, 2007).3529

"at selected higher and lower pressure magnitudes" — "at a higher pressure magnitude and a lower pressure magnitude that have been chosen prior to operation of the computer circuitry that is used to determine whether the patient is inhaling or exhaling."  *Respironics, Inc., et al. v. Invacare Corp.*, 2006 U.S. Dist. LEXIS 62233 (W.D. Pa., Aug. 30, 2006).3530


"selected ones of the supports" — "more than one of the supports."  *Fargo Electronics, Inc. v. Iris Ltd, Inc.*, 2005 U.S. Dist. LEXIS 34493 (D. Minn., Nov. 30, 2005).3532


"selected shape" — "is any shape selected by a person skilled in the art who is practicing the patent."  *Applied Elastomerics, Inc. v. Z-Man Fishing Products, Inc.*, 521 F. Supp. 2d 1031 (N.D. Cal. 2007).3534

"selecting" — "In sum, claim 14 does not suggest that the selecting step requires a two-part manual process as interpreted by the district court. Moreover, the specification and prosecution history confirm that the two-part manual process relied upon by the district court is distinct from the claimed selecting step. Thus, the district court's interpretation of the selecting step was unduly narrow." Varco, L.P. v. Pason Systems USA Corp., 436 F.3d 1368 (Fed. Cir. 2006).\(^{3536}\)

"selecting" — "the meaning of 'selecting' in claims 40 and 67 is identical to that of 'sorting' in claims 1, 19, 87, and 93." Clintec Nutrition Co., et al. v. Baxa Corp., 988 F. Supp. 1109 (N.D. Ill. 1997).\(^{3537}\)

"selectively adjusted to any horizontal or vertical position within a range of movement as permitted by the pair of arm segments" — "mean[s] a hand crank position adjustable anywhere within a restricted plane and allowing movement either up and down independently, or forward and rearward independently, or both up/down and forward/rearward simultaneously, and excluding a device in which the hand crank position is adjustable only on an axis linearly coincident with the axis of two telescoping sections." Brike International, Ltd. v. Invacare Corp., 2007 U.S. Dist. LEXIS 44003 (D. Or., June 14, 2007).\(^{3538}\)

"steps of ... selectively energizing ... to provide a combination of energized unequal capacity compressors that exceeds in number the preselected number of compressors in the system" — "invokes application of § 112 par. 6." Altech Controls Corp., et al. v. E.I.L. Instruments, Inc., 1997 U.S. Dist. LEXIS 21336 (S.D. Tex., Jun. 5, 1997)\(^{3539}\) "[B]oth the language of the claims and the prosecution history indicate that the claims are limited to a FIFO system. During prosecution of the patent Altech made express representations that the claims were limited to a FIFO system. In addition, Altech repeatedly referred to its invention as utilizing FIFO selection, without any reference to specific claims." Id., 8 Fed. Appx. 941 (Fed. Cir., May 2, 2001) (unpublished).\(^{3540}\)

"a pair of clamp members selectively engaging an end face of each of said opposing ends of said body member, each of said clamp members being adapted for engaging the roll tube of the roll bending machine such that said clamp members are for securing said body member to the roll tube of the roll bending machine" — "two clamps, which are able, at the operator's discretion, to engage an end face of each of the opposing ends of said body member, each of the clamps is designed to engage the roll tube of the roll bending machine, such that the clamp members function to secure the body member to the roll tube of the roll bending machine." Sabasta, et al. v. Buckaroos, Inc., 2009 U.S. Dist. LEXIS 12754 (S.D. Iowa, Feb. 13, 2009).\(^{3541}\)

"a locking reinforcement support member having a mating means for selectively engaging said connector body at said open-end body cavity" — "The term 'selectively' serves to emphasize that ... the support member can be removed from the connector body so as to allow access to the interior of the connector, facilitating inspection or repair of the contacts without destroying the integrity of the connector in general or the contact elements in particular." Helifix Limited v. Blok-Lok, Ltd., et al., 26 F. Supp. 2d 294 (D. Mass. 1998)\(^{3542}\)

"selectively operable coupling" — "a connecting device that connects the implant to the pusher and that can be selectively operated by the user." Boston Scientific Corp. v. Cordis Corp., 422 F. Supp. 2d 1102 (N.D. Cal. 2006).\(^{3543}\)
"selectively operating" — "selective activation or operation of the device regardless of the method used to achieve activation." Optical Coating Laboratory, Inc. v. Applied Vision, Ltd., 1996 U.S. Dist. LEXIS 1476 (N.D. Cal., Jan. 29, 1996). 3544

"selectively positionable" — "requires that the stem be capable of being positioned or arranged in any desired orientation." Zimmer Technology, Inc., et al. v. Howmedica Osteonics Corp., 397 F. Supp. 2d 974 (N.D. Ind. 2005). 3545

"wherein staples within said pocket become self-aligning" — "the claim term 'self aligning' cannot be limited to require that each and every staple "touch" the tapered sides each and every time a staple is loaded." Ethicon Endo-Surgery v. Tyco Healthcare Group LP, 2006 U.S. Dist. LEXIS 51187 (S.D. Ohio, July 26, 2006). 3546


"self-contained apparatus dimensioned to be easily transported" — "During the prosecution of the patent, Lockwood thus differentiated his device from the prior art because of its compact physical dimensions, not because of its ability to 'function on its own.' ... Lockwood cannot now argue for an interpretation inconsistent with this earlier representation." Lockwood v. American Airlines, Inc., 107 F.3d 1565 (Fed. Cir. 1997). 3548

"self-erecting" — "require[s] that the accused blankets 'form a curved or arched structure which stands off the patient.'" Augustine Medical, Inc. v. Gaymar Industries, Inc., et al., 181 F.3d 1291 (Fed. Cir. 1999). 3549

"a self-expanding structure exhibiting a spring-like behavioral component for moving the member between a compressed orientation ... and an expanded orientation" — "[is] a means-plus-function limitation subject to 35 U.S.C. § 112, P 6." Regents of the University of Minnesota v. AGA Medical Corp., 2009 U.S. Dist. LEXIS 90289 (D. Minn., Sep. 29, 2009). 3550


"sensing a torque occurring at a drive shaft of the washer due to an impact from the clothes" — "sensing a torque occurring at a drive shaft of the washer due to a collision from the clothes." LG Electronics U.S.A., Inc., et al. v. Whirlpool Corp., 2007 U.S. Dist. LEXIS 24056 (D.N.J., April 2, 2007). 3553

"sensing a torque occurring at a drive shaft of said washer due to the twist of clothes, to sense the distribution of impact applied to an agitator of the washer by said clothes" — "sensing a torque occurring at a drive shaft of the washer due to clothes that are entwined together, to sense the distribution of collisions between the clothes and the agitator of the washer." LG Electronics U.S.A., Inc., et al. v. Whirlpool Corp., 2007 U.S. Dist. LEXIS 24056 (D.N.J., April 2, 2007). 3554
"sensing an amount of concentrated detergent being released from said tumbling fabric" — "sensing an amount of concentrated detergent solution that is released from the tumbling fabric (i.e., not sensing the level of a pool of detergent solution in the wash chamber as the fabric tumbles)." *Whirlpool Corp., et al. v. LG Electronics, Inc., et al.*, 423 F. Supp. 2d 730 (W.D. Mich. 2004).\(^\text{3555}\)

"sensing system"; "sensor" — "a system that senses the location and/or identification information of objects"; "one or more devices for sensing the location and/or identification information of objects." *Tinkers & Chance v. Leapfrog Enterprises, Inc.*, 2007 U.S. Dist. LEXIS 43871 (E.D. Tex., June 18, 2007).\(^\text{3556}\)

"sensing the weight of an occupying item of a seat of the vehicle" — "sensing or measuring the weight of an item occupying a seat of the vehicle." *Automotive Technologies International, Inc. v. Delphi Corp.*, 2009 U.S. Dist. LEXIS 83187 (E.D. Mich., Sep. 11, 2009).\(^\text{3557}\)

"sensor" — "a device designed to respond to a physical stimulus (as heat or cold, light, a particular motion) and transmit a resulting impulse for interpretation or measurement or for operating a control." *Harmonic Design, Inc. v. Hunter Douglas, Inc.*, 88 F. Supp. 2d 1102 (N.D. Cal. 2000).\(^\text{3558}\)

"sensor means for providing an output signal when said article feeder element is in a predetermined position" — "the Court sustains Goss’s objection and rejects Special Master Harmon’s recommendation that the Court give "sensor means" means-plus-function treatment." *Goss International Americas, Inc. v. Graphic Management Associates, Inc., et al.*, 2010 U.S. Dist. LEXIS 95468 (N.D. Ill., Sep. 14, 2010).\(^\text{3559}\)

"two or more sensors" — "two or more PMT type detectors." *ADE Corp. v. KLA-Tencor Corp.*, 220 F. Supp. 2d 303 (D. Del. 2002).\(^\text{3560}\)

"separate" — "The court construed the term 'separate' to mean capable of independent movement. ... While the claim language and specification may only allow, rather than dictate, the court's construction of the term 'separate,' the prosecution history of the '857 patent confirms that the district court's interpretation is correct." *Springs Window Fashions LP, et al. v. Novo Industries, L.P.*, 323 F.3d 989 (Fed. Cir. 2003).\(^\text{3561}\)

"separate from but adjacent to" — "means that the two visual displays must be near, or not far from, each other." *American Science and Engineering, Inc. v. Autoclear, LLC, et al.*, 2009 U.S. Dist. LEXIS 25954 (E.D. Va., Jan. 30, 2009).\(^\text{3562}\)

"separate switches" — "a plurality of distinct, mechanically actuated device(s) for making, breaking, or changing connections in an electric circuit." *Minerva Industries, Inc. v. Motorola, Inc. et al.*, 2010 U.S. Dist. LEXIS 9329 (E.D. Tex., Feb. 3, 2010).\(^\text{3563}\)

"separated apart and disconnected from each other" — "not joined to one another at their ends by any structural feature." *Johnson Electric Industrial Manufacturing, Ltd., et al. v. Ametek, Inc.*, 2005 U.S. Dist. LEXIS 19300 (D. Conn., Aug. 24, 2005).\(^\text{3564}\)

"said ramp members being separated by a distance of substantially about 3.5 inches from inside to inside" — "refer[s] either to the distal end of the ramps or, at most, to roughly the last inch of the ramps nearer to the distal end before they go below the road surface." *Stimsonite Corp. v. NightLine Markers, Inc., et al.*, 33 F. Supp. 2d 703 (N.D. Ill. 1999).\(^\text{3565}\)
"separated by a wall"; [ii] "interchamber orifice" — [i] "there is at least a wall between the first and second vacuum chambers"; [ii] "an orifice in a wall that is between the first and second vacuum chambers." Applaera Corp., MDS Inc., et al. v. Micromass UK Ltd., et al., 186 F. Supp. 2d 487 (D. Del. 2002).

"information tracks ... separated by intertrack portions" — "since only the discrete surface indicia are described as representing the stored information, the term 'intertrack portion' cannot represent any stored information." DiscoVision Associates v. Disc Manufacturing, Inc., 1997 U.S. Dist. LEXIS 17735 (D. Del., Sept. 16, 1997).


"separating a layer of skin and subcutaneous soft tissue connected to surrounding skin and soft tissue from underlying support tissue to form a pocket" — "spacing apart the skin and loose connective tissue located just beneath the skin connected to surrounding skin and soft tissue from the support tissue lying beneath to create a pocket." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006).


"sequential" — "The term 'sequential' in the claims is in accordance with this description in the specification; no usage or exemplification of the sequential movement requires eliminating all overlap. It is incorrect to construe the claims as barring all overlap, as urged by M3 Systems. On the correct claim construction, no reasonable jury could have found that the claims are not supported by the description in the specification." C.R. Bard, Inc. v. M3 Systems, Inc., 157 F.3d 1340 (Fed. Cir. 1998).

"the appliances are marked with sequential numbering directly on the appliances" — "assigned with consecutive numbers or a symbol representing a number." Ormco Corp. v. Align Technology, Inc., 2004 U.S. Dist. LEXIS 29994 (C.D. Cal., Jun. 29, 2004).


"series of threads" — "continuous threading with a plurality of turns, as found on an ordinary screw or bolt." Karlin Technology Inc., et al. v. Surgical Dynamics, Inc., 177 F.3d 968 (Fed. Cir. 1999).

"said support mat and central reduced diameter portion serve as the sole support means for the substrate" — "the central reduced diameter portion and the mat are the only structures that hold the substrate in place in the cylindrical body." Tenneco Automotive Operating Co. Inc. v. Visteon Corp., 2005 U.S. Dist. LEXIS 12738 (D. Del., Jun. 28, 2005).

"wherein a shape of said predetermined pressure profile is set independently of any monitored respiratory characteristics of such a patient" — "wherein the magnitude and duration of the predetermined pressure profile are set without reference to or consideration of any monitored breathing characteristics of such a patient." Respironics, Inc., et al. v. Invacare Corp., 2006 U.S. Dist. LEXIS 62233 (W.D. Pa., Aug. 30, 2006).

"reference set of colors" — "a group of two or more hues or tints, the quality or attribute in virtue of which objects present different appearances to the eye, that serves as a basis for comparative measurement or standardization." X-Rite, Inc. v. Accudent Pty Ltd., 2004 U.S. Dist. LEXIS 31069 (D.D.C., Aug. 11, 2004).


"set screw" — "a machine screw designed to be screwed through a metal part (as a collar) and to jam tightly upon another part (as a shaft) so as to prevent relative movement." Innovative Office Products, Inc. v. SpaceCo, Inc., et al., 2007 U.S. Dist. LEXIS 62296 (E.D. Pa., Aug. 23, 2007).

"set stitch" — "a stitch that sets or joins at least a garment component and a bonding element together, or at least two garment components together, to define their relationship in the garment seam, but does not pass through the outer garment component in the finished seam." Taltech Ltd. v. Esquel Enterprises Ltd., 410 F. Supp. 2d 977 (W.D. Wash. 2006).

"settling modulation of servomechanism means dependent upon the optical disk standard data which corresponds with the processed optical signal" — "establishing the regulation of an automatic feedback control system for mechanical motion dependent upon the recognized arrangement of depressions for an optical storage medium which corresponds to the processed optical signal." Kamatani, et al. v. BenQ Corp., et al., 2005 U.S. Dist. LEXIS 42764 (E.D. Tex., Jun. 29, 2005).

"severe impact forces" — "impact forces such as jarring, rolling, dropping, or tipping having a magnitude sufficient to cause immediate effervescence and overflowing of carbonated beverages upon opening, or damage to a container/product such that the container or product is no longer suitable for consumption or sale." Crane Co., et al. v. Sandenvendo America, Inc., et al., 2009 U.S. Dist. LEXIS 47509 (E.D. Tex., Jun. 5, 2009).

"severing edges of the expanded layer from surrounding soft tissue to form a differentially expanded tissue flap" — "separating dividing lines of the expanded layer from the soft tissue along the outer points of the expanded tissue layer to render it capable of being used to cover an area greater than its original area." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006).

"shaft" — "a vertical or inclined hollow opening, of uniform and limited cross section, from the ground surface to a point in the contaminated area. Finally, the claim language does refer to a single shaft, not multiple shafts. The claim is thus limited to a single shaft." Knopik v. Amoco Corp., et al., 96 F. Supp. 2d 892 (D. Minn. 2000).
"prior to adding a fluid to the liner, has a shape corresponding to, and is a close fit within, the interior of the reservoir" — "the liner has a shape as the interior of the reservoir before fluid is added to the liner so that the liner fits within the reservoir with little space between the exterior of the liner and the interior of the reservoir." 3M Innovative Properties Co. v. Illinois Tool Works, Inc., et al., 2007 U.S. Dist. LEXIS 78695 (D. Minn., Oct. 23, 2007).3587


"shape memory alloy element"; "memory alloy element" — "a device or device component made of an alloy that can be caused to revert, or to attempt to revert, from its unstable deformed shape to its stable, original state." Medtronic, Inc., et al. v. W.L. Gore & Associates, Inc., 2007 U.S. Dist. LEXIS 80038 (N.D. Cal., Oct. 19, 2007).3589

"is shaped by an outer contour of said plurality of cords" — "the term does not require construction." Schindler Elevator Corp. v. Otis Elevator Co., 2010 U.S. Dist. LEXIS 2463 (D.N.J., Jan. 13, 2010).3590

"an inflatable bag shaped for active engagement solely with the human foot and substantially only in the region between the ball and heel of the foot" — "exclude[s] the inflation of additional bags at the same time as the bag(s) directed to the plantar arch, as well as the pressurization of any bag(s) concurrently with the pressurization of bag(s) directed to the plantar arch." Novamedix Distribution Ltd. v. Dickinson, 175 F. Supp. 2d 8 (D.D.C. 2001).3591

"shaped substantially as a right triangle" — "shaped as a triangle in which one of the interior angles is approximately ninety degrees." Synvasive Corp. v. Stryker, Corp., 425 F. Supp. 2d 1105 (E.D. Cal. 2006).3592

"a surface shaped to contact said skin region" — "Defendant seeks to add a parenthetical explaining that 'shaped' means 'not flat.' This is contrary to the patent." Palomar Medical Technologies, Inc., et al. v. TRIA Beauty, Inc., 2010 U.S. Dist. LEXIS 112200 (D. Mass., Oct. 13, 2010).3593

"shaped to fit substantially water-tight within the body" — "the elongate member, when disposed within the body, causes a water-tight seal." Millipore Corp. v. W.L. Gore & Associates, Inc., 2010 U.S. Dist. LEXIS 99704 (D. Mass., Sep. 20, 2010).3594

"shaped to normally assume a substantially straight configuration" — "means the anchor member must be sufficiently straight to be inserted into a needle." Smith & Nephew, Inc., et al. v. Biomet, Inc., et al., 2005 U.S. Dist. LEXIS 31723 (D. Or., Nov. 21, 2005).3595

"shaped throughout the length thereof for ..." — "Tenneco argues that the separator finger does not have to be any particular shape; rather, all the patent requires is that the separator finger is shaped such that it accomplishes its intended purpose. The Court agrees with Tenneco." Tenneco Packaging Specialty and Consumer Products, Inc. v. S.C. Johnson & Son, Inc., et al., 1999 U.S. Dist. LEXIS 17937 (N.D. Ill., Nov. 12, 1999).3596
"sharp cut-on" — "in the context of a dye or filter, having a cut-on slope that at some concentration or dye density rises more than one half percent (0.5%) change in transmission for every one nanometer of increasing wavelength change. The cut-on slope is that portion of the transmission spectra of a cut-on dye that represents the transition between [the] substantially blocking and the substantially transmitting region." Suntiger, Inc. v. Sunglass Products of California, 2006 U.S. Dist. LEXIS 1076 (C.D. Cal., Jan. 10, 2006). 3597

[i] "including a sharp, forward cutting edge"; [iii] "a pair of side edges interconnecting said front portion and said rear trailing portion"; [iii] "including a rear edge" — [i] "having a sharp margin of intersection between the top and bottom surfaces of the blade, in which the surface border defined by that margin also defines the forward most point of the blade"; [ii] "the two surface borders, on each side of the blade, that are defined by the margin of intersection between the top and bottom surfaces of the blade and are adjacent to and/or continuous with the front and rear trailing portions of the blade."; [iii] "having a margin of intersection between the top and bottom surfaces of the blade in which at least some part of the surface border defined by that margin is at the rearmost point of the blade. There is no limitation on the shape of the surface border defined by the margin of intersection." Bausch & Lomb Surgical, Inc. v. Oasis Medical, Inc., 2001 U.S. Dist. LEXIS 25880 (C.D. Cal., Jul. 16, 2001). 3598

"sharp impact forces" — "abrupt and sudden impact forces such as jarring, rolling, dropping, or tipping sufficient to cause immediate effervescence and overflowing of carbonated beverages upon opening, or damage to a container/product such that the container or product is no longer suitable for consumption or sale." Crane Co., et al. v. Sandenvendo America, Inc., et al., 2009 U.S. Dist. LEXIS 47509 (E.D. Tex., Jun. 5, 2009). 3599

"sheath" — "any tubular member of any size that can be used for accessing the vascular system through the skin and through which other devices and elements can be passed." Grayzel v. St. Jude Medical, Inc., 162 Fed. Appx. 954 (Fed. Cir., Dec. 23, 2005) (unpublished). 3600

"a sheathing surrounding a major portion of the length of said tube, said sheathing being made of a fireproof, refractory heat resistant material attached to said tube exterior" — "HEN has not made a clear disavowal of claim coverage regarding whether the sheathing can or cannot be molded onto the conductive tube, or whether it must be a separate unit that is capable of being slid on and off the probe." Heraeus Electro-Nite Co. v. Midwest Instrument Co., 2007 U.S. Dist. LEXIS 81685 (E.D. Pa., Nov. 1, 2007). 3601

"sheet"; "sheet-like" — "A review of the '482 patent and its prosecution history reveals that the terms 'sheet' and 'sheet-like' do not have any special meanings in the art and that the '482 inventors used these terms in their ordinary, everyday sense, i.e., to describe something flat with a fairly broad surface relative to its thickness. The claims thus include within their literal scope only devices with conductive material that comprises a fairly broad surface relative to its thickness." Strattec Security Corp. v. General Automotive Specialty Co., Inc., et al., 126 F.3d 1411 (Fed. Cir. 1997). 3602

"sheet" — "may include material made up of different elements and may even include multiple layers of material that are dimensionally the same. When various layers are pressed together, however, to retain the characteristics of a 'sheet,' the material must have a continuous, flat surface (e.g. a bed sheet, a sheet of wood, a sheet of paper, or a sheet of ice). By placing a dimensionally different (e.g. a smaller) material on top of a sheet of flexible material, it loses its sheet-like characteristics because it loses its continuous, flat shape." Conmed Corp., et al. v. Ludlow Corp., et al., 235 F. Supp. 2d 109 (N.D.N.Y. 2002). 3604


"sheet" — "a piece of paper of a size suitable for printing esp. of books or other matter of which the page is a subdivision of a larger area -- often distinguished from reel or web." Ferag AG, et al. v. Grapa-Holding AG, 905 F. Supp. 1 (D.D.C. 1995). 3606

"sheet material which comprises: a) an electrically nonconducting, synthetic sheet laminate material ...; and b) an electrically conductive layer of a polymeric, film-forming, particulate binder material secured to the bottom surface of the synthetic sheet material ..." — "so long as the accused static-dissipating material has an electrically nonconducting layer that embodies all of the limitations described in subpart (a) and an electrically conductive layer that embodies all of the limitations described in subpart (b), the material literally infringes the claim even if it has additional layers below the conductive layer." Charleswater Products, Inc. v. Nevamar Corp., 1998 U.S. App. LEXIS 31011 (Fed. Cir., Dec. 10, 1998) (unpublished). 3607


"shift actuator" — "Because the intrinsic evidence does not clearly narrow the term 'shift actuator' to a device containing a cam, the district court erred by construing the term in that manner." Sunrace Roots Enterprise Co., Ltd., et al. v. SRAM Corp., 336 F.3d 1298 (Fed. Cir. 2003). 3609

"said at least one protrusion permanently fixed to said first end cap and projecting axially inward from said first end cap a short distance toward second end cap" — "a small distance relative to the overall length of the filter element." Parker-Hannifin Corp., et al. v. Baldwin Filters, Inc., et al., 2010 U.S. Dist. LEXIS 68906 (N.D. Ohio, Jul. 9, 2010). 3610

"shoulder" — "an enlargement or projection for keeping something in place or preventing movement past a projection, located at the ends of the male rib and female recess, consisting of definite breaks or sharp edges, that does not offer a smooth transition when the male rib is pressed into the female recess during latching." Inline Plastics Corp. v. Tenneco Packing Corp., 979 F. Supp. 79 (D. Conn. 1997). 3611


"shoulder region" — "region defined by the blades of the bit, located radially between the nose and gage regions if the shoulder region is incorporated with the flank region, and located radially between the flank and gage regions if the flank region exists separately, labeled 316 in Fig. 16 of the '631 Patent." Reedhycalog UK, Ltd, et al. v. Baker Hughes Oilfield Operations, Inc., et al., 2007 U.S. Dist. LEXIS 76125 (E.D. Tex., Oct. 12, 2007). 3613

"shredder"; "shredder mechanism" — "a well known device used for shredding items, such as documents, CDs, floppy disks and other articles"; "a device that shreds items, such as documents, CDs, floppy disks and other articles." Fellowes, Inc. v. Michelin Prosperity Co., Ltd., et al., 2006 U.S. Dist. LEXIS 90648 (E.D. Va., Dec. 15, 2006). 3615

"shrink-fit" — "a tight interference fit between mating inner and outer parts made by heating the outer member to expand it or cooling the inner part to contract it so that the outer part can fit into the inner part." Advanced Fiber Technologies Trust v. J&L Fiber Services, Inc., 2010 U.S. Dist. LEXIS 95032 (N.D.N.Y., Sep. 13, 2010). 3616


"locking shutter" — "portion of bracket that is capable of shutting, closing, making secure, or preventing displacement of the archwire." OrthoArm, Inc., et al. v. Forestadent USA, Inc., et al., 502 F. Supp. 2d 968 (E.D. Mo. 2007). 3618


"side rail positioning mechanism" — "the combination of (1) a handle mounted to a side rail; (2) a vertical lock spindle which is rotatably attached to the same side rail and has several lock pins spaced vertically along its length; and (3) a specially designed locking component for receiving the lock spindle." Pedicraft, Inc. v. Stryker Corp. of Michigan, et al., 2003 U.S. Dist. LEXIS 27837 (M.D. Fla., May 5, 2003). 3625
"side wall" — "a structure projecting or extending upward, i.e., above the plane of the support surface, from either side of the support tray." Ambrose, et al. v. Steelcase, Inc., et al., 2003 U.S. Dist. LEXIS 26035 (W.D. Mich., Nov. 10, 2003).3626


"side walls" — "opposing vertical constructions resembling an upright continuous surface, and each serving to enclose, divide, or protect the opposing areas of the body and that join a top to a bottom." Bradford Co. v. Afco Manufacturing, et al., 2006 U.S. Dist. LEXIS 88547 (S.D. Ohio, Dec. 5, 2006).3628

"side view" — "the side view image is not limited to crescent shaped; the viewing angle may not be a 90 degree angle, a top view angle, or identical to the angle created by the first camera; and the viewing angle is not limited to a 'low angle.'" Scanner Technologies Corp. v. ICOS Vision Systems Corp., N.V., 2002 U.S. Dist. LEXIS 331 (S.D.N.Y., Jan. 10, 2002).3629


"sidewall" — "a structure projecting or extending upward, i.e., above the plane of the support surface, from either side of the support tray." Flex-Rest, LLC v. Steelecase, Inc., 455 F.3d 1351 (Fed. Cir. 2006).3632


"a second distance that is significantly less than the first distance" — "Defendant urges that the Court conclude that a difference of less than one-quarter inch is not 'significantly less' within the meaning of this claim. It notes that the specification gives an example of 1/4 inch, and that Claim 3 requires a difference of 'more than about 0.64 centimeters (0.25 inch).' Rather than support Defendant's point of view, these references imply a different construction. Under the doctrine of claim differentiation, Claim 3 is necessarily narrower than Claim 1, not identical to it." Minnesota Mining and Manufacturing Co. v. Lake Country Manufacturing, Inc., 918 F. Supp. 1307 (D. Minn. 1996).3635

"wherein the groove about the lid has an inner surface, and the rim of the main body has an outer surface, that each define semi-circular arcs of similar radii" — "The inner surface of the groove and the rim of the main body are curved at respective radii so that the inner surface and the rim remain in nearly continuous contact over the extent of the semi-circular arcs when the lid and body are assembled." Learning Curve Brands, Inc. v. Munchkin, Inc., 2010 U.S. Dist. LEXIS 27277 (W.D. Wis., Mar. 22, 2010).3636
"the improvement comprising a simplified set of instruments, including ..." — "a set of instruments used in resecting the bones that form a patient's knee. The set of instruments comprises: at least one guide member capable of making all the necessary tibia and femur bone resections; and at least one L-shaped guide rod that cooperates with the guide member." Depuy Orthopaedics, Inc. v. Androphy, et al., 2000 U.S. Dist. LEXIS 661 (N.D. Ill. 2000).


"simultaneously" — "at the same time or almost the same time, e.g., the inner tubular holds both flapper valves open at the same time during auto-fill mode, and the flapper valves close at almost the same time during conversion and back pressure mode." Davis-Lynch, Inc. v. Weatherford International, Inc., 2009 U.S. Dist. LEXIS 33414 (E.D. Tex., Apr. 20, 2009).

"said weight member consisting essentially of a single back bar mass" — "The parties agree that the term 'consisting essentially of' as used in the subject phrase means that the back bar mass does not have any elements that would substantially affect the characteristics of the claimed invention in addition to those elements set forth in the claim. ... The term 'back bar mass' ... is not limited to masses having planar surfaces and uniform width." Antonious v. Spalding & Evenflo Cos., Inc., et al., 1998 U.S. Dist. LEXIS 10740 (D. Md., Apr. 27, 1998).

"to define a single flow lumen which transfers substantially all flow between said primary graft flow lumen and said secondary graft flow lumen" — "when the primary graft body is connected to the secondary graft body a single, rather than a bilateral, lumen is formed and substantially all fluid flows from the primary graft body to the secondary graft body through that single flow lumen." Edwards Lifesciences, LLC, et al. v. Cook Inc., et al., 2007 U.S. Dist. LEXIS 55634 (N.D. Cal., July 23, 2007).

"single joint of boneless meat" — "one of the portions into which an animal carcass is divided." Logan v. Smithfield Foods, Inc., et al., 2009 U.S. Dist. LEXIS 27635 (S.D. Tex., Mar. 31, 2009).

"single layer web" — "a single sheet of film consisting of one or more polymer layers." Pliant Corp. v. MSC Marketing and Technology, Inc., 416 F. Supp. 2d 632 (N.D. Ill. 2006).

"a single output receptacle" — "mandates that any device with more than one output pocket would not infringe." Cummins-Allison Corp. v. Glory Ltd., et al., 2005 U.S. Dist. LEXIS 38857 (E.D. Tex., Dec. 12, 2005).

"single package" — "We reject the district court's conclusion that the 'single package' limitation ... merely requires that devices be 'capable of' being provided to the patient in a single package. Here, the claims are written to require that the devices actually be in a single 'package.'" Ormco Corp., et al. v. Align Technology, Inc., 463 F.3d 1299 (Fed. Cir. 2006).


"single piece construction" — "cannot mean pipe which does not require inserts, but instead means pipe which in fact does not have inserts. This is the definition that was presented to the examiners during the patent prosecution and the term cannot now be argued to mean something else." W.E. Hall Co., Inc. v. Atlanta Corrugating, LLC, 2002 U.S. Dist. LEXIS 27444 (N.D. Ga., Sept. 24, 2002).
"wherein each of the components of the health tracker is part of a single, unified portable unit" — "wherein each of the components of the health tracker is a part of a coherent group or whole that is capable of being carried." *PHT Corp. v. Invivodata, Inc.*, 2005 U.S. Dist. LEXIS 9577 (D. Del., May 19, 2005). 3648


"siphoning treated water from the drainage space under gravity into the treated water outlet conduit" — "Whether this 'siphoning effect' requires a siphon valve that allows the drainage space to fill with water before opening does not need to be determined by the court in construing this claim for the purposes of this litigation. The essential finding here is that the '527 patent does not define 'siphoning' to include the ordinary meaning of the term as understood by a person of skill in the art. Quite simply, the '527 patent does not teach a true siphon. To define 'siphoning' in the '527 patent to include the hydraulic process by which water is induced to flow against gravity and over an intermediate elevation would grant the '527 patent an overbroad scope that exceeds the clear intent of the patent's claim language and specification." *Contech Stormwater Solutions, Inc. v. BaySaver Technologies, Inc., et al.*, 2007 U.S. Dist. LEXIS 71659 (D. Md., Sept. 25, 2007). 3654

"sit-on-top kayak" — "a small decked watercraft propelled by a human or by humans using a double-ended paddle or paddles, narrow in shape, with a generally V-shaped hull porton and a deeper draft than a surfboard to allow better tracking, on top of which the passenger or passengers sit horizontally aligned." *Old Town Canoe Co. v. Glenwa, Inc.*, 229 F. Supp. 2d 1151 (D. Or. 2001). 3655 "We [] adopt the district court's construction of 'sit-on-top kayak' and its function as a limitation of the claims with the exception of the clause 'with a generally V-shaped hull portion and a deeper draft than a surfboard to allow better tracking.' That we reject. The proper definition includes crafts with both displacement and planing hulls." Id., 55 Fed. Appx. 918 (Fed. Cir., Jan. 14, 2003) (unpublished). 3656

"lip portion sized larger than the first opening"; "the peripheral lip portion projecting beyond the first opening thereof" — "a portion of the suction cup sized to project beyond the first opening of the housing"; "the peripheral lip portion of the suction cup extending beyond the first opening of the housing." National Products, Inc. v. Palmetto West Trading Co., LLC, 2006 U.S. Dist. LEXIS 28682 (W.D. Wash., May 4, 2006).

"an antenna, sized to fit within an area defined by a faceplate for an outwardly facing opening of said wallbox" — "an antenna developed so it fits within the outer edges of a faceplate that covers the opening of an electrical wallbox." Lutron Electronics Co., Inc. v. Control4 Corp., 2009 U.S. Dist. LEXIS 3562 (D. Utah, Jan. 20, 2009).

"back bar mass being sized to provide a significant mass at its point of location to enhance the energy transfer of a golf ball being struck during the execution of a golf stroke" — "The Court does not find a locational limitation in the subject phrase that would require the mass to be at the center of gravity." Antonious v. Spalding & Evenflo Cos., Inc., et al., 1998 U.S. Dist. LEXIS 10740 (D. Md., Apr. 27, 1998).

"sized to receive a finger of the user" — "of such a size to allow greater leverage for easier opening of the binder when applying the finger of the user." U.S. Ring Binder, LP v. Staples the Office Superstore LLC, et al., 2009 U.S. Dist. LEXIS 21783 (E.D. Mo., Mar. 18, 2009).

"skinless" — "is properly construed as a performance characteristic, and that a surface that does not impede flow is 'skinless' as that term is used in the art of filtration membranes." Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211 (Fed. Cir. 1995).

"skull facial features" — "pertaining to the bones of the face, including, but not limited to, a mouth feature and a nose feature, as shown in Figures 5 through 9 of the '972 patent." Hoodlums Welding Hoods, LLC v. Redtail International, LLC, 2009 U.S. Dist. LEXIS 100356 (E.D. Mo., Oct. 28, 2009).

"sleeve" — "a substantially cylindrical object that is dimensioned to fit into or attach to the roll core of the print ribbon supply roll." Fargo Electronics, Inc. v. Iris Ltd, Inc., 2005 U.S. Dist. LEXIS 34493 (D. Minn., Nov. 30, 2005).

"sleeve" — "a part, such as a grommet or rubber collar, that fits over the non-pointed end of the spike such that (a) both the spike and the sleeve fit into the hole so that (b) the sleeve is capable of reducing the forces between the spike and the frame. This design reduces potential damage to, or distortion of, the frame as the spike pierces a tire and is removed from the frame during deployment." PMG, Inc. v. Stinger Spike Systems, Inc., 2002 U.S. Dist. LEXIS 17162 (N.D. W. Va., Mar. 28, 2002).

"sleeve" — "a cylinder, tube, frustum or sphere insertable into a body vessel and capable of isolating material normally flowing into the vessel from direct contact with the interior surface of the vessel." Arlaine & Gina Rockey, Inc. v. Cordis Corp., 2004 U.S. Dist. LEXIS 30763 (S.D. Fla., Jan. 5, 2004).

"a sleeve surrounding said emissive insert so as to separate said emissive insert from contact with said holder, said sleeve having a radial thickness of at least about 0.01 inches at said front end"; "a sleeve positioned in said cavity coaxially about said emissive insert, said sleeve having a radial thickness of at least about 0.01 inches at said front end" — "The term 'sleeve,' as used in the 425 patent, encompasses both sleeves that separate the emissive insert from the holder by completely encircling it and those that separate the emissive insert from the holder by partially encircling it, so long as the emissive insert is entirely encircled by the sleeve at its front end and has a radial thickness of at least about 0.01 inches." Centricut, LLC v. Esab Group, Inc., 2002 U.S. Dist. LEXIS 4202 (D.N.H., Feb. 7, 2002).3669

"slidably enclosing a sliding assembly comprising a needle and a winged needle hub" — "requires that the guard substantially contain the needle-assembly at all times." DSU Medical Corp., et al. v. JMS Co., Ltd., et al., 471 F.3d 1293 (Fed. Cir. 2006).3670

"the insulated block being adapted to slidably engage the coolant cavity, thereby the coolant and the insulated block together substantially filling the coolant cavity" — "The district court construed this limitation to require that the cover block be inserted into the coolant cavity in order to 'slidably engage' it. ... We agree with the district court." Foremost in Packaging Systems, Inc. v. Cold Chain Technologies, Inc., 485 F.3d 1153 (Fed. Cir. 2007).3671


"slidably receiving"; "relative movement"; "relatively moved" — "'slidably receiving' (as well as the terms 'relative movement' and 'relatively moved' found in other claims) should be construed to refer to a stationary body into which the movable needle retracts." MBO Laboratories, Inc. v. Becton, Dickson & Co., 385 F. Supp. 2d 88 (D. Mass. 2005).3675

"slideably supported on the truck trailer" — "the bows are adapted for smooth and continuous movement along a surface on the truck trailer, which supports the bows." Sundance, Inc. v. De Monte Fabricating, Ltd., 485 F. Supp. 2d 805 (E.D. Mich. 2007).3676

"sliding interface" — "a common boundary between two surfaces that can move along in smooth, continuous contact." Retractable Technologies v. New Medical Technologies, 2004 U.S. Dist. LEXIS 3855 (E.D. Tex., Mar. 1, 2004).3677

"slight misalignment" — "a misalignment resulting from a rotation of the lenslets of the lens array relative to an edge of the LCD panel by just enough number of degrees to eliminate residual moire." Honeywell International Inc. v. Apple Computer, et al., 2009 U.S. Dist. LEXIS 73428 (D. Del., May 4, 2009).3678

"slight misalignment" — "a slight misalignment resulting from a rotation of the lenslets of the lens array, relative to an axis of the LCD panel causing moire, by just enough, and not more, number of degrees to eliminate moire effects due to the structure of the display." Honeywell International, Inc., et al. v. Nikon Corp., et al., 642 F. Supp. 2d 322 (D. Del. 2009).3679

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"slightly larger in diameter than said male end" — "the second enlarged interior diameter is slightly larger than the exterior diameter of the male end." CertainTeed Corp. v. Modern Products Industries, Inc. et al., 2005 U.S. Dist. LEXIS 7638 (E.D. Pa., May 2, 2005).3680

"a slit through a planar section of said thin membrane" — "a slit through the section of the thin membrane that has a flat, two-dimensional quality." Freeman, et al. v. Gerber Products Co., 506 F. Supp. 2d 529 (D. Kan. 2007).3681

"sloping upwardly and inwardly" — "Once the adjacent surface is defined, it must slope 'upwardly and inwardly' relative to the trailing edge and the hitting face of the club." Karsten Manufacturing Corp. v. Cleveland Golf Co., 1998 U.S. Dist. LEXIS 23148 (D. Ariz., Dec. 4, 1998).3682 "The district court's claim construction correctly reflected the description in the specification, and is confirmed." Id., 242 F.3d 1376 (Fed. Cir. 2001).3683


"slot" — "the trial court correctly construed 'slot' as not requiring a defined width, as long as it was capable of receiving a wing." DSU Medical Corp., et al. v. JMS Co., Ltd., et al., 471 F.3d 1293 (Fed. Cir. 2006).3685


"slot" — "a groove or opening in the bottom exterior surface of a window operator's bottom support that accommodates a raised surface of a window frame." Ashland Products, Inc. v. Truth Hardware Corp., 2002 U.S. Dist. LEXIS 9822 (N.D. Ill., May 29, 2002).3687

"slot for receiving the camming member of the clamp"; "pair of slots" — "opening or groove (or a pair of openings or grooves) that imparts motion to and guides the motion of the camming member." Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F. Supp. 2d 93 (D. Conn. 2006).3688

"a housing having [or including] a slot therein for receiving the pedal shaft [therein]" — "require that the device contain a narrow opening, groove, passage, enclosure or space, and that this narrow opening, groove, passage, enclosure or space be located in the housing of the device." Lawman Armor Corp. v. Winner International, Inc., 2002 U.S. Dist. LEXIS 1431 (E.D. Pa., Jan. 22, 2002).3689

"the slots being disposed substantially parallel to the longitudinal axis of the tubular member" — "a 'slot' is a long and narrow opening or groove, an opening whose length is substantially greater than its width. The claim requires slots in the tubular members that run largely or approximately parallel to the longitudinal axis." Cordis Corp. v. Boston Scientific Corp., 2005 U.S. Dist. LEXIS 10750 (D. Del., Jun. 3, 2005).3690

"slots engageable with a pair of camming members" — "openings or grooves that impart motion to and guide the motion of the camming members." Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F. Supp. 2d 93 (D. Conn. 2006).3691

"slotted head" — "a head containing one or more slots." Rutherford Controls Int'l Corp., et al. v. Alarm Controls Corp., et al., 2009 U.S. Dist. LEXIS 69115 (E.D. Va., Aug. 6, 2009). 3693

"a slotted plate" — "a plate with a slot that is stably attached to a case." Tom Hayden Enterprises, Inc. v. Southern Oregon Hot Bikes, Inc., 2004 U.S. Dist. LEXIS 8195 (D. Or., Apr. 29, 2004). 3694

[i] "slow the rotation of said head during said no-load operational mode"; [ii] "anti-spin apparatus" — [i] "slowing the rotation of the head when no material is being crushed"; [ii] "device that slows the rotation of the head." Metso Minerals Industries, Inc. v. Flsmidth-Excel LLC, et al., 2010 U.S. Dist. LEXIS 47389 (E.D. Wis., May 13, 2010). 3695

"slurry" — "a mixture of additives and carrier is required, not necessarily a uniform or homogeneous mixture." Micro Chemical, Inc. v. Great Plains Chemical Co., Inc., 900 F. Supp. 1386 (D. Colo. 1995). 3696

"small play" — "a relatively little space between the locking surfaces of interlocking panels such that the locking surfaces can be displaced relative to one another in the direction of their joined edges." Alloc, Inc., et al. v. Pergo, LLC, 2009 U.S. Dist. LEXIS 62881 (E.D. Wis., Jul. 2, 2009). 3697

"small volume" — "the term 'small volume' does not limit the dialer to a particular size as long as it performs its function. The claim term 'small volume' does reemphasize, however, that the portable dialer unit does not include a keypad. The specification itself notes that a keypad would inhibit the portability of the hand-held item." Innovad Inc. v. Microsoft Corp., et al., 260 F.3d 1326 (Fed. Cir. 2001). 3698


"snag-resistant means ... for smoothly guiding and positioning the lens across contacted eye tissue" — "[need not] prevent any and all damage to the eye during insertion." Pannu v. Iolab Corp., 155 F.3d 1344 (Fed. Cir. 1998). 3701

"snap" — "When used as a noun, a 'snap' is defined as 'a catch or fastening that closes or locks with a click,' and when used as an adjective, 'snap' is defined as 'shutting, fastening or otherwise coming together with a click or by means of a device that snaps.'" LRC Electronics, Inc. v. John Mezzalingua Associates, Inc., 974 F. Supp. 171 (N.D.N.Y. 1997). 3702

"the lid defining a groove about its edge sized to receive and snap over the rim of the main body and form a seal" — "The groove defined about the edge of the lid fits over the rim of the main body so that as the rim is received in the groove a portion of at least one of the lid and rim deflects to overcome an interference between them and then rebounds toward its position before deflection to form a closure to resist leakage." Learning Curve Brands, Inc. v. Munchkin, Inc., 2010 U.S. Dist. LEXIS 27277 (W.D. Wis., Mar. 22, 2010). 3703
"snap-together coupling" [and] "snap-action shifting them laterally" — "a device that serves to connect the ends of adjacent parts or objects by snap-action, which is characterized by a rapid resilient movement towards a geometry, immediately precipitated by the reduction of a resisting force, when the panels are joined by shifting them laterally in a substantially co-planar fashion." Alloc, Inc. v. Unilin Decor N.V., et al., 2007 U.S. Dist. LEXIS 16743 (E.D. Wis., Mar. 6, 2007).

"snap type elements" — "elements that are capable of exhibiting snap action." Alloc, Inc. v. Unilin Decor N.V., et al., 2007 U.S. Dist. LEXIS 16743 (E.D. Wis., Mar. 6, 2007).


"disposed ... so as to substantially lessen the foreshortening of said stent upon its expansion" — "encompasses an increase in the distance between the longitudinal positions of the ends of the flexible compensating members or flexible links that is caused by expansion of the stent by a balloon or other mechanical means." Scimed Life Systems, Inc., et al. v. Johnson & Johnson, 225 F. Supp. 2d 422 (D. Del. 2002).

"so dimensioned as to be installable within the exit station of the processing machine" — "designed for use in the exit station." Nova Measuring Instruments, Ltd. v. Nanometrics, Inc., 2006 U.S. Dist. LEXIS 90736 (N.D. Cal., Dec. 1, 2006).

"providing an implantable prosthesis including a plug formed of a surgical mesh fabric which is compressible from a first configuration which is larger than the defect into a second configuration which approximates the shape of the defect so that the plug securely fits therein and occludes the defect" — "using a plug formed of surgical mesh that can be compressed from a configuration that is larger than the defect or hole into a second configuration that approximates the shape of the hole, so that the plug fits into and plugs up the hole." C.R. Bard, Inc., et al. v. United States Surgical Corp., 102 F. Supp. 2d 199 (D. Del. 2000).


"soft gas permeable contact lens"; "characterized by ... softness ..." — "a contact lens having a Hardness (Shore D) of less than five"; "having flexibility when hydrated to shape to the contours of the eye." Rembrandt Vision Technologies, L.P. v. Bausch & Lomb, Inc., et al., 2007 U.S. Dist. LEXIS 36919 (E.D. Tex., May 21, 2007).

"softened wear layer" — "means that the claimed surface covering is in a softened condition after being cured and cooled no later than a finite point in time prior to being imprinted with a surface texture by mechanical means." Mannington Mills, Inc., et al. v. Armstrong World Industries, Inc., et al., 2002 U.S. Dist. LEXIS 18641 (D. Del., Aug. 20, 2002).

"solder reflow temperature" — "mean[s] the peak reflow temperature, rather than the liquidus temperature." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 (Fed. Cir. 1996).
"sole" — "the distinguishable portion of the sole plate designed to contact the ground (i.e., a flat, planar surface) and contacting the ground as the club lies at rest, with the club contacting the ground at the standard lie angle for the club at issue." Despoir, Inc. v. Nike USA, Inc., 2005 U.S. Dist. LEXIS 10845 (N.D. Ill., Feb. 9, 2005).3715

"solenoid" — "a structural element where (1) the solenoid is actuated only as long as power is supplied, then returning automatically to its original position; (2) the motion of the solenoid plunger is linear; and (3) the solenoid housing is movable." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997).3716


"solid radiation source" — "a radionuclide of definite shape and volume; not liquid or gaseous." Xoft, Inc. v. Cytyc Corp., et al., 2007 U.S. Dist. LEXIS 34468 (N.D. Cal., April 27, 2007).3718

"source of light" — "include[s] a device comprised of two or more component parts, such as a bulb and a reflector, producing a beam of light." Krippelz v. Ford Motor Co., 2003 U.S. Dist. LEXIS 2538 (N.D. Ill., Feb. 24, 2003).3719

"source of pressurized fluid" — "the Court will not construe this term." Toro Co. v. Textron, Inc., et al., 502 F. Supp. 2d 904 (D. Minn. 2007).3720

"space" — "a location that can be occupied by one of the game pieces." Innovention Toys, LLC v. MGA Entertainment, Inc., et al., 2009 U.S. Dist. LEXIS 48386 (E.D. La., May 21, 2009).3721

"space" — "the opening bounded by the web and interlinked link ends when the opening is at its maximum." Habasit Belting Inc. v. Rexnord Industries, Inc., et al., 340 F. Supp. 2d 518 (D. Del. 2004).3722

"spaced apart" — "there is a space between two cutting disks." Fellowes, Inc. v. Michilin Prosperity Co., Ltd., et al., 2006 U.S. Dist. LEXIS 90648 (E.D. Va., Dec. 15, 2006).3723

"spaced apart" — "two articles cannot be 'spaced apart' from each other if they are physically touching." Sparks v. Eastman Kodak Co., 1999 U.S. Dist. LEXIS 22169 (S.D. Cal., Aug. 31, 1999).3724

"spaced apart"; "longitudinally spaced from" — "are [] respectively defined as 'separated' and 'separated along the longitudinal axis.'" Medinol Ltd. v. Guidant Corp., et al., 2004 U.S. Dist. LEXIS 19705 (S.D.N.Y., Sept. 30, 2004).3725

"said connectors being spaced apart and each located adjacent a side wall portion of said bag and adjacent the one end of said bag and liner having the discharge openings therethrough" — "the connectors are located so that they do not touch one another and so that they are near both the end of the bag through which the contents of the bag are emptied and the sides of the bag." Scholle Custom Packaging, Inc. v. Grayling Industries, Inc., 2010 U.S. Dist. LEXIS 55414 (W.D. Mich., Jun. 3, 2010).3726

"two spaced-apart-and-parallel implement-support plates" — "two implement support plates that are spaced apart and parallel and do not touch or intersect." Kai U.S.A., Ltd. v. Buck Knives, Inc., 2006 U.S. Dist. LEXIS 24924 (D. Or., Feb. 9, 2006).3727
"said rear wall comprising a vertical baffle spaced apart from the rear of said combustion chamber for directing combustion gases first in a vertically downward direction and then in a vertically upward direction and into said horizontal exhaust pipe" — "Hearth offers several definitions of 'baffle' including 'an object placed in an appliance to change the direction or retard airflow….' The Court will adopt Hearth's definition of baffle for the purposes of construing this limitation. ... Moreover, ... the patentee changed the limitation to read 'a vertical baffle spaced apart from the rear of said combustion chamber.' The clear implication is that there must be some distance between the baffle and the rear of the chamber." **Fireplace Manufacturers, Inc. v. Hearth Technologies, Inc., 1997 U.S. Dist. LEXIS 21966 (D. Minn., Dec. 10, 1997).**

"spaced apart opposing pivot flanges" — "projecting rims or ribs with flat inner surfaces placed a fixed distance from each other on opposite sides of the center flange that support the shift lever pivot structure and attach it to the support via a pivot pin for turnable or rotational motion. These projections are distinct from and supported by pairs of webs that serve to connect opposite ends of each pivot flange to the center flange." **Grand Haven Stamped Products Co. v. Dura Automotive System, Inc., 2004 U.S. Dist. LEXIS 31087 (W.D. Mich., Jun. 28, 2004).**

"spaced axially downwardly"; "spaced axially below"; "spaced apart" — "'spaced axially downwardly' and 'spaced axially below' ... [permit] the flanges [to] be abutting -- that is, touching or bordering -- so long as they remain independently function and not attached -- that is, joined, connected, or bonded -- to one another. Spaced apart, however, requires at least some physical space between the flanges." **Stant Manufacturing, Inc. v. Gerdes, GmbH, 2004 U.S. Dist. LEXIS 27704 (S.D. Ind., Sept. 27, 2004).**

"said shelf spaced laterally inward from said one side wall and forming a front-to-rear gap therebetween" — "the gap need not be either a long single gap or a quite wide single gap (or both) ... Standing alone, the claim language is plain enough: It merely requires the shelf to be laterally inward so as to form the previously described front-to-rear gap. In other words, the spacing between the shelf and the side wall does not have to meet some particular measure, but must merely be located 'laterally inward.'" **Maytag Corp. v. Whirlpool Corp., 88 F. Supp. 2d 894 (N.D. Ill. 2000).**

"spaced parallel axes" — "requires that the axes be 'spaced' by some distance such that they do not touch, but that there is no requirement that the axes be fixed." **Ishida Co., Ltd., et al. v. Taylor, et al., 1998 U.S. Dist. LEXIS 22957 (N.D. Cal., Nov. 23, 1998).**

"spaced relation to the uppermost portion of the first quantity of explosive material"; "first relatively large quantity of explosive material"; "second relatively small quantity of explosive material" — "there is an air-gap in the borehole between the top of the lower-most explosive material and the bag-like device above it"; "the larger quantity of explosive material placed within the borehole"; "the smaller quantity of explosive material placed in the borehole." **Fitzgibbon v. Eico, Inc., et al., 2006 U.S. Dist. LEXIS 57424 (S.D. W.Va., Aug. 10, 2006).**

"spaced separate elements" — "distinct components that do not come in contact with each other, once they are formed in the patented manufacturing process." **McDavid Knee Guard, Inc., et al. v. Nike USA, Inc., 2009 U.S. Dist. LEXIS 84921 (N.D. Ill., Sep. 17, 2009).**
"spacer" — "a device that creates a space between two cutting disks on the cutting cylinder, the space having a width just slightly greater than an interleaving cutting disk from a mating cutting cylinder [that] may be separate from or integral with the cutting disk(s)." Fellowes, Inc. v. Michilin Prosperity Co., Ltd., et al., 2006 U.S. Dist. LEXIS 90648 (E.D. Va., Dec. 15, 2006) 3735

"spacer" — "a device or piece, distinct from the burner body and the burner pan, that holds the burner body a given distance from the burner pan base, but not a gasket." Travis Industries, Inc. v. Hearth & Home Technologies, Inc., et al., 2004 U.S. Dist. LEXIS 31059 (W.D. Wash., Oct. 18, 2004) 3736

"spacer means" — "is thus limited to the structure disclosed in the specification for performing the 'spacing' function and its equivalents." Polyvision Corp. v. Smart Technologies, Inc., et al., 501 F. Supp. 2d 1042 (W.D. Mich. 2007) 3737

"spacing surface" — "a generally planar surface that is distinct from, and located between, the kayak's seating surfaces, providing at least enough separation between seating surfaces to enable a paddler seated on one seating surface to paddle without interfering with a paddler or passenger occupying another seating surface." Old Town Canoe Co. v. Glenwa, Inc., 229 F. Supp. 2d 1151 (D. Or. 2001) 3738

"spacings between the internal surface of the casing and the pen periphery defining one or more passageways for the flow of air blown into the casing" — "open areas bounded by the inner wall of the casing and the outside of the pen through which air can pass." P & M Products, Ltd., et al. v. Rose Art Industries, 2002 U.S. Dist. LEXIS 5008 (E.D. Pa., Mar. 25, 2002) 3739

"spanning between said side walls" — "extending from one of the two 'side walls' to the other one of the two 'side walls'." Bradford Co. v. Afco Manufacturing, et al., 2006 U.S. Dist. LEXIS 88547 (S.D. Ohio, Dec. 5, 2006) 3740

"special procedure" — "a procedure for processing special locks, as recited in the respective claims, in which the screening entity has agreed to act pursuant to a prior agreement, to look for the identification structure while screening luggage, and, upon finding that identification structure on an individual piece of luggage, to, use the master key previously provided to the screening entity to, if necessary, open the luggage." Travel Sentry, Inc. v. Tropp, 2009 U.S. Dist. LEXIS 87923 (E.D.N.Y., Sep. 24, 2009) 3741


"spike" — "an elongated structure having a pointed tip for piercing the seal, which tip may be sharp or slightly rounded." ICU Medical, Inc. v. Alaris Medical Systems, Inc., 2006 U.S. Dist. LEXIS 96077 (C.D. Cal., July 17, 2006) 3744 "[T]he district court correctly construed spike as 'an elongated structure having a pointed tip for piercing the seal, which tip may be sharp or slightly rounded.'" Id., 558 F.3d 1368 (Fed. Cir. 2009)
"spike" — "an elongated, pointed object, one end of which is sharp and strong enough to pierce a tire to allow air to escape and an opposite end of which is small enough to be inserted into the hole of the frame." PMG, Inc. v. Stinger Spike Systems, Inc., 2002 U.S. Dist. LEXIS 17162 (N.D. W. Va., Mar. 28, 2002). 3745

"spindle" — "any shaft, rod or pin that turns around or on which something turns, as an axle, arbor, or mandrel." Acco Brands, Inc. v. American Power Conversion Corp., 2003 U.S. Dist. LEXIS 27829 (E.D. Tex., Jul. 16, 2003). 3746


"spring-biased mechanism" — "a structure that includes a spring which is exerting force on at least one other part of the structure." Insight Technology Inc. v. SureFire, LLC, 2006 U.S. Dist. LEXIS 11762 (D.N.H., Feb. 28, 2006). 3755

"said vertical supports spring-biased so as to maintain said vertical supports and said platforms in a parallelogram configuration" — "a spring biased against the vertical supports that causes the vertical supports and the platforms to be maintained in a parallelogram configuration." Forest Group, Inc. v. Bon Tool Co., et al., 2007 U.S. Dist. LEXIS 10487 (S.D. Tex., Feb. 15, 2007). 3756

"spring means connected to said hinged arm"; "spring means extending between said mounting means and said hinged arm" — "Here, the means-plus-function presumption is rebutted and the claims should not be construed according to § 112, P 6. Therefore, the district court correctly construed the 'spring means' limitation according to its ordinary meaning: '[t]he hinged arm is connected to a spring that moves the guard along the cannula toward the second position.'" Becton, Dickinson and Co. v. Tyco Healthcare Group, LP, 2010 U.S. App. LEXIS 15609 (Fed. Cir., Jul. 29, 2010) (Gajarsa, J., dissenting). 3757

"spring means tending to keep the door closed" — "We agree with the district court that the phrase 'tending to keep the door closed' is functional language modifying 'spring means.' We disagree with the district court, however, that the recitation of 'spring,' which is structural language, takes the limitation out of the ambit of the construction dictate of § 112, P 6." *Unidynamics Corp., et al. v. Automatic Products International, Ltd., et al.*, 157 F.3d 1311 (Fed. Cir. 1998).


"[a] sputter-deposited dielectric" — "cannot be formed by a two-step process in which a metal layer is first sputter-deposited and then oxidized." *Southwall Technologies, Inc. v. Cardinal IG Co.*, 54 F.3d 1570 (Fed. Cir. 1995).

"squeezing extruder throat" — "a passageway or channel that 1) has an inlet opening wider than a W-beam guardrail so that the guardrail fits inside the opening; and 2) flattens a W-beam guardrail by using the energy of an impacting vehicle to force the guardrail through the throat, where the flattening is caused by passing through a width of the throat that is narrower, in at least one dimension, than the width of an unflattened guardrail." *Trinity Industries, Inc., et al. v. Road Systems, Inc., et al.*, 121 F. Supp. 2d 1028 (E.D. Tex. 2000).


"stabilizing supports" — "two or more parts or projecting surfaces at the end of the dispenser from which fluid is dispensed, other than the end of the passageway out of which fluid is dispensed, which: make contact with the target surface; keep said passageway opening from being forced into the target surface; tend to keep the end of the passageway out of which fluid is dispensed in the same position relative to the target surface; and which transfer back to the stopper, the force applied by the user on the container and/or dispenser for the purpose of dispensing fluid." *Helena Laboratories Corp. v. Alpha Scientific Corp.*, 2006 U.S. Dist. LEXIS 84596 (E.D. Tex., Nov. 21, 2006).


"stably positioned upon the staple cartridge and/or anvil components of the stapler instrument"; "adapted to assist in positioning and/or retaining the buttress material"; "adapted to position and/or retain the materials in place" — "are readily understandable and no construction is necessary." *Synovis Life Technologies, Inc. v. W.L. Gore & Associates, Inc.*, 2009 U.S. Dist. LEXIS 4870 (D. Minn., Jan. 23, 2009).

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"stack" — "nothing in the disclosures of the asserted patents suggests that 'stack' has any meaning in the art that would limit its scope to horizontal stacks." *Agfa Corp. v. Creo Products Inc., et al.*, 451 F.3d 1366 (Fed. Cir. 2006). 3768

"a first stage in which said laser removes ...; a second stage in which said laser continues to deliver energy ...; a third stage in which said laser removes ..." — "is properly construed as describing three progressive physical effects that may be obtained in fewer than three laser passes." *Laser Light Technologies, Inc. v. Brick Markers U.S.A., Inc.*, 200 F. Supp. 2d 1093 (E.D. Mo. 2001). 3769

"staggered" — "the Court finds that the patentee adopted a lexicography of the term 'staggered' that encompasses objects which overlap or 'step' along one side, yet that form a straight or sloping line along a different side." *Typeright Keyboard Corp. v. Microsoft Corp.*, 2002 U.S. Dist. LEXIS 27468 (S.D.N.Y., Mar. 27, 2002). 3770

"stagnation point flow" — "should be construed in accordance with its ordinary meaning: Stagnation point flow is achieved when a flow toward a solid surface in which the gas or fluid approaching the surface divides into streams proceeding away from the point at which the central streamline intersects the surface. This point is called the 'stagnation flow point.' In order to achieve a stagnation point flow, the direction of the flow initially must be perpendicular to the surface." *ASM America, Inc., et al. v. Genus, Inc.*, 260 F. Supp. 2d 827 (N.D. Cal. 2002). 3771

"stainless steel" — "the court declines to construe the term 'stainless steel' in isolation. Instead, the court will pass on to the question of the proper construction of 'stainless steel comprising' specified elements, which is the second term in the '668 patent for which the parties dispute the proper construction." *Ideal Instruments, Inc. v. Rivard Instruments, Inc., et al.*, 498 F. Supp. 2d 1131 (N.D. Iowa 2007). 3772


"a standard insulin needle fitting for removably mounting said needle assembly on a pen-type syringe having a standard mounting" — "this Court cannot determine what '[a] standard insulin needle fitting for removably mounting said needle assembly on a pen-type syringe having a standard mounting,' was at the time of the patent. The Court can and does construe the word standard in accordance with the dictionary definition of standard to mean: 'regularly and widely used, available, or supplied.'" *Novo Nordisk A/S, et al. v. Becton Dickinson and Co.*, 2000 U.S. Dist. LEXIS 3384 (S.D.N.Y. 2000). 3776
"the standard needle cannula" — "the standard needle cannula of the prior art of the same gauge." Ideal Instruments, Inc. v. Rivard Instruments, Inc., et al., 498 F. Supp. 2d 1131 (N.D. Iowa 2007). 3777


"surgeon's operating station" — "the place within the sterile area of the operating environment where the surgeon and the surgical instruments are located during a surgical procedure." Karl Storz Endoscopy-America, Inc. v. Smith & Nephew, Inc., 2010 U.S. Dist. LEXIS 85036 (W.D. Tenn., Aug. 18, 2010). 3781


"statue" — "the positive, substantially entire version of the tooth, having at least portions of three sides of the tooth, formed by the investment material from the impression." PSN Illinois, LLC v. Ivoclar Vivadent, Inc., 2006 U.S. Dist. LEXIS 88691 (N.D. Ill., Dec. 7, 2006). 3783

"steering structure connected between the junction box and the tongue for causing the junction box to swing responsively when the latter is pivoted about said first axis between its various angular positions" — "does not fall within the meaning of section 112(6). ... The court believes the clause ... means 'a steering structure separate from the drive line that operatively interacts with the tongue at one end and operatively interacts with the junction box at the other end and that transmits the swinging motion of the tongue to the junction box during swinging of the tongue.' The steering structure must be 'separate from the drive line' because it is mentioned separately from the drive line clause in claim 1, thus signifying that a person of ordinary skill in the art would consider the drive line and the steering structure to be two separate items. The steering structure must 'operatively interact with the tongue at one end and operatively interact with the junction box at the other end' because the claim reveals that the steering structure must 'connect between the junction box and the tongue.' The steering structure must 'transmit the swinging motion of the tongue to the junction box during swinging of the tongue' because the claim reveals that the steering structure must 'cause[] the junction box to swing responsively ... when the [tongue] is pivoted.'" Hay & Forage Industries, et al. v. New Holland North America, Inc., 25 F. Supp. 2d 1170 (D. Kan. 1998). 3784


"stent" — "a supporting device, without any attached fabric or graft material." Medtronic, Inc., et al. v. W.L. Gore & Associates, Inc., 2007 U.S. Dist. LEXIS 80038 (N.D. Cal., Oct. 19, 2007). The Court cannot say that the term 'stent' should be limited to a bare stent, reconsiders and reverses its previous construction, and concludes that the term 'stent' as used in the Wiktor Patents should be construed to mean 'a supporting device.' Id., 2007 U.S. Dist. LEXIS 91053 (N.D. Cal., Nov. 30, 2007).

"stent" — "a device, made of a body-compatible material, used to widen a blood vessel or other body opening (also called a 'lumen'), and to maintain the resultant size of the blood vessel or lumen." Scimed Life Systems, Inc., et al. v. Johnson & Johnson, 225 F. Supp. 2d 422 (D. Del. 2002).


"stent which is substantially uniformly flexible with respect to its longitudinal axis by the flexibility of its cells with respect to said axis" — "the structural elements of the cells provide longitudinal flexibility such that the flexibility of the stent is substantially uniform as one moves along the longitudinal axis of the stent." Scimed Life Systems, Inc., et al. v. Johnson & Johnson, 225 F. Supp. 2d 422 (D. Del. 2002).


"steps formed in the fins" — "a surface or surfaces cut into the fins against which part of the pen may abut." P & M Products, Ltd., et al. v. Rose Art Industries, 2002 U.S. Dist. LEXIS 5008 (E.D. Pa., Mar. 25, 2002).

"steps of: providing a memory ... determining when the cruise control is engaged; ... retrieving one of the sets [of] data ...; retrieving the other set of ...; and using the retrieved data ..." — "§ 112(6) is not applicable." Caterpillar Inc. v. Detroit Diesel Corp., 961 F. Supp. 1249 (N.D. Ind. 1996).
"a sterilized balloon" — "a balloon sterilized by the sterilization process disclosed at 10:66-11:9 of the '364 patent, which consists of (1) a preconditioning step at a temperature about 35 to about 45 °C and a relative humidity of about 55% for about 15 hours, (2) then an ethylene oxide treatment step at a temperature of about 35 to about 45 °C and a relative humidity of about 55% with ethylene oxide for about 6 hours, and (3) then an aeration step at a temperature of about 35 to about 45 °C for about 22 hours in order to permit the ethylene oxide to dissipate." Medtronic Vascular Inc., et al. v. Boston Scientific Corp., et al., 526 F. Supp. 2d 613 (E.D. Tex. 2007).


"a stop" — "an element with a hole or opening that blocks or limits light." Fujinon Corp. v. Motorola, Inc., 2009 U.S. Dist. LEXIS 83088 (D. Del., Sep. 11, 2009).


"stop means within the casing against which a surface of a pen can abut to position the nib of the pen at least partially within the nozzle orifice" — "is not a means plus function claim, even though the word 'means' is used in the term because the claim element does not recite a function." P & M Products, Ltd., et al. v. Rose Art Industries, 2002 U.S. Dist. LEXIS 5008 (E.D. Pa., Mar. 25, 2002).

"stop member" — "a physical structure, which in combination with other elements, performs the function of limiting the movement of the swing arm." Deere & Co. v. Toro Co., 2001 U.S. Dist. LEXIS 25305 (N.D. Ill., Jul. 11, 2001).

"stopper" — "a part of a substrate that may be used to stop the flow of resin to the center hole." Matsushita Electrical Industrial Co., Ltd. v. Cirram International, Inc., 2004 U.S. Dist. LEXIS 131 (D. Del., Jan. 5, 2004).

"a compressed [nitrox] storage assembly" — "the assembly contains as many conventional storage vessels (such as a nitrox storage cylinder or a scuba tank) as the operator of the system desires, and it contains an identical number of branch lines, one branch line for each storage vessel." Undersea Breathing Systems, Inc. v. Nitrox Technologies, Inc., 985 F. Supp. 752 (N.D. Ill. 1997).

"storm survival kit" — "a protective barrier device configured to be quickly deployed on or within a portion of a structure for protecting an interior portion of the structure from the force of the wind and objects carried thereby." Armor Screen Corp. v. Storm Catcher, Inc., et al., 2009 U.S. Dist. LEXIS 33407 (S.D. Fla., Mar. 10, 2009).
"stowed"; "retracted position substantially within said housing" — "means that the anchoring mechanism is completely stowed within the bulkhead and is completely out of the way of passengers." American Seating Co. v. Transportation Seating, Inc., 2001 U.S. Dist. LEXIS 14720 (W.D. Mich., Sept. 18, 2001). "The natural meaning of this claim language would be that most, but not necessarily all, of the anchor member must be contained within the housing. We therefore conclude that claim 31 requires the bulkhead housing to contain most of the anchor member and to such an extent as to prevent a passenger from tripping over the anchor member." Id., 62 Fed. Appx. 344 (Fed. Cir. 2003) (unpublished).


"strap opening" — "an opening for the arm of a user, formed by a section of strap as it extends from one securing point to another." Izzo Golf, Inc. v. King Par Golf, Inc., 2006 U.S. Dist. LEXIS 51199 (W.D.N.Y., July 26, 2006).

"strata in the earth"; "said strata" — "mean[s] identifiable and distinguishable layers of material (e.g., rock) beneath the surface of the earth." Union Pacific Resources Co. v. Chesapeake Energy Corp., et al., 236 F.3d 684 (Fed. Cir. 2001).

"streamer positioning device" — "a device that controls the position of a streamer as it is towed (e.g. a 'bird')." WesternGeco LLC v. ION Geophysical Corp., 2010 U.S. Dist. LEXIS 71875 (S.D. Tex., Jul. 16, 2010).


"streamer separation mode" — "a control mode that attempts to set and maintain the spacing between adjacent streamers." WesternGeco LLC v. ION Geophysical Corp., 2010 U.S. Dist. LEXIS 71875 (S.D. Tex., Jul. 16, 2010).


"a roll of stretched plastic film" — "a roll of stretched (i.e., mechanically elongated) plastic film." Pliant Corp. v. MSC Marketing and Technology, Inc., 416 F. Supp. 2d 632 (N.D. Ill. 2006).

"strike the periphery ... for visibly outlining" — "nothing in the term's denotation precludes the laser beam from striking inside the energy zone's perimeter. The plain words of the claims merely require that the laser beam strike the periphery of that zone." Omega Engineering, Inc. v. Raytek Corp., et al., 334 F.3d 1314 (Fed. Cir. 2003).


"strip of material" — "in claims 1 and 14 of the '240 patent has a low flexural stiffness but does not have to be substantially water impermeable. The 'strip of material' disclosed in claims 1 and 11 of the '579 patent has a low flexural stiffness and is substantially water impermeable." Procter & Gamble Co. v. McNeil-PPC, Inc., 2009 U.S. Dist. LEXIS 6947 (W.D. Wis., Jan. 26, 2009).


"stud" — "those portions of the two sides of each primary spectacle frame which include a magnetic material and project outwardly and rearwardly of the lenses or lens rims (if provided)." Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc., 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003).

"studs" — "projections that do not mandatorily have the minimum practicable or less than 5% limitation." Synthes (U.S.A.) v. DePuy Ace Medical Co., 1999 U.S. Dist. LEXIS 18173 (E.D. Pa., Nov. 29, 1999).


"sub-area of an area" — "a distinct portion of a larger portion of a substrate, which is to be imaged with a pattern." Nikon Corp., et al. v. ASM Lithography B.V., 308 F. Supp. 2d 1039 (N.D. Cal. 2004).
"substantial" — "when considered in the light of the entire claimed invention, is as accurate as the subject matter permits and provides sufficient guidance to one skilled in the art of paving stone installations." Pave Tech, Inc., et al. v. Snap Edge Corp., et al., 952 F. Supp. 1284 (N.D. Ill. 1996). 3837

"substantial" — "largely, but not necessarily wholly, that which is specified." Mueller Sports Medicine, Inc. v. Sportstar Athletics, Inc., 385 F. Supp. 2d 775 (W.D. Wis. 2005). 3838

"substantial" — "a portion or amount that is considerable in quantity." ChemFree Corp. v. J. Walter, Inc., et al., 2007 U.S. Dist. LEXIS 51677 (N.D. Ga., July 17, 2007). 3839


"substantial coverage" — "large enough to cover the skin area on the zygomatic arch when applied to said skin area." Mueller Sports Medicine, Inc. v. Sportstar Athletics, Inc., 385 F. Supp. 2d 775 (W.D. Wis. 2005). 3842


"substantial helical flow path" [and] "substantially volume filling" — "all flow patterns that are generally, though not necessarily perfectly, spiral, and that fill much, though not necessarily all, of the tank's volume." Liquid Dynamics Corp. v. Vaughan Co., Inc., 355 F.3d 1361 (Fed. Cir. 2004). 3844

"a substantial part of the entire height thereof" — "requires that the ridges must cover nearly the entire height of the sidewall portion of the invention." York Products, Inc. v. Central Tractor Farm & Family Center, et al., 99 F.3d 1568 (Fed. Cir. 1996). 3845


"a substantial portion" — "could be up to and including 100%." Harsco Corp. v. North Star Bluescope Steel, LLC, 2007 U.S. Dist. LEXIS 55335 (N.D. Ohio, July 31, 2007). 3847


"providing a substantial refractive index match between the applicator and the skin surface" — "I am fully persuaded by the Northern District of California's use of examples from the specification to illustrate the meaning of 'substantial' and decline to follow defendant's suggestion of the term 'approximately equal' because it adds no clarity to the claim language." Palomar Medical Technologies, Inc., et al. v. TRIA Beauty, Inc., 2010 U.S. Dist. LEXIS 112200 (D. Mass., Oct. 13, 2010). 3849
"a substantial surface portion of said food item" — "refers to a positional relationship between the susceptor and the food item in which the susceptor envelops a very large portion of the surface of the food item." General Mills, Inc. v. Hunt-Wesson, Inc., 103 F.3d 978 (Fed. Cir. 1997). 3850

"substantially" — "is commonly understood as meaning 'largely' or 'most'--i.e., at minimum, some figure greater than 50 percent." Fisher-Price, Inc., et al. v. Evenflo Co., Inc., 2006 U.S. Dist. LEXIS 42982 (W.D.N.Y., June 26, 2006). 3851

"substantially" — "to a considerable degree." Epcon Gas Systems, Inc., et al. v. Bauer Compressors, Inc., 134 F. Supp. 2d 838 (E.D. Mich. 2000). 3852 "In this case, the term 'substantially' was used in two contexts with a subtle but significant difference. The phrase 'substantially constant' denotes language of approximation, while the phrase 'substantially below' signifies language of magnitude, i.e., not insubstantial. Because the same term was used in a different manner in these two phrases, the word 'substantially' should not necessarily be interpreted to have the same meaning in both phrases." Id., 279 F.3d 1022 (Fed. Cir. 2002). 3853

"at substantially a lumbar region" — "approximately the portion of the backrest where the lumbar section of a user's back would be supported by the backrest." Herman Miller, Inc. v. Teknion Corp., et al., 504 F. Supp. 2d 360 (N.D. Ill. 2007). 3854

"a graspable arm ... extending ... at substantially a right angle with respect to the longitudinal axis" — "contemplate[s], at the very least, that the 'graspable' portion of the arm be at or near a 90-degree angle to the handle." Oreck Holdings, LLC, et al. v. Dyson, Inc., 434 F. Supp. 2d 385 (E.D. La. 2006). 3855

"substantially above the softening temperature" — "mean[s] sufficiently above the softening temperature of the binder to allow conversion of the binder to a continuous web matrix or forced point-bonds." KX Industries, L.P., et al. v. Culligan Water Technologies, Inc., et al., 90 F. Supp. 2d 461 (D. Del. 1999). 3856

"substantially above the softening temperature of said binder material" — "the court construes the phrase 'substantially above' to mean a temperature which is sufficiently high both to form a composite and to keep the mixture from solidifying in the extruder." KX Industries, L.P., et al. v. Culligan Water Technologies, Inc., et al., 90 F. Supp. 2d 461 (D. Del. 1999). 3857

"substantially all" — "largely, but not wholly, the totality of the bolster." Flexi-Mat Corp. v. Dallas Manufacturing Co., et al., 2006 U.S. Dist. LEXIS 19528 (D. Mass., April 11, 2006). 3858


"substantially all of said panel" — "Substantially all of the said panel' simply means 'largely or essentially all' of the panel. ... the court ... construes 'panel' to mean 'that portion of the surface of the claimed device which functions as both a display and a keyboard.'" NCR Corp. v. Palm, Inc., et al., 217 F. Supp. 2d 491 (D. Del. 2002). 3860
"substantially all of said reactants remaining in said reaction space and adsorbed on inner walls of said reaction space are removed to a level of less than 1% prior to the inflow of a second pulse" — "more than 99% of the combined total amount of the unreacted reactants remaining in the reaction space and those adsorbed on the inner walls of the reaction space are removed before the inflow of a second pulse." ASM America, Inc. v. Genus, Inc., 2002 U.S. Dist. LEXIS 15348 (N.D. Cal., Aug. 15, 2002). 3861

"a substantially axial annular groove" — "There is nothing in the claim or the disclosure of the patent that indicates that the annular groove must be circular." Produits Berger S.A., et al. v. Schemenauer, et al., 2007 U.S. Dist. LEXIS 10294 (E.D. Tex., Feb. 14, 2007). 3862

"substantially block" — "in reference to wavelengths, it is defined as blocking over 99% of the incident radiation at each and every wavelength"; "in reference to polarization, it is defined as blocking 80% or more of the horizontally polarized incident radiation at each and every wavelength." Suntiger, Inc. v. Sunglass Products of California, 2006 U.S. Dist. LEXIS 1076 (C.D. Cal., Jan. 10, 2006). 3863

"substantially bonded" — "requires that the overlapping folds in the sheet of material be gathered or crimped about the upper end of the floral holding material by a band or bonding material." Prima Tek II, L.L.C., et al. v. Polypap, S.A.R.L., 318 F.3d 1143 (Fed. Cir. 2003). 3864

"substantially centered driver circuit" — "the driver circuit is mounted near the center of one side of the memory modules." Sun Microsystems, Inc. v. Dataram Corp., 1997 U.S. Dist. LEXIS 18363 (N.D. Cal., Aug. 29, 1997). 3865


"an elongate hollow liner ... having an original outer diameter substantially comparable to the inside diameter of the pipe to be lined" — "the term 'substantially comparable to' [] encompass[es] pipe liners slightly less than, equal to, or slightly greater than the host pipes into which they are being installed." Pipe Liners, Inc., et al. v. Pipelining Products, Inc., 1999 U.S. Dist. LEXIS 17271 (D. Del., Oct. 22, 1999). 3867

"substantially completely wetted" — "largely, but not necessarily wholly, surrounded by resin. In the context of LFRT pellets, it is surrounding the individual filaments by resin to the extent that in articles injection molded from such pellets, the individual filaments are randomly dispersed and at least 50% by weight of the filaments retain a length of 2 millimeters or greater." LNP Engineering Plastics, Inc., et al. v. Miller Waste Mills, Inc., et al., 77 F. Supp. 2d 514 (D. Del. 1999). 3868 "The district court [ ] correctly concluded that 'substantially completely wetted' means 'largely, but not necessarily wholly, surrounded by resin.' Moreover the district court correctly determined that a flexural modulus test result does not limit claim 1 of both patents." Id., 275 F.3d 1347 (Fed. Cir. 2001). 3869

"substantially conjugated" — "positioned such that the area's points map or image to a significant degree to the corresponding points of another area or plane." Nikon Corp., et al. v. ASM Lithography B.V., 308 F. Supp. 2d 1039 (N.D. Cal. 2004).

"substantially constant wall thickness" — "wall thickness that is to a large or considerable degree constant." Verve, LLC v. Crane Cams, Inc., et al., 395 F. Supp. 2d 558 (E.D. Mich. 2005).

"substantially continuously deformable" — "Although in some contexts the addition of a qualifier like 'substantially' can be important, the court finds that within the context of the real world art of sunshade design and manufacture, there is no 'perfectly continuously deformable' material. Accordingly, Claim 1, sensibly read, never required such an interpretation. A deformable material, within the context of auto sunshades, could be at most 'substantially' deformable." Huang, et al. v. Autoshade, et al., 950 F. Supp. 1016 (C.D. Cal. 1997).

"substantially continuously deformable to a predetermined contour of said vehicle window" — "means that the perimeter of the sunshade is capable of bending ('deformable') so as to fit a predetermined contour of a vehicle window." Huang, et al. v. Autoshade, et al., 950 F. Supp. 1016 (C.D. Cal. 1997).

"substantially coplanar" — "requir[es] an angle of no more than ten degrees between the snag-resistant elements and the supporting elements." Pannu v. Iolab Corp., 155 F.3d 1344 (Fed. Cir. 1998).

"extending substantially coplanar" — "means said finger plate extends substantially in the same plane as said shield allowing sheets of paper to lie flat atop the ring metal assembly." U.S. Ring Binder, LP v. Staples the Office Superstore LLC, et al., 2009 U.S. Dist. LEXIS 21783 (E.D. Mo., Mar. 18, 2009).


"substantially defines" — "means that the channel(s) serve to distinguish between the inner and outer portions, and in order to do so the channel(s) need not connect or constitute a single channel unit." Kimberly-Clark Corp., et al. v. Tyco Healthcare Retail Group, 456 F. Supp. 2d 998 (E.D. Wis. 2006).
"said peripheral rim having an inner region contour being substantially different from the inner surface contour of the annular bead of the container for allowing only a portion of said inner region contour of said peripheral rim to contact the inner surface contour of the annular bead when said mounting cup is disposed upon the container" — "the district court properly determined ... that the claims require a mounting cup that 'exhibits a flattening in the inner region contour, an area depicted as between 12 o'clock and 3 o'clock in Figures 4-11 of the '067 patent,' wherein the 'flattening extends substantially into the semi-circular region defined by the peripheral rim of conventional prior art mounting cups illustrated in Figures 1-3 of the '067 patent.' The district court also concluded that the claimed cup must 'not match the bead in that location before crimping ... [and that the cup] when placed on can beads, does not fully seat on the can bead before crimping, but rather rests on the can bead in a manner resulting in a gap between the apex of the mounting cup and the apex of the can bead.' In sum, the district court interpreted the claim to require a 'flattening' sufficient to prevent the rim from properly seating on the annular bead, and creating a gap between the rim apex and the bead apex." AptarGroup, Inc. v. Summit Packaging Systems, Inc., 1998 U.S. App. LEXIS 28047 (Fed. Cir., Oct. 30, 1998) (unpublished).

"whereby said axle cross-sectional configuration is prevented from assuming a cross-sectional configuration substantially different from an unaltered configuration when said torsional forces are imposed upon said axle" — "a) 'substantially different from an unaltered configuration' means not the same, or largely not the same, and measurably less altered than that achieved by the prior art. b) 'said torsional forces' are the twisting forces causing a portion of an axle to be placed in compression and a portion to be placed in tension." Boler Co. v. Arvinmeritor, Inc., 2004 U.S. Dist. LEXIS 13365 (N.D. Ill., Jul. 16, 2004).

"substantially doughnut shaped" — "The district court concluded that 'substantially doughnut-shaped' means a toroidal object, which is defined as a surface generated by a plane closed curve rotated about a line lying in the same plane as the curve but not intersecting it. ... Although the district court did not need to introduce the term toroidal to define 'substantially doughnut-shaped,' we agree with the district court that the accused Hageman device does not literally meet this claim limitation." Ad-in-the-Hole, International, Inc. v. Hageman, 1997 U.S. App. LEXIS 6213 (Fed. Cir., Apr. 2, 1997) (unpublished).
"a substantially enclosed guide conduit" — "The Court construes 'conduit' in its ordinary and customary sense, thus signifying a tube or channel for carrying or taking materials from one place to another. In addition, the Court construes 'guide' in its ordinary meaning, thus signifying something that helps to direct an object's travel or its progressive motion. The Court consequently construes the 'guide conduit' to be a tube or channel that carries materials from one place to another and that helps to direct the materials' progressive motion. ... The Court construes the phrase 'substantially enclosed' according to its ordinary and customary meaning, thus signifying a conduit that is almost entirely closed in from the outside environment." In re: Turn-Key-Tech Matters, 2002 U.S. Dist. LEXIS 25583 (C.D. Cal., Jan. 8, 2002). A review of the claim language, written description, and prosecution history show that a guide conduit is simply a passageway through which a plastic product is moved. The plain language of the claims describes the guide conduit as an area within the mold. The district court's definition attributes a function to the guide conduit, namely that it direct the material's motion. That is an added limitation not found in the claim language or properly imposed by the intrinsic record." Turn-Key-Tech, LLC v. National Film Laboratory, Inc., et al., 74 Fed. Appx. 58 (Fed. Cir., Sept. 8, 2003) (unpublished).

"substantially enclosed processing space" — "require[s] a 'seal' created by the head and the bowl that is sufficiently closed to permit the effective gas processing of a wafer using the gas phase of a processing fluid." Semitool, Inc. v. Novellus Systems, Inc., 12 Fed. Appx. 918 (Fed. Cir., Jun. 8, 2001) (unpublished). "[T]he district court correctly interpreted the 'substantially enclosed' limitation ... to require a 'seal' created by the head and the bowl that is sufficiently closed to permit the effective gas processing of a wafer using the gas phase of a processing fluid, regardless whether the chemical to be used is in a gas or liquid state." Id., 44 Fed. Appx. 949 (Fed. Cir., Jul. 23, 2002) (unpublished).

"substantially entirely" — "is not indefinite and needs no further construction." Broadcast Innovation, LLC v. Echostar Communications Corp., 240 F. Supp. 2d 1127 (D. Colo. 2003).

"substantially entirely and flushly" — "requir[es] the lid's latch bar to fit within the recess formed across the tongue in a manner that creates an almost completely continuous plane with the outer, front side of the container." Pehr v. Rubbermaid, Inc., 87 F. Supp. 2d 1222 (D. Kan. 2000).


"the thickness is substantially equal on the left side region of the second zone and the right side region of the second zone" — "the second zone includes a series of horizontal cross-sections each having substantially uniform thickness not varying by more than about 30 jam or 20% of the minimum thickness on the left side region and the right side region." Coopervision, Inc. v. Ciba Vision Corp., 2007 U.S. Dist. LEXIS 51432 (E.D. Tex., July 16, 2007).

"wherein the height of said lip is substantially equal to the depth of said recess" — "the Court determines that the claim language creates no ambiguity and has a readily understood meaning. Accordingly, the Court declines to construe the phrase." Allan Block Corp. v. County Materials Corp., et al., 502 F. Supp. 2d 845 (D. Minn. 2007).

"substantially fill the defect" — "A joining segment 'substantially fills a defect' if the perimeter of the joining segment is substantially the same size as the perimeter of the defect." Regents of the University of Minnesota v. AGA Medical Corp., 2009 U.S. Dist. LEXIS 90289 (D. Minn., Sep. 29, 2009). 3894


"substantially flat"; "substantially flush" — "are unambiguous and therefore require no construction." ICU Medical, Inc. v. B. Braun Medical, Inc., 344 F. Supp. 2d 663 (N.D. Cal. 2004). 3896

"an upper surface which is substantially flat across the bottle retaining pockets" — "require a pocket bottom with a relatively smooth or even surface at the bottle contact area without significant curvature or noteworthy deviations from horizontal." Rehrig Pacific Co. v. Norseman Plastics Ltd. Inc., 2003 U.S. Dist. LEXIS 27566 (C.D. Cal., Sept. 29, 2003). 3897

"substantially flat, horizontally disposed bottom wall" — "the court holds that the 'substantially flat' limitation in claim 1 should be construed to mean 'entirely flat.'" Circle R. Inc. v. Trail King Industries, Inc., 1999 U.S. Dist. LEXIS 23531 (D. Neb., Nov. 23, 1999). 3898 "[T]he district court erred when it concluded that the specification required the phrase 'substantially flat' be construed to mean 'entirely flat.'" Id., 21 Fed. Appx. 894 (Fed. Cir., Sept. 28, 2001) (unpublished). 3899

"substantially flat surface" — "the limitation 'substantially flat' inherently excludes the defined cavities of Lee and [] this term needs no further construction." Tinkers & Chance v. Leapfrog Enterprises, Inc., 2007 U.S. Dist. LEXIS 43871 (E.D. Tex., June 18, 2007). 3900

"substantially flattened surfaces" — "surfaces, including flat surfaces, materially flatter than the cylindrical front portion of the applicator." Playtex Products, Inc. v. Procter & Gamble Co., et al., 400 F.3d 901 (Fed. Cir. 2005). 3901

"substantially flush with adjacent portions" — "mean[s] that the cladding closely abuts or conforms to the underlying contours of the entire wheel face outer surface." Lacks Industries, Inc. v. McKeechnie Vehicle Components USA, Inc., et al., 55 F. Supp. 2d 702 (E.D. Mich. 1999). 3902


"density substantially greater than" — "The density of the pleats must be 40 to 100% greater than the rest of the paperboard." James River Corp. of Virginia v. Hallmark Cards, Inc., 915 F. Supp. 968 (E.D. Wis. 1996). 3904

"extending substantially higher than said front, rear and second side walls to define a protective barrier" — "while the term 'substantially higher' is construed according to its plain meaning, the higher wall must act as a protective barrier." Maytag Corp. v. Whirlpool Corp., 88 F. Supp. 2d 894 (N.D. Ill. 2000). 3905
"substantially homogeneous paperboard blank" — "the blank must have not had additional layers of paperboard or other non-uniformly dispersed reinforcing material added to its periphery for the purpose of increasing the plate's strength. This allows for less than perfect homogeneity or uniformity in the paperboard blank." James River Corp. of Virginia v. Hallmark Cards, Inc., 915 F. Supp. 968 (E.D. Wis. 1996).3906


"substantially identical size distribution" — "80% by weight of hard and resilient granules in the bottom course distributed in a range spanning a numerical difference of no more than 40 screen mesh standard." FieldTurf USA, Inc., et al. v. Sports Construction Group LLC, 499 F. Supp. 2d 907 (N.D. Ohio 2007).3908

"substantially identically shaped" — "having a particular form that is approximately exactly alike." Synvasive Corp. v. Stryker, Corp., 478 F. Supp. 2d 1193 (E.D. Cal. 2007).3909


"The written description, as a whole, clearly requires that a portion of the metal insert of the weight penetrate the imaginary plane containing the fulcrum of the beam to minimize the weight of the scale and facilitate portability. There is no disclosure suggesting that a portion of the weight need only be located at or near the plane as Deering suggests. For this reason, we agree in part with the district court's construction of the Zero Position Limitation as requiring at least a portion of the weight to intersect the plane containing the fulcrum. We agree with the district court's claim construction only in part because the district court's construction effectively reads the term 'substantially' out of the claims by construing the claim to read on any slight penetration of the plane." Id., 347 F.3d 1314 (Fed. Cir. 2003).3911

"said binder particles being substantially incapable of fibrillation under normal conditions into microfibers of less than 10 micrometers diameter at room temperature" — "the binder particles are substantially incapable of forming fibers of less than 10 micrometers diameter by shear and pulling alone without heating or substantial compression." KX Industries, L.P., et al. v. Culligan Water Technologies, Inc., et al., 90 F. Supp. 2d 461 (D. Del. 1999).3912


"substantially integrated fibrous structures generally inseparable into their constituent layers" — "In this context, 'substantially' allows for something short of absolute elimination of gaps and voids. It does require that comparison of photomicrographs reveal to one skilled in the art that the gaps and voids are distinctly reduced as compared to the prior art." James River Corp. of Virginia v. Hallmark Cards, Inc., 915 F. Supp. 968 (E.D. Wis. 1996).3914
"a stop ... located forward of the body and above and substantially inward of the peripheral edge" — "Zodiac contends that the district court erred when it found that all of the structure must be 'substantially inward of' the disc's periphery. We disagree. ... It defies common usage to suggest that a stop which is 'substantially inward' of an edge could at the same time extend at least to that same edge." Zodiac Pool Care, Inc. v. Hoffinger Industries, Inc., 206 F.3d 1408 (Fed. Cir. 2000). Because the term 'substantially' can have either meaning, we must look elsewhere to determine which meaning should be adopted in this instance. When we do, we find that the claim language, the written description, and the prosecution history all point the same way: the term 'substantially' should be interpreted, as Zodiac proposes, to mean 'largely,' 'mostly,' or 'in the main,' rather than 'far.' Zodiac Pool Care, Inc. v. Hoffinger Industries, Inc., 206 F.3d 1408 (Fed. Cir. 2000). (Bryson, J., dissenting-in-part).


"substantially larger" — "figure three, which depicts a cross-sectional dimension that is about twenty percent larger than a perpendicular cross-sectional dimension, provides an indication of the scope of the term 'substantially larger.' ... Figure nine also depicts a cross-sectional dimension that is approximately twenty percent larger than a perpendicular cross-sectional dimension. ... In addition, as the Court also previously noted, the specification clearly states that the purpose of reducing the catheter profile, which results in one transverse dimension substantially larger than the perpendicular direction, is to increase flexibility substantially. Thus, the specification makes clear that the difference between the first transverse direction and the perpendicular direction must be such as to result in a substantial increase in flexibility. The Court concludes that this requirement, in connection with figures three and nine, allows a person skilled in the art to ascertain the scope of the Sirhan '275 patent." Advanced Cardiovascular Systems, Inc. v. SciMed Life Systems, 96 F. Supp. 2d 1006 (N.D. Cal. 2000).


"said filter media is a paper filter presenting substantially no openings therethrough having a greater dimension than 25 microns" — "the filter media is a paper filter that has substantially no openings through it with dimensions greater than 25 microns." Ekstam v. Ekstam, 2006 U.S. Dist. LEXIS 12937 (E.D. Mo., March 7, 2006).

"substantially non-resilient lever moving element" — "a 'non-resilient lever moving element' is one which does not utilize a spring." Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997).
"points **substantially on a geometric extension**" — "means that attenuator plates must extend on both ends as close to the surface of the imaginary sphere formed by expanding the curved surface of the closure member as economically efficient, allowing for mechanical clearance to avoid contact between the plates and the valve body either through rotation or thermal expansion." Neles-Jamesbury, Inc. v. Fisher Controls International, Inc., et al., 989 F. Supp. 393 (D. Mass. 1998).

"**substantially only backscattered light**" — "mean[s] that only backscattered light is collected." ADE Corp. v. KLA-Tencor Corp., 252 F. Supp. 2d 40 (D. Del. 2003).

"**substantially parallel**" — "the linear light emitting portion of the at least two compact fluorescent lamps are 'substantially parallel' to an adjacent section of the reflector where that 'substantially parallel' relationship is defined by Tickner's Fig. 3 and Fig. 15 cross sectional views. The utilization of the modifier 'substantially' contemplates meaningful variations from the specific angular relationships illustrated in Tickner's patent drawings as long as the overall 'eyeball' impression is one of 'general parallelism' as articulated by Tickner's Figs. 3 and 15." Sportlite, Inc. v. Genlyte Thomas Group, LLC, et al., 2006 U.S. Dist. LEXIS 96638 (D. Ariz., Sept. 13, 2006).


"**substantially parallel said reflector**" — "the lamps are close enough to parallel or generally parallel to the reflector." Sportlite, Inc. v. Genlyte Thomas Group, LLC, et al., 518 F. Supp. 2d 1122 (D. Ariz. 2007).


"**substantially parallelepiped**" — "a six-sided parallelogram in which the end panels are neither parallel to each other nor perpendicular to the face walls." Phillips v. AWH Corp., et al., 2002 U.S. Dist. LEXIS 27298 (D. Colo., Nov. 20, 2002).

"**substantially perpendicular**" — "means an angle that is 90 degrees or approximately 90 degrees." Christiana Industries v. Empire Electronics, Inc., 443 F. Supp. 2d 870 (E.D. Mich. 2006).

"each said embedded leg being positioned in a plane substantially perpendicular to said faceplate and substantially parallel to said longitudinal axis of the faceplate" — "each embedded leg is positioned in a plane sufficiently perpendicular to the faceplate and parallel to the longitudinal axis of the faceplate to permit significant flexing under vertical shear and tension forces." JVI, Inc. v. Universal Holdings, Inc., et al., 464 F. Supp. 2d 758 (N.D. Ill. 2006).
"side surfaces of said embedded insulator being substantially perpendicular to said semiconductor substrate" — "Although the patent does not provide a numerical limitation for the term 'substantially,' the disclosed embodiments and the ordinary and plain meaning of 'substantially' should be sufficient to guide a jury in performing its duties. If necessary, and if the parties marshal any new intrinsic evidence, the court would consider revisiting this issue at a later date. But for present purposes, the court rejects Hynix's construction and declines to construe this term."  Toshiba Corp. v. Hynix Semiconductor Inc., et al., 2006 U.S. Dist. LEXIS 63313 (N.D. Cal., Aug. 21, 2006).\(^{3938}\)

"wherein the spring is a substantially planar bent wire spring" — "a spring having one or more bends in the same plane, thereby providing a substantially flat shape. The spring may be composed wire that is not flat."  Kai U.S.A., Ltd. v. Buck Knives, Inc., 2006 U.S. Dist. LEXIS 24924 (D. Or., Feb. 9, 2006).\(^{3936}\)

"substantially planar cover portion" — "a cover portion having a substantially flat, two-dimensional quality."  Freeman, et al. v. Gerber Products Co., 357 F. Supp. 2d 1290 (D. Kan. 2005).\(^{3937}\)

"substantially planar ... support structure" — "a structure having substantially flat or flush surfaces."  BOC Health Care, Inc., et al. v. Nellcor Inc., 892 F. Supp. 598 (D. Del. 1995).\(^{3938}\)

"blood is substantially prevented from entering the proximal portion of the guide wire lumen" — "The Court agrees with the defendant that the patent does not limit the term based on where the blood enters the guide wire lumen. The Court, however, agrees with the plaintiff that 'substantially' can be understood according to its plain and ordinary meaning."  Medtronic AVE, Inc. v. Cordis Corp., 516 F. Supp. 2d 741 (E.D. Tex. 2007).\(^{3939}\) "After carefully considering the arguments raised, the court is not persuaded to alter its construction from the Cordis case. Accordingly, the Court concludes that this term does not requires construction."  Medtronic Vascular Inc., et al. v. Boston Scientific Corp., et al., 526 F. Supp. 2d 613 (E.D. Tex. 2007).\(^{3940}\)

"substantially quadrilaterally shaped" — "the enclosure along its major longitudinal axis has an overall quadrilateral shape with four sides which are overall flat or level and are composed of overall straight lines, and the shape's internal angles reach the sum of approximately 360 degrees."  Farrago v. Rawlings Sporting Goods Co., Inc., 2007 U.S. Dist. LEXIS 38036 (E.D. Mo., May 24, 2007).\(^{3941}\)


"substantially semi-elliptical" — "approximately a shape of a semi-ellipse, i.e., one half of a geometric shape where the sum of the distance of each point of the curve from two points remains constant."  Highway Equip. Co., Inc. v. Cives Corp., et al., 476 F. Supp. 2d 1079 (N.D. Iowa 2007).\(^{3943}\)

"substantially similar" — "would require the weights to have shapes and sizes that are alike, but not necessarily identical. In particular, if the weights are not equal, they may, by necessity, be different sizes. In that instance, the weights could still be 'similar' in the geometric sense of the term by sharing the same shape."  Momentus Golf, Inc. v. Concept Sports, Inc., 2002 U.S. Dist. LEXIS 10901 (S.D. Iowa, Jun. 5, 2002).\(^{3944}\)
"three-dimensional isodose profile that is substantially similar in shape to the expandable surface element" — "three-dimensional isodose profile that is substantially the same shape as the outer spatial volume expandable surface and is concentric with the outer spatial volume expandable surface." Hologic, Inc., et al. v. SenoRx, Inc., 2009 U.S. Dist. LEXIS 12274 (N.D. Cal., Feb. 18, 2009).

"said deforming step substantially simultaneously applying uniform inward radial pressure on said mat" — "unvarying inward radial pressure is applied to the mat at essentially the same time the tubular body is deformed." Tenneco Automotive Operating Co. Inc. v. Visteon Corp., 2005 U.S. Dist. LEXIS 12738 (D. Del., Jun. 28, 2005).


"substantially spherical, concave reflective surface ... having a cylindrical component added thereto to increase coincidence of foci in two orthogonal planes" — "defines a set of curved surfaces that includes a toroidal surface." On-Line Technologies, Inc. v. Bodenseewerk Perkin-Elmer GmbH, et al., 386 F.3d 1133 (Fed. Cir. 2004).


"substantially straight segments" — "portions of the stent that are straight or nearly straight and extend the length of the stent." Medtronic Vascular, Inc., et al. v. Advanced Cardiovascular Systems, Inc., et al., 2005 U.S. Dist. LEXIS 822 (D. Del., Jan. 5, 2005).

"substantially straight, non-overlapping segments" — "portions of a stent that are straight or nearly straight and do not extend over or cover part of any other segment." Medtronic Vascular, Inc., et al. v. Advanced Cardiovascular Systems, Inc., et al., 2005 U.S. Dist. LEXIS 822 (D. Del., Jan. 5, 2005).


"substantially surrounds" — "encloses completely or largely, at least sufficiently (in combination with other limitations) to prevent alteration of the cross-sectional configuration of the axle." Boler Co. v. Arvinmeritor, Inc., 2004 U.S. Dist. LEXIS 13365 (N.D. Ill., Jul. 16, 2004).

"being substantially symmetrical with said center of gravity" — "'center of gravity' ... refers to a vertical plane transverse to the longitudinal direction of movement of the machine that divides the machine into halves of equal weight. ... Webster's Dictionary defines 'symmetrical' as 'capable of division by a longitudinal plane into similar halves.' Therefore, each half of the inner chamber on either side of the center of gravity must be of a similar shape." Breuer Electric Mfg. Co. v. Tennant Co., Inc., 1997 U.S. Dist. LEXIS 13222 (N.D. Ill., Aug. 22, 1997).
"said outlet being oriented relative to the liquid passageway so that the liquid being pumped passes through the outlet substantially tangentially relative to the longitudinal axis of the pump housing" — "the outlet is designed and positioned so that liquid passing through the outlet is moving in a direction that is both (i) substantially on one side of the longitudinal axis; and (ii) not directly toward or away from either end region of the pump housing."  

"substantially tapered end" — "an end which essentially, has the principal characteristic of being tapered."  

"substantially the same size and configuration" — "In this case, there is no need to divine the location of the hinge through an interpretation of the phrase 'substantially the same size and configuration' because the claims themselves go on to inform the reader exactly where the hinge must be."  

"cylindrical wall portions radially spaced from the end portions of the substrate projecting beyond said mat for a distance substantially the same as that of the projecting ends of the substrate" — "the distance between the inner wall of the enlarged diameter tubular body and the catalyst substrate is largely, though not exactly, the same distance the substrate extends beyond the mat."  

"the prescribed absorbed dose is delivered to the target tissue in substantially three dimensions" — "the prescribed absorbed dose is delivered to the target tissue such that all points at a given outward distance from the tissue wall will receive the same dose."  

"transferred substantially to the reaction frame" — "the movement or direction of most, but not necessarily all, of the reaction force to a physical structure, separate and distinct from the structure supporting the precision components, that transfers reaction forces caused by the movement of a stage drive away from the precision components."  

"substantially toroidal flow path" — "a flow path defined by a toroidal structure."  
The court reconsidered and revised this claim construction, however, after considering Bard's arguments that the recited 'flow path' was not a structural path, but was the path followed by the fluid. The court tentatively accepted Bard's assertion that a substantially toroidal flow can occur in a non-toroidal housing, and construed the phrase as requiring 'that the housing (although not necessarily toroidal in shape) must determine with precision a fluid flow path having the shape of a substantially closed curve which rotates about, but does not intersect or contain, an axis in its own plane.'  
... [W]e disagree with the district court's determination that the housing itself need not be toroidally shaped."  
"substantially transmit" — "in reference to wavelengths, [it] is defined as transmitting more than 1% of the incident radiation at each and every wavelength"; "in reference to polarization, it is defined as transmitting more than 20% of the horizontally polarized incident radiation at each and every wavelength." Suntiger, Inc. v. Sunglass Products of California, 2006 U.S. Dist. LEXIS 1076 (C.D. Cal., Jan. 10, 2006).3964


"is substantially transparent in the transverse direction so as to allow a user to see completely through ... from one side of the cartridge to the other" — "[is] limited to situations wherein the user may view directly through the central longitudinal axis of the cartridge." Dap Products, Inc. v. Sashco, Inc., 1996 U.S. Dist. LEXIS 22529 (S.D. Ohio, July 17, 1996).3966

"said upper wall portion being constructed for substantially uniform airflow therethrough over substantially the entire plan surface area of said upper wall portion"; "said secondary wall means being constructed for substantially uniform passage of air therethrough over substantially the entire plan surface area of said secondary wall means" — "A person of ordinary skill in the art of air bed engineering would read 'substantially uniform airflow' to mean airflow that does not substantially fluctuate over time. When added to the words 'over substantially the entire plan surface,' the claim requires that air flow at substantially the same rate at substantially all locations on the surface." KCJ Corp. v. Kinetic Concepts, Inc., et. al., 30 F. Supp. 2d 1319 (D. Kan. 1998).3967 "This court [] agrees with the district court that claim 1 requires uniformity in space as well as time." Id., 223 F.3d 1351, 1356 (Fed. Cir. 2000).3968

"substantially uniform cross-section" — "mean[s] less than a 0.010 inch variance in diameter along the length of the die." KX Industries, L.P., et al. v. Culligan Water Technologies, Inc., et al., 90 F. Supp. 2d 461 (D. Del. 1999).3969

"substantially uniform cross-sectional area" — "an intake passageway has a substantially uniform cross-sectional area if it has approximately the same cross-sectional area across its length." Briggs & Stratton Corp. v. Kohler Co., 398 F. Supp. 2d 925 (W.D. Wis. 2005).3970


"substantially uniform structure of flexible cells" — "all of the flexible connected cells have approximately the same structure." Medinol Ltd. v. Guidant Corp., et al., 2004 U.S. Dist. LEXIS 19705 (S.D.N.Y., Sept. 30, 2004).3972

"substantially uniform thickness" — "the district court erred in imposing that numerical restriction on the 'substantially uniform thickness' limitation." Cordis Corp. v. Medtronic AVE, Inc., et al., 339 F.3d 1352 (Fed. Cir. 2003).3973

"substantially uniform thickness" — "the wall of the tubular member must be of largely or approximately uniform thickness. A wall that varies in thickness by as much as 100 percent cannot be said to be of substantially uniform thickness." Cordis Corp. v. Boston Scientific Corp., 2005 U.S. Dist. LEXIS 10750 (D. Del., Jun. 3, 2005).3974
"substantially uniform thickness inside the perimeter wall" — "allows thickness deviations at or near the standard commercial tolerance." Vardon Golf Co., Inc. v. Karsten Manufacturing Corp., 2000 U.S. Dist. LEXIS 13769 (N.D. Ill., Sept. 7, 2000).\textsuperscript{3975}

"substantially uniform wall thickness" — "is properly construed to mean that the wall of the tube is largely or approximately uniform in thickness, but may vary at least as much as the wall thickness varied prior to swaging plus the variation in wall thickness that necessarily results from swaging the tube in accordance with the claimed invention of the '093 and '042 patents." Dana Corp. v. American Axle & Manufacturing, Inc., 110 Fed. Appx. 871 (Fed. Cir., Aug. 27, 2004) (unpublished).\textsuperscript{3976}

"substantially uniformly flexible (with respect to its longitudinal axis)" — "the flexibility of the stent is substantially uniform as one moves along the longitudinal axis of the stent." Medinol Ltd. v. Guidant Corp., et al., 2004 U.S. Dist. LEXIS 19705 (S.D.N.Y., Sept. 30, 2004).\textsuperscript{3977}


"substantially unmagnetized" — "having zero magnetization or as close to zero magnetization as possible." Comair Rotron, Inc. v. Nippon Densan Corp., et al., 154 F. Supp. 2d 326 (D. Conn. 2001).\textsuperscript{3979}

"substantially vertical" — "exclude[s] ones 'inwardly directed,' or sloped." Amhil Enterprises Ltd. v. Wawa, Inc., et al., 1995 U.S. Dist. LEXIS 3689 (D. Md., Feb. 21, 1995).\textsuperscript{3980} "[W]e interpret claim 1 to include only lids wherein the outwardly extending projections have well-defined faces that deviate only slightly, if at all, from the vertical. Any other construction of claim 1 would render it invalid." Id., 81 F.3d 1554 (Fed. Cir. 1996).\textsuperscript{3981}


"disposed substantially vertically in said grooves" — "'vertically' means that the bars are disposed substantially in a vertical direction, i.e., a direction that is perpendicular to the plane of the horizon, or parallel to a plumb line through the center of the earth, when the array is resting on a flat, horizontal surface." Laser Diode Array, Inc. v. Paradigm Lasers, Inc., et al., 114 F. Supp. 2d 167 (W.D.N.Y. 2000).\textsuperscript{3983}


"substantially within it" — "the anchor member [must] be, in all material parts, within the bulkhead housing to prevent tripping." American Seating Co. v. Transportation Seating, Inc., 2001 U.S. Dist. LEXIS 14720 (W.D. Mich., Sept. 18, 2001).\textsuperscript{3985}

"substantially zero overlap": "substantially aligned" — "the same as or very close to zero overlap"; "the same as or very close to perfect alignment." Thorn EMI North America, Inc. v. Intel Corp., 936 F. Supp. 1186 (D. Del. 1996).\textsuperscript{3986}
"substrate" — "a material suitable for receiving a thermal transfer laminate, such as a seatbelt or automotive visor." *Avery Dennison Corp. v. Whitlam Label Co., Inc.*, 2003 U.S. Dist. LEXIS 27836 (N.D. Ohio, Sept. 24, 2003). 3987


"second substrate" — "a material that can be modified to contain discrete individual sites appropriate for the attachment or association of beads and is amenable to at least one detection method." *Illumina, Inc. v. Affymetrix, Inc.*, 2010 U.S. Dist. LEXIS 70549 (W.D. Wis., Jul. 14, 2010). 3989

"each cycle of such continuous variation from one value to the other and then back to the first" — "no construction is necessary." *Vision Advancement, LLC v. Johnson & Johnson Vision Care, Inc.*, 2007 U.S. Dist. LEXIS 5742 (E.D. Tex., Jan. 26, 2007). 3990

"folding ... such that" — "folding, which creates or results in the relationship described following 'such that.'" *Taltech Ltd. v. Esquel Enterprises Ltd.*, 410 F. Supp. 2d 977 (W.D. Wash. 2006). 3991

"such that a user may rest their torso thereupon while performing back extensions" — "no construction of this term is required." *Fitness Quest Inc. v. J. Monti*, 2007 U.S. Dist. LEXIS 60195 (N.D. Ohio, Aug. 16, 2007). 3992

"such that each one of the plurality of expansion boards inserted into a corresponding one of said expansion connectors" — "mean[s] that connectors on the riser card can accommodate expansion boards but there is no requirement that expansion boards be inserted into those connectors." *Tulip Computers, International B.V. v. Dell Computer Corp.*, 236 F. Supp. 2d 364 (D. Del. 2002). 3993

"an elongated hollow support for receiving said shoulder of said sheathing in an abutting relationship such that the end of said tube is inserted into said support and said outer diameter of said sheathing and said support are substantially the same at said shoulder" — "this claim language should be given its plain and ordinary meaning and does not require any construction." *Heraeus Electro-Nite Co. v. Midwest Instrument Co.*, 2007 U.S. Dist. LEXIS 81685 (E.D. Pa., Nov. 1, 2007). 3994

"a flattened surface adjacent to said one or more buttons ... such that the user's ring finger receives support from the flattened surface" — "a surface that is sufficiently flat, wide, and horizontal to support a user's ring finger without the finger touching the mouse button." *Goldtouch Technologies, Inc. v. Microsoft Corp.*, 2000 U.S. Dist. LEXIS 3370 (W.D. Tex., Jan. 14, 2000). 3995

"sufficient clearance for a user's hands to comfortably grasp the handle structure" — "[is] limited to handles that provide the user's hand absolute clearance." *Rehrig Pacific Co. v. Norseman Plastics Ltd. Inc.*, 2003 U.S. Dist. LEXIS 27566 (C.D. Cal., Sept. 29, 2003). 3996

"said deforming step ... radially compressing the mat to substantially reduce its thickness and to apply sufficient radial pressure against the substrate to hold the substrate in the body" — "the deforming step and the mat alone supply enough pressure to hold the substrate in the body for its intended use." *Tenneco Automotive Operating Co. Inc. v. Visteon Corp.*, 2005 U.S. Dist. LEXIS 12738 (D. Del., Jun. 28, 2005). 3997
"sufficient space" — "the amount of space between the locking groove and the locking element is enough to allow for the movement of the joined panels such that the panels can (i) slide relative to one another along their joined edges and (ii) can be disassembled by angular rotation of one panel about the other joined edge." Alloc, Inc., et al. v. Pergo, LLC, 2009 U.S. Dist. LEXIS 62881 (E.D. Wis., Jul. 2, 2009).  

"shell having a hardness sufficient to maintain the shape of the grip" — "a structure that is firm enough to maintain the shape of the grip while the writing implement is used for writing," Kwitek, et al. v. Pilot Corp., et al., 516 F. Supp. 2d 709 (E.D. Tex. 2007).  

"said layer of foam being sufficiently resiliently compressible to [1] allow the layer of foam to be pressed manually against the painted surface to compress the portions of the layer of foam toward the rear surface of the layer of foam and cause the parts of the front surface of the layer of foam defined by both the projecting portions and the recessed portions to generally conform to the painted surface and press the glazing or compounding material into engagement with the painted - surface for efficient removal of imperfections, and [2] subsequently to allow the layer of foam to be manually pressed against the painted surface with a lesser force only sufficient to compress parts of the projecting portions of the layer of foam to complete polishing of the painted surface" — "'Sufficiently resiliently compressible' means that [1] the foam must be soft enough to be able to perform the function of allowing the convolutions (projections) to compress enough so that both the projections and the flat portion will 'generally conform to the painted surface' and cause 'efficient removal of imperfections', and [2] it must be hard enough so that when a lesser force is used, only the projections do the polishing." Minnesota Mining and Manufacturing Co. v. Lake Country Manufacturing, Inc., 918 F. Supp. 1307 (D. Minn. 1996).  

"said sealing portion being sufficiently soft to seal against an air flow tube, to form a radial seal against the air flow tube and cylindrical inner support" — "the Court declines to adopt Baldwin's proposed construction and does not construe the phrase." Donaldson Co., Inc. v. Baldwin Filters, Inc., 481 F. Supp. 2d 974 (D. Minn. 2007).  

"suitable for installation by the average consumer"; "can be installed by the average consumer" — "capable of being installed by an individual that purchases supplies for a home improvement task from a retail outlet and performs the home improvement task himself or herself, regardless of whether the individual has any training in that task"; "capable of being installed by an individual that purchases supplies for a home improvement task from a retail outlet and performs the home improvement task himself or herself, regardless of whether the individual has any training in that task." Romala Stone, Inc. v. Home Depot U.S.A., Inc., 2007 U.S. Dist. LEXIS 73098 (N.D. Ga., Sept. 28, 2007).  

"sunglasses" — "The preamble here limits the scope of the claim. The claims only cover sunglasses as opposed to more general eyewear." Panoptx Inc. v. Protective Optics Inc., 2007 U.S. Dist. LEXIS 83462 (N.D. Cal., Nov. 9, 2007).  


"supply of stored gas is provided" — "means ... that such a supply of stored gas is an integral part of the claimed invention." Epcon Gas Systems, Inc., et al. v. Bauer Compressors, Inc., 134 F. Supp. 2d 838 (E.D. Mich. 2000). "The district court did not err in finding that the 'supply of stored gas' is integral, or a component part of the claimed apparatus and process." Id., 279 F.3d 1022 (Fed. Cir. 2002).

"support" — "aperture, bore, or other apparatus that can be used to support, detain, carry, or accept insertions of another object." Fargo Electronics, Inc. v. Iris Ltd, Inc., 2005 U.S. Dist. LEXIS 34493 (D. Minn., Nov. 30, 2005).


"a support" — "a structurally rigid, molded structure that serves as a prop, base, foundation, brace or stay for a shift lever and related attachments, and pivotally mounts a transmission shift lever, such that the pivot axis is at a low position on the shifter to provide optimal mechanical advantage and movement to actuate a transmission shift cable." Grand Haven Stamped Products Co. v. Dura Automotive System, Inc., 2004 U.S. Dist. LEXIS 31087 (W.D. Mich., Jun. 28, 2004).


"support body means" — "Because the 'support body means' limitation uses the phrase 'means' and also recites function, without reciting any definite structure, it is appropriate to construe the term as a means-plus-function limitation." Medical Device Technologies, Inc. v. C.R. Bard, Inc., 7 Fed. Appx. 945 (Fed. Cir., Mar. 27, 2001) (unpublished).

"a support frame to which the trailer is mounted" — "a skeletal framework or other structure for a towed vehicle." Watson & Chalin Manufacturing, Inc. v. Boler Co., 227 F. Supp. 2d 633 (E.D. Tex. 2002).

"support layer" — "a flexible transparent material upon which the photopolymer material is disposed." MacDermid Printing Solutions, L.L.C. v. E.I. Du Pont De Nemours & Co., 2010 U.S. Dist. LEXIS 23746 (D.N.J., Mar. 15, 2010).
"support member" — "a spit (or pointed rod) that traverses the length of the spiral cut and helps the boneless meat product maintain its shape or integrity during slicing operations." Logan v. Hormel Foods Inc., et al., 2005 U.S. Dist. LEXIS 33861 (S.D. Tex., Sept. 2, 2005). 4017 "We agree with the portion of the district court's claim construction that requires that the support member 'help[] the boneless meat maintain its shape or integrity during slicing operations,' however, the intrinsic record does not require the 'support member' to 'traverse the length of the spiral cut,' so long as it is performing the function of helping 'the boneless meat maintain its shape or integrity during slicing operations.'" Id., 217 Fed. Appx. 942 (Fed. Cir., Jan. 25, 2007). 4018


"support member" — "spring retaining member." SRAM Corp. v. AD-II Engineering, Inc., 155 F. Supp. 2d 826 (N.D. Ill. 2001). 4020

"support member" — "a constituent part that serves as a foundation, prop, brace or stay." ICU Medical, Inc. v. B. Braun Medical, Inc., 344 F. Supp. 2d 663 (N.D. Cal. 2004). 4021

"a plurality of lamp supports mounted on the upper surface of said support member for engaging and supporting said fluorescent lamps adjacent their non-socket ends" — "we construe 'support member' to refer to a member that is mounted to the same surface as the lamp and that supports the lamp at its non-socket end." Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354 (Fed. Cir. 2004). 4022

"support plate" — "must be a physical structure. A 'plate' suggests a more or less flat surface. A 'support' plate is a plate that serves as a 'foundation, prop, brace or stay.' It must be sturdy and large enough to bear up, or prevent from falling free, the object or objects it is designed to 'support.'" MHB Industries v. Dennis Garberg & Associates, Inc., et al., 1996 U.S. Dist. LEXIS 11639 (D. Mass., July 26, 1996). 4023

"support structure" — "structure used to support the membrane and the conductive surface underlying the membrane." Polyvision Corp. v. Smart Technologies, Inc., et al., 501 F. Supp. 2d 1042 (W.D. Mich. 2007). 4024


"support wires" — "require that the wire be a continuous strand of wire which may be formed by butt-welding, end to end, shorter segments of wire." Leggett & Platt Inc. v. Hickory Springs Manufacturing Co., 2000 U.S. Dist. LEXIS 13063 (N.D. Ill., Sept. 5, 2000). 4026 "In sum, the district court correctly construed the term 'support wires' to mean 'a continuous strand of wire' with 'only two ends.'" Id., 285 F.3d 1353 (Fed. Cir. 2002). 4027

"supported along its entire length by the upper edge of the front portion of said band";
"supported upon its entire length" — "does not mandate constant contact. 'Support' does not mean the same thing as 'constant contact.' Therefore, an item made out of an inherently stiff material, such as the hard plastic from which these collars are made, is 'supported along its entire length' without constant contact, and the presence of gaps does not alter that support. Thus, constant contact is not called for by the patent claims." California Medical Products, Inc. v. Tecnol Medical Products, Inc., 921 F. Supp. 1219 (D. Del. 1995).


"supported by" — "held, propped, or with weight borne by." Nikon Corp., et al. v. ASM Lithography B.V., 308 F. Supp. 2d 1039 (N.D. Cal. 2004).

"nib supported by said housing" — "nib held in place by said housing." Chip-Mender, Inc. v. Sherwin-Williams Co., 458 F. Supp. 2d 994 (N.D. Cal. 2006).

"supported by the second end of the housing so as to permit movement of the first end of the locking member between a first position and a second position" — "requires only that the second end of the housing holds the locking member in position, in a manner that allows for the first end of the locking member to move between a first and a second position." Engineered Products Co. v. Donaldson Co., Inc., 165 F. Supp. 2d 836 (N.D. Iowa 2001).


"supported on ... said opposing surfaces" — "the plate members are held up and in position and their weight is borne by the surface of each of the two side members that faces or looks toward the corresponding surface of the other side member." IKN, Inc. v. CemProTec GmbH, 2005 U.S. Dist. LEXIS 29134 (E.D. Pa., Nov. 22, 2005).

"having a fine grain filter media supported on said underdrain laterals" — "The [district] court construed the claim language 'having a fine grain filter media supported on said underdrain laterals' as requiring that the filter media sit directly on the porous cap. Leopold argues that the filter media need only be 'above the porous cap and supported by the porous cap either directly or with the assistance of intermediate elements.' We conclude that the district court properly construed the claim language." F.B. Leopold Co., Inc. v. Roberts Filter Manufacturing Co., Inc., 1997 U.S. App. LEXIS 16233 (Fed. Cir., Jul. 2, 1997) (unpublished).


"supporting portion" — "any structure protruding from the frame (including but not limited to a cylinder or a cuboid) intended to support the optical film." LG Display Co., Ltd. v. AU Optronics Corp., et al., 2010 U.S. Dist. LEXIS 12969 (D. Del., Feb. 16, 2010).

"supporting (respectively auxiliary) primary lenses therein" — "mean[s] that lenses are secured to frames that include rims." Aspex Eyewear, Inc., et al. v. Altair Eyewear, Inc., 386 F. Supp. 2d 526 (S.D.N.Y. 2005).
"said arms and said first and second magnetic members supporting said auxiliary spectacle frame on said primary spectacle frame" — "the arms contacting the upper side of the primary spectacle frame's extensions and the first and second magnetic members being magnetically engaged to support the auxiliary frame."  Aspex Eyewear, Inc., et al. v. E'Lite Optik, Inc., 2007 U.S. Dist. LEXIS 76024 (N.D. Tex., Oct. 12, 2007). 4040

"supporting the housing of the microprocessor in position relative to said docking connection means so that the single connector on the housing is coupled with said additional connection provided in the docking connection means" — "[this] phrase will be construed to mean that the housing is supported and the single connector on the housing couples or mates with the connector on the docking module."  Computer Docking Station Corp. v. Dell Inc., et al., 2006 U.S. Dist. LEXIS 58388 (W.D. Wis., Aug. 16, 2006). 4041

"supports for operatively mounting said trays within said vending machine"; "a reinforcement structure secured to said trays ..." — "are not subject to § 112, P 6."  Crane Co., et al. v. Sandenvendo America, Inc., et al., 2009 U.S. Dist. LEXIS 47509 (E.D. Tex., Jun. 5, 2009). 4042

"surface" — "the exterior face of an object"; "a material layer constituting such an exterior face"; or "the outer face, outside, or exterior boundary of a thing" or "part or all of the boundary of a solid."  Byrne v. Black & Decker Corp., et al., 2006 U.S. Dist. LEXIS 24104 (E.D. Ky., April 27, 2006). 4043

"surface adjacent said trailing edge" — "a back surface"  Karsten Manufacturing Corp. v. Cleveland Golf Co., 1998 U.S. Dist. LEXIS 23148 (D. Ariz., Dec. 4, 1998). 4044 "This construction is in accordance with the description in the specification that the 'back surface' that is adjacent to the indented trailing edge circumscribes but does not include the cavity surfaces."  Id., 242 F.3d 1376 (Fed. Cir. 2001). 4045

"a major surface having a planar surface area and a plurality of spaced-apart, elongated, discrete surface indicia integral with said planar surface area" — "As construed in this court's prior memorandum order, the term 'surface' may refer to the surface of an unfinished plastic disc-shaped substrate. Given this interpretation, the term 'surface indicia' is not limited to any specific type of 'surface indicia' such as 'transparent microgrooves' or surface indicia with a partial metal coating."  DiscoVision Associates v. Disc Manufacturing, Inc., 1997 U.S. Dist. LEXIS 17735 (D. Del., Sept. 16, 1997). 4046

"surface layer" — "a layer beginning from, and including, the outermost surface and moving inward to an arbitrary depth of the lens, and having a different composition from the 'body' portion of the lens."  Rembrandt Vision Technologies, L.P. v. Bausch & Lomb, Inc., et al., 2007 U.S. Dist. LEXIS 36919 (E.D. Tex., May 21, 2007). 4047

"surface modifying layer" — "a layer that alters the surface characteristics of photosensitive element."  E.I. du Pont de Nemours & Co. v. MacDermid, Inc., et al., 2010 U.S. Dist. LEXIS 23750 (D.N.J., Mar. 15, 2010). 4048

"surface mount semiconductor light elements" — "a semiconductor light emitting element where the electrical leads are designed to be soldered to a surface of a circuit board, rather than mounted through a hole in the circuit board."  Litepanels, LLC, et al. v. Gekko Technology, Ltd., 2007 U.S. Dist. LEXIS 89756 (E.D. Tex., Dec. 6, 2007). 4049
"a surgical device"; "an implant" — "a device for use in surgical applications, but not including an expandable intraluminal vascular graft or expandable prosthesis for a body passageway." MarcTec, LLC v. Johnson & Johnson, et al., 2009 U.S. Dist. LEXIS 27011 (N.D. Ill., Mar. 31, 2009). 4050


"a surgical reference device defining a three-dimensional space" — "a device used to define three-dimensional space." Medical Instrumentation and Diagnostics Corp. v. Elekta AB, et al., 2001 U.S. Dist. LEXIS 25448 (S.D. Cal., Apr. 4, 2001). 4053


"sheathing surrounding a major portion of the length of said tube" — "We construe 'surrounding a major portion' to mean 'covering a significant portion.'" Heraeus Electro-Nite Co. v. Midwest Instrument Co., 2007 U.S. Dist. LEXIS 81685 (E.D. Pa., Nov. 1, 2007). 4056

"surrounding said leading end" — "describ[es] an adaptor that significantly borders the circumference of that part of the connector that fits within the junction box." Arlington Industries, Inc. v. Bridgeport Fittings, Inc., 290 F. Supp. 2d 508 (M.D. Pa. 2003). 4057

"a distal portion susceptible to electrolytic disintegration in blood"; "elongate tip portion not being susceptible to electrolytic disintegration in blood" — "a distal portion of the core wire which has attributes which make the segment able to electrolytically disintegrate when submersed in blood"; "an elongate tip portion which has attributes which make the portion resistant to electrolytic disintegration when submersed in blood." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007). 4058

"suspended between adjacent said corner pylons" — "require[s] that the structure not be supported from below in order to give some meaning to the term 'suspended.'" Rehrig Pacific Co. v. Norseman Plastics Ltd. Inc., 2003 U.S. Dist. LEXIS 27566 (C.D. Cal., Sept. 29, 2003). 4059

"a sweep angle that causes the blade to intercept the shock" — "a rearward sweep angle in the outer region that is constant or decreasing." Rolls-Royce, PLC v. United Technologies Corp., 2010 U.S. App. LEXIS 9201 (Fed. Cir., May 5, 2010). 4060

"switch" — "a device for altering the direction of something, in this case a beam, and selecting the onward path of the entity by choosing between at least two possible paths." Optivus Technology, Inc., et al. v. Ion Beam Applications S.A., 2004 U.S. Dist. LEXIS 30314 (C.D. Cal., Aug. 31, 2004). 4061

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"a mode selector switch connected to the circuit controlling and processing means and movable between a RECORD and a PLAY mode" — "does not necessarily require a slide switch, but allows for other types of switches." Howes, et al. v. Zircon Corp., 992 F. Supp. 957 (N.D. Ill. 1998).


"switchyard" — "a series of switches that bend or otherwise divert the proton beam emanating from the accelerator in one of two directions; that is, the beam is either diverted toward a treatment station or sent on to the next switch in the yard." Optivus Technology, Inc., et al. v. Ion Beam Applications S.A., 2004 U.S. Dist. LEXIS 30314 (C.D. Cal., Aug. 31, 2004).


"swivel member" — "a component designed to permit the coupling member to swivel or rotate." Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F. Supp. 2d 93 (D. Conn. 2006).

"swung forwardly and upwardly about a transverse axis" — "The Court finds that the bending of fixed flexible fingers does not constitute swinging about an axis. Swinging about an axis necessarily requires some pivoting or rotation at the axis." Marquip, Inc. v. Fosher America, Inc., et al., 1997 U.S. Dist. LEXIS 22678 (W.D. Wis., May 21, 1997).


"arranged symmetrically" — "mean[s] 'putting the layers in a desired symmetrical order when the film is viewed in cross-section, so that the layers are in the same order on each side of the core of the film, for example c/d/b/a/b/d/c. This claim phrase limits only the arrangement of the layers, and does not require precise identity in the thickness of the layers or the amounts of recited components or additives that may be included in the layers.'" Cryovac Inc. v. Pechiney Plastic Packaging, Inc., 2006 U.S. Dist. LEXIS 19144 (D. Del., April 13, 2006).

"synthetic mulch" — "a manufactured material for placement on the ground, which is designed, dimensioned and colored to have an appearance enabling it to substitute for hay, wood chips, tree bark, rocks, pea gravel, leaves, and other similar natural plant and mineral materials usable as groundcover." Green Edge Enterprises, LLC v. Rubber Mulch Etc., LLC, et al., 2007 U.S. Dist. LEXIS 38799 (E.D. Mo., May 29, 2007).

"a syringe mounting for attachment to a syringe to position a syringe relative to said injector to permit said plunger drive ram to engage and move a plunger into or out of said syringe" — "A 'mounting' is something that holds an object in place, and a 'syringe mounting' is something that would hold a syringe in place. Because a syringe is tube-shaped, 'syringe mounting' connotes a structure that would hold a tube in place. Syringe mounting is therefore not a means-plus-function term. ... The Court construes the limitation to mean, 'a syringe mounting that attaches to a syringe, so that the syringe is positioned to allow the plunger drive ram to engage and move the plunger toward or away from a discharge tip of the syringe.'" Tyco Healthcare Group LP, et al. v. E-Z-EM, Inc., et al., 2010 U.S. Dist. LEXIS 15664 (E.D. Tex., Feb. 22, 2010).


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"tack modifier" — "shall include antioxidants only when each is used in an amount greater than three percent of the total weight of the product." *Edizone, LC v. Cloud Nine, LLC, et al.*, 2006 U.S. Dist. LEXIS 68069 (D. Utah, Sept. 21, 2006).

"tail" — "the portion of the projectile extending rearward from a constriction/delineation and including the rear opening, which is bounded by the rear edge." *Combined Tactical Systems, Inc. v. Defense Technology Corp. of America, et al.*, 426 F. Supp. 2d 140 (S.D.N.Y., April 4, 2006).

"tail portion" — "the rear end portion of the projectile extending rearward from the lead shot-filled body compartment having a substantially cylindrical shape narrower than the cylindrical shape of the front end portion." *Combined Tactical Systems, Inc. v. Defense Technology Corp. of America, et al.*, 426 F. Supp. 2d 140 (S.D.N.Y., April 4, 2006).

"said expansion profile of the balloon had been tailored whereby said balloon has a maximum inflated size selected from a range of maximum inflated sizes that are a function of balloon processing conditions" — "'tailoring' according to the patent is more than making different balloons for different needs. It involves the use of varying balloon processing conditions to vary a balloon's expansion profile." *Cordis Corp. v. Advanced Cardiovascular Systems, Inc., et al.*, 1999 U.S. Dist. LEXIS 15529 (D. Del., Sept. 10, 1999).


"a pair of spaced guides tapering in an outwardly direction" — "two spaced guides, each tapering in a direction away from the centerline of the U-shaped channel on which it is located." *Douglas Dynamics, LLC v. Buyers Products Co.*, 2010 U.S. Dist. LEXIS 18592 (W.D. Wis., Mar. 2, 2010).

"tautly holding" — "The term 'tautly holding' derives from the phrase 'to hold tautly.' 'To hold something tautly against a septum' means both (1) to hold that thing itself taut, like a drum head, and (2) to hold that thing tightly against a septum." Regents of the University of Minnesota v. AGA Medical Corp., 2009 U.S. Dist. LEXIS 90289 (D. Minn., Sep. 29, 2009).


"tear impressions" — "In distinguishing the Chang reference, Bailey stated that his tear impressions were not continuous faults completely through the plastic material of construction and were only faulted completely through the material of construction at the exterior ends, if at all. Bailey cannot now assert that the claims cover this surrendered material. ... We also conclude that perforations, spaced apart faults completely through the material of construction, from the exterior edge into the central portion of the lid, cannot be 'tear impressions' because Bailey expressly stated during prosecution that the 'tear impressions' were only completely faulted through the material of construction at the exterior ends, if at all." Bailey v. Dunkin Donuts, Inc., et al., 1998 U.S. App. LEXIS 1175 (Fed. Cir., Jan. 8, 1998) (unpublished).

"a pair of spaced apart tear impressions extending inwardly from the edge of the container lid" — "the first impression may have a small space between it and the outer edge of the container lid." Bailey v. Dart Container Corp., 980 F. Supp. 560 (D. Mass. 1996).


"telecentric lens means for peering into the well" — "As a matter of law, this Court construes that the term 'telecentric lens' is a sufficient structure to support the function of 'peering into the well.' The Court does not accept Defendant's argument of construing the telecentric lens as a limitation stemming from construing the phrase in means-plus-function format of 35 U.S.C. § 112 P6." Amersham Biosciences Corp., et al. v. PerkinElmer, Inc., 2006 U.S. Dist. LEXIS 32758 (D. N.J., May 23, 2006).[4094] "[T]he conclusion reached by the Court in its May 24 Opinion remains unchanged, as the Court hereby construes that the term 'telecentric lens' is a sufficient structure to support the function of 'peering into the well,' as well as the function of 'improv[ing] the collection of light therefrom.' As such, upon reconsideration, the Court affirms its May 24, 2006 Opinion and Order." Id., 2006 U.S. Dist. LEXIS 86552 (D.N.J., Nov. 29, 2006).[4095]

"telescope" — "this Court construes the term 'telescope' to include both 'reflecting telescopes,' which use mirrors as optical elements, and 'refracting telescopes,' which use lenses as optical elements." Lasermax, Inc. v. Glatter, 2005 U.S. Dist. LEXIS 17136 (S.D.N.Y., Aug. 17, 2005).[4096]


"temples pivotally secured to the outer edges of respective lenses" — "sidepieces or arms extending along the wearer's temples which are fastened to the lenses by a means or method that allows them to pivot or rotate at a place on the exterior portion of those lenses near the wearer's temples." Gargoyles, Inc. v. Aearo Corp., 1998 U.S. Dist. LEXIS 22294 (D. Mass., May 19, 1998).[4098]

"temporarily" — "used in connection with the elevator installation during modernization, and removed after modernization is complete." Inventio AG v. ThyssenKrupp Elevator Americas Corp., et al., 2010 U.S. Dist. LEXIS 59020 (D. Del., Jun. 14, 2010).[4099]

"temporarily adhering" — "to temporarily hold fast or stick by or as if by gluing, suction, grasping, fusing or otherwise." Stephen Key Design, LLC, et al. v. Lego Systems, Inc., et al., 261 F. Supp. 2d 1196 (N.D. Cal. 2003).[4100]

"temporarily coupled to" — "attached to until detached from." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007).[4101]

"temporarily coupling" — "to fasten together for a limited time, and, upon uncoupling, allowing the outer label to rotate about the inner label and/or container." Stephen Key Design, LLC, et al. v. Lego Systems, Inc., et al., 261 F. Supp. 2d 1196 (N.D. Cal. 2003).[4102]

"tension" — "Here too no Markman-type construction seems to be required that would add a definition beyond the ordinary English language meaning of the term 'tension.'" Zip Dee, Inc. v. Dometic Corp., 63 F. Supp. 2d 868 (N.D. Ill. 1998).[4103]

"tension member" — "a structure which, during use, is stretched taut." Schindler Elevator Corp. v. Otis Elevator Co., 2010 U.S. Dist. LEXIS 2463 (D.N.J., Jan. 13, 2010).[4104]

"terminal" — "a device attached to the end of an elongated barrier that is anchored to the roadside, or attached to the end of a fixed roadside hazard, that prevents an errant vehicle's movement perpendicular to the roadway and ... absorbs energy when a vehicle hits the terminal itself." Kothmann Enterprises, Inc. v. Trinity Industries, Inc., 394 F. Supp. 2d 923 (S.D. Tex. 2005).[4105]

"a terminal" — "is attached to an elongated barrier that is anchored to prevent the impacting vehicle's perpendicular movement and does not include a truck or work vehicle." Kothmann & Kothmann, Inc. v. Trinity Industries, Inc., 287 F. Supp. 2d 699 (S.D. Tex. 2002). 4107

"terminal portion" — "the part of the appendage at the end, extremity, or boundary of the appendage." Stant Manufacturing, Inc. v. Gerdes, GmbH, 2004 U.S. Dist. LEXIS 27704 (S.D. Ind., Sept. 27, 2004). 4108


"a textile material" — "a woven, knitted, nonwoven or extruded material." Armor Screen Corp. v. Storm Catcher, Inc., et al., 2009 U.S. Dist. LEXIS 33407 (S.D. Fla., Mar. 10, 2009). 4110


"retrieving one of the sets [of] data from the memory representing one of the fuel delivery limit curves when the cruise control is engaged; ... retrieving the other set of data from the memory representing the other fuel delivery limit curve when the cruise control is not engaged" — "require the retrieval of one set of data representing a fuel delivery limit curve if the cruise control is engaged, and the retrieval of a different set of data representing a different fuel delivery limit curve if the cruise control is not engaged." Caterpillar Inc. v. Detroit Diesel Corp., 961 F. Supp. 1249 (N.D. Ind. 1996). 4112

"one or more parts within the plurality of parts" — "In some contexts, 'the plurality of parts' or similar terms may be confusing to a lay jury. Here, the antecedent 'plurality of parts' is identified in the previous step. Given the close proximity of the phrases, it is highly unlikely to be confusing." Orion IP, LLC v. Staples, Inc., et al., 406 F. Supp. 2d 717 (E.D. Tex. 2005). 4113

"the polygon further comprises a first wall having a concave shape and a second wall having a convex shape" — "the polygon having a first wall with an apex directed toward the interior of the polygon and a second wall, also with an apex, directed away from the interior of the polygon." Medtronic Vascular, Inc., et al. v. Abbott Cardiovascular Systems, Inc., et al., 2007 U.S. Dist. LEXIS 95430 (N.D. Cal., Dec. 21, 2007). 4114

"the wall has a thickness of greater than 0.018 inch" — "each and every one of the one or more sidewalls of the needle cannula has a thickness, measured from the inner sidewall (wall of the lumen) to the outer sidewall, of greater than 0.018 inch." Ideal Instruments, Inc. v. Rivard Instruments, Inc., et al., 498 F. Supp. 2d 1131 (N.D. Iowa 2007). 4115

"and then" — "use of the words 'and then' between all steps [] requires the surgeon to have completed Steps (a) and (b) before moving to Step (c)." Young v. Lumenis, Inc., 2005 U.S. Dist. LEXIS 27792 (S.D. Ohio, Nov. 1, 2005). 4116

"and therebetween" — "mean[s] the angle of the grinding stone must be adjustable to vertical and horizontal positions, as well as angles between vertical and horizontal." Matweld, Inc. v. Portaco, Inc., 2006 U.S. Dist. LEXIS 60027 (D. Minn., Aug. 23, 2006). 4117
"thereby" — "the district court explained to both parties that it would not construe the 'thereby' clause because the claim limitation was clear in its meaning. ... [W]e see no error in the district court's instruction." C.R. Bard, Inc. v. Boston Scientific Corp., 2000 U.S. App. LEXIS 16090 (Fed. Cir., Jul. 7, 2000) (unpublished). 4118

"thereby prevent the build-up of electrostatic charge in the fuel and the resultant arcing which causes the breakdown of the polymer material comprising the fuel injection system component" — "preventing the accumulation of charge in the fuel such that arcing and deterioration of the polymer material used to make the housing of the fuel filter are avoided." Honeywell International, Inc., et al. v. ITT Industries, Inc., et al., 330 F. Supp. 2d 865 (E.D. Mich. 2004). 4119


"thereby to lower the temperature at the surface of combustible material at said area" — "in order to lower the temperature at the surface of the combustible material at said area." US Foam, Inc, et al. v. On Site Gas Systems, Inc., 2010 U.S. Dist. LEXIS 79286 (E.D. Tex., Aug. 3, 2010). 4121

"therein" — "mean[s] that a housing must have at least one compartment or chamber within it that has an inlet aperture and an outlet aperture. A housing may have more than one compartment or chamber. A housing must have an inlet aperture and an outlet aperture." Seitz, et al. v. Envirotech Systems Worldwide Inc., et al., 2006 U.S. Dist. LEXIS 53084 (S.D. Tex., July 31, 2006). 4122

[a projection or a recess] "therein" — "for a projection or recess to be located anywhere in the aperture, including at the beginning of the aperture, as long as the projection or recess is a structure that is distinct from the surface of the ornamental component that gives the aperture its shape." Friedrich Zettl GmbH v. Bloomingdales, Inc., et al., 2000 U.S. Dist. LEXIS 6747 (N.D. Ill., Feb. 24, 2000). 4123


"having a pressurizable member of a medical apparatus for interacting with the patient's body resting thereon" — "An inflatable device that turns a mattress from underneath it might be considered to be acting upon that mattress, but would not ordinarily be considered to be acting upon a person lying on that mattress." Safe Bed Technologies Co. v. KCI USA, Inc., et al., 2004 U.S. Dist. LEXIS 17773 (N.D. Ill., Sept. 2, 2004). 4125

"said connection means having adjustment means thereon for infinitely adjusting the tracking of the mower by adjusting the output of one of said right and left hydraulic pumps"; "said connection means including adjustment means thereon for infinitely adjusting the tracking of the mower by adjusting the output of at least one of said right and left hydraulic pumps" — "since the connection means includes the adjustment means, the adjustment means is physically located on the connection means." Toro Co., et al. v. Scag Power Equipment, Inc., et al., 2002 U.S. Dist. LEXIS 14428 (D. Neb., Aug. 5, 2002). 4126

"thermal adhesive net" — "a regular array of thermal adhesive material that is more solid structured than a thermal adhesive web."  *Taltech Ltd. v. Esquel Enterprises Ltd.*, 410 F. Supp. 2d 977 (W.D. Wash. 2006).  

"thermal adhesive web" — "a random array of thermal adhesive material that is less solid structured than a thermal adhesive net."  *Taltech Ltd. v. Esquel Enterprises Ltd.*, 410 F. Supp. 2d 977 (W.D. Wash. 2006).  

"thermal characteristic such that a 950 degrees C. temperature at the working surface results in a temperature of less than 750 degrees C. at the depth" — "is definite. In addition, the claim language is clear and does not require construction."  *Reedhycalog UK, Ltd., et al. v. United Diamond Drilling Services, Inc., et al.*, 2009 U.S. Dist. LEXIS 32959 (E.D. Tex., Apr. 15, 2009).  


"thermally changing the properties of the regions of the layer of composition by exposing the composition to imaging radiation" — "does not support a construction that would ... require homogenization."  *Imagecube LLC v. Boeing Co., et al.*, 2006 U.S. Dist. LEXIS 19911 (N.D. Ill., April 17, 2006).  


"thermostat means ... for switching off the heater when all the liquid in the boiling water reservoir has evaporated therefrom" — "a thermostat that automatically switches off the heater when all of the water in the reservoir has boiled dry."  *Rival Co. v. Sunbeam Corp., et al.*, 987 F. Supp. 1167 (W.D. Mo. 1997).  

"thin" — "a 'thin' layer of 'tooth whitening substance' is a layer that does not impede speech or affect appearance. ... It is not so broad and infinite that the term is indefinite."  *Procter & Gamble Co. v. McNeil-PPC, Inc.*, 2009 U.S. Dist. LEXIS 6947 (W.D. Wis., Jan. 26, 2009).
"thin membrane having attachable means" — "a thin, soft, pliable sheet with a wall around its perimeter. The thin membrane itself may take any of a variety of shapes." Freeman, et al. v. Gerber Products Co., 506 F. Supp. 2d 529 (D. Kan. 2007).\(^{413}\)

"thin-walled" — "the wall of the tubular member must have little extent from one surface to its opposite at both its first and second diameters." Cordis Corp. v. Boston Scientific Corp., 2005 U.S. Dist. LEXIS 10750 (D. Del., Jun. 3, 2005).\(^{410}\)


"wherein the differential expansion portion is thinner than the limited expansion portion" — "wherein the differential expansion portion has comparatively lesser overall thickness than the limited expansion portion." Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006).\(^{412}\)

"thread" — "a yarn or yarns used in forming the stockinette member." Mintz, et al. v. Dietz & Watson, Inc., et al., 2009 U.S. Dist. LEXIS 11186 (S.D. Cal., Feb. 13, 2009).\(^{413}\)

"thread means that includes a plurality of thread flights formed in the anchor distal from said drill means end to turn into the bone mass following the drill means" — "thread means that overlap the drill means so long as a greater number of thread means are distal from the drill means." Mitek Surgical Products, Inc. v. Arthrex, Inc., 21 F. Supp. 2d 1309 (D. Utah 1998).\(^{414}\)

"threaded"; "threads"; "threading" — "require that the 'threaded' parts have a continuous helical or spiral ridge or groove, around the inside of the hole in the base member (i.e., internally), or around the outside of each sight insert (i.e., externally), completing one or more turns around the central axis of the part, like the threading of a nut or bolt, respectively, and parts with complementary threads must be able to 'screw' together." Kudlacek v. DBC, Inc., et al., 115 F. Supp. 2d 996 (N.D. Iowa 2000).\(^{415}\)

"threaded back end" — "mean[s] either a screw with or without a head that has a threaded back part." Arthrex, Inc. v. DePuy Mitek, Inc., 2006 U.S. Dist. LEXIS 95465 (M.D. Fla., Oct. 16, 2006).\(^{416}\)

"three dimensional position" — "the X, Y and Z values for the top of at least one ball of a ball grid array." Scanner Technologies Corp. v. ICOS Vision Systems Corp., N.V., 2002 U.S. Dist. LEXIS 331 (S.D.N.Y., Jan. 10, 2002).\(^{417}\)


"[the first and second openings pass] through [the first and second baffles]" — "The district court properly construed this term to mean that each opening extends from one side of the baffle to the other." Sage Products, Inc. v. Devon Industries, Inc., 126 F.3d 1420 (Fed. Cir. 1997).\(^{415}\)

"extend through" — "mean[s] that the rod passes the entire length of the isthmus of the femur." Dow Corning Wright Corp. v. Osteonics Corp., 939 F. Supp. 65 (D. Mass. 1996).\(^{415}\)
"flow of said paint through said passageway, to said nib" — "flow of said paint through said channel to, not through, said nib."  

"passing through said wash load" — "passing [detergent solution] through the wash load, not merely over or around."  

"forming a fluid flow path through the housing" — "the fluid flow path must be formed from one end of the housing to the other."  

"lateral stability and traction through the plane of a golf swing" — "resisting side and providing adhesive friction as a golfer swings a golf club from the backswing through hitting the ball and the follow-through."  

"through the tubular housing and over the pen to the outlet orifice" — "along the housing and pen to the outlet orifice."  

"throughhole passing through the dielectric layer" — "a space between the first and second conducting layers free of dielectric layer material."  

"throughout the substrate"; "through the substrate"; "throughout the entire substrate" — "throughout every part of the substrate."  

"thumbwheel" — "an input device consisting of a dial or wheel, inset into a surface so that only a portion of its rim protrudes, and that can be rotated either clockwise or counterclockwise around its axis."  

"tie yarns" — "the district court's ruling that tie yarns are 'not visible from the face side of the knit' is erroneous."  

"tight joint" — "means that standing water will not penetrate the joint for several hours."  

"center tilt mount" — "a center mount configured to tilt."  

"tilt valve" — "a valve that can operate at least by tilting."  

"tip" — "requires a separate elongated attachment to be fitted to the connecting body."  

"tip" — "that which serves as the end, cap or point of an object."  
"tip comprising ... a suction tube having a fluid path that channels aspirated irrigation fluid externally of the handpiece and directly to a suction source" — "the language of claims 9 and 30 requiring a 'tip comprising' a 'suction tube having a fluid path that channels aspirated irrigation fluid externally of the handpiece and directly to a suction source' requires that the tip include a bypass path."  C.R. Bard, et al. v. Stryker Corp., 2006 U.S. Dist. LEXIS 16659 (D.R.I., April 4, 2006).  

"tip of the waveguide" — "the distal end portion of the waveguide, including a separate component coupled thereto in a manner that prevents internal reflection at any interface between the components (for example, by fusing or a transparent, index-matched adhesive), but not including a cap or tube enclosing a transmitting surface on the distal end portion of the waveguide or a reflecting surface on the distal end portion of the waveguide."  American Medical Systems, Inc., et al. v. Laser Peripherals, LLC, 2009 U.S. Dist. LEXIS 95387 (D. Minn., Oct. 13, 2009).  


"heating the resulting batter-coated dough to a temperature in the range of about 400 ° F. to 850 ° F." — "As written, the claim unambiguously requires that the dough be heated to a temperature range of 400 ° F. to 850 ° F."  Chef America, Inc. v. Lamb-Weston, Inc., 358 F.3d 1371 (Fed. Cir. 2004).  

"a gas spring ... to assist in stably retaining said tread base" — "gravity creates a stable closed position; the gas spring claimed must only 'assist' in stably retaining the tread base."  In re Icon Health and Fitness, Inc., 496 F.3d 1374 (Fed. Cir. 2007).  

"with a wick to convey a combustible liquid" — "the 'liquid' referenced in claim 1 is itself part of the claimed invention and is, therefore, a required limitation of the claim."  Produits Berger S.A., et al. v. Schemenauer, et al., 2007 U.S. Dist. LEXIS 10294 (E.D. Tex., Feb. 14, 2007).
"fresh water is added to cool said fabric" — "requir[es] that the water be added for the purpose of cooling the fabric. However, the term 'fresh water' does not mean clear water without any additives or wash residue." Whirlpool Corp., et al. v. LG Electronics, Inc., et al., 423 F. Supp. 2d 730 (W.D. Mich. 2004).

"shingling ... to form a group of shingled sheets for stacking" — "requires some basis to distinguish that group from the next." Marquip, Inc. v. Fosber America, Inc., et al., 1997 U.S. Dist. LEXIS 22678 (W.D. Wis., May 21, 1997).


"to provide a maximum tractive effort on the rear wheel for a given pressurized fluid flow regardless of wheel slippage conditions on the front wheels" — "A wheel -- call it Wheel A -- receives the 'maximum tractive effort for a given pressurized fluid flow regardless of wheel slippage conditions' on other wheels if the pressurized fluid flow to Wheel A's motor is not affected by whether those other wheels' slip." Toro Co. v. Textron, Inc., et al., 502 F. Supp. 2d 904 (D. Minn. 2007).

"passing the produced smoke through a filter to remove mainly the tar therefrom" — "the Yamaoka Patent claims a process for filtering smoke to the extent that the smoke produced by the filtration is still able to impart a noticeable and "agreeable" taste and smell to the fish. The Yamaoka Patent does not claim a process specifically intended to filter flavor-giving particles out of the smoke." Tuna Processors, Inc. v. Hawaii International Seafood, Inc., et al., 2007 U.S. Dist. LEXIS 77396 (D. Haw., Oct. 17, 2007).

"to the atria" — "means that the electric shock must be directed toward the destination of the atria, but that the electric shock may pass through the ventricles on its way toward the atria." Medtronic, Inc., et al. v. Guidant Corp., et al., 2004 U.S. Dist. LEXIS 10020 (D. Minn., May 25, 2004).


"pin ... for extending ... to thereby inhibit rotation of said slot engagement member to said unlocked position" — "requires a pin that can be extended into the security slot and thereby inhibit rotation of the slot engagement member between the locked and unlocked positions." Acco Brands, Inc. v. Micro Security Devices, Inc., 346 F.3d 1075 (Fed. Cir. 2003).
"to convert said beam to a line of light on surfaces to which it is projected" — "only requires that the device project the beam as a line on a surface, regardless of whether the surface is a remote surface." Irwin Industrial Tool Co. v. Orosz, et al., 2004 U.S. Dist. LEXIS 14325 (N.D. Ill., Jul. 26, 2004).4182


"tongue section" — "A tongue is a projecting strip that may, but need not, resemble or suggest a human tongue." Bruno Independent Living Aids, Inc. v. Acorn Mobility Services Ltd., et al., 301 F. Supp. 2d 914 (W.D. Wis. 2003).4188


"tooth" — "is a cutting surface." Synvasive Corp. v. Stryker, Corp., 425 F. Supp. 2d 1105 (E.D. Cal. 2006).4191

"table having a top" — "strongly implies that the referenced 'top' is a physical object or structure, not merely a particular point in space." Powell v. Home Depot USA, Inc., 2009 U.S. Dist. LEXIS 45517 (S.D. Fla., May 30, 2009).4192

"top"; "skirt" — "the top is the upper portion of the cap from which the sealing protrusions and skirt depend, and the skirt is the outer portion of the cap which is generally the same diameter as the upper portion of the base." Phoenix Closures, Inc. v. Silgan Plastics Corp., 2005 U.S. Dist. LEXIS 28825 (N.D. Ill., Nov. 15, 2005).4193

"top edge" — "does not include the side surfaces of the lateral trough walls." ADC Telecommunications, Inc. v. Panduit Corp., 200 F. Supp. 2d 1022 (D. Minn. 2002).4194

"top member" — "a distinct part of a whole that extends around the entire periphery of the uppermost end." Bradford Co. v. Afco Manufacturing, et al., 2006 U.S. Dist. LEXIS 88547 (S.D. Ohio, Dec. 5, 2006).4195

"top of the container body" — "mean[s] the 'highest point, level, or part of.'" Sage Products, Inc. v. Devon Industries, Inc., 126 F.3d 1420 (Fed. Cir. 1997).4196


"a top surface of the housing"; "extending upward from a ... side of the housing" — "the directional terms used in the patent have their ordinary meanings. The phrase 'extending upward' means upward from the housing toward the weapon above the housing, with the weapon in its expected position as shown in the drawings. The top of the housing means the top with reference to the housing in its position under the weapon, again, with the weapon in its expected position as shown in the drawings." Insight Technology Inc. v. SureFire, LLC, 2006 U.S. Dist. LEXIS 11762 (D.N.H., Feb. 28, 2006).4198
"toric lens" — "a lens which is curved so that the radii of curvature in the horizontal and vertical meridians are different." Gargoyles, Inc. v. Aearo Corp., 1998 U.S. Dist. LEXIS 22294 (D. Mass., May 19, 1998). 4199


[i] "non-tortuous copy path"; [ii] "tortuous bend" — [i] "a path that, while not necessarily straight, has no curves sharp enough to sacrifice the integrity of the edible substrate sheet" [ii] "a bend sufficiently sharp to sacrifice the integrity of the substrate sheet." Jack Guttman, Inc. v. Kopykake Enterprises, Inc., 302 F.3d 1352 (Fed. Cir. 2002). 4201

"tortuous path" — "five elements of a 'tortuous path' are set forth in the specification, including: (a) a number of bends, some of which may be 90 degrees or more, (b) small vessels, typically with lumen diameters of less than about 3 mm, and (c) a total path length within the target tissue of at least about 5 cm, (d) accessible by a guidewire 18 mil or smaller of the type described above, but being too delicate and or tortuous for accessing by significantly larger guidewire, and (e) the requirement that the path include vessels that branch off the more proximal vessels of the path at greater than a right angle." Target Therapeutics, Inc. v. Cordis Endovascular Systems, Inc., 1997 U.S. App. LEXIS 9718 (Fed. Cir., May 2, 1997) (unpublished). 4202

"touch switch" — "a switch that requires physical contact in order to be activated." Michilin Prosperity Co. v. Fellowes Manufacturing Co., 450 F. Supp. 2d 35 (D.D.C. 2006). 4203

"toward" — "should be construed according to its dictionary definition, which is 'in the direction of.'" Janes v. Bose Corp., 2004 U.S. Dist. LEXIS 8136 (N.D. Ill., May 6, 2004). 4204

"a toy device for the amusement of pet animals" — "a device for the amusement of an animal kept for pleasure or companionship, rather than solely for utility." Robinson v. Advanced Decoy Research, Inc., et al., 519 F. Supp. 2d 1087 (S.D. Cal. 2007). 4205

"tracer" — "Inverness claims that the proper construction of the term 'tracer' ... is 'a tracer that is a separate component from (i.e., is not attached to) the solid support.' ... the court finds that Inverness's suggested interpretation ... is unsupported." Becton, Dickinson and Co. v. Inverness Medical Technology, Inc., 176 F. Supp. 2d 258 (D. Del. 2001). 4206

"track means on said divider comprising a pair of elongated rails" — "two similar or corresponding plastic bars, matched for use together, that run horizontally (in the direction perpendicular to the shelf's edge) with the purpose of guiding a pusher member down a fixed and defined path." RTC Industries, Inc. v. William Merit & Associates, Inc., 2004 U.S. Dist. LEXIS 13288 (N.D. Ill., Jul. 15, 2004). 4207

"a lace trained between the eyelets on the first and second eyelet strips" — "a lace threaded in a way to connect the eyelet or eyelets on the first eyelet strip with the eyelet or eyelets on the second eyelet strip." Mueller Sports Medicine, Inc. v. Core Products International, Inc., 2003 U.S. Dist. LEXIS 24617 (W.D. Wis., Mar. 3, 2003). 4208

"transducer" — "include[s] only various transducers and switches capable of signaling as soon as possible after initial contact between the stylus and an object." Renishaw plc v. Marposs Societa' per Azioni, et al., 974 F. Supp. 1056 (E.D. Mich. 1997). 4209

"transferring electrical energy at a predetermined radio frequency range as arcs in ionized conductive pathways at a predetermined power level within the gas jet in an electrical circuit which includes the tissue" — "transferring electrical energy, at a predetermined radio frequency from the RF drive to a resonant output circuit to the pencil to the needle-like electrode, which extends into the nozzle, to the tissue as arcs in ionized conductive pathways in a gas jet." Erbe Elektromedizin Gmbh, et al. v. Canady Technology, LLC, et al., 512 F. Supp. 2d 297 (W.D. Pa. 2007).

"transferring unit" — "The court finds that the transferring unit connotes structure, not function, to one skilled in the art. Accordingly, means-plus-function treatment is denied. Instead, the transferring unit is interpreted as a mechanism that moves ribbon stock, from a roll at the beginning of the assembly line, through the claimed machine." SDS USA, Inc. v. Ken Specialties, Inc., 107 F. Supp. 2d 574 (D.N.J. 2000).

"said first location on said wall after said seaming operation forming the transition from said double seam to said second wall portion" — "the first location, after seaming, at which the double seam region changes to the second wall portion." Crown Packaging Technology, Inc., et al. v. Rexam Beverage Can Co., 486 F. Supp. 2d 366 (D. Del. 2007).


"transmission lines" — "means an arrangement of conductive elements (wires) capable of conducting electric magnetic energy in a prescribed fashion over the extent of a chessboard which does not require termination of the arrangement in its characteristic matching impedance." Brehn corp. v. TASC BV, et al., 1997 U.S. Dist. LEXIS 14411 (S.D.N.Y., Sept. 19, 1997).

"transmitting a force" — "is not a step-plus-function limitation." Masco Corp. v. United States, et al., 303 F.3d 1316 (Fed. Cir. 2002).

"transparent" — "transmitting light without appreciable scattering in a manner such as ordinary window glass so that objects placed behind the placard are clearly distinguishable." MPT, Inc. v. Marathon Labels, Inc., et al., 2006 U.S. Dist. LEXIS 4612 (N.D. Ohio, Feb. 7, 2006).

"transparent protective coating … defining a barrier to prevent injury to said photographic print from foot traffic and other objects passing over the floor tile" — "a transparent barrier of sufficient thickness to protect the photographic print from injury that would otherwise be caused by foot traffic and other objects passing over it." Cies Bisker, LLC v. 3M Co., et al., 2009 U.S. Dist. LEXIS 110055 (E.D. Tex., Nov. 25, 2009).

"transverse holes" — "holes across the butt portion of the nail." Acumed LLC v. Stryker Corp., et al., 483 F.3d 800 (Fed. Cir. 2007).4223 "The term 'transverse holes' in claim 1 of the '444 patent should be interpreted as 'openings through the butt portion of the nail oriented perpendicularly with respect to the longitudinal axis of the butt portion.'" Id. (Moore, J., dissenting).4224


"transverse sectional dimensions" — "The Court remains convinced that its original determination of indefiniteness is correct." Howmedica Osteonics Corp. v. Tranquil Prospects, Ltd., 2003 U.S. Dist. LEXIS 26345 (N.D. Ind., Nov. 24, 2003).4226 "Because one of ordinary skill would understand these requirements from the patent, the claim language is not indefinite. In sum, this record shows that 'transverse sectional dimensions' refers to two-dimensional measurements, or the cross-sectional area." Id., 401 F.3d 1367 (Fed. Cir. 2005).4227


"transversely oriented support extending across the user support"; "extending substantially across the entire lateral extent of the body pad" — "this Court ... declines to construe either term." Fitness Quest Inc. v. J. Monti, 2007 U.S. Dist. LEXIS 60195 (N.D. Ohio, Aug. 16, 2007).4229

"trap space between each magnet member and a magnet protector of an immediately adjacent magnet member"; "secondary settling area between each magnet member and a magnet protector of an immediately adjacent magnet member" — "a catch space created between the exposed side of a magnet and the protector for the next magnet over." Rattler Tools, Inc. v. Bilco Tools, Inc., et al., 2007 U.S. Dist. LEXIS 49124 (E.D. La., July 6, 2007).4230


"wherein the first layer of foam is treated to have reversible enhanced thermal properties" — "wherein the first layer of foam possesses reversible enhanced thermal properties by means of being coated with PCMs, or having PCMs embedded within it, or by means of some other process that does not involve the physical attachment of a tangible, distinct layer of material, such as a temperature regulating membrane, to the surface of the foam." Baychar, Inc., et al. v. Frisby Technologies, Inc., et al., 230 F. Supp. 2d 75 (D. Me. 2002).4234

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"providing a treating flow of said hydrogen peroxide solution from one or more of said wells"
— "the term 'treating flow'... is read to have no pressure limitation associated with it and to be limited to 'chemical remediation.'" Cleanox Environmental Services, Inc. v. Hudson Environmental Services, Inc., et al., 14 F. Supp. 2d 601 (D.N.J. 1998). 4235

"a trigger depression device operative to support said trigger of said saw in a depressed 'on' position" — "Though the term 'device' is a general term, in connection with 'trigger depression' and given the prevalence of triggers in the art of trimming devices, as well as the existence of the term in prior art, this term evinces sufficient structure so as not to invoke § 112." Rogers v. Desa International, Inc., et al., 166 F. Supp. 2d 1202 (E.D. Mich. 2001). 4236

"a troughed portion" — "has a meaning readily understood by one of skill in the art." Donaldson Co., Inc. v. Baldwin Filters, Inc., 481 F. Supp. 2d 974 (D. Minn. 2007). 4237


"truncated wall" — "a wall (planar or non-planar) that truncates, in essence, the typical corner that would otherwise be formed between two side walls." K-TEC, Inc. v. Vita-Mix Corp., 2009 U.S. Dist. LEXIS 98752 (D. Utah, Oct. 23, 2009). 4239

"trunnion" — "although required to contain a projection, is broad enough to include a projection with a recess." Sun Coast Merchandise Corp., et al. v. CCL Products Enterprises, Inc., et al., 179 Fed. Appx. 6 (Fed. Cir., April 21, 2006) (unpublished). 4240

"trunnions" — "pin[s] or pivot[s] usually mounted on bearings for rotating or tilting something." Sun Coast Merchandise Corp. v. CCL Products Enterprises, Inc., 2003 U.S. Dist. LEXIS 27316 (N.D. Cal., Apr. 30, 2003). 4241

"tubular" — "will be given its commonly-understood meaning with the caveat that it is not to be restricted to objects having a circular cross-section." Paczonay v. American Recreation Products, Inc., et al., 2007 U.S. Dist. LEXIS 9773 (N.D. Cal., Jan. 30, 2007). 4242


"tubular member" — "a structure that 'has the form of a tube,' i.e., is hollow and cylindrical in shape." Cordis Corp., et al. v. Advanced Cardiovascular Systems, Inc., et al., 1998 U.S. Dist. LEXIS 11342 (D. Del., Jul. 17, 1998). 4244

"tubular sock-like projectile body" — "a tube shape hollow body, composed of one or more layers of material, having a single inner compartment." Combined Tactical Systems, Inc. v. Defense Technology Corp. of America, et al., 426 F. Supp. 2d 140 (S.D.N.Y., April 4, 2006). 4245


"tufts of fibers" — "clusters of binding fibers which have been intentionally needle-punched on a downstroke and which extend beyond an opposite surface of the batt." Lydall Thermal/Acoustical, Inc., et al. v. Federal-Mogul Corp., et al., 2009 U.S. App. LEXIS 20077 (Fed. Cir., Sep. 8, 2009). 4248


"turf maintenance operation" — "an operation for maintaining grass- or vegetation-covered soil or for maintaining sand. Such operations include mowing, sand grooming, and aeration." Toro Co. v. Textron, Inc., et al., 502 F. Supp. 2d 904 (D. Minn. 2007). 4252

"turn control mode" — "mode wherein streamer positioning device(s) generate a force in the opposition direction of a turn and then directing each streamer positioning device to the position defined in the feather angle mode." WesternGeco LLC v. ION Geophysical Corp., 2010 U.S. Dist. LEXIS 71875 (S.D. Tex., Jul. 16, 2010). 4253

"turnbuckle" — "the applicants defined a turnbuckle as something that is adjustable. Therefore, any influence that the doctrine of claim differentiation may have on claim construction in this case cannot survive the multiple statements indicating that a turnbuckle is an adjustable connector." Springfield Co., Inc. v. Staubli Corp., et al., 1998 U.S. App. LEXIS 7657 (Fed. Cir., Apr. 17, 1998) (unpublished). 4254


"conveyor assembly comprising at least two conveyor means"; "conveyor assembly comprising two vertically positioned conveyors"; "conveyor assembly comprising at least two conveyors positioned adjacent to each other" — "require at least two conveyors which are separate elements and not merely two moving surfaces." Lantech, Inc. v. Keip Machine Co., 32 F.3d 542 (Fed. Cir. 1994). 4256


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"unassisted flow" — "flow without the aid of any additional process or device to draw out more fluid than that which occurs once the flow has been initiated." *Therasense, Inc. v. Becton, Dickinson and Co.*, 2006 U.S. Dist. LEXIS 66437 (N.D. Cal., Aug. 31, 2006).

"rollers each comprising a prong having a first end attached to said lifting means and an unattached free end spaced from said lifting means ... wherein ... said free ends of said rollers may be inserted under said object prior to lifting" — "requires the following: (1) one end of the roller (the tractor end) is spaced closely to and attached to the lifting means so that insertion of the roller at the tractor end would not be possible; and (2) the other end of the roller is spaced from and 'unattached' to the lifting means and free from any other structure so that it may be freely inserted under the bale." *Oiestad v. Ag-Industrial Equipment Co., Inc., et al.*, 1997 U.S. App. LEXIS 18219 (Fed. Cir., Jul. 22, 1997) (unpublished).

"uncompressed position" — "the position of the flexible element when it is not under axial compression from a medical implement and closes the valve." *ICU Medical, Inc. v. B. Braun Medical, Inc.*, 344 F. Supp. 2d 663 (N.D. Cal. 2004).


"underside" — "the surface of the mat that faces or contacts the surface on which the mat or pad rests, the underside or bottom." *Microthin.com, Inc. v. SiliconeZone USA, LLC*, 615 F. Supp. 2d 754 (N.D. Ill. 2009).


"original unidentified mass" — "a mass that does not have a specific preformed size and shape." *All Dental Prods, LLC, et al. v. Advantage Dental Products, Inc.*, 309 F.3d 774 (Fed. Cir. 2002).
undisputed claim limitations — "Although the construction of the claim is independent of the device charged with infringement, it is convenient for the court to concentrate on those aspects of the claim whose relation to the accused device is in dispute." Pall Corp. v. Hemasure, Inc., 181 F.3d 1305, 1308-09 (Fed. Cir. 1999). "[W]e are reviewing only certain disputed terms of the claim construction and lack the power to construe other terms not disputed by the parties." MBO Laboratories, Inc. v. Becton, Dickinson & Co., 474 F.3d 1323 (Fed. Cir. 2007).

"said front portion of said side wall having inner and outer surfaces with undulating contours that define projections at said inner surface and corresponding indentations at said outer surface" — "Because Plaintiffs expressly disclaimed corrugations during the '640 prosecution history, undulating contours cannot be construed to include corrugations. Thus, the court concludes that undulating contours must be construed to mean a wavy curve-like appearance, but not corrugations." Sentry Protection Products, Inc., et al. v. Eagle Manufacturing Co., 2003 U.S. Dist. LEXIS 27435 (N.D. Ohio, Sept. 30, 2003).


uneven" — "sufficently non-smooth as to allow for the influx of air around a suction cup." Techtronic Industries Co., Ltd., et al. v. Chervon Holdings Ltd., et al., 395 F. Supp. 2d 720 (N.D. Ill. 2005).

rendering uniform" — "to make the absorbed dose of radiation more uniform to prevent over-treatment of body tissue at or close to the outer wall of the instrument." Xoft, Inc. v. Cytyc Corp., et al., 2007 U.S. Dist. LEXIS 34468 (N.D. Cal., April 27, 2007).


uniform flexible film" — "means that the material must be of a uniform thickness, and excludes material in which there are any variations in thickness." Middleton, Inc. v. Minnesota Mining and Manufacturing Co., 1998 U.S. Dist. LEXIS 19428 (N.D. Ill., Nov.24, 1998). "We understand the district court's interpretation to mean that the film must have the same thickness throughout, except that normal manufacturing tolerances are allowed." Id., 1999 U.S. App. LEXIS 29872 (Fed. Cir., Nov. 16, 1999) (unpublished). "In sum, the proper construction of 'uniform flexible film' is a flexible film having always the same form. Thus, a uniform flexible film includes, for example, a flexible film having the same thickness throughout, as well as a flexible film having the same textured surface throughout." Id., 311 F.3d 1384 (Fed. Cir. 2002).

cylinder of uniform, second diameter" — "a tube having a consistent circumference throughout the length of its shaft without significant bulges or cavities, such that it can telescope within the first cylinder while maintaining an unvarying distance between the outermost exterior of the inner tube and the innermost interior of the outer tube." Robinson v. Cannondale Corp., et al., 2002 U.S. Dist. LEXIS 6797 (C.D. Cal., Jan. 29, 2002).
"having a uniform thickness"; "by said uniform thickness seals" — "require the gasket means to be the same thickness throughout and to seal the duct connecting flange members and also the corner edge portions of the duct, forming the only seal for the corner edge portions of the duct extending beyond said front surface of said corner means." *Ductmate Industries, Inc. v. Famous Supply Corp., et al.*, 55 F. Supp. 2d 777 (N.D. Ohio 1999). 4282

"said support mat is of uniform thickness between its opposite ends" — "the thickness of the mat does not vary between its ends." *Tenneco Automotive Operating Co. Inc. v. Visteon Corp.*, 2005 U.S. Dist. LEXIS 12738 (D. Del., Jun. 28, 2005). 4283

"uniformity of resulting cut surface" — "any aspect of uniformity for a cut surface, for example consistency of surface finish or of dimensional accuracy or precision from entry to exit of the jet through a work piece for the segment specified by the user." *Omax Corp. v. Flow International Corp.*, 2006 U.S. Dist. LEXIS 81914 (W.D. Wash., Nov. 7, 2006). 4284

"uniformly" — "Grayzel is splitting hairs in arguing that the district court should have selected the definition "without fluctuation or variation; consistent" instead of the definition "always the same; unvarying" for the term "uniformly." The district court's definition is synonymous with Grayzel's proposed definition." *Grayzel v. St. Jude Medical, Inc.*, 162 Fed. Appx. 954 (Fed. Cir., Dec. 23, 2005) (unpublished). 4285


"ablation ... is caused uniformly but only to a predetermined depth" — "Without any other guide for the term, the Court is left with the ordinary and customary meaning of uniform ablation, that is, ablation to an identical depth, or to a depth that does not vary in detail." *Laser Industries, Ltd., et al. v. Reliant Technologies, Inc.*, 1998 U.S. Dist. LEXIS 23494 (N.D. Cal., Sept. 3, 1998). 4287

"containing uniformly dispersed therein a static-reducing amount of electrically conductive particulate material" — "The written description of the '040 patent thus shows that the 'uniformly dispersed' limitation requires the distribution of conductive particles across the length and width of the conductive layer but does not require uniform dispersion of the particles across the thickness of the layer." *Charleswater Products, Inc. v. Nevamar Corp.*, 1998 U.S. App. LEXIS 31011 (Fed. Cir., Dec. 10, 1998) (unpublished). 4288

"allowing the resultant assembly to set and dry such that the calcined gypsum forms set gypsum having voids uniformly dispersed therein" — "The only part of the resultant assembly that need have uniformly dispersed voids is the deposited dispersion described in claim 25." *United States Gypsum Co., et al. v. LaFarge North America, Inc., et al.*, 508 F. Supp. 2d 601 (N.D. Ill. 2007). 4289


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"said connectors being unitary" — "an undivided component that extends between the bag and the liner and is connected to the bag and the liner." *Scholle Custom Packaging, Inc. v. Grayling Industries, Inc.*, 2010 U.S. Dist. LEXIS 55414 (W.D. Mich., Jun. 3, 2010).\(^{4293}\)

"unitary central hub member" — "a single device comprising at least two parts pivotably coupled to and centrally located among the lower frame assembly, that enables corner legs, hub legs and side rails to collapse into a substantially parallel compact configuration without the need to disassemble fabric or other components of the structure or to release a latch or lock on the corner legs to permit the corner legs to collapse." *Graco Children's Products, Inc. v. Century Products Co., Inc., et al.*, 1996 U.S. Dist. LEXIS 10356 (E.D. Pa., July 23, 1996).\(^{4294}\) "At oral argument on the instant motions, counsel for Graco cited the above portion of the '437 patent to argue that 'the patentee is using unitary to show that a number of pieces can be put together in an assemblage, so that they act as one.' We adopt this common-sense interpretation, especially in light of the parties agreement that the unitary central hub can have multiple parts that act as one piece." *Graco Children’s Products, Inc. v. Regalo International LLC*, 2000 U.S. Dist. LEXIS 11133 (E.D. Pa., Aug. 8, 2000).\(^{4295}\)

"unitary continuous external gasket means" — "require[s] the gasket means to be a unitary (one-piece), uninterrupted gasket means having a uniform thickness that extends around the periphery of said duct connecting flange members." *Ductmate Industries, Inc. v. Famous Supply Corp., et al.*, 55 F. Supp. 2d 777 (N.D. Ohio 1999).\(^{4296}\)

"unitary tube" — "means the tube and tip are a single unit." *Mahurkar, et al. v. Arrow International, Inc.*, 160 F. Supp. 2d 927 (N.D. Ill. 2001).\(^{4297}\)

"unmagnetized magnetic material" — "material that is capable of being magnetized but in the absence of an applied external magnetic field is not magnetized." *Fargo Electronics, Inc. v. Iris Ltd, Inc.*, 2005 U.S. Dist. LEXIS 34493 (D. Minn., Nov. 30, 2005).\(^{4298}\)


"unstretched original length" — "the length of the stretched plastic film before mechanical elongation." *Pliant Corp. v. MSC Marketing and Technology, Inc.*, 416 F. Supp. 2d 632 (N.D. Ill. 2006).\(^{4300}\)


"upper edge" — "an edge that faces upwardly (e.g., it does not face sidewardly)." *Bradford Co. v. Afco Manufacturing, et al.*, 2006 U.S. Dist. LEXIS 88547 (S.D. Ohio, Dec. 5, 2006).\(^{4304}\)

"first and second upper mounting portions" — "first and second portions of a top of the vertical frames to which an object may be mounted." TBC Consoles, Inc. v. Forecast Consoles, Inc., 2009 U.S. Dist. LEXIS 91653 (S.D.N.Y., Sep. 28, 2009).

[i] "upper portion"; [iii] "lower portion" — [i] "that part of the jamb, which is less than the whole, made up of one or more pieces joined together, and which is higher in physical position in the jamb than the lower portion."; [ii] "the part of the jamb different than the upper portion, which is joined to the lower end of the upper portion." Burns, Morris & Stewart L.P. v. Endura Products, Inc., 2005 U.S. Dist. LEXIS 46839 (E.D. Tex., May 11, 2005).

"upper surface" — "surface of the plastic sheet that is opposite the lower surface and faces away from the surface on which the mat or pad rests." Microthin.com, Inc. v. SiliconeZone USA, LLC, 615 F. Supp. 2d 754 (N.D. Ill. 2009).

"upper surface"; "lower surface" — "Upper surface' and 'lower surface' are designated at the time the first set stitch is applied, and the upper and lower surfaces of a component/element are opposing surfaces through a thickness of the component/element, providing that the 'upper surface' faces upward and the 'lower surface' faces downward at the time of designation along the unfolded portions of the garment components, and providing that the upper surface and lower surface designations of the garment components remain consistent around folds required in the claim." Taltech Ltd. v. Esquel Enterprises Ltd., 410 F. Supp. 2d 977 (W.D. Wash. 2006).

"upright position" [and] "reclined position" — "requir[e] that each seat contain a movable backrest." GFI, Inc. v. Franklin Corp., et al., 142 F. Supp. 2d 780 (N.D. Miss. 1999).

"upright standing manner"; "standing upright manner"; "upright manner" — "having a generally vertical orientation, corresponding to that of a beverage container or other product." Crane Co., et al. v. Sandenvendo America, Inc., et al., 2009 U.S. Dist. LEXIS 47509 (E.D. Tex., Jun. 5, 2009).

"upstanding lip or wall" — "any member provided at the front of the track which either cooperates with the front member in stopping the forward movement of an article or at least does not interfere with the functioning of the front member in this regard. A 'transversely extending' lip or wall would extend at least partially across the track." Display Technologies, Inc. v. Paul Flum Ideas, Inc., 2000 U.S. Dist. LEXIS 14258 (S.D.N.Y., Sept. 27, 2000).

"rotating the receiving means downwardly and away from said first conveyor means to urge the received eggs downwardly" — "Another ordinary meaning of 'to urge' avoids exclusion of the preferred embodiment from the claims. Specifically, 'to urge' may mean 'to cause to move, hasten, or gather speed.' This definition receives support from the patent specification. The specification clarifies that 'to urge' means broadly to move or to carry and that the receiving means may slow the motion of the eggs." Moba, B.V., et al. v. Diamond Automaton, Inc., 325 F.3d 1306 (Fed. Cir. 2003).

"urinary bladder submucosa" — "urinary bladder submucosa delaminated from the abluminal muscle cell layers and at least the luminal portion of the tunica mucosa of the urinary bladder tissue." Cook Biotech, Inc., et al. v. Acell, Inc., et al., 460 F.3d 1365 (Fed. Cir. 2006). 4315

"used in a truck trailer" — "The retractable segmented cover systems is used with a trailer that is designed to be hauled by a truck." Sundance, Inc. v. De Monte Fabricating, Ltd., 485 F. Supp. 2d 805 (E.D. Mich. 2007). 4316

"an electrical utility box for the electrical power system" — "an electrically conductive hollow box enclosure (e.g. for mounting electrical power equipment)." Senior Industries, Inc. v. Thomas & Betts Corp., et al., 2001 U.S. Dist. LEXIS 16901 (N.D. Ill., Sept. 27, 2001). 4317

"utilizing at least one of said instantaneous flow rate and said reference indicia to select one of said higher and said lower pressure magnitudes to be applied in the airway of such a patient" — "using the instantaneous flow rate or the average flow rate, or both, to determine whether to provide the previously selected higher pressure magnitude (for inhalation) or the previously selected lower pressure magnitude (for exhalation) to the patient." Respironics, Inc., et al. v. Invacare Corp., 2006 U.S. Dist. LEXIS 62233 (W.D. Pa., Aug. 30, 2006). 4318

"utilizing said instantaneous flow rate and said reference indicia to select one of said higher and said lower pressure magnitudes for said flow of breathing gas to be applied in the airway of such a patient" — "comparing the instantaneous flow rate signal to the average flow rate signal to determine whether to provide the previously selected higher pressure magnitude (for inhalation) or the previously selected lower pressure magnitude (for exhalation) to the patient." Respironics, Inc., et al. v. Invacare Corp., 2006 U.S. Dist. LEXIS 62233 (W.D. Pa., Aug. 30, 2006). 4319

"utilizing the core pins to aid in ejecting" — "using the core pins to assist in forcing the washing machine basket from the apparatus." Maytag Corp. v. Electrolux Home Products, Inc., 411 F. Supp. 2d 1008 (N.D. Iowa 2006). 4320

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"V-shape" — "An object or sequence of objects has a 'V-shape' if the object or sequence of objects is generally shaped like the letter 'V.' However, an object or sequence of objects may be 'V-shaped' even if the nadir of such object or objects is not acute or 'sharp,' and even if the nadir is not characterized by a physical joining of the two legs of the 'V.'" Typeright Keyboard Corp. v. Microsoft Corp., 2002 U.S. Dist. LEXIS 27468 (S.D.N.Y., Mar. 27, 2002). 4321


"reserve vacuum assembly" — "a means-plus-function analysis does not apply to the construction of the term reserve vacuum assembly. ... I therefore conclude that the proper construction is based on the term's ordinary meaning; 'the structure, including but not limited to a tank, to one of ordinary skill in the art that is a reserve source of vacuum.'" Bausch & Lomb Inc. v. Moria S.A., et al., 222 F. Supp. 2d 616 (E.D. Pa. 2002). 4323


"valve-actuating portion" — "to include the cylindrical portion, the annular base, and the keys, which engage the valve mechanism." Parker-Hannifin Corp., et al. v. Baldwin Filters, Inc., et al., 2010 U.S. Dist. LEXIS 68906 (N.D. Ohio, Jul. 9, 2010).

"valve means" — "the term 'valve' ... provides sufficient structure to preclude application of § 112." Haberman v. Playtex Products, Inc., 403 F. Supp. 2d 708 (W.D. Wis. 2005).


"valve pin assembly" — "part of the valve pin actuator that secures the valve pin to the actuator and includes a first part for holding a top end of a valve pin that is removably secured to the piston, and a second part for receiving the valve pin that is secured to the manifold." Synventive Molding Solutions, Inc. v. Husky Injection Molding Systems, Inc., 2009 U.S. Dist. LEXIS 72474 (D. Vt., Aug. 13, 2009).


"variable gauge thickness" — "the plastic film has thickness variations that help trap air and ease unwinding." Pliant Corp. v. MSC Marketing and Technology, Inc., 416 F. Supp. 2d 632 (N.D. Ill. 2006).

"where [the offset] distance \(d\) varies between minimum distances for the first and last string ends in [the] sequence and a maximum distance for a string end between [the] first and last string ends in [the] sequence" — "require[s] that the offset distance \(d\), take on at least three values, i.e., a minimum, a maximum, and at least one intermediate value." Athletic Alternatives, Inc. v. Prince Manufacturing, Inc., 73 F.3d 1573 (Fed. Cir. 1996).4337

"the volume of chlorine drawn from the chlorine supply canister during a period of continuous sewage effluent recirculation varies with the duration period of continuous sewage effluent recirculation" — "the longer the sewage effluent is recirculated without stopping, the greater the volume of chlorine that is dispensed." Cecil's On-Site Products, Inc. v. Chaffin, 2009 U.S. Dist. LEXIS 10095 (S.D. Tex., Feb. 11, 2009).4338

"vary the position" — "to make or cause a change in place or position." Bradford Co. v. Afco Manufacturing, et al., 2006 U.S. Dist. LEXIS 88547 (S.D. Ohio, Dec. 5, 2006).4339

"vault" — "a durable box-type steel container, that may be locked, and that is of a size capable of housing a video recorder and being placed in the trunk of an automobile." P.A.T., Co., et al. v. Ultrak, Inc., 948 F. Supp. 1506 (D. Kan. 1996).4340


"a vent associated with the upper rim of the at least one chamber" — "a recess that extends completely through the upper rim of the sidewall of the main chamber, and allows for the escape of gas." Merit Medical Systems, Inc. v. Aspen Surgical Products, Inc., 2006 U.S. Dist. LEXIS 64895 (W.D. Mich., Sept. 12, 2006).4345


"ventilation opening" — "an opening in the enclosure to provide for reducing the buildup of heat, fumes, or vapor, within the radio enclosure." Black & Decker Inc., et al. v. Robert Bosch Tool Corp., 389 F. Supp. 2d 1010 (N.D. Ill. 2005).4348

"venturi"; "venturi tube"; "venturi passage" — "a tube or other passageway for exerting suction, which tube or passageway is narrower than the areas at both ends." Performance Aftermarket Parts Group, Inc., et al. v. TI Group Automotive Systems, Inc., 2006 U.S. Dist. LEXIS 92686 (S.D. Tex., Dec. 22, 2006).4349

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"venturi chamber" — "a volume in a tubular fluid pathway in which suction is produced due to a constriction." Cecil's On-Site Products, Inc. v. Chaffin, 2009 U.S. Dist. LEXIS 10095 (S.D. Tex., Feb. 11, 2009). 4350


"vertical channel" — "a structure with a U- or bracket-shaped cross-section that runs vertically down the back of the plow blade, and which generally conforms throughout its length to the shape or curvature of the back of the blade. It does not, then, include a so-called 'boxed gusset,' with a back that does not conform to the blade's shape, but rather slopes at a downward angle away from the top of the blade." Pro-Tech Welding & Fabrication, Inc. v. Lajuett, et al., 367 F. Supp. 2d 398 (W.D.N.Y. 2005). 4352

"vertical lock spindle" — "a long, rotating, vertically-oriented rod that serves as an axis of rotation for the lock pins for locking the side rail." Pedicraft, Inc. v. Stryker Corp. of Michigan, et al., 2003 U.S. Dist. LEXIS 27837 (M.D. Fla., May 5, 2003). 4353

"so that said pair of magnetic members can vertically engage corresponding magnetic members on a primary spectacle frame" — "so that the pair of magnetic members can magnetically engage corresponding magnetic members on the primary spectacle frame along a vertical polar axis, either by contacting the primary spectacle frame's magnetic members or by magnetic attraction without physical contact." Aspex Eyewear, Inc., et al. v. E'Lite Optik, Inc., 2007 U.S. Dist. LEXIS 76024 (N.D. Tex., Oct. 12, 2007). 4354

"vertically movable" — "which can be moved up and down to position the unit prior to operation." Tom Hayden Enterprises, Inc. v. Southern Oregon Hot Bikes, Inc., 2004 U.S. Dist. LEXIS 8195 (D. Or., Apr. 29, 2004). 4355

"vertically-projecting columnar support element" — "a generally cylindrically shaped supporting structure, which may be tapered at either or both ends, and/or grooved or fluted, the non-circular axis of which is oriented generally from the sole to the upper and not between the medial and lateral sides of the foot." Nike, Inc. v. Adidas America, Inc., et al., 2006 U.S. Dist. LEXIS 91011 (E.D. Tex., Dec. 18, 2006). 4356


"vessel" — "a container that must be capable of holding both solid and liquid food." Green v. Conagra Foods, Inc., 2009 U.S. Dist. LEXIS 1342 (D. Neb., Jan. 9, 2009). 4358
"said secondary fuel filter means including a vessel defining a hollow interior chamber in fluidic communication with a return line in fluidic communication with said fuel tank for returning fuel and undesired gas thereto, and a filter media positioned within said chamber for immersion in fuel received therein and a conduit located within said filter media for delivering fuel passing through said filter media to said outlet" — "The secondary fuel filter also includes a vessel defining a hollow interior chamber, which chamber is in fluidic communication with a return line, which is in fluidic communication with the fuel tank, for returning fuel and undesired gas to the fuel tank. The secondary fuel filter also includes a filter media positioned within the chamber of the vessel so that the filter can be immersed in the fuel received in the chamber. The secondary fuel filter also has a conduit located within the filter media for delivering fuel passing through said filter media to the outlet." Ekstam v. Ekstam, 2006 U.S. Dist. LEXIS 12937 (E.D. Mo., March 7, 2006).

"vessel means for supporting said wafers" — "is written using the means-plus-function terminology of 35 U.S.C. § 112 and, therefore, the court will construe the phrase to cover the corresponding structure and equivalents thereof. ... the court finds that the phrase 'vessel means for supporting said wafers' refers to a structure designed to hold wafers being processed and provide for a closed circulation process stream, and any structure that would be considered an equivalent." CFMT, Inc., et al. v. YieldUP International Corp., 92 F. Supp. 2d 359 (D. Del. 2000).


"at least one vibration dampener adjustment member having openings therethrough matching the number and circumferential spacing of said stabilizer rods and a diameter larger than the diameter of said stabilizer rods freely receiving said rods therethrough" — "encompasses a 'vibration dampener adjustment member' comprised of either a single piece or multiple pieces joined together so that the member has 'openings therethrough' that permit the stabilizer rods to pass through the 'adjustment member' and the 'adjustment member' partially or completely encloses the 'openings therethrough.'" Kudlacek v. DBC, Inc., et al., 115 F. Supp. 2d 996 (N.D. Iowa 2000).


"viscoelastic hand surface"; "viscoelastic finger surface" — "the external layer of the grip is soft enough to change shape under the pressure exerted by fingers gripping a writing implement to write and which will tend to return to its original shape when released." Kwitek, et al. v. Pilot Corp., et al., 516 F. Supp. 2d 709 (E.D. Tex. 2007).

"vivid colored appearance" — "require[s] that the maximum differential effect equal or exceed about 5.45%." Oakley, Inc. v. Sunglass Hut International, et al., 316 F.3d 1331 (Fed. Cir. 2003). 4367

"plurality of voids extending between said top and bottom" — "gaps or spaces which extend in the space between the top and bottom ends." Innovative Office Products, Inc. v. SpaceCo, Inc., et al., 2007 U.S. Dist. LEXIS 62296 (E.D. Pa., Aug. 23, 2007). 4368

"method for using vulcanized rubber" — "the process of treating crude or synthetic rubber ... to give it useful properties." Green Edge Enterprises, LLC v. Rubber Mulch Etc., LLC, et al., 2007 U.S. Dist. LEXIS 38799 (E.D. Mo., May 29, 2007). 4369

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"wafer" — "a thin, generally cylindrical, slice of semiconductor material used as a base for an electronic component or circuit." MEMC Electronic Materials, Inc. v. Mitsubishi Materials Silicon Corp., et al., 2006 U.S. Dist. LEXIS 9353 (N.D. Cal., Feb. 24, 2006). 4370

"wafer cassette" — "a wafer carrier that holds one or more wafers and keeps them separate." Nova Measuring Instruments, Ltd. v. Nanometrics, Inc., 2006 U.S. Dist. LEXIS 90736 (N.D. Cal., Dec. 1, 2006). 4371

"wafer support for detachably supporting wafers thereon" — "We conclude that the 'wafer support' limitation conveys sufficient structure to preclude the application of § 112, P 6, and therefore interpret that limitation to mean any device capable of both holding or grasping a semiconductor wafer and releasing it at some later time." Semitool, Inc. v. Novellus Systems, Inc., 12 Fed. Appx. 918 (Fed. Cir., Jun. 8, 2001) (unpublished). 4372 "We conclude that the 'wafer support' limitation conveys sufficient structure to preclude the application of § 112, P 6, and therefore interpret that limitation to mean any device capable of both holding or grasping a semiconductor wafer and releasing it at some later time." Id., 44 Fed. Appx. 949 (Fed. Cir., Jul. 23, 2002) (unpublished). 4373

"waist area"; "waist area of the garment" — "an area of the garment that is above and distinct from the hip area of the garment." Orr v. Patagonia, Inc., et al., 2006 U.S. Dist. LEXIS 73739 (N.D. Tex., Sept. 26, 2006). 4374

"wakeboard traction pad" — "a pad with a friction-enhancing top surface, the bottom surface of which may be attached to the top surface of a wakeboard." Messer v. Ho Sports Co., Inc., et al., 2007 U.S. Dist. LEXIS 50081 (D. Or., July 9, 2007). 4375

"wakeboard traction surface" — "a friction-enhancing finish or surface material that may adhere or be attached to the top surface of a wakeboard." Messer v. Ho Sports Co., Inc., et al., 2007 U.S. Dist. LEXIS 50081 (D. Or., July 9, 2007). 4376


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"rear wall" — "need not be a solid rear wall, but can be an outline in which the interior wires of the device are left exposed." _Amphenol, Corp., et al. v. Maxconn, Inc., et al._, 2000 U.S. Dist. LEXIS 20221 (N.D. Cal., Mar. 7, 2000). 4378

"a third wall defining a soil container, said soil container being fluidly connected to said guide chamber by said aperture in said second wall" — "Because the '433 Patent's specification expressly distinguishes between what it labels 'walls' and the 'cover' of the soil container, the third wall does not include the cover." _Maytag Corp. v. Whirlpool Corp._, 95 F. Supp. 2d 888 (N.D. Ill. 2000). 4379

"wall depth" — "a measurement along a radius of the wheel from the outermost edge of the wheel to the outermost surface of the pneumatic tire." _World Sports Products, Inc. v. Jugs Co._, 2009 U.S. Dist. LEXIS 111012 (D. Utah, Nov. 25, 2009). 4380

"a high impact forward wall ... having a ball impacting face wall with a plurality of generally parallel grooves" — "Literally read, the claim would require a wall that has a wall. This construction does not make sense and thus will not be adopted." _Vardon Golf Company, Inc. v. Golfsmith International, Inc., et al._, 2000 U.S. Dist. LEXIS 14259 (N.D. Ill., Jun. 6, 2000). 4381

"The context of this claim specifically and of the patent as a whole suggests that the 'high impact forward wall' simply has a face, not a 'face wall,' with many, roughly-parallel grooves on that face." _Vardon Golf Co., Inc. v. Karsten Manufacturing Corp._, 2000 U.S. Dist. LEXIS 13769 (N.D. Ill., Sept. 7, 2000). 4382

"wall tensile strength" — "a value calculated according to the equation [shown in the '364 patent at 3:55] where the burst pressure is determined at or about normal human body temperature." _Medtronic Vascular Inc., et al. v. Boston Scientific Corp., et al._, 526 F. Supp. 2d 613 (E.D. Tex. 2007). 4383


"waste rubber buffings"; "ground tires" — "a product obtained from a tire re-treading process in which tread is removed from the used tire body by a buffing device"; "the product of a tire recycling process in which the entire body is reduced to pieces by grinding or shredding." _Green Edge Enterprises, LLC v. Rubber Mulch Etc., LLC, et al._, 2007 U.S. Dist. LEXIS 38799 (E.D. Mo., May 29, 2007). 4385

"water-permeable outer surrounding wall of a basket" — "the ... filtration basket must be enclosed by vertical, porous walls that allow storm water to infiltrate the filter material following a horizontal flow." _Contech Stormwater Solutions, Inc. v. BaySaver Technologies, Inc., et al._, 2007 U.S. Dist. LEXIS 71659 (D. Md., Sept. 25, 2007). 4386

"water pump" — "cover[s] both internal and external water pumps." _Aqua Products, Inc. v. Intex Recreation Corp._, 2007 U.S. Dist. LEXIS 41496 (S.D.N.Y., June 5, 2007). 4387
"water vapor impermeable polymer layer" — "a polymer layer that is substantially impermeable to water vapor. Substantially impermeable means that some amount of water vapor may pass through the polymer layer, provided that the polymer/absorbent layer combination constitutes the mechanism for avoiding water vapor caused sogginess in the foodstuff and such passage is minimized so as to reduce resulting heat loss during the holding period." Fort James Corp. v. J.H. McNairn, Ltd., 2006 U.S. Dist. LEXIS 36528 (N.D. Ga., April 4, 2006).4388

"a wear layer on top"; "a wear layer located on top"; "a wear layer located on" — "a 'wear layer' is applied over top of or above the design layer. This claim language is broad enough to permit intervening layers between the design and the 'wear layer.'" Mannington Mills, Inc., et al. v. Armstrong World Industries, Inc., et al., 2002 U.S. Dist. LEXIS 18641 (D. Del., Aug. 20, 2002).4389


"web" — "the Court finds that the 'web' of the rail includes one-half of the curved junction between the web and base of the rail, or 'fillet.'" RFR Industries, Inc. v. Century Steps, Inc., et al., 1999 U.S. Dist. LEXIS 15212 (N.D. Tex., Sept. 23, 1999).4392

"web" — "a thin sheet, plate, or strip." Lifetime Products, Inc. v. GSC Technology Corp., et al., 321 F. Supp. 2d 938 (N.D. Ill. 2004).4393

"webs connecting opposite ends of each of said pivot flanges to said center flange in spaced relationship therefrom" — "flat, narrow and rigid connecting plates that hold the pivot flanges in fixed distance from each other on opposing sides of the support, forming a looped structure defining a generally open, accessible bottom area that facilitates manual manipulation and positioning of the pivot structure on the pivot flanges from above and below, and within which the shift lever can be inserted during assembly. These structures extend from and connect the front and rear ends of each of the pivot flanges to the center flange." Grand Haven Stamped Products Co. v. Dura Automotive System, Inc., 2004 U.S. Dist. LEXIS 31087 (W.D. Mich., Jun. 28, 2004).4394

"heat weld"; "welding" — "require the PVC-coated mesh to melt and thereby form a bond with the guard panel." L.B. Plastics, Inc. v. Amerimax Home Product, Inc., et al., 431 F. Supp. 2d 578 (W.D.N.C. 2006).4395 "[W]e conclude that the district court correctly construed the term 'welding.'" Id., 499 F.3d 1303 (Fed. Cir. 2007).4396

"well" — "a structure used for both monitoring and injecting the groundwater." Cleanox Environmental Services, Inc. v. Hudson Environmental Services, Inc., et al., 14 F. Supp. 2d 601 (D.N.J. 1998). 4398 "[T]he claim term 'well' in the patents in suit is a structure that enables either monitoring or injecting of groundwater, or both. Therefore, the methods practiced by the Defendants could indeed infringe the patents, contrary to the district court's summary judgment." Mantech Environmental Corp. v. Hudson Environmental Services, Inc., et al., 152 F.3d 1368 (Fed. Cir. 1998). 4399


"wheel" — "a circular frame that has a hub at the center for attachment to or suspension from an axle, on which it revolves, and that serves to bear the weight of the screening plant." Metso Minerals, Inc. v. Powerscreen International Distribution Ltd., et al., 2010 U.S. Dist. LEXIS 7099 (E.D.N.Y., Jan. 28, 2010). 4402


"wheel face outer surface" — "the entire area of the wheel's exposed outer face that lies within the circumscribing boundary of the inner shoulder of the axial peripheral lip." Lacks Industries, Inc. v. McKechnie Vehicle Components USA, Inc., et al., 55 F. Supp. 2d 702 (E.D. Mich. 1999). 4404 "The district court's construction is the only reading consistent with the plain language of the claim limitation and we therefore uphold the district court's construction of 'wheel face outer surface.'" Id., 322 F.3d 1335 (Fed. Cir. 2003). 4405 "To my mind, this claim language explicitly defines the wheel face outer surface as extending precisely up to the terminal boundary of the peripheral rim portion--the axial peripheral lip." Id. (Clevenger, J., dissenting-in-part). 4406

"operable for moving into an engagement position when" — "being 'coupled to' the two 'sides' such that the 'dunnage structure' is capable of being moved into an engagement position during the time that the two opposing 'sides' of the container body are being erected to thereby receive a product placed in the container for shipment." Bradford Co. v. Afco Manufacturing, et al., 2006 U.S. Dist. LEXIS 88547 (S.D. Ohio, Dec. 5, 2006). 4407

"when installed" — "the filler is installed when it is placed in its intended position--abutting the web of the rail." RFR Industries, Inc. v. Century Steps, Inc., et al., 1999 U.S. Dist. LEXIS 15212 (N.D. Tex., Sept. 23, 1999). 4408

"the probe generate a trigger signal when said sensing tip contacts an object and said stylus holder is thereby deflected relative to said housing" — "claim 2 covers probes which signal within a nonappreciable period of time after contact such that the delay in signaling is insignificant when compared to the sensitivity and accuracy of the probe." Renishaw plc v. Marposs Societa' per Azioni, et al., 158 F.3d 1243 (Fed. Cir. 1998). 4409
"a pin for extending into said security slot ... when said slot engagement member is in locked position" — "the term 'when' is defined as 'at or during the time that.' The balance of the claim language needs no construction." Acco Brands, Inc. v. American Power Conversion Corp., 2003 U.S. Dist. LEXIS 27829 (E.D. Tex., Jul. 16, 2003). Viewed in light of the specification, the phrase 'for extending' is a functional restriction on the pin. Kensington's argument that 'for extending' describes a 'state of being' that encompasses a pin that extends into the slot before locking is negated by the explanation and argument during prosecution. We conclude, as did the district court, that the participle 'extending' refers to an action occurring when the slot engagement member is rotated to and in the locked position. Acco Brands, Inc. v. Micro Security Devices, Inc., 346 F.3d 1075 (Fed. Cir. 2003).

"providing a signal when said stylus engages said object thereby indicating the position thereof"; "means for providing said signal when said stylus engages the object" — "the term 'when' ... must be construed to have the ordinary meaning of 'at the time that.'" Renishaw plc v. Marposs Societa' per Azioni, et al., 974 F. Supp. 1056 (E.D. Mich. 1997).

"stopping the relative displacement of corresponding contact surfaces when said testing determines said alignment and existence of correct electrical contact" — "mean[s] stopping that occurs as a result of a positive test for correct alignment and electrical contact, and that is instantaneous or nearly instantaneous such that relative displacing is halted before the corresponding contact surfaces are moved from a position of proper alignment and correct electrical contact to a position out of such alignment and contact." Thomson Consumer Electronics, Inc. v. Innovatron, S.A., 43 F. Supp. 2d 26 (D.D.C. 1999).

"when the dough base is cut" — "The ordinary meaning of 'when' in 'when the dough base is cut' is that at some point, the dough base will be cut, not that it may be cut." Angelo Mongiello's Children, LLC v. Pizza Hut, Inc., 70 F. Supp. 2d 196 (E.D.N.Y. 1999).

"whenever" — "has its usual and customary meaning, that is, 'each and every time.'" Semmler v. American Honda Motor Co., Inc., et al., 990 F. Supp. 967 (S.D. Ohio 1997).

"whereby low pressure is maintained throughout said annular space" — "refer[s] to pressure below atmospheric pressure that is preserved within the annular space, which includes both the free passageway and the microporous insulation." ITP, Inc., et al. v. BP Corp. North America, Inc., 2005 U.S. Dist. LEXIS 39078 (S.D. Tex., May 2, 2005).

"whereby rotational movement of the mounting means is inhibited" — "The mounting means is to be secured in the channel means. And the mounting means is to have a raised spine positioned between and in the same plane as said inwardly turned opposed flanges of said channel means whereby rotational motion of said mounting means is inhibited." Amesbury Group, Inc., et al. v. Caldwell Manufacturing Co., 2006 U.S. Dist. LEXIS 2175 (D. Mass., Jan. 20, 2006).

"whereby said substantially uniform particulate mixture is deformed, consolidated into a desired form and solidified in the extrusion die and is extruded from said die cavity as a solid composite porous article" — "means that, as a necessary result of the above steps, the 'substantially uniform particulate mixture' changes form due to softening, is shaped under pressure, and is solidified, all within the extrusion die, and the resulting product is extruded from the die as a solid composite article having pores." KX Industries, L.P., et al. v. Culligan Water Technologies, Inc., et al., 90 F. Supp. 2d 461 (D. Del. 1999).
"whereby said vascular cavity is occluded by said distal tip, and any thrombus formed by use of said tip" — "as a consequence of the method, a vascular cavity is blocked by the detached distal tip and any thrombus formed by use of the distal tip." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007). \[4419\]

"whereby the processing does not require[] movement or operator handling of said wafers between said steps" — "excludes any cleaning process in which wafers are moved between vessels between steps of the process." CFMT, Inc., et al. v. YieldUP International Corp., 92 F. Supp. 2d 359 (D. Del. 2000). \[4420\]


"wherein each spring element is tensioned so as to be able to independently restrain the door against opening once the door is in a closed position" — "requir[es] two springs that are independently sufficient to counterbalance the door and reduce the force with which the ramp door swings open, although each spring acting alone does not have to restrict the door from any movement whatsoever." M-3 & Associates, Inc. v. Cargo Systems, Inc., et al., 33 Fed. Appx. 513 (Fed. Cir., Apr. 2, 2002) (unpublished). \[4422\]

"wherein said loops disposed on said first meander patterns and said loops disposed on said second meander patterns are disposed and adapted to cooperate so that upon the expansion of said stent said loops change shape to compensate for the tendency of said stent to foreshorten when said stent is expanded" — "the loops disposed on the first meander patterns and the loops disposed on the second meander patterns must be oriented in different directions, one a generally vertical direction and one a generally horizontal or longitudinal direction. This limitation encompasses growth of one of the sets of loops in the longitudinal direction that is caused by expansion of the stent by a balloon or other mechanical means." Scimed Life Systems, Inc., et al. v. Johnson & Johnson, 225 F. Supp. 2d 422 (D. Del. 2002). \[4423\]

"wherein said metal block further comprises a plurality of receptacles for supporting a plurality of containers" — "limits the metal block to one having a plurality of recesses." Applera Corp., et al. v. MJ Research Inc., et al., 292 F. Supp. 2d 348 (D. Conn. 2003). \[4424\]

"wherein the bias element operates on the blade through a cavity formed in the handle, the cavity extending parallel to and spaced outwardly from the plane of travel of the blade" — "is clear on its face." Kai U.S.A., Ltd. v. Buck Knives, Inc., 2006 U.S. Dist. LEXIS 24924 (D. Or., Feb. 9, 2006). \[4425\]

"wherein the circumference of the spacer at at least one point is greater than the circumference of the spacer at at least one other point" — "the spacer's circumference is different at at least two different points, [and] each spacer has at least two different circumferences." Fellowes, Inc. v. Michilin Prosperity Co., Ltd., et al., 2006 U.S. Dist. LEXIS 90648 (E.D. Va., Dec. 15, 2006). \[4426\]

"wherein the circumference of the spacer at its center is less than the circumference of the spacer at at least one of its edges" — "the circumference of the spacer is smaller at its center than at one or both of its edges." Fellowes, Inc. v. Michilin Prosperity Co., Ltd., et al., 2006 U.S. Dist. LEXIS 90648 (E.D. Va., Dec. 15, 2006). \[4427\]
"wherein the differential expansion portion is formed from an elastomer material and is bulbous in shape when such portion is fully expanded" — "wherein the differential expansion portion is formed from a substance having the elastic properties of rubber and resembling a bulb shape when it is fully expanded.‖ Manders v. McGhan Medical Corp., et al., 2006 U.S. Dist. LEXIS 6881 (W.D. Pa., Feb. 23, 2006).4428

"wherein the first length of the distal portion of the guide wire tube and the first diameter for the distal portion of the guide wire tube being selected such that when a guide wire is within the guide wire lumen, blood is substantially prevented from entering the proximal portion of the guide wire lumen and a less viscous anticoagulation in the proximal portion of the guide wire lumen is allowed to coat the surface of the guide wire within the distal portion of the guide wire lumen‖ — "the ‗wherein‘ clause states functional limitations on the structure.‖ Medtronic AVE, Inc. v. Cordis Corp., 516 F. Supp. 2d 741 (E.D. Tex. 2007).4429

"wherein the energy absorption system is positionable along a roadway to cooperate with the upstream portion of a roadside hazard‖; ‖wherein the impact head is in operational connection with the cutter and the cuttable member such that the impact of an errant vehicle with the impact head will cause the cutter to cut at least a portion of the cuttable member to absorb the impact energy of the errant vehicle‖ — "Trinity has failed to rebut the presumption that section 112, P6 does not apply to the ‗wherein‘ clauses of claims 3 and 14 of the '820 Patent." Kothmann & Kothmann, Inc. v. Trinity Industries, Inc., 287 F. Supp. 2d 673 (S.D. Tex. 2003).4430

"wherein the ratio of said hard segments to said soft segments is such as to provide" — "does not need to be construed." Medtronic Vascular Inc., et al. v. Boston Scientific Corp., et al., 526 F. Supp. 2d 613 (E.D. Tex. 2007).4431

"wherein the surface of each spacer has a linear measure greater than the distance between adjacent disk‖ — "the linear measure of the surface of each spacer follows the surface of the spacer and is greater than the linear distance of the space between the two adjacent cutting disks measured parallel to the shaft." Fellowes, Inc. v. Michlin Prosperity Co., Ltd., et al., 2006 U.S. Dist. LEXIS 90648 (E.D. Va., Dec. 15, 2006).4432

"wherein when the primary frame is supporting the auxiliary frame, each magnetic material of the primary frame magnetically engages in a lateral manner with one of the magnetic materials of the auxiliary frame for securing said auxiliary frame to said primary frame‖ — "wherein when the primary frame is maintaining the auxiliary frame in position so as to keep the auxiliary frame from falling, sinking or slipping off the primary frame, each magnetic material of the primary frame magnetically attracts or is attracted by one of the magnetic materials of the auxiliary frame, with the magnetic attraction taking place with or without actual physical contact and in the horizontal plane." Aspex Eyewear, Inc., et al. v. Miracle Optics, Inc., 2003 U.S. Dist. LEXIS 26355 (C.D. Cal., Feb. 14, 2003).4433

"at least one contact vane extending in circumferential direction from the wall of the contact support and at a distance from the wall of the contact support which increases in circumferential direction" — "Neutrik added the language 'which increases in circumferential direction' to the claim ... Neutrik's arguments during prosecution disclaimed contact vanes similar to those disclosed in the Kissling patent. We therefore conclude that claim 1 should be interpreted so as to exclude contact vanes that extend with increasing distance in the axial direction."

"cooling said core while applying a second pressure" — "cooling said core during the time that a second pressure is applied." Leighton Technologies LLC v. Oberthur Card Systems, S.A., 358 F. Supp. 2d 361 (S.D.N.Y. 2005).

"automatically rotating each reagent container of the first set about its respective axis while it is being scanned" — "automatically rotating each reagent container of the first set about its respective axis while it is being passed by a scanning light beam." Bayer Healthcare LLC v. Abbott Laboratories, 2005 U.S. Dist. LEXIS 21042 (D. Del., Sept. 26, 2005).

"while maintaining the plunger free of contact with the pitcher" — "while maintaining the device free of contact with the pitcher." Vita-Mix Corp. v. Basic Holdings, Inc., et al., 514 F. Supp. 2d 990 (N.D. Ohio 2007).

"heated while out of contact with oxygen"; "annealing said material while out of contact with oxygen"; "heating the polyethylene material forming the implant ... while said polyethylene material is prevented from contact with oxygen" — "do[] not require segregation from oxygen 'in an airtight package.'" Howmedica Osteonics Corp. v. Zimmer, Inc., et al., 2007 U.S. Dist. LEXIS 29991 (D.N.J., April 23, 2007).


"oiling wick" — "a portion of the device that contacts the inside of the barrel to spread oil and may be formed from a loop or fold of a fabric sheath." Michaels of Oregon Co. v. Clean Gun, LLC, 2002 U.S. Dist. LEXIS 20371 (D. Or., Jul. 9, 2002).


"wire" — "a part of an apparatus of the invention which is a thin, flexible, continuous length of metal, of circular cross-section which has a detachable tip." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007).
"wire guide mounted on the distal region" — "a part attached at a fixed position to the distal region of the support wire that has an opening for another wire to pass through so the other wire can lead the support wire to a location."  Boston Scientific SciMed, Inc., et al. v. ev3 Inc., 502 F. Supp. 2d 931 (D. Minn. 2007) 4446


"conductive wire portion of which contacts said gel layer" — "the conductive wire portion of the insulated wire that is in contact with the gel layer."  Cardiac Science, Inc. v. Koninklijke Philips Electronics N.V., et al., 2006 U.S. Dist. LEXIS 22267 (D. Minn., April 20, 2006) 4449

"wires for cutting said housing part into several sections" — "threads that can penetrate and divide said housing part into more than two sections."  Laboratories Perouse S.A.S. v. W.L. Gore & Associates, Inc., 528 F. Supp. 2d 362 (S.D.N.Y. 2007) 4450

"one side of each of said magnet protector with a length greater than a corresponding side of the immediately adjacent magnet member" — "the magnet protector extends farther out from the tool body than the magnet it protects. To put it another way, the magnet protector is "taller" than the magnet it protects, so that during rotation, as described above, the particles hit the casing wall, are pushed upward, and then attach themselves to the magnet surface."  Rattler Tools, Inc. v. Bilco Tools, Inc., et al., 2007 U.S. Dist. LEXIS 49124 (E.D. La., July 6, 2007) 4451

"with a wick to convey a combustible liquid to the burner" — "the Court will not construe the term as requiring the negative limitation ["This term may not be construed to encompass a wick that extends through the cavity to the upper surface of the catalytic combustion burner"] asserted by Defendants."  Produits Berger S.A., et al. v. Schemenauer, et al., 2007 U.S. Dist. LEXIS 10294 (E.D. Tex., Feb. 14, 2007) 4452

"with from approximately 10 to 40 bristles per turn of the helix" — "in determining the number of bristles 'per turn of the helix,' one should count the number of bristles included in each original bundle that is inserted into each 'turn' or 'loop' or 'coil' of the core."  L'Oreal S.A, et al. v. Revlon Consumer Products Corp., et al., 2000 U.S. Dist. LEXIS 3130 (D. Del., Feb. 24, 2000) 4453

"withdrawing said steam from said confined space" — "removing, either by active or passive means, steam from the elongate confined space."  In re: Manchak Patent Litigation, 320 F. Supp. 2d 178 (D. Del. 2002) 4454

"withdrawn position" — "the withdrawn position is the opposite of the engagement position where the detent ball has projected above the surface of the solenoid housing."  Mas-Hamilton Group v. LaGard, Inc., 21 F. Supp. 2d 700 (E.D. Ky. 1997) 4455


"a concavity in said housing at said key-actuation position, and a thumb-associable cluster of keys forming a keyboard within said concavity" — "the concavity must be formed by a depression in the housing of the device, and all keys comprising the keyboard must be contained entirely within the concave area and sunk below the surface of the housing, so that the thumb movement occurs within the concave area." Motionless Keyboard Co. v. Microsoft Corp., et al., 486 F.3d 1376 (Fed. Cir. 2007).

"configured to be exposed to said whole blood sample without an intervening membrane or other whole blood filtering member" — "The ordinary and natural meaning of the phrase 'without an intervening membrane or other whole blood filtering member' is without any type of filter whatsoever -- neither an intervening membrane nor any other whole blood filter." Abbott Laboratories v. LifeScan, Inc., et al., 37 F. Supp. 2d 70 (D. Mass. 1999).


"all of said connectors being constructed, arranged, located and connected to said liner such that said liner is not withdrawn from said bag and can collapse upon itself during discharge of the contents thereof independently of and without being substantially restricted by said bag from collapsing" — "the build of the connectors, their attachment to the liner and the places at which they are attached to the liner allow the liner to remain attached to the bag while the contents of the bag are emptied and also allow the liner to cave in as the contents of the bag are emptied without being strongly held back by the bag, even as the bag itself does not cave in." Scholle Custom Packaging, Inc. v. Grayling Industries, Inc., 2010 U.S. Dist. LEXIS 55414 (W.D. Mich., Jun. 3, 2010).


"without mechanically agitating" — "without using a means for providing agitation to agitate the wash load." Whirlpool Corp., et al. v LG Electronics, Inc., et al., 2005 U.S. Dist. LEXIS 44479 (W.D. Mich., Nov. 8, 2005). "The Court is not convinced that its original construction of the term was erroneous or that any further construction is required." Id., 2006 U.S. Dist. LEXIS 48698 (W.D. Mich., July 18, 2006).

"detachment of said distal tip from said wire without necessarily displacing either said distal tip or said wire during detachment" — "detachment accomplished without necessitating movement of the distal tip to accomplish detachment and without necessitating that force be applied by the distal tip on any surface of the vascular cavity to accomplish detachment." Regents of the University of California v. Micro Therapeutics, Inc., et al., 2007 U.S. Dist. LEXIS 20511 (N.D. Cal., Mar. 2, 2007).
"without significantly damaging said material" — "without causing significant damage to the ligature material." Callicrate v. New Age Industrial Corp., Inc., 2005 U.S. Dist. LEXIS 8934 (D. Kan., Apr. 27, 2005). 4467

"flexible ... without stressing" — "is not so indefinite as to render claim 1 of the '014 patent invalid." BOC Health Care, Inc., et al. v. Nellcor Inc., 892 F. Supp. 598 (D. Del. 1995). 4468

"without the application of independent means for urging said sleeve member toward said trailing end of said bit holder" — "the interference fit between the sleeve and the bit holder is itself sufficient, without the use of any additional device or structure, to prevent rotation or axial movement of the sleeve." Joy MM Delaware, Inc., et al. v. Sandvik Mining and Construction USA LLC, 2007 U.S. Dist. LEXIS 40868 (W.D. Pa., June 4, 2007). 4469


"said portion being in the work-hardened pseudoelastic metallurgical state" — "The words of Claim 1, in the Court's view, in no way specify or limit the method or process by which such a state is reached." CVI/Beta Ventures, Inc., et al. v. Custom Optical Frames, Inc., et al., 893 F. Supp. 508 (D. Md. 1995). 4472

"work machine" — "a device for transferring mechanical energy from a four-cycle engine, the orientation of which varies from when it is in use to when it is not in use." American Honda Motor Co., Inc. v. Coast Distribution System, Inc., 609 F. Supp. 2d 1032 (N.D. Cal. 2009). 4473

"working channel" — "a channel of an endoscope that has an opening at each end through which a device may be inserted." Erbe Elektromedizin Gmbh, et al. v. Canady Technology, LLC, et al., 512 F. Supp. 2d 297 (W.D. Pa. 2007). 4474

"working channel" — "The way to reconcile claim 1 with the specification is thus to construe claim 1 as referring to movable optics. In short, fixed optics do not involve a 'working channel.'" Erbe Elektromedizin Gmbh, et al. v. International Trade Commission, et al., 566 F.3d 1028 (Fed. Cir. 2009). 4475

"working surface" — "any portion of the PCD body which, in operation, may contact the object to be worked." ReedHycalog UK, Ltd., et al. v. Diamond Innovations, Inc., 2009 U.S. Dist. LEXIS 110781 (E.D. Tex., Nov. 30, 2009). 4476

"workpiece" — "a silicon wafer or similar article susceptible to particle and COP defects." ADE Corp. v. KLA-Tencor Corp., 220 F. Supp. 2d 303 (D. Del. 2002). 4477

"workstations" — "individual components of a laboratory automation system, each of which is capable of performing a test." Board of Regents of the University of Nebraska, et al. v. Siemens Healthcare Diagnostics, Inc., 2010 U.S. Dist. LEXIS 97353 (D. Neb., Sep. 16, 2010). 4478

"worm gear" — "a gear having a screw thread (for example, helical or spiral) that may mesh with a toothed wheel, typically used to connect non-parallel, non-intersecting shafts." Molon Motor & Coil Corp. v. Merkle-Korff Industries, Inc., 2006 U.S. Dist. LEXIS 27575 (N.D. Ill., April 26, 2006). 4479

"wound" — "as used in the asserted patents, does not cover the fistulae described in the Chariker-Jeter publications and the 'pus pockets' described in the Davydov references. ... To construe 'wound' to include fistulae and 'pus pockets' would [] expand the scope of the claims far beyond anything described in the specification." Kinetic Concepts, Inc., et al. v. Blue Sky Medical Group, Inc., et al., 554 F.3d 1010 (Fed. Cir. 2009)."The definition of 'wound' provided by Stedman's, an accepted medical dictionary, includes 'trauma to any of the tissues of the body' and 'surgical incision.' In light of the disclosures of the specifications and the additional support of the dictionary, in my view the term 'wound' as used in the claim includes fistulae caused by surgical incision." Id. (Dyk, J., dissenting).


- X -


- Y -


"yaw momentum commands" — "instructions to at least two nonparallel momentum/reaction wheels in a pitch/yaw plane of a spacecraft concerning the wheels' relative rates of speed, the purpose of which is to control the angular momentum in the yaw direction and to control the attitude of the satellite by changing the roll angle." Space Systems/Loral, Inc. v. Lockheed Martin Corp., 1998 U.S. Dist. LEXIS 23046 (N.D. Cal., Aug. 3, 1998).

"a yield strength greater than 30,000 psi" — "clearly makes no reference to a temperature range. Accordingly, it is not proper to look to the patent specifications to determine whether or not claim 5 requires that a component possess this yield strength at any specific temperature." CVI/Beta Ventures, Inc. v. Tura LP, et al., 905 F. Supp. 1171 (E.D.N.Y. 1995).


"zoom optical system" — "a collection of two or more devices, positioned between a light source for emitting an illumination beam and a plurality of prisms, configured to adjust a dimension of an illumination beam." *Nikon Corp., et al. v. ASM Lithography B.V.*, 308 F. Supp. 2d 1039 (N.D. Cal. 2004).
A. "a body"

It is not entirely clear from the record whether there is any dispute over the meaning of the term "a body." The specification provides the following definition:

The term "body" of the lure as used hereinafter refers either to the tear drop shaped body applied to a lure having a leader connected to the shank portion projecting out of one end of the body and a hook or hooks projecting out of the other end of the body, or to any form of blade, spoon or other vibrating element swivelly attached to the lure to further attract the attention of the fish. Thus, the term body includes, without limitation, spinner baits, popping lures, jig-type lures, "buzz baits", crank baits, blades and spoons of any size or shape.

Nichols argues that, according to this definition, the body includes "any solid part of the lure except leader connecting wire or shank and/or the hooks." (PL’s Post Markman Br. at 3.) Defendants do not disagree. Instead, they raise an issue that Nichols has not addressed; namely, that the definition of "a body" in the specification is ambiguous because it is unclear whether the term refers collectively to any number of elements that together comprise a single body, or whether each of the elements enumerated in the definition individually comprises a body. Stated another way, the question is whether a patented lure has only a single body comprised of one or more elements, for example one tear drop-shaped element to which two blade elements are swivelly attached, or whether each element is a separate body so that a patented lure may have several bodies. Under the "several body" construction, a patented lure configured according to this example would have three bodies—one tear drop-shaped body plus two blade bodies.

The Court concludes that the proper construction of the term "body" is that each patented lure has only a single body, which may consist of one or more elements. The Court finds this the most reasonable interpretation based on the predominate use of the term in the patent, despite one or two arguably ambiguous references in the specification.

First, the Court finds particularly convincing that claim 1, as well as other claims that are not at issue here, refers to "a body securable to a fishing line." The implication of this language is that a fishing lure has only one body. Second, throughout the specification, the term "body" is consistently used in the singular. For example, the Abstract refers to the application of a glitter containing coating to the external surfaces of "the lure body." ( '160 Patent, Abstract.) There are numerous other similar examples. ( '160 Patent, col. 2, line 1; col. 2, line 9; col. 2, line 12; col. 2, line 32; col. 3, line 3; col. 4, line 43.)

There is at least one place in the specification where the term "body" is used in the plural form. ( '160 Patent at col. 4, line 55.) This reference describes the method by which the lure bodies are allowed to dry after the coating has been applied to their surfaces. The use of the plural in this context is easily construed as referring to the method for drying on a single rack the bodies for several lures and is not inconsistent with the Court's conclusion that each lure has only one body.

In one place in the specification, "body" is used to refer to the "head" of the lure—commonly tear drop-shaped—which is the part of the lure molded around the shank. ( '160 Patent, col. 1, lines 27-34.) This language arguably implies that only the tear drop-shaped head of the lure is the body and therefore, elements other than the head are not part of the body. However, the definition of "body" in the specification expressly includes other swivelly attached elements; thus, these elements may not be excluded from the term.

In sum, claim 1 is construed to mean that each fishing lure has one body; said body consisting of a tear drop shaped head element and any form of blade, spoon or other vibrating or swivelling elements attached to the lure to further attract the attention of the fish.

2

1. a cable linking
Free Motion further argues that the term "linking" does not preclude an embodiment from having an intervening structure of some kind, namely a second cable. Free Motion defines linking as "serving to connect one part or thing with another." (Pl. Brief I at 8-9 (citing Random House Webster's Unabridged Dictionary, 119 (2nd ed. 2001)).) Cybex denies that the FT 360 fits the definition because while one cable does in fact link both arms, direct contact with the weight stack is accomplished only by way of a second cable. (Cybex Brief at 7-8.) The Court agrees with Cybex that the '061 patent does not contemplate multiple cables as permissible intervening structures that link the arms and resistance assembly. In addition to the expressly singular meaning of the term "a cable linking," throughout the patent, the inventor refers to "the cable." ('061 Patent, col. 2, lines 18-21; col. 3, lines 10-30, 39-55; col. 5, lines 47-67; col. 6, lines 1-14.) The Court must conclude, therefore, that the patent contemplates a single cable that links the arms and resistance assembly.

3

A.

The disputed claim construction on appeal involves limitations of clauses (a), (b), and (d). Clause (a) requires "a ... continuous ... chamber." At the heart of the dispute over this limitation is the meaning of the article "a." Specifically, does the article limit the number of chambers to only one or does it cover one or more chambers?

The district court limited clause (a) to only one non-interrupted inflatable chamber. The district court stated that "the concept of multiple chambers is at fundamental odds with the concept of continuity, and discrete multiple chambers cannot be read into the patent without sacrificing the concept of continuity." KCJ I, 30 F. Supp. 2d at 1325. Thus, the district court "had little hesitation in concluding that [the claim] means exactly what it says: one continuous chamber." Id. Based on that construction, the district court held as a matter of law that clause (a) of claim 1 does not read on Kinetic's accused devices having multiple continuous chambers.

As noted before, the claim language itself governs claim scope. See Vitronics, 90 F.3d at 1582. This court has repeatedly emphasized that an indefinite article "a" or "an" in patent parlance carries the meaning of "one or more" in open-ended claims containing the transitional phrase "comprising." See Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 977, 52 U.S.P.Q.2D (BNA) 1109, 1112 (Fed. Cir. 1999); AbTox, Inc. v. Exiton Corp., 122 F.3d 1019, 1023, 43 U.S.P.Q.2D (BNA) 1545, 1548 (Fed. Cir. 1997); North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1575-76, 28 U.S.P.Q.2D (BNA) 1333, 1336 (Fed. Cir. 1993); see also Robert C. Faber, Landis on Mechanics of Patent Claim Drafting 531 (3d ed. 1990). Unless the claim is specific as to the number of elements, the article "a" receives a singular interpretation only in rare circumstances when the patentee evinces a clear intent to so limit the article. See AbTox, 122 F.3d at 1023, 43 U.S.P.Q.2D (BNA) at 1548. Under this conventional rule, the claim limitation "a," without more, requires at least one.

This court has encountered "a" or "an" in patent claims on several occasions. This court has uniformly applied the general rule for indefinite articles. For instance, in AbTox, this court applied the rule and amplified: "The written description supplies additional context for understanding whether the claim language limits the patent scope to a single unitary [element] or extends to encompass a device with multiple [elements]." Id. at 1024, 43 U.S.P.Q.2D (BNA) at 1548. Moreover, standing alone, a disclosure of a preferred or exemplary embodiment encompassing a singular element does not disclaim a plural embodiment. "Although the specifications may well indicate that certain embodiments are preferred, particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments." Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054, 32 U.S.P.Q.2D (BNA) 1017, 1021 (Fed. Cir. 1994). Thus, as the rule dictates, when the claim language or context calls for further inquiry, this court
consults the written description for a clear intent to limit the invention to a singular embodiment.

Prosecution history also may assist claim interpretation. Indeed, prosecution history "limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448, 452, 227 U.S.P.Q. (BNA) 293, 296 (Fed. Cir. 1985). Accordingly, an applicant may disclaim before the PTO a plural interpretation and thus lose the benefit of the customary meaning of indefinite articles in patent claims. See Alpex Computer Corp. v. Nintendo Co., 102 F.3d 1214, 1220-21, 40 U.S.P.Q.2d (BNA) 1667, 1671-72 (Fed. Cir. 1996).

Accordingly, when claim language or context suggests an ambiguity in application of the general meaning of an article, this court undertakes an examination of the written description and the prosecution history to ascertain whether to limit the meaning of "a" or "an." For example, in Insituform Technologies, Inc. v. CAT Contracting, Inc., 99 F.3d 1098, 1106, 40 U.S.P.Q.2d (BNA) 1602, 1608 (Fed. Cir. 1996), the claim language itself belied a singular meaning. Thus, this court undertook an examination of the entire context of the language and held: "In light of the language found in the claims, specification and file history, we conclude the only correct and indeed the reasonable interpretation of claim 1 limits the scope of that claim to a process using only one vacuum cup which inherently creates a discontinuous vacuum." Id. In that case, the court restricted the claim to a singular interpretation because "the claim is specific as to the number of elements (one cup) and adding elements eliminates an inherent feature (discontinuous vacuum) of the claim." Id.

In the present case, neither the claim nor its context suggests an exceptional meaning for the article. The intrinsic evidence simply provides no support for departing from the general rule. At the outset, the claim language of clause (a), "a . . . continuous . . . chamber," does not specify the number of elements. Thus, under the general rules of claim construction, this court presumes the customary meaning of "a" - one or more. Furthermore, the written description does not trump that construction. Referring to Figure 3, the written description of the '767 patent discloses that "the bottom, side and top walls 22, 24, and 26 cooperatively define a lower inflatable chamber broadly referred to by the numeral 34." '767 patent, col. 4, ll. 20-22. Chamber 34 is operatively coupled to a secondary uppermost wall 36, which provides even airflow. See id. at col. 4, ll. 32-45. The written description at no point restricts the invention to only one chamber.

Similarly, the prosecution history of the '767 patent does not disclaim multiple chambers. Neither the amendment itself nor the accompanying remarks limits "a . . . continuous . . . chamber" to only a single chamber. Rather, the remarks focus on the details of the airflow, which passes through the entirety of the chamber during all operations of the mattress. Accordingly, in view of the use of an indefinite article "a" in the claim language without numerical qualifiers and the absence of disclaimers in the written description and the prosecution history, this court holds that "a . . . continuous . . . chamber" covers one or more continuous chambers.

Thus, under the proper claim construction, an accused device having one or more continuous chambers would fall within the scope of clause (a). In the present case, undisputed evidence shows that Kinetic's accused devices have three chambers. Accordingly, this court concludes that clause (a) reads on Kinetic's accused devices. The district court's misreading of the article in this claim, however, is harmless error in light of the meaning of the other clauses.

Claim 1, the only claim in suit, is as follows:

1. A method of impregnating with a curable resin an inner layer of resin absorbent material disposed in an elongate flexible tube having an outer layer formed by an impermeable [sic] film, the method comprising the steps of

   (1) introducing into one end of the elongate tube a mass of the curable resin sufficient to impregnate the entire resin absorbent inner layer of the tube,

   (2) forming a window in the impermeable outer layer of the tube at a distance from said one end of the tube,

   (3) drawing through the window a vacuum in the interior of the tube downstream of said one end by disposing over the window a cup connected by a flexible hose to a vacuum source which cup prevents ingress of air into the interior of the tube
while the tube is being evacuated, the outer layer of the tube being substantially impermeable to air,

(4) beginning at or near the end at which the curable resin mass was introduced, passing the tube between squeezing members which force the resin to flow towards the region of vacuum application as the tube progresses through the squeezing members,

(5) when the resin reaches the vicinity of the region of vacuum application, removing the cup and sealing the window,

(6) providing another window in the impermeable layer of the tube downstream of the previously formed window,

(7) drawing through the new window a vacuum in the interior of the tube while progressively moving the tube through the squeezing members to force the resin to flow toward the new region of vacuum application, and

(8) repeating steps 5, 6, and 7, where necessary to impregnate the entire resin absorbent inner layer of the flexible tube.

Col. 6, l. 37 - Col. 7, l. 6.

The Accused Process

Inliner engages in two processes which are at issue here. Both processes result in continuous vacuums.

In "Process 1" or "the Multiple Cup Process," from four to six cups are used to draw a vacuum from a corresponding number of slits in the tube. As a result, when the cup closest to the advancing resin is removed, and the slit beneath it sealed, the remaining downstream cups continue to draw a vacuum in the tube.

In "Process 2" or "the Multiple Needle Process," the multiple cups are replaced by multiple metal tubes. The metal tubes, known as needles, are inserted through the layers of the impregnated tube, rather than merely placed over holes in the wall of the impregnated tube. Inliner did not develop Process 2 until 1991, after the first phase of the case had already been tried to a jury.

ANALYSIS

Literal Infringement

Insituform cross-appeals from the district court's grant of Inliner's motion for JNOV of no literal infringement. According to Insituform, JNOV was improper because "each of defendants' [vacuum] cups 1, 2, 3, etc. is manipulated precisely as called for in the claim, thus constituting multiple infringements."

We review de novo the correctness of a grant of a JNOV by reapplying the JNOV standard. Markman v. Westview Instruments, Inc., 52 F.3d 967, 975, 34 U.S.P.Q.2D (BNA) 1321, 1326 (Fed. Cir. 1995) (in banc), aff'd, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). Thus, as the district court was required to do upon Inliner's motion for JNOV, we must determine whether there exists evidence of record upon which a jury might properly have returned a verdict in [the non-movant's] favor when the correct legal standard is applied. If there is not, [the movant] was entitled to have the question removed from the jury and decided as a matter of law.

Markman, 52 F.3d at 975, 34 U.S.P.Q.2D (BNA) at 1326 (quoting Jamesbury Corp. v. Litton Indus. Prods., Inc., 756 F.2d 1556, 1560, 225 U.S.P.Q. (BNA) 253, 257 (Fed. Cir. 1985)). In so determining, we must uphold factual findings made by the jury unless there is a lack of substantial evidence to support a finding in favor of the nonmovant. Id. On the other hand, we must consider de novo whether the legal standards applied by the jury are correct as a matter of law. Id.

Here, we are asked to determine whether there is substantial evidence to support the jury's finding that Inliner literally infringed Insituform's patent. An infringement analysis consists of two steps: interpreting the claims in a patent to determine their scope and meaning and comparing the properly construed claims to the accused product or process. Id. at 976, 34 U.S.P.Q.2D (BNA) at 1326.
Here, the entire analysis turns on the proper claim construction. That is because the underlying issue of claim construction is whether claim 1 should be construed to be literally limited to a process using one and only one vacuum cup, as asserted by Inliner. If so limited, the claim is also inherently limited to a process where the drawing of the vacuum inside the tube is discontinuous, i.e., interrupted by the moving of the cup from window to window. Such a claim cannot be infringed by Process 1, because that process maintains a continuous vacuum.

Claim construction is a question of law which we review de novo. Id. at 979, 34 U.S.P.Q.2D (BNA) at 1329. In construing claim 1, we look first to the intrinsic evidence of record, namely the language of the claim, the specification and the prosecution history. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996). Looking first to the claim language, we note preliminarily that Insituform has conceded that claim 1 contains no terms that have a specialized or technical meaning. Furthermore, nothing in the text of claim 1 suggests the use of more than one cup. Specifically, claim 1 refers to "a cup" and "the cup" repeatedly, suggesting that only one cup is involved. Indeed, rather than describing the process in terms of more than one cup, claim 1 specifically describes using the same cup repeatedly. Also, claim 1 uses the phrase "region of vacuum application" in a manner indicating that only one such region exists at any given time. This use of the phrase "region of vacuum application" is thus inconsistent with the use of more than one cup at any given time, as each cup creates its own associated region of vacuum application. Likewise, it is also inconsistent with the creation of a continuous, rather than discontinuous, vacuum.

Turning to the text of the specification, we note that neither the specification nor the drawings disclose the use of more than one cup. For example, the specification states:

The vacuum may be applied through a window in the film in the wall of the tube by means of a cup applied to said window . . . whereby the cup can move with the tube . . . . As each section of the tube has its resin absorbent material thus impregnated with resin, the cup may be moved and applied to a position spaced downstream from the previous window . . . .

Col. 2, ll. 30-35 (emphasis added).

A vacuum source is provided, and a vacuum cup is connected to the vacuum source by means of a flexible hose. The vacuum cup is applied to the outside of the lining tube downstream of the mass of resin inside the tube . . . .

Col. 5, ll. 61-65 (emphasis added, diagram reference numbers omitted).

When one section of the impregnation of the tube has been completed, the suction cup is removed to a downstream location . . . . The vacuum cup is therefore applied at intervals during the impregnation process, until complete impregnation of the resin absorbent material has been achieved.

Col. 6, l. 14-24 (emphasis added, diagram reference numbers omitted).

Likewise, the drawings of the '012 patent, specifically figures 10 and 11, show only a single vacuum cup. 7

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7 Although Insituform's own witnesses confirmed this interpretation of the claim, we need not give such testimony any weight, as the intrinsic evidence alone is sufficient to resolve any ambiguity in the claim. See Vitronics, 90 F.3d at 1584, 39 U.S.P.Q.2D (BNA) at 1578.

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In light of the language found in the claims, specification and file history, we conclude the only correct and indeed the reasonable interpretation of claim 1 limits the scope of that claim to a process using only one vacuum cup which inherently creates a discontinuous vacuum. Indeed, as Insituform concedes in its brief, "there is no question but that the patent discloses a single vacuum cup which draws a vacuum at one point and then, when the resin front approaches, is removed from its initial position and repositioned to draw vacuum at its new downstream position." Thus, in light of the fact that
Inliner’s processes both create a continuous vacuum, neither can literally infringe.

Insituform argues that such an interpretation places too much weight on the distinction between drawing a vacuum and the evacuated state that exists within the tube, even as a cup is moved from one window to another. According to Insituform, "it is not the continuity of drawing the vacuum which is important but rather the continuity of having an effective vacuum where the resin meets the portion of the felt to be impregnated." However, such attorney argument cannot control in light of the language of the claim. Claim 1, and more specifically steps 3 and 7, is cast in terms of "drawing a vacuum," not merely having a vacuum.

Insituform also argues that claim 1 requires only "manipulating the suction cup (or its equivalent) in a particular fashion," that each of the cups used in Process 1 is manipulated in such a fashion, and that "adding something to an infringement [i.e., more than one cup] does not avoid infringement." However, as discussed above, we believe that claim 1 must be construed as reading only on a one cup, discontinuous vacuum process. While adding elements may, in certain instances, fail to prevent a finding of infringement, it will prevent a finding of literal infringement where, as here, the claim is specific as to the number of elements (one cup) and adding elements eliminates an inherent feature (discontinuous vacuum) of the claim.

In light of our conclusion that claim 1 must be construed to literally cover a process using only one cup, and thereby literally cover only a process using a discontinuous vacuum, and the complete lack of evidence indicating Inliner’s Process 1 uses only a single cup, there was no evidence upon which the jury could have reasonably returned a verdict in Insituform’s favor when applying the correct claim construction, and the district court’s grant of JNOV was proper. We therefore affirm the district court’s JNOV of no literal infringement.

Currency Evaluation Device & Transport Path

The two remaining phrases that we must construe are "a . . . currency evaluation device" and "a transport path." Both phrases appear in all independent claims at issue. (See Nelson Decl., Ex. 1, ‘806 Patent, Claims 1, 16, 21, 30, 40, 49, 76, 82, 91, 101, 112, 125.) Glory says that the intrinsic evidence demonstrates that the phrase "a . . . currency evaluation device" refers to a device with a only one output pocket. (Defs.’ Mem. Supp. Mot. Partial Summ. J. ‘806 Patent at 18). Under Glory's proposed construction, the patented device receives a stack of bills in a single input bin and transports them along a single transport path to a single output pocket. (Id. at 21.)

Again, the Court begins its construction of this phrase not with the specification or prosecution history, but with the language of the claims themselves. See Comark Communications at 1186. Independent claims 1, 66 and 76 specify that bills are delivered to "one and only one" output receptacle after being "evaluated." (Nelson Decl., Ex. 1, ‘806 Patent, Claim 1, Col. 30, ll. 34-44, Claim 66, Col. 35, ll. 54-67, Claim 76, Col. 36, ll. 40-51.) Similarly, independent claims 16, 82 and 91 state that bills are delivered to "one and only one output receptacle" after being "denominated." (Id., Claim 16, Col. 31, ll. 35-45, Claim 82, Col. 37, ll. 11-22, Claim 91, Col. 37, ll. 55-65.)

The rest of the independent claims do not contain the "one and only one" output receptacle limitation. (See id., Claims 21, 30, 40, 49, 101, 112, 125.) Moreover, Cummins argues that the language of dependent claims 103, 113 and 126 establishes that the limitation cannot be imported into the claims on which they depend, independent claims 101, 112 and 125.

The Court agrees. Dependent claims 103, 113 and 126 each contain the limitation of "at least one output receptacle." (See id., Claim 103, Col. 38, ll. 54-55, Claim 113, Col. 39, ll. 34-35, Claim 126, Col. 40, ll. 30-31.) As noted above, dependent claims should be no broader in scope than the independent claims upon which they depend. See 35 U.S.C. § 112 P 4; AK Steel Corp., 344 F.3d at 1242 ("Under the doctrine of claim differentiation, dependent claims are presumed to be of narrower scope than the independent claims from which they depend."). If we were to interpret claims 101, 112 and 125 as requiring only one output pocket, then those independent claims would be narrower in scope than claims 103, 113 and 126, a violation of that basic tenet of claim construction. Thus, the phrase "a currency . . . evaluation device," as it is used in claims 101, 112 and 125, cannot be limited to a device with only one output pocket.

Moreover, because the phrase "a . . . currency evaluation device," as it is used in independent claims 101, 112 and 125,
cannot be interpreted to limit the device to a single output pocket, it should not be interpreted to do so in the remaining independent claims either. See Southwall Techs., 54 F.3d at 1579 (stating that identical phrases should be interpreted consistently among patent claims).

Glory contends that interpreting the claims as contemplating more than one output pocket conflicts with the prosecution histories of the '806 and related patents. Glory says that plaintiff distinguished its invention from the prior art O'Maley and Jones devices, at least in part, on the basis that plaintiff's device has only one output receptacle.

Glory's view, which is echoed in both the Magistrate Judge's and this Court's preliminary claims construction, is an over-simplification of the prosecution history. Plaintiff did not distinguish its invention as whole from those prior art references. Rather, it distinguished various of its proposed claims. For example, plaintiff distinguished proposed claim 238, which recited the "one and only one . . . output receptacle" limitation, (see Nelson Decl., Ex. 7, Prosecution History '806 Patent at GL046686) on the grounds that it contained the limitations of "automatically denominating bills" and "delivering bills which have been evaluated to an output region comprising one and only one . . . output receptacle." (Id. at GL046721.) The fact that plaintiff distinguished a claim that contained the limitation of a single output pocket from the prior art on the grounds that it recited that limitation sheds no light on whether claims that do not recite that limitation should be construed as containing it.

Glory's reading of the prosecution histories of the '067 patent and U.S. Patent No. 6,028,951 ("the '951 patent"), from which the '806 patent descended, is similarly flawed. In the application process for the '067 patent, plaintiff urged the patent examiner to withdraw its rejection of various claims as obvious in view of the O'Maley and other prior art devices because the device plaintiff claimed had only a single output pocket: "Claims 34-45, 86-90, and 97-113 are distinguishable because they contain the limitations of a single output receptacle and a discriminating unit. O'Maley teaches the use of at least two output receptacles . . . ." (Id., Ex. 5, Prosecution History '067 Patent at GL047388; see id. at GL07392 ("The references cited by the examiner (O'Maley and Jones) coexisted since 1979. That is over a decade . . . before the Applicants filed their application disclosing a single output pocket discriminator."); id. ("De La Rue was also offering a multipocket discriminator in 1980.").) Because the '067 patent is related to the '806 patent and they share a common specification, Glory says these admissions by plaintiff apply equally to the claims of the '806 patent.

Once again, however, Glory's argument ignores the context in which plaintiff's comments were made. Plaintiff made those statements to persuade the examiner to withdraw his obviousness rejections to claims 34-45, 86-90, and 97-113 of the application, all of which contain the express limitation of a single output pocket. (See id. at GL047304-07, GL047343-44, GL047349-51.) Thus, plaintiff's comments to the PTO shed no light on the proper scope of the claims of the '806 patent that do not contain that express limitation.

Glory's reliance on the prosecution history of the '951 patent is equally misplaced. Initially, the PTO rejected proposed claims 28-47 of the '951 patent application as unpatentable in view of the Jones and O'Maley prior art devices. (Id., Ex. 6, '951 Patent Prosecution History at GL047028.) Plaintiff took issue with that rejection, saying:

This rejection requires impermissable hindsight. The Applicants' machine is able to determine the denomination of bills, to detect counterfeit bills, and to flag the presence of a counterfeit bill. Jones et al. describes a counting device which contains means for detection of counterfeit bills, but is not able to determine the denomination of the bills which it is counting. It does have the capability of stopping the machine if a suspect note is detected. O'Maley describes a device which can determine the denomination of bills, but instead of flagging suspect bills, it diverts them to a separate output bin. O'Maley does not provide for stopping the machine in order to retrieve a suspect bill. Thus, the Applicants' machine is not a combination of O'Maley and Jones et al., because it does not contain all of their features. The Examiner selected only one feature from O'Maley to combine with Jones et al. A combination of the machines of O'Maley and Jones et al. would detect counterfeit bills and determine their denomination, as the Applicants' machine does. However, it would stop when a suspect bill was detected and also divert it to a separate bin. The Applicants' machine does not do that, and therefore, it is clear that it was necessary to select one feature from O'Maley and ignore others in order to make the rejection.

(Id. at GL047028-29) (emphasis added). Once again, however, each of the claims to which that discussion relates contains the limitation of "a single output receptacle." (See id. at GL046980-84.) Thus, that statement has no relevance to the '806 patent claims that do not contain the single output pocket limitation.
Glory has no more success with its proposed interpretation of the phrase "a transport path." In its view, the use of the article "a" in the phrase "a transport path" refers to a singular path. This interpretation has been repeatedly rejected by the Federal Circuit: "This court has consistently emphasized that the indefinite articles 'a' or 'an,' when used in a patent claim, mean 'one or more' in claims containing open-ended transitional phrases such as 'comprising,' Under this conventional rule, the claim limitation 'a,' without more, requires at least one." Crystal Semiconductor Corp. v. TriTech Microelectronics Int'l. Inc., 246 F.3d 1336, 1347 (Fed. Cir. 2001) (citations omitted) (emphasis in original).

Glory also argues that the "same intrinsic evidence demonstrating that the claimed invention only has one output pocket necessarily also demonstrates that the transport path comprises only one path leading to the single output pocket." (Defs.' Mem. Supp. Mot. Partial Summ. J. '806 Patent at 20.) For the reasons previously discussed, however, the independent claims that do not recite an output receptacle limitation cannot be limited to a single output pocket and, therefore, are not limited by the phrase "a transport path" to a single transport path. In sum, the Court rejects Glory's proposed construction of "a . . . currency evaluation device" and "a transport path" and holds that those phrases do not limit the claims to a device that contains only one output pocket and one transport path.

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B.

Claims 1-6 of the '943 patent are directed to a method of metering different material ingredients for discharge to a material processing machine, and claims 7-14 are directed to an apparatus for carrying out that method. Claims 1-7, 11, and 13-14 are at issue in this appeal, of which claims 1, 4, 7, and 14 are independent.

The district court determined that all of the claims at issue contained the limitation of determining the material processing rate by adding (1) the sum of the material discharge rates of the individual material ingredients to a common hopper, and (2) the discharge rate of the blended materials from the common hopper to the processing machine. See Order of September 30, 1997, P 5. We agree with that analysis, and therefore our discussion of the limitations at issue in the context of claim 1 applies to all of the claims at issue on appeal.

Claim 1 provides:

1. A method of metering different material ingredients for discharge to a material processing machine, comprising:

[a] delivering to a common hopper a plurality of individual material ingredients at controllable individual material discharge rates,

[b] discharging material from said common hopper to said processing machine at a discharge rate,

[c] determining loss of weight of material in said hopper due to discharge of material therefrom,

[d] determining the material processing rate of the processing machine from the sum of the material discharge rates of the ingredients to the common hopper and the discharge rate of the material from the common hopper to the processing machine, and

[e] controlling the material discharge rates of the ingredients to the common hopper in response to said determined material processing rate as needed to maintain a preset recipe of said blended ingredients at said determined material processing rate.

(emphasis and paragraphing added).

Before the district court, the parties disputed whether "discharge rate" emphasized above in clauses [b] and [d] should be given the same meaning throughout the claim, as urged by Process Control, or whether the second emphasized occurrence means "change in weight of the common hopper," as urged by HydReclaim. Based on the written description, the district court construed the claim in accordance with HydReclaim's assertion, namely that the occurrence of "discharge rate" in
clause [d] means "change in weight of the common hopper." See Order of September 30, 1997, P 32-33. The district court determined that the patentee had specifically defined the second occurrence of "discharge rate" in his written description to mean "change in weight," relying on the following passages from the written description for its claim construction:

A master computer control unit is coupled to the weighing device of the common hopper for determining a discharge rate of the ingredients from the common hopper to the processing machine based on the weight loss of the common hopper over time. '943 Patent, col. 3, ll. 35-39 (emphasis added).

A weighing device 40, such as a precision, offset, cantilever load cell, is operably connected to and solely supports the common hopper 30 at the discharge end 30a. The weighing device 40 detects the change in weight of the blend M therein during the admission and discharge of material to and from the common hopper 30. '943 Patent, col. 5, ll. 44-50 (emphasis added).

A master digital computer control unit 50 (FIG. 4) is coupled via interface 50a (e.g., RS485 serial network interfaces) to the weighing device 40 of the common hopper 30 for receiving weight loss signals therefrom (analog to digital converted signals) over time and determining a blend discharge rate from the common hopper 30 to the extrusion machine 5. '943 Patent, col. 5, ll. 50-57 (emphasis added).

The master computer control unit 50 continually determines minute differential weight changes in the common hopper 30 and calculates the precise differences in the sum of the material discharge rates of the metering units 10 and the extrusion rate. '943 Patent, col. 7, ll. 46-50 (emphasis added).

The district court concluded that "if ‘discharge rate’ is construed as Process Control asserts [i.e., the same as the first occurrence of discharge rate], this specification would be nonsensical." Order of September 30, 1997, P 33.

C.

On appeal, Process Control challenges the district court's claim construction on various theories. First, as in the district court, Process Control asserts that "discharge rate" in clauses [b] and [d] should be given the same meaning throughout the claim, particularly as both occurrences include the language "from said [or the] common hopper to said [or the] processing machine." This construction, notes Process Control, obviates the lack of antecedent basis for the second occurrence of "discharge rate" in clause [d] and a concomitant finding of invalidity under 35 U.S.C. § 112, P 2 which necessarily results from the district court's claim construction.

Second, Process Control argues that "discharge rate" is defined in the claims themselves to mean "discharging [blended] material from said common hopper to said processing machine at a discharge rate." '943 Patent, claim 1, clause [b] (emphasis added). The references in the written description relied upon by the district court to redefine "discharge rate" to mean "change in weight" do not clearly redefine that term and, in any event, would redefine the term contrary to the explicit definition of that term in the claim itself.

Third, Process Control notes that claims 7-14 include the limitation of a "second weighing means … for detecting a change in weight of the ingredients" in the common hopper. According to Process Control, this demonstrates that the subsequent reference to "discharge rate" in clause [d] could not mean "change in weight" as determined by the district court, as use of different terms in a single claim indicates that those terms are not synonymous.

In response, HydReclaim defends the district court's claim construction, urging that the claims are to be construed in a way which will preserve their validity and secure the patentee his actual invention. This can only be done, asserts HydReclaim, by construing the claims in light of the written description, in "the natural manner in which they make sense." Process Control's asserted claim construction, as its own witnesses admitted, would require "determining something from some entity which includes what you are trying to measure," a construction that clearly does not make sense. HydReclaim also refutes Process Control's antecedent basis argument by asserting that "a discharge rate" in clause [b] is different from "the discharge rate" in clause [d], the former being an undetermined flow rate at that stage of the algorithm, the latter being an actually calculated flow rate based on loss of weight of material in the common hopper over time.

D.
We agree with Process Control, although the parties present us with competing canons of claim construction with which to interpret the claims at issue on appeal. It is true, as HydReclaim urges, that we should attempt to construe the claims to preserve their validity, see Smith v. Snow, 294 U.S. 1, 14, 79 L. Ed. 721, 55 S. Ct. 279 (1935) (holding that "if the claim were fairly susceptible to two constructions, that should be adopted which will secure to the patentee his actual invention"); Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1556, 37 U.S.P.Q.2D (BNA) 1609, 1617 (Fed. Cir. 1996) ("When claims are amenable to more than one construction, they should when reasonably possible be interpreted so as to preserve their validity."); reading them in light of the specification, see Vitronics, Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996).

However, contrary to HydReclaim's assertions, this is not a case where the claim language is reasonably susceptible to two constructions. Rather, the claim as written by the patentee is susceptible to only one meaning. It is clear from the language of the claim itself that the term "a discharge rate" in clause [b] is referring to the same rate as the term "the discharge rate" in clause [d]. This conclusion necessarily results from the identical language associated with the term "discharge rate" in both clauses [b] and [d], namely "from the common hopper to the material processing machine." The presence of that identical language clearly indicates that "a discharge rate" in clause [b] is the same as "the discharge rate" in clause [d], both referring to the rate (in units of weight per unit of time) that material is discharged from the common hopper to the material processing machine. In addition, that conclusion avoids any lack of antecedent basis problem for the occurrence of "the discharge rate" in clause [d].

--- Footnotes ---

1 It should be noted that the lack of antecedent basis problem would not be present in those claims specifically reciting "change in weight" (i.e., claims 7-14). Nevertheless, those claims would suffer from the infirmity of using two different phrases, "change in weight" and "discharge rate," to mean the same thing in the same claim if we were to adopt HydReclaim's and the district court's claim construction.

--- End Footnotes ---

The district court's attempt to use the written description to circumvent the plain language of the claim and the clear definition of the disputed claim language found therein was inappropriate. While we have held many times that a patentee can act as his own lexicographer to specifically define terms of a claim contrary to their ordinary meaning, see, e.g., Digital Biometrics v. Identix, Inc., 149 F.3d 1335, 1344, 47 U.S.P.Q.2D (BNA) 1418, 1424 (Fed. Cir. 1998), the quoted portions from the written description above do not so clearly redefine "the discharge rate" in clause [d] so as to put a reasonable competitor or one reasonably skilled in the art on notice that the patentee intended to so redefine that claim term. See Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 951 n.15, 28 U.S.P.Q.2D (BNA) 1936, 1939 n.15 (Fed. Cir. 1993) (reasoning that the reasonable competitor standard is analytically equivalent to the reasonably skilled in the art standard). More importantly, we do not permit courts to redraft claims. See Quantum Corp. v. Rodime, Plc, 65 F.3d 1577, 1584, 36 U.S.P.Q.2D (BNA) 1162, 1168 (Fed. Cir. 1995) ("Although we construe claims, if possible, so as to sustain their validity, … it is well settled that no matter how great the temptations of fairness or policy making, courts do not redraft claims."); Becton Dickinson & Co. v. C.R. Bard Inc., 922 F.2d 792, 799 n.6, 17 U.S.P.Q.2D (BNA) 1097, 1102 n.6 (Fed. Cir. 1990) ("Nothing in any precedent permits judicial redrafting of claims. At most there are admonitions to construe words in claims narrowly, if possible, so as to sustain their validity."). Where, as here, the claim is susceptible to only one reasonable construction, the canons of claim construction cited by HydReclaim are inapposite, and we must construe the claims based on the patentee's version of the claim as he himself drafted it. See Hoganas, 9 F.3d at 951, 28 U.S.P.Q.2D (BNA) at 1939 ("It would not be appropriate for us now to interpret the claim differently just to cure a drafting error …. That would unduly interfere with the function of claims in putting competitors on notice of the scope of the claimed invention.").

E.

Our conclusion that the occurrences of "discharge rate" in clauses [b] and [d] of claim 1 are to be interpreted as referring to the same rate has the following implication for clause [d]. It cannot be disputed that the "material processing rate of the processing machine" is identical to the "discharge rate of the material from the common hopper to the processing machine." The material processing rate of the extruder (the processing machine) is dictated by the rate of the material fed to it, i.e., the discharge rate of the material from the common hopper. As a result of our claim construction, clause [d] does not make
"sense" as HydReclaim itself realizes and concedes. What HydReclaim fails to realize is that such a nonsensical result does not require the court to redraft the claims of the '943 patent. Rather, where as here, claims are susceptible to only one reasonable interpretation and that interpretation results in a nonsensical construction of the claim as a whole, the claim must be invalidated, thus preventing unduly burdening competitors who must determine the scope of the claimed invention based on an erroneously drafted claim.

7

a. "A Line"

Defendant seeks to construe the phrase "a line" with the standard geometric definition: a series of points defined by the intersection of two planes. Plaintiff asks the court to construe the entire phrase "arrayed on a line," and proposes this definition: a mark that is long relative to its width. (Pl.'s Opp'n 12 (citing Hulse Decl. Ex. D (dictionary definition)).) 4 Plaintiff's definition is plainly over-inclusive. Although a line is a mark that is long relative to its width, other objects that are not lines are also included in that definition. For instance, defendant notes that a rectangle is a mark that is long relative to its width. 5 Because this is an instance in which the ordinary meaning of the term is amenable to common-sense interpretation by judges, Phillips, 415 F.3d at 1314, this court will apply defendant's definition: a line is the intersection of two planes.

- - - - - - - - - - - - Footnotes - - - - - - - - - - - -

4 Plaintiff refers to the declaration of Matthew G. Fisher to assist in the construction of this claim; plaintiff also cites this declaration and other expert declarations with regard to other claim terms for the conclusory statements that the definitions provided by plaintiffs are correctly applied to the claim terms. Although dictionary definitions may assist the court in claim construction, "conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court." Phillips, 415 F.3d at 1318.

5 Defining "a line" as "a mark that is long relative to its width" could make it possible for plaintiff to claim that a blade with a curved or offset top infringes its invention -- if the line is thick enough, one can imagine an infinite number of configurations of teeth made possible by placing the tips of the teeth at various points within the "line."

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - -

The term "a" is susceptible to the meaning of "one or more" lines, as discussed above. However, the patents at issue clearly evince an intent to restrict the meaning to blade with a flat top, in which the tips would necessarily be aligned along a single straight line. In the specification, both patents distinguish the invention from "prior art cutting blades having curved cutting heads." ('353 Patent, 2:49-50; 253 Patent, 2:51-52.) Because curved lines would also impermissibly encompass the prior art, the definition of "a line" cannot include curved lines. Moreover, plaintiff concedes that its claims cover blades with a flat top. (Pl.'s Opp'n to Mot. for Summ. J. 10.) Accordingly, the court further construes the term "a line" to mean "a single straight line that is the intersection of two planes."

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Depth of Cut for the Plurality of Cutters

Claims in the '930 and '631 Patents require the step of selecting or limiting a depth of cut, a maximum depth of cut, or a cutter exposure for the plurality of cutters. Baker Hughes contends these terms mean "selecting or choosing a depth for the plurality of cutters to cut into the formation during drill bit rotation." ReedHycalog contends these terms mean "selecting the same depth of cut for all of the plurality of cutters." The dispute centers on whether the claims require selecting the same depth of cut for all cutters.

In patent parlance, the terms "a" and "the" carry the presumptive meaning of "one or more" when used in open-ended claims
that contain the transitional phrase "comprising." Good Sportsman Mktg. LLC v. Testa Assocs., LLC, 440 F. Supp. 2d 570, 578-79 (E.D. Tex. 2006) (Davis, J.) (citing Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 423 F.3d 1343, 1350-51 (Fed. Cir. 2005)). If the claim specifically lists the number of elements or if the patent reveals the patentee's clear intent to limit the article, the presumption no longer applies and the claim term has a singular meaning. Id. (citing Free Motion Fitness, Inc., 423 F.3d at 1350).

The '930 and '631 Patent claims, which contain the transitional phrase "comprising," vary between use of "a" and "the" in the claim terms. '930 Patent col. 19:46-51 ("selecting a depth of cut for the plurality of cutters"); '930 Patent col. 20:24-28 ("selecting a depth of cut for the plurality of superabrasive cutters"); '631 Patent col. 32:54-60 ("limiting the maximum depth-of-cut of a plurality of superabrasive cutters"); id. at col. 33:18-30 ("limiting a maximum depth-of-cut of a plurality of superabrasive cutters"); id. at col. 33:31-37 ("limiting the extent of exposure of each of the plurality of superabrasive cutters"). Thus, the plural meaning presumption applies, and the presumptive construction allows for one or more depths of cut, maximum depths of cut, and cutter exposure for the plurality of cutters.

The '631 and '930 Patents do not rebut the presumption of plurality. The '631 Patent specification specifically states "cutter exposure HC generally differs for each of the cutters." '631 Patent col. 2:4-7. Further, Figs. 15A, 15B, and 15C of the '631 Patent show different cutter exposures for cutters along the blade of the drill bit, labeled Hc in Fig. 15A, which is annotated in Appendix C.

The '631 Patent also supports the presumption of plurality with regard to the maximum depth of cut terms. The specification shows that each cutter may have a different maximum depth of cut, as a cutter's exposed height limits how deep the cutter can cut into the formation. Id. at Figs. 18B, 18C, col. 25:13-19, col. 25:27-37, col. 26:4-12.

Finally, nothing in the '930 or '631 Patents requires all the cutters to cut the formation to the same depth. It appears from Figs. 18B and 18C in the '631 Patent that a cutter's depth of cut is roughly equal to the difference between the cutter exposure and the gap. Id. at Fig. 18B, 18C. The gap, labeled G1 in Fig. 18B, partially depends on the weight applied to the bit and the design weight applied to the bit, which is the weight on bit that would virtually eliminate the gap for a given rate of penetration and compressive strength of the formation. Id. at col. 25:12-23. Nothing in the '930 or '631 Patents suggests the difference between the cutter exposure and the gap is equal for all cutters in the plurality at all times.

Thus, the selecting or limiting a depth of cut, a maximum depth of cut, or a cutter exposure for the plurality of cutters terms do not require a single depth of cut, maximum depth of cut, or cutter exposure for all cutters in the plurality. Accordingly, these terms do not require construction.

--- Footnotes ---

24 Ref. Nos. 28 and 30 of Appendix B contains the disputed terms and their constructions.

--- End Footnotes ---

1. "A Master Game Card."

The meaning of "a master game card" is the first issue. The '737 patent claims "a lottery type system providing multiple levels of play, comprising: a plurality of playing cards . . . and [among other things] a master game card for use in conjunction with said playing cards." Cl. 1, Col. 5, lines 11-13, 24-25. The Court construes the term "a master game card" to literally mean "one card," a construction that is supported by the claim and specification language and that is not contradicted by the prosecution history.

First, the language of the '737 claim indicates that the word "a," as used in the phrase "a master game card," was intended to mean "one" card, and not "two or more." In construing patent claims, the Court must give the ordinary meaning to claim language unless it appears that the inventor intended a different meaning. See Bell Communications v. Vitalink Communications, 55 F.3d 615, 620 (Fed. Cir. 1995). The ordinary meaning of "a" means "one." While a patentee is free to
be his or her own "lexicographer," any "special definition given to a word must be clearly defined in the specification." Markman, 52 F.3d at 980. Here, there is no indication that the inventor of the patent, Debra Feinberg, intended to give the word "a" anything other than its ordinary meaning as it is used in the phrase "a master game card."

To the contrary, here the article "a" here introduces the phrase "master game card" -- in the singular. By contrast, the inventor expressly used words such as "plurality," "cards," and "symbols" when she intended to express plural, rather than singular, meanings for elements of the game such as cards and awards. The use of the term "a master game card" therefore indicates a definite choice--meaning one master game card, and not two.

18 Although the Court is not using extrinsic evidence to construe the claims, it is interesting to note that the inventor admitted as much in her deposition testimony. See Pl.'s Surreply Ex. H (Feinberg Dep. at 47, lines 14-16).

19 Arrow argues for a different construction, stating that the article "a" can mean "one or more" in a claim using the transitional phrase "comprising." Abtox, Inc. v. Exitron Corp., 122 F.3d 1019, 1023 (Fed. Cir. 1997) (Arrow Reply Mem. 12). However, the use of the term "comprising" must be read in context. In this case, the transitional word "comprising" in Claim 1 does not directly introduce the term "a master game card." Rather, it links the term "multiple levels of play" with "a plurality of playing cards," "each of said playing cards," and "a master game card." The word "comprising" does not directly modify only the term "a master game card," and therefore the Court does not construe the use of that word as indicating that the word "a" would mean more than one.

Second, the specification language does not change the Court's reading of the claim. There is no language in the specifications definitively ascribing to the word "a" anything other than its ordinary meaning. In fact, where the inventor seeks to assign a plural, rather than a singular, meaning, she clearly chooses plural forms, e.g., "players," "plurality," "cards," "symbols," "groups," "values," "means," "ones," and "one or more." The specifications, both in their illustrated and preferred forms, do not include two master game cards; they only include one card, upon which both the second and third levels are played. Although the specifications expressly state that they were not "intended to limit the invention to the specific embodiments illustrated[,]" see Specs., Col. 3, lines 15-17, it remains that the ordinary meaning of "a" is singular. There is no reason, either in the claim language or the specifications, to ignore that meaning.

Third, the prosecution history does not establish a different meaning for the word "a" as used in the phrase "a master game card." In that history, the inventor of the '737 patent describes her game as having "a master game card." When she lists the prior art references of which she was aware, she classifies one group of these references as: "game systems including playing cards and associated master cards, with each system arranged to provide two levels of play." (Pl.'s Facts P 3d Motion at 29). The reference to master cards may refer to multiple master cards in one game, or it may refer to multiple games with one or more master game cards in each game. Either way, the statement does not provide conclusive evidence that the term "a master game card" in the '737 patent means anything other than a single card. Nor does the Office's "Reasons for Allowance" indicate a plural meaning for the phrase "a master game card." Id. at 32. Thus, the prosecution history does not require--or even support--giving the word "a" something other than its customary meaning.
Plaintiff counters that Defendant's proposed construction defies the specific disclosure in the claims, the specification, and the prosecution history. As to the "otherwise configured" language, Plaintiff argues that, read in context, that language refers specifically to the internal configuration of the features on the single, integrated master game card and not that the master game card was to be reconstructed as multiple cards.

This Court agrees with Plaintiff and construes "a master game card" to mean one unitary card. While indefinite articles such as "a" or "an" can mean "one or more" in some cases, this Court finds that, in this case, the patentee did not intend a "special" definition for "a master game card," see Bell Comm. Research, Inc. v. Vitalink Comm. Corp., 55 F.3d 615, 620 (Fed. Cir. 1995), and the prosecution history does not suggest "a master game card" means anything other than a single card.

Claim interpretation is the process of giving proper meaning to the claim language. Claim language, after all, defines claim scope. See York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572, 40 U.S.P.Q.2D (BNA) 1619, 1622 (Fed. Cir. 1996); Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 619-20, 34 U.S.P.Q.2D (BNA) 1816, 1819 (Fed. Cir. 1995) ("The language of the claim defines the scope of the protected invention."). Therefore, the language of the claim frames and ultimately resolves all issues of claim interpretation. In determining the meaning of disputed claim terms, however, a construing court considers the descriptions in the rest of the patent specification, the prosecution history, and relevant extrinsic evidence. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2D (BNA) 1321, 1329 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384, 38 U.S.P.Q.2D (BNA) 1461 (1996); Whittaker Corp. v. UNR Indus., 911 F.2d 709, 711, 15 U.S.P.Q.2D (BNA) 1742, 1744 (Fed. Cir. 1990). These additional sources provide a context to illuminate the meaning of claim terms. See York Prods., 99 F.3d at 1572. Nonetheless, throughout the interpretation process, the focus remains on the meaning of claim language.

Accordingly, this court begins with the claim language. The language of claim 3 of the '261 patent defines only the microwave embodiment of the invention as illustrated in figure 2. The claim specifies "a metallic gas-confining chamber." Of particular relevance for the claim dispute before this court, the article "a" suggests a single chamber. However, patent claim parlance also recognizes that an article can carry the meaning of "one or more," for example in a claim using the transitional phrase "comprising." See North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1575-76, 28 U.S.P.Q.2D (BNA) 1333, 1336 (Fed. Cir. 1993) (acknowledging that patent parlance construes "a" to connote "one or more," yet holding that "there is no indication in the patent specification that the inventors here intended it to have other than its normal singular meaning"); see Robert C. Faber, Landis on Mechanics of Patent Claim Drafting 531 (3d ed. 1990).

The terms used in claim 3 of the '261 patent to demarcate the regions of the apparatus -- "gas-confining chamber," "microwave cavity," and "field free zone" -- are defined in relation to each other. For example, microwave energy from the "microwave cavity" is brought "into said chamber." Therefore, this language separates the "microwave cavity" from the "gas-confining chamber." The claim continues to describe "a portion of the internal volume of said chamber . . . providing a field free [sterilization] zone." This language places the sterilization zone within the "gas-confining chamber.

Repeatedly the claim refers to "said chamber" as it describes various portions of the apparatus. This term itself, "said chamber," reinforces the singular nature of the chamber. The claim does not place the sterilization zone vaguely within "a chamber," but within "said chamber." This language clarifies that only one chamber is in question. Likewise, claim 1 of the
'586 patent discloses a "field-free zone away from said [microwave] cavity." This language suggests some separation between the sterilization zone and the microwave cavity. Even this language, however, contains no suggestion of separate gas-confining chambers.

While in some instances claim language alone may disclose unambiguously the limits of claim coverage, E.I. Du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433, 7 U.S.P.Q.2D (BNA) 1129, 1131 (Fed. Cir. 1988), in this instance, this court seeks the meaning of the claim terms by examining their fuller context. The written description supplies additional context for understanding whether the claim language limits the patent scope to a single unitary chamber or extends to encompass a device with multiple gas-confining chambers. Figure 2, for instance, shows a single chamber. That chamber, as described in the claims, features a sterilizing zone separate and downstream from the plasma-generating zone. These zones denote regions and functions within the same chamber, rather than multiple chambers. Nothing in the written description suggests that the claim language encompasses a device with more than one gas-confining chamber. For example, to distinguish the RF sterilizer from the microwave sterilizer, the specification notes that the microwave plasma generator "cannot be mounted concentric about the long axis" shown in figure 2. Col. 7, ll. 57-58. The specification continues:

The microwave cavity 16 is mounted at one end of chamber 11, and a perforated metallic shield 17 may be placed just beyond it toward the opposite end of the chamber, spanning the entire diameter cross section of the chamber, thus creating a field-free and glowless reactive zone immediately below it and away from the microwave cavity.

Col 7., ll. 59-65. This explanation discloses a non-metallic sterilization zone separate from the metallic plasma-generating zone within the same chamber. While a Faraday shield lies between the zones, both zones are contained within the single chamber 11. MDT argues that these clearly separate zones disclosed in the specification evidence the district court's error in stating that the Jacob patents do not cover plasma generation "in an enclosure that is in any way separate from the enclosure in which the sterilization takes place." To the contrary, although a Faraday shield separates the zones to prevent free passage of particular particles, the zones remain within the same chamber, not in distinct gas-confining chambers.

The record of administrative proceedings at the Patent and Trademark Office (PTO) provides additional context for understanding the claim terms. As briefly discussed above, the '261 and '586 patents have a common parent application which matured into the '427 patent. The '427 patent claimed both microwave and RF embodiments. Claim 2 of the '427 patent, for instance, defines a plasma generator with an RF energy source. During the prosecution of the '427 patent application, the examiner rejected independent application claim 2 and dependent application claim 7 as being unpatentable over prior art. Application claim 2, as amended, read:

A method for sterilization of medical devices and materials comprising the steps of,

placing said devices and materials within a gas-tight confining chamber wherein said chamber is cylindrical, formed from metal, and includes an internal electrode formed as a perforated metallic cylinder positioned within, and generally concentric with, said chamber cavity,

 evacuating said chamber . . . ;

 initiating an electrical discharge in said gas within said chamber by application of RF energy between the metal container wall and said internal electrode creating a gas plasma; and maintaining said gas plasma for a controlled period of time, said chamber cavity creating a field free and glowless volume within the perforated cylinder, said devices and materials being placed within said field free and glowless volume.

Dependent claim 7 read: "A method in accordance with claim 2 wherein said gas is flowed through said chamber during said discharge." Both claim 2 and claim 7 clearly and explicitly specified an RF electric field source.

In the rejection, the examiner noted that claim 7 was obvious in "further view of Fraser et al [U.S. Patent No. 3,851,436]. To flow the plasma gas through the chamber during the sterilization process in order to increase the effect of the sterilizing plasma gas would be obvious as taught by Fraser et al." Fraser, entitled "Sterilizing and Packaging Process Utilizing Gas Plasma," discloses a gas plasma sterilization process using an RF electric field source. As illustrated below, Fraser discloses a sterilizer with an upstream RF generator, wherein the sterilization chamber is separate from the plasma generator:
Fraser discloses neither a concentrically arranged sterilizer nor a sterilizer utilizing a microwave source.

Jacob responded by canceling claims 2 and 7 and adding new claims 50-59. Claims 50-52 and 57-59 specified a method using an RF electric field source. Claims 53-56 claimed a method using microwave sources. For example, independent claim 50, which combined the limitations of 2 and 7, read:

A method for sterilization of medical devices and materials comprising the steps of,

placing said devices and materials within a metallic perforated electrode, generally cylindrical in shape, said electrode being positioned within, and generally concentric with, a gas-tight confining chamber, said chamber being generally cylindrical, formed from metal and connected to a point of potential reference,

 evacuating said chamber . . .,

 initiating an electrical discharge in said gas within said chamber by application of RF voltage between said internal perforated electrode and the metal chamber wall, creating a gas plasma, having a field free and glowless volume within the perforated electrode containing said devices and materials,

 maintaining said gas plasma . . .,

 maintaining a flow of said gas through said chamber during said electrical discharge; and,

 evacuating the gas plasma residual gases from said chamber prior to withdrawing said devices and materials from it.

(Emphasis added.) Independent claim 53 read:

A method for sterilization of medical devices and materials comprising the steps of,

placing said devices and materials within a gas-tight confining chamber, said chamber being generally cylindrical, formed from non-metallic material,

 evacuating said chamber . . .,

 initiating a microwave discharge in said gas within said chamber by application of microwave energy at one end of said chamber remote from said devices and materials creating a gas plasma,

 maintaining said gas plasma . . .,

 maintaining a flow of said gas through said chamber during said electrical discharge; and,

 evacuating the gas plasma residual gases from said chamber prior to withdrawing said devices and materials from it.

(Emphasis added.) Thus, these different claims specified different energy sources.

To clarify his changes to overcome the examiner's rejections, Jacob explained his amendments:

Each of Applicant's independent Claims 50, 51 and 52 are limited to methods including such [a concentric] arrangement and [RF] electrical methodology . . . .

. . . .

The Fraser reference discloses a method which differs sharply from Applicant's method. In essence Fraser generates his plasma in a nonconducting glass reactor capacitively coupled to an RF source, and exposes materials to be sterilized in a separate chamber away from and downstream from the plasma generating device. Applicant performs the sterilization process within the confines of the plasma generating device.
From previous considerations, Fraser's method yields high plasma potentials, coupled with elevated processing temperatures. However, due to this separation, the net concentration of active species reaching the sterilization chamber is substantially reduced by exponential decay processes of these species during their time-of-flight from one place to the other. Fraser's corresponding process' inefficiency manifests itself by its incapability to sterilize material through hermetically sealed enclosing packages . . . in clear contradiction to Applicant's method capability.

(Emphasis added.) Jacob clearly restricted this argument to claims 50-52. These arguments were not relevant at all to the microwave embodiment of Jacob's invention. As to claims 53 and 54, the microwave energy source claims, Jacob argued: "Claim 53 is directed to a method employing a microwave energy source. None of the prior art shows any recognition that the plasma so generated would be suitable for sterilization purposes." As to claim 56, Jacob argued: "None of the art shows or suggests a plasma chamber with a microwave energy source and a perforated shield . . . ."

Following these actions, the examiner determined that the claims to a microwave-generated plasma process were an independent and distinct invention. The examiner, therefore, required Jacob to cancel the claims pertaining to microwave energy sources. Subsequently, the application containing the claims of the RF embodiment matured into the '427 patent, which consequently limits Jacob's RF source claims to only a concentric configuration apparatus. Jacob then claimed the microwave-generated plasma in continuing applications. At all times during the prosecution, Jacob maintained the distinction between the microwave and RF embodiments. Jacob's RF energy claims feature concentric configurations while the microwave energy claims permit separate zones -- but not separate gas-confining chambers -- for plasma generation and sterilization.

In considering the prosecution history, the trial court erred by importing limitations from the disclosures of RF technology into the claims applicable solely to microwave technology. Without acknowledging the distinction between RF and microwave claims, the district court merely referred generically to the parent application to apply a limitation to both kinds of claimed devices:

The prosecution history of the Jacob Patents contains clear and unambiguous statements to the effect that MDT's device is materially different from devices in which the plasma is generated in an enclosure that is in any way separate from the enclosure in which sterilization takes place.

899 F. Supp. 775 at 781. However, upon closer inspection, Jacob's statements about RF technology during the prosecution of the '427 patent application are not relevant to this dispute over microwave-generated sterilization. The district court erred by applying limits applicable only to RF technology to this dispute over microwave technology. Read in context, the prosecution history supplies no express single chamber limitation on microwave sterilizers, though such a limitation clearly applies to RF technology.

The prosecution history relevant to this dispute includes not only the two distinct Jacob patent applications, but also the parent application. See Jonsson v. Stanley Works, 903 F.2d 812, 818, 14 U.S.P.Q.2D (BNA) 1863, 1869 (Fed. Cir. 1990) (prosecution history of parent application is relevant to understanding scope of claims issuing in a continuation-in-part application); Mark I Mktg. Corp. v. R.R. Donnelley & Sons Co., 66 F.3d 285, 291, 36 U.S.P.Q.2D (BNA) 1095, 1100 (Fed. Cir. 1995), cert. denied, 516 U.S. 1115, 133 L. Ed. 2d 847, 116 S. Ct. 917 (1996). However, statements in the parent application must be confined to their proper context and properly acknowledge the distinctions between RF and microwave claims. The prosecution history relied upon by the district court ("Applicant performs the sterilization process within the confines of the plasma generating device."), however, refers only to RF plasma generators, not to the microwave plasma generator in this case. In other words, the arguments made by Jacob to distinguish claims 50-52 over Fraser are drawn to the RF embodiment. As can be seen in figure 3, supra, the sterilization occurs within the cylindrical Faraday shield which itself is within the surrounding wall of the chamber. Thus, for the RF embodiment, the Jacob patent does "perform[] the sterilization process within the confines of the plasma generating device." This single chamber limitation, however, is neither necessary nor applicable to the microwave embodiment.

The district court misread the prosecution history, but nonetheless arrived at a correct single chamber limitation for microwave sterilizers. That reliance on the prosecution history was in error. Nevertheless, because the claim language, as interpreted in light of the specification, limits the microwave devices to a single gas-confining chamber, this court affirms the district court's grant of summary judgment.
Claim Interpretation

First, we will examine the scope of the claims themselves. Here, the patent claims refer to only one set of linear actuators capable of moving the cradle. Although claim three refers to another set of actuators, the claim discusses only the manner in which the actuators support the cradle once it is lifted into the second position. We therefore find that the "ordinary and accustomed meaning" of the claim language does not allow for coverage of secondary linear actuators that move the cradle to the carry position.

--- Footnotes ---

1 The relevant section of claim one describes the activity of the main linear actuators as follows:

[A] pair of linear actuators mounted on [the] frame and connected to [the] levers for swinging said levers and thus tilting [the] cradle about its pivots from the said first position through a second position, wherein the pot is raised from the ground but held substantially level and to a third position where in the pot is tipped by abutting an abutment on the cradle and is at least partially inverted into a dumping position.

Patent 4,063,658 col. 4, lines 8-16.

2 Claim 3 reads as follows:

3. The combination of claim 2 in which said struts are linear actuators which, when fully extended, support said cradle so that the pot is slightly tilted to the rear to minimize spilling to the front and reduce sway.


--- End Footnotes ---

Kress argues that language from the patent's specification should be construed to cover devices that have such structures. Defendants rejoin that the specification language does not support such a finding, and that the prosecution history of the patent similarly limits the patent coverage.

Both sides agree that the patent's specification section discusses the role of the second pair of actuators, mentioned in claim three, in lifting the slag pot to the "carry," or second, position. However, they disagree on the effect of the specification language.

A patent's claims "must be read in view of the specification, of which they are a part." Markman, 52 F.3d at 979, (citing Autogiro Co. of America v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 397 (Ct. Cl. 1967)). "The specification contains a written description of the invention that must enable one of ordinary skill in the art to make and use the invention." Markman, 52 F.3d at 979. For claim construction purposes, "the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims." Id. "The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)(citing Markman, 52 F.3d at 979).

The specification section of the '658 patent reads, in pertinent part:

To eliminate the load on the main actuator hydraulic system and its links during travel of the carrier while carrying a loaded pot, as well as to assist the main linear actuators in picking the pot off the ground, a pair of struts in the form of simple two-position linear actuators are mounted on the frame.

Patent '658 at col. 2, lines 56-61 (emphasis added). Kress argues that the words in the specification expand the claims'
meaning by defining the use of the struts. Defendants rejoin that the description of the linear actuators in the specification is not a definition, but describes an alternative system not covered in the claims. We agree.

We find that the specification quoted above cannot reasonably be construed to define the "linear actuators" described in claim three. Rather, it describes a use for the actuators that is not mentioned in the claims. The language of the specification states that the actuators have two uses: (1) eliminating the load on the other systems, and (2) assisting the main linear actuators in lifting the pot. Claim two specifically discusses the first of these abilities; 3 however, neither claim two nor claim three details the ability to move the cradle. Claim three describes only "the combination of claim 2, in which said struts are linear actuators which, when fully extended, support said cradle so that the pot is slightly tilted to the rear to minimize spilling to the front and reduce sway." Patent '658 at col. 2, lines 56-61. The language of the specification, rather, discusses a separate use for these actuators, outside those discussed in the claims.

3 Claim two reads as follows:

2. The combination of claim 1 including a pair of positionable struts on said frame and adapted to be positioned for underlying and supporting said cradle in its second position and thereby removing the forces on said levers, links and actuators.

Patent '658 at col. 2, lines 19-24

Where, as here, a patentee discloses subject matter in the patent specification but fails to include it in the claims, the material is deemed "dedicated to the public." Maxwell v. J. Baker, Inc., 86 F.3d 1098, 1106 (Fed. Cir. 1996)(quoting Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1562 (Fed. Cir. 1991)). We find that the relevant subject matter here, concerning the use of the secondary linear actuators in lifting the cradle to the second position, is dedicated to the public.

We also note that, in describing the overall invention, the specification states that "it is an object of the invention to provide a carrier . . . that utilizes only two major working linear hydraulic actuators and two small simple holding cylinders." Patent '658 at col. 1, lines 25-28. This statement further strengthens defendants' argument that the use of the actuators mentioned in claim three cannot be expanded to include lifting the pot from the ground. Rather, the actuators are limited to their use as "holding cylinders."

Defendants also argue that the patent should be limited because of various statements made by the inventors during the prosecution history. Where an applicant makes arguments and amendments during the prosecution of a patent, we may examine the statements in determining the meaning of the terms in the claims. Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995). "Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers." Id. However, "unless altering claim language to escape an examiner rejection, a patent applicant only limits claims during prosecution by clearly disavowing claim coverage." York Products, Inc. v. Central Tractor, 99 F.3d 1568, 1575 (Fed. Cir. 1996).

Kress originally applied for the patent on August 9, 1976. During the prosecution, the Patent Office rejected the application because of similarities between claim one and a number of existing patents, including a British patent. The British patent described a slag pot carrier that used two separate sets of linear actuators in lifting and dumping the slag pot. See Pl. Reply Br. Exh. A. The linear actuators moved the captured pot in two separate arcing motions while performing the carry and dump processes. Id.

In May 1977, Kress's attorneys contested the Patent Office's rejection. In their statement, they noted that the British patent required "two sets of actuators . . . one to initially lift the pot and a second set to perform the tilting function." See Def. Exh. d-4 in support of their joint motion. Claim one of the plaintiff's device differed, they argued, because it used "only a pair of linear actuators which . . . produced three different positions of the cradle." Id.

The Patent Office subsequently allowed Kress's first claim with an amendment relating to the manner in which the primary
linear actuators move the pot, rather than the number of actuators needed. Pl. Exh. 1C. However, statements made during the prosecution history are relevant in claim construction regardless whether the claim is modified on the basis of that particular argument. Amhil Enterprises, Ltd. v. Wawa, Inc., 81 F.3d 1554, 1560 (Fed. Cir. 1996).

Defendants argue that Kress's statement to the Patent Office limits the coverage of the first claim of plaintiff's patent to carriers with "only one" pair of linear actuators that lift the pot to the second and third positions. We agree.

Kress argues that claim one cannot be limited in this manner because of the wording of claim three. Claim three is dependent on claim one, insofar that it can be applied only in combination with claim one. The scope of an independent claim must be construed to allow for the application of all dependent claims in the patent. Laitram Corp. v. NEC Corp., 62 F.3d 1388, 1393 (Fed. Cir. 1995). Plaintiff argues that because claim three calls for the addition of a secondary pair of linear actuators, claim one cannot be limited to allow for only one pair. We agree. However, as rehearsed, the specification limits the patent as a whole to one pair of actuators that perform the lifting function. Therefore, plaintiff cannot claim that carriers with more than one set of actuators that perform the lifting function infringe its patent.

In sum, based on the language of the claims, specification and the prosecution history, we find that the coverage of the '658 patent is limited to carriers that use "only a pair of linear actuators which produce three different positions of the cradle."
The defendants' witness, Wayne Milestone, testified that a curve has an infinite number of radii or distances between the center of the arc to the outside edge of the arc. However, Mr. Milestone admitted that he was familiar only with the geometric definition of "radius." Id. at 171.

After considering the testimony of both parties' expert witnesses, the magistrate judge accepted that the '493 patent intended to limit the term "radius" to the singular. R&R at 11. The magistrate judge agreed that the claim is intended to describe a single smooth curve to minimize potential stress points, which is supported by the opinion of Mr. Beall, who has extensive experience in the plastics industry. Id.

b. The Defendants' Objections

The defendants argue that the phrase "a relatively large radius" means one or more radii. Defs. Objections at 6. Specifically, the defendants first claim that the magistrate judge erred in failing to follow the rule that the words "a" or "an" in a patent claim carry the meaning of "one or more," and that there was not a clear intent to limit the article to the singular. Id. at 6-7. Second, the defendants claim that the magistrate judge erred by suggesting the '493 patent favors a singular interpretation of the term "a relatively large radius," and the R&R did not include evidence that the use of more than one radius in the transitional area would fail to accomplish these purposes. Id. at 8-9. Finally, the defendants assert that because the plaintiffs' expert, Glenn Beall, did not have evidence to support his testimony, the court should disregard his expert opinion. Id. at 9.

c. This Court's Construction

The Federal Circuit has stated that in open-ended claims containing the transitional phrase "comprising," the use of an indefinite article "a" or "an" in a claim generally carries the meaning of "one or more." KCJ Corp., 223 F.3d at 1356. The subsequent use of the definite articles "the" or "said" in a claim to refer back to the same claim term does not change the general plural rule, but simply reinvokes that non-singular meaning. Baldwin Graphic Sys., Inc. v. Siebert, Inc., 512 F.3d 1338, 1342-43 (Fed. Cir. 2008). Only in circumstances when the patentee evinces a clear intent to limit the number of elements to "one" does the use the article "a" receive a singular interpretation. KCJ Corp., 223 F.3d at 1356. The exception arises where the language of the claims themselves, the specification, or the prosecution history necessitate a departure from the rule. Baldwin, 512 F.3d at 1343. See also TiVo, Inc. v. EchoStar Communns. Corp., 516 F.3d 1290, 1303 (Fed. Cir. 2008) ("[T]he question whether 'a' or 'an' is treated as singular or plural depends heavily on the context of its use. The general rule does not apply when the context clearly evidences that the usage is limited to the singular.") (citations omitted).

Here, contrary to the defendants' position, the court concludes that the term "a relatively large radius" constitutes one of those exceptions. As an initial matter, while not discussed by either party, the court finds the use of the adjective "large" to be compelling. The claim indicates "a relatively large radius." If radius were to mean "one or more," then the use of the adjective "large" would have no purpose because including multiple radii decreases the size of each radius.

In addition, as noted by the magistrate judge, the word comprising does not modify the term "a relatively large radius." Dippin' Dots, Inc. v. Mosey, 476 F.3d 1337, 1343 (Fed. Cir. 2007) (discussing that the word comprising "does not reach into each [element] to render every word and phrase therein open-ended"). Thus, the general rule that the use of the indefinite
The defendants respond that even if "comprising" does not apply to the term "a relatively large radius," the term should still be construed to have a plural meaning because "clear evidence" in support of a singular meaning does not exist. The court disagrees. As noted by the magistrate judge, the use of the term "said", see '493 Patent at Col. 7:4 ("said radius and thickness...") supports a singular meaning because "it may reinforce the singular nature of the relatively large radius when examined within the framework of the claim, the specification, and the expert testimony." R&R at 8 (citation omitted).

Here, Figure 5 reflects only one radius. While it is true that the embodiment in the patent is not the only embodiment, KCJ Corp., 223 F.3d at 1356, this points to a singular construction. Additionally, the patent claims, specification, and prosecution history use the term "radius" instead of "radii." The lack of the plural terminology for this term further supports the intent of the patentee to limit "a relatively large radius" to the singular. Moreover, as the magistrate judge noted, the purpose of the radius is expressly stated in the claim, that "said radius and thickness prevent[ ] stress concentration from weakening the bucket." '493 Patent at Col 7:4-5. In particular, the specification indicates a design which "establish[es] strong stacking strength and avoiding high stress points at sharp corners." R&R at 8.

According to the plaintiffs' expert, Mr. Beall, one radius would be stronger than multiple radii. The defendants challenge the reliance on Mr. Beall's testimony because he did no testing to support this assertion. However, it is permissible for this court in its sound discretion to admit and use expert testimony regarding the field of the invention to determine what a person of ordinary skill in the art would understand claim terms to mean. Phillips, 415 F.3d at 1318-19 ("E)xtrinsic evidence in the form of expert testimony can be useful to a court for a variety of purposes, such as to provide background on the technology at issue, to explain how an invention works, to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field."). Mr. Beall's testimony simply educates this court as to the meaning of "radius" to one skilled in the art. Multiple radii applied to a plastic bucket, according to Mr. Beall, would mean imposing additional sources of weakness. Moreover, the defendants' expert, Mr. Milestone, admitted that he had no knowledge of the term radius as used in the plastics industry, and that his testimony was based on the use of the term radius as it is used in geometry.

For all these reasons, the court concludes, based on the language of the specification as supplemented by the drawings of the patent and the expert testimony of Mr. Beall, that the term "a relatively large radius" refers to a single radius.
There is no dispute that the term "a tip" is distinct from the term "tooth," and that it refers to the top, or distal end, of the specification describes the final product: "Reams . . . are most commonly packaged for shipping, storage, and retail sale in ream wrappers made of various wrap materials." (Id., col. 1, 16-19.) Thus, it is not surprising that CEI's own witnesses would concede that, in some cases, "a" ream wrapper means the final wrapper that wraps a ream of paper.

CEI does not dispute that a ream wrapper can mean a single, discrete wrapper for a ream of paper. It argues, however, that its patent is not limited to describing a single wrapper with a recurring pattern; it describes, instead, a continuous sheet of film ream wrapper. I agree with CEI's reading and conclude that Thilmany's interpretation improperly limits the claim in a fashion not warranted by the patent itself. Several reasons suggest themselves.

What first stands out is that none of the patent's several illustrations depict a single ream wrapper. Instead, they all portray the wrapping material, either as it is being pressed through nip rollers (essentially a smoothing press), or in what appears to be a sheet form. In other words, there is no picture of a specific final product that could be described as "a" ream wrapper. Although drawings are not to be used to limit or expand a patent beyond its claims, the claims are to be interpreted in light of the entire patent, including the drawings. For instance, in Insituform Technologies, Inc. v. Cat Contracting, Inc., the Federal Circuit construed the terms "a cup" and "the cup" as singular when "neither the specification nor the drawings disclose[d] more than one cup." 99 F.3d 1098, 1105-06 (Fed. Cir. 1996). Here, the opposite inference could be made: because neither the drawings nor specification describe the invention in the singular form pressed by Thilmany, limiting the claims in that fashion would seem unwarranted. Though I do not believe the drawings to be dispositive of the issue, the omission lends support to CEI's argument that the claim is not limited to a single ream wrapper.

More importantly, the language of the patent itself makes clear that what's important is not a single implementation of the wrapper but the material that can be used for wrapping. A court, in construing a term, may look to the "words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence." Phillips, 415 F.3d at 1312 (quoting Brown v. 3M, 265 F.3d 1349, 1352 (Fed. Cir. 2001)). While in some cases the specification does use the term "wrapper" to describe the single end-use wrapper (in the sense Thilmany proposes), in other places it is clear that "wrapper" means a continuous sheet of wrapping material. For instance, the specification describes the method for making "a solid plastic film ream wrapper," in which the "layers pass through the nip rollers, forming the laminated solid plastic film ream wrapper." (Franzini Aff., Ex. A, col. 6, 17-18; 30-32; 40-41.) What is described here is not a single ream wrapper, but "a . . . wrapper" that is a sheet of continuous material capable of being fed through rollers. Because the patent uses the term to mean both a single wrapper as well as a continuous wrapping material, I find little basis to narrow the claim in the fashion Thilmany suggests.

Finally, Thilmany has not explained why its proposed construction would be a sensible reading of the claim as a whole. In particular, it has not squared its interpretation with the term "recurring." The specification describes the coating as being in a "recurring pattern or design, such as a logo or other marking, rather than flood-coated over the entire surface of the film." (Id. col. 6, 58-61; col. 7, 7-9.) The salient distinction drawn here (as elaborated more fully below) is between some kind of distinct, incomplete, coating versus a completely covered ("flood-coated") surface. That distinction would survive regardless of whether an individual wrapper had a single design or whether it had recurring designs; the point is that the wrapper is not to be completely coated. In short, it is unclear why "recurring" patterns on a single wrapper would add anything meaningful to the invention, or what purpose that distinction would serve. And when one considers that the wrappers are manufactured and sold in continuous rolls, it makes much more sense to consider designs as "recurring" over the course of the continuous roll rather than on an individual ream wrapper.

In sum, the use of "recurring" makes the most sense if we consider the designs as recurring over the course of a continuous wrapper, not a single one. That is how the wrappers are referred to in the specification and how they are manufactured, and Thilmany has not explained what purpose would be served by a requirement that the patterns "recur" on a single wrapper. Accordingly, I will construe the term in the manner CEI suggests, which means Thilmany is not entitled to summary judgment on the basis that its coating is non-recurring.
tooth. (Def.'s Mot. for Summ. J. 14; Pl.'s Opp'n to Mot. for Summ. J. 24.) The Federal Circuit has explained that the indefinite article "a" is amenable to two different meanings: it can mean "one" or "one or more." KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1355 (Fed. Cir. 2000). Moreover, the default is to presume that the article "a" refers to "one or more." Id. ("Unless the claim is specific as to the number of elements, the article a' receives a singular interpretation only in rare circumstances when the patentee evinces a clear intent to so limit the article" (emphasis added).)

Defendant argues that because the term "tip" is defined as "the area of coalescence" where the sides of the tooth come together, the term "a tip" should be construed to mean a single tip. However, an area of coalescence does not clearly denote one single tip. 3 This evidence is insufficient to demonstrate the patentee's clear intent to limit the article "a" to its singular form. Therefore, the court concludes that the term "a tip" refers to one or more tips at the distal end of a tooth.

3 For instance, a mountaintop might be considered an "area of coalescence," but many mountaintops consist of a few distinct peaks. Similarly, an area of coalescence could encompass more than one distinct tip, and therefore, this phrase does not clearly establish the patentee's intent to restrict the patent to cover only teeth with a single tip.

The parties dispute the meaning of "being ablated only partially," as that phrase appears in Claim 1. Creo contends that the phrase means "a portion, but not all, of the third layer decomposes into gases and volatile fragments in a uniform manner with limited melting or formation of solid decomposition products." Creo bases this construction on the patent's internal definition of "ablate" and its disclosed preference for a third layer that cleanly ablates with only limited melting or formation of solid decomposition products. Presstek argues that the phrase means "a portion, but not all, of the third layer decomposes into gases and volatile fragments."

"It is well-established that the patentee can act as his own lexicographer," and that it may do so either expressly or by implication in the specification. Irdeto Access, Inc. v. Echostar Satellite Corp., 383 F.3d 1295, 1300 (Fed. Cir. 2004). Where a patent defines a term by implication, I must be mindful of "the distinction between using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim." Phillips, 415 F.3d at 1323. The Federal Circuit warns against the latter. Id.

The '705 Patent expressly defines "ablate" to mean "decompose into gases and volatile fragments." '705 Patent col.5 11.16-19. The specification also states a preference for clean ablation of the secondary ablation layer and describes preferred materials that achieve this effect. '705 Patent col. 5 11.44-54; col.6 11.1-16. Although it is true, as Creo points out, that these preferences respond to problems associated with the prior art, they are preferences nonetheless. As such, it would be improper to treat them as limitations on the claims. See, e.g., Phillips, 415 F.3d at 1323; Taskett v. Dentlinger, 344 F.3d 1337, 1340 (Fed. Cir. 2003). Accordingly, I conclude that a person skilled in the art would understand the phrase "being ablated only partially," as used in Claim 1, to mean "a portion, but not all, of the third layer decomposes into gases and volatile fragments."

The "about" terms:

(1) "the ratio, R[3], of the difference between the inlet valve center point and the valve plate inlet center point to R[2] is at least about 0.15;" (2) "R[2] is in a range of 1.25 to about 1.45;" and (3) "R[3] is in a range of about 0.15 to about 0.40"
Claim 10 of the '183 Patent contains the term "the ratio, R[3], of the difference between the inlet valve center point and the valve plate inlet center point to R[2] is at least about 0.15." Claim 11 of the '183 Patent contains the term "R[2] is in a range of 1.25 to 1.45." Claim 12 of the '183 Patent contains the term "R[3] is in a range of about 0.15 to about 0.40." The parties' dispute centers around the meaning of "about" as it is used in these three terms.

SHURflo contends that the scope of the ratios R[2] and R[3] is entitled to reasonable breadth and proposes that the Court construe the term "about" to encompass a full increment or decrement of the least significant digit claimed—here, the digit in the hundredths decimal place. Accordingly, SHURflo contends that "at least about .15" means "at least .14," "range of 1.25 to about 1.45" means "between 1.25 and 1.46," and "range of about 0.15 to about 0.40" means "in a range of at least 0.14 to 0.41." Furthermore, SHURflo argues that its proposed constructions are consistent with the level of precision chosen by the patentee when drafting the claims because the patentee chose to claim the ratios to two decimal places.

Defendants contend that the "about" terms must be construed narrowly because the '183 Patent emphasizes precision and the differences in dimensions set out in a chart on column 7 of the '183 Patent are minor. The column 7 chart compares ratios from the preferred embodiment of the inventive valve plate with ratios from a prior art valve plate using three decimal places. Defendants assert that the narrow construction should include three decimal places instead of two because the patentee chose to use three decimal places in the column 7 chart and the inventor testified that those experienced in this field typically work with three decimal places for dimension measurements and tolerances. Defendants propose that the Court construe the term "about" to encompass all values that, when rounded to the hundredths decimal place, equal the claimed value. Thus, Defendants contend that "at least about .15" means "equal to or greater than 0.145," "range of 1.25 to about 1.45" means "in the range of 1.25 to 1.454," and "range of about 0.15 to about 0.40" means "in the range of 0.145 to 0.404." SHURflo counters that nothing in the intrinsic record of the '183 Patent supports the Defendants' proposed constructions. Further, SHURflo contends that the patentee knew how to express the ratios and underlying measurements to three decimal places as he did in the column 7 chart, but chose to claim the ratios to two decimal places instead.

Because nothing in the specification supports any construction using qualitative boundaries, the Court will construe the "about" terms using quantitative boundaries. In addition, given the specification's attention to numerical detail and the absence of qualitative disclosure regarding the range of the disclosed ratios, the flexibility afforded by the word "about" must be construed narrowly, as Defendants suggest. However, Defendants' proffered constructions offer no flexibility in that they merely offer an extended range that numerically rounds to the claimed quantity. For example, where the claim states "at least about .15," Defendants propose "equal to or greater than 0.145," but if 0.145 is expressed to two decimal places, it is equivalent to 0.15 due to numerical rounding principles. Thus, Defendants' proposals afford no flexibility, thereby giving the word "about" no meaning.

Although the inventor used three decimal places in comparing the ratios of the preferred embodiment of the inventive valve plate to the ratios from a prior art valve plate, the patentee used only two decimal places when discussing the inventive ratios in the specification and claims. The values in the patent comprise actual measured data and the ratios of same. As such, there is inherent approximation based upon the accuracy of the measuring tool. However, that approximation would not normally extend to a full digit in the least significant value of a measurement or a ratio. For example, if a measurement instrument measures to the hundredths decimal and the artisan measures 0.15, the result might reasonably be expressed as "about 0.15" in order to reflect the fact that there is limited or no visibility in the thousandths decimal. In this context, "about 0.15" would mean a number above 0.14 but below 0.16. When the intrinsic record is viewed as a whole, it is apparent from the patentee's use of varying decimal places that the patentee expected a certain range of accuracy. In order for the term "about" to provide complete flexibility commensurate with the specification and claims, it should provide complete flexibility as to the next least significant decimal place. Thus, the "about" terms should be construed to include all values less than a full increment and greater than a full decrement of the least significant digit claimed.

Accordingly, the Court construes the term "the ratio, R[3], of the difference between the inlet valve center point and the valve plate inlet center point to R[2] is at least about 0.15" to mean "the ratio R3 (i.e., the difference between the inlet valve center point and the valve plate inlet center point divided by the ratio R2) is greater than 0.14;" "R[2] is in a range of 1.25 to about 1.45" to mean "the ratio R2 (i.e., the value of the inlet valve radius divided by the value of the valve plate inlet radius) is between 1.25 and 1.459999;" and "R[3] is in a range of about 0.15 to about 0.40" to mean "the ratio R3 (i.e., the difference between the inlet valve center point and the valve plate inlet center point divided by the ratio R2) is in the range of 0.140001 to 0.409999." Further, in construing the "about" terms, the amount of decimal places used is not significant. What is significant is whether the measurement falls within the appropriate ranges.
The parties dispute the meaning of the phrase "about" in the phrase "at a rate in excess of about 800 bills per minute" in claim 1 and subsequent claims. Cummins argues that the phrase "about" should be given its ordinary meaning of "approximately." Glory argues that the phrase "about" is not given a specific definition in the specification, prior art, prosecution history, or any other source, and should therefore be invalid. In the alternative, Glory argues that it should be read as "plus or minus a tolerance."

In some cases, "the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." Phillips, 415 F.3d at 1314. The Court does not see any meaningful distinction between construing the phrase as "approximately" or "plus or minus a tolerance." Either explanation is consistent with a layperson's understanding of the term "about" in the phrase "about 800 bills per minute." The Court determines the phrase "about" to mean "approximately."

The parties have requested that the Court construe the meanings of "approximately" and "about" in claims 8 and 11. These terms are closely related and appear in the same sections of the claims and therefore are addressed together.

Claim 8(b) states: "the heat treating step comprises the steps of heating the blank to approximately 1560 [degrees] F.; quenching the heated blank into a liquid salt bath at approximately 500 [degrees] F. for about 20 seconds; withdrawing the quenched blank from the salt bath and allowing it to air cool to room temperature; and tempering the cooled bank at approximately 300 [degrees] F." (6:17-23.)

Claim 11(b) states "the heat treating step comprises heating the blank to approximately 1560 [degrees] F.; quenching the heated blank into a liquid salt bath at approximately 500 [degrees] F. for about 20 minutes; and withdrawing the quenched blank from the salt bath and allowing it to air cool to room temperature." (6:35-40.)

"The word 'about' does not have a universal meaning in patent claims, and that the meaning depends on the technological facts of the particular case." Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1217 (Fed. Cir. 1995). Furthermore, the word "about," avoids a strict numerical boundary to the specified parameter. Id. Its range must be interpreted in its technological and stylistic context. Id. The court in Pall considered how the term "about 5:1 to about 7:1" was used in the patent specification, the prosecution history, and other claims. Id. It is appropriate to consider the effects of varying that parameter, for the inventor's intended meaning is relevant. Id. Extrinsic evidence of meaning and usage in the art may be helpful in determining the criticality of the parameter, and may be received from the inventor and others skilled in the field of the invention. Id. (citing Markman, 52 F.3d at 980).

Fisher-Barton urges that one of ordinary skill in the art would understand that the terms "approximately" and "about" permit reasonable ranges on either side for the times and temperatures stated and that the steps of the claimed process are not limited to the exact temperatures and time period recited. (Fisher-Barton Mem. 6.) Fisher-Barton relies upon the Turner Declaration as establishing that one with skill in the art would understand the temperatures to include plus or minus 10% of the stated temperature. (Id.) Thus, 500 [degrees] F would mean a range 450 [degrees] F. to 550 [degrees] F., 300 [degrees] F. would mean a range of 270 [degrees] to 330 [degrees] F. and 1560 [degrees] F. could vary between 1404 [degrees] F. and 1716 [degrees] F. (Id.)
Likewise, Fisher-Barton asserts that one skilled in the art of metallurgy would understand "about 20 seconds" in claim 8 as meaning plus or minus five seconds (15 to 25 seconds) and "about 20 minutes" in claim 11 as meaning plus or minus five minutes (15 to 25 minutes). (Id. at 7.) Fisher-Barton states that such ranges are well within the typical tolerances of the heat treating process. (Id.)

The Defendants claim that "approximately" should be construed to mean plus or minus five degrees. (Defs.' Opening Br. 16.) Thus, the 500 [degrees] F. quench temperature would have a range from 495 [degrees] F. to 505 [degrees] F. and the 300 [degrees] F. tempering temperature would have a range from 295 [degrees] F. to 305 [degrees] F. (Id. At 16-17.) The Defendants do not offer any construction of the range for the heating temperature of the metal.

Relying on the Krauss Declaration, the Defendants maintain that "about" with respect to the time in claims 8 and 11 should be construed to mean plus or minus 10%, which would mean a range from 18 to 22 seconds and a range from 18 to 22 minutes. (Id. at 17.) Krauss opines that one skilled in the art of metallurgy would consider a reasonable range for the duration of the quench to be plus or minus 10% of the specified time. (Krauss Decl. P 27.) Krauss indicates that since claim 8:

appears to be aiming at martensite formation . . . it is important to allow the work piece to be in the quench long enough for the surface and interior of the work piece to equalize, but not so long as to allow for the formation of bainite or other non-martensitic structures. To allow the piece to stay in the quench much longer would result in the additional formation of bainite.

(Id.)

With respect to claim 11, Krauss avers that one skilled in the art would consider a reasonable range of plus or minus 10% of the specified time to be reasonable. He avers that to go below that time would create a high risk of preventing the austenite from fully transforming to bainite, and thus would allow the formation of other microstructures, such as martensite. (Id. at P28.) Krauss states that these other microstructures are certainly disfavored in trying to achieve a blade having the characteristics of high hardness and high toughness without tempering the blade once it has been cooled to room temperature. (Id.)

In response, Fisher-Barton asserts that Krauss offers a very narrow range of what "about" and "approximately" would mean to one skilled in the art. Fisher-Barton also relies upon the Declaration of Apolonio Ortiguera ("Ortiguera"). 10

10 Ortiguera is a consulting metallurgist retained by Fisher-Barton. Ortiguera has 35 years of experience in metallurgy. The Court has considered the Ortiguera Declaration but does not find it helpful in resolving the issues presented because it contains unsupported conclusory assertions. See Phillips, 415 F.3d at 1318.

In the Defendants' response, they state that given the accuracy of quench tank controls a skilled heat treater would read the language "approximately 500 [degrees] F" to mean plus or minus 5 [degrees] to 10 [degrees] F. (Defs.' Responsive Claim Construction Br. ("Defs.' Responsive Br.") 11.) They also proffer the Declaration of Glenn True ("True"). 11 The Defendants state that the specification and the claim language indicate that the close tolerances of their definition are the appropriate construction.

11 True is the owner of Superior Metals Treating and Equipment Inc., located in Kansas City, Missouri. (True Decl. P 1.) Since 1964, True has been heat treating lawn mower blades using a variety of metals including 10B38 steel. (Id. at P 2.) Since 1972, True has treated lawn mower blades for defendant Frederick Manufacturing. (Id. at P 1.)
Much of the evidence proffered on the meaning of "approximately" is extrinsic evidence. Having considered the varying opinions regarding "approximately" and what it means in the context of quenching, this Court finds the plus or minus 5 [degrees] F. to 10 [degrees] F. construction to be most persuasive. True is a person skilled in the art of heat treating steel blades and his opinion is consistent with the quenching range in the Handbook. Turner has attested to his reliance upon the Handbook (even though he has not relied upon it in his opinion of "approximately"). While Turner is skilled in the art and the inventor, his opinion as to the temperature range is a mere conclusion and no basis for his conclusion is explained.

Krauss's interpretation of "approximately" as meaning plus or minus 5 [degrees] is rejected as being a narrower temperature range than specified by the Handbook. The Defendants have not offered any evidence regarding the meaning of "approximately" when considering the temperature range in the heating process. But, patent terms are normally used consistently throughout the patent. Phillips, 415 F.3d at 1314. Thus, the Court adopts the 5 [degrees] to 10 [degrees] F range in interpreting the term "approximately" in claims 8 and 11 of the '114 patent.

In determining the meaning of "about" the Court notes that Turner testified at his deposition that attributing the meaning of five seconds to "about" that gives "a relatively small window of opportunity" to pull a rack of parts out of a marquenching tank and that "from a practical standpoint" you need "at least that much time for it to be workable." (Mansfield Decl. Supp. Defs.' Responsive Br. P 3, Ex. A. (Turner Dep.) 55.) Turner's explanation is the most persuasive of those offered and is therefore adopted. Since patent terms are to be construed consistently the Court construes "about" as follows; "about 20 seconds" in claim 8 means plus or minus five seconds (15 to 25 seconds) and "about 20 minutes" in claim 11 means plus or minus five minutes (15 to 25 minutes).

5. The term "about" in claims 8 and 11 of the '114 patent means plus or minus five seconds (15 to 25 seconds) in claim 8 and plus or minus five minutes (15 to 25 minutes) in claim 11.

H. "About"

Claim 12 of the '623 patent, in which the word "about" appears, reads as follows:

The device of claim 10 wherein a first opening of said first set is located about 1.765 inches from a center line of said housing and a first opening of said second set is located about 1.750 inches from said center line.

The dictionary definition of "about" when the word is used to refer to spatial relationship is "reasonably close to." Webster's Collegiate Dictionary (10th Ed. 1995). This is the interpretation advanced by CellNet. Itron, however, says that "about 1.765 inches" should be construed to include the range from 1.7645 to 1.7654 inches and "about 1.750 inches" should include the range from 1.7495 to 1.7504 inches. Itron's argument is based on the holding in Viskase Corp. v. American Nat. Can Co., 947 F. Supp. 1200, 1201 (N.D. Ill. 1996).

The problem with Itron's argument, however, is that the cases cited were decided on their particular facts rather than a universal understanding among those in the scientific or engineering community that "numbers defined with two decimal places encompass any three decimal place number within a .005 range of the two decimal place number." In Viskase, the court specifically commented that the expert witnesses on both sides agreed that "ordinarily numbers defined with two decimal places encompass any three decimal place number within a .005 range of the two decimal place number." Id. In this case, however, Itron has not cited any intrinsic or extrinsic evidence to warrant a departure from the common and ordinary meaning of the term "about." Therefore, the Court construes the term to mean "reasonably close to."
4. "Wherein At Least A Portion Of The Liquid Absorbing Member About Said Immunosorbing Member"

As to this dispute, Dade Behring argues "about" means near or in the immediate neighborhood so that the liquid absorbing member is in a liquid receiving relationship with the immunosorbing member. Biosite contends "about" means that the liquid absorbing member must surround the immunosorbing member.

Again, the ordinary and customary meaning of "about" will be applied as there is no special or unique definition supplied in the specification or the prosecution history. See Vitronics, 90 F.3d at 1582. The dictionary defines "about" as "in the vicinity: NEAR." See Webster's at 5. This definition is supported by the claim construction principle that, "each claim is an entity must be considered as a whole." See General Foods, 972 F.2d at 1274. The "extending transversely" claim language just construed and the "about" claim language are used to describe the exact same spatial relationship between the liquid absorbing member and the immunosorbing member. See Col. 2, lines 3-9. Thus, because "extending transversely" has just been interpreted to mean spanning an interval by lying or passing across, "about" must be interpreted in a consistent manner in order to interpret Claim 25 consistently as a whole. The above dictionary definition is indeed consistent with the definition adopted for "extending transversely." As a result, the Court construes "about" to mean in the vicinity or near.

THE '196 PATENT

Claim Term | Rivard's Proposed Definition
---|---
g. The sidewalls flanking the lumen have a combined thickness of about 0.025 inch. (In claims 4 and 11) | The combined thickness of the sidewalls opposing each other across the lumen have a combined thickness of between 0.0245 and 0.0255 inches.

i. Arguments of the parties. Rivard argues that the specification does not disclose any range associated with the 0.025 inch value, but that the chart of "standardized" needle dimensions provided by the patentee indicates wall thickness tolerances of plus or minus 0.0005 inch. Thus, Rivard argues that its construction of the approximate value is supported by the intrinsic evidence.

Ideal concedes that, owing to the agreed definition of "flanking the lumen," the claim term in question should be construed to mean "the combined thickness of the sidewalls opposing each other across the lumen have a combined thickness of about 0.025 inch." However, Ideal argues that no construction of "about 0.025 inch" is required, because such a term does not need to be construed with numerical exactitude. Ideal asserts, further, that the '196 patent is devoid of language that disclaims tolerances other than those in the range asserted by Rivard.

ii. Analysis. The court agrees with the parties that the proper construction of the "sidewalls flanking the lumen" portion of this claim term is the agreed construction, as modified by the court, "opposing each other across the lumen." The court also agrees with Ideal that nothing in the '196 patent itself suggests limitations on the value "about 0.025 inch." The limits of the approximation indicated by "about" are not explained anywhere in the Detailed Description. On the other hand, the court finds that the exhibit of needle dimensions that the patentee submitted to the examiner, Joint Appendix at 787-88 is intrinsic evidence from the prosecution history of the '196 patent of the "standard" tolerances for wall thickness of hypodermic needles. See Ortho-McNeil Pharm., Inc., 476 F.3d at 1326. As the court explained above, in reference to dimensions of "standard" needles, use of the exhibit in an illustrative manner did not limit the patentee to the dimensions stated therein. See supra, page 125. Nevertheless, Ideal is hardly in a position to dispute the validity of this exhibit as evidence of the understanding of one skilled in the art concerning permissible tolerances for sidewall thicknesses of hypodermic needles, just as Ideal is hardly in a position to dispute the validity of this exhibit as extrinsic evidence of the understanding of one skilled in the art concerning permissible tolerances for inside diameters of hypodermic needles, for purposes of the '668 patent, because the chart was offered essentially for the purpose of illustrating that hypodermic needle dimensions are "standardized," as explained above beginning on page 88.

Rivard contends that this exhibit demonstrates that the understanding of one skilled in the art was that the sidewall thickness
measurements have a tolerance range of plus or minus 0.0005 inch, leading Rivard to assert that "about 0.025 inch" must mean "between 0.0245 and 0.0255 inches." The exhibit, which purports to be "Syringe Needle Dimensions--Technical Notes," does indeed define the tolerances for "nominal wall" thickness as plus or minus 0.0005 inch for gauges 15 through 19. See Joint Appendix 787, Nominal Wall, Tolerance (in), Needle Gauges 15-19. The embodiments of the claimed needle are generally compared to "standard" needles of 16 gauge in the Detailed Description. See the '196 patent, Col. 4, l. 50 to Col. 5, l. 2. Indeed, dependent claims 4 and 11 expressly claim the sidewall thickness that is described in the Detailed Description as a preferred embodiment of the 16 gauge embodiment of the claimed needle. See id., Col. 55-60. The Detailed Description and the claims of the '196 patent, however, refer to "standard needles" or "prior art needles" or "needle cannulas that are useful for medical and veterinarian purposes" as including gauges 14 through 27. See id., Detailed Description, Col. 5, ll. 16-19; claim 1, Col. 9, ll. 3-4; claim 8, Col. 10, ll. 11-12. The chart shows the same tolerance of plus or minus 0.0005 inches for wall thickness for gauges 20 through 27, but tolerances of plus or minus 0.0010 inches for gauges 10 through 14. The competing chart of needle dimensions offered by Rivard, see Defendants' Appendix at 38, which must be considered, at best, extrinsic evidence under Ortho-McNeil Pharm., Inc., 476 F.3d at 1326, likewise shows wall thickness tolerances of plus or minus 0.0010 inches for gauges 6 through 14, plus or minus 0.0005 inches for gauges 15 through 19, and plus 0 and minus 0.0005 for gauges 20 through 27. From the two charts, the court concludes that one of ordinary skill in the art would understand that a thickness for the sidewall of a hypodermic needle of gauges 14 through 27 stated as "about" a certain fraction of an inch would have a tolerance of plus or minus 0.0005 inches.

iii. The court's construction. In light of the foregoing, the court concludes that this claim term in claims 4 and 11 of the '196 patent is properly construed as follows: "The sidewalls opposing each other across the lumen have a combined thickness of about 0.025 inch, encompassing a range of thicknesses no greater than 0.0245 to 0.0255 inches." See Ortho-McNeil Pharm., Inc., 476 F.3d at 1326-27 (in light of the kinds of evidence cited, concluding that the claim term defining a ratio of tramadol to acetaminophen of "about 1:5" should be construed to mean "approximately 1:5, encompassing a range of ratios no greater than 1:3.6 to 1:7.1").

5. "The needle has an inside diameter of about 0.046 inch and an outside diameter of 0.018 inch"

The last claim term of the '668 patent for which the parties dispute the proper construction is "the needle has an inside diameter of about 0.046 inch and an outside diameter of 0.018 inch [sic]" in claims 6 and 12. The parties' competing constructions for this claim term are shown in the chart below:

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This claim term presents a paradox, at least for those of us unable to conceptualize objects beyond three or four dimensions, because, as Rivard points out, it defines a needle with an inner diameter that is greater than its outer diameter. Leaving aside for now the question of whether claims 6 and 12 are invalid as impossible and, therefore, not enabling, the court turns to a summary of the parties' arguments for their competing constructions of this claim term.

a. Arguments of the parties

Rivard argues that, to the extent that this obviously impossible and, therefore, invalid claim term is susceptible to construction, the meaning of "about" depends upon the technological facts of the particular case. Here, Rivard contends that,
in prosecution of the '196 patent, Ideal submitted an exhibit that purported to represent standardized dimensions of hypodermic needles showing tolerances for inside diameters of plus or minus 0.0005 inch for a 16 gauge needle. Thus, Rivard contends that the range of the approximate inside diameter claimed should be from 0.0455 to 0.0465 inch.

Apparently not recognizing or simply not acknowledging the impossibility of this claim term, Ideal argues that its meaning is clear and unambiguous and that there is simply no basis for Rivard's limitations on the scope of the "about" measurement, not least because Rivard relies on an exhibit offered in support of the prosecution of the '196 patent, not in support of the prosecution of the '668 patent in which the claim term is found. Ideal also argues that such an approximation term as "about" a certain diameter does not need to be construed with numerical exactitude. Ideal argues, further, that it is clear from the context that the "inside diameter" referred to is the diameter of the lumen. Thus, in the alternative, Ideal asserts that a proper construction, well supported by the intrinsic evidence, is "the needle has a lumen diameter of about 0.046 inch and an outside diameter of 0.018 inch."

b. Analysis

i. Source of the error in the impossible claim. As noted above, this claim term claims an impossibility, at least as this court understands three- and four-dimensional physics, an object with an inside diameter that is greater than its outside diameter. The court believes that it has discovered the source of the error, a none-too-surprising mix up of measurements in millimeters and inches and measurements of different features. For example, the Detailed Description includes the following:

In the case of the 16 gauge embodiment of the needle of the present invention, the sidewall 17 has a thickness greater than 0.46 mm (0.018 inch), preferably a thickness of 0.46 mm (0.025 inch) and the diameter of the lumen 18 is about 1.19 mm (0.047 inch). Thus, the outer diameter of needle 12 is about 1.8 mm (0.072 inch).

The '668 patent, Detailed Description, Col. 4, ll. 54-59. It seems readily apparent that, in the claim term presently at issue, the inside diameter was properly stated in inches, but the outside diameter was misstated as 0.018 inches, when it probably should have been stated as 0.072 inches or 1.8 mm. Moreover, the thickness of the sidewall of the claimed needle, in a 16 gauge embodiment, is described as having "a thickness greater than 0.46 mm (0.018 inch)," see the '668 patent, Col. 4, ll. 55-56, and is likewise claimed to have "a thickness of greater than 0.018 inch" in claims 5 and 11, so that the sidewall thickness in these instances is identical to the "outside diameter" claimed in claims 6 and 12, and one measurement was inadvertently transposed with the other.

The problems with the measurement of the "outside diameter" in the '668 patent do not stop with a mix up of measurements or measurement units, however. In the preceding section, the court construed the term "the wall has a thickness of greater than 0.018 inch," found in claims 5 and 11 of the '668 patent, to mean that "each and every one of the one or more sidewalls of the needle cannula has a thickness, measured from the inner sidewall (wall of the lumen) to the outer sidewall, of greater than 0.018 inch." A consequence of this construction is that the "outside diameter" of 0.072 inch, as described in the Detailed Description of the '668 patent, Col. 4, ll. 54-59, cannot be correct, because it does not include the thickness of the sidewall on opposite sides of the lumen (0.047 inch + 0.25 inch + 0.25 inch = 0.097 inch), just the thickness of the sidewall on one side of the lumen (0.047 inch + 0.25 inch = 0.072 inch).

The court has some reluctance to construe a claim term that obviously claims a physical impossibility, such as an object with an inside diameter that is larger than its outside diameter. The disputed aspect of the claim term, however, is not the clearly erroneous outer diameter, but the construction of the language stating an approximate inside diameter in terms of "about 0.046 inch." Therefore, the court will consider the proper construction of that portion of the claim term.

ii. Construction of the approximation. Claims 6 and 12 of the '668 patent claim a needle with an "inside diameter of about 0.046 inch," which Rivard asserts must be construed to mean "between 0.0455 and 0.0465 inches." 11 Ideal contends that the "about" term does not need to be construed with mathematical exactitude.

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11 Although the '668 patent claims a needle with an "inside diameter of about 0.046 inch," the Detailed Description explains that an ordinary, prior art 16 gauge needle has "a lumen diameter of about 1.19 mm (0.047 inch)." See the '668 patent, Col. 4, ll. 61-63. Consequently, Rivard's construction of "about 0.046 inch" could mean that any 16 gauge needle that has "a
The lumen diameter of about 1.19 mm (0.047 inch) does not infringe claims 6 and 12 of the '668 patent, because such a needle could fall outside the range of possible diameters defined by "about 0.046 inch."

The Federal Circuit Court of Appeals provides some guidance on the construction of such an approximation:

This court has looked at the meaning of the term "about," and similar qualifying words or phrases, in other cases and has developed an approach to the interpretation of such terms:

[T]he word "about" does not have a universal meaning in patent claims, . . . the meaning depends upon the technological facts of the particular case.

* * *

The use of the word "about," avoids a strict numerical boundary to the specified parameter. Its range must be interpreted in its technological and stylistic context. We thus consider how the term . . . was used in the patent specification, the prosecution history, and other claims. It is appropriate to consider the effects of varying that parameter, for the inventor's intended meaning is relevant. Extrinsic evidence of meaning and usage in the art may be helpful in determining the criticality of the parameter. . . .

Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1217 (Fed. Cir. 1995) (citations omitted). See also Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1554 (Fed. Cir. 1996) (stating that "the usage [of the term 'about'] can usually be understood in light of the technology embodied by the invention"); Conopco, Inc. v. May Dep't Stores Co., 46 F.3d 1556 (Fed. Cir. 1994) (discussing the criticality of the claimed ratio to the invention and whether or not one of ordinary skill in the art would have read the modifier "about" expansively in light of the intrinsic evidence).

Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Inc., 476 F.3d 1321, 1326-27 (Fed. Cir. 2007) (in light of the kinds of evidence identified, concluding that the claim term defining a ratio of tramadol to acetaminophen of "about 1:5" should be construed to mean "approximately 1:5, encompassing a range of ratios no greater than 1:3.6 to 1:7.1").

Rivard's sole authority for its construction of "approximately 0.046 inch" as "between 0.0455 and 0.0465 inches" is an exhibit offered in the prosecution of the '196 patent, which is a different, albeit related, patent. The court has considerable doubt that this evidence is on a par with "how the term . . . was used in the patent specification, the prosecution history, and other claims" of the '668 patent, notwithstanding the relationship between the applications of the '668 patent and the '196 patent. See id. at 1326 (quoting Pall Corp., 66 F.3d at 1217). The exhibit may, however, be extrinsic evidence of the meaning and usage in the art of the criticality of approximations of inside diameters of hypodermic needles. See id. The question is whether the court has any need of recourse to extrinsic evidence to construe the term in question.

Unfortunately, the court finds little in other claims or the specification of the '668 patent that is illuminating, and no party has pointed to anything in the prosecution history of the '668 patent that is on point. The court notes that the specification simply refers to "inside diameter" or "lumen diameter" for a 16 gauge needle, either the claimed invention or a prior art needle, as being "about 1.19 mm (0.047 inch)." See the '668 patent, Col. 4, ll. 58-64. The limits of the approximation indicated by "about" are not explained in the Detailed Description. It is apparent from the same portion of the specification, however, that the goal of claims 6 and 12 was to claim a needle with an inside diameter comparable to the inside diameter of "standard" or "prior art" 16 gauge needles. That being so, the court cannot explain from the intrinsic evidence why the claimed "inside diameter" is not precisely the same approximation as the "inside diameter" described in the Detailed Description, i.e., why what is claimed is an inside diameter of "about 0.046 inch," where what is described is a needle with an inside diameter of "about 0.047 inch."

The court notes that 1.19 mm would "round" to 0.047 inch rather than 0.046 inch, where 1.19 mm, converted to seven decimal places, is 0.0468503 inch.
Thus, as a last resort, the court turns to the evidence of the needle dimensions exhibit in the prosecution history of the '196 patent, cited by Rivard, and found in the Joint Appendix at 787-88, to see what it reveals about how the common inventor of the '668 patent and the '196 patent understood the invention and, in particular, the scope of the approximation of inside diameter of hypodermic needles. See Nystrom, 424 F.3d at 1142 ("In addition to the written description, 'the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.") (quoting Phillips, 415 F.3d at 1317). The court explained, above, that it deems this evidence to be, if anything, the sort of "extrinsic" evidence contemplated by the court in Ortho-McNeil Pharm., Inc., 476 F.3d at 1326. Nevertheless, Ideal is hardly in a position to dispute the validity of this exhibit as extrinsic evidence of the understanding of one skilled in the art concerning permissible tolerances for inside diameters of hypodermic needles, because the exhibit was offered essentially for that purpose by the same patentee in the prosecution of the '196 patent.

Rivard contends that this exhibit demonstrates that the understanding of one skilled in the art was that the inside diameter of a 16 gauge hypodermic needle is defined in terms of tolerances of 0.0005 inch, leading Rivard to assert that "about 0.046 inch" must mean "between 0.0455 and 0.0465 inches." Rivard's analysis based on this evidence is flawed, however. The exhibit, purporting to be "Syringe Needle Dimensions--Technical Notes," actually defines the "nominal inside diameter" of a 16 gauge syringe needle as 0.047 inch, 13 and the tolerance, in inches, for the inside diameter of a 16 gauge needle to be plus or minus 0.0015 inch, not plus or minus 0.0005 inch, as Rivard would have it. See Joint Appendix 787, Nominal ID, Tolerance (in), Needle Gauge 16. Thus, the evidence upon which Rivard relies would suggest that "about 0.046 inch" should be construed to mean "between 0.0445 and 0.0475 inches." Therefore, the court construes the phrase "about 0.046 inch" to mean "about 0.046 inch, encompassing a range of diameters no greater than 0.0445 to 0.0475 inch." Cf. Ortho-McNeil Pharm., Inc., 476 F.3d at 1327 (in light of the kinds of evidence cited, concluding that the claim term defining a ratio of tramadol to acetaminophen of "about 1:5" should be construed to mean "approximately 1:5, encompassing a range of ratios no greater than 1:3.6 to 1:7.1").

13 To be precise, the exhibit shows the nominal inside diameter of a 16 gauge syringe needle to be 0.470 inch, but that is clearly a misprint, based on the conversion of the stated nominal inside diameter of a 16 gauge needle from millimeters (stated as 1.194) to inches (0.047 inch), and a comparison to the stated nominal inside diameters for 15 and 17 gauge needles (0.0540 inch and 0.0420 inch, respectively). See Joint Appendix at 787.

14 Moreover, both the "inside diameter" of the claimed needle ("about 0.046 inch"), as claimed in claims 6 and 12 of the '668 patent, and the "inside diameter" of a 16 gauge embodiment of the claimed needle, as described in the Detailed Description of the '668 patent ("about 0.047 inch"), would fall within the permissible tolerance suggested by this evidence, mitigating some of the concerns that the court expressed above, in note 11, that the approximate inside diameters of 16 gauge needles as described and as claimed do not match.

iii. Inside diameter. What the specification does reveal is that "inside diameter" is properly understood to mean the "lumen diameter," as the two phrases are used interchangeably: The claims use "inside diameter" and "outside diameter," while the Detailed Description refers to "lumen diameter" and "outer diameter." Compare the '668 patent, claims 6 and 12, with id., Detailed Description, Col. 4, ll. 58-64. Although Rivard refers to the diameter of the "hole" in its proposed construction, rather than to the diameter of the "lumen," it is apparent that Rivard recognizes that the "inside diameter" means the "lumen diameter."

iv. The court's construction. Upon the foregoing, the court concludes that the proper construction of the term "the needle has an inside diameter of about 0.046 inch and an outside diameter of 0.018 inch [sic]" in claims 6 and 12--recognizing that the stated outside diameter is doubtless an error--is the following: "The needle has a lumen diameter of about 0.046 inch, encompassing a range of diameters no greater than 0.0445 to 0.0475 inch, and an outside diameter of 0.018 inch."
b. "No More Than About 0.6 Square Inches"

Claim 1 of the Pieniak patent recites that the portion of the impact zone of the absorbent panel positionable between the thighs must have "a transverse dimension and a thickness dimension to provide a cross-sectional area for said portion of no more than about 0.6 square inches." [DTX 1, at 17:31-40]. The specification provides no express indication as to the basis for the about 0.6 square inches limitation. The only disclosure in the Pieniak patent that relates to this limitation is the 0.585 square inch measurement disclosed in Table I as the CSB for Sample LBD. Id. at 10:18-40. The 0.585 measurement rounds off to 0.6. The prosecution history confirms that the CSB for Sample LBD was in fact used to obtain the "about 0.6 square inches" limitation. Prior to the inventor's final amendment of the claims, claim 1 included the approximate width and thickness dimensions of Sample LBD and specified that these dimensions provide the basis for the 0.6 square inch limitation. [DTX 2, at 210].

The Court finds that, at best, the "no more than about 0.6 square inches" limitation does not cover any diaper with a CSB that, when rounded off to a single digit, exceeds 0.6 square inches. The parties do not dispute that a diaper which exceeds this measurement, i.e., a diaper having a CSB in excess of 0.64 square inches, does not literally infringe claim 1 of the Pieniak patent. See [Tr. at 2071]. Although P&G asserts that 0.6 square inches represents the maximum permissible CSB for a diaper to infringe the Pieniak patent, the Court need not resolve this issue given the fact that none of the accused diapers have a CSB in the 0.6 to 0.64 square inches range. Thus, the Court concludes that, at the very least, a diaper having a CSB that exceeds 0.6 square inches when rounded off to a single digit does not literally infringe claim 1 of the Pieniak patent.

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Claim Interpretations

I held a hearing pursuant to Markman v. Westview, U.S., 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996), at which the parties presented evidence, including the testimony of their experts, on the proper interpretation of terms in the claim language of the various patents in suit, where such terms are disputed. Having heard the evidence, I reach the following conclusions.

The term "about" as used in the phrase "a density below about 0.91 g/cm3" means a number between 0.905 and 0.914. I reach this conclusion for the following reasons: First, the ordinary dictionary definition of "about" means "reasonably close to," "near" or "around." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY (1983), p.45. Thus, as one of the experts testified, a person skilled in the art of the invention, reading this language, would assume the term included numbers slightly above and slightly below 0.91 g/cm3. Accord, e.g., Eiselstein v. Frank, 52 F.3d 1035, 1039 (Fed. Cir. 1995) ("about" means "approximate"); Conopco, Inc. v. May Dept. Stores Co., 46 F.3d 1556, 1561 and n.2 (Fed. Cir. 1994), cert. denied, 131 L. Ed. 2d 582, 115 S. Ct. 1724 (1995).

Second, as experts on both sides in this case agreed, persons skilled in the art understand that ordinarily numbers defined with two decimal places encompass any three decimal place number within a .005 range of the two decimal place number. That is, 0.91 encompasses 0.905 to 0.914, because either of these numbers would be rounded off to 0.91 if the third decimal place is removed. An exception to this rule lies in cases in which a patentee has itself limited the interpretation ordinarily given a two decimal place number. E.J. DuPont de Nemours & Co. v. Phillips Petroleum Co., 711 F. Supp. 1205, 1222 (D.Del. 1989).

In the present case, Viskase consistently used two digit numbers in its specifications. ANC argues that Viskase is limited to 0.910 as a result of statements made to the patent examiner during the prosecution of U.S. Pat. 4,863,769. I disagree. ANC relies, first, on the fact that the original patent application (Serial No. 745,236) did not have a density limitation. After its rejection in February, 1986, Viskase filed the continuation application that became the '769 patent. In that continuation application, Viskase narrowed its claims by adding language stating "below about 0.91 g/cm3." ANC's patent expert testified that this history precluded a broad range of interpretation. But he ignores the word "about." "Below about 0.91" is,
ANC's second argument is that Viskase's actions with respect to two additional claims in the continuation application which as submitted stated that the copolymer had a density "above 0.91 g/cm3", and which were subsequently changed to "below" rather than "above," limit all of the claims to densities below 0.91 g/cm3. The examiner rejected these claims as originally filed, stating that there was no support in the specification for a VLDPE of above 0.91. But he also noted that "clearly applicant intended to claim below 0.91." (Viskase Trial Ex. 3, p. 253) Furthermore, in the same paragraph the examiner held that the disclosure for other claims, correctly stating the density limitation as below rather than above 0.91 g/cm3, was "enabling for claims limited to the VLDPE having a density of from about 0.86 to about 0.91." As the examiner concluded, the use of "above" was obviously just an error, although a careless one, which was corrected. It carried no meaning that would limit the interpretation of these claims to exactly 0.91. That the examiner understood that the claims encompassed some inexactness that could go beyond 0.910 is shown by his own repetition of the word "about" in the same paragraph in discussing the claims, as well, of course, by his allowance of the claims with the inclusion of the word "about" as modifying 0.91.

ANC next argues that one of the patents relied on by the examiner in initially rejecting the application that became the '769 patent, Nishimoto, U.S. Patent No. 4,456,646 encompassed a density between 0.900 to 0.950 g/cm3. ANC argues that Viskase's argument against this patent was that it described linear low density polyethylene (LLDPE) rather than VLDPE, and thus necessarily agreed that LLDPE densities went as low as 0.900 (or at least stopped at 0.91 g/cm3). But ANC has misconstrued Viskase's argument before the examiner. Viskase did say that Nishimoto described its own copolymer as LLDPE, but the point of that was that LLDPE's are different from VLDPE's. Viskase went on to attach various articles discussing the newly discovered VLDPE's and the differences between them and LLDPE's. Viskase also distinguished Nishimoto on the ground that the 0.90 density lower limit in that patent was hypothetical and that the copolymers disclosed in Nishimoto are made using different catalysts and are incompatible with the VLDPE copolymers. The examiner in response agreed that Nishimoto did not anticipate the claims in the '769 patent.

ANC also argues that a statement made by Viskase in a disclosure made after the notice of allowance limits Viskase's claims to copolymers with a density below 0.910 g/cm3. The notice of allowance was dated November 6, 1988. On November 23, 1988, Viskase notified the Patent Office, pursuant to its duty of disclosure under 37 C.F.R. 1.56, of the existence of Shibata U.S. Patent No. 4,429,079, which issued January 31, 1985, and which Viskase stated that it had recently learned. Viskase described Shibata as describing two ethylene/alpha-olefin copolymers designated as "A" and "B." The "A" copolymer is the one of concern in this suit. Viskase stated that the Shibata "A" copolymer was different from its claimed invention because "the present application … does not have a density below about 0.910 g/cm3 as defined in all pending claims." Shibata describes a copolymer with a density of 0.910 to 0.940 g/cm3. Viskase states that the use of the third decimal point was an obvious error. Whether or not it was intentional, I agree that in no other place in the prosecution history did Viskase use a third decimal point. As Viskase argues also, the same letter distinguished Shibata on the ground that the Viskase patent claims did not have densities below about 0.910 g/cm3 range. I conclude that Intervet America, Inc. v. Kee-Vet Laboratories, Inc., 887 F.2d 1050, 1054 (Fed. Cir. 1989), controls. In that case, the Federal Circuit held that remarks made by an attorney during the prosecution history that claims were restricted to a certain vaccination scheme, although some claims were not so limited, did not alter the claim language, and that the claim language controlled. In this case, the examiner certainly knew that the claims themselves included broader language than the limitation of 0.910. He did not require an amendment. The language, accordingly, is not so limited.

Finally, ANC argues that "about 0.91 g/cm3" cannot include a range of 0.912 g/cm3 because of the further language in the relevant claims stating that the film has "a 1% secant modulus below about 140,000 kPa." ANC says such a film necessarily has a secant modulus in the 165,000 or 170,000 range. In support of this conclusion, ANC introduced the testimony of its expert, Dr. Quirk. Dr. Quirk relied upon a measurement taken from an illustration in an article cited to the Patent Office by Viskase and the Karol patent, which Dr. Quirk testified discussed the relationship between density and secant modulus. On cross examination, however, Dr. Quirk agreed that the secant modulus measurement will vary depending upon the method used to make the film. He did not explain his reference to the Karol patent. ANC has failed to show that the limitation of "a 1% secant modulus below about 140,000 kPa" requires that "about 0.91 g/cm3" be limited to 0.910 g/cm3.
Nylon 46 Membranes

Three years after Pall filed this suit, MSI converted most of its membrane manufacture from nylon 66 to nylon 46. Nylon 46 is made not from hexamethylenediamine and adipic acid, but from tetramethylenediamine and adipic acid. Claim 34, quoted supra, does not name polytetramethylene adipamide (nylon 46). However, claim 116 of the Pall patent describes the polyamide resins in terms of their methylene to amide ratio:

116. A hydrophilic skinless alcohol-insoluble polyamide resin membrane sheet of alcohol-insoluble hydrophobic polyamide resin having a ratio CH2:NHCO of methylene CH2 to amide NHCO groups within the range of about 5:1 to about 7:1; capable when completely immersed in water of being wetted through within no more than one second, and reverting when heated to a temperature just below the softening temperature of the membrane to a hydrophobic material which is no longer wetted by water. [Emphasis added.]

Nylon 66 has a ratio of methylene to amide groups of 5:1. Nylon 46 has a ratio of 4:1. Pall asserts that the term "about 5:1 to about 7:1" is infringed by the ratio of 4:1, either literally or by the doctrine of equivalents.

A. Literal Infringement

The district court, construing the term "about 5:1 to about 7:1," observed that the word "about" does not have a universal meaning in patent claims, and that the meaning depends on the technological facts of the particular case. We have so held. E.g., Andrew Corp. v. Gabriel Electronics, Inc., 847 F.2d 819, 821-22, 6 U.S.P.Q.2D (BNA) 2010, 2013 (Fed. Cir.), cert. denied, 488 U.S. 927, 102 L. Ed. 2d 330, 109 S. Ct. 312 (1988); W.L. Gore & Assoc. Inc. v. Garlock, Inc., 842 F.2d 1275, 1280, 6 U.S.P.Q.2D (BNA) 1277, 1282 (Fed. Cir. 1988).

The determination of whether the literal meaning or scope of "about 5:1 to about 7:1" includes 4:1 is a matter of claim construction, a question of law for decision de novo by this court. The use of the word "about," avoids a strict numerical boundary to the specified parameter. Its range must be interpreted in its technologic and stylistic context. We thus consider how the term "about 5:1 to about 7:1" was used in the patent specification, the prosecution history, and other claims. It is appropriate to consider the effects of varying that parameter, for the inventor's intended meaning is relevant. Extrinsic evidence of meaning and usage in the art may be helpful in determining the criticality of the parameter, and may be received from the inventor and others skilled in the field of the invention. See Markman, 52 F.3d at 980, 34 U.S.P.Q.2D (BNA) at 1330 ("The court may, in its discretion, receive extrinsic evidence in order 'to aid the court in coming to a correct conclusion' as to the 'true meaning of the language employed' in the patent.") (quoting Seymour v. Osborne, 78 U.S. 516, 546, 20 L. Ed. 33, (1871)).

Dr. Pall, the inventor, explained his usage of "about 5:1 to about 7:1" as deriving from his tests of the performance of various nylon resin membranes. He explained that the ratios change in half integers, e.g., 7:1, 6.5:1, 6:1, etc., depending on the total number of methylene groups in the acid and amine components of the polymer. For example, each recurring unit of nylon 66 contains 10 methylene groups and 2 amide groups, for a ratio of 10:2, which reduces to 5:1. Each recurring unit of nylon 46 contains 8 methylene groups and 2 amide groups, for a ratio of 4:1. The Pall patent also illustrated a mixture having the ratio of 5:1.

Dr. Pall testified that he conducted experiments with several commercially available nylon resins. He found that a nylon resin having a methylene:amide ratio higher than 7:1 produced membranes that were less readily wettable, such that use of a wetting agent was required for optimum results. He therefore placed the upper limit of "about 7:1" in the claims. Dr. Pall stated that the only commercially available nylon resin with a ratio lower than 5:1 was a nylon with the ratio of 3:1, and that he made a membrane of the 3:1 nylon and found it to be soluble in alcohol and therefore unacceptable. No experiments were conducted with a nylon between 3:1 and 5:1, he testified, because none was commercially available. He placed the lower limit at "about 5:1." The reasons for these claim limitations also appear in the patent specification.

The district court found that Dr. Pall's use of the word "about" was "appropriate." We agree that the evidence showed that an exact limitation would have been inappropriate. However, the evidence showed that while a ratio of 7:1 was satisfactory, higher ratios were not, suggesting that the upper limit was close to 7:1, and did not extend to, for example, 8:1. At the lower ratios, although Dr. Pall conducted no tests with resins between 3:1 and 5:1, the 3:1 resin was clearly unsatisfactory. Reviewing all the evidence, the district court held that a literal reading of "about 5:1 to about 7:1" did not include the ratio
Since the claim is construed more narrowly than would literally encompass the ratio of 4:1, the district court’s finding that MSI’s nylon 46 membranes do not literally infringe the Pall patent is affirmed.

In determining the meaning of disputed claim language, we look first to the intrinsic evidence of record, examining the claim language itself, the specification, and the prosecution history. Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001) (citing Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

Here, the issue is how to construe the claim terms "about 600 to 700 umm (25-30 mesh)." Janssen encourages us to all but ignore the parenthetical statement "25-30 mesh," arguing that the claim reads on a bead measuring between about 600-700 umm across the center and the presence of the parenthetical should not change that interpretation. Janssen further asserts that measuring the diameter in terms of mesh cut looks beyond the plain meaning of the term "diameter." Eon, whose ANDA calls for cores measuring 20-25 mesh, naturally seeks a claim construction in which the mesh size is a positive limitation in the claim, or at least a product by process limitation. We believe that a claim construction in which "25-30 mesh" is a positive limitation best describes the invention of the '015 patent.

The shortcoming of Janssen’s arguments is that they fail to take into account the patentees’ description of what they invented. Specifically, whenever the written description describes the size of the cores, it always includes the mesh cut, see abstract line 2; col. 1, ll. 52, 53; col. 2, ll. 6, 12, 27; col. 3, line 23; col. 4, line 57; col. 5, line 18, and only rarely (twice) includes the micron size limitation (600-700 umm). Indeed, there are six places in the written description where the size of the cores is referred to only as "25-30 mesh" and nowhere is the micron size limitation referred to alone. Also counseling against adopting Janssen’s proposed claim construction is the fact that we generally interpret claims so that no term is superfluous. See Merck & Co. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005) (“A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.”); Power Mosfet Techs., L.L.C. v. Siemens AG, 378 F.3d 1396, 1410 (Fed. Cir. 2004) (stating that interpretations of claims rendering claim terms superfluous is generally disfavored). Were we to conclude that claim 1 simply covers all cores having a diameter 600-700 umm across the center we would be rendering the phrase "25-30 mesh" superfluous. The mere fact that a limitation is placed within parentheses does not mean it is no longer a part of the claim.

Additionally, evidence adduced at trial suggests that a person of ordinary skill in the art reading the claims in conjunction with the written description would understand claim 1 to require cores selected according to the industry standard sieving process and not simply particles having a certain micron diameter. In the pharmaceutical industry, cores are measured and labeled based on the size sieve they fall through. For example, a group of particles that falls through a 25 mesh sieve but stays on top of a 30 mesh sieve will be labeled "25-30 mesh," with the particles generally having diameters in the range of 600-710 umm. Similarly, a group of particles that falls through a 20 mesh sieve but stays on top of a 25 mesh sieve will be labeled "20-25 mesh," with the particles generally having diameters in the range of 710-850 umm. 2 There is no dispute that drug manufacturers identify core size based on mesh cut for pharmaceutical use. In fact, even one of Janssen’s research scientists testified that "mesh" "was an expression of the size of the sugar spheres, based, for example, on the number of sieve openings per surface unit." Thus, one having ordinary skill in this art would interpret "a diameter of from about 600 to 700 umm (25-30 mesh)" to describe cores 1) labeled 25-30 mesh at the time of manufacture and classification, and 2) having a particular diameter, about 600-700 umm.

2 At the time of manufacture and packaging for pharmaceutical use, 100 of the cores in a labeled product have fallen through the sieve with the larger openings and remained on top of the sieve with the smaller openings noted on the label. No manufacturer measures the size of individual cores. For quality control, a manufacturer performs analytical sieving (a second round of sieving) on a sample of the cores it intends to use to verify the sieves have produced a product which conforms to allowable specifications. To be within the standards of the American Society for Testing and Materials...
("ASTM"), the distribution of particles in a given lot may contain up to 10 cores larger than the largest named sieve and up to 10 cores smaller than the smallest named sieve.

3 Janssen also asserts that the district court improperly construed the term "about." Because the meaning of this term has no effect on our infringement and validity analyses, we do not reach the issue of its correct interpretation.

7. Less Than About 1 Liter / Minute

The seventh disputed claim term "less than about 1 liter/minute" is found in Claims 1 and 38 as set forth above.

   Erbe's Proposed Definition: 1 liter/minute or less than 1 liter/minute.

   Canady's Proposed Definition: Less than 1 liter per minute.

(Docket No. 42, p. 9). In viewing the claim language itself, it is clear that the term means less than 1 liter/minute. The prosecution history supports this construction. For example, in viewing the prior art of the '675 patent, the patent examiner noted that Canady fails to specifically disclose a flow rate which is less than 1 liter per minute. (Docket No. 63, Ex. 18, pp. 5-6). In response to this action by the patent officer, Erbe responded that "[a] flow rate of 1 litre per minute leads to a flow velocity of 19 m/h. …Such velocities in Canady would certainly be classified as laminar jets.…." (Docket No. 63, Ex. 19, p. 12). Because the '745 patent is limited to low flow rates that avoid the production of laminar jets and produce only non laminar, inert gas atmospheres (Id.), the term "less than about 1 liter/minute" must be construed as less than 1 liter per minute.

C. About a 75 Degree Arc

Claims 10, 23, and 38 provide, respectively: "light-transmissive material extends through about a 75 arc circumferentially;" "extends through about a 75 degree arc circumferentially of said elongated outer tube wall;" and "light transmissive window extends through about a 75 arc circumferentially of said wall."

Clinical Innovations argues that these claim terms should be construed to mean:

   The light-transmissive material extends only to about, approximately, or in the vicinity of a 75 degree arc around the tube. The material cannot extend to any materially greater amount, such as 100 degrees or all the way around the tube. 48

Utah Medical argues that they should be construed to mean:

   At least one of the windows that is made of light-transmissive material extends through a circumferential 75 degree arc of the outer tube circumferential wall. Any completely transparent device includes an arc of about 75 degrees, such as a totally clear tube. 49
The Court finds that "about" is so commonly understood a term that these claim terms need little or no construction. When used with numbers, "about" means "nearly, approximately; not many more or less." 50 or "reasonably close to." 51 No matter what dictionary is used, "about a 75 degree arc" cannot mean something that includes "a 360 degree arc." The Court finds Utah Medical's arguments to the contrary to be unpersuasive.

The Court construes these claim terms to mean "the light-transmissive material cannot extend to any materially greater amount such as all the way around the tube."


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2. "About a Center Line"

The parties also disagree as to the definition of "about a center line," another term used by the Court in construing "meander." Guidant asserts that "about a center line" means there must be the same amount of stent elements on either side of the line. By contrast, Medinol argues that "about a center line' means that the meander is oriented in a straight line, with repeating elements on either side of the straight line being the same distance from the line on each cycle." 99 But Medinol's definition cannot be correct because it is simply a long-winded way of saying "periodic." 100 Medinol's expert essentially admitted this at his deposition. 101 For this reason alone, Medinol's proffered definition must be rejected.

100 See Def. Reply at 5 ("By definition, a 'periodic pattern' has 'repeating elements on either side of the line being the same distance from that line').
101 See Snyder Dep. Tr. at 106, Ex. 5 to Shaffer Decl.:

103 Id.

104 See 2004 U.S. Dist. LEXIS 19705, [WL] at *5 n.64 (quotation and citation omitted).

Medinol argues that Guidant's definition would exclude two preferred embodiments of the patents-in-suit, namely Figures 2 and 7. Medinol is wrong as to both. While Medinol points to a center line in Figure 2 that appears to place unequal amounts of stent material on either side of the line, there is no indication in the written description that this was intentional. A court cannot rely on what could simply be a poor drawing. 105 Moreover, Guidant correctly notes that accepting Medinol's argument regarding Figure 2 would mean that Figure 2 does not meet Medinol's own definition of center line, which requires that "repeating elements on either side of the line [be] the same distance from that line." 106

105 See Nystrom, 424 F.3d at 1149 (citation omitted) (a court should not rely purely on drawings to gauge proportions between elements). Indeed, I note that the other center line depicted in Figure 2 does appear to leave equal amounts of stent material on either side of the center line.

106 Def. Reply at 6 n.5 (quoting Pl. Reply at 11).

Regarding Figure 7, Medinol contends that "under Guidant's definition, a longitudinal structure extending over an odd number of cells in a Figure 7-like stent can never be a "meander," because there will always be more loops on one side of the line." 107 But Medinol ignores the fact that Figure 7 is not intended to depict an entire stent, so the fact that there are an unequal number of loops on either side of Figure 7's center line is of no consequence. 108 Even if Figure 7's pattern were used throughout an entire stent, Guidant's definition can be refined to require that the elements of the stent be uniformly distributed on each periodic cycle.

107 Pl. Reply at 10 (citing Medinol PTO Statement at 5, where Medinol stated that the length of a stent "can be changed by removing or adding a row of cells") (emphasis added).

108 See, e.g., '120 Patent, col. 2, ll. 43-44 ("FIG. 7 is an illustration of a third embodiment of the pattern for the stent") (emphasis added).

Finally, Medinol asserts that its definition of "about a center line" is established by a PTO examiner's drawing, during prosecution, of a center line on a putative second meander pattern of the Burmeister application, a prior art stent design. 109 But it is unclear why a drawing made years before my claim construction in this case should override the plain meaning of the patents-in-suit and the intrinsic evidence before this Court.

109 See Pl. Mem. at 14. The Burmeister application, filed in 1994 and then abandoned, was discussed in Medinol III, 2005 U.S. Dist. LEXIS 35866, 2005 WL 3535062, at **2-3, 12. This drawing shows that the PTO examiner's center line leaves a much larger portion of the Burmeister application's putative second meander pattern below the line than above the line. See Pl. Noninfringement P65.

For these reasons, I conclude that "about a center line" means that the stent elements must be uniformly distributed about a center line on each periodic cycle. This is consistent with the plain meaning of "center line." 110

110 "Centerline" is defined as "A real or imaginary line that is equidistant from the surface or sides of something." Merriam-Webster Dictionary. Accord Webster's Ninth New Collegiate Dictionary (1991) (same).

The phrase "about said centerline" further characterizes the "lamp support means" as extending around the reflector center line and supporting the compact fluorescent lamps laterally spaced away from the centerline.
B. FLANGE

The claimed unit calls for a "tank rim engaging flange about its perimeter, said housing is positioned atop the tank with the flange engaged on the rim of the tank." There are two issues of disagreement regarding the flange: 1) whether the term "about" its perimeter is defined as "completely around" its perimeter, and 2) whether the flange must extend outwardly.


Plaintiff argues that the term "about" does not mean "completely around," and that the ordinary and accustomed definition can mean either "partially about" or "completely about." He uses the example of people sitting about a campfire to illustrate that one would ordinarily envision people unevenly dispersed around a campfire, not completely encircling the campfire. Although the drawings and the preferred embodiment illustrate a flange completely around the perimeter of the unit, Plaintiff points out there is no limitation or modifier of the word "about" in the claim language. Accordingly, Plaintiff contends the claim should not be limited to the preferred embodiment. Plaintiff also argues that "about its perimeter" is not a limitation, but simply refers to the location of the flange. Finally, Plaintiff argues that, because Claim 10 refers to a "support flange" and Claim 1 refers only to a "flange," Claim 1 should be interpreted broadly, based on the doctrine of claim differentiation.

On the other hand, Bunn-O-Matic argues that the term "about" means "completely around," reasoning that "completely around" is the ordinary and accustomed meaning, based on at least one dictionary definition. Defendant contends that the illustration of the invention in Figure 4 supports its definition. Defendant suggests that using the word "completely" next to "about" in the claim would be redundant, using the example of the term "completely pregnant" to illustrate its point.

After applying the rules of claim construction, the Court holds that the Plaintiff's interpretation of the "flange" language is correct.

a) Claim Language

The analysis begins, as always, with the language of the claim, which calls for a "tank rim engaging flange about its perimeter." The general term "about" does not contain a modifier, thus, rules of claim construction would suggest that none be added. The terms "completely" or "partially" are not mentioned next to the term "about."

The paragraph just prior to the claim states: "Having illustrated and described only one typical preferred form and embodiment of my invention, I do not wish to be limited to the specific details herein set forth, but wish to reserve to myself any modifications and/or variations that might appear to those skilled in the art and which fall within the scope of the following claims:" (‘664 Patent Col. 14 line 15-21).

1 Unless otherwise noted, all patent reference will be to the ‘664 patent and citations will refer first to column number, then to the first line of the cited language. Thus, Column 14 line 15-21 of the ‘664 patent will be cited as "(Col.14:15)".

Defendant argues that this is simply boilerplate language. Plaintiff contends that the boilerplate language reflects the language of the statute, which only requires that the inventor "set forth the best mode contemplated by the inventor of carrying out his invention." 35 U.S.C. § 112. It is apparent to the Court that the patentee did not want to limit the scope of the claims. It is also apparent that the inventor informed the public that the described invention was only one preferred embodiment, to which the claims should not be limited.

b) Written Description

The Court next looks to the patent specification, that is, the written description. The paragraph immediately preceding the
"DESCRIPTION OF DRAWINGS" states "The foregoing and other objects and features of my invention will be fully understood from the following detailed description of one typical preferred form and application of my invention, throughout which description reference is made to the accompanying drawings." ('664 Patent Col. 4 line 57). Therefore, the inventor intended that the description and drawings were only one preferred embodiment of the invention.

The specification of the preferred embodiment describes "an outwardly projecting horizontal support flange 34 about the upper perimeter of lower said portion defined by the walls 30, 31, and 32." (Col. 7:32). Again, there is no modifier or limitation to the term "about," however, for location purposes, the description denotes that the flange is "about the upper perimeter" of the lower portion of the housing, as opposed to simply "about its perimeter" as in Claim 1. This supports Plaintiff's argument that the terms were used to identify the location of the flange, not to impose a limitation. Although Figure 4 of the preferred embodiment illustrates a flange completely around the perimeter of the housing unit, the law does not limit the claim to the preferred embodiment.

c) Prosecution History

Third, the Court looks to the patent prosecution history. The history provides no specific reference to the flange or the terms "about its perimeter." However, included in the letter from the PTO after the PTO's approval is the following Examiner's Statement of Reason for Allowance: "The primary reason for the allowance of claims 1-18 was the combination of the supply tank and attachment unit, said attachment unit comprising a housing mounted atop said tank and enclosing dry powdered beverage concentrate and water discharge apparatus which operate in response to the level of beverage in the tank. The above was found in all the claims but not in the prior art." (Pl. Ex. 7 p.2).

Thus, the primary reason for allowance was not the specific elements of the invention, but the overall combination into one unit. This factor also weighs in favor of a broad definition of the terms.

d) Dictionary Definition

Finally, the Court looks to a dictionary definition to suggest an ordinary and accustomed meaning to the term. However, the dictionary definition cannot be used if it varies or contradicts the terms of the claim. Vitronics, 90 F.3d at 1584 n.6.

The term "about" is used as a preposition in the phrase "about its perimeter." Looking to the meaning as it refers to a preposition, the following relevant definitions appear: "1. around; on all sides of; 2. here and there in; everywhere in; 3. near to." WEBSTER'S NEW WORLD COLLEGE DICTIONARY 4 (3d ed. 1997). Another dictionary cites the following: "1. on all sides of: surrounding; 2. in the vicinity of: around; 3. almost the same as: close to." WEBSTER'S II NEW RIVERSIDE UNIVERSITY DICTIONARY 67 (1994). It would seem that both Plaintiff's proffered definition and Defendant's proffered definition are plausible. However, the fact that Plaintiff argues that the term not only means here and there, but is also an identifier of the location of the flange weighs in Plaintiff's favor, accounting for two out of a possible three definitions in each dictionary.

e) Extrinsic Evidence

The meaning of the term "about" is made clear from an analysis of the intrinsic evidence and the dictionary, therefore, it is unnecessary to look to extrinsic evidence for claim interpretation.

Based on the foregoing analysis, the Court holds that the term "about" in this context is not limited to "completely around." The term "about" does not contain a limitation or modifier in the claim language and therefore none should be read in to its meaning. Plaintiff's argument that "about the perimeter" identifies the location of the flange, and that the interpretation of the claim should not be limited to the preferred embodiment is in accordance with proper patent construction rules.

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3. Claim 6, Step (c)

Step (c) reads: "Forming a second circumferential incision in the epidermis about 3 millimeters cranial to the first
circumferential incision, thereby severing at least some of the subcutaneous fascia from the ungual crest …." Defendant argues that Step (c) is invalid for indefiniteness in two ways.

First, Defendant asserts that the phrase "about three millimeters" provides no instruction to those skilled in the art and is thus indefinite. Defendant relies primarily on In re Oetiker, 23 U.S.P.Q.2d 1641 (Bd. Pat. App.1990) (finding indefinite the phrase "length on the order of 5 mm" to describe leg portions of a patent), and Ex parte Brummer, 12 U.S.P.Q.2d 1653, 1989 Pat. App. LEXIS 11 at *4 (Bd. Pat. App. 1989) (holding patent claims to a bicycle seat indefinite because the seat's measurements were based on a percentage of the rider's height and weight, reasoning "the same bicycle might fall within this language … when ridden by a rider or one combination of weight and build, but not when ridden by a rider of another"). Plaintiff, pointing to the specification, argues that this terminology has a clear meaning. The specification explains: "The position of the second incision 3 millimeters cranial of the first incision is based upon the average size of the household cat. For smaller animals the distance will be smaller, and for larger animals the distance will be larger." Id.

As stated above, when a "word of degree" is used in a claim, a court "must determine whether the patent's specification provides some standard for measuring that degree." Datamize, LLC, 417 F.3d at 1349. In In re Oetiker, the court held "have a length of the order of 5 mm" indefinite because "there are no guidelines in appellant's specification to enable one skilled in the art to determine whether or not a given leg portion has a length of the order of 5 mm." 23 U.S.P.Q.2d 1641, 1990 Pat. App. LEXIS 37 at *15. In contrast, the '579 patent's intrinsic evidence provides at least some guidance as to the second incision's location and purpose. The specification, which is accompanied by Figure 2, explains:

The traction in the direction T causes the epithelium to release from its distal attachment and permits a second circumferential incision of the redundant epithelium approximately 3 millimeters cranial from the first incision along the line B-B. This second incision allows slightly deeper subcutaneous fascia to be moved cranially over the ungual crest as well.

The position of the second incision 3 millimeters cranial of the first incision is based upon the average size of the household cat. For smaller animals the distance will be smaller, and for larger animals the distance will be larger.

The Federal Circuit, considering similar allegations of indefiniteness, has permitted approximate measurements if the words used are "as accurate as the subject matter permits." See Orthokinetics v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576 (Fed. Cir. 1986). In Orthokinetics, the court found valid the term "so dimensioned," which the patent used to describe the measurements of a pediatric wheelchair that helped disabled children in and out of cars:

In a wheel chair having a seat portion, a front leg portion, and a rear wheel assembly, the improvement wherein said front leg portion is so dimensioned as to be insertable through the space between the doorframe of an automobile and one of the seats thereof whereby said front leg is placed in support relation to the automobile and will support the seat portion from the automobile in the course of subsequent movement of the wheel chair into the automobile ….

Id. at 1568 (emphasis added). The court acknowledged that "one desiring to build and use a travel chair must measure the space between the selected automobile's doorframe and its seat and then dimension the front legs of the travel chair so they will fit in that particular space in that particular automobile," but found that "the claims were intended to cover the use of the invention with various types of automobiles" and that the phrase was "as accurate as the subject matter permits, automobiles being of various sizes." Id. at 1576. The court emphasized that "patent law does not require that all possible lengths corresponding to the spaces in hundreds of different automobiles be listed in the patent, let alone that they be listed in the claims." Id; see also Andrew Corp. v. Gabriel Elecs., 847 F.2d 819 (Fed. Cir. 1988) (finding the words "approach each other," "close to," "substantially equal to" and "closely approximate," which described the configuration of a horn reflector microwave antenna used in long distance telephone and data networks, specific enough because "it became very clear during trial … that curves showing RPEs for horn antennas will never be identical."); Rosemount, Inc., 727 F.2d at 1547 (Fed. Cir. 1984) (finding the phrase "close proximity," which described the distance between a mounted transistor and high impedance material, acceptable because the description was "as precise as the subject matter permits").

In light of Orthokinetics, Andrew Corp. and Rosemount, the Court finds that Defendant has not proved by clear and convincing evidence the phrase "about three millimeters" is indefinite. The claim could be more definite, but in light of the specification, Figure 2 and the variation inherent in cat sizes, the Court finds that one skilled in the art would know where to make the second incision.
At oral argument, Defendant presented an exhibit depicting five photographs of post-operative cat claws. Dr. Young testified that he believed the cat claws numbered 3 and 5 were larger-than-average; yet, when defense counsel measured the distance between the striation marks of the first and second incisions, it was less than 3 millimeters. Defendant argues that this in-court exercise demonstrates the indefiniteness of the 3 millimeter estimate and the specification's statement that "for smaller animals the distance will be smaller, and for larger animals the distance will be larger." Although the specification contains the preferred embodiment, which states that the distance between incisions correlates to the size of the cat, the Court will not narrow Claim 6, step (c) accordingly. While the phrase "about three millimeters" is not as precise as possible, the claim avoids indefiniteness because it is not "insolubly ambiguous." Honeywell Int'l, 341 F.3d at 1338; see also Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001).

Second, Defendant contends that Step (c)'s use of the word "epidermis" renders it indefinite. Defendant queries how the epidermis, which it defines as "the surface layer of the skin," can be incised in Step (c) if the epidermis has already been incised in Step (a) ("forming a first circumferential incision … in the epidermis …"). 9 noting that the top layer of skin cannot be incised twice. The specification only adds to the confusion, Defendant asserts, because it instructs the surgeon to make a "second circumferential incision of the redundant epithelium approximately 3 millimeters cranial from the first incision." Defendant notes that a medical dictionary defines epithelium as "the covering of internal and external surfaces of the body." See DORLAND'S ILLUSTRATED MEDICAL DICTIONARY 400 (26th ed. 1981). In other words, Defendant argues that the definitions of epidermis and epithelium are mutually exclusive because cutting into the epithelium requires cutting through the epidermis and the underlying layers; thus, both terms cannot be used to describe the skin to be incised in Step (c). Plaintiff counters that "epithelium" and "epidermis" can be used interchangeably when referring to a feline's claw.

Because of its use of the words "and then" between all steps, Claim 6 requires the surgeon to have completed Steps (a) and (b) before moving to Step (c).

A word will not render a claim invalid if it can be given any reasonable meaning: "If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds." Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1347 (Fed. Cir. 2005) (citing Exxon Research & Eng'g, 265 F.3d 1371, 1375 (Fed. Cir. 2001)). In this case, the '579 patent's subject matter, the other steps in Claim 6, the specification's language, and Figure 2, all taken together, adequately instruct a person skilled in the art that the word epidermis, as used throughout Claim 6, simply means "skin," and does not refer only to the skin's top layer. 10 The patent's intrinsic evidence conveys that the second incision must occur after the first incision during which some skin will have already been retracted. The intrinsic evidence also makes clear that the second incision's purpose is to retract more skin for covering the post-operative wound. Although the claim is certainly not an example of clear drafting, a person skilled in the art would be able to discern the meaning of the word "epidermis" as used in Step (c). Thus, the word does not render the claim indefinite.

Indeed, this more general definition has been used in at least one respected medical dictionary. See TABLER'S CYCLOPEDIC MEDICAL DICTIONARY (17th ed. 1993) (defining "epidermis" as "skin").
Whirlpool contends that the term "above" should be construed to mean "on top of." Defendants contend that the term "above" should be construed to mean "over." Both definitions are found in the dictionary. For example, the Oxford English Dictionary Online defines "above" as "Directly over, vertically up from; on or over the upper surface; on the top of, upon, over." Accordingly, the Court must determine which definition best matches the term as it is used in the context of the patent. Home Diag., Inc. v. LifeScan, Inc., 381 F.3d 1352, 1358-59 (Fed. Cir. 2004).

Whirlpool contends that its proposed construction of "above" to mean "on top of" best matches the term as used in the context of the patent because the patent specification repeatedly and consistently refers to cloth items "above" the impeller as being in direct contact and in frictional engagement with the impeller. For example,

"The motion of cloth items within the wash chamber is created by direct contact between an oscillating impeller and the cloth items supported above the impeller."

'722 Patent, col. 2 ll. 43-45 (emphasis added).

This inverse toroidal rollover pattern is created by direct contact between the oscillating impeller and the cloth items supported above the impeller.

'722 Patent, col. 3 ll. 3-5 (emphasis added).

However, when the impeller 40 oscillates, the frictional engagement between the impeller 40 and the cloth items in the lower transfer zone . . .

'722 Patent, col. 5 ll. 60-63 (emphasis added).

Defendants contend "above" should be construed according to its ordinary meaning of "over." Defendants contend that Whirlpool's attempt to narrowly construe "above" to mean "on top of" is an effort to imply contact and frictional engagement between the impeller and the cloth items and is designed to respond to Defendants' prior art defenses. Defendants contend these efforts must fail because the specifications cannot be used to limit the claims. In addition, Defendants contend that the word "above" should not be given two different meanings within the same patent. Claim 3 refers to "free liquid in which the cloth items can be suspended in above the impeller." '722 Patent, Claim 3, col. 12 ll. 16-17. Defendants note that cloth items cannot be suspended "on top of" the impeller, and that this is a further basis for defining "above" as over.

The Court agrees that the reference in Claim 3 to "liquid in which the cloth items can be suspended in above the impeller," indicates a use of "above" that does not necessarily mean on top of or in physical contact with the impeller. Furthermore, Claim 2 recites "a lower transfer zone immediately above the impeller" and Claim 6 recites "less than the quantity of wash liquid at which the cloth items lose frictional engagement with the cloth items directly above the impeller." If "above" were to be construed to mean "on top of" it would render the terms "directly" and "immediately" superfluous.

In contrast to the difficulties met when "above" is construed to mean "on top of," construing "above" as "over" is appropriate in all contexts in the patent. There may be other terms used in the patent that suggest touching between the cloth and the impeller, but the use of the term "above" does not. It appears that the term "above" was used in its broad and most common form to mean "over," and that it is narrowed in the claims through its association with other terms such as dragged, frictional engagement, directly, and immediately. Accordingly, the Court will construe "above" as "over."

"Above" in Element 3

Turning to the term "above" in element 3, 29 W. Mem. 27 echoes Whirlpool's claim 1 contention by asking for the more specific meaning of "directly over' something else." But nothing in the claim language calls for such a narrow definition. If
anything, the earlier analysis as to the use of the word "adjacent" applies here a fortiori. In normal parlance, the spatial relationship indicated by the term "above" far less frequently connotes "immediately above" than "adjacent" suggests "immediately abutting." Importantly, the functionality obtained by placing the stepped portion of the upper rack above the high side wall of the lower rack is not necessarily thwarted if the stepped portion is not directly over the side wall, for oversized items can still fit into the larger space created on that side of the washer. In all events, though, the functionality is not incorporated in the claim language.

30 That functional purpose is not served by stepped portions of the upper rack that are positioned too far inward from the high side wall of the lower rack.

31 If Maytag had wanted to advert to all three stepped portions, it could readily have drafted the element to say (for example) "above said basic rack" rather than "above said one higher side wall of said basic rack" (contrast element 1 with element 3). Indeed, M. Mem. 29 characterizes the term "above" as identical to "adjacent," and the other less elevated steps are certainly not adjacent to the high side wall of the lower rack.

This Court therefore rejects both polar positions offered by the parties. As used in element 3, "above" means neither "directly above" nor simply "at a higher place than." Instead it means "at a place higher than the high side wall such that a sufficient space is formed laterally inward from that side wall and vertically between that wall and the stepped portion of the upper rack to enable the washing of oversized articles."

37 c. "above"

A claim construction that excludes a preferred embodiment is "rarely, if ever, correct." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996). The first element of claim 1 recites that the metal interconnect layer is formed "above" the substrate surface. The specification states, as illustrated in Figure 1, that the interconnect layer (16) may be separated from the substrate layer (10) by a dielectric layer (12). Thus, the metal interconnect need not sit directly on top of the substrate layer. As is advocated by EMI, the court finds that the term "above" means higher than, but not necessarily directly in contact with.

38 b. The "above" limitation

Claim 1 requires a "a first semi-spherical reflector mounted above the first LED." 5 Defendants submit that the ordinary and customary meaning of "above" is "in or to a higher place; overhead." 6 Terlep argues that since the dictionary definition of "above" impliedly uses the Earth as a reference point and the Earth is nowhere mentioned in the claims, that the Court must
look to other intrinsic evidence to correctly construe what "above" means. Terlep, however, points to no intrinsic evidence outside the claims themselves the Court should consider. The only evidence Terlep points to is his deposition wherein he testified "The relationship between the reflector and LED is not referenced to the world. It's referenced to each other."

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - - 
5 Doc. 29, Ex. 1 (The '433 patent), column 6, lines 20-21.

6 Webster's Encyclopedic Unabridged Dictionary of the English Language (1989).

Extrinsic evidence used in construing a patent's claim includes the inventor's testimony. Zodiac Pool Care, Inc. v. Hoffinger Industries, Inc., 206 F.3d 1408 (Fed. Cir. 2000). A court should turn to extrinsic evidence only when the intrinsic evidence is insufficient to establish the clear meaning of the asserted claim. Zodiac, 206 F.3d at 1414. The use of extrinsic evidence when construing a patent's claims is rare. See Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258 (Fed. Cir. 2001); Dow Chemical Co. v. Sumitomo Chemical Co., Ltd., 257 F.3d 1364 (Fed. Cir. 2001). A court acts improperly when it uses extrinsic evidence to contradict claim construction unambiguously apparent from the intrinsic evidence. Pitney Bowles, Inc. v. Hewlett-Packard Co., 182 F.3d 1298 (Fed. Cir. 1999). Litigation induced pronouncements of an inventor have no effect on what the words of a claim do in fact convey. Lear Siegler, Inc. v. Aeroquip Corp., 733 F.2d 881 (Fed. Cir. 1984).

Here, if the Court accepted Terlep's testimony as a correct construction of the "above" limitation, the "above" limitation would effectively be read out of the claim. This would be in clear contradiction to the intrinsic evidence and the ordinary and customary meaning of the word itself. Such an interpretation would also be in contradiction to Figures 2A and 2B 7, which are drawings of the embodiment, and the descriptions of the figures. 8 Figures 2A and 2B show a reflector mounted above, in a higher place than, or overhead of an LED. Therefore, the Court construes the "above" limitation to mean "a first semi-spherical reflector mounted in a higher place than or overhead of the first LED."

- - - - - - - - - - - - Footnotes - - - - - - - - - - - - 
7 Doc. 29, Ex. 1 (The '433 patent), Sheet 2 of 7.

8 Doc. 29, Ex. 1 (The '433 patent), column 3, lines 40-49, and column 3, lines 66-67 through column 4, lines 1-6.
2. What is the Proper Construction for the Phrase "heating . . . in the absence of pressure or shear" in the '311 Patent?

Claim 1 and claim 94 of the '311 patent include the phrase: "heating said substantially uniform mixture, in the absence of pressure or shear sufficient to convert the binder particles . . . ." KXI contends the phrase "in the absence of pressure or shear sufficient to convert the binder particles" means that any pressure and shear applied to the "substantially uniform mixture" during heating should not be sufficient to convert the binder particles to a continuous web matrix or forced point-bonds. KXI also contends this phrase does not require that all of the mixture be heated prior to the application of sufficient pressure and shear to convert the binder particles. Culligan contends "in the absence of pressure or shear sufficient to convert the binder particles" means subjecting the mixture to "as little pressure and shear as possible during the entire heating process." Culligan contends at a given location along the extruder, the entire mixture must be fully heated before sufficient pressure and shear are applied to the mixture to convert the binder.

According to KXI, some pressure or shear is permitted while the mixture is being heated, so long as there is not enough pressure or shear to convert the mixture into a continuous web matrix or forced point-bonds. KXI cites passages from the '311 patent specification that disclose the presence of some pressure or shear before the "substantially uniform mixture" has been heated to a temperature above the binder's softening temperature. See U.S. Patent No. 5,019,311, column 19, lines 35-48; column 19, lines 39-42; column 12, lines 61-66.

Culligan argues that the prosecution history of the '722 patent supports its interpretation. The application which led to the '722 patent was originally filed as a subsequent, divisional application of the co-pending application which led to the '311 patent, and was prosecuted after the '311 patent issued. The court will not rely on the prosecution history of the '722 patent here in interpreting the claims of the '311 patent.

Culligan cites passages from the '311 patent's specification stating that no pressure should be applied after heating. Culligan cites column 18, line 67 to column 19, line 2. This states "during heating, no pressure is applied and no effort is made to consolidate the powder. The powder must be at the desired temperature before pressure and shear are applied." The court notes, however, that the statement was made in the context of a discussion of compression molding, one method offered for producing the composite material. Culligan also cites passages from the '311 patent's specification stating that the mixture should be heated "in the absence of any significant pressure or shear." U.S. Patent No. 5,019,311, column 5, lines 3-15; column 12, lines 33-41.

The court agrees with KXI that the '311 patent's specification permits some pressure or shear to occur before the particulate mixture has been heated to a temperature "substantially above the binder's softening temperature." The court construes the contested phrase according to the plain language of the words of the claim. Accordingly, the court construes the phrase "in the absence of pressure or shear sufficient to convert the binder particles" as follows: any pressure and shear applied to the mixture must not be sufficient to convert the mixture to a continuous web matrix or forced point-bonds until the mixture has been heated to a temperature substantially above the softening temperature of the binder.

KXI contends the claims of the '311 patent do not require all the mixture to be heated prior to the application of sufficient pressure and shear to convert the binder. Culligan contends that all of the mixture at a given axial location must be fully heated before pressure and shear are applied to convert the binder. The court finds no reason to read either of these interpretations into the definition of the contested phrase.

2. Claim 2

Both parties have identified one phrase in dependent Claim 2 that requires construction - "absorbable plug." Claim 2 describes a needle assembly as claimed in Claim 1 wherein the means for positioning includes "an absorbable plug." (760 Patent col. 5. ll. 52-53.) The Court has already construed the term plug. Thus, the only issue is the construction of the term
"absorbable." The World Wide Plaintiffs urge the Court to construe this phrase as "which can be broken down and absorbed within the human body, but not necessarily eliminated." AnazaoHealth has defined absorbable as "where such material is taken up by the body especially by capillary, osmotic, solvent, or chemical action, but does not include material comprising solid polymers that can be carried in a volatile organic solvent."

Webster's Third New International Dictionary defines "absorbable" as "capable of being absorbed." Id. at 7. "Absorb" is defined as "to take up by various means," citing as examples by capillary, osmotic, solvent, or chemical means. Id. The Court agrees with the World Wide Plaintiffs that the term should not be limited to examples listed in one particular and general dictionary. See Phillips, 415 F.3d at 1321-22 (discussing the hazards of relying on general dictionary definitions). Perhaps a more meaningful dictionary definition is from Dorland's Illustrated Medical Dictionary, which defines "absorb" as "to take in or assimilate, as to take up substances into or across tissues." Id. at 7 (28th ed. 1994).

The only reference in the specification to an absorbable plug is in the summary of the invention wherein it states that the biocompatible end plug may be made of a variety of materials including absorbable or non-absorbable suture materials. ('760 Patent at 2:36-37.) The Dorland's Medical Dictionary defines absorbable sutures as "a strand of material used for closing wounds which is subsequently either digested by proteolytic enzymes derived from inflammatory cells or hydrolyzed by water." Id. at 1614. American Cyanamid Co. v. U.S. Surgical Corp., 833 F. Supp. 92 (D. Conn. 1992), involved a patent for synthetic absorbable sutures. It described an absorbable suture as one which is designed to hold tissue together for only a few weeks while healing occurs and is then broken down by body moisture into components that the body can metabolize. Id. at 98.

The prosecution history references "absorbable" in distinguishing the Mercereau Patent, stating that Mercereau does not anticipate Claim 2, as amended, because the lubricious material, solid polymers in a volatile organic solvent, would not be absorbable. (W0481-W0482.) The fact that the patentees distinguished the material used by Mercereau, however, as not being absorbable does not mean that this should be incorporated into the construction of the term "absorbable."

The Court also finds no support in the intrinsic record for including the phrase added by Plaintiffs "but not necessarily eliminated." There is nothing in the specification or prosecution history that discusses whether an absorbable plug is eliminated from the body or not. Plaintiffs cite to the deposition of Mr. Lamoureux, who testified that one of ordinary skill in the art would recognize such a restriction. The Federal Circuit has cautioned that the testimony of an inventor concerning claim construction should be given little or no weight as it is often self-serving and an after-the-fact attempt to state what should have been part of the patent application. See Roton Barrier, Inc. v. Stanley Works, 79 F.3d 1112, 1126 (Fed. Cir. 1996); North Am. Vaccine, Inc. v. Am. Cyanamid, Inc., 7 F.3d 1571, 1577 (Fed. Cir. 1993), cert. denied, 511 U.S. 1069, 114 S. Ct. 1645, 128 L. Ed. 2d 365 (1994).

Accordingly, the Court finds that one of ordinary skill in the art would understand "absorbable plug" in the context of the '760 Patent to mean "an object or material used to fill or seal an opening that is capable of being assimilated or broken down by the human body."

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2. "an absorbent core"

KC contends that the term "an absorbent core" found in Claims 1, 6, 8, and 10 means "a portion of the absorbent article containing a liquid permeable cover, a liquid permeable baffle, and an absorbent layer therebetween, having not more than one transverse fold line." (doc. 150 at 32-33.) First Quality agrees with most of KC's construction except for the phrase "having not more than one transverse fold line." First Quality argues this additional language "impermissibly attempts to read-in additional limitations from the stated 'object' of the invention." (doc. 168 at 84.)

In support of its construction, KC cites to the specification which provides, in relevant part, that the absorbent core "includes a liquid permeable cover, a liquid impermeable baffle, and an absorbent layer positioned therebetween." U.S. Patent No. 6,702,798 B2, col. 4, ll. 38-41. In addition, the specification explains that when the absorbent article is transversely folded along the demarcation line "the absorbent core will contain only one transverse fold line located approximately along transverse centerline Y-Y thereby minimizing the chance of fluid leakage." U.S. Patent No. 6,702,798.
Here, the evidence supports First Quality's construction. The pertinent specification language KC relies on to support its construction only encompasses one embodiment of the invention. The specification clearly states that "[w]hen the absorbent article is folded in this manner, the absorbent core will contain only one transverse fold line." Id. at col. 11, ll. 51-53 (emphasis added). This language indicates that only when the article is folded in this specific fashion will the absorbent core have only one transverse fold line. KC's proposed claim construction also conflicts with the previously cited section of the specification which provides that the purpose of folding the article at the demarcation line was to eliminate transverse folding of the absorbent core. See Id. at col. 1, ll. 40-48. Indeed, the specification readily supports First Quality's construction by clearly providing that the absorbent core "includes a liquid permeable cover, a liquid impermeable baffle, and an absorbent layer positioned therebetween." U.S. Patent No. 6,702,798 B2, col. 4, ll. 38-41. Thus, we conclude that the claim language and the specification supports First Quality's proposed claim construction. Therefore, we will construe the term "an absorbent core" found in Claims 1, 6, 8, and 10 to mean "a portion of the absorbent article containing a liquid permeable cover, a liquid impermeable baffle, and an absorbent layer therebetween."

Based on a review of claim language, the specification, and the prosecution history, the Court concludes that a wicking layer, even if separate from the storage core, forms part of the "absorbent panel," and thus must be included in making the thickness measurements. The patent's definition of "absorbent panel" itself provides little guidance on this issue. The specification of the Pieniak patent defines the 'absorbent panel as "comprising," certainly does not exclude the possibility that a separate wicking layer should be considered part of the absorbent panel. Nevertheless, the Pieniak patent's definition of "absorbent panel," by use of the term "comprising," does not exclude the possibility that a separate wicking layer should be considered part of the absorbent panel. Perhaps the strongest evidence that a wicking layer is a part of the "absorbent panel" comes from the Pieniak's patent description of its preferred embodiment. The preferred absorbent panel expressly includes "an associated wicking layer of densified cellulosic fibers provided on one or both of the expansive surfaces of the fibrous web for enhancing liquid transport within the absorbent matrix." Id. at 4:34-40; see also id. at 9:13-32 (indicating that the absorbent matrix in the preferred embodiment includes at least one wicking layer). In fact, Sample LBD included two wicking layers, both of which were considered part of the absorbent matrix and included in the thickness measurement listed in Table I. Id. at 9:13-39; [Tr. at 2097-98]. The specification thus teaches to one of ordinary skill in the art that if the diaper contains a wicking layer, it forms a part of the absorbent panel and must be taken into account in determining the thickness in the crotch region, and hence the CSB and AEI as well.

Paragon argues that the CS-10 layer in the accused diapers is not analogous to the wicking layers in Sample LBD because the former is separated from the storage core by a tissue layer, whereas the latter were embedded on the top and bottom sides of the fibrous web of the absorbent matrix. It follows from Paragon's argument that only wicking layers which are attached to the storage core fall within the definition of "absorbent panel," while wicking layers that are separate from the storage core do not.
The patent, however, does not teach that such a distinction should be made. The CS-10 layer in the accused diapers serves the same purpose and functions in essentially the same manner as the wicking layers in Sample LBD. The purpose of the CS-10 layer is to enable the diapers to handle high rates of urine discharge by facilitating the transportation of urine to the storage core. [Tr. at 1998-2000, 2014-15, 3180-84]. It performs this function by providing temporary storage capacity for urine, and, over time, permitting the urine to be distributed and absorbed by the storage core. Id. Thus, like the wicking layers in Sample LBD, the CS-10 layer plays an important role in the efficient acquisition and storage of urine by the superabsorbent material in the storage core. This identity of functionality strongly suggests to one of ordinary skill in the art, as matter of claim construction, that the patent's failure to make the distinction between a wicking layer which is embedded in the fibrous web and a wicking layer that sits atop the fibrous web warrants equal treatment for both types for purposes of determining the composition of the absorbent panel. See [Tr. at 3116].

In addition, the inclusion of a wicking layer, assuming the diaper in question contains one, in measuring the thickness of the absorbent panel corresponds with the primary objective of the Pieniak invention. The Pieniak patent is replete with statements and teachings that the "improved fit and comfort" objective of the claimed invention is directly related to reducing the bulk of the diaper in the crotch region. The Pieniak patent accordingly uses the cross-sectional area of the absorbent panel as the yardstick for determining whether a particular diaper is sufficiently thin and narrow that it is covered by the claims of the patent. The presence of a wicking layer in any diaper invariably contributes to the bulk in the crotch region. Because the CSB is the test provided in the patent to gauge the relative bulkiness of the diaper, the inclusion of the thickness and bulk of a wicking layer in making this calculation, regardless of whether it is separate from the storage core, is consistent with the patent's claimed coverage of only relatively low bulk disposable diapers.

The conclusion that a wicking layer, if present, forms part of the absorbent panel, is also consistent with the prosecution history of the Pieniak patent. In their last submission before allowance of the Pieniak patent, the applicants represented that the significance of the Pieniak invention was that it claimed a diaper with less bulk in the crotch region than the prior art. The applicants stated:

It is the Applicants who have discovered and claimed a diaper structure which is of a low bulk. . . . In this regard, claim 1 specifies a disposable diaper having a cross-sectional area in the portion of the diaper between the thighs of the wearer of no more than about 0.6 square inches. . . .

. . . claim 1 should be in condition for allowance as it now requires a diaper with low-bulk in the crotch region. . . .

[DTX 2, at 285, 287 (emphasis added)].

The Court does not mean to suggest that the applicants' representations to the patent examiner override the unambiguous language in claim 1 that only thickness of the absorbent panel should be measured in computing the CSB and AEI. The Court finds only that these remarks lend support to the conclusion that the inventor's definition of absorbent panel includes all the material sandwiched between the topsheet and backsheet that plays a role in the absorbent capabilities of the diaper. See [DTX 1, at 1:19-25].

Paragon asserts that if the Court holds that a separate wicking layer forms part of the absorbent panel, the Court would be construing claim 1 to require the presence of a wicking layer, a limitation not present in that claim. Paragon therefore asserts that such an interpretation would be contrary to the doctrine of claim differentiation, given claim 9's express requirement of the presence of a wicking layer in the absorbent matrix. This argument completely mischaracterizes the issue before the Court. The issue does not involve whether claim 1 requires an infringing diaper to contain a wicking layer. Rather, the issue before the Court is whether a wicking layer forms part of the absorbent panel, if the diaper accused of infringement contains this element. The Court's holding thus in no way adds the limitation of a wicking layer to claim 1 of the Pieniak patent.

Based on the foregoing, the Court finds that a person of ordinary skill in the art at the time of invention would have understood the term "absorbent panel" to include a wicking layer, if one is present, regardless of whether this layer is separate from or attached to the diaper's storage core. It follows that a wicking layer, if present, must be included in the thickness measurements underlying the determination of an accused diaper's CSB and AEI. 38
38 Even the Court did not find, as matter of claim construction, that one of ordinary skill in the art would conclude that a wicking layer, if present, forms a part of the "absorbent panel," the Court would find as a matter of fact that the CS-10 layer in the accused diaper forms a part of the absorbent panel. The evidence establishes that the CS-10 layer makes up the top layer of the absorbent panel, forming part of the absorbent capacity of the diaper itself. [Tr. at 3180-84]. The CS-10 layer absorbs and temporarily stores urine, gushes before distributing most of the urine to the storage core. [Tr. at 1752, 2000, 2014-15, 3180-84]. The CS-10 layer thus constitutes 'absorbent material" because it has the power, tendency, or capacity, to absorb. See Webster's Third New Int'l Dictionary 7 (1981).

I. Claim Construction

Claim construction is a purely legal question appropriate for the Court to decide on summary judgment. See Cybor Corp. v. FAS Techs, Inc., 138 F.3d 1448, 1451 (Fed. Cir. 1998). In conducting its claim construction, the Court considered the plain meaning of the words in Claim 1, the specification and the prosecution history. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) (finding that the scope and meaning of a claim is determined by the language of the claim, the written description and the prosecution history of the patent). The Court's claim construction focused on the two key aspects of this action: (1) the meaning of the word "abutment" in the path of the latch arm and (2) the meaning of the word "prevent."

First, the Court interprets the word "abutment" under its ordinary and customary meaning. In Webster's Third New International Dictionary, abutment is defined as "the place where touching occurs" and "a fixed point from which resistance is obtained." Because "it is always necessary to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning," the Court has reviewed the specification as well. Vitronics Corp., 90 F.3d at 1582 (finding that the "specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication."). The specification teaches the Court that the abutment or dimples must be positioned in the path of the arm and "extend laterally over the arm assembly where they are in position to abut it and restrict its rotation away from the floor." Specification at column 4, 1. 2-4. Thus, the Court construes abutment to mean a dimple that protrudes into the path of the arm a sufficient amount so as to restrict motion, but not necessarily so much so as to extend over the entire arm like a bar or even to protrude out like tabs. Although the specification uses the word "tabs," the claim itself purposefully does not use the word "tab." Most importantly, although the specification describes the abutment as extending over the arm, the claim itself merely defines the abutment as "positioned in the path." 1 If the patentee had intended the abutment to act as a bar or tab that truly extended over the path, he or she would have said so. The Court finds, however, that "in the path," is more specific and permits only a slight protrusion into the path.

1 Moreover, although the Court referred to Dr. Shiflett's report as merely a guide, he describes the purpose of the abutment or detents as the following: "As the arm brushes against the detents, the bracket shoulders flex away from one another causing a force to be exerted against them." (emphasis added). The foregoing language suggests that the abutment need not block the pathway, but, rather, it need only extend into the pathway far enough such that the arm brushes against the dimple. In fact, the word "brushes" implies that the dimple does not extend that far into the pathway.
3 The term "abuts" is contained in claims 48, 53, 54, and 59 of the '329 patent.

Plaintiff's Proposed Construction
makes direct contact with

Defendant's Proposed Construction
to be adjacent to, or to touch or join one
another

Plaintiff argues that the term "abuts" encompasses both objects in direct contact and objects adjacent to one another. OPENING at 3-4. Defendant argues that this term requires direct contact. RESPONSE at 5-6.

The term "abuts" is used in claim 48 of the '329 patent. This claim discloses:

48. A method for manufacturing an assembly that includes a socket body, a leakdown plunger, and a roller follower body, comprising the steps of:

   a) providing the socket body that has, at least in part, been cold formed to include a first socket surface, an outer socket surface, and a second socket surface;

   b) providing the leakdown plunger that has, at least in part, been cold formed to include a first annular plunger surface located at a first end of the leakdown plunger, an inner plunger surface provided with a cylindrical plunger surface that abuts an inner conical plunger surface;

   c) providing the roller follower body that has, at least in part, been cold formed to include:

      i) a plurality of roller walls that are configured to accommodate a roller;

      ii) a second roller cavity that is provided with a second roller surface and a second roller opening wherein a second inner roller surface is provided with a plurality of cylindrical surfaces and configured to accommodate the socket body and the leakdown plunger; and

   d) assembling the socket body and the leakdown plunger within the roller follower body so that the socket body and the leakdown plunger are located at least in part within the second roller cavity and the second socket surface of the socket body faces the a second annular plunger surface.

'329 patent at 44:11-38 (claim 48); see also id. at 45:31-67, 32:1-7 (claim 54). Claim 48 indicates that within the leakdown plunger, a cylindrical plunger surface abuts an inner conical plunger surface. Figure 25 depicts an embodiment of a leakdown plunger. Referring to this figure, the specification indicates:

The rounded plunger surface 251 is located adjacent to a first inner conical plunger surface 252, which is located adjacent to a second inner cylindrical plunger surface 253. The second inner cylindrical surface 253 is located adjacent to a second inner conical plunger surface 254, which is located adjacent to a third inner cylindrical plunger surface 255.

'329 patent at 17:63-18:1-2 (emphasis added). Figure 25 depicts an embodiment of the leakdown plunger disclosed in claim 48, and these disclosures imply that the patentee intended no distinction between the terms "abuts" and "adjacent."

Similarly, claim 53 discloses that a curved surface abuts a wall of the first inner roller surface. '329 patent at 44:65-67, 45:1-30 (claim 53). Figures 8, 9, and 10 depict a roller follower body. Referring to this figure, the specification indicates:

FIG. 10 depicts a first inner roller surface 50 depicted in FIGS. 8 and 9. . . . The second curved roller surface 55 is adjacent to a third angled roller surface 67 and a third roller wall 56.

'329 patent at 7:60-8:11 (emphasis added). As with claim 48, Figures 8, 9, and 10 depict an embodiment of the invention disclosed in claim 53, and these disclosures also imply that the patentee intended no distinction between the two terms.
It is important to note that claim 53 also discloses that a first angled surface is located adjacent to a first wall, a fourth wall, a first angled wall, and a first curved surface. '329 patent at 44:65-67, 45:1-30 (claim 53); see also id. at 46:25-58 (claim 59). Because the patentee uses both of the terms "abuts" and "adjacent to" in each of claims 53 and 59, the Court presumes that the use of both of these different terms in each claim connotes different meanings. CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co. KG, 224 F.3d 1308, 1317 (Fed. Cir. 2000) (citing Tandon Corp. v. U.S. International Trade Com., 831 F.2d 1017, 1023 (Fed. Cir. 1987)).

Yet, aside from this presumption based on the disclosure in only claims 53 and 59, the patentee uses these terms interchangeably throughout the '329 patent. The patentee makes no further disclosures that indicate an intention to distinguish the use of these two terms. As previously noted, the embodiments disclosed in Figures 8, 9, 10, and 25 correspond to portions of the inventions disclosed in claims 48 and 53, which imply that the patentee intended no difference in using these two terms. Moreover, the specification of the '329 patent uses the term "abuts" in a non-direct contact manner. See '329 patent at 17:35-37 ("the cylindrical plunger surface 281 may abut the undercut plunger surface 282 so that the conical plunger surface 283 is an annular surface"). As a result, these claims and portions of the specification, in conjunction, indicate that the term "abuts" is used interchangeably with the term "adjacent to" in the '329 patent.

Defendant argues that the term "abuts" requires direct contact. RESPONSE at 5-6. Defendant asserts that the embodiments disclosed in the specification show abutting surfaces as surfaces that are in direct contact. Id. However, as previously discussed, the embodiments disclosed in the specification indicate that surfaces that "abut" one another are also "adjacent to" one another and vice versa. Furthermore, Defendant points to nothing in the intrinsic evidence that indicate that these terms are not used interchangeably, nor does Defendant point to other intrinsic evidence that supports its proposed construction requiring direct contact.

Defendant also argues that this construction is supported by a dictionary definition. Id. While dictionaries are "often useful to assist in understanding the commonly understood meaning of words . . . in claim interpretation," Phillips, 415 F.3d at 1322, the "ordinary meaning" of a claim term "is its meaning to the ordinary artisan after reading the entire patent" id. at 1321. Thus, reliance placed on intrinsic evidence--the claims, specification, and prosecution history--should be greater than that placed on extrinsic sources--dictionaries, treatises, and encyclopedias, among other sources. Id. at 1320. Furthermore, extrinsic sources may be considered, but may not be "used to contradict claim meaning that is unambiguous in light of the intrinsic evidence." Id. at 1324. Thus, as set forth above, the term "abuts" is used interchangeably with the term "adjacent to," and the intrinsic evidence fails to indicate that the term requires direct contact. Because there is no ambiguity in the intrinsic record, the Court need not consider the dictionary definition set forth by Defendant in support of its argument. 4 Therefore, the Court rejects Defendant's proposed construction and finds that the proper construction of the term "abuts" is "to be adjacent to, or to touch or join one another."

--- Footnotes ---

4 Moreover, in Phillips, the Federal Circuit noted three main problems with using dictionary definitions to establish the "ordinary" meaning of disputed claim terms. First, dictionaries focus on the abstract meaning of words rather than the meaning of claim terms within the context of the patent. Phillips, 415 F.3d at 1321. Second, dictionaries collect all uses of particular words, and the use of such dictionaries may extend patent protection beyond what should properly be afforded by the inventor's patent. Id. at 1321-22. Finally, the scope of a claim term should not be determined based on "the preferences of a particular dictionary editor, or the court's independent decision, uninformed by the specification to solely rely on one dictionary rather than another." Id. at 1322.

--- End Footnotes ---
lower surface of the bonding element abuts an upper surface of the first garment component." 779 Patent at 6:33-36 (emphasis added). Similarly, steps (d) and (e) require that an upper or lower surface of a garment component "abuts" an upper or lower surface of the bonding element. 779 Patent at 6:40-46. In Claim 20 of the 779 Patent, a product claim, the seam is defined as comprising "a second garment component . . . such that . . . a portion of said upper surface of the second garment component abuts a lower surface of the first garment component . . . " and "a first set stitch . . . traversing through the bonding element . . . the first garment component . . . and . . . the second garment component which abuts said lower surface of the first garment component." 779 Patent at 8:18-30 (emphasis added). The 615 Patent similarly uses the term in Claims 1 and 19, method and product claims, respectively. 615 Patent at 6:48-51, 8:12-22.

Taltech asks the Court to construe "abuts" to mean "to touch, border on, or end at a surface, including being directly bonded to that surface." Taltech relies on the patent specifications, on a dictionary definition of "abut," and on patent publications in the garment industry such as U.S. Russell Patent No. 4,333,980 (Taltech's Markman Ex. 10). Esquel asks the Court to construe "abuts" to mean "touching (i.e., having direct contact) at a border." Esquel relies on the patent specifications, on the prosecution history of Taltech's related U.S. Patent No. 6,079,343 (the "343 Patent"), on the opinion of Esquel's expert, Mr. Haddock, and on the deposition testimony of Taltech's expert, Mr. Nienke.

The point of contention concerning the construction of "abuts" is whether touching, i.e., having direct contact, is required. Esquel argues that touching is required, whereas Taltech argues that "abuts" does not necessarily require direct contact. Taltech argues that "the two surfaces of garment components are deemed abutting where adhesive holds the two abutting surfaces together." In other words, the surfaces of garment components that are separated by a bonding element would "abut" under Taltech's proposed construction.

The Court finds Esquel's proposed construction more persuasive. Although neither party relied on the claims, the Court first looks to them to interpret the disputed term. As outlined above, Claim 20 of the 779 Patent and Claim 19 of the 615 Patent use the term "abuts" to refer to contact between the surfaces of first and second garment components, whereas Claim 1 of the 779 Patent and Claim 1 of the 615 Patent use the term "abuts" to refer to contact between a surface of a garment component and a surface of a bonding element. Given the latter use of "abuts," Taltech's proposed construction makes no sense. The surfaces of garment components cannot "abut" if there is a bonding element in between them. If that were the case, Claim 1 of both patents would not have used the term "abuts" to describe the contact between the surfaces of a garment component and a bonding element. Taltech's proposed construction ignores the existence of a bonding element when using the term "abuts;" however, the claims themselves do not ignore the existence of a bonding element when using the term "abuts."

Furthermore, Taltech's reliance on the following excerpt from the specifications is misplaced:

Preferably, the bonding element 32 comprises an adhesive web which flows during ironing onto the abutting surfaces of the garment components to create a very strong bond between the garment components along the garment seam 12.

779 Patent at 6:1-5; 615 Patent at 6:3-7 (emphasis added). Taltech argues that this excerpt shows that "the abutting surfaces of the garment components' need not necessarily touch -- as the bonding element is between the two abutting surfaces of the garment components." Taltech's argument is not persuasive. Taltech has taken the phrase "abutting surfaces of the garment components" out of context. The surfaces of the first and second garment components are not abutting each other. The subject of the sentence is "the bonding element 32" and the bonding element is the object that is abutting the surfaces of the garment components. This interpretation is supported by the claims, which describe the bonding element as abutting the first and second garment components prior to fusing the seam together. See 779 Patent at 6:33-36, 6:40-46, 8:10-21; 615 Patent at 6:42-43, 6:48-51, 8:4-11. The only time that the claims clearly describe one garment component abutting another is when there is no bonding element between them. See 779 Patent at 8:21-24 (". . . a portion of said upper surface of the second garment component abuts a lower surface of the first garment component along the seam"); 615 Patent at 8:13-16 (". . . a portion of the upper surface of the second garment component abuts at least a portion of the lower surface of the first garment component"); Fig. 3b. Taltech's interpretation of the specifications would be more persuasive if the sentence following the quoted excerpt stated as follows: "This bond prevents the first garment component 20 from separating from the [abutting] garment component 22 during the subsequent laundering of the garment." 779 Patent at 6:5-8. However, the term "abutting" does not appear in that sentence.

Other parts of the specifications also support Esquel's proposed construction that "abuts" does not signify a relationship
between the surfaces of two garment components with a bonding element in between them. See 779 Patent at 4:8-17, 4:59-
63; 615 Patent at 4:10-18, 4:60-64; Fig. 3b. 3 These specification excerpts do not ignore the existence of the bonding
element when using the term "abuts." Under Taltech's proposed construction, the specifications would state that Figure 3b
depicts the upper surface 24 of the first garment component 20 abutting the lower surface 30 of the second garment
component 22. The specifications include no such statement.

3 The patent appears to contain an error in that it should say "36" rather than "26" to refer to the lower surface of
("The bonding element 32 has an upper surface 34 and a lower surface 36.").

The claims further support Esquel's proposed construction because the claims have used the term "abuts" interchangeably
with the term "contacts." Claim 1(b) of the 779 Patent speaks of "placing a bonding element . . . along the seam such that a
lower surface of the bonding element abuts an upper surface of the first garment component." 779 Patent at 6:33-36
(emphasis added). The analogous Claim 1(c) of the 615 Patent speaks of "placing the bonding element along the seam . . .
such that the lower surface of the bonding element contacts at the seam the upper surface of the first garment component." 615 Patent at 6:39-43 (emphasis added). This is direct evidence from the claims themselves that the term "abuts" requires
contact.

The extrinsic evidence supports Esquel's proposed construction requiring contact or touching. First, the prosecution history
of the 343 Patent supports Esquel's proposed construction that the term "abuts" requires direct contact. The term "abuts" was
used in some of the pending claims to describe a relationship of "direct contact" between the thermoplastic adhesive (i.e.,
the bonding element) and the garment components. Docket no. 85, Ex. F (part 2) at 32 ("a single strip of thermoplastic
adhesive is in direct contact with both the first and second garment component [sic] forming the seam") (emphasis added).
Second, the dictionary definition provided by Taltech -- i.e., "abut . . . to touch along a border or with a projecting part . . . to
terminate at a point of contact . . . to lean for support . . . to border on" -- supports Esquel's position that the term requires
touching and contact. See Merriam Webster's Collegiate Dictionary 5 (10th ed. 1993) (docket no. 94, Ex. A at 2). Nothing in
this dictionary definition supports Taltech's proposed construction to expand the definition of "abuts" to include "being
directly bonded to that surface." Third, Taltech's expert, Mr. Nienke, testified in a deposition on September 16, 2005, that
had he not spoken with the attorneys in this case he would have defined "abut" simply to mean "touch." Nienke Dep. at 9:3-
10 (Esquel's Markman Ex. 1).

At the Markman hearing, Taltech argued that Esquel's proposed construction language of "at a border" is ambiguous. The
Court agrees. Taltech suggested replacing the "at a border" language with "along a surface." Rather than adopting Taltech's
suggestion, which may improperly limit the claims, the Court simply omits Esquel's proposed "at a border" language from
the Court's construction.

Accordingly, the Court adopts Esquel's proposed construction, with modification, and construes the term "abuts" to mean
"touching (i.e., having direct contact)."

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5. Access Cover

The parties dispute the meaning of the following limitation, which is common to all the claims of the '408 patent: "an access
cover, mounted on the top of said riser extension over said upper opening and including an aperture therein, for enabling
access to the interior of said sump apparatus." TCI argues that this limitation is met by a gasket.

Unlike the term "surrounding relationship," both "cover" and "gasket" appear in the specification. "The system . . . is
preferably connected and sealed by rubber gaskets. . . ." '408 Patent, column 3, lines 60-62. "The connections between the
various components of the secondary system . . . employ a rubber compression seal or gasket. . . ." Id. at column 13, lines
35- 42. "Other components and fittings . . . use gaskets or compression seals to connect and seal the secondary system." Id.
at column 14, lines 7-9. Figures 4(a) of the patent (Figure 6) depicts gasket 52 and gasket 56, each fitting between two
stationary parts.

A gasket is generally understood to be "a pressure tight seal made of deformable material, typically rubber, plastic, or paper,
fitting between two stationary parts; used in many applications to prevent the leaking of fluids. . . " Academic Press Dictionary of Science and Technology 906 (Christopher Morris, ed., 1992). The gaskets in the '408 patent, consistent with the ordinary and accustomed meaning of the term, are made of rubber, fit between two stationary parts, and are intended to seal the secondary containment system and prevent leaks.

The term "cover" is used differently in the specification. Figures 1 and 2 depict cover 14a. Figure 31 depicts cover 194. In each of these figures the cover sits on top of the riser; it is not held between two stationary parts. The sump, including the cover, "is preferably rotationally molded from a thick high density polyethylene. . . " Id. at column 8, lines 7-8. This material is used because it provides excellent strength, chemical resistance, and soil burial stability. Id. at column 16, lines 42-45. A sump made of rubber or any other deformable material would be unacceptable because one of the purposes of the sump is to keep excavation backfill away from the submersible pump. Id. at column 8, lines 13-15.

A gasket cannot function as a cover. Unlike a cover, it fits between two stationary parts and is made from a deformable material, such as rubber. A cover sits on top of the riser, rather than between two stationary parts, and cannot be made from a deformable material. It is neither the literal nor functional equivalent of a cover. The court concludes that a gasket does not satisfy the access cover limitation, either literally or under the doctrine of equivalents.

TCI argues that this was the interpretation advanced by defendants in the reexamination requests. First, any arguments that the defendants may have advanced during reexamination are extrinsic evidence. Extrinsic evidence cannot be relied on to change the meaning of a claim when the meaning is clear from the patent. Southwall Technologies, 54 F.3d at 1578. Second, this court is not aware of any doctrine that forever binds a reexamination requestor who is not the patent owner to a position it has taken in a reexamination request. Nor does it find good reason for the existence of such a doctrine.

The arguments and amendments made by the patent owner during prosecution are pertinent to claim interpretation. Id. They also limit the allowable equivalents under the doctrine of equivalents. Exhibit Supply v. Ace Patents Corp., 315 U.S. 126, 86 L. Ed. 736, 62 S. Ct. 513 (1942). This prevents the patent owner from construing the claims narrowly before the PTO and broadly before the courts. Unique Concepts at 1562, Autogiro, 384 F.2d at 399.

These considerations do not apply to a third-party reexamination requestor. Infringement litigation and reexamination are separate proceedings with different objectives carried out before independent tribunals. In reexamination, there is only one issue, validity in the light of newly discovered patents and printed publications. Litigation involves numerous other issues as well.

One of the objectives of reexamination is to "permit efficient resolution of questions about the validity of issued patents without recourse to expensive and lengthy infringement litigation." House Report No. 96-1307, 96th Cong., 2d Sess. (1980). Reexamination not only settles validity questions more cheaply and quickly than litigation, it conserves judicial resources as well. If arguments made in a reexamination request could limit the defenses available in a subsequent patent infringement action, a potential defendant might be reluctant to request reexamination to resolve questions of validity. Rather than limit its defenses, the requestor might decide to bypass reexamination and resolve these questions by litigation. Validity questions that should have been resolved by reexamination would be unnecessarily returned to the courts.

1. Accessory

The word "accessory" is used in the preamble of the Claims to state the intended use of the invention claimed. The term does not, in context, add to the claim elements defining the invention. See Loctite Corp. v. Ultraseal Ltd., 781 F.2d 861, 868 (Fed.Cir. 1985) citing Kropa v. Robie, 187 F.2d 150, 152, 38 C.C.P.A. 858, 1951 Dec. Comm'r Pat. 177 (CCPA 1951).

In particular, the use of the term "accessory" in the preamble does not, in and of itself, prevent the claim from reading on a product that might combine a game controller and the accessory in a self-contained unit. Any such restriction of the invention must be found, if at all, in the claim elements rather than in the preamble.

The term "accessory" is construed as meaning a device which is not necessary to the operation of a video game but which
A. Accuracy

76. A central claim interpretation issue of the present case revolves around the meaning of the term "accuracy" as used in the claims. This term must be construed as it would by one of ordinary skill in the art based on the patent disclosure. Intelllicall, Inc. v. Phonometrics, Inc., 952 F.2d at 1387.

77. At various times, MCI's witnesses expressed different opinions on the meaning of this term. None of the definitions given by MCI's witnesses was entirely satisfactory. It appeared that MCI's patent law expert, Mr. Vilhauer, struggled with the dilemma that if he construed this term as well as the term "isolating means" narrowly enough to provide a basis for urging patent validity, the patent would not be infringed, while if he read them broadly enough to provide a basis for an infringement claim, the teachings of the patent would be obvious.

78. Mr. Vilhauer has limited experience in batch weigh systems. His testimony on the meaning one skilled in the art would ascribe to terms in the patent cannot be totally relied upon. Thus, his opinion as to the meaning of terms in the patent should be afforded limited weight.

79. Claim 64 defines "an accuracy of at least + one gram." The prior art Hough reference which was before the patent examiner defines accuracies within 0.01 pounds (4.5 grams). Although the specification discloses 0.5 gram accuracy, the Court believes it would be error to incorporate this limitation into the claims, particularly where to do so would result in a narrower interpretation of the independent claims of the patent than dependent claim 64. Thus, the Court concludes that the term "accuracy" as used in the independent claims of the '971 Patent refers to accuracies between 1 gram and 4.5 grams. No other definition is consistent with the patent disclosure in view of the prior art of record in the file history of the patent. Moreover, there is no other definition which would apprise one skilled in the art of the metes and bounds of the invention in a sufficiently definite manner to comply with 35 U.S.C. § 112.

B. "Predetermined Accurate Work Position"

Utica next asserts that the district court erred in construing the term "predetermined accurate work position" in claims 1 and 3. While agreeing with the court's definition generally, Utica maintains that the court should not have interpreted the term to require that the planar abutment surfaces of the cutting tool and the tool holder be in direct contact "without any spaces in between." Federal Broach responds that the specification and the prosecution history define the term "predetermined accurate work position" to mean that the planar abutment surfaces of the cutting tool and the tool holder engage without any gap between them.

We agree with Utica that the district court's interpretation of the term "predetermined accurate work position" was unduly narrow. The court construed the term as follows:

The term "predetermined accurate work position" means the fixed placement of the tool in the tool holder. This placement is achieved by precisely measuring the distance from the surface of the cutting tool's center axis to the appropriate surfaces of the tool holder in advance, such that the flat mounting surfaces of the cutting tool directly contact the corresponding surfaces of the tool holder, without any spaces in between, thereby maintaining the cutting tool's original placement until the tool is removed.

Claim Construction Order, slip op. at 18 (emphasis added).

Although the specification states that a goal of the invention is to eliminate clearances between the cutting tool and the tool
holder, the patent does not require that the surfaces of the cutting tool and the tool holder abut with absolute precision. Indeed, it seems that no device—not even those depicted in the disclosed embodiments—could actually achieve zero clearance between the cutting tool and the tool holder. We instead read the specification to mean that the claimed method achieves improved accuracy in positioning the cutting tool by allowing for only minimal clearances between the tool and the holder. Moreover, the prosecution history statements to which Federal Broach adverts explain only that the planar abutment surfaces of the cutting tool and the tool holder are forced against one another to generate an accurate work position; they say nothing about eliminating gaps between the cutting tool and the tool holder. We therefore conclude that the patent does not mandate zero clearance between the cutting tool and the tool holder and, as a result, we modify the district court’s definition of the term “predetermined accurate work position” to omit the language “without any spaces in between.”

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c. "accurately moving"

With respect to "accurately moving," the surrounding claim language, along with the term's plain meaning, provide adequate context for the claim. In claim 145 of the 930 patent, the relevant limitation reads "said transporter having an X-Y drive apparatus for accurately moving said capture system in two orthogonal directions within said vend selection space." The term "accurately moving" means "moving in accordance with the vend control signal."

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2. "accurately positioned" and "accurately displacing and positioning"

The parties agree that the words "positioned" (as used in claim 1) and "positioning" (as used in claims 5, 8, 15, 16, and 17) require no court interpretation. The parties also agree that "displacing" (as the word is used in claims 5, 8, 15, 16, and 17) denotes moving or movement. But the parties do not agree regarding the meaning of the adverb "accurately." See id. at 2:14 (discussing "very great positioning accuracy" through "satisfactory" alignment); Abbott Labs. v. Baxter Pharm. Prods., Inc., 334 F.3d 1274, 1279 (Fed. Cir. 2003). In both the claim overall and in this particular claim term, "accurately" is used to imply a minimum standard, a threshold standard of exactness. Terms like "sufficiently accurate" and "satisfactorily aligned" necessarily connote a baseline of required accuracy, and related aspects of the specification—as well as the parties' own constructions—are in accord. In various parts, in fact, specification language discusses both the proper (i.e., accurate) positioning of a substrate sub-area and the proper positioning of the substrate itself. See generally '832 Patent at 2:60-3:9; 13:15-14:17.

The claim language makes clear that proper positioning of a substrate sub-area is the focus of this claim term; that is, a "sub-area" is the entity "accurately positioned with respect to the mask pattern." Id. at 32:55-56. The claim language also makes clear that "accurately positioned" references the exactitude with which that sub-area is oriented. Id. Consistent with this language, the court construes "accurately positioned" to mean "locating and situating an item with adequate exactness relative to the mask pattern." "Accurately displacing and positioning," in turn, means "moving, locating, and situating an item with adequate exactness." 44

44 A like construction is indicated for the word "sufficiently."

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The parties argue vigorously about whether the limitation "across" is equivalent to "over" (or "across and over," as the step was described in the '409 patent). It is fair to say that, in general usage, "across" connotes "over" commonly, perhaps even usually, though not invariably. See Webster's Third New International Dictionary 20 (G. & C. Merriam Co. 1981) ("across prep la: from one side to the opposite side of: over"). In general human experience, when we think of going "across" something, we normally think of going over it. So, when we talk of going across a street, across a field, across a line, we generally mean to say that we pass over the surface, or above, the thing in question. 

2 It is true that it is sometimes possible to go across a river by riding the subway underneath it, but in normal usage, if one were to speak of going across a body of water, a listener would ordinarily understand it to have been a voyage above the surface, unless the contrary were expressed.

Common usage thus tends to favor Sunflower's position that the limitation "across the header" means "across and over the header." Significantly, so does the patent specification. The method disclosed calls for the transfer to occur by bringing the bag over the header. The patent office examiner interpreted the claim that way. In his Statement of Reasons for Allowance he noted that the claim referred to "transferring the bag over the common wicket header." See Def.'s Ex. 3, Tab U (emphasis added). As Sunflower notes, that interpretation was never challenged or corrected by MHB. Indeed, in the apparatus described as the preferred embodiment, it is not physically possible to transfer the bag across and under the header. Accordingly, this claim must be construed to mean that the individual bag is transferred across and over the header of the wicket.

MHB also argues that the court misconstrued the claimed step of transferring the bags "across" the header from the first station to the second station for sealing by construing "across" to mean "across and over" and improperly reading a requirement into the claim that the transfer take place "over" the header as opposed to "under" the header. While the term across is not defined in the specification, the specification shows the bags being moved from one side of the header to the other side of the header during the transfer step. Consistent with this depiction of the method in the specification, a common definition of "across" is "from one side to the opposite side of: over." Webster's Third New International Dictionary, 20 (1971). The district court also determined that this was the proper meaning of across but went on to state that the claim required that a bag be transferred "across and over" the header, apparently distinguishing the situation in which the bags are transferred under the header. We agree with MHB that the claim does not require a distinction between over, as in above, and under the header. Simply, the claim requires that the bag be transferred across or, in other words, from one side of the header to the other. Given the other differences in the accused method, however, this error is harmless.

The third disputed element requires a "cover means associated with said receptacle across said openings of said cavities." Defendant argues that the term "across" means "adjacent to," thus requiring the cover to be adjacent to the cavity openings. Once again, this definition is too narrow and nonsensical. One purpose of the cover is to close the openings to both cavities so that the pipe and tobacco do not fall out. In this context, the pertinent definition of "across" is "over," requiring the cover to lay over the two openings. This comports with the embodiment described in the '658 patent which features a cover resting directly on top of the two cavities when closed.
Additionally, while certainly not disagreeing with plaintiff's contention that the ridge must also extend "across said tongue," defendant asserts that construction of the phrase "across said tongue" also supports its contention that the ridge must, in fact, be a part of the tongue structure. That phrase is not defined in the patent, and the court therefore concludes that it is to be interpreted in light of its customary meaning.

According to Webster's, "across" is defined as "in a position reaching from one side to the other." Webster's Collegiate Dictionary 11 (10th ed. 1999); accord Webster's Third New Int'l Dictionary 20 (1986) (defining across as "so as to cross transversely: crosswise"). As with the other patent terms construed above, plaintiff does not offer an alternative definition with respect to the word "across." Thus, the court interprets that term, and, consequently, the phrase "across said tongue," as meaning that the ridge must reach from one side of the tongue to the other.

As set forth above, plaintiff does not specifically dispute defendant's interpretation of the terms "having," "extending outwardly," "across said tongue," or "generally parallel to . . . said tooth." In addition to his mere blanket assertion with respect to the three limitations of the term "ridge," plaintiff alternatively attempts to dismiss defendant's contention that claim 4 requires the ridge to be a part of the tongue structure by insisting that such an interpretation is improperly gleaned from the patent illustrations which portray the ridge as a projection of the lower portion of the tongue. Plaintiff is correct in his assertion that the court may not use the patent illustrations or other portions of the specification to limit the scope of the patent claims. See Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998). However, and even though the '041 patent drawings do, in fact, depict latch mechanisms with tongues from which both the tooth and the ridge project, the court is not, by its construction, limiting plaintiff's claims to those illustrations. Instead, the court's construction is limited by the language of the patent itself, and the illustrations are simply consistent with that interpretation. See Cortland Line Co., Inc. v. Orvis Co., Inc., 203 F.3d 1351, 2000 U.S. App. LEXIS 1993, 2000 WL 156553, at *3 (Fed. Cir. 2000)(noting that court's construction of patent term was "reinforced by the words and drawings" of the patent).

Accordingly, because the court's construction does not rely upon, but is merely consistent with, the illustrations included as a part of the patent specification, plaintiff's argument on this basis is rejected.

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Accordingly, because the court's construction does not rely upon, but is merely consistent with, the illustrations included as a part of the patent specification, plaintiff's argument on this basis is rejected.
1997). Ambient, then, could refer to a wide array of temperatures and, if applied to the construction of "shape memory activation temperature," it would deprive that claim limitation of any meaning.

Nonetheless, plaintiffs point to the claim language itself for support of this functional interpretation of "shape memory activation temperature." Plaintiffs argue that the term "shape memory activation temperature" is limited "functionally, namely to enable the altered liner to be pulled into the host pipe." (D.I. 128 at 8) The claim language "to enable the liner to be pulled into the pipe," however, does not modify "shape memory activation temperature;" rather, it modifies "having reduced cross-sectional dimensions." (D.I. 17, Ex. 2, col 11, Ins. 2-3) Thus, the claim language itself sheds no light on the scope of the term "shape memory activation temperature." 3

3 For these reasons, the court also declines to accord any weight to the testimony of plaintiffs' expert. Plaintiffs' expert, Stanley Mruk, construed the term "shape memory activation temperature" to mean "any temperature above ambient which enables the liner to be temporarily deformed while retaining a memory of the liner's original shape (reformed) by heating the pipe liner to a temperature at or above the temperature used in the deformation of the pipe liner." (D.I. 67 at 4, P 9) Mruk's construction thus rests on an undefined term (i.e., "ambient") as well as an implausible reading of the claim language.

Plaintiffs also rely heavily on the '365 patent's specification as support for their functional interpretation of shape memory activation temperature. Specifically, plaintiffs point to that patent's description of "a desired deformation temperature of, for example, 160 [degrees] F." (D.I. 65, Tab 1, col. 5, Ins. 15-16) Plaintiffs contend that the '196 patent's incorporation of the '365 patent compels the conclusion that shape memory activation temperature "can vary as circumstances require." (D.I. 65, Tab 1, Ex. C., col. 5, Ins. 21-22) A careful reading of the '365 patent reveals, however, that the term "shape memory activation temperature" never appears therein. Indeed, both the 160 [degrees] F cited by plaintiffs as a shape memory activation temperature and the phrase, "temperatures [that may] vary as circumstances require," relate merely to the "desired deformation temperature" of the preferred embodiment described in the '365 patent's specification. (D.I. 65, Tab 1, Ex. C., col. 5, ln. 15) Other than plaintiffs' conclusory assertion, there is no basis for equating the '365 patent's use of the term "deformation temperature" with the '196 patent's specific use of "shape memory activation temperature" -- a highly technical term capable of precise calculation. (See, e.g., D.I. 17, Ex. 3 at A363 (providing formula for crystallization temperature, which the coinventor equates with shape memory activation temperature at D.I. 17, Ex. 3 at A351)).

Because the meaning of the term "shape memory activation temperature" is not apparent from the patent, the court must turn to the prosecution history to determine the "meaning that it would be given by persons experienced in the field of invention." See Hoechst Celanese Corp., 78 F.3d at 1578. The prosecution history reveals that plaintiffs took pains to convince the Examiner that "shape memory activation temperature" referred to a specific range of temperatures, identifiable by calculation or by reference to the "specification sheet" of particular thermoplastics, which lists the thermoplastic's crystallization point.

2. The Prosecution History

Because the prosecution history plays such a significant role in determining the meaning of "shape memory activation temperature," the court shall review it in considerable detail. Plaintiffs filed their initial patent application in October of 1987. In this initial application, the proposed specification of the patent referred to 160 [degrees] F as the temperature at which deformation of the thermoplastic liner occurred. (D.I. 17, Ex. 3 at A025) Claim 1 of the initial application also disclosed a process for "altering the cross-sectional shape of the liner to reduce the cross-sectional dimension thereof at a shape memory activation temperature of about 160-180 [degrees] F." (D.I. 17, Ex. 3 at A044) In July of 1988, the Examiner denied claims 1 through 18 of the application as obvious in light of the Laurent patent and other prior art. (D.I. 17, Ex. 3 at A082-088)

In response, plaintiffs amended claim 1 to add, "so as to permit the liner to be pulled into the pipe," following that claim's recitation of a shape memory activation temperature "of about 160-180 [degrees] F." (D.I. 17, Ex. 3 at A102) In February of 1989, however, the Examiner again rejected claim 1 for, among other reasons, obviousness. (D.I. 17, Ex. 3 at A112-118)
Plaintiffs again amended their application in June of 1989 and canceled claim 1 along with other claims. Plaintiffs then added several new claims. Of these new claims, claim 31 disclosed a process for installing thermoplastic pipe and

(b) altering the cross-sectional shape of the liner to reduce the cross-sectional dimension thereof at a shape memory activation temperature of about 221-277 [degrees] F so as to permit the liner to be pulled into the pipe . . . .

(D.I. 17, Ex. 3 at A141) Dependent claim 35 of these new amendments also disclosed "[a] process according to Claim 31 wherein said shape memory activation temperature is about 260 [degrees] F." (D.I. 17, Ex. 3 at A142) Similarly, claim 36 and its dependent claim 40 each disclosed shape memory activation temperatures of "about 221-277 [degrees] F" and 260 [degrees] F, respectively. (D.I. 17, Ex. 3 at A143-44)

Plaintiffs also added claim 41, the predecessor of claim 12 of the '196 patent. Initially, claim 41 taught merely "an elongate hollow liner formed of thermoplastic material having a cross-section altered at a shape memory activation temperature . . . ."

Although claim 41 did not provide a specific shape memory activation temperature, its dependent claims 47 and 50 each provided, "[a] process according to Claim 41, wherein said memory activation temperature is within a range of 221-277 [degrees] F." (D.I. 17, Ex. 3 at A146)

Significantly, in their remarks to the preceding amendments, plaintiffs' patent counsel explained that

the reference in the specification and claims to 160 [degrees] F as the melting temperature of the polyethylene liner material is incorrect. . . . Applicants enclose five specification sheets from various companies indicating that the melting temperature of polyethylene was a known parameter at a time prior to the date of this application and specifically known to lie within a range of 221-277 [degrees] F.

(D.I. 17, Ex. 3 at A147) It appears that plaintiffs' patent counsel equated "melting temperature" with "shape memory activation temperature." 4 Each of the specification sheets referred to by plaintiffs' patent counsel pinpoint the melting temperature of the various thermoplastics as above 200 [degrees] F. (D.I. 17, Ex. 3 at A163-67) Plaintiffs' patent counsel also submitted a declaration of one of the coinventors in which the coinventor confirmed that these specification sheets indicated melting points in the range of 221-277 [degrees] F. (D.I. 17, Ex. 3 at A162)

4 Later in the prosecution, however, the '196 patent's coinventor equates shape memory activation temperature with a thermoplastic's "crystallization temperature" and provided the Examiner with a formula for calculating that temperature. (D.I. 17, Ex. 3 at A363; see also A351)

Despite these amendments, the Examiner again rejected the newly added claims in September of 1989. (D.I. 17, Ex. 3 at A296-302) In rejecting the claims for, among other reasons, obviousness, the Examiner noted:

It is submitted that the steps of altering the tube's cross-section at 210 [degrees] F and heating to expand the tube in British Application -695 are inherently at the thermoplastic liner's shape memory activation temperature as recited in the instant claims. This temperature is dependent on particular material used.

(D.I. 17, Ex. 3 at A298) (emphasis added). Following this rejection of their newly added claims, plaintiffs again offered amendments to their application in December of 1989. (D.I. 17, Ex. 3 at A303-12) In their remarks to these amendments, plaintiffs' patent counsel distinguished the aforementioned "British Application -695" by noting that, unlike the British Application, "applicants require the cross-sectional shape of the liner to be reduced by altering such shape at a shape memory activation temperature of about 221-277 [degrees] F." (D.I. 65, Ex. 3 at A310) The British Application disclosed a process of deforming polyvinyl chloride ("PVC") tubing at "approximately 210 [degrees] F." (D.I. 17, Ex. 3 at A173) Plaintiffs' patent counsel argued strenuously that, "PVC does not have shape memory characteristics, and . . . the temperature to which the liner is elevated in [the British Application] is not within the range claimed . . .." (D.I. 17, Ex. 3 at A310) Contrary to plaintiffs' current contention that shape memory activation temperature is a variable, "functional concept," plaintiffs' patent counsel also acknowledged that, "a shape memory activation temperature is a known property,
for example, of polyethylene material, prior to this invention." (D.I. 17, Ex. 3 at A309)

In January of 1990, the Examiner rejected plaintiffs' application on the ground that the recitation of a shape memory activation temperature "of about 221-277 [degrees] F" constituted new matter. Further, the Examiner remarked that this "range would read on any number of polymers dependent on their exact composition." (D.I. 17, Ex. 3 at A325-26) In response to the Examiner's new matter objections, plaintiffs amended their application in April and again in May of 1990. (D.I. 17, Ex. 3 at A331-39; A340-61) In these amendments, plaintiffs deleted reference to 160 [degrees] F in the specification as the deformation temperature and replaced it first with 260 [degrees] F and, in May, with 235 [degrees] F. Plaintiffs' patent counsel explained this change in his remarks to the May 1990 amendments:

It must be recognized that patent specifications are directed to those skilled in the art. A person skilled in this art would recognize 160 [degrees] F as an incorrect shape memory activation temperature simply by reference to the specification sheet for this particular type of material specifically disclosed as the preferred embodiment and available at the time of this filing. The person of ordinary skill in the art would be advised by such specification sheet of the actual shape memory activation temperature.

Also, materials such as nylon, Teflon and ABS are disclosed . . . together with the Union Carbide material. All of those materials have shape memory activation temperatures above 200 [degrees] F as indicated on the additional specification sheets for each of those materials accompanying the Declaration of [the coinventor]. Consequently, a person of ordinary skill in the art would recognize that the temperature of 160 [degrees] F could not be the shape memory activation temperature and would be directed by those specification sheets to the appropriate shape memory activation temperature.

(D.I. 17, Ex. 3 at A351-52)

Also in May, plaintiffs canceled claims 31-35 and claim 47 of the application and amended claims 36 and 41. Plaintiffs removed from claims 36 and 41 any reference to a specific shape memory activation temperature. Thus, in May of 1990, claim 41 disclosed in relevant part:

An elongate hollow liner formed of thermoplastic material having a cross-section altered at a shape memory activation temperature from a generally cylindrical cross-section having an original diameter substantially comparable to the inside diameter of the pipe to be lined to a reduced cross-section having reduced cross-sectional dimensions to enable the liner to be pulled into the pipe, whereby the liner is maintained in its reduced cross-sectional shape with substantially no tendency to return to its cylindrical cross-section and retains a memory of its cylindrical cross-section, said liner in said altered cross-section having a predetermined wall thickness . . . .

(D. I. 17, Ex. 3 at A343)

5 Claims 36 and 41 were renumbered as claims 1 and 12, respectively, upon issuance of the '196 patent. (D.I. 17, Ex. 3 at A442)

In a final supplemental amendment filed in August of 1990, plaintiffs deleted all reference to a specific shape memory activation temperature from the specification and amended claim 41 to read as claim 12 now reads in the '196 patent. (D.I. 17, Ex. 3 at A431-38) In explaining these changes, plaintiffs' patent counsel remarked:

Applicants have attempted to amend the specification to present the proper numerical temperature but without apparent success. Thus, by canceling the numerical temperature for the shape memory activation temperature, the patent issuing from this application will not be misleading and, of course, the actual value is disclosed in the file wrapper. The actual numerical temperature is also not necessary to the claims inasmuch as those claims do not specify the precise numerical shape memory activation temperature.

(D.I. 17, Ex. 3 at A437) (emphasis added).
Thus, the prosecution history reveals (1) that shape memory activation temperature is a specific temperature defined by the particular properties of the thermoplastic at issue, (2) that plaintiffs contemplated shape memory activation temperatures that were well above ambient temperature (assuming "ambient" refers to normal, "room" temperatures), and (3) that the patentee defined shape memory activation temperature first (and, apparently, erroneously) as a given thermoplastic's "melting point" and later as a thermoplastic's crystallization point. In defining shape memory activation temperature as a thermoplastic's crystallization point, the '196 patent's co-inventor declared that:

4. The preferred embodiment's] crystallization point is given as 113 [degrees] C, or about 235 [degrees] F. This is the memory activation temperature for that particular material.

5. The crystallization temperature is a temperature defining the maximum crystallization speed and it may be obtained by the formula T[c] \[\approx\] (T[m] + T[g])/2 where T[c] is the crystallization temperature, T[m] is the melting temperature and T[g] is the glass transition temperature. Each of nylon, Teflon and ABS, as disclosed in this application as an alternative material to the specifically identified and preferred Union Carbide material has a crystallization temperature above 200 [degrees] F. This is evidenced by calculations and specification sheets for those materials . . . .

(D.I. 17, Ex. 3 at A363-64) (emphasis added). The prosecution history thus establishes that shape memory activation temperature is not, as plaintiffs suggest, a "functional" concept that "can vary as circumstances require."

Instead, the prosecution history reveals that the co-inventor himself regarded shape memory activation temperature as a known temperature ascertainable by calculation and dependent upon a given thermoplastic's physical properties. Accordingly, the court shall construe the term, "shape memory activation temperature," as the '196 patent's coinventor understood it -- namely, as the crystallization point of a given thermoplastic, calculated according to the following formula:

\[ T[c] \approx \frac{(T[m] + T[g])}{2} \]

where T[c] is the crystallization temperature, T[m] is the melting temperature and T[g] is the glass transition temperature.

(D.I. 17, Ex. 3 at A363; see also A351 (equating shape memory activation temperature with a material's crystallization temperature)).

Claim 1 states, in relevant part, that the invention is a "combined garment and earphones" in which the earphones are comprised of

a conductive wire assembly passing through the elongate internal passageway and having left and right lengths of wire exiting through the left and right apertures, respectively, wherein at least a portion of the conductive wire assembly is slideable within the passageway, and acts as a drawstring for the hood.[.]

('192 Patent col. 8 ll. 29-34 (filed Sept. 13, 2005) (emphasis added).)

The Plaintiffs contend that the meaning of Claim 1's language is unambiguous so the court need not ascribe any particular meaning to the claim terms. They assert that the court need only compare the claim language "conductive wire assembly"and "acts as a drawstring" as commonly understood and explained in the specification to the Accused Products.

Defendants, on the other hand, interpret the scope of Claim 1 by attempting to impose a limitation that the "conductive wire assembly" is an earphone wire. They also construe the language "acts as a drawstring" as follows: "The wire must be used to tighten or close the hood opening. Moveable wiring within the drawstring passageway is not wiring that acts as a drawstring."

The court disagrees with both parties' constructions of Claim 1. As the Plaintiffs point out, the Defendants' construction would be unworkable (i.e., if the claim were construed as Defendants proffer, it would be impossible to infringe Claim 1). (See Pls.' Reply Mem. at 11.) But relying on the plain language, as Plaintiffs do, is unworkable as well.
Instead, the court provides a preliminary claim construction that is guided in part by two sources: (1) the patent applicants' remarks to the patent examiner in a June 10, 2008 reply to the U.S. Patent & Trademark Office ("USPTO") February 21, 2008 rejection of certain claims in the application ("Amendment A"); and (2) the patent examiner's subsequent Notice of Allowability.

In Amendment A, the applicants asked the USPTO to allow an amendment to the patent application of Logan Haycock et al. The applicants remarked in relevant part as follows:

In the Office Action, claims 1-7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Eves, U.S. Publication No. 2001/0050991 ("Eves"), in view of Cyr et al., U.S. Publication No. 2006/0182297 ("Cyr"). Applicants respectfully request removal of the rejection under 35 U.S.C. § 103(a) of claims 1-7 because Eves in view of Cyr does not teach or suggest wiring that "acts as a drawstring" as claims in applicants' claim 1.

Eves teaches wiring that is moveable within the internal passageways in the clothing. Moveable wiring within a passageway is not wiring that acts as a drawstring. The moveable wiring disclosed in Eves serves to minimize the amount of loose cable. In one embodiment shown in figures 7 and 8 in Eves this wiring emerges "discretely from the collar close to the user's ears such that there is a minimum of loose cable." Eves does not teach or suggest that this wiring be used to tighten or close an opening in the clothing. The disclosure does not show or explain that the wiring goes around the periphery of the collar so that the wiring could possibly be used as a drawstring. The configuration only allows the ear pieces to emerge discretely from the collar and minimizes the amount of loose wire.

Referring specifically to figures 7 and 8 in Eves, one can observe that the disclosed configuration would not function as a drawstring. If a user were to pull on the wiring in the direction away from the ear piece attempting to tighten the collar, the ear piece would move in the same direction and not provide resistance allowing the collar to be drawn.

("Remarks" in Amendment A to Patent Application at pp. 7-8 (Docket No. 16-1 at pp. 98-99) (emphases added).)

In response to Amendment A, the USPTO issued a Notice of Allowability, with the following explanation:

Claims 1-10 and 13 are allowed. The following is a statement of reasons for the indication of allowable subject matter: As set forth in the previous action, claim 1 discloses the unique feature of having a conductive wire slideable through the passageway, and acting as a drawstring for a hooded garment. The closest prior art fails to teach a slideable conductive wire that acts as a drawstring for a hood.

(USPTO Notice of Allowability, Application/Control Number 11/224,888, Art Unit 2614, at p. 2 (Docket No. 16-1 at p. 123).)

Given the above-quoted language, the court makes the following preliminary construction of Claim 1 in the '192 Patent:

"The wire must be used to tighten or close the hood opening. Moveable wiring within the drawstring passageway is not necessarily wiring that acts as a drawstring."

Under the court's construction, the issues of validity and infringement can now be addressed.
top surface and a centrally positioned aperture formed therethrough, a tubular portion extending from the top surface in coaxial relation to the aperture and in right angle relation to the top surface . . . the shaft of the locking means being positioned in the tubular portion of the actuating means with the actuating means engaged to the locking means and the tubular portion butted against the support.

'871 Patent col. 4 l. 61 - col. 5 l. 19.

More specifically, LaRue Tactical contends that Claim 2 does not comprise sufficient structure to activate the locking means because an essential element to perform this function, the "actuating handle," is missing from the recited structure. While the term "actuating handle" does not appear in Claim 2, I agree with LaRue Tactical that it is mainly the actuating handle that performs the function of actuating the locking means. This is clear from the specification, see, e.g., '871 Patent col. 3 ll. 37-40 ("The tubular portion 84 includes an external surface from which an actuating handle 88 extends in right angle relation to the vertical axis of the tubular portion 84."), id. at col. 3 ll. 65-68 ("This engagement extends the actuating handle 88 of the first actuating means 70 away from the support portion 34a and across the plane of the second edge 72b of the first base portion 72."), id. at col. 4 ll. 14-19 ("Rotation of the lever of the first fastening device 64 in a counterclockwise direction and of the lever of the second fastening device 64 in a clockwise direction causes their respect first or second camming areas to pass, in abutting relation, under the engagement surface 35 of the first rail 36.")., from the drawings of '871 Patent, see, e.g., Figures 8 & 9, as well as from the animation provided by ARMS.

I find that, because of the lack of actuating handle, Claim 2 of the '871 Patent does not provide sufficient structure, materials or acts within the claim itself to show how the recited function, that of actuating, can be accomplished. I therefore conclude that the term "actuating means" used in Claim 2 and by reference in Claim 3 of the '871 Patent should be construed as a means-plus-function claim limitation pursuant to 35 U.S.C. § 112 P 6.

3 Relying on Searfoss v. Pioneer Consol. Corp., 374 F.3d 1142 (Fed. Cir. 2004), ARMS argues that Claim 2 does elaborate sufficient structure to perform the recited function. In Searfoss, the Federal Circuit held that the "actuation means" limitation was not a means-plus-function limitation because the claim specifically recited the structure that performed the claimed function, that of actuating, thus overcoming the presumption resulting from use of the word "means." Id. at 1149. I find ARMS' reliance on Searfoss to be misplaced because, contrary to the claim at issue in Searfoss, Claim 2 of the '871 Patent cannot provide sufficient structure to accomplish the recited function without the "actuating handle."

LaRue Tactical argues that the actuating means should be construed as to include an actuating handle and to require that the
actuating handle be mechanically linked to the shaft of the locking means by the pin and horizontal hole arrangement found in the specification of the '871 Patent. To support this argument, LaRue Tactical relies on the engagement process described in the following part of the specification of '871 Patent:

Association of the subassembly of the locking means 68 and the support 71 with the first actuating means 70, is accomplished by passing the shaft 74 of the locking means 68 through the aperture 82 and then through the tubular portion 84, in a press fit, horizontally aligning the opening 78 of the shaft 74 and the hole 86 of the tubular 84. This engagement extends the actuating handle 88 of the first actuating means 70 away from the support portion 36a and across the plane of the second edge 72b of the first base portion 72. A pin 34 is then passed through the hole 86 of the tubular portion 84 and the aligned opening 78 of the shaft 74.

'871 Patent col. 3 l. 58 - col. 4 l. 2 (emphasis added).

As discussed in Section III.A. supra, I find that the actuating handle is necessary to perform the function of actuating and therefore construe the term "actuating means" to include an "actuating handle." In contrast, I do not find it necessary that the actuating handle be mechanically linked to the shaft of the locking means as described by LaRue Tactical. In this respect, I consider the provision of Claim 2 pursuant to which "the actuating means [is] engaged to the locking means" to be sufficient to perform the function of actuating. Id. at col. 5 l. 18 (emphasis added). Accordingly, I reject LaRue Tactical's effort to limit the language of Claim 2 of the '871 Patent to the preferred embodiment described in the specification.

--- Footnotes ---

4 Because I find the mechanism described by LaRue Tactical to be unnecessary to perform the function of actuating, I adopt the Federal Circuit's cautionary approach with respect to importing limitations into claims. As discussed in Section II.A. supra, "[w]hen consulting the specification to clarify the meaning of claim terms, courts must take care not to import limitations into the claims from the specification." Abbott Labs. v. Sandoz, Inc., 566 F.3d 1282, 1288 (Fed. Cir. 2009) (en banc). For instance, "[a]lthough the specification often describes very specific embodiments of the invention," the Federal Circuit has "repeatedly warned against confining the claims to those embodiments." Kara Tech. Inc. v. Stamps.com Inc., 582 F.3d 1341, 1345 (Fed. Cir. 2009). In particular, the Federal Circuit has "expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." Id.

--- End Footnotes ---

In sum, I conclude that the term "actuating means" is a means-plus-function claim limitation which is to be construed to include an actuating handle.
of the machine without the presence of a [proper] filter." Motion, Ex. A, Col. 4, lines 58-63. Although both fingers or projections are capable of actuating the switch controlling the motor and disabling it when the filter is removed, only one of the projections engages the switch at any given time since there is only one switch. However, both projections are needed to properly locate the filter and ensure a proper seal. In other words, the projections serve two functions.

The fact that the two functions of the projections are recited separately is not problematic; "double recitation of elements of combination inventions does not necessarily render a claim vague and indefinite, particularly if . . . an element performs more than one function or overlapping functions." Palmer v. United States, 191 Ct. Cl. 346, 423 F.2d 316 (Ct. Cl.), cert. denied, 400 U.S. 951, 27 L. Ed. 2d 258, 91 S. Ct. 242 (1970). As the Court of Customs and Patent Appeals, the predecessor court for the Federal Circuit, stated in In re Kelley, 49 C.C.P.A. 1359, 305 F.2d 909, 916 (CCPA 1962): "The fact that one or more structural elements performing more than one function are common to the mechanisms which are recited separately in the claims does not prevent the claims from being sufficiently supported by the disclosure." Thus, the phrases "actuating member" and "plurality of projections" need not refer to two separate elements, as C-Vac argues, but are properly interpreted to allude to the two functions of the projections.

As a threshold matter, we agree with both parties that the "actuation means" limitation of claim 3 is not a means-plus-function limitation, as the district court found. The claim specifically recites the structure that performs the claimed function ("said actuation means including first and second pivot connections respectively between said first and second tension bail legs and a midpoint on said respective first and second extension bail legs"), thus overcoming the presumption resulting from use of the word "means." Though we find that the district court erred in construing the "actuation means" limitation to be a means-plus-function limitation, the error was harmless. Indeed [**15] both parties agree that it was harmless because they agree the scope of the claim would be identical, whether under the doctrine of equivalents or under the literal scope of the means-plus-function claim.

The third disputed term is "actuator." General Creation argues that "actuator" should be construed as a "switch to activate the toy." (Pls.' Br. at 16.) LeapFrog asks the court to construe "actuator" more specifically as "a pressure switch," because, it asserts, a pressure switch is the only type of "actuator" disclosed by the inventor in the specification. (Def.'s Br. at 32-35).

Again, I begin my analysis with the claim language. Claim 1 provides that the memory storage means produces audio signals "upon actuation of said … actuator." ( '213 patent, col. 5, 11. 4-15.) However, there is no further indication as to the structure of the "actuator." Thus, I must determine the ordinary meaning of "actuator" as defined by a toy inventor or toy manufacturer, experienced in educational toys. Unlike "book," as discussed above, "actuator" is a broad term, capable of many interpretations. An "actuator," as argued by General Creation, can be anything that activates something else, including but not limited to a switch, a lever, or an infrared light reader. (Pls.' Br. at 15.) These types of actuators, as well as many others, are used in toys and are known to toy inventors and toy manufacturers. Thus, the ordinary meaning of "actuator" is "anything that activates something else." As this is the ordinary meaning, I must look to the specification to determine if the inventor intended a different meaning in the context of the '213 patent.

LeapFrog contends that because the specification discloses only pressure switches as actuators, the term "actuator" should be construed as "pressure switch." (Def.'s Br. at 31-37.) However, I find that the specification does not so limit the claim.

First, pressure switches are not the only type of "actuator" referenced by the inventor in the specification. While the preferred embodiment focuses on the use of pressure switches, the summary of the invention portion of the specification uses only the general term "actuator." ( '213 patent, col. 1, 11. 34-62.) Also, both the summary of the invention portion and the preferred embodiment identify a remote control as an example of an actuator that could be used with this toy. ( '213 patent, col. 1, 11.58-59 & col. 4, 11. 8-19.) A remote control is a device that combines both pressure switches and infrared
signals, two different types of "actuators."

Second, even if pressure switches were the only type of actuators disclosed in the preferred embodiment, the inventor "is
not confined to that particular mode of use since the claims of the patent, not its specifications, measure the invention." SRI
Int'l, 775 F.2d at 1122. Instead, the preferred embodiment and the other parts of the specification should be used only to
determine if the inventor intended to deviate from the ordinary meaning given to a claim term. See Vitronics, 90 F.3d at
1582 citing Markman, 52 F.3d at 979.

LeapFrog contends that the rule set forth in Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473 (Fed. Cir. 1998), applies
in this case. Gentry Gallery held that in certain circumstances, "claims may be no broader than the supporting disclosure."
Id. at 1480. However, the Gentry Gallery case is distinguishable. In Gentry Gallery, the specification was "crystal clear that
a particular (i.e., narrow) understanding of a claim term [was] an 'essential element of [the inventor's] invention." Johnson
Worldwide Assocs., 175 F.3d at 993 (quoting Gentry Gallery, 134 F.3d at 1479). Here, the specification, by referring to the
"actuator" as a pressure switch, a remote control or a general actuator, makes it clear that the invention does not require a
particular type of actuator. Because more than one type of actuator is disclosed and because there is no indication that a
pressure switch must be used in this invention, the specification is consistent with the broader, ordinary meaning of actuator.

While the claim language does not specify what type of structure the "actuator" takes, it does specify that the function of the
"actuator" is to activate the memory storage means. The memory storage means "produces audio signals" ('213 patent, col.
5, 11. 2-3) and the audio signals are produced "upon actuation of said … actuator." ( '213 patent, col. 5, 11. 4-5). According
ly, "actuator" will be construed as "a device that activates the memory storage means."

1. The ’685 patent - the preamble

16. The analysis in this section is based entirely on intrinsic evidence consisting of the patent, the prosecution history and
the reexamination history.

17. The first claim element at issue is the meaning of the "adapted . . . for" and "adapted . . . to" clauses of the preamble.

18. "[A] claim preamble has the import that the claim as a whole suggests for it." Bell Communications Research, Inc. v.
Vitalink Communications Corp., 55 F.3d 615, 620 (Fed. Cir.1995). Where a patentee uses the claim preamble to recite
structural limitations of his claimed invention, the PTO and courts give effect to that usage. See id.; Corning Glass Works v.

19. In the reexamination of the ’685 patent, NAB relied on the preamble of claim 1 to demonstrate that the Scharbach patent
was not relevant to the art of dental prostheses. The examiner agreed, stating that it was not relevant "to the art of dental
prosthetics in that it does not address any of the problems encountered in this area." As in Corning Glass Works, the
specification makes it clear that the inventors were working on solving a problem with the art of dental prosthetics, not with
hip replacements. Thus, the preamble of Claim 1 limits claim 1 to the art of dental prosthetics.

20. The preamble recites that one end of the angled spacer element is "adapted . . . for attachment to a fixture [1] defining
therein a threaded aperture [7], said fixture [1] being intended for implantation in the maxillary." Thus, the preamble
describes the fixture as a dental fixture having a threaded aperture. The preamble further recites that the other end of the
spacer element is "adapted at its other end to support a dental prosthesis."

21. 3I has argued that these two "adapted" clauses are "means-plus-function" elements under 35 U.S.C. § 112, P6. 3I argues
that the phrase in the preamble, "adapted at its other end to support a dental prosthesis," is functional language which limits
the upper end of the angled abutment to the exact configuration shown in Fig. 2 of the patent.

22. 3I has cited no case, and the Court has been unable to find a case, holding that an "adapted . . . for" or "adapted . . . to"
clause in a preamble is a means-plus-function element. 3I's argument is without merit, in view of several recent Federal
Circuit authority on means-plus-function clauses.
23. Section 112 P6 of the patent statute provides that

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material or acts described in the specification and equivalents thereof.


24. "To invoke this statute, the alleged means-plus-function claim element must not recite a definite structure which performs the described function." Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed. Cir. 1996). In Cole, the Federal Circuit held that the phrase "perforation means . . . for tearing" fails to satisfy the statute "because it describes the structure supporting the tearing functions (i.e., perforations)." d.; See also York Products, Inc. v. Central Tractor Farm & Family Center, 99 F.3d 1568, 1574 (Fed. Cir. 1996) (the word "means" "protrude from the liner sidewall portions and form[ ] load locks" did not invoke section 112 P6).

25. In Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1582 (Fed. Cir. 1996) the Court held that the claim element "a cooperating detent mechanism defining the conjoint rotation of said shafts in predetermined intervals" was not a means-plus-function element. The Federal Circuit pointed out that claim drafters "conventionally use the preface 'means for' (or 'step for') when they intend to invoke section 112(6), and there is seldom any confusion about whether section 112(6) applies to a particular element." After noting that the particular mechanism in question - detent mechanism - was defined in functional terms, the court held that was not sufficient to convert it into a means-plus-function element.

First, the fact that a particular mechanism -- here detent mechanism -- is defined in functional terms is not sufficient to convert a claim element containing that term into a "means for performing a specified function" within the meaning of section 112(6).

91 F.3d at 1583. The Federal Circuit also noted that the claim element there in question did not use means plus function language. Id. at 1584. In that regard, the Court set forth two inter-related rules of claim construction for section 112 P6:

The use of the term means is not always necessary to trigger the application of section 112P6. Because "the use of the term "means" has come to be so closely associated with 'means-plus-function' claiming[,] it is fair to say that the use of the term 'means' (particularly as used in the phrase 'means for') generally invokes section 112(6) and that the use of a different formulation generally does not.

Id. at 1584.

26. The "adapted . . . for" and "adapted . . . to" clauses of the preamble of the '685 patent do not use the phrase "means for." Because the "use of a different formulation [than "means for"] generally does not invoke section 112, P6, this Court presumes that the "adapted" clauses in the preamble do not invoke section 112, P6. Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d at 1584.

27. Further, the body of the claim describes the second threaded bore: in claim element [d] it describes the "second portion" that "defines a second threaded bore" and in which both the second threaded bore and the second portion form an acute angle with respect to the through bore in the first portion. The function of the second threaded bore is to accept the screw that supports the dental prosthesis on the abutment -- the same as the function recited in the adapted . . . to clause of the preamble. Because "the alleged means-plus-function claim element must not recite a definite structure which performs the described function." Cole v. Kimberly-Clark Corp., 102 F.3d at 531, this is a further indication that the "adapted. . . to" clause in the preamble is not a means-plus-function element.

28. Finally, the Court looks to the '200 patent, which is related to the '685 patent, since it resulted from a patent application that was a continuation of the patent application for the '685 patent, and it thus has the same drawings and written specification. Clauses [a], [b], and [c] of claim 1 of the '200 patent are identical to the same clauses in claim 1 of the '685 patent. Clause [d], however, is different.
29. Clause [d] of the ‘200 patent includes a means-plus-function clause, "means for supporting and securing to said unitary member said dental prosthesis." That means-plus-function clause uses the classic language "means for" and shows that the inventors were capable of drafting a means-plus-function element when they intended to do so. Moreover, the function of "supporting . . . said dental prosthesis" in the means-plus-function clause of the ‘200 patent is the same as the function of the "adapted . . . to support a dental prosthesis" in the preamble. If the "adapted . . . to" clause in the ‘200 patent were construed to be a means-plus-function element, then the means-plus-function element in clause [d] of the 200 patent would be superfluous. The Court will not construe the meaning of a claim to render an element superfluous. Further, as a matter of common sense, the "adapted . . . for" and "adapted . . . to" clauses in the ‘685 and ‘200 patents must have the same meaning, since the specifications and drawings in the two patents are identical.

30. For the foregoing reasons, the "adapted . . . for" and "adapted . . . to" clauses of the preamble are not means-plus-function elements under section 112, P6.

M. "adapted for"

Touchtunes proposes that the phrase "adapted for" as used in the various claims of the ‘575 Patent and the ‘189 Patent means "physical modification of a structure specifically for the use as further set forth in the claim." This construction is based on the prosecution history of these patents, during which Arachnid amended claims to add the "adapted for" language to certain previously recited structures. (See, e.g., Presta Decl. Ex. 16 at 2 (changing the phrase "a display presenting song selections" to "a display adapted for presenting song selections").) These amendments were intended "to better clarify applicants' contribution to the art." (Id. at 7.) The modification of the claims to include the "adapted for" clause establishes that the clause is a limitation. See Manual of Patent Examining Procedure § 2111.04 (using "adapted for" as an example of claim language that may have a limiting effect and stating that "[t]he determination of whether [this] clause[] is a limitation in a claim depends on the specific facts of the case").

In contrast, Arachnid proposes that the term be construed as "combined and/or applied for use as further set forth in the claim." The phrase "applied for use" would not require any adaptation at all. Indeed, under Arachnid's proposed construction, for example, any unmodified display necessarily would be "adapted for presenting song selection" merely because the display operates in response to signals instructing it to present song selection. This construction removes the difference between the original and amended claims submitted by Arachnid during the prosecution of the patent and effectively reads the term "adapted for" out of the claims.

Touchtunes' proposed construction is consistent with the intrinsic record, including the prosecution history. The term "adapted for" is therefore construed as "physical modification of a structure specifically for the use as further set forth in the claim.

Sub-element 2. The leading edge of the channeling structure being adapted for positioning immediately below the shrimp eggs at the water surface

BAI argues that this "positioning" element of claim 8 requires constant and immediate adjustment of the channeling structure, which its device cannot accomplish because it is heavy, bulky and difficult to adjust. This "constant adjustment" argument also applies to the "height adjustment means" element of claim 8. The specification provides:

Accordingly, the positioning step involves constant adjustment of the leading edge of the funnel to ensure its location just below the egg level. This is accomplished by using a height adjustment device to selectively move the funnel up or down, depending upon the change in layer thickness.

Col. 3, lines 62-67 ('062 patent).
…[The funnel structure's] depth must be adjustable to enable an operator to immediately vary its position as egg layered depth changes across the water surface….

Col. 7, lines 47-49 (‘062 patent). This court disagrees that a constant and immediate adjustment limitation be read into claim 8. 26

26 From oral argument, it is plain to the court that BAI's height adjustment mechanism sometimes gets "stuck" because the working platform is broken and has not been fixed. Working as designed, the working platform would be adjustable through turning the height adjustment wheel. The court is unpersuaded that the operating characteristics of a broken BAI device would transform it from an infringing harvesting device to a non infringing device. "Imperfect practice of an invention does not avoid infringement." Paper Converting Mach. Co. v. Magna-Graphics Corp., 745 F.2d 11, 20, 223 U.S.P.Q. 591, 597 (Fed. Cir. 1984).

First, in claim 8, neither the height adjustment element nor the "positioning" sub element of the channeling structure require "constant" or "immediate" adjustability. Claim 8 only requires the leading edge to be adapted for positioning immediately below the shrimp eggs and the height adjustment means are coupled to the channel structure for providing adjustment of the height. Second, the specification does not define the scope of patent protection. The examples and discussion of constantly and immediately positioning the leading edge of the skimmer are examples of embodiments of the invention found in the specification, not fundamental principles to the invention, and therefore will not be read into the claims. Environmental Designs v. Union Oil Co. of Cal., 713 F.2d 693, 699, 218 U.S.P.Q. 865, 871 (Fed. Cir. 1983). This court declines to read a constant or immediate adjustability limitation from the specification into claim 8.

F. "said separate switches are adapted for simultaneously operating said camera for capturing continuing images and operating said microphone for capturing sounds with the continuing images"

Minerva contends that the term "said separate switches are adapted for simultaneously operating said camera for capturing continuing images and operating said microphone for capturing sounds with the continuing images" means "one of the switches is configured to operate the microphone and camera such that they allow the camera and microphone to operate at the same time." The defendants' proposed construction is "the independent switch for operating the camera and the independent switch for operating the microphone configured such that they can be actuated to allow the camera and microphone to begin operation at exactly the same time." Claim 28 of the '783 patent requires "separate switches for separately operating said microphone for capturing sounds and said camera for capturing said still or continuing images" and "said separate switches are adapted for simultaneously operating said camera . . . and operating said microphone." (emphasis added).

The parties dispute the significance of "simultaneously," although they have agreed upon a definition of the word: "occurring, done, etc. at the same time." Webster's New World Dictionary (3rd ed. 1990). The defendants assert that "simultaneously" means that the switches must be capable of beginning the operation of the camera and the microphone at exactly the same time. On the other hand, the plaintiff contends that the switches need only to allow the camera and microphone to operate at the same time. The dictionary definition of "simultaneously" does not require the operations to commence at exactly the same time. In addition, the claim language reads "simultaneously operating," not "simultaneously commencing."

The proposed constructions also differ on how the switches are used to simultaneously operate the camera and microphone. Minerva contends that one of the switches allows simultaneous operation of both the camera and microphone. The defendants maintain that there is an independent switch for the camera and an independent switch for the microphone. The simultaneous operation of the camera and microphone is controlled by "said separate switches"--this refers back to the
initial disclosure of "separate switches" within the claim. The earlier claim limitation discusses separate switches for "separately operating said microphone" and "separately operating said camera." There is no disclosure of a separate switch that jointly operates both the camera and microphone.

For the foregoing reasons, the court construes the term to mean "the independent switch for operating the camera and the independent switch for operating the microphone configured such that they allow the camera and microphone to operate at the same time."

1. Construction

Element A of claim 1 defines "rings adapted for supporting ornaments." Both parties agree about the meaning of the term "ring," and Wilshire concedes that its Versailles Chandeliers feature them. The dispute thus centers upon the proper construction of the phrase "adapted for supporting ornaments."

Schonbek contends that an ornament whose weight is in any manner borne by a ring is, under the ordinary meaning of the term, "supported" by that ring. That this, if without the ring the ornament would fall to the ground, then that is sufficient to consider the ring as supporting the ornament. Wilshire counters that the ordinary meaning of "support" is more restrictive, such that an ornament is only supported if it is directly attached to the ring.

Neither party has argued that the word "support" has a particular meaning in the field of chandelier design or construction that differs from its ordinary one. Nor is the term precisely defined in the 805 patent's specification. Consequently, I begin my construction, just as the parties suggest, with the ordinary meaning of the term. See DeMarini Sports, Inc. v. Worth, Inc., 239 F.3d 1314, 1324 (Fed.Cir.2001).

Looking to dictionary definitions of the word "support," I note that Webster's Third New International Dictionary (1986) defines "to support" as "to hold up or in position: serve as a foundation or prop for: bear the weight or stress of: keep from sinking or falling," adding in a side note that "support' is applicable to a variety of uses with the general meaning or suggestion of carrying or leaning from or as if from below, of maintaining or holding up the weight or pressure of, and of forestalling sinking or falling back." The formal definition is virtually identical to that found in the earlier edition favored by some purists, Webster's New International Dictionary (2d ed.1950). Cf. Empire Co., Inc. v. OSHA, 136 F.3d 873, 878 n.2 (1st Cir.1998). The American Heritage Dictionary (3d ed. 1992), meanwhile, supplies similar meaning but in different order of priority, assigning the first to "to bear the weight of, especially from below," and the second to "to hold in position so as to keep from falling, sinking, or slipping."

None of these definitions appear to me to place particular emphasis on direct attachment as a crucial part of the meaning of "support." Furthermore, even if there was greater ambiguity in this regard, I note that Schonbek's interpretation of the claim language is strengthened, in the particular context of the 805 patent, by the patent's specification.

As noted, the specification does not precisely define the word "support," but the Federal Circuit has emphasized that the claim language need not be evaluated "in a vacuum." DeMarini Sports, 239 F.3d at 1325. Cf. Duncan v. Walker, 533 U.S. 167, 121 S. Ct. 2120, 2135, 150 L. Ed. 2d 251 (2001) (Breyer, J. dissenting) ("dictionaries . . . unilluminated by purpose, can lead courts into blind alleys"); Samuel A. Thumma & Jeffrey L. Kirchmeier, The Lexicon Remains A Fortress: An Update, 5 Green Bag 2d 51 (2001) (courts "should rely less on bare dictionary definitions and place more emphasis on context, conduct, purpose, history and other relevant sources") (quoting Samuel A. Thumma & Jeffrey L. Kirchmeier, The Lexicon Has Become A Fortress: The United States Supreme Court's Use of Dictionaries, 47 Buff. L. Rev. 227, 298 (1999)). Thus, whatever ordinary meaning is suggested for claim language by dictionary definitions must be put into the context of the specification, and even the prosecution history, of a given patent. DeMarini Sports, 239 F.3d at 1325. Indeed, "such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." Vitronics Corporation v. Conceptronics, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996).

Looking then, to the 805 patent's specification, I find described at columns 5:33-38 and 11:12-37, and depicted at Figures 17 and 18, an embodiment of claim 1 that features an array of scrolled spokes borne by two inner rings (themselves attached by
a central column to the ceiling), the spokes rather than these rings directly "bearing" or "carrying" -- in the language of the specification -- all but (arguably) one of the ornaments. 1 Adopting Wilshire's restrictive definition of "support" thus would require ignoring a portion of the patent specification, insofar as it contains an embodiment in which the rings do not directly, but rather indirectly bear the ornaments. In light of the Federal Circuit's emphasis on the patent specification as "the single best guide to the meaning of a disputed term," Vitronics, 90 F.3d at 1582, and noting that dictionary definitions of "support" in any event do not focus on direct attachment, I decline Wilshire's invitation.

--- Footnotes ---

1 Wilshire seeks to dispose of this embodiment by suggesting that it is associated with claim 25 of the 805 patent, rather than claim 1. Claim 25 specifically concerns the "twist tab" locking mechanism that is disclosed in the patent specification as corresponding structure to the "locking means" of claim 1. The basis for Wilshire's position appears to be the fact that the patent specification describes the embodiment depicted at Figures 17 and 18 as fastened by such twist tabs, rather than one of the other locking mechanisms also disclosed. '851 patent, column 11:29-37. I find Wilshire's argument entirely unpersuasive. Although claim 25 is not drafted with explicit language of dependency, a practical reading cannot fail to perceive its linkage to the core claim of the 805 patent, claim 1. Furthermore, it strains reason to suggest that a full blown chandelier frame merely embodies a particular locking mechanism that is itself generally preferred for the subject matter of the 805 patent's core claim (i.e. chandelier frames).

--- End Footnotes ---

Accordingly, I construe element A of claim 1 of the 805 patent to include circumstances where the rings of a chandelier frame bear the weight of ornaments only indirectly.

--- 70 ---

A. Claim Term in Dispute: "adapted to"

Claim 3 of the '498 Patent provides:

The combination of claim 1 wherein said detachable elongate tip portion is a long and substantially pliable segment adapted to be multiply folded upon itself to substantially pack said body cavity.

('498 Patent, Col. 13:15-18.)

The parties dispute the proper construction of the phrase "adapted to." Similar use of the phrase "adapted to" appears in Claim 9 of the '498 Patent and Claims 8 and 33 of the '385 Patent. For example, Claim 8 provides:

The improvement of claim 7 wherein said elongate distal tip is a long and substantially pliable segment adapted to be multiply folded upon itself to sufficiently occupy said body cavity to impede fluid flow therein.

('385 Patent, Col. 13:40-43.)

B. Principles of Claim Construction

A principle of patent claim construction is that the words of a claim are to be given their ordinary and customary meaning, which is the meaning that the words would have to a person of ordinary skill in the art at the time of the invention. Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005). A person skilled in the art is deemed to have read the claims and written description and to have knowledge of any special meaning and usage of the words used in the claims. Id. at 1313. Thus, in the claim construction process, the Court should start by reviewing these same resources to derive definitions for the words and phrases in the claims. Id.

C. Proposed Definitions
Both parties contend that the phrase "adapted to" is an ordinary and customary phrase and should be given its ordinary and customary meaning. (See Plaintiffs' Brief Regarding Claim Construction of the "Adapted To" Claim Term, "Pls.' Br.," Docket Item No. 930, at 3; Defendant's Brief in Support of Claim Construction of the Phrase "Adapted To," "Def.'s Br.," Docket Item No. 931, at 2.) However, they proffer different meanings for the phrase both based on dictionary definitions.

Plaintiffs Boston Scientific Corp. and Target Therapeutics, Inc. contend that "adapted to" should be construed to mean "configured to" to convey that the elongate tip portion was designed (i.e., configured) to multiply fold upon itself. (Pls.' Br. at 3.) Defendant Cordis Corp. ("Defendant") contends that the term should be construed to mean "suitable for" because that is the plain and ordinary meaning of "adapted to." (Def.'s Br. at 1.)

D. Construction of Phrase

In accordance with the principles of claim construction articulated in Phillips, the Court turns first to the intrinsic evidence to construe the phrase "adapted to."

Claim 7 of the '385 Patent discloses an elongate distal tip "capable of" 1 being multiply folded upon itself:

An apparatus for use in occluding a body cavity comprising: … a detachable elongate distal coupled to said wire, said elongate distal tip being a relaxed coil capable of being multiply folded upon itself.

('385 Patent, Col. 13:33-39.) Claim 8, which depends from Claim 7, claims an elongate distal tip "adapted to" be multiply folded upon itself:

The improvement of claim 7 wherein said elongate distal tip is a long and substantially pliable segment adapted to be multiply folded upon itself to sufficiently occupy said body cavity to impede fluid flow therein.

('385 Patent, Col. 13:40-43.)

Footnotes

1 The term "capable of is also used in Claims 15, 32, and 38 of the '385 Patent.

Under the doctrine of claim differentiation, there is a presumption that when different words or phrases are used in separate claims, they are presumed to have different meanings. See Comark Communications Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998). There is no dispute between the parties that the phrase "capable of means "having the ability to." (See Stipulation Regarding the Court's August 21, 2006 Order Re: Claim Construction of the "Multiply Folded" Term, Docket Item No. 928.) An object may be "capable of multiply folding upon itself, even if it is not intentionally and specifically made in a way that would cause it to multiply fold. Thus, "capable of is a broader term than "adapted to."

The definition asserted by Defendant Cordis, namely "suitable for" is similar to "capable of." That is, a device could be suitable for multiply folding upon itself, without being intentionally and specifically made in a way that would cause it to multiply fold. Moreover, Defendant's proposed definition of "suitable for" does not follow from a plain dictionary definition of the word "adapt." Widely accepted dictionary definitions of "adapt" are "to make fit (as for a specific new use or situation)," (Merriam-Webster's Collegiate Dictionary 13 (10th ed. 1998)), and "to make suitable to a specific use or situation." American Heritage College Dictionary 15 (3d ed. 1993). No dictionary that Defendant has cited defines "adapt to" to mean "suitable for."

On the other hand, Plaintiffs' proposed definition of "configured to" embraces the concept of a device intentionally and specifically made to act in a certain way. A widely accepted dictionary definition of the word "configure" means "[t]o design, arrange, set up, or shape with a view to specific applications or uses." American Heritage Dictionary 386 (4th ed. 2000). The written description of the '498 patent supports the definition of "configured to" because it discloses embodiments in which specific types of materials and wire dimensions are used to make coils that act in certain ways. ('498 Patent, Col. 9:6-13.)
III. CONCLUSION

The Court construes "adapted to" to mean "configured to."

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"each of said different sets of elements being adapted to at least assist in holding one of a plurality of differently configured pumps to the housing"

Claim 5 of the '662 Patent and claims 1, 11, and 18 of the '767 Patent contain the term "each of said different sets of elements being adapted to at least assist in holding one of a plurality of differently configured pumps to the housing." SHURflo contends that the term means "each different set of elements having the capacity to at least assist in holding one of the differently configured pumps to the housing." Defendants contend that the term means "each of the different sets of elements is uniquely tailored to assist in holding only one of the differently configured pumps." The parties disagreement centers around two main disputes: (1) whether the term requires exclusivity between the different sets of elements; and (2) the construction of the phrase "adapted to." Because the parties' first dispute was addressed under the previous disputed claim term, there is no need to repeat the parties' arguments or the Court's analysis. For the same reasons discussed above, a requirement of exclusivity between the different sets of elements is not supported by the claim language, the specification, or the prosecution history. The Court will address the parties' second dispute in some detail as it is a source of disagreement among the parties in many of the remaining disputed terms.

SHURflo contends that the term "adapted to" means "having the capacity to," while Defendants contend that the term means "uniquely tailored." Although SHURflo offers no persuasive support for its proposed construction of the term, it argues that Defendants proposed construction lacks support in the intrinsic record. Specifically, SHURflo argues that the prosecution history merely shows that the claimed "different sets of elements" are capable of holding "pumps of different configurations." SHURflo's Reply Brief, at 5. Neither ordinary meaning nor any proper influence of the specification suggests that the phrase "adapted to" should be interpreted to mean "uniquely tailored." Such a construction would be a severe narrowing of the ordinary meaning, which is not appropriate because there is no clear definition or disclaimer in the intrinsic record. On the other hand, Defendants argue that SHURflo's proposed construction is too broad because "[s]omething may have a capacity for a use (e.g., through misuse or incidental use) without being made fit for that use." Defendants' Responsive Brief, at 14. Indeed, in view of the specification, simple capacity does not reflect the intended meaning of "adapted to." Thus, SHURflo's proposed construction of "having the capacity to" is much broader than "adapted to."

Understanding that extrinsic evidence is less significant than the intrinsic record, it is helpful in this instance to look at the dictionary definition of the word "adapted." Merriam--Webster's Online Dictionary defines the term "adapted" to mean "to make fit (as for a specific or new use or situation) often by modification." In addition, the claim language itself is instructive, stating "each of said different sets of elements being adapted to at least assist in holding one of a plurality of differently configured pumps to the housing." The ordinary meaning of the phrase "adapted to" is precisely consistent with the claim in that each "set" of elements is "made fit" to assist in holding a pump. As seen in Figures 1 through 4 of the specification, the "sets" of elements are "made fit" by the placement and section of clips, holes, cavities and other items that contribute to holding the pump. Thus, the "adaptation" of an element set is illustrated by this placement and selection of elements, which is a designed or configured feature of the element set.

Because SHURflo's proposed construction is too broad and Defendants' proposed construction is too narrow, the Court construes the term "adapted to" to mean "designed or configured to." The Court's construction gives the term the appropriate amount of breadth consistent with the specification. Accordingly, the Court construes the term "each of said different sets of elements being adapted to at least assist in holding one of a plurality of differently configured pumps to the housing" to mean "each different set of elements is designed or configured to assist in holding one of the differently configured pumps to the housing."
5. "Graft which is adapted to be anchored within one of the flow lumens" and "Graft structure which is adapted to be anchored within one of the flow lumens" 8

--- Footnotes ---

8 The term "graft which is adapted to be anchored within on of the flow lumens" is found in independent claim 1 of the '458 Patent. The term "graft structure which is adapted to be anchored within one of the flow lumens" is found in independent claim 1 of the '158 Patent.

--- End Footnotes ---

Because the parties requested that the Court construe the term "graft," as used in the preamble of the claims but not the bodies of claims, the Court inquired of the parties whether the crux of the dispute over this phrase, and other similar phrases, was with respect to the "adapted to be anchored within" language. Plaintiffs argued it was. Defendants argued it was not and argued that the Court must construe the entire phrase. Defendants also argued that the phrase, as with their proposed construction of the term "graft," should be construed to be an intraluminal device. The Court concludes this phrase should be construed to require an intraluminal limitation. Although the word "graft" is followed by a "which" clause, that clause does not fully elaborate on the meaning of the word graft. As set forth above in Section B.1, the specification demonstrates how the inventors defined the word "graft."

Although the parties disagree on the intraluminal limitation, they do agree that this phrase should be construed in such a fashion as to make clear that the "graft" contains some structure that permits it to be attached to a flow lumen. Although the claim language is silent, the parties also agree that wires perform this function. (See, e.g., Plaintiffs' Br. at 18:6-7 ("The parties seem to be in agreement that the structure that allows the anchoring to occur is the wires.").) The parties again dispute, however, whether the wires must be malleable. The parties also dispute whether the wires must project beyond the end of the graft body.

For the reasons set forth above in Section B.2, the Court concludes that the wires must be malleable. Although the Court concludes that to serve their function, the wires in question must be located at or near the end of the graft or graft structure, the wire need not project beyond the end of the material forming the graft body. In the specification, the inventors state that the "projection of alternate crests or apices of the end wire or wires beyond at least part of the end or ends of the graft body is an important feature of this invention." ('458 Patent, col. 2, ll. 6-8.) The inventors then elaborate on the importance of this feature as follows:

As the graft is expanded by a balloon, the expansion of the wires, and of the balloon, will be limited by the diameter of the tubular graft body except in the region of the alternate crests or apices of the end wire or wires. The balloon will be able to expand these crests slightly more than the remainder of the wire so that they bell outwardly away from the adjacent end of the graft body. … This belling out of the crests of the wires at one or both ends of the graft body into contact with the inside surface of the vessel wall and then being at least partly embedded in the wall will assist in resisting any tendency for the graft to move longitudinally within the vessel after insertion.

(Id., col. 2, ll. 8-22.) Thus, the importance of the crests of wire is to permit the device to be expanded in such a fashion that it will engage with the vessel wall. With respect to how far the crests of wire might extend, the inventors state the crests of wire normally will extend beyond the end of the graft body. However, they also state that "[i]t would, …, be possible to have flaps of graft material protrud[ing] up the outside of each crest even though intermediate the crests the end of the graft stops well short of the crests. In this latter arrangement the crests are still free to bell outwardly as has been described above even though the crests do not extend absolutely beyond the end of the graft." (Id., col. 2, ll. 29-35 (emphasis added).) It is clear from the specification that if the graft body covers the wire crests, that will not diminish the importance of the wire crests and will not preclude the wire crests from performing their function. As such, the Court concludes that the wires need not always extend beyond the end of the material forming the graft body.

Accordingly, the Court construes the term "graft [structure] which is adapted to be anchored within one of the flow lumens"
to mean: "An intraluminal graft that includes malleable wires located proximal to at least one end of the graft [structure], which enable the intraluminal graft to be secured or attached to one of the flow lumens of the bifurcated base [graft] structure in an overlapping relationship."

8. said first wall portion adapted to be deformed during said seaming operation ('826 patent, claim 13)

Crown's proposed construction is "[a]dapted to have its shape altered during the seaming operation." 43 Rexam's proposed construction is "[s]ome treatment or conditioning, done to the first wall portion of the can end that makes the first wall portion easier to deform than the rest of the of the can end." 44

The court rejects Rexam's proposed construction requiring "some treatment or conditioning" done to part of the can end for the same reasons stated in number 4, above. The court adopts Crown's proposed construction: "adapted to have its shape altered during the seaming operation."

D. "A third periphery surface adapted to be disposed adjacent and spaced from the back of the knee of the person"

The parties agree that the third periphery surface need not touch the back of the knee; they differ as to the shape and orientation of that surface. Plaintiff argues that the phrase requires only that the third periphery surface face, but need not touch, the back of the knee. Plaintiff suggests that the third periphery surface can be curved and need not be perpendicular to the pad's major longitudinal axis. Defendant argues that the phrase means that the third periphery surface faces the back of the knee, is perpendicular to the major longitudinal axis of the pad, and is "truncated" and does not include an apex or point touching the back of the knee.

The original patent application claim 13 (later amended to become what is now claim 12) did not include reference to a third or fourth periphery surface. See Prosecution History, Application at 20. In response to the examiner's comments and rejections, the plaintiff amended the claim to add the language describing the third and fourth periphery surfaces.

The claim language, specification, and prosecution history do not reveal the ordinary and customary meaning of "adjacent," and the Court will consult a dictionary. The dictionary definition of "adjacent" is: "1. near or close; next or contiguous . . . 2. Geom. (of two angles) having a common vertex and one common side." Random House College Dictionary (1973). Thus, the plain language of the claim, "disposed adjacent and spaced from the back of the knee," is silent as to the orientation of the third periphery surface and the measure of the angle at which it intersects the major longitudinal axis.

In the specification, plaintiff's drawings appear to depict the third periphery surface as perpendicular to the major longitudinal axis. The specification discusses angle 72, which is the angle where the third periphery surface (facing the knee) and the second periphery surface (facing the lower leg) meet: "Preferably, angle 72 is a right angle . . . in order to increase the amount of volume of flexible enclosure containing flexible, resilient material acting upon the back of the upper leg." Patent, col. 5, lines 37-40; Patent Figs. 1, 2 (internal references to illustration legends omitted). As the specification's choice of words makes clear, this configuration is a preferred embodiment, and as such, cannot be used to limit the claim. Anchor Wall, 340 F.3d at 1306-7. Further, "when a claim term is expressed in general descriptive words," the court "will not
ordinarily limit the term to a numerical range that may appear in the written description or in other claims." Id. at 1358, quoting Renishaw PLC v. Marposs Societa per Azioni, 158 F.3d 1243, 1249 (Fed. Cir. 1998) (other citations omitted).

The specification also describes a configuration wherein both the third and fourth periphery surfaces "are disposed substantially perpendicular to first periphery surface," which faces the upper leg. Patent, col. 5, lines 35-36; Patent Figs. 1, 2. This description is also a preferred embodiment which cannot operate to limit a claim. Anchor Wall, 340 F.3d at 1306-7.

The third periphery surface is one of the four periphery surfaces that define the substantially quadrilaterally shaped sides of the pad structure. As discussed above, that quadrilateral must have internal angles of approximately 360 degrees, and the sides of the quadrilateral must be straight overall. No requirement that the third periphery surface must be perpendicular to the major longitudinal axis inheres in the definition of a quadrilateral.

The Court finds that claim 12 allows the third periphery surface to be perpendicular, but does not require it to be perpendicular.

Defendant argues that the phrase "spaced from the back of the knee" shows that plaintiff specifically disclaimed a pad structure wherein the third periphery surface forms an apex. Defendant argues that if the third periphery surface extended to an apex, it would no longer be spaced from the back of the knee. Defendant notes that plaintiff's preferred embodiment describes and illustrates the third periphery surface as truncated. Patent Fig. 3; Patent, col. 5, lines 40-49.

Two of the three illustrations in the specification depict the pad structure with a truncated third periphery surface. See Patent Figs. 1, 3. The specification explains:

Although pad structure could be formed having a configuration of each side face surface in the shape of a triangle, as illustrated in FIG. 2, it has been determined that pad structure is more comfortable for the wearer of pad structure if the tip of flexible enclosure is removed, or truncated, whereby the third periphery surface is formed by the removal of portion of the flexible enclosure to leave flexible enclosure in the configuration illustrated in FIGS. 1 and 3.

Patent, col. 5, lines 40-49 (internal references to illustration legend omitted). The Court finds that this language merely expresses a preferred embodiment of the pad structure, but does not in itself operate to limit the claim, which does not describe the third periphery surface as truncated.

The Court also notes that the patent's third illustration, Fig. 2, depicts the pad structure in the shape of a triangle with an apex facing the back of the knee. The depiction of the pad structure in the overall shape of a triangle appears to contradict the claim's requirements of four periphery surfaces and two substantially quadrilaterally shaped sides. The claim's language, however, does not preclude an enclosure in the overall shape of a triangle with the surface of the tip truncated very slightly, resulting in a very narrow third periphery surface. The requirements of four periphery surfaces and two quadrilaterally shaped sides, however, do preclude a pad enclosure shaped like a true triangle with the third periphery surface being a true apex. Whether the third periphery surface of a particular pad enclosure is narrow enough to constitute the apex of a triangle is a question of fact.

The Court construes the claim language to allow, but not require, the third periphery surface to be perpendicular to the major longitudinal axis. The claim language precludes a pad enclosure in the shape of a true triangle with an apex facing the back of the knee, but allows for a pad enclosure with two substantially quadrilaterally shaped sides and four periphery surfaces, where the third periphery surface is very narrow. Finally, the pad enclosure need not touch the knee, as the parties agree.

4. [seaming panel] adapted to be formed into a portion of said double seam during said seaming operation ('826 patent, claim 13)

Crown's proposed construction is "[a]adapted to be formed into a portion of the double seaming during the seaming operation." 36 Rexam's proposed construction is "[s]ome treatment or conditioning, done to the first wall portion of the can
end that makes the first wall portion easier to deform than the rest of the can end." 37

The court adopts Crown's proposed construction.

The claim language does not indicate the limitation Rexam proposes. The preamble of claim 13 of the '826 patent recites, in part, "[a] metal can end for use in packaging beverages under pressure and adapted to be joined to a can body by a seaming process to form a double seam therewith using a rotatable chuck . . . said can end comprising . . . ." 38 The element at issue reads "a peripheral cover hook, said peripheral cover hook comprising a seaming panel adapted to be formed into a portion of said double seam during said seaming operation." 39 The use of "adapted" in the preamble, referring to the entire can end and repetition of that word in the disputed claim element supports Crown's position that the word "adapted" is merely a patent drafter's term describing functionality, i.e., to be formed into a double seam during the seaming operation.

Furthermore, nowhere in the common specification is there any indication that the seaming panel of the claimed can end must be treated or conditioned so that it is easier to deform than the rest of the can end as required by Rexam's proposed construction. Therefore, the court determines this claim term requires no further construction and adopts Crown's proposed construction: "adapted to be formed into a portion of the double seaming during the seaming operation."

2. The "Adapted to be" Limitation

The parties dispute the meaning of the additional words "adapted to be" preceding the previously construed term "in pressure contact with a portion of the skin surface" in claim 27 of the '844 Patent. Candela insists that it limits the invention to applicators which are "fit for (i.e., constructed for)" pressing down on the skin, while Palomar argues that it includes all applicators which are "capable" of pressing down on the skin, even if not specifically designed for that purpose. (Compare Docket # 45, 15-17, with Docket # 35, 17-18.) While this phrase is commonly used in patent claims, guidance from the Federal Circuit on its meaning is rather sparse. 3

Palomar's construction effectively reads the phrase out of the claim as a limitation without first examining it in light of the specification. See Phillips, 415 F.3d at 1312-13; see also Manual of Patent Examining Procedure § 2111.04 (8th ed., rev. 5, Aug. 2006) ("The determination of whether [the clause 'adapted to'] is a limitation in a claim depends on the specific facts
of the case.

Almost any applicator shape is "capable" of being in pressure contact with the skin. The specification, however, describes the applicator in one embodiment as having "a convex surface in contact with the skin surface," while another describes it as "designed to form a fold of the skin." (’844 Patent, col. 2 ll.47-51.) The design of the applicator is important to provide "efficient compression of the skin," "uniform displacement of blood," "allow[] optical radiation to be coupled into and out of the epidermis," and, in an alternative embodiment, to apply pressure "to the skin on both sides." (Id. at col.6 ll.50-51, col.7 ll.1-3, 14-15, col. 15 ll.10-11.) Therefore, the specification supports an interpretation of "adapted for" that requires some deliberate design or construction of the applicator that relates to the function of its being "in pressure contact with the skin." Other courts have come to similar conclusions. See Boston Sci. Corp. v. Cordis Corp., No. C 02-10474 JW, 2006 U.S. Dist. LEXIS 94329, at *7 (N.D. Cal. Dec. 20, 2006) (unpublished) (concluding that "adapted to" requires "the concept of a device intentionally and specifically made to act in a certain way"). Therefore, I conclude that the phrase "adapted to be" requires that the applicator be designed to be in pressure contact with the skin.

1. "wing section adapted to be out of a strain path"

The parties' proposed constructions are as follows:

CTS
wing section is a portion of the substrate contiguous with the center section but does not flex in response to a force transmitted to the center section by the step section

TK
the wing section is configured so that the force of weight applied on the substrate does not cause strain in the wing section

Again, CTS's proposed interpretation carries the day. Figure 2 of the ’361 Patent shows that the wing sections (24) are attached to the center section (102). The specification also explains that the wing sections are "located out of the strain or flexing path that affects [the] center section." ’361 Pat., Abstract; Col. 4, II. 19-25. Thus, when a weight is applied to the strain gage, the wing sections do not flex. Id.

TK's proposed interpretation of a "wing section adapted to be out of a strain path" boil down to a second attempt to limit the claim such that the weight must be applied directly to the substrate. The claim language, however, does not require that weight must be applied directly to the substrate. Rather, the claim states that the wing section is configured such that as the center section is allowed to flex in response to an applied force, but the wing section is not caused "to flex or have strain therein." Id. Col. 4, II. 23-25. There is no requirement that the weight is applied on the substrate. Rather, the claim clearly states that the center section is adapted to flex "in response" to weight applied.

Like the ’013 patent, TK it attempting to read limitations from the specification into the claim and to limit the invention to a single preferred embodiment disclosed in the specification. In addition, in arguing that the disputed phrase should mean that: "the wing section is configured so that the force of weight applied on the substrate does not cause strain in the wing section," TK seeks to limit the location where the weight to be measured is applied. The claim, however, includes no language regarding where the supposed "force of weight" is applied. TK also confuses the issues by using the term "force of weight." Both parties have stipulated that "weight" is "a force by which a body or object is attracted to earth by gravity;" "Force of weight" is redundant and meaningless. While the ’361 patent uses the term "force of the weight," col. 4, II. 17-19); "of the weight" clearly modifies the force that is applied. It is not that the weight itself is applied.

TK also reiterates its position on the force applied to the "step section" and transmitted to the "center section" which was addressed above in interpreting the ’013 patent. In addition to the plain language of the claim requiring the force to act on the "step section" as discussed above, the context of the actual invention cannot require the weight to be applied directly to the substrate. In the context of the actual invention, the weight being measured is that of the passenger in the car seat. It does not follow that the passenger would sit directly on the substrate.

Rather, the ’361 specification teaches otherwise:

This invention relates to a force sensor or strain gage sensor for detecting the presence of a person having a weight in a car seat, and in particular to a strain gage that can detect the presence of an occupant using strain sensitive resistors and
provide an electrical signal to control activation of an airbag.

'361 Pat., Col. 1, ll. 25-30.

Referring to FIG. 2, another embodiment of a strain gage sensor 100 is shown. Sensor 100 has a metal substrate 12 with an upper surface 13 and a bottom surface 14. Metal substrate 12 is preferably formed from stainless steel. Substrate 12 has step sections 104 that extends downwardly generally perpendicularly on both sides of a center section 102. A pair of outer flat sections 106 connect with and extend away from step sections 104. Apertures 108 are located in outer sections 106. Fasteners (not shown) would be used to attach strain gage sensor 100 to a structure that supports a weight or force to be measured. The step sections concentrate the force of the weight to be measured onto the center section causing the center section to slightly flex.

Id., col. 4, ll. 8-20.

Accordingly, CTS' proposed interpretation is supported by the context of the claim language and the actual invention. As such, "wing section adapted to be out of a strain path" means "wing section is a portion of the substrate contiguous with the center section but does not flex in response to a force transmitted to the center section by the step section."

The parties' proposed constructions are as follows:

<table>
<thead>
<tr>
<th>CTS</th>
<th>TK</th>
</tr>
</thead>
<tbody>
<tr>
<td>a portion of the substrate contiguous with the center section, but does not flex in response to stress transmitted to the center section by the step section</td>
<td>the wing section is configured so that the force of weight applied on the substrate does not impact the wing section or cause it to flex</td>
</tr>
</tbody>
</table>

The Court agrees with CTS. In Figure 1, the wing sections (22) are contiguous with the center section (14). The specification only states that the wing sections are configured so they do not flex when force is transmitted to the center section via the step section. '013 Pat., col. 2, ll. 28-32; col. 3, ll. 21-27; and col. 4, ll. 2-16.

TK's proposed interpretation is improper because of the use of the redundant term "force of weight." It is also inconsistent with the context and ordinary claim meaning as a whole, because (a) the specification teaches that the wing section is not affected by the weight the presence of which is to be detected; and (b) the specification does not teach or suggest that a "weight force" pushes down on the sensor substrate. Instead, the specification teaches that the force to which the weight sensor is subjected when the vehicle seat is occupied is first received at the outer flat sections 18 and transmitted to the center section 14 along the path defined by the step sections but without involvement of the wing sections. '013 pat, col. 3, ll. 12-19.

The claim language is clear. The wing section is simply a portion of the substrate that is connected to the center section, yet is positioned such that force experienced by the center portion does not cause the wing section to flex.

TK's proposed interpretation attempts to add limitations that are not in the claim or specification, particularly as to where the weight to be measured is applied. The specification states that in the preferred embodiment the outer sections of the sensor are fastened to a support structure for supporting the weight to be measured, and that the weight applied to the outer sections is transferred through the step sections to the center. However, in the context of the claim and the specification, the weight acting upon the step section does not directly act on the step section. Rather, the wing section is adapted such that it will not flex in normal operation when the force is transmitted by the step section to the center section and causes the center section to flex:

The wing sections 22 are located out of the strain or flexing path that affects center section 14. The weight applied to
Strain gage 10 does not cause the wing sections to flex or have strain therein.

Accordingly, the Court adopts CTS' construction. The phrase "wing section adapted to be out of the path of the weight and not to flex" means "a portion of the substrate contiguous with the center section, but does not flex in response to stress transmitted to the center section by the step section."

Turning to the words of element (c), it claims: "a conductive electrode comprising a surface adapted to be placed in a fixed position in proximity to a surface of said pin." The parties disagree as to the meaning of the terms "conductive electrode" and, specifically, whether the term would include a direct contact probe in addition to a capacitive probe. Hence, the parties also disagree about the meaning of the phrase "in proximity" and whether the phrase would include a surface of a conductive electrode which touches the surface of the pin under test.

The words of element (c) disclose a "conductive electrode" "comprising" of two surfaces. As defined in lexicographic sources, the word "comprising" ordinarily means "to consist of" or "to be composed of" as well as "containing." See, e.g., In Re Paulsen, 30 F.3d at 1479 (recognizing that "lexicographic sources" supported interpretation used by United States Board of Patent Appeals); Miles Laboratories, Inc. v. Shandon, Inc., 997 F.2d 870, 876 (Fed.Cir. 1993) (utilizing Webster's definition to illuminate meaning of word "cabinet" used in claim). Thus, whatever words grammatically modify and follow the word "comprising" serve to define the constituents which form the "conductive electrode." See, e.g., ZMI Corporation v. Cardiac Resuscitator Corporation, 844 F.2d at 1579-1580 (recognizing that from "grammatical point of view" certain phrase modified word electrodes). The words which follow the word "comprising" are two surfaces which lie "in proximity" to each other.

The first surface is "placed in a fixed position." Grammatically, the second surface is the surface of the pin under test. See, e.g., ZMI Corporation v. Cardiac Resuscitator Corporation, 844 F.2d at 1579-1580. It is these two surfaces which comprise the conductive electrode.

The term "in proximity" denotes nearness or, as applied to the location of a conductive electrode, almost touching. Almost or near engenders a meaning of being close to an object without making physical contact. In the event the patentee intended to claim a direct contact probe, element (c) would include such words as "in contact with," "contiguous" or "touching" rather than "in proximity to." The claimed language therefore suggests an arrangement whereby two surfaces lie near each other (i.e., "in proximity") albeit not in direct contact.
It is true that the term "conductive electrode" standing alone might suggest a direct contact probe to one skilled in the art such as probe B in the prior art testers. Indeed, Keirn testified to this effect at his deposition as one skilled in the art. 20 It is also true that in some cases probe B can lie near the pin under test. Therefore, the phrases ("conductive electrode" and "in proximity") taken out of context or by themselves can in certain instances include the characteristics of the prior art testers. But the terms "conductive electrode" and "in proximity" in element (c) do not stand alone. Rather, element (c) discloses a "conductive electrode" which is comprised of two surfaces in proximity to each other. Such a structure suggests a capacitor. Therefore, when interpreted in the context of all of the words of element (c), the term "conductive electrode" suggests a capacitor. Moreover, such an interpretation adheres to the principle that, if possible, claims should be construed to uphold their validity. Lewmar Marine, Inc. v. Barent, Inc., 827 F.2d at 749.

20 See footnote number 18.

The specification corroborates the above interpretation of the disputed term "conductive electrode." The parties agree that the examples describing the conductive electrode in the specification all depict a capacitive probe. (Docket Entry # 103, p. 12; Docket Entry # 126, p. 10). The described capacitive probe forms a capacitor with the pin under test. The specification states that "the conductive electrode is effective if it is near the conductive circuit of the component lead being tested." ( '953 patent, Col. 3, l. 42-43). The "conductive electrode (106) is placed on top of the component package (110)." ( '953 patent, Col. 6, l. 51-52). After applying an oscillator voltage to a trace (114), "the oscillator voltage then appears on the pin (112)" under test. "Through capacitive coupling, a current is then passed to the electrode (106)." ( '953 patent, Col. 6, l. 58-64).

Even more enlightening, the specification explains that:

The conductor (204) forms a metallic plate, which acts as one plate of a capacitor. The other plate of the capacitor is the electrode (106), here illustrated by dashed lines, indicating that the conductor (106) is placed over the top of the integrated circuit package (110). Although the capacitor created in this manner is small, it is sufficient to conduct a signal between the electrode (106) to the pin (112).

This is not a situation in which this court is using the specification and its repeated descriptions of the conductive electrode as forming a capacitance with the pin under test to limit or redefine the terms of element (c). The language of element (c) already suggests that the two surfaces which lie near but not touching each other constitute the "conductive electrode." Such a structure does not include a direct contact probe. Rather, it suggests a capacitor structure which the specification confirms. See, e.g., North American Vaccine, Inc. v. American Cyanamid Company, 7 F.3d at 1576 (specification confirmed that claim referring to "a terminal portion" rather than "any terminal portion" meant a singular polysaccharide linkage inasmuch as all references in specification spoke of "a linkage, not multiple linkages"); Miles Laboratories, Inc. v. Shandon, Inc., 997 F.2d at 876 (term "cabinet" in claim meant single enclosure and specification and drawings all disclosed single cabinet enclosure thus precluding literal infringement by three module enclosure); cf. In Re Paulsen, 30 F.3d at 1480 (specification did not show a definition of "computer" different than the common definition which would include a device capable of carrying out calculations such as a calculator disclosed in an anticipating Japanese application); Specialty Composites v. Cabot Corporation, 845 F.2d at 986-987 (term "plasticizer" generally includes internal as well as external plasticization to those skilled in art and specification did not distinguish between external or internal plasticizer and included examples of internally plasticized polymers).

This court finds little, if anything, in the prosecution history to suggest otherwise. In fact, as explained below, the patent examiner ("the examiner") in the parent application, application '660, recognized that the term "conductive electrode" meant a capacitive probe with the capacitive coupling being the connection between the electrode and the component pin. 21 See, e.g., Salt Lake Brine Shrimp, Inc. v. Sanders Brine Shrimp Company, 1995 U.S. App. LEXIS 14255, 1995 WL 340119 (Fed.Cir. June 7, 1995) (claim language did not suggest cross sectional flatness and nothing in prosecution history of parent
The '660 application as amended claimed, in part, "a plurality of conductive electrodes each connected to one output of said selector means and each having a surface in proximity with a surface of one of the electrical components." (Gentile Declaration, Ex. 1, No Docket Entry No. Assigned). Similar to the specification of the '953 patent, the specification of the '660 application contained language describing the conductor as forming:

a metallic plate, which acts as one plate of a capacitor. The other plate of the capacitor is the electrode (106), here illustrated by dashed lines, indicating the conductor (106) is placed over the top of the integrated circuit package (110). Although the capacitor created in this manner is small, it is sufficient to conduct a signal from the electrode (106) to the pin (112).

(Gentile Declaration, Ex. 1, No Docket Entry No. Assigned).

In allowing the '660 application as amended, the examiner noted that:

A plurality of electrodes are placed in proximity to the surface of the electrical components which have a plurality of connector pins, and a signal is capacitively coupled from the electrode to the components [emphasis added].

Therefore, all of the claims are allowable over the prior art of record since the prior art does not include any of the novel aspects of the independent claims mentioned above.

(Docket Entry # 24, Ex. 1; Gentile Declaration, Ex. 1, No Docket Entry No. Assigned). 22

GenRad, however, points out that the examiner 23 in application number 892,868 ("the '953 application") rejected claim 1 which included the element of "a conductive electrode comprising a surface adapted to be placed in proximity to a surface of said pin" as unpatentable over U.S. Patent No. 4,186,338 to Fitchenbaum ("the Fitchenbaum patent"). Instead of arguing the absence of capacitive probing, HP relied on the fact that the Fitchenbaum patent disclosed a probe being "manually moved from side to side along a short circuit trace." 24 (Gentile Declaration, Ex. 3, No Docket Entry No. Assigned). Contrary to GenRad's argument, the fact that HP relied on an easy and apparent argument to distinguish the Fitchenbaum patent does not indicate that the prosecution history reflects a construction of the term "conductive electrode" as including a direct contact probe.

23 Although different examiners reviewed the '660 and '953 applications at different times, this court refers to the examiners as a group.

24 The Fitchenbaum patent expressly claimed, in part, "deliberately moving a probe held in the hand of a human operator back and forth across and along one of said pair of tracks in the proximity of said path in a zig-zag manner to pick up said
field and produce voltages induced therefrom." (Gentile Declaration, Ex. 3, No Docket Entry No. Assigned).

As construed, element (c) is absent from the prior art testers. The probe in the prior art testers is meant to be in ohmic contact with the trace which, absent an open, contacts the pin under test. Such a probe does not capacitively couple with the pin under test. It contacts a pin via direct electrical contact. Simply stated, it is not a capacitive probe. (Docket Entry # 103, Ex. 5, p. 264).

Having so construed element (c) in light of the prior art testers, this court need not address HP's other arguments concerning the scope of element (c) and the meaning of element (d) inasmuch as such an analysis is unnecessary to resolve the motions for partial summary judgment which seek declarations of validity or invalidity through anticipation by the prior art testers depicted in exhibit 25. Having also considered GenRad's arguments, including that the definitions in the specification do not include a definition of "conductive electrode," this court finds as a matter of law that the prior art testers do not anticipate claims 1, 2, 3 and 6 of the '953 patent.

As Mattox contends, the district court also misconstrued the structure defined by the "heel brace" limitation of the claimed device. The district court construed "adapted to be positioned behind and bear against the rear surface of the heels" to mean that the heel brace must necessarily "restrain[] upward movement of the heels" by touching the heels of each and every user who operates the exercise device. Under the district court's interpretation, if a user could use an accused device by engaging restraining force against the part of the leg above the rear surface of the heels, then this limitation would not be met. This interpretation is incorrect because it fails to respect that the claim language defines a structural element, not a method of use.

The proper interpretation of this limitation flows from the correct understanding of the term "adapted." The term "adapted" plainly means to make fit (as for a specific or new use or situation). Thus, the language, "heel brace adapted to be positioned behind and bear against the rear surface of the heels," defines a structure fit to be positioned "behind and bearing against the rear surface of the heels" and fit for performing the function of "restraining upward movement of the heels." In other words, the structure defined by the claim language must be capable of performing the function in the manner described. If a user can put his or her heels in contact with the heel brace such that the heel brace restrains the upward movement of the user's heels in the course of operating the device, then the limitation is met.

Notwithstanding the fact that Infotopia's marketing materials state that the user's "heels should be secure" under the bracing structure of the accused device, the district court held that the "heel brace" limitation of the '961 patent could not be met by the accused device. After a review of the record, we are convinced that this holding was based on a misapprehension of the claim meaning. Accordingly, it is vacated. As noted, if an accused device is capable of use so as to restrain upward movement of the heels by engaging the rear surface of the heels with the heel brace, that device literally meets the heel brace limitation.

Barton Nelson contends that the Court should interpret this language as meaning that the tape flags are "suitable" to be written on, while 3M maintains that the Court should find that the tape flags are "capable" of being written on. Essentially, Barton Nelson submits that the scope of the claim is limited to tabs without printing or coloration.

The Court agrees with 3M, that "adapted" means "capable." Whether a tape flag can be written on depends on the finish on
the top of the flag, because of the finish's ability to accept or reject ink or graphite. The design or logo on the flag has no bearing on the tape flag's adaptability to be written on, but rather the finish on the top of the tape flag directly controls the adaptability of the tape flag to be written on. Moreover, as 3M points out, claim 1 also requires that the tape flag be "visually distinctive." Thus, advancing Barton Nelson's interpretation runs contrary to the plain language of claim 1. (See also Barton Nelson's Mem. in Supp. of Mot. of Invalidity of '825 Patent at 16 (proposing "capable" construction) ("Claim 1 also requires that both of said end portions be adapted to be written on. In the Edit-Tac, [the] entire the upper surface (i.e. both ends of the sheet) are [sic] made of parchment paper, which clearly can be written on.") (emphasis added)).

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3. "step section adapted to concentrate the weight applied thereon onto to [sic] 8 the center section"

The parties agree that the additional word "to" should be disregarded as a clear typographical error.

The parties' proposed constructions are as follows:

<table>
<thead>
<tr>
<th>CTS</th>
<th>TK</th>
</tr>
</thead>
<tbody>
<tr>
<td>the step section causes a stress</td>
<td>the step section causes a force of</td>
</tr>
<tr>
<td>concentration in the mid-portion of the substrate contiguous with the step section</td>
<td>weight applied on the step section to be directed onto the center</td>
</tr>
<tr>
<td>and capable of flexing in response to a force transmitted by the step section when the substrate experiences stress</td>
<td>section of the substrate</td>
</tr>
</tbody>
</table>

CTS again has the better view. First, the intrinsic evidence supports CTS' interpretation. The claim language and the specification of the '013 patent describe the functionality of the step section. The claim states that the step section is adapted to concentrate the weight, i.e., force, onto the center section. As explained in the specification, "the step sections concentrate the force of the weight to be measured onto the center section causing the center section to slightly flex." '013 pat., col. 3, II. 17-19. Moreover, Figure 1 teaches that the mid-portion (14) is contiguous with the step section (16). The specification further teaches that when a force is applied to the substrate, such force is concentrated by the step section. Id. at col. 2, II. 22-24. After this occurs, the step section transfers the concentrated force to the mid-portion, thereby causing the mid-portion to flex.

TK's interpretation—that a weight force be directed onto the center section—is misleading. The specification makes clear that a passenger's weight, i.e., the gravitational force on his or her body, is transmitted to the sensor and concentrated by the step section to the center section. TK's proposed interpretation results in a claim that would not describe the preferred embodiment, because the preferred embodiment expressly states that the passenger's weight is not applied directly to the sensor; rather, it is directed to "a structure that supports a weight or force to be measured" and "the step sections concentrate the force of the weight to be measured onto the center section causing the center section to slightly flex." However, the specification does not require the step section to "direct" a weight onto the center. Id. at col. 2, II. 17-32; and col. 3, II. 10-20. Contrary to TK's proposed language, there is no suggestion in the patent specification of weight transfer from the step section to the center section. Common sense tells us that is not what is happening during the operation of the seat weight sensors. Instead, the sensor, such as strain gage 10, is attached to a "structure that supports a weight or force to be measured." Id. col. 3, II. 15-17.

Accordingly, the Court adopts CTS' interpretation. The phrase "step section adapted to concentrate the weight applied thereon onto to [sic] [the] center section" means "the step section causes a stress concentration in the mid-portion of the substrate contiguous with the step section and capable of flexing in response to a force transmitted by the step section when the substrate experiences stress."
Gargoyles contends that the word "conform" used to describe the nose pads in Claim 1 of the '611 Patent should be given its ordinary meaning. According to Gargoyles, in order to "conform" to the nose of the wearer, the nose pads need only correspond to the shape of a nose.

Aearo argues the term "conform" means that the nosepiece and nose pads claimed in the '611 Patent must be flexible, not rigid. In support of that more limited definition, Aearo quotes the Specification which differentiates the disclosed invention from the prior art:

Another problem associated with protective eyeglasses adapted for sports use is the inability of the eyeglasses to absorb shocks imparted to the lenses. Conventional eyeglasses generally utilize a nosepiece which is either integrally formed with the lenses or frame or rigidly secured to the frame. As a result, shocks imparted to the lenses by objects are coupled directly to the nose of the wearer, sometimes causing injury.

In the disclosed invention, by contrast, the nosepiece includes a base portion which tightly surrounds the bridge but is not secured thereto so that the nosepiece is capable of floating to some extent and thus absorbing shocks imparted to the lens. . . . The nose pads are resilient and spaced apart from the lenses so that they are capable of absorbing shock imparted to the lenses.

In addition, Aearo cites the PTO file history for an amendment filed on January 16, 1984 in which the inventor's attorney differentiated the "flexibility" of the pads disclosed in the patent application from the nose pads that "do not loosely surround the bridge" of the DeAngelis prior art.

The word "conform" is not defined within the claims of the '611 Patent. While the description in the Specification and PTO file seem to add to the properties of the "nose pads," neither the Specification nor the prosecution history may be used to vary the terms of the claims themselves. Markman, 52 F.3d at 980; Goodyear Dental Vulcanite Co. v. Davis, 102 U.S. 222, 227, 26 L. Ed. 149 (1880);

Moreover, the doctrine of claim differentiation dictates that the word "conform" in Claim 1 should be given the broader meaning suggested by Gargoyles. Under the doctrine of claim differentiation, the terms of an independent claim must be interpreted so as not to render dependent claims superfluous or redundant. See Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023-24 (Fed. Cir. 1987) (enunciating the principle of claim differentiation); United States v. Teletronics, Inc., 857 F.2d 778, 783-84 (Fed. Cir. 1988) (same); D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1574 (Fed. Cir. 1985)("Where some claims are broad and others narrow, the narrow claim limitations cannot be read into the broad . . .").

In the '611 Patent, dependent Claims 2 and 4 disclose:

2. The eyeglasses of Claim 1 wherein said nosepiece includes a base portion tightly surrounding said bridge while remaining free of rigid connection thereto so that said nosepiece is capable of absorbing shocks imparted to said lenses.

4. The eyeglasses of Claim 2 wherein said nose pads project from said nosepiece along respective inner edges of said lenses and are spaced apart therefrom, said nose pads being resilient so that they are capable of absorbing shocks imparted to said lenses.

The word "conform" is not defined within the claims of the '611 Patent. While the description in the Specification and PTO file seem to add to the properties of the "nose pads," neither the Specification nor the prosecution history may be used to vary the terms of the claims themselves. Markman, 52 F.3d at 980; Goodyear Dental Vulcanite Co. v. Davis, 102 U.S. 222, 227, 26 L. Ed. 149 (1880);
Based upon the intrinsic evidence, this Court concludes that the inventor did not vary the ordinary meaning of "conform" and, therefore, interprets "nose pads adapted to . . . conform to the nose of a wearer" to mean simply that the nose pads correspond in shape to the form of a wearer's nose.

Claim 1 of the '936 Patent contains the term "adapted to contact." Defendants contend the term "adapted to contact" is indefinite. After a review of the arguments and relevant evidence, "adapted to contact" meets the definiteness requirements of 35 U.S.C. § 112, P 2.

Claim 1 claims "at least one boss adapted to contact the second protrusion of the pump." '936 Patent, col. 20: 45-46. The specification describes the related functionality of the disclosed "bosses" as follows: "the raised bosses 50 receive a rail or other protrusion of the pump 48." '936 Patent, col. 14: 66-67. Figure 4 of the '936 Patent, produced below, shows the pump 48 and two bosses 50. Defendants assert that the patent does not identify a rail or protrusion of the pump or disclose how the raised bosses receive a rail or other protrusion of the pump. Further, because the back side of the pump is not shown in Figure 4, Defendants argue that "the reader is left to completely guess, right or wrong, as to what the patentee considered to be a second protrusion" of the pump in Claim 1. Defendants' Indefiniteness Brief, at 13. Defendants further assert that the specification lacks any reference to the functional term "adapted to contact" with respect to a boss and a protrusion of the pump and the figures do not show "contact" between the two items. Thus, Defendants argue that a person of ordinary skill in the art could not discern how the bosses described in the specification are "adapted to contact" a protrusion of the pump.

SHURflo argues that a person of ordinary skill in the art would understand from the written specification and figures that the pump "is intended to be symmetric, and that a rail similar to the rail shown on the front of the pump 48 contacts the raised bosses 50 when the pump is engaged in the bracket." SHURflo's Responsive Indefiniteness Brief, at 8. SHURflo further argues that the specification does not have to show the exact point at which the bosses contact the protrusion in order for one of ordinary skill in the art to "understand from Figure 4[,] and the specification describing that Figure[,] that the bracket's raised bosses frictionally engage . . . the protrusion or rail on the pump." Id. at 16.

"When a claim limitation is defined in purely functional terms, the task of determining whether that limitation is sufficiently definite is a difficult one that is highly dependent on context (e.g., the disclosure in the specification and the knowledge of a person of ordinary skill in the relevant art area)." Halliburton, 514 F.3d at 1255. The claim language and specification undermine Defendants' contention that the term "adapted to contact" is indefinite. It is clear that a person of ordinary skill in the art would understand that the pump is symmetrical and that the bosses functionally engage the protrusion on the pump to support the pump. Accordingly, because Defendants have not shown by clear and convincing evidence that the term "adapted to contact" is indefinite, Defendants' Motion for Summary Judgment of Indefiniteness of the '936 Patent (Docket No. 74) is DENIED. Further, while the term is not insolubly ambiguous, because the parties have consistently disagreed as to the proper construction of the term "adapted to," the Court construes "adapted to contact" to mean "designed or configured to functionally engage."

Claim 4 of the '204 patent describes an apparatus with an expandable surface element adapted to contact tissue surrounding a cavity and to conform the tissue to the shape of the expandable surface element. Claim 4 of the '204 patent reads:
The apparatus of claim 3, wherein the expandable surface element is adapted to contact tissue surrounding a resected cavity and adapted to conform the tissue to the desired shape of the expandable surface element.

'204 patent 8:43-46. Claim 8 of the '142 patent requires that an "expandable outer surface is sufficiently rigid to deform the target tissue." Claim 8 states:

The apparatus of claim 1, wherein the expandable outer surface is sufficiently rigid to deform the target tissue into the shape of the expandable outer surface, causing the predetermined asymmetric isodose curves to penetrate into the target tissue to a prescribed depth.

'142 patent 10:13-17.

The parties argue for the following constructions:

SenoRx asserts that Dr. Verhey opines for the first time in his expert report that the "adapted to contact tissue . . . and adapted to conform the tissue" language of Claim 4 of the '204 patent requires that the outer balloon to actually contact and conform the tissue.

At the hearing on claim construction, the court became convinced the parties do not, in fact, have any substantive disagreement. Hologic asserts that "adapted to contact tissue" and "adapted to conform the tissue" needs no interpretation. SenoRx submits that "adapted to" means "capable of" and that the claim does not require that the outer balloon actually contact and conform the tissue. Hologic's concern appeared to be that SenoRx was making a distinction between the meaning of "adapted to" and "capable of" that Hologic did not appreciate and which might later come as a surprise. SenoRx's concern, as mentioned above, was that the outer balloon actually contact and conform the tissue. What became clear at the hearing was that both sides agreed that "[the language] does not require that the expandable outer surface actually contact and conform the tissue." Hearing transcript 138:17-19 (argument of Hologic's counsel).

The prosecution history also supports the conclusion that the outer balloon does not actually have to contact and conform the tissue but it has to be capable of doing so. The "adapted to" wording in Claim 4 resulted from a rejection by the PTO of the exact claim construction plaintiff now asserts is correct. In the prosecution of the '204 patent, the application was rejected for claiming that "the expandable surface element contacts . . . and conforms the tissue." Ex. 20 (June 20, 2000 Office Action, '204 patent Prosecution History) at 2. The examiner explained that the then proposed language could have been construed as reciting "a positive connection to the body" and suggested the claim instead be amended to read "adapted to" to eliminate this problem. Id. As a result, the applicants so amended Claim 4, changing the claim language from "the expandable surface element contacts tissue . . . and conforms the tissue" to "the expandable surface element is adapted to contact tissue . . . and adapted to conform the tissue."

The dispute, to the extent there is one, as to the construction of the language in Claim 8 of the '204 patent--"expandable outer surface is sufficiently rigid to deform the target tissue into the shape of the expandable outer surface"-- is similar to that involving Claim 4 of the '204 patent. The subject language in Claim 8 requires only requires that the expandable outer surface be sufficiently rigid to deform the target tissue into the shape of the expandable outer surface. It does not necessary have to actually deform the tissue as long as it is capable of doing so.

The court adopts the constructions proposed by SenoRx except that the second sentence in each, which although true, seems unnecessary.

** III. ORDER **

For the foregoing reasons, the Court construes the disputed claim language as follows:
"adapted to contact tissue . . . and adapted to conform the tissue" (Claim 4 of '204 Patent)

the expandable surface element is capable of contacting the tissue and capable of conforming the tissue. This does not require that the expandable outer surface actually contact or conform the tissue.

GO BACK

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(14) "said arms and said pair of magnetic members adapted to extend across respective side portions of a primary spectacle frame so that said pair of magnetic members can engage corresponding magnetic members on a primary spectacle frame" (claim 24)

Plaintiffs construe the phrase "adapted to extend across" to mean "that the pair of auxiliary frame magnetic members are capable of or suitable for reaching from one side to the other of the respective side portions of the primary spectacle frame." JS, Exh. B at 57-58. Plaintiffs further define the term "engage" to mean "that surfaces of the auxiliary spectacle frame magnetic members either contact the corresponding surfaces of the primary spectacle frame magnetic members or magnetically attract those corresponding [sic] 18 without actual contact to attach the auxiliary spectacle frame to the primary spectacle frame." JS, Exh. B at 55.

Conversely, Defendant construes the instant phrase to mean that:

the arms of the auxiliary spectacle frame must contact and be supported on the upper side of the side portion extension of the primary spectacle frame to allow the magnets on the rear side of the extensions of the primary frame, which are positioned directly below although not in contact with the magnets on the arms of the auxiliary frame and to allow the auxiliary spectacle frame to be supported by the primary spectacle frame.

JS, Exh. D at 6-7.

Defendant's construction seeks to read into the phrase in question that the arms must be in contact and be supported on the upper side of the extensions of the primary frame; and that the primary frame magnetic members must be positioned directly below, although not in contact with the auxiliary frame magnetic members. The Court has already rejected this interpretation. See Sections (11) and (12) supra.

Based on the above, the Court construes the phrase in dispute here to mean that the arms and the pair of auxiliary frame magnetic members are capable or suitable for reaching from one side to the other of the respective side portions of the primary spectacle frame so that said pair of magnetic members can either contact the corresponding surfaces of the primary spectacle frame magnetic members or magnetically attract those corresponding surfaces of the primary spectacle frame magnetic members without actual contact to attach the auxiliary spectacle frame to the primary spectacle frame. See Webster's, Nicodema Decl., Exh. 5 at 130, defining "extend" as "to stretch or spread out at full length;" Id. at 123, defining "across" as "from one side to the other;" Id. at 129, defining "engage" as "to interlock or cause to interlock: mesh;" see also, Koo Decl., Exh. B, the '545 Patent at Col. 3, 11. 11-17 (stating that "[i]n one embodiment, as shown in FIG. 7, magnetic members 14 and 22 are engaged with, but not supported on each other. Instead, the arm 21 securing the magnetic member
22 is supported on an upper side portion of the primary spectacle frame 10."

B.

The '493 patent, entitled "Hot Gas Measuring Probe," describes and claims an improved oxygen sensing probe. Blumenthal sued Barber-Colman for infringement of claim 9 of the '493 patent. It was undisputed that the accused Barber-Colman devices met every limitation in claim 9 except the one in clause b. It also was undisputed that the limitation in clause b was not met literally in the accused devices. Thus the sole issue before the district court was whether the accused devices met the limitation of clause b of claim 9 under the doctrine of equivalents.

Clause b of claim 9 recites that: "the second electrode defines a frusto-conical interior surface terminating in a grooved flat adapted to guide the electrolyte and a central opening in said electrode flat." Col. 10, lines 41-44. In construing clause b, the district court stated.

Claim 9 . . . [requires] an electrode with a tapered surface to guide an electrolyte. Neither the frusto-conical nor the guiding limitations of claim 9 can be read as meaningless. The claim specifically calls for a "frusto-conical interior surface terminating in a grooved flat adapted to guide the electrolyte." The specification in the patent also supports this court's construction of claim 9. The specification refers to an electrolyte which is guided by a taper. . . . Each reference to the frusto-conical aspect of the probe in the specification pertains to the structure of the probe and not the operation of the probe.

In short, the district court agreed with Barber-Colman that the term "adapted to guide the electrolyte" means that the tapered shape of the second electrode guides or positions the electrolyte as it is inserted into the electrode during the assembly of the probe.

Blumenthal argues that the specification's description of the "guide the electrolyte" function of the second electrode is directed solely to the second electrode's adaptation to guide the electrolyte in order to obtain ventilation of the zone of contact by the furnace gases during use. Thus, Blumenthal contends, the guiding function of the second electrode (with its tapered sides) refers to "maintaining the contact between the electrolyte and the electrode in the ventilation path during operation of the probe."

We hold that the district court properly construed clause b. The specification compels the conclusion that clause b is directed toward assembly of the probe, rather than its operation. Referring to an embodiment of the invention reflected in claim 9, the "Summary of the Invention" section of the specification states that the second electrode has "projecting converging walls which guide the flat end of a tubular electrolyte to positively position the electrolyte over a central aperture in a flat portion." Col. 4, lines 36-38. Referring to the same embodiment, the "Description of the Invention" section states that "the outer diameter of the electrolyte tube . . . is slightly less than the diameter of the grooved flat surface . . . so as to be centrally guided by the tapered surface." Col. 7, lines 51-53. Referring to another embodiment, the description states that "the flat end of the electrolyte tube . . . is guided into position against the flat area . . . by the taper in the anode converging walls." Col. 8, lines 34-37. This sentence indicates that the function of the tapered walls of the second electrode is to facilitate the act of putting the electrolyte tube into contact with the second electrode ("guided into position against the flat area"). We do not read these statements as referring to facilitating the act of holding the electrolyte tube in place during operation of the probe, as Blumenthal does.

Figures 3 and 4a on sheet 1 of the patent drawings -- which is attached -- weigh heavily against the construction of the term "guide the electrolyte" urged by Blumenthal. Each of the figures shows a gap between the tapered wall of the second electrode (21) and the electrolyte (28). The existence of the gap, as shown in the drawings, indicates that the tapered walls could not play a role in maintaining electrolyte contact during probe operation. The drawings do reveal, though, how the tapered walls could serve the purpose of guiding the electrolyte tube "into position against the flat area" during assembly of the probe. Col. 8, lines 35-36.

Further, the specification does not support Blumenthal's suggestion that the need to obtain ventilation of the zone of contact
by furnace gases during operation of the probe is served by the tapered side walls of the second electrode. Rather, the specification refers generally to gas being exchanged "through the openings in the electrode plate." Col. 4, lines 21-22. In addition, with reference to figures 3, 3a, and 4a, the specification states that "gas can flow or is exchanged, for example, through or from opening 27 and holes 41, along the grooves 39 and electrolyte end 33, through the annular space between the cylindrical surface 25 and outer surface of electrolyte tube 28." Col. 8, lines 3-8.

Finally, in connection with its response to Barber-Colman's motion for summary judgment, Blumenthal stated "Agreed" with respect to the following statement by Barber-Colman in support of the motion: "In the patented probe, a tapered guideway engages the end of the electrolyte and, if that end is off center, guides or translates it toward the center of the sheath as the electrolyte tube is inserted into the sheath to its seated position." This is precisely the kind of guiding function that the district court concluded the tapered walls of the second electrode would provide.

For the foregoing reasons, we conclude that the district court properly construed clause b of claim 9 as relating to assembly, rather than operation, of the probe. The question then becomes whether, in light of that construction, Blumenthal established the existence of a genuine issue of material fact so as to defeat Barber-Colman's motion for summary judgment. We hold that it did not.

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I. "center section"

The parties' proposed constructions are as follows:

CTS
mid-portion of the substrate contiguous with the step section and capable of flexing in response to force transmitted by the step section when the substrate experiences stress

TK
a flexible central portion of the substrate onto which the force of weight is directed by the step section

CTS has the better view. Figure 1 of the '013 patent, above, shows that center section (14) is the mid-portion of the substrate, which is connected with the step section (16). The specification further explains that the center section may flex in response to force received from the step section by an applied weight. See '013 pat., col. 2, ll. 19-20; and col. 3, ll. 18-22.

TK's proposed interpretation is problematic. First, it introduces the language "force of weight" which departs from the agreed upon meaning for the term "weight." Adopting TK's construction would result in an interpretation of the claim where the step section causes a "force of a force by which a body or object is attracted to earth by gravity" to be applied. Moreover, the word "directed" is not found in the specification. TK's proposed interpretation also appears to require that the weight being sensed must be applied directly to the substrate. While that may be found in the specification in discussing an embodiment, the claim language, however, does not require that the weight being sensed must be applied directly to the substrate. Instead, the claim language states that "the center section is adapted to flex in response to the applied weight." In other words, the claim language states that the bending of the center section is in response to force applied, but does not require that the force is applied directly to the substrate itself.

Accordingly, the Court will adopt CTS' proposed interpretation, namely that the term "center section that is adapted to flex in response to the applied weight" means the "mid-portion of the substrate contiguous with the step section and capable of flexing in response to force transmitted by the step section when the substrate experiences stress."

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I. "Contact arrays being adapted to interchangeably connect"

Foxconn maintains that the district court correctly interpreted the claim limitation "contact arrays being adapted to
interchangeably connect” as requiring a contact array that was not present in the prior art. Foxconn asserts that the word "adapted" includes the concept of adjustment or modification of the array known to the prior art such that there must be something different from the prior art. The district court opined that a device which uses preexisting contact arrays does not contain "contact arrays being adapted."

We disagree. There is nothing in either patent to indicate that the claims require a novel contact array. Nowhere in the written description does either patent state that the disclosed contact array is novel or has been specifically adapted from prior art contact arrays. Rather, the written description simply describes the contact array as a pin terminal array that can accept either a memory card or a hard disk drive. We decline to find that the claims require a novel contact array when the only contact array that is disclosed in the written description is not novel.

The patentee's use of the claim term "adapted to" does not change our conclusion. The term "adapted to" is often used in claim drafting to indicate "capable of." There is nothing in the claims, written description, or prosecution history to indicate a different meaning. That a claim element is old does not prevent a claim to a combination from being infringed.

Foxconn asserts that when Berg added the "adapted to" language to overcome the Tarver prior art reference, Berg added the additional limitation of a novel contact array. The Tarver device has spaces for accepting submodules such as a central processing unit, a fan, or a hard disk drive and a midplane member comprising connectors. The patent states that one type of connector is a 32-pin contact array.

During prosecution, Berg stated that although "Tarver appears to show upper and lower storage spaces within a single housing, Tarver never suggests that the upper and lower storage spaces be combined to form a single, larger storage space for accommodating larger submodules. . . . None of Tarver's submodules is designed to occupy more than a single sub-space within the housing" while the applicant's connector device is specifically designed to accept either memory cards in either the upper or lower storage space or both or a single hard disk drive package occupying both spaces.

Berg also stated that Tarver does not teach applicant's claimed feature "wherein 'at least one of [the] upper and lower contact arrays [is] adapted to interchangeably connect to both a memory card and a hard disk drive package.' To the contrary, the 'midplane' of Tarver provides a separate connector for each submodule. None of the connectors of Tarver is capable of interchangeably connecting to two different types of submodules."

We do not read the interchangeable capability of the contact array asserted by Berg during prosecution as requiring a new contact array that has never existed in the prior art. Rather, the capability simply requires a contact array that is selected so that it is connectable to both a memory card and a hard disk drive, so that the connector can receive those memory storage devices in the spaces that the structure of the connector defines to receive them. It is both the structure defining those spaces and the contact array selected to receive both of those devices that give the claimed combination the alternative capability that the Examiner found to be nonobvious.

Foxconn further asserts that we cannot adopt the patentee's claim interpretation because under that interpretation, the claims are invalid as anticipated by the Tarver reference. However, validity of the claim is not at issue on appeal and has not been fully briefed before us. The patentee has urged adoption of its claim interpretation and bears the risk that the claim may later be found invalid.

Thus, we conclude that the term "contact arrays adapted to interchangeably connect" requires contact arrays that are able to interchangeably connect to both a memory card and a hard disk drive package. Because the Foxconn device contains a contact array that is able to interchangeably connect to both a memory card and a hard disk drive package, the district court erred in finding the Foxconn device fails to meet this claim limitation.

This conclusion, however, does not end our analysis. Foxconn additionally asserts that the district court's finding of noninfringement should also be affirmed because its device lacks a storage space that is substantially uninterrupted by a guide member, as required by the claims.
b "Sprocket Recess"

The parties dispute whether the "sprocket recesses" as contemplated by the '158 and '518 patents require opposing "transverse elements" each having "driving surfaces," or whether the sprocket recess can be defined as the opening between a single transverse element and a corresponding pivot axis. Stated differently, the issue is whether the "intermediate section," defined in the asserted claims of the '158 and '518 patents as consisting of at least two transverse elements extending at least partially across the width of the module, can consist of only a single bar.

KVP argues that because all of the asserted claims require at least two transverse elements extending at least partially across the width of the module, and because all claims require that the sprocket recesses be "adapted to mate with," "capable of mating with" or "capable of receiving" sprocket teeth, the '158 and '518 patents are limited to modules having sprocket recesses with opposing driving surfaces which are simultaneously contacted by the sprocket teeth while being driven Laitram, however, contends that the claim terms contemplate a module having only one driving surface per sprocket recess, which in turn would limit the belt to a single direction of travel. Laitram relies on the doctrine of "claim differentiation" since only claim 2 of the '518 patent requires "opposing" transverse elements.

7 Claim 10 of the '158 patent only refers to "elements." All other asserted claims in both the '158 and '518 patents refer to "transverse elements."

Laitram's argument lacks merit. Although the doctrine of claim differentiation means that an interpretation of a claim should be avoided if it would make the claim read like another, claim differentiation is a "guide, not a rigid rule." Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir. 1991) (quoting Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 404 (Fed. Cir. 1967)). Where the specification or prosecution history provide a basis for reading a limitation into a claim, the presumption provided by the doctrine of claim differentiation may be overcome. See Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023-24 (Fed. Cir. 1987); Autogiro, 384 F.2d at 404 ("if a claim will bear only one interpretation, similarity will have to be tolerated"). As explained below, the claim terms, specifications and prosecution history collectively show that the claims in the present case will bear only one interpretation that the sprocket recesses consist of opposing transverse elements, each of which have driving surfaces capable of mating with cooperative sprocket teeth.

The term "sprocket recess" is nowhere defined in any of the claim terms. Nor do the claim terms unambiguously indicate whether all the transverse elements, each of which extends "at least partially" across the width of the module, can be assembled side by side so as to collectively form only a single bar. 8 Thus, the court looks to the specifications and prosecution history for guidance Markman, 52 F.3d at 979.

8 Claim 100 of the '518 patent requires "at least one" cross member extending across the width of the module, with at least two transverse elements comprising portions of that cross member. Although this claim language, standing alone, would cover a module having only a single cross-member, the specifications and prosecution history will not bear such an interpretation.

In the specifications to both the '158 and '518 patents, Lapeyre indicates that "the sprocket recesses 50 are in line and can be driven in either direction. The associated sprocket teeth are also symmetrical and in line such that the sprocket wheel can be driven in either direction and installed either way on a driving shaft." Figure 3 of the drawings show the sprocket recess 50 referred to in the specifications as the space defined by opposing angled surfaces 32 and 34 of the intermediate section. In fact, the drawings in both patents show only a sprocket recess with two opposing, angled elements.

Laitram contends that the idea of opposing driving surfaces which allow the belt to be driven bi-directionally 9 by
symmetrical sprocket teeth merely represents the "preferred embodiment" of Lapeyre's invention: but that the overall scope of the invention is not so limited. While Laitram is correct that the preferred embodiment does not generally limit the scope of the claim, see Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277 (Fed. Cir. 1995), the prosecution history in this case limits the scope of the '158 and '518 patents to modules having opposing driving surfaces which allow the belt to be driven bi-directionally.

--- Footnotes ---

9 A conveyor belt can be driven "bi-directionally" if it can be driven in opposite directions merely by changing the direction of rotation of the sprocket wheel.

--- End Footnotes ---

As indicated, Lapeyre repeatedly recited to the patent examiner that a "key feature" or the "essence" of his invention was the provision of a "sprocket recess" intermediate the pivot axes and having "angularly disposed sides adapted to mate with a corresponding sprocket tooth." Importantly, Lapeyre referred to a single sprocket recess as having angularly disposed side, not "at least one" angularly disposed side.

Moreover, Lapeyre made several key statements to the examiner in attempting to explain his failure to cite the Lapeyre '527 patent as relevant prior art. The Lapeyre '527 patent contains an intermediate section consisting of a single bar extending across the width of the module. Referring to this particular structure of the Lapeyre '527 patent, Lapeyre stated that it "does not disclose or suggest the presently claimed invention and does not even teach the use of sprocket recesses in conveyor modules. In contrast, the '527 teaches opposite the presently claimed feature." (Delich Decl. Ex. 2 at 096977.) These comments prevent Laitram from now claiming that a sprocket recess exists absent opposing transverse elements.

Finally, in order to distinguish his invention from the Kewley '763 and Lapeyre '14l patents, Lapeyre argued that "any attempt to drive a conveyor belt built according to the Kewley Patent by a sprocket tooth simultaneously contacting both interior parallel surfaces would clearly be technically unfeasible and would render the belt substantially inoperative." (Delich Decl. Ex 2 at 96867.) Laitram admits, as it must, that the term "mate" or "mating" means that whatever configuration the sprocket tooth surface takes, the driving surface must match it. This admission, in light of Laitram's comments to the patent examiner in distinguishing the Lapeyre '141 and Kewley '763 patents, shows that each sprocket recess must have opposing, angled transverse elements, each of which contains a driving surface capable of mating with the corresponding side of a single sprocket tooth. Indeed, this limitation is not only consistent with every drawing or photograph submitted to the patent examiner, but is also necessary to achieve the utility stated in the specifications that the sprocket recesses are capable of being driven bi-directionally.

Laitram points out that the "mating" requirement only applies to the '158 patent since all asserted claims of the '518 patent do not contain such a requirement, but instead contain the language "capable of receiving cooperative sprocket teeth." The specifications and prosecution history, however, show that this language was intended to imply the same "mating" requirement present in claims 1 and 10 of the '158 patent.

The specification of the '518 patent shows that Lapeyre considered the term "capable of receiving" as equivalent to "adapted to mate with." The specification is the "single best guide to the meaning of a disputed term." Vitronics, 90 F.3d at 1582. "Words must be used in the same way in both the claims and the specification." ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580 (Fed. Cir. 1988). Here, the specification of the '518 patent describes sprocket recesses which are "adapted to mate with corresponding sprocket teeth." Nothing in the claim terms themselves or the prosecution history suggest an interpretation other than that the term "capable of receiving" is equivalent to the term "adapted to mate with."

Accordingly, the court finds that all asserted claims of the '158 and '518 patents are limited to modules having sprocket recesses with opposing transverse elements, each of which contains a driving surface capable of mating with the corresponding side of a single sprocket tooth.
A. "a central portion adapted to nest within and below the rim of a container."

The parties agree that the central portion is the section of "relatively flat," plastic material that is bounded by the rim-engaging means, and which nests "below the rim of a container." '015 patent, col 2, l. 50-52. The sole dispute between the parties with respect to this claim element is whether all of the structures found upon the central portion also must nest "within and below" the horizontal plane formed by the rim of the container. Bailey suggests that the central portion is, in effect, the platform for other structures of the claimed container lid. Therefore, the structures that are found on the central portion are not required to be lower in height than the rim of the container. Dart, on the other hand, argues that a person of the ordinary skill in the art would interpret "the central portion" to be an amalgam of the relatively flat portion bounded by the rim engaging means and any structures molded-into or rising from that relatively flat surface. Therefore, Dart claims that all the structures on the central portion, such as a vent cap and any protrusions, must sit below the horizontal plane formed by the rim of the container. As evidence, Dart points to the language of the claim which states that the central portion nests "below the rim of a container." Moreover, Dart suggests that the illustrations in the '015 patent confirm its interpretation. Dart's argument is unavailing.

A person of ordinary skill in the art 3 would not construe the '015 patent to require that all of the structures on the central portion to nest "below the rim of a container." The '015 patent makes clear that the "central portion" is a different structure from the structures found on it, specifically either a "protrusion" or a "vent cap." See CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co., 224 F.3d 1308, 1317 (Fed. Cir. 2000) ("In the absence of any evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings). Thus, the limitations assigned to "the central portion" in the '015 patent do not apply to those structures simply because those structures are attached to or molded-into the central portion.

3 The "art" in this case is the mechanical design, molding and production of plastic lids. Tr. 3, p. 87, l. 10-11; Tr. 2, p. 3, l. 23-25. One skilled in the art is someone with a bachelors degree in mechanical or manufacturing engineering and two years of practical experience or someone with less formal education, such as an associates degree in plastics technology, with five or six years of practical experience. Tr. 3, p. 87, l. 18-25; Tr. 2, p. 4-5, l. 17-25, 1-7.

The point is made obvious when one considers the other limitation in the '015 patent, namely that the central portion be "relatively flat." Dart concedes that the central portion must be "relatively flat." See Defendants' Post Markman Hearing Memorandum of Law Regarding Claim Construction p. 1. However, Dart wisely does not press a construction that would require structures found on the central portion to be "relatively flat." The reason for the inconsistency in Dart's position is obvious. It would simply strain common sense to argue that "protrusions" found on the central portion should also be "relatively flat." Clearly, the '015 patent does not require "protrusions," which by definition jut out from the central portion, to take a "relatively flat" form. In fact, Dart concedes that the magistrate judge correctly defined protrusion as a structure that "jut[s] out from the surrounding surface." See Bailey I, 980 F. Supp. at 575. See also Defendants' Post Markman Hearing Memorandum of Law Regarding Claim Construction p. 20. Thus, it is evident that the '015 patent, as interpreted by one skilled in the art, does not require "protrusions" and "vent caps" to meet the "relatively flat" limitation placed upon the central portion. By the same logic, structures found on the central portion are not required to "nest within and below the rim of a container."

To the extent that there is any doubt, the specification supports the construction that the claim term "a central portion adapted to nest within and below the rim of a container" does not restrict the height of other structures found on the central portion. Figure 2 of the '015 patent shows in cross-section one preferred embodiment of the patented lid. Simply taking a ruler or other straight edge and extending a line from the top of structures comprising the retainer means out across the lid shows that each such protrusion rises above the rim of the container. Accordingly, in this embodiment, the protrusion is not limited in height. It does not need to sit entirely below the rim of the cup. The same can be seen in Figure 4 of the '015 patent, which shows another preferred embodiment. Both protrusions rise slightly above the rim of the cup. As a matter of law, an interpretation of a claim that would exclude a preferred embodiment of the patent, such as the preferred embodiments depicted in the schematic drawings, "is rarely, if ever, correct." Vitronics, 90 F.3d at 1583.
6. "Graft Structure Which is Adapted to Overlap and Be Attached to One of the Flow Lumens"

The parties' proposed constructions for this phrase are substantially similar to their proposed constructions for the previous phrase. The only differences are that Plaintiffs and Cook include a reference to the flow lumens in their proposed constructions, and Gore references a "second graft" in its proposed construction. Indeed, the parties seem to equate the phrases "adapted to be anchored within" and "adapted to overlap and be attached to," with one another. Once again the disputes center on whether the wires must be malleable and whether they must project beyond the ends of the graft.

The Court finds no significant difference between this phrase and the previous phrase and, accordingly, concludes they should be construed in the same manner. Accordingly, the Court construes the term "graft which is adapted to overlap and be attached to one of the flow lumens," to mean: "An intraluminal graft that includes malleable wires located proximal to at least one end of the graft structure, which enable the intraluminal graft to be secured or attached to one of the flow lumens of the bifurcated base graft structure in an overlapping relationship."

2. "In Proper Alignment with Respect to Said Handle"

Osteonics also differentiates its product from the patent claim because the claim requires that the rod handle be "adapted to receive at least one femoral surface modifying instrument in proper alignment with respect to said handle." The question is, to what sort of alignment the claim is referring? Osteonics asserts that this statement implies that the Whiteside system foresees the cutting guides (and the cuts made from the cutting guides) as dependent entirely on their alignment to the handle of the rod. In other words, once the rod has been set in place, nothing else makes a difference; the positioning of the cutting guides has been effectively set as well and no other feature of the femur is really relevant for the Whiteside system at this point. Osteonics contrasts this limitation with its own system, which, as described earlier, uses both the internal and external geometry of the femur to set the proper alignment. With the Osteonics system, according to Osteonics, the surgeon has not limited himself once the rod is in place. At the very least, Osteonics asserts, this is clear from the fact that its system allows for cutting guides to rotate freely around the handle, whereas the DCW system uses a handle with flattened sides that would specifically prevent such rotation.

DCW responds that the alignment described in claim 6 refers to the angle of the handle, which in turn permits the bone cuts to be made at the proper varus/valgus angle, and that nothing more is meant. DCW notes that although the preferred embodiment of handling the Whiteside patent has flat edges that do align the blades, that embodiment is not required in the patent. To read the "proper alignment" as referring also to the rotational alignment of the blades, as Osteonics does, is therefore to limit improperly the scope of the claims by the scope of the preferred embodiment. See SRI International v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1121-22 (Fed. Cir. 1985) (en banc).

DCW buttresses its argument by noting that claim 9, which depends on claim 6, describes a planar that fits on the guide handle and rotates on the handle to file down the femur. The planar cannot be fixed rotationally; otherwise, it would not work as a planar. Accordingly, claim 6 would not establish a rule of rotational alignment that claim 9 necessarily breaks.

Osteonics replies that claim 9, read properly, proves DCW wrong. Claim 9 indicates that the planar must have "a passage therethrough adapted to cooperatively engage said guide handle and to allow the planar abrading surface to be transversely rotated about the central axis of said guide handle while it is in contact with the distal femoral surface to flatten said distal
femoral surface transversely with respect to the central long axis of the guide handle . . . " 4 Column 14, lines 22-25. Osteonics asserts that this language expressly excludes claim 9 from claim 6's alignment limitation for this one purpose, the implication being that the limitation applies to all the cutting instruments.

4 The language used for the claims describing the cutting guides, claims 7, 8, and 10, each use the following (or almost identical) language: "The article as claimed in claim 6 wherein at least one of the instruments employed in said (B) is a[] . . . cutting guide . . . having a passage passing though said cutting guide and designed to cooperatively engage said guide handle and a means for fixing said cutting guide in proper alignment with respect to said handle . . . " See columns 13 & 14.

Osteonics again has the better of the argument. The Whiteside patent discloses a system that depends entirely on the handle alignment once the handle is in place. Claim 6 makes that point explicitly. The handle's being "adapted to receive" an instrument "in proper alignment with respect to said handle" implies what the preferred embodiment makes clearer--that any rotation alignment is fixed by the handle. Whether such alignment is absolutely necessary as a practical matter to achieve certain results does not change what the patent claim itself contains. Finally, Dr. Whiteside's testimony on the subject at the first trial, in which he seems to have conceded the difference, clearly supports Osteonics' interpretation. See Mentlik Declaration, Ex. C at 381-82. Accordingly, the Court agrees with Osteonics' construction of claim 6 on this point too.

3. "adapted to secure said panel to said structure"

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<tr>
<th>Claim Term</th>
<th>Plaintiff's Proposed Construction</th>
<th>Defendants' Proposed Construction</th>
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<tr>
<td>adapted to secure said panel to</td>
<td>One or more of the edges of the</td>
<td>The reinforced edge is structured</td>
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<td>said structure</td>
<td>panel incorporates a fastening</td>
<td>to be fastened to the ground by an</td>
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<td></td>
<td>structure for connecting the</td>
<td>anchoring system so as the</td>
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<td>panel to the structure.</td>
<td>to hold the protective</td>
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<td>barrier device on structure.</td>
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Plaintiff asserts in its rebuttal statement that Defendants' proposal "is inconsistent with the ordinary and customary meaning of this claim language, improperly narrows the claim by importing limitations from the specification, and fails to construe consistently identical claim terms relating in related patents." Defendants counter in their rebuttal statement that "[t]he described embodiments of the '852 patent, the peripheral hem is connected to fasteners anchored to the ground or connected to adjacent panels" and that "[n]o direct connecting of the hem to the structure is disclosed." Thus, Defendants maintain that "'adapted to secure' more properly means positioning one or more panels in an at least partially overlying relation to the roof of the structure and anchoring the one or more panels to the ground around the perimeter of the structure via the peripheral hem."

Claim 2 discloses that the barrier device is formed "as at least one panel including a peripheral hem adapted to secure the panel to the structure." For reasons similar to those stated above in the discussion of "securing said protective barrier to said structure" in claim 1, the plain import of the instant claim language makes clear that it is properly construed to mean at least one edge of the panel is secured or connected to the structure. Claim 2 clearly states that the barrier device formed as at least one panel including a peripheral hem, as earlier defined, is "adapted" to secure the panel to the structure. The Court turns to the specification for guidance in constructing the meaning of "adapted." According to the specification, "[t]he panels may be suitably attached to the siding of the building . . . in which the material is wrapped
around a batten … which is in turn fastened to the wall with appropriate screws." Patent '852, Col. 10, Ins. 61-67. This
Court's review of the claim language and specification, including the above specification disclosures, leads it to conclude
that a slightly modified version of Plaintiff's proposal is proper. Specifically, the Court construes this claim term to mean
"one or more edges of the panel includes a hem along its perimeter that incorporates a fastening structure for connecting the
panel to the structure."

B. Claim 1(b) -- "Adapted to Support"

Claim 1(b) requires "wheel means mounted on axle means and adapted to support said base unit on said floor." '315 Patent
at 4:17-18. The parties agree that the described wheel means must support, or hold the weight of, the base unit so that the
base unit can move across a floor to be cleaned. Although Dyson's proposed construction requires that the wheels carry the
entire weight of the base unit and Oreck's proposed construction omits that term, the parties' submissions make it apparent
that their disagreement has less to do with the correct construction of the phrase "adapted to support" than it does with their
competing constructions of the term "base unit," an issue that the Court has already resolved. In any event, Oreck concedes
in its claim construction brief that Dyson's proposed construction is "acceptable as written." Oreck Claim Constr. Mem. at 7.
Accordingly, the Court construes "adapted to support" to mean that the wheel means of the cleaner must support the entire
weight of the base unit on the floor.

1) "adapter"

Plaintiff proposes that "adapter" be defined as "a device that permits the cylinder head's intake position to be altered." Defendant proposes the definition "a device used to connect different pieces of apparatus." I conclude that an "adapter" is a
device used to connect different pieces of apparatus. No specialized definition of "adapter" is provided in either the claim
language or the written description of the '502 patent. Though plaintiff does not propose the following construction in its
brief, I note that plaintiff proposed the fact that "one of ordinary skill in the art reading the ['502] patent would define
'adapter' … to mean a component that is used to effect operative compatibility between different parts of a system." Plt.'s
Reply to PPFOF, dkt. #87, P 179. Defendant did not dispute the proposal. Practically speaking, this construction is identical
to defendant's insofar as it implies that an adapter connects pieces of apparatus so that they can operate compatibly, that is,
together. Defendant's construction gains further support from the ordinary meaning of the term. An adapter is defined as "a
Because the patent specification does not indicate that the term should be given a meaning outside its ordinary definition, I
will construe an "adapter" to be a device used to connect different pieces of apparatus.

"Adapting the expandable surface to contact tissue surrounding the resection cavity to conform the tissue"

Xoft's contention that this phrase is indefinite springs from its argument that "expandable surface element" means "deflated
balloon or cage." As the court has rejected Xoft's interpretation of "expandable surface element," no construction of
"adapting the expandable surface to contact tissue surrounding the resection cavity to conform the tissue" is necessary.
A. Adaptor

The Court construed "adaptor" to mean "[a]n interconnector between the catheter and another fluid line, wherein the adaptor is not integral with the catheter." In the interests of conserving judicial resources, plaintiff does not oppose entry of summary judgment of non-infringement for defendant with respect to all asserted claims in the 676 patent.

MDG's device does not literally infringe plaintiff's device on this element because, in the Foley catheter securement device, the adaptor is integral with the catheter. (See Def. Exhibit 68 (conceding that plaintiff would not pursue literal infringement on "adaptor" claim, following the Court's ruling on claim construction).)

Furthermore, during prosecution of the 676 patent, the applicant argued its claims were patentable because the adaptor was separate from the catheter. (Def. Exhibit 506, at 5-6.) The applicant emphasized the distinction between the catheter and the adaptor in response to a rejection that the claim was obvious. (Id. at 6.) Where "the applicant clearly and unmistakably surrendered during prosecution" some particular subject matter, the applicant "cannot recapture under the doctrine of equivalents the surrendered subject matter." Cortland Line Co., Inc. v. Orvis Co., Inc., 203 F.3d 1351, 1360 (Fed. Cir. 2000). Even if plaintiff could argue for the doctrine of equivalents, the Court finds the doctrine would not apply here. In defendant's device, the adaptor is integral with the catheter. Therefore, defendant's device does not perform its function in substantially the same way as plaintiff's device, wherein the adaptor is not integral with the catheter. Summary judgment on all asserted claims of the 676 patent is appropriate.

In addition, defendant argues for summary judgment on claims 1, 2, and 6 of the 892 patent. These claims reference an "adaptor" but do not require it. The Federal Circuit has explained when a court should construe a limitation in the claim preamble as part of the claim itself:

A claim preamble has the import that the claim as a whole suggests for it. If the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is necessary to give life, meaning and vitality to the claim, then the claim preamble should be construed as if in the balance of the claim. Indeed, when discussing the "claim" in such a circumstance, there is no meaningful distinction to be drawn between the claim preamble and the rest of the claim, for only together do they comprise the "claim". If, however, the body of the claim fully and intrinsically sets forth the complete invention, including all of its limitations, and the preamble offers no distinct definition of any of the claimed invention's limitations, but rather merely states, for example, the purpose or intended use of the invention, then the preamble is of no significance to claim construction because it cannot be said to constitute or explain a claim limitation.


The Court finds that the claim preamble recites claim limitations and is necessary to give "life, meaning and vitality" to claims 1, 2, and 6 of the 892 patent. In these three claims, the patent claims [a]n anchoring system for use with a catheter having an adaptor with a radially extending member projecting therefrom[.]." The components of the anchoring system include a retainer with channel portions "sized to surround at least a portion of the adaptor through an arc of greater than 180[degrees] about said longitudinal axis." (892 patent, at 24:14-18.) Because the channel portions must be sized to fit the adaptor, the claim preamble, which explains the adaptor's design, recites a claim limitation and gives "life, meaning, and vitality" to the claims. Therefore, summary judgment on claims 1, 2, and 6 of the 892 patent is likewise appropriate.

f. "an amount of . . . added" & "adding an amount of" Claims 1, 4, and 8
The terms "added" and "adding" should be given their plain and ordinary meaning in this instance. While Rubber Mulch proffers a definition of "joining or uniting without mixing," the patent specification does not support its argument. The detailed description states, in part, "af[ter] the rubber particles are placed in the mixing means an amount of colorant is added to the rubber particles in the mixing means." (‘514 Patent, col. 4, lns. 31-33) Nothing in the claims, specification or patent history supports the definition that the colorant is added without mixing. Therefore, the undersigned finds that the terms "added" and "adding" mean "to join or unite so as to bring about an increase or improvement." Merriam-Webster Online Dictionary (visited May 15, 2007) <http://www.m-w.com/dictionary/add>.

Increasing amounts

"Increasing amounts" is used in claim 14 of the ‘977 Patent in the context of "adding increasing amounts of liquid water . . . to the working fluid acquired by the compressor . . ." (emphasis added). Defendants contend that the definition of "increasing amounts" is the same as that proposed for "increments," i.e., "an amount of water fog injected into the inlet of a gas turbine for a period of time of sufficient length to allow each component of the turbine to reach thermal equilibrium.

Column 16, lines 27 through 38 of the ‘977 Patent discuss the manner in which the water increments may be increased - either by smooth ramping or in a stepped fashion (or both). Defendants' proposed definition is at odds with the notion of smooth ramping. Moreover, the term "increasing amounts," like the term "increments," does not necessarily carry with it a time element. The Court therefore rejects Defendants' proposed meaning of the term. Instead, the Court construes the term "increasing amounts" as:

Adding water in stepped increments or in a smooth ramping fashion, or by a combination of the two.

B. "Adhere"

The '971 Patent does not give the term "adhere" a special meaning. As Plaintiffs assert; the term should be given its ordinary meaning. Ormco Corp. v. Align Tech., Inc., 463 F.3d 1299, 1306 (Fed. Cir. 2006); Atofina v. Great Lakes Chem. Corp., 441 F.3d 991, 996 (Fed. Cir. 2006). The ordinary meaning of adhere is: "to hold fast or stick by or as if by gluing, suction, grasping, or fusing." (Ex. 54 to Stewart's Decl. [citing Webster's Third New Int'l Dictionary]; see also Ex. 55 [citing Hackh's Chemical dictionary].)

Defendants assert that the term "adhere" requires a particular degree of strength of attachment and requires an adhesive substance that bonds more strongly with the items adhered together than it does with itself. Specifically, Defendants allege that the MF5 grip fails to "adhere" the grip's anti-slip sheet to its rubber sleeve for two reasons: (1) its adhesive does not create a strong enough bond between the panel and the sleeve to satisfy the "adhered to" limitation (Ex. 52, Meirowitz Expert Report, at 10); and (2) "adhesive" must bond to the sleeve and the panel more strongly than it does to itself, so that when the panel is pulled apart from the sleeve, adhesive material remains attached to both components. (Ex. 51, Meirowitz Depo., at 70:10-75:25.)

An examination of the Patent itself demonstrates that there is no basis for limiting the term "adhere" in the ways suggested by Defendants. Defendants fail to provide support for reading the term to include the limitations they advocate. Moreover, none of the definitions provided contain a requirement relating to the strength of the bond or the disposition of the adhesive after the bond is broken. There is also no requirement within the term that an adhesive be used to adhere the panel and sleeve together. To the contrary, the Webster's Third New International Dictionary allows for adhesion by means not only of sticking and gluing, but also of suction, grasping, or fusing. (Ex. 54.) In other words, the term "adhere" does not require any particular adhesive, or any adhesive at all; if the component parts are attached to one another, they are adhered to one another.
The '971 Patent never gives the term "adhere" a special meaning, and it is therefore appropriate to rely on the dictionary to determine the ordinary meaning of the term. Ormco, 463 F.3d at 1306; Atofina, 441 F.3d at 996. Both standard and technical dictionaries indicate that items are adhered if they are held together. (See Exs. 54-55.) Because nothing in the intrinsic evidence or ordinary meaning of the term "adhere" limits the terms in the manner Defendants suggest, their attempt to import these limitations into Claim 1 is improper. See Phillips, 415 F.3d at 1323 (warning against importing limitations without justification); Hoganas AB v. Dresser Indus., 9 F.3d 948, 950 (Fed. Cir. 1993) (disapproving the importation of "extraneous" limitation). Therefore, the Court construes the term "adhered" as meaning "attached."

C. Adhesive

Defendants set forth two arguments with respect to the construction of the final element of Claim 1 (i.e. "with the side edges of the panel abutting one another and being adhered together to define a longitudinal seam extending from the interior surface of the panel to the exterior surface of the polyurethane layer"). First, they allege that the adhesive must extend from the interior surface of the panel to the exterior surface of the polyurethane layer absent any air gaps. Second, Defendants urge that the only permissible adhesive is one composed of polychloroprene and toluene. (Def. Opp., at 13-14; Ex. 2, at 6:18-39.)

Defendants' construction errs in three respects. First, the phrase "extending from the interior surface of the panel to the exterior surface of the polyurethane layer" modifies the word "seam," not "adhered." Thus, the Court adopts Plaintiffs' construction that while the seam in the panel must extend from the panel's inner surface to its outer surface, the claim does not require that the side edges be adhered at all points along the seam. (Pl. MSJ, at 24.) Second, Plaintiffs contend, and Defendants do not dispute, that the specification of the '971 Patent contemplates the presence of air gaps in the panel's seam. (Pl. MSJ, at 24.) Third, the form of adhesive referenced in the preferred embodiment of the '971 Patent is not exclusive to polychloroprene and toluene because it is the claims of the patent, not the specification, that are the measure of the invention. SRI Int'l v. Matsushita Elec. Corp. of America, 775 F. 2d 1107, 1121 (Fed. Cir. 1985).

Defendants' argument that the side panels be adhered without air gaps is, according to Plaintiffs, inconsistent with the specification of the '971 Patent. (Pl. MSJ, at 24.) The preferred embodiment described in the specification of the '971 Patent contemplates the use of an adhesive composed of polychloroprene and toluene. (Ex. 2, at 6:18-39.) Plaintiffs assert that one of skill in the art would understand that this composition is a solvent-based adhesive that, once hardened, typically contains air gaps that correspond to the evaporated solvent. (Pl. MSJ, at 24.) Defendants do not dispute this assertion. Accordingly, the polychloroprene-toluene adhesive expressly included in the patent's embodiment considers and provides for the presence of air gaps in the seam. Because Defendants' construction of Claim 1 would preclude air gaps, it would prevent the claim from covering the patent's preferred embodiment, constituting an inaccurate construction. See MBO Labs, Inc. v. Becton,
Dickinson & Co., 474 F.3d 1323, 1333 (Fed. Cir. 2007) (holding that a claim construction that excludes the preferred embodiment "is rarely, if ever, correct").

Compgrip erroneously asserts that the term "adhered" requires the exclusive use of a polychloroprene-toluene adhesive because that chemical combination is expressly referenced in the preferred embodiment of the '971 Patent's specification. (Def. Opp., at 13-14.) Relying on the ordinary meaning of "adhere," discussed above, two materials are adhered if they "hold fast or stick by as if by gluing, suction, grasping or fusing." (Ex. 54), or if they are "attached to or stick to another substance." (Ex. 55.) The ordinary meaning does not require adhesion solely by way of, a polychloroprene-toluene chemical compound. Defendants assert that Claim 1 should be construed to refer only to this type of adhesive because "no other adhesive is disclosed" in the '971 Patent. (Def. Opp., at 13.) Yet this argument has been expressly disregarded by the Federal Circuit:

Our precedent has emphasized that the disclosure in the written description of a single embodiment does not limit the claimed invention to the features described in the disclosed embodiment.

Gemstar - TV Guide Int'l, Inc. v. ITC, 383 F.3d 1352, 1366 (Fed. Cir. 2004) (citing Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004)). The argument has also been disregarded by the United States Supreme Court:

Smith v. Snow, 294 U.S. 1, 11, 55 S. Ct. 279, 79 L. Ed. 721, 1935 Dec. Comm'r Pat. 757 (1935). Accordingly, the term "adhered to" should not be limited in the ways Defendants suggest. A reading of the Patent's specification makes clear that "adhered to" should be construed to include the use of an adhesive that contains air gaps, and should not, as a matter of law, be limited solely to the type of adhesive disclosed in the '971 Patent's embodiment.

The moving party Eaton would like the Court to construe the meaning of the claim terms (1) "handle" and "grip"; and (2) "adhered to and abutting." Eaton argues that although the terms "handle" and "grip" can be used interchangeably the language of the '418 Patent define two distinct elements related to an impact imparting device: "In sum, 'handle means a handle or shaft, bare of a grip. [Whereas a] 'Grip' means something placed over the handle to assist one in gripping the handle." (P.&A., p.11). In other words, the handle is part of the impact imparting device whereas the grip refers to something placed over the handle. (See id.). Eaton interprets the term "adhered to and abutting" as "fastened to and touching." (Id. at 1.23). Defendant Eaton then contrasts this language with the definition of the allegedly infringing Whisper grip: "The Whisper golf club grip is a combination of a rubber underlisting sleeve about which is spirally wrapped a strip." (Id. p.11; citing Ex. 2, Plaintiffs' Int. Response No. 4).

Using its interpretation of the claim terms as a premise, Defendant Eaton argues that the Whisper grip does not literally infringe the '418 Patent because "the strip of the Whisper Grip is 'adhered to and abutting' the rubber sleeve of the grip; it is not 'adhered to and abutting [the] handle' of the golf club, which is required by Claim 1 of the '418 Patent." (P.&A., p.12). Essentially, they are arguing that "the rubber sleeve" of the Whisper grip is different than the claim term "handle" used in the '418 Patent. To bolster this argument, in its Reply, Defendant Eaton argues that Plaintiffs' subsequent patent, the '813 Patent, similarly distinguishes between a "handle" and "sleeve." 5 (Reply, p.5). Furthermore, Eaton contends that the
prosecution history of the '418 Patent distinguishes between the term "handle and sleeve." (Reply, p. 7).

--- Footnotes ---

5 Plaintiffs supply no authority, and the Court is unaware of any authority, suggesting it is appropriate to examine a subsequent patent to determine the meaning of claim terms used in a prior patent. Accordingly, the Court rejects this approach.

--- End Footnotes ---

In its Opposition, Plaintiffs contend that "adhered to" means "to hold fast." (Opp. at p.13). On that point, the parties are in agreement. Compare, Opp. at p.13 and P.&A. at p.11. However, Plaintiffs argue that "adhered to" does not require that elements be directly touching. (Opp. at p.13). Plaintiffs offer the example of floor tile being held fast to a concrete foundation, even though there is a paper underlay between the tile and the foundation. (Id.). As for the term "abutting," Winn proposes the following definition: "to touch or end at one end or side" or alternatively, to "lie adjacent." (Opp. at p.13; citing American Heritage Dictionary of the English Language, 4th Ed.). Plaintiffs contend that there is no requirement for the items to be touching. According to Plaintiffs, "adhered to and abutting" the handle means "held to and adjacent to the handle." (Id.).

To support its argument, Plaintiffs point to the prosecution history of the '418 Patent. (Id. at p.14). During the prosecution of the patent, the examiner rejected the claim specifying that the textile layer be "adhered directly to the handle" in view of several prior art references. (Opp. at p.14).

The Court finds Plaintiffs' argument unpersuasive. Adhered to means to "hold fast." The American Heritage Dictionary of the English Language, Fourth Edition (2000). Abutting is commonly defined as touching, lying adjacent to or bordering upon. See id. Plaintiffs' argument hinges on the contention that abutting might not necessarily require that the device touch the handle. To support that contention, they refer the Court to the prosecution history. (Opp. at p.14). However, before proceeding to the prosecution history, the Court should first look at the claims and then the specification. Markman, 52 F.3d at 979. In the specification, the last sentence provides that the patented device have "an adhesive provided along the inner surface of the textile strip securing the strip to the handle." (Saros Decl., Ex. 3, '418 Patent, Col. 4, Claim 1, ll.54-56.) Further, in the specification the handle is described in print and in the accompanying drawings as "the handle of a tennis racket." (Id., Col. 2, ll.40-45). Accordingly, it seems unambiguous from the specification and figures referenced therein that the patented device was to be touching and attached to the handle, that is the stem extending from the impact imparting device (i.e., club or racket). Between the shock absorbing felt layer, and the joint formed by the adhesive tape and the handle, there is "a conventional layer 30." (Id. at Col 3, ll.4-10). Viewing this language, it is clear that the patent contemplates no sleeve between the handle of the impact imparting device and the strip. Contrary to Plaintiffs' assertions, the handle described in its claims and specifications is not the same as a rubber sleeve. That being said, it requires further analysis to determine whether the Whisper grip infringes Plaintiffs' product. There appears to be no literal infringement because the strip of the Whisper grip is adhered to and abutting a rubber sleeve. It is not adhered to and abutting the handle of the golf club which is required by claim 1 of the '418 Patent. The Court now must turn to perform analysis under the doctrine of equivalents to determine if a triable issue of fact exists.

2

With regard to the district court's construction of the "adhering material" limitation, Airboss persuaded the district court and now maintains before us that "adhering" essentially means "bonding." Although "bonding" indeed was used in the specification, the passage in which it appears could be read so that the term refers to the epoxy resin adhesives that comprised the first of two preferred embodiments of the invention. '046 patent, col. 2, ll. 37-38. The second preferred embodiment contemplates the use of "an HDPE closed cell foam" in lieu of the epoxy resin adhesives. '046 patent, col. 2, ll. 38-39. Furthermore, the dictionary definition of "adhere" indicates that bonding is not the only way to get two objects to "adhere" to one another. 1 For instance, magnets, solder, and Velcro strips can all be used to "adhere" objects together, but in altogether different ways. Even the prosecution history suggests that a broader meaning is appropriate in that the PTO
examiner used the word "adhere" to describe a plate being fastened down by nails or spikes. J. App. at 401. In short, the district court unduly restricted the limitation of "adhering material" to "a layer of adhesive, such as a glue or epoxy, which bonds the plate to the tie." Pandrol I, at 10.

1 "adhere: to hold fast or stick by or as if by gluing, suction, grasping, or fusing." Webster's New Collegiate Dictionary 56 (9th ed. 1985).

The district court's construction is not only unnecessarily narrow, but also violates at least two basic canons of statutory construction. First, the district court's construction is in direct conflict with the plain language of a neighboring claim, namely, claim 3, which specifies "wherein said adhering material is a closed cell foam pad." '046 patent, col. 2, ll. 63-64 (emphasis added). According to our decision in Georgia-Pacific Corp. v. U.S. Gypsum Co., 195 F.3d 1322, 1331, 52 U.S.P.Q.2D (BNA) 1590, 1598 (Fed. Cir. 1999), "a claim term cannot be given a different meaning in the various claims of the same patent." Id. The clear language of claim 3 indicates that a closed cell foam pad is an "adhering material." The district court, however, construed "adhering material" in claim 1 in such a way that would necessarily exclude a closed cell foam pad. Since the patent does not otherwise provide for such inconsistent definitions, the claim construction is in error. Second, the district court's construction effectively reads out one of the preferred embodiments of the claims, namely, the use of HDPE foam as an "adhering material." According to our decision in Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 39 U.S.P.Q.2D (BNA) 1573 (Fed. Cir. 1996), a construction that would cause a preferred embodiment to fall outside of the scope of the patent claims is strongly disfavored. Id., 90 F.3d at 1583-84, 39 U.S.P.Q.2D (BNA) at 1578 ("Such an interpretation is rarely, if ever, correct and would require highly persuasive evidentiary support."); see also Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1581, 38 U.S.P.Q.2D (BNA) 1126, 1130 (Fed. Cir. 1996) ("It is unlikely that an inventor would define the invention in a way that excluded the preferred embodiment, or that persons of skill in this field would read the specification in such a way."). Given that the district court's definition of "adhering material" would exclude an HDPE closed cell foam, claim 3 of the '046 patent would no longer cover what was disclosed in one of its preferred embodiments. A claim construction that produces such a result cannot stand.

II. Claim Construction.

The only issue the parties raise regarding claim construction concerns the "adhering material" limitation of claim 3. The defendants argue that the district court erroneously concluded that any closed cell foam pad is an "adhering material."

Our earlier decision in this case is dispositive of this issue. In Pandrol I we concluded that "the clear language of claim 3 indicates that a closed cell foam pad is an 'adhering material,'" and that the district court's construction erroneously excluded from claim coverage the "HDPE closed cell foam" that was disclosed in the preferred embodiment. Pandrol I, 10 Fed. Appx. at 841-842.

The defendants essentially argue that our earlier claim construction was incorrect. Even if that claim construction were not binding as the law of the case, it was clearly correct. Both the abstract and the preferred embodiment make clear that a gasket between the rail plate and the rail tie, in and of itself, constitutes an "adhering material" and need not satisfy a separate bonding requirement. I The abstract provides, "the plate may be bonded to the rail tie or a resilient gasket can be interposed between the rail tie and the plate." Abstract of the '046 Patent (emphasis added). This makes clear that bonding is merely an alternative to the separate solution of merely interposing a gasket between the rail tie and the plate. The preferred embodiment similarly provides, "the plate 10 may be bonded by layer 12 of adhesive (epoxy resin adhesives are preferred) to the tie or an HDPE closed cell foam of 1.5 mm thickness of the same size and shape as plate 10 fitted between plate 10 and tie 1." '046 Patent, col. 2, ll. 37-41 (emphasis added). Once again, bonding is merely an alternative embodiment to inserting a closed cell foam, which is "fitted" between the plate and the tie. Hence, while the claims require an "adhering material" between the abrasion resistant plate and the rail tie, this requirement is satisfied by "interposing" or "fitting" the closed cell foam pad between the rail plate and the tie.
The defendants' argument that the patentee disclaimed such an interpretation during prosecution is without merit. During prosecution, the Patent Examiner initially objected to the drawings in the application under 37 C.F.R. § 1.83(a), 2 because the drawings in the application did not include an illustration of the "adhering material." Office Action of Mar. 7, 1990 in the 489,498 Application at 2. The patentee amended the application by including an illustration of the "adhering material" in the drawings and "correcting the informalities noted by the Examiner" in the specification. Am. of Mar. 13, 1991 to Application No. 489,498 at 2. The specification originally contained the following language:

The plate 10 may be bonded by adhesive (epoxy resin adhesives are preferred) to the tie 1 or an HDPE closed cell foam of 1.5 mm thickness of the same size and shape as plate 10 is fitted between plate 10 and tie 1.

See id. at 1. The patentee amended the specification to refer to the new drawings, by adding "layer 12 of" between "by" and "adhesives" and deleting the word "is" between "plate 10" and "fitted." Hence, the amended lines of the specification read:

The plate 10 may be bonded by layer 12 of adhesive (epoxy resin adhesives are preferred) to the tie 1 or an HDPE closed cell foam of 1.5 mm thickness of the same size and shape as plate 10 is fitted between plate 10 and tie 1.

046 patent, col. 2, ll. 37-41 (added language emphasized; deletion indicated by strikethrough). The addition of the phrase "layer 12 of" and the deletion of the word "is" are without significance. The defendant retained the language indicating that a preferred embodiment would include "an HDPE closed cell foam of 1.5 mm thickness of the same size and shape as plate 10 fitted between plate 10 and tie 1." 046 patent, col. 2, ll. 38-41 (emphasis added).

The district court found, "it is undisputed that defendants' product utilizes a foam pad which is a polyethylene pad of one to two millimeters in thickness and of similar shape to the abrasion plate." Opinion at 5. There is thus no dispute that under this construction of claim 3, the district court correctly determined that the claims cover the accused device, and that the plaintiffs were, therefore, entitled to summary judgment of infringement as a matter of law.

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1 It is well-settled that "claims must be read in view of the specification, of which they are a part." Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 USPQ2d 1321, 1329 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). This includes consulting the preferred embodiment, see, e.g., Watts v. XL Sys., Inc., 232 F.3d 877, 883, 56 USPQ2d 1836, 1840 (Fed. Cir. 2000), and the abstract. See, e.g., SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1342, 58 USPQ2d 1059, 1064 (Fed. Cir. 2001).

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A. "Adhesion Promoting Layer"

Both the '486 and the '722 patents include the term "adhesion promoting layer" in the following context: "A thermal transfer laminate, comprising…an adhesion-promoting layer overlying said upper surface of said first layer" (486 Claim 1, '722 Claim 1). The parties have proposed two divergent definitions of the term "adhesion promoting layer." Avery's proposed definition, presented at the claim construction hearing is: "A layer or treated layer, that increases the adhesion of coatings to a film substrate including radiation-curable, solvent-based, or water-based primers as well as a layer treated by corona treatments." In contrast, Whitlam suggests that an adhesion promoting layer should be defined as "a transparent layer of a
radiation-curable, solvent-based, or water-based primer designed to increase the adhesion of coatings to a film substrate."
The parties agree that layers of radiation-curable, solvent-based or water-based primers that act to increase the adhesion of coatings to a film substrate would qualify as an adhesion promoting layer. Therefore, the issue to be decided is whether a layer formed by corona treatment should also qualify as an adhesion promoting layer. This Court finds that it does not.

The Court looks first to the plain meaning of a term to seek its definition. Altiris, Inc. v. Symantec Corp., 318 F.3d 1363 (Fed. Cir. 2003). Unless the patentee has specifically redefined a term, it will be defined according to the ordinary meaning as viewed by one of ordinary skill in the art. Id. In this case, the term has not been specifically redefined by the patentee, and therefore it will be given its ordinary meaning. The plain meaning of adhesion promoting layer, however, is ambiguous. Avery has suggested that corona treatment creates a layer of treated film, which increases adhesion, and therefore meets the criteria of a plain definition of adhesion promoting layer. Viewed in the context of other portions of the patents' claims and specifications, this argument fails.

Although the specifications of a patent are not afforded the same authority as the claim terms, they are helpful in determining the necessary context of the claim language. Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1552 (Fed. Cir. 1997). The specifications of both patents indicate that corona treatment is not what Avery had in mind when he used the term adhesion promoting layer in the patent. The specification relating to the adhesion promoting layer from the '722 patent is as follows:

The adhesion promoting layers 130 and 135 may be made from any radiation-curable, solvent-based or water-based primer designed to increase the adhesion of coatings to a film substrate. The layer 130 is transparent and the layer 135 is preferably transparent. The adhesion promoting layer material is typically comprised of a lacquer and a diluent. The lacquer is typically comprised of one or more polyolefins, polyamides, polyesters, polyester copolymers, polyurethanes, polysulfones, polyvinylidine chloride, styrene-maleic anhydride copolymers, styrene-acrylonitrile copolymers, ionomers based on sodium or zinc salts of ethylene methacrylic acid, polymethyl methacrylates, acrylic polymers and copolymers, polycarbonates, polyacrylonitriles, ethylene-vinyl acetate copolymers, and mixtures of two or more thereof. Examples of the diluents that can be used include ethanol, isopropanol, butanol, ethyl acetate, propyl acetate, butyl acetate, toluene, xylene, acetone, methyl ethyl ketone, heptane, and mixtures thereof. The ratio of lacquer to diluent is dependent on the viscosity required for application of the adhesion-promoting layer, the selection of such viscosity being within the skill of the art. Examples of the adhesion-promoting layers that can be used include CLB04275F-Prokote Primer (a product of Sun Chemical Corporation identified as a solvent based primer useful with inks and coatings). The adhesion promoting layers 130 and 135 typically have thicknesses in the range of about 1 to about 4 microns, and in one embodiment about 2 microns.

Nowhere in this general description of the adhesion promoting layer is the use of corona treatment mentioned. Without interposing any specific limitations on the claims, this language from the specification contemplates a layer deposited on the surface of the substrate of a solvent-born polymer. It would have been possible, if Avery considered corona treating to be an adhesion promoting layer, for the specification to include language to that effect. Regardless of whether corona treating produces a layer of treated material for adhesion purposes, the general description of the invention envisions a separate, chemically different layer applied over the facestock as the adhesion promoting layer.

In addition to the language of the specification, the doctrine of claim differentiation also weighs against a finding that corona treatment should be considered a part of an adhesion promoting layer. The doctrine of claim differentiation creates a presumption that claims should not be construed so similarly as to make a claim superfluous. United States v. Teleelectronics, Inc., 857 F.2d 778, 784 (Fed. Cir. 1988). The adhesion promoting layer is first set forth in independent claim one of both patents. Following this independent claim, there are dependent claims that place limitations on it. In the '722 patent, dependent claim 2 states, "The composite of claim 1 wherein said upper surface of said first layer is corona treated." In the '486 patent, dependent claim six puts the same limitation on independent claim one. If it is accepted that an adhesion promoting layer includes corona treating, then it is superfluous to include the dependent claims that specifically call for corona treating of the facestock. However, if adhesion promoting layer is construed not to include corona treating, then these dependent claims are reasonable limitations on the patent, and still foreclose a competitor from using a corona treatment on the upper surface of the facestock. This case is analogous to RF Delaware Inc. v. Pacific Keystone Technologies, Inc., 326 F.3d 1255 (Fed. Cir. 2003), which held it was error to import limitations from a narrower dependent claim into a broad independent claim. The use of corona treating is given in a dependent claim as a treatment to be applied to the facestock. It is inconsistent and superfluous to say that it should also be included in the definition of an adhesion promoting layer. For the forgoing reasons, the Court adopts the following definition of adhesion promoting layer: "A layer
that increases the adhesion of coatings to a film substrate including radiation-curable, solvent-based, or water-based primers.

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d. An "Adhesive" is a Substance Used to Bond Two or More Solids so that They Act or Can be Used as a Single Piece

The same reasoning used in the Court's construction of "rivet" governs its construction of "adhesive." "Adhesive" is not defined in the intrinsic evidence. AFT draws its construction, "an adhesive substance (as glue or cement)" from Merriam-Webster's Ninth New Collegiate Dictionary, Dkt. No. 60-19, whereas J&L cites to the McGraw Hill Dictionary of Scientific and Technical Terms: "a substance used to bond two or more solids so that they act or can be used as a single piece." As the latter definition comes from a technical dictionary and is likely more indicative of the meaning attributed to the term by those skilled in the art, the Court adopts that construction.

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The parties agree on the meaning of most of the claim language. They disagree strongly, however, on the meaning of one particular aspect of the first claim. According to the express language of the ’916 Patent, it first claims protection for:

A strip to be shaped into spacer stock for maintaining adjacent glass sheets of an insulating unit in a predetermined spaced relationship to one another, the strip comprising:

[A] an elongated flat bendable metal substrate having opposed major surfaces, at least one of the surfaces being fluid impervious; said substrate having a structural stability sufficient to maintain adjacent glass sheets in a fixed relationship when said substrate is shaped into the spacer stock;

[B] an elongated bead of fluid pervious adhesive adhered directly to one of said major surfaces spaced from edges of said substrate; said adhesive having structural stability less than the structural stability of said substrate;

[C] and a desiccant in said bead.

’916 Patent, Col. 6 lns. 32-43 (brackets and lettering added).

This claim covers metal stock that will be formed into multi-pane window spacers. The metal strip must be longer than it is wide, planer, and prevent fluid from passing through it at least one of the flat sides. The strip must also be pliable enough to be shaped into spacer stock, but rigid enough to hold panes of glass apart. A bead of adhesive is stuck to one of the strip's flat surfaces. The adhesive must not simply coat the surface but be three dimensional and be longer than it is either tall or wide. The adhesive must also be set in from the edges of the strip and contain a drying agent. Finally, the adhesive must not be as rigid as the metal strip.

The parties agree on this description of Claim 1. They part company, though, on the meaning of "adhesive." Even with respect to adhesives, though, the parties agree on a great deal more than they disagree. Both of the parties agree on the general concept of adhesives -- namely, that they stick to things or they stick two non-adhesive things to each other. They also both acknowledge that there is a broad range of stickiness for adhesives. Finally, both agree that how sticky a particular substance is does not affect its characterization as an adhesive. 1

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1 PPG submitted testimony at the Markman hearing that unless a substance stuck for more than twenty-four hours, it was not an adhesive. The Court does not credit this limited definition. As counsel for PPG acknowledged in response to one of the Court's concerns, adhesives designed for particular purposes can have specific and limited durations. It is not at all clear that twenty-four hours provides any meaningful distinction between an adhesive and a non-adhesive.
Beyond their agreement on these general principals, though, Lockformer and PPG have different ideas about how sticky a substance must be to fall within the first claim of the ‘916 Patent. On the one hand, Lockformer says that the adhesive must stick to the strip for the life of the window, which is sometime between a handful and a dozen years or so. On the other hand, PPG says that it needs to stick to the strip only long enough for the strip to be shaped into a spacer and glass applied to the spacer. Unfortunately, there is little in either the intrinsic or extrinsic evidence to clarify which of these position, if either, is correct.

In light of this lack of clarity, the Court interprets Claim 1 in a manner no more limiting than its drafters provided. Consequently, the Court construes "adhesive" in Claim 1 to require that the adhesive stick to the strip through the process of shaping it into spacer stock and fixing glass to the spacer. It would be useful to have the adhesive material containing the drying agent stick to the strip through the process of forming it into a window spacer. This seems to be the minimum period that is necessary to have the adhesive be useful to the invention. Any other interpretation would limit the claim where no limits have been set.

While it is true that not-very-sticky material placed on all sides of a spacer would eventually fall into the window where it could be seen, there is nothing in Claim 1 requiring adhesive to be placed on the entire length of the yet-to-be-shaped strip. Conceivably, a strip could have only a portion of its length -- one quarter, for example, with a window that is perfectly square -- covered with adhesive and drying agent. Then, that strip could be formed into a spacer and the part with adhesive could form the bottom of the spacer. In such a case, no material would fall into the viewing area of the window. Such a strip would still meet the requirements of Claim 1.

Since "adhesive" in Claim 1 is not limited by any other language, and to be useful, only requires that the material stick to the metal strip, at a minimum, throughout the process of shaping the strip into spacer stock and fixing glass to the spacer, the Court will not limit it further.

The first term in dispute concerns the word "adhesive," contained numerous times in the patent claims. Moore asserts that an adhesive is a generic term which includes cohesives. The Court agrees. While a cohesive may have the special property of sticking only to itself, 4 there is nothing that precludes a cohesive from being a subset of the term adhesive. An adhesive is "[a] substance . . . that provides or promotes adhesion." The American Heritage Dictionary of the English Language (3d ed. 1996). Certainly this definition applies to a cohesive as well. Finally, Central States has offered no evidence to show that a cohesive is a term of art that is excluded from the definition of adhesives. 5

4 The parties appear to be in agreement as to this interpretation.

5 Though extrinsic and not considered by this Court, Central States even quotes its own technical manual definition of a cohesive which describes it as an "adhesive." Def.'s Response at 13.

Central States contends that the ‘875 patent is meant to protect only products using heat-seal adhesives. As justification for its assertion, Central States asserts that the patent is "drafted in the context of a heat seal adhesive" and because of that, "Moore's construction of the term 'adhesive' . . . renders the claims invalid under 35 U.S.C. § 112, paragraph 1 (lack of enablement) and paragraph 2 (unduly vague)." Def.'s Response at 12. Central States' justification for this is that since the patent only describes the placement of adhesive on one side of a seal strip, and pressure sensitive adhesive requires adhesive on two sides, the patent does not enable a person reasonably skilled in the art to make the claimed invention.

Central States' reliance on section 112 is ill-founded. What paragraph 1 of section 112 requires of the patentee is to state the
"best mode" contemplated of making the invention. 35 U.S.C. § 112, para. 1. The patentee has illustrated a "best mode" using a heat-seal adhesive. The use of a heat-seal adhesive as a preferred embodiment does not mean that the claims can be limited to only a heat-seal adhesive. See Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998) ("one may not read a limitation into a claim from the written description"). Furthermore, the claims use the terms "adhesive" and "activated" when relating to the method by which the envelope will be sealed. These are adequately specific and comply with paragraph 2 of section 112. The adhesive may be any type of adhesive that can be activated, whether by heat or pressure.

Central States appears to be forwarding the theory that since the patent claims only describe adhesive strips on one side of the seal, then a product with a matching seal using a cohesive would be non-infringing. However, such a product would still infringe upon the adhesive placement in Claim 1 of the '875 patent. One cannot rightfully add elements to a patented invention because the "improved" invention would still contain all of the claims protected in the existing patent. Therefore, Central States' argument fails.

3. Adhesive Coating

Defendants' Proposed Construction: An "adhesive coating" is a substance such as a glue or gum, which is applied by "coating," which is capable of holding materials together by surface attachment. It does not include magnetic materials that affix a label to a metal surface.

Plaintiff's Proposed Construction: Leave undefined.

The Court's Claim Construction: An "adhesive coating" is a covering of a substance such as a glue or gum, which is capable of holding materials together by surface attachment. It does not include magnetic materials that affix a label to a metal surface.

MPT believes that adhesive coating is a term that a jury can understand without further definition. 29 In any event, MPT does not state any disagreement with the portion Defendants' definition which refers to "a substance such as a glue or gum . . . which is capable of holding materials together by surface attachment. It does not include magnetic materials that affix a label to a metal surface." The Court finds that this portion of Defendants' definition is not contrary to the plain meaning and is consistent with industry definitions. 30 For example, one industry reference defines adhesive as follows:

Adhesive (glue, gum) - A substance capable of holding materials together by surface attachment. (American Society for Testing Materials).

(Fasson p. 31).

29 MPT also explains that it was not notified of Defendants' position on "adhesive coating" until right before the deadline for initial Markman briefs. However, MPT has had an opportunity to respond to Defendants' position.

30 Although the Court might otherwise be wary of including examples ("a substance such as a glue or gum") or express disclaimers of claim scope ("It does not include magnetic materials that affix a label to a metal surface") within a claim definition, MPT has provided no argument that the Court should not do so. Moreover, these portions of Defendants' definition do not appear to be contrary to portions of the claims, specification, prosecution history or extrinsic evidence identified for the Court. This is quite different from the definition of a release coating, where the examples and express disclaimers Defendants sought to import into the claim definition were contrary to the intrinsic and extrinsic record.

However, MPT does not agree that the adhesive must be applied by "coating" as that term is defined by Defendants. The same arguments that apply to a release coating apply with equal force here. Simply put, none of the evidence provided by Defendants supports limiting a coating to a material applied by a liquid coating process. As was discussed in detail above, the specification explicitly contemplates that an adhesive coating can be applied to the placard by a lamination process...
involving an adhesive layer.

Defendants nonetheless argue that an adhesive coating cannot be defined as a covering. First, they note that Claim 1 includes "a liner covering said adhesive coating." From this they conclude that the adhesive coating cannot be a covering, since this would mean there is a covering for a covering. The Court has no difficulty with a covering having a covering. The adhesive coating of Claim 1 is defined as the "adhesive coated face" of a placard. There is no reason that the adhesive cannot serve as a covering for a placard while a liner covers the adhesive. 31

31 The same logic applies to the specification's description of "a disposable liner having a release coating on one face for covering the placard's adhesive coating." (709 patent, col. 1, ln. 56-57).

B.

We now address the construction of "adjacent." This limitation explicitly appears only in independent claim 5 of the '317 patent, but it is also required in dependent claims 7 and 8 by dependency from claim 5. The district court construed this limitation as "next to or adjoining." Claim Construction, 2007 U.S. Dist. LEXIS 98875 at *56.

Boss argues that this term should be construed as "close to." Boss contends that the district court inappropriately limited the definition of "adjacent" and, in doing so, excluded certain embodiments in the '317 patent. According to Boss, the proper construction would cover all of the disclosed embodiments. Specifically, Boss points to figures 4 and 10 in the '317 patent, emphasizing that its proposed construction--"close to"--would encompass both disclosed figures, whereas the district court's construction excludes the embodiment shown in figure 4.

Yamaha responds that the intrinsic evidence, the claims, and ordinary meaning support the district court's construction. In particular, Yamaha argues that the '317 patent's specification use of "adjacent" to describe "corners formed by adjacent sides of the base section 240," col.9 l.52, confirms "the concept of next to or adjoining." Yamaha also contends that, contrary to Boss's suggestion, the court's construction "does not exclude any embodiments from the scope of the invention because other claims are available to cover those embodiments."

We agree with the district court that the correct construction of "adjacent" in the '317 patent is "next to or adjoining." Although the term "adjacent" is a commonly understood word, we still look to the intrinsic evidence for the proper construction. See Phillips, 415 F.3d at 1321 ("the specification is 'the single best guide to the meaning of a disputed term'") (quoting Vitronics, 90 F.3d at 1582); id. ("T[he] "ordinary meaning" of a claim term is its meaning to the ordinary artisan after reading the entire patent.").

Turning to the pertinent claim language, claim 5 states "a storage section, disposed adjacent the flexible seat section, having a storage cavity formed therein." '317 patent col.11 ll.3-4. While the language of claim 5 alone does little to clarify the parties' dispute, the figures in the specification support the proposition that the term means "next to or adjoining." As shown by figure 10, the storage section is directly "next to or adjoining"--not merely "close to"--the flexible seat section 260. Id. fig.10. In addition, the specification's use of "adjacent"--"corners formed between adjacent sides of the base section"--supports that "next to or adjoining" is the correct construction. Id. col.9 ll.51-52. Indeed, in order for the sides of the base section to form "corners," the sides would logically have to be "next to or adjoining" each other, rather than merely "close to" each other. See id. fig.9a items 230 and 224. Moreover, this construction, gleaned from the intrinsic evidence, is consistent with the dictionary definition of "adjacent." See, e.g., American Heritage Dictionary of the English Language (4th Ed. 2000); Phillips, 415 F.3d at 1322-23 (acknowledging that a construction "may also rely on dictionary definitions . . . so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." (quoting Vitronics, 90 F.3d at 1584 n.6)).

Moreover, Boss's proposed construction of "close to" and its contentions that the current construction of "next to or adjoining" excludes certain disclosed embodiments are contradicted by the unasserted claims of the '317 patent. See Phillips, 415 F.3d at 1314 ("Other claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term."); see also PSN Illinois v. Ivoclar Vivadent, Inc., 525 F.3d 1159,
1166 (Fed. Cir. 2008) ("[U]nasserted or cancelled claims may provide 'probative evidence' that an embodiment is not within the scope of an asserted claim."). Indeed, this case presents a clear example of the situation in which, although alternatively disclosed embodiments are not encompassed by the current claim construction, other unasserted claims cover those alternative embodiments. See, e.g., TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc., 529 F.3d 1364, 1373 (Fed. Cir. 2008) ("[T]he mere fact that there is an alternative embodiment disclosed in the . . . patent that is not encompassed by [a] district court's claim construction does not outweigh the language of the claim, especially when the court's construction is supported by the intrinsic evidence."); PSN Illinois, 525 F.3d at 1166 ("[C]ourts must recognize that disclosed embodiments may be within the scope of other allowed but unasserted claims.").

Claim 5 reads "a storage section, disposed adjacent the flexible seat section." '317 patent col.11 ll.3-4 (emphasis added). Under the current construction of "next to or adjoining," claim 5 encompasses the embodiment shown in figure 10, which discloses the storage section next to the seat section. Id. fig.10. Importantly, unasserted independent claims 1 and 12, as well as their dependent claims, omit the requirement that the storage section be "adjacent" the seat section. See, e.g., id. col.10 ll.35-36; col.12 ll.25-34. As such, the unasserted claims allow the storage section to be in a variety of locations, including simply "close to" the seat section. The unasserted claims therefore specifically encompass the other disclosed embodiments, which show the storage section "close to" a seat section. See, e.g., id. fig.4 items 60 (seat section) and 44 (utility cavity). Construing the limitation "adjacent" as "close to," as urged by Boss, in this case would render that limitation in claim 5 essentially meaningless in light of the other unasserted claims--a construction we cannot accept based on the entirety of the intrinsic evidence. See, e.g., Ortho-McNeil Pharm., Inc. v. Caraco Pharma. Labs., Ltd., 476 F.3d 1321, 1327-28 (Fed. Cir. 2007) (rejecting a claim construction that would have "render[ed] meaningless another claim's limitation").

8 Also, we note that Boss originally proposed during claim construction in the district court that, if "adjacent" required construction, it should be construed as "next to."

For the foregoing reasons, we hold the district court correctly construed "adjacent" as "next to or adjoining." We have considered Boss's additional arguments on this issue, but find them unpersuasive.

4. "Positioned Adjacent"

The term "positioned adjacent" used in Claim 1 of the '477 Patent designates which end of the elongate member is nearest to the fluid receptacle. See '477 Patent col. 8 ll. 43-46 ("the elongate members having a front and a rear with the front of the elongate members being positioned adjacent a fluid receptacle"). Millipore argues that this claim term should be given its ordinary meaning, which includes "nearby," but should not require that there be contact between the elongate member and the fluid receptacle. Gore counters that the term "positioned adjacent" should be construed as "next to or adjoining, with no intervening structure between the elongate members and the fluid receptacle."

Although the term "adjacent" is a commonly understood word, I consider the intrinsic evidence for the proper construction. See Phillips, 415 F.3d at 1315 (referring to the specification as "the single best guide to the meaning of a disputed term"). I find that Gore's construction of the term "adjacent" to be consistent with the specification, which requires the elongate member to stop the flow of fluid when placed in the closed position. See '477 Patent col. 4 ll. 57-67 ("the elongate members 30 are . . . shaped to fit substantially water-tight within said shaft 26. . . . Each elongate member 30 is movable within said shaft 26 from a closed position Pl to an open position P2 such that the release of fluid out of said fluid receptacle through said port insert 10 is frustrated when the elongate member 30 occupies the closed position Pl."). (emphasis added).

Consequently, I construe the term "adjacent" as "next to or adjoining with no intervening structure between the elongate members and the fluid receptacle." 5 See Boss Indus., Inc. v. Yamaha Motor Corp. U.S.A., Inc., 333 Fed. Appx. 531, 2009 WL 1475036, at **9 (Fed. Cir. 2009) ("the correct construction of 'adjacent' in the [477] patent is 'next to or adjoining.'").
5 In the aftermath of the May 19, 2010 hearing, Millipore now requests me to specify that there can be no intervening structure "other than the cap" between the elongate members and the fluid receptacle. Because I construe the cap as part of the same structure, see Section II.B.2.b. supra, I reject Millipore's argument.

The parties next offer competing constructions for the term "adjacent," which appears in claim 11 to describe the arrangement of LEDs. "[A] first light emitting diode . . . is adjacent a second light emitting diode." ('831 patent, claim 11.) The parties dispute whether the term requires actual physical contact between the LEDs. The dictionary definition does not resolve the dispute, but it does aid the court in distinguishing between the meaning of "adjacent" and contiguous" as used in the patent. "Adjacent may or may not imply contact but always implies the absence of anything of the same kind in between. . . . Contiguous implies having contact on all or most of one side." WEBSTER COLLEGIATE DICTIONARY at 14 (10th ed. 1997). As thoroughly described in Part C, the patent and specification employ the term "contiguous" to indicate objects that adjoin one another in constant contact (i.e. "contiguous beam," "contiguous pool of light"). In light of that fact, claim 11's use of the term "adjacent," which has a lesser connotation of contact, appears to represent a deliberate departure. In context, the term adjacent is best understood as requiring a close proximity, while remaining silent as to contact.

Defendant challenges this conclusion, urging that in light of the meaning of "contiguous beam," as a single, unbroken beam of light, "adjacent" must mean touching. Only adjoining (touching) LEDs, Defendant urges, could form the single light source necessary to project a "contiguous beam." The court agrees that, to create a beam that "appears to be a single unbroken beam of light," LEDs would need to be in very close proximity such that they appeared to form one light source. This requirement does not, however, necessarily require the LEDs be in physical contact with one another. A millimeter could separate two focused LEDs and yet they would still be "adjacent" and project a "contiguous beam." Plaintiff's construction of "adjacent" as "not necessarily touching" is technically accurate, but unnecessary. In the court's view, the ordinary meaning of "adjacent," as "being in close proximity," is the best reading here. Id.

Accordingly, the court adopt the following construction of "adjacent:" "closely proximate."

The parties dispute the meaning of the term "adjacent" (claim 13 of '493 Patent) and the related phrase "to a respective said vertical post between said adjacent liner panels" (claim 21 of '493 Patent). The term is used to specify that two items of the same type (e.g., liner panels) are next to each other, even if they are separated by an item of another type (e.g., a vertical post). (See, e.g., claim 1 of '493 Patent (claiming a trailer where "adjacent" liner panels are attached to a "vertical post disposed between" them).)

Plaintiff contends that "adjacent" means "close to or nearby." Defendants argue that "adjacent" liner panels are "next to" each other-and that no other structure of the same kind comes between them. As to the phrase "to a respective said vertical post between said adjacent liner panels," Plaintiff asserts that no construction is necessary, while Defendants propose a
definition that "the panels are next to each other."

Both sides agree that two liner panels are "adjacent" to each other if they are near each other and have no other liner panels between them or if they are next to each other but have a vertical post between them. Plaintiff's concern with Defendants' proposed definition is that "next to" implies "abutting." The Court agrees that Defendants' proposed construction may cause confusion, so the Court concludes that "adjacent" means "close to or nearby, but not separated by another item of the same type." In light of this construction, the Court concludes that it need not construe the phrase "to a respective said vertical post between said adjacent liner panels."

**D. "Adjacent"**

The parties also disagree on the meaning of the word "adjacent," which appears in several places in the ’484 patent claims. Defendants propose "next to or adjoining something else." Dkt. No. 82 at 12. They argue that the term must mean that if two portions of the apparatus are "adjacent" to one another, no other structure is between them. Plaintiff Aero proposes "close to, next to or lying near," and argues against the requirement that no structure be between the two "adjacent" structures, asserting that "abuts" would be a better word for that narrower meaning. Dkt. No. 84 at 10. Dictionary definitions of "adjacent" encompass both meanings. See Free Motion Fitness, Inc. v. Cybex Intern., Inc., 423 F.3d 1343, 1349 (Fed. Cir. 2005) (explaining that Webster's Third New International Dictionary provided several different definitions of "adjacent,") including "not distant" and "relatively near and having nothing of the same kind intervening"; court held that "not distant" was more consistent with the specification). Defendants have not pointed to indications of the narrower meaning in the specification or prosecution history here. The court agrees with plaintiff Aero that the term "adjacent" in the ’484 patent claims does not require that no other structure be between the two structures described as "adjacent."

**B. "Adjacent"**

Claim 8 describes the configuration of the invention's "work surface" as "a display screen adjacent to the work surface that is tiltable relative to the work surface." (the '178 patent, claim 8). The Plaintiff seeks to broadly define the term "adjacent." The Plaintiff's version would define adjacent as "close to." (Joint Claim Construction Statement at 5). The Defendant seeks a more restrictive version - "contiguous, adjoining, abutting." (Joint Claim Construction Statement at 5).

Both parties suggest that the intrinsic evidence is not useful here. Both urge, then, that it be given its ordinary and customary meaning. Oddly, though not surprisingly, neither party can agree on the ordinary and customary meaning of the term. The parties cite to varying dictionary definitions as well as Court of Federal Claims interpretations of "adjacent" to support their positions. See, e.g., Chemical Separation Technology, Inc. v. United States, 51 Fed. Cl. 771, 63 U.S.P.Q.2d 1114 (Ct. Fed. Cl. 2002). As the Federal Circuit noted, "Dictionaries or comparable sources are often useful to assist in understanding the commonly understood meaning of words and have been used both by our court and the Supreme Court in claim interpretation." Phillips, 415 F.3d at 1322.

Before resorting to dictionary definitions, however, it is necessary to "scrutinize the intrinsic evidence in order to determine the most appropriate definition." Free Motion Fitness, Inc. v. Cybex In'll., Inc., 423 F.3d 1343, 1349 (Fed. Cir. 2005). This is because "any reliance on dictionaries [must accord] with the intrinsic evidence." Id. at 1348.

The intrinsic evidence suggests that the term "adjacent" should be used as "close to" as opposed to abutting. The actual claim in dispute - "A mobile workstation, comprising . . . a display screen adjacent to the work surface that is tiltable relative to the work surface" is vague even after surveying the patent in relation to the claim. (the ’178 patent, claim 8) (emphasis added). However, claim 8 uses the term adjacent in a way that is not in dispute: "A movable workstation, comprising . . . an input device tray supported adjacent to the work surface." (the ’178 patent, claim 8) (emphasis added). The patent figures illustrate that although the input device tray is close to the work surface, it does not touch it. (See the ’178
The input device tray is below the top work surface, as can be seen clearly where the input device tray is pulled out of the tray shelf. Thus, the more appropriate and consistent definition of adjacent for the '178 patent would be "close to."

One could arguably read claim 8 as stating that the input device tray's support is adjacent to the work surface. In that case, the device's support would abut the top work surface. However, a more straightforward and less strained reading would be to compare the input device tray's location with the top work surface. While this claim was a close call (as were other claims in dispute), the intrinsic evidence does in fact support the Plaintiff's definition of "adjacent" as "close to."

1. Claim Construction of the Term "adjacent"

Defendants first contend that the accused chairs do not meet the limitation of "a backrest . . . positioned adjacent said rear of said seat." Defendants assert that "positioned adjacent" means that the bottom of the backrest is at or below the level of the seat. This construction, defendants argue, is mandated by both the specification and the prosecution history of the '741 patent's grandparent patent application, U.S. Patent Application No. 08/347,475 (the "'475 application"). Plaintiff opposes this construction, contending that the plain meaning of "adjacent" should apply, and arguing that defendants have mischaracterized the prosecution history by providing the court with an abridged version of the file wrapper.

It is not uncommon for patent drafters to use--or for courts to have to construe--the term "adjacent." See Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 423 F.3d 1343, 1348-49 (Fed. Cir. 2005); Tyco Healthcare Group LP v. Ethicon Endo-Surgery, Inc., 411 F. Supp. 2d 93, 105 (D. Conn. 2006). In Free Motion, the Federal Circuit held that the term "adjacent" should be construed as "not distant." Free Motion, 423 F.3d at 1349. The court there noted that "adjacent" bears several related dictionary definitions, and that there was nothing within the intrinsic evidence to cause the court to apply anything but the broadest definition of the term.

In the instant case, defendants argue that the intrinsic evidence requires the court to apply a narrower scope to "adjacent." The court notes that the claims themselves provide no insight into the meaning of "adjacent." Defendants direct the court to Figure 4 of the '741 patent, which shows a chair with a bottom of the backrest located at or below the level of, rather than spaced above, the seat. Again, however, it is hornbook patent law that preferred embodiments found in the specification should not be read as limiting the claims. See Phillips, 415 F.3d at 1323. Because the specification fails to expatriate on what "adjacent" to the seat means and, a fortiori, what the term "positioned adjacent" means, the court declines defendants' invitation to limit the claims to the preferred embodiment as illustrated in various drawings within the patent. Therefore, if a limiting definition is to manifest itself in the intrinsic evidence, it will have to come from the prosecution history. Id. at 1317 ("In addition to consulting the specification, we have held that a court should also consider the patent's prosecution history, if it is in evidence.") (quoting Markman v. Westview Instruments, Inc., 52 F.3d 967, 980 (Fed Cir. 1995) (en banc)).

Defendants argue that during the prosecution of the '475 application--a grandparent patent application--plaintiff added the term "adjacent" to distinguish the prior art. See Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 980 (Fed. Cir. 1999) ("When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation."). Consequently, according to defendants, plaintiff disclaimed a broad construction of the term. As defendants see it, the patent office examiner rejected the pending claims as being anticipated by the chair disclosed in prior art. In response, plaintiff added the limitation "with said back positioned adjacent said rear portion of said seat" to overcome the rejection. Through extrapolation, defendants contend that because the backrest in Diffrient was positioned above the seat, plaintiff limited the term "adjacent" to mean "at or below the level of the rear of the seat."

Plaintiff contends that neither the claims in the grandparent case nor the patent office examiner's rejection contemplated a requirement that precluded the backrest from being spaced above the rear of the seat. According to plaintiff, the patent office examiner requested a definition for the location of the "rear" of the seat, and that is why the claim limitation in question was added.
After reading the office action and the response to that office action, the court finds defendants' argument to be untenable. The court notes that "[w]hile the prosecution history is relevant to claim construction, 'it often lacks the clarity of the specification and thus is less useful for claim construction purposes.'" LG Elecs., Inc. v. Bizcom Elecs., Inc., 453 F.3d 1364, 1373 (Fed. Cir. 2006) (quoting Phillips, 415 F.3d at 1317). The various snippets of language cited by defendants may relate to a back of a chair and its positioning, but they by no means "rise to the level of disclaiming or limiting the scope of the express claim language." Id. Indeed, in rejecting certain claims in the '475 application as being anticipated, the patent office examiner stated:

Diffrient discloses a tiltable chair and methods comprising a seat (11) and back (12) connected to a base (10) through an exposed linkage assembly. The linkage assembly comprising a link member (65) including a pair of links attached pivoted to the base at an axle (5) and extending at the sides of the seat and back. The link member having a first portion pivotally attached (at 84) to a side of the seat at location above the seating surface (see Fig. 3) which would be substantially aligned with a user's hips and extending to be rigidly connected to the back (at 67). The linkage also includes a rear link (92) pivotally connected between the base and a rear portion of the seat to form a four bar linkage with the link member (the claims do not define a rear direction which would preclude the link 92 of Diffrient from being "rear") . . . . [Italics appear in original] (emphasis added)

In response to this, the applicant amended the claims to state in part, "a seat comprising a seating surface, a front portion, a rear portion and a side portion; a back; and a linkage assembly connecting said seat and back to said base member, with said back positioned adjacent said rear portion of said seat, . . . ." Response to Office Action (emphasis added to show amended language). The applicant then stated in his remarks to the office action:

Independent claim 102 recites a seat having a front and rear portion and a linkage assembly connecting a seat and a back to said base member, "with said back positioned adjacent to the rear portion of said seat." In this way, claim 102 now orients the seat relative to the back and clarifies the meaning of various directional recitations. [Emphasis in original]

This language does not indicate a clear disavowal of scope on the part of the applicant. To the contrary, this commentary indicates that the applicant amended the claims to incorporate "directional recitations" into the claims and to "orient the seat relative to the back," i.e., the seat and back are adjacent to each other. It does not show an attempt to limit the backrest to only positions at or below the level of the seat. The court simply cannot read such innocuous language as incorporating a clear, drastic limitation into the word "adjacent." Therefore, this court defines "adjacent" in claim 1 of the '741 patent as meaning "in close proximity to" or "not distant."

D. The Term "Adjacent"

We disagree with the requirement imposed by the district court that the blocking flange be "contiguous or connected" with the front face of the guard body. "[A] claim interpretation that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct." On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH, 386 F.3d 1133, 1138 (Fed. Cir. 2004) (quotation marks omitted). Two different preferred embodiments, depicted by Figure 4 of the '655 patent and Figure 9A of the RE '885 patent, clearly show the blocking flange resting somewhat in front of the front surface and not in any way "contiguous or connected" with it. The proper construction of this term is "next to."

A. Construction of the Claim Terms Relating to "Shoulder"

The parties ask the Court to construe the following phrases related to the "shoulder" portion of a toner container:

... "a shoulder portion forming a circumferential wall adjacent one end of said body" ('662 patent, Claim 1; '631 patent, Claims 1, 5, and 6)
"a shoulder portion forming a wall adjacent to a first end of said hollow body" ('195 patent, Claims 7, 8, 9, 29, 30, and 31)

"a shoulder portion adjoining a first end of said body and forming a wall" ('293 patent, Claims 1 and 22)

The parties disagree over the meaning of the words "shoulder", "adjacent", and "end" in these phrases.

As an illustrative example, Claim 1 of the '662 patent reads:

said developer container having a hollow cylindrical main body comprising:

a shoulder portion forming a circumferential wall adjacent one end of said body;

a mouth portion on said one end, said mouth portion being smaller in diameter than said shoulder portion; and

a guide means provided on said shoulder portion for guiding said developer stored in said developer container to said mouth portion as said main body is rotated.

('662 Patent, Claim 1).

Ricoh argues that the shoulder is "an angle or curve in the outline of an object (as between the body and the neck of a bottle) and the parts adjacent to it." This definition is based on a definition of "shoulder" found in Webster's dictionary, except for the Webster's definition reads "and often also the parts adjacent to it." See Webster's Third New International Dictionary of the English Language, Unabridged (1993) ("Webster's Third"). Ricoh also proposes that "adjacent" be construed as "nearby" and "end" as "the last part lengthwise" but "not limited to the tip."

Katun and Nashua argue that the "shoulder" is the "the wall at the mouth end of the bottle, which is substantially perpendicular to the outer surface of the body." They argue that because the claim also requires that the "shoulder" form a "circumferential wall adjacent" to the body, and because a "wall" is a vertical structure, anything "adjoining" a horizontal body is necessarily perpendicular to that body. Katun and Nashua also argue that because the claims require a comparison between the diameter of the shoulder and the mouth, the shoulder must be a area with a single diameter.

GTI argues that the "shoulder" should be construed to include "an inner surface thereof partly raised to the edge of the mouth portion to form raised portion(s) 85, 86a and 86." These portions form a ramp-shaped protrusion that wraps around approximately half of the top of the toner bottle.

Defendants also argue that "adjacent" should be construed as "relatively near and having nothing of the same kind intervening" and that "end" should be construed as "the last part lengthwise."

As discussed, the Court must start by analyzing the language of the claim itself, construing the terms according to their ordinary and plain meaning. See Johnson Worldwide Assocs., 175 F.2d at 989. In defining a term according to its plain meaning, it is appropriate to rely upon certain extrinsic evidence, such as a regular dictionary. See Vitronics, 90 F.3d at 1584 n. 6. The Court finds that the ordinary meaning of the term "shoulder" is well-represented by the definition found in Webster's dictionary: "an angle or curve in the outline of an object (as between the body and the neck of a bottle)." Webster's Third at 2104. Nothing in the intrinsic evidence contradicts this common definition. The Court is not convinced that "anything" adjoining a wall must be perpendicular to that wall. As Ricoh points out, the claim specifications recognize a wide variety of shoulder shapes with varying slopes, curves and angles. Nothing in the patents' claims or specifications limit the shoulder to a perpendicular surface.

Moreover, the Court does not derive as much significance as Defendants from the claims' requirement that the shoulder have a "diameter." The claim requires only that the "shoulder" diameter be larger than the diameter of the mouth. A conical object with a "mouth" at the narrow end will necessarily have an average diameter larger than that of the mouth, and that object's diameter will be larger than the mouth's diameter at every point up to where the two pieces join. Therefore, it is not necessary to limit the construction of the term "shoulder" to a shape with a single diameter.
The Court does not, however, view the ordinary meaning of "shoulder" to include any parts adjacent to it. Where, as here, various parts of a toner bottle are nearby, abut, or are attached to the shoulder, such a definition would obliterate the precise drafting of the claims. For this reason, the Court rejects defendant GPI's proposed construction of "shoulder," which would include portions 85, 85(a) and 86.

The parties ask the court to construct the term "adjacent" as used in the context of "shoulder." Defendants adopt the definition "relatively near and having nothing of the same kind intervening" Websters Third at 26. Plaintiffs construe "adjacent" to mean "nearby" or "not distant or far off." Websters Third at 26. This Court finds that "adjacent" means relatively near, or nearby. This Court is not convinced by Defendants' argument and does not find any suggestion in the patent that the added definition of "nothing of the same kind intervening" is applicable here. Id.

The parties agree that the term "end" means "the last part lengthwise," but do not agree on whether the last part lengthwise is the bottle's mouth or the bottle's shoulder, upon which the mouth rests. The Court finds that the ordinary meaning of "last" is the part after which there is no other. After the shoulder, there is still a mouth, as well as other "adjacent" pieces. Therefore, the "last part lengthwise" can refer only to the tip or mouth of the bottle. That said, when the term "end" is used with a qualifier, such as the "end of said hollow body," the terms refers to "the last part lengthwise" of that hollow body. In this case, the "end" of the hollow body is where the "shoulder" joins the body.

B. "adjacent"

The Commission determined that "adjacent," the term describing the location of the product information array, means "lying near or next to the primary circuit, but not overlapping with the primary circuit." Supplemental Views at 22. The Commission further used the language "not overlapping with the primary circuit" interchangeably with "not surrounded by the primary circuit". E.g., Supplemental Views at 31-32. This court, however, determines that the term "adjacent" simply means close to, next to, lying near, or adjoining. Webster's II New Riverside University Dictionary 79 (1988). This definition of "adjacent" does not render the claim unclear. Moreover, neither the specification nor prosecution history suggest any special definition for the term.

Claims 1 and 9 state that the product information array is "adjacent" the "primary circuit." Because "primary circuit" encompasses more than the memory array, the limitation "adjacent" does not restrict the product information array to a position immediately next to the memory array, or extending from the memory array, or physically contacting the memory array.

The prosecution history of the '903 patent does not contradict this reading of "adjacent." During prosecution of the '903 patent, Atmel's predecessor specified that the claimed invention "defines a semiconductor information array which is integrally formed with a primary circuit on a semiconductor chip" (emphasis added). This language does not mean that the product information array is integral to the memory array. Once again, the "primary circuit" encompasses more than the memory array alone. Because "primary circuit" includes more components than just the memory array, this statement in the prosecution history has not narrowed the meaning of "adjacent." The word "integral" means "[a] complete unit: whole." Webster's II New Riverside University Dictionary 634 (1988). Thus, the prosecution history simply affirms that the product information array is formed together with the primary circuit.

In sum, this court determines that "adjacent," according to its ordinary definition, can mean adjacent on all sides. The correct interpretation of the term "adjacent," therefore, is simply "close to, next to, or adjoining," without the additional limitation of "not overlapping." This meaning includes embodiments where the primary circuit surrounds the product information array so that the product information array is close to, next to, or adjoining the primary circuit on all sides.
Free Motion proposes that adjacent ought to be construed as lying near or close. (Pl. Opposition II. at 16-17.) Nautilus similarly proposes that adjacent means near to, abutting, adjoining, bordering, or contiguous or coterminous with, but emphasizes "in contact with." (Nautilus Brief at 14, 22.) The Court is persuaded that objects may or may not be in contact, but are not adjacent to each other where there is another object between them. See May v. Carriage, Inc., 688 F. Supp. 408, 414, n. 2 (N.D. Ind. 1988) ("adjacent things may or may not be in contact with each other, but they are not separated by things of the kind" (quoting Webster's New World Dictionary (2d ed. 1976)).

E. Adjacent the Inner Wall of the Annulus

Smith & Nephew proposes that "adjacent the inner wall of the annulus" should be construed to mean "being in close proximity to the inner wall of the annulus." ArthroCare would interpret the term to mean "next to the inner wall of the annulus." The parties' dispute centers on the meaning of the word "adjacent."

The American Heritage Dictionary defines "adjacent" as: "1) close to; lying near; 2) next to; adjoining." THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (4th ed. 2000). The claims, specification, and prosecution history give no reason to depart from using the ordinary meaning of the word adjacent as the term's definition. Thus, the court construes "adjacent the inner wall of the annulus" to mean "close to, lying near, next to, or adjoining the inner wall of the annulus."

F. Adjacent a Wall of the Intervertebral Disc

The parties agree that "wall of the intervertebral disc" used in the '311 patent, and "inner wall of the annulus fibrosus" used in the '504 patent have the same meaning. Thus, the court defines "adjacent a wall of the intervertebral disc" to mean "close to, lying near, next to, or adjoining the inner wall of the annulus."

G. Adjacent an Inner Wall of an Intervertebral Disc

The parties agree that "inner wall of an intervertebral disc" used in the '311 patent, and "inner wall of the annulus fibrosus" used in the '504 patent have the same meaning. Thus, the court defines "adjacent an inner wall of the intervertebral disc" to mean "close to, lying near, next to, or adjoining an inner wall of an annulus."

H. Functional Element Adjacent a Distal End of the Catheter

Smith & Nephew proposes that "functional element adjacent a distal end of the catheter" should be construed to mean "functional element in close proximity to a distal end of the catheter." ArthroCare would interpret the term to mean "the functional element is next to the tip of the catheter, but is not the tip itself." The dispute centers on the definition of the word "adjacent," and the level of clarification needed to demonstrate that the functional element and the tip of the catheter are separate entities.

The court has already construed the word "adjacent" to mean "close to, lying near, next to, or adjoining." Proper claim construction requires that, where possible, the same word be given the same meaning throughout the claims. Nothing in the claims, specification, or prosecution history suggests that the word adjacent in the term "functional element adjacent a distal end of the catheter" should be construed any differently from the word "adjacent" in any of the uses already discussed, such as "adjacent the inner wall of the annulus."

ArthroCare argues at some length that two objects adjacent to each other cannot be the same object. The Court agrees, but sees no need to add the words "but is not the tip itself" to the term's definition. The claim language, specification and
prosecution history all indicate that the distal end and the functional element are different entities. A definition that describes the functional element as "close to, lying near, next to, or adjoining" the distal end clearly indicates that the functional element and the distal end are separate. Thus, the court defines "functional element adjacent a distal end of the catheter" as "functional element close to, lying near, next to, or adjoining the distal end of the catheter."

G. "Adjacent"

Claims 1 and 16 use the term adjacent. Specifically, the claims state:

1. . . . said housing including a waveguide projecting from one of said side walls adjacent to said moveable portion . . .

16. . . . said housing includes a plurality of projections projecting from said side walls adjacent to said moveable portions . . .

'378 patent at 10:32-33, 14:10-12 (emphasis added).

ADC argues the term "adjacent" is clear on its face and does not require interpretation. However, if interpretation is necessary, ADC argues the term should be interpreted to mean "nearby, not distant." See, e.g., Merriam-Webster's Collegiate Dictionary, supra at 16.

Switchcraft claims "adjacent" "if not construed . . . could be used to describe any level of proximity, and thus render the claim indefinite and hence invalid under 35 U.S.C. § 112(2)." Consequently, Switchcraft argues "adjacent" should be interpreted as "next to." In support of this position, Switchcraft cites language in the specification indicating a fin-like waveguide must project from the base of a wall to reach a region where it is adjacent to a movable leaf spring. '378 patent at 8:45-47, 8:59-61, 64-65. Based on this language, Switchcraft argues the '378 patent specification used the word "adjacent" to "denote surfaces which are next to one another in the sense that they share the same lateral space." Def.'s Markman Brief at 20.

The Court finds further construction may reduce any ambiguity in "adjacent" and interprets the term to mean "nearby, not distant." The proposed construction of "next to" is unwieldy, not supported by the specification, and unworkable. Switchcraft cobbles its "lateral space" requirement from several distinct provisions of the patent. Its adoption would create the illogical result of finding that objects which share the same vertical space, but do not overlap horizontally, are not adjacent.

Furthermore, Merriam-Webster's Collegiate Dictionary defines "next to" as "immediately following or adjacent to." (11th ed. 2003) at 836. This definition would impermissibly narrow the meaning of the word "adjacent" beyond its use in the patent's specification and figures. Figure 1 and the text of the specification contain examples where "adjacent" elements are not "immediately adjacent" or "next to" one another, but are merely in close proximity. See '378 patent, 4:36-57, FIG. 1. ADC's proposed construction of "nearby, not distant" reflects the objective meaning of "adjacent" and corresponds to the use of the term in the patent. A claim is not indefinite under 35 U.S.C. § 112 if "those skilled in the art would understand what is claimed when the claim is read in light of the specification." Beachcombers, Int'l v. Wildewood Creative Prods., 31 F.3d 1154, 1158 (Fed. Cir. 1994). A construction of "nearby, not distant" is consistent with the meaning given to "adjacent" by the Federal Circuit in other cases and is not indefinite. See, e.g., General American Trans. Corp. v. Cyrp-Trans. Inc., 93 F.3d 766, 769 (Fed. Cir. 1996) (applying "not far off or not necessarily at but nearby or near" as the definition of "adjacent").
MBO's proposed construction of the term "adjacent" is "flush with," meaning that the protective blocking flange of the spring that seals the needle in the body must be flush with the forward surface of the body. Becton maintains that, with respect to the "adjacent" limitation, MBO acted as its own lexicographer, defining the blocking flange as being "flush" with the forward surface of the body. Becton notes that, unless the flange is "right next to the front surface," it could not immediately block the [needle tip]. Thus, Becton emphasizes that, unless the blocking flange is flush with the front surface of the body, a needle would have to be "withdrawn at least a minimum predetermined distance beyond the exit" from the guard body to permit the flange to cover the needle tip. Becton insists that MBO specifically disclaimed flanges that are not "on," "directly adjacent to," or "flush with" the front surface of the body. Finally, Becton points out that the figures and other embodiments of the 885 patent show the blocking flange immediately next to the front surface of the guard.

The language of the claim is ambiguous. I, therefore, turn to the specification for illumination. The specification of the 885 patent states, in part, that "with the blocking flange face 98 immediately adjacent the forward surface of the body at 84, as soon as the needle passes behind the flange 98, the spring snaps the flange forward surface over the 84 of the body into needle-blocking position and positively precludes reemergence of the contaminated needle point from the body 82 and thus needlestick injury is absolutely avoided." 885 patent, col. 7, ll. 1-2. The specification also contrasts and criticizes safety devices in the prior art, "wherein the needle must be withdrawn at least a minimum predetermined distance beyond the exit from the tubular body," explaining that, in the prior art, "if the needle is not retracted sufficiently inwardly from the exit aperture, it is still able to accidentally projected to cause hazard." 885 patent, col. 7, ll. 2-8. The specification praises this feature as "an outstanding safety feature of the invention." 885 patent, col. 7, ll. 1-2. The specification also contrasts and criticizes safety devices in the prior art, "wherein the needle must be withdrawn at least a minimum predetermined distance beyond the exit from the tubular body," explaining that, in the prior art, "if the needle is not retracted sufficiently inwardly from the exit aperture, it is still able to accidentally projected to cause hazard." 885 patent, col. 7, ll. 15-25.

Furthermore, during the prosecution of the 699 patent, MBO sought to distinguish its invention from Smith by arguing that the invention disclosed in Smith protected only the tip of the needle, leaving the adjoining needle end portion exposed, whereas MBO's invention covered both the needle tip and the needle shank. Becton Exh. 10, pp. 8-9. MBO also sought to distinguish its invention from Bayless by explaining, inter alia, that Bayless disclosed a "separate hollow needle sheath," whereas its invention had a blocking flange "adjacent" to the front surface of the body. Becton Exh. 13, pp. 3-4. See Ekchian, 104 F.3d at 1304 (explaining that, by "distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover"); see also SciMed Life Sys., Inc., 242 F.3d at 1341-42, 1342-43 (noting that it is improper for the court to construe disputed claims "to cover what was expressly disclaimed" during prosecution history). In light of the foregoing, I construe the term "adjacent" to mean contiguous or connected with the front surface of the body.
15 Becton's proposed construction of the term "adjacent" to mean "flush" is not entirely accurate, because "flush" means "even or level with the adjacent surface." See OXFORD ENGLISH DICTIONARY.

Centennial asserts that its tank does not infringe the '785 Patent: 1) "because the tank of Centennial does not have a fill opening formed in the top wall of the tank adjacent one corner;" and 2) because the Centennial tank "does not have a structure wherein the one corner has a bottom portion located above the horizontal plane of the bottom wall to provide a space below the one corner vertically aligned with the liquid fill opening." (Support Brief at 12). On the other hand, Carlson claims that Centennial's product literally infringes claims 1-24 of the '785 Patent because the "fill opening is clearly adjacent to the tank's corner." (Opposition Brief at 8). Carlson further asserts that Centennial's tank literally infringes the '785 Patent because the space in the lower portion of Centennial's tank "is vertically aligned with the tank's fill opening." (Opposition Brief at 10).

In Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005), the Federal Circuit Court of Appeals stated that claims "are generally given their ordinary and customary meaning." (citing Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)). The Federal Circuit further stated that "the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." (Phillips, 415 F.3d at 1313). In cases where the ordinary meaning of a claim term is readily apparent to lay judges, a court may apply the "widely accepted meaning of commonly understood word," using general purpose dictionaries. (Id. at 1314). Each party concedes that the term "adjacent" is a commonly understood term rather than a technical one, and the parties have provided the Court with various dictionary definitions of the term "adjacent." (Opposition Brief at 9; Filing No. 34, hereafter "Reply Brief" at 4).

The American Heritage Dictionary (2d College ed. 1982) defines "adjacent" as "close to; lying near; near or close to but not necessarily touching." (Opposition Brief at 9). The Merriam-Webster's Collegiate Dictionary defines the term as "immediately proceeding or following" and "may or may not imply contact but always implies absence of anything of the same kind in between." (Filing No. 35-3). Roget's II: The New Thesaurus describes "adjacent" as "sharing a common boundary" or "not far from another in space, time, or relation." (Filing No. 35-4). WordReference.com English Dictionary defines the word "adjacent" as "near or close to but not necessarily touching", "nearest in space or position; immediately adjoining without intervening space", "abutting, adjacent, conterminous, contiguous." (Filing No. 35-5).

Although the definition of "adjacent" is not precise, a comparison of the various dictionary definitions provided to the Court demonstrates that the term "adjacent" does not have as narrow a definition as Centennial suggests. Each definition of "adjacent" makes it clear that two objects, in this case the corner and the fill opening, need not actually touch or come into contact with the other to qualify as adjacent. Instead, to qualify as adjacent, the corner and fill opening need only be close or near to each other. Centennial suggests: "If Plaintiff's fill opening is located approximately midway between the outside edge of the tank's corner and the center of the tank, Plaintiff's fill opening cannot be any more adjacent to the corner than it can be adjacent to the center of the tank." (Reply Brief at 4). The Court does not disagree with Centennial on this point; however, the fact that the fill opening may be adjacent to the center of Centennial's tank does not preclude the fill opening from being adjacent to the corner of the tank as well.

Page four of the brochure for Centennial's tank contains a picture of a man filling Centennial's tank through the fill opening. (Filing No. 30-4 at 4). The fill opening in that picture appears to be "near" and "close" to the corner or "not far from" the corner, which is consistent with the above definitions of "adjacent." It is the Court's duty to construe the scope and meaning of the claim, and based on the dictionary definitions, the Court concludes the term "adjacent" as used in the '785 Patent has its plain and ordinary meaning of "close to; lying near; near or close to but not necessarily touching." The American Heritage Dictionary (2d College ed. 1982).
Centennial again argues that Centennial's tank "does not have a fill opening formed in the top wall of the tank adjacent one corner." (Support Brief at 14). The Court has previously construed the term "adjacent" as used in the '785 Patent to mean "close to; lying near; near or close to but necessarily touching." (Filing No. 39 "Order" at 9). Centennial claims that certain of the comments in the Court's Order dated November 21, 2005, prompted Centennial's renewed motion for summary judgment. (Support Brief at 12). Specifically, Centennial points to the Court's statement that "the fact that the fill opening may be adjacent to the center of Centennial's tank does not preclude the fill opening from being adjacent to the corner of the tank as well." (Order at 9).

Centennial cites General American Transportation Corp. v. Cryo-Trans, Inc., 93 F.3d 766 (Fed. Cir. 1996), where the Federal Circuit Court of Appeals construed the term "adjacent" as it related to a patent for a cryogenic refrigerated railcar. In General American, the Federal Circuit stated: "an opening 'adjacent' to a side wall cannot also be adjacent to an end wall." Id. at 770. The Court also stated: "each opening is 'adjacent' to only one wall, the nearest one to which it directs the downward flow of [carbon dioxide] gas." Id. The Federal Circuit's statements regarding the patent at issue in General American do not contradict this Court's statements in the November 21, 2005 Order, and furthermore, the claim construction in General American was fact-specific to the patent at issue in that case.

Centennial argues that because the fill opening on the Centennial tank is located six inches from the center of the tank and eleven inches from the corner edge of the tank and the width of the tank is thirty-four inches, the fill opening cannot be adjacent to the corner. (Support Brief at 14). Carlson does not concede that physical measurements are determinative of the question of infringement and argues that the term "corner" should be construed to include "the square-shaped piece joining the walls," not just the outermost edge of the tank's corner. (Opposition Brief at 9). Carlson cites to the '785 Patent, which refers to "square upright corners 27, 28, 29 and 30" and states that the "top of the corner 28 has a fill opening . . .," to support his contention that the term "corner" is not limited to the outermost edge. (Filing No. 44-3 ("'785 Patent") at P. 10, Col. 2, Ln. 34-36; P. 11, Col. 3, Ln. 6-7). Under Carlson's proposed claim construction, he claims the distance between the fill opening and the inner edge of the corner on Centennial's tank is approximately five inches.

The Court declines to revise its prior construction of the term "adjacent" and maintains that based on the Court's construction of the term, a jury could find that Centennial's tank literally infringes the challenged claim limitation.

C. Adjacent

The term "adjacent" pertains to the location of the mating connector into which the riser card is inserted: "a mating connector for a riser card, said mating connector situated on the motherboard and adjacent and parallel to a peripheral side edge thereof." 69

--- Footnotes ---

69 621 at 5:66-6:1 (claim 1); Id. at 6:38-40 (claim 2).

--- End Footnotes ---

1. Parties' positions

Tulip proposes "adjacent" be given its ordinary and accustomed meaning, "lying near or close to," 70 Dell contends that the term should not be given its ordinary and accustomed meaning, "nearby but not touching," 71 because the term is clearly redefined in the written description. Dell asserts that the term requires the mating connector to be located along the side of the motherboard. Dell contends that Figure 2 (reproduced below) shows the mating connector 22 located on the edge of the motherboard 21. Dell contends that Figure 4 also shows the riser card and mating connector along the side of the
motherboard.

--- Footnotes ---

--- End Footnotes ---

Tulip argues that Figure 2 illustrates a preferred embodiment. Tulip contends that reference to a preferred embodiment is insufficient to overcome the presumption that a claim term carries its ordinary and accustomed meaning. Furthermore, Tulip points out that Figure 2 shows the riser card connector 22 is near, but not touching, the outermost side edge of the motherboard. Tulip contends Dell's construction improperly limits the claims, without intrinsic support for that limitation, by suggesting a definition that would preclude traces or other components between the riser card connector and the far edge of the motherboard.

--- Footnotes ---

72 See CCS Fitness, Inc. v. Brunswick Corp. 288 F.3d 1359, 1366 (Fed. Cir. 2002) ("An accused infringer may overcome [the] 'heavy presumption' [that a claim term carries its ordinary and customary meaning] and narrow a claim term's ordinary meaning, but he cannot do so simply by pointing to the preferred embodiment or other structures or steps disclosed in the specification or prosecution history.").
--- End Footnotes ---

[SEE FIG. 2 IN ORIGINAL]

2. Court's construction

The parties' disagreement over the meaning of the term "adjacent" concerns whether the term should be defined with reference to the side edge of the motherboard and whether the connector must be flush with the side edge of the motherboard. The court accepts the dictionary definition cited by Dell, "nearby but not touching," as the ordinary and accustomed meaning of "adjacent" but disagrees with Dell that "adjacent" is clearly redefined in the written description. To the extent Dell suggests that "adjacent" means that the mating connector must be flush with the side edge of the motherboard, there is nothing in the claims or specification supporting that meaning. Notwithstanding the fact that the figures cited by Dell merely represent preferred embodiments of the claimed invention, they do not show the mating connector flush with the side of the motherboard. Figure 2 shows mating connector 22 nearby, but not touching, the edge of motherboard 21. The perspective shown in Figure 4 does not illustrate either the mating connector or side edge of the motherboard where the mating locator is located and, therefore, Figure 4 is of no aid to the court's construction of the disputed term.

To the extent there is any dispute over whether the term "adjacent" must be defined with respect to the side edge of the motherboard, the claims in issue make that requirement clear. Claims 1 and 2 recite that the mating connector is "situated on the motherboard and adjacent … to a peripheral side edge thereof." Consequently, the court construes "adjacent" as meaning that the mating connector is located nearby but not touching the side edge (as defined below) of the motherboard.

--- Footnotes ---

73 621 at 5:67-6:1 (claim 1); Id. at 6:39-40 (claim 2) (emphasis added).
--- End Footnotes ---
Maytag and Whirlpool also debate as to whether the use of "adjacent" in element 4 means that a stepped portion of the upper rack "is near to" or, more narrowly, must "abut" the first side wall of the lower rack (see M. Mem. 19-20, W. Mem. 15-16). 25 Functionally, an upwardly stepped portion is above and "adjacent" to the high side wall of the lower rack so that space exists for large items to fit into the lower rack (see M. Mem. App. 5 at 3). But purporting to look at how "adjacent" is used in the specification, W. Mem. 16-17 argues that if any portion of the washer comes between the upper stepped portion of the rack and the lower side wall, they are not "next to" (hence not "adjacent to") each other.

That argument does not convince. While it is appropriate to look at the specification, W. Mem. 15-16 strains to reconstruct from its language the meaning that Whirlpool desires. Significantly, it simply does not follow that because one portion of the specification may use the term "adjacent" to refer to items that are directly next to each other or even attached, "adjacent" then necessarily takes on its narrower definition in all subsequent uses (see W. Mem. 16). After all, the broader and first-listed definition of "adjacent" also encompasses the depiction of items that are right next to each other. In that respect, it is relevant that (quite contrary to Whirlpool's assertion at W. Mem. 28) the functionality of having the stepped portion of the upper rack above the high side wall is not destroyed if the side wall of the lower rack and the stepped portion of the upper rack are not directly next to each other. Sufficient space can exist for the placement of large items on the bottom rack if the extra space created by the upwardly stepped rack is used to accommodate an intervening part. Indeed, the accused device is so configured (see W. Mem. Ex. 2 fig. 11).

In short, despite Whirlpool's efforts this Court finds that the more natural and more appropriate definition of "adjacent" in light of the function involved is Webster's first-listed meaning of "near" or "close." Hence an intervening design element does not prevent two other elements from being "adjacent" to one another.

Crown's proposed construction is "portion of the central panel near the hinge segment." 132 Rexam's proposed construction is the "area of the central panel near the frangible panel." 133

Footnotes:

130
"Adjacent" in Element 4

25 Room certainly exists for such a debate. Webster's Third New Int'l Dictionary 26 (examples omitted) provides these different alternative definitions of "adjacent":

1a: not distant or far off: nearby but not touching

b: relatively near and having nothing of the same kind intervening: having a common border

Thus the second listed definition, but not the first, is synonymous with "abutting."

Footnotes:

132 D.I. 325 at 10.
133 Id.
The court adopts Crown's proposed construction.

Rexam argues that the claim language, "'a second score groove having a tail portion passing from the frangible panel into said adjacent area of the central panel and transecting said hinge segment,'" demonstrates that "the frangible panel and the adjacent area of the central panel lie next to each other." 134 Rexam also cites the summary of the invention section's recitation of "the hinge region of the frangible tear panel" to support its argument that "this portion of the specification clearly suggests that the hinge segment is not mutually exclusive of the frangible panel." 135 The court disagrees.

134 D.I. 294 at 36 (emphasis added by Rexam).

135 D.I. 294 at 36.

Claim 1 of the '230 patent recites: "said hinge segment being non-frangible to integrally connect the frangible panel segment to an adjacent area of the panel; and, a second score groove having a tail portion passing from the frangible panel into said adjacent area of the central panel and transecting said hinge segment." 136

136 '230 patent, claim 1, 8:12-17.

The claim language identifies the hinge segment as "being non-frangible to integrally connect": (1) the frangible panel segment to (2) an adjacent area of the panel. That language also identifies a second score groove having a tail portion which: (1) passes from the frangible panel into (2) said adjacent area of the central panel and (3) transecting said hinge panel. This claim language supports Crown's proposed construction.

The court agreed with Rexam that the proper construction of "hinge segment" is "the segment of metal between the first end and the second end of the primary score that stays attached to the central panel of the can end under normal opening conditions." That "segment of metal," which "stays attached to the central panel," is what "connect[s] the frangible panel segment to an adjacent area of the panel." That "segment of metal" is also what the "tail portion" of the second score groove "cuts across" 137 as it "pass[es] from the frangible panel into said adjacent area of the central panel."

137 The parties agree that the proper construction of "transecting" is "cutting across." See infra at claim term 39.

Moreover, the specification's summary of the invention supports the court's interpretation of the claim language. It states:

The hinge segment is non-frangible to integrally connect the frangible panel segment to an adjacent area of the panel. A second groove is formed in the end, having a tail portion passing from the frangible panel through the hinge segment and extending into the adjacent area of the central panel. 138

138 '230 patent, 3:22-27 (emphasis added).
This claim language and specification support Crown's proposed construction which references "the adjacent area of the central panel" with respect to the hinge segment. Therefore, Rexam's proposed construction must be rejected and the court adopts Crown's proposed construction: "portion of the central panel near the hinge segment."

BACKGROUND

Cryo-Trans is the assignee of U.S. Patent 4,704,876, which concerns a "cryogenic" railcar for transporting frozen foods. Cryogenic railcars use inexpensive carbon dioxide (C\(\text{O}_2\)) as the refrigerant. Conventional refrigerated railcars, on the other hand, employ mechanical refrigeration systems that consume fossil fuels and thus are more expensive to operate.

The cryogenic railcar disclosed in the '876 patent has an insulated compartment (32) extending lengthwise along the top of the car. A system is provided for filling the compartment with solid carbon dioxide "snow" by injecting liquid C\(\text{O}_2\) into the compartment under high pressure. The bottom of the compartment contains openings (66) adjacent to each of the car's side walls (16, 18) and end walls (20, 22). In operation, the compartment is first filled with C\(\text{O}_2\) snow and then the frozen food products are loaded into the cargo area (26). During transit, the C\(\text{O}_2\) snow gradually sublimates as C\(\text{O}_2\) gas, which flows through the compartment's openings (66) and moves downward along the side walls and end walls, enveloping and cooling the load. Each of the four walls has corrugated channels to facilitate the flow of the C\(\text{O}_2\) gas down that particular wall. Figure 1 of the patent illustrates the railcar:

[SEE ILLUSTRATION IN ORIGINAL.]

Claim 1 is representative of the asserted claims. It reads, with emphasis on the language in dispute, as follows:

1. In a container adapted to be maintained in a refrigerated condition from the sublimation of carbon dioxide snow[,] the combination comprising:

   a storage area defined by a floor, a pair of opposed side walls, a pair of opposed end walls, and a ceiling means;

   an insulated roof positioned above said ceiling means and defining therewith a compartment for supporting a supply of carbon dioxide snow, said compartment extending substantially the full length of said storage area;

   means in said compartment for forming carbon dioxide snow and means for connecting said carbon dioxide snow forming means to a supply of liquid carbon dioxide;

   a plurality of openings through said ceiling means adjacent [sic] each of said side walls and end walls for permitting the flow of sublimated carbon dioxide gas from said compartment;

   each of said walls being corrugated to define a plurality of channels therein open-sided toward the interior of the container whereby said carbon dioxide gas may flow from said openings in said ceiling means downwardly through said channels between said walls and a product load disposed in said container toward said floor.

Numerous cryogenic railcars were known before the invention at issue here. The "AFFX 2002" railcar, for example, which was built and publicly used in 1983, embodied all the elements of claim 1 except that its compartment for holding C\(\text{O}_2\) snow had openings adjacent to only one side wall and it had no openings adjacent to the end walls. U.K. Patent 399,678, issued to Kurth in 1933, disclosed a cryogenic railcar in which a compartment for holding solid C\(\text{O}_2\) had openings adjacent to both side walls, but again had no openings adjacent to the end walls. It also had no corrugated walls or system for forming C\(\text{O}_2\) snow using liquid C\(\text{O}_2\).

GATC manufactured a cryogenic railcar that included a compartment for holding C\(\text{O}_2\) snow. The bottom of the
compartment had a row of openings provided lengthwise along its center and two rows of openings adjacent to the car's opposite side walls. The openings adjacent to the side walls were each three inches from the nearest side wall, and the endmost of such openings were three feet from the nearest end wall. The endmost center row openings were six feet from the nearest end wall. The drawing below illustrates the arrangement of openings in GATC's railcar compartment:

[SEE ILLUSTRATION IN ORIGINAL.]

In March 1991, after Cryo-Trans threatened to assert the '876 patent against GATC, GATC sued Cryo-Trans seeking, inter alia, a declaratory judgment that the patent was invalid, unenforceable, and not infringed. GATC argued that it did not infringe because the bottom of the compartment in its railcar lacked openings adjacent to the car's end walls, as required by the claims. Cryo-Trans counterclaimed for infringement of claims 1-3.

The district court conducted a bench trial in May 1995. At the conclusion of the trial, the court, relying on a dictionary definition, construed the term "adjacent" in the claims to mean "not far off" or "not necessarily at but nearby or near." The court then found that the endmost openings adjacent to the side walls in GATC's railcar compartment were "not far" from the car's end walls and functioned as openings adjacent to the end walls. Thus, the court found that GATC had infringed the claims, both literally and under the doctrine of equivalents. It rejected GATC's invalidity and unenforceability claims. The court accordingly awarded Cryo-Trans $8,983,440 in damages and entered a permanent injunction.

GATC appeals, challenging the district court's findings that the '876 patent was infringed and not proved invalid. GATC does not appeal the court's decision rejecting GATC's unenforceability claim.

DISCUSSION
A. Infringement


GATC argues that the district court misconstrued the claim language "openings through said ceiling means adjacent to each of said side walls and end walls," which led to a clearly erroneous finding of infringement. We agree. As explained below, the district court incorrectly held that openings "adjacent" to the side walls could also be considered to be openings "adjacent" to the end walls. That error led to a clearly erroneous finding of infringement.

To ascertain the meaning of the claims, we consider the claim language, the specification, and the prosecution history. Markman, 52 F.3d at 979, 34 U.S.P.Q.2D (BNA) at 1329. Here, the claim language itself distinguishes between the openings that are adjacent to the side walls and those that are adjacent to the end walls. Specifically, the claims require "openings . . . adjacent each of said side walls and end walls," which suggests that the openings adjacent to the side walls are structurally distinct from the openings adjacent to the end walls. The district court's claim construction obliterated that distinction.

In addition, the patent specification distinguishes between the openings that are adjacent to the side walls and those that are adjacent to the end walls. It states, in the "Summary of the Invention" section, that "the bottom of the compartment is provided with openings along each side and end wall of the car through which sublimating carbon dioxide gas may escape." Col. 2, ll. 22-25 (emphasis added). Similarly, the "Detailed Description of the Invention" portion of the specification states:
The bottom wall 40 of the compartment 32 is provided with a plurality of openings 66 along each of the side walls 16, 18 and along each end wall 20, 22 of the car and which openings are preferably slanted toward the adjacent wall. These openings are provided for the flow of carbon dioxide gas sublimating from the snow contained within the compartment 32 and which gas may then flow downwardly along the adjacent wall through the sinusoidal passageways defined thereby. The openings on opposite walls preferably are offset with respect to each other.

Col. 3, ll. 41-51 (emphasis added). This arrangement of openings is said to yield an advantage: "Because the cold carbon dioxide gas is flowing downwardly on each of the opposite sides and on the ends of the car and in direct contact with the bottom of the load, all parts of the load will be maintained at a desirably low temperature." Col. 5, ll. 59-64 (emphasis added). Figure 1, to which the detailed description refers, depicts separate openings (66) adjacent to each of the side and end walls. Carbon dioxide gas is shown exiting each opening and travelling down the nearest wall.

Thus, the specification and drawings teach that the openings are provided along all four walls, and that each opening directs the flow of C\([O\]2 gas down a particular, "adjacent" wall, i.e., the nearest wall. This is not just the preferred embodiment of the invention; it is the only one described. Nothing in the claim language, specification, or drawings suggests that any of the dedicated side or end wall openings may be eliminated, or that an opening may be "adjacent" to more than one wall. The prosecution history is brief and not helpful to resolving the meaning of the disputed claim language.

Under these circumstances, we construe the phrase "openings . . . adjacent each of said side walls and end walls" as referring to structurally distinct openings that are provided adjacent to each of the railcar's four walls. Each opening is "adjacent" to only one wall, the nearest one to which it directs the downward flow of C\([O\]2 gas. Thus, an opening "adjacent" to a side wall cannot also be an opening "adjacent" to an end wall. The patent does not contemplate the openings performing double duty in this manner. We therefore reject the district court's claim construction, which was inconsistent with the specification and drawings and rendered superfluous the claim requirement for openings adjacent to the end walls.

D. "Adjacent" insert track

Defendants propose the following construction for the phrase "adjacent insert track": in a door with two lateral sides, a left and a right side, the screen track and insert track on the same side of the door are "adjacent" to each other and the insert track on the opposite side of the door from a screen track is non-adjacent. The Court finds that the term "adjacent" is in its simplest form and does not require construction.

2. Claim Construction

As did the trial court, we focus on the claim requirement that the bearing means be "disposed in adjacent longitudinal co-extensive lateral recesses." The '008 patent shows in Fig. 3, below, recesses 30 and 32.

The '008 specification states that

the hinge members 14, 16 define longitudinally co-extensive lateral recesses 30 and 32, respectively, along adjacent longitudinal edges thereof. As illustrated, each of the recesses 30, 32 has a stepped profile which is the mirror image of the other.

The specification further sets forth that

the stepped profile of each recess 30, 32 is further defined by providing each hinge member 14, 16 with laterally extending upper and lower shoulder portions 33 and 35 which are aligned with and vertically spaced from each other.
Roton contends that the claim phrase "adjacent longitudinal co-extensive lateral recesses" requires only that the cut-outs have a "common opening" and that therefore they may be offset from one another. However, this interpretation is inconsistent with the quoted language of the '008 patent specification. In setting forth that the recesses are mirror images of each other and that the shoulder portions 33 and 35 are aligned and vertically spaced from each other, the '008 patent speaks explicitly in terms of recesses that are directly across from each other as opposed to being offset.

Roton additionally relies on the following colloquy between its attorney and Mr. Baer, the inventor of the '008 patent.

Q. What do you understand longitudinal co-extensive lateral recesses to mean when you use that term? . . . Do the end points of each of the recesses have to be at the same place for them to be co-extensive?

A. No.

Baer's testimony on this point is unpersuasive. We have previously stated that an inventor's "after-the-fact testimony is of little weight compared to the clear import of the patent disclosure itself." North American Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1577, 28 U.S.P.Q.2D (BNA) 1333, 1337 (Fed. Cir. 1993), cert. denied, 128 L. Ed. 2d 365, 114 S. Ct. 1645 (1994).

In light of the clear language of the '008 specification, excerpted above, and Fig. 3, the only figure showing the recesses, we construe the language of claim 1, "adjacent longitudinal co-extensive lateral recesses," to require recesses that are directly across from each other and not offset.

A. Disputed Phrase: "an opening adjacent one end to the exterior of the bag through which contents are discharged"

The disputed language is located in Claims 2 and 10 of the patent and describes the collapsible outer bag. The parties disagree about whether the claim language requires the discharge opening to be placed on the bottom of the bag or one end of the bag. Plaintiff proposes this claim should be interpreted as "an opening to the exterior of the bag through which contents are dischargeable that is near one end of the bag." Defendant proposes this claim should be interpreted as "a discharge opening extending through the bottom of the bag." Plaintiff argues the patent language does not include a directional requirement for the openings. Defendant disagrees. Whether the patent requires the discharge spout be located at the bottom of the bag, a directional requirement, is the central dispute between the two parties. Resolution of this question, whether the patent includes a directional requirement, implicates a number of the disputed claims. Accordingly, the parties' arguments are described in detail.

Plaintiff insists the plain meaning of the phrase places no directional or positioning requirements on the discharge opening. Plaintiff asserts the specification expressly provides that the discharge opening can be at one or both ends. 3 Plaintiff also points out that the specification identifies an embodiment with a single opening where the contents of the bag are inserted and discharged through the same opening. 4 Plaintiff argues that the specification uses the word "bottom" does not require that to be a limitation on the Claim. Plaintiff argues the prosecution history is devoid of any discussion of whether the discharge opening is on the top or the bottom of the bag. In its reply brief, Plaintiff finds significance in the fact that the claim language specifically uses the terms "end" and "other end."

3 The language to which Plaintiff refers is located in the "background" portion of the patent. In the relevant passage, the patentee describes a common problem that bags with liners suffer. The passage cited by Plaintiff is not describing the patented bag. The patent states: "When a liner is used in connection with such large bags to contain particulate or granular material and the bag is formed with an opening or spout at one or both ends for distributing the contents, a common problem is the tendency for the material when discharged to draw the liner out of the bag." (Patent No. '472 Col. 1, lines 43-46.)

4 The language to which Plaintiff refers is located in the "detailed description" portion of the patent. Although Plaintiff cites
column 3, the relevant passage is located in column 2. In this passage, the patentee describes the patent and refers to the accompanying diagrams. The patent states: "However, if desired, the bag can have only one spout with the other end being fully closed. For some applications, the bag may have no spout, but rather one end which is normally open, a side wall and a bottom which is fully closed and connected to the side wall. (Patent '472 Col. 2, lines 37-42.)

Defendant offers several reasons why the discharge opening must be at the bottom of the bag. Defendant argues the prior art, the patent examiner, and the specification all describe the discharge opening as being on the bottom of the bag and the fill opening as being on the top of the bag. First, Defendant argues the bag employs a gravitational discharge, which necessitates the opening be located at the bottom of the bag. Defendant points out the detailed description of the bag in the specification provides that the bag is filled at the top and the contents discharged through the bottom. 5 Defendant argues Figure 2 in the patent is identified as the bottom view of the bag and liner. 6 Defendant argues, in an amendment to the patent application submitted by the patentee to the patent office, the patentee discussed the prior art of a different patent as having directional spouts. 7 Defendant reasons the contents of this sort of bag, which might weigh several thousand pounds, can only be discharged while the bag is upright and the contents pass through the bottom opening. Defendant insists the patent does not anticipate a danger that the liner would be withdrawn through the top opening because the contents of the bag and liner are always described as discharging through the bottom.

5 The language to which Defendant refers is located in the "detailed description" portion of the patent, immediately prior to the single spout embodiment passage referred to by Plaintiff. In this passage, the patentee is describing portions of Figure 1. The patent states: "Preferably, the bag has a first spout [] in the top for filling the bag and a second spout [] in the bottom for discharging the contents of the bag." (Patent No. '472 Col. 2, lines 35-37.)

6 The language to which Defendant refers is located in the "detailed description" portion of the patent. The patentee is describing Figure 2. The patent states: "Preferably, as shown in FIG. 2, the bottom of the liner is connected to the bag in at least two, and preferably four, spaced apart locations [] each adjacent the bottom and the side of the bag. (Patent No. '472 Col. 3, lines 4-7.)

7 Defendant attaches the amendment to its brief at Exhibit D. On pages 7 and 8 of the exhibit, the patentee is discussing the rejection of Claims 1-3 and 13-18 as unpatentable over other patents. The patentee explains those claims define a specific arrangement of connections between the outer bag and the inner liner. In the prior art, the bag and liner are connected so that when emptied, the two collapse together, rather than independently. The patentee then describes the other patents, in order to demonstrate this distinction. In the material referenced by Defendant, the patentee describes the Isbrandtsen patent as "a generally cubical rigid container or box [] with a flexible bag [] inserted therein and the bag is secured to the container by a plurality of straps [] adjacent its stop [sic]. The bag has an inlet spout [], a vent [] in its top, and a discharge spout [] in its bottom." (Def. Ex. D at 7.) As is clear from the quoted material, the patentee is describing a different invention. There is no indication the patentee intends the directional language to describe or limit the patent at issue.

Defendant also asserts the reexamination history provides evidence that the discharge opening must be at the bottom of the bag. Defendant argues the patent examiner initially rejected what is now Claim 2 as being anticipated by prior art. Defendant argues the patent examiner described the invention as having directional spouts. 8

8 Defendant attaches the "Ex Parte Reexamination Communication Transmittal Form" from the Patent Office as Exhibit C to its brief. The patent examiner rejected Claims 1-4, 7-8, 10, 14-17, and 24-25 as being anticipated by the Cuthbertson patent. The patent examiner stated:

However, even when the bag [] of Cuthbertson includes a top wall/end [], it is assertedby the examiner that the liner inherently includes top and bottom openings in the vicinity of the filler spout [] and the discharge spout [], such that one of
ordinary skill in the art, upon reading the Cuthbertson reference, would be in possession of the knowledge that such openings exist, even though the reference does not particularly point out such openings. The top and bottom liner openings are inherent in Cuthbertson because (1) the spouts [] of the bag are identified as being dispensing and filler spouts [], and (2) the liner is described as being filled with the bulk material [] and is shown as contacting the interior surface of the bag. If there were no openings in the liner, the spouts would be unable to function as indicated by their identification as dispensing and filler spouts since no material would be filled through the top spout [] or dispensed through the bottom spout [].

Accordingly, the examiner asserts that the Cuthbertson reference inherently discloses top and bottom liner openings. Accordingly, the opening adjacent the bottom end of the liner would be an opening through which the material would be discharged.

(Def. Exhibit C at 5) (underlining in original).

Defendant argues Plaintiff's own expert supports the conclusion that the discharge opening is located at the bottom of the liner and the bag. Plaintiff's expert is also the inventor of another, similar bag, the Schnaars Patent No. 4,946,291. Defendant argues, in the Schnaars patent, the inventor describes the discharge spout for the invention as being on the bottom of the bag.

9 Defendant attaches the patent as Exhibit E to its brief. In the portion of the patent entitled "Detailed Description of the Preferred Embodiment," the inventor states "As seen in the FIGURES, since in fact the bulk bag [] would be the type of bulk bag that would release its contents from a discharge outlet [] as seen in FIG. 2, again liner [] would have a lower neck portion [] which would extrude out from the bottom spout [] of bulk bag." (Patent No. '291 Col. 4, lines 16-21.) Obviously, the inventor is describing his invention, not the invention at issue.

Finally, Defendant argues the downward collapse of the liner during discharge requires the discharge opening be at the bottom of the bag and liner. Defendant relies on statements of the patent examiner. 10 Defendant insists that the patent examiner's understanding that the liner would collapse downward necessarily means that the discharge opening is at the bottom of the bag. Defendant concludes the patent specification, the prior art, and the patent examiner all describe the discharge opening to be at the bottom of the bag and liner. Defendant further concludes the patent does not include any embodiment of a bag and liner with a single opening because all the drawings include a top and a bottom opening.

10 Defendant refers to the patent examiner's statements in the "Ex Parte Reexamination Communication Transmittal Form." In the portion cited by Defendant, the patent examiner concludes that the Cuthbertson patent anticipates an invention that prevents the liner of the bag from being withdrawn as it empties because of the placement of the connections between the bag and the liner. The examiner describes the Cuthbertson patent as follows: "In this embodiment, downward collapse somewhat of the liner [], as material is discharged from the liner, would not be hindered by a connection with the bag because all connections would be at the bottom of the bag and liner. Therefore, with respect to such an embodiment, the liner can also downwardly collapse in a manner independent of any collapse of the bag." (Def. Exhibit C at 7.)

The claim language does not include a requirement that the discharge spout be located on the bottom. In the specification, the patentee describes, as a preferred embodiment, a bag where the discharge opening is located on the bottom. However, the specification does not employ language requiring the discharge opening to be located on the bottom of the bag. Indeed, the specification expressly states that a bag could have only one spout. Although the predominant description of the bag and liner places the discharge spout on the bottom, the explicit claim that the bag could have only one spout makes clear that a directional discharge is not an essential characterization of the invention. See Andersen Corp., 474 F.3d at 1367. Some portions of the examiner's statements referenced by Defendant do not describe this patent, but other patents. More
importantly, when the patent examiner is talking about the patent at issue, the statements are not evidence of a position taken by the applicant before the patent office. See Schwing GMBH, 305 F.3d at 1325; see also Alwin Mfg. Co. v. Global Plastics, 629 F.Supp.2d 869, 872 (E.D. Wis. 2009)("The utterances of an examiner in such a context cannot limit the patent's own clear terms. Although a patentee's clear disavowal of material during the prosecution history can limit the terms of a claim, the public is not expected to paw through patent file wrappers to divine idiosyncratic word meaning used offhandedly by patent examiners."). This court is mindful to avoid importing limitations from the specification and prosecution history unless the patentee specifically intended those limitations to be part of the invention. The intrinsic evidence cited by Defendant does not indicate that the patentee intended those words to become restrictions or limitations on the patented invention. The best argument in favor of adopting Defendant's interpretation is that the obviousness of a gravitational discharge is so plain that no individual skilled in the art could read the patent and anticipate any other option. That argument is undermined by the express language in the patent allowing for a bag and liner with a single spout. With only one spout, the top and bottom of the bag become relative to whether the bag is being filled or emptied.

The intrinsic evidence provides sufficient clarification of the claim language and eliminates the need to resort to examining extrinsic evidence. Plaintiff's construction of the claim is persuasive and supported by the intrinsic evidence. The claim at issue is interpreted to mean "an opening to the exterior of the bag through which contents are dischargeable that is near one end of the bag."

II. "Bone"

Claim 1 uses the term "bone" several times. DePuy argues that the term should be construed to mean "hip bone" or "femur," while Zimmer argues that the term should not be so limited and should include shoulder and arm bones. Thus, for example, DePuy argues that the claim, which calls for 
[a] kit for the assembly of a modular bone joint prosthesis," should be read as a kit for the assembly of a hip joint prosthesis, and that references in the claim to pieces sized for insertion into or replacement of a portion of the bone should be read as pieces sized for insertion into or replacement of a portion of the patient's femur.

Clearly the ordinary and accustomed meaning of the term "bone" is not limited to hip bones and femurs. DePuy argues, however, that the specification leaves no doubt that the claimed invention is limited to hip replacements. Indeed, the patent is titled "Modular Hip Prosthesis," (1:2), and begins by reciting:

The present invention relates to prosthesis for replacement of a portion of the hip joint. More particularly, the present invention relates to a modular prosthesis for replacement of the upper portion of the femur.

(1:13-16.) The specification goes on to describe the current state of conventional hip prostheses and some of the problems associated with them (1:17-60), and then explains that "[the] object of the present invention is to provide a modular hip prosthesis" that addresses these various problems (2:50-64). It is clear that the specification is describing a hip prosthesis in particular, as opposed to any ball-and-socket-type prosthesis in general. The claim construction inquiry, however, "begins and ends in all cases with the actual words of the claim." Renishaw, 158 F.3d at 1248. And "while it is true that claims are to be interpreted in light of the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims." Sjolund v. Musland, 847 F.2d 1573, 1581 (Fed. Cir. 1988).

3 Sjolund goes on to explain the justification for this rule:

If everything in the specification were required to be read into the claims, or if structural claims were to be limited to devices operated precisely as a specification-described embodiment is operated, there would be no need for claims. Nor could an applicant, regardless of the prior art, claim more broadly than that embodiment. Nor would a basis remain for the statutory necessity that an applicant conclude his specification with "claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."
There is, however, a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification. See E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir. 1988) ("It is entirely proper to use the specification to interpret what the patentee meant by a word or phrase in the claim … but this is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.") 4 See also Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1256-57 (Fed. Cir. 1989) (reading a patent claim as limited to having properties set out in the specification because the specification "makes clear that the inventors were working on the particular problem of an effective optical communication system not on general improvements in conventional optical fibers [and thus, to] read the claim in light of the specification indiscriminately to cover all types of optical fibers would be divorced from reality.").

4 The court in du Pont defined "extraneous limitation" as "a limitation read into a claim from the specification wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim." 849 F.2d at 1433.

Zimmer makes two arguments why the claims should not be limited to hip joint prostheses. First, in claim 18, which is not at issue here, the patent claims "[a] kit for the assembly of a hip prosthesis for replacement of a head, neck, and adjacent portions of a femur." (9:29-31) (emphasis added). Thus, argues Zimmer, when the patentees wished to limit a claim to hip prostheses, they explicitly did so. The doctrine of claim differentiation states:

There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between the claims is significant.

Comark Communications, 156 F.3d at 1187. There is thus a presumption that the terms "bone joint prosthesis" and "bone" in claim 1 have a separate meaning and scope from the terms "hip prosthesis" and "femur" in claim 18. However, the doctrine of claim differentiation applies only if giving the terms in claim 1 the same meaning and scope as the terms in claim 18 renders one of the claims superfluous. That is not the case here. Claim 18 describes a kit containing stems with a lower portion and an upper portion and bodies that are placed over the upper portion of the stem. (9:29-41.) Claim 1, on the other hand, describes a kit containing stems and bodies "to be joined in fixed attachment." (8:27-35.) Claim 1 does not describe the stems as containing upper and lower portions and does not describe the bodies as being placed over the upper portion of the stem. Reading "bone joint prosthesis" and "bone" in claim 1 as having the same scope and meaning as "hip prosthesis" and "femur" in claim 18 does not render either claim superfluous, and the doctrine of claim differentiation therefore does not apply to require a broad reading of claim 1 as including shoulder joint prostheses.

Zimmer also argues that the prosecution history indicates that the patentees did not intend to limit claim 1 to hip prostheses. Cf. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) ("The court may [in the course of claim construction] consider the prosecution history of the patent, if in evidence."). Claim of the '706 patent comes from claim 18 of the '706 patent application. (DePuy Ex. 3 at DPY018095-96.) Claim 18 of the '706 patent application came from claim 20 of patent application serial number 07/793,860. (DePuy Ex. 3 at DPY018099.) Patent application serial number 07/793,860 was originally entitled "Modular Humeral Prosthesis," and claim 20 of that application was described as "not being limited to a shoulder prosthesis." (Zimmer Ex. K.) Thus, argues Zimmer, the claim that ultimately became claim 1 of the '706 patent...
The term "adjacent relationship" is found only in the method claims of the '779 Patent. In Claim 1 of the '779 Patent, step (a) of the claim describes a prosthesis designed for the replacement of a head, neck, and parts of the femur next to the head and neck. There is no explicit limitation in the claim as to the size of the portion of the femur to be replaced. Nor is there anything in the specification indicating such a limitation. DePuy points to two figures in the specification showing the device replacing only a small portion of the femur, but it is well established that patent drawings may not be relied upon to show particular sizes if the specification is completely silent on the issue. Hockerson-Halberstadt, Inc. v. Avia Group Int'l Inc., 222 F.3d 951, 956 (Fed. Cir. 2000) (rejecting an argument based on a patent drawing regarding the width of a groove in an athletic shoe heel). Thus, the fact that two drawings in the patent show only a small femur portion being replaced by the device in no way establishes a limitation on the size of the femur portion that can be replaced.

A related dispute between the parties is whether, given that the prosthesis is limited to the hip joint and femur, the prosthesis is limited to use in only certain types of surgeries. DePuy argues that claim 1, which claims a prosthesis to replace a head, neck, "and adjacent portions of a bone" should be read as limiting the use of the prosthesis to surgeries in which only a small portion of the femur adjacent to the head and neck is removed. DePuy contrasts hip replacements typically used in arthritis cases, in which only a small portion of the femur is removed, with hip replacements typically used in oncological applications, in which a much larger portion of the femur is removed. Zimmer, on the other hand, argues that the claim language does not support a limitation to any particular kind of surgery or amount of femur removed.

The plain meaning of the term "adjacent portions" cannot seriously be disputed. "Adjacent" means "next to" and "portion" means "a part of a whole." Thus, claim 1 calls for a prosthesis for the replacement of a head, neck, and parts of the femur next to the head and neck. There is no explicit limitation in the claim as to the size of the portion of the femur to be replaced. Nor is there anything in the specification indicating such a limitation. DePuy points to two figures in the specification showing the device replacing only a small portion of the femur, but it is well established that patent drawings may not be relied upon to show particular sizes if the specification is completely silent on the issue. Hockerson-Halberstadt, Inc. v. Avia Group Int'l Inc., 222 F.3d 951, 956 (Fed. Cir. 2000) (rejecting an argument based on a patent drawing regarding the width of a groove in an athletic shoe heel). Thus, the fact that two drawings in the patent show only a small femur portion being replaced by the device in no way establishes a limitation on the size of the femur portion that can be replaced.

DePuy also points to the patent history to support its argument that there exists a limitation on the size of the femur portion that can be replaced. As part of the application process, the patentees submitted an information disclosure statement discussing prior art. (DePuy Ex. 2 at DPY019130-36.) In the disclosure statement, the patentees described prior art in which "the prosthesis … is designed to replace the entire upper portion of the femur, and not to be implanted within the femur." (Id. at DPY019133.) DePuy argues that this statement distinguished the prostheses claimed in the '706 patent from prior art prostheses that replaced large portions of the femur, and thus limited the '706 patent claims prostheses replacing only small portions of the femur. Statements made in an information disclosure statement can be used to interpret the scope of claims. Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1303-04 (Fed. Cir. 1997). However, "unless altering claim language to escape an examiner rejection, a patent applicant only limits claims during prosecution by clearly disavowing claim coverage." York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1575 (Fed Cir. 1996). Here, the disclosure statement simply described prior art in which the prosthesis replaces the entire upper portion of the femur and contrasts that to simply implanting the prosthesis within the femur. It does not "clearly disavow[]" claim coverage over prostheses otherwise covered that replace the entire upper portion of the femur.

DePuy points to one other element of the prosecution history to support its argument that there exists a limitation in the claim on the size of the femur portion that may be replaced by the prosthesis. The claim was at one time rejected as clearly anticipated by another patent ("Harder"). In requesting reconsideration of the rejection, the patentees distinguished Harder by arguing, among other things, that unlike the prior patent, the current claim "require[s] selection of a stem from different sized and shaped stems and having a portion for reception into the femur." This language pointed to by DePuy says nothing about how large a portion of the femur may be replaced by the claimed prosthesis and therefore does not "clearly disavow[]" claim coverage over prostheses otherwise covered that replace large portions of the femur. Thus, neither the specification nor the prosecution history presents any reason to limit to small portions of the femur the plain language of the claim covering replacement of "adjacent portions of a bone."

The term "adjacent relationship" is found only in the method claims of the '779 Patent. In Claim 1 of the '779 Patent, step (a) of the claim describes a prosthesis designed for the replacement of a head, neck, and parts of the femur next to the head and neck. There is no explicit limitation in the claim as to the size of the portion of the femur to be replaced. Nor is there anything in the specification indicating such a limitation. DePuy points to two figures in the specification showing the device replacing only a small portion of the femur, but it is well established that patent drawings may not be relied upon to show particular sizes if the specification is completely silent on the issue. Hockerson-Halberstadt, Inc. v. Avia Group Int'l Inc., 222 F.3d 951, 956 (Fed. Cir. 2000) (rejecting an argument based on a patent drawing regarding the width of a groove in an athletic shoe heel). Thus, the fact that two drawings in the patent show only a small femur portion being replaced by the device in no way establishes a limitation on the size of the femur portion that can be replaced.

A related dispute between the parties is whether, given that the prosthesis is limited to the hip joint and femur, the prosthesis is limited to use in only certain types of surgeries. DePuy argues that claim 1, which claims a prosthesis to replace a head, neck, "and adjacent portions of a bone" should be read as limiting the use of the prosthesis to surgeries in which only a small portion of the femur adjacent to the head and neck is removed. DePuy contrasts hip replacements typically used in arthritis cases, in which only a small portion of the femur is removed, with hip replacements typically used in oncological applications, in which a much larger portion of the femur is removed. Zimmer, on the other hand, argues that the claim language does not support a limitation to any particular kind of surgery or amount of femur removed.

The plain meaning of the term "adjacent portions" cannot seriously be disputed. "Adjacent" means "next to" and "portion" means "a part of a whole." Thus, claim 1 calls for a prosthesis for the replacement of a head, neck, and parts of the femur next to the head and neck. There is no explicit limitation in the claim as to the size of the portion of the femur to be replaced. Nor is there anything in the specification indicating such a limitation. DePuy points to two figures in the specification showing the device replacing only a small portion of the femur, but it is well established that patent drawings may not be relied upon to show particular sizes if the specification is completely silent on the issue. Hockerson-Halberstadt, Inc. v. Avia Group Int'l Inc., 222 F.3d 951, 956 (Fed. Cir. 2000) (rejecting an argument based on a patent drawing regarding the width of a groove in an athletic shoe heel). Thus, the fact that two drawings in the patent show only a small femur portion being replaced by the device in no way establishes a limitation on the size of the femur portion that can be replaced.

DePuy also points to the patent history to support its argument that there exists a limitation on the size of the femur portion that can be replaced. As part of the application process, the patentees submitted an information disclosure statement discussing prior art. (DePuy Ex. 2 at DPY019130-36.) In the disclosure statement, the patentees described prior art in which "the prosthesis … is designed to replace the entire upper portion of the femur, and not to be implanted within the femur." (Id. at DPY019133.) DePuy argues that this statement distinguished the prostheses claimed in the '706 patent from prior art prostheses that replaced large portions of the femur, and thus limited the '706 patent claims prostheses replacing only small portions of the femur. Statements made in an information disclosure statement can be used to interpret the scope of claims. Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1303-04 (Fed. Cir. 1997). However, "unless altering claim language to escape an examiner rejection, a patent applicant only limits claims during prosecution by clearly disavowing claim coverage." York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1575 (Fed Cir. 1996). Here, the disclosure statement simply described prior art in which the prosthesis replaces the entire upper portion of the femur and contrasts that to simply implanting the prosthesis within the femur. It does not "clearly disavow[]" claim coverage over prostheses otherwise covered that replace the entire upper portion of the femur.

DePuy points to one other element of the prosecution history to support its argument that there exists a limitation in the claim on the size of the femur portion that may be replaced by the prosthesis. The claim was at one time rejected as clearly anticipated by another patent ("Harder"). In requesting reconsideration of the rejection, the patentees distinguished Harder by arguing, among other things, that unlike the prior patent, the current claim "require[s] selection of a stem from different sized and shaped stems and having a portion for reception into the femur." This language pointed to by DePuy says nothing about how large a portion of the femur may be replaced by the claimed prosthesis and therefore does not "clearly disavow[]" claim coverage over prostheses otherwise covered that replace large portions of the femur. Thus, neither the specification nor the prosecution history presents any reason to limit to small portions of the femur the plain language of the claim covering replacement of "adjacent portions of a bone."
of the seam manufacturing process requires "placing the first garment component in an adjacent relationship to the second garment component so as to define a seam." 779 Patent at 6:30-32 (emphasis added). The term "juxtaposed relationship" is found only in the method claims of the 615 Patent. In Claim 1 of the 615 Patent, step (b) of the seam manufacturing process requires "providing a second garment component in a juxtaposed relationship with respect to the first garment component to be joined at a seam to the first garment component." 615 Patent at 6:33-36 (emphasis added).

Taltech asks the Court to construe "adjacent relationship" to mean "next to" and "juxtaposed relationship" to mean "placed next to." Taltech also interprets these terms not to require touching, an interpretation that Esquel does not contest. Taltech relies on the claims, on the specifications, and on dictionary definitions of "adjacent" and "juxtaposed." Esquel agrees with Taltech's proposed construction so long as "next to" is given its ordinary meaning, i.e., "immediately following." Esquel relies on the specifications and on a dictionary definition of "next to." The parties' dispute centers on whether any intervening material may exist between two garment components that are placed in an "adjacent" or "juxtaposed" relationship. Taltech interprets "adjacent" and "juxtaposed" to allow intervening material, whereas Esquel's interpretation does not allow any intervening material.

In Free Motion, "the district court construed adjacent' to mean that objects may or may not be in contact, but are not adjacent to each other where there is another object between them." 423 F.3d at 1348 (quoting Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 311 F. Supp. 2d. 1297, 1304 (D. Utah 2003)). On appeal, the Federal Circuit concluded that there were two possible dictionary definitions of "adjacent" to choose from in that case: one definition was "not distant" and the other was "relatively near and having nothing of the same kind intervening." Id. at 1349 (quoting Webster's Third New Int'l Dictionary of the English Language Unabridged 26 (2002)). After noting that "any reliance on dictionaries" must "accord[] with the intrinsic evidence," the Federal Circuit vacated the district court's construction that adopted the second dictionary definition because that definition was inconsistent with the intrinsic evidence. See id. at 1348-49. Nothing in the patent at issue in Free Motion suggested a concern with an object intervening in between the "adjacent" pivot point and resistance assembly, particularly since the adjacent objects were not of the "same kind." Id. at 1349.

In the present case, because the adjacent/juxtaposed objects (i.e., garment components) are of the "same kind," Free Motion counsels that an intervening garment component may be a concern. Nonetheless, the Court is not bound by a dictionary definition discussed in Free Motion. Although it is true that Figures 3a and 4a depict the adjacent/juxtaposed relationship as having no intervening garment component between the two "adjacent" or "juxtaposed" garment components, the Court declines to limit the claims by the preferred embodiments. Nothing in the intrinsic evidence demonstrates an intent to preclude the adjacent/juxtaposed relationship where an object intervenes.

Accordingly, the Court adopts Taltech's proposed construction, with modification, and construes the terms "adjacent relationship" and "juxtaposed relationship" to have identical meanings 5 and to mean "next to but not necessarily touching."

5 At the Markman hearing, the parties agreed that the Court should construe the terms "adjacent relationship" and "juxtaposed relationship" the same.

The term "adjacent said detent plate structure" means positioned near the detent plate structure.

5. Claim 12 ("adjacent the handle assembly")
Claim 12 (and dependent Claim 13) of the '286 Patent uses this disputed claim term in the following context:

An ultrasonic instrument according to claim 11, wherein the coupling member is operably connected to a rotatable knob
positioned adjacent the handle assembly, the rotatable knob being rotatably secured to the handle assembly such that rotation of the rotatable knob in relation to the handle assembly effects corresponding rotation of the coupling member and the clamp member.

'286 Patent, Claim 12 (emphasis added). Plaintiff proposes construing the term as "near the handle assembly," whereas defendant proposes, "directly next to the handle assembly."

As the parties' submissions indicate, standard dictionary definitions result in multiple possible constructions. See Pl. Claim Construction Br. at 20; Def. Claim Construction Br. at 14-15. The defendant acknowledges that where the claim language is not determinative, and the Court is confronted with multiple definitions, the Court should consult the other intrinsic evidence. See Novartis Pharm. Corp. v. Eon Labs Mfg., 363 F.3d 1306, 1309-10 (Fed. Cir. 2004). In this case, the intrinsic evidence does not define the term, nor does it suggest that the term has some specialized meaning in the relevant art. Additionally, plaintiff argues that defendant's proposed construction would in fact exclude the patented instrument itself because such a construction wrongly implies that the knob and the handle assembly "touch" each other, when in fact, while they may touch each other, nothing in the patent requires that they touch each other. See Pl. Reply Br. at 4-5 & n.10; Markman Tr. at 23-25.

The Federal Circuit recently held that where the intrinsic evidence did not define the term "adjacent" or suggest that the term had a specialized meaning in the relevant art, the appropriate construction of the term "adjacent" was "not distant." See Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 423 F.3d 1343, 1348-49 (Fed. Cir. 2005). The Circuit noted that there were multiple possible dictionary definitions and concluded that the intrinsic evidence served to "point away" from the more restrictive definitions where there was nothing in the intrinsic evidence to suggest that such a narrowing definition was appropriate. See id. As was the case in Free Motion, nothing in the intrinsic evidence of the '286 Patent requires the adoption defendant's more restrictive definition, "directly next to," and thus the Court adopts plaintiff's construction, "near," as guided by the decision in Free Motion.

n9 Defendant also argues that use of the word "near" in the construction would allow the "adjacent" parts to be anywhere on the instrument (given that the instrument itself is relatively small). See Def. Claim Construction Br. at 14. This is clearly not the case, however, given that "near" is a relative term to be interpreted in the context of the instrument as a whole, which would take into account the relative size of the instrument.

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d. "Adjacent the plug receiving opening"

Plaintiffs argue that the "adjacent" limitation requires that the light emitting source be visible in the front wall of the housing of the connector where the plug receiving opening is located, in close proximity to the opening. Maxconn argues that it means "near, close to or within a short distance of the plug receiving opening. This is in contrast to being remote from the plug receiving opening."

i. Claim Language

At least one light emitting source must lie "adjacent the plug receiving opening." '317 patent at 4:62-63. Adjacent means next to, nearby or within a short distance. Black's Law Dictionary defines "adjacent" as "Lying near or close to; sometimes, continuous; neighboring." Adjacent implies that the two objects are not widely separated, though they may not actually touch . . . while adjoining imports that they are so joined or united to each other that no third object intervenes." Black's Law Dictionary 41 (6th ed. 1990). Webster's defines adjacent as "near or close." Webster's New World Dictionary College Edition 16 (3d ed. 1988). "Adjacent things may or may not be in actual contact with each other, but they are not separated by things of the same kind . . . ; that which is adjoining something else touches it at some point or along a line . . . ." Id.

The purpose of the adjacency limitation is set forth within the claim: "to provide visual verification of the status of the electrical connection." '317 patent at 4:63-64.

ii. Specification
One possibility for the relative positions of the light emitting sources and the plug receiving opening is contained in Figures 1 and 2 of the '317 patent. Consistent with the word "adjacent," as opposed to the word "adjoining," the light emitting source does not share a common boundary with the plug receiving opening. The lights are neighboring, near, or close. The LEDs of the preferred embodiment (Figure 1 of the '317 patent) are positioned at some distance, a millimeter or two, from the edge of the plug receiving opening, so that it appears that the lights correspond to electrical activity within the corresponding plug receiving opening.

The specification also indicates that "the connector 10 includes a visual indicator 12 integrated within the connector to provide visual verification of the status of the electrical connection." '317 patent at 2:39-42. In addition, the "Background of the Invention" section states that "The front wall has a plug receiving opening therein, and a light-emitting diode positioned within the front wall such that the light emitting diode provides visual verification of the status of the electrical connection." '317 patent at 2:5-9.

iii. Prosecution History

The prosecution history does not provide any guidance on this point.

iv. Extrinsic Evidence

Expert Lazar stated that adjacent means close to the plug receiving opening to indicate to the viewer that the LED correlates with that particular plug. While the Court found this testimony credible, it is unnecessary to consider it in light of the strength of the intrinsic evidence.

v. Construction

"Adjacent the plug receiving opening" means that the light emitting device is situated close to the plug receiving opening such that (1) both the plug receiving opening and the light emitting device are in close proximity and are easily visible to the observer simultaneously; and (2) the observer could discern a relation between the plug receiving opening and the nearby lights. "Adjacent" was intended to signify not remote. Were a more precise limiting definition desired, the patentee could have used more precise language, such as "bordering on," or "abutting."

4. "adjacent to and above"

Plaintiff's Proposed Construction: "terminating at an elevation sufficient to not interfere with the rotating blades of a blender"

Defendant's Proposed Construction: "at a location just above the rotating blades in the area where an air channel may form in the pitcher of a blender, without interfering with the rotating blades"

The Court's Construction: "adjacent to and above"

Plaintiff contends that its proposed construction embodies the ordinary meaning of "adjacent to and above." Consistent with its arguments made in connection with the "plunger" element, defendant argues that, as a practical matter, the plunger must be in the area where the air channel would otherwise form in order to perform the claimed method of preventing the formation of the air pocket around the mixing blades.

The term "adjacent to and above" appears only in Claim 1 and in the Abstract of the '021 Patent. Claim 1 requires the plunger to be adjacent to and above the rotating blades. The original apparatus claims, on the other hand, required the plunger to be "just above" the blade assembly. The specification similarly indicates that the plunger is "just above" the blade assembly. Several dependent apparatus claims required that the plunger also be "adjacent to" the blade assembly.
First, the Court finds that "above" carries its ordinary and customary meaning. Because the claim requires that the plunger be above the rotating blades, the plunger of necessity cannot interfere with the blades. This is consistent with plaintiff's proposed construction and the intrinsic evidence. The Court also finds that, consistent with plaintiff's argument, "above" does not mean "just above." In submitting the method claim for examination, the inventors chose to eliminate the word "just," which had appeared in their apparatus claims. The examiner allowed the claim without comment on this element. The Court cannot re-insert the word "just" into the claim without unambiguous evidence in the intrinsic record of the patent to support such a construction.

The Court next turns to the meaning of "adjacent to." The plaintiff's proposed construction ignores these two words. Defendant's construction would have "adjacent to" interpreted as "in the area where an air channel may form in the pitcher of a blender, without interfering with the rotating blades." As stated above, some of the apparatus claims did include a limitation that required the plunger to be adjacent to the blade assembly. The method claim at issue, on the other hand, requires the plunger to be adjacent to the rotating blades. This is not a distinction without a difference. The blade assembly is distinct from the blades in that the blade assembly is the element that houses the air channel defining member. The blades extend outward from the blade assembly. Defendant argues that the air channel forms above the blade assembly. So, defendant essentially seeks a construction of the claim that would require the plunger to be located adjacent to and above the blade assembly rather than the blades.

In support of its position, defendant argues that in order to practice the claimed invention and prevent the air pocket from forming, the plunger must be in the area where the air channel would form, i.e. adjacent to the blade assembly. However, the intrinsic evidence does not unequivocally support such a construction. The specification does state that the air channel is defined by the member associated with the blades and that the cross-sectional size of that air channel is defined by the cross-section of the member. However, the inventors chose, in submitting their method claim, to indicate that the plunger was above "the rotating blades" rather than "the blade assembly." And, it is not clear to the Court that the plunger could not close off the air channel and, thus, prevent the formation of the air pocket if it were positioned adjacent to and above the rotating blades. To adopt defendant's proposed construction that the plunger be placed where the air channel would otherwise form might unduly limit the claim.

Accordingly, the Court finds that "adjacent to and above the rotating blades" means just that. Resort to the dictionary definitions provided by defendant is unnecessary.

1. "located adjacent to said battery"

Claim 13 describes an AED with a battery and a temperature sensing circuit that is "located adjacent to said battery." The parties dispute the meaning of the term "adjacent." Philips asserts that "adjacent" should be defined as "adjoining or next to the battery, with nothing of the same kind in between." Cardiac Science contends that "adjacent" means "close," but does not require that the temperature sensing circuit needs to touch the battery. Philips agrees that the temperature sensing circuit does not need to touch the battery, but contends that Cardiac Science's definition is not precise enough. (Tr. at 444.)

The claim itself provides some guidance as to the proximity required between the battery and the temperature sensors, as the claim describes a "temperature sensing circuit designed to sense the temperature inside of said battery." ('576 Patent at c. 8, II: 47-48.) However, nothing in the claim language or the specification requires that the temperature sensors adjoin the battery, as Philips proposes. The Court finds that "located adjacent to" is properly construed as "close to," as in "located close to the battery so that it may sense the temperature of the battery."

4. "adjacent to the base of the user's fingers"

McHugh asserts that this term does not require construction, while H&B asserts that it does. Nevertheless, as there is a
controversy regarding this term, this Court will construe the term "adjacent to the base of the user's fingers." See Markman, 517 U.S. at 374.

Claim 1 further goes on to recite that a "retainer connected to the member ... [retains] the member in the user's hand adjacent to the base of the user's fingers." (5:18-21.) As the Court has already construed "base of the user's fingers" to mean "the location where the palm joins the fingers," it is now up to the Court to determine what it means to be adjacent to "the location where the palm joins the fingers." McHugh contends that it should mean "near the proximal phalanx A2 pulley region of the user's fingers" while H&B contends that it should mean "below the base of the user's fingers."

The claim language indicates that the member is "configured to fit at a base of the user's fingers ... and a retainer [retains] the member in the user's hand adjacent to the base of the user's fingers." (5:15-21.) H&B's proposal that the base of the user's fingers is the location where the palm joins the fingers is adopted by the Court because it allows for the member to sit in the gap formed at the base of the user's fingers. However, if the Court were to adopt H&B's proposed construction for "adjacent to the base of the user's finger," the member would be both at the base of the user's fingers and below the base of the user's fingers. This construction does not make sense.

On the other hand, McHugh's proposed construction is supported by the specification. The specification indicates that "adjacent" should mean "near." The written description states that the "hand grip fits in the user's hand near where the palm joins the fingers." (1:43-44.) Additionally, as stated above the proximal phalanx A2 pulley region encompasses the "location where the palm joins the fingers." Most importantly, if the member is located "near the proximal phalanx A2 pulley region of the user's fingers," this placement specification is broad enough to allow the member to fit in the gap between the base of the user's fingers and the palm of the hand.

Accordingly, the Court adopts McHugh's proposed construction and construes the term "adjacent to the base of the user's fingers" to mean: "near the proximal phalanx A2 pulley region of the user's fingers."

7. An open space "adjacent to the distal end of the cannula" is an open space next to, but not occupied by, the expanded portion of the cannula.

3. "Adjoining"

The final disputed claim limitation is "said wafer including a further region of opposite conductivity type adjoining said lightly doped major body portion," (emphasis added) found in claim 19 of the '699 patent. This claim and three claims dependent therefrom are the four claims asserted against IXYS that do not contain the terms "polygonal" and "annular." The district court construed "adjoining" as follows:

Consistent with Figure 8 [of the '699 patent], the dictionary definitions of "adjoin," "adjoining," and its synonym "adjacent" indicate that two objects need not be in physical contact to be "adjoining." See Webster's Ninth New Collegiate Dictionary, p. 56, which states that "adjoin" can mean "to be close to or in contact with one another," while "adjacent" is a synonym of adjoining and means "not distant; nearby."

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IXYS argues that the district court erroneously misquoted the cited dictionary, and that the construction thus provided is incorrect. IR counters that IXYS is asserting the most narrow ordinary and customary definition for the term "adjoining," contrary to our precedent. See, e.g., Inverness Med. Switz. GmbH v. Warner Lambert Co., 309 F.3d 1373, 1378-80 (stating that a term is to be given its broadest ordinary meaning consistent with the written description).
The dictionary definition cited by the district court, when examined carefully, not only defines "adjoining," but further, makes an express distinction between "adjoining" and "adjacent." Other dictionaries contemporaneous with the patents contain a similar definition. The definition of "adjoining" is "touching or bounding at some point or on some line: near in space." Webster's, supra, at 27. This definition, in turn, references "adjacent" as synonymous. The dictionary then defines "adjacent" and notes that, as between adjacent and adjoining, "[adjoining] may more strongly indicate existence of common bounding lines or lines or points of junction." Id. at 26. By resorting to the dictionary to determine the ordinary and customary meaning of the claim term, the district court was not free to disregard this usage note. It is true that "if more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all such consistent meanings." Tex. Digital, 308 F.3d at 1203. However, in this case, the district court's adoption of a definition attributed to "adjacent," a synonym of the claim term, disregards entirely the distinction between the two terms set forth in the usage note. Had the inventor meant "adjacent," he could have used that word. However, we must consider the word that the inventor actually chose and use the definitions of that term that are consistent with the written description.

Because there is no express disavowal or limit on the scope of the claim term, we give "adjoining" its ordinary and customary meaning as "touching or bounding at a point or a line."

IR argues that by adopting a claim construction that requires adjoining regions to touch, not only would the construction be inconsistent with the written description, but it would also exclude the preferred embodiment, a conclusion that IR correctly observes is rarely, if ever, correct. See Gentry Gallery, 134 F.3d at 1477. IR argues that the "adjoining" "major body portion" 87 and "further region" 83 depicted in Figure 8 of the '699 patent have an intervening layer (84) between them. IR's argument is not persuasive because it overlooks the fact that "major body portion" 87 and "further region" 83 do touch, at least in part. Therefore, those regions are adjoining in the embodiment shown and described in the patents. IR points to the intervening layer between the two regions, but fails to appreciate that, as depicted in Figure 8, that layer does not extend to the full length of the regions, leaving the ends in direct contact. There is nothing in the language of the claims or in the ordinary and customary meaning of the word "adjoining" to require that adjoining regions touch over any particular expanse, only that they are "touching or bounding at a point or line." The broad definition of the term "adjoining" is entirely consistent with the written description and does not exclude the preferred embodiment.

a. "adjustable"

Plaintiff contends that the court should construe "adjustable" to mean "automatically or passively adjustable," and add as explanation, "In the context of an airbag, 'adjustable' refers to the ability to control inflation and/or deflation of the airbag." (Chart at 8.) Defendant argues that the court should construe "adjustable" to mean "the manner in which the component operates may be adjusted," and also to explain, "In the context of an airbag, 'adjustable' refers to the ability to adjust the manner in which the airbag is deployed by adjusting the direction of the airbag, the flow of gas into the airbag, flow of gas out of the airbag, rate of generation of gas and/or amount of generate[d] gas." (Id.)

Plaintiff emphasizes that it is important that "adjustable" includes the notion that the adjustment is automatic, i.e., does not require the occupant to take any action. Plaintiff also argues that Defendant's construction limits the claim by not specifying that in the context of an airbag, "adjustable" can also refer to the manner in which the airbag is suppressed. As support for its position, Plaintiff cites to the specification, which states:

The component or device an be an airbag system including at least one deployable airbag whereby the deployment of the airbag is suppressed, for example, if the seat is occupied by a rear-facing child seat . . . . The component adjustment system and methods in accordance with the invention can automatically and passively adjust the component based on the morphology of the occupant of the seat.


Defendant, however, maintains that suppression and adjustment constitute two different actions, and that neither includes the other as a sub-type. (Def.'s Br. at 18-19.) Defendant cites from the specification:
Control of the occupant restraint device may entail suppression of deployment of the device. If the occupant restraint device is an airbag, e.g., a frontal airbag or side airbag, control of the airbag deployment may entail not only suppression of the deployment but also depowered deployment, adjustment of the orientation of the airbag, adjustment of the inflation rate or inflation time and/or adjustment of the deflation rate or time.

'029 Patent col. 208 l.16-23. As in Claim 4 of the '945 Patent, the adjustment contemplates variations on deployment: (1) no deployment or suppression, (2) deployment, and (3) deployment at varying rates or varying ways.

The logic of Plaintiff is sound: an airbag can be deployed or not deployed, and if it is deployed, deployed in various ways. These variations are adjustments, and a suppressed airbag is one type of adjustment to the airbag's deployment. The specification includes these options in the following language:

The adjustment system may be a system for adjusting deployment of an occupant restraint device, such as an airbag. In this case, the deployment adjustment system is arranged to control flow of gas into an airbag, flow of gas out of an airbag, rate of generation of gas and/or amount of generated gas.

'029 Patent col. 60 l.24-29. The specification further states: "The component may be an occupant restraint device such as an airbag whereby the control unit could control inflation and/or deflation of the airbag, e.g., the flow of gas into and/or out of the airbag, and/or out of the airbag, and/or the direction of deployment of the airbag." '029 Patent col. 265 l.19-23. The language of the specification begins with "control inflation and/or deflation of the airbag," which includes no inflation, or suppression. If the component is adjusted so that no air can flow into the airbag, then the result is no deployment and a suppressed airbag. However, the court finds that the construction suggested by Defendant incorporates the idea of suppression because it includes the phrase "adjust the manner in which the airbag is deployed," which could include no deployment, or suppression. (Chart at 8.) This is further supported by the language of the specification as cited above. See '029 Patent col. 60 l.24-29; col. 208 l.16-23.

While the language of the specification specifies that certain embodiments include adjustments that are "automatically or passively adjustable," the term "adjustable" does not itself require a rendering of "automatically or passively adjustable"; the specification itself modified "adjustable" with an adjectival phrase to clarify when a component was specifically "automatically or passively adjustable." See '029 Patent col. 204 l.56-59 ("The component adjustment system and methods in accordance with the invention can automatically and passively adjust the component based on the morphology of the occupant of the seat."). The court will therefore decline to incorporate this adjectival phrase into its construction. See Praxair, Inc. v. ATMI, Inc., 543 F.3d 1306, 1324 (Fed. Cir. 2008) ("[T]he specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.") (internal citations omitted).

Finally, Plaintiff argues that the court must include "e.g." in its construction so that its claim is not impermissibly limited to the functions listed in Defendant's proposed claim construction. The court recognizes Plaintiff's concern. See Praxair, 543 F.3d at 1324. The court will interpret this claim pursuant to the specification, and therefore will construe "adjustable" to be "'adjustable' means that the manner in which the component operates may be adjusted," and, "In the context of an airbag, 'adjustable' refers to the ability to control inflation or deflation of the airbag, and thereby adjust the manner in which the airbag is deployed. For example, this can include adjusting the direction of the airbag, the flow of gas into or out of the airbag, the rate of generation of gas, or the amount of generated gas."

1. Claim Construction

With regard to the first step, claim construction is a question of law although factual determinations may underlie this determination. Id. It is not necessary for a court to construe definitively the patent claims when ruling on a motion for preliminary injunction. Data Race, Inc. v. Lucent Techs., Inc., 73 F.Supp.2d 698, 708 (W.D.Tx. 1999). Claims must be viewed in light of a person of ordinary skill in the art at the time of the invention, and the language of the claim must be given its common and accustomed meaning. To derive the meaning of a claim, courts must first utilize the three parts of the
patent application: the language of the claim, the specification, and the prosecution history (file wrapper). Insituforn Techs., Inc. v. Cat Contracting, Inc., 99 F.3d 1098, 1105 (Fed. Cir. 1996). The claim language will define its scope, and the specification and prosecution history provide the necessary context to the claim language. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996). The claim term's ordinary and accustomed meaning serves as a default meaning. If the patent holder has given a term an unconventional meaning within the patent specification or prosecution history, the Court must apply that meaning. However, if not, the term's ordinary and accustomed meaning controls. Id.; ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580 (Fed. Cir. 1988).

If necessary, in its discretion, the Court may look to extrinsic evidence to assist in understanding the technology or in determining the meaning or scope of technical terms. See Markman, 52 F.3d at 976. This extrinsic evidence, including expert testimony or prior art, may not be interpreted to broaden the scope of the patent or to contradict the claim language, the specification, or the prosecution history. See Vitronics Corp., 90 F.3d at 1583; see also Data Race, Inc., 73 F.Supp.2d at 708.

Velan contends the term "adjustable" as used in the pertinent claims "means the biasing force inherently provided by the biasing elements or coil springs integrated into a dynamic live loaded seat, can be adjusted to increase or decrease the biasing force during use or operation of the de-heading device." The core of Velan's argument is that Claims 14 and 33 incorporate into the definition of "adjustable" the ability to cause adjustment to the load pressure exerted by the dynamic, live loaded seat on the sliding gate while the de-heading device is in operation, or coupled to the coke drum. Velan contends Curtis-Wright's assertion that replacement of the coil springs housed inside the apparatus with springs having a different bias force does not constitute "adjustment" and, in any event, this procedure cannot be performed while its device is in use and attached to the coke drum. Velan further contends the term adjustment provides no additional function than that provided by a live loaded seat, and therefore, the term is redundant. Looking to the specification, Velan argues every reference to patent '714 to adjustability refers to the necessity of having an external adjustment mechanism associated or directed at the dynamic, live loaded seat. Therefore, the term "adjustable" must mean the device must contain an external means of adjusting the biasing force placed upon the sliding gate by the dynamic, live loaded seat while the device is in use.

Curtis-Wright contends the term "adjustable" is a common word that must be given its ordinary and accustomed meaning as it is used in the context of Claims 14 and 33 of the '714 patent. Curtis-Wright contends the accustomed meaning of this term means "capable of making a change or being changed". Claims 14 and 33 do not restrict the term "adjustable" to changing the biasing force during use or operation of the de-heading device. Thus, the ability to adjust the pressure placed upon the sliding gate by the dynamic, live loaded seat while the valve is in operation is not a requirement of the patented invention. Because an external adjustment mechanism is described in the patent specification as a "preferred embodiment" of the device, Curtis-Wright contends the limitations cannot be read into the claims, nor do claims 14 or 33 limit the invention to the existence of an external adjustment mechanism or any particular means, method, or time of adjustment of the load pressure placed on the sliding gate. Instead, Curtis-Wright contends the asserted claims require only that the live loaded seat be adjustable, regardless of how, when, or whether the adjustment is actually performed. Curtis-Wright particularly argues the asserted claims do not require that adjustment must or may be made while the device is in use, only that adjustment may be made to the load pressure placed upon the sliding gate by the live loaded seat.

Viewing the claim language, Curtis-Wright is correct the term "adjustable" as used in Claims 14 and 33 holds a common meaning of normal usage. See plaintiff's motion, Exh. A,Cols. 17,20. This term means, as asserted by Curtis-Wright, "capable of making a change to something" or capable of being changed. The term "adjustable" as used as a modifier to the term "dynamic, live loaded seat" means the dynamic, live loaded seat must have the capability of changing or making a change. In this particular application, the parties do not dispute the change to be made is a change to the load placed upon the blind, or sliding gate, by the dynamic, live loaded seat. This change can either loosen or tighten the seal between the live loaded seat and the sliding gate.

Also, the Court agrees with Curtis-Wright the term "adjustable", as used in Claims 14 and 33, does not contain or imply any requirement regarding the time in which the load placed upon the gate by the dynamic, live loaded seat may be adjusted. See plaintiff's motion, Exh. A,Cols. 17,20. The use of the term "adjustable" as it appears in Claims 14 and 33 does not include or require any adjustment be made while the Delta Valve is in operation or in use. See 'id. Thus, Velan's asserted definition of the term "adjustable" to include the requirement that a change to the biasing force can be made while the device is in use or operation is beyond the accustomed meaning of the term.
A reading of Claims 14 and 33, and those associated with them, in light of the other asserted claims, and those associated with them, gives context to this construction. Claim 1 describes a coke drum de-heading device which comprises several elements, including an external "live loaded seat assembly" which contains "at least one dynamic, live loaded seat and a corresponding live loaded seat adjustment mechanism to control exertable force of said dynamic, live loaded seat". See plaintiff's motion, Exh. A, Cols. 16-17. Claims 2 through 13 consist of further descriptions and elements of the coke drum de-heading device presented in Claim 1. Id. Claims 9 and 10, in particular, depict an external live loaded seat adjustment mechanism. Id. at Col. 17. Thus, Claims 1 through 10 depict a device limited by Velan's assertions: one which possesses an external adjustment mechanism capable of changing the bias force placed upon the sliding gate by the dynamic, live loaded seat while the device is in use or operation. See id.

Claim 14 begins another description of a coke drum de-heading device, this time limited to a "bottom de-heading system" which comprises several elements similar to those depicted in Claim 1; however, the device claimed in Claim 14 does not contain the necessity of a "live loaded seat adjustment mechanism to control exertable force of said dynamic, live loaded seat", as in Claim 1. See plaintiff's motion, Exh. A, Col. 17. Claim 14 asserts only that the claimed device be "adjustable", without reference or limitation to the means, time, or manner in which an adjustment to the exerted force placed upon the sliding gate by the dynamic, live loaded seat must be made. Claim 15, only, further describes the device depicted in Claim 14. Id. Thus, in this instance, any reference to an external live loaded seat adjustment mechanism is intentionally omitted.

Further, Claim 16 depicts a "top de-heading system" and follows the same format as described for Claim 14. See plaintiff's motion, Exh. A, Col. 18. Claim 18 begins another depiction of a coke de-heading system and follows an identical format as Claim 1. Id. Claim 18 also includes the claim of a "live loaded seat assembly coupled to said main body and comprising a dynamic, live loaded seat, a live loaded seat adjustment mechanism coupled to said main body and designed to control and adjust the force and resulting seat load…." Id. Claims 19 through 32 consist of further descriptions and elements of the coke drum de-heading device presented in Claim 18. See plaintiff's motion, Exh. A, Cols. 18-19. Claim 28, in particular, depicts an external live loaded seat adjustment mechanism. Id. at Col. 19.

Finally, Claim 33 claims the method used to de-head a coke drum. This method described includes only the restriction that the coke drum be equipped with an "adjustable dynamic, live loaded seat coupled to said main body." Id. at Col. 20. The method to be used does not require an external seat adjustment mechanism or the requirement that the adjustment be made while the device is in use.

Examination of Claim 14 in light of the remaining claims reveals that the device claimed therein does not restrict the claimed device to the existence of an external live loaded seat adjustment mechanism. Such a device was specified and claimed in Claims 1 and 18 and those claims associated with them. Thus, because Claims 1 and 18 specifically describe an embodiment possessing this external seat adjustment mechanism and Claim 14 does not, the only meaning to be derived from Claim 14 is that it encompasses all devices that are simply "adjustable", or capable of changing the bias force exerted on the sliding gate by the dynamic, live loaded seat, regardless whether these devices possess an adjustment mechanism or not and regardless of the means or time in which this adjustment is made. Therefore, Velan's primary argument must fail.

This Court further finds Velan's argument that all references to any adjustability in the dynamic, live loaded seat further refers to the necessity of having a "live seat adjustment mechanism" fails on the principle of "preferred embodiment". In the specification, which describes the invention, Curtis-Wright always uses the reference that the description is the "preferred embodiment" of the device. See plaintiff's motion, Exh. A, Cols. 4,5,9. A preferred embodiment is the inventor's description of the best mode of use; however, the invention is not limited to the preferred embodiment, nor may the court place any limitation contained in the description of the preferred embodiment into the asserted claims. See Interactive Gift Express, Inc. v. CompuServe, Inc., 256 F.3d 1323, 1341 (Fed. Cir. 2001); TurboCare Div'n of Demag Delaval Turbomachinery Corp. v. Gen'l Elec. Co., 264 F.3d 1111, 1123 (Fed. Cir. 2001)("There is no basis for reading a limitation from the preferred embodiment into the language of the claim," particularly…where another claim restricts the invention in exactly the manner suggested by [a proposed] narrow claim construction.).

Curtis-Wright included the preferred embodiment of its coke drum de-heading device in the specification of patent '714. Such embodiment includes a live seat adjustment mechanism. In the subsequent asserted claims, Curtis-Wright asserted claims restricting the protected device to inclusion of a live seat adjustment mechanism. Curtis-Wright also asserted a claim, Claim 14, which did not include this limitation. Consequently, this Court may not limit Claims 14 and 33 by the description of its preferred embodiment in the patent specification. See Interactive Gift Express, Inc., 256 F.3d at 1341; TurboCare
The Court finds the term "adjustable" has a meaning and concept different than the term "live loaded seat", and therefore, is not just redundant or superlative. As described in the patent claims and specification, the term "live loaded seat" is used in conjunction with its counterpart, a static seat. See plaintiff's motion, Exh. A, Fig. 8, Col. 4, lines 32-42, Col. 13, line 39-Col. 14, line 18. The static seat is mounted to the main body below the sliding gate and does not move. Conversely, the live loaded seat, located above the sliding gate, is flexible, or capable of movement up or down. Id.; see also Col. 14, line 65-Col. 15, line 3. This movement is facilitated by the spring coils located inside the apparatus. As the weight of coke filling the coke drum changes, the live loaded seat is capable of moving to place further pressure on the sliding gate, thus maintaining the seal. Id. Thus, the term live loaded refers to the ability of the seat to move up or down, as opposed to being static, or mounted to the main body. The term adjustable refers to the capability of changing the bias force already exerted on the sliding gate by the live loaded seat. See id. at Col. 15, lines 7-22. Although similar, the two terms do not refer to the same or redundant activity.

Based upon these comparisons, findings and conclusions, this Court construes the term "adjustable" as used in Claims 14 and 33 to mean the protected device is capable of changing the bias force exerted on the sliding gate by the dynamic, live loaded seat. This term is not limited by any time, place, manner, or means of adjustment and does not necessitate any external adjustment mechanism.

The trial court's claim construction followed a logical path. The court first set forth the ordinary meaning of "adjustable": "capable of making a change to something or capable of being changed." Preliminary Injunction Order, slip op. at 10. The court then determined that a narrower construction of "adjustable" would be inconsistent with other claims in the '714 patent, which recite an adjustment mechanism that allows adjustment while the device is in use or operation. Id. at 11-13. In other words, the district court relied on claim differentiation during its claim construction. Finally, the district court explained that any construction of the term "adjustable" that requires the presence of the adjustment mechanism disclosed in the '714 patent would be an impermissible narrowing of that claim term to the structure of the preferred embodiment. While logical, this chain of reasoning errs because it places too much emphasis on the ordinary meaning of "adjustable" without adequate grounding of that term within the context of the specification of the '714 patent. Moreover, to the extent this reasoning relies on claim differentiation, it misapplies that limited tool of claim construction. This court recently reiterated that the specification is the single best guide to the meaning of a claim term. Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc) (citing Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)). In this case, the '714 patent's specification describes the deficiencies of the prior art, including the conventional requirement of removing the entire head unit from the coke drum during de-heading:

[The prior art] assemblies or devices require that the head unit be completely removed from the flange portion of the coke drum after each coking cycle and prior to the purging of the coke from the coke drum. This creates an extreme hazard to workers and provides an inefficient and time consuming procedure.

The '714 patent. col. 2, ll. 49-54. The '714 patent specification further extols this invention for overcoming these deficiencies of the prior art:

Another critical aspect of the present invention is the ability to de-head the coke drum without having to remove the head unit, and to do so at a remote location with little or no manual requirements.

Id. at col. 4, ll. 13-17. The '714 patent then associates the adjustability of the live loaded seat with that critical aspect of the invention. In other words, the patent stresses that adjustment occurs during operation and without removal of the head unit: In a normal coking process, extreme temperatures and pressures are present. Any variation in temperature between the upper and lower surfaces of the blind can cause the blind to bow. If the bowing is allowed to progress or continue, there is a danger in breaking the seal created between [the] upper and lower seats and [the] blind, which could cause damage to the system and upset the manufacturing process. However, the ability of the present invention to adjust the load exerted on [the] blind, utilizing the dynamic, live loaded seat and its adjustment mechanism, provides a way to compensate for or modulate any existing bowing that might occur. By increasing the applied load of the dynamic, live loaded seat on [the]
blind, the bowing is substantially eliminated . . . .

Id. at col. 11, ll. 7-20 (reference numbers omitted). With respect to an alternative embodiment with multiple live loaded seats at different points along the blind, the specification explains:

By allowing point to point adjustability, the system is capable of being fine tuned to decrease the chances of unwanted leaks within the system. For example, if the system were leaking at one location, any one of, or multiple, dynamic seats could be adjusted to compensate and seal the leak.

Id. at col. 15, ll. 33-37.

Thus, the specification of the '714 patent consistently, and without exception, describes adjustment that occurs during operation of the de-header system. The district court's construction of "adjustable," which includes a structure that requires dismantling of the valve to perform the adjustment, finds no support in the overall context of the '714 patent specification. Moreover, the district court's construction of "adjustable" renders that limitation nearly meaningless. This court finds it difficult, if not impossible, to imagine any mechanical device that is not "adjustable," under the ordinary meaning of that term adopted by the district court. Almost any mechanical device undergoes change (for instance, when dismantled to replace worn parts) when no consideration is given to the "time, place, manner, or means of adjustment."

This court commends the district court's reluctance to narrow the claims to the preferred embodiment. In this instance, however, that care is admirable but misplaced. This case does not evince a situation where a party is attempting to import a limitation from the specification into the claims. Claim 14 already contains the "adjustable" limitation. Thus, the claim construction task requires this court to discern the meaning of that term in the context of this invention and field of art. The specification provides that context and substantial guidance on the meaning of "adjustable." In light of the specification, the term "adjustable" means that the dynamic, live loaded seat can be adjusted while the de-heading system of claim 14 is in use.

The district court buttressed its broad construction of "adjustable" with a comparison to other independent claims in the '714 patent, specifically claims 1 and 18. Those claims recite an adjustment mechanism. See Preliminary Injunction Order, slip op. at 11-13. As the district court explained:

Because Claims 1 and 18 specifically describe an embodiment possessing [an] external seat adjustment mechanism and Claim 14 does not, the only meaning to be derived from Claim 14 is that it encompasses all devices that are simply "adjustable," or capable of changing the bias force exerted on the sliding gate by the dynamic, live loaded seat, regardless whether these devices possess an adjustment mechanism or not and regardless of the means or time in which this adjustment is made.

Id. Thus, without using the formal label, the district court relied on claim differentiation to reach its broad meaning. The district court's misapplication of that claim construction tool is understandable given the variability of explanations of claim differentiation.

In the most specific sense, "claim differentiation" refers to the presumption that an independent claim should not be construed as requiring a limitation added by a dependent claim. See Nazomi Commc'ns, Inc. v. Arm Holdings, PLC., 403 F.3d 1364, 1370 (Fed. Cir. 2005) ("Claim differentiation 'normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend.'" (quoting Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999))); see also "Phillips, 415 F.3d at 1314-15 (explaining the presumption without invoking the "claim differentiation" label). Thus, the claim differentiation tool works best in the relationship between independent and dependent claims. See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004) (citing Sunrace Roots Enter. Co. v. SRAM Corp., 336 F.3d 1298, 1302-03 (Fed. Cir. 2003)). Indeed the statute stresses that a dependent claim must add a limitation to those recited in the independent claim. See 35 U.S.C. § 112, P4 (2000) ("[A] claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed.") (emphasis added). Thus, reading an additional limitation from a dependent claim into an independent claim would not only make that additional limitation superfluous, it might render the dependent claim invalid.

Beyond the independent/dependent claim scenario, this court has characterized claim differentiation more generally, i.e., as the "presumption that each claim in a patent has a different scope." Versa Corp. v. Ag-Bag Int'l Ltd., 392 F.3d 1325, 1330
with different words can, of course, define different subject matter within the ambit of the invention. On the other hand, claim drafters can also use different terms to define the exact same subject matter. Indeed this court has acknowledged that two claims with different terminology can define the exact same subject matter. Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987); Hormone Research Found. v. Genentech, Inc., 904 F.2d 1558, 1567 n.15 (Fed. Cir. 1990) ("It is not unusual that separate claims may define the invention using different terminology, especially where (as here) independent claims are involved."). In this context, this court has cautioned that "claim differentiation is a guide, not a rigid rule." Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir. 1991).

With those precedents in mind, this court observes that two considerations generally govern this claim construction tool when applied to two independent claims: (1) claim differentiation takes on relevance in the context of a claim construction that would render additional, or different, language in another independent claim superfluous; and (2) claim differentiation "can not broaden claims beyond their correct scope." Fantasy Sports Props. v. Sportsline.com, 287 F.3d 1108, 1115-16 (Fed. Cir. 2002) (quoting Kraft Foods, Inc. v. International Trading Co., 203 F.3d 1362 at 1362). In this case, both of those considerations weigh against the district court's construction of "adjustable."

First, reading "adjustable" to mean adjustable "on the fly" during de-heading does not render the recitation of an adjustment mechanism in other claims superfluous. Even if "adjustable" were synonymous with the presence of an adjustment mechanism, this court perceives no redundancy because the claims that recite the presence of such a mechanism do not include the "adjustable" limitation. Compare '714 patent, claims 1 and 18 with '714 patent, claim 14. As noted before, a patentee may define the same subject matter with claims having different terminology. Mycogen Plant Sci. v. Monsanto Co., 243 F.3d 1316, 1329 (Fed. Cir. 2001). Moreover, in-use adjustability does not necessarily mean the same thing as the presence of an adjustment mechanism. After all, an adjustment mechanism might be present but not usable during de-heading. To be clear, this court does not venture to construe the scope of the adjustment mechanism limitation in claims 1 and 18, but merely observes that the language of claim 14, as properly construed, does not appear to be commensurate with the language in claims 1 and 18. Thus, while the district court may have been correct that a device encompassed by claim 14 of the '714 patent need not have an adjustment mechanism, it went too far in completely eliminating any constraints on the "adjustable" limitation. Moreover, the district court's construction actually creates a redundancy: if "adjustable" means adjustable at any time and in any way, it is hard to imagine any meaning for the term because without limitations on time or manner of adjustment, all structures are "adjustable."

Second, relying on the claim differentiation presumption in this case contradicts the correct meaning of claim 14. As discussed above, the specification stresses that the invention is "adjustable" during de-heading. Any construction to the contrary is not consistent with the overall context of this invention and this field of art as described in the specification. Before the district court, the dispute over Curtiss-Wright's showing of a likelihood of infringement centered on the recognition that Velan's valves must be dismantled for adjustment. Velan argued that its de-heading system did not infringe because the only way to adjust their live loaded seat required removal of the seat to replace its internal biasing springs. The district court rejected that argument because its construction of "adjustable" placed no meaningful limits on that term. Because the district court erred in its claim construction, its subsequent infringement analysis in the context of Curtiss-Wright's motion for a preliminary injunction was flawed. Accordingly, the district court's grant of the preliminary injunction was an abuse of discretion.

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E. Adjustable Straps

Plaintiff proposes that the claim term "adjustable straps" be construed as "strips of suitable flexible material that are capable of being changed so that it [sic] fits." (Pl.'s Br., at 18.) It is unclear to what "it" refers; the court assumes that Plaintiff intends "it" to mean either each adjustable strap, or the chest protector itself. TAG offers "narrow strip[s] or band[s] of leather or other material capable of being lengthened or shortened." (Def.'s Br., at 22.) Both parties rely on dictionary definitions. Plaintiff cites to a definition of "adjustable" as "capable of being adjusted"; "adjust" is in turn defined as "to change (something) so that it fits." WEBSTER'S ENCYCLOPEDIC UNABRIDGED DICTIONARY 25. For "strap," both parties cite to essentially the same definition: Plaintiff's citation describes "a narrow strip of flexible material, esp. leather, as for fastening or holding things together[,]" id. at 1880; and TAG's source describes "a narrow strip or band of leather or
other flexible material . . . for binding or securing things." WEBSTER'S NEW WORLD DICTIONARY 1407 (2d ed. 1984). TAG additionally points out that in their description of the preferred embodiment, the patentees explained that the adjustable straps "may be made of leather or other suitable material." (‘226 Patent, col. 3, ll. 1-2.)

The parties' citations to dictionary definitions are appropriate. Neither the claim nor the specification either explicitly or implicitly defines "adjustable strap"; and the reference in the preferred embodiment to "leather or other suitable material" does not serve to limit the term, as discussed above, and is consistent with both parties' cited dictionary definitions in any event. Considering the two words separately, Plaintiff's proposed construction of "adjustable" is more in keeping with those definitions: the phrase "capable of being changed so that it fits" is supported directly by the definitions of "adjustable" and "adjust," whereas TAG's proposed phrase "capable of being lengthened or shortened" is somewhat narrower, and does not appear in TAG's cited source. The court thus declines to adopt TAG's version of "adjustable."

TAG's interpretation of "strap" is more in keeping with the specification and the dictionary definitions. Plaintiff's proposal--"strips of suitable flexible material"--omits the references to "leather" and "narrow" found in both dictionary definitions quoted above. The court notes, however, that the omission of "leather" is less significant, for even TAG's proposed construction--"leather or other material"--if read literally, means "any material"; and the same is true of the phrase "leather or other suitable material" that appears in the preferred embodiment. The word "narrow" is a more significant limitation, but one that is consistent with the intrinsic evidence, for the straps shown in the patentees' drawings are indeed narrow. (‘226 Patent, figs. 1 & 2.) Given that both parties' cited dictionary definitions use the term "narrow" in defining "strap," and given that this limitation is not inconsistent with the intrinsic evidence, the court does not find the use of the term to be inappropriate. 17

17 The dispute over the meaning of "adjustable straps" is likely much ado about nothing. As TAG points out, both Serewicz and Gallucci testified in their depositions that adjustable straps were used on existing chest protectors, (Serewicz Dep., at 44-45; Gallucci Dep., at 78); and it does not appear that Plaintiff intends to argue that the straps in the ‘226 chest protector were somehow novel, or that the patentees invented any particular kind of adjustable strap.

The court thus construes "adjustable straps" as "narrow strips of leather or other suitable flexible material that are capable of being changed so that the chest protector fits."

C. Claim Construction

Above I have concluded that the undisclosed information was material and that there is at least a genuine issue of fact as to whether Hoffman possessed the requisite intent. These conclusions were founded largely on the fact that the PTO examiner, during the continuation application, rejected the very similar continuation claims on the basis of the 1980 article. Part of Latentier's defense, however, is based on a claim construction argument that is largely unrelated to the issues discussed above.

The central claim construction dispute puts the parties in positions that are initially counterintuitive. IP, the accused infringer, asserts that the patent is very broad, whereas Latentier, the patentee, argues for its narrowness. Essentially, Latentier argues that IP has created a straw man by pressing an "impossibly broad reading" of the '916 patent. Specifically, Latentier argues that IP's reading of the patent fails to account for the special meaning of the term "adjusting." (Dkt. # 40 at 12.) Claim 1 of the patent reads as follows:

1. A method of controlling the operating speed of a papermaking facility comprising the steps of:

Determining a desired operating speed, the desired operating speed dependent on at least one economic variable that varies depending on the operating speed; and adjusting the operating speed in response to the determination.
In IP's view, "adjusting" incorporates any kind of manipulation of the operating speed to achieve the desired speed. For instance, it could involve the manual manipulation of the speed by an employee or by the machine not using (for example) a vacuum pump -- i.e., the kinds of methods that were used at Green Bay Packaging for years, according to the employees IP talked to. (Borowski Aff., P 6.) Any kind of speed "adjustment" is fair game. As such, the use of the slowing-down methods at Green Bay Packaging, as described in the 1980 article, constitutes a prior use that Hoffman should have disclosed to the PTO.

By contrast, Latentier argues that "adjusting" has a more narrow meaning, namely: "adjusting directly by control of the machine drive." Latentier notes that this was the construction it proposed in the claim chart it exchanged with IP during this litigation, and IP did not object to it. More substantively, Latentier argues that the entire purpose of the patent is to create an automated system or program that controls the speed of the machines through the machine drive rather than through the kind of manual and ad hoc alterations employed at Green Bay Packaging. In the first paragraph of the summary of the invention, for example, the specification explains: "According to a first aspect of the invention a method of controlling, and apparatus, which can include a computer program, that controls, the operating speed of a papermaking facility includes determining a desired operating speed . . . [which] is adjusted (if necessary) in response to the determination." ('916 patent, col. 4, ll. 18-26.) This makes it clear that "adjusting" is not simply tweaking by hand or using some other method; the adjusting must be accomplished by an apparatus or computer program that controls the operating speed. This theme is echoed throughout the patent. For example: "The present invention is, in one embodiment, a method and apparatus for an integrated control system in a manufacturing facility . . . that implements an optimal operating speed . . ." (Id., col. 5-6, ll. 66-2.) Finally, Latentier notes, the patent examiner, in allowing the patent, observed that prior art (Keys) discloses that "the process of making paper is controlled on economic factors." But, he found, "the prior art does not teach or suggest in regard to claims 1, 21 & 33, a system which senses a variable of a paper making process . . . determining the desire[d] operating speed based on the sensed variable and adjusting the actual operating speed of the paper making process in response to the sensed variable." (Dkt. # 40 at 14.) Thus, Latentier argues, the examiner agreed with its view that "adjusting" meant "adjusting directly by control of the machine drive."

IP argues that the patent explicitly notes that the operating speed is not limited to being directly controlled by the machine drive: "While operating speed of a paper machine may be adjusted directly by control of the paper machine drive, it is often adjusted by changes to the steam pressure for the paper machine dryers." ('916 patent, col. 2, ll. 4-8.) But this statement is found within the "background" section of the specification. It is not an effort to explain the '916 invention but is instead a reference to the history and then-current methods of adjusting operating speed. As such, it does not support IP's construction of the claim term.

IP further bases its broad construction on the deposition it conducted of Roger Hoffman. When asked if Latentier contends that IP infringed the patent "when it slows output to meet customer demand," Hoffman responded as follows: "Well, again, I don't know that we have defined your definition of demand, but, I think in the classic definition of demand absolutely, because demand is the most fundamental economic variable." (DPFOF P 71.) Thus, Hoffman himself has ostensibly claimed that a company would infringe his patent if all it did was to slow output to meet customer demand. Although IP concedes that such a broad patent would be "remarkable," that is what Hoffman himself claims. (Dkt. # 32 at 1.) And because he used the process taught in the patent long before he applied for the patent (in 1998), this prior use invalidates the patent and renders his failure to disclose the prior use inequitable conduct.

A few snippets from deposition testimony do not bear on the question of what "adjusting" means, however. Hoffman's current beliefs and statements in depositions do not shed light on what he should or should not have disclosed to the PTO a decade earlier, and his own view of the patent's scope is simply not material. 4 Otherwise, the public at-large would not be able to rely on the plain terms of patents but would instead be forced to depose inventors to learn their secret and subjective views of the scope of their inventions. Accordingly, I do not find Hoffman's deposition testimony probative of the meaning of the term "adjusting." (Even so, however, it is noteworthy that the inventor does not appear able to articulate a more narrow embodiment of his invention that would correspond to the narrowing construction his company's lawyers now propose.)

Footnotes

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Presumably Hoffman's statements could be suggestive of intent to deceive, but I do not rely on them in construing the actual claim terms.

Most problematic for Latentier, however, is the glaring fact that the examiner actually rejected the continuation claims on the basis of the 1980 article, as discussed at length above. If the patent examiner actually believed that "adjusting" in the '916 patent had the specific narrow meaning Latentier now attributes to it, then why would the examiner have found the 1980 article -- which describes a much broader notion of "adjusting" -- to be a prior publication of the same invention? That article says nothing (as Latentier itself argues) about "adjusting directly by control of the machine drive" -- it is instead a broad description of a general method of increasing efficiency. If the patent examiner believed that the 1980 article was a prior publication of an invention very similar to the '916 patent, then it is likely an examiner would believe the '916 used the broader, common definition of "adjusting" rather than the more narrow one Latentier now proposes. In fact, the continuation patent was only allowed after Hoffman added the "adjusting directly by control of the machine drive" language to its claims. (Dkt. # 32 at 10.) If it was clear from the specification that "adjusting" already had that meaning, why was it necessary to add that language in the continuation patent? This strongly suggests that "adjusting," as used in the '916 patent, does not carry the narrowing limitations Latentier now proposes.

In addition, I am mindful of the impropriety of importing limitations from the specification into the claims, and of relying on embodiments to redefine or limit claim terms. Phillips v. AWH Corp., 415 F.3d 1303, 1323 (Fed. Cir. 2005) ("[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.")

Thus, for present purposes I reject Latentier's argument that the non-disclosed information was immaterial because the information did not relate to an invention that adjusted speed "directly by control of the machine drive." Even so, I am mindful of the fact that we have not undertaken explicit claim construction proceedings in this case. Although the parties have placed the inequitable conduct counterclaim on the front burner, Latentier has based part of its inequitable conduct defense on claim construction, which means it would appear that the term "adjusting" must be construed definitively before I could rule on materiality. Thus, it seems necessary to incorporate some kind of claim construction proceeding into the bench trial on inequitable conduct. My preliminary claim construction, as discussed above, is that "adjusting" simply means "adjusting." I will allow Latentier to argue otherwise in the context of a bench trial on inequitable conduct, but because the issue is a discrete one that has already been briefed, I do not expect it to consume a large amount of additional resources.

In this disputed term, the phrase "adjusting the pressure" is part of four phrases appearing in two different patents, as noted above. The parties dispute whether these four phrases are sufficiently related to be construed as one term, or whether they should be construed separately. They also dispute whether "adjusting" should be construed as having its ordinary meaning, or whether the "adjusting" can be done only at a particular step, as part of an ordered sequence of steps.
Plaintiffs argue that the four phrases actually comprise four terms in four distinct claims. Plaintiffs assert that the court should decline to construe these terms, asserting that they are not sufficiently closely related for joint construction as a single term, that they contain many potential claims for construction, and that Fresenius appears to be attempting to get around the court's ten-term limit.

In addition, however, plaintiffs contend that these terms do not require construction because they are plain and unambiguous. Thus, plaintiffs propose that the two terms from the '062 patent be construed as "adjusting the pressure in the control volume in accordance with the measured pressure" and "adjusting the pressure in accordance with the measured pressure;" and that the two terms from the '369 patent be construed as "adjust[ing] the fluid pump pressure in accordance with the relative elevation to obtain a desired pressure at the distal end."

Fresenius, on the other hand, proposes that the two terms from the '062 patent be construed as "adjusting the pressure in the control volume based on (1) the system correction factors obtained during calibration and (2) the measured pressure in the control volume after the liquid is placed in fluid communication with the distal end of the fluid line;" and that the two terms from the '369 patent be construed as "adjusting the pressure in the control volume based on the estimate provided by the controller of the height differential between the pump and the distal end of the fluid line [to obtain a desired pressure at the distal end]."

Both sides proffer proposed constructions that include the words "adjusting the pressure" to explain the meaning of "adjusting the pressure;" and "adjusting the pressure in the control volume" to explain the meaning of "adjusting the pressure in the control volume." Thus, it cannot be that they seek a judicial construction of "adjusting the pressure" or "adjusting the pressure in the control volume."

While plaintiffs argue that the words in the claims themselves are sufficient ("in accordance with the measured pressure" in the '062 patent, and "in accordance with the relative elevation to obtain a desired pressure at the distal end" in the '369 patent), it appears that Fresenius seeks construction of the words that follow "adjusting the pressure" in claims 1 and 16 of the '062 patent; the words that follow "adjust[ing] the fluid pump pressure" in claims 1 and 7 of the '369 patent; 3 and the words that follow "adjusting the pressure in the control volume" in claims 10 and 21 of the '062 patent.

--- Footnotes ---

3 Fresenius proposes construing "adjust[ing] the fluid pump pressure" as "adjusting the pressure in the control volume."

--- End Footnotes ---

In other words, Fresenius proposes a construction of the phrases "in accordance with the measured pressure" ('062 patent) and "in accordance with the relative elevation" ('369 patent). Specifically, Fresenius asserts that "in accordance with the measured pressure" means "based on (1) the system correction factors obtained during calibration and (2) the measured pressure in the control volume after the liquid is placed in fluid communication with the distal end of the fluid line," and that "in accordance with the relative elevation" means "based on the estimate provided by the controller of the height differential between the pump and the distal end of the fluid line."

The court finds that the claims and specifications of the two patents do not suggest a construction other than the plain and ordinary meaning of the words "in accordance with the measured pressure" and "in accordance with the relative elevation." The specification does not support Fresenius' additions to the claim terms, but rather mirrors the claim language itself. Thus, there is no need for the court to construe these terms.

Both the '062 patent and the '369 patent relate to fluid flow control devices, and, more specifically, to regulating pump pressure." '062 patent, 1:6-7; '369 patent, 1:10-11. In claims 1, 10, 16, and 21 of the '062 patent, a "method for regulating pressure in a fluid line or at the distal end of a fluid line comprises "a fluid flow control system" with "means for measuring pressure." Each of these claims also includes the step of "measuring pressure," and the step of "adjusting the pressure in accordance with the measured pressure."

In claims 1 and 7 of the '369 patent, a "system for regulating fluid pump pressures" comprises "a fluid flow control device"
that includes "pressure means for pressurizing . . . at least one liquid volume;" "a transducer . . . for measuring pressure;" and "a controller" used "for controlling the fluid pump pressure," for estimating "a relative elevation between the fluid control device and the distal end" based on information received from the transducer; and for "adjusting the fluid pump pressure in accordance with the relative elevation to obtain a desired pressure at the distal end."

In both the '062 patent and the '369 patent, the "Summary of the Invention" states that the inventions provide a method for "regulating fluid pump pressures based on the relative elevation between a fluid flow control device and a distal end of a fluid line by providing at least one liquid volume in valved communication with the distal end." '062 patent, 1:56-60; '369 patent, 1:60-64. After "[t]he pressure measurement of the liquid volume is calibrated, . . . valving is opened to establish communication between the liquid volume and the distal end of the fluid line." '062 patent, 1:60-63; '369 patent, 1:64-67. "A pressure associated with the one liquid volume is measured, and the fluid pump pressure is adjusted in accordance with the measured pressure." '062 patent, 1:63-65; see also id, 2:5-7 (same); '369 patent, 1:67-2:2 (same); id., 2:9-11 (same).

The "Detailed Description of Specific Embodiments" describes "[a] computer program product" which "may be employed for implementing the methods" of the invention. This computer program product may include "program code for calculating a desired fluid pump pressure" as well as "program code for adjusting the pump pressure in accordance with the desired pump pressure." '062 patent, 6:5-20; '369 patent, 6:9-24 (same); see also '062 patent, 6:21-28 ("The computer program product may be run on a data processing unit, which acts as a controller. Such a unit may be capable of adjusting the flow rate of fluid being pumped to the distal end 208 by adjusting the pump pressure. For example, if the calculation determined that the distal end 208 of the fluid line 204 and the fluid control system were at the same height, the pump pressure might be safely increased above 75 mm Hg resulting in faster flow rate."); '369 patent, 6:25-32 (same).

Both patents also explain that "the pressure in the pumps 300 and 310 may be adjusted in process 517 to accommodate the height differential." '062 patent, 6:2-4; '062 patent, 6:6-8; see also '062 patent, 6:55-7:3; id., 7:9-26; id., 8:52-67, it does not follow that "adjusting the pressure" should be construed as requiring adjustments based on (1) system correction factors obtained through calibration, and (2) measured pressure in the control volume after establishing fluid communication with the fluid line's distal end. The pressure is simply adjusted "in accordance with the measured pressure."

Fresenius' proposed construction of the terms from the '369 patent also reflects an improper attempt to import limitations from the '369 specification into the claims - specifically, the inclusion of "control volume" in their proposed construction. While "control volumes" are claimed in the '062 patent, they do not appear in any claim limitation in the '369 patent.

In addition, Fresenius has chosen to substitute "relative elevation" in the claim with "estimate provided by the controller of the height differential between the pump and the distal end of the fluid line." The words used in the patent are sufficiently concise without the additional words that Fresenius has improperly attempted to import from the specification. See, e.g., '369 patent, 6:4-8 ("Subsequently, the pressure at the distal end 208 of the fluid line 204, P (distal end), due to the elevation differential may be calculated in process 516. Finally, the pressure in the pumps 300 and 310 may be adjusted in process 517 to accommodate the height differential.").

"Adjusting the pressure in the control volume in accordance with the measured pressure" means "adjusting the pressure in the control volume in accordance with the measured pressure."

"Adjusting the pressure in accordance with the measured pressure" means "adjusting the pressure in accordance with the measured pressure."

"Adjust[ing] the fluid pump pressure in accordance with the relative elevation to obtain a desired pressure at the distal end" means "adjust[ing] the fluid pump pressure in accordance with the relative elevation to obtain a desired pressure at the distal end."
c. "an adjustment system arranged to adjust said at least one component"

Plaintiff proposes the construction "a system for adjusting the operation of at least one component." Defendant, however, contends that this phrase requires a means-plus-function limitation. This phrase is similar to that discussed above. "System" is of the same sort of generic term as "means," "mechanism," and "device." See Mass. Inst. of Tech., 462 F.3d at 1354. Likewise, while there is a presumption that means-plus-function limitations do not apply to claims that do not include the word "means," this presumption is rebutted if the claim does not "recite[] sufficiently definite structure." TIP Sys., 529 F.3d at 1374 (citing CCS Fitness, 288 F.3d at 1369). The modifier "adjustment" does not provide the requisite structure. See id. The court construes this claim as a means-plus-function limitation. The parties then disagree as to whether the claim should include an explanation of what "adjusting" means in the context of an airbag. Plaintiff offers no construction, whereas Defendant proposes "adjusting the manner in which an occupant restraint device is deployed." Because Defendant's proposed construction makes the phrase easier to read without altering the meaning of the claim, the court will construe the function as proposed by Defendant. However, the court will use for the language describing the adjustment in the context of an airbag to parallel the language the court has construed above.

The parties also disagree regarding the construction of the structure. Primarily the dispute involves whether the structure includes a processor. Plaintiff argues that the structure includes a processor. Defendant, however, argues that the claim later specifically includes a processor, and therefore should not do so in this phrase. Defendant also argues that the specification does not disclose a structure that includes a control circuit, the corresponding wiring, transmitter, and algorithm, or a seated-state detecting unit. In response, Plaintiff argues that these may but need not be part of the structure, but that the claim covers all possible corresponding structures. (Pl.'s Reply at 11.) The parties do not materially dispute any of the other components of the structure.

The court will substantially construe the structure of the claim according to Plaintiff's proposed construction, see Bell Comm'ns Research, Inc., 55 F.3d at 620 (quoting Envirotech Corp., 730 F.2d at 759); however, the court will not include a processor because, as Defendant correctly identifies, this is the next component listed in the claim as comprising the vehicle of Claim 1. Plaintiff does not provide any indication that it intends to include multiple processors in the claim, and therefore the court will not construe this phrase to include one. As for the control circuit, the corresponding wiring, transmitter, and algorithm, or seated-state detecting unit, the specification, as cited by Defendant states:

'T029 Patent col. 209 l.14-25. The court will not include a control circuit, the corresponding wiring, transmitter, and algorithm, or seated-state detecting unit. While these structures are described in the specification, Plaintiff states in its brief that they need not be associated with the function of adjustment. (Pl.'s Reply at 11.) Accordingly, the court will not include these structures in its construction because they are not necessary structures to the function.

Therefore, the court will construe the "an adjustment system arranged to adjust said at least one component" as follows:

Function:

adjusting the manner in which the one or more components operate. In the context of an airbag, 'adjustable' refers to the ability to control inflation or deflation of the airbag, and thereby adjust the manner in which the airbag is deployed. For example, this can include adjusting the direction of the airbag, the flow of gas into or out of the airbag, the rate of generation of gas, or the amount of generated gas.
According to the document, the following structures are mentioned:

- an orifice between an inner bladder and an outer container;
- seat positioning actuators or motors;
- seat and/or headrest motors;
- adjustable airbag inflators, control valves, exit valves, and/or exit orifices;
- seatbelt pretentioner or force limiter;
- inflation combustion chamber and a pressure control system associated with an airbag.

The chief evil of Fitness Quest's proposed construction is that it looks to the preferred embodiment -- and apparently only the preferred embodiment -- of the invention as represented in Figure 8 to construe this term. Fitness Quest is correct in contending that Figure 8 reflects a telescoping structure, with a male and a female member, that additionally is adjustable as to angle with reference to the user support. That said, there is nothing in Claim 28 tending to support Fitness Quest's contention that the concept of "adjustably coupled" begins and ends with this embodiment. The Federal Circuit has "expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." Phillips v. AWH Corp., 415 F.3d 1303, 1323 (Fed. Cir. 2005).

Figure 8 of the 749 Patent reflects a drawing of a device on which a person is resting in a supine position on the depicted apparatus. Fitness Quest seeks to limit the adjustability reflected in the language of Claim 28 to the specific adjustability features of this drawing. Such an effort plainly is not permissible. A court construing claim terms may not limit its reading of those terms on the strength of a figure depicting a single preferred embodiment. Acumed LLC v. Stryker Corp., 483 F.3d 800, 807 (Fed. Cir. 2007); see also TI Group Auto. Sys. (N. Am.), Inc., v. VDO N. Am., L.L.C., 375 F.3d 1126, 1136 (Fed. Cir. 2004). Rather, "a patentee is entitled to a definition that encompasses all consistent meanings" of the term. TI Group, 375 F.3d at 1136.

As Monti noted at the Markman hearing, there is no requirement that the adjustability referenced in Claim 28 be accomplished by means of a telescoping construction, or that it provide for an angular adjustment. "All consistent meanings" of the term "adjustably coupled" include embodiments beyond that reflected in Figure 8 and the claim language must not be so limited without the patentee's express consent to the limitation, which Monti plainly has not given here. See Playtex Prods., Inc., v. Procter & Gamble Co., 400 F.3d 901, 908 (Fed. Cir. 2005) (citation omitted). The referenced term does not require construction.

I. Advanced Axially

Claims 1(e) and 2(e) disclose a compression ring that is "advanced axially" over the cylindrical body member. Using definitions from Webster's Third New International Dictionary for "advance" and "axial," defendant proposes a construction
of the term "advanced axially" to mean "moved forward on or along an axis." Plaintiff does not deny that defendant's definition is an accurate reflection of the ordinary meaning of the phrase. However, plaintiff argues that the "'194 specification repeatedly teaches that the compression ring slides over the connector body." Plt.'s Cl. Constr. Reply Br., dkt. # 113, at 16. Thus, plaintiff proposes a definition of "advancement along an axis by sliding."

Plaintiff's proposed construction fails because, again, it attempts to read in limitations from the specification that are not present in the claims. Plaintiff's own definition recognizes that sliding is one way "advancement along an axis can occur." Although the specification does discuss sliding, the patent does not limit the type of movement to sliding. Accordingly, I construe "advanced axially" to mean "moved forward on or along an axis."

II.


"To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently." In re Schreiber, 128 F.3d at 1477. Anticipation of a patent claim requires a finding that the claim at issue "reads on" a prior art reference. See Titanium Metals Corp. v. Banner, 778 F.2d 775, 781, 227 U.S.P.Q. (BNA) 773, 778 (Fed. Cir. 1985). In other words, if granting patent protection on the disputed claim would allow the patentee to exclude the public from practicing the prior art, then that claim is anticipated, regardless of whether it also covers subject matter not in the prior art. See id. at 781. Specifically, when a patent claims a chemical composition in terms of ranges of elements, any single prior art reference that falls within each of the ranges anticipates the claim. See id. at 780-82 ("It is also an elementary principle of patent law that when, as by a recitation of ranges or otherwise, a claim covers several compositions, the claim is 'anticipated' if one of them is in the prior art.")).

In chemical compounds, a single prior art species within the patent's claimed genus reads on the generic claim and anticipates. See In re Gosteli, 872 F.2d 1008, 1010, 10 U.S.P.Q.2d (BNA) 1614, 1616 (Fed. Cir. 1989).

As noted previously, both Egly and Butterworth disclose blasting compositions with ingredients identical to those of the Clay patent and its reissue in overlapping amounts. The only element which is arguably missing from the prior art is the requirement that "sufficient aeration [be] entrapped to enhance sensitivity to a substantial degree." To decide the issue of anticipation, therefore, the district court examined whether "sufficient aeration . . . to enhance sensitivity" was inherently part of the prior art compositions. That decision, in turn, required the trial court to interpret the claim term "sufficient aeration." By looking at the express language of the claims and the patent's written description, the district court concluded that the claim term "sufficient aeration" included both interstitial air (between oxidizer particles) and porous air (within the pores of oxidizer particles).

The first task of this court on appeal is to construe independently the disputed claim term. This question requires this court to determine whether the claim term "sufficient aeration" includes porous air, as the trial court determined. The claim term "sufficient aeration" does not limit the air content of the composition to interstitial air. Rather, the broad term "aeration" contains no qualitative limits on the kind of air exposure, only the quantitative limit that the air exposure be "sufficient" to enhance sensitivity. If the inventor intended "sufficient aeration" to carry qualitative limits, he also did not express that intention in the patent's written description. The specification gives no explicit definition of the phrase "sufficient aeration . . . to enhance sensitivity," which appears in the patent for the first time in the claims.

It is, of course, possible that the inventor did not include qualitative limits on the term "sufficient aeration" in the specification because those of ordinary skill in the art understand that only interstitial air enhances sensitivity and satisfies the claim's language. See Autogiro Co. of Am. v. U.S., 181 Ct. Cl. 55, 384 F.2d 391, 397, 155 U.S.P.Q. (BNA) 697 (Ct. Cl. 1967) ("Claims cannot be clear and unambiguous on their face."); Markman, 52 F.3d at 986 ("The focus in construing
disputed terms in claim language is . . . on the objective test of what one of ordinary skill in the art at the time of the invention would have understood the term to mean."). The trial record, however, shows that those of ordinary skill in this art at the time the patent application was filed knew that both interstitial and porous air enhance sensitivity. Dr. Clay himself, the inventor of the patents in suit, testified that air from any source would contribute to the explosion of a heavy ANFO composition and, particularly, air trapped within the pores of porous prilled AN. Therefore, this court detects no error in the district court's conclusion that "sufficient aeration . . . to enhance sensitivity" is understood by those of ordinary skill in the art to include both interstitial and porous air. The district court appropriately construed the claims at issue to include aeration from both sources.

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B. "AFFECTED AREA"

The competing constructions of the phrase "affected area" are overdrawn.

Plaintiffs urges the construction of "affected area" as that part of the skin which comes into contact with urushiol at the point in time that the skin displays an outward manifestation of the contact, arguing that the inventor's goal was the treatment of a manifestation of contact dermatitis. Implicit in this construction is the fact that the solution would not be applied to the skin until a rash develops.

Plaintiffs' attempt to impose a limit on the time of application of the solution to the skin is not tenable. 4 As defendants note, the inventor's statement in the written description supports a finding that there is no temporal element to the phrase, stating:

Solution has historically consisted of attempting to remove the oil as quickly after exposure as possible; applying rubbing alcohol, washing affected areas with water, and showering with soap and water. In many instances, however, people either fail to fully remove the toxin before it has bound to the skin or don't realize they have been exposed until after the rash appears.

(col 2 ll 40-46) (emphasis added). Moreover, there is nothing in the written description that suggests application of the composition begins with a manifestation of the effect of the urushiol on the skin. Rather, application of the solution may begin as soon as there is an awareness of the skin contacting the urushiol. Indeed, as noted above, an object of the invention is to provide a solution to "block" urushiol's "allergic reaction." Defendants are correct in stating that "no dermatitis-like breakout is required in the patent claim or patent specification and the term 'affected area' should not be construed to require such physical manifestation in order to define the area."

4 Indeed, if this was the case, no one would carry the solution with them when they went for a walk in the woods for example to apply at the time of contact, and would instead wait to apply the solution when a rash develops.

"Affected area" is not a term of art and its ordinary meaning is well understood. The American Heritage Dictionary of the English Language defines "affected" as "acted upon" and "area" as "a distinct part."

"Affected area" simply means the area of the skin which comes into contact with urushiol.

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The Court construed the disputed claim terms as follows:

"affixed" means secured
"adjusting" means its functions are: to
frictionally receive the belt; to
hold the belt to tighten the harness;
and to release the belt to tighten
it; its corresponding structures are:
cam member and bar, or a bottom wall,
cam bar and bar, that are described
in the '889 patent at col. 1, 55-57,
col. 1,ll. 63-68 to col. 2, 1-8,
and at ll. col. 3, 65-68 to col. 4,
1-ll. ll. 58, and Figures 3-5, or
their equivalents
"cam member" means
an eccentrically revolving part
with a radial bearing surface; and
"bar" means
a part that is longer than it is
wide.

A. Asserted Claims

The '585 and '169 patents each describe disposable multifunctional physiological electrodes for cardiac care. These electrodes utilize an electrically conductive plate, preferably constructed of tin. In addition, the electrodes use an electrically conductive medium, such as a saline gel, located between the plate and the patient's skin in order to improve the transfer of electrical energy between the plate and the patient. At issue in this motion is the limitation in each of the asserted claims that a portion of stannous (tin) chloride be "affixed" to the conductive plate. According to the patents and R2's expert, the use of a tin plate and stannous chloride are important to the electrode's multifunctional capabilities, particularly by allowing its "quick recovery" from the electrical bursts of defibrillation to resume accurate monitoring of the patient. In addition, the specifications explain that tin and stannous chloride are able to conduct high energy currents produced by defibrillation without deterioration.

The specifications of each patent provide two alternative locations for the stannous chloride between the tin plate of the electrode and the patient: (1) in the saline gel, or (2) by "forming a layer of chloride directly on the metal." R2 alleges that the accused electrodes infringe claims 1, 2 and 4 of the '585 patent. These claims each describe a "disposable physiological electrode element for use in monitoring or stimulating the heart." The critical limitation of all three claims requires:

a quantity of stannous chloride affixed to at least a portion of said tin between said tin and the skin of a patient.

R2 also alleges that the accused electrodes infringe claims 1 and 2 of patent '169. The critical limitation for each of these claims similarly requires:

a chloride of said electrically conductive metal being affixed to said outer surface of said metal to provide enhanced monitoring capability through the same electrode used for stimulation.

In sum, R2 asserts that the defendants' electrodes infringe the '585 and '169 patents because (1) the electrodes use stannous chloride, and that (2) this stannous chloride is "affixed" to the surface of the tin conductive plate of the electrodes.

R2 does not argue that stannous chloride is sprayed onto the surface of the accused electrodes. Like R2's electrodes, the accused electrodes use a conductive tin surface. During the manufacturing process, Katecho places the tin contact with either a conductive adhesive or a wet gel, both of which contain potassium chloride and/or sodium chloride. Relying on the deductions of their expert witness, R2 argues that these chloride compounds then react with the tin from the surface, breaking apart to form stannous chloride directly "affixed" to the electrode's tin surface.

Defendants move for summary judgment, arguing that, (1) there is no genuine issue showing that stannous chloride is present on the Katecho electrodes, and (2) even if there were an issue, any stannous chloride could not be "affixed" to the
electrodes' conductive plate as required by the patents' claims. Defendants contend that R2 provides no evidence directly revealing the presence of stannous chloride on the tin plate of their electrodes, but only present a speculative theory that it may form from the combination of sodium chloride and tin. Assuming arguendo that stannous chloride is present, defendants argue that it could not have been "affixed" as required by the asserted claims. Defendants propose that the specifications, prosecution history and prior art of the electrode patents all indicate that to have stannous chloride "affixed" to the conductive plate can only mean that it is separately applied and not formed by chemical reaction.

B. Analysis

There are two steps to infringement analysis. First, the court must determine the meaning and scope of the patent claims asserted. Second, the court must compare the construed claims to the accused device. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995), aff'd, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). The first step, claim construction, is a question of law. Markman v. Westview Instruments, Inc., 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). The second step, determining whether the accused device infringes, is a question of fact. Texas Instruments Inc. v. U.S. Int'l Trade Comm'n, 988 F.2d 1165, 1172 (Fed. Cir. 1993).

1. Claim Construction

In the recent Markman decision, the Federal Circuit clarified the proper methodology for construing a patent claim. To interpret a claim, a court must consider the terms of the claims themselves, the specifications, and the prosecution history. Markman, 52 F.3d at 979. Claim construction begins with the language of the claim itself. North American Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1575 (Fed. Cir. 1993). These terms are read in light of the specification, which may act as a sort of dictionary providing clues to how specific terms are used. Markman, 52 F.3d at 979-80; see Autogiro Co. of Am. v. U.S., 181 Ct. Cl. 55, 384 F.2d 391, 397 (Ct. Cl. 1967) ("words must be used in the same way in both the claims and the specification"). The prosecution history similarly may present the patentee's understanding of specific claims as well as limit the meaning of the claims' terms to exclude any interpretation that was disavowed by the inventor in his or her effort to obtain the patent. Markman, 52 F.3d at 980. In addition, the court may consider extrinsic evidence to better understand the patent and the embodied art, but not for the purpose of varying or contradicting the terms of the claims. Id. at 980-81.

Defendants' first argument in their motion turns on the legal construction of the claim language requiring "a quantity of stannous chloride affixed to at least a portion of said tin." Defendants propose that the term "affixed" excludes stannous chloride that forms as a result of a chemical reaction between the electrode's surface and an applied substance. Specifically, defendants define "affixed" as requiring that the stannous chloride be directly deposited or sprayed onto the surface of the conductive plate. In support, they point to the distinction in each patent's specification between locating the stannous chloride in the gel and locating it directly on the electrode's conductive plate. 4 Defendants contend that this distinction indicates that the second alternative is limited to the separately placing stannous chloride onto the surface.

--- Footnotes ---

4 Although distinct in some aspects, the specifications of the '585 and '169 present essentially identical descriptions of the electrodes with respect to the stannous chloride.

--- End Footnotes ---

Defendants also argue that the prosecution history requires that "affixed" exclude stannous chloride that is somehow derived from the gel. In response to the patent examiner's ("Examiner") rejection of his application, Heath amended the asserted claims to replace the original limitation, that the stannous chloride be "coated on" the conductive surface, with the limitation that it be "affixed to" that surface. The Examiner had rejected the application in light of the prior art reference of a physiological electrode patented by Kado, et. al ("Kado patent"). The Kado patent disclosed an electrode using a tin wire submerged in a solution of stannous chloride contained in a ceramic container. In his remarks to his amendment, Heath distinguished the Kado electrode by noting that its stannous chloride merely "contacted" the tin surface of the electrode, but was not "affixed" to it. The remarks further explained that:

the affixation of the stannous chloride to the tin, as described and shown in this application, is of more significance than originally anticipated. It was thought that the stannous chloride could be located in the saline gel, but subsequent work has
shown that the stannous chloride rapidly migrates to the skin of the patient, where it causes skin irritation.

Defendants contend that Heath's efforts to distinguish his electrodes by emphasizing that the stannous chloride is not located in the gel indicate that "affixed" cannot refer to stannous chloride that is derived from the gel through a chemical reaction.

Words in patent claims are given their ordinary and accustomed meanings unless the specifications or prosecution history indicate otherwise. In re Paulsen, 30 F.3d 1475, 1480 (Fed. Cir. 1994). In general usage, "affixed" means "to be attached physically." See Webster's New Third International Dictionary (1963). As used in the limitation, "affixed" describes the location and state of the stannous chloride in relation to the remainder of the electrode. The terms of the claims do not indicate that "affixed" refers to a process by which the stannous chloride is bound to the conductive plate, but only that it refers to the result of that process. See CVI/Beta Ventures, Inc. v. Custom Optical Frames, Inc., 893 F. Supp. 508, 519 (D.Md. 1995) (limitation that element be in "work-hardened pseudoelastic metallurgical state" speaks to the structure, not the process, of manufacture). The asserted claims are all product claims, specifically apparatus claims, and not method or process claims. None of the other limitations in any of these claims appear to refer to a process of manufacture. The parties present no evidence revealing a contrary technical definition of "affixed." Therefore, the claims' use of the term "affixed" indicates a structural relationship between the stannous chloride and the electrode's tin plate.

The specifications further confirm that "affixed" is not limited to stannous chloride separately applied to the conductive plate. As defendants argue, the specifications distinguish between two possible locations for the stannous chloride: on the surface of the conductive plate or in the saline gel. However, this distinction does not refer to the manner in which the stannous chloride is located. Neither specification states that the only alternative to locating the stannous chloride in the gel is to spray it onto the surface. Instead, they repeatedly describe the alternative location of the stannous chloride in broad terms such as "forming a layer of the chloride directly on the metal" or refer to stannous chloride as "associated" with the conductive plate. Although they both disclose that the stannous chloride may be "sprayed" onto the surface, this method is clearly suggested as an example:

The stannous chloride may be directly applied to the tin surface, such as by spraying a thin layer thereon. (emphasis added).

A chloride of the conductive metal is located between the conductive metal and the skin of the patient, such as by spraying a layer [] thereof on the metal conductive plate. (emphasis added).

It has been noted that the stannous chloride may be associated with the tin plate 71 by spraying a layer 72 of the stannous chloride on the plate.

Of these three references, two are located in the section revealing the preferred embodiment and the third is contained in an earlier paragraph referring to this preferred embodiment. An applicant is not required to describe every conceivable embodiment of his or her invention, but only the best contemplated mode. See SRI Int'l v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1121 (Fed. Cir. 1985). Describing this best mode will often require the applicant to include a description of a preferred process for manufacturing the claimed apparatus. But this does not transform a structural limitation into a process limitation. See Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1571 (Fed. Cir. 1988) ("examples in the specifications will not generally be read into the claims").

The specifications of each patent describe apparatuses--multifunctional electrodes. Outside of their description of the preferred embodiment, there is no reference to the method of manufacture. The patents allude only to the structure of the electrodes as important to their utility: the use of stannous chloride in conjunction with tin within electrodes designed for
both monitoring and defibrillation. They do not imply that the method of production or applying the stannous chloride will have any important impact on the electrode's utility.

The prosecution history is no more helpful to the defendants' proposed construction. In his remarks, Heath explained that the "affixation" of the stannous chloride distinguished the Kado reference because the Kado electrode's tin surface was merely "in contact" with the stannous chloride. These remarks argued that the significance of the bonded state of the stannous chloride, in contrast to placing in the conductive medium between the electrode and the patient, is that unbonded stannous chloride may reach and irritate the patient's skin. This argument does not look to the manner of applying the stannous chloride, but only to its structural relationship with the conductive plate and the importance of that relationship to protecting the patient from injury.

Defendants contend that an electrode produced according to the limitations of the Kado patent must also have stannous chloride attached to the tin surface of the wire. In particular, defendants propose that if the wire in the Kado patent were removed from the solution and dried, some stannous chloride would remain "affixed" to the tin. Therefore, to distinguish the claims from Kado, defendants argue that Heath must have added "affixed" as a process limitation describing stannous chloride that was not derived from the gel. But the Kado patent does not contemplate an electrode where stannous chloride has been dried onto the tin wire. Instead, the Kado patent describes an electrode using a wire immersed in a stannous chloride solution.

In fact, the Examiner raised a similar objection in response to the inventor's use of the term "affixed." He stated that while Kado's stannous chloride may be located in the conductive medium, some stannous chloride was also "affixed by the chamber to at least a portion of the tin surface": The container held some stannous chloride in the solution against the tin. This objection indicates that the Examiner similarly interpreted "affixed" to refer to the structural relationship between the tin and stannous chloride, not to the source of the stannous chloride. The record does not reveal that Heath ever narrowed his interpretation of "affixed" to refer to a method of applying the stannous chloride. Neither does it indicate that the Examiner imposed or argued for a narrower interpretation of "affixed." Consequently, the prosecution history does not indicate that "affixed" is limited to a process by which the stannous chloride becomes attached to the conductive surface.

6 Heath submitted several subsequent amendments to the claims before the electrode patents were granted. Defendants have not identified any subsequent changes to the use of the term "affixed." But Heath subsequently added a limitation that the electrodes must be constructed for monitoring or defibrillation. The record reveals that the Examiner agreed that the prior art did not teach the use of tin and tin chloride for use with defibrillation, and that a publication in fact indicated that tin was not a favored material for that purpose.

Defendants confuse R2's allegation that a chemical reaction derives an element from the gel to form stannous chloride with their own position that the stannous chloride may not be located within the gel. In their briefs, defendants repeatedly refer to deposition testimony and documents distinguishing stannous chloride that is "affixed to the electrode versus that which is placed in a solution or gel in contact with the electrode. R2 does not contend that the stannous chloride allegedly "affixed" to the accused electrodes is applied from stannous chloride in the gel. Rather, it asserts that the gel reacts with the tin surface to create stannous chloride attached to the electrode's tin surface. R2 never asserts that stannous chloride is located within the gel.

In a final argument, defendants contend that "affixed" must be construed to exclude stannous chloride that is formed by an electrochemical reaction in order to avoid rendering the asserted claims invalid in light of the prior art. Assuming arguing the presence of stannous chloride on their accused electrodes, defendants argue that their electrodes are obvious in light of five presented prior art references. In particular, defendants assert that the Muir patent, Ruben patent, Allison patent and Frances patent each reveal physiological electrodes using a tin surface in contact with a sodium chloride solution. If R2's alleged chemical reaction occurs on the accused electrodes, defendants argue that it would also have occurred on electrodes constructed according to these prior references. Thus, these prior references unwittingly taught the use of stannous chloride "affixed" to the conductive tin surface of a physiological electrode. If the asserted claims are read to include stannous chloride formed by this reaction, then defendants conclude that these claims would be obvious in light of the prior art and,
consequently, invalid.

7 Defendants also point to the '345 patent as a prior reference that renders the electrode patents obvious. Although it does not disclose the use of either tin or stannous chloride, the '345 patent discloses a defibrillation system using physiological electrodes.

R2 responds that the defendants' analysis is inappropriate, and that neither the electrode patents nor the accused electrodes are obvious in light of the cited prior art. First, R2 argues that infringement is not determined by whether the accused device adopts the combined teaching of the prior art. See Baxter Healthcare Corp. v. Spectramed, Inc., 49 F.3d 1575, 1583 (Fed. Cir. 1995) (finding no requirement that an accused be obvious in light of the prior art). Rather, such claims go to an affirmative defense of validity that defendants must prove by clear and convincing evidence. Second, R2 argues that the accused electrodes are not obvious in light of the prior art. In particular, R2 notes that none of the cited references describe electrodes used or constructed for defibrillation, let alone multifunctional use of either monitoring or defibrillation. Because the prior art allegedly taught away from using tin for defibrillation, R2 contends that using tin and stannous chloride within an electrode constructed for this purpose was nonobvious.

The Supreme Court has mandated that claim construction is a question of law to be resolved by the court. Markman, 134 L. Ed. 2d 577, 116 S. Ct. 1384. As explained above, claim construction is determined by the terms of the claim, the specifications, the prosecution history and, when appropriate, extrinsic evidence. Markman, 52 F.3d at 979. Arising either in the prosecution history or separately submitted as extrinsic evidence, the prior art may be relevant to interpreting the scope of an asserted claim. As part of the file wrapper, prior art presents a legislative history to help determine the proper scope of a claim. See Autogiro, 181 Ct. Cl. 55, 384 F.2d 391, 399. As extrinsic evidence, it may provide important clues to understanding the definition of technical terms of art. Markman, 52 F.3d at 980.

Where the terms of a claim are susceptible to two reasonable interpretations, a court may look to the prior art in order to adopt the interpretation that preserves the validity of the claim. Texas Instruments, Inc. v. U.S. Int'l Trade Comm'n, 871 F.2d 1054, 1065 (Fed. Cir. 1989); see Whittaker Corp. v. UNR Industries, Inc., 911 F.2d 709, 712 (Fed. Cir. 1990). However, a court may not use evidence extrinsic to the patent and prosecution history in order to change the meaning of a claim when that interpretation is made clear by these documents. Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1578 (Fed. Cir. 1995); see also Texas Instruments, 871 F.2d at 1065 (court may not read a limitation disavowed during prosecution history back into claim in order to sustain its validity). Although a court may refer to the prosecution history and prior art in interpreting key terms of a claim, it may not use them to impose a limitation from the specifications or any other source. Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559, 1566 (Fed. Cir. 1992). Extrinsic evidence should be used only to assist "the court's understanding of the patent, not for the purpose of varying or contradicting the terms of the claims." Markman, 52 F.3d at 981.

As explained above, the patent and prosecution history demonstrate that "affixed" does not exclude electrodes that have stannous chloride formed on their tin surface through a chemical reaction rather than separately applied to the surface. The '585 and '169 patents each present apparatus claims describing multifunctional physiological electrodes. Accordingly, the adjective "affixed" describes the structural relationship of the stannous chloride to the tin plate, and not the method by which the manufacturer places the compound there. Nothing in the patent or file history indicates that "affixed" was limited to stannous chloride that had been sprayed or separately applied onto the surface. Defendants ask this court to interpret "affixed" as an adjective describing a process of manufacture of the apparatus: bonded onto the surface by any manner other than created by a chemical reaction with the conductive plate. But such an interpretation would vary the meaning of "affixed" by reading in a limitation from the prior art or the specification's preferred embodiment. See Minnesota Mining, 976 F.2d at 1566.

Because the meaning of "affixed" is clear from the patent and prosecution history, neither defendants nor the plaintiffs may use the prior art in order to circumscribe its meaning. See Kears v. Chrysler Corp., 32 F.3d 1541, 1547 (Fed. Cir. 1994) (no error in refusing to consider prior art evidence where plain meaning of terms resolved proper interpretation of patent claim). The court does not doubt that patentees will assert patent claims defined by limitations that the patent and prosecution...
history leave ambiguous. In such circumstances, it may be appropriate to interpret a critical term in a manner that would sustain the validity of the patent. But where the alleged infringer raises an alternative interpretation belied by the document and file history, it cannot avoid the required factual analysis of obviousness by presenting its challenge as one of claim construction. If defendants wish to challenge the validity of the asserted patents, they may do so directly. The court concludes, however, that "affixed" as used in the asserted claims describes stannous chloride that attached or bonded with the tin plate, and does not describe only stannous chloride separably applied onto the tin surface.

B. "a bond affixing the retention structure to the resilient body"

The next disputed phrase, "a bond affixing the retention structure to the resilient body," is found solely in claim 8. Only Hologic seeks a construction of this particular phrase. Conceptus, by contrast, asserts that the phrase does not require construction, and that its plain meaning should apply (Br. 9-10). Hologic's proposed construction is shown below.

**CONCEPTUS'S PROPOSED CONSTRUCTION**

Plain meaning applies. No construction necessary.

**HOLOGIC'S PROPOSED CONSTRUCTION**

"solder or a similar type material for affixing the retention structure to the resilient body"

The term "bond" appears in various portions of the specification (see, e.g., cols. 3:57-62, 4:55-57), as well as in the discussion and drawings of particular embodiments (see, e.g., cols. 14:63-66, 15:3-7, 15:32-35, 15:66-16:2; FIGS. 14, 14A-C). To provide a visual example, FIG. 14A below shows a "bond" (206) affixing a retention structure (204) to the resilient body (202) in a particular embodiment of the present invention.

[SEE FIG. 14A. IN ORIGINAL]

Hologic's proposed construction attempts to limit the "bond" between the retention structure and resilient body of the present invention to a "solder or a similar type material" (Resp. 8-10). Nothing in the intrinsic evidence, however, supports such a limitation. While a "solder bond" is mentioned once in the specification, the context of its use has nothing to do with affixing the retention structure to the resilient body (see col. 3:57-62, using a "solder bond" to describe the attachment of the contraceptive device to an installation apparatus). As such, Hologic's construction improperly imports a limitation into the claim without any support in the specification, and must be rejected. See Abbott Labs. v. Sandoz, Inc., 566 F.3d 1282, 1288 (Fed. Cir. 2009)(explaining that courts must be careful to not improperly import limitations from the specification into the claims); Liebel-Flarsheim, 358 F.3d at 905.

This does not mean, however, that plain meaning should apply (Br. 9-10). As Hologic explained at the claim construction hearing, it's underlying concern with respect to the term "bond" -- reflected in its proposed construction -- was that it could be stretched to encompass bonds on a molecular level (Resp. 8-9). Using such a construction, a unitary device, having no disparate parts that have ever been joined together, could still be argued to the jury as meeting the "bond" limitation. Given this dispute over the appropriate meaning of "bond," construction of the phrase is perhaps necessary. See O2 Micro Intern. Ltd. v. Beyond Innovation Technology Co., Ltd., 521 F.3d 1351, 1361 (Fed. Cir. 2008) ("A determination that a claim term 'needs no construction' or has the 'plain and ordinary meaning' may be inadequate when a term has more than one 'ordinary' meaning or when reliance on a term's 'ordinary' meaning does not resolve the parties' dispute.").

Looking to the language of claim 8, the context of the phrase "a bond affixing the retention structure to the resilient body" plainly contemplates the joining of two disparate components of the claimed device: namely, a retention structure and a resilient body. Adding support to this reading of claim 8 is the fact that it separately lists "a resilient elongate body," "a retention structure," and "a bond affixing the retention structure to the resilient body" as three distinct components of the invention (see col. 20:21-33). Given this language, this order finds that the patentee would not have called out "a bond affixing the retention structure to the resilient body" if the resilient elongate body and retention structure were already one and the same. Stated differently, the "bond" in claim 8 would serve no purpose if the retention structure and resilient body were already affixed to each other.
Since courts must interpret claim terms in the context of the claim as a whole, see Kyocera Wireless Corp. v. International Trade Comm'n, 545 F.3d 1340, 1347 (Fed. Cir. 2008), this order finds that a person of ordinary skill in the relevant art at the time the patent was filed would have construed the phrase "a bond affixing the retention structure to the resilient body" as meaning "a bond affixing the retention structure to the resilient body, where without the bond, the retention structure and resilient body would be unaffixed components."

The Fourth Element of Claim 1 is a "pacing means for pacing the ventricles of the heart at a controlled decreasing rate from a base rate to a final rate lower than said base rate after said cardioverting means applies said cardioverting electrical energy to the atria of the heart." (emphasis added).

Medtronic argues that the ordinary meaning of "after" is "subsequent in time," which is an "unbounded term." It argues that the term must be bounded, otherwise the pacing could begin days after the cardioversion. Thus, the ordinary meaning of the term "after" cannot be used. See Combined Sys., Inc. v. Defense Tech. Corp. of America, 350 F.3d 1207, 1215 (Fed. Cir. 2003) (noting that it is incorrect to rely exclusively on a dictionary definition or to allow a dictionary definition to overcome the clear language of the patent). Instead, Medtronic asserts that "after" means that the pacing must be initiated in time to avoid a sudden reduction in cardiac rate after shocking the atria.

To support its definition, Medtronic relies on the perceived purpose of the patent: preventing a sudden reduction in cardiac rate. It relies on the prosecution history of the '600 Patent in which the patentees explained how the invention differed from the prior art:

None of the cited references describe or suggest in any way the adverse effects of such a sudden reduction in cardiac rate following successful cardioversion of the atria and hence do not show, describe, or even suggest an implantable atrial defibrillator or method having structure or function for overcoming such a circumstance.

'600 Patent Amendment at 10-11, Medtronic Exh. 12.

Guidant argues that nothing in the patent states that the pacing must be initiated in time sufficient to prevent sudden reduction. In fact, the invention has a purpose other than preventing a sudden reduction in cardiac rate following cardioversion: avoiding bradycardia.

Guidant asserts that although the ordinary meaning of "after" is "following in time or place," Webster's Ninth New Collegiate Dictionary 62 (1990), "after" is not an unbounded term as understood by those skilled in the art. It contends in the context of this patent, "after" means that the pacing does not occur until the microprocessor determines that the shock was successful in stopping atrial fibrillation.

The Court agrees with Guidant. The Court cannot rely solely on the ordinary dictionary meaning when that meaning contradicts the patent language. Combined Sys., Inc. v. Defense Tech. Corp. of America, 350 F.3d 1207, 1215 (Fed. Cir. 2003). As Guidant notes, when describing the steps that occur to start the pacing, the preferred embodiment indicates that the pacing occurs when the microprocessor determines that the shock was successful in stopping atrial fibrillation.

When the atrial fibrillation detector 70 determines in step 128 that the cardioversion of the atria was successful in arresting the atrial fibrillation, the microprocessor proceeds to step 134. In step 134, the microprocessor resets and starts timer 64.

At this time, the atrial defibrillator 32 has begun the first post-cardioversion pacing interval which is the aforementioned base interval and the timer is timing the base interval. The next three steps, namely steps 136, 138, and 140 implement a demand mode of pacing of the type well known in the pacing art and more specifically, a VVI pacing mode of the ventricles.
Additionally, in the preferred embodiment, pacing may not occur for eight to fifteen seconds after the cardioverting electrical energy is applied to the atria. The '600 Patent incorporates by reference the algorithms denoted by the Jenkins and Thakor article titles. See '600 Patent at 7:34-38; '837 Patent at 10:45-51; '729 Patent at 10:13-24.

Medtronic's construction of the term "after" would not cover the embodiment found in the '600 Patent, because it would exclude embodiments in which pacing occurs after the microprocessor analyzes fifteen seconds worth of data to determine whether the cardioversion shock was successful. See, e.g., Janice Jenkins, et al., Diagnosis of Atrial Fibrillation Using Electrograms from Chronic Leads: Evaluation of Computer Algorithms, 11 PACE 622, 623-24 (May 1988). Guidant asserts, and Medtronic does not dispute, that if the device waits for fifteen seconds worth of data, it will not begin pacing of the ventricle in time to avoid a sudden reduction in cardiac rate. Medtronic's proposed definition of "after" would exclude the preferred embodiment of the device. "Construing a claim to exclude a preferred embodiment is rarely, if ever, correct and would require highly persuasive evidentiary support." Invitrogen Corp. v. Biocrest Mfg., 327 F.3d 1364, 1369 (Fed. Cir. 2003) (internal quotation omitted). Medtronic does not present such "highly persuasive" evidence. Thus, the Court concludes that "after" means that the pacing occurs when the microprocessor determines that the shock was successful in stopping atrial fibrillation.

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1. "said first connector face fits against a second forward surface of the second insert cap tower"

<table>
<thead>
<tr>
<th>Disputed Term</th>
<th>FSI Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>said first connector face fits</td>
<td>the connector face of a first connector is directly opposite</td>
</tr>
<tr>
<td>against a second forward</td>
<td>of, or faces, a forward surface</td>
</tr>
<tr>
<td>surface of the second insert</td>
<td>of the second insert cap tower</td>
</tr>
<tr>
<td>cap tower</td>
<td>of a second connector</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disputed Term</th>
<th>AOSI Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>said first connector face fits</td>
<td>one thing literally touching and fits &quot;in contact with&quot;</td>
</tr>
<tr>
<td>against a second forward</td>
<td>another thing</td>
</tr>
<tr>
<td>surface of the second insert</td>
<td></td>
</tr>
<tr>
<td>cap tower</td>
<td></td>
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</table>

The disputed term "against" is used throughout the claims and specification. The parties dispute whether or not actual physical contact is necessary when the claims use the term "against." In the context of this claim, FSI proposes that the term "against" means "directly opposite of" or "faces," such that the first connector face may be in contact with, but is not required to be in contact with, the second forward surface of the second insert cap tower. AOSI proposes that the term "against" means "one thing literally touching and fits in contact with another thing," such that the first connector face must be in physical contact with the second forward surface of the second insert cap tower.

Throughout the specification, usage of the term "against" suggests that the term requires contact. Moreover, in this context, when the term "against" is read naturally and given its ordinary meaning, the term requires contact. There is nothing in the specification to indicate that "against" does not require actual contact. Further, there is nothing in the prosecution history as originally filed to indicate a definition of "against" where contact is not required.

2 FSI seeks to distinguish the usage of the term "fits against" in claim 1, from "pressed against," in claim 20. '849 patent, 20: 11-16. For its part, AOSI points to several quotations from the specification where the term "against" is used to describe two elements that are in contact with and touching one another: e.g. "the annular protuberance 240 extends inward and against the exterior periphery 232 of the pin body." '849 patent, 9:38-43.
FSI asserts that during the reexamination of the '849 patent, in the Supplemental Amendment and Response to Office Action at page 37, filed October 20, 2008, the patentee stated in part that "the word 'against' in this claim limitation clearly has the dictionary definition of 'directly opposite' or 'facing'" and that "there is no requirement that the connector face actually contact the insert cap tower." The court, however, does not adopt this new definition of "against." The reexamination proceedings began after the infringement contentions had already been filed. The court is hesitant to expand the definition of "against" beyond the scope defined in the original specification. The patentee's remarks in reexamination were influenced and clouded by litigation and driven by a competitor's product, not by what was actually invented and described.

Accordingly, the court rejects FSI's proposed construction and adopts AOSI's construction. The court defines "against" in the context of the phrase "said first connector face fits against a second forward surface of the second insert cap tower" as "one thing literally touching and fits in contact with another thing."

E. "Said Wash Load is Agitated"

Dependent Claim 14 provides that "said wash load is agitated." Whirlpool contends that this phrase should be construed as "moving the wash load to and fro." Defendants contend that it should be construed to involve an agitator because this is what Whirlpool represented during the prosecution of the patent.

As noted in Part IV A above, the '666 Patent uses the term "agitate" in its broadest and most generic form. Accordingly, the Court will adopt Whirlpool's construction of "said load is agitated" to mean "moving the wash load to and fro."

5. "Air Boost Device" and "Turbocharger"

The '949 Patent recites claims for methods for manufacturing an "air boost device" (Claim 1) and a "turbocharger" (Claim 10). '949 Patent, Col. 10, lines 38-53; Col. 11, line 10 to Col. 12, line 11. BorgWarner argues that the terms "air boost device" and "turbocharger" should be limited by the requirement that these components are for use solely in an internal combustion engine. [Doc. 57-2 at 23].

The parties agree that a "turbocharger" is an air boost device driven by a turbine which is powered by exhaust gases. The parties further agree that an "air boost device" is an apparatus, such as a turbocharger, used to increase combustion air throughput and density. [Doc. 52 at 4]. Because the Court concludes that the patents do not limit these components to use in internal combustion engines, the Court does not accept the parties' apparent stipulation that an "air boost device" should be construed as an apparatus that is used to increase only combustion air throughput and density.

The specification makes clear that the inventors did not intend to limit the use of the inventive compressor wheel to internal
Although a cast titanium compressor wheel has been described herein with great detail with respect to an embodiment suitable for the automobile or truck industry, it will be readily apparent that the compressor wheel and the process for production thereof are suitable for use in a number of other applications, such as fuel cell powered vehicles.

949 Patent, Col. 10, lines 23-28 (emphasis added). As BorgWarner's expert noted in his deposition, a fuel cell powered vehicle "is a very different device from the internal combustion engine, and it works on completely different principles." [Baines Dep., Doc. 63-6 at 8].

The inventors further state in the specification that the use of the subject compressor wheel within an automotive internal combustion engine is just one embodiment of the invention:

Although this invention has been described in its preferred embodiment with a certain [amount] of particularity with respect to an automotive internal combustion compressor wheel, it is understood that the present disclosure of the preferred form has been made only by way of example and that numerous changes in the details of structures and the composition of the combination may be resorted to without departing from the spirit and scope of the invention.

949 Patent, Col. 10, lines 29-36.

For these reasons, the Court concludes that the term "air boost device" should be construed as an apparatus, such as a turbocharger, used to increase air throughput and density, and that the term "turbocharger" should be construed as an air boost device driven by a turbine which is powered by exhaust gases. Neither of these terms should be limited further by adding a requirement that these components are for use solely in an internal combustion engine.

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a. Air Chamber

The parties do not dispute that an air chamber is "a space containing air." However, Electromed argues that the Court should construe "air chamber" in Claim 1 of the '662 Patent more narrowly to include the walls and seal that are described in the specification. (See '662, c. 3, ll: 48-50.) The Court will not add limitations to the claim that appear only in the specification. Electro Medical Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994). Furthermore, the Court notes that in Defendant's brief, Defendant concedes that the common meaning of an air chamber is a space containing air. See Defendant Electromed's Markman Memorandum Regarding Scope and Content of Claims of U.S. Patent No. 4,838,263 and U.S. Patent No. 6,036,662 at 14.

Thus, the Court construes the phrase "air chamber" to mean a space containing air.

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1) Air Circulating Means

As an initial matter, we agree with the parties that the "air circulation means" limitation should be construed as a means-plus-function limitation under § 112, P 6. In determining whether a claim limitation is a means-plus-function limitation, "the use of the word 'means' creates a presumption that § 112, P 6 applies." Personalized Media, 161 F.3d at 703, 48 U.S.P.Q.2D (BNA) at 1886. However, a limitation that uses the word "means" but does not recite a function that corresponds to the means does not invoke § 112, P 6. Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1302, 50 U.S.P.Q.2D (BNA) 1429, 1434 (Fed. Cir. 1999). Likewise, even when a limitation does recite a function, if it also recites sufficiently definite structure for performing that function, then § 112, P 6 does not apply. Id. In this case, the "air circulation means" limitation uses the word "means" and therefore is presumed to invoke § 112, P 6. Moreover, the claim language recites the corresponding function of "circulating air through said reel," without reciting any structure for performing that function. Accordingly, the
district court correctly concluded that the "air circulation means" falls under § 112, P 6.

However, we agree with Wenger that the district court erred in interpreting the "air circulation means" limitation as requiring structure capable of recirculating air. In construing a means-plus-function limitation, a court must identify both the claimed function and the corresponding structure in the written description for performing that function. Micro Chem., Inc. v. Great Plains Chem. Co., 194 F.3d 1250, 1258, 52 U.S.P.Q.2D (BNA) 1258, 1263 (Fed. Cir. 1999). Under § 112, P 6, a court may not import functional limitations that are not recited in the claim, or structural limitations from the written description that are unnecessary to perform the claimed function. Id. In this case, the district court correctly identified "circulating air" as the recited function. Wenger II at 4 ("The function recited in the claim and clearly associated with the means language in the claim is the function of circulating air through the apparatus, not the recirculation of air through the apparatus."). However, the court then concluded that "the structure corresponding to the function of circulating air through the apparatus requires the ability to recirculate air." Id. By doing so, the court improperly restricted the "air circulation means" limitation to structure that was disclosed in the preferred embodiment, but was not necessary to perform the recited function of circulating air.

Given its ordinary meaning, the term "circulate" denotes that the "air circulating means" is capable of moving air in a circuit through the reel and dryer housing. See, e.g., Webster's New World Dictionary 254 (3d ed. 1988) (defining "circulate" as "to move in a circle, circuit, or course and return to the same point"). However, the term "circulate" neither connotes nor requires that the "air circulation means" have structure capable of "recirculating," i.e., circulating the air again after it has circulated once before. See id. at 1116 (defining the prefix "re-" as "again, anew, over again" and listing "recirculate" as a word). For example, in common parlance, it is customary to speak of "circulating" something once (e.g., an inter-office memorandum), without "recirculating" it a second time. We therefore do not agree with CMS that the ordinary meaning of the term "circulate" necessarily includes or implies recirculation.

Moreover, while claim 1 recites the function of "circulating" air through the reel, dependent claim 3 expressly recites the additional limitation of "means for exhausting a first portion of said air received in said plenum and recirculating a second portion of said air back into the interior of said reel." '683 patent, col. 8, ll. 9-12 (emphasis added). Under the doctrine of claim differentiation, each claim in a patent is presumptively different in scope. Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187, 48 U.S.P.Q.2D (BNA) 1001, 1005 (Fed. Cir. 1998). However, claim differentiation is not a "hard and fast rule of construction," and cannot be relied upon to "broaden claims beyond their correct scope." Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1368, 53 U.S.P.Q.2D (BNA) 1814, 1818 (Fed. Cir. 2000) (citations and quotation marks omitted). Although the judicially created doctrine of claim differentiation cannot override the statutory requirements of § 112, P 6, Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538, 19 U.S.P.Q.2D (BNA) 1367, 1371 (Fed. Cir. 1991), it does not necessarily follow that means-plus-function limitations must be interpreted without regard to other claims. Claim differentiation, while often argued to be controlling when it does not apply, is clearly applicable when there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims.

Citing Laitram, CMS argues that independent claim 1 must be interpreted in accordance with § 112, P 6, without regard to dependent claim 3. In Laitram, the disputed claim limitation was a "means for joining" a plurality of link ends for a conveyor belt. Id. at 1535 n.3, 19 U.S.P.Q.2D (BNA) at 1369 n.3. The corresponding structure in the specification consisted of link elements and cross members. Id. at 1536, 19 U.S.P.Q.2D (BNA) at 1370. This court rejected the argument that the "means for joining" limitation could not include a cross member because that limitation was explicitly recited in a dependent claim. We explained that "[a] means-plus-function limitation is not made open-ended by the presence of another claim specifically claiming the disclosed structure which underlies the means clause or an equivalent of that structure." Id. at 1538, 19 U.S.P.Q.2D (BNA) at 1371. We then held that "one cannot escape [the] mandate [of § 112, P 6] by merely adding a claim or claims specifically reciting structure or structures." Id. Thus, Laitram held that the stringencies of a means-plus-function limitation are not to be avoided by the mere addition of a dependent claim that recites the corresponding structure disclosed in the specification. However, Laitram does not stand for the broader proposition suggested by CMS, viz., that a means-plus-function limitation must be interpreted without regard to other claims.

We agree with Wenger that the examination of other claims in a patent may provide guidance and context for interpreting a disputed means-plus-function limitation, especially if they recite additional functions. Because claim 3 recites a separate and distinct function (i.e., "recirculating"), one that is not recited in claim 1, the doctrine of claim differentiation indicates that these claims are presumptively different in scope. Comark, 156 F.3d at 1187, 48 U.S.P.Q.2D (BNA) at 1005. The
dependency of claim 3 on claim 1 strengthens this presumption. Compare Dow Chem. Co. v. United States, 226 F.3d 1334, 1341-42, 56 U.S.P.Q.2d (BNA) 1014, 1019-20 (Fed. Cir. 2000) (applying the doctrine of claim differentiation and concluding that an independent claim should be given broader scope than a dependent claim to avoid rendering the dependent claim redundant), and Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72, 50 U.S.P.Q.2d (BNA) 1465, 1468 (Fed. Cir. 1999) (explaining that the doctrine of claim differentiation "normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend"), with Kraft, 203 F.3d at 1368, 53 U.S.P.Q.2d (BNA) at 1818 (holding that the presumption arising from the doctrine of claim differentiation was overcome in a case involving two separate independent claims). Accordingly, the doctrine of claim differentiation supports the conclusion that the "air circulation means" limitation in claim 1 should be limited to structure for performing the recited function of circulating air, and should not be interpreted as requiring structure capable of performing the additional function of recirculation, which is expressly recited in dependent claim 3 and not found in claim 1.

Our conclusion is consistent with the specification, which discloses the function of "circulating" in the context of drawing air through the reel in order to dry the food product, and discloses "recirculating" as a separate function involving the return of a portion of the drying air back into the reel. In the summary of the invention, for example, the specification states that "the reel is rotatable and permits the circulation of drying air therethrough." '683 patent, col. 1, ll. 56-58 (emphasis added). The specification further states that "the product is presented as a tumbling bed which is agitated as it passes through the reel with drying air circulated therearound." Id. at col. 1, l. 67 to col. 2, l. 1 (emphasis added). In the next paragraph, however, the specification then explains that "in preferred forms," the housing is configured "to draw additional air through the openings at each end of the reel whereby both fresh and recirculating air is introduced into the reel." Id. at col. 2, ll. 4, 11-14 (emphasis added). Later, in describing the preferred embodiment, the specification states that the circulating component 22 and exhaust fan 122 create "positive air flow," which causes the air to flow "in a substantially closed circuit through the housing." Id. at col. 5, ll. 30-33. Thus, in the preferred embodiment, after the air is drawn from the interior of the reel into the housing, it may either be exhausted from the housing or returned back to the reel for recirculation. By disclosing recirculation as an additional feature of the preferred embodiment, the specification thus further supports the conclusion that the "air circulation means" should not be limited to structure capable of performing the unrecited function of recirculation.

CMS argues that the prosecution history supports the conclusion that the "air circulation means" in claim 1 should be limited to structure capable of recirculating air. We disagree. Original claim 14, which later became claim 1, was initially rejected as anticipated by the Benson patent. Paper No. 2 at 4. In response to the examiner's rejection, the applicant amended the claim as follows, with additions indicated by underlining:

14. (Amended) An apparatus for coating and drying a food product comprising:

air circulating means associated with said dryer housing for circulating air through said reel, the air circulating means including means for drawing air from the interior of the reel into said housing in order to provide positive air flow through the apparatus;

Paper No. 5 at 2. The applicant also added the following new claim, which later became dependent claim 3:

25. An apparatus for coating and drying a food product as set forth in claim 24 including a means for exhausting a first portion of said air received in said plenum and recirculating a second portion of said air back into the interior of said reel.

Id. at 3 (emphasis added). In the "remarks" section, the applicant stated that the claimed apparatus resulted in numerous advantages, including the ability to "ensure that air is drawn into the housing from the interior of the reel in order that the air drawn from the reel may be recirculated through the reel or exhausted from the housing." Id. at 6 (emphasis added).

--- Footnotes ---

1 In support of its prosecution history arguments, CMS relies heavily on an unsigned draft amendment, which was never entered into the file wrapper. The district court properly refused to consider that draft amendment. Wenger I at 6 n.3; Manual of Patent Examining Procedure §§ 714.19(E), 714.21 (7th ed. rev. 1 2000) (indicating that an unsigned amendment
is ordinarily denied entry and that inadvertently entered amendments have no legal effect).

It is evident from the prosecution history that claim 14 was amended to specify that the "air circulating means" draws air from the interior of the reel into the housing. As emphasized by Wenger, the applicant did not add a "recirculation" limitation to that claim. Instead, the applicant added a new claim, claim 25, which expressly recited the function of recirculation. In view of these amendments, the applicant's statement that the claimed apparatus is capable of recirculating air through the reel or exhausting it from the housing indicates that the function of recirculation is an optional feature that is made possible by the housing, but is not required by claim 14.

While CMS argues that Wenger distinguished the prior art based on its inability to recirculate air, we agree with Wenger that the Benson patent was distinguished based on its lack of a housing. According to the applicant, because the Benson patent disclosed a machine that was "essentially open" and mostly "exposed to atmosphere," nothing in the Benson patent taught or suggested the use of an elongated reel "located substantially within a housing such that the perforations provided in the side wall of the reel are surrounded by the housing." Id. at 7. The applicant explained that:

Because air is drawn from the interior of the reel into the housing, there is less of a likelihood that warm, dust-laden air within the reel will be exhausted from the ends of the reel or will be released through the perforations provided in the sidewall of the reel to atmosphere without first being directed through a housing and any other suitable exhaust treating devices deemed to be appropriate.

Id. at 6. Moreover, the applicant expressly stated that "there is nothing taught by the Benson patent which would have suggested a construction as claimed, wherein it is possible to circulate air through the reel and draw air from the interior of the reel into a housing surrounding the reel." Id. Thus, according to the applicant, the Benson patent did not disclose the claimed housing structure, which enabled the air to be circulated through the reel and exhausted in an appropriate manner.

While CMS argues that the housing alone does not distinguish claim 1 over the prior art, and that absent recirculation, claim 1 would have been obvious in view of French patent 2,502,466, we decline to consider this reference as it was not in evidence before the district court, and is not part of the record on appeal.

2. "Air inlet path"

a. Parties' Positions

The parties propose the following constructions for "air inlet path" which is present in claim 2 of the '631 Patent. Plaintiff objects to Defendants' proposed definition to the extent it requires a specific shape of the air inlet path. Plaintiff further asserts the path does not actively direct the air flow as Defendants suggest. Finally, Plaintiff takes issue with Defendants' proposal that the air flow be strictly perpendicular.

<table>
<thead>
<tr>
<th>Plaintiff</th>
<th>Defendants</th>
</tr>
</thead>
<tbody>
<tr>
<td>An unoccupied space adjacent to an opening in the cover plate</td>
<td>An unoccupied slot directing air inflow from the opening in the cover plate perpendicularly to the second surface of the top plate</td>
</tr>
</tbody>
</table>

b. Court's Construction
In claim 2, the "air inlet path" is the space between the fin structures, formed by their relative position. (‘631 Patent at 4:31-36). According to Plaintiff, there is no requirement to employ any particular shape or design of the air inlet path, including any shape or design described in the preferred embodiments. (‘631 Patent at 7:6-11). Plaintiff further asserts claim 2 states that the "air inlet path" is the space formed by the relative positioning of the fin structures, i.e., akin to the "gap" in claim 3. (‘631 Patent at 7:48-50).

The split feed transverse flow configuration requires that air enter the heat sink at an unoccupied slot before flowing through the fin structures. In addition, claim 2 expressly requires that the air inlet path be "adjacent" to the opening in the cover plate. (‘631 Patent at 8:4-5). According to Defendants, Figure 1 of the ‘631 Patent, which the specification identifies as the "heat sink assembly of the present invention" (id. at 2:12-13; 4:40), shows that air flows through the opening in the cover plate and into the gap perpendicular to the second surface of the top plate. The Court agrees with Plaintiff that nothing in the claim language or specification requires the air flow to be strictly "perpendicular." Even if Figure 1's schematic depiction of air flow is to be taken literally (i.e., perpendicular), Defendants do not satisfy their burden to justify importing this limitation into the plain, intelligible claim language. Phillips, 415 F.3d at 1323. In addition, Defendants have failed to convince the Court that the air flow path is the consequence of air being directed by the relative spacing of the fin structures, top plate, and the opening in the cover plate.

The Court construes "air inlet path" to mean "an unoccupied space receiving air flow from the opening in the cover plate to the second surface of the top plate."
The specification provides further support for Honeywell's proposed construction. The specification describes one of the inventions' preferred embodiments as using a die of twelve "simple" die inserts to define a wheel with six full-length and six splitter blades. '347 Patent at Col. 9, lines 8-18 ("the die preferably has a total of either 12 (simple) or 24 (compound) inserts for making a total of 6 full length and 6 'splitter' blades"); The specification explicitly defines "simple die inserts" as referring to one die insert per air passage. Id. at Col. 5, lines 9-11 ("the blades are designed to permit pulling of simple die inserts (i.e., one die insert per passage)"). Thus, the specification makes clear that the "air passage" refers to the space between each blade in the compressor wheel, whether that blade is a full blade or a splitter blade.

For these reasons, the Court concludes that the phrase "air passages between adjacent blades" should be construed as the space between either a full blade and a splitter blade or two full blades.

The parties disagree on the meaning of the terms "air plenum" and "partition" in Claim 15. Claim 15 calls for:

a partition disposed in said interior chamber for defining an air plenum on one side of said partition and a rack receiving chamber on the opposing side of said partition, said air plenum and said rack-receiving chamber being in fluid communication with each other such that cooled air can be channeled through said air plenum and into said rack-receiving chamber.

See '569 Patent at column 8, lines 6-33.

The words of the claim itself make clear that an "air plenum" refers to an air flow passage through which cooled air travels to an adjacent dispensing rack. Because the patent specification and prosecution history do not give the term "air plenum" any special meaning, it must be given its ordinary meaning. The best place to look for that meaning is a technical dictionary. See Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1203 (Fed. Cir. 2002) (acknowledging that dictionaries "may be the most meaningful sources of information to aid judges in better understanding . . . the terminology used by those skilled in the art"). The ordinary meaning of the word "plenum" used in the heating, ventilating, and air-conditioning ("HVAC") field is an "air flow passage". Home Energy Magazine Online DUCTIONARY, Ex. H to Thompson Dec. (defining "plenum" as an "air flow passage made of duct board, metal, drywall, or wood" that "joins supply and return ducts with HVAC equipment"); see also WordNet 1.6 (1997), available at http://dictionary.reference.com/search?q=plenum (defining "plenum" as "an enclosed space in which the air pressure is higher than outside"). This definition is consistent with the use of the term in Claim 15. However, the claim language includes one limitation -- that cooled air be able to travel through the air plenum to an adjacent rack-receiving chamber. Thus, the definition of the term "air plenum" in Claim 15 of the '569 Patent must include this limitation.

Watson interprets this element as "a number of air cushions/ air actuated elastic or resilient devices lying in a space that separates the axle seats and the primary frame members." Boler asserts that the element should be construed as "a set of air springs reaching across the distance between and attaching to said axle seats and said frame members." Boler argues that Watson's proposed definition is not consistent with the specification because the specification states that the air springs are mounted between the top plate and the axle seat. The court disagrees with Boler. Simply because the specification states that the air spring is mounted between the axle seat the top plate does not necessarily mean, in light of the claim language, that the air spring must be attached to the axle seat and frame members. Laitram Corp., 863 F.2d at 865. However, the court adopts a portion of Boler's interpretation. The court construes this element as "a number of air cushions reaching across the distance between the axle seats and primary frame members."
73. The court construes the first limitation of claim 23, "an air supply for supplying compressed air," as follows: The air supply is either one or more storage vessels of compressed air or an oil-free air compressor. (”845 patent, col. 2, lines 40-48.) The limitation is further narrowed by specifying a function for the element, namely to supply compressed air.

Claim 1 of the 987 patent requires that the gun have "at least one pressurizable air/water storage tank." Ohio Art asserts that since its water storage tank (the backpack) is not pressurizable, it is not violating this limitation of the claim. Larami admits that the water storage tank in the A.R.M. gun is not pressurizable but argues that the bladder is a pressurizable air/water storage tank.

The plain language of the 987 patent indicates that the tank must store water and air. Otherwise, it would read an "air and/or water storage tank." When interpreting patent claims, "all limitations in a claim must be considered meaningful." Lantech, Inc. v. Keip Mach. Co., 32 F.3d 542, 546 (Fed. Cir. 1994). The limitation in the claim that there be a "pressurizable air/water storage tank" is not met by the presence in the A.R.M. gun of a pressurizable water storage tank, in the form of the expandable bladder. The bladder is not designed to store air, only water. It is clear that the 987 patent envisioned a storage tank filled partly with water and partly with pressurized air. 2 The A.R.M. gun does not have such a tank and so therefore this limitation of claim 1 of the 987 patent has not been infringed upon by Ohio Art.

--- Footnotes ---

2 The preferred embodiment of the 987 patent shows a water gun where the effect of air pressure acting on water in a tank would force water out of the open valve. There is no expandable bladder in this design. (See Def.’s Ex. D-4).

--- End Footnotes ---

8. "the longitudinal portions are aligned in a spaced relationship parallel to a stent longitudinal axis"

This phrase is found in claims 13, 34, and 48 of the '037 patent, and in claim 22 of the '255 patent. See Joint Statement, '037 and '255 Patents. Plaintiffs contend that "the longitudinal portions are aligned in a spaced relationship parallel to a stent longitudinal axis" should be construed to mean "the longitudinal portions are spaced from each other along a line parallel to an imaginary straight line running lengthwise in the center of the stent." Defendants contend that the phrase should be construed to mean "the longitudinal portions run substantially along the stent's longitudinal axis and are spaced apart, e.g., as shown in Figure 5." The intervenor contends that the phrase should be construed to mean "the longitudinal portions run substantially along the stent's longitudinal axis and are spaced apart."

The claim language provides the first starting point. Beginning with claims 13 and 14, claim 13 covers a stent "wherein the longitudinal portions are aligned in a spaced relationship parallel to a stent longitudinal axis." Claim 14, by contrast, covers a stent "wherein the longitudinal portions are aligned in an interconnected relationship parallel to a stent longitudinal axis." Both claims cover longitudinal portions aligned in relationships parallel to the stent longitudinal axis. Claim 13 covers spaced relationships, however, while claim 14 covers interconnected relationships.

The figure drawings of the '037 patent shed light on the difference between the two types of relationships -- both of which are parallel to the longitudinal axis. Figure 9, for example, depicts an illustration of the spaced relationship. See Joint Statement, '037 Patent, Figure 9. Looking at this figure, it is apparent that the longitudinal connectors are spaced apart from each other -- with no interconnectors linking them consistently together -- on an axis that runs parallel to the length of the claimed stent design. Id. In Figures 8 and 10, by contrast, the longitudinal connectors are still spaced apart from each other.
along an axis running parallel to the length of the claimed stent design, but they are depicted as linked consistently together by interconnectors. See id. at '037 Patent, Figures 8 and 10. The remaining figures depicted in the patent can also be viewed from this vantage point. Figure 5, for example, depicts an interconnected relationship, as understood in comparison with Figures 8-10. Id. at '037 Patent, Figure 5.

This understanding of the patent's figure drawings supports plaintiffs' construction of the phrase at issue, because it requires -- consistently with the drawings -- that the longitudinal portions of the claimed stent be "spaced from each other along a line parallel to an imaginary straight line running lengthwise in the center of the stent" where the claim language calls for a "spaced relationship."

Defendants' proposed construction, by contrast, construes the phrase in question expressly with reference to Figure 5. Since, as noted above, Figure 5 depicts an interconnected relationship rather than a "spaced relationship" -- as required by the claim language at issue -- it would be improper to limit the claim language to the interconnected relationship depicted in Figure 5. Defendants rely on the prosecution history for their construction. See McCauley Decl., Ex. 36 at AB0732736. However, a review of this evidence does not provide any express support for defendants' construction. Indeed, it does not appear from this citation that the applicants were expressly discussing this phrase of the limitation, or the fact that the applicants intended figure 5 to represent the phrase at issue.

In sum, then, and for the above reasons, the court adopts plaintiffs' proposed construction and construes “the longitudinal portions are aligned in a spaced relationship parallel to a stent longitudinal axis” as: “the longitudinal portions are spaced from each other along a line parallel to an imaginary straight line running lengthwise in the center of the stent.”

3. "A method of aligning an optical element in a telescope"

The next dispute concerns the phrase "[a] method of aligning an optical element in a telescope." The phrase appears in every claim in the '908 patent, either expressly or by reference. It appears twice in claim 1, once in the preamble and once in subpart (b).

The key term in this phrase is the word "aligning." As used in the '908 patent, the term "aligning" is construed to mean moving an optical element toward a collimated position in response to a projected reticle image.

Glatter argues that "aligning" means "moving an optical element in a telescope to its optimal position and angular orientation specified in the telescopes' [sic] design." (Def.'s Opp. Br. at 3.) LaserMax contends that "aligning" meant "moving an optical element in a telescope to a desired position." (Pl.'s Reply at 2.) The difference between the terms "optimal" and "desired" is a difficult one to parse. The language of the claims themselves offer little guidance as to the meaning of "aligning," as used therein. The tautological nature of claim 1 makes it difficult to discern a contextual definition of aligning. It claims a "method of aligning an optical element in a telescope" wherein the second step in the method is "aligning the optical element." '908 Patent at 6:29, 33. Thus, the claim itself offers little guidance in discerning a definition. Other claims, however, demonstrate that the choice of the word "aligning" may have been intended to mean more than simply moving or adjusting an element. Claim 18, for example, has "aligning" in the preamble, but uses the term "adjusting," in subpart (c), when indicating that one following the method would move an optical element. Id. at 7:13, 21-23. Therefore, it is unclear based on the claims alone, whether "aligning" means more than simply "moving to a desired position."

The specification provides some guidance in construing the term. Glatter originally construed "aligning" as "moving an optical element to an optimal position," but changed his asserted definition during the Markman hearing to "moving to an optical element in a telescope to its collimated position." (See Hearing Tr. at 33:6-11.) "Collimated" is a term of art in the field of optical devices that would be understood by a person of ordinary skill in the art. The specification uses variations of the word "align" several times. At one point, the specification uses the terms "properly aligned" and "collimated" as synonyms. First, the specification states that "Newtonian type telescopes are subject to misalignment of the optical elements. . . . A misaligned Newtonian telescope will exhibit an image of a star that looks like a comet with a tail." '908 Patent at 1:36-40. In describing how to determine whether the optical elements are aligned, the specification uses the phrase
"in a properly aligned or collimated telescope." Id. at 1:43-46. According to the specification, the term "collimate" means "properly aligned," as opposed to "misaligned," and in a Newtonian telescope is characterized as an arrangement of the optical elements wherein "a laser beam is projected through an emission aperture to reflect off of the secondary mirror which directs it to the center of the primary mirror. The primary mirror reflects the beam back to the secondary mirror which then reflects it back to the emission aperture of the laser." Id. at 1:43-49. In other words, "the complete return of the emission aperture assures that the telescope is correctly aligned." Id. at 1:49-51. Thus, the specification indicates that "properly aligned" means "collimated." Aligning, therefore, means moving toward a collimated configuration.

Nonetheless, use of the word "collimated" should not be unduly limited to a single appropriate arrangement for the elements in a telescope. First, although the specification's description of "properly aligned" uses the components of a reflecting telescope as an example, refracting telescopes can also be collimated. See id. at 6:19-21. Second, at the Markman hearing, plaintiff and defendant agreed that there can be more than one "collimated position," depending upon the setup of the telescope, for example, collimation for use with a camera may be slightly different from collimation for use with the eye alone. (See Markman Tr. at 43:18-25.) Since the claims pertain to "optical element(s) in a telescope," the meaning of a claim term should not be limited based on potential uses that differ from one another due to a component that lies outside of the telescope, like the viewer's eye or a camera. Therefore, the word "collimated" restricts the term "aligning" to arrangement of the optical elements for use in a telescope (usually centering the elements along a line formed by the beam's center), but does not connote a single, objectively accurate position.

The court agrees with Crane that the defendants' proposed construction is too restrictive in light of the disclosed embodiments and dependent claims. Although unambiguous statements made during reexamination may, in certain circumstances, limit the scope of a claim, the patentee's statement in this case does not rise to that level. See On Demand Machine Corp. v. Ingram Indus., Inc., 442 F.3d 1331, 1338-39 (Fed. Cir. 2006). In this case, in response to a rejection during reexamination of the '930 patent, the patentee distinguishes the lack of precision alignment of a sliding embodiment of a prior art reference to the '930 patent's precision alignment in a comparable embodiment. See, e.g., '930 Patent, cl. 28; see Ex. 4 to SVA's Resp. at 83. Crane's statements do not amount to a clear and unmistakable disclaimer of claim scope to the extent suggested by the defendants. The remarks, for instance, state that "[t]he '930 Patent suggests vertical alignment between the beverage capture assembly 102 and the beverage trays 42 of between 1/32nd and 1/64th of an inch as suitable to ensure transfer without beverage container tipping." Id. (emphasis added). This statement suggests that the alignment necessary is that which would be suitable to prevent container tipping so as to preserve the overall object of the invention. Consequently, the court finds no disclaimer in the reexamination history that would suggest limiting each and every claim and embodiment in the manner requested by the defendants.

Despite the court's disagreement with the defendants' construction, Crane's construction does not account for the "in registration" language of the limitation. The claim language, read in light of the specification and the statements in the prosecution history, suggest that the robotic assembly must be aligned vertically with the product. Accordingly, the court defines "aligning . . . in registration" (as used in claim 1 of the '930 patent) as "moving the robotic assembly in the machine into a position vertically aligned with a customer selected one of said beverage container queues."
During the claim construction proceedings in this case, neither party proposed a construction for the term "alignment mark." However, it appears that post-trial the parties are now disputing the meaning of this term. According to LGD, a person of ordinary skill in the art would understand an "alignment mark" to "be a distinctive identifying feature that is provided solely for positioning of the flexible printed circuit boards during assembly." D.I. 1388 at P 544.

In response, AUO contends that alignment marks can have more than one purpose. For example, they can function for both positioning and bonding. Thus, AUO contends that LGD's definition of alignment marks is too restrictive, and "alignment marks" should be more broadly defined as patterns used for accurate positioning and connection of flexible printed circuit boards. D.I. 1383 at PP 657-663; D.I. 1384 at 46, 50.

Reviewing this claim term in light of the specification of the '506 patent, the Court concludes that AUO's more expansive definition is correct. The '506 patent discloses more than one type of alignment mark. For example, pad electrodes are disclosed on the first and second printed boards in Figure 3a. These pad electrodes serve as both alignment marks for positioning and as contact pads for bonding or electrically joining two flexible printed circuit boards. '506 patent, col. 2, ll. 26-38. Accordingly, the Court concludes that an alignment mark is a pattern used for accurate positioning and connection of flexible printed circuit boards.

It is not clear why Freedman identified this phrase as ambiguous and why ASC did not say the phrase needs no construction and that its meaning is self-evident. This phrase states the purpose of the retaining member, previously described, and its function, previously described, and the manner in which the functions perform. Obviously the female fastener must be held in place to assure fastening and because of possible misalignment some play is possible and that play is kept to a perpendicular movement, previously described. There is no need to construe this phrase.

The next term in dispute involves the folding mechanism of the napkins. Three phrases are at issue. First, claim 1 speaks of the "channels in use being spaced apart from the napkin wearer's body and allowing said napkin edges to fold upward at said embossed channels to form an occlusive volume between said napkin and the wearer's body." (6:14-17.) Second, claim 4 teaches the channels "having their ends spaced inward from the edge of said napkin at least 1/8 inch, and adapted to allow the edges to turn upward." (6:32-34.) Finally, claim 4 also teaches that the channels are "adapted to be activated by the thighs of the wearer to allow the absorbent edges to fold upwards to form said occlusive volume."

The particular bone of contention is the meaning of the verbs used: "allowing" and "adapted to allow." K-C's interpretation is largely synonymous with the claim terms: "allowing" means "permitting" and "adapted to allow" means "formed so as to permit." (At argument K-C indicated no objection to retaining the claim terms as-is.) Tyco, however, believes "allowing the edges to fold upward" means "directing the edges to fold upward." It also claims "adapted to allow" means "suited by design to direct the edges upward in use."

Tyco's effort to transform "allowing" into "directing" is based on the prosecution history and the general purpose of the invention itself. It asserts that the goal of the patent -- and its novelty -- was grounded in the napkin's ability to fold upwards.
to meet the body of the wearer, forming an occlusive volume. Thus, in prosecuting the patent, K-C repeatedly referred to the fact that the hinged areas (i.e., the "edges," as construed above) fold upwards when the wearer's thighs compress against the pad. 3 In Tyco's view, K-C cannot now run away from that important distinction by asserting that the channels merely "allow" or "permit" the flaps to fold upwards. In Tyco's view, any napkin -- whether having channels or not -- would "permit" folding upward under the right circumstances. In Tyco's view, therefore, "allow" must mean something more.

3 Citations from the prosecution history are found, for example, at Tyco's brief at page 21.

I first note that Tyco's concerns are already incorporated into the claims themselves. Claim 4, for instance, teaches that the channels "are adapted to be activated by the thighs of the wearer to allow the absorbent edges to fold upwards to form said occlusive volume." (6:39-41.) This recognizes that the channels' purpose is to facilitate the folding process in the event the wearer activates the design. Because the claim itself sets forth this process, it is not as though the claim differs materially from anything the inventors had set forth in the prosecution history. Along the same lines, there is nothing in the prosecution history that would justify redefining the word "allow" to mean "direct" -- the former implies ability, whereas the latter implies action. It is of course true that the invention, at its most useful, would have the effect of creating the occlusive volume and that this volume would be created by virtue of the channels' hinging properties. That is reflected in the prosecution history as well as in the specification, which states: "Advantageously, these embossed channels are activated during use by the thighs, allowing the sides of the napkin to fold upwards." (2:63-65.) But the fact that these advantageous features may be allowed to occur does not mean that the channels themselves direct them to occur. 4 Instead, everything in the patent indicates that the channels facilitate the folding or allow the edges to fold.

4 This is true even if I considered Tyco's alternative definition of "allow." It asserted at argument that a car's muffler "allows" the car to drive quietly, and in that sense the muffler also "directed" or caused the car to drive quietly. This reading incorporates not just permissiveness but also functionality. Even so, this gloss is several steps removed from the active voice "direct" that Tyco now prefers. That is, no one would say that a muffler "directs" the car the operate quietly - its presence more properly enables the car to do so, which gets us back to the more permissive reading of "allow" we began with. The channels enable the sides of the napkin to fold upwards. Moreover, Tyco's preferred reading does not fit the physical reality of the invention. In short, just as it was unclear how an "edge" could create an occlusive volume, it is difficult to discern how a channel can "direct" the edge to fold upward. By way of analogy, a door's hinge allows it to open, but no one would claim that the hinge is the cause of the door opening, or that the door opens at the hinge's direction -- there is another actor. Similarly, according to the patent it is the wearer of the napkin whose thighs direct the edges to fold upward, and the fact that the channels facilitate that process does not mean that they direct it. Accordingly, I reject Tyco's attempt to redefine the word "allow."

Similarly, I reject Tyco's interpretation of "adapted." It asserts that "adapted to allow" should mean "suited by design to direct," yet this alteration has even less basis in the intrinsic evidence. Tyco merely cites a dictionary for its definition of "adapted" and notes that the invention was specifically designed to function so that the edges of the napkin fold upward. That much is clear from the patent itself -- and indeed could be inferred in almost any invention -- but nowhere does Tyco articulate why "suited by design" should be substituted for the less cumbersome "adapted" language of the claim itself. Instead, the notion of design opens up a number of interpretive problems that can be avoided simply by retaining the language of the claim itself.

Although I have rejected Tyco's preferred claim construction, I am not persuaded that K-C's substitution of the word "permit" for "allow" serves any useful purpose. As noted, K-C acknowledged at argument that leaving "allow" untouched would accomplish the same goal. Moreover, K-C does not explain why the phrase "adapted to allow" should be interpreted as "formed so as to permit" -- these reworkings of the claim terms seem merely to be synonymous surplusage or assume the
obvious (e.g., that the channels were "formed"). As K-C argues with respect to Tyco's proposed construction, "[t]he original terms in the claims, 'adapted to allow' and 'adapted,' are far more easily understood." (K-C Br. at 19.) Accordingly, I will leave the claims as they are without appending synonyms or otherwise redefining them.

3. "Allowing said napkin edges to fold upward" means "allowing said napkin edges to fold upward." "Adapted to allow the edges to turn upward" means "adapted to allow the edges to turn upward." "Adapted to be activated by the thighs of the wearer to allow the absorbent edges to fold upward" means "adapted to be activated by the thighs of the wearer to allow the absorbent edges to fold upward."

In the instant action, the disputed language of claim 1 of the of the '954 patent provides, "allowing the bar or pin to be placed in said passage by pressure in a direction perpendicular..." (Am. Compl., Exh. A, col. 5, 11. 60-61). Plaintiffs maintain that this language is permissive because the structure of the clamp is such that it requires the bar, pin or rod be placed in the clamp by pressure in a perpendicular direction alone. In support, Plaintiffs point to the plain and ordinary meaning of the word "perpendicular," which has been defined to mean "being at right angles to a given line or plane." Webster's Collegiate Dictionary, 876 (9th ed. 1985). Here, there is no apparent dispute with the definition of the word "perpendicular" in and of itself. Rather, the narrow issue before the Court is whether the claim language is interpreted to mean solely perpendicular. On this point, the Court observes that the word perpendicular is preceded, and accordingly modified, by the word "direction." Direction is defined as "the line or course on which something is moving or is aimed to move or along which something is pointing or facing." Id. at 358. Taken together, it appears to this Court that the language of this claim is intended to indicate that the bar or pin is to be placed in the structure of the clamp in a generally perpendicular direction - but not purely or solely perpendicular. Accordingly, this Court concludes that based on the plain language of the claim 1, the disputed language contained therein accords with Defendant's interpretation that the bar, pin or rod may be inserted into the passageway by at least some pressure applied in a perpendicular direction with respect to both the axis of the shaft and the transverse direction.

D. "the first and second legs allowing the hangers to accommodate various sizes"

For the reasons stated below, the court finds the term in claims 1, 2, 6, 7, 10, 12, 14, and 21-24 of the '305 patent to be clear on its face and therefore does not need this court's construction.

Beverly contends that the term "the first and second legs allowing the hangers to accommodate various sizes" suffers from the same defect as the claims from the '543 patent referring to "the first and second leg having a compliant area" in that the specification does not sufficiently teach what structure should be used to accommodate the various sizes of line. According to Beverly, "the '305 specification teaches that it is some structure, either the spring fingers 29 and/or the stops 30 in conjunction with either the compliant section or the extended section that permits the hanger to accommodate a large range of different transmission line diameters," but the specification does not reveal how the "legs themselves" accommodate the various lines. (Def. Mem. at 6.) Beverly suggests the same construction as in subheading C, that the term be construed as "the first and second legs should include structure equivalent to either the spring fingers or the stops in order for the first and second legs to allow the hanger to accommodate different sizes of transmission lines." (Def. Mem. at 6.)

The disputed term in the '305 patent does not raise the same issues discussed above as the disputed "compliant area" term from the '543 patent because the grammar used in the claims in the '305 patent could not suggest that there is a separate compliant area in the hanger legs apart from the teaching in the specification of the location of the compliant area. Hence, there is no possible confusion between the terms used in the claims and those used the specification, and the court may rely on the general principle that preferred embodiments in the specification should not be imported to confine the claims. Phillips, 415 F.3d at 1323. The court rejects Beverly's proposed construction because the proposed construction would improperly limit the claim to one of its preferred embodiments. The court finds the language of the disputed claim to be clear on its face and not in need of construction.
In claims 1 and 6 of the '125 patent, the parties dispute the meaning of two phrases related to the biodegradation process. For example, claim 1 recites:

1. A method of removing hydrocarbons from a part and disposing of the hydrocarbons, the method comprising the steps of:

   suspending, in a biodegradable, non-caustic, non-flammable, oil dispersant, cleaning and degreasing fluid, microorganisms to which the fluid is non-toxic;

   providing a parts washer having at least a basin for receiving the part and a tank below the basin for containing the fluid;

   bringing the part into contact with the fluid containing the microorganisms;

   allowing the fluid to remove the hydrocarbons from the part and flow into the tank; and

   allowing the microorganisms within the fluid to biodegrade the hydrocarbons.

1. "allowing," "retaining"

Plaintiff ChemFree argues that no construction is necessary because the meaning of these disputed phrases is obvious; the first phrase means to "let or permit the microorganisms within the fluid to chemically decompose the hydrocarbons" and the second means that "the hydrocarbons remain in the fluid that is in the tank while the microorganisms chemically decompose them." In contrast, Defendant seeks to impose a limitation on these claims -- as well as every other claim involving biodegradation in the parts washing patents -- that would require biodegradation to take place at or near the top of the fluid in the tank. Thus, Defendant suggests that "allowing the microorganisms within the fluid to biodegrade the hydrocarbons" should mean "placing the bacteria in close proximity to the hydrocarbons floating at the top of the fluid so that the bacteria can break down the hydrocarbons into predominantly environmentally safe by-products." Similarly, they argue that "retaining the hydrocarbons within the fluid in the tank while the microorganisms biodegrade the hydrocarbons" should mean "allowing the bacteria to break down the hydrocarbons into predominantly environmentally safe by-products at a location that is at the top of the fluid in the tank."

J. Walter's position is based primarily upon his theory that Plaintiff ChemFree, during prosecution of the '491 patent, disclaimed biodegradation that takes place anywhere other than the top of the tank. (Def.'s Opening Brief at 59-60 ("The prosecution history . . . mandates that the disputed phrase be construed as ensuring the bioremediation occurs at the top of the cleaning fluid."); id. at 62-63 ([A]ll the patents that claim bioremediation of the grease and oil washed from a part are restricted to an embodiment wherein a substantial amount of the biodegradation takes place proximate to the fluid surface.") (emphasis omitted).)

The Court begins with the language of the claims themselves, which generally "provide[s] substantial guidance as to the meaning of particular claim terms." Phillips, 415 F.3d at 1314. As seen from the text of claims 1 and 6, neither of the claim phrases at issue either explicitly or implicitly require that biodegradation take place at the surface of the fluid. Instead, both claims merely recite that the biodegradation take place "within the fluid [in the tank]." Notably, when the Applicant desired to limit its invention to an embodiment where biodegradation takes place at the surface of the fluid, it knew how to do so. For example, claim 3 of the '110 patent recites a parts washing system "wherein [a] substantial portion of the microorganisms and hydrocarbons accumulate proximate to said fluid surface such that a substantial amount of biodegradation takes place proximate to said fluid surface." The presence of such a limitation there and not in these claims suggests they should not be so-limited.
Defendant also points to language in the specification in support of their position that all embodiments should be limited to biodegradation taking place at or near the surface of the fluid. The portion of the specification cited teaches that:

[T]he fluid 72 and organic contaminants pass through the support grid 58, and drain hole 52 to deposit into the tank cavity 44. . . . Within the tank cavity 44, a large percentage of the microorganisms and organic contaminants will tend to accumulate proximate to the surface of the cleaning fluid 72 such that a large portion of the biodegradation takes place proximate to the surface of the cleaning fluid 72.

'110 patent, col. 6, l. 49 - col. 7, l. 3. The parties do not dispute that, generally speaking, oil and grease, if left undisturbed, will float on top of the cleaning fluid. The specification merely discusses this phenomenon in the context of explaining a preferred embodiment of the invention. Nowhere, however, does the Applicant's disclosure indicate that it intended to limit the invention to embodiments where a substantial amount of the biodegradation takes place at the surface of the fluid. Cf. Phillips, 415 F.3d at 1323 ("Much of the time, upon reading the specification in that context, it will become clear whether the patentee is setting out specific examples of the invention . . ., or whether the patentee intends for the claims and the embodiments to be strictly coextensive."). It would be inappropriate to import the limitation into these claims due to the Applicant's discussion of a natural phenomenon that "tend[s] to" happen.

J. Walter's primary argument with regard to its proposed construction is that ChemFree, during prosecution of the '491 patent, made a representation that serves to limit all embodiments in all patents stemming from the '902 application to an embodiment wherein a substantial amount of the bioremediation takes place at the fluid surface. (Def.'s Opening Brief at 62-63 ("Applicants' characterization of the scope of the invention during prosecution limits the scope of all the patents-in-suit to the same extent -- all the patents that claim bioremediation of the grease and oil washed from a part are restricted to an embodiment wherein a substantial amount of the biodegradation takes place proximate to the fluid surface.").) To be clear, J. Walter seeks to impose a limitation on the claims in the '125 patent based not on representations made during prosecution of that patent, but on representations made during prosecution of its sibling '491 patent.

During prosecution of the '491 patent, the Examiner initially rejected all pending claims as obvious over three prior art references.'491 patent File History, Examiner's First Office Action at 2 (mailed July 19, 1996). In response to the Examiner's rejection, the Applicant cancelled independent claim 23 and amended remaining independent claims 26 and 35. Id., Applicant's Resp. to First Office Action at 1-3 (filed Dec. 22, 1997). With respect to claim 35, which eventually issued as the only independent claim of the '491 patent, the Applicant added two limitations to the claimed method for cleaning parts: "accumulating the microorganisms and the hydrocarbons adjacent a fluid surface defined by the fluid in the tank[] and biodegrading the hydrocarbons proximate to the fluid surface." Id. at 2-3. These limitations appear in the claim as issued. See '491 patent, col. 8, ll. 41-45. In connection with the amendment, the Applicant argued in the "remarks" portion of the response as follows:

The method of cleaning hydrocarbons from a part in the parts washer, as recited in claims 35-41, as now amended, includes exposing the part to a fluid within the basin and providing a flowpath for the fluid between the basin and the tank, wherein microorganisms are disposed within the parts washer, and the improvement thereto comprises heating the fluid, accumulating microorganisms and the hydrocarbons adjacent a fluid surface defined by the fluid in the tank, and then biodegrading hydrocarbons proximate to the fluid surface.

Such an improved construction of a parts washing system and method for cleaning hydrocarbons from a part are not believed to be taught by the cited art of record.

* * * 8

In addition, even if the cited references were modified as stated by the Examiner, Applicant respectfully submits that such a combination still would not make the invention recited by the claims, as now amended, obvious. As recited in claims 23 9 and 35-41, as now amended, the fluid defines a surface in the tank and a substantial portion of the microorganisms and hydrocarbons washed from the part tend to accumulate proximate to the fluid surface so that a substantial amount of the biodegradation takes place proximate to the fluid surface. Such a feature is not taught by the cited references.

In Microsoft v. Multi-Tech Systems, Inc., Multi-Tech sued Net2Phone, Inc. for infringement of several patents related to computer-based systems and methods for simultaneously transmitting voice and/or data to a remote site. Microsoft, 357 F.3d at 1344. In response to Multi-Tech's lawsuit, Microsoft filed suit in the same court seeking a declaratory judgment of noninfringement, invalidity, and unenforceability of seven of Multi-Tech's patents. Id. Multi-Tech filed a counterclaim against Microsoft alleging infringement of five of its patents. Id. The dispute among the parties centered in large part over the construction of three terms: "sending," "transmitting," and "receiving" certain types of data. Microsoft and Net2Phone, the accused infringers, argued that the specification and prosecution history mandated that Multi-Tech's claims be limited to systems using point-to-point telephone lines. Id. at 1346. Multi-Tech argued that the claim language was broad enough to encompass communications over a packet-switched network, such as the Internet. Id.

The Federal Circuit agreed with Microsoft and Net2Phone that the "sending," "transmitting," and "receiving" limitations at issue should be "limited to communications over a telephone line and excluding the use of a packet-switched network." Id. The court first looked to the claims themselves and determined that the language used did not operate to limit the scope of the claims to point-to-point telephone lines because it was broad enough to encompass packet-switched networks. Id. at 1347. Nevertheless, the court concluded that "the specification shared by all three patents leads to the 'inescapable conclusion' that the communications between the local and remote sites of the claimed inventions must occur directly over a telephone line." Id. at 1348. The court's conclusion was based on several important facts. The court noted that the specification common to the three patents "repeatedly and consistently describes the local and remote systems of the claimed inventions as communicating directly over a telephone line." Id.; cf. id. ("[T]he specification refers to data transmission 'over' or 'through' a telephone line roughly two dozen times."). The court also found important that the portion of the specification delineating the "Summary of the Invention" discussed the invention in terms of a standard telephone line. Id. These "clear statements in the specification that the invention . . . is directed to communications 'over a standard telephone line'" led the Federal Circuit to conclude that the "sending," "transmitting," and "receiving" required the communications to occur over a telephone line and not a packet-switched network. Id. at 1347-48.

The Federal Circuit also concluded that placing the telephone line limitation on these claims was required by the prosecution history. During prosecution of one of the patents at issue in that case, in response to an office action rejecting the claims as obvious, the applicant gave a "summary of the invention," which included a representation that the communications system disclosed in the specification "operates over a standard telephone line." Id. at 1349. The court determined that this statement "makes clear that Multi- Tech viewed the local and remote sites of its inventions as communicating directly over a telephone line." Id. Importantly, the court also determined that this limiting statement was applicable to all patents which shared the common specification, even though those patents were not before the examiner when the statement was made, because the general statement directed to the "communications system' disclosed '[i]n the [] specification' . . . was a representation of [the applicant's] understanding of the inventions disclosed in all three patents." Id. at 1349-50.

Defendant's reliance on Microsoft in this case is misplaced. Neither the common specification shared by the parts washing
patents nor the prosecution history of any one of those patents support limiting all embodiments in all patents to biodegradation taking place at or near the fluid surface. As discussed above, the only reference in the specification to the biodegradation occurring at the fluid surface is the disclosure that "a large percentage of the microorganisms and the organic contaminants will tend to accumulate proximate to the surface of the cleaning fluid 72 such that a large portion of the biodegradation takes place proximate to the surface of the cleaning fluid 72." 110 patent, col. 6, l. 49 - col. 7, l. 3. This solitary generalization is a far cry from the "repeated[] and consistent[]" representations in the specification in Microsoft, including the statement in the "Summary of the Invention," which led the Federal Circuit to the "inescapable conclusion' that the communications ... must occur directly over a telephone line." Id. at 1348.

Defendant J. Walter also relies upon the statement made by the Applicant in the prosecution history that "a substantial portion of the microorganisms and hydrocarbons washed from the part tend to accumulate proximate to the fluid surface so that a substantial amount of the biodegradation takes place proximate to the fluid surface. Such a feature is not taught by the cited references." This statement, devoid of context, is surely damning evidence that the invention being discussed must be limited to an embodiment where a substantial portion of biodegradation takes place at the fluid surface. J. Walter does not, however, acknowledge the context in which the statement was made. When the it made this argument to the Examiner, the Applicant specifically referred to the pending claims which explicitly recited those limitations. See '491 Patent File History, Applicant's Resp. to First Office Action at 8 (filed Dec. 22, 1997) ("As recited in claims ... 35-41, as now amended ... "). In essence, the Applicant merely recited the language of the claims and stated that the prior art did not teach such an arrangement. Thus, this is not the situation presented in Microsoft, where the statement made during prosecution broadly described the inventions in general as possessing a certain characteristic. Microsoft, 357 F.3d at 1349 ("That statement, which expressly related to the specification shared by all three patents and the communications system disclosed in all three patents, makes clear that Multi-Tech viewed the local and remote sites of its inventions as communicating directly over a telephone line."); cf. Ventana Med. Sys., Inc. v. BioGenex Labs., Inc., 473 F.3d 1173, 1184 (Fed. Cir. 2006) (noting that "[s]tatements made during the continued prosecution of a sibling application may 'inform the meaning of the claim language by demonstrating how the inventor understood the invention,'" but noting that the utility of such analysis is diminished when the claim language is different).

For these reasons, the Court declines to impose a limitation on these claims whereby biodegradation must occur at or near the top of the tank. The Court construes "allowing the microorganisms within the fluid to biodegrade the hydrocarbons" to mean "let or permit the microorganisms within the cleaning fluid to biodegrade the hydrocarbons." The Court construes "retaining the hydrocarbons within the fluid in the tank while the microorganisms biodegrade the hydrocarbons" to mean "the hydrocarbons remain in the cleaning fluid while the microorganisms biodegrade them."

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1. Claim Construction

Moore argues that the district court erred in granting summary judgment of non-infringement of the '110 patent due to the accused SRC form's inability to literally satisfy the "devoid of adhesive" limitation of claims 1 and 11 and in view of the prosecution history. According to Moore, the district court failed to evaluate the "devoid of adhesive" limitation in view of the prior art and the prosecution history, as Moore alleges is required by Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559, 1566, 24 U.S.P.Q.2D (BNA) 1321, 1327 (Fed. Cir. 1992).

Moore emphasizes that the Conti patent depicts a form with adhesive strips that extend the entire distance between the longitudinal lines of weakness at both end edges. Given this teaching of the Conti patent, Moore theorizes that "devoid of adhesive" must be construed as encompassing a form with "no adhesive extending substantially completely along both the end edges between the lines of weakness as in Conti." (Emphasis added.) Alternatively stated, Moore believes that the "devoid of adhesive" limitation extends to forms with adhesive absent from all but one end edge, along which intermittent adhesive extends. Moore further suggests that the phrase "along said end edges" requires that the adhesive not merely be near the end edges, but that the adhesive actually abut the end edges, as depicted in the Conti patent.

We reject each of Moore's claim construction arguments seriatim. With respect to Moore's belief that the sheet need only be devoid of adhesive that extends "substantially completely" between the longitudinal lines of weakness, we note that the Conti patent discloses an intermittent strip of non-permanent adhesive along the transverse end edge on one face, see Conti
Moore's evidentiary submissions show that the adhesive strip in the Conti patent need not be "substantially complete," but can be intermittent. We are perplexed by Moore's reliance on the prior art as somehow supporting a construction of "adhesive" as limited to a substantially complete strip. We further note the applicant's statement during the prosecution of the '110 patent that "if one were to remove the adhesive from the end edges of Conti, the remaining elements of Conti would not perform the same function as before." The applicant was plainly speaking of the removal of all the adhesive, not merely portions.

While Moore contends that a form that is devoid of adhesive between the longitudinal lines of weakness along all but one end edge would still infringe, the plain language of the claim does not limit the "devoid of adhesive" limitation to only one face or only one edge. Both claims 1 and 11 refer to the sheet as having "opposite end edges" (plural) and first and second faces, and we discern nothing in the plain language of the claims or the written description that would limit the reference to "said end edges" in the "devoid of adhesive" limitation to only some, but not all, of the end edges. In fact, the written description suggests the contrary, since all of its figures depict a form with no adhesive along any of the four end edges between the longitudinal lines of weakness. See '110 patent, Figs. 1-3.

Finally, with respect to Moore's bare contention that "along" requires that the strip abut the end edge and not merely be "near" the end edge, we emphasize that the plain meaning of "along" does not so require. According to Webster's II New Riverside University Dictionary, "along" means "1. Over, through, or by the length of <<roses growing along the fence>>." Webster's II New Riverside University Dictionary 95 (1984) (emphasis added). The definition of "by," in turn, is "1. Next to: close to <<the light by the window>>. Id. at 214 (emphasis added). These definitions clearly demonstrate that "along" does not require that a first item abut a second item, but rather can be "near" the second item.

Defendant contends the court's construction of the claim term "along a line" is erroneous. Patent claims define in words the scope of the invention at issue. Construction of the claims is a matter of law for the court. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1996) (en banc).

In construing claims, the analytical focus must begin and remain centered on the language of the claims themselves, for it is that language that the patentee chose to use to "particularly point[] out and distinctly claim[] the subject matter which the patentee regards as his invention." 35 U.S.C. § 112, P 2.

Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001). Likewise, the court must be guided
by the principle that there is a "heavy presumption" that words used in the claims are "given their ordinary and customary meaning," that is "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005)(en banc), cert. denied, 546 U.S. 1170, 126 S. Ct. 1332, 164 L. Ed. 2d 49 (2006)(citation omitted). See also Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202 (Fed. Cir. 2002)(collecting cases), cert. denied, 538 U.S. 1058, 123 S. Ct. 2230, 155 L. Ed. 2d 1108 (2003). Once the court has determined the ordinary meaning of the disputed terms, the court must examine the written description and prosecution history of the patent to ascertain whether the inventor specifically defined or used any of the terms in a way that is inconsistent with the ordinary or customary meaning. Likewise, if the court cannot fathom the meaning of the words, the specifications and prosecution history must be examined to determine the scope of the claims. The Federal Circuit has cautioned, however, that "[t]he written description part of the specification itself does not delimit the right to exclude. That is the function and purpose of claims." Markman v. Westview Instruments, Inc., 52 F.3d 967, 980 (Fed. Cir. 1995)(en banc), aff'd 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996).

With these principles in mind, the court construed "along a line" to mean "[c]ontacting the aorta inner wall with a portion of the tube body such that when the end of the catheter lodges within the opening in the coronary artery, an about 1.5 cm or greater length of the tube body bears upon the wall of the aorta opposite the opening." Order at 2 (W.D. Okla. Sept. 15, 2005)(Doc. No. 153). Defendant argues this construction is in error because it does not require "contiguous contact between the aorta inner wall and a straight section of the catheter". Cordis' JMOL Motion at 7 (emphasis added).

The court once again rejects defendant's proposed construction. The phrase "along a line" was added to Claim 4 of the '213 patent by amendment. Order at 14 (W.D. Okla. May 8, 2006)(Doc. No. 309). Specifically, Claim 4 was amended to describe the shape of the profiled portion and to reflect that the profiled portion engaged the wall of the aorta "along a line." Id. The purpose of the amendment was to distinguish prior art catheters by indicating the length and location of the engagement of the aortic wall. Id. at 15. Defendant's construction asks the court to incorporate a term into the claim that does not exist -- that is, that the engagement is solely along a straight portion of catheter. In addition to violating claim construction rules, defendant's construction fails to recognize that the '213 patent focuses on the catheter as it is used in the human body. The claim requires the catheter body to engage the aortic wall, which by its very nature is not straight. A person of ordinary skill in the art would understand the complex geometry of the aorta and would not expect engagement along a line to indicate a straight line. See Primos, Inc., 451 F.3d at 847-48. Moreover, defendant's construction would render disclosed preferred embodiments outside the scope of the claim. 9 While claim construction should not import limitations from preferred embodiments into the claim, interpretations that exclude a preferred embodiment are also not appropriate. Primos, Inc., 451 F.3d at 848; Burke, Inc. v. Bruno Indep. Living Aids, Inc., 183 F.3d 1334, 1341 (Fed. Cir. 1999).

--- Footnotes ---

8 See Superguide Corp. v. DirecTV Enterps., Inc., 358 F.3d 870, 878 (Fed. Cir. 2004)(error to limit claim to analog signals as "neither 'analog' nor 'digital' appears in any of the asserted claims").

9 The '213 patent teaches "the second straight portion 124 and the proximal portion of the secondary curved portion 130 of the distal end portion together provide a contact portion for resting substantially contiguously against the wall of the ascending aorta 158." PX 2 at 23:51-55 (emphasis added). Likewise, the patent reflects, "to the extent that an aorta varies in size/shape, the secondary curved portion 130 readily accommodates this change so that the contact portion (including the second straight portion 124 and the proximal portion 131 of the secondary curved portion 130) remains in contact with the ascending aortic wall in a substantially contiguous manner." Id. at 23:67 -- 24:6 (emphasis added). See also id. at 19:52-57 ("in this preferred orientation shown in FIG. 8C, a distal end 135 of the contact portion (the contact portion including the second straight portion 124 and a proximal portion 131 of the secondary curved portion 130) rests against the wall of the ascending aorta 158 at a point substantially directly across from the ostium 157 of the left main coronary artery 154. . . . Moreover, this advantageous orientation of the guide catheter 110 within the aortic complex is directly attributable to the shape and configuration (including a particular sequence of straight and curved portions) of the guide catheter 110 in its relaxed state prior to insertion in the cardiovascular system.")(emphasis added).

--- End Footnotes ---
The central issue is whether the Eastman Carbon Venture Blind has a "closable vertical opening," as required by the nine claims of the '338 Patent. Claims 1 and 7 are the independent claims of the patent. Claim 1 reads:

1. A portable and collapsible blind or shelter structure comprising:
   (a) a flexible fabric cover having four side walls and a top; wherein each side wall includes at least one window opening; wherein each said side wall opposite side edges and a top edge; wherein side edges of adjacent side walls are integral with each other; and further including a closable vertical opening along one of said side edges; wherein the perimeter of each side wall and the top is non-stretchable; and
   (b) a framework comprising five support members; wherein each side support member comprises four resilient leg members hingedly connected at one end to a central hub; wherein one said support member engages and supports said top; and wherein said leg members connected to each said hub can be pivoted towards each other to collapse said structure.

('338 Patent, col. 4, 11. 2-21). Claim 7 reads:

7. A portable and collapsible blind or shelter structure comprising:
   (a) a flexible, integral fabric cover having four generally-square side walls and a top; wherein each side wall includes at least one window opening; and further including a closable vertical opening along one vertical corner of said structure; wherein the perimeter of each side wall and the top is non-stretchable; and
   (b) framework comprising five support members; wherein each said support member comprises four resilient leg members hingedly connected at one end to a central hub; wherein one said support member engages and supports a respective side wall in a taut condition; wherein one said support member engages and supports said top; and wherein said leg members connected to each said hub can be pivoted towards each other to collapse said structure.

('338 Patent, col. 4, 11. 36-52). Claims 2-6 depend on claim 1. Consequently, those claims are limited by the term "a closable vertical opening along one of said side edges." Claims 8 and 9 depend on claim 7 and are limited by the term "a closable vertical opening along one vertical corner of said structure."

The plaintiff and defendant dispute the meaning of these claim limitations. The plaintiff contends that these phrases encompass an opening of any shape having a predominately vertical dimension which is positioned along or adjacent to a side edge or vertical corner of the structure. According to the plaintiff's construction, this claim language would cover a triangular flap extending into one side wall, so long as one side of the triangle is positioned along one side edge or vertical corner of the structure. The defendant disputes that interpretation, arguing that the claim language, the specification, and the prosecution history show that a "closable vertical opening" means "a slit-like opening that runs straight up and down or perpendicular to the horizon." Eastman further asserts that the ordinary meaning of "along one of said side edges" is "over the length of or on a line or course parallel and close to one of the side edges of the blind," and that the ordinary meaning of "along one vertical corner of said structure" is "over the length of or on a line or course parallel and close to the vertical line formed where two side walls of the blind meet at an angle."

"It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996); see also Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996). The words of the claims are of primary importance. Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc); Vitronics, 90 F.3d at 1582 (Fed. Cir. 1996). "[T]he words of a claim 'are generally given their ordinary and customary meaning.' Phillips, 415 F.3d at 1312 (quoting Vitronics, 90 F.3d at 1582). "[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Phillips, 415 F.3d at 1313.
Eastman submitted the declaration of Mr. Jeffrey A. Pestrue, its chief engineer. Mr. Pestrue is person with expertise in the design, development and production of hunting blinds, and he stated that the phrase "closable vertical opening" has no special meaning in the hunting blind industry. (Pestrue dec. P 5). There is no other evidence on this point.

Resolution of this claim construction dispute involves the application of commonly understood words. The parties have focused attention on the meaning of the word "vertical." "The common-sense understanding of 'vertical' or 'vertically' is that those words convey a sense of perpendicularity with respect to the surface of the earth." Laser Diode Array, Inc. v. Paradigm Lasers, Inc., 114 F.Supp.2d 167, 172 (W.D.N.Y. 2000). General purpose dictionary definitions, which are a type of extrinsic evidence, may be considered in the context of the intrinsic evidence. See Phillips, 415 F.3d at 1314-19. The plaintiff cites Merriam-Webster's Collegiate Dictionary (10th ed. 1998) which includes the following definitions: "perpendicular to the plane of the horizon or to a primary axis: UPRIGHT … lying in the direction of an axis: LENGTHWISE." That source also states, "Vertical suggests a line or direction rising straight upward toward a zenith."

When construing claims, "the context in which a term is used in the asserted claim can be highly instructive." Phillips, 415 F.3d at 1314. In the disputed phrases, "vertical" modifies "opening." This context means that the opening itself must extend lengthwise, in a direction that is straight up and down or perpendicular to the plane of the horizon.

The claim language also requires that the closable vertical opening be along one of the side edges (claim 1) or along one vertical corner of the structure (claim 7). The position of the opening is described throughout the patent. The abstract states: "One corner of the structure includes a vertical opening to permit ingress and egress from the structure." The following statement appears in the summary of the invention: "An openable doorway is positioned vertically at one corner of the blind or shelter to enable ingress and egress. Closure means such as a zipper is used to close the opening." (‘338 Patent, col. 2, ll. 13-15). The following statement appears in the detailed description of the invention:

> A zipper is incorporated in one corner of the structure where two side walls meet. The zipper is stitched in place with non-stretchable thread. The leg members must flex in order to enable the door opening to expand for ingress and egress. When the zipper is in an open position, the fabric adjacent [to] the opening can be pulled slightly away from the opening (which results in widening of the opening as the pegs flex.)

(Col. 3, ll. 28-35). In Figure 1, a vertical slit-like opening positioned at the corner of the blind is shown as element 5. No other type of opening is mentioned in the patent.

The patent's prosecution history is also informative. The application claims were allowed without amendment. The Notice of Allowability included the following Examiner's Statement of Reasons for Allowance:

> The primary reason for the allowance of the claims is the claimed foldable tent structure having a cover which includes a top wall and 4 side walls and a zippered vertical opening at a cornered side edge, 5 frame members each has four resilient legs hingedly connected at one end to a central hub, each frame member engages and supports a respective side wall and the top wall in a taut condition; each leg is pivotable at the hub toward each other to collapse the tent structure. Said tent structure is not shown or taught by the prior art of record.

(Def's Ex. A-2). This statement demonstrates that the Examiner considered a vertical opening positioned at a cornered side edge to be a distinguishing feature of the invention. Among the prior art patents cited as references in the '338 Patent are U.S. Patent No. 3,810,482 to Beavers (the "482 Patent") and U.S. Patent No. 4,819,680 to Beavers ("the '680 Patent). These patents disclose a cube-shaped collapsible tent structure having a hub-style framework similar to that of the plaintiff's invention. One of the few distinctions between the plaintiff's invention and these prior art patents is that the plaintiff's invention has a vertical opening at a cornered side edge.

The plaintiff has provided the declaration of Rex E. Paulsen, Ph.D., P.E. Mr. Paulsen is a registered professional engineer and has some expertise relating to collapsible tents and patents. Mr. Paulsen's declaration constitutes extrinsic evidence, a category that is less significant than the intrinsic evidence. See Phillips, 415 F.3d at 1317. Mr. Paulsen's declaration suffers from errors and deficiencies and is not useful in ascertaining the meaning of the disputed terms. In his discussion of the prosecution history, Mr. Paulsen dismissed the significance of Examiner's Reasons for Allowance without any review of the prior art. Where he did address the '482 Patent, Mr. Paulsen mistakenly stated that the '482 Patent shows a three-sided tent, whereas the specification of the '482 Patent expressly states that the invention is not limited to a structure having three sides.
and a top. See '482 Patent, col 3, 11. 24-38 ("The frame 12 comprises a minimum of four and a maximum of six nearly identically constructed subframe assemblies … [in the preferred embodiment] the subframe assemblies which could be positioned in the entryway 18 as well as in the floor area are both left out."). Figure 2 of the '482 Patent shows a tent having four side walls and top, with a triangular entryway in one of the side walls. A similar drawing is shown in the '680 Patent.

Mr. Paulsen failed to appreciate the full teachings of the Beavers patents and other references cited in the '338 Patent. The language of the '338 Patent claims, the specification, and the prosecution history support the construction urged by Eastman. The term "a closable vertical opening" means "a slit-like opening that runs straight up and down or perpendicular to the plane of the horizon." "Along one of the side edges" means "over the length of or on a line or course parallel and close to one of the side edges of a wall of the blind." "Along one vertical corner of said structure" means "over the length of or on a line or course parallel and close to the vertical line formed where two side walls of the blind meet at an angle."

The court need only construe the term "alphanumeric keyboard" within claim 1 to decide the preliminary injunction application. n5 Wireless proposes the following construction: "An alphanumeric keyboard" is a regular arrangement of keys. When activated, these keys are used to generate the internal representation of symbols. Alphanumeric' symbols include letters of the alphabet and numbers 0-9. Alphanumeric keyboards' allow the generation of internal representations for this set of symbols." P. Reply Br. 8 (quoting Dr. Deffner Report P 31, P. App. 306). Sony submits the following proposed construction: "An input device having a QWERTY, FITALY, or Dvorak layout or any other alphanumeric layout that includes a substantially full set of alphabetic and numeric keys." D. Br. 8 (emphasis omitted).

n5 Wireless has submitted proposed constructions for ten terms within claim 1. For purposes of Wireless' preliminary injunction application, Sony does not dispute the proposed constructions of seven of the ten terms, but it does challenge the proposed constructions of three -- "hand-held," "body portion," and "alphanumeric keyboard" -- and maintains that a fourth term -- "high resolution" -- needs to be interpreted. Of these, the court need only construe the term "alphanumeric keyboard" to conclude that Wireless is not entitled to injunctive relief.

To support its proposed construction, Wireless relies exclusively on extrinsic evidence -- primarily the report of its expert, Dr. Gerhard Deffner ("Dr. Deffner"). n6 The Federal Circuit generally views extrinsic evidence as "less reliable than the patent and its prosecution history in determining how to read claim terms." Phillips, 415 F.3d at 1318. The language of Wireless' proposed construction comes directly from Dr. Deffner's report. The report states in conclusory terms that the proposed construction is how "[a] person of ordinary skill in the art would understand" the term. P. App. 306. But "conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to [the] court." Phillips, 415 F.3d at 1318.

n6 Wireless also points to various technical dictionaries to support its proposed construction. Under Phillips the court may review technical dictionaries "if the court deems it helpful." Phillips, 415 F.3d at 1318. Because the court is able to construe the disputed claim term based on intrinsic evidence, it need not resort to technical dictionaries. See Vitronics, 90 F.3d at 1583 (If "an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term . . . , it is improper to rely on extrinsic evidence.").

In addition, Wireless points to allegedly inconsistent positions that Sony and its expert, Dr. Brad A. Myers ("Dr. Myers"), have taken in other patent proceedings. This is also extrinsic evidence because it is external to the 173 patent and its prosecution history. See Phillips, 415 F.3d at 1317.
In contrast to Wireless' reliance on extrinsic evidence, Sony points primarily to the patent specification to support its proposed construction. Indeed, the text of its proposed definition comes directly from the specification. Compare D. Br. 8 with P. App. 20.

Because the meaning of the claim term "alphanumeric keyboard" as understood by persons of skill in the art is not immediately apparent, the court will interpret it by considering the intrinsic evidence. See Vitronics, 90 F.3d at 1582 ("It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record . . . "). The court turns first to the specification of the 173 patent. The "Background of the Invention" section of the specification summarizes the configurations of several conventional wireless communication devices, including the mobile phone. It describes the mobile phone as typically including, inter alia, "a twelve-digit keypad designed for numeric data entry." P. App. 18. It then details shortcomings with each of the conventional wireless devices. It describes the following fundamental disadvantage with the mobile phone's twelve-digit keypad. Although the twelve-digit keypad usually supports some alphanumeric data entry,

the commonly used method of accessing alphanumeric characters is to switch the device into a text entry mode, then press a key repeatedly to access a particular one of a subset of characters available for each key, this method being extremely slow, awkward, error prone, and not appropriate for a device intended to transfer textual data on a regular basis.

The "Summary of the Invention" section distinguishes between the invention's alphanumeric keyboard' and the mobile phone's keypad. "The alphanumeric keyboard is easier and faster to use and learn than the keypads . . . on most mobile phones . . . ." Id. at 20. It describes the alphanumeric keyboard as follows: "The keyboard may be a keyboard with a layout such as the common QWERTY' layout, but need not be limited to this particular layout. Other layouts may include the FITALY' layout, the Dvorak' layout[,] or any other alphanumeric layout that includes a substantially full set of alphanumeric keys." Id. (emphasis added). The specification explains the primary advantage of the invention's keyboard. In contrast to data entry using the mobile phone's twelve-digit keypad, which is "extremely slow, awkward, [and] error prone," id. at 18, the invention's "full alphanumeric keyboard allows the user to quickly and easily transmit messages and other textual and graphical communications in a complete and intuitive manner," id. at 20, and is "effortless to learn and use," id. n7

n7 Neither party has adduced evidence of the patent's prosecution history. Thus the specification is the only intrinsic evidence that the court will consider.

Based on the intrinsic evidence, the court rejects Wireless' proposed construction of "alphanumeric keyboard." The patent specification unambiguously distinguishes between the invention's keyboard and the mobile phone's standard twelve-digit keypad. Because Wireless' proposed construction -- "a regular arrangement of keys" -- would include the twelve-digit keypad, it is simply too broad. Instead, the court adopts Sony's proposed construction, which is taken directly from the language of the patent specification.

Wireless contends that the court's adoption of Sony's proposed construction would be improper because it would use the patent specification to limit the scope of the claims. The court recognizes that it is prohibited from "limiting the claimed invention to preferred embodiments or specific examples in the specification." Tex. Instruments, Inc. v. U.S. Int'l Trade Comm'n, 805 F.2d 1558, 1563 (Fed. Cir. 1986); see also Phillips, 415 F.3d at 1323 ("Although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments."). The court also "recognize[s] that the distinction between using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim can be a difficult one to apply in practice." Phillips, 415 F.3d at 1323. But because the court's analysis does not refer to the patent's preferred embodiment or to the numerous
specific examples of other embodiments listed within the patent, the court is satisfied that it is relying on the specification to interpret the claims, not to improperly limit them.

D

The claims of the 173 patent do not read on the accused products. The Sony devices do not have an "alphanumeric keyboard," as the term is properly construed. Rather, they incorporate a typical twelve-digit numeric keypad, a power key, and a Sony operator-defined key. Like standard mobile phone keypads, the keys associated with the numerals 2 through 9 are also capable of inputting alphabetic characters in a text-entry mode. But the specification makes clear that this is the keypad configuration that suffers from the problems that the inventors sought to overcome by incorporating an alphanumeric keyboard that employs a substantially-full set of alphanumeric keys. Thus the court concludes on the present record that Wireless has failed to establish that it will likely prove infringement of claim 1 at trial. The remaining asserted claims are dependent on claim 1. Because dependent claims necessarily include all limitations of the claims on which they depend, Wireless has not demonstrated that it will likely prove infringement of any of the asserted dependent claims at trial.

The intrinsic evidence provides adequate grounds for the court to construe the term "alphanumeric keyboard." Accordingly, the court does not rely on any extrinsic evidence, including expert reports. See Vitronics, 90 F.3d at 1583 (If "an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term . . ., it is improper to rely on extrinsic evidence.").

C

In their briefing on the summary judgment motion, the parties focus their arguments on the construction of "alphanumeric keyboard" alone, disregarding the remaining claim terms. Thus the court in deciding the motion will construe "alphanumeric keyboard" only. In its summary judgment motion, Sony urges the court to adopt its preliminary construction of "alphanumeric keyboard" as its final construction. Sony relies on the court's analysis of the intrinsic evidence in Wireless I, contending that this evidence dictates that an "alphanumeric keyboard" have a substantially full set of alphabetic and numeric keys and maintaining that Wireless cannot rely on extrinsic evidence to contradict the meaning of "alphanumeric keyboard" that is contained in the specification. Wireless posits that the court improperly construed "alphanumeric keyboard" on an incomplete record at the preliminary injunction stage and impermissibly limited the claims of the '173 patent to the preferred embodiment. n7 Wireless also directs the court to the prosecution history of United States Patent Application No. 10/655,802 ("the '802 application"), which Wireless maintains supports a broader construction for "alphanumeric keyboard" than the one the court adopted in Wireless I. Sony replies that the '802 application's prosecution history does not support Wireless' assertions.

n7 Rather than restate its analysis in its response to Sony's summary judgment motion, Wireless reasserted and incorporated by reference all of the legal and factual assertions it made in its motion for preliminary injunction and motion to reconsider.

Because the parties' arguments are substantially the same ones made at the preliminary injunction stage, the court will address only the new claim construction evidence before issuing its final claim construction for "alphanumeric keyboard." Wireless submitted a November 29, 2005 notice of filing supplemental appendix to its brief in support of its motion to reconsider, which contains the prosecution history of the '802 application. Wireless filed the supplemental appendix even though the court had earlier denied Wireless' motion to reconsider and Wireless had already appelead the denial of the preliminary injunction motion and the motion to reconsider. Sony recognizes the "procedural impropriety" of Wireless' filing a supplemental appendix for a motion that had already been decided by the court and that was the subject of a pending appeal. D. Br. 2 n.6. Nevertheless, Sony does not object to the supplemental appendix; instead, it contends the '802 application's prosecution history does not support Wireless' assertions.
Wireless avers that during the prosecution of the '802 application -- which it maintains has an identical specification to that of the '173 patent -- the Patent and Trademark Office ("PTO") Examiner ruled that an "alphanumeric keyboard" should be construed to include "a qwerty, a Fitaly, a Dvorak or a twelve-key keyboard." P. Br. 3 (emphasis omitted) (quoting P. Supp. App. 32-33). Wireless contends the prosecution histories of related applications are highly relevant and useful evidence in determining a patent's scope, and that the PTO Examiner's conclusion is wholly consistent with Wireless' construction of "alphanumeric keyboard" as specifically including a twelve-digit keypad. Sony argues that Wireless has misrepresented the prosecution history of the '802 application. It maintains that, in response to the PTO's rejection of all claims in the '802 application, Wireless removed the word "alphanumeric" from the claims, and that the PTO Examiner made no conclusions relating to the construction of "alphanumeric keyboard."

The prosecution history of the '802 application is extrinsic evidence. See Phillips, 415 F.3d at 1317 (holding that extrinsic evidence "consists of all evidence external to the patent and prosecution history" (quoting Markman, 52 F.3d at 980)). As such, it is less reliable than the '173 patent's specification in construing that patent's claim terms, and the court should discount it if it is clearly at odds with the claim construction mandated by the intrinsic evidence. See id. at 1317-18. And because, as the court held in Wireless I, "the intrinsic evidence provides adequate grounds for the court to construe the term 'alphanumeric keyboard,'" Wireless I, 390 F. Supp. 2d at 540, it is improper for the court to rely on extrinsic evidence, including the '802 application's prosecution history. See Vitronics, 90 F.3d at 1583 (If "an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term . . ., it is improper to rely on extrinsic evidence.").

Moreover, even if the court were to afford great weight to the '802 application's prosecution history, it does not support Wireless' assertions. To support its contention that the PTO Examiner "ruled that an 'alphanumeric keyboard' should be construed to include 'a qwerty, a Fitaly, a Dvorak or a twelve-key keyboard,'" P. Br. 3, Wireless cites claims 67, 68, and 69 of the '802 application. Claim 67 depends on claim 1, claim 68 depends on claim 31, and claim 69 depends on claim 56. At one point, claims 1 and 31 required, inter alia, "an alphanumeric keyboard carried by the body portion." P. Supp. App. 16, 25. In response to PTO action, the '802 applicant amended claims 1 and 31 such that the "alphanumeric keyboard" limitation was removed. These claims now include the limitation of "a keyboard carried by the body portion." Id. at 15, 16, 25. Claim 56 also contains the limitation of "a keyboard carried by the body portion." Id. at 30. Claims 67, 68, and 69 each contain the limitation that the "keyboard [be] selected from the group of a qwerty, a Fitaly, a Dvorak or a twelve-key keyboard." Id. at 32-33. Wireless' contention that this language is somehow equivalent to a ruling by the PTO Examiner regarding the construction of "alphanumeric keyboard" is incongruous. To the extent that claims 67, 68, and 69 might enlighten a person of ordinary skill in the art as to whether a claim term includes "a twelve-key keyboard" in its definition, that term is "keyboard," not "alphanumeric keyboard."

Relying only on the intrinsic evidence of the '173 patent as the court explained in Wireless I, the court adopts its tentative construction of "alphanumeric keyboard" at the preliminary injunction stage as its final construction. Thus the court construes "alphanumeric keyboard" as an input device having a QWERTY, FITALY, or Dvorak layout or any other alphanumeric layout that includes a substantially full set of alphabetic and numeric keys.

DISCUSSION

This appeal turns entirely on the correct construction of the term "alphanumeric keyboard." We construe the term "alphanumeric keyboard" without deference to the district court's claim construction. Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 423 F.3d 1343, 1347 (Fed. Cir. 2005).

The scope of the term "alphanumeric keyboard" is not readily apparent from the face of the claim, and there is no common dictionary definition of this term. n2 However, the term "alphanumeric keyboard" "must be read in view of the specification, of which [it is] a part." Phillips, 415 F.3d at 1315 (internal quotation marks and citation omitted). The specification is "the single best guide to the meaning of a disputed term." Id. (internal quotation marks omitted). Here, it is clear to us, as it was to the district court, that an "alphanumeric keyboard" is an input device having a QWERTY, FITALY, or Dvorak layout or any other alphanumeric layout that includes a substantially full set of alphabetic and numeric keys, and that it does not include a twelve-digit keypad.
First, the description of the invention in the "Summary of the Invention" section of the specification states:

The keyboard may be a keyboard with a layout such as the common "QWERTY" layout, but need not be limited to this particular layout. Other layouts may include the "FITALY" layout, the "Dvorak" layout or any other alphanumeric layout that includes a substantially full set of alphanumeric keys.

'173 patent, col. 5, ll. 6-11 (emphasis added). The description clearly depicts the claimed invention as having "the common 'QWERTY' layout" or "any other alphanumeric layout that includes a substantially full set of alphanumeric keys." This description is not merely referring to a preferred embodiment; rather, as part of the "Summary of the Invention," it is "commensurate with the invention as claimed." 37 C.F.R. § 1.73 (2004). Therefore, to allow Wireless to claim a keyboard with less than a substantially full set of keys would injure the public's right "to take the patentee at [his] word." Honeywell Int'l, Inc. v. ITT Indus. Inc., 452 F.3d 1312, 2006 U.S. App. LEXIS 15553, F.3d , No. 05-1407, 2006 WL 1703376, at *6 (Fed. Cir. June 22, 2006).

Wireless argues that the specification cannot be used to define the term "alphanumeric keyboard" because at the end of the specification the '173 patent contains the following boilerplate language:

Although the invention has been described with reference to a particular embodiment, this description is not meant to be construed in a limiting sense. Various modifications of the disclosed embodiments as well as alternative embodiments of the invention will become apparent to persons skilled in the art. . . . It is therefore contemplated that the appended claims will cover any such modifications or embodiments that fall within the scope of the invention.

'173 patent, col. 13, ll. 20-28. We see nothing in this language that contradicts our reading of the specification.

Second, the specification explicitly references the disadvantages of keypads that have only twelve digits, such as the accused device. For example, in describing the disadvantage of the mobile phone twelve-digit keypad, the specification states:

The mobile phone configuration has the following disadvantages . . . the keypad is typically a twelve-digit keypad designed for numeric data entry, although the keyboard usually supports alphanumeric character entry . . . whereby the commonly used method of accessing alphanumeric characters is to switch the device into a text entry mode, then press a key repeatedly to access a particular one of a subset of characters available for each key, this method being extremely slow, awkward, error prone, and not appropriate for a device intended to transfer textual data on a regular basis. . . .

'173 patent, col. 2, ll. 39-58 (emphasis added). Further, the specification distinguishes the "alphanumeric keyboard" from the keypads on most mobile phones by stating "[t]he alphanumeric keyboard is easier and faster to use and learn than the keypads and touch screens on most mobile phones and personal digital assistants." '173 patent, col. 5, ll. 4-6.

We have previously recognized that "[w]here the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question." Scimed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1341 (Fed. Cir. 2001). In Honeywell Int'l, Inc., 2006 U.S. App. LEXIS 15553, F.3d , a case involving similar circumstances, we found that the claim term "electrically conductive fibers" excluded carbon fibers because the specification's "repeated derogatory statements concerning one type of material [(carbon fibers)] [was] the equivalent of disavowal of that subject matter from the scope of the patent's claims." Id., 2006 U.S. App. LEXIS 15553, 2006 WL 1703376 at *7. Here too, the specification's repeated derogatory statements about the twelve-digit keypad convince us that the "alphanumeric keyboard" does not include a twelve-digit keypad.
Wireless also urges that we look to extrinsic evidence, including a statement by its expert witness that "an 'alphanumeric keyboard' is a regular arrangement of keys." J.A. at 407 (emphasis added). Wireless's expert concluded that the accused device "includes a regular arrangement of keys, i.e., a keyboard, which allows users to generate all the letters of the alphabet and the numbers 0 through 9." J.A. at 415. We find that the expert's statement is conclusory and is unsupported by reference to any contemporaneous document and therefore of no value in our claim construction analysis. Phillips, 415 F.3d at 1318.

Wireless also points to the fact that the Patent and Trademark Office allowed certain claims of Wireless's related patent application ("the '802 application") to cover a twelve-digit keyboard. The allowed claims of the '802 application do not include an "alphanumeric keyboard." That allowance has no bearing on the construction of the term "alphanumeric keyboard." Wireless also cites to various patent applications filed by Sony, arguing that Sony's patents describe a twelve-digit keypad as an alphanumeric keyboard. None of the references cited by Wireless contains a definition of alphanumeric keyboard that is contrary to the district court's claim construction here. In any event, the specification here is clear and the expert testimony and other extrinsic evidence cannot be used to contradict it.

For the foregoing reasons, we conclude that the district court's claim construction was correct. The undisputed evidence established that the accused device utilized twelve keys rather than a substantially full set of alphanumeric keys. The preliminary injunction was therefore properly denied. We affirm.

2. Altering (claims 1, 30, 46, 50) 4

4 For purposes of claim construction, the parties appear to use the words "altered," "altering," and "adjusting" interchangeably. The Court will also use them interchangeably.

Plaintiff one or more techniques selected from the group consisting of adding, removing, isolating and shielding a known fraction of said initial amount

Defendant a two-phase manufacturing process in which a lot or test characterization is performed, and the initial amount of an oxidizable or reducible species is altered or adjusted to bring it within a desired or target.

For its proposed construction, defendant relies on the language in claims 30 and 46, which include the terms "initial amount" as the thing to be altered. (Def.'s Mem. in Opp'n, 20.) Based on the claim language, defendant argues that "the plain meaning of claim terms 'initial amount' or 'original amount' is the first or beginning amount of oxidizable and reducible species on each iontophoretic device . . . the plain meaning of the terms 'altering' and 'altered' requires a change or variation from that beginning amount." (Id. at 20.) Defendant also argues that the specification shows that the two-step process was necessary to avoid encompassing prior art. (Def.'s Mem. in Support Summ. J., 19.)

Plaintiff's construction simply quotes the language of the claim itself. (014 Patent, col. 8, lines 44-48.) Under plaintiff's proposed construction, a two-phase process is not required. In addition, plaintiff notes that the prosecution history does not suggest that specifically a two-phase manufacturing process, rather than a one-step "altering" process, was necessary to avoid encompassing prior art.

The Court adopts plaintiff's proposed construction of the term "altering." First, plaintiff's proposed construction relies on the claim language itself. Phillips, 415 F.3d at 1312-13. Second, defendant's construction of "altering" would impermissibly import the two-phase manufacturing process limitation from a dependent claim -- claim 32 -- into an independent claim -- claim 30. See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004) ("the presence of a dependent claim that adds a particular limitation raises a presumption that the limitation in question is not found in the independent claim").
Therefore, the Court construes the claim term "altering" to mean: one or more techniques selected from the group consisting of adding, removing, isolating and shielding a known fraction of said initial amount.

II. MOTION FOR A MARKMAN DETERMINATION.

Plaintiff asks the Court to construe the term "aluminum" as set forth in Claims 1 and 2 of the '050 patent to mean "commercial grade aluminum." Defendants respond that plaintiff's definition is incomplete and that the Court should construe "aluminum" to mean "commercial grade aluminum from 0.010 inches to 0.015 inches in thickness."

A. Legal Standard.

Patent infringement analysis involves two steps: the proper construction of the asserted claim and a determination as to whether the accused method or product infringes the asserted claim as properly construed. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384, (1996). Interpretation and construction of patent claims is a matter of law for determination exclusively by the court. 52 F.3d at 979.

"In interpreting an asserted claim, the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). In examining the intrinsic evidence, the court should first look at the words of the claims themselves to define the scope of the patented invention. See id. While "words in a claim are generally given their ordinary and customary meaning," a patentee may alter the meaning of any words as long as the special definition is clearly stated in the patent specification or file history." Id.

Second, the court should always review the patent specification "to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning." Id. The specification is a written description of the invention which is designed to be clear and complete enough so that a person of ordinary skill in the art could make and use the invention. Drawings included in the patent application have the same impact on and effect on claim language as other portions of the specifications. See Autogiro Co. of America v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 398 (Ct. Cl. 1967). "The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." Vitronics, 90 F.3d at 1582. The Federal Circuit teaches that "the specification is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term." Id.

In most cases, analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed term. "In those cases where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper." Vitronics, 90 F.3d at 1583.

B. Claim Construction.

Here all parties agree that the Court need only review intrinsic evidence. All parties also agree that, at a minimum, "aluminum" means "commercial grade aluminum." The specification the '050 patent states that the laminated component "comprises substrate A of commercial grade aluminum." '050 patent, col. 4, lines 61-62. The specification goes on the state in the next sentence that "aluminum from about, 0.010 to 0.015 inches in thickness has been found to be satisfactory, although the aluminum may be from about 0.001 inches to 0.125 inches thick depending upon the end use." Id., lines 62-66. It states further that "the CAC component show in FIG. 5 includes a substrate layer of commercial grade aluminum A which is illustrate as from about 0.010 to about 0.015 inches in thickness. Id., col. 5, lines 49-52.

Defendants argue that the specification offers no explanation as to how one skilled in the art of how to practice the invention using the outside measurements of 0.001 inches to 0.125 inches thick, other than stating that thickness depends on "end use." Such vague language, defendants contend, violates the enablement requirements of 35 U.S.C. § 112 and therefore "aluminum" must be construed to mean "commercial grade aluminum from 0.010 inches to 0.015 inches in thickness."
Defendants cite no caselaw for the proposition that a claim must be limited to an inventor's preferred embodiment. Moreover, 35 U.S.C. § 112 paragraph one requires the specification to provide "a reasonable amount of guidance with respect to the direction in which the experimentation should proceed to enable the determination of how to practice a desired embodiment of the invention claimed." PPG Indus., Inc. v. Guardian Indus. Corp., 75 F.3d 1558, 1564 (Fed. Cir. 1996) (quoting Ex Parte Jackson, 217 U.S.P.Q. (BNA) 804, 807 (1982)). The '050 specification does just that. "The fact that some experimentation [such as experimentation to determine the thickness of the sheet] is necessary does not preclude enablement; what is required is that the amount of experimentation must not be unduly extensive." Id. Defendants offer no evidence, and indeed do not argue, that any experimentation to determine the appropriate thickness depending on "end use" would be unduly extensive. Accordingly, the Court will adopt the construction of "aluminum" proposed by plaintiff.

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3. On December 22, 2000, the court issued its construction of disputed claim terms as follows:

a. "Aluminum alloy sheet product." As understood by one of ordinary skill in the art, an aluminum product with a maximum thickness of 1/4 inches.


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1. The '531 Patent

Claim construction begins with the words of the claim. See Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 619-20, 34 U.S.P.Q.2D (BNA) 1816, 1819 (Fed. Cir. 1995). We focus on the limitation "an upstanding feed tube . . . to provide a hygienic flow path for delivering liquid from . . . and for admitting air . . . into said container" in claim 1 for convenience because our analysis does not vary concerning the corresponding limitation in claim 7. 1

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1 Ebco argues that we should construe the following claim language:

an upstanding feed tube . . . to provide a hygienic flow path for delivering liquid from said inverted unpressurized container into said reservoir to said predetermined maximum liquid level and for admitting air from said reservoir above said liquid level into said container to displace the liquid delivered therefrom, . . .

Ebco asserts that the phrases "[delivering liquid from] said inverted unpressurized container into said reservoir to said predetermined maximum liquid level" and "[admitting air from] said reservoir above said liquid level to displace the liquid delivered therefrom" are essential to properly construe the feed tube limitation. We recognize that claim limitations must be construed in context and do so in this case. These phrases, however, do not add context that affects our analysis of whether this limitation is properly interpreted to include more than one feed tube or flow path for liquid and air. Therefore, we do not focus on them.

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Ebco asserts that the normal, accepted meaning of the use of the articles "a" and "an" requires that the above-quoted limitation be construed as describing a single feed tube with a single path for both air and water. This contention goes too far. While the article "a" or "an" may suggest "one," our cases emphasize that "a" or "an" can mean "one" or "more than one," depending on the context in which the article is used. See Abtox, Inc. v. Exitron Corp., 122 F.3d 1019, 1023, 43 U.S.P.Q.2D (BNA) 1545, 1548 (Fed. Cir. 1997) ("The article 'a' suggests a single chamber. However, patent claim parlance also recognizes that an article can carry the meaning of 'one or more,' for example in a claim using the transitional phrase 'comprising.") (citing North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1575-76, 28 U.S.P.Q.2D (BNA) 1333, 1336 (Fed. Cir. 1993)).

The use of the articles "an" and "a" when referring to "feed tube" and "flow path," respectively, suggest a single feed tube with a single flow path for liquid and air. Other language in the claim similarly suggests a single flow path for both fluids. See '531 patent, col. 8, ll. 39-51 ("Said feed tube having a length . . . to permit the discharge of liquid from said container into said reservoir . . . and admission of air from said reservoir above said liquid and into said container."). The asserted claims, however, use the open term "comprising" in their transition phrases. We therefore hold that the plain meaning of "an upstanding feed tube . . . to provide a hygienic flow path for delivering liquid from . . . and for admitting air . . . into said container" is not necessarily limited to a single feed tube with a single flow path for both liquid and air. See PPG Indus. v. Guardian Indus. Corp., 156 F.3d 1351, 1354, 48 U.S.P.Q.2D (BNA) 1351, 1353 (Fed. Cir. 1998).

We next turn to the written description of the '531 patent. Ebco asserts that the written description confirms that the feed tube must have a single flow path for air and water. There are numerous references to "a feed tube" and "the feed tube" in the written description, see, e.g., '531 patent at col. 5, ll. 9, 25, and 52-53, and the figures show a single feed tube with a single flow path for liquid and air, see id. at Figs. 1, 2, 4a-4c, 6, 7, and 10. Furthermore, the written description does not describe a no-spill adapter design incorporating separate feed tubes for liquid and air or a single feed tube with separate flow paths for liquid and air.

The written description, however, expressly states that it describes a preferred embodiment of the invention. See id. at col. 2, ll. 48-52 ("These and other features and advantages of the invention will be more readily apparent upon reading the following description of a preferred exemplified embodiment of the invention . . . "). "The general rule, of course, is that the claims of a patent are not limited to the preferred embodiment, unless by their own language." Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 973, 50 U.S.P.Q.2D (BNA) 1465, 1469 (Fed. Cir. 1999). The written description thus does not conclusively establish that the meaning of "an upstanding feed tube . . . to provide a hygienic flow path for delivering liquid from . . . and for admitting air . . . into said container" is limited to a single feed tube with a single flow path for liquid and air.

We turn finally to the prosecution history of the '531 patent. "The prosecution history gives insight into what the applicant originally claimed as the invention, and often what the applicant gave up in order to meet the Examiner's objections." Lemelson v. General Mills, Inc., 968 F.2d 1202, 1206, 23 U.S.P.Q.2D (BNA) 1284, 1288 (Fed. Cir. 1992); see also Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448, 452, 227 U.S.P.Q. (BNA) 293, 296 (Fed. Cir. 1985) ("The prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance."); J.T. Eaton & Co. v. Atlantic Paste & Glue Co., 106 F.3d 1563, 1565, 41 U.S.P.Q.2D (BNA) 1641, 1642 (Fed. Cir. 1997) ("The correct meaning of [the disputed] term is established by reading the prosecution history of the '584 patent. That is a legal exercise which we are obligated to conduct independently."). Ebco asserts that the prosecution history of the patents shows that Elkay gave up a construction of the feed tube/probe limitation that could include an apparatus with separate flow paths for liquid and air. We agree.

In an office action dated November 18, 1992, the Examiner rejected independent claims 16 and 22 of the '570 application (which correspond to claims 1 and 7, respectively, in the '531 patent) pursuant to 35 U.S.C. § 103, based on U.S. Patent No. 2,057,238 (Krug) in view of U.S. Patent No. Re 32,354 (Savage). Krug describes a beer dispensing apparatus with two separate feed tubes, one for pressurized air and one for beer. 2 Savage describes an apparatus that allows a liquid feed tube to be connected to a collapsible bag so that air is not introduced into the bag as the connection is made.

Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

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Krug has no reservoir open at its upper end as recited in the preamble of independent claims 16 and 22 and, more importantly therefore, cannot possibly teach or suggest . . . a flow path (claim 16) or "fluid passage means" (claim 22) for delivering liquid from said inverted unpressurized container (claim 16) into said reservoir up to said predetermined maximum liquid level and for admitting air from said reservoir above said liquid level into said container as recited in the body of each of applicants' independent claims 16 and 22.

(internal quotations omitted and emphasis added). Because Krug teaches the use of separate liquid and air feed tubes, when Elkay made this argument it necessarily relinquished a construction of its claim language that could include separate feed tubes. Consequently, Elkay cannot successfully argue now that the feed tube limitation in claims 1 and 7 is properly construed to include separate flow paths for liquid and air.

Elkay's argument that its statement distinguishing Krug on the basis of Krug's use of separate feed tubes was insignificant is particularly unpersuasive in view of the Examiner's response to that statement. In the Examiner's Statement of Reasons for Allowance, dated March 30, 1993, the Examiner wrote that he allowed claim 22 (i.e., claim 7 in the '531 patent) because he understood the claim to describe a single feed tube with a single flow path for both liquid and air:

In regard to claim 22, the prior art of record does not teach a container support with a removable mounting means and feed tube as claimed wherein the feed tube has a passage means which both dispenses liquid from the container into the reservoir and admits air from the reservoir into the container . . . [Beer] feed tube 13 [in Krug] does not provide a means for admitting air. Note that Krug provides a separate conduit for exterior air 27/34 in order to relieve the vacuum in container 6.

Elkay did not respond to this statement.

We conclude that during prosecution Elkay disavowed a potential interpretation of the feed tube limitations in claims 1 and 7 of the '531 patent that would include separate feed tubes or flow paths for liquid and air. Therefore, based on the claim language, the written description and the prosecution history, we hold that "an upstanding feed tube . . . to provide a hygienic flow path for delivering liquid from . . . and admitting air . . . into said container" is properly interpreted to refer to a single feed tube with a single flow path for both liquid and air.
8. An "anatomic space" is an open working space for the performance of a surgical procedure, which is not occupied by a bladder or other device, or by tissue.

2. "An object"

Mars' next claim construction argument is that Claim 1 requires the detection of a single metal object, by positioning it in the field of the circuit element. Mars makes this argument because its accused products only detect a plurality of metal objects, not a single object.

Claim 1, the only independent claim asserted, describes (insofar as relevant to Mars' argument now being addressed) a metal detector comprising a circuit, a means for repetitively impulsing it, a means for positioning an object, differing characteristics when no object is present, and characteristics representative of the object. (Emphasis added). Based on the emphasized references to a singular object in Claim 1, Mars argues that Claim 1 should be construed to refer only to identifying and distinguishing individual objects such as coins, one at a time. 1 The language of claim 1, emphasized above, does support Mars' position. So does the other relevant intrinsic language, quoted above from the prosecution history, where the applicants referred to an output representative of an object (emphasis added) such as a coin, in the course of opposing a rejection by the Examiner. The Court agrees with Mars' claim construction argument in this respect; Claim 1 is interpreted to refer to detection of a single object.

--- Footnotes ---

1 Based on the Court's ruling above construing Claim 1 to refer only to "detecting," Mars' argument is modified accordingly.

--- End Footnotes ---

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Claim 1 of the '756 patents reads:

1. A three dimensional inspection apparatus for ball array devices having a plurality of balls, wherein the ball array device is positioned in a fixed optical system, the apparatus comprising:

   a) an illumination apparatus positioned for illuminating the ball array device;

   b) a first camera disposed in a fixed focus position relative to the ball array device for taking a first image of the ball array device to obtain a characteristic circular doughnut shape image from at least one ball;

   c) a second camera disposed in a fixed focus position relative to the ball array device for taking a second image of the ball array device to obtain a side view image of the at least one ball; and

   d) a processor, coupled to receive the first image and the second image, that applies triangulation calculations on related measurements of the first image and the second image to calculate a three dimensional position of the at least one ball with reference to a pre-calculated calibration plane.

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'756 patent, col. 18, ll. 34-53 (emphases and formatting added). Similarly, claim 1 of the '757 patent reads:

1. A three dimensional inspection process for ball array devices having a plurality of balls, wherein the ball array device is positioned in a fixed optical system, the process comprising the steps of:

   a) illuminating the ball array device;

   b) taking a first image of the ball array device with a first camera disposed in a fixed focus position relative to the ball array device to obtain a characteristic circular doughnut shape image from at least one ball;

   c) taking a second image of the ball array device with a second camera disposed in a fixed focus position relative to the ball array device to obtain a side view image of the at least one ball; and

   d) processing the first image and the second image using a triangulation method to calculate a three dimensional position of the at least one ball with reference to a pre-calculated calibration plane.

'757 patent, col. 18, ll. 34-49 (emphases and formatting added).

In its claim construction decision, the trial court construed "illumination source," a phrase that does not appear in the patent, to be limited to "only one illumination source." Memorandum Decision at 17. With regard to the '757 patent, the district court did not separately construe "illuminating," instead construing "illumination source" and "illuminating" together. Id., at 8, 17. Scanner sought reconsideration of the district court's claim construction decision, noting that the '756 patent does not claim an "illumination source," but rather an "illumination apparatus." Scanner also challenged the district court's construction on the merits. In denying Scanner's motion for reconsideration, the district court clarified that the distinction between "illumination apparatus" and "illumination source" was "not significant" for purposes of the decision, and that the claim language "apparatus" only "underscored the correctness of the decision." Order Denying Motion for Reconsideration at 1.

Prior to trial, the parties stipulated that, during the infringement period, ICOS sold inspection systems containing one or two illumination sources. [A291.] The parties executed a settlement agreement dismissing the single light source products from the case. The trial court entered an order of summary judgment of non-infringement for the two illumination source devices, based upon its claim construction decision. See Order Granting Summary Judgment. With regard to literal infringement, the trial court found that the ICOS products containing two illumination sources did not literally infringe the claims as construed. Id. Moreover, the trial court found that the ICOS products containing two illumination sources did not infringe the patents-in-suit under the doctrine of equivalents because "a product that uses one illumination source is significantly different than a device using two illumination sources." Id. at 3.

Scanner timely appealed. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

This opinion follows the court's review of the record and consideration of the parties' oral argument, heard on February 6, 2004.

I.

We review de novo a district court's grant of summary judgment. Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 149 F.3d 1309, 1315 (Fed. Cir. 1998). Summary judgment is appropriate if, drawing all factual inferences in favor of the non-movant, there is no genuine issue of material fact and the movant is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c); Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 255, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986).

Analysis of infringement involves two steps. Johnson Worldwide Assocs., Inc. v. Zebeo Corp., 175 F.3d 985, 988 (Fed. Cir. 1999). First, the trial court determines the scope and meaning of the asserted claims. Markman v. Westview Instruments, Inc., 517 U.S. 370, 372-74, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). The trial court's claim construction is an issue of law reviewed without deference. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). Second, the claims are construed by the court are compared to the allegedly infringing device. Johnson Worldwide, 175 F.3d at 988. We affirm a district court's grant of summary judgment of non-infringement only if, "after viewing the alleged facts in the light
most favorable to the non-movant, there is no genuine issue whether the accused device is encompassed by the claims.” Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1304 (Fed. Cir. 1999).

On appeal, Scanner challenges the methodology employed by the district court in construing the terms "an illumination apparatus" and "illuminating," and its substantive constructions of those terms. Scanner further challenges the district court's entry of summary judgment of non-infringement as based upon erroneous claim constructions. We address these challenges below.

II.

We first address Scanner's argument that the district court only construed a term that does not appear in either the '756 or '757 patent, namely "illumination source." It is correct that the district court's claim construction order referred to an "illumination source," a term that does not appear in either patent's claims, and was thus imprecisely worded. Nevertheless, in its claim construction decision, the district court concluded that "because the plain language sufficiently shows that the illumination apparatus is limited to one light source, the Court does not rely on extrinsic evidence in construing this term." Memorandum Decision at 10 (emphasis added). Moreover, in its order denying Scanner's motion for reconsideration, the district court acknowledged that "Scanner correctly points out that the memorandum decision refers to the term 'illumination source' when the reference should be to 'illumination apparatus' in the '756 patent and to the term 'illuminating' in the '757 patent," but went on to state that "the distinction, however, is not significant for purposes of my decision." Order Denying Motion for Reconsideration at 1. The district court also made clear that "if anything, the fact that the actual reference is to 'illumination apparatus' underscores the correctness of the decision." Id.

Though we agree with Scanner that it is improper for a district court to construe terms that do not appear in the patent claims, we do not agree that the trial court in the present case construed only the term "illumination source." Rather, a careful review of the district court's claim construction and reconsideration decisions shows that the court used inconsistent wording in referencing its claim construction. However, because the district court made clear that it did in fact construe the claims terms at issue, namely "an illumination apparatus" and "illuminating," we find any error in the district court's use of the phrase "illumination source" to be harmless. 1

1 The difference between "illumination apparatus" and "illumination source" is surely not so great. Scanner's own Memorandum on Interpretation of the Asserted Claims to be Determined From the Markman Hearing [A326-364] argued that an illumination apparatus is "a source of illumination" and that illuminating "indicates that there is a source of illumination."

2 For purposes of this opinion, we too treat "an illumination apparatus" and "illuminating" together. Thus, to the extent "an illumination apparatus" is construed to include one or more illumination sources, the step of "illuminating" in the '757 patent may be performed by one or more illumination sources. Similarly, if "an illumination apparatus" is found to be limited to a single illumination source, the "illuminating" step may be performed with only one illumination source.
The language of the claim defines the boundary of its scope. Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1324 (Fed. Cir. 2002). Accordingly, "the claim construction inquiry . . . begins and ends in all cases with the actual words of the claim." Id. (quoting Renishaw plc v. Marposs Societ'a per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998)). Claim terms must be construed as they would be understood by a person of ordinary skill in the art to which the invention pertains. Specialty Composites v. Cabot Corp., 845 F.2d 981, 986 (Fed. Cir. 1988). "The words used in the claim[] are interpreted in light of the intrinsic evidence of record, including the written description, the drawings, and the prosecution history, if in evidence." Teleflex, 299 F.3d at 1324.

"This court has repeatedly emphasized that an indefinite article 'a' or 'an' in patent parlance carries the meaning of 'one or more' in open-ended claims containing the transitional phrase 'comprising.' Unless the claim is specific as to the number of elements, the article 'a' receives a singular interpretation only in rare circumstances when the patentee evinces a clear intent to so limit the article." KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed. Cir. 2000) (citations omitted).

Here, we agree with Scanner that the district court erred in limiting "an illumination apparatus," and thus "illuminating," to an apparatus containing only a single illumination source. We hold that "an illumination apparatus" is properly construed to encompass one or more illumination sources because the patentee has not evinced a clear intent to limit the article "an" to a single illumination source in either the claims or specification of the '756 patent.

To the extent ICOS argues, and the district court found, that Insituform Technologies, Inc. v. Cat Contracting, Inc., 99 F.3d 1098 (Fed. Cir. 1996), and North American Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571 (Fed. Cir. 1993), require a construction of the disputed claim term as limited to a single illumination source, we disagree.

Unlike the present case, Insituform dealt with claim language and a specification that strongly suggested that the claim language "a cup" was meant to encompass only one cup. There, the asserted claim repeatedly described a single cup, using the term "the cup" and describing a process in terms of a single cup. Insituform, 99 F.3d at 1105-06. The claim at issue in Insituform also used the phrase "region of vacuum application" in a "manner indicating that only one such region exists at any given time" and was thus "inconsistent with the use of more than one cup at any given time, as each cup creates its own associated region of vacuum application." Id. Moreover, the court in Insituform found that "neither the specification nor the drawings discloses the use of more than one cup," and in fact repeatedly described or depicted "the cup." Id. Thus, the court in Insituform found that the claims were properly limited to a single cup. Id.

Here, we discern no intent on the part of the patentees to limit the term "an illumination apparatus" to a single illumination source in either the claim language or the specification. Though ICOS argues, and we acknowledge, that claim 1 of the '756 patent and the specification call out other limitations with multiple components, e.g., "first camera" to take "a first image" and "second camera" to take "a second image," we do not agree that the failure to specifically refer to a "first illumination apparatus" and a "second illumination apparatus" evinces a clear intent on the part of the patentee that the term be limited to a single illumination source. Indeed, the very use of the article "an" indicates, at least presumptively, that the patentees intended the claim language "an illumination apparatus" to mean one or more illumination sources, and thus to cover implicitly "a first illumination apparatus" and subsequent "illumination apparatuses" where they exist. To limit the claim term "an illumination apparatus" to one illumination source, we require much stronger evidence of the patentees' intent than strained extrapolation from the language employed by the patentees in other claim limitations. Barring some evidence that the patentees intended to limit the claims to a single illumination source, evidence we do not find in the claim language, their use of the term "an" is consistent with multiple illumination sources. 3

We also disagree with ICOS's assertion that dependent claim 11 of the '756 patent requires a narrow reading of "an illumination apparatus." Claim 11 claims, "the three dimensional inspection apparatus of claim 1 wherein the illumination apparatus further comprises a diffuser." '756 patent, col. 19, ll. 17-18 [A69]. Though this claim does suggest that there is one illumination source, "the illumination source," it does not suggest or require that every embodiment of the claimed inventions be limited to a single illumination source. We do not find the language of dependent claim 11 to be sufficient to
"evince a clear intent" that "an illumination apparatus" must in every embodiment be limited to a single illumination source.

Turning to the specification, we find no evidence of a clear intent on the part of the patentees to limit the claim language at issue to a single illumination source. Even where the specification refers to "a light source," there is no indication that the patentee intended to limit the claims to the single light source. At best, the specification is inconclusive on the issue of one versus multiple light sources. ICOS argues that the specification references and depictions of multiple mirrors or prisms for shaping the course of the light, and the failure to depict multiple illumination sources, suggest that only a single illumination source is covered by the claimed invention. We disagree. Though the specification does disclose multiple mirrors and prisms, it does not describe or depict any illumination source. The closest the specification comes to describing or depicting the number of illumination sources is the reference to the "design of the lighting." And although this language is certainly not conclusive, we find that it at least suggests that multiple lighting sources may be arranged in a particular "design."

Where an open "comprising" claim includes the article "a" or "an," and the specification is at best inconclusive on the patentee's intent to limit that article to a single element or step, we do not find a "clear intent" to so limit the claims. Both the specification and claims in this case are far short of those in Insituform.

In addition, the district court relied upon, and ICOS cites, North American Vaccine in support of limiting the claims to a single illumination source. In North American Vaccine, the court acknowledged that "it is generally accepted in patent parlance that 'a' can mean one or more," but found that in that case, there was no indication in the patent specification that the patentees intended "a terminal portion" to include one or more terminal portions and that the specification repeatedly spoke of "a linkage, not multiple linkages." 7 F.3d at 1575-76. Accordingly, the court construed the article "a" in the singular.

We find North American Vaccine to be inapposite. There, unlike the present case, the disputed claim did not include the open transitional phrase "comprising." The use of the transitional phrase "comprising" itself indicates that the elements or steps following the transition may be supplemented by additional elements or steps and still fall within the scope of the claim. See, e.g., AFG Indus. Inc. v. Cardinal IG Co., Inc., 239 F.3d 1239, 1244-45 (Fed. Cir. 2001) ("When a claim uses an 'open' transition phrase, its scope may cover devices that employ additional, unrecited elements. We have consistently held that the word 'comprising' is an open transition phrase." (citations omitted)). Indeed, it the very use of the transition "comprising" in conjunction with the article "a" or "an" that creates the presumption that the article is construed to mean one or more elements or steps, unless there is evidence of a clear intent to limit the claims. Unlike North American Vaccine, the use of "comprising" in claim 1 of the '756 and '757 patents itself establishes a presumption that those claims are "open," and North American Vaccine is not relevant to the present case on that ground alone.

In view of the above, we find that the patentees have not evinced a clear intent to limit the disputed claims to apparatuses or methods with a single illumination source. Unlike the cases relied upon by ICOS and the district court, neither the claims nor the specification in the present instance indicate any such intent on the part of the patentees. Accordingly, we give the article "an" its ordinary meaning of "one or more" and hold that the '756 and '757 patents encompass apparatuses and methods using one or more illumination sources.

We hold that the claim terms "an illumination apparatus" and "illuminating" in the '756 and '757 patents respectively
encompass one or more illumination sources.

The court begins the process of claim construction by looking to the language of the patent claims themselves. North American Vaccine v. American Cyanamid Co., 7 F.3d 1571, 1575 (Fed. Cir. 1993). Unless a patentee indicates any intention to deviate from [the] ordinary meanings of the claim terms, then the patentee's "claim terms take on their ordinary meaning." Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1423 (Fed. Cir. 1997). The claims in the '963 patent state as follows:

1. A method for dewatering food items comprising the steps of: placing food items in a compartment formed from flexible thinwall sheet material, said compartment having an open top and an opening opposite the open top sized to permit passage of liquid but substantially to prevent passage of the food items therethrough; and twirling the compartment nearby its open top to cause water from the food items to be expelled through the opening by centrifugal force.

2. The method of Claim 1 wherein water expelled through the opening in a second compartment surrounding the opening.

Upon considering the highlighted language, the court finds that Jones' invention comprises a dual compartment bag that is separated by a single throat. The Federal Circuit Court has even noted that the article "an" ordinarily has a singular meaning. North American, 7 F.3d at 1575-76. Additionally, an examination of the '963 patent specifications, especially Figures 1, 3, and 4, clearly depict a dewatering bag with a single opening separating the two compartments. (Def. Exhibit A.)

In determining the claim construction of the '963 patent, the court also examines its prosecution history. Because claims cannot encompass specifications that were surrendered during the prosecution of the patent, an examination of the prosecution history provides limits to the interpretation of the claim terms. See Southwall Tech., Inc. v. Cardinal Ig Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995). The rationale behind this limit is to prevent inventors from "construing claims one way in order to obtain allowance and in a different way against accused infringers." Id. In this case, the prosecution history includes the parent application, which led to the issuance of the divisional '963 patent. See Mark I Mkt. Corp. v. R.R. Donnelley & Sons Co., 66 F.3d 285, 291 (Fed. Cir. 1995).

During prosecution, the PTO rejected Jones' parent application due to obviousness in view of prior art in the field. However, in an effort to amend the parent application, Jones argued that her bag was distinct because it contained a throat which allowed the passage of water but minimized the back flow of the water into the food items. She even pointed out that the Tocker bag, with its multiple openings across the width of the weld, would easily allow back flow of water into the main compartment, which would defeat the purpose of her invention. (Def. Exhibit B, p. 56.) The function of the single throat is even reflected in the '963 patent specification, in which the dewatering bag is described as substantially preventing water from returning to food items. (Def. Exhibit A, Col. 1, Ins. 45-47.) When Jones distinguished her single opening bag from the Tocker bag with multiple openings, she limited her claims to encompass only a two compartment bag separated by a single throat. See Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985).

Upon properly construing the '963 patent as a two compartment bag with a single throat, the court must determine if a reasonable fact finder could determine that Argee committed infringement. Literal infringement of a claim exists when every element in the claim is found in the accused device or process, i.e., when "the properly construed claim reads on the accused device [or process] exactly." Cole, 102 F.3d at 532. In the instant case, Argee's dewatering bag does not literally meet all of the '963 patent limitations. The court construed the single throat of the '963 patent to be an indisputable element of Jones' invention, whereas the Argee bag, with its multiple openings, does not contain the single throat element. Argee, therefore, did not literally infringe the claims in the '963 patent.

Even if a device or process does not literally infringe a patent claim, it "may nonetheless infringe under the doctrine of equivalents if every element in the claim is literally or equivalently present in the accused device." Sage, 126 F.3d at 1423. The court should grant summary judgment if the evidence is such that no reasonable jury could determine two elements to be substantially equivalent. Id. "The doctrine of equivalents prevents an accused infringer from avoiding infringement by changing only minor or insubstantial details of a claimed invention while retaining their essential functionality." Id. at 1424.
However, the doctrine cannot be used to recapture material that was surrendered during the prosecution of the patent. This rule, called prosecution history estoppel, serves to protect competitors who review the prosecution history of a patent to reasonably determine what elements the inventor relinquished in order to achieve procurement of the patent. See Mark, 66 F.3d at 292.

Jones surrendered multiple openings when she contended that her single throated bag was distinct from the Tocker bag with multiple openings. She deliberately and expressly argued that the single throat feature was essential to the proper functioning of her dewatering bag. Upon reviewing the prosecution history of the '963 patent, Argee was therefore justified in concluding that developing a bag with multiple openings between the two compartments constituted a substantial difference from Jones' bag with a single throat. Specifically, Argee reasonably determined that even though the Argee and Jones' devices achieve substantially the same result, the difference between Argee's multiple openings and Jones' single throat feature caused the bags to function in substantially different ways.

As such, Argee did not infringe the '963 patent under the doctrine of equivalents. "To hold otherwise would be to frustrate the important definitional and functional public-notice requirements of the statutory claiming requirement." Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 117 S. Ct. 1040, 1049, 137 L. Ed. 2d 146 (1997).

B. "an opening formed therein"

Brita and Recovery also lock horns as to what is meant when the patent requires the sleeve to have "an opening formed therein." Recovery asserts that the sleeve must have a permanent hole or aperture formed in its side wall. In response, Brita argues that the opening does not have to be formed during the molding of a plastic sleeve, as this patent does not claim a manufacturing process. Brita proposes a more amorphous construction, arguing that an "opening" need not be a permanently formed hole, but instead can also be some sort of space or gap that is created between the sleeve and other parts of the water filter.

Though the claim language does not limit how the "opening" can be "formed" in the sleeve, the Court believes that this opening must be a permanent part of the sleeve structure. As Webster's contemplates, an opening is "formed" when the material of an object has been worked on to create a void. An opening is not "formed," however, merely by having a gap between two separate parts of the filter assembly. Of course, the manufacturing process by which the opening is formed - be it during molding, by drilling a hole, or whatever - is not restricted by the claim language. What the claim language does require, however, is that the opening be a permanent part of the sleeve structure.

A final point of contention arises as to whether the claim "an opening" limits the number of openings the sleeve can have. The Federal Circuit has stated that "it is generally accepted in patent parlance that 'a' can mean one or more." North American Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1575-76 (Fed. Cir. 1993), cert. denied 511 U.S. 1069, 128 L. Ed. 2d 365, 114 S. Ct. 1645 (1994) (citing Robert C. Faber, Landis on Mechanics of Patent Claim Drafting 531 (3d ed. 1990). However, the court in North American Vaccine also made clear that the articles "a" or "an" are ordinarily given a singular construction, and that a plural construction is only appropriate if the specification indicates that this was intended. Id. at 1576. In this case, the specification provides no embodiment which has more than a single opening in the sleeve. Thus, when the patent claims "an" opening in the sleeve, the Court reads this to disclose a single opening in the sleeve and no more.

6. "[L]owering said body into the well bore and imparting rotation to said tool body, thereby creating a magnetic field"

This phrase is contained in an independent claim in the 787 patent, 111 the 781 patent, 112 and the 117 patent. 113 In each case, the patent specifies a method including the steps of lowering and rotating the tool.
As to this phrase, the Court construes the following meaning: both steps are required, that is lowering the tool into the well bore, and subsequently rotating the tool, to create the magnetic field described in the language of the claim. In each case, the language of the claim calls for lowering and rotating; the use of the conjunctive "and" does not provide the option of not rotating the tool. The Abstracts of the 787, 781, 386, and 539 patents all explicitly call for rotation, and while the 117 Abstract does not mention rotation, the specifications of all five patents describe what happens "during rotation of the tool."

The parties dispute the proper construction of the phrase "detaching said distal tip from said guidewire to leave said distal tip within said vascular cavity and said occlusion being formed within said vascular cavity," as disclosed in Claim 1.

Before turning to the specifics of the dispute with respect to this phrase, the Court's attention is drawn to the fact that the subject phrase includes the words "guidewire" and "distal tip." Supplemental materials and oral arguments from the parties in connection with the September 2006 hearing has led the Court to conclude that it should modify the definitions of the words "guidewire," and "distal tip."

Previously, the Court construed "guidewire and "wire" as having the same meaning for all claims. Based on additional consideration in light of the September 2006 proceedings, the Court now finds that each of these words should be defined in each claim in accordance with how it is used in that particular claim. 5

4 "A thin, flexible, continuous length of metal, usually of circular cross-section that collectively includes both guidewires and tips and simply wires without distinct tip structures." (See August 2005 Markman Order.)

5 In the written description of the '578 Patent, the inventors expressly define "wire" and guidewire:

The invention is a method for forming an occlusion within a vascular cavity having blood disposed therein comprising the steps of endovascularly disposing a wire and/or tip near an endovascular opening into the vascular cavity. The wire may include a distinguishable structure at its distal end, which is termed a tip, in which case the remaining portion of the wire may be termed a guidewire. The term "wire" should be understood to collectively include both guidewires and tips and
simply wires without distinct tip structures. However, the tip may also simply be the extension of the wire itself without substantial distinction in its nature.

(’578 Patent, Col. 4:3-13.)

The Court construes "guidewire" as it is used in Claim 1 of the ’136 Patent to mean:

Part of an apparatus of the invention which is a thin, flexible, continuous length of metal, of circular cross-section which has a detachable tip.

The Court construes "distal tip" as it is used in Claim 1 of the ’136 Patent to mean:

a detachable portion or segment of the guidewire furthest away from the physician.

The Court now returns to the disputed phrase, "detaching said distal tip from said guidewire to leave said distal tip within said vascular cavity and said occlusion being formed within said vascular cavity." Specifically, there is a dispute over whether the "detaching" step is performed after the occlusion is completely formed, or whether "detaching" takes place after the formation of the occlusion has been initiated but before it is completely formed. The plain language of the Claim discloses that the "detaching" step takes place while the occlusion is "being formed," i.e., after formation has been initiated but before it has been completed. If formation of an occlusion is actually finished at the time of detachment, the "being formed" limitation would be unnecessary.

In the written description, the inventors describe an embodiment in which the thrombus continues to form after detachment:

It has further been discovered that thrombus 74 continue to form even after detachment from guidewire 42. It is believed that a positive charge is retained on or near coil 56 which wherefore continues to attract platelets, white blood cells, red blood cells and fibrinogen with aneurysm 64.

(’136 Patent, Col. 8:42-47.) There are other embodiments in which the inventors state that detachment takes place after the vascular cavity is completely occluded:

After the thrombus has been formed and the aneurysm completely occluded, tip 58 and coil 56 are detached from guidewire 42 by electrolytic disintegration of at least one portion of stainless steel coil 46.

* * *

After separation by electrolytic disintegration, guidewire 42, microcatheter 44 and the remaining portion of coil 46 still attached to guidewire 42 are removed from vessel 66, leaving aneurysm 64 completely occluded as diagrammatically depicted in FIG. 5 by thrombus 74.

(’136 Patent, Col. 8:16-19, 26-30.)

It is apparent that the inventors distinguished between detachment after an aneurysm is "completely occluded" and detaching "to leave" "said occlusion being formed." The latter is claimed in Claim 1. Therefore, in the following element of Claim 1 of the ’136 Patent: "detaching said distal tip from said guidewire to leave said distal tip within said vascular cavity and said occlusion being formed within said vascular cavity," the Court construes the phrase, "being formed" to mean:

- detaching the distal tip after the formation of an occlusion has started under circumstances where continuation of formation of the occlusion can take place after detachment.
As for the meaning of "anchoring," I turn to the claims of the 691 patent not in suit that describe a device used solely for "anchoring" tissue. These claims all identify devices that provide for permanent placement of the anchor member in the tissue or bone, presumably for healing purposes. One device requires a hole to be drilled into the bone, another calls for insertion of the apparatus into the bone, while another prevents a "suture from being withdrawn" from the tissue. Ex. A, col. 11, l. 33-35, col. 14, l. 15-20, and col.13, l. 15-18. Therefore, I find that anchoring means holding permanently.


With respect to the claim construction, Angres argues that the limitation "anesthetizing the portion of the eye lid . . ." does not encompass "freezing" or application of "cold water." The district court, following what it perceived as the "ordinary meaning" of the term, held that it did. We review the district court's claim construction de novo. Markman, 52 F.3d at 975, 34 U.S.P.Q.2D (BNA) at 1326. Angres argues both that the written description replaces the meaning of the words in the claims from their ordinary usage and that the district court improperly relied on extrinsic evidence (Angres's own testimony and that of Pavlik) when the meaning of the disputed term in the claims is clear when read in light of the specification and file history. For the proposition that the intrinsic evidence limits the claim to not cover use of cold water or ice, Angres cites to the "Description of the Preferred Embodiment" at col. 3, ll. 41-43, which states, "Any intradermal anesthetic can be used, such as solutions of novocaine, xylocaine, or the like." Following that sentence, the written description states that in the preferred embodiment, "an anesthetic solution is used comprising 2cc 2% xylocaine, epinephrine, and hyaluronidase." The preferred embodiment section also discloses the use of a needle and massage of the skin after injection. The preferred anesthetic solution is specifically recited in claim 4.

Angres argues that one skilled in the art would read claim 1 to mean "anesthetizing" by use of a "medical" (i.e., prescription) anesthetic, not ice water or cold water. We disagree. While a patentee may be his own lexicographer, in order to vary the ordinary meaning of the words of a claim a patentee must clearly define the term as used in the claim in the specification. Markman, 52 F.3d at 980, 34 U.S.P.Q.2D (BNA) at 1330; Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578, 38 U.S.P.Q.2D (BNA) 1126, 1129 (Fed. Cir. 1996) ("A technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent and the prosecution history that the inventor used the term with a different meaning.") (citations omitted). Here, Angres's written description merely indicates that in the known best mode of practicing the invention, an injected liquid "medical" anesthetic like xylocaine is used. Angres is not entitled to have his claims limited to the best mode disclosed in the written description unless he specifically defined "anesthetized" to mean injected with the solution in his written description. We hold that he did not.

A skilled artisan (see infra) reading the patent document would not conclude that "anesthetizing" was specifically defined in the written description. Rather, the district court correctly held that, as used here, "anesthetizing" means "to render physically insensible" to pain and other sensations. While it is true, as Angres asserts, that only Dorland's Illustrated Medical Dictionary, 26th ed., specifically mentions refrigeration as a method of anesthesia (cryoanaesthesia), none of the other sources define anesthesia in functional terms, as is done in the patent. The purpose of anesthetic is to reduce pain; in the patent, the eyelid is anesthetized so that the person desiring tattooed eyeliner will not suffer undue discomfort or move excessively while the procedure is taking place. Since claim 1 is drafted in broad terms, and "anesthetizing" is not clearly limited by the specification, any method which achieves those goals meets the limitation of the claim. Moreover, claim 4 (which was not asserted) requires anesthetization by injection with a specified prescription solution; this lends support to the construction that claim 1, which has no such "injection," formula or prescription limitations, has a broader scope. See D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1574, 225 U.S.P.Q. (BNA) 236, 239 (Fed. Cir. 1985) (claim differentiation).

-- Footnotes --

2 As noted in Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 n.6, 39 U.S.P.Q.2D (BNA) 1573, 1578 n.3 [sic - 6],
"Although technical treatises and dictionaries fall within the category of extrinsic evidence, . . . judges are free to consult such resources at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claims terms, as long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents."

Angres next cites Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2D (BNA) at 1576, for the proposition that even if the written description does not clearly define "anesthetizing," one skilled in the relevant art would recognize that use of ice or cold water would not fall within the meaning of the claim. 3 Further, Angres claims that the artisan is a doctor, and not a tattooist, although Angres argues that even a tattooist would not consider use of cold "anesthetizing."

3 To support this, Angres cites the declaration of Dr. Stephen VanCampen, M.D., an anesthesiologist, who stated "It is my [expert] opinion that the application of ice or ice water is insufficient to cause anesthesia to do [the] procedure [in the patent] . . . the temperature of the skin must be lowered enough to block nerve conduction, which in turn would cause permanent damage . . . ." The VanCampen declaration was properly rejected because it is inconsistent with the plain language of the claims and the specification. It further conflicts with the testimony of Pavlik, who testified in her affidavit that she performed the procedure without medical anesthetic.

Although the district court only addressed the relevant skill in the art with respect to obviousness, not claim construction, by implication the district court correctly determined no genuine issues of material fact existed as to the relevant skill in the art and that the relevant artisans are both tattooists and doctors. While a tattooist could not perform the best mode without the assistance of a doctor to administer injected, prescription anesthetic, tattooing was an old art and Angres does not dispute that permanent make-up had been tattooed prior to the issuance of the '106 patent without medical assistance. There is nothing "surgical" about the procedure: the needles used to inject the pigment are similar or identical to the needles used by tattooists to mark other parts of the body. If the relevant artisans include tattooists, then use of cold to reduce pain is clearly within the scope of the patent. 4 Even if the relevant artisans were limited to doctors, however, the medical dictionaries cited by Angres do not exclude freezing and define "anesthesia" broadly; depending on the situation, a doctor could reasonably select from a number of methods for reducing pain, some of which require an injection of prescription medication, and some of which, like ice, do not.

4 Angres cites Pavlik's testimony in which Angres claims she (Pavlik) equated "anesthetic" with "medication." However, Pavlik merely answered that she did not use any "medication" in response to a question about whether she used "topical anesthetic." Immediately after that statement, she stated she used cold water. Pavlik's statements do not lead to the conclusion that she equated anesthetic with medication only. Further, under Vitronics Pavlik's testimony may not be relied upon to vary the plain meaning of the claim. Vitronics, 90 F.3d at 1584, 39 U.S.P.Q.2D (BNA) at 1578.

Angres's arguments that tattooing frozen flesh is impossible (since either the needle would bend and the lid could not be properly stretched as described in the preferred embodiment) or that freezing must necessarily kill the flesh are similarly unavailing. No evidence was submitted to show that skin which is cooled sufficiently to reduce pain cannot be punctured; in fact, the only testimony on that issue was Dr. Angres's statement in deposition that the anesthetizing step can be performed "any number of ways" including freezing, "hypothermia or cryo." Angres's testimony may not be relied upon to vary the intrinsic plain meaning of the patent, but may be to confirm that the plain meaning of the claims includes use of cold. See Vitronics, 90 F.3d at 1584, 39 U.S.P.Q.2D (BNA) at 1518. Accordingly, the district court correctly construed the claims under Markman.
This appeal depends on whether the claim phrase "balloon angioplasty catheter," which appears only in the claim preamble, is or is not an affirmative limitation of the claim. The Board interpreted the claim as "drawn to the subject matter of a balloon catheter of general utility" and gave no meaning to the word "angioplasty." On this basis, the Board concluded that the Lemelson patent, which admittedly discloses only a general purpose catheter, anticipated Rowe's claims. Rowe urges that the Board erred in failing to limit the claims at issue to angioplasty catheters.

"[A] claim preamble has the import that the claim as a whole suggests for it." Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620, 34 U.S.P.Q.2D (BNA) 1816, 1820 (Fed. Cir. 1995). Where a patentee uses the claim preamble to recite structural limitations of his claimed invention, the PTO and courts give effect to that usage. See id.; Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257, 9 U.S.P.Q.2D (BNA) 1962, 1966 (Fed. Cir. 1989). Conversely, where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation. See Bell Communications, 55 F.3d at 620; Kropa v. Robie, 38 C.C.P.A. 858, 187 F.2d 150, 152, 88 U.S.P.Q. (BNA) 478, 481 (CCPA 1951).

The determination of whether preamble recitations are structural limitations or mere statements of purpose or use "can be resolved only on review of the entirety of the patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim." Corning Glass Works, 868 F.2d at 1257. The inquiry involves examination of the entire patent record to determine what invention the patentee intended to define and protect. See Bell Communications, 55 F.3d at 621 (looking to patent specification to determine whether claimed invention includes preamble recitations); In re Paulsen, 30 F.3d 1475, 1479, 31 U.S.P.Q.2D (BNA) 1671, 1674 (Fed. Cir. 1994) (examining "patent as a whole"); Vaupel Textilmaschinen KG v. Meccanica Euro Italia SPA, 944 F.2d 870, 880, 20 U.S.P.Q.2D (BNA) 1045, 1053 (Fed. Cir. 1991) (looking to claims, specification, and drawings); Gerber Garment Tech., Inc. v. Lectra Sys., Inc., 916 F.2d 683, 689, 16 U.S.P.Q.2D (BNA) 1436, 1441 (Fed. Cir. 1990) (noting that preamble recitations provided antecedent basis for terms used in body of claim); Corning Glass Works, 868 F.2d at 1257 (considering the specification's statement of the problem with the prior art); Kropa, 187 F.2d at 152 (noting that preamble sets out distinct relationship among remaining claim elements).

Inspection of the entire record in this case reveals that "angioplasty" is, in fact, a structural limitation of Rowe's claims. To begin with, the form of the claim itself, the so-called "Jepson" form, suggests the structural importance of the recitations found in the preamble. The Jepson form allows a patentee to use the preamble to recite "elements or steps of the claimed invention which are conventional or known." 37 C.F.R. 1.75(e) (1996). When this form is employed, the claim preamble defines not only the context of the claimed invention, but also its scope. See Pentec, Inc. v. Graphic Controls, Corp., 776 F.2d 309, 315, 227 U.S.P.Q. (BNA) 766, 770 (Fed. Cir. 1985) ("Although a preamble is impliedly admitted to be prior art when a Jepson claim is used, . . . the claimed invention consists of the preamble in combination with the improvement.") (citations omitted); United States Patent and Trademark Office, Manual of Patent Examining Procedure § 608.01(m) (6th ed. rev. Sept. 1995) ("[T]he Jepson form of claim is to be considered a combination claim. The preamble of this form is considered to positively and clearly include all the elements or steps recited therein as a part of the claimed combination."). Thus, the form of the claim itself indicates Rowe's intention to use the preamble to define, in part, the structural elements of his claimed invention. The device for which the patent claims "an improvement" is a "balloon angioplasty catheter."

The court looks next to the specification and drawings to determine whether those sources convey a clear structural meaning for the phrase "balloon angioplasty catheter." The parties argue over whether this court should interpret the claim with reference to the Dror patent, in which it originated, or the Rowe application, into which it was copied. The nature of this inquiry provides the answer. At this juncture, this court and the PTO examine claims to determine their patentability over the prior art. In effect, section 1.633(a) allows the PTO to consider the novelty or non-obviousness of each application's claims as if the application stood alone. In this posture, the PTO properly interprets the claim in light of its host disclosure, just as it would during ex parte prosecution. Thus, this court looks to the Rowe application to determine the meaning of the phrase at issue.

Notwithstanding Dror's arguments, this court's holding in In re Spina, 975 F.2d 854, 24 U.S.P.Q.2D (BNA) 1142 (Fed. Cir. 1992), does not apply to the present case. In Spina, this court considered whether an applicant was eligible to copy a
examining the entire patent disclosure to discern the meaning of claim words and phrases. See, e.g., Paulsen, 30 F.3d at 321, 13 U.S.P.Q.2D (BNA) 1320, 1322 (Fed. Cir. 1989). However, this does not relieve the PTO of its essential task of

During the patent examination process, claims receive their broadest reasonable meaning. See In re Zletz, 893 F.2d 319, 321, 13 U.S.P.Q.2D (BNA) 1320, 1322 (Fed. Cir. 1989). However, this does not relieve the PTO of its essential task of examining the entire patent disclosure to discern the meaning of claim words and phrases. See, e.g., Paulsen, 30 F.3d at

patentee's claim and thereby challenge priority of invention, a question that turned on whether the copying party's specification adequately supported the subject matter claimed by the other party. Id. at 856. This court held, in that context, that a copied claim is interpreted in light of its originating disclosure. 2 Id. This Spina rule sought to ensure that the PTO would only declare an interference if both parties had a right to claim the same subject matter. However, that rule does not apply in cases, such as this one, where the issue is whether the claim is patentable to one or the other party in light of prior art. In this posture, the PTO and this court must interpret the claim in light of the specification in which it appears.

Without question, the Rowe specification evinces a particular and distinct structural meaning for "balloon angioplasty catheter" that distinguishes it from "balloon catheters" generally. In particular, an angioplasty catheter must be capable of "expanding a stenosis in a coronary artery." The specification repeatedly refers to "dilation of coronary arteries," "expanding the coronary artery," and other unique functions of "PCTA [percutaneous transluminal coronary angioplasty] catheters." Figures 2 through 4 illustrate the radial expansion of an area of stenosis by the forceful inflation of a balloon catheter. The specification also indicates that the pressure exerted against the vessel walls upon balloon inflation forces the medication into the stenosis. These and similar phrases limit the claimed "balloon angioplasty catheters" to catheters that can be inflated radially outward to dilate a narrowed region in a blood vessel.

Dror argues that Rowe's claim broadly includes all balloon catheters because Rowe's specification indicates that "the invention of this application can be used in a wide variety of medical procedures above and beyond dilation of stenoses in coronary arteries." Rowe's specification also teaches the use of "catheters and flexible probes which do not carry a balloon" in non-angioplasty procedures as an alternative embodiment of Rowe's invention. Quite to the contrary of Dror's argument, these passages indicate that Rowe recognized a difference between angioplasty catheters and other types of catheters. Thus, when he uses the phrase "balloon angioplasty catheter" in his claim, it is that device, not some other, that he defines.

In concluding that "angioplasty" was not a structural limitation of the claim, the Board relied on claim language requiring that the microcapsules contain "a drug or combination of drugs for treatment or diagnosis within a body lumen" (emphasis added). According to the Board:

Since a diagnostic procedure is completely different from expanding a stenosis, [Rowe's] argued narrow interpretation of the preamble directly conflicts with the broader literal language of the claim. Interpreting the invention as a whole, we agree with the APJ that the claim language should be interpreted as drawn to the subject matter of a balloon catheter of general utility.

Contrary to the Board's reasoning, the claim term "diagnosis" is consistent with limiting the claim to angioplasty apparatus. Indeed, Rowe's specification provides an example of an angioplasty procedure being performed contemporaneously with a diagnostic procedure. Specifically, the specification expressly teaches the use of diagnostic agents, such as radiopaque dyes, in angioplasty procedures to "allow the vessel to be visualized."

During the patent examination process, claims receive their broadest reasonable meaning. See In re Zletz, 893 F.2d 319, 321, 13 U.S.P.Q.2D (BNA) 1320, 1322 (Fed. Cir. 1989). However, this does not relieve the PTO of its essential task of examining the entire patent disclosure to discern the meaning of claim words and phrases. See, e.g., Paulsen, 30 F.3d at

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Thus, when properly interpreted, Rowe's claims require a balloon angioplasty catheter capable of expanding radially and exerting pressure on the plaque-encrusted walls of a surrounding blood vessel. The Lemelson patent does not show such a catheter, but instead describes a general purpose balloon catheter. Lemelson describes a medicated swab that extends out the end or side of the catheter to allow contact with the internal surface in need of medication. Although the Lemelson patent does describe substitution of a balloon for the medicated swab, it does not illustrate this balloon embodiment. Thus, even an artisan of ordinary skill must guess about how exactly the balloon would substitute for the medicated swab and whether the resulting balloon catheter would be capable of radial, as well as axial, expansion. In fact, Lemelson makes no suggestion of any kind about its structural suitability for angioplasty procedures. About the most that can be said for the Lemelson patent is that it does not explicitly describe anything inconsistent with angioplasty procedures. However, this negative pregnant is not enough to show anticipation. See In re Spada, 911 F.2d 705, 708, 15 U.S.P.Q.2D (BNA) 1655, 1657 (Fed. Cir. 1990) (in order to anticipate, "the [prior art] reference must describe the applicant's claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it").

Although anticipation is a question of fact, see In re Bond, 910 F.2d 831, 833, 15 U.S.P.Q.2D (BNA) 1566, 1567 (Fed. Cir. 1990), this court can conclude from this record that the Lemelson patent does not anticipate Rowe's properly interpreted claim. Neither the administrative patent judge nor the Board indicated that the Lemelson patent disclosed a "balloon angioplasty catheter." In fact, the Board would not have likely paid so much attention to whether Rowe's claim was limited to balloon angioplasty catheters if it had believed that the Lemelson patent showed such a catheter anyway. Further, the record does not show that Dror argued, either before the PTO or before this court, that the Lemelson patent discloses a "balloon angioplasty catheter." Dror's failure to deny Rowe's clear and forcible allegations is tantamount to an admission.

9. "angle"

Floe contends that, consistent with its proposed construction of the phrase "angle less than ninety degrees" in Claim 1, "angle" should be construed as "a geometric figure or arithmetic quantity defined by two rays emanating from a common point or by two planes emanating from a common line." Newmans, on the other hand, consistent with its arguments above, contends that "angle" should be construed as "slope." Consistent with the Court's reasoning above, the Court construes "angle" as "a geometric figure or arithmetic quantity defined by two rays emanating from a common point or by two planes emanating from a common line."

10. "angle less than ninety degrees"

Floe asserts that this phrase should be construed as "a geometric figure or arithmetic quantity defined by two rays emanating from a common point or by two planes emanating from a common line, where the measured angle between the two rays or two planes is less than ninety degrees." Newmans, on the other hand, contends that this phrase should be construed as "slope less than ninety degrees." Floe asserts that its proposed construction is consistent with the ordinary and accustomed meaning of "angle" as defined by dictionaries. Floe also asserts that Newmans' proposed construction is not mathematically precise because, in some cases, "angle" and "slope" measure different things. Newmans, on the other hand, contends that the prosecution history supports its construction. Specifically, Newmans points to a statement that the Examiner made in rejecting Claims 1, 6, and 11 as anticipated by Pittman. The Examiner stated, "Pittman shows . . . a ramp surface 21a disposed at an angle less than 90 [degrees] to the support member (claim 1; note, 0 [degree] is an angle less than 90 [degrees] ) . . . ." (Frederick Decl. at P 3, Ex. B at FL00170.)

Here, Claim 1 requires that the ramp member have "a ramp surface disposed between said upper edge and said longitudinal edge at a predetermined angle less than ninety degrees to said deck support surface and arranged to protect an edge of a
deck to be supported by said deck support surface." ('379 Patent, c. 6, l: 65-c. 7, l: 3.) The Court finds that this phrase should
be construed in accordance with its ordinary and accustomed meaning. Thus, the Court construes this phrase as "a geometric
figure or arithmetic quantity defined by two rays emanating from a common point or by two planes emanating from a
common line, where the measured angle between the two rays or two planes is less than ninety degrees." The Court
recognizes, however, that the prosecution history does not foreclose the possibility that a zero degrees angle could fall
within the confines of the claim language.

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19. Angle of the Common Plane of the Coupled Panels

Alloc requests that the Court interpret "angle of the common plane of the coupled panels" in claims 1 and 65 of the '486
patent. Alloc states that "angle of the common plane of the coupled panels" in the '486 patent refers to the angle between
the coupled contact surfaces and the surface of the panel. (Alloc Initial Mem. 17-18.) Alloc states that the angle made by the
two planes must be other than 90 [degree], in claim 1 of the '486 patent, and in claim 65 of the '486 patent, the angle is "30
[degree] to 70 [degree]." (Id.) In so contending, Alloc relies upon its interpretation of the file history involving the British
patent. (Id. at 17.)

Unilin states that it is unclear to what element Alloc refers since such language is not in the '486 patent claims, and it is
nonsensical for a single plane to have an angle. (Unilin Opp'n 14.) Unilin states that Alloc appears to be referring to the
angle that is formed between the "common plane of tangency" and the "common plane of the coupled panels" as recited in
claims 1 and 65 of the '486 patent. (Id.) Unilin states that because the claim language is clear, it does not believe claim
construction is necessary. (Id.) But, to extent a construction is needed, Unilin states that for claim 1, the angle between the
common plane of tangency and the common plane formed by the connected panels, is other than 90 [degree], and for claim
65, the angle formed is 30 [degree] to 70 [degree]. (Id.)

In its response memorandum, Alloc states that as to claim 1, the reference requires that "the panels have contact surfaces
that, when the panels are locked together, meet in a common plane that is at an angle other than 90 [degree] with respect to
the plane of the joined panels." (Alloc Reply 10.) Further, as to claim 65, Alloc states that the term requires that the panels
must have contact surfaces that, when the panels are locked together, meet in a common plane that is at an angle of 30
[degree] to 70 [degree] with respect to the plane of the joined panels. (Id. at 13.)

Unilin states Alloc's construction ignores the plain language of the claim 1 which explicitly states that it is the common
plane of tangency, and not the plane of the contact surfaces, that is inclined at an angle other than 90 [degree]. (Unilin Reply
4.)

The question presented does not involve a "term" explicitly stated in a patent claim; rather, it is a geometric relationship
described in claims, upon which the parties disagree. The disputed "relationship" appears in claim 1 of the '486 patent as
follows: "configured, when engaged in a cooperative relationship upon coupling in a common plane of two identical ones of
said panel, to meet each other at a common plane of tangency that with respect to the lower lip is inclined at an angle other
than 90 [degree] relative to the common plane of the coupled panels, said angle extending inwardly and downward from a
distally outer location to a proximal inner location." ('486 patent, 14:19-26)(emphasis added.) The "relationship" appears in
claim 65 as follows: "configured, when engaged in a cooperative relationship upon coupling in a common plane of two
identical ones of said panel, to meet each other at a common plane that, with respect to the lower lip, is inclined at an angle
of 30 [degree] to 70 [degree] relative to the common plane of the coupled panels, said angle extending inwardly and
downward from a distally outer location to a proximal inner location" ('486 patent, 20:9-17)(emphasis added.)

The language in claims 1 and 65 is similar, but not identical. Claim 1 refers to "a common plane of tangency." Therefore, a
plain reading of the claim, supports Unilin's proposed construction of geometric relationship as referring to the angle other
than 90 [degree] between the common plane of tangency and the common plane formed by the connected panels.

Unlike claim 1, claim 65 contains no mention of a common plane of tangency. 14 Claim 65 simply refers to a common
plane. Unlike claim 1, claim 65 also contains commas setting off the clause, "with respect to the lower lip." Thus, the Court
construes claim 65 as refers to the common plane of the coupled panels, that with respect to the lower lip, is inclined at the
angle of 30 \([\text{degree}]\) to 70 \([\text{degree}]\) relative to the coupled panels.

-------- Footnotes --------

14 These distinctions between claims 1 and 65 were not pointed out by either party.

-------- End Footnotes --------

Therefore, the Court concludes that "angle of the common plane of the coupled panels" in claim 1 of the '486 patent refers to the angle of the common plane of the coupled panels with the common plane of tangency which is other than 90 \([\text{degree}]\). The Court further concludes that with respect to claim 65 of the '486 patent the "angle of the common plane of the coupled panels," refers to the angle of the coupled panels that, with respect to the lower lip, is inclined at the angle of 30 \([\text{degree}]\) to 70 \([\text{degree}]\) relative to the coupled panels.

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1. The Issue of the Angled Cutter

Trinity argues that the Gertz 484 Patent discloses the limitations of claims 3, 4, 11, and 14 of the 820 Patent. The primary dispute is whether the Gertz reference discloses an "angled cutter." This court construed "angled cutter" to mean:

An angled structure that cuts, in which "angled" means that at least one edge of the angled structure is oriented other than perpendicularly to the material to be cut.

(Docket Entry No. 90, p. 73).

Trinity argues that the "angled" limitation applies only to one edge of a structure that cuts; KEI argues that the limitation applies to the cutter itself. KEI argues that the "cutter" in the Gertz reference -- the honeycomb structure -- and the "cuttable member" -- the foam -- are oriented perpendicularly to one another. Trinity asserts that the "other than perpendicular" limitation is met because the cell walls that make up the grids themselves intersect at angles that are other than perpendicular. Trinity argues that the honeycomb sheets in Figures 4 and 5 show an angled cutter because the intersecting walls of the grids approach the foam at a zero degree angle, which is less than ninety degrees. Trinity's expert witness, Dr. Malcolm Ray, states in his report that "since the edges of the cutting surface of the lattice wall are in the same plane of the surface of the foam they are oriented parallel to the material to be cut (i.e. the foam)" and the angle is zero. According to Trinity, KEI does not take into consideration that the "angled cutter" limitation of the 003 Patent requires only one edge of the angled structure to be other than perpendicular. See In re Simpson, No. 03-1530, 102 Fed. Appx. 675, 679 (Fed. Cir. 2004) (claims calling for cutting die with "at least one scrap cutting blade" precluded the patentee's argument that the claims were not anticipated unless the prior art disclosed two blades).

KEI argues that Figure 4 shows that the honeycomb sheets are stacked vertically on top of each other, and that "in operation, an impact force causes the upper honeycomb sheet and the lower honeycomb sheet to shear into one another." (Docket Entry No. 162, Ex. 5, Gertz 484 Patent, col. 5, ll. 34-36). KEI points out that a cutting edge approaching a cuttable member at a zero degree angle would not reach the cuttable member. Instead, a cutter that approaches a cuttable member at a zero degree angle moves in a parallel plane with respect to the cuttable member.

Trinity argues that KEI impermissibly adds limitations to the claims of the 820 Patent with respect to the angle at which the cutter moves, to require the cutter itself to approach the cuttable member "along an acute vector." See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 904-05 (Fed. Cir. 2004); In re Paulsen, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (improper for patentee to import "extraneous" limitation to avoid anticipation apart from the meaning of particular words or phrases in the claim). In this case, KEI's construction does not impermissibly import "extraneous" limitations but reflects this court's construction of the asserted claims of the 820 Patent. Trinity's argument assumes that if any part of a structure that contains a cutter is oriented "other than perpendicular to the material to be cut," the "angled cutter" limitation is met. This argument, however, means that a structure with many edges that do not cut but are oriented other than perpendicularly to the material to be cut would meet the limitations of an "angled cutter." This argument proves too much; under this interpretation,
virtually any structure that has a cutting edge would meet the limitations of the 820 Patent.

The 820 Patent discloses two embodiments of the angled cutter, the dual plate cutter in Figure 7 and the wedge-shaped cutters of Figures 9 and 15. The dual-plate cutter consists of two metal plates positioned in parallel planes and welded together. "The first and second steel sections 70 and 72 are each abrasion resistant steel plates dimensioned to be stronger than the W-beam so as to be able to sever it." (Docket Entry No. 65, Ex. 5, 820 Patent, col. 6, ll. 32-34). Where the two plates meet "at a point . . . an acute angle is formed" and the "location of the point . . . is positioned to engage" the cuttable member. At the point, "the force of the impact of the vehicle causes cutting." (Id., col. 6, ll. 53-57, ll. 65-66). The wedge-shaped cutter consists of two joining faces that form a "forward pointed edge." (Id., col. 7, ll. 24-25). In both embodiments, the two parts meet at a point and both parts approach the material to be cut at an angle other than perpendicular. It is the intersection of the two cutting edges that contacts the material to be cut.

"The dispositive question regarding anticipation is whether one skilled in the art would reasonably understand or infer from the prior art reference's teaching that every claim [limitation] was disclosed in that single reference." Dayco Prods., Inc. v. Total Containment, Inc., 329 F.3d 1358, 1368 (Fed. Cir. 2003) (internal quotation marks and alterations omitted). The Gertz 484 Patent does not claim an angled cutter that meets all the limitations of the 820 Patent claims.

The motion for summary judgment on anticipation is denied.

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a. "Angled" or "Extending Downwardly"

Claim 1 of the '158 patent requires that the conveyor belt modules each have "driving surfaces having an upper edge and a lower edge and being angled from said upper edge downward toward said lower edge and in said selected direction of travel." Claim 10 of the '158 patent does not contain the word "angled," but requires that the claimed modules each have driving surfaces "having an upper edge and a lower edge and extending downward from said upper edge toward said lower edge and in said selected direction of travel." All asserted claims in the '518 patent have language similar to that of Claim 10 of the '158 patent, requiring that "at least a portion" of the driving surfaces "extend downwardly toward the bottom surface and in the direction of intended travel."

KVP argues that all asserted claims of both the '158 and '518 patents are limited to modules having sprocket recesses with angled, planar driving surfaces. Laitram, however, maintains that curved driving surfaces are within the scope of the asserted claims.

Neither the specifications nor the claim terms specifically define the terms "angled" or "extending downwardly." But throughout the prosecution history, Lapeyre repeatedly stated that the driving surfaces were "angularly disposed." In fact, the prosecution history of the '158 patent shows that Lapeyre substituted the claim term "extending downwardly" for the former term "angularly disposed" after the patent examiner rejected the claim as "indefinite as to how the extending elements are 'angularly disposed.'" (Delich Decl. Ex. 2, at 096955.) Moreover, Lapeyre repeatedly recited to the PTO that a "key feature" or the "essence" of his invention was the provision of sprocket recesses intermediate the pivot axes and having "angularly disposed" sides adapted to mate with corresponding sprocket teeth. (See Delich Decl. Ex. 1 at 097169, 097174, and 097176; Ex. 2 at 096975-76.)

Because Lapeyre made these arguments in an attempt to avoid the Kewley '763 patent, the Lapeyre '141 patent, and the Lapeyre '527 patent, the claim term "extending downwardly" can only be interpreted as a further limitation on the original claim term "angularly disposed." The prosecution history therefore limits the asserted claims to modules having "angled" or "angularly disposed" driving surfaces extending downward from the upper edge to the lower edge in the selected direction of travel.

The court must therefore determine whether "angled" or "angularly disposed" driving surfaces include curved surfaces. The specifications do not define the terms "angled" or "angularly disposed." The drawings, however, show the driving surfaces as flat, planar surfaces. (See Figure 3 to '158 and '518 patents, elements 32 and 34.) The drawings are consistent with the ordinary and customary meaning of "angle" or "angled," which is defined as "the figure formed by two lines diverging from
the same point or by two surfaces diverging from the same line." Webster's Third New International Dictionary, at 83 (1986). The ordinary and customary meaning of "angle," at least in geometric terms, does not contemplate a curved surface.

This interpretation is fully supported by the prosecution history. In response to the patent examiner's rejection of the claims in continuation Application No. 52,845, and to distinguish his invention over the prior art Kewley '763 and Palmaer '831 patents, Lapeyre argued that "the cylindrically shaped wall of the drive link of the chain of Palmaer . . . does not and could not provide the module of the instant invention having . . . a driving surface within the sprocket recess that extends downwardly toward the bottom surface and in the direction of travel." (Delich Decl. Ex. 3 at 097388-89.) Lapeyre therefore distinguished a cylindrically shaped driving surface from one that "extends downwardly toward the bottom surface in the direction of travel."

On another occasion, Lapeyre referred to two photographs in exhibit as illustrative of "angularly disposed" elements which provide sprocket recesses that are adapted to mate with corresponding teeth. Both photographs show a working model identical to Figure 3 of the '158 and '518 patents -- sprocket recesses with angled, planar sides being driven by sprocket teeth adapted to mate with such sprocket recesses (See Delich Decl. Ex. 1 at 097167, 097188, and 097191.)

Based on these representations, the patent examiner understood the claimed "angularly disposed" driving surfaces to exclude curved surfaces. Indeed, he expressly stated that "the curved surfaces 31, 32 of Palmaer '831 or '150 do not qualify as an 'angled' surface from the upper edge to the lower edge." (Delich Decl. Ex. 4 at 097824.)

Laitram nevertheless argues that because some of the statements were made in the prosecution chain resulting in the '158 patent, and some were made in the prosecution chain leading to the '518 patent, the above statements in the prosecution history are not relevant in interpreting all claims at issue. Laitram is mistaken. Where, as here, two patents using the same or similar claim terms both stem from the same original patent application, the prosecution history of both patents is relevant to an understanding of those terms. Jonsson v. Stanley Works, 903 F.2d 812, 818 (Fed. Cir. 1990).

Laitram further relies on KVP's alleged admission during reexamination that the asserted claims of the '158 and '518 patents are broad enough to cover curved driving surfaces. KVP, however, made no such admission. Instead, KVP merely argued that if the asserted claims were as broad as Laitram was urging in the present litigation, then the patents would read on prior art. These arguments were entirely proper during reexamination, where claims are to be construed broadly, see In re Yamamoto, 740 F.2d 1569, 1571 (Fed. Cir. 1984), and do not operate to bar the narrow claim construction KVP now advocates See DeGeorge v. Bernier, 768 F.2d 1318, 1322 n.2 (Fed. Cir. 1985) (the approach during reexamination does not apply "during litigation of the issued claims, where the specification and file history should be resorted to in ascertaining the claims' true meaning").

Thus, in light of the specifications, drawings, prosecution history, and the ordinary and customary meaning of "angle" or "angled," the court finds that the '158 and '518 patents are limited to modules having angled, planar driving surfaces.

1. The "Driving Surface" Limitation

Laitram argues that the district court erred by construing the phrase "each of said driving surfaces extending downwardly . . . and in the direction of intended travel" to include only "angled, planar" driving surfaces. Instead, Laitram argues that this phrase should be construed to include curved driving surfaces like those of the accused devices. In support of its interpretation, and by way of attacking the district court's interpretation, Laitram asserts the following: (1) the court's interpretation erroneously reads the limitations of the disclosed embodiments into the claims, which are not expressly limited to planar driving surfaces; (2) the applicant's statement during prosecution that "the cylindrically shaped wall of the drive link of the chain of Palmaer . . . does not and could not provide the module of the instant invention having . . . a driving surface . . . that extends downwardly toward the bottom surface and in the direction of travel" should not have been relied upon by the district court because this statement was not relied upon by the examiner in allowing the claims and thus was of no consequence to patentability; (3) because Palmaer was cited during the prosecution of the '158 patent, the claims must necessarily encompass curved surfaces; (4) KVP, when requesting reexamination of the '158 patent, "admitted" that the claims encompassed curved surfaces; and (5) the doctrine of claim differentiation supports its construction because
None of Laitram's arguments is persuasive, and we address each in turn before construing the "driving surface" limitation. First, we do not agree that the court's observation that the patents' written description discloses only flat driving surfaces erroneously reads that structure into the claims. Rather, the court's observation was merely a starting point for construing the disputed language "extending downwardly . . . in the direction of intended travel." It is entirely proper to "use the specification in order to determine what the inventor meant by terms and phrases in the claims." Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559, 1566, 24 U.S.P.Q.2D (BNA) 1321, 1327 (Fed. Cir. 1992).

Laitram's second argument, that applicant's statement which attempted to distinguish his invention over prior art disclosing curved driving surfaces was not relied upon by the examiner and is therefore irrelevant to claim construction, is not sustainable under our case law. "Regardless of the examiner's motives, arguments made during prosecution shed light on what the applicant meant by its various terms." E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1438, 7 U.S.P.Q.2D (BNA) 1129, 1136 (Fed. Cir. 1988). The fact that an examiner placed no reliance on an applicant's statement distinguishing prior art does not mean that the statement is inconsequential for purposes of claim construction. See id., 7 U.S.P.Q.2D (BNA) at 1136.

Laitram's third argument, that the fact that Palmaer was cited as prior art during the prosecution of the '158 patent mandates the conclusion that curved driving surfaces are within the claims, is unavailing. When this snap-shot of the prosecution history is scrutinized in context, it becomes clear that nothing transpired which is helpful in construing the disputed claim language. When Palmaer was cited as a ground for rejection of the claims, the examiner suggested to the applicant that his claims would be allowed if they were limited to multiple driving surfaces across the width of the module, a feature not taught by Palmaer. The applicant acted on this suggestion and his claims were allowed. Thus, the only conclusion that can be drawn from this portion of the prosecution history is that the claims are limited to modules having multiple recesses, a conclusion irrelevant to the claim construction issue on appeal. 6

Laitram's fourth argument, that KVP "admitted" during reexamination that the claims were broad enough to encompass curved driving surfaces, is irrelevant to the construction of the claims. It is the applicant's representations during prosecution that potentially shed light on the construction of the claims, see, e.g., Vitronics, 90 F.3d at 1582, not the representations of a reexamination requester.

Laitram's fifth and final argument, that claim differentiation warrants the conclusion that the asserted claims are not (unlike claim 85 of the '518 patent) limited to flat driving surfaces, is not persuasive. As the district court properly noted, although different claims should be presumed to cover different inventions, "if a claim will bear only one interpretation, similarity [with another claim] will have to be tolerated." Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538, 19 U.S.P.Q.2D (BNA) 1367, 1371 (Fed. Cir. 1991) (quoting Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 404, 155 U.S.P.Q. (BNA) 697, 708 (Ct. Cl. 1967)). Here, the asserted claims will bear only one interpretation: that the "driving surface" limitation is limited to flat driving surfaces. While claims are not necessarily limited by the written description, it is relevant that nothing in the written description suggests that the driving surfaces can be anything but flat. Indeed, the benefits of having flat driving surfaces are stated in the "Summary of the Invention" portion of the written description. 7 These observations warrant a conclusion that the "driving surface" limitation, "extending downwardly . . . in the direction of intended travel," requires flat driving surfaces. See North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1576-77, 28 U.S.P.Q.2D (BNA) 1333, 1337 (Fed. Cir. 1993) (noting that the written description requirement of 35 U.S.C. § 112, P 1, warranted a claim construction that encompassed only the disclosed embodiments).
The intermediate section also includes angled surfaces which define sprocket recesses... These intermediate sprocket recesses provide the benefit of minimizing chordal action and scrubbing between the mating surface of the module and the sprocket." 158 patent, col. 1, l. 67 to col. 2, l. 6. "The angled surfaces... of the intermediate section also serve to present greater surface area to water and/or steam jets which can be located above and below the modules for cleaning of the belt. The angled sections also facilitate visual inspection of the belt." Id., col. 3, l. 67 to col. 4, l. 3.

The prosecution history confirms this conclusion. That history makes clear that the applicant distinguished the cylindrical walls of Palmaer from his invention because it did not disclose a "driving surface within the sprocket recess that extends downwardly toward the bottom surface and in the direction of travel." Accordingly, this limitation cannot be construed to cover the cylindrically shaped driving surfaces of the accused devices. See Advance Transformer Co. v. Levinson, 837 F.2d 1081, 1083, 5 U.S.P.Q.2D (BNA) 1600, 1602 (Fed. Cir. 1988) (a patentee's statements to the PTO distinguishing his pending application's invention from that of another person's issued patent may be relied on for purposes of construing the patentee's claims).

The district court's interpretation of the "driving surface" limitation was not erroneous, and it did not err in granting summary judgment that the accused devices did not literally infringe the asserted claims.

3. "Angularly offset"

As noted above, the district court interpreted the claim requirement that the hole axes be "angularly offset" to mean that "the axes of the three holes are spaced apart from each other, an angle is formed by the axes of any two such holes when viewed in two dimensions from the butt end or from the side, and the axes are not aligned in a parallel orientation." Neither party challenges this definition on appeal, but Stryker argues that its accused product does not fall within the definition.

Stryker's argument is geometrical in nature. A "hole axis" under the district court's definition is the imaginary line that passes through the center of one of the transverse holes. Stryker correctly points out that the axes thus defined by the accused product form "skew lines" which are neither parallel nor intersecting in three-dimensional space. Since those lines neither form angles nor run parallel with each other, Stryker suggests that its product falls outside the district court's definition. However, this argument ignores an essential part of that definition, which states that "an angle is formed... when [the hole axes are] viewed in two dimensions." The district court's meaning here is clear: the hole axes need not actually intersect. It suffices that the axes appear to intersect in two dimensions. As an example, if the hole axes are sketched on a piece of paper (a two-dimensional view of the nail) and the lines of that drawing intersect, the product drawn meets the district court's definition of "angularly offset." It is totally clear that the hole axes of Stryker's product intersect when drawn on paper, a point well illustrated by Stryker's own diagram in support of its argument on this point:

[SEE DIAGRAM IN ORIGINAL]

This diagram, which represents the accused product, shows intersecting hole axes when viewed in two dimensions. The jury's finding that Stryker's product embodies the "angularly offset" claim limitation is therefore supported by substantial evidence.

E. "Angularly Offset from the Tip Longitudinal Center Axis"

The phrase "angularly offset from the tip longitudinal center axis," is used only in one dependent claim of the patent: "[S]aid tip fluid passageway is angularly offset from the tip longitudinal center axis such that said fluid discharge orifice is formed in a lateral surface of said tip." (Doc. 29, Ex. A). Dentsply argues that this claim refers to a "fluid passageway displaced from the longitudinal center axis such that an angle is formed with the longitudinal center axis." (Docs. 34, 55). Hu-Friedy
proposes a more restrictive definition, construing the phrase to mean a "fluid passageway beginning at the center axis of the fluid inlet end and then proceeding towards the discharge orifice at an angle therefrom." (Docs. 51, 55).

The claims support the broader construction advanced by Dentsply.

The independent claims indicate that the fluid passageway is "linear" and runs substantially parallel to the center axis of the tip body. It ends at a discharge orifice formed at the bend of the tip, on the "discharge side." The disputed phrase appears in a dependent claim and provides an additional limitation. It instructs that the passageway may be skewed to run at a slight angle from the center axis of the tip body. (Doc. 29, Ex. A). The discharge orifice of this passage is formed in a "lateral surface," at a point prior to the bend in the tip.

Nothing in this claim requires that the passageway begin at the center axis point or "proceed[] towards the discharge orifice." The claim does not indicate where the passageway must begin or end, but requires only that the discharge point be on a "lateral side." Although several figures in the specifications are consistent with Hu-Friedy's interpretation, nothing in the patent indicates that other methods also encompassed within the claims are excluded. (Doc. 29, Ex. A). Absent a clear indication that the inventor intended to restrict the scope of the patent, the court will not import these limitations into the claims. Arlington Indus., 290 F. Supp. 2d at 526 ("[T]hat the inventor chose to illustrate the embodiment of certain claims but not others does not alter the scope of the unillustrated claims.").

Nor do reference sources require the more limited definition proposed by Hu-Friedy. Dictionaries define an "offset" as a "linear or angular displacement." E.g., AMERICAN HERITAGE COLLEGE DICTIONARY 805 (4th ed. 2002). None of these definitions require that, to be "offset," two lines must commence at a common point. The court will construe "angularly offset from the tip longitudinal center axis" as "displaced from the longitudinal center axis such that an angle is formed with the longitudinal center axis."

Eisenmann's claims 1, 10, 11, and 12 clearly state that the incoming gas distribution surface is "angularly positioned relative to the axis of rotation." (Dft. Ex. A). In the REECO RTO system, the gas distribution system is parallel to the rotary axis (labeled "Z" on Dft. Ex. E) and is connected to the rotary axis by a perpendicular surface (labeled "Y" on Dft. Ex. E). (Dft's 12(M) Stmt. PP 18, 19). Therefore, the main question is the meaning of the word "angular."

Eisenmann attempts to argue that the court should look to the "normal usage" of the word "angular," and states that the meaning of the word includes ninety degree angles as well as straight lines in the definition. (Pl's Resp., p. 4, citing Webster's English Dictionary). However, as the defendant correctly points out, Eisenmann surrendered the use of the ordinary meaning of the word "angular," for the prosecution history of the Eisenmann patent limits the use of the word. Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1477 (Fed.Cir. 1998). In fact, the prosecution history of the Eisenmann patent excludes a vertical surface which is parallel to the axis of the rotation valve, for this limitation was necessary to overcome the original claim rejection by the Patent Examiner. (See Dft's 12(M) Stmt. PP12, 14, 15). If the court allowed the Eisenmann patent to be read as broadly as the plaintiff suggests, then the Eisenmann patent would also include the Thomason patent, the prior art. A claim cannot be construed so broadly as to cover the prior art and remain valid. Harris Corp. v. IXYS Corp., 114 F.3d 1149, 1153 (Fed.Cir. 1997); Amhil Enterprises Ltd. v. Wawa, Inc., 81 F.3d 1554, 1562 (Fed.Cir. 1996). Therefore, the word "angular" does not include parallel and perpendicular surfaces, and the defendant does not literally infringe Eisenmann's claims 1, 10, 11, and 12.

Both parties dispute which portions of the invention have to be angularly spaced from each other. The Plaintiff claims that there is only one angular relationship -- that the conduit is angularly disposed from the collection elements. The Defendant argues that the patent calls for two angular relationships -- the angle between the conduit and collection elements and the angle between the collection elements.
The Court begins its analysis with the claim language. The claim provides that "... the collection elements and conduit being angularly spaced from each other..." 407 Patent, Column 4, Lines 59-61. This claim language can be read as providing for only one angular relationship between the collection elements and the conduit.

However, the specification contradicts such a reading. In the summary of the invention portion of the specification - as opposed to the description of the preferred embodiment- Plaintiff writes:

The number, length and location with respect to each other of the elongate perforated collection elements is an important aspect of the invention. There should be at least two collection elements to provide effective recovery of contaminant vapors from the contaminated area. ... The collection elements should be angularly disposed with respect to one another for effective vapor recovery. That is, they should not be substantially parallel but should be spaced apart at an angle, preferably of at least 20 [degrees] and most preferably of at least 30 [degrees]. The preferred embodiment is in a radial array, although other configurations e.g. fan or wing shapes may be equally useful and may actually be required to avoid ground obstructions.

407 Patent, Column 1, Lines 61-66 and Column 2, Lines 8-16 (emphasis added). Thus, the specification informs the reader that the placement of the collection elements is an important aspect of the invention, and to that end, the collection elements are not to be parallel, that they should be angularly spaced from each other. Although Plaintiff used the word "should" rather than "must", the language of the specification nonetheless instructs the reader that the collection elements are arranged at an angle from one another. Because of the ambiguity between the claim language and the specification language, the Court will consider the file history.

The Defendants argue that the prosecution history of the '407 Patent is pertinent both as intrinsic evidence in construing the claim and in the context of prosecution history estoppel. "Prosecution history estoppel serves as a limit on the scope of claims by excluding any interpretation of the claim language that would permit the patentee to assert a meaning for the claim that was disclaimed or disavowed during prosecution in order to obtain claim allowance." Zenith Labs, Inc. v. Bristol-Myers Squibb Co., 19 F.3d 1418, 1421 (Fed. Cir.), cert. denied, 513 U.S. 995, 130 L. Ed. 2d 409, 115 S. Ct. 500 (1994). Arguments made during prosecution must be viewed in context, however. Read Corp. v. Portec, Inc., 970 F.2d 816, 824 (Fed. Cir. 1992); See also, Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1580 (Fed. Cir.) cert. denied, 516 U.S. 987, 133 L. Ed. 2d 424, 116 S. Ct. 515 (1995)(When a court applies the doctrine of prosecution history estoppel to limit the scope of equivalents, a close examination must be made as to, not only what was surrendered, but also the reason for such a surrender). It is the position of the Defendants that the prosecution history of the '407 Patent supports its interpretation of Element 3.

Originally, Plaintiff filed a total of five claims. Claim 1 was an apparatus claim, Claim 5 was a method claim and Claims 2-4 were dependent claims from Claim 1. Kane Declaration, Ex. A. The original claims refer to the orientation of the collection elements three times. For example, Application Claim 1 required that the collection elements be angularly disposed from the conduit and from each other. Application Claim 4 required that the collection elements be disposed in a radial array. Application Claim 5 required that the collection elements and the conduit be angularly spaced from each other. Plaintiff argues that as illustrated in Application Claims 1 and 4, he knew what language was necessary to require that the collections elements themselves be angularly disposed from each other. Since Application Claim 5, which eventually became Claim 1 of the '407 Patent, uses different language, the claim language that "the collection elements and conduit [be] angularly spaced from each other" cannot be interpreted to require an angular relationship between the collection elements.

The doctrine of "claim differentiation" cannot be used to broaden claims beyond the scope that is supported by the specification. ATD Corp. v. Lydall, Inc., 159 F.3d 534, 541 (Fed. Cir. 1998)(citations omitted). Because the specification supports a narrower interpretation, resort to the language of the canceled claim is inappropriate. Id.

Claim 5 of the Application claims was rejected by the Patent Office under 35 U.S.C. § 103 as unpatentable over U.S. Patent No. 4,026,355 issued to Johnson, et al. ("Johnson reference") in view of U.S. Patent No. 166,357 issue to Gray (the "Gray reference"). Kane Decl. Ex. A, KN 010655. The Johnson reference discloses the use of a number of vertically placed, parallel pipes to remove methane gas from landfills. The Gray reference discloses a fire hydrant in which multiple groundwater collection elements are arranged in a radial array about a common collection point. In light of the Johnson reference and the Gray reference, the patent examiner found:
All the claimed features of Applicant's invention as set forth in the above claims are disclosed by Johnson et al except a manifold and angularly perforated collection elements. Gray shows a manifold D and perforated collection elements angularly extending therefrom. As both references are directed to the removal of underground fluids, it would be obvious to one skilled in the art to modify Johnson et al to include a manifold and collection elements extending therefrom in a radial array as shown by Gray.

Id.

Plaintiff argues that during the prosecution history of the '407 Patent, he did not distinguish his invention over the Johnson reference because his invention required a radial array. Instead, he distinguished his invention from Johnson by asserting that the Johnson invention required the removal of methane for commercial purposes and that air should not be drawn into the underground area, while his invention provides for the replacement of vapors with air. Kane Decl., Ex. A, KN 010645. He then distinguished Gray by noting that the Gray invention teaches the removal of water, but does not teach the removal of vapors. Id. at KN 010646. Plaintiff also argued that it would be improper to combine the Gray and Johnson references by stating:

There is no indication in either reference of the desirability of making such a combination of references. In fact, it would appear by Johnson et al's disclosure that such a combination would be unwarranted since the modification of Johnson et al's equipment to include a radial array would drastically alter his equipment and process.

Id.

However, as in the summary of invention included in the '407 Patent specification, Plaintiff described his invention as "… a plurality of perforated collection elements angularly disposed from the conduit and each other…." Sankaran Decl., Exh. D (Amendment After Final Action, dated February 6, 1979) at pages 2-4. He further stated that the method involves "… positioning the collection elements within the contaminated area in a radial display…." Id. In reading the prosecution history of the '407 Patent, it is clear that the patent examiner also understood the invention to include a radial array. See, Kane Decl. Ex. A, KN 010655.

The Court also notes that while Plaintiff did not assert the argument that his invention requires a radial array, he also did not assert that his invention could include a configuration that involves parallel collection elements. Rather, the entire prosecution history involves discussion, on the part of the examiner and Plaintiff, of an invention with collection elements that are angularly disposed from each other. Because the file history is consistent with the specification language requiring the collection elements be angularly spaced from each other, the Court interprets Element 3 of Claim 1 as requiring two angles—an angle between the conduit and collection elements and an angle between each of the collection elements.

Taking into account the term "annular," "gap" takes on a meaning different from the trial court's construction. Specifically, the modifiers to "gap," such as "annular," produce significant differences in the geometries in each defining claim. These modifiers inform the nature of the gap in each claim and define differently the cross-section of the claimed insert. ACTV, Inc. v. Walt Disney Co., 346 F.3d 1363, 1372-73 (Fed. Cir. 2003) ("The context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms.").

This court notes that the adjective "annular" appears only within the claims, not in the patent specification. Nothing in the specification, including the claims, indicates explicitly or implicitly, that the inventor intended to impart a novel meaning to "annular." The record also contains no evidence that "annular" has a peculiar meaning in the field of art encompassed by the '398 patent. This court concludes, therefore, that the ordinary and customary meaning attributed to this term by those of ordinary skill in this art at the time of invention "involves little more than the application of [its] widely accepted meaning." Phillips, 415 F.3d at 1314.

This court has previously recognized that the ordinary and customary meaning of "annular" is "of or relating to an area formed by two concentric circular or curved regions." Int'l Rectifier Corp. v. IXYS Corp., 361 F.3d 1363, 1372-73 (Fed. Cir. 2004).
2004) (citing Webster's Third New International Dictionary 88 (1966)). Giving "annular" its proper place in the construction of the claims informs the interpretation of "gap." In claim 1, both the frame and the insert unequivocally have "a circular cross-section," but the gap between them need only form "at least part of an annular shape along a central portion between" the ends. The claim language thus permits non-annularity somewhere along the central portion. Annularity also requires "roughly parallel sides." An embodiment without the annular requirement, therefore, need not have even "roughly" parallel sides. Thus, a claim without the "annular" requirement or with only a partial "annular" requirement could have a gap characterized by intersection of part of the cross-section between insert and frame. In other words, claims 1 and 18 do not require concentricity of the circular insert and frame. Moreover, those claims do not foreclose some contact between the insert and frame.

4. Annular

The term "annular" is found in Claims 5, 10(a), 14(b), 22, 32, 35, 38 and 44 of the '461 patent; Claims 1, 2, 8 and 9 of the '108 patent; Claims 4, 5, 9, 11, 14, 15 and 18 of the '839 patent; Claims 4, 5, 9, 13, 14 and 17 of the '625 patent; Claim 1 of the '744 patent; Claims 4, 9 and 15 of the '389 patent; 1, 2, 4, 9 and 10 of the '711 patent; and Claims 1, 3, 5, 10 and 11 of the '340 patent.

Vision Advancement argues that "annular" should be construed as "ring-shaped," while Vistakon argues for a construction of "forming a ring." Vision Advancement, in the alternative, agrees to the same dictionary definition that Vistakon relies on with an exception. Vision Advancement disagrees with Vistakon's construction to the extent that it does not include the complete dictionary definition, i.e., "of relating to, or forming a ring." Merriam-Webster's Medical Desk Dictionary Revised Edition at 41.

The Court agrees with the parties and finds that "annular" has not been given a special definition in the patent and, therefore, looks to the dictionary definition proffered by the parties to supply the necessary construction. See Phillips, 415 F.3d at 1322 (finding dictionaries or comparable sources useful and appropriate when used to assist in understanding the commonly understood meaning of words). Thus, the Court construes "annular" to mean "of, relating to, or forming a ring."
I.

An accused device outside the literal meaning of the claims may still infringe by equivalents so long as each claimed element or its equivalent is found in the accused device. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co., U.S. , 117 S. Ct. 1040, 1049, 137 L. Ed. 2d 146 (1997). A patentee may prove equivalence by showing that the substituted element in the accused device performs substantially the same function, in substantially the same way, to produce substantially the same result as the claimed element. See id. at , 117 S. Ct. at 1054; Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 608, 94 L. Ed. 1097, 70 S. Ct. 854 (1950). "It is important to ensure that application of the doctrine, even as to an individual element, is not allowed such broad play as to effectively eliminate that element in its entirety." Warner-Jenkinson, U.S. at , 117 S. Ct. at 1049; see also Dolly, Inc. v. Spalding & Evenflo Cos., 16 F.3d 394, 398, 29 U.S.P.Q.2D (BNA) 1767, 1771 (Fed. Cir. 1994) ("The doctrine of equivalents is not a license to ignore claim limitations."). This is particularly so for claims drawn to specific structures.

Winco moved for summary judgment of non-infringement during the course of discovery. A Markman hearing was held, and the district court construed the crucial claim terms "annular" and "uniformly." After considering the specification and the prosecution history, but relying primarily on the ordinary meaning of the term "annular," the district court construed the term as requiring the coupling element to be "circular or ring-like in shape, but not necessarily a perfect circle." Also relying primarily on the ordinary meaning, the district court construed "arranged uniformly" as requiring that "no significant portion of the outer periphery should be lacking or treated differently or in a different manner for the placement of the projecting elements." The court noted specifically that uniform arrangement does not require that the anchoring elements (projections) be equidistantly spaced.

We have reviewed independently the claim language, specification, and prosecution history. Although Winco would have us construe "annular" and "uniformly arranged" as "circular" and "equidistantly spaced," the terms are not that narrow. We discern no error, however, in the district court's constructions, and adopt them in their entireties. We therefore turn to the application of the claim as so construed to the two accused devices.

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Turning to the next claims at issue, Claim 29 and Claim 31 as dependent upon 29, the court must construe the phrase "...an annular channel formed in said first end bounded in part by an annular lip." Specifically, the parties dispute the meaning of "annular channel" and "annular lip." The court concludes that "annular channel" should be construed to mean a ring-like gutter, groove or furrow which is large enough to receive displaced septum material, and "annular lip" should be construed to mean a septum-supporting ridge which also serves as one wall of the annular channel.

There is little discussion as to the meaning of these terms in the specification, and no discussion of them at all in the prosecution history. Therefore, the court must construe these phrases in light of the ordinary, literal sense of the words in light of what the specification teaches about the functions of these elements. As mentioned in the ruling on the '554 patent, "annular" means ring-like or cylindrical. Thus, both the lip and the channel in this claim must be in the shape of a ring.

A "channel" is best defined, in the context of this claim, as a gutter, groove or furrow. The gutter, groove or furrow, as the specification teaches and as Sheehan and Vaillancourt testified, exists to give displaced rubber septum a place to go. (See column 2, lines 49-53, and column 7, lines 18-21). Rubber displaces into this channel both during swaging and once the blunt cannula is inserted. Therefore, in order to be an annular channel, it must be large enough to receive the displaced rubber.

Defendant urges the court to construe the channel as being an uninterrupted groove. The court does not read such a limitation into the use of the word channel. What is necessary is that the channel be able to receive displaced rubber septum material during the processes mentioned. It is for the jury to decide whether any interruption in the channel prevents it from receiving the displaced septum, and thus rendering it outside the definition of an "annular channel" in this claim.

The annular lip, as mentioned by Sheehan, is a fulcrum or support for the septum, to keep it from sliding into either the annular channels or the flow path. As the specification puts it, the annular lip is a "septum supporting ridge." (Column 6,
A. Claim Construction

The construction of claims is simply a way of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims." Embrex, Inc., v. Serv. Eng’g Corp., 216 F.3d 1343, 1347, 55 U.S.P.Q.2D (BNA) 1161, 1163 (Fed. Cir. 2000) (internal quotations and citation omitted). Interpreting the asserted claims begins with a review of the intrinsic evidence, which consists of the claim language, the written description, and the prosecution history. Interactive Gift Express, Inc. v. Compserv Inc., 231 F.3d 859; 865, 56 U.S.P.Q.2D (BNA) 1647, 1652 (Fed. Cir. 2000); Embrex, 216 F.3d at 1347, 55 U.S.P.Q.2D (BNA) at 1163; Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996) (noting that the claims, specification, and prosecution history are "the most significant sources of the legally operative meaning of disputed claim language.") Extrinsic evidence may be accepted by the court to enhance its understanding of the technology. EMI Group N. Am., Inc. v. Intel Corp., 157 F.3d 887, 892, 48 U.S.P.Q.2D (BNA) 1181, 1184 (Fed. Cir. 1998). However, extrinsic evidence cannot be used to contradict the established meaning of the claim language. Mantech Envtl. Corp. v. Hudson Envtl. Servs., Inc., 152 F.3d 1368, 1373, 47 U.S.P.Q.2D (BNA) 1732, 1736 (Fed. Cir. 1998).

The district court construed the phrase "an angular medial surface for supporting the three remaining ulnar fingers in a wrapped configuration with flexion of the distal, middle, and proximal phalanges of said ulnar fingers" to require that the mouse housing have "an angular ledge for supporting the three remaining fingers [i.e., the middle, ring, and small fingers] in an enclosed or folded position." Gart I, slip op. at 5. The district court then compared each of the accused products to the claim as construed and summarily concluded that each product lacked the claimed angular medial surface either literally or equivalently. Gart I, slip op. at 6; Gart II, slip op. at 4.

Both parties suggest that the district court understood the term "angular ledge" to include a concave depression or curved undercut. We note, however, that the district court stated that "even if [it] were persuaded that . . . infringement of Claim 7 does not require a surface area called a 'curved undercut' or 'concave depression' beneath the angular medial surface, [it] finds that the . . . plain language of Claim 7 . . . requires that the angular medial surface support the middle, ring, and small fingers in an enclosed or folded configuration." Gart II, slip op. at 5. Thus, it is not at all clear that the district court construed the "angular ledge" to include a curved undercut or concave depression. On the other hand, what is clear from Gart I and Gart II is that the district court construed the "angular medial surface" of claim 7 to require a "ledge" and that some surface over that ledge supports the middle, ring, and small fingers in an enclosed or folded position. For the reasons we will discuss below, we conclude that it was erroneous to construe the plain language of claim 7 to require a "ledge." Moreover, in view of that erroneous determination, it would also be erroneous to require that ledge to include a concave depression or curved undercut area.

In support of the district court's construction, Logitech asserts that to properly interpret the structure defined by the claim, which it concludes is the critical feature of the invention, the court should look to the drawings. Logitech notes that all of the drawings show that the support structure for keeping the three remaining ulnar fingers in a wrapped configuration has a ledge with an undercut area.

In addition, Logitech asserts that the written description particularly describes the invention as having a "medial ledge undercut" to support the three remaining ulnar fingers, and that this reference is not related to a preferred embodiment. Moreover, Logitech notes that Gart distinguished his invention in the '165 patent specification from three prior art references and in so doing stated that those references fail to set forth an undercut area for the middle, ring, and small fingers. Logitech also contends that this distinction over the prior art was critical to the United States Patent and Trademark Office's decision that claim 7 was patentable. In this regard, Logitech notes that the examiner's reasons for allowance state: "the prior art fails to teach the details on the shape and surfaces of the hand controller taught by the instant claims."

None of Logitech's arguments persuades us that the district court's claim construction was correct. Logitech is certainly
correct that claims do not have meaning removed from the context from which they arose, i.e., "the claims are directed to the invention that is described in the specification." Netword, LLC v. Centraal Corp., 242 F.3d 1347, 1352, 58 U.S.P.Q.2D (BNA) 1076, 1079 (Fed. Cir. 2001). In addition, it is certainly correct that the specification and the prosecution history should be consulted to construe the language of the claims. However, we perform this consultation to determine if the patentee has chosen to be his or her own lexicographer, In re Paulsen, 30 F.3d 1475, 1480, 31 U.S.P.Q.2D (BNA) 1671, 1674 (Fed. Cir. 1994) (noting that claim terms may be defined by the patentee in the specification as long as such defining is done with reasonable clarity, deliberateness, and precision), Watts v. XL Sys., Inc., 232 F.3d 877, 882, 56 U.S.P.Q.2D (BNA) 1836, 1839 (Fed. Cir. 2000) (noting that distinguishing remarks contained in both the specification and in the prosecution history contributed to finding that the patentee had narrowed the construction of the sealingly connected limitation); Southwall Techs., Inc. v. Cardinal IG, Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2D (BNA) 1673, 1676 (Fed. Cir. 1995) (noting that arguments and amendments made during the prosecution of a patent application and other aspects of the prosecution history, must be examined to determine the meaning of terms in the claims because claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers), or when the language itself lacks sufficient clarity such that there is no means by which the scope of the claim may be ascertained from the language used, Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1554, 42 U.S.P.Q.2D (BNA) 1737, 1741 (Fed. Cir. 1997), overruled on other grounds by Cybor, 138 F.3d 1448, 46 U.S.P.Q.2D (BNA) 1169. However, when the foregoing circumstances are not present, we follow the general rule that terms in the claim are to be given their ordinary and accustomed meaning. Johnson Worldwide Assocs. v. Zebco Corp., 175 F.3d 985, 989, 50 U.S.P.Q.2D (BNA) 1607, 1610 (Fed. Cir. 1999). 1 "In short, a court must presume that the terms in the claim mean what they say, and, unless otherwise compelled, give full effect to the ordinary and accustomed meaning of claim terms." Id.

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1 Of course, "[a] common meaning, such as one expressed in a relevant dictionary, that flies in the face of the patent disclosure is undeserving of fealty." See Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250, 48 U.S.P.Q.2D (BNA) 1117 (Fed. Cir. 1998).

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Contrary to Logitech's assertion, the '165 patent specification does not describe "the invention" as having a "medial ledge undercut to support the middle, ring and small fingers of the hand." '165 patent, col. 3, ll. 29-36. This portion of the specification merely exemplifies one embodiment of the invention that would provide "a great deal of comfort." Id. The specification clearly states that the provision of "an angular medial surface" for supporting the remaining three ulnar fingers in a wrapped configuration will achieve the object of the invention, i.e., an ergonomic design of a hand controller apparatus that minimizes hand fatigue. Id. at col. 3, l. 60-col. 4, l. 13. Furthermore, the description at column 5, lines 29-34, to which the district court referred in construing claim 7 to include a ledge, is merely a description of the preferred ergonomic design that minimizes hand fatigue.

Admittedly, the drawings show a controller housing having an angular ledge with a concave or flat undercut area over which the three remaining ulnar fingers must be wrapped. However, the '165 patent presents these drawings only to depict the preferred embodiment. Id. at col. 4, l. 15-col. 6, l. 46. These drawings are not meant to represent "the" invention or to limit the scope of coverage defined by the words used in the claims themselves. In view of the foregoing, we conclude that the entirety of the specification describes several embodiments of an ergonomic hand controller, including a controller with an angular medial ledge, a controller with an angular medial ledge having an undercut area, and a controller with an angular medial surface. The written description does not explicitly limit the subject matter of the patent to the ledge configuration set forth in the drawings.

We acknowledge that Gart made statements at column 2, lines 28-63 of the specification distinguishing the prior art, noting in particular that at least three of the references did not include the "undercut curved areas." However, Gart also notes in the specification that the "prior art [that has attempted to provide specially shaped hand engaging surfaces] either [does] not provide the full ergonomic surface design of the present invention or [is] simply incompatible with the surface shapes needed in a hand controller as opposed to other hand-related applications." Id. at col. 2, ll. 18-26.

Moreover, we also note that Gart indicates in the specification that this undercut feature that the prior art does not have is a feature of the preferred embodiment. Id. at col. 5, ll. 34-43. From the foregoing, we conclude that Gart distinguished his
preferred embodiment from particular prior art references on the basis of its undercut feature: but, Gart also noted that those
same references did not contain all of the ergonomic surface features of the invention or were incompatible with the surface
shapes needed in a hand controller. In other words, Gart did not in any way limit all of his claims to a controller with an
angular medial ledge by the remarks distinguishing the prior art.

Finally, we do not agree with Logitech that the examiner expressly allowed the claims because "an undercut area" was novel
and non-obvious. It is undisputed that the examiner remarked that "claims 1 and 7 recite a hand controller . . . apparatus
having various surfaces and shaped in order to provide support to various parts of a user's hand operating the device to
minimize hand fatigue." Moreover, the examiner asserted that "the details on the shape and surfaces . . . taught by the
claims" were not taught by the prior art. However, the examiner never stated that the patentable difference over the prior art
was "the concave undercut area" of the claimed device. We note that drawing inferences of the meaning of claim terms from
an examiner's silence is not a proper basis on which to construe a patent claim. DeMarini Sports, Inc., v. Worth, Inc., 239

We conclude that the '165 patent does not attribute a special meaning to the phrase "angular medial surface," and there were
no express representations made in obtaining the patent regarding the scope and meaning of the claim terms. Moreover, the
scope of claim 7 may be ascertained from the plain language of that claim. Thus, we cannot sustain the district court's
interpretation of the claim language "angular medial surface" as requiring "an angular medial ledge." Such a construction
would improperly add a limitation appearing in the specification and the drawings, but not appearing in the unambiguous
language of the claim. See Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053, 12 U.S.P.Q.2D (BNA) 1474, 1476
(Fed. Cir. 1989) (noting that "courts cannot alter what the patentee has chosen to claim as his invention"); Southwall, 54
F.3d at 1576, 34 U.S.P.Q.2D (BNA) at 1676; Wang Labs., Inc. v. Am. Online, Inc., 197 F.3d 1377, 1383, 53 U.S.P.Q.2D
(BNA) 1161, 1165 (Fed. Cir. 1999); Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551, 37
U.S.P.Q.2D (BNA) 1609, 1612 (Fed. Cir. 1996). Moreover, it is well established that broad claims supported by the written
description should not be limited in their interpretation to a preferred embodiment, e.g., Laitram Corp. v. Cambridge Wire
Cloth Co., 863 F.2d 855, 865, 9 U.S.P.Q.2D (BNA) 1289, 1299 (Fed. Cir. 1988) ("References to a preferred embodiment,
such as those often present in a specification, are not claim limitations."). which we deem to be the case here. Rather, the
terms of the phrase "angular medial surface for supporting . . . in a wrapped configuration with flexion" must be given their
ordinary meaning.

We adopt the ordinary definitions of the terms "wrapped" and "flexion," i.e., "to enclose . . . or to surround" and "partially
bent," respectively, proffered by Gart because they are standard dictionary definitions that Logitech does not dispute. The
parties do not dispute that "the three remaining ulnar fingers" refers to the middle, ring, and small fingers. The parties do not
proffer an ordinary definition of the remaining terms. The ordinary definition of the term "angular" and "surface" means
"having one or more angles," and "the exterior or upper boundary of an object or body," respectively. Webster's New
Collegiate Dictionary 45, 1172 (1975). Moreover, as for the phrase "distal, middle, and proximal phalanges," we take
judicial notice that this refers to the bones of the fingers from the tip down to, but not including, the palm.

Therefore, we conclude that "an angular medial surface for supporting the three remaining ulnar fingers in a wrapped
configuration with flexion of the distal, middle, and proximal phalanges of said ulnar fingers" merely requires an angled
surface that supports the middle, ring, and small fingers in a folded position such that the distal, middle and proximal bones
of the fingers are partially bent over that angled surface. We note that the foregoing definition does not require that the
middle, ring, and small fingers be supported on the surface such that they are folded under.

On appeal, Schwing challenges only the second of the district court's two summary judgment orders. Schwing argues that
the district court erred in its construction of the phrase "annular extension," and that under the correct claim construction
there is a genuine dispute of material fact as to literal infringement by the modified Bastardring II so as to preclude the entry
of summary judgment on that issue. Schwing also argues that the district court erred as a matter of law in concluding that
prosecution history estoppel barred Schwing's claims of infringement under the doctrine of equivalents.

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Schwing's argument focuses on the district court's construction of the "annular extension" limitations in the '657 patent claims. The district court examined the prosecution history of the original '441 patent and concluded that the applicant had distinguished his invention from the prior art on the ground that the claimed annular extensions prevented or limited radial expansion of the elastic sealing ring so as to increase the axial force exerted by the sealing ring on the cutting ring. In light of the prosecution history, the district court interpreted the claims of the '657 patent to require that the annular extensions inhibit radial expansion of the sealing ring.

That interpretation, however, is not supported by the language of the claim. Claim 1 defines the "annular extensions" in purely structural terms. The annular extensions on the cutting ring and the shutter mechanism are described as "partly overlapping the second side of the spring means from opposite ends thereof so that a part of the second side surface of the spring means is left free between the annular extension." Where a claim uses clear structural language, it is generally improper to interpret it as having functional requirements. See Toro Co. v. White Consol. Indus., Inc., 266 F.3d 1367, 1371, 60 U.S.P.Q.2D (BNA) 1437, 1439 (Fed. Cir. 2001) ("An invention claimed in purely structural terms generally resists functional limitation."). We find nothing in the claim language itself that requires the annular extensions to perform the function of inhibiting radial expansion of the sealing ring.

Putzmeister defends the district court's claim construction on the ground that the "annular extensions" are part of the claimed "seatings," and that they must share the function of ensuring that the spring means pushes the cutting ring against the face plate. Putzmeister relies on the written description of the '657 patent to argue that the annular extensions must inhibit radial expansion of the spring means in order to provide the axial force required to push the cutting ring against the face plate. Although it is true that some annular extensions, including embodiments disclosed in the written description, inhibit radial expansion of the sealing ring, we find nothing in the '657 patent that suggests that the function of "inhibiting radial expansion of the sealing ring" is a necessary limitation of the annular extensions recited in claim 1.

The prosecution history was the main focus of the district court's claim construction analysis. During the prosecution of the original '441 patent, the examiner rejected the claims as obvious over German Patent 28 29 181 ("Korthaus") in light of U.S. Patent No. 4,382,752 ("Schlecht"). The applicant responded to the examiner's rejection by amending claim 1 to require that the sealing ring be axially elongated and that there be a support surface on either the shutter mechanism or the cutting ring for engaging essentially the entire length of one side of the flexible ring. In remarks accompanying that amendment, the applicant characterized Schlecht as follows: "One disadvantage of the Schlecht device is that a mechanical compression of the elastic ring creates very small axial forces, since the seatings allow the flexible ring of Schlecht to deflect along the whole axial length of its inner surface." The district court interpreted that statement as indicating that the applicant relinquished any claim to a device in which the means for retaining the sealing ring does not also inhibit radial expansion of that ring.

Although prosecution history can be a useful tool for interpreting claim terms, it cannot be used to limit the scope of a claim unless the applicant took a position before the PTO that would lead a competitor to believe that the applicant had disavowed coverage of the relevant subject matter. See, e.g., N. Telecom Ltd. v. Samsung Elecs. Co., 215 F.3d 1281, 1294, 55 U.S.P.Q.2D (BNA) 1065, 1075 (Fed. Cir. 2000) (holding that prosecution history statements did not provide a narrowing definition "with reasonable clarity and deliberateness"); IMS Tech., Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1439, 54 U.S.P.Q.2D (BNA) 1129, 1141 (Fed. Cir. 2000) (holding that a patentee's statements during prosecution and reexamination did not constitute clear disavowal of claim scope). Immediately after identifying the disadvantages of the Schlecht reference, the applicant explained the structure and operation of his invention:

With the present invention, the resilient force applied to the cutting ring to urge the contact surface of the cutting ring into contact with the face plate is provided by a long stroke spring in the form of a flexible rubber ring having a rectangular cross-section which is longer in the axial direction than in the radial direction. The shutter mechanism and the cutting ring combine to provide first and second seatings for the first and second ends of the flexible ring, and a support surface which engages the first side of the flexible ring along essentially its entire length. The second side of the flexible ring is only partly covered by a pair of annular extensions, one from the shutter mechanism and one from the cutting ring. Finally, the stops on the cutting ring and shutter mechanism limit the extent of movement of the cutting ring in the axial direction so that the flexible rubber ring cannot be squeezed out and lifted from its seating.

In the next sentence, the applicant distinguished his invention from the Schlecht reference as follows: "At the same time, unlike the Schlecht patent, the present invention provides substantial axial resilient forces which urge the cutting ring
toward the face plate because both the first and second ends and the first side are engaged by solid surfaces."

Viewed as a whole, the prosecution history does not support the district court's adoption of the functional limitation of "inhibiting radial expansion of the sealing ring." The applicant's remarks describe the annular extensions in purely structural terms, and do not suggest that the annular extensions are needed to achieve substantial axial forces. Furthermore, the final sentence distinguishing Schlecht does not mention the annular extensions or their role in inhibiting the radial expansion of the sealing ring. Instead, the applicant argued that "unlike the Schlecht patent, the present invention provides substantial axial resilient forces which urge the cutting ring toward the face plate because both the first and second ends and the first side are engaged by solid surfaces." None of those solid surfaces include the claimed annular extensions, which engage the second side of the spring means. We therefore do not consider the applicant's remarks as sufficient to overcome the general rule that functional limitations should not be read into purely structural claims.

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B. "Annular Inner Surface Having At Least A First Portion Extending Inwardly and Upwardly"

Claim 1 recites an impact pad with an outer wall including an "annular inner surface having at least a first portion extending inwardly and upwardly" toward the opening at the top of the impact pad. D.I. 36 at Exh. A, col. 7, ll. 51-53. There are two subsidiary disagreements regarding this phrase. First, the parties differ over the meaning of an "annular inner surface," despite an explicit definition provided for "annular" in the specification. Second, API and CCPI diverge on whether the "first portion" of the impact pad must itself be annular.

1. "Annular Inner Surface"

Both sides agree on what an "inner surface" is for purposes of the '551 patent; their dispute centers on the meaning of "annular." Fortunately, the specification provides some guidance. Annular, as used in the '551 patent, is "not meant to denote any particular shape but is meant to indicate a fully enclosing, endless boundary structure." D.I. 36 at Exh. A, col. 3, ll. 7-10 (emphasis added). API contends the word "endless," as used to define "annular," is ambiguous and this vagary, by implication, clouds the meaning of "annular." "Endless" should be defined, urges API, just as the inventor of the '551 patent, Karl J. Saylor, coined it; that is, "endless" means "without a definite beginning or ending." D.I. 37 at Exh. 4, p. 375.

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4 "Annular" is ordinarily defined as "of or relating to a ring: forming a ring: shaped like a ring." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 88 (1971). The Court is not bound by this definition, of course, as "a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the file history." Vitronics, 90 F.3d at 1582.

5 The Court recognizes this is extrinsic evidence; given the disposition of this issue, however, the nature of this evidence is trivial.

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Extrapolating from its definition of "endless," API suggests "annular" should be redefined to signify "a fully enclosing, endless boundary structure without a definite beginning or ending." D.I. 37 at 1. While this may seem mere semantic quibbling, API's true motivation is revealed in the inference it draws from its proposed definition. According to API, a structure without a definite beginning or ending is "without surface discontinuities." D.I. 48 at 2. In other words, API interprets "endless" to limit the meaning of an "annular inner surface" to an inner surface that is "continuous" and is "not interrupted by intermediate structures." Id. CCPI, on the other hand, does not cavil about "endless"; it simply argues an "annular inner surface" can be any shape, so long as, when viewed from above, it surrounds an inner space or cavity.

API's most powerful argument in support of its interpretation is that CCPI's reading elides the word "endless" from the definition of "annular." To reiterate, "annular" indicates "a fully enclosing, endless boundary structure." D.I. 36 at col. 3, ll. 7-10. Requiring an annular structure merely to surround an interior space when viewed from above, API contends, ascribes
to "endless" the same meaning as the phrase that immediately precedes it---"fully enclosing." 6 API points to the specification statement "any geometric shape which fully encloses or defines an[] endless boundary" will suffice under the '551 patent. Id. at col. 7, ll. 34-39. According to API, this disparate use of "fully enclose" and "endless" illustrates "fully enclosing" and "endless" cannot have the same meaning. API's proposal, it submits, does not make "endless" surplusage; as API puts it, its interpretation "breathes life and meaning into the term 'endless.'" D.I. 48 at 2.

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6 Of course, "fully enclosing" does not mean the impact pad has no ingress or egress for the stream of molten metal; otherwise, the impact pad would be useless. Rather, the specification and patent makes clear that a "fully enclosing" structure is one which, when viewed from above, surrounds an interior space or cavity. See, e.g., D.I. 36 at Exh. A, col. 5, ll. 1-6; col. 7, ll. 2-7.

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The short answer to this is API wants to resuscitate a term that already has too much animation and too many uses; "endless," as strewn haphazardly throughout the '551 patent and its prosecution history, seems to mean many things, yet nothing, and certainly not the limiting effect API gives it. For example, in the summary of the invention, the specification describes an "endless annular side wall" of the impact pad. D.I. 36 at Exh. A, col. 2, ll. 53, 57. The use of "endless" there is tautological, of course, since an annular wall is, by the specification definition, "endless." The pad is later described as including "an endless annular . . . outer side wall having an annular . . . inner wall surface . . . ." Id. at col. 6, ll. 2-4. Again, for the same reason, "endless" becomes so much wasted typeface. Finally, in the file wrapper, CCPI stated, "While the impact pad of the present invention may be formed with different shapes when viewed from above, in each case there is an endless side wall, or, in other words, a sidewall which surrounds an interior space or volume of the pad." D.I. 36 at Exh. C., p. 56 (emphasis added). According to CCPI, this statement shows "endless" was employed as a synonym for "fully enclosing."

This indiscriminate use of "endless" 7 only serves to highlight the principal flaw in API's position: API attributes limitations to the claims from a word found nowhere in the claim itself, but only as subsumed in "annular." When the claims are examined in conjunction with the specification and prosecution history, the limitations API would impose--no discontinuities or intermediate structures on the inner surface--cannot be found; they cannot be discerned in "endless" as it hopsscotch throughout the specification and they cannot be imputed to the broader definition of "annular inner surface." As noted earlier, the specification repeatedly disavows the notion "annular" is meant to denote a particular shape. See D.I. 36 at col. 3, ll. 7-10. Indeed:

While the impact pad of the present invention is preferably circularly shaped and while one alternative shape has also been shown and described [a rectangle], many shapes for the side walls of the impact pad are possible and fall within the scope of the present invention. Any geometric shape which fully encloses or defines an[] endless boundary for an interior space of the pad and redirects the incoming molten metal flow back into itself and creates a flow pattern away from the ladle shroud will perform similarly to the illustrated embodiments.

D.I. 36 at col. 7, ll. 29-39 (emphasis added). API's definition would run contrary to these teachings; it would limit the shape of the walls of the impact pad. Accordingly, it is unnecessary to define "endless"; it does not disturb the meaning of "annular."

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7 "Endless" appears nine times in the specification; five times in connection with the "annular side wall" (which can be the outer or inner wall of the impact pad), see D.I. 36 at Exh. A, col. 2, ll. 49, 53, 56-57, col. 3, l. 6, col. 5, l. 66; twice as a description of the outer side wall (once in connection with the "annular" outer side wall), id. at col. 5, ll. 1-2, col. 6, ll. 2-3; once, of course, in the definition of "annular" itself, id. at col. 3, l. 9; and once to describe a "boundary for an interior space of the pad[,]" id. at col. 7, ll. 35-36.

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Even if the Court defined "endless" in accordance with its usual meaning, i.e., without an end, 8 this definition would not engender API's proposed limitations on the shape of "annular inner surface." To elaborate, one can trace with a pencil an outline of a circle or rectangle--which are the preferred embodiments of the inner surfaces of the '551 impact pads when viewed from above, see D.I. 36 at Figures 3-5--and API concedes this outline is "endless," or "without a definite ending." API seems to argue the inner surface fails to qualify as "endless" as soon as an irregular portion of the inner surface protrudes into the interior cavity of the pad; for example, API presumably characterizes the inner surface of an impact pad, when viewed from above, that forms a square with a triangular protrusion in each corner as lacking an "endless" quality. But this assertion is misplaced. First, as rehearsed earlier, the specification allows for any shape. Second, a continuous outline can be traced along such an inner surface--the pencil never reaches an ending point--despite the surface irregularity.

8 This differs from API's proposed definition of "without a definite beginning or ending."

Accordingly, the Court concludes CCPI's definition of "annular inner surface" is correct; that is, so long as an inner surface, when viewed from above, surrounds an interior space or cavity, that surface will be considered "annular."

1. "Annular locking means." This limitation is not a means plus function limitation. 1 Therefore, "annular locking means" shall be construed to mean a "ring-shaped locking device."

Plaintiff also argues that "annular locking means" should be defined as "a ring having two spaced apart ends." This argument must also fail since dependent claim 8 claims "the coupling assembly of claim 7, wherein said annular locking means is a ring having two spaced apart ends."

Plaintiff also argues that "annular locking means" should be defined as "a ring having two spaced apart ends." This argument must also fail since dependent claim 8 claims "the coupling assembly of claim 7, wherein said annular locking means is a ring having two spaced apart ends." Construing the limitation "annular locking means" in claim 7 as plaintiff suggests would render claim 8 meaningless. Furthermore, nowhere in the specification does plaintiff state or suggest that the only suitable annular locking means is a ring having two spaced apart ends. Rather, the specification states "in the present embodiment, the ring includes a space between ends ...." ( '682 patent, col. 2, 11. 47-49)

6. "annular member"

Agere argues that the term "annular member" should be construed as "a member with both an internal hole and expanded dimensions in the direction perpendicular to the major axis of the paddle support arm, and with a hole in the member." Atmel argues that the term "annular member" should be construed as "a deformation absorbing member that is ring-like, with expanded dimensions perpendicular to the major axis of the paddle support arm."
First, Atmel's reference to an "annular member" as being "a deformation absorbing member" seems unnecessarily redundant since claims 4 and 9, in which the term "annular member" appears, clearly provide that the annular member is a deformation absorbing member. See '269 Patent at col. 4:8-10 ("A package as recited in claim 1 in which said deformation absorbing member comprises an annular member."); '269 Patent at col. 4:34-46 ("A semiconductor integrated circuit package as recited in claim 6 in which deformation absorbing member comprises an annular member."). The only other significant difference between the parties' constructions is Agere's description of "an internal hole" as contrasted with Atmel's description of the member being "ring-like."

Atmel's description of the member being "ring-like" most closely comports with the only dictionary definition of the word "annular" offered by either party, which is "of, relating to, or forming a ring." Merriam-Webster's Collegiate Dictionary 47 (10th ed. 2001). However, in this case, the patentees clearly chose to be their own lexicographers, providing a specific definition for the term "annular member" in the specification. "In the embodiment depicted in FIG. 2, the deformation absorbing member 11 comprises an annular member, i.e., a member with expanded dimensions in the direction perpendicular to the major axis of the paddle support arm. The annular member is depicted as being circular although other shapes, e.g., oval, can be used." '269 Patent at col. 2:62-68. Moreover, there is no intrinsic or extrinsic evidence to support's Agere's description of the member having "an internal hole." Thus, although the word "annular" generally means "of, relating to, or forming a ring," the Court concludes that the term "annular member" as used in the '269 patent should be construed in accordance with the specific definition provided in the specification. Therefore, the term "annular member" is construed as "a member with expanded dimensions in the direction perpendicular to the major axis of the paddle support arm, which member may be, but need not necessarily be, circular or oval in shape."

3. Annular Peripheral Zone

The sixth clause of claim 1 recites "the burner (3, 30) having an annular peripheral zone (7) carrying a catalyst." Plaintiffs propose that the phrase needs no construction, that the burner has an annular peripheral zone that includes a catalyst. Defendants assert that the construction be narrowed to "an outer circular zone" which includes a catalyst.

Both parties appear to agree that the term periphery and, hence, the term "peripheral" means "the perimeter of a circle or other closed curve; also: the perimeter of a polygon." See Merriam-Webster Online, Doc. No. 58, Ex. 2, at 1-2, Additionally, both parties submit the dictionary definition of "annular," means "a thing in the form of a ring." Id. at 8. Defendants assert that because "peripheral" has an ordinary meaning of the "perimeter" (of some shape) and "annular" has an ordinary meaning of "ring," logic would dictate that the term "annular peripheral" would have an ordinary meaning of "outer circular." To not construe the term as "circular," Defendants argue, is to ignore the word "annular."

The exemplary embodiment of the burner stone illustrated in the patent has a round or circular shape. See '061 patent; Fig. 2; 1:8-10; 3:1-5; Fig. 8; 5:6. The claim is not limited to such a shape, however. Such structures may include circular or round configurations, but are not necessarily limited to such. Accordingly, the Court finds no basis for limiting the claims in such a manner.

12. annular reinforcing bead ('826 patent, claim 14; '875 patent, claim 50)

Crown's proposed construction is "[a] ring-like stiffening channel." 54 Rexam's proposed construction is "an outwardly concave generally 'U' shaped groove (also called a countersink or anti[-]peaking bead) that is stamped or pressed into the can end, and is located inwards from the bottom of the wall (chuck wall) when looking at a cross section of the can end, which encircles and supports the center panel of the can end."

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The court adopts Rexam's proposed construction as modified below.

Crown's proposed construction is based on a cobbled together series of dictionary definitions and it argues that Rexam's proposed construction improperly limits the phrase to the preferred embodiment illustrated by figure 4 of the common specification. The court declines to accept Crown's proposed construction and disagrees with the contention that Rexam's proposed construction erroneously limits the claim language to a preferred embodiment.

The common specification discusses several prior art can ends having reinforcing beads. U.S. Patent No. 4,093,102 "describes can ends comprising a peripheral cover hook, a chuck wall dependent from the interior of the cover hook, an outwardly concave annular re-inforcing bead extending radially inwards from the chuck wall and a central panel joined to an inner wall of the reinforcing bead by an annular outwardly convex bead. 56 U.S. Patent No. 4,217,843 describes an alternative design of can end in which the countersink has inner and outer flat walls, and a bottom radius which is less than three times the metal thickness. 57 U.S. Patent No. 4,571,978 describes a can end comprising "a peripheral flange or cover hook, a chuck wall dependant from the interior of the cover hook, an outwardly concave reinforcing bead extending radially inwards from the chuck wall from a thickened junction of the chuck wall with the bead, and a central panel supported by an inner portion of the reinforcing bead." 58 U.S. Patent No. 5,582,319 describes the use of a particular alloy for a can end, the use of such alloy, "permitted manufacture of a can end with a narrow, and therefore stronger reinforcing bead . . . ." 59

The common specification notes that known can ends "are held during double seaming by an annular flange of chuck, the flange being of a width and height to enter the anti-peaking bead. There is a risk of scuffing if this narrow annulus slips. Furthermore a narrow annular flange of the chuck is susceptible to damage." 60 The specification does not distinguish the prior art can ends on the basis that those ends had a concave annular reinforcing bead and the invention of Crown's patents-in-suit does not. It states that "[w]e have discovered that improvements in metal usage can be made by increasing the slope of the chuck wall and limiting the width of the anti peaking bead." 61 Figure 5 shows a modified chuck used in attaching a can end to a can body. Contrasting the prior art illustrated in figure 2, the modified chuck illustrated by figure 5 "is designed to drive initially on the relatively large chuck wall 32 without entering deeply into the anti-peaking bead 25." 62

Also, "typical dimensions" of the invention illustrated in figure 4 include measurements of the "concave radius in antipeaking bead"; "maximum diameter of antipeaking bead"; "minimum diameter of antipeaking bead"; "height to top of antipeaking bead"; and "outer wall height." 63
The common specification also describes differently shaped annular reinforcing beads. "In a preferred embodiment of the can end an outer wall of the reinforcing bead is inclined to a line perpendicular to the central panel at an angle between -15 [degree] and +15 [degree] and the height of the outer wall is up to 2.5 mm." 64 Another embodiment describes a reinforcing bead having "an inner portion parallel to an outer portion joined by said concave radius." 65 Each of these embodiments would describe a "generally 'U' shaped groove," however, Rexam is not seeking to limit the claim language to any of the specific dimensions of the annular reinforcing (or antipeaking) beads recited in the common specification.

Moreover, the recitations of the patents' in suit with regard to annular reinforcing beads is not limited to a description of a concave annular reinforcing bead with respect to prior art discussed and the preferred embodiments described therein. The annular reinforcing bead is generally described as outwardly concave prior to the detailed descriptions of particular embodiments.

The abstract of the '826 patent describes a can end including:

a peripheral cover hook, a chuck wall dependant from the interior of the cover hook, an outwardly concave annular reinforcing bead extending radially inwards from the chuck wall, and a central panel supported by an inner portion of the reinforcing bead . . . . 66

The common specification recites:

this invention provides a can end comprising a peripheral cover hook, a chuck wall dependant from the interior of the chuck wall, an outwardly concave annular reinforcing bead extending radially inwards from the chuck wall, and a central panel supported by an inner portion of the reinforcing bead, characterized in that, . . . the concave bead narrower than 1.5 mm (0.060"). 67

The court determines that the common specification supports Rexam's proposed construction with the exception of the portion reciting "stamped or pressed into a can end." Crown argues that this phrase limits the method of manufacture of an annular reinforcing bead. Rexam contends that phrase merely explains that a bead is a groove that is formed to extend into the can end and was included for clarity. The court does not find language in the claims or common specification that would warrant inclusion of that portion of Rexam's proposed construction. Therefore, the court adopts Rexam's proposed
construction as modified by the court: "an outwardly concave generally 'U' shaped groove (also called a countersink or anti peaking bead) that is located inwards from the bottom of the wall (chuck wall) when looking at a cross section of the can end, which encircles and supports the center panel of the can end."

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The '554 Patent

At issue in plaintiff's '554 patent is the meaning of certain language in Claims 1, 3, and 5. One element of Claim 1, an apparatus claim, is "an annular shield wall extending axially beyond the distal end of said connector member..." Because Claims 3 and 5 are dependent upon Claim 1, these claims also contain the above phrase. In addition, Claim 5 includes the phrase "...annular shield wall extends axially from transverse wall." What is in need of interpretation here is the meaning of "annular shield wall."

Aided by the testimony of Vaillancourt, Browne, and Sheehan, the court concludes, based upon the language of the claims themselves, the specification, and the prosecution history, that an annular shield wall is a cylindrical hollow protective barrier which surrounds a centrally located hollow, elongated cylindrical blunt piercing member. (See column 7, lines 1-4). The claim also requires that this hollow protective barrier extend axially beyond the blunt cannula, or, in other words, be longer than the blunt cannula. The purpose of this protective barrier is to maintain the blunt piercing member in an aseptic condition by preventing touch contamination. (See column 7, lines 9-11).

The court finds its support for the above claim construction from the ordinary meaning of the words "annular," "shield," and "wall." Annular means ring-like or cylindrical; a shield is a structure, device or part that serves as a protective cover or barrier; and a wall is a partition. Inherent in the word shield is the function of the invention - to prevent touch contamination. The requirement that the shield go axially beyond the cannula also serves the function of protection. Thus, the phrase must be construed with that function in mind.

Further support for construing the phrase in light of its function is found in the '554 patent's prosecution history. Plaintiff's attorney argued, in light of an anticipation rejection, that neither Cox nor Herlitze have a member that prevents touch contamination, nor do these patents claim as a function of their "shields" protection from touch contamination (pgs 86-87 and 97-99 of Exhibit 401). Thus, plaintiff distinguished its shield on the basis of its touch-prevention function, and that must be included as part of the definition.

Defendant urges the court to construe the phrase as requiring the shield to extend axially beyond the cannula in every radial direction, such that any cut-out or hole in the shield would not meet the limitation. The court declines to read that requirement into the phrase. What is required is that the annular shield wall prevent touch contamination. It is for the jury to decide, when determining whether defendant's device infringes, what configuration of the wall would or would not perform this function.

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b. The disputed term in Claim 25: "Annular sidewall . . . diverging radially outwardly to an upper terminal edge"

i. Claim language. The next claim term in the '909 patent that the court finds is actually "in dispute" at this time is in Claim 25. That disputed claim term is "annular sidewall . . . diverging radially outwardly to an upper terminal edge." Claim 25, with the disputed term highlighted, states the following:

25. A plastic washing machine basket comprising: a base wall having a peripheral portion, said base wall being formed of plastic; and an annular sidewall extending upward from the peripheral portion of the base wall and diverging radially outwardly to an upper terminal edge, said sidewall including inner and outer surfaces having spaced apertures extending therethrough with the outer surface being beveled at the apertures, said sidewall being made of plastic and integrally formed with both the base and the apertures such that the basket has a smooth, uniform construction.
The '909 patent, Claim 25 (emphasis added).

ii. The parties' definitions and arguments. The parties' proffered definitions of this term are the following, with bold and italic font indicating differences between their definitions. Again, the authority on which each party relies for its construction is shown just below that party's definition.

| "ANNULAR SIDEWALL . . . DIVERGING RADially OUTWARDLY TO AN UPPER TERMINAL EDGE" |
|----------------------------------------|----------------------------------------|
| **Maytag's Definition** | **Electrolux's Definition** |
| "a sidewall formed like a ring and having a radius measured from the vertical center axis to the sidewall that increases moving from the base wall to the edge of the access opening of the sidewall" | "the structure of the sidewall is disposed from a central axis a greater distance at the top edge than at the bottom" |
| **Maytag's Authority** | **Electrolux's Authority** |
| '909 patent, Fig. 2 and 4; col. 4, ll. 19-22; col. 4, ll. 32-34; col. 6, ll. 37-39; claims 11, 12 and 18; dictionary definitions of "diverging" and "radial" | '909 Patent at Fig. 2 (radially outwardly); Fig. 3; dictionary definitions of "radially" |

In its initial Markman brief, Maytag contends that its definition is correct, because it is consistent with the patent specification. For example, Maytag contends that the Detailed Description Of The Invention makes clear that some "slant" to the inner surface of the sidewall of the washing machine basket is necessary to allow for easy removal of the basket from the mold core. Maytag also contends that the illustrations show that the basket gets wider from the base to the open end. Indeed, Maytag contends that its construction is the only one that is consistent with both the ordinary meaning of the claim terms and the disclosures of the '909 patent. In contrast, Maytag contends that Electrolux's construction rewrites the claim by playing word games like inserting "structure of" before "sidewall." Maytag also contends that Electrolux's definition makes no sense, because it measures the increasing radius as the distance between the center axis and the outer surface of the sidewall, not the inner surface that is formed by the mold core. Maytag contends that Electrolux is attempting to maintain a frivolous argument of non-infringement based on its contention that its baskets do not have an increasing radius from the center axis to the outer surface of the sidewall, when the radius to the outer surface is irrelevant to aiding removal of the basket from the mold core.

In its initial Markman brief, however, Electrolux argues that its construction of this claim term is correct, precisely because the claim itself refers to the "sidewall," not merely to the "inner surface" of the sidewall. Thus, Electrolux contends that the entire sidewall must diverge outwardly from the bottom to the top of the washing machine basket and that such a construction is confirmed by the illustrations in the patent, which show the entire wall diverging. Electrolux contends that it is Maytag, not Electrolux, that is rewriting the claim language to focus only on the radius from the center axis to the inner surface.

In its rebuttal brief, Maytag reiterates that Electrolux's construction ignores the invention, which involves ease of removal from the mold core; instead, Maytag contends that Electrolux is attempting to read the language of the patent claim in the abstract. Indeed, Maytag points to parts of the specification that explain that the purpose of the radial divergence of the sidewall is to further facilitate removal of the basket from the mold assembly. Electrolux's construction, according to Maytag, does not align with the claim language or the specification. In its rebuttal brief, on the other hand, Electrolux contends that Maytag's construction disregards claim limitations and explicit definitions in the patent specification. Electrolux points out that the claim language expressly requires that the "sidewall," not merely the "inner surface" of the sidewall, diverge radially, and that the sidewall is defined to include both inner and outer surfaces. Thus, Electrolux
 contends that the construction of the disputed term must encompass radial divergence of the entire structure of the sidewall, not just the inner surface. Moreover, Electrolux contends that Maytag did not "invent" draft on a mold core, that is, radial divergence of the product formed, to facilitate removal of the product from the molding apparatus. Finally, Electrolux asserts that there is not a single reference in the patent to radial divergence of only the inner surface of the sidewall. In its surrebuttal brief, Maytag contends that its construction merely clarifies what one of ordinary skill in the art would understand: that the purpose of the radial divergence claim limitation is to allow the basket to be removed from the mold core. Moreover, Maytag contends that Electrolux's proposed definition is the one that imports a limitation into the claim language, by requiring radial divergence of both the inner and outer surfaces of the sidewall, and such a construction is not supported by the claim language or the specification. In its surrebuttal brief, on the other hand, Electrolux reiterates that the '909 patent teaches that the "sidewall" diverges radially, not that the "inner surface of the sidewall" diverges radially. Electrolux also points out that the claim language shows that, when Maytag wanted to refer to a specific part of the sidewall, it knew how to do so.

Although the parties also addressed the construction of this term during oral arguments at the Markman hearing, their oral arguments are best understood as responses to the court's proposed construction of the term. Therefore, those arguments will be addressed below.

iii. Analysis. The court notes that, as contentious as the construction of this claim term appears to be, there is some common ground between the parties' proffered constructions. First, the parties agree that an "annular sidewall" means a sidewall "shaped like a ring." See, supra, Section I.C., at page 23 (noting agreed term constructions, including the construction of "annular" as "shaped like a ring"). The parties also agree on the construction of "diverges radially" to the extent that they agree that the radius (distance from a central axis) of the annular sidewall is greater at the open end of the washing machine basket than it is at the base wall. Compare Maytag's definition ("having a radius measured from the vertical center axis to the sidewall that increases moving from the base wall to the edge of the access opening of the sidewall") (emphasis added), with Electrolux's definition ("disposed from a central axis a greater distance at the top edge than at the bottom") (emphasis added).

n9 This reading is also supported by the dictionary meanings of "radially" offered by both parties, for example, in their Joint Claim Construction Statement, concerning "annular sidewall . . . diverging radially outwardly to an upper terminal edge." See Maytag's construction (definition of "radial" as "relating to or placed like a radius: moving and retaking place along a radius: of, relating to, or adjacent to a bodily radius," quoting WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY, p. 1871); Electrolux's construction (defining "radially" as "radiating from or converging from a common center," citing AMERICAN HERITAGE DICTIONARY at 1490, n.1(b); as "characterized by divergence from a center," citing MERRIAM-WEBSTER DICTIONARY at 962, def. 1, n.2(b), and as "branching out in all directions from a common center," citing WEBSTER'S NEW WORLD DICTIONARY at 1170, n. 1(a)).

The crux of the parties' disagreement is whether the increasing radius should be measured to the inner surface of the sidewall only, as Maytag contends, or to both the inner and outer surfaces, as Electrolux contends. However, the court notes other differences between the parties' definitions that the court finds should be resolved before the court addresses the parties' primary disagreement.

One of those differences is that Electrolux insists on calling the reference points on the sidewall for measurement of the radii the "bottom" and the "top edge" of the washing machine basket, while Maytag refers to them as the "base wall" and the "edge of the access opening of the sidewall." The other difference is that Electrolux's definition suggests that only the radii at the "bottom" and the "top edge" matter, while Maytag's definition suggests that the radius "increases" from the "base wall" to the "edge of the access opening of the sidewall."

Beginning once again with the words of the claim, Nystrom, 424 F.3d at 1142; Biagro, 423 F.3d at 1302, the court finds that there is some justification for Electrolux's construction of opposite ends of the washing machine basket as the "bottom" and the "top edge," respectively. The court acknowledges that there are references to the "annular sidewall extending upward" from the base wall in both this claim (No. 25) and in Claim 23, and this claim (No. 25) also refers to an "upper terminal edge." See the '909 patent, Claims 23 & 25 (emphasis added). On the other hand, the court has found no similar references in the Detailed Description. See Phillips, 415 F.3d at 1314-16 (the specification remains of "central importance" to determining the proper construction of the term and may even be "dispositive"). Rather, references in the Detailed Description are to an "annular sidewall 8 extending from a peripheral portion 10 of base wall 5," which suggests direction
away from the base wall, but not necessarily "upward." See the '909 patent, Detailed Description, col. 2, ll. 45-46 (emphasis added); id., col. 3, ll. 5-6 (same); but see id., Summary Of The Invention, col. 2, ll. 7-8 ("annular sidewall extending upward from a peripheral portion of a base wall") (emphasis added). Thus, the court reads references to "extending upward" to suggest a direction in which the annular sidewall extends from the base wall, rather than as a categorical limitation on the orientation of the plastic washing machine basket, such that it has a "top" and a "bottom." Moreover, the claims and the specification consistently refer to the closed end of the washing machine basket as the "base wall 5," not as the "bottom" of the basket, and refer to the open end only indirectly by referring to the "terminal edge 36" of the sidewall, not to the "top" of the basket. These references do not suggest that the "base wall 5" is necessarily the "bottom" of the basket or that the "terminal edge 36" is necessarily at the "top." Finally, even a lay judge has sufficient imagination to recognize that the washing machine basket could be mounted "on its side" for a front-loading washing machine, that is, with the central axis of the washing machine basket horizontal rather than vertical. Indeed, Figure 2, of the '909 patent, reproduced above on page 14, appears to show the washing machine basket in just that orientation.

In contrast, the court finds Maytag's construction of the closed end of the washing machine basket as the "base wall" to be consistent with the patent claims and the specification. Indeed, the court finds no other form of reference to the closed end of the washing machine basket anywhere in the patent claims or specification. The court cannot say the same, however, for Maytag's construction of the open end of the washing machine basket as the "access opening of the sidewall." Such a construction is untenable, because the "access opening," if such it is, is to the interior of the washing machine basket, not of, to, through, or into the "sidewall." Also, the court finds nothing in the patent claims or specification contrary to construing or describing the end of the washing machine basket opposite the "base wall" as the "open end." Such a definition plainly comports with the plain and ordinary understanding of an open end of a "basket," not to mention the illustrations and descriptions of the washing machine basket in the patent.

Thus, designating the "base wall" the "bottom" and the open end the "top" is misleading and inconsistent with the specification and illustrations. Electrolux has not pointed to any part of the patent claims or any part of the specification that makes inevitable or exclusive a construction of the washing machine basket as having "top" and "bottom" ends, even considering the references in Claim 23 and Claim 25 to "upward." Ultimately, the court finds that introducing "top" and "bottom" limitations on the washing machine basket is unwarranted, when accurate references to the "base wall" and "open end" will suffice. PPG Indus., 156 F.3d at 1355 (the task of the court is to "define[] the claim with whatever specificity and precision is warranted by the language of the claim and the evidence bearing on the proper construction"). Therefore, the court concludes that the two ends of the washing machine basket are properly defined as the "base wall" and the "open end," respectively.

Next, again relying on the words of the claim, Nystrom, 424 F.3d at 1142 (construction begins with the words of the patent); Biagro, 423 F.3d at 1302 (same), and the specification of the patent, see Phillips, 415 F.3d at 1314-16 (the specification remains of "central importance" to determining the proper construction of the term and may even be "dispositive"), the court must reject Electrolux's assertion, or unintentional implication, that the radius from the central axis is relevant only at two points, at the base wall and at the edge of the sidewall at the open end. See Electrolux's definition ("the structure of the sidewall is disposed from a central axis at a greater distance than the top edge than at the bottom") (emphasis added). First, whatever the claim language means, "diverging radially outwardly" means that the radius continuously increases moving from the base wall to the edge of the sidewall at the open end, not just that it is greater at the open end than at the base wall. The difference, for example, is that a continuously increasing radius would suggest that the sidewall "slants" outward, while Electrolux's definition suggests a sidewall with a "stair-step" at the open end. To put it another way, Electrolux's construction reads "diverging radially outwardly" completely out of the claim limitation. Second, although the court has not found any portion of the Detailed Description Of The Invention, and the parties have pointed to none, that actually describes the "radially diverging sidewalk," n10 a careful examination of Figure 2 does reveal that the radius from the central axis to the sidewall 8 continuously increases from a point at the base wall 5 to a point at the edge of the sidewall at the open end of the washing machine basket, whether one considers the radius from the central axis to the inner surface or to the outer surface of the sidewall. See the '909 patent, Fig. 2 (reproduced above, page 14). Next, turning to extrinsic evidence, such as standard dictionaries, for guidance on "the widely accepted meaning of [this] commonly understood word[]," Phillips, 415 F.3d at 1314, the court finds that a standard definition of "diverging" is "moving or extending in different directions from a common point: drawing apart," MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY (10th ed. 1995) (definition 1 a of "diverge vb"), which suggests that the sidewalk continuously moves away from the central axis, rather than suddenly increases in a sort of "stair step." Finally, at the Markman hearing, Electrolux acknowledged that it did not mean to imply a stair-step configuration, but a regular or continuous divergence, so that the court's construction was appropriate in this
Maytag cites only portions of the specification that state that the mold core is "tapered" or "diverges inwardly," which Maytag apparently asserts imply that the sidewall of the washing machine basket molded upon such a core must also have a corresponding "taper" or "diverge outwardly." See the '909 patent, col. 4, ll. 11-19 and col. 4, ll. 37-39 (the mold core 90 has a "tapered outer surface 163"); id. at col. 6, ll. 37-39 ("The outer peripheral surface of core mold 90 diverges slightly inwardly from bottom to top as shown in FIGS. 3 and 4.").

The court also finds that use of the term "outwardly" suggests that the radius of the annular sidewall increases continuously from the base wall to the edge of the sidewall at the open end, as the nature of the change shown, for example, in Figure 2 of the patent is, indeed, "continuously increasing," and this construction also comports with the dictionary definition of "outwardly" as "toward the outside," again suggesting a continuous rather than an abrupt increase in the radius. See MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY (10th ed. 1995) (definition 1 b of "outwardly adv"). Therefore, the court provided the parties with its tentative construction of "diverging radially outwardly" to mean, at a minimum, that the radius of the annular sidewall continuously increases from the base wall to the edge of the sidewall at the open end.

At the Markman hearing, however, Maytag took issue with this part of the court's construction, asserting that "continuously" is unnecessary, because construing the term to require an increase in the radius "moving from base wall to open end" was sufficient. Somewhat more specifically, Maytag asserted that the court's insertion of "continuously" could require that there be no variation in the angle of divergence from the central access. In response, Electrolux asserted that "continuously" is what "diverges radially outwardly" means. The court is not persuaded that "continuously" should be stricken from the construction of this term. For the reasons stated above, "diverging" and "outwardly" both plainly suggest that the radius continuously increases from the base wall to the edge of the sidewall at the open end.

At last, the court reaches the crux of the parties' dispute, which is whether the continuously increasing radius should be measured only from the central axis to the "inner surface of the sidewall," as Maytag asserts, or to both the inner and outer surfaces of the sidewall, such that the entire "structure of the sidewall" "diverges radially outwardly," as Electrolux asserts.

The short answer to Maytag's assertion that only the radius to the inner surface of the sidewall matters is that there is no such limitation to be found in this or any other claim of the patent. See Nystrom, 423 F.3d at 1142 (construction begins with the words of the patent): Biagro, 423 F.3d at 1302 (same). Claim 25, instead, claims "an annular sidewall... diverging radially outwardly to an upper terminal edge," see the '909 patent, Claim 25, not just the "inner surface of the annular sidewall... diverging radially outwardly to an upper terminal edge." The claim then defines the sidewall as "including inner and outer surfaces," and clearly specifies which surface is intended when only one is relevant to a limitation, for example, by stating, "the outer surface [of the sidewall] [is] beveled at the apertures." Thus, the claim language expressly states that the "sidewall," not just the "inner surface of the sidewall," diverges radially outwardly" from the central axis of the washing machine basket.

Furthermore, attempting to read Maytag's "inner surface" limitation into this portion of the patent claim, on the basis that the specification refers to corresponding "draft" on the mold core, would be to improperly import or read a limitation from the specification into construction of the claim term. See Playtex Prods., Inc., 400 F.3d at 906 ("The court must take care in its analysis, when locating in the written description the context for a disputed term, not to import a limitation from that written description. It must use the written description for enlightenment and not to read a limitation from the specification [into the construction of the term].") (citing Comark Comms., 156 F.3d at 1186-87). Indeed, Maytag's construction is based on what the court finds to be, at best, a tenuous inference that only the radial divergence of the inner surface of the washing machine basket was intended, because only the outer surface of the mold core was correspondingly tapered, and the radial divergence was intended to facilitate removal of the washing machine basket from the mold core. See the '909 patent, Detailed Description, col. 4, ll. 19-22 (the mold core 90 has a "tapered outer surface 163"); col. 6, ll. 37-39 (the outer surface of the mold core 90 "diverges slightly inwardly from the bottom to top"); Claim 11 (claiming that the outward divergence is "to further facilitate removal of said tub from the mold assembly"); Claim 12 (same); Claim 18 (same). These portions of the specification plainly do not exclude the possibility that the outer surface of the sidewall, or the entire structure of the sidewall, also "diverges radially outwardly" from the central axis, because nothing about them suggests that a corresponding divergence of the outer surface of the sidewall or of the entire structure of the sidewall was intended, because only the outer surface of the mold core was correspondingly tapered, and the radial divergence was intended to facilitate removal of the washing machine basket from the mold core. Moreover, the corresponding "cavity sidewall member[s] 102" are defined as "extending about the periphery of mold core 90 with a first space therebetween," see, e.g., the '909 patent, col. 3, ll. 38-40, which suggests that the space between the mold core and the cavity sidewall members is uniform, rather than widening or thinning. Finally, the court suggested in its tentative draft of this ruling that the illustrations
of the washing machine basket, reproduced above, on page 14, plainly show that the sidewall is of uniform thickness, such that the outer surface of the sidewall also "diverg[es] radially outwardly." At the Markman hearing, Maytag took issue with this tentative finding, asserting that the sidewall as illustrated does grow thinner toward the open end. While Maytag may be correct that the sidewall, as illustrated, grows thinner toward the open end, the illustration unmistakably shows that both the inner and outer surfaces of the sidewall "diverg[es] radially outwardly." Maytag poses the question, what if only one surface of the sidewall "diverges radially outwardly," such that the inner surface "diverged radially outwardly," but the outer surface remained parallel to the central axis? Would the limitation "read on" such a configuration? The court finds it unnecessary to answer that question, which might require consideration of infringement under the doctrine of equivalents, for example, but certainly asks for an answer to a hypothetical question of infringement that is not pertinent to claim construction.

Finally, because the court's construction relies primarily on the unambiguous meaning of "sidewall" in Claim 25 as the entire sidewall, not just the inner surface of the sidewall, the court finds it unnecessary to accrete onto that construction Electrolux's "structure of" language, because to do so might be to construe the claim term with greater specificity than is warranted by the claim language. See PPG Indus., 156 F.3d at 1355 (the task of the court is to "define[] the claim with whatever specificity and precision is warranted by the language of the claim and the evidence bearing on the proper construction").

Thus, the court's construction of "annular sidewall . . . diverging radially outwardly to an upper terminal edge" is the following: "a sidewall shaped like a ring . . . continuously increasing in radius from the central axis moving from the base wall to the edge of the sidewall at the open end of the washing machine basket."
The Federal Circuit has concluded in this case that claim 20 is "limited to a double-drive mechanism which functions to impart the two described motions." Haney v. Timesavers, Inc., 1995 U.S. App. LEXIS 2535, No. 94-1287, slip op. at 6 (Fed. Cir. Feb. 10, 1995). The language in dispute here appears in the limitation found in claim 20 of Haney's '794 patent of "a double-drive mechanism interposed between and connecting the platen and frame, where the double-drive mechanism imparts at least one translational orbital movement superimposed on another movement to the platen relative to the frame."

The parties agree that "the double-drive mechanism imparts at least one translational orbital movement" in the Timesavers' machine, and that the Timesavers' machine superimposes a second reciprocating motion. Claim 20 of Haney's patent adds the phrase "superimposed on another movement to the platen relative to the frame."

Timesavers has maintained throughout this litigation that the language in claim 20 "superimposed on another movement" cannot cover a second reciprocating motion because such a motion is found in prior art devices. However, the court must interpret the language "another movement" to include a reciprocating movement as a matter of law.

"The words of a claim are generally given their ordinary and accustomed meaning, unless it appears from the specification or the file history that they were used differently by the inventor." Carroll Touch, Inc. v. Electro Mech. Sys., Inc., 15 F.3d 1573, 1577 (Fed. Cir. 1993). While the court recognizes the general rule that it is appropriate to interpret claims narrowly if necessary in order to sustain their validity, in this case Timesavers is asking the court to interpret the term "another-movement" to mean "another movement but not one with a reciprocating motion." To interpret a claim in a manner which would diminish or vary the claim language in order to sustain the validity of the claim would destroy the certainty that the patent statutes provide to the public. In Markman, the court explained:

It is only fair (and statutorily required) that competitors be able to ascertain to a reasonable degree the scope of the patentee's right to exclude. They may understand what is the scope of the patent owner's rights by obtaining the patent and prosecution history -- "the undisputed public record" and applying established rules of construction to the language of the patent claim in the context of the patent. Moreover, competitors should be able to rest assured, if infringement litigation occurs, that a judge, trained in the law, will similarly analyze the text of the patent and its associated public record and apply the established rules of construction, and in that way arrive at the true and consistent scope of the patent owner's rights to be given legal effect.

52 F.3d at 978-79 (citations omitted).

While a court, where possible, construes the language of a claim to sustain the validity of the claim, it is not possible to sustain the validity of a claim where the court must read limitations into or out of the language of the claim.

The term "another movement" is a broad term and cannot be interpreted to exclude a reciprocating movement without varying the claim limitations. A reciprocating movement is another movement. "Another movement" is not a disputed technical term which is ambiguous as to its meaning. There is nothing in the specification or the file history which indicates that the words "superimposed on another movement to the platen relative to the frame" were meant to have a meaning other than the ordinary accustomed meaning. When this portion of claim 20 is so interpreted, claim 20 literally reads on Timesavers' Series O/B Sanders.

Upon reconsideration of its opinion filed on August 9, 1995, the court finds that it was error for this court to find that it must make a factual determination as to the prior art in order to interpret Haney's claims. The issues raised by Timesavers regarding prior art are relevant to the validity of the claims and not to the interpretation of the language of the claims. There is a genuine issue of fact as to the validity of Haney's claims in light of the prior art. A jury must decide whether Haney's claims are invalidated by the prior art.

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A. "Any Standard Meter" Or "Any Standard Electric Meter"

In independent claim 1 of the '623 patent, the patentees state that their claimed device has a housing with mounting holes
arranged such that said housing may be mounted in "any standard electric meter." 5 Itron contends that, in the context of the '623 patent, the terms "any standard meter" and "any standard electric meter" require that CellNet's claimed device be mountable on all "standard electric meters" as that term is defined in the specification. CellNet's position is that claim 1 should not be read to require the device to have mounting holes which permit it to be mounted on all of the standard electric meters. Rather, CellNet argues that "claim 1 refers to a housing amenable to use with various electric meters" because its counsel stated during the prosecution of the patent that the device could be mounted within "various" electric meters. CellNet further opines that "it is clear that CellNet simply intended to refer to the ability of their [sic] device to fit more than one of the standard meters." Thus, CellNet contends that it merely claimed a device that could be installed on more than one of the standard electric meters.

--- Footnotes ---

5 The parties agree that the terms "standard meter" and "standard electric meter" have the same meaning in the '623 patent.

--- End Footnotes ---


The parties' dispute focuses on the meaning of the word "any" since they appear to agree that the terms "standard meter" and "standard electric meter" are specifically defined in the patent specification:

The device of the present invention is configured to be mounted within the following Class 200 watthour meters as well as other meters having a similar internal structure: the D5S meter type manufactured by the Westinghouse Corporation, Raleigh, N.H.; the I-70-S meter type manufactured by the General Electric Corporation, Somersworth, N.H.; the MS meter type manufactured by Landis & Gyr (Duncan), Lafayette, Ind.; and the J4 meter type manufactured by Sangamo, Atlanta, Ga. Meters of the type just identified, including meters having a similar internal structure, will be hereinafter referred to as standard watthour meters or standard electric meters.

'623 patent, 3:40-52 (emphasis added).

The definition given to a disputed claim term in the specification is to be accorded substantial deference when construing the term. The Federal Circuit has declared that courts should generally begin their claim construction analysis with the patent specification because it is usually "dispositive." Vitronics, 90 F.3d at 1582. The Vitronics court described the patent specification as "the single best guide to the meaning of a disputed claim." Id. In this case, the patentees clearly and precisely defined the terms "standard meter" and "standard electric meter" in the patent specification. Since the patentees' express definition is consistent with the remainder of the intrinsic evidence, the Court hereby construes the terms as they are defined in the specification. '623 patent, 3:40-52.

2. The Court Construes "Any" To Mean "Every" Or "All"

Itron argues that claim 1 discloses a device which may be mounted on all four of the specifically-identified meters, including the Westinghouse, General Electric, Landis & Gyr, and Sangamo electric meters, and all other meters having similar internal structures. CellNet claims that the term "any" should be construed to mean "more than one." For the reasons given below, Itron's definition of "any" comports with the specification and prosecution history of the '623 patent application.

The patent specification contains several statements which contradict CellNet's argument that "any standard meter" and "any standard electric meter" merely mean "more than one standard electric meter." For example, the patentees explain that "the [mounting] holes are arranged so that the device may be mounted in any standard watthour meter." '623 patent, 2:63-65. The inventors also describe in detail the manner in which the mounting holes of the claimed device are arranged so that the mounting posts on each of the identified standard electric meters (including the Westinghouse, General Electric, Landis & Gyr and Sangamo meters) can be accommodated. '623 patent, 3:56-4:19 and 5:40-6:29. Moreover, in their introductory statement, the patentees state that their invention relates "to a device readily installed within standard electric meters for recording time of energy use." '623 patent, 1:5-8. Finally, the patentees leave little doubt that the disclosed device is designed to fit all four of the standard electric meters with these comments:
Excellent, highly-standardized, electromechanical meters for metering power consumption at fixed rates are currently in place at literally millions of locations throughout the United States. These meters are readily available and relatively inexpensive. Thus, the most practical and inexpensive way to provide for a multiple rate structure is to provide a device for recording time of energy use that is readily utilized with such standard electric meters. [P] Examples of such standard meters include: the D5S meter type manufactured by the Westinghouse Corporation, Raleigh, N.H.; the I-70-S meter type manufactured by the General Electric Corporation, Somersworth, N.H.; the MS meter type manufactured by Landis & Gyr (Duncan), Lafayette, Ind.; and the J4 meter type manufactured by Sangamo, Atlanta, Ga. ... [P] Accordingly, a general object of the present invention is to provide a relatively inexpensive device readily installed on standard meters for recording time of energy use.

'623 patent, 2:21-43 (emphasis added). Thus, the specification clearly provides that the device disclosed in claim 1 was designed to permit ready installation on all four of the specified standard electric meters. 6

6 CellNet does not argue that its construction is supported by the patent specification. CellNet's interpretation is based on the isolated comment of its patent counsel in reply to the November 23, 1987 Office Action and Mr. Johnson's testimony during the claim construction hearing.

The prosecution history also supports Itron's interpretation of "any standard meter" and "any standard electric meter." Although CellNet's patent counsel, William J. Egan III, stated in the Remarks section of the patenantes' Response to the Office Action of November 23, 1987 that the claimed device can be mounted on "various" electric meters, Mr. Egan also made statements contradicting CellNet's position. For instance, Mr. Egan argued to the examiner that the disclosed device was distinguishable over the identified prior art because it "may be mounted in any standard electric meter." Response to Office Action, 6:2-4. Mr. Egan also explained later that the device "may be mounted in standard electric meters." Such an unqualified statement clearly suggests that the inventors claimed a device which could be installed in all standard electric meters. The Court also notes that the examiner clearly understood the patentees to be claiming a universally adaptable meter module and the patentees never advised the examiner that they did not intend to assert such a claim. Office Action, P 2.

Finally, Itron's definition of the disputed terms is supported by reference to the dictionary definition of the word "any." 7 According to the dictionary, the word "any" can mean: 1) every; 2) all; 3) one, some, or all indiscriminately of whatever quantity; 4) one or another taken at random; and 5) one or more -- used to indicate an undetermined number or amount. Webster's Collegiate Dictionary (10th Ed. 1993). While the dictionary definition indicates that "any" can be construed to mean every, all, or an indeterminate number, it does not commonly mean "more than one." Thus, if the patentees intended to claim such a special definition of the word "any," their intent to do so must be reflected in the specification. In this case, no such intent is expressed in the specification of the '623 patent.

7 Both CellNet and Itron contend that their respective definitions of the word "any" is supported by the dictionary. They each submitted the relevant portions of dictionary at the July 24, 1998 hearing.

Accordingly, the Court construes the terms "any standard meter" and "any standard electric meter" to mean the D5S meter type manufactured by the Westinghouse Corporation, the I-70-S meter type manufactured by the General Electric Corporation, the MS meter type manufactured by Landis & Gyr, the J4 meter type manufactured by Sangamo, and all electric utility meters having similar internal structures.

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III.

The first issue we address is Display's challenge to the district court's construction of the claim term "aperture." The term appears in the clause in claim 1 of the 176 patent that recites "an aperture through which an upright substantial portion of a lead article in said channel may be viewed." The district court concluded that "aperture" refers to a two-dimensional, rectangular space and, based on that construction, held that claim 1 was anticipated by the Allen and Vineyard patents. Display argues that the district court's claim construction was incorrect and that, under the correct construction of "aperture," the Allen and Vineyard patents do not anticipate claim 1.

Display urges a claim construction which would require the aperture to be three dimensional, revealing the lower front quadrant of the container from both front and side angles. Display defines the term aperture with reference to the written description of the patent, column 6, lines 17-20, where it is stated that "the aperture typically presents substantially a full quadrant of the lead article A' for view by the customer." According to the specification, "such a quadrant in the case of a bottle typically extends the full width of the bottle and upwardly for about one third to about one half the height of the bottle." 176 Patent, col. 6, ll. 21-23. Based on this language, Display concludes that any aperture revealing "substantially a full quadrant" must reveal a view of the bottle from both the front and sides (i.e., a three-dimensional view of the full quadrant). Display argues in its brief, therefore, that the Allen and Vineyard patents "cannot reveal 'substantially a full quadrant' of the lead article because the lead article cannot extend beyond the sidewalls of the display rack."

Essentially, Display takes the claim term "aperture," combines it with language in the specification describing an embodiment of the invention as revealing "substantially a full quadrant" comprising "the full width" of the container, and creates a limitation on the relationship between the sidewalls and the lead article to require that the lead article must extend beyond the sidewalls of the display rack. Display argues that "there is little room for dispute that the patentee . . . was acting as his own lexicographer and that the claim 1 language requiring 'an aperture through which an upright substantial portion of a lead article . . . may be viewed invites reference to the specification."

The district court did not err in its claim construction. "The general rule is, of course, that the claims in a term are to be given their ordinary and accustomed meaning." Johnson World Wide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 989, 50 U.S.P.Q.2D (BNA) 1607, 1610 (Fed. Cir. 1999). The ordinary definition of the term "aperture" is "an opening; hole; gap." Webster's New World Dictionary Third College Edition 63 (1994). That definition does not indicate either a two dimensional or three dimensional space. Because the ordinary meaning of the term aperture does not resolve the issue before us, it is appropriate to consider the specification. See Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1331-32, 59 U.S.P.Q.2D (BNA) 1401, 1407 (Fed. Cir. 2001).

The district court based its construction of "aperture" on the following statement in the 176 patent's specification:

The aperture thus formed is preferably generally rectangular in outline. . . . Even where the front member is not transparent or not present, the aperture typically presents substantially a full quadrant of the lead article A' for view by a potential customer, the quadrant mentioned being the bottom half of the front half of the article. Such a quadrant in the case of a bottle typically extends the full width of the bottle and upwardly for about one third to about one half the height of the bottle, typically an area of about 10 square inches.

176 Patent, col. 6, ll. 10-24 (emphasis added). The court stressed that if the term "aperture" were to refer to a three-dimensional, cylindrical space, there would be a conflict with the language in the specification - quoted above - referring to the aperture being "rectangular in outline" and having "an area of about 10 square inches." The specification supports the district court's claim construction.

There is, we think, an additional consideration that weighs in favor of the district court's claim construction. As seen above, both claims 2 and 3 of the 176 patent, which depend from claim 1, are directed to a display rack in which the "front member is disposed forwardly of the front of said track." Claims 2 and 3 embody the kind of structure that Display urges is claimed in claim 1 (an aperture that reveals a bottle from both the front and the sides). In view of dependent claims 2 and 3, the district court's claim construction, in addition to being grounded in the specification, has the added virtue of being consistent with the doctrine of claim differentiation. See Wenger Mfg. v. Coating Mach. Sys., 239 F.3d 1225, 1233, 57 U.S.P.Q.2D (BNA) 1679, 1685 (Fed. Cir. 2001) (stating that claim differentiation "is clearly applicable when there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only
meaningful difference between the two claims”). Because we conclude that the district court did not err in construing the claim term "aperture," we affirm the holding that claim 1 is invalid.

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1. aperture (claims 4, 9, 10, 11) n3

n3 Although the disputed terms often occur in claims other than those identified by the parties, the Court will limit itself to identifying those claims in which the parties indicate the disputed terms occur. In so doing, the Court notes that it has nevertheless considered each term in the context of the entire patent, including the specification and the unasserted claims.

Fargo: an opening, such as a hole, gap, or slit
Iris: an opening that extends completely through the end face of the supply roll assembly (claim 4) or through the member movable with the roll core (claims 9-10)

Both parties agree that an aperture is some type of opening. Iris contends that, "in the real world," the term "aperture" is used to refer to an opening that extends all the way through something. It cannot be identical to a "hole" or an "opening," Iris argues, because synonyms by their nature do not have identical meanings. Iris also points out that the specification shows the apertures extending all the way through the hubs. Both parties refer to dictionary definitions to support their arguments. Fargo's definition comes straight from a dictionary. While criticizing Fargo's reliance on a dictionary, Iris relies on a newer edition of the same dictionary to argue that the most common use of the word "aperture" is to describe the opening extending through the wall of a camera or a telescope.

The Court finds that Fargo's proposed definition is the most appropriate construction of the term "aperture." Iris has not shown that the ordinary meaning of the word "aperture" requires that the hole extend completely through the hub. While Iris's evidence concerning cameras and telescopes might be relevant in a different case, the patents at issue here do not involve cameras or telescopes. Although courts should not place blind reliance on dictionaries, there is no evidence in this case that the '519 patent is using "aperture" in a specialized manner, and all the dictionaries the parties cite define "aperture" in a manner similar to Fargo. Cf. Phillips, 415 F.3d at 1314 (noting that dictionaries are helpful in cases where the ordinary meaning is readily apparent and "claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.").

Moreover, the fact that the specification shows openings extending all the way through the hub does not mean that Fargo must be limited to that meaning. While the specification is "the single best guide to the meaning of a disputed term," Phillips, 415 F.3d at 1315 (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)), courts are not to import limitations from the specification into the claims. Comark Commc'n's, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998). While this distinction can be difficult to apply, it is helpful to keep in mind that the purpose of the specification is to enable those of skill in the art to make and use the invention. Phillips, 415 F.3d at 1323. In this case, where the specification uses the words "openings," "bores," and "apertures" interchangeably to refer to the holes in which pins are inserted, it is apparent that the patentee has not assigned any special meaning to the word "aperture" that would require an aperture to extend all the way through the hub.
There are additional references to "an aperture" in the Summary of the Invention and in the Detailed Description of the Preferred Embodiment which describe a structure or portions of structure of the fastener system as an "aperture" in like fashion. Clearly "aperture" is used to describe an opening or hole in a structural element. This construction is consistent with the dictionary definition. For example, Funk & Wagnall's Standard College Dictionary (1973) (the one immediately at hand) defines aperture as "an opening, orifice, hole, cleft."

This word is to be construed as follows:

- an opening or a hole

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B. The Patent

Following the rules laid out above, we now construe the proper meaning of "aperture," as used in the Patent. Most important is the language of Claim 1, which has been invalidated by both the courts and the Patent and Trademark Office, see supra, but which remains central to our inquiry because it is the claim from which the presumptively valid claims at issue depend.

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--- Footnotes ---

3 Claims 2, 3, 16, 30, 31, 33 and 34 are refinements of Claim 1, and therefore are read as containing all the elements described in Claim 1. Moreover, Claim 29 (added in the Reexamination Certificate), from which Claims 35-37 depend, describes the aperture in language identical to that in Claim 1.

--- End Footnotes ---

Claim 1 claims, inter alia,

the bottom of [the] front member, the top of the front of said track [i.e., the floor of the channel], and the front of said sidewalls [i.e., the vertical walls that separate adjacent channels] cooperatively defining an aperture through which an upright substantial portion of a lead article in said channel may be viewed.

Col. 10, ll. 24-31. The most logical interpretation of the term "aperture," as used here, is that it describes the empty space between these components. Not only does this make the most internal sense, but it makes the most sense in light of the fact that the preferred embodiment of the Patent uses transparent material, see Col. 5, ll. 39-52, in which case, if "aperture" simply meant "viewing window," as plaintiff argues, then the aperture here would not be "defined" by the bottom of the front track or the front of the sidewalls, but rather would extend across the entire front of the rack.
Plaintiff contends that the patent specification suggests a broader definition of "aperture." The specification states that "even where the front member is not transparent, but assuming that any secondary or auxiliary front wall is either transparent or not present, the aperture 30 typically presents substantially a full quadrant of the lead article." Col. 6, ll. 15-19 (emphasis added). Plaintiff reasons that, because this passage uses the word "aperture" to include an embodiment with a transparent solid front wall, the claimed aperture must include such a possibility as well. This argument, however, is unpersuasive.

The plaintiff must overcome the presumption that the ordinary meaning is the one intended by the patent. See K-2, 191 F.3d at 1363. The ordinary meaning of the word aperture, and the one that makes the most sense in the context of the claims, is "hole." A word can be redefined either explicitly or implicitly, by its clear and consistent use throughout the specification. See Id.; Bell Atl. Network Servs., Inc. v. Covad Communs. Group, Inc., 262 F.3d 1258, 1273 (Fed. Cir. 2001). In this case, however, the specification does not clearly redefine "aperture" to mean "viewing window." Only once does the specification allow for a transparent auxiliary front wall, and the numerous other references to the term "aperture" define it by its four edges, never mentioning its face. Moreover, as mentioned above, Claim 1 describes an "aperture" bound by the solid front parts, whether they are opaque or transparent, which further suggests the conventional meaning. For these reasons, we reject plaintiff's argument that defendant's transparent front member is an "aperture" as described in the Patent.

Plaintiff argues alternatively that the cutaway section in OmniGlide, which is undoubtedly an aperture, infringes. This aperture, however, is not "defined by" the two sides or bottom of the track, as specified in Claim 1. Plaintiff suggests that the cutaway aperture is covered by the Patent under the doctrine of "claim differentiation" 5--that because the invalidated Claim 10 covers the invention devoid of an upstanding lip, the Patent, by negative implication, covers the existence of an upstanding lip. We assume arguendo that an invalidated claim can be the basis for claim differentiation. Even if Claim 1 covers an upstanding lip or wall, it still claims an "aperture" defined by the bottom of the front member, the top of the track, and the front of the sidewalls. The aperture in OmniGlide, by contrast, is not defined by any external structures, but rather is cut out of the transparent front piece.

Accordingly, we find that OmniGlide does not contain the aperture element described in Claim 1, and therefore does not infringe related Claims 2, 3, 16, 29-31, or 33-37.

As was readily apparent during the Markman hearing, the parties' dispute is predominately about the meaning of the word "aperture." Minor disputes also exist as to the meanings of the terms "cavity," "longitudinal directions," and "upper, lower, and outer surfaces." At the most basic level, the parties are fighting about the scope of the patent. Medtronic would have the Court limit the invention to a device with at least one, "fully enclosed" aperture and with narrow limitations on shape and spacial orientation. Quickie seeks "the broadest construction of these claims reasonable." (Pl. Mem. at 13.)
There are two independent claims at issue, claims 13 and 33. Taking claim 13 as representative of the use of the words in the patent, the invention is "an apparatus body having a upper surface, a lower surface, an outer surface, and at least one aperture, the aperture having a longitudinal axis extending from the upper surface to the lower surface and defining an aperture surface, wherein a first longitudinal direction and a second longitudinal direction thereof each extends along the longitudinal axis in opposite directions." (Col. 15, lines 5-12) (emphasis added). Moreover, the aperture has a "middle portion [with] a first surface and second surface opposing each other and is wider than either of the upper portion and the lower portion and forms a cavity therein; and (b) a movable cam member [is] disposed in the middle portion of the aperture." (Col. 15, lines 20-25.)

Medtronic describes the Quickie invention as "a disk-shaped body having at least one hole ('aperture') through it, with a 'cavity' located inside the body and in which is housed a movable 'cam member' that alternatingly allows and restricts passage of a suture through the hole (aperture) in the body," and points to Figs. 5 and 7 in the patent. (Def. Reply at 1.) Medtronic argues that this embodiment of the device is "the only structure shown and described in the '160 patent that corresponds to the asserted claims." (Id. at 2.) Consistent with this structure, defendant argues that (1) the aperture must be "fully enclosed," meaning a hole through the device as opposed to any other opening, such as a crenelation, (2) the device must be disk-shaped with parallel upper and lower surfaces, (3) the cavity must be fully enclosed within the aperture, and (4) the longitudinal directions must run north-south. Quickie, in contrast, argues that the drawings in Figs. 5 and 7 merely represent one example of a device embodying the patented invention, and point to case law holding that the "law does not require the impossible. Hence it does not require that an applicant describe in his specification every conceivable and possible future embodiment of his invention." SRI Intl v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1121 (Fed. Cir. 1985).(See also Pl. Reply at 2-3.)

To support its narrow construction, Medtronic focuses on Figs. 5 and 7 and on language in the claims describing the movable cam member as "captured" within the aperture. (See, e.g., Sept. 4, 2002, Tr. at 43.) Emphasizing that the cam member must be "disposed in the middle portion of the aperture" (col. 15, lines 24-25) (emphasis added), or "therein" (col. 18, lines 9-13) (emphasis added), or "captured within the cavity, since the largest dimension of the cam member is larger than either end opening of the aperture" (col. 11, lines 15-17); and that the main criticism of the prior art was harm caused by the cam member falling out (see, e.g., col. 2, lines 58-67, col. 3, lines 25-34, col. 3, lines 36-48, and col. 3, lines 52-65), Medtronic correctly argues that the aperture cannot be "just any opening" (Tr. at 45).

Because these functional constraints are essential to the claimed invention, Quickie goes too far in its assertion that the meaning of the term "aperture" is "unqualified," or encompasses "any three-dimensional opening, space or channel" (Tr. at 10). However, none of the intrinsic evidence warrants as narrow a definition of "aperture" as the one offered by Medtronic.

An "aperture" need not by definition be "fully enclosed" in the sense argued by Medtronic, but rather includes any form of opening. The only justification for reading the term more narrowly here is that the very essence of the invention described requires a spatial configuration of the various parts that will "capture[ ]" the cam within the device and prevent its falling out. Such configurations can be of various types, and still fit comfortably within the language of the claims. Therefore, there is no reason in evidence intrinsic to the patent to require, as Medtronic suggests, that the "aperture" be "fully enclosed." The patent fairly contemplates and covers any shape with the requisite "spatial relationship[s]" (col. 11, line 20) between the cam member, cavity, and aperture, and is not limited to the embodiment shown in Figs. 5 and 7, so long as the cam is contained within the device as a result of the spatial configuration of the aperture.
An aperture is ordinarily understood to mean an open space or opening as between parts or sections of solid matter. Webster's 3rd New International Dictionary (unabridged) 99 (1986). The specification provides that the aperture may take the form of a blind hole, groove or groove section. ('664 patent, Col. 2, ln. 39-42). But contrary to the contentions of the Defendants, the specification does not limit the meaning of "aperture" to only those structures. "Particular embodiments appearing in the specification will not generally be read into the claims." Specialty Composites, 845 F.2d 981 at 987. That is especially the case where, as here, the description explicitly states that the embodiments disclosed "are by no means exhaustive." ('664 patent, Col. 3, ln. 8); see also, Specialty Composites, 845 F.2d at 987.

Defendants fail to cite any other portion of the specification or the prosecution history that clearly demonstrates an intent on the part of the patentee to limit the ordinary understanding of the term "aperture" to a few structures. Neither do the Defendants offer any support that an aperture, as understood in the '664 patent, must be a structure that includes a "front wall and at least two side walls," other than to point to an illustration of one of the embodiments of the invention. Again, however, what is patented is not restricted to the examples. Specialty Composites, 845 F.2d at 987. "Aperture," as that term is used in the '664 patent, is simply an open space or opening as between parts or sections of solid matter.

A. '413 PATENT

All of SLT's contact probes have optically transparent distal ends made of either sapphire or quartz that transmit laser or radiant energy from a fiber optic cable. Almost all of the contact probes have an infrared coating that is sprinkled on this distal, transparent surface of the probe. This infrared coating, which does not cover the entire distal end, absorbs a limited portion of the radiant energy and converts it to thermal or heat energy. These contact probes also have a stainless steel connecting sleeve that secures the probe to the fiber optic cable. A coolant is supplied to the sleeve to prevent the connecting sleeve from heating. The sleeve also contains a port to vent the coolant.

The district court focused on claims 1 and 20, the only two independent claims of the '413 patent asserted against SLT. Claims 1 and 20 read as follows:

1. A localized heat applying medical device for applying heat to a site in a selected lumen in a patient's body, the device comprising in operative association:

an elongated light transmitting conduit having a proximal end and a distal end, and bulbous heat generating means mounted on the distal end, for converting light transmitted by the conduit in part to heat thereby raising the temperature
thereof, the diameter of the bulbous heat generating means being larger than the diameter of said conduit, the bulbous heat generating means including a light transmitting aperture therethrough enabling light transmitted by the conduit in part to pass through the means into the lumen to directly impinge on a region thereof.

20. A localized heat applying medical device for applying heat to a site in a patient's lumen, the device comprising in operative association:

an elongated light transmitting conduit having a proximal end and a distal end and a heat generating element defining a cavity with vent means therein for permitting gas to escape from the cavity, the element being mounted on the distal end such that light transmitted by the conduit to the element is in part converted by the element into heat to raise the temperature of the element and the element can then be contacted with material in the patient's lumen to alter the material, the element including a light transmitting aperture through which a part of the transmitted light can pass to impinge directly onto the material; the conduit and heat generating element being adapted for insertion into the patient's lumen.

The district court focused on the claim term "light transmitting aperture" common to both claims 1 and 20. The district court found that the term was described in the specification as a "hole," "window," or "port," and concluded that it should be defined as "an opening in the tip of the device through which laser energy passes." Trimedyne, slip op. at 3 (C.D. Cal. May 8, 1996). The district court found that the accused SLT probes do not have such an aperture because the SLT device tip was entirely light transmissive and there was no evidence that the amount of light transmission could be controlled for clinical effect. Id. The district court additionally found that the accused SLT probes do not have "a cavity with vent means therein for permitting gas to escape from the cavity" as additionally required by claim 20. Id. at 3-4.

The district court held that SLT's accused probes do not infringe under the doctrine of equivalents because SLT's probes perform in a different way from that claimed in the '413 patent. For instance, the district court found that SLT's probes are light transmissive, but also transmit a "mix" of laser and thermal energy over the entire tip, whereas radiant energy is transmitted straight ahead through a "light transmitting aperture" in the tip of the '413 claimed probe while the rest of the tip transmits only thermal energy. This difference the district court found creates a different therapeutic effect than SLT's contact probes. Therefore, the district court granted SLT's motion for summary judgment of non-infringement of the '413 patent.

* * *

II. DISCUSSION

A. '413 PATENT

First, Trimedyne argues that the district court improperly construed the claim term "light transmitting aperture" from independent claims 1 and 20 as requiring an opening in the tip of the probe through which laser energy passes when the specification of the '413 patent teaches that the aperture can be a quartz window or lens, as in SLT's contact probes. Trimedyne also argues that the district court improperly decided a question of fact when it determined that SLT's contact probe tips or distal ends are entirely light transmissive. SLT applies a heat absorbing coating of carbon particles to the majority of its contact probes. Because such a coating is not perfect, Trimedyne asserts that laser energy escapes from the probe tip through the spaces between the coating's carbon particles. These spaces, Trimedyne asserts, constitute "light transmitting apertures" as claimed in claims 1 and 20.

Trimedyne also argues that during use of SLT's contact probes such an aperture is created. During use, carbonized tissue particles adhere to the surface of the tip, which increases the tip temperature. Through further use, the laser light burns an aperture through the "blackened" tip, which Trimedyne argues independently satisfies the "light transmitting aperture" limitation of the patent claims at issue.

Second, Trimedyne asserts that the SLT contact probes have the vents described in claim 20. Trimedyne argues that a gap is created between the fiber optic cable and the probe when mounted together. A hole or port communicates with the gap and can allow gases as well as liquid coolant to pass from the gap through the hole or port. This ability to vent gases, regardless of whether SLT uses the vent to do so, Trimedyne asserts, meets the limitation of claim 20. Therefore, Trimedyne concludes that at least a triable issue of fact exists concerning whether SLT's contact probes literally infringe the asserted claims of the
'413 patent.

Lastly, Trimedyne argues that even if we agree with the district court, after construing the claims, that no literal infringement exists, triable issues of fact remain concerning whether SLT's contact probes infringe the '413 patent under the doctrine of equivalents. For instance, Trimedyne argues that SLT has admitted that its contact probes function to achieve the same therapeutic result as the claimed probe, i.e. to deliver heat to alter the tissue by coagulation, ablation, or vaporization.

SLT counters Trimedyne's arguments by asserting that its various contact probes do not infringe the '413 patent because they lack the claimed light transmitting aperture, vent means, and a bulbous heat generating means or element. First, SLT asserts that the district court properly construed the claim term "light transmitting aperture" to be a hole in an opaque heat generating element through which a portion of the radiant energy may be transmitted directly to the tissue. All of SLT's contact probes are made of quartz or sapphire, which are light transmissive, and therefore, SLT argues, they have no such discrete light transmitting aperture. Therefore, SLT's contact probes do not infringe the '413 patent, it argues, because the claimed probe allows laser energy to pass only through the small, single aperture, while laser energy may exit the entire surface of the distal end of SLT's contact probes.

Second, SLT asserts that the claimed means-plus-function element, "vent means," must function to "permit gas to escape from the cavity." SLT argues that its probes do not use the vents to perform the function of venting gas. Rather, force-driven coolant is used to keep the probe cool to avoid the build-up of such gases. Therefore, its vents do not perform the required function of venting gases.

Third, SLT asserts that its contact probes lack a heat generating element, an issue that the district court did not reach. The heat generating element or means when read in light of the specification, SLT asserts, requires an opaque material in which there is an aperture for transmitting direct laser radiation to the tissue. Because the distal end of SLT's probes are light transmissive with no opaque material, it asserts it lacks the claimed heat generating element. Finally, SLT asserts that its probes are not bulbous because during the prosecution of the '413 patent the applicants distinguished probes such as SLT's with a cylindrical body portion and distal ends having the same or smaller diameter as the body portion. Because of this increasing diameter, SLT's contact probes have an increasing point of contact with the walls of a vessel when the probe is urged forward; exactly what SLT argues the claimed probe of the '413 patent was intended to avoid. Therefore, SLT asserts that the district court properly found that SLT's contact probes do not literally infringe any asserted claim of the '413 patent.

SLT also agrees with the district court that none of SLT's contact probes infringe the '413 patent under the doctrine of equivalents. Taken on an element by element basis, SLT argues that its devices do not perform in substantially the same way because SLT's contact probes diffuse laser energy throughout the entire probe surface whereas the claimed probe transmits laser energy only through the light transmitting aperture. This leads to substantially different clinical results, SLT argues. The lesion formed by the claimed device is a double crater; the outer crater mirrors the shape of the heat generating element and the inner crater reflects the intense, direct laser irradiation of the tissue from the aperture. The lesion formed by SLT's probes, on the other hand, is a single, uniform crater.

1. LITERAL INFRINGEMENT

Summary judgment is properly rendered when "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c); see also Johnston v. IVAC Corp., 885 F.2d 1574, 1576-77, 12 U.S.P.Q.2D (BNA) 1382, 1383 (Fed. Cir. 1989). In deciding whether a genuine issue of material fact exists, any evidence must be viewed in favor of the nonmoving party with any doubts resolved in its favor. O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1580, 42 U.S.P.Q.2D (BNA) 1777, 1779 (Fed. Cir. 1997). A grant of summary judgment is reviewed de novo. Conroy v. Reebok Int'l, Ltd., 14 F.3d 1570, 1575, 29 U.S.P.Q.2D (BNA) 1373, 1377 (Fed. Cir. 1994).

To determine on summary judgment whether SLT literally infringes any claim of either patent in suit, we first interpret the claims, and second, determine whether a reasonable trier of fact could find that every limitation in any construed claim at issue is found in SLT's accused probes. Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1575, 34 U.S.P.Q.2D (BNA) 1673, 1676 (Fed. Cir.), cert. denied, 516 U.S. 987, 133 L. Ed. 2d 424, 116 S. Ct. 515 (1995). The primary issue presented in the appeal from the grant of summary judgment of the '413 patent is whether the district court properly construed the claim terms "light transmitting aperture" and "vent means for permitting gas to escape from the cavity." Claim
construction is a question of law that we review de novo. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 U.S.P.Q.2D (BNA) 1169, 1174 (Fed. Cir. 1998). In defining the meaning of key terms in a claim, the court may refer to the specification, the prosecution history of a patent, prior art, and other claims. Minnesota Mining and Mfg. Co. v. Johnson & Johnson Orthopaedics, 976 F.2d 1559, 1566, 24 U.S.P.Q.2D (BNA) 1321, 1335 (Fed. Cir. 1992) (citing Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1021, 4 U.S.P.Q.2D (BNA) 1283, 1286 (Fed. Cir. 1987)).

The distal end or head portion of the claimed contact probe is a generally rounded, heat generating element preferably made of metal, such as stainless surgical steel, or a combination of metal and ceramic. '413 patent, col. 6, ll. 52-55. This head portion or heat generating element is designed to absorb the radiant energy from fiber optic cable and convert it to heat. Id. at col. 5, ll. 55-60; col. 12, ll. 25-32. This heat is transferred primarily by conduction to ablate any obstruction. Id. at col. 12, ll. 31-32. The heat generating element is thus not light transmissive.

The light transmitting aperture as claimed in the '413 patent is first introduced in one embodiment as

a central aperture or bore which permits a portion of the light transmitted to the heat generating element to pass through the aperture and directly impinge upon a selected region of the plaque obstruction. With this form of heat generating element, both radiant and heat energy can be applied sequentially or simultaneously to the lumen or to the obstruction therein.

'413 patent, col. 3, ll. 11-18.

Under the Description of the Preferred Embodiments, the light transmitting aperture is described in more detail in relation to Figure 10 reproduced below.

As illustrated in FIG. 10, tapered body portion 542 has a varying side wall thickness and partly defines a cavity 544. An optically transparent means such as a lens or window 546 is positioned within the head portion 543 so as to block the distal end of the cavity 544 against the inflow of body fluids and tissue components. The window 546 can be made of quartz, sapphire or other optically transparent material. Aperture or bore 550 in head portion 546 defines a communication port between the window 546 and the surroundings. The window 546 prevent bodily fluids or material that have entered the boring 550 from contaminating the end 532a of the fiber optic member 532. The thickness of the side wall of body portion 542 is less than the wall thickness of the head portion 543.

The light transmitting fiber 532 emits light or radiant energy from an end surface 532a which impinges upon a surface 548 of the window 546. As discussed earlier with respect to the embodiments of FIGS 1-8, radiant energy transmitted through the conduit 532 heats the heat generating element 536 when it impinges upon the surface 548. A portion of the radiant energy, such as the light beam designated by the legend R emitted from the surface 532a passes through the window 546 and the aperture 550 directly into the surrounding lumen. The radiant energy R then impinges upon a surface 154a of the obstruction 154. The sequential or simultaneous application of heat and radiant energy to the obstruction 154 softens or vaporizes the plaque thereby easing the advance of the heat generating element 536.

As a result of adding the port or aperture 530, light or electromagnetic energy as well as thermal energy, are sequentially or simultaneously applied to the obstruction 154 desired to be removed. By controlling the size of the aperture 550, it is possible to control the amount of power or energy delivered directly to the site.

'413 patent, col. 13, ll. 20-56.

On the basis of the above description of the aperture, we hold that the district court was correct in defining "light transmitting aperture" as a hole, window, port, or opening in the tip of the probe through which laser energy passes. The written description, including Figure 10, shows the aperture as a discrete hole or bore in the center of the distal end or head portion of the probe. Also, the aperture 550 and the transparent window 546 that is positioned within the aperture to transmit light are always described in the singular. Only one aperture and window are present within the distal head of the probe as described in the '413 patent, not a multitude of small apertures, as Trimedyne asserts, exist between the carbon particles of the infrared coating on some of SLT's contact probes. The reference to controlling the size of the aperture to control the
amount of radiant energy for use with Trimedyne's contact probes further supports the conclusion that the claim limitation "light transmitting aperture" refers to a single discrete hole or opening.

The dispute here is whether an "aperture" is a discrete opening, such as a perforation, or whether it includes more complex openings, such as those contained in frits and porous plates. According to ASM's expert, Douglas L. Peltzer ("Peltzer"), a frit is made by packing small particles together, which creates minute, randomly distributed interstitial spaces, called pores. (Peltzer Report at 8 n. 4.) A porous plate is another term for a frit. (Id.) Genus' expert, William Oldham ("Oldham") agrees with Peltzer that "in a frit an opening on one side does not correspond to an opening on the other side, and that in general the gas passageways are randomly located, occasionally interconnect within the frit, and can be described as tortuous." (Oldham Rebuttal Report at 2.) A frit thus appears to be similar to a layer of sand, or a sponge; although gas can flow through it, it does not have distinct or uniform holes passing through it. Instead, it has random passageways, some that dead-end, and others that allow gas to flow from one side to the other.

The language of the patent is silent on the issue. The term "aperture" is used in two different contexts.

First, the patent describes apertures through which the gas is directed towards the substrate. (See, e.g., '165 patent 3:35, 3:63.) For ease of reference, the Court will refer to these apertures as "gas flow apertures," in accordance with the language of claim 1. (Id. 5:40.) The diagrams of the patent show the gas flow apertures as discrete round holes. (Id., Figs. 1c and 4.) The parties often refer to the apparatus containing the gas flow apertures as the "showerhead.

Second, the patent describes apertures through which the gas is removed from the chamber containing the substrate. (See, e.g., id. 4:14, 4:31.) For ease of reference, the Court will refer to these apertures as "extracting apertures," in accordance with the language of claim 10. (Id. 6:45.) The diagrams of the patent show the extracting apertures as discrete round holes leading into what probably could best be described as an L-shaped tunnel. (Id., Figs. 5a and 5b.)

These diagrams of the gas flow apertures and the extracting apertures only describe preferred embodiments, however. They do not purport to describe all possible forms of apertures that could be used to practice the invention.

ASM argues that the apertures must be discrete openings, because the specification of the '165 patent refers at one point to "discrete apertures" and describes apertures located at the apexes of equilateral triangles. (Peltzer Report at 9.) That language appears in the description of the preferred embodiment and describes the gas flow apertures:

Because of the relatively small size of the apertures 74, the magnitude of the gas velocity will generally be uniform among all of the apertures 74 as the gas passes through toward the plane of substrate 10. To reduce the effects of any granularity that can result from the use of discrete apertures, and to smooth out any irregularities in distribution of the gas, the substrate 10 can be rotated during the period of gas flow. It has been found that a generally uniform flow can be obtained when the apertures 74 are located at the apexes of equilateral triangles, and are distributed uniformly over the region of surface 71 approximately the same size as substrate 10 and axially symmetrical therewith

(165 patent 3:65-4:4.) On the one hand, nothing in this language expressly requires the use of discrete apertures. Instead, it points out a possible problem with the use of discrete apertures, and offers a solution: rotating the substrate. On the other hand, it also points out that one way of obtaining a generally uniform flow is to use apertures that are located at the apexes of equilateral triangles. Although this language describing a preferred embodiment does not require that apertures be located at the apexes of equilateral triangles, it does strongly suggest that "apertures" in the context of the '165 patent must be holes that are capable of being arranged into patterns.

Claims 1 and 6 also require that the apertures be arranged "in a generally circular configuration." (165 patent 5:47-48, 6:22-23.) This language also requires that the apertures be arrangeable into patterns. The Court agrees with ASM that because the holes in a frit generally are dispersed randomly, they cannot be arranged in "a generally circular configuration" as required by the language of claims 1 and 6. As the patent requires that one must be able to arrange the apertures into various configurations, the Court agrees with ASM that the apertures must be discrete openings, rather than the loose, random network of openings generally found in a frit.
ASM also points to the prosecution history, but to less effect. ASM does not contend that there is a definition of "aperture" in the prosecution history, but rather points to the examiner's conclusion that three prior patents (the Nishizawa, Robinson and Brandolf patents) disclosed using a plurality of gas flow apertures. (Peltzer Expert Report, Ex. N ('165 Prosecution History) at FH-0090.) ASM contends that each of those patents used a discrete opening, rather than a frit. Even if that is true, however, it proves only that discrete openings are at least one type of aperture. The issue here is not whether the "apertures" must be the openings in a frit, but whether they can be the openings in a frit.

ASM's argument that holes are not apertures unless one can pass a beam of light through them has no support in the language of the patent, however. Moreover, it contradicts Figure 5b of the patent, which clearly shows an extracting aperture with an L-shaped bend that does not pass directly through the material.

ASM also points to a memorandum, dated September 26, 1984, by Mac Robinson ("Robinson"), one of the inventors of the '165 patent. (Peltzer Report, Ex. M.) ASM contends that this memorandum demonstrates that frits cannot be used to practice the invention because they absorb too much energy and a source of particular contamination. In that memorandum, Robinson discusses the likelihood of obtaining uniform silicon deposition when gas is introduced uniformly over the entire wafer, and states:

The gas will be injected normal to the wafer, through a fused quartz plate. Ideally, the plate should act like a porous frit. However a porous frit would absorb too much radiant energy, besides being a source of particulate contamination, so we must approximate a porous plate with an array of holes or slits.

(Id. at 1.) The '165 patent also mentions the possibility of using a fused quartz plate and provides that "if the substrate is to be heated, and particularly if the substrate is to be heated by optical radiation, the apparatus containing the apertures through which the gas is introduced will generally be made of a suitable transparent material, for example, fused quartz." ('165 patent 4:69-5:4.) Thus, it appears that Robinson's memo is referring to a process in which the substrate is heated. Robinson concluded that a frit would not be acceptable for use in that process because it would absorb too much radiant energy. (Peltzer Report, Ex. M.) None of the '165 patent claims require that the substrate be heated, however, and the specification's use of the language "if the substrate is to be heated," suggests that it need not be heated. Even if a frit would not be acceptable for use in a process where the substrate is heated, it does not necessarily mean that it would be unacceptable for use in a process where the substrate is not heated.

Robinson also states that a porous frit would be a source of particulate contamination. Nothing in his memo suggests whether particulate contamination would be a problem only in a process where the substrate is heated, or whether it would also be a problem where the substrate is not heated. Oldham's deposition testimony, however, suggests that contamination might generally be a problem with the use of certain types of frits. Oldham was asked when he last used a frit and responded:

I don't know. I mean, I haven't thought about it. Our -- the kind of business we're in is enormous emphasis on cleanliness and noncontamination and in particular sodium is a big problem. In the industry we'll do anything to keep sodium out of the processing and so you're very careful about the kind of materials you use and ordinary glasses are -- are not used in our laboratory. You use only very special semiconductor grade chemicals and materials. So you don't bring the common, as I say, these common materials in. Now, if I had occasion to want a, for instance, in connection with this -- with this -- the matter under discussion today, there's an issue of -- of gas distribution and if I had a need for a gas distribution and I decided to use a frit, I could have one made up or I could buy a high purity fused silica frit, for instance, or one of appropriate metal, but usually we've done other things.

(Oldham Dep. 7:20-8:15.) Counsel then clarified:

Q: Okay. So just so I understand your testimony, using a glass frit would be a problem in semiconductor processing because of the potential for contamination?
A: Yeah, you have to use a special glass.

(Id. 8:21-24.) Although Oldham's testimony makes clear that there are special types of frits that can be used that do not pose a risk of particulate contamination, it also suggests that one of ordinary skill in the art would not normally think of using a frit to function as the gas flow apertures due to a risk of particulate contamination.

ASM also argues that frits do not have holes that pass all the way through them, and thus the holes in a frit cannot be the "apertures passing therethrough" that are required by the language of claims 1 and 6. Although it is undisputed that each hole in a frit does not necessarily pass directly through the frit, it is also undisputed that at least some holes in a frit do connect to passageways that lead all the way through the frit; otherwise, gas could not pass through a frit. Accordingly, this argument is unpersuasive.

Finally, ASM argues that apertures must be discrete holes because, although the parties dispute whether a frit contains openings that could be used as gas flow apertures, there is no dispute that a frit does not contain openings that could be used as extracting apertures. The fact that two different types of apertures are described in the patent claims is highly relevant to determining the appropriate claim construction. The Federal Circuit has held that "unless the patent otherwise provides, a claim term cannot be given a different meaning in the various claims of the same patent." Georgia Pacific Corp. v. United States Gypsum Co., 195 F.3d 1322, 1331 (Fed Cir. 2000). Nothing in the '165 patent provides or even suggests that "aperture" is defined differently when referring to the gas flow apertures than when referring to the extracting apertures. Thus, the Court must construe the term "aperture" in a way that is applicable to both the gas flow apertures and the extracting apertures.

At deposition, Oldham was asked:

Q: Now, referring to the ASM patent in suit here, the '165 patent, there was some testimony before the -- the break about the use of the term "aperture" in connection with the apertures 53 that are used to extract the gas and do you have any view as to whether a person of skill in the art would think to use a frit as opposed to a through hole for extracting the gas?

A: My -- yeah, I have an opinion. I don't think one would be likely to use a frit in an application like that.

(Jackson Decl., Vol. 3, Ex. E (Oldham Rebuttal Report), Ex. A (Oldham Dep.) 129:22-130:4.) There was no further explanation from Oldham on this point, but his testimony suggests that the extracting apertures cannot be the type of openings generally found in a frit.

Peltzer also explains in his expert report that frits are impractical for use in injecting gases because they clog easily as a result of having such small pores. (Peltzer Expert Report at 10, 21.) A report on improvement of the Genus 8720 reactor also concluded that "a frit-type injection plate, however, can degrade due to clogging of the fine holes . . . ." (Peltzer Supp. Expert Report, Ex. A (Design Analysis and Performance Improvement of the Genus 8720 Reactor: Report on Modeling of and Recommendations for Showerhead Gas Injectors) at 83362.)

Peltzer concludes that a frit is even more impractical for extracting gases, particularly in CVD, where the gases react both in the chamber and on their way out of the chamber. (Peltzer Expert Report at 21.) He states that he knows of no one in research or industry who would propose that a frit could work as an extracting aperture. (Id. at 21-22.) As both Peltzer and Oldham agree that a person of ordinary skill in the art would be unlikely to use a frit as the extracting apertures, this last argument cuts against Genus' position that "apertures," as used in the '165 patent, include the type of openings found in a frit.

The Court finds most persuasive ASM's arguments that the patent language requires that apertures be able to be arranged in patterns, and that one of ordinary skill in the art would not think to use the type of openings generally found in a frit as extracting apertures. Accordingly, the Court agrees with ASM that the "apertures" of the '165 patent must be discrete openings, rather than the random passageways generally found in a frit. Accordingly, the Court construes "apertures" as follows:

Apertures are discrete, arrangeable, openings through a solid material that allow a gas to flow from one side to the other.
7. "Apex." Consistent with the specification and the claims, "apex" shall mean "the uppermost surface of the ramp and may be pointed, radiused, cylindrical or flat."

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(4) "Apices." Points at the two longitudinal ends of a cell of a stent.

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5. purge gas

The parties agree that "purge gas" should be construed as follows: "A gas that aids in the removal of unwarranted material." Alternately, the parties agree that no construction is necessary. In light of the substantial disputes surrounding "evacuate" and "purge" in the patents the Court has previously construed, the Court will adopt the parties' joint construction of this term, rather than leave the term unconstrued.

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<tr>
<th>Disputed Claim Language</th>
<th>ASM's construction</th>
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<td>5. apparatus for</td>
<td>ASM contends that</td>
<td>Genus contends that</td>
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<tr>
<td>introducing a purge gas</td>
<td>interpretation of this claim is not governed by 35 U.S.C. § 112 P 6, and that this limitation is not indefinite.</td>
<td>interpretation of this claim is governed by 35 U.S.C. § 112 P 6, and that this limitation is indefinite.</td>
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The dispute here is whether this is a means-plus-function claim, and thus is governed by 35 U.S.C. § 112 P 6. A "means-plus-function" claim is a special type of claim provided for in 35 U.S.C. § 112, paragraph 6, which states:

An element in a claim for a combination may be expressed as a means or a step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112, P 6. Under this provision, an inventor may describe an element of the invention by the result accomplished or the function served, rather than by describing the item or element to be used. Warner-Jenkinson Co., Inc. v. Hilton Davis Chemical Co., 520 U.S. 17, 27, 137 L. Ed. 2d 146, 117 S. Ct. 1040 (1997). When using means-plus-function language, however, "the applicant must describe in the patent specification some structure which performs the specified function." Valmont Industries, Inc. v. Reinke Manufacturing Co., Inc., 983 F.2d 1039, 1042 (Fed. Cir. 1993). A structure disclosed in the specification is only deemed to be "the corresponding structure" if the specification clearly links or associates that structure to the function recited in the claim. Kahn v. General Motors Corp., 135 F.3d 1472, 1476 (Fed. Cir. 1998). The duty to link or associate structure in the specification with the function is the quid pro quo for the convenience of employing the means-plus-function format. Id.

The use of the word "means" creates a presumption that § 112 P 6 applies. Personalized Media Communications, LLC v. International Trade Commission, 161 F.3d 696, 703 (Fed. Cir. 1999). Failure to use the word "means" creates a presumption that § 112 P 6 does not apply. Id. at 703-04. "These presumptions can be rebutted if the evidence intrinsic to the patent and any relevant extrinsic evidence so warrant." Id. at 704. "In deciding whether either presumption has been rebutted, the focus remains on whether the claim as properly construed recites sufficiently definite structure to avoid the ambit of § 112 P 6." Id. Where a claim recites a function, but then goes on to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format, even if the claim uses the term
"means." Id. (quoting Sage Prods. v. Devon Indus., Inc., 126 F.3d 1420, 1427-28 (Fed. Cir. 1997)).

Claim 5 does not use the word "means." Thus, there is a presumption that the claim is not a means-plus-function claim. Personalized Media, 161 F.3d at 703-04. The presumption that § 112 P 6 does not apply can be rebutted by showing that the claim element recites a function without reciting sufficient structure for performing that function. Watts v. XL Systems, Inc., 232 F.3d 877, 880 (Fed. Cir. 2000). Claim 5 requires that there be an "apparatus for introducing a purge gas on a reverse side of said substrate," but the claim does not recite any structure for performing that function.

A claim that is not a means-plus-function claim need not always specifically recite a structure for performing the function, however. In Personalized Media, the claim language at issue was "a digital detector for receiving said transmission and detecting said predetermined signal in said transmission based on either a specific location or a specific time[.]" Personalized Media, 161 F.3d at 698. The Federal Circuit held that this was not a means-plus-function claim because the term "detector" was a sufficient recitation of structure. Id. at 704. The court found that:

"detector" had a well-known meaning to those of skill in the electrical arts connotative of structure, including a rectifier or demodulator. No other extrinsic evidence, including the expert testimony, and no evidence intrinsic to the patent casts doubt on this conclusion. Moreover, neither the fact that a "detector" is defined in terms of its function, nor the fact that the term "detector" does not connotate a precise physical structure in the minds of those of skill in the art detracts from the definiteness of structure. Even though the term "detector" does not specifically evoke a particular structure, it does convey to one knowledgeable in the art a variety of structures known as "detectors." We therefore conclude that the term "detector" is a sufficiently definite structural term to preclude the application of § 112, P 6.

Id. at 704-05. ASM argues that persons of ordinary skill in the art would think of numerous structures for providing a purge gas to the reverse side of the substrate, and thus claim 5 is not a means-plus-function claim.

Personalized Media, however, found that the term "detector" itself conveyed a variety of structures to persons of ordinary skill in the art. In other words, it found that "detector" was, in and of itself, a structural term. Personalized Media relied on Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580 (Fed. Cir. 1996), in which the phrase "detent mechanism" was at issue. Personalized Media, 161 F.3d at 703 (citing Greenberg, 91 F.3d at 1583). There, the court held that:

The fact that a particular mechanism -- here "detent mechanism" -- is defined in functional terms is not sufficient to convert a claim element containing that term into a "means for performing a specified function" within the meaning of [§ 112, P 6.] Many devices take their names from the functions they perform. The examples are innumerable, such as "filter," "brake," "clamp," "screwdriver," or "lock." . . .

"Detent" (or its equivalent "detent mechanism") is just such a term. Dictionary definitions make clear that the noun "detent" denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms. It is true that "detent" does not call to mind a single well-defined structure, but the same could be said of other commonplace structural terms such as "clamp" or "container." What is important is not simply that a "detent" or "detent mechanism" is defined in terms of what it does, but that the term, as the name for structure, has a reasonably well understood meaning in the art.

Id. In Personalized Media, the Federal Circuit distinguished "detector," as a specific type of structure, from vague, generic terms like "means," "element," or "device." 161 F.3d at 704.

By contrast, claim 5 contains no structural term like "detent mechanism." The only remotely structural term in claim 5 is "apparatus," which no one would claim calls to mind a structure for purging gas. Rather, "apparatus," without more, is just a synonym for "device," and just as inadequate to provide the requisite structure. See, e.g., The American Heritage Dictionary of the English Language, Fourth Edition, at http://www.dictionary.com (defining "apparatus" as "an appliance or device for a particular purpose.")

Unlike the claim language at issue in Personalized Media or Greenberg, claim 5 is stated in purely functional terms. Thus, claim 5 is more like Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206 (Fed. Cir. 1998), where "a substantially non-resilient lever moving element for moving the lever" failed to cite sufficient structure to avoid application of § 112 P 6. In Mas-Hamilton, as in claim 5, the only vaguely structural term used in defining the function was "lever moving element,"
which the court found did not have a generally understood structural meaning in the art. Id. at 1213.

Thus, claim 5 must be viewed as a means-plus-function claim. As a means-plus-function claim, claim 5 is invalid due to indefiniteness if the specification, as understood by a person of ordinary skill in the art, fails to describe some structure that performs the specified function. Atmel Corp. v. Information Storage Devices, 198 F.3d 1374, 1378 (Fed. Cir. 1999). "[A] court's determination of the structure that corresponds to a particular means-plus-function limitation is indeed a matter of claim construction." Id. at 1379. The structure does not have to be disclosed explicitly in the specification; rather, disclosure of structure corresponding to a means-plus-function limitation may be implicit in the specification if it would have been clear to those skilled in the art what structure must perform the function recited in the means-plus-function limitation. Id. at 1380.

The following language is the only reference in the specification to an "apparatus for introducing a purge gas on a reverse side of said substrate:"

The axially symmetric flow of gas (away from the axis) has the important benefit of reducing autodoping by creating a flow of gas in a direction, relative to the substrate, that is opposite from the flow of materials producing the autodoping. This effect can be enhanced and autodoping further reduced, by applying a purge gas to the bottom of the substrate. ('165 patent 5:15-22.) This language contains no structure for applying a purge gas.

Fulfillment of the § 112 P 6 tradeoff cannot be satisfied when there is a total omission of structure. There must be structure in the specification. This conclusion is not inconsistent with the fact that the knowledge of one skilled in the art may be used to understand what structure(s) the specification discloses, or that even a dictionary or other documentary source may be resorted to for such assistance, because such resources may only be employed in relation to structure that is disclosed in the specification.

Atmel, 198 F.3d at 1382.

The Court has previously declined to rule on indefiniteness arguments during claim construction. If the patent had arguably provided some structure for applying a purge gas, and the experts disagreed about what that structure would reveal to a person of ordinary skill in the art, the Court might possibly defer the indefiniteness inquiry to the summary judgment stage. Here, however, the failure to provide any structure for applying a purge gas requires that the Court find the claim indefinite as a matter of law. As a person of ordinary skill in the art could not read the specification as describing any structure for introducing a purge gas on a reverse side of the substrate, claim 5 is invalid for indefiniteness.

The Appearance of Smoothed Edges

Both Claims 1 and 3 of the 272 patent conclude with the limitation that the recited method or apparatus be used so that the "appearance of smoothed edges are given to the generated shapes." Pitney argues that this means "avoiding roughened edges and improving character formation so that the generated shapes have less of an uneven appearance or less 'jaggies' than under prior printing methods." Hewlett argues that the phrase has a broader meaning of "improves image quality or more precisely reproduces the details of an original image by reducing edge roughness."

The court first considers the ordinary meaning of "the appearance of smoothed edges." "Smooth" means "having a surface free from roughness, irregularities, or projections." Webster's II New College Dictionary (1995). "Appearance" means "outward aspect." Id.

The specification does not indication that Pitney meant to either expand or limit this definition. The specification states that "the use of different spot sizes can effectively be employed as letters or numbers are created so as to avoid roughened edges and improve character formation. . . . The different size dot will intermesh to create letters and numerals having a smoother appearance." 272 pat., col. 6, ll. 2-12. As the Federal Circuit said, "the 272 patent teaches an apparatus and method for combating the problem of jaggies by using toner dots of different sizes." Pitney III, 182 F.3d at 1301.
Hewlett argues that the term should be more broadly construed because, during the prosecution history of the related 021 patent, the Board of Patent Appeals stated that they "[did] not consider the terms 'smoothed' and 'smooth' to distinguish" the 021 patent from another which discloses an "image of high quality" or "an exact reproduction." HP Ex. CC at 626-43. However, the Yamada patent, the patent being distinguished, is an ink jet system which does not use a photoreceptor or create an image on a photoreceptor, nor does it create a plurality of beams of light or control a parameter of light beams. U.S. Patent No. 4,050,077 ("Yamada patent"). Under its plain meaning, the term "the appearance of smoothed edges" in the 272 patent is distinguishing the benefit of the 272 patent over prior products comparable to it, which is that the method and the apparatus disclosed produce generated shapes with the appearance of smoother edges. A person of ordinary skill in the art would know that this means the generated shapes will have fewer "jaggies."

Because there is nothing in the specification or prosecution history to suggest either a broader or a narrower meaning than the ordinary meaning of "the appearance of smoothed edges," the court concludes that "the appearance of smoothed edges" means avoiding roughened edges and improving character formation so that the generated shapes have less of an uneven appearance or less "jaggies" than under prior printing methods.

A review of the specification compels the conclusion that the disputed terms "rearward area" and "end area," also used interchangeably throughout the '445 patent claims and specification, are correctly defined as "the area facing away from the brake disk." See '445 Patent Specification, Column 1, lines 54-57 (providing that "a direct transmission of the braking forces into the caliper is permitted since the rearward area, which faces away from the brake disk, of the caliper receiving the application unit is essentially closed....") (emphasis added). The specification also teaches that the last disputed term, "application unit," is properly defined as "a mechanical mechanism that multiplies an input force using a lever to provide a greater output force that presses the brake shoes against the brake disk."

A. Claim 12

Claim 12 of the 844 patent states:

12. A method for the simultaneous removal of a plurality of hairs from a skin region . . ., the method comprising the steps of:

(a) placing an applicator in contact with the skin surface in said skin region; and

(b) applying optical radiation of a selected wavelength and of a selected fluence through said applicator to said skin region . . .;

pressure being applied to the applicator during steps (a) and (b) so as to cause the applicator to deform the skin region thereunder.

In this Court's claim construction order, the term "applicator" was construed as meaning "[a] device for applying optical radiation," and the phrase "pressure being applied to the applicator . . . so as to cause the applicator to deform the skin region thereunder" was construed as meaning "pressure being applied to the applicator so as to cause the applicator to compress the area of skin under it." (Feb. 24, 2004 Order, at 3).

Cutera seemingly concedes that the CoolGlide handpieces are "applicators" within the meaning of claim 12, but denies that pressure is applied to the handpieces. Cutera's first argument is that pressure is not applied to the CoolGlide handpieces because doing so would make little sense. Cutera points out that the 844 patent calls for pressure to be applied to the applicator in order to achieve a specific purpose, i.e., "more efficient delivery of light to the follicular target regions"
(Garretson Decl., Ex. A, at 6:60-66). Because applying pressure to Cutera's devices allegedly would not achieve this result, Cutera maintains that pressure is not applied to the accused devices within the meaning of claim 12.

However, claim 12 does not refer to the reasons for applying pressure to the applicator; it merely describes the application of pressure as part of the patented method. The Court's Markman order construed claim 12 simply as specifying that a certain amount of pressure (i.e., an amount sufficient to compress the underlying skin) be applied to the applicator. (See Feb. 24, 2004 Order, at 3). The issue before the Court, therefore, is not why pressure is applied to the accused devices (or why not), but rather whether or not pressure sufficient to compress the underlying skin is applied to the accused devices. On this issue, summary judgment is inappropriate. According to Cutera, no "appreciable" compression of the skin occurs during use of the accused products, and any compression of the skin is "minimal." (Cutera Jan. 14, 2005 Mem., at 13 n.6). The chilled footplate is, Cutera maintains, never pressed into the skin, but is instead "glided over the skin." (Id. at 12). Whether compression of the underlying skin occurs during use of the Cutera devices, however, and whether that pressure results in compression that is "appreciable" or more than "minimal" are disputed questions of fact. As Palomar notes, Cutera's training and instruction materials warn users to ensure that the footplate remains in contact with the skin, "especially over curves." (Saxton Decl., Ex. 15, at ALT 000137). Reasonable jurors could find that pressure sufficient to compress the underlying skin was required in order to maintain constant contact between the footplate and curved areas of skin. Furthermore, a video displayed at oral argument on Cutera's motion depicts through animation the application of a Cutera product; the animation shows the skin beneath the Cutera device being somewhat compressed as the footplate passes over the skin. Perhaps most significant, the record includes the notes of Michael Sasnett, the designer of a prototype of the CoolGlide products, which state that the handpiece is to be pressed upon the skin. (Saxton Decl., Ex. 22, at ALT 017390).

Cutera argues that even if the skin beneath the applicator is somehow compressed, there is no evidence in the record that such compression results from pressure being brought to bear upon the applicator, and further challenges the relevance of Sasnett's notes, which it claims reflect only early stages of product development. On a motion for summary judgment, however, the Court draws inferences in the nonmovant's favor; in doing so, it is clear that a material issue of fact exists as to whether pressure sufficient to compress the underlying skin is applied to Cutera's CoolGlide devices. For substantially the same reasons, a factual dispute exists as to whether Cutera intends that its customers apply pressure to its devices so as to compress the skin under them and thereby induces infringement. Accordingly, summary judgment as to both direct infringement and inducement of infringement of claim 12 is denied.

10. "applying a compressive force against said terminal by said electrodes"

This phrase appears in Claim 4, which states as follows: "[t]he method of claim 1, further including applying a compressive force against said terminal by said electrodes." Plaintiff asserts that this phrase means "using the electrodes to apply additional pressure against the terminal after the insulation has been removed from the armature wire." In support of its construction, Plaintiff refers to that part of the specification of the '015 Patent, discussed above, that explains that under the fusing process, pressure is "once again" applied after the insulation on the armature wire is burned off. See '015 Patent, col. 6:20-25. Plaintiff also notes that Claim 4 uses the term "further." Last, Plaintiff points to certain extrinsic evidence, such as deposition testimony and prior patents, also discussed above, which support its assertion that Claim 4 refers to a second, subsequent application of pressure than that referred to in Claim 1. Defendants take issue with Plaintiff's construction insofar as it interprets the disputed phrase as describing "additional" pressure. As discussed in section II.1, supra, Defendants have taken the position that under the proper construction of Claim 1, there is no "pressure" step in Claim 1, but rather the application of pressure is initially occurs as described in Claim 4. However, the Court finds that the evidence does not support such a construction of these claims.

Defendants proposed construction of this phrase in Claim 4 is "using the electrodes to press against the terminal." In support of this proposed construction Defendants cite only to the Webster's dictionary definition of "compressive." However, considering the evidence cited by Plaintiff, the Court shall construe the phrase "applying a compressive force against said terminal by said electrodes" consistent with Plaintiff's proposed construction as follows: "using the electrodes to apply additional pressure against the terminal after the insulation has been removed from the armature wire."
Defendants construe this phrase as teaching only full face adhesive coverage on either the interior surface of the panel or the wheel face outer surface. Defendants base this argument on the affidavit of Lacks' own engineering expert, James D. Varin, in which Varin interprets the '809 patent to teach only full face coverage by the adhesive. Lacks argues, however, that it would be improper for me to consider the extrinsic evidence of Varin's expert testimony pursuant to Vitronics. Lacks contends that the disputed language does not limit the coverage of the adhesive, and therefore the language encompasses any pattern of adhesive coverage, whether it be full, selective, or random.

Claim 1 only refers to adhesive in the second "applying" step: "applying an adhesive to one of said wheel face outer surface of said wheel and said interior surface of said thin solid formed ornamental panel." '809 patent, col. 11, lines 17-19. Claim 2 also refers to adhesive but once: "The method of claim 1 wherein said adhesive is applied to a recess formed in said wheel face outer surface of said wheel and said thin solid formed ornamental panel is positioned in said recess." '809 patent, col. 12, lines 11-14.

It is clear that this language limits the application of the adhesive in only two ways, neither of which gives defendants' full face construction any support. The first limitation exists for both claims 1 and 2: the adhesive must be applied to either the wheel face outer surface or the interior surface of the panel. The second limitation is a specific requirement for cladded wheels assembled according to the method of dependent claim 2: adhesive must be applied to a recess formed in the wheel face outer surface. Both limitations are silent as to how the adhesive should cover the surfaces to which it must be applied.

The specification mentions the cladding panel adhesive only twice. The first reference discusses the type of adhesive to be used in the first preferred embodiment: "The overlay 20 can be permanently adhered directly to the outboard surface of the wheel 11 by a suitable adhesive 30, such as a silicone or polyurethane adhesive, to form a permanent wheel." '809 patent, col. 8, lines 5-8. The second reference discusses the way in which the adhesive is to be applied in the second preferred embodiment: "The panel 22 is adhesively bonded directly to the outboard surface of the wheel 11 either with a suitable adhesive 30 as shown, or in any other suitable manner." '809 patent, col. 9, lines 56-58, referring to Figure 5. While the first reference in the specification is silent on the issue of the extent, or pattern, of adhesive coverage, the second reference, through its "any other suitable manner" language, clearly favors the broader construction of "applying an adhesive" offered by Lacks.

In light of the intrinsic evidence of record discussed above, I find that a person of ordinary skill in the art of cladded wheels would understand "applying an adhesive" as encompassing the full range of possible adhesive coverages not already within the prior art. The silence of the claim language on that point does not imply defendants' narrower construction of full face coverage. Rather, the silence indicates that the inventor did not consider the coverage of the adhesive to be an essential element of the '809 patent's claimed invention. Thus solely on the basis of questionable extrinsic evidence -- Varin's affidavit -- defendants have asked me to read into claims 1 and 2 an element that does not exist. Pursuant to Vitronics, I decline to do so. See id.

9 Neither party offered any prosecution history evidence on this issue.
construction of the term: "The application of force to the label(s) and container by holding and pressing apparatus that arises or acts from the outside; i.e., separate and independent from the labels and container." Joint Claim Construction ("JCC") at 1:9-13.

Defendants object to the extent Plaintiffs' proposed construction "attempts to make a dependant claim (claim 5 of the '269 patent) broader than its referenced independent claim (claim 1 of the '269 patent)." 3 Defendants' Opposition to Brief Re: Claim Construction of the '269 and '697 Patents ("Opposition") at 3:5-12; see also 35 U.S.C. § 112 ("a claim in dependant form shall be construed to incorporate by reference all the limitations of the claim to which it refers"). However, Defendants fail to offer--and the Court cannot find--any basis for determining that Plaintiffs' proposed construction would render claim 5 broader than claim 1. 4 Claim 5 is simply one of several dependant claims describing various methods of "temporarily coupling a leading end of an outer to the inner label while the outer label is wrapped about the object," as described in claim 1. See '269 Patent at Claims 2, 5-8. 5

--- Footnotes ---

3 Claim 1 of the '269 patent describes: "A method of applying a rotatable label to an object, comprising the steps of: [1] providing an object; [2] attaching an inner label with indicia disposed thereon about the object; [3] temporarily coupling a leading end of an outer label having indicia and a transparent portion thereon to the inner label while the outer label is wrapped about the object; [4] securing the outer label about the object; and [5] uncoupling the leading end of the outer label to permit the outer label to rotate about the inner label and the object."

Claim 5 of the '269 states: "The method according to claim 1, wherein the step of temporarily coupling further comprises applying an external physical pressure to the outer label." Id.

4 To the extent Defendants' argument is based on its proposed construction of the term "temporarily coupling," this argument is mooted by the Court's construction of that term. See infra Section C.

5 Defendants also object to Plaintiffs' proposed construction of the term "applying an external physical pressure" to the extent it affects the Court's construction of "temporarily coupling." It does not.

--- End Footnotes ---

Therefore, the Court adopts Plaintiff's proposed construction of "applying an external physical pressure"--"the application of force to the label(s) and container by holding and pressing apparatus that arises or acts from the outside; i.e., separate and independent from the labels and container"--which is consistent with the relevant dictionary definition of "external." See Plaintiffs' Supporting Evidence, Exh. E (Merriam-Webster's Collegiate Dictionary, Tenth Edition) ("of, relating to, or connected with the outside or an outer part…applied or applicable to the outside"); see Texas Digital Systems, 308 F.3d at 1203 ("dictionaries, encyclopedias and treatises, publicly available at the time the patent is issued, are objective resources that serve as reliable sources of information on the established meanings that would have been attributed to the terms of the claims by those of skill in the art").

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E. "applying an overprinting layer over at least the scratch-off layer"

This claim term, which is found exclusively in the 504 patent, is identical to the above-construed phrase, the only difference being the addition of the words "at least." The parties agree that this addition should be construed in this context to mean "optionally printing the overprinting layer over a portion of the non-scratch-off layer." (See Pl.'s Resp. in Supp. of Mot. for Claim Construction, at 20.) Thus, the Court construes this claim term as follows: "printing an overprinting layer over the scratch-off layer and optionally printing the overprinting layer over a portion of the non-scratch-off layer."

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D. "applying an overprinting layer over the scratch-off layer"

The only term in this disputed phrase that has not been construed previously is "applying." As a commonly understood word, construction of the term "applying" simply requires application of the widely accepted meaning of the term. In such circumstances, general dictionaries may be used to ascertain the meaning of the term. Phillips, 415 F.3d at 1322. "Apply" means "to put on." Webster's College Dictionary at 55. In the context of the present invention, a person of ordinary skill would understand that putting the overprinting layer on the scratch-off layer would be accomplished by printing the overprinting layer over the scratch-off layer.

The Court's previous construction of "overprinting layer" and the agreed upon construction of "scratch-off layer" mean that little, if any, additional construction of this disputed term is required. Nevertheless, the Defendant maintains that further construction is necessary. It argues that the phrase should be construed as "printing the overprinting layer over the scratch-off layer, thereby securely covering the variable printed indicia on the game area." Again, the Defendant proposes a construction that contains elements of security and variable printed indicia. And again, the intrinsic evidence fails to support the inclusion of these elements. As noted above, nothing in the specification requires that the printed indicia be variable. The Defendant argues, however, that the specification and prosecution history require that the printed indicia be "securely covered." According to the Defendant, this element must be included in the construction because the purpose of the overprinting technique of this invention is to improve lottery ticket security and enhance the overall appearance of the lottery ticket. ('647 patent, col. 1, 11. 60-65; 504 patent, col. 1, 1. 66 -- col. 2, 1. 1.) In addition, the Defendant argues that the prosecution history supports the limitation because the patentee distinguished prior art based on the fact that "there is no teaching or suggestion in the reference of the employment of an overprinting layer of the type used in the present invention as a security improving component of the lottery ticket." (Resp. to Office Action, Def.'s Proposed Claim Construction, Ex. 8) (emphasis added). This is not an express disavowal of claim scope. Rather, the patentee was distinguishing prior art based on the use of an overprinting layer of screened halftone images. The fact that this type of overprinting layer may have the effect of improving security does not translate into a requirement that the overprinting layer must "securely cover" the printed indicia. It is improper to limit a claim based merely on an articulated objective or purpose of an invention, unless the purpose is clearly expressed in the claim. Brookhill-Wilk 1, 334 F.3d at 1301; Applied Materials, Inc., 98 F.3d at 1574; see also Liebel-Flarsheim Co., 358 F.3d at 908 ("The fact that a patent asserts that an invention achieves several objectives does not require that each of the claims be construed as limited to structures that are capable of achieving all of the objectives."). The specification and prosecution history do not evidence a clear intention to limit the ordinary meaning of the phrase. Therefore, because "overprinting layer" and "scratch-off layer" have been construed and "applying" is afforded its common meaning, the Court construes the phrase "applying an overprinting layer over the scratch-off layer" to mean "printing an overprinting layer over the scratch-off layer."

The '234 Patent

At issue in plaintiff's '234 patent is the meaning of certain language in the first two steps of Claims 1, 2, and 3. At the outset, the court has concluded that these claims are mixed claims: the first two steps of Claims 1, 2, and 3 are method-of-manufacture steps, while the last two steps of Claims 1 and 2, and the last three steps of Claim 3 are method-of-use steps. This is readily apparent on the face of the claims, where the first two steps deal with applying respective forces to complete the manufacture of the product, while the remaining steps deal with steps taken by the clinician in the use of the product. Testimony by Vaillancourt that these are entirely method-of-use claims is not persuasive in light of the clear language of the claims, as well as the specification which shows, through the figures, the manufacturing of the injection site, including applying both axial and radial forces, respectively.

The first phrase at issue is included in all three claims of the '234 patent, in different iterations, and reads as follows:

Claim 1: "applying axially directed forces to the septum to form an outwardly, easily wipable exterior peripheral surface;"
Claim 2: "applying axially directed forces to the septum to form an outwardly curved, easily wipable exterior peripheral surface;"

Claim 3: "applying axially directed forces to the septum to form a curved, easily wipable exterior peripheral surface;"

Aided by the testimony of Sheehan, the court concludes, based upon the language of the claims themselves, the specification, and the prosecution history, that each of these phrases has the same meaning, regardless of the discrepancies in language. Furthermore, the court concludes that the "axially directed forces" have as their sole purpose the forming of the surface of the septum. That surface is formed by these forces as outwardly curved or domed. The court also concludes that the "exterior peripheral surface" is that part of the septum not covered by the housing, and thus easily wipable because it is exposed.

Support for the court's conclusions is as follows: First, support for the court's construction that each phrase has the same meaning is found in the prosecution history of the '234 patent, and especially in plaintiff's responses to the examiner's repeated rejections of Claims 1 and 2 (Claim 3 was added later) (See pgs 77 and 90 of Exhibit 403). Plaintiff argued for the allowance of such claims as a group, with the understanding that the language in each was the same and not slightly different as the above-quoted phrases reflect (See pgs 82-84, 94-96 and 101-111 of Exhibit 403). At no time did the prosecuting attorney distinguish between the claims based upon the phrases "outwardly," "outwardly curved," or "curved." All three claims were treated throughout the prosecution as having the same meaning.

Plaintiff argued during this trial that the first step in each claim has a different meaning due to the variation in language. Vaillancourt testified as such. However, this interpretation is inconsistent with the prosecution of these claims, especially in light of three separate arguments for allowance by plaintiff's prosecuting attorney in which he treated the first step of each claim as having the same meaning.

Second, as mentioned previously, the court concludes that the sole purpose for including axially directed forces is to form the shape of the septum surface. Throughout the specifications, plaintiff explained the purpose of both radially directed forces -- to reseal -- and axially directed forces -- to form the surface. Most tellingly, in column 6, lines 41-47 of the patent, plaintiff states: "The swaged end members apply axial forces to the septum thereby creating the domed exterior peripheral surface. In contradistinction, the tapered internal surface applies radially directed forces to the septum, thereby forcing the opening into a resealed condition."

In addition as Sheehan pointed out in his testimony, plaintiff's attorney argued throughout the prosecution that the invention was unique, and not anticipated by Pfister or Wolff-Mooij, because these patents do not teach applying axially directed forces to form an outwardly curved surface (See pgs 82-84, 94-96, and 101-111 of Exhibit 403). This is further support for the court's conclusion that the specific purpose of applying axially directed forces is to form the specified shape of the septum.

Third, there is ample support for the court's conclusion that the claims require the septum to be outwardly curved. The fact that each of the claims has a different iteration of the phrase "outwardly curved" is inapposite, and appears to be the result of sloppy drafting. On its face, Claim 1 does not make sense grammatically. "Outwardly" is an adverb which does not modify anything in this sentence. It only makes sense if you look at Claim 2, where "outwardly" is modifying "curved." Vaillancourt testified that "outwardly" in Claim 1 modified "wipable," but again this does not make sense. The court cannot conceive of a situation where a surface may be inwardly wipable. More likely, the discrepancy in the three claims is due to drafting errors rather than with the specific purpose of distinguishing the claims.

This is amply demonstrated in the prosecution history. Apparently, plaintiff's prosecuting attorney had the examiner add "outwardly" to both Claims 1 and 2 with the understanding that "curved" was still included in those claims. However, "curved" had been eliminated from the claim language by plaintiff's in-house counsel, and was only re-added to Claim 2 by a Certificate of Correction. Therefore, it was a lack of communication that resulted in the discrepancy in language rather than an intent to vary the claims.

Even further support for this construction is found in plaintiff's attempts to distinguish the prior art from the claims in the '234 patent. Plaintiff's prosecuting attorney argued vigorously on three separate occasions that the invention was not
anticipated by any prior art because the prior art "does not even arguably suggest applying axially directed forces to the septum to form an outwardly curved surface." (pg 82 of Exhibit 403). The attorney also distinguished the invention from Pfister by stating that Pfister contains "a deformable barrier means in the form of a split deformable resilient foam block, which is recessed inwardly from the open end so as to prevent accidental contact...", and thus teaches away from "an outwardly curved surface." (pg 83 of Exhibit 403). There is no doubt after reading the prosecution history that plaintiff distinguished its invention from the prior art based upon the outward curve of the septum, as well as applying axial forces to create that outward curve. Thus, each claim is read to contain the limitation "outwardly curved" despite the incomplete language actually used.

The specification also dictates this conclusion. The specification details the process of making the outwardly curved or domed surface, and explains how this surface is easily wipable. For example, column 6, lines 1 - 5 state: "The surface has been forced into a dome-like shape by annular, U-shaped, swaged end members carried by the first end. The dome-like shape of the surface can extend beyond a surface of the first end. This facilitates cleaning the surface."

Vaillancourt has testified to the contrary. In his opinion, under the claim language and specification the surface of the septum could be concave, convex, or flat. He interprets "outwardly" as the exposed section of the septum, and "curved" as merely a clarification. In his view, Claims 1 and 2 should both say "outwardly" only, with no reference to the shape of the septum. However, there is one major fallacy with this argument that demonstrates once again that "outwardly," "outwardly curved," and "curved" all have the same meaning: if outwardly means the exposed surface of the septum, then Claim 3 must describe a septum completely encased in plastic, since it does not contain the word "outwardly." Vaillancourt's reading of these three claims is nonsensical and borders on ridiculous. The court will therefore disregard it.

Similarly, one sentence in the specification states, contrary to the clear teachings of the specification as well as the prosecution history, that the septum could be flat. (Column 6, lines 48-49). This statement is not supported by the claims and is thus not persuasive that the septum could be other than outwardly curved.

Finally, as to this first step in Claims 1, 2, and 3, the support for the court's finding that the exterior peripheral surface is that portion of the septum that is exposed lies in the clear language of the claims themselves. "Exterior," in the ordinary, literal sense of the word, means external; that which is on the outside. Therefore, the exterior portion of the septum is that part which is outside the housing. In addition, exterior peripheral surface is modified, in each of the claims, by "easily wipable." A septum that is covered by a plastic housing is not wipable at all, let alone easily wipable. Only the exposed portion is easily wipable.

9. Applying Energy To (Claim 1, '803 Patent; Claims 1 and 18, '084 Patent)/Applying Energy ... To (Claim 1, '433 Patent)

Vnus argues the term "applying energy to"/"applying energy ... to" does not require construction. Defendants argue "applying energy to"/"applying energy ... to" should be construed as "applying energy directly to the inner wall of the [hollow anatomical structure/ vein] through physical contact between the electrode device and the inner wall of the [hollow anatomical structure/vein] and maintaining the electrode device in physical contact with the inner wall."

The Court, for the reasons stated by Vnus, finds "applying energy to"/"applying energy ... to" does not require construction.
Plaintiffs propose that this term means "applying pressure through a gas or liquid to the diaphragm to operate the pump chamber." Fresenius proposes that this term means "applying alternating positive and negative fluid pressure pulses to the diaphragm such that the diaphragm is flexed in and out and liquid moves through the pump chamber."

Thus, both sides agree that "applying" means "applying;" that "fluid pressure" means either "fluid pressure" or "pressure through a gas or liquid;" 2 that "to the diaphragm" means "to the diaphragm;" and that "pump chamber" means "pump chamber." What is left is the construction of the two words - "to operate." Plaintiffs contend that "to operate" should be construed as having its ordinary and customary meaning. Fresenius asserts, however, that under O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., Ltd., 521 F.3d 1351 (Fed. Cir. 2008), the court is required to construe "to operate" because the parties have raised an actual dispute regarding the proper scope of the term. See id. at 1361.

2 Plaintiffs note that Fresenius appears to accept plaintiffs' construction of "fluid" as "a gas or a liquid."

The claim language provides the starting point for analysis of the words "to operate." Claim 1 discloses that the pump chamber "operates" by the application of "fluid pressure to the diaphragm." The claim language also makes clear that "operation" of the pump chamber "either move[s] dialysis solution fluid from the peritoneal cavity" - "or move[s] dialysis solution into the peritoneal cavity." Thus, the meaning of "to operate" is explained by the claim language itself.

Nothing in the specification suggests that the patentees intended a meaning of "to operate" other than the plain and ordinary meaning of those words as used in the claims. The specification identifies preferred embodiments in which both positive and negative pressures are applied. See, e.g., '823 patent, 8:60-68, 13:22-29; 20:48-58; 21:40-50.

In addition, the "Summary of the Invention" explicitly identifies the embodiment in which both positive and negative pressures are applied as a preferred embodiment. See id., 2:52, 3:16-20). Because that configuration is described as "preferred" only (not required), and does not avow a broader claim scope, this claim term cannot be limited to require both positive and negative pressure. Where there is no narrowing limitation in the claim language and no express disavowal of broader language in the written description, it is error to rely on a preferred embodiment to limit the claim term. Gemstar-TV Guide Int'l, Inc. v. Int'l Trade Comm'n, 383 F.3d 1352, 1368-69 (Fed. Cir. 2004)

Neither the claims themselves nor the specification support Fresenius' narrow construction, and Fresenius has pointed to no language in either the claims or specification clearly limiting the claims to embodiments disclosed in the '823 patent specification. The '823 patent claim language itself is not limited to pneumatics, is not limited to alternating positive and negative fluid pressure pulses, and is not limited to flexing the diaphragm in and out.

Absent any indication that the patentees intended to define the phrase "to operate" to require both positive and negative fluid pressure pulses, the court will not read into the claim language limitations taken from the preferred embodiments. See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004). In addition, the doctrine of claim differentiation precludes Fresenius' proposed addition of the words "alternating positive and negative fluid pressure."

Under the doctrine of claim differentiation, when one claim does not recite a particular limitation that is recited in another claim, "that limitation cannot be read into the former claim." Amgen, Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1326 (Fed. Cir. 2003). Each claim is presumed to be different in scope, and that presumption "is especially strong where there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between two claims." Ecolab, Inc. v. Paraclipse, Inc., 285 F.3d 1362, 1375 (Fed. Cir. 2002); see also Liebel-Flarsheim, 358 F.3d at 909.

Here, independent claims 1, 10, 16, 21, and 25 of the '823 patent all recite "applying fluid pressure" generally, and do not specify any particular type of fluid pressure. However, claims that depend from those independent claims narrowly recite the specific types of fluid pressure. Dependent claims 5, 14, and 19 specify a "fluid pressure that is below atmospheric pressure" - that is, negative pressure. Dependent claims 6, 15, and 20 specify a "fluid pressure that is above atmospheric pressure."
pressure" - that is, positive pressure. Thus, under Fresenius' proposed construction, the limitation of negative pressure in dependent claims 5, 14, and 19, and the limitation of positive pressure in dependent claims 6, 15, and 20, would be redundant and superfluous.

It is true that the doctrine of claim differentiation is a rebuttable presumption, which may be overcome "by a contrary construction dictated by the written description or the prosecution history." Seachange, Int'l, Inc. v. C-COR, Inc., 413 F.3d 1361, 1368-69 (Fed. Cir. 2005). Here, however, Fresenius has pointed to no evidence from the intrinsic record to overcome this presumption.

With regard to the second and third limitations proposed by Fresenius - "pulses" and "such that the diaphragm is flexed in and out" - "fluid pressure" is used generically in independent claims 1, 10, 16, 21, and 25. Nothing in the patent dictates that the "fluid pressure" be applied in "pulses" or that it "flex" the diaphragm "in and out."

In short, nothing in the specification of the '823 patent indicates that the patentees intended to give some special meaning to the words "to operate." The claim language preceding and following "to operate" - "applying fluid pressure to the diaphragm" and "to either move dialysis solution fluid from the peritoneal cavity or move dialysis fluid into the peritoneal cavity - clearly explains how the "operation" occurs and what it accomplishes.

"Applying fluid pressure to the diaphragm to operate the pump chamber" means "applying pressure through a gas or liquid to the diaphragm to operate the pump chamber."

2. "Applying glue...to abutting wooden surfaces"

Staples defines "applying glue...to abutting wooden surfaces" as "applying an adhesive to touching wooden surfaces that are susceptible to outside air infiltration." (Joint Claim Construction Statement, P. 1). Defendants generally agree with Staples' definition, so long as the adhesive is applied, "prior to the installation of insulation." (Id.).

Upon consideration, the Court will not adopt Defendants' definition, because it "will not at any time import limitations from the specification into the claims." Stumbo v. Eastman Outdoors, Inc., 508 F.3d 1358, 1362 (Fed. Cir. 2007) (internal quotations and citations omitted). Defendants' construction attempts to do just that. In other words, although the specification at times appears to impose a temporal restriction (see, e.g., '088 Patent, P. 9, Col. 2, ll. 2-4, P. 10, Col. 3, ll. 7-9), the claims themselves do not. Furthermore, the specification itself states as follows: "As various changes could be made in the above embodiments without departing from the scope of the invention, it is intended that all matter contained in the above description shall be interpreted as illustrative and not in a limiting sense." (Id. at Col. 3, ll. 53-56). The Federal Circuit has refused to import limitations from the specification when nearly identical language was used. See Pfizer, Inc. v. Ranbaxy Labs. Ltd., 457 F.3d 1284, 1290 (Fed. Cir. 2006), cert. denied, 549 U.S. 1328, 127 S. Ct. 1928, 167 L. Ed. 2d 577 (2007). Accordingly, the Court will adopt Staples' construction, and define "applying glue...to abutting wooden surfaces" as "applying an adhesive to touching wooden surfaces that are susceptible to outside air infiltration."

3. What is the Proper Construction for the Phrase "thereafter applying pressure and shear to the heated mixture" in the '311 Patent?

Claim 1 and claim 94 of the '311 patent contain the phrase "thereafter applying pressure and shear to the heated mixture sufficient immediately to convert at least a portion of the binder material..." KXI contends this phrase means applying sufficient pressure and shear to convert the heated binder into either a continuous web matrix, as disclosed in claims 1 and 94, or forced point-bonds, as disclosed in claim 94. KXI contends no specific amount of pressure or shear is required. KXI argues its construction is supported by the plain meaning of the words in the claims.
Culligan contends this phrase means applying pressure and shear sufficient to convert at least a portion of the binder materials after the entire mixture has been heated to a temperature above the softening temperature of the binder. Culligan contends the pressure required during the conversion step must be (1) greater than the pressure applied during the heating step; and (2) greater than 400 psi to achieve "forced point-bonds" and greater than 4,000 psi to achieve a "continuous web matrix."

Regarding the temporal limitation, Culligan argues that the plain meaning of the claims imposes this requirement. Culligan responds to KXI's arguments by alleging KXI has ignored the "thereafter" limitation in the claim, which imposes a temporal restriction requiring that the pressure and shear sufficient to convert the mixture be applied after the heating step. Culligan argues that its definition of the claim takes into consideration the continuous nature of the extrusion process. According to Culligan, "if . . . you take a cross-section of mixture at any given position along the length of the extruder, the conditions that piece of mixture has to be seeing have to conform to the process steps. In other words, that piece of the mixture has to be first heated. Then it has to be pressurized."

Culligan argues the specification of the '311 patent establishes that the pressure required to achieve "forced point-bonds" is at least 400 psi. The patentee distinguished the Degen '683 patent (U.S. Patent No. 4,664,683) at column 2, lines 43-45 of the specification. This reads in relevant part:

The levels of compression disclosed by Degen et al. are exceedingly low, 0.3-10 psi . . . most preferred maximum 40 psi. . . . Accordingly, it describes process conditions well outside the range of compression utilized in the present invention, which would be 400-1000 psi . . . for granular materials . . . and approximately 8,000 psi . . . or more for powders . . . . Without such higher pressures, the binder resins are not activated and the novel structure produced by the current invention are not obtained.

Culligan argues KXI is estopped from arguing now that their process covers pressures lower than 400 psi, because KXI disclaimed lower pressures in distinguishing the Degen '683 patent.

Culligan argues the '311 patent's specification establishes that pressure required to achieve a "continuous web matrix" is at least 4,000 psi. Culligan cites passages from examples drawn from the patent's specification stating that successful examples of "continuous web matrix" formation occurred only at pressures in excess of 4,000 psi. Culligan cites passages from the examples section using pressures below 4,000 psi that produced unsuccessful results. Culligan argues that patent claims should be construed consistently with examples given in the patent, citing Johns Hopkins v. CellPro, Inc., 152 F.3d 1342, 1349 (Fed. Cir. 1998).

KXI argues in response that "no specific amount of pressure and shear is required by the claims." According to KXI, the '311 patent only requires the application of "sufficient" pressure and shear to convert the heated binder into either a "continuous web matrix" or a "forced point-bonding."

The court agrees with Culligan that the term "thereafter" applies a limitation that "applying pressure and shear to the heated mixture sufficient immediately to convert at least a portion of the binder material" occurs after the mixture is heated "substantially above" the binder's softening temperature.

The court finds that the specification does not define pressure to mean greater than 400 psi to achieve "forced point-bonds" and greater than 4,000 psi to achieve a "continuous web matrix." The court finds, however, that the patentee disclaimed using pressures below 40 psi in the claimed invention when the patentee distinguished the pressures used in the Degen '683 patent. Accordingly, the court construes the phrase "thereafter applying pressure and shear to the heated mixture sufficient immediately to convert at least a portion of the binder material" to mean applying pressure greater than 40 psi and shear sufficient to convert at least a portion of the binder materials after the entire mixture has been heated to a temperature above the softening temperature of the binder.
The first part of the analysis, claim interpretation, begins with the language of the claim itself. Stiftung, 945 F.2d at 1177 (citing SmithKline Diagnostics, Inc. v. Helena Laboratories Corp., 859 F.2d 878, 882 (Fed. Cir. 1988)). A court interpreting a patent claim may also look to the patent's specification, prosecution history, other claims, and expert testimony. Atlantic Thermoplastics Co., Inc. v. Faytex Corp., 970 F.2d 834, 837 (Fed. Cir. 1992); see also Stiftung, 945 F.2d at 1177; SmithKline, 859 F.2d at 882; ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1579 (Fed. Cir. 1988); Perini America, Inc. v. Paper Converting Machine Co., 832 F.2d 581, 584 (Fed. Cir. 1987). "This interpretation proceeds from the vantage point of one skilled in the art." Atlantic Thermoplastics, 970 F.2d at 837 (citing SmithKline, 859 F.2d at 882).

4 "To ascertain the meaning of claims, we consider three sources: The claims, the specification, and the prosecution history." Markman 52 F.3d at 967 (quoting Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1561 (Fed. Cir. 1991) (other citations omitted)). "Expert testimony, including evidence of how those skilled in the art would interpret the claims, may also be used." Markman 52 F.3d at 979 (citing Fonar Corp. v. Johnson & Johnson, 821 F.2d 627, 631 (Fed. Cir. 1987)).

The issue of claim interpretation presented on these motions, as already explained, is whether Claim 1 of the '745 patent excludes a seal assembly in which the wedge means touches only one of the two sealing lips.

a. Claim Language

Claim interpretation begins with the claim language itself. ZMI Corp., 844 F.2d at 1579; McGill, Inc. v. John Zink Co., 736 F.2d 666, 672 (Fed. Cir.), cert. denied, 469 U.S. 1037, 105 S. Ct. 514, 83 L. Ed. 2d 404 (1984). The language at issue in Claim 1 calls for:

integral annular wedge means cooperating with said circular recess for applying radial loads to said inner and outer sealing lips to force said lips into sealing relationship with said cylindrical rod and seal receiving bore, respectively, said circular recess and wedge means being proportioned so that the load applied to said inner sealing lip is greater than the radial load applied to said outer sealing lip . . .

whereby the radial load applied to said inner sealing lip is greater than the radial load applied to said outer sealing lip.

(Ralabate Aff. P 2, exh. 1, Col. 6, lines 1-9, 22-25; P2. Facts, exh. E, Col. 6, lines 1-9, 22-25.)

5 Claim 1 reads in its entirety:

In a seal assembly the elements comprising:

an annular elastomeric seal element having an outer annular side adapted to be received in sealing relationship within a seal receiving bore, a central axial bore generally concentric with said outer annular side and adapted to receive a cylindrical rod in sealing sliding relationship, a first end, a second end, and a circular recess in said second end extending generally concentrically with said axial bore and opening axially of said seal element to define an inner sealing lip adapted to seal with said cylindrical rod and an outer sealing lip adapted to seal with said seal receiving bore; and

a seal actuator element including guide means for aligning said actuator element with said seal element, and integral annular wedge means cooperating with said circular recess for applying radial loads to said inner and outer sealing lips to force said lips into sealing relationship with said cylindrical rod and seal receiving bore, respectively, said circular recess and wedge means being proportioned so that the load applied to said inner sealing lip is greater than the radial load applied to said outer sealing lip, the walls of said circular recess defining generally frusto-conical surfaces which diverge outwardly toward said integral annular means and the walls of said wedge means defining generally frusto-conical surfaces which converge inwardly toward said circular recess, said walls being proportioned so that the walls of said wedge means converge more rapidly relative to the radially inner wall of said circular recess than the radially outer wall of said wedge means converges
relative to the radially outer wall of said circular recess whereby the radial load applied to said inner sealing lip is greater than the radial load applied to said outer sealing lip.

(Ralabate Aff. P 2, exh. 1; P2. Facts, exh. E.)

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Enidine contends that the clear language of Claim 1 requires a wedge to apply radial loads to both an inner and outer sealing lip. "Applying radial loads to said inner and outer sealing lips" requires the annular wedge means to contact both lips. (D. Memo, pp. 12-20.) Hydraflow disagrees. It argues that this language does not exclude a structure in which a wedge contacts only one of the sealing lips. Claim 1 calls for a "wedge means cooperating with said circular recess for applying radial loads" and does not recite that the wedge means must contact both seal lips. Rather, the '745 patent teaches that two load sources cause the seal lips to bear against the rod and bore, namely the wedge and the lips themselves. The seal is larger than the bore into which it fits -- an "interference fit" -- generating radial loads independent of the wedge. The "cooperating" limitation of Claim 1, according to Hydraflow, requires both the wedge and the stress in the lips themselves to contribute to the recited loads. Since nothing in the language of Claim 1 requires the wedge to contribute to the radial loads on both lips, Claim 1 does not require the wedge to contact both lips. (P2. Memo, pp. 12-18.)

The problem with this interpretation is that Claim 1 clearly calls for a wedge applying radial loads to the inner and outer sealing lips. The claim specifically teaches that the wedge cooperates with the recess for applying radial loads to the seal lips. The claim, in other words, identifies the wedge, cooperating with the recess, as the source of the radial loads, not the lips themselves. Under Hydraflow's proposed interpretation, "whether [the Enidine wedge means] cooperates by wedging one or both lips against the adjacent structures is not required." (P2. Memo, p. 8.) Claim 1, however, does not call for a wedge applying radial loads to the inner sealing lip or the outer sealing lip; it calls for a wedge applying radial loads to the "inner and outer sealing lips" (emphasis added). The issue is whether a wedge can apply radial loads to both lips if it only contacts one lip. Hydraflow concedes that if the wedge does not contact a lip, the wedge itself does not apply a radial load to it. (P2. Memo, p. 13; P2. R.Memo, p. 4.) Dr. James E. Brunton, Hydraflow's patent law witness, agreed that the converging wall of the inner portion of the wedge would have to touch the wall of the inner sealing lip to exert a radial load on it. (Perlman Aff. P 13, exh. 6, p. 61.)

In short, Claim 1 calls for a wedge "applying radial loads to said inner and outer sealing lips." To apply a radial load, the wedge must contact the lip. Claim 1, by its own language, calls for a seal assembly in which the wedge contacts both lips.

The more specific language at issue in Claim 1, that explains the cooperation between the wedge and circular recess in detail, supports this conclusion:

the radially inner wall of said wedge means converging more rapidly relative to the inner wall of said circular recess than the radially outer wall of said wedge means converges relative to the radially outer wall of said circular recess whereby the radial load applied to said inner sealing lip is greater than the radial load applied to said outer sealing lip.

(Ralabate Aff. P 2, exh. 1, Col. 6, lines 17-25; P2. Facts, exh. E, Col. 6, lines 17-25.) This merely recites how the wedge applies the radial loads to the inner and outer sealing lips -- the wedge applies a greater load to the inner lip than to the outer lip. To apply the greater load to the inner lip, the wedge must contact it. To apply the lesser load to the outer lip, the wedge must contact it. The plain language of Claim 1 calls for a seal assembly with a wedge that contacts an inner lip and an outer lip.

b. Specification

The specification is also relevant to ascertain the meaning of Claim 1. ZMI Corp., 844 F.2d at 1579. "Claims must be read in view of the specification, of which they are a part." Markman, 52 F.3d at 979 (citing Autogiro Company of America v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 397 (Ct. Cl. 1967)). It is, however, "the claim, not the specification, [that] measures the invention." Environmental Designs, Ltd. v. Union Oil Co. of California, 713 F.2d 693, 699 (Fed. Cir. 1983) (citing Continental Paper Bag Co. v. Eastern Paper Bag Co., 210 U.S. 405, 420, 28 S. Ct. 748, 752, 52 L. Ed. 1122 (1908)), cert. denied, 464 U.S. 1043, 104 S. Ct. 709, 79 L. Ed. 2d 173 (1984); SRI International, 775 F.2d at 1118. "For claim construction purposes, the description [in the specification] may act as a sort of dictionary, which explains the invention and
may define terms used in the claims." Markman, 52 F.3d at 979.

Hydraflow contends that Enidine has wrongly argued that Claim 1 must include an unstated limitation found in the specification, namely that the wedge must contact both lips. (P. Memo, p. 6.) This contention is inapposite, however, since, for the reasons explained above, the plain language of Claim 1 does contain that limitation.

Enidine's argument, more accurately stated, is that the '745 patent's specifications and drawings simply confirm what the claim itself makes clear, that the wedge must contact both lips. The patent's background section explains that

the present invention provides a seal assembly in which a single, integral, annular wedging element applies radial loads to the inner and outer lips of a seal in such a way that the loads applied to the respective sealing lips are applied uniformly around the circumferences of the individual lips, but as between the two lips the loads are proportioned so that the inner lip on the dynamic side of the seal receives a greater load than the outer lip on the stationary side of the seal.

(Ralabate Aff. P 2, exh. 1, Col. 2, lines 45-50; P2. Facts, exh. E, Col. 2, lines 45-50.) The specification explains how the wedge applies radial loads to the inner and outer sealing lips:

At the base of annular inner wedge portion 40 where converging walls 74 and 76 are furthest apart, the wedge portion 40 is thicker than the distance between walls 54 and 56 at the top of the U-shaped recess so that as integral wedge portion 40 advances into circular recess 52 converging walls 74 and 76 contact diverging walls 54 and 56 at the top of the U-shaped circular recess 52 so as to force the outer-most edges 62 and 66 into contact with the respective adjacent structure to accomplish the intended sealing function. The diameters of circular recess 52 and annular inner wedge portion 40 are chosen so that converging walls 74 and 76 contact diverging walls 54 and 56 about simultaneously as wedge portion 40 is urged by helical compression spring 42 into circular recess 52. The converging wall 74 thus exerts a greater radial load on sealing lip 60 than is exerted by converging wall 76 on sealing lip 64.

(Ralabate Aff. P 2, exh. 1, Col. 4, lines 23-26, 41-43; P2. Facts, exh. E, Col. 4, lines 23-26, 41-43.) Figure 2 in the '745 patent, to which this specification refers, shows the inner side of wedge contact the inner sealing lip, and the outer side of the wedge contact the outer sealing lip.

The explanation in the specifications, with the corresponding drawing, that the wedge contact both the inner and outer sealing lips confirms the plain language of Claim 1. 6

--- Footnotes ---

6 A court may also look to the prosecution history to interpret a claim. ZMI Corp. 844 F.2d at 1580; McGill, Inc., 736 F.2d at 673. The parties barely addressed this factor beyond noting that the issue of contact between one seal lip and the wedge was not mentioned during prosecution of the application leading to the '745 patent. (P2. Memo, p. 20; D2. Memo, p. 19.)

--- End Footnotes ---

c. Other Claims in the '745 Patent

Also relevant to claim interpretation are the other claims in the patent. SmithKline, 859 F.2d at 882. Hydraflow argues that certain limitations in Claims 3 and 4 of the '745 patent indicate that Claim 1 does not exclude a structure in which the wedge only contacts one seal lip. (P2. Memo, pp. 14-15, P2. R.Memo, p. 5.) Claim 3 recites "an integral annular wedge means for contacting both said radially inner and radially outer sealing lips." Claim 4 also recites "an integral annular wedge means for contacting both said inner and outer sealing lips." (Ralabate Aff. P 2, exh. 1, Col. 7, lines 8-10, Col. 8, lines 2-3; P2. Facts, exh. E, Col. 7, lines 8-10, Col. 8, lines 2-3.) Under the doctrine of claim differentiation, Hydraflow argues, the "both" limitations of Claims 3 and 4 should not be read into Claim 1.

The concept of claim differentiation

states that claims should be presumed to cover different inventions. This means that an interpretation of a claim should be avoided if it would make the claim read like another one. Claim differentiation is a guide, not a rigid rule. If a claim will
bear only one interpretation, similarity will have to be tolerated.

Autogiro, 384 F.2d at 404; see also Laitram Corporation v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir. 1991). In other words, "when a patent claim does not contain a certain limitation and another claim does, that limitation cannot be read into the former claim in determining ... infringement." SRI International, 775 F.2d at 1122 (citing Fromson v. Advance Offset Plate, Inc., 720 F.2d 1565, 1570 (Fed. Cir. 1983); Environmental Designs, Ltd., 713 F.2d at 699; Palumbo, 762 F.2d at 977). Claim differentiation serves to avoid interpretations that would render other claims superfluous. SRI International, 775 F.2d at 1122.

According to Hydraflow, Claims 3 and 4, not Claim 1, require the wedge to contact both sealing lips. To read that limitation into Claim 1, Hydraflow argues, would render the claims redundant. Claim 1, however, bears only one interpretation. It requires, for reasons already explained, that the wedge apply radial loads to, and therefore contact, both sealing lips. This one interpretation, which the specifications and drawings clearly support, does not render any other claims superfluous. Claim 3, for example, recites a guide means and changes and in the respective radial loads as the wedge moves axially toward the seal. Claim 4 calls for a snubber including a cylinder and rod with means for acting on fluid to dampen the movement between the rod and piston. The fact that Claim 1 recites a wedge applying radial loads to the inner and outer sealing lips does not render Claims 3 and 4 superfluous.

d. Conclusion

Construing the plain language of Claim 1, the specifications and drawings, and other claims in the patent, this Court must interpret Claim 1 to exclude a seal assembly in which the wedge contacts, and thus applies a radial load to, only one of two sealing lips. Hydraflow asks this Court to find that the '745 patent teaches that there are two sources for the radial loads applied to the seal lips, the loads which result from stretching and compressing the respective lips, and the loads which the wedge applies. (Soom Dec. P 6.) The specifications do clearly contemplate such an "interference fit" of the sealing lips. (Ralabate Aff. P 2, exh. 1, Col. 3, lines 48-61; P2. Facts, exh. E, Col. 3, lines 48-61.) The question is what bearing, if any, this has on the teachings of Claim 1.

Claim 1 calls for a wedge, cooperating with a circular recess, "for applying radial loads to said inner and outer sealing lips." Enidine responds that loads generated by seal lips are applied "to" something else, not to the seal lips themselves. Even if someone skilled in the art would understand that loads generated by the lips are applied "to" the lips as Hydraflow contends, the issue is not dispositive. Whether lips in an "interference fit" apply loads "to" themselves or "to" something else, the language of Claim 1 teaches that the wedge must apply loads to the inner and outer lips. Claim 1 speaks of radial loads that a wedge applies to the sealing lips, not radial loads the lips may apply to themselves. The specifications fully support this teaching. They depict a wedge applying radial loads to both the inner and the outer lips, which themselves are stretched and compressed.

Contrary to Hydraflow's contention, the teachings of Claim 1 clearly require that the source of the load on the inner lip include a load applied by the wedge element. Since Hydraflow concedes that a wedge must contact a sealing lip to apply a load to it, Claim 1 does exclude a structure in which the wedge contacts only one of the two sealing lips.

The second step of Claims 1, 2, and 3 of the ‘234 patent is also in need of interpretation by the court. Step two reads as follows in the respective claims:

Claims 1 and 2: "applying radially directed forces to the septum to reseal the slit therein;"

Claim 3: "applying sufficient radially directed forces to the septum to reseal the slit therein preventing fluid flow therethrough;"

The court concludes that because the purpose of the radially directed forces in all three claims is to reseal, the radially directed forces must be strong enough to affect the center of the septum, thus causing the slit to reseal and not leak.
Throughout the specification, plaintiff stressed the importance of having the slit reseal. For example, in column 1, lines 50 - 62, plaintiff discussed the reasons for strong resealability, including prevention of contamination and leakage. Again in column 2, lines 27 - 30, 32 - 35; column 3, lines 24 - 26; column 6, lines 19 - 26, 45 - 47; and column 8, lines 41 - 43, plaintiff discusses the use of radially directed forces to reseal.

Plaintiff in this case has presented testimony, again from Vaillancourt, that the presence of axial forces may meet the claim requirement of "radially directed forces" in that axial forces will result in radial forces that reseal. The court does not agree with such a broad interpretation of radially directed forces. As mentioned above, it is clear that axial and radial forces have distinct purposes in this patent. Nowhere in the specifications or prosecution history is it mentioned that axial forces alone can create a reaction that leads to resealing the slit. Indeed, as Sheehan pointed out, axial forces alone would urge the slit to remain open, since those forces push down on the edge of the septum to create the dome.

It is the radially directed forces -- forces emanating from the sides of the septum and directed inward toward the septum slit -- that reseal. Any radial force that comes from axially directed forces is a radially resultant force rather than a radially directed force.

The '350 patent, entitled "Automated Clutch Control and Calibration", relates to method and apparatus for reengaging a clutch in a truck transmission system after the clutch has been disengaged. The essence of the invention is a way to shorten the distance the clutch has to move between events of engagement and disengagement. Defendants object to the Special Master's recommended construction on the basis that it expands the scope of the claim beyond that described and supported by the specification, and that it interjects indefiniteness and ambiguity in the asserted claims because one of ordinary skill in the art is not able to determine their scope and boundary.

The claimed invention purports to improve responsiveness of the clutch during clutch engagement by defining clutch control parameters corresponding to an "approach point" as well as a "touch point". The touch point, also called the point of incipient engagement, is a theoretical point at which the clutch plates just begin to touch. The '350 patent describes touch point as the point "at which the master clutch just beg[ins] to transmit torque." This point cannot be observed directly because the clutch plates are enclosed in a bell housing. In addition, torque transfer cannot be directly measured. The term "touch point" was known to those skilled in the art at the time the '350 patent was issued. There is no agreed upon standard for determining touch point, and different prior art methods produce inconsistent results.

The term "approach point" is not a term of art used by automotive engineers. The '350 specifications state that approach point is not the same point as the touch point. The Special Master's Report states that "the approach point is a point intermediate full disengagement and the touch point, preferably almost to the touch point." Defendant contends that the approach point is a single point, while the recommended definition encompasses an infinite number of possible approach points, including points that the prior art teaches are touch points. Both experts used illustrations which demonstrate that the same points described in the prior art as a touch point can be an approach point under the recommended definition. Defendants urge the court to reject the recommended definition because the '350 patent teaches that the touch point and approach point must be different points. Rather, defendants invite a claim construction which includes using the algorithm set forth in FIG 4 of the '350 patent for determining the touch point and approach point.

The Special Master specifically addressed defendants' concerns in his Report, emphasizing that limitations in patent specifications are generally not imported into the claims, and that issues of infringement and validity generally are separate from claim construction. The Report concludes that the '350 patent sets forth express definitions for approach point and touch point, and such definitions are clear enough so that one skilled in the art can easily understand what is being read in light of the patent specifications. The Special Master notes that the claim construction leaves the claims "broad" as sought by plaintiff, i.e. not limited to the specific calibration technique disclosed in the patent.

The Report goes on to consider the issue of indefiniteness, which would render a claim invalid if those skilled in the art would not understand the scope of the claim when the claim is read in light of the specification. Atmel Corp. v. Information Storage Devices, Inc., 198 F.3d 1374, 1378 (Fed. Cir. 1999); Personalized Media Communications, LLC v. ITC, 161 F.3d 696, 705 (Fed. Cir. 1998). In this case the experts are in direct confrontation about "indefiniteness" and how those skilled in
the art would view the matter. The Special Master concludes that under Federal Circuit precedent, such a validity challenge is ripe for consideration at trial. See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 911-14 (Fed. Cir. 2004).

This court adopts the Special Master's recommended claim construction without modification, as well as the recommendation to deny defendant's motion for summary judgment of invalidity for indefiniteness.

"About" and "Approximately"

The parties have requested that the Court construe the meanings of "approximately" and "about" in claims 8 and 11. These terms are closely related and appear in the same sections of the claims and therefore are addressed together.

Claim 8(b) states: "the heat treating step comprises the steps of heating the blank to approximately 1560 [degrees] F.; quenching the heated blank into a liquid salt bath at approximately 500 [degrees] F. for about 20 seconds; withdrawing the quenched blank from the salt bath and allowing it to air cool to room temperature; and tempering the cooled bank at approximately 300 [degrees] F." (6:17-23.)

Claim 11(b) states "the heat treating step comprises heating the blank to approximately 1560 [degrees] F.; quenching the heated blank into a liquid salt bath at approximately 500 [degrees] F. for about 20 minutes; and withdrawing the quenched blank from the salt bath and allowing it to air cool to room temperature." (6:35-40.)

"The word 'about' does not have a universal meaning in patent claims, and that the meaning depends on the technological facts of the particular case." Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1217 (Fed. Cir. 1995). Furthermore, the word "about," avoids a strict numerical boundary to the specified parameter. Id. Its range must be interpreted in its technologic and stylistic context. Id. The court in Pall considered how the term "about 5:1 to about 7:1" was used in the patent specification, the prosecution history, and other claims. Id. It is appropriate to consider the effects of varying that parameter, for the inventor's intended meaning is relevant. Id. Extrinsic evidence of meaning and usage in the art may be helpful in determining the criticality of the parameter, and may be received from the inventor and others skilled in the field of the invention. Id. (citing Markman, 52 F.3d at 980)). In Merck & Co., v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1371 (Fed. Cir. 2005), tasked with the construction of the word "about, "the court held that it should be given its ordinary meaning of "approximately."

Fisher-Barton urges that one of ordinary skill in the art would understand that the terms "approximately" and "about" permit reasonable ranges on either side for the times and temperatures stated and that the steps of the claimed process are not limited to the exact temperatures and time period recited. (Fisher-Barton Mem. 6.) Fisher-Barton relies upon the Turner Declaration as establishing that one with skill in the art would understand the temperatures to include plus or minus 10% of the stated temperature. (Id.) Thus, 500 [degrees] F would mean a range 450 [degrees] F. to 550 [degrees] F., 300 [degrees] F. would mean a range of 270 [degrees] to 330 [degrees] F. and 1560 [degrees] F. could vary between 1404 [degrees] F. and 1716 [degrees] F. (Id.)

Likewise, Fisher-Barton asserts that one skilled in the art of metallurgy would understand "about 20 seconds" in claim 8 as meaning plus or minus five seconds (15 to 25 seconds) and "about 20 minutes" in claim 11 as meaning plus or minus five minutes (15 to 25 minutes). (Id. at 7.) Fisher-Barton states that such ranges are well within the typical tolerances of the heat treating process. (Id.)

The Defendants claim that "approximately" should be construed to mean plus or minus five degrees. (Defs.' Opening Br. 16.) Thus, the 500 [degrees] F. quench temperature would have a range from 495 [degrees] F. to 505 [degrees] F. and the 300 [degrees] F. tempering temperature would have a range from 295 [degrees] F. to 305 [degrees] F. (Id. at 16-17.) The Defendants do not offer any construction of the range for the heating temperature of the metal.

Relying on the Krauss Declaration, the Defendants maintain that "about" with respect to the time in claims 8 and 11 should be construed to mean plus or minus 10%, which would mean a range from 18 to 22 seconds and a range from 18 to 22 minutes. (Id. at 17.) Krauss opines that one skilled in the art of metallurgy would consider a reasonable range for the
duration of the quench to be plus or minus 10% of the specified time. (Krauss Decl. P 27.) Krauss indicates that since claim 8:

appears to be aiming at martensite formation . . . it is important to allow the work piece to be in the quench long enough for the surface and interior of the work piece to equalize, but not so long as to allow for the formation of bainite or other non-martensitic structures. To allow the piece to stay in the quench much longer would result in the additional formation of bainite.

(Id.)

With respect to claim 11, Krauss avers that one skilled in the art would consider a reasonable range of plus or minus 10% of the specified time to be reasonable. He avers that to go below that time would create a high risk of preventing the austenite from fully transforming to bainite, and thus would allow the formation of other microstructures, such as martensite. (Id. at P28.) Krauss states that these other microstructures are certainly disfavored in trying to achieve a blade having the characteristics of high hardness and high toughness without tempering the blade once it has been cooled to room temperature. (Id.)

In response, Fisher-Barton asserts that Krauss offers a very narrow range of what "about" and "approximately" would mean to one skilled in the art. Fisher-Barton also relies upon the Declaration of Apolonio Ortiguera ("Ortiguera"). 10

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10 Ortiguera is a consulting metallurgist retained by Fisher-Barton. Ortiguera has 35 years of experience in metallurgy. The Court has considered the Ortiguera Declaration but does not find it helpful in resolving the issues presented because it contains unsupported conclusory assertions. See Phillips, 415 F.3d at 1318.

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In the Defendants' response, they state that given the accuracy of quench tank controls a skilled heat treater would read the language "approximately 500 [degrees] F" to mean plus or minus 5 [degrees] to 10 [degrees] F. (Defs.' Responsive Claim Construction Br. ("Defs.' Responsive Br.") 11.) They also proffer the Declaration of Glenn True ("True"). 11 The Defendants state that the specification and the claim language indicate that the close tolerances of their definition are the appropriate construction.

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11 True is the owner of Superior Metals Treating and Equipment Inc., located in Kansas City, Missouri. (True Decl. P 1.) Since 1964, True has been heat treating lawn mower blades using a variety of metals including 10B38 steel. (Id. at P 2.) Since 1972, True has treated lawn mower blades for defendant Frederick Manufacturing. (Id. at P 1.)

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Much of the evidence proffered on the meaning of "approximately" is extrinsic evidence. Having considered the varying opinions regarding "approximately" and what it means in the context of quenching, this Court finds the plus or minus 5 [degrees] F to 10 [degrees] F construction to be most persuasive. True is a person skilled in the art of heat treating steel blades and his opinion is consistent with the quenching range in the Handbook. Turner has attested to his reliance upon the Handbook (even though he has not relied upon it in his opinion of "approximately"). While Turner is skilled in the art and the inventor, his opinion as to the temperature range is a mere conclusion and no basis for his conclusion is explained.

Krauss's interpretation of "approximately" as meaning plus or minus 5 [degrees] is rejected as being a narrower temperature range than specified by the Handbook. The Defendants have not offered any evidence regarding the meaning of "approximately" when considering the temperature range in the heating process. But, patent terms are normally used consistently throughout the patent. Phillips, 415 F.3d at 1314. Thus, the Court adopts the 5 [degrees] to 10 [degrees] F range in interpreting the term "approximately" in claims 8 and 11 of the '114 patent.
In determining the meaning of "about" the Court notes that Turner testified at his deposition that attributing the meaning of five seconds to "about" that gives "a relatively small window of opportunity" to pull a rack of parts out of a marquenching tank and that "from a practical standpoint" you need "at least that much time for it to be workable." (Mansfield Decl. Supp.Defs.' Responsive Br. P 3, Ex. A. (Turner Dep.) 55.) Turner's explanation is the most persuasive of those offered and is therefore adopted. Since patent terms are to be construed consistently the Court construes "about" as follows; "about 20 seconds" in claim 8 means plus or minus five seconds (15 to 25 seconds) and "about 20 minutes" in claim 11 means plus or minus five minutes (15 to 25 minutes).

4. The term "approximately" in claims 8 and 11 of the '114 patent means plus or minus 5 [degrees] to 10 [degrees] F. 

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A. 35 U.S.C. § 112 - Definiteness

Every patent's specification must "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, P.2. The Federal Circuit has stated the standard for assessing whether a patent claim is sufficiently definite to satisfy the statutory requirement as follows: "If one skilled in the art would understand the bounds of the claim when read in light of the specification, then the claim satisfies section 112, paragraph 2." Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001) (citing Miles Labs., Inc. v. Shandon, Inc., 997 F.2d 870, 875 (Fed. Cir. 1993)). "Because the claims perform the fundamental function of delineating the scope of the invention, the purpose of the definiteness requirement is to ensure that the claims delineate the scope of the invention using language that adequately notifies the public of the patentee's right to exclude." Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1347 (Fed. Cir. 2005). "The statutory requirement of particularity and distinctness in claims is met only when [the claims] clearly distinguish what is claimed from what went before in the art and clearly circumscribe what is foreclosed from future enterprise." United Carbon Co. v. Binney & Smith Co., 317 U.S. 228, 236, 63 S. Ct. 165, 87 L. Ed. 232, 1943 Dec. Comm'r Pat. 758 (1942); see Morton Int'l, Inc. v. Cardinal Chem. Co., 5 F.3d 1464, 1470 (Fed. Cir. 1993) (claims must be "sufficiently precise to permit a potential competitor to determine whether or not he is infringing").

However, absolute clarity is not required, and only claims "not amenable to construction" or "insolubly ambiguous" are indefinite. See Datamize, LLC, 417 F.3d at 1347; Novo Indus., LP v. Micro Molds Corp., 350 F.3d 1348, 1353 (Fed. Cir. 2003); Honeywell Int'l, Inc. v. Int'l Trade Comm'n, 341 F.3d 1332, 1338 (Fed. Cir. 2003); Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001). Further, an issued patent enjoys a statutory presumption of validity, and clear and convincing evidence must be shown to invalidate a patent. See 35 U.S.C. § 282; Datamize, LLC, 417 F.3d at 1347-48; Budde v. Harley Davidson, Inc., 250 F.3d 1369, 1376 (Fed. Cir. 2001). "By finding claims indefinite only if reasonable efforts at claim construction prove futile, we accord respect to the statutory presumption of validity." Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001).

"In the face of an allegation of indefiniteness, general principles of claim construction apply." Datamize, LLC, 417 F.3d at 1348. Indeed, "the determination of claim indefinite is a legal conclusion that is drawn from the court's performance of its duty as the construer of patent claims." Personalized Media Comm., LLC v. Int'l Trade Comm'n, 161 F.3d 696, 705 (Fed. Cir. 1998). "Intrinsic evidence in the form of the patent specification and file history should guide a court toward an acceptable claim construction." See Datamize, LLC, 417 F.3d at 1348. Specifically, the court should consider the patent's prosecution history, which may reveal "how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution." Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005). In addition, a court considering an allegation of indefiniteness may rely on extrinsic evidence when construing the claims at issue. Datamize, LLC, 417 F.3d at 1348. Such extrinsic evidence may include "all evidence external to the patent, including expert and inventor testimony, dictionaries, and learned treatises." Markman v. Westview Instruments, Inc., 52 F.3d 967, 980 (Fed. Cir. 1995).

Here, the language in the '621 patent claimed as indefinite by Hamilton is that describing the numeric value of the dimensions of the slot and tongue of the purportedly universal buckle. Specifically, Hamilton contends that those dimensions are indefinite because each numeric value is proceeded by modifying language that makes it so ambiguous as to prevent one skilled in the art from determining the scope of the '621 patent. The language in the claims at issue is the
the tongue section having a thickness of less than approximately 0.13", an overall width of less than approximately 0.8", and a front wall portion having a width of less than approximately 0.23" the slot having an overall width of greater than approximately 0.53" and a length of greater than approximately 0.99".

Claim 1 of the '621 patent. That language is present claims 1, 12, 19, 21, 25, 28 and 35 - all of the independent claims. Hamilton asserts that the use of the modifiers "less than approximately" and "greater than approximately" in those claims is vague, imprecise and internally inconsistent.

Looking first to the intrinsic evidence, the Court is unable to determine what numeric values would fall within the scope of the dimensions specified in the patent. It is clear from the patent prosecution history that O'Neill sought to distinguish his buckle from Ellwanger on the basis that Ellwanger merely taught a "universal buckle designed to fit almost all of the automobile and truck seatbelts manufactured today" and the '621 patent actually taught the numeric values of the dimensions necessary to achieve universality. However, O'Neill's argument that "a mere assertion of universality of a device does not make it so" applies equally to the '621 patent; the mere assertion that certain dimensions achieve universality does not make it so. Especially, here, where the dimensions specified in the claims themselves belie a clear determination of their numeric values. Moreover, the only true limitation to the dimensions specified in the '621 patent and the prosecution history is that those dimensions be within a range to allow universality. Because the Court cannot construe the numeric value of the dimensions of the tongue and slot of the purportedly universal buckle described in the '621 patent by looking solely to the intrinsic evidence, the Court must look to the extrinsic evidence.

A primary piece of extrinsic evidence before the Court is the testimony of the inventor himself. During O'Neill's deposition, Hamilton's counsel attempted to ascertain the numeric value of the outer boundaries of the dimensions in the independent claims. For example, counsel asked Hamilton whether a buckle with a tongue section of an overall width of 0.848" would fall within the claim language of "an overall width of less than approximately 0.8." O'Neill replied that it would. In fact, O'Neill replied that any measurement that would not cause fit failure would fall within the claims of the patent. Hamilton testified that: "On this device it is the function that is critical. It has to perform its intended function once its put into the female receiver. For this device the dimensions are actually non-critical as long as the device performs the way its intended to perform." 14 O'Neill went on to explain that: "So the wording approximately was used for a couple reasons. One, to prevent or discourage somebody from attempting to design around by changing the dimension by several thousandths or even a few tenths - hundredths rather, but also to allow for normal manufacturing tolerances." 15 Finally, the following exchange took place:

Q: What I want to find out is when you use the term with respect to tongue width less than approximately 0.8 inches, how far does that go on either side? Where is the proper line?

A: I guess, David, it doesn't really set a line. There is, when you're dealing with tolerances, you know, a tolerance would have to be defined because I had no belief manufacturers would tell me the design and dimensioning and the tolerancing of their systems, assuming that they would consider that proprietary in nature. I had to design a male to fit all manufacturers' buckles, and when I say all, just for the record, I'm talking the narrower design in figure Exhibit 2, the lower photograph, the narrow design. 16 But, you know, the word approximately is intended to again, because I don't know the manufacturers' dimensioning, I don't know what they use for tolerances, the word approximately is intended to allow tolerance and latitude in design, the key element being function, that when it is inserted into the female portion of the buckle system that it fits and functions as intended, okay?

* * *

Q: With respect to less than approximately 0.8, how far in either direction can they go and not have their product be read upon by your patent claim limitation of less than approximately 0.8?

A: They could go to the point in either direction that it causes fit or function failure.

February 20, 2007 deposition of O'Neill at 96-97. Accordingly, O'Neill's deposition does not assist the Court in construing or limiting the numeric value of the dimensions in the patent, other than limiting those dimensions to a mere assertion of
universality. Indeed, it appears that O'Neill has attempted to use assertions of numeric values in describing the dimensions of his buckle to achieve patentability over prior art, but also attempted to use the words "greater than approximately" and "less than approximately" to have his patent read on all universal buckles that function properly. Further, to the extent that O'Neill has asserted that the term "approximately" is used to account for manufacturing tolerances, he has testified that he is unaware of what the limitations of those tolerances would be and has provided no evidence to establish the limitations of such tolerances. Thus, that explanation does not assist the Court in its determination of the definiteness of the '621 patent.

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13 February 20, 2007 deposition of O'Neill at 89.
14 February 20, 2007 deposition of O'Neill at 89.
15 February 20, 2007 deposition of O'Neill at 89.

16 The product actually sold by Hamilton contained two buckles, one with a long and narrow shape and intended for use with newer vehicles, and one with a shorter and wider shape, for use with vehicles produced prior to the mid-1990s. At his deposition, Hamilton asserted that the '621 patent did not read on the shorter and wider buckle. However, O'Neill did not otherwise limit the coverage of '621 patent, and did not explain that limitation or its numerical significance, other than to state that his patent was intended to read on seat belt buckles of vehicles produced prior to the mid-1990s. Moreover, such a limitation is not contained in the intrinsic evidence.

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In addition to the testimony of O'Neill, the Court has before it the report of Hamilton's expert, Herbert Joe, M.A., J.D., LL.M. Joe gives the opinion that the '621 patent is invalid as indefinite under § 112 based upon the use of the modifiers "greater than approximately" and "less than approximately." Specifically, the expert explains his reasoning as follows:

The points about the vagueness and internal inconsistencies of the words in the alleged O'Neill patent claims (and specification), and the variable imprecision in the measured values thereof are that they effectively invalidate the patent. Specifically, because one or more claims includes a measure of a parameter and there is more than one method to measure that parameter, where the different methods of measurement achieve different results, the O'Neill claims are, in my opinion, invalid for indefiniteness under 35 U.S.C. § 112. 17

For example, in Claims 1, 12, 19, 21, 28 and 35 (all of Mr. O'Neill's independent claims), the tongue section is described as "having . . . an overall width of less than approximately 0.8", . . . " (italics added).

* * *

However, to give a measurement of "less than about (or approximately)" or "greater than about (or approximately)" is not intuitive, not common sense and can reasonably lead to different results. For example, it is not illogical to conclude that (in our example with the 0.8" value) "less than about" 0.8" yields a measurement of 1) any value less than but not including 0.8" because of the phrase "less than" but without the phrase "or equal to", 2) any value less than or equal to 0.8" because of the phrase "less than" and the word "about", and 3) any value less than more or less than 0.8", including values just "greater than" 0.8" because a value greater than 0.8" gives import to the chosen word "about" (or approximately). (However, to give import to the word "about" can mean more or less than 0.8" in this example, but then that would seem to vitiate the import of the "less than" the example value of 0.8").


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17 [footnote in expert report] Honeywell Int'l, Inc. v. Int'l Trade Comm'n, 341 F.3d 1332 (Fed. Cir. 2004). However, if values encompassed by the claim language can be calculated or measured, so that the claim is not "insolubly ambiguous," the claim is not invalid for indefiniteness. Marley Mouldings, Ltd. v. Mikron Indus., Inc., 417 F.3d 1356 (Fed. Cir. 2005).
Accordingly, Hamilton has succeeded in carrying its burden to establish by clear and convincing evidence that the '621 patent is indefinite. The dimensions of the '621 patent are insolubly ambiguous and incapable of construction by the Court. O'Neill did not meet the statutory requirement of particularity and distinctness in the claims of the '621 patent because those claims do not "clearly distinguish what is claimed from what was done before in the art" and do not "clearly circumscribe what is foreclosed from future enterprise." United Carbon, 317 U.S. at 236; see Morton Int'l, 5 F.3d at 1470 (claims must be "sufficiently precise to permit a potential competitor to determine whether or not he is infringing").

This case is distinguishable from Ortho-McNeil Pharm., Inc. v. Kali Labs., Inc., - F. Supp. 2d -, 482 F. Supp. 2d 478, 2007 U.S. Dist. LEXIS 25459, 2007 WL 1071940 (D.N.J. April 5, 2007), in which the court construed "about 1:5" to encompass the specific numerical range of 1:3.6 to 1:7.1. In Kali, the court was able to definitely construe that numerical range because the specification in the patent read over a ratio of the subject pharmaceutical mixture covering - in terms of efficacy - a 95% statistical confidence interval. Kali, 2007 U.S. Dist. LEXIS 25459, 2007 WL 1071940; see Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs. Ltd., 476 F.3d 1321 (Fed. Cir. 2007). The patentee then presented expert extrinsic evidence that the term "about" encompassed the statistical variation of efficacy to that 95% confidence interval, an interval that experimentation showed consisted of a definite range of ratios from 1:3.6 to 1:17.1. Kali, 2007 U.S. Dist. LEXIS 25459, 2007 WL 1071940. Here, the specification of the '621 patent contains no benchmark similar to the 95% confidence interval present in Kali and O'Neill has presented this Court with no way to definitely gauge the numeric value of the dimensions of his universal buckle. Moreover, the use of "less than approximately" and "greater than approximately" in the '621 patent adds a level of ambiguity not encountered by the Kali court, which simply interpreted the modifier "about."

Additionally, this case is distinguishable from Orthokinetics, Inc. v. Safety Chairs, Inc., 806 F.2d 1565 (Fed. Cir. 1986), in which the Federal Circuit found that a claim not invalid as indefinite that contained the following claim language of an orthopaedic chair for use in automobiles: "wherein said front leg portion is so dimensioned as to be insertable through the space between the doorframe of an automobile and one of the seats thereof." In Orthokinetics, the court reasoned that: "The phrase 'so dimensioned' is as accurate as the subject matter permits, automobiles being of various sizes. As long as those skilled in the art realized that the dimensions could be easily obtained, § 112, 2d P requires nothing more. The patent law does not require that all possible lengths corresponding to the spaces in hundreds of different automobiles be listed in the patent, let alone that they be listed in the claims." Id. at 1577. That reasoning clearly indicates that the device in Orthokinetics would be manufactured in varying lengths depending upon the automobile in which the user of the device intended to place it. In stark contrast, the universal buckle in the '621 patent was designed and intended for the explicit purpose of creating not multiple buckles of varying dimensions, but a single buckle that would fit universally in the female portion of any automobile seatbelt buckle. In addition, the numeric values of the dimensions in the '621 patent are particularly critical to its validity, because it is undisputed that those dimensions are what made it patentable. 18 Indeed, if those dimensions read on any buckle that could be termed "universal", then they actually have no meaning. As such, the patent is invalid as indefinite.

18 The only material difference between the '621 patent and the Snyder and Ellwanger patents is the inclusion in the '621 patent of the numeric values of the dimensions of the universal buckle. See February 20, 2007 deposition of O'Neill at 161. As the Court will explain in the next section, the '621 patent is invalid for obviousness because it is indistinguishable from the prior art, especially because the dimensions in the '621 patent are indefinite and may only be construed as a mere assertion of universality.
follower plate surface that would face the confronting surface. The Plaintiff avers that the term should be construed as
meaning coplanar within the limits of machine tolerances. See Potter Dep. at 215. The Defendants contend that the claim
limitation is indefinite such that one could not determine what falls within and what avoids the claim limitation. They
concede, however, that "to the extent that one of ordinary skill would interpret this claim, it would be interpreted as being
limited to the roller axes of rotation being in the same plane as the face of the driven member plate within a relatively small
tolerance corresponding to the machine tolerances of a few thousandths or tens thousandth of an inch." The Court agrees.
The Defendants do not contest that this definition of the term "approximately coplanar," which the Court adopts, does not
encompass a difference of this amount exhibited in the Berger plate.

FOOTNOTES

4 Defendants Micro and Black Magic's Supplemental Mem. on Claim Interpretation and Invalidity under § 103 at 2 (Dkt #
98).
5 Id. at 3.

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B. Claim 10

The parties also disagree on the proper construction of claim 10. The court repeats claim 10 here for ease of reference:

In a pull-type harvesting machine as claimed in [claims 1-9], said steering structure including telescoping linkage having
a front pivotal connection with the tongue at a point which is at least approximately equidistant from said opposite ends of
the telescopic section.

The parties join issue first on the meaning of the term "telescoping." Defendant argues that the term should be construed to
encompass only linkages that have overlapping sections, as if in overlapping cylindrical sections. Plaintiff argues that the
term is broader, and encompasses any sliding linkage allowing for the adjustment of length.

The court agrees with defendant and holds, as a matter of law, that the term "telescoping linkage" as used in the '859 patent
means a linkage having overlapping cylindrical sections. The ordinary meaning of the term telescoping is "to slide or pass
one within another like the cylindrical sections of a hand telescope." Webster's Third International Dictionary, 2351 (1986).
The court believes the term telescoping is simply too narrow to encompass the entire class of sliding linkages which allow
for the adjustment of length.

The parties apparently do not contest the meaning of the phrase "a front pivotal connection with the tongue at a point."
Defendant urges the court to construe this phrase to mean that the steering structure must be connected to the tongue at a
spot which allows for pivotal movement. Because defendant's proposed construction comports with the plain meaning of the
claim terms, the court adopts this construction as a matter of law.

Finally, the parties join issue on the meaning of the phrase "at least approximately equidistant." Plaintiff urges the court to
construe this phrase as encompassing a placement of the front pivotal connection at a point where the angles of the U-joints
in the telescoping drive line are approximately equal. Defendant urges the court to construe this phrase to require a
placement of the front pivotal connection at a point equidistant or within manufacturing tolerances of being equidistant to
the opposite ends of the telescoping drive line.

The court rejects both parties' proposed formulations. As a matter of law, the court construes the phrase "at least
approximately equidistant" to require a placement of the front pivotal connection "at least reasonably close to" the exact
point on the tongue that is equidistant from the opposite ends of the telescoping drive line. The ordinary meaning of the term
approximately is "reasonably close to." Webster's Third International Dictionary, 107 (1986). Neither parties' arguments
have convinced the court that any meaning of the term approximately other than its ordinary meaning should apply. The
ambiguity of the term, if any exists, is inherent in claim 10, and cannot be cured by any strained construction by the court.

III. Motion for Summary Judgment of Invalidity for Claim Indefiniteness

Defendant contends that the phrase "at least approximately equidistant" in claim 10 renders the claim fatally ambiguous pursuant to 35 U.S.C. § 112, P 2. This statute requires patent specifications to "conclude with one or more claims pointing out and distinctly claiming the subject matter which the applicant regards as his invention." Id. Whether a claim is invalid for indefiniteness under section 112 depends on whether those skilled in the art would understand the scope of the claim when the claim is read in light of the specification. North American Vaccine v. American Cyanamid Co., 7 F.3d 1571, 1579 (Fed. Cir. 1993) (citing Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576 (Fed. Cir. 1986)). "If the claims, read in the light of the specification, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the courts can demand no more." Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 624 (Fed. Cir. 1985), quoted in North American Vaccine, 7 F.3d at 1579-80. Compliance with the definiteness requirement is generally a question of law. North American Vaccine, 7 F.3d at 1579; Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 624 (Fed. Cir. 1985).

The court concludes that claim 10 is not invalid for indefiniteness. The court begins by noting that the mere use of the phrase "at least approximately" does not itself violate section 112. See Seattle Box Co. v. Industrial Crating & Packing, Inc., 731 F.2d 818, 826 (Fed. Cir. 1984) ("Definiteness problems often arise when words of degree are used in a claim. That some claim language may not be precise, however, does not automatically render a claim invalid."). (upholding "substantially equal to" claim language); see also Andrew Corp. v. Gabriel Electronics, Inc., 847 F.2d 819, 821 (Fed. Cir. 1988) (reversing district court's determination that terms such as "approach each other", "close to", "substantially equal", and "closely approximate" rendered claims fatally indefinite); In re Fisher, 57 C.C.P.A. 1099, 427 F.2d 833, 838 (C.C.P.A. 1970) (use of "at least" does not render claim indefinite); cf. Quantum Corp v. Rodime, PLC, 65 F.3d 1577, 1579 (Fed. Cir. 1995) (PTO allowed "at least approximately" language in amended claim without objecting on indefiniteness grounds). Moreover, every prior art patent cited on the face of the '859 patent uses terms in its claims that are very similar to, and in some cases even identical to, the "at least approximately" language.

The court believes that the "at least approximately equidistant" language, when read in light of the patent specification, reasonably apprises one of ordinary skill in the art of the scope of claim 10. Figure 6 of the '859 patent, read in conjunction with column 6, lines 35-40 of the specification, explains the geometric relationship envisioned by claim 10:

FIG. 6 shows the geometric relationship between the tongue 30, the drive line 90, and the steering structure 138. It will be noted that the connection point 144 of the steering structure to the tongue 30 is approximately equidistantly spaced from both of the U-joints 104 and 110.

'859 patent (emphasis added). One of ordinary skill would recognize, the court believes, that as the tongue 30 swings about its axis to position the operative cutting components of the machine in alternative positions, the "exact point on the tongue that is equidistant from the opposite ends of the telescoping drive line," see Hay & Forage, 1998 WL 420219, at *9, does not remain fixed. This is because one of ordinary skill would recognize that the geometry by which the exact center point is measured changes as the drive line telescopes. As the tongue swings, the distance between the connection point 144 and the U-joint 110 changes (in conjunction with the telescoping of the steering structure), but the distance between the connection point 144 and the U-joint 104 stays the same. Consequently, the imaginary exact point of equidistance moves a short distance away from the connection point 144. The court believes those of ordinary skill in the art would understand this geometry. The court also believes that this geometry reasonably apprises such artisans of the patent's scope.

Moreover, the "at least approximately equidistant" language is as precise as the subject matter permits. The precise limits of the distance away from which the front pivotal connection can stray from the exact point of equidistance and still be "at least approximately equidistant" from the opposite ends of the telescoping drive line or "at least reasonably close to," see Hay & Forage, 1998 WL 420219, at *9, the exact point of equidistance would be very difficult to determine. In the context
of the ’859 patent, "at least approximately equidistant" is sufficient to avoid invalidity for indefiniteness. See Andrew Corp., 847 F.2d at 823. ("The law imposes no obligation on a patent applicant to . . . set the claim limits at the precise technological edge of the invention. A claim is not fatally indefinite for failing specifically to delineate the point at which the change in physical phenomenon occurs."). A patentee has particular latitude in the use of relative terms in his claim where, as here, the prior art is remote from the claimed invention. 2 Cf. Amgen, Inc. v. Chugai Pharmaceutical Co., 927 F.2d 1200, 1218 (Fed. Cir. 1991) ("When the meaning of the claims is in doubt, especially when, as is the case here, there is close prior art, they are properly declared invalid. . . . In arriving at this conclusion, we caution that our holding . . . should not be understood as ruling out any and all uses of ["about" as a term of degree] in patent claims. It may be acceptable in appropriate fact situations.").

2 Defendant argues that the "Niemeyer" machine, which is the subject of cross motions for summary judgment not currently under consideration by the court, constitutes close prior art. The court disagrees because in the Niemeyer machine, the alleged "steering structure" contacts the tongue entirely or almost entirely at one end of the drive line; the connection is nowhere near the exact point of equidistance.

Defendant nonetheless contends claim 10 is invalid for indefiniteness. Defendant directs the court's attention to a number of cases purporting to support its position. In Amgen, 927 F.2d at 1217-18, for example, the Federal Circuit held invalid for indefiniteness a claim limitation reciting "a specific activity of at least about 160,000 IU per absorbance unit." Defendant, apparently seizing upon the analogy between "at least about" in Amgen and "at least approximately" in this case, argues that claim 10 is indefinite.

The court does not read Amgen as broadly as defendant urges. Unlike this case, the prior art in Amgen was very close. The patentee in Amgen had originally sought to patent claims with a specific activity limitation of "at least 120,000." Id. The PTO rejected this limitation because prior art disclosed a similar product having specific activity of 128,620. Id. In response, the patentee submitted the "at least about 160,000" language. Id. In the particular field at issue in Amgen, the recital of specific activity levels was such "an imprecise form of measurement with a range of error" that the "at least about" limitation did not sufficiently distinguish the invention over the close prior art. Id. Here, on the other hand, the record before the court does not indicate that the PTO had any problem with the "at least approximately equidistant" language because of close prior art. Moreover, the Niemeyer "prior art" referred to by the defendant is, in the context of this case, far more distant from the ’859 patent than the prior art in Amgen was distant from the patent there at issue. In Amgen "nothing in the specification, prosecution history, or prior art provided any indication as to what range of specific activity is covered." Id. Here, as the court explained above, the geometry demonstrated in the ’859 patent specification provides ample indication to those skilled in the art of the scope of the "at least approximately equidistant" language.

Defendant also believes that claim 10 is indefinite because the language, the specification, and the prosecution history provide no concrete indication of what numerical range is covered by the claim. Again, however, the court disagrees. Defendant finds support in Amgen for its theory that claim definiteness requires concrete numerical limits. Id. ("Nothing in the specification, prosecution history, or prior art provides any indication as to what range of specific activity is covered by the term 'about,' and . . . no expert testified as to a definite meaning for the term in the context of the prior art."). (emphasis added). Amgen does not support defendant's theory because in the context of Amgen, the existence of close prior art required more precision than is required here. See Andrew Corp., 847 F.2d at 823 ("It is the prior public knowledge--the "prior art"--by which patentability is tested. A patentee may set the metes and bounds of that which is sought to be patented, and it is not material whether the phenomena just outside those claim limits are qualitatively different from that which is claimed.").

Other cases upon which defendant relies for a requirement of concrete numerical limits have been either expressly or impliedly limited by the Federal Circuit. See, e.g., Helene Curtis Indus. v. Sales Affiliates, 233 F.2d 148, 154 (2d Cir. 1956) (patent invalid for indefiniteness where "nothing in the four corners of the patent defines" the relevant range), limited in Andrew Corp., 847 F.2d at 823 n.4 (district court misread Helene Curtis as requiring precise numerical range; "in . . . Helene Curtis the claim limitation fell in the midst of the prior art; . . . the claim in Helene Curtis was to an optimum range of a chemical property where the chemical was already known to have that property.") (emphasis added); see also Andrew Corp.,
847 F.2d at 823 ("To the extent that Brown-Bridge [Mills, Inc. v. Eastern Fine Paper, Inc., 700 F.2d 759, 763 (1st Cir. 1983),] may be read as holding, as the district court appears to have believed, that a claim is invalid unless it sets as a limitation the exact technological border of the invention, we expressly reject that holding."). 3

3 Although defendant did not cite Brown-Bridge, it is representative of the precise numerical limits approach the defendant would have this court adopt. See, e.g., Todd v. Sears, Roebuck & Co., 216 F.2d 594 (4th Cir. 1954).

The court believes an artisan of ordinary skill would understand the scope of claim 10 when it is read in light of the '859 patent specification. Accordingly, defendant's motion for summary judgment of invalidity for claim indefiniteness is denied.

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F. "approximately one and one half inches," "approximately nine and one half inches," "approximately one fourth inch," and "approximately eleven and one fourth inches"

All parties contend (i) that "approximately one and one half inches" should be construed to mean "no less than one and three-eighths inches and no greater than one and five-eighths inches," (ii) that "approximately nine and one half inches" should be construed to mean "no less than nine and three-eighths inches and no greater than nine and five-eighths inches," (iii) that "approximately one fourth inch" should be construed to mean "no less than one eighth of an inch and no greater than three eighths of an inch," and (iv) that "approximately eleven and one fourth inches" should be construed to mean "no less than eleven and one-eighth inches and no greater than eleven and three-eighths inches." The terms appear in dependent Claims 5-8 and independent Claim 19. The proposed constructions are in keeping with the ordinary and customary meaning of the words of the terms, and the claim language does not suggest any need for recourse to other sources of evidence. I therefore conclude that these related terms should be construed as the parties propose.

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G. "approximately one fourth to one fifth" and "approximately three fourths to four fifths"

All parties contend that "approximately one fourth to one fifth" should be construed to mean "no less than one fifth and no greater than one fourth," and that "approximately three fourths to four fifths" should be construed to mean "no less than three fourths and no greater than four fifths." The terms appear in dependent Claim 13 and independent Claim 19.

The proposed constructions ignore the presence of the word "approximately", which the parties would treat as meaningless (or as having the same meaning as "precisely"). This court does not construe a claim term as meaningless absent a sound evidentiary basis for so doing. See Merck & Co. v. Teva Pharm. USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so").

Applicable Federal Circuit case law establishes that the words "approximately" and "about" have functionally equivalent meanings within a patent claim. See, e.g., Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Labs., Ltd., 476 F.3d 1321, 1326 (Fed. Cir. 2007); Andrew Corp. v. Gabriel Electronics, Inc., 847 F.2d 819, 821-822 (Fed. Cir. 1988). With respect to the word "about," the Federal Circuit has held that the term "does not have a universal meaning in patent claims," but rather that "the meaning depends upon the technological facts of the particular case." Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1217 (Fed. Cir. 1995). The Pall court held that:

The use of the word "about" avoids a strict numerical boundary to the specified parameter. Its range must be interpreted in its technological and stylistic context. We thus consider how the term . . . was used in the patent specification, the prosecution history, and other claims. It is appropriate to consider the effects of varying that parameter, for the inventor's
intended meaning is relevant. Extrinsic evidence of meaning and usage in the art may be helpful in determining the
criticality of the parameter, and may be received from the inventor and others skilled in the field of the invention.

Id.; see also Conopco, Inc. v. May Dep't Stores Co., 46 F.3d 1556 (Fed. Cir. 1994) (discussing the criticality of the claimed
ratio to the invention and whether or not one of ordinary skill in the art would have read the modifier "about" expansively in
light of the intrinsic evidence); Ortho-McNeil, 476 F.3d at 1326-1327 (determining how narrowly to constrain the term
"about" by reference to the criticality of the claimed ratio to the patented invention).

Here, the only intrinsic evidence of the criticality of the ratios inheres in the fact that an approximate range has been
specified, rather than a single value. The only extrinsic evidence of criticality offered by either party lies in the fact that
through his counsel at oral argument, Messer expressed himself willing to stipulate to defendants' proposed constructions.
This evidence suggests that precision in the specified ratios is not significantly critical to the claimed invention.

For the foregoing reasons, I reject the construction proposed by the parties, and conclude instead that the term
"approximately one fourth to one fifth" should be construed to mean "no less than fifteen and no more than thirty percent," and
that the term "approximately three fourths to four fifths" should be construed to mean "no less than seventy and no more
than eighty-five percent."

H. Claim 8: "wherein said film is stretched approximately 200%"
The parties agree that this term should be construed as "the plastic film is stretched 200 percent, plus or minus standard
manufacturing tolerances." Defendant Sigma proposes to define the margin for manufacturing tolerances as +/-1% and
presented expert testimony in support of this narrow construction. Nothing in the specification or prosecution history
supports this narrow, numerical construction of the term "approximately." Cf. Cordis Corp., 339 F.3d at 1360 ("the question
presented here is whether there is anything in the prosecution history of either patent that justifies giving the 'substantially
uniform thickness' limitation an even narrower construction"). For this reason, the disputed term is construed as suggested
by Pliant without any further numerical limitation.

9. arbitrary child defined locations

This term appears in claims 1 - 24 of the '874 patent and in claims 1 - 20 of the '786 patent. The plaintiff proposes a
construction of "the child selects where to place the object on the work platform and can place the object at arbitrary
locations across the work platform. The object is sensed where the child places the object." The defendant counters with
"any location on the work platform chosen by a child." The parties' disagreement stems from whether an "arbitrary child
defined location" includes only those portions of the work platform that are capable of detecting an object (the plaintiff's
position) or whether the above term includes any location on the work platform, such as a "dead zone" (the defendant's
position). The plaintiff's definition of this term appears to incorporate other claim limitations. See '874 patent, cl. 1 ("the
graspable object capable of being placed and sensed in arbitrary child-defined locations on the work platform"). The court
concludes this term means "arbitrary locations on the work platform selected by the child."

1. "Arc Chamber"
The parties agree that the patentees acted as their own lexicographer by defining the term "arc chamber" as the area between
"a pair of spaced-apart electrodes . . . in which electric arcs are to be formed." '210 patent col. 2, 11. 59-61. Plaintiff
contends that this definition does not require elaboration. Defendant, by contrast, argues that the specification further limits
the term to the area between the cylindrical side surface of one electrode and the surface of another electrode.
Defendant's argument fails because it is based on the flawed premise that the '210 patent only covers plasma-arc systems that use cylindrical electrodes. This premise is plainly wrong. Claim 1 does not limit the shape that an electrode must take. Indeed, dependant claim 2 claims "the invention of claim 1 wherein said electrode is of generally rod shape so that the surface is cylindrical." '210 patent, col. 6, ll. 57-59. In cases like this, where a dependant claim contains a limitation that is not expressed in an independent claim, a presumption exists that the independent claim is not subject to the limitation described in the dependant claim. See Liebel-Flarsheim Co., 358 F.3d at 910. Defendant has failed to identify sufficient evidence to overcome this presumption. Thus, I reject its argument that the patentee's definition of arc chamber should be further limited to the area that lies between the cylindrical side surface of one electrode and the surface of another electrode.

--- Footnotes ---

2 This construction applies to claims 1-3, 13-16, 18, 19, 22, 24, 25, 26, 31, 33, 37-41 of patent 449.

3 The Court is not applying the shifting presumption framework set forth in Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193, 1204 (Fed. Cir. 2002) and discontinued by Phillips, 415 F.3d at 1324. The claims, specification, and prosecution history reveal that one of ordinary skill in the art would understand arcuate to describe a lower portion that is curved like a bow or is arched. This definition does not broaden the meaning of arcuate beyond the meaning provided by the claims, specification, and prosecution history. See Nystrom, 424 F.3d at 1144. The issue presented by the parties is whether the specification and prosecution history provide the additional limitation that the lower portion has no flat sections. In addition, Ameritex argues that the Court must construe arcuate to include this limitation to avoid reading on prior art.

--- End Footnotes ---

Imposing limitations from the specification into claim terms.

Section 112 requires a patent to contain a specification which describes the claimed invention in "full, clear, concise, and exact terms." 35 U.S.C. § 112. Therefore, words of the claims must be based on the context revealed in the specification. Phillips, 415 F.3d at 1315. The specification limits a claim term when it uses the term in a manner inconsistent with the term's ordinary meaning. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir 1996).

However, a patentee is not required to describe every possible embodiment of the invention in the specification. Phillips, 415 F.3d at 1323. Consequently, a court must not limit a claim term based on specific examples found in the specification. Id. The Court must determine if the context of the specification indicates that the patentee did not intend for arcuate to claim a lower portion with flat sections, but the Court must not limit arcuate based solely on the examples provided in the specification.

The specification refers to the lower portion of prior art as flat. 449 patent, col. 1, ll. 16-26. The specification then states that the flat lower portion would not maintain continuous flush contact with the deck when the mounting member was twisted to conform it to the curvature of the windshield. 449 patent, col. 1, ll. 31-34. In addition, twisting the member made screwing the flat lower portion onto the deck difficult. 449 patent, col. 1, ll. 37-41.

The specification subsequently states that "[i]n contrast to this system, the lower portion on the claimed invention is
arcuate." 449 patent, col. 1, ll. 64-67. The arcuate lower portion enables "continuous flush contact without gaps between the mounting member and the flat deck throughout the length of the member." 449 patent, col. 2, ll. 15-20. Continuous flush contact is at "different arcuate or circumferential positions along the arcuate lower portion." 449 patent, col. 2, ll. 22-25.

The lower portion illustrated in figures 2 and 3 is labeled arcuate and concave, and the lower portion is a semi-circle. 449 patent, col. 4, ll. 18-25. However, the specification states that "[w]hile the preferred concave lower portion hereof constitutes a semi-circular section, it will be appreciated that other lower portions having non-circular arcuate cross-sections may be used." Id. Figure 4 depicts a mounting member with a lower portion that has a flat and a curved outer section. 4 The flat section is labeled flat and the curved outer section is labeled arcuate. 449 patent, col. 6, ll. 9-18. The specification explains that the lower portion depicted in figure 4 can shift on its arcuate outer section to maintain continuous line contact between the deck and the mounting member. Id.

4 Figure 4 is used for mounting wing panels to a boat deck. Wing panels have steeper angles of inclination than windshields. 449 patent, col. 5, ll. 64-68 and col. 6, ll. 1-2.

Ameritex contends that the specification uses arcuate to distinguish the claimed lower portion from the lower portion on the prior art that had flat sections. In addition, Ameritex argues that the description of the flat section in figure 4 demonstrates that an arcuate lower portion is void of flat sections.

The specification does not state that an arcuate lower portion cannot consist of flat sections. Rather, the specification distinguishes an arcuate lower portion from a lower portion that is entirely flat on the basis that the arcuate lower portion enables the mounting member to shift while maintaining continuous contact with no gaps between the mounting member and the boat deck. In addition, labeling the flat section found on figure 4 as flat emphasizes that the arcuate outer section enables the mounting member to shift. Therefore, the Court holds that the specification does not indicate that the lower portion must be void of flat sections.

2 Limiting a claim term based on the prosecution history

Ameritex also contends that the patentee disclaimed lower portions with flat sections during the prosecution of patent 449. "[T]he prosecution history can often inform the meaning of claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." Phillips, 415 F.3d at 1317.

Independent claim 35 of patent 449 uses the phrase "shaped cross section" to describe the lower portion. The content found in claim 35 was originally set forth in claims 48 and 49. Examiner action dated January 21, 1988, P 4. Claim 48 described the lower portion as "shaped and engageable with the boat deck at different angular locations." Application dated May 27, 1987, p. 15. The examiner rejected independent claim 48 because a prior mounting member, the Loxcreen 5923, had a shaped lower portion, and this mounting member could engage the boat deck at different angular locations. 5 Examiner action dated January 21, 1988, P 4. To overcome this objection, the patentee added the limitations found in claim 49 to claim 48. Amendment dated January 26, 1988, p. 1-2.

5 Dependent claims 49 and 50 were rejected because they were dependent on rejected claim 48.
with the boat deck at various locations along the member depending on said angle. Application dated May 27, 1987, p. 15. With these additions, the examiner approved the claim. The patentee renumbered combined claims 48 and 49 to independent claim 35.

Nothing in the prosecution history indicates that the examiner required these limitations because only a lower portion with no flat sections could achieve them. Rather, the additional limitations distinguish the claimed mounting member on the basis of its ability to shift and maintain continuous contact with the boat deck, which eliminates the gaps caused by the Loxcreen's flat lower portion.

3 Limiting a claim term based on prior art

Ameritex argues that the Court must construct arcuate to claim a mounting member with a lower portion having no flat sections to avoid reading on prior art. If after applying all of the available tools of claim construction, the claim is still ambiguous, a court should choose the meaning that does not render the patent invalid. Phillips, 415 F.3d at 1327. When invoking this maxim, courts determine "whether it is reasonable to infer that the patent examiner would not have issued an invalid patent, and that the ambiguity in the claim language should be resolved in a manner that would preserve the patent's validity." Id.

However, this maxim does not allow a court to construe a claim differently from its plain meaning to preserve the claim's validity. Phillips, 415 F.3d at 1327. As explained above, the claims and specification provide the meaning for arcuate. Consequently, resort to this doctrine is unnecessary and improper. Id. at 1328. In addition, construing arcuate without imposing a limitation that the lower portion has no flat sections does not read on prior art. The mounting member's ability to shift at varying angles of inclination while its lower portion maintains continuous contact with no gaps between the lower portion and the boat deck sets the invention apart from the prior art.

The Court holds that the sum of the evidence does not reveal a limitation that arcuate claims a lower portion with no flat sections. Consequently, the Court construes a lower portion that is "arcuate in cross section" to mean a lower portion that is curved like a bow or arched.

5. "arcuate"

This phrase is found in claims 1, 8-9, 12-13, 16-17, 20, 22, 29-30, 33-34, 40-41, 43, 45-48, 52-53, and 55-75 of the '037 patent, and in claim 11 of the '255 patent. See Joint Statement, '037 and '255 Patents. Originally, plaintiffs contended that "arcuate" should be construed to mean "comprising a shape curved in the form of a bow," defendants contended that the phrase should be construed to mean "comprising a shape bent or curved in the form of a bow," and the intervenor contended that the phrase should mean "deviating from the axis of the longitudinal portion."

At the hearing on claim construction, however, the court indicated to the parties that it was likely to adopt plaintiffs' proposed construction, with a slight modification adding defendants' proposed term "bent." In view of the similarities between the court's likely construction and the parties' proposed constructions, the court requested that the parties attempt to reach agreement as to a jointly proposed construction. On November 12 and 13, the parties wrote separately to the court, indicating that they were unable to reach a compromise. Plaintiffs therefore now propose that the court construe "arcuate" as "comprising a shape bent in the form of a bow or curved in the form of a bow." Defendants, for their part, continue to propose that the court construe the phrase as "comprising a shape bent or curved in the form of a bow."

The court is completely flummoxed as to why, now that plaintiffs' proposed construction includes the term "bent," the parties have been unable -- and more likely, have refused -- to reach agreement on a proposed construction. The present constructions before the court are substantively indistinguishable, and any difference between the two is semantic-- as demonstrated by the fact that defendants' only objection to plaintiffs' new construction is that it "restates" defendants' proposed construction "in a longer, more convoluted way." As such, the parties' continued dispute calls to mind the classic phrase "you say tomato, I say tomahto," and warrants no greater analysis than this mainstream observation, and certainly no more of the court's time.
In view of the fact that there is no substantive difference between the parties' current proposed constructions, the court chooses to adopt plaintiffs' proposed construction and hereby construes "arcuate" as: "comprising a shape bent in the form of a bow or curved in the form of a bow."

B. The '728 Patent

The '728 patent uses nearly identical specification language and identical drawings as the 802 patent, although the wording of the claims is quite different. The dispute between the parties, however, is much the same. Here too, Plaintiff argues that certain cross-sections of the groove are "non-circular in part," meaning that most cross-sections will incorporate some circular curves (on the bottom of the groove) and some non-circular curves (on the sides of the tapered portion of the groove). Only the cross-sections very near the exit edge of the groove will be entirely non-circular. Plaintiff asserts that this construction is consistent with the disputed claim language, which describes the groove's cross-sections as "arcuate" and the groove as having "side walls having radii of curvature."

Defendants contend that these disputed terms describe an end tract with cross-sections that must be non-circular and elliptical throughout. According to Defendants, the claims of the '728 patent describe a groove with two different sections; one that has circular curvature that maintains a constant radius toward one end of the groove, and another section with "arcuate" cross-sections that decrease in radii (i.e., taper) toward the other end of the groove. Defendants acknowledge that the claims themselves do not describe where one section begins and the other ends, but argue that the specification and drawings indicate that the second section is indeed the same end tract as defined in the 802 patent and as evidenced by the network of cross-hatched lines in Figure 1.

In order to construe the meaning of "arcuate" as it is used to describe the cross-sections of the groove, the Court looks first to the actual wording of Claim 1 of the '728 patent. Significantly, the term "end tract" appears nowhere in the claim. Nor does the term "elliptical." Rather, the claim describes "an elongated body having an elongated groove therein," and goes on to describe the cross sections of the groove as being "arcuate" and decreasing in radius of curvature toward one end of the groove. Unlike the wording of the 802 claim, then, this claim does not limit its description to cross-sections of the end tract. It follows that, in contrast to the 802 patent, cross-sections of the groove in this patent do include the semi-circular curve of the bottom of the groove, as well as the non-circular portions of the groove where it tapers toward the exit edge.

The next question is whether the term "arcuate," as it applies to the non-circular portions of the cross-sections, means the same thing as "elliptical." Defendants assert that the term "arcuate" must describe elliptical cross-sections, because arcuate is not defined by the claim language, and the specification and drawings describe an end tract that is defined by elliptical shapes. Def.'s Brief at 18. Plaintiff argues that the term arcuate is broader than "elliptical" or "substantially elliptical." Indeed, Plaintiff chose to use the words "substantially elliptical" to describe the cross-sections of the end tract in the '728 patent, but chose different wording in this patent. Namely, C.M.L. used neither the term "elliptical," nor the term "end tract" in the '728 patent. It is well-established that "different words or phrases used in separate claims are presumed to indicate that the claims have different meaning and scope . . . ." Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999).

According to the actual wording of the claim, then, the term "arcuate" should be construed more broadly than "substantially elliptical." Whether the language of the specification changes this construction is a close question. Defendant argues that the specification in the '728 patent (which is nearly identical to that of the 802 patent) describes an end tract with cross-sections "made up of two arcs of equal ellipses, . . . which arcs are inferiorly radiused to each other by an arc of ellipse." 728 patent, Col. 2, Ins. 57-61. Defendants urge that "these repeated references to elliptical shapes demonstrates that the term arcuate must describe elliptical, and therefore, non-circular cross-sections in the end tract." Def.'s Brief at 18. The specification, however, is to be used only to interpret words or phrases of a patent claim, not to add to, or detract from, the language of the claims. See, In re Paulsen, 30 F.3d at 1480. Under this principle of claim construction, the Court concludes that the term "arcuate" includes, but is not limited to, elliptical cross-sections. To conclude otherwise would neglect Plaintiff C.M.L.'s choice of different language in the '728 patent.
This analysis also applies to the final disputed term, the requirement in Claim 3 that the groove have "side walls having radii of curvature." Here again, Defendants contend that this language means that the groove must have cross-sections that are elliptical and non-circular throughout. The Court finds, however, that this term, like "arcuate," does not restrict the shape of the side walls to that of an ellipse. Nothing in the claim language describe the side walls as being elliptical, and although the specification characterizes the end tract as being defined by elliptical shapes, the specification may not be used to detract from the actual wording of the claims. Therefore, the Court concludes that the term "side walls having radii of curvature" in Claim 3 does not require elliptical cross-sections.

For the foregoing reasons, the Court construes the term "arcuate contour" as:

Curved or arc shaped contour.

As to this phrase, the Court construes the following meaning: each magnet itself has a cross section that is curved like a bow, or arc-shaped. The drawings of the 787, 781, 386, and 539 patents support this interpretation even though the arcuate magnets are specifically claimed only in the 539 patent. The drawings in those four patents illustrate one example of the tool with elongated magnets and one with arcuate magnets. The Abstracts of those four patents support this interpretation as well, by explaining that magnets with an arcuate cross section are one of the options for the patented device, the other being, as discussed earlier, longitudinal magnets.

While this is not a technical term, out of an abundance of caution the Court also cites the Oxford English Dictionary definition of arcuate: "Curved like a bow, arc-shaped, arched," as additional support for this interpretation.

Claim 2:

1. "wherein the lining has an arcuate opening through which the spring operates on the blade"

Plaintiff proposes the construction of "an arcuate aperture in the lining through which force from the spring is transmitted to the blade to assist in opening the blade."
Defendant proposes the construction of "wherein the lining has an arc-shaped opening through which the spring imparts the rotational force onto the blade."

The court finds this to be clear on its face, except for the word "arcuate." The court's construction of this term is "wherein the lining has a curved opening through which the spring operates on the blade."

C. "arcuate path"

Precor proposes that this term be construed the same way Judge Zilly and the patent itself defines it, as "a circular oval or other such closed, curved path of travel." Fitness Quest proposes that this term be construed as "a circular path." The Court construes this phrase as Precor suggests, as "a circular oval or other such closed, curved path of travel."

Neither party argues that the term "arcuate" was used correctly in the patent. The term means "bent or curved in the form of a bow," Webster's Third New International Dictionary 115 (1981). This seems to contradict the inventor's own definition of the term: "Within the context of this application, 'arcuate' shall refer to a circular oval or other such closed, curved path of travel." Col. 3, lines 12-14. Regardless of the word's ordinary meaning -- which neither party argues for -- the Court must defer to the definition contained in the patent where the inventor has clearly set forth a definition. Johnson Worldwide Assocs. v. Zebo Corp., 175 F.3d 985, 990 (Fed. Cir. 1999) (patentee acts as his own lexicographer).

Fitness Quest's best arguments against this result are that (1) the patent figures, which include bell crank or fly wheel coupling members, teach a circular path, and (2) Miller refers to a "generally circular" path during patent prosecution. These arguments are unavailing. First, the figures are designed to illuminate, not limit, the patent. Amhil Enters. Ltd. v. Wawa, Inc., 81 F.3d 1554, 1559 (Fed. Cir. 1996). Second, the Court should not employ the patent prosecution history to aid interpretation where there is more reliable and less ambiguous evidence of the claim's meaning. Here, the inventor's lexicography in the specification serves that function.

b. area

LGD contends that the term "area" is indefinite because one of ordinary skill in the art would be unable to unambiguously discern the boundaries of the asserted claims. D.I. 1388 at P 168-170. In this regard, LGD contends that there is no disclosure on how the 30% of the area should be calculated. Alternatively, LGD contends that the term "area" refers to "material deposited and patterned on a substrate, such as glass, that covers part of the array substrate surface." Id. at P 171.

In response, AUO contends that "area" should be construed according to its ordinary meaning as a "specified region." D.I. 1384 at 23-24. Turning to the context of the claims more specifically, AUO contends that "area" refers to a region of the array substrate, specifically a region containing the dummy conductive patterns.

After reviewing the claim language in light of the specification, the Court concludes that the term "area" is not indefinite and should be construed according to its plain meaning as a "specified region." In the Court's view, this is consistent with the specification which explains that the substrate coverage "of the dummy conductive patterns themselves [is] 30% or more on an area of a specified surface." '629 patent, col. 5, ll. 55-61. Similarly, the specification explains that "dummy conductive patterns are formed on an area of a specified region where the dummy conductive patterns are formed." Id., col. 6, ll. 1-6. Thus, the Court concludes that an "area" is "a specified region," more specifically, the region where dummy conductive patterns are located. 
Braun contends that "arm" is a readily understandable term that does not require construction. (D.I. 74 at 24) If, however, it is construed, Braun proposes "a structure that extends of another part of the structure." (Id.) Terumo proposes that "arm" be construed as "a part of a structure, machine or an instrument projecting from a main part, axis, or fulcrum." (D.I. 97 at 10 & 11 n.7; Tr. at 111, 122) I recommend adopting Braun's proposed construction.

This conclusion essentially follows from my earlier recommendation that "extend[ing] distally of" be construed in a manner that does not require the arms to be attached to the proximal wall. I understand Terumo's proposed construction of "arm," and particularly the phrase "projecting from," to require attachment between the arms and the proximal wall (or at least attachment of the arms to some other structure). For the same reasons I rejected the requirement of attachment in connection with the "extend[ing] distally of" terms, I again reject it here. Reading a limitation of attachment into the claims would not be consistent with the claim language and is not supported by the specification. See generally Linear Tech. Corp. v. Int'l Trade Comm'n, 566 F.3d 1049, 1055 (Fed. Cir. 2009) (holding where "nothing in the claim language or specification . . . support[ed] narrowly construing the terms," terms would be "accorded their full scope").

Both parties cite to numerous dictionary definitions to support their proposals. (D.I. 71 at 12; D.I. 74 at 24) I find these extrinsic sources unhelpful to determining the proper construction of "arm" in the patent-in-suit. The proper construction here is one that accurately accounts for the context in which the claim term appears, in light of the entire patent, including all of the claims and the specification. Here, I conclude that the proper construction is the one proposed by Braun, which I recommend that the Court adopt.

Arm assembly

The Court construes “arm assembly” as “a structure having one or more constituent parts connected to and projecting from the support means.” At the hearing, the parties identified that the main dispute was whether “assembly” required a minimum of one or two constituent parts.

Defendants contend that the plain and ordinary meaning of “assembly” requires two or more parts. However, such a construction would contradict unasserted dependent claim 6, which states “an arm assembly is an elongate telescopic member.” ‘978 patent, Col. 9:25; see Phillips, 415 F.3d at 1314 (unasserted claims can help determine the meaning of a term as claim terms are usually used consistently). Claim 6 clearly defines that an arm assembly may be made up of one part, “an elongate telescopic member.”

The written description further supports a minimum of one constituent part. The Abstract refers to a particular embodiment where the arm assembly is “a single telescopic member.” ‘978 patent, Abstract. The Summary of the Invention also states “an arm assembly which supports the displays and which may comprise a single rotary arm, a pair of arms rotating about separate axes, a single arm locatable in two desired orientation [sic] or interchangeable arms of different length.” Id., Col. 1:30–34. Accordingly, the arm assembly does not require two parts. Therefore, the Court construes “arm assembly” as “a structure having one or more constituent parts connected to and projecting from the support means.”

Plaintiffs contend that the term "arm[s]" means "those portions of the auxiliary spectacle frame that extend outwardly and rearwardly of the side portions of the frame and secure the second magnetic members." JS, Exh. B at 38. Plaintiffs further construe the phrase "extending beyond" to mean "that at least some portion of each arm reaches past the rear side of the corresponding extension [of the primary frame]." Id. at 40.

Conversely, Defendant argues that the phrase in question means "an arm which extends back from the auxiliary spectacle
As in claim 12, the parties dispute whether the construction of the instant phrase requires that the arm not extend past the rear edge of the projection of the primary spectacle frame. As the Court has already held, the applicant never overcame the Examiner's objection that the arm cannot extend past the rear edge of the primary spectacle frame. Therefore, the court construes the phrase "an arm extended therefrom for extending beyond said rear side" in claim 16 to mean an arm which extends back from the auxiliary spectacle frame over the rear side of the side portion extension of the primary frame but not past the rear edge of the projection containing the magnetic members of the primary frame.

Plaintiffs contend that the term "arm[s]" means those portions of the auxiliary spectacle frame that extend outwardly and rearwardly of the side portions of the frame and secure the second magnetic members." JS, Exh. B at 15. Plaintiffs also contend that the phrase "extending toward and beyond" means that "at least some portion of each arm reaches in the direction of and past the rear side of the corresponding extension." Id. at 17.

Defendant argues that "an arm extended therefrom for extending toward and beyond said rear side" means "an arm which extends back from the auxiliary spectacle frame over to the rear side of the side portion extension of the primary frame." JS, Exh. D at 2. Defendant's construction of the instant phrase requires that the arms not extend "past the rear edge of the projection containing the magnetic members. . . ." Def.'s Opposition at 9:20-22. Defendant argues that its construction is supported by the prosecution history which, according to Defendant, reveals that the inventor canceled proposed Figure 8 (showing the arms extending past the projections) in response to a new matter rejection by the Examiner, and "eliminated all claims" encompassing that subject matter. Id. at 9:23-10:10. Plaintiffs argue that Defendant misreads the prosecution history because the Examiner ultimately withdrew his rejection. Pls.' Reply at 6:12-17.

In this case, during the April 4, 2001 interview, "the Examiner clarified his objection by stating that he was not objecting to a downwardly extending end portion per se, but to the fact that the end portion extends laterally past the rear edge of the projection [of the primary spectacle frame]." Interview Summary, 13 Koo Decl., Exh. E at 477. The Interview Summary then goes on to state why the applicant thinks "the original specification supports new Figure 8." Id. at 478. It then concludes by stating:

In any event, during the interview, the Examiner indicated that claims directed to the feature, "the end portion of the arm of the auxiliary spectacle frame extended downwards towards the projection [of the primary spectacle frame] for hooking on the primary spectacle frame," are supported by the original disclosure, and would not require a separate drawing figure to show this feature. Thus, the Examiner expressly waived the requirements of 37 CFR 1.83 with respect to this feature. Accordingly, Figure 8 and its corresponding description in the specification have been deleted.

Id.

- - - - - - - - - - Footnotes - - - - - - - - - - -

13 The Interview Summary was prepared by the applicant's patent counsel.

- - - - - - - - - - End Footnotes - - - - - - - - - - -

Based on the above, it is clear that the applicant, in canceling Figure 8, never overcame the Examiner's objection with regard to the end portion extending beyond the rear edge of the projection of the primary frame. Instead, the applicant accepted that limitation with the understanding that the arm could extend downward -- but still not past the rear edge of the projection of the primary spectacle frame. 14 See also Koo Decl., Exh. E at 460 (showing the annotations and the initials of the Examiner, H. Mai, with regard to Figure 8); Koo Decl., Exb. B at 12 (Figure 7 of the '545 Patent showing the arm not extending beyond the rear edge of the projection of the primary spectacle frame).
14 On February 13, 2003, Plaintiffs filed an Ex Parte Application for Leave to File Supplemental Brief on Claim Construction. In their proposed supplemental brief, Plaintiffs argue that the Federal Circuit's decision in Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572 (Fed. Cir. 1996), counsels against relying on the prosecution history to limit the claims as the Court has done in this instance. See Pls.' Proposed Supplemental Brief at 9-12. In Ethicon, the patent examiner had stated during the reissue proceedings that the "lockout mechanism" cannot be mounted on the "stapler," and that the original patent had disclosed a "lockout mechanism" mounted on the "cartridge." Id. at 1582 fn. 7. The district court erroneously interpreted the examiner's statement to mean that the "lockout mechanism" can only be mounted on the "cartridge." Id. The Federal Circuit disagreed and held that:

CLAIM 1 was properly rejected because it recited an element not supported by Fox's disclosure, i.e., a lockout on the stapler. It does not follow, however, that Fox's disclosure could not support claims sufficiently broad to read on a lockout off the cartridge.

Id.

The instant case is completely distinguishable. Here, the patent examiner held that the original disclosure did not support an end portion extending beyond the rear edge of the projection of the primary frame, but that it supported a downwardly extending end portion. By accepting the limitation imposed by the examiner, the patentee surrendered any matter that was covered by the examiner's limitation -- here, an end portion extending beyond the rear edge of the projection of the primary frame. See Schumer, 308 F.3d at 1313. Put differently, the patent examiner in Ethicon had stated that "X" cannot be "A," but can be "B." The district court held that "X" can only be "B" (and thus cannot be "A," "C," "D," etc.). In disagreeing with the district court, the Federal Circuit held the fact that "X" can be "B" but not "A" does not mean that "X" cannot be "C," "D," or even a "pink elephant," as along as such interpretation was not excluded by the prior art or prior disclosure. Here, the examiner stated that "X" cannot be "A," but can be "B," and the Court is simply holding that "X" cannot be "A."

Based on the above, the Court construes "an arm extended therefrom for extending toward and beyond said rear side" in claim 12 to mean an arm which extends back from the auxiliary spectacle frame over the rear side of the side portion extension of the primary frame but not past the rear edge of the projection containing the magnetic members of the primary frame.

C. Arm Means

Claim 1 further discloses:

a first arm means supporting one of said sealing and stripping means, a second arm means supporting the other sealing and stripping means,

This element also is written in means-plus-function format. The element recites the function of supporting the sealing/stripping means but does not describe any particular structure which performs this function. It is undisputed that the structures corresponding to the arm means are the arms 15 with respect to Embodiment 1 and the arms 45 with respect to Embodiment 2.

(c) "an arm pivotally connected to each of said hangers;"
Having reviewed the parties' proposed interpretations, the court construes element (c) as "an arm-like structure pivotally attached to each of said structures or things."

4. "armature wire having electrical insulation thereon"

This term appears in Claims 1 and 16. Plaintiff proposes a construction as follows: "an electrical conductor having an insulating coating used in the windings of an armature, such as magnet wire." Defendants assert that this phrase does not need to be construed because it is not dispositive of either the infringement or invalidity issues in the case. Alternatively, Defendants offer the following construction: "insulated wire of a moving part of an electromagnetic device." The Court finds that construction of the disputed phrase is appropriate given its significance within the relevant claims.

In support of their respective proposed constructions, Plaintiff points to the specification of the '015 Patent itself, and Defendants cite the definition of "armature" in Webster's College Dictionary (Random House 1991). The Federal Circuit has stated that a general purpose dictionary may be helpful in situations where "the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges." Phillips, 415 F.3d at 1314. However, as noted earlier, the Phillips court has emphasized the importance of the specification. Id. at 1315.

The specification for the '015 Patent states that the invention relates in part to "methods for fusing armature wires having an electrically insulating coating, e.g., magnet wires, to the tangs of a commutator." Buckingham Decl. at Ex. A, col. 1:8-10. The specification also refers to an "armature wire having an electrically insulating coating, e.g., magnet wire." Id. at col. 1:51-53. Consequently, the Court finds Plaintiff's proposed construction to be more consistent with the specification of the '015 Patent. The Court, therefore, shall construe "armature wire having electrical insulation thereon" as meaning "an electrical conductor having an insulating coating used in the windings of an armature, such as magnet wire."

B. Construction of the Claims

The essence of the dispute between the parties is whether the claims of the plaintiffs are construed to limit the patent grant to devices using a closure device fastenable at the surface of the backrest or equivalents, and, whether the claims are construed to require an armrest guard, or equivalents. Both of those disputed matters are within the scope of claim construction.

The plaintiffs' patent includes nine claims, with Claims Two through Nine dependent upon Claim One. Claim One includes a convertible seat including an adult size seat with a horizontal cushion for support, with the back support surface "having an aperture as an entrance to a cavity therein, with the operative having a closure means fastenable at the surface of the backrest." [emphasis added]. Claim One also includes "an armrest guard encircling the second cushion position when unfolded substantially parallel therewith and substantially vertical when folded."

The plaintiffs assert that the novelty of its claims are not dependent upon either the closure device (the method by which the smaller child's seat fits into the adult-sized seat) or the armrest. Relying upon the affidavit of Jerome Koziatek, the plaintiffs' assert that the "new and novel" aspect of the '216 Patent is the integration of a child seat into an adult seat.

The language of the claim itself, the prosecution history, and the prior art all refute the plaintiffs position. No fewer than three patents were issued prior to the '216 Patent which described various types of built-in automotive child seats. Previously issued patents clearly show an integrated child seat built into an adult size seat. The Bernier Patent (No. 3,094,354), for example, issued in 1963, shows one integrated child's seat which is pulled down from the back of an adult seat. (Appendix A) The same is true with respect to the Strahler Patent (No. 2,966,201) which describes an adult automotive seat which contains a built-in integrated pull down child's seat. (Appendix B)
Further, in the "Background of Invention" accompanying the '216 Patent, it is expressly noted that "the possibility of storing a child's seat within the normal built-in seats of the automobile has not been overlooked in the past..." (Def. Ex. 1, column 1, lines 39-43) The plaintiffs themselves admitted as much when, in response to the initial patent application, an amendment was submitted which noted that "the prior art does not show an aperture having a closure means fastenable at the surface of the backrest..." (Def. Ex. 5, p. 51)

Moreover, the plaintiffs noted to the PTO in their amended filing that "...none of the references [to prior patents] have a construction wherein the armrest is foldable to a position encircling the top of the second backrest in the folded position." (Def. Ex. 5, p. 51) Only after the plaintiffs submitted such limiting descriptions of the invention did the patent actually issue.

In this case, the precise language of the claim, the state of the prior patents, the prosecutive history of the original application, and the specifications of the claim, all dovetail in the process of construing the claim. Claim One clearly references an aperture having a closure means fastenable at the surface. The claim does not limit the precise closure means. The claim therefore includes snaps, zippers, buttons, and similar devices fastenable at the surface.

Other methods, such as an oversized cushion placed and maintained in the aperture through friction, are not fastenable at the surface but are instead held in place by pressure between the inserted cushion and the permanently placed surrounding seat cushion. Such pressure is asserted between the two at all points except the surface of the child's seat and the adult seat.

Claim One also includes specific reference to an armrest. The claim refers to an armrest which is substantially vertical when folded into the adult seat and substantially parallel to the child's seat when deployed. The armrest is described as "encircling the second cushion position when unfolded."

Under the heading "Background of the Invention," the patent document itself refers to "a secure guard encircling the child's upper body, a guard to receive the impact of the child's face in the event of a rapid deceleration." (Def. Ex. 1, column 1, lines 30-32) Further, in the description of the invention, it is noted that, "the armrest as it passes around the upper torso of the child serves as a guard for the descending face of the child if it [sic] should be thrown forward." (Def. Ex. 1, column 3, lines 18-21)

With respect to the elements of the claim at issue in this case, the Court construes the '216 Patent to require (1) a closure device fastenable at the surface which, through use of a zipper, buttons, hooks, or similar device, physically connects the surface of the backrest to the surface of the second cushion used as the foldable child's seat, and (2) an armrest guard which folds down from a vertical position and encircles the child, once such child is placed in the pulled down seat.

The parties agree that the arms of the header are generally parallel and form a channel for engaging the upper extremity of a boat windshield between the arms. The parties also agree that the arms have means along them for gripping the windshield. However, Ameritex contends that the meaning of arms must also include a requirement that a rail portion extends across the channel created by the arms.

The claims separately describe the limitations for the arms and the rail portion. The description of the arms does not include the required placement of the rail portion. One skilled in the art would determine the location of the rail portion by looking to the description of the rail portion and not the arms. Consequently, the Court finds that arms are structures that are...
generally parallel, form a channel between them for receiving the upper extremity of a boat windshield, and have means along the channel for gripping the windshield. The required placement of the rail portion is not included in the description of the arms.

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(10) "arms having a rearwardly directed end for securing a magnetic member" (claim 24)

Plaintiffs argue that "arms" means "those portions of the auxiliary spectacle frame that extend outwardly and rearwardly of the side portions of the frame and secure the pair of magnetic members." JS, Exb. B at 49. Additionally, Plaintiffs construe the term "end" to mean "the outermost or farthest portion of the arms in relation to the location of their attachment with the lenses or lens rims (if provided). The ends' of the arms include those portions that secure the pair of magnetic members." Id. at 52-53.

Conversely, Defendant construes the instant phrase to mean "arm[s] which extend backward from the side portions of the auxiliary spectacle frame, the arms include an end for securing a magnet." JS, Exh. D at 6. Defendant further argues that the arms cannot extend past the rear edge of the projection of the primary spectacle frame. Def.'s Opposition at 10:15-18.

The Court has already held that the phrase "magnetic member" means a permanent magnet or a ferromagnetic member 15 and that the arms cannot extend beyond the rear edge of the projection of the primary spectacle frame. Based on this, the Court construes the phrase "arms having a rearwardly directed end for securing a magnetic member" to mean arms which extend backward from the side portions of the auxiliary spectacle frame but not past the rear edge of the projection of the primary frame and which include an end for securing a permanent magnet or a ferromagnetic member.

15 It is also to be understood, as the Court already stated above, that at least either the first or second magnetic member must be a permanent magnet.

2. applying the principles

Much of Porta's argument for a four-sided frame rests on its reading of the '062's prosecution history. True to Phillips's warning about prosecution history, the '062's history exemplifies the ambiguity that makes such evidence less useful than the specification for claims interpretation. Phillips, 415 F.3d at 1317. Irrespective, Porta seizes on patentee counsel's response to the examiner to make its estoppel argument, a response that dealt with the examiner's complaints about unclear language in claims 4, 6, 10-19, and 21-24: "[a]s the examiner acknowledges, the Dousset reference [prior art noted in the application] clearly lacks the teaching of the singular rectangular-shaped frame." See doc. 111-7, p. 18. 3 From this, Porta extrapolates PODS "surrendered any claims for a carrier frame having anything but a singular rectangular-shaped frame." See doc. 110 at p. 18. But that exchange, when considered in context, fails to support a clear, decisive surrender of subject matter. See Aquatex Industries, Inc. v. Techniche Solutions, 419 F.3d 1374, 1382-83 (Fed. Cir. 2005) (prosecution history estoppel and argument-based estoppel require a showing of clear and unmistakable surrender of subject matter by amendments or arguments to examiner); Salazar v. Procter & Gamble Co., 414 F.3d 1342, 1344 (Fed. Cir. 2005) (same). If anything, the examiner's perception about the clarity of the '062's language highlights the inherent difficulties encountered by using words to define the property boundaries of a technical invention. See Festo, 535 U.S. at 731 ("Unfortunately, the nature of language makes it impossible to capture the essence of a thing in a patent application.").
2 Phillips directs a claim construction court to "consider the patent's prosecution history, if it is in evidence." 415 F.3d 1317 (emphasis added). It also defined the prosecution history as "the complete record of the proceeding before the PTO and includes the prior art cited during the examination of the patent." Id(emphasis added). Neither party has submitted the '062's complete file wrapper. Instead, the parties offered only select portions. See doc. 111-7.

3 The examiner's report or documentation of his actions are not part of the record. The parties have submitted instead the patentee's response and characterization of the examiner's actions.

Initially, claim 29 appeared as claim 22. The examiner rejected that claim and others (4, 6, 10-19, and 21-24) because its language made "the limitations regarding the frame, carrier frame, and the carrier . . . unclear." See doc. 111-7 at pp.7, 16. Patentee's counsel answered the rejection asserting the examiner had misconstrued the prior art and the teaching of Dousset in particular. Unlike the '062' device which integrated frame, container, and transport vehicle in a connected unit, Dousset required "specially designed containers" so that spindles or pins could be secured to the corresponding female connections on the container. Id at 17-18. Dousset used two end-fitted hydraulic jacks (portals) with transverse frame elements to lift the container. The container's longitudinal frame elements added structural support for lifting (the lifting apparatus had no longitudinal support elements). The operator had to position these hydraulic jacks to and from the container by hand; thus, Dousset did not offer an easy and safe method for integrating the lifting mechanism, container, and transport vehicle. Nothing from Porta's quoted exchange supports its estoppel argument. Besides, the comments miss the clarity needed for surrendering all but a four-sided frame, particularly given patentee's counsel's prefatory remarks to the examiner: "[the applicant by amending claims was] not intending in any manner to narrow the scope of the originally filed claims." Id at p. 16.

Instead of surrendering subject matter, these remarks, when considered in the context of the specification, highlight the prior art's shortcomings and the '062's gains. Namely, whether the earlier art used two, three, or four-sided frames, all the devices suffered a common denominator. Each lacked a unit that integrated lift, frame, container, and transporting vehicle. Some lacked a transport vehicle, others made using the lifting device awkward and unsafe, and others made the relationship between container and the transporter difficult. Id. The '062, in contrast, promoted a unit that easily positioned the frame to the container and then moved the container onto or from the transport vehicle. This integration is the core of the invention—not the frame's configuration as Porta suggests. The specification bears this out:

"Accordingly, there is a need to provide a means for easy positioning of the frame around the container, and for moving and positioning the frame and the container together . . . to provide a method to adjust the width of the frame under power to clear the container when moving and positioning the frame . . . [and] to provide a means for releasably attaching the frame to the vehicle for safe transport."

See doc. 111-2, col. 2, lines 19-29.

These words echo claim 29's method. Porta's estoppel argument is misplaced. Accepting it would require sidestepping two basic principles of construction: guarding against limiting claims to the preferred embodiment and claims are considered to vary in scope.

D. Claim Construction Conclusion

The term "around," as used in Claim 29 means "on all four sides or on less than all four sides." The PODS "carrier frame" is not limited to a four-sided, rectangular shaped frame.
K. "arranged about/disposed about"

The parties have agreed that "arranged about" and "disposed about" are synonymous and should have the same construction. The plaintiff proposes "placed or set in a particular order." Defendants propose "covering substantially all of."

The plaintiff contends that its construction follows the plain and ordinary meaning of the phrases as defined in dictionaries. See, e.g., American Heritage Dictionary 129 (2d college ed. 1991). The plaintiff also argue that this dictionary meaning is supported by the prosecution history, and that Defendants' construction is limited to the preferred embodiment.

Defendants argue that the plaintiff's construction is not supported by the claims or the specification because they do not require "a particular order." Defendants argue that the specification shows LEDs covering substantially all of the surfaces. See '269 patent, fig. 8.

In reply, the plaintiff contends that it does not need to have "a particular order;" "specific order" or "proper order" would be sufficient as defined by other dictionaries. Furthermore, the plaintiff argues that Defendants' construction would not encompass the specification's figures showing 25-50% of surfaces covered by LEDs. See '269 patent, figures 5-8, 12.

The Court agrees with the plaintiff that the defendants' construction would exclude preferred embodiments. Accordingly, "arranged about" and "disposed about" mean "placed or set in a specific order."

F. CLAIM 18

Claim 18 reads:

A tension member according to claim 1 wherein said cords are arranged in spaced relation to each other.

Schindler asserts that "cords are arranged in spaced relation to each other" should be construed as "cords are positioned at predetermined positions relative to each other." Otis suggests that the term should be interpreted to mean "cords are positioned with predetermined separation(s) between adjacent cords."

Otis' construction inappropriately reads an extraneous limitation into the term by implying mandatory separation between the cords. See In re Cruciferous Sprout Litigation, 301 F.3d 1343, 1348 (Fed. Cir. 2002). As noted above, it is very likely that in practice the tension member will contain inner cords that do not touch each other. See Section III.A.6. Separation, however, is not a requirement, and the Court will not impart such a limitation on the claim. "Cords are arranged in spaced relation to each other" will be construed as "cords are positioned at predetermined positions relative to each other."

B. Construction of "cords are arranged in spaced relation to each other" in Claim 18

Claim 18 reads:

A tension member according to claim 1 wherein said cords are arranged in spaced relation to each other.

Schindler asserted that "cords are arranged in spaced relation to each other" should be construed as "cords are positioned at.
predetermined positions relative to each other." Otis suggested that the term should be interpreted to mean "cords are positioned with predetermined separation(s) between adjacent cords."

This Court previously found that Otis's construction inappropriately added a mandatory separation between the cords. See In re Cruciferous Sprout Litigation, 301 F.3d 1343, 1348 (Fed. Cir. 2002). The Court found that separation was not required, and refused to impart such a limitation on the claim. "Cords are arranged in spaced relation to each other" was, therefore, construed as "cords are positioned at predetermined positions relative to each other."

C. Motion for Reconsideration

In its motion for reconsideration, Otis asserts that "Cords are arranged in spaced relation to each other" should be construed to mean "cords are positioned at predetermined positions spaced relative to each other." That is, Otis (again) asserts that there must be separation between the cords in Claim 18. Otis asserts that without such a distinction, Claim 1 (independent claim) and Claim 18 (a dependent claim, which relies on Claim 1) would have the same scope. This result, Otis argues, is impermissible because the doctrine of claim differentiation provides a presumption that dependent claims must be narrower than the independent claim(s) from which they rely.

Schindler responds that Otis is not entitled to reconsideration as "claim differentiation is not a rigid rule, and dependent claims are not required to have a narrower scope than the independent claims from which they depend." Accordingly, Schindler argues that because there has been no error of law, reconsideration need not be granted. Next, Schindler argues, "even if the doctrine of claim differentiation is considered by the Court, the Court's constructions already result in dependent claim 18 having a scope narrower than the scope of independent claim 1."

This Court will address the two questions raised by the parties: (1) whether the doctrine of claim differentiation applies to this motion for reconsideration, and if so, (2) whether the construction already in place adequately differentiates the claims.

1. Has Otis Failed to Satisfy the Standard for Reconsideration?

As the Federal Circuit has explained, "dependent claims are presumed to be of narrower scope than the independent claims from which they depend" under the doctrine of claim differentiation. AK Steel Corp. v. Sollac and UGINE, 344 F.3d 1234, 1242 (Fed. Cir. 2003). The presumption created by the doctrine of claim differentiation, however, is "not a hard and fast rule and will be overcome by a contrary construction dictated by the written description or prosecution history." Seachange Int'l, Inc. v. C-COR, Inc., 413 F.3d 1361, 1369 (Fed. Cir. 2005). The doctrine of claim differentiation, accordingly, should be applied unless there is a contrary construction required by the written description or prosecution history (i.e., an indication that the dependant claim is, in fact, not narrower than the independent claim).

Previously, Otis's primary argument as to the construction of "arranged in spaced relation" was that there must be separation between the cords. Its argument on this point was essentially the same as its argument with respect to "arranged side-by-side" (of Claim 1). See Doc. No. 80, at 84 (noting that the "spaced relation" construction issue is the "same" as the "side by side" construction issue); see also Doc. No. 61, at 22; Doc. No. 66, at 6-7, 14. 1 This fact notwithstanding, at oral argument Otis also asserted that "Schindler's construction just reads the word 'spaced' out of that term entirely. It gives no meaning to 'arranged in spaced relation.'" See Doc. No. 101, at 67-68. This Court agrees.

1 This Court has already rejected this argument with respect to Claim 1, and construed "side-by-side" to mean that the cords are "arranged linearly along the width dimension" without requiring that there be "spacing" OR "no spacing" between the cords. 2010 U.S. Dist. LEXIS 2463, at *18, 27.

Accordingly, although Otis did not explicitly argue that "arranged in spaced relation" must be given a more narrow reading than "arranged side-by-side" based on the doctrine of claim differentiation, its position at oral argument did allude to such a rationale. Moreover, both parties acknowledge that the doctrine was discussed elsewhere in this matter. 2 The Court will, accordingly, consider the applicability of the doctrine to the dispute concerning the term "arranged in spaced relation" found.

2 See Doc. No. 92, at 3 n.2; Doc. No. 67, at 13-14; Doc. No. 80, at 60; Doc. No. 66, at 15-16

2. Is Claim 18 Narrower in Scope than Claim 1?

Having determined that the doctrine of claim differentiation applies to the construction of Claim 18 (in view of Claim 1), this Court must determine whether its construction of Claim 18 resulted in a claim that was not narrower in scope than Claim 1.

Schindler argues that, as is, Claim 18 has been construed narrower than Claim 1. Schindler notes that the term "side-by-side" in Claim 1 has been construed to mean "arranged linearly along the width dimension," and the term "cords are arranged in spaced relation to each other" in Claim 18 is currently construed to require the cords to be "positioned at predetermined positions relative to each other." Schindler asserts that the latter term has been construed to be more narrow than the former. The Court cannot agree, and finds that its initial construction of Claim 18 gave the claim a scope that was equal to that of Claim 1. In other words, in this context "arranged linearly along the width dimension" has a definition that is functionally the same as "positioned at predetermined positions relative to each other." The fact that the "positioning" of the cords (in Claim 18) takes place in "positions relative to each other" does not change this result—objects which are "arranged" are also necessarily arranged "in relation" to other objects (here, cords). Further, the Court cannot agree that the physical relationship described in Claim 18 requires that the spacing between the cords has a fixed and/or uniform distance between each cord.

Accordingly, this Court does not agree that Claim 18, as construed, is narrower than Claim 1.

* * * *

For the reasons stated, and in light of the doctrine of claim differentiation, the Court will reconsider its construction of the term "arranged in spaced relation" in Claim 18. The phrase "cords are arranged in spaced relation to each other" in Claim 18 will be defined as "cords are positioned at predetermined positions spaced relative to each other."

2. Arranged (A first set of elements arranged on the first side of said printed circuit board)

A well defined collection of memory elements arranged in a logical fashion on one side of the printed circuit board.

1. "Arranged to Bias"

Plaintiff argues that the claim language "arranged to bias" in claim 1 of the '946 patent means "placed in a certain location or in such a way as to cause a continuous tendency or preference toward a particular position." (Doc. # 26-2, at 18). Plaintiff relies on dictionary definitions to support its proposed construction. (Doc. # 26-2, at 19). Defendant argues that the term "arranged to bias" means "acts directly on." (Doc. # 26-2, at 20). Defendant refers the Court to the '946 patent prosecution history, whereby the patentee repeatedly states that "the coil spring 134 acts directly on the travel bar to move it so that the
hinge plates close the rings.” (Doc. # 26-4, at 12, 59; # 26-5, at 26) (emphasis added). Defendant further relies on Figures 15 and 18 in the '946 patent specification to support its construction. Although Figure 15 does not clearly illustrate the interaction between the spring and the travel bar, Figure 18 depicts the direct connection between the two components. As such, the Court believes that the intrinsic evidence supports defendant's alternative, proposed construction. Therefore, the Court finds that "arranged to bias" in the '946 patent means "acts directly on.

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1. "Arranged to Bias"

Plaintiff argues that the claim language "arranged to bias" in claim 1 of the '946 patent means "placed in a certain location or in such a way as to cause a continuous tendency or preference toward a particular position." (Doc. # 26-2, at 18). Plaintiff relies on dictionary definitions to support its proposed construction. (Doc. # 26-2, at 19). Defendant argues that the term "arranged to bias" means "acts directly on." (Doc. # 26-2, at 20). Defendant refers the Court to the '946 patent prosecution history, whereby the patentee repeatedly states that "the coil spring 134 acts directly on the travel bar to move it so that the hinge plates close the rings." (Doc. # 26-4, at 12, 59; # 26-5, at 26) (emphasis added). Defendant further relies on Figures 15 and 18 in the '946 patent specification to support its construction.

Claims 1, 21, and 26 of the '946 patent refer to "a spring arranged to bias said travel bar toward the closed position for locking the hinge plates in the closed position." (Doc. # 1-2, '946 patent, col. 9, lines 65-67, col. 11, lines 27-29, col. 12, lines 27-30). As stated above, claims "must be read in view of the specification, of which they are a part." Vitronics, 90 F.3d at 1582 (citations omitted). Figure 15 does not clearly illustrate the attachment between the spring and the travel bar. Although the patentee stated that there is a direct connection between the spring and the travel bar, Figures 17, 18, 18A, 18B, 18C, 19, and 20 show that the spring, item 134, is directly connected to the tab, item 162, and that the tab is directly connected to the travel bar, item 142. Thus, the spring is indirectly connected to the travel bar. As such, the Court believes that the specification does not limit the scope of the term "arranged to bias" to include only a direct connection. The Court, therefore, finds that the term "arranged to bias" in the '946 patent means "acts directly or indirectly on.

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L. "Arranged to Disorganize Scar Tissue"

Claim 9 of the '418 patent describes "[t]he sheet of claim 1 wherein the second surface is arranged to disorganize scar tissue." Plaintiffs contend that "arranged to disorganize scar tissue" means "arranged to disrupt the natural formation of scar tissue." Defendants claim that "arranged to disorganize scar tissue" means "a silicone elastomer configured into concentric nested close geometric shapes that force scar tissue into concentric nested rings."

The specifications of the '418 patent disclose that the implant exists to weaken the growth of scar tissue surrounding the implant by forcing the tissue to grow into the textured surface of the implant. See U.S. Patent No. 6,921,418, at 4:63-64. The textured molded covering of the implant may be made of "silicone elastomer or other suitable materials which serve to limit the force or scar contracture around the implant by disorganizing the scar tissue itself . . . ." Id. at 8:48-52; see also id. at 8:21-25. Because the express specifications of the '418 patent provide that silicone elastomer is not the only suitable material, it would be inappropriate for the Court to adopt Gore's proposed construction that the phrase "arranged to disorganize scar tissue" only includes silicone elastomer. Additionally, the '418 patent specifications do not limit the design to concentric nested rings. See id. at 8:65-9:4. Moreover, adopting Gore's proposed construction would have the effect of excluding the embodiment displayed in Figure 12 from claim 9 because Figure 12 utilizes channels rather than concentric rings. See id. at Fig. 12. Therefore, the Court determines that "arranged to disorganize scar tissue" means "arranged to disrupt the natural formation of scar tissue."

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a. "arranging a weight sensor in connection with the seat such that the at least one morphological characteristic is the weight of the occupant"

Plaintiff argues that the court should construe this phrase to mean "measuring a sensor output and obtaining information corresponding to the force of the occupant on the seat." (Chart at 21.) Defendant maintains that the court should construe the phrase to mean "measuring the weight of the occupant by placing a weight sensor in the seat. The weight of the occupant is a calculation of the force gravity exerts on the occupant." (Id.) Plaintiff contends that Defendant's construction implies the existence of an extra step, requiring a measurement and then a calculation of actual weight. In response, Defendant argues that the plain language of its construction is best, it is support by the specification and prosecution history, and that Plaintiff proposes a construction by which it would encompass Defendant's PODS, which measures pressure rather than weight.

"[R]esort must be had in the first instance to the words of the claim,' words [which are ascribed] their ordinary meaning unless it appears the inventor used them otherwise." Bell Comm'ns Research, Inc. v. Vitalink Comm'ns, Corp., 55 F.3d 615, 620 (Fed Cir. 1995) (quoting Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759 (Fed. Cir. 1984)). The claim makes clear that the "weight sensor" measures something called "weight of the occupant." Plaintiff argues that the sensor does not give a weight measurement in the way a bathroom scale might; however, the specification itself discusses an identification of the weight of the occupying item of the seat:

The control system 1030, e.g., a microprocessor, is arranged to receive the digital signals from the transducers 1010, 1011 and determine the weight of the occupying item of the seat based thereon. In other words, the signals from the transducers 1010, 1011 are processed by the control system 1030 to provide an indication of the weight of the occupying item of the seat, i.e., the force exerted by the occupying item on the seat support structure.

'516 Patent col. 27 l.64-col. 28 l.4. Nonetheless, the specification describes the action involved in this claim as follows: "An occupying item of the seat will cause a force to be exerted downward and the magnitude of this force is representative of the weight of the occupying item. Thus by measuring this force, information about the weight of the occupying item can be obtained."'516 Patent col. 20.165-col. 21 l.3. This description provides what is being measured by the weight sensor and takes into account the concern presented by Plaintiff's that no calculation of the weight of the occupant is performed in the ordinary sense of "weight." However, the court finds that it need not precisely define what is meant by "weight"; the ordinary meaning of "weight" is sufficient. See Texas Digital Systems, Inc., 308 F.3d at 1202 (finding that there is a heavy presumption that the words of a claim should be given their ordinary meaning). In addition, the court will address Plaintiff's concerns regarding measurement, in contrast to some kind of calibration, by using the verb "sensing" in its construction rather than "measuring."

Accordingly, the court will construe the phrase "arranging a weight sensor in connection with the seat such that the at least one morphological characteristic is the weight of the occupant" to mean "sensing the weight of the occupant by placing a weight sensor in the seat."

The point of contention between the Parties is the definition of the covers for the holes of the vent. To determine the scope of the claim, the Court must, therefore, define the terms and establish the elements prescribed therein. Looking first to the language of the claims, the Court notes that both Claims 1 and 6 contain the following language describing the covers:

an array of cowls integral with and positioned on the exterior surface of the plate, each of said cowls formed of an inflexible material, each cowl for shielding one of the holes, said holes and cowls, being sized shaped, and oriented to inhibit entry of fluids through the holes and into the envelope interior while allowing generally unrestricted air circulation between the envelope interior and exterior . . . .

Defendants argue that the definition of an array of cowls cannot encompass a strip of adjacent holes with a louver or slat covering that does not create separate hoods. Plaintiff asserts that a cowl is a more general term for hood than Defendants contend and that in fact Defendants' louver hood does fall within the scope of the claim. Furthermore, Plaintiff argues that the claim language does not require that there be multiple, individual or separate cowls and holes, but that even if the Court determines the claim so indicates, Defendants' vent contains multiple, individual holes which each have their own cowl, the
fact that they are adjacent to one another notwithstanding. Based on these arguments, the Court must define the terms "array" and "cowl" and the phrase "each cowl for shielding one hole."

--- Footnotes ---

2 In the instant case, Plaintiff Bickerstaff alleges infringement of claims 1, 4, 6 and 9 of the '911 Patent. Claims 1 and 6 are independent claims, while claims 4 and 9 are dependent on claims 1 and 6 respectively. Thus, if the scope of claims 1 and 6 cannot include Defendants' vent, then Plaintiff's assertion of infringement necessarily fails as to all four claims.

--- End Footnotes ---

An array is alternatively defined as "a rectangular arrangement of quantities arranged in rows and columns, as in a matrix," "an orderly, often imposing arrangement," or "an impressively large number, as of persons or objects." THE AMERICAN, HERITAGE DICTIONARY 102 (3d Ed. 1996). When this language is reviewed in light of the figures attached to the specification of the patent, it becomes clear that the intended definition of an array in this context is the first definition. See Fig. 2. Given that the prosecution history provides no contrary argument, the Court finds that the term "array" as used in patent '911 refers to "a rectangular arrangement of quantities arranged in rows and columns."

--- B. Array of Light Emitting Diodes ---

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Plaintiff's Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>array of light emitting diodes</td>
<td>a spatial arrangement of two or more light emitting diodes that are not necessarily touching</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Defendants' Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>array of light emitting diodes</td>
<td>a group of at least two light emitting diodes that function as a single light source</td>
</tr>
</tbody>
</table>

The term "array of light emitting diodes" is first mentioned in claim 1, which describes an "array of light emitting diodes integral within said brim and proximate to said rim." The term is subsequently mentioned reflexively in several claims, i.e., "said array of light emitting diodes [is] focused to form a contiguous beam." ('831 patent, claim 1.)

Defendant proposes construing "array of light emitting diodes" as "a group of at least two light emitting diodes that function as a single light source." (Def's Br. at 3.) While Plaintiffs agree that "array" denotes two or more LEDs, they disagree as to what the term means for the physical placement of the LEDs in relation to one another. Plaintiffs would construe the term to emphasize that the claim does not require the LEDs to physically touch one another. (Pl's Br. at 16.)

In the Court's view, neither party's construction is fully accurate. Defendant's construction seeks to build its preferred construction of "contiguous beam" (as a single light source) into the meaning of "array." Such a construction would result in an unnecessary redundancy, and the Court sees no purpose in injecting a duplicative construction of "contiguous beam" into a term that it construes separately. See Cross Medical Products, Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1307 (Fed. Cir. 2005)(holding that rules of construction disfavor redundant interpretation of claims).

Plaintiffs, in contrast, seek to insert a connotation of distance between LED components into the meaning of "array." Plaintiffs' proposed reference to "not necessarily touching" fails to add any clarity to the term. The term "array" neither intrinsically requires nor precludes any arrangement in which LEDs touch one another. One could imagine a variety of arrangements in which proximate and distant LEDs are still "arrayed" for an illuminating purpose. Plaintiffs' proffered...
emphasis on the distance between LEDs is not intrinsic in the ordinary meaning of "array" and finds no support in the contextual use of the term.

The ordinary meaning of the word array is \"[a] regular grouping or arrangement.\" MERRIAM WEBSTER COLLEGIATE DICTIONARY at 64 (10th ed. 1997). The word connotes a group of items that are organized in some orderly manner. (Id.) The patent employs this ordinary meaning of the word. The embodiments of the patent depict a group of LEDs aligned in straight parallel rows in close proximity to one another (‘831 Patent, Fig. 19.; Col. 13, ll. 58-61)(\"In this example LEDs are two white LEDs electrically parallel to each other, and LEDs are two red LEDs electrically parallel to each other.\") The LED grouping that is depicted and described in the patent is an orderly arrangement. Accordingly, the court adopts the following construction for \"array of light emitting diodes\:\" \"an orderly arrangement of at least two light emitting diodes.\"

IV. Array of Light-Sensitive Elements

For the following reasons, this court will not construe the term \"array of light sensitive elements\" in the ‘434 patent to have a meaning other than its plain meaning.

Claims 2, 3, 4 and 10 of the ‘434 patent recite the claim limitation \"array of light sensitive elements.\" Anoto argues that \"array of light sensitive elements\" should be interpreted to mean: \"A charged-coupled device (CCD) or any other grouping of multiple light sensors configured to detect indicia in either one or two dimensions.\" (Anoto's Claim Construction at 11.) Anoto, however, has provided no reason why any limitation should be read into the term \"array of light sensitive elements.\" The prosecution history quoted by Anoto does not support limiting the term to a CCD. The excerpt of the prosecution history primarily relied upon by Anoto states:

The Applicant believes that CCD bar code readers comprise light sensitive arrays grouped together in one dimension or straight line. Two dimensional arrays are reserved for devices like video cameras or the like. The device described in the present invention is not exclusively a bare [sic] code reader, although it can be used for that purpose with the proper programming. The device may be described as a hand-held two dimensional CCD scanner or camera. (A0112); (Anoto's Reply at 21.) This excerpt does not purport to define an \"array of light sensitive elements\" as a CCD. It cannot operate as a clear disclaimer of claim scope. See Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1324-25 (7th Cir. 2003). Furthermore, Anoto has not made any argument that the terms require interpretation because they are unclear, but Anoto nevertheless has suggested construing the terms to mean an \"arrangement of light sensitive elements.\" (Anoto's Reply at 21.) However, Anoto provides no reason why the term \"arrangement\" should be used instead of \"array.\" This court finds no basis for departing from the ordinary meaning of the term \"array of light sensitive elements.\"

Plurality of Apertures Arrayed Along

Claim 1 requires that the elongated hollow tube include \"a plurality of filtering apertures arrayed along [the] tube for improving the diffusion into and out of the space within the tube.\" ‘332 Patent, col. 6, ll. 12-14. The district court construed \"a plurality of filtering apertures arrayed along [the] tube\" to mean \"a sample chamber with a minimum of two apertures located somewhere along the surface of the sample chamber.\" Finding and Recommendation at 15.

Digital Control asserts that this claim construction gives no meaning to the term \"arrayed along,\" thereby giving the '332 patent more breadth than that to which it is entitled. Digital Control also asserts that the applicant argued that a combination of references that \"clearly shows\" two apertures did not suggest the arrayed apertures limitation. We are not persuaded by these arguments.

We agree with the district court's analysis and adopt its construction of this claim limitation.
Defendant proposes that the court construe the term "arrayed on a line" as "positioned on a single line." As the court has construed the term "a line" above, the only term left to be construed is "arrayed." There is nothing to suggest that "arrayed" has a meaning other than its ordinary meaning, and the court therefore adopts the proposed construction of "positioned on a single line."

In its complaint, Worldwide alleges that defendant Microtek infringed upon the 233 patent by manufacturing and distributing the competing "RADbarrier" radiation shield. The parties' briefs and arguments have focused primarily upon Microtek, but the complaint also alleges that defendant Aadco infringed upon the 233 patent by manufacturing and distributing its "X-Drape" radiation shield. On August 30, 2007, this court heard oral arguments from attorneys for Microtek and Worldwide regarding defendants' summary judgment motion. Microtek has characterized this motion as seeking complete summary judgment, but Worldwide correctly notes that the instant motion for summary judgment relates only to claim 1 of the 233 patent, along with dependent claims 10-12 thereof. Claim 1 of the 233 Patent recites the following:

1. A flexible shield for covering an article and attenuating the flux of electromagnetic radiation to or from said article, comprising a polymeric matrix charged with an attenuating filler, said shield having a transmission attenuation factor of at least 50% of a primary 100 kVp x-ray beam, a durometer of less than about 100 Shore "OO" and a coefficient of sliding friction relative to said article of at least 0.15.

At the August 30 hearing, Worldwide noted that it alleges infringement of claim 21 of the 233 patent as well, and the complaint also asserts various trademark claims, the status of which is unclear to this court. It is thus appears that the present motion is, as stated by plaintiff, only one for partial summary judgment.

Microtek has represented to this court that, at this juncture, it is seeking summary judgment based solely upon non-infringement arguments and arguments that claim 1 of the 233 patent was invalid due to indefiniteness. Microtek has reserved the right, however, to subsequently file a separate summary judgment motion alleging that the 233 patent is invalid based on pre-existing prior art. Defendant conceded, however, that the question of invalidity based on prior art involves a more fact-intensive inquiry as to which discovery was not yet complete. In spite of this representation, the first portion of Microtek's oral presentation did include substantial arguments relating to its contention that claim 1 of the 233 patent actually represented no new invention. However, given defendant's representation that it does not presently seek summary judgment based upon invalidity due to prior art arguments, this court puts its concerns regarding these arguments out of its mind and considers solely the summary judgment arguments which were raised by defendant.

In seeking summary judgment, Microtek first alleges that there is no genuine issue of fact regarding whether it infringed upon the 233 patent. The determination of infringement is a two-step process. First, the court must construe the claims at issue. Claim construction is a question of law for the court. See Markman v. Westview Instruments, Inc., 517 U.S. 370, 385, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996); Novartis Pharm. Corp. v. Eon Labs Mfg., Inc., 363 F.3d 1306, 1308 (Fed. Cir. 2004). Second, the patentee must prove that every limitation of the properly construed claims is present in the accused device or process. See Novartis Pharm., 363 F.3d at 1308; Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1330 (Fed. Cir. 2001) Disputes over claim construction are issues of law, properly determined on summary judgment. See, e.g., Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387 (Fed. Cir. 1992). Claim terms are generally given their ordinary and customary meaning to a person of ordinary skill in the relevant art at the time of the invention. Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc), cert. denied, 546 U.S. 1170, 126 S. Ct. 1332, 164 L. Ed. 2d 49 (2006).
The Federal Circuit has repeatedly cautioned, however, that the ordinary meaning of claim terms must be viewed in light of the intrinsic record, particularly the specification and prosecution history. See, e.g., id. at 1313 and 1315-17; Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1319 (Fed. Cir. 2005). The specification is always highly relevant to claim construction: "Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." Phillips, 415 F.3d at 1315. It should be apparent that this standard leaves little room for evidence of extrinsic evidence, including subjective knowledge on the part of defendant.

Microtek argues that, properly construed, the language of the 233 patent supports a conclusion that its RADBarrier shield did not infringe upon the 233 patent. In so arguing, defendant emphasizes that claim 1 only covers radiation shields to be placed on "articles," which term, it argues, does not include people. The court agrees. In so concluding, the court would concede that this argument originally struck it as being somewhat hyper-technical in nature. Worldwide correctly notes that, throughout the patent specification, it is clear that the primary use of the invention is in radiological medical procedures performed on human patients. Indeed, the patent specifications contain numerous drawing sheets which depict various radiation shields which clearly appear to be designed to fit the human body. While the primary use of the 233 patent thus clearly seems to be for shields to be used on human beings, the court would emphasize that the patent contains 27 dependent and independent claims. In the court's view, it is far from unreasonable to conclude that one or more of those claims might relate only to radiation shields for inanimate objects.

Considered in this light, the most logical interpretation of the term "article" in claim 1 is its customary interpretation in the English language referring to something other than a human being. This conclusion is greatly strengthened by language in the patent which states that:

Thus, the radiation shield of the present invention is adaptable to such diverse applications as covering a patient and/or health care practitioner (or selected anatomical regions thereof) during a medical procedure or shielding a radiation [sic] such as a vial or canister or radionuclides.

Thus, the patent clearly envisions that it may be placed on inanimate objects such as "vials and canisters" and, accordingly, it is far from irrational to conclude that one or more of the 27 claims of the patent might, in fact, be limited to such objects.

In the court's view, this language clearly supports a conclusion that the term "article" used in claim 1 is intended to refer to something other than a human being. Any argument that the language quoted above merely constitutes an unfortunate misstatement is negated by the fact that, as noted in Microtek's brief, the patent specifications repeatedly distinguish between "articles" and "bodies," "patients" and "persons." For example, the patent makes reference to "a flexible shield for protecting an article or body," "the article or patient to be protected," and it notes that the "shield, when applied to a patient's body or an article (e.g. a table), not only conforms closely with any topical irregularities but has a sufficiently high coefficient of friction that it cannot be easily dislodged or moved." Thus, the patent itself clearly distinguishes between "articles" and human beings and, lest there be any doubt regarding the proper construction of the term, the patent offers a "table" as an example of an article.

The conclusion that claim 1 does not encompass shields to be placed on human beings is also strengthened by the language of claim 21 of the patent, which covers a "disposable radiological garment to be worn or selectively draped about a patient." Thus, the 233 patent was clearly able to specify when a particular claim was intended to cover shields to be placed on human beings, and the court can therefore only conclude that claim 1 is limited, on its face, to "articles." Having closely reviewed the patent in this case, it becomes clear that defendant's arguments are not hyper-technical, but, rather, constitute the proper legal construction of claim 1 of the 233 patent. In light of the foregoing, the court concludes that claim 1 only
covers radiation shields to be used on "articles," and that, within the context of the 233 patent, the term "article" does not encompass human beings. It is undisputed that the radiation shields manufactured by defendants Microtek and Aadco were designed for use on human beings, and the court therefore concludes that defendants are entitled to summary judgment as to any infringement claims relating to claim 1 of the 233 patent.

A. "Article Feeder Means"

The parties dispute whether the term "article feeder means" in claims 1, 20, and 24 is governed by Section 112, paragraph 6. Goss argues the statute does not apply despite the presumption that attaches because the word "means" is used in the claim. Pl. Memo. at 11. Goss contends the term "article feeder" recites sufficient structure on its own to rebut the presumption. Id. In addition, Goss argues the claims set forth sufficient structure because it contains detailed descriptions of the location and components of the article feeder means. Id. at 12. Goss draws support for its construction from the specification, the patent examiner's repeated use of the term "feeder" without discussion of its function, and a dictionary definition of the term. Id. at 13. According to Goss, a person of ordinary skill in the art would understand the term to describe a known structure. Id.

K&M responds that Goss has not rebutted the presumption in favor of means-plus-function analysis. K&M contends that the only structure identified to perform the function of "feeding sheet material articles to said receiving locations" is a variable speed motor. Def. Memo. at 10; Pat. at col. 14, ll. 51-53. But an article feeder requires structures in addition to a variable speed motor to move the sheet material to the pockets, such as a hopper, feed drum, sucker mechanism, gripper, variable speed feed motor, and feed motor drive circuit. Id. at 12; Pat. at Fig. 4 (included within the dashed line denoting the "sheet material article feeder 54" is a host of structures other than variable speed motor). K&M concludes the element is functional and falls under Section 112, paragraph 6. Id. at 13. Employing means-plus-function analysis, K&M argues for a construction that includes all the structures necessary to determine the position of the pockets and transport the sheet material to them. Id. at 13.

The "article feeder means" element is not governed by Section 112, paragraph 6. Although use of the term "means" presumes application of the statute, that presumption may be overcome if the claim recites structure sufficient to perform the claimed function. See Altiris, 318 F.3d at 1375. That structure is apparent. First, the term "article feeder" provides enough structural detail on its own to render Section 112, paragraph 6 inapplicable. In MIT v. Abacus Software, the court found means-plus-function analysis did not apply to the term "aesthetic correction circuitry." 462 F.3d 1344, 1355 (Fed. Cir. 2006). The court determined the word "circuitry," by itself, connotes structure." Id. The court based its decision on general-usage and technical dictionaries defining the term. Id. "Article feeder," like "circuitry," describes a known structure. The specification is rife with references to different types of feeders. See e.g., col 1, ll. 34-38; col. 2, ll. 46-47. None of the references are described functionally. In addition, the prosecution history makes clear that the patentees and the patent examiner understood the term "article feeder" to identify a specific item. See Pl. Memo. at Ex. B, PAT00185 (term is used without explanation or qualification in discussion of the Maoploski patent, which is referenced as prior art in the '724 patent). Moreover, as in MIT, dictionaries identify a "feeder" as a known device consistent with the '724 patent's use of the term. Id. at Ex. C, Ex. 7 ("feeder" defined as a "device that feeds materials into a machine for further processing"). See also Cole, 102 F.3d at 531 ("perforation means . . . for tearing" was not means-plus-function element because the element's precise structural character was defined by its own description).

Second, aside from the element's description, the claims set forth structure sufficient to overcome application of Section 112, paragraph 6. The claims describe the location of the article feeder means ("disposed along said conveyer") and some of its components ("each one of said article feeder means includes a variable speed motor"). Pat. at col. 14, ll. 52-54. By doing so, the claims do not merely depict the article feeder means as a function, they describe the element's structure by explaining its operation. When a structural term is coupled with operational terms, "sufficient structural meaning will generally be conveyed to persons of ordinary skill in the art." Linear Tech. Corp. v. Impala Linear Corp., 379 F.3d 1311, 1320 (Fed. Cir. 2004); see also MIT, 462 F.3d at 1356 (structural term "circuit" described by reference to additional operational structure); Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1304-05 (Fed. Cir. 1999) ("positioning means" was not means-plus-function element because claim recited additional structures for performing function).

K&M argues the element's description does not embody all the structures necessary to perform the element's function;
therefore, the presumption in favor of means-plus-function analysis is not rebutted. This argument is unavailing. "It is well established that it is not necessary to claim in a patent every device required to enable the invention to be used." Asyst Techs., Inc. v. Empak, Inc., 268 F.3d 1364, 1371 (Fed. Cir. 2001). Thus, it is not fatal to Goss' position that the claim recites a variable speed motor as additional structure, but fails to recite more. Id. The recitation of operational components and the article feeder means' location indicates the element is structural.

In any event, K&M's proposed construction fails because it commits a cardinal sin of claim construction: it seeks to import structures unnecessary to perform the element's function. See Wegner, 239 F.3d at 1233. The majority of structures K&M includes in its construction relate to controlling the specific location sheet material is delivered to the pockets, e.g., feed motor position sensor, operator advance/retard control, home position and receiving location proximity sensors, etc. Def. Memo. at 14; Pat. at Fig. 3. But these structures are not necessary for the article feeders means to perform the limited function of "feeding sheet material articles to said receiving locations." Pat. at col. 14, ll. 51-53. The structures K&M adds enable or enhance, rather than perform, the specified function. See Asyst Tech., 268 F.3d at 1371. The court cannot construe claims in a way that adds unnecessary structures. Wegner, 239 F.3d at 1233. To be sure, the patent's drawings create some ambiguity regarding what structures are contained in the article feeder means. Pat. at Fig. 3 (item 54, identified as a "sheet material article feeder," drawn to include all structures within dotted-line); Fig 4 (item 54 points to unspecified group of structures). However, the specification clearly sets forth the element's function. Claim language, not the drawings, define the scope of the patent. See Cummins Engine Co. v. Gen. Motors Corp., 299 F. Supp. 59, 88 (D.C. Md. 1969).

Further, K&M's construction would violate the doctrine of claim differentiation, which requires the court to construe independent claims in a way to avoid nullifying dependant claims. See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 908 (Fed. Cir. 2004). Many of the structures K&M includes as part of claim 1's "article feeder means" element are recited as separate elements in dependant claims. See e.g., Pat at col. 15, ll. 62-65 (construction of claim 1 includes sensors, but "sensor means" are described in claim 9). Adopting K&M's construction would render many dependant claims redundant. Therefore, the court construes the "article feeder means" element in claims 1, 20, and 24 consistent with Goss's proposed constructions.

As the engineer adjusts design parameters

The Court finds that it cannot reduce the term "as the engineer adjusts design parameters" to a more simple or clear construction based on the intrinsic evidence. Haliburton proposes the construction "during any time while the design engineer is adjusting design parameters of the bit, either automatically or manually," and Smith proposes "automatically as the engineer adjusts design parameters." "As" relates to time in that it means "while" or "during," and it implies that two things happen close in time but not necessarily instantaneously. Additionally, "as" implies that one thing causes another. Haliburton's construction "during any time" would allow the two things to occur far apart in time, and Smith's construction "automatically as" seems to require the two things to occur instantaneously. Thus, the proposed constructions either improperly restrict or expand the time in which the graphic display would represent the engineer's adjustments. Also, Haliburton's "manually" would perhaps eliminate the causal relationship implied by "as," and Smith's "automatically" could place undue restrictions on the causal relationship. In sum, the word "as" is incapable of simplification or more precise definition, and the Court can only give the parties the guidelines announced here.

End Cap Assembly

The parties contest the meaning of the term "end cap assembly" used in claim 1 and 12 of the 537 patent. Parker proposes the following construction: "collection of components including or comprising an end cap." Parker contends the intrinsic evidence supports this construction. First, the claims themselves define the components of the end cap assembly:

Claim 1: … and end cap assembly at the first end of the filter media including a first annular end cap sealingly bonded to
the first end of the filtration media, and a separate annular end piece located in the sealing relation with the first end cap…

Claim 12:…an end cap assembly at the first end of the filter media including a first flat annular end cap sealingly bonded to the first end of the filtration media…

Parker contends the above claim language clearly encompasses multiple components including the end cap. Because the claim is the best intrinsic evidence, Parker contends, it should control. Furthermore, Parker contends the extrinsic evidence supports its construction. Its expert, Professor Charles Garris, a mechanical engineering professor at George Washington University states:

An assembly is a unit containing the component parts of a mechanism, machine, or similar device. See McGraw-Hill Dictionary of Engineering 2d ed. 2003 p.33 (attached hereto as Exhibit H). It is the final product after putting together a machine or mechanism from its component parts. See Dictionary of Mechanical Engineering 4th ed. 1996 p. 14 (attached hereto as Exhibit I). Therefore, an assembly generally connotes a set of parts that are connected or related in some fashion.

Defendants contend the appropriate construction of "end cap assembly" should be:

end cap unit formed from two or more component parts that necessarily remain with the filter element when the filter element is removed from the housing.

At the heart of this claim dispute is whether the end cap assembly remains with the filter element upon removal or whether end cap assembly refers to the entire assembly that includes both the removed portion of the filter and the remaining housing. According to Defendants, the plain claim language supports its position. The claim language requires the end cap assembly include a "separate annular end piece located in sealing relation with the first end cap." The annular piece is the portion of the end cap having protrusions. This piece must remain with the filter element when the filter is removed from the housing. According to Defendants, the prosecution history of the '537 family of patents demonstrates, "the elongated protrusions remaining with the filter element when the filter element is removed from between the housing portions." Therefore, in order for the term "end cap assembly" to have any meaning, according to Defendants, the end cap assembly must include two or more components that remain with the filter element upon its removal from the housing.

The Wix Court construed the term as a "collection of components comprising the end piece of at least a combination of a flat annular end cap and a separate annular end piece."

Court's Construction

The Court finds that "end cap assembly" is not limited to the two or more components that remain with the filter element since the specification and claim language place no such limitation on the claim. The claim uses the term "including" which encompasses more than the specified components. The Wix Court determined that the terms "including" and "comprising" are interchangeable. This Court agrees the terms are synonymous. In light of the fact that the Federal Circuit has held, "The transitional term 'comprising' … is inclusive or open-ended and does not exclude additional, unrecited elements or method steps." Georgia-Pacific Corp. v. United States Gypsum Co., 195 F.3d 1322, 1327-28 (Fed.Cir.1999). "A drafter uses the term 'comprising' to mean 'I claim at least what follows and potentially more.' " Vehicular Techs. Corp. v. Titan Wheel Int'l, Inc., 212 F.3d 1377, 1383-84 (Fed.Cir.2000). CollegeNet, Inc. v. ApplyYourself, Inc. 418 F.3d 1225, 1235 (Fed Cir. 2005). In light of the above caselaw, the Court finds Plaintiffs' interpretation more accurately captures the claim as stated without the limitations suggested by Defendants that are not found in the claim itself. Therefore, in agreement with the Wix Court, the Court interprets "end cap assembly" as "a collection of components including or comprising at least a flat annular end cap and separate annular end piece."

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C. Retaining Assembly

'092 patent claim 76 states that the table comprises a "retaining assembly including a cross brace member." (Id., Claim 76.) GSC claims that its seven tables do not have a retaining assembly for two reasons. First, GSC claims that a retaining assembly must consist of more than one part. Second, GSC claims that a retaining assembly only applies to structures that
"interrelate the ends of the two support braces to one another thereby to nullify a force applied to one of them." We agree that a retaining assembly must consist of more than one part, but disagree that a retaining assembly is limited to the function described by GSC.

Similar to the term "frame," which we have already construed, the patent's claims do not explicitly define the term "retaining assembly," but claim 76 states that a retaining assembly includes "a cross brace member." (Id.) Once again, the specification broadly defines the disputed term. First, the specification states that a cross brace member is an example of a retaining assembly: "the retaining assembly (e.g., cross brace member)." (Id. at 10:7.) The specification even uses the terms "cross brace member" and "retaining assembly" interchangeably. (See id. at 10:10 (referring to structure 36 as the retaining assembly); 10:19-20 (referring to structure 36 as the cross brace member).) Additionally, the retaining assemblies in all four figures in the specification appear to be composed of single cross brace members. (Id. at Figs. 1-4.)

This broad construction of retaining assembly is, however, at odds with other patent claims. Claims 59 and 60 state that a "cross brace member connects the retaining assembly" to the frame and the table top respectively. (Id., Claims 59-60.) These claims indicate that the retaining assembly is distinct from a cross brace member. Construing the term "retaining assembly" to include structures that consist solely of a cross brace member would render these claims meaningless because the cross brace member would be the retaining assembly, rather than a structure that connects the retaining assembly to the frame and table top.

This broad construction is also inconsistent with the ordinary meaning of the term "assembly." The ordinary meaning of the term "assembly" is "the fitting together of manufactured parts into a complete machine, structure, or unit of a machine" and "a collection of parts so assembled." Claim terms are presumed to possess their ordinary meaning, and the party advancing a different meaning must overcome this strong presumption. Apex, 325 F.3d at 1370. Lifetime's proposed construction--that an assembly can consist of one part--would render certain claims meaningless, so we find that the broad usage of the term "retaining assembly" in the specification does not overcome the presumption that terms should be accorded their ordinary meaning. 5 Therefore, we construe the term "retaining assembly" as a structure that consists of more than one part. Accordingly, a cross brace member cannot constitute a retaining assembly.

5 We also note that Lifetime has previously relied on the ordinary definition of "assembly" when defending its patents. (See R. 74, GSC's Brief, Ex. 26, Lifetime's Reply at 7.)

We now turn to whether a retaining assembly only applies to structures that "interrelate the ends of the two support braces to one another thereby to nullify a force applied to one of them." We decline to adopt this narrow construction. First, the ordinary meaning of the term "retain" is much broader; it means "to hold secure or intact." Second, the patent's claims do not define this term in such a technical manner. Third, the only evidence GSC has provided in support of this claim limitation is the patent's specification. The specification states that:

the retaining assembly generally provides structural support to the center of the table top of the utility table. It will further be appreciated that with the distal ends attached contiguous each other in retention to the cross brace member, forces applied to the table top which would ordinarily be transferred through one of the support pivotal braces, respectively, into the table top causing it to bow, will substantially be nullified by the counter force provided by the opposing pivotal support brace, respectively.

(R. 58, Keller Decl., Ex. A, '092 Patent at 10:14-24.) We cannot read a limitation into a claim from the specification. Liebel-Flarsheim, 358 F.3d at 904. Fourth, although GSC makes an argument on the basis of the patent's prosecution history, it did not provide the Court with the relevant portion of the prosecution history. We cannot conclude without reviewing the prosecution history whether Lifetime affirmatively stated that the term "retaining" should be so limited. See Vitronics, 90 F.3d at 1582 (stating that the prosecution history should only be considered if it is in evidence). For all of these reasons, we decline to construe the term "retaining assembly" in this manner, but if GSC submits the relevant prosecution history, we will reconsider this one aspect of our opinion.

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a. Meaning of "Blade Assembly Comprising at Least Two Blades"

The Court has not found, nor have the parties referred the Court to, anything in the patent specification that conveys an "express intent to impart a novel meaning," Optical Disc, 208 F.3d at 1334, to the claim term "blade assembly." The term blade assembly therefore takes on its ordinary meaning. Id.

The dictionary defines "blade" as: "1. The flat cutting part of a sharpened weapon or tool." American Heritage(R) Dictionary of the English Language: Fourth Edition (2000). The dictionary defines "assembly" as: "4a. The putting together of manufactured parts to make a completed product, such as a machine or electronic circuit. 4b. A set of parts so assembled." Id.

The ordinary meaning of "blade assembly," therefore, is a set of parts, put together to make a completed product, in which said set of parts includes at least one part that is the flat cutting part of a sharpened weapon. Further, the ordinary meaning of "blade assembly comprising at least two blades" is: a set of parts, put together to make a completed product, in which said set of parts includes among its members either (1) at least two parts that each are the flat cutting part of a sharpened weapon; or (2) one part that has at least two flat cutting parts of a sharpened weapon.

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B. Means-Plus-Function Limitation

Defendant argues that "assembly means" as used in claims 1 and 8 is a mean-plus-function because it contains the terms "means" and recites a function. As I discussed, the use of the term "means" gives rise to the presumption of a means-plus-function element but it is not dispositive. Cross Medical Products, Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1303 (Fed. Cir. 2005); Sage Products, Inc. v. Devon Industries, Inc., 126 F.3d 1420, 1427 (Fed. Cir. 1997). The key is whether the means-plus-function term is followed by a function. Defendant argues that the following language found in claims 1 and 8 is the function of the assembly means: "retaining said stand portions in face-to-face [or sliding] engagement with the underside of said platform and permitting limited displacement of said bearing members at a horizontal direction." '420 Pat., col. 5, lns. 12-18, 30-32. However, this language is used to describe how the bearing member and platform are connected.

Regardless, defendants' contention is much ado about nothing. Even assuming its position that "retaining said stand portions . . ." was a function of the "assembly means," the court would need to determine whether the claim contains sufficient structure for performing that function. 35 U.S.C. § 112 P 6 ("An element of a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof"); Apex Inc. v. Raritan Computer, Inc., 325 F.3d 1364, 1372 (Fed. Cir. 2003). Defendant contends that structure is not located in the claim language but rather in the specification. According to defendant, the specification teaches that the structure that allows the assembly means to retain the stand or bearing portions in a face-to-face or sliding engagement are "platform tabs inserted through the bearing member slots and bent over the base of the bearing member." Dkt. 28, at 1. Although the court did not agree with defendant that "assembly means" was a means-plus-function, it did construe "assembly means" as used in claims 1 and 8 means "[p]latform tabs or projections inserted into slots in the bearing member and bent over to connect the platform and the bearing member." It is hard to understand why defendant is concerned whether or not "assembly means" is a means-plus-function when the practical outcome is the same. The "assembly means" are the tabs and slots.

Also, now defendant argues that the tabs and slots are insufficient to perform the function of retaining the stand and bearing means and offers a new construction for "assembly means." However, defendant offers no argument from the claim language, specification or expert opinion to support its contention. Therefore, I will disregard this proposed construction.
A. The Disputed Claim Limitations

The parties have presented four claim terms for construction, two from each patent. Claim 11 of the ’668 patent recites (with the claim limitations at issue emphasized in bold):

11. An oven capable of preparing food product utilizing a first and second food preparation process, the oven comprising:

   a heating cavity defining an interior including an apparatus for supporting food product disposed therein, and a door providing selective access to the interior;

   a first food preparation assembly operable to prepare raw food product using steam and at least one of radiating heat and forced air convection;

   a smoking assembly configured to deliver heat to an aromatic smoke producing media that emits smoke into the heating cavity in response to the delivered heat; and

   a closed ventilating system that drains liquids produced during food preparation from the interior while preventing gasses from escaping from the interior when the interior is pressurized below a threshold pressure;

   wherein the oven is capable of operating the first food preparation assembly simultaneously with the smoking assembly or separately from the smoking assembly;

   wherein the heated cavity is configured to be a closed system so that air inside the heating cavity is not continuously in direct communication with air outside the oven.

Def. Opening App., Ex. 1 at 27 (col. 13, l. 56-col.14, l. 11) (emphasis supplied).

Claim 1 of the ’173 patent recites (with the limitations at issue emphasized in bold):

1. A combination oven capable of preparing food product, the combination oven comprising:

   a heating cavity defining an interior including an apparatus for supporting food product disposed therein;

   a door providing selective access to the interior;

   a first food preparation assembly comprising a steam assembly selectively providing steam into the interior to prepare food and a heat assembly selectively heating the interior to prepare food using at least one of radiating heat and forced air convection, the heat assembly comprising a heating element disposed in the heating cavity and an air mover capable of forcing incoming air across the heating element to produce heated air that is delivered to the interior of the heating cavity, the steam assembly comprising a steam producing assembly capable of delivering liquid across the heating element that transforms the liquid into steam that is delivered to the interior of the heating cavity; and

   a smoking assembly selectively delivering smoke into the interior independently of the first food preparation assembly; and

   a drain system configured to drain liquids produced during food preparation from the interior while preventing gasses from escaping from the interior when the interior is pressurized below a threshold pressure.

Id., Ex. 2 at 52 (col 12, ll. 43-67) (emphasis supplied).
B. Discussion

In its opening brief, Alto-Shaam asserts that "the claim terms in its patents should be construed according to their ordinary meaning[]." Pl. Opening Brief at 1. By contrast, Defendants contend in their opening brief that these claim terms should be construed as means-plus-function limitations under 35 U.S.C. § 112, P 6 since "each of the limitations at issue fails to identify a sufficiently definite structure[]." Def. Opening Brief at 10. In response, Alto-Shaam contends that since none of the limitations at issue in the '668 and '173 Patents use the term "means," "they are presumptively not means-plus-function limitations." Pl. Resp. Brief at 1 (citing Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004)). According to Alto-Shaam, "[t]hroughout their Opening Brief, Defendants attempt to minimize the force of this presumption and improperly shift the burden to Alto-Shaam. In the end, Defendants fail to overcome the strong presumption against means-plus-function." Id. By contrast, in their response to Alto-Shaam's opening brief, Defendants argue that: "None of the four disputed limitations discloses definite structure within the asserted claims. Instead, each disputed limitation uses the generic term, 'assembly.' Claims that merely use generic terms and do not include any definite structure are means-plus-function limitations." Def. Resp. Brief at 1 (original emphasis)(citing Mass. Inst. of Tech. and Elecs. for Imaging, Inc. v. Abacus Software ("M.I.T."), 462 F.3d 1344, 1353-54 (Fed. Cir. 2006)). Defendants further argue that "Plaintiff is not entitled to a construction that coversevery conceivable structure for performing the functions recited in the claim." Id. (citing Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1214 (Fed. Cir.1998)). In support of their respective positions, the parties rely on intrinsic and extrinsic evidence, as well as the same body of case law. 2 The Court necessarily begins with an analysis of the controlling case law.

1. Means-Plus-Function Claiming

Pursuant to 35 U.S.C. § 112, P 6, a patentee is permitted to express a claim limitation by reciting a function to be performed by some generic "means," instead of reciting in the claim the actual structure for performing that function. Specifically, section 112, P 6 provides:

[an element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112, P 6 (1994). Section 112, P 6 thus "operates to restrict claim limitations drafted in such functional language to those structures, materials, or acts disclosed in the specification (and their equivalents) that perform the claimed function." Personalized Media Comm's, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 703 (Fed. Cir. 1999). "The point of the requirement that the patentee disclose particular structure in the specification and that the scope of the patent claims be limited to that structure and its equivalents is to avoid pure functional claiming." Aristocrat Techs. Australia Pty Ltd. v. Int'l Game Tech., 521 F.3d 1328, 1333 (Fed. Cir. 2008).

3 Claim construction of a means-plus-function limitation has two steps: "First, the court must determine the claimed function. Second, the court must identify the corresponding structure in the written description of the patent that performs that function." Applied Med. Res. Corp. v. U.S. Surgical Corp., 448 F.3d 1324, 1332 (Fed. Cir. 2006). The claimed function is recited in the claim itself, and the corresponding structure "must not only perform the claimed function [but] the specification must clearly associate the structure with the performance of the function." Cardiac Pacemakers, Inc. v. St. Jude Med., Inc., 296 F.3d 1106, 1113 (Fed. Cir. 2002). In the event the Court applies section 112, P 6 to the disputed claim terms,
the parties have agreed to the corresponding structure disclosed in the '668 Patent and '173 Patent. See Joint Claim
Construction and Prehearing Statement at 2 ("If the Court determined that means-plus-function analysis is appropriate, Alto-
Shaam agrees to accept Defendants' proposed constructions with respect to the corresponding structure.").

"The task of determining whether the limitation in question should be regarded as a means-plus-function limitation, like all
claim construction issues, is a question of law for the court, even though it is a question on which evidence from experts
may be relevant." Lighting World, 382 F.3d at 1358 (citations omitted). The court in Lighting World delineated the standard
to be used by courts to determine whether to apply section 112, P 6 to a disputed claim limitation:

A claim limitation that actually uses the word "means" invokes a rebuttable presumption that § 112 P 6 applies. By
contrast, a claim term that does not use "means" will trigger the rebuttable presumption that § 112 P 6 does not apply. The
use of the term "means" is central to the analysis because the term "means," particularly as used in the phrase "means for," is
part of the classic template for functional claim elements and has come to be closely associated with means-plus-function
claiming.

The presumption that a limitation lacking the term "means" is not subject to section 112 P 6 can be overcome if it is
demonstrated that the claim term fails to recite sufficiently definite structure or else recites function without reciting
sufficient structure for performing that function. Our cases make clear, however, that the presumption flowing from the
absence of the term "means" is a strong one that is not readily overcome.

Id. at 1358 (internal punctuation and internal citations omitted) (emphasis added). This presumption stems from the fact that
section 112, P 6 "providesthat an element in a claim for a combination 'may be expressed' as a means for performing a
function, which indicates that the patentee is afforded the option of using the means-plus-function format. The question then
is whether, in the selection of claim language, the patentee must be taken to have exercised that option." Greenberg v.

In Greenberg, the Federal Circuit found that the district court erred in characterizing "detent mechanism" as a means-plus-
function limitation. In so ruling, the court noted, among other things, that dictionary definitions made "clear that the noun
'detent' denotes a type of structure with a generally understood meaning in the mechanical arts, even though the definitions
are expressed in functional terms . . . It is true that the term 'detent' does not call to mind a well-defined structure, but the
same could be said of other commonplace structural terms such as 'clamp' or 'container.'" Greenberg, 91 F.3d at 1583
(reciting several dictionary definitions of "detent" including "a mechanism that temporarily keeps one part in a certain
position relative to that of another, and can be released by applying force to one of the parts.").

In Lighting World, notwithstanding the ruling in Greenberg that the disputed claim term need not call to mind a specific
structure to avoid the ambit of section 112, P 6, the trial court applied section 112, P 6 to the phrase "connector assembly,"
adopting defendants' argument therein that "in order to be regarded as structural for purposes of section 112, P 6, a claim
limitation must identify a specific structure and not use a generic term that includes a wide variety of structures." Lighting
World, 382 F.3d at 1359 (citing the district court opinion). Reversing the district court's decision as "unduly restrictive," the
Federal Circuit rejected the premise upon which the district court based its decision, namely, that "connector assembly" was
not structural because "it would cover every conceivable structure that could connect two elements and pivot." Id. Instead,
the Federal Circuit found that the term "connector assembly" provided sufficient structure, and therefore did not fall within
the ambit of section 112, P 6. Lighting World, 382 F.3d at 1360-63. Looking to various dictionary definitions of the term
"connector," which modified "assembly," the court found that "connector" has a "reasonably well-understood meaning as a
name for structure, even though the structure is defined in terms of the function it performs." Id. at 1361 ("connector"
defined as "any of various devices for connecting one object to another" and "connect" defined as "to join, fasten, or link
together usu. by means of something intervening"). From these definitions, the court held that the term "connector
assembly" "means a unit that joins, fastens, or links each pair of adjacent support members." In so holding, the court stated:

In considering whether a claim term recites sufficient structure to avoid application of section 112 P 6, we have not
required the claim term to denote a specific structure. Instead, we have held that it is sufficient if the claim term is used in
common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of
structures and even if the term identifies the structures by their function.
Id. at 1359-60. The Lighting World court further stated: ""[T]he fact that a particular mechanism . . . is defined in functional terms is not sufficient to convert a claim element containing that term into a 'means for performing a specified function' within the meaning of section 112(6)."" Id. at 1360 (quoting Greenberg, 91 F.3d at 1583). Further, in reaching its conclusion that "connector assembly" did not fall within the purview of section 112, P 6, the court noted:

[W]hile it is true that the term "connector assembly" does not bring to mind a particular structure, that point is not dispositive. What is important is whether the term is one that is understood to describe structure, as opposed to a term that is simply a nonce word or a verbal construct that is not recognized as the name of structure and is simply a substitute for the term "means for."

382 F.3d at 1360.

In reaching its decision, the Lighting World court added that, in light of the principles enunciated in its ruling reversing the district court (see supra), "it is not surprising that we have seldom held that a limitation not using the term 'means' must be considered to be in means-plus-function form. In fact, we have identified only one published opinion since Greenberg in which we have done so, and that case provides a useful illustration of how unusual the circumstances must be to overcome the presumption that a limitation lacking the word 'means' is not in means-plus-function form. That exceptional case is Mas-Hamilton." Id. at 1362.

In Mas-Hamilton, the Federal Circuit held that "lever moving element" and "movable link member" recited in a patent involving a high security lock did not define structure, in that the phrases did not have a well understood structural meaning in the art, and the terms in the claim limitations did not provide any structure as necessary to remove the limitation from the ambit of section 112, P 6. Mas-Hamilton, 156 F.3d at 1213-15. Based on the entire record, the Mas-Hamilton court found that the terms "element" and "member" were mere proxies for the term "means for" and the presumption flowing from the absence of the term "means for" was overcome. See id.

In addition to pointing out the "exceptional" nature of that case, the court in Lighting World distinguished Mas-Hamilton, finding that the term "connector assembly," unlike "lever moving element" and "movable link member," had an understood structural definition in the relevant art, as defined by the patent specification, dictionaries, and expert testimony. See Lighting World, 382 F.3d at 1363. The court further distinguished Mas-Hamilton since the prosecution record showed that the patentee in that case, unlike the patentee in Lighting World, had used the terms "element," "member," and "means" interchangeably, and in the patent itself the patentee described the "lever moving element" and the "movable link member" as the "[m]eans . . . for moving the lever, and the "[m]eans . . . for releasably maintaining the pivotable lever in a position substantially disengaged." Id. at 1362 (internal citation omitted).

By way of contrast to the phrase "connector assembly," following the Lighting World decision, the Federal Circuit held in M.I.T. that the term "colorant selection mechanism" failed to connote sufficient structure to a person of ordinary skill in the art, and therefore the patentee could not avoid the application of section 112, para. 6. "M.I.T., 462 F.3d at 1354. The court in that case reiterated that the terms 'mechanism,' 'means,' 'element,' and 'device,' typically do not connote sufficiently definite structure" to avoid application of section 112, P 6. Id. (citation omitted). The court further stated, however, that "[c]laim language that further defines a generic term like 'mechanism' can sometimes add sufficient structure to avoid 57 Ore. 541, 112 P 6." Id. On the record before it, though, the court concluded that "colorant selection," unlike "detent" in Greenberg, failed to add sufficient structure to define the term "mechanism," rendering section 112, P 6 applicable. Id. ("In contrast [to 'detent'], the term 'colorant selection,' which modifies 'mechanism' here, is not defined in the specification and has no dictionary definition, and there is no suggestion that it has a generally understood meaning in the art.")

Thereafter, in Welker Bearing Co. v. PHD, Inc., 550 F.3d 1090, 1096 (Fed. Cir. 2008), the Federal Circuit found the phrase "mechanism for moving said finger" subject to the means-plus-function limitation for, inter alia, the following reasons:

The applicant for the '254 patent could have supplied structural context to claim 1 in any number of ways. If claim 1 of the '254 patent had recited, e.g., a "finger displacement mechanism," a "lateral projection/retraction mechanism," or even a "clamping finger actuator," this court could have inquired beyond the vague term "mechanism" to discern the understanding of one of skill in the art. If that artisan would have understood such language to include a structural component, this court's analysis may well have turned out differently. Instead the applicant chose to express this claim element as "a means or step

"
for performing a specified function without the recital of structure, material, or acts in support thereof." 35 U.S.C. § 112 P 6.

Welker Bearing, 550 F.3d at 1096-97. The Court now turns to the disputed claim terms and construes them in light of this body case law.

2. Analysis of Claim Limitations

Claim 11 in '668 Patent

"a first food preparation assembly operable to prepare raw food product using steam and at least one of radiating heat and forced air convection";

"a smoking assembly configured to deliver heat to an aromatic smoke producing media that emits smoke into the heating cavity in response to the delivered heat"

Claim 1 in '173 Patent

"a first food preparation assembly comprising a steam assembly selectively providing steam into the interior to prepare food";

"the steam assembly comprising a steam producing assembly capable of delivering liquid across the heating element that transforms the liquid into steam that is delivered to the interior of the heating cavity"; and

"a smoking assembly selectively delivering smoke into the interior independently of the first food preparation assembly"

As a threshold observation, these claim limitations clearly do not fit squarely within the standard means-plus-function analysis. Because the "first food preparation assembly" limitation and the "smoking assembly" limitation in Claim 11 of the '668 Patent do not contain the words "means" or "means for," the Court begins with the strong presumption that section 112, P 6 does not apply to this limitation. See Lighting World, 382 F.3d at 1358. Similarly, because the "steam assembly" limitation, the "first food preparation assembly" limitation and the "smoking assembly" limitation in Claim 1 of the '173 Patent do not contain the words "means" or "means for," the Court begins with the presumption that section 112, P 6 does not apply to these limitations. See id. Further, the disputed claim terms do not contain the "generic terms 'mechanism,' 'means,' 'element,' and 'device,' [which] typically do not connote sufficiently definite structure" See M.I.T., 462 F.3d at 1354 (quoting Personalized Media Communications, 161 F.3d at 704). Accordingly, to overcome the strong presumption that section 112, P 6 does not apply to these limitations, Defendants must "demonstrate[] that the claim term[s] fail[] to recite sufficiently definite structure or else recite[] function without reciting sufficient structure for performing that function."

Lighting World, 382 F.3d at 1358.

Defendants' Opening Brief

To rebut the presumption that section 112, P 6 does not apply, Defendants first contend that the claim limitations are defined in purely functional terms, rather than structural terms:

Claim 11 of the '668 Patent does not recite sufficiently definite structure for the "first food preparation assembly," thus making this limitation a means-plus-function limitation. The claim defines this limitation in functional terms by what it does, rather than by what it is. The recited function is being "operable to prepare raw food product using steam and at least one of radiating heat and forced air convection." This functional description says nothing about structure -- it reveals merely that there be some means to prepare raw food product with steam and either heat or forced air convection. The claim does not recite any definite structure for generating steam, generating radiating heat, or causing forced air convection.

Def. Opening Brief at 11 (original emphasis). Defendants make the same argument with regard to the phrase "smoking assembly" in Claim 11. See id. at 16 ("Claim 11 of the '668 Patent does not recite sufficiently definite structure for the 'smoking assembly' limitation. An analysis similar to the one applied to the 'first food preparation assembly' applies . . . Claim 11 uses only functional language for this limitation, describing the limitation by what it does rather than by what it is.") Similarly, with regard to the disputed claim terms in Claim 1, Defendants' arguments are essentially the same. See id. at 18 ("Claim 1 of the '173 Patent also does not recite sufficiently definite structure for the 'steam assembly' limitation. An analysis similar to the one used for the 'first food preparation assembly' and the 'smoking assembly' limitations applies.

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First, Claim 1 again uses only functional language for this limitation, describing the limitation by what it does rather than what it is . . . None of the language discloses structure . . . id. at 19-20 (“For the same reasons discussed above with respect to the 'smoking assembly' limitation of Claim 11 of the '668 Patent, the 'smoking assembly' limitation of Claim 1 of the '173 Patent also is a means-plus-function limitation. While the stated function is slightly different (selectively delivering smoke into the interior independently of the first food preparation assembly), again the claim recites no definite structure to perform the function. Claim 1 defines this limitation in functional terms by what it does rather than by what it is.”).

In addition, Defendants contend that the term “assembly,” which is part of each disputed claim limitation, "is merely a generic term that does not connote sufficiently definite structure to avoid the application of § 112, P 6 . . . Indeed, if the term 'means' were substituted for the term 'assembly,' there would be no difference in the ultimate construction of the claim." Def. Opening Brief at 11-12. According to Defendants, "the term 'assembly' is like the term 'mechanism' -- standing alone it is a generic term that does not constitute sufficiently definite structure to avoid treatment under § 112, P 6." Id. at 12-13. Further, Defendants argue that "the myriad ways the term 'assembly' is used in the '668 Patent demonstrates that the term is not a definite structure." Id. at 12. Defendants point out that in the '668 patent, the term "assembly" is used 127 times, and in the specification is used "in connection with no less than 12 diverse types of structure[.]" Id.

Citing to M.I.T., where the court held that "colorant selection mechanism" was not sufficiently structural to avoid application of section 112, P 6, Defendants posit:

In analyzing the term "mechanism" alone, the Court determined that it did not recite sufficiently definite structure, noting that the term "standing alone connotes no more structure than the term 'means.'" "Assembly" has been treated no differently. In Lighting World, the Federal Circuit relied upon the dictionary definition of the term "connector" that demonstrated that it had a generally understood meaning, and, therefore, that "connector assembly" did recite definite structure. Notably, the Federal Circuit did not even analyze the term "assembly" to determine if it had a generally understood meaning. "Assembly" is generic, and the Federal Circuit has never suggested that the term "assembly," on its own, is a sufficiently definite recitation of structure."

Def.Opening Brief at 13 (internal citations omitted).

Defendants next argue that, unlike the terms "detent mechanism" in Greenberg, supra, and "connector assembly" in Lighting World, supra, where dictionary definitions showed the terms had sufficiently well understood structural meaning to persons of skill in the art, the addition of the modifiers "first food preparation," "smoking" and "steam," to the generic word "assembly" does not add sufficient structure. Id. at 13-19. According to Defendants, these are mere labels to differentiate the various types of assemblies, and these modifiers, which lack any dictionary definitions, are more akin to the modifier "colorant selection" in M.I.T., supra, where the court found that the presumption against application of section 112, P 6 had been rebutted.

In a further effort to rebut the presumption that section 112, P 6 does not apply to the disputed claim terms, Defendants cite to the deposition testimony of one of the patents' named inventors, Janus Bartelick. See Def. Opening Brief at 15 ("Named inventor Janus Bartelick agrees that Claim 11 does not disclose any definite structure and, instead, that Claim 11 would read on any combination oven('combi oven') having any structure that performs the recited function.") The deposition transcript provides:

Q. . . . [T]his is your issued patent I'm now talking about. It says "first food preparation assembly operable to prepare raw food product using steam in at least one of radiating heat and forced air convection." Do you understand what that means?

A. Yes, I do understand that you can cook in either steam, convection, or the combination of steam and convection.

Q. And you understand that that would cover anything that you used to generate steam, radiating heat or forced air convection as long as you could cook with steam and either heat or forced air convection?

A. This means basic functions of the combination oven, that you can cook in steam, convection or the combination of two.

Q. Right. And you understand the claim to cover anything that would perform those basic functions?
A. In the combi oven, yes.

Def. Opening App. at 152-153 (Ex. 7). Defendants conclude: "Thus, named inventor Bartelick agrees that the claim is described in terms of its function, rather than in terms of its structure." Def. Opening Brief at 15.

4 Defendants also seek to introduce deposition testimony from Janus Bartelick regarding the "smoking assembly" in Claim 11, contending that the testimony shows that Mr. Bartelick agrees that the claims do not disclose any structure, but are purely functional. See Def. Opening Brief at 16-18. Alto-Shaam contends that Defendants have selectively quoted from Mr. Bartelick's deposition, and that "taken in context, Defendants' characterization of Mr. Bartelick's testimony is without support." Pl. Resp. Brief at 11-12. Having read the portion of Mr. Bartelick's deposition in dispute (see Pl. Resp. App. at 1113-1115, 1116-1117), while it appears that Alto-Shaam is likely correct that Mr. Bartelick is testifying that the smoking assembly and/or smoker box could be internal or external, the testimony is, at best, ambiguous. The Court will therefore not consider it.

Alto-Shaam's Response

In response, Alto-Shaam contends that Defendants have failed to rebut the strong presumption against means-plus-function claiming. In support, Alto-Shaam argues that case law cited by Defendants is distinguishable or inapplicable, that reliance on Janus Bartelick's testimony is misplaced, that the specifications show that the disputed claim terms denote structure 5 , and that Alto-Shaam exercised its option to not claim in means-plus-function form. In further support, Alto-Shaam introduces a dictionary definition of "assembly," as well as the Declaration of named inventor William Hansen.

With regard to case law, Alto-Shaam contends that "first food preparation assembly," "smoking assembly," and "steam assembly," "refer to structures that take their names from the function they perform [and] [t]hese terms are therefore more like the 'connector assembly' in Lighting World than the 'lever moving element' or 'movable link member' of Mas-Hamilton. Mas-Hamilton therefore has no bearing on the issues in this case." Pl. Resp. Brief at 6. Alto-Shaam also distinguishes Mas-Hamilton since, as explained by the court in Lighting World, the prosecution record in that case showed that the patentee, unlike the patentee in Lighting World, had used the terms "element," "member," and "means" interchangeably, and in the patent itself the patentee described the "lever moving element" as the "[m]eans... for" moving the lever, and the "[m]eans... for releasably maintaining the pivotable lever in a position substantially disengaged." Lighting World, 382 F.3d at 1362 (internal citation omitted). Similarly, in M.I.T., in reaching its decision that "colorant selection mechanism" was subject to section 112, P 6, the court gave weight to the fact that the patentee had used the terms "mechanism" and "means" as synonyms. See generally M.I.T., 462 F.3d at 1354. No such evidence of synonymous usage is present in this case. As to Welker Bearing, where the court held that "mechanism for moving said finger" was a limitation subject to means-plus-function treatment, Alto-Shaam argues that, unlike in that case, the "patent claims as a whole makes it abundantly clear that the term 'assembly' denotes structure." Pl. Resp. Brief at 8.

As to Defendants' argument that named inventor Janus Bartelick's deposition testimony regarding the term "first food preparation assembly" supports application of section 112, P 6 to the disputed claim terms, Alto-Shaam argues that, based on the court's reasoning in Lighting World, Mr. Bartelick's testimony actually supports Alto-Shaam's proposed claim construction:
While the terms "connector" and "connector assembly" are certainly broad, and may in the end include any structure that performs the role of connecting, the same could be said of numerous other terms, such as "clamp," or "clip," or even "support member[.]" Those terms are routinely treated as structural by patent practitioners and courts, and we conclude there is no reason to treat the term "connector assembly" any differently for purposes of § 112, P 6.

Pl. Resp. Brief at 9 (quoting Lighting World, 382 F.3d at 1361). To review, Mr. Bartelick testified that "first food preparation assembly" could be any structure that performs the role of convection or combination steam and convection cooking in the combination oven. See Def. Opening App. at 152-53. Alto-Shaam argues that this testimony, contrary to Defendants' interpretation, is consistent with the court's reasoning in Lighting World.

Alto-Shaam also introduces extrinsic evidence in support of its argument that Defendants have failed to rebut the presumption that section 112, P 6 does not apply to the disputed claim terms. Specifically, Alto-Shaam introduces the Declaration of named inventor William Hansen. See Pl. Resp. App., vol. 1 Ex. A (Declaration of William Hansen). Mr. Hansen testified as follows:

A person with ordinary skill provided with nothing more than Alto-Shaam's patents would recognize that "smoking assembly" is a number of component pieces fitted together to form a whole capable of delivering heat to an aromatic smoke producing media. A skilled artisan would also easily determine that the "steam producing assembly" is a number of component pieces fitted together to form a whole capable of delivering liquid across the heating element which transforms the liquid into steam. A person of ordinary skill in the art of oven design is aware that combination ovens utilize multiple cooking processes to prepare food. Therefore, a person of ordinary skill would also understand that the "first food preparation assembly" is a number of component pieces fitted together to form a whole capable of cooking food using one cooking process -- in this case convection heat, steam, and/or radiant heat -- before a second food preparation process, such as smoke, is engaged to continue the cooking process.

Id. at 17 (Hansen Decl. P 28).

Alto-Shaam has also submitted the definition of "assembly" contained in the SHORTER ENGLISH OXFORD DICTIONARY 133 (5th ed. 2002). See Pl. Resp. App. at 1105-1107 (defining "assembly" as "a collection of objects; esp. a number of component pieces fitted together to form a whole; a device consisting of numerous parts.").

Defendants' Response to Alto-Shaam

Defendants first contend that: "Plaintiff's reliance on Lighting World is misplaced. In that case the determination that a 'connector assembly' was not a means-plus-function limitation had nothing to do with the use of the term 'assembly.' The Federal Circuit held that 'connector' had a well-known structural meaning to persons of skill in the art in light of dictionary definitions of 'connector.' No similar evidence exists in this case." Def. Resp. Brief at 4-5.

As to Alto-Shaam's statement that the claims of the '668 Patent themselves recite sufficient structure forthethe "first food preparation assembly," Defendants point out that Alto-Shaam supports this proposition by citing to Claim 1 of the '668 Patent, when the Court is concerned with the recitation of "first food preparation assembly" in Claim 11. Id. at 6 ("Once again Plaintiff confuses the issue. The issue is whether the term 'first food preparation assembly' in Claim 11 of the '668 Patent recites sufficient structure 'within the claim itself,' not whether sufficient structure is recited in other claims.") (original emphasis) (citations omitted). According to Defendants, "Claim 11 does not recite the structure that Plaintiff alleges is 'sufficient structure' for the 'first food preparation assembly.' By citing Claim 1, Plaintiff tacitly admits that Claim 11 does not recite sufficiently definite structure to avoid the application of 35 U.S.C. § 112, P 6." Id. (quoting Personalized Media Communications, 161 F.3d at 704) ("the focus remains on whether the claim as properly construed recites sufficiently definite structure to avoid the ambit of § 112, P 6").

With regard to the extrinsic evidence, Defendants argue that the Court should give little weight to Mr. Hansen's declaration, deeming itself-serving and conclusory. See Def. Resp. Brief at 1, 7-8. Defendants further argue that Mr. Hansen's testimony actually supports application of means-plus-function limitations, since he asserts that a person of skill in the art would understand all of the disputed claim limitations as a "number of component pieces" that collectively perform the functions cited in the claim. Id. at 1. According to Defendants, Mr. Hansen's "view would encompass every conceivable structure for performing the functions recited in the claim [and] Plaintiff is not entitled to such a construction[.]" Id. at 7 (citing Mas-
With regard to the dictionary definition introduced by Alto-Shaam, Defendants assert that an "assembly" is defined as a generic structure, "a collection of objects" or a "device consisting of numerous parts." Defendants cite to numerous cases where the term "device," like "mechanism," was held to be a generic term lacking sufficient structure to avoid the ambit of section 112, P 6. Id. at 7 (citations omitted). Defendants contend: "To the extent that Plaintiff is arguing that it somehow escapes means-plus-function treatment because an assembly has multiple parts instead of a single part, that argument is baseless." Id.

Further, to counter Alto-Shaam's argument that the disputed claim terms should be given their ordinary meaning, Defendants introduce the deposition testimony of one of the named inventors, Patrick Willis, who testified that he is not familiar with the disputed claim terms in this case:

Q. Do you know what that term means, "first food preparation apparatus"?
A. No.

Q. "First food preparation assembly," that's not a term you used around the office, correct?
A. No.

. . .

Q. But you've never used the term before?
A. I have not.

Q. Have you ever used the term "first food preparation assembly before?"
A. No.

Q. All right. Have you ever used the word "steam assembly" before?
A. No.

Q. The term "steam assembly" is not a term of art you're aware of?
A. No.

Q. The term "first food preparation assembly" is not a term you are aware of?
A. Correct.

Def. Resp. App., Ex. 8 at 7-8 (Deposition of Patrick A. Willis).

3. The Court's Ruling
a. Inventor Testimony

With regard to credibility assessments of experts in patent cases, the Supreme Court stated in Markman:

It is, of course, true that credibility judgments have to be made about the experts who testify in patent cases, and in theory there could be a case in which simple credibility judgment would suffice to choose between experts whose testimony was equally consistent with the patent's internal logic. But our own experience with document construction leaves us doubtful that a trial court will run into many cases like that. In the main, we expect, any credibility determinations will be subsumed within the necessarily sophisticated analysis of the whole document, required by the standard construction rule that a term
can be defined only in a way that comports with the instrument as a whole.

Markman, 517 U.S. at 389. Mr. Hansen's testimony is in no way inconsistent with the specification and file history in this case, and accordingly the Court will consider it. Defendants' contention that his Declaration is self-serving and conclusory would be of more concern to the Court were he to define the terms in a way that did not comport with the instrument as a whole. See id. The Court also takes into account Mr. Hansen's qualifications, including a Bachelor of Science Degree in mechanical engineering and significant experience in the industry, and concludes he is well-qualified as one of ordinary skilfin the art of combination oven design. See generally Pl. Resp. App., vol. 1 Ex. A (Hansen Decl. PP 2-3).

As to Mr. Willis's deposition testimony that he is unfamiliar in common parlance with the disputed claim terms, however, the Court agrees with Alto-Shaam that his testimony is entitled to little weight. As a review of his deposition transcript makes clear, Mr. Willis has little to no experience in engineering or combination oven design, and pursued a general business degree for two years, but never graduated from college. See Pl. Resp. App. at 1126-1128, vol. 3 Ex. F. Further, Mr. Willis testified that he did not participate in designing the prototype of the combination oven, but only provided the concept to the engineering team, which took the concept and designed the prototype. Id. at 1131-1135.

Finally, the Court will not consider the testimony of Cleveland Range engineer Robert McGhee offered by Alto-Shaam. As Defendants correctly argue, a review of Mr. McGhee's actual testimony reveals that he did not even provide testimony about a "smoking assembly" or mention the patents involved in this case, but rather discussed a "smoker box assembly." See Def. Resp. Brief at 11. Accordingly, his testimony is irrelevant.

b. Claim Construction

First, while the Court finds that, facially, the disputed claim terms do not appear to connote any specific structure, and can be interpreted as describing an apparatus based on the function it performs, as Defendants have argued, the case law provides that to avoid application of section 112, P 6, the delineation of a particular structure, and the identification of structure separate from its function, are not required. See Lighting World, 382 F.3d at 1359-60. Rather, to avoid falling into the ambit of section 112, P 6, the phrase must be used in common parlance or by persons of skill in the pertinent art to designate structure, even if the structure described is of a broad or amorphous class. See id. (to avoid application of "section 112 P 6, we have not required the claim term to denote a specific structure. Instead, we have held that it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.") (emphasis added).

Further, the Court's analysis of the case law (see supra) reveals that both parties engage in arguments in an attempt to align this case to those previous cases they perceive are most favorable to their position regarding the reach of section 112, P 6. Contrary to Alto-Shaam's argument that the disputed claim terms in this case are somehow akin to the term "connector assembly" in Lighting World, as Defendants correctly point out, the court in that case did not even discuss the term "assembly," and focused instead on "connector." See generally Lighting World, supra. Thus, while the overarching principles governing means-plus-function claiming in this case are relevant to the Court's analysis today, with regard to the term "assembly," Lighting World sheds no light. With regard to the case law which Defendants cite to support their argument, the Court discerns that Defendants omit several key distinguishing factors present in those case. For example, two key factors relied upon by the court in M.I.T. to ultimately construe "colorant selection mechanism" as a means-plus-function element, are not present in the instant case. See generally M.I.T., 462 F.3d at 1354. In that case, the court took into account that "the patentee used 'mechanism' and 'means' as synonyms" in the patent, and that "one dictionary definition equates mechanism with means." Id. By contrast, the prosecution history of the '668 and '173 Patents lacks any synonymous usage of the terms "assembly" and "means," and the Court is unaware of any dictionary definition equating "assembly" with "means. In fact, the dictionary definition before the Court defines "assembly" in purely structural terms.

Similarly, several key factors relied upon by the court in Mas-Hamilton to construe "lever moving element" and "movable link member" as means-plus-function claim limitations, are not present herein. First, in Mas-Hamilton, the court pointed out that the patentee had "not directed [the] court to any evidence demonstrating the district court erred in determining that the term 'lever moving element' lacks a reasonably well understood meaning in the relevant lock art[.]" and "there was no evidence that 'movable link member' has a well-understood meaning in the art." 156 F.3d at 1213-15. By contrast, in this case Alto-Shaam has introduced into the record named inventor William Hansen's testimony that to one skilled in the art of combination oven design, the disputed claim terms connote structure, as well as a dictionary definition of "assembly" from
which the Court readily concludes that the term is defined as a structure. Further, as highlighted by the Lighting World court in distinguishing Mas-Hamilton, the prosecution record showed that the patentee in that case, unlike the patentee in Lighting World, had used the terms "element," "member," and "means" interchangeably, and in the patent itself the patentee described the "lever moving element" and the "movable link member" as the "[m]eans . . . for" moving the lever, and the "[m]eans . . . for releasably maintaining the pivotal lever in a position substantially disengaged." Lighting World, 382 F.3d at 1363. Again, no such evidence that the applicant used the disputed terms interchangeably with "means" or "means for" has been introduced in this case.

Welker Bearing, where the Federal Circuit found the phrase "mechanism for moving said finger" subject to the means-plus-function limitation, is also distinguishable. "Mechanism," which was not modified, is different from "assembly" in this case, which is modified. Further, unlike in Welker Bearing, Mr. Hansen, one skilled in the art of combination oven design and engineering, testified that such language includes a structural component. Contrast Pl. Resp. App. at 17 (Hansen Decl.) with Welker Bearing, 550 F.3d at 1096-97. ("If claim 1 of the '254 patent had recited, e.g., a "finger displacement mechanism," a "lateral projection/retraction mechanism," or even a "clamping finger actuator," this court could have inquired beyond the vague term "mechanism" to discern the understanding of one of skill in the art. If that artisan would have understood such language to include a structural component, this court's analysis may well have turned out differently.") (emphasis added). Here, the Court has been able to inquire beyond the term "assembly" to determine that an artisan understands the language to have a structural component. Finally, Welker Bearing is distinguishable because, as Alto-Shaam points out, in that case, "the limitation used the term 'for' -- one half of the phrase 'means for' that is 'part of the classic template for functional claim elements . . . [that] have come to be closely associated with means-plus-function claiming.'" Pl. Resp. Brief at 7 (quoting Lighting World, 382 F.3d at 1358). No such language appears in Claim 11 or Claim 1.

Further, while Defendants argue that Mr. Hansen's testimony supports application of means-plus-function limitations, since his "view would encompass every conceivable structure for performing the functions recited in the claim [and] Plaintiff is not entitled to such a construction[]" (Def. Resp. Brief at 7) (citing Mas-Hamilton, 156 F.3d at 1214), the Court is mindful of the principles enunciated in Lighting World, where the Federal Circuit held that section 112, P 6 is not implicated "even if the term covers a broad class of structures and even if the term identifies the structures by their functions." See Lighting World, 382 F.3d at 1359-60 (citations omitted). Contrary to Defendants' argument, that the disputed claim terms are understood to one skilled in the art as including "a number of component pieces fitted together to form a whole" (see Hansen Decl. P 28) capable of performing various function set forth in the patent does not automatically bring the claim terms at issue within the ambit of section 112, P 6. See id. 6

6 Although the Court has made a finding that Patrick Willis is not a person of skill in the art of combination oven design (see supra), even assuming arguendo that the Court were to consider his testimony that he is not familiar with the terms "first food preparation assembly" and "steam assembly" (see Def. Resp. App., Ex. 8 at 7-8 (Willis Depo .)), the Court would nevertheless reach the same conclusion based on the entire record that Defendants have failed to rebut the strong presumption that section 112, P 6 does not apply. Moreover, the Court notes that Mr. Willis does not provide any testimony regarding the disputed claim term "smoking assembly."

Also significant on this point is the Federal Circuit's rejection in Lighting World of the district court's decision to apply section 112, P 6, which the Federal Circuit characterized as "unduly restrictive," as it was based on testimony of a defense expert that the term "connector" "encompasses 'at least a single infinity of possible devices' and that the term 'would not provide [him] or others of ordinary skill in lighting fixture art with sufficient structural information to put [him] on notice as to what device or component would read on the claim element." 382 F.3d at 1359. The Federal Circuit rejected the premise "[i]mplicit in [the defense expert's] testimony" "that in order to be regarded as structural for purposes of section 112, P 6, a claim limitation must identify a specific structure and not use a generic term that includes a wide variety of structures." Id. This faulty premise is the basis of Defendants' argument that Mr. Hansen's testimony supports means-plus-function limitations in this case. As in Lighting World, this Court rejects the premise upon which Defendants' argument hinges as "unduly restrictive." See Lighting World, 382 F.3d at 1359. 7
Similarly, the Court rejects Defendants' argument that named inventor Janus Bartelick's deposition testimony regarding the term "first food preparation assembly" is effective to rebut the presumption against means-plus-function claiming. To review, Mr. Bartelick testified that "first food preparation assembly" could be any structure that performs the role of convection or combination steam and convection cooking in the combination oven. See Def. Opening App. at 152-53. Whether a "first food preparation assembly" could cover a broad class of structures is not the relevant inquiry. See Lighting World, 382 F.3d at 1359-60 (to avoid application of "section 112P 6, we have not required the claim term to denote a specific structure. Instead, we have held that it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.") (emphasis added). At a minimum, Mr. Bartelick's testimony indicates that to one skilled in the art of combination oven design, the disputed claim term designates structure.

The Court also considers the dictionary definition of "assembly" introduced by Alto-Shaam. See generally Lighting World, 382 F.3d at 1360 (courts are encouraged to look "to the dictionary to determine if a disputed term has achieved recognition as a noun denoting structure, even if the noun is derived from the function performed."). Alto-Shaam has submitted the definition of "assembly" contained in the SHORTER ENGLISH OXFORD DICTIONARY 133 (5th ed. 2002). See Pl. Resp. App. at 1105-1107 (defining "assembly" as "a collection of objects; esp. a number of component pieces fitted together to form a whole; a device consisting of numerous parts."); see also THE NEW OXFORD AMERICAN DICTIONARY 95 (2001) (defining "assembly" as "a unit consisting of components that have been fitted together: the tail assembly of the aircraft"). Clearly this definition describes structure (albeit not a specific structure), and cannot be said to be a "nonce word" or a "verbal construct" that is "simply a substitute for the term 'means for.'" Lighting World, 382 F.3d at 1360. Further, it is significant that the Lighting World court looked to whether the disputed claim term was "understood to describe structure" in general, not a structure. 382 F.3d at 1360. To reiterate the court's reasoning in not applying section 112, P 6:

[W]hile it is true that the term "connector assembly" does not bring to mind a particular structure, that point is not dispositive. What is important is whether the term is one that is understood to describe structure, as opposed to a term that is simply a nonce word or a verbal construct that is not recognized as the name of structure and is simply a substitute for the term "means for."

Id.; see also id. (citing cases where the court rejected arguments that "broad" terms such as 'digital detector,' 'eyeglass hanging member,' 'reciprocating member,' and 'sealingly connected' joints trigger section 112 P 6.") (internal citations omitted).

While it is true that the term "connector assembly" does not bring to mind a particular structure, that point is not dispositive. What is important is whether the term is one that is understood to describe structure, as opposed to a term that is simply a nonce word or a verbal construct that is not recognized as the name of structure and is simply a substitute for the term "means for."

In short, having considered the entire record in the context of the applicable law, the terms "first food preparation assembly," "smoking assembly," and "steam assembly," in the context of Claim 11 of Patent '668 and Claim 1 of '173 Patent connote a sufficient degree of structure to one of ordinary skill in the art to avoid section 112, P 6. 9 Accordingly, the Court concludes that Defendants have failed to rebut the presumption that section 112, P 6 does not apply to the disputed claim terms.

In reaching this decision, the Court has taken into account Defendants' argument that Alto-Shaam cites to portions of Claim 1 and Claim 4 of the '668 Patent to support its assertion that the disputed claim terms in Claim 11 recite sufficient structure and makes similar arguments regarding the '173 Patent. Def. Resp. Brief at 6 ("By citing Claim 1, Plaintiff tacitly
admits that Claim 11 does not recite sufficiently definite structure to avoid the application of 35 U.S.C. § 112, P 6.” While the Court is concerned with the disputed claim terms as used in Claim 11, nothing prevents the Court from viewing the instrument as a whole. See generally Research Plastics, Inc. v. Fed. Packaging Corp., 421 F.3d 1290, 1295 (Fed. Cir. 2005) (“claim terms are presumed to be used consistently throughout the patent, such that the usage of a term in one claim can often illuminate the meaning of the same term in other claim”).

In reaching this decision, the Court additionally takes into account that the presumption against construing an element as means-plus-function arises from the premise that section 112, P 6 provides the patentee the option of drafting the patent in the means-plus-function format. See Greenberg, 91 F.3d at 1584. It appears to the Court that if the patentee had wished to exercise the option to invoke section 112, § 6, the patentee would have done so, and there is nothing in the record to suggest that patent counsel intended to claim in means-plus-function form. See generally Unidynamics Corp. v. Automatic Prods. Intern., Ltd., 157 F.3d 1311, 1319 (Fed. Cir. 1998), abrogated on other grounds by Egyptian Goddess, Inc. v. Swisa, 543 F.3d 665 (Fed. Cir. 1998) (use of the term "means" generally shows that the patent applicant has chosen the option of means-plus-function format invoking section 112, P 6). This case is therefore distinguishable from Welker Bearing, where the applicant "chose to express ['mechanism for moving said finger'] as a 'means or step for performing a specific function without the recital of structure, material or acts in support thereof.'” 550 F.3d at 1096-97 (quoting 35 U.S.C. § 112, P 6).

IV. Conclusion

Based on the foregoing, the Court concludes that Defendants have failed to overcome the presumption that section 112, P 6 does not apply to the claim limitations at issue in Claim 11 of the ’668 Patent and Claim 1 of the ’173 Patent. See generally Lighting World, 382 F.3d at 1358. As such, the Court construes the following limitations of the ’668 Patent and the ’173 Patent according to their ordinary meanings. 10

1. In Claim 11 of the ’668 Patent, "a first food preparation assembly operable to prepare raw food product using steam and at least one of radiating heat and forced air convection" means "a number of component pieces fitted together to form a whole capable of cooking food using one cooking process -- in this case convection heat, steam, and/or radiant heat -- before a second food preparation process, such as smoke, is engaged to continue the cooking process";

2. In Claim 11 of the ’668 Patent, "a smoking assembly configured to deliver heat to an aromatic smoke producing media that emits smoke into the heating cavity in response to the delivered heat" means "a number of component pieces fitted together to form a whole capable of delivering heat to an aromatic smoke producing media";

3. In Claim 1 of the ’173 Patent, "a steam assembly selectively providing steam into the interior to prepare food . . . the steam assembly comprising a steam producing assembly capable of delivering liquid across the heating element that transforms the liquid into steam that is delivered to the interior of the heating cavity" means:

a. "a steam assembly" -- "a number of component pieces fitted together to form a whole capable of providing steam into the interior to prepare food;" and

b. "steam producing assembly" -- "a number of component pieces fitted together to form a whole capable of delivering liquid across the heating element which transforms the liquid into steam."

4. In Claim 1 of the ’173 Patent, "a smoking assembly selectively delivering smoke into the interior independently of the first food preparation assembly" means, "a number of component pieces fitted together to form a whole capable of selectively delivering smoke into the interior independently of the first food preparation assembly";

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

10 See Phillips, 415 F.3d at 1312-13 (words of a claim "are generally given their ordinary and customary meaning, [which] . . . is the meaning that the [words] would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.") (internal quotation marks and citations omitted).
Claim 13 of the '839 patent covers:

A vend control circuit comprising

[a] a coin unit for accepting coins of at least two different denominations,

[b] accumulator means operatively connected to the coin unit including means for entering into the accumulator means amounts representing the value of each different denomination coin deposited during a vend operation,

[c] a price accumulator means having

[c.1] a plurality of input connections for the entry therein of a selected vend price, said last named means including

[c.2] a plurality of serially connected vend selection switches any one of which can be actuated by a customer depending on the vend he chooses,

[c.3] a vend price establishing device associated respectively with each of the vend selection switches, each of said vend price establishing devices having a corresponding number of input and output connections,

[c.4] means operatively connecting the output connections respectively to the input connections of the price accumulator,

[c.5] means establishing continuity between selected ones of the input and output connections of the price establishing means depending on the price to be established thereby for entry into the price accumulator,

[c.6] a source of pulses connected in circuit with the series connected selection switches, operation of a selected one of said selection switches establishing a circuit connection between the pulse source and selected inputs to the price accumulator through the associated vend price establishing device, and

[d] means for producing a vend signal to initiate a vend operation whenever the amount entered in the accumulator means at least equals the amount entered in the price accumulator.

(Def. Exh. 880.)

As is evident from the claim language, Claim 13 encompasses numerous limitations. Coinco created the paragraphing utilized above in order to identify the various limitations and facilitate analysis of the claim. Mars objects to the paragraphing as "incorrect and misleading" (Mars' Post-Trial Mem. at 8 n.5), but nevertheless used the designations in constructing its argument. Thus, although the Court has some reservations about Coinco's breakdown of the claim limitations, the Court will utilize them as well.

In order to prove direct infringement of Claim 13, Coinco must establish that Mars' accused coin changers (when used in "Type I" and "Type II" vending machines) satisfy each of the numerous limitations of the claim. Mars concedes that its accused changers connected to a "Type I" or "Type II" vending machine comprise a vend control circuit, and include "a coin unit for accepting coins of at least two different denominations," but disputes the presence of the remaining claim elements. Mars focuses primarily on four specific elements: [b], [c.3], [c.6], and [d]. For the reasons explained herein, the Court finds that element [c.3] is not present in Mars' changers. Accordingly, Coinco cannot prove direct infringement of the '839 patent and cannot succeed on its contributory infringement or inducement of infringement claim.

A. Claim Construction of Element [c.3]
Patent infringement analysis is a two-step process. Cybor Corp. v. FAS Techs., 138 F.3d 1448, 1454 (Fed. Cir. 1998). First, the Court must construe the claim—or in this case the particular limitation—at issue. The proper construction of the claim is a matter of law to be decided by the Court without reference to the allegedly infringing device. Markman v. Westview Instruments, 52 F.3d 967 (Fed. Cir. 1995) (en banc), aff'd 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996); Pall Corp. v. Hemasure Inc., 181 F.3d 1305, 1308 (Fed. Cir. 1999). "Ascertaining the meaning of the claims requires that they be viewed in the context of those sources available to the public that show what a person of skill in the art would have understood the disputed claim language to mean." MBO Labs., Inc. v. Becton, Dickson & Co., 474 F.3d 1323, 1329 (Fed. Cir. 2007) (internal quotation marks omitted).

When conducting this claim construction analysis, the Court may consider various sources. The starting point for the analysis is the claim language itself. Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Other than the actual claim language, [t]he most relevant source is the patent's specification, which is the single best guide to the meaning of the disputed term. Next in importance is the prosecution history, which is also part of the "intrinsic evidence" that directly reflects how the patentee has characterized the invention. Extrinsic evidence--testimony, dictionaries, learned treatises, or other material not part of the public record associated with the patent--may be helpful but is less significant than the intrinsic record in determining the legally operative meaning of claim language.

MBO Labs., 474 F.3d at 1329 (internal quotation marks and citation omitted).

Here, the disputed question is whether the proper construction of element [c.3] requires a one-to-one relationship between vend selection switches and vend price establishing devices. Mars argues that it does. Coinco disagrees and argues that there is no requirement of a one-to-one association.

To resolve this question, the Court turns first to the claim language. Element [c.3] requires "a vend price establishing device associated respectively with each of the vend selection switches." The article "'a' normally refers to the singular." North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1575-76 (Fed. Cir. 1993). Accordingly, the claim language can be restated as "one vend price establishing device associated respectively with each of the vend selection switches." Mars argues that the word "respectively" in this sentence mandates the one-to-one relationship between vend price establishing devices and vend selection switches. Coinco disagrees. Coinco maintains that the following illustration depicts a situation wherein a vend price establishing device ("PD") is associated--but not "associated respectively"--with each vend selection switch ("SW"): 

[SEE ILLUSTRATION IN ORIGINAL]

Coinco asserts that the PDs and SWs are not "associated respectively" in the above example because there is overlap--i.e., some selection switches are associated with more than one vend price establishing device. Coinco contrasts this situation with the one depicted below:

[SEE ILLUSTRATION IN ORIGINAL]

Coinco maintains that in this latter illustration, a vend price establishing device is "associated respectively" with each of the vend selection switches, despite the lack of a one-to-one relationship, because each selection switch is associated with only one price establishing device.

Accordingly, the proper construction of claim limitation [c.3] depends on whether the word "respectively" in the limitation requires a one-to-one relationship between PDs and SWs (as Mars contends), or whether it permits multiple SWs to be associated with a single PD as long as no SW is associated with more than one PD (as Coinco contends).

As a general rule, all terms in a patent claim are given their "plain, ordinary and accustomed meaning," Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001), "unless the text of the patent makes clear that the word was used with a special meaning," Toro Co. v. White Consol. Indus., Inc., 199 F.3d 1295, 1299 (Fed. Cir. 1999). An example, as provided below, illuminates the ordinary use and meaning of the word "respectively," and indicates that Mars' interpretation of the
language as requiring a one-to-one relationship is more sensible.

Compare, for example, the following two sentences: (1) The cat and the dog belong to John and Jane, respectively. (2) The cat, the dog, and the fish belong to John and Jane, respectively. Sentence (1) represents a typical use of the word "respectively." The meaning of the sentence is clear and understandable--the cat belongs to John and the dog belongs to Jane. Sentence (2) by contrast is incoherent. Unlike in sentence (1), it is impossible to be certain which animal belongs to which person. The only difference between the two sentences is that there is a one-to-one relationship between animals and people in sentence (1), but not in sentence (2). The addition of a third animal in sentence (2) eliminates the one-to-one relationship, and renders the sentence effectively meaningless.

This indicates that the word "respectively" generally requires a one-to-one relationship between the words it modifies in order to remain meaningful. Translating this idea back to the context at hand, the word "respectively" in the claim limitation would require a one-to-one relationship between selection switches and vend price establishing devices. Accordingly, the Court finds that the plain language of the claim limitation supports Mars' construction of the claim as requiring such a one-to-one association.

Further support for this conclusion is found in the patent's specification, which, after the claim language itself, has been characterized by the Federal Circuit as the "most relevant source . . . [and the] single best guide to the meaning of the disputed claims." MBO Labs., 474 F.3d at 1329. Figure 1 is a "block diagram of the vending control circuit of the instant invention." '839 patent, col. 2, lines 22-23. The figure reflects a one-to-one relationship between vend price establishing devices and vend selection switches. Specifically, selection switch 74 is associated with price establishing device 96 via motor hold switch 158 and motor 78, and selection switch 90 is associated with price establishing device 136 via an unnumbered motor hold switch and motor 94. Id. at Fig. 1; see also id. at col. 4, lines 43-50; col. 5, lines 36-39. Nowhere in the figure are two or more selection switches associated with a single price establishing device. See id. at Fig. 1; see also Trial Trans. 39/27/19-29/9 (Kesner). This clearly bolsters the conclusion that the proper construction of limitation [c.3] requires a one-to-one relationship between vend price establishing devices and selection switches.

Moreover, the Court's task when construing a claim is to ascertain what a person of ordinary skill would have understood the claim language to mean. MBO Labs., 474 F.3d at 1329. Mars' expert witness, Mr. Kesner, testified that an engineer of ordinary skill would expect from the figure that if another selection switch were added, then another motor hold switch, motor, and vend price establishing device would be added as well, thus maintaining the one-to-one relationship reflected in figure 1. 2 Trial Trans. 39/29/9-19 (Kesner). Coinco offered no contrary evidence indicating that a person of ordinary skill would have understood the claim language any differently. Two of Coinco's witnesses did testify that additional selection switches could be added without having to add additional price establishing devices by creating a diode "or" connection to an existing price establishing device. See Trial Trans. 35/143/11-144/21 (Morley); 37/101/4-10 (Levasseur); see also Mars, Inc. v. Coin Acceptors, Inc., Civ. Act. No. 90-49 (JCL), 478 F. Supp. 2d 689, 2007 U.S. Dist. LEXIS 20094 (D.N.J. Mar. 21, 2007) (explaining "or" connections). However, the mere fact that one could modify the invention by attaching additional switches to existin price establishing devices does not indicate that such a configuration was covered by the '839 patent. Indeed, the Court sustained an objection by Mars to further questions on this topic for precisely this reason. See Trial Trans. 35/145/1-151/16. Nor does anything in the patent suggest that such a configuration was contemplated by the inventors. See Trial Trans. 39/29/30-31/11 (Kesner). Mr. Kesner testified that if such a configuration had been contemplated, one would expect to see certain features, such as diodes, in the figure 1 diagram of the vending control circuit. Id.

2 Although trial testimony is "extrinsic evidence," which is considered "less significant than the intrinsic record in determining the legally operative meaning of claim language," MBO Labs., 474 F.3d at 1329, the Court finds this testimony to be helpful--indeed critical--to illuminating and interpreting the meaning of the patent specification and how it would be understood by a person of ordinary skill.

Accordingly, the undisputed evidence indicates that the person of ordinary skill would understand figure 1 as requiring a one-to-one relationship between selection switches and vend price establishing devices. This, in conjunction with the Court's independent interpretation of figure 1 as well as the claim language, supports Mars' interpretation of claim limitation.
Mars also argues that aspects of the written description as well as "market factors" indicate that the '839 is limited to circuits having a one-to-one ratio of selection switches and vend price establishing devices. See Mars Post-Trial Br. at 14-18. The Court is not persuaded by these arguments. Nor, however, does the Court find that these factors weigh in favor of Coinco's broader interpretation of the patent claim. Notably, Coinco does not argue that these factors support its interpretation. Nor does Coinco point to any other evidence--intrinsic or extrinsic--that supports its position. Accordingly, the only relevant and informative sources of guidance (the claim language and the figure included in the patent specification) weigh in favor of Mars' claim construction position, which the Court accepts.

Alternatively, Coinco's arguments at most present a case of ambiguity in claim construction, and the Federal Circuit has stated that "where the claim is so ambiguous as to support two differing interpretations, and resort to other intrinsic and extrinsic evidence does not resolve the confusion, a court should adopt the narrower of the suggested interpretations." Quickie Mfg. Corp. v. Libman Co., 180 F. Supp. 2d 636, 645 (D.N.J. 2002); see also Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572, 1581 (Fed. Cir 1996); Athletic Alternatives v. Prince Mfg. ("AAI"), 73 F.3d 1573, 1581 (Fed. Cir. 1996).

In the AAI case, AAI had patented a stringing arrangement for tennis rackets in which the strings were offset at distances which "varied between" a minimum and a maximum distance from the racket's central plane. AAI, 73 F.3d at 1577. Both parties agreed (1) that the phrase "varied between" unambiguously covered a stringing arrangement in which three or more offset distances were used and (2) that a stringing arrangement which employed only a single offset distance was anticipated by the prior art. Id. at 1577, 1575. The disputed question in the case was whether AAI's claim was sufficiently broad to cover a stringing arrangement which employed exactly two offset distances. The Federal Circuit examined the claim language as well as other intrinsic and extrinsic evidence, but ultimately concluded that the reach of the claim was ambiguous and that it was impossible to tell with reasonable certainty whether it covered a racket with only two offset distances. AAI, 73 F.3d at 1578-81. The Court then found, based on its understanding of the second paragraph of 35 U.S.C. § 112, that to the extent that a claim is ambiguous, a narrow reading which excludes the ambiguously covered subject matter must be adopted. AAI, 73 F.3d at 1581; see also Ethicon Endo-Surgery, 93 F.3d at 1581.

Applying this principle to the instant case, the Court finds that the narrow interpretation of the limitation proffered by Mars must be adopted. This conclusion is bolstered by the facts noted above, namely that both the claim language and figure 1 of the patent favor Mars' position and that Coinco does not point to any evidence demonstrating that its proffered interpretation should be accepted over any other. In sum, the Court finds that the proper construction of claim limitation [c.3] requires a one-to-one relationship between selection switches and vend price establishing devices.

2. "an associated value representing a desired quality of result" (claims 9 and 23)

Omax proposes that this phrase "means a value that itself represents desired quality of result, and that can be specified by selecting any numeric, verbal, pictorial or other symbol representing such desired quality, (and which value is stored in computer memory, and is a value that a computer mathematically combines, with one or more other parameters which affect(s) the quality of result, to determine motion control commands provided to the machine tool to adjust velocity or acceleration to achieve the desired quality of result)." Omax continues by noting that an "associated value representing a desired quality of result can be expressed as a so-called 'percentage of speed' if it meets the criteria stated above. It cannot, however, be an actual speed stated in distance/time if such speed specification causes the machine tool to move strictly at the specified speed, without adjustment of the speed to achieve the desired quality of result." Flow's proposed construction is as follows: "A single number that directly represents finished surface quality itself; but cannot be a variable that affects the finished surface quality such as a number related to velocity (e.g. normalized speed or percentage speed scale) or material thickness."

The parties' central dispute is how the value that is inputted by the user "represents" the quality of result that is desired by the user. Flow alleges that this claim was plainly defined during the claim prosecution, when Omax differentiated from prior art by declaring:
However, neither Cutler, nor any other cited art, suggests that the number which should be stored should represent finished surface quality itself rather than any one of many factors which contributes to surface quality. In the claimed invention, a single value is stored which value represents directly the quality of result.

FLO 2268-69. Therefore, Flow argues, the absence of the word "directly" in Omax's proposed construction, and their effort to include "normalized speed" in their definition, is an effort to retrieve ground lost during claim prosecution. Schriber-Schroth Co. v. Cleveland Trust Co., 311 U.S. 211, 220-21, 61 S. Ct. 235, 85 L. Ed. 132, 1941 Dec. Comm'r Pat. 802 (1940) ("It is a rule of patent construction consistently observed that a claim in a patent as allowed must be read and interpreted with reference to claims that have been cancelled or rejected, and the claims allowed cannot by construction be read to cover what was thus eliminated from the patent.").

Omax, of course, disputes this characterization of its statement during the prosecution. The context of the disclaimer was the Cutler prior art, which required an operator to enter velocities of the cutter in surface feet per minute and inches of feed per spindle revolution. These velocity values were typically derived in reliance on a chart that proposed different speeds based on desired quality. Omax was attempting to distinguish the previous system by explaining that the value was not a velocity, but rather the quality level itself. It used the word "directly" to emphasize this difference, and not to distinguish its claim from any claim where the input "inferred" quality. There is no unequivocal disavowal of a variable inputted into an equation which infers quality, so long as it is not an actual velocity. See Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1325-26 ("Consequently, for prosecution disclaimer to attach, our precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable."). Thus, Omax's patent prosecution statement must be construed in the proper context--distinguishing the new method from the Cutler prior art.

The Court is persuaded by Omax's expert's representation that "representing" has no specialized meaning in the art that would require the explicit exclusion of Flow's method. Hutchins's '596 Expert Report at 15 ("[I]t is my opinion that in this context the term 'represents' would reasonably be understood by a person of ordinary skill as meaning 'symbolizes' or 'stands for'.") In its ordinary and customary meaning, and as used in the claim specification, the "value representing quality of result" is a variable that relates to or infers the ultimate quality of the piece that is cut. It is one of a number of factors included in a formula that ultimately dictates how the cutting head behaves.

Pursuant to the rules of claim construction, the Court will not determine infringement through its claim construction; instead, the Court will adopt a construction of this claim term without reference to Flow's "percentage" or "normalized" speed. Whether Flow's formula and input method infringe on Omax's patent will be a jury question. The claim will be construed as follows: "One value from a range of values representing the quality of a cut. This value is inputted into an equation containing other values that reflect characteristics of the task that will impact the quality of the cut, such as material type."

The Court, for the reasons stated by plaintiff, finds "associated with an exit station" is properly construed as "joined to or installed in the exit station." 10

10 The Court has not included in its construction plaintiff's proposed additional language, specifically, "of a processing machine," "where the exit station includes a wafer transfer means and can accommodate at least one wafer cassette," and "closely connected with." The first of these phrases is already included in Claim 21. See '689 Patent, col. 7, ll. 14-15. The
second is a proposed construction of "that includes a wafer transfer means and at least one wafer cassette," which is not one of the seven disputed terms before the Court. The third could be understood as covering a disclaimed construction. (See Duggan Decl. Ex. D at 11-12 (disclaiming "measurement device" located "adjacent to" exit station).)

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c. "Package Reader associated with the picking means"

The parties next dispute the proper construction of "package reader associated with the picking means," as that term is used in claim 1 of the '110 patent. McKesson proposes that this term be construed as "a device that provides the identity of a package to the computer directing the picking means." Swisslog counters that the proper construction is "a package reader attached to the picking means." I recommend that the Court adopt McKesson's proposed construction.

The disputed term appears in element e) of claim 1 of the '110 patent, which reads:

1. A system for selecting and delivering packages to fill orders comprising: . . .

   e) a package reader associated with the picking means and being positioned for reading the machine readable labels on packages located within the storage area, wherein only one type of package is stored in each x, y coordinate location.

'110 patent, col. 13 lines 34-38 (emphasis added).

The claim language does not include the word "attachment" or "attached" or contain any suggestion that the package reader must be physically affixed to the picking means. 8 Importantly, other claims do use the word "attached." '110 patent, col. 13 lines 41-42 (claiming "sensor attached to the picking means"); '267 patent, col. 13 lines 48-52 (claiming "A system as described in claim 3 wherein the picking means is comprised of: a housing; means for storing a plurality of medicine packages attached to the housing . . . .")

where, by contrast, the Applicants used "associated," as in claim 1 of the '110 patent, I believe they meant something broader than "attached." See '267 patent, col. 13 lines 33-38 ("A system as described in claim 1 including a conveyor in communication with the picking means; and patent prescription boxes which are moved by the conveyor to the picking means such that the picking means provides the medicine packages it has picked to fill a given prescription to an associated box.") (emphasis added).

--- Footnotes ---

8 The parties appear to be in agreement that a plain and ordinary dictionary definition of "associated" would be broader than such a definition of "attached," in that the former does not require a physical connection between the package reader and the picking means. (See, e.g., D.I. 351 at 26-27 (citing dictionary definitions); Tr. at 119 (McKesson stating that "extrinsic evidence" with respect to "attached" as that term is used "requires some type of fastening or physical connection, but associated with is united in action or purpose. It's a broader interpretation. It denotes a broader connection between elements that attach."); Tr. at 120 (Swisslog responding that "because of the specific arguments and statements which the inventors made to the Patent Office during the prosecution, they gave up the broader scope of the claim that otherwise might have been applicable with respect to the difference between the word association and attached.").)

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Likewise, in the specification, the patentees continued this distinction between things that are physically "attached" to one another and things that may merely be "associated" with one another. Compare '110 patent, col. 3 lines 21-24 ("The gripper assembly preferably has a movable rod or other carrier for holding selected items, at least one vacuum head and associated controls for gripping and moving selected items."); id. col. 3 lines 30-31 ("We provide a processing unit with associated memory and data entry peripherals."); id. col. 8 lines 4-7 ("The obtaining means 50 also preferably includes an extension rod 52 in fluidic communication with a pneumatic in/out cylinder 53 and associated valve 59, as shown in FIGS. 8 and 11.")
with id. col. 5 lines 29-30 ("Attached to the back 23 are sets of brackets 25 position to hold packages 27."); id. col. 7 lines 49-50 ("A third actuator 43 is attached to bracket 41."); id. col. 7 lines 60-61 ("The obtaining means 50 is slidlingly attached to the housing 49. . ."); id. col. 8 lines 7-9 ("The extension rod 52 is slidilngly attached with respect to the Y and Z directions to the housing 49."); id. col. 8 lines 24-28 ("The holding rod 48 is also attached to a cylinder 48B which allows the storage rod to retract and extend in reference to the obtaining means. The pusher plate 57B is also attached to a cylinder 57A ."). Thus, I conclude that the Applicants used the terms "associated" and "attached" differently and, therefore, claim 1's use of "associated" should not be narrowed to "attached."

Swisslog emphasizes that the specification discloses a package reader that is physically attached to the picking means, and McKesson does not disagree. When the package reader is physically attached to the picking means in a specific manner as shown in Figures 7-11, the specification notes an additional capability of reading the package label prior to picking to confirm picking of the proper packages. See '110 patent, col. 10 lines 2-6 ("When the end of gripper assembly 38 is properly positioned, the bar code reader 26 reads 190 the identity 16 on the medicine package 14 in order to confirm that it is the proper medicine package to be picked with respect to the patient's prescription."). 9 This is a preferred embodiment. '110 patent, col. 6 lines 9-12 ("The picking means 38 can also include means, such as a bar code reader 26 as shown in FIG. 7, for determining the identity 16 of a package 14 . . . and providing its identity 16 to the computer 24.") (emphasis added); id. col. 7 lines 64-67 ("Identifying means, for example, the bar code reader 26 shown in FIG. 8, is mounted on housing 49 such that it can identify a package 14 to be picked by the obtaining means 50.") (emphasis added). Nothing in the claim language limits the claimed invention to this preferred embodiment. Nor may the Court import a preferred embodiment into a claim limitation. See Phillips, 415 F.3d at 1323.

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9 McKesson does not appear to dispute Swisslog's contention (D.I. 349 at 19) that to perform such "pre-pick verification" it is necessary for the package reader to be attached to the picking means.

--- End Footnotes ---

Swisslog additionally argues that during prosecution the Applicants disavowed any claim they might otherwise have had to package readers that are not physically attached to the picking means. (D.I. 349 at 18-23; D.I. 361 at 16-22; Tr. at 119-29) That is, Swisslog finds in the prosecution history an express disclaimer by the Applicants of the full scope of package readers that are "associated" with the picking means, narrowing the claim to just those package readers that are "attached" to the picking means. Such a disclaimer "must be clear and unambiguous." Seachange Int'l, Inc. v. C-COR, Inc., 413 F.3d 1361, 1373 (Fed. Cir. 2005). "Consequently, for prosecution disclaimer to attach, [Federal Circuit] precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable." Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1325-26 (Fed. Cir. 2003). Moreover, the disavowal must directly address the disputed term. See Schwing GmbH v. Putzmeister Aktiengesellschaft, 305 F.3d 1318, 1324 (Fed. Cir. 2002). "If the locus of the argument does not center on the disputed term, a court will face an ambiguity as to whether the statement or disclaimer affects the inventor's belief in the scope of the disputed term." Sky Techs., LLC v. Ariba, Inc., 491 F. Supp. 2d 154, 158 (D. Mass. 2007). Having reviewed the extensive prosecution history in the record here (see D.I. 349 at 18-23; D.I. 360 Ex. E; D.I. 361 at 16-22), I find that the statements on which Swisslog relies do not constitute a clear, unambiguous, unmistakable, and particularized disavowal. 10

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10 The statement most helpful to Swisslog appears in the Applicants' February 15, 1994 "Remarks" accompanying proposed amendments, in which they attempted to distinguish a prior art reference (Morello) the PTO had cited in rejecting claims as obvious. The Applicants stated: "When the picker assembly [of the Morello reference] arrives at that [storage] location it cannot read the article identification while the article remains in the storage location. This teaching is quite different from the system of amended claim 1." (D.I. 387 Ex. 4 at T056471-72) (emphasis added) When read within the full context of the complex prosecution history here, even these two sentences do not rise to the level of clarity and particularity required to constitute a disclaimer. See generally Biogen, Inc. v. Berlex Labs., Inc., 318 F.3d 1132, 1141 (Fed. Cir. 2003) ("Every statement made by a patentee during prosecution to distinguish a prior art reference does not create a separate estoppel. Arguments must be viewed in context.").
These two sentences appear in the middle of a long paragraph that runs to three pages. The two sentences appear at the point in this long paragraph in which the Applicants move from describing multiple features of the Morello patent to describing multiple features of their own invention. Hence, the second of the two sentences -- "This teaching is quite different from the system of amended claim 1" -- is not referring just to the sentence immediately preceding it -- about how Morello's "picker assembly . . . cannot read the article identification while the article remains in the storage location" -- but, rather, refers generally to the many features of the Morello patent described to that point in the paragraph. Moreover, in the paragraph just before the long paragraph in which the two sentences appear, the Applicants explained that they "have amended the pending claims to distinguish over" prior art references including Morello, by adding three new requirements, only one of which deals with the package reader. See id. at T056470. That new package reader requirement is that a package reader be associated with the picking means which reader is positioned for reading the machine readable labels on packages located within the storage area; the requirement is not, therefore, that the package reader be "attached" to the picking means. Id. (emphasis added); compare id. at T056472 (distinguishing Morello reference as not including element of Applicants' system of "a sensor attached to the picking means"). To be sure, there are also suggestions in this long paragraph that the package reader may be attached to the picking means. See id. (explaining that in patentees' invention "[a]rticles are removed from storage locations after the reader confirms that the desired article has been found"); id. (explaining that, even if an associated computer knowing the locations of packages crashes, "applicants' system can still operate using the package reader to locate desired packages"). However, there is nowhere the clear, unambiguous, unmistakable, and particularized disclaimer that would be required to narrow the "associated" claim language to "attached." Given this ambiguity, there is also nothing in the prosecution history on which the public or a competitor of the Applicants could have reasonably relied in concluding that the Applicants disclaimed package readers that are not physically attached to picking means.

Accordingly, again, I recommend that the Court adopt McKesson's proposed construction of "package reader associated with the picking means."

2. “[P]ackage reader associated with the picking means”

The Magistrate Judge has recommended that the court construe "package reader associated with the picking means" as used in claim 1 of the '110 patent to mean "a device that provides the identity of a package to the computer directing the picking means." Swisslog objects 14 to the recommended construction, arguing that a "package reader associated with the picking means" is properly construed to mean a "package reader attached to the picking means."

14 Swisslog's objection is found nestled within its objection to the Magistrate Judge's recommended denial of its motion for noninfringement. (D.I. 553 at 10-11)

In support of its proposed construction, Swisslog alleges that the applicants made statements during prosecution of the '110 patent that resulted in a disavowal of claim scope, 15 requiring a package reader that is physically attached to the picking means. Swisslog primarily relies upon a selective quotation from the prosecution history in which the applicants sought to traverse a rejection made pursuant to 35 U.S.C. § 103 in view of, inter alia, U.S. Patent No. 4,896,024 to Morello ("the Morello patent"):

[T]he picker assembly [of the Morello patent] . . . cannot read the article identification while the article remains in the storage location. This teaching is quite different from the system of the amended claim 1.

(D.I. 350, ex. C at 56471-72) (emphasis added) Looking at these two sentences in isolation lends credence to Swisslog's position regarding the physical relationship between the picking means and the package reader. However, the clarity of any specific disavowal is belied by the bulk of the applicants' remarks, contained in a sizeable two-page paragraph terminating
in the aforementioned sentences, which distinguish the invention of the '110 patent from the Morello patent on various grounds. (Id. at 56470-72) The emphasized sentence characterizes the combination of elements taught by the Morello patent, and not solely the manner in which the picking means identifies an article. The court agrees with Judge Stark's conclusion that these remarks do not amount to a clear, unambiguous and unmistakable disavowal. See Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1325-1326 (Fed. Cir. 2003) (holding that "for prosecution disclaimer to attach, [Federal Circuit] precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable."). Accordingly, the court declines to limit this claim limitation in the manner proposed by Swisslog, and adopts the Magistrate Judge's recommended construction.

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15 The parties agree that "associated with" contemplates a broader connotation than "attached to," at least to the extent that "associated with" does not require a physical connection. (See, e.g., D.I. 351 at 26-27)

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a. "Asymmetrical"

Tecnol's principal argument with respect to the "asymmetrical" limitation is that asymmetry is a term which is only applicable to a two-dimensional figure or structure. [TAB at 25]. This proposed construction is relevant because it ties in with Tecnol's arguments, previously rejected by the Court, that the invention is limited to a collar which must be transformable by a user from a two-dimensional to a three-dimensional configuration. The specification makes clear, however, that Garth used the word "asymmetrical" to describe a collar that fastened at the side as opposed to the back of a patient's neck. [PX 520 at 2/28-32; 3/61-65]. The parties do not dispute that the 911 collar closes at the side, therefore, the 911 collar is "asymmetrical."

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3. "A Gantry at Each Treatment Station"

Claim 1 of the '287 patent recites "[a] proton beam therapy system comprising: . . . a gantry at each treatment station each rotatable about a different axis of rotation and carrying optics for receiving a proton beam on its axis of rotation. . . ." (Rosenberg Decl. Ex. 1, the '287 patent at 14:1-18.) Plaintiff contends the term "a gantry at each treatment station" should be construed as "a gantry at more than one treatment station." (Optivus P.&A. at 11:5-7.) The court cannot accept Plaintiff's argument that "each" means "more than one." Defendant Ion Beam, on the other hand, proposes that "a gantry at each treatment station" be defined as "a gantry at all treatment stations." (Ion Beam P.&A. at 6:14-16.)

In support of its preferred construction, Plaintiff argues the term at issue, "a gantry at each treatment center," relates back to an earlier recited element in Claim 1 - "a plurality of separate patient treatment stations each having a patient support." (Optivus P.&A. at 11:2-8; Optivus Opp'n at 9:11-18.) As the court has already found, supra, the term "a plurality of separate treatment stations" means "more than one separate treatment station." Plaintiff notes the claim terms of the '287 patent describe a system where there is more than one treatment station and each treatment station has a gantry. (See id.) As Plaintiff points out, however, this construction is plainly contradicted by Figure 1 in the '287 patent, depicting a "Stationary Beam Station" without a gantry in addition to several treatment stations with a gantry. (See Rosenberg Decl. Ex. 1 at Fig. 1; 2:44-56; and Optivus P.&A. at 11:12-14.) Plaintiff insists the claim term "a gantry at each treatment station" takes on the meaning "a gantry at more than one treatment station" when considered in light of this drawing and in view of the earlier recited claim term "a plurality of treatment stations." (Optivus P.&A. at 11.) The court does not agree.

The term "each" clearly does not mean "more than one." According to the Random House Dictionary, the definition of "each" is "1. every one of two or more considered individually or one by one . . . 2. every one individually . . . ." (Airhart
Similarly, the Oxford English Dictionary (2d ed. 1989) defines the word "each" as meaning "every." Accordingly, the court hereby finds the contested claim term to mean "a gantry at every treatment center" in a system where there is "a plurality" or "more than one treatment station." (See Rosenberg Decl. Ex. 1, the '287 Patent at 14:1-24.)

Just as the court is unwilling to import limitations from the patent specification to limit the claim term "injector," the court declines Plaintiff's invitation to alter the meaning of the claim term "each" based on information found in the patent specification, or in this case, Figure 1 portraying a treatment station without a gantry in addition to stations with gantries in the '287 patent. 9 "A second caveat [on claim construction] is that it is improper to eliminate or ignore (i.e., "read out") a claim limitation in order to extend a patent to subject matter disclosed [in the specification] but not claimed." 5A DONALD S. CHISUM, CHISUM ON PATENTS § 18.03[2][c][i] at 18-194 (2003) (citing Oak Technology, Inc. v. U.S. Int'l Trade Comm'n., 248 F.3d 1316, 1329 (Fed. Cir. 2001.) In Unique Concepts, Inc. v. Brown, 939 F.2d. 1558, 1562 (Fed. Cir. 1991), the Federal Circuit commented:

The statute requires that an inventor particularly point out and distinctly claim the subject matter of his invention. 35 U.S.C. § 112 (1988). It would run counter to this statutory provision for an applicant for patent to expressly state throughout his specification and in his claims that his invention includes right angle corner border pieces and then be allowed to avoid that claim limitation in a later infringement suit by pointing to one paragraph in his specification stating an alternative that lacks that limitation, and thus interpret the claim contrary to its plain meaning. Such a result would encourage an applicant to escape examination of a more broadly-claimed invention by filing narrow claims and then, after grant, asserting a broader scope of the claims based on a statement in the specification of an alternative never presented in the claims for examination.

Unique Concepts, supra, 939 F.2d at 1562. Significantly, in Gart v. Logitech, Inc., 254 F.3d 1334, 1342 (Fed. Cir. 2001) the Federal Circuit commented "drawings are not meant to represent "the" invention or to limit the scope of coverage defined by the words used in the claims themselves." 10 The term "each" is not ambiguous. Accordingly, there is no reason to rely on the patent specification in order to clarify the meaning of the term. Schering v. Amgen Inc., 18 F. Supp. 2d 372, 380 (D. Del. 1998), aff'd, 222 F.3d 1347 (Fed. Cir. 2000). 11

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9 The figures or drawings disclosed in a patent are part of the specification or description of the patented device. See 35 U.S.C. § 113.

10 At the same time, the court recognizes there is Federal Circuit precedent that could be construed as contrary:

a common meaning, such as one expressed in a relevant dictionary, that flies in the face of the patent disclosure is undeserving of fealty . . . . "Indiscriminate reliance on definitions found in dictionaries can often produce absurd results. . . . One need not arbitrarily pick and choose from the various accepted definitions of a word to decide which meaning was intended as the word is used in a given claim. The subject matter, the context, etc., will more often than not lead to the correct conclusion.

Renishaw, supra, 158 F.3d at 1250 (citations omitted)

11 Defendant Ion Beam also argues that the prosecution history supports a rigid interpretation of "each" meaning "every" in the context of the disputed claim term. (Ion Beam Opp'n at 4:11-22.) However, the cited passage from the prosecution history (Rosenberg Decl. Ex. 6 at p .56) does not clearly take a position foreclosing Plaintiff's proffered construction.

--- End Footnotes ---
id.) Given the context of the claim terms, there is only one possible definition for the word "each," and the patent specification does not clearly show the patentees elected to be their own lexicographer. Accordingly, the court has little choice but to hold the contested claim term to mean "a gantry at every treatment center" in a system where there is "a plurality" or "more than one treatment station." (See Rosenberg Decl. Ex. 1, the '287 Patent at 14:1-24.)

5. Relationship of Duration of Heating Step to Its Temperature

'934 Patent, claims 23, 50; '814 Patent, claims 7, 19; '308 Patent, claim 1, 12, 24: heating material at a temperature and for a time at least equivalent to heating "at 50 [degree] C for 144 hours as defined by . . . Arrhennius' [sic] equation (14)."

The 9 claims at issue here require the heating of the material at a temperature and for a period at least equivalent to heating the material "at 50 [degree] C for 144 hours as defined by . . . Arrhennius' equation (14)." Defendants argue that this phrase needs no construction. But, they add, should the Court decide to interpret the phrase, it means "as defined by equation 14 from the patent specification." In its original claim construction brief, Howmedica argued that Arrhenius' equation, in the case of ultra-high molecular weight polyethylene, should be construed as dictating that for every 10 [degree] C increase of the heating temperature the required duration of heating is halved. In its supplementary filing of November 2006, Howmedica does not offer any construction of this term, implying that there is no need for construction. The Court agrees that construction of this phrase is not required at this time, because it clearly refers to Arrhenius' equation as it is defined by equation 14 in the '934, '814, and '308 Patent specifications.

5. controlling said supply of gas to such a patient during at least a portion of a breathing cycle based on said fluid characteristic signal and said first gain

(a) at least a portion of a breathing cycle

This phrase is found in Claim 23 of the '575 Patent.
Phrase: at least a portion of a breathing cycle

Construction: anywhere from a part of either the inspiratory or expiratory phase of the breathing cycle to an entire two-phase breathing cycle, and anything in between.

Reasoning: The dispute between the parties as to this phrase is difficult to discern. However, regardless, the proper construction of this phrase is elementary once the term breathing cycle is properly defined. There is no reasonable dispute that a breathing cycle is defined by the patent to be the expiratory phase and the inspiratory phase of a complete breath. '575 Patent, cl. 1, ln. 64; cl. 2, ln. 7; cl. 7, lns. 1-12. Therefore, "at least a portion of a breathing cycle", means anywhere from part of the inspiratory phase or part of the expiratory phase, to an entire expiratory-inspiratory cycle.

B. "covering at least a portion of the printed indicia with a scratch-off layer"

The parties have agreed to the construction of "printed indicia" and "scratch-off layer." Thus, the construction of this disputed phrase centers on the meaning of "covering at least a portion of." Unless the context suggests otherwise, common words should be interpreted according to their ordinary meaning. Desper Prods. v. Qsound Lab., 157 F.3d 1325, 1336 (Fed. Cir. 1998). "Covering" means "to place something on or over, so as to protect or conceal" or "to overlay or spread with something." Webster's College Dictionary at 260. "At least" means "at the lowest estimate: as the minimum." Webster's Third New Int'l Dictionary 1287 (1976). "Portion" means "a part of a whole." Webster's College Dictionary at 861. Nothing in the intrinsic evidence suggests that the ordinary meaning of these words does not control. Thus, the ordinary meaning of "covering at least a portion of the printed indicia with a scratch-off layer" is "concealing some or all of the printed indicia by applying a scratch-off layer."

Although the ordinary meaning of the phrase does not indicate as much, the Defendant argues that the construction should include a requirement that the printed indicia be variable and "securely and completely" concealed by the scratch-off layer. These limitations are not supported by the language of the claims or the intrinsic evidence. 5 Nowhere does the specification refer to variability as a requirement, or even a characteristic, of the printed indicia. Thus, this limitation will not be read into the claim. Likewise, there is nothing in the intrinsic evidence that requires the printed indicia to be "securely" covered. As discussed above, absent an express intent to import a limitation, the fact that increased security may be an advantage of the invention does not require the claim to be limited in that manner. Brookhill-Wilk1, 334 F.3d at 1301; Applied Materials, Inc., 98 F.3d at 1574. Finally, the language of the claim itself contradicts the Defendant's assertion that the printed indicia must be completely covered. Although the printed indicia may be completely covered, the claim language does not require as much. Rather, the claim states that only a portion of printed indicia is required to be covered with the scratch-off layer.

5 The Defendant also relies on the specification of an abandoned patent application filed by Desbiens in support of its proposed construction of this term. However, this patent application, while it relates to the patents at issue, amounts to extrinsic evidence. See Epic Metals Corp. v. Consolidated Sys., Inc., 19 F. Supp. 2d 1296, 1303 (M.D. Fla. 1998) (continuation-in-part of allegedly infringing patent considered extrinsic evidence). It will not be considered by the Court unless a genuine ambiguity remains after consideration of the intrinsic evidence.

In support of its construction, the Defendant relies upon a portion of the specification that refers to the printed indicia being "completely" covered. This is the only reference to complete coverage in the entire patent. The identified portion of the specification discusses the preferred manner of applying varnish, an optional release coating layer, the scratch-off layer, and the overprint layer that will keep the ticket aligned "to ensure that the printed indicia is completely covered by the scratch-off layer and the overprint layer." ('647 patent, col. 4, 11.20-30; 504 patent, col. 4, 1.55-col. 5, 1. 3.) This section begins by stating that "[t]he lottery tickets of the present invention can be produced by way of example, in the following manner." ('647 patent, col. 3, 11. 66-67; 504 patent, col. 4, 11. 33-34) (emphasis added). In addition, it states that the step of the operation concerning covering the game area and printed indicia is "preferably accomplished" by using a particular type of...
press that is equipped in such a manner that the ticket will remain aligned, allowing the printed indicia to be completely covered. (‘647 patent, col. 4,11. 20-30; 504 patent, col. 4, 1. 55 -- col. 5, 1. 3.) This section merely describes a preferred embodiment, which cannot be used to limit a claim. Phillips, 415 F.3d at 1323; Resonate Inc. v. Alteon Websystems, Inc., 338 F.3d 1360, 1364-65 (Fed. Cir. 2003). Thus, the Court rejects the Defendant's proposed construction.

Crown's proposed construction is "[a]t least part of the first portion of the can end wall is turned upwardly through an angle of at least about 16 [degree]." 80 Rexam's proposed construction is "[a] portion of the upper wall (chuck wall), which is above and adjacent to the first location, is bent upwards, when looking at a cross section drawing, around the first location by 16 degrees (less 1 degree or plus 1 degree or more)." 81

The court adopts Crown's proposed construction.

Crown's primary difference between the parties' proposed constructions is the precision with which "at least about 16 [degree]" should be defined. As with the claim element "between about 20 [degree] and about 60 [degree]," Rexam argues that Crown does not establish the meaning of the term "about." Although arguing that "about" in the that claim term should be completely ignored resulting in a construction of "between 20 [degree] and 60 [degree]," here Rexam proposes to define the phrase "at least about 16 [degree]" to mean "16 degrees (less 1 degree or plus 1 degree or more)."

As with the prior claim term, Rexam points out that the common specification (when describing particular embodiments) does not use the word "about" in connection with the chuck wall angle of the can end or the +/- 4 degree angle of the substantially cylindrical portion of the chuck. With regard to these claim elements, however, Rexam suggests that "at least about" does have meaning. 82 Curiously, Rexam ascribes the meaning of "less 1 degree" or "plus 1 degree or more" without explanation of why that meaning is appropriate with regard to these claim elements, but no meaning should be given to "about" in the prior claim terms. Despite its position that the common specification does not use the word "about" with reference to relevant aspects of the can end and seaming chuck, Rexam declares its "proposed construction is generous in this context." 83

Moreover, Rexam does not explain why it proposes that "about" should be construed restrictively as "less than one degree."

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80 D.I. 325 at 6, 9.

81 Id. (emphasis and footnote omitted).

82 D.I. 294 at 30.

below 16 degrees but broadly as "plus 1 degree or more" above 16 degrees. The court, therefore, rejects Rexam's proposed construction and adopts Crown's proposed construction: "at least part of the first portion of the can end wall is turned upwardly through an angle of at least about 16 [degree]."

At Least About 0.1 mm / At Least 0.1 mm

These terms appear in the Impact Strength Patent and the Depth Patents and refer to the depth of the leached portion of the PCD element. ReedHycalog argues the terms do not require construction. Defendants contend the terms mean "a minimum of 0.1 mm." At the hearing, the parties agreed the term "at least 0.1 mm" required a minimum measurement of 0.1 mm.

The parties' dispute is identical to the dispute regarding the "to a depth" limitation. For the same reasons explained above, the Patents-in-Suit do not require a minimum leach depth of 0.1 mm. In addition, Defendants' construction improperly reads out of the claims the term "about." See Cohesive Techs., Inc. v. Waters Corp., 543 F.3d 1351, 1368 (Fed. Cir. 2008). Thus, the term "at least about 0.1 mm" is not limited to "a minimum of 0.1 mm." The terms "at least about 0.1 mm" and "at least 0.1 mm" are easily understood terms and do not require construction.

Rodime is the owner of the reexamined '383 patent, which issued on November 29, 1988. The reexamined '383 patent is directed to a micro hard-disk drive system (3.5 inch drive) suitable for use in portable computers with performance parameters comparable to those available in 5.25 inch disk drive systems. Quantum, the plaintiff in this declaratory judgment action, is the manufacturer of disk drives which, Rodime alleges in its counterclaim, infringe its patent.

The claim limitation at issue in this appeal relates to the storage capability of the hard-disk. The storage capability of a hard-disk is a function of the track density; the greater the track density, the more data that can be stored in a given area of the disk. Track density may be defined in terms of "tracks per inch" (tpi), calculated based on the number of concentric tracks present within an inch along the radius of the hard-disk.

On November 19, 1985, James G. McGinley and Roderick M. Urquhart, two engineers at Rodime, filed a patent application for the invention described above. Claim 1 of this application recited, inter alia, a track density of "approximately 600" tpi. The examiner, in a first office action, rejected all the claims as obvious under 35 U.S.C. § 103. With respect to the track density limitation in Claim 1, the examiner stated:

The art described in the preceding paragraph [regarding 5.25 inch disks] demonstrates that such a density is within the state of the art. Such a density would seemingly be achievable on a [3.5 inch] disk in the same manner by which it was achieved on a larger disk. Consequently it would seem that the subject matter of claim 1 - which is seemingly quite general - should not be considered patentable.

In a response dated May 23, 1986, applicants cancelled the original claims and inserted new claims some of which recited a track density of "at least 600" tpi. Although applicants had replaced "approximately" with "at least" in the track density limitation of these new claims, they made no reference to this in their response, but instead focused on the difference between the size of their disks (3.5 inch) and those in the prior art (5.25 inch) as a basis for overcoming the examiner's rejection. The examiner subsequently allowed these new claims, and the patent issued on January 20, 1987, as U.S. Patent No. 4,638,383 (the original '383 patent). Claims 4, 6, 7, 9, and 14 of the original '383 patent all recited a track density of "at least 600 concentric tracks per inch."

On September 28, 1987, Rodime, the owner of the original '383 patent pursuant to an assignment from the inventors, requested reexamination of its patent. Finding a substantial new question of patentability, see 35 U.S.C. § 303, the United
The States Patent and Trademark Office (PTO) granted Rodime's request for reexamination of all 16 claims in the original '383 patent. In an office action dated April 19, 1988, the examiner rejected all but two of the original claims. Rodime responded by cancelling certain claims, amending others, and adding dependent Claims 17-31. With respect to the claims at issue in this appeal, Rodime made substantial amendments including changing the track density limitation from "at least 600" tpi to "at least approximately 600" tpi. These claims were allowed, as amended, and the '383 reexamined patent issued on November 29, 1988, as U.S. Patent No. B1 4,638,383. As issued, independent Claims 4, 6, 7, 9, and 14 of the reexamined '383 patent all recite a track density of "at least approximately 600" tpi, and the newly added dependent claims which are at issue in this appeal, i.e. Claims 19-27, either explicitly contain this limitation or incorporate it through their dependency.

Illustrative of the amendments made is Claim 4 with the sections within the brackets being the matter that was deleted and the underlined sections indicating the additions made to the claim during reexamination:

4. A computer disk drive system [for operating a micro hard-disk, said disk drive system] comprising:

   a sealed housing;

   at least [one] two micro [hard-disk] hard-disks each having a diameter of between 92 and 96 millimeters and each having a plurality of concentrically adjacent tracks on both planar sides thereof, said micro hard-disks fixedly mounted in [a] the sealed housing;

   means for rotatably supporting said [hard-disk] micro hard-disks;

   means for rotating said [hard-disk] micro hard-disks;

   first and second transducer means [having two read/write heads] for writing digital information on and reading digital information from said [hard-disk] micro hard-disks on both planar sides of [said] each micro hard-disk in a format so that [said] each micro hard-disk has digital information stored on [concentric] said concentrically adjacent tracks at a density providing at least 5 Megabytes of storage per [disk] micro hard-disk with the digital information being stored at a density of at least [6000] approximately 600 concentric tracks per inch, said first and second transducer means each comprising two read/write heads; [and,]

   positioning means for moving said first and second transducer means between the concentrically adjacent tracks on said [hard-disk] micro hard-disks, said positioning means including:

   a positioning arm disposed within the sealed housing and mounted for movement relative to said micro hard-disks;

   a pivot shaft coupled to one end of said positioning arm and supporting said positioning arm for rotational movement relative to said micro hard-disks, four support arms, each supporting one of said heads at one end and each connected to said positioning arm at its other end; and

   means for moving said positioning arm including a stepper motor having a shaft extending into said sealed housing and means for operating said stepper motor in step increments, each increment causing [said transducer means] said read/write heads to move from one track to the next adjacent track on said [hard-disk] micro hard-disks.

Quantum filed the present action in the United States District Court for the District of Minnesota on February 26, 1993, seeking a declaration that the reexamined '383 patent is invalid, unenforceable and not infringed. Rodime subsequently filed an answer and a counterclaim for infringement. On February 22, 1994, Quantum filed a motion for summary judgment that Claims 4, 6, 7, 9, 14, and 19-27 of the reexamined '383 patent are invalid under 35 U.S.C. § 305 for being impermissibly
broadened by Rodime during reexamination. According to Quantum, Rodime's amendment during reexamination of the track density limitation from "at least 600" tpi to "at least approximately 600" tpi broadened the scope of the claims to cover certain disk drives with approximately but less than 600 tpi that were not covered by the original '383 patent claims, and therefore these claims are invalid under 35 U.S.C. § 305.

The district court, in an order dated April 11, 1994, granted Quantum's motion for summary judgment. The court, after examining the claims, specification, and prosecution history, concluded that the addition of the word "approximately" to the track density limitation during reexamination was not a mere clarification, as Rodime argued, but was instead a substantive change that expanded the scope of the claims at issue in violation of 35 U.S.C. § 305, and that no reasonable juror could have found otherwise. In support, the court relied on the difference in the ordinary meaning of the disputed claim limitations: a track density of "at least 600 tpi" indicates densities starting at, but greater than 600 tpi, whereas the addition of "approximately" in the track density limitation of the reexamined '383 patent modifies the 600 tpi value, thereby eroding the "not less than" meaning of "at least." Based on these definitions, it followed, according to the court, that the claims had been broadened during reexamination since the reexamined '383 patent covered devices with track densities less than 600 tpi that were not covered by the original '383 patent. The court then concluded, without analysis, that the improperly broadened claims were invalid.

Since the district court's ruling disposed of all the claims which Rodime in its counterclaim had alleged Quantum to infringe, the district court, on April 26, 1994, ordered that final judgment be entered under Fed. R. Civ. P. 58 in favor of Quantum for a declaratory judgment of nonliability and against Rodime for its counterclaim of infringement of the reexamined '383 patent. This appeal followed.

II. DISCUSSION

There are two issues in this case: first, whether Rodime broadened the scope of the claims at issue during reexamination in violation of 35 U.S.C. § 305 by changing the track density limitation from "at least 600 tpi" to "at least approximately 600 tpi," and, second, assuming the claims were impermissibly broadened, the legal effect of violating section 305. We review the district court's grant of summary judgment in favor of Quantum on these issues -- that the claims were broadened and are therefore invalid -- to determine whether any genuine issues of material fact are in dispute, and whether any errors of law were made. London v. Carson Pirie Scott & Co., 946 F.2d 1534, 1537, 20 U.S.P.Q.2D (BNA) 1456, 1458 (Fed. Cir. 1991).

A.

35 U.S.C. § 305 states, in relevant part, that "no proposed amended or new claim enlarging the scope of a claim of the patent will be permitted in a reexamination proceeding." An amended or new claim has been enlarged if it includes within its scope any subject matter that would not have infringed the original patent. In re Freeman, 30 F.3d 1459, 1464, 31 U.S.P.Q.2D (BNA) 1444, 1447 (Fed. Cir. 1994). "A claim that is broader in any respect is considered to be broader than the original claims even though it may be narrower in other respects." Id. (quoting Tillotson, Ltd. v. Walbro Corp., 831 F.2d 1033, 1037 n.2, 4 U.S.P.Q.2D (BNA) 1450, 1453 n.2 (Fed. Cir. 1987)). Accordingly, the claims at issue have been improperly broadened in violation of 35 U.S.C. § 305 if the track density limitation in the claims of the reexamined '383 patent -- "at least approximately 600 tpi" -- is broader than the track density limitation in the claims of the original '383 patent -- "at least 600 tpi."

Whether claims have been enlarged is a matter of claim construction, a question of law subject to complete and independent review on appeal. Id. at 1464, 31 U.S.P.Q.2D (BNA) at 1447. When construing the meaning of disputed terms in a claim, we look to the claims, specification and prosecution history. Carroll Touch, Inc. v. Electro Mechanical Sys., Inc., 15 F.3d 1573, 1577, 27 U.S.P.Q.2D (BNA) 1836, 1839-40 (Fed. Cir. 1993). Although a patentee can be his own lexicographer, the words of a claim will be given their ordinary meaning to one of skill in the art unless the inventor appeared to use them differently. Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 951, 28 U.S.P.Q.2D (BNA) 1936, 1938 (Fed. Cir. 1993).

Rodime's principle argument on appeal is that the addition of the word "approximately" to the track density limitation only made explicit what was already implicitly included in the claim, and therefore did not expand the scope of the claims at issue. In support of this proposition, Rodime cites Laitram Corp. v. NEC Corp., 952 F.2d 1357, 21 U.S.P.Q.2D (BNA) 1276 (Fed. Cir. 1992), Tennant Co. v. Hako Minuteman, Inc., 878 F.2d 1413, 11 U.S.P.Q.2D (BNA) 1303 (Fed. Cir. 1989), and
Kaufman Co. v. Lantech, Inc., 807 F.2d 970, 1 U.S.P.Q.2D (BNA) 1202 (Fed. Cir. 1986). Specifically, Rodime asserts that to one of skill in the art the term "600 tpi" means "approximately 600 tpi." In support, Rodime proffers the testimony of various technical experts who maintain that, because of manufacturing tolerances and variations inherent in rotary actuator drives, industry literature referring to a specific track density value is understood by those skilled in the art to represent a range. This interpretation, according to Rodime, is consistent with the specification which uses the terms "600 tpi" and "approximately 600 tpi" interchangeably. Since "600 tpi" means "approximately 600 tpi" to one of skill in the art, it necessarily follows, Rodime argues, that one of skill in the art would interpret "at least 600 tpi" to mean "at least approximately 600 tpi." Accordingly, Rodime concludes that the district court erred in not granting summary judgment in their favor, or, at a minimum, concluding that this evidence created a genuine issue of material fact to be resolved at trial.

We disagree. The major flaw in Rodime's argument is that it focuses solely on the term "600 tpi" instead of the claim limitation as a whole, in context. See United States v. Telectronics, Inc., 857 F.2d 778, 781, 8 U.S.P.Q.2D (BNA) 1217, 1219-20 (Fed. Cir. 1988), cert. denied, 490 U.S. 1046, 104 L. Ed. 2d 423, 109 S. Ct. 1954 (1989). Even if "600 tpi" means "approximately 600 tpi," as Rodime argues, it is unnecessary to read in an implicit range when interpreting "at least 600 tpi" because this limitation as a whole already expressly represents an open-ended range, i.e. 600 tpi and up. Therefore, that one skilled in the art understands "600 tpi" to connote a range is irrelevant because the limitation in dispute is "at least 600 tpi," and Rodime offered no evidence to show that one skilled in the art understood "at least 600 tpi" to be the same as "at least approximately 600 tpi" or that the patentee defined it as such in the patent or during prosecution.

Absent such a definition or evidence that the claim limitation as a whole has a special meaning to one of skill in the art, we see no error in the district court's use of dictionary definitions to ascertain the ordinary meaning of the relevant claim limitation. See, e.g., Hoganas, 9 F.3d at 951 n.8, 28 U.S.P.Q.2D (BNA) at 1938 n.8 (using Webster's New World Dictionary, Third Edition, to define the word "straw"). Regarding the limitation "at least 600 tpi," the term "at least" means "as the minimum," Webster's Third New International Dictionary 1287 (1986), and therefore when coupled with a specific number sets forth an absolute lower limit of a range, i.e., 600 on up. See Lantech, Inc. v. Keip Mach. Co., 32 F.3d 542, 546, 31 U.S.P.Q.2D (BNA) 1666, 1670 (Fed. Cir. 1994) ("The term 'at least two' sets forth the minimum number of a particular element required."). The addition of "approximately" which means "reasonably close to," 3 eliminates the precise lower limit of that range, and, in so doing extends the scope of the range. The term "at least approximately 600 tpi" therefore defines an open-ended range starting slightly below 600. See, e.g., Hybritech, Inc. v. Abbott Labs., 849 F.2d 1446, 1455, 7 U.S.P.Q.2D (BNA) 1191, 1199 (Fed. Cir. 1988) (reasonable likelihood of success of proving that accused products with affinities of 4.8 x 107 and 7.1 to 7.5 x 107 liters/mole literally infringe patent with a recited claim limitation for affinity of "at least about 108 liters/mole"); Ex parte Neuwirth, 229 U.S.P.Q. (BNA) 71, 73 (Bd. Pat. App. & Int. 1985) (addition of the word "substantially" during reexamination as a modifier for "rounded bottom wall" broadened the scope of the claim in violation of 35 U.S.C. § 305).

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3. "At Least Long Enough to Receive Most of Said External Threads From Said Similar Adjacent PVC Pipe Therein"

a. Claim Term:

"... said second enlarged interior diameter being at least long enough to received [sic] most of said external threads from said similar adjacent PVC pipe therein before threading ..."

b. Parties' Contentions

CertainTeed's proposed construction of "at least long enough to received [sic] most of said external threads from said similar adjacent PVC pipe therein" is "the second enlarged interior diameter must be at least long enough to receive most of, i.e. - 742 -
more than 50.00% of, the external threads on the male end or a similar adjacent PVC pipe, before any of the external threads at the male end are interlocked with the internal threads in the first enlarged interior diameter of the female end." The only issue disputed by the parties is how the words "said external threads" should be construed. Pl's Markman Brief at 15. CertainTeed contends that the phrase should be construed in accordance with its plain meaning to simply mean "the external threads on the male end of a similar adjacent PVC pipe."

The parties agree on the central issue in this claim element, namely that the words "at least long enough to received [sic] most of" should be construed in accordance with their plain, ordinary meaning. However, CertainTeed's proposed construction interprets "most of" to mean "i.e. more than 50.00% of, the external threads on the male end of a similar adjacent pipe." CertainTeed argues that this interpretation is in keeping with the teaching of the Federal Circuit that quantitatively precise claim elements must be construed precisely. See Elekta Instrument S.A. v. O.U.R. Scientific Int'l Inc., 214 F.3d 1302, 1307-08 (Fed. Cir. 2000).

Modern Products' proposed construction of "at least long enough to received [sic] most of said external threads from said similar adjacent PVC pipe therein" is "said second enlarged interior diameter is long enough to receive most of the external threads from said similar adjacent PVC pipe which mate with the internal threads of a similar adjacent PVC pipe, before any of the external threads at the male end are interlocked with the interior threads in the first enlarged interior diameter of the female end." Modern Products, in support of this proposed construction, states that this limitation, like the others, must be construed in context. The limitation contemplates threads that mate. "Because claim 1 qualifies the word 'threads' by their ability 'to mate,' this limitation requires the second enlarged diameter to be long enough to cover most of the threads that mate before they are threaded together." Def's Claim Construction Brief at 31.

c. Court's Construction

The Court concludes that "at least long enough to received [sic] most of said external threads from said similar adjacent PVC pipe therein" means "said second enlarged interior diameter is long enough to receive most of the external threads from said similar adjacent PVC pipe which mate with the internal threads of a similar adjacent PVC pipe, before any of the external threads at the male end are interlocked with the interior threads in the first enlarged interior diameter of the female end." This term is construed in accordance with the claim and specification, and dictated by its ordinary and customary meaning. Claim 1 contemplates that threads mate, and qualifies the term "threads" by their ability to mate. Thus, this limitation requires the second enlarged interior diameter be long enough to cover most of the threads that mate before they are threaded together. In addition, this Court notes that it is improper to read a limitation into a claim from the written description or specification, as CertainTeed has urged the Court to do by proposing the following language: "i.e. more than 50.00% of, the external threads on the male end of a similar adjacent pipe." See Elekta, 214 F.3d at 1307-08 (citing Renishaw, 158 F.3d at 1248). The term was not defined using quantitatively precise language, distinguishing it from Elekta, therefore, that language will not be added to the claim term. See Comark Communications v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998) (citing Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1577 (Fed. Cir. 1988)) ("Although the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.").

iii. Claim 9 does not limit the term "at least one contact" to a pair of contact arms

Finally, the parties dispute the proper construction of the term "at least one contact." Although Invisible Fence argues that the term is defined as "one or more electrical contacts for electrical connection with the first terminal of the battery," Perimeter believes that the term means "[a] pair of electrically-conductive elongated arms that are interconnected by an elongated flexion spring." (Joint Statement 4.)

Perimeter again bases its construction on the Description, claiming that because it depicts a pair of contact arms, this limitation must be read into claim 9. See '900 Patent col.6 1.39-42 ("The contactor . . . includes two elongated contact arms. . ."); figs. 3, 8, 10. This construction, however, runs counter to the clear language of claim 9. Giving the language of claim 9 its ordinary meaning, see Johnson Worldwide Assocs., 175 F.3d at 989, the phrase "at least one contact" (which also appears in the Summary at col.1 1.63-64) necessarily implies that the number of contact arms is not limited to two and
To credit Perimeter's argument would mean that the requirement of a pair of contact arms would have to be read into every claim of the '900 Patent. Other claims, however, reveal that the patentee did not intend to limit the invention in this way; for example, claims 1, 7, and 21 include "a contactor having . . . a contact." '900 Patent col.6 1.5-13, col.6 1.54-61, col.10 1.3-6.

The prosecution history further suggests that the invention is not limited to a dual contact arm design. Upon initial rejection of claims 7 and 21, the Examiner wrote, "the recitation that 'at least one contact' is 'connected with one end of the spring' is confusing, because when there are two contacts (encompassed by the phrase 'at least one'), they are at opposite ends of the spring." U.S. Dep't of Commerce Patent & Trademark Office, Examiner's Action 2 (Apr. 5, 1994). The phrase "when there are two contacts" indicates that the Examiner did not view the invention as always having two contacts.

For the aforementioned reasons, the Court will not limit the contactor in claim 9 to having a pair of contact arms.

14 Also included in Perimeter's proposed construction is the notion that the contact arms are electrically conductive and elongated. (Joint Statement 3.) Neither party discusses these proposed constructions, ostensibly because they are consistent with claim 9. The contact arm(s) would have to be electrically conductive in order to make an electrical connection with the electronic receiver. See '900 Patent col.11 1.41-43. In addition, the contact arms should be elongated so they can extend outside the opening to make the electrical connection. See '900 Patent col.11 1.41-42.

Invisible Fence adds "for electrical connection with the first terminal of the battery" to its proposed construction. The Court will specifically discuss the terms "for electrical connection" and "the first terminal of the battery" infra, Parts III.B.5-6. For now, it is enough to say that the phrase "for electrical connection with the first terminal of the battery" modifies the phrase "contactor," and not "at least one contact"; therefore, we decline to include this phrase in our construction of "at least one contact."

Finally, in an attempt to support all of its proposed constructions related to "a contactor having a spring . . . and at least one contact," Perimeter cited the following language from the patentee's Amendment to the April 5, 1994, Office Action: "As described in the specification, the contactor . . . includes two elongated contact arms . . . which are interconnected by an elongated flexion spring. . . ." Amendment 11 (Sept. 8, 1994). Perimeter asserts that this comment limits claim 9 because it does not contain the following caveats: (1) that the contact arms could be separate from the spring, (2) that the spring could encompass more than an elongated flexion spring, and (3) that the contactor could have only one contact arm. The paragraph's thesis, however, clearly indicates that it was only being offered to clarify claims 4 and 20, or stated another way, since the amendment had no relationship to claim 9, the Court is not obligated to import its purported limitations into that claim's construction. Cf. Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1347 (Fed. Cir. 1998) (When comments "were made without reference to a particular claim[.]. . . arguments made to obtain the allowance of one claim are relevant to interpreting other claims in the same patent." (emphasis added).

iv. Summary

For the foregoing reasons, the Court construes the terms "a contactor having a spring . . . and at least one contact" and "a contactor" as follows: "An electrically-conductive component having a spring and at least one contact arm. The spring may, or may not, be interconnected to the contact arm(s)." In addition, the Court interprets the term "a spring" to mean "a spring located between the base of the battery holder and the battery for biasing the battery toward the opening." Finally we define the term "at least one contact" as "one or more electrically conductive elongated contact arms."

GO BACK
Under the inventions of the '092 and '766 patents, at least one "elongate bar" is placed behind the wall to be retrofitted. The bar is fastened by screws through the wall to a support surface, which has a speaker attached to it. The speaker is wedged between the bar and the support surface in a hole formed in the wall. This serves to create an unobtrusive appearance, with the support surface (which covers the speaker) flush against the wall. The asserted claims of the '092 patent describe a method for installing wall speakers. Claim 16 is an independent claim; claims 17-20 dependent from it. The seven claims of the '766 patent are directed to a retrofit bracket apparatus. Claim 1 is an independent claim; claims 2-7 depend from it.

Claim 16 of the '092 patent reads as follows:

A method for attaching speakers to a wall, the method comprising the steps of:

attaching at least one speaker to a support surface;

attaching at least one elongate bar to the support surface such that the bar extends across two opposite sides thereof;

forming an opening in a wall covering;

inserting the bar through the hole;

adjusting the distance between the bar and the support surface such that the wall covering is captured intermediate the bar and the support surface.

Claim 1 of the '766 patent reads as follows:

A retrofit bracket for wall mount speakers comprising:

a support surface configured for mounting at least one speaker thereto;

a least one elongate bar attached to said support surface and abutting a wall covering such that the wall covering is clampably capturable intermediate said support surface and said bar; and

adjustment means for varying the distance between said support surface and said bar;

wherein said adjustment means facilitates the accommodation of various wall covering thicknesses.

Summary judgment is appropriate if the evidence shows "that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed.R.Civ.P. 56(c). The district court determined that no material facts were in dispute and, as noted above, held that the Boston No. 2 device anticipated claim 16 of the '092 patent, claim 1 of the '766 patent, and all of the dependent claims. In so holding, the court found that the "elongate bar" limitation of the claims was found in the Boston No. 2 device.

II.


"Although a patentee can be his own lexicographer, the words of a claim will be given their ordinary meaning to one of skill in the art unless the inventor appeared to use them differently." Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 1580, 36 U.S.P.Q.2D (BNA) 1162, 1165 (Fed. Cir. 1995). As seen above, claim 16 of the '092 patent and claim 1 of the '766 patent both refer to "at least one elongate bar." According to Webster's Third New International Dictionary, the word "elongate" refers to a structure "having a form notably long in comparison to its width," while the word "bar" is defined as "a straight
In the case before us, the court misapplied the axiom and adopted a construction of "flashlight" that is at odds with the clear language of the claim and the written description. In holding that the recited "flashlight . . . is distinct from the light source . . .", the court arguably altered the patent's claim language and specifications. The proper construction, as determined by the Court, is one that remains consistent with the claim's language and the written description. This consistent construction determines the court's decision on the patent's validity.

Turning to the specifications, figures 1 and 3 of the '092 patent and of the '766 patent are identical. They both show single detached rods as elongate bars. Under the heading "SUMMARY OF THE INVENTION" the specifications of both patents state that the claimed invention "has a pair of elongate clamping bars extending across to opposite sides of the support surface and adjusably attached thereto such that a wall covering is clampingly capturable intermediate the support surface . . ." Further on, under the heading "DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT," both specifications recite that "the retrofit bracket of the present invention generally comprises . . . a plurality, preferably two, of generally parallel elongate clamping bars . . . disposed on the inside of the wall covering . . ." Based upon the dictionary definitions of the words "elongate" and "bar" and based upon the claims and the specifications of the patents, we conclude that the "at least one elongate bar" limitation of claim 16 of the '092 patent and of claim 1 of the '766 patent calls for the bar to be a discrete structural element, not simply an integrated component of a larger structure not having any of the characteristics of a "bar."

We hold that, as properly construed, the claims at issue are not anticipated by the Boston No. 2 device. The structure of the Boston No. 2 device is not in dispute. The Boston No. 2 speaker bracket consists of a continuous, integrated box, or frame, which is attached to the wall and which has the speaker fastened to it. The frame has four sides, each of which is integral with its neighbor, so that no one side is discrete, or separate. The district court found that the "elongate bar" limitation of the claims at issue was found in the Boston No. 2 device because the court viewed the sides of the frame in the Boston No. 2 bracket as elongate bars. The district court thus concluded, as a matter of claim construction, that the "elongate bar" of the claims could be found in an integrated portion of a larger structure not having any of the characteristics of a "bar." That conclusion, however, is contrary to the correct construction of the claims set forth above. Under that correct construction, a side of the continuous frame of the Boston No. 2 device cannot be an "elongate bar." Thus, there is not clear and convincing evidence that the Boston No. 2 device has "at least one elongate bar," as required by claim 16 of the '092 patent and claim 1 of the '766 patent. Accordingly, since each limitation of the asserted claims of the '092 patent and the '766 patent is not found in the Boston No. 2 device, that device does not anticipate those claims. The district court's judgment of invalidity must be reversed. The case is remanded for further proceedings consistent with this opinion.
that illuminates the face of the watch," the court construed the claim to require at least two light sources--one that illuminates an area beyond the watch face and one that illuminates only the watch face (a face illuminator). However, claim 1 recites a flashlight comprising "at least one light source." (Emphasis added). Use of the phrase "at least one" means that there could be only one or more than one. See Kistler Instrumente AG v. United States, 224 Ct. Cl. 370, 628 F.2d 1303, 1318, 211 U.S.P.Q. (BNA) 920, 920 (Ct. Cl. 1980) ("Anyone with even the most rudimentary understanding of the English language understands 'at least one piezo-electric crystal means lodged within said component means,' to mean one or more crystals."). Therefore, the court's construction is contrary to the plain language of the claim.

To give meaning to the phrase "at least one light source," we must construe claim 1 to cover a device that has only one light source or a device that has more than one light source, assuming that the "device" is a "flashlight," as that term is used in the claim. According to the written description, the flashlight 8 is a light that is bright enough "to illuminate a small room or to otherwise serve satisfactorily as a flashlight." Col. 2, ll. 46-53. The face illuminator 9, in contrast, is a light that "enables reading the time without turning on [the flashlight] 8 if desired." Col. 2, ll. 58-62. According to the written description, the flashlight 8 and the face illuminator 9 are different elements. However, the written description further explains that light from the flashlight 8 can be used to illuminate the watch face 4 in the absence of a distinct face illuminator. See col. 2, ll. 49-54 ("The brightness of lamps 8 and the disposition of lamps 8 about case 3 should be arranged to illuminate timepiece face 4 so that the watch hands can be seen in the absence of otherwise provided light and so that the time indicative numbers and dots are also then visible."). Therefore, properly construed, the flashlight limitation is met by a wrist watch whose only light source illuminates both the watch face and a significant area beyond the watch face. This definition is consistent with the term's ordinary meaning. See American Heritage Dictionary 511 (2d College ed. 1982) (defining "flashlight" as a "small, portable lamp usually powered by batteries").

Casio argues that the claim cannot cover a watch without a separate face illuminator because the preferred embodiment includes one. However, "particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments." Electro Med. Sys. S.A. v. Cooper Life Sciences, 34 F.3d 1048, 1054, 32 U.S.P.Q.2D (BNA) 1017, 1021 (Fed. Cir. 1994). Because claim 1 does not recite a face illuminator, it is broader than the embodiment referenced by Casio. Moreover, because the written description does not require that the watch include a face illuminator, this "limitation should not be read from the specification into the claim[]." Specialty Composites v. Cabot Corp., 845 F.2d 981, 987, 6 U.S.P.Q.2D (BNA) 1601, 1605 (Fed. Cir. 1988).

Casio also argues that, under our construction, claim 1 is invalid because the recited combination is obvious. This argument is premature. Casio cannot avoid a full-blown validity analysis by raising the specter of invalidity during the claim construction phase. Although the court appeared to believe that several pieces of prior art, when viewed in combination, disclose all the limitations of claim 1, it did not conduct a validity analysis. See Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 U.S.P.Q. (BNA) 459, 467, 15 L. Ed. 2d 545, 86 S. Ct. 684 (1966). Specifically, it did not identify any motivation to combine the references, see In re Fine, 837 F.2d 1071, 1074, 5 U.S.P.Q.2D (BNA) 1596, 1598-99 (Fed. Cir. 1988), or consider objective evidence of nonobviousness, see Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc., 807 F.2d 955, 960, 1 U.S.P.Q.2D (BNA) 1196, 1199 (Fed. Cir. 1986). Moreover, Rhine alleges that he was denied the opportunity to conduct discovery on the secondary considerations. Therefore, we remand the case so that discovery can proceed, if necessary, and the court may fully evaluate the strength of the invalidity case.

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8. Further Comprising a Step of Setting . . .

This phrase is found in claim 44 of the ‘575 patent.

Phrase: Further comprising a step of setting at least one of a magnitude and a duration of said pressure profile

Construction: Further comprising the step of setting a magnitude, a duration, or both, of said pressure profile.

Reasoning: The real dispute between the parties regarding this claim element is whether the shape of the predetermined pressure profile includes its magnitude and duration. As we have already resolved that issue, there is no need to further construe this claim element.
16. At Least One of the Side Edge of Both Pairs of the Side Edges

The next term to be addressed is "at least one of the side edge of both pairs of the side edges" in claim 10 of the '836 patent. Unilin states that there are at least two grooves that are identified by claim 10. (Unilin Open. Br. 29.) Therefore, Unilin states that such limitation "requires only one of the two grooves previously identified in the claim needs to have an upper lip above the groove." (Id.)

Alloc responds that the limitation is confusing and makes no sense; it therefore renders this claim indefinite under 35 U.S.C. § 112, P 2 for failure to particularly point out and distinctly claim the subject matter which the applicant regards as his invention. (Joint Charts, '836 chart, 11.) Alloc has not proposed an alternative construction.

The disputed term appears in claim 10 of the '836 patent as follows:

"wherein the panels at the side edge comprising the groove, of at least one of the side edge of both pairs of the side edges, include an upper lip above the groove, said upper lip defining at least in part an upper side of said groove, and said upper lip terminating at a distal outer end, wherein said lower lip extends distally beyond the distal outer end of the upper lip, and further wherein the recess is located in the lower lip in an area of the lower lip that is located at least partly beyond the distal outer end of the upper lip."

('836 patent, 17:46-55)(emphasis added.) Claim 10 of the '836 patent states "said panel comprising a first pair and a second pair of opposed side edges, said panel further comprising generally complementary coupling parts located at both of the pairs of said side edges." (17:16-18.) Thus, there are at least two grooves on each panel. The construction of "at least one of the side edge of both pairs of the side edges" as requiring "that only one of the two grooves previously identified in the claim needs to have an upper lip above the groove" is consistent with the language of claim 10 and, therefore, is adopted by the Court.

The district court agreed with Springs, finding claim 1 of the '940 patent and claim 1 of the '550 patent invalid. Newell, 53 U.S.P.Q.2d (BNA) at 1323-26. The court first construed the phrase "cellular pleated shade member" in claim 1 of both patents as describing "a sample of cellular pleated fabric that contains three or more cells, with at least one of those cells exhibiting the physical characteristics described in the claims." Id. at 1324-25. Armed with that construction, the court found that the Rosette anticipated the '940 patent because it met all of claim 1's limitations. Id. at 1324. The court next turned to claim 1 of the '550 patent, first noting that the Rosette did not anticipate claim 1 because the Rosette only had one attachment zone between each cell, while claim 1 required at least two. Id. at 1324-25. The court concluded, however, that it would have been obvious to one skilled in the art to apply the teachings found in the '027 patent, the use of multiple attachment zones between two cells, to the Rosette. Id. at 1325-26. The court considered, and dismissed, Newell's evidence of secondary considerations and concluded that claim 1 of the '550 patent was obvious. Id. at 1326.

B. On appeal, Newell argues that the district court's finding of invalidity of claim 1 of both patents is based on an improper claim construction of the phrase "cellular pleated shade member." Newell contends that this phrase limits the claims to a cellular shade member that is part of a complete shade, not a mere sample of shade material such as the Rosette. Therefore, Newell asserts, claim 1 of the '940 patent is not anticipated. Newell next argues that there was no evidence to support the district court's determination that claim 1 of the '550 patent was obvious because nothing suggests a motivation to modify the Rosette with the teachings of the '027 patent. Newell also cites its evidence regarding secondary considerations, such as long felt need and commercial success, as mandating a reversal of the district court's finding of obviousness.

To determine whether a patent claim is anticipated or obvious, it must first be construed. Key Pharms. v. Hercon Lab. Corp., 161 F.3d 709, 714, 48 U.S.P.Q.2d (BNA) 1911, 1915 (Fed. Cir. 1998). The district court properly construed claim 1 of the
'940 patent and claim 1 of the '550 patent to include a cellular pleated fabric that contains at least three or more cells, with at least one of those cells meeting the described claim limitations. The plain language of both claims supports the district court's construction. Claim 1 of the '940 patent requires "[a] cellular pleated shade member having a plurality of cells, at least one of the cells comprising" certain physical characteristics. '940 patent, col. 6, ll. 27-28. Claim 1 of the '550 patent has a similar requirement"[a] cellular pleated shade member having a plurality of interconnected cells, at least one of the cells comprising" certain physical characteristics. '550 patent, col. 5, ll. 53-54. Both claims only require a "member" of a cellular pleated shade, not a complete cellular pleated shade. The claims also only require one cell within this member to have the described physical characteristics.

116. Step 7. Micro-Waste contends that "at least partially compacting the particulate articles in the temperature maintenance zone" in step 7 means compaction by "passing refuse from a larger cross-sectional area microwave chamber to a smaller-cross sectional area in the temperature maintenance chamber …." micro-Waste's proposed construction cites the description of an embodiment of the device in Claim 1.

117. Micro-Waste's proposed construction cites the description of an embodiment of the device in Claim 1.

118. Industries defines the phrase, "at least partially compacting" as any degree of compressing or compacting.

119. Industries's definition is consistent with the specification, which states in its description of the process that "the articles so heated are at least slightly compacted …." To "compact" is "to press together" or "compress." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 267. "Partially" means of or relating to a part rather than the whole; not general or total.

120. Compacting" is broader than and is therefore not limited to the embodiment cited by Micro-Waste. See Rhine, 13 F.3d at 1346.

121. "Compacting" is broader than and is therefore not limited to the embodiment cited by Micro-Waste. See Rhine, 13 F.3d at 1346.

122. The Court construes Step 7 to mean the partial compacting or compressing of the particulate articles to any degree while they are in the area where the disinfecting or sterilizing temperature is maintained.

3. At least Partially Received

Claim 1(c) of the '456 patent provides: "said cutting head assembly being structured and disposed to be at least partially received in said guide means." Defendants propose the following construction: "a portion of the cutting head assembly that goes inside the guide means." (Def. Br. at 44.) Plaintiff objects to the insertion of the word "inside." The ordinary meaning of "received" in, however, would include "to act as a receptacle or container for" and "to permit to enter." Merriam-Webster's Collegiate Dictionary available at http://www.m-w.com. Thus, the inclusion of the word "inside" does not mean that this Court would be giving the claim term something other than its ordinary meaning. This Court has not been directed to any portion of the specification or the prosecution history which would indicate a different construction. I therefore conclude that this term is construed to mean: a portion of the cutting head assembly that goes inside the guide means.

5. "Catheter at least partly formed from a pseudoelastic shape-memory alloy"

This phrase is found in independent claim 18 of the '957 Patent, and the crux of the dispute is over the proper construction of the term "catheter." The parties agree that, however "catheter" is construed, it must be made, at least in part, of a pseudoelastic shape-memory alloy. (See Amended Joint Claim Construction Statement, Ex. A at 3.)
The claim language suggests that the term catheter should be given its ordinary meaning in the field, namely "a hollow, flexible tube for insertion into a body cavity, duct or vessel to allow the passage of fluids or distend a passage way." (See, e.g., Wang Decl., Ex. G.) Medtronic, however, argues that Jervis acted as his own lexicographer and defined the term "catheter" to include "cannulas," which do not necessarily transport fluids. (See '957 Patent, 5:59-62 ("Wilson ... discloses a catheter or cannula (both being included hereinafter in the word 'catheter')...")); Wang Dec I., Ex. H (cannula, in surgical field, means "a tube to be inserted into a cavity or duct").

Dependent claim 21 of the '957 Patent, however, claims "[t]he method of claim 18 wherein the catheter is a cannula." The use of the term "cannula," is the only significant difference between the two claims. Thus, if the Court construes the term "catheter" to include a "cannula," it could be argued that dependent claim 21 is superfluous. If, however, the Court determined that a "catheter" could not include a cannula, independent claim I would be narrower than dependent claim 21. In this situation, the Court concludes that the doctrine of claim differentiation is overcome by the specification and concludes that Jervis acted as his own lexicographer and defined the term "catheter" to include "cannulas."

Gore's construction, which includes a reference to the catheter's function, is offered primarily out of a concern that the term not be construed so as to encompass a stent. (See Gore Br. at 18.) However, the specification of the '957 Patent sets forth examples of medical devices unitizing SMAs. One such example discusses catheters and cannulas. ('957 Patent, 5:59-6:57.) Another such example discusses coil stents and filters. (Id., 9:20-57.) Because of this distinction, the Court concludes that a person of ordinary skill in the art would understand from the specification that the term "catheter" is intended to be something different than a stent. As such, the Court concludes that phrase should not be construed to include a reference to the function of the "catheter."

Accordingly, the Court construes the term "catheter at least partly formed from a pseudoelastic shape-memory alloy" to mean: "a tube inserted into a cavity or duct that is made of, at least in part, a pseudoelastic shape-memory alloy."
mean the end is what you grab hold of." (Bolton Dep. at 171-72.)

P&M's expert, Charles A. Garris, Jr., 3 testified that the claim merely describes the proper positioning of the mouthpiece and nozzle so that the air flows properly through the pen, and does not require that the mouthpiece and nozzle be located on opposite extremities:

the patent specification teaches that what is important is that the air enter the housing at a location spaced from where the air exits so that the air passes through the housing, over the pen, to the outlet. . . . Nothing in the claims or specification of the '886 patent requires the mouthpiece or nozzle to be located at the exact extremity of the housing. In fact, such an interpretation would be contrary to what is shown and described with respect to the Figure 8 embodiment of the invention in which air enters through the side of the housing at an end remote from the nozzle.

(Statement of Charles A. Garris, Jr. at 2.) Rose Art's experts, Victor Reiling and Parviz Daftari, 4 testified that "end of the tubular housing" refers to one extreme end of the device and "at one end" describes "one extremity of the tubular housing and not the sides." (Statement of Victor Reiling at PP 7-8, Statement of Parviz Daftari at PP 4-5.) However, neither Mr. Reiling nor Mr. Daftari have explained the basis of their opinions and both admitted on cross-examination that neither the word "extreme" nor the word "extremity" appear in the specification of the '886 patent. (1/31/02 N.T. at 113, l. 13 - 114, l. 20 and 122, l1. 2-18.) Consequently, the Court cannot conclude that the word end is used in claim 1 to describe an integrated extremity. Based upon the intrinsic evidence contained within the patent, and the extrinsic evidence supplied by the parties, the Court construes "at one end" as "the portion of the housing where the nozzle is located or attached" and "at the other end of the housing" as "that portion of the housing where the mouthpiece is located or attached."

3 Dr. Garris is a professor of mechanical and aerospace engineering. (Statement of Charles A. Garris, Jr. at 1.)

4 Mr. Reiling and Mr. Daftari are both inventors of toys.

The Parties dispute whether one skilled in the art would understand "atrial activity" to mean only electrical signals originating in the atria or all electrical signals that could possibly be detected in the atria.

Medtronic argues that, based on the language of the patent, "atrial activity" consists of all electrical signals in the atria, including any detectable R waves from the ventricles, and noise. Guidant, on the other hand, argues that "atrial activity" has an ordinary meaning to those skilled in the art. Guidant avers that "atrial activity" refers only to electrical events that occur in the atria, specifically both normal, organized depolarizations ("P waves") and abnormal, disorganized depolarizations, which occur during atrial fibrillation. In contrast to the term "atrial activation," which encompasses just P waves, the term "atrial activity" encompasses both complete activations, normal P waves, and incomplete or disorganized activations, abnormal electrical events, that exist during atrial fibrillation.

The Court agrees with Guidant. As Guidant notes, at the Markman hearing, Medtronic's expert, Dr. David Benditt, testified that the P wave represented "the electrical signal for the atria." Tr. at 17:14-17. He also used the term "atrial activity" to refer to abnormal P waves existing during an atrial tachycardia. Tr. at 25: 12-15.

Additionally, a treatise available at the time of the '219 Patent application states that "the external reading of normal atrial electrical activity was arbitrarily termed a P wave in the early days of electrocardiography." Stephen Scheidt, M.D., Basic Electrocardiography 6 (1986). The treatise also states that during atrial fibrillation, "atrial activity is seen as small, irregular undulations in the baseline [of a printout strip]." Id. at 95. In the context of the Scheidt treatise, the term "atrial activity" refers to electrical activity generated in the atria.
The Court concludes that contemporaneous literature available to one skilled in the art limits "atrial activity" to that activity either associated with a healthy P wave or with abnormal depolarizations such as occur during atrial fibrillation. There is nothing in the specification that alters this definition. Thus, the Court concludes that "atrial activity" means electrical events that occur in the atria.

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3. ATTACH / ATTACHMENT

Claims 1, 2, 3, 11, 15 and 16 all use the word "attachment" in conjunction with "luminal." The parties disagree as to how "attachment" or "attach" should be defined. Ravo and Nicolo urge that attach means "to make fast (as by tying or gluing)." See Plaintiffs' Brief, p. 17. Ethicon, in contrast, contends that "attach" must mean "to make immoveable with respect to."

Having reviewed the '148 Patent in its entirety, I conclude that "attach" means to make fast, as by tying or gluing. The specification itself provides that:

the bowel is attached to the central post 14, such as by tying the bowel portion to the central post 14 at the annular groove 16 with a ligation member 26.

See Col. 3, line 66 - Col. 4, line 2 (emphasis added). Thus, the specification itself defines the word. Further, the specification is consistent with the definition set forth in the dictionary. See Webster's Ninth New Collegiate Dictionary, p. 140.

Further, Ethicon's proposed definition of making something "immoveable" is at odds with the language of the '148 Patent itself. The Patent reads:

with the bowel completely immobilized and attached to the central post 14, this relative movement will cause the intussusception of the segment of the bowel to be removed as shown in FIG. 2.

See Col. 4, lines 17-20 (emphasis added). Ravo and Nicolo use the conjunctive "and" between "immobilized" and "attached." A conjunctive word joins elements. This suggests that the inventors understood "immobilized" and "attached" to mean two different things.

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4. V-Tak

Arthrex's fourth accused device, the V-Tak, is a unitary anchor. Instead of an eyelet or enclosed passage through which the suture is threaded, the V-Tak has a notch or trough formed across the distal end of the anchor body. The suture is laid in the notch and held in place as the anchor is wedged in the bone hole. The pressure from being wedged into the hole is the only thing that keeps the suture connected to the anchor. It is not otherwise tied or fastened to the anchor. Again, the issue is whether this device meets the element of "attaching a suture to a member" or "threading the suture through a passage in the member."

Arthrex's fourth accused device, the V-Tak, is a unitary anchor. Instead of an eyelet or enclosed passage through which the suture is threaded, the V-Tak has a notch or trough formed across the distal end of the anchor body. The suture is laid in the notch and held in place as the anchor is wedged in the bone hole. The pressure from being wedged into the hole is the only thing that keeps the suture connected to the anchor. It is not otherwise tied or fastened to the anchor. Again, the issue is whether this device meets the element of "attaching a suture to a member" or "threading the suture through a passage in the member."

I did not engage in claim construction of the word "attach" on the basis that is a commonly understood term needing no further definition. The dictionary defines it as "to make fast," and gives the examples of "tying or gluing." Merriam-Webster's Collegiate Dictionary 79 (11ed. 2005). On the other hand, Smith & Nephew equates "attach" to touching or simple physical contact. It argues that because the V-Tak notch "captures" or holds the suture in place as the anchor is inserted into the bone thereby preventing the suture from changing position or falling out of the bone, the suture and the anchor are "attached." This is inconsistent with the general understanding of this term. Additionally, the patent claims are
written as a series of steps. For example, claim one requires:

forming a hole in the bone;

attaching a suture to a member;

lodging the member within the hole by pressing the member with attached suture into the hole;

and attaching tissue to the suture so that the tissue is secured against the bone.

Pls.' Ex. 1 at 10. From the order and language of the these steps, I find this claim anticipates that the suture is attached to the anchor before it is inserted into the bone hole. This clearly does not occur with the V-Tak device. Even assuming the suture is "attached" to the anchor due to pressure from the bone wall, before they are inserted into the bone hole, the suture and anchor are simply held together by the physician using the device. They are not attached or made fast to another; they are simply touching. Thus, Arthrex's motion for non-infringement as relates to its V-Tak device is granted on that basis that this device does not encompass the element of "attaching a suture to a member," which, though stated slightly differently, is common to all of '557's claims.

The Preamble

The preamble to claim 1 states as follows:

1. Claim 1
HoMedics asserts that the straight insoles lack a sheet that is "self adhesive to the skin or attachable to the skin by a self adhesive plaster." HoMedics argues that the district court did not fully construe claim 1 and argues that that claim requires the insole itself to be self-adhesive or to include a self-adhesive plaster. HoMedics contends that claim 1 does not, as the district court found, include anything that might be attached with a self-adhesive plaster because during the prosecution history the patent owner specifically disclaimed insoles to which a self-adhesive plaster might be added. Moreover, HoMedics argues that the district court's interpretation of claim 1 renders the "attachable to the skin with a self adhesive plaster" limitation meaningless because it makes everything "attachable." Thus, given a proper claim construction, HoMedics asserts, the straight insoles do not infringe claim 1.

Nikken responds that claim 1 does not require a self-adhesive and that HoMedics' straight insoles are "attachable to the skin," according to the ordinary meaning of that phrase. But even under HoMedics' proposed claim construction, Nikken argues, there was sufficient evidence for the jury to find infringement.

We agree with HoMedics that the district court erred in its reading of claim 1. The district court's limited interpretation of claim 1 recognized the disjunctive nature of the claim -- that is, that the sheet must be either "self adhesive to the skin" or "attachable to the skin by a self adhesive plaster." It is clear that the straight insoles are not self-adhesive to the skin. Consequently, the question of infringement turns on whether the straight insoles are "attachable to the skin by a self adhesive plaster."

The court did not, however, construe the individual terms in the disputed limitation. We therefore must interpret the phrase "attachable to the skin by a self adhesive plaster." Looking to the plain meaning, we find that the word "attachable" requires that the magnetic sheet itself must be capable of being attached to the skin by a self-adhesive plaster. 4 But reading the limitation broadly to include any magnetic sheet that could somehow be attached to the skin by the addition of some external means would make everything attachable and would render meaningless the "attachable" limitation. We refuse to construe a claim term so broadly. See Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 93 F.3d 1572, 1578, 40 USPQ2d 1019, 1023 (Fed. Cir. 1996) (refusing to read a limitation so broadly that it would become "meaninglessly empty").

4 Such a reading is consistent with the court's finding that the word "magnetizable," found in claim 4 of the '111 patent and also having the "-able" suffix, requires that the sheet itself be capable of being made a magnet. Summary Judgment Order at 13.

Moreover, statements made during the prosecution history, including reexamination proceedings, are relevant to determining claim scope. E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1439, 7 USPQ2d 1129, 1136 (Fed. Cir. 1988). The prosecution history limits the scope of claim terms so as to exclude any interpretation that was disclaimed during prosecution. Pall Corp. v. PTI Techs. Inc., 259 F.3d 1383, 1393, 59 USPQ2d 1763, 1770 (Fed. Cir. 2001) (citing Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1676 (Fed. Cir. 1995)). During reexamination of the '711 patent, the then-owner of the patent distinguished prior art references by disclaiming certain magnetic therapy devices that are not self-adhesive and that do not include self-adhesive plasters but to which self-adhesive plasters might be added. Specifically, the patent owner argued that two such prior art inventions are not "self adhesive to the skin or attachable to the skin by a self adhesive plaster compatible with the skin" because one is hung as a necklace and the other is attached by a buckle. Nikken cannot now claim a broader scope of claim 1 to include subject matter that has been disclaimed during the prosecution history. Thus, we find that the "attachable" limitation requires the magnetic sheet itself to be "attachable to the skin by a self adhesive plaster" without the addition of other means for attaching and therefore requires the magnetic sheet to include a self-adhesive plaster.
Multiquip retained Mr. Dwayne Allen and Mr. Benjamin Wiese, experts in riding power trowels, to examine the Accused Trowels. (MQ PFF [Re: Infringement] P 20). Both men concluded that all elements of claims one and two of the '740 patent are present in the Accused Trowels. (Id.). Dr. Charles Garris, an expert retained by MBW, agreed, with one exception, that all elements of claims one and two of the '740 patent are present in the Accused Trowels. (Id. P 21). The only claim element Dr. Garris argues is lacking in the Accused Trowels is: "engine means for powering said power trowel is attached to the frame means." (Id. P 22). Dr. Garris bases his opinion that this element is not met on the fact that on each of the Accused Trowels the engine is bolted to the gearbox, and it is the gearbox that is directly affixed to the frame. (MBW Resp. MQ PFF [Re: Infringement] P 23). Though this gearbox is affixed to the frame - thus causing Multiquip's experts to assert that the "engine . . . attached to the frame" element is indeed met -- Dr. Garris holds that because the engine is not directly affixed to the frame, the "engine . . . attached to the frame" element is not met. (Id. P 24). Thus, this issue of whether the Accused Trowels infringe the '740 patent hinges on whether an engine affixed to a gearbox that is affixed to the frame is either literally the same as, or equivalent to, an engine "attached to the frame."

--- Footnotes ---

1 Claim 1 of the '740 patent claims the following:

A self propelled power trowel, for finishing a concrete surface, which comprises:

- rigid frame means adapted to be disposed over said concrete surface, said rigid frame means having a front and a rear and defining a centerline from front to rear: engine means for powering said power trowel attached to the frame means;

- a pair of rotor assemblies for frictionally contacting said concrete surface and supporting said frame means thereabove, tiltably connected to the frame means and operably connected to the engine means;

- at least three dual action hydraulic cylinders, with one of said dual action hydraulic cylinders operably interconnected between the rigid frame and each rotor assembly for selectively and independently tilting each rotor assembly toward and away from the centerline of the frame, and the third dual action hydraulic cylinder operably interconnected between the rigid frame and one of the rotor assemblies for tilting said rotor assembly fore and aft parallel to said frame centerline;

- a hydraulic pump, having hydraulic fluid, operatively connected to the engine means and hydraulically connected to each of the dual action hydraulic cylinders; and

- means for selectively delivering hydraulic fluid from the hydraulic pump to each of the dual action hydraulic cylinders at variably selectable pressure.

Claim 2 of the '740 patent claims the following:

The self propelled power trowel, for finishing a concrete surface, of claim 1, wherein the means for selectively delivering hydraulic fluid from the hydraulic pump to each of the dual action hydraulic cylinders at variably selectable pressure, further comprises a plurality of proportional pressure output control valves operatively interconnected between the hydraulic pump and each of the dual action hydraulic cylinders.


--- End Footnotes ---

When evaluating a claim of patent infringement, the court engages in a two-step process. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995). The first step is to construe any disputed terms of the patent claims, and the second step is to compare the claims, once properly construed, with the accused device. Id. Typically, claim construction is a question of law for the court, id. at 977, while comparison of the construed claims to the accused device is typically an issue of fact for a jury. Bai v. L & L Wings, Inc., 160 F.3d 1350, 1353-54 (Fed. Cir. 1998). However, summary judgment for the patent holder is appropriate where no reasonable jury could find that the elements of a patent claim are absent, either literally or equivalently, from an accused device. See generally Bai, 160 F.3d 1350.
Claim construction analysis is guided by Phillips v. AWH Corp., 415 F.3d 1303, 1312-25 (Fed. Cir. 2005). Phillips recognizes that the issue of claim construction breaks down into two scenarios: those that involve "little more than the application of the widely accepted meaning of commonly understood words[,]" and those that involve "examination of terms that have a particular meaning in a field of art." Id. at 1314. For the former scenario, Phillips advises that "general purpose dictionaries may be helpful." Id. For the latter scenario, Phillips directs recourse to "the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." Id. (quoting Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111, 1116 (Fed. Cir.2004)).

The words of the patent's claims are given their ordinary and customary meaning that would have been attributed to them by a person of ordinary skill in the art at the time the invention was made. Phillips, 415 F.3d at 1312. Generally, in making this determination, the court should look first to the intrinsic evidence of record, such as the patent's claims, its specifications, and, if available, its prosecution history. Vitronics Corp. v. Conectoric, Inc., 90 F.3d 1576, 1582 (1996). If a review of the intrinsic evidence alone resolves all ambiguities, then the court does not turn to extrinsic evidence. Id. at 1583. However, where intrinsic evidence is insufficient to resolve the issue, the court may turn to extrinsic evidence, such as dictionaries, expert witnesses, and case law. Phillips, 415 F.3d at 1317.

In the instant case, in which the court must determine whether the word "attached" means only "directly affixed" or can also include the meaning "connected by an intervening device," it certainly appears that the court is dealing with a word of the type envisioned by the first scenario articulated in Phillips. That is, one in which determining "the ordinary meaning of claim language as understood by a person of skill in the art . . . involves little more than the application of the widely accepted meaning of commonly understood words." Phillips, 415 F.3d 1303. If the instant case is in fact such a situation, then it seems evident that the court should construe "attached" to include the fastening of a piece of equipment (such as an engine) to a fixed structure (such as a frame) through the use of an intermediary device (such as a gearbox).

The court reaches this result not only from its own understanding of the word "attached," but also through reference to the dictionary definition, as well as applicable case law. Of the many definitions for the word "attach" found in Webster's Third New International Dictionary, the iteration most relevant (based on the dictionary's proffered examples) is the fifth one: "to make fast or join (as by string or glue)." The proffered example for this definition is "attach price tags on each article." Under this definition, an item (such as a price tag) could be attached in any number of ways, including directly (such as with a stick-on tag as one commonly finds with grocery items) or through an intermediary (such as with the type of tags one typically finds attached to an article of clothing). This understanding is supported by applicable case law. In Royal Typewriter Co. v. Remington Rand, Inc., 168 F.2d 691 (2d Cir. 1948) Judge Learned Hand rejected the notion that "attached" means only "directly affixed":

However, merely as matter of interpretation of the instrument as a whole, there is no reason to circumscribe the word, "attached," in the claims to the very details of the disclosure and at least of all to the details of the figures. In point of colloquial speech no such limitation is to be implied; we speak of two objects as "attached" to each other, though they are connected by a train of links or even by a chain. Even more than in the case of the "trip bar" the infringement is well within any but a deliberately hostile interpretation of the claims.

Id. at 693. MBW maintains that this case law is inapplicable, and that reference to Judge Hand's opinion is "disingenuous," though the only reason MBW gives for its position is the age of the case. Has the meaning of the word "attached" changed in the intervening years? Not that the court is aware. In the end, MBW gives no compelling reasons why the case should be ignored. 2 The court is, of course, well aware that prior case law is not controlling when it comes to construction of terms in a patent claim. A term can vary from instance to instance depending on the facts, especially when the term is a term of art, or when it is a term that the inventor has used in an idiosyncratic manner. However, as the term "attached" is not a term of art, and as the inventor did not use it in an idiosyncratic manner, 3 the court finds that prior case law is relevant to interpreting a word's common, ordinary use and meaning.

--- Footnotes ---

2 Arguably the case cited is distinguishable from the instant case, as the intermediary component in Royal Typewriter was a screw (a common interlinking/attaching device) and the intermediary component in the instant case is a gearbox (not a common interlinking/attaching device). However, MBW makes no such argument; the court shall make no such argument.
MBW argues that the instant case is not of the kind envisioned in the first Phillips scenario, but rather of the kind envisioned in the second scenario. That is, one that involves "examination of terms that have a particular meaning in a field of art[,] or one in which the patentee has "use[d] [the] term[] idiosyncratically." Phillips, 415 F.3d at 1314. However, MBW has not argued that the word "attached" is a term of art, and MBW has failed to show that the patentee has used the word idiosyncratically -- that is to mean something other than the commonly accepted definition of the word.

MBW argues that the intrinsic evidence reveals that the patentee intended a narrow definition for the word "attached"; a definition limited only to that which is "directly affixed" or "fastened." (MBW Mem. Supp. Mot. S.J. [Re: Non-infringement] at 5). If there were evidence that the patentee had intended such a narrow definition, the court would, of course, be obliged to accept it, for "the inventor's lexicography governs" claim construction of the patent. Phillips, 415 F.3d at 1316. MBW searches for such intent mainly in two places, the patent claims themselves, and the patent specifications.

MBW points out that "[t]he claims of the '740 patent use a variety of different terms to describe and claim different connecting relationships between various elements." (MBW Mem. Supp. Mot. S.J. [Re: Non-Infringement] at 6).

For example, a pair of rotor assemblies are "tiltably connected" to the frame (claims 1 and 3; Fig. 2; Col. 7, L55-58). In contrast, the rotor assemblies are "operably connected" to the engine assembly through respective universal drive assemblies (claims 1 and 3; Col. 7, L58). At least one of three hydraulic cylinders is "operably interconnected" between the frame and a rotor assembly (claims 1 and 3; Col. 7, L59; Col. 8, L5). A pump is not illustrated in the drawings; however, the specification describes the pump as being "operatively connected" to the engine assembly and "hydraulically connected" to each hydraulic cylinder (Col. 4, L3-4; claims 3 and 4; Col. 8, L8-11). The pump is "interconnected" to the cylinders through hydraulic control valves, as well as hydraulic hoses and fittings (claims 2 and 4) (Garris [Decl., Docket 83 (hereinafter: "Garris")] P10).

The intrinsic evidence (i.e., the claims and patent specification) demonstrates that the terms "operatively connected" and "operably connected" do not require that one element must be affixed or fastened to another in a manner that results in the two components forming a unitary structure (Garris P12). The terms reflect a functional relationship between the components to one of ordinary skill in the art at the time of the invention, Id. In other words, the claimed components which are "operatively connected" and/or "operably connected" must be interrelated in a way to perform a designated function, Id.

(MBW Mem. Supp. Mot. S.J. [Re: Non-Infringement] at 6). The court concurs -- as does Multiquip -- with the foregoing analysis of the various phrases used in the claims. However, like Multiquip, the court does not find the foregoing analysis to be of any real relevance to the question at hand. The phrases MBW describes all relate to the interaction of components that operate on, or in conjunction with, one another. Those phrases explain the components, and how they interact. "Thus, the trowel rotor assemblies are 'operably connected' to the engine, because the engine drives -- or causes to 'operate' -- the rotor assemblies." (MQ Br. Opp. Mot. S.J. [Re: Non-Infringement] at 7). However, as Multiquip points out: "[o]ne would not expect to see the phrase 'operably connected' to describe a relationship between the engine and frame, because the engine does not act on, or 'operate' on, the frame[,] [t]he engine is simply . . . attached." (Id.). Therefore, it is only reasonable that there is no functional phrase describing the manner of attachment, and it would certainly be unreasonable to infer some sort of limitation on the word "attached" on the basis of a lack of a functional phrase describing such an attachment or on the existence of functional phrases elsewhere. "[N]o particular method of 'attachment' is suggested, required, or excluded by the use of phrases like 'operatively connected' in other contexts" (id.), or by the lack of the use of such a phrase in the engine/frame context. Therefore, there is nothing in the claim itself to indicate that a person of ordinary skill in the art would read the word "attached" as not encompassing all its normal meanings, but rather, limited only to "directly affixed."

Nor is there anything in the specifications that give such an indication. MBW argues that several uses of the term "attached" in the specifications do show that "attached" is limited to meaning "directly affixed." MBW points to several instances in the specifications in which the term "attached" is used to describe components that are directly affixed. (MBW Mem. Supp. Mot. S.J. [Re: Non-Infringement] at 7-9). Multiquip raises a factual question as to whether the examples cited by MBW are
in fact instances in which components are directly affixed. (MQ Br. Opp. Mot. S.J. [Re: Non-Infringement] at 9). However, ultimately it is of no consequence, nor is it necessary for the court to describe MBW's cited examples in any detail. For the sake of this analysis, the court will assume that all the instances in the specifications cited by MBW do demonstrate the use of the word "attached" to describe components directly affixed to one another. Again, the court fails to see the point of MBW's argument. No one is asserting that "attached" does not include "directly affixed." Obviously, things that are directly affixed are attached. MBW is the party that wants to show that "attached" is limited to "directly affixed"; showing that a word ("attached") used to depict one of its ordinary meanings ("directly affixed") in no way evidences an intent by the inventor to limit the word to that meaning. In the end, all MBW's argument does is persuade the court that the term "attached" includes the meaning "directly affixed" -- an issue that was never in contention.

Nothing in any of the intrinsic evidence indicates that a person of ordinary skill in the art would read the word "attached" as being limited to meaning only "directly affixed." Examination of extrinsic evidence shows that the ordinary meaning of the word "attached" includes components attached to a fixed structure via another component. Thus, the court construes the term "attached" accordingly.

1. "Attached"

This term appears in three claims with respect to two different attachments: that of the bar clamp and the master cylinder housing (claims 1 and 21) and that of the elastomeric diaphragm and the side wall of the reservoir (claim 4). Formula contends, largely based upon drawings contained in the patent, that these attachments must be direct, i.e., without any additional components intervening between the two specifically stated as being attached to one another. Although patent figures are undoubtedly pertinent to a determination of an invention's scope, they are by no means dispositive in every case. MBO Laboratories, Inc. v. Becton, Dickinson & Co., 474 F.3d 1323, 1333 (Fed. Cir. 2007). Despite Formula's arguments, nothing in the specification requires that either of these attachments be direct. In fact, an example offered by Formula in support of its construction demonstrates an attachment of two components through a third, namely the attachment of the master cylinder to the handlebar via the bar clamp. Claims 1 and 21 describe this configuration as "a bar claim attached to a master cylinder housing for attaching the…housing to a bicycle handlebar." Formula perceives a functional difference between the phrase "attached to" and "attaching…to" such that the latter would permit an intermediate component but the former would not. However, without a strong indication in the specification that the two forms of the verb "attach" have two different meanings, Formula's proposed construction cannot stand. The plain language of claims 1 and 21 indicate that the word "attach" contemplates situations in which the attached components are not in direct contact with each other. Accordingly, we construe the term attached to mean a connection or joining of two components, whether or not the connection involves an intermediate component.

vi. Attached

Plaintiffs construe the term "attached" to mean "fastened or connected, by way of magnetic engagement." Defendant objects to limiting the term's meaning to fastening or connecting by magnetic engagement.

The court agrees with Plaintiffs. In the relevant claim language, the term "attached" is found in the following phrase: "a second magnetic member secured to said projection of said auxiliary spectacle frame for engaging with said first magnetic member of said primary spectacle frame and for allowing said auxiliary spectacle frame to be attached to said primary spectacle frame with only one hand by a user" (emphasis added). The references to "magnetic" members clearly imply that the term "attached," read in context, refers to magnetic attachment.

Therefore, the court construes the term "attached" as "fastened or connected, by way of magnetic engagement."
4. Attached

The term "attached" is also used by reference throughout the claims of the reexamined 097 patent and explicitly in asserted Claims 11, 27, 32, 34, 35, and 42. The dictionary definition advanced by Stant defines "attached," in relevant part, as "joined, connected; bound." Webster's Universal, Stant Ex. 103, p. 133. Similarly, Gerdes contends that the dictionary definition of "attached" is "to make fast or join." Webster's Third, Gerdes Ex. 214.

The patentee used the term "attached" in the claims of the reexamined 097 patent to describe the connection between the first flange and the outer cover and/or the housing. Nothing in the way the term is used in the claims indicates any intention to give "attached" a meaning other than its ordinary meaning. Neither of the parties dispute this finding.

In the specification of the 097 patent, however, the patentee describes the connection between the outer cover and the first flange somewhat differently. Specifically the specification states that "the outer shell 14 engages the frangible portion 60 of the disc . . . " The dictionary defines the term "engage," in relevant part "to mean" come into contact or to interlock with. "Webster's Third, Gerdes Ex. 225. As Gerdes points out, this definition is somewhat broader than that of the term "attached" in that it encompasses more possibilities for the connection between the two structures described. Similarly, during the prosecution of the reexamined 097 patent, the patentee attempted to substitute the phrase "an outer cover engaging said first flange" for the phrase "an outer cover attached to said first flange" in one claim. Compare Prosecution History for the Reexamined 097 patent, Gerdes Ex. 250, p. GE 3391 with Prosecution History for Reexamined 097 patent, Gerdes Ex. 250, p. GE 3546a. The PTO specifically held the claim with the changed language invalid because the new phrase, "an outer cover engaging said first flange" was broader than the old language and therefore was impermissible under 35 U.S.C. § 305. 3 Prosecution History of the Reexamined 097 patent, Gerdes Ex. 250, p. GE 3597. As a result, the claim remained "an outer cover attached to said first flange." Reexamined 097 patent, col. 1, 1. 53.

3 35 U.S.C. § 305(a) provides that "no proposed amended or new claim enlarging the scope of a claim of the patent will be permitted in a reexamination proceeding. . . ." In its Office Action in Reexamination of the 097 patent, the PTO explained that,

A claim presented in a reexamination "enlarges the scope" of the patent claim(s) where the claim is broader than any claim of the patent. A claim is broader in scope than the original claims if it contains within its scope any conceivable apparatus or process which would not have infringed the original patent. A claim is broadened if it is broader in any one respect, even though it may be narrower in other respects.

Prosecution History of the Reexamined 097 patent, Gerdes Ex. 250, p. GE 3597.

Gerdes correctly uses this exchange to argue that the court must give the terms "engage" and "attach" different meanings -- with "attach" being narrower than "engage." The court agrees, however, this does not mean that the court must adopt the definition of "attached" advanced by Gerdes. To the contrary, the court finds nothing in the claims, specification, or prosecution history to indicate that the patentee intended a definition as restricted as that advanced by Gerdes. If the court were to adopt Gerdes' position that something attached must be immovable, as Stant argues, it is difficult to imagine how the outer cover could be "attached to the housing in such a manner as to allow the outer cover to rotate the housing." Reexamined 097 patent, col. 4, 11. 28-31. Instead, the court finds that the ordinary meaning of the term "attached" is more narrow than that of the term "engaged," in that "attached" requires some type of joint or bond where "engaged" allows for any type of contact, with or without attachment, between the structures. Thus, applying the ordinary meaning of the term is consistent with the prosecution history of the patent.

For these reasons the court finds that the meaning of the term "attached" is "joined, connected, or bound," but not necessarily immovable.
The Court held a Markman hearing and subsequently issued a Memorandum opinion (Docket No. 138) in which the Court construed the disputed claim terms of the '981 Patent and the '306 Patent. At issued were the following claim terms of the '981 Patent and the '306 Patent: 1) "Frame"; 2) "Formed Integrally Within"; 3) "Integrally Formed Within"; 4) "Integrally Formed With"; 5) "Including"; 6) "Attached"; and 7) "Manifold". The Court construed the terms as follows:

"Frame": "the underlying structure of the cone crusher to which other constituent parts may be fitted, attached or integrated."

"Formed integrally within" and "Integrally formed within": "created or constructed within or as a part of the frame."

"Integrally formed with": "created or constructed within or in combination with the frame."

"Attached": "fastened or affixed."

"Including": "to take in or comprise as a part of a whole."

"Manifold": "a fitting or a passage that has a plurality of openings for making connections."

2. **attached is construed to mean secured or joined to the solid surface.**

Affymetrix contends that "attached" means secured to the solid surface.

Incyte contends that "attached" means covalently bonded to the surface by the 3' end of the nucleotide or nucleotide polymer.

Hyseq contends that "attached" means synthesized at a predefined region on the first surface of the solid support by bonding of the 3' end of the first monomer in the oligonucleotide to the predefined region on the first surface of the solid support prior to monomer-by-monomer synthesis of the oligonucleotide at that predefined region.

The Court adopts the ordinary and customary meaning of the term, "attached." Incyte argues that, during prosecution of the '934 patent, the PTO indicated that the claims were only enabled for arrays in which the oligonucleotides are covalently coupled to the surface. (Livornese Decl. Exh. 19 (7/12/94 Office Action) at 3). Consequently, Affymetrix withdrew claims to noncovalently attached oligonucleotides in order to obtain allowance. (See Markman hearing transcript at 402: 21-25). Affymetrix concedes that there is no new teaching added to the '305 specification compared to the '934 specification to support a non-covalent attachment. (Id. at 403:11-14). Because the Examiner's comments suggest that claims to non-covalently attached oligonucleotides would not be enabled, Incyte argues that "attached" must be construed to exclude non-covalent attachment, to avoid invalidity based on non-enablement.

In this case, however, "attached" is not reasonably susceptible to a definition that restricts it to covalent attachment. Process Control, 190 F.3d at 1357. The specification and prosecution history clearly show that Affymetrix used the term, "attached," to mean encompassing both covalent and non-covalent attachment. ('305 patent, col. 5:19-21 (stating, "Receptors may be attached, covalently or noncovalently, to a binding member, either directly or via a specific binding substance.").) The Court cannot rewrite the claims, even if necessary to avoid a finding of invalidity. Process Control, 190 F.3d at 1357. Thus, the Court rejects Incyte's importation of "covalently" to the definition of the term. Likewise, the Court declines to impose the monomer-by-monomer synthesis and 3' attachment limitations on the definition of attachment to avoid invalidity based on non-enablement.
The parties disagree whether the term "attached" indicates that the layers of the liner listed in Claim 8 must be attached to each other directly, or signifies that other layers may be inserted between them. Plaintiffs insist that all three layers named in Claim 8 must be directly adjacent to one another. Defendants, on the other hand, contend that the individual layers of the liner taught by Claim 8 need not be directly adjacent, but may have other layers inserted between them provided all of the named layers are also present.

The language of Claim 8 does not give the Court any indication of what the meaning of "attached" might be. However, because the Court construes claim terms consistently throughout a patent, it may look to the use of "attached" in other Claims for guidance. See Rexnord, 274 F.3d at 1342. Claim 1 describes a liner with layers "attached" to one another. Claim 3 teaches a liner as described in Claim 1, with an additional layer inserted in the middle. The interplay between these two claims is significant. It is a principle of patent law that dependent claims encompass all of the elements of the independent claims upon which they depend, so that a dependent claim cannot be found infringed unless the independent claim is also found to be infringed. See Wahpeton Canvas Co. v. Frontier, Inc., 870 F.2d 1546, 1553 n. 10 (Fed. Cir. 1989). Claim 3 is a variation upon Claim 1, with a particular added feature. Because the added element in Claim 3 is an additional layer, the Court must infer that Claim 1 contemplates the insertion of additional layers between its elements. By implication, "attached" does not mean directly attached or adjacent.

Therefore, the Court construes "attached" as meaning physically attached, but not necessarily directly so. Coupling this construction with the Court's interpretation of the term "comprising," Claim 8 teaches a liner that requires the named elements, but may also include additional elements inserted between the named elements while still forming a construct within the scope of the Claim.

The final disputed claim term pertains to how the straps are attached to the chest protector, as disclosed by the phrase "each adjustable strap attached at one end to the abdomen portion of the main pad and at the other end to the back portion of the shoulder guard." Plaintiff seeks a construction of this phrase in which "the straps are attached to the abdomen portion of the main pad and back portion of the shoulder guard either directly or indirectly through the other strap." (Pl.'s Br., at 19.) Plaintiff's concern is that the claim language suggests that each strap must be attached directly from the abdomen portion of the main pad, on one end of the strap, to the shoulder guard, at the other end. In Plaintiff's view, the claim should also contemplate a system in which one set of straps, attached to each side of the abdomen section of the main pad, run more or less horizontally to a connector near the center of the wearer's back; a second, Y-shaped vertical strap runs up from the connector, with each leg of the "Y" attached to the back of each shoulder guard. Hence, the connection between the main pad and the shoulder guards is made via the connector and is thus "indirect." (Id.) This type of strap arrangement, according to Plaintiff, is what is portrayed in the inventors' drawings and what was used on TAG's 200 Series chest protectors and Mizuno's Tsunami protectors. An interpretation that requires a direct connection, Plaintiff maintains, would thus improperly exclude both the preferred embodiment, and the licensed products, from the scope of the '226 Patent. (Pl.'s Reply, at 13.)

TAG does not offer its own proposed construction; instead, TAG contends that the identified claim language need not be construed by the court at all. (Def.'s Br., at 23.) In TAG's view, the language is "easily understood" as is, and Plaintiff's proposal "would merely serve to confuse a jury." (Id.) Citing no authority, TAG maintains that the court is not required to "construe each and every claim term or phrase merely because one side or the other requests a construction." (Def.'s Sur-reply, at 9.)

TAG is correct that as a general matter, only claim language that is disputed or in controversy need be construed by the
& Eng'g, Inc., 200 F.3d 795, 803 (Fed. Cir. 1999) & U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir.
1997)). The court is unaware, however, of any authority holding that one party can avoid a claim construction that is sought
by the other party, simply by declining to argue its merits or to offer an alternative proposal. Indeed, a court must often
interpret claims that are not in dispute at all, simply "to provide a proper context for the discussion of the terms that are in

More importantly, Plaintiff has sufficiently established that the identified claim language is in controversy. In the court's
view, the most "easily understood" interpretation of the language indeed is that the patent covers only chest protectors in
which each adjustable strap runs directly from the main pad to a shoulder guard. This would exclude the patentees' example
of their invention, as represented by their drawings depicting the preferred embodiment, from the scope of the patent. It is
well-settled that claims should be interpreted to cover the preferred embodiment; while it is improper to limit claims in
accordance with that embodiment, as discussed above, it is further inappropriate to interpret a claim term so as to exclude
the preferred embodiment. See Primos, Inc. v. Hunter's Specialties, Inc., 451 F.3d 841, 848 (Fed. Cir. 2006) ("While we are
mindful that we cannot import limitations from the preferred embodiments into the claim, we also should not normally
interpret a claim term to exclude a preferred embodiment."); SanDisk Corp. v. Memorex Prod's., Inc., 415 F.3d 1278, 1285
(Fed. Cir. 2005) ("A claim construction that excludes a preferred embodiment . . . 'is rarely, if ever, correct.'") (quoting
Vitronics, 90 F.3d at 1583); see also Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1581 (Fed. Cir. 1996) ("it is
unlikely that an inventor would define the invention in a way that excluded the preferred embodiment, or that persons of
skill in this field would read the specification in such a way.").

Moreover, as noted above, the licensed products--the TAG 200 Series and the Mizuno Tsunami--serve as extrinsic evidence
of how others skilled in the art understood the scope of the '226 Patent. Swangard and Mizuno apparently believed that
these products were covered by the '226 Patent, and given that both models employed the indirect strap system detailed
above, it is reasonable to conclude that persons skilled in the art would have interpreted the claim language as covering
chest protectors using that strap arrangement. This extrinsic evidence, combined with the intrinsic evidence provided by the
drawings of the preferred embodiment, is sufficient to support Plaintiff's proposed construction.

The court finds Plaintiff's choice of language less helpful, however. Specifically, it may be confusing to state that the "straps
are attached . . . directly or indirectly through the other strap." For there to be an "other" strap, a first strap (singular) must
be identified. In the court's view, "another strap" is preferable to "the other strap," and is consistent with the intrinsic and
extrinsic evidence noted above. The court thus concludes that the phrase "each adjustable strap attached at one end to the
abdomen portion of the main pad and at the other end to the back portion of the shoulder guard" shall be construed as "each
strap is attached to the abdomen portion of the main pad and back portion of the shoulder guard either directly, or indirectly
through another strap."

The parties place at issue the construction to be put on the language that limits the invention to a club head that has "a single
weight member formed on and attached solely to said rear wall within said cavity."

The Defendants contend that these words of the claim should be read to mean precisely what the words say. That is, that the
weight member is attached solely (i.e. only) to the rear wall (backside of the striking surface) within the cavity. Therefore,
the claim would not read on a club having the weight member attached to the peripheral mass and, therefore, not attached
solely to the rear wall.
Plaintiff states that "the written claims in the utility patents should be construed according to their plain and ordinary meaning. Because the claims are clear on their face, no further interpretation is required." Plaintiff's Opening Brief at 3. However, the Plaintiff then proceeds to argue that this Court should ignore the clear plain meaning of the words "attached solely to said rear wall." Plaintiff wishes these words to mean that in addition to 3 being attached to the rear wall, the weight member can be attached to the peripheral mass. In an effort to find some meaning for the subject limitation, Plaintiff argues that the term "formed on and attached solely to said rear wall" means that the back bar mass is formed on and attached solely to the club head's rear wall as opposed to being attached to other club structure separate from the rear wall. The Court cannot agree.

3 And, perhaps, instead of as well.

Plaintiff argues that the limitation at issue, "attached solely to said rear wall" was added to avoid the prior art in the Sugioka Patent, No. 4,602,787. Defendant argues that the limitation was added to avoid the prior art in the Winquist Patent, No. 3,814,437.

If the subject limitation were added simply to avoid Sugioka, it was drafted far more broadly than necessary. The Court should not rewrite the claim language to narrow a limitation to that which the patentee might have "needed" to avoid a particular reference. On the Sugioka avoidance theory, the patentee deliberately chose to abandon more than was necessary. He cannot rewrite the claim to recover the abandoned coverage at the present stage.

To the extent pertinent, if at all, the Court concludes that the claim limitation likely was, or at least should have been, included to avoid the Winquist reference. Winquist disclosed a single weight member which is attached to (and integral with) the peripheral mass of the club head. It would have been reasonable to distinguish the alleged invention from Winquist by limiting the claim to a club with a weight mass that is not attached to the peripheral mass, but only to the rear wall.

In any event, whatever the patentee's motivation for including the limitation at issue, the limitation is in the claim and will not be ignored.

Plaintiff argues that the claim construction espoused by the Defendant would result in a claim which did not read on any of the preferred embodiments of the invention disclosed in the patent. Plaintiff is incorrect. Furthermore, even if Plaintiff were correct, he would not prevail on the claim construction at issue.

The patent application, as filed, included disclosed embodiments in which the weight bar was integral with the peripheral mass. The limitation at issue would result in a claim which did not read on these disclosed embodiments. However, Plaintiff is not correct when he asserts that in every one of the disclosed embodiments, the weight member is integral with the peripheral mass.

In Figures 2, 3, 9, and 10, one can see that the weight bar and the peripheral mass are integral. In others, such as Figures 4-8 and 11-20, one cannot tell whether the weight bar is integral with the peripheral mass. In these figures, an expressed integral connection, shown by the absence of a line at the bottom of member 30 in Figures 2 and 3, is not present. It is, of course, possible that there is an integral connection which would not be shown on certain figures, such as Figures 4-8, because of the angle from which the drawing is made. However, this Court does not see in the figures and disclosure any intent to exclude from the disclosure club heads in which the weight bar mass is separate from the peripheral mass. Fairly and reasonably read, the patent disclosure contains embodiments which can be viewed as ones in which the weight member is other than integral with the peripheral mass.

Moreover, the Court emphasizes that even if one could read the patent disclosure so as to include only embodiments in which the weight bar was integral to the peripheral mass, the claim construction would be no different. This patentee used clear language to add a limitation which excludes from coverage a club head in which the weight member is not "attached solely to said rear wall."
Plaintiff argues that the patent examiner must have understood the term at issue to cover a club in which the weight member was integral with the peripheral mass. This contention is based upon the fact that examiner asserted that the Gorman Patent No. 5,048,835 "anticipated" the claimed invention. In the course of prosecution, the patentee never had to confront this conclusion because he was able to persuade the examiner that Gorman was not prior art.

4 Gorman would "anticipate" the claim if in Gorman there is found every limitation in the claim, including, therefore, the "attached solely to" limitation. Glaxo, Inc. v. Novopharm Ltd., 52 F.3d 1043, 1047 (Fed. Cir.), cert. denied, 516 U.S. 988, 116 S. Ct. 516, 133 L. Ed. 2d 424 (1995).

5 Plaintiff filed a Declaration Under 37 C.F.R. 1.131 in which he swore that he had reduced his invention to practice prior to the filing date of the Gorman patent.

It is true that using Gorman as an anticipation reference would be contrary to the construction that the Court places upon the subject claim language. However, it is apparent to the Court that the examiner's assertion was, simply, erroneous. To the extent that the examiner may have focused on the matter, he came to the wrong conclusion. This Court has considered, and finds most unreliable, the conclusion of the patent examiners that Gorman shows a "single weight member attached solely to the rear wall."

6 Moreover, Gorman does not disclose a club with a single weight member, but, rather, one with two or three weight members as shown in Figure 8:

In sum, the claim language at issue is interpreted to mean what it says. The weight member must be attached solely (i.e., only) to the rear wall (backside of the striking surface) and not attached also to the peripheral mass within the cavity.

1. Claim Construction

Claim construction is a question of law, which we review de novo. See Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 U.S.P.Q.2D (BNA) 1169, 1174 (Fed. Cir. 1998) (en banc). When construing a claim, a court should first look to the intrinsic evidence, i.e., the patent itself, its claims, written description, and, if in evidence, the prosecution history. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996). The court may receive extrinsic evidence to educate itself about the invention and the relevant technology, but the court may not use extrinsic evidence to arrive at a claim construction that is clearly at odds with the construction mandated by the intrinsic evidence. See Key Pharms. v. Hercon Lab. Corp., 161 F.3d 709, 716, 48 U.S.P.Q.2D (BNA) 1911, 1917 (Fed. Cir. 1998). Dictionary definitions are considered to be intrinsic evidence. See Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971, 50 U.S.P.Q.2D (BNA) 1465, 1468 (Fed. Cir. 1999).
Claim construction begins with the words of the claim. See Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 619-20, 34 U.S.P.Q.2D (BNA) 1816, 1819 (Fed. Cir. 1995). In this case, the infringement analysis centers on the construction of the "a single weight member formed on and attached solely to said rear wall within said cavity" limitation in claim 1 of the '184 patent, and in particular, the phrase "attached solely to said rear wall."

The critical terms are the words "attached," "solely," and "rear wall." The relevant definition of "attach" is to "make fast or join," Philip Babcock Gove et al., Webster's Third New International Dictionary 140 (1971), while "solely" is defined as "to the exclusion of alternate or competing things," id. at 2168. Thus, the plain meaning of "attached solely to said rear wall" is that the weight member cannot be fastened to any portion of the golf club head except the rear wall.

We must also determine whether, as Antonious argues, the term "rear wall" is properly construed to comprise the peripheral mass. The district court held that the peripheral mass is not properly considered to be part of the rear wall. We agree. Claim 1 plainly defines the rear wall and peripheral mass as separate elements. See '184 patent, col. 6, II. 47-54 ("said [iron] comprising . . . a rear wall opposite said ball striking face, . . . [and] a peripheral mass located on said rear wall at an outer extremity of said club head, said peripheral mass and said rear wall defining a centrally located cavity") (emphasis added). Therefore, because the peripheral mass is defined by the claim as being separate from, albeit located on, the rear wall, the plain meaning of "a single weight member formed on and attached solely to said rear wall" does not include a weight member fastened to the peripheral mass.

Antonious argues that the written description compels us to interpret the rear wall term as including the peripheral mass. He asserts that all of the preferred embodiments shown in the figures indicate that the weight bar is attached both to the rear wall and to the peripheral mass, and that a claim interpretation that does not include those embodiments must be incorrect. It is true that claims are normally construed to cover preferred embodiments. See Vitronics, 90 F.3d at 1583, 34 U.S.P.Q.2D (BNA) at 1578 (construing claim language so as to include the only embodiment described in the written description, where the prosecution history was not in evidence). However, Antonious's argument is unpersuasive in this case, where most of the preferred embodiments are not excluded under the plain meaning of the claim language and the limitation at issue was added during prosecution.

We agree with the district court's statement that "fairly and reasonably read, the patent disclosure contains embodiments which can be viewed as ones in which the weight member is other than integral with the peripheral mass." Spalding I at *7. 2 Thus, Antonious is incorrect in asserting that all of the preferred embodiments would be excluded from coverage by claim 1 if the claim language is interpreted to mean that the weight member cannot be fastened to any portion of the golf club head except the rear wall, and that the rear wall does not include the peripheral mass. In addition, the exclusion of some preferred embodiments by the "attached solely to said rear wall" limitation is more easily understood given the fact that Antonious added this claim language during prosecution, i.e., after he had submitted the written description, including the figures showing the preferred embodiments.

2 The district court based this conclusion on the differences in the preferred embodiments shown in the figures of the '184 patent. The court found that the preferred embodiments shown in figures 2, 3, 9 and 10 show the weight bar attached both to the rear wall and the peripheral mass, as indicated by the absence of a joint line between the weight member and the lower portion of the peripheral mass. The court found that figures 4-8 and 11-20 show the weight bar not attached to the peripheral mass, based on the presence of a line between the weight member and the lower portion of the peripheral mass.

During prosecution, the examiner rejected claims in a parent application of the '184 patent pursuant to 35 U.S.C. § 103, based on U.S. Patent No. 3,814,437 (Winquist) in view of U.S. Patent Nos. 4,602,787 (Sugioka) and 4,511,145 (Schmidt). Winquist discloses an iron-type golf club head with a peripheral mass and a single weight member (in the form of a symbol) attached both to the rear wall and the peripheral mass. Sugioka discloses a hollow metal "wood"-type golf club head with a detachable sole plate. A weight chamber is mounted on the upper surface of the sole plate and several reinforcing ribs are attached to the weight chamber and the sole plate so that the ribs come into contact with the sides of the club head when the sole plate is attached to the upper portion of the club head. In the rejection, the examiner stated that "it would have been
obvious to modify the Winquist device . . . so long as the bar connects the upper and lower surfaces of the rear cavity as shown by Winquist."

As part of his office action response, Antonious added the "attached solely to said rear wall" language. Antonious referred to this limitation only in distinguishing Sugioka, and argues now that an interpretation of this language to exclude irons where the weight member is attached to the rear wall and peripheral mass is therefore unjustified. This argument is not persuasive.

We do not disagree with Antonious's suggestion that the addition of this claim language may not have been needed in order to distinguish Sugioka. However, an applicant is free to give up more claim scope than is necessary to overcome a reference. See Bai v. L & L Wings, Inc., 160 F.3d 1350, 1356, 48 U.S.P.Q.2d (BNA) 1674, 1678-79 (Fed. Cir. 1998); see also Lemelson v. General Mills, Inc., 968 F.2d 1202, 1206, 23 U.S.P.Q.2d (BNA) 1284, 1288 (Fed. Cir. 1992) ("The prosecution history gives insight into what the applicant originally claimed as the invention, and often what the applicant gave up in order the meet the Examiner's objections."); Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448, 452, 227 U.S.P.Q. (BNA) 293, 296 (Fed. Cir. 1985) (the prosecution history "limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance"). We are satisfied that, whether he needed to or not, Antonious gave up a claim scope that could include a weight bar attached to the peripheral mass and the rear wall when he added the "attached solely to said rear wall" limitation.

Antonious finally argues that the examiner's rejection pursuant to 35 U.S.C. § 102 based on U.S. Patent No. 5,048,835 (Gorman) shows that the examiner must have agreed with Antonious's proffered interpretation of the disputed claim language, because Gorman discloses a weight member attached to the peripheral mass. We are not persuaded by this argument for two reasons. First, we would not be persuaded to interpret claim 1 as including the peripheral mass as part of the rear wall even if the examiner had expressly indicated that he thought this was so, given the plain meaning of the claim language. Moreover, the examiner did not discuss the "attached solely to said rear wall" limitation with respect to Gorman, which raises the possibility that the examiner may not have considered that claim language when issuing that rejection.

Consequently, we construe the phrase "a single weight member formed on and attached solely to said rear wall" to mean that the weight member cannot be fastened to any portion of the golf club except the rear wall; we further conclude that the peripheral mass is not part of the rear wall.

b. "attached thereto and in sliding engagement therewith"

Claim language

Callicrate urges that the phrase "attached thereto and in sliding engagement therewith" means "attached to the ligature material in a manner that allows the ligature material to slide through the grommet." NAIC contrarily urges the Court to adopt the following construction: "loosely attached to the band so as to allow movement of said ligature material through said grommet." The claim language does not require the grommet to be "loosely" attached to the endless loop, nor does it otherwise qualify the way in which the grommet must be attached to the endless loop. The Court thus turns to the specification.

Specification

NAIC does not provide any argument to support its proposed inclusion of the term "loosely" into the construction of the claim language. Nevertheless, the Court notes that this interpretation is based upon the specification, which states:

The pre-attached grommet 32 must be loosely attached to the band in a manner that allows the ligature material to slip through the grommet 32 until desired tension on the body part is achieved. At such time, the grommet 32 is deformed to permanently secure the tightened band around the body part. 61
The specification is not stated in terms of a preferred embodiment, but rather states that the grommet "must be loosely attached" to the ligature material. In this way, the specification acts as a dictionary and explains how the grommet must be attached to the band. Thus, the Court construes the phrase "attached thereto and in sliding engagement therewith" to mean "loosely attached to the ligature material in a manner that allows the ligature material to slide through the grommet."

We will construe "wherein said elastomeric ear further comprises a non-elastomeric extension member attached to said distal edge" to mean "wherein the elastomeric ear further comprises a non-elastomeric extension member attached to the distal edge along a seam." This construction is supported by the claim language and the specification. The claim language, as indicated above, clearly provides that the non-elastomeric ear extension member be "attached to said distal edge." U.S. Patent No. 5,496,298, Claim 30 (emphasis added). "To" is not a technical term of art that requires a special definition. Therefore, KC's proposed construction would impermissibly broaden the scope of the claimed invention beyond what the inventor intended or a person of ordinary skill in the art would understand the claim language to mean. When KC chose the language for Claim 30, they chose the phrase " attached to" to mean "attached to the main body 48 along a seam 52." U.S. Patent No. 5,496,298, col. 5, ll. 13-14. Based on this language, we conclude that a person of ordinary skill in the art would understand that the ear extension must be attached to the distal edge along a seam. Accordingly, we will construe "wherein said elastomeric ear further comprises a non-elastomeric extension member attached to said distal edge" to mean "wherein the elastomeric ear further comprises a non-elastomeric extension member attached to the distal edge along a seam."

This question is difficult because of several competing considerations. On the one hand the specification repeatedly uses the term "attached" to mean only "affixing to the outer surface" and both "attached" and "embedded" appear in the claims, suggesting consistent use. On the other hand, construing the term to exclude embedding seems to exclude the specification's only description of the seat-based embodiment, which is a primary embodiment. Nonetheless, because several seat-based...
embodiments would still be included in the claim language, construing the claim in line with its meaning in the specification will not violate the tenet that claims must be construed to include preferred embodiments. Vitronics, 90 F.3d at 1583.

The discussion of this term requires a closer look at the caselaw. Claims must be construed in light of the specification. Phillips, 415 F.3d at 1312. A patentee may choose to be his own lexicographer and use a term in a manner other than its ordinary meaning; however, an "explicit statement of redefinition" is not always necessary if the patentee clearly expresses an intent to redefine the term. Bell Atl. Network Servs., Inc. v. Covad Commc'ns Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001). Indeed, "when a patentee uses a claim term throughout the entire patent specification, in a manner consistent with only a single meaning, he has defined that term 'by implication.'" Id. at 1271; see Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1327 (Fed. Cir. 2002).

Despite Plaintiffs' arguments that the word need not be construed, this Court finds that the specification redefines "attached" by implication. There are two reasons that "attached" cannot be construed to include embedding: (1) the specification repeatedly and consistently uses the terms distinctly and with different meanings, and (2) the claims themselves differentiate attaching from embedding.

The '941 patent uses "attached" to mean only "affixed to the outside surface"; any time it refers to an actuator inside an object, it uses only the term "embedded." Two, of many examples, are reproduced below:

In a second illustrative form, small vibratory actuators can be affixed to or embedded within the throttle's handle . . . . They may be attached in a temporary fashion via small elastic straps, or they may be embedded within a small plastic housing that is specifically designed to fit precisely upon the surface of a specific location of a specific throttle handle.

('941 patent, 33:45-58) (emphasis added.)

In the preferred illustrative form, a vibratory actuator can be attached to [the] outer side of the 40 throttle handle with hook and loop fasteners or two sided adhesive foam tape (or some other readily available attachment means). . . . In a 45 second illustrative form, small vibratory actuators can be affixed to or embedded within the throttle's handle, . . . . If these motors are attached to the outer surface of the 50 throttle handle, they must be small enough to not substantially disrupt the ergonomics of the throttle handle. A preferable location would be the underside (bottom) of the throttle handle. They may be attached in a temporary fashion via small elastic straps, or they may be embedded within a 55 small plastic housing that is specifically designed to fit precisely upon the surface of a specific location of a specific throttle handle The tactile sensation actuator(s) for a flight control joystick 540 are implemented in a similar fashion to the actuators for the throttle and weapons controller 530. In the preferred illustrative form, vibratory actuators can be affixed to or embedded within the joystick's handle, such that the hand of the user, in holding the joystick, will come into direct or indirect contact with these vibratory motors. If these motors are attached to the outer surface of the joystick handle, they must be small enough to not substantially disrupt the ergonomics of the joystick handle.

('941 patent, 33:39-34:9 (emphasis added); see also '941 patent, 3:32-37, 33:45-58, 33:9-28, 33:37-34:9, 39:58-64, 40:13-14.) Thus, the specification consistently uses "attached" when it refers to an actuator affixed to the outer surface, and it consistently uses "embedded" when it refers to an actuator inside an object. This strongly suggests that, as two different words that are consistently used in different contexts, "attached" does not encompass embedding. See Bell Atl., 262 F.3d at 1271 (finding that consistent use in the specification may implicitly redefine a term); Acumed v. Stryker, 483 F.3d 800, 807 (Fed. Cir. 2007) (finding that "transverse" did not mean the same thing as "perpendicular," because if it did, there would have been no need to use both terms). Thus, the specification defines "attached" as "affixed to the outer surface of an object." This distinction is not abandoned in the claims — claim 1 uses the word "attached," but claim 10 uses the term "embedded." (‘941 patent, 43:62, 45:14-20.)

It may appear at first blush that the Court's construction reads the preferred seat embodiments out of the claims. (‘941 patent, 2:17-20 (the seat embodiment is "a primary objective of the patent"); see also ‘941 patent Abstract; Defs.' Br. at 6, Doc. No. 148.) However, while the patent only describes in detail the seat embodiment with embedded actuators (‘941 patent, 32:47-63, 4:45-50), these descriptions are merely "illustrative" and "by no means specifically imply any limitations regarding other possible . . . control input devices." (‘941 patent, 32:13-17.) When the seat-based embodiments are mentioned as a primary objective, they are not limited to embedding. (‘941 patent, 2:17-20 ("a primary objective of the present invention is to introduce a tactile feedback seating unit that can produce tactile feedback within a seat").) As such, the seat-based
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

embodiment with embedded actuators is only one sub-embodiment of many seat-based embodiments, which include attaching actuators to the surface of a seat. Consequently, claims 1, 6 and 7, which claim a seating unit, include the embodiments that attach the actuators to the seat. They only exclude the sub-embodiment that is detailed by the specification. Thus, the meaning of "attached" that is clearly set forth in the specification to exclude embedding does not violate the tenet of construction that the claims be read to include preferred embodiments. 2

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2 The preferred embodiments of embedding of actuators in a throttle, joystick, yolk and shift knob are present in claims 8 and 10. (‘941 patent, 44:57-45:20.)
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While there is no doubt that construing "attached" in this manner also reads many other embodiments described in the specification out of the claims, it is the claims that define the invention, not the embodiments that are disclosed in the specification. This is a "bedrock principle" of patent law. Phillips, 415 F.3d at 1312; see also Interactive Gift Express, 256 F.3d at 1331. The claims put the person of ordinary skill in the art on notice so that she may design around the claimed invention. Athletic Alternatives v. Prince Mfg., 73 F.3d 1573, 1581 (Fed. Cir. 1996). It does not matter that the inventor may have subjectively intended to claim these embodiments. Here, the claims, read by a person of ordinary skill in the art in light of the specification, do not include these embodiments; they are disclosed, but not claimed.

Consequently, because the specification impliedly defines "attached" to mean "affixed to the exterior surface" the Court construes "attached to said pad" as "affixed to the exterior surface of the flexible pad."

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1. Claim 1

Claim 1 of the patent states:

A variable torch apparatus comprising:

a torch portion having a fuel canister and wick element, said torch portion constructed of a segment of copper pipe which has been capped and sealed;

a vertical support portion constructed of a length of copper pipe and attached to said torch portion by a copper pipe reducer element; and

a base portion connected to said vertical support portion, said base portion constructed of copper pipe material.

'371 Patent col.4 11.11-19. Both parties state this claim creates three parts for the invention: a torch portion, a vertical support portion, and a base portion. As the following discussion shows, these three parts can be manipulated into a variety of configurations: table-top torches, lawn torches, torches with one or multiple torch portions, and torches of various heights. Thus, "all . . . variations . . . result from the combination of the three basic components," id. col.3 1.46, col.4 11.1-2, and this makes the torch a variable torch apparatus.

One of the first disagreements is over the meaning of "copper pipe." While both parties state that pipe is a "hollow body," Gardendance argues that the meaning should be limited to cylindrical pipe. Such a limitation is unreasonable because although all the patent's figures use cylindrical pipe, none of the claims limit "pipe" to only cylindrical pipe. Moreover, the specification states that those "skilled in the art" of coppersmithing can make modifications without departing from the "spirit and scope" of this invention. Id. col.4 11.3-7. Thus, the specification shows the claim terms should be construed so that a slightly modified apparatus still falls under the claim terms. Changing the shape of the pipe is a minor change.

The torch portion has a fuel canister, or "a container for holding combustible matter" and a wick element, or "a bundle of
fibers, or a loosely twisted or braided cord, tape, or tube” that draws up fuel. (Def.’s Markman Br. at 9, 12.) There is some confusion over what is "capped and sealed" in the torch portion. Gardendance proffers three possible interpretations. Gardendance’s preferred interpretation is not clear from its argument. Woodstock only asserts that "the 'copper pipe' has been closed off and covered." (Id. at 14.)

"Capped" means "something covering the top or end of a thing." http://www.onelook.com/?other=web1913&w=cap (last visited Oct. 11, 2005). "Sealed" means "to shut close." http://www.onelook.com/?other=web1913&w=seal (last visited Oct. 11, 2005). The difference in the terms appears to be that "seal" is a more complete "closing off." The specific arrangement of what is capped and what is sealed, however, comes from the specification.

The copper pipe that forms the torch portion has a pipe fitting on the bottom with a plug in it, and "this creates a vessel or fuel canister." ‘317 Patent col.2 1.61. The bottom has a "cap," and this is where the "seal" is because a seal, or a complete closing off, prevents fuel from leaking. The top of the pipe has "a standard one and one-fourth inch copper cap" that has a hole drilled for a wick. Id. col.2 11.63-64. The cap can be friction fit or soldered, with the first option being the preferred method. In either case, there remains a hole in the top for a wick. This hole can allow fuel to evaporate. Thus, the top of the tank is not completely closed off; the top is merely capped. Thus, the torch portion is capped and sealed on the bottom so that fuel does not leak, and the top is only capped.

The vertical portion is copper pipe and connects to the torch portion by a copper pipe reducer element. A copper pipe reducer element is "a part that connects two hollow copper bodies of different sizes." (Def.’s Markman Br. at 13.) Thus, the vertical portion and torch portion are not of the same diameter pipe. The parties disagree over how the copper pipe reducer element is actually formed and the meaning of "connects."

The best interpretation of the ’371 Patent is that the copper pipe reducer element does not have to be a separate piece. Woodstock argues that the copper pipe reducer element "need not be a separate and distinct item, but may simply be an integrated part of the 'torch portion' or an integrated part of the 'vertical support portion."

The best interpretation is that the element does not have to be a separate piece; the element can be one with another part of the torch, or it may be a separate element. Nothing in the claim states that the copper pipe reducer element is a separate piece from the torch portion. Also, the specification states that "it is obvious that modifications and changes . . . may be made by those skilled in the art of coppersmithing "without departing from the spirit and scope of the invention." ‘371 Patent col.4 11.4-7. Thus, the specification shows that the claim terms should be construed to allow minor modifications that do not otherwise depart from the spirit and scope of this patent. Someone versed in coppersmithing, even if it takes as much time as Gardendance suggests in its brief, could make the torch portion and copper pipe reducing element into one unit and otherwise still construct the torch covered by this patent. When those two pieces are actually one piece, that torch retains its variable nature in that a user could still create a variety of torch units, including lawn and table-top units, and units with one, two, or more torches. One has a variable torch even if the two elements are actually one element. Making the torch unit and copper pipe reducing element into one is within the claim terms, and the copper pipe reducing element may or may not be a separate piece.

vi. Two frames are attached together

Plaintiffs interpret the phrase "two frames are attached together" to mean "two eyeglasses, whether rimmed or rimless, and comprising the entirety of the auxiliary frame with the exception of the lenses and including the lens rims (if provided), the auxiliary frame magnetic members, the nose bridge, and the arms connected together as by way of a magnetic device."

Consistent with its above constructions, the court finds that the phrase "two frames are attached together" means "two eyeglass devices, which include, at least, a bridge and rims, are fastened or connected by magnetic attraction."
The district court also erred in interpreting the “attaching portion attachable to a portion of said frame of said pair of
eyeglasses” element of claim 1 of the ’726 patent as a means-plus-function element. It instructed the jury that the "attachable
portion" is "a mechanically fastened loop that goes around the nose bridge of the glasses as disclosed in the specification, or
the structural equivalent thereof." Because this claim element is also not in traditional means-plus-function form and
supplies structural, not functional, terms, the trial court erred by applying § 112, P 6 to this claim element. This error caused
the district court to incorporate unduly restrictive structural limitations into the claim.

C. ”attenuating effect of said plates is immediately called into play when said closure member is first opened“ and
”attenuating effect thereof is great during initial opening“

In describing how the plates comprising the barrier means are mounted, Claim 2 describes the positioning of the plates. The
plates are mounted

adjacent [the] closure member substantially within [the] valve body . . . and spaced from each other in the direction of
[the] flow passage when [the] closure member is in [the] closed position so that the attenuating effect of [the] plates is
immediately called into play when [the] closure member is first opened and . . . is great during initial opening of [the]
closure member, and diminishes as [the] closure member is moved toward [the] completely open position.

The parties dispute the use of the terms ”immediately," "first opened," "great" and "initial
opening" in the context of the quoted language.

NJI argues that the quoted language includes both a physical description and a description of how the attenuators function in
time. NJI contends that the physical description is limited to a) the relationship between the plates and the closure member,
b) the location of the plates within the valve body, c) the spacing of the plates in relationship to each other and d) the
direction of the plates with respect to the flow of fluid. According to NJI, the remainder of the clause describes how the
attenuating device functions temporally so that

1) ”immediately" means that there is no time lapse between the opening of the valve and the attenuation or lessening of
noise,

2) "first" in the phrase "first opened" merely emphasizes the absence of temporal delay in attenuation and

3) "great during initial opening" is used for contrast with the diminished attenuation as the valve opens farther.

Fisher argues that the quoted language is a physical description that dictates not only the relationship between the plates and
the remainder of the valve, but also the physical extension of the plates in relation to the flow of fluid. According to Fisher,
the disputed words describe how the attenuators and closure member operate together spatially so that

1) "first opened" means the smallest possible angular degree to which the closure member may rotate;

2) "immediately," in the phrase "immediately called into play" means that the attenuator functions at that small degree of
rotation; and

3) "great during initial opening" further emphasizes that the attenuator functions very effectively at that small degree of
rotation.

The terms "first," "immediately" and "initial" ordinarily connote temporal measurements, and neither the specification, nor
the prosecution history nor the expert testimony at the Markman hearing expresses a specialized meaning for any of those
terms in the patent itself or in the field of valve mechanics. Furthermore, the specification supports the temporal interpretation of those terms because the patentee uses different words such as "range" and "degree" when he intends to describe the opening of the valve in spatial terms. E.g., '510 Patent at col. 1, 1. 52 & col. 2, 11. 4, 42. This Court, therefore, adopts NJI's interpretation and construes the disputed language as a description of the valve's function in time.

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1. Audiometer

The term "audiometer" appears in claim 6 of the '681 Patent and claim 1 of the '482 Patent. 5 Diagnostic asserts that "audiometer" should be construed as "an instrument; for measuring hearing." Benson proposes that the term "audiometer" be construed as a "a computer and a conventional audiometer."

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5 Because the parties each propose the same construction for this term as used in both Patents and because the Court's construction is supported by both Patents' specifications, the Court construes the term "audiometer" consistently.

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The dictionary definition of "audiometer" is "[a]n instrument for measuring hearing activity for pure tones of normally audible frequencies."

The American Heritage Dictionary of the English Language 121 (3d ed. 1996). Next, the Court turns to the intrinsic evidence to determine whether the ordinary meaning has been rebutted. In examining the written description of both the '681 and '482 Patents, the Court concludes that "audiometer" is referred to as "an electrically activated generator of test tones for evaluation of hearing." ('681 Patent, col. 1, 11. 13-14; '482 Patent, col. 1,11. 16-17.) This use is consistent with the term's ordinary meaning.

Benson argues, however, that Diagnostic is limited to its proposed construction because of arguments made by the patentees during the prosecution of the '681 Patent. Specifically, Benson argues that the patentees narrowed the meaning of their invention by representing that it included a conventional audiometer and a separate computer. Diagnostic, on the other hand, denies that the patentees ever defined the term "audiometer" as a conventional audiometer and a separate computer, or that it ever disavowed claim scope outside of a conventional audiometer and a separate computer.

As discussed previously, the Court rejects Benson's attempt to import structural limitations into individual claim terms based on its prosecution history estoppel argument. With respect to this term in particular, the fact that the patentees specified that its multimedia audiometer in claim 4 included a conventional audiometer and a computer does not constitute a clear and unambiguous surrender of subject matter so as to define "audiometer" in claim 6 as a conventional audiometer and a separate computer. See Middleton, Inc. v. Minn. Mining & Mfg. Co., 311 F.3d 1384, 1388 (Fed. Cir. 2002) (explaining that the disavowal of claim scope requires a clear and unambiguous surrender of subject matter). Therefore, the Court adopts the term's ordinary meaning and construes "audiometer" as "an instrument for measuring hearing."

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"Austempering" and "Marquenching"

The meanings of "austempering" and "marquenching," two metallurgical heat treating techniques, are jointly addressed to avoid repetition because the arguments with respect each term are similar and overlapping.

Claim 1 states:
A process for forming a rotary cutting blade, comprising the steps of:

a) working a blank of boron steel to have a bevelled cutting edge; and

b) heat treating the formed blank to elevate the blank hardness to between 48 and 55 on the Rockwell Hardness Scale to thereby form a rotary cutting blade having Charpy Notch toughness of at least 15 ft.lb., wherein the heat treating step comprises austempering the formed blank.

Claim 4 states:

A process for forming a rotary cutting blade, comprising the steps of:

a) working a blank of boron steel to have a bevelled cutting edge; and

b) heat treating the formed blank to elevate the blank hardness to between 48 and 55 on the Rockwell Hardness Scale to thereby form a rotary cutting blade having Charpy Notch toughness of at least 15 ft lb, wherein the heat treating step comprises marquenching the formed blank.

Turner averrs that he owns a copy of the ASM International's Handbook II, which he has heard referred to as the "bible" of heat treating, he consults it regularly, and that when he drafted the patents he used the terms "austempering" and "marquenching" in a manner consistent with the Handbook II's definitions. (Turner Decl. P 3-4.) Fisher-Barton proffers excerpts from the Handbook I and Handbook II which define the terms. (Fisher-Barton Mem. P 4, Exs. A & B.) Handbook II defines the term "martempering" -- the patent uses the term "marquenching" -- but the two terms are used interchangeably in metallurgy. (Krauss Decl. P 8 n.1.)

Handbook II defines "austempering" as "the isothermal transformation of a ferrous alloy at a temperature below that of pearlite formation and above that of martensite formation." (Turner Decl., Ex. B at 3.) (footnotes added.) It further states that steel is austempered by being:

- heated to a temperature within the austenizing range, usually 790 to 915 [degrees] C (1450 to 1675 [degrees] F); quenched in a bath maintained at a constant temperature, usually in the range of 260 to 400 [degrees] C (500 to 750 [degrees] F); allowed to transform isothermally to bainite in this bath; and, cooled to room temperature.

(Id.) (footnote added.)

5 Martensite is a generic term for the microstructure formed by diffusion less phase transformation in which the parent and product phases have a specific crystallographic relationship. Id. at 462. "An important aspect of 'martempering' is that no transformation product other than martensite should form." Id. at 266.

6 Bainite is a transformation product that may form just above M[s]. See Id. at 267.

Handbook II defines "martempering" as:

an interrupted quench from the austenizing temperature of certain alloy, cast, tool and stainless steels. This purpose is to delay the cooling just above the martensitic transformation for a length of time to equalize the temperature throughout the piece. This will minimize the distortion, cracking, and residual stress. The term martempering is somewhat misleading and is better described as marquenching.

(Id. at 5.) The steps of "martempering" steel consist of:

quenching from the austenizing temperature into a hot fluid medium (hot oil, molten salt, molten metal or a fluidized particle bed) at a temperature usually above the martensite range (M[s] point); holding in the quenching medium until the temperature throughout the steel is substantially uniform; cooling (usually in the air) at a moderate rate to prevent large differences in temperature between the outside and the center of the section.

(Id.)

The Defendants, rely upon the patent specification, and assert that the terms "austempering" and "marquenching" have special meanings given to them by the patentee. (Defs.’ Opening Br. 9-12.) The Defendants state that although the general processes of "austempering" and "marquenching" were known in the art several decades before the patents were filed, the inventions claimed in the patents-in-suit are the specific "austempering" and "marquenching" steps required by the claims to arrive at the boron steel blades with the claimed hardness and toughness characteristics. The Defendants indicate that Fisher-Barton's proffered definitions of the terms should be rejected because they fail to read the terms in light of the rest of the claim and the specification, completely disregard the express definitions ascribed those terms in the patents, and are inconsistent with the process disclosed in the preferred embodiment. (Id. at 16.)

The Defendants rely upon the Declaration of George Krauss ("Krauss"), a university emeritus professor of the Colorado School of Mines since 1997, who holds a Science Doctorate in Metallurgy and a Master of Science from Massachusetts Institute of Technology and has been involved exclusively in metallurgy and material science since 1955 when he received his Bachelor of Science from Lehigh University. (Krauss Decl. PP 1-2.) Krauss indicates that austempering of medium carbon boron steels has been well known for many years and that austempering in general is a method of transforming austenite to lower bainite - a particularly hard and tough steel microstructure in boron steels. (Id. at P 21.) He indicates that austempering, like marquenching begins with heating the work piece to the austenitizing temperature and cooling the steel to a temperature above the martensite (M[s]) range. (Id.) Krauss states that the quenching step differs from marquenching, because in the austempering the steel is held at the quench temperature for a particular duration long past the temperature equalization of the steel in order to allow the formation of lower bainite and not martensite. (Id.)

7 Krauss has a considerable list of professional positions, achievements, honors and awards including having authored or coauthored more than 300 articles and having authored, co-authored or edited 12 books related to heat treating or tools used for metal fabrication. (Krauss Decl. P 2 and Ex. 2.) He is also the co-inventor on three U.S. patents. (Id.)

- - - - - - - - - - - - - End Footnotes - - - - - - - - - - - - -
The Defendants maintain that this Court should construe the "austempering" as a heat treating process in which the blades are first heated to approximately 1560 [degrees] F.; the heated blades are then quenched into a liquid salt bath at approximately 500 [degrees] F. for about 20 minutes; the quenched blades are then withdrawn from the salt bath and allowed to air cool to room temperature. This alternative process eliminates the need for further tempering. The Defendants' definition is taken from the preferred embodiment.

The Defendants maintain that this Court should interpret "marquenching," as the process whereby the formed blades are first heated to approximately 1560 [degrees] F; the heated blades are then quenched into a liquid salt bath at approximately 5000 F. for about 20 seconds; the quenched blades are then withdrawn from the salt bath and allowed to air cool to room temperature; and, the cooled blades then proceed to a tempering station where they are tempered at 3000 F. as a stress relief. This definition is taken from the description of the preferred embodiment. (See 3:66-67 & 4:1-6.)

Krauss notes that claim 4 of the patent sets forth a process for achieving hardness in boron steel to "between 48 and 55 on the Rockwell Hardness scale" and a "Charpy Notch toughness of least 15 ft. lb., wherein the treating step comprises marquenching the formed blank." (Krauss Decl. P 10.) Krauss opines that a person skilled in the art would understand that because the process claimed seeks to arrive at a particular hardness and toughness in the boron steel, "marquenching" as used in claim 4 must refer to the process that includes particular times, temperatures and quenchants that are necessary to achieve those results from boron steel. (Id.) Krauss maintains that because marquenching is not defined in claim 4 a person of ordinary skill in the art would refer to the specification to determine what process is being claimed. (Id. at P 11.) Krauss also avers that a skilled heat treater reading the patent would not understand the term "marquenching" as used in claim 4 to have as broad a definition as advanced by Fisher-Barton. (Id. at P 14.) He states that Fisher-Barton's proposed definition does not provide for achieving the specific hardness and toughness for the boron steels expressly set forth in claim 4. (Id.)

--- Footnotes ---

8 Krauss also indicates that Fisher-Barton's "marquenching" definition is problematic because it does not include a tempering stage once the blades are cooled to room temperature and a person of ordinary skill in the art would realize that a blade that is quenched according the Fisher-Barton general definition, and then air cooled without a subsequent tempering step would be of low toughness such that it would not achieve the claimed Charpy Notch toughness of at least 15 ft. lbs. (Krauss Decl. P 16.) In its responsive claim construction memorandum, Fisher-Barton agrees to include in its definition of marquenching the step of an additional tempering after cooling. (Fisher-Barton Responsive Br. 9 n.2.) Therefore, the tempering issue raised by paragraphs 16 and 17 of the Krauss Declaration is moot.

--- End Footnotes ---

Krauss avers that the M[s] temperatures for the medium boron steels that are disclosed in the patent would be known to a skilled person, "for example by using the Andrews equation from his book, Steels: Heat Treatment and Processing Principles." (Id. P 15.) He states that the appropriate M[s] temperatures are:

<table>
<thead>
<tr>
<th>Steel</th>
<th>M[s] Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>10B36</td>
<td>687 [degrees] F.</td>
</tr>
<tr>
<td>10B37</td>
<td>673 [degrees] F.</td>
</tr>
<tr>
<td>10B38</td>
<td>671 [degrees] F.</td>
</tr>
<tr>
<td>10B39</td>
<td>658 [degrees] F.</td>
</tr>
<tr>
<td>10B40</td>
<td>656 [degrees] F.</td>
</tr>
<tr>
<td>10B41</td>
<td>644 [degrees] F.</td>
</tr>
</tbody>
</table>

Krauss avers that because a person of skill in the art would recognize that the general marquenching process (i.e., as used in the context other than the patent) requires that the work piece be held above the M[s] temperature until the temperature equalizes, that the lowest possible temperature of the quench would be greater that 687 [degrees] F for 10B36, 673 [degrees] F for 10B37 and so on. (Id.) Krauss avers that "the marquenching process described in the '114 patent in column 3, lines 66-67 and column 4, lines 1-6, however, calls for the quench temperature to be approximately 500 [degrees] F., which is well above the M[s] temperature for 10B38, or any of the listed boron steels." (Id.) Therefore, Krauss avers that one of skill in that art would realize that the process disclosed in the patent departs from the general marquenching process, such that a
skilled person would understand the term "marquenching" as used in the claim to have the special meaning ascribed in the patent that achieve the claimed hardness and toughness characteristics. (Id.)

The Defendants' arguments regarding the meanings of "austempering" and "marquenching" have some initial appeal because they focus in part on intrinsic evidence, which is generally preferred over extrinsic evidence. However, Krauss's interpretation of the intrinsic evidence, upon which the Defendants rely, is extrinsic evidence. Krauss's construction of "marquenching" also centers on boron steel designations 10B36 through 10B42 but claim 4 provides for working a blank of boron steel blank but does not include designation of the boron steel type. (Compare claims 3, 7, 9 (5:21-24; 6:7-9; 6:26-28) ("wherein the blank is formed of a boron steel selected from the group consisting of 10B36, 10B37, 10B38, 10B39, 10B40, 10B41, and 10B42 steel.") Ultimately, careful consideration of the Defendants' position reveals that if accepted, the Court would be improperly importing the preferred embodiment into the claims. Furthermore, consideration of the terms in the context of the entire patent does not indicate that the patentee redefined the terms "austempering" and "marquenching." See Phillips, 415 F.3d at 1313. Therefore, the Court adopts Fisher-Barton's construction of the terms.

"Judges are free to consult dictionaries and technical treatises at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." Phillips, 415 F.3d at 1322-23 (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 n.6 (Fed. Cir. 1996).) The Handbook II was the starting point for the Court in construing these metallurgical terms, which are familiar to a metallurgical lay person. But, the Court has carefully considered the intrinsic evidence -- the patent claims and the rest of the specification in its analysis.

Claim 1 uses the term "austempering" as a component of the heat treatment process claimed. Claim 4 uses "marquenching" as a component of the heat treatment process claimed. Neither claim defines the term. However, each term has a commonly accepted meaning known to one skilled in the art of metallurgy.

The proposed constructions of the terms urged by the Defendants is drawn from the preferred embodiment portion of the patent. 9 However, limitations from the specification are not to be read into the claims. See Golight, Inc. v. Wal-Mart Stores, Inc., 355 F.3d 1327, 1331 (Fed. Cir. 2004). This principle was reaffirmed in Phillips, 415 F.3d at 1323, where the court recognized that the distinction between using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim can be a difficult one to apply in practice. Id. (citing Comark Commun's. v. Harris Corp., 156 F.3d 1182, 1186-87 (Fed. Cir. 1998) ("there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification.") However, the line between construing terms and importing limitations can be discerned with reasonable certainty and predictability if the Court's focus remains on understanding how a person of ordinary skill in the art would understand the claim terms. Id. "Although the specification often describes very specific embodiments of the invention, [the court] repeatedly warned against confining the claims to those embodiments," and had "expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." Id.

9 The description of the preferred embodiment states, in pertinent part:

In one advantageous heat treating process, known as Marquenching, the formed blades are first heated to approximately 1560 [degrees] F. The heated blades are then quenched into a liquid salt bath at approximately 500 [degrees] F. for about 20 seconds. The quenched blades are then withdrawn from the salt bath and allowed to air cool to room temperature. The cooled blades then proceed to a tempering station 36 where they are tempered at 300 [degrees] degrees F. as a stress relief.

Alternatively, the formed and edged blade may be subjected to an austempering heat treating process in which the blades are first heated to approximately 1560 [degrees] F. The heated blades are then quenched into a liquid salt bath at approximately 500 [degrees] F. for about 20 minutes. The quenched blades are then withdrawn from the salt bath and allowed to air cool to room temperature. This alternative process eliminates the need for further tempering.

(3:66-67; 4:1-14.)
In this case, the specification includes only one preferred embodiment as to the "austempering" and "marquenching" processes. The Defendants' proposed construction would require importation of the preferred embodiments into the claims -- contrary to Phillips. The Defendants have not established that the claims or the specification indicate that a special definition of "marquenching" or "austempering" was used. To a great extent, the Defendants' interpretation of the terms rests on their assumption that a single blade is processed at a time. However, the patent does not embrace that assumption.

Furthermore, if the Defendants' construction of "marquenching" and "austempering" were adopted the portions of claims 8(b) and 11(b) which follow the phrase "wherein the heat treating step comprises . . . " would be superfluous. The patentee could have merely inserted the "marquenching" in claim 8(b) and "austempering" in claim 11(b). Therefore, the Defendants' proposed constructions of austempering and marquenching are rejected.

2. As used in claim 1 of the '114 patent "austempering" means: heated to a temperature within the austenitizing range, usually 790 to 915 [degrees] C (1450 [degrees] to 1675 [degrees] F); quenched in a bath maintained at a constant temperature, usually in the range of 260 [degrees] to 400 [degrees] C (500 [degrees] to 750 [degrees] F); allowed to transform isothermally to bainite in this bath; and, cooled to room temperature.

C. Infringement

1. The Chan Patent

SSL argues that the district court erred in construing the "automatically" limitation in claim 1 of the Chan patent to mean "autonomously." SSL contends that the plain meaning of "automatically" is "having a self-acting or self-regulatory mechanism," and that "automatically" does not mean "undertaken or carried out without any outside control." SSL argues that the claim only requires that desaturation and east-west stationkeeping occur simultaneously and without further manual commands from the ground; it does not preclude such maneuvers from being initiated by ground control commands. SSL further argues that Lockheed's satellites literally infringe claim 1, and that prosecution history estoppel does not preclude infringement under the doctrine of equivalents.

Lockheed responds that SSL's proposed claim construction is inconsistent with the written description, and that the district court properly concluded that the accused satellites do not infringe claim 1, either literally or under the doctrine of equivalents. Lockheed emphasizes the fact that the accused satellites require a ground operator to initiate stationkeeping maneuvers. Lockheed contends that the Chan patent does not disclose manually initiated east-west stationkeeping, and instead discloses that desaturation maneuvers are initiated by the satellite itself, not by a ground operator. Lockheed further contends that SSL failed to present any evidence of any structural equivalence under 35 U.S.C. § 112, P 6, and that the district court correctly concluded that the accused satellites do not perform the same functions as recited in the claim.

In interpreting claims, a court "should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history." Vitronics Corp. v. Conception Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1577 (Fed. Cir. 1996). Absent an express intent to impart a novel meaning, "terms in a claim are to be given their ordinary and accustomed meaning." Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1234, 1249, 48 U.S.P.Q.2D (BNA) 1117, 1121 (Fed. Cir. 1998); Carroll Touch, 15 F.3d at 1577, 27 U.S.P.Q.2D (BNA) at 1840 ("The words of a claim are generally given their ordinary and accustomed meaning, unless it appears from the specification or the file history that they were used differently by the inventor.").

As an initial matter, we do not agree with SSL's assertion that the district court erred in construing the term "automatically" to mean "autonomously." The disputed portion of claim 1 reads as follows:

[d] coupled to the determining means, means for performing any desired desaturation of the momentum/reaction wheel while automatically and simultaneously accomplishing a pre-selected compensation of the spacecraft's east-west position.

Chan patent, col. 6, ll. 40-44 (emphasis added). Given its ordinary meaning, the term "automatically" denotes that the
claimed apparatus is capable of performing east-west stationkeeping independently, without any external control. See, e.g., Webster's II New Riverside University Dictionary 140 (1988) (defining "automatic" as "1. a. Acting or operating in a manner essentially independent of external influence or control. b. Self-regulating."). The term "autonomously" has a similar ordinary meaning, likewise denoting independent operation. See id. (defining "autonomous" as "1. a. Independent. b. Self-contained."). Thus, the district court's construction is supported by the ordinary meaning of those terms.

The district court's construction is also consistent with the specification. The written description explicitly states that one of the advantages of the present invention is that "all manual east-west stationkeeping maneuvers are eliminated." Chan patent, col. 1, ll. 63-65. Moreover, the abstract indicates that the claimed invention relates to an "apparatus for autonomously performing stationkeeping maneuvers for three-axis stabilized spacecraft." Id., Abstract (emphasis added). 1 The abstract further states that "the invention autonomously performs desaturation of a momentum/reactive wheel . . . while simultaneously accomplishing the preselected compensation of the spacecraft's east-west position." Id., Abstract (emphasis added). Accordingly, given that the elimination of "all manual east-west stationkeeping maneuvers" is one of the stated advantages of the claimed apparatus, and the fact that the terms "automatically" and "autonomously" are used interchangeably in the specification, we conclude that the district court did not err in construing the term "automatically" to mean that the claimed apparatus is "capable of performing multiple, autonomous east-west changes in position over a substantial period of time without ground transmissions concerning the parameters of such movements." Space I, 1998 WL 1045304, at *6 (emphasis added).

1 Although SSL argues that it was improper for the district court to rely on the abstract in construing the claim, we have previously stated that in determining the scope of a claim, the abstract of a patent is a potentially useful source of intrinsic evidence as to the meaning of a disputed claim term. See Hill-Rom Co. v. Kinetic Concepts, Inc., 209 F.3d 1337, 1341 n.*, 54 U.S.P.Q.2D (BNA) 1437, 1440 n.1 (Fed. Cir. 2000).

1. "automatically" or "automated" (claim 1)

Flow argues that this term should be construed as "performed without manual intervention." Omax acknowledges in its Markman brief that "this is generally the ordinary meaning of the term," but argues in the joint claim chart that this phrase "should be construed against Flow depending on the circumstances." In its Markman brief, Omax proposes that the Court find this term to be invalid or adopt a narrow construction of this term: "on-the-fly, in real time."

Omax's arguments for finding the term invalid lack merit. Omax seizes on a number of apparently contradictory references to the claim term to argue that the term is indefinite and therefore the claim invalid. Flow's alleged contradictions, however, would not affect the ability of an individual of ordinary skill in the art to understand the meaning of the term as used in the patent. Moreover, it is far from apparent that Flow has ever defined the term "automatically," as used in claim 1, as anything other than "performed without manual intervention." 4 In light of Omax's acknowledgment that this is how someone of ordinary skill in the art would interpret this term, the Court adopts this construction.

4 Omax's proposed definition for this term seems far more fitting as a definition of "dynamically." This adds credence to Dr. Garris's argument that the prosecution history relied on by Omax refers to the static vs. dynamic issue, not the definition of automatically.
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C. "... Are automatically transferred from storage to the calculating unit."

Claim 18 claims: "The method of Claim 13 wherein the number configurations for the next game having identification numbers which are displaced in a predetermined relationship from the identification numbers of the previous game are automatically transferred from storage to the calculating unit without entering the identification numbers of the selected number configurations." Defendants argue that the use of the word "automatically" in Claim 18 precludes any human intervention to initiate the transfer of the number configurations. Plaintiff disagrees. Plaintiff argues that the mere use of the word "automatically" does not foreclose any human intervention. Rather, according to Plaintiff, the language contemplates that the microprocessor automatically enters the next set of cards at the end of the previous game and/or after a new game has been "started through a key pad command." Thus, both parties agree that the disputed phrase means that the device automatically enters the next set of bingo cards at the end of a game. Plaintiff submits, however, that this automatic function can also be initiated by the player pressing a button to signal that the game is over.

Both parties cite the same definition for the word "automatically": "having a self-acting or self-regulating mechanism." See MERRIAM WEBSTER'S COLLEGIATE DICTIONARY (10th ed. 2001) (available at http://www.m-w.com/cgi-bin/dictionary). The Patent details a device that is able to determine which sheet of bingo cards follows the sheet just played, and pull that successor sheet from its memory so the player can play this sheet next. No intervention is required for the device to determine which sheet of cards is next. Nor is intervention required for the device to retrieve that sheet from the memory. In other words, the device has a "self-regulating mechanism" that enables it to complete those functions. Only the timing of these processes is initiated by human intervention. Thus, the question becomes whether the fact that this procedure is initiated by an external factor precludes it from being automatic. The court finds that it does not. The device, on its own, ascertains which sheet of bingo cards comes next and makes that sheet available for play - the player merely prompts the machine to perform this automatic function. An "automatic" garage door opener, similarly, does not sense that an automobile is ready to enter or depart a garage, but performs automatically once it is prompted to do so. Much the same, the device does not sense that a player in the bingo hall has shouted "bingo" and call up the next sheet to be played, but prepares for the next game once the player instructs the device that a new game is starting.

Plaintiff, as the patentee, was free to establish its own meaning for the word "automatically:" "Patent law permits the patentee to choose to be his or her own lexicographer by clearly setting forth an explicit definition for a claim term that could differ in scope from that which would be afforded by its ordinary meaning." Rexnord Corp. v. Laitram Corp., Intralox, Inc., 274 F.3d 1336, 1342 (Fed. Cir. 2001). Here, rather than providing any alternative definition, Plaintiff used the word consistently with its ordinary meaning. The word "automatically" is used twice in the specifications: "the processor automatically compares the entered number with the numbers contained in each of the stored number configurations," and "the processor automatically enters the next set of cards after the previous game has ended." (151 Patent, Col; 4, lines 23-25, 54-56.) On both occasions its usage is consistent: the device performs an automatic function once it is signaled that it is time to do so, either by the player entering a number for the device to compare to the numbers on the cards being played, or by the player pressing a button signaling that a new game is beginning. Neither the language of the patent, nor the ordinary meaning of the word, suggests that a function must be performed entirely spontaneously for it to be automatic.

In conclusion, the word automatically," as used in the 151 Patent, does not preclude human intervention to trigger a process that is, in all other respects, automatic.

The parties dispute the claims "evaluating," and "about 800 bills per minute," both of which have already been construed above. The only other term the parties dispute is "automatically denominating." Having fully reviewed the parties' briefs on the motion for reconsideration and the briefs on claim construction for the '806 Patent, and having heard testimony on the term "automatically denominating" at the Markman hearing, the Court affirms the '806 Opinion.

In Glory's late 2005 motion for reconsideration, in the second half of its claim construction brief before this Court, and in
argument during the Markman hearing. Glory relies primarily on recent cases from the Federal Circuit that Glory believes invalidate the reasoning of the '806 Opinion. Glory cites to Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) and Honeywell Int'l, Inc. v. ITT Industries, Inc., 452 F.3d 1312 (Fed. Cir. 2006) to support its argument that the '806 Opinion erroneously relied too little upon the terms of the specification, and relies upon Curtiss-Wright Flow Control Corp. v. Velan, Inc. 438 F.3d 1374 (Fed. Cir. 2006) to support its argument that an inventor cannot claim prior art specifically disclaimed in its specification. While the Court respects Glory's arguments that the specification discusses the "optical sensing and correlation technique" that halts whenever a "no-call" bill is discovered, none of the cases cited by Glory refute the basic principles that a court should not import everything in the specification into the claims, or the basic principle of claim differentiation. See Phillips, 415 F.3d at 1315 ("The presence of a dependent claim that adds a particular limitation give rise to a presumption that the limitation in question is not present in the independent claim;"); Varco, L.P. v. Pason Systems USA Corp., 436 F.3d 1368, 1372 (Fed. Cir. 2006) ("In examining the specification for proper context, however, this court will not at any time import limitations from the specification into the claims."). The '806 Opinion explained why "automatically denominating" could not be limited to the specific correlation technique with halting function suggested by Glory because the dependent claims of the '806 Patent describe specific limitations on "automatically denominating" and "denominating," creating the inference that the independent claims may not be so limited. '806 Opinion at 11-13. Additionally, as stated in the '806 Opinion, Glory's own expert testified that correlation algorithms as well as various other denomination techniques were "known to and understood by those in the art well before 1999." '806 Opinion at 15. Therefore, the Court agrees with the '806 Opinion that "automatically denominating" includes any method for automatic denomination known to those skilled in the art at the time the '806 Patent was filed.

6. Claim 1 - "automatically moving"

Bradford proposes that "automatically moving" means "changing or capable of changing position independent of external influence or control other than by side structures." Defendants propose that "automatically moving" means "becoming fully erected merely upon changing the two opposing and moveable 'side structures' into an upright position and without any additional steps, including, e.g., securing a rod or bar at its end in a channel." "Automatically moving" is a further limitation on "dunnage structure" in that the dunnage structure must be operably coupled to the side structures for automatically moving into the erected and/or collapsed position. Defendants again seek to impose a substantial negative limitation on this term.

In support of their construction of "automatically moving", Defendants refer to the prosecution history of the '096 Patent in which Bradford distinguished the claimed invention from Kupersmit. Specifically, in distinguishing Kupersmit from the claimed invention, Bradford stated to the Examiner that "the Kupersmit reference clearly does not teach the benefits of the present invention which provide for rapid assembly and positioning of the dunnage structures merely upon erecting or collapsing the side walls of the container. No separate steps are required in the invention for lifting rigid bars and then securing those rigid bars at their ends with channel structures." Doc. No. 48-3, at 20. Bradford argues that Defendants' construction of this term would exclude operations that the '096 Patent explains as a normal method of operation. For instance, Bradford notes that there must be some latching and unlatching of various elements or components for the container to operate. The Court disagrees with Defendants' interpretation of the significance of Bradford's distinction between Kupersmit and the claimed invention to the Examiner.

Kupersmit teaches a collapsible container in which the dunnage is suspended from support elements which extend between the side walls. In turn, the support elements are supported by channel forming members which engage insert members on the side walls. See U.S. Patent 4,946,036 col. 3 ll. 52-63, passim, and Figure Sheet Drawing 2. In order for the Kupersmit container to collapse, the support elements must be completely lifted from the insert members on the side walls. See id. Presumably, the support elements are then stored inside of the collapsed container for return. In order to erect the container, the support elements have to be replaced in the channels. Bradford correctly argued to the Examiner that the claimed invention is distinguishable from Kupersmit because it does not require any assembly or disassembly of components to erect and collapse the container. Thus, the real distinction that Bradford made was not that the claimed invention does not require additional steps to erect and collapse the container, but that it does not require any individual assembly or disassembly of components to erect or collapse the container. For purposes of the distinction between the claimed invention and Kupersmit it is immaterial that Kupersmit teaches a channel mechanism to support the support element. It could just as easily be some
other means so long as separate assembly or disassembly of components is required to erect or collapse the container. As Bradford correctly argues, Defendants' proposed construction would preclude simple operations such as operating latching or locking mechanisms to release or engage the side walls. Locking or latching would technically comprise "additional steps" under Defendants' proposed construction, but they do not involve the separate assembly or disassembly of components of the container. Defendants' construction of "automatically moving" is overly restrictive, and, consequently, it is rejected.

Accordingly, the Court holds that "automatically moving" means "changing or capable of changing position independent of external influence or control other than by side structures."

J. Terms 11 and 12: "automatically . . . positioning"

The Court finds that it need not construe the term "automatically . . . positioning" in claims 17 and 28 of the '291 patent. These are ordinary words, used in their ordinary sense. Anyone who reads the patent claims will understand that the claimed device's central portion is positioned automatically --that is, without any further action on the part of the person implanting the device -- within the defect when the device is fully deployed. Further, as both the University and AGA conceded at oral argument, anyone who reads the patent claims will understand that "automatically positioning" modifies "opening of the second disk" in both claims. Hr'g Tr. at 237-38, 243-45. That is, there is no dispute that the thing that "automatically positions" the "joining segment" (in claim 17) or the "tubular member" (in claim 28) is the "opening of the second disk" -- i.e., the full deployment of the device.

AGA contended in the amended JCCS that for the second disk to automatically position the joining segment or tubular member within the defect, the opening of the second disk must "cause[]" the segment or member to "assume its position" within the defect. 18 Am. JCCS Sched. B at 36. In other words, AGA contended that the device's central portion cannot be in its final position -- even by happenstance -- before the second disk is opened; rather, the opening of the second disk must cause the central portion to move from a location that is not its final position to a location that is its final position. 19

18 In discussing this term at oral argument, AGA's counsel seemed to contend that opening of the second disk must cause the disk's central portion to assume a "final" position within the defect. Hr. Tr. at 234-35. The Court rejects this argument for the reasons given in the text.

19 The Court is not sure whether AGA still advocates this construction given the University's concession that "opening of the second disk" is what "automatically position[s]" the joining segment within the defect. See Hr'g Tr. at 244-45.

The Court rejects AGA's proposed construction because it is inconsistent with the words "automatically positioning" and the patent as a whole. It is clear from the specification and the patent claims that the device's central portion will already be at least roughly -- and perhaps even exactly -- in place within the defect after the first half of the device has been deployed on the defect's far side and before the second half has been deployed on the defect's near side. Yet even if, as a result of the accuracy of the deployment of the first half of the device, the device's central portion does not move at all when the second half of the device is deployed, the opening of the second half would nevertheless "automatically position" the device within the defect. That is, the opening of the second half would position the device within the defect without any further intervention. 20

20 See Webster's Third 148 ("automatic . . . 3: having a self-acting or self-regulating mechanism that performs a required act at a predetermined point in an operation . . . 4: marked by spontaneous or apparently spontaneous action: marked by action
that is unpremeditated and that arises as a really or apparently necessary reaction to or consequence of a given set of circumstances"; id. ("automatically . . . in an automatic manner: without thought or conscious intention"); AHD Third at 125 ("automatic . . . 1.a. Acting or operating in a manner essentially independent of external influence or control: an automatic light switch; a budget deficit that caused automatic spending cuts. b. Self-regulating: an automatic washing machine.").

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

In such a situation, the "automatic position" assumed by the device's central portion would, by happenstance, equal the position that the device's central portion occupied before the second half of the device was deployed. But this happenstance would not change the fact that the opening of the device's second half positioned the device's central portion automatically. The Court finds that a jury will understand this without the need for any construction by the Court of the term "automatically . . . positioning."

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6. automotive paint composition

The term "automotive paint composition" appears in claim 1 and claim 12. Chip-Mender asserts that it means paint composition made for use on automobiles. Sherwin-Williams contends that it means "Pigment and solvent. The pigment of the paint composition may be of any type sufficient to provide a coating property for repair or damage to a painted surface. That is to say, the pigments may provide a decorative function to contribute to opacity, color, and gloss control. In addition, pigments also provide protective qualities to the final paint composition after it has hardened. In this regard, pigments may be of any class, including white hiding pigments, extender pigments, black pigments, and any other color pigments known in the art. The automotive paint composition includes both lacquers and enamels, i.e., paint composition with a catalyst or drying agent."

Chip-Mender argues that the term "automotive" appears throughout the claims, the specification, and the file history of the '299 patent because it is part of the claimed invention. Chip-Mender complains that Sherwin-Williams' proposed construction would convert the simple "automotive paint composition" of the '299 patent into essentially any paint composition to be used on any surface. Chip-Mender accuses Sherwin-Williams of attempting to broaden the claims of the patent to read on a variety of prior art references, such as correction fluid pens.

Chip-Mender asserts that the claims and specification of the '299 patent, as well as the prosecution history, all require that the disclosed paint composition be made for or designed for use on automobiles. Chip-Mender argues that there is no suggestion in the intrinsic evidence that the claimed paint composition be made for anything other than an automobile.

In opposition, Sherwin-Williams argues that Russo admitted that he did not invent any new paint composition, and that the paint described in the '299 patent is commercially available. Thus, Sherwin-Williams asserts, Russo's amendment of the claims (following the initial rejection) by adding the terms "automotive" or "vehicle" did not distinguish over prior art paint compositions.

Sherwin-Williams also notes that the specification of the '299 patent defines the automotive paint composition generically as "pigment" and "solvent" (citing '299 patent, col. 19 2, II. 12-14), and also contains the following description, which Sherwin-Williams has incorporated into its proposed construction:

The pigment of the paint composition may be of any type sufficient to provide a coating property for repair of damage to a painted surface. That is to say, the pigments may provide a decorative function to contribute opacity, color, and gloss control. In addition, pigments may also provide protective qualities to the final paint composition after it has hardened. In this regard, pigments may [be] of any class, including white hiding pigments, extender pigments, black pigments, and any other color pigments known in the art.

Sherwin-Williams contends that although Russo argued during the prosecution that his paint composition excluded catalysts, the '299 patent discloses an "enamel" paint as an example of the claimed automotive paint composition (citing "Example 1" in the '299 patent, col. 4, ll. 41-42). Sherwin-Williams claims that enamel paints include those that harden by a catalytic reaction in which a drying agent in the paint reacts with air. Thus, Sherwin-Williams asserts, the '299 patent inherently discloses an automotive paint composition with catalysts and driers.

The court finds that "automotive paint composition" means "paint composition formulated for use on vehicles." Sherwin-Williams' proposed addition of "pigment and solvent" is unnecessary, as both claim 1 and claim 12 include the limitation "including… pigment and… solvent" immediately following the term "automotive paint composition." Thus, including "pigment and solvent" as part of the construction would be redundant.

The remainder of Sherwin-Williams' proposed construction is unnecessary. The portion of the proposed construction that is taken from the specification, col. 2, ll. 40-48, describes the decorative function and protective qualities of the pigments, and states that the pigments "may be of any class," including "any color pigments known in the art." A person skilled in the art would understand "automotive paint" to have certain decorative function and protective qualities, and to include many classes and colors.

With regard to the question whether "automotive paint" includes catalysts, the court notes that the prosecution history indicates that Russo disclaimed paint compositions including catalysts, and that the claims were allowed on that basis. Prosecution History, CM 00061, 00069-70. In addition, in discussing the viscosity of paint composition, the specification states in the "Preferred Embodiments" that "driers, typically used in paints, hinder the free flow of paint from [the] applicator." The reference in Example 1 to "enamel paint" is not explained in the patent, and neither party provides any documentary extrinsic evidence regarding the composition of "enamel paint." It appears, however, that the device described in Example 1 did not effect an acceptable repair to the chipped surface of the automobile. Thus, it is questionable whether the reference to "enamel paint" in Example 1 is of consequence in determining the proper construction of "automotive paint."

There is no indication in the claims or specification that the "automotive paint" in the '299 patent is different than ordinary automotive paint, except with regard to the use of paint of a particular viscosity range (not at issue in the present proceeding), as described in the claims and specification. It is not necessary for the court to construe "automotive paint" as anything other than "paint composition formulated for use on vehicles."

Fitness Quest contends that the claim language is too broad, and proposes revised language based chiefly on the embodiment reflected in Figure 8. Monti denies that the claim requires construction. Monti is correct.

Fitness Quest seeks to construe chiefly the term "pad assembly," adding language relating to a cushioning function. Again, Fitness Quest references primarily the preferred embodiment as reflected in Figure 8 as support for its proposed construction, injecting additional language relating to the telescoping member referenced immediately above. As this Court has exhaustively discussed, the preferred embodiment, standing alone, is not a basis for limiting the claim language. In the absence of any indication that the patentee intends the claim language to be so limited, such a construction is improper.

It is worth noting that, on the one hand, Fitness Quest objects to the use of the term "an auxiliary body support" in the prior term in Claim 28, seeking to replace it with "an additional body support," but on the other hand, leaves untouched in this term the subsequent reference to "the auxiliary body support" -- which presumably references the same feature. The confusion this approach is likely to inject into the understanding of Claim 28 is not desirable. This term does not require construction.

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b. "auxiliary sealant"

LGD contends that the term "auxiliary sealant" means "sealant deposited in an area outside of the main sealant." D.I. 376 at Exh. I-3.

AUO's proposed construction is slightly different in that AUO contends that the term "auxiliary sealant" means "a segment of sealant that extends from the main sealant and is outside the enclosure of the main sealant." Id. Like its construction for "main sealant," CMO's construction for auxiliary sealant focuses on the functional aspect of the auxiliary sealant. Specifically, CMO defines "auxiliary sealant" as "sealant material that is not necessary for confining liquid crystal from leaking out between the substrates."

After reviewing the specification in light of the parties' arguments, the Court concludes that "auxiliary sealant" means "sealant deposited in an area outside of the main sealant." As LGD points out, AUO's construction improperly suggests that the main sealant is formed prior to the auxiliary sealant, which is contrary to the teachings of the specification which indicate that the auxiliary sealant is formed first. '374 patent, col. 3, ll. 13-15 (" . . . forming an auxiliary sealant and subsequently forming a main sealant on one of the lower and upper substrates . . .") (emphasis added). In addition, CMO's construction for the term "auxiliary sealant" fails for the same reasons discussed with respect to its proposed construction of "main sealant."

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(6) "auxiliary spectacle frame" (claims 12, 16 and 24)

Plaintiffs argue that the phrase "auxiliary spectacle frame" means "the entirety of the auxiliary frame with the exception of the lenses. The auxiliary spectacle frame includes the lens rims (if provided), the auxiliary frame magnetic members, the nose bridge, and the arms which secure the auxiliary frame magnetic members." JS, Exh. B at 12-13.

Defendant does not dispute the components which Plaintiffs contend are included in the "auxiliary spectacle frame"; instead, Defendant argues that the auxiliary frame is limited to a frame that secures "sunglass lenses." JS, Exh. D at 5; Def.'s Opposition at 9:9-12. In support of its proposed limitation, Defendant cites to the specification of the '545 Patent at Col. 2, 11. 38-48. Def.'s Opposition at 9:12. However, there is no such limitation in that section of the specification cited by Defendant or in any other part of the '545 Patent. See Koo Decl., Exh. B at 13. As such, the Court declines to limit the auxiliary spectacle frame to one securing "sunglass lenses."

Therefore, the Court construes "auxiliary spectacle frame" to mean the entirety of the auxiliary frame with the exception of the lenses and including the lens rims (if provided), the auxiliary frame magnetic members, the nose bridge, and the arms which secure the auxiliary frame magnetic members.

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I.

The invention claimed in the '388 patent is a strap assembly that has both stretchable and non-stretchable strap members. According to the patent's specification, in a preferred embodiment of the invention, a "resilient under strap member provides a shoulder pad having an under surface adapted to cushionably rest upon the shoulder of a wearer." '388 patent, col. 1, ll. 65-68. At the same time, an "auxiliary strap assembly is disposed above and in parallel relation to the shoulder pad." Id. at col. 1, 168 - col. 2, 1.1. The auxiliary strap assembly "includes first and second separate end sections made of a relatively non-stretchable material, and also a separate center section made of a material which is longitudinally stretchable." Id., at col. 2, ll. 2-5. The construction of the strap assembly is completed with "[f]irst and second transverse stitch means" securing "the
corresponding ends of the stretchable center section, as well as the inner ends of the first and second end sections of the auxiliary strap assembly, to the shoulder pad.” Id., at col. 2, ll. 5-9. The benefit of the strap assembly claimed in the ’388 patent is that, when it is used in an item such as a book bag, the wearer experiences cushioning without excessive bouncing of the load being carried.

II.

In November of 2005, Comfort Strapp filed suit against Targus in the Central District of California, alleging both direct infringement and inducement of infringement of independent claim 1 of the ’388 patent. The accused products were several shoulder straps designed and marketed by Targus.

Claim 1 reads as follows:

A shoulder strap assembly having a limited amount of stretchability, comprising, in combination:

- elongated resilient strap means having an under surface adapted to cushionably rest upon the shoulder of a wearer, and being adapted to support a load between its two ends;
- auxiliary strap means disposed above and in parallel relation to said elongated resilient strap means, said auxiliary strap means including first and second separate end sections made of a relatively non-stretchable material, and also including a separate center section made of material which is longitudinally stretchable;
- first and second transverse stitch means securing the inner ends of said first and second end sections of said auxiliary strap means both to the corresponding ends of said stretchable center section thereof, and to said elongated resilient strap means;
- means securing the ends of said auxiliary strap means to respective ends of said elongated resilient strap means; and
- separate load-attachment means secured to respective ends of said auxiliary strap means;

said strap assembly being responsive to the weight of a load such that the middle portion of said strap assembly between said first and second stitch means may stretch by a substantial amount, but said non-stretchable end sections of said auxiliary strap means prevent any substantial stretching of the end portions of said strap assembly.

The accused shoulder straps bear several common characteristics. Like the claimed invention, Targus's accused shoulder straps incorporate both a cushioned strap and an auxiliary strap. The auxiliary strap is made of a single unitary piece of inherently stretchable fabric that is folded over and cross-stitched to itself at each end, where it is attached to the cushioned strap.

In due course, Targus moved for summary judgment of non-infringement, arguing that its straps did not infringe claim 1 of the ’388 patent because they did not meet the claim's "auxiliary strap means" and "first and second transverse stitch means" limitations. On March 21, 2007, the district court granted Targus's motion. After construing the two limitations at issue, the court ruled that the accused straps did not infringe either limitation literally or under the doctrine of equivalents. Wleklinski v. Targus, Inc., No. 05-1143, slip op. at 1 (C.D. Cal. Mar. 21, 2007). The court therefore entered judgment in favor of Targus on Comfort Strapp's claims of direct and induced infringement. Comfort Strapp now appeals from that judgment.

III.

We have jurisdiction over Comfort Strapp's appeal pursuant to 28 U.S.C. § 1295(a)(1). On appeal, Comfort Strapp contends that the district court erred in granting summary judgment of non-infringement in favor of Targus. Comfort Strapp argues that the district court erred in construing the "auxiliary strap means" and "first and second transverse stitch means" limitations of claim 1 of the ’388 patent and that it misunderstood the structure of the accused Targus straps.

Summary judgment is only appropriate if there are no genuine issues of material fact and the movant is entitled to judgment

Because we conclude that the district court properly construed the "auxiliary strap means" limitation and that there is no genuine issue of material fact as to whether the accused straps infringe that limitation as properly construed, we affirm the district court's grant of summary judgment in favor of Targus, both as to direct infringement and inducement of infringement. Resolving the case on that basis, we do not reach the issues of the district court's construction of the "transverse stitch means" limitation and whether that limitation is met in the accused straps.

IV.

The district court construed the "auxiliary strap means" of Claim 1, which includes "first and second separate end sections made of a relatively non-stretchable material" and "a separate center section made of material which is longitudinally stretchable," to require that the "end sections and the center section be made of separate pieces of separate material." Thus, the court construed the limitations relating to the auxiliary strap means to "require three separate pieces of material that are attached to one another: a stretchable center section and two relatively non-stretchable end sections on either end of the center section. The center section must be made of a stretchable material that is different from the relatively non-stretchable material that comprises the end sections." Based upon that construction, the district court ruled that this limitation was not present in the accused straps because "the alleged center and end sections of the Targus straps are not made of different material." The court also ruled that the limitation was not met under the doctrine of equivalents, because "the unitary piece of material that comprises the Targus auxiliary strap means is the fundamental opposite of the separate pieces and different material required by the '388 Patent."

Under this claim construction, Comfort Strapp argues that, in construing the "auxiliary strap means" limitation, the district court should have consulted general purpose dictionaries, which define "separate" to mean "dissimilar in nature or identity," and "material" to mean "matter that has qualities that give it individuality and by which it may be categorized." Thus, Comfort Strapp seeks a claim construction that emphasizes the functional attributes rather than the chemical composition of the auxiliary strap means and its component sections.

On appeal, Comfort Strapp argues that, in construing the "auxiliary strap means" limitation, the district court should have consulted general purpose dictionaries, which define "separate" to mean "dissimilar in nature or identity," and "material" to mean "matter that has qualities that give it individuality and by which it may be categorized." Thus, Comfort Strapp seeks a claim construction that emphasizes the functional attributes rather than the chemical composition of the auxiliary strap means and its component sections.

Under this claim construction, Comfort Strapp urges, summary judgment of literal infringement was inappropriate because the auxiliary strap of the accused Targus straps have separate center and end sections made of different materials: the center section is made of a single-ply fabric that is longitudinally stretchable, and the end sections are made of relatively non-stretchable material because they are double-ply stitched sections. In any event, argues Comfort Strapp, the district court should not have granted summary judgment of non-infringement under the doctrine of equivalents because the single-ply center section and double-ply end sections made of the same fabric are arguably functionally equivalent to center and end sections made of different fabrics, thus creating a genuine issue of material fact properly reserved for the jury.

V.

We see no error in the district court's construction of the "auxiliary strap means" limitation of claim 1. In our view, the plain meaning of the claim language requires that the center and end sections be composed of different materials. The limitation refers to the end sections being "made of a relatively non-stretchable material" and the center section being "made of material which is longitudinally stretchable" (emphasis added). At the same time, the center and end sections are both described as being "separate" from each other. The most persuasive reading of the claim language is that the center and end sections are constructed of different materials. We reject Comfort Strapp's proposed construction as inconsistent with this plain meaning.

Markman Order

By order [138] entered June 15, 2006, this case was referred to Gale R. Peterson, as Special Master, for issues relating to
claim construction. Following briefing of the issues by the parties and a hearing, Mr. Peterson submitted his Report and Recommendation (the "R&R") [153] to the Court on April 3, 2007. Following submission of the R&R to the Court, each of the parties filed objections [154 and 155] to the R&R, as well as responses [156 and 157] to the opposing party's objections. As required by Federal Rule of Civil Procedure 53(g)(4) the Court has conducted a de novo review of all of the recommended findings to which objections have been filed. Except as set out below, the Court adopts the findings and conclusions of the R&R. Specifically, the Court adopts the proposed constructions of all terms and phrases as recommended by the R&R, except for the following phrases: "average consumer," "suitable for installation by the average consumer," "can be installed by the average consumer," and "price affordable to an average consumer" (the "'average consumer' phrases").

In defining "average consumer" in the "average consumer" phrases, the R&R suggests that because the claimed method in the patent is a "method for providing," the focus of the claim is "the objective characteristics of what is 'provided' rather than the characteristics of an actual purchaser." (R&R at 36) Based on this conclusion, the R&R proposes that these terms be construed as follows:

(1) "average consumer" to mean one without special training in stonecutting;

(2) "price affordable to an average consumer" to mean that a "pre cut" "non man made" "stone top" in accordance with other terms in the claims does not require a purchaser to incur the additional costs of engaging the services of someone skilled in stonecutting in order to install the top;

(3) "suitable for installation by the average consumer" and "can be installed by the average consumer" to mean a "pre cut" "non man made" "stone top" in accordance with other terms in the claims that is "non custom ordered" or "not custom ordered" also in accordance with other terms in the claims, and that product may be installed without requiring the services of someone with special training in stone-cutting.

(R&R at 46.) The problem with this conclusion is that, in defining what is "provided," the patent claim utilizes the characteristics of the purchaser. That is, the counter top must be one that is "pre cut non man made" stone and is "affordable to an average consumer" and is capable of being installed "by the average consumer." (‘973 Patent, col. 5, ll 27-28, 32.)

The Federal Circuit has instructed that "claim language should not be treated as meaningless," and "claims are interpreted with an eye toward giving effect to all terms in a claim." Bicon, Inc. v. Straumann Company, 441 F.3d 945, 950, 951 (Fed. Cir. 2006). The construction of these terms in the R&R violates this principle by attributing no meaning to "average consumer" beyond what is otherwise stated in the claim: "a pre cut non man made, non custom ordered stone top." (‘973 Patent, col. 5, ll. 27-28.) Plaintiff recognized something more was required to define "average consumer" in its proposed claim construction in which it proposed to define the average consumer, not in terms of the pre cut nature of the top, but in terms of the characteristics of the consumer. Plaintiff's proposed construction of "average consumer" was: "an individual that purchases supplies for a home improvement task from a retail outlet and performs the home improvement task himself or herself, regardless of whether the individual has any professional training in that task." (Joint Claim Construction Statement at A1-1.)

Consistent with the foregoing principles, the Court rejects the construction of "average consumer" in the R&R. The Court finds that Plaintiff's construction of the term "average consumer," with one exception, is consistent with the specification and does not treat a clearly stated characteristic as superfluous. The use of the word "professional" in Plaintiff's proposed definition is not warranted. First, this is a term that may require further definition. Second, the Court finds no support for imposing an additional limitation on the type of training. After reviewing the evidence, the Court concludes that the patent is intended to include tops that can be installed by consumers with no training in counter top installation. The claim provides a method for providing a top that the typical "do-it-yourself homeowner" would be able to install. (‘973 Patent, col. 2, ll. 18-19.) Therefore, the term "average consumer" shall mean "an individual that purchases supplies for a home improvement task from a retail outlet and performs the home improvement task himself or herself, regardless of whether the individual has any training in that task."
First, the Court finds that a person of ordinary skill in the art would define "axial force" as used in the claim terms to mean the force acting parallel with an axis. The two words axial, meaning "of an axis," and "force" tell the reader that the term concerns some force exerted along or around an axis. Neither party suggests that axial force could be read as "torque" or the twisting force moving around an axis. Instead, despite their different proposed constructions, both parties agree that axial force is the force moving parallel to an axis. The only dispute is to what axis "axial force" refers.

The parties disagree over the meaning of "axial force" because the drill bit contemplated in the 225 Patent contains at least two types of axes. First, there is an axis theoretically perpendicular to the well bottom which travels up the drill string. The entire drill bit rotates around that axis, and any "axial force" generated along that axis presses straight down into the well bottom. Second, there is an axis around which each of the roller cones rotates. Axial forces that press down into the well bottom at an angle determined by the angle at which the roller cone intersects the drill bit act on those axes. See Figs. 2 and 12 supra. Third, Smith contends that there is a third type of axis through each tooth on the drill bit which creates axial force that presses down into the well bottom at the angle which the tooth intersects the formation. Essentially, Haliburton argues that axial force in the 225 Patent always means the type of axial force that is parallel to the bit's axis ("downforce"). In contrast, Smith argues that axial force in the 225 Patent never means downforce, and must instead mean the axial force along the roller cones' axes ("cone axial force") and along the teeth axes.

--- Footnotes ---

7 Fig. 2 illustrates the axial force of a roller cone with the variable Fz[i]. The Fz[i] arrow illustrates axial force pressing upward into the drill bit rather than down into the earth. This is nothing more than a recognition of the equal and opposite force that Newton's Third Law of Motion requires when the cone's axial force presses down into the formation. This effect has no bearing on the Court's analysis and for ease of reference the Court will continue to refer to axial forces as pressing down into the formation.

--- End Footnotes ---

The Court finds that the language in Claim 1 could equally refer to downforce or cone axial force. Claim 1 only requires that the axial force acting on each cutting structure (roller cone) be approximately the same. Under Haliburton's construction, Claim 1 would mean that each roller cone took an approximately equal share of the downforce. Under Smith's construction, Claim 1 would mean that the cone axial forces were approximately the same. Based only on the claim language, Claim 1 does not assist proper construction of "axial force."

The Court finds that Claim 2's language suggests that "axial force" means downforce and not the cone axial forces. Claim 2 claims the drill bit described in Claim 1 where the axial force on each roller cone is roughly one third (between 31 and 35 percent) of "the total of the axial force on the bit." The phrase "the total of the axial force" suggests that the drafter contemplated one axial force acting on the bit. Moreover, if the drafter had meant that phrase to mean "the sum of the axial forces acting on each of the cones" as Smith argues, the claim would say "the total of the axial force[s]" not "the total of the axial force." One cannot sum a single thing.

The Court finds that Claim 8, by its own terms can support either Haliburton's or Smith's interpretation. Claim 8 provides a method for designing a bit including a step of "calculating the axial force acting on each tooth on each cutting structure." If one of reasonable skill in the field were to define "axis" as a line around which an object rotates, then the Court would reject Smith's assertion that each tooth has an axis because the teeth do not rotate. In that case, Claim 8 would support Haliburton's construction. However, if a person of reasonable skill in the field defined "axis" as a line dividing an object into symmetrical halves, then Smith's interpretation would be feasible. The parties have provided the Court with no evidence regarding how one reasonably skilled in the field defines "axis." Therefore, the "tooth" language does not assist the Court's interpretation. Likewise, the Claim 8 language "axial force acting on each cutting structure per revolution of the drill bit" is inconclusive for the same reasons regarding Claim 1.

Examining intrinsic evidence other than the claims, the Court finds that the 225 Patent abstract defines "axial force" as downforce. See Pandrol USA, LP v. Airboss Ry. Products, Inc., 320 F.3d 1354, 1363 n.1 (Fed. Cir. 2003) (holding that the abstract is intrinsic evidence relevant to claim construction). The 225 Patent abstract states: "roller cone drilling wherein the bit optimization process equalizes the downforce (axial force) for the cones (as nearly as possible, subject to other design
Bit performance is significantly enhanced by equalizing downforce." Even though the drafter did not use signals such as "hereafter" or "also called," the parenthetical "axial force" following the word "downforce" is strong evidence that the drafter intended "axial force" and "downforce" to have the same meaning. Members of all legal professions commonly use a parenthetical following a term to rename or provide an alternate name for the term. Thus, the Court finds that a person of ordinary skill in the field would read "downforce (axial force)" in a legal document like the 225 Patent to define "axial force" as "downforce."

However, the 225 Patent specification seemingly contradicts the abstract's "axial force" definition. Column 8 of the 225 Patent, lines 21-26, states: "there is a distinction between force balancing techniques and energy balancing. A force balanced bit uses multiple objective optimization technology, which considers weight on bit, axial force, and cone moment as separate optimization objectives." By describing "weight on bit" as a separate objective from "axial force," the specification seemingly contradicts the abstract's definition. 8

--- Footnotes ---
8 The Court reminds the reader that "weight on bit" and "downforce" have the same meaning. See Fn. 2 supra.
--- End Footnotes ---

However, the Court reads Column 8's distinction between "axial force" and "weight on bit" in light of mathematical formulas from the immediately preceding paragraph. The patent specification provides formulas describing three characteristics of each roller cone. First, WOB[i] "is the weight on bit taken by cone i." Second, "Fz[i] being the i-th cone axial force." And third, "Mz[i] being the i-th cone moment in the direction perpendicular to the i-th cone axis." Fig. 2 supra, taken from the 225 Patent, illustrates WOB[i], Fz[i], and Mz[i] on a roller cone. Because these three definitions immediately precede Column 8's distinction, are part of the same discussion as Column 8's distinction, and because the three variables (WOB[i], Fz[i], and Mz[i]) parallel the three "objectives" noted in Column 8 (weight on bit, axial force, and cone moment), the Court reads the two statements together. Thus, Column 8 distinguishes "cone axial force" from "weight on bit" and does not distinguish "axial force" from "weight on bit."

Distinguishing the axial force of a cone from "weight on bit" is consistent with the abstract's assertion that "axial force" generally means "downforce." As noted above, by its terms "axial force" generally means the force parallel to an axis, and this invention has at least two types of axes. Moreover, it is unsurprising that the drafter would need to discuss both types of axes in the specification. Generally defining "axial force" as "downforce" in the abstract does not preclude the drafter from later discussing the axial force of a roller cone. Column 8 merely discusses a second type of axial force, and it does not attempt to redefine the abstract's axial force definition.

Finally, the abstract's "axial force" definition is consistent with the claim terms and teachings of the 225 patent. As discussed above, defining "axial force" as downforce is consistent with Claims 1 and 8, and is suggested by Claim 2. Moreover, the 225 patent identifies the importance of equalizing downforce on the roller cones in at least three different places: "the present application teaches that roller cone bit designs should have equal mechanical downforce on each of the cones," Col 4., Ins. 49-51; "equalization of downforce per cone is a very important (and greatly underestimated) factor in roller cone performance," Col. 5, Ins. 10-12; and "the improved performance of balanced-downforce cones may also be partly due to reduced oscillation of the drill string," Col 5, Ins. 21-23. Thus, construing "axial force" as downforce is encouraged by the patent claims and teachings.

Therefore, the Court finds that "axial force" in the 225 Patent is synonymous with "downforce" and "weight on bit." The Court does not find that Column 8's distinction is clear enough to contradict the construction suggested by the abstract, claim language, and patent teachings. Consequently: (1) Claim 1's language "wherein approximately the same axial force is acting on each of said cutting structure" means "wherein nearly or exactly the same downforce parallel to the axis of the bit is taken by each cone;" (2) Claim 2's language "the total of the axial force on the bit" means "the weight on bit;" (3) Claim 8's language "the axial force acting on each tooth" means "the downforce parallel to the axis of the bit taken by each tooth;" and (4) Claim 8's language "the axial force acting on each cutting structure" means "downforce parallel to the axis of the bit taken by each cone."

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a. "axial peripheral lip"

Lacks construes the axial peripheral lip to be some portion, but not all, of the rim lip. Lacks argues that an uncovered portion of the wheel surface exists between the edge of the cladding panel and the location of the structure it believes is the axial peripheral lip. Defendants construe the axial peripheral lip more broadly, arguing that it is all of the uncovered surface between the edge of the cladding panel and the edge of the tire mounting surface of the wheel rim.

1 Defendants propose this construction as an alternative to their primary argument that this phrase is indefinite. As I noted above, I will return to defendants' indefiniteness arguments later in the opinion. First, however, I must render a Markman interpretation of the disputed language. I discuss defendants' alternative construction because it assists me in this task.

My construction of "axial peripheral lip" must begin with the language of claim 1. See Phonometrics, 133 F.3d at 1464. The phrase first appears in the claim's preamble: "[a] method for providing a decorative surface on a vehicle wheel having a web portion and a peripheral rim portion for mounting a tire, said peripheral rim portion defining an axial peripheral lip circumscribing said peripheral rim portion." '809 patent, col. 10, lines 65-67 and col. 11, lines 1-2 (emphasis added). It next appears in the "forming" step: "said thin solid formed ornamental panel being shaped to cover said entire wheel face outer surface and not cover said axial peripheral lip." '809 patent, col. 11, lines 8-11 (emphasis added). It last appears in the "whereby" step: "whereby said positioning step locates said thin solid formed ornamental panel so as to be substantially flush with adjacent portions of said wheel face outer surface of said wheel such that said decorative layer readily blends with said axial peripheral lip circumscribing said peripheral rim portion." '809 patent, col. 12, lines 1-6.

These references to "axial peripheral lip" imply critical limitations on its meaning. Accordingly, after reading claim 1, it would be evident to an individual of ordinary skill in the art of cladded wheels 2 that the axial peripheral lip must be located on the wheel rim or peripheral rim portion, that it is not covered by the panel 3, that it must begin where the panel ends 4, and that it touches the edge of the decorative layer in such a way that aesthetic blending occurs.

2 See the obviousness discussion, infra, in Part IV.A.4 of this opinion for the standard I have adopted for one of ordinary skill in the art of cladded wheels.

3 My reference to "cladding panel" is purposeful. As is clear from the language of claim 1, the cladding is the sum of two elements: the ornamental panel and a decorative layer applied only to the exterior of that panel. The parties have sometimes conflated these elements, treating the panel and the layer as one and the same even though the claim language places different limitations on each. To end this confusion, I will impose some precision. In this opinion, "panel" or "cladding panel" refers to the panel element of the cladding. "Layer" or "decorative layer" refers to the layer element of the cladding. "Cladding" refers to the structure that is the combination of the panel and the decorative layer.

4 To put it another way, the cladding and the axial peripheral lip terminate along the same boundary.

The specification reinforces these limitations. It does not mention the phrase "axial peripheral lip," but does use the nearly identical phrase "peripheral lip." It reads in pertinent part: "The wheel 11 of the composite wheel 10 includes a wheel disk 18 which defines an outboard surface of the composite wheel 10, a peripheral rim portion or rim 12 with a peripheral lip 12a." '809 patent, col. 6, lines 56-60. Figures 3 and 5 of the specification clearly illustrate the location of the rim (labeled 12) and the peripheral lip (labeled 12a). These figures show that the peripheral lip structure projects out from the rim and is not covered by the cladding (labeled 20). Its shape and location, as well as its relation to other structures on the composite
wheel, correspond with claim 1's implicit limitations on the axial peripheral lip.

Even if it were not clear that the phrases "axial peripheral lip" and "peripheral lip" refer to the same structure, the prosecution history makes it clear that they do. During the course of the '809 patent's prosecution, the patent examiner concluded that the term "axial peripheral lip" did not have a "proper antecedent basis" in the specification. (Joint Ex. 189, Submission of Amendments to Patent Examiner at 5.) Lacks' patent attorney responded by proposing the following amendment to the '809 application:

The undersigned takes issue with this conclusion on the basis that it is clear to a person ordinarily skilled in the art that every wheel that is used on an automobile has a peripheral rim portion with an axial peripheral lip. Accordingly, the drawings as exemplified by Figures 3 and 4 [of the '809 patent application] identify the rim portion by reference character 12 and for the purpose of clarifying the axial peripheral lip, reference character 12a has been added to identify the axial peripheral lip. Therefore, it is respectfully suggested that the language of the claims objected to by the Examiner is supported by the specification, at least in the drawings thereof, and would certainly be within the knowledge of a person ordinarily skilled in the art.

(Id. at 6 (emphasis added).) The examiner apparently agreed to this amendment because reference numeral 12a can be found in the '809 patent in Figure 3, in Figure 5, and at col.6, line 60. Numeral 12a is the reference marker attached to "peripheral lip" in the specification. See '809 patent, col. 6, line 60. Thus the omission of "axial" from the specification text, due to poor drafting, does not prevent a person of ordinary skill in the art from concluding that the peripheral lip of the specification and the axial peripheral lip of the claim language are the same element.

In light of the claim language, the specification, and the prosecution history before me, I conclude that the intrinsic evidence of record would lead a person of ordinary skill in the art of cladded wheels to understand claim 1's axial peripheral lip to be that uncovered surface of the composite wheel that starts at the edge of the cladding, goes up and over the top of the projecting rim lip, and ends where the outer side of the rim lip merges with the tire mounting surface of the wheel rim. This is defendants' construction. I choose it because the intrinsic evidence renders it the construction a person of ordinary skill in the art would choose. See Exxon, 64 F.3d at 1556.

Having determined that the intrinsic evidence is more than adequate for the construction of "axial peripheral lip," I further conclude that the parties' extrinsic evidence regarding the meaning of "axial peripheral lip" is unnecessary and thus improper for me to consider pursuant to Vitronics. See 90 F.3d at 1583.

A. Lacks' Appeal of Summary Judgment of Noninfringement of the Asserted Claims of the '809 and '906 Patents.

On appeal Lacks argues that the district court erred in its construction of the limitations "axial peripheral lip" and "wheel face outer surface" in the '809 and '906 patents. Focusing first on "axial peripheral lip," the district court construed the term to mean "that uncovered surface of the composite wheel that starts at the edge of the cladding, goes up and over the top of the projecting rim lip, and ends where the outer side of the rim lip merges with the tire mounting surface of the wheel rim." Lacks, 55 F. Supp. 2d at 711. According to Lacks, however, "axial peripheral lip" refers only to the projecting lip at the outermost edge of the wheel rim, as this is the plain meaning of the language. For support Lacks recites the dictionary definitions of "axial" ("around an axis"), "peripheral" ("of, relating to or forming a periphery," which is defined as "the perimeter of a circle"), and "lip" ("the edge or margin of a hollow vessel or cavity," or "an edge" or "margin"), Webster's Third International Dictionary (1997). These definitions, Lacks argues, render plain the meaning of "axial peripheral lip" as "the edge at the outermost perimeter circumscribing the rim."

Lacks next points to the prosecution history, noting that the limitation was added through amendment after the examiner rejected the claims as obvious in light of U.S. Patent No. 3,726,566 ("the Beith patent"). The Beith patent taught a decorative wheel cover extending over the outermost edge of the wheel rim. To avoid Beith, Lacks added the "axial peripheral lip" limitation and also added the language about the panel blending with the lip to provide a visual impression that the decorative layer "appears to constitute an integral portion of said wheel." Lacks argues that one of ordinary skill in the art would realize that its amendment surrendered only enough subject matter to get around Beith. Therefore, Lacks
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

contends, the "axial peripheral lip" limitation only prevents the decorative cover from extending over the outermost edge of the wheel rim.

Lacks' arguments fail to persuade us that its construction is correct. First, the dictionary definitions do not provide a plain meaning. As McKechnie points out, these definitions also fit the district court's construction. Second, Lacks' amendment to overcome the Beith patent, although providing some support for Lacks' construction, does not outweigh the support for the district court's construction present in the claim language and the specification. The district court observed that the limitation appears at three points in claim 1 of the '809 patent and concluded, from this context, that the axial peripheral lip "is not covered by the panel" and "touches the edge of the decorative layer in such a way that aesthetic blending occurs." Lacks, 55 F. Supp. 2d at 710. The final point is key, because under Lacks' construction this "aesthetic blending" would have to occur between two things that are not adjacent: the outermost edge of the wheel rim and the edge of the cladding. While this is not impossible, it is unlikely and the district court's construction avoids such a problem.

The drawings also support the district court's construction. Figures 3 and 5 disclose the preferred embodiment of the '809 patent and explicitly identify a "peripheral rim portion or rim 12" and an "axial peripheral lip 12a."

[SEE FIGURE 5 AND FIGURE 3 IN ORIGINAL]

Here, the diagrams indicate two separate edges on the wheel rim, an interior one facing the center of the wheel, and an external one facing the outside. Notably, the pointer in figure 3 points to the outermost edge (supporting Lacks' construction), while the pointer in figure 5 points to the middle of the flat between the inside and outside edges. We do not think it reasonable to view one diagram as correct, but the other as erroneous. The better interpretation is that these references both refer to the larger structure the district court construed as being the "axial peripheral lip."

In sum, the weight of the intrinsic evidence supports the district court's construction and we therefore uphold the district court's construction of "axial peripheral lip."

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I would reverse the district court's interpretation of "axial peripheral lip." However, as I conclude that the construction of "wheel face outer surface" compels a finding of noninfringement, I concur with the court's opinion on this issue.

The district court's claim construction of "axial peripheral lip" is unusual. Defining "axial peripheral lip" as the "uncovered surface of the composite wheel that starts at the edge of the cladding, goes up and over the top of the projecting rim lip, and ends where the outer side of the rim lip merges with the tire mounting surface of the wheel rim" (emphasis in original) literally means that the accused products must meet the claim requirement that the ornamental surface "not cover" the axial peripheral lip, since the axial peripheral lip, by the district court's definition, is uncovered. This renders the district court's finding of noninfringement somewhat opaque.

The district court's claim construction views the "axial peripheral lip" as including both some portion of the wheel wall below the innermost edge of the wheel rim (facing the center of the wheel) as well as the top of the wheel rim. This is evident from both the district court's definition given above, as well as its characterization of the defendant's ornamental panel as "terminating just shy of the tip of the lip." The parties concede that the term "axial peripheral lip" has no particular meaning in the art. The standard dictionary definition of "lip" is given as "an edge, rim, or margin," or even more specifically as the "edge or margin of a hollow vessel." Webster's 3rd New International Dictionary 1318 (1993). Here, the diagrams indicate two separate edges on the wheel rim, an interior one facing the center of the wheel, and an external one facing the outside. In this context, the "axial peripheral lip" logically refers to the external one—the one furthest from the center of the wheel. However, there is an alternative possibility: the "axial peripheral lip" could also refer to the combination of both "edges," along with the flat portion of the wheel rim in between.

Either of these definitions is inconsistent with the district court's interpretation of "axial peripheral lip," specifically the inclusion in the definition of some portion of the wheel wall below the innermost edge of the wheel rim. Both are strongly supported by the prosecution history. The claims at issue were amended in response to an office rejection for unpatentability in light of the Beith reference. Beith discloses a lip 43 "formed to grip the edge of the terminal flange 29 of the multi-

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flanged tire mounting rim 21 and, thereby, aid in fixing the wheel cover 12 to the wheel 13. Figures 2 (see below) and 5 depict lip 43 doing precisely this--extending over and around the outer circumferential edge of the rim to "grip" the wheel.

In response to this rejection, the patentee added the requirement that the ornamental panel "not cover" the axial peripheral lip. As can be seen from Figure 2, in order to distinguish over Beith, the patentee needed to emphasize that his ornamental panel did not overlap the very outer edge of the wheel rim.

It is difficult to square the import of this amendment with a claim construction interpreting "axial peripheral lip" as including some undefined portion of the wheel wall below the interior "edge," particularly if we presume that the patentee only surrendered enough structure to get out from under Beith.

As a result, I would reverse the district court's claim construction as to "axial peripheral lip," interpreting it instead as either the outer terminal edge or, alternatively, the highest point on the wheel rim.

Genus' original proposed construction is highly constrictive, requiring that the direction of the gas flow be identical at every point in space between the gas flow apertures and the substrate surface. This construction conflicts with the plain language of the claims. Claim 1 requires that the "flow of gas generally has an axial symmetry" and claim 6 requires that there be "a flow of gas having a substantially uniform magnitude of velocity directed perpendicular to and having axial symmetry across said circular substrate." (165 patent 6:3-4; 6:26-29.) Thus, the velocity vector of the flow need not be the same at every point, as Peltzer points out in his expert report. (Peltzer Expert Report at 15.)

Peltzer also correctly points out that Genus' original proposed definition would exclude the preferred embodiment shown in Figure 4 of the patent, and it appears to this Court that it might well also exclude every apparatus that has multiple gas flow apertures. As Peltzer points out:

The velocity vector of the flow will by no means be the same at every point on a given radius on the plane immediately below the apertures -- some points will be located below a gas flow aperture, and some will be located immediately below a solid section of the surface, through which gas cannot flow. Obviously, the velocity vector will vary between two such points. However, Genus' construction would exclude such a device, because Genus requires identical velocity vectors at each point on a given radius, and that this be true "for every plane between the gas flow apertures exits and the substrate."

(Peltzer Expert Report at 16.) In addition, because the specification of the '165 patent also uses the term "axial symmetry" to describe the substrate and the configuration of the gas flow apertures, Genus' original construction is inappropriate because it cannot be used to describe the axial symmetry of anything except the flow of gas. (165 patent 2:12-15, 4:4-9.) Genus has wisely abandoned this proposed construction.

The patent specification does not define "axial symmetry." ASM's construction is an adaptation of the definition contained in the McGraw-Hill Dictionary of Scientific and Technical Terms, which defines "axial symmetry" as "Property of a geometric configuration which is unchanged when rotated about a given line." (Peltzer Expert Report at 15, and Ex. H.) Genus states in its opposition brief that it is willing to accept the McGraw-Hill definition, but objects to ASM's changes to that definition, particularly ASM's change of the language from "is unchanged" to "looks unchanged."

The McGraw-Hill definition, although useful by analogy, is somewhat unhelpful in describing a gas flow, which is not a geometric figure. Peltzer argues, however, that: "once the basic concept of axial symmetry is understood, it can be applied to gas flow. The flow described in the '165 patent is axially symmetric because, like the configuration of gas flow apertures and the substrate, it is circular in nature."

(Peltzer Expert Report at 17 (citing '165 patent, Fig. 2 and 2:47-49, 3:40-42, 5:15-16.)

Describing the gas flow as "circular" is somewhat simplistic, however. The outer perimeter of the gas flow could be
described as generally circular, but in describing the gas flow as "axially symmetric," it is also necessary to take account of the
gas flow apertures inside the outer perimeter. For the flow to be axially symmetric, each gas flow aperture would need to
have a counterpart equidistant from the center, but on the opposite side of the circle. In other words, if one drew a line in
any direction through the center of the generally circular configuration of the gas flow apertures, the apertures on one side
of the line would be a mirror image of the apertures on the other side of the line. ASM acknowledges in its reply brief that
"in the context of real objects, the key question for symmetry is whether or not one side is the mirror image of the other." (Reply Brief at 21.)

7 Figure 4 of the '165 patent, which illustrates a preferred embodiment, does not have a mirror-image configuration. The
parties agreed at oral argument, however, that Figure 4 was merely a schematic drawing that was not intended to show the
actual placement of the gas flow apertures.

In addition to the requirement of mirror-image placement of gas flow apertures, the direction and speed of the gas flow must
also be in a mirror image configuration for the gas flow to be axially symmetric. As Oldham points out:

One of ordinary skill in the art would understand that it is the velocity vectors of the gas which must be symmetrical
about the shared axis of the showerhead and the substrate . . . . One of ordinary skill in the art would know that a flow of gas
cannot be axially symmetric if the velocity vector of the gas is different at one point located at a given distance from the
axis than at another point located at the same distance from the axis in the same plane.

(Oldham Rebuttal Report at 5 (emphasis in original).) Thus, for the gas flow to be axially symmetric, the direction of the gas
flow and the speed of the gas flow must be the same on each horizontal plane for each gas flow stream that is equidistant
from the center of the generally circular configuration.

ASM's proposal to insert a visual term, "looks," into the definition opens the door to unnecessary confusion and ambiguity.
First, it is difficult to say that the flow of a presumably colorless gas has any particular "look." Second, the use of the word
"looks" would introduce some uncertainty into the definition of a precise term. To the extent that ASM is seeking to avoid
having to show, in the infringement phase of this litigation, that the gas flow is precisely axially symmetric, the claim
language itself offers some wiggle room. Claim 1 requires only that the gas flow "generally has an axial symmetry." (‘165
patent 6:3-4.) Claim 6 requires that the flow of gas have a "substantially uniform magnitude of velocity directed
perpendicular to and having axial symmetry across said circular surface." (‘165 patent 6:26-29.) If the speed of the gas flow
need only be substantially uniform at each equidistant point on a horizontal plane, then the gas flow will only generally have
axial symmetry. In addition, claim 6 requires that the gas flow apertures form "a generally circular configuration having a
radius substantially equal to a radius of said substantially circular substrate and coaxially aligned therewith," which also
limits the precision of the axial symmetry of the gas flow. (‘165 patent 6:23-26 (emphasis added).)

Accordingly, the Court will construe "axial symmetry" in accordance with its ordinary dictionary definition, with a minor
change to assist the jury's understanding of the term: "A geometric figure possesses axial symmetry if it is unchanged when
rotated about a given line, such as a circle rotated around its axis."

2. Axially Confronting Surfaces Limitation

231. Based on the claim language and the specification of the '514 patent, the phrase "annular surfaces axially confronting
each other" and as the phrase would be understood by those skilled in the pertinent art, must be construed to mean that the
surfaces are fully engaged, i.e., abutting, so that a precise axial rest position is achieved. See PP 84, 86, 91-92 supra.
Axially Spaced

The most hotly-debated issue of claim construction in this case is the meaning of the term "axially spaced". Defendant contends that the term means "on a single straight line". (Def. Brief at 10). In that regard, defendant maintains that the patent requires that the strap attachment points be fixed on, and not deviate circumferentially from, the axis "A" depicted on Figure 2 of the patent. According to defendant, the invention had to have axially-aligned attachment points in order to overcome the prior art of the Williams patent, cited in the subject patent, which utilized circumferentially-offset straps. Plaintiff, however, states that,

[t]he term 'axially spaced' means that the points are spaced along an axis, but they may also be spaced in other directions -- i.e., circumferentially along the side of the cylinder. Indeed, the term 'axially' simply is a word that modifies the term 'spaced' and means 'located . . . in the direction of an axis.'

(Pl. Brief, at 12) (citing American Heritage Dictionary, at p. 93 (1981)); (Pl. Presentation Materials at 18) (Stating that the term "axially spaced" means "spaced along an axis not in a line on an axis"). According to plaintiff, defendant wants the Court to define "axially spaced" to mean "axially aligned", a definition which the inventor rejected during the prosecution of the patent.

From studying the subject patent as a whole, it appears clear that claims 1 and 8 require the invention's three strap-attachment points to form, and be located along, a straight axis line running from the top of the bag to the bottom of the bag. Accordingly, the Court gives the term "axially spaced" its ordinary dictionary meaning: "Located on, around, or in the direction of an axis." WEBSTER'S II NEW COLLEGE DICTIONARY 79 (Houghton Mifflin 1995). An axis is "[a] straight line about which a body or geometric object rotates or may be thought to rotate," or "a center line to which parts of a structure or body may be referred." Id. To the extent that plaintiff is urging the Court to adopt a definition of "axially spaced" that would allow the attachment points to be spread around the outside of the bag circumferentially, i.e. away from the axis line depicted in the patent drawings, without any requirement that they be at least capable of alignment, the Court declines to do so. Otherwise, the term "axial" would be meaningless. Consequently, the term "axially spaced" would not apply to attachment points that are permanently circumferentially offset, such that they are incapable of being axially aligned. However, with the exception of the second or center attachment point 5, the term "axially spaced" does not require that the strap attachment points remain fixed on the axis line. Instead, as it is used in the patent, the term allows for the straps to move circumferentially off the axis, and around the circumference of the bag, during use. To hold otherwise would be to exclude the preferred embodiment of the patent, which envisions the straps moving circumferentially on either side of the attachment axis.

4 It appears that plaintiff agrees that the attachment points must at least be capable of being axially aligned. During oral argument, plaintiff's counsel stated: "Our position is that the attachment points can be axially aligned. They run on this -- on this longitudinal axis, 1, 2, 3; but they can also move circumferentially . . . ." (Oral Argument Transcript at 26).

5 It appears that the second of the three attachment points in Claims 1 and 8 must remain fixed on the axis line. There is nothing in the patent to indicate that the second securing means would ever move circumferentially off the axis line.
Claim 14 of the patent uses the term "longitudinally spaced" instead of "axially spaced." Defendant maintains that, in the instant patent, the two terms mean "exactly the same thing." (Def. Brief at 14) Plaintiff, however, contends that the term "longitudinally spaced" means "spaced lengthwise or along the long direction." (Pl. Brief at 23) The Court's view is that, since the inventor used the term "longitudinally spaced" in claim 14, and not in the other claims, where he used the term "axially spaced", the two terms were intended to have different meanings. In fact, as discussed earlier, the inventor expressly changed the terminology from "longitudinally" to "axially" in claims 1 and 8 after they were initially rejected by the patent examiner. Consequently, the Court finds that longitudinally spaced attachment points need only be spaced lengthwise along the golf bag, without regard to being positioned in relation to an axis. 6

6 See, Oral Argument Transcript at pp. 28-29.

C. Axial Direction

Finally, the court turns to the term "axial direction." Although the plaintiff originally identified the term "axial direction" as being in need of construction, (Docket No. 55 at 2), the parties in their replies instead refer to "axial flow." Both are used in the patent but "axial direction" is used in the claims whereas "axial flow" is absent from the claims but appears in the abstract, summary, and detailed descriptions of the drawings. Thus, there is no claim in the patent relating to "axial flow" but rather only a claim relating to "axial direction." Nonetheless, for present purposes, the distinction is inconsequential. The crucial term is "axial" in that this term was added so as to distinguish the '712 patent from Schink wherein the direction of the flow was helical. In the '712 patent, the liquid to be heated flows in an axial direction through the combining region. It is not necessary to engage in any sort of detailed analysis to discern the meaning of these terms; the common and ordinary meaning of the terms is clear. "Axial direction" is a direction related to, characterized, or forming an axis.

III. Analysis

The '712 patent refers to a device that heats liquids or slurries by injecting high velocity steam into the fluid. The fluid enters the heater body and the high pressure steam enters through a Mach diffuser. The steam then mixes with the liquid, thereby heating it, and the combined heated fluid exits the heater body.
Claim 1 states:

A direct contact steam injection heater comprising:

a heater body having a steam inlet, a liquid inlet, a combining region and a heated liquid discharge outlet;

the combining region having an inlet and an outlet located within the heater body in which steam and liquid are combined to generate heated liquid;

a Mach diffuser that receives the flow of steam into the heater body and discharges the steam into the liquid flowing through the combining region, wherein a coaxial channel is located between the Mach diffuser and an inlet portion of the combining region of the heater body and the Mach diffuser contains a plurality of steam diffusion holes through which the steam is discharged into the liquid flowing through the channel between the Mach diffuser and the inlet portion of the combining region; and

an adjustably positionable cover over the steam diffusion holes contained in the Mach diffuser that is movable relative to the Mach diffuser to adjustably expose one or more of the steam diffusion holes in the Mach diffuser and modulate the amount of steam discharged through the Mach diffuser into the liquid flowing through the combining region;

wherein:

the steam pressure upstream of the Mach diffuser is sufficient to create sonic choked flow conditions through the exposed diffusion holes through which steam is discharged from the Mach diffuser into the flow of liquid flowing through the channel between the Mach diffuser and the inlet portion of the combining region;

the coaxial channel has a flow area substantially less than a flow area of a downstream portion of the combining region in which the injected steam condenses; and

liquid flows through the inlet portion and the downstream portion of the combining region in an axial direction and steam flows in generally radial directions as the steam flows through the one or more steam diffusion holes in the Mach diffuser into the axial liquid flow through the channel between the Mach diffuser and the combining region of the heater body.

(Docket No. 54-2 at 7-8) (emphasis added.) The portion of the claim that is most relevant to the issues presently before the court is the last paragraph of the portion quoted above and specifically the italicized portions.

A. "Axial Direction"

As noted above, the term "axial direction" was subject to the court's prior claim construction order. (Docket No. 64 at 9-10.) In their Markman brief, the defendants requested that the court issue an order "requiring literal interpretation of the axial flow limitation of claims 1 and 16; that is, permitting no range of equivalents as to that limitation." (Docket No. 53 at 15.) In support of this request the defendants' Markman brief presented many of the same arguments they present here regarding prosecution history estoppel as a bar to an infringement claim under the doctrine of equivalents. (Docket No. 53 at 11-15.) The court construed the term as "a direction related to, characterized, or forming an axis." (Docket No. 64 at 10.)

In contending that prosecution history estoppel barred the plaintiff from proving infringement under the doctrine of equivalents, the defendants' Markman brief read more like a motion for summary judgment. Now the defendants' present summary judgment brief, wherein they contend that the plaintiff cannot prove literal infringement because the court should read the "axial direction" element of the claim as requiring entirely axial flow as soon as the liquid enters and continues through the channel between the Mach diffuser and the combining region of heater body, in many ways seems like an effort to take a second bite from the Markman apple.

If one were to read only the last paragraph of the portion of the claim quoted above, it might be reasonable to conclude that for there to be literal infringement, the flow over the Mach diffuser must be "entirely" axial. The argument could be made that if the patent sought to claim anything less than entirely axial flow, the claim would have used an adverb such as...
"predominantly" or "generally" to describe the flow, as was done with respect to the radial flow of steam from the Mach diffuser.

However, it is important to note that, as claims often are, claim 1 of the '712 patent is prefaced with the word "comprising." When used in the patent context, "comprising" is a term that is "inclusive or open-ended" and "is well understood to mean "including but not limited to" in that it "does not exclude additional unrecited elements or method steps." Abbott Labs. v. Sandoz, Inc., 544 F.3d 1341, 1360 (Fed. Cir. 2008) (quoting CIAS, Inc. v. Alliance Gaming Corp., 504 F.3d 1356, 1360 (Fed. Cir. 2007); Georgia-Pacific Corp. v. United States Gypsum Co., 195 F.3d 1322, 1327-28 (Fed. Cir. 1999)). This is in contrast to the closed-ended, limited, and exclusive term "consisting of." CIAS, Inc., 504 F.3d at 1361. Thus, when the term "comprising" is used in a claim, infringement cannot be avoided simply because the accused device has elements in addition to those recited in the claim. Stiftung v. Renishaw PLC, 945 F.2d 1173, 1178 (Fed. Cir. 1991). However, "'[c]omprising,' while permitting additional elements not required by a claim, does not remove the limitations that are present." Power Mosfet Techs., L.L.C. v. Siemens AG, 378 F.3d 1396, 1409 (Fed. Cir. 2004).

An exception to this general understanding of the word "comprising" is found when the patentee had "clear intent" to limit the scope of the claims. ScannerTechs. Corp. v. ICOS Vision Sys., N.V., 365 F.3d 1299, 1304-05 (Fed. Cir. 2004). For example, one way a patentee's intent to limit the scope of the claims may be manifested is when "the claim is specific as to the number of elements . . . and adding elements eliminates an inherent feature . . . of the claim." InsituformTechs., Inc. v. Cat Contracting, Inc., 99 F.3d 1098, 1106 (Fed. Cir. 1996). The defendants have failed to present any evidence that the presence of any other type of flow in addition to axial flow would eliminate an inherent feature of the claim, and thus the court finds this limited exception to be inapplicable.

It is the conclusion of the court that as a consequence of the use of the open-ended term "comprising" to preface Claim 1, the "axial direction" limitation is a necessary element of the claim but the claim is not limited to only axial flow. Accordingly, the court rejects the defendants' contention that the '712 patent requires entirely axial flow from the point the liquid passes through the inlet and continues through the channel between the Mach diffuser and the combining region of heater body. The court shall now turn to the question of infringement.
face of the catalyst" to mean "during the inserting step, the support member is wrapped around the substrate such that it
covers the middle point of the substrate and does not extend to the substrate ends."

--- Footnotes ---

21 Random House Dictionary of the English Language 335 (2d ed. 1987) (defining "center" as "the middle point").
22 '264 patent, col. 2, ll. 5-7, 32-33; col. 4, ll. 63-64; figs. 1, 4, 5-10.

--- End Footnotes ---

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b. Construction of "Defining a Longitudinal Axis"

The relevant claim language refers to a "elongate shank" with the above mentioned oblong cross-section, "defining a
longitudinal axis." Alltrade construes the claim limitation to require a shank with a linear axis. Alltrade's construction is
grounded in the argument that a straight shank defines a linear axis. Olympia contends that the shank is capable of defining
a non-linear longitudinal axis. Olympia argues that limiting the Claim language to a shank defining a "linear" axis
improperly narrows the Claim and commits construction error by reading in words from the specification in to the Claim. At
oral argument, Olympia cited a number of cases in support of the undisputed legal proposition that it is improper to read
limitations from words or drawings in the specification into the Claim. See, e.g., Resonate Inc. v. Alteon Websystems, Inc.,
338 F.3d 1360, 1364-65 (Fed. Cir. 2003); Electro Scientific Indus.; Inc. v. Dynamic Details, Inc., 307 F.3d 1343, 1349 (Fed. Cir.
2002); GE v. Nintendo Co., 179 F.3d 1350, 1358 (Fed. Cir. 1999).

The Court notes that the limitation at issue, that the shank is linear, derives not from the words or drawings of the
specification, but directly from Claim 19. The Court finds the Claim language unambiguous, and does not find that Olympia
otherwise defined the term with precision and clarity anywhere within the patent or prosecution history. The ordinary
meaning of "axis" involves a straight line. See American Heritage Dictionary of the English Language (4th ed. 2000)
(defining axis as "[a] straight line about which a body or geometric object rotates or may be conceived to rotate.").

Without leave, Olympia submitted additional definitions of "axis" following the hearing. None change the result. The
McGraw-Hill Dictionary of Scientific and Technical Terms includes the following: "a line of symmetry for a geometric
figure." (Second Supplemental Greenspan Declaration, Ex. G28.) However, such a line would necessarily be a straight line.
definitions which explicitly or implicitly incorporate the concept of symmetry: "a central line that bisects a two-dimensional
body or figure" and "a line about which a three dimensional body or figure is symmetrical." (Second Supplemental
Greenspan Declaration, Ex. 28; emphasis supplied.) While a line may be curved or straight in common parlance (id., Ex.
29), the McGraw-Hill Dictionary of Scientific and Technical Terms defines a line in terms of a linear function; in other
words, a straight line. (Brown Declaration, Ex. D.) The Court believes that one reasonably skilled in the art would
understand the term "axis" in its technical sense.

--- Footnotes ---

3 The Court does not believe that its construction is inconsistent with Texas Digital Systems, Inc. v. Telegenix, Inc. 308 F.3d
1193, 1203 (Fed. Cir. 2002). There the Federal Circuit observed, "If more than one dictionary definition is consistent with
the use of the words in the intrinsic record, the claim terms may be construed to encompass all such terms." (Id.) The Court
does not interpret this language to compel a construction that encompasses any definition, but rather as permissive where
such multiple interpretations would be supported by the internal record.

--- End Footnotes ---

Therefore, the Court construes this claim limitation to require the shank to have a linear axis.
Watson uses the dictionary definition of "axle" and "seat" to propose an interpretation of this element as "a part or surface joined to or made a part of each arm adapted for contacting an axle." Boler asserts that the element should be interpreted as "any structure used to attach the axle to the suspension arms." Boler contends that Watson's interpretation is not consistent with the specification of the '953 patent because the specification shows an air spring or suspension spring between the axle seat and the plate affixed to the frame members. Boler also contends that the trucking industry's understanding of "axle seat" does not support Watson's proposed definition.

Claims define the invention and it is claims that are infringed, not specifications. See E.I. du Pont de Nemours & Co. v. Phillips Petroleum, 849 F.2d 1430, 1433 (Fed. Cir. 1988); SRI Int'l v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1121 (Fed. Cir. 1985). While claims are to be interpreted in light of the specification, this does not mean that everything expressed in the specification will be read into the claims. Id.; see also Johnson Worldwide Assocs., Inc. v. Zebeo Corp., 175 F.3d 985, 988 (Fed. Cir. 1999) ("Mere inferences drawn from the description of an embodiment of the invention cannot serve to limit claim terms"); Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations."). As the Federal Circuit explained in SRI Int'l:

If everything in the specification were required to be read into the claims, or if structural claims were to be limited to devices operated precisely as a specification-described embodiment is operated, there would be no need for claims. Nor could an applicant, regardless of the prior art, claim more broadly than that embodiment. Nor would a basis remain for the statutory necessity that an applicant conclude his specification with 'claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.' 775 F.2d 1107, 1121 (citations omitted).

A specification may be used to interpret what a patentee meant by a particular word or phrase in the claim. E.I. du Pont de Nemours & Co., 849 F.2d at 1433. However, it is improper to read a limitation into the claim from a specification "wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim." Id. "Where a specification does not require a limitation, that limitation should not be read from the specification into the claims." Id. (quoting Specialty Composites v. Cabot Corp., 845 F.2d 981, 987 (Fed. Cir. 1988)) (emphasis in original).

Having reviewed the intrinsic evidence, the court concludes that the term "axle seat" is unambiguous and may be defined by the ordinary meaning of the words that make up the term. Gentex Corp. v. Donnelly Corp., 69 F.3d 527, 530 (Fed. Cir. 1995). While the specification does describe an air spring mounted on the axle seat, this description of an embodiment is not necessary to interpret or understand the meaning of the term "axle seat." Nothing in the claims or the specification leads one to conclude that the structure termed an "axle seat" must be located between an axle and an air or suspension spring. To limit the term in the manner Boler suggests would require improperly reading an "extraneous" limitation from the specification into the claims. E.I. du Pont de Nemours & Co., 849 F.2d at 1433 (an "extraneous" limitation is one that is read into a claim from a specification wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim."). Thus, the court construes element (d) in the manner Watson proposes.

THE MEANING OF THE TERM "AXLE SEAT"

The Claim Language

The court begins, as it must, with the claim language itself. Bell Comm'n's Research, Inc. v. Vitalink Comm'n's Corp., 55 F.3d 615, 619 (Fed. Cir. 1995). To support its proposed definition of "axle seat," Watson argues that the grammatical structure of claim 17 reveals that the "axle seat" is included in the device (a structure to be attached to the ends of the axle).
Watson points out that there is no mention of any suspension system component to which this "axle seat" might be connected or a part of, such as a spring or suspension arm. Further, Watson contends that the claim describes the "axle seat" in terms of its shape relative to the axle, thus suggesting its connectivity to the axle. Watson also argues that the grammatical structure of claim 18 suggests the formation of the "axle seat" through the cooperation of side plates and a profile shaped to form a connection with the axle. Watson asserts that no other component of the suspension system is mentioned as a limitation to this claim.

In response, Boler argues that Watson's proposed definition is contrary to the definition one skilled in the art would attribute to the term. To support this contention, Boler cites expert affidavits and publications of organizations in the trucking industry. Boler contends, essentially, that while a patent applicant is free to define a term differently from how one skilled in the art would understand it, Watson failed to attribute a special definition to "axle seat" in the '452 patent. Thus, Boler's argument continues, "axle seat" must be given its ordinary meaning: "a portion of the suspension system for attaching the suspension components to the axle."

As Watson points out, however, the problem with Boler's argument is that, rather than looking to the claim language first and then other intrinsic evidence to interpret the term, Boler looks first to extrinsic evidence for the meaning of a claim term and then imposes that meaning on the claims. "Relying on extrinsic evidence is 'proper only when the claim language remains genuinely ambiguous after consideration of the intrinsic evidence.' Such instances will rarely, if ever, occur." Interactive Gift Express, Inc. v. Compsure, Inc., 256 F.3d 1323, 1332 (Fed. Cir. 2001) (quoting Bell & Howell Document Mgmt. Prods. Co. v. Altek Sys., 132 F.3d 701, 706 (Fed. Cir. 1997)); see Key Pharmas. v. Hercon Lab. Corp., 161 F.3d 709, 716 (Fed. Cir. 1998) ("[i]f the meaning of the disputed claim term is clear from the intrinsic evidence—the written record --that meaning, and no other, must prevail; it cannot be altered or superseded by witness testimony or other external sources simply because one of the parties wishes it were otherwise"); Vitrionics Corp. v. Conceptronic Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996) ("In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term."). "Extrinsic evidence may never be used 'for the purpose of varying or contradicting the terms in the claims.'" Interactive Gift Express, 256 F.3d at 1332 (quoting Markman, 52 F.3d at 976).

While the court does not disagree that the term "axle seat" has been attributed the meaning Boler proposes in prior art suspension systems, the court sees no reason why, in light of the intrinsic evidence, one skilled in the art would not attribute Watson's proposed meaning to the term as used in the '452 patent. Put differently, contrary to Boler's assertion that Watson did not attribute a special meaning to the term, the court concludes that it did. The claim language itself does not limit the "axle seat" to a structure for attaching suspension components to an axle. As will be discussed in more detail below, the remaining intrinsic evidence--the specification and the prosecution history--also supports Watson's proposed definition of "axle seat."

The Specification of the '452 Patent

The specification contains a written description of the invention, and of the manner and process of making and using it, so as to enable a person skilled in the art to which it pertains to make and use the invention. 35 U.S.C. § 112. Boler argues that the specification describes the "axle seat" in the '452 patent as attaching a suspension component to the axle. Col. 3, line 59-Col. 4, line 19. Further, Boler contends that Figures 1A, 1B and 2 in the '452 patent show the "axle seat" as attaching an air spring, i.e., a suspension component, to the axle. The section titled "Brief Description of the Drawings" in the '452 patent describes Figures 1A and 1B as views of "a steerable axle system" and Figure 2 as a view of "a typical steerable suspension system." This section goes on to describe Figure 3 as a view of "a steerable suspension embodying principles of the present invention." Further, immediately after the portion of the specification cited by Boler, the specification states "referring additionally now to FIGS. 3 & 4, an improved steerable axle system [] embodying principles of the present invention is representatively illustrated." Thus, it is clear that the portion of the specification cited by Boler and Figures 1A, 1B and 2 concern prior art suspension systems which do not incorporate the claimed invention.

It is undisputed that the prior art suspension systems shown in Figures 1A, 1B and 2 and discussed in the specification have connections from the axle tube to the suspension components. The invention described in the '452 patent creates a new end device that also connects to the axle. Watson argues that it is appropriate for the term "axle seat" to refer to both the device connection point and the suspension connection point. The court agrees.

The specification describes the axle seat as follows:
The device includes a king pin housing portion and an axle seat portion. The king pin housing portion and axle seat portion are combined by a unique construction and arrangement of a top plate, an outer plate, opposing side plates and the inner plate. The plates and the king pin housing portion are attached to each other as shown by conventional methods, such as by welding to thereby provide a generally hollow box-like assembly ... Inner side surfaces of the side plates are complementarily shaped relative to the outer side surface of the axle and the inner plate formed therein, which is also complementarily shaped relative to the outer side surface thereby forming the internal axle seat ... Each of the plates is attached to the axle as shown by conventional methods, such as by welding the plates to the axle, but it is to be understood that the axle seat portion may be other wise attached to the axle ... (figure references omitted)

Nowhere in this language is there any reference to the axle seat connecting suspension components. Instead, the specification describes the axle seat as a point of connection between the end device and the axle.

The Prosecution History of the '452 Patent

The '452 patent application as originally filed contained 19 claims. On July 17, 1998, the patent examiner issued an Office Action allowing claims 10-12, rejecting claims 1-9 and 13-16, and objecting to claims 17-19. Watson 2 amended claim 17 to satisfy the examiner's objection to claims 17-19.

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2 The court recognizes that Thomas Chalin was actually the applicant but for ease of reference the court will refer to the applicant in this opinion as Watson.

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The examiner initially rejected claims 13-16 as being anticipated by U.S. Patent No. 4,733,744 issued to Jack Glaze. In response to the rejection of claims 13-16, Watson amended claim 16 to recite that the "king pin housing and said axle seat being integrally formed." In its remarks to the examiner, Watson stated the following:

"In contrast, Glaze does not show, describe, or suggest a device including an integrally formed king pin housing and axle seat, nor does Glaze disclose attaching such a device to a tubular axle. Instead, Glaze discloses a yoke or king pin housing, which is attached to axle tube 22, and a pivotable spring mounting device, which is separately attached to the axle with flange members. The yoke is separate from the spring mounting device and flange members, and is separately attached to the axle.

Thus, the yoke, spring mounting device and flange members are not included in a single device attached to each end of an axle and are not integrally formed. (figure references omitted)

Boler argues that these remarks show that Watson considered the "pivotable spring mounting device" an "axle seat," since it is "separately attached to the axle" and "separate from" the yoke. The court has noted previously, however, that Watson has acknowledged "axle seats" separate from the claimed end device in the prior art. This does not mean that Watson cannot use this term to describe the connecting point between the end device and the axle. The '452 patent discloses a new invention.

Boler also argues that the connection between the yoke and the axle described in the Glaze patent constitutes an "axle seat" under Watson's proposed definition. Thus, Boler asserts that had the term "axle seat" been given the meaning Watson proposes, Watson would not have been able to distinguish the claimed invention over the Glaze patent. Having reviewed Watson's remarks, the court concludes that Watson did not view the Glaze patent as disclosing an axle seat connection, or perhaps any connection, between the yoke and the axle tube. The specification in the Glaze patent states that "the outer end 22 is provided with an outboard yoke portion 120" thereby indicating a unitary design. Even if the Glaze design is not unitary and the yoke is somehow attached to the axle, Watson's remarks to the examiner make clear that, unlike Glaze, its application taught an integrally formed king pin housing and axle seat. In sum, Watson's remarks simply distinguish the integrally formed king pin housing and axle seat from Glaze's yoke and separate axle seat (spring mounting device.) Accordingly, the court concludes that Boler has failed to show that Watson attributed a different meaning to "axle seat" than it does now.
The examiner also rejected claims 1-9 as being obvious in light of U.S. Patent 4,693,486 issued to William Pierce and U.S. Patent 1,890,766 issued to F.J. Adams. Boler argues that in its attempt to distinguish the '452 invention from the Pierce and Adams patents, Watson argued that neither Pierce of Adams taught an integrally formed kind pin housing and axle seat. The court agrees. Boler goes on to assert that by distinguishing the Pierce and Adams patents in this manner, Watson is now precluded from contending that an "axle seat" can attach anything to an axle. However, this definition is not the one Watson is proposing here, but rather is part of a definition put forth by Watson's patent attorney, Marlin Smith, in deposition testimony. Smith's testimony is extrinsic evidence which the court need not consider. Further, while an "axle seat" may be a structure that attaches something to an axle, Watson proposes that "axle seat" be defined, in relation to the '452 patent, as "the portion of the device in contact with the outer surface of the axle." Thus, Watson is not necessarily proposing that an axle seat be defined as a structure that attaches anything to an axle. It is simply saying that in construing the language in the '452 patent, the term "axle seat" should not be limited solely to "a portion of the suspension system for attaching suspension components to the axle."

Conclusion from the Intrinsic Evidence

Having reviewed the intrinsic evidence, the court concludes that the term "axle seat" is clear and unambiguous. Boler argues that the court should look to extrinsic evidence, such as the publications of organizations in the trucking industry, the depositions of the inventor of the claimed device, Thomas Chalin, and the president of Watson and Chalin, Donald Watson, and the position of Watson in another case before this court, to interpret the term "axle seat" and other disputed terms contained in the claims at issue. Having concluded that the term "axle seat" is clear from the intrinsic record, the court will not resort to extrinsic evidence to interpret the disputed terms. Based on the intrinsic evidence, the court interprets "axle seat" as "the portion of the device in contact with the outer surface of the axle."

GO BACK

A. "BNC Connector"

Because none of the claims in either patent defines the term "BNC connector," the court must consult the remaining intrinsic evidence - the specification and the prosecution history - in construing the disputed term. If the meaning of the disputed term cannot be ascertained from the intrinsic evidence alone, the court will consult the relevant extrinsic evidence.

The summary of the invention of the '932 and '799 patent use the same language to define what is meant by "BNC connector":

    The BNC connector 38 is basically a conventional BNC connector that is typically used as an electronic connector. Because the construction of the BNC connector is, for the most part, conventional, it will not be described in detail. The connector includes a cylindrical collar 48 that is mounted on a body 50 of the connector for rotation relative thereto. The collar 48 is constructed of a conductive material. The collar includes a pair of diametrically opposite grooves or slots 52. The slots 52 spiral around the collar 48 for one quarter of the circumference of the collar.

'932 patent, col. 5, ll. 8-17 (emphasis added); '799 patent, col. 5, ll. 51-60 (emphasis added).

The prosecution history of the '932 patent shows that patent was originally rejected on July 24, 2001 as being anticipated by U.S. Patent No. 5,074,637, issued to Dan Rink on December 24, 1991 (the "Rink patent"). The prosecution history of the '799 patent shows that patent was originally rejected on March 6, 2003 for various reasons, including double patenting of the '932 patent claims. Following amendments, the '932 and '799 patents successfully issued on March 19, 2002 and October 21, 2003, respectively. The Rink patent is referenced as prior art in both the '932 and '799 patents. The Rink patent uses the term "bayonet connector," which is similar to but broader than the term "BNC connector."

Defendants argue the slots of a "conventional" BNC connector must fall within the dimensions set forth in international and United States standards. Plaintiff responds by arguing that the court should not construe "BNC connector" to incorporate specific dimensions; plaintiff notes that a leading technical dictionary defines "BNC connector" without any reference to the size of its slots: "[a] small device for connecting coaxial cables, used frequently in low-power, radio-frequency and test..."
applications. Abbreviation for bayonet Neil-Concelman connector." McGraw-Hill Dictionary of Scientific and Technical Terms 260 (6th ed. 2003). Defendants respond by arguing that persons skilled in the art of electrical connectors understand that BNC connectors - particularly conventional ones - are necessarily defined by technical standards in order to ensure compatibility amongst connectors produced by various manufacturers. Defendants argue the term "BNC connector" is a subset of the more general term "bayonet connector," and thus BNC connectors are governed by the relevant provisions of the United States Department of Defense Standards for Radio-Frequency Connector Interfaces ("U.S. standard" or "military specification") and the International Standards for Radio-Frequency Connectors ("international standard"), 3 both of which require the width of BNC connector slots to be between .091 and .097 inches. 4 Ex. D (military specification) to Defs.' Reply at 2; Ex. E (international standard) to Defs.' Reply at 5-6.

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3 The United States was not one of the countries that voted in favor of publication of the international standard, as amended in 1997. See Ex. G (international standard) to Pl.'s Br. at 5. Therefore, it is not clear whether BNC connectors produced and sold in the United States are governed by the international standard. This issue is irrelevant, however, because the international and U.S. standards are identical with regard to minimum and maximum slot widths for BNC connectors. Ex. D (military specification) to Defs.' Reply at 2; Ex. E (international standard) to Defs.' Reply at 5-6.

4 At oral argument, plaintiff argued these standards were not relevant to claim construction of the term "BNC connector" and should not be incorporated into the '932 and '799 patent claims. See May 4, 2005 Tr. at 77-78. Yet plaintiff had previously argued in its brief that the international standard was in fact relevant. Pl.'s Br. at 15-16; see also Auld Decl. P8 (attached to Pl.'s Br.) (inventor named on '932 and '799 patents declaring that "manufacturers commonly use technical standards, such as the International Standards for Radio-frequency Connectors ("ISRC"), to ensure that electronic parts from multiple manufacturers are capable of working in concert"). Plaintiff even proposed incorporating the international standard into the court's claim construction. Pl.'s Br. at 16, n.6. Plaintiff made this proposal because, at that time, it mistakenly believed the international standard did not set forth a maximum slot width; therefore, plaintiff thought the international standard supported its argument that BNC connectors could possess a wide variety of slot widths. Later, plaintiff realized it had incorrectly cited to an older version of the international standard and acknowledged that the international standard does indeed include maximum slot widths. See Pl.'s Notice to Correct Record at 1-2.

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Defendants note that the slot width of plaintiff's commercial implementation of a BNC connector is .093 inches, approximately halfway between the minimum and maximum slot widths identified in the U.S. and international standards. Defendants cite various manufacturer definitions in support of its proposed claim construction, including one from Tyco Electronics ("Tyco"), one of the largest connector manufacturers in the world. Tyco defines "BNC Series (connector)" as:

A radio frequency connector covered by Military Specification. It has an impedance of 50 ohms, and is designed to operate in the 0 to 4 GHz frequency range. Quick connect/disconnect is featured by a pin and cam bayonet coupling. Ex. G (Tyco website) to Defs.' Reply at 3. Tyco defines "bayonet coupling (product feature)" as:

A quick coupling device for circular plug and receptacle connectors. Pins projecting from the outside of the cylindrical receptacle engage with corresponding cam slots in the bayonet plug.

Id. at 2. Defendants argue that these definitions confirm that persons skilled in the art, i.e., electrical engineers from Tyco, distinguish between a general bayonet connector and the more specific BNC connector. Defendants' argument is supported by the one of the two definitions plaintiff provided in its brief defining "BNC connector":

A type of bayonet connector used with thin coax cable used in 10Base-2 ethernet systems. BNC stands for Bayonet-Neill-Concelman. Neill and Concelman were the inventors of the connector. There are a number of other BNC type devices such as a terminator and a T-connector.

Ex. H to Pl.'s Br. (definition taken from glossary section of website devoted to cable industry) (emphasis added).
Plaintiff's own definition confirms that a BNC connector is a specific kind of bayonet connector. The Rink patent, referenced by the patent examiner in the '932 patent prosecution history and cited as prior art in both the '932 and '799 patents, confirms that the term "BNC connector" is more specific than the general term "bayonet connector." The Rink patent, entitled "Optical Fiber Connector," describes an "improved bayonet optical connector" and includes an illustration of the preferred embodiment which pictures slot widths as wide as the entire circumference of the connector, presumably wider than .097 inches, the maximum width for BNC connectors meeting U.S. and international standards. Plaintiff argues the Rink patent demonstrates that a BNC connector can have slots wider than .097 inches. This argument fails because: (1) the description of the preferred embodiment in the Rink patent makes no mention of specific dimensions; and (2) even if the illustrated slots are presumed to be wider than .097 inches, the Rink patent describes a "bayonet connector," of which there are many kinds, not a "BNC connector," which is a subset of bayonet connectors according to plaintiff's own definition.

Plaintiff attempts to conflate the terms "bayonet connector" and "BNC connector," but the court concludes, based on the intrinsic and extrinsic evidence, that the two terms have different meanings, i.e., a BNC connector is a specific type of bayonet connector. The drafters of the '932 and '799 patents were aware of the more general term "bayonet connector" used in the Rink patent and chose instead the more specific term "BNC connector." The drafters' choice of the specific term over the general term makes sense because the specific term promotes connectivity and interchangeability across different brands and products. Because of the importance of interchangeability in the field of electrical connectors, it is logical to construe the term "BNC connector," described as "conventional" in the specification, as incorporating the relevant U.S. standard for slot widths. Michael Auld, the inventor named on the '932 and '799 patents, agrees: "manufacturers commonly use technical standards, such as the International Standards for Radio-frequency Connectors ("ISRC"), to ensure that electronic parts from multiple manufacturers are capable of working in concert." Auld Decl. P8 (attached to Pl.'s Br.)

In construing the disputed patent term "BNC connector," the court has utilized the following evidence, in order of importance: (1) the '932 and '799 patents' specification, which describes a "conventional" BNC connector with "diametrically opposite grooves or slots;" (2) the '932 patent's prosecution history and cited prior art, including the Rink patent's description of a general "bayonet connector;" and, because the disputed patent term could not be ascertained from the intrinsic evidence alone, (3) the extrinsic evidence, including plaintiff's admissions, the McGraw-Hill and manufacturer definitions, and the U.S. and international standards, none of which vary or contradict the claim language. The court has also reviewed the inventor and expert testimony, although little weight has been accorded this extrinsic evidence with regard to claim construction as most of it appears self-serving and generated for the purpose of litigation.

The court construes the term "BNC connector" to mean "a type of bayonet connector with a slot or slots 5 conforming to military specification."

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5 Although the intrinsic and extrinsic evidence demonstrates that a BNC connector always has two diametrically opposite slots, and consequently a light source adapter always has two diametrically opposite posts, the court includes the language "slot or slots" in its claim construction in order to avoid reading out certain elements of the '932 and '799 patent claims. For example, claim 19 of the '799 patent, supra p. 7, recites: "the assembly comprising a BNC connector having a cylindrical collar with a center axis, the collar having at least one slot therein that spirals around the center axis of the collar . . ." (emphasis added). Claim 1 of the '932 patent, supra pp. 5-6, recites: "the adapter comprising . . . at least one post on the external surface of the sleeve, the post being positioned to engage with a slot of a BNC connector . . ." (emphasis added).

Defendants argue "BNC connector" should also be construed to have "spiral slots." Some independent claims, such as claim 19 of the '799 patent quoted above, describe a "BNC connector having a cylindrical collar with a center axis, the collar having at least one slot therein that spirals around the center axis of the collar." See also claim 7 of the '932 patent, supra p. 6. Other independent claims, such as claim 6 of the '799 patent, describe a BNC connector slot without any mention of spiraling. See supra, p. 6; see also claim 1 of the '932 patent, supra pp. 5-6. A narrowing limitation present in one claim should not be read into other claims in which the limitation is absent, Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999); the court will not construe "BNC connector" as having spiral slots.
D. Back Portion

Plaintiff advances two, essentially identical constructions of "back portion": "the part of the shoulder guard that is opposite the front part of the shoulder guard and that extends over part of the back shoulder," (Pl.'s Br., at 17); and "the part of the shoulder guard that is opposite the front part of the shoulder guard and covers at least a portion of the back of the shoulder." (Pl.'s Reply, at 11.) TAG maintains that the proper interpretation of the term is "a part of the shoulder guard that extends from the top portion down a portion of the wearer's back shoulder such that the shoulder is covered." (Def.'s Br., at 21.) The court gleans two areas of disagreement from these competing proposals: whether the back portion of the shoulder guard is "opposite" from the "front part"; and the degree to which the back portion extends over, and covers, the shoulder.

Neither the claim nor the specification support the notion that the back portion of the shoulder guard is "opposite" the front portion. The claim simply discloses a front portion, a top portion, and a back portion; out of the three, only the front portion is further described as "adjacent the main pad." (‘226 Patent, col. 4, ll. 8-9.) According to the claims, therefore, the back portion is simply the part of the shoulder guard that is not the front portion or the top portion; and given that "front", "top", and "back" are commonly understood words, it is clear merely from the claim language that the back portion is separated from the front portion by the top portion. 15 Nor does the specification ever use the word "opposite." The only description of the back portion appears in the preferred embodiment: the back portion is described as "extending from the top portion down a portion of the wearer's back such that the shoulder is covered . . . ." (Id. col. 2, ll. 42-43.)

15 In addition, as noted, the parties agree that the "front portion" of the shoulder guard is "the foremost part of the shoulder guard that extends from the shoulder portion of the main pad," and the "top portion" is "the upper part of the shoulder guard that curves over the wearer's shoulder."

Indeed, Plaintiff cites only to extrinsic evidence to support its inclusion of the term "opposite": a dictionary definition of "back" that includes "the opposite of front" as one of many definitions. WEBSTER'S ENCYCLOPEDIC UNABRIDGED DICTIONARY 150. Plaintiff thus appears to intend the use of "opposite" merely as an explanation of "back." In the court's view, however, the term "back" is sufficiently within common knowledge that it does not have to be further defined as "opposite" the front; indeed, the meaning of "opposite" likely would itself need to be construed. Moreover, the term "opposite" might in fact function as an additional limitation to the claim, if that term were construed to exclude from coverage all shoulder guards in which the back portion was not directly, and symmetrically, opposite the front portion. 16 The court assumes that Plaintiff does not seek to impose such a limitation on its own claim, and given the lack of explicit support for the term "opposite" in the claim or the specification, the court is disinclined to do so in any event.

16 Indeed, TAG asserts that the inclusion of the term "opposite" would necessarily exclude J-shaped shoulder guards. (Def.'s Sur-reply, at 8.)
Moreover, TAG's proposed limitation necessarily depends on a determination of precisely what area of the upper back is deemed the boundary of the "shoulder." The patentees' drawings of the preferred embodiment, for example, depict a shoulder guard that extends over the wearer's shoulder and then curves down only slightly. (‘226 Patent, fig. 2.) If the term "shoulder" refers to an area that extends significantly down the a wearer's back, then the "back portion" in the drawings covers only a portion of the shoulder, consistent with Plaintiff's construction. For TAG's construction to be consistent with the drawings, the area considered as the "shoulder" would have to be much smaller. TAG, however, makes no effort to establish any particular definition of "shoulder." Plaintiff does attempt to do so with a citation to a treatise of human anatomy; but as TAG points out, it is not clear that persons skilled in the relevant art are likely to consult such materials. In any event, the court need not make an explicit determination of what constitutes a "shoulder" within the meaning of the '226 claim. Plaintiff's construction, in which only a "part" or "portion" of the shoulder is covered, does not depend upon a precise determination of the boundaries of the shoulder area; only TAG's proposed construction, in which the shoulder must be entirely covered, would require such a determination, and TAG's proposed construction again reflects an improper attempt to limit a claim term to the preferred embodiment.

Plaintiff's proposed construction, moreover, is consistent with what the patentees identified in the specification as the primary problem with existing chest protectors: they did not adequately "protect the top portion of the shoulder" from stray baseballs. (‘226 Patent, col. 1, ll. 16-17.) The shoulder guards of the ‘226 chest protector, which purported to alleviate problems with existing chest protectors, do not have to cover the entire shoulder in order to address this issue. It appears undisputed that the shoulder guards' top portions protect the top area of the wearer's shoulders, thus accomplishing the invention's primary stated purpose; the extent to which the back portions protrude down the back of the shoulder appears to have little, if any, significance in light of that purpose.

The court thus construes "back portion" as "the part of the shoulder guard that extends from the top portion and covers at least a portion of the back of the shoulder."

### II. Mode

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Davis-Lynch's Proposal</th>
<th>Weatherford's Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;auto-fill mode&quot;</td>
<td>A mode of operation wherein the casing string is allowed to automatically fill by the flow of wellbore fluid toward the surface or starting position of the wellbore.</td>
<td>A mode of operation in which fluid may flow in either of two directions.</td>
</tr>
<tr>
<td>Claims 33, 34, 35, 37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;back pressure mode&quot;</td>
<td>A mode of operation wherein the flapper valves are closed by and obstruct the flow of wellbore fluid toward the surface or starting position of the wellbore.</td>
<td>A mode of operation in which fluid flow is permitted in one direction but blocked in an opposite direction.</td>
</tr>
<tr>
<td>Claims 33, 34, 35, 37</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As an initial matter, the Court notes that the parties have no dispute over claim scope with regard to the term "auto-fill mode." Both parties agree that during auto-fill mode, the flapper valves are held open to allow wellbore fluid to flow toward the surface during run in. The parties also agree that, if necessary, fluid can be pumped from the surface toward the bottom of the tubular string to clear a path for the tubular string by a process called circulation. Thus, the parties' dispute is simply over the best way to explain this mode.

Weatherford argues that its construction is necessary as a matter of law. It points out that the '336 patent is a continuation-in-part of the application that became U.S. Patent No. 6,401,824 ("the '824 patent"). During prosecution of the '336 patent, the
examiner rejected claim 33 as "not patentably distinct" from claim 11 of the '824 patent. '336 patent Office Action 8/20/2008 at 8 (Doc. No. 114-6). Claim 11 is substantially similar to claim 33 of the '336 patent, merely substituting the terms "two-way mode" and "one way mode" for the terms "auto-fill mode" and "back pressure mode." In order to overcome this rejection, the patentee filed a terminal disclaimer limiting the term of the '336 patent to coincide with the term of the '824 patent. Weatherford argues that because claim 11 of the '824 patent and claim 33 of the '336 patent are tied together by a terminal disclaimer, the two claims must be construed identically.

Weatherford's argument misunderstands the purpose of a terminal disclaimer. The judicially created doctrine of obviousness-type double patenting prevents a patentee from obtaining a patent that is an obvious variation of claims in a prior patent. See re Vogel, 422 F.2d 438, 441-42, 57 C.C.P.A. 920 (C.C.P.A. 1970). The doctrine may be overcome if the applicant files a terminal disclaimer in compliance with 37 C.F.R. 1.321(b). This provision allows an applicant to "disclaim or dedicate to the public the entire term, or any terminal part of the term, of a patent to be granted." 37 C.F.R. 1.321 (b). A terminal disclaimer "ties the affected patents together; they expire on the same date and are enforceable only during periods in which they are owned by the same person." Pharmacia Corp. v. Par Pharmaceutical, Inc., 417 F.3d 1369, 1374 (Fed. Cir. 2005) (quoting DONALD S. CHISUM, CHISUM ON PATENTS, § 9.04[5] at 9-107 (2003)).

Beyond the shared expiration date, the affected patents maintain significant attributes of individuality. A terminal disclaimer is not an admission of obviousness and raises neither presumption nor estoppel as to the merits of the rejection. Quad Envtl. Tech. Corp. v. United Sanitary Dist., 946 F.2d 870, 874 (Fed. Cir. 1991). Rather, it "simply serves the statutory function of removing the rejection of double patenting." Id. Thus, the filing of a terminal disclaimer does not require a Court to construe the claims of a terminally disclaimed patent identically with the claims of the older patent. See, e.g., Arminak & Assoc., Inc. v. Saint-Gobain Calmar, Inc., 424 F. Supp. 2d 1188, 1194 n. 1 (C.D. Cal. 2006) ("[d]espite the fact that the examiner found the two designs not patentably distinct, the Court construes the [design] patents' claims separately to reflect differences in the two designs"); Travelers Exp. Co. v. Transaction Tracking Techs., Inc., No. 03-2848, 2005 U.S. Dist. LEXIS 46009, 2005 WL 59799355 at *8 (D. Minn. May 2, 2005) (reaching the same conclusion with regard to utility patents). Thus, the Court will construe the '336 patent as separate from the '824 patent.

Having rejected Weatherford's terminal disclaimer argument, the Court begins its analysis by consulting the language of the claims at issue. Claim 33 explains that during auto-fill mode the flapper elements are in an "open position to permit fluid flow . . . toward said surface position and also to permit fluid flow in a direction away from said surface position." Thus, as the parties have agreed, auto-fill mode allows for fluid flow in two directions. Nonetheless, the focus of auto-fill mode, as explained in the specification, is in allowing wellbore fluid to automatically fill up the tubular string. See '336 patent at 2:66-3:3, 8:1-3. The flow of fluid away from the surface is described as an optional feature of auto-fill mode. See '336 patent 8:17-21. While Weatherford's proposal accurately describes "auto-fill mode," it does so by reciting an additional limitation already mentioned in the claim language. Davis-Lynch's proposal better reflects the meaning of the term "auto-fill mode" as used in the specification. Thus the Court will construe the term "auto-fill mode" as "a mode of operation wherein the tubular string (as defined herein) is allowed to automatically fill by the flow of wellbore fluid toward the surface or starting position of the wellbore." 6

6 This construction is essentially the same as Davis-Lynch's construction except that the phrase "casing string" has been replaced with the phrase "tubular string" to be consistent with the actual language of the claims at issue.

A similar approach applies with regard to "back pressure mode." Claim 33 explains that during back pressure mode the flapper elements are in a "closed position responsively to fluid flow . . . [to] prevent fluid flow . . . toward said surface position and to permit fluid flow in said direction away from said surface position." Thus, back pressure mode allows for fluid flow in only one direction. Nonetheless, the purpose of back pressure mode is to prevent cement pumped down the tubular string from re-entering the tubular string and flowing back toward the surface. '336 patent at 1:64-2:2, 2:7-10. Therefore, the Court will construe "back pressure mode" as: "A mode of operation wherein fluid flow is permitted in a direction away from the starting position of the wellbore but obstructed from flowing toward the starting position of the wellbore by flapper valves." 7

- 808 -
7 Davis-Lynch offered this proposed construction as a compromise proposal after the hearing. (Doc. No. 135.) Davis-Lynch's original proposal was: "a mode of operation wherein the flapper valves are closed by and obstruct the flow of wellbore fluid toward the surface or starting position of the wellbore." At the hearing, Weatherford argued that this original proposal was inappropriate because it stated that "the flapper valves are closed by . . . the flow of wellbore fluid." Weatherford argued that the '336 patent only discloses closing the flapper valves by some sort of spring bias, not by the flow of wellbore fluid. Because the construction adopted by the Court does not state that the flapper valves are closed by fluid flow, the Court will not address Weatherford's argument.

b. The Claim Term "Back Surface"

The court agrees with Rockwood that "back surface" as it is claimed in the '363, '183, and '129 patents must include the special characteristic of spanning the full width of the block. The shape of the block in each and every embodiment presented in the Anchor patents discloses and teaches a back portion that extends toward the sides so that two adjacent blocks in a given course of blocks have abutting back surfaces. (See Figs. 1, 3, 3A, 4, 6, 6A, 7, 9, 10, & 11 of the '363 patent.) The specification further states that, "if the desired structure is to be inwardly curving, blocks of the invention . . . may be completed by striking leg 24A or 24B with a chisel adjacent deflection 19, see FIGS. 1 and 4." ( '183 patent, col. 8, Ins. 10-15.) The court fails to see how the characteristic, "spanning the full width of the block," cannot inhere in the claim term "back surface." The specification would not address the necessity of chiseling off a portion of that "back surface" if it did not inhere in the meaning of the term that the "back surface" spanned the full width. This conclusion is reinforced by the fact that each of the preferred embodiments details a "back surface" spanning the full width of the block. Accordingly, the court construes this term to include the characteristic of "spanning the full width of the block."

a. "Back Surface"

The independent claims of the '363 patent family require a masonry block comprising "a front surface, a back surface, a top surface, and bottom surface, and first and second sides." See, e.g., '183 patent, col. 16, ll. 20-23 (emphasis added). The district court construed the "back surface" limitation to require a back surface "spanning the full width of the block." Anchor, 252 F. Supp. 2d at 847. This was error.

The ordinary meaning of the claim term "back surface" is a surface at the back of the block. See Webster's Third New International Dictionary 157 (1993) (defining "back" as "the side or surface of something that is opposite to the side that is regarded as its front or face"); id. at 2300 (defining "surface" as "the exterior or outside of an object or body"). The written description does not compel a construction different from the plain meaning of "back surface." In departing from the ordinary meaning of "back surface," the district court relied on the written description, which stated "if the desired structure is to be inwardly curving, blocks of the invention . . . may be completed by striking leg 24A or 24B with a chisel adjacent deflection 19, see FIGS. 1 and 4." Anchor, 252 F. Supp. 2d at 847 (citing '183 patent, col. 8, ll. 10-15). The district court concluded that "the specification would not address the necessity of chiseling off a portion of that 'back surface' if it did not inhere in the meaning of the term that the 'back surface' spanned the full width." Id. Contrary to the district court's analysis, we do not read this excerpt to conclude that "back surface" is necessarily limited to a back surface "spanning the full width of the block." Id. For us to do so here would be to impermissibly read a limitation into the claims from the written description. Comark, 156 F.3d at 1186 ("While . . . claims are to be interpreted in light of the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims." (internal quotation marks and citation omitted)). Furthermore, the parties point to nothing in the prosecution history that clearly and unmistakably disclaims a back surface that does not extend the full width of the block. Accordingly, we hold that the proper
1. "[B]ack surface tool including . . . a convexly curved second surface portion circumscribing the first surface portion." Used in '706 patent, claim 1.

"[T]he surface of the tool including . . . a second surface portion defining a convex curved outer peripheral edge surface of the insert." Used in '706 patent, claim 15.

CooperVision argues that "a 'convex[ly] curved surface' is an outward facing curved surface containing a continuous curve, or a series of flats, or a combination of one or more curves and one or more flats. A 'second surface portion circumscribing the first surface portion' is the outer peripheral edge surface." CIBA advances a competing construction of "a second surface portion that circumscribes the first surface portion and the entire second surface portion is curved outward like the exterior of a sphere so as to produce a contact lens with a rounded edge."

The parties now agree that the "convex curve" of the invention may be created by a continuous curve, or a series of flats, or a combination of curves and flats. At the hearing, the parties clarified that the remaining points of dispute are whether: 1) the flats, if any, must be small; 2) the convexly curved second surface portion must extend to the end of the insert tool; and 3) the contact lens produced must have a rounded edge. These points are now considered seriatim.

a. "Flats"

The parties apparently agree that flats mean straight segments. Turning first to claims language, claim 1 of the '706 patent recites that the back surface tool disclosed includes a "convexly curved second surface portion." Similarly, claim 15 recites: "a second surface portion defining a convexly curved outer peripheral surface." Dependant claims 17 and 18 indicate that the convex curve may also be created by a series of flats approximating a convex curve or a combination of flats and convex curves.

Looking next at the specification, the patent discloses that "[t]he second surface portion may be defined by a continuous curve . . . . Alternatively, the second surface portion may be defined by a series of small flats, or a combination of small flats and curves, which approximate a convexly curved surface." '706 patent, col. 3, ll. 43-49 (emphasis added). The invention thus permits the use of small flats to make up the curved convex shaping.

CooperVision argues that the flats may be any size, including large flats or straight segments. However, when reading the claims in light of the specification, it is clear that if flats are present, then they must be either small or very short. See '706 patent, col. 7, ll. 1-4 ("very short flats would closely simulate continuously curved convex shaping"); '706 patent, col. 3, ll. 43-49.

CooperVision opposes this interpretation, arguing that the term "small" would render the claim indefinite. A patent specification must "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, P 2. The purpose of the definiteness requirement is to "ensure that the claims delineate the scope of the invention using language that adequately notifies the public of the patentee's right to exclude. Datamize, 417 F.3d 1342, 1347 (Fed. Cir. 2005). Claims are considered indefinite when they are "not amenable to construction or are insolubly ambiguous . . . . Thus, the definiteness of claim terms depends on whether those terms can be given any reasonable meaning." Id. To make a determination of indefiniteness, "general principles of claim construction apply." Id. at 1348.

The specification makes clear that the flats must be small enough to define a continuous curve with a radius of curvature of about 0.05 mm. "706 patent, col. 3, ll. 45 - 49. Because the flats may be combined with curves to create the convexly curved outer peripheral edge surface, it is not inappropriate to describe the flats as "small," as opposed to a precise numerical measurement. Akin to the term "large," a person having ordinary skill in the art would know how small the flats must be to maintain a 0.05 mm radius of curvature. See, e.g., O'Hara Mfg. Ltd. v. Eli Lilly & Co., 1986 U.S. Dist. LEXIS 22546, 1986 WL 8391 (N.D. Ill., July 21, 1986) (holding that the word "large" is not indefinite even if it does not specify an exact amount.)
CIBA does not dispute that the convexly curved surface can be formed by a series of one or more curves, by a combination of curves, by a combination of curves and flats or by a series of small flats that approximate a continuous curve. However, CIBA’s proposed construction sounds as though the second surface portion must have a single radius of curvature or be a section from a perfect circle.

b. Extent of Convexly Curved Surface

CIBA argues that the convexly curved second surface portion must extend to the end of the entire back surface tool. Figure 8 shows that the tool has an extended flat portion which does not affect the configuration of any part of the lens. When describing the convexly curved second surface portion, the claim and specification clearly refer to the part of the tool that affects the shape of the lens. See ’706, col. 3, ll. 32 - 45.

c. Rounded Edge?

CIBA’s construction includes a separate requirement that the back surface tool "produce a contact lens with a rounded edge." Formation of a "contact lens member" appears in the last phrase of claim 1. CIBA proposes to add the term to the first phrase, thus making the last phrase superfluous. "A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so." See Merck & Co. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005). Accordingly, there is no basis to add the phrase, "produce a contact lens . . ." to the definition of this claim term. Similarly, Claim 15 describes the surface tool but makes no reference to the shape of the contact lens. Again, there is no basis to include the phrase "...with a rounded edge" to the definition of this claim term.

d. Definition

The court defines these disputed terms as follows:

"[B]ack surface tool including a first surface portion in the general shape of a posterior face of a contact lens and a convexly curved second surface portion circumscribing the first surface portion" and "the surface of the tool including a first surface portion in the general shape of a posterior face of a contact lens and a second surface portion defining a convex curved outer peripheral edge surface of the insert" means: Back surface tool including a first surface portion in the general shape of a posterior face of a contact lens and a second surface portion defined by an the outer peripheral edge surface of the insert. The second surface portion is an outward facing curved surface created from a continuous curve, a series of small flats (i.e., straight segments) that approximate a continuous curve, or a combination of curves and small flats that approximate a continuous curve.

F. "Backing Element"

Tessera proposes that the Court construe "backing element", as in the TI Order, to mean: "An element overlying the rear surface of the chip that is thin in comparison to its length and width and generally planar or flat (but does not need to be flexible)." See TI Order at 20. Samsung argues that the term is actually a "means plus function" claim, and should be construed according to 35 U.S.C. § 112 P 6.

The Court rejects Samsung's argument that "backing element" should be treated as a "means plus function" claim. The Court construes "backing element" to mean: "A sheetlike element overlying the rear surface of the chip." The element may be, but is not necessarily, flexible. See TI Order at 20.

3. "Backing Plate" is a Structural Support for the Screening Medium that Includes a Metal Plate.

J&L suggests that the ordinary meaning of a "backing plate" is "a support for a screening element that is made from a flat
piece of metal." J&L's Mem. in Opp'n to AFT's Infringement Mot. (Dkt. No. 39) ("Opp'n to Infringement Mot.") at 11. AFT proposes that the term instead means "a structural support for the screening medium that includes a metal plate with openings." AFT Reply to J&L's Mem. in Opp'n to AFT's Infringement Mot. (Dkt. No. 44) at 8. Thus, the parties disagree as to whether a "backing plate" must originally exist as a flat piece of metal. J&L argues it must originally be a flat plate that can be rolled where a cylindrical shape is desired; AFT argues that no such limitation exists, and it can, instead, be cast originally as a cylinder. Both parties assert that their construction finds support in the claims and specification of the '940 patent and is further confirmed by extrinsic dictionary definitions.

The '940 patent does not explicitly define "backing plate." The specification employs variations of the term, including a "backing plate" or "structural backing plate," which may exist "in either flat or cylindrical configurations," see, e.g., '940 patent, Col.5, Lns. 10-12, a "generally cylindrical structural backing plate," see id., Col. 5, Lns. 45-46, and a "backing cylinder," see, e.g., Col. 6, Lns. 45, 60-61. None of the claims refer to a "backing cylinder," though they do recite a "cylindrical structural backing plate" (claim 1) and a "screen plate . . . wherein said . . . backing plate [is] cylindrical" (claim 11). The claims do not specify whether the "backing plate" must be made from a flat piece of metal. The specification describes an embodiment of the invention wherein the "backing plate . . . comprises a perforated plate having a plurality of relatively large openings . . . ." Id., Col. 2-3 Lns. 66-67, 1-2. That same embodiment may "form[] a screen cylinder" where "the screening plate is preferably formed initially in a flat configuration . . . then rolled into a cylindrical configuration . . . . [and] the backing plate is rolled into a cylindrical shape." Id., Col. 3, Lns. 12-23 (emphasis added). The specification returns to this description of "rolling" a backing plate in numerous embodiments of the invention. See, e.g., id., Col. 6, Lns. 44-45 (relating a method of manufacture that includes the "rolling of a backing plate"); id., Col. 8, Lns. 63-67 (referencing an embodiment in which "the screening and backing plates . . . lie in a flat configuration . . . . [and t]hereafter . . . are rolled into cylindrical form."). Other embodiments describing screen cylinders, however, do not describe "rolling." See, e.g., id., Col. 5, Lns. 42-57; id., Col. 6 Lns. 53-Col. 7 Ln.11. Nevertheless, referencing the definition of "plate" found in the McGraw Hill Dictionary of Scientific and Technical Terms, J&L seeks to construe "backing plate" to require that the component originally exist as a flat piece of metal, and that, whenever a cylindrical form is desired, be rolled into such form. The Court rejects this construction.

First, the claims themselves do not limit the "backing plate" to a component originally existing as a flat metal plate. Rather, they note that the backing plate may be cylindrical and nowhere state a process, for example, rolling, by which that shape is achieved. Similarly, the specification sometimes, but not always, identifies rolling as a method of achieving a cylindrically shaped backing plate. The Court finds significance in the inconsistent drafting as to the formation of a cylindrically shaped "backing plate." Here, the prosecution history provides no basis for altering the broader scope suggested by the claims and specification as to the term "backing plate." Hence, importing J&L's proposed limitation into the claims simply based upon some described embodiments would be inappropriate.

Finally, adopting the construction proposed by J&L would yield redundancies if that definition were applied to all "plates" mentioned in the patent. For example, the specification describes one variation "[w]here a flat screen plate is desired, the two flat plates are . . . " Id., Col. 3, Ln. 5. Another description notes that ",[t]he flat backing plate may then be rolled into cylindrical form." Id., Col. 11, Lns. 24-25. Were "plate" defined as a flat piece of metal, the use of the qualifying adjective "flat" in the quoted language would be duplicative, which suggests that no such limitation is intended. Similarly, where a screen cylinder is desired, the specification states, "the screening plate is preferably formed initially in a flat configuration . . . ." Id., Col. 3, Lns. 11-12 (emphasis added). If the plate is "preferably formed" in a flat configuration, it is clearly not necessarily formed in that configuration initially. In light of these considerations, the limitations J&L proposes would yield a construction contrary to that mandated by the intrinsic evidence, and, therefore, are inappropriate. See Vitronics, 90 F.3d 1576, 1583-84. The Court instead adopts AFT's proposed construction which better comports with the intrinsic evidence. Accordingly, as used in the '940 patent, "backing plate" means a structural support for the screening medium that includes a metal plate.
8. Backlight Unit

a. The Parties' Constructions

LPL construes "backlight unit" simply as an assembly that includes at least a backlight. Both Defendants base their constructions on the premise that "backlight unit" is well known in the art as being associated with an LCD. Each defendant, however, offers a different construction for that term. Tatung proposes that it means the layers of an LCD module from the first frame to the back of the LCD panel. ViewSonic submits that it means a lighting structure including specific components, i.e., a reflector, a light guide film, a diffuser or protecting film, a prism sheet and the first frame. LPL responds that the Defendants' constructions read in the preferred embodiment, particularly that of Figure 4C of the patents.

b. The Special Master's Construction

The Special Master concludes that the term "backlight unit" is well known to one skilled in the art as relating to an LCD module. For example, in the prior art reference to Yun, a "back light unit" is described as including multiple components, such as a luminescent lamp 11, a lamp housing 12, a light 13, a reflector 14, a first prism sheet 16, a second prism sheet, a diffuser 18, and a first supporting frame 19. Yun patent, 1:16-32. Consistent with Yun, the common specification of the patents-in-suit describe a backlight unit 14 as part of an LCD device and including multiple layers, such as a protecting film 14a, first and second prism sheets 14b and 14c, a light guide 14e, diffuser 14d, a reflector 14f, and a first frame 14g. '641 patent, Fig. 4C, 4:18-26. Thus, one skilled in the art reading the claims in context of the common specification would understand that a backlight unit both relates to an LCD and includes multiple layers.

Additionally, the plain language of claim 35 requires that the backlight unit includes the first frame. '641 patent, 9:65-66. At the same time, as LPL argues, under the doctrine of claim differentiation the term "backlight unit" should not include specific components (such as those recited in dependent claims 40 and 41 of the '641 patent, namely "a reflector unit," "a light source unit," "a light guide film," "a diffuser unit," or "a prism unit," see '641 patent, 10:19-26). Finally, the Special Master does not adopt LPL's construction of "backlight unit" because it does not further define the term. It is axiomatic that a "backlight unit" would include a backlight.

Accordingly, the Special Master's claim construction is as follows:

<table>
<thead>
<tr>
<th>CLAIM TERM</th>
<th>SPECIAL MASTER CONSTRUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>backlight unit</td>
<td>The layers of the flat-panel display device which illuminate the flat-panel (or liquid crystal) display from behind</td>
</tr>
</tbody>
</table>

Claims 1 to 6 are at issue. Claims 2 to 6 all depend from claim 1, which reads:

1. A laryngeal-mask airway device comprising:

   a backplate defining a passage;

   an inflatable cuff, the cuff defining a distal region and a central opening at least when inflated, the cuff being attached to the backplate, the cuff being insertable through a mouth of a patient to an inserted location within the patient, an airway extending from a laryngeal inlet of the patient, through the central opening, to the passage when the cuff is inflated and at the inserted location, at least a portion of the posterior portion of a wall of the cuff in the distal region being thicker and stiffer than other portions of the cuff.
'100 patent, claim 1 (emphasis added).

On appeal, LMA argues that the district court improperly read a tube joint limitation into the claims. LMA contends that the claim language requires only that the backplate "define[s] a passage" and that the "cuff be [ ] attached to the backplate." LMA asserts that because the claims do not mention an airway tube, the claims need not clarify or explain how the airway tube will attach to the backplate.

LMA argues that the specification's repetition of the term tube joint does not justify adding it to the claims. LMA states that the "Summary of the Invention" describes "a mask attached to one end of the airway tube," and LMA asserts that this statement is broad enough to include a mask that is integrally molded to an airway tube as well as devices with a tube joint. LMA Reply Br. 7.

LMA further argues that the prosecution history weighs against the addition of a tube joint limitation. LMA explains that during the final phase of prosecution, when pursuing claims directed to a mask having a reinforced cuff, it deleted the airway tube and tube joint language from the claims. LMA reiterates that the tube joint has nothing to do with the claimed invention. LMA asserts that because the terms "airway tube" and "tube joint" were deliberately deleted, it is improper to read these limitations back into the claims.

Ambu contends that backplate is a technical term coined by the inventor, Dr. Brain. Ambu does not argue that the plain and ordinary meaning of backplate includes a tube joint, but rather that Dr. Brain acted as his own lexicographer and defined backplate as a bowl containing a passage and a tube joint, fitted between the airway tube and the inflatable cuff. Ambu places great emphasis on the specification statement that: "The backplate 52 has a one-piece, integral spoon-shape including a bowl 90 and an external tube-joint 92 oriented proximally relative to the bowl, as shown in FIGS. 5 and 6." '100 patent col.6 ll.3-5. Ambu asserts that every figure, every embodiment, and every description of the backplate in the '100 patent shows that the backplate is a separate structure from the airway tube and comprises a tube joint for connection to the airway tube. Ambu concludes that because "backplate" does not have a common meaning broader than that described in the '100 patent, the patentee must have acted as his own lexicographer. Ambu further asserts that the prosecution history does not compel excluding the tube joint limitation. Ambu contends that by deleting the tube joint language, LMA removed clarifying language from the claims, but LMA did not remove any limitation.

This is a difficult case of claim construction. We have a specification replete with discussion of a tube joint, which is the point of attachment between the mask structure and the airway tube. And we are mindful that the specification is the single best guide to the meaning of a disputed term. The preferred embodiment states that the backplate has a tube joint: It is this tube joint that connects the mask structure to the airway tube. See, e.g., '100 patent figs. 2-3. Ambu is correct that the patent does not disclose an integrally molded mask/airway tube. Certainly, it would be improper to add a tube joint limitation to the claims at issue where none appears. Kara Tech. Inc. v. Stamps.com Inc., 582 F.3d 1341, 1348 (Fed. Cir. 2009) ("The patentee is entitled to the full scope of his claims, and we will not limit him to his preferred embodiment or import a limitation from the specification into the claims."). Ambu, however, does not ask this court to import the tube joint limitation into the claims generally, but rather argues that the claim limitation "backplate" should be construed to include a tube joint.

Although it is a close case, in light of the claim language, specification, and prosecution history, we conclude that the term backplate is not so limited. The claims themselves are limited to the mask structure. The claims require "a backplate defining a passage." Claim 1 further defines that "the cuff … [is] attached to the backplate." There is no mention of the airway tube or how the backplate or mask structure would attach to the airway tube. The claims cover only a laryngeal mask airway device comprising the backplate and cuff.

Although there is ample discussion of the tube joint throughout the specification, there is only one place where the specification indicates that the tube joint is part of the backplate (in the preferred embodiment's description of Figures 5 and 6): "The backplate 52 has a one-piece, integral spoon-shape including a bowl 90 and an external tube-joint 92 oriented proximally relative to the bowl, as shown in FIGS. 5 and 6." '100 patent col.6 ll.3-5. This sentence, which as its language indicates, describes what is shown in Figures 5 and 6, is not enough to require every backplate to include a tube joint. To be his own lexicographer, a patentee must use a "special definition of the term [that] is clearly stated in the patent specification or file history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1580 (Fed. Cir. 1996); see also CCS Fitness, Inc. v.
Brunswick Corp., 288 F.3d 1359, 1366 ("[T]he claim term will not receive its ordinary meaning if the patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim term in either the specification or prosecution history."). The specification does not clearly contain such a special definition. Although the preferred embodiment includes a backplate that contains a tube joint, we do not generally limit claims to the preferred embodiment. Phillips, 415 F.3d at 1323 ("[W]e have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment."). The specification here does not clearly indicate the patentee's intent to give backplate a unique meaning different from its ordinary and customary meaning to one of skill in the art. See Helmsderfer v. Bobrick Washroom Equip., Inc., 527 F.3d 1379, 1381 (Fed. Cir. 2008) ("A patentee may act as its own lexicographer and assign to a term a unique definition that is different from its ordinary and customary meaning; however, a patentee must clearly express that intent in the written description.").

The Summary of the Invention uses the term backplate to refer to the mask structure. See '100 patent col.1 l.64 (referring to "the mask structure or backplate"). It describes the mask structure as "having a generally elliptical periphery provided with an inflatable cuff which surrounds the hollow interior of the mask into which the airway tube opens . . . ." Id. col.1 ll.59-61. It further explains that the laryngeal airway mask device comprises "a flexible airway tube and a mask attached to one end of the airway tube." Id. col.1 ll.58. This indicates that the backplate will be connected or attached to the airway tube, but does not require that connection to be formed via a tube joint. We agree with LMA that this description is broad enough to include integrally molded devices as well as devices with a tube joint. The specification does not clearly convey the patentee's intent to appoint a special meaning to the term backplate. Having concluded that the patentee did not act as his own lexicographer in this case by clearly defining a claim term, we must determine the ordinary meaning of backplate as used in these claims to one of skill in the art in light of the specification and prosecution history.

The prosecution history also indicates that the backplate is not required to have a tube joint. Just prior to issuance, the applicant deleted language concerning the airway tube and the tube joint. Reply to Office Action dated Oct. 19, 2005, at 2 (Apr. 19, 2006). The claims previously required that the backplate include a tube joint in the pharyngeal side of the mask. See, e.g., U.S. Appl. No. 09/412,954, 19 (Oct. 5, 1999); Reply to Office Action of Dec. 15, 2004, 2 (Jun. 15, 2005). The applicant deleted this requirement from the claims. See Reply to Office Action dated Oct. 19, 2005, 2 (Apr. 19, 2006). Following the amendment, the Examiner allowed the claims without any objection to or rejection of the deleted airway tube or tube joint language. See Notice of Allowance (Aug. 23, 2006). 2 Ambu asserts that LMA amended its claims in an effort to cover Ambu's recently marketed AuraOnce TM mask, which has a unitary structure lacking a tube joint. Regardless of why LMA amended its claims, we agree with LMA that it would be improper to read a tube joint limitation back into the backplate. See Kister Instrumente AG v. United States, 628 F.2d 1303, 1308, 224 Ct. Cl. 370 (Ct. Cl. 1980) ("[D]efendant's insistence upon this court's reading back into the claims limitations which were originally there and were removed during prosecution of the application through the Patent Office cannot be permitted.").

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2 The Notice of Allowance contains an Examiner's amendment, but this amendment has nothing to do with the deleted tube joint limitation. The amendment clarified that the thicker and stiffer cuff reinforcement be located on the "posterior" portion of the cuff, rather than on a "first" portion of the cuff. Notice of Allowance (Aug. 23, 2006).

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Although there was no dictionary or treatise definition introduced for backplate, 3 there are two prior art patents also related to laryngeal mask devices which use the term. U.S. Patent No. 5,355,879 ('879 patent); U.S. Patent No. 5,305,743 ('743 patent). Both prior art patents list the same inventor as the patent at issue, Dr. Brain. Both of these patents disclose a backplate, but neither includes a tube joint. This prior art use of the term would further inform one of skill in the art as to the common meaning of the term backplate.

- - - - - - - - - - - - Footnotes - - - - - - - - - - - - 

3 The failure to introduce a dictionary definition for the disputed claim term does not preclude a conclusion that there exists a plain meaning to one of skill in the art. We will not adopt a categorical rule that absence of a dictionary definition means that the applicant must be held to have acted as his own lexicographer and is therefore constrained to the preferred embodiment.
The term backplate has a somewhat self-descriptive nature. As the prior art patents indicate it is the plate on the back. In light of the claims, specification, prosecution history, and prior art patents, we conclude that one of skill in the art would understand the claimed backplate to be "the relatively rigid mask structure surrounded by the cuff." We conclude that one of skill in the art would not conclude that the backplate must have a tube joint. We also conclude that the inventor did not act as his own lexicographer here and clearly require the backplate to have a tube joint. Because the district court's judgment of noninfringement was based on an erroneous claim construction, we vacate that judgment and remand for further proceedings.

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1. "backsheet layer"

First Quality argues that the phrase "backsheet layer" found in Claim 1 of this patent means "a layer of material which substantially blocks the passage of liquid." (doc. 168 at 25.) In contrast, KC proposes that we construe the phrase to mean "a layer of the outer cover." (doc. 150 at 45.) In arguing for its construction, First Quality relies on the specification and expert testimony. It contends that the specification shows that "backsheet" and "backsheet layer" are used interchangeably, and indicates that said lay is substantially liquid impermeable. (doc. 168 at 25-27.) First, we must determine whether the intrinsic evidence supports First Quality's argument that "backsheet" and "backsheet layer" are used interchangeably in the patent. Then, we will determine whether the evidence supports KC or First Quality's construction.

We conclude the evidence supports First Quality's contention that "backsheet" and "backsheet layer" are used interchangeably in the patent. Claim 1 states that one part of a finished article is "a backsheet layer." U.S. Patent No. 5,286,543, Claim 1. The specification further provides, referencing Figure 3A, that the "article generally includes a backsheet layer 236, and a substantially liquid permeably topsheet layer 239 which is disposed in an adjacent facing relation with the backsheet layer." Id. at col.6, ll.10-14 (emphasis added). The specification continues stating "[i]n the shown embodiment, the topsheet and backsheet are substantially coextensive and relatively larger than the absorbent pad." Id. at col.6, ll.15-17. Indeed, a "backsheet 236 typically comprises a substantially liquid impermeable polymer film, such as polyethylene film." Id. at col.6, ll.61-63 (emphasis added). In addition, the specification includes numerous other references where "backsheet 236" is in place of "backsheet layer." Based on the preceding, we are compelled to conclude that "backsheet" and "backsheet layer" are interchangeable in the Ungpiyakul patent.

[SEE FIG. 3A IN ORIGINAL]

In support of its proposed construction, First Quality relies on two embodiments described in the specification. In one embodiment, the specification, as previously cited, provides that a "backsheet layer 236 typically comprises a substantially liquid impermeable polymer film, such as polyethylene film" and that "the backsheet may comprise a non-woven material which has been imparted with a desired level of liquid impermeability." U.S. Patent No. 5,286,543 at col.6, ll. 61-63; col.6, ll. 68-col.7, ll.1-2. In another embodiment indicated in Figure 3, the specifications states that "substrate 36 is a moving layer composed of a substantially liquid impermeable backsheet material, such as polyolefin film layer." Id. at col.5, ll.59-63. In contrast, KC principally relies on what it believes is a distinction between backsheet and backsheet layer. As we have indicated, we are not persuaded by KC's argument. Instead, we agree with First Quality's contention that the proposed limitation is supported by the claim language and the specification. Nevertheless, we believe that First Quality's construction fails to closely adhere to the language of the specification, which is readily understandable. Thus, we conclude that the intrinsic evidence neither supports First Quality nor KC's construction of the disputed claim term. We believe a person of ordinary skill in the art based on the claim language and the specification would understand "backsheet layer" to mean "a layer of substantially liquid impermeable material." Therefore, we will construe "backsheet layer" to mean "a layer of substantially liquid impermeable material."
2. "Backswept Aerodynamic Blades"

The parties agree that the term "backswept blades" should be construed as blades with an end portion angled backward (i.e., opposite the direction of rotation) from the radial direction. [Doc. 52 at 2]. Where the parties differ, however, is with respect to the term "aerodynamic." BorgWarner contends that the use of the term "aerodynamic" in this context should be construed to mean that a given blade design is suitable for air boost applications. [Doc. 62 at 12-17]. While Honeywell initially proposed a definition in the Joint Claim Construction Statement defining "aerodynamic" as allowing air to flow [Doc. 52 at 3], Honeywell now contends that the term "aerodynamic" is indefinite and incapable of being defined. [Doc. 58-2 at 14-17].

Section 112 paragraph 2 of the Patent Act requires the specification of a patent to "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. §112, P2. "Because claims delineate the patentee's right to exclude, the patent statute requires that the scope of the claims be sufficiently definite to inform the public of the bounds of the protected invention, i.e., what subject matter is covered by the exclusive rights of the patent." Halliburton Energy Services, Inc. v. M-I LLC, 514 F.3d 1244, 1249 (Fed. Cir. 2008). The Supreme Court has stated, "[t]he statutory requirement of particularity and distinctness in claims is met only when [the claims] clearly distinguish what is claimed from what went before in the art and clearly circumscribe what is foreclosed from future enterprise." United Carbon Co. v. Binney & Smith Co., 317 U.S. 228, 236, 63 S.Ct. 165, 87 L.Ed. 232, 1943 Dec. Comm'r Pat. 758 (1942).

The Federal Circuit has applied the definiteness requirement in a variety of circumstances. For example, the Federal Circuit has held claims to be indefinite: (1) where a claim recited a means-plus-function element but failed to disclose corresponding structure in the specification, Biomedino, LLC v. Waters Techs. Corp., 490 F.3d 946, 952 (Fed. Cir. 2007); (2) where a claim included a numeric limitation but did not disclose which of several methods of measurement for that number should be used, Honeywell Int'l, Inc. v. Int'l Trade Comm'n, 341 F.3d 1332, 1340 (Fed. Cir. 2003); and (3) where a claim contained a term that is "completely dependent on a person's subjective opinion," Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1350 (Fed. Cir. 2005). Additionally, the Federal Circuit has stated that a claim term would be indefinite if it lacked a proper antecedent basis and such basis was not otherwise present by implication or the term's meaning was not readily ascertainable. See Energizer Holdings, Inc. v. Int'l Trade Comm'n, 435 F.3d 1366, 1370-71 (Fed.Cir.2006). As the Federal Circuit has noted, "[t]he common thread in all of these cases is that claims were held indefinite only where a person of ordinary skill in the art could not determine the bounds of the claims, i.e., the claims were insolubly ambiguous." Halliburton, 514 F.3d at 1249.

Of course, the requirement of definiteness "does not compel absolute clarity." Datamize, 417 F.3d at 1347. A claim is indefinite only if it is not "amenable to construction" or is "insolubly ambiguous." See Exxon Research and Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001). "If one skilled in the art would understand the bounds of the claim when read in light of the specification, then the claim satisfies section 112 paragraph 2." Id. As the Federal Circuit has noted, "a difficult issue of claim construction does not ipso facto result in a holding of indefiniteness." Datamize, 417 F.3d at 1347. "If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree," the claim will be deemed "sufficiently clear to avoid invalidity on indefiniteness grounds." Exxon, 265 F.3d at 1375; Halliburton, 514 F.3d at 1249-50 (noting that indefiniteness standard "is met where an accused infringer shows by clear and convincing evidence that a skilled artisan could not discern the boundaries of the claim based on the claim language, the specification, and the prosecution history, as well as her knowledge of the relevant art area"). "By finding claims indefinite only if reasonable efforts at claim construction prove futile, [the court can] accord respect to the statutory presumption of patent validity, and . . . protect the inventive contribution of patentees, even when the drafting of their patents has been less than ideal." Id. (citation omitted).

The language of the claims do not offer substantial guidance in defining the term "aerodynamic." For example, Claim 1 of the '347 Patent recites "[a] titanium centrifugal compressor wheel . . . including . . . a plurality of backswept aerodynamic blades carried on the surface of said hub and defining air passages between adjacent blades." '347 Patent, Col. 10, lines 26-32. Claim 5 of the '347 Patent recites "[a] cast titanium centrifugal compressor wheel comprising . . . a plurality of backswept aerodynamic blades, each of said blades including a leading edge, an outer edge adapted for close passage to a compressor housing, and a trailing edge, . . . wherein said blades are designed such that a single solid die insert defining the
space between adjacent blades can be inserted between adjacent blades and retracted along a radial or curved path." Id. at Col. 10, lines 45-57. The '556 Patent and '949 Patent recite similar limitations with respect to the aerodynamic blades of the compressor wheel. While the claims delineate where the "backswept aerodynamic blades" are located, what physical characteristics they possess, and what purpose they serve within the invention, the claims do not offer any standard by which the aerodynamic feature of these blades can be measured or otherwise ascertained.

Turning now to the specification, under the "Summary of the Invention," the inventors note that they sought to design a titanium compressor wheel which would have "aerodynamic efficiency, when operating at the high RPM at which titanium compressor wheels are capable of operating, … comparable to the efficiency of the complex state-of-the-art compressor wheel designs...." '347 Patent, Col. 4, lines 13-17 (emphasis added). The inventors go on to state that the prior art compressor wheels were "designed for optimum aerodynamic efficiency, and thus have narrow blade spacing and complex leading and trailing edge design (excess rake, undercutting and backsweep, complex bowing and leading edge hump and dip)." Id. at Col. 4, lines 28-32. The inventors claim that despite its simplified design, the subject compressor wheel "has an entirely satisfactory aerodynamic performance" at high RPM, and that it has a degree of aerodynamic efficiency "comparable to that of a complex compressor wheel design." Id. at Col. 4, lines 43-46, 47-50. Under the "Detailed Description of the Invention," the inventors stress that "it must be understood that the shape, contours and curvature of the blades are modified to provide a design which . . . provides aerodynamically acceptable characteristics at high RPM . . . ." Id. at Col. 6, lines 48-52.

As the specification makes clear, the purpose of the present inventions was to develop a high-strength, heat-resistant compressor wheel to achieve high RPM and high pressure ratios in turbocharging applications. '347 Patent at Col. 4, lines 8-22. The inventors specifically did not seek to improve the aerodynamic efficiency of the compressor wheel with their design; rather, the inventors intended to provide a stronger, heat-resistant titanium compressor that was comparable to the prior art in terms of aerodynamic efficiency. The experts presented by BorgWarner in this case agree that one of ordinary skill in the art "would have a bachelors degree in Mechanical Engineering, or related fields, with a minimum of 5 years of experience designing compressor wheels and an awareness of the processes by which compressor wheels are manufactured." [Declaration of Dr. Nicholas C. Baines ("Baines Decl."), Doc. 53 at P37; Thorne Decl., Doc. 55 at P27]. Honeywell has not offered any competing evidence of what would constitute ordinary skill in the art. Considering this level of skill, it is difficult to conceive that a mechanical engineer with five years or more of experience designing compressor wheels would be incapable of determining whether a particular compressor wheel was comparably aerodynamic to that of the prior art. Because "one skilled in the art would understand the bounds of the claim when read in light of the specification," Exxon, 265 F.3d at 1375, the Court concludes that the term "aerodynamic" is not indefinite.

Having determined that the term "aerodynamic" is not indefinite, the Court will now endeavor to construe the term. "Aerodynamic" is commonly defined as "designed to reduce or minimize the drag caused by air as an object moves though [sic] it or by wind that strikes and flows around an object." http://dictionary.reference.com/browse/aerodynamic (last visited February 20, 2009) (quoting American Heritage Science Dictionary (2002)). BorgWarner argues for a narrower definition, arguing that the term "aerodynamic" is used in the Patents-in-Suit to describe blades that are "shaped for use in air boost applications." [Doc. 66 at 10]. For the reasons previously stated in this opinion, the compressor wheels which are the subject of the patents-in-suit are not limited to use in air boost devices, and thus it would be inappropriate to limit the term "aerodynamic" to describing compressor wheel blades for use in air boost applications. Accordingly, the Court construes the term "backswept aerodynamic blades" to mean blades that have an end portion angled backward (i.e., opposite the direction of rotation) from the radial direction and which are designed to reduce or minimize the drag caused by air that strikes and flows around the blades.

2. "The rear end of the keyboard being disposed below the front end of the keyboard"

Claim 1 of the '489 patent also includes language defining the "backward tilted position" in which a keyboard may be oriented as "the rear end of the keyboard being disposed below the front end of the keyboard." The parties disagree as to whether "below" should be construed as referring to a measurement of (a) the bottom surface of the keyboard or (b) the key plane, the plane defined by the upper most portion of the keyboard keys. Plaintiffs' proposed construction:
The keyboard is oriented so that the tilt is sufficient to provide some negative tilt of the key plane in order to achieve the benefits of the invention.

Defendants' proposed construction:

The support device permits the bottom of a keyboard to be tilted backward (i.e., at any angle of less than 0 degrees).

Plaintiffs rightly argue that their construction finds support in the specification, where "backward tilt" is illustrated with reference to the top surface or key plane. Moreover, it is indisputable that the very purpose for the device, to provide ergonomic advantage to keyboard operators, is dependant on the negative or backward tilting of the key plane. It follows, plaintiffs argue, that "backward tilted position" should be construed with reference to the key plane.

Plaintiffs' arguments are not without appeal, but they are ultimately unpersuasive. The purpose of a patent is to define and give public notice of the patent holder's exclusive rights in the claimed invention so as to exclude other inventors and competitors from making, using or selling the invention. King Instruments Corp. v. Perego, 65 F.3d 941, 947 (Fed. Cir. 1995). A patent claim is invalid for indefiniteness if, when read in light of the specification, it does not reasonably apprise those skilled in the art of the scope of the invention. Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1342 (Fed. Cir. 2003). This definiteness requirement assures that patent claims are sufficiently precise to permit a potential competitor to determine whether or not it is infringing. Id. A claim is fatally indefinite if it is "insolubly ambiguous, and no narrowing construction can properly be adopted." Id. (quoting Exxon Research & Engineering Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001)).

Defendants observe that "keyboard" is not a part of the claimed invention and is not defined in the '489 patent. Rather, the patent describes a keyboard positioning system. Because keyboards have varying designs with different key plane configurations, defendants contend that construing "backward tilted position" in terms of the key plane results in a definition that fails to reasonably apprise potential competitors, i.e., designers, manufacturers and sellers of keyboard positioning systems, as to whether their products would be infringing.

In response to this argument, plaintiffs have, at the September 2, 2003 hearing, proposed an amended construction. Plaintiffs would have the Court read just four additional words into the claim language: "all of the rear end of the keyboard being disposed below all of the front end of the keyboard." This proposed construction is arguably superior, but remains contingent on keyboard design variables that undermine potential competitors' ability to determine whether their products would be infringing.

Defendants' proposed definition, on the other hand, is linked to the bottom surface or plane (as defined by the four feet or resting contact points on the bottom surface) of the keyboard, which is universally flat because it is designed to rest potentially on a flat support tray or support surface. If the subject claim language is construed as referring to the orientation of the bottom of the rear end of the keyboard in relation to the bottom of the front end of the keyboard, defendants contend, it reasonably apprises those skilled in the art of the scope of the patented invention. This construction is supported by Richard Benoit's second declaration:

In the furniture industry, backward tilt has always been measured by the tilt of the support surface of the keyboard, i.e., the tilt of the bottom of the keyboard. The reason is very practical. The furniture manufacturers design and market keyboard supports, not keyboards, and cannot control the tilt of the keyboard key plane.

Benoit Second Declaration, P 4. This construction is not inconsistent with the claim language and specification or the prosecution history. It represents a sensible, clarifying construction. The Court will therefore adopt defendants' proposed construction:

"Backward titled position," "defined by the rear end of the keyboard being disposed below the front of the keyboard" is construed to mean that the support device permits the bottom of a keyboard to be tilted backward (i.e., at any angle of less than 0 degrees).
Claim 1 of the '798 patent is representative of the asserted claims with respect to the use of the term "baffles." It recites:

Building modules adapted to fit together for construction of fire, sound and impact resistant security barriers and rooms for use in securing records and persons, comprising in combination, an outer shell . . . , sealant means . . . and further means disposed inside the shell for increasing its load bearing capacity comprising internal steel baffles extending inwardly from the steel shell walls.

As a preliminary matter, we agree with the panel that the term "baffles" is not means-plus-function language that invokes 35 U.S.C. § 112, paragraph 6. To be sure, the claim refers to "means disposed inside the shell for increasing its load bearing capacity," a formulation that would ordinarily be regarded as invoking the means-plus-function claim format. However, the claim specifically identifies "internal steel baffles" as structure that performs the recited function of increasing the shell's load-bearing capacity. In contrast to the "load bearing means" limitation, the reference to "baffles" does not use the word "means," and we have held that the absence of that term creates a rebuttable presumption that section 112, paragraph 6, does not apply. See Personalized Media Communns., LLC v. ITC, 161 F.3d 696, 703-04 (Fed. Cir. 1998).

Means-plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function. See Watts v. XL Sys., Inc., 232 F.3d 877, 880-81 (Fed. Cir. 2000). While the baffles in the '798 patent are clearly intended to perform several functions, the term "baffles" is nonetheless structural; it is not a purely functional placeholder in which structure is filled in by the specification. See TurboCare Div. of Demag Delaval Turbomachinery Corp. v. GE, 264 F.3d 1111, 1121 (Fed. Cir. 2001) (reasoning that nothing in the specification or prosecution history suggests that the patentee used the term "compressed spring" to denote any structure that is capable of performing the specified function); Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996) (construing the term "detent mechanism" to refer to particular structure, even though the term has functional connotations). The claims and the specification unmistakably establish that the "steel baffles" refer to particular physical apparatus. The claim characterizes the baffles as "extending inwardly" from the steel shell walls, which plainly implies that the baffles are structures. The specification likewise makes clear that the term "steel baffles" refers to particular internal wall structures and is not simply a general description of any structure that will perform a particular function. See, e.g., '798 patent, col. 4, ll. 25-26 ("the load bearing baffles 16 are optionally used with longer panels"); d., col. 4, ll. 49-50 (opposing panels are "compressed between the flange 35 and the baffle 26"). Because the term "baffles" is not subject to section 112, paragraph 6, we agree with the panel that the district court erred by limiting the term to corresponding structures disclosed in the specification and their equivalents. Accordingly, we must determine the correct construction of the structural term "baffles," as used in the '798 patent.

II

The first paragraph of section 112 of the Patent Act, 35 U.S.C. § 112, states that the specification

shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains . . . to make and use the same . . .

The second paragraph of section 112 provides that the specification

shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Those two paragraphs of section 112 frame the issue of claim interpretation for us. The second paragraph requires us to look to the language of the claims to determine what "the applicant regards as his invention." On the other hand, the first paragraph requires that the specification describe the invention set forth in the claims. The principal question that this case presents to us is the extent to which we should resort to and rely on a patent's specification in seeking to ascertain the proper
scope of its claims.

This is hardly a new question. The role of the specification in claim construction has been an issue in patent law decisions in this country for nearly two centuries. We addressed the relationship between the specification and the claims at some length in our en banc opinion in Markman v. Westview Instruments, Inc., 52 F.3d 967, 979-81 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). We again summarized the applicable principles in Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 (Fed. Cir. 1996), and more recently in Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111 (Fed. Cir. 2004). What we said in those cases bears restating, for the basic principles of claim construction outlined there are still applicable, and we reaffirm them today. We have also previously considered the use of dictionaries in claim construction. What we have said in that regard requires clarification.

A

It is a "bedrock principle" of patent law that "the claims of a patent define the invention to which the patentee is entitled the right to exclude." Innova, 381 F.3d at 1115; see also Vitronics, 90 F.3d at 1582 ("we look to the words of the claims themselves . . . to define the scope of the patented invention"); Markman, 52 F.3d at 980 ("The written description part of the specification itself does not delimit the right to exclude. That is the function and purpose of claims."). That principle has been recognized since at least 1836, when Congress first required that the specification include a portion in which the inventor "shall particularly specify and point out the part, improvement, or combination, which he claims as his own invention or discovery." Act of July 4, 1836, ch. 357, § 6, 5 Stat. 117, 119. In the following years, the Supreme Court made clear that the claims are "of primary importance, in the effort to ascertain precisely what it is that is patented." Merrill v. Yeomans, 94 U.S. 568, 570, 24 L. Ed. 235, 1877 Dec. Comm'r Pat. 279 (1876). Because the patentee is required to "define precisely what his invention is," the Court explained, it is "unjust to the public, as well as an evasion of the law, to construe it in a manner different from the plain import of its terms." White v. Dunbar, 119 U.S. 47, 52, 30 L. Ed. 303, 7 S. Ct. 72, 1886 Dec. Comm'r Pat. 494 (1886); see also Cont'l Paper Bag Co. v. E. Paper Bag Co., 210 U.S. 405, 419, 52 L. Ed. 1122, 28 S. Ct. 748, 1908 Dec. Comm'r Pat. 594 (1908) ("the claims measure the invention"); McCarty v. Lehigh Valley R.R. Co., 160 U.S. 110, 116, 40 L. Ed. 358, 16 S. Ct. 240, 1895 Dec. Comm'r Pat. 721 (1895) ("if we once begin to include elements not mentioned in the claim, in order to limit such claim . . . , we should never know where to stop"); Aro Mfg. Co. v. Convertible Top Replacement Co., 365 U.S. 336, 339, 5 L. Ed. 2d 592, 81 S. Ct. 599, 1961 Dec. Comm'r Pat. 635 (1961) ("the claims made in the patent are the sole measure of the grant").

We have frequently stated that the words of a claim "are generally given their ordinary and customary meaning." Vitronics, 90 F.3d at 1582; see also Toro Co. v. White Consol. Indus., Inc., 199 F.3d 1295, 1299 (Fed. Cir. 1999); Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1249 (Fed. Cir. 1998). We have made clear, moreover, that the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application. See Innova, 381 F.3d at 1116 ("A court construing a patent claim seeks to accord a claim the meaning it would have to a person of ordinary skill in the art at the time of the invention."); Home Diagnostics, Inc. v. LifeScan, Inc., 381 F.3d 1352, 1358 (Fed. Cir. 2004) ("customary meaning" refers to the "customary meaning in [the] art field"); Ferguson Beaveregard/Logic Controls v. Mega Sys., LLC, 350 F.3d 1327, 1338 (Fed. Cir. 2003) (claim terms "are examined through the viewing glass of a person skilled in the art"); see also PC Connector Solutions LLC v. SmartDisk Corp., 406 F.3d 1359, 1363 (Fed. Cir. 2005) (meaning of claim "must be interpreted as of [the] effective filing date" of the patent application); Schering Corp. v. Amgen Inc., 222 F.3d 1347, 1353 (Fed. Cir. 2000) (same).

The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation. See Innova, 381 F.3d at 1116. That starting point is based on the well-settled understanding that inventors are typically persons skilled in the field of the invention and that patents are addressed to and intended to be read by others of skill in the pertinent art. See Verve, LLC v. Crane Cams, Inc., 311 F.3d 1116, 1119 (Fed. Cir. 2002) (patent documents are meant to be "a concise statement for persons in the field"); In re Nelson, 47 C.C.P.A. 1031, 280 F.2d 172, 181, 1960 Dec. Comm'r Pat. 369 (CCPA 1960) ("The descriptions in patents are not addressed to the public generally, to lawyers or to judges, but, as section 112 says, to those skilled in the art to which the invention pertains or with which it is most nearly connected.").

Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification. This court
explained that point well in Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477 (Fed. Cir. 1998):

It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed. Such person is deemed to read the words used in the patent documents with an understanding of their meaning in the field, and to have knowledge of any special meaning and usage in the field. The inventor's words that are used to describe the invention--the inventor's lexicography--must be understood and interpreted by the court as they would be understood and interpreted by a person in that field of technology. Thus the court starts the decisionmaking process by reviewing the same resources as would that person, viz., the patent specification and the prosecution history.

See also Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1319 (Fed. Cir. 2005) ("We cannot look at the ordinary meaning of the term . . . in a vacuum. Rather, we must look at the ordinary meaning in the context of the written description and the prosecution history."); V-Formation, Inc. v. Benetton Group SpA, 401 F.3d 1307, 1310 (Fed. Cir. 2005) (intrinsic record "usually provides the technological and temporal context to enable the court to ascertain the meaning of the claim to one of ordinary skill in the art at the time of the invention"); Unitherm Food Sys., Inc. v. Swift-Eckrich, Inc., 375 F.3d 1341, 1351 (Fed. Cir. 2004) (proper definition is the "definition that one of ordinary skill in the art could ascertain from the intrinsic evidence in the record").

B

In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words. See Brown v. 3M, 265 F.3d 1349, 1352 (Fed. Cir. 2001) (holding that the claims did "not require elaborate interpretation"). In such circumstances, general purpose dictionaries may be helpful. In many cases that give rise to litigation, however, determining the ordinary and customary meaning of the claim requires examination of terms that have a particular meaning in a field of art. Because the meaning of a claim term as understood by persons of skill in the art is often not immediately apparent, and because patentees frequently use terms idiosyncratically, the court looks to "those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean." Innova, 381 F.3d at 1116. Those sources include "the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." Id.; see also Gemstar-TV Guide Int'l, Inc. v. ITC, 383 F.3d 1352, 1364 (Fed. Cir. 2004); Vitronics, 90 F.3d at 1582-83; Markman, 52 F.3d at 979-80.

1

Quite apart from the written description and the prosecution history, the claims themselves provide substantial guidance as to the meaning of particular claim terms. See Vitronics, 90 F.3d at 1582; see also ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1088 (Fed. Cir. 2003) ("the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms").

To begin with, the context in which a term is used in the asserted claim can be highly instructive. To take a simple example, the claim in this case refers to "steel baffles," which strongly implies that the term "baffles" does not inherently mean objects made of steel. This court's cases provide numerous similar examples in which the use of a term within the claim provides a firm basis for construing the term. See, e.g., Mars, Inc. v. H.J. Heinz Co., 377 F.3d 1369, 1374 (Fed. Cir. 2004) (claim term "ingredients" construed in light of the use of the term "mixture" in the same claim phrase); Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1356 (Fed. Cir. 1999) (claim term "discharge rate" construed in light of the use of the same term in another limitation of the same claim).

Other claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term. Vitronics, 90 F.3d at 1582. Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims. See Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001); CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1159 (Fed. Cir. 1997). Differences among claims can also be a useful guide in understanding the meaning of particular claim terms. See Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir. 1991). For example, the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim. See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004).
The claims, of course, do not stand alone. Rather, they are part of "a fully integrated written instrument," Markman, 52 F.3d at 978, consisting principally of a specification that concludes with the claims. For that reason, claims "must be read in view of the specification, of which they are a part." Id. at 979. As we stated in Vitronics, the specification "is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." 90 F.3d at 1582.

This court and its predecessors have long emphasized the importance of the specification in claim construction. In Autogiro Co. of America v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 397-98 (Ct. Cl. 1967), the Court of Claims characterized the specification as "a concordance for the claims," based on the statutory requirement that the specification "describe the manner and process of making and using" the patented invention. The Court of Customs and Patent Appeals made a similar point. See In re Fout, 675 F.2d 297, 300 (CCPA 1982) ("Claims must always be read in light of the specification. Here, the specification makes plain what the appellants did and did not invent . . . .").

Shortly after the creation of this court, Judge Rich wrote that "the descriptive part of the specification aids in ascertaining the scope and meaning of the claims inasmuch as the words of the claims must be based on the description. The specification is, thus, the primary basis for construing the claims." Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985). On numerous occasions since then, we have reaffirmed that point, stating that "the best source for understanding a technical term is the specification from which it arose, informed, as needed, by the prosecution history." Multiform Dessicants, 133 F.3d at 1478; Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings, 370 F.3d 1354, 1360 (Fed. Cir. 2004) ("In most cases, the best source for discerning the proper context of claim terms is the patent specification wherein the patent applicant describes the invention."); see also, e.g., Kinik Co. v. ITC, 362 F.3d 1359, 1365 (Fed. Cir. 2004) ("The words of patent claims have the meaning and scope with which they are used in the specification and the prosecution history."); Moba, B.V. v. Diamond Automation, Inc., 325 F.3d 1306, 1315 (Fed. Cir. 2003) ("The best indicator of claim meaning is its usage in context as understood by one of skill in the art at the time of invention.").

That principle has a long pedigree in Supreme Court decisions as well. See Hogg v. Emerson, 47 U.S. (6 How.) 437, 482, 12 L. Ed. 505 (1848) (the specification is a "component part of the patent" and "is as much to be considered with the [letters patent] in construing them, as any paper referred to in a deed or other contract"); Bates v. Coe, 98 U.S. 31, 38, 25 L. Ed. 68, 1879 Dec. Comm't Pat. 365 (1878) ("in case of doubt or ambiguity it is proper in all cases to refer back to the descriptive portions of the specification to aid in solving the doubt or in ascertaining the true intent and meaning of the language employed in the claims"); White v. Dunbar, 119 U.S. 47, 51, 30 L. Ed. 303, 7 S. Ct. 72, 1886 Dec. Comm't Pat. 494 (1886) (specification is appropriately resorted to "for the purpose of better understanding the meaning of the claim"); Schriber-Schroth Co. v. Cleveland Trust Co., 311 U.S. 211, 217, 85 L. Ed. 132, 61 S. Ct. 235, 1941 Dec. Comm't Pat. 802 (1940) ("The claims of a patent are always to be read or interpreted in light of its specifications."); United States v. Adams, 383 U.S. 39, 49, 15 L. Ed. 2d 572, 86 S. Ct. 708, 174 Ct. Cl. 1293 (1966) ("It is fundamental that claims are to be construed in the light of the specifications and both are to be read with a view to ascertaining the invention.").

The importance of the specification in claim construction derives from its statutory role. The close kinship between the written description and the claims is enforced by the statutory requirement that the specification describe the claimed invention in "full, clear, concise, and exact terms." 35 U.S.C. § 112, para. 1; see Netword, LLC v. Centraal Corp., 242 F.3d 1347, 1352 (Fed. Cir. 2001) ("The claims are directed to the invention that is described in the specification; they do not have meaning removed from the context from which they arose."); see also Markman v. Westview Instruments, Inc., 517 U.S. 370, 389, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996) ("[A claim] term can be defined only in a way that comports with the instrument as a whole."). In light of the statutory directive that the inventor provide a "full" and "exact" description of the claimed invention, the specification necessarily informs the proper construction of the claims. See Merck & Co. v. Teva Pharms. USA, Inc., 347 F.3d 1367, 1371 (Fed. Cir. 2003) ("A fundamental rule of claim construction is that terms in a patent document are construed with the meaning with which they are presented in the patent document. Thus claims must be construed so as to be consistent with the specification, of which they are a part.") (citations omitted). In Renishaw, this court summarized that point succinctly:

Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim
language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction. 158 F.3d at 1250 (citations omitted).

Consistent with that general principle, our cases recognize that the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs. See CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002). In other cases, the specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor. In that instance as well, the inventor has dictated the correct claim scope, and the inventor's intention, as expressed in the specification, is regarded as dispositive. See SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1343-44 (Fed. Cir. 2001).

The pertinence of the specification to claim construction is reinforced by the manner in which a patent is issued. The Patent and Trademark Office ("PTO") determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." In re Am. Acad. of Sci. Tech. Ctr., 367 F.3d 1359, 1364 (Fed. Cir. 2004). Indeed, the rules of the PTO require that application claims must "conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description." 37 C.F.R. § 1.75(d)(1). It is therefore entirely appropriate for a court, when conducting claim construction, to rely heavily on the written description for guidance as to the meaning of the claims.

In addition to consulting the specification, we have held that a court "should also consider the patent's prosecution history, if it is in evidence." Markman, 52 F.3d at 980; see also Graham v. John Deere Co., 383 U.S. 1, 33, 15 L. Ed. 2d 545, 86 S. Ct. 684 (1966) ("An invention is construed not only in the light of the claims, but also with reference to the file wrapper or prosecution history in the Patent Office."). The prosecution history, which we have designated as part of the "intrinsic evidence," consists of the complete record of the proceedings before the PTO and includes the prior art cited during the examination of the patent. Autogiro, 384 F.2d at 399. Like the specification, the prosecution history provides evidence of how the PTO and the inventor understood the patent. See Lemelson v. Gen. Mills, Inc., 968 F.2d 1202, 1206 (Fed. Cir. 1992). Furthermore, like the specification, the prosecution history was created by the patentee in attempting to explain and obtain the patent. Yet because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes. See Inverness Med. Svitz. GmbH v. Warner Lambert Co., 309 F.3d 1373, 1380-82 (Fed. Cir. 2002) (the ambiguity of the prosecution history made it less relevant to claim construction); Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1580 (Fed. Cir. 1996) (the ambiguity of the prosecution history made it "unhelpful as an interpretive resource" for claim construction). Nonetheless, the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be. Vitronics, 90 F.3d at 1582-83; see also Chimie v. PPG Indus., Inc., 402 F.3d 1371, 1384 (Fed. Cir. 2005) ("The purpose of consulting the prosecution history in construing a claim is to 'exclude any interpretation that was disclaimed during prosecution.'"), quoting ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580 (Fed. Cir. 1988); Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995).

Although we have emphasized the importance of intrinsic evidence in claim construction, we have also authorized district courts to rely on extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." Markman, 52 F.3d at 980, citing Seymour v. Osborne, 78 U.S. (11 Wall.) 516, 546, 20 L. Ed. 33 (1870); see also Vitronics, 90 F.3d at 1583. However, while extrinsic evidence "can shed useful light on the relevant art," we have explained that it is "less significant than the intrinsic record in determining 'the legally operative meaning of claim language.'" C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 862 (Fed. Cir. 2004), quoting Vanderlande Indus. Nederland BV v. Int'l Trade Comm'n, 366 F.3d 1311, 1318 (Fed. Cir. 2004); see also Astrazeneca AB v. Mutual Pharm. Co., 384 F.3d 1333, 1337 (Fed. Cir. 2004).
Within the class of extrinsic evidence, the court has observed that dictionaries and treatises can be useful in claim construction. See Renishaw, 158 F.3d at 1250; Rexnord, 274 F.3d at 1344. We have especially noted the help that technical dictionaries may provide to a court "to better understand the underlying technology" and the way in which one of skill in the art might use the claim terms. Vitronics, 90 F.3d at 1584 n.6. Because dictionaries, and especially technical dictionaries, endeavor to collect the accepted meanings of terms used in various fields of science and technology, those resources have been properly recognized as among the many tools that can assist the court in determining the meaning of particular terminology to those of skill in the art of the invention. See Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002). Such evidence, we have held, may be considered if the court deems it helpful in determining "the true meaning of language used in the patent claims." Markman, 52 F.3d at 980.

We have also held that extrinsic evidence in the form of expert testimony can be useful to a court for a variety of purposes, such as to provide background on the technology at issue, to explain how an invention works, to ensure that the court's understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field. See Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1308-09 (Fed. Cir. 1999); Key Pharms. v. Hercon Lab. Corp., 161 F.3d 709, 716 (Fed. Cir. 1998). However, conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court. Similarly, a court should discount any expert testimony "that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent." Key Pharms., 161 F.3d at 716.

We have viewed extrinsic evidence in general as less reliable than the patent and its prosecution history in determining how to read claim terms, for several reasons. First, extrinsic evidence by definition is not part of the patent and does not have the specification's virtue of being created at the time of patent prosecution for the purpose of explaining the patent's scope and meaning. Second, while claims are construed as they would be understood by a hypothetical person of skill in the art, extrinsic publications may not be written by or for skilled artisans and therefore may not reflect the understanding of a skilled artisan in the field of the patent. Third, extrinsic evidence consisting of expert reports and testimony is generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence. The effect of that bias can be exacerbated if the expert is not one of skill in the relevant art or if the expert's opinion is offered in a form that is not subject to cross-examination. See Senmed, Inc. v. Richard-Allan Med. Indus., Inc., 888 F.2d 815, 819 n.8 (Fed. Cir. 1989). Fourth, there is a virtually unbounded universe of potential extrinsic evidence of some marginal relevance that could be brought to bear on any claim construction question. In the course of litigation, each party will naturally choose the pieces of extrinsic evidence most favorable to its cause, leaving the court with the considerable task of filtering the useful extrinsic evidence from the fluff. See Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579, 595, 125 L. Ed. 2d 469, 113 S. Ct. 2786 (1993) ("Expert evidence can be both powerful and quite misleading because of the difficulty in evaluating it."). Finally, undue reliance on extrinsic evidence poses the risk that it will be used to change the meaning of claims in derogation of the "indisputable public records consisting of the claims, the specification and the prosecution history," thereby undermining the public notice function of patents. Southwall Techs., 54 F.3d at 1578.

In sum, extrinsic evidence may be useful to the court, but it is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence. Nonetheless, because extrinsic evidence can help educate the court regarding the field of the invention and can help the court determine what a person of ordinary skill in the art would understand claim terms to mean, it is permissible for the district court in its sound discretion to admit and use such evidence. In exercising that discretion, and in weighing all the evidence bearing on claim construction, the court should keep in mind the flaws inherent in each type of evidence and assess that evidence accordingly.

III

Although the principles outlined above have been articulated on numerous occasions, some of this court's cases have suggested a somewhat different approach to claim construction, in which the court has given greater emphasis to dictionary definitions of claim terms and has assigned a less prominent role to the specification and the prosecution history. The leading case in this line is Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193 (Fed. Cir. 2002).

A

In Texas Digital, the court noted that "dictionaries, encyclopedias and treatises are particularly useful resources to assist the
court in determining the ordinary and customary meanings of claim terms." 308 F.3d at 1202. Those texts, the court explained, are "objective resources that serve as reliable sources of information on the established meanings that would have been attributed to the terms of the claims by those of skill in the art," and they "deserve no less fealty in the context of claim construction" than in any other area of law. Id. at 1203. The court added that because words often have multiple dictionary meanings, the intrinsic record must be consulted to determine which of the different possible dictionary meanings is most consistent with the use of the term in question by the inventor. If more than one dictionary definition is consistent with the use of the words in the intrinsic record, the court stated, "the claim terms may be construed to encompass all such consistent meanings." Id.

The Texas Digital court further explained that the patent's specification and prosecution history must be consulted to determine if the patentee has used "the words [of the claim] in a manner clearly inconsistent with the ordinary meaning reflected, for example, in a dictionary definition." 308 F.3d at 1204. The court identified two circumstances in which such an inconsistency may be found. First, the court stated, "the presumption in favor of a dictionary definition will be overcome where the patentee, acting as his or her own lexicographer, has clearly set forth an explicit definition of the term different from its ordinary meaning." Id. Second, "the presumption also will be rebutted if the inventor has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Id.

The Texas Digital court explained that it advanced the methodology set forth in that opinion in an effort to combat what this court has termed "one of the cardinal sins of patent law--reading a limitation from the written description into the claims," SciMed Life Sys., 242 F.3d at 1340. The court concluded that it is improper to consult "the written description and prosecution history as a threshold step in the claim construction process, before any effort is made to discern the ordinary and customary meanings attributed to the words themselves." Texas Digital, 308 F.3d at 1204. To do so, the court reasoned, "invites a violation of our precedent counseling against importing limitations into the claims." Id. Summarizing its analysis, the Texas Digital court stated:

By examining relevant dictionaries, encyclopedias, and treatises to ascertain possible meanings that would have been attributed to the words of the claims by those skilled in the art, and by further utilizing the intrinsic record to select from those possible meanings the one or ones most consistent with the use of the words by the inventor, the full breadth of the limitations intended by the inventor will be more accurately determined and the improper importation of unintended limitations from the written description into the claims will be more easily avoided.

Id. at 1205.

B

Although the concern expressed by the court in Texas Digital was valid, the methodology it adopted placed too much reliance on extrinsic sources such as dictionaries, treatises, and encyclopedias and too little on intrinsic sources, in particular the specification and prosecution history. While the court noted that the specification must be consulted in every case, it suggested a methodology for claim interpretation in which the specification should be consulted only after a determination is made, whether based on a dictionary, treatise, or other source, as to the ordinary meaning or meanings of the claim term in dispute. Even then, recourse to the specification is limited to determining whether the specification excludes one of the meanings derived from the dictionary, whether the presumption in favor of the dictionary definition of the claim term has been overcome by "an explicit definition of the term different from its ordinary meaning," or whether the invent or "has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." 308 F.3d at 1204. In effect, the Texas Digital approach limits the role of the specification in claim construction to serving as a check on the dictionary meaning of a claim term if the specification requires the court to conclude that fewer than all the dictionary definitions apply, or if the specification contains a sufficiently specific alternative definition or disavowal. See, e.g., Texas Digital, 308 F.3d at 1202 ("unless compelled otherwise, a court will give a claim term the full range of its ordinary meaning"); Nystrom v. TREX Co., 374 F.3d 1105, 1111-13 (Fed. Cir. 2004) (ascertaining the "full range" of the ordinary meaning of the term "board" through a collection of dictionary definitions, and stating that those candidate definitions should be removed from consideration only if they were "disclaimed" in the written description or prosecution history); Inverness Med. Switz., 309 F.3d at 1379 (claim should be construed to encompass multiple dictionary meanings unless "the specification or prosecution history clearly demonstrates that only one of the multiple meanings was intended"). That approach, in our view, improperly restricts the role of the specification in claim

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Assigning such a limited role to the specification, and in particular requiring that any definition of claim language in the specification be express, is inconsistent with our rulings that the specification is "the single best guide to the meaning of a disputed term," and that the specification "acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." Vitronics, 90 F.3d at 1582; Irdesto Access, Inc. v. Echostar Satellite Corp., 383 F.3d 1295, 1300 (Fed. Cir. 2004) ("Even when guidance is not provided in explicit definitional format, the specification may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents.") (citations omitted); Novartis Pharm. Corp. v. Abbott Labs., 375 F.3d 1328, 1334-35 (Fed. Cir. 2004) (same); Bell Atl. Network Servs., Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001) ("[A] claim term may be clearly redefined without an explicit statement of redefinition.").

The main problem with elevating the dictionary to such prominence is that it focuses the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent. Properly viewed, the "ordinary meaning" of a claim term is its meaning to the ordinary artisan after reading the entire patent. Yet heavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification. The patent system is based on the proposition that claims cover only the invented subject matter. As the Supreme Court has stated, "it seems to us that nothing can be more just and fair, both to the patentee and the public, than that the former should understand, and correctly describe, just what he has invented, and for what he claims a patent." Merrill v. Yeomans, 94 U.S. at 573-74. The use of a dictionary definition can conflict with that directive because the patent applicant did not create the dictionary to describe the invention. Thus, there may be a disconnect between the patentee's responsibility to claim and describe his invention, and the dictionary editors' objective of aggregating all possible definitions for particular words.

Although the Texas Digital line of cases permit the dictionary definition to be narrowed in some circumstances even when there is not an explicit disclaimer or redefinition in the specification, too often that line of cases has been improperly relied upon to condone the adoption of a dictionary definition entirely divorced from the context of the written description. The problem is that if the district court starts with the broad dictionary definition in every case and fails to fully appreciate how the specification implicitly limits that definition, the error will systematically cause the construction of the claim to be unduly expansive. The risk of systematic overbreadth is greatly reduced if the court instead focuses at the outset on how the patentee used the claim term in the claims, specification, and prosecution history, rather than starting with a broad definition and whittling it down.

Dictionaries, by their nature, provide an expansive array of definitions. General dictionaries, in particular, strive to collect all uses of particular words, from the common to the obscure. By design, general dictionaries collect the definitions of a term as used not only in a particular art field, but in many different settings. In such circumstances, it is inevitable that the multiple dictionary definitions for a term will extend beyond the "construction of the patent [that] is confirmed by the avowed understanding of the patentee, expressed by him, or on his behalf, when his application for the original patent was pending." Goodyear Dental Vulcanite Co. v. Davis, 102 U.S. 222, 227, 26 L. Ed. 149, 1881 Dec. Comm'r Pat. 131 (1880). Thus, the use of the dictionary may extend patent protection beyond what should properly be afforded by the inventor's patent. See Smith v. Snow, 294 U.S. 1, 14, 79 L. Ed. 721, 55 S. Ct. 279, 1935 Dec. Comm'r Pat. 757 (1935) ("if the claim were fairly susceptible of two constructions, that should be adopted which will secure to the patentee his actual invention") (emphasis added). For that reason, we have stated that "a general-usage dictionary cannot overcome art-specific evidence of the meaning" of a claim term. Vanderlande Indus. Nederland, 366 F.3d at 1321; see also Renishaw, 158 F.3d at 1250, quoting Liebscher v. Boothroyd, 46 C.C.P.A. 701, 258 F.2d 948, 951, 1958 Dec. Comm'r Pat. 437 (CCPA 1958) ("Indiscriminate reliance on definitions found in dictionaries can often produce absurd results. . . . One need not arbitrarily pick and choose from the various accepted definitions of a word to decide which meaning was intended as the word is used in a given claim. The subject matter, the context, etc., will more often than not lead to the correct conclusion.").

Even technical dictionaries or treatises, under certain circumstances, may suffer from some of these deficiencies. There is no guarantee that a term is used in the same way in a treatise as it would be by the patentee. In fact, discrepancies between the patent and treatises are apt to be common because the patent by its nature describes something novel. See Autogiro, 384 F.2d at 397 ("Often the invention is novel and words do not exist to describe it. The dictionary does not always keep abreast of the inventor. It cannot.").
Moreover, different dictionaries may contain somewhat different sets of definitions for the same words. A claim should not rise or fall based upon the preferences of a particular dictionary editor, or the court's independent decision, uninformed by the specification, to rely on one dictionary rather than another. Finally, the authors of dictionaries or treatises may simplify ideas to communicate them most effectively to the public and may thus choose a meaning that is not pertinent to the understanding of particular claim language. See generally Ellen P. Aprill, The Law of the Word: Dictionary Shopping in the Supreme Court, 30 Ariz. St. L.J. 275, 293-314 (1998). The resulting definitions therefore do not necessarily reflect the inventor's goal of distinctly setting forth his invention as a person of ordinary skill in that particular art would understand it.

As we have noted above, however, we do not intend to preclude the appropriate use of dictionaries. Dictionaries or comparable sources are often useful to assist in understanding the commonly understood meaning of words and have been used both by our court and the Supreme Court in claim interpretation. See Exhibit Supply Co. v. Ace Patents Corp., 315 U.S. 126, 134, 86 L. Ed. 736, 62 S. Ct. 513, 1942 Dec. Comm'r Pat. 738 (1942) (rellying on dictionaries to construe the claim term "embedded"); Weber Elec. Co. v. E.H. Freeman Elec. Co., 256 U.S. 668, 678, 65 L. Ed. 1162, 41 S. Ct. 600, 1921 Dec. Comm'r Pat. 363 (1921) (approving circuit court's use of dictionary definitions to define claim terms); Renishaw, 158 F.3d at 1247-53 (approving the use of dictionaries with proper respect for the role of intrinsic evidence). A dictionary definition has the value of being an unbiased source "accessible to the public in advance of litigation." Vitronics, 90 F.3d at 1585. As we said in Vitronics, judges are free to consult dictionaries and technical treatises at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents.

Id. at 1584 n.6.

We also acknowledge that the purpose underlying the Texas Digital line of cases--to avoid the danger of reading limitations from the specification into the claim--is sound. Moreover, we recognize that the distinction between using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim can be a difficult one to apply in practice. See Comark Communs., Inc. v. Harris Corp., 156 F.3d 1182, 1186-87 (Fed. Cir. 1998) ("there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification"). However, the line between construing terms and importing limitations can be discerned with reasonable certainty and predictability if the court's focus remains on understanding how a person of ordinary skill in the art would understand the claim terms. For instance, although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments. See, e.g., Nazomi Communications, Inc. v. ARM Holdings, PLC, 403 F.3d 1364, 1369 (Fed. Cir. 2005) (claims may embrace "different subject matter than is illustrated in the specific embodiments in the specification"); Liebel-Flarsheim, 358 F.3d at 906-08; Teleflex, 299 F.3d at 1327; SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1121 (Fed. Cir. 1985). In particular, we have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment. Gemstar-TV Guide, 383 F.3d at 1366. That is not just because section 112 of the Patent Act requires that the claims themselves set forth the limits of the patent grant, but also because persons of ordinary skill in the art rarely would confine their definitions of terms to the exact representations depicted in the embodiments.

To avoid importing limitations from the specification into the claims, it is important to keep in mind that the purposes of the specification are to teach and enable those of skill in the art to make and use the invention and to provide a best mode for doing so. See Spectra-Physics, Inc. v. Coherent, Inc., 827 F.2d 1524, 1533 (Fed. Cir. 1987). One of the best ways to teach a person of ordinary skill in the art how to make and use the invention is to provide an example of how to practice the invention in a particular case. Much of the time, upon reading the specification in that context, it will become clear whether the patentee is setting out specific examples of the invention to accomplish those goals, or whether the patentee instead intends for the claims and the embodiments in the specification to be strictly coextensive. See SciMed Life Sys., 242 F.3d at 1341. The manner in which the patentee uses a term within the specification and claims usually will make the distinction apparent. See Snow v. Lake Shore & Mich. S. Ry. Co., 121 U.S. 617, 630, 30 L. Ed. 1004, 7 S. Ct. 1343, 1887 Dec. Comm'r Pat. 354 (1887) (it was clear from the specification that there was "nothing in the context to indicate that the patentee contemplated any alternative" embodiment to the one presented).

In the end, there will still remain some cases in which it will be hard to determine whether a person of skill in the art would
understand the embodiments to define the outer limits of the claim term or merely to be exemplary in nature. While that task may present difficulties in some cases, we nonetheless believe that attempting to resolve that problem in the context of the particular patent is likely to capture the scope of the actual invention more accurately than either strictly limiting the scope of the claims to the embodiments disclosed in the specification or divorcing the claim language from the specification.

In Vitronics, this court grappled with the same problem and set forth guidelines for reaching the correct claim construction and not imposing improper limitations on claims. 90 F.3d at 1582. The underlying goal of our decision in Vitronics was to increase the likelihood that a court will comprehend how a person of ordinary skill in the art would understand the claim terms. See id. at 1584. In that process, we recognized that there is no magic formula or catechism for conducting claim construction. Nor is the court barred from considering any particular sources or required to analyze sources in any specific sequence, as long as those sources are not used to contradict claim meaning that is unambiguous in light of the intrinsic evidence. See id. at 1583-84; Intel Corp. v. VIA Techs., Inc., 319 F.3d 1357, 1367 (Fed. Cir. 2003). For example, a judge who encounters a claim term while reading a patent might consult a general purpose or specialized dictionary to begin to understand the meaning of the term, before reviewing the remainder of the patent to determine how the patentee has used the term. The sequence of steps used by the judge in consulting various sources is not important; what matters is for the court to attach the appropriate weight to be assigned to those sources in light of the statutes and policies that inform patent law. Vitronics, 90 F.3d at 1582. In Vitronics, we did not attempt to provide a rigid algorithm for claim construction, but simply attempted to explain why, in general, certain types of evidence are more valuable than others. Today, we adhere to that approach and reaffirm the approach to claim construction outlined in that case, in Markman, and in Innova. We now turn to the application of those principles to the case at bar.

IV

A

The critical language of claim 1 of the '798 patent--"further means disposed inside the shell for increasing its load bearing capacity comprising internal steel baffles extending inwardly from the steel shell walls"--imposes three clear requirements with respect to the baffles. First, the baffles must be made of steel. Second, they must be part of the load-bearing means for the wall section. Third, they must be pointed inward from the walls. Both parties, stipulating to a dictionary definition, also conceded that the term "baffles" refers to objects that check, impede, or obstruct the flow of something. The intrinsic evidence confirms that a person of skill in the art would understand that the term "baffles," as used in the '798 patent, would have that generic meaning.

The other claims of the '798 patent specify particular functions to be served by the baffles. For example, dependent claim 2 states that the baffles may be "oriented with the panel sections disposed at angles for deflecting projectiles such as bullets able to penetrate the steel plates." The inclusion of such a specific limitation on the term "baffles" in claim 2 makes it likely that the patentee did not contemplate that the term "baffles" already contained that limitation. See Dow Chem. Co. v. United States, 226 F.3d 1334, 1341-42 (Fed. Cir. 2000) (concluding that an independent claim should be given broader scope than a dependent claim to avoid rendering the dependent claim redundant). Independent claim 17 further supports that proposition. It states that baffles are placed "projecting inwardly from the outer shell at angles tending to deflect projectiles that penetrate the outer shell." That limitation would be unnecessary if persons of skill in the art understood that the baffles inherently served such a function. See TurboCare, 264 F.3d at 1123 (claim terms should not be read to contain a limitation "where another claim restricts the invention in exactly the [same] manner"). Dependent claim 6 provides an additional requirement for the baffles, stating that "the internal baffles of both outer panel sections overlap and interlock at angles providing deflector panels extending from one end of the module to the other." If the baffles recited in claim 1 were inherently placed at specific angles, or interlocked to form an intermediate barrier, claim 6 would be redundant.

The specification further supports the conclusion that persons of ordinary skill in the art would understand the baffles recited in the '798 patent to be load-bearing objects that serve to check, impede, or obstruct flow. At several points, the specification discusses positioning the baffles so as to deflect projectiles. See '798 patent, col. 2, ll. 13-15; id., col. 5, ll. 17-19. The patent states that one advantage of the invention over the prior art is that "there have not been effective ways of dealing with these powerful impact weapons with inexpensive housing." Id., col. 3, ll. 28-30. While that statement makes clear the invention envisions baffles that serve that function, it does not imply that in order to qualify as baffles within the meaning of the claims, the internal support structures must serve the projectile-deflecting function in all the embodiments of all the claims. The specification must teach and enable all the claims, and the section of the written description discussing
the use of baffles to deflect projectiles serves that purpose for claims 2, 6, 17, and 23, which specifically claim baffles that deflect projectiles. See In re Wright, 999 F.2d 1557, 1561 (Fed. Cir. 1993).

The specification discusses several other purposes served by the baffles. For example, the baffles are described as providing structural support. The patent states that one way to increase load-bearing capacity is to use "at least in part inwardly directed steel baffles 15, 16." '798 patent, col. 4, ll. 14-15. The baffle 16 is described as a "strengthening triangular baffle." Id., col. 4, line 37. Importantly, Figures 4 and 6 do not show the baffles as part of an "intermediate interlocking, but not solid, internal barrier." In those figures, the baffle 16 simply provides structural support for one of the walls, as depicted below:

GET DRAWING SHEET 1 OF 3.

GET DRAWING SHEET 2 OF 3.

Other uses for the baffles are listed in the specification as well. In Figure 7, the overlapping flanges "provide for overlapping and interlocking the baffles to produce substantially an intermediate barrier wall between the opposite wall faces":

GET DRAWING SHEET 2 OF 3.

'798 patent, col. 5, ll. 26-29. Those baffles thus create small compartments that can be filled with either sound and thermal insulation or rock and gravel to stop projectiles. Id., col. 5, ll. 29-34. By separating the interwall area in to compartments (see, e.g., compartment 55 in Figure 7), the user of the modules can choose different types of material for each compartment, so that the module can be "easily custom tailored for the specific needs of each installation." Id., col. 5, ll. 36-37. When material is placed into the wall during installation, the baffles obstruct the flow of material from one compartment to another so that this "custom tailoring" is possible.

The fact that the written description of the '798 patent sets forth multiple objectives to be served by the baffles recited in the claims confirms that the term "baffles" should not be read restrictively to require that the baffles in each case serve all of the recited functions. We have held that "the fact that a patent asserts that an invention achieves several objectives does not require that each of the claims be construed as limited to structures that are capable of achieving all of the objectives." Liebel-Flarsheim, 358 F.3d at 908; see also Resonate Inc. v. Alteon Websystems, Inc., 338 F.3d 1360, 1367 (Fed. Cir. 2003).

Although deflecting projectiles is one of the advantages of the baffles of the '798 patent, the patent does not require that the inward extending structures always be capable of performing that function. Accordingly, we conclude that a person of skill in the art would not interpret the disclosure and claims of the '798 patent to mean that a structure extending inward from one of the wall faces is a "baffle" if it is at an acute or obtuse angle, but is not a "baffle" if it is disposed at a right angle.

B

Invoking the principle that "claims should be so construed, if possible, as to sustain their validity," Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed Cir. 1999), argues that the term "baffles" should be given a restrictive meaning because if the term is not construed restrictively, the asserted claims would be invalid.

While we have acknowledged the maxim that claims should be construed to preserve their validity, we have not applied that principle broadly, and we have certainly not endorsed a regime in which validity analysis is a regular component of claim construction. See Nazomi Communications, 403 F.3d at 1368-69. Instead, we have limited the maxim to cases in which "the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous." Liebel-Flarsheim, 358 F.3d at 911; see also Generation II Orthotics, Inc. v. Medical Tech., Inc., 263 F.3d 1356, 1365 (Fed. Cir. 2001) ("Claims can only be construed to preserve their validity where the proposed claim construction is 'practicable,' is based on sound claim construction principles, and does not revise or ignore the explicit language of the claims."); Elekta Instrument S.A. v. O.U.R. Scientific Int'l, Inc., 214 F.3d 1302, 1309 (Fed. Cir. 2000) ("having concluded that the amended claim is susceptible of only one reasonable construction, we cannot construe the claim differently from its plain meaning in order to preserve its validity"); E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1434 (Fed. Cir. 1988) (rejecting argument that limitations should be added to claims to preserve the validity of the claims). In such cases, we have looked to whether it is reasonable to infer that the PTO would not have issued an invalid patent, and that the
ambiguity in the claim language should therefore be resolved in a manner that would preserve the patent's validity.

That is the rationale that gave rise to the maxim in the first place. In Klein v. Russell, 86 U.S. (19 Wall.) 433, 466, 22 L. Ed. 116 (1873), the owner of a reissued patent argued for a narrow construction of the patent, while the accused infringer argued for a broader construction. The Court noted that the law "required that the reissue should be for the same invention as the original patent." Id. Because the reissue, which was granted under the predecessor to 35 U.S.C. § 251, would have been improper under the broader construction, the Court "presumed the Commissioner did his duty" and did not issue an invalid patent. For that reason, among others, the Court construed the disputed claim language in a manner that "sustained the patent and the construction claimed by the patentee," since that "can be done consistently with the language which he has employed." Id. The applicability of the doctrine in a particular case therefore depends on the strength of the inference that the PTO would have recognized that one claim interpretation would render the claim invalid, and that the PTO would not have issued the patent assuming that to be the proper construction of the term.

In this case, unlike in Klein and other cases in which the doctrine of construing claims to preserve their validity has been invoked, the claim term at issue is not ambiguous. Thus, it can be construed without the need to consider whether one possible construction would render the claim invalid while the other would not. The doctrine of construing claims to preserve their validity, a doctrine of limited utility in any event, therefore has no applicability here.

In sum, we reject AWH's arguments in favor of a restrictive definition of the term "baffles." Because we disagree with the district court's claim construction, we reverse the summary judgment of noninfringement. In light of our decision on claim construction, it is necessary to remand the infringement claims to the district court for further proceedings.

CONCUR BY: LOURIE (In Part)

DISSENT BY: LOURIE (In Part); MAYER

DISSENT

LOURIE, Circuit Judge, concurring in part and dissenting in part, with whom NEWMAN, Circuit Judge, joins.

I fully join the portion of the court's opinion resolving the relative weights of specification and dictionaries in interpreting patent claims, in favor of the specification. I could elaborate more expansively on that topic, but Judge Bryson's opinion for the majority says it so well, there is little reason for me to repeat its truths. I also agree with the court that claims need not necessarily be limited to specific or preferred embodiments in the specification, although they are limited to what is contained in the overall disclosure of the specification.

However, I do dissent from the court's decision to reverse and remand the district court's decision. The original panel decision of this court, which implicitly decided the case based on the priorities that the en banc court has now reaffirmed, interpreted the claims in light of the specification and found that the defendant did not infringe the claims. We affirmed the district court, which had arrived at a similar conclusion. The dissent from the panel decision relied on the "dictionaries first" procedure, which the court now has decided not to follow. Thus, while the claim construction issue had to be decided by the en banc court, I see no reason for the court, having reaffirmed the principle on which the district judge and the panel originally decided the case, to send it back for further review.

The court premises its reverse-and-remand decision on the concept of claim differentiation and the reasoning that the contested term "baffle" need not fulfill all of the functions set out for it in the specification. Reasonable people can differ on those points. However, the court did not take this case en banc because the full court differed with the panel majority on those disputable criteria. It did so to resolve the claim construction issue, which it has now done so well. Having done so, I believe that it should simply affirm the district court's decision on the merits, consistently with that court's rationale and that of the panel that affirmed the district court, which it now adopts.

I will not critique in detail particular statements the majority makes in rationalizing its reversal of the district court's
I will simply point out that the specification contains no disclosure of baffles at right angles. Moreover, as the majority correctly states, a patent specification is intended to describe one's invention, and it is essential to read a specification in order to interpret the meaning of the claims. This specification makes clear that the "baffles" in this invention are angled. There is no reference to baffles that show them to be other than angled. The abstract refers to "bullet deflecting . . . baffles." Only angled baffles can deflect. It then mentions "internal baffles at angles for deflecting bullets." That could not be clearer. The specification then refers several times to baffles, often to figures in the drawings, all of which are to angled baffles. A compelling point is that the only numbered references to baffles (15, 16, 26, 27, 30, and 31) all show angled baffles.

The specification further states that steel panels "form the internal baffles at angles for deflecting bullets." It states that the baffles are "disposed at such angles that bullets which might penetrate the outer steel panels are deflected." It explains that if bullets "were to penetrate the outer steel wall, the baffles are disposed at angles which tend to deflect the bullets." There is no specific reference in this patent to a baffle that is not angled at other than 90.

While, as the majority states, the specification indicates that multiple objectives are achieved by the invention, none of the other objectives is dependent upon whether the baffles are at other than a 90 angle, whereas the constantly stated objective of deflection of bullets is dependent upon such an angle.

Finally, even though claim construction is a question of law, reviewable by this court without formal deference, I do believe that we ought to lean toward affirmance of a claim construction in the absence of a strong conviction of error. I do not have such a conviction in this case, after considering the district court's opinion and the patent specification.

For these reasons, while I wholeheartedly join the majority opinion in its discussion and resolution of the "specification v. dictionaries" issue, I would affirm the decision below.

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iii. "baffle"

The parties dispute the meaning of the following phrase of independent Claims 17, and its dependent claims (18-24): "baffle."

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Defendant's Proposed Construction</th>
<th>Plaintiff's Proposed Construction</th>
</tr>
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<tbody>
<tr>
<td>baffle</td>
<td>&quot;a flat, upwardly does not require a inclined surface against which the feed flow impacts&quot;</td>
<td>flat surface</td>
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</table>

PSI argues that the "baffle" should be construed as "a flat, upwardly inclined surface against which the feed flow impacts." Highland Tank retorts that the claim does not require a "flat" baffle.

PSI cites the following section of the specification in support of its argument: "The baffle is disposed in the inlet chamber and its face, which comprises a flat surface, is inclined upwardly so that it faces towards the inlet nozzle and towards the inlet end of the tank. The baffle is disposed to reduce and isolate inlet turbulence and to relatively evenly distribute the flow over the entire width of the tank. The flat surface of the baffle contributes to reduction of turbulence." '800 Patent, 1:25-32. Also, PSI cites the following section of the specification: "[T]he McCarthy et al. Baffle is corrugated which contributes turbulence, whereas the diffusion baffle of this invention has a flat surface which contributes to laminar flow." '800 Patent: 2: 45-48.

In response, Plaintiff argues that the "baffle" of Claim 17 does not need to be flat. Plaintiff implores the Court that
construction begins with interpreting the claims, and invites the court not to "read undue limitations from the specification into the claim." Specifically, Highland Tank states that the claim language does not say anything about the baffle being flat, and that the exclusion of "flat" from the actual claim language is dispositive.

While Plaintiff's exhortations are correct as general statements, they are completely inapt in this setting, as applied to this specification. Of course, the appropriate starting point in construction is always the way in which the language is used within the claim. See Pause Tech. LLC v. TiVo Inc., 419 F.3d 1326, 1331 (Fed. Cir. 2006). However, Plaintiff's second point is more nuanced. On the one hand, a court must be careful to read a claim term in the context of the entire patent. Phillips, 415 F.3d at 1313. On the other hand, though, Phillips and other Federal Circuit opinions caution against reading features of one or more enclosed embodiments into claims drafted more broadly. Id. at 1323-24; see also Callicrate v. Wadsworth Mfg., Inc., 427 F.3d 1361, 1368 (Fed. Cir. 2005). The Federal Circuit itself has described this balance as a "fine line." Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1117 (Fed. Cir. 2004).

In this instance, Highland Tank's complete jettisoning of clear and unmistakable specification language is scarcely understandable and borders on either mistake or advocacy blindness. The entire point of claim construction is to arrive at the acquired meaning of the words in the claim, and that meaning may derive from various sources, especially the particular use of that language within the patent. V-Formation, inc. v. Benetton Group SPA, 401 F.3d 1307, 1311 (Fed. Cir. 2005). Here, within the first three paragraphs, the specification contains unmistakable language that facilitates the proper understanding of the term "baffle:" "According to method of the invention [t]he baffle is disposed in the inlet chamber and its face, which comprises a flat surface . . . ." '800 Patent, 1:19-27. Where in this clear phrasing is any discussion of a "mere embodiment"? Even more aggressive language exists later in the specification, as the inventor distinguishes the McCarthy baffle: "the McCarthy et al. Baffle is corrugated, which contributes turbulence, where the diffusion baffle of this invention has a flat surface which contributes to laminar flow." '800 Patent, 2: 45-48. The Federal Circuit has explained that when the specification obviously explains that the invention, as a whole, does not include a particular feature, that feature must be deemed to be outside of the reach of the language of any individual patent claim, even where the literal language may seem sufficiently broad. Sci-Med Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1343-44 (Fed. Cir. 2001).

In this matter, the unambiguous specification language acts as a dispositive indicator of the boundaries of the invention that was patented, and thus allows the court to settle upon the acquired meaning of the term "baffle": "a flat, upwardly inclined surface against which the feed flow impacts."

Moreover, Highland Tank's claim differentiation arguments are precluded by application of the precedential Fantasy Sports Properties, Inc. v. Sportsline.com, Inc., 287 F.3d 1108, 1115-16 (Fed. Cir. 2002). As in Fantasy Sports, the doctrine of claim differentiation, applied here, could only create a presumption that each claim has a different scope to the extent that differing scope is not overcome by the patentee's clear disclaimer of claim scope in the specification. Id. The doctrine of claim differentiation cannot operate to broaden claims beyond their correct scope. Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000).

In short, PSI's arguments are far more persuasive, and, correctly interpreted in light of the clear and unmistakable explanation in the specification, the term "baffle" should be construed as requiring a flat surface. This does not represent an instance where the court is reading a feature of a disclosed embodiment into a more broadly drafted claim. See, e.g., Saunders Group, Inc. v. Comfortrac, Inc., 492 F.3d 1326, 1331-35 (Fed. Cir. 2007). Rather, the inventor's own express acknowledgments in the specification clearly demand that this aspect of the claim be read in light of the specification. See Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1117 (Fed. Cir. 2004).

7. Claim 7: "baffle."

Claim 7 is construed to mean "a structure for isolating fuel leaving the pumping means from the region of the opening of the inlet to the high pressure pump."
1. "baffle having heat absorbing and insulating means thereon"

This claim term appears in claim 1 as follows:

baffle having heat absorbing and insulating means thereon in heat exchanging relationship with lower combustion chamber and the upper exhaust heat exchanging chamber to minimize a loss of heat through the baffle and to maximize the burning temperature in the fuel combustion chamber.

(The '876 patent, 8:19-24 (emphasis added)).

Hearth proposes the following construction: "an object, that includes firebrick or other heat absorber and insulator, placed in an appliance to change the direction or retard the flow of air, air fuel mixtures, or fuel gases." Travis proposes the following construction: "heat absorbing and insulating means must be on the baffle." The parties agree on the definition of "baffle" and "heat absorbing and insulating means." They dispute whether the "heat absorbing and insulating means" has to be on top of the baffle (Travis' position), or whether it can be either on top of the baffle or a part of the baffle (Hearth's position).

Based on the intrinsic evidence, the Court adopts Hearth's more precise language regarding the baffle, but concludes that the plain meaning of the claim language limits the heat absorbing and insulating means to being on the top of the baffle. Therefore, the Court construes "baffle having heat absorbing and insulating means thereon" to mean "an object placed in an appliance to change the direction or retard the flow of air, air fuel mixtures, or fuel gases, with the heat absorbing and insulating means on top of the aforesaid object."

The National Fire Protection Association defines "baffle" as "an object in an appliance to change the direction or retard the flow of air, air-fuel mixtures, and fuel gases." (Zeuli Decl., Ex. F-1.) The parties agree that this is the proper definition for baffle as used in this claim.

The claim language explicitly references the location of the heat absorbing and insulating means by using the word "thereon." "Thereon" is defined as "on or upon this, that or it." (Rossman Decl., Ex. D (American Heritage College Dictionary, 3d ed. 1997)). Thus, based on the ordinary and plain meaning of "thereon," the heat absorbing and insulating means must be located on top of the baffle.

Hearth attempts to overcome this conclusion by pointing to language in the specification that clearly contemplates two possible embodiments, where the heat absorbing and insulating means is either on top of or a part of the baffle. The specification states "[b]affle 68 includes baffle insulation and heat absorber 85 on the baffle 68 or forming part thereof for insulating the baffle . . . ." (The '876 patent, 4:24-25 (emphasis added)). Hearth argues that despite the ordinary meaning of "thereon" used in the claim, which would narrow the definition, it would be error to adopt that meaning over the language used in the written description. However, the case Hearth cites, Jack Guttmann Inc. v. Kopykake Enters, Inc. holds only that the specification may broaden the meaning of a claim term beyond its ordinary and plain meaning when the patentee chooses to be his or lexicographer "by clearly setting forth an explicit definition for a claim term that could differ in scope from that which would be afforded by its ordinary meaning." 302 F.3d 1352, 1360 (Fed. Cir. 2002).

Here, Hearth has not pointed to anywhere in the specification that the patentee used the word "thereon" to mean either "thereon" or "a part thereof." Thus, even though the specification includes language that allows for the alternative construction Hearth proposes, the patentee limited its claim by using a word, "thereon," whose ordinary and plain meaning limited it to one configuration. See Johnson & Johnston Associates Inc. v. R.E. Service Co., Inc., 285 F.3d 1046, 1052 (Fed. Cir. 2002) ("the claim requirement presupposes that a patent applicant defines his invention in the claims, not in the specification. After all, the claims, not the specification, provide the measure of the patentee's right to exclude."); Novo Nordisk of North America, Inc. v. Genentech, Inc., 77 F.3d 1364, 1369 (Fed. Cir. 1996) ("While claims are to be interpreted in light of the specification, all that appears in the specification is not necessarily within the scope of the claims and thus entitled to protection. What is not claimed, even though disclosed as part of the 'invention,' cannot be enjoined.")

This construction does not violate the doctrine of claim differentiation. Claim 11, which is dependent on claim 1, states
[t]he wood stove as defined in claim 1 wherein the base, rear and side walls have fire brick thereon to protect said walls and wherein fire brick is mounted on an upper side of the baffle to minimize the heat loss through the baffle . . . .

(The ’876 patent, 9:25-29). Hearth argues that, because this claim adds the limitation that the fire brick be mounted on the baffle, claim 1 cannot be read as requiring this same configuration because it would render claim 11 redundant. However, Travis offers the equally reasonable explanation that claim 11 does not only require that the fire brick be mounted on top of the baffle. Rather, it requires that the heat absorbing and insulating means be fire brick and that the sides of the firebox have fire brick on them. Because Travis' interpretation is a reasonable one, nothing about the language in claim 11 bars construing this term to require that the heat absorbing and insulating means be located on top of the baffle. Moreover, "[t]he doctrine of claim differentiation cannot be used to overcome the plain language of the claims themselves." Mycogen Plant Science v. Monsanto Co., 243 F.3d 1316, 1329 (Fed. Cir. 2001).

While the prosecution history does not compel this particular construction, it does not prohibit it or compel a contrary construction. According to Hearth, the examination was not focused on the location or configuration of the heat absorbing and insulating means, but rather on prior art that had insulating means but no heat absorbing means. The remarks accompanying the amendments stated

It was pointed out that the thermal means shown in the Chamberlain reference and in the Carver reference [prior art] is provided only for the purpose of insulating (preventing heat transfer). The applicants' heat absorbing and insulating means, however, provides an additional function of heat storage along with an insulation capacity.

(Zeuli Decl., Ex. M-6 at 13). Hearth maintains that it overcame this prior art by adding the heat absorbing means. In fact, Hearth argues that the prior art had insulating means located on top of the baffle, and therefore it would not have made sense to add the requirement that the heat absorbing and insulating means be on top of the baffle as a way to overcome the prior art. Thus, Hearth argues, the prosecution history narrowed the claim only by requiring that it include heat absorbing means. Even if all of Hearth's assertions are true, that only means that the prosecution history does not require Travis' construction. Importantly, however, the prosecution history does not bar it either.

a. Construing the scope of the ’395 patent claim

The patentee bears the burden of proving infringement by a preponderance of the evidence. CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1161 (Fed. Cir. 1997). To succeed in a patent infringement case, the patentee must show every limitation set forth in a patent claim is found in an accused product or process. Becton Dickinson and Company v. C.R. Bard, Inc., 922 F.2d 792, 796 (Fed. Cir. 1990). If, as Clestra contends, the claim limitation regarding a second baffle means or its equivalent set forth in claims One, Sixteen or Twenty is missing from the Fantom unit, there is no infringement. London v. Carson Pirie Scott & Company, 946 F.2d 1534, 1539 (Fed. Cir. 1991).

In relevant part, claim One reads:

1. second baffle means disposed radially outwardly of said centrifugal fan means and said first baffle means, second baffle means having inner surfaces for directing the airflow from said centrifugal fan means inwardly of said primary housing and between said first baffle means and said filter means whereby air being introduced into said housing by said centrifugal fan means will be directed radially outwardly of said centrifugal fan means and guided by said first baffle means towards said second baffle means and thereafter by said second baffle means between said first baffle means and said air filter means.

’395 pat., col. 10, 11. 20-32 (emphasis supplied). 3

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3 In relevant part, claims Sixteen and Twenty read:
16. . . . a pair of second baffle means disposed radially outwardly on opposite sides of said centrifugal fan and within the plenum chamber, said second baffle means having at least one air deflecting surface for directing the air passing radially outwardly from said centrifugal fan inwardly of the plenum chamber and toward said filter means . . . Col. 12, 11. 35-41 (emphasis supplied).

20. . . . second air baffle means carried by said upper section of said housing so as to be oriented radially outwardly and in spaced relationship to said first said baffle means, said second air baffle means having inner surfaces for deflecting air flow from said centrifugal fan inwardly of said housing and between said first air baffle means and said filter means whereby the flow of air will be directed radially outwardly by said centrifugal fan and said first air baffle means toward said second air baffle means and thereafter by said second air baffle means between said first air baffle means and said filter means so that the flow of air is distributed across said filter means. Col. 13, 1. 25-col. 14, 1. 6 (emphasis supplied).

Clestra argues, and the court agrees, that the second baffle means is described in "means-plus-function" form as provided for in 35 U.S.C. § 112, P 6. Pursuant to that statute,

an element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

"To determine whether a claim limitation is met literally, where expressed as a means for performing a stated function, the court must compare the accused structure with the disclosed structure, and must find equivalent structure as well as identity of claimed function for that structure." Pennwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931, 934 (Fed. Cir. 1987) (en banc) (emphasis in the original). See also King Instruments Corp. v. Perego, 65 F.3d 941, 945-46 (Fed. Cir. 1995) (citation omitted), cert. denied, 517 U.S. 1188, 116 S. Ct. 1675, 134 L. Ed. 2d 778 (1996). The "means" term in a means-plus-function limitation essentially is a generic reference to the corresponding structure disclosed in the specification, so a determination of corresponding structure is a determination of the meaning of the "means" term in the claim and is also a matter of claim construction. Chiuminatta Concrete Concepts v. Cardinal Industries, 145 F.3d 1303, 1308 (Fed. Cir. 1998).

b. Does the Fantom unit infringe the '395 patent under a means-plus-function analysis?

To answer this question, the court first must provide a brief overview of the '395 patent. Again, the abstract to the '395 patent describes it as "compact centrifugal fan and filter assemblies" that provide an even flow of clean air to work environments, such as "clean rooms and clean air work stations." A blower unit provides an airflow, generally parallel with respect to a HEPA filter element, which ultimately is channeled by two separate baffles "so as to provide uniform air pressure and airflow across the filter element while reducing vibration and increasing the air flow from the fan and filter assemblies to such clean air environments."

More specifically, the blower unit directs airflow into the first baffle, which is located directly underneath it. The first baffle has "outwardly extending wall portions" that "extend outwardly" from the blower unit toward the "sidewalls of said primary housing so as to create an airflow space radially" of the blower unit between the first baffle and the sidewalls. '395 pat., col. 10, 11. 15-21. The second baffle, located on the sidewalls, has "inner surfaces for directing the airflow" from the blower unit "inwardly of said primary housing and between the inner surfaces for directing the airflow . . . inwardly of said primary housing." Id., at 11. 23-26 (emphasis supplied). Ultimately, the placement and design of the two baffles means "air being introduced into said housing" by the blower unit "will be directed radially outwardly" of the blower unit, guided by the first baffle towards the second baffle, and thereafter by the second baffle to the space between the first baffle and the HEPA filter. Id., at 11. 27-32. The description of the preferred embodiment specifically explains the function of the "side baffles"--i.e., the second baffle--as "to direct the airflow generally in an arcuate fashion downwardly and inwardly towards the HEPA filter element." '395 pat., col. 5, 11. 31-33 (emphasis supplied). The description continues that the second baffle provides "continuous arcuate surfaces to direct airflow away from the sidewalls." Id., at 11. 40. In short, the '395 patent requires an arcuate shaped second baffle, the purpose of which is to direct airflow inwardly to the HEPA filter.

At least for the purposes of this motion, the parties do not dispute that the Fantom unit contains a blower unit, first baffle, housing and a HEPA filter that correspond to the placement of those items in the '395 patent; rather, the dispute is whether
the sound dampening materials of the Fantom unit are equivalent to the second baffle described in the '395 patent. The sound dampening material, made of foam, is lined against the housing of the Fantom unit in the shape of a horizontal "L" on each side of the blower unit. The smaller part of each "L" represents the side of the Fantom unit just above its HEPA filter, while the longer part of the "L" traverses the ceiling of the unit, until it meets the blower unit. Envirco submits that these foam-shaped "L's" comprise a second baffle: like the second baffle in the '395 patent, Envirco maintains, the sound dampening material in the Fantom unit directs airflow from a first baffle "radially inwardly into the spaces between the first baffle[] and the filter[]", and then across the filter." Leader Decl. PP 9-13, Ex. B. It also notes that the description of the preferred embodiment allows that the second baffle may be composed of sound dampening material. 4 '395 pat., col. 5, 11. 41-46. Finally, Envirco claims that even without the sound dampening material, the Fantom unit still would contain a second baffle: the top and side walls of its housing, which similarly would deflect air to the base of the unit.

Clestra counters, correctly, that Envirco's latter argument is meritless. Clearly the '395 patent requires a housing and a second baffle. 5 As to Envirco's argument that the Fantom unit's "L-shaped" sound dampening material is a second baffle, Clestra responds: (1) the material "is simply flat, straight sound dampening material, not a second baffle means"; (2) according to claims One and Sixteen, the second baffle must be disposed "radially outwardly" of the blower unit or, according to claim Twenty, it must be "oriented radially and outwardly and in a spaced relationship" to the first baffle--e.g., the second baffle must be to the side, within the radius of either the fan or the first baffle; and (3) the second baffle must be arcuate. Clestra concludes that the disputed sound dampening material, which clearly is not arcuate, is not within the radius of either the fan or first baffle because it is located above the fan.

Clestra's points are well taken. The proper test under a means-plus-function analysis is "whether the differences in the accused device and any disclosed in the specification are insubstantial." Chiuminatta, 145 F.3d at 1309 (citation omitted). While it is true that the second baffle of the '395 patent may be composed of sound dampening material, it is also true that it must be disposed radially outwardly, or arcuately. The L-shaped sound dampening material in the Fantom unit simply does not meet this description: it is not the equivalent structure of the '395 patent's second baffle: it does not infringe the '395 patent under a means-plus-function analysis. Pennwalt Corp., 833 F.2d at 934.

In pre-trial proceedings the parties agreed that the second baffle is the only disputed claim element. Claim 1 of the '395 patent illustrates the asserted claims-in-suit:

1. A compact air purification apparatus for providing clean airflow to a clean air enclosure comprising a primary housing having first and second end portions and substantially closed sidewall portions, inlet and discharge openings disposed through said first and second end portions, respectively, a blower means mounted through said inlet opening so as to extend inwardly of said primary housing, said blower means having a motor drivingly connected to a centrifugal fan means, said centrifugal fan being disposed within said primary housing so as to discharge air radially outwardly with respect to said inlet opening, said centrifugal fan including a plurality of radially extending blade means, a filter means mounted within said primary housing adjacent said discharge opening so that all airflow outwardly of said primary housing through said
discharge opening passes through said filter means, a first baffle means disposed adjacent said centrifugal fan means and between said centrifugal fan means and said filter means, said first baffle means having outwardly extending wall portions which extend outwardly of said centrifugal fan means toward said sidewalls of said primary housing so as to create an airflow space radially of said centrifugal fan means between said first baffle means and said sidewalls of said primary housing, second baffle means disposed radially outwardly of said centrifugal fan means and said first baffle means, said second baffle means having inner surfaces for directing the airflow from said centrifugal fan means inwardly of said primary housing and between said first baffle means and said filter means whereby air being introduced into said housing by said centrifugal fan means will be directed radially outwardly of said centrifugal fan means and guided by said first baffle means towards said second baffle means and thereafter by said second baffle means between said first baffle means and said air filter means.

'395 patent, col. 9, line 64 - col. 10, line 32 (emphasis added).

Clestra makes the accused infringing product, the Fantom fan. The parties agree that the Fantom has a blower fan, a first baffle, a housing, and a HEPA filter covered by the claims in the '395 patent. At issue is whether the sound dampening material of the Fantom constitutes, or is equivalent to, the second baffle means of the asserted patent claims. The district court described the Fantom's sound dampening material as "L-shaped." The Fantom actually has sound dampening material covering the interior ceiling and walls of the enclosure. Thus, only when viewed as a cross-section does the Fantom's sound dampening material appear as L-shaped.

The district court construed the term "second baffle means" of the asserted claims of the '395 patent as a means-plus-function claim element under 35 U.S.C. § 112, P 6 (1994). Because the district court held that the second baffle means is a means-plus-function claim element, it looked to the specification for the corresponding structure. The district court focused its attention on one of the disclosed preferred embodiments, which included a second baffle having "continuous arcuate surfaces." '395 patent, col. 5, line 40. Therefore, the district court limited the second baffle means to only arcuate, or curved surfaces. However, the district court overlooked other disclosed embodiments such as those in Figures 2 and 3, which both contain angular baffles.

Under this claim construction, the district court performed its infringement analysis, comparing the accused Fantom product to the claims of the '395 patent. Granting Clestra's summary judgment motion, the district court held that the Fantom does not infringe because the L-shaped material in the Fantom is not arcuate. The district court also held the claims of the '395 patent not infringed under the doctrine of equivalents. Envirco appeals.

II.

This court reviews the district court's grant of Clestra's summary judgment motion de novo. See Conroy v. Reebok Int'l, Ltd., 14 F.3d 1570, 1575, 29 U.S.P.Q.2D (BNA) 1373, 1377 (Fed. Cir. 1994). Clestra may prevail on summary judgment only by showing an absence of genuine issues of material fact and entitlement to judgment as a matter of law. See Fed. R. Civ. P. 56(c). In granting Clestra's motion for summary judgment, a district court must view all evidence in a light most favorable to Envirco, and draw all reasonable inferences in Envirco's favor. See SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1116, 227 U.S.P.Q. (BNA) 577, 581 (Fed. Cir. 1985) (en banc).

The question of infringement involves a legal analysis, interpreting the scope and meaning of the claims, and a factual analysis, applying the claims to the accused device. See Cybor Corp. v. FAS Techs, Inc., 138 F.3d 1448, 1454-56, 46 U.S.P.Q.2D (BNA) 1169, 1172-75 (Fed. Cir. 1998) (en banc). This appeal asks this court to review the district court's claim construction. Specifically, this court must review whether the second baffle is a means-plus-function claim element and, therefore, whether the district court properly applied a structural limitation from the written description, that of being "arcuate," to define the scope of the claims.

Section 112, P 6 of title 35 of the United States Code allows patent applicants to claim an element of a combination functionally, without reciting structures for performing those functions. If a claim element contains the word "means" and recites a function, this court presumes that element is a means-plus-function element under § 112, P 6. See Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1318, 50 U.S.P.Q.2D (BNA) 1161, 1166 (Fed. Cir. 1999). That presumption falls, however, if
the claim itself recites sufficient structure to perform the claimed function. See id.

The asserted claims of the '395 patent describe the disputed second baffle element with the term "second baffle means." The word "means," as already noted, invokes a presumption that § 112, P 6 governs the second baffle claim element. The district court recognized this rule and accorded the second baffle means-plus-function treatment. The district court, however, did not complete the triggering analysis for § 112, P 6. The district court should have determined whether the claims recite sufficient structure for performing the claimed function, thereby overcoming the presumption of § 112, P 6. See Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427-28, 44 U.S.P.Q.2D (BNA) 1103, 1109 (Fed. Cir. 1997) ("Where a claim recites a function, but then goes on to elaborate sufficient structure, material or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format.").

Although using the word "means" to describe the second baffle, the '395 claims also recite sufficient structure to rebut the presumption that the term is in means-plus-function form. The term "baffle" itself is a structural term. The dictionary definition of the word "baffle" is "a device (as a plate, wall or screen) to deflect, check, or regulate flow." Webster's Ninth New Collegiate Dictionary 124 (1990). Because the term "baffle" itself imparts structure, meaning a surface which deflects air, its use in the claims rebuts the presumption that § 112, P 6 applies.

Further, the claims describe the particular structure of this particular baffle ("having inner surfaces for directing airflow . . . radially outward . . . and thereafter . . . between said first baffle means and said air filter means"). This recital of structure conflicts with the statutory requirement that means-plus-function claim elements state a function "without the recital of structure." 35 U.S.C. § 112, P 6.

The recital of structure in this claim for the second baffle is similar to the claim element in Cole v. Kimberly-Clark Corp., 102 F.3d 524, 41 U.S.P.Q.2D (BNA) 1001 (Fed. Cir. 1996). In that case, this court held that the term "perforation means . . . for tearing" was not a means-plus-function clause, because the claim sufficiently described a structure (i.e., the perforation itself) to perform the function of tearing. Id. at 531. Relying on the dictionary definition for the word "perforation," the court construed the term, "perforation means . . . for tearing" to mean "perforations." Id. Likewise, in this case the claims recite sufficient structure (i.e. a baffle disposed radially outward from the centrifugal fan, with inner surfaces for directing airflow). Therefore the second baffle limitation is not a means-plus-function claim element. Because the claims recite sufficient structure, including details about the location and formational details about the second baffle, this court holds that the district court erred in construing the "second baffle means" as a means-plus-function claim element under § 112, P 6.

Because the "second baffle means" element does not qualify for § 112, P 6 treatment, it is not limited to the structure corresponding to the claimed function as "described in the specification and equivalents thereof." 35 U.S.C. § 112, P 6.

Instead, this court construes the claims with standard claim construction rules. Thus, for instance, the specification informs but does not control, the claim construction. Rather, in that process, the claim language itself governs the meaning of the claim. To acquire proper context to understand claim terms, this court also consults the specification, the prosecution history, and where relevant (and not contradictory of intrinsic evidence), extrinsic evidence. See Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1308-09, 51 U.S.P.Q.2D (BNA) 1161, 1167-68 (Fed. Cir. 1999); see also, Scripps Clinic v. Genentech, Inc., 927 F.2d 1565, 1580, 18 U.S.P.Q.2D (BNA) 1001, 1013 (Fed. Cir. 1991).

In this case, the "second baffle means" covers a surface for deflecting air. The claim locates the "second baffle means" inside the top and sides of the housing. This distinguishes the "second" from the "first baffle means." The location of the "second baffle means" ensures that it directs air inward from the vertical walls of the housing, beneath the first baffle means, and toward the HEPA filter. In the words of the claim, the second baffle means is "disposed radially outward of said centrifugal fan."

The descriptions and figures in the specification support the locational limitations in the claim language. The specification describes in writing and shows in figures the "second baffle means" above the first baffle means, and then wrapping around the edges of the fan enclosure. See figs. 1, 2, and 3. Ultimately, the claims (and supporting specification) show that the first and second baffles act together to direct air away from the fan, around the first baffle means, and through the HEPA filter ("guided by said first baffle means towards said second baffle means and thereafter by said second baffle means between said first baffle means and said air filter means.").

The specification depicts several embodiments of the claimed invention. One embodiment includes an arcuate second
baffle. Other embodiments include angular second baffles. Thus, while the second baffle means may be arcuate, it is not limited to an arcuate shape. In other words, the arcuate shape is within the scope of the claims, but is not a limitation on the second baffle means. Similarly, the specification discloses baffles constructed of various materials, including metal, plastic, and sound damping material. Thus, baffles made of these materials are within the scope of the claims, but the descriptive enumeration of those materials in the specification does not, per se, limit the scope of the patent's claims to one or more of those materials.

With this interpretation of the "second baffle means," the district court shall on remand proceed to resolve any factual issues in this case. Accordingly this court remands for further proceedings on infringement.

404

(a) "Bag" In ordinary usage, a bag is a container, usually flexible, for holding or carrying something. See Webster's Third New International Dictionary 162 (G. & C. Merriam Co. 1981) (defining "bag" as "a container made of paper, cloth, mesh, metal foil, plastic, or other flexible material and usu. closed on all sides except for an opening that may be closed (as by folding, pasting, tying, or sewing), being of sizes ranging from small to very large and being specially designed and treated for properly holding, storing, carrying, shipping, or distributing any material or product"); Webster's College Dictionary 103 (Random House 1992) ("bag" defined as "a container or receptacle made of some pliant material and capable of being closed at the mouth"). Describing it as a "container" implies its ability to contain or hold, and this ability normally depends on its having only one open end. This construction of "bag" is also consistent with the specification of the patent. Moreover, the inventor acknowledged in deposition testimony that he understood a "bag" to have a continuous sidewall and a closed bottom. Def.'s Ex. 28 at 149-50. In contrast, a "sleeve" is a tubular configuration, open at both ends. See Merriam-Webster's Collegiate Dictionary 1103 (10th ed. 1993) (defining "sleeve" to include "an open-ended flat or tubular packaging or cover").

Accordingly, the word "bag" as used in the '409 patent must be construed to mean a flexible container sealed on all sides but one.

405

MHB also argues that the court erred in limiting the claimed process to bags. It contends that claim 1 only requires that the end product be a bag. Claim 1, however, uses the specific term "bag," which is used in the specification in its ordinary sense, i.e., to mean "a container . . . closed on all sides except for an opening that may be closed," Webster's Third New International Dictionary, 162 (1971). Moreover, claim 1 specifies that the steps be performed on a bag.

406

A. The Parties' Proposed Construction

Plaintiff proposes the following terms construction:

1. Spaced relation to the uppermost portion of the first quantity of explosive material: There is an air-gap in the borehole between the top of the lower-most explosive material and the bag-like device above it.

2. First relatively large quantity of explosive material: The larger quantity of explosive material placed within the borehole.

3. Second relatively small quantity of explosive material: The smaller quantity of explosive material placed in the borehole.

4. Disposed or disposing: Placed, placing, or causing to be placed.
5. Bag-like device: An item similar to, or characteristic of, an inflatable body of flexible material that is made, or adapted, to perform a function. 4

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4 See plaintiff's memorandum, footnote 2. Plaintiff proposed this definition anticipating that the court would decline to separately define the term "bag."

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In contrast, defendants propose the following:

1. Spaced relation to the uppermost portion of the first quantity of explosive material: The bag-like device is sufficiently spaced within a borehole above the top of the explosive material to form an air gap in the borehole between the bag-like device and the explosive material, with the air gap being approximately 8% to 16.7% of the borehole.

2. First relatively large quantity of explosive material: The major charge or quantity of total explosive material within the borehole.

3. Second relatively small quantity of explosive material: The minor charge or quantity of explosive material within the borehole, with the major charge being 3-5 times the quantity of the minor charge.

4. Disposed or disposing: The bag-like device while in a flat and uninflated state is placed in a particular order or place to accomplish the special effect or purpose of the device.

5. Bag-like device: A device comprised of multiple polymeric sheets sealed along the edges thereof and capable of being closed at one end which lies flat when uninflated. 5

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5 Defendants modified their proposed definition at the Markman hearing on July 29, 2005, after the release of Phillips by the Federal Circuit. Defendants' initial proposed construction was "a flexible device capable of being closed at one end comprised of at least one polymeric sheet sealed along the edges thereof which lies flat when uninflated, of disc-like, square, tubular, or doughnut conformation."

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D. "Bag-like device"

The parties have stipulated that a "device" is "an article made, or adapted, to perform a function," and the stipulation is adopted for purposes of construction of the term at issue. In the summary of the invention, the '233 patent indicates "[t]he devices of the invention can be formed of various flexible polymeric materials including polyvinylchlorides, low density polyethylenes, and polyurethane films in selected thicknesses." (Col. 2, Lines 29-33, emphasis supplied.) The summary goes on to explain that "the selected material forming the present inflatable devices must have the capability to stretch to a degree sufficient to cause the device to be firm within the borehole and yet resist continued stretching . . . which would cause the device to fall." (Col. 2, Lines 41-47, emphasis supplied.) The "present inflatable devices can be shaped in various conformations including double-ended tubular conformations, disc-like conformations, and 'flat' square and rectangular conformations as examples." (Col. 2, Lines 47-51, emphasis supplied.)

Defendants contend that the teachings of the patent include only configurations that are comprised of polymeric "sheets" that "lie flat' when uninflated." (Def. Mem. at 13.) They cite portions of the '233 patent's description of the preferred embodiments (see Col. 8, Line 36; Col. 9, Lines 29, 57; Col. 10, Lines 7-11) 7 to show that the materials used must display
such characteristics. Defendants have pointed to no language, however, that requires the use of polymeric sheets or requires that any such sheets lie flat when uninflated. Rather, they have shown only that certain materials are suggested by the patentee. The only requirement flowing from the summary language is that the device material "have the capability to stretch . . . and yet resist continued stretching . . ." The remainder of the summary states that certain materials and conformations "can" be used.

7 Defendants represent that column 10, lines 7-11 teach that configurations that do not lie flat are "ineffective." (Def. Mem. at 13.) That portion of the '233 patent reads, "While the device [numbered on the diagram as 36] is useful, a primary teaching of the invention is that the 'flat' configurations of the present inflatable devices, such as shown in figures 6 through 9, act to function in a superior manner relative to the device 36." The cited language does not convey that non-flat configurations are ineffective.

Courts are "cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification." Lemelson v. United States, 752 F.2d 1538, 1552 (Fed. Cir. 1985). Here, defendants have cited various portions of the patent that appear to describe materials favored by the patentee. Without limiting language, however, it is not for the court to confine the components of the patent to the described examples. "A patentee may claim an invention broadly and expect enforcement of the full scope of that language absent a clear disavowal or contrary definition in the specification." Home Diagnostics, Inc. v. Lifescan, Inc., 381 F.3d 1352, 1357 (Fed. Cir. 2004). The description appearing in the summary of the patent, together with the actual language of each disputed claim appears to articulate that stretchable material of various shapes can be fashioned into an inflatable bag-like device consistent with the teaching of the '233 patent. Defendants seek restrictions not required within the corners of the patent, which contains no "clear disavowal or contrary definition" to that proposed by plaintiff. See Home Diagnostics, Inc. at 1357.

Defendants next ask the court to read the term "bag-like device" in consideration of other patents filed by plaintiff, including U.S. Patent No. 4,919,203 ("'203 patent"), which is comprised of the apparatus claims for which plaintiff initially applied in conjunction with the '233 patent methods claims. 8 (Def. Mem. at 15, citing U.S. Patent Nos. 5,000,261; 5,273,110; 6,502,631; and Def. Resp. Mem. at 11, citing U.S. Patent No. 4,919,203.) Aside from the '203 patent, defendants have not designated any of the other three patents as having a significant connection to the '233 patent or as prior art that was considered during the examination of the patent. It does not appear, then, that these three are part of the prosecution history or the intrinsic evidence. In any event, a survey of the patents cited by defendants does not reveal a clear contrary meaning to that proposed by plaintiff. See Home Diagnostics, Inc. at 1357.

8 Plaintiff filed a patent application comprising the claims of both the '203 patent and the '233 patent on March 10, 1988. The divisional application for the '233 patent was filed November 28, 1988.

Defendants argue that two of plaintiff's other patents do not "embrace" any spherical, oval, or "non-flat" conformation, and that a third employs the term "ball," evidencing plaintiff's awareness at the time of his application that playground balls were used for the same purpose as the bag-like device. Thus, defendants conclude, plaintiff made a conscious decision to exclude the spherical conformation from his application for the '233 patent. However, a "clear disavowal" of the spherical conformation is not present. See Home Diagnostics, Inc. at 1357. Moreover, defendants appear to ask the court to construct a definition of exclusion by specifying what is not described in the '233 patent. The court's task is to construe the terms before it, not to expel embodiments.

The '203 patent is directly connected to this one inasmuch as the two initially were filed in a single application. The '203 patent for apparatus claims describes an "inflatable body means," which was changed from plaintiff's initial preferred term "flexible body member." Defendants argue that "bag-like device," as it appears in the '233 patent, must have a different meaning than "body means" because plaintiff did not change the term during his prosecution of the '233 patent. They aver
that the court should presume that the different terms have different meanings. It has not been shown, however, that the term "bag-like device" of the '233 patent is inconsistent with the term "body member" of the '203 patent, and different terminology may have been selected for a myriad of reasons. While the selected words may have different meanings, it does not follow that the difference is sufficient to amount to the "clear disavowal or contrary definition" necessary to discredit the meaning gleaned from the claims and specification. See Home Diagnostics, Inc. at 1357. Plaintiff's proposed construction of "bag-like device" is in agreement with the context of the '233 patent, but the meaning suggested by defendants would impose limitations not required by the patent itself or by the prosecution history.

Defendants further argue that the characteristic of inflatability is not inherent in the term "bag-like device." The point is well taken. Given that the term often is preceded in the patent by the adjective "inflatable" it does not appear that the isolated term "bag-like" necessarily implies an inflatable device. Additionally, though defendants' proposed definition proves too restrictive, plaintiff's construction broadly encompasses any conceivable "body of flexible material." This meaning potentially reaches numerous objects not contemplated by the patent. Here, upon consultation of The American Heritage Dictionary of the English Language, the court would include in its construction an indication that "bag-like" implies that an object is a "container," rather than simply a "body," inasmuch as "container" is an integral part of the definition of "bag". This application does not run afoul of the teachings of the patent which show, at the least, that the bag-like devices must be capable of containing air or another fluid substance so as to sustain inflation. Finally, the court would supplement plaintiff's suggested construction with "having the capability to stretch," a phrase taken directly from the requirements discussed in the summary of the invention. Otherwise, plaintiff's proposed construction appears consistent with the indications of the '233 patent, and especially the description contained in the summary of the invention.

3. "BAGGAGE SCRREENER" AND "BAGGAGE SCREENING ENTITY"

Tropp's proposed construction for baggage screening entity is "an entity that screens baggage". Travel Sentry's proposed construction is "[a]ny governmental agency or non-governmental organization that screens or inspects luggage prior to being loaded aboard aircraft." Similarly, Tropp defines baggage screener as "a person who screens baggage" while Travel Sentry defines the term as "[a]ny person employed by a governmental agency or non-governmental organization that screens and inspects luggage prior to being loaded abroad aircraft."

The terms "baggage screener" and "baggage screening entity" appear in independent claims 1 and 10 of the 728 patent. While Tropp, unsurprisingly, takes issue with nearly every aspect of Travel Sentry's proposed construction of "baggage screener" and "baggage screening entity", the conflict between Tropp's and Travel Sentry's proposed constructions of "baggage screener" and "baggage screening entity" centers materially on three issues: (1) whether luggage and baggage are synonyms, (2) whether the screening is limited in scope to screening done in connection with air travel only, and (3) whether it should be further confined to screening that occurs prior to the baggage being boarded onto aircraft.

a. Whether baggage is synonymous with luggage

The words "luggage" and "baggage" appear in both patents. The 728 patent claims "a method of improving carrier baggage inspection by a baggage screening entity" and replaces all references to "luggage" and "luggage screening entity" in the 537 patent to "baggage" and "baggage screening entity" in the 728 patent. However, while the claims in the 728 patent use the word "baggage", the term "luggage" appears predominantly in the specifications of both patents, and both patents are titled "Method of Improving Airline Luggage Inspection".

The 728 patent is a continuation-in-part from the 537 patent. The written descriptions of the 728 and the 537 patents are identical in their treatment of "baggage", although the word appears sparsely in them. The "background of the invention and discussion of the prior art" sections of the 728 and 537 patents state that "[d]ue to the threat of terrorism… the TSA… announced that with respect to luggage at United States airports if a TSA baggage screener was unable to open a traveler's bag for inspection because the bag was locked, the screener would have to break the locks on the traveler's bag. Hence, travelers should leave their bags unlocked. Beginning Jan. 1, 2003 the TSA's federal workers started screening luggage at U.S. airports and when it deemed it necessary it started clipping locks on this luggage in order to open and inspect the luggage. 537 patent, col. 1, ll. 13-25. "[T]ravelers, just getting accustomed to the new security laws, may have legitimate
concerns about baggage inspections… in addition, working as a TSA luggage screener is a highly demanding and stressful job. 537 patent, col. 2, 11. 8-14. Stated differently, there is no indication from the patent's specifications or the prosecution history of either patent 3 that a person of ordinary skill in the art considers "baggage" as covering a different scope than luggage. It appears that both patents use the word "baggage" synonymously with "luggage" which impels the Court to conclude that "baggage" is not ascribed a different meaning from "luggage" within the context of the claims.

3 Interpretations made in the prosecution of a parent application can also affect related continuation in part applications arising from that same patent. See, e.g., Omega Eng'g v. Raytek Corp., 334 F.3d 1314, 1333-34 (Fed. Cir. 2003).

Additionally, the prosecution history for the 728 patent suggests that the word "luggage screening authority" was changed to "baggage screening entity" to "broaden it" to indicate that the term extended to nongovernment entities, but there is no similar argument or remarks made by Tropp indicating that "baggage" should be, and was intended to be given a different meaning from "luggage" (Def.'s Reply Br. Attach.). 4 Accordingly, "baggage screener" and "baggage screening entity" in the 728 patent are synonymous with "luggage screener" and "luggage screening entity" as used in the 537 patent.

4 Reading "baggage" and "luggage" as synonyms is supported not only by the specifications, but also by the fact that the plain meaning of the words themselves are consistent with the patents' written descriptions. Webster's Third New International Dictionary ("Webster's") defines both luggage and baggage as synonyms of the other. Webster's at 162, 1344 (2002). Oxford American Dictionary ("Oxford") defines baggage as a synonym for luggage. Oxford. at 121 (2001).

b. Scope of baggage screening

Travel Sentry argues further that "baggage screener" and "baggage screening entity" should be limited to screenings related to air travel only. This Court agrees. The claim terms of the patents and their written descriptions focus solely on the method's usefulness and applicability for improving air travel screening procedures. When the inventor acts as his own lexicographer, he controls how expansive or narrow the scope of his definition should be, though this asserted definition must be supported by the specification. See Jonsson v. Stanley Works, 903 F.2d 812, 819 (2d Cir. 1990).

Independent claims 1, 9, 14, and 18 in the 537 patent claim "a method of improving airline luggage inspection by a baggage screening entity". Independent claims 1 and 10 in the 728 patent claim "a method of improving carrier baggage inspection by a baggage screening entity", but the language in the 728 patent's specification is nearly identical to the 537 patent with respect to the invention's objectives and benefits. Thus, the specifications for both patents clearly support a finding that the field of the invention extends to air-related travel only. See, e.g., SciMed Life Sys, Inc. v. Advanced Cardiovascular Sys. Inc., 242 F.3d 1337 (Fed Cir. 2001) ("Where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question.").

The patents-in-suit are entitled "Method of Improving Airline Luggage Inspection". In describing the field of the invention, both patents state that "[t]he field of this invention is methods of improving airline luggage inspection, and more particularly, methods of making such inspection less intrusive and more secure". 537 patent, col. 1, 11. 6-8; 728 patent, col. 1, 11. 20-22. Furthermore, the specifications in both patents identically extol the benefits of the invention to air-travelers and airport screeners and are replete with references to screening procedures and problems unique to air travel. For example, the patents discuss the benefits of the invention, which include addressing the concerns of "close to half a billion" airline travelers who pass through airports in the United States. 537 patent, col. 2, 11. 17-20; 728 patent, col. 2, 11. 33-37. The patents also state that "there is a compelling and immediate need for a method of inspecting luggage at airports that does not create a security risk and that is not damaging or aggravating to passengers." 537 patent, col. 2, 11. 21-24; 728 patent, col. 2, 11. 38-41. The laundry list of important objects and advantages of the invention focus entirely on its
usefulness in screening luggage at airports, i.e. to provide a method of screening "at airports that avoids forcible opening of luggage"; to "non-intrusively search[] passenger's luggage at airports", to provide a method of "airport luggage screening that allows the luggage screening authority to get its work done more efficiently," 537 patent, col. 2, col. 2, 11. 55-56, 60-61, 30-32; 728 patent, col. 3, 11. 5-6, 10-11, 48-50. However, notably absent from the patents' written descriptions is any discussion of screening procedures for methods outside of the air travel context; the specifications do not even imply that the procedures covered in the patents extend beyond that scope. The short of it is that both patents focus unequivocally and exclusively on the use of the invention in improving screening procedures related to air travel.

While an inventor's anticipation that an invention would be used in a particular way does not always mean that the patent's scope is applied only in that context, see Northrop Grumman Corp. v. Intel Corp., 325 F.3d 1346 (Fed Cir. 2003), it is both permissible and proper to limit the claims when a patent, read as a whole, makes clear that the claimed invention is actually narrower than the claim language implies. See Alloc, Inc. v. ITC, 342 F.3d 1361, 1370 (2d Cir. 2003). The Court need not go even that far. Here, the patents-in-suit as a whole support a construction that the terms "baggage screener" and "baggage screening entity" describe those screening procedures that take place solely in relation to air travel.

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5 While the 537 patent uses "luggage screener" and "luggage screening entity", as the Court has determined, these terms are synonymous with "baggage screener" and "baggage screening entity" as they appear in the 728 patent. Accordingly, the analysis regarding the scope of the screening methods and the finding that the patents cover screening procedures only in the context of air travel applies to both patents.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

Travel Sentry also argues that such screening procedures should be further limited to those that occur prior to the boarding of the luggage onto aircraft. Unlike the prior limitation, this one is unsupported by the claims and the Court rejects it. The written descriptions do not specify or even imply that such screening is limited to pre-boarded luggage nor do the specifications even require that such luggage be boarded onto aircraft. The Court reaches a similar conclusion with respect to Travel Sentry's parse-out of "entity" as "a government agency or non-governmental organization" in construing the terms. Such line-drawing is, frankly, superfluous for this claim-constructing exercise. At best, the specification of either patent suggests that an entity pertains to some authority responsible for screening, but the Court does not see the utility that is (singularly) apparent to Travel Sentry in defining "entity" as a government authority or a non-government authority. More importantly, beyond burdening these terms with mere surplusage, there is no genuine dispute, no difference, between Tropp's and Travel Sentry's proposed constructions of an "entity".

Accordingly, the Court construes "baggage screener" as a person who screens baggage, and "baggage screening entity" as an "entity that screens baggage"; "baggage" is understood as a synonym for "luggage". As for the term "screening", covered is any and all screening occurring within the scope of air travel.

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B. "a bail"

For the reasons stated below, the court construes the term "a bail" in claims 19, 22, 37, 47, 50, and 54 to mean:

a hinged band that secures the grounding clip to the electrical conductor.

Beverly asserts that the term bail should be construed to have a semicircular or hoop-like support having curved or arcuate shaped end portions based on an illustrated figure of a bail in the specification. Andrew counters that Beverly has improperly limited the bail to an illustration in the specification despite an absence of language in either the claims, specifications, or prosecution history that would suggest the limitation of a semi-circular or hoop-like shape.

The court finds that Beverly improperly imports limitations from an illustration of a preferred embodiment in the specification and rejects Beverly's construction that the bail is limited to a specific semi-circular or hoop-like shape. See
Phillips, 415 F.3d at 1323 (Fed. Cir. 2005) ("Claims may embrace 'different subject matter than is illustrated in the specific embodiments in the specification.'") (internal citations omitted). Furthermore, as Andrew points out, accepting Beverly's construction would defy the principle of claim differentiation. See Curtiss-Wright Flow Control Corp., 438 F.3d at 1380. Interpreting a bail to be limited to a semi-circular or hoop-like shape would render meaningless claim 30, which is a dependent claim to independent claim 22, and claim 30's reference to a bail with a C-shaped profile. (Ex. 3, col. 10, ln. 6-7.)

1. The Ball Projecting Wheel

The language of claim 1 requires "at least one ball projecting wheel driven rotationally by an electric motor and mounting a pneumatic tire." '325 patent at col. 4, lines 4-7 (emphasis added). Dependent claim 5 includes the same "ball projecting wheel" element as independent claim 1. See '325 patent, col. 4, lines 4-9, 19-22. Both parties agree that the "ball projecting wheel" can only project a ball with a pneumatic tire mounted thereon. However, there is a dispute whether the definition of "ball projecting wheel" itself must include a pneumatic tire. Trend argues that the proper construction of "ball projecting wheel" requires a combination of a wheel and a mounted tire because the wheel alone cannot eject the ball. Trend points out that all of the drawings in the '325 patent show a wheel or wheels having a mounted tire. See id. at figs.1-5.

Jugs claims that Trend's proposed construction is improper because independent claim 1 already provides for the fact that there is a pneumatic tire mounted on the wheel. See id. at col. 4, lines 5-6. Jugs' position is that the claims are clear that the wheel throws a ball and the wheel has a tire; a tire is thus involved in throwing the ball. Jugs argues that to add the wheel limitation into the claim again would unnecessarily lengthen and over complicate the language of claim 1.

The court finds that the intrinsic evidence supports a construction of "ball projecting wheel" that does not include the pneumatic tire limitation. Claim construction "is not an obligatory exercise in redundancy." O2 Micro Intern. Ltd. v. Beyond Innovation Tech. Co., Ltd., 521 F.3d 1351, 1362 (Fed. Cir. 2008) (citation omitted). Rather, "claim construction is a matter of resolution of disputed meanings . . . to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement." Id. (citation omitted). Here, both parties agree that the "ball projecting wheel" can only project a ball with a pneumatic tire mounted thereon. (See Trend's Opening Claim Construction Br. 4; Jugs' Resp. To Trend's Supplemental Claim Construction Br. 5.) Moreover, the language of claim 1 already provides for the fact that there is a pneumatic tire mounted on the wheel. See '325 patent at col. 4, lines 5-6 ("at least one ball projecting wheel . . . mounting a pneumatic tire."). There is no reason to construe the claim to recite the pneumatic tire twice. Thus, the court construes "ball projecting wheel" to mean:

a wheel capable of projecting a ball.

3. "[B]allast Portion." 3 Used in '740 patent, claim 1; '746 patent, claims 1, 4, 7 and 8.

3 The parties agree that once the dispute regarding the definition of ballast portion is resolved, the definition of prism ballast portion will be "a ballast portion that includes the optic zone."

CooperVision contends that this term means "a portion of a ballast. A ballast being a surface contour of the lens that has a varying thickness to re-orient the lens." CIBA proposes "a surface contour of the lens that has a varying thickness to re-orient the lens and that has consecutive horizontal cross sections throughout the entire structure each of which has
substantially uniform thickness not varying by more than approximately 30 \( \mu \text{m} \) or 20% of the minimum thickness of the cross section."

The central differences between the proposed constructions are whether 1) "ballast portion" refers to a portion of a ballast rather than the portion of the lens with ballast, and 2) the entire ballast must have iso-thickness. See '903 patent, col. 6, ll. 55-61 ("The term iso-thickness means that each of the consecutive horizontal cross sections has a substantially uniform thickness not varying by more than 30 \( \mu \text{m} \) or 20% . . . ").

The patent is for a contact lens "having improved thickness and ballast arrangement." '903 patent, col. 3, ll. 6-9. The heart of the invention is a particular type of ballast with iso-thickness. When the PTO allowed the claims, the examiner stated that "[t]he prior art fails to teach a combination of all the claimed features as presented, for example, in independent claim 1, which includes a contact lens having an improved ballast that imposes a low-torque rotational correction on the lens." Notice of Allowance, 03/22/2002, p. 2, Ex. 13 to Defendant's Responsive Claim Construction Brief. Thus, the feature of an improved ballast was added to distinguish the present invention from the prior art.

The Abstract explains that "the prism ballast is provided on one or more portions of the anterior face of the lens such that the lens body has a uniform thickness of within 10% along horizontal cross-sections." See also '903 patent, col. 6, ll. 39-42. The "iso-thickness ballast surfaces are formed in at least 20% . . . and more preferably at least 100%, of at least one of the superior, intermediate, and inferior portions 40, 44, and 48 as a series of consecutive horizontal cross-sections . . . ." '903 patent, col. 6, ll. 44-50. Figure 5d gives an example of the ballast portion 102 located entirely within the inferior portion of the inner zone.

CooperVision contends that the portions of the inner zone where ballast is not specified in Figures 5a-5d contain non-iso-thickness ballast structures. It is clear from the specification and the figures that the entire inner zone need not contain ballast. Figures 5a-5d illustrate the complete and only ballast surfaces of the lens. Nothing in the specification supports CooperVision's argument that there are other ballast surfaces or portions not illustrated in the figures. Therefore, ballast portion is the portion of the lens with ballast, not simply a portion of the ballast itself. This comports with the following text from the specification:

The present invention provides that consecutive horizontal cross-sections shown in FIG. 2 that possess ballast each has a substantially uniform or iso-thickness, except in optic zone 22 and peripheral zone 24. For example, one of the cross-sections in Fig. 2 having ballast, such as D-D', has a substantially uniform thickness. Alternatively, all of the cross-sections shown in Fig. 2 that possess ballast may have a uniform thickness except in the optic zone 22 and peripheral zone 24. '903 patent, col. 7, ll. 13-21.

The specification also states that "the sections of substantially uniform thickness do not vary in thickness within one section by more than about 30 pm or 20% whichever is greater in absolute terms." '903 patent, col. 7, ll. 23-25 (emphasis added). One skilled in the art could ascertain from this description that the entire lens need not contain ballast, but the section or portion that does have ballast also has substantially uniform or iso-thickness.

That is not to say that the entire lens can only have an iso-thickness ballast arrangement. See '903 patent, col. 11, ll. 25-27. CooperVision correctly points out that the Toric Patents claim techniques useful for creating high performing lenses that contain rotational stabilization structures other than iso-thickness, such as the Meridian Width and A to B Ratio features. But even if the Meridian Width and A to B Ratio are other techniques for re-orienting the lens, whether all ballast must have iso-thickness is a separate issue.

CooperVision also relies on dependent claims 31 and 36, which add the specific limitation of a ballast portion with iso-thickness. However, claims 31 and 36 also contain limitations other than iso-thickness, so the presumption of claim differentiation does not apply.

The claim itself limits the ballast portion to those with "a series of horizontal cross-sections . . . wherein each horizontal cross-section has a substantially uniform thickness not varying by more than 30 \( \mu \text{m} \)." '746 patent, col. 12, ll. 4-13. CIBA's proposed definition, therefore is redundant, and there is no need to repeat those words in the definition of "ballast.
The court defines this term as follows:

"Ballast portion" means: The portion of the lens with ballast. Ballast is a surface contour of the lens that has elevated surfaces that interact with the blinking action of the eyelids to re-orient the lens.
The court agrees that the term "balloon" does not provide sufficient textual reference to include the sterilization process. Accordingly, the term "balloon" does not need to be construed.

b. "balloon catheter"

The term "balloon catheter" appears in claims 7 and 12. ev3 proposes that the term be construed as "a catheter that includes a balloon. A balloon catheter may or may not include a stent." Boston Scientific has not proposed an alternative construction. There is no intrinsic evidence supporting the second part of ev3’s proposed construction. The Court therefore construes "balloon catheter" as "a catheter that includes a balloon." 7

7 This construction also applies to the term "balloon catheter" in ev3’s '103 and '375 Patents.

22. "Balloon-expandable." Consistent with the independent claims of the '053 patent, 46 the prosecution history 47 and its ordinary meaning, 48 the court construes "balloon-expandable" to mean "capable of being increased from one diameter to another by inflating a balloon."

46 Claim 1, '053 patent, col. 6, ll. 2-65; claim 8, '053 patent, col. 7, ll. 9-26; claim 16, '053 patent, col. 7, ll. 46-61.

C. "Bar"

Insight contends that the term "bar," as used in claims 11, 12, 13, 17, 21, and 22, has its "plain and ordinary meaning" being "a length of solid material." Glock contends that "bar" as used in the patent has a clear and well-understood meaning to those skilled in the art. SureFire defines "bar" with reference to The American Heritage Dictionary of the English Language (4th ed. 2000) as "a relatively long, straight, rigid piece of solid material."

As used in the claims, "bar" is "a spring-loaded bar," which in claim 12 includes an "end portion," and in claim 22 "includes first and second end portions." The bar is described in one embodiment as having "a geometry that is complimentary to elongate transverse slot." 6:46-47. The bar may be long enough to extend substantially across the width of the auxiliary device and protrude through an opening, and it must be sufficiently solid or rigid to bias in response to force. 6:47-55. Based on the parties’ submissions and the use of "bar" in the patent, it is construed to mean a piece of solid material with one or two ends and with sufficient rigidity to bias in response to force.
The Court construed the disputed claim terms as follows:
"affixed" means secured
"adjusting" means its functions are: to frictionally receive the belt; to hold the belt to tighten the harness; and to release the belt to tighten it; its corresponding structures are: cam member and bar, or a bottom wall, cam bar and bar, that are described in the '889 patent at col. 1, 55-57, col. 1, ll. 63-68 to col. 2, 1-8, and at ll. col. 3, 65-68 to col. 4, 1-ll. 58, and Figures 3-5, or their equivalents
"cam member" means an eccentrically revolving part with a radial bearing surface; and
"bar" means a part that is longer than it is wide.

The parties also dispute the proper construction of the term "transparent bar." Irwin contends this term means a transparent and straight, cylindrical, rod-like piece that is considerably longer than it is wide. Orosz argues that this term means a transparent piece of material that has a curved surface.

According to Irwin, the terms bar, rod, and tube are used synonymously throughout the patent specification and that no other term or shape is used to describe the transparent bar. Irwin also asserts that the figures included with the patent specification depict a cylindrical bar.

Orosz claims that the prosecution history of the '081 patent demonstrates that both the Patent and Trademark Office and Orosz understood a transparent bar to include something less than a full cylinder. In an office action dated December 29, 1997, the patent examiner stated, "Jehn teaches how a transparent bar may be used for the purpose of projecting light onto an object." (Pl.'s App. at A0058). Figures 1, 5, 6, 7, and 8 of the Jehn Patent, Patent No. 5,446,635, disclose a half-cylinder used for projecting light onto an object.

However, the prosecution history may not be viewed as evidence of the subjective intent of the patent applicant or the patent examiner. "Representations during prosecution cannot enlarge the content of the specification"; and it is proper, instead, to rely on the specification itself for guidance in analyzing the claims. Biogen, Inc. v. Berlex Labs., Inc., 318 F.3d 1132, 1139-40 (Fed. Cir. 2003). Thus, a transparent bar is not required to be construed as something other than a cylinder simply because the prosecution history discloses that a transparent bar could be a half-cylinder.

Here, Orosz has failed to identify anything in the specification that explains a transparent bar is a piece of material with a curved surface. Instead, as Irwin argues, the specification interchangeably uses the words rod and tube with the term bar; and no other descriptive word is used. Moreover, even without referring to the specification, the ordinary meaning of the term bar is not best understood as any piece of material with a curved surface but, rather, as something that is cylindrical in shape. Accordingly, a transparent bar is construed to be a transparent and straight, cylindrical, rod-like piece that is considerably longer than it is wide.
F. Back Bar Mass (Claim 1)

Plaintiff contends that the word "bar" is to be given its ordinary dictionary definition as an object "which is longer than it is wide". See Webster's Third New International Dictionary 73-74 (1981). Alternatively, "bar" is defined as "a piece of any material long in proportion to its thickness or width." See Oxford English Dictionary 165 (compact ed. 1988).

The Defendants seek a broader definition of the word "bar" so as to exclude the requirement that the bar mass has a length greater than its width. Defendants say, for example, that a "bar" could be shaped as a square. However, the Defendants have not proposed a construction for the word "bar" that would include a square. Indeed, Defendants seem to be contending that the word "bar" should be construed to mean an object of any shape at all.

The Court does not find it appropriate to take the shape limitation inherent in the word "bar" out of the claim. The word "bar" will be given its above-quoted ordinary dictionary definition.

GO BACK

1. Construing the Claim

I find that the Dart does not infringe the third element of Claim 1. As such, I conclude that the Dart does not literally infringe on either Claim 1 or Claim 15 of the Schreiber patent.

The third element of Claim 1 reads, "barb means integrally connected to said shaft portion to aid in insertion of said shaft portion into said tissue and to lock said shaft portion into said tissue" (emphasis added). One way to make sense of a "barb means" aiding in the "insertion" of the shaft (as well as locking the shaft in place) would be to construe the "barb means" to include the pointed tip at the head of the shaft (along with the portion of the "barb means" which extends out past the shaft itself). The other way is to construe the "barb means" as a structure connected to the shaft that is swept back towards the base so that it minimally resists the insertion of the shaft (while also locking the shaft in place).

--- Footnotes ---

2 Contrary to Innovasive's assertion, this element is not presented in "means-plus-function" language. An element presented in means-plus-function language does not itself "recite a definite structure which performs the described function." Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed. Cir. 1996), cert. denied, 139 L. Ed. 2d 20, 118 S. Ct. 56 (1997). Put in the context of this case, the issue is whether the word "barb" defines a definite structure for performing the task. I conclude that it does. See Cole, 102 F.3d at 531 ("the 'perforation means . . . for tearing' element of Cole's claim fails to satisfy the statute [35 U.S. § 112, P 6 (1994)] because it describes the structure supporting the tearing functions (i.e. perforations)"). But the ultimate conclusion here - of no infringement - would hold even if I concluded that the word "barb" did not include a definite structure, since I would then be directed to refer to the specifications in the patent, which would only further buttress the ultimate conclusion.

--- End Footnotes ---

Bionx would have me read the "barb means" in the second way. This would be consistent with the idea that there can be barbs on places on the shaft other than the tip (See Appendix, figures 4, 6, and 7). But while such a construction meets the second requirement of the element in question - "locking said shaft portion into said tissue" - it does not meet the first - "aiding in insertion of said shaft portion into said tissue."

The first construction of the "barb means," as including the pointed tip, obviously provides a more plausible reading of the concept of aiding in the insertion of the shaft. If the Arrow has a pointed tip, which composes part of the "barb means," then the "barb means" plainly aids in the insertion of the rest of the Arrow. If the "barb means" is construed merely as that part of
the barb which is "swept back," then the most that can be said for the "barb means" is that it minimally resists the insertion of the shaft.

Bionx objects that I cannot read Claim 1 to include the requirement of a sharply pointed tip because Claim 9 includes that limitation, and this would make Claim 9 superfluous. Claim 9 reads in full: "The suture of claim 1 wherein said barb means comprises a flat triangular point at the end of said shaft portion opposite said base member and having a width greater than said shaft portion" (emphasis added).

Bionx is mistaken. Construing the "barb means" in the third element of Claim 1 to include the idea of a pointed end does not make Claim 9 superfluous. Claim 9 specifies that the "barb means" is to have a flat triangular head. Without that extra specification, one could imagine that the "barb means" would be, for example, conic, with the lip of the cone extending out beyond the width of the shaft (see Appendix, figure 5, number 52), or with rod-like extensions protruding beyond the edge of the shaft (like the bars depicted in Appendix, figure 7, number 62).

Indeed, rather than undermine the construction of "barb means" to include the pointed tip, Claim 9 supports the construction of the "barb means" as including the pointed tip. For if there were any question whether the "barb means" must be limited to only that part of the barb which locks the Arrow in place, that question is answered in the negative by Claim 9, which describes the "barb means" more broadly.

This construction of the concept of the "barb means" in Claim 1 to include a pointed tip is further confirmed in two ways. First, it is confirmed by comparing Claim 1 with an alternative embodiment of the Arrow, as described in Claim 16 (depicted in Figure 7). Claim 16 has the following three elements:

(a) a solid base member having a substantially flat portion for seating against an exterior surface of said tissue;

(b) a single, rigid cylindrical shaft portion upstanding from and integrally connected to said base member and having a pointed end for insertion into said tissue; and

(c) barb means positioned along said shaft portion.

(emphasis added).

In this embodiment of the Arrow, what serves "for insertion" (i.e. "aids in insertion") is simply the pointed end. This strongly suggests that the "barb means" referred to in Claim 1 - which, rather than the tip of the shaft, is said to "aid in insertion" - should be construed as comprising, in part, the pointed tip of the Arrow.

Second, the construction of the "barb means" as including the pointed tip allows Claim 1, which provides a general description of one preferred embodiment, to capture an essential feature of the Arrow, namely that it can be pushed into a meniscus in and of itself, without the need for any other devices. This feature of the Arrow was emphasized numerous times in the procedural history ("PH"). For example, Dr. Schreiber argued at one point before the Patent and Trademark Office ("PTO") that it "is crucial . . . that no unnecessary enlargement of the aperture of the tissue material through which the fastener must pass through [sic] is required." PH at 97. In other words, the Arrow can be inserted without the use of a carrying needle to bring it into position, and thus, without creating a hole in the tissue wider than the Arrow itself. On another occasion, Dr. Schreiber contrasted the Arrow with another suture which has "no teaching of a rigid shaft as claimed by the Applicant which is necessary to have the suture penetrate through the meniscus tear." PH at 42 (emphasis). While neither of these arguments mentions a pointed tip directly, they clearly indicate that the Arrow has to be capable of penetrating meniscal tissue in and of itself, and that in turn implies that the Arrow must have a pointed tip. Construing the "barb means" in Claim 1 to include the pointed tip brings this essential feature of the Arrow - already implied with the "aid in insertion" language - into the general description of Claim 1.

--------- Footnotes ---------

3 References to the Procedural History are taken from Tab C in the Affidavit of Sarah Chapin Columbia.

--------- End Footnotes ---------
For all of these reasons, I interpret the phrase "a barb means . . . to aid in insertion of said shaft" to imply that the barb means comprises not only the projection from the shaft which locks the shaft in place, but also the pointed tip of the shaft. There may be additional barbs on the shaft (as described in Claims 10-12), but they are distinct from the "barb means" described in the third element of Claim 1.

2. "barrel"

a. Parties' Positions

The parties propose the following constructions for "barrel," which is present in each of the asserted claims as well as the other two patents-in-suit. Dkt. No. 114. The primary dispute between the parties is whether the syringe barrel must be cylindrical in shape.

<table>
<thead>
<tr>
<th>RTI</th>
<th>BD</th>
</tr>
</thead>
<tbody>
<tr>
<td>The elongated part of the syringe body</td>
<td>The elongated cylindrical portion of</td>
</tr>
<tr>
<td>including a portion within which the</td>
<td>the syringe body through which the</td>
</tr>
<tr>
<td>plunger moves during injection</td>
<td>plunger moves during injection</td>
</tr>
</tbody>
</table>

RTI contends the claimed barrel could take a number of conceivable shapes and should not be limited to a cylindrical form. Dkt. No. 111 at 26-27. RTI further argues that the '224 specification specifically contemplates a non-cylindrical barrel. Id. (citing '224, 10:47-50). Moreover, the principle of claim differentiation supports RTI's broad construction as certain claims specifically contain a cylindrical limitation while others do not. Id. at 27 (citing '224, 20:22-23 (claim 25)). Finally, RTI contends that it is improper to limit the claimed barrel to the portion of the syringe through which the plunger moves. Id. Instead, some claims within the '224 and '077 Patent suggest that the term may encompass other structures through which the plunger does not move; specifically, the term may also define the front end portion of the syringe, including the nose portion and retraction mechanism. Id. at 27-28 (citing inter alia '224, 22:37-40 (claim 43) & '077, 22:13-15).

In response, BD relies on numerous dictionaries, which suggest that a barrel is limited to a cylindrical shape. Dkt. No. 112 at 30-31. BD also maintains that every figure in this family of patents shows a cylindrical barrel and expressly labels the non-cylindrical parts of the syringe as a 'nose' or 'transition zone'. Id. Thus, BD argues that the patent figures make clear that the term is limited to a cylindrical shape and does not include narrow parts in the front end of the syringe. Id. In addition, BD contends that the terms barrel, nose, and transition zone should each be given distinct meanings because they are given different names and labels throughout the patent--to do otherwise would render the different labels superfluous. Id.

b. Court's Construction

The Federal Circuit has made it clear that when the specification discloses only a single preferred embodiment, limitations from that embodiment generally should not be imported into the claim language. Phillips v. AWH Corp., 415 F.3d at 1323 (rejecting the contention that "if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment"). Limitations from the specification may be imported into the claims where it is clear that the patentee intended for the "claims and embodiments in the specification to be strictly coextensive." Id. (citing SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1341 (Fed. Cir. 2001)). Such intention is evidenced by the manner in which the patentee uses a term within the specification and the claims. Id. (citing Snow v. Lake Shore & M.S. Ry. Co., 121 U.S. 617, 630, 7 S. Ct. 1343, 30 L. Ed. 1004, 1887 Dec. Comm'r Pat. 354 (1887) (it was clear from the specification that there was "nothing in the context to indicate that the patentee contemplated any alternative" embodiment to the one presented)).

RTI is correct that all figures in the patents-in-suit generally depict syringes having a cylindrical barrel. The specification of the '224 Patent, however, makes it clear that the patentee contemplated alternative shapes. Specifically, the patent states that the "head of the needle holder is preferably circular but could conceivably be another shape with the retainer member correspondingly configured to conform to it." '224, 10:47-50. As the '224 Patent generally depicts a syringe having a barrel
and needle holder having similar shape, such a statement evidences the patentee's belief that both the needle holder and related barrel could have a non-circular shape. Thus, the patentee may have contemplated a non-cylindrical barrel.

Moreover, claim 25 of the '224 Patent specifically recites a "substantially cylindrical barrel," which strongly suggests that the term is not inherently cylindrical. Furthermore, the absence of this "substantially cylindrical" limitation in other claims suggests that it should not be read into claims in which it is not present. See Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1326 (Fed. Cir. 2003) ("when a patent claim does not contain a certain limitation and another claim does, that limitation cannot be read into the former claim"). The Court therefore finds that the term barrel should not be limited to a cylindrical shape.

Finally, although this Court believes that the terms barrel, nose, and transition zone are generally distinct components within the patents-in-suit, the patents also suggest that the barrel may encompass some portion of the syringe through which the plunger does not move. Specifically, claim 25 of the '077 Patent recites a "barrel having a front end portion containing a retraction mechanism." If this front end portion of the claimed barrel contains the retraction mechanism, then it cannot logically also be a portion through which the plunger moves. Although the plunger will assuredly move through some portion of the barrel, this Court finds that it would be improper to limit the barrel to that portion.

Accordingly, this Court finds that "barrel" means "the elongated part of the syringe body including a portion through which the plunger moves during injection."

B. "barrier means"

NIJ argues that "barrier means" refers to any perforated structure that attenuates noise. Fisher contends that the word "barrier means" denotes a complete block to the flow of fluid so that, if a "barrier means" is perforated, fluid can flow only through the perforations.

The '510 Patent uses the phrase "barrier means" in independent claims 1, 2 and 13 as one component of a "means for attenuating fluid" (the other component being the "closure member"). Based upon the claims, this Court will therefore construe "barrier means" as any structure, other than the closure member, that attenuates the flow of fluid.

The specification corroborates this definition referring to "perforated barrier means" as "an attenuator plate or like structure" and as "any type of perforated surface capable of performing the desired attenuating function." '510 Patent at col. 1, 11. 49-50 & col. 4, 11. 36-37.

a. "basal rate profile"

i. The Parties' Proposed Construction

In the Joint Claim Construction Chart, Smiths asserts that I should construe "basal rate profile" to mean "an infusion rate with a start and stop time." (D.I. 165 at 39.) At oral argument, Smiths amended its position somewhat, stating that "basal rate profile" is a "basal rate with a start and stop time." (D.I. 269 at 42.) MiniMed argues that I should construe "basal rate profile" to mean "a series of variable liquid infusion rates." (Id.)

Smiths argues that the specification supports its construction of the term "basal rate profile." Specifically, Smiths points to a paragraph in the specification where the term "profile segment," which is described as being programmed with a "start time and a basal rate," and the term "profile" are, says Smiths, used interchangeably. (798 patent, col. 27:1-6.) Smiths also notes that the two terms are used interchangeably throughout the '798 patent. (D.I. 218 at 39, n. 22.) This, Smiths argues, supports the construction of the term "profile" as a single rate. (Id. at 39.) Lastly, Smiths argues that MiniMed's product literature
uses the term "profile" to mean a "basal rate with a start and a stop time." (D.I. 193, Ex. 35 at 136.)

MiniMed argues that, in the part of the specification cited by Smiths, the patentee merely left out the word "segment" after the word "profile." (D.I. 169 at 37, n. 3.) MiniMed further argues that, in the prosecution history, the patentee clearly indicated that the meaning of "basal rate profile" does not mean a constant basal rate. (D.I. 214 at 38-39.) Lastly, MiniMed argues that it is improper for the court to look at MiniMed's product literature in order to construe the claims. (Id.)

ii. The Court's Construction

The definition of "profile" is "a set of data . . . portraying the significant features of something . . . ." Merriam-Webster Dictionary, 928 (10th ed. 2001). The word "set" in this definition supports the construction that "basal rate profile" means multiple rates.

The prosecution history of the patent also supports this construction. In attempting to overcome the examiner's objection to Claim 12, labeled as Claim 54 in the application, the patentee stated that:

the [prior art] references only describe and disclose storing basal and bolus rates in the memory of the pump. Thus . . . [the] references do not disclose, teach or suggest an external infusion device including a memory to store at least two basal rate profiles, as recited in Claim 54.

(D.I. 207, Ex. J at 35 (emphasis added).) In this excerpt, the patentee distinguished storing "basal and bolus rates" from storing "at least two basal rate profiles." (Id.) This supports the argument that a "basal rate profile" is more than a simple "basal rate."

The section of the patent cited by Smiths is unconvincing. In that paragraph, the patentee continually uses the term "profile segments" to refer to a single basal rate. (798 patent, col. 27:1-16.) In the last sentence, however, the patentee uses the term "profile" instead of the term "profile segment." (Id. at 27:13-16.) The fact that the patentee chose the term "profile segment" leads me to believe that, the patentee intended that the term "profile" encompasses multiple segments and that the single use of the term "profile" as opposed to "profile segment" was merely an inadvertent dropping of the word "segment." 24

24 Smiths' statement that the terms "profile" and "profile segment" are used interchangeably throughout the specification is incorrect, as this appears to be the only instance of the two terms being used in such a manner.

Lastly, it is improper for Smiths to argue that literature from MiniMed's commercial embodiment of the invention should be used to construe the terms. See Vitronics, Inc., 90 F.3d at 1584 (stating that "only if there were still some genuine ambiguity in the claims, after consideration of all available intrinsic evidence, should the trial court have resorted to extrinsic evidence").

With respect to the construction of the term "basal rate," I hold that it has a plain meaning that does not include a bolus rate. Neither side has cited, nor have I found anything in the specification or prosecution history that would lead me to expand the definition to include a bolus rate. The term "basal rate profile" means "a series of variable basal rates."

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G. "base" (claims 6, 10, and 20)
PolyVision's proposed construction
Smart's proposed construction
No construction required. Alt.: The A rigid foundation upon which the bottom part or layer of a structure. support substrate is mounted.

PolyVision contends that this term needs no construction. It offers a construction based upon the dictionary definition of
"base" in the event that construction is required. PolyVision notes that in the preferred embodiments the base as shown is numbered "14" and is the bottom part of the structure. Smart contends that the term must be construed because it serves a particular function in the invention. That is, Smart notes, the base must be rigid because all of the embodiments show the base as supporting the tension between the membrane and the flexible members. As support, Smart cites Fig. 5, which shows the invention with an inverted base and identifies the base as number "14a" without a support substrate. Smart points out, correctly, that it is obvious from this example that the base would need to be rigid, because if it were not, the membrane would not remain tensioned. Smart also notes that in describing the embodiment that includes a support substrate, the specification states that "[b]ase 14 may be metal or plastic" and that the "substrate spacer 16 may be formed of polystyrene or polyurethane foam, or glass," (Col. 3, ll. 26-29), thus indicating that the base must provide the support for the tension of the membrane and the peripheral flexible member. PolyVision counters that Smart's argument is refuted by the specification, which shows that the "base" and "flexible wall" are part of the same one-piece element.

The Court agrees with PolyVision that it would be improper to read the term "rigid" into the claim. While it is certainly true that in the embodiment shown in Fig. 5, the base must be rigid in order to provide support to maintain pressure on the membrane, the same is not necessarily true in the embodiment shown in Fig. 1. As indicated above, the specification states that the substrate spacer may be formed of polystyrene or polyurethane foam, or glass. While the Court is no expert in the area, it can see no reason why a very dense foam spacer or even a glass spacer could not provide the rigidity needed to keep the membrane tensioned, even if the base is not rigid. Accordingly, the Court concludes that no construction is required.

13. "base"

This term is used in Claim 16. Plaintiff asserts that this phrase should be construed as "curved section." Defendants assert that the term need not be construed, and the Court agrees. Because the Court see no ambiguity as to the meaning of the term "base" and because its ordinary and customary meaning is clear to one skilled in the art, the Court declines to construe the phrase as it is used in the '015 Patent.

The court adopts Simmons' construction of the term base:

The claim term "base" means the structure which supports all of the other claimed structures of the snowmobile ski, and upon which all of the other claimed structures of the snowmobile ski stand or are mounted.

According to Random House Webster's Unabridged Dictionary, "base" means "the bottom support of anything: that on which a thing stands or rests: a metal base for the table." The alternate construction proposed by Bombardier does not change the plain meaning as set forth by Simmons. The primary dispute -- whether or not the side portions are a part of the base or whether they are separate structures supported by the base -- is resolved by other language in claim 1 and does not need to be resolved at this point.

Footnotes

8 RANDOM HOUSE WEBSTER'S UNABRIDGED DICTIONARY at 172 (2d. ed. 1993).
The parties have also asked the Court to construe the word "base." The claim language is "a base removably attached and arranged to support the seat." '649 Patent, col. 6, ll. 5-7. The claim defines base as a support for the seat. In other words the "base" is the structure that props up the seat. Similarly, the '862 patent language identifies that the base is separate from the seat and is a structure upon which the seat sits.'862 Patent, col. 6, ll. 12-13.

Initially, the parties disputed the construction of the terms "base" and "slot." Truth argued that the term "base" used in the '308 patent was properly construed as meaning "a one-piece, single element, which is an integral part of the operator and which acts to support the rest of the operator, and which excludes separate but physically or imaginarily joined elements." (Mot. Markman Hearing Claim Construction at P 13.) However, Truth later conceded, in its Opening Claim Construction Brief and at oral argument, that a "base" can be comprised of more than one piece as long as those pieces were cohesive. (Truth's Opening Claim Construction Br. at 5 n.6.)

It should be noted that neither the claims nor the specification of the '308 patent state or specify that a "base" must be a single piece. The '308 patent uses the term "base" to refer to a window operator's bottom support or mounting surface. However, in none of these references does the '308 patent ever state that the bottom support or mounting surface must be composed of a single piece. Furthermore, a "base" is defined as "the bottom of something considered as its support[;] that on which something rests or stands[;] foundation." Webster's Third International Dictionary 180 (3d ed. 1986).

Based on the foregoing, "base" is construed as "the bottom support of the operator; the piece (or multiple pieces) that support the remainder of the operator and/or permit the operator to be mounted to a window frame."

Defendant asks the Court to construe the term "base" and the term "connected to the cable." Defendant argues that "base" means a supporting layer or foundation that serves to support the elements of the device, that needs not render the device free standing. Defendant further argues that "connected to the cable" means that the cable is fastened to the seat, not to a belt that is wrapped around the user. Defendant bases its argument on the definition of "base" reference in the R. Lee Rawls Markman report, as well as specific claims in the '057 patent. Defendant also introduces extrinsic evidence in the form of expert testimony by Evan R. Flavell.

As a threshold matter, the Court notes that the term "base" is the tenth disputed claim presented by the parties. This Court previously limited claim construction to a total of ten disputed claims. (Dkt. # 288). Accordingly, the Court will not construe the term "connected to the cable."

The "base" is described in the patents at issue as follows:

the machine comprises a rigid frame or base 10 having an upright U-shaped post 12 and a short horizontal leg 14 rigidly connected to post 12, e.g., by means of triangularly-shaped side corner plates 16. An elongated section 18 is hinged to leg 14 by means of a hinge 20, which is clearly shown in Fig. 9. . . . Base 10, including horizontal leg 14, corner plate 16, and base section 18 can be made of a light metal, such as aluminum or aluminum alloy, or of any other suitable material.

'057 Patent at 2:66-3:30 and '704 Patent at 3:25-55. The parties agree that the common meaning of base, something on which a thing stands or by which it is supported, correctly describes the term "base" as used in the context of this patent. However, plaintiff asks the Court to also construe the term to mean "floor-supported" frame, including all of the named components above, while defendant argues that nothing in the claim requires that the base be free standing or "floor-supported." In addition, defendant appears to argue that the term base refers only to the horizontal element that lies on the floor. Based on the intrinsic record for these patents, the Court finds that the "base" does include the components listed above, but does not require that these components be "floor-supported" as plaintiff suggests.

The language of the specifications demonstrates that the "base" is intended to include all of the components listed, not just
one piece. For example, the inventor uses the inclusive words "a rigid frame or base 10 having . . .," '057 Patent at 2:66-67 and '704 Patent at 3:25-26 (emphasis added), and "[b]ase 10 including . . .." '057 Patent at 3:27 and '704 Patent at 3:54. Moreover, in other sections of the specifications, the inventor refers to individual components of the base as "base sections." For example, the inventor first identifies section 18 as "an elongated section," then refers to it subsequently as "base section 18." '057 Patent at 3:2 and 3:29 and '704 Patent at 3:29 and 3:55.

This intent to include all of the base components in the term "base" is further evidenced by the prosecution history of the '704 Patent. In the initial patent application the frame and the base were described separately:

the machine comprises a rigid frame 10 formed by an upright U-shaped post 12 and a horizontal leg 14 rigidly connected to post 12, e.g., by means of triangularly-shaped side corner plates 16. A base 18 is hinged to leg 14 by means of a hinge 20, which is clearly shown in Fig. 9.

(Dkt. # 319, Ex. D at NAUT 003310). Accordingly, the term "base" strictly referred to the horizontal section 18, as shown in Figure 9. (Dkt. # 319, Ex. D at NAUT 003328). However, that patent application was rejected, and in response to the rejection, the definition of "base" was amended with the more inclusive language highlighted above:

the machine comprises a rigid frame or base 10 having an upright U-shaped post 12 and a short horizontal leg 14 rigidly connected to post 12, e.g., by means of triangularly-shaped side corner plates 16. An elongated section 18 is hinged to leg 14 by means of a hinge 20, which is clearly shown in Fig. 9.

(Dkt. # 319, Ex. D at NAUT 003310) (emphasis added). Thus, the definition of base was broadened to include both the horizontal and vertical components. Accordingly, this Court finds that the term "base" includes the components described in the specifications, not just the horizontal section 18.

However, the Court does not find that anything in the claims or specifications requires the "base" to be "floor-supported" as plaintiff asserts. In fact, the doctrine of claim differentiation weakens any suggestion that claim 7 includes such limitation. While the Court recognizes that the doctrine of claim differentiation is not a hard and fast rule of construction, it does create a presumption that each claim in a patent has a different scope. Claim 8 incorporates claim 7 by reference and further defines the term "base" with an additional limitation: "wherein the base is adapted to rest on a horizontal supporting surface, and the seat includes wheels engageable with the supporting surface." '057 Patent at 7:33-36 and '704 Patent at 7:62-65. If this Court were to interpret the term "base" to include the limitation "floor-supported," as plaintiff asserts, it would render claim 8 superfluous and nearly redundant of claims 7 and 1, the exception being the description of the seat including wheels engageable with the supporting surface. Plaintiff has not shown any reason sufficient to rebut the presumption that claims 1 and 7 should not be so limited in order to preserve the distinction between claims 7 and 8. Consequently, the Court declines to limit the term "base" to a "floor-supported" structure.

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B. "Base"/"Base End"

The district court construed the term "base" in Claim 11 to refer to "the general area that lies beneath the face member of each wing or side where the flexing occurs, rather than a structurally distinguishable finite section of each wing." Trial Tr., Vol. 5 at 120. Similarly, the court construed the term "base end" in Claim 15 to mean "a general area of each side, rather than a structurally distinguishable finite section of each side." Id. Bridgeport maintains that the meaning of these terms is facially unclear, and advocates recourse to the specification to supplement the allegedly deficient claim language. Bridgeport contends that resort to the specification establishes that the "only legitimate construction of 'base end'" is "a structurally distinguishable, finite section of each of the plurality of the wings or sides."

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - - -

1 Bridgeport argues that the claim term should be "base end" in Claim 1 as well as in Claim 15, because the word "and" following "base" in Claim 1 is allegedly a typographical error introduced by the PTO. We must take the claim as we find it, however. See Cardiac Pacemakers, Inc. v. St. Jude Med., Inc., 296 F.3d 1106, 1115 (Fed. Cir. 2002) ("This court will not
We do not accept Bridgeport's premise that the use of "base" or "base end" "so deprives the claim of clarity' as to require resort to the other intrinsic evidence for a definite meaning." CCS Fitness, 288 F.3d at 1367 (quoting Johnson Worldwide, 175 F.3d at 990). Bridgeport simply asserts that the terms are unclear; it does not explain why one of ordinary skill in the art would not be able to understand what was signified by those terms. Because we do not find the terms at issue unclear, we decline to resort to the specification to supplant the ordinary meaning of those terms, and find no error in the district court's construction.

**Base member**

The Court construes "base member" as the "lowermost portion of the system that supports the arm assembly above a surface." Both parties agree that the term’s plain and ordinary meaning applies, but they disagree as to what that plain and ordinary meaning is.

Defendants proposed construction is “the portion of the display system that provides support for the display system from a surface.” Defendants proposed construction is overly broad and fails to give meaning to the term “base.” Even though Defendants agree that the plain and ordinary meaning applies, they fail to account for that meaning in their construction. See Philips, 415 F.3d at 1312–13 (words of a claim should generally be given their plain and ordinary meaning).

MASS proposes that “base member” means “the lowermost portion of the system for resting on a work surface and that supports the arm assembly above the work surface.” MASS relies on both intrinsic and extrinsic evidence for its construction. MASS claims the prosecution history limits the base to “resting on a work surface.” See MASS’s Opening Brief, Ex. C. During prosecution, the inventor stated, “this [base] is used to support the arm assembly above a work surface.” See MASS’s Opening Brief, Ex. C. During prosecution, the inventor stated, “this [base] is used to support the arm assembly above a work surface.” Id. However, the prosecution history does not reference where the base must rest; thus, MASS’s construction is incorrect in limiting base to “resting on a work surface.” MASS’s limit of “lowermost portion” incorporates “base’s” plain and ordinary meaning. The dictionary defines “base” as “1 a (1): the lower part of a wall, pier, or column considered as a separate architectural feature (2): the lower part of a complete architectural design b: the bottom of something considered as its support.” MASS’s Opening Brief, Ex. E (emphasis in original). When the base component is illustrated, the base component is shown as the lowermost portion of the system. See ‘978 patent, Figs. 1–6 (showing base 12 as the lowermost portion); 12–16 (showing base 102 as the lowermost portion); 17–18 (showing base 156 as the lowermost portion). As one of ordinary skill in the art would understand that the “base” is the lower or lowermost part of the structure, that limitation must be included. Both parties agree that the base is used to support the system. Accordingly, the Court construes “base member” as “the lowermost portion of the system that supports the arm assembly above a surface.

C. "a base member"

Defendants cite to various other patents, which would have been prior art at the time of the '448 application, for the proposition that "base member" means "an integral support structure." Because the patent specification is reasonably clear on the structure of this element, and owing to the general presumption in favor of construing claim terms using intrinsic evidence, reference to other patents or additional extrinsic evidence is unnecessary. See Key Pharms, 161 F.3d at 716. Plaintiff cites to the patent specification, in particular column 2 at line 19, for the proposition that "base member" should be construed to mean a "housing." However, that sentence states that the device "basically comprises a base or housing," thereby implying that a base member is not a housing. In addition, while the patent specification appears to use the two
terms interchangeably in some places, it also clearly distinguishes between the two in others. Compare Patent Abstract ("A toy device for a pet animal comprises a base housing having an upper wall . . . ") with Column 1, Line 27 ("The base preferably comprises a housing in which the rotatable member and drive assembly are mounted . . . ") (emphasis added). Accordingly, the Court cannot find that the specification clearly defines the term "base member" as a "housing."

Rather, the implication present throughout the patent, and the Court's understanding of the plain meaning, indicate that the term "base member" should be construed as "supporting structural unit."

2 American Heritage Dictionary defines "base," as used in the context of the '448 patent, as: "a supporting part or layer; a foundation."

"Member," in this context, is defined as: "a structural unit, such as a beam or wall."

In briefing their proposed constructions of this phrase, neither party appears to have accounted for all of the differences in language employed in Claim 11, as opposed to Claim 1. The Court, however, feels that Patentee's different choice of language to describe the base member in Claim 11 is important and must be given effect in construing the claim. The differences are subtle, but significant. To wit, in Claim 1, the base member has a lower surface for freely seating on a substantially flat surface; and that lower surface has no projections for connection to the seating surface. In Claim 11, the base member has a lower edge for freely seating on the ground; that lower edge lying in a substantially flat plane and having no protrusions projecting downward from said plane.

The Court finds that the difference between "edge" and "surface" is not significant. However, Claim 11's edge freely sits on the ground, not any substantially flat surface. The ground, which is defined as the "solid surface of the earth," while flat in places, can be significantly uneven or irregular. Accordingly, as in Claim 1, the lower edge of the device would not necessarily be flat itself. This construction, however, ignores the crucial additional phrase of Claim 11: "the lower edge lying in a substantially flat plane." Neither party has briefed the meaning of this phrase. A plane is defined as "an unbounded two-dimensional shape" or "a surface containing all the straight lines that connect any two points on it." As it is a two-dimensional shape, it is perfectly regular and flat, though not necessarily horizontal. A substantially flat plane, then, is one that is mostly horizontal. As the lower edge lies in the plane, not on it, all of the points on the lower edge must be regularized and, thus, the edge itself must be flat. The Court, therefore, finds that the lower edge must be a flat surface that lies mostly horizontal on the ground.

12 American Heritage Dictionary defines "edge," as used in the context of the '448 patent, as: "the line of intersection of two surfaces."


14 American Heritage Dictionary defines "flat" as: "having a horizontal surface without a slope, tilt, or curvature."
Claim 11 also refers to the absence of any protrusions from the lower edge, which would project downwardly from the mostly horizontal plane. Claim 1 referred to projections, not protrusions - a distinction the Court considers immaterial - but also referred to the purpose of the projections, i.e., for connection to the seating surface. No such limitation exists in Claim 11. Accordingly, the device in Claim 11 does not contain any part that protrudes out from the lower edge of the device and proceeds downward, regardless of its intended purpose.

The Court therefore construes "a base member having a lower edge for seating freely on the ground, the lower edge lying in a substantially flat plane and having no protrusions projecting downward from said plane" as "a supporting structural unit having a flat lower edge for sitting on, unsecured to, the ground in a mostly horizontal position. This unit shall have no parts extending downward from its lower edge."

3. "base of the user's fingers"

McHugh asserts that this term does not require construction, while H&B asserts that it does. Nevertheless, because there is a controversy regarding this term, this Court will construe the term "base of the user's fingers." See Markman, 517 U.S. at 374.

Claim 1 of the patent recites a hand grip comprising an elongated resilient member that is "configured to fit at a base of the user's fingers in a gap between the palm of the user's hand and the base of the user's fingers." (5:15-17.) McHugh's proposed construction for "base of the user's fingers" is "over the proximal phalanx A2 pulley region of the user's fingers." H&B's proposed construction is "the location where the palm joins the fingers."

The primary controversy regarding this term is whether "base of the user's fingers" refers to the specific location where the palm joins the fingers or whether "base" should be construed more broadly to include the entire area over the proximal phalanx A2 pulley region of the user's fingers. The location where the palm joins the fingers is within the area over the proximal phalanx A2 pulley region of the finger. (Brief at 21.) As always, the Court begins its analysis with the language of the claim itself. The claim states that the elongated resilient member is supposed to fit "at the base of the user's fingers … in a gap between a palm of the user's hand and the base of the user's fingers." (5:15-17.) Here, the claim language indicates that the gap is not a separate location apart from the base of the user's fingers or the palm of the user's hand. Instead, the gap is formed by an interaction of the fingers and the palm. This conclusion is further supported by the written description. The written description states that when users grip any equipment with a handle, the superficial transverse "metacarpal ligament, along with associated muscle and skin tissue, [is] forced over the fingers." (1:50-51.) When the skin above the superficial transverse metacarpal ligament rubs the skin near the base of the fingers, the skin "often becomes blistered or callused with repetitive use of hand-held equipment." (2:40-41.) The invention is designed to fill this gap and prevent the ligament and associated muscle and skin tissue from being forced over the fingers.

The Court finds that H&B's construction is more persuasive, as its construction is supported by the written description. The written description indicates that the patented invention "fits in the user's hand near where the palm joins the fingers." (1:43-44.) As the claim states that the elongated member is configured to fit at the base of the user's fingers, this is clear evidence that the base of the fingers is where the palm joins the fingers.

McHugh's proposed construction also provides for this placement because the location at which the palm joins the fingers is contained within the proximal phalanx A2 pulley region. However, McHugh's construction is too broad because the proximal phalanx A2 pulley region encompasses not only the location where the gap is formed, but the part of the finger above that location as well. If the member were above both the palm and the base of the fingers, it would not be able to separate the superficial transverse metacarpal ligament from the fingers. Thus, the claim language and the written description indicate that the base of the user's fingers is not a region, but rather a specific location on the hand. Most importantly, McHugh's construction is not supported by the patent claims or the intrinsic evidence of the patent.

Accordingly, the Court adopts H&B's proposed construction and construes the term "base of the user's fingers" to mean: "the location where the palm joins the fingers."
"A modular prosthesis system comprising a prosthetic base portion . . . and a stem extension . . ."

Zimmer asserts that the Federal Circuit only partially construed the term "stem extension" when it held that it encompasses both one-piece and multiple-piece stem extensions. Zimmer argues that the Federal Circuit did not construe the terms of this limitation which refer to the parts that make up the claimed "stem extension." Zimmer's proposed construction of this claim term is: "a standardized prosthesis system including a prosthetic base portion . . . and a stem extension, that are located on the same side of a joint" (emphasis added). Zimmer asserts that one of ordinary skill in the art would understand that the base portion and stem extension must be located on the same side of a joint. Zimmer states that this construction is compelled by the claim language itself, which requires that the stem extension be mounted to the base portion. 04/06/05 Zimmer Mem. at 123. Zimmer reasons that the meaning of the term "base," the claim language (base portion and stem extension are mounted together), and the specification compel this construction. Finally, Zimmer asserts that the term "base portion" is readily understandable according to its ordinary meaning as being a "supporting part of layer." Id. at 123 (quoting Webster's New Universal Unabridged Dictionary (1992)).

Howmedica asserts that Zimmer's construction is incorrect because it adds an unstated limitation. Howmedica stated, "Zimmer cannot avoid the Federal Circuit's claim construction by throwing in the terms base portion' and stem extension' and calling it a new' claim term requiring an entirely new construction." 05/06/05 Howmedica Mem. at 7. Howmedica states that the plain language of claim 1 does not require that the base portion and stem extension be located on the same side of the joint, but rather broadly recites a "modular prosthesis system." 05/06/05 Howmedica Mem at 8. Further, Howmedica states that Zimmer admitted that "the 313 patent does not claim a joint, and the term "joint" does not appear anywhere in the patent." Id. at 9 (quoting Zimmer's Statement of Undisputed Facts at P 7). Rather, Howmedica argues that claim 1 only requires "a modular prosthesis system," "a prosthetic base portion," and "a stem extension." As such, Howmedica asserts that the proper construction of this term is a "prosthesis system of standardized units" with no requirement that the base portion and stem extension be located on the same side of the joint. Transcript of Oral Proceedings Held on 06/09/05 at 3.

In construing this claim term, this Court looked first to the specification of which it is a part. One "purpose for examining the specification is to determine if the patentee has limited the scope of the claims." Watts. v. XL Sys., Inc., 232 F.3d 877, 882 (Fed. Cir. 2000). The specification reveals that claim 1 contemplates the connection between the base portion and stem extension to be one that is both "releasably fixed" and as one providing "a secure mating interlock." 313 patent, col. 5, 11. 36-36; col. 6, 11. 5-7. This connection is described in the specification as occurring at the undersurface of the base portion, whereas the other surface of the base portion is attached to an "articular surface or additional portion. 313 patent, col. 2, 11. 57-59. Additionally, the adjacent surfaces of the base portion and stem extension are in a bone cavity. 313 patent, col. 4, 11. 7-21. If the base portion and stem extension could be located on opposite sides of a joint, then the space between the two would be the joint space-where articulation occurs-rather than in a bone cavity. This would be in direct contravention of the specification. Finally, a study of the figures in the specification and in the descriptions of the embodiments in the specification show that the base portion and stem extension cannot, then, be on opposite sides of the joint, because this type of prosthetic joint requires movement between the components on either side. See Crowninshield Decl. P 27. As such, this Court adopt's Zimmer's proposed construction and construes this term as requiring "a standardized prosthesis system including a prosthetic base portion . . . and a stem extension, that are located on the same side of a joint."
10. The Parties disagree about how the base rate number is derived. Medtronic asserts that "base rate" is defined as any rate higher than the normal heart rate, determined as a function of the heart rate prior to cardioversion. It asserts that only under its definition would the device appropriately respond to a sudden reduction in cardiac rate.

Guidant argues that under Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1372 (Fed. Cir. 2003), it is appropriate to parse out the words of the term to arrive at an ordinary meaning. In doing so, Guidant argues that "base" means "the starting point or line for an action or undertaking." Webster's Ninth New Collegiate Dictionary 133 (1990). The Parties agree that the ordinary meaning of "rate" is "pacing rate." Thus, Guidant argues that "base rate" means the rate at which ventricular pacing starts, which is higher than a preselected lower rate where the pacing ends up.

Guidant asserts that Claim 1 does not state that the base rate is a determined or calculated value, as opposed to a programmed value. The claim does not mention the calculation or determination of the base rate.

As Guidant notes, although overcoming the "sudden reduction in cardiac rate" that may result from applying cardioverting electrical energy to the atria is an advantage of the invention, "advantages described in the body of the specification, if not included in the claims, are not per se limitations to the claimed invention." Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1301 (Fed. Cir. 2003) (citation omitted).

The Court agrees with Guidant. The claim refers only to a "base rate," not a method for determining the base rate. For support, Medtronic cites to the referred embodiment of the '600 Patent. The Court will not rely on these portions of the specification because it is inappropriate to import limitations from the preferred embodiment into claim construction. See Tex. Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1204 (Fed. Cir. 2002). Medtronic also cites to the background portion of the specification and the prosecution history to support its argument that it proffered interpretation of "base rate" is consistent with the perceived purpose of the claimed invention which is to avoid the problems associated with a sudden reduction in cardiac rate following successful cardioversion or defibrillation. The Court should not limit its claim construction based on the perceived purpose of the invention. See E-Pass Techs., Inc. v. 3COM Corp., 343 F.3d 1364, 1370 (Fed. Cir. 2003). Therefore, Medtronic's proposed limits will not be included in the Court's claim construction.

Thus, the proper interpretation of "base rate" is the rate at which ventricular pacing starts. The rate is higher than a preselected lower rate.

A.

We first turn to the "base section" limitation, which appears in all but one of the asserted claims. More particularly, "base section" is found in claims 1-3, 6, 8, 20, and 21 of the '149 patent; claims 19, 21, and 23 of the '630 patent; and claims 7, 8, 12, 13, 16, and 18 of the '317 patent. As noted, the district court construed this limitation to have a single meaning for all three of the patents-in-suit: "the bottom support structure of the snowmobile seat." Claim Construction, 2007 U.S. Dist. LEXIS 98875 at *35.

According to Boss, notwithstanding the fact that the patents' specifications are nearly identical, each patent should have a different construction for the term "base section":

The '149 Patent: "a cellular structure that forms at least part of the bottom of the seat."

The '630 Patent: "a cellular structure that forms at least part of the bottom of the seat and which can be directly or indirectly mounted to the snowmobile."

The '317 Patent: "a cellular structure that forms at least a part of the bottom of the seat and which can be mounted to other support structure that in turn can be mounted to the snowmobile."

Boss argues that the district court erred by construing "base section" identically for all three patents because "the specifications of the Boss Patents successively broaden the scope of 'base section.'" Specifically, Boss highlights that each
Yamaha counters that the district court's construction of "base section" is supported by the all three patents' claims and specifications. In addition, Yamaha points out that both the preferred and alternative embodiments indicate that the "base section" is the bottom structure that provides support. Moreover, Yamaha argues that Boss's proposed constructions import unnecessary limitations into the claims and misinterpret the patents' specifications.

We hold that the district court correctly construed "base section" as the "bottom support structure of the snowmobile seat." Contrary to Boss's arguments, the district court's construction--"bottom support structure of the snowmobile seat"--does not improperly limit "base section" to a preferred embodiment. Rather, it is in accordance with the entirety of each patents' intrinsic evidence. See, e.g., Phillips, 415 F.3d at 1314-15 (emphasizing a patent's intrinsic evidence as particularly important to claim construction); Alloc, Inc. v. Int'l Trade Comm'n, 342 F.3d 1361, 1370-71 (Fed. Cir. 2003) (looking to "whether the specification read as a whole suggests that the very character of the invention requires" a particular claim construction). In addition, because each patent-in-suit is derived from the same parent application and shares many common terms with its sister patents, the district court correctly interpreted "base section" consistently across all of the asserted patents. See NTP, Inc. v. Research In Motion, Ltd., 418 F.3d 1282, 1293 (Fed. Cir. 2005) ("Because NTP's patents all derive from the same parent application and share many common terms, we must interpret the claims consistently across all asserted patents."); Jonsson v. Stanley Works, 903 F.2d 812, 818 (Fed. Cir. 1990) ("The '912 patent is the result of a continuation-in-part application from the original '008 application, which led to the '251 patent. Hence . . . the construction of the term 'diffuse light' contained in that patent, is relevant to an understanding of 'diffuse light' as that term is used in the '912 patent.").

We begin by looking at the claim language itself, which is instructive of the proper construction of "base section." See Phillips, 415 F.3d at 1314 ("[T]he claims themselves provide substantial guidance as to the meaning of particular claim terms."). Several claims at issue in each patent indicate that the "base section" has a "lower surface for mounting on a snowmobile" and that "a flexible seat section [is] disposed on the base section . . . on which a rider may sit." '149 patent col.9 ll.53-57; col.12 ll.31-38; see '317 patent col.10 ll.65-67; col.11 ll.19-25 (claiming that the flexible seat section, upon which the rider sits, is placed on top of the base section); '630 patent col.11 ll.41-44 (claiming that a flexible seat section is disposed on a generally rigid base section); col.12 ll.18-23 (claiming "a substantially rigid base section, supporting the flexible seat section," upon which a rider may sit). Other claims similarly state that the base section "has a bottom surface configured to abut an upper surface of the track tunnel of the snowmobile" and that "the rigid base section provides a desired shape and structure of the seat." '317 patent col.11 ll.25-29; col.12 ll.10-13, 42-46. In addition, certain unasserted claims likewise suggest that the "base section" must be the bottom structure of the seat. See, e.g., Phillips, 415 F.3d at 1314 ("unasserted [claims] can also be valuable sources of enlightenment"). For example, several such claims indicate that the "base section" includes "fasteners" to couple the seat to the body of the snowmobile. See, e.g., '317 patent col.10 ll.28-61 ("fasteners being coupled on the lower surface of the base section and configured to be coupled to the snowmobile to resist horizontal movement between the base section and the snowmobile"); '630 patent col.20 ll.5-16 ("fasteners, configured to be coupled between the base section and the snowmobile" to resist movement between the base section and the snowmobile); '149 patent col.10 ll.30-35 ("fasteners being coupled on the lower surface of the base section and configured to be coupled to the snowmobile"). The fact that the base section abuts, mounts, and fastens to the upper portion of the snowmobile body indicates that it must be the bottom of the snowmobile seat. Indeed, it would be difficult, if not impossible, to mount the base section to the top of the snowmobile, using the fasteners on the base section's bottom, if the base section was not the bottom of the snowmobile seat. Similarly, that the base section is placed underneath the flexible seat section and that it provides the shape of the snowmobile seat, certainly denotes that the base section provides support for the snowmobile seat upon which the rider sits.

While the claims provide guidance, the district court's construction of "base section" is further confirmed, and consistently explained in detail, by each patents' specification. See Phillips, 415 F.3d at 1315 (acknowledging that the specification is "always highly relevant" and usually dispositive). The patents' specifications emphasize exactly what was described in the claims--that the base section has a bottom surface that is disposed on, and abuts, the snowmobile body and an upper surface for placing a flexible seat section upon which the rider may sit. See '149 patent col.2 ll.40-45; col.4 ll.8-13; col.6 ll.33-34; see also '630 patent col.3 ll.35-36 ("The front 24, like the bottom 22, abuts the snowmobile 23."); col.4 ll.25-26 ("The seat section 60 has an upper surface 62 on which a rider may sit."); col.6 ll.3-4 ("bottom 222 disposed on the snowmobile 23");
part of the base section, the base section is therefore the bottom structure of the snowmobile seat. Logically, because both the higher and lower surfaces are higher than the lower surface, but still part of the bottom of the base section. Indeed, the "lower surface 42" forms a part of the bottom of the snowmobile seat, and another fastener on the top of the snowmobile body.

Thus, the base section is required to be the bottom structure of the snowmobile seat.

Further emphasizing that the base section is the bottom structure of the snowmobile seat, the base section consists of formed cavities that fit around various components located on the snowmobile itself, such as the gas tank, engine, and battery. '630 patent col.4 ll.14-16; '149 patent col.4 ll.58-60; '317 patent col.2 ll.2-32 (describing various indentations in the base section to "match" components on the snowmobile body). In this way, the base section can act as a "leak barrier between the snowmobile components . . . and the flexible seat section," which is placed on top of the base section. '317 patent col.2 ll.27-30; see, e.g., '630 patent col.3 ll.47-50 (explaining that the base section "does not absorb moisture or water"); '149 patent col.4 ll.25-28 (same). If the base section was not the bottom of the snowmobile seat, it would not need to be formed with cavities to "match" the shape of the snowmobile body and components; nor could it protect the flexible seat section from leaking snowmobile components.

The patents' specifications similarly reiterate that the base section is the support structure of the snowmobile seat. Specifically, each patents' specification states that the "base section . . . is substantially rigid and provides support for the seat []." '149 patent col.4 ll.22; col.6 ll.38-40; '630 patent col.3 ll.42-43; col.6 ll.7-9; '317 patent col.4 ll.5-7; col.7 ll.1-3, and "provide[s] strength and rigidity," '630 patent col.3 ll.47-48; '149 patent col.4 ll.24-26; '317 patent col.4 ll.20-22. The statement in the specification that the base section "prevents the seat from collapsing onto the snowmobile components" and "provide[s] the desired shape and structure of the seat," '317 patent col.2 ll.23-25; col.4 ll.24-26; col.4 ll.64-col.5 l.5, further suggests that the base section is required to be the bottom structure.

Boss cites several portions of the patents-in-suit, suggesting both that its proposed constructions are correct and that the district court's construction is unduly narrow. In emphasizing these excerpts, however, Boss attempts to read unnecessary limitations into the claims and misinterprets the specification.

Arguing that the "base section" should be only "at least a part of the bottom" of the snowmobile seat, Boss stresses that each patent explains that the "base section 40 has a lower surface 42 that forms at least part of the bottom 22." See, e.g., '317 Patent col.4 ll.44-45 (emphasis added); see also '149 patent col.4 ll.44-45; '630 patent col.3 ll.66-67. Boss, however, misinterprets these statements in the specifications. Tellingly, the "at least part of the bottom 22" of the snowmobile seat language does not describe the entire base section 40. Instead, as clarified in figure 4, the "at least a part of the bottom 22" language only describes the "lower surface 42." In other words, the "bottom 22" of the snowmobile seat consists of at least a "lower surface 42" of the base section, but may consist of another surface on the bottom of the base section--i.e., a surface higher than the lower surface, but still part of the bottom of the base section. Indeed, the "lower surface 42" forms a part of the bottom 22, while the higher surface, indicated by 46, forms the remaining part of the bottom 22. Thus, the higher and lower surfaces form the entire bottom of the snowmobile seat. Logically, because both the higher and lower surfaces are part of the base section, the base section is therefore the bottom structure of the snowmobile seat.
A "higher surface" should not be confused with the "upper surface" of the base section, which is exemplified by 52 and 54 in figure 4. The "upper surface" is on the top of the base section, and the rider either sits directly on the "upper surface" or on a "flexible seat section" placed on the "upper surface." See, e.g., '317 patent col.5 ll.6-23. In contrast, the "higher surface" refers to a surface higher than lower surface, but nonetheless still on the bottom of the base section. See, e.g., '317 patent fig.4. Accordingly, both the higher and lower surfaces make up the bottom of the base section, which abuts the snowmobile body.

We recognize that the patents' specifications describe item 46 in figure 4 as "additional cavities." See, e.g., '149 patent col.4 l.58. We in no way contradict this disclosure, but, because the higher surface in figure 4 is not labeled, we simply use 46 as a convenient reference.

Next, Boss cites the specification language stating that the base section, or bottom thereof, can be "directly or indirectly mounted on the snowmobile." This suggests to Boss that the base section for all patents need only be "at least a part of the bottom" of the snowmobile seat. See '630 patent col.3 ll.31-32; col.3 l.67-col.4 l.1; col.6 ll.19-21. Because this statement only appears in the '630 patent, Boss also argues that its unique construction of base section in the '630 patent is correct. This disclosure, however, does not further explain the difference between directly and indirectly mounting and does not prevent the base section from being the "bottom support structure of the snowmobile." Rather, based on the entirety of the intrinsic evidence, including these specific statements, the base section can still be indirectly mounted to the snowmobile while being the "bottom" structure of the snowmobile seat. Moreover, the other portions of the specifications, which more clearly discuss mounting the snowmobile seat to the snowmobile body, disclose using "hook-and-loop type fasteners" or the "snap type fasteners." See, e.g., '630 patent col.5 ll.10-35; col.8 ll.8-61. Not only do neither of these mounting fasteners preclude the base section from being the bottom structure, but they in fact support that the base section must be the bottom structure of the snowmobile seat. As explained, mounting the base section to the top of the snowmobile--using the fasteners on the base section's bottom--would be difficult unless the base section was the bottom of the snowmobile seat. As such, if the base section is "indirectly mounted on the snowmobile" using either of these fastener-types, the base section is nonetheless the "bottom support structure of the snowmobile seat."

Boss also points out that the '317 patent states that "the base structure can be mounted to other support structure that in turn can be mounted on the track tunnel." See '317 patent col.4 ll.14-16. According to Boss, this statement both proves its different construction for the '317 patent and that, because the base section can be mounted to an additional support structure, the base section is not necessarily the bottom support structure. Boss, however, overlooks that this statement is not inconsistent with the base section being the bottom support structure of the snowmobile seat, despite being mounted to another support structure. In fact, the cited passage suggests that the "other support structure" is not part of the snowmobile seat, but rather is part of the snowmobile body or is independent from any other part. The claim construction, however, requires the base section to be the "bottom support structure of the snowmobile seat." As such, even assuming the "other support structure" provides some support to the bottom of the seat, it is neither the bottom structure nor the support structure of the snowmobile seat. Thus, the base section remains both the bottom structure and the support structure of the snowmobile seat.

For the foregoing reasons, we hold the district court correctly construed "base section" for all three patents-in-suit to mean the "bottom support structure of the snowmobile seat." We have considered Boss's additional arguments on this issue, but find them unpersuasive.

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A. Claim 1(a) -- "Base Unit"

Claim 1(a) describes an upright floor cleaner containing "a base unit for reciprocable translation over a floor to be cleaned." '315 Patent at 4:17-18. The parties dispute whether the "base unit" so described must include the entirety of the device's cleaning mechanism. Dyson argues that the term "base unit" should be construed as "the main part of the floor cleaner's cleaning mechanism (which includes, among other things, the motor, fan, and brushbar) that constitutes the preponderance
of the weight of the vacuum cleaner and... carries the rest of the cleaner along the floor." See Joint Claim Constr. Statement at A-1. Oreck, by contrast, asserts that "base unit" refers only to the head, or nozzle, of an upright cleaner and "can be defined as the place into which the dirt or debris is suctioned or swept." See id. Under Oreck's proposed construction, the base unit of an upright vacuum cleaner described by the '315 patent can, but need not, include parts such as the motor and fan.

Neither party suggests that the term "base unit" has a specialized meaning to people experienced in the art, and "base unit" is not defined in either the patent claims or the specification. The specification does, however, contain several descriptive references to the term "base unit." The description of the preferred embodiment states that "[t]he floor cleaning mechanism disposed within the housing of base unit 2 is not shown but may be of any conventional well-known type." '315 Patent at 2:47-50 (emphasis added). Similarly, the specification later refers to "the cleaning mechanism of base unit 2." Id. at 2:57-58. These statements evidence that the inventors intended the term "base unit" to mean that portion of the cleaning device that contains the device's cleaning mechanism. See Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1251-52 (Fed. Cir. 1998) (looking to specification for evidence as to intended definition of claim term). Moreover, nothing in the patent claims or the specification suggests that any portion of the cleaning mechanism could be located anywhere but in the base unit. In light of the intrinsic evidence available to the Court of the meaning intended by the inventors, the Court finds that a person of ordinary skill in the art at the time of the invention would understand the term "base unit," as used in the '315 patent, to mean the portion of an upright floor cleaner that contains the device's cleaning mechanism. 3

3 Oreck inadvertently supports this construction in its claim construction brief. Referring to Dyson's product, Oreck states that the DC14 is "unusual in that its motor and suction fan are not located within the nozzle assembly, as is customary." Oreck Claim Constr. Mem. at 5 n.4. This statement implies that it is, in fact, "customary" for an upright vacuum cleaner to have the motor and fan included within the same apparatus as the nozzle of the cleaner, which suggests that a person of ordinary skill in the art at the time of the invention would understand the nozzle assembly, or "base unit," of such a device to contain the entire cleaning mechanism, including the motor and fan.

Oreck attempts to minimize the significance of the term "base unit" to the '315 patent. It asserts that the claims and the specification simply "assume" that any upright cleaner will have a "base unit;" that "the '315 patent is not concerned with fans and motors;" and that "this claim element does not constitute an invention." Oreck Claim Constr. Mem. at 3; Oreck Supp. Mem. at 8. Although these might be accurate statements, they are not grounds for disregarding what the Court has determined is the ordinary meaning of the term "base unit." A "base unit" is one of the express structural limitations of the patent claims, and the Court cannot dismiss that limitation as unimportant or immaterial simply because it was not the primary focus of the invention. See, e.g., Bicon, Inc. v. Straumann Co., 441 F.3d 945, 950 (Fed. Cir. 2006) ("Allowing a patentee to argue that physical structures and characteristics specifically described in a claim are merely superfluous would... leav[e] examiners and the public to guess about which claim language the drafter deems necessary to his claimed invention and which language is merely superfluous, nonlimiting elaboration."); Techsearch, L.L.C. v. Intel Corp., 286 F.3d 1360, 1373 (Fed. Cir. 2002) ("We have... recognized that specific claim limitations cannot be ignored as insignificant or immaterial in determining infringement.").

The Court therefore finds that the term "base unit" in claim 1(a) means that part of the floor cleaner that contains the device's cleaning mechanism.

5. "Determining [determine] an elapsed time period based on a time at which the characteristic appeared in the signal." Used in Claims 13(d), 18, and 31; and "Measuring an elapsed time period based on a time at which the characteristic appeared in the signal." Used in Claim 27(d).

Nike states that no construction of "an elapsed time period" is necessary, and that the term should be given its plain and ordinary meaning in each of these claims. Adidas proposes measuring the time period that begins when the person starts...
moving and ends when it is determined that the person has ceased moving." There is no disagreement that some interval of
time is being determined or measured. The dispute is whether or not it must end when the characteristic of the signal
appears.

The pertinent language of Claims 13, 18, 27, and 31 is very similar so the court will refer specifically to Claim 13. That
claim describes generation of a signal after a person has begun walking or running. Paragraph (c) of Claim 13 describes
"analyzing the signal to identify a characteristic in the signal that indicates the person has initially ceased taking footsteps." '
314 patent, col. 14,11. 18-21 (emphasis added). The disputed phrase is found in paragraph (d) of Claim 13, and, logically,
"the characteristic" must refer back to "characteristic" in paragraph (c) of Claim 13. "Characteristic" is not used elsewhere in
the Claim.

Therefore, the phrase in dispute refers only to the characteristic "that indicates the person has initially ceased taking
footsteps," or, as it has been agreed, when the person has stopped stepping. There is no reference to the time the person
began stepping. The elapsed time to be measured could be from the point at which the first step was taken. But that is not
required by the claim language. It could be from the time the person stopped. Nothing in the claim language would
eliminate the second possibility, which might be found in a system which measured a set time after stopping and then started
a pulse or blood pressure monitor to determine recovery. (The time it takes the individual to return to the individual's resting
pulse rate or blood pressure.)

The specification describes both situations - measurement of time between the first and last steps, and the taking of some
action at some time interval after the point at which the characteristic which shows the person first stops. See '314 patent,
col. 11, 11. 53-62. ("a timer is stopped or another appropriate action is taken."). Additionally, the specification states that
two timers may be involved, which indicates that the "elapsed time period" measured from when the "characteristic" shows
that steps have stopped may not be related to the time the steps started. See '314 patent, col. 12, 11. 6-7 (timer stopped
when the steps started).

Adidas' strongest argument is based on statements made by the patentee to the Examiner. An Office Action mailed
September 15, 2000 rejected Claim 14 (present Claim 13) because it would have been obvious to one of ordinary skill to
combine U.S. Patent No. 5,720,200 ("Anderson") and U.S. Patent No. 5,976,083 ("Richardson") to achieve the same result.
See Office Action, 9/15/2000, Ex. K to Nike's Opening Claim Construction Brief, [Doc. # 70, Attachment # 1, pp. 18-19 of
50]. The Response to the Office Action used the phrase "and to determine an elapsed time period between when the first and
to Nike's Opening Claim Construction Brief, [Doc. # 70, Attachment # 1, p. 45 of 50]. But that does not accurately describe
Claim 13, which does not mention a first characteristic. The Response goes on to state:

the proposed combination of Anderson and Richardson does not disclose or suggest at least one controller, or any other
device, that determines an elapsed time period based upon an identified characteristic in a signal that indicates that a person
has initially ceased taking footsteps after having been walking or running.

Brief, [Doc. # 70, Attachment # 1, p. 45 of 50].

Taken together, these statements in successive paragraphs in the Response are not the most accurate exposition of the claim
language. They are also not a clear limitation on, nor a disavowal of, an embodiment of the language in Claim 13 (nor
Claims 18, 27, and 31).

The claim language and the specification indicate that the "elapsed time period" may occur before or after the
"characteristic" appears. The court will construe this claim term as follows:

Determining or measuring "an elapsed time period" based on a time at which the characteristic appeared in the signal
means: "Using the point at which the characteristic appears to determine or measure an interval of time."
A. Frame

As previously noted, in Demarini II, the district court, before reaching the question of infringement, construed the term "large-diameter impact portion." Demarini II, slip op. at 6-8. The court also found it a necessity to adopt a definition of the term "frame" or "bat frame" before reaching the issue of infringement. Id. at 6 n.1. The court adopted the interpretation "that the bat frame is the single piece with the large portion for hitting the ball at one end, tapering to the handle with a knob at the other end." Id.

DeMarini contends that the district court's construction of the claim term "frame" was improper. Specifically, DeMarini takes issue with the district court's construction of the term "frame" as modified by the term "bat" set forth in DeMarini II, i.e., "a single piece with a large portion for hitting the ball at one end, tapering to the handle with a knob at the other end." Id. DeMarini's basic position is that a "bat frame" is a hollow tube of the sort that covers the hitting end of a bat (i.e., an external shell that is large enough to hold an insert), and that an "insert" is a structure that incorporates both the handle and the portion of the hitting end of the bat that goes inside the external shell. DeMarini argues that this was how the term "frame" was construed in DeMarini I and that the district court improperly reinterpreted the term "frame" in DeMarini II. We do not agree that the district court reinterpreted the term "frame" in DeMarini II. In DeMarini I, the term "frame" was not in dispute and the district court's discussion of the term "frame" was simply to give context to the discussion of the disputed terms "gap" and "interference fit" and not to set forth a binding definition. The court did not focus its attention on the structural requirements of a bat "frame" until it came time to grapple with the issue of literal infringement of claim 15, an issue raised by DeMarini only after the court released its DeMarini I opinion.

DeMarini presents five arguments as to why its proffered definition is correct and that of the district court in DeMarini II is erroneous. First, DeMarini notes that the ordinary meaning of frame is "an open structure or rim for encasing, holding or bordering." Second, DeMarini notes that an integral relationship of the handle, the impact portion, and the tapered portion of the frame is only described as a preferred embodiment in the written description and that this written description indicates that other configurations, such as separate pieces, fall within the scope of the invention. Third, DeMarini contends that a handle cannot be a required part of the frame since the insert of the invention cannot fit inside the handle. Fourth, DeMarini notes that in view of the discourse between the Examiner and the patentee regarding U.S. Patent No. 5,219,164, issued to Peng ("Peng '164"), it is clear that the Examiner understood that the term "frame" did not require an integral handle. Fifth, and last, DeMarini notes that, in view of the fact that it never attempted to distinguish its claimed invention from the Peng '164 insert, which extends outside the axial limits of the "frame," it obviously never considered that the claim term "frame" must include an impact portion and a handle.

DeMarini's arguments fail to persuade us that its proffered definition is the correct construction for the claim term "frame" as modified by the claim term "bat." We address each of DeMarini's contentions beginning first with the argument that a handle cannot be a required part of the frame because the insert of the invention cannot fit inside the handle. The district court's definition of frame does not require the insert to fit inside the handle, it merely requires that the insert be contained within some part of the frame which consists of the impact portion, the tapering portion, and the handle portion of the bat.

As we noted above, interpreting claims requires a review of all of the intrinsic evidence: the claim language, the written description, and the prosecution history. The claim language does little to elucidate what structure is described by "bat frame," and "bat frame" is not specifically defined in the written description. Consequently, we begin our construction of the term "bat frame" by looking at the ordinary meaning of the term "frame." We deem it appropriate to use the dictionary definition proffered by DeMarini; i.e., "an open structure or rim for encasing, holding or bordering," because it is a standard dictionary definition, which Worth does not dispute. DeMarini would have us end our analysis with this definition to reach its conclusion that this term only requires that one tube be large enough to accommodate a second tube inside of it. We decline DeMarini's invitation. We cannot look at the ordinary meaning of the term "frame" in a vacuum. Rather, we must look at the ordinary meaning in the context of the written description and the prosecution history of the '398 patent to determine the proper construction of that term as modified by the claim term "bat" and as used in the claims of the '398 patent.

The written description of the '398 patent indicates that the invention particularly relates to the use of structural members inside of softball or baseball bats to improve their impact response. '398 patent, col. 1, ll. 6-11. The patent discusses prior art attempts to provide for greater impact response by constructing tubular bats using materials other than aluminum, and the high cost and difficulty of working with materials such as titanium. Id. at ll. 49-56. The patent also discloses that prior art
bats have been made using inserts, but that most of these inserts are positioned for vibration deadening purposes. Id. at ll. 57-59. In addition, the patent recognizes that there is at least one prior art bat that uses an insert in a bat to improve the "repelling action" of the bat. Id at ll. 59-62. But, the patent further discloses that the insert of that prior art bat is in "tight abutment within the tubular frame" of the bat, thus merely providing a thickened wall of the impact portion of the bat. Id. at ll. 60-68.

After its discussion of the prior art shortcomings, the patent indicates that one of the objects of the invention is to design a new bat with a simple construction. See id., col. 2, ll. 1-8. Thereafter, a preferred embodiment of the invention is described. See id., col. 2, ll. 9-23. That description includes a discussion of the external structure of the tubular bat frame, namely that it has a large-diameter impact portion, an intermediate tapering portion, and a small-diameter handle portion. The description also indicates where the tubular insert is positioned in the bat frame and the manner in which the tubular insert is suspended in the frame. Id.

The detailed description of the invention found at col. 2, l. 39, and continuing through col. 5, l. 52, which describes a manner of providing for an improved impact response according to one embodiment of the invention, notes, as does the "preferred embodiment," that the tubular bat frame has a relatively large-diameter impact portion, an intermediate tapering portion, and a relatively small-diameter handle portion. Id. at col. 2, ll. 39-49. This description then describes the insert and a manner of placing it within the frame to achieve an interference fit and obtain the leaf-spring effect and greater slugging capacity. Id. at col. 2, l. 50 - col. 3, l. 35. Other manners of achieving an interference fit by positive attachments of the insert are described at col. 4, ll. 24-60. At col. 5, ll. 33-45, the patent describes yet another embodiment of the invention in which a positive attachment of the insert to the frame may be dispensed with, while still achieving the leaf-spring effect. Thus, the detailed description of the invention discusses at great length a variety of ways of placing an insert within a bat frame to achieve greater slugging capacity through the leaf-spring effect.

Contrary to DeMarini's argument, the patent does not suggest a bat frame consisting of less than a handle, a tapered portion, and an impact portion. DeMarini points out that the patent indicates that forming the bat frame by swaging an integral, weld-free frame is only an exemplary manner of making the bat frame, and that "all permutations of component dimensions and configurations fall within the scope of the present invention." Id. at col. 3, l. 66 - col. 4, l. 23. The latter remark, however, comes just after the statement that "many permutations of bat frame, insert, and gap dimensions will work equally as well." In other words, the "components" contemplated in the "all permutations" remark clearly refers to the insert, the gap, and the bat frame as a whole--not just the handle, the taper portion, and the impact portion of the bat frame. Moreover, as for "swaging" only being an exemplary manner of constructing the bat frame, this remark only indicates that there are other methods aside from swaging that can be used to make the bat frame, i.e., that the bat frame structure need not be made in a single construction step--not that the frame does not include the handle, the tapering portion, and the impact portion.

Turning now to the prosecution history, we disagree with DeMarini that the discourse between the Examiner and the patentee regarding the U.S. Patent No. 5, 219,164 ("Peng '164 patent"), clearly shows that the Examiner understood that the term "frame" did not require an integral handle. The Peng '164 patent discloses the following with regard to its inventive bat structure: (1) an elongated handle 10, with an axial cavity formed therein; (2) a tapering tubular stem 20; (3) a generally cylindrical main body 30, with a taper section to the rear; (4) an elastic shock and vibration absorbing end piece 40; and (5) a guard piece 50. See Peng '164 patent, col. 1, ll. 4-10. The above-listed components are assembled together, with the end piece 40, the main body 30, the guard piece 50, and the handle 10 all arranged on the stem 20 to form a completed bat. This shock absorbing baseball bat structure can be seen in figure 1 immediately below.

GET DRAWING SHEET 1 OF 4.

The examiner rejected DeMarini's original claims 1 and 2 as being clearly anticipated by the Peng '164 patent under 35 U.S.C. § 102(e). Original claim 1 read:

A bat comprising:

- a hollow tubular bat frame; and an insert positioned within the frame, the insert having first and second ends adjoining the tubular fame, the insert being separated from the tubular frame by a gap along a central portion between said first and second ends.
In his rejection, the examiner did not make reference to any particular feature of the Peng '164 bat that he considered to be the "bat frame" or the "insert" in his rejection. It was only DeMarini, and not the examiner, who characterized the main body 30 as a "frame" and the tapering tubular stem 20 as an "insert." The examiner made no comment on DeMarini's naming of the parts of the Peng '164 bat. DeMarini would have us infer a meaning for the term "frame" drawn from the examiner's silence, rather than from its response to the examiner's rejection. Drawing inferences of the meaning of claim terms from an examiner's silence is not a proper basis on which to construe a patent claim, and we reject DeMarini's arguments predicated on such inferences.

DeMarini also contends that because it never argued that the Peng '164 insert distinguished the Peng '164 patent from the claimed invention by extending outside the axial limits of the "main body 30," DeMarini never considered the claim term "frame" to include an impact portion and a handle. However, just as we can draw no inference from what the examiner did not say, we can draw no inference from what DeMarini did not argue. It could just as easily be presumed from DeMarini's silence that DeMarini recognized that when the "main body 30" was connected to the handle, the "insert" of the Peng '164 bat did not extend beyond the "bat frame" of the Peng '164 bat, just as the claimed "insert" does not extend beyond the "bat frame."

In view of the ordinary definition of the term "frame" and the explanation of that term in conjunction with the term "bat" in the written description and intrinsic record, we conclude that "frame" as modified by the term "bat" and used in claims 1 and 18 means a tubular structure having a large-diameter impact portion, a tapered portion and a small-diameter handle, all of which are connected when the bat is fully constructed for its intended use. This is substantially the same definition of "bat frame" given by the district court in DeMarini II.

A. Claim Construction and Infringement

DDI challenges the summary judgment of noninfringement on the grounds that the district court construed the claims of the '156 patent erroneously. Its primary arguments relate to the appropriate reach of the term "beads" in Claim 1, which the district court construed to mean "small frozen droplets . . . which have a smooth, spherical (round or ball shaped) appearance." The district court's construction also excluded processes which produce any "irregular or odd shaped particles such as 'popcorn.'" The district court correctly found that the claim steps mentioning "beads" were limited to covering processes that produce beads and only beads. The accused process produces both spheres and irregular particles, so under this construction, the defendants do not infringe. DDI objects both to the definition of "beads" and to the district court's refusal to use the word "comprising" to extend the coverage of the claim beyond a beads-only process. As to the definition of "beads," the district court correctly noted that the written description specifically describes "beads" as having a "smooth, spherical appearance." '156 patent col.5 ll.22-23. Indeed, DDI argued to the Special Master before whom the construction issue was originally presented that a "bead" was "a small round ball or round drop." There is no error in the district court's definition of this term.

3 As described supra, the claim construction and summary judgment phases of this litigation were handled by the United States District Court for the Northern District of Georgia. "The district court" as used in this section refers to that court.

A. Construing "elongated beam"

Defendant Neway Anchorlok argues that "beam," as claimed by claim 16 of the '237 patent, should be construed to mean an integral elongated structural member in a suspension system that is similar to Figures 9-12 of the '237 patent. Referring to
those figures, Plaintiff Neway Anchorlok argues that the beam must connect the beam to the axle without additional parts, including U-bolts, brackets, sleeves, or welds. As Neway Anchorlok interprets "beam," the axle must insert through some opening or orifice in the beam. Otherwise it would not rigidly connect the axle to the beam. 3

3 Defendant Neway Anchorlok says that claim 16 cannot include elements extrinsic to the beam to affix the axle. If Neway Anchorlok's interpretation controlled, the only apparent method of rigidly affixing the beam to the axle would be through some opening similar to an orifice. See Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1358 (Fed. Cir. 1999) ("35 U.S.C. § 101 mandates that any patentable invention be useful and, accordingly, the subject matter of the claim must be operable.")

In suggesting that "beam" be interpreted to require a member similar to Figures 9-12, Defendant Neway Anchorlok runs afoul of the doctrine of claim differentiation.

The doctrine of claim differentiation is ultimately based on the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope. See Karlin Technologies, Inc. v. Surgical Dynamics, Inc. 177 F.3d 968, 971 (Fed. Cir. 1999) (citing Comark Communications Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998)). Thus, limitations stated in dependent claims are not normally read into the independent claim from which they depend. See id. (citing Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277 (Fed. Cir. 1995)); see also Comark, 156 F.3d at 1187 ("There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant.") (citing Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987)). As described above, dependent claim 17 explicitly teaches:

The suspension system of claim 16 wherein said means for rigidly connecting said axle to said beam comprises an orifice in said beam which substantially surrounds said axle and is rigidly attached thereto, thereby to prevent said axle from assuming a cross-sectional shape substantially different from its unstressed shape when said torsional forces are imposed upon it. (Emphasis added.)

Dependent claim 17 thus differentiates itself from claim 16 by saying the axle is attached through an orifice.

Here, dependent claim 17 teaches the same structure that Defendant Neway Anchorlok says should be required of claim 16. If Neway Anchorlok's construction of claim 16 was accepted, the Court would be reading limitations stated in dependent claim 17 into independent claim 16, the claim upon which claim 17 depends.


Here, the specifications teach several versions of the invention. The '237 patent teaches generally:

In another form of the invention there is provided in an axle suspension system wherein external forces imposed on the vehicle to which the suspension system is attached result in a torsional force being imposed on the axle, the suspension system including a brake actuation mechanism comprised of a brake chamber, and S-cam bearing, slack adjuster, and elongated beam, a pneumatic bellows located on the beam, a hanger bracket located at one end of the beam, means for rigidly connecting the axle to the beam, and a pivot connection for resiliently connecting the beam to the hanger bracket, the improvement comprising means located on the beam for attaching said S-cam bearing directly to the beam, and means for directly attaching the brake chamber to the beam.
'237 patent, col. 5, ll. 58 - col. 6, ll. 1-5.

The '237 patent then teaches that the preferred embodiment involves attaching the axle to the beam through an orifice:

In a particularly preferred embodiment of the present invention, there is provided in a beam type axle suspension system . . . means for rigidly connecting the axle to the beam, comprising an orifice in the beam of a larger size but substantially the same shape as the axle and through which the axle, with a sleeve rigidly attached thereto, is slid or pressed.

'237 patent, col. 6, ll. 5-13.

The '237 patent specifications uses the term "beam" even though the "beam" does not have an inherent method of attaching to the axle:

"A typical trailing arm suspension 17 is shown in Figs. 5, 6 & 8 in this respect. . . . Beam 42 has a means of a rigid attachment 44 to axle 7."

'237 patent, col. 3, ll. 50-55. Before the '237 patent issued, the prior art understood the phrase "beam" to include beams that were secured to an axle by means of U-bolts.

The '237 patent specifications thus suggest more than one embodiment of the invention. Only in the preferred embodiment does the '237 patent teach that the axle is attached by sliding or pressing the axle through an orifice. In other embodiments, the '237 patent teaches a rigid connection between the beam and axle. It does not require the connection be made through the orifice described in the preferred embodiment.

Also, the '237 patent history suggests that the focus of its claim prosecution had been on its movement of the brake actuation mechanism from the axle to the beam. After the initial application was made, the Patent and Trademark Office denied the patent application on the ground that it had been anticipated by the Raidel patent, 4 among others. The claim was later allowed after the inventor argued that the Raidel patent did not suggest placement of the brake actuation mechanism on the beam and that the Raidel patent was a different kind of suspension. Importantly, none of the '237 patent history suggests that the axle's placement through an orifice in the beam was ever an important issue during the claim prosecution.

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4 U.S. Patent No. 4,132,432.

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To summarize, claim 16 of '237 patent uses a means-plus-function format to teach a trailing arm suspension that moved the brake actuation mechanism from the axle to an elongated beam. While claim 16 describes only "an elongated beam," claim 17 of the '237 patent differentiates by teaching a "beam comprises an orifice in said beam which substantially surrounds said axle and is rigidly attached thereto."

In similar fashion, the '237 patent specifications teach several versions of the invention. Certain specifications teach a more general description of the beam. Other specifications teach a preferred embodiment that includes beams with orifices for the receipt of the axle.

In Micro Chemical, Inc. v. Great Plains Chemical Co., Inc., 194 F.3d 1250, 1257-58 (Fed. Cir. 1999), the Federal Circuit recognized that in a means-plus-function format patent, the patent should be construed through the identification of the structure in the specification which performs the recited function. The Court held that a means-plus-function claim should not be limited to a "structure from the written description beyond that necessary to perform the claimed function." Id.; see also Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1302 (Fed. Cir. 1999).

In this means-plus-function claim, the Court looks to the structure in the written description necessary to perform the claimed functions. While the preferred embodiment of the '237 patent includes a beam with an orifice to connect the axle to
the beam, these elements are not necessary to perform the claimed function. The doctrine of claim differentiation argues against this construction. If claim 16 of the '237 patent required the elongated beam to have an orifice in said beam which substantially surrounds said axle and is rigidly attached thereto, there was no reason for claim 17 of the '237 patent.

In claim 16 of the '237 patent, the Court construes "beam" to a mean an integral elongated structural member in a suspension system and attached at the other end by a rigid connection to an axle and equivalents thereto.

In claim 17 of the '237 patent, the Court construes "beam" to a mean an integral elongated structural member in a suspension system without any distinct means, structure, or component to attach the suspension system's axle to the beam, such as U-bolts, brackets, sleeves or welds and equivalents thereto.

(c) "Beam Transport System Configuration"

Of the four terms in this phrase, "beam" and "configuration" have already been defined. Configuration means an arrangement of elements or physical properties. In this context, configuration is modified by the preceding terms "beam transport system." Accordingly, the phrase means the arrangement of the beam transport system's physical properties. This definition dovetails nicely into the definition of the term "system," infra. 29 As Plaintiff Optivus points out, Webster's Third defines "transport" to mean "to transfer or convey from one person or place to another." (Airhart Decl. Ex. N at 230.) The Oxford English Dictionary includes a nearly identical definition. OXFORD ENGLISH DICTIONARY (2d ed. 1989). The Oxford English Dictionary defines the term "system" as "[a] set or assemblage of things connected, associated, or interdependent, so as to form a complex unity; a whole composed of parts in orderly arrangement according to some scheme or plan; rarely applied to a simple or small assemblage of things"; and "[i]n various scientific and technical uses: A group, set, or aggregate of things, natural or artificial, forming a connected or complex whole…. b. of artificial objects or appliances arranged or organized for some special purpose, as … pieces of mechanism[.]" Id. Microsoft defines the term as "any collection of component elements that work together to perform a task." (Airhart Decl. Ex. P at 250.) Of the definitions offered by the American Heritage Dictionary, the following stand out as particularly germane: "A functionally related group of elements, especially: A group of interacting mechanical or electrical components [or] … A network of related computer software, hardware, and data transmission devices." AMERICAN HERITAGE DICTIONARY (4th ed. 2000).

29 Relying exclusively on the patent specification and expert testimony, Defendant Ion Beam tries to define the term without breaking it down into constituent parts. Defendant proffers the following definition: "the set of all switching, dipole and quadrupole magnets which direct the beam from the beam source for delivery in the treatment rooms, including the beam transport apparatus, switchyard and gantries." (Ion Beam P.&A. at 26.) At first glance, it is difficult to distinguish between "beam transport apparatus," and the term Defendant is trying to define - beam transport system." As a result, the definition does not appear to adequately define the term. Moreover, the definition is overly narrow and seems to import limitations from the specification and expert testimony.

Accordingly, the entire phrase at issue - "beam transport configuration system" - is hereby held to mean "the arrangement of all the interacting elements and components used to convey the beam." 30 See id.

30 Optivus proposes "the arrangement of a system of devices to convey the beam." (Optivus P.&A. at 25.) Ion Beam, on the other hand, suggests "the set of all switching dipole & quadrupole magnets which direct the beam from the beam source for delivery in the treatment rooms, including the beam transport apparatus, switchyard and gantries." (Ion Beam P.&A. at 26.)
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G. Beams of Light

The term "beams of light" is used in both Claims 1 and 3. While some of Pitney's representations during reexamination of the 272 patent suggest a dispute between the parties regarding the meaning of this term, Pitney now states that there is no dispute. Judge Covello found the term "a plurality of beams of light" to mean "multiple beams of light generated sequentially from one or more light sources." Pitney I, 69 F. Supp. 2d at 317. The parties agree that such "beams of light" include any type of light beam and are not limited to laser beams or diffraction limited systems. The court therefore agrees with Judge Covello's definition and does not limit "beams of light" to any particular type of light beam.

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E. "Bearing Against Said Wall Structure Near Said Opening to Seal Said Opening"

Alaris proposes the following definition for this claim term: "the seal is situated in contact with the wall structure [of the housing] near the opening of the proximal end of the housing to make the opening fluid tight." ICU in turn proposes the following definition: "the seal presses against the wall structure near the opening to prevent leakage of fluid into the valve when the seal is in the decompressed state." At issue between the parties with respect to this term is (1) whether the verb "seal" requires that the opening be fluid tight or just that it be sufficient to prevent leakage and (2) whether this claim term refers only to when the valve is in a decompressed state.

With respect to the first issue, the applicable passage from the Common Specification makes clear that the seal in question is intended to be a fluid tight seal:

The seal in the decompressed state has a section which fills essentially completely a portion of the cavity adjacent to the opening. The seal section bears against the wall structure near the opening to seal the opening. In the compressed state, the seal section is pushed by the delivery end of the medical implement away from the opening and into the cavity. A fluid tight seal is maintained between the seal section and the wall structure as the seal is moved into the compressed estate. The seal section bears against the wall structure as the seal is moved inward into the cavity by the tip of the medical implement … A fluid tight seal is maintained over repeated opening and closing of the valve …

Id. At 3:35-57 (emphasis added). The use in two instances of the word "maintained" in describing the fluid tight nature of the seal thus makes clear that the seal described in this claim term is fluid tight at all times.

Although the claim language itself with respect to the second point is somewhat ambiguous, the above quoted passage from the Common Specification also makes clear that this claim term is not limited to the decompressed state. In particular, the assertion that "the seal section bears against the wall structure as the seal is moved inward into the cavity by the tip of the medical implement" - i.e., when the valve is in the compressed state - makes plain that this claim term is applicable to both the compressed and decompressed states.

The proper construction of "bearing against said wall structure near said opening to seal said opening" is thus "the seal is situated in contact with the wall structure [of the housing] near the opening of the proximal end of the housing to make the opening fluid tight."

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G. "a spring bearing directly against the memory card when in place in the memory card socket for urging the replaceable memory card out of the socket" / "a spring bearing directly against the memory card"

Minerva seeks construction of the term "a spring bearing directly against the memory card when in place in the memory
card socket for urging the replaceable memory card out of the socket." Minerva argues that this term means "a spring that is compressed by the memory card when the memory card is inserted in the socket, and which pushes the memory card out of the socket." On the other hand, the defendants ask the court to construe the shorter term "a spring bearing directly against the memory card" to mean "a spring touching the memory card." Claim 93 reads in part, "said replaceable memory card socket being provided with a spring bearing directly against the memory card when in place in the memory card socket for urging the replaceable memory card out of the socket." The following sentence is the sole disclosure of a spring in the specification: "Still further, the socket 120A may be provided with a spring for urging the card 200 outwardly as soon as the card is unlatched."

The two primary differences between the parties' proposed constructions are whether the spring touches the memory card and whether the spring is compressed by the memory card. The defendants assert that the plain and ordinary meaning of "bearing" is "to support or sustain" and "directly" means "with nothing or no one between." In addition, Minerva's proposed construction is wrong, according to the defendants, because "compress" or "compressing" appears nowhere in the claims or specification.

Minerva responds that the defendants' proposed construction should be rejected because it violates the doctrine of claim differentiation. Clearstream Wastewater Sys. Inc. v. Hydro-Action Inc., 206 F.3d 1440, 1446 (Fed. Cir. 2000) ("Under the doctrine of claim differentiation, it is presumed that different words used in different claims result in a difference in meaning and scope for each of the claims."). The parties have already agreed that the term "a spring in direct contact with the replaceable memory card," used in claims 96 and 97, means "a spring touching." Minerva argues that the defendants' proposed construction would result in "a spring touching" and "a spring bearing against" having the same meaning. The plaintiff also contends that, although the patent does not contain the word "compress," compression of the spring is implicitly disclosed to one of ordinary skill in the art. The ordinary artisan allegedly understands that a spring has to be compressed before it may urge the memory card out of the socket.

The court agrees that the "bearing directly against" language requires the spring to touch the memory card. The doctrine of claim differentiation is a rebuttable presumption, and it may not be used to overcome the plain meaning of the claim language. Mycogen Plant Sci., Inc. v. Monsanto Co., 243 F.3d 1316, 1329 (Fed. Cir. 2001). The dictionary definition of "directly" is "in immediate physical contact," and the definition of "against" is "in contact with." Merriam-Webster's Collegiate Dictionary 22, 354. Nothing in the specification or claim language rebuts this plain meaning of the phrase "bearing directly against." In addition, the claim differentiation presumption is weaker when two independent claims are compared, as opposed to an independent claim and an associated dependent claim. See Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380 (Fed. Cir. 2006) (holding that "the claim differentiation tool works best in the relationship between independent and dependent claims").

The court finds that the claim language, which requires the spring to urge the memory card out of the socket, implicitly discloses compression of the spring. Therefore, the court construes the term "a spring bearing directly against the memory card when in place in the memory card socket for urging the replaceable memory card out of the socket" to mean "a spring that is compressed and directly contacted by the memory card when the memory card is inserted in the socket, and which pushes the memory card out of the socket."

1. "Bearing Plate"

The '933 Patent makes numerous references to the term "bearing plate." See, e.g., Summary of the Invention ("The present invention is directed to a mine roof and rib support system and apparatus and generally includes a square bearing plate....") Jennmar proposes the following construction: "A plate designed to be used with a single mine roof bolt to provide mine roof support." Jennmar contends that this is an established and well-known term in the mining industry, and that "bearing plates" are distinct from header plates, roof mats and roof channels.

Excel originally proposed a fairly similar definition which primarily would have clarified that the plate could be used for roof "or rib" support, and argued that the plate could be used with one or more roof bolts. On the eve of the Markman Hearing, Excel filed a Supplemental Brief which revised its proposed definition. Excel now agrees with Jennmar that the
plate is used with a single roof bolt and that the term "bearing plate" has an established and well-known meaning within the industry. However, the parties disagree as to what that "well-known meaning" is. Excel proposes the following construction:
"A plate to be used with a single mine roof bolt to provide mine roof and rib support and having a minimum strength of 20,000 lbf (89.0KN) and as otherwise defined by ASTM standard F 432-95."

Each party presented a witness on this issue at the Markman Hearing. John Oldson, Vice President of Research and Development for Jennmar, testified that the ASTM F 432-95 standard provides grade ratings for load bearing, i.e., the amount of force a bearing plate must be able to withstand when used alone. Oldson further testified that a product which did not comply with the minimum load-bearing requirements set forth in the ASTM standard would be an "unrated bearing plate," but would still be a "bearing plate" nevertheless. Jennmar points to Figures 13 and 14 of the '933 Patent, which illustrate that all of the products tested fall far below the minimum ASTM standard. In other words, all of the examples used in the '933 Patent to illustrate the benefits of the invention involve unrated bearing plates. Similarly, Column 1 of the '933 Patent states that "bearing plates" need not be used alone but may be used "in connection with . . . a primary support member." Jennmar also introduced a products list of "bearing plates" published by Dywidag-Systems International ("DSI") (the third major supplier in this industry), in which the first three products do not meet the minimum ASTM standard, or grade rating, for load bearing.

Scott Shapkoff, Director of Technical Services for Excel testified that a "bearing plate" must be a grade-rated plate that can be used stand-alone in a primary pattern in a roof control plan. Shapkoff explained that federal regulations require bearing plates to comply with the ASTM specification and because the minimum rating in the ASTM specification is 20,000 lbf, a product that does not meet that load bearing requirement is not a "bearing plate" per se. Shapkoff testified that he is part of a team that is working to create an ASTM specification for "surface control products," which would be distinct from the specification governing bearing plates. In Shapkoff's opinion, neither the Jennmar Roof and Rib Plate nor the Excel Spider Plate are "bearing plates." Customers refer to each of these products as "pans." On cross-examination, Shapkoff conceded that Jennmar and DSI do not share or agree with his definition of "bearing plate."

After careful and deliberate consideration of the filings of the parties, the arguments of counsel, and the intrinsic and extrinsic evidence presented, the Court finds that Plaintiff's proposed definition of "bearing plate" is the correct construction, with one caveat explained in the footnote. Excel's proposed construction would improperly import into the claim a limitation on load bearing capacity which is in no respect recited or mentioned in the '933 Patent. Indeed, all of the examples in Figures 13 and 14 of the '933 Patent involve non-grade-rated products. Further, the Patent explains that a "bearing plate" may be used in connection with a "primary support member" -- it need not meet the ASTM specification on its own. Thus, the Patent clearly indicates that the inventor considers the term "bearing plate" to include non-grade-rated products. Furthermore, Excel's proposed definition would exclude Jennmar's own product from the scope of its own invention. See Hoechst Celanese Corp. v. BP Chemicals, Ltd., 78 F.3d 1575, 1581 (Fed. Cir. 1996) ("it is unlikely that an inventor would define the invention in a way that excluded the preferred embodiment, or that persons of skill in this field would read the specification in such a way."); MBO Laboratories, Inc. v. Becton, Dickinson & Co., 474 F.3d 1323, 1333 (Fed. Cir. 2007) (such an interpretation is rarely, if ever, correct). The extrinsic evidence is far too insubstantial to overcome the patent language. Indeed, Shapkoff conceded that DSI uses the term "bearing plate" in the same manner as Jennmar and does not share Excel's proposed new, but narrower definition.

--- Footnotes ---

1 The Patent language makes clear that the invention is intended to be used to provide both roof "and rib" support. Jennmar did not explain why it omitted the reference to "rib" support.

--- End Footnotes ---
E. "the polymeric material . . . becomes flowable, tacky and adherent upon the application of heat" ('753 patent) and "the heat bondable material . . . becomes flowable, tacky and adherent upon the application of heat" ('290 patent)

38) The plain language of the claim language "the [polymeric/heat bondable] material . . . becomes flowable, tacky and adherent upon the application of heat" requires that the material bonded to the implant be transformed by the addition of heat, from being non-flowable and non-adherent at room temperature to being flowable, tacky, and adherent. It takes heat to bond in the Bonutti invention and that heat must be sufficient to cause the material to be bonded to become flowable, tacky and adherent. This claim language is consistent with the specification that teaches that heat is required to bond.

39) This claim language was added to each patent during prosecution, (D.I. 70, Ex. M at 2; D.I. 70, Ex. O at 2), to avoid the prior art Palmaz patent, (id. at 5-6), and is construed consistent with this clear and unequivocal statement in the file history. Seachange, 413 F.3d at 1372-73; Springs Window, 323 F.3d at 995; Rheox, Inc. v. Entact, Inc., 276 F.3d 1319, 1325 (Fed. Cir. 2002).

40) Consistent with the claim language, the specification, and the prosecution history, the Court construes the phrase "the polymeric material . . . becomes flowable, tacky and adherent upon the application of heat" from claim 1 of the '753 patent as meaning "the polymeric material is bonded to the implant by the application of heat sufficient to cause the polymeric material to become flowable, tacky and adherent."

41) Consistent with the claim language, the specification, and the prosecution history, the Court construes the phrase "the heat bondable material . . . becomes flowable, tacky and adherent upon the application of heat" from claim 1 of the '290 patent as meaning "the heat bondable material is bonded to the tubular member by the application of heat sufficient to cause the heat bondable material to become flowable, tacky and adherent."


11 This term is found in independent claim 1 of the '736 Patent. The parties ask the Court to construe this term and the term "said inlet end of said second graft body being attachable in an overlapping relationship with said outlet end of said first graft body while inside a vessel," found in independent claims 20, 21 and 22 of the '736 Patent in the same manner.
4. "the device being capable of substantially restricting the through passage of at least one type of macromolecule therethrough"

The Court has already construed the term "device" above. At oral argument, the parties agreed that the phrase "capable of substantially restricting the through passage" requires no construction. Hence, the only remaining disputes to decide are whether the Court will read in two specific limitations—one proposed by each side. Plaintiff argues the phrase "at least one type of macromolecule" should be limited to "the at least one treating material recited previously in the respective claims." The Court refuses to read in this limitation. The Court also refuses to read in Defendants' limitation that the device "does not include a sheet of material on a stent that leaves uncovered mesh holes which allow macromolecules to freely move through them." Instead, the Court concludes that the entire phrase "the device being capable of substantially restricting the through passage of at least one type of macromolecule therethrough" requires no construction.

This phrase also appears in claims 8 and 15. However, in claim 8 the language is "capable of restricting" instead of "capable of substantially restricting" as in claim 1. Compare 22:46-47; 23:32-33. The addition of "substantially" does not affect the Court's construction because the parties again agree that the phrases should have the same construction regardless of the addition of the word "substantially."

A. Parties' Construction Arguments

Plaintiff argues the Court should construe the phrase "at least one type of macromolecule" as meaning "the at least one treating material recited previously in the respective claims." Plaintiff supports this argument by citing to various references in the specification: release medicine can be "macromolecules" (6:34-40), the macromolecular containment means serves to "keep the medicine where it is most needed" (10:46-47), "[t]his example shows unidirectional delivery of medicine from the outer surface taking advantage of macromolecular containment means of the minimally-porous sheet" (11:30-33), and "[n]ote that both the macromolecules produced by the abnormal tissue and the treating material are contained within the interstices of the plaque by the macromolecular restraint means of the invention" (11:42-47).

Defendants seek to add the limitation that the device "does not include a sheet of material on a stent that leaves uncovered mesh holes which allow macromolecules to freely move through them." Defendants' argument is that this construction follows naturally if this Court accepts the construction that "device" means "sheet," that is, if the device is a sheet that minimally restricts macromolecules then it cannot contain large uncovered mesh holes. Defendants argue the specification criticizes porous stents with uncovered mesh holes—so much so that it amounts to a disclaimer. Defendants also point to figures, including figure 8(e), that show the present invention completely wrapped around the stent with no mesh holes left uncovered.

Defendants argue the specification creates an intentional disclaimer of the claim scope. Defendants' argument is best summed up by a quote from their brief:

A sheet on a stent that leaves uncovered openings or mesh holes that allow macromolecules to freely move through them is the antithesis of the '760 invention and would frustrate Saffran's objective of blocking the migration of macromolecules away from the site of injury. As the specification states, "[t]he device itself must be substantially impermeable to macromolecules. . . ." 13:38-44 (emphasis added). This is "a critical aspect of the present invention. . . ." 14:8-10 (emphasis added). It is an "exceedingly important feature." 20:49-51 (emphasis added). A sheet on a stent that leaves open mesh holes is not within the specification's disclosure and cannot come within the proper scope of Saffran's claims. Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1367-68 (Fed. Cir. 2007) (specification's description of "critical" feature found limiting).

(Dkt. No. 102 at 17 (emphasis in original).)

B. Analysis

The Court refuses to construe "at least one type of macromolecule" in accordance with Plaintiff's construction as meaning
"the at least one treating material recited previously in the respective claims." Instead, the Court concludes that the phrase requires no construction. There is no dispute that the phrase "at least one type of macromolecule" could be the macromolecule produced by the treating material. However, the "at least one type of macromolecule" could also be a macromolecule produced by the abnormal tissue. Plaintiff even cites to the specification where it discloses both the macromolecules produced by the abnormal tissue and the macromolecules produced by the treating material. 11:42-47 ("Note that both the macromolecules produced by the abnormal tissue and the treating material are contained within the interstices of the plaque by the macromolecular restraint means of the invention."). Therefore, the Court agrees with Defendants that "macromolecule" encompasses both types of macromolecules, and the Court will not limit it to "the at least one treating material recited previously in the respective claims" as requested by Plaintiff. It is presumed that Defendants agree that the phrase needs no construction since Defendants' construction recites the language verbatim as "at least one type of macromolecule." In any event, the Court concludes the phrase needs no construction.

The Court disagrees with Defendants' disclaimer argument and thus refuses to read in Defendants' limitation that the device "does not include a sheet of material on a stent that leaves uncovered mesh holes which allow macromolecules to freely move through them." To find a disclaimer, the Court must find a "clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction." Liebel-Flarsheim, 358 F.3d at 906 (internal quotes omitted). Additionally, "interpreting what is meant by a word in a claim is not to be confused with adding an extraneous limitation appearing in the specification, which is improper." In re Cruciferous Sprout Litigation, 301 F.3d at 1348 (internal quotes omitted). Neither the specification nor prosecution history shows a clear intention to limit the claim scope. Nowhere in the specification does the inventor disclaim a stent that leaves uncovered mesh holes. Defendants' argument that it would be the "antithesis of the '760 invention" is not enough to find manifest exclusion or restriction. If anything, the inventor in the specification has disclosed the possibility of spraying the invention on the stent. The specification states that the "spray stream . . . forms the invention when the spray hits a solid surface." 12:64-65. While the only embodiment discussed in the specification in connection with the stent is a coat wrapped around the stent, presumably, if the inventor sprayed the invention on the stent, then as described above, the invention would be formed when the spray hit the solid surface on the stent. In that case there would be uncovered mesh holes that allow macromolecules to move freely through because the solid surfaces on a stent leave mesh holes. Thus, the Court refuses to incorporate Defendants' limitation.

Other than an extraneous limitation proposed by each party, the parties have provided no construction or alternative constructions of the meaning of the phrase "the device being capable of substantially restricting the through passage of at least one type of macromolecule therethrough." Further, much of the language in the phrase is not disputed by the parties because the parties are merely attempting to impose extraneous limitations through the interpretation of this phrase. Thus, since the Court rejects the parties' extraneous limitations and there are no other apparent conflicts or proposed constructions by the parties, the Court concludes that the phrase "the device being capable of substantially restricting the through passage of at least one type of macromolecule therethrough" needs no construction. The Court has already construed the key terms within the phrase such as "macromolecule," and given those constructions, the phrase as a whole would be understandable to a jury.

C. Coupled To

Defendant Mothers Work also raises an issue with the construction of the term "coupled to" in claims 5 and 12. The dispute is whether the phrase requires a direct connection within the nursing bra of the claimed nursing garment between the back region of the shoulder strap to the back section of the elastic chest band. The claim phrase at issue is "said back region of said shoulder strap being coupled to said back section of said elastic chest band." Defendant Mothers Work proposes the following construction: "a direct connection within the nursing bra of the claimed nursing garment between the back region of the shoulder strap to the back section of the elastic chest band (if the back region of the shoulder strap and the back section of the elastic chest band are not attached to each other, a connecting element must extend directly from one to another)."

Plaintiff contends that the back region of the shoulder strap and the back section of the elastic chest band can be connected by either a direct or indirect connection. Plaintiff claims that the term "coupled to" has no particular meaning in the clothing art. Defendant Mothers Work, however, claims that there must be a direct connection between the back region of the
shoulder strap and the back section of the elastic chest band within the nursing bra. Defendant Mothers Work also submits that the term "coupled to" requires more meaning than just "connected," since in some respect it could be said that all sections of the garment are coupled to all other sections.

Defendant Mothers Work contends that the only embodiment of the nursing garment in the '029 patent has an element that directly connects the back region of the shoulder strap and the back section of the chest band within the nursing bra which is attached to the fabric body. According to Defendant Mothers Work, the patent is devoid of any description or suggestion that the shoulder strap and elastic chest band could be coupled together indirectly through an intermediate component that is not part of the nursing bra. Moreover, Defendant Mothers Work claims that the patent describes the invention as the product of attaching a nursing bra to a separate fabric body, and so the term should be limited to those garments having a nursing bra with a direct connection within the bra from the back region of the shoulder strap to the back section of the chest band.

Defendant Mothers Work points to the cross-sectional view of figure 4 of the '029 patent, which they claim demonstrates that the only contemplated connection between the back region of the shoulder strap and the back section of the chest band is through a direct connection within the nursing bra using a connecting element. Plaintiff, however, states that the '029 patent shows a preferred embodiment of the invention with a back piece connected (as shown in figure 4), which does not serve to limit claims 5 and 12 to the preferred embodiment. According to Plaintiff, reference to a figure in the specification as being "in accordance with the present invention" operates to incorporate any feature of the figure into the claims. Plaintiff contends that implying a negative limitation for the purpose of excluding any part of the fabric body to form part of the connection between the shoulder strap and the chest band is without justification. Plaintiff also claims that the prosecution history does not limit the interpretation of the phrase "coupled to" in claims 5 and 12, as there is no mention of the coupling of the elastic chest band to the back region of the shoulder strap in the file history.

Based on the evidence set forth in the record, the Court will adopt Plaintiff's proposed construction for this term. Accordingly, in the phrase "said back region of said shoulder strap being coupled to said back section of said elastic chest band," there can be a direct or indirect connection within the nursing bra of the nursing garment between the back region of the shoulder strap to the back section of the elastic chest band.

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1. Scope of the Claims

The language at issue here is the phrase "the free end being defined as the portion of the cap most remote from the end section of the cap" as used in independent claims 3 and 28 of the '773 patent. The dispute centers on whether the quoted language limits patent protection only to capped wheel nuts with a weld at the outermost edge of the open end, or whether it encompasses capped wheel nuts with a weld on a "free end" portion in general.

a. claim language

The plain language of the claims provides that only the free end is welded to the nut insert, at the projection formed on the nut insert where it extends out to form the circumferential edge. Claim 3 states that the cap has a "free end overlying said projection" it is this "free end" that is to be welded to the nut insert projection ("only said free end being welded to said nut insert at said projection"). Claim 3 goes on to define the free end as "the portion of the cap most remote from the end section of the cap." This description uses the word portion, not the point, most remote from the end section of the cap. This indicates that there is some flexibility in where along the "free end" portion the weld can be.

Based on the plain language of Claim 3, the "free end" is the section, or portion, of the cap that overlies the projection. The projection is where the "generally longitudinally extending surface [intersects the] shoulder." The free end is the portion of the cap most remote, or farthest from, the end section, which overlies the projection. According to the plain language of Claim 3, the weld must be on the free end at the projection. It does not have to be at the very tip of the free end.

Claim 28 is similarly worded. The free end is the same as in Claim 3, however, in Claim 28 there is a raised weld projection on the extending portion of the nut insert (this portion is flat in the Claim 3 embodiment). By the terms of Claim 28, the weld may only be at the weld projection. However, the free end may extend beyond the weld projection.
At the hearing, Defendants urged the Court to rely on dictionary definitions to define the phrase "most remote" as used in Claims 3 and 28. However, resort to extrinsic evidence is unnecessary. The words "most remote" are given their plain meaning in the claims. The dispute here is whether the free end - which is indisputably located at the end "most remote" from the end section - refers to a portion having some degree of axial length, or to the point at the very end of the open end.

b. specification

The specification is consistent with the above interpretation. "The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001).

The summary of the invention section states that "[t]he weld effectively seals against moisture entering underneath the cap by locating the weld near the lower extending edge of the cap. In addition, because the cap is welded near its lower extending edge…" [Plaintiff's Response, Exhibit A](emphasis added). This supports Plaintiff's assertion that the patent contemplates a weld along the free end portion - not necessarily at the outermost point.

The summary of the invention section also notes that the cap includes an end section and a side section, "the side section extending over the sides of the nut insert, and the side section may terminate in a free end, which free end may be either flared outwardly, flared inwardly, or not flared at all." Id. It goes on to say "the side sections terminates [sic] in a free end which free end is welded to the nut insert." Id. This language indicates that the "free end" is a portion that potentially flares out from the side section of the cap, thus, it is not limited to a specific point. Moreover, the "free end" must have some degree of axial length in order to flare. Counsel for Defendant admitted at the hearing, in response to a question by the Court, that the language of the specification stating that the free end may be flared requires that the free end be a portion with some discernable length.

The detailed description of the invention further supports this interpretation. With reference to Figure 1, the patent states "[t]he side section 36 of the cap 14 (terminates in a free edge) or skirt portion 38 which in this embodiment is flared outwardly. Hence, the cap skirt may be referred to as a cap flange or flared end." Id. This language defines the "free end" described in Claims 3 and 28. Again, it is referred to as a portion, not a particular point. Regarding Figure 3, the weld is to occur where the "cap skirt or free edge contacts the circumferential edge of the nut body." Id. The description goes on to note that "the free edge of the cap may extend slightly beyond the circumferential edge." Id. Clearly this embodiment did not envision the interpretation advanced by Defendants that requires the weld to be at the outermost point of the open end.

c. prosecution history

The prosecution history is important in identifying exactly what the '773 patent claims.

Initially, the patent examiner rejected the asserted claims as anticipated 1 by U.S. Patent No. 4,123,961 (the '961 patent) invented by Joseph Chaivre and Albert Jadach. The patent examiner rejected the claims stating:

Chaivre '961 discloses a decorative capped wheel nut (Fig. 10) comprising a nut insert (130), and a cap (132). Said nut insert comprises: a first end (102, 104) for engaging a wheel; a second end (116); polygonal sides; a shoulder (130) being a weld projection defining a circumferential edge for welding said cap thereto. Said cap comprise: a top section (124) extending longitudinally from the second end of said nut insert; a side section (132) extending over the polygonal sides of said nut insert forming a plurality of wrench flats; and a flanged free end portion (134) extending from said wrench flats laterally outward and away from said top section to overlie, generally tangentially, the edge of said nut insert so that a weld can be made by an electrical charge. Said free end extends laterally beyond said edge.

[Plaintiff's Response, Exhibit B].

--- Footnotes ---

1 "To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently." Atlas Powder Company v. Ireco, Inc., 190 F.3d 1342, 1346 (Fed. Cir. 1999). See also 35 USC § 102. - 882 -
In response, Plaintiff filed a declaration by the inventor of the '773 patent, John Toth ("Toth"). In his declaration, Toth indicated that he had personally worked with Chaivre and Jadach on the '961 patent. Toth explained that the concept of the '961 patent was to "weld on the end of the nut insert, where the nut insert was in contact with a portion of the cap, or, in Figure 10, on the horizontal flange, where the horizontal flange was in contact with a portion of the cap." [Plaintiff's Response, Exhibit B]. Toth asserted that the '961 patent did not suggest welding at the free end of the cap flange, which he defined as "the portion of the flange farthest away from the domed cap." Id. Indeed, Toth claimed the manufacturing equipment owned by the company the inventors worked for was not even capable of welding at the free end at the time of the '961 patent.

By contrast, regarding the '773 patent, Toth stated that he discovered that "it is desirable to place the weld as close to the free end or free edge of the skirt of the cap as possible to seal the cap to the nut insert such that water cannot enter between the cap and the nut insert." Id. The reason it is desirable to place the weld in that position is to prevent corrosives "from entering between the cap and the nut insert and causing corrosion of the thin stainless steel cap." Id. Toth went on to describe that corrosion was a problem even in the Figure 10 embodiment of the '961 patent because water could enter "between the cap and the nut insert on the axially positioned, circumferential portion of the flange just to the right of the lead line to reference numeral 136." Id. According to Toth, the weld placement in the '961 patent would not have sealed the "axial or longitudinal circumferential portion between the nut insert flange 136 and the cap."

Toth's declaration is consistent with the specification of the '961 patent. The specification of the '961 patent states "[t]he present invention provides capped wheel nuts wherein the cap is welded to the nut body at points on a surface extending substantially laterally to the central axis of the nut rather than along the axial surfaces which form the major contact areas between the nut and the cap." Id. With reference to Figure 10, cited by the patent examiner as anticipating the '773 patent, the '961 patent states that "FIG. 10 illustrates an embodiment of the invention wherein a nut insert...is joined to a cap 132 by welds formed between the two at a ring 134 extending over the upper lateral surface of the nut flange 136." Id.

Following an interview in March 1990, the patent examiner indicated that "favorable consideration would be given if applicant claimed the weld only at the circumferential edge." This distinguished the '773 patent from the '961 patent, where the weld was along the top of the nut flange, before the circumferential edge.

Additionally, following another interview in April 1990, the patent examiner issued a notice of allowability for the asserted claims. During the interview, claims 3 and 28 of the '773 patent were discussed. The examiner agreed on wording to more clearly define the "free end" of the cap. Id. The examiner required the addition of the disputed language "the free end being defined as the portion of the cap most remote from the end section of the cap." [Plaintiff's Response, Exhibit B]. The examiner stated his reasons for the allowance as:

The prior art of record, in particular the reference to Chaivre et al., does not show the feature of free end portion of the cap being welded only to the circumferential edge of a shoulder. Said feature is not to be so limiting as to say that the cap cannot also be welded at another portion such as along the sides and/or the closed end. Furthermore, the prior art of record, again in particular Chaivre et al., does not disclose the cap welded to the nut at the free end of the cap as clearly defined in the claims.

Id. (emphasis original).

The prosecution history is consistent with the interpretation derived from the claim language and specification.

Undoubtedly, the '773 patent is differentiated from the '961 patent because it discloses welding only at the circumferential edge, rather than along the surface where the nut flange is in contact with the cap. This clarification was made by Toth's declaration and is made clear by the patent examiner's conclusion that favorable consideration would be given if the patent claimed welds only at the circumferential edge.

In addition, the patent examiner required that the free end be the portion farthest from the end section of the cap. However, because the patent examiner refers to the free end as a portion, it is clear that the free end may extend slightly beyond the
circumferential edge or weld projection.

 Defendants' interpretation of the prosecution history would require that the weld be at absolute outermost point of the open end of the cap. "HTG's position...thus precludes from the scope of coverage of the asserted claims wheel nuts which have any measurable extension of the skirt beyond the weld location." [Defendants' Reply, p.3](emphasis added). For this to occur, the open end of the cap would have to terminate exactly at the circumferential edge. Otherwise the "free end" would overly the circumferential edge, which Defendants argue is not contemplated by the '773 patent.

 The patent examiner did not require that the weld on the '773 patent must be at the circumferential edge and simultaneously at the point most remote from the end section of the cap. It was the patent examiner's own amendment that defined the free end as "the portion of the cap most remote from the end section of the cap."

 Taken together, the intrinsic evidence demonstrates that the free end may extend slightly beyond the circumferential edge. In his declaration, Toth stated that it was desirable to "place the weld as close to the free end...as possible." He contemplated that the weld would not always be at the absolute end of the open end of the cap. Additionally, the purpose of welding at this location is to prevent moisture from getting in between the cap and the nut insert. This was a problem in the '961 patent because the cap extended over the sides of the circumferential projection but were not sealed. The specification of the '773 patent, and Toth's declaration, make clear that the advantage of the '773 patent over the '961 patent was that "[t]he weld effectively seals against moisture entering underneath the cap." Accordingly, the free end is defined as the portion most remote from the end section of the cap, and said free end may extend slightly beyond the circumferential edge.

 With respect to Claim 3, the prosecution history, together with the plain language of the claim, and the specification, reveal that the '773 patent covers capped wheel nuts where the weld is at the circumferential edge of the nut insert and along the free end of the cap. The free end is the portion of the cap overlying the projection created by the intersection of the generally longitudinally extending surface of the nut insert and the shoulder of the nut insert. The free end may extend slightly beyond the circumferential edge. The preferred embodiments of the '773 patent support this claim construction.

 With respect to Claim 28, the patent covers capped wheel nuts where the weld is only at the weld projection and along the free end of the cap. The free end may extend slightly beyond the weld projection.

 Because the intrinsic evidence was sufficient to aid the Court in coming to a correct conclusion on the true meaning of the language employed in the '773 patent, resort to extrinsic evidence is not required.

 1. Scope of the Claims

 The language at issue here is the phrase "the free end being defined as the portion of the cap most remote from the end section of the cap" as used in independent claims 3 and 28 of the '773 patent. The dispute centers on whether the quoted language limits patent protection only to capped wheel nuts with a weld at the outermost edge of the open end, or whether it encompasses capped wheel nuts with a weld on a "free end" portion in general.

 a. claim language

 The plain language of the claims provides that only the free end is welded to the nut insert, at the projection formed on the nut insert where it extends out to form the circumferential edge. Claim 3 states that the cap has a "free end overlying said projection" it is this "free end" that is to be welded to the nut insert projection ("only said free end being welded to said nut insert at said projection"). Claim 3 goes on to define the free end as "the portion of the cap most remote from the end section of the cap." This description uses the word portion, not the point, most remote from the end section of the cap. This indicates that there is some flexibility in where along the "free end" portion the weld can be.

 Based on the plain language of Claim 3, the "free end" is the section, or portion, of the cap that overlies the projection. The projection is where the "generally longitudinally extending surface [intersects the] shoulder." The free end is the portion of the cap most remote, or farthest from, the end section, which overlies the projection. According to the plain language of
Claim 3, the weld must be on the free end at the projection. It does not have to be at the very tip of the free end.

Claim 28 is similarly worded. The free end is the same as in Claim 3, however, in Claim 28 there is a raised weld projection on the extending portion of the nut insert (this portion is flat in the Claim 3 embodiment). By the terms of Claim 28, the weld may only be at the weld projection. However, the free end may extend beyond the weld projection.

At the hearing, Defendants urged the Court to rely on dictionary definitions to define the phrase "most remote" as used in Claims 3 and 28. However, resort to extrinsic evidence is unnecessary. The words "most remote" are given their plain meaning in the claims. The dispute here is whether the free end - which is indisputably located at the end "most remote" from the end section - refers to a portion having some degree of axial length, or to the point at the very end of the open end.

b. specification

The specification is consistent with the above interpretation. "The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001).

The summary of the invention section states that "[t]he weld effectively seals against moisture entering underneath the cap by locating the weld near the lower extending edge of the cap. In addition, because the cap is welded near its lower extending edge..." [Plaintiff's Response, Exhibit A](emphasis added). This supports Plaintiff's assertion that the patent contemplates a weld along the free end portion - not necessarily at the outermost point.

The summary of the invention section also notes that the cap includes an end section and a side section, "the side section extending over the sides of the nut insert, and the side section may terminate in a free end, which free end may be either flared outwardly, flared inwardly, or not flared at all." Id. It goes on to say "the side sections terminates [sic] in a free end which free end is welded to the nut insert." Id. This language indicates that the "free end" is a portion that potentially flares out from the side section of the cap, thus, it is not limited to a specific point. Moreover, the "free end" must have some degree of axial length in order to flare. Counsel for Defendant admitted at the hearing, in response to a question by the Court, that the language of the specification stating that the free end may be flared requires that the free end be a portion with some discernable length.

The detailed description of the invention further supports this interpretation. With reference to Figure 1, the patent states "[t]he side section 36 of the cap 14 (terminates in a free edge) or skirt portion 38 which in this embodiment is flared outwardly. Hence, the cap skirt may be referred to as a cap flange or flared end." Id. This language defines the "free end" described in Claims 3 and 28. Again, it is referred to as a portion, not a particular point. Regarding Figure 3, the weld is to occur where the "cap skirt or free edge contacts the circumferential edge of the nut body." Id. The description goes on to note that "the free edge of the cap may extend slightly beyond the circumferential edge." Id. Clearly this embodiment did not envision the interpretation advanced by Defendants that requires the weld to be at the outermost point of the open end.

c. prosecution history

The prosecution history is important in identifying exactly what the '773 patent claims.

Initially, the patent examiner rejected the asserted claims as anticipated 1 by U.S. Patent No. 4,123,961 (the '961 patent) invented by Joseph Chaivre and Albert Jadach. The patent examiner rejected the claims stating:

Chaivre '961 discloses a decorative capped wheel nut (Fig. 10) comprising a nut insert (130), and a cap (132). Said nut insert comprises: a first end (102, 104) for engaging a wheel; a second end (116); polygonal sides; a shoulder (130) being a weld projection defining a circumferential edge for welding said cap thereto. Said cap comprise: a top section (124) extending longitudinally from the second end of said nut insert; a side section (132) extending over the polygonal sides of said nut insert forming a plurality of wrench flats; and a flanged free end portion (134) extending from said wrench flats laterally outward and away from said top section to overlie, generally tangentially, the edge of said nut insert so that a weld can be made by an electrical charge. Said free end extends laterally beyond said edge.

[Plaintiff's Response, Exhibit B].
In response, Plaintiff filed a declaration by the inventor of the '773 patent, John Toth ("Toth"). In his declaration, Toth indicated that he had personally worked with Chaivre and Jadach on the '961 patent. Toth explained that the concept of the '961 patent was to "weld on the end of the nut insert, where the nut insert was in contact with a portion of the cap, or, in Figure 10, on the horizontal flange, where the horizontal flange was in contact with a portion of the cap." [Plaintiff's Response, Exhibit B]. Toth asserted that the '961 patent did not suggest welding at the free end of the cap flange, which he defined as "the portion of the flange farthest away from the domed cap." Id. Indeed, Toth claimed the manufacturing equipment owned by the company the inventors worked for was not even capable of welding at the free end at the time of the '961 patent.

By contrast, regarding the '773 patent, Toth stated that he discovered that "it is desirable to place the weld as close to the free end or free edge of the skirt of the cap as possible to seal the cap to the nut insert such that water cannot enter between the cap and the nut insert." Id. The reason it is desirable to place the weld in that position is to prevent corrosives "from entering between the cap and the nut insert and causing corrosion of the thin stainless steel cap." Id. Toth went on to describe that corrosion was a problem even in the Figure 10 embodiment of the '961 patent because water could enter "between the cap and the nut insert on the axially positioned, circumferential portion of the flange just to the right of the lead line to reference numeral 136." Id. According to Toth, the weld placement in the '961 patent would not have sealed the "axial or longitudinal circumferential portion between the nut insert flange 136 and the cap."

Toth's declaration is consistent with the specification of the '961 patent. The specification of the '961 patent states "[t]he present invention provides capped wheel nuts wherein the cap is welded to the nut body at points on a surface extending substantially laterally to the central axis of the nut rather than along the axial surfaces which form the major contact areas between the nut and the cap." Id. With reference to Figure 10, cited by the patent examiner as anticipating the '773 patent, the '961 patent states that "FIG. 10 illustrates an embodiment of the invention wherein a nut insert…is joined to a cap 132 by welds formed between the two at a ring 134 extending over the upper lateral surface of the nut flange 136." Id. Following an interview in March 1990, the patent examiner indicated that "favorable consideration would be given if applicant claimed the weld only at the circumferential edge." This distinguished the '773 patent from the '961 patent, where the weld was along the top of the nut flange, before the circumferential edge.

Additionally, following another interview in April 1990, the patent examiner issued a notice of allowability for the asserted claims. During the interview, claims 3 and 28 of the '773 patent were discussed. The examiner agreed on wording to more clearly define the "free end" of the cap. Id. The examiner required the addition of the disputed language "the free end being defined as the portion of the cap most remote from the end section of the cap." [Plaintiff's Response, Exhibit B]. The examiner stated his reasons for the allowance as:

The prior art of record, in particular the reference to Chaivre et al., does not show the feature of free end portion of the cap being welded only to the circumferential edge of a shoulder. Said feature is not to be so limiting as to say that the cap cannot also be welded at another portion such as along the sides and/or the closed end. Furthermore, the prior art of record, again in particular Chaivre et al., does not disclose the cap welded to the nut at the free end of the cap as clearly defined in the claims.

Id. (emphasis original).

The prosecution history is consistent with the interpretation derived from the claim language and specification.

Undoubtedly, the '773 patent is differentiated from the '961 patent because it discloses welding only at the circumferential edge, rather than along the surface where the nut flange is in contact with the cap. This clarification was made by Toth's
declaration and is made clear by the patent examiner's conclusion that favorable consideration would be given if the patent claimed welds only at the circumferential edge.

In addition, the patent examiner required that the free end be the portion farthest from the end section of the cap. Welding at this location solves the problem of corrosion found in the '961 patent because it prevents moisture from entering under the cap. However, because the patent examiner refers to the free end as a portion, it is clear that the free end may extend slightly beyond the circumferential edge or weld projection.

Defendants' interpretation of the prosecution history would require that the weld be at absolute outermost point of the open end of the cap. "HTG's position...thus precludes from the scope of coverage of the asserted claims wheel nuts which have any measurable extension of the skirt beyond the weld location." [Defendants' Reply, p.3](emphasis added). For this to occur, the open end of the cap would have to terminate exactly at the circumferential edge. Otherwise the "free end" would overly the circumferential edge, which Defendants argue is not contemplated by the '773 patent.

The patent examiner did not require that the weld on the '773 patent must be at the circumferential edge and simultaneously at the point most remote from the end section of the cap. It was the patent examiner's own amendment that defined the free end as "the portion of the cap most remote from the end section of the cap."

Taken together, the intrinsic evidence demonstrates that the free end may extend slightly beyond the circumferential edge. In his declaration, Toth stated that it was desirable to "place the weld as close to the free end...as possible." He contemplated that the weld would not always be at the absolute end of the open end of the cap. Additionally, the purpose of welding at this location is to prevent moisture from getting in between the cap and the nut insert. This was a problem in the '961 patent because the cap extended over the sides of the circumferential projection but were not sealed. The specification of the '773 patent, and Toth's declaration, make clear that the advantage of the '773 patent over the '961 patent was that "[t]he weld effectively seals against moisture entering underneath the cap." Accordingly, the free end may extend slightly beyond the circumferential edge, but it may not extend as far as it did in the Figure 10 embodiment of the '961 patent. Otherwise, the purported advantage of the '773 patent would be lost.

With respect to Claim 3, the prosecution history, together with the plain language of the claim, and the specification, reveal that the '773 patent covers capped wheel nuts where the weld is at the circumferential edge of the nut insert and along the free end of the cap. The free end is the portion of the cap overlying the projection created by the intersection of the generally longitudinally extending surface of the nut insert and the shoulder of the nut insert. The free end may extend slightly beyond the circumferential edge. The preferred embodiments of the '773 patent support this claim construction.

With respect to Claim 28, the patent covers capped wheel nuts where the weld is only at the weld projection and along the free end of the cap. The free end may extend slightly beyond the weld projection.

Because the intrinsic evidence was sufficient to aid the Court in coming to a correct conclusion on the true meaning of the language employed in the '773 patent, resort to extrinsic evidence is not required.
13 Plaintiff contends that the parties agreed to a stipulation that "stylet" would be defined as "slender probe." Counsel for MDTech did not remember that stipulation, however, and Plaintiff used "stylet" instead of "slender probe" in its proposed construction. As it does not appear to be a point of contention, the Court does not define "stylet" for purposes of this claim construction.

In support of its argument that being "detachable" requires separation without loss or damage, MDTech relies on various case law, the specification of the "798 patent, and the dictionary definition of "detachable." The case on which MDTech primarily relies is K-2 Corp. v. Salomon S.A., 191 F.3d 1356 (Fed. Cir. 1999), in which the Federal Circuit addressed the meaning of the term "permanently affixed" as used in a patent claim describing how an in-line roller skate base was connected to the boot. Id. at 1360-61. The asserted claim in that case contained the limitation that the boot be "permanently affixed" to the base, and the issue before the Court was whether a removable screw used in the accused device met the "permanently affixed" limitation. Id. In defining "permanently affixed," the Court first considered that the patentee distinguished prior art that included a "detachable" boot, noting that the term "permanently" was added to distinguish claims from the "detachable" boot disclosed in the prior art. Id. at 1364. The Court then addressed the difference between a permanent and a removable connection, first considering what it considered a permanent rivet-made connection and a permanent single injection molded unit, and stating that:

Likewise, were an adhesive laminate used to provide the permanent connection, that permanence too could be destroyed by breaking the structure apart. Screws, unlike rivets and laminates, are meant to be unscrewed, that is, to be removed. A rivet or a laminate, to the contrary, is meant to remain permanent, unremovable unless one is bent on breaking the permanent structure apart.

Id. at 1365 (citations to the record omitted). In affirming the district court's holding that "permanently affixed" required an unremovable connection, the Federal Circuit found that the removable screw in the accused device did not meet the limitation of the asserted claim and, thus, there was no literal infringement. Id. at 1365-66.

In this case, MDTech argues that the patentee focused on the "detachable" quality of the stylet and cannula in the reusable embodiment (depicted in Fig. 1), as contrasted with the permanently affixed quality of the stylet and cannula in the single use embodiment (depicted in Fig. 5). MDTech points to the fact that the specification describes the stylet of the reusable embodiment as being "detachably engaged" within the clevis 46 of the spring guide 18, but does not use the term "detachable" in relation to the stylet of the single use embodiment. ("798 patent, col. 7, l. 41-43.) Indeed, the single use embodiment is described as being assembled like the reusable embodiment, except that the stylet in the single use embodiment is "adhesively bonded" within the recess, and the cannula mount is "similarly secured" (i.e., with adhesive) within the bore. (Id., col. 10, l. 24-27.) In addition to these arguments, MDTech also relies on a dictionary that defines "detachable" as "to separate especially from a larger mass and usually without violence or damage."

14 For the sake of clarity, the Court notes that the specification refers to the clevis 46 of the spring guide 18, but Fig. 1 appears to indicate that the clevis 46 is on the inner support rod 14, not the spring guide 18.

On the other hand, Plaintiff argues that MDTech's proposed construction is improper because there is nothing in the claim or specification that requires the limitation of "without loss or damage." Plaintiff points out that the specification, in describing the assembly of the instrument, explains that the stylet is telescopically or coaxially received within the cannula to form the needle in both the reusable and single use embodiments. ("798 patent, col. 7, l. 36-37; col. 10, l. 22-23.) Presumably, this reference indicates that, at some point, the stylet and cannula are separate and, therefore, detachable. Plaintiff argues that the claim does not specify when the stylet is capable of being decoupled or disassembled from the cannula, and that detachability does not occur during the normal operation of the instrument, but during the assembly or disassembly of the instrument. Plaintiff, however, does not address how they would be detached during disassembly. Finally, Plaintiff argues that there are dictionary definitions of "detachable" that do not include the words "without violence or damage," and that MDTech has selectively chosen a dictionary solely to support its proposed construction.
Plaintiff also contends that MDTech misses the point by focusing on how the stylet is secured to the spring guide and how the cannula is secured to the cannula mount, because this claim focuses on the stylet's relation to the cannula, not to the other parts of the instrument. The Court is not persuaded by this argument. As MDTech put it, "[i]t will be appreciated that if the cannula and stylet are secured by adhesive, the stylet is not detachable from the cannula except upon the occurrence of 'violence or damage.'" (MDTech Br. at 21.) The stylet and the cannula need not be bonded to each other to conclude that the patentee did not intend them to be "detachable," it is enough that they are bonded to the instrument when the stylet is received within the cannula.

After considering the parties' arguments, the Court concludes that MDTech has the better argument and that the term "detachable" as used in this claim requires separation "without loss or damage." The Court finds it significant that the specification only describes the stylet of the reusable embodiment as being "detachably engaged" within the clevis of the spring guide, (‘798 patent, col. 7, l. 41-43), but specifically distinguishes the assembly of the single use embodiment by describing that the stylet is "adhesively bonded" within the recess of the base. (Id., col. 10, l. 24-27.) The term "detachable" does not appear at all in the portion of the specification describing the single use embodiment. Further, "detachably" also appears in the specification in describing that the cannula mount is "detachably affixed" to the spring guide in the reusable embodiment, a connection that, in Fig. 1, is made by use of a screw thread, not a plug in or adhesively bonded connection. 16 The specification, therefore, refers to a piece being "detachably engaged" or "detachably affixed" where the piece is placed in the clevis or where a piece is connected by a screw thread; but it does not use that term when pieces are adhesively bonded or similarly secured. This distinction suggests that the patentee intended "detachable" to mean capable of removal or separation without breaking or causing damage through the necessary use of undue force.

The Court understands that the cannula mount being detachable from the spring guide is a separate feature than the stylet being detachable from the cannula; it only notes the use of the term "detachably" in that context to explore the patentee's understanding of that word's meaning as used in the '798 patent.

This conclusion is further supported by the dictionary definition of "detachable," which is: "capable of being or designed to be detached : capable of being separated or withdrawn without loss or damage." Webster's Third New International Dictionary 615 (1993) (emphasis added); see also Mirriam-Webster Online Dictionary, www.m-w.com (not defining "detachable" separately, but defining "detach" as "1: to separate especially from a larger mass and usually without violence or damage." (emphasis added)). Because the Court has relied on the same dictionaries throughout this opinion, Plaintiff's argument that MDTech has selectively used dictionaries to support its construction of this term is unavailing.

In addition, the Court notes that, although the Federal Circuit's decision in K-2 is, again, not directly controlling on this issue because it involved a different patent, specification, and prosecution history (especially prior art distinctions that are not present in this case), it nonetheless reflects a similar understanding of the general concepts of detachability and permanent affixation. Although this Court's conclusion is based on the claim language and specification of the '798 patent specifically, it is at least consistent with the notion espoused in K-2 that something is not detachable or removable if doing so requires breaking the permanent structure apart.

For the reasons stated above, therefore, the Court construes this term to be "the stylet is capable of being separated or withdrawn from the cannula without loss or damage."

In so holding, the Court recognizes that this construction may exclude claim 2's coverage of the single use embodiment of the invention illustrated in Fig. 5. Indeed, this is a consistent area of dispute between the parties and, although it arises primarily in connection with the term "releasably engaging" (addressed next), this issue is also implicated by interpretation of the term "detachable." MDTech argues that claim 2 of the '798 patent was written only to cover the reusable embodiment.
of the invention, not the single use embodiment. Specifically, MDTech contends that the use of the words "detachable" and "releasably engaging" in claim 2 demonstrates that the drafter intended this claim to cover only the reusable embodiment. According to MDTech, because the stylet and/or the cannula of the single use embodiment can be adhesively bonded or otherwise secured to the instrument, and because the cannula mount in that embodiment is connected to the spring guide with a peg and hole or adhesive connection, those pieces must be broken or subjected to undue force in order to detach or release them. MDTech argues that one skilled in the art would not understand "detachable" or "releasable" to require a user to damage or break the items in order to accomplish that task and, thus, that claim 2 is not written toward the single use embodiment.

Plaintiff counters by arguing that there is nothing in the patent that indicates that the patentee intended to give up an entire alternative embodiment when he drafted these claims, and that it would be improper to construe these claims in such a way that could produce that result. Specifically regarding the second connector means "releasably engaging" the first connector means, Plaintiff acknowledges that "the addition of an adhesive does create more of a bond," but that something adhesively bonded nonetheless can be pulled out. (Tr. at 72.) In addition, Plaintiff points out that all but one of the independent claims of the '798 patent (claim 18) use the term "releasably." As such, construing "releasably" as not covering the single use embodiment excludes all but one claim from covering that embodiment.

The Court agrees with MDTech that it is possible that claim 2 may not cover the single use embodiment and, even if the court's construction of "detachable" and "releasably engaging" produce that result, such a construction, though not the norm, is not improper. In describing the reusable embodiment, the specification clearly provides that "[b]ecause the cannula mount 58 is detachably affixed to the spring guide 18, the biopsy instrument 10 may interchangeably employ a needle having any one of several configurations well known in the art . . . " (798 patent, col. 6, l. 46-53) (emphasis added). Although the single use embodiment can employ several needle configurations, it cannot do so interchangeably, a feature of the single use embodiment which is attributed to the fact that the cannula mount is detachably affixed to the spring guide. The specification does not contain similar language in connection with the single use embodiment.

In addition, contrary to Plaintiff's assertion, each claim of a patent does not have to cover every embodiment in the patent. See Ventana Med. Sys. v. Biogenex Labs., Inc.,473 F.3d 1173, 1181-82 (Fed. Cir. 2006) ("[E]ach claim does not necessarily cover every feature disclosed in the specification"). In this case, claim 18 of the '798 patent does not include the terms "detachable" or "releasably engaging" and, therefore, the Court's construction would not exclude claim 18's coverage of the single use embodiment. In addition, as MDTech points out, '798 is a continuation-in-part and does not have to cover everything that has already been covered by the '797 patent. Indeed, none of the claims of the '797 patent contain "detachable," "releasably," or comparable terms and, therefore, would not exclude the single use embodiment. For that reason, the Court need not construe claim 2 to cover both the reusable and single use embodiments.

In addition, Plaintiff's remaining arguments are not persuasive. Plaintiff argues that the specification of the '798 patent explains that both embodiments have essentially the same operation with only small differences. (798 patent, col. 9, l. 41-60.) ("[T]he principles of operation [of the reusable and single use embodiments] are virtually identical.") Plaintiff contends that this implies that both embodiments function in a "releasably engaging" manner. As noted above, the specification also expressly states that the reusable embodiment can interchangeably employ various needle sets because the cannula mount of that embodiment is "detachably affixed" to the spring guide, a feature that is not disclosed in relation to the single use embodiment. In addition, while the specification may state that both embodiments have essentially the same operation, it also explains that:

Assembly of instrument 210 [the single use embodiment] is quite similar to assembly of instrument 10 [the reusable embodiment], as described hereinabove. However, in this instance, the proximal end 282 of the stylet 26[6] is adhesively bonded within the recess 246, and the base 262 of the cannula mount 258 is similarly secured within the bore 255a.

(Id., col. 10, l. 22-27) (emphasis added.) In addition, while the cannula of the reusable embodiment is described as being secured "in any suitable manner," (Id., col. 6, l. 35-37), the specification describes that the cannula of the single use embodiment "may there be secured by means of adhesive (not shown)." (Id., col. 10, l. 14-15.) These distinctions are crucial, and they may well remove the single use embodiment from the coverage of a claim that describes an instrument with a "detachable" stylet or a cannula mount that is "releasably engaging" with the spring guide.

Finally, Plaintiff's cite to Micro Chemical, Inc. v. Great Plains Chemical Co., Inc., 194 F.3d 1250 (Fed. Cir. 1999) is
unavailing. In that case, the Federal Circuit explained that "[w]hen multiple embodiments in the specification correspond to the claimed function, proper application of § 112, P 6 generally reads the claim element to embrace each of those embodiments." Id. at 1258. This cite, however, does not support Plaintiff's argument because it relates specifically to a means-plus-function analysis, namely a court's identification of structures in the specification that correspond to a recited function. Here, the Court is not identifying structures that correspond to the recited function in a means-plus-function clause, it is using ordinary claim construction principles to interpret a claim term, even though its construction may exclude that claim's coverage of an alternative embodiment.

The Court, therefore, is not persuaded that it must give these disputed terms a construction that results in claim 2 covering the single use embodiment.

II

A

In his challenge to the district court's construction of the '798 patent, Dr. Baran advocates a definition for the terms "detachable" and "releasably" that does not include the "without loss or damage" condition. Dr. Baran objects to that condition because it excludes the single-use embodiment from the asserted patent claim and therefore precludes his infringement claim against the BioPince, which is a single-use device.

As an initial matter, we accept Dr. Baran's assertion that the '798 patent "never discloses a stylet that is joined to a cannula." The specification indicates that the stylet 60 is attached to a support rod 14, and that the cannula 66 is attached to a spring guide 18. The full needle is then assembled by placing a coil spring "coaxially" onto the stylet and placing the cannula "telescopically" over the stylet and coil spring. The cannula remains an independent component that slides freely over the stylet.

[SEE FIG. 1 IN ORIGINAL]

The fact that the stylet is not attached to the cannula, however, is not favorable to Dr. Baran. If anything, it lends further credence to the district court's construction of "detachable" as meaning "separation without loss or damage," because the stylet and cannula as described in the specification are readily separable without loss or damage.

Of greater significance is the different language used by the patentee to distinguish the single-use embodiment from the reusable embodiment. In describing the reusable embodiment, the patent states that "the stylet 60 is received and detachably engaged within the clevis 46 of the spring guide 18. The thread 74 on the inner surface 72 of the collar 62 is engaged with the thread 56 on the spring guide 18 to secure the cannula mount 58 to the spring guide." '798 patent, col. 7, ll. 42-46. Figure 1 shows that the stylet is inserted into a notched recess on the support rod from which it can be easily removed, 1 and that the cannula is screwed onto the spring guide from which it too can be easily removed.

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1 Although the specification states that the stylet is inserted into the clevis of the "spring guide," Figure 1 clearly shows that the clevis is located on the support rod.

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - - -

By contrast, in describing the single-use embodiment, the patent states that the assembly of the device is "quite similar" except that "the stylet 262 is adhesively bonded within the recess 246, and the base 262 of the cannula mount 258 is similarly secured within the bore 255a." '798 patent, col. 10, ll. 22-27. Figure 5, which corresponds to the single-use embodiment, shows that the clevis is absent from the support rod, and that the screw threads are absent from the spring guide. Instead, the stylet and the cannula are glued permanently into the support rod and the spring guide, respectively.

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The patentee used the term "detachably" in the specification to draw a direct contrast between the removable components of the reusable embodiment and the adhesively bonded components of the single-use embodiment. That usage effectively concedes that adhesively bonded components—including the single-use embodiment—are not "detachable" components within the meaning of the patent. We agree with the district court that "[t]his distinction suggests that the patentee intended 'detachable' to mean capable of removal or separation without breaking or causing damage through the necessary use of undue force." Baran v. Med. Device Techs., Inc., 519 F. Supp. 2d 698, 724 (N.D. Ohio 2007); see also K-2 Corp. v. Salomon S.A., 191 F.3d 1356, 1365 (Fed. Cir. 1999) ("Screws, unlike rivets and [adhesive] laminates, are meant to be unscrewed, that is, to be removed. A rivet or a laminate, to the contrary, is meant to remain permanent, unremovable unless one is bent on breaking the permanent structure apart."). Incorporating the "without loss or damage" condition into the claim construction has the additional advantage of comporting with the plain meaning of "detachable," as expressed by the several dictionary definitions cited by the district court.

We also agree with the district court that the terms "releasably" and "detachable" have the same meaning in the '798 patent. Dr. Baran argues that the use of different terms implies that they have different meanings, see CAE Screenplates Inc. v. Heinrich GmbH, 224 F.3d 1308, 1317 (Fed. Cir. 2000), but that implication is overcome where, as here, the evidence indicates that the patentee used the two terms interchangeably. See Tehrani v. Hamilton Med., Inc., 331 F.3d 1355, 1361 (Fed. Cir. 2003).

In a final attempt to bring the single-use embodiment within the scope of the asserted claim, Dr. Baran argues that the district court's claim construction improperly excluded a preferred embodiment and ignored the Summary of the Invention. There is no force to either of those arguments. It is not necessary that each claim read on every embodiment. In this instance, while claim 2 reads on only the reusable embodiment, a different claim of the '798 patent (claim 18) reads on both the single-use and the reusable embodiments., See Helmsderfer v. Bobrick Washroom Equip., Inc., 527 F.3d 1379, 1383 (Fed. Cir. 2008) ("It is often the case that different claims are directed to and cover different disclosed embodiments."); Intamin Ltd. v. Magnetar Techs., Corp., 483 F.3d 1328, 1336-37 (Fed. Cir. 2007) ("[A] claim need not cover all embodiments."). As for the excerpt from the Summary of the Invention, it simply repeats verbatim the claim language that the "stylet means is . . . detachable from the cannula" and that the "second connector . . . releasably and fixedly engages the first connector." '798 patent, col. 3, ll. 50-60. The fact that those claim terms were used in the Summary does not mean that they must be read to encompass all the embodiments of the invention.

Because we do not disturb the district court's construction of "releasably," or the related constructions of "first connector means" and "second connector means," Dr. Baran's stipulation of noninfringement of the '798 patent remains effective.


10 This term is found in independent claim 1 of the '073 Patent.
dockable to said second portion of said primary graft body while inside of a vessel to define a single flow lumen which transfers substantially all flow between said primary graft flow lumen and said secondary graft flow lumen.

('073 Patent, col. 6, II. 49-57.)

Thus, the claim language suggests that the "first end" of the "graft body" must have some additional structure that permits the first end to be coupled with or docked to the second portion of the primary graft body. Although Plaintiffs' proposed construction does not expressly refer to such a feature, they argued that the "adapted to be connected," and "being dockable" to language was intended to refer to the intraluminal aspect of the invention. (See, e.g., Tr. at 40:15-41:4, 67:6-18.) Further, all parties concur that intraluminal grafts require some type of wires. Accordingly, the Court concludes that with respect to this phrase, the "first end" of the supplemental graft body must include some form of wire structure. For the reasons discussed above in Sections B.2 and B.5, the Court also concludes that the wires must be malleable but that they need not extend entirely beyond the end of the graft body.

Finally, the Court agrees with Cook and Gore that the construction of this term must include a reference to a vessel, rather than a general reference to a "fluid containing lumen," as Plaintiffs' propose. This is because the inventors clearly defined the term "vessel" in the specification to mean "blood vessels or like ducts such as the bile duct and the ureter (which are all hereafter called 'vessels')." ('458 Patent, col. 1, II. 18-20 (emphasis added)).

Accordingly, the Court construes the term "said first end of said supplemental graft body being dockable to said second portion of said primary graft body while inside of a vessel," to mean: "The first end of the supplemental graft body includes a malleable wire structure that permits it to be intravascularly docked to or coupled with the second portion of the primary graft body."

"the combination of the hook, the hole and the pin being effective to hold the pump received by the hook to the housing"

Claims 4, 12, and 18 of the '767 Patent contain the term "the combination of the hook, the hole and the pin being effective to hold the pump received by the hook to the housing." SHURflo contends the term means "the hook, the hole, and the pin together are capable of supporting the pump that is received by the hook to the housing." Defendants contend that the term means "the functional and structural cooperation of the hook, the hole and the pin result in the pump being received by the hook being held to the housing such that eliminating any one of them causes a failure to hold the pump in the housing."

SHURflo's proposed construction would merely require that the combined elements "be capable of holding" the pump, when the claim clearly requires that the elements "be effective to hold" the pump. This construction is unduly broad because something may be capable of holding, but not be effective to hold. In addition, neither intrinsic nor extrinsic evidence supports Defendants' proposed requirement that the mechanism must fail if one element is removed. The claim language clearly says that the three combined elements are effective to hold the pump. However, this does not necessarily preclude any one element, either alone or in combination with another element, from being effective to hold the pump. SHURflo's Reply Brief, at 7-8. Thus, Defendants' proposed construction is improper.

The claim language is clear and understandable to the fact finder and does not require construction beyond its plain and ordinary meaning. See Orion, 406 F. Supp. 2d at 738 (stating that "although every word used in a claim has meaning, not every word requires construction" in declining to construe claim terms). However, the Court has resolved the parties' disputes in accordance with O2 Micro, 521 F.3d 1351, and to the extent that this claim term arises at trial, the Court instructs the parties to tailor their trial arguments to conform with this Order.

"said gussets along each of said edges being fitted together"
The parties also dispute the construction of the claim term "fitted together." Perouse's proposed construction is "positioned in one place or group." Gore's proposed construction is "interlock[ing] and contact[ing] each other."

In common parlance, two items that are "fitted together" have structures that conform to or complement one another, as evidenced by the relevant dictionary definition of "fit," 

"[t]o fashion, modify, or arrange so as to conform or correspond to something else," The Oxford English Dictionary (2d Ed.), vol.5 p.975, and the relevant dictionary definition of "together" (used following a transitive verb), "each other." The Oxford English Dictionary (2d Ed.), vol.18 p. 190. The '787 specification does not explicitly define the phrase "fitted together." However, it is clear that "fitted together" is being used in the patent according to its ordinary meaning. The gussets are described as "being fitted into each other" (787 patent col.1 11.60-61) and "interpenetrat[ing]" (787 patent col.3 1.66), and Figure 8 depicts a zipper-like arrangement of gussets, in which each gusset fits into the space between gussets on the opposing edge.

Perouse's construction of "fitted together" as "positioned in one place or group" is therefore too broad and inconsistent with the ordinary meaning and intrinsic evidence. "Gussets" that are merely "positioned in one place or group" are not "fitted together," as this term is used in the '787 patent.

The Court cannot accept Gore's proposed construction either. Gore construes "fitted together" to mean "interlock[ing] and contact[ing] each other." This construction is too narrow and improperly imports limitations from the specification into the claim. See, e.g., Phillips, 415 F.3d at 1323. Gore's "interlocking" limitation is easily dismissed, as there is no suggestion in the patent that opposing gussets lock together in any sense. While Figure 8 does depict gussets that contact each other, a drawing of a single embodiment does not limit the ordinary meaning of "fitted together," which does not require contact. See, e.g., id.; Gart v. Logitech, Inc., 254 F.3d 1334, 1342-43 (Fed. Cir. 2001) ("Such a construction would improperly add a limitation appearing in the specification and the drawings, but not appearing in the unambiguous language of the claim.").

Accordingly, the Court construes the phrase, "said gussets along each of said edges being fitted together," to mean "said gussets along each of said edges having an arrangement that conforms to the arrangement of gussets on the opposite edge, such as an arrangement in which the gussets on one edge can occupy the spaces between the gussets on the opposing edge."

The parties dispute whether the term includes an intent requirement as specified in the defendant's proposed construction, "the length and diameter of the distal portion of the guide wire tube are consciously selected with the intention of producing the results that follow." The plaintiff argues that an intent requirement would impermissibly limit the term. The defendant, on the other hand, argues that "being selected" connotes an intentional act to produce certain results and that without the intent requirement, the language in the claim would be rendered superfluous.

After considering the parties' arguments, the Court concludes that one of ordinary skill in the art would understand "being selected" according to its plain and ordinary meaning. As a result, the Court declines to construe the phrase "being selected."

At issue here are four elements in Claim 1 of the '658 patent. The first element is "said second cavity being shallower than said first cavity." This simply means that the first cavity which holds the pipe must be deeper than the second cavity which holds the tobacco. The reason for this is so the smoking pipe can be deposited into the first cavity for carrying purposes, but be long enough to put pressure on the bottom of the second cavity in order to place a small amount of tobacco in the bowl.
B. Claim Construction

The disputed element of the '251 patent is the activator mechanism for opening the umbrella -- "a latch slidably received in said barrel for selectively disengaging said catch from said barrel to release said barrel from said tube; . . . said latch being ring-shaped and being slidably received in said channel of said barrel for slidably receiving said tube therein." 40 In the February 3 Opinion, the term "ring-shaped latch" was construed as "a curved band that encircles the tube." 41 Taylor Made approves of this construction, but cites Engel Industries for the proposition that this Court should additionally consider whether the latch and the barrel in the '251 patent should be construed as "structurally distinct elements in the accused device." 42

In Engel Industries, the Federal Circuit Court of Appeals considered the patent for an air conditioning machine. 43 The patentee, Met-Coil, asserted that two specified ductal portions of the machine should be understood as a single piece in order to prove infringement. The Federal Circuit rejected this argument:

Met-Coil asserts that the second portion 24 . . . includes the return portion 26. We cannot agree since this assertion contradicts the plain language of the '641 patent. For example, the patent states, 'A second portion 24 is bent rearwardly whereby this portion 24 extends opposite a portion of the duct wall. A return portion 26 is also provided . . . .' Since a return portion is 'also provided,' they logically cannot be one and the same. 44

In conclusion, the court held as a matter of claim construction that "the claimed second portion 24 is separate and distinct from the return portion 26." 45

The dispute currently facing this Court is similar to that discussed in Engel Industries. Here, Windbrella asserts that "when the knob located outside the barrel [of the Taylor Made umbrella] is depressed, the arms of the latch extend distally towards
the inner wall of the barrel. The latch and the curved inner wall of the barrel thereby create an enclosed space which is clearly "ring-shaped." 46 Like the patentee in Engel Industries, Windbrella argues that one claimed element of the patent -- here, the latch -- "includes" part of another claimed element -- the barrel. The teaching of Engel Industries is that the structural distinctness of the latch and the barrel claimed by the '251 patent should be analyzed as a matter of claim construction. This analysis was not conducted in the February 3 Opinion.


The claims, specification, and prosecution history of the '251 patent all provide evidence that the latch and barrel must be construed as structurally distinct elements. In the claim itself, the barrel is described first, and then the latch is separately described as a structure "received in said barrel." 47 The claim then continues to refer to the latch and barrel as two distinct elements; for example, "said latch being received in said barrel and movable, together with said barrel, away from said handle." 48 The drawings in the patent's specification picture the latch and barrel as distinct devices, and also label them as such. 49 The specification's text also repeatedly refers to the latch and barrel as separate elements. 50 Finally, as explained in the February 3 Opinion, the prosecution history of the '251 patent precludes an expansive reading of the requirement for a "ring-shaped latch" because "the purpose of consulting the prosecution history in construing a claim is to 'exclude any interpretation that was disclaimed during prosecution.'" 51 A claim construction that did not require the ring-shaped latch to be structurally distinct from the barrel "might well be deemed anticipated by the Lee patent because it also includes a latch that, when depressed, closes a circle with the barrel around the tube." 52

47 '251 patent, col. 4, l. 25.
48 Id., col. 4, ll. 27-28.
49 See id., Figures 2-4 (identifying the latch as "7" and the barrel as "30").
50 See, e.g., id., col. 1, ll. 52-53 ("latch is received in the barrel and movable, together with the barrel"); col. 1, ll. 61-62 ("latch is ring-shaped, is slidably received in the channel of the barrel for slidably receiving the tube therein"); col. 3, ll. 10-11 ("latch which is ring-shaped is slidably received in the channel 35 of the barrel 30").

Windbrella's effort to promote a different claim construction fails to respond to this evidence. Windbrella cites two cases in support of its argument that "the term 'latch,' in claim 1, should be interpreted to include multiple parts that may be combined to create a ring-shape as that term has been construed." Of course, the claimed latch, like the patented elements in the cases cited by Windbrella, could indeed incorporate multiple components. 54 But under Engel, the components making up the latch cannot include the barrel, which is a "separate and distinct" element of the '251 patent.

53 Windbrella's Memorandum of Law in Opposition to Taylor Made's Motion for Reconsideration of Summary Judgment Opinion and Order ("Pl. Reconsideration Mem.") at 4 (citing CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359 (Fed. Cir. 2002); Cross Medical Prods., Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293 (Fed. Cir. 2005)).
54 See, e.g., CCS Fitness, 288 F.3d at 1362 (a "reciprocating member" could be composed of a multiple components); Cross
Medical Prods., 424 F.3d at 1309 (an "anchor seat portion" could be comprised of two components, despite the depiction of a unitary structure in the specification).

55 Engel Indus., 96 F.3d at 1405.

For the reasons stated below, the court rejects Beverly's construction of "distal ends . . of the arms being structured to be urged toward each other and to lock into a common opening" in Claims 25 and 30 of the '305 patent as means plus function claims.

4 Beverly quotes a different phrase to be construed in the table of its Memorandum on page 10 under the subheading regarding its Means Plus Function argument, but discusses the above-quoted phrase in its analysis and in its Proposed Claim Construction. (Def. Mem. Ex. 6). The different phrase appears to be a typographical error, and the court construes the above-quoted phrase.5 Claim 25 reads:

A stackable line hanger being composed of a resilient material and having a generally U-shaped body with arms that grip a line, distal ends of the arms being structured to be urged toward each other and to lock into a common opening in a line support or another line hanger, the hanger having a stacking provision located in a region where said arms are joined and configured to retentively engage a second hanger supporting a second line. (Ex. 2.)

Claim 30 reads:

A stack of line hangers comprising:

a first stackable line hanger being composed of a resilient material and having a generally U-shaped body with arms which grip a line, distal ends of which the arms being structured to be urged toward each other and to lock into a common opening in a line support or another line hanger, the hanger having a stacking provision; and a second stackable line hanger configured to lock onto the stacking provision so as to support a second line. (Ex. 2.)

Beverly argues that claims 25 and 30 of the '305 patent do not identify a structure that allows the distal ends of the arms to perform the function of locking into a common opening and argues for the application of a means plus function construction to teach the way in which the arms should be structured. Beverly proposes the following means plus function construction for the phrase based on the structure described in the specification:

Arms having distal ends supporting a locking barb or equivalent structure that includes a line or contact point such that the locking barb locks against the attachment surface at two or more linear points or at a single contact point.

Arms having distal ends supporting a locking barb or equivalent structure that includes a line or contact point such that the locking barb locks against the attachment surface at two or more linear points or at a single contact point.

The locking barb further includes a notch or equivalent structure configured to lock against a lip or other surface associated with the attachment surface.

(Def. Mem. Ex. 6 at 8-9.) In essence, Beverly's proposed construction reads into claims 25 and 30 the requirement of a locking barb device at the end of the distal arms. Additionally, Beverly treats the phrase "being structured to" as a substitute for the term "means for," to argue that the claim teaches "a specified function without the recital of structure, material, or acts in support thereof within the meaning of 35 U.S.C. § 112, P 6, and thus would sufficiently rebut the strong presumption
against treating a phrase that does not use the word "means" as a means plus function clause. Andrew disputes Beverly's construction, contending that the phrase has an understood meaning in the art and thus recites a sufficient structure, see CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1369 (Fed. Cir. 2002).

**Beverly does not overcome the strong presumption of the inapplicability of § 112, P 6 to the disputed phrase.** See CCS Fitness, 288 F.3d at 1369. That a particular mechanism is defined in functional terms is not sufficient to convert a claim element with that term into a means plus function clause. See Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1360 (Fed. Cir. 2004). In this case, the term "to lock" may be understood to mean "to fix or join firmly by interlacing or fitting of parts into each other." (Pl. Reply Ex. 1.) The term "lock" in the context of the disputed phrase supplies a sufficient structure for construction of the claim: distal ends of the arms being structured to be urged toward each other and to fix or join firmly by interlacing or fitting of parts into each other into a common opening. See id. at 1359-60. That the phrase may cover a broad class of structures and may identify a structure by its function is not enough to convert the phrase into a means plus function clause. See id.

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I. Claim 9: "the two opposite outermost side edges being thicker than the remainder of said stretched film for strengthening the outermost edges of the film"

Claim 9 is an independent claim that mirrors claim 1 but for two words. Whereas claim 1 purports to improve upon prior stretch film through folded edges, claim 9 achieves the same objective through "thicker" edges. Pliant, adhering to the plain language of the claims and the doctrine of claim differentiation, would construe claim 9 to include any means of thickening the edges other than folding, and argues that folded edges are a subset of the larger universe of thicker edges. Defendants assert that the inventor expressly disclaimed any means of thickening edges other than folded edges, and that notwithstanding the doctrine of claim differentiation, claim 9 must be construed as requiring folded edges. In the alternative, Defendants ask that I find that at the very least, claim 9 excludes edges thickened by neck down. 4

4 Neck down is the process by which a plastic film narrows as it is stretched, causing the edges to become thicker. (393 Patent, Col. 6, ll. 29-42.)

The doctrine of claim differentiation presumes that there is "a difference in meaning and scope when different words or phrases are used in separate claims." Comark Commun's. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987)). If a lack of difference in meaning or scope would render a claim redundant or superfluous, the doctrine of claim differentiation presumes that the different language is significant. Id. at 1187. However, the doctrine cannot restore to claims a scope that has been shown to be unwarranted. See Tandon, 831 F.2d at 1024 ("whether or not claims differ from each other, one can not interpret a claim to be broader than what is contained in the specification and claims as filed") (citations omitted). As with all claim construction issues, I look first to the claim language, specification and the prosecution history to determine the meaning of the disputed claim terms.

When the prosecution history reveals a clear disclaimer as to the scope of a claim, that disclaimer will be binding on the claim's construction. See C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 868-70 (Fed. Cir. 2004) (limiting claim based on disclaimers in prosecution history.) See also Digital Biometrics v. Identix, Inc., 149 F.3d 1335, 1347 (Fed. Cir. 1998) (observing that the public has a right to rely on statements made during prosecution). The patent at issue in C.R. Bard involved a plug used to repair hernias. That patent included multiple claims, some of which contained an explicit limitation requiring "pleating" of the claimed plug, and some of which did not. The Court reviewed amendments submitted by the inventor during the initial prosecution and during re-examination. C.R. Bard, 388 F.3d at 866-69. During the initial prosecution, in an attempt to overcome the Examiner's rejection of multiple claims, the inventor made broad arguments that explicitly or implicitly required "pleating." Id. at 866-67. The Court refused to find that the "pleating" limitation made in those arguments necessarily applied to the claim that lacked an express pleating limitation. Id. at 867. During a subsequent re-examination, the only claims at issue did not expressly require pleating. Id. at 868. However, in an effort to distinguish prior art, the inventor once again stated that the invention was pleated. Id. This time, the Court found the comments were directed explicitly to a claim whose language lacked a "pleating" limitation. Id. at 868-69. As such, the comments limited the claim. Id.
C.R. Bard set a high bar for finding that remarks within the prosecution history constitute a clear disclaimer applicable to all claims. That standard appears to conflict with a statement in an earlier Federal Circuit case: "absent qualifying language in the remarks, arguments made to obtain the allowance of one claim are relevant to interpreting other claims in the same patent." Digital Biometrics, 149 F.3d at 1347. Digital Biometrics was rightly concerned with the notice provided by "definitive statements" in patent prosecution. Yet it failed to define the parameters of the relevance it granted these "global comments." Id. ("absent qualifying language in the remarks, arguments made to obtain the allowance of one claim are relevant to interpreting other claims in the same patent"). The only hint the case offers (aside from its own facts) is a citation to Southwall Techns., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed. Cir. 1995) (emphasis added), in which the Court made the much narrower observation that "arguments made during prosecution regarding the meaning of a claim term are relevant to the interpretation of that term in every claim of the patent absent a clear indication to the contrary." I am persuaded to adopt the C.R. Bard standard in lieu of the Digital Biometrics-based standard in construing this claim. The Digital Biometrics standard, wherein global statements regarding the scope of the claims apply to all claims, was rejected in C.R. Bard. Cf. Swimways Corp. v. Overbreak, LLC, 354 F. Supp. 2d 637, 646 (E.D. Va. 2005) ("C.R. Bard does not stand for the principle that the use of [the] term in the claim preamble that defines a broad universe of objects . . . must somehow be construed to apply to a small subset of that broad universe"). Furthermore, I find the C.R. Bard rule a corollary to the principle that an invention is not limited to its preferred embodiment, but only to what is clearly excluded from the claims. See Fuji Photo, 386 F.3d at 1104-05.

In this case, Defendants' examples of disclaimers that would limit claim 9 to folded edges fail the C.R. Bard test. The Information Disclosure Statement states that the invention relates to a roll of stretched film "presenting two opposite side edges folded along the lateral direction to said length." A Petition to Make Special included a sworn declaration from the inventor stating that the invention "in particular, relates to a roll of stretched plastic film . . . [with] opposite side edges folded along the lateral direction." The claims were rejected once as anticipated. They were subsequently rejected, and after an amendment was filed the Examiner again rejected the claims as indefinite. After the indefiniteness rejection, the prosecuting attorney twice noted that "the claims have been amended so as to particularize . . . the two opposite, outermost side edges being folded and stretched." All of these statements were global in nature; none were directed specifically to independent claim 9. Moreover, although the Examiner only approved the patent after multiple rejections and all of the above-noted assertions by the inventor and prosecuting attorney, he nonetheless approved a patent with two independent claims, the latter of which clearly required only thicker edges. 5

5 Defendants make a decent case for the fact that claim 9 is invalid because it adds impermissible "new matter" in violation of 35 U.S.C. § 132. While this argument may ultimately prevail, it is not a matter for claim construction.

Nonetheless, I do find one limitation of claim 9 in a much clearer and targeted disclaimer found within the patent itself. The '393 patent proclaims that the invention has "strengthened tear characteristics than that presently available by the prior art." (‘393 Patent, Col. 2, ll. 23-24.) The prior art includes rolls of stretched film. (Id. at Col. 1, ll. 62-64.) Later in the specification, the patent states that "the relative spacing between first textured roller [] and second textured roller [] is selected so as to minimize the 'neck down' of the film as it is stretched between said first and second textured rollers [ ]." (Id. at Col. 6, ll. 33-37.) The parties agree that neck-down occurs when the film is stretched, and that an aspect of "neck down" is a relative thickening of the side edges of the film. Without question, the patent expressly disclaims prior art rolls and explicitly teaches that neck-down (and thereby its inherent thickening) should be minimized. Cf. SciMed, 242 F.3d at 1341 (disclaimer occurs when the specification "makes clear that the invention does not include a particular feature"). For this reason, claim 9 is construed to exclude thickening that results from "neck down."

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2. "Below Limits for Imparting Smoke Flavoring to Food"

In addition, HISI and TPI disagree over the meaning in Claim 67 of the phrase "below limits for imparting smoke flavoring to food." TPI requests that the "limits for imparting smoke flavoring to food" be defined as "having phenolic fractions less than 2.3 ppm for vapor and 1.4 ppm for particulate." (TPI Brief 17 (emphasis removed).) TPI bases this request on Table 3 in the Background Art section of the Kowalski Patent, which identifies 2.3 ppm and 1.4 ppm as the taste recognition thresholds for the vapor and particulate phases, respectively, of wood smoke. (Kowalski Patent, Col. 11, at 1-20.) HISI responds that this table is merely part of the background art, and cannot be drawn upon to limit the claims of the Kowalski
Patent. HISI argues that "Claim 67 is a perfectly good claim without any numbers, and the lack of numbers serves a legitimate purpose." (HISI Reply 10.)

The Court here agrees with HISI that the numerical ranges described in the background art may not be read into this particular limitation. The specifications of the Kowalski Patent do not disclose a numeric limitation for "smoke flavoring" in either the smoke or the food with which the smoke is treated. The table listing the "Odor and Taste Recognition Thresholds (ppm) and Most Desirable Concentrations (ppm) of the Phenolic Fraction Isolated From the Vapor and Particulate Phases of Wood Smoke" (Kowalski Patent, Col. 11, at 1-19) is neither referenced nor commented upon at any other point in the specifications.

Furthermore, while an operable numeric range for tasteless smoke was given for the preferred embodiment of the Kowalski Patent, this was a range which was "determined empirically" for that particular embodiment of the patent. (Kowalski Patent, Col. 17, at 14-36.) The process claimed by the Kowalski Patent and disclosed in its specifications, however, is substantially broader; namely, the treatment of smoke "such that the phenols in both particulate and gaseous vapor phases are reduced to concentrations below recognition thresholds for odor and taste that impart a smoked flavor to the treated food. (Kowalski Patent, Col. 12, at 3-6.) Unlike the "heating" limitation discussed above, where the specifications uniformly disclosed a narrow operable temperature range of between 204 [degrees] and 510 [degrees] C., here the specifications disclose a range that is not numerically defined, and further disclose one particular embodiment for which numerical ranges have been determined. The claim here does not exceed the specifications of the patent, and the Court declines to add any numerical boundaries to the phrase "below limits for imparting smoke flavoring to food."

6. "Below said light box" is construed to mean "the supplemental display is at a lower position than the light box."

D. "Below The Disc" And "Beneath The Disc"

In independent claim 1, the patentees state that the disclosed device includes "a housing configured to fit within the meter below the disc." In independent claims 5 and 10, the patentees indicate that the device includes "a housing configured to fit within a meter beneath the disc." Although the parties disagree about the precise meaning of the phrases, they concur that the terms "below the disc" and "beneath the disc" are equivalent and should be given the same interpretation. CellNet contends that the terms should be construed to mean "substantially below the horizontal plane formed by the disc and beneath the disc," whereas Itron argues that they should be construed to require the disclosed housing to be "entirely below the plane formed by the disc and beneath the disc."

The Court construes the terms "below the disc" and "beneath the disc" as requiring the disclosed housing to be completely below the horizontal plane formed by the disc of the standard electric meter. This construction is consistent with both the ordinary meaning of the words "below" 15 and "beneath" and the intrinsic evidence. For example, the patentees state in the specification that their device includes a "housing 30 configured to fit within the structure of standard watthour meters below the discs thereof." 623 patent, 5:5-7. Moreover, the drawings showing the physical relationship between the housing and the meter disc (Figures 1 and 2) both indicate that the housing is positioned completely below the horizontal plane of the meter disc. Furthermore, statements made by the patentees' counsel during prosecution supports Itron's narrower interpretation of the terms:

In Keller, the circuit elements are mounted on printed circuit boards which, at least partially, slide over the meter structure to be concentrically arranged there around. The circuit elements are not contained within a housing that fits beneath the meter disk [sic].

Response to Office Action, p. 6.
There is no indication or suggestion in the intrinsic evidence that the patentees intended to claim a device whose housing is located "substantially below or beneath the horizontal plane of the meter disc." The terms "below" and "beneath" are unqualified in the '623 patent and in the prosecution history. In view of these considerations, the Court believes that a person with ordinary skill in the art would conclude that the disclosed housing of the claimed device must be located completely or entirely below the horizontal plane of the meter disc. Finally, the Court should adopt Itron's narrower interpretation of the disputed language because the parties' respective interpretations are at least equally plausible. See Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1581 (Fed. Cir. 1996) ("Where there is an equal choice between a broader and a narrower meaning of a claim, and there is an enabling disclosure that indicates that the applicant is at least entitled to a claim having a narrower meaning . . . the notice function of the claim . . . [is] best served by adopting the narrower meaning.").

The term "below the open top and above the drain opening to form a drain" (claim 12)

The Court construes this term to mean:

below the open top of the erosion-control housing and above the drain opening to form a drain.

The Court's construction simply clarifies what is already implicit in the claim language -- that the "open top" in the term "below the open top and above the drain opening to form a drain" is the "open top of the erosion control housing." This is clear from claim 9, upon which claim 12 depends. Claim 9 defines the claimed "erosion control housing" as "having an open top . . . ." '207 Patent col. 4:60-61. The "open top" in claim 12 is necessarily the "open top" of the erosion-control housing referred to in claim 9.

Lange asks the Court to construe this term to mean "below the open top erosion control housing and above the standpipe hole in the bottom of the erosion control housing." JCCS at 4; Def. Claim Constr. Br. at 40-41. The first portion of Lange's proposed construction is not substantially different from the construction adopted by the Court. (Lange proposes "the open top erosion control housing," whereas the Court uses the words "the open top of the erosion control housing.")

As noted above in connection with the term "drain opening." Lange is really asking the Court to construe the term "drain opening" within this longer term. According to Lange's proposed construction of this longer term, a "drain opening" is a "standpipe hole in the bottom of the erosion control housing." JCCS at 4; Def. Claim Constr. Br. at 40-41. The Court has already rejected Lange's attempt to define a "drain opening" as being a hole for the bottom of a standpipe. The term "drain opening" in this term has the meaning that the Court has already given it above.

1. Belt

Rexnord contends that "belt" means "a belt with a pitch larger than or equal to 1.5 inches." (D.I. 57 at 22.) Rexnord argues that a court should deviate from the ordinary meaning of the claim term when compelling evidence in the patent specification so indicates. (Id. at 21-22 (citing Rexnord v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001).) Rexnord argues that compelling evidence occurs if the patentee "disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Id. (quoting Laitram, 274
F.3d at 1342). For example, Rexnord notes that a patentee narrows the scope of claims by describing in the specification a narrower, specific purpose of the patent. Id.

Rexnord argues that the '680 patent requires such a narrowing of scope. According to Rexnord, the specification discloses "a radius belt 20 suitable for larger pitch (>1.5") radius belt applications . . ." ('680 patent, col. 5, 1. 28-32.) Moreover, Rexnord argues that the '680 patent has the sole and entire purpose of protecting fingers of operators from getting caught in large pitch belts. Rexnord argues that, because the specifications and purpose of the '680 patent clearly deviate from the ordinary meaning of belt, the Court should narrow the construction of the term belt accordingly.

In contrast, Habasit contends that "belt" means "radius conveyer belt without any limitation as to the size of the pitch." (D.I. 55 at 36.) Habasit argues that no language in the '680 patent disclaims coverage of small pitch belts and thus the Court should apply the ordinary meaning of belt. Habasit concedes that the patent discloses the solution in the context of large pitch belts, but insists that the Court should not import limitations from the specifications into the claim. Id. at 35 (citing Northern Telecom Ltd. v. Samsung Electronics Co., 215 F.3d 1281, 1290 (Fed. Cir. 2000)).

After considering the claim language, specification, and prosecution history of the '680 patent and the parties' respective positions, the Court agrees with Habasit's interpretation of the disputed term. The Federal Circuit cautions against limiting claims to specific embodiments in the specification. Specialty Composites v. Cabot Corp., 845 F.2d 981, 987 (Fed. Cir. 1988). The Federal Circuit also warns against importing specifications into the claim. Northern Telecom Ltd., 215 F.3d at 1290. Despite these cautions, Rexnord asks this Court to import such a limitation. Rexnord, however, has not presented the "compelling evidence" of "clear disavowal" necessary to justify deviating from the ordinary meaning of belt. Therefore, the Court concludes that the term belt means "radius conveyer belt without any limitation as to the size of the pitch."
Gore concedes that the language of the claims does not require that the steps be performed separately and also concedes that the claim language does not require that the steps be performed in the order in which they are recited. Gore asserts, however, that the specification of the '062 Patent implicitly requires that the wire first be bent into a zig-zag pattern and then wound around a form in a coil. (See Gore 13r. at 22-24.) Gore finds support for its position in references in the specification wherein Wiktor states that the zig-zag wire is "preformed" and "subsequently" wound around a form. Gore also points the Court to references in the specification describing Figure 1. (See, e.g., '062 Patent 2:55-62, 3:1-2, 3:11-17, 3:35-38, 4:14-16, 4:52-58.)

Wiktor, however, clearly identifies Figure 1 as the "preferred embodiment." (Id., 3:52, 4:6-11.) In general, a court should not limit a disputed claim term to the preferred embodiment, even when the specification only describe a single embodiment. See Phillips, 415 F.3d at 1323 ("In particular, we have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment….That is not just because Section 112 of the Patent Act requires that the claims themselves set forth the limits of the patent grant, but also because persons of ordinary skill in the art rarely would confine their definitions of terms to the exact representations depicted in the embodiments.").

For example, in the Altiris case, although the specification only disclosed "a single 'preferred' embodiment," which set forth a particular order, the patentee did not state that the order was important and did not disclaim any other order of the steps. Altiris, 318 F.3d at 1371. Similarly, in this case, the specification also describes a single preferred embodiment. As in the Altiris case, however, Wiktor did not state that the order of the steps was an important feature of his invention. There also is not a clear disclaimer of any other order of the steps.

Moreover, the prosecution history submitted to the Court does not suggest that Wiktor disclaimed any other order of the steps. See, e.g., Loral Fairchild Corp. v. Sony Corp., 181 F.3d 1313, 1321 (Fed. Cir. 1999) (noting that, in addition to claim language, statements by the inventor during the prosecution history limited process claim to the sequence of the steps set forth in claim language). Finally, after noting that the figures represented the preferred embodiment, Wiktor stated that "it is understood that other applications not specifically mentioned herein are possible and no limitations in scope of this invention are intended or implied without departing from the basic principles of this invention." ('062 Patent, 4:6-11.) This language again suggests that the claims should not be limited to the disclosed preferred embodiment. See Pfizer, Inc., 457 F.3d at 1289. 7

Accordingly, the Court adopts Medtronic's proposed construction and concludes that the steps of the method claims in dispute need not be performed separately or in a particular order.

3. Language in Dispute: "being bent back toward the distal end of said catheter"

Do the tubes being "bent back toward the distal end of said catheter" mean that (1) the tubes must be bent toward (i.e., in the direction of) the distal end of the catheter or (2) the tubes be bent so that the proximal ends of the extension tubes are facing the distal end of the catheter?

Answer: The tubes being "bent back toward the distal end of said catheter" means that the tubes must be bent toward (i.e., in the direction of) the distal end of the catheter.
a). Claim Language

Claim 1 lists what components are necessary for a catheter assembly. Among those mentioned are a "pair of flexible extension tubes." The claim language says each of these tubes have three characteristics: (1) they are "bent back toward the distal end"; (2) they "form a bend having a predetermined shape"; and (3) each bend is "adapted to flex and deform from said predetermined shape in response to an external force and...to return to [the] predetermined shape in response to removal of said external force."

Both parties agree that the extension tubes should have a memorized bend and that the tubes are resilient so that their shape can be changed by force, but that once the force is removed, the tubes will return to the original shape. Thus, the only issue for the Court to decide is whether these flexible tubes must have a memorized bend of at least 180 degrees. The Court answers this question no.

The ordinary meaning of "bend" is to form a curve. For example, a wire can be bent from a straight line into a curve, or a gymnast can arch her back and place her hands on a mat to perform a "back bend" or a "back handspring." The word "bend" in claim 1 is followed by a directional modifier describing the manner in which the flexible tubes should be bent. The claim language says they should "bend back toward the distal end." The term "back" ordinarily means the rear or from where something just came and "toward" means in a specific direction (i.e., together the words "back toward" mean in the direction of the rear). Therefore, in this claim, the common meaning of the words is that the flexible tubes should curve in the direction of the rear, or the distal end. This does not mean they must curve to at least 180 degrees. Again consider a gymnast's body, this time as a flexible tube. When a gymnast performs a "back bend" reaching her arms back (toward the rear) over her head and toward the ground, her body becomes a curve, she may place her hands in a position such that her body is curved 180 degrees, or so that her body is curved 150 degrees. No matter what the exact placement of her hands she still has bent back toward the rear and caused her body to become curved. That is exactly what we have in this claim. So long as the flexible tubes are bent back toward the distal end, toward the catheter, they are not required to be at least 180 degrees, or facing the distal end of the catheter.

Furthermore, the doctrine of claim differentiation requires Claim 1 to be read without a limitation of the bend being at least 180 degrees. The claim language in Claim 8 reads, "The catheter assembly of claim 1 wherein said extension tubes are generally U-shaped." If claim 1 were meant to require a bend of at least 180 degrees, then claim 8 would conflict with claim 1 and violate the doctrine of claim differentiation. This is because claim 8 limits the bend to a shape which is generally 180 degrees, therefore it contemplates claim 1 can have a bend of potentially less than 180 degrees. Thus, in order not to have claim 8 conflict with claim 1, the tubes in claim 1 cannot be limited to a bend of at least 180 degrees.

b). Written Description

It is clear in the specification that the extension tubes must bend back toward the catheter tip in order to accomplish their purpose of making the catheter assembly more comfortable for the patient. The extension tubes are bent back toward the distal end of the catheter so that the catheter "can be accommodated in a small area around the access site on the patient's body." ( '561 patent, col. 5, lines 60-61). Furthermore, the bend in the tubes also enables patients to change clothing and move about without projections interfering. ( '561 patent, col. 5, lines 65-68 and col. 6, lines 1-3). Each of these goals can be achieved without limiting the bend of the tubes to at least 180 degrees. A bend short of 180 degrees would still provide for a patient to be able to change clothing and allow the catheter to be contained to a small area.

2. Construction of "between"

Related to the discussion of channel region is the meaning of the term "between" in claims 1, 5, 12 and 13. Defendants argue that if the channel region is to be "between" the source and drain regions, it must be bordered or surrounded directly by those regions. In other words, all three regions must be co-planar. Therefore, according to defendants, a channel region located below the source and drain regions is not "between" them. Plaintiff asserts correctly that this construction adds a limitation not specified in the '463 patent.
Nothing in the patent claims or specification indicates that the channel region has to be in the same plane as the source and drain regions. Although the only embodiment contained in the specification shows the source, drain and channel regions in the same plane (see Figure 6H), that is not necessarily the only allowable embodiment of the claim. Defendants point out that because only claims 1, 5, 12 and 13 disclose a channel region between the source and drain regions, those claims require a particular configuration of the source, drain and channel regions. Defendants are correct. These claims require a channel region located between the source and drain regions, unlike claims 8 and 14, which disclose only a semiconductor film having at least source, drain and channel regions. However, the requirement in claims 1, 5, 12 and 13 that the channel region be between the source and drain regions does not mean that the channel region must be directly beside or coplanar with the source and drain regions.

An object positioned below two other objects also may be between them. As plaintiff points out, an extension cord running from a wall-mounted television to an electrical outlet near the baseboard below also runs between the television and outlet, regardless whether it dips below both objects. The terms are not mutually exclusive. The parties agree that common definitions of the word between include "from one to the other of," "in the space that separates," "in an intermediate position in relation to two other objects" and "filling the space limited by two objects." This is consistent with the way in which the thin film transistor operates. It is undisputed that when a voltage is applied to the gate electrodes of a thin film transistor, electric charge flows from the source region through the channel region to the drain region. In this sense, the channel region lies between the source and drain regions because it is in an intermediate position with respect to the source and drain regions along the same current path. Therefore, I will not limit the term "between" to meaning that the objects at issue must be co-planar.

Even assuming that only the AL layer comprises the "channel region" in the accused products, a reasonable jury could conclude from this only that the AL layer lies between the source and drain regions. It is undisputed that when the thin film transistor is turned on in the accused products, current flows from the source region through the AH layer to the AL layer, then back through the AH layer on its way to the drain region. Because the AL layer is in an intermediate position in relation to the source and drain regions along the current path, the AL layer is between the source and drain regions. Therefore, plaintiff is entitled to summary judgment with respect to the question whether the accused products satisfy the requirement in claims 1, 5, 12 and 13 that the accused channel region be located between the source and drain regions.

3. "Between"

Excel proposes that the term "Disposed between the hole and the perimeter" means "Located between, but not including, the hole and the edge of the bearing plate." Jennmar contends that the term "between" is self-evident and does not require any further construction. The Court agrees with Jennmar. "Between" is a common word with a well-understood ordinary meaning -- located in the space that separates Point A from Point B. To the extent that Excel is attempting to argue that an object is not "between" if it touches either Point A or Point B, such argument is rejected. The Court finds that there is no need to further clarify the term "between" as the term is clear, has an ordinary meaning, and requires no construction.

The parties' first disagreement regarding the construction of claim 1 revolves around the meaning of "between" in the following sentence: "an actuating device for operating a safety unit which is mounted on a vehicle or the like and moved between a first retracted position and a second extended position . . . ." (052 Patent, col.7, ll.58-61.) The parties both contend that the plain and ordinary meaning should be given to these terms. Additionally, the plain and ordinary meaning of the term "between" is not contested by the parties: The term "between" means "from one to the other of." Webster's 9th New College Dictionary, 146. However, although the parties agree that this language means that the safety unit moves from its retracted position to its extended position, they disagree on exactly what the plain meaning of "between" is in this situation.

Specifically, Transpec claims that the word "between" suggests not only that the safety unit moves from a retracted to an
extended or deployed position, but also that it moves from the extended or deployed position back to its retracted position. In support, Transpec cites to the specification which describes an embodiment of the invention moving the attached safety unit "back and forth between its retracted and deployed positions." (’052 Patent, col.6, ll.23-25.)

Ellison disagrees with this interpretation of the word "between"; suggesting that once the safety unit is in its extended position its function is completed and the claim does not necessarily require a movement back to the retracted position. In support, Ellison contends there may be a different method of bringing the safety unit back to its retracted position other than the actuating device described in claim 1.

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2 Although in the claim construction hearing Ellison argued that this language does not necessarily require the safety unit to move to an extended position and suggested that the claim could cover a point anywhere between the two locations as in "Salisbury is 'between' Greensboro and Charlotte", the language of the claim is clear that it does, in fact, contemplate an extended or deployed position. For example, claim 1 clearly states that the safety unit moves from a first retracted position to a "second extended position." (’052 Patent, col.9, l.15.) Additionally, the specification refers to the second positions as the "deployed position[]." (’052 Patent, col.6, ll.24-25.) There is no discussion in either the patent or the specification of an intermediate position or the possibility that the safety arm is designed to stop sometime before it is fully extended or deployed to a position that is perpendicular to the bumper in the case of the crossing arm or the side of the bus in the case of the stop arm. (’052 Patent, col.3, ll.34-44.)

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The use of the word "between" in claim 1 strongly suggests coverage of the movement both ways. The word "between" is actually used several times in claim 1. The additional two times "between" is used in the following manner: "between said retracted and extended positions." (’052 Patent, col.7, l.64 & col.8, l.19.) As pointed out by Transpec, if Ellison had intended the patent to cover only one direction it could have said so in the Claim. However, instead of doing so, the way "between" is used within the claim supports an interpretation that covers movement of the safety unit out fully and back again.

Further support for this interpretation is found in the specification. First, the specification's discussion of the preferred embodiment clearly anticipates movement to and from the deployed or extended positions. For example, the improved switch operating device is discussed in the specification and explained as "moving safety units of this type between their retracted and extended positions." (’052 Patent, col.3, ll.53-55.) Additionally, the specification describes a system of beam generators and beam sensors that function to deploy the safety unit, as well as to retract it. (see chart, ’052 Patent, col.5, ll.20-29.) Finally, the specification discusses the signals of the sensors and their purpose to move "the pivot arm 32 3 with its attached safety unit back and forth between its retracted and deployed positions." (’052 Patent, col.6, ll.24-25.) There is also no suggestion in the patent regarding how, if not through this device, the safety unit returns to its retracted position.

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3 The numbers inserted throughout the specification correspond to the structures depicted in the accompanying figures of the ’052 Patent.

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Additionally, in its discussion of the background of the invention, the specification cites to several other patents regarding the construction and operation of crossing arms of this type. These patents also suggest that the word "between" is commonly used in the field to describe the movement of the safety unit in and out. For example, Latta U.S. Pat. No. 4,599,518 discusses movement between a retracted and deployed position and then references the "deployment and retraction of said safety device." Similarly, in Latta U.S. Pat. No. 4,339,744, relating to a stop sign located on a school bus, "between" is used to explain the movement of the sign and then later in the language of the same claim is a discussion of movement from the retracted to deployed positions and again back to the retracted position. See also Latta U.S. Pat No. 6,138,688 (utilizing the same language in discussing the movement of a safety arm).

Thus, Ellison's contention that "between" refers only to the movement from retracted to deployed position and not back to
the retracted position is unsupported by both the language of the claim as well as the accompanying specification. There is, however, ample support for Transpec's contention that the word "between" in claim 1 refers to the movement from the retracted position to the deployed position and from the deployed position back to the retracted position. Thus, "between" will be interpreted as such and the introduction of claim 1 will be construed as follows:

1. An actuating device for operating a safety unit which is mounted on a vehicle or the like. This safety unit is moved from a retracted position to an extended or deployed position and from an extended or deployed position back to a retracted position.

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B. "Between" weather stripping

Although Defendants contend the '998 Patent requires the screen to be in continuous frictional contact with the weather stripping, the Court does not find the word "between" requires construction in this case. Neither the claim language, the specification nor the prosecution history require that the screen be in "continuous frictional contact" with the weather stripping. The Court does not find it necessary to adopt Plaintiff's proposed construction, because the Court finds the word "between" is in its simplest form in the context of the '998 Patent.

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B. "Between" weather stripping

Defendants' proposed construction of "between" weather stripping is: the screen fabric is extracted from the roll and slides in the screen track such that the screen fabric is in contact with fibrous pile, brush or bristle material so as to seal the gap between the walls of the screen track and the screen fabric and retain the edge of the screen fabric from lateral displacement out of the screen track. Although Defendants contend the '998 Patent requires the screen to be "in contact with" the weather stripping, which will result in the sealing of the gap between the screen wall and the screen fabric, the Court does not find the word "between" requires construction in this case. Neither the claim language, the specification nor the prosecution history require that the screen fabric be in such close contact with the screen track so as to "seal" the gap between the two. The Court does not find it necessary to adopt Plaintiff's proposed construction, because the Court finds the word "between" is in its simplest form in the context of the '998 Patent.

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This court next examines the district court's claim interpretation. This court reviews a trial court's interpretation of patent claim terms under the requirements of Markman, 116 S. Ct. at 1395. See Wiener, 102 F.3d at 539. The first issue of disputed claim language is the meaning of "between" in claims 5 and 33-36. The district court construed the claim language as follows:

After considering the plain language of claim 5, I conclude that the phrase "movable central portion which reciprocates back and forth between the mounting frame members" means that all parts of the movable central portion, including the head members, must remain in the space bounded by the innermost edges of the mounting frame member at all times.

The district court based its interpretation on the ordinary meaning of "between" gleaned from Webster's New World Collegiate Dictionary 134 (3d ed. 1996), namely "in or through the space that separates (two things)." The entire context of the claim language, however, does not prohibit the movable central portion from extending beyond the innermost edges of the mounting frame. In context, the preposition "between" does not directly refer to the movable central portion, but instead refers generally to an action of reciprocating back and forth. In other words, the claim does not say that the movable central portion at all times remains "between the mounting frame members." Rather, the claim says that the central portion moves in a reciprocating fashion and that motion occurs between the mounting frame members. The claim does not say that the
The linear hydraulic units...are defined to be comprised of piston head members, cylinder head members, piston rod...

Turning first to the claim interpretation issue, the district court held:

claim interpretation, as to whether all parts of the Hallco drive unit do in fact transmit downward forces. Second, Foster contends that there is a genuine issue of material fact, even under the district court's

transmission of forces. Second, Foster contends that there is a genuine issue of material fact, even under the district court's

erred in interpreting the claim language "said linear hydraulic drive units transmitting downward forces from the transverse

determination of infringement in accordance with the claim construction discussed supra.

Thus, the claim language does not limit the meaning of "between" to require that the movable central portion "must remain

in the space bounded by the innermost edges of the mounting frame member at all times." The limited extrinsic evidence

also discloses no special limits on the meaning of "between" as applied to the reciprocating motion of the central portion. Therefore, this court determines that the district court unnecessarily limited its claim interpretation. The claim language "movable central portion which reciprocates back and forth between the mounting frame members" includes movable central portions which extend, and reciprocate, between and beyond the mounting frame members. Accordingly, this court vacates the district court's grant of summary judgment of non-infringement of claims 5 and 33-36, and remands for a determination of infringement in accordance with the claim construction discussed supra.

Next, appellant contends that the district court erred in granting summary judgment of non-infringement of claims 5 and 33-36 under the doctrine of equivalents. Foster alleges the district court made two separate errors in granting summary judgment. Appellant's first argument again centers on an issue of claim interpretation. Foster contends that the district court erred in interpreting the claim language "said linear hydraulic drive units transmitting downward forces from the transverse drive beams to the mounting frame members" as requiring all claimed parts of the drive units to participate in the transmission of forces. Second, Foster contends that there is a genuine issue of material fact, even under the district court's claim interpretation, as to whether all parts of the Hallco drive unit do in fact transmit downward forces.

Turning first to the claim interpretation issue, the district court held:

The linear hydraulic units...are defined to be comprised of piston head members, cylinder head members, piston rod...
end portions, and cylinder sidewall portions. If only a subset of those components were required to transmit downward forces, the limitation in the last paragraph would have expressly stated so. It did not. Accordingly, I conclude that all components of the hydraulic drive units, and not just a subset, must transmit downward forces.

In making this determination, the district court again unnecessarily limited the claim language. The claim language requires that each linear hydraulic drive unit transmit downward forces. This language requires no more than that the drive unit, taken as a whole, transmit the downward force English syntax simply does not require that all the components, or even more than one of the specified components, contribute to the transmission of forces As long as the downward forces flow from the drive units (or any portion of the drive units) downward, the claim language requires nothing more. Contrary to the opinion of the district court, the claims would need to have specified that all of the components of the hydraulic drive unit must participate in the transmittal of forces, if that was the meaning of the language. See In re Hyatt, 708 F.2d 712, 714, 218 U.S.P.Q. (BNA) 195, 197 (Fed. Cir 1983) ("A claim must be read in accordance with the precepts of English grammar."). Merely specifying the drive unit, rather than any particular component or all of the components, does not limit the portion of the drive unit which may transmit or participate in the transmission of the downward forces. The district court thus read in an additional limitation not required by the language of the claim. Accordingly, this court vacates the district court's grant of summary judgment of non-infringement under the doctrine of equivalents of claims 5 and 33-36, and remands for a determination on the merits. Having decided this issue, this court need not reach the issue of whether there was a genuine issue of material fact under the district court's erroneous claim interpretation

Foster contends that the district court also erred in granting Hallco's motion for summary judgment of non-infringement of claim 11, both literally and under the doctrine of equivalents. Foster argues that the district court erred in its interpretation of several words in the claim. According to Foster, the district court incorrectly read this claim on the accused device, and thus erred in granting summary judgment of non-infringement.

First, the district court construed the meaning of the claim language "fixed opposite end portions which are secured to the mounting frame members." With respect to this issue, the court held:

Although I agree with Foster that the cylinder does not have to "touch" the mounting frame member, I believe that the indirect connection relied on by Foster is too circuitous for the cylinder to be considered secured to the undercarriage channel member. The two are connected to portions of the conveyor frame that are at right angles to each other. All parts of the conveyor are welded or bolted to another part. Foster's argument would have them all "secured to" each other. I disagree.

The trial judge apparently interpreted the claim language with an eye to the accused device, a practice this court eschews. See SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1118, 227 U.S.P.Q. (BNA) 577, 583 (Fed. Cir 1985) The district court concluded that the two components need not be in direct contact and that the connection may be indirect, but then looked to the accused device to declare the meaning of indirect.

As the district court correctly noted, the claim does not require "secured" to mean a direct connection. Rather, the term "secured" means "to make tight or firm: FASTEN." Webster's II New Riverside University Dictionary 1055 (2d ed. 1988). Neither the specification nor the prosecution history discloses a more specialized or different meaning. Thus, the claim envisions and includes an installation which connects the opposite end portions of the drive units to the end portions of the conveyor frame, and which connects the end portions of the conveyor frame to the channel members. Although the connection is indirect, the claim requires no more than a secure fastening of the fixed opposite end portions to the mounting frame members. The district court unnecessarily restricted the meaning of this claim language.

Next, the district court construed the claim language "in," "within," and "between." Each of these claim construction issues is similar to the interpretation of "between" discussed above in relation to claims 5 and 33-36 The district court construed these words more narrowly than required by the claim language and context. The word "in" does not require that something be completely and continuously inside of something else. The word "within" does not require that something be completely and continuously within something else. Further, as discussed above in more detail, the word "between" does not require that something be completely and continuously between two things.

Nothing in the specification or the prosecution history supports such narrow readings, and no testimony was offered to suggest that these narrow interpretations are the correct meaning to one skilled in the art. Consulting the claim language again, the "between" requirement may be satisfied even if a component extends beyond the specified boundaries. In the
same way, the "in" requirement may be met by a component which is located, at least in relevant part, in the defined space, as the "within" requirement may be met by a component which located, at least in relevant part, within the defined area. Accordingly, this court vacates the district court's grant of summary judgment of non-infringement, both literal and under the doctrine of equivalents, as to claim 11 and remand for a trial on the merits.

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(a) "Locating said wicket at a first station with said common header positioned between said first station and an adjacent second station."

As used in the patent, "station" refers to the physical place or location of the wicket of bags or of an individual bag. The station is a place relevant to the process in some way. That is, the bag or bags are at the "station" for a purpose in the course of the full process. See Sineath Aff. P 45. As described in the patent, the wicket of bags is located at the "first station" so the individual bags may be taken one by one and worked on. The individual bag is taken from the wicket group and moved so that, after the sample has been inserted, the pocket can be sealed at the "second station." The wicket remains at the first station until all the individual bags in it have been transferred to the second station for sealing. The individual bags will not necessarily remain very long at the second station. But what makes the location a station is not that the bag or bags rest there for any minimum amount of time, but rather that the location advances in some distinct way the method described in the patent. The patent clearly indicates that the sealing of an individual bag is done at a different location or station from the place where the bags await processing.

The other important feature expressed in this limitation is the description that the wicket's header lies "between" the two stations. The word "between" in this context has its usual meaning: that is, lying in the space or interval that separates. See Merriam-Webster's Collegiate Dictionary 109 (10th ed. 1993). To say that the header is between the stations is to say that one station is on one side of the header, and one on the other.

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17. between about 20 [degree] and about 60 [degree] ('875 patent, claims 32 and 50)

Crown's proposed construction is "[b]etween about 20 [degree] and about 60 [degree]." 76 Rexam's proposed construction is "$[b]etween 20 [degree] and 60 [degree]." 77

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76 Id. at 6.

77 Id.

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The court adopts Crown's proposed construction.

The parties' proposed construction are identical except Rexam's proposal elides the word "about" from the claim language. Rexam offers no support for the omission of the word "about" in its proposed construction, other than to assert that Crown's proposed construction does not clarify the meaning of the word; that the word is vague and, therefore, should be disregarded; and that the specification does not discuss an embodiment having chuck wall angles of less than 20 degrees or greater than 60 degrees. Rexam is correct that the common specification recites "between 20 [degree] and 60 [degree] in describing the embodiments illustrated in figures 4 and 5. 78 Claims 32 and 50 of the '875 patent, however, are broader than that specification language in that they recite "between about 20 [degree] and about 60 [degree]." 79 Therefore, the court rejects Rexam's more restrictive proposed construction and agrees with Crown that the claim language needs no further construction than the words of the claims themselves: "between about 20 [degree] and about 60 [degree]."

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PUBPAT
Claims 3, 4, 13, and 21 refer to the placement of certain "resilient support members." In claims 3, 4, and 13, those support structures are placed "between said frame and said deck member." Precor urges the Court to construe this language to mean "within the vertical space between the frame and the deck." Life Fitness urges the Court to give the word "between" its ordinary meaning.

The Court concludes that the meaning of the disputed claim element is apparent on its face. "Frame" and "deck member" are clearly defined within the patent. "Between" has an ordinary meaning, and requires no further construction.

F. Between Said Lower Covering and Said Rim

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Plaintiff's Proposed Construction</th>
<th>Defendants' Proposed Construction</th>
</tr>
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<tbody>
<tr>
<td>disposed between said lower covering and said main panel at said rim</td>
<td>located above the lowering covering and within the main panel or within a void in the main panel and located integral to the outer edge of the brim</td>
<td>positioned entirely within the space above the lower covering and below the main panel of the rim</td>
</tr>
</tbody>
</table>

While claim 3 describes the location of the LED array as being within a void in the main panel, claim 4 appears to recite an alternate possible location of the LED array as being "between said lower covering and said main panel." The '831 patent's location of the LED array within the brim was a key innovation over the prior art, as it permitted the light source to remain "visually inconspicuous" when unlit. ('831 patent, Col. 2, ll. 7.; Notice of Allowability, Apx. 2, 112-13) To that end, the patent specification repeatedly describes the light source as "integratedly disposed within the main panel or fitted into a void in the main panel." (831 patent, Col. 4-5, ll. 63-1.) While the language of claim 3, the patent specification, and the prosecution history all contemplate locating the light source wholly or partially within the main panel itself, claim 4 alone appears to introduce the possibility of locating the LED array "between" the lower covering of the brim and the main panel.
Plaintiffs urge the court to construe claim 4's reference to a location "between said lower covering and said main panel" to include a location "within the main panel or within a void in the main panel." Plaintiffs' proposed construction ignores any difference in the terms "between" and "within" and would, in the court's view, functionally render claim 3 indistinct from claim 4. "The concept of claim differentiation . . . states that claims should be presumed to cover different inventions. This means that an interpretation of a claim should be avoided if it would make the claim read like another one." Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir. 1991)(quoting Autogiro Co. of America v. United States, 384 F.2d 391, 404, 181 Ct. Cl. 55 (Fed. Cir. 1967)(emphasis omitted).

While the arrangement set forth in claim 4 is not found in the specifications or embodiments, "[t]he claim language itself governs the meaning of the claim." Envirco Corp. v. Clestra Cleanroom, Inc., 209 F.3d 1360, 1365 (Fed. Cir. 2000). In its ordinary usage, "between" means "in the time, space, or interval that separates" objects. WEBSTER COLLEGIATE DICTIONARY at 109 (10th ed. 1997.) An object cannot simultaneously be "between" Point A and Point B while being located "within" Point B. Plaintiffs' construction violates the ordinary meaning of between and would render two distinct claims redundant.

The court thus concludes that Defendant's construction more accurately captures the meaning of "between," though Defendant adds undue emphasis by unnecessarily including the word "entirely." The court construes the term "disposed between said lower covering and said main panel at said rim," as: "located within the space above the lower covering and below the main panel at the rim."

1. "Between"

As noted, in the Markman order, this court construed "an elongated cuttable member horizontally mounted between two parallel guardrails" to mean that the "'elongated cuttable member' must be horizontally mounted in the space that separates two parallel guardrails." (Docket Entry No. 90, p.49). This court concluded that the "ordinary meaning of between' includes both [horizontal and vertical] limits on the space defined by two objects." (Id.). KEI had argued that the cuttable member could be above or below the guardrails when viewed from the side because the specification did not limit the term "between" to "in the space that separates" viewed both horizontally and vertically. Trinity argued that "between" meant "in the space that separates," in both the horizontal and vertical dimensions.

KEI relied on Figure 14, which shows the crash cushion embodiment viewed from above. In Figure 14, the cuttable member is located in the space defined by the parallel guardrails in the horizontal dimension. In Figure 14, however, no information is provided as to whether the cuttable member is located above or below the guardrail edges. The description of Figure 14 states:

In FIG. 14 there is shown another embodiment of guardrail 10A serving to protect vehicles from hard structures 120 such as an overpass or the like. In this embodiment, beam 130 is horizontally mounted between two parallel rails 122 and 124, each having corresponding overlapping sections 122A-122D and 124A-124C, supported by corresponding ones of the breakaway posts 126A-126D. The structure without the terminal assembly 18 and beam 130 is similar in operation and construction as that described in the aforementioned U.S. Pat No. 4,655,434 [to Bronstad].

(Docket Entry No. 65, Ex. 5, 820 Patent, col. 8, ll. 9-26). Figure 14 is the only drawing of the crash cushion embodiment and, as noted, it provides no information about whether the cuttable member is mounted between the parallel guardrails when viewed from the side, as opposed to from above. The specification states that the cuttable member must be horizontally mounted "between" the parallel guardrails, but nothing in the specification states that the cuttable member is between the guardrails when viewed from above but not when viewed from the side. The description of Figure 14 states that the embodiment is similar to the operation and construction of the device claimed in the Bronstad 434 Patent. In that patent, the term "between" describes the slotted material that is within the overlapping portions "in the space that separates" the top and bottom portions of the guardrail. That description is consistent with this court's claim construction.

The claim limitations and the prosecution history undermine KEI's reliance on Figure 14 in arguing that "between" can
During the prosecution of the 820 Patent, the examiner rejected claims directed at cutting fiber -- reinforced material as obvious in light of the Bronstad 434 Patent, a patent issued to Sicking, and U.S. Patent No. 3,596,963 issued to Phillips. The Phillips reference disclosed the use of fiber-reinforced material within guardrails. In an office action dated January 13, 2000, the examiner stated that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the guardrail terminal of Sicking et al in view of Bronstad by forming the guardrail from fiber reinforced material, as taught by Phillips, in order to increase the rigidity of the rail." (Docket Entry No. 148, Ex. 11, T02014). The applicants objected. With respect to the Bronstad reference, the applicants argued that it did not disclose "cutting" and that "the new claims are all directed to cutting the guardrail and thus are not properly rejectable . . . over Bronstad." (Id., T02040). With respect to the Phillips reference, the applicants argued that the examiner's rejection was improper because it did not disclose "cutting a guardrail." (Id.). The applicants limited "cuttable member" to a member that was physically mounted as part of the guardrail structure itself-horizontally mounted between the parallel guardrails -- as opposed to an additional or separate structure that could be above, below, or to the side of one of the guardrails. 24 Narrowing claim constructions argued during prosecution history to distinguish the claimed invention from prior art excludes the construction that was disclaimed, even if the examiner did not rely on the applicant's statements in allowing the claims. The Federal Circuit has rejected the argument that statements made during prosecution about features that distinguish the claimed invention from prior art should be disregarded if the features were not expressly included in the claims. See Springs Window Fashions LP v. Novo Indus., LP, 323 F.3d 989, 995-96 (Fed. Cir. 2003) ("[A] reasonable competitor, reviewing the amendments and statements made by the applicant to distinguish the claimed invention from Pluber, would conclude that the claimed invention did not cover a device like Pluber's."); see also Rheox, Inc. v. Entact, Inc., 276 F.3d 1319, 1327 (Fed. Cir. 2002) (adopting a claim construction that excluded an embodiment when the prosecution history required the claim construction because of the disclaimer). The fact that "the prosecution shifted to a different focus [after the applicant amended the claims] does not blunt the impact of those remarks made to overcome the prior rejection." Desper Prods., Inc., v. QSoundLabs, Inc., 157 F.3d 1325, 1336 (Fed. Cir. 1998).25

Footnotes

24 "Absent a clear disclaimer of particular subject matter, the fact that the inventor anticipated that the invention may be used in a particular manner does not limit the scope to that narrow context." Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1301 (Fed. Cir. 2003). "[A] claim term will not carry its ordinary meaning if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention." CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366-67 (Fed. Cir. 2002); see also C.R. Bard v. U.S. Surgical Corp., 388 F.3d 858, 863 (Fed. Cir. 2004) (ordinary and customary meaning does not trump the intrinsic record).

25 In September 2002, KEI filed the 755 Application as a continuation of the 003 and 820 Patents. The claims in the 755 Application include claims substantially identical to the asserted claims of the 820 Patent. In one claim, the sole difference is the addition of parenthetical language broadening the "between" limitation as "an elongated cuttable member horizontally mounted between (when viewed from above) two parallel guardrails." (emphasis added). KEI does not dispute that the addition of the "when viewed from above" element broadened the scope of the 820 Patent claims. The Federal Circuit has noted that the prosecution history of a subsequently issued patent may be relevant for purposes of a related, previously granted patent. See Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1349-50 (Fed. Cir. 2004) (recognizing that "the prosecution history of one patent is relevant to an understanding of the scope of a common term in a second patent stemming from the same parent application").

Footnotes

Reexamining the claim construction under Phillips does not lead to the result KEI sought in the Markman proceeding. The specification of the 003 Patent does not use the word "between" in a way that alters its ordinary meaning or limits it to a
horizontal dimension. Phillips does not forbid the use of a dictionary to articulate the ordinary meaning so long as that meaning is not divorced from, or inconsistent with, the meaning of the claim terms in the context of the patent specification and file history. Although this court cited dictionary definitions of "between" and cited to Texas Digital, this court did not construe "between" to include all dictionary definitions of the term without regard to the context of the invention. 26

26 Both KEI and Trinity relied on dictionary definitions of "between" in their arguments during the Markman proceeding. KEI argued that the dictionary definition of a city located "between" New York and Chicago supported construing "between" as meaning "between" the guardrails if viewed from above, but not viewed from the side. This court rejected the argument and noted that the when "between" is used to describe two geographical locations on a map, the respective altitudes of the locations are ignored.

This court concludes that the claim constructions entered in September 2003 are consistent with the approach set forth in Phillips.

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1. **Language in dispute: "bevel"**

Does "bevel" mean (1) an angle that one surface or line makes with another when they are not at right angles (i.e. not 90 degrees), or (2) a visibly sloping, slanted angle?

**Answer:** a bevel means a visibly sloping, slanted angle.

The court agrees with Defendants that in order for the second opening to be deemed "beveled," the slant must be visible to the human eye. Plaintiff notes that the specification does not refer to a visible slant, but provides that "the bevel is formed by simply cutting the desired angle of bevel through the wall of that half of the tube that forms the lumen . . . " (Col. 4, lines 5-9.) Thus, Plaintiff urges, any non-90 degree angle might qualify. If taken literally, the court notes the language appears to contemplate selection of an angle so closely resembling 90 degrees, for example 89 degrees, that it would be indistinguishable from 90 degrees to the naked eye. Plaintiff argued during the Markman hearing that if the court adopts Defendants' proposed construction, this will make the term more vague, rather than clarify the issue. The court concludes to the contrary, that if a jury is instructed that the bevel as contemplated by the patent means visibly beveled, jurors should be capable of determining whether, to the naked eye, the accused patents infringe this particular claim.

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5. **"Beveled Tip Portion … Formed at an Acute Angle … to Facilitate Entry"**

The only apparent dispute over element [4] of claim 13 is the severity of the "acute angle." Plaintiff, citing his expert, suggests that "a person of ordinary skill would understand a beveled tip portion that facilitates entry to mean an angled surface of about 60 degrees or less." (Pl.'s Markman Br. at 28 n.35.) Defendants argue that importing a numerical limitation runs counter to precedent, and that the prosecution history suggests merely a preference for the angle of the cut -- one of 30 degrees, not 60.

Defendants are correct. The "beveled tip" language of the claim does not warrant importation of a numerical limitation. To the contrary, it implies that, so long as the tip "facilitate[s] entry," the angle is acute enough. The medical definition of "bevel" available during the period supports this plain language interpretation: "A surface having a sloped or slanting edge." Stedman's, at 168.
Given the purpose of the invention, see, e.g., '960 patent, col. 2:62-68, it can be inferred that any bevel, so long as it renders entry significantly easier than it would have been with a blunt tip, is encompassed by the claim. Moreover, the specification states that, "with respect to the longitudinal axis of the catheter, the bevel should be cut at an angle as acute as possible, preferably 30 [degrees] or less." '960 patent, col. 6:38-40 (emphasis added). This raises two problems for plaintiff. First, it is indicative of the fact that the term "beveled tip" has only a preferred embodiment, rather than one justifying numerical limitation of the claim. See Texas Digital, 308 F.3d at 1204-05. Second, it calls into question the assertion by plaintiff's expert that 60 degrees is the outer limit of "acuteness," which appears arbitrary in light of this significantly more acute preferred embodiment. In any event, there is no basis in the intrinsic record for such a limitation. See Invitrogen, 327 F.3d at 1371.

12 The Court disagrees with defendants insofar as they contend that any acute angle would suffice. Clearly, an angle of, say, 89 degrees would fail to comport with the spirit of the supposed invention and would probably create the same undesirable effect as a blunt tip. The bevel must "facilitate entry" into the vein.

Accordingly, "beveled tip portion" shall be construed as "a sloped edge rendering entry into a vein palpably easier than it would have been with a blunt edge."

6. Bias Exerting Mechanism

As it did for "retainer device," Aqua-Lung proposes that "bias exerting mechanism" invokes 35 U.S.C. § 112(6) because it fails to recite adequate structure to those skilled in the art. Two Forty counters that the claims describe "bias exerting mechanism" as various spring or lever structures that would not implicate any means-plus-function analysis. Despite Aqua-Lung's argument to the contrary, "bias exerting mechanism" connotes sufficient structure in the claims. Just like the addition of "detent" to "mechanism" in Greenberg or the combining of "retainer" with "device" above to provide adequate structure, "mechanism" becomes a structural term when placed with "bias exerting." See Mass. Inst. of Tech., 462 F.3d at 1354 (finding that the generic term "mechanism" typically does not connote sufficient definite structure).

Based on the claims, one purely functional term ("mechanism") is being modified by a second structural term ("bias exerting"). Claim ten of the '130 application and claim thirteen of the '609 patent provide that the "bias exerting mechanism
comprises a resilient member. "'130 application claim 10 at 37; '609 patent claim 13 at 20:57-58. Claim eleven of the '130 application and claim fourteen of the '609 patent add that "said bias exerting mechanism comprises a coil spring and a spring containment sleeve, said coil spring having one end portion engaged with said pressure responsive element and an opposite end portion mounted in said containment sleeve." '130 application claim 11 at 37; '609 patent claim 14 at 20:59-63. A slight change in claim five of the '958 patent states that "said bias exerting mechanism comprises a coil spring and a spring containment sleeve, said coil spring having one end portion engaged with said valve member and an opposite end portion mounted in said containment sleeve." Claim 5 at 18:34-38.

One skilled in the art, therefore, would understand that a spring, a spring with a spring containment sleeve, or resilient member is the derived structural connotation for the generally claimed "bias exerting mechanism." See Welker v. Bearing Co. v. PHD, Inc., 550 F.3d 1090, 1096 (Fed. Cir. 2008). Accordingly, because the inventor did not choose to express this claim element as "a means or step for performing a specified function without the recital of structure, material, or acts in support thereof," 35 U.S.C. § 112(6), means-plus-function analysis does not apply to "bias exerting mechanism."

Having determined that Section 112(6) does not apply, the next step is to construe the term. As noted above, "bias exerting mechanism" is mentioned in the claims of the '130 application and two of the patents-in-suit as a spring, a spring with a spring containment sleeve, or resilient member. See '130 application claims 10-11 at 37; '609 patent claim 13 at 20:58-59, claim 14 at 20:60-61; '958 patent claim 5 at 18:34-38. The term further occurs in one other claim of the '130 application, two other claims in the '609 patent, and two additional times in claim one of the '958 patent. See '130 application claim 12 at 37 ("said filter element is disposed between said bias exerting mechanism and said retainer device proximate said outlet opening"); '958 patent claim 1 at 18:13-15, 19-21 ("said valve member being biased toward said closed position with a bias exerting mechanism; and . . . said filter is disposed between said bias exerting mechanism and said retainer device proximate said outlet opening"); see also '609 patent claim 12 at 20:55-57, claim 16 at 21:5-7). The term does not appear in the claims of the '674 patent.

Aqua-Lung seeks to have "bias exerting mechanism" defined as: "A spring whose downstream end bears on the gas filter either directly or via a sleeve or spacer, whose upstream end is connected to or received within the filter cover and whose spring force is selected to urge the filter cover to its closed position absent gas pressure sufficient to overcome the spring force, and to permit the filter cover to open in response to gas pressure applied to the filter cover." Two Forty proposes that it be construed as "a portion of the device which exerts a force against the filter cover." Similar to their proposed definition of "retainer device," Aqua-Lung's proposed definition operates from the assumption that 35 U.S.C. 112(6) applies, and thus, is too narrow.

The specifications repeatedly identify various different springs as the "bias exerting mechanism." Referring to figure eight of the '609 patent, for example, the specification states: "The bias mechanism in the preferred form of the coil spring 102 creates a bias force against the piston 90 and the bottom of the containment sleeve 108 so as to press the upper surface 94 against the internal lip 82." 9:59-63. The spring's shape and configuration differs somewhat from embodiment to embodiment, but they all have the same basic characteristics. See '674 patent at 20:6-11 ("The embodiment of FIG. 49, or for that matter any other embodiment illustrated herein, may be modified further to provide an alternative bias exerting mechanism 102. This modification is illustrated in FIG. 49k. In this particular embodiment, the bias exerting mechanism is in the form of a Schraede valve 414 . . . .") (emphasis added); see also '130 application at 24 (referring to FIG. 32); '958 patent at 15:4-8, 44-47 (referring to FIG. 36 & 40).

While none of the specific embodiments suggest any other structure as the "bias exerting mechanism," that does not support Aqua-Lung's argument that any resulting construction must include a spring. Despite all the embodiments showcasing a spring, persons of ordinary skill in the art rarely confine their definitions of terms to the exact representations depicted in the embodiments. Phillips, 415 F.3d at 1323. The fact that only a spring is shown in the embodiments is taken into consideration when examining the patentee's entire invention. Honeywell, 452 F.3d at 1318.

Based on the intrinsic record, and similar to "retainer device," there is no additional evidence beyond the use of a spring in the embodiments to justify narrowing any definition to a spring. Agfa, 451 F.3d at 1376-77. To the contrary, reading the specification with the claims demonstrates that the embodiment is not so limited. Phillips, 415 F.3d at 1323. First, just like "retainer device," while the embodiments disclose various springs for the "bias exerting mechanism," the inventor knew the term "spring" and could have used that term in the claims instead of the much broader term, "bias exerting mechanism."


Second, the doctrine of claim differentiation supports a construction that is not limited solely to a spring. That doctrine creates a presumption against constructions that would render a claim meaningless in its entirety by making it identical in scope to another claim. Sinorgchem Co., Shandong v. Int'l Trade Comm'n, 511 F.3d 1132, 1139 (Fed. Cir. 2007). In other words, claim differentiation creates a presumption that each claim in a patent has a different scope. Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000). Here, as noted above, dependent claim ten of the '130 application and dependent claim thirteen of the '609 patent recite a “resilient member,” while all of the other claims with "bias exerting mechanism" do not. Any resulting construction, therefore, must take into consideration that a spring was not the only "bias exerting mechanism" intended by the inventor. To hold otherwise would render these dependent claims meaningless. Based on the foregoing, the Court adopts Two Forty's proposed construction of "bias exerting mechanism" to mean "a portion of the device which exerts a force against the filter cover."

F. "Biased in a Direction Normal to the Top Surface of the Housing" and "Biased to Move in a Direction Normal to the Top Surface of the Housing"

These terms are used in claims 1, 23, and 32. While SureFire does not believe a construction of these terms is necessary, Glock and Insight offer constructions that explain what a "direction normal to the top surface" means. They agree that a normal direction in this context is perpendicular to the top surface of the housing. Insight adds that the direction is upward and also adds that a perfect ninety degree angle is not required for the direction to be perpendicular.

Because relative orientation is disputed in the context of other terms, that issue will not be resolved here. The court agrees with Insight that a normal direction, in this context, means the direction that will make the biasing mechanism work, which is a perpendicular direction, but does not require a specific angle of perpendicularity. These terms are construed to mean: forced by a biasing spring or biased in a direction that is perpendicular to the top surface of the housing and forced to move, by a biasing spring, in a direction that is perpendicular to the top surface of the housing, although no specific angle of perpendicularity is required.

K. "biased to tension said membrane" (claim 20)

PolyVision's proposed construction

No construction required. Alt.: The flexible member is pushed in a direction to impart or store spring tension in that member before the attachment of the membrane to the flexible member.

As both parties acknowledge, the word "biased" does not appear in the specification or prosecution history of the '309 patent. Based upon its review of the intrinsic evidence, the Court concludes that the inventors intended this term to have the same meaning as "pretensioned." Therefore, the Court will adopt Smart's proposed construction of the term "biased", which is the same as "pretensioned."

I. PolyVision's Motion Regarding the ’309 Patent

PolyVision contends that reconsideration of the Court's construction of the claim terms "pretensioned" and "biased to tension" is required under the Federal Circuit's decision in Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361 (Fed. Cir. 2007), which, according to PolyVision, "clarified and narrowed the law on reading manufacturing limitations into product claims." (PolyVision's Br. Supp. at 2.) The Court has read Andersen and, for the reasons set forth below, disagrees with PolyVision that Andersen compels a different result.
Initially, the Court notes that, contrary to PolyVision's reading, Andersen does not appear to establish any new rule or limitation regarding incorporating "manufacturing limitations" into product claims. Rather, it applied well-established rules of construction (in fact, the same rules which this Court applied in its construction of the claims) to reach the particular result in that case. 1

1 Although PolyVision first cited Andersen in the instant motion for reconsideration, the Court notes that the decision was issued on January 26, 2007, and PolyVision had ample time to bring the decision to the Court's attention prior to its issuance of its claim construction memorandum, had it believed it important to do so.

Andersen involved two groups of patents, Group I, which covered compositions capable of being extruded into structural members, and Group II, which covered the extruded structural members themselves. The district court agreed with the defendant that the term "composite compositions" in the Group I patents were limited to materials that had previously been extruded into either pellet or linear extrudate form. However, with regard to the term "composite structural members" claimed in the Group II patents, the district court agreed with Andersen Corp. and held that the members were not limited to items made from a composite mixture that had been extruded into pellet or linear extrudate form, as claimed in the Group I patents. The Federal Circuit held that the district court erred in its construction of the Group II patents, finding that the scope of the composite structural members was limited to composite structural members in which the preparation of the composite composition includes an intermediate step of pelletization or linear extrusion. See id. at 1375. The court observed that "[t]he specification . . . indicates that the claimed physical properties of the composite structural members are attributable to the process that is used to make them, a process that includes pelletization." Id. at 1372. While the court acknowledged that claim construction would be a close question in the case before it if the intrinsic evidence were limited only to the specification, it found that the prosecution history resolved the issue with a clear disavowal of claim scope by requiring pelletization in the process of production of the structural members. See id. at 1373.

PolyVision contends that this case is distinguishable from Andersen, which limited the product claim to method of manufacture, for several reasons. First, it contends that contrary to the Court's construction, the specification discloses two embodiments shown in Figures 9 and 10 in which the membrane is attached to the support substrate rather than the flexible members. It also asserts that the specification describes an embodiment in which one end is fixed and the other is flexible, such that the membrane could be attached to the fixed end prior to the storing of spring energy rather than afterward, as required by the Court's construction. This argument fails for several reasons. First, according to the Court's construction, the pretensioning occurs by pushing or imparting spring energy to the flexible member and then attaching the membrane to the flexible member. The fact that the membrane is attached to the support substrate instead of the flexible member in Figures 9 and 10 is irrelevant because the specification explains that the compressible flexible member in Figure 9 is first pretensioned by compressing it inwardly toward the substrate, following which the membrane is affixed to the bottom of the substrate. (Col. 4, ll. 65-67 to Col. 5, ll. 1-2.) Thus, in either situation (attachment to the flexible member or the support substrate), the flexible member is pretensioned (pushed to impart spring energy prior to the attachment of the membrane). PolyVision's point regarding a fixed-end configuration is unavailing, because even in such a configuration, the flexible member would still be pretensioned prior to attachment of the membrane to either the flexible member or the support structure, as required by the invention.

Second, PolyVision argues that the ‘309 patent specification contains none of the limiting words present in the patents in Andersen, such as "necessary," "critical," or "controlling." The Court rejects this argument because, as fully set forth in the Court's claim construction memorandum, the specification establishes that pretensioning requires that tension be imparted to the flexible members prior to the attachment of the membrane. Thus, while the specification may not contain the exact words of limitation used in the patents in Andersen, the specification establishes that the flexible members must be tensioned prior to the attachment of the membrane.

PolyVision's final argument is that, unlike Andersen, the prosecution history in this case contains no clear disavowal of claim scope to a specific manufacturing process. Nothing in Andersen suggests that the prosecution history must contain a disclaimer of claim scope limiting the claims to a particular manufacturing process. The court in Andersen looked to the prosecution history only because the specification was not entirely clear with regard to the process limitation. The
prosecution history resolved this question. In this case, the absence of a disclaimer from the prosecution history is irrelevant because the specification provides sufficient guidance on the proper construction of the disputed claim language.

2. "Biasing"

Claim 9 includes "a contactor having a spring located inside the battery holder between the base of the battery holder and the battery for biasing the battery toward the opening of the battery holder. . . ." '900 Patent col.11 1.36-39 (emphasis added). Invisible Fence asserts that the term "biasing" should be construed as "mechanically biasing or urging," while Perimeter claims that the term means "exerting force in a particular direction, [i.e., the direction of the open end of the battery holder]." (Joint Statement 4.)

Invisible Fence argues that "claim 9 simply states that the spring causes the battery to be biased toward the opening, which can be as a result of a direct force applied by the spring or a reactionary force resulting from the spring." (Pl.'s Opening Br. on Claim Construction 15.) Referencing the basic principle of physics that "for every action, there is an equal and opposite reaction," Invisible Fence explains that the battery is held in place within the battery holder as a result of two opposing forces. Newton's Third Law of Physics, available at http://www.physicsclassroom.com/Class/newtlaws/U2L4a.html. While the spring exerts a force biasing the battery towards the opening, the contact simultaneously exerts a force biasing the battery in the opposite direction. Invisible Fence characterizes the force exerted by the contact as a "reactionary force resulting from the [force of the spring]."

Ultimately, this discourse about opposing forces is utterly irrelevant to the interpretation of claim 9; although other objects could be exerting forces that cause the battery to be biased away from the opening, claim 9 only concerns the spring and the force it exerts in biasing the battery toward the opening. Because the Court's duty is to give the words in the claim their ordinary meaning, see Johnson Worldwide Assocs., 175 F.3d at 989, we will not construe the language in claim 9 to encompass anything broader than what it explicitly says. Therefore, the Court construes the term "biasing," to mean "exerting force in a particular direction toward the open end of the battery holder." 8

8 In fact, Invisible Fence seemingly concedes that this is the proper construction, since its proposed construction for the term "spring" is "[a] spring for biasing the battery toward the opening . . ." See infra, Part III.B.3.

11. Biasing Force

The next term for construction is "biasing force" which appears in claims 1 through 3 and claims 6 and 7 of the '836 patent. In claim 1, the term appears as follows:

a coupling part of said panel, when engaged with a complementary coupling part of another one of said panel, configured and arranged to produce a biasing force between such coupled panels tending to urge the panels towards each other; at least one of said coupling parts including an elastically bendable portion having a relaxed unbent position, and which, when in a coupled condition, is at least partially bent out of its normal relaxed position and thereby provides said biasing force.

('836 patent, 14:7-16)(emphasis added.)

In claim 3, the term appears in the following context: "to produce a resultant biasing force maintaining the panels compressed against each other at the coupled side edges." ('836 patent, 14:62-65)(emphasis added.)
Unilin maintains that "biasing force" means "force acting within a joint that urges the panels together after coupling." (Unilin Opp'n Br. 15.) Alloc states that it has no substantial disagreement with Unilin's proposed interpretation. (Alloc Resp. Mem. 13.) Alloc states that it is clear that such force must be in effect after the panels have been joined and that the term "biasing force" does not apply to any forces that are at work during the installation or assembly of the panels. (Id.)

The parties' proposed construction of "biasing force" is consistent with the specification and claims and, therefore, is adopted. "Biasing force" means "force acting within a joint that urges the panels together after coupling."

C. Biasing Mechanism

The function of the biasing mechanism described in the various claims whether in means plus function format or not, is to bias the swing arm bi-directionally toward a median position. The biasing mechanism is described in some independent claims in a means plus function format which under 35 U.S.C. § 112(6) is construed to cover the corresponding structure described in the specification for performing the claimed function. However, in determining whether a means plus function clause invokes section 112(6), the Court must decide whether the claim recites sufficient structure to perform the claimed function. See Al-Site Corporation v. VSI International, Inc., 174 F.3d 1308 (Fed. Cir. 1, 1999). If it does, section 112(6) does not apply to limit the coverage of the claim.

In claim 1, the biasing mechanism is described as a structure comprising resilient buffer members which are in contact with the stop member when the swing arm is in the median position and compressible by the stop member by movement of the swing arm from the median position whereby the buffer member applies a biasing force to urge the swing arm to the median position. At the Markman hearing, the parties stipulated that the word "contact", as used in the claims, means "touching". Claim 9 describes the same structure as Claim 1 except that "resilient buffer members" are replaced by "resilient buffer material" and the swing arm is attached to the structure for "pivotal motion about an axis having a fixed position with respect to the structure." In Claims 13 and 14, 2 the biasing mechanism is described in means plus function format, and under section 112(6), is limited to the structure described in the specification and related drawing which turns out to be the identical structure described in Claims 1 and 9. Claim 15 describes the same biasing mechanism structure as claim 1 except that the stop member is depicted as being "carried on said structure." Claim 16 describes the same biasing mechanism structure as Claim 9 except that the stop member is depicted as being "carried on said structure." Claims 17 and 18 describe the same biasing mechanism structure in a means plus function format as Claim 14 except that the stop member is depicted as being "carried on said structure."

2 Claim 14 contains other means plus function limitations. Apart from the "biasing means" clause of Claim 14, the "drive means" clause of that claim is a means plus function limitation and includes the motor 42 and flywheel 54 to drive the post member or tool support 74. That clause therefore covers a flywheel and equivalents of that structure. Claim 18 also contains a similar "drive means" clause which should be interpreted in the same way.
argues however, that Deere is estopped by the prosecution history from contending that the claims of the '290 patent cover devices with more than two buffers. During prosecution, Deere presented a claim to the PTO with the language "at least two substantially cylindrical, resilient bodies." The examiner rejected this claim language stating:

The recitation "at least two substantially cylindrical, resilient bodies" in claim 9, line 2 is inaccurate since this implies that more than two cylindrical, resilient bodies can be present yet more than two cylindrical, resilient bodies are never shown. (Benchbook of Exhibits in Support of the Prehearing Memorandum of Deere & Company Relating to the Markman Hearing, Doc. # 31, Exhibit D at D100120.)

Deere responded by amending this claim in the following manner:

The cultivating machine of claim 2 wherein the resilient buffer members comprise [at least two] substantially cylindrical, resilient bodies [,] respectively mounted on [either side] opposite sides of one of the stop means [in] and mounting means so that [the] a portion of a circumference of each [body] of the bodies abuts the other of the stop means and mounting means.

Toro asserts that, by acquiescing in the examiner's rejection and amending the claim to remove the "at least two" language, Deere gave up the right to assert its claims against any device with more than two buffers. The Court disagrees. This amendment was not made to overcome prior art. It was made in response to a rejection based on the patentee's failure to disclose the invention he was claiming. Deere did not disclose an invention with more than two resilient buffers and therefore they were not entitled to claim such a device. This does not mean, however, that Deere may not assert its claims against a device that has more than two buffers. Accordingly, the Court will not read this limitation into the claim.

--- Footnotes ---

3 Additions are underlined and deletions are in brackets.

--- End Footnotes ---

The Court also agrees with Deere that the force being generated by the biasing mechanism or means is not limited to compressive force. Toro's reliance upon language in the specification expressing dissatisfaction with the prior art's use of a leaf spring as a biasing means in Australian Patent Application 41609/89 "due to the torsional forces applied to such biasing means" is misplaced. (See col. 2, line 40, et seq.) A careful reading of the specification in that regard reveals that what is criticized as "unsatisfactory" is not a mechanism giving rise to a torsional force, but rather the use of a leaf spring as providing the biasing force:

Australian Patent Application 41609/89 disclose the use of a leaf spring to bias the link arm to a right angle position relative to a secondary link part. However, the present inventors have found such biasing means to be unsatisfactory due to the torsional forces applied to such biasing means. (Patent '290. Col.2, line 64, et seq.)

Accordingly, the Court will not read the limitation suggested by Toro into the claim language.

2. "A liquid absorbing member comprising a bibulous material"

Dade Behring argues the term "bibulous" is an adjective which describes a property or function of a material. Dade Behring then suggests that the property or function of the material is to pull or draw liquid through the immunosorbing member. Biosite contends the "bibulous material" refers to a physical part of the assay device which is comprised of an absorbent, porous material which allows for the flow of solutions.

Starting with the language of the claim itself, the liquid absorbing member is said to be comprised of a "bibulous material." See Col. 2, lines 3-4. As the term "bibulous" has not been used in a special or unique way in the specification, it is interpreted according to its ordinary and customary meaning. 23 See Vitronics, 90 F.3d at 1582; Ekchian, 104 F.3d at 1303. Additionally, by adding extraneous limitations only found in the specification or prosecution history, the Court would be
violating a cardinal rule of claim construction by importing limitations found only in the specification into the claim. See Electro Medical Systems, 34 F.3d at 1054 ("claims are not to be interpreted by adding limitations appearing only in the specification."); Zenith Laboratories, 19 F.3d at 1422 ("It is axiomatic that terms in the specification cannot simply be read into the claims where they do not appear.").

23 Much has been made by both parties of the following specification language:

The important features of the assay device material are that they are able to absorb liquid, particularly aqueous solutions, without substantially impeding the movement of the solutes employed in the assay. In effect, the materials are bibulous; they are porous and allow the flow of solutions. . . .

See Col. 15, lines 16-22. The Court does not believe that the term "bibulous" is being used in a special or unique way in this passage in the sense that the patentee was attempting to be his own lexicographer or a special definition of the term is clearly stated in the patent specification or prosecution history. See Vitronics, 90 F.3d at 1582 ("Patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history.") The Court therefore declines to import this specification language into the claim.

The dictionary definition of "bibulous" is "readily taking up fluids or moisture." 24 See Webster's Dictionary at 212. No further gloss is required. Such words as "porous" or "absorbent" may or may not be equivalent. The important point is that for one reason or another, the patent applicant decided not to use these terms.

24 The dictionary definition is consistent with the definition adopted for "liquid absorbing zone," which has been previously found to be identical to the "liquid absorbing member." As the "liquid absorbing member" is comprised of the "bibulous material," the adopted definition of "liquid absorbing zone" proves insightful. The specification relates that the "liquid absorbing zone" "acts as a pump to pull liquid through and out of the immunosorbing zone." Col. 4, lines 67-68; see also Col. 2, lines 32-33; Col. 3, lines 18-19; Col. 14, lines 35-37; Col. 16, lines 61-62; Col. 17, lines 1-3, 21-22.

Accordingly, the Court construes "bibulous material" as any material which is able to readily take up fluids or moisture.

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2. "Bifurcated Base Structure" and "Bifurcated Base Graft Structure" 4

The parties agree that the "bifurcated base [graft] structure" is divided at its downstream end. Cook argues that it must be "trouser" shaped. Plaintiffs and Gore argue it is either "Y-shaped" or "forked." 5 The primary dispute between the parties is whether this term should be construed to mean that the "bifurcated base [graft] structure" is an intraluminal device that contains malleable wires.

4 458 Patent. The parties ask the Court to construe this term and the term "bifurcated base graft structure," found in independent claims 1, 15, 17 and 23 of the '158 Patent in the same manner.

4 458 Patent. The parties ask the Court to construe this term and the term "bifurcated base graft structure," found in independent claims 1, 15, 17 and 23 of the '158 Patent in the same manner.
5 Plaintiffs also propose a construction that includes a requirement that the "bifurcated base structure" permits the "connection of additional grafts." The Court concludes that this feature of the "bifurcated base [graft] structure" is addressed by the manner in which the Court construes the term "a pair of connector legs."

Plaintiffs support their position that the "bifurcated base [graft] structure" is not limited to intraluminal devices by reference to the declarations submitted during the prosecution history, which describe the October 6, 1993 surgical procedure. Plaintiffs argue that these declarations refer to an "aorta-iliac bypass graft," which previously had been implanted in the patient during open surgery. Plaintiffs equate that aorto-iliac bypass graft to the "bifurcated base [graft] structure" as used in the claims. Plaintiffs also argue that because claim 1 of the '158 Patent provides that "at least one" of the bifurcated base graft structure or the second graft structure has a wire member, the Court should not construe "bifurcated base [graft] structure" to require wires in all instances. Defendants, in contrast, argue that the specification does not support a construction of the term "bifurcated base [graft] structure" that could include a traditional surgical graft, i.e. a graft without wires. Defendants also argue that the specification demonstrates that the inventors disclaimed resilient wires.

Defendants' arguments do find support in the section of the specification that describe a bifurcated device, the inventors state that when an aneurysm is located near a bifurcated artery, "it is possible to place a graft according to the present invention which has a bifurcation at its downstream end, a so-called 'trouser-graft', wholly within the primary artery." (458 Patent, col. 4 II. 18-23 (emphasis added).) That The term "bifurcated base structure" is found in independent claim 1 of the section of the specification continues, "[i]n the case of an aneurysm in the aorta, for instance, that extended into each of the iliac arteries the primary graft of the 'trouser' type would be placed in the aorta through one of the iliac arteries." (Id., col. 4, II. 25-29 (emphasis added).) These references suggest that the device in question is placed intraluminally and is not a bifurcated device already implanted in a vessel. Further support for Defendants' position is found in the section of the specification in which the inventors state that one leg of a trouser graft "will have a skirt which cannot be expanded by a balloon catheter." (Id., col. 4, II. 45-49.) This language again suggests that the "bifurcated base [graft] structure" of the claims would not encompass a traditional vascular graft. In addition, the prosecution history of the '158 Patent shows that when the inventors added the "bifurcated base graft structure" language to the claims, they referred to the portions of the specification, cited above, that describes a bifurcated device as support for that claim language. (See Prosecution History of '158 Patent, 37 CFR 1.111 Amendments dated Aug. 11, 2003 and October 30, 2003, Inventors Remarks and Support Chart.)

Plaintiffs also rely on the doctrine of claim differentiation to support their position that the "bifurcated base [graft] structure" could encompass a traditional vascular graft. Thus, by way of example, Plaintiffs argue that because dependent claim 2 of the '458 Patent recites a prosthesis "wherein said bifurcated base structure is circumferentially reinforced at locations along its length by a plurality of separate spaced apart wires," the Court should not construe the term as used in independent claim 1 of that patent to require wires. (Compare '458 Patent, col. 6, II. 12-19, with id., col. 6, II. 20-23.)

In general, the doctrine of claim differentiation recognizes "that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope." Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1369 (Fed. Cir. 2007) (quoting Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999)). Thus, there is a presumption that "[t]o the extent the absence of such difference in meaning and scope would make a claim superfluous, … the difference between claims is significant." Id. (quoting Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987)). That presumption may be overcome, however, by the written description of the patent or its prosecution history. Id.

Defendants argue that claim 1 of the '458 Patent would not be rendered superfluous if the Court were to adopt their construction, because the dependent claims of that patent contain other limitations, such as "circumferentially reinforced at locations along its length." Indeed, dependent claim 11 of the '458 Patent provides that "said graft is circumferentially reinforced at locations along its length by a plurality of separate spaced apart wires." This language refers back to the "graft which is adapted to be anchored within one of the flow lumens," limitation of independent claim 1, which appears in the second portion of the body of the claim. Plaintiffs, however, argue that it is the second portion of the bodies of the asserted
claims that incorporate the intraluminal limitation. Thus, under Plaintiffs' theory, the "circumferentially reinforced" language must be an additional limitation. Furthermore, when the Court views the term "bifurcated base [graft] structure" in light of the references in the specification that describe a bifurcated device, the Court does not find Plaintiffs' claim differentiation argument persuasive. (See '458 Patent, col. 4, ll. 18-23, 25-29, 45-49.)

Plaintiffs also propose a construction that would equate this term merely to a foundation. The term "base," however, implies that this portion of the device serves as a foundation. Therefore, the Court concludes that something additional is required to give meaning to the word structure. The Court concludes that the reinforcing wires give meaning to that word and, thus, agrees with Defendants that the term should be construed to include wires.

Finally, the Court concludes that the inventors disclaimed self-expanding wires in the specification. The inventors describe prior art intraluminal grafts as being comprised of "a sleeve in which is disposed a plurality of self expanding wire stents." ('458 Patent, col. 1, ll. 20-22.) They then state that "[t]here are a number of problems associated with such known grafts," including the "lack of precise control of the expansion of the graft in the lumen." The inventors then state that their invention is "directed to an alternative form of intraluminal grafts which provides an alternative to the known grafts." (Id., col. 1, ll. 32-42.) Thereafter, the inventors describe the wires that form part of the invention as malleable or state that the device is expanded by use of balloons. (See, e.g., id., col. 1, ll. 49, 60-63, col. 2, ll. 8-15, col. 3, ll. 8-10, col. 5, ll. 32-36, 58-60, 66-67, col. 6, ll. 5-7.) Thus, when the Court reads the claims in light of the specification, it concludes that a person of ordinary skill in the art would clearly understand that this invention requires malleable, rather than resilient, wires.

Accordingly, the Court construes the terms "bifurcated base structure" and "bifurcated base graft structure" to mean: "An intraluminal graft that has one opening at its upstream end and two openings at its downstream end and which includes at least one malleable wire."

(c) "Billowing" In general usage, to "billow" means "to swell out, puff up, etc." Webster's College Dictionary 136 (Random House 1992); "to bulge or swell out in billows (as through the action of the wind)" Webster's Third New International Dictionary 216 (G. & C. Merriam Co. 1981). The specification in the '409 patent describes a process of causing the pocket to open by means of a puff of air: "The nozzle 90 discharges an air jet blast which billows the pocket 26 such that the article 88 may be received therein." '409 patent, col. 3, lines 64-66.

"Billowing" the pocket, as the term is used in the '409 patent, must be construed to mean causing the pocket to swell or bulge open by use of a puff or gust of air. It is fair (and sensible) to conclude that, in using the word "billowing," the inventor meant to say something more than, and different from, merely "opening." The use of the particular word refers to a specific way of opening the pocket.

A. "Method of managing at least two bingo cards . . ."

Independent Claim 13 of the Patent begins with the preamble: "Method of managing at least two bingo cards which comprises: . . ." (151 Patent, Col. 6, line 9.) Plaintiff asserts that this preamble means nothing more than it says, that the invention is a method for managing at least two bingo cards." (Pf. Markman Br. at 7, 9.) Defendants, on the other hand, focus on the term "bingo cards" and insist that "bingo cards" really means "actual physical bingo cards to be played." (Def. Brief at 13.) Plaintiff counters that there is no reason to limit the term "bingo cards," and that it includes bingo cards in whichever form they happen to come, whether physical or electronic/virtual card form. (Plaintiff's Response to Defendants' Bench Memorandum, (hereinafter, "Plf. Resp. Def. Bench Mem.").) at 2-3.)

The term "bingo cards" is not plainly "so amorphous that one of skill in the art can only reconcile the claim language with the inventor's disclosure by recourse to the specification." Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998). The term is subject to more than one understanding, however, and because both parties enlist support
from the specifications, the court will follow their lead. First, the court notes that the specifications expressly define a "bingo card" as "a square that is divided into a 5 x 5 matrix." (151 Patent, Col. 1, lines 24-25.) The preamble of Claim 13 arguably narrows that definition; it claims a method of managing . . . bingo cards . . . " Therefore, whether the term "bingo cards" might include any item on which the basic 5 x 5 bingo matrix is printed or any mode in which the matrix is stored, is irrelevant here because only those bingo cards that the 151 Patent method" contemplates "managing" are significant in the Claim 13 preamble.

To determine which bingo cards the 151 Patent contemplates managing, reference to the specifications is necessary. Plaintiff points to two portions of the specifications to support its argument that the reference to "bingo cards" in the Claim 13 preamble includes electronic or virtual cards. Plaintiff notes the specification language, "the processor automatically enters the next set of cards," and Figure 2, which indicates that the device will "DISPLAY CARDS." (151 Patent, Col. 4, lines 54-55; 151 Patent, Figure 2.) These references, however, do not require the conclusion that electronic or virtual cards are included because they do not identify the types of bingo cards the patented device is intended to manage at all. Instead, these provisions merely refer to the multiple number configurations that the device monitors after they are called up from the device's memory and displayed on the screen.

In numerous respects, the language of the specifications supports Defendants' contention that the 151 Patent contemplates managing physical bingo cards as opposed to virtual ones. The abstract states that the stored standard card configurations . . . correspond to physical cards . . . selected by a player." (151 Patent, Abstract.) It continues, the processor compares 'called' numbers with card configurations which correspond to the physical cards being played by the user." (Id.) The BACKGROUND OF THE INVENTION section begins by explaining that the "device . . . is capable of monitoring standard bingo cards." (151 Patent, Col. 1, lines 7-8.) It also describes the two predominant types of bingo cards" as "hard cards," made of cardboard or plastic, and "padded paper cards." (151 Patent, Col. 1, lines 32-35, 46-47.) In the section that explains the method of the invention," the first step is for the "user [to] determine whether hard or padded, paper cards are being used." (151 Patent, Col. 3, lines 49-51.) No where is it mentioned that virtual bingo cards might be managed by the device.

The potential danger here is the possibility of running afoul of the rule that, although claims are to be read in light of the specifications . . . limitations from the specifications are not to be read into the claims." Bell Atlantic Network Services, Inc., 262 F.3d at 1270. Sometimes only "a fine line" separates "reading [the] claim in light of a specification, and reading a limitation into the claim from the specification." Id. The court concludes, contrary to Plaintiff's contentions, that the line is not crossed by Defendants' interpretation. The specifications are entirely consistent in referring solely to physical cards, hard cards, or padded paper cards, whenever discussing the type of bingo cards for which the 151 Patent provides a device to manage. The Federal Circuit has explained that the written description 'can provide guidance as to the meaning of the claims, thereby dictating the manner in which the claims are to be construed, even if the guidance is not provided in explicit definitional format." Id. at 1271, quoting SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337, 1344 (Fed. Cir. 2001). As a result, where a "patentee uses a claim term throughout the entire specification, in a manner consistent with only a single meaning," as Plaintiff did when referring to bingo cards to be managed by the patented device, the patentee "has defined that term' by implication." Bell Atlantic Network Services, Inc., 262 F.3d at 1270, citing Vitrinetics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). The court finds that even if the term "bingo cards" does encompass cards in formats other than the traditional printed paper, cardboard, etc., the 151 Patent does not contemplate managing them. In light of the consistency with which the specifications refer to the sub-group of bingo cards the device is designed to manage, the court would improperly expand the scope of the claims if it were to read virtual bingo cards into the claims.

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2. "Biologically inert coating."

Consistent with the claim language and its ordinary meaning 24 and the prosecution history, 25 this court construes "biologically inert coating" to mean "a coating that is not biologically active."
4. "biopsy actuator"

Turning to the other patent in suit, the '798 patent, the first disputed term of claim 2 (the only asserted claim) is "biopsy actuator." Plaintiff's proposed construction is "a mechanism for the removal of tissue." MDTech proposes that this term be defined to mean "the automated biopsy instrument 10 having an outer casing 12; an inner support rod 14; a coil spring 16; a biopsy spring guide 18; a safety cap 20; a release lever 22; and a needle 24, as shown in Figure 1." In essence, MDTech's proposed construction defines the "biopsy actuator" as the "automated biopsy instrument" - i.e., the claimed invention.

In support of its proposed definition, MDTech relies solely on the prosecution history. According to the prosecution history, the examiner initially rejected claim 2 (originally claim 8 in the application) as being indefinite because it read "a biopsy actuator . . . further comprising . . .," even though the "biopsy actuator" itself had not been defined as having any structure. (Ex. 5 to MDTech's Br., GWB00609) (emphasis added). In response, the applicant amended the patent application by deleting "further" from the claim. (Id. at GWB00600.) MDTech seized upon comments made in the remarks to this amendment where the applicant describes the invention as "comprising a cannula 66 and a biopsy actuator 10." (Id. at GWB00606) (emphasis added). In the specification of the '798 patent, however, reference numeral 10 refers to the "automated biopsy instrument" generally. ('798 patent, col. 5, l. 29-32.) The automated instrument 10 is further described as having the "seven principle elements" that MDTech seeks to use to define the "biopsy actuator."

At the Markman hearing, counsel for MDTech argued that the applicant used reference numeral 10 to refer to the biopsy actuator in order to overcome the examiner's finding that the claim was indefinite as originally drafted. In doing so, MDTech argues that the patentee acted as his own lexicographer and defined "biopsy actuator" as "biopsy instrument," thereby incorporating all of the elements of the biopsy instrument.

As an initial matter, it is clear that MDTech's interpretation of the prosecution history is inaccurate. The applicant did not refer to the biopsy actuator using reference numeral 10 in response to the examiner's assertion that the claim was indefinite; he made that reference in the remarks section of the filing when he was providing a general description of the invention. The only mention of claim 8 (which ultimately became claim 2) in the amendment and response section was to indicate that "further" was deleted. MDTech is attempting to extrapolate a comment made in the remarks section and attribute a motivation for making that comment which is simply not there. For that reason, its interpretation must be rejected.

While the Plaintiff argues that the reference to numeral 10 in the remarks was just a mistake by the prosecuting attorney and should not be given any significance, this Court does not need to determine whether it should be characterized as a mistake, because the claim and the specification provide enough guidance for construing this term. MDTech's proposed interpretation is inconsistent with the claim and the specification and, therefore, regardless of whether the prosecuting attorney made a mistake or not, the one paragraph of the prosecution history upon which MDTech relies is given little weight compared to the rest of the intrinsic evidence that guides this Court.

It is also clear that Plaintiff's proposed definition - "a mechanism for the removal of tissue" - is too broad and essentially repeats the introductory phrase of claim 2, which is "[a]n apparatus for acquiring biopsy specimens." Plaintiff also points out that "biopsy actuator" is further defined in claim 2 under subparts d) and e), which provide:

   d) said biopsy actuator comprising a second connector means for releasably and fixedly engaging the first connector means, wherein the first connector means and the second connector means are movable as a unit during acquisition of the biopsy specimen,
e) said biopsy actuator comprising means for rapidly advancing the distal end of said cannula beyond the distal end of the stylet means to acquire a core biopsy specimen.

("798 patent, col. 14, l. 67 - col. 15, l. 8.) According to the claim language, therefore, the "biopsy actuator" includes at least a second connector means and a means for rapidly advancing the cannula. In addition, the Summary of the Invention section of the '798 patent describes the invention as "comprising a cannula and a biopsy actuator," (Id. at col 3, l. 43-44), and further explains that the biopsy actuator includes a stylet means, (Id. at col. 3, l. 47-50), a second connector, (Id. at col. 3, l. 58-63), a means for exposing the notch of the stylet and subsequently advancing the cannula over that notch, (Id. at col. 3, l. 64-67), and, in some aspects of the invention, a means for retracting the second connector (Id. at col. 4, l. 5-10) and for rapidly advancing the cannula (Id. at col. 4, l. 16-19). Further, the Detailed Description of the Invention indicates that an operator of the biopsy instrument "actuates the instrument by depressing the finger rest 96 on the release lever 22," which raises the latching projection such that "the stored energy of the biasing means or compressed coil spring 16 is released to drive the cannula 66 forward over the stationery stylet 60 and into the mass." (Id. at col. 8, l. 48-58) (emphasis added).

According to the claim and the specification, therefore, the "biopsy actuator," in descriptive terms and in the words of Plaintiff's counsel, constitutes the subparts of the biopsy instrument that make the instrument an automated rather than a manually operated device. (Tr. at 63). Although there is little in the specification that limits the biopsy actuator to something less than the entire biopsy instrument, it must be something more limited than the "apparatus" referred to in the introductory language to claim 2, and it at least does not include the cannula.

Based on the claim language and the specification, therefore, the Court defines "biopsy actuator" as "a mechanism for putting the biopsy instrument in operating motion, other than by hand." 12 This construction is also consistent with the ordinary meaning of "actuator," which is defined as "one that actuates; specifically : a mechanical device for moving or controlling something." Mirriam-Webster Online Dictionary, www.m-w.com; see also Webster's Third New International Dictionary 22 (1993) ("one that actuates; specif: any of various ... mechanisms by means of which something is moved or controlled indirectly instead of by hand.")

12 The Court rejects MDTech's belated argument, made for the first time at the close of the Markman hearing, that this definition would render the term "biopsy actuator" indefinite. The Court finds that the additional limitations placed on this term elsewhere in claim 2, where the term is first used, suffice, as construed by this Court, to provide a sufficiently definite structure to the actuating mechanism claimed.
a replaceable pliable sheet material patch having a first face for generally conformable application to the skin area on the zygomatic arch along the lower side of the orbit of a user, said patch being of sufficient extent to substantially cover the skin area on the zygomatic arch when applied to said skin area.

The second area of controversy is contained in the third sub-paragraph of claim 1, which recites

a light absorbing surface on a second face of the patch for absorbing incident light rays directed toward said skin area; said light absorbing surface being dark in color to reduce glare by substantially preventing light from reflecting from said skin area of the zygomatic arch toward the eyes of the wearer, said light absorbing surface being resistant to running caused by perspiration.

Defendant contends that the first section must be construed to cover the entire zygomatic arch, which is the arch of bone extending from the cheekbone to the side of the skull just in front of the ear, in other words, the whole of the cheekbone, including not only the under-the-orbit portion shown in Fig. 1 of the patent specifications, but also the portion of the cheekbone on the side of the face. Alternatively, defendant contends, the section must be found indefinite as a matter of law because the term "substantially cover" is not sufficiently precise to tell the person of ordinary skill in the art what he must do to avoid infringement.

Defendant's suggested construction makes no sense. Although defendant argues that the court should look to the dictionary definition of zygomatic arch, which would lead to the conclusion it proposes, the claim language, the specifications and common sense militate against doing so. The inventors claim an "under-eye" device; a patch extending beyond the eye would not be an under-eye device. The claim itself specifies that the patch is to be applied to the skin area on the zygomatic arch "along the lower side of the orbit of the user." '909 Pat., col. 3, Ins. 54-55. Also, the device is designed to prevent light from reflecting from the skin area to the wearer's eye; a side patch would be unlikely to fulfill this purpose.

The specifications start with Fig. 1, which shows a small kidney bean-shaped device located right under each eye of the wearer. Although defendant argues that "a figure cannot be relied upon for the precise dimensions of a claim limitation," Dft.'s Br., dkt. # 39, at 2, and cites Hockerson-Halberstadt, Inc. v. Avia Group Int'l, 222 F.3d 951, 956 (Fed. Cir. 2000), in support of its argument, Hockerson-Halberstadt is easily distinguishable. In that case, the court held that the patent drawings could not be used to determine measurements where the claims referred to quantitative relationships among the components of a particular device and the specifications were silent on the same relationships. "It is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue." Id. The court noted that "figures in a patent are not drawn to scale unless otherwise indicated." Id. In other cases, however, the Federal Circuit has approved the use of patent drawings in understanding the claims of a patent. See, e.g., CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1153 (Fed. Cir. 1997) (holding patent drawings highly relevant to understanding claims). See also Phillips v. AWH Corp. 415 F.3d 1303, 1315 (Fed. Cir. 2005) (holding specification highly relevant to claim construction analysis). Even if the claims left any doubt about where the patch is to be placed, the specifications would eliminate the doubt.

Finally, common sense and experience dictate construction of the claimed patch as one that is applied to the bony (zygomatic) arch immediately below the eye. The reason that athletes use using charcoal and other materials to black out that section is because it is the area from which light can reflect back into the athlete's eyes.

As to the second area of controversy, relating to the glare reduction requirement, defendant argues that the claim should be construed as requiring a black patch and one that is intended to be used primarily for the purpose of reducing glare to improve sight. Plaintiff counters by pointing out that nothing in claim 1 or the specifications requires an entirely black patch or even one that is mostly black. The claim provides for a surface that is "dark in color." Col. 3, In. 68. It does not specify black as the "dark color." Dependent claim 7 adds the limitation: "wherein said light absorbing surface is black." If independent claim 1 were interpreted as requiring a black patch, claim 7 would be superfluous and would not have been approved by the examiner.

Plaintiff denies that the patent requires patches that improve the user's eyesight. Plaintiff is correct. The patent claims a patch that substantially prevents light from reflecting from the zygomatic arch toward the wearer's eyes; it says nothing about improving sight. One would expect that sight would improve if protected from glare, but this is not a claim requirement.
Accordingly, for claim construction purposes, "substantial coverage" means a patch large enough to cover the skin area on the zygomatic arch when applied to said skin area; "substantial" means "largely, but not necessarily wholly, that which is specified," LNP Engineering Plastics, Inc. v. Miller Waste Mills, Inc., 275 F.3d 1347, 1354 (Fed. Cir. 2001), or approximately the same size as the patch shown in the patent drawings. In the third section of claim 1, "said skin area of the zygomatic arch" is the area under the eye; "substantially" preventing reflected light means, again, "largely, but not necessarily wholly, that which is specified." "Wherein said light absorbing surface is black" is construed to mean a patch that includes a black light-absorbing surface.

Having construed the claims, I find no problem of indefiniteness. The substantial coverage limitation is definite enough to give clear warning of what constitutes infringement; the reference to the zygomatic arch along the lower side of the orbit of a user is clear; the patent gives sufficient guidance for determining how much coverage is "substantial" as I have explained and the patent makes it clear that preventing light from reflecting into the eyes of the user will follow if the patch is about the same size as the one pictured in the specifications, dark in color and have a non-reflective surface to reduce glare.

Avon next asserts, citing the dictionary and the patent figures, that the term "blade" in claims one and nine must be interpreted to mean a broad, flat structure. Suncast does not quarrel with this interpretation. However, Avon attempts to further limit the definition of "blade" by looking to the specifications and dependent claim seven. The specification states that the blades are approximately one inch and three-quarter inches. See U.S. Patent 5,501,036, col. 3, lines 25-32. Suncast disputes this interpretation, arguing that the claim has no width requirement for the blade and that the width requirements described in claim seven cannot limit claim one. The Federal Circuit has consistently stated that limitations appearing in the specification will not be read into the claim. See Intervet America, Inc. v. Kee-Vet Laboratories, Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989). Although the specification can be used to define a term that is already in the claim, Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572, 1578 (Fed. Cir. 1996), Avon's interpretation adds a term, exact width, that extends beyond the limitations of the claim. It is sufficient that one of ordinary skill in the art interprets the word "blade" to mean a broad, flat structure, specifically a shape limitation. The structure could come in a variety of widths and still meet this requirement. Avon's interpretation, requiring a minimal width, unnecessarily limits the claim.

A. Claim Construction and Literal Infringement

The '848 patent has three independent claims--numbers 1, 13, and 14--and the summary judgment of noninfringement pertains to all three. The principal dispute in this case concerns the proper meaning of the claim term "blades," which is used in each of the three independent claims. Claim 1 recites "a plurality of upstanding conductive blades," claim 13 recites "a plurality of planar contact blades," and claim 14 recites "an array of separated and specially [sic, spatially?] parallel contact blades vertically mounted."

A claim must be given its ordinary meaning, absent a contrary definition in the specification or the prosecution history. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). The technical dictionary cited by Siemon's expert defines "blade contact" as "a solid contact with rectangular cross section, usually with a chamfered mating edge," a definition that accords with the more general definition found in the dictionary cited by the district court, which defined "blade" as "a flat, thin part or section."

The definition of "blade contact" in the art is consistent with the use of the term in the specification. The written description of the '848 patent refers to "contact blades" as "preferably planar" and as having a "generally rectangular configuration, being slightly elongated and preferably flat or planar with "tapered contact tips," a description that is distinctly at odds with the cylindrical shape of the contact pins used in the Siemon device.

Given the proper construction of "blades," it is apparent that claims 1, 13, and 14 of the '848 patent do not read on the
accused adapters. Because the evidence is undisputed that the contacts of the accused device are cylindrical, there is no
genuine issue of fact material to literal infringement. Accordingly, the district court properly granted judgment as a matter of
law that Seimon's adapters do not literally infringe the '848 patent.

500

b. "Blades" and "blade edge"

Claim 1 recites "a group of first, second, and third blades with parallel sharpened edges located between the guard and cap." 777 Patent col.4 11.6-7 (emphasis added). Claim 1 identifies each of the "first, second, and third blades" as "defining a blade edge." Id. col.4 11.7-14 (emphasis added).

Gillette asserts, and Schick does not dispute, that the term "blades" is well-known in the wet shaving art and that its plain
meaning is clear. (Pls.' Markman Br. 6.) The Court agrees. From the language of Claim 1, it is readily apparent that the
ordinary meaning of term "blades" as understood by a person of skill in the art refers to "safety razor blades."

The parties disagree, however, over the term "blade edge." Schick asserts that the term means "the entire sharpened side of a
blade lying between the sidewalls of the cartridge housing." (Defs.' Markman Br. 10.) Gillette responds that the term means
"that portion of a blade that has a sharpened surface which engages the skin and cuts hair." (Pls.' Opp'n to Defs.' Markman
Br. 12.)

The ordinary and customary meaning of the term "blade edge" appears to the Court to include any sharpened edge of the
blade. Claim 1 recites "blades with parallel sharpened edges," and there is no language in Claim 1 or in any of the other
claims that indicates that the term "blade edge" excludes any sharpened edges in whole or in part. See 777 Patent col.4 11.5-
50. Similarly, the specification recites "blades defining parallel sharpened edges arranged to pass in turn over a skin surface
being shaved." 777 Patent col.1 11.3-6. As such, at the outset, the term "blade edge" means "any sharpened edge of the
blade." This definition is supported by the extrinsic evidence as well. (See Defs.' Markman Br. 10 (quoting the American
Heritage College Dictionary (2d ed. 1982) definition of "edge" as the "usually thin, sharpened side of the blade of a cutting
instrument").)

In light of this apparent ordinary and customary meaning, both parties' proposed definitions contain unjustified limitations.
Gillette attempts to shave away portions of the blade that do not engage the skin and cut hair from the term "blade edge" by
pointing to the term "skin contacting surface" in the specification. (See Pls.' Opp'n to Defs.' Markman Br. 11-13; Markman
& Summ. J. Hr'g Tr. 10-12, Oct. 20, 2005.) However, none of the claims contain the term "skin contacting surface." And the
specification uses the terms "skin contacting surface" and "skin engaging surface" only in defining the term "exposure" but
not in defining the terms "blade edge" or "edge." See, e.g., 777 Patent col.1 11.50-53, col.2 11.2-5. Similarly, Schick's
attempt to limit the term "blade edge" to the "sharpened side of a blade lying between the sidewalls of the cartridge
housing" is not supported by either the claims or the specification. (Defs.' Markman Br. 10 (emphasis added).)

Therefore, as used in the 777 patent, the term "blade edge" means "any sharpened edge of the blade."

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Avon further disputes the interpretation of the phrase "blade extending perpendicular to a side surface of said barrier along a
bottom portion thereof" in claim one. Avon contends that this language means that the blade must be attached directly to the
side of the vertical barrier and not from a structure attached to the barrier, such as an anchor. Suncast argues that the claim
language does not require the blade to be in direct contact with the vertical barrier. Avon avers that this cannot be so because
the word "perpendicular" implies a direct connection. The plain meaning of the word "perpendicular" is "standing at right
angles to the plane of the horizon: exactly upright" or "being at right angles to a given line or plane." Webster's Ninth New
Collegiate Dictionary ("Webster's") 876 (1985). By definition an angle is "a corner" or "the figure formed by two lines
extending from the same point." Id. at 85. Thus, "perpendicular" does imply a connection between the blade and a side
surface of the barrier. Avon cites the prosecution history to further support this interpretation. In the prosecution of the
s.1. C. Patent, Suncast stated that the blade was "integrated into a lower portion of the barrier." Def. Memo. Non-Infringement, Ex. I. "Integrate" means to unite with something else. Webster's at 628. Contrary to Suncast's contention, Avon's use of the specification and prosecution history does not add limitations to the claim. Rather, the citations help define terms that are already in the claim, a perfectly acceptable practice according to the Federal Circuit. Ethicon Endo-Surgery, 93 F.3d at 1578. Accordingly, one of ordinary skill in the art would interpret "a blade extending perpendicular to a side surface" to mean that the blade was directly connected, at a right angle to one of the barrier's side surfaces. 

Avon asserts that the claim also requires the blade to extend from the bottom of the vertical barrier based on the language "along a bottom portion thereof." The claim language does not warrant such a narrow reading. The figures in the patent even include an alternative embodiment of the edging that does not place the blades at the very bottom of the barrier, but in roughly the bottom third of the vertical barrier. See U.S. Patent No. 5,501,036, Fig. 3. Thus, "bottom portion" does not necessitate that the blades be attached at the very bottom or the end of the vertical barrier.

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b. "Blades" and "blade edge"

Claim 1 recites "a group of first, second, and third blades with parallel sharpened edges located between the guard and cap." 777 Patent col.4 11.6-7 (emphasis added). Claim 1 identifies each of the "first, second, and third blades" as "defining a blade edge." Id. col.4 11.7-14 (emphasis added).

Gillette asserts, and Schick does not dispute, that the term "blades" is well-known in the wet shaving art and that its plain meaning is clear. (Pls.' Markman Br. 6.) The Court agrees. From the language of Claim 1, it is readily apparent that the ordinary meaning of term "blades" as understood by a person of skill in the art refers to "safety razor blades."

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6. "blank paper"

Southwest argues that "blank paper" means "paper suitable for printing checks which contains no printed matter on it excluding watermarks or other marks or features present for security purposes," whereas 3T argues that it means "paper that is eight and one half by seven inches which may have background color or printing or distinctive watermarks or other overall indicia but which is otherwise unprinted as contrasted with preprinted forms."

Southwest provides little discussion for its proposed construction and argues that 3T's proposed construction improperly limits blank paper to a particular size. 3T argues that the specification specifically states that "any suitable blank paper of the appropriate size may be used." '405 patent, 6:59. Thus, 3T argues that the paper must be eight and one half by seven inches in order to be of an appropriate size because the printer must be designed to accommodate this size paper. '405 patent, 7:50-53. 3T also argues that the specification is in agreement with its proposed construction:

According to the present system, pre-printed forms are not necessary. Any suitable blank paper of the appropriate size may be used. The term "blank paper" is meant to preferably comprise any suitable "security paper" which may have background color or printing or distinctive watermarks or other overall indicia but which is otherwise unprinted as contrasted with preprinted forms. Data processing system 14 will automatically determine the first plurality of parameters necessary to print a particular type of financial instrument.

'405 patent, 6:58-67 (emphasis added). 3T argues that the specification provides suitable type and appropriate size requirements for the blank paper. 3T argues that Southwest improperly ignores the size requirement and focuses only on the suitability of the paper.

The Court finds that 3T's attempt to limit "blank paper" to a paper of one physical size is an improper limitation. There is no express teaching in the specification that would limit blank paper to be a particular size, and instead, the specification
provides a generic definition for blank paper. See '405 patent 6:58-67. Further, the Court notes that the parties implicitly agreed to a construction for blank paper for the '673 patent and did not limit it to a particular size. For the '673 patent the parties agreed that the phrase "printing the site specific coupon on blank paper" in the '673 patent means "printing a certificate...on paper that contains no pre-existing information," which implies that blank paper means "paper that contains no pre-existing information." Thus, the Court construes the term "blank paper" to mean "paper which may have background color or printing or distinctive watermarks or other overall indicia for security purposes but which otherwise contains no pre-existing information."

4. "Blends smoothly"

For the term "blends smoothly," Plaintiff offers "is free from irregularities such that it would not show if worn under sheer or thin clothing." For their proposed construction, Defendants offer "creating a seamless transition from the portion of the breast not covered by the device to the portion that is covered without deforming the breast." Many of the same arguments involved in the construction of "gradually tapering" are also present in the parties' proposed constructions of "blends smoothly," namely the dispute over continuous curvature and how smooth the transition from the nipple cover to the breast must be in order to "blend smoothly."

From the claims, it can be determined that it is the periphery of the nipple cover and the curved portion of the breast that are supposed to blend smoothly. See '606 patent col. 4 ll. 24-27 ("[T]he method further includes the step of bending the nipple cover on the breast such that the periphery of the cover blends smoothly with a curved portion of the breast while concealing a nipple shape"). Turning next to the specification, the gradual tapering of the nipple cover's thickness is designed so as to allow for the periphery of the cover to "blend with the breast surface (as shown in FIG. 2) for a continuous smoothness." '606 patent col. 2 ll. 37-40. According to the specification, in order to blend smoothly there should be a "continuous smoothness" in the transition from the nipple cover to the shape of the woman's breast. As noted above, "continuous" means "of or relating to a line or curve that extends without a break or irregularity." Likewise, the ordinary meaning of the term "smooth" means "having a surface free from irregularities, roughness or projections." AMERICAN HERITAGE DICTIONARY 1643 (4th ed. 2000).

The Federal Circuit has previously construed the term "smooth" under similar circumstances, and in the process provided guidance for the situation at hand. In Bausch & Lomb, Inc. v. Barnes-Hind / Hydrocurve, Inc., 796 F.2d 443, 450 (Fed. Cir. 1986), the District Court concluded that the accused devices at issue (contact lenses) were not "smooth" because extremely high levels of magnification showed that the surface of the lenses were not "smooth and unsublimated." Id. On appeal, the Federal Circuit held that "smooth means smooth enough to serve the inventor's purposes." Id. After reviewing all of the material before it, the Bausch & Lomb court found that the District Court erred in applying such a rigorous requirement for smoothness as the use of an electron microscope to determine the extent of the roughness of the edges. Id. Instead, the court found that "smooth enough to serve the inventor's purposes" meant "not to inflame or irritate the eyelid of the wearer or be perceived by him at all when in place." Id.

In the present case, the specification teaches that the inventor's purpose is to prevent the unsightliness of bra straps or erect nipples showing through thin clothing. See '606 patent col. 1 ll. 16-20. The invention attempts to accomplish this through the use of a nipple cover that blends naturally with the shape of a woman's breast. The prosecution history further shows that the purpose behind having the nipple cover and woman's breast blend smoothly is to enable the user to wear thin clothing "without showing the nipples and areola, and without showing the edges of the cover." See Pl.'s Claim Constr. Br., Exh. 3 (Remarks, March 22, 2005) P 4999.

Pulling all of the above considerations together, Federal Circuit precedent teaches that "smooth" means "smooth enough to serve the inventor's purpose." An examination of the specification and prosecution history teaches that the inventor's purpose behind the "blending smoothly" limitation in the claim is to ensure that the edges of the nipple cover itself would not be visible at the point of transition from the surface of the cover to the woman's flesh. In the present circumstances, smooth enough to serve the inventor's purpose means the transition must be smooth enough that the break cannot be seen under thin clothing.
Defendant's proposal incorporates the phrase "seamless transition" as the key element in defining "blending smoothly." The term "seamless" implies a more perfect smoothness than is required. The transition from the nipple cover to the breast need not be "seamless," just not visible when worn under thin clothing. Defendants also impermissibly attempt to import a limitation into the claim with the "without deforming the breast" language in their proposal. Neither the claims nor the specification indicate any limitation that the smooth transition must not deform the breast—the focus is instead on visibility. The Court finds Plaintiff's proposed construction to be in line with the claims, specification, prosecution history, and most importantly, Federal Circuit precedent. Accordingly, the Court adopts Plaintiff's proposed construction: "free from irregularities such that it would not show if worn under sheer or thin clothing," as the construction of the Court.

3. Blind Socket

Claims 1, 4, 6, and 11 all require the use of a blind socket at some point. Claim 1 (and dependent Claims 4 and 11) reads:

[Preamble] The method of making a butterfly valve having a cast annular body defining a central axial fluid passageway and a tubular neck portion and a diametrically positioned blind socket for receiving an end of the valve stem of the assembled valve, the steps which include:

[Step 4] inserting a valve stem replica through the stem openings in the valve disc replica and both bushings and into the socket.

Claim 6 reads:

[Preamble] The method of making a butterfly valve having an annular metallic body defining a central axial fluid passageway and an intersecting tubular neck opening and a diametrically positioned blind socket for receiving the valve stem of the assembled valve, the steps which include:

[Step 1] placing bushings loosely in the neck and socket openings.

In our claim construction opinion, we found that "blind socket" is a limitation of NIBCO's claim and that "socket," refers to a "blind socket." We also construed "blind socket" to mean "a hole that does not pass completely through a workpiece and into which an inserted part is designed to fit," and that the socket "has to be blind at the time one calls it a blind socket."

Thus, Claim 1 (and Claims 4 and 11) requires that there be a hole that does not pass completely through the workpiece and into which an inserted part is designed to fit at the time the valve stem replica is inserted through the stem openings. Clearly, this does not describe what happens in the Tyco process. In Tyco's process, the holes pass completely through the neck portions of the valve. Each alignment rod is passed through one of the holes, and neither of these holes are "blind" at the time. (McClinton 12/9/04 Dep. at p. 223). Similarly, Claim 6 requires that there be a hole that does not pass completely through the workpiece and into which an inserted part is designed to fit at the time the bushings are placed in the socket opening. And just as is the case with Claims 1, 4 and 11, neither of the socket openings are blind at the time. (McClinton 12/9/04 Dep. at p. 224).

a. "Blocking Element" (Claim 1)

76. In the '656 patent, the blocking element is a cantilever arm formed as an integral part of the lever which blocks movement of the lever.
B. "Blocks" and "Resists"

1. The claim terms and proposed constructions

Claims 1, 15, and 42 contain the terms "blocks" and "resists" and recite, in relevant part:

1. . . . a shield, comprising an air-permeable material, having left and right ends, and forward and rearward sides, wherein
the air-permeable material allows passage of gasses, but blocks passage of liquids and solids, and the shield has two lens
openings formed therein. . . .

'688 patent at 10:1-5 (emphasis added).

15. . . . a shield structure, comprising an air-permeable material, having forward and rearward sides, wherein said air-
permeable material allows passages of gasses, but resists passage of liquids and solids, said forward side has at least one
lens opening formed therein, and said forward side is operable to be releasably secured to the rearward side of the frame. . . .

Id. at 10:64 - 11:4 (emphasis added).

42. . . . a unitary body configured to fit interstitially between a pair of eyeglasses and a wearer's face, said unitary body
comprising an air-permeable material that blocks the passage of solids and liquids therethrough. . . .

Id. at 13:33-36 (emphasis added).

Preventive proposes a construction of "impedes" for the term "blocks," and "hinders" for the term "resists." Panoptx
contends that both terms should be construed to mean "stops or does not allow the passage of liquids or solids." In other
words, Panoptx would require that the shield material be impermeable to liquids and solids, while Protective would construe
the terms to mean less than an absolute barrier.

2. Plain meaning of the claim

The claim limitations recite, respectively, a "shield," a "unitary body," and a "shield structure" as the main element, and then
further recite limitations on the structure and function of that element. In each case, the main element comprises a material
possessing certain properties. Each claim limitation requires that the material both (i) permit gas to pass through, but (ii) not
permit liquids or solids to pass through. The notion that liquids or solids are not permitted to pass through is expressed by
the verbs "blocks" and "resists."

The plain meaning of both of these terms ranges from the absolute, such as, "completely blocks" or "absolutely resists," to
the passive, in which an obstacle is present, but simply slows the passage around or through the material. The fact that gases
may pass through the material indicates that the material is not impervious to all matter, but instead acts more like a filter
that stops different matter to different degrees. The fact that the invention requires at least some breach of the shield
undermines an interpretation of the claim as requiring complete blockage or absolute resistance, at least with respect to
liquids, because liquids, like the gases that are required to pass through, are fluids. One of skill in the art would not read the
claim as ruling out the possibility that a liquid would be able to wick through the material. The plain meaning with respect
to solids is different, however. If liquids are "blocked" or "resisted," one would readily infer that solids are blocked or
resisted to a greater degree, tending more towards absolute blockage. The skilled artisan would also understand this
tendency to hold for liquids as they become more viscous.

The plain meaning of "blocks" or "resists," when not used in an absolute sense, also implies an element of time. That is, the
material blocks liquids or solids from immediately traversing the material, but over time, they may in fact be able to do so.
To "resist," or to "block" the passage also carries the connotation that the substances will eventually, or gradually, pass
around or through the material.
In certain senses, the two terms are distinguishable. "Blocks" also carries the meaning of a physical barrier that prevents a direct hit. To get beyond a blocking barrier requires circumventing the barrier. In contrast, "resist" suggests that the body of the object that prevents passage ultimately allows passage through the object itself.

In short, the plain meaning of the claim encompasses the constructions proposed by both parties. Although the proposed terms differ significantly in scope, the claim language does not suggest that only one or the other is the correct construction. Note, too, that the degree of resistance offered by the material, and thus the characterization of the degree of prevention implied by "blocks" or "resists," depends on the nature of the substance coming into contact with the shield. Thus, the plain meaning of the claim limitations for both "blocks" and "resists" is that the material provides a range of protection against the passage of liquids and solids, from protection for a period of time, to protection against direct ingress, to an absolute bar to passage. See Texas Digital Systems, 308 F.3d at 1203 ("If more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all such consistent meanings.").

3. Specification

The specification does not explicitly define the terms. Nor does it disclose a rate by which any substance was contemplated to pass through the shield material. The specification also does not distinguish between the degree of protection afforded against liquids and solids. Instead, the ability of the material to withstand the passage of substances is to be inferred from the stated functions and exemplary intended uses of the invention.

First, the patent specifies that the shield is to be made of material permeable to air to the extent that fogging of the lenses of the eye protection system is "inhibit[ed]." 688 patent at 2:25. The patentee further emphasizes that one function of the invention is to "permit enough air to pass through it, so that it inhibits the fogging up" of the glasses. Id. at 2:53-56. This degree of permeability notwithstanding, the system is "particularly useful for providing protection for surgeons or other medical personal from splashed liquids or solids." 4 Id. at 2:25-27. The specification continues, "[i]t is also useful for any workers who must wear some protective shield for their eyes." Id. at 2:27-29. One specific example noted by the patentee is that the invention can be used for protection from splashed bodily fluids that may carry the AIDS virus. Id. at 2:29-32.

--- Footnotes ---

4 This passage in the "Background" section is directed to both the ability of the material itself to withstand passage of substances, as well as the conformal fit of the shield to the face in serving as a protective seal.

--- End Footnotes ---

Panoptx contends that the claims must be read to "keep out all contaminants . . . like the HIV virus." The more natural reading of the specification is that the shield protects against a splash directly hitting the eye region, but does not absolutely block or resist the passage of fluids. Absolute protection against all contaminants is not required by the claims and the specification makes no such restriction. The shield "blocks" or "resists" fluid from directly entering, but nothing in the specification requires that the material be impermeable. Some materials may be capable of absolutely blocking out fluid, but the invention is not limited to such materials. The fact that the material is required to allow gas to pass through means that openings exist. The specification does not preclude the reasonable inference that fluids may wick through the material over some period of time.

To read the claims as requiring the material to "keep out all contaminants" would impermissibly import into the claims an inference based on a single embodiment. The specification introduces two broad areas of use for the eye shield system: (i) surgeons or medical personal, and (ii) any workers who must wear some protective shield. For neither application does the patentee indicate in the specification that absolute blockage is necessary, nor does the plain meaning of the claim suggest it. Such a reading is inferred by Panoptx based on a preferred embodiment that the shield is to protect from viruses carried in splashed liquids. Even if the inference as to what would satisfy the goals of the preferred embodiment were correct, without "words or expressions of manifest exclusion or restriction," the claims are not to be restricted to any single embodiment. Teleflex, 299 F.3d at 1327. Accordingly, the scope of the terms "blocks" and "resists" is not to be set by the embodiment of eyewear for a surgeon needing to prevent contamination.

Furthermore, to infer that protection from viruses requires absolute blockage is to neglect alternative means of achieving
protection that are consistent with the claims. Specifically, another limitation in these claims requires that the shield be releasable or detachable. 5 The specification teaches that "one desire" of the invention is that the shield be "low cost" so that it can be regarded as disposable. This is said to be particularly important "in a medical situation." Wearers can still be protected from contaminants that enter the material, and that might eventually pass through, by removing the shield and disposing of it. Thus, a claim interpretation that permits the shield material to be less than an absolute barrier is fully consistent with the disclosed embodiments. Pfizer, 429 F.3d at 1373 ("[I]t is necessary to consider the specification as a whole and to read all portions of the written description, if possible, in a manner that renders the patent internally consistent."). Panoptx' proposed construction reaches for a particular interpretation of how the invention should function that is neither suggested by the claims or the specification, nor required to practice the invention.

5 Claims 1 and 15 recite a "retainer for releasably securing the shield," '688 patent at 10:10, 11:5, and claim 42 requires the shield to be "adapted for releasable engagement," id. at 14:2.

4. Conclusion

The terms "blocks [the] passage of liquids and solids" and "resists passage of liquids and solids" 6 mean that the shield material "substantially blocks" or "substantially resists" the passage of liquids and solids. See Playtex Products, Inc. v. Procter & Gamble Co., 400 F.3d 901, 907 (Fed. Cir. 2005) ("The term 'substantial' is a meaningful modifier implying 'approximate' rather than 'perfect.'" (quoting Liquid Dynamics Corp. v. Vaughan Co., Inc., 355 F.3d 1361, 1368 (Fed. Cir. 2004)). An equivalent expression of the construction is that the material "stops the direct passage of, but is not impermeable to, liquids and solids." The material is not required to "block" or "resist" absolutely the passage of liquids and solids.

6 Note that "resists passage of liquids and solids" is the only construed term of claim 15. The limitation of "a seal" found in dependent claim 16 is not present and is not to be read in. Phillips, 415 F.3d at 1315 ("[T]he presence of a dependent claim that adds a particular limitation gives rise to the presumption that the limitation in question is not present in the independent claim.").

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G. "blow-off valve"

The parties agree that "blow-off valve" means "pressure relief valve." Fox argues for the additional limitation that it is a "device that permits the discharge of fluid under pressure upon a high force impact." The phrase really at issue is "upon a high force impact," as the rest of Fox's proposed addition simply defines or restates "pressure relief valve." Fox's proposed addition or "upon a high force impact" is not supported by the '049 Patent, which states in the specification that the blow-off valve will be activated "if sufficient force from an impact or other force input is imparted." (8:12-13) Fox cites to the specification to support its argument for the limitation, but the section cited states that the blow-off valve "functions upon harsh or sudden impacts." (8:56) The valve is not limited to functioning under a "high force impact." The phrase is construed as "pressure relief valve."

509

7."blunt"
Plaintiff argues that "blunt" means "not sharp," while defendants construe it to mean "flat-surfaced." Defendants draw support for their construction from the description in the specification that the "projectile...can be shaped preparatory to being fired along a path of flight [] to the target [] with a blunt or flat end." '086 patent, 2:49-52 (emphasis added). Defendants construe this phrase to define "blunt" to mean "flat." However, the phrase might also be read to provide a range of adjectives to describe the possible shape of the "end" portion, as being either "blunt" or "flat." This second reading better comports with the ordinary meaning of "blunt, which is not "flat," but rather "not sharp." The specification also notes that the "blunt-shaped front end" is the shape of the projectile after it is reshaped from "a curvature shape." '086 patent, 4:24-25. Therefore, taking the use of "blunt" in the specification as a guide to the meaning of that term as in the claims, "blunt" is construed to mean "not sharp and not in a curvature shape." See Phillips, 415 F.3d at 1315.

510

3. Language in dispute: "blunt distal end"

Does "blunt distal end" mean (1) an end that is not sharp so that it does not cause trauma or get caught in the walls of a vessel into which the catheter is inserted, or (2) that the distal end of the tube is cut or formed in a direction generally perpendicular to the longitudinal axis of the catheter?

Answer: the court interprets "blunt distal end" to mean that the distal end of the catheter is not sharp, but it need not be perpendicular to the longitudinal axis of the catheter.

The final disputed term in claim 1 is over the description of the tip of the distal end, which the claim language describes as "blunt." Plaintiff contends that blunt means an end that is not sharp so that it does not cause trauma or get caught in the walls of a vessel into which the catheter is inserted. Defendants argue that the term blunt means that "the distal end of the tube is cut or formed in a direction generally perpendicular to the longitudinal axis of the catheter." Defendants point to the specification language which states that "the [catheter] tube terminates with a blunt distal end which is normal to the axis of the catheter," (Col. 3, lines 58-60.) Plaintiff argues that the claim is not limited to the specific embodiment described in the specification or in a drawing. Rather, Plaintiff's focus is on the explanation for which the term blunt was used in the claim, which Plaintiff explains was to ensure that the distal end would not be so sharp as to cause harm to the patient upon insertion.

The court agrees with Plaintiff that blunt is a general term and in this context indicates simply that the distal end is not sharp. Without the need to resort to a dictionary, the meaning seems plain: most knives, for example, do not have flat or straight edges, yet the adjective "blunt" is commonly used to describe knives. There is nothing in the claim language itself that indicates the distal end must be perpendicular to the axis of the lumens, and the specification clearly describes the preferred, but not the only, embodiment of the patent.

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A. "Blunt-nosed screw" and "screw"

The parties' primary claim construction dispute concerns the meaning of the terms "screw" and "blunt-nosed screw" as used in both the '248 and '588 patent. The parties agree that the term "screw" as used in these patents means a "blunt-nosed screw."

Claim 1 of the '248 patent is representative of the manner in which the disputed terms are used in the asserted patents. It reads, with the disputed terms in italics:

1. An apparatus for controlling movement of ice and/or snow along a predetermined area of a sloping surface, said surface including a plurality of spaced, longitudinal raised portions, said raised portions extending from an elevated portion of said surface to a lower portion thereof and each being laterally separated by a base portion, wherein said raised portions are positioned a greater distance above a reference plane than said base portions, said apparatus comprising:
clamp means for detachably engaging one of said raised portions, said clamp means including a body having a longitudinal cavity for receiving said one raised portion and means for frictionally engaging an external surface of said one raised portion, said means for frictionally engaging comprising at least one blunt-nosed screw threadably interconnected to said body, said screw being extendable into said cavity to deform said external surface of said one raised portion, wherein a first of said clamp means is positionable on a first of said raised portions and a second of said clamp means is positionable on a second of said raised portions; and

a cross-member interconnectable with said clamp means, wherein a first said cross-member extends between and is interconnected with said first and second clamp means above at least one of said base portions.

The parties agree that the ordinary and customary meaning of "blunt-nosed screw" to one skilled in the art at the time of the invention is a device with a blunted forward end, a shaft or cylinder with a continuous, spirally grooved thread and a tool member connection, such as a slot to accept a driving device. The parties also agree that a unitary structure having these elements is a "blunt-nosed screw." They do not agree, however, whether a "blunt-nosed screw" is limited to a unitary structure or whether, as CFE asserts and Contek disputes, it may also be comprised of several parts.

Neither party points to any intrinsic evidence that defines or addresses, directly or indirectly, whether the ordinary and customary meaning of a "blunt-nosed screw" to one skilled in the art of metal roofing encompasses a multi-piece device. Both parties instead rely on extrinsic evidence to support their arguments.

Webster's Third New International Dictionary provides several definitions of "screw" that are potentially relevant here. The first, relied upon in part by Contek, defines a "screw" as "a simple machine of the inclined plane type consisting of a spirally grooved solid cylinder and a correspondingly grooved hollow cylinder of equal dimensions in which the applied force acts in a spiral path along the grooves while the resisting force acts along the axis of the cylinder." Webster's Third New Int'l Dictionary of the English Language Unabridged 2040 (1993); see Merriam Webster's Collegiate Dictionary 1049 (10th ed. 1995) (reciting a similar definition relied upon by Contek). Other, related definitions describe a "screw" as "a cylinder with a helical cut groove on the outer surface . . . used variously (as to fasten, apply pressure, transmit motion, or make adjustments)," and "a cylindrical fastener that is usu. pointed, that has a head with a slot or recess, that is helically or spirally threaded, and that is designed for insertion into material by rotating." Webster's Third New Int'l Dictionary at 2040. While these definitions can be read as suggesting that a "screw" is a unitary structure consisting of a spirally grooved solid cylinder, none definitively addresses this issue.

Webster's Third New International Dictionary offers an alternate definition that more closely addresses this question. This definition states that the term "screw" includes "any of several devices consisting wholly or partly of a screw." Id. (emphasis added). Under this definition, therefore, the ordinary meaning of the term "screw" includes devices that encompass both a spirally grooved solid cylinder or shaft and additional features or components.

The only evidence in the record regarding the ordinary and customary meaning of the term "screw" in the field of metal roofing is found in the declaration of Robert M. Haddock, the inventor of the '248 and '588 patents. Mr. Haddock testifies there that he has 30 years of experience in the steel and metal construction trades, including more than 15 years in the field of metal roof design and fabrication. Pls.' Markman Br., Ex. 1 [hereinafter "Haddock Decl."], P 2. Based on this experience, Mr. Haddock declares that it is well-known in the field of metal roofing that fasteners such as screws come in many different shapes, sizes and configurations, including "threaded shaft-type fasteners that are comprised of multiple components, but are designed to function as a single unit." Id. P 8. Mr. Haddock states that such threaded shaft-type, multi-component fasteners are known as "screws" and gives several examples of such devices that are common in the metal building trade. Id.

Mr. Haddock's testimony is unrebutted. Contek contends it nonetheless should be disregarded based on Federal Circuit authority holding that inventor testimony regarding the meaning of patent claims is not entitled to special deference, see Markman, 52 F.3d at 983, and that inventor testimony is entitled to little or no consideration when it is "a self-service, after the fact attempt to state what should have been part of his or her patent application." Bell & Howell Document Mgmt. Prods. Co. v. Altek Sys., 132 F.3d 701, 706 (Fed. Cir. 1997). The testimony by Mr. Haddock relied on here does not fall within this authority because it describes the state of knowledge in the field of metal roofing at the time of the invention, rather than Mr. Haddock's intent and meaning in using the term "screw" in the asserted patents. In its most recent and
comprehensive statement of evidence that district courts may properly rely upon in claim construction, the Federal Circuit specifically authorized consideration of extrinsic evidence, "including expert and inventor testimony," for the purpose of "establish[ing] that a particular term in the patent or prior art has a particular meaning in the pertinent field." Phillips, 415 F.3d at 1317, 1318. That is precisely the purpose of the inventor testimony cited here and thus it may be considered.

Contek also argues "screw" as used in the asserted patents must be construed to be a unitary structure because this construction is most consistent with the most common English usage of the term. This may be true, but the dictionary definition recited above as well as Mr. Haddock's testimony indicates that "screw" as used in the metal roofing field can also encompass multi-part fasteners that include a spirally grooved cylinder or shaft.

"[U]nless compelled otherwise, a court must give a claim term the full range of its ordinary meaning as understood by persons skilled in the relevant art." Riverwood Int'l, 324 F.3d at 1357; Rexnord, 274 F.3d at 1342. Before adopting the broadest definition of a term based on a dictionary definition or other extrinsic evidence, however, I must scrutinize the intrinsic evidence to determine if this is the most appropriate definition. Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 423 F.3d 1343, 1349 (Fed. Cir. 2005); see Phillips, 415 F.3d at 1322-23, 1324.

Having reviewed the language of the claims, the specification of the asserted patents and relevant prosecutorial history, I find no indication that the term "screw" must be limited to the narrower definition of a unitary structure. The intrinsic record suggests that "blunt-nosed screw" simply means a fastener with spirally grooved shaft and rounded end that frictionally engages the roof seam. Nothing in this record indicates a concern with whether this fastener is made up of one or multiple parts. Based on this and the extrinsic evidence cited above, I hold that the term "blunt-nosed screw" and "screw" as used in the asserted patents is not limited to a unitary structure.

My reasoning and result here is similar to that of the Federal Circuit in Free Motion Fitness, Inc. v. Cybex International, Inc., 423 F.3d 1343 (Fed. Cir. 2005), an infringement action concerning a patent for an exercise apparatus comprising a resistance assembly, two adjustable extension arms that pivot on an axis substantially parallel to the axis of rotation of a pulley at the end of each arm, and a cable linking the resistance assembly to the arms. Id. at 1345. One of the issues on appeal was the proper construction of the term "adjacent" as used in claims describing the location of the resistance assembly of the exercise machine relative to the pivot point on each of its extension arms. Id. at 1345, 1349. The court observed that the intrinsic evidence did not define the term and that it had no specialized meaning in the relevant art. Id. at 1348. It next identified two definitions of "adjacent" in Webster's Third New International Dictionary that might apply, the first being "not distant" and the second being "relatively near and having nothing of the same kind intervening." n4 Id. at 1349. The court then returned to the intrinsic record and determined that nothing in it suggested a concern with intervening pivot points or excluding any intervening pivot points. Id. Accordingly, the court adopted the broader definition of "not distant" in construing the term "adjacent." Similarly, I find no concern in the asserted patents for a unitary as opposed to a multi-part screw and therefore also adopt the broader of the possible dictionary definitions of "screw" in finding that the term is not limited to a unitary structure. n5

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n4 The choice between these definitions was material because the accused device had intervening pivot points. See id. at 1346, 1348-49.

n5 I am also guided by the Federal Circuit's decision in Riverwood International Corp. v. R.A. Jones & Co., 324 F.3d 1346 (Fed. Cir. 2003), in which the court considered whether the term "flight bars" was limited to a unitary structure or could include a plurality of pieces. The court found that the term, which was not defined in either the intrinsic or external evidence, was not limited to a unitary structure because "[n]othing in the claim language, specification, or prosecution history suggests that flight bars must be of unitary structure. The district court, consistent with our guidance that a claim term is to be given 'the full range of its ordinary meaning as understood by an artisan of ordinary skill' instructed the jury not to limit the term to the unitary structure found in the specification. We agree with that conclusion." Id. at 1358 (quoting Rexnord, 274 F.3d at 342).

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - -

I caution the parties that this decision goes only to the construction of the disputed term "blunt-nosed screw" and in no way
finds or suggests that Contek's accused device constitutes a multi-part "blunt-nosed screw" that infringes on CFE's patents. The question of infringement is for the finder of fact, which may well find that one or more of Contek's combinations of a spirally grooved cylinder and blunt-ended ball bearing, "circle-lok" and/or "sure grip pad" does not constitute a "blunt-nosed screw" because it has other functionality or perhaps for other reasons.

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5. "blunt projectile front end portion"

Defendants contend that "blunt" should be defined in the same way for both the '133 and '086 patents and throughout the '133 patent. Defendants argue that the blunt projectile end must be cylindrically shaped because that patent claim describes the tail portion as being "substantially cylindrically shaped" and narrower than the blunt end, implying by comparison that the blunt end is cylindrical. Defendants' proposed construction of the phrase is "a cylindrical shape with a flat-surfaced front end." Def. Br. at 16.

Plaintiff's proposed construction of "blunt" is different in each of claims 1 and 7. In claim 1, plaintiff proposes that blunt means "flattened (i.e. blunt)." Plaint. Br. at "Ex. G." However, in claim 7, plaintiff proposes that blunt means "non-sharp." Id. As noted in Part 7, supra, the ordinary meaning of "blunt" is "not sharp." Plaintiff contends that "blunt" means "not sharp" in claim 7, but does not explain why the term should be construed differently in claim 1. "Blunt projectile front end portion" is properly construed in both claims 1 and 7 to mean "a cylindrical shape with a front end that is not sharp."

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1. "Board"

The district court construed the word "board" in independent claim 1 to mean a "piece of elongated construction material made from wood cut from a log." Claim Construction Order, 2002 U.S. Dist. LEXIS 27501 at *16. The district court held that Nystrom had limited the scope of the claim term "board" by statements in the written description that a board is cut or obtained from a log, 2002 U.S. Dist. LEXIS 27501 at * 12 (citing '831 patent, col. 2, ll. 22-23; id. at col. 2, l. 34), and statements made by Nystrom during prosecution in arguing against an obviousness rejection, id. at 8.

Nystrom argues that "board" in claim 1 is not limited to conventional wood boards that are cut from a log. He argues that the claim language "board" does not contain a description of the material from which the board is composed and that the claim should not be so limited. He contends it was error for the district court to rely on statements in the specification to limit the claim because those statements do not represent a clear disavowal of claim scope. Moreover, Nystrom asserts that there was no disavowal in the prosecution history, because his comment in response to an obviousness rejection was not intended to limit but to establish that the resin tiles disclosed in the Yoshida reference were not properly combined with the wood planks of the Zagelmeyer reference in the examiner's § 103 obviousness rejection. Thus, Nystrom argues, the comment was not such a clear and unambiguous disclaimer as to justify limiting the claim term.

TREX responds that the ordinary meaning of "board" is a piece of sawn lumber. Because the specification only disclosed a board as made of wood and cut from a log, TREX contends that the claim term "board" must be limited to wood boards cut from a log. TREX further argues that Nystrom disclaimed non-wood boards by the statements he made during prosecution in overcoming an obviousness rejection based on Yoshida and Zagelmeyer.

As this court recently articulated in our en banc decision in Phillips v. AWH Corp., "it is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" 415 F.3d 1303, 1312 (Fed. Cir. 2005) (quoting Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1115 (Fed. Cir. 2004)). Therefore, we begin our claim construction analysis with the words of the claim. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). The words of the claim are generally given their ordinary and customary meaning. Id. at 1582. The ordinary and customary meaning of a claim term "is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Phillips, 415 F.3d at 1313. The person of ordinary skill in the art
views the claim term in the light of the entire intrinsic record. See id. Thus, the claims "must be read in view of the specification, of which they are a part." Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc). "The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." Phillips, 415 F.3d at 1316 (quoting Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998)). In addition to the written description, "the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor intended the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." Id. at 1317. In discerning the meaning of claim terms, resort to dictionaries and treatises also may be helpful. Id. at 1318. However, "undue reliance on extrinsic evidence poses the risk that it will be used to change the meaning of claims in derogation of the 'indisputable public records consisting of the claims, the specification and the prosecution history,' thereby undermining the public notice function of patents." Id. at 1319 (quoting Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1578 (Fed. Cir. 1995)).

The claims at issue do not include any language describing the "board" as cut from a log or necessarily being made of wood. In fact, claim 16, which is similar to claim 1, covers "[a] wood decking board for use in constructing a flooring surface for exterior use, said decking board having a convex top surface, a bottom surface, opposite side edges, a variety of specialized flooring materials have been developed for interior and exterior use." '831 patent, col. 5, ll. 32-35 (emphases added). By contrast, claim 1 simply claims a "board," without restricting the term to a particular material or describing characteristics of wooden boards cut from logs. See id. at col. 4, ll. 19-21 ("A board for use in constructing a flooring surface for exterior use, said board having a top surface, a bottom surface and opposite side edges . . . .") (emphases added)). When different words or phrases are used in separate claims, a difference in meaning is presumed. Tandon Corp. v. U.S. International Trade Com., 831 F.2d 1017, 1023 (Fed. Cir. 1987). This principle of claim construction would suggest that the difference in the use of terms has significance and that "board" should not be limited to wood that is cut from a log. However, simply noting the difference in the use of claim language does not end the matter. Different terms or phrases in separate claims may be construed to cover the same subject matter where the written description and prosecution history indicate that such a reading of the terms or phrases is proper. Id. at 1023-24 (affirming the International Trade Commission's holding that "the inclusion of the term 'non-gimballed' in claim 5 did not require that claims 1 and 12 be read to encompass a gimballed first transducer").

An examination of the term "board" in the context of the written description and prosecution history of the '831 patent leads to the conclusion that the term "board" must be limited to wood cut from a log. The written description begins by noting that "[a] variety of specialized flooring materials have been developed for interior and exterior use." '831 patent, col. 1, ll. 13-14. The discussion then proceeds to the specific context of wood flooring materials for exterior use. In the context of the discussion of wood flooring materials for exterior use, the patent states, "In all conventional flooring materials known to applicant, the top and bottom horizontal surfaces of these flooring materials are flat and planar. As a result, water tends to stand on the surface of the decking material, causing it to deteriorate more quickly than it otherwise would." Id. at ll. 57-61. The discussion continues, "Further, the process used to cut such lumber from logs can produce inferior product on the outermost boards, often leading to scrap." Id. at ll. 65-67. The Background of the Invention, thus, frames the invention in the context of wood decking materials cut from logs, even though it acknowledges that other materials exist.

This context is maintained throughout the written description. For example, the written description states, "With particular reference to FIGS. 1-5, it can be seen that the convex top surface 13 is curved in the same general direction as the curvature of the growth rings GR." Id. at col. 3, ll. 25-27. The written description goes on to note that the manner of installation of conventional decking boards "leads to accelerated deterioration of the boards when exposed to weather." Id. at ll. 34-35. Similarly, the written description states, "FIG. 4 shows the relationship of the outermost boards B cut from a log L." Id. at ll. 65-66. Throughout the written description, Nystrom consistently used the term "board" to describe wood decking material cut from a log. See AquaTex Indus., Inc. v. Techniche Solutions, 419 F.3d 1374, 2005 U.S. App. LEXIS 17588, No. 05-1088 at 9 (Fed. Cir. Aug. 19, 2005) ("Here, the context of the specification 'makes clear that the patentee did not intend the term [fiberfill] to encompass' natural materials." (citation omitted)).

The prosecution history provides additional context that is consistent with the written description. In a preliminary amendment, Nystrom stated that "the particular configuration and dimensions of the board result in a uniformly superior product and reduction in waste or rejects due to bark or other flaws along the edges of the board when it is cut from near the outer circumference of a log." Prelim. Amendment at 2. In responding to a rejection, Nystrom stated,

The present invention represents a unique and significant advance in the art of exterior wood flooring. Wood floors have
been in use for hundreds of years, and except for the development of different installation techniques, i.e., the use of nails, screws, various fastening clips, and/or adhesives, very little has been done to the basic shape of the board itself.

Amendment rec'd Sept. 30, 1993, at 2. Similarly, when arguing against an obviousness rejection, Nystrom stated, "YOSIDA [sic] is clearly not concerned with materials made from wood, and especially an elongate board for exterior use and having a convex top surface when installed that will shed water and at the same time provide a surface that is suitable for supporting furniture and comfortable to walk on." Id. at 4. Although Nystrom argues that the latter statement was limited to explaining why Yoshida could not be combined with the Zagelmeyer reference, which was directed to wood, we are not convinced that the statement is so limited. Nystrom explained in the same response that "the extent of curvature used by ZAGELMEYER in his boards was such that a distinctly uneven surface resulted, giving any surface constructed from them a corduroy-like texture which would have been unsuitable for supporting furniture, and which would have produced a distinct tactile sensation of roughness or uneven surface." Id. at 3. Thus, it is clear that when Nystrom was distinguishing Yoshida from an elongate board that is suitable for supporting furniture and comfortable to walk on, he was referring to the invention and not Zagelmeyer. We need not decide, however, whether this statement represents a clear disavowal of claim scope because the context reflects Nystrom's consistent use of the term board to refer to wood decking materials cut from a log.

Nystrom contends that although some dictionaries define "board" solely in reference to its material composition, see Webster's Third International Dictionary 243 (2002) (defining "board" as "a piece of sawed lumber of little thickness but considerable surface area usu. being rectangular and of a length generally exceeding its width"), not all dictionaries are so constrained. For example, the American Heritage Dictionary of the English Language 203 (4th ed. 2000) defines "board" as "1. A long flat slab of sawed lumber; a plank. 2. A flat piece of wood or similarly rigid material adapted for a special use." Nystrom argues that the ordinary meaning of the word "board" encompasses both a piece of cut wood or sawn timber and a similarly-shaped item made of a rigid material.

However, as explained in Phillips, Nystrom is not entitled to a claim construction divorced from the context of the written description and prosecution history. The written description and prosecution history consistently use the term "board" to refer to wood decking materials cut from a log. Nystrom argues repeatedly that there is no disavowal of scope in the written description or prosecution history. Nystrom's argument is misplaced. Phillips, 415 F.3d at 1321 ("The problem is that if the district court starts with the broad dictionary definition in every case and fails to fully appreciate how the specification implicitly limits that definition, the error will systematically cause the construction of the claim to be unduly expansive."). What Phillips now counsels is that in the absence of something in the written description and/or prosecution history to provide explicit or implicit notice to the public--i.e., those of ordinary skill in the art--that the inventor intended a disputed term to cover more than the ordinary and customary meaning revealed by the context of the intrinsic record, it is improper to read the term to encompass a broader definition simply because it may be found in a dictionary, treatise, or other extrinsic source. Id.; see also Snow v. Lake Shore & Mich. S. Ry. Co., 121 U.S. 617, 629-30, 30 L. Ed. 1004, 7 S. Ct. 1343, 1887 Dec. Comm'r Pat. 354 (1887) ("It is not admissible to adopt the argument made on behalf of the appellants, that this language is to be taken as a mere recommendation by the patentee of the manner in which he prefers to arrange these parts of his machine. There is nothing in the context to indicate that the patentee contemplated any alternative for the arrangement of the piston and piston-rod.").

Our recent decision in AquaTex Industries illustrates this principle. In that case, the patentee consistently used the term "fiberfill" throughout the written description to refer to synthetic materials. Although the written description indicated that the composition of the fiberfill was not known to be critical, we held that "the context of the specification 'makes clear that the patentee did not intend the term [fiberfill] to encompass' natural materials." 2005 U.S. App. LEXIS 17588, [slip op.] at 9 (citation omitted). In particular, we noted that "none of the patents [incorporated by reference] discusses the possibility of using natural fibers as commercial fiberfill batting." 2005 U.S. App. LEXIS 17588 at *15. Although there was no disavowal of natural materials, we held that the consistent use of the term "fiberfill" to refer to synthetic materials and the extrinsic definitions supporting that interpretation led to the conclusion that a person of ordinary skill in the art would have understood the term to be limited to synthetic materials. The present case is analogous. Nystrom consistently used the term "board" to refer to wood cut from a log. Although there was no clear disavowal of claim scope, there was nothing in the intrinsic record to support the conclusion that a skilled artisan would have construed the term "board" more broadly than a piece of construction material made from wood cut from a log.

In Phillips, we held that the term "baffle" did not require any specific angle--even in view of the written description's limited disclosure of baffles oriented at right angles to the walls--because the ordinary meaning of the term "baffle," as reflected in a
dictionary definition to which the parties stipulated and as supported by the overall context of the written description, was simply "objects that check, impede, or obstruct the flow of something." 415 F.3d at 1324. In this case, both parties acknowledge the ordinary meaning of "board" as "a piece of sawed lumber." Nystrom, however, seeks to broaden the term "board" to encompass relatively obscure definitions that are not supported by the written description or prosecution history. Broadening of the ordinary meaning of a term in the absence of support in the intrinsic record indicating that such a broad meaning was intended violates the principles articulated in Phillips. Therefore, we affirm the district court's construction of the term "board."

GO BACK

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Body

The parties dispute whether "body" means only a one piece structure or whether "body" may also refer to multiple-piece structures. The disputed instances of "body" appear in Claim 22 of the 011 Patent and Claims 10, 25, and 41 of the 077 Patent. The parties do not dispute that "body" generally means the outer structure of the syringe which houses the inner workings. Instead, the parties dispute whether the patentee has limited "body" to a one piece structure. NMT argues that "body" should be construed as "the one-piece hollow outer syringe structure that houses the syringe components and comprises a wall having an elongated barrel portion, a smaller diameter nose portion, and a transition zone in between," and RTI argues that "body" should be construed as "the hollow outer structure of the syringe that houses the components of the syringe." Although NMT points to language in the 011 and 077 patents which may indicate a manifest intent to limit "body" to a one piece structure, the Court must begin its analysis with the claim language. Teleflex, Inc., 299 F.3d at 1324.

The 011 Patent claims refer to "body" as a one piece structure in some instances and are silent in others. Claims 1 and 23 describe "a one piece body" and "a one piece hollow outer body" in several instances. 011 Patent, Col. 12, Ins. 62, 66, Col. 16, In. 12. In contrast, Claim 22 of the 011 Patent and Claims 10, 25, and 41 of the 077 Patent claim only "a syringe body" without any reference to "one piece."

Reading the claims together, the Court finds significance in the patentee's decision to include the words "one piece" in claims 1 and 23, but not in the others. Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed. Cir. 1995) (requiring Courts to examine claim terms in light of, and consistently with, one another). If the patentee had defined "body" as a one piece structure, then describing it as a one piece structure in Claims 1 and 23 would be redundant, and the inclusion of "one piece" in Claims 1 and 23 but nowhere else would be arbitrary. In contrast, if body simply meant any outer structure, then the terms "one piece" in Claims 1 and 23 would not be redundant, and the exclusion of "one piece" in the remaining claims would have meaning. The patentee must have chosen to include the words "one piece" in Claims 1 and 23, and to exclude them from the remaining claims for a reason. Based on the claim language, the only apparent reason for doing so is to limit Claims 1 and 23 to a one piece syringe body but allow the remaining claims to cover any syringe body.

However, as NMT correctly points out, the intrinsic evidence strongly points that the inventor contemplated a one piece body. For example, abstract describes a syringe with "a one piece hollow outer body." 011 Patent. Also the summary of the invention declares "the syringe structure features a one piece hollow outer body." Id. at Col. 2, Ins. 40-41. Moreover, Background of the Art section describes the number of parts which must be assembled as a "problem" with prior art. The 077 Patent's Abstract declares "a tamperproof retractable non-reusable syringe has a one piece hollow outer body with a barrel for a slidable plunger ...." The Summary of the Invention states "The invention is claimed to be a reliable tamperproof syringe having multiple tamperproof features which operates on a principle which permits low cost parts which are few in number and well suited for high speed mass production and assembly. The syringe structure features a one piece hollow outer body having a longitudinally extending wall which is stopped." Col. 3, Ins. 2-9. Additionally, the patent describes a two piece barrel (part of the body) as one problem with the prior art because it "requires at least an additional part and assembly step." Col. 1-2, Ins. 60-03. These examples indicate that the patentee considered a one piece body to be an important design consideration, and possibly part of the patent itself.

Despite the numerous references to a one piece body in the patent specification, however, the Court need not read to limit "body" to a one piece structure. Because an expert in the relevant field would not limit "body's" meaning to a one piece structure based on the word's own definition 2, the Court begins with a heavy presumption that "body" is not limited to a one piece structure. See Sunrace Roots Enter. Co., LTD, 336 F.3d at 1302 (finding a "heavy presumption" that claim terms...
carry their ordinary and customary meaning which is only rebutted if the patent "expresses an intention to impart novel meaning to [them]". The specification's statements regarding a one piece body do not overcome that heavy presumption because of the term "one piece" in Claims 1 and 23. The patentee addressed the concerns of a one piece body in Claims 1, 23, and their dependent claims by including the term "one piece." The patentee did not choose to incorporate "one piece" into the term "body" but rather chose to use the term "one piece" when it intended to so limit its patent claims. Thus, giving "body" its ordinary meaning does not read the specification's one piece concerns out of the patent, but rather recognizes the patentee's right to not be limited to the specification's terms. The specification does not overcome the heavy presumption in favor of "body's" ordinary meaning because the patentee placed any "one piece" limitations in the term "one piece."

--- Footnotes ---

2 See e.g., MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY, 128 (10th ed. 2001) (defining "body" as "the main, central, or principal part").

--- End Footnotes ---

In sum, the Court finds that "body" in the 011 and 077 Patents simply means "hollow outer structure that houses the syringe's components." Ultimately, "the claims define the scope of the right to exclude; the claim construction inquiry, therefore, begins and ends in all cases with the actual words of the claim." Teleflex, Inc., 299 F.3d at 1324. The only construction of "body" that is consistent with the 011 and 077 Patents' claim language is a structure that may be one or more pieces. This reading is consistent with the specification, despite some indications to the contrary.

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1. "body"

a. Parties' Positions

The parties propose the following constructions for "body," which is present in each of the asserted claims as well as the two other patents-in-suit. Dkt. No. 114. The primary dispute between the parties is whether the syringe body must be limited to a one-piece structure.

RTI
A hollow outer structure that houses the syringe's components

BD
A one-piece hollow outer structure that houses the syringe's components

RTI contends this term should not contain a one-piece limitation because many of the claims in the '733 Patent already contain such a limitation. Dkt. No. 111 at 22. To add this limitation to the definition of body itself would render the additional claim language meaningless. Id. RTI also contends the patentee expressly used a one-piece limitation in the '733 Patent while no such limitation is generally present in the '077 or '224 Patents. Id. at 23. In fact, the patentee in the '224 patent used the limitation to differentiate between certain claims. Compare '224, 22:38-40 (claim 43), with 24:23-25 (claim 57 -- "The syringe assembly of claim 43 wherein the body comprises a one-piece barrel.")).

Judge Davis previously construed this term in connection with the '011 and '077 Patents. See RTI v. New Medical Techs., Civil Action No. 4:02-CV-34, Dkt. No. 110 at 6-9 (E.D. Tex. March 8, 2008). Judge Davis, like RTI, found significant the fact that the patentee in this family of patents included the phrase "one piece" in some claims, but not in others. Id. at 7. As such, Judge Davis found it improper to limit the term to a preferred embodiment containing only a one-piece body. Id. at 8-9.

b. Court's Construction

At the outset, this Court notes that certain terms, such as barrel, pervade all of the patents-in-suit. Because all of these patents are related--the latter patents being continuations-in-part of earlier patents and patent applications--this Court finds that terms should be construed consistently throughout absent some evidence to the contrary. In addition, the specifications
and claims of each patent within this family may provide guidance when construing such pervasive terms.

Regardless of whether collateral estoppel applies to the construction of this term, the Court finds no reason to deviate from Judge Davis’ previous construction. See Id. at 6-9. Accordingly, this Court finds that "body" means "a hollow outer structure that houses the syringe's components."

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C. "Locking Body for Engaging Said Locking Recess"

The final phrase in dispute among the parties, which appears in the second element of claim 1, is "locking body for engaging said locking recess." ’715 patent, Col. 16, ll. 61-62. Plaintiff proposes that the phrase be construed as follows: "the portion of the locking shutter or clip that is capable of coming together with or fitting into the locking recess." Pl.'s Ex. 3 at 6. Defendants propose the following construction:

The locking body is a structure, as shown in the ’715 patent figures, that engages with, that is, locks or fastens in a fixed position into the definite and pronounced indentation (the locking recess) that serves to hold the locking body in place when in the closed position, but without covering the lip or tongue structures of the tie wings, but only when in the closed position.

Id. at 8.

Claim Construction of "Locking Body for Engaging Said Locking Recess."

The "locking body" referred to in the disputed phrase is depicted in one embodiment as item 64 in Figures 2 (open position) and 3 (closed position). The specification at Col. 6, ll. 6-17 and 23-35, explains how the locking body (item 64) of one embodiment of the invention engages (comes together with and fits into) the locking recess. Descriptions of how the locking body of other embodiments engages the locking recess appear at Col. 8, ll. 15-19 and Col. 10, ll. 52-57. The specification refers to Figures 3 and 8 as illustrations of how the locking shutter of this embodiment engages the locking recess (item 48). Other depictions of how the locking body engages the locking recess of other embodiments appear at Figures 13 and 14, 18 and 22, and 23 and 24.

The term "engage" is commonly defined as "to interlock" or, in other words, to "fit together." Pl.'s Ex. 5 at 438, 695, Random House College Dictionary. The claim, specification and plain and ordinary meaning of the phrase all support construction of the phrase "locking body for engaging said locking recess," as "the portion of the locking shutter or clip that is capable of coming together with or fitting into the locking recess." This construction is confirmed by the opinions of two persons skilled in the art. See Voudouris Decl. at P 15; Jerrold Decl. at PP 21-23.

Defendants' proposal, "the locking body is a structure, as shown in the ’715 patent figures, that engages with, that is, locks or fastens in a fixed position into the definite and pronounced indentation (the locking recess) that serves to hold the locking body in place when in the closed position, but without covering the lip or tongue structures of the tie wings, but only when in the closed position," if read into the claim language, would result in redundancy and complication, and the Federal Circuit has specifically stated that claim construction "is not an exercise in redundancy." U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997).

For example, the claim specifies that the "locking body for engaging said locking recess" engages the locking recess "without covering the labial or lingual faces of the sets of occlusal and gingival tie wings." Defendants' proposal incorporates this pre-existing limitation by requiring that the locking recess "hold the locking body in place when in the closed position, but without covering the lip or tongue structures of the tie wings, but only when in the closed position without covering the labial or lingual faces of the sets of occlusal and gingival tie wings." (Emphasis added.) It also repeats, unnecessarily, the requirement in the claim that the locking body engage the locking recess "when in closed position" such that claim 1 would read, if construed as Defendants propose, as follows: "but only when in the closed position without covering the labial or lingual faces of the sets of occlusal and gingival tie wings when in closed position." (Emphasis added). Defendants' proposal also suggests that the locking body must remain in a fixed position once it engages the locking...
recess. As noted above, this is incorrect and inconsistent with the way the specification describes how the bracket operates. Therefore, Defendants' proposal is rejected.

Accordingly, for all the foregoing reasons, the Court construes the phrase "locking body for engaging said locking recess," in accordance with its plain meaning as "the portion of the locking shutter or clip that is capable of coming together with or fitting into the locking recess."

"body pad"

Fitness Quest has proposed a 71-word construction of this two-word phrase; Monti contends that no construction is required.

Much of Fitness Quest's proposed construction of "body pad" goes to the specific function of the body pad within Claim 15. This construction is unduly limiting, in that "body pad" is used in other claims, as well.

Other claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term. Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims.

Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (internal citations omitted).

If this Court were to impose the limitations proposed by Fitness Quest on "body pad" within Claim 15, those limitations of necessity would be imported to other claims where "body pad" is found. Neither party has argued or briefed the effect of these limitations on the other claims in the 749 Patent, but this Court is reluctant to act so broadly when it is not necessary.

In identifying the difference between the original language and its proposed construction, Fitness Quest explained at the hearing that, "[O]ne of the things that's incorporated in our construction is the concept of the body pad being angular or angled, which is not in theirs." Transcript 96. As Monti's counsel astutely noted, to identify the difference was to identify the problem with Fitness Quest's proposed construction: "In the words body pad there is no requirement that it be angularly adjustable as proposed in the construction." Transcript 104. Fitness Quest's proposed construction limits the term "body pad" beyond what is necessary to a clear understanding of the claim.

"Body pad" is not a term that requires construction. Its ordinary, customary meaning to one skilled in the art is sufficiently clear that neither Fitness Quest's proposed explosion of words nor Monti's proposed alternative construction is necessary. This Court declines to construe this term.

(i). Claim 1

What is claimed in claim 1 is as follows:

A tray insert removably disposable within a cavity of a support, the support including a rim and a lower surface defining the cavity, said tray insert comprising:

a body portion including a first surface having a plurality of pockets formed therein and a second surface adapted to be disposed adjacent said lower surface of the support; and

a coupling member disposed on said body portion, and including a protrusion having an inclined surface, said coupling member adapted to releasably and mechanically engage a recess formed in the support within the cavity of the support.
See '830 patent, col. 5, lines 49-60.

On this claim, the parties disagree as to the meaning of the term "body portion." Evenflo contends that the limitation "coupling member disposed on said body portion" is not met by its accused high chair tray inserts because its coupling mechanisms are located on the perimeter of the outer portion of the tray inserts, not the body portion. According to Evenflo, in the '830 patent, the outer portion is a separately delineated area of the tray insert. Def. Memo, pp. 7-8.

Fisher-Price contends that the "body portion" of a tray insert includes what are elsewhere identified in the patent claims as an "outer portion," an "extending portion" and a "perimeter portion." Under Fisher-Price's proposed construction, a coupling member located anywhere on the tray insert would, necessarily, be disposed on the body portion.

This Court first notes that the word "portion" is ordinarily understood as designating a part of a whole. Thus, a whole object, such as a tray insert, may be comprised of two or more portions. 5

5 It would be nonsensical for an object to be comprised of a single "portion," as there would be nothing distinguishing the part from the whole.

When the term "body" is used in connection with an inanimate object, its ordinary meaning is:

- the main, central or principal part of something as a: the nave of a church b(1): the bed or box of a vehicle on or in which the load is placed (2): the enclosed or partly enclosed part of an automobile usu. not including the hood and fenders.

WEBSTER'S THIRD NEW INT'L DICTIONARY OF THE ENGLISH LANGUAGE UNABRIDGED (1993); see also, THE AM. HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE: FOURTH ED. (2002) (online at www.bartleby.com) (defining "body" as, among other things, "the passenger-and cargo-carrying part of an aircraft, ship or other vehicle").

In this regard, Fisher Price argues that were the statement "the automobile includes [a] body portion and a fender portion extending around the body portion" to appear in a patent, "no one would argue that the fender portion of the car is not also part of the body portion of the car." Pl. Reply, pp. 3-4. Hence, the "outer portion" of a tray insert must be part of its "body portion." However, this Court notes that Fisher-Price's chosen hypothetical is directly contrary to the customary definition stated above, and this argument is unavailing unless the term "body portion" is accorded something other than its ordinary meaning in the '830 patent and its prosecution history.

Upon review of the patent, this Court is satisfied that no special meaning is indicated in the claim language itself. Claim 1 suggests only a general limit on the body portion's size or dimensions vis-a-vis the support tray. The fact that the claim 1 insert tray is "removably disposable within a cavity of a support," suggests that its main part—the body portion—rests entirely within the support's cavity. Indeed, claim 1 expressly states that the body portion's second (lower) surface, 6 and the area of the body portion on which the coupling member is disposed, both rest within the cavity of the support.

6 The terms "first surface" and "second surface," used to indicate areas of the body portion, are not defined in claim 1. They are defined in the specification as the upper (first) and lower (second) surfaces. Col. 3, lines 43-45.

Additionally, this Court notes that claim 1 does not include language limiting a tray insert's composition to a body portion and a coupling member only. Thus, in this Court's view, the claim does not exclude the possibility that a tray insert meeting all the limitations of claim 1 may include additional portions or elements as well.
The Federal Circuit recently reiterated that the specification is the single best guide to the meaning of a claim term. Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc) (citing Vitronics Corp. v. Conceptronics, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)); see also, Merck & Co. v. Teva Pharms. USA, Inc., 347 F.3d 1367, 1371 (Fed. Cir. 2003) ("[C]laims must be construed so as to be consistent with the specification, of which they are a part."). Here, because claim 1 provides limited guidance as to the construction of the term "body portion," this Court looks to the language of the specification, which must describe the claimed invention in "full, clear, concise and exact terms," 35 U.S.C. § 112, par. 1.

Based on the written descriptions and illustrations of the specification, and construing that information consistent with the patent claims, this Court concludes that the "body portion" of the claimed tray insert consists of the lower surface or floor of the tray insert's cavity, the outer wall(s) of the insert's cavity rising no further than the level of the support's rim, and any interior ridges or walls forming pockets within the insert's cavity. Furthermore, to the extent that an insert tray includes areas extending outward from its outer cavity wall(s), such areas are not part of the body portion.

In reaching this conclusion, the Court notes the following descriptions and illustrations:

In one embodiment, the liner includes an outer portion that is releasably engageable with a rim of the support. '830 patent, col. 2, lines 22-23 [emphasis supplied].

In the illustrated embodiment [Fig. 5], tray insert 200 includes a body portion 205 and an outer portion 210 extending around the body portion. Id., col. 3, lines 41-43 [emphasis supplied].

[SEE FIG. 5 IN ORIGINAL]

The body portion includes a cavity. Id., col. 3, line 51. Tray insert 250 includes a body portion 252 having a central large pocket or cavity 256 and several smaller pockets or cavities 254. Id., col. 4, lines 19-22.

Cavity insert 200 includes an extending, engagement, or side portion 230 that extends from the rear of the body portion 205 of the tray insert 200. The extending portion 230 includes a flange 232 that extends downwardly from the extending portion 230 and forms a channel 234 with the body portion 205 of the tray insert 200." Id., col. 3, lines 57-63 and Fig. 7 [emphasis supplied].

[SEE FIG. 7 IN ORIGINAL]

----------------- Footnotes ----------------

7 Liner is another term for tray insert. '830 patent, col. 3, lines 39-40. Tellingly, it is the liner, not the body portion, that includes an outer portion.

8 Use of the connector "and" indicates two distinct portions of the whole--i.e., the tray insert or liner.

9 Throughout the specification, the cavity(ies) is the only feature of the tray insert identified as being included within the "body portion."

10 The "body portion" on Figure 7 that forms a channel with the flange of the "side portion" is the outer wall of the tray insert's cavity.

----------------- End Footnotes ----------------

A further embodiment of the invention illustrated at Figures 13-17, and particularly, Figure 14, shows that "the body portion 205 of the tray insert 200 is aligned with the cavity 114 of tray 100." Id., col. 4, lines 47-49 [emphasis supplied]. The same Figure 14 shows a "side portion' 230 that extends from the rear of the 'body portion' 205 of the tray insert" (Id., col. 3, lines 58-59) [emphasis supplied] and a "'seating portion' 240 extend[ing] along the front and sides of tray insert 200" (Id., col. 5, lines 4-5), the upper surface of which is level with the upper surface of the rim of the support.
Based on the claim and specification, this Court finds that a tray insert may consist of a body portion and coupler only, or may include an outer portion, extending portion and/or seating portion. These additional portions extend from the body portion outward and engage with the rim of the support's cavity by extending over the rim or being seated adjacent or on top of the rim.

This Court is aware that, for a patent claim to be infringed, every limitation in the claim must be found in the accused device. Pfizer, Inc. V. Teva Pharms. USA, Inc., 429 F.3d 1364, 1376 (Fed. Cir. 2005) (citation omitted). As noted above, Evenflo claims its accused high chair models, the Simplicity and the Envision, do not meet the limitation of having the "coupling member disposed on said body portion." The parties have submitted a support tray and tray insert for each model for the Court's examination. Pl.'s Exs. 25A, 25B, 27A and 27B.

Upon examination of these exhibits, this Court concludes that Evenflo has raised a substantial question as to infringement of claim 1. Based on the foregoing claim construction, it finds that the body portions of the Evenflo inserts are surrounded by outer portions, and the coupling members are disposed on the perimeters of the outer portions, not the body portions.

This Court also finds that Fisher-Price has not succeeded in demonstrating that Evenflo's defense lacks substantial merit. In addition to the previously-mentioned car/fender analogy, Fisher-Price argues in its reply memorandum that because claim 1 does not recite an outer portion separate from the body portion, it is error to view them as distinct portions of a tray insert. Pl. Reply, p. 5. 12 As already noted above, while claim 1 requires the presence of a body portion and coupling member, it does not exclude the possibility that a tray insert may contain additional elements or portions. Therefore, Fisher-Price's argument in this regard is unavailing.

Finally, Fisher-Price points to dependent claim 4, which calls for: "[t]he tray insert of claim 1, wherein said body portion includes an extending portion configured to conform to engage a portion of the support rim." '830 patent, col. 5, lines 65-67. Contrary to the claim 1 phrasing, the specification description and illustrations state that an extending portion is included on the tray insert, not the body portion, and extends from the rear of the body portion over a segment of the top and outer wall of the support.

Fisher-Price urges that to construe claim 1 consistent with its dependent claim 4, one must conclude that the extending portion is included on the body portion and, because the extending portion "must necessarily be a reference to what is described in Fig. 5 as the 'outer portion,'" the outer portion and its perimeter must also be part of the body portion. Pl. Reply, p. 4.

The Court rejects Fisher-Price's underlying premise that an "extending portion" and "outer portion" are one and the same. Id. There is nothing in the claim language or specification suggesting that an extending portion 230 which "extends from the
rear of the body portion" only ('830 patent, col. 3, lines 58-59) and engages a "portion of the support rim" only (Id., claim 4) is the same as "an outer portion 210 extending around the body portion." (Id., col. 3, lines 41-43) [emphasis supplied]. Nor is there any suggestion in the '830 patent that these two portions form some larger integral portion that yet again is part of some larger whole.

Additionally, this Court notes that Fisher-Price's claim construction analysis ignores the fact that independent claims 12 and 27, both of which are also at issue here, expressly include the "outer portion" on the liner, not the body portion. Id., col. 6, lines 22-24 and col. 8, lines 2-3. To construe claim 1 as Fisher-Price suggests would be inconsistent with claims 12 and 27.

In sum, Fisher-Price has not, at this preliminary injunction stage, shown a likelihood of success on the merits as to infringement of claim 1.

This court agrees with Black & Decker's general statement of the law and therefore begins with an examination of the specific language of the claims. With regard to the second limitation, Black & Decker argues that the phrase "a boiling liquid reservoir" merely requires a reservoir or receptacle that holds liquid that -- at some point in time and at some place -- will be boiled. In other words, according to Black & Decker, the language does not require that the liquid actually be boiled in the reservoir.

This court disagrees with Black & Decker's proposed interpretation and instead finds that the limitation of "a boiling liquid reservoir defined by the base" must be construed to mean a reservoir inside which the liquid is brought to boil. This interpretation makes sense of the specific language. The limitation refers to a "boiling" liquid reservoir. Under Black & Decker's interpretation, the word "boiling" would be superfluous if the limitation did not require that the liquid actually be brought to a boil while it sits inside the reservoir. Black & Decker chose to add the phrase "boiling liquid" to modify the word "reservoir." To interpret the phrase only to mean that the water in the reservoir will be boiled at some later point in time and in a different place is an awkward and unnatural interpretation of the language. This court believes that its construction of the second limitation makes more sense of the ordinary meaning of the words used by Black & Decker.

To the extent that there is any ambiguity, this court finds that the specification provides further support for this interpretation. Specifically, the patent specification states as follows:

The present invention is embodied in a steam cooking utensil generally referenced by the numeral 10. Utensil 10 includes a base member 12 having a wall 17 defining a boiling liquid reservoir 16. A heating element 18 is mounted in reservoir 16 to provide heat to the liquid, such as water to transform the water into steam.

* * *

In operation, fluid such as water is placed into reservoir 16 and food is placed into bowl 26 onto surface. The various components of utensil 10 are assembled and electrical power is delivered to the heating element 18 to boil the water in the reservoir. The steam formed as a consequence of boiling the water passes upwardly through opening 24 in member 20 and thence through flow holes 42A-42E in food support tray 28.

Ex. A at Col 2., lines 8-13, and Col. 3, lines 53-60 (emphasis added). This language emphasizes that the water is brought to a boil "in" the reservoir and thus reinforces the court's construction of the language above.

6 In referring to the specification, this court is aware of the rule that the language of the specification cannot be used to limit the broader language of the claims but only can be used to interpret that language. However, as the Federal Circuit has recently acknowledged, "there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification." Comark, 156 F.3d at 1186-87.
Rival raises three claim construction issues on appeal. The first issue is whether the district court erroneously construed claim 1's "boiling water reservoir" limitation. Rival maintains that this limitation refers to a reservoir for storing water of any temperature, and that the court erroneously construed it to mean that the water must boil in the reservoir. Sunbeam responds that the limitation clearly refers to a reservoir for storing boiling water, because the term "boiling" modifies "water" and "water" modifies "reservoir." Sunbeam points out that both claim 1 and the written description describe an invention in which water boils in the reservoir. Sunbeam also contends that Rival's proposed construction renders the term "boiling" meaningless.

We agree with Sunbeam that the court correctly construed the limitation "boiling water reservoir." Claim 1 states:

"thermostat means . . . for switching off the heater when all the liquid in the boiling water reservoir has evaporated therefrom." See ‘412 patent, col. 5, ll. 50-51 (emphasis added). The word "therefrom" makes it clear that the expression "boiling water reservoir" means that the water boils in the reservoir. The written description also makes this clear. See, e.g., col. 1, ll. 45-46 ("boiling reservoir can therefore boil dry"); col. 2, ll. 5-6 (heated water from the boiling water reservoir"); col. 4, ll. 1-3 ("steam must travel a circuitous path to escape from the boiling water reservoir"); col. 4, ll. 32-33 ("when the water boils dry in the boiling water reservoir"). In contrast, nothing in the specification supports Rival's construction.

A. Claims at Issue

The Rival has alleged violations of the following claims set forth in patent 4,509,412:

Claim 1:

A steam cooking utensil comprising:

[A] a base;

[B] a boiling water reservoir defined by the base;

[C] a heater, mounted in the base to heat liquid in the boiling water reservoir;

[D] thermostat means, mounted in the base and coupled to the heater, for switching off the heater when all the liquid in the boiling water reservoir has evaporated therefrom;

[E] a condensate trough, defined by the base and thermally insulated from the heater; and

[F] a food tray comprising an imperforate surface and a drainage surface, said food tray supported above the reservoir and trough such that said imperforate surface is aligned with the boiling water reservoir, said drainage surface is aligned with the condensate trough, and water flows from the imperforate surface to the drainage surface into the condensate trough, said reservoir, trough and tray cooperating substantially to prevent the flow of water from the imperforate surface into the reservoir.

Claim 2:

The invention of claim 1 wherein the food tray comprises a surface shaped to facilitate radial drainage to the drainage surface and into the condensate trough.

Claim 3:
The invention in claim 1 wherein the food tray defines a central baffle, vertically aligned with the heater, said baffle operative to direct heated water back to the vicinity of the heater in order to accelerate steam formation.

Claim 6:

The invention of claim 1 wherein the imperforate surface defines a multiplicity of raised surfaces effective to facilitate radial drainage through the drainage surface into the condensate trough.

Claim 31:

A steam cooking utensil comprising:

[A] means for defining a boiling water reservoir;

[B] a heater mounted adjacent a central portion of the reservoir to heat water contained in the reservoir;

[C] means for supporting food to be steamed above the reservoir, said supporting means defining an imperforate surface above the heater; and

[D] a baffle which extends downwardly from the supporting surface over the heater, said baffle shaped to define a partially enclosed region of the supporting surface in alignment with the heater;

[E] said baffle effective to impede the outward flow of water, heated by the heater and splashed by the heater against the partially enclosed region, radially away from the partially enclosed region.

Claims 1 and 31 are independent claims. Claims 2, 3 and 6 are dependent claims, being dependent upon Claim 1.

B. Markman Hearing

On November 18, 1997, this Court held a Markman hearing. See Markman v. Westview Instruments, 52 F.3d 967 (Fed. Cir. 1995) aff'd, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996). Markman sets forth a two-step process for resolving patent infringement claims. The first step requires that claim construction (determination of the meaning and scope of the claims) is an issue of law for the district judge to decide. 52 F.3d at 979. The second step is that of the jury looking at the claims and the court-determined definitions in order to determine whether an infringement of the patent took place.

Prior to the Markman hearing, this Court required the parties to brief the type of evidence to be heard at a Markman hearing, to identify any disputed language in the claims, the type of evidence used to resolve any disputes and to offer proposed definitions of the claims. The proposed definitions of both parties greatly assisted this Court during the claim construction phase.

Both Rival and Sunbeam agreed with that only "intrinsic" evidence should be used to construe the disputed claims. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Intrinsic evidence is made up of (1) the claims, 5 (2) the patent specification, and (3) the prosecution history. 6 Markman, 52 F.3d at 979. However, the claims should always be the first place a court looks to determine the scope of the claim. Vitronics, 90 F.3d at 1576.

5 The words in a claim should be given their ordinary and customary meaning. Vitronics, 90 F.3d at 1576.

6 Both parties were also required, prior to the Markman hearing to submit the prosecution history (or file wrapper) on each of their patents.
Extrinsic evidence is anything external to the patent, i.e. expert testimony, dictionaries, technical treatises and articles. Markman, 52 F.3d at 980. Even the plaintiff's product is extrinsic evidence. SRI Int'l v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1118 (Fed. Cir. 1985). Extrinsic evidence is only to be relied upon to resolve any ambiguity in a disputed claim term. CVI/Beta Ventures, Inc. v. Tura L.P., 112 F.3d 1146, 1153 (Fed. Cir. 1997); Vitronics, 90 F.3d at 1583.

The theory behind the admission of intrinsic evidence, and the exclusion of extrinsic evidence, has been explained by the Federal Circuit 7 in the following manner:

competitors are entitled to review the public record, apply established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention . . . . Allowing the public record to be altered or changed by extrinsic evidence . . . would make this right meaningless.

Vitronics, 90 F.3d at 1583.

Even though both parties agreed that only intrinsic evidence should be used to determine the claim construction, both parties attempted to influence this Court through the use of extrinsic evidence. Defendant Sunbeam used plaintiff Rival's product in the hearing and attempted to enter into evidence Sunbeam's products. During argument before this Court, Rival referred the court to dictionary definitions and expert testimony. However, this Court did not use any of this extrinsic evidence to determine the claim construction. In fact, this Court did not go beyond the actual claim language and patents in order to construe the disputed claims in the following manner:

1. "[A] boiling water reservoir defined by the base": a receptacle that holds boiling water. The water may be at one time fresh, non-boiling water, but the water must actually come to a boil in the reservoir. To be defined by the base, the base must create or form the outline of the shape of the boiling water reservoir.

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The second claim construction issue is whether the court properly construed claim 1's "defined by the base" limitation. Claim 1 calls for both a boiling water reservoir and a condensate trough that are "defined by the base." Rival asserts that the court erroneously construed this limitation to mean that the base "creates or forms the outline of the shape of" the boiling water reservoir and the condensate trough. Rival contends that the expression "defined by the base" means "contained within or encompassed by" the base. Rival argues that the court's construction is ambiguous and does not cover the preferred embodiment because the base's perimeter only creates or outlines a part of the boiling water reservoir's shape. Rival supports its claim construction by referring to the written description's statement that the condensate trough "need not be disposed in annular relationship to the boiling water reservoir" and that a "wide variety of shapes and arrangements can be adapted." See '412 patent, col. 4, ll. 56-57, 59-60. Sunbeam replies that the court's construction was correct because the patent consistently uses the term "defined by" to convey a relationship in which one element of the product forms the shape of another element. Sunbeam points out that claim 1 uses the expression "supported above the reservoir" to describe the position of the food tray over the reservoir, but still within the base's perimeter. See id., col. 5, ll. 54-56. Thus, Sunbeam reasons, "defined by the base" cannot mean only within the perimeter of the base. Sunbeam also contends that the court's construction is clear and does apply to the preferred embodiment because the base's inner peripheral wall outlines the boiling water reservoir's shape. See Fig. 1, element 35.

We agree with Sunbeam that the court correctly construed the expression "defined by the base" to mean that the base "creates or forms the outline of the shape of" both the condensate trough and the boiling water reservoir. The specification uses the term "define" many times. In each case, the term is used in a manner consistent with the district court's construction, viz., "to create or form the outline of the shape of." See '412 patent, col. 2, ll. 54-55 ("base 20 defines a
condensate trough 30"; col. 2, ll. 59-60 ("inner peripheral wall 35 defines an inner peripheral lip 36"); col. 2, ll. 67-68 ("outer peripheral wall 31 defines outer peripheral lip 32"); col. 3, ll. 11-14 ("heater 22 defines heater well 24 and a central recess 25"); col. 3, ll. 46-47 ("inner peripheral lip 36 defined by inner peripheral wall 35"); col. 4, ll. 4-5 ("high domed cover 60 having a bottom opening defined by a rim 61"); col. 4, ll. 66-67 ("boiling water reservoir can define a cube shape volume"); col. 5, ll. 4-9 ("food tray may be shaped to define a linear array of apertures"); col. 5, ll. 13-14 ("food tray need not define apertures at all so long as it defines a drainage surface") (emphasis added). Rival's construction would not make sense in any of these instances where the patent uses the term "define."

Moreover, and contrary to Rival's assertion, we find the court's construction of the term "defined" to be perfectly clear, for it is essentially the same as the common dictionary definition. See, e.g., Webster's II New Riverside University Dictionary 356 (1988) ("de·fine . . . 3. To delineate the outline or form of."). That the court construed the term consistently with the dictionary definition is evidence that the court used an accepted meaning. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 n.6, 39 U.S.P.Q.2d (BNA) 1573, 1578 n.6 (Fed. Cir. 1996).

Also contrary to Rival's assertion, the district court's construction does cover the preferred embodiment. As can be seen in figure 1, the specification discloses a base (20) designed such that its outer (31) and inner (35) peripheral walls create the outline and shape of both the boiling water reservoir (40) and the condensate trough (30). The specification's statement that the boiling water reservoir and condensate trough can have a variety of arrangements is not inconsistent with the court's claim construction. A variety of arrangements may exist in which the base creates the outline and shape of both the boiling water reservoir and the condensate trough. In fact, the specification itself suggests such alternative arrangements. See '412 patent, col. 4, ll. 63-68 ("the boiling water reservoir can be situated to one side of the condensate trough, or on a different horizontal plane from the condensate trough. Alternately, the boiling water reservoir can . . . define a cube shape volume central to a condensate trough of an irregular shape."). In all of the examples provided in the specification, the base would still "define" the boiling water reservoir and condensate trough under the court's construction of that term.

Said bonded diamonds exhibit a thermal characteristic such that a 950 degree C. temperature at the working surface results in a temperature of less than 750 degrees C. at the depth

The thermal characteristic language in the term is the subject of the motion for summary judgment above. Baker Hughes contends this entire phrase is indefinite. As stated in the ruling on summary judgment, the phrase is not indefinite.

ReedHycalog only proposes a construction for "bonded diamonds" as "a plurality of diamonds or diamond-like crystals joined together" and contends the rest of the phrase needs no construction. The Court agrees with ReedHycalog's proposed construction, however "diamond-like" is only included in the '662 patent's construction because only the '662 patent specification uses this term in its definition of PCD. In other words, for the '447 patent, '098 patent, and '137 patent, the Court construes "bonded diamonds" as "a plurality of diamond crystals." The Court construes "bonded diamonds" in the '662 patent as "a plurality of diamond or diamond-like crystals." The rest of the phrase needs no construction.

The Court first construes the "bonded to" limitation. Comfortex describes the "Shangri-La" product in the following manner:

The Shangri-La blind is made of an elongated strip which is wound in helical fashion, with each turn of the helix overlapping and adhesively joining preceding and succeeding turns. The joined helical strips are then cut to form an assemblage of multiple strip segments and fastened to a roller to form the completed window covering.

The strip(s) itself is formed of three narrow ribbons which are welded together ultrasonically. The center ribbon is made of an opaque fabric and the two exterior ribbons consist of relatively sheer or transparent fabrics. After the required number of turns of the helix are joined . . ., the helical assembly is split perpendicularly to the overlapped strips to form a plurality
of joined strip segments. The exterior (sheer) ribbons on the assembled segments form the front and back panels or facings of the window covering and the center (opaque) ribbons form the vanes.

Comfortex Mem. Summ. J. at 7-8 (footnote omitted). Comfortex thus avers that because the strips are made from three ribbons of fabric ultrasonically welded together, the "Shangri-La" does not have a plurality of vanes "bonded to [a] first sheet and [a] second sheet[]." Rather, Comfortex contends that given the specification and the prosecution history of the '999 patent, "bonded to" is limited to the situation where the vanes are adhesively connected to the front and rear fabric panels.

Hunter Douglas, on the other hand, asserts that the method used to produce the "Shangri-La" window covering is irrelevant. In addition, Hunter Douglas avers that the term "bonded to" is not limited to adhesives and, in fact, includes the ultrasonic weld used by Comfortex to produce the ribbons of the "Shangri-La." More importantly, Hunter Douglas challenges Comfortex's contention that the three-layer strips are connected by means of a weld; rather, Hunter Douglas contends that Comfortex actually uses an adhesive to connect the three layers of fabric comprising the strips.

Given the specifications and prosecution history of the '999 patent, however, neither Comfortex nor Hunter Douglas offer wholly satisfactory interpretations of the term "bonded." It is clear to the Court that "bonded" encompasses more than an adhesive, but does not include within its scope the weld used by Comfortex for the "Shangri-La" window covering. First, the claims themselves reveal that "bonded to" includes more than just an adhesive. Although independent claims 1 and 9 provide that the plurality of vanes are "bonded to" the first and second fabric sheets, dependent claims 7 and 11 provide that "the window covering further includes an adhesive for bonding said edge portions to said first sheet and said second sheet." Col. 18, 11. 53-55; Col. 19, 11. 15-17. It is axiomatic that "the dependent claim tail cannot wag the independent claim dog." North American Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1577 (Fed. Cir. 1993). See also Beachcombers, Int'l, Inc. v. Wildewood Creative Products, Inc., 31 F.3d 1154, 1161 (Fed. Cir. 1994)(finding interpretation of a claim that would render another claim in the patent 'superfluous' 'presumptively unreasonable.'); E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430 (Fed. Cir. 1988). Reading "bonded to" in independent claims 1 and 9 to be limited to adhesive would render claims 7 and 11 superfluous and would indeed allow the dependent claim tail to wag the independent claim dog. Consequently, "bonded to" as used in the '999 patent includes more than an adhesive.

Second, however, it is also evident from the '999 patent's specifications and prosecution history that a "bond" does not include a "weld." In the "BACKGROUND OF THE INVENTION" section, the '999 patent sets forth the following disadvantages associated with the use of a heat welding process to connect vanes to the front and back panels of fabric window coverings:

Heat-welding . . . limits the fabrics which may be utilized to thermoplastic materials. Also, heat-welding necessarily requires a melting of at least some of the fibers of the materials bonded, thus providing an uneven outer appearance along the heat-welds and producing unwanted crimps or creases in the materials, which can result in fatigue failure. Further, heat-welding is a relatively slow process which may require six or more seconds to create a bond over an extended length. This is too slow for application in high volume commercial production processes.

Col. 2, 11. 1-11.

As a result, it is an

object of [the '999 patent] to provide [a fabric light control] window covering which has a neat and uniform construction and outer appearance in all degrees of light control. In this respect a feature of the present invention is therefore adhesive bonding of the light control vanes to the sheer fabric utilizing linear application of the adhesive and, thus, a high degree of controllability of the adhesive application process and bonding of the vane.

C.2, 11. 60-68. Indeed, the advantages of using a hot-melt adhesive rather than a heat-weld were specified in the application for the '999 patent filed with the PTO on May 17, 1991. See Comfortex Book of Exhibits, Ex. 6A, at p.3, 1. 5-18 (citing same disadvantages as given above). It was also clear from that time that "the same principles [were] generally applicable to other types of liquid adhesives." Id. at p. 12, 11. 23-24.

After canceling their initial seventy-five (75) claims, Colson et al. submitted a second batch of claims, 76-236, which the
PTO rejected. Relevant for purposes of this discussion is the fact that the PTO rejected some of those claims because the welding process used by another inventor (the "Froget patent") in his window covering "fully responded to 'bonding means'" claimed in the second batch of claims. Similarly, the PTO rejected the use of an "adhesive" as claimed by Colson because replacing the welding of the Froget patent with an adhesive would have been obvious pursuant to 35 U.S.C. § 103 in light of the Froget patent and another patent (the "Corey patent"). Thus, it is clear that the PTO considered a "weld" to anticipate a "bond" yet only an obvious substitute for an "adhesive". In order to overcome the PTO's rejections, therefore, Colson had to distinguish a "bond" from a "weld" and identify a reason why substitution of an "adhesive" for a "weld" would not have been obvious to one skilled in the art.

In asserting the nonobviousness of using an adhesive as taught in the Corey patent, Colson stated that one in the fabric light control window covering industry would not look to the Corey patent because Corey was directed to "multi-cellular, collapsible shades" which are "quite distinct from a window covering of the type described and claimed in the present application . . . ." Comfortex Book Exhibits, Ex. 6D, at p. 13. Use of an adhesive as a substitute for a weld in a fabric light control window covering, therefore, would not have been obvious to one in the relevant art not because of anything inherent in an adhesive or in a weld, but rather because the subject matter of the Corey patent was too far removed from that of the '999 patent to be considered a relevant source. As previously noted, however, Colson had already distinguished a weld from an adhesive. At this point in the application process, Colson further added that Froget's weld did not anticipate the bond used in the '999 patent because if one used a weld, "the adjoining lines of connection may not always be straight." Id. at 14. Due to the fact that lines of connection are visible in fabric window coverings, Colson asserted that they must be straight in order to be aesthetically pleasing. Id. Thus, it is clear that in response to the PTO's claims that (1) a weld was responsive to "bonding means" and (2) substitution of an adhesive for a weld was obvious, Colson defined an adhesive in a way that did not include a weld, and differentiated between a bond used in the '999 patent and Froget's welding process based on the purpose and effect of the "bonded to" limitation. That is, "bonded to" must be construed broader than adhesive, yet not inclusive of affixing agents that require a process by which material used to fabricate the window covering melts at the point of connection, are difficult to apply in straight lines, or cannot be used in a commercial setting. Simply stated, given the extant facts presented here, the "bonded to" limitation does not incorporate "welded to". 4

--- Footnotes ---

4 Though Comfortex contends that it uses an ultrasonic welding process to connect the opaque material (vanes) to the translucent fabric (front and back sides or panels) rather than a heat-welding process, there is no indication in the record that ultrasonic welding should be treated any differently from heat-welding for purposes of this motion.

--- End Footnotes ---

It should be noted that the above is consistent with the conventional definitions assigned a "bond" and a "weld." Whereas to "bond" two things together means "to cause to adhere firmly" or "to hold together or solidify by or as if by means of a bond or binder", Merriam Webster's Collegiate Dictionary, (10th ed. 1996), to "weld" means "to unite (plastics) [by heating and allowing the [plastics] to flow together] by heating." Id. Clearly, Colson differentiated the procedure used in the '999 patent from one which allowed materials to flow together due to heating.

Hunter Douglas, however, alleges that Comfortex actually uses an adhesive rather than an ultrasonic weld in connecting the vane material of the "Shangri-La" to the front and back fabric sides. Hunter Douglas has made representations to this Court that its challenge is supportable and that same will be shown at later stages of the litigation. 5 This is a very serious representation and one to which the Court will give foremost consideration. With both parties contesting a critical issue of fact regarding the material used to manufacture the "Shangri-La", judgment as a matter of law cannot be entered in favor of Comfortex on the issue of literal noninfringement of the "bonded to" limitation. As a result, the Court now examines whether the "Shangri-La" window covering literally incorporates a "sheet" as that term is defined in the '999 patent.

--- Footnotes ---

5 This is at least reasonably supported in Comfortex's patent application regarding the Shangri-La Window covering where Comfortex states the following:

The adjoining edges of these portions (material ultimately forming vanes and fabric sides) may be connected by gluing,
ultrasonic welding, thermal bonding or stitching. Ultrasonic welding is the preferred method, because it is speedy and permits precision location of adjoining edges. This process also beneficially compresses the welded zone and destroys the fabric interstices, so that the joint will not be porous to subsequently applied glue lines. Thus, unsightly bleed through of the glue lines is avoided.


GO BACK

4. "Bonded to said second surface"

a. Parties' Positions

"Bonded to said second surface" is found only in the text of claim 2. Plaintiff asserts this term does not require any construction. Alternatively, Plaintiff asserts the term should be construed as indicating only that the heat sink base must be thermally connected to the fin structures.

Plaintiff
Thermally connected to the second surface

Defendants
Affixed to the second surface using a thermally-conductive bondant.

b. Court's Construction

The specification discusses using an epoxy adhesive as one way to bind the fin structures to the heat sink base. ('631 Patent at Abstract; 4:37-39). Plaintiff argues this embodiment cannot exclude other means to bind the fin structures, including means that rely on integral bonds. For example, according to Plaintiff, the specification also discusses soldering and dip brazing as viable means of bonding, even though these mechanisms create an integral bond. Plaintiff also relies on the specification, which notes that the heat sink's elements may be fashioned out of "alternative materials" ('631 Patent at 7:7), and the Abstract, which states that, in addition to a metal-filled epoxy, dip brazing and soldering "may also be employed depending on the materials selected." Finally, Plaintiff asserts Defendants' proposed construction that the bonding must be non-integral is inconsistent with the preferred embodiment, which contemplates the fin structures being "integ rally" connected to the top plate. ('631 Patent at 5:51-53).

According to Defendants, "bonded to said second surface" means the fin structures are affixed to the second surface using a bondant, whether that bondant be an epoxy, an alloy in dip brazing, or solder. Defendants assert the term does not mean extruded; rather, bonding requires the attachment of two separate parts. The Court agrees the claims in the specification confirm that a bonded substance joins the fin structures to the top plate.

There is further support for this in claim 2 where a plurality of fin structures are each bonded to said second surface. The claim further provides a top plate having a second surface for receiving fin structures. The fin structures are each bonded to said second surface. If the inventor were talking about an extruded heat sink, there would be no need for a second surface for receiving fin structures, and there would not be a plurality of fin structures bonded to the second surface. There are two separate pieces, not one piece.

Looking at the Abstract, a person of ordinary skill in the art would understand bonding to require affixing two separate pieces together. A high thermal conductivity bondant, such as metal-filled epoxy, may be used to bond the fin structures to either the plate or the fin supports. Dip brazing and soldering may also be employed depending upon the material selected.

The Court agrees with Defendants' proposed construction and construes "bonded to said second surface" to mean "affixed to the second surface using a thermally-conductive bondant."

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A. "a polymeric material bonded to the implant" ("753 patent) and "a first component bonded to at least a portion of the tubular member" ("290 patent)

22) Heat bonding is the only form of bonding taught by the patent. The specification defines "bondable material" as "any material, suitable for use in surgical applications, which can be softened and made flowable by the application of heat, and which, when softened, will become tacky and bond to other materials and will flow to fill available space." D.I. 70, Ex. A ("753 patent") at 3:52-57.

23) The specification describes the "present invention" as involving "heat bonding," putting the public on notice that Dr. Bonutti's invention covers heat bonding, not all bonding. Honeywell Int'l., Inc. v. ITT Indus., Inc., 452 F.3d 1312, 1318 (Fed. Cir. 2006) ("[T]he written description refers to the fuel filter as 'this invention' or 'the present invention' . . . . The public is entitled to take the patentee at his word and the word was that the invention is a fuel filter."); Verizon Servs., 503 F.3d at 1308 ("When a patent thus describes the features of the 'present invention' as a whole, this description limits the scope of the invention.").

24) The specification distinguishes and disfavors methods of bonding that do not involve heat. See D.I. 70, Ex. A ("753 patent") at 7:14-28; 7:34-37. Such language indicates that the claims encompass heat bonding and nothing broader. Honeywell, 452 F.3d at 1320 ("[D]erogatory statements concerning one type of material are the equivalent of disavowal of that subject matter from the scope of the patent's claims."); Scimed Life Sys., Inc. v. Advanced Cardiov. Sys., Inc. 242 F.3d 1337, 1341 (Fed. Cir. 2001) ("Where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question.").

25) Confronted with prior art that taught bonding materials to a device using the same materials he had selected - the Palmaz '417 patent - Dr. Bonutti made arguments (D.I. 70, Ex. M at 6) and amendments to his claims (id. at 2; D.I. 70, Ex. O at 2.) to avoid that art. For claim construction purposes, these arguments and amendments are binding on Dr. Bonutti.

26) Dr. Bonutti disclaimed a device that has a polymer "placed upon" the implant by arguing that "[i]n contrast [to Dr. Palmaz' balloon-expandable stent], Applicants' implant includes a heat bondable material which is bonded to an implant by the application of heat." D.I. 70, Ex. M at 6. This argument limits his claims so as to exclude devices where a material is bonded to the device other than by the application of heat. Seachange Int'l, Inc. v. C-Cor, Inc., 413 F.3d 1361, 1372-73 (Fed. Cir. 2005) ("Where an applicant argues that a claim possesses a feature that the prior art does not possess in order to overcome a prior art rejection, the argument may serve to narrow the scope of otherwise broad claim language."); see Springs Window Fashions, 323 F.3d at 995 ("A patentee may not state during prosecution that the claims do not cover a particular device and then change position . . . ."); Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1324 (Fed. Cir. 2003) ("As a basic principle of claim interpretation, prosecution disclaimer promotes the public notice function of the intrinsic evidence and protects the public's reliance on definitive statements made during prosecution.") (citation omitted); see also Computer Docking, 519 F.3d at 1379; Gillespie, 501 F.3d at 1291; Chimie, 402 F.3d at 1384.

27) MarcTec argues that it is improper to limit a product claim to a particular process of manufacture (i.e. heat bonding). The Court does not agree. Dr. Bonutti's claims are limited to heat bonding because Dr. Bonutti relied on this aspect of his invention to distinguish Palmaz and obtain his patents. See Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1373-75 (Fed. Cir. 2007) (construing claims to a composite to be limited to composites prepared using a particular process because the specification made clear that this process was an essential part of the claimed invention and the particular process was used to distinguish prior art); Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995) (construing claim to sputter-deposited dielectric layer to be limited to a layer created by a particular process where the process was used to distinguish prior art).

28) MarcTec also relies on the doctrine of claim differentiation to argue that it is improper to limit claim 1 of the '753 patent to heat bonding because such a construction would make claim 8 of the '753 patent ("The surgical device of claim 7 wherein the polymeric material is bonded to the implant by the application of heat") redundant. This argument is defeated by the specification and prosecution history.
29) "[T]he doctrine of claim differentiation cannot broaden claims beyond their correct scope, determined in light of the specification and the prosecution history and any relevant extrinsic evidence." Wang Labs, Inc. v. Am. Online, Inc., 197 F.3d 1377, 1384 (Fed. Cir. 1999) (quoting Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1480 (Fed. Cir. 1998)); Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000) ("[T]he written description and prosecution history overcome any presumption arising from the doctrine of claim differentiation . . . ."). First, as discussed, the specification discloses only heat bonding. Second, claim 8 is an original claim (filed originally as claim 18, which depended from original claim 11). D.I. 91, Ex. CC at 29. It was written before Dr. Bonutti's independent claims were rejected over Palmaz and before Dr. Bonutti obtained his patent by arguing that his invention was different than Palmaz because, unlike Palmaz, "[a]pplicants' implant includes a heat bondable material which is bonded to an implant by the application of heat." D.I. 70, Ex. M at 6. That argument limited the term "bonded" in the independent claims to "heat bonded" - claim 8 was not at issue.

30) Consistent with the claim language, the specification, and the prosecution history, the Court construes the phrase "a polymeric material bonded to the implant" from claim 1 of the '753 patent as meaning "a polymeric material is bonded to the implant by the application of heat."

31) Consistent with the claim language, the specification, and the prosecution history, the Court construes "a first component bonded to at least a portion of the tubular member" from claim 1 of the '290 patent as meaning "a material is bonded to the tubular member by the application of heat."

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The '753 and '290 patents have identical specifications and are directed to a surgical implant in which a polymeric material is bonded by heat to an expandable implant, where the polymer includes a therapeutic agent such as an antibiotic. Claim 1 is the broadest claim of the '753 patent:

1. A surgical device for implantation in a body comprising: an implant, at least a portion of which is expandable; and a polymeric material bonded to the implant, wherein the polymeric material is a thermoplastic, includes a therapeutic agent, is non-flowable and non-adherent at room temperature, and becomes flowable, tacky, and adherent upon the application of heat.

For the '290 patent, claim 1 is the broadest claim:

1. An implant for implantation in a human body comprising: a tubular member having a channel and mechanically expandable upon activation of a delivery mechanism from a contracted condition in which the tubular member has a first cross sectional size in a plane perpendicular to a longitudinal central axis of the tubular member to an expanded condition in which at least a portion of the tubular member has a second cross sectional size in a plane perpendicular to the longitudinal central axis of the tubular member, the second cross sectional size being larger than the first cross sectional size to thereby lock the tubular member against tissue in the human body; and a first component bonded to at least a portion of the tubular member and formed of a heat bondable material that includes a therapeutic agent selected from the group consisting of a tissue ingrowth promoter and an antibiotic, wherein the heat bondable material is non-flowable and nonadherent at room temperature and becomes flowable, tacky, and adherent upon the application of heat.

(Emphases added.) The claims of both patents all include the requirement of a polymeric material or heat bondable material bonded to an implant. Relying on the specification and the Applicants' arguments during prosecution, the district court construed "bonded" to mean "bonded by the application of heat."

The accused product is a drug-eluting stent having the brand name Cypher®, for implantation into patients with narrowed or blocked coronary arteries. This stent consists of an expandable, slotted metal tube that is bonded to a matrix comprised of two polymers, poly n-butyl methacrylate (PBMA) and polyethylene-co-vinyl acetate (PEVA), and a drug having the common name sirolimus, also known as rapamycin. During a portion of the manufacturing process called "solution casting," the polymers and the drug are dissolved in a volatile solvent and the resulting solution is sprayed onto the stents. The stents are then air-dried, allowing the solvent to evaporate and leaving the polymer/ drug coating "bonded" to the stents. The
solution casting process is performed at room temperature; no heat is applied. This is the basis for the judgment of noninfringement, for the district court construed the claims as requiring the application of heat. The district court explained:

Heat bonding is the only form of bonding taught by the patent[s]. The specification defines "bondable material" as "any material, suitable for use in surgical applications, which can be softened and made flowable by the application of heat, and which, when softened, will become tacky and bond to other materials and will flow to fill available space."


MarcTec argues that the asserted claims do not require the use of heat, and that the doctrine of claim differentiation undermines the district court's construction, for dependent claim 8 of the '753 patent specifically describes the polymeric material as one that "is bonded to the implant by the application of heat." MarcTec observes that the district court's construction of "bonded" renders this claim superfluous. Perhaps it does. However, as stated in Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1480 (Fed. Cir. 1998), "the doctrine of claim differentiation can not broaden claims beyond their correct scope, determined in light of the specification and the prosecution history and any relevant extrinsic evidence."

The specification's discussion of bonding, in the context of the invention, is uniformly directed to heat bonding. The "Summary of the Invention" states that the components of the inventive assembly "are bond[ed] to each other by the application of heat." '753 patent, col.1 ll.66-67, col.2 ll.4, 8, 15. During prosecution of the patents, the Applicants limited the claimed "bonding" to heat bonding, in order to overcome the cited U.S. Patent 5,102,417 to Palmaz by arguing that: "In contrast [to Palmaz], Applicants' implant includes a heat bondable material which is bonded to an implant by the application of heat." [J.A. 5739.] To overcome the rejection based on Palmaz, and "[t]o highlight this distinction," the Applicants amended the claims to recite "a polymer material which is non-flowable and non-adherent at room temperature and becomes flowable, tacky, and adherent upon the application of heat." [J.A. 5739] Marc-Tec argues that the distinction from the Palmaz reference was not premised on the use of heat. MarcTec states that the distinction was between "bonding" the material to an implant, as in Applicants' invention, and having the material "placed upon" the implant, as in Palmaz. MarcTec states that the Applicants had no need to, and did not, distinguish Palmaz based on heat bonding because Palmaz lacks any teaching of bonding. The district court found that the prosecution record shows heat bonding as a condition of patentability, and not merely a preferred method of bonding. See Honeywell Int'l, Inc. v. ITT Industries, Inc., 452 F.3d 1312, 1318 (Fed. Cir. 2006) (when a patentee consistently describes a particular embodiment as his invention, "[t]he public is entitled to take the patentee at his word").

Limitations clearly adopted by the applicant during prosecution are not subject to negation during litigation, on the argument that the limitations were not really needed in order to overcome the reference. When an applicant yields claim scope in order to secure allowance of the patent, the public notice aspect of the record inhibits later retrenchment to recover what was yielded. See Norian Corp. v. Stryker Corp., 432 F.3d 1356, 1361-62 (Fed. Cir. 2005) ("[I]t frequently happens that patentees surrender more through amendment than may have been absolutely necessary to avoid particular prior art. In such cases, we have held the patentees to the scope of what they ultimately claim, and we have not allowed them to assert that claims should be interpreted as if they had surrendered only what they had to."). Prosecution history estoppel thus prevents MarcTec from recovering claim scope that includes bonding without the application of heat.

We affirm the district court's construction that "bonded" means bonded by the application of heat. Although MarcTec argues that heat is applied, it did not present evidence to avoid the grant of summary judgment. The district court's determination that no reasonable jury could find infringement, is affirmed.

II. Pergo's Cross-Motion for Reconsideration

Pergo argues that the court should reconsider its construction of "bonded wood particles."

The court determined that "bonded wood particles" does not include fibers or fiberboard. (See Order 7-11, May 12, 2006.) The court determined that fiberboard is distinct from "chipboard" or "particle board," and that wood "fiber" is distinct from wood "particles." (Id.) The court noted that the United States Department of Agriculture's Wood Handbook distinguishes
fiberboard from particleboard and fibers from particles. (Id. at 8-11.) The court noted that particleboard and medium-density fiberboard are governed by different American National Standards Institute ("ANSI") standards. (Id. at 9.) The court noted that ANSI A208.1-1999 defines particleboard as "a generic term for composite panel composed of cellulosic materials (usually wood), generally in the form of discrete pieces or particles, as distinguished from fibers, bonded together with a bonding system, which may contain additives." (Id.) This ANSI definition expressly distinguishes particles from fibers. The court acknowledged that particleboard and fiberboard may both be described as "wood-based composite panels" but concluded that the Wood Handbook and the ANSI standards show that fiberboard is not synonymous with, or a subset of, particleboard. The court noted that wood fiber is absent from the Wood Handbook's definition of "particles": "all small subdivisions of wood such as chips, curls, flakes, sawdust, shavings, slivers, strands, wafers, wood flour, and wood wool." (Id. at 10.) In light of the Wood Handbook's distinction between particles and fibers in Chapter 10, the court did not believe the omission of fiber from the definition of particle to be a careless error, as Pergo suggested. (Id.) Lastly, the court noted that the '970 patent lists "fiber board" as an item distinct from "chipboard" or "particle board," a fact that further confirms that fiberboard is not synonymous with, or a subset of, particle board. (Id. at 11.)

In its opening Markman brief, Pergo argued that the ordinary meaning of "bonded wood particles" is "small pieces or particles of wood that are bonded together by, for example, joining wood particles in the presence of a thermoplastic, glue, resin, or other bonding agent." (Pergo's Br. on Claim Construction 10-11, Jul. 23, 2004.) Pergo, however, does not say how it derived the ordinary meaning of "bonded wood particles": in fashioning its proposed definition of "bonded wood particles," Pergo did not cite to any intrinsic or extrinsic evidence. (Id.) Moreover, Pergo did not define "fibers." (See id.) Pergo emphasized that the intrinsic evidence did not contradict its construction of "bonded wood particles." (Id. at 11) ("There is no indication in the patent specifications that the patentee acted as their 'own lexicographer in explicitly setting forth a definition' of 'bonded wood particles' distinct from its ordinary meaning.").

In response to Alloc's arguments that the Wood Handbook and its expert Dr. Otto Suchsland distinguish "particleboard" from "fiberboard" and "particles" from "fibers," Pergo merely reasserted that the "ordinary meaning" -- and by "ordinary meaning" Pergo presumably relies upon its particular construction of "bonded wood particles" -- of "chipboard," "particle board," and "bonded wood particles" includes fiberboard. (See Pergo's Resp. Br. 15 & n.8, Aug. 13, 2004.) Ignoring all of the ways in which the Wood Handbook distinguished particleboard and fiberboard and particles and fibers (e.g. the separate definitions of "particle" and "fiber"), Pergo argued that the Wood Handbook's definition of "particles" could be read to include fibers, an argument that the court did not find persuasive. Pergo also cited a treatise for a definition of fiberboard that indicates it could be made of wood chips, (id. at 15), but Pergo did not explain how the court could reconcile that definition with the Wood Handbook or why the court should deem the treatise more authoritative than the Wood Handbook. Pergo did not respond to Dr. Suchsland's opinion other than to argue that the court should not consider it because "bonded wood particles" is unambiguous. (Id. at 14 n.7.) With respect to the argument that the '970 patent lists "fiber board" as an item distinct from "chipboard" or "particle board," Pergo argues-weakly, the court thinks-that the '970 patent "clarifies and makes explicit what was at least implicit: the invention covers all of these broad and overlapping categories of wood-based materials." (Pergo's Reply Br. 5, Aug. 20, 2004) The court has a healthy suspicion of assertions of "implicit meaning" as does Pergo itself. (See Pergo's Br. 8, Jul. 28, 2006)(citing CAE Screenplates, Inc. v. Heinrich Fiedler GmbH & Co. KG, 224 F.3d 1308, 1317 (Fed. Cir. 2000)("In the absence of any evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings.").

In its motion for reconsideration, Pergo no longer argues that particleboard is the same as, or includes, fiberboard. Pergo no longer argues that the Wood Handbook's definition of "particles" supports its construction of "bonded wood particles." Instead, Pergo argues that "bonded wood particles" has a broader meaning than "particle board" and "chipboard." Pergo argues that the court's construction of "bonded wood particles" was based entirely upon the Wood Handbook, rather than on the specification, which is improper in light of Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005)(en banc). Pergo also argues that "bonded wood particles" and "particle board" have the same meaning under the court's construction of those terms, an alleged breach of claim construction principles.

Pergo's more recent arguments do not persuade the court any more than Pergo's original arguments. The methodology outlined in Phillips is no different than the methodology the court employed in its May 12, 2006 order: the court examines the intrinsic evidence--the claims themselves, the specification, and the prosecution history--and the words in the claim are given their ordinary and customary meaning that they would be given by persons experienced in the field of the invention; the court considers whether the inventor chooses to be his own lexicographer by using terms in a manner other than their ordinary meaning and whether the inventor has disavowed or disclaimed scope of coverage; if the intrinsic evidence
unambiguously describes the scope of the invention, the court does not rely upon extrinsic evidence such as expert testimony; the court may consult dictionaries, encyclopedias, and treatises as long as they are not inconsistent with the intrinsic evidence. (See Order 2-3, May 12, 2006.) Phillips does not articulate a different methodology; it reaffirms basic principles of claim construction, including the primacy of intrinsic evidence over extrinsic evidence, and clarifies that extrinsic evidence, such as technical dictionaries and treatises, may properly assist the court in construing terms but must be considered in the context of intrinsic evidence and must not contradict claim meaning that is unambiguous in light of the intrinsic evidence. See Phillips, 415 F.3d at 1312-24.

"Bonded wood particles" is a phrase found in claims 23-24, 29, 32, and 35 of the '547 patent. (See Pergo's Br. on Claim Construction 10, Jul. 23, 2004.) Pergo does not rely upon the '547 patent's specification, prosecution history, or any of its claims aside from claim 23:

23. The flooring panel of claim 21, wherein said bonded wood particles is [sic] made of a material selected from the group consisting of chipboard and particle board, each impregnated with a resin.

(Id. Ex. A.) Claim 24 is very similar to, and perhaps redundant with, claim 23:

24. The flooring panel of claim 21, wherein said bonded wood particles is [sic] made of a material comprising particle board impregnated with a resin.

(Id.) Claim 21, in turn, provides:

21. A flooring panel for use in assembling a glueless floor, said flooring panel comprising

a surface of a thermosetting laminate or a paper impregnated with a thermosetting resin said surface being bonded to a carrier of wood particles impregnated with a plastic; . . .

(Id.) (emphais added). Pergo argues that claim 23 would be meaningless unless bonded wood particles is broader than chipboard or particle board.

Even if the court were to accept Pergo's premise that "bonded wood particles" is broader than "chipboard and particle board, each impregnated with a resin," Pergo does not point to the intrinsic evidence that demonstrates how "bonded wood particles" include fibers or fiberboard. Rather than rely upon intrinsic evidence, Pergo deduces that "bonded wood particles" must include fiberboard because that is "the only other option," "the only other possibility" to the court's construction. (See Pergo's Br. 8-9, Jul. 28, 2006.) The basis for Pergo's deduction is extrinsic evidence that particle board and fiberboard are distinct. (Id. at 9)(citing "4/15/04 Issal Depo. at 122" for the proposition that "[p]ersons skilled in the art are well aware that particle board and fiberboard have for years been used as the core material for laminated flooring").

Pergo's argument is unpersuasive for a number of reasons. First, Pergo ignores intrinsic evidence that undermines its position. Claim 23 contains a "Markush group" which is "a listing of specified alternatives of a group in a patent claim, typically expressed in the form: a member selected from the group consisting of A, B, and C." (See Order 7, May 12, 2006) (citing Abbott Labs. v. Baxter Pharm. Prods., Inc., 334 F.3d 1274, 1280 (Fed. Cir. 2003).) In the example, A, B, and C are alternatively usable, but the group is closed, so that D does not fall within the claim scope. (Id.) (citing Abbott Labs., 334 F.3d at 1280-81.) Therefore, even if "bonded wood particles" otherwise included fiberboard, it does not in claim 23; in that claim, "bonded wood particles" may only be "made of a material selected from the group consisting of chipboard and particle board, each impregnated with a resin." In a prior version of its argument, Pergo acknowledged the Markush format but insisted that chipboard and particle board included fiberboard. (Pergo's Resp. Br. 15 n.8, Aug. 13, 2004.) In its motion for reconsideration, however, Pergo does not advance this argument, and in an extraordinary change in position, Pergo argues that particle board and fiberboard are distinct. (Pergo's Br. 9, Jul. 28, 2006)(citing "4/15/04 Issal Depo. at 122" for the proposition that "[p]ersons skilled in the art are well aware that particle board and fiberboard have for years been used as the core material for laminated flooing"). This concession means that fiberboard is outside the scope of claim 23. By ignoring the Markush format of claim 23, Pergo ignores intrinsic evidence that supports the court's construction and contradicts Pergo's proposed construction.

Moreover, Pergo overlooks intrinsic evidence that the court discussed in the May 12, 2006 order: the '970 patent lists "fiber
board" as an item distinct from "chipboard" or "particle board." As Pergo itself noted, in the absence of evidence to the contrary, the court presumes that the use of different terms in the claims connotes different meanings. (See Pergo's Br. 8, Jul. 28, 2006) (citing CAE Screenplates Inc., 224 F.3d at 1317.)

Pergo's argument itself only masquerades as an argument based upon intrinsic evidence. Even if the intrinsic evidence indicates that "bonded wood particles" has a different meaning (or even a broader meaning) than "particle board," Pergo relies upon no intrinsic evidence when it weakly concludes that fiberboard is "the only other possibility" to "particle board." As an initial matter, the court suggests that "bonded wood particles" may be broader than "particle board" in that it may also include "chipboard" as the intrinsic evidence suggests; or "bonded wood particles" may be broader than "chipboard and particle board, each impregnated with a resin" in that the bonding agent may be something other than resin. In any event, Pergo's extrinsic evidence does not establish that fiberboard and particle board are the only wood-based composite materials used in laminate flooring. (Pergo's Br. 9, Jul. 28, 2006.) Because Pergo's argument depends upon unpersuasive extrinsic evidence, the court need not place any greater weight on Pergo's tenuous deduction than the court placed on the clear distinction between particles and fibers in the Wood Handbook or the ANSI standards.

--- Footnotes ---

2 Although Alloc's expert Suchsland states that "chipboard" is a "confusing term" that is similar to particle board, (Suchsland Decl. P 10, Jul. 23, 2004), the terms are treated as distinct in the '547 patent.

--- End Footnotes ---

Pergo argues that the Wood Handbook does not contain the phrase "bonded wood particles" and that the Wood Handbook's definition of "particles" is too narrowly defined to include only the raw materials of particle board. (Pergo's Reply Br. 2-3, Sept. 5, 2006.) Pergo suggests that the "ordinary meaning" of "particles" includes "fibers." (Id. at 2.) As the court has already noted, however, the intrinsic evidence makes no suggestion that "particles" includes "fibers," and Pergo has not tendered any definition of "particles" or "bonded wood particles" other than its own particular definition of "bonded wood particles" that is unsupported by any intrinsic or extrinsic evidence. (See Pergo's Br. on Claim Construction 10-11, Jul. 23, 2004.) The authoritative treatise in the particular art field makes a clear distinction between particles and fibers, and Pergo does not persuade the court that the patentees used the word "particles" in a manner that ignores that distinction. Pergo is silent with respect to the different ANSI standards and the distinction between fibers and particles therein.

The court's position is further supported by the opinion of Alloc's expert, Dr. Otto Suchsland, who indicates that persons of ordinary skill in the art of using wood composite materials would understand that particles are different than fibers and that particleboard is different than fiberboard. (See Alloc's Resp. Br. Ex J, Aug. 13, 2004.)

For the reasons stated above, the court denies Pergo's motion for reconsideration.

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8. "Bonding" ('009 patent) means causing two surfaces to adhere. 5

--- Footnotes ---

5 The court discusses this limitation at pages 45-46 of its memorandum opinion of the same date.

--- End Footnotes ---

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4. "Garment Component"
The term "garment component" is found in both the method and product claims of the patents-in-suit. For example, in Claim 1 of the 779 Patent, a method claim, step (a) of the seam manufacturing process requires "placing the first garment component in an adjacent relationship to the second garment component so as to define a seam." 779 Patent at 6:30-32 (emphasis added). In Claim 20 of the 779 Patent, a product claim, the seam is defined as comprising "a first garment component having an upper and lower surface" and "a second garment component having an upper and lower surface." 779 Patent at 8:10-11, 8:18-19 (emphasis added). The 615 Patent similarly uses the term in Claims 1 and 19, method and product claims, respectively. 615 Patent at 6:31-36, 8:4-5, 8:12-13.

Taltech asks the Court to construe "garment component" to mean "a structural part of a garment, such as a front panel, yoke, rear panel, and sleeve. An interlining is not a garment component." Taltech relies on the specifications and on the opinion of Taltech's expert, Mr. Nienke. Esquel asks the Court to construe "garment component" to mean "any element of an article of clothing," including an interlining, a bonding element or thread. Esquel relies on the patent specifications, on a dictionary definition of "component," and on a technical treatise.

The Court finds Taltech's proposed construction more persuasive. Claim 6 of the 779 Patent and Claim 13 of the 615 Patent state that "... said first garment component comprises a front panel, yoke, and rear panel of a dress shirt and said second garment component comprises a shirt sleeve...." 779 Patent at 7:10-13; 615 Patent at 7:40-42 (emphasis added). The specifications state that "a pucker free garment seam 12" consists of "a first garment component 20, such as a component consisting of a dress shirt front panel 16, yoke 14, and rear panel; a second garment component 22 such as a dress shirt sleeve 12 [sic]; 4 and a bonding element 32." 779 Patent at 5:60-65; 615 Patent at 5:62-67 (emphasis added); see also Fig. 2; 779 Patent at 3:44-47; 615 Patent at 3:45-48 (defining first garment component as comprising a front panel, shirt yoke and rear panel and the second garment component as comprising a shirt sleeve). The examples of a "garment component" identified in the claims and specifications are those that Taltech includes in its proposed construction of the term. Although this is not an exhaustive list of possible garment components, nothing in the intrinsic evidence supports Esquel's broad construction of the term.

4 The patent appears to contain an error in that it should say "13" rather than "12" to refer to the shirt sleeve in the 779 Patent at 5:64 and in the 615 Patent at 5:66. See 779 Patent at 3:46-47 and 615 Patent at 3:48 ("the second garment component comprises a shirt sleeve 13.").

First, a bonding element is not a garment component. The specifications, as outlined above, separately list the bonding element as its own thing, and not as an example of a garment component. 779 Patent at 5:58-65; 615 Patent at 5:60-67; see also 779 Patent at 6:26-56 (Claim 1 separately refers to garment components and bonding elements as distinct objects); 615 Patent at 6:28-67 (same). Nothing in the intrinsic evidence indicates that the terms should be used interchangeably.

Second, an interlining is not a garment component. The specifications of the patents-in-suit state: "Interlinings are known in the art to provide stiffness to garment components." 779 Patent at 5:1-2; 615 Patent at 5:2-3 (emphasis added). This sentence only makes sense if the Court interprets interlinings and garment components to be distinct categories. Esquel's genus and species analogy, see Esquel's Responsive Brief, docket no. 111, at 12 n.6, is not persuasive because there is no evidence in the patent for the proposition that interlinings are a subset of the broader category of garment components. Esquel argues that garment components should specifically include " fusible and non-fusible interlinings ... and fusible webs or nets;" however, Esquel's interpretation is unsupported by the intrinsic evidence. Esquel relies on parts of the specification of the 779 Patent that have no bearing on the construction of the term "garment component." See Esquel's Opening Brief, docket no. 97, at 21 (citing 779 Patent at 3:51-4:3, 4:66-5:1).

Third, thread is not a garment component. Esquel argues to the contrary and relies on the characterization of "components of garments" in a technical treatise that includes interlinings and thread as examples of "components of garments." See Peyton B. Hudson, Guide to Apparel Manufacturing 51-63 (Rev. 2d ed. MEDIA Apparel, Inc. 1989) (docket no. 97, Ex. E). The Court does not rely on extrinsic evidence that is inconsistent with the intrinsic evidence. In this case, the specifications state that "the sewing thread contracts upon being laundered and pulls on opposing garment components at the garment seam which in turn causes the garment components to buckle. ...," 779 Patent at 1:22-26; 615 Patent at 1:26-29 (emphasis added). Thread acts on the garment components, indicating that it must be a distinct object. The specifications' reference to garment components as coming together at a seam and as buckling are further evidence that a garment component is a fabric panel, not thread.

To interpret the term "garment component," the Court does not rely on the expert testimony provided by Taltech. See
Nienke Decl., docket no. 96, P 28. Mr. Nienke's opinion regarding the term "garment component" is merely conclusory. See Phillips, 415 F.3d at 1318 ("[C]onclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court."). The intrinsic evidence is sufficient to support Taltech's proposed construction. Accordingly, the Court adopts Taltech's proposed construction, with modification, and construes the term "garment component" to mean "a structural part of a garment, such as a front panel, yoke, rear panel, and sleeve. A bonding element, an interlining, and thread are not garment components."

As to the '001 patent, "bonding said braid and thin foil" means that the braid and foil are attached together by an outside agent resulting in the braid and foil being permanently affixed or attached to one another. See Column 2, lines 28-30, 42-44, 56-58. The language in Column 2, lines 58-63, quoted in part in plaintiff's brief filed on 3/23/01 page 8, articulates how the bonding agent is applied. That language in Column 2, lines 58-63 does not, however, define the term "bonding said braid and thin foil."

A. THE MEANING OF "BOOK."

The first disputed term is "book." General Creation asserts that the proper construction of "book" is "a first set of two or more pages having related content." (Pls.' Br. at 12.) LeapFrog argues for a more limited construction. Specifically, that "book" be construed as "a set of written, printed pages fastened along one side and encased between protective covers." (Def.'s Br. at 25.)

Both parties have relied on various dictionary definitions of "book" to support their claim construction arguments. However, "the dictionary definitions of common words are often less useful than the patent documents themselves in establishing the usage of ordinary words in connection with the claimed subject matter." Toro Co. v. White Consol. Indus., Inc., 199 F.3d 1295, 1299 (Fed. Cir. 1999). Indeed the court is to construe claims from the point of view of a person of "skill in the art." Intellicall, Inc., 952 F.2d at 1387. Certainly such a person would not begin by looking to a dictionary, but instead would look to the claim language and the specification in the context of the person's particular field of expertise. See Toro Co., 199 F.3d at 1299.

Thus, I must start by analyzing the claim language itself. The plain language of the claim does not specify whether the "book" has a cover. However, the plain language does imply that the pages are bound together in some fashion. The claims identify the "book" as having at least two pages containing different "written material" ( '213 patent, col. 4, 11. 40-50), that said "written material" is a "set of words" ( '213 patent col. 5, 11. 24-26), and that the "set of words" on each page combine to "comprise a story" ( '213 patent, col. 5, 11. 27-28). This sequence implies that the pages are interrelated and must be fastened together in some manner to create a story. Beyond this implication, the claim language provides little guidance as to what the inventor meant by "book."

Because the claim language sheds little light on the proper construction of "book," I must determine its ordinary meaning. "Book" must be given the ordinary meaning as determined by one of skill in the art, who in this case is a toy inventor or toy manufacturer experienced in the field of educational toys. Such a person would likely construe "book" to mean more than just a set of loose pages having related content. This is further supported by the fact that the patent is described as a "child's toy." ( '213 patent, col. 1, 1. 5.) The ordinary meaning of a "book" that a "child" would play with implies that there is a binding of the pages and a cover to protect the pages. A child could not likely play with a set of loose pages in any satisfactory manner. The pages, if not bound together and encased in some sort of cover, would be lost or destroyed. A toy inventor or manufacturer, experienced in the art of making and marketing educational toys, would not intend such an invention for children. Thus, the ordinary meaning of "book" is "a set of pages having related content, fastened along one side and encased between covers." Since this is the ordinary meaning, I must look to the specification to determine if the inventor intended a different meaning in the context of the '213 patent.

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The specification does not indicate that the inventor intended to deviate from the ordinary meaning of "book." The language of the specification identifies that the "book" has a cover: "The book is provided with a cover 94 and a plurality of pages 96." ('213 patent, col. 2, 11. 62-63.) The language also implies that the pages are fastened together on one side: "the book 92 may be opened as shown in FIG. 4 to a particular page" ('213 patent, col. 3, 11. 29-30); "the book 92 would be opened to a particular page." ('213 patent, col. 3, 11. 49-50.) The Abstract also describes the "book" as having "a plurality of numbered pages containing parts of a story." ('213 patent, Abstract.) Identifying the pages as numbered indicates that they are somehow bound together to form a set. Further, the drawings identify the "book" as having a cover and pages fastened along one side:

[SEE FIG. 1, FIG. 2, FIG. 4 IN ORIGINAL]

The only "book" that is described in the specification and illustrated by the drawings in the '213 patent is a "book" that has a cover and is bound on one side. This confirms that "book" was used by the inventor in accordance with its ordinary meaning.

Precedent has clearly established that the specification cannot be used to limit broader claim terms. See, e.g., Johnson Worldwide Assoc., Inc. v. Zebo Corp., 175 F.3d 985, 992 (Fed. Cir. 1999); SRI Int'l v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1122 (Fed. Cir. 1985). However, this is not such a case. The claim language here is not broader than that which is set out in the specification. The claims state that the "book" is comprised of pages containing written material that, taken together, comprise a story. ('213 patent, claims 1, 2, 3, 10, 11.) If the inventor intended this invention to be loose sheets of paper with related content, he could have claimed it that way. Instead, the inventor chose to use the word "book." From the viewpoint of an educational toy inventor or manufacturer, a "book" consists of pages that are bound together and protected by a cover. The specification and the drawings confirm that this is clearly the invention the inventor intended. Thus, this construction does not impose limits on the claims drawn from the specification. Instead, any limits on the claim come from using the word "book" which has a very specific ordinary meaning. Like many patents that have been previously construed, the specification, at least in context, merely states what the invention is and what the claim describes. See, e.g., Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551 (Fed. Cir. 1996) ("When the preferred embodiment is described in the specification as the invention itself, the claims are not necessarily entitled to a scope broader than that embodiment."); Wang Labs., Inc., v. Am. Online, Inc., 197 F.3d 1377, 1381-83 (Fed. Cir. 1999) (narrowly construing "frame" based on the specification and the drawings); Toro Co., 199 F.3d at 1301-02 (construing "including" to mean "permanently attached" based on the specification and the drawings, despite the fact that the claim language did not contain such a limitation).

Accordingly, "book" will be construed as "a set of pages having related content, fastened along one side and encased between covers."

The second disputed term is "supplemental book." The parties have agreed that the "supplemental book" must contain content unrelated to the first book. (See Pls.' Br. at 13-14; Def.'s Br. at 31.) Therefore, for the reasons stated above, "supplemental book" will be construed as "a second set of pages having related content, fastened along one side and encased between covers, such content being unrelated to the content of the first book."

2) the word "border" means "extending along the edge;"

2) the word "border" means "extending along the edge;"
B. Claim Construction

Interface's second argument is that the district court erred in construing the "border" limitations in independent claims 1 and 8 to encompass the simple beveled edges in its accused floor panels. This argument also fails.

Claim interpretation begins, as always, with the language of the claims. Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 989, 50 U.S.P.Q.2D (BNA) 1607, 1610 (Fed. Cir. 1999). "[A] court must presume that the terms in the claim mean what they say, and, unless otherwise compelled, give full effect to the ordinary and accustomed meaning of claim terms." Id. (citing Nike Inc. v. Wolverine World Wide, Inc., 43 F.3d 644, 646, 33 U.S.P.Q.2D (BNA) 1038, 1039 (Fed. Cir. 1994); E.I. du Pont de Nemours & Co. v. Phillips Petroleum, 849 F.2d 1430, 1433, 7 U.S.P.Q.2D (BNA) 1129, 1131 (Fed. Cir. 1988); Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759, 221 U.S.P.Q. (BNA) 473, 477 (Fed. Cir. 1984)). This strong presumption in favor of the ordinary meaning of claim language as understood by one of ordinary skill in the art may be overcome where: 1) the patentee has chosen to become his or her own lexicographer by clearly and explicitly defining the claim term; or 2) where the claim term would render the claim devoid of clarity such that there is "no means by which the scope of the claim may be ascertained from the language used." Bell Atl. Network Servs., Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1268, 59 U.S.P.Q.2D (BNA) 1865, 1870 (Fed. Cir. 2001) (quoting Johnson, 175 F.3d at 990, 50 U.S.P.Q.2D (BNA) at 1610).

One ordinarily skilled in the art of raised access floor panels would understand the term "border" to refer to the area or zone forming an edge or trim framing the decorative surface of the panel. Independent claim 1 recites "a border along the edges of said panels along which said decorative surface layer is removed to expose said inner body portion." 491 patent, col. 4, l. 67 to col. 5, l. 11. Independent claim 8 recites "a border extending along the edges of said panel along which the decorative layer is removed to expose said inner layer." Id. at col. 5, l. 37 to col. 6, l. 11. Nothing in the language of these claims requires the "border" to be horizontal or formed of a single layer.

The "border" in claim 1 is formed by exposing an "inner body portion." A portion may certainly consist of one or more layers.

The "border" in claim 8 is formed by exposing "said inner layer." That language refers to the phrase "an inner layer," which first appears earlier in claim 8. 491 patent, col. 6, l. 6. 67 to col. 5, l. 11. Independent claim 8 recites "a border extending along the edges of said panel along which the decorative layer is removed to expose said inner layer." Id. at col. 5, l. 37 to col. 6, l. 11. Nothing in the language of these claims requires the "border" to be horizontal or formed of a single layer.

The "border" in claim 1 is formed by exposing an "inner body portion." A portion may certainly consist of one or more layers.

The "border" in claim 8 is formed by exposing "said inner layer." That language refers to the phrase "an inner layer," which first appears earlier in claim 8. 491 patent, col. 6, ll. 2-9 (emphasis added). The language "an inner layer" must be read in the context of the language claiming "a single visible decorative layer along the side of said floor covering also providing an inner layer contrasting with said decorative layer having a thickness substantially greater than the thickness of the decorative layer adjacent to said decorative layer along the side thereof facing said load surface. . . .

491 patent, col. 6, ll. 2-9 (emphasis added). The language "an inner layer" must be read in the context of the language claiming "a single visible decorative layer;" where the patentee meant to constrict the claim to one and only one particular layer, he said so clearly. Moreover, the reference to substantially greater thickness also suggests that the claimed inner layer may consist of one or more layers, because increasing the layers would increase the thickness. 3

Because we conclude independently that the "border" limitations in claims 1 and 8 both properly encompass one or more layers, we need not address the issue of whether Interface is bound by this court's prior determination in Tate v. Maxcess, 222 F.3d at 968, 55 U.S.P.Q.2D (BNA) at 1518-19, that the "inner body portion" and "inner layer" limitations forming the borders are co-extensive.

Like the claim language, the remainder of the specification supports construing the term "border" to include multiple layers framing the decorative paper. Of course, limitations from elsewhere in the specification will not be read in where, as here,
the claim terms are clear. See, e.g., Toro Co. v. White Consol. Indus., Inc., 266 F.3d 1367, 1371, 60 U.S.P.Q.2D (BNA) 1437, 1439 (Fed. Cir. 2000) (citing E.I. du Pont de Nemours & Co. v. Phillips Petroleum, 849 F.2d 1430, 1433, 7 U.S.P.Q.2D (BNA) 1129, 1131 (Fed. Cir. 1988) (holding that it is improper to import an extraneous limitation from elsewhere in the specification into the claim)); see also Kahn, 135 F.3d at 1476, 45 U.S.P.Q.2D (BNA) at 1611 (distinguishing means-plus-function claims from the "ordinary situation in which claims may not be limited by functions or elements disclosed in the specification, but not included in the claims themselves").

Nevertheless we note that this is not a case in which the patentee acted as his own lexicographer, and that the written description supports our construction. In pertinent part, it reads:

Rearwardly of the decorative paper, the floor covering material is provided with layers of material having a contrasting color with respect to the decorative paper.

In accordance with the present invention, the surface layer of protective material and the layer of decorative paper are cut away along the edge of the floor covering to expose the inner layers and provide a contrasting color integral border within the floor covering material itself.

491 patent col. 1, l. 65 to col. 2, l. 4 (emphasis added). This language contradicts Interface's position that the description requires construing the claimed "border" as a single, horizontal layer. Interface emphasizes the statement that "a uniform exposure of the layers of black paper is obtained." 491 patent, col. 3, ll. 53-54. This language, however, merely underscores that the border is formed by uniformly exposing multiple layers, not by exposing a single layer. Thus, the written description plainly contemplates that the claimed contrasting color border can be formed of multiple layers of material.

Interface argues that notwithstanding this language, Figures 3 and 4 of the 491 patent compel its construction of the "border" limitations. This is allegedly so because the arrow corresponding to the "integral border or edge trim 14," 491 patent, col. 2, l. 54, aims at a horizontal, single layer of exposed trim. This argument fails. Even were we to accept the proposition that the arrow in Figures 3 and 4 points only to the horizontal, single-layered portion of the border rather than to the beveled portion (which is also clearly exposed, and which is formed of multiple layers of material) additional limitations from these figures cannot be imported into the unambiguous claim language.

Contrary to Interface's next contention, nothing in the prosecution history, or elsewhere in the prior art of record, 4 renders proper a construction that limits the claimed "border" to a single, horizontal layer. Interface would have us adopt its narrow construction in order to preserve the validity of the 491 patent. It contends that the prior art would render the asserted claims obvious if they cover floor panels with simple beveled edges such as its accused products.

--- Footnotes ---

4 In construing claims, we look first to the intrinsic evidence of record -- the patent, including the claims, remainder of the specification, and, if it is in evidence, the prosecution history. Vitronics Corp. v. Conceptor Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996). The court may not vary the meaning of claim language when that meaning is clear from the intrinsic evidence. Prior art cited in the prosecution history falls within the category of intrinsic evidence. Prior art the examiner failed to consider is extrinsic. In the present case, however, we will discuss all of the prior art on which Interface now seeks to rely, because none of it compels its narrow construction of the term "border."

--- End Footnotes ---

Even if this were so, where claim language is clear we must accord it full breadth even if the result is a claim that is clearly invalid. Apple Computer, Inc. v. Articulate Sys., Inc., 234 F.3d 14, 24, 57 U.S.P.Q.2D (BNA) 1057, 1064 (Fed. Cir. 2000) (explaining that claims should be read to preserve validity but only where it is possible to do so, and holding that it was impossible and that therefore the claims were simply invalid) (citing Rhine v. Casio, Inc., 183 F.3d 1342, 1345, 51 U.S.P.Q.2D (BNA) 1377, 1379 (Fed. Cir. 1999) (Where "the only claim construction that is consistent with the claim's language and the written description renders the claim invalid, then the axiom does not apply and the claim is simply invalid.")))
3. Bore

While the term "bore" appears throughout the specifications, it does not appear in the claims of either the '609 patent or the '958 patent. The term first appears as a claim element in the '674 patent. See '674 patent claim 1 at 26:45 ("a housing including a bore"), claim 13 at 27:27-29 ("a first stage regulator comprising: a housing; and a gas inlet opening located within a bore in the housing"); see also id., claim 1 at 26:46, 50, claim 13 at 27:40-41.

Aqua-Lung proposes two different definitions for the term "bore": (1) in claims one through twelve of the '674 patent, "an internal passageway that is cylindrical"; and (2) in claims thirteen through twenty-four of the '674 patent, "a threaded opening to a first stage regulator housing where the fluid flow control valve is connected." Two Forty proposes that the term be defined as "a hole or passage."

Aqua-Lung maintains that the '674 patent uses the term "bore" as a special definition given to "passageway" by the patentee that differs from the meaning it would otherwise possess. It contends that two different meanings of "bore" are needed because the '674 patent refers to two different things. In claims one through twelve, "bore" is being used as an alternative to "passageway" while in claims thirteen through twenty-four it is being used as the downstream connection point to the regulator. According to Aqua-Lung, while "passageway" in the first instance is referred to as a "bore," it does not cease being a "passageway." In the context of the individual embodiments, "passageway" is called a "bore," thereby suggesting that the latter is at least not narrower than the former. The end result, according to Aqua-Lung, is that once "passageway" is defined, then "bore" essentially must be defined accordingly.

Two Forty counters that their simple meaning of "bore" is based on the various uses of the structure in the patents. Like Aqua-Lung, Two Forty explains that "bore" is used in two different pieces of the invention. The first is the smaller insert portion of the opening hole in the connection point of the regulator. The second arises in the larger regulator in which the smaller insert is placed. According to Two Forty, regardless of what part is at issue, these two different pieces contain a "bore" that is used consistently in the patent as a hole. Two Forty contends that there just is no need to have two definitions for the same term especially when the different embodiments encompass a consistent element. The embodiments show a hole in an otherwise solid piece, whether it be in the larger or smaller insert. Two Forty, therefore, submitted a dictionary definition of the term "bore," arguing that a person of ordinary skill in the art would understand the term to mean a hole in the housing.

As noted above, the intrinsic record assists in ascertaining the meaning of "bore" to one of ordinary skill in the art because the definition found in the specification is the best guide to the meaning of the term. Phillips, 415 F.3d at 1315. A representative portion from the specification of the '609 patent states that: "The housing shaft 65 includes a threaded portion 68 which is designed to engage a bore 69 (FIG. 14) disposed within the first stage regulator housing 34." 8:54-56 (emphasis added). A representative sample of "bore" in the '958 patent provides that: "the inlet valve 60 is illustrated in a closed position wherein the upper curved surface 94 of the piston 90 is in firm contact with the annular lip 82 so as to seal the opening 80 to the bore 78." 9:64-67 (emphasis added).

Indeed, a review of the embodiments accompanying the specification reveals that a "bore" is portrayed as a circular opening or hole in the housing of two different pieces. Similarly in the specification of the '674 patent, embodiments show a first stage regulator housing with a circular hole and a smaller device with a circular opening. See 10:62-64 ("[1]he housing shaft 65 includes a threaded portion 68 which is designed to engage a bore 69 (FIG. 14) disposed within the first stage regulator housing 34") (emphasis added); 12:8-10 ("In this closed position, neither fluid, liquid nor particulate matter of any kind can pass into the bore 78 through the inlet 80.") (emphasis added).

The intrinsic record, therefore, does not support two different meanings of the term "bore." Two Forty's suggested construction is more amenable to one skilled in the art. It accurately describes "bore" in all instances of use, whether in the '609, '958, or '674 patents. Nor does the '674 patents by itself indicate a separate meaning for "bore." At least for claims one through twelve of the '674 patents, Aqua-Lung's proposed definition of "an internal passageway that is cylindrical" does not sound that much different than Two Forty's proposed definition of "a hole or passage." Two Forty's proposed definition, however, lacks the "cylindrical" qualifying element that Aqua-Lung proposed and is present in the embodiments. At the
hearing, both sides agreed that the term "bore" does bring in this cylindrical concept. Any definition, therefore, must include that defining aspect.

In short, there may be different uses of "bore" in the claims of the '674 patents, but at base the meaning remains the same. Said another way, the Court cannot import limitations from specific embodiments where "bore" is used in multiple contexts. The fact remains that whether "bore" is a cylindrical hole in the regulator or a cylindrical hole in the insert piece, it remains a cylindrical hole. Based on the foregoing, the Court construes "bore" to mean "a cylindrical hole or passage."

Claim 3 includes the word "bore," the interpretation of which is also in dispute. Claim 3 reads as follows: "A cannula as in Claim 1 in which said proximal end tube flow path is a bore and in which said distal end tube flow path is a bore having a diameter less than the diameter of said proximal end tube bore."

The court concludes that a "bore," as used in Claim 3, is a hollow tube. Neither the specifications nor the prosecution history shed light on the meaning of this term in the context of the claim, so the court relied upon the ordinary meaning of the word: an interior cylindrical opening usually running the entire or nearly the entire length of an object; the interior diameter of a tube (as of a hypodermic needle). Such a definition is consistent with that given by Sheehan, who stated that a bore is a tube, like a cannula.

Plaintiff contends that a bore, by definition, must contain an opening at the end of the tube. The court does not read that restriction into the word. The focus of the definition is on the hollowness of the tube, and not whether there is an opening or where such an opening may be located.

Arcom objects to Magistrate Judge Peebles' recommended construction of the term "bore" as "a generally cylindrical hole made by or as if by boring through the use of a rotary instrument." Arcom does not contend that the construction is technically incorrect; rather, it contends that a lay jury may find it confusing and may believe that the use of a rotary instrument is required. Arcom requests the construction be modified to read "a generally cylindrical hole," or, in the alternative, "a generally cylindrical hole, which could be made by various methods, including by a rotary instrument or by molding." Upon de novo review, the Court adopts Magistrate Judge Peebles' recommended construction.

Young's challenge to the findings of noninfringement on the '547 patent centers on the court's construction of the following limitation from claim 1: 2

a one-piece body having a sleeve part with an open rear end, a neck part, and a head part including a back adjacent said sleeve and a front, a first axial bore extending through the sleeve and neck part, a second axial bore in the head part, said first and second bores communicating with each other at an intersection and being at an angle with respect to each other, and receiving means at the front of said head part;

The claim terms "head" and "bore" are in dispute, with the meaning of the former dependent on the meaning given the latter. The district court defined "bore" as a structure that is "formed by a cylindrical wall extending from one side of the neck around to the other side of the neck." The court stated that the bore's purpose "is to receive and enclose the driven gear." The court thus ruled that the "head" was the entire enlarged area completely surrounding the bore at the end of the neck. After "hesitantly" agreeing to conduct a literal infringement analysis, the court determined that the head of Q3's DPA has a solid end structure (cap 9 in Fig. 3 of the '859 patent) and thus does not contain
an aperture at the front end of the head, as required by the "receiving means" element of the claims. The court thus granted summary judgment of no literal infringement.

2 The other asserted claims each contain a similar limitation. All call for an aperture or receiving means at the front, or distal end, of the head.

3 The parties do not dispute the court's finding that the "receiving means" is the aperture 11, shown in Fig. 1 of the '547 patent, or structural equivalents thereof.

We believe the district court's construction of the disputed claim limitation is a more natural reading of the claim language. The claim limitation calls for a head with a back adjacent the sleeve and a front, with an axial bore in the head. The plain English meaning of bore is "an internal cylindrical cavity, as of a pipe or tube," which is the definition applied by the district court. See Webster's New International Dictionary 255 (3d ed. 1968). The specification describes, and the patent figures show, a head that wraps around the driven gear and shaft, forming a cylindrical bore. For example, in the summary of the invention, Bailey states that "the head has an axial bore therein," and in the description of the preferred embodiment notes that "[the] head portion 6 is formed as a cylinder at right angles to the neck 5." In the prosecution history, he proclaims: "All of these claims call for a one-piece body having both a bore for the drive gear and a bore for the driven gear in it, the body having the equivalent of the aperture 11 at the front of the head. . . ." All of these sources indicate that the bore is a substantially cylindrical hole in the head, and not a small portion of a hole in a terminated head, as argued by Young. The claims, specification, and file history simply do not support Young's broad reading of the claims.

2. Construction of "axial bore for receiving said curvate head"

The parties agree on the meaning of "axial bore" but dispute the meaning of "for receiving said curvate head." (Defs.' Resp. Br. 17.) The crux of the parties' dispute over this term concerns the question of whether this phrase limits the size of the bottom hole of the bore such that only "top-loading" use is possible: is the bottom hole sized such that the claim is limited to devices in which the screw is inserted through the top, or does it include devices in which the screw is inserted through the bottom? Medtronic argues in favor of a construction limiting it to top-loading devices.

Medtronic begins with the "only one way" specification argument which this Court has already rejected. In the absence of language in the specification which constitutes a clear redefinition by implication, Federal Circuit law does not allow the characteristics of a preferred embodiment to be imported as claim limitations, based on a redefinition by implication theory.

Medtronic's proposed construction of this phrase also hits a wall created by the doctrine of claim differentiation. In Curtiss-Wright Flow Control Corp. v. Velan, Inc., the Federal Circuit explained the doctrine of claim differentiation as follows:

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reading an additional limitation from a dependent claim into an independent claim would not only make that additional limitation superfluous, it might render the dependent claim invalid.

438 F.3d 1374, 1380 (Fed. Cir. 2006) (citations omitted).

The essential concept Medtronic proposes is that the axial bore must have holes of different sizes at the top and bottom ends, such that the screw head can fit in through the top but not through the bottom. The doctrine of claim differentiation, however, creates a presumption against this. Claim 21 is an independent claim. Claim 23 is a dependent claim, depending on claim 21: "The assembly of claim 21 wherein said bore includes at least two portions having different diameters." (089 Patent, col. 14, ll. 5-6.) Under the doctrine of claim differentiation, "an independent claim should not be construed as requiring a limitation added by a dependent claim." Curtiss-Wright, 438 F.3d at 1380. Thus, claim 21 should not be construed as requiring a bore that includes at least two portions having different diameters. This defeats Medtronic’s proposed construction.

Moreover, the aspect of the specification Medtronic points to does not appear to have the limiting implications Defendants claim. Medtronic points to the preferred embodiment characteristic of an inwardly tapered lower chamber portion, and states: "Thus, the screw must be inserted in the top of the axial bore since it cannot fit through the tapered bottom portion." (Defs.’ Br. 25.) This inference is opposed in the declaration of Fastenetix’ expert, Dr. Crisco, who stated that the preferred embodiment "could easily be configured" so as to be bottom-loaded, and also offered some explanations of how this could be done. (Crisco Dec. P 39, 43.) The rebuttal declaration of Medtronic's expert, Dr. Gulberg, takes issue with Dr. Crisco on many points related to this issue but does not state that the preferred embodiment cannot be configured so as to be bottom-loaded. (Gulberg Dec. PP 25-26.) This Court infers from this evidence that the preferred embodiment can, in fact, be bottom-loaded. Thus, even if this Court found a basis to import characteristics of the preferred embodiment as claim limitations -- a position that has clearly been rejected -- the preferred embodiment does not appear to require top-loading.

In its responsive brief, Medtronic contends that "for receiving said curvate head" must mean that the bottom hole is too small for the screw head to go through. Medtronic offers no rationale for this assertion, and this Court does not perceive why the curvate head cannot be received from the bottom hole as well as the top one.

A. Motion for Reconsideration of Claim Construction

In an Order dated May 14, 1998, this court construed the claims of the '100 Patent as follows: 1). "Boring, when turned, a hole in bone mass" was defined as "making a cylindrical hole by the removal of material with a rotary tool." The court further held that "[a] drill means does not include a screw or a pin or a nail or a trocar tip or any other object that does not have cutting edges and flutes." (Slip Op. at 5-6). "Thread means that includes a plurality of thread flights formed in the anchor distal from said drill means end to turn into the bone mass following the drill means" was defined to include "thread means that overlap the drill means so long as a greater number of thread means are distal from the drill means." 3). "Means for securing a suture to said anchor to extend therefrom after said anchor is seated in the bone mass" was defined as "a structure having a suture permanently attached to a retention disk positioned internally within the anchor." In construing the claim this court relied on the claim itself, the specification and the prior art as revealed in the prosecution history. The court did not rely on extrinsic evidence except for a general understanding of the patent.

Mitek's Motion for Reconsideration of Claim Construction argues that the court committed errors in its construction of the terms "drill means" and "means for securing". Mitek does not request modifications of the court's definition of "thread means". Mitek argues that the question of whether or not a drill means includes a screw, a pin, a nail or a trocar tip is a question for the jury and not a question of law for the court. This court disagrees. Mitek argued and presented evidence at length to support its contention that a drill means includes a trocar tip, a pin, a nail or a screw and requested that this court construe the term "drill means" to include these devices. Only when this court disagreed with Mitek's definition did it argue that this was an issue for the jury. The conclusion that a drill means does not include objects that do not have cutting edges and flutes is fully supported by the intrinsic evidence. Further, the Federal Circuit has affirmed claim construction rulings that define functions or structures that are excluded from the coverage of a claim. See, e.g. The Gentry Gallery, Inc., v. The Berkline Corp., 134 F.3d 1473, 1477 (Fed. Cir. 1998) (term "console" construed to exclude tray unit) and General American
Transp. Corp. v. Cryo-Trans, Inc. 93 F.3d 766, 770 (Fed. Cir. 1996) (opening "adjacent" to a side was construed to exclude opening adjacent to an "end wall").

Mitek further argues that the court committed error in defining "means for securing" to exclude a freely sliding suture. As stated above, this court may properly define functions or structures that are excluded from the coverage of a claim. Mitek also argues that the court may not use the prior art to limit the range of structures that may be equivalent to the structure disclosed in a specification for performing an identified function. Once again, this court disagrees. It is well established that the prior art as cited by the applicant is part of the intrinsic evidence upon which the court must rely to construe the claims. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996). The prior art relied upon by the applicant "gives clues as to what the claims do not cover." Autogiro Co. of America v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 399 (Ct Cl. 1967). The holding that the structure of the means for securing cannot include an eyelet is full supported by the intrinsic evidence. Therefore, Mitek's Motion to Reconsider Claim Construction is denied.

For boring, when turned, a hole in bond mass

Because the inventor did not define "boring" in the specification or the prosecution history and the claim does not impact the clarity of that term, the court below properly determined that the plain and ordinary meaning should be used in claim construction. Mitek argues that the court erred by defining the term "boring" to require the removal of material because nothing in the specification requires it, and if it was required, the claim would have used the term "boring out". Arthrex asserts that there is no suggestion in the patent that a hole may be "bored" in bone by turning in the threads of a screw-like device. The plain and ordinary meaning of "boring" includes the removal of material from the hole. See Webster's New International Dictionary 255 (3rd ed., 1971). This meaning excludes the action of a screw being turned with the material merely compressed. The prosecution history also supports Arthrex's assertion because when distinguishing his device from prior art that included a screw-like device, the inventor stated that none of the prior art involved a combination of drill means and thread means in a single anchor assembly.

In light of this construction and the absence of disputed facts, the district court properly concluded that Arthrex's anchors do not infringe because they do not perform the identical or substantially the same function of boring a hole with the same or equivalent structure disclosed in the patent.

"boss"

Claim 1 of the '936 Patent contains the term "boss." SHURflo contends that "boss" means "an area raised with respect to some other area," while Defendants contend that "boss" means "a structure residing on a flat body." The parties dispute whether a "boss" is merely a "structure" or a "raised area."

SHURflo argues that its proposed construction is consistent with the ordinary meaning of the word and the specification, which refers to "raised bosses 50." '936 Patent, col. 14:63. SHURflo argues that Defendants' proposed construction fails to take into account the raised geometry of a "boss." Defendants contend that the specification's use of the term "raised bosses" and the use of the phrase "at least one boss includes two bosses raised from the substantial planar body" in claim 7 of the '936 Patent indicate that a "boss" is not necessarily "raised." '936 Patent, col. 14:63; col. 20:61-63.

The specification's consistent use of "raised" with "boss" provides strong evidence that the patent's use of "boss" is not merely intended to be a "raised area." To construe it as such would inappropriately eliminate meaning from either the word "raised" or the word "boss," which fundamentally refers to a protrusion. Moreover, Claim 7 uses the term "raised" when referring to the term "boss" to specify that the projections extend roughly perpendicular to the "substantially planar body." '936 Patent, col. 20:57-63. In view of the claim language, the specification, and the plain and ordinary meaning of the term "boss," the Court construes the term "boss" to mean "a three dimensional body or structure extending from the planar body."
E. Claim 35

A device as in claim 31 wherein both cover portions extend across the cover.

The parties generally agree that both the limited expansion portion and the differential expansion portion of the cover reaches or stretches from one side of the device adjoining the base to the other side of the device adjoining the base. The court finds this limitation to be construed as "a device as in claim 31 wherein both the limited expansion portion and the differential expansion portion of the cover reach from one side of the device adjoining the base to the other side of the device adjoining the base."

6. Opening at the Bottom

Finally, TI Group argues that dependent claim 8, reciting that the opening for connecting, defined above, is "at the bottom of the reservoir" was construed too narrowly by the district court. The district court determined that the opening must be "in the bottom surface of the reservoir." Markman Order at 2. TI Group argues that this construction is more narrow than the ordinary and customary meaning of the term "bottom" and is inconsistent with the written description. VDO counters that the district court's construction is consistent with every drawing in the patent. As we have already discussed, the fact that the drawings are limited to a particular embodiment does not similarly limit the scope of the claims. Anchor, 340 F.3d at 1306-07. Rather, TI Group is entitled to the full breadth of claim scope supported by the words of the claims and the written description. VDO's argument again focuses on a single, narrow dictionary definition, when many equally apt, and broader, definitions are also provided. The written description does not restrict the ordinary and customary meaning of "bottom" in any respect. Therefore, we conclude that the "bottom" of the reservoir means "the lower or lowest part," Webster's at 259, of the reservoir, and is not restricted only to the bottom surface thereof.

Claim 1:

A snowmobile ski, comprising:

- a base extending in a longitudinal direction and having a bottom for moving over snow, the base also extending in a lateral direction between a first edge and a second edge thereof and having a top adapted to be connected to a snowmobile; and
- a first side portion extending in the longitudinal direction and extending downward from the first edge;
- a second side portion extending in the longitudinal direction and extending downward from the second edge; and
- a first guide rod disposed on a bottom of the first side portion; and a second guide rod disposed on a bottom of the second side portion.

's594 patent, col. 6, ll. 58-67 (emphasis added).

Claim 10:

A snowmobile ski, comprising:
a base extending in a longitudinal direction and having a bottom for moving over snow, the base also extending in a lateral direction between a first edge and a second edge thereof and having a top adapted to be connected to a snowmobile;

a first side portion extending downward from the first edge and extending in the longitudinal direction;

a second side portion extending downward from the second edge and extending in the longitudinal direction, the first and second side portions having a front and a rear and tapering downward from the base at the front and tapering upward toward the base at the rear;

a first guide rod disposed on a bottom of the first side portion; and a second guide rod disposed on a bottom of the second side portion.

Id. at col. 7, ll. 1-8 (emphasis added).

The district court construed the phrase "bottom for moving over snow" to require "flat middle and rear bottom portions that would serve to funnel snow underneath the middle portion of the ski and enhance flotation." To support this construction, the court relied on a passage found in the '594 patent's "Summary of the Invention": "Flotation is enhanced by forming the base of the ski so that as it moves across snow, the snow is funneled toward the middle portion of the ski." The court further cited a passage from the "Description of the Preferred Embodiment" where the patentee describes how a snowmobile ski "having a flat middle bottom (40), as depicted in FIG. 4, and rear bottom (60), as portrayed in FIG. 5, also aids flotation on snow." In addition, the court concluded that the prosecution history of the '594 patent required that claim coverage be limited to circumstances in which the middle and rear bottom portions of the ski are flat.

In light of its claim construction and prosecution history analyses, the court held that the claims as interpreted did not read on the accused product either literally or under the doctrine of equivalents and entered summary judgment of noninfringement for Bombardier. It also denied Simmons's request for a preliminary injunction.

At the outset, we note that the parties are in contention about the claim language the district court should have construed in this dispute. Simmons asserts that it was only necessary for the court to construe the word "bottom," while Bombardier successfully urged construction of the phrase "bottom for moving over snow." The court properly determined that the limitation in dispute was "bottom for moving over snow" because the word "bottom" in this particular instance finds context in the surrounding words. See Hockerson-Halberstadt, Inc. v. Converse Inc., 183 F.3d 1369, 1374 (Fed. Cir. 1999) (surrounding words of disputed claim language must also be considered in determining the ordinary and customary meaning of that language). However, the court erred in abandoning its quest for a common meaning for an individual word that is part of a phrase that lacks a common meaning. Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1372 (Fed. Cir. 2003).

Simmons argues that the court improperly narrowed the scope of claims 1 and 10 by limiting the claimed snowmobile ski to a particular shape, i.e., flat in the middle and rear portions. It contends that "bottom" as used in the limitation at issue has an ordinary and customary meaning of "the underside." The American Heritage College Dictionary 163 (3d ed. 1993). Simmons also argues that the court erroneously imported limitations from the written description into the claims and misapplied the prosecution history as limiting the scope of the claims at issue. Bombardier defends the court's claim construction and noninfringement analysis asserting that the written description and prosecution history of the '594 patent require that the claim language be restricted to a snowmobile ski with a certain shape.

The analytical focus of claim construction must begin and remain centered on the language of the claims, for it is that language that the patentee chose to use to "particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, ¶ 2 (2000). Claim language is given its plain, ordinary, or accustomed meaning to one of ordinary skill in the relevant art, unless the applicant has imparted a novel meaning to the language. See Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002).

The district court erred in incorporating limitations of the preferred embodiment into the "bottom for moving over snow" claim limitation. Its consultation of the written description and prosecution history before making any effort to discern the ordinary and customary meanings attributed to the language of the claims was premature. Tex. Digital Sys. v. Telegenix, Inc., 308 F.3d 1193, 1204 (Fed. Cir. 2002). The court also erred in concluding that Simmons had implicitly defined the limitation at issue. A basic canon of claim construction is that one may not read a limitation into a claim from the written
Contrary to the court's conclusion, the specification does not show that Simmons implicitly defined the claim language at issue or restricted claims 1 and 10 to the preferred embodiment. Nothing in the intrinsic evidence suggests that the middle bottom (40) or the rear bottom (60) should be limited to being flat. The flat middle and rear bottom limitation is simply not present in claims 1 or 10, thus the language of the asserted claims does not limit them to that requirement. Moreover, neither the specification nor the prosecution history includes an expression of manifest exclusion or restriction demonstrating intent to limit the middle bottom (40) or the rear bottom (60) to being flat. Although the specification describes only one embodiment of the middle bottom (40) and the rear bottom (60), no "clear statements of scope" limit those details to having an underside that is flat.

The court's requirement that the "bottom for moving over snow" limitation of claims 1 and 10 be flat in the middle and rear portions impermissibly reads limitations from the specification into the claims. Because the patentee did not deviate from the accustomed meaning of the disputed language we construe the limitation "bottom," in context with its surrounding language in claims 1 and 10, to mean "the underside for moving over snow." Accordingly, we vacate the court's grant of summary judgment of noninfringement in favor of Bombardier and remand for further proceedings consistent with this opinion.

The parties' first dispute focuses upon the clause "being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof." At the Hearing, the parties agreed that the court should construe "at a bottom of said walls" as "the lowest part" and "within said body" as "inside the dump body." See, e.g., TI Group Auto. Sys. (N. Am.), Inc., 375 F.3d 1126, 1135-36 (equating "within" with "inside"). 11

The parties offer competing constructions of the clause "extending between said first and second ends thereof." HECO construes the clause as "the conveyor . . . is located entirely within the end walls, i.e., no part of the conveyor extends beyond the end walls of the dump body." JCCC at 4. Cives and Monroe do not believe the clause needs construing. Alternatively, they construe the clause as "the conveyor extends from the front wall to the back wall.

The court construes "extending between said first and second ends thereof" as "extends from the front wall to the back wall." HECO's proposed construction is too restrictive. Nothing in the clause requires that the conveyor be located entirely within the first and second ends of the dump body. In common usage, "extending between" is not necessarily used restrictively. For example, Interstate 80 "extends between" Iowa City and Chicago. This does not necessarily mean that Interstate 80 is entirely located between Iowa City and Chicago. Indeed, Interstate 80 stretches from coast to coast.

The specification makes clear that a person of ordinary skill in the art at the time of the invention would not necessarily construe "extends between" restrictively. For example, the specification states:
The hoist means 32 includes hydraulic cylinder means 90 shown in FIG. 2 which extends between the chassis 14 and the dump body 16 with the hydraulic cylinder means 90 being disposed preferably forwardly relative to the dump body 16 so that the conveyor means 34 extends through the second end 20 of the dump body 16 with sufficient clearance between the cylinder 90 and the conveyor means 34 to permit unimpeded hoisting of the dump body 16.

'389 patent, col.5, ll.61-66, col.6, ll.1-2 (italics added). In other words, in a preferred embodiment of the invention, the conveyor means is not located entirely between the first and second walls, but instead extends through the second (front) end of the dump body. Indeed, Figure 3 shows a conveyor extending through and slightly past the front end wall:

GET DRAWING SHEET 2 OF 4

'389 Patent, fig.3. The Federal Circuit Court of Appeals has repeatedly held that a claim interpretation that excludes a preferred embodiment "is rarely, if ever, correct." See, e. g., MBO Labs., Inc. v. Becton, Dickinson & Co., No. 2006-1062, 474 F.3d 1323, 2007 WL 163068, at *8 (Jan. 24, 2007) (quoting On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH, 386 F.3d 1133, 1138 (Fed. Cir. 2004)). HECO does not explain how its proposed construction is an exception to this general rule, and thus the court declines to adopt such construction.

The court recognizes that the claim also states that the conveyor means is "within said body" and "in ordinary and customary usage, what is not outside is inside." TI Group, 375 F.3d at 1136. In this patent, however, the specification makes clear that the requirement that the conveyor means be inside the dump body does not mean that the conveyor means must be entirely within the dump body. Were the court to adopt HECO's proposed construction, the court would wrongly infuse an additional restriction that the claim language does not contain. The patentee did not claim that "no part of the conveyor extends beyond the end walls of the dump body." Indeed, the specification indicates otherwise.

In sum, the court construes "being disposed at a bottom of said walls and within said body and extending between said first and second ends thereof" as "being disposed at the lowest part and inside the dump body and extending from the front wall to the back wall."

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At trial, the parties disagreed as to the meaning of one particular limitation within the asserted claims: "bottom plane." Specifically, the parties disputed whether the "bottom plane" of the groove in the claimed screen plate includes a bottom physical surface. According to CAE, the district court erred when it concluded that the limitation does require a physical surface. CAE argues that the trial court improperly read limitations from the patent's preferred embodiment into the claims and misconstrued the patent's prosecution history. Had the court focused on the language of the specification and the patent drawings, CAE continues, it would have avoided this error, and held that the disputed term imparts no physical surface requirement.

Claim construction starts with the language of the claim itself. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996); see also Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1344, 47 U.S.P.Q.2D (BNA) 1418, 1424 (Fed. Cir. 1998) ("The actual words of the claim are the controlling focus.") (citing Thermalloy, Inc. v. Aavid Eng'g, Inc., 121 F.3d 691, 693, 43 U.S.P.Q.2D (BNA) 1846, 1848 (Fed. Cir. 1997). Claim 1 provides for grooves in the surface of the screen plate that include a "bottom plane." The claim further provides for an "upstream side plane" and "downstream side plane" for the grooves, at different orientations to the envelope surface. These side planes, along with the bottom plane, "form" the contours of the grooves. The bottom plane of the grooves further include "perforations."

This language supports the interpretation adopted by the district court. The language specifies the orientation of the two side planes, the upstream side plane being "substantially perpendicular to the envelope surface of the screen plate" and the downstream side plane as forming "a 60-5 angle against the envelope surface." This description confirms that the terms refer to the structural walls of the grooves. Given this character of the side planes, there is little reason to believe that the third component "forming" the groove, the bottom plane, does not also refer to a groove structure, particularly when all three groove components include the term "plane." See Phonometrics, Inc. v. Northern Telecom, Inc., 133 F.3d 1459, 1465, 45 U.S.P.Q.2D (BNA) 1421, 1426 (Fed. Cir. 1998) ("A word or phrase used consistently throughout a patent claim should
be interpreted consistently"). In some cases, a claim term can be given a different meaning in the various claims of the same patent, when a patent so provides. See Georgia-Pacific Corp. v. United States Gypsum Co., 195 F.3d 1322, 1331, 52 U.S.P.Q.2D (BNA) 1590, 1598 (Fed. Cir. 1999) (citations omitted). But here, we agree with the district court that it makes little sense to provide "perforations" in the "bottom plane" unless the plane refers to at least some physical structure.

The written description and figures further support this structural interpretation of the groove components. The description notes that one can adjust the turbulence force on the screened pulp by "changing the geometrics of the sidewalls of the grooves." In each of Figures 2a, 2b and 3, the invention includes a physical structure at the bottom of the plate's grooves.

CAE asserts that other text in the written description suggests that the bottom plane does not include any physical surface. Specifically, CAE notes the description of "the bottom plane of the groove" as "at least as wide as the diameter or width of the perforations." Any such suggestion, however, is belied by the patent's prosecution history. The patent examiner rejected claim 1 as originally filed, which provided for "[a] screen plate, wherein the perforations of the screen plate are disposed at the bottom of grooves the direction of which substantially deviates from the flow direction of the pulp to be screened." According to the examiner, the claim was "clearly anticipated" by United States Patent No. 4,276,159. The examiner also cited the Canadian '322 patent.

In response, on May 7, 1984, the applicant canceled all the original claims and introduced claim 13, the predecessor to the claim subsequently issued as claim 1. Unlike original claim 1, claim 13 referred specifically to the "bottom plane," rather than the broader "bottom" of the groove. The "bottom plane" language had been included in original claim 3, which depended from claim 1. In the absence of any evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings. See Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023, 4 U.S.P.Q.2D (BNA) 1283, 1288 (Fed. Cir. 1987). Here, this suggests that "bottom plane" refers to a surface lying within the more general "bottom" of the groove.

This interpretation is also consistent with other prosecution history in the file wrapper. On May 10, 1984, the applicant distinguished claim 13 from the Frykhult patent, which disclosed a plate with a bottom consisting of the gap between two side planes. The applicant contended specifically that "nothing in this reference teaches the use of perforations at the bottom of the recesses as stated in claim 13." One can only reasonably understand this amendment as suggesting that the claimed invention, in contrast to the Frykhult reference, has perforations in a physical structure constituting the bottom plane of the grooves.

Given this overwhelming clarity of the intrinsic evidence, we conclude that the district court's interpretation of the limitation "bottom plane" is correct, and adopt it as our own. We further conclude that the district court properly ignored CAE's proffered extrinsic evidence on this issue, the testimony of Mr. Frejborg. In our decision in Vitronics, we held that when the intrinsic evidence is unambiguous, it is improper for a court to rely on extrinsic evidence such as expert testimony when construing disputed claim limitations. See Vitronics, 90 F.3d at 1583, 39 U.S.P.Q.2D (BNA) at 1577. As we explained,

in most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is improper to rely on extrinsic evidence. In those cases where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper. The claims, specification, and file history, rather than extrinsic evidence, constitute the public record of the patentee's claim, a record on which the public is entitled to rely. In other words, competitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention. Allowing the public record to be altered or changed by extrinsic evidence introduced at trial, such as expert testimony, would make this right meaningless.

Id. (citations omitted); see also Georgia-Pacific, 195 F.3d at 1332, 52 U.S.P.Q.2D (BNA) at 1598. In Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1309, 51 U.S.P.Q.2D (BNA) 1161, 1169 (Fed. Cir. 1999), we stated that "had the district court relied upon the extrinsic evidence to contradict the claim construction unambiguously apparent from the intrinsic evidence it would have been error." Here, of course, there was no such reliance, and the district court did not commit any error. Because there is no genuine "ambiguity" in the intrinsic record relevant to this case, we conclude that the district court did not rely on the extrinsic evidence and properly ignored the proffered Frejborg testimony.

Applying the proper understanding of the meaning of "bottom plane" to the accused plates, it is clear that the district court
was correct in granting summary judgment of no literal infringement. The accused plates do not include any physical structure as part of their grooves' "bottom plane." Accordingly, no reasonable jury could find that the plates literally infringe the asserted claim.

GO BACK

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A. Claim Construction:

Claim 1 of the 321 patent requires "a bottom sole attached to the bottom of said upper sole and including one or more inverted cups dispersed therein . . ." (Id., col. 4, ln. 67-col. 5, ln. 1). Similarly, Claim 1 of the 046 patent requires "a bottom sole attached to the bottom of said upper sole and including an angularly displaced inverted cup dispersed therein . . ." (Id., col. 8, lns. 60-62). The parties dispute the meaning and scope of the term "bottom sole." Construction of the common term "bottom sole" is addressed first because it applies to both of the asserted claims and all accused shoe models. Thus, disposition of this motion for summary judgment hinges upon the construction of this critical term.

Nike contends that the term "bottom sole" should be construed to mean "the outsole, which is the part of the shoe that contacts the ground and is also the lowest part of the sole." Nike argues that the intrinsic evidence demonstrates that the patentee uses "bottom sole" consistently with the accepted meaning of outsole in the shoe design art. In addition, Nike asserts that its proffered meaning is consistent with the ordinary dictionary definition of the term "bottom."

Lawlor counters that the term "bottom sole" is properly construed to mean "a part of the shoe sole attached to the bottom of the upper sole." Lawlor argues that the term "bottom sole" is used in both patents in a relative manner, rather than in an absolute sense, and was deliberately created by the patentee as a relational term to describe a functional feature different from what existed in the prior art. According to Lawlor, the "bottom sole" of the inventions is unlike a traditional outsole which is just a thin layer of rubber that absorbs little shock during a running or walking footstep. While the "bottom sole" taught in both patents may include a traditional outsole, neither the specification or the knowledge of one of ordinary skill in the art limits the "bottom sole" only to the outsole. Rather, the term "bottom sole" is used to describe a functional feature that acts in concert with an upper sole to provide enhanced shock absorption and dispersion.

In construing the scope and meaning of patent claim terms, a court looks first to the evidence intrinsic to the patent such as the claims, the specification, and the prosecution history. AstraZeneca v. Mutual Pharmaceutical, 384 F.3d 1333, 1336-37 (Fed. Cir. 2004). Of course at the onset, a court considers "the claim language itself to define the scope of the patented invention", and thereafter, the patent's specification "when the claim language itself lacks sufficient clarity to ascertain the scope of the claims." Chimie v. PPG Indus. Inc., 402 F.3d 1371, 1377 (Fed. Cir. 2005). The specification is also consulted "to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning." Id. Further, to give proper effect to disputed technical terms, the terms are interpreted as having the meaning that they would be given by a person of ordinary skill in the relevant art. AstraZeneca, 384 F.3d at 1336-37. Finally, the prosecution history, if in evidence, is examined "to discern the applicant's express acquiescence with or distinction of the prior art as further indication of the scope of the claims." Id.

Upon a review of the intrinsic evidence I conclude that the disputed term "bottom sole" should be construed in accordance with the definition proposed by Nike. The reasons for my conclusion follow:

First: in the 046 patent's "Background of the Invention" and "Detailed Description of Preferred Embodiments", the term "bottom sole" (numbered 14) is consistently described alternatively as either the "outersole" or "outsole". (See 046 patent, col. 2, lns. 47-50; col. 3, lns. 34-35; col. 4, lns. 63-66; col. 6, lns. 63-66; col. 7, lns. 5-9; and col. 8, lns. 34-36). For example, the Background of the Invention states that "the present invention has overcome the basic shortcomings of the prior art by providing [a] . . . shoe sole which utilizes one or more inverted cups dispersed within the outersole or bottom sole." (Id., col. 1, lns. 37-41). In the Detailed Description of the Preferred Embodiments, the "rubber bottom sole" of the present invention is again described alternatively as the outsole, and further narrates that "ribs or other patterns" may be "provided on the bottom surface of the outsole" to "enhance gripping contact between the shoe sole and the ground." (Id., col. 4, lns. 43-59).

Second: the reciprocal use of "bottom sole" and "outsole" in the 046 patent does not support the proposition that the "bottom sole" functions alternatively as an outsole and that therefore "bottom sole" should be construed as different from an outsole.
Rather, the two terms are synonymous, and are used to describe and define the same structure numbered 14 in the 046 patent and its Figures. It is readily evident that the terms "bottom sole" and "outsole" are used interchangeably throughout the specification, and thus should be construed in the same manner. See Tate Access Floors Inc. et al., v. Maxcess Tech. Inc., 222 F.3d 958, 967-969 (Fed. Cir. 2000) (construing disputed claim terms in the same manner because the terms are readily used interchangeably in the specification).

Third: Figures 15-16 and 19-24 of the 046 patent each depict the bottom sole or outsole 14 as the ground-engaging part of the shoe sole. Further, in The Running Shoe Book, the outsole is described as the portion of the sole making contact with the ground. See Peter R. Cavanagh, The Running Shoe Book, p. 98; Figures 5.1a, B.1b. 1

Fourth: the specification of the 321 patent describes "bottom sole" (numbered 12) as being the ground-engaging part of the shoe. The specification refers to bottom sole 12 as "a rubber bottom sole" or a "hard rubber bottom sole." (See e.g. 321 patent, col. 3, In. 8; col. 4, In. 15, In. 38). In particular, Figures 3, 4 and 6 of the 321 patent each depict the bottom sole as the part of the shoe sole contacting the ground.

Fifth: the 321 patent describes the bottom surface (numbered 26) of bottom sole 12 as being "primarily flat", and states that "alternatively, however, ribs or other patterns for enhancing gripping contact between the shoe and the ground may be provided on surface 26." (321 patent, col. 3, Ins. 46-49). Contrary to Lawlor's assertion, this phrase does not support the construction that bottom sole 12 can act either as an outsole or as a flat surface to which a treaded outsole could be affixed. The phrase, read in the context of the entire specification, does not lend itself to providing for such a broad reading of the term "bottom sole". Indeed, the specification does not teach, even by way of implication, that another sole could be affixed to the bottom surface 26 of bottom sole 12. It is apparent that the invention of the 321 patent contemplates bottom sole 12 as being the ground-contacting sole, which may either be flat or contain patterns for enhancing ground gripping.

Sixth: as argued by Nike, during prosecution of the 321 patent, it is evident that both the patent examiner and Lawlor understood that bottom sole 12 referred to the outsole of a shoe. For example, when rejecting all the original claims as obvious under 35 U.S.C. § 103, the examiner equated bottom sole 12 to the combined outsoles of prior art references Hogg, U.S. Pat. No. 2,424,463 and Denu, U.S. Pat. No. 4,130,947. [See 321 Patent Prosecution History, Office Action dated 10/12/83 at pp. 2-3; and Office Action dated 04/19/84 at pp. 3-4]. The Hogg reference shows an outer sole of a shoe having rubber suction cups and skid-resisting ribs; and the Denu reference describes a hard rubber outsole containing ribs on its underside for gripping, with spaces between them. In attempting to distinguish these references in subsequent responses, Lawlor similarly characterized the Hogg and Denu outsoles as the "bottom sole layer" and "bottom outer sole layer", respectively, in comparing them to his claimed bottom sole.

Seventh: construing the term "bottom sole" as outsole is consistent with the ordinary meaning of the term "bottom". "When examining a claim, a court must presume that the terms in a claim mean what they say, and unless otherwise compelled, give full effect to the ordinary and accustomed meaning of claim terms." Johnson Worldwide Assocs. Inc. v. Zebo Corp., 175 F.3d 985, 989 (Fed. Cir. 1999). To do so, the Federal Circuit cases "emphasize the use of technical and general usage dictionaries in determining the ordinary meaning." Astrazeneca, 384 F.3d at 1337. Further, if patent claim language has an ordinary and accustomed meaning in the art, there is a heavy presumption that the inventor intended that meaning to apply. Bell Atl. Network Servs., Inc. v. Covad Communs. Group, Inc., 262 F.3d 1258, 1269-70 (Fed. Cir. 2001). Thus, unless the inventor has manifested an express intent to depart from that meaning, the ordinary meaning applies. Telefex Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002); see also Optical Disc Corp. v. Del Mar Avionics, 208 F.3d 1324, 1334 (Fed. Cir. 2000) ("Without evidence in the patent, specification of an express intent to import a novel meaning to a claim term, the term takes on its ordinary meaning.").

The accepted meaning in the shoe design art denotes the term "bottoms" as: "the underface of the shoe sole which extends
from the toe to the heel breast." American Society for Testing and Materials (ASTM), Standard Definitions of Terms Relating to Athletic Shoes and Biomechanics F 869-86 (Re-approved 1994). The term "outsole" is described in ASTM as: "the bottom sole thickness. The surface of which is exposed to wear." Id. In Merriam-Webster's Collegiate Dictionary, (11th ed. 2003), the term "bottom" is characterized as: "the underside of something" and "the lowest part or place."

Nothing in the 321 patent and the 046 patent, or the patents' prosecution history, demonstrates that Lawlor intended to deviate from the ordinary and accustomed meaning of "bottom sole". Nor is there any express language showing that Lawlor, in using the term "bottom sole", intended to refer to anything other than the lowest part of a shoe sole.

Hence, in the instant case, "bottom sole" is properly construed as "outsole" which refers to the part of a shoe sole that engages and contacts the ground. Accordingly, "bottom sole" as used in the asserted Claim 1 of the 321 patent and asserted Claim 1 of the 046 patent is construed to mean the outsole of a shoe, which is the part of the shoe that contacts the ground and is also the lowest part of the sole.

2. Claim Construction of the Term "bow"

The parties also disagree over the terms, "bow," "bow-shaped" and "bowed section" as used in claim 1 of the '741 patent.

The claims at issue contain the following limitation:

a backrest . . . wherein said backrest comprises a frame having a pair of spaced-apart, bow-shaped side members, each of said side members having a lower section and an upper section, wherein each of said upper sections extends from one of said respective lower sections so as to form a pair of first bowed sections at substantially a lumbar region of said backrest, wherein said first bowed sections have a generally convex-shaped forwardly facing contour, and wherein said upper section of each side member further extends laterally outwardly from said lower section . . . . [Emphasis added]

Defendants contend that the written description and drawings indicate that "bow" means that the sides of the backrest frame form an arch with a discrete upper section and a discrete lower section. In particular, defendants argue that the written description defines the bowed section as a discrete section of the backrest frame and that the drawings illustrate a backrest frame that has a section extending above the "peak" of the bow and a section extending below the "peak" of the bow. According to defendants, every embodiment of the patent shows a discrete lower section extending below the bowed section.

Plaintiff argues that defendants are reading limitations into the claims; specifically, that defendants are reading the word "discrete" into the claims. Plaintiff contends that the proper reading of "bowed section" is the section formed by at least a portion of the upper section and at least a portion of the lower section.

A reading of the language of the claim itself reveals the proper meaning of "bow." The claim recites "each of said upper sections extends from one of said respective lower sections so as to form a pair of first bowed sections . . . ." '741 Patent, col. 22, ll. 45-47. Therefore, the bowed section of the backrest frame side members is that portion of the frame created by the connection of an upper section and a lower section. It is neither uncommon nor improper in patent claim drafting to define structures in such ways. The use of the terms "upper section" and "lower section" allow the claim drafter to then further describe other characteristics and limitations within the same or a dependent claim. For instance, dependent claim 6 recites, "The seating structure of claim 1 wherein said frame further comprises a top member extending between and connecting said upper sections of said side members and a bottom member extending between and connecting said lower sections of said side members." Id., cols. 22:66-23:3 (emphasis added). Without using the terms "lower section" and "upper section" it would be impractical to describe where the "top member" or "bottom member" is placed.

Moreover, the use of "bowed" in "bowed sections" provides a limitation to the interaction of the upper and lower sections. Arguably, a chair having a backrest with side members wherein the lower and upper sections came together to form a sharp point (perhaps a 90 [degree] angle), would not infringe the patent claim because the formation created by the connection of the upper and lower sections must be "bowed," which the claim defines as "a generally convex-shaped forwardly facing contour." See id., col. 22, ll. 49-50. Thus, the "bowed section" must be "curved." Accordingly, contrary to defendants'
argument, the use of the terms "bowed section," "upper section" and "lower section" within the claim do not require there to be "discrete" sections so as to avoid having superfluous claim language. Rather, as properly construed, each term holds meaning. In sum, the bowed section of the backrest frame side members is the curved portion of the frame created by the connection of an upper section and a lower section.

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The word "bows" means "members that are either curved or straight and have any cross-sectional shape."

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11. "[B]racing itself on the wiper blade:" 11 "Supporting itself on both the support element and wiper strip." Although claim 1 refers to bracing on both wiper strip (20) and support element (16), the inventive nature of the '434 patent, illuminated by the intrinsic record, does not require that such bracing be simultaneous. (See col. 1:52-2:17)

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11 '434 patent, claim 1 (and dependent claims).
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The '210 patent consistently refers to a "bracket" it means or member that is mounted to the wheelchair frame. Words used in a claim are to be given their ordinary meaning, unless it appears that the inventor used them differently. Jonsson v. Stanley Works, 903 F.2d 812 (Fed. Cir. 1990). Contrary to plaintiffs' present assertions that the word "bracket" refers to any connecting point creating a straight line transfer of forces, there is no evidence that the use of "bracket" in any of the claims was intended to invoke this special and uncommon meaning. Webster's Unabridged Third New International Dictionary defines bracket as a "member that projects from a wall, pier, or other structure, and is usually designed to support a vertical load or to strengthen an angle." Especially in light of the drawings in the '210 patent, 1 we are convinced that the words "bracket," "bracket means," and "bracket member" in the '210 patent claims describe a rigid fixture, which can be mounted in a stationary position at a fixed point on the wheelchair frame in order to establish a fixed angular relationship between the occupant lap and rear wheelchair restraint belts.

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1 To interpret a claim, courts properly consult the patent specification, drawings, and prosecution history. Gargoyles Inc. v. U.S., 6 F.3d 787 (Fed. Cir. 1993).
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2. CLAIM CONSTRUCTION OF THE CLAIMS ONE AND EIGHTEENTH

To rule on the Motion, the Court must first construe two phrases: (1) "each said element comprising three or more strands interwoven to form a braided element," recited in claim 1 of the '021 Patent; and (2) "said conductive elements comprising at least three individual strands woven together in a braid-like fashion," recited in claim 18 of the '021 Patent.
The parties dispute the "ordinary and customary meaning." Phillips, 415 F.3d at 1312, of the term "braid." Defendant offers the testimony Dr. Abdel-Fattah M. Seyam ("Dr. Seyam"), to show that a "braid" is "formed by intertwining three or more yarns in such a way that no two yarns are twisted around one another." (Declaration of Dr. Seyam in support of Motion ("Seyam Decl.").) Plaintiff argues that this definition is underinclusive, and that Dr. Seyam's definition is not one of a "person of ordinary skill in the art" of the patent because Dr. Seyam declared that his definition is that of "a person of ordinary skill in the textile arts" rather than an expert in electro-mechanical deterrent devices. But the Court finds that in construing terms like "braid," "weave," "knit," and "mesh," the testimony of a textile engineer is highly instructive. Additionally, the Court finds that Dr. Seyam has demonstrated skill and expertise in the field of mechanical engineering as well as textile engineering. (See Supplemental Declaration of Dr. Seyam in support of Reply ("Suppl. Seyam Decl.") P 1, 4.) If the Court were to find that a POSIT in this case must be skilled in mechanical engineering, Dr. Seyam would still be qualified. If, on the other hand, the Court were to find that because '021 Patent focuses on the textile nature of the conductive elements, a POSIT must be skilled in textile engineering, then the Court would have to discount the testimony of Plaintiff's own expert, Dr. James Williams Jones ("Dr. Jones"), because while Dr. Jones is a mechanical engineer, he is not a textile engineer.

But the Court need not make such a finding to reach a decision here. Even when the Court fully considers the testimony of Dr. Jones, the evidence weighs in favor of Dr. Seyam's definition of "braid." This conclusion is based in part on the fact that in Dr. Jones's declaration, he "only considered whether there is at least . . . a dispute on the issues raised by [Defendant's] motion" because Plaintiffs counsel informed Dr. Jones that "the test is whether there is or is not a 'genuine factual dispute' with respect to infringement." (Dr. Jones's Declaration in support of Plaintiff's Opposition ("Jones Decl.") P 4.) But as noted, the analysis for summary adjudication of noninfringement is a two step inquiry. The first step is claim construction. Cybor Corp., 138 F.3d at 1454. And of course, judges, not juries, construe claims. Markman, 517 U.S. at 372. Accordingly, the issue of "whether there is a genuine dispute about the proper definition of a the [sic] claim phrase 'braided element,'" (Jones Decl. 4:1-2), is relevant only to the extent that an affirmative answer means that the Court must resolve the dispute. The Court's resolution of this dispute, after careful consideration of the evidence presented, is a finding that Dr. Seyam's testimony is the most credible and most relevant to the claim construction of the '021 Patent, and that a "braid" in the context of the '021 Patent is therefore three or more wire strands woven together in a way that no two wire strands are twisted around one another.

Plaintiff also argues that the exclusion of "mesh weaves" in the claim language means that all other meshes are included in the claim language. This argument fails. The term "mesh" means that there are open spaces between strands, and braids, weaves, and knits can all be "mesh." (Suppl. Seyam Decl. P 10.) The mesh exclusion language in claims 1 and 18 simply exclude mesh, or open, braid-like weaves. If the Court were to construe the mesh exclusion language to include all other types of mesh arrangements, then the terms "braid-like" and "braided" would become meaningless. See ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1088-90 (Fed. Cir. 2003) ("the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms"). Accordingly, the Court cannot find that the exclusion of mesh equates to the inclusion of all non-mesh arrangements.

Thus, in determining whether the New Bird Jolt infringes the '021 Patent, the Court construes "braid" in the '021 Patent to mean "three or more wire strands woven together in a way that no two wire strands are twisted around one another." The first and eighteenth claims require that the conductive elements have two limitations: (1) at least three strands; (2) that are woven tightly together into a braid or in a braid-like manner.

**B. "Braking Means"**

Defendants argue that the '346 patent must be construed as a means plus function patent under 35 U.S.C. § 112, P 6. It is undisputed that the '346 patent uses the phrase "braking means." A presumption arises when the term "means" is used in a patent. Unidynamics Corp. v. Automatic Products International, 157 F.3d 1311, 1319 (Fed Cir. 1998). Plaintiff argues that it has overcome the presumption of a means plus function analysis because the claims recite sufficient structure, relying upon Envirco Corp. v. Clestra Cleanroom, Inc., 209 F.3d 1360, 1364-66 (Fed. Cir. 2000) and Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed. Cir. 1996).
In deciding whether the presumption has been overcome, the court should determine "whether the claims recite sufficient structure for performing the claimed function...." Envirco, 209 F.3d at 1365. The claims at issue all include the term "braking means" and a description of the function that the braking means perform in the apparatus, without a description of any structure in those claims. See Claims 1, 2, 6, 11, and 13. 4 This Court concludes that unlike Cole and Envirco, the claims of the patent at issue do not disclose sufficient structure to overcome the presumption of a means plus function patent.

4 For example, in Claim 1: "braking means, responsive to the absence of said exhaust pressure, for preventing said rotor from rotating;" in Claim 2: "braking means for enabling said rotor to rotate in said housing in response to said exhaust pressure and for inhibiting said rotor from rotating in the absence of said exhaust pressure;" in Claim 6: "braking means, responsive to said predetermined exhaust pressure, for enabling said rotor to rotate in said internal cavity and, in the absence of said predetermined exhaust pressure, for inhibiting said rotor from rotating;" in Claim 11: "braking means for automatically enabling said rotor to rotate in said housing in response to said exhaust pressure and for automatically inhibiting said rotor from rotating in the absence of said exhaust pressure;" and in Claim 13: "braking means, responsive to the absence of said exhaust pressure, for automatically preventing said rotor from rotating." See '346 Patent, col. 6-8.

In Cole the claim language at issue described the structure of the perforation in the claim itself. Cole 102 F.3d at 530 ("perforation means extending from the leg band means to the waist band means through the outer impermeable layer means for tearing the outer impermeable layer means for removing the training brief in case of an accident by the user"). The Federal Circuit concluded that this claim overcame the presumption because it contained structure (term "perforation" itself recites structure) performing the tearing function and the location of the structure.Id. In Envirco, the Federal Circuit reached a similar conclusion with regard to a claim element of a "second baffle means." The Court stated:

The term "baffle" itself is a structural term. The dictionary definition of the word "baffle" is "a device (as a plate, wall or screen) to deflect, check, or regulate flow." Webster's Ninth New Collegiate Dictionary 124 (1990). Because the term "baffle" itself imparts structure, meaning a surface which deflects air, its use in the claims rebuts the presumption that § 112, P 6 applies. Further, the claims describe the particular structure of this particular baffle ("having inner surfaces for directing airflow … radially outward … and thereafter … between said first baffle means and said air filter means").

Envirco, 209 F.3d at 1365. As described above, the claims in the '346 Patent do not contain a description of structure as do the patents involved in Cole and Envirco.

In the '346 Patent, the use of the verb "braking" to describe the means is another distinction between this case and Cole and Envirco. "Braking" is defined in the dictionary as "to retard or stop by a brake." Merriam-Webster's Collegiate Dictionary 138 (10th ed. 1996). This definition describes a function, not a structure. Plaintiff urges this Court to substitute the noun form "brake," in order to construe the claim as containing sufficient structure. For the same reasons that the Court agreed with Plaintiff that the term "only" cannot be read to modify "responsive to exhaust pressure," the Court will not substitute the term "brake" into the "braking means" elements of the claims in the '346 Patent. Even if the Court did construe the term to mean a "brake," the term "brake" by itself does not contain sufficient structure. The decisions in Cole and Envirco did not rely solely on the fact that "perforation" and "baffle" were nouns indicating structure, but rather that the claim language described either additional structure or its location.

Plaintiff argues that the Court should look to several dependent claims of the patent, including Claims 4, 5, 8, 9, 10, to find the necessary structure. It is true that these claims describe a rotary apparatus according to independent claims 2 and 6, which "includes" a brake pad (Claims 4 and 8), spring (Claims 5 and 9) and a predetermined number of guide holes (Claim 10). However, Plaintiff does not provide any legal precedent (other than the cases cited above) allowing this Court to rely upon language in dependent claims for corresponding structure to overcome a means plus function presumption. Rather, as Defendant argues, dependent claims must be construed to include all limitations of the independent claims incorporated therein. Therefore, if the independent claims fail to contain sufficient structure to rebut the presumption that they are in means plus function format, the dependent claims cannot "save" such claims from being means plus functions claims.
In addition, the dependent claims in the '346 patent use the term "includes" to describe the brake pad and spring. "Including" and "includes" are considered open terms, meaning other structure is needed to perform the function. See Altiris, 318 F.3d at 1376 ("claim language uses "including"--an open term--which suggests that the two sets of "commands" are not sufficient structure; rather, something else is needed").

Finally, while the specifications of the '346 Patent provide sufficient structure of a braking mechanism consisting of a brake pad having a number of guide holes in which guide pins are received with springs placed over the guide pins, the structure required to overcome the presumption of means plus function format must be in the claim itself. See '346 Patent, col 3; Envirco, 209 F.3d at 1365.

9. "A breath guard"

For the term "a breath guard," Foodie proposes "a barrier, such as distance, space, or solid materials, that provides protection from contaminants originating from a human's mouth or nose." Jamba Juice offers "a protective piece positioned between the customer and the customer service station to reduce the likelihood of ingredient contamination by the customer." Before analyzing the substance of the parties' different interpretations, it is important to note the parties have agreed on substantial parts of the term's definition, including use of the term "barrier." The parties also agree on the breath guard's purpose. As noted by Foodie, "the specification references the purpose of the breath guard is to reduce the likelihood of ingredient contamination during periods of consumer discourse and beverage preparation." Pl.'s Open. Markman Br. 29. Finally, the parties agreed that the "breath guard" should be positioned between the customer and the customer service station. See Transcript of Markman Hearing at 61, Foodie Partners v. Jamba Juice Co., Civ. No. 2:06-cv-12 (E.D. Tex. 2007).

6 While they did not initially propose "barrier" in their construction, at the Markman hearing, Jamba Juice made it clear that they felt a breath guard meant a "physical barrier." See Transcript of Markman Hearing at 56, Foodie Partners v. Jamba Juice Co., Civ. No. 2:06-cv-12 (E.D. Tex. 2007). On the other hand, Foodie's proposed definition uses "barrier," though as they pushed for the inclusion of space or distance in the definition of "breath guard" at the Markman hearing, Foodie's counsel later back-tracked from "barrier," saying "maybe barrier is not the most appropriate term, but I was just thinking as we were sitting here maybe it would be more appropriate to say 'mechanism such as distance or space or solid materials that provide protection.'" Counsel's second proposition was largely presented after argument over whether "barrier" included physical space, and was only offered off-the-cuff as an alternative to account for any ambiguity of whether "barrier" might include physical space. Regardless of whether "barrier" can include physical space/distance, the Court finds that "barrier" is the best term for this definition.

The dispute between the parties resides largely on the nature and positioning of the "breath guard." Regarding the nature of the breath guard, the dispute centers around whether or not the guard itself is a tangible object, or if something such as distance or air could qualify as a barrier for purposes of a breath guard. Foodie advances a number of arguments to support an interpretation that air or distance qualify as a "breath guard" under the patent. First, Foodie claims that inclusion of the term "breath" as a modifier for "guard" indicates the purpose is to guard against exhaled air during breathing or sneezing, and therefore distance or space would be an acceptable guard. Second, Foodie argues that the Ask.com Online Dictionary definition of "guard" is "something that gives protection; a safeguard," which they claim, as understood by one of ordinary skill in the art, would include distance or a wall—anything that would provide protection from bodily contaminants. Finally, Foodie references various health and safety standards as supporting extrinsic evidence, including the California Health and Safety Code and the National Sanitation Foundation Standard No. 2. 7 Foodie claims their interpretation of allowing space or distance to be included as a barrier is specifically based on the California Health and Safety Code's provisions allowing space and distance to qualify as contaminant-reduction mechanisms. Foodie also claims it chose the California code because it has a reputation as being one of the most stringent in the industry, and therefore one of ordinary skill in the art would understand that space or distance would satisfy the purpose of a "breath guard."
In response, Jamba Juice argues that the standards cited by Foodie are not uniform throughout the country, and that they are merely citing an alternative to an actual breath guard, not something that should be used to interpret the term. Instead, Jamba Juice turns to the patent's specifications in arguing that space and distance are not covered by the patent's reference to a "breath guard." As referenced in the patent, the most detailed information regarding a "breath guard" states that "a consumer breath guard 2.40 is attached to the [customer service station] to reduce likelihood of ingredient contamination during periods of consumer discourse and beverage preparation." '448 patent col. 6 l. 23-26. Jamba Juice argues that because the term "attached" is included, the patent specifically requires that a "breath guard" be something tangible—something that can actually be attached to the customer service station. In response, Foodie counters that this section would be a preferred embodiment, but that it does not preclude space or distance. Looking at both the ordinary meaning of the term, and the term's use and description in the specification, the Court agrees with Jamba Juice that a "breath guard," as referenced in the '448 patent, does not include space or distance.

As noted above, the parties both included "barrier" either in their construction, or argued for its inclusion at the Markman hearing. The definition of the term "barrier" includes "a material object or set of objects that separates, keeps apart, demarcates, or serves as a unit or barricade," WEBSTER'S 3D NEW INT'L DICTIONARY 179 (3d ed. 1961), and also "any natural bar or obstacle" and "anything that restrains or obstructs progress, access." Dictionary.com, http://dictionary.reference.com/browse/barrier. The first definition above would seem to negate any possibility of distance or space being included, while an argument could be made that distance or space would be a "natural bar" or "anything that … obstructs" under the second and third definitions. However, in order to "attach" something to the customer service station, as noted in the patent, it would take some liberal stretching of the meaning of attach to believe that air or space or distance, all essentially intangible, could somehow be attached to the customer service station. The Court agrees with Foodie that the specification is only delineating a preferred embodiment and is therefore not absolutely dispositive. Nonetheless, the specification offers clear support that the "breath guard" is meant to be limited to tangible objects that can actually be attached to the customer service station. The entire focus of the patent is to conserve space through the various measures it outlines, which makes arguing that distance should be included as a possible "breath guard" a counterintuitive exercise. Finally, the Court agrees with Jamba Juice's argument that many of the standards that Foodie cites are offering space or distance as an alternative to a breath guard, not a breath guard in itself. Accordingly, the Court must reject Foodie's proposition that "breath guard" includes distance or space, and finds that the barrier aspect of the "breath guard" was meant to include only tangible objects protecting ingredients from human contamination.

With the above considerations in mind, the Court construes the term "breath guard" to mean "a protective barrier positioned between the customer and the customer service station to reduce the likelihood of ingredient contamination by the customer."
(Patent at 2:6-7, 3:55-59.) That definition of "breathable" is further supported by plaintiff's response to the initial rejection of its patent application by the United States Patent and Trademark Office ("PTO"), by which plaintiff amended this claim to add "breathable" before "torso pad member." The Court believes that defining "breathable" in this manner would be useful to the jury. Accordingly, the Court construes the term "breathable" as used in Claim 11 of the Patent to mean allowing air or moisture to flow through.

Plaintiff does take issue with defendant's additional proposed limitation requiring that the flow of air or moisture be throughout [the torso pad member's] whole area. Defendant bases this portion of its proposed construction on the Patent's prosecution history, in particular the aforementioned response by plaintiff to the PTO. Defendant argues that plaintiff itself added this limitation in seeking to distinguish prior art (the Bassett patent) in order to overcome the PTO's rejection of this claim of the Patent. The Court does not agree, however, that plaintiff's response compels a construction of this term with the proposed limitation.

In rejecting the initial application, the PTO examiner stated as follows:

[The claims] are rejected under 35 U.S.C. 102(b) as being anticipated by Bassett et al. (US 5,781,935). Bassett et al. (hereinafter Bassett) discloses a protective shoulder pad (20) that includes a foam body having a hard rigid layer (36) being positioned between first and second breathable layers of foam material (38, 42) in a sandwich configuration and has a breathable fabric layer (34, 45) that is secured about the periphery of the pad, col. 3, lines 1 - col. 4, line 15 and as shown in figure 4. Further, the hard rigid inner layer includes spaced openings/perforations therethrough as shown in figure 5 which can inherently be made of plastic. Furthermore, the first and second foam layers are breathable with openings that align with the perforation of the inner layer, col. 4, lines 11-15.

Plaintiff amended its claim to add "breathable" to describe "torso pad member," and it responded to the PTO as follows:

[The claims] stand rejected under 102(b) as being anticipated by Bassett et al (Bassett). In response, [the claims have] been amended. . . . Because the claims as amended recite a breathable protective pad, this rejection should be overcome.

The amended claims continue to recite first and second layers of breathable foam, a breathable fabric layer and a hard layer having spaced apart openings. Now, as amended, the claims further emphasize the breathability of the pad as a whole. More specifically, [the claim] has been amended to explicitly recite a breathable protective pad that allows air or moisture to flow throughout the pad's area.

The object of the Bassett patent is to provide a pad that cushions not only the wearer but also another person/player coming into contact with the wearer. Col. 1, lines 3-51. Breathability and moisture transfer across the pad are not contemplated. In fact, the Bassett patent discloses the opposite: a nonbreathable pad incapable of air and moisture transfer across the pad's area.

Bassett discloses a nonbreathable pad having layers of nonbreathable materials. Padding layers 38 and 42 are disclosed as being closed cell type foam, such as VNS, which does not allow air and moisture transfer. The layer 34 is disclosed as being extremely durable and water-resistant and is applied across the exterior surfaces of the outer and inner layers. Col. 3, lines 49-52. As the detailed description goes on to state, "[b]y fully coating the pad, all surfaces would be sealed and impervious to external penetrants [sic] as water and sweat." Col. 3, lines 52-54 (emphasis added).

At col. 4, lines 11-15, the Bassett patent contemplates including "cutouts for ventilation or attachment or accessories." As this portion of the disclosure makes clear, such cutouts are not made to provide overall breathability and moisture transfer. In fact, modifying the Bassett pad to include a cutout that would allow air and moisture transfer across the pad's area would effectively eliminate the pad because the pad would become one big cutout. Instead, as the disclosure states, the cutouts allow for straps, hooks and attachment of other pad accessories through the cutout. Nothing suggests that the cutouts would make the padding breathable. Put another way, the cutout will allow ventilation through the cutout only, but the padding still would not provide any air or moisture transfer. As discussed above, the padding is explicitly disclosed as being sealed and impervious to water and sweat.

Accordingly, because Applicant's breathable pad that allows air and moisture transfer therethrough is not disclosed or suggested by the Bassett patent, the rejection should be overcome.
The PTO examiner then allowed the Patent's claims and amended the record, stating as follows:

[The claims] are allowable because the prior art does not teach or suggest the recitation therein including a football shoulder pad having a breathable torso pad that has a front portion, a back portion and a shoulder portion such that first and second layers of breathable foam layers are secured on opposing surfaces of a hard inner layer in a laminate configuration with the hard inner layer having spaced apart openings therethrough to allow air to flow through the torso pad.

Defendant argues that in distinguishing the Bassett prior art, plaintiff limited its claim by the use in its response of the phrases "breathability of the pad as a whole;" "allows air and moisture to flow throughout the pad's area;" and "[b]reathability and moisture transfer across the pad" (bold type in original). The Court does not agree, however, that plaintiff's response clearly shows an intent to disclaim patent scope in this manner. See Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1325 (Fed. Cir. 2003) (statements in prosecution history disavowing claim scope must be both "so clear as to show reasonable clarity and deliberateness" and "so unmistakable as to be unambiguous evidence of disclaimer"). Plaintiff certainly did not disclaim any claim scope explicitly in its response. A review of the entirety of the examiner's rejection and plaintiff's response suggests that plaintiff was seeking to overcome the rejection by pointing out that the Bassett shoulder pads (as opposed merely to the hard layer with cutouts) were not breathable (due to the use of VNS material and a sealant) and were not intended to be so (cutouts were not for breathability of the pad, pad was intended to be impervious); while plaintiff's own shoulder pads or torso pad members (as opposed merely to one or more layers of the pads or members) were breathable. Plaintiff's response does not suggest that plaintiff intended any additional spatial or areal limitation to its claim requiring that the torso pad member (and not merely one or more layers) be breathable.

Moreover, plaintiff also amended its claim to include the requirement of openings in the hard layer to allow airflow "substantially throughout" the torso pad member's area. That amendment supports the conclusion that plaintiff intended no other additional limitations not found in the language of the claim itself.

The Court thus rejects defendant's proposed limitation requiring that the flow of air or moisture be throughout the torso pad member's "whole area." The Court construes "breathable" in Claim 11 to mean allowing air or moisture to flow through.

The '810 patent does not define "breathable" or "moisture transfer." However, the specification employs the term "breathable" in the context of permeability to moisture vapor. "An object of the present invention," the specification reads, "is to provide . . . a more breathable liner. . . . This object . . . is realized by providing a lining system having lining materials which act as a moisture transferring system. Moisture vapors are transferred through the liner from one side to the other side." (810 Patent, col. 1, lines 37-47.) "Breathable" is also used in contradistinction to "waterproof." For instance, the patent refers to "a waterproof/breathable membrane," which it defines as a membrane permeable to moisture vapor in one direction, but impervious to moisture or moisture vapor in the other. (Id. at col. 5, lines 52-62; see also col. 4, lines 59-61; col. 8, lines 43-49. Thus, the Court defines "breathable" as "permeable to water vapor.")

Honda argues that this phrase should be construed as "a second volume for breather gas situated near the intake system on the side approximately opposite to the first breather chamber relative to the axis of the cylinder bore".

Honda argues that this phrase should be construed as "a second volume for breather gas situated near the intake system on the side approximately opposite to the first breather chamber relative to the axis of the cylinder bore." Coast argues that the phrase should be construed to mean "a second enclosed space that collects breather gas from the crank chamber to facilitate separation of oil from breather gas is situated near the intake system and is on the side of the engine body opposite, relative to the axis of the cylinder bore, a first enclosed space that collects breather gas from the crank chamber to facilitate separation of oil from breather gas." Although the parties have presented the entire phrase to the Court for construction, it is evident from their proposed constructions that they dispute the meaning of the term "breather chamber," as well as the
meaning of the term "on the side approximately opposite."

With respect to the "breather chamber" dispute, Honda argues that Coast's proposed construction improperly includes a functional limitation. In general, "[a]n invention claimed in purely structural terms generally resists functional limitation." Toro Co. v. White Consolidated Indus., Inc., 266 F.3d 1367, 1371 (Fed. Cir. 2001). Relying on Toro, Coast responds that including the function of the breather chamber is proper, because the function of the breather chamber is inherent in its structure. In Toro, the Federal Circuit construed a disputed claim term to require "a unitary cover and ring." Id. As part of the claim construction process, the court relied on the fact that the specification stated that an advantage of the invention was that the "unitary cover and ring design" could restrict the size of an air inlet "without having the operator manually insert or remove a replaceable ring," i.e. an automatic placement function. Id. The court, however, did not utilize that function in its construction of the term, because the function was inherent to the structure. Simply put, the "automatic placement" function was embraced within the construction of the term, because the ring was permanently attached to the cover in a unitary design, i.e. it did not need to be inserted or removed. Id.

In this case, the disputed phrase is couched in structural terms. Although Honda suggests that the term should be construed to mean a "volume," the Court finds that Coast's proposed construction of an "enclosed space" more accurately reflects the plain meaning of the term "chamber." See, e.g., Webster's at 225 ("a natural or artificial enclosed space or cavity"). Although, the inventors describe the function of the breather chamber throughout the specification, a review of the detailed description of the preferred embodiment demonstrates that there are numerous components within the breather chamber, such as labyrinth walls, that help to facilitate the separation of oil from breather gas. The functional limitation Coast seeks to add to the construction of the term "breather chamber" is not necessarily inherent to its structure, and Coast's reliance on Toro is inapposite. To the extent there is any function inherent in the structure of the breather chamber, the Court concludes Honda's view of that function is more apt, i.e. the chamber is an enclosure for breather gas.

The parties also dispute the meaning of "on the side." The claim language states that the "second breather chamber is placed in the vicinity of the intake system on the side approximately opposite to the first breather chamber relative to the axis bore." Coast argues that the claim language is ambiguous because there is no antecedent basis for "the side," leaving one to "wonder, 'the side of what?'" (Opp. Br. at 13:10-11.) The Court finds the claim language to be ambiguous and looks to the specification for guidance.

The specification states that the "engine block 25 of the engine body 11 includes a first breather chamber 64, a first through passage 65, a second breather chamber 66, a second through passage 67, and a communicating passage 68[.]" ('215 Patent at 5:17-20.) Referring to Figures 3 and 4 of the '215 Patent, the inventors state that the "first breather chamber … is placed at a position that is approximately 180 degrees away from the position corresponding to the … intake system 39 along the circumferential direction of the … cylinder bore 16. … The second breather chamber is placed in the vicinity of the intake system 39 on the side approximately opposite to the first breather chamber 64 relative to the axis of the cylinder bore 16," (Id. at 5:22-31.) Referring back to the figures, the two breather chambers are located on opposite sides of the engine body. These specification references and the figures, therefore, illuminate the meaning of the term "on the side," as it is used in the claims, and the Court adopts this aspect of Coast's proposed construction.

Accordingly, the Court construes the term "a second breather chamber placed in the vicinity of the intake system on the side approximately opposite to the first breather chamber relative to the axis of the cylinder bore" to mean: "a second enclosed space for breather gas situated near the intake system on the side of the engine body approximately across the axis of the cylinder bore from the first enclosed space for breather gas."

8. "bridging portion"

a. Parties' Positions

The parties propose the following constructions for "bridging portion," which is present in claim 1 and in the '224 Patent. Dkt. No. 114. The primary dispute between the parties is whether the bridging portion must be limited to a ridge-like structure.
RTI contends that BD's construction improperly limits the invention to a preferred embodiment. Dkt. No. 111 at 28. While the embodiment in Figure 8 admittedly depicts a raised ridge between facing surfaces, RTI argues that nothing in the specification limits the bridging portion to such a structure. Id. Instead, the specification states that the bridging portion may be joined to needle holder by a tack weld, or "by providing any other form of frangible bridging portion that holds the separable ring member and needle holder together." Id. at 28-29 (citing '733, 9:37-40).

In response, BD argues that the specification defines the bridging portion as a "small ridge" or "raised portion" joining facing surfaces. Dkt. No. 112 at 27 (citing '733, 3:43 and '077, 10:38-39). While the bridging portion may admittedly be made of various materials, BD contends that it must have some definable structure, which the patent identifies as a ridge on one of the facing surfaces. Id.

b. Court's Construction

The specification describes the bridging portion as a ridge-like structure that may take the form of a single "very small raised portion" or a "series of horizontally spaced apart raised portions." While the preferred embodiment describes the bridging portion as such ridge-like structures, the Court finds no evidence that the patentee intended to limit the term to that structure. See Phillips, 415 F.3d at 1323 (claims should not be limited to particular embodiments unless the inventor has indicated such a narrow construction). Additionally, the bridging portion is part of an embodiment depicted in Figure 8, which the specification distinguishes from those embodiments depicted in Figures 1-3. See '733, 9:7-17. It is thus apparent that Figures 1-3 do not contain the claimed bridging portion, as the adjoining surfaces of the retainer member and needle holder in those embodiments are flush with one another. Thus, if two surfaces are completely flush with one another they cannot logically be joined by a bridging portion. As such, the claimed bridging portion, whatever the form it takes, must be a distinguishable structure that both joins the two components and provides some separation between them. The separation may take the form of a "small gap between them all around" ('733, 9:30-31) as depicted in Figure 8. Conversely, the bridging portion could take the form of a "frangible web" (Dkt. No 111 at 29), the gaps of which separate the two surfaces.

Accordingly, as the Court previously ruled, the term "bridging portion" means "a structure that spans the gap between and connects the retainer member and needle holder."

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4. "Bringing, Respectively"

The first step of the method taught by Claim 1 is "(a) bringing, respectively, said corresponding contact surfaces of said electrically conductive terminals into contacting relationship with said corresponding contact surfaces of said conductor elements."

Thomson construes "bringing, respectively" to mean "the article and the device are brought face to face and then into physical contact in a direction that has at least one component of "normal" (perpendicular) motion." Thomson's Prop. Or. Thomson argues first that "bringing" is indefinite or a technical term. To save the term, Thomson argues that the normal motion limitation must be imposed either by reference to the specification or by operation of law under 35 U.S.C. § 112 P 6. The ALJ rejected Thomson's contention, and the Commission allowed the ALJ's construction to stand. This Court also finds no reason to read in the directional limitation Thomson suggests.

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4 Gentry Gallery Inc. v. Berkline Corp., 134 F.3d 1473, 1479 (Fed. Cir. 1998) is distinguishable. In Gentry, the court narrowed a broad claim to the scope of the disclosure based on a series of considerations concerning the patent's purpose.
and the inventor's objective intent, which are not present in this case. Moreover, Thomson's general step-plus-function argument must be rejected. The very authority Thomson relies on does not support the argument. See O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1583 (Fed. Cir. 1997) ("If we were to construe every process claim containing steps described by an 'ing' verb . . . into a step-plus-function limitation, we would be limiting process claims in a manner never intended by Congress.").

As for the term "respectively," Innovatron would have this mean only that the corresponding contact surfaces are brought together correspondingly -- with the contacts meeting A to A, B to B, etc. Within the sentence, however, the adverb "respectively" modifies the verb "bringing" to impose two limitations on how the surfaces are brought together: (1) both the article's terminals and the device's elements are "brought," i.e., force is applied to both so that they move toward each other; and (2) the motion is not simultaneous -- the removable article's terminals are first "brought" followed by the bringing of the device's elements to create the "contacting relationship." The specification confirms this reading because this is how the bringing step is accomplished in the preferred embodiment. If resort to extrinsic evidence is appropriate, the dictionary definition also supports this reading. See WEBSTER'S II NEW RIVERSIDE UNIVERSITY DICTIONARY [hereafter "WEBSTER'S II"] 1001 (1994) (defining "respectively" as "singly in the order indicated or mentioned").

The term "bringing, respectively," as used in step (a) of Claim 1, is construed to mean that force is applied to both the removable article and the device's electrically conductive elements such that the removable article is moved first followed by motion of the device's conductive elements until they are brought into a contacting relationship. No directional limitation on how these movements are accomplished is imposed by the term "bringing, respectively."

The '167 patent, like the '015 patent, describes a disposable container lid that is primarily used with beverage containers. The '167 patent is an "improvement" patent. "The '167 patent discloses an improved self-forming hinge element for the access strip and an improved retainer construction for holding the access strip open to allow drinking." See Bailey, 1998 WL 4726 **1 (Fed. Cir. 1998). The '167 patent has nine claims, but not all of them are asserted against Dart. Claim 1 is the only independent claim of the '167 patent. It reads as follows:

1. In a container lid of the type composed of a thin, resilient, thermoplastic polymeric sheet material and comprising a central portion of a size and shape to overlie the open end of a container, a rim-engaging means integral with the periphery of said central portion and being adapted to releasably secure the lid to the rim of a container and a pair of spaced apart tear impressions extending inwardly from the edge of said rim-engaging means and terminating at spaced apart locations within said central portion, thereby to define therebetween an access strip, the improvement which comprises: a self-forming hinge element for said access strip comprising a molded-in depression on said central portion, said depression defining an essentially vertical depending straight wall bridging the interior ends of said tear impressions.

The claim language "essentially vertical depending straight wall" is not in dispute. The Federal Circuit has previously construed "essentially vertical" as "vertical or a few degrees from vertical." See Bailey v. Dunkin Donuts, Inc., 1998 U.S. App. LEXIS 1175, *6, 1998 WL 4726 at *4. Moreover, the parties agree that the term "depending straight wall" should be given its plain and ordinary meaning. The term "depending" means "hanging or inclining downwards." 4 Oxford English Dictionary 475 (2d ed.1989). In this case, the term "depending" is understood in relation to the horizontal plane of the surface of the central portion. In addition, the term "straight" should be given its ordinary meaning. "Straight" means "not crooked; free from curvature, bending, or angularity." 16 Oxford English Dictionary 817 (2d ed.1989). Finally, the term "wall" in the claim was intended by Bailey to be given its ordinary meaning, and, therefore, I determine "wall" to mean "a perpendicular surface forming an enclosure or barrier." 19 Oxford English Dictionary 848 (2d ed.1989).

The gravamen of the dispute between the parties is the phrase "bridging the interior ends of said tear impressions." While
both parties agree that I should construe the word "bridging" according to its ordinary meaning, they cannot agree on what that definition requires. Dart argues that the word "bridging" requires that the tear impressions physically extend to touch or intersect the essentially vertical depending straight wall hinge element. Bailey argues that the term "bridging" does not require that the tear impressions touch the wall of the hinge element.

Bailey's expert, Dr. Grossman, found support for Bailey's construction in the specification, which describes an embodiment in which the tear impressions "can run to or into" the wall. The use of the permissive word "can," rather than a mandatory word such as "must," suggested to Dr. Grossman that the tear impressions may run to or into the wall, but are not required to do so. The magistrate judge adopted Bailey's position:

Examining the term bridging, the ordinary meaning of bridging does not require that the component being bridged, i.e., the interior ends of the tear impressions, touch or physically intersect with the component doing the bridging, i.e., the vertical depending straight wall. Ordinarily, the term bridge simply means "a structure carrying a pathway or roadway over a depression or obstacle." Such a definition does not directly imply, let alone require, that the obstacle being bridged intersect the actual bridge. To create this implication, let alone this requirement, would necessitate more specific and particular language in the claim. For example, claim 1 could describe the vertical depending straight wall as "bridging and touching the interior ends of the tear impressions." Unfortunately for Dart, however, claim 1 does not contain such language but simply uses the term bridging.

See Bailey I, 980 F. Supp. at 578.

Upon reconsideration, I conclude that one skilled in the art would understand the term "bridging" to require the tear impressions to intersect or touch the essentially vertical depending straight wall. The verb form "bridging," as opposed to the noun examined by the magistrate judge, is defined:

"22. to make a bridge or passage over; span: The road bridged the river. 23. to join by or as if by a bridge: a fallen tree bridging the two porches."

Random House Webster's Unabridged Dictionary 261 (2d ed. 1997). 9 Bailey's counsel disagrees, however, that "bridging" requires the joining of the tear impressions. Instead, Bailey's counsel argued at the hearing that joining was permissible, but all that is required by the '167 patent is that the vertical wall be "between" the tear impressions. Tr. 5, p. 70, l. 4-6. 10 Bailey's argument seeks to limit the word "bridging" to simply mean "spanning." While it is true that all bridges must span whatever it is they bridge (e.g., the river or the area between the two porches), it is also true that bridges must touch either side of what it is they bridge (e.g., the banks of the river or the porches). The most accurate way of expressing these truths is the verb "to join." Thus, the essentially vertical depending wall must "join" the pair of spaced apart tear impressions.

9 I have relied generally on the Oxford English Dictionary for the definition of disputed terms. Here, I rely on the Random House Webster's Unabridged Dictionary because that was the source provided to me by Bailey. Bailey's Brief After Markman Hearing, Ex. 2.

10 The following conversation took place at the Markman hearing:

The Court: [The wall] may join, but it may just be between?

Counsel: Yes, exactly right.

Tr. 5, p. 70, l. 4-6.

Therefore, in the case of one continuous line, the tear impression must touch or intersect the vertically depending straight wall. When the tear impression consists of a plurality of spaced-apart, relatively short impressions, a small space separating the wall from the last impression may be appropriate. Such a space must be small enough that the tear impression retains its
essential feature of touching the wall, bearing in mind that the tear impression is formed by a series of intermittent impressions and spaces. 11

--- Footnotes ---

11 This conclusion is consistent with my ruling above that a small space may exist between the first impression and the outer edge. Both of these rulings recognize that the "tear impression" consists of "impressions" and "spaces" between them. Thus, the tear impression does not necessarily begin at the first "impression" or end at the last "impression." Instead, there may be a small space beginning or ending the structure termed "tear impression."

--- End Footnotes ---

2. "Bristle"

Plaintiffs and defendants dispute whether the term "bristle" means a single fiber having two ends or, rather, a portion of a single fiber having a "tip" located some distance from the brush's core and a "base" located at the brush's core. Plaintiffs urge the former construction and defendants the latter. Plaintiff's construction of the term "bristle" is the more plausible.

Although the language of claim 1 sheds no light on the proper interpretation of the term "bristle," the specification describes bristles as fibers with two ends. In describing the insertion of the bristles between the metal loops of the twisted iron core, the specification depicts the bristles as constituting single fibers, not portions of a single fiber: "In effect, when the bristles are implanted between the turns of the core, there is a softening of the bristles due to the deformation of the cross-section of the bristle, which is all the more noticeable when bristles used comprise capillary tubes." ( '622 patent, col. 3, ln. 68 to col. 4, lns. 1-4) (emphasis added). Thus, the patent refers to the fibers as bristles even prior to their insertion into the metal core where they subsequently are "bent" at their midway point. The specification uses the term bristle in a similar fashion in its description of the drawings: "FIGS. 3 and 4, respectively, represent a profile and top view of a rake delivering the bristle tufts intended, in conjunction with the core, to constitute the brush." ( '622 patent, col 4, lns. 41-43) (emphasis added). The patent further explains that, when situated within the rake-like device prior to their insertion in the core, "the bristles 3 are disposed in regular bundles 6 within successive mutually parallel teeth 7 of a rake-shaped device 8 from which they project laterally by substantially the same distance on either side." ( '622 patent, col. 5, lns. 1-4) (emphasis added). With the bristles thus situated, the rake-shaped device is brought near the twisted wire 2b until the bundles 6 each penetrate with one of their ends into a loop 5 perpendicular to the median line of the twisted wire 2b until the wire comes to occupy a median position in relation to the bundles 6 of the bristles which then project from the latter on either side by a practically identical distance.

( '622 patent, col. 5, lns. 8-15) (emphasis added). Stated differently, the bristles are inserted into the metal loops constituting the core until the core is roughly in the middle of the bristle tufts. If the core sits at the middle of the bristle bundles, a bristle must be the entire fiber and not just a portion of it.

Defendants, however, point to the language of claim 7 in support of their two-bristles-for-one-fiber theory. Claim 7 discloses a brush according to claims 1 or 6, wherein each bristle of at least part of the set of bristles of the brush comprises on its surface at least one capillary channel extending substantially from its base as far as its tip.

( '622 patent, col. 6, lns. 42-45) Defendants argue that if a bristle is a single fiber with two ends, the ends would be indistinguishable and it would be nonsensical to refer to one end as a base and the other as a tip. Thus, they conclude that a bristle is the portion of a fiber extending from the core (its base) to its tip. This is an unwarranted conclusion. Claim 7 discloses a mascara brush with capillary channels disposed on the surface of its bristles. Its use of the word "base" is necessitated by the fact that the brush's twisted wire core interrupts the capillary channel's progress across the surface of the bristle. "Base" is merely a convenient way of expressing that the capillary channels extend (for all practical purposes) only
as far as the wire core, where their capillary action is thwarted by the wire core that deforms the bristle's cross section. (See ’622 patent, col. 3 ln. 68 to col. 4, Ins. 1-3) ("In effect, when the bristles are implanted between the turns of the core, there is a softening of the bristles due to the deformation of the cross-section of the bristle . . . .").

Accordingly, the court shall construe the term "bristle" to mean a single fiber having two ends.

1. "A Brush for the Application of Mascara to the Eyelashes"

Both parties agree that this phrase forms the preamble of claim 1. Plaintiffs urge the court to give this preamble the effect of a claim limitation. Specifically, they argue that it refers to "a brush that takes up mascara formula from a container and then transfers the formula to the eyelashes while simultaneously separating and combing the lashes." (D.I. 272 at 15) Defendants, on the other hand, argue that this preamble is not a claim limitation at all. Defendants argue in the alternative that the preamble limits the claim only to a brush intended for use in "making up" the eyelashes with mascara.

The question of whether to give the preamble the effect of a claim limitation "can be resolved only on review of the entirety of the patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim." Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257 (Fed. Cir. 1989). Courts construe claim preambles consistent with the general principles of claim construction. If, after reviewing the patent as a whole, the claim preamble is "necessary to give life, meaning, and vitality" to the claim then the claim preamble should be construed as if in the balance of the claim." Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999). When the drafter chooses to use both the preamble and the claim body to define the invention, "the invention so defined, and not some other, is the one the patent protects." See Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed. Cir. 1995). If, on the other hand, the body of the claim sets forth the complete invention and the preamble offers no distinct definition of any of the claimed invention's limitations, "but rather merely states . . . the purpose or intended use of the invention, then the preamble is of no significance to claim construction." Id.

In the present case, the preamble must be read as a limitation upon the claim. This conclusion is confirmed by a review of the patent as a whole. First, and most obviously, the patent title, "Brush for the Application of Mascara to the Eyelashes," indicates that the inventor intended the patent to cover only mascara brushes. Second, the specification is replete with references to brushes used in applying mascara. In short, the patent as a whole is directed to a particular type of brush -- specifically, a brush designed to solve the problem of uneven mascara application on the eyelashes. The preamble gives meaning to claim 1 by indicating the kind of brush the inventor designed to remedy this problem: only those brushes structurally suited for placing mascara on the eyelashes. Without benefit of the preamble, it is conceivable, for instance, that claim 1 could be construed to cover brushes not designed to place mascara on the eyelashes (for instance, brushes with purely industrial applications). 2 To read claim 1 in such a fashion "would be divorced from reality." Corning Glass, 868 F.2d at 1257. Therefore, the court shall give the preamble to claim 1 the effect of a claim limitation.

2 At one point during the prosecution history, patents disclosing brushes used in cleaning metal parts and boiler tubes were offered (and rejected) as prior art references. (See D.I. 275 at SA 570-71)

Having determined that the preamble serves as a structural limitation on claim 1, it is now necessary to determine the scope of that limitation. Plaintiffs argue that the preamble refers to a brush that takes up mascara formula from a container, transfers the formula to the eyelashes, while simultaneously separating and combing the lashes. The simple phrase, "[a] brush for the application of mascara to the eyelashes" does not warrant such a narrow reading. Contrary to plaintiffs' assertions, neither the preamble nor claim 1 refers to a particular method in which the mascara brush must be used. Nor does it make any mention of other mascara components, such as a mascara container. Indeed, reference to claim 17 of the '622 patent, which discloses a mascara applicator comprising several components, confirms that the preamble to claim one refers only to mascara brushes and not to the process or components of mascara application. Claim 17 reads, in pertinent part, as
In a mascara applicator including a mascara reservoir, a detachable cap adapted to said reservoir, a stem integral with said cap and a brush depending therefrom, said stem and brush penetrating into said reservoir through a substantially circular opening surrounded by a wiping lip . . . .

(Reexamination Certif. B1 '622 patent, col. 2, ins. 8-13) It would be improper to read the more sparsely worded claim 1 as narrowly as the more detailed claim 17. Where some claims are broad and others narrow, the narrow claim limitations cannot be read into the broad claims. See Marsh-McBirney, Inc. v. Montedoro-Whitney Corp., 882 F.2d 498, 504 (Fed. Cir. 1989).

Consequently, the court shall construe the preamble of claim 1 to mean a brush used to place mascara on the eyelashes.

12. "brush track"

This term is found in Claim 16. The parties are nearly in agreement on the construction of this term, with relatively minor differences in their proposed constructions. Plaintiff offers the following: "the area of the commutator bar, including any carbon block bonded thereto, which is slidingly engaged by the brushes of the motor or generator." Defendants, on the other hand, assert that the disputed term means "the area of the commutator bar which is slidingly engaged by the brushes of the dynamoelectric device." As found in the prosecution history of the '015 Patent, Plaintiff's patent counsel explained to the Patent Examiner that "[t]he brush track is that area of the commutator bar which is slidingly engaged by the brushes of the dynamoelectric device." Buckingham Decl., Ex. B at J00199. Defendants' prosed construction tracks this language exactly. Plaintiff's construction, while similar, adds reference to the "carbon block" that may be bonded to the commutator bar. The Court agrees, however, with Defendants' assertion that whether a carbon block has been bonded to the commutator bar is not relevant to the definition of "brush track." Therefore, the Court shall construe "brush track" as "the area of the commutator bar which is slidingly engaged by the brushes of the dynamoelectric device."

II. "Buckling"

Plaintiff next argues that the proper construction of "buckling" is "the planned failure or collapse of a column wall resulting in redistribution or lessening of the load carried by the column." 25 Plaintiff points to the language of the '111 and '527 patents which states that "buckled columns offer little resistance to deformation, thus removing pressure from the hip bone area." 26 Defendants rely on a Mechanics of Materials manual and the Random House dictionary to define "buckling" as "lateral bending of a portion of a column, or the change in primary loading of a portion of a column from axial compression to lateral bending." 27 Defendants also point to a Final Office Action by the USPTO in a Reexamination of Patent '111, in which the USPTO rejected Plaintiff's proposed definition of the term and noted that "the term buckling . . . is defined as bending." 28

--- Footnotes ---

26 Id.
27Defs.’ Markman Ex. M, at M-12.
28 Id.
Again, the Court finds that Plaintiff's intrinsic evidence, rather than Defendants' extrinsic evidence, provides the proper ordinary and accustomed meaning as understood by one of ordinary skill in the art. Specifically, the Court notes that bending, as defined by Defendants, does not necessarily result in a lessening of a load as a person of ordinary skill in the art would understand Plaintiff's use of the term "buckling" upon a careful reading of Plaintiff's patents. As to Defendants' intrinsic evidence, the Court notes that the USPTO's reexamination definition appears to be vague and overbroad. Defendants argued at the Markman hearing that one understood definition of buckling defines the term as lateral bending of a portion of a column. However, the USPTO states only that the term means "bending." This lack of clarity in the examination history, combined with the specification language describing buckled columns, leads the Court to accept Plaintiff's preferred definition.

C. As Properly Construed, the Claims of the '434 Patent Are Not Infringed

Claims in the '631 Patent require a bearing surface "built up with a hard facing." Baker Hughes contends "built up" means "raised or built up, or increasing surface height." ReedHycalog contends "built up" means "appreciably raised." A lay jury will understand the term "built up" and therefore the term requires no construction.

We find that the district court defined "bulbous" as used in claims 1 and 45 too narrowly. The district court defined "bulbous" as non-cylindrical device with rounded edges. The written description defines bulbous more broadly.

The distal end portion of the bulbous element 28 is preferably generally rounded on its exterior surface (as illustrated in order to facilitate pressing the element into and through softened body material while minimizing the risk of mechanical perforation. The bulbous element 18 can alternatively have other shapes as desired, including oblong or eccentric with respect to the axis of the fiber optic 22 or even generally crescent shaped. Such an eccentric or oblong shape can be rotated to generate an even larger channel through an obstruction. A crescent-shaped element also allows for viewing past the element.

Although the patent does not define the term "bulbous" with great specificity, the above-quoted passage is consistent with the generally understood meaning of the term as "bulb-shaped, bulging," Random House Unabridged Dictionary 274 (2d ed. 1993), or "resembling a bulb; rounded," Webster's II New Riverside University Dictionary 207 (1984). In order to infringe, the accused device thus must have an element mounted on the distal end region of the laser energy transmitting conduit that is enlarged vis-a-vis the conduit and has a generally rounded distal end. Based on the evidence in the record, we conclude that there is at least a triable issue of fact as to whether SLT's SFB 1.0 probe is bulbous under this definition.
Application of the above principles here compels the conclusion that STX is entitled to judgment as a matter of law because Brine/SLI has failed to counter the evidence presented by STX demonstrating that the Raptor lacrosse head does not infringe claims 1 and 9 of the '434 patent as herein construed. Similarly, there is no evidence in the record demonstrating that the Raptor lacrosse head infringes claims 2, 3, and 8 of the patent.

Brine/SLI has alleged that STX's Raptor lacrosse head infringes claims 1, 2, 3, 8, and 9 of the '434 patent. Of these claims, claims 1 and 9 are the only independent claims. As such, claims 1 and 9 represent the minimum number of elements required to infringe the '434 patent. Each of the claims contain the limitation that the sidewalls of the lacrosse head must "have a bottom edge thereof extending outwardly such as generally to define a bulge in the bottom" of the sidewall, "generally about midway of the length of [the] sidewall."

STX contends that the Raptor lacrosse head does not infringe the '434 patent because it does not have the characteristic "bulge" feature denoted in claims 1 and 9 of the '434 patent. At issue is the meaning of the term "bulge." Adverting to the specification, claim language, testimony of the inventors of the '434 patent and a dictionary definition, STX argues that the "bulge" limitation is properly defined as a "swelling" or "belly" protruding from the bottom sidewalls. STX argues that the specification of the patent clearly defines "bulge" as "an outward extension of the bottom edge." STX describes the accused product, the Raptor head, as having sidewalls with a continuous "curve" as opposed to a protuberance or swelling in the bottom sidewalls.

Brine/SLI asserts that there is no distinction between a "curve" and a "bulge" and that the Raptor design is the same as the '434 patent design. In support, Brine/SLI cites the definition of "bulge" given in one dictionary: an "outward curve." Instead of focusing particularly on defining the term "bulge," Brine/SLI focuses on defining words in the specification associated with demarcating the limitation of the "bulge" design:

Nowhere in the specification or claims of the '434 patent do the inventors apply a special or unique meaning to the words "extends," as used in the specification, or "extending", as recited in claim 1 of the '434 patent, to define the word "bulge." Consequently, the word "extending" as used in claims 1 and 9 of the '434 patent has the ordinary meaning as construed by someone skilled in the art. The word "extend," as used in the '434 patent to define "bulge," obviously means, "to stretch or spread out to full length; to expand the area or scope . . . ." It is also apparent from the '434 specification, that the word "bulge" does not have a special meaning contrary to its ordinary meaning, which includes . . . "protruding part; an outward curve or swelling."

I have carefully considered and evaluated the claim language and the specification. I have also reviewed the prosecution history, interrogatories, and deposition testimony cited by the parties in support of their respective positions. I conclude that the meaning of the term "bulge" is clear when read in light of the claims and specification together. "Bulge" as used in claims 1 and 9 comports with the ordinary and plain meaning of the term, as it would be understood by one of ordinary skill in the art. Furthermore, it is clear from the patent as a whole that "bulge" has an even more distinct and finite meaning as it relates to the invention. First, the "bulge" is in the bottom sidewall as described in claims 1 and 9. The "bulge" begins about midway in the bottom sidewall. Claim 5 places further limitations on the bulging feature. The height of the sidewalls at the midpoint of the bulge is 1.15 - 1.5 times the height of the sidewall at the throat end. Clearly, the bulging feature creates a swelling near the midpoint of the lacrosse head and in the bottom sidewalls. As a matter of law, the "bulge" limitation in the '434 patent is not simply a "curve" but is a curve-like protuberance.

As described in the specification, the "bulge" design was a move away from the design where the ball pocket was in the throat area. The '434 patent design was to create a ball pocket nearer the lip portion of the head. This novel design was viewed by the inventor as facilitating the advanced playing skills of lacrosse players who play and pass the ball using wrist-flicking movements as opposed to the old method of fall arm swings. The '434 patent design is intended to keep the ball from leaving the head too soon, thus enabling the player to exercise greater control in directing the ball when propelling it.

The prior art reviewed during patent prosecution supports these conclusions. In an "Information Disclosure Statement" the following references were cited:

Brine '737 is illustrative of lacrosse stick head frames in which the upper and lower edges of the side walls are substantially parallel . . . .
Brine '248 and '260 are illustrative of lacrosse sticks having typical rearwardly-disposed ball pockets...

Brine '666 and '260 show a lacrosse stick head frame in which the side walls are provided with greater height from the throat area than from the lip area...

See Brine's Response, '434 Patent File Wrapper. Further, during patent prosecution, the original title of the patent was changed from "A Lacrosse Head" to "Lacrosse Stick Head With Bulged Side Walls" to reflect the distinct bulging feature. Id.

The intrinsic evidence alone is enough to resolve the meaning of the term "bulge." Nevertheless, the testimony of Peter Brine, Jr. and William Brine III, the inventors of the '434 patent, also supports the court's interpretation. William Brine III defined "bulge" as

[A] bulge starts on a defined plane and goes down, and comes back up to somewhere near that plane; and a curve doesn't necessarily have to do that.

He testified further that Brine used the term "bulge" "by what the dictionary said." Id. He also offered this construction:

In order to shift the ball pocket forward in the head, a lowering of the sidewall in the center is needed. This bending of the lower line of the sidewall forms a bulge that extends outwardly from the imaginary plane between the shaft and the scoop.

Peter Brine offered the following construction:

Q: What was the invention of the 434 patent?
A: This was a stick that -- rather a lacrosse head that had a belly or a bulge in the sidewall, bottom of the sidewall.

* * *

Q: And what is your understanding of the term "Bulge"?
A: An outcropping . . . . An outcropping off of a line.

After preliminary claim construction briefing, the parties agree that the only term necessary for the court to construe is "bulk volume." As an example, claim 14 of the '694 patent states:

14. A method for making expanded graphite from lamellar graphite comprising:
   a) providing lamellar graphite particles having at least a minimal purity;
   b) intercalating the lamellar graphite particles with an expandable graphite intercalation method;
   c) expanding the graphite intercalation compound to exfoliate the graphite particles; and
   d) air milling the exfoliated graphite particles to further delaminate them to create an exfoliated graphite product having a surface area to mass ratio of at least 18 m\(^2\)/g and a bulk volume of at least 20 ml/g.

II. Analysis

a court to use when performing claim construction. Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) (en banc). The words of the claims in a patent are to be given the ordinary and customary meaning that would have been attributed to them by a person of ordinary skill in the art at the time the invention was made. Id. at 1312-13. The person of ordinary skill in the art is deemed to have read the term in the context of entire patent, including the claims themselves, the specification, and the prosecution history. Id. at 1313. The claims, specification, and prosecution history are so-called intrinsic evidence.

Extrinsic evidence is everything "external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." Id. at 1317. Review of technical dictionaries and treatises can be helpful to the court in understanding the technology of the invention and can assist the court in determining the meaning of terms to those of skill in the art of the invention. Id. at 1318. Where extrinsic evidence conflicts with the intrinsic evidence of the patent, however, the intrinsic evidence controls. Id.


The requirement that claim language be sufficiently definite arises from 35 U.S.C. § 112 P 2 which states: "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." If a person of ordinary skill in the art can reasonably understand the claim when read in light of the specification, the claim is not indefinite. Marley Mouldings, 417 F.3d at 1359 ("The statute is satisfied if a person skilled in the field of the invention would reasonably understand the claim when read in the context of the specification."). "When a claim 'is not insolubly ambiguous, it is not invalid for indefiniteness."' Id. at 1361 (quoting Bancorp Servs., L.L.C. v. Hartford Life Ins. Co., 359 F.3d 1367, 1372 (Fed. Cir. 2004)). The Federal Circuit has recently emphasized that the court must keep in mind the presumption of validity when determining whether a claim in invalid for indefiniteness:

    In this regard it is important to note that an issued patent is entitled to a statutory presumption of validity. See 35 U.S.C. § 282 (2000). "By finding claims indefinite only if reasonable efforts at claim construction prove futile, we accord respect to the statutory presumption of validity and we protect the inventive contribution of patentees, even when the drafting of their patents has been less than ideal." Exxon Research & Eng'r v. U.S., 265 F.3d 1371, 1375 (Fed. Cir. 2001) (citation omitted). In this way we also follow the requirement that clear and convincing evidence be shown to invalidate a patent. See Budde v. Harley-Davidson, Inc., 250 F.3d 1369, 1376 (Fed. Cir. 2001).

Datamize, 417 F.3d at 1347-48.

Timcal argues that the term "bulk volume" as used in the '694 patent is indefinite, rendering the claims invalid, because the patent does not specify the method used to measure bulk volume. According to Timcal, the calculation of bulk volume depends on the method used to determine it, and because no method of measuring bulk density is specified in the patent, the term is devoid of meaning. Thus, Timcal argues that the claims of the '694 patent which include a bulk volume limitation are indefinite. In order to be sufficiently definite, Timcal argues, the patent would need to specify: (1) whether it refers to "loose bulk density," "tapped bulk density," or "packed bulk density"; and (2) the precise procedures for measuring the bulk density such as the type of measuring instrument and the method of adding material to that instrument among other things.

Superior argues that, although no method of measuring bulk density is provided in the patent itself, a person of ordinary skill in the art would understand how to measure it. Superior argues that "bulk density" has a recognized meaning in the graphite processing industry: loose bulk density measured using the Scott volumeter. 1

--- Footnotes ---

1 In its initial claim construction contention, Superior proposed a broader definition of bulk volume, "the physical measurement of the volume to unit mass ratio of the air milled graphite which physical property is the mathematical inverse of the measured bulk density (mass to unit volume ratio) value." In response to Timcal's contention that the term is indefinite, Superior provided a narrower construction, loose bulk density measured using the Scott volumeter. Since the
dispute in this case involves the view of one of ordinary skill in the art, the court finds that it is appropriate to consider Superior's narrower proposed construction.

A. Intrinsic Evidence

If a claim term is unambiguous after reviewing the intrinsic evidence (i.e., the claims, the specification, and the prosecution history of the patent), the court need not consider extrinsic evidence, such as the expert declarations submitted by the parties. Intel Corp. v. VIA Technologies, Inc., 319 F.3d 1357, 1367 (Fed. Cir. 2003) (holding that if a claim not indefinite after construed it in light of the intrinsic evidence, "reference to extrinsic evidence is improper"). Thus, the court will first review the claims, specification, and prosecution history of the '694 patent.

In this case, at least to a lay person, the intrinsic evidence provides little guidance as to the meaning of "bulk volume." The claims themselves indicate that bulk volume is a ratio of volume per unit mass (or more specifically ml/g). The specification indicates that bulk volume is the inverse of bulk density. '694 Patent, Col. 4, 11. 2-3 ("a bulk volume of approximately 20 ml/g (or a bulk density of 0.050 g/cc"). 2 The prosecution history provides little additional information, except that the bulk density as used in the '694 patent is not the "true density." See Ex. B, Tab 18 to Timcal's Preliminary Claim Construction Contentions.

B. Person of Ordinary Skill in the Art

Since the intrinsic evidence does not resolve the issue, the court must review the extrinsic evidence submitted by the parties to determine whether the failure to specify a method for determining bulk volume renders the claims indefinite. The court views this evidence to determine how a person of ordinary skill in the art would have interpreted this term. In doing so, it is helpful to determine the description of a person of ordinary skill in the art.

Timcal states that a person of ordinary skill in the art has at least a four-year college degree in a field that is related to graphite or its uses and has at least four years of experience working with graphite. Alternatively, Timcal states that a person can possess ordinary skill if he does not have a four-year degree but has a combination of equivalent education and experience. Timcal's Response at 4 n.6. Superior simply states that a person of ordinary skill in the art is a person experienced in the field of processing graphite through education, experience, or both. Superior's Response at 4. Since the parties' definitions are consistent for the most part and the court agrees with them, the court need not comment further on the qualifications of a person of ordinary skill except to note that, since the '694 patent relates to processing graphite, some experience or knowledge as to graphite processing is necessary to be a person of ordinary skill in the art. That having been said, since Timcal has the burden to prove indefiniteness by clear and convincing evidence, the court will review Timcal's evidence first.

C. Extrinsic Evidence Upon Which Timcal Relies

Timcal argues that the term "bulk volume" is devoid of meaning without reference to the method of measuring it. In support of its argument, Timcal relies on the declaration of Dr. John Fischer ("Dr. Fischer"). Ex. L to Timcal's Response. Dr. Fischer has a doctorate degree in nuclear science and engineering and is currently a professor of materials science and engineering at the University of Pennsylvania. Dr. Fischer declared that Superior's proposed definition for "bulk volume" could include both loose bulk volume and tapped bulk volume. After reviewing the intrinsic evidence of the '694 patent, Dr. Fischer concluded that nothing in it informed those of skill in the art as to which was intended.

Dr. Fischer relied in part on the Patent Application No. 09/213,544 ("the ‘544 application"). Ex. D to Timcal's Preliminary
Claim Construction Contentions. As part of that application, the applicant included a table which showed testing data for various samples and reported, among other properties, the Scott density (g/cm³), bulk volume (g/cm³), and tap density (g/cm³). Dr. Fischer declared that the bulk volume measurement reported in the '544 application is significantly different from the tap density reported. Other than the '544 application, Dr. Fischer reviewed only the intrinsic evidence of the '694 patent in making his declaration.

3 It is curious that this application used the same units of measure for bulk volume and tap density. Bulk volume should have been the inverse.

Timcal relies on several ASTM standards to show that "numerous other detailed standards [besides the Scott method] also exist for how to measure specific types of 'bulk volume/bulk density' of carbon and graphite materials." Timcal's Response at 9 (citing its Ex. O). Dr. Fischer did not reference any of these standards in his declaration, and thus Timcal has not provided any evidence that these standards are used to measure bulk density in the field of the '694 patent.

A review of the specification of the '694 patent and the ASTM procedures cited by Timcal shows that it is unlikely that any of these standards apply to testing the type of product disclosed in the '694 patent. First, some of the standards are directed toward testing metal powders. See ASTM Standard B703-05, Standard Test Method for Apparent Density of Powders Using Arnold Meter, at 1 n. 1 ("This test method is under the jurisdiction of ASTM Committee B09 on Metal Powders and Metal Powder Products and is the direct responsibility of Subcommittee B09.02 on Base Metal Powders."); ASTM Standard B527-93, Standard Test Method for Determination of Tap Density of Metallic Powders and Compounds (emphasis added). It is well-known, however, that carbon (and therefore graphite) is nonmetallic. See Webster's Ninth New Collegiate Dictionary 206 (1985) (defining carbon as "a nonmetallic chiefly tetravalent element . . . "); Phillips, 415 F.3d at 1314 ("In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words. In such circumstances, general purpose dictionaries may be helpful.") (citation omitted). While the court recognizes the possibility that graphite (despite its technical classification as a nonmetal) might be used in some powder metallurgy applications, Timcal has provided no evidence that the product of the claimed process in the '694 patent could be so used.

Other ASTM standards cited by Timcal require a particle size that is inconsistent with the disclosure of the '694 patent. ASTM Standard D2854-96, Standard Test Method for Apparent Density of Activated Carbon states: "This test method covers the determination of the apparent density of granular activated carbon. For the purposes of this test method, granulated activated carbon is defined as a minimum of 90% being larger than 80 mesh." Eighty mesh corresponds to a 177 micron opening. Perry's Chemical Engineers' Handbook 21-15 Tbl.21-6 (6th ed. 1984). Yet the '694 patent teaches that after air milling, the product has a preferred mean particle size of 30 microns. See '694 patent, col. 3, 11 30-31. A person of ordinary skill in the art would not believe that bulk density should be measured by a procedure used for particles more than six times the preferred size disclosed in the patent, particularly when the patent teaches that the method results in product with a high surface area to mass ratio. See '694 patent, col. 1, 11 14-15. The same holds true for ASTM Standard C357-94, Standard Test Method for Bulk Density of Granular Refractory Materials, which states: "This test method covers a procedure for determining the bulk density of granular refractory materials, commercial products which usually have particles that are retained on a 0.265-in. (6.7 mm) or coarser sieve." That size sieve corresponds to 6730 microns, over 200 times larger than the preferred particle size disclosed in the patent. Perry's Chemical Engineers' Handbook 21-15 Tbl. 21-6.

The remaining standards cited by Timcal appear to apply to products different from the claimed invention. ASTM Standard C1039-85, Standard Test Methods for Apparent Porosity, Apparent Specific Gravity, and Bulk Density of Graphite Electrodes, at 1 ("These test methods cover the determination of . . . bulk density of cores taken from graphite electrodes manufactured for use in electric arc furnaces."); ASTM Standard C914-95, Standard Test Method for Bulk Density and Volume of Solid Refractories by Wax Immersion; ASTM Standard C838-96, Standard Test Method for Bulk Density of As-Manufactured Carbon and Graphite Shapes (emphasis added). In short, while the ASTM standards cited by Timcal show that there are multiple methods of determining bulk density, they do not show that there are multiple methods of determining bulk density in the field of the invention of the '694 patent.
The only remaining evidence provided by Timcal relates to the Scott method for determining bulk volume. This evidence includes: Superior's internal procedure which uses a Scott volumeter, Ex. I to Timcal's Preliminary Claim Construction Contentions; Superior's customer Eveready used the Scott method in testing Superior's product, Id. at Ex. E; ASTM has a standard test method (albeit for metal powders) for testing apparent density using a Scott volumeter, Id. at Ex. M, N. Therefore, the only credible evidence that Timcal has provided to support its indefiniteness argument is Dr. Fischer's declaration in which he states that a person of ordinary skill in the art cannot tell whether the patent refers to loose bulk density or tap bulk density.

C. Extrinsic Evidence Upon Which Superior Relies

Superior argues that a person of ordinary skill in the art would read bulk density as loose bulk density measured using a Scott volumeter. In support of this position, Superior relies on an industry standard publication and two declarations. First, Superior relies on the National Electrical Manufacturers Association ("NEMA") Standards Publication CG 2-1196, Powdered Graphite. NEMA Pub. CG 2-1196, Ex. 13 to Superior's Responsive Claim Construction Brief. The publication states: "This Standard covers terminology and test methods for those physical properties and chemical properties relevant to the material characterization of powdered graphite, generally less than 75 microns, used in the electrical industry." Id. at 1. It defines bulk density as "Apparent density. The mass, under specified conditions, of a unit volume of a powder including its pore volume and inter-particle voids." Id. at 2. The publication includes a method for determining "bulk density" using the "Scott volume method," and separate methods for determining "compressed density" and "tap density." Id. at 6, 9.

Unlike the ASTM standards cited by Timcal, the NEMA standard applies to powder graphite of the particle size taught in the '694 patent.

Superior next cites to the declaration of Sim Henry ("Henry"), who worked in the graphite processing industry for twelve years. Henry declared that, as General Manager at Dixon Southwestern Graphite, he was responsible for International Standards Organization ("ISO") 9000 certification for the graphite processing plant. That process required the plant to maintain quality assurance procedures, including testing for bulk density. Based on his experiences in the graphite processing industry, Henry declared that he and others of ordinary skill would equate bulk density as used in the '694 patent to Scott density, that is, loose bulk density measured using a Scott volume machine. He declared that this density would be measured after the graphite had been air milled, and that, if the powder had settled prior to testing, it would be reconditioned to its just-processed state by fluffing. He declared that if a tapped density measurement was intended, the word "tap" or "tapped" would expressly be used. Henry did not refer to any evidence other than his own experience and the '694 patent in making his declaration.

Finally, Superior provided the declaration of David Derwin ("Derwin"), one of the named inventors of the '694 patent. Derwin has been at Superior for over 30 years. He is currently a group leader in Superior's graphite technology area. Derwin declared that persons of skill in this art area would interpret "bulk density" as used in the '694 patent to be the loose density of the product immediately after processing and would have equated "bulk density" to the Scott density. Derwin declared that Superior's internal method for determining bulk volume is equivalent to the method described in the NEMA publication. Finally, Derwin declared that although differences in the procedure used to measure the bulk density could cause the results to vary (as they did when Eveready tested a Superior product using a different size screen and a plastic scoop instead of a paint brush), the variance did not affect whether the product fell within the scope of the claims of the '694 patent. Derwin relied on his own experience, the NEMA standard, and Superior's in-house procedure for measuring bulk density in making his declaration.

D. Analysis of the Extrinsic Evidence

Because Superior's patent is presumed valid, Timcal has the burden of proof to show that bulk density (and thereby bulk volume) is not amenable to construction. Timcal has not met that burden.

Honeywell International, Inc. v. International Trade Commission, 341 F.3d 1332 (Fed. Cir. 2003), relied upon by Timcal, is instructive in reviewing Timcal's arguments that the term "bulk volume" is indefinite. In Honeywell, the patent-in-suit was for a polyethylene terephthalate ("PET") yarn used as reinforcement in automobile tires. Id. at 1334. The claims required a specific melting point elevation ("MPE") of the yarn produced by the claimed process. Id. at 1335. The written description did not disclose the method of preparing the PET yarn specimen for testing, although four methods of preparing a sample
were known to those of skill in the art at the time of the invention. Id. at 1336. The sample preparation method selected mattered a great deal; only one of the four methods resulted in the accused product falling into the MPE range claimed. Id.

The Federal Circuit reviewed whether "MPE" could be construed as "any one method," "all methods," or "the ball method," the method used by the patentee. Id. at 1339. First, the court rejected the patentee's proposed construction of the ball method, the only method that resulted in infringement, because the other three methods were well-documented in publications and prior art and because the ball method, although perhaps known, was unpublished. Id. at 1340-41. Next, the court reviewed the "any one method" construction under which the claims would be satisfied if the MPE fell within the claimed range using any one of the four methods. Id. at 1339. The court rejected this approach because the sample would fall into or out of the claimed range depending on the method chosen, and the court held that such a construction would not give competitors sufficient notice of the scope of the claims. Id. at 1341. Finally, the court rejected the "all methods" construction, under which the accused product would infringe only if it fell within the claimed range when tested using all four methods, because such a construction would render the invention inoperable. Id. at 1339, 1341.

As will be discussed below, the instant case is distinguishable from Honeywell. Timcal has made two arguments that the term "bulk volume" is indefinite: (1) the term "bulk volume" could refer to either tap bulk volume or loose bulk volume, and (2) Timcal did not specify the precise equipment for measuring bulk volume.

1. Loose or Tap Density

Timcal argues that there are two recognized methods of determining bulk density: tap bulk density and loose bulk density. 4 Tap density is measured after tapping a container of powder; tapping causes the powder to settle and results in a higher density. See Ex. 13 to Superior's Response. In the NEMA procedure for tap density, the density is measured after tapping "for a one-minute period or until no further decrease of the volume of the powder takes place," whereas the NEMA procedure for bulk density requires a person to "avoid any jarring or vibration that can compact the powder." Id. at 7, 11. Timcal relies on sample results provided in the '544 application, which show that testing of samples of graphite powder would have a bulk volume of at least 20 ml/g when measured using a loose bulk volume test but would have a significantly lower bulk volume when measured using the tap test. Ex. D to Timcal's Preliminary Claim Construction Contentions, at Fig. 4. These results show that the tap density can be more than three times greater than the bulk density. Id. Because of the wide variation in result between tap and loose bulk density, if a competitor used one test, it might believe its product was infringing, but if the competitor used the other test, it might believe the product was not infringing. Based on this, the court agrees that if Timcal is correct that a person of ordinary skill in the art could not discern whether the claims refer to loose bulk density or tap bulk density, the claims would be indefinite.

4 Timcal also mentions other types of bulk density measurements in its briefs such as packed bulk density. Since Timcal's expert, Dr. Fischer, opined only about tap and loose bulk density in any detail, the court considers these two types of bulk density measurements.

In support of its position, Timcal relies on its expert, Dr. Fischer, who declared that Superior's proposed definition in its Preliminary Claim Construction Brief would encompass both loose and tapped bulk density, that the intrinsic evidence of the patent does not indicate which method to use, and that given the variation of values of loose and tapped bulk density and the lack of guidance in the intrinsic evidence of the patent, one of ordinary skill in the art could not determine whether a product met the bulk volume limitation of the claims of the '694 patent. Dr. Fischer relied only on the '544 application (Ex. D to Timcal's Preliminary Claim Construction Contentions), the intrinsic record of the patent, and his knowledge. The court notes that while Dr. Fischer has impressive academic credentials, his level of practical experience with the type of process and product disclosed in the '694 patent is unclear.

On the other hand, Superior relies on the declarations of Henry and Derwin, one of the named inventors. Both declared that a person of ordinary skill in the art would have equated bulk density as used in the '694 patent with a loose density measured using a Scott volumeter and that a person of ordinary skill in the art would not have understood bulk density to refer to tap density unless the word "tap" or "tapped" was explicitly used. Ex. 11 to Superior's Response at 3-5; Ex. 12 to
Superior's Response at 3, 6.

The Federal Circuit has held that"it is particularly inappropriate to consider inventor testimony obtained in the context of litigation in assessing validity under section 112, paragraph 2, in view of the absence of probative value of such testimony." Solomon v. Kimberly-Clark Corp., 216 F.3d 1372, 1379 (Fed. Cir. 2000) (holding that the inventor's deposition testimony could not be used to invalidate the patent claims). Thus, the court finds that Derwin's declaration is of little, if any, probative value in determining whether the claims are definite.

Henry, however, has significant experience in materials testing in a graphite processing plant. His declaration, although based primarily on his own experience working in the field, is consistent with the NEMA publication that referred to loose bulk density only as bulk density and provided a separate procedure for tap density. Because the court finds both the NEMA publication and Henry's declaration persuasive, it holds that a person of ordinary skill in the art would read the term "bulk density" as referring to loose bulk density only.

2. Equipment for Measuring Bulk Volume

Timcal also argues that the term "bulk volume" is indefinite because the patent does not disclose the precise equipment used for measuring it. Specifically, Timcal relies on data from tests performed by Superior and Eveready. These data showed that when measuring loose bulk density using a Scott volumeter, variables in measurement technique such as type of sieve and brush make a difference in the result. Timcal, however, has not provided any evidence that any such differences are determinative of infringement. The tests performed by both Superior and Eveready resulted in a bulk volume of at least 20 ml/g as required by the claims of the '694 patent. Ex. E to Timcal's Preliminary Claim Construction Contentions.

Additionally, the variations in the test results between Superior's tests and Eveready's tests occurred because Eveready used a scoop instead of a paint brush to push the material through the screen and because Eveready used a size 18 mesh screen instead of a size 35-40 mesh screen. The ASTM method cited by Timcal requires a 16 mesh screen and a one-inch wide nylon brush. Ex. M to Timcal's Response. The NEMA standard uses a one-or two-inch wide paint brush and does not specify the size of the screen. Ex. 13 to Superior's Response. Thus, there is no evidence that it is acceptable in the industry to use a scoop instead of a brush to move the powder across the screen and into the volumeter. While it may be acceptable to use various size screens to measure bulk density using a Scott volumeter, there is no evidence as to how much of the difference in results between Superior's method and Eveready's method was attributable to the scoop and how much was attributable to the screen. In any event, since all of the results fell within the scope of the bulk volume required by the patent claims, the court finds that Superior's failure to specify the precise equipment used to test bulk density does not render the term "bulk volume" indefinite.

Since the term "bulk volume" is not "insolubly ambiguous" and can properly be given a narrowing construction, the court holds that the term "bulk volume" as used in the '694 patent is not indefinite. As part of this determination, the court reiterates that the patent is entitled to a presumption of validity and Timcal had the burden to show by clear and convincing evidence that the term "bulk volume" as used in the '694 patent is indefinite. After reviewing all of the evidence in detail, Timcal has not met that burden.

Thus, the court construes "bulk volume" as the mathematical inverse of bulk density, and "bulk density" as the mass of a unit volume of graphite powder including its pore volume and inter-particle voids, measured in its loose state using a Scott volumeter. Unlike the proposed construction in Honeywell which would have limited the claim scope to one method even though there were four known methods, this construction does not improperly redraft the claims because a person of ordinary skill in the art would find that bulk density as used in the '694 patent refers only to one method of testing, loose bulk density using a Scott volumeter. See Honeywell, 341 F.3d at 1341.

III. Conclusion

For the foregoing reasons, the term "bulk volume" as used in the '694 patent is amenable to construction and is not indefinite. The court construes "bulk volume" as the mathematical inverse of bulk density, and "bulk density" as the mass of a unit volume of a powder including its pore volume and inter-particle voids, measured in its loose state using a Scott volumeter.
Construction of all of the patented claims turns on a construction of the term "bulkhead." Transportation Seating contends that a "bulkhead" refers to any boxlike structure and that because American Seating's A.R.M. products contain a boxlike structure for receiving the anchor mechanism that the products fall within the claim language describing a "bulkhead." American Seating contends that the term "bulkhead" refers to a boxlike structure of substantial horizontal and vertical length which functions as a partition. The specification language at issue did not employ any definition of the term "bulkhead." However, it explained that term by referring to assembly D, which was marked on the various drawings contained in the patent. Assembly D, within those drawings, depicts a bulkhead of substantial size which acts as a partition. The specification also explained the term "bulkhead" in referring to one of the chief purposes of the patent--which was to prevent tripping hazards associated with the exposed mechanisms of the prior art (which included an exposed mounting plate, anchor and retractor housing) when the mechanisms were not deployed. The suggestion that the "bulkhead" and "bulkhead" assembly could be as small as the exposed mechanisms utilized in the prior art would defeat the purpose of the invention because it would substitute tripping over and tangling in the bulkhead for tripping over and tangling in the prior art's exposed mechanisms, including the anchor member, retractor housing and mounting plate. This construction of the term "bulkhead" is also confirmed by the file history. The file history, as explained in this Opinion, shows that deliberate changes were made to the claim language for the purpose of distinguishing the patent claims from the claims in the Ditch patent. The point of this distinction was the function of this invention in preventing tripping by concealing previously open anchor and locking mechanisms within a bulkhead. Given this file history, the prosecution history confirms American Seating's reading of the term "bulkhead" as referring to a structure of substantial, three-dimensional size which defeats tripping by enclosing in a partitioned manner the front locking mechanisms including anchor member and belt assemblies.

While the above construction is unambiguous and does not require reference to extrinsic evidence, the Court also determines that the extrinsic evidence on record supports this construction of the term "bulkhead." Of the dictionary definitions proffered by the parties, the most pertinent definitions are those definitions utilized within the transportation sectors, which definitions support American Seating's understanding of the term as meaning a bulkhead of substantial three-dimensional size which functions as a partition. The expert testimony of John Adelsperger, contained in his Declaration and Supplementary Declaration, also supports this interpretation of the term "bulkhead" by American Seating and further supports the conclusion that the A.R.M. products do not utilize a "bulkhead" as so defined.

The district court construed the term bulkhead to mean "a structure of substantial, three-dimensional size which defeats tripping by enclosing in a partitioned manner the front locking mechanisms including anchor member and belt assemblies." TSI argues that this definition is erroneous because it relies on a misinterpretation of the file history, improperly imports limitations from the written description into the claim, fails to consider the doctrine of claim differentiation, and is improperly based on extrinsic expert witness testimony. According to TSI, "bulkhead" should mean "a stationary housing and a slideable anchor relative to the housing."

To determine the proper meaning of the disputed claim terms, we look first to the language of the claims. Allen Eng'g Corp. v. Bartell Indus., 299 F.3d 1336, 1344, 63 USPQ2d 1769, 1772 (Fed. Cir. 2002) ("The words of the claims themselves define the scope of the invention, and are given their ordinary and customary meaning, unless the patentee has chosen to use terms in some other manner."). Claim 24 requires that the bulkhead "stow" an anchor member "retracted in a non-operating position." Similarly, claim 31 requires that the bulkhead have a "stationary housing" that contains a movable anchor "substantially within said housing" when the anchor member is in a "retracted position." Thus, the plain language of the claims indicates that a bulkhead is a structure for stowing or containing.

We look next to the specification to further understand the meaning of the term bulkhead. Id. (stating that "the specification is 'the single best guide to the meaning of a disputed term'") (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 USPQ2d 1573, 1577 (Fed. Cir. 1996)). The specification of the '325 patent does not specifically define "bulkhead," although the term is used repeatedly when describing the invention. For example, a "front anchor bulkhead" is shown in Figures 1-3, 6 and 7 of the '325 patent as element D. These figures show the bulkhead as having a box-like housing 52,
which contains a slidable anchor 54 having an attached belt assembly. The written description describes bulkhead D as follows:

A front anchor bulkhead, designated generally as D, is carried near a front portion of the securement area for securing the front of the wheelchair. There is a front wheelchair attachment assembly, designated generally as E, for attaching the wheelchair to the front bulkhead. It will be noted at this point, that barrier B and front anchor bulkhead D extend away from side wall 16a of the vehicle transversely to a longitudinal axis 50 of vehicle 11. As can best be seen in FIGS. 1, 3, and 6-7A, front anchor bulkhead D includes a housing 52 with suitable reinforcement in which a slidable anchor 54 is enclosed and stored. Slidable anchor 54 has a deployed position (FIG. 6) and a stored position (FIG. 7). In the stored position, a retractable crank/belt assembly, designated generally as 56, is stowed away. In the deployed position of FIG. 6, the belt/crank assembly 56 includes a retractable attachment belt 58 which is anchored to the wheelchair, as can best be seen in FIG. 1. When the belt/crank assembly is stowed, it can be seen that the anchor 54 and belt/crank assembly 56 are stored away clearly out of a position in which a regular passenger may trip over the structure.

'325 Patent, col. 4, l. 59 - col. 5, l. 12 (emphasized added). Thus, the description in the specification of the bulkhead is consistent with the language of the claims requiring the bulkhead to stow or substantially contain the anchor assembly.

Based on the plain language of the claims and the specification of the '325 patent, we conclude that claim 24 requires as a bulkhead a structure that can stow the claimed anchor member. Similarly, we conclude that claim 31 requires as a bulkhead a structure with a housing that can contain the claimed anchor member substantially within the housing. We see nothing in the prosecution history that is contrary to these meanings.

b. Bulkhead

The ordinary meaning of the term "bulkhead" is "a vertical partition generally extending the full width of a car and usually used to restrain lading." See The Cyclopedia, at 40. This is how the term bulkhead is used in the '575 Patent.

The bulkhead assembly in the '575 Patent is mounted above the draft sill assembly that is at approximately the same height as the wheels. The bulkhead assembly is connected to the upper side sills that are on the outside of the center beam and are at approximately the same height as the top of the center beam. The result is that the bulkhead extends the vertical length of the car.

The bulkhead assembly called for in the preferred embodiment is to be one of conventional design at the time of the '575 Patent. According to the Cyclopedia, bulkheads are usually used to restrain lading. A bulkhead assembly of conventional design as called for in the preferred embodiment of the '575 Patent would be something that performs the usual functions of a bulkhead including restraining lading.

Additionally, in the summary of the invention in the '575 Patent, bulkheads are discussed as standard features of center beam cars. Standard features generally perform the feature's usual function, and for bulkheads this is to restrain lading.

Finally, as the bulkheads in the '575 Patent are to be of conventional design and are part of the standard features of a center beam flat car, the bulkheads are construed as extending the full width of the car because that is what a bulkhead ordinarily does. See Findings of Fact, PP 111-112, 119, 122, 139-141.

E. "Bump Rails"

Element (g) in claim 18 requires:
a pair of horizontal bump rails adapted for connection with the trailer flat bed in parallel spaced relation below said pair of guide rail means, respectively, each of said bump rails extending laterally outwardly from said trailer flat bed in spaced relation below the associated guide rail means and below the lower edge portion of the associated carriage vertical wall.

Defendants argue that this element should be construed by importing some details from the specification, but defendants have not identified any ambiguities in this element that would require construction, let alone the delicate task of turning to the specification for guidance without importing details into the claim. See generally Phillips v. AWH Corp., 415 F.3d at 1323 (cautioning against this common mistake in claim construction). No interpretation is needed.

1. "burner pan"

This term appears in all of the asserted claims in both the '726 and '068 patents. Travis proposes the following construction: "a substantially flat metal plate having a gas inlet aperture, and which may or may not have perpendicular perimeter sides." Hearth proposes the following construction: "a broad, shallow, open metal container having perpendicular perimeter sides and a base used to receive a gas-air mixture to be burned." The dispute over this claim term comes down to whether the "pan" must include perimeter sides (Hearth's position) or can either include perimeter sides or be totally flat (Travis' position). The Court agrees with Travis' position and therefore construes the term to mean "a substantially flat metal plate having a gas inlet aperture, and which may or may not have perpendicular perimeter sides." Further, the Court finds that this term can be construed based solely on the intrinsic evidence without resorting to extrinsic evidence.

Independent claim 1 of the '726 patent reads, in relevant part:

A burner assembly for burning a fuel gas from a gas source, comprising:

a burner pan with a fuel gas inlet aperture therein;

and a burner body having upper and lower portions, the lower portion of the burner body being sealably connected to the burner pan forming an interior gas distribution chamber therebetween . . . .

(The '726 patent, 11:25-31 (emphasis added); see also independent claim 13, 12:24-30 (identical language)).

Another portion of independent claim 13 of '726 patent describing the burner body reads "wherein the burner pan has a base spaced apart from the burner body and a plurality of distribution fences projecting from the base . . . ." (Id., 12:46-48 (emphasis added)).

Independent claim 20 of the '726 patent reads, in relevant part:

A burner assembly for burning a fuel gas from a gas source, comprising:

a burner pan with a base having a fuel gas inlet aperture therein, and a distribution fence attached to the base of the burner pan, the distribution fence projecting away from the base;

and a burner body having upper and lower portions, the burner body being connected to the burner pan integrally forming an interior gas distribution chamber therebetween . . . .

(Id., 13:28-37 (emphasis added)).

Independent claim 1 of the '068 patent reads, in relevant part:

A burner assembly for burning a fuel gas from a gas source, comprising:

a burner pan with a fuel gas inlet aperture therein;
a spacer extending away from the burner pan;
and a burner body having upper and lower portions, the lower portion of the burner body extending at least partially into the burner pan.

(The '068 patent, 11:32-38 (emphasis added)).

Independent claim 15 of the '068 patent reads, in relevant part:

A burner assembly for burning a fuel gas from a gas source, comprising:

a burner pan with a fuel gas inlet aperture therein, the burner pan having a base;

a spacer extending away from the base of the burner pan;

a burner body having upper and lower portions, the burner body being coupled to the spacer with the lower portion of the burner body being spaced apart from the base of the burner pan by the spacer . . . .

(Id., 12:40-48 (emphasis added)).

Independent claim 23 of the '068 patent reads, in relevant part:

A burner assembly for burning a fuel gas from a gas source, comprising:

a burner pan with a base having a fuel gas inlet aperture therein;

a distribution fence sealably coupled at a bottom portion to the base of the burner pan, the distribution fence projecting away from the base;

and a burner body having upper and lower portions, the burner body being spaced apart from the burner pan integrally forming an interior gas distribution chamber therebetween . . . .

(Id., 13:31-42 (emphasis added)).

As shown by the above claim language, the burner pan is sometimes referred to as having a base, which arguably implies that it also has perimeter sides, but other times it is not referred to as consisting of a base. None of the claim language quoted above explicitly refers to perimeter sides. At the most, the claim language referring to a "base" of the burner requires that the pan have a base; it does not likewise require that the pan have perimeter sides.

Some of the passages quoted above refer to a "distribution fence" attached to or projecting away from the base of the burner pan. This language, however, does not require construing burner pan as having perimeter sides. The "distribution fence" does not refer to perimeter sides. The specification makes clear that "distribution fences" are not "perimeter fences." Both patents' description of figure 20 refer to both perimeter fences and distribution fences. It states "[t]he distribution fences 318 and the perimeter fence 316 provide a sealed area around the combustion air holes." (The '726 patent, 10:60-62; the '068 patent, 10:65-67). The distribution fences are generally the internal fences that divide the interior gas distribution chamber into sub-chambers. For instance, claim 13 of the '726 patent and claim 3 of the '068 patent refer to "the distribution fences dividing the interior gas distribution chamber into separate chamber portions." (The '726 patent, 12:50-52; the '068 patent, 11:66-12:1; see also claims 14 and 26 of the '726 patent, 12:55-56, 14:18-20, and claims 27-29 of the '068 patent, 14:22-40). There is only one reference in the claim language to perimeter sides, which appears in a dependent claim and therefore does not require construing burner pan as necessarily always having perimeter sides. (See the '726 patent, claim 25, the '068 patent, claim 30).

Travis admits that the language in claim 1 of the '068 that the burner body "extends at least partially into the burner pan" does imply a pan that had depth, which further implies a pan that has perimeter sides. Travis contends, however, that this
represents only one embodiment of the invention. Other embodiments do not include such a limitation. The Court agrees. None of the other independent claims quoted above include such language. To construe burner pan as requiring perimeter sides would be improperly importing a limitation from one independent claim into a different independent claim. See D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1574 (Fed. Cir. 1985) ("Where some claims are broad and others narrow, the narrow claim limitations cannot be read into the broad"). Hearth's contention that, as a general matter, a term must be construed consistently in all the claims is correct. However, that principle does not mean that the limitation in claim 1 of the '068 patent must be applied to all of the independent claims.

Figure 5 and the specification language describing figure 5 provide further support for this conclusion. The specification states "[a]s best seen in FIG. 5, the burner pan 26 is a substantially flat metal plate having a gas inlet aperture 32 . . . ." (The '726 patent, 4:17-18; the '068 patent, 4:21-22). Thus, the specification teaches that a burner pan does not necessarily have perimeter sides. The Court is not persuaded by Hearth's attempt to describe figure 5 as necessarily representing a burner pan with perimeter sides. The Court finds that figure 5 is not necessarily meant to be specific regarding the exact dimensions of the pan in relation to the air holes in the center of the pan. Moreover, the figure is drawn to be viewed at an angle; because it is not clear from the illustration what the exact angle is, it is difficult to determine what the dimensions should be even if the illustration were meant to provide exact dimensions.

Other specification language cited by Hearth does not require a contrary construction. According to Hearth, figures 17-20 show a burner pan with perimeter sides. The specification states:

- the burner pan 214 has a shallow pan configuration formed by a base 216 and a plurality of perimeter fences 224 connected to the perimeter of the base 216 and projecting upwardly away from the base. . . . The illustrated perimeter fences 224 form sidewalls that are integrally connected to the base 216. In alternate embodiments, the perimeter fences 224 can be separate structures securely attached to the base 216. . . .

  The burner pan 314 of the illustrated embodiment includes the perimeter fences 316 . . . .

(The '068 patent, 7:66-8:2; 8:8-11 describing figure 18; 10:52-54 describing figure 20). While this language does suggest that the pan consists of the base together with the perimeter fences, it also contemplates that the fences could be separate structures attached to the base. Moreover, this language represents only one embodiment of the invention.

The prosecution history does not compel a contrary construction. Hearth contends that, in the prosecution proceedings, Travis disavowed a burner pan that had anything other than upwardly extending sides. In other words, Hearth contends that Travis limited its burner pan to a pan with upwardly extending sides. Claim 1 of the '068 patent, as originally filed did not include the "extending into the burner pan" language. Instead it stated "the lower potion of the burner body being sealably connected to the burner pan forming an interior gas distribution chamber . . . ." (Travis Markman Exhibit 4 (hereinafter "Ex. 4") at 101). According to Hearth, this allowed for a burner pan with sides extending either up or down. The claim was rejected as anticipated by the prior art in the "Shimek '743 patent," which patented a portable gas burner. Hearth asserts that the Shimek '743 patent claimed a flat plate or base with downward leg extension. (Zeuli Decl., Ex. K (hereinafter "Ex. K"), figure 4 and 3:54-58). When Travis amended the claim language to have its invention be patentable over the Shimek '743 patent, Travis inserted the "extending . . . into the burner pan" language. (Ex. 4 at 101). The remarks accompanying this amendment stated that this claim was amended:

  to clarify that the burner assembly includes a spacer extending away from the burner pan, and the burner body has a lower portion extending at least partially into the burner pan. The burner body's lower portion is sealably connected to the spacer and is supported apart from the burner pan by the spacer forming an interior gas distribution chamber between the burner pan and the burner body. Shimek '743 does not disclose, teach, or suggest a burner assembly having a burner pan, a spacer extending away from the burner pan, and a burner body with the lower portion as recited in the claim 1 as amended.

(Ex. 4 at 97 (emphasis added)).

Amending claim 1 to include the "extending into the burner pan" language cannot be said to constitute a clear and unambiguous disavowal of a pan without perimeter sides. Notably, Travis did not insert this same language into the independent claims 15 or 23 of the '068 patent. Further, Travis did not state that its burner pan was necessarily different than the burner base or plate in Shimek '743. Nothing in the prosecution proceedings specifically described the burner pan.
Rather, Travis stated that Shimek '743 did not contain the combination of elements that the invention in the '068 patent contained, namely a burner assembly with 1) a burner pan, 2) a spacer extending away from the burner pan, and 3) a burner body with a lower portion that extended into the burner pan, among other aspects of the burner body. The final "and" in the quotation above supports this conclusion. Hearth's contention that Travis distinguished its invention from Shimek '743 because Shimek did not contain any of these elements would make sense only if the final "and" were instead an "or." In short, despite Hearth's contention otherwise, Travis did not make any explicit statement in the prosecution proceedings that it was limiting its burner pan to a pan with upwardly extending perimeter sides.

A. "Burning a Smoking Material at 250 [degrees] to 400 [degrees] C"

TPI first requests that "burning a smoking material at 250 [degrees] to 400 [degrees] C" be interpreted as claiming "the production of smoke at a beneficial temperature through the burning of a smoking material unless such smoking material cannot produce any smoke at temperatures of 400 [degrees] C or less, or the equivalent thereof." (TPI Brief 41.) In particular, TPI argues that this claimed temperature range of 250 [degrees] to 400 [degrees] C pertains to the temperature of the smoking material itself. It contends that any given material can "burn" only at one specific temperature, just as the only temperature at which water boils is 100 [degrees] C. The specific burning temperature of wood, according to TPI's expert testimony and treatises, varies from 200 [degrees] to 500 [degrees] C depending on the type of wood or wood product. TPI contends that adopting its proposed construction would mean that "unless a smoking material was used that did not combust or smoke at 400 [degrees] C or less, the resulting gas produced would contain, at least in part, gas produced that literally infringes the Yamaoka claim range." (TPI Brief 16).

HISI, on the other hand, argues that the phrase "burning a smoking material at 250 [degrees] to 400 [degrees]" means that the smoking material is to be burned in a medium heated to between 250 [degrees] and 400 [degrees]. They base their arguments on the syntax of the claim, the language of the specifications, the prior statements of TPI officers, and expert testimony on the practice and feasibility of measuring the temperature of smoke-producing materials.

The Court will first examine the language and syntax of the claim itself. See Eastman Kodak, 114 F.3d at 1552. Here, the syntax of the claims indicates that the 250 [degrees] to 400 [degrees] temperature range likely refers to the temperature of the medium, not the temperature of the material. In Eastman Kodak, the Federal Circuit held that where the word "at" modified the transitive verbs "crystallizing," "polycondensing," and "passing" in a process patent, it "refer[ed] to the process temperature of the heating medium, rather than the temperature of the polymer itself." 114 F.3d at 1553; see also Chef America, 358 F.3d at 1374 (distinguishing between "heating to" a certain temperature and "heating at" a certain temperature). This is very similar to the case here, where "at" modifies the transitive verb "burning," and instructs the person doing the burning to perform the process in a particular way, namely at 250 [degrees] to 400 [degrees] C.

The Court recognizes, however, that just as in Eastman Kodak, "[t]he claim language alone . . . does not settle the claim interpretation issue." 114 F.3d at 1554. The interpretation proposed by TPI, while less likely than HISI's interpretation, is not implausible. Thus, the Court turns to the specifications of the patent for additional guidance.

Unfortunately, the specifications of the Yamaoka Patent are also ambiguous. Some of the language in the specifications seems to confirm HISI's position that the stated temperature range refers to the temperature of the medium and not the material. The description of the preferred embodiment of the patent, for example, describes how "[a] temperature sensor-controller is fitted to the smoke generating chamber to direct and control the temperature therein." (Yamaoka Patent, Col. 5, at 17-20). This indicates that it is the temperature of the smoke generating chamber that is to be controlled, not the temperature of the smoking material itself.

At the same time, however, the specifications also state that the "thermostat-controlled heater" installed on the bottom of the combustion chamber "controls the production of smoke by measuring the combustion temperature." (Yamaoka Patent, Col. 4, at 21-24). Given the location of the heater directly beneath the smoking material and the phrase "combustion temperature," this specification seems to indicate that it is the temperature of the smoking material, and not the temperature of the medium, that is to be regulated by the Yamaoka Patent. Other language in the specifications is unhelpful, and can be read to support either of these two interpretations.
Because some ambiguity still remains after examining the intrinsic evidence, the Court will now turn to the extrinsic evidence for additional guidance. The extrinsic evidence in this case proves decisive. It shows (1) that people of ordinary skill in the art believed that the Yamaoka patent's temperature range referred to the temperature of the medium, not the material; and (2) that the temperature of the smoking material is not typically measured, nor is it easy to do so. Given this unrefuted evidence, the Court concludes that the 250 [degrees] to 400 [degrees] C temperature limitation of the Yamaoka Patent refers to the temperature of the medium, not the temperature of the smoking material.

First, TPI officers' own past interpretation of the claim language indicates that people of ordinary skill in the art interpreted the Yamaoka patent's claimed temperature range as referring to the temperature of the heating apparatus rather than the temperature of the smoking material. While attempting to obtain patent insurance in 2000, Richard Friend, Vice President of TPI, and someone with years of experience in the industry, stated in reference to "the Yamaoka smoke machine" that the "problem with the original design was that it took a long period of time to reach the desired temperature" and that "[a] system that . . . could combust wood at a constant high temperature was strongly desired." (HISI Am. Opp., Ex. 8). The "desired temperature" is not the temperature of the smoking material, but the temperature of the smoke machine itself.

Similarly, in a 2003 letter urging the Philippines Bureau of Patents to reject Kowalski's patent application, Friend stated that this new machine "enabled commercialization of the Yamaoka patent[ . . . ] by applying heat at high temperatures (360 [degrees]-400 [degrees]C) to thermally decompose the sawdust and thereby generate smoke." (Defs.' Ex. 10.) Again, the temperature that Friend emphasizes here as a unique feature of the Yamaoka Patent is not the temperature of the combustion itself, but the temperature that the device is "applying" to that smoking material. These statements show that at least one person skilled in the art actually believed that the temperatures referenced in the Yamaoka process referred to the temperatures of the combustion chamber, and not the temperature of the wood or sawdust.

Second, HISI provides expert testimony that measuring the temperature of the smoking material itself is not the actual practice of people in the industry, and moreover, may not even be technologically feasible. In his expert report, Dr. Joseph Maga states that "members of the food smoking industry do not measure the actual temperatures of the sawdust or wood in their production of smoke for treating food commercially." (HISI Am. Opp., Ex. 13, P 13.) Rather, he believes that "the temperatures stated in the Yamaoka patent's claim would be read by commercial producers of smoke for treating food as the temperature at which the heating unit is to be operated, as opposed to the actual temperatures of the sawdust." (HISI Am. Opp., Ex. 13, P 12.) In addition, TPI's expert, Dr. Kumazawa, admitted in his deposition that "sawdust temperature is very difficult to measure" (HISI Am. Opp., Ex. 12, at 34:8-9.) Another of TPI's experts, Dr. Hagadone, similarly indicated in his deposition that the sawdust temperature would be difficult to measure in a Yamaoka smoke machine, although he thought that perhaps it could be done "if you had some kind of transmitter device, like a Martian land[er]." (HISI Am. Opp., Ex. 11, at 175:10-11.) This sort of transmitter device, however, is nowhere mentioned in the Yamaoka Patent, leading to the conclusion that the temperature limitation claimed in the patent refers instead to the temperature of the medium.

Accordingly, the Court concludes that "a person of ordinary skill in the art in question at the time of the invention," Phillips v. AWH, 415 F.3d 1303, 1312 (Fed. Cir. 2005), would have interpreted the Yamaoka Patent's temperature limitation to refer to the temperature of the heating medium, and not the temperature of the smoking material.

TPI also requests that the Court construe the Yamaoka Patent's literally claimed temperature range of 250 [degrees] to 400 [degrees] as extending beyond the stated numerical boundaries to include any "beneficial temperature," (TPI Brief 41). While TPI contends that it is not estopped from asserting this broader range by its prosecution history, it does not provide any affirmative reason as to why "250 [degrees] to 400 [degrees]" should be construed as "beneficial temperature." The language of the claimed numerical range is plain and unambiguous. The Court therefore rejects TPI's proposed claim construction and finds that "burning a smoking material at 250 [degrees] to 400 [degrees] C" means burning a smoking material in a chamber or other medium heated to a temperature between 250 [degrees] and 400 [degrees] C.
27. The plastic washing machine basket of claim 25, wherein the basket lacks burrs at the apertures.

The '909 patent, Claim 27 (emphasis added).

ii. The parties' definitions and arguments. The parties' proffered definitions of this term are the following, with bold font indicating differences between their definitions. Again, the authority on which each party relies for its construction is shown just below that party's definition.

<table>
<thead>
<tr>
<th>&quot;BURRS AT THE APERTURES&quot;</th>
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<tbody>
<tr>
<td><strong>Maytag's Definition</strong></td>
</tr>
<tr>
<td>&quot;a rough, sharp or jagged edge or area remaining on the inner surface of the sidewall after holes have been formed by perforating, cutting or drilling&quot;</td>
</tr>
<tr>
<td><strong>Electrolux's Definition</strong></td>
</tr>
<tr>
<td>&quot;irregularities, roughness or projections, where the apertures are formed, on the inner or outer surface of the sidewall of the plastic washing machine basket&quot;</td>
</tr>
<tr>
<td><strong>Maytag's Authority</strong></td>
</tr>
<tr>
<td>'909 patent, col. 1, ll. 26-33; col. 6, ll. 64-67; dictionary definition of &quot;burr&quot;</td>
</tr>
<tr>
<td><strong>Electrolux's Authority</strong></td>
</tr>
<tr>
<td>'909 Patent at col. 1, line 29; col. 6, lines 64-66; dictionary definition of &quot;burr&quot;</td>
</tr>
</tbody>
</table>

In its initial Markman brief, Maytag asserts that the invention in the '909 patent eliminates the problems with burrs that form on the inside surface of the washing machine basket, when using other production methods and designs, by forming the apertures in the basket during the molding operation, instead of in a subsequent manufacturing step requiring perforation of the basket. Maytag contends that its construction of "burrs at the apertures" is consistent with the only references to such "burrs" in the specification, which identifies them as sharp or jagged edges on the inner surface of the sidewall formed by perforating the apertures in a post-molding manufacturing step. Maytag contends that Electrolux's construction is strained, because it arguably would include any irregularity on the inner or outer surface of the sidewall, including irregularities that have nothing to do with punching or drilling holes. Thus, Maytag contends that Electrolux has construed the claim term without regard for the meaningful context provided by the patent specification. Maytag also argues that Electrolux's construction makes Claim 27 a nullity, if "burrs" means any irregularity on the surface of the basket. Maytag contends that Electrolux's construction also flies in the face of extrinsic testimony from Electrolux's own witnesses.

Electrolux, on the other hand, contends in its initial brief that there are only two references to "burrs" in the patent, one in Claim 27, and one in the Background Of The Invention, neither of which provides any guidance, and that there is little support for a meaning for this term in the file history. Even so, Electrolux contends that its construction is consistent with commonly understood meanings of the term drawn, for instance, from standard dictionary definitions of "burrs." Electrolux contends that Maytag's construction is faulty, because it attempts to limit the location of the "burrs" to the inner surface of the sidewall, which is not warranted by the claim language or specification, and it attempts to limit the meaning of "burrs" to rough edges formed by perforating, cutting, or drilling, when such limitations do not exist in either the patent or the understanding in the art.

In its rebuttal brief, Maytag argues that Electrolux's construction misses the mark for two reasons: it improperly includes all irregularities, roughness, and projections, which ignores the context of the term in the patent and the understanding of one of ordinary skill in the art, because all molded baskets, whatever method is used to mold them, would necessarily have some type of irregularity, roughness, or projection, but what matters is that the claimed burrs are those discussed in the specification as formed in the prior art by punching or drilling. In its rebuttal brief, on the other hand, Electrolux reiterates its arguments that Maytag's construction improperly limits the manner in which the burrs are formed and the location of such burrs. Electrolux admits that the part of the Background Of The Invention cited by Maytag supports the idea that a burr can be formed by perforation, but argues that this part does not stand for the proposition that a burr must be formed in that manner. Indeed, Electrolux contends that Maytag is misconstruing this term in the same way that Maytag accused
Electrolux of misconstructing "grooves" by importing a process limitation into the claim. Electrolux also reiterates that nothing in Claim 27 or the specification imposes any limitation on the location of the burrs to the inner surface of the washing machine basket. Electrolux also contends that additional parts of the testimony of its witnesses not submitted by Maytag actually undercut Maytag's construction.

iii. Analysis. Beginning with the words of Claim 27, see Nystrom, 424 F.3d at 1142 (construction begins with the words of the patent); Biagro, 423 F.3d at 1302 (same). It is plain that the claim language itself does not support a limitation on the location of the "burrs" to the inner surface of the washing machine basket, as Maytag asserts, or even to the inner or outer surfaces of the washing machine basket, as Electrolux contends. Rather, the claim specifies that the burrs are located "at the apertures." See the '909 patent, Claim 27. The "apertures" in question are, in turn, those defined in Claim 25, the independent claim from which Claim 27 depends. Claim 25 claims "said sidewall including inner and outer surfaces having spaced apertures extending therethrough with the outer surface being beveled at the apertures." Id., Claim 25 (emphasis added). Thus, while the apertures pass through the inner and outer surfaces of the sidewall, id., the "burrs" in Claim 27 are "at the apertures," rather than on the inner or outer surfaces of the sidewall. Id., Claim 27 (emphasis added). This location of the "burrs," specifically, "at the apertures," seems to the court to be unambiguous, so that, to construe it further might be to construe the claim term with greater specificity than is warranted by the claim language. See PPG Indus., 156 F.3d at 1355 (the task of the court is to "define[] the claim with whatever specificity and precision is warranted by the language of the claim and the evidence bearing on the proper construction")

Turning to the specification, see Phillips, 415 F.3d at 1314-16 (the specification remains of "central importance" to determining the proper construction of the term and may even be "dispositive"), the court finds that the one reference to the "burrs" in the Background Of The Invention n11 is not to the contrary concerning the location of the "burrs." That reference states, "Alternatively, it has also been proposed to mold a plastic washing machine basket as a unitary structure and then perforate the holes during a subsequent manufacturing step. This method leaves burrs and sharp edges that would result in damage to garments washed in the basket." '909 patent, col. 1, 11.26-33. This snippet from the Background Of The Invention is silent about the location of the "burrs"; it certainly does not suggest that the "burrs" are located only on the inner surface of the sidewall, or on both inner and outer surfaces. Plainly, it does not state or contradict the location of the "burrs" as "at the apertures," which is the location expressly and unambiguously claimed in Claim 27. Thus, the court finds nothing in the intrinsic evidence to contradict its construction of the location of the "burrs" as "at the apertures."

n11 The court will assume, for the sake of argument, as Maytag has, that the Background Of The Invention is part of the "specification" of the invention, just as the Detailed Description Of The Invention clearly is.

Therefore, based on the plain language of the claim and the little insight provided by the specification, the court concludes that the "burrs" are unambiguously claimed to be located "at the apertures."

Unfortunately, the court finds that the language of Claim 27, and the language of the independent claim from which it depends, Claim 25, do not shed any light on the meaning of "burrs." The court also finds that the specification is largely unhelpful as to the nature of the "burrs," but not because it is merely silent on the question. Electrolux is correct that the reference to "burrs" in the Background Of The Invention merely suggests that "perforating holes . . . leaves burrs," but it does not suggest that "burrs" mean only flaws left by "perforating holes." Rather, in context, this reference to "burrs" in the Background Of The Invention indicates that "burrs" are one kind of flaw left by "perforating holes," another is "sharp edges." '909 patent, col. 1, ll. 26-33. Furthermore, to read "burrs" as limited to flaws created by "perforating holes," if one could read the reference in the Background Of The Invention that way, would also be to import, improperly, a limitation from the specification into the claim term. See Playtex Prods., Inc., 400 F.3d at 906 ("The court must take care in its analysis, when locating in the written description the context for a disputed term, not to import a limitation from that written description. It must use the written description for enlightenment and not to read a limitation from the specification [into the construction of the term].") (citing Comark Comms., 156 F.3d at 1186-87). Therefore, based on the plain language of the claim and the little insight provided by the specification, the court concludes the "burrs" are not formed exclusively by "perforating holes," such that any reference to formation only by "perforating" is inappropriate.

Thus, the remaining issue is, what is the nature of a "burr," if it is not a flaw formed exclusively by "perforating"? The court can find nothing, and the parties have pointed to nothing, in the words of Claim 27 or any other claim in the patent that illuminates the meaning of "burrs." See Nystrom, 424 F.3d at 1142 (construction begins with the words of the patent); Biagro, 423 F.3d at 1302 (same). The few references in the specification cited by the parties are only slightly more
illuminating. See Phillips, 415 F.3d at 1314-16 (the specification remains of "central importance" to determining the proper construction of the term and may even be "dispositive"). What the reference to "burrs" in the Background Of The Invention may suggest is that "burrs" means something different from "sharp edges," or the reference to "burrs and sharp edges" left by perforation would be redundant. '909 patent, col. 1, ll. 29 (emphasis added). The other reference cited by the parties, this one from the Detailed Description, states, "Since holes 44 are recessed within the teardrop-shaped grooves 50, any edges on the holes 44 will be prevented from snagging clothes placed in basket 2." The '909 patent, col. 6, ll. 64-67. However, this reference does not mention any kind of flaw that could be taken to mean a "burr," because it simply refers to "any edges on the holes."

Having exhausted the possibilities of intrinsic evidence, the court turns to standard dictionary definitions for assistance. See Free Motion Fitness, Inc., 423 F.3d at 1348 ("Phillips confirms that courts may "'rely on dictionary definitions when construing claim terms'" and that 'dictionaries... are often useful to assist in understanding the commonly understood meaning of words.") (quoting Phillips, 415 F.3d at 1322, in turn quoting Vitronics Corp., 90 F.3d at 1584 n.6). Indeed, the court finds that it is possible to construe "burrs" simply "by applying the widely accepted meaning of [this] commonly understood word[.""] Network Commerce, Inc., 422 F.3d at 1359. Maytag nominates the following definition from WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY, 300: "a thin ridge or area of roughness produced in cutting or shaping metal (as in drilling, turning or blanking)." Electrolux nominates the following definition from AMERICAN HERITAGE DICTIONARY, 258, definition 1, n.1: "a rough edge or area remaining on material, such as metal, after it has been cast, cut, or drilled." These definitions do not differ significantly, but neither do they directly support the respective constructions of "burrs" offered by the parties citing them. Nowhere in Maytag's dictionary definition is there any reference to a "burr" as a "sharp or jagged edge," as in Maytag's proffered construction, and nowhere in Electrolux's dictionary definition is there reference to "burrs" as "irregularities... or projections," as in Electrolux's proffered construction.

What both dictionary definitions do support, however, is the construction of "burrs" as "rough areas... remaining after material is shaped, cut, cast, or drilled." The court does not believe that adopting such a construction of "burrs" would constitute giving that term "its broadest dictionary definition or the aggregate of multiple dictionary definitions," but would, instead, be "the most appropriate [dictionary] definition" after "scrutinizing the intrinsic evidence." Free Motion Fitness, Inc., 423 F.3d at 1349 (citing Phillips, 415 F.3d at 1320-24). Specifically, this construction is not an "aggregate" of the parties' nominated definitions, but a recognition of the extent to which those nominated definitions overlap. For example, both nominated definitions refer to "rough areas." Although both nominated definitions then also identify a particular kind of "rough area," either a "thin ridge" or "a rough edge," such specificity is not warranted by any language in Claim 27 or elsewhere in the patent. See PPG Indus., 156 F.3d at 1355 (the task of the court is to "define[] the claim with whatever specificity and precision is warranted by the language of the claim and the evidence bearing on the proper construction"). Both nominated definitions also refer to the "rough area" as "produced in" or "remaining on" material; thus, both suggest results of a formation process, albeit one from the "cause" perspective (Maytag's nominee from WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY, 300: "a thin ridge or area of roughness produced in cutting or shaping metal (as in drilling, turning or blanking)" (emphasis added)) and one from the "effect" perspective (Electrolux's nominee from AMERICAN HERITAGE DICTIONARY, 258, definition 1, n.1: "a rough edge or area remaining on material, such as metal, after it has been cast, cut, or drilled" (emphasis added)). Similarly, "shaping" includes the other dictionary identifications of the method of producing the "burrs," specifically, "turning or blanking," "drilling," "cutting," or "casting." "Shaping" also includes the method of creating "burrs" in the sole reference to "burrs" in the Background Of The Invention ("perforating"), as well as the claimed method of forming washing machine baskets in the patent ("molding"). For the same reason, including "drilling" and "cutting" in the construction is appropriate, because those terms are also consistent with the method of creating "burrs" in the sole reference to "burrs" in the Background Of The Invention ("perforating"), while including "casting" in the construction is appropriate, because it is consistent with the claimed method of forming washing machine baskets ("molding").

Maytag's concern that construction of "burrs" simply as "rough areas" could encompass any irregularities on the surface of the washing machine basket is unfounded. That concern is eliminated by the language of the claim itself, which specifies that the "burrs" (i.e., "rough areas remaining after material is shaped, cut, cast, or drilled") are "at the apertures" through the sidewall of the washing machine basket, see the '909 patent, Claim 27 ("burrs at the apertures"); see also id., Claim 25 (the apertures are through the sidewall), not elsewhere on the inner or outer surfaces of the washing machine basket. Therefore, the court concludes that the appropriate construction of "burrs at the apertures," in light of the intrinsic evidence and extrinsic standard dictionary definitions, is the following: "Rough areas at the apertures remaining after material is shaped, cut, cast, or drilled."
The term bushing is used throughout the claims and specification for the '988 Patent. While the parties agree that bushing must be construed as a hollow cylinder in accordance with its ordinary meaning, they dispute whether the patent limits the type of material used to construct the bushing.

The claim language of the '988 Patent does not specify that the bushing must be composed of certain material. See e.g. Pl's Markman Br. Ex. E. col. 7 ll. 21-22 ("a bushing"). This accords with the ordinary meaning of bushing as being made from metal or other material. Id. at Ex. I. The patent specification to the '988 Patent states that a plastic bushing might be advantageous to avoid frictional contact between the support block and the tilter shaft. Id. at col. 5 ll. 17-32. Yet, the applicant decided not to claim the material of the bushing in the patent. Therefore, Innovative argues the claimed invention should not be construed narrowly as a non-metalic bushing. Defendants, on the other hand, contend that the bushing must be made of a non-metalic material because the applicant disavowed metal bushings in the '988 patent specifications by stating the advantages of plastic.

The patent applicant's decision to claim a bushing without limiting the construction material shows an intention to cover all material for bushings. Therefore, the court will construe "bushing" to mean "a hollow cylinder," without limiting the material of its construction, in accordance with the general rule of construction that limitations in the specification are not to be read into the patent claims. Prima Tek II, 412 F.3d at 1289.

4. "business office device"

The next disputed term "business office device" appears in various claims of the '289, '120 and '618 Patents. Ricoh proposes the following construction:

A business office device is an intelligent module of an office machine system that includes a device engine for carrying out the mechanical operations of the office machine system, and its own communication capability that enables it to communicate intelligently with other modules of the office machine system, or with other devices. The intelligent business office device makes use of an intelligent communication protocol.

(Chart at 13). Pitney asserts that "business office device" is "a copier, printer or facsimile or other business office equipment." (Id.).

The Court finds that the intrinsic evidence, particularly the claims in this instance, provides a straightforward definition for this term which is consistent with Pitney's proposed construction. As the Federal Circuit noted in Phillips, the claim in which the term appears and other claims of a patent, including both asserted and unasserted claims, can serve as "valuable sources of enlightenment as to the meaning of the claim term." Phillips, 415 F.3d at 1314. Claim 1 of the '289 Patent reads:

A method, comprising the steps of:
storing semi-static state data in a business office device, the semi-static state data including data which may change infrequently over a life of the business office device;

initiating communication between the business office device and a computer, by the business office;

transmitting the semi-static state data from the business office device to the computer; and

receiving the semi-static state data by the computer.

'289 Patent, Claim 1. Notably, dependent claims 4 through 6 further recite:

4. A method according to claim 1, wherein: the business office device is a copier . . .

5. A method according to claim 1, wherein: the business office device is a facsimile machine . . .

6. A method according to claim 1, wherein: the business office device is a printer . . .

Id., Claims 4-6. Thus, the plain language of the claims appearing in the '289 Patent clearly defines copiers, facsimiles and printers as examples of a "business office device." This language is consistent with Pitney's construction.

Additionally, Pitney's construction is further supported by the specification. In the Background of the Invention, the patentee states:

The present invention relates to a method and apparatus for communicating and controlling various types of business office equipment or devices transparently and uniformly. The types of business equipment could be copiers, facsimiles and/or printers.

The creation of business office devices such as a copier, facsimile or printer requires activities assigned to various groups which must be integrated into at a certain time.

Id., col. 1, ll. 15-23 (emphases added). Support for this construction is further found in the Abstract which describes the claimed invention as "[a] method and apparatus for controlling and communicating with business office devices, such as copiers, facsimiles and/or printers." Id., Abstract. In light of the intrinsic evidence, the Court finds that the patentee acted as his own lexicographer with respect to the term "business office device" by setting forth a clear definition in the specification.

Ricoh argues that Pitney's proposition is incorrect because: 1) the prosecution history supports its construction which includes language regarding intelligent modules and communication, (Chart at 13-14); and 2) by adopting Pitney's construction, the Court would not maintain integrity between the Court's definitions. (Tr. of Markman Hr'g at 44-45). With respect to Ricoh's first argument, the Federal Circuit clearly indicated that the specification is usually dispositive and "the single best guide to the meaning of a disputed term." Phillips, 415 F.3d at 1315. The Court remains mindful that "because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes." Id. at 1317. In this case, the Court relies heavily upon the specification as opposed to the prosecution history in defining this term since it provides a clear definition for "business office device" -- one that is consistent with Pitney's construction.

The Court further rejects Ricoh's second argument as a basis for adopting its proposed construction. Ricoh argues that integrity between the Court's constructions is not maintained because the "business office device" must be "just the engine" of a device, rather than the device as a whole. (Tr. of Markman Hr'g at 44:14-45:1). Ricoh, however, fails to provide any basis for limiting the construction to "just the engine" when the claims and specification clearly indicates otherwise. Consequently, the Court concludes that a "business office device" means "a copier, printer or facsimile or other business office equipment."

GO BACK
The '091 patent refers to several patents as prior art. The prior art consists of numerous methods and devices for shucking the clams, extracting or removing the clam meat, cleaning or washing the meat, separating the viscera from the tongue portion and cutting or chopping the tongue into small portions. According to plaintiff's patent specification, however, "none of these references disclose using the tongue or foot of the clam as a one-piece food product."

To remedy this perceived deficiency, plaintiff's patent discloses a method for cleaning and preparing clam tongues, by "butterflying" the tongues into "cutlets," and passing them through a mechanical meat tenderizer. In particular, plaintiff made the following claims in his patent:

1. A method for preparing a one-piece clam tongue for consumption, which comprises extracting the clam from its shell, removing the viscera from said tongue, separating the tongue from any remaining flesh, butterflying said tongue and passing it through a mechanical meat tenderizer to provide thereby a tender, edible one-piece clam cutlet.

2. The process of claim 1 wherein said tongue is washed with water prior to said butterflying step.

3. The process of claim 1 wherein said tongue is cut along one of its vertical edges to form the butterfly cutlet.

4. The process of claim 1 wherein said tongue is cut along one of its horizontal edges to form the butterfly cutlet.

5. The process of claim 1 wherein said tongue is tenderized and then subsequently butterflied.

6. The process of claim 1 wherein said tongue is butterflied first and then tenderized by a mechanical tenderizer.

7. A method for providing a one-piece clam cutlet which comprises sequentially:
   (a) extracting substantially all the clam flesh from its shell;
   (b) separating any viscera from any edible meat parts of the extracted clam;
   (c) discarding the extracted viscera;
   (d) washing the remaining meat parts of the clam to remove sand and other debris;
   (e) separating the meat parts into the tongue, the mantles, the siphons and the adductor muscles;
   (f) bisecting said tongue in a manner whereby the bisected pieces are connected at a folding edges; and
   (g) passing said tongue through a mechanical meat tenderizer.

8. The process of claim 7 wherein said tongue is washed with water prior to said butterflying step.

9. The process of claim 7 wherein said tongue is cut along one of its vertical edges to form the butterfly cutlet.

10. The process of claim 7 wherein said tongue is cut along one of its horizontal edges to form the butterfly cutlet.

11. The process of claim 7 wherein said butterflying step includes separating the butterflied portions into two separate parts.

The '091 patent does not claim a particular tenderizer apparatus or device, but instead refers to previous patents for mechanical meat tenderizer blades. Plaintiff does not have a protected patent interest in the mechanical tenderizer blades.

*   *   *
B. Literal Infringement

The heart of the parties' dispute regarding infringement centers on the meaning of the terms "butterflying" and "bisecting" as contained in the patent claims. Claim 1 states that the patented method includes a step in which the tongue is "butterflied." Claim 7, the only other independent claim, describes sequentially a process including a step in which the tongue is "bisected ... in a manner whereby the bisected pieces are connected at a folding edge." Throughout the patent specification, the two terms are used interchangeably, and the dependent claims to claim 7 refer to the "butterflying step" of claim 7. "Butterflying" is in turn defined as occurring when "the feet are bisected leaving the two parts connected by a narrow part along one edge of the foot," and "is intended to include one or two-pieced tongues where the tongue is cut in half and either separated or maintained as a single piece." I conclude that claims 1 and 7 are referring to the same step when they use the term "butterflying" and "bisecting."

Aside from the explanations stated above, the patent specification and claims do not contain a detailed definition of the term "butterflying." The specification does contain, however, several figures depicting the anatomy of a clam, the clam tongue after being separated from the other organs, and a picture of the tongue after being butterflied or bisected in different ways. As depicted in Figure 2, the intact clam tongue is roughly triangular in shape, and is pictured with its flat surface facing the viewer. Forming the sides of the triangle in the figures is a short straightish edge (referred to as the "horizontal" edge), a longer straightish edge (the "vertical" edge), and a long, quite curved edge. When the clam is butterflied, a cut is made through the tongue, on a plane parallel to the flat surfaces of the clam, leaving either the vertical or the horizontal edges intact. The resulting thinner "flaps" are spread out, but remain connected at either the vertical or the horizontal edge (Figures 3 and 4, respectively). The patent specification states that instead of leaving the edge intact, the resulting "flaps" can also be separated into two distinct pieces (Figure 5). As described in the specification, "the butterfly cutlet consists of two mirror image sections ... connected by a focal portion."

Based on the patent claims and specification, including the figures just described, I determine that, to someone skilled in the art of processing and preparing seafood, the term "butterflying" means cutting the clam tongue in half along the plane parallel to the flat surfaces of the tongue, and either leaving the resulting portions connected along one edge, or separating the portions into distinct pieces. I determine, as well, that the scope of plaintiff's patent claims is limited by the requirement that the clam tongue be butterflied as part of the patented process.

Plaintiff argues that the patent specification contains statements that support a broader interpretation of the scope of plaintiff's patent. In the section describing the figures and the "preferred embodiment" of the process, plaintiff stated that the clam tongue could be butterflied along the horizontal or vertical edge, and that, "if desirable, the tongue can be cut into two distinct parts or used as a single piece rather than butterfly." The specification also states that "the tongue to be ultimately used can be (1) two or more portions of tongue, (2) one piece not butterflied or (3) the preferred butterflied as shown in drawing." In his opposition to defendant's motion for summary judgment, plaintiff suggests that the patent covers clam tongues that are not butterflied, and argues that, at the least, the specification supports construing claims 1 and 7 to include any step by which a clam tongue is "cut[] in half with or without a connecting edge."

Plaintiff's argument is not persuasive. Claims 1 and 7 both state, as a limitation to the claims, that the process involves a step in which the tongue is butterflied or bisected leaving a connecting edge. Neither of the claims states that the tongue could be left in one piece and also not butterflied. As noted in Part III, above, the claim language, not the specification, defines the scope of the patent. See, e.g., Markman v. Westview Instruments, Inc., 52 F.3d 967, 980 (Fed. Cir. 1995) ("The written description part of the specification itself does not delimit the right to exclude. That is the function and purpose of claims."). Where, as here, the plaintiff states an express limitation in the claims (that the tongue be butterflied), the plaintiff cannot "avoid that claim limitation in a later infringement suit by pointing to one paragraph in his specification stating an alternative that lacks that limitation, and thus interpret the claim contrary to its plain meaning." Unique Concepts, 939 F.2d at 1562.

My examination of the claims, in light of the specification, convinces me that the terms "butterflying" and "bisecting" (as used in claim 7) are to be understood as having the meaning stated above, namely, cutting the tongue in half, parallel to the flat surfaces, and either leaving the "mirror image" portions connected at one edge or separating them. Although the latter option might not ordinarily be understood as the result of butterflying (because the pieces are not connected), I conclude that the specification and the claims themselves plainly include this as part of the claim limitations.
This is not the case, however, with the definition urged on the court by plaintiff. The statements cited by plaintiff run contrary to the repeated descriptions in the specification and in every single one of the claims that the process includes a butterflying step as I have construed such a step. Under the trimming step performed by defendant, the tongue is cut on a plane perpendicular to the flat surfaces, and the piece near the rough edge of the tongue is removed and discarded. This step plainly does not fall within the definition of butterflying as that term is used in the claims of the '091 patent.

Rome disputes the trial court's construction of claims 1 and 7 of United States Patent No. 4,715,091 (the 091 patent). The court construed both method of preparation claims to require "butterflying" or its synonym "bisecting." "'Butterflying,' means cutting the clam tongue in half along the plane parallel to the flat surfaces of the tongue, and either leaving the resulting portions connected along one edge, or separating the portions into distinct pieces," the court interpreted. Id. at 103. We agree and adopt the court's claim construction and attendant reasoning.

13. button

This term appears in claims 1 and 5 of the '754 patent. The plaintiff proposes "the button used by the user to input cognitive selections into the system. The button is not part of a keyboard or numeric keypad." The defendant asserts that this term is indefinite. Alternatively, the defendant's construction is "a button with which the user can initiate the generation of the block location information and the character identification information by the working platform." Although the written description includes an embodiment that utilizes a button as the defendant's construction suggests, those passages of the written description are not limiting. In light of specification, including the claims of the '754 patent, the court concludes the term "button" means "a button for making entries."

A. "buttress material"

The parties dispute the meaning of the term "buttress material" as it appears in claims 37, 41, and 45 of the '748 Patent. Synovis contends that the jury can easily grasp the meaning of the term and therefore no construction is necessary. Alternatively, if the Court decides to construe the term, Synovis asserts that that the term "buttress material" should be construed as "material useful for reinforcing a seam." (Joint Proposed Claim Construction Statement ("Joint Statement") at 4.) Gore, on the other hand, asserts that the Court should construe "buttress material" as "biomaterial formed from animal tissue designed to be used in a surgical procedure to reinforce a staple line." (Id.) The parties' dispute therefore centers on whether the term "buttress material" is limited to "biomaterial formed from animal tissue."

In support of its construction, Synovis points to the specification of the '748 Patent, beginning with the description of the Technical Field, which states:

In one aspect, the invention relates to surgical staplers, including circular staplers. In another aspect, the invention relates to surgical stapling procedures that include the use of buttress and reinforcing materials formed of stabilized tissues and polymeric [3] materials. In yet another aspect, the invention relates to the preparation and use of preformed heterologous tissues for implantation within the body.

(‘748 Patent c. 1, 11: 5-12.) In addition, Synovis points to portions of the specification that explain, for example, that "a variety of references teach the preparation of 'buttress,' or 'pledget' or 'reinforcing' materials for use in combination with conventional surgical staplers." (Id., c. 2, 11: 7-10.) Synovis asserts that the specification shows that "buttress" and "reinforce" have similar meanings. Synovis further maintains that the '748 Patent uses "buttress material" to mean "material
useful for reinforcing a seam." (See '748 Patent c. 6, 11:11-14 ("FIG. 4 shows a cross-section view of the overall process of creating a reinforced stapled connection for tubular tissue . . ."). Finally, Synovis argues that Gore's proposed construction departs from the language of the claim and would improperly limit the claims to a single disclosed embodiment.

--- Footnotes ---

3 Polymeric refers to plastic materials.

--- End Footnotes ---

Gore asserts that the term "buttress material" is explicitly defined in the specification as being composed of "biomaterial formed from animal tissue." Gore contends that this definition is mandated by the description of the invention which Gore contends describes only the use of biomaterial. In addition, Gore asserts that the inventors consistently describe the use of animal tissue in buttress material throughout the patent, and particularly that the written description focuses exclusively on the use of animal tissue.

The term "buttress material" appears in the claim language of claims 37, 41, and 45 simply as "buttress material" and is not expressly limited to "biomaterial formed from animal tissue." Gore does not dispute that the claim language lacks an express limitation to "biomaterial formed from animal tissue," but instead asserts that the specification provides an explicit definition of "buttress material." In support, Gore points to a portion of the Detailed Description of the specification, which reads: "Circular stapler buttress material is composed of biomaterial which is typically bovine pericardium sheet fixed onto a preformed shape using a tanning solution." ('748 Patent c. 7, 11: 5-6.) The patent specification "may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess." Phillips, 415 F.3d at 1316. Here, however, when viewing the patent in its entirety, the Court finds that the specification does not transform the plain meaning of "buttress material" to be limited to "biomaterial formed from animal tissue." First, the language cited by Gore reveals that "bovine pericardium" is only an example of a buttress material and that the patentee contemplated the use of additional materials. The use of the word "typically" immediately preceding "bovine pericardium" underscores the notion that "bovine pericardium" was not meant to be the exclusive material for "buttress material." In addition, the Background of the Invention portion of the specification references three patents that disclose non-woven polyethylene as a buttress material. (See '748 Patent c. 2, 11: 10-12; Mayer Decl. P 2, Ex. B at c. 2, 11: 41; P 3, Ex. C at c. 2, 11: 42-43; P 4, Ex. D at c. 3, 11: 29-30.)

--- Footnotes ---

4 Gore argues that these patents were not incorporated by reference, are not part of the patent's written description, and thus do not aid in claim interpretation. The Court disagrees. Even if the patents were not incorporated by reference, they are listed on the first page of the patent under "References Cited." The Court concludes that these patents can shed light on claim interpretation. See, e.g., Arthur A. Collins, Inc. v. N. Telecom Ltd., 216 F.3d 1042, 1045 (Fed. Cir. 2000) ("When prior art that sheds light on the meaning of a term is cited by the patentee, it can have particular value as a guide to the proper construction of the term, because it may indicate not only the meaning of the term to persons skilled in the art, but also that the patentee intended to adopt that meaning.").

--- End Footnotes ---

Claim differentiation further suggests that the patentee did not intend to limit "buttress material" in claims 37, 41, and 45 to "biomaterial formed from animal tissue." "Differences among claims can also be a useful guide in understanding the meaning of particular claim terms." Phillips, 415 F.3d at 1314. Here, claim 1 of the '748 Patent contains the term "buttress material" as it is appears in independent claims 37, 41, and 45. ("748 Patent c. 12, 11: 27.) Claim 2, which is dependent on claim 1, reads in part: "A combination according to claim 1 wherein the buttress material comprises preformed animal tissue." (Id., c. 12, 11: 49-50.) Thus, it is presumed that the patentee did not intend for the "buttress material" in independent claim 1 to be limited to animal tissue. 5 See, e.g., Phillips, 415 F.3d at 1315 (noting that "the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim"). In addition, because claims 37, 41, and 45 also lack the "preformed animal tissue" limitation, it is presumed that the patentee did not intend for those claims to be so limited.
Defendant Gerber manufactures and sells a line of spill-proof cups and replacement valves. The valves in its cups are curved inwardly such that they are convex to the interior of the cup and the direction of flow of the liquid.

The '457 patent was issued on September 12, 2000. It includes a single independent claim.

1. An article through which or from which a drinking liquid is taken by a consumer, the article having a spout provided with a valve comprising a membrane of resiliently flexible material, said membrane being provided with at least one split adapted such that the liquid may be drawn from or through said article by the sole application of a predetermined level of suction in the region of said valve, characterized in that the membrane has a normal condition in which it is dished inwardly of the article, opposite the direction through which the drinking liquid is taken in use of the article and is adapted to close up by returning to the normal inwardly dished condition under its own resilience when such suction is removed.

The claims submitted in the application that ultimately led to the granting of the '457 patent ("'457 application") contained no reference to operation by the sole application of suction. The original claims were rejected on the basis of anticipation and obviousness. Plaintiff added the language related to operation by the sole application of suction in an effort to overcome the prior art, particularly the Coy patent.

United States Patent No. 5,186,347 to Freeman ("Freeman patent") is prior art to the '457 patent. The Freeman patent teaches a flat valve operable by suction for use in a drinking cup.

United States Patent No. 5,071,017 to Stull ("Stull patent") is prior art to the '457 patent. The Stull patent teaches a variety of valves, including inwardly dished valves for use in squeeze bottles.

United States Patent No. 5,213,236 to Brown ("Brown patent") is prior art to the '457 patent. The Brown patent relates to a dispensing package for fluid products such as liquid soaps and particularly to a valve in such a product.

The valve includes a marginal flange, a valve head with a discharge orifice therein, and a connector sleeve having one end connected to the valve flange and the opposite end connects with the valve head adjacent a marginal end thereof. The connector sleeve has a resiliently flexible construction, such that when pressure within the container raises above a predetermined amount, the valve head shifts outwardly in a manner which causes the connector sleeve to double over and extend rollingly.

Brown patent abstract. Figure 10 depicts a preferred embodiment of the Brown valve.
preferred embodiment.

GET DRAWING SHEET 3 OF 3

Prior to trial the Court rejected defendant's summary judgment motion to find that Lampe anticipates the '457 patent. The basis for denying the motion was that the element of operation by "sole application of a predetermined level of suction" was not expressly disclosed in Lampe.

The Court also addressed the issue of obviousness in the summary judgment order:

The issue here is whether it would have been obvious to one of ordinary skill in the art to combine the convex-to-flow valve from the squeeze bottle prior art of Brown and Lampe with the teachings of trainer cup prior art to produce the suction operated vessel of the '457 patent. The evidence presented on this motion is insufficient to find by clear and convincing evidence that this combination was obvious as a matter of law. While defendant Gerber has compared the invention with the prior art it has provided virtually no evidence relevant to the motivation to combine, or to overcome objective evidence of non-obviousness. Concerning the motivation to combine, Brown and Lampe each teach away from creating a pressure differential by operation of suction teaching instead to increase internal pressure by squeezing the container.

…Evidence provided by plaintiff suggests that she has successfully licensed the invention to others and that defendant Playtex copied the invention for use in its competing products. Defendant Gerber offers nothing to counter this evidence or to suggest alternative reasons for the invention's success other than its novelty. While defendants may be able to demonstrate obviousness at trial, the evidence presently before the Court presents factual issues which preclude summary judgment.

The Court subsequently construed this element and instructed the jury as follows:

As used in claim 1 of the '457 patent the phrase "adapted such that liquid may be drawn from or through said article by sole application of suction" means that it is possible for the user to draw the drink from the vessel using only suction.

The jury found the '457 patent anticipated. In overturning the jury verdict of anticipation the Court of Appeals noted that facts had not been sufficient to establish that the Brown valve was necessarily operable by suction. The Court remanded for a jury determination on the issue of obviousness.

C. Calculating/Determining

Claim 1 and Claim 9 contain disputed limitations which refer to the calculation of the rate of blood flow. Although the
language used in each limitation is slightly different -- the former refers to "calculating" while the latter refers to "determining" -- both parties agree that the meaning of each limitation is the same. However, the parties do not agree what the meaning is. Plaintiff would interpret "calculating/determining" to mean: "(1) the actual access blood flow using the measured amount of distinguishable blood characteristic (for example, flow = 600 ml/minute), (2) a number related to the flow rate from which flow rate can be determined, or (3) determining whether the flow rate is above or below a predetermined threshold (for example flow >/= 600 ml/minute)." (Pl's Reply Brief at 13). In contrast, defendant suggests the proper construction would be limited to: "determining a number representing the amount of flow of blood in the line per unit time without using a recirculation calculation, and using the equations set forth in the specification." (Def's Opening Brief at Exh. 1).

Nothing in the record, however, suggests that the terms "calculating" or "determining," as used in patent '989, mean anything other than, "to determine by mathematical equation." See WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY (1991).

4 The relevant, disputed limitation in Claim 1 reads as follows: "calculating the rate of flow of said shunt blood flow in said arterio-venous shunt from said measured amount of distinguishable blood characteristic." The relevant, disputed limitation in Claim 9 reads as follows: "determining the rate of patient blood flow in said shunt from the measured amount of said changed parameter."

While defendant asserts that representations made by plaintiff to the PTO now prevent plaintiff from relying on the plain language of the claim limitations, the Court is unpersuaded by this argument. Defendant relies heavily on a representation made by plaintiff to the PTO in which plaintiff stated:

[Recirculation and blood flow] are unrelated quantities, for shunt recirculation can only occur when the patient is connected to a hemodialysis machine through intake (arterial) and delivery (venous) lines. . . . Line blood flow, however, is a cardiovascular system quantity. It is the flow of blood, in mL/min, inside a patient, and a functioning shunt in a patient will always conduct such flow, whether a patient is connected to the dialyzer or not.

(Specification, Ex. B at FH 989 0143). Specifically, defendant emphasizes plaintiff's statement that recirculation and blood flow "are unrelated quantities" in support of its position that the "calculations/determinations" anticipated by patent '989 do not, and cannot, rely on recirculation measurements in any way.

This emphasis, however, distorts the meaning and context of plaintiff's statement. As plaintiff stated in oral argument, the PTO was concerned that prior art which calculated recirculation in shunts rendered the '989 patent obvious. In response to this concern, plaintiff carefully explained to the PTO that the '989 patent device calculated, as an ultimate computation, blood flow -- a rate distinct from, or "unrelated" to -- recirculation rate. However, in making this distinction clear to the PTO, at no time did plaintiff disavow the device's possible reliance on a recirculation rate in calculating its ultimate blood flow determination.

Defendant also asserts that the equations set forth in the specification are the equations contemplated by the '989 patent. The intrinsic evidence cited by defendant in support of this argument, however, is comprised of nothing more than references taken out of context and puffed up to support defendant's position. While plaintiff did proffer various dilution equations in the specification to illustrate the preferred embodiments of their device calculations, no statements in the prosecution history suggest that plaintiff, or the PTO, intended to limit the blood flow calculation to the preferred embodiment equations. See Rhine, 183 F.3d at 1346.

After careful consideration, we reject NMT's arguments. We discern no error in the district court's construction of the "mixing and "changing" limitations or in its findings that those limitations are met by NMT's Delta H method. However, as far as the "calculating" and "determining" limitations are concerned, we believe that the district court's construction was too broad.
In construing patent claims, we look to the intrinsic evidence of record — the claims, the specification, and, if in evidence, the prosecution history. Vitronics Corp. v. Conцепtronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996). "One purpose for examining the specification is to determine if the patentee has limited the scope of the claims." Watts v. XL Sys., Inc., 232 F.3d 877, 882, 56 U.S.P.Q.2D (BNA) 1836, 1839 (Fed. Cir. 2000). The '989 patent describes the determination of shunt blood flow with reference to specific equations. See, e.g., '989 pat., col. 1, II. 56-61 ("Blood flow, Q, measured by the dilution method . . . is given by Q=V/S (Eq. 1)."); see also id. at col. 2, II. 31, 34, 57, 67 (setting forth alternative equations 2-5); id. at col. 3, II. 2, 24, 33 (setting forth alternative equations 6-8). Moreover, the "SUMMARY OF THE INVENTION" section of the patent teaches that "the blood flow relationships are calculated in accordance with the foregoing equations." Id. at col. 4, II. 26-27. There is no description of "calculating" or "determining" blood flow that does not require the use of at least one of the disclosed equations. Moreover, no language in the specification indicates that the invention encompasses other methods of "calculating" or "determining" blood flow.

The prosecution history also may be "of critical significance in determining the meaning of the claims." Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2D (BNA) at 1577. During prosecution of the '989 patent, in response to an Office Action rejecting the pending claims, Transonic identified several "primary features of the invention." Included in these features is "the calculation of shunt blood flow (line blood flow) from the sample via dilution principles as is taught in the present application." As discussed above, the only "calculation . . . via dilution principles" taught in the specification of the '989 patent revolves around the disclosed equations. In the same response, Transonic argued that the disclosed equations are critical to achieving the purpose of the invention and are novel over the prior art:

"The purpose of the invention is to measure shunt (blood line) blood flow, and for this purpose the application sets out the flow relationships which permit calculation of the line blood flow from other measurements. These relationships are not taught in the prior art. . . ."

Moreover, Transonic distinguished a prior art reference by explaining that, "in the present invention[,] shunt flow is calculated from a dialysis flow and a concentration curve measurement." Taken together, these statements indicate that the disclosed equations are part of the claimed invention, play an important role in achieving the objects of the invention, and help to distinguish the invention from the prior art. By describing the invention in these terms, Transonic disclaimed any interpretations of the terms "calculating" and "determining" that do not reflect the stated significance of the disclosed equations to the invention as a whole. See Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2D (BNA) 1673, 1676 (Fed. Cir. 1995) ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution.").

The intrinsic evidence of the '989 patent -- the claim language, the specification and the prosecution history -- leads us to conclude that the claim terms "calculating" and "determining" must be construed as requiring the use of at least one of the equations set forth in the specification of the '989 patent. Because the district court's determination that Transonic had established a likelihood of success on the issue of infringement was founded on an overly broad construction of these terms, we vacate the preliminary injunction and remand for further proceedings consistent with this opinion.

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The first disputed term, "caliper," is generally understood in the automotive industry to be "a structure composed of those housing portions that engage about the brake disk and contain a brake application unit." See Pall, 181 F.3d at 1309 (recognizing that technical terms are taken to have the meaning that they would ordinarily have in the field of the invention). Defendants attempt to add a functional limitation to this essentially structural definition, namely that the caliper is a structure that absorbs the brake reaction force generated by the brake application unit. Yet, because the '445 patent claims do not expressly require that the caliper absorb the brake reaction force, such a functional limitation should not be imported into the patent claims from the specification. See Burke, 183 F.3d at 1340.

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1. "Cam"

The term "cam," which is undefined in the patent specification, appears in claim 6 of the '830 patent. Claim 6 reads in pertinent part, "when a latch bolt is present in said strike, to thereby rotate said latch monitor lever arm from a home position to which it is biased, said rotation being a cam extending from said latch monitor lever arm into gradual contact with a switch button on a microswitch. . . ." ('830 patent, col. 9, lines 6-11.)

Because the claim term "cam" is undefined by the inventor, all three parties have fashioned their proposed construction by tailoring dictionary definitions to the specifications and preferred embodiments contained in the patent. Rutherford recommends "a projecting part of a wheel or other moving piece so shaped as to give alternative or variable motion to another piece against which it acts." Security Door advocates "a disk or cylinder having an irregular shape such that its motion, usually rotary, gives to a part or parts in contact with it a specific rocking or reciprocating motion." Vanguard offers "an eccentric wheel mounted on a rotating shaft and used to produce variable or reciprocating motion in another engaged or contacted part."

Rutherford's proposed definition is drawn verbatim from Dictionary.com. Merriam-Webster Online Dictionary defines "cam" as "a rotating or sliding piece (as an eccentric wheel or cylinder with an irregular shape) in a mechanical linkage used especially in transforming rotary motion into linear motion or vice versa."

While all three defendants put forward different phraseology, the words have similar import. Therefore, within the context of the claims and specifications of the '830 patent, the Court will define the term "cam" as "a cylinder or eccentric wheel having an irregular form such that its motion, usually rotary, gives to a part or parts in contact with it a specific rocking or reciprocating motion."

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The Court construed the disputed claim terms as follows:

"affixed" means secured
"adjusting" means its functions are: to frictionally receive the belt; to hold the belt to tighten the harness; and to release the belt to tighten it; its corresponding structures are: cam member and bar, or a bottom wall, cam bar and bar, that are described in the '889 patent at col. 1, 55-57, col. 1, ll. 63-68 to col. 2, 1-8, and at ll. col. 3, 65-68 to col. 4, 1-ll. ll. 58, and Figures 3-5, or their equivalents

"cam member" means an eccentrically revolving part with a radial bearing surface; and
"bar" means a part that is longer than it is wide.

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3. Claim 8 ("cam members")

Claim 8 (and all dependent claims) of the '286 Patent invokes the term "cam members" as follows:

An ultrasonic instrument according to claim 7, further including an actuator tube slidably positioned about the vibration
coupler, a distal end of the actuator tube including a cam slot configured to receive cam members formed on the clamp member, the actuator tube being moveable between advanced and retracted positions about the vibration coupler in response to actuation of the handle assembly to effect movement of the clamp member between the open and closed positions.

'286 Patent, Claim 8 (emphasis added). Plaintiff's proposed construction of this term is: "The parts on the clamp (followers) that are imparted motion by the cam slots," while defendant proposes: "Protrusions (followers) the motion of which is controlled by movement of the 'slots' with which they are engaged."

The Court will construe this term as: "The follower parts of the cam mechanism that are imparted motion by the cam slots and whose motion is guided by the cam slots." The issues are the same as those discussed above with respect to "camming members" in the '050 Patent Claims 11 and 12. For the reasons discussed above, defendant's proposed use of the words "protrusions" and "controlled" is inappropriate because there is no basis in the claim or specification for importing such terms into the claim construction. Additionally, as earlier discussed, the words "impart" and "guide" best describe the interaction and engagement between the cam slots and cam members.

Moreover, the use of the word "protrusions" would be improper given that the patentees used that term elsewhere in the specifications, and therefore knew how to use it to describe this claim term, if they had so desired. See '286 Patent, 5:16-18 ("Protrusions project outwardly from sidewalls of swivel member and extend through cam slots of movable handle) (emphasis added), 5:48-50 ("In the open position, moveable handle is spaced rearwardly from stationary handle portion and protrusions are positioned in the lower proximal portion of cam slots.") (emphasis added).

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2. Claim 8 ("cam slot")

Claim 8 (and all dependent claims) of the '286 Patent uses the term "cam slot" in the following context:

An ultrasonic instrument according to claim 7, further including an actuator tube slidably positioned about the vibration coupler, a distal end of the actuator tube including a cam slot configured to receive cam members formed on the clamp member, the actuator tube being moveable between advanced and retracted positions about the vibration coupler in response to actuation of the handle assembly to effect movement of the clamp member between the open and closed positions.

'286 Patent, Claim 8 (emphasis added). Plaintiff seeks to construe this term as "[an] opening or groove that imparts motion to the camming member," while defendant proposes, "narrow opening or groove that engages and controls the motion of the camming members."

The Court adopts the following construction: "opening or groove that imparts motion to and guides the camming member."

The Court refers to its discussion above regarding a similar term in the '050 Patent, and concludes that the '286 Patent claim language itself and the specifications support the finding that this construction reflects the ordinary and customary meaning of this claim term. See '286 Claim 8, 4:21-23, 5:51-54, 6:9-18; see also Markman Tr. 52-53, 59, 107-08 (discussion with counsel regarding the translation of movement from the cam slots to the camming members). As noted above, it would be inappropriate to import defendant's proposed limiting terms "narrow" and "control." Additionally, as noted above, the terms "impart" and "guide" most accurately describe the interaction between the cam slot and the camming member.

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I. "Cam Slot" in the '286 Patent

Tyco seeks clarification of the Court's construction of the term "cam slot" in the '286 patent (construed as "opening or groove that imparts motion to and guides the camming member"), querying why the construction omitted the words "the motion of" whereas those words were included in the constructions of "slots" in the related '050 and '544 patents. The Court's constructions of "slots" in the '050 and '544 patents were: "openings or grooves that impart motion to and guide the motion of the camming members" (id. at 11) (emphasis added), and "opening or groove (or pair of openings or grooves) that imparts motion to and guides the motion of the camming member" (id. at 30) (emphasis added).
Defendant Ethicon believes that the Court's construction of "cam slot" in the '286 patent "has essentially the same meaning as that for the similar terms in the 050 and 544 patents," Ethicon Opp. [Doc. # 66] at 12, but does not object to adding "the motion of" to the Court's construction of this claim term.

For the sake of consistency, because the Court already concluded that use of the words "impart" and "guide" "accurately describe the interaction between the camming members and the slots," see Claim Construction at 12, the Court amends its construction of the term "cam slot" in the '286 patent to: "opening or groove that imparts motion to and guides the motion of the camming member."

C. Whether "Camera," As Used In The Patents-In-Suit, Is Limited To A Still Camera And A Self-Contained Device

1. The '219 patent, claim 1: "in an electronic camera …"

The parties present two issues related to the construction of the phrase "in an electronic camera." The first issue is whether the term "camera" is limited to a "still picture" camera and the second issue is whether the term "camera" is limited to a self-contained device.

With respect to the still picture issue, Canon contends that the term "camera," as used in claim 1 of '219 patent should be construed to mean an "apparatus that takes a digital still picture (not movie)." (D.I. 426 at 18.) Canon contends that the '219 patent, as described in its specification, clearly relates only to still cameras.

St. Clair contends that the patent only requires that the camera be capable of taking still pictures. (D.I. 519 at 25.) In other words, St. Clair contends that a camera with both motion picture and still image capabilities is within the scope of the '219 patent.

Reviewing the parties' arguments in light of the claim language and specification of the '219 patent, the Court concludes that the term "electronic camera" is not limited to a camera with only still picture capabilities. Rather, the only requirement imposed by the '219 patent is that the camera be capable of taking still pictures and the camera's capability for motion pictures does not preclude it from the scope of the patent. The Court's conclusions are supported by both the language of the claim and the specification of the '219 patent. As the Court previously discussed, neither the specification nor the language of the claims imposes a still picture limitation on the patented invention and the specification expressly contemplates the camera's capability to take both still and motion pictures. The specification discusses taking approximately 20 images in a one second period and using formats reserved for motion pictures. Accordingly, the Court declines to limit the term "camera" in the manner proposed by Canon.

With respect to the second issue, concerning whether the phrase "in an electronic camera" is limited to a self-contained device, St. Clair contends that the Court should construe the phrase "in an electronic camera" as "in a self-contained portable electronic camera the components of which are contained in a single housing." (D.I. 427.) In support of its contention, St. Clair contends that the ordinary meaning of the word "camera" relates to a device that is self-contained in a single housing, and that this ordinary meaning is not altered by the claim language or the specification of the patent.

In response, Canon contends that the word "camera," as used in the '219 patent, can described a self-contained device in a single housing, but it is not required to be construed as a self-contained device. Canon contends that to hold otherwise would ignore the plain meaning of the patent and read out two of its preferred embodiments. Further, Canon contends that, under the standard announced in Microsoft v. Multi-Tech Systems, Inc., 357 F.3d 1340 (Fed. Cir. 2004), the failure to include a limitation related to the camera housing in the patent indicates an intent not to incorporate such a limitation. Canon requests the Court to construe "camera" to mean, in relevant part, "an apparatus, which is self-contained or formed of several physically separate parts that can be connected to one another."

The Court concludes that the term "camera" should be construed in accordance with its plain meaning to be a self-contained device in a single housing unit. The ordinary, dictionary definition of camera is "a lightproof box fitted with a lens through
the aperture of which the image of an object is recorded on a light-sensitive material." (D.I. 486, Ex. 32.) The Court finds
this definition relates to a self-contained device in a single housing.

Canon contends, however, that the Court should not rely on the ordinary meaning of the term "camera" as a self-contained
device, because the claims concern "digital cameras." In the context of digital cameras, Canon contends that the term
"camera" would not relate only to a self-contained camera. By way of example, Canon directs the Court to prior art digital
cameras that were not self-contained, such as the Tessera 2K and Dycam Model 1. (See D.I. 494 at PP 10-15.)

The fact that digital cameras existed which were not self-contained does not, in the Court's view, mean that the Court should
depart from the ordinary and plain meaning of the word "camera" as a self-contained unit. Stated another way, Canon has
demonstrated that there are digital cameras with physically separate components, but Cannon has not established that the
patentees in this case intended to depart from the general usage of the term "camera."

As for Canon's reliance on the Microsoft decision that the term "camera" must include devices with physically separate
parts unless the patent claims or specification detail their exclusion, the Court concludes that the facts of Microsoft are
distinguishable from the facts in this case. In Microsoft, the Federal Circuit held that a patent disclosing a "speaker phone"
did not limit the described "speaker phone" to a particular physical housing. In reaching this conclusion, the Federal Circuit
pointed out that the patent referred to the component parts of the speaker phone, a microphone and a speaker, as distinct
parts. Unlike Microsoft, here the component parts of the patented device are not parts that are ordinarily independent and
are not repeatedly described in the patent as independent parts. Compare United States Patent No. 5,764,627, claim 2
(describing the claimed speaker phone as a "deskset microphone operable for receiving the local analog voice signals and a
deskset speaker operable for playing the remote analog voice signals") with the '219 patent, claim 16 (describing the
claimed camera as comprised of a shutter mechanism, an array of discrete light sensing pixel elements, a pixel multiplexing
means, an analog to digital converter means, a memory means, an output data control means, and a logic means).

Canon also contends that the ordinary meaning of the term "camera" to mean a self-contained device should not be used,
because such a definition would exclude the preferred embodiments described in the patent. Specifically, Canon directs the
Court to two embodiments described in the specification, one relating to external control and processing and the other
relating to external activation, and contends that these preferred embodiments must include separate physical components.

Considering the preferred embodiments in the context of the patent, the Court is not persuaded by Canon's argument. In the
first disputed embodiment, the specification discloses an alternative embodiment that adds an auxiliary input/output
interface to allow external control and monitor of timing and control signals internal to the camera. According to the
specification, this auxiliary interface also allows image data to be "routed past or around the compression processor out to
any additional internal or external device." '219 patent, col. 9, 11. 5-9. Although this embodiment references external
features that are separate components, these external features are offered in addition to the features of the single camera
body. Stated another way, the auxiliary input/output channel describes the possible outward expansion of the camera's
internal capabilities, but it is not a substitute for the camera's internal processing capabilities. As Figure 7 of the
specification illustrates, the camera still contains all of the internal circuits that allow processing within the camera. As such,
the external components are not clearly part of the described "camera," and the use of external components in this preferred
embodiment does not demonstrate that the inventors disavowed the plain meaning of the term "camera" as a single housing
unit.

The Court's reasoning is the same with respect to Canon's reference to the second preferred embodiment, the external
activation described in the specification of the '219 patent. The described external activation is not integral or exclusive to
the described "camera," and therefore, in the Court's view, it does not require the Court to depart from the common usage
of the word "camera."

The conclusion that the inventors did not depart from this common meaning and usage of the word "camera" is further
supported by references within the specification and the file history that demonstrate the inventors sought to create a
portable, self-contained unit in a single housing. For example, the stated objective of the invention is to "provide an
electronic still camera that is efficient in design and permits extended periods of portable operation." '219 patent, col. 2, 11.
59-61. As described in the prosecution history of the related '459 patent, "the principle advantages of Applicants' claimed
improved electronic still camera" as "a less costly, more compact and more efficient design." (See, e.g., D.I. 521, Ex. 69 at
St. Clair 00083.) In the Court's view, these statements take on particular significance when one considers that "cameras"
involving a multiple of separate parts and a separate computer were well-known in the prior art. Indeed, during the prosecution of the '219 patent, the inventors of the claimed invention sought to expressly distinguish the prior art by stating that "the claimed device instead stores a plurality of computer-ready digitized images on removable mass memory in the device housing." (See D.I. 486, Ex. 34 at St. Clair 01433 (emphasis added); see generally D.I. 486, Ex. 35.)

In sum, the Court will adopt the ordinary meaning of the term "camera" as it relates to camera structure. In addition, the Court has previously determined that the term "camera" is not limited to a device which takes only still pictures. Accordingly, the Court construes the term "camera" to mean "a self-contained, portable electronic camera, with the capability to take still pictures, the components of which are contained in a single housing." Thus, the Court concludes the phrase "in an electronic camera," as used in claim 1 of the '219 patent, means "in a self-contained, portable electronic camera, with the capability to take still pictures, the components of which are contained in a single housing."

B. Camera Base

The preambles to all six claims contain the language "[a] remote control apparatus for a rotating camera base..." Lectrolarm argues that the preambles are limitations of the claims and proposes that "camera base" should be construed to mean "television camera base." The Defendants argue that the preambles are not limitations of the claims, and would interpret "camera base" to mean "a base capable of supporting a camera." n6

n6 If the preambles are not claim limitations, as the Defendants argue, it is not clear why the Defendants have proposed a definition for the preambles.

"A claim preamble has the import that the claim as a whole suggests for it. If the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is necessary to give life, meaning, and vitality to the claim, then the claim preamble should be construed as if in the balance of the claim." Pitney Bowes v. Hewlett Packard, 182 F.3d 1298, 1305 (Fed. Cir. 1999) (internal quotes and citations omitted); see also In re Paulsen, 30 F.3d 1475, 1479 (Fed. Cir. 1994) ("terms appearing in a preamble may be deemed limitations of a claim when they give meaning to the claim and properly define the invention"). The preambles to claims one through six of the '088 patent give meaning to the claims. For example, claim two recites "an input means for inputting the operating data for the automatic operation of said rotating camera base." U.S. Patent No. 4,974,088, Column 11:38-45. The words "said rotating camera base" refer back to the "camera base" in the preamble, and are only properly understood if the accompanying description of the camera base in the preamble is read as a limitation of the claim. All six of the claims include the language "said rotating camera base" referring the reader back to the description of the rotating camera base in the claims' preambles.

Because the preambles are limitations of the claims, the court must construe the disputed language. The plain language of the term "camera base" is "camera base." Neither the specification nor the prosecution history indicates that the patentees desired a different definition of this term. The Defendants have identified no reference to the base of the apparatus in the specification that contemplates any use other than in conjunction with a camera.

The Defendants attempt to use the specification to support their view by arguing that the "'088 Patent does not describe any aspect of the camera itself, apart from the existence of zoom, focus, and iris motors. Instead the focus of the '088 Patent is the base itself and the control box, not what is on the camera base." (D.'s Br. at 46.) As the title of the invention states, the patent is for a "Television Camera Base." U.S Patent No. 4,974,088 (emphasis added). Patenting an invention for a base for television cameras does not require discussing the details of the television cameras that will be mounted on that base.

The inventors, by the plain language used in the claims, limited patent '088 to bases for cameras. Nothing in the specification or prosecution history indicates otherwise. The court sees no reason to use a definition other than the plain meaning of the words and construes "camera base" to mean "television camera base."
The Court construes "camera mechanism" to mean "the functional components of the motion detector camera." Defendants' proposed construction limits the camera to a film-camera, a limitation the Court has already rejected. Defendants' proposed construction also includes the limitation that the camera mechanism "includes a stand-alone [off-the-shelf] camera that can be used independently when removed from the housing of the motion detector camera." Defendants argue the Court should adopt this limitation because Plaintiffs do not argue against it, nothing in the claims excludes off-the-shelf cameras, and Figure 7 depicts such a camera. The specification does not describe the camera mechanism in Figure 7 as an off-the-shelf camera. The claim does not address whether the camera mechanism can be an off-the-shelf camera. Defendants do not present any reason that the jury should specifically be instructed that the camera can be an off-the-shelf camera. Accordingly, the Court rejects this limitation of Defendants' construction.

2. Claims 11 and 12 ("camming members")

Claims 11 and 12 of the '050 Patent use the term "camming members" as follows: "The surgical instrument of claim 1, wherein the clamp member includes a pair of pivot pins and pair of camming members spaced from the pivot pins," see '050 Patent, Claim 11 (emphasis added), and "The surgical instrument of claim 1, wherein the actuator tube includes a pair of slots engageable with a pair of camming members of the clamp member," see '050 Patent Claim, 12 (emphasis added). Plaintiff proposes construing the term as: "The parts on the clamp (followers) that are imparted motion by the cam slots" and defendant proposes: "Protrusions (followers) the motion of which is controlled by movement of the "slots" with which they are engaged."

The main issues in dispute appear to be: (1) defendant's use of the word "protrusions" to describe the "camming members" and (2) the parties' disagreement concerning the type of movement and/or control imparted by the cam slots to the camming members.

As to the first issue, the use of the word "protrusions" is inappropriate because that word is not invoked in the claim or the specifications. In fact, the patentees did use the word "protrusions" elsewhere in the patent, thus suggesting that if they had wished to use that term here, they knew how to do so. See e.g., '050 Patent 10:47-50, 12:24-26. Thus the Court will not import such a limitation into the claim absent any basis for such a limitation in the intrinsic evidence. As to the second issue, defendant acknowledges both that a "cam" is a well-known structure in the art, see Def. Claim Construction Br. at 27; Houser Decl. [Doc. # 41, Ex. 8] at P7, and that definitions for "cam" "almost uniformly refer to the cam as being a structure which communicates or imparts motion to a 'follower','' see Def. Claim Construction Br. at 27. Plaintiff agrees that a "cam" imparts motion to a "follower." See Pl. Reply Br. at 7. There is no basis for defendant's proposed use of "controlled" in either the claims or the specifications. n3

n3 Although the plain language of the claims and specifications is determinative on this issue and therefore resort to extrinsic evidence is neither necessary nor appropriate, the Court notes that plaintiff's expert testified that many factors can influence the movement of the cam followers, indicating that the "cam slots" do not definitively "control" the movement of the cam members. See Markman Tr. 56, 59.

Lastly, there was much discussion at the Markman hearing regarding the type of motion imparted by the cam slots to the camming members. Counsel appeared to be in agreement that a cam is a mechanism that effects the translation of motion, for example, the translation of linear motion into rotary motion. With respect to the cam mechanism in the patents at issue here, counsel also appeared to be in agreement that the cam slots impart that translated motion to the camming members and guide the motion of the camming members as the camming members engage with the surface of the cam slots. See Markman Tr. at 52-53, 59, 107-08. Accordingly, this concept is incorporated into the Court's construction of "camming members" as: "The follower parts of the cam mechanism that are imparted motion by the cam slots and whose motion is
The Kellenberger Patent concerns an absorbent composite or core for an absorbent article. More specifically, the absorbent composite consists of a matrix of fibers and superabsorbent material that is designed to absorb fluids, but dramatically reduce the thickness and weight of an absorbent article.

Here, we are asked to construe two commonly used verbs, "can" and "has". KC suggests that "can" and "has" should be given their common usage definition, "capable of" and "possesses", respectively. (doc. 150 at pg. 64.) In contrast, First Quality proposes that we construe "can" and "has" to mean "the superabsorbent material is 'specifically selected based on its having the' claimed properties." (doc. 168 at pg. 34.) Essentially, First Quality argues that we should construe said verbs to mean "selected". In support of its construction, First Quality cites to portions of the prosecution history it alleges indicate that KC intended "can" and "has" to have an "unconventional meaning." (doc. 168 at pg. 38.) KC denies First Quality's characterization of the prosecution history, and also argues that First Quality is improperly trying to include a method step or intent into the patent claims. (doc. 197 at pgs. 32-40.) We agree.

By seeking to construe "can" and "has" to mean "selected", First Quality improperly seeks to add a process limitation into an apparatus claim. Baldwin Graphic Sys., Inc. v. Siebert, Inc., 512 F.3d 1338, 1344 (Fed. Cir. 2008)(citations omitted) ("Courts must generally take care to avoid reading process limitations into an apparatus claim...because the process by which a product is made is irrelevant to the question of whether that product infringes a pure apparatus claim."). "Selected" assumes a process or method of selection. Here, Claims 1, 20, 30, 41 and 42 are apparatus claims. They have no process limitations. The claims do not represent an intention to patent a method or process of selection. Instead, these claims indicate the patentees intention of patenting an apparatus that has specific superabsorbent properties. Furthermore, we find nothing in the specification, claims or patent history that would indicate that KC intended to give "can" and "has" unconventional, special definitions. Based on this reasoning, we conclude that "can" and "has" will be given their ordinary meaning. Thus, "can" and "has" mean "capable of" and "possesses", respectively.

4. "Wherein the memory alloy element can be extruded from the hollow placement device by the guide wire"

This disputed phrase appears in independent claim 1 and in dependent claims 2, 3, 4, 5 and 22 of the '141 Patent. 5 Claim 1 reads, in pertinent part:

A medical device for insertion into a mammalian body, the device comprising (a) a hollow placement device; (b) a memory alloy element formed at least partly from pseudo-elastic shape memory alloy, …; and (c) a guide wire; the memory alloy element being within the hollow placement device, and the placement device being guideable by the guide wire, …, wherein the memory alloy element can be extruded from the hollow placement device by the guide wire ….

(See '141 Patent, 10:6-11:20.)
derives its antecedent basis from subsection (c) of the claim. The plain language of the claim suggests that the term "a guide wire" should mean what it says, i.e., a wire that is used to guide a device. Medtronic, however, argues that the specification and prosecution history demonstrate that Jervis did not intend for the term to be restricted to a "wire," but rather that he intended the term to be construed broadly enough to encompass a catheter. As support for this argument, Medtronic notes that Jervis describes Figure 7 as disclosing "a guide catheter, a transport catheter, and compacted wire coil stent according to the present invention." ('141 Patent, 3:21-22.)

Medtronic's argument also is supported by the prosecution history of the '141 Patent, during which Jervis appealed a final rejection and in his appeal brief referred to element 104 of Figure 7 as a "guide wire." (Declaration of Ellen J. Wang in Support of Medtronic's Claim Construction Brief ("Wang Decl."), Ex. F at 11.) The specification of the '141 Patent refers to element 104 as a "transport catheter." ('141 Patent, 9:28.) Thus, these references support Medtronic's argument that "a guide wire" need not be construed to literally encompass a "wire," and that it should be construed more broadly.

Gore argues that this term should be construed to include a reference to the fact that the guide wire "is also used to guide the hollow placement device into a mammalian body." However, the clause that immediately precedes the disputed "wherein" phrase provides that "the memory alloy element being within the hollow placement device, and the placement device being guidable by the guide wire…." This clause therefore explains that the guide wire is used to guide the hollow placement device. The Court concludes there is no need to include such a limitation in the disputed phrase.

Accordingly, the Court construes the phrase "wherein the memory alloy element can be extruded from the hollow placement device by the guide wire," to mean: "the device or memory alloy element is forced out of the hollow placement device by the guide wire, which is a device that assists in positioning another device."

3. "electrothrombosis can be performed"

The parties dispute the proper construction of the phrase "electrothrombosis can be performed." There are three aspects to the dispute. One aspect of the dispute is whether the performance of electrothrombosis is a requirement of Claim 1 or whether Claim 1 is practiced if some other method of forming a thrombus is used. The second aspect of the dispute is whether, if performance of electrothrombosis is a required element, must it be carried through to complete occlusion or does partial occlusion meet the claim. Finally, although not raised by the parties, the meaning of the phrase "can be performed" raises a construction issue. The language of the Claim resolves all of these issues.

17 In the Supplemental Joint Claim Construction Chart, The Regents' Proposed Construction state, "The '962 patent makes clear that the invention can be practiced to form an occlusion with or without electrothrombosis."

18 In the Supplemental Joint Claim Construction Chart, Defendants' Proposed Construction state, "Electrothrombosis can start and carry through to completion."

Claim 1 is an apparatus claim. The apparatus is a catheter wire. The catheter wire comprises two elements. The first element is a core wire and the second element is a detachable coil. Although the language of Claim 1 imposes limitations on these two elements, neither occlusion nor electrothrombosis-partial or complete are limitations on the apparatus disclosed in Claim 1. There is no disclosure in Claim 1 of formation of an occlusion as an element of the claim. Indeed, there is no disclosure in Claim 1 of electrothrombosis being performed.

The disputed phrase appears in a "so that clause:"

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shape such that on its advancement out of the distal end of a microcatheter and into a cavity it will change from being straight to its prebiased spiral or helical shape so that on the application of current to said detachable coil disposed in the cavity, electrothrombosis can be performed and at least one portion of said distal portion electrolytically disintegrated to detach said detachable coil from said main body.

A "so that clause" introduces a functional description of the results from the use of an apparatus. See In re Michlin, 256 F.2d 317, 320, 45 C.C.P.A. 1028, 1958 Dec. Comm'r Pat. 408 (C.C.P.A. 1958.) Thus, a "so that clause" is equivalent to a "whereby clause" in a method claim. A "whereby clause" in a method claim that merely states the results of the limitations in the claim adds nothing to the substance of the claim. See Lockheed Martin Corp. v. Space Systems/Loral, Inc., 324 F.3d 1308, 1319 (Fed. Cir. 2003). To be consistent, the Court finds that in an apparatus claim, a "so that clause" which is followed by a description of the desired results from the use of the apparatus, does not impose a limitation on the apparatus. Accordingly, with respect to Claim 1, the phrase "so that . . . electrothrombosis can be performed" merely describes the intended results from use of the apparatus but does not impose a limitation that those results in fact take place.

19 A different conclusion might be reached in a method claim which recites the electrothrombosis as a step in the method.

The Court declines to construe the claim as requiring an occlusion by electricity or by some other means or as requiring electrothrombosis—initiated or carried through to completion. To the extent the dispute is over the word "can," the Court construes it to mean is "able to."

The Court construes "electrothrombosis can be performed" to mean:

electrothrombosis is able to be performed.

3. Claims 3 and 5

The parties have asked the Court to construe the term "position . . . relative to the housing can be varied" which appears in dependent claims 3 and 5. Claim 3 claims an "apparatus as claimed in claim 2 wherein the position of the nozzle (4) relative to the housing can be varied." ('886 patent, col. 4, ll. 20-21.) Claim 5 claims an "apparatus as claimed in claim 4 wherein the position of the mouthpiece (3) relative to the housing can be varied." ('886 patent, col. 4, ll. 24-25.) P&M maintains that the plain and ordinary meaning of this term is that the location of the mouthpiece [or nozzle] and the housing can differ with respect to one another. (Pls. Opening Mem. at 22.) Rose Art maintains that the term means that the nozzle and the mouthpiece can move up or down the longitudinal axis of the housing in order to accommodate different lengths of nibs (for the nozzle) and different lengths of pens (for the mouthpiece.) (Def.'s Pre-Markman Hr'g Br. at 28-31.)

Rose Art's construction of the disputed term is supported by the specification which states that:

the end walls 10, 17 of the barrel together define end stops for the pen 9, variations in pen length being accommodated by the position of the mouthpiece 3 on the barrel 2. As mentioned above, the position of the nozzle 4 relative to the barrel 2 can be varied simply by turning the nozzle about the cooperating threads to ensure that the nib 15 is always correctly located with respect to the orifice 6. By this means variations in the nib lengths of different felt tipped pens can be accommodated.

('886 patent, col. 3, ll. 3-8.) However, the claim language is clear on its face and, therefore, the Court can only consider the specification to determine if the construction must deviate from the clear language of the claim. Interactive Gift Exp., 256 F.3d at 1332. Adoption of the construction urged by Rose Art would impermissibly restrict the construction of the term to one of the preferred embodiments described by the specification. Rodime, 174 F.3d at 1303. Consequently, the disputed term is construed to mean that "the locations of the mouthpiece [or nozzle] and housing can differ with respect to one another." Since the intrinsic evidence with regard to this term is not ambiguous, the Court did not consider the extrinsic
evidence submitted by the parties with respect to this term.

1. "a cannula mount affixing the cannula to the guide"

Plaintiff proposes that this term should be construed to mean "anything that affixes or connects the cannula to the guide." MDTech's proposed construction is "a support which attaches the cutting cannula to the guide in a secured manner." At oral argument, counsel for MDTech agreed that the word "cutting," which Plaintiff found objectionable, could be removed from MDTech's proposed definition, and further agreed that "structure" could be substituted for "support" in the proposed definition. (Trans. at 92 - 93.) The only real dispute between the two proposed constructions, therefore, is whether the "cannula mount" can be "anything," as Plaintiff proposes, or whether it must be a "support" or "structure," as MDTech argues it should.

A cannula mount, depicted as item 58 in the Fig. 1 embodiment, is shown to the right. The Fig. 1 embodiment depicts the cannula mount 58 configured to receive the cannula 66 at one end near its conical head 64 and to attach to the guide 18 at the other end by engaging the cannula mount's internal threaded portion 72 (the female thread) with the external threaded portion 56 (the male thread) of the guide 18. In other words, the cannula mount in this illustration joins the cannula to the guide by securing the cannula on one end and having a screw-like connection with the guide on the other.

In the Fig. 5 embodiment shown to the right, the cannula mount 258 receives the cannula 266 on one end and plugs into the guide 218 by inserting the base 262 into a bore 255a in the guide. The specification explains that the cannula mount 258 is adhesively bonded within the bore 255a. (‘797 patent, col. 9, 38 - 43.)

Plaintiff argues that both embodiments show the cannula mount joining the cannula and the guide and, therefore, that the mount can be "anything" that affixes these two components together. In addition, Plaintiff argues that defining this term as requiring a support or structure is impermissibly interpreting it as means plus function claim.

MDTech, on the other hand, argues that the word "anything" gives too broad of a construction to this term, and that "anything" could include glue, velcro or other materials that can attach or affix components and that are not themselves structures. MDTech argues that such a construction is in conflict with both the intrinsic and extrinsic sources to which the Court may refer. First, MDTech points to language in the detailed description of the invention, explaining that "the proximal end 282 of the stylet 262 [sic] is adhesively bonded within the recess, and the base 262 of the cannula mount 258 is similarly secured within the bore 255a." (‘797 patent, col. 9, l. 40-43). MDTech argues that, if the cannula mount can be secured with adhesive, the cannula mount itself cannot be adhesive and, therefore, it cannot be just "anything."

In addition, MDTech argues that the prosecution history reveals that this claim was amended to add the phrase "cannula mount" in order to obtain allowance of the claim. Prior to the examiner's amendment, the claim read, "a guide having means affixing the cannula thereto." (MDTech Claim Construction Brief, Doc. 54, Ex. 4, at GWB 00086.) The examiner's amendment changed that language to its current form. (Id., at GWB 00068.) MDTech argues that the reason for the change was the submission of additional prior art references, one of which (the Portner patent) showed a guide directly gripping the cannula, as opposed to having a structure joining the two components. The change, MDTech argues, was meant to incorporate some structure that attached the guide to the cannula rather than having them directly attached or bonded together. Plaintiff offers no alternative explanation for this amendment.

Finally, MDTech argues that a common dictionary definition of the noun "mount" is "FRAME, SUPPORT: as a material (cardboard) on which a picture is mounted." (MDTech Br., Ex. 6.); see also Mirriam-Webster Online Dictionary, www.m-w.com (same). MDTech points out that this definition is consistent with the Fig. 1 and Fig. 5 embodiments, both of which refer to a support structure that attaches the cannula to the guide.
The Court agrees with MDTech that, based on the specification, prosecution history, and dictionary definition, "cannula mount" cannot simply mean "anything." Rather, the Court concludes that this language contemplates and, thus, claims a piece or structure which is independent from the structures which are the guide and the cannula, and serves the function of connecting the two other structures. Thus, the Court construes "a cannula mount affixing the cannula to the guide" to mean "a structure or support which attaches or connects the cannula to the guide." 7

7 The Court is not persuaded by Plaintiff's argument that defining this term as requiring a structure or support is the equivalent of improperly construing it as a means-plus-function claim. The Court is not holding that the structure or support must only be the structures identified in Fig. 1 and Fig. 5 as the cannula mounts (58 and 258), as would be the effect of a finding that it is a means-plus-function claim. The holding is merely that it must have some structure and cannot be just "anything.

A Definition of "Cantilevered"

Here the parties and their experts dispute the term "cantilevered." Defendant argues that cantilevered means that one end of each rod is fixed while the other is free, with the fixed end supporting the free end Plaintiff argues that cantilevered means that one end of the rod supports the other, so that both ends of the rods can be free Accordingly, this Court must construe the term cantilevered as used in the '057 and '704 patents.

The parties put forward different dictionary definitions of cantilevered that support each of their respective positions. Dictionaries and technical treatises may be considered along with the intrinsic evidence when determining the ordinary meaning of claim terms. Texas Digital Sys. v. Telegenix, Inc., 308 F.3d 1193, 1203 (Fed. Cir. 2002).


Plaintiff puts forward a contrary definition of "cantilever" from the American Heritage Dictionary (1986) "1. A projecting beam or other structure supported only at one end. 2. A beam or other member projecting beyond a fulcrum and supported by a balancing member or a downward force behind the fulcrum." (Rawls Decl. Ex. B at 2.) 1 Plaintiff urges the Court to adopt both definitions, but rests its arguments of the merits solely on the second Because the secondary general dictionary definition refers to a rod extending beyond a fulcrum, Plaintiff argues it encompasses a design where both rod-ends are free. In effect, Plaintiff claims that cantilevered means any beam or rod placed or balanced on a fulcrum. (See Rawls Decl at 8.)

1 Plaintiff claims this is a definition of "cantilevered." However, the definition is for the word "cantilever," and the definition itself merely reflects that "-ed" may be added to the word "cantilever."

The parties dispute how to resolve the conflicting dictionary definitions. The Court does not find, after close examination, that the dueling expert reports on the definitions resolve the matter. Defendant claims that a scientific dictionary definition "trumps" a general dictionary definition Defendant is correct that the Federal Circuit has cautioned against the use of non-scientific dictionary definitions, lest dictionary definitions be converted into technical terms of art having legal, not linguistic significance Dow Chem. 257 F.3d at 1372. At the same time, the Federal Circuit has "never held that non-scientific dictionaries cannot be used to determine the ordinary meaning of claim language." Id at 1373 However, to the extent that
there is a difference between the general and technical definitions of a word, if the word is used in "a technical context to describe a component of a mechanical apparatus," then "a technical dictionary is therefore a better source to inform the meaning of the term to a skilled artisan in this case" Transclean Corp., 290 F.3d at 1375.

"Cantilevered" is used in the '057 and '704 patents in a technical context to describe a component of a mechanical apparatus, and therefore this Court gives priority to the technical dictionary definition. Moreover, the Court is skeptical of the secondary definition from the American Heritage Dictionary that Plaintiff proposes as the appropriate claim construction. First, a contemporaneous general dictionary does not include the broad secondary definition. Webster's Ninth New Collegiate Dictionary (1986) only contains the first definition listed in the American Heritage Dictionary "A projecting beam or other structure supported only at one end." Second, the Court believes that Plaintiff's proposed reading of the secondary definition is incorrect. The primary general dictionary definition is clearly in accord with the common understanding of a cantilever, such as a diving board or a construction crane, where an extending beam is supported by a counterbalancing force on the other end. Plaintiff's interpretation of the secondary definition of the American Heritage Dictionary would reduce the word "cantilever" to mean any rod placed or balanced on a fulcrum. Under Plaintiff's reading, a balance scale would be a cantilever because one end of the bar of the scale supports the other to create a balance. (See Rawls Decl. at 8.) However, a scale can be described "a beam that is supported freely in the center." Webster's Ninth New Collegiate Dictionary at 1047. The Court concludes that even under the general dictionary definition of cantilever, Plaintiff's proposed claim construction is incorrect. In addition, the Court finds that Plaintiff's proposed construction does not fit with the intrinsic record, as described below.

B Intrinsic Evidence

The Court looks to the intrinsic record to identify which of the different possible dictionary meanings of the claim terms at issue is most consistent with the use of the words by the inventor Texas Digital Sys, 308 F.3d at 1203. If more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all such consistent meanings. Id. When claims are amenable to more than one construction, they should, when reasonably possible, be interpreted so as to preserve their validity. Process Control Corp v HydReclaim Corp., 190 F.3d 1350, 1356 (Fed. Cir. 1999), cert. denied, 529 U.S. 1037, 146 L. Ed. 2d 346, 120 S. Ct. 1531 (2000).

The parties put forward two principal arguments on intrinsic evidence supporting their respective dictionary definitions and proposed claim construction of cantilevered. Defendant argues that language in claims dependent on Claim 12 indicates that one end of the rod mentioned in Claim 12 is fixed (an "antecedent problem") Plaintiff argues that adopting Defendant's definition leads to redundant language in the claims (a "surplusage problem")

1. The Antecedent Problem

Defendant argues that Claim 15, which is dependent on Claim 12, demonstrates that the term "cantilevered fashion" implies that one end is fixed and the other end is free. Claim 15 claims: "The exercising machine of claim 12 including a guide member for the cable mounted on the base near the fixed ends of the rods." (057 patent, claim 15, col. 8 ll. 1-3) (emphasis added) Defendant points to the language in Claim 15 regarding "the fixed ends of the rod" as intrinsic evidence supporting its proposed definition.

When a dependent claim states an invention in relation to an independent claim by adding a new component, it does so by using "a" as an antecedent Patent & Trademark Office, Manual of Patent Examining Procedure § 2173.05(e) (2001). For example, dependent Claim 15 adds a limitation to independent Claim 12 by adding "a guide member for the cable mounted on the base near the fixed ends of the rods" The "guide member" is not described in Claim 12, but rather is added by Claim 15. However, when a dependent claim refers back to elements already disclosed in the dependent claim, it uses "the" or "said" as an antecedent. Id Thus, when dependent Claim 15 mentions "the cable" used to connect to "the rods," it is referring back to "the cable" and "the rods" already disclosed and described by Claim 12.

Because Claim 15 recites "the fixed ends of the rods," it is expected that Claim 12 disclosed and described "fixed ends" to the rods However, "fixed ends" is not recited in Claim 12. Although the actual term "fixed ends" is not mentioned in Claim 12, the term "fixed ends" could be considered to be implicit in "cantilevered fashion," because the definition of cantilever that Defendant puts forward requires "fixed ends." Should Plaintiff's proposed construction be adopted, then it appears that dependent Claim 15 may be invalid as indefinite. See id. Claim 15 should not refer to "the fixed ends" unless "the fixed
ends" are described in independent Claim 12. If Plaintiff's proposed definition were correct, then the patent should read "a fixed end" or simply "fixed ends." The phrasing of dependent Claim 15 is evidence in support of Defendant's proposed construction.

It would be error, as Plaintiff points out, to actually import a limitation of dependent Claim 15 to independent Claim 12 D.M I., Inc. v. Deere & Co., 755 F.2d 1570, 1573 (Fed Cir. 1985) The prohibition of importing limitations does not bar the Court from concluding that the antecedent problem identified by Defendant supports their proposed claim construction, although it clearly does not decide the matter.

2. The Surplusage Problem

Courts should not construe a patent claim term such that it renders other terms in the claim mere surplusage or reads such other terms out of the claim. Texas Instruments v. United States Int'l Trade Comm'n, 988 F.2d 1165, 1171 (Fed Cir. 1993). However, this canon of construction is not absolute, and patents may in fact be drafted and construed such that surplusage exists. See Pickholtz v. Rainbow Techs., Inc, 284 F 3d 1365, 1373 (Fed Cir. 2002).

Plaintiff argues that Defendant's proposed claim construction would render other terms of the claim superfluous or redundant -- a "surplusage" problem. Specifically, if a cantilever has "one fixed end and one free" as Defendant proposes, then the language of Claims 1, 19, and 25 of the '057 patent and Claims 1 and 12 of the '704 patent describing fixed and free ends are arguably redundant if Defendant's proposed definition is correct, Plaintiff argues, these claims describing the mounting of the rods should only read "in a cantilevered fashion," because all cantilevers under Defendant's definition have a fixed and a free end. Defendant admits that its definition could result in redundancy, but argues that Plaintiff's proposed definition also leads to surplusage -- "There is no getting around the fact that the claims of the '057 patent are unnecessarily repetitive." (Def.'s Resp. at 10)

Both of the proposed definitions result in possible surplusage. Defendant's proposed construction does threaten to make those claims that describe a rod's fixed end and free end into surplusage. However, this criticism is partially tempered by the fact that the language of the claims indicates specific modifications to the fixed end. For example, Claims 19 and 25 of the '057 patent describe the lower ends of the rods as being "rigidly affixed to the post." Claim 12 of both the '704 and '057 patents describes one end of the rod "being attached to said base." The additional specification that the fixed end of the rod is "affixed to the post" or "attached to said base" makes the claim language more specific, not redundant. Moreover, Plaintiff's proposed construction results in surplusage as well. Plaintiff's proposed construction would cover all rods mounted on a base, since it does not matter under its definition of cantilever specifically where the rods are mounted, either in the center or at an end. This makes the term "cantilevered" into surplusage because it would mean effectively nothing more than "attached" or "mounted on." The surplusage problem does not compel use of Plaintiff's definition over Defendant's. 2

Footnotes

2 The primary general dictionary definition -- which neither party proposes as the proper construction -- is probably the least problematic in terms of creating surplusage. However, it does not resolve the antecedent problem nor the preference in this case for a technical definition.

End Footnotes

C. Construing "cantilevered fashion"

The above analysis leads this Court to conclude that the term "cantilever" is appropriately construed in accordance with Defendant's proposed definition: "A beam or member securely fixed at one end and hanging free at the other end." This proposed definition includes the BowFlex as disclosed in the patent specification. The BowFlex rods and those of the preferred embodiment have one end free, and are attached to a fulcrum near the other end, the tip of which is bolted to the base. The preference for a technical definition in this matter, as well as the considerations raised by the antecedent and surplusage arguments, clearly favors Defendant's proposed construction over Plaintiff's. It is clear to the Court that the claim language and intrinsic evidence describe rods mounted on a base with one fixed end and one free end, and not rods balanced or attached to a base in their center.
The district court construed "cantilever" to mean: "A beam or member securely fixed at one end and hanging free at the other end" and stated that "cantilevered fashion" means that "one end of the resilient rod is fixed and the other is free." The district court relied heavily on dictionary definitions in reaching its claim construction. The record contains the dictionary definitions shown below, although the district court considered only the first three:

A beam or member securely fixed at one end and hanging free at the other end.


1. A projecting beam or other structure supported only at one end.


2. A beam or other member projecting beyond a fulcrum and supported by a balancing member or a downward force behind the fulcrum.


(Civ. Eng.). A beam or girder fixed at one end and free at the other.


A cantilever beam is fixed (no rotation) at one end.

Marks' Standard Handbook for Mech. Eng'rs (9th ed.).

A beam supported at one end and supporting a load along its length or at its free end . . . . Familiar examples are the symmetrical paired cantilevers of a seesaw or teeterboard, the beam in a chemical balance, and the unsymmetrical cantilever in the overhang of a roof.


These definitions of "cantilever" include a beam fixed at one end and also a beam with two free ends in double (or "paired") cantilevers. The district court gave priority to the McGraw-Hill Dictionary of Scientific & Technical Terms. The district court also considered the language of claim 15: "The exercising machine of claim 12 including a guide member for the cable mounted on the base near the fixed ends of the rods." The district court concluded that claim 15 supports an interpretation of claim 12 that requires rods with fixed ends. The district court did not rely on the record expert testimony.

At the outset, the district court erred by failing to recognize that the term at issue is not simply "cantilevered" but "in cantilevered fashion." The latter phrase does not mean a literal cantilever, but only a structure that is similar to or in accordance with the principles of a cantilever. Thus the claim language does not require a literal cantilever. Even a literal cantilever, however, need not have only one fixed end.

In requiring the "fixed end" limitation, the district court erred by improperly importing that limitation from the specification and a few selected dictionaries. A cantilever with one fixed end is not the only possible cantilevered structure. The secondary definition in the American Heritage Dictionary is a "beam or other member projecting beyond a fulcrum and supported by a balancing member or a downward force." Drawings of a cantilevered bridge and a hammerhead crane, each showing a cantilever having two free ends, accompany that definition.
If "multiple, potentially consistent, dictionary definitions exist for the claim terms in question," a court must consider "the rest of the intrinsic record for further context and guidance." Brookhill-Wilk 1, LLC. v. Intuitive Surgical, Inc., 334 F.3d 1294, 1300 (Fed. Cir. 2003). "When a term has multiple dictionary definitions, we must consult the intrinsic record 'to identify which of the different possible dictionary meanings of the claim terms in issue is the most consistent with the use of the words by the inventor.'" Tehrani v. Hamilton Medical, Inc., 331 F.3d 1355, 1361 (Fed. Cir. 2003) (quoting Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1203 (Fed. Cir. 2002)). A trial court must construe claims "consistently with the scientific and technical context in which it is used in the patent." AFG Indus., Inc. v. Cardinal IG Co., 239 F.3d 1239, 1248 (Fed. Cir. 2001).

The district court's construction is incorrect, based on the full context of the claim language. Taken in context, "in cantilevered fashion" includes the "double cantilever" definition, i.e., a structure in which a beam projects on both sides beyond its support.

Claim 12 also has the limitation "one end of each of the rods being free" (emphasis added). This language may also encompass a rod with two free ends. A rod with two free ends literally includes "one end . . . free." Thus, this limitation requires only at least one free end.

The language of claim 15 does not suggest that claim 12 must include a fixed end limitation. Claim 15 states: "The exercising machine of claim 12 including a guide member for the cable mounted on the base near the fixed ends of the rods." In the first place, claim 15 does not explicitly add a limitation to claim 12 that one end of the rods is fixed. More important, claim 15 is a dependent claim with a narrower scope than claim 12 in any event. The trial court noted that the specification of the '057 patent only contains embodiments with rods having one free end and one fixed end. The specification performs a different role from the claims. The specification, among other roles, describes an enabled embodiment of the invention. The claims, on the other hand, recite the outer boundaries of the scope encompassed by the invention. By definition, therefore, the claims may encompass more than the embodiment or embodiments described in the specification. The claims, after all, recite boundaries, not the only characteristics and features of the invention. Thus, a construing court may not limit the claims to the disclosed embodiments without a clear disclaimer in the intrinsic record that limits the invention to these embodiments and nothing more.

The term cantilever appears only once in any form outside the claims: "These holes receive respective cantilevered resilient rods or arms 44, the free ends of which extend upward from retainer 36 and base 10." '057 patent, col. 3, ll. 43-45. That descriptive statement in the specification does not preclude a cantilevered structure with two free ends.

Claim differentiation also weakens any suggestion that claim 12 must include the "fixed end" limitation. While claim 12 contains no express "fixed end" limitation, "fixed end" limitations appear in independent claims 1, 19, and 25. Claims 1, 19, and 25 describe an end of the rod as "secured in a fixed position" or "rigidly affixed" and the other end as "free." If "cantilevered" meant one fixed end and one free end, the recitations of fixed and free ends in claims 1, 19, and 25 would be surplusage. The district court's construction improperly renders claim terms superfluous and reads limitations of claim 15 and of the preferred embodiment into the claim. Although it is true that "no canon of claim construction is absolute in its application," Renishaw PLC, v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998), and that surplusage may exist in some claims, see Pickholtz v. Rainbow Techs., Inc., 284 F.3d 1365, 1373 (Fed. Cir. 2002), these principles show error in the district court's construction.

This court therefore construes the limitation "in cantilevered fashion with one end of each of the rods being free" to mean that the rods are mounted with one or both ends free such that the rods have the structure of a single or double cantilever. In the circumstances, we think that the appropriate disposition of this case is to remand it to the district court for reconsideration in light of this opinion.

1. "Cantilevered"

Plaintiff contends that the term "cantilevered leg" means "a leg that extends outwardly and under a space that exists between the leg, the arm, and the rail." (Plf. Brief at 5). Similarly, plaintiff argues that a "cantilevered [] arm" is "an arm extending
outwardly and over a space existing between the leg, the arm, and the rail." (Plf. Brief at 10). Defendants maintain that the term "cantilevered" should be given its ordinary and accustomed meaning of being supported only at one end. (Def. Brief at 11-12).

In ordinary usage, the term "cantilever" refers to "[a] projecting structure, as a beam, supported at one end" or "[a] structural member, as a beam, that projects beyond a fulcrum and is supported by a balancing member or a downward force behind the fulcrum." WEBSTER'S II NEW COLLEGE DICTIONARY at 163 (1995 ed.); see also MERRIAM WEBSTER'S COLLEGIATE DICTIONARY at 168 (10th ed. 1993) (defining "cantilever" as "a projecting beam or member supported at only one end"). Thus, it is not the creation or definition of a space that characterizes a cantilevered object. Rather, the defining characteristic is that the object is supported only at one end.

The specification does not indicate that any contrary usage of the term was intended. The description in Figure 2, a cross-sectional view of the embedded railway system, defines the cantilevered leg and arm in terms of their relation to the main body of the gauge insert:

"Referring still to FIG. 2, the leg 340 of the gauge insert 300 extends in a cantilever arrangement from the rail side 322 of the main body 320. . . .

* * * *

Referring still to FIG. 2, the resilient arm 380 extends in a cantilever arrangement upwardly from the main body 320 and in the same direction as the leg 340."

(Plf. Brief, Exh. 1, col. 4, ln. 10-12 & 33-35). This language suggests that the term "cantilever" was used to describe the manner in which the leg and arm project outward from, and are supported by, the main body of the insert. The fact that this arrangement creates a space between the leg and the arm is incidental.

Nevertheless, plaintiff insists that the prosecution history reveals that a different usage was intended. The inventors originally claimed the leg of the insert as "an elongated leg projecting from said main body toward said rail . . . ." and the arm as "an elongated resilient leg projecting from said main body toward said rail and upwardly toward the head of said rail . . . ." The patent examiner noted that this language was too broad and was anticipated by the earlier Grant Patent. (U.S. Patent No. 4,606,498) (Id., Exh. 3, Office Action Summary of Sept. 13, 1995 P 7). The Grant insert was contoured to fit snugly against the rail and base. (Id., Exh. 4, col. 3, ln. 50). The examiner suggested that "additional positively recited structural limitations to the claims detailing . . . in particular the free end cantilever arrangement of the legs and arms . . . may receive favorable consideration . . . ." (Id., Exh. 3, Office Action Summary of Sept. 13, 1995 P 14) (emphasis in original). The applicants therefore added the term "cantilever" to the claim language and noted that "in contrast, the legs and arms of Grant are not cantilevered, but are portions of a mass that also form the main body." (Id., Exh. 3, Amend. of Jan. 16, 1996, Remarks P 4 at 13).

The Court is not convinced that this prosecution history requires a different construction of the term "cantilevered." The applicants sought to distinguish the Grant Patent based on the relation of the leg and arm to the body of the insert--not on their relation to the rail. The fact that the applicants did not refer to the leg and arm as a "free end cantilevers," as suggested by the examiner, is irrelevant. At best, the modifier was redundant, as a cantilever must necessarily have a free end.

Moreover, plaintiff's proposed construction would effectively render the term "cantilever" meaningless. Even without this term, the leg and arm of the insert would still define a space between one another and the rail. The Court must give meaning to all the terms of the claim. Exxon Chemical Patents, Inc. v. Lubrizol Corp., 64 F.3d 1553, 1557 (Fed. Cir. 1995), cert. denied, 518 U.S. 1020, 116 S. Ct. 2554, 135 L. Ed. 2d 1073 (1996). Accordingly, a "cantilevered leg" and "cantilevered arm" must be defined as a leg or arm that is supported by the main body of the insert and has a free end.
This claim term is the logical starting point for claim construction because the definition of "cap" will influence the definition of all of the other terms that the Court needs to construe.

The Defendants' proposed construction of "cap" is "a removable cover that completely covers a beverage container or drinking container." Sunbeam's proposed construction is "a removable structure adapted to mount to the end of a container to cover the end of the container to some extent." Thus, the parties' dispute focuses on the extent to which the "cap" must cover the beverage container.

1. Words of the Claims

The language of Claim 4 of the '592 patent describes the following claim:

a beverage container having an open top portion and a closed bottom portion;

a first removable cover for selectively covering said top portion of said container, said first cover adapted to be removably mountable on and off a blender and comprising an adapter portion for mounting said container on a blender; and

a second removable cover for selectively covering said open top portion of said container, said second cover comprising a cap, and wherein said first and second covers are interchangeable on said container.

'592 Patent at 20:53-63 (emphasis added).

2. Specification and Prosecution History

The specification describes the function of the cap, which is also referred to as a "removable cap." Id. at 11:39-59. The cap is described, in context of its use as an appurtenance to a single-serving beverage container, as follows:

The single serving beverage container 38 (shown also in FIG. 19) is slightly tapered along its length, and preferably is sized to fit into a user's hand as well as a typical beverage holder in automobiles. A removable cap 198 (FIG. 2) is provided that may be screwed onto the male threads 196. The removable cap 198 may include a drinking hole, and/or may include a closure tab to avoid spillage.

To use the single serving beverage container 38, the cap 198 is removed (if present), and beverage ingredients are placed in the single serving beverage container 38. The agitator collar 190 is then screwed onto the male threads 196. . . . The single serving beverage container 38 and the agitator collar 190 are then inverted (FIG. 19) and installed on the blender base 32. The beverage ingredients may then be mixed and/or blended by the blender base 32. The agitator collar 190 and the single serving beverage container 38 are then removed, inverted, and the agitator collar is screwed off of the single serving beverage container. The cap 198 may then be screwed onto the single serving beverage container 38, and the single serving beverage container is ready for use.

Id. The specification implies that the cap is intended to be used to facilitate drinking, because drinking is the standard use for beverage containers. However, it is also conceivable that a cap could be used to store the beverage and prevent spillage.

Neither party discusses any prosecution history surrounding the term "cap." The term does not appear to have engendered any dispute during prosecution of the '592 patent. Indeed, this is common to all of the claim terms containing the word "cap." See Pl. Memo, at 12 ("[T]here is nothing in the prosecution history of either patent-in-suit that changes the ordinary meaning of "drinking cap having a drinking hole."); id. at 15 ("[A]gain, there is nothing in the prosecution history of the patents that changes the ordinary meaning of the term 'drinking cap.'"). See also Def. Memo, at 9 ("The '592 Patent file history does not appear to modify the definition of 'cap' from Defendants' position."); id. at 12 (finding no history relevant to the term "drinking cap having a drinking hole"); id. at 19 (noting the lack of history pertinent to the term "cap configured for . . . drinking from the container").

3. Extrinsic Evidence

The only extrinsic evidence in the record is a dictionary definition of "cap," submitted by the Defendants to attack
Sunbeam's construction. Although Sunbeam complains that the dictionary is from 2010, as opposed to 2001, which is the date the initial patent application was filed, there is no reason to believe the definition of "cap" has changed since then. The lay definition of "cap" proffered by the Defendants is "[a] protective cover or seal, especially one that closes off an end or a tip: a bottle cap; a 35-millimeter lens cap." Def. Exh. 1 at 3. Sunbeam, in its reply, sets forth a definition of "cover" (which is used synonymously with "cap" throughout the patents) as "something that is placed over or about another thing," and lists "lid" and "top" as synonyms.

4. Proper Construction of "Cap"

The Defendants have adduced no reason to construe "cap," one of the more basic nouns in the English language. There is nothing about any of the claim language that would require "cap" to be defined differently in different contexts. Thus, as to this claim term, no construction is required — no benefit to claim scope or clarity would accrue from defining a cap in terms of synonyms such as "lid" or "cover." Cf. Tesco Corp., F. Supp. 2d, 2010 U.S. Dist. LEXIS 36434, 2010 WL 1443540, at *5. And, to adopt a construction that favored either partial or complete coverage of the container would be to effectively rewrite the patent, which is not within the Court's province in claim construction.

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12. Capable of Being Mounted; Capable of Being Fixed

"Capable of being" does not require construction, particularly because both of the terms "mounted" and "fixed" have stipulated constructions.
18. "Capable of being compressed onto." The court finds that no construction of this phrase is required, as no substitute terms could be clearer than the phrase itself.

4. "The interior portion of the plate is capable of being deflected relative to the peripheral portions in a direction substantially perpendicular to the major axis of the shoe"

This claim term is sometimes referred to as the "relative deflection" feature, and it occurs as a result of relative restraint, discussed above. Akeva proposes the following definition: "a plate portion can deflect as compared to a portion that is closer to the center of the plate, caused at least in part by the relative restraint." (Akeva's Markman Br. at 13.)

adidas proposes that the term be construed as

the interior portion of the plate is susceptible to undergoing an action wherein the position of the interior portion is changed through normal use from its normal unflexed state (in which the interior portion is elevated relative to the periphery of the plate) into a position in which the interior portion is bent downward with respect to the periphery of the plate.

(adidas' Proposed Cl. Construction Order at 2.)

adidas argues that "capable of being deflected" cannot take on its plain and ordinary meaning of "susceptible to changing its position to become curved or turned downward" because the specification discusses it in a very specific way. The plate is capable of changing position from a "normal, unflexed state" to a deflected position. The "normal, unflexed state" is one in which the plate's interior is elevated relative to the periphery, or is in a convex (domed) or arched position. This means, adidas contends, that the plate is convex and deflects to a position of concave. Otherwise, if the plate began in a concave shape, it could not be further deflected.

The plain and ordinary meaning of "deflected" as an adjective is "curved or turned downward." Webster's Third New Int'l Dictionary 592 (1986). The idea of "turning" an object would appear more appropriate in the context of the deflection of a projectile or moving object. "Curved" is more appropriate to a stationary object.

The court notes, first, that Akeva's definition is incorrect because the plain meaning of the term should require the center of the plate to deflect compared to the periphery. Plaintiff offers no evidence to refute this construction, adidas' argument that the plate must begin in a convex shape and deflect to a concave shape is also problematic. To begin with, a concave plate made of a flexible material (such as rubber) could be further deflected. More importantly, even if it is true that the specification discloses no other forms in discussing deflection, this would not be enough to warrant limiting the term unless there had also been a redefinition, disclaimer, or disavowal of claim scope with respect to this term. A specification need not discuss all possible embodiments of the invention, and simply because an embodiment is not discussed is not enough to exclude that embodiment from the scope of the invention. See Liebel-Flarsheim, 358 F.3d at 906 ("This court has expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as

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being limited to that embodiment."); Alloc, Inc. v. ITC, 342 F.3d 1361, 1370 (Fed. Cir. 2003) ("It is impermissible to read the one and only disclosed embodiment into a claim without other indicia that the patentee so intended to limit the invention."). A disclosure of only one embodiment may only be enough to limit the claim terms if the court can find that the patentee "demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction." Liebel-Flarsheim, 358 F.3d at 906 (internal quotations omitted). Here, while it may be true that the specification only discusses a flexible plate that begins in a convex shape and deflects to a concave shape, the specification does not show any clear intent to limit the flexible plate to this shape.

The latter portion of this claim term "in a direction substantially perpendicular to the major axis of the shoe" specifies the direction of deflection. As an initial matter, and although the dictionary definition of "deflected" includes the direction "downward," the court will afford greater weight to the direction specified in the claim term itself. Next, the wording of this portion of the claim term is identical to the wording in the relative restraint term, except that the word "the" precedes "major axis" instead of the word "a." With regard to "in a direction substantially perpendicular," the court must construe this term the same way that it defined it regarding relative restraint. See Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1345 (Fed. Cir. 1998) (noting the rule that "the same word appearing in the same claim should be interpreted consistently"). The parties are in agreement about the meaning of "the major axis of the shoe," as discussed above. Thus, the court must interpret this claim term according to its plain and ordinary meaning.

The relative deflection term will be construed as "the portions of the flexible plate close to the center are able to be curved, as compared to the peripheral portions of the flexible plate, in any direction that is substantially at a right angle to a heel-toe axis of the shoe, including the medial-to-lateral and vertical directions."

20. "Capable of being . . . forcibly expanded." Consistent with its ordinary meaning, 41 the court construes this phrase to mean "capable of increasing from one diameter to another by application of force to overcome the resistance to expand."

-- Footnotes --

41 See Stedman's Medical Dictionary 1696 (27th ed. 2002) (defining "expandable stent" as "increasing its diameter"); American Heritage Dictionary 522-23 (2d ed. 1984) (defining "forcibly" as "effected through the use of force" and "force" as "power made operative against resistance"); id. at 476 (defining "expand" as "to increase the size . . . of").

-- End Footnotes --

E. "Capable of Deflection"

"Capable of deflection" is found in claim 1 of the '486 patent and claim 7 of the '677 patent. Hysitron asserts that "capable of deflection" means the "central plate is capable of deviation from a starting position between the conductive surfaces of the drive plates." Joint Claim Construction Statement at 23-24. MTS asserts that "capable of deflection means "capable of being bent or deformed."

The intrinsic evidence supports Hysitron's construction. The specification teaches that "the central plate under force, moves closer or further away from one or the other of the outer most substrate." '486 patent, col. 10:12-14. The specification also states that the metal mass of the central plate is "displaceable within the frame opening when the five substrates are sandwiched together." I.d., col. 5:49-51. The value in the invention is the ability of the central plate to deflect or displace relative to the drive plates. MTS argues that the L-shaped springs "act as 'hinges' which bend or flex to allow the central plate to deflect within the openings formed by the insulating substrates while maintaining the outer portion of the central plate generally parallel to the drive plates." MTS's Markman Br. at 49. This construction relies on the distinct L-shape springs that are mentioned only in the preferred embodiment. See '486 patent, col. 5:47-49. Because the patent is not
confined to the preferred embodiment, MTS's argument is unpersuasive. The Court construes "capable of deflection" to mean "the central plate is capable of deviation from a starting position between the conductive surfaces of the drive plates."

...Wherein the actuating mechanism is capable of electronically switching between the first mode and the second mode to set and release the brake without manual readjustment of the gearing means... whereby the actuating mechanism can electrically set the wheel brake device and then electrically release the brake device, or vice versa, without having to manually reset the gearing means...

A. "Simulated Capsule-Like Medicament"

This phrase appears at the beginning and the end of Claim 1, and is used the same way in each instance. The parties are essentially in agreement that the ordinary meaning of this phrase is "a medicinal form that imitates, resembles, or suggests in form or appearance a gelatin shell containing medicine." This is essentially the definition derived from Webster's Third New International Dictionary (1961), an extrinsic source to which the Court may properly turn.

Defendant argues, however, that "capsule-like" is effectively defined in the specification and the prosecution history of the '524 patent as meaning "similar to a hard gelatin capsule". Defendant's sole argument with regard to the specification is that "the only capsules disclosed or referred to in the '524 patent are hard gelatin capsules with overlapping separable halves... [having] an overlap where the one capsule half fits inside the other, and a visible raised portion" (Defendant Bayer Corporation's Markman Brief at 25 - 26), so that when the phrase "capsule-like" appears in the '524 patent, it must mean "similar to a hard gelatin capsule".

Defendant would have the Court place too much weight on indirect references in the specification to "hard gelatin capsules". The claims do not specifically state that the claimed medicament is intended to simulate a "hard gelatin capsule," and the specification does not do so either. "Capsule" has a clear, ordinary meaning, as the parties agree, so that there is no...
understood by an ordinary person skilled in the art of pharmaceutics to mean "like a hard gelatin capsule." Defendant's definition, and the prosecution history does not require such a definition, the Court would only apply a different definition if there were clear evidence that the term would have a meaning other than the ordinary meaning for one skilled in the art of the patent. Here, defendant offers expert testimony as extrinsic evidence that "capsule-like" would be defined as meaning specifically "hard gelatin capsule" for purposes of the claims. The finished product resulting from the process described in Claim I may very broadly resemble a hard gelatin capsule, as a cylindrical caplet is coated with gelatin layers of different colors, but the claim terms and the specification do not define the specific phrase "simulated capsule-like" to mean only medicaments that simulate the hard gelatin capsules to which the specification makes reference.

Defendant argues that "capsule" is given a particular definition by the prosecution history. The first application by the patentee of the '524 patent, Mr. Berta, was rejected by the PTO, and in order to escape rejection, he filed an amended version of his claims, along with remarks explaining the changes and the manner in which they distinguished this patent from the 1898 Richards patent and thus warranted granting of this patent; these remarks are now part of the prosecution history. In these remarks, the patentee states that "the change in thickness at the end of the outer gelatinous coating accompanied by the changing color makes it appear that rather than a coated caplet, the medicament is actually a hollow, hard gelatin capsule."

This phrasing in the prosecution history is not enough to limit the construction of the disputed terms in the claims, however, because, under clear Federal Circuit precedent, the prosecution history cannot be used to enlarge, vary, or diminish the limitations in the claim language, unless the patentee has disclaimed or disavowed a certain scope or definition for the purpose of escaping rejection by the PTO. In this case, the phrase "simulated capsule-like medicament" appears in both the original application by the patentee and the amended application, and the remarks in the amended application state that it is the new language, regarding the color dichotomy and the seam resulting from the overlapping of the layers of gelatin, that has been added in order to avoid rejection. The patentee did not amend the wording of the phrase "simulated capsule-like medicament."

In addition, the seven pages of remarks accompanying the newly worded claims describe how the claim terms, as amended, disclose an invention which is different than the invention disclosed in the Richards patent. The remarks specifically emphasize a change in color and a change in thickness as elements which set the claimed invention off from the older patent, but they do not state that the claimed invention is distinct from the Richards patent by virtue of resembling a "hard gelatin capsule." The description quoted by defendant is made in passing, in a single place in the remarks. Elsewhere in the remarks, the patentee says simply that the appearance of the medicament provides an "illusion that the medicament is actually a capsule," and that it "would fool the viewer into believing that it was, in fact, a capsule." The patentee did not disclaim or disavow other possible types of capsules by making a single reference to a "hollow, hard gelatin capsule," given that in several other places the patentee represented that the general illusion of a "capsule" was sufficient to achieve the effect required for his claimed invention. Since the patentee did not endeavor to escape rejection by arguing to the PTO that his invention was limited to a medicament specifically simulating a "hard gelatin capsule," and he did not 'clearly disavow' coverage of simulated capsules other than simulated hard gelatin capsules, he did not limit the '524 patent to such type of medicament, and the Court will not read that limitation into the claims from the prosecution history. See, e.g., York Products, 99 F.3d at 1572. The phrase "simulated capsule-like medicament" will be construed to have its ordinary meaning.

In this case, where the term has a clear ordinary meaning, the specification does not provide an explicit alternative definition, and the prosecution history does not require such a definition, the Court would only apply a different definition for the term if there were clear evidence that the term would have a meaning other than the ordinary meaning for one skilled in the art of the patent. Here, defendant offers expert testimony as extrinsic evidence that "capsule-like" would be understood by an ordinary person skilled in the art of pharmaceutics to mean "like a hard gelatin capsule." Defendant's
witness, Dr. Gilbert Banker, did not provide an interpretation of the term "capsule" from the perspective of pharmaceutics, however. Rather, Banker offered his own opinion of how one skilled in the art would understand the phrase "simulated capsule-like medicament" in light of the other remarks in the specification and the prosecution history. Asked to give his understanding of the phrase, Banker remarked, "We have a hard gelatin capsule. There are, by the way, soft gelatin capsules, but they are not at issue here. This patent is clearly related to hard gelatin capsules… It was made clear in the specification that we were dealing with hard gelatin capsules." Markman Hearing on Patent Claim Construction, transcript at 148 - 149.

Having testified that hard gelatin capsules have strictly circular cross-sections, Banker then also testified that the United States Pharmacopeia, a standard reference work in the field, refers to flat, pancake-shaped caplets as "capsule-shapes." Id. at 205. He agreed that this definition is "a general definition… that people use," id. Having defined "cylindrical" as meaning "shaped like a hard gelatin capsule," Banker was asked, "Capsule-shaped then does not necessarily mean cylindrical?", and he replied, "That's right." Id. at 210. Banker thus conceded that there are other common capsule forms aside from hard gelatin capsules, and that the phrase "capsule-shaped" is commonly used to refer to a shape other than that of a hard gelatin capsule. The expert testimony was therefore not conclusive on whether "simulated capsule-like" would be understood by one of ordinary skill in the art of pharmaceutics, but rather offered his own construction of the term based upon limitations that he perceived as implicit in the intrinsic evidence of the '524 patent. As a matter of law, claim construction is the duty of the court. Here, the Court does not agree with Banker's assessment that the patent, using the regular rules of claim construction, is "clearly" limited to hard gelatin capsules. The disputed phrase is not ambiguous in the claim, the specification does not lay out a particular definition for the phrase, and the prosecution history does not indicate that the patentee disavowed claims to medicaments defined by the phrase as commonly understood. Therefore, the Court will assign the plain, ordinary meaning to the phrase "simulated capsule-like."}

--- Footnotes ---

1 It may be that the '524 patent, read as a whole, discloses only medicaments that turn out to resemble hard gelatin capsules, but that fact would not, by itself, mean that the specific phrase "simulated capsule-like medicament" is limited to such a narrow definition.

--- End Footnotes ---

IV. CONCLUSION

The Court concludes that the disputed terms have the following meanings:

1. "Simulated capsule-like medicament" shall mean "a medicinal form that imitates, resembles, or suggests in form or appearance a gelatin shell enclosing medicine."

The Court construes this term to mean:

A bracket (1) into which the lower end of the leg support fits and (2) that prevents significant downward or lateral movement of the lower end of the leg support.

This construction is consistent with the construction adopted in Forest Group, 2007 U.S. Dist. LEXIS 10487, at *10 (construing "capturing bracket" as "a bracket into which the lower end of the leg support may be positionally fixed to prevent movement downward below the bracket or laterally in any direction").

Warner asks for a construction that wrongly disregards the word "capturing." Joint Markman Subm. at 3. Forest asks for a
construction that wrongly includes language about how the bracket functions when a fastener breaks. Id. This particular term, however, has nothing to do with fasteners. The language about fasteners that Forest advocates relates to a limitation expressed in the last sentence of Claim 1, not to this particular term. Accordingly, the Court adopts neither party's proposed construction of the term "capturing bracket."

Instead, the Court construes "capturing bracket" consistently with the patent claims, drawings, and written description, and with the ordinary meaning of the words. The patent drawings depict a U-shaped bracket into which the lower end of the leg support fits. 1 Figs. 1, 2, & 3. The written description states that the leg-support end "is shaped or contoured . . . to fit within capturing bracket 48." '515 Pat. col. 3:4-6. The description also states that if the nut-and-bolt assembly connecting the capturing bracket and the leg-support end breaks, "capturing bracket 48 will still hold leg support lower end 46 in place." Id. col. 3:11-12. Finally, the ordinary meaning of the word "capture" is to "seize" -- that is, to hold in place. See, e.g., Am. Heritage Dictionary of the English Language 278 (4th ed. 2000). The Court's construction is based on all of this evidence.

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B. "Said Mounting Including a Capturing Bracket for Engaging the Lower End of Said Leg Support"

One of the improvements contained in the '515 Patent is the addition of the "capturing bracket" on the rear vertical support, which bracket receives and holds the leg support. In the embodiment figures contained in the '515 Patent and on the stilts shown to the Court, the capturing bracket is a small structure that is enclosed on three sides and the bottom. The fourth, open side of the capturing bracket is attached on the rear vertical support. The leg support is placed into the capturing bracket and, in all the embodiments, a bolt or other fastener is placed through the sides of the capturing bracket and through the lower end of the leg support. The Court construes the term "said mounting including a capturing bracket for engaging the lower end of said leg support" to mean "the mounting includes a bracket into which the lower end of the leg support may be positionally fixed to prevent movement downward below the bracket or laterally in any direction."

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A. The "Electronic Multi-Function Card" Limitation

1. Law of the Case

"Once a case has been decided on appeal, the rule adopted is to be applied, right or wrong, absent exceptional circumstances, in the disposition of the lawsuit." Gindes v. United States, 740 F.2d 947, 949 (Fed. Cir. 1984) (quoting Schwartz v. NMS Indus., Inc., 575 F.2d 553, 554 (5th Cir. 1978)). E-Pass argues that the district court disobeyed the mandate of this court by entering summary judgment in favor of the defendants as to the subject of the prior appeal, the "electronic multi-function card" limitation of claim 1 of the '311 patent. It further argues that the district court disobeyed our mandate when it elaborated upon our claim construction in E-Pass I in light of the teachings of this court's en banc decision in Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) (en banc). We disagree as to each of these contentions.

a. Summary Judgment

E-Pass's first argument rests in substantial part on our statement in E-Pass I that "issues of material fact remain in dispute as to both literal and doctrine of equivalents infringement under the proper construction" of the term "card." E-Pass I, 343 F.3d at 1365. That statement, however, must be read in context. As the very same sentence announced, we vacated the grant of summary judgment and remanded to the district court for further proceedings. Id. By vacating, we signaled that, although the district court's prior decision rested upon erroneous grounds, a proper claim construction might support a judgment (summary or otherwise) in favor of either party, depending on the evidence and argument submitted to the district court on remand and considered by the district court in the first instance. Cf. Communities for Equity v. Mich. High Sch. Athletic Ass'n, 459 F.3d 676, 680 (6th Cir. 2006) (noting that when the Supreme Court grants a writ of certiorari, vacates, and remands, it "does not indicate, nor even suggest, that the lower court's decision was erroneous").
The balance of our opinion in E-Pass I supports this interpretation. We discussed in detail the claim construction of the term "card" and the district court's error in construing "card" to mean a card with the precise dimensions of a standard credit card. E-Pass I, 343 F.3d at 1367-71. At the conclusion of this discussion, we emphasized that "under the correct construction of 'card' in this context . . . it may or may not be that the accused Palm Pilot devices literally infringe." Id. at 1371. Indeed, we could not have intended to foreclose a summary judgment of noninfringement because the record did not yet contain the evidence that the parties would put forward in support of their infringement and noninfringement contentions under the proper construction.

Accordingly, the district court correctly concluded that it had the authority to entertain the defendants' motions for summary judgment on remand. SJ Order, slip op. at 11, 12; see also Liquid Dynamics Corp. v. Vaughan Co., Inc., 449 F.3d 1209, 1220 (Fed. Cir. 2006) ("Issues not decided by the court in a prior proceeding are not covered by the law-of-the-case doctrine."). As the district court observed, we did not in E-Pass I "inten[d] . . . to preclude [the district court] from hearing a complete summary judgment motion as to the Palm VII on remand." n1 SJ Order, slip op. at 12. As we discuss next, the district court on remand properly undertook a thorough and thoughtful analysis of the infringement issues, and in so doing, it followed our claim construction in E-Pass I.

--- Footnotes ---

n1 Of course, the decision in E-Pass I does not constitute law of the case as to parties and accused devices that were not yet part of the litigation when that decision issued. See Jamesbury Corp. v. Litton Indus. Prods., Inc., 586 F.2d 917, 920 (2d Cir. 1978) (noting that "because the present case involves a different defendant . . . the earlier decision . . . is n[ot] 'law of the case'").

--- End Footnotes ---

b. Claim Construction

In E-Pass I, we addressed the question of whether the district court had improperly added a dimensional limitation to the claim. See 343 F.3d at 1368-69. We concluded that a dimensional limitation was not warranted and overturned a claim construction that improperly limited the claim to encompass only devices having exact credit card dimensions. Id. at 1368. We went on to hold that "the ordinary meaning of the word 'card' . . ., as used in the phrase 'electronic multi-function card,' is the proper construction." Id. at 1370-71. From this, we articulated a definition of "card" -- namely, a "flat rectangular piece of stiff material" -- derived from several general-purpose dictionaries. See id. at 1367-68.

Following our decision in E-Pass I and prior to the district court's ruling on remand, our court, sitting en banc, decided Phillips. 415 F.3d at 1303. In its brief, Visa argues that the district court was "at liberty to reconstrue 'card'" because Phillips "supersedes the 3Com panel decision." Visa Br. at 19-20. This is an overstatement. A claim construction articulated by a prior panel decision of this court ordinarily remains the law of the case unless it is in conflict with a subsequent decision by this court sitting en banc or by the Supreme Court. See Cal. Fed. Bank v. United States, 395 F.3d 1263, 1274-75 (Fed. Cir. 2005) (declining to revisit earlier ruling where intervening en banc decision was not in direct conflict, and where Supreme Court analysis of the same issue controlled); see also United States v. Moran, 393 F.3d 1, 7 (1st Cir. 2004) ([A] legal decision made at one stage of a criminal or civil proceeding should remain the law of that case throughout the litigation, unless and until the decision is modified or overruled . . . ."). Here, we see no conflict between the guidance provided in Phillips and the claim construction we articulated in E-Pass I. As we discuss below, see infra Part II.A.2, the district court correctly applied our construction as the governing definition of "card."

Nonetheless, any articulated definition of a claim term ultimately must relate to the infringement questions that it is intended to answer. See Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1322, 1326 (Fed. Cir. 2006) ("[T]he legal function of giving meaning to claim terms always takes place in the context of a specific accused infringing device or process."). The definition of "card" that we articulated in E-Pass I described the properties of a "card" relevant to the accused devices, and it thereby sufficed to determine the question of infringement. Thus, the district court's observation that not every "flat rectangular piece of stiff material" is a "card," see SJ Order, slip op. at 26, was not strictly necessary to its holding.

Even so, the district court's observation was correct. For example, no reasonable jury, if properly instructed, would conclude
that a 4’x8’x 1/2” piece of plywood or a plate glass window infringes the "card" limitation of ’311 patent claim 1. See id. The specification of the ’311 patent makes it clear that a "card," as used in the patent's claims, is something a user will "carry about." See, e.g., ’311 patent, col. 1, l. 44. Although not a precise restriction on size or portability, the attributes of being able to be "carried about" and of not having protruding buttons, keyboards, antennae, indented display screens, or hinged covers are characteristics that a complete claim construction of "card" can be expected to embrace.

Moreover, we reiterated in Phillips the paramount importance to claim construction of the language of the claims themselves. See Phillips, 415 F.3d at 1312; see also Vitronics Corp. v. Conceptor, Inc., 90 F.3d 1576, 1582 ("[W]e look to the words of the claims themselves . . . to define the scope of the patented invention."). This case hinges on the construction of a term that not only bears one of its ordinary meanings, but is a straightforward name for an everyday object. Most members of a jury are likely to have at least one "card" in the sense of the ’311 patent in their pockets, wallets, or purses. The district court implicitly recognized this observation when it boiled the infringement inquiry down to a "straightforward question -- using the plain meaning of the word 'card,' can any of the accused devices be considered to be a 'card'?" SJ Order, slip op. at 33.

2. First Card

Webster's defines "card" as ",(6) (a) : a flat stiff usually small and rectangular piece of material (as paper, cardboard, or plastic) usually bearing information …" WEBSTER'S at 186. Fiala seeks to define the term "first card" as "a first card of any outline shape." (Pl. Reply at 9.) SVS disputes that construction, claiming that it is an alteration of the ordinary meaning of "card." All of the preferred embodiments display a card in the shape of a rectangle. (See Def. Resp. at 4.) As discussed above, this fact will not limit the ordinary meaning of the word. The preferred embodiments demonstrate simply that a card usually takes a shape similar to that of a rectangle.

That a card is "usually … rectangular," however, implies that there are some instances in which it is not. Because a "card," as that term is normally understood, can have a number of different outline shapes, the court will not strictly limit the claim to cover only rectangular cards. Having reviewed the claim language, specification, and prosecution history, the court defines "a first card generally defining a plane" as "a first card of any outline shape and generally defining a plane."

1. "Card Moving Mechanism"

VendingData argues the term "card-moving mechanism" requires claim construction. VendingData acknowledges that the term is not used in the patent description but asserts claim construction of this term is required because the specification discusses "a first card mover," a "second card mover," "a third card mover," and "card moving pickoff assemblies." VendingData argues that a review of the prosecution history of the ’258 patent and its parent ’035 application demonstrates the patentee defined the term "card moving mechanism" as one that required a "bi-directional movement of cards." VendingData points to the claim Examiner's statements rejection of claims 12, 17, 21, and 23 of the ’035 application and the applicant's responses to support its argument the term "card moving mechanism" must be construed to include direction changes in the event of a jam. VendingData also argues that because the patentee distinguished the term "card moving mechanism" from prior art, he acted as his own lexicographer and defined the term to include direction changes in the event of a jam.

Therefore, the presumption of ordinary meaning has been overcome and the court should construe the term "card moving mechanism" to mean:

a mechanism that moves cards and, in the event of a jammed shuffle, changes the direction of normal card movement.
VendingData advances an alternative construction for the term "card moving mechanism" asserting the claim should be interpreted as a "means-plus-function" element or as equivalent to "means for moving cards" under the provisions of 35 U.S.C. § 112, P 6. As a means-plus-function element, VendingData urges the court to construe the term "card moving mechanism" to mean:

card moving pickoff assemblies 182, 184 and 186 or their equivalents, i.e., the center pickoff assembly 182, including a pickoff roller 190 carrying at least two sticky pickoff fingers or tabs 191 one hundred eighty-degrees apart.

A review of this specification does not support VendingData's argument that the claim is limited as VendingData suggests. VendingData points to specification language discussing "a first card mover," "a second card mover," "a third card mover," and "card moving pickoff assembly" to support its argument "'card moving mechanism' described in the specification is one that is for individual reengaging and moving cards from the top of the stack of cards in a magazine horizontally to another magazine." (Defendants' brief at 10: 15-17.) However, as Shuffle Master points out, defendants do not argue that the phrase "card moving mechanism" should be limited to mechanisms that move cards "from the top of the stack of cards." The court finds no support in the intrinsic evidence the patentee acted as his own lexicographer to define the term "card moving mechanism" as a mechanism that "in the event of a jammed shuffle, changes the direction of normal card movement" as VendingData argues. Moreover, VendingData's suggested construction of the term to include "a mechanism that moves cards" is consistent with ordinary meaning.

Finally, VendingData's citation to a portion of the specification that describes one example of the invention in which three mechanisms are used to move individual cards from the tops of three stacks of cards using devices known as pickoff assemblies is merely a reference to a specific example or preferred embodiment. It would be error, however, to limit the claim's scope by "importing a characteristic of a disclosed or preferred embodiment into that term." Generation II Orthotics, Inc., v. Medical Tech., Inc., 263 F.3d 1356, 1367 (Fed. Cir. 2001). Federal Circuit authority makes it "clear that an applicant is not required to describe in the specification every conceivable and possible future embodiment of its invention." Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1344. Or, as the Federal Circuit has stated:

"If structural claims were to be limited to devices operated precisely as a specification-described embodiment is operated, there would be no need for claims. Nor could an applicant, regardless of the prior art, claim more broadly than that embodiment." Id. In short, it is the claims that measure the invention, as informed by the specification. As we noted long ago: "Specifications teach. Claims claim."


In short, the cited portions of the specification VendingData relies on does not support a limitation of the claims as VendingData suggests. It merely describes one example of the invention and does not establish that the patentee has acted as his own lexicographer to explicitly define the term as VendingData would have the court construe it, or that the patentee has disavowed or described the scope of coverage by using words or expressions that manifest exclusion or restriction. The court finds the specification does not limit the scope of the claims. The court also finds the prosecution history does not limit the scope of the claims and that the term "card moving mechanism" is not written as a means-plus-function claim element. The term "card moving mechanism" describes a structure, not a "means for" performing the function of moving cards. Therefore, the restrictions of 35 U.S.C. § 112 P 6 do not apply. Watts v. X.L. Sys., Inc., 232 F.3d 877, 880-81 (Fed. Cir. 2000).

A. '472 Claim 1: "cardioverting device"

The principal dispute over the term "cardioverting device" in Claim 1 of the '472 patent is whether the term is limited to atrial cardioverting devices, as St. Jude contends, or whether the term includes both ventricular and atrial devices, as CPI argues. The court agrees with CPI that the term "cardioverting device" as used in the claim without limitation includes both atrial and ventricular devices.
The claim construction process begins with the claim language itself. As a starting point, the court gives claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the field of invention. Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc., 222 F.3d 951, 955 (Fed. Cir. 2000). Neither Claim 1 of the '472 patent nor any of the other '472 claims uses the word "atrium" or "atrial." Looking exclusively at the claim itself, there is no basis for adding the limiting adjective "atrial" to the construction of the more general term "cardioverting device." 4

The claim term's ordinary and accustomed meaning in the art, however, serves initially only as a default meaning. The Federal Circuit has explained:

The patentee may act as a lexicographer and ascribe a different, or modified, meaning to the term. See Multiform Desicants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477, 45 U.S.P.Q.2D (BNA) 1429, 1432 (Fed. Cir. 1998) (observing that an inventor, acting as a lexicographer, may bestow "a special meaning to a term in order to convey a character or property or nuance relevant to the particular invention"); Intellecall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1388, 21 U.S.P.Q.2D (BNA) 1383, 1386 [(Fed. Cir. 1992)]. The court, therefore, must examine a patent's specification and prosecution history to determine whether the patentee has given the term an unconventional meaning. See Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2D (BNA) 1573 at 1577 (holding that "it is always necessary to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning [because the specification] acts as a dictionary when it expressly defines terms . . . or when it defines terms by implication" (emphasis added)); Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2D (BNA) 1673, 1676 (Fed. Cir. 1995) (determining that "arguments and amendments made during the prosecution of a patent application . . . as well as the specification and other claims must be examined to determine the meaning of terms in a claim" (emphasis added)). If the patentee has not done so, the term's ordinary and accustomed meaning controls. See York Prods., Inc. v. Central Tractor Farm Family Ctr., 99 F.3d 1568, 1572, 40 U.S.P.Q.2D (BNA) 1619, 1622 (Fed. Cir. 1996) ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning.").

Id. Under these rules of claim construction, the court must examine the specification and the prosecution history to determine whether the patentee explicitly or implicitly defined "cardioverting device" to refer only to atrial devices.

The specification does not explicitly limit the phrase "cardioverting device" to atrial devices. St. Jude argues that the '472 patent specification nevertheless at least implicitly defines the term "cardioverting device" to include only atrial devices. There are several examples of potentially limiting language in the written description of the '472 patent. For example, the Abstract describes "An externally controlled implantable electronic device for delivering a cardioverting pulse of energy to the atrium of an ailing heart." The specification also states that the invention "relates to an atrial device designed to be implanted under the skin of patients who frequently suffer from bouts of atrial fibrillation, flutter or tachycardia," '472 Patent, col. 1, ll. 46-49; that "it is one object of the present invention to provide a device which will enable to [sic] cardioversion of a heart undergoing atrial fibrillation, flutter or tachycardia, without hospitalization," '472 Patent, col. 2, ll. 59-62; that "Yet another object of the present invention is to provide a method for cardioverting a heart suffering from an atrial malfunctioning, wherein cardioversion is initiated by a physician or by the wearer while in a state of consciousness,"
Beyond the repeated use of the words "atrial" and "atrium" in the specification, there is no doubt that the two disclosed embodiments (shown in Figures 1 through 3 and discussed in detail in the specification) are designed to treat only atrial arrhythmias. The specification does not describe an embodiment of the invention that is designed to function as a ventricular defibrillator.

There is obviously some tension between the narrower '472 specification language and the broader '472 claim language. The Federal Circuit, however, has repeatedly cautioned against limiting the scope of a claim to a preferred embodiment or to specific examples disclosed in the specification. See, e.g., Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1302-03 (Fed. Cir. 1997) (holding that the district court erred in interpreting the phrase "conductive liquid-like medium" as being limited to liquids having a conductivity similar to the examples listed in the specification). The fact that the written description focuses on characteristics and functions of the disclosed embodiments does not prevent the patentee from claiming an invention broader than the disclosed embodiments. See Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994) ("claims are not to be interpreted by adding limitations appearing only in the specification"); SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc) ("If everything in the specification were required to be read into the claims, or if structural claims were to be limited to devices operated precisely as a specification-described embodiment is operated, there would be no need for claims.").

In this case, the difference between the broad term "heart" and more specific references to only the atra or to only the ventricles is clear to anyone skilled in the art. The deliberate use of the broader terms "heart" and "cardioverting device" in the claims, when contrasted with the narrower language in the specification, indicates an intentional choice by the patentee to reach beyond the embodiments described in the specification. In this respect, the language of Claim 1 itself is broad, but it is not ambiguous. Cf. Sedima, S.P.R.L. v. Imrex Co., 473 U.S. 479, 499, 87 L. Ed. 2d 346, 105 S. Ct. 3275 (1985) (rejecting attempt to narrow deliberately broad language in civil RICO statute: "The fact that RICO has been applied in situations not expressly anticipated by Congress does not demonstrate ambiguity. It demonstrates breadth.") quoting Haroco, Inc. v. American National Bank & Trust Co., 747 F.2d 384, 398 (7th Cir. 1984), aff'd, 473 U.S. 606, 87 L. Ed. 2d 437, 105 S. Ct. 3291 (1985). Construing the term "cardioverting device" to reach both atrial and ventricular devices is consistent with the rest of the language in Claim 1 of the '472 patent. As explained by CPI: "The invention of [Claim 1 of] the '472 patent is the ability to externally program the amount of energy to be delivered by a cardioverting device. Whether the device treats the atrium or the ventricle has no bearing on the external programmability of energy levels that the inventors had invented." Pl. Reply Br. at 29.

The prosecution history of the '472 patent also indicates that both the patentee and the patent examiner were fully aware of the differences between atrial and ventricular devices and that the claim language was intentionally drafted to reach beyond atrial cardioverting devices. First, the claims of the '750 patent, a related "parent" application cited in the '472 patent, distinguished between atrial cardioverters (claims 1-25, 29) and cardioverting devices generally (claim 26). Ex. 110, '750 Patent, col. 8, ll. 58 to col. 14, ll. 22. The claims of the '472 patent contain no similar limit. Second, during the prosecution of the claims in the '472 patent application, the examiner applied ventricular prior art. Ex. 14, '472 Pros. Hist., at CPI 005590-92. These examples from the prosecution history show that the drafters were fully aware of the differences between atrial cardioverters, ventricular cardioverters, and cardioverters generally, and that the examiner did not consider ventricular devices irrelevant to the '472 claims.

CPI contends that the court should also consider as relevant intrinsic evidence (1) an amendment that was made to the '472 patent title during claims prosecution which eliminated the word "atrial," and (2) the granting of a term extension for the '472 patent based on a ventricular device in 1992. During prosecution of the '472 patent, the drafters changed the patent title from "Command Atrial Cardioverter" to "Cardioverting Device with Stored Energy Selecting Means and Discharge Initiating Means, and Related Method." Pl. Br. at 31-32. This change was made after the patent examiner raised an objection that the original title and statements of invention were "not commensurate with the claimed subject matter." Ex. 14, '472 Pros. Hist., at CPI 005590.

The court is reluctant to give much weight to the title change because the Federal Circuit has noted the "near irrelevancy of the patent title to claim construction" and has stated that "an amendment of the patent title during prosecution should not be regarded as having the same or similar effect as an amendment of the claims themselves by the applicant." Pitney Bowes,
Inc. v. Hewlett-Packard Co., 182 F.3d at 1312 (concluding that the district court attached too much weight in its claim construction to the patent title and to the amendment of that title). In any event, the title change certainly does not support defendants' effort to construe the claim language narrowly to exclude devices that treat ventricular conditions.

The application for an extension of the '472 patent term explicitly stated that the approved product treated ventricular tachycardia and ventricular fibrillation and that Claim 1 covered the product. Plaintiffs contend that the extension could not have been granted unless the Patent Office agreed that the '472 patent claims could reach ventricular cardioverters. Pl. Reply Br. at 36; Ex. 14, '472 Pros. Hist., Request for Extension of Patent Term. However, it is not clear where an application for a patent term extension fits in the interpretive hierarchy. Certainly the device descriptions in a patent extension application cannot be read to amend the claims or specification of the original patent document. The patent term extension is consistent with the clear language of Claim 1, but the claim language itself is by far the most important evidence that supports plaintiffs' interpretation of "cardioverting device." 5

--- Footnotes ---

5 CPI also contends the court should consider evidence of licenses and royalty payments among manufacturers of cardioverting devices. CPI believes this evidence will show that defendants have construed the claims of CPI's patents as covering the defendants' devices. CPI has not offered any specific case support for using such evidence in construing ambiguous claim language, and the court has not considered such evidence for two principal reasons. First, under Markman, it is clear that evidence relevant to claim construction should be publicly available evidence. See 52 F.3d at 978-79, 987 (discussing the importance of the public record). Other inventors are entitled to know the scope of the claims and may try to design around those claims. See Vitronics, 90 F.3d at 1583. If evidence of licensing agreements and royalty payments (which are often confidential) were deemed relevant to claim construction, the scope of claims could not be known without access to private, often highly confidential information from multiple sources in an industry. Second, as the evidence in this case suggests, an industry may operate on the basis of a complex web of cross-licensing agreements negotiated on the basis of a complicated matrix of business considerations and legal risks. The fact that licenses have been negotiated and royalties paid offers little or nothing of probative value as to how claim language should be construed when a court is finally called upon to provide a definitive construction.

--- End Footnotes ---

Defendants have cited several statements made by the inventors and patentees during the prosecution of a parent application to the continuation application that actually resulted in the '472 patent. Defendants argue that these statements, like the language of the '472 specification, limit the scope of the '472 patent claims to atrial cardioverting devices. Def. Br. at 23-24. The cited statements include the following:

The broad invention disclosed in the parent and instant applications relates to an implanted electronic device which is manually operable from external to the skin of the wearer, for accomplishing atrial cardioversion. Never before has such a device been conceived, and it is therefore the firm belief and opinion of the applicants that their broad invention is patentable over the prior art.

Ex. 118 at 8 (remarks supporting an amendment to the claims and description in patent application Serial No. 641,381, dated December 17, 1975) (emphasis added). 6 Similarly:

Because these two types of fibrillation are so different, ventricular defibrillation and atrial defibrillation are not suited for indiscriminate comparison. It is on this basis that the application of the Schuder et al article is deemed improper.

In the February 23, 1977 Action, it is alleged that an obvious step would be to combine the teachings of a Schuder et al article, admittedly directed to ventricular defibrillation, with a Charms patent, which suggested atrial defibrillation. This combination is untenable for two basic reasons. First, even if the references were to be combined, the man having ordinary skill in the art would have evolved a fully automatic implantable atrial defibrillator; based upon his awareness of ventricular defibrillation technology, he would not have considered a non-automatic approach.

Ex. 119 at 2 (response to patent examiner, dated June 22, 1977) (emphasis in original).
The above-identified application relates to a non-automatic atrial defibrillator. This device is in every way practical and realistic. The wearer is able to recognize when he is experiencing atrial fibrillation; and he, himself, can initiate a defibrillating procedure. Or, if he chooses, the individual can consult with his physician, discuss his suspected arrhythmia, and decide either to, or not to, initiate a defibrillating procedure. While ventricular defibrillation is a necessity to save a life, and while a reaction to ventricular fibrillation must be immediate, atrial defibrillation is an elective procedure.

Accordingly, the invention described in the above-identified application involves far more than merely borrowing from the art of ventricular defibrillation. The concept of a fully-implantable non-automatic atrial defibrillator can be thought of as an accommodation to a heart patient; with such a device, defibrillation can be accomplished at home, without the inconvenience of repeated visits to a physician.

Ex. 111, P 11 (Declaration of Mieczyslaw Mirowski, dated June 8, 1977).

For the reasons set forth in my October 28, 1976 Declaration and those set forth in the foregoing paragraphs, I am of the firm belief that an implantable non-automatic ventricular defibrillator is unrealistic and totally impractical, because not useful by the suffering individual himself, and because the suffering individual is not likely to experience ventricular fibrillation in the presence of one skilled in medicine and aware that the individual wears an implanted defibrillator.


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6 The continuation application that resulted in the '472 patent was filed on August 9, 1979.

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While statements made during the prosecution of a parent application are part of the prosecution history and relevant to interpreting claims in a subsequent daughter application, see Wang Laboratories, Inc. v. America Online, Inc., 197 F.3d 1377, 1383-84 (Fed. Cir. 1999), they form only part of the interpretive backdrop. In this case, the parent application, Serial No. 641,381, was abandoned. Significantly, at least some of the claims in the abandoned parent application referred explicitly to the "atrium" and to devices for converting "supra-ventricular" cardiac arrhythmias. Ex. 118 at 3-7.

Defendants are correct to point out through the inventors' statements that the devices disclosed in the abandoned parent application (as well as the devices in Figure 1 and Figure 3 of the '472 patent) are not suited for ventricular defibrillation. However, the removal of all references to the words "atrium," "atrial," and "supra-ventricular" in the claims of the '472 patent indicates a deliberate intent to broaden the claims over those in the abandoned parent application. The statements made in support of the abandoned parent application do not limit the unambiguous language in the claims of the '472 patent.

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7 In contrast to the claims in the abandoned parent application, the claims in the '472 patent also make no explicit reference to a "non-automatic" or "manually operated" device. In fact, the claims of the '472 patent were specifically amended during prosecution to replace the phrase "implantable non-automatic converting device" with the more general term "cardioverting device." Ex. 14, '472 Pros. Hist., at CPI 005600-07.

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Nevertheless, defendants have cited Federal Circuit decisions that are difficult to reconcile with the cases suggesting that a claim may be broader than the specific embodiment disclosed in a specification. For example, in Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1480 (Fed. Cir. 1998), the court wrote that "claims may be no broader than the supporting disclosure, and therefore . . . a narrow disclosure will limit claim breadth." In Gentry Gallery, however, the court was deciding an issue of validity and held invalid broad claims that reached beyond the disclosure. In Laitram Corp. v. Morehouse Industries, Inc., 143 F.3d 1456, 1462-63 (Fed. Cir. 1998), the court rejected a number of arguments by a patentee who sought a broad claim interpretation: "It is entirely proper to 'use the specification in order to determine what
the inventor meant by terms and phrases in the claims.’ * * * While claims are not necessarily limited by the written description, it is relevant that nothing in the written description suggests that the driving surfaces can be anything but flat.”

In North American Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1576-77 (Fed. Cir. 1993), the court noted that the written description requirement of 35 U.S.C. § 112, ¶ 1 warranted a claim construction limited to the disclosures in the specification. See also Modine Manufacturing Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551 (Fed. Cir. 1996) (“when the preferred embodiment is described in the specification as the invention itself, the claims are not necessarily entitled to a scope broader than that embodiment”).

In the present case, however, both the deliberate use of broad language in the claims and the prosecution history show a clear choice to write claims that would apply to the entire heart, including the ventricles. To the extent that the broad claim language raises issues of validity, those issues may be addressed later in the case. They would not support an artificially narrowed reading of the deliberately broad claim language applying to the entire heart. The court therefore intends to define “cardioverting device” for the jury as “a device capable of correcting high-rate arrhythmic heart conditions by applying non-pacing electrical shocks to the heart. Such heart conditions include atrial arrhythmias and/or ventricular arrhythmias.” For essentially the same reasons, the terms (1) "cardioverting a heart" and "cardioverting the heart" in Claim 18 of the '472 patent, and (2) "cardioverting device" in Claim 1 of the '191 patent will be defined to include both atrial and ventricular cardioversion. See '472 Patent, col. 10, ll. 62-63; col. 12, ll. 6-8; '191 Patent, col. 8, l. 56.

A. "carriage"

The parties' proposed constructions are as follows:

TK

a movable part of a seat belt tension sensor that has an enclosed hole in it for receiving a portion of the seat belt webbing and moves a distance that corresponds to the amount of tension applied to the seat belt webbing

CTS

a belt carrying component in a stationary housing, provided with an open space for receiving belt webbing relative to the stationary housing in response to tension applied to the webbing

Despite both parties rather verbose interpretations, the dispute regarding this term centers on two issues: (1) the meaning of an opening in the carriage, whether opening refers to a defined hole within the carriage or simply an open space; and (2) whether a carriage is required to be encompassed "in a housing." Each issue is addressed in turn.

CTS argues that a "carriage" with an opening adapted to receive the webbing of the seat belt refers to an open space, not necessarily a hole defined by the carriage. However, TK says that it is the very fact that the '944 "carriage" defines a hole for receiving the seat belt webbing that allowed its claims to go forward in light of prior art, namely U.S. Patent No. 5,996,421 to Hubsy ("Husby").

The Court agrees with TK. In the prosecution history of the '944 patent, "carriage" was determined to mean "a movable part of a machine for supporting some other movable object or part." Plaintiff's Markman Brief, Ex. 4 (7/18/2005 Office Action at 4). Throughout claim 19 and the specification, the patent refers to the opening as "openings in" specific structural elements. In using the language "opening in," the specification rejects the use of simply an open space, as such a use is unconstrained within a specific structure and may only be defined by the outer limits of two or more structural entities such as the open space between the slide [40] and bracket plate [22] of Husby. It is clear from the specification, the drawings, and most prominently the prosecution history, that the specification was drafted to limit the use of the term opening to that of a hole defined by the carriage. The dictionary definition of "hole" describes an "opening through something." MERRIAM-WEBSTER COLLEGIATE DICTIONARY 575 (9th Ed. 1985). Here, the opening is for the carriage to receive the seat belt webbing. Thus, "carriage" shall be interpreted as urged by TK.
The more critical question with respect to the construction of "carriage" is whether the carriage must be contained within a housing as CTS contends. Notably, the term "a housing" is not found in either claim 19 or other relevant claims in the '944 patent. It is, however, found in the description of the "exemplary seat belt tension sensor," i.e., a preferred embodiment. See Col. 4 ll. 33-35 ("an exemplary seat belt tension sensor comprises an assembly of an anchor plate, a housing . . ."). Col. 5 ll. 18-20 (a carriage . . . wherein openings in the first portion i.e. openings in the anchor plate and housing . . .), and Col. 5 ll. 48-51 ("[t]he bunching of webbing within the opening generates lateral forces against the sides for the opening in the housing and/or anchor plate . . .").

CTS contends that without the housing, described in the preferred embodiment, the '944 patent would have a carriage moving a distance relative to no claimed component in the invention. This assertion is without merit. Claim 19 clearly sets forth that the carriage "is adapted to move relative to "a first portion of the seat belt tension sensor," Col. 11 ll. 6-7. Thus, there is a reference point relative to the carriage-the first portion of the seat belt tension sensor.

Moreover, the term "carriage" is defined as moving, in a crash event, relative to an "anchor plate," the "anchor plate and the housing," and the "anchor plate and/or the housing." See Col. 4 ll. 47; Col. 4 ll. 50-52; Col. 4 ll. 62-63; Col. 5 ll. 2-5. Never does the specification exclusively measure the movement of the carriage in a crash event relative to a housing alone. Thus, CTS's contentions that the carriage would be moving a distance relative to no claimed portion of the invention without the inclusion of a housing is misplaced as the motion of the carriage is also or exclusively measured relative to the anchor plate. Col. 4 ll. 50-52.

Further, in every instance in which the claim term "carriage" appears as referenced within a "housing" is within the specification's description of its preferred embodiment. Simply because the specification describes only one embodiment of the invention does not mean that the claims should automatically be limited to that embodiment. The portions of the specification in which the preferred embodiment is not described, including the claims themselves, use the open ended term housing and/or anchor plate indicating an invention similar which does not include a housing, would also be covered by the '944 patent. Col. 6 ll. 3; Col. 7 ll. 4; Col. 7 ll. 14-15; Col. 7 ll. 28. Put simply, this is not a situation where the preferred embodiment is the invention.

Notable also is that claim 19 does not recite a seat belt tension sensor, but rather "a carriage of a seat belt tension sensor." The claim language focuses on the structure and operation of the carriage component in relation to other seat belt tension sensor components (i.e., an adjacent first portion, spring(s) and the seat belt webbing). Details relating to other aspects of the range of seat belt tension sensors in which such a carriage may be employed were not specified, and therefore should not be used to limit claim 19. Thus, "carriage" should not be further limited to a carriage that is located in a sensor that has a stationary housing. The claim uses the generic term "carriage" without reference to the overall structure of the sensor or the specific location of the carriage relative to other components of the sensor. This gives support for the assertion that the "carriage" was not intended to be limited by the the particular sensor design described in the preferred embodiment. The carriage must have an opening for receiving the seat belt webbing and must be mounted so as to move relative to a first portion of the sensor, against the force of at least one spring, and by an amount that is responsive to tension applied to the seat belt. The width of the carriage opening must be sufficiently smaller than that of the adjacent first portion opening to prevent the webbing from rubbing against the sides of the adjacent opening. The claim language requires nothing further in respect to the carriage. Interjecting the requirement of a housing when the claim is silent in this regard would be inconsistent with the claim language as a whole, and would improperly import extraneous limitations from the specification apart from the need to construe recited claim language.

Additionally, the carriage is illustrated in the preferred embodiment as having an anchor plate attached to a housing adjacent to the carriage. In other embodiments (Figs. 15a, 15b and 16a, 16b), substantial portions of the carriage extend outside of the housing 104. By illustrating various carriages in the context of embodiments that include both an anchor plate and a housing, "carriage" cannot be interpreted to exclude carriages utilized in seat belt tension sensors that do not have an outer housing.

Finally, "the prosecution history provides evidence of how the PTO and the inventor understood the patent." Phillips, 415 F.3d at 1329. Application claim 19, which was renumbered and issued as independent claim 13, is similar to application claim 25, which issued as claim 19. Both claims recite a carriage adapted to move relative to a first portion in opposition to at least one spring acting between them. Application claim 19 was rejected as anticipated by Husby, and application claim
25 was rejected as obvious in view of Husby and a second reference. (Ex. 4, 7/18/05 Office Action at pp. 2-4.). As explained below, the way in which the rejection was resolved demonstrates that "carriage" is not limited to a carriage within a housing.

Key features of Husby are depicted in Figures 5 and 6 of the Husby patent and are set forth below:

As the figures show, Husby discloses a belt tension sensor which includes an anchor plate ("hold-down bracket 22") having an opening 43 in which slide 40 moves vertically. The belt loop 45 extends through the opening 43 and wraps around the slide 40, pulling the slide 40 in an upward direction when tension is applied to the belt. The upward travel of the slide 40 compresses a flexible resistor 35 on spring 36. This results in a change in the resistance of the resistor that can be detected by a controller and correlated to the applied belt tension. (Husby, Col. 3, I. 28-Col. 4, I. 40.)

Although the Husby sensor does not have a stationary housing, the examiner found that the Husby slide corresponded to the claimed "carriage" of application claims 19 and 25. (Ex. 4, 7/18/05 Office Action at pp. 2 and 4.) The applicant had suggested that the slide of Husby does not correspond to the claimed "carriage" because it does not have "an opening adapted to receive the webbing of a seat belt" but rather provides an outer surface around which the seat belt is looped. (Ex. 6, 5/11/05 Amendment and Reply at p. 9.) To this the examiner responded:

First, applicant argues that element 41 is not a "carriage". It is noted that Applicant does not provide a definition of what a "carriage" is. Looking to the dictionary (Merriam Webster's Collegiate Dictionary, 10th edition), the closest definition that would apply to this usage is "a movable part of a machine for supporting some other movable object or part". The slide of Husby (element 40, which includes sides 41; seen in Figures 2-4) is clearly a movable part which supports another movable part (the seat belt).

(Ex. 4, 7/18/2005 Office Action at p. 4.) Thus, the examiner understood "carriage" to refer to a movable part that supports the movable seat belt, without requiring that the carriage be located within a housing. The examiner's explanation of the term "carriage" in the prosecution history corresponds to TK's proposed interpretation and is consistent with the other language of the allowed paradigm claim relevant to this term. The applicant did not take issue with this usage of the term "carriage" by the examiner. The applicant did not amend the claim to require a housing or further define the claimed carriage to require that it be located within a stationary housing. The applicant instead continued to distinguish the slide of Husby on the basis that it lacks the claimed "opening adapted to receive the webbing of the seat belt." (Ex. 7, 10/18/05 Reply at pp. 2-4.) The examiner eventually accepted that argument and allowed the claims to issue. In sum, the prosecution history file supports TK's contentions that the meaning of the term "carriage" does not require it be encompassed in a housing as shown in the preferred embodiment.

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8 The applicant did not distinguish Husby on the basis that Husby lacks an outer housing or a carriage surrounded by such a housing.

--- End Footnotes ---

In the end, the Court adopts TK's construction of "carriage." The Court is satisfied that one having ordinary skill in the relevant art at the time of the invention would not have assumed that the carriage was to be encompassed in a housing. Carriage shall be interpreted held to mean "a moveable part of a seat belt tension sensor that has an enclosed hole in it for receiving a portion of seat belt webbing and moves a distance that corresponds to the amount of tension applied to the seat belt webbing."

3. "Carried on [the] Intermediate Portion"

Bridgeport next contends that summary judgment on claims 4, 5, and 7 of Patent '050 and claims 5, 8, and 9 of Patent '164 is warranted because Bridgeport's adaptor has raised steps at either end of the intermediate portion, meaning that the adaptor is...
not "carried on" the intermediate portion of the connector. These claims provide, in pertinent part, as follows:

The quick connect fitting of claim 2 wherein said connector has a flange and shoulder with an 12 intermediate portion there between with said adaptor carried on said intermediate portion and held in position by said flange and shoulder.

(Doc. 83, Exs. A, B (emphasis added)). According to the dictionary definition, to "carry" is "to sustain the weight or burden of" or to "bear." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 343. Thus, the court will construe "carried on" to mean that the weight of the adaptor is supported in some manner by the intermediate portion of the connector, defined in the claims as that part of the connector between the flange and shoulder. 13

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12 In claims 5 and 9 of Patent '164, the word "an" is replaced with "smooth." (Doc. 83, Ex. A).

13 To the extent that Bridgeport argues that the phrase "carried on" requires the adaptor to contact the entire intermediate portion of the connector, this interpretation defies plain meaning and common sense. A ship may "carry" cargo without that cargo covering the entire surface of the vessel and a person may "carry" a blanket without draping the blanket evenly over his or her skin. See WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 343. "Carried on" means that the weight of the adaptor is supported in some fashion by all or part of the intermediate portion of the connector.

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Under this construction, Bridgeport's demand for summary judgment on these claims clearly lacks merit. The steps of the Bridgeport connector admittedly fall between the flange and the shoulder of its connectors, meaning that they constitute part of the intermediate portion of the connector. Because the weight of the adaptor rests on these steps, a reasonable jury could find that the Bridgeport adaptor is "carried on [the] intermediate portion" of its connector, rendering summary judgment on these claims improper.

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Propet argues that the district court erred in its construction of the claims of the '895 patent and that, under the correct construction, its shoes cannot infringe. The claims 3 of the '895 patent are reproduced below, with emphasis added to the limitations at issue in this appeal:

1. An Athletic Shoe comprising a sole having a midsole formed of a resilient force-absorbing material,

An outsole mounted below the midsole, said outsole being formed of a durable material for contact with a surface,

an upper mounted on the sole, the upper having a counter forming a heel cup having exterior sidewalls with lower edges,

a support band carried on the upper rim of the midsole and secured about the sidewalls of the heel cup,

said band extending upwardly and merging with the vertical midspan of the heel cup for supporting and stabilizing the heel cup relative to the sole during contact of the sole onto the surface when in use,

said midsole comprising a forefoot portion and heel portion means, said heel portion means being pyramid shaped in lateral cross section with a lower rim having opposite sides which flare outwardly to locations which lie sufficiently laterally beyond the lower edges of the heel cup for substantially stabilizing the shoe during initial contact on the surface along one side of the sole,

the opposite sides of the lower rim of the heel portion means having a lateral width greater than the lateral width of the heel cup midspan, and

the midsole and support band having wall means which inclines upwardly from the lower rim of the heel portion means
to the heel cup midspan for resisting flexing of the sidewalls of the heel cup relative to the sole during said initial contact on the surface along one side of the sole.

2. An athletic shoe as in claim 1 in which the support band extends forward from the heel cup and merges with the opposite sides of the upper above the midsole for providing support between said opposite sides and the midsole.

3. An athletic shoe as in claim 2 in which the support band is integral with the midsole.

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3 Claim 1 was the only claim amended during reexamination.

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When the district court construed the claims of the '895 patent, it noted that both HHI and Propet relied on our decision in Converse, the '895 patent, and the Reexamination Certificate to advance their positions on claim construction. Claim Construction Order at 2-3. The court noted that, according to HHI, under the correct claim construction, the support band and the midsole may be either one integral piece or two separate pieces. The court observed that, Propet, on the other hand, took the position that the scope of the patent is narrower and that the support band and midsole must be two, separately defined pieces. Id. It noted that, according to Propet, HHI's patent "encompasses only shoes that have a clearly-defined pyramid-shaped midsole and a separate, well-defined heel band." Claim Construction Order, at 3 (emphasis in original). After considering the '895 patent, the Reexamination Certificate, and our decision in Converse, the court concluded that the '895 patent is not limited to a two-piece construction. It construed the patent's claims as follows: "Thus, the support band and the midsole may be unitary or in two separate parts. While the patent clearly requires a pyramid-shaped midsole, this shape need not be visible, if the pieces are merged." Claim Construction Order, at 5.

On appeal, Propet argues that the district court erred in construing the claims of the '895 patent. It asserts that the district court's claim construction is inconsistent with our decision in Converse and the prosecution history of the '895 patent, and that the district court's claim construction erases meaningful limitations from claim 1. Propet contends that the claims only cover a sole that has a two-piece construction, i.e., a pyramid-shaped midsole and a separate support band. Specifically, it asserts that the correct construction requires that the pyramid-shaped midsole be visible to the naked eye in a lateral cross section of the sole. Based on this claim construction, Propet argues that because its shoes have a one-piece construction, they can never have a visible pyramid-shaped midsole and, therefore, as a matter of law, cannot infringe the '895 patent. We do not agree with Propet. We think that the district court properly construed the claims of the '895 patent.

As a preliminary matter, we note that Converse did not address the issue of claim construction that is currently before us: whether the claims of the '895 patent require that the midsole and support band be made of two separate pieces so that the pyramid shape of the midsole is visible to the naked eye in a lateral cross section of the sole. In Converse, the question before the court was whether HHI had impermissibly broadened its claims during reexamination. 183 F.3d at 1370, 51 USPQ2d at 1519. In answering that question, we relied on the figures shown below:

Fig. A

[SEE FIGURE IN ORIGINAL]

Fig. B

[SEE FIGURE IN ORIGINAL]

We noted that according to Converse, claim 1, as amended during reexamination, had been impermissibly broadened because original claim 1 only covered the Fig. B configuration, while the amended claim covered both the Fig. A configuration and the Fig. B configuration. Id. at 1373, 51 USPQ2d at 1520. In rejecting that argument, we noted that HHI amended claim 1 during reexamination to recite that the "heal portion means is 'pyramid shaped in lateral cross section with a lower rim having opposite sides which flare outwardly.'" Id. at 1374, 51 USPQ2d at 1522. We concluded that, by reason of this additional limitation, the amended claim covers only the Fig. B configuration. Id. We observed that the amended claim
does not cover Fig. A because not only is the midsole 32 of Fig. A not "pyramid shaped" as the amended claim requires, but the lower rim does not "flare outwardly." Id. at 1375, 51 USPQ2d at 1522.

Converse, at most, requires us to construe claim 1 so that the "heel portion means" of the midsole is pyramid shaped in a lateral cross section, with a lower rim having opposite sides which flare outwardly. Nothing in Converse requires us to limit claim 1 to a sole in which the pyramid shape is visible to the naked eye in a lateral cross section or to a sole that has a two-piece construction, i.e., a pyramid-shaped midsole and a separate support band. To the contrary, in Converse, we noted that the specification states that "the support band can be formed 'integral with the upper rim of the midsole' as shown in Fig. 6, or can be 'a separate piece which is secured as by fusion to the sole during manufacture.'" Id. at 1371, 51 USPQ2d at 1519. Therefore, our decision in Converse would tend to support the district court's claim construction.

The claim language, the specification, and the prosecution history also support the district court's claim construction. As we have stated, "the claims define the scope of the right to exclude; the claim construction inquiry, therefore, begins and ends in all cases with the actual words of the claim." Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1248, 48 USPQ2d 1117, 1120 (Fed. Cir. 1998). Put another way, "the language of the claim frames and ultimately resolves all issues of claim interpretation." Abtox, Inc. v. Exitron Corp., 122 F.3d 1019, 1023, 43 USPQ2d 1545, 1548 (Fed. Cir. 1997). In this case, nothing in the language of the claims requires us to limit the claims to only a two-piece construction, i.e., a pyramid-shaped midsole and a separate support band. In addition, nothing in the language of the claims requires that the pyramid shape of the midsole be visible to the naked eye in a lateral cross section of the sole. To the contrary, the claim language supports both a one-piece and a two-piece construction. For example, claim 3 states: "An athletic shoe as in claim 2 in which the support band is integral with the midsole." Since claim 3 depends from claim 1, claim 1 is conceivably broader and could cover both a one-piece and a two-piece construction.

The specification also supports the district court's construction. Nothing in the specification limits the claimed invention to either a one piece or a two-piece construction. The specification supports both constructions. The specification states that the support band can be formed "integral with the upper rim of the midsole," as shown in Fig. 6, or can be "a separate piece which is secured as by fusion to the sole during manufacture." '895 patent, col. 3, II. 14-25. At the same time, nothing in the specification requires us to limit the claimed invention to a sole in which the pyramid shape is visible to the naked eye in a lateral cross section of the sole. In fact, the specification states: "the lateral sides of the pyramid are not shown in the cross section of Fig. 6 because in the preferred embodiment they merge with the support band." '895 patent, col. 3, II. 10-11.

The prosecution history also supports our conclusion. Nothing in the prosecution history limits the patent claims to a two-piece construction, or requires that the pyramid shape of the midsole be visible to the naked eye.

Finally, we do not agree with Propet's claim construction because its construction would exclude the preferred embodiment, i.e., the one-piece construction, from the scope of the claims. A claim construction that excludes from its scope a preferred embodiment "is rarely, if ever, correct . . . ." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583, 39 USPQ2d 1573, 1578 (Fed. Cir. 1996).

In short, we agree with the district court's claim construction that "the support band and the midsole may be unitary or in two separate parts" and that "while the patent clearly requires a pyramid-shaped midsole, this shape need not be visible, if the pieces are merged." See Claim Construction Order at 5.

Based on its claim construction, the district court gave the jury the following claim construction instruction: "I have previously determined that the '895 patent is subject to two permissible constructions: the support band and the midsole may be either two separate pieces, or merged into one piece." We note that this instruction was incomplete because although the court construed the claims as requiring "a pyramid-shaped midsole, [which] . . . need not be visible, if the pieces are merged," the court did not include this requirement in its instruction. See Claim Construction Order at 4-5. Propet, however, did not object to the court's incomplete instruction. See Fed. R. Civ. P. 51 (stating that a party must object to an error in a jury instruction before the jury retires in order to preserve the claim of error on appeal); see also City of Springfield v. Kibbe, 480 U.S. 257, 258-60, 94 L. Ed. 2d 293, 107 S. Ct. 1114 (1987). Moreover, in the district court, Propet's sole argument in support of its JMOl motion was that the district court erred in construing claim 1 as not requiring that the support band and the midsole be two separate pieces. In addition, in the district court, Propet never argued that given the district court's claim construction, the jury's verdict of infringement was not supported by substantial evidence. Propet also does not make any of these arguments on appeal. It merely advances the claim construction argument that we have rejected.
Under these circumstances, we affirm the district court's denial of Propet's motion for JMOL. 4

4 We also reject Propet's argument that its shoes cannot infringe the '895 patent if the shoe shown in Fig. A in Converse does not infringe the patent. In Converse, we could tell from looking at Fig. A that not only was the midsole 32 of the shoe shown in Fig. A not "pyramid shaped," as claim 1 of the '895 patent requires, but also that the lower rim did not "flare outwardly." 183 F.3d at 1375, 51 USPQ2d at 1522. Accordingly, we concluded that claim 1 did not cover the shoe shown in Fig. A. Id. In contrast, as we have noted, Propet has not even argued, much less shown, that substantial evidence does not support the jury's verdict of infringement in this case.

Propet argues that if we find that claim 1 covers a one-piece shoe sole, as we have, then the claims of the '895 patent are invalid in view of certain prior art. It relies on the following prior art references in support of its argument: U.S. Patent No. 3,952,358 to Fuknoka, U.S. Patent No. 4,150,455 to Fuknoka, and South African Design Registration No. 78/1124 to Halberstadt. We disagree. Propet has not shown by clear and convincing evidence that any of these references anticipates or renders obvious the claims of the '895 patent. See WMS Gaming Inc. v. Int'l Game Tech., 184 F.3d 1339, 1355, 51 USPQ2d 1385, 1396-97 (Fed. Cir. 1999) (stating that because an issued patent is presumed to be valid, the evidentiary burden to show facts supporting a conclusion of invalidity is clear and convincing evidence).

Porta Stor argues that the district court erred in not construing the phrases "carrier frame" and "around" in claim 29 to have the same meaning as they undisputedly have in claim 1, namely a four-sided rectangular shaped frame that completely surrounds the container on all four sides.

We begin our claim construction analysis with the words of the claims themselves. See Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). We are not limited to considering just the language of claim 29 because "[o]ther claims of the patent in question, both asserted and unasserted, [are] valuable sources of enlightenment as to the meaning of a claim term." Id. at 1314. In this case, the term "carrier frame" in claim 29 also appears in claim 1 where it is specifically described as including "right and left longitudinal elements" adjacent to "front and rear transverse elements." '062 patent col.6 ll.64-65, col.7 ll.1-2. The parties agree that the structure described as a "carrier frame" in claim 1 is "a four-sided or rectangular-shaped carrier frame" that surrounds the container on all sides. Claim Construction Order, 2006 U.S. Dist. LEXIS 36486 at *4. We apply a "presumption that the same terms appearing in different portions of the claims should be given the same meaning unless it is clear from the specification and prosecution history that the terms have different meanings at different portions of the claims." Fin Control Sys. Pty., Ltd. v. OAM, Inc., 265 F.3d 1311, 1318 (Fed. Cir. 2001); see also, e.g., Phillips, 415 F.3d at 1314; Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001). PODS has pointed to no evidence in the specification or the prosecution history that the term "carrier frame" in claim 29 has any meaning other than the uncontested meaning in claim 1. To the contrary, the only embodiments disclosed in the specification are four-sided. Also, as discussed in the next section, during prosecution the Dousset prior art patent was distinguished on the ground that the '062 patent claimed a rectangular-shaped frame, thus suggesting that all claims were limited to a four-sided device. See Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed. Cir. 1995) "[A]rguments made during prosecution regarding the meaning of a claim term are relevant to the interpretation of that term in every claim of the patent absent a clear indication to the contrary."). We therefore conclude that the term "carrier frame" in claim 29, as in claim 1, requires "a four-sided or rectangular shape." See Claim Construction Order, 2006 U.S. Dist. LEXIS 36486 at *4.

As PODS itself notes, in a claim that "recites a four-sided 'carrier frame'...placing that four-sided carrier frame 'around the container' would result in 'all four sides' of the carrier frame being 'around the container." Appellee's Br. at 24-25. Thus, since we construe the term "carrier frame" in claim 29 to require a four-sided structure, we necessarily construe the term "around" to require the frame to be on all sides of the container. This construction is confirmed by the ordinary meaning of
"around," which in this context is defined as "along the outer edge or boundary of...on all sides of...so as to encircle or enclose...about." Webster's Third New International Dictionary 120 (2002) (emphases added).

1. "A carrier portion interconnecting the plurality of user interface key caps" (Claim 6)

a. The Parties' Proposed Constructions

Motorola's Proposal: "Material filling or bridging the area between two adjacent user interface key caps."

VTech's Proposal: "Material between the key caps which connects the key caps contained in the keypad."

b. Discussion

Motorola asserts that the main dispute between the parties regarding this phrase is whether the "carrier portion" must connect all key caps on a keypad. VTech asserts that its construction does not require all keys to be connected. Motorola's construction comports with the intrinsic evidence and shows that a carrier portion must connect at least two key caps. The Court agrees that connection of all key caps on the keypad is unnecessary.

The use of a carrier portion to interconnect adjacent user interface key caps was one of the elements of the invention claimed in the '349 patent, as the patent's specification and figures make clear. (See, e.g., '349, 2:3-17). Figure 2 identifies the "carrier portion[s]," by number (211 & 213), as areas connecting adjacent key caps on the keypad. ('349, 2:18-23; see also Fig. 3 (311 & 313)). In each of the exemplary embodiments, the carrier portions are defined in relation to the adjacent or neighboring key caps. For example, in Figure 2, "the '7' key cap 210, the '0' key cap 212 and the '9' key cap 214 [are] flexibly coupled by intermediate carrier portions 211 and 213." ('349, 2:21-23). The "carrier portion" is material that connects the narrow area between these adjacent key caps, thus "interconnecting" them. ('349, 2:3-50).

While the carrier portion in a certain embodiment may connect all of the key caps on the keypad (316, 318, 311, 313, 330 in Figure 3), the claims and the specification make clear that this is not a requirement. In another embodiment, each of the plurality of user interface key caps are coupled to the carrier by a flexible carrier portion disposed along not more than one side of the corresponding user interface key cap, wherein other sides of each of the user interface key caps are separated from neighboring key caps and/or carrier portions by a space. ('349, 2:11-18). This is shown in Figure 2, which shows rows of interconnected key caps that are not connected to one another.

That being said, the Court is not convinced, as urged by Motorola, that the material fills or bridges the area between two key caps. Requiring "filling" or "bridging" a space, without requiring a connection, is not supported by the intrinsic record. The words "filling" and "bridging" are not found in the specification in the discussion of "carriers" and "carrier portion." Rather, the specification uses the words "interconnecting" and "flexibly coupled." (See, e.g., '349, 2:5-7; 2:22, 2:41, 4:54).

c. The Court's Construction

Accordingly, the Court construes the term "carrier portion interconnecting the plurality of user interface key caps" to mean: "material connecting at least two user interface key caps."

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2. Carrier Sheet

Avery's proposed definition for the carrier sheet is: "A paper, polymer film, or combination thereof upon which a number of additional layers of a laminate are at least temporarily disposed." Whitlam proposed: "A paper, polymer film or combination..."
sheet that is transparent and between 0.25 and 10.0 mils thick inclusive and is placed in contact with the 'another adhesive layer' to serve as a release liner.' Whitlam's proposed limitations on thickness and transparency are taken verbatim from column 11, lines 31 through 67 of both patents. The relevant portions of these lines read: "The carrier sheet can be comprised of paper, polymer film, or a combination thereof...It is preferred, however, that the carrier sheet be transparent, to permit visibility of the ink or graphics layer...The carrier sheet typically has a thickness of about 0.25 to about 10 mils." Whitlam thus seeks to limit a claim by using the language of the specification, a practice which has consistently been found inappropriate. See RF Delaware, Inc. v. Pacific Keystone Technologies, Inc., 326 F.3d 1255, 1263 (Fed. Cir. 2003)("When a claim is expressed in general descriptive words, it typically will not be limited to a numerical range that may appear in the written description as referring to a particular embodiment"). For this reason, the Court adopts the following definition of a carrier sheet: "A paper, polymer film, or combination thereof upon which a number of additional layers of a laminate are at least temporarily disposed."

II. Carrier Web

3M's proposed definition of "carrier web" is "generally planar material that carries, can carry or that has carried another material that is releasable from the web." Avery proposes defining "carrier web" as "sheeting material that carries or can carry another material." The Court finds that both proposed definitions are too limited.

Claim 1 describes the carrier web only as "at least one surface." The "at least" language indicates a broad, rather than narrow, definition of carrier web. The language of the specification, which repeatedly emphasizes the flexibility of the claimed invention definition, further supports a broad definition of the term. For example, the specification lists multiple uses for the carrier web, some of which might require a non-sheeting carrier web. (See col. 2 11. 44-55.) Additionally, the embodiments make clear that the carrier web can be 'any web...that is capable of being embossed." (Col. 3 11. 58-59 (emphasis added.).) The web "can have any dimensions required for the sequential formation of a complex topography." (Col. 4 11. 7-9 (emphasis added.).) While the carrier web may frequently take the form of a liner sheet that is relatively planar (see col. 3 1. 60 - col. 4 1. 6 and col. 7 11. 44 - col. 8 1. 67), the embodiments make clear that a web may be different than a liner (see col. 5 1. 5 (distinguishing web 10 and liner 20)). Because, "neither the plain text of the claims, the specification, nor the file wrapper justifies the imposition of [these] negative limitation[s]," Omega Eng'g v. Raytek Corp., 334 F.3d 1314, 1333 (Fed. Cir. 2003), the Court declines to limit the definition of carrier web either to sheeting or to generally planar material.

In the same vein, the Court finds it inappropriate to limit the definition of carrier web to carrying material that is releasable from the web. Although the patent clearly contemplates such a use, nothing in the claim or specification language requires restricting the carried material to releasable material. To the contrary, the patent's reference to the carrier web as the end product (col. 2 1. 27), and emphasis that a "wide variety" of materials may be introduced into the web (col. 2,11. 22-23), indicates that the carrier web is intended to carry a broad range of materials for any number of purposes. The Court therefore declines to impose a limitation on the carrier web relating to the type of material carried.

Finally, the Court finds that an item that is once a carrier web is always a carrier web. Wallpaper removed from the wall does not cease to be wallpaper, even though it cannot be reused as wallpaper. Similarly, a candy wrapper removed from the candy remains a candy wrapper, although it would be difficult to use it to wrap another piece of candy. Therefore, a carrier web that has been removed from whatever other material it has been connected to does not cease to be a carrier web -- regardless of whether it can or will be reused for its intended purpose.

Based on the above discussion, the Court finds that carrier web is properly defined, in this case, as a "material with at least one surface that carries, can carry, or has carried another material."
Comaper's proposed construction of "case" is "a structure for containing and holding something." (Pl.'s Constr. Mem. at 2; Pl.'s Reply Mem. at 2.) According to Comaper, although the intrinsic record does not specifically define the term "case", elements of the intrinsic record use the term consistent with its construction. (Pl.'s Constr. Mem. at 2.) Comaper further argues that the functionality of the air movement device is consistent with its interpretation of the term case being "a structure for holding something." Id. at 3. Comaper suggests that the ordinary meaning of the term "case" supports its position, as the relevant dictionary definitions of "case" comport with its interpretation. Id. at 4. In response, Antec argues that Comaper's definition is overbroad because it includes a term (structure) that is broader than the object that term seeks to define (case). (Defs.' Reply. Mem. at 9-10.)

The interpretation that Antec offers for "case" is "an enclosure with six or more sides that is capable of being pressurized and which does not contain a drive." (Defs.' Constr. Mem. at 5.) Antec supports this position by first claiming that the "plain and ordinary meaning" of the word requires that a "case" be an enclosure. Id. at 5. Secondly, Antec submits that the specifications and drawings show that the case is a housing that is capable of being pressurized, therefore supporting its interpretation. Id. at 6-7. Finally, Antec contends the prosecution history shows that Comaper disclaimed a device that could house both a cooling device and a drive in the same case. Id. at 8. Based on the position of the parties, the Court must determine whether or not the term "case" should be interpreted as an enclosure.

The Court concludes that "case" means "a structure for containing and holding something." This term is construed in accordance with the claim and specification, and dictated by its ordinary and customary meaning. 1 Claim construction "begins and ends in all cases with the actual words of the claim," which, absent a special definition delineated in the specification or prosecution history by the patent applicant, are given their "ordinary and accustomed meaning." Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1248, 1249 (Fed. Cir. 1998). The "ordinary" meaning is determined according to an objective standard: "The focus is on the objective test of what one of ordinary skill in the art at the time of the invention would have understood the term to mean." Markman, 52 F.3d at 986. Applying this standard, it is clear that the term case is not an enclosure. When examining both Claims 1 and 12, it is clear that the terms "structure for holding something" is a reasonable construction of the term "case".

1 If the court cannot determine the ordinary meaning of the claim terms, it must consider the specification to determine whether the patentee provided a distinct definition for a term, or used any terms in a manner inconsistent with their ordinary meaning. See Vitronics, 90 F.3d at 1582. The Court agrees with Comaper's proposed construction because it is supported by the ordinary meaning of the claim language.

The specifications also support this construction. The specification states that "many variations of the case design exist and may be practiced within the scope of the invention." '955 Patent col. 2, ln. 63-65. Limitations from the specification may not be read into the claim. Liquid Dynamics Corp. v. Vaughan Co., 355 F.3d 1361, 1368 (Fed. Cir. 2004) (citing Comark Communs v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998)). Moreover, the specification states that the disclosed embodiment is a mere example of the term "case".

Claims can never be read in isolation, but rather "must be read in view of the specification, of which they are a part." Markman, 52 F.3d at 979. Nevertheless, while courts can look to the written descriptions in the specification to define a term already in a claim limitation, courts cannot read a limitation into a claim from the written description. See Renishaw, 158 F.3d at 1248. Courts should not narrow the meaning of the claim terms on the basis of the contents of the specification, by assigning a meaning to the claim terms other than their ordinary meaning, unless either the patentee has explicitly set forth a special, novel definition for a term, or else the "terms chosen by the patentee so deprive the claim of clarity that there is no means by which the scope of the claim may be ascertained from the language used." Johnson Worldwide Assoc., Inc. v. Zebraco Corp., 175 F.3d 985, 990 (Fed. Cir. 1999). There is nothing in the specification that requires the "case" to be an enclosure.

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With regard to the term "case" in the '955 patent, the district court construed it to mean "a structure for containing and holding something." 2 Claim Construction Order, 2006 U.S. Dist. LEXIS 67363, 2006 WL 2709382, at *6. Antec argues that the district court's claim construction is too broad, and that a "case" requires at least some type of enclosure. We disagree. While the embodiment disclosed in the '955 patent includes a six-sided rectangular enclosure, this court has repeatedly cautioned against limiting claims to a preferred embodiment. See, e.g., Linear Tech. Corp. v. Int'l Trade Comm'n, 566 F.3d 1049, 1058 (Fed. Cir. 2009); Comark Communs. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998). The patent specification does not assign or suggest a particular definition to the term "case." Therefore, in determining the ordinary and customary meaning of the claim term as viewed by a person of ordinary skill in the art, it is appropriate to consult a general dictionary definition of the word for guidance. See Phillips v. AWH Corp., 415 F.3d 1049, 1058 (Fed. Cir. 2005) (en banc). A "case" is generally defined, relevant to its use in the '955 patent, as "a box or receptacle to contain or hold something." Webster's Third New International Dictionary 346 (2002). The district court's construction of "case" as "a structure for containing and holding something" is thus appropriate.


Defendant's device is used with a Foley catheter, which a medical professional passes through the patient's urethra to the bladder. Plaintiff's expert previously conceded a Foley catheter is not a percutaneous catheter. (Frankhouser Depo., at 207:9-11.) Even here, plaintiff concedes that a percutaneous catheter enters the patient only "by piercing the skin," which defendant's device does not. (Opp., at 20.)

In the Court's claim construction of "catheter," it meant a percutaneous catheter. In light of plaintiff's claim construction briefs equating "percutaneous catheter" with a catheter inserted through the skin, the Court found it unnecessary to mention "percutaneous catheter" explicitly in the Order on claim construction. The Court also rejects plaintiff's argument that "through the skin" is broad enough to encompass inserting a catheter through a natural orifice of the body. 3 Because a percutaneous catheter pierces the skin of a patient, the ordinary way of inserting the Foley catheter into the patient (i.e., through the urethra) does not create a genuine issue of fact on material infringement.
3 Plaintiff bases this argument on an inapplicable analogy to throwing a rock through an open or closed window. The throwing of rocks is unrelated to the Court's analysis of the medical technology issues in the present litigation.

Even though a Foley catheter is not ordinarily inserted "through the skin of a patient," however, plaintiff nonetheless argues for literal infringement because defendant's device can be used for suprapubic catheterization. In suprapubic catheterization, a needle pierces the skin and abdominal wall to insert the Foley catheter into the bladder. (Layton Decla. P 40.) Plaintiff bases this allegation of literal infringement on a passing statement in defendant's patent application that its device "may be adapted to retain . . . suprapubic catheters." (Pl. Exhibit 519, at 8.) Plaintiff also claims that one size of Foley catheter that can be used with defendant's device is capable of percutaneous introduction into the bladder. (Opp., at 22.) The Court finds this evidence to be speculative and insufficient to create a genuine issue of fact on non-infringement.

Similarly, plaintiff cannot avoid summary judgment of non-infringement through the application of the doctrine of equivalents. "A patent applicant may limit the scope of any equivalents of the invention by statements in the specification that disclaim coverage of subject matter." Frank's Casing Crew & Rental Tools, Inc. v. Weatherford Int'l Inc., 389 F.3d 1370, 1376 (Fed. Cir. 2004). In its Order on claim construction, the Court observed that Federal Circuit precedent authorized the Court to limit the construction of terms "when the scope of the invention is clearly stated in the specification, and is described as the advantage and distinction of the invention[.]"] On Demand Mach. Corp. v. Ingram Indus., Inc., 442 F.3d 1331, 1340 (Fed. Cir. 2006). Here, the specification limits the scope of plaintiff's device to percutaneous catheterization and describes the benefits of plaintiff's device in relation to percutaneous catheterization. Plaintiff cannot now assert that its device is equivalent to a device designed for a catheter not inserted percutaneously.

Therefore, summary judgment is appropriate wherever a "catheter" is claimed, including all contested claims of the 676 patent. Plaintiff claims "catheter" is recited, but not required, in all asserted claims of the 892 patent. 4 As with "radially extending member," plaintiff's argument contradicts its final infringement contentions and violates Patent Local Rule 3.7. In light of the claims' extensive description of the anchoring system and/or retainer designed to hold the catheter in place (consistent with the requirements of percutaneous catheterization), the Court finds the reference to "catheter" in the claim preamble "is necessary to give life, meaning and vitality to the claim". Therefore, for procedural and substantive reasons, summary judgment is appropriate on all asserted claims of the 892 patent.

4 "Catheter" does not appear in the asserted claims of the 230 patent.
Therefore the term catheter must mean only that portion of the catheter assembly intended to be placed into the body and not the entire apparatus which contains other parts as described by the claim.

A syringe contains a needle and a dispensing tube. We commonly describe the "needle" as the portion of the syringe from the tip up to the dispensing tube. Although on each person the portion of the needle that goes into the flesh may vary, the needle is still considered to be the part of the syringe that could possibly enter the skin. Similarly, the term "catheter" is that portion of the catheter assembly which is intended to be inserted into the patient.

b). Written Description

The specification is consistent with defining "catheter" as that portion of the catheter assembly which is intended to be inserted into the body. The background of the invention section supports construing the word "catheter" as the tube intended to be inserted into the patient. In this section it describes that "catheters" are "routinely allowed to remain in patients" for weeks or months. ( '561 patent, col. 1, lines 32-34). Additionally, the background section explains the potential problems with catheters including the potential for them to become dislodged or cause pain or discomfort in patients because of continual movement within the vein. ( '561 patent, col. 2, lines 1-5).

The summary of the invention also supports construing the word "catheter" as the tube intended to be placed into the patient's body. The summary provides that the primary object of the invention is "to provide an improved dual-lumen catheter-connecting system which permits the catheter to remain relatively stable during the entire time the catheter remains inserted in the patient." ( '561 patent, col. 2, lines 34-38). (Emphasis added). Furthermore, throughout the summary of the invention, reference is made to a catheter which is inserted into the patient's vein. For example: "... improves the comfort level of the patient in whom the catheter is inserted" ( '561 patent, col. 2, lines 42-43); "regardless of the particular vein into which the catheter is inserted" ( '561 patent, col. 2, lines 54-55); and "the catheter is inserted in a jugular vein" ( '561 patent, col. 3, lines 3-5).

c). Dictionary Definition

The dictionary definition of "catheter" lends even more support to constructing "catheter" to mean the portion of the assembly intended to be inserted into the patient. Webster's II New Riverside University Dictionary defines "catheter" as "a slender, flexible tube inserted into a bodily channel, as a vein..." (Webster's II New Riverside University Dictionary 238 (1994)).

In addition, a medical dictionary definition is also consistent with this construction. Stedman's Medical Dictionary defines "catheter" as "a tubular instrument to allow passage of fluid from or into a body cavity." (Stedman's Medical Dictionary 292 (26th ed. 1995)). The "catheter" is the tube inserted into the patient which makes it possible to extract fluid from or pass fluid into body cavities.

B. Catheter

Smith & Nephew proposes that "catheter" should be construed to mean "a long flexible tube." ArthroCare would interpret "catheter" to mean "a long flexible tube that can bend around the inner wall of the annulus fibrosus." The parties agree that the specification controls the definition of "catheter" because the patentees acted as their own lexicographer. The specification explicitly defines "catheter:"

"[t]he catheter is not necessarily a traditional medical catheter... but is a defined term for the purposes of this specification. 'Catheter' has been selected as the operant word to describe this part of the apparatus, as the apparatus is a long flexible tube... ."

U.S. Patent No. 5,980,504, Column 5:51-57. The parties' dispute centers on whether the word "catheter" should be construed to have an additional flexibility requirement such that it could be bent around the inner wall of the annulus.
The claims recite no catheter flexibility requirements, and the claims must be read to contemplate methods of practicing the invention that do not involve bending the catheter around the inner wall of the annulus. Every word in a claim is presumed to add meaning, and the claim should not be read so as to render any of the claim language superfluous. Exxon Chem. Patents, Inc. v. Lubrizol Corp., 64 F.3d 1553, 1557 (Fed. Cir. 1995). Claim 1 describes advancing the functional element of the catheter "through the nucleus pulposus to the inner wall of the annulus." Claim 10 describes advancing the "distal end of the catheter through the nucleus pulposus and adjacent the inner wall of the annulus such that the catheter conforms sufficiently to the inner wall." For every word in Claim 10 to have meaning, Claim 1 must envision methods of practicing the invention that do not involve "conforming" the catheter to the inner wall of the annulus. If the invention can be practiced without bending the catheter around the inner wall of the annulus, there is no reason to require that the catheter be capable of bending to such a degree.

ArthroCare argues that the patentees implicitly defined "catheter" as something that can be bent around the inner wall of the annulus because the specification consistently describes the catheter as bending to that degree. The summary of the invention, detailed description, abstract, and several of the drawings all involve a catheter bending around the inner wall of the annulus. This repeated use is not enough to imply a flexibility requirement in the definition of "catheter." The Federal Circuit has stated that "when a patentee uses a claim term throughout the entire patent specification, in a manner consistent with only a single meaning, he has defined that term 'by implication.'" Bell Atlantic, 262 F.3d at 1271 (citing Vitronics, 90 F.3d at 1582). "Catheter," however, is not used in all portions of the specification in a manner consistent with a definition requiring sufficient flexibility to bend around the inner wall of the annulus.

The specification describes catheters that are "actively steerable." A physician can bend these catheters by applying force at various points along the device's length using mandrels located inside the catheter. U.S. Patent No. 5,980,504, Column 11:33-12:67. When these catheters are used to practice the invention, the inner wall of the annulus plays no role in bending them.

The specification also describes catheters that contain segments with differing levels of flexibility. "Such a catheter will have two or more different radii of curvature in different segments of the catheter under the same bending force." U.S. Patent No. 5,980,504, Column 13:28-30. A catheter that is bent around the inner wall of the annulus will have a single radius of curvature. A catheter with multiple radii of curvature will not necessarily be flexible enough to bend around the inner wall of the annulus at all places along its length.

ArthroCare also argues that the specification distinguishes prior art that involved flexible catheters. The specification discusses prior art that was "rigid" or "somewhat more flexible [than rigid]." U.S. Patent No. 5,980,504, Column 3:9-39. That prior art could be practiced with catheters described as "somewhat more flexible" does not imply that the current invention only avoids the prior art if it is practiced with a catheter so flexible that it can bend around the inner wall of the annulus.

The court has found no specific requirement of flexibility indicated in the patent claims, specification, or prosecution history. The patentees clearly intended to define the term catheter, and they did so in plain, simple language. The court sees no reason to use a definition other than the one chosen by the patentees and construes catheter to be "a long flexible tube."

1. Language in dispute: "catheter"

Does "catheter" mean (1) only that portion of the catheter assembly intended to be inserted into the patient's vein, or (2) a tubular device for withdrawing fluids from, or introducing fluids into, a cavity of the body, such as a blood vessel?

Answer: "catheter" means a tubular device for withdrawing fluids from, or introducing fluids into, a cavity of the body, such as a blood vessel.

Claim 34 begins with the components of a dual-lumen catheter assembly: a catheter, connecting means, and a pair of internal curving passageways. As Judge Denlow noted, the claim language appears to support the construction proposed by Plaintiff because it says that a catheter assembly requires a catheter and other items. Judge Denlow concluded therefore that
the term catheter logically means only that portion of the assembly intended to be placed into the body and not the entire apparatus which contains other parts as described by the claim. Arrow Int'l, 160 F. Supp.2d at 946.

This court respectfully disagrees with Judge Denlow's conclusion on this issue. Defendants' proposed construction does not contradict the claim language and, in this court's view, makes more logical sense. If Plaintiff were correct that the term catheter only refers to the portion of the tube intended to be inserted into the patient, then the meaning of that term would differ from patient to patient, even if the same catheter assembly is used. As Defendants point out, some patients are smaller than others, and the length of the tube that is inserted into the body will by necessity differ from one patient to another. Plaintiff does not dispute this; he argues that it is nevertheless acceptable to define a term in reference to its particular usage in different contexts. While this may be true, the court does not find anything in the claim language or the specification indicating that the term should be construed so fluidly.

Defendants point out that the description of the invention contemplates a catheter extending from the distal to the proximal end. (Defs.' Brief at 14.) Specifically, Defendants point out that claims 34, 38 and 42 recite, respectively, a catheter assembly and blood treatment system, each comprising a "dual-lumen catheter," and "connecting means attached to the proximal end of said catheter [with passageways curving back toward] the distal end of said catheter." Claims 35 and 39 recite a "connecting means [that] comprises a connector fastened to the proximal end of the catheter." (‘561 Patent, Ex. B to Second Amended Complaint, Col. 11, lines 24-32 and 61-65 and Col. 12, lines 1-4;Defs.' Brief at 13-14.) They argue that if the location of the proximal end of the catheter changes based on each individual patient, then the location of the connecting means would change as well, since it is described in claim 34 as attached to the proximal end. (Id., Col. 11, line 15.) The court agrees that such a fluid definition is hard to reconcile with the specific language in the claim that the proximal end is attached to a connecting means. If Plaintiff's proposed construction were adopted, then the term "connecting means" would likely have to include a portion of the catheter tube, perhaps a significant portion, depending on the size of the patient.

Plaintiff points out that the background of the invention section describes that catheters are "typically allowed to remain in patients for several weeks, and sometimes for several months." (Id., Col. 1, lines 32-34.) Additionally, the background section explains the potential problems with catheters including the potential for them to become dislodged or cause pain or discomfort in patients because of continual movement within the vein. (Id., Col. 2, lines 1-5.) Plaintiff argues that these statements indicate that the catheter is something which is wholly inside of the patient. The court notes, however, several devices which are commonly described as being inserted inside a person, but a portion of which almost always remain outside of the person's body. Thermometers, otoscopes, and intravenous devices are inserted into persons, often with portions remaining external to the body.

Plaintiff points out that the summary of the invention states that the primary object of the invention is "to provide an improved dual-lumen catheter-connecting system which permits the catheter to remain relatively stable during the entire time the catheter remains inserted in the patient." (Col. 2, lines 34-38.) Once again, the court is not convinced this supports his proposed definition of the claim term. The fact that a portion of the catheter protrudes from the patient's body would not defeat Plaintiff's goal of ensuring stability when a portion of a catheter has been inserted into the patient.

Finally, the court believes Defendants' proposed definition makes the most logical sense. Imagine an embodiment of the '561 patent on display for examination by health care providers. How would a manufacturer's representative describe the product to a potential user? Where would she say the proximal end of the catheter is? How would she describe the tube that is inserted into the patient? It simply makes more sense to describe the catheter as extending from the distal end, the end that is first inserted into the patient's body, to the proximal end, where the connecting means attaches the catheter to the remainder of the apparatus. For these reasons the court adopts Defendants' proposed claim term.
A. No Integral Connection Requirement

Claims 1, 13, and 25 provide, respectively: "A catheter for detecting changes in pressure within a body comprising . . . a structure for detecting changes in fluid pressure;" 7 "An interuterine pressure catheter comprising . . . a pressure detection device;" 8 and "A pressure catheter for detecting changes in pressure within a body comprising . . . a pressure detection device." 9

Clinical Innovations argues that these claim terms should be construed to mean:

The claimed catheter (i.e., elongated tube) is a "pressure catheter." That is, the catheter itself must be capable of detecting changes in pressure. Accordingly, the recited elongated tube of the catheter must be integrated with the recited structure for detecting changes in fluid pressure, such as by being sealed to that tube or to another integrated part of the catheter. The claim excludes any catheter with an elongated tube that can be readily connected to, or disconnected from, the pressure detecting structure. 10

Utah Medical argues that they should be construed to mean:

A catheter that is used to detect pressure changes within a body. The claim does not require an integral connection between the elongated tube and the structure for detecting changes in fluid pressure. 11

Clinical Innovations argues that its interpretation is supported by the language of the claims 1, 13, and 25, by claim differentiation, by the claim preamble, and because, in the specification for a balloon configuration, the elongated tube is permanently attached to the inner tube.
Utah Medical argues that Clinical Innovations' asserted "integral connection" and "permanently connected" or sealed constructions are not supported by plain language of the claims or the specifications, by claims construction rules or claim differentiation, and is undermined by Clinical Innovations' act in marketing a "non-integrated" catheter under the '524 patent.

The parties make a similar argument regarding the housing in dependent claims 2, 15, and 29, providing, respectively: "The catheter of claim 1, further including a housing;" "The interuterine catheter of claim 13, further including a housing;" "the pressure catheter of claim 25, further including a housing."

Clinical Innovations argues that these claims should be construed to mean:

The claimed catheter (i.e. elongated tube) must include a housing. That is, the housing must be permanently connected to the elongated tube (or to a structure that includes the elongated tube), such as by being "sealed" to that tubing or to another integrated part of the catheter. In other words, the housing is effectively and physically an integrated part of the same structure as the elongated tube. The claim language excluded catheters that can be readily connected to, or disconnect from, the housing. 12

--- Footnotes ---

12 Id., at 3.

--- End Footnotes ---

Utah Medical argues that they should be construed to mean:

A housing which is in fluid communication with the fluid channel has a port. The claim does not require an integral connection between the elongated tube and the housing. 13

--- Footnotes ---

13 Id.

--- End Footnotes ---

The Court finds that nowhere in the claims, specification, or preambles is the "integral" requirement sought to be added by Clinical Innovations found. Nor is the Court persuaded by Clinical Innovations' argument that because dependent claims 3, 16, and 30 (which depend from claims 1, 13, and 25) include "venting cap configured for attachment to said housing" that if the pressure detector and housing could be attached and detached, they would include similar language.

The Court finds Clinical Innovations' "integral connection" and "permanently connected" arguments to be unpersuasive. The Court agrees with Utah Medical that the claims do "not require an integral connection between the elongated tube and the structure for detecting changes in fluid pressure" and do "not require an integral connection between the elongated tube and the housing."

--- Footnotes ---

The Court disagree with Utah Medical that the claims do "not require an integral connection between the elongated tube and the structure for detecting changes in fluid pressure" and do "not require an integral connection between the elongated tube and the housing."

--- End Footnotes ---

1. A Catheter Having A Working End (Claim 1, '803 Patent; Claim 1, '433 Patent)

Vnus argues "catheter," as found in the term "a catheter having a working end" should be construed as "a tubular, flexible, surgical instrument that is inserted into a cavity of the body, including, but not limited to, a sheath," and argues "working end," as found in the subject term, should be construed as "direction toward the treatment site in the patient (contrast with connecting end)." Defendants argue "a catheter having a working end" should be construed as "a hollow, tubular instrument pre-assembled with electrodes capable of applying energy at the end of the instrument proximate the treatment site."
3 The parties' respective constructions as set forth herein are taken from the Amended Patent Local Rule 4-3(b) Chart, filed October 23, 2006. Any brackets contained in such constructions as set forth herein are in the original.

The Court, for the reasons stated by Vnus, finds "a catheter having a working end" is properly construed as "a tubular, flexible, surgical instrument, including, but not limited to, a sheath, having an end directed toward the treatment site in the patient." 4

4 The Court has not adopted the additional language proposed by Vnus, specifically, "that is inserted into a cavity of the body"; such language is a proposed construction of "into the hollow anatomical structure," which is not one of the ten disputed terms before the Court.

Vnus argues "catheter" and "having a working end," as found in the term "a catheter having a working end with an energy application device at the working end," should be construed as set forth above with respect to the first disputed term, and additionally argues the phrase "energy application device," as set forth in the subject term, should be construed as "a device for delivering energy, such energy includes, but is not limited to, RF energy, microwaves, ultrasound, direct current, circulating heated fluid, radiant light and lasers." Defendants argue "a catheter having a working end" should be construed as "a hollow, tubular instrument pre-assembled with electrodes capable of applying energy at the end of the instrument proximate the treatment site."

The Court, for the reasons stated by Vnus, finds "a catheter having a working end with an energy application device at the working end" is properly construed as "a tubular, flexible, surgical instrument, including, but not limited to, a sheath, having an end directed toward the treatment site in the patient, with a device at that end for delivering energy, such energy including, but not limited to, RF energy, microwaves, ultrasound, direct current, circulating heated fluid, radiant light, laser, and thermal energy." 5

5 For the reasons stated above with respect to the first disputed term, the Court has not adopted Vnus' proposed additional language, specifically, "that is inserted into a cavity of the body." The Court has added "thermal energy" to Vnus' proposed construction. See '084 Patent, col. 7, II. 58-59.

The '958 Patent

The district court also found infringement of the '958 patent by tanks sold by Custom after November 22, 1988, the date of patent issuance. Custom states that the district court ignored a claim element that is not present in the accused tanks, and
that claim 1 is not infringed.

Infringement analysis is conducted in two steps. First the claims are construed as a matter of law, even though it is necessary to resolve a dispute concerning the meaning or scope of the claims or any term of the claims. Claim construction is decided de novo on appeal. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2d (BNA) 1321, 1329 (Fed. Cir. 1995) (en banc). The trier of fact then determines whether the accused device is within the scope of the claims as construed. Markman, 52 F.3d at 976, 34 U.S.P.Q.2d (BNA) at 1326.

Claim 1 of the '958 patent requires "a bend in said bottom plate radiating from said discharge opening in a direction extending away from said one edge." Claim 1 also requires that the bend is configured so that when the convergent gap is closed "liquid in said tank will be caused by gravity to flow into said bend and along said bend to said discharge opening."

The district court construed claim 1 to mean that "the direction of the bend in the tank bottom is not part of the claim limitation of the '958 patent," and therefore that the "bend" can be in the shape of either an inverted V, i.e., a bend extending upwardly into the tank; or a V, where the bend extends downwardly forming a trough. Thus the accused tanks, all of which had a divergent gap structure, were found to infringe although their bend in the bottom was bent in the shape of the inverted V, instead of the V-shaped trough that was illustrated in the specification. A trough-shape is required to achieve the gravity flow of liquid "into said bend and along said bend," as the claim states.

Hoover argues that liquid can flow by gravity "into" an upwardly extending bend if the meaning of the word "into" is taken to include "in the direction of" or "so as to strike." The experts at trial offered opposing views. However, none of the drawings of the '958 patent shows an upwardly extending (inverted V) bend, and the possibility that the bend might be so configured is not mentioned in the specification. Hoover directs us to nothing in the specification, prosecution history, or prior art to suggest other than the ordinary meaning of liquid flowing "into and along" the bend in the bottom of the tank. We conclude that claim 1 of the '958 patent requires the bend in the bottom of the tank to extend in the downward direction, to form a trough whereby gravity will cause liquid to flow into and along the bend to the discharge opening. Consequently, a tank whose bottom has only an upwardly extending bend, as the district court found Custom's accused tanks to have, does not infringe claim 1 of the '958 patent.

The district court's finding of infringement was based upon an incorrect construction of the claim. On correct construction, we have been directed to no potential finding or inference that could support a holding of infringement by tanks that do not have the structure whereby liquid flows into and along the bend in the bottom. The finding of infringement of claim 1 must be reversed.

The '958 patent has three claims, claim 1 being directed to a tank of specific structure and claims 2 and 3 to methods of constructing tanks. The district court did not indicate which of the claims he found infringed. Custom argues that Hoover offered no evidence at trial that any of the accused tanks were built by the methods of claims 2 and 3, and urges that the district court found only claim 1 infringed. Hoover argues that its evidence shows Custom manufactured and sold tanks "with structures materially identical to that described in claim 1, and built in accordance with the methods described in claims 2 and 3." The district court's opinion discusses only the structure of the tanks alleged to infringe the '958 patent and not their method of manufacture, although the court found "the patent" infringed. In the absence of findings relating to the method claims, we are unable to review the decision with respect to claims 2 and 3. On remand, the district court may consider whether claims 2 and 3 are infringed, based on our interpretation of claim 1.

7. causing contact with the work platform two or more times

This phrase appears in claim 10 of the '283 patent. The plaintiff's proposed construction is "contacting the work platform two or more times, each contact being at a location on the work platform." The defendant argues that the term is indefinite, but alternatively offers a construction of "causing two or more coexisting physical contacts with the work platform." The crux of the disagreement is whether the contact times must occur simultaneously or whether such contact times can occur independently of one another.
In support of its position, the defendant cites to amendments and arguments that were made by the patentees during the prosecution of separate, related patents. The plaintiff supports its position with excerpts from the specification that suggest the claimed invention is capable of detecting and transmitting the location of an object in a continuous fashion. See, e.g., '874 patent at 9:18-21. The defendant's prosecution history arguments are misplaced because it appears that the patentees' statements during prosecution were directed at different claim limitations. See Elkay, 192 F.3d at 980 ("When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation." (emphasis added)). Therefore, the court concludes that this phrase means "causing contact with the work platform two or more times."

8. causing contact with the work platform two or more times in a particular sequence

This phrase appears in claims 11 and 12 of the '283 patent. The plaintiff proposes a construction of "contacting the work platform two or more times in a particular sequence, each contact being at a location on the work platform." The defendant counters with "causing two or more coexisting physical contacts with the work platform in a particular positional sequence on the work platform." The crux of the argument is whether the "particular sequence" is limited to a simultaneous positional arrangement of the objects on the work platform, or whether the "particular sequence" more broadly includes a temporal relationship, such as the sequential contacting of objects on the work platform. For the above reasons, the court concludes this term means "causing contact with the work platform two or more times in a particular sequence."

C. "Causing" Language in Claim 8 of the '142 Patent

In its October 30, 2009 order, the court denied the motion for summary judgment of invalidity of claim 8 of the '142 Patent due to anticipation by the Ashpole reference. Claim 8 of the '142 Patent contains the following limitation: "wherein the expandable outer surface is sufficiently rigid to deform the target tissue into the shape of the expandable outer surface, causing the predetermined asymmetric isodose curves to penetrate the target tissue to a prescribed depth." '142 Patent 10:13-17. SenoRx argued that Ashpole inherently disclosed this claim limitation because the balloon in Ashpole is sufficiently rigid to deform the target tissue. This court nonetheless denied summary judgment because the limitation requires both sufficient rigidity to deform and that such deformation would cause penetration to a prescribed depth. Not recognizing the latter requirement would read the language "causing the predetermined asymmetric isodose curves to penetrate the target tissue to a prescribed depth" out of the claim.

Unfortunately, the language in the court's earlier order, which stated that the specified rigidity must be used towards the claim's stated purpose, may have caused some confusion to the parties regarding the court's meaning. To clarify, the court does not hold that the rigidity in the balloon in Ashpole must have been recognized and used for the same purpose as the patented invention in order to anticipate the invention. The Federal Circuit has clearly rejected the contention that inherent anticipation requires recognition in the prior art. Schering Corp. v. Geneva Pharmaceuticals, Inc., 339 F.3d 1373, 1377 (Fed. Cir. 2003); see also Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 782 (Fed. Cir. 1985) ("Congress has not seen fit to permit the patenting of an old alloy, known to others through a printed publication, by one who has discovered its corrosion resistance or other useful properties"). This is a natural result of the patent law principle, "that which would literally infringe if later in time anticipates if earlier." Schering, at 1379 (quoting Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc., 246 F.3d 1368, 1378 (Fed. Cir. 2001)). Regardless of whether a person having ordinary skill in the art would have recognized that the balloon in Ashpole had sufficiently rigidity to deform target tissue, Ashpole anticipates claim 8 of the '142 Patent if it meets each and every claim limitation.

Now both parties move for supplemental claim construction of the term "causing" in claim 8 of the '142 Patent. Hologic contends that "causing" should be construed to mean "with the purpose of allowing," while SenoRx contends that "causing"
should be construed as "which would allow." As discussed above, anticipation does not require recognition of purpose in the prior art. Therefore, the court declines to adopt Hologic's proposed construction. However, SenoRx's proposed construction could be read to suggest a distinction between the phrase "which would allow" (passive language - allowing an event to occur) and the word "causing" (active language - producing an event or result). Because the court finds that the plain meaning of "causing" would be easily understood by the jury and would be more clear than construing the term as "which would allow," the court also declines to adopt SenoRx's proposed construction.

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4. "cavity" or "cavity for holding electronic components"

<table>
<thead>
<tr>
<th>Plaintiff's Construction</th>
<th>Defendants' Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>A hollow area within a structure.</td>
<td>A formation in the underside of the raised periphery surrounding the game board, not on the playing surface, that holds the batteries, wires, and/or two lasers, not used for holding playing pieces.</td>
</tr>
</tbody>
</table>

a. Innovention's Proposed Construction

Innovention does not offer much to advance its argument that "cavity" should be construed so broadly. It simply notes that "cavity" is distinct from "game piece" and is cited in claim 1, which provides that:

The invention claimed is:

1. A board game, comprising:

   a game board having a playing surface and a cavity for holding electronic components.

b. Defendants' Proposed Construction

The defendants insist that their proposed construction of "cavity" is consistent with the claim language, as well as the specification and preferred embodiment's (Figure 5's) emphasis on the importance of the raised border, which has battery compartments and wiring that interconnects a battery and lasers. The defendants say that the invention differentiates "cavity" from "space" because the space on the surface of the game board is not illustrated or described as being configured or dimensioned to hold battery compartments or wiring. The defendants also point out that "cavity" and "space" are used in close proximity to each other within the same claims, which makes clear that the terms must be construed as having different meanings.

c. The Court's Construction

The "cavity" limitation appears in independent claims 1 and 25, which specify only that the "cavity" is "for holding electronic components" and further suggests that it is located on the game board. See Claim 1 ("A board game, comprising: a game board having a playing surface and a cavity for holding electronic components.") A person of ordinary skill in the art would agree with the ordinary meaning of the term "cavity" that it is something, as defined by the claims, that holds electronic components. However, that fails to fully define what "cavity" means in the context of the invention. Accordingly, the Court is informed by the specification and the preferred embodiment. The Court finds the plaintiff's proposed construction is too broad and the defendants' proposed construction is most consistent with the claim language and the specification, with the exception that the defendants' asserted limitations "not used for holding playing pieces" is unnecessary and fails to elucidate the meaning of "cavity." Accordingly, the Court adopts a modified version of the defendants' proposed construction of "cavity": "A hollow space in the raised periphery surrounding the playing surface that holds batteries and wires."
12 The specification and preferred embodiment (Figure 5) suggest a possible use for "cavity":

lower section 13 of game board 11 reveals cavity 26 that is defined by the sections 16, 17, 18 of raised boarder 15. Cavity 26 provides one or more battery compartments 27. The cavity 26 can be used for containing wiring 28 that interconnects a battery (or batteries) and lasers 21, 22 so that power supplied by a batter that occupies battery compartment 27 can be used to power the lasers 21, 22.


Nike argues that this term does not need any construction and that the word should be given its ordinary meaning. Adidas states that the term "cavity" must be construed because the inventors acted as lexicographers in defining "cavity." Adidas proposes "a cavity is an open area extending through the sole that is defined as the space between a top heel portion and a bottom heel portion, both portions extending continuously from the medial to the lateral side."

The parties have agreed that the term "medial" means inside (of the foot) and the term "lateral" means outside (of the foot). The parties also agreed at the hearing that "cavity" means "void" or "open space." The only dispute is whether the cavity must be bounded at the top and bottom.

Adidas asserts that the patentee provided a special definition of cavity: "A cavity in sole 106 is defined by the space between heel plate 104 and base 110 that is not occupied by support elements 108." 796 patent, col. 6, 11. 63-65. But this is just a clever appropriation of the word "defined" to imply that the patentee was interpreting the meaning of the word "cavity," rather than delineating the boundaries of the cavity in a preferred embodiment.

Neither the claim nor the specification limit "cavity" to a void with a physical structure at the top and the bottom. The parties agree that one side of the cavity is bounded by the bottom of the heel plate - the part on which the heel rests. The rest of the claim language defines the other limits of the cavity - "said cavity extending from a medial side to a lateral side of said footwear to define an open area extending through said sole." Nothing in the claim, the specification, or the prosecution history indicates that "cavity" has to be re-defined to explain this language or to further delineate the limits of the cavity.

The court will define this term as follows:

"Cavity" means: "an open space."

As to the remaining disputes about the shape of the patented device, Medtronic's construction is again too narrow. Medtronic would limit the apparatus to a three-dimensional, disk shape with parallel upper and lower surfaces and with an aperture going through the entire device running in a north-south direction. But the patent requires neither a disk shape nor parallel upper and lower surfaces. It simply mandates a shape with three surfaces (upper, lower, and outer). The terms "first and second longitudinal directions" mean simply opposing directions, and not anything more specific, such as 180-degree angles. A "cavity" is simply an opening in the aperture -- regardless of whether the aperture is fully enclosed -- which houses the cam member and whose width is larger than the opening of aperture to prevent the cam member from falling out.
With respect to the proper construction of the cavity element of the patent claims, both parties rest on the arguments in their summary judgment papers. According to Centricut, the 425 patent claims a cavity, which necessarily has an open outer end and a closed inner end. 7 Centricut further argues that the distinction it draws between a cavity (with an open outer (or front) end and a closed inner (or back) end) and a through-hole or bore (with an open outer end and an open inner end) is supported by the 425 patent itself, which uses the term "cavity" to describe the recess filled by a sleeved emissive insert and the term "bore" to describe certain open passageways, elsewhere in the electrode, designed to permit the flow of gas or water. See, e.g., 425 patent, col. 4, ll. 64-66, col. 5, ll. 50-52. According to Esab, Centricut's proposed construction is unavailing because: (1) the distinction between a blind cavity (i.e., one with a single opening) and a cavity with more than one opening is immaterial when, as here, the cavities in question are both completely filled (with an emissive insert); (2) Centricut limits the term cavity to include only blind cavities by impermissibly treating as a claim limitation a physical characteristic drawn from one of the preferred illustrative embodiments in the specification; and (3) Centricut's distinction between a cavity and a bore ignores the dictionary definition of "bore" as "an interior lengthwise cylindrical cavity."

The term "cavity," as used in the 425 patent, encompasses both blind cavities and those with openings at both ends. The relevant claims in the patent all disclose a metallic holder with a front end and a cavity in the front end. See 425 patent, col. 7, ll. 27-28, ll. 48-48, col. 8, ll. 29-36. In other words, a cavity is an open space formed (and subsequently filled) in the front end of the metallic holder. 8 Whether such an opening continues through to the back end or terminates somewhere short of the back end is not asserted in the claim. See Vitronics, 90 F.3d at 1582 (explaining that proper claim construction takes into account the words of the claim "both asserted and nonasserted) (citation omitted). The plain language of the patent does not limit the claim to blind cavities. Because the relevant claims recite the element of a cavity in the front end, and because a holder with a through-hole meets the limitation of having a cavity in its front end, the cavity element may not be construed with the additional limitation urged by Centricut, which it reads into the claim from other parts of the patent. See Kraft Foods, 203 F.3d at 1366 (limitation appearing only elsewhere in the patent may not be read into the claim). In short, for purposes of construing the 425 patent, the term "cavity" includes both blind cavities and through-holes. 9

A definition of the term "cavity" that refers exclusively to the front end of the electrode is entirely consistent with the electrode's function, given that the front end is the part of the electrode to which the electrical arc attaches.

While there is some logic to Centricut's argument that the patent specification uses the term cavity to describe the space filled by the emissive insert and the term bore to describe a cylindrical passageway open on both ends, the force of that argument is substantially diminished by the fact that the cavities in the specification are all filled while the bores identified in the specification remain open for the transmission of gas or water. In other words, to the extent the 425 patent includes a meaningful distinction between cavities and bores, the distinction is based not on the number of openings (one versus two), but, instead, on whether the space has been filled (as with the cavities) or remains open (as with the bores).
a. "cavity"; "phosphor layer"

LG argues that its constructions for the above terms comport with representations made by the patentee during prosecution of the '500 patent. See Ex. 11, 14, & 15 to Defs.' Opening Claim Construction Brief. While representations made to the examiner may, in certain circumstances, operate to limit scope, this is not such a circumstance. As suggested by Hitachi, the '500 patent repeatedly and expressly contains "uninterrupted," "continuous," etc., limitations, whereas, the '563 patent does not. Furthermore, the patentee suggests that any such limiting statements were specifically directed towards the claims of the '500 patent. See Ex. 10 to Pl.'s Opening Claim Construction Brief. Indeed, the prosecution history indicates that the purported disclaimers were directed to a claim that was subsequently omitted from the '563 patent. "When the purported disclaimers are directed to specific claim terms that have been omitted or materially altered in subsequent applications (rather than to the invention itself), those disclaimers do not apply." Saunders Group, Inc. v. Comfortrac, Inc., 492 F.3d 1326, 1333 (Fed. Cir. 2007). Finally, for the same reasoning as discussed above with respect to "strip[e]-shaped phosphors," the court declines to impose any additional limitations on "cavity" or "phosphor layer."

Accordingly, the court gives the above disputed terms their plain meaning and rejects the limitations proposed by the defendants.

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b. The second disputed term in Claim 7: "Cavity cover member spaced about an end of the mold core"

i. Claim language. The second disputed term in Claim 7 of the '809 patent is "cavity cover member spaced about an end of the mold core." In its tentative draft ruling, provided to the parties prior to the Markman hearing, the court concluded that this term, among many others, was not "ripe" for construction, because Electrolux had not shown that the term was "in dispute" for infringement or for any other purpose. However, following the hearing, the court revised that conclusion, and found above, in Section II.A.1.b., beginning on page 36, that this term is also "in dispute" at this time for purposes of infringement. Therefore, the court must now construe this term, as well.

Claim 7, with the disputed term italicized, states the following:

7. A method of making an integral, smooth and uniformly constructed plastic washing machine basket having a base wall including a peripheral portion from which extends an annular sidewall that diverges radially outwardly to a terminal edge in an apparatus including a mold core, cavity sidewall members spaced about the mold core which carry core pins each having a beveled tip portion adapted to abut the mold core during a molding operation and a cavity cover member spaced about an end of the mold core and abutting the cavity sidewall members so as to define a cavity between the mold core and both the cavity cover member and the cavity sidewall members comprising:

injecting a plastic material to fill the cavity while flowing around the beveled tip portion of each of the core pins to form a plastic washing machine basket having sidewalls provided with a plurality of spaced beveled apertures; and ejecting the washing machine basket from the apparatus by separating the mold core and cavity cover member and shifting the cavity sidewall members away from the mold core.

The '809 patent, Claim 7 (emphasis added).

ii. The parties' definitions and arguments. The parties' proffered definitions of this term are shown below, with bold font indicating differences between their definitions. Also, the authority on which each party relies for its definition is shown just below that party's definition.

"CAVITY COVER MEMBER SPACED ABOUT AN END OF THE MOLD CORE"

Maytag's Definition
"a section of the mold extending about and spaced from an end of the mold core"

Electrolux's Definition
"a cover that is adapted to abut the cavity sidewall members when the molding apparatus is in a closed mold"
Maytag did not offer any argument in support of its construction of this term in its opening brief, because Maytag asserted that it is not in dispute for infringement purposes. However, in its rebuttal brief, Maytag argued that this term should be left to its plain and ordinary meaning, as informed by the patent specification. Maytag also argued that Electrolux's proposed definition is flawed, because it renders claim language superfluous and injects limitations from the preferred embodiment of the specification into the claims. Somewhat more specifically, Maytag asserts that Electrolux's insertion of "to abut the cavity sidewall members when the molding apparatus is in a closed position" is improper, because Claim 7 already includes essentially this same language, so that Claim 7 is rendered partially superfluous. Maytag also asserts that Electrolux's insertion of "is spaced from the cavity sidewall members when the molding apparatus is in an open mold position" inserts language not in Claim 7, but in Claim 11, so that Electrolux is attempting to import limitations from one claim into another, which violates the requirement that claims having different terms are presumed to have different scopes. Moreover, Maytag points out that Electrolux acknowledges that its proposed construction comes directly from the specification, but importing limitations from the specification that are not found in the claim is not appropriate.

In its rebuttal brief, Electrolux contends that its construction of this term is proper, because it fits the illustrations and specification, which show that the "cavity cover member" covers a cavity, not just that it is any end of the cavity, whether or not it covers an opening, as Maytag's definition suggests. Electrolux also contends that the specification and claims clearly define the "cavity cover member" with reference to its location in the "open" and "closed" mold positions and require that the "cavity cover member" touch the sidewall members only in the "closed" mold position, but not touch them when it is in the "open" mold position.

In its surrebuttal brief, Maytag asserts that this term need not be construed, because Electrolux's representative, Michael Griffith, admitted that the accused process includes this limitation. Electrolux, however, contends that this term is in dispute and that Maytag's criticism of Electrolux's definition is wrong, because the specification explicitly defines "cavity cover member" in the context of the "open" and "closed" mold positions, citing the '809 patent, col. 5, ll. 7-20. Electrolux asserts that its definition incorporates this definition from the specification. Electrolux also asserts that claim differentiation does not require the court to ignore the limitations on a term that are apparent from the specification.

The parties also addressed the construction of this term at the Markman hearing oral arguments. Electrolux again asserted that its definition is correct, because it is drawn straight from the specification. Electrolux also argued that it is not enough to note differences among claims, because differences may cover the same thing, if they are consistent with the specification. Maytag countered that the specification discloses only the preferred embodiment, not a definition of all claim terms for all purposes, such that the specification should not be imported into the claim definition.

iii. Analysis. Beginning once again with the words of Claim 7, see Nystrom, 424 F.3d at 1142 (construction begins with the words of the patent); Biagro, 423 F.3d at 1302 (same), it is plain from the claim language itself that the "cavity cover member" is part of the apparatus for molding a plastic washing machine basket. See the '809 patent, Claim 7 (claiming "[a] method of making [a] . . . plastic washing machine basket . . . in an apparatus including a mold core, cavity sidewall members . . . , and a cavity cover member. . . .") (emphasis added). It is also plain that the claim language itself states that the "cavity cover member" is (1) "spaced about an end of the mold core," and (2) "abuts the cavity sidewall members," with the result (3) that the "cavity cover member" "defines a cavity between the mold core and both the cavity cover member and the cavity sidewall members." The '809 patent, Claim 7. Maytag's definition is, thus, incomplete, in that it leaves out the second requirement that the cavity cover member abut the cavity sidewall members, as well as the third requirement that the
cavity cover member define a cavity. Maytag's definition is also erroneous--or at least misleading--because it transforms the claim language "spaced about an end of the mold core" into "extending about and spaced from an end of the mold core." The court finds nothing ambiguous about "spaced about" that warrants redefining it as "extending about and spaced from," even assuming that the proffered redefinition is accurate.

Similarly, Electrolux's definition does not comport with the claim language, because it imports limitations from the specification concerning "open" and "closed" mold positions that are found nowhere in Claim 7. Rather, such limitations are expressly claimed in Claim 11. Thus, while Electrolux's definition clearly "aligns" with the description in the specification--indeed, is drawn directly from the specification--it does not "stay[] true to the claim [7] language." Phillips, 415 F.3d at 1316 (quoting Renishaw PLC, 158 F.3d at 1250); see also Nystrom, 424 F.3d at 1142 (quoting this portion of Phillips). It also improperly imports into Claim 7 limitations subsequently claimed in Claim 11, which would render Claim 11 superfluous. See Merck & Co., 395 F.3d at 1372 ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so."); Power Mosfet Techs., L.L.C., 378 F.3d at 1410 (stating that interpretations of claims rendering claim terms superfluous is generally disfavored).

Indeed, the court concludes that the claim term "cavity cover member," in the context of Claim 7, is unambiguous: It means "a part of the apparatus for molding a plastic washing machine basket that is spaced about an end of the mold core and abutting the cavity sidewall members so as to define a cavity between the mold core and both the cavity cover member and the cavity sidewall members." This definition is not only consistent with the language of Claim 7, but consistent with the specification, to the extent that Claim 7 claims particular limitations for the "cavity cover member" among other limitations stated in the specification and claimed elsewhere in the claims of the '809 patent. See Phillips, 415 F.3d at 1314-16 (the specification remains of "central importance" to determining the proper construction of the term and may even be "dispositive"). Specifically, the specification identifies the "cavity cover member" as part of the molding apparatus, see the '809 patent, col. 3, ll. 39-44 ("The molding apparatus 60 further includes . . . a cavity cover member 102. . . ."), that is spaced about the end of the mold core, see id. at col. 3, ll. 44-45 ("a cavity cover member 102 . . . extending about an end of the mold core 90. . . ."), that abuts the cavity sidewall members, see id. at col. 3, ll. 44-47 ("a cavity cover member 102 . . . abutting cavity sidewall members 99. . . ."); col. 5, ll. 7-10 ("Cavity cover member 102 includes an annular flange portion 202 which is adapted to abut cavity sidewall members 99 . . .."); and, as a result, defines a cavity between the mold core and both the cavity cover member and the cavity sidewall members. See id. at col. 3, ll. 47-53 (defining "a second space therebetwen" the cavity cover member and the mold core and explaining that plastic material is injected "within the spaces between mold core 90 and both cavity cover member 102 and cavity sidewall members 99"); col. 5, ll. 36-39 (also explaining that plastic material is injected "into the spaced defined between the mold core 90 and both cover insert 105 of cavity cover member 102 and cavity sidewall members 99").

In short, the court finds that "cavity cover member" in Claim 7 unambiguously means "a part of the molding apparatus that is spaced about an end of the mold core and abutting the cavity sidewall members so as to define a cavity between the mold core and both the cavity cover member and the cavity sidewall members." No further construction of this term is required.

**Turn-Key** argues that the limitation "cavity situated internally to the boundaries of the parting surface" must be construed as referring to "at least one product molding cavity that is surrounded by the parting surface." Pl's Opening Brief at 8. Defendants, conversely, assert that the "cavity" is a space that is surrounded by a parting surface in all directions (i.e., all directions in the plane of that parting surface). In so arguing, they specifically object to Turn-Key's inclusion of the cavity walls of the mold which form the cavity into the definition of "cavity." KM, MC & Concord's Brief at 5; Pl's Opening Brief at 8. Turn-Key, by contrast, objects to Defendants' description of the cavity as being surrounded in the "plane of that parting surface" on the grounds that this wording leads to the "erroneous conclusion that the parting surface is only in one plane." Pl's Opening Brief at 8. The Court finds that Defendants' briefs do not make any argument about the cavity being surrounded in the "plane of that parting surface" and as such, considers this interpretation to be waived. Consequently, the only dispute concerns whether the cavity walls should be included in the definition of the term "cavity."

The Court construes "cavity" according to its ordinary and customary meaning, thus signifying a hollow space, Random
House Webster's College Dictionary at 209, and specifically construes "cavity" within the context of the '998 patent as a hollow space that is surrounded by a parting surface. In keeping with this interpretation, the Court declines to construe the "cavity" to include the cavity walls which actually form the hollow space. Nothing in the specification suggests that Sorenson, as patentee, intended to define "cavity" in his own terms rather than by its ordinary, customary meaning.

E. "Cell"

"Cell(s)" is (are) used in claims: 28 of the '303 Patent; 51 of the '018 Patent, 56-58, 61, 63, 65-66, 68-70 of the '381 Patent. 96 Medinol asserts that "cell" and "cells" mean "an arrangement of structural elements that defines an enclosed space." 97 Guidant proposes the following definition for these terms: "A first and second loop at the two longitudinal ends and a first and second flexible link that define a small enclosed space." 98

The plain meaning of "cell" is, as the Cordis court found, an arrangement of structural elements that defines an enclosed space. 99 Guidant's suggested construction cannot be adopted because it is overly restrictive. This definition only relates to the preferred embodiment depicted in Figures 7 and 8, and excludes the preferred embodiment reflected in Figures 1-4. Specifically, Figure 4 contemplates a cell that has four loops at the longitudinal ends, two interior longitudinal loops, and two flexible links. 100 The text of the patent itself indicates that Figures 4, 7, and 8 collectively represent two different "preferred embodiments" of the invention. 101 Accordingly, to restrict the term "cell" to the manner in which it is represented for purposes of Figures 7 and 8 would improperly exclude another preferred embodiment of the invention. 102 Accordingly, the term "cell" is defined as an arrangement of structural elements that defines an enclosed space.
2. "Cell analysis instrument" (claim 21)

Cytyc contends that a "cell analysis instrument" is "a device, not including a microscope station, that performs measurements or analysis of at least one cell feature on a specimen preparation, such as a specimen slide." TriPath's proposed definition is, "an instrument that automatically conducts a detailed assessment or examination of one or more cells to determine its nature or essential features." The disagreement centers on three issues. First, whether a cell analysis instrument is or includes a microscope station; second, whether it performs "measurements"; and third, whether it conducts assessments automatically or requires human input.

The above discussion of "microscope station" resolves the first issue. A "cell analysis instrument" is not, and does not include, a microscope station. Therefore, the remainder of this section will focus on the second and third issues.

The claims provide little guidance as to whether the cell analysis instrument performs measurements. Claim 21 states that the cell analysis instrument produces "analysis", but does not provide any further details. 969 patent at col. 14, 1. 33. Similarly, claim 24 states that the cell analysis instrument produces "analysis data." Id. at col. 14, 1. 49.

The specification is more helpful. As mentioned above, the specification lists examples of four types of cell analysis instruments. Id. at col. 9, 11. 25-30. The only type that it describes in detail is a particular brand of laser scanning cytometer, the CompuCyte LSC(tm) ("LSC"). Id. at col. 9, 1. 27.

The description states that the LSC can scan slides stained with fluorescent dyes to measure the constituents and morphology of cells on the slide and generate a computer database file containing a set of constituent values, morphology values and slide position values of every cell found by it on the slide.

Id. at col. 9, 11. 39-44 (emphasis added). This passage indicates that the patentee intended a cell analysis instrument to conduct measurements.

Moreover, the sentence introducing the four types of cell analysis instruments begins, "There are at least four types of instruments." Id. at col. 9, 11. 35 (emphasis added). The words "at least" make clear that the four listed types are examples; they are not the outer limits of the claims. The patentee does not define any specific method of analysis that the claimed "cell analysis instruments" must use. Therefore, to interpret "cell analysis instrument" as one that does not perform measurements would not only contradict the example in the preferred embodiment, but would improperly limit the scope of the claim. See Phillips, 415 F.3d at 1323 (warning against confining the claims to the embodiments in the specification when those embodiments are merely "exemplary in nature").

The claims are silent as to whether a "cell analysis instrument" operates automatically or requires human input. Again, the description of the LSC provides the only detailed example of a how a cell analysis instrument functions. The LSC clearly allows some human interaction. For example, the user may move the slide to view areas of interest and annotate the positions of specific cells while the slide is on the stage. Id. at col.9, 11. 61-62; col. 10, 11. 2-4. However, it does not appear that human interaction is required in order for the LSC to perform the analysis. Another embodiment specifically automates the movement of the microscope to locations of interest. Id. at col. 10, 11. 6-14.

Since much of the description of the LSC is written in the passive voice, it is difficult to discern whether a machine or a human is conducting the analysis. See id. at col. 9, 1. 34 -- col. 10, 1. 5. However, the specification is clear that the purpose of the "cell analysis instrument" is to perform "analysis", an activity that can be conducted with or without human interaction. The claims and the specification do not restrict the methods by which the "cell analysis instrument" can perform its analysis. Thus, I will not read into the claims a limitation that a "cell analysis instrument" must conduct analysis either automatically or with human input.

In sum, a "cell analysis instrument" is a device, not including a microscope station, that performs measurement or analysis...
of at least one cell feature on a specimen preparation, such as a specimen slide.

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c. Center Beam

The Court concludes, and the parties agree that the ordinary meaning of "center beam" is a structure that runs lengthwise in a rail car and serves two functions. First, it strengthens the bed of the car allowing for the use of a lighter underframe. Second, it provides a structure to secure the load to the car. See Pl. Reply Ex. 1, at P 7; Def. Opp. Ex. 1, at P 13.

Claims 1 and 2 of the '575 Patent discuss a vertical center beam assembly that extends the length of the car between the bulkheads. The preferred embodiment also states that the center beam assembly extends along the longitudinal centerline of the rail car.

Additionally, the summary of prior art in the '575 Patent discusses how one advantage center beam flat cars enjoy over other rail cars is that center beam flat cars are lighter because of the center beam. The '575 Patent uses the same type of center beam that had been used in previous center beam flat cars resulting in the center beam of the '575 Patent strengthening the bed of the rail car and allowing a lighter underframe to be used.

The summary of prior art discusses how lumber is stacked on both sides of the center beam in standard center beam flat cars. The '575 Patent has the same type of center beam, and the center beam is to be used the same way that it was used in standard center beam flat cars. The result is that the center beam in the '575 Patent is a structure to which the load being carried can be attached. See Findings of Fact, PP 111-112, 119-120, 124, 136, 139-142.

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C. Center of Gravity (Claim 1)

The term "center of gravity" is not used to mean the single point (in a three dimensional sense) at which the club head is balanced along the x, y, and z axis. Rather, in context, the term is used to mean the point on the striking face of the club at which the club head would be balanced on a pivot. The true three dimensional center of gravity point would, necessarily, be to the rear of the club striking face since the striking face is, by definition, a planar surface at the front of the club. Therefore, the true three dimensional center of gravity would have to be somewhere behind the striking face -- either inside a part of the club or in a cavity behind the rear wall of the striking surface.

There may well be problems with the patentee's use of the term "center of gravity." In the disclosure, he uses the term "center of gravity" and "center of percussion" as if these refer to the same point. However, the terms are not synonymous.

The Court construes the claim language "center of gravity" in the claim to have the ordinary, in context, meaning of that particular term. That is, the point on the striking face of the club head at which the club head would be in static balance on a pivot point and not the literal three dimensional center of gravity. The center of gravity apparently cannot be at the center of percussion. The Court is not now deciding any issue which might be presented by virtue of any misuse of the terms "center of gravity" and "center of percussion."

9 It appears that the center of gravity (defined in static context) and the center of percussion (defined in dynamic context) may never be at the same place since the movement of the club head will cause the center of percussion to be closer to the toe than the center of gravity.

--------- Footnotes ---------

9 It appears that the center of gravity (defined in static context) and the center of percussion (defined in dynamic context) may never be at the same place since the movement of the club head will cause the center of percussion to be closer to the toe than the center of gravity.

--------- End Footnotes ---------

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As is the case with all the disputed terms and phrases, the parties disagree in the first instance as to whether construction is necessary. Saint Gobain maintains that no construction is necessary, while Xinyi, on the other hand, urges that the term "centering" be construed to mean that the glazing is centered so that "a gap of even width remains all around the glazing." Saint Gobain responds that Xinyi's proposed construction is improper for at least three reasons: (1) it is contrary to the plain language of the claim itself; (2) its adoption would improperly import limitations from the specification; and (3) it is based upon a limitation found in the specification that relates not to the reissue patent now at issue, but to the earlier original-issue patent, which subsequently was expanded by the reissue patent in a way that rendered the specification language cited by Xinyi (which includes the proposed limitation) inapposite. Finding each of Saint Gobain's counterarguments meritorious, the Court rejects Xinyi's proposed construction and concludes that no construction is necessary.

Claim 14 teaches "[a] method of centering a glazing upon a mounting bracket." According to the claim language, the glazing has "a surface with a periphery for receiving a spacer," with the "periphery including a glazing edge[.]") The method of "centering" taught by claim 14 consists of "providing a glazing that has a spacer on at least a portion of its periphery," with the spacer having a lip portion extending beyond the edge of the glazing. When the glazing is placed in the mounting bracket, the "lip portion of the spacer contacts said bracket to provide a force for centering said glazing thereon, which force is sufficient to maintain centering of the glazing on the bracket and to provide a gap between said glazing edge and the bracket along said portion of said periphery of the glazing." According to Saint Gobain, the language at the end of the claim - "along said portion of said periphery of the glazing" - is of paramount importance because it defines the "centering" function performed by the lip portion of the spacer. Specifically, when read as a whole, the claim language indicates that "centering" occurs only along the portion of the periphery of the glazing to which the spacer is attached.

Xinyi concedes that claim 14 does not require that the glazing have a spacer along its entire periphery but, as the claim language clearly specifies, only on "at least a portion" thereof. Nevertheless, Xinyi argues that "centering" must be construed as requiring "a gap of even width all around the glazing," i.e., that the glazing must be centered uniformly along all four sides, irrespective of whether all four sides have a spacer. In support of this construction, Xinyi cites the specification, which provides that "[d]uring insertion of the glazing into the window frame, glazing is automatically centered, so that a gap of even width remains all around the glazing." (Col. 3:13-15.) Xinyi claims that here the patentee acted as his own lexicographer by setting forth a specific definition for "centering."

A patentee may act as his own lexicographer by specifically defining terms of a claim contrary to their ordinary meaning. Abraxis Bioscience, Inc. v. Mayne Pharma (USA) Inc., 467 F.3d 1370, 1376 (Fed. Cir. 2006) (quoting Chef Am., Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1374 (Fed. Cir. 2004)). "Interpretation of descriptive statements in a patent's written description is a difficult task, as an inherent tension exists as to whether a statement is a clear lexicographic definition or a description of a preferred embodiment." E-Pass Techs., Inc. v. 3COM Corp., 343 F.3d 1364, 1369 (Fed. Cir. 2003). In such situations, the court aims "to interpret claims 'in view of the specification' without unnecessarily importing limitations from the specification into the claims." Id. (citing Tex. Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1204-05 (Fed. Cir. 2002)). "When a patentee acts as his own lexicographer in redefining the meaning of particular claim terms away from their ordinary meaning, he must clearly express that intent in the written description." Merck & Co. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1370-71 (Fed. Cir. 2005) (citing Bell Atl. Network Servs. v. Covad Communications Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001)). The statement of intent in the specification "must have sufficient clarity to put one reasonably skilled in the art on notice that the inventor intended to redefine the claim term." Id. (citations omitted).

Saint Gobain explains that '395 patent is a reissue patent and that the statement from the specification cited by Xinyi relates to the claims in the original patent, not the reissue. The original is U.S. Patent No. 5,519,979 ("the '979 patent"), issued May 28, 1996. It is undisputed that the specification of the '979 patent includes the exact same statement. ('979 patent, Defs.' Ex. B, Col. 3:15-17.) This is crucial because, according to Saint Gobain, the specification language Xinyi claims supplies the definition of "centering" actually addresses the claims of the earlier original patent (which also appear in the reissue patent but are not asserted in this case). The claims in the '979 patent were much narrower than those of the reissue patent. The '979 patent described a glazing with a spacer on substantially its entire periphery (Id., Col. 4:58-64), while the pertinent claims of the '395 reissue patent describe a glazing with a spacer on at least a portion of its periphery. ('395 reissue patent,
Col. 6:16-21.) Saint Gobain's clear purpose in seeking the reissue patent was to expand the claims to cover a broader invention; specifically, to claim a glazing with a lip on only a portion of its periphery (i.e., on one or more of the four sides) rather than on substantially the entire periphery (i.e., on all four sides only).

2 Claim 1 of the '979 patent is exactly the same as claim 1 of the '395 reissue patent. Claim 1 is not asserted in this case.

Xinyi attempts to bolster its proposed construction by citing prosecution history, but it cites the history of the '979 patent, not the '395 reissue. (Defs.' Claim Constr. Mem., Doc. No. 98, at 6, 8-9; Tr. of Nov. 21, 2008 Markman Hearing, Doc. No. 105, 35:15-21, 67:4-5, 80:13-18.) Under the circumstances presented, this evidence merely reinforces Saint Gobain's explanation. Indeed, Xinyi's references to the prosecution history illustrate that this limitation set forth in the specification -- describing the "gap of even width all around the glazing" -- relates to the '979 patent, which required that the spacer be present on all four sides of the glazing, and does not apply to the asserted claims of the '395 reissue patent (which did not appear in the '979 patent). These facts (particularly the '979 specification and the '979 prosecution history) illustrate rather vividly that Xinyi's proposed construction relates to the earlier invention, which had a spacer with a lip on substantially the entire periphery. And while the '395 reissue patent encompasses such an invention, it is not so limited. Indeed, the motivation for obtaining the '395 reissue patent was to claim a broader version of the earlier invention, one that did not require a spacer on all four sides and, correspondingly, did not provide for centering on all four sides either.

Furthermore, the prosecution history also demonstrates that the term "centering" possessed an ordinary meaning to a person of ordinary skill in the art before the '979 patent was issued, independent of any effort by the applicant to define the term in the specification. The examiner's remarks evince a fluent analysis of the "centering" function as it related to both the patent being examined (the '979 patent) and the prior art. (See, e.g., Def.'s Ex. E, 76-77, 80.) Indeed, the examiner's initial rejection was based at least in part upon his conclusion that the prior art already disclosed a lip having "an inherent tendency to center the glazings [. . .]." (Id. at 80.) Saint Gobain responded by amending the claims to provide more specificity and argued that the prior art did not, in fact, disclose an invention that performed the centering function. (Id. at 83-87.) The examiner accepted this argument and allowed the claims. (Id. at 91.) Not once during this discourse is it indicated, or even implied, that the "centering" under discussion is "centering" as expressly defined by the applicant, rather than as its plain and ordinary meaning was understood by the examiner. Nor does the prosecution history reveal any convincing evidence that the ordinary meaning of the term necessarily required that the centering function occur on all four sides of the glazing (even though the claimed invention in fact may have provided for such centering since at the time the claims called for a spacer on substantially entire the periphery of the glazing).

Xinyi's only response to this argument is that none of the historical context (in particular, the expansion of the claims from the '979 patent to the '395 reissue patent) makes any difference. Xinyi argues that the only relevant change from the '979 patent to the '395 reissue patent was the position of the spacer, not the nature or location of the centering. Xinyi takes the position that if Saint Gobain wanted to change the '979 patent to provide for centering only on the portion of the periphery having a spacer, rather than around the entire periphery, it could have, but needed to do so expressly.

The Court disagrees. The term "centering" had an ordinary meaning to one of skill in the art before it was used by Saint Gobain, first in the '979 patent and, later, in the '395 reissue patent. That ordinary meaning was intended to govern the use of the term throughout. None of the evidence cited by Xinyi persuasively establishes that Saint Gobain's use of the term "centering" was intended to represent a departure from that ordinary meaning. Indeed, the specification lacks any evidence of a clear expression of an intention by the inventor to redefine the term "centering." Likewise, the claim language itself makes no mention of the need for "a gap of even width all around the glazing." Xinyi's argument always returns to this specification language, which Saint Gobain has demonstrated relates directly to the claims originally present in the '979 patent which, although part of the '395 reissue patent, are not asserted in this action.

Moreover, even if the specification language did relate specifically to the '395 patent, the absence of any such language from the claims themselves clearly demonstrates that the inventor never intended the claims to be so limited. As the Federal Circuit has frequently admonished, it is improper to "at any time import limitations from the specification into the claims." CollegeNet, Inc. v. Apply Yourself, Inc., 418 F.3d 1225, 1231 (Fed. Cir. 2005) (citing Teleflex, Inc. v. Ficosa N. Am. Corp.,
299 F.3d 1313, 1326 (Fed. Cir. 2002)). Specifically, the Federal Circuit "has consistently adhered to the proposition that courts cannot alter what the patentee has chosen to claim as his invention, that limitations appearing in the specification will not be read into claims, and that interpreting what is meant by a word in a claim 'is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.'" Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989) (quoting E.I. Du Pont De Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir. 1988)). Having concluded that the inventor did not use the specification to specifically define "centering" in the manner Xinyi suggests, the Court finds that adopting Xinyi's proposed construction, which is based entirely upon a single statement in the specification, would be inappropriate.

The interpretation of the evidence advocated by Xinyi amounts to a contention that in order to achieve its purpose in obtaining the '395 reissue patent, Saint Gobain was required to go back and delete the language concerning "a gap of even width all around the glazing" from the specification, or else be required to produce an invention that performed the centering function on all four sides of the glazing notwithstanding the absence of a spacer (which all agree is what performs the centering function) from as many as three of the four sides. Neither the law nor the relevant facts support such an interpretation. The claim term to which the specification language is particularly relevant remains a part of the reissue patent; it is simply not at issue in this litigation. Saint Gobain had no reason to believe that such language would somehow limit its reissue claims by infecting those claim terms with teachings that did not apply to those claims and limited them in ways Saint Gobain did not intend. Most importantly, under such circumstances, a person of skill in the art would not understand such a limitation -- which Xinyi insists must inform the understanding of the term "centering" -- to be consistent with the ordinary meaning of that term.

In light of all the intrinsic evidence, the Court finds that the patentee did not act as his own lexicographer with respect to the term "centering," and, furthermore, that adoption of Xinyi's proposed construction of "centering" would entail improperly importing a limitation from the specification into the claim. The plain and ordinary claim language satisfactorily describes the centering function and, under the circumstances, in the absence of countervailing evidence in the specification or prosecution history, that language must control. See DSW, Inc. v. Shoe Pavilion, Inc., 537 F.3d 1342, 1347 (Fed. Cir. 2008) (citing Northern Telecom Ltd. v. Samsung Elecs. Co., 215 F.3d 1281, 1295 (Fed. Cir. 2000)). Accordingly, the Court declines Xinyi's proposal and instead finds that no construction is necessary.

655 e. "central drainage aperture"

The term "central drainage aperture" appears in claims 9 and 10 of the '712 Patent. Baldwin asserts that the phrase has a meaning readily understood by one of skill in the art and construction is not necessary. Baldwin asserts that this term should be construed as "an opening in the second end cap at the base of a sloped interior surface that allows water and other contaminants to flow out from the open filter interior." Baldwin argues that because the term "drainage" modifies "aperture," the claimed aperture must include some limitation beyond simply being an opening. Baldwin points to the several portions of the patent specification that it contends set forth the overall arrangement that makes the bottom end cap opening a drainage aperture. In addition, Baldwin claims that the patent applicant disavowed any construction of drainage aperture that would broadly cover any opening in an end cap. In particular, Baldwin argues that the applicant did so to overcome inefficient drainage of the prior art. Baldwin also directs the Court to certain statements made in a patent application from which the '712 Patent claims priority describing the prior art and certain drainage structures therein. 12

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11 The terms "drainage aperture" and "aperture" appear in claim 1 of the '366 Patent and claim 1 of the '009 Patent, respectively. Baldwin proposes that the terms be construed consistently.

12 Such statements include:

Exhibits 1-3 of the Declaration show an end cap with an angled surface angled toward an aperture. However, . . . the interior surface is not angled from an outside edge toward the central drainage aperture and is not constructed and arranged to funnel moisture to a central drainage aperture.
Exhibit 4 shows . . . the bottom cover G shown in Exhibit 1 . . . Further the interior surface is not angled from the outside edge toward a central aperture.

Exhibit 6-8 . . . Again, these exhibits do not show an end cap with an interior surface angled from an outside edge toward a central drainage aperture.

Upon examination of the intrinsic evidence, the Court determines that one of the ordinary skill in the art would define "drainage aperture" without reference to the slope or configuration of the surrounding end cap surface. Instead, one skilled in the art would understand that the "drainage aperture" and surrounding surface are separate and distinct. Looking first to the language of the claims, the Court discerns that there is no ambiguity in the term "drainage aperture"—it is simply a hole or an opening in the second end cap. See '712 Patent, claim 9 ("said second end cap includes a central drainage aperture"); id., claim 10 ("said second end cap has: a central drainage aperture"). Neither claim contains language regarding the slope or configuration of the internal surface of the second end cap that surrounds the "drainage aperture." Instead, the claims recite only the "central drainage aperture." The specification reinforces the separate nature of the "drainage aperture" and the surrounding interior surface:

The second end cap preferably has a central drainage aperture and an interior surface constructed and arranged to funnel moisture, collected on the interior surface of the second end cap, to the central drainage aperture.

'B712 Patent, col. 3, ll. 37-41; '366 Patent, col. 3, ll. 56-59. The use of the word "and" in the above example demonstrates that the drainage aperture and the interior surface are separate structures.

Baldwin suggests that the claim term "drainage aperture" must be construed to include the surrounding internal surface of the second end cap because the only embodiment described in the specification is of a drainage aperture being at the base of a sloping surface. The Court rejects this suggestion. It would be improper to read into the claim the structure of the interior surface described in this specific embodiment. 13 See Phillips, 415 F.3d at 1323 (noting that the Federal Circuit has "expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment"); Playtex, 400 F.3d at 908 ("Claims of a patent may only be limited to a preferred embodiment by the express declaration of the patentee.").

The second end cap preferably has a central drainage aperture and an interior surface constructed and arranged to funnel moisture, collected on the interior surface of the second end cap, to the central drainage aperture.

'B712 Patent, col. 3, ll. 37-41; '366 Patent, col. 3, ll. 56-59. The use of the word "and" in the above example demonstrates that the drainage aperture and the interior surface are separate structures.

Baldwin suggests that the claim term "drainage aperture" must be construed to include the surrounding internal surface of the second end cap because the only embodiment described in the specification is of a drainage aperture being at the base of a sloping surface. The Court rejects this suggestion. It would be improper to read into the claim the structure of the interior surface described in this specific embodiment. 13 See Phillips, 415 F.3d at 1323 (noting that the Federal Circuit has "expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment"); Playtex, 400 F.3d at 908 ("Claims of a patent may only be limited to a preferred embodiment by the express declaration of the patentee.").

The Court notes that the specification describes additional functions of the interior surface, yet such features are not read into the construction of the drainage aperture. For example, "[i]n some embodiments recessed, radial troughs extending outwardly and upwardly from central aperture 96 can be used to facilitate this flow. . . . An advantage to troughs 99 is that should a leaf or other large particulate material become positioned over central aperture 96, water can still flow into and through aperture 96 by means of the troughs." '712, col. 6, ll. 52-65; see also '366 Patent, col. 8, ll. 47-62; '009 Patent, col. 8, ll. 50-65.

Baldwin's disavowal arguments are also unavailing. First, Baldwin has not demonstrated that a sloped interior surface is necessary to achieve significant drainage. The Court notes that the filter is installed vertically. Thus, water will filter out through the bottom end cap through the drainage aperture even without a sloped interior surface. Second, Baldwin relies on remarks made during the prosecution of a related application that eventually matured into U.S. Patent No. 5,612,992. At the time the remarks were made, however, the pending claims included both a central drainage aperture and an interior surface "being angled from the outer region toward the central drainage aperture." Because those claims describe structure different from that of claims 9 and 10 of the '712 Patent, which do not recite the surface surrounding the aperture, the remarks are not

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14 Moreover, the Court notes that both the '366 and '009 Patents contain dependent claims that contain limitations describing the structural surface surrounding the aperture as being "angled" or "an inner funnel." See '366 Patent, claim 3; '009 Patent, claim 15. Thus, it is presumed that the patentee did not intend for the drainage aperture to include the inner surface limitation in the independent claims. See Phillips, 415 F.3d at 1315 ("the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim").

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In sum, the Court concludes that the intrinsic evidence does not support Baldwin's proposed construction. Accordingly, the Court declines to construe to claim language.

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The only issue on appeal is whether the district court correctly construed the term "central longitudinal groove" to require that the width of the groove must be less than the combined width of the fins. Claim construction is a question of law, see Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2D (BNA) 1321, 1329 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996), that we review de novo on appeal, see Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 U.S.P.Q.2D (BNA) 1169, 1174 (Fed Cir. 1998) (en banc). Proper claim construction entails an analysis of a patent record's intrinsic evidence—the claim language, the written description, and the prosecution history. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83, 39 U.S.P.Q.2D (BNA) 1573, 1576-77 (Fed. Cir. 1996). If the meaning of a claim is unambiguous from the intrinsic evidence, then a court may not rely on extrinsic evidence for purposes of claim construction. See Key Pharm., Inc. v. Heron Labs. Corp., 161 F.3d 709, 716, 48 U.S.P.Q.2D (BNA) 1911, 1917 (Fed. Cir. 1998) (explaining that a court may receive extrinsic evidence to educate itself about the underlying technology, but it cannot use extrinsic evidence "to arrive at a claim construction that is clearly at odds with the claim construction mandated by the [intrinsic evidence]").

Claim construction analysis begins with the claim language itself. See Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971, 50 U.S.P.Q.2D (BNA) 1465, 1467 (Fed. Cir. 1999); Renishaw PLC v. Marposs Societa per Azioni, 158 F.3d 1243, 1248, 48 U.S.P.Q.2D (BNA) 1117, 1120 (Fed. Cir. 1998). As a starting point, the court gives claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art. See Hoechst Celanese Corp. v. BP Chems., Ltd., 78 F.3d 1575, 1578, 38 U.S.P.Q.2D (BNA) 1126, 1129 (Fed. Cir. 1996) (stating that the court assigns a claim term the meaning "that it would be given by persons experienced in the field of invention"); Markman, 52 F.3d at 980, 34 U.S.P.Q.2D (BNA) at 1330. Here, the relevant claim language recites a "central longitudinal groove in the underside of the heel part extending forwardly through the heel part into the underside of the sole part to divide the lower surface of the heel part into a pair of fins." Col. 5, ll. 45-58. Thus, our analysis focuses on the word "groove" in the term "central longitudinal groove." The ordinary and accustomed meaning of "groove," as the district court correctly found, is a "relatively long and narrow structure."

The claim term's ordinary and accustomed meaning initially serves as a default meaning because the patentee may act as a lexicographer and ascribe a different, or modified, meaning to the term. See Multiform Desicants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477, 45 U.S.P.Q.2D (BNA) 1429, 1432 (Fed. Cir. 1998) (observing that an inventor, acting as a lexicographer, may bestow "a special meaning to a term in order to convey a character or property or nuance relevant to the particular invention"); Intelecall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1388, 21 U.S.P.Q.2D (BNA) 1383, 1674 (Fed. Cir. 1994). The court, therefore, must examine a patent's specification and prosecution history to determine whether the patentee has given the term an unconventional meaning. See Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2D (BNA) at 1577 (holding that "it is always necessary to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning [because the specification] acts as a dictionary when it expressly defines terms . . . or when it defines terms by implication" (emphasis added)); Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2D (BNA) 1673, 1676 (Fed. Cir. 1995) (determining that "arguments and amendments made during the prosecution of a patent application . . . as well as the specification and other claims must be examined to determine the
meaning of terms in a claim" (emphasis added)). If the patentee has not done so, the term's ordinary and accustomed meaning controls. See York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572, 40 U.S.P.Q.2D (BNA) 1619, 1622 (Fed. Cir. 1996) ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning.").

The written description of the '792 patent supports the district court's initial interpretation of groove as a long and narrow structure. The written description teaches an inverted groove that divides a heel lengthwise and forms fins on each side. It thus follows that the width of the fins is inversely proportional to the width of the groove. The written description also explains that the claimed invention improves shock absorption stability because "a large part of the total heel area is deployed in shock absorption, [resulting] in a very good cushioning effect." Col. 4, ll. 36-38 Thus, a narrow groove complemented by a wide pair of fins is consonant with the purpose of the invention. Cf. Renishaw Plc, v. Marposs Societa' Per Azioni, 158 F.3d 1243 at 1250, 48 U.S.P.Q.2D (BNA) at 1122 (reasoning that a claim interpretation that aligns with the purpose of the invention is likely to be correct).

Review of the prosecution history, however, reveals that the inventor disclaimed a particular interpretation of groove, thereby modifying the term's ordinary meaning. See CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1158, 42 U.S.P.Q.2D (BNA) 1577, 1585 (Fed. Cir. 1997) (observing that statements made during prosecution commit the inventor to a particular meaning of a claim term that is binding during litigation); Southwall Techs., 54 F.3d at 1576, 34 U.S.P.Q.2D (BNA) at 1676 ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution."). During prosecution of the '792 patent, the inventor submitted drawings comparing the features of the claimed invention to a hypothetical combination of the prior art Lombard and Bowerman patents. The inventor then distinguished the prior art by arguing that the claimed invention "provides a much narrower groove for a totally different purpose, namely . . . to involve as much of the underneath surface of the footwear as possible in a cushioning and supporting function." Flowing from this statement is the inventor's clear disavowal of footwear having a groove width greater than that disclosed in the prior art. The Lombard patent, in turn, teaches a shoe with a groove width greater than the combined width of the two fins. Thus, the district court correctly held that the inventor necessarily defined the central longitudinal groove as requiring a width that must be less than the combined width of the two fins.

On appeal, HHI asserts that the district court incorrectly analyzed the prosecution history. HHI contends that a reasonable competitor would understand that the inventor's "much narrower groove" statement was an erroneous statement rather than a disavowal of a particular width relationship because the statement was made in reference to drawings submitted during prosecution, and the specification contains figures depicting a groove that is wider than the fins.

HHI's argument is unavailing. The '792 patent is devoid of any indication that the proportions of the groove and fins are drawn to scale. HHI's argument thus hinges on an inference drawn from certain figures about the quantitative relationship between the respective widths of the groove and fins. Under our precedent, however, it is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue. See In re Wright, 569 F.2d 1124, 1127, 193 U.S.P.Q. (BNA) 322, 335 (CCPA 1977) ("Absent any written description in the specification of quantitative values, arguments based on measurement of a drawing are of little value."); In re Olson, 41 C.C.P.A. 871, 212 F.2d 590, 592, 101 U.S.P.Q. (BNA) 401, 402 (CCPA 1954); cf. Manual of Patent Examining Procedure § 2125 (1998). Thus, in the present case, a reasonable competitor, being aware that figures in a patent are not drawn to scale unless otherwise indicated, would understand the arguments in the prosecution history as clearly disclaiming a groove having a width greater than the combined width of the two fins.

HHI's argument therefore reduces to a request for a mulligan that would erase from the prosecution history the inventor's disavowal of a particular aspect of a claim term's meaning. Such an argument is inimical to the public notice function provided by the prosecution history. The prosecution history constitutes a public record of the patentee's representations concerning the scope and meaning of the claims, and competitors are entitled to rely on those representations when ascertaining the degree of lawful conduct, such as designing around the claimed invention. See Vitronics, 90 F.3d at 1583, 39 U.S.P.Q.2D (BNA) at 1577; Lemelson v. General Mills, Inc., 968 F.2d 1202, 1208, 23 U.S.P.Q.2D (BNA) 1284, 1289 (Fed. Cir. 1992). In the present case, the inventor's statements about groove width are part of the prosecution history and form the totality of the public record upon which competitors rely. See Elkay Mfg. Co. v. Ebcio Mfg. Co., 192 F.3d 973, 979, 52 U.S.P.Q.2D (BNA) 1109, 1113 (Fed. Cir. 1999) (stating that the totality of the prosecution history must be considered and reasoning that it is "irrelevant whether [the inventor] relinquished [a] potential claim construction in an amendment to the claim or in an argument to overcome or distinguish a reference"). Were we to accept HHI's position, we would undercut

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the public’s reliance on a statement that was in the public record and upon which reasonable competitors formed their
business strategies.

HHI further cites Intervet Am. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 12 U.S.P.Q.2D (BNA) 1474 (Fed. Cir. 1989), for the
proposition that erroneous statements made during prosecution do not affect claim construction analysis. Intervet is
inapposite to this case and does not support HHI's cause. In Intervet, the patentee, responding to an office action, amended
three claims to include the term "single administration." Id. at 1053-54, 12 U.S.P.Q.2D (BNA) at 1476-77. Then, in the
remarks accompanying the amendment, the patentee made an unqualified statement that the "claims are restricted to a single
vaccination." See id. at 1054, 12 U.S.P.Q.2D (BNA) at 1477. On appeal, the issue was whether claims without the term
"single administration" nonetheless included that limitation because of the patentee's remarks. See id. This court held that
the remarks were clearly erroneous and did not apply to all the claims, but were limited to only those claims that included
the term "single administration." See id. Thus, although not invoking the exact terminology, we implicitly reasoned that a
reasonable competitor would perceive the remarks as erroneous and understand them as applying only to the amended
claims. The court also concluded that, to the extent the examiner may have relied on those remarks in allowing all the
claims to issue, such confusion was likely cured by subsequent communications between the examiner and the patentee. See
id.

The present circumstances are distinct from Intervet. Here, unlike Intervet, no conspicuous error exists. The term "central
longitudinal groove" is present in all three claims of the '792 patent. Thus the inventor's statements and submitted drawings
concerning groove width apply with uniform force to all the claims. See Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d
1335, 1348, 47 U.S.P.Q.2D (BNA) 1418, 1427 (Fed. Cir. 1998) ("Absent qualifying language in the remarks, arguments
made to obtain the allowance of one claim are relevant to interpreting other claims in the same patent.") Accordingly, a
reasonable competitor reading the '792 patent's prosecution history would have no reason to believe that a mistake was
made or that the inventor meant anything other than what he said. Also, unlike Intervet, the '792 patent issued immediately
after the inventor's arguments regarding the prior art; consequently, the examiner continued to understand that the groove in
the '792 patent was narrower than the one in the Lombard patent.

CONCLUSION

Because we hold that during the prosecution of the '792 patent, the inventor disclaimed a groove width greater than the
combined width of the fins, we affirm the district court's claim construction.

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In this case, the claim limitations at issue in Claim 10 consist of an exercise and play apparatus comprising:

(1) "an inflatable, substantially horizontally oriented bottom wall having an upper surface, a lower surface and a
perimeter";

(2) the upper and lower surfaces [of the bottom wall] being spaced apart throughout the bottom wall by a distance
sufficient to generate a trampoline effect based on air pressure between the upper and lower surfaces";

(3) "an inflatable, substantially vertically oriented sidewall extending upwardly from and continuously along the upper
surface of the bottom wall";

(4) "said sidewall defining a continuous perimeter of an enclosed, upwardly open central play area on said bottom wall
around said play area"; and

(5) "[said sidewall] extending upwardly from said bottom wall to provide a cushioned perimeter wall around said play
area, the sidewall having a height and thickness selected to retain, as well as cushion the impact of users jumping on the
upper surface of the bottom wall."

[Second] Decl. of David N. Makous, Exh. E at 63-64.
The Court has already determined that the term "substantially horizontally oriented" is something that "lies relatively flat." September 19, 1997 Order at 18. The Court has also determined that the phrase "upwardly open central play area" is properly interpreted to define the area where "one or more users can . . . enter the play area and jump, bounce, or crawl on the bottom wall." September 19, 1997 Order at 18. The Court has further noted that the perimeter of the play area in the '738 patent is explicitly defined by the sidewall, which "extend[s] upwardly from the outermost bottom wall compartment or section 20." September 19, 1997 Order at 19. Finally, the Court has held that the bottom wall and the sidewall of the '738 patent cooperate to define the play area. September 19, 1997 Order at 19.

1. Claim Language

The disputed language from claim 1 reads as follows: "a stationery optical scanning head located between said feed and stacking stations for scanning a preselected segment of a central portion of each bill . . . " '196 Patent, Col. 31, ll. 55-60. Glory asks this Court to construe the claim such that the "central portion" from which the "preselected segment" is taken is at the "geometric center" of the bill.

Claim 1 describes not one predetermined segment or one central portion, but "a predetermined segment" in "a central portion" of the bill. Standing alone, a claim containing the article "a" or "an" means "at least one." See Crystal Semiconductor Corp., 246 F.3d at 1347. Glory correctly states that the use of the phrase "said predetermined segment of a bill" later in claim 1 implies one predetermined segment per type of bill, but that does not necessarily lead to an inference that the preselected segment for the bill must be at the geometric center of the bill. The use of "said predetermined segment" alone does not limit the central portion to the geometric center of the bill.

Cummins also points to the existence of dependent claim 8 as support that "central portion" does not limit the scanned segment solely to the geometric center of the bill. The context of the surrounding words in a claim must be considered in determining the ordinary and customary meaning of a term. See ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1088 (Fed. Cir. 2003). One such context is the presence of a dependent claim adding a particular limitation, which "gives rise to a presumption that the limitation in question is not present in the independent claim." Phillips, 415 F.3d at 1314-15; see also Wenger Mfg., Inc. v. Coating Mach. Sys. 239 F.3d 1225, 1233 (Fed. Cir. 2001). Claim 8 describes: "The currency counting and evaluation device of claim 1 wherein said preselected segment of each bill is located in the central region of the bill." '196 Patent, Col. 32, Claim 8. If a dependent claim provides an additional limitation of a more specific location for a preselected segment, it can be inferred that the independent claim 1 does not provide such a limitation on location. Otherwise, claim 8 would become superfluous. The use of "central region" in claim 8 implies that there is a subset of "central portion" that is the "central region." Unfortunately, this claim alone does not clarify the relative size of either of these terms in relation to the size of the bill. The claim language, standing alone, does not allow the Court to determine the meaning of "central portion."

2. Specification

A person of ordinary skill in the art reads a claim term not only in the context of a claim, but also in the context of the patent and its specification. Phillips, 415 F.3d at 1313. In reviewing the specification of the '196 Patent, the Court finds that the specification is ambiguous. Both parties have focused on one area of the specification discussing the "central portion":

In the case of U.S. currency, for instance, it has been determined that the central, approximately two-inch portion of currency bills, as scanned across the central section of the narrow dimension of the bill, provides sufficient data for distinguishing among the various U.S. currency denominations on the basis of the correlation technique used in this invention. Accordingly, the optical encoder can be used to control the scanning process so that reflectance samples are taken for a set period of time and only after a certain period of time has elapsed since the borderline has been detected, thereby restricting the scanning to the desired central portion of the narrow dimension of the bill.

'196 Patent Col. 7 11. 29-42. Glory argues that this section suggests that the patent is limited to the two-inch portion that is at the center of the bill. Glory Const. Br. at 2. But the specification describes the central portion as approximately two inches "as scanned across the central section of the narrow dimension." That implies that the central portion is either in a different
direction from, or a subset of, the central section, but does not give a sense of whether that is necessarily at or around the geometric center.

In the paragraph preceding the above-quoted text, the specification explains why the "central, two-inch portion" is important - because the distance between the borderline of U.S. currency are "an absolute reference point" approximately two-inches apart, while the distance between the borderline and the actual edge of the bill may differ from bill to bill "due to the relatively large range of tolerances permitted during printing and cutting of currency bills." Col. 7 ll. 5-17. This explanation clarifies that the "central portion" is a narrow strip measured between the borderlines of the narrow dimension of the bill, while "central section" defines where on the horizontal dimension of the bill the machine will scan.

Glory relies upon the drawings accompanying the patent's specification as evidence that the patent holders intended that the invention scan only the geometric center of the bills. It is true that the figures accompanying the patent's preferred embodiment depict scanning in the geometric center of the bill. A preferred embodiment, however, is just that - a preference. See Texas Instruments, Inc. v. United States Int'l Trade Comm'n, 805 F.2d 1558, 1563 (Fed. Cir. 1986) ("This court has cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification."). While a claim cannot be construed as something that is excluded by the language of the specification, the specification - like the claim language - does not necessarily lead to a conclusion about the meaning of "central portion."

3. Prosecution and Subsequent Patents

Finally, while neither party relies upon the prosecution history of the '196 Patent to support claim construction, Glory argues - and the '196 Opinion agreed - that the Court could consider the specification of a subsequent, continuation-in-part patent to in interpreting the meaning of terms in the '196 Patent. The subsequent patent, No. 6,381,354 (the "'354 Patent") covers currency counting devices for foreign bills, and states in relevant part:

In adapting . . . U.S. Patent No. 5,295,196 to optimize the scanning of currencies from countries other than the United States, it is first noted that while it has been found that scanning along the central portion of the green side of U.S. bills provides good patterns to discriminate between the different U.S. denominations, foreign bills may require scanning along segments located in locations other than the center . . . it may be . . . desirable to scan German marks. . . along a segment 1 inch (2.54 cm) to the left of center along the top face of a bill while it may be desirable to scan British pounds along a segment 1.5 inches (3.81 cm) to the right of center.

The '196 Opinion relied upon the recent opinion from the Federal Circuit, Microsoft Corp. v. Multi-Tech Systems to draw an inference that the language in the 354 Patent limited the claims of the '196 Patent to the "geometric center". In Microsoft, the Federal Circuit reviewed statements made during the prosecution of a subsequent, related patent in construing the claims of an earlier patent. Microsoft, 357 F.3d at 1349-50. Glory suggests that the statements about the '196 Patent made in the specification of the '354 Patent can be used to interpret the terms of the '196 Patent. Cummins urges this Court to discredit all arguments using Microsoft because that case relied upon the prosecution history of a subsequent patent in which the patent specification was identical to the specification of the earlier patent, and is therefore distinguishable from the patents at issue in this case.

It is the statement about the '196 Patent in the '354 Patent specification that convinces this Court that the term "central portion" means at or near the geometric center of the bill. As Cummins points out, the facts of this case can be distinguished from those in Microsoft because the relevant statement is in the specification rather than the PTO prosecution. But the Microsoft court's logic-that a patentee's considered statement about the scope of an earlier patent in an official proceeding on a later patent is relevant to determining the scope of the earlier patent - applies with equal, if not more, force to statements made in a later specification. Unlike a statement before the PTO, made in order to get the PTO to accept an application, a specification is directed to all practitioners skilled in the art in the field. 35 U.S.C. § 112. Thus, the patentee has even more incentive to "exercise care in characterizing the scope of its invention" in a subsequent specification as it does when describing an earlier invention during prosecution. Microsoft, 357 F.3d at 1350. The fact that Cummins described the '196 Patent as scanning the center in the specification rather than in prosecution proceedings does not render the description irrelevant to construing the scope of the '196 Claims.
The Microsoft case's holding also does not hinge on the fact that the specifications of the two patents in that case were identical. The court's conclusion that "any statement of the patentee in the prosecution of a related application as to the scope of the invention [is] relevant to claim construction" does not rely upon identical specifications. Id. at 1350. Moreover, the body of precedent in Microsoft relied upon Jonsson v. Stanley Works, 903 F.2d 812 (Fed. Cir. 1990) and Wang Lab., Inc. v. America Online, Inc., 197 F.3d 1377 (Fed. Cir. 1999), both of which used the prosecution histories of Continuation-in-Part patents. Neither of those cases relied upon the existence of common specifications, but rather relied upon the existence of common subject matter.

Finally, the purpose served in the Microsoft holding by the common specification is not present in this case. In the usual case, the term in a related patent with identical specification is used as an inference that the patent holder intended the two terms to have the same meaning. In this case no inference is required, because the patent holder directly described the term "central portion" in the '196 Patent as being in the center, and distinguished the continuation-in-part '354 Patent because it would cover devices that scan "along segments located in sections other than the center." In the face of that direct evidence, the circumstantial inference that would be drawn from a common specification is not necessary.

Therefore, the Court finds that the term "central portion" as used in the '196 Patent means scanning at or near the geometric center of the bill.

2. Claims 16-19

The parties dispute the construction of two different phrases found in Claim 16: "centrifugal unit" and "channels extending radially in the base". Claim 16 reads:

A centrifugal unit comprising a centrifugal component and a plurality of tubes, said unit to turn around an axis to separate the components of a liquid, blood in particular, with such plurality of tubes displaying a single tubular component wherein said unit includes:

- a base in the form of a disk;
- an external cylindrical wall extending from the base;
- an internal cylindrical wall extending from the base and separated by the external wall so as to define a ring-shaped separation chamber among each other;
- a tubular housing almost extending co-axially to said rotating axis from the base to receive an end of a tubular unit; and
- a plurality of channels extending radially in the base of the centrifugal unit, with each channel providing communication between a respective tube of the tubular unit and the separation chamber, with the centrifugal unit having a radius between 25 and 50 mm and a height between 75 and 125% of the radius.

(emphasis added).

a. "Centrifugal Unit"

The phrase "centrifugal unit" appears in each of the 22 claims of the '983 patent. In nearly all of those claims, the parties agree that "centrifugal unit" should be construed as referring exclusively to the vessel in which the centrifugation takes place. The parties disagree, however, with respect to how the phrase should be construed in Claim 16 (and dependent Claims 17-19).

The general rule of thumb in claim construction is that:

same terms appearing in different portions of the claims should be given the same meaning unless its clear from the
specification and prosecution history that the terms have different meanings.

Frank's Casing Crew & Rental Tools, Inc. v. Weatherford Int'l, Inc., 389 F.3d 1370, 1377 (Fed. Cir. 2004). Here, rather atypically, both parties advocate for the exception to that general rule. Defendants Baxter and Fenwal contend that in Claims 16-19, the phrase "centrifugal unit" refers, not only to the vessel, but also to the accompanying tubing. With respect to the first of the three instances in which "centrifugal unit" is used in Claim 16, Plaintiff Haemonetics agrees with the defendants. In the later two occurrences, however, Haemonetics asserts that "centrifugal unit" should be construed consistent with the usage of the phrase in all other claims.

Claim 16 begins with the phrase: "[a] centrifugal unit comprising a centrifugal component and a plurality of tubes …" The plain language of that first line defines "centrifugal unit", as the combination of both the vessel and the tubing. Accordingly, the defendants assert that the phrase adopts a specific meaning throughout Claim 16 (and its dependent claims) that is different than the definition in the earlier claims. The plaintiff does not dispute that interpretation of the phrase as it is used in the first line of the claim and the Court agrees.

The more difficult question is whether the second and third usages of "centrifugal unit" in Claim 16 should be interpreted in a manner consistent with the first line or with the usage of the phrase in Claims 1-15. As an initial matter, Haemonetics provides little or no explanation for why the same phrase, "centrifugal unit", would be used to describe both the whole device (both the vessel and the tubes) as well as merely the vessel component. Haemonetics simply allows that "[u]nfortunately, in making this amendment, the applicant failed to note that it was now using the same phrase, centrifugal unit, to refer to two different concepts". In effect, Haemonetics asserts that within Claim 16, the term "centrifugal unit" is a synecdoche, i.e. a word that describes both the whole and a part of the whole.

2 For example, "wheels" is a word that means "car" as well as indispensable components of the car.

While the Court is unconvinced by the tenuous explanation for why the same phrase would have two different meanings within the same Claim, Haemonetics's alternative argument is compelling. The second and third references to "centrifugal unit" in Claim 16 are juxtaposed to the phrase: "having a radius between 25 and 50 mm and a height between 75 and 125% of the radius." Neither party challenges the application of those dimensions to the "centrifugal unit" described in Claim 16. The question is the exact meaning of the term "centrifugal unit". Those precise dimensions (described identically) are found in all of the patent's independent claims. With the exception of Claim 16, the parties agree that the dimensions refer to the height and radius of the vessel. Accordingly, Haemonetics convincingly contends that such dimensions necessarily refer to the same object and, thus, "centrifugal unit" refers to the vessel alone.

The defendants assert that the same dimensions should apply in Claim 16 to the combined vessel and tubing. The Court is skeptical. In essence, the defendants would require that identical dimensions be interpreted differently in Claim 16 than in the other claims. Because the vessel and tubing together are, a fortiori, larger than the vessel alone, the defendants' proposed construction would yield an absurdity. The Court declines to adopt such an awkward construction.

While the defendants correctly contend that avoidance of a nonsensical result of a particular construct is not the Court's responsibility, in this case, the Court's conclusion is compelled not only by logic but also by the claim language. See Chef America, Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1375 (Fed. Cir. 2004) (holding that a claim that the dough be heated "to" a particular temperature range meant that the dough itself, and not merely the air in the oven, had to be heated to that temperature despite the fact that it would result in an unusable product).

In this case, contrary to the facts in Chef America, Inc., there are clear indicators in the text of the claim itself (i.e. the identical dimensions) which persuades the Court that "centrifugal unit" should be interpreted, in the body of Claim 16 and the dependent claims, in the same manner as in the prior claims. The patent consistently refers to "centrifugal unit" with respect to those, measurements and the drawings indicate that the measurement is intended to apply to the same structure throughout the patent.
Accordingly, with the exception of its use in the first line of Claim 16 in which "centrifugal unit" is defined as comprising various components, the phrase "centrifugal unit", as used in Claim 16 and its dependent claims, will be construed as referring exclusively to the vessel itself. This is consistent with the use of the same phrase in Claims 1-15.

Claim 16 claims a centrifugal unit that includes a centrifugal component, which the parties agree refers to the vessel, and a plurality of tubes. It reads as follows:

A centrifugal unit comprising a centrifugal component and a plurality of tubes, said unit to turn around an axis to separate the components of a liquid, blood in particular, with such plurality of tubes displaying a single tubular component wherein said unit includes:

- a base in the form of a disk;
- an external cylindrical wall extending from the base;
- an internal cylindrical wall extending from the base and separated by the external wall so as to define a ring-shaped separation chamber among each other;
- a tubular housing almost extending coaxially to said rotating axis from the base to receive an end of a tubular unit; and
- a plurality of channels extending radially in the base of the centrifugal unit, with each channel providing communication between a respective tube of the tubular unit and the separation chamber, with the centrifugal unit having a radius between 25 and 50 mm and a height between 75 and 125% of the radius.

Id. claim 16 (emphases added).

On August 16, 2007, the district court issued a claim construction order and construed the term "centrifugal unit" as used in claim 16. The court held, and the parties agreed, that "centrifugal unit" as used in the claim's first line means "the combination of both the vessel and the tubing." Haemonetics Corp. v. Baxter Healthcare Corp., 517 F. Supp. 2d 514, 518 (D. Mass. 2007). Nevertheless, the court construed the claim's remaining two references to "centrifugal unit," including the final one in the context of the "height" and "radius" limitations, to mean only the vessel. Id. at 519-20. The court relied on claim 16's use of identical dimensions to the patent's other independent claims, which the parties agreed used "centrifugal unit" to refer exclusively to the vessel. Id. at 519. The court reasoned that, because the vessel and the tubing together are always larger than the vessel alone, giving "centrifugal unit" a construction that includes the tubing in the context of the dimensional limitations "would yield an absurdity." Id.

Following claim construction, the case proceeded to trial before a jury. At the close of evidence, the district court granted without opinion Haemonetics's motion for JMOL that claim 16 was not indefinite. The jury then found claim 16 infringed and not invalid, and awarded Haemonetics over $11.3 million in lost profits damages and over $4.3 million in reasonable royalty damages. The district court denied Fenwal's motions for JMOL on anticipation and obviousness without opinion, then entered a permanent injunction to begin on December 1, 2010, and finally ordered Fenwal to pay a 10% royalty on sales of the infringing kits made after the jury verdict of infringement.

Fenwal timely appealed. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

DISCUSSION

I.

We begin with the district court's construction of the claim term "centrifugal unit." Claim construction is an issue of law, Markman v. Westview Instruments, Inc., 52 F.3d 967, 977-78 (Fed. Cir. 1995) (en banc), which this court reviews de novo, Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454-55 (Fed. Cir. 1998) (en banc). The words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the relevant art at the time of the
Fenwal argues that the district court erred in construing "centrifugal unit" in the body of claim 16 to refer to just the vessel when the plain language of the claim's preamble defines the unit as comprising a vessel and a plurality of tubes. According to Fenwal, the district court's construction violates black letter claim construction law by either rendering superfluous "comprising a centrifugal component" or rendering "centrifugal unit" redundant with "centrifugal component." Instead, Fenwal asserts, "centrifugal unit" should be construed to refer to the vessel and its associated tubing throughout claim 16, a construction that tracks the specification's description of such an embodiment at column 3, lines 21 through 22, and which accomplishes the invention's goal of creating a small, portable apheresis machine.

Haemonetics responds that the specification makes clear that "centrifugal unit" in the context of the dimensional limitations refers to the vessel alone, as Fenwal concedes for claims 1 and 20. To reconcile this construction with claim 16's first use of the term, which expressly defines "centrifugal unit" as comprising a centrifugal component and a plurality of tubes, Haemonetics asserts that the claim preamble does no more than state the claimed invention's intended field of use. Conversely, Haemonetics argues that Fenwal's construction of "centrifugal unit" in the body of claim 16 to include the tubing nonsensically alters the unit's dimensional limitations; excludes every embodiment in the specification; and ignores that the invention's goals, i.e., small size, light weight, and economic disposability, depend on the vessel having the claimed height and radius range.

We agree with Fenwal. Patent claims function to delineate the precise scope of a claimed invention and to give notice to the public, including potential competitors, of the patentee's right to exclude. Bicon, Inc. v. Straumann Co., 441 F.3d 945, 950 (Fed. Cir. 2006). This notice function would be undermined, however, if courts construed claims so as to render physical structures and characteristics specifically described in those claims superfluous. Id.; see also Elekta Instrument S.A. v. O.U.R. Scientific Int'l, Inc., 214 F.3d 1302, 1307 (Fed. Cir. 2000) (holding that the claim language "extending between latitudes 30 [degrees] -45 [degrees]" did not include latitudes between 14 [degrees] and 43 [degrees] because that would "render[] the reference to 30 [degrees] superfluous"). As such, we construe claims with an eye toward giving effect to all of their terms, Bicon, 441 F.3d at 950, even if it renders the claims inoperable or invalid, see Chef Am., Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1374 (Fed. Cir. 2004) ("[W]here, as here, claims are susceptible to only one reasonable interpretation and that interpretation results in a nonsensical construction of the claim as a whole, the claim must be invalidated." (quoting Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1357 (Fed. Cir. 1999))); Elekta Instrument, 214 F.3d at 1309 (same).

In this case, claim 16's beginning and, in our view, controlling language could hardly be clearer. Claim 16 states: "A centrifugal unit comprising a centrifugal component and a plurality of tubes . . . ." It does not merely state the intended field of use in a preamble, as Haemonetics argues. Rather, it unambiguously defines "centrifugal unit" as "comprising" two structural components: a centrifugal component and a plurality of tubes. The claim then further recites, not the centrifugal component and not a centrifugal unit, but "the centrifugal unit" as "having a radius between 25 and 50 mm and a height between 75 and 125% of the radius." Reading "the centrifugal unit" in the context of the dimensional limitations to refer exclusively to the vessel, as the district court did, ignores the antecedent basis for "the centrifugal unit," see Process Control, 190 F.3d at 1356-57, and fails to give effect to the claim language "comprising a centrifugal component," see Bicon, 441 F.3d at 950.

Furthermore, the specification defines "centrifugal unit" in the context of the height and radius limitations in two different embodiments, one that tracks the language of claim 1, in which the parties agree that "centrifugal unit" refers to the vessel alone, and one that tracks the language of claim 16. Specifically, the specification describes a "first embodiment" in which a centrifugal device "includes a centrifugal unit with a center and a rotation axis." 983 patent col.2 ll.50-53. In this embodiment, which tracks the language of claim 1, a plurality of tubes connects to the centrifugal unit, and the "centrifugal unit has a radius between 25 and 50 mm and a height between 75 and 125% of the radius." Id. col.2 ll.53-65. The specification also describes "another embodiment" in which a centrifugal unit "includes a centrifugal component and a plurality of tubes," tracking the language of claim 16. Id. col.3 ll.20-22 (emphasis added). Again, the "centrifugal unit has a radius between 25 and 50 mm and a height between 75 and 125% of the radius." Id. col.3 ll.33-35.

The patentee's inconsistent use of identical height and radius limitations for two different embodiments thus indicates that "the centrifugal unit" in the context of the dimensional limitations must have different meanings in the context of different claims. Compare Process Control, 190 F.3d at 1356-57 (holding that "a discharge rate" and "the discharge rate" in the same
claim maintained the same meaning because the written description did not clearly redefine the term in the different contexts so as to put one skilled in the art on notice, with Epcos Gas Sys., Inc. v. Bauer Compressors, Inc., 279 F.3d 1022, 1031 (Fed. Cir. 2002) (construing the term "substantially" differently in the same claim in the context of language of approximation --"substantially constant"--versus language of magnitude--"substantially below"). In other words, the description of two embodiments with each tracking the language of different independent claims most reasonably supports a construction in which "centrifugal unit" has one meaning in claim 1 and another in claim 16. See Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1322, 1327-29 (Fed. Cir. 2006) (holding that the claim term "gap" had different meanings in different claims based on those claims' different geometrical contexts).

Haemonetics argues, and the district court concluded, that because the vessel with the tubing is larger than the vessel alone, construing "centrifugal unit" in the context of the dimensional limitations to include the tubing "would yield an absurdity." Haemonetics, 517 F. Supp. 2d at 519. Maybe so, but we do not redraft claims to contradict their plain language in order to avoid a nonsensical result. See, e.g., Elekta Instrument, 214 F.3d at 1309. Cf. Ultimax Cement Mfg. Corp. v. CTS Cement Mfg. Corp., 587 F.3d 1339, 1348 (Fed. Cir. 2009) (holding that construing "soluble calcium sulfate anhydride" to mean "soluble anhydrous calcium sulfate" did not rewrite the claim but "merely restate[d] its plain meaning" in light of the specification and the knowledge in the art).

Claim 16 defines "centrifugal unit" to include a plurality of tubes and defines the dimensional limitations of that centrifugal unit. An "error" may have occurred in drafting claim 16, as Haemonetics's counsel indicated during the district court's claim construction hearing, J.A. 923, but it is what the patentee claimed and what the public is entitled to rely on. See Process Control, 190 F.3d at 1357 ("Where, as here, the claim is susceptible to only one reasonable construction, . . . we must construe the claims based on the patentee's version of the claim as he himself drafted it."); Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 951 (Fed. Cir. 1993) ("It would not be appropriate for us now to interpret the claim differently just to cure a drafting error. . . . That would unduly interfere with the function of claims in putting competitors on notice of the scope of the claimed invention.").

We thus reverse the district court's claim construction and hold that "centrifugal unit" in claim 16 consistently means a vessel and a plurality of tubes, irrespective of its meaning in claim 1.

II.

Related to the construction of "centrifugal unit" in claim 16, Fenwal also appeals the district court's grant of JMOL that claim 16 was not indefinite. As with claim construction, we review a decision on indefiniteness de novo. Datamize, LLC v. PlumeTree Software, Inc., 417 F.3d 1342, 1347 (Fed. Cir. 2005).

The Patent Act requires that a patent's specification "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, P. 2. "Because the claims perform the fundamental function of delineating the scope of the invention, the purpose of the definiteness requirement is to ensure that the claims delineate the scope of the invention using language that adequately notifies the public of the patentee's right to exclude." Datamize, 417 F.3d at 1347 (internal citations omitted).

Yet, because claim construction frequently poses difficult questions over which reasonable minds may disagree, proof of indefiniteness must meet "an exacting standard." Halliburton Energy Servs., Inc. v. M-I LLC, 514 F.3d 1244, 1249 (Fed. Cir. 2008). "Only claims 'not amenable to construction' or 'insolubly ambiguous' are indefinite." Id. at 1250 (quoting Datamize, 417 F.3d at 1347). A claim is not indefinite merely because parties disagree concerning its construction. An accused infringer must thus demonstrate by clear and convincing evidence that one of ordinary skill in the relevant art could not discern the boundaries of the claim based on the claim language, the specification, the prosecution history, and the knowledge in the relevant art. Id. at 1249-50.

The district court held that claim 16 is not indefinite as a matter of law but did not provide a reason for its conclusion. Fenwal argues that the court erred in that conclusion and that claim 16 is indefinite because the terms "radius" and "height" used to define the centrifugal unit can be measured at several different places, and the patent does not disclose which is correct. Fenwal, however, rests its argument exclusively on the district court's erroneous construction of "centrifugal unit" in the context of the dimensional limitations to refer to the vessel alone. Specifically, Fenwal points to conflicting evidence at trial regarding whether one skilled in the art would understand "radius" and "height" to refer to the interior dimensions of
the vessel, as Fenwal argued, or the exterior dimensions of the vessel, as Haemonetics argued. While Fenwal does identify in passing additional radius and height measurements that include the tubing, Fenwal does not argue or point to any evidence indicating whether or not including the tubing in the construction of "centrifugal unit" makes the radius and height measurements discernable to one of skill in the art and where around the tubing the measurements are to be made.

Haemonetics also argues the issue of indefiniteness based only on the district court's incorrect claim construction. As a result, this court lacks any evidence in the record or any argument by the parties directed to where the height or radius are to be measured when the centrifugal unit includes not only the circular vessel but also the off-set, question mark-shaped tubes. Given the change in the unit's shape in claim 16 under this court's construction of "centrifugal unit" and the absence of any basis on which to decide the issue in the first instance, we vacate the district court's grant of JMOL and remand for a determination of the meaning of "radius" and "height" under the correct claim construction of "centrifugal unit" and of whether claim 16 is definite.

8) "Plasma Chamber"

MKS contends that the term "plasma chamber" means "a structure that confines a plasma." (D.I. 103 at 7). MKS further contends that, in the context of the '628 Patent a "plasma chamber" must include "a means for ingress and egress of gases." (D.I. 118 at 21). Advanced Energy contends that the term "plasma chamber" means "a structure that contains or confines a plasma, and is of no specific shape." (D.I. 110 at 29).

In construing the term "plasma chamber," the Court has considered the patent specification and prosecution history. (See D.I. 104, Ex. A col. 2 ln. 46-54, col. 4 ln. 16-24, 35-44, Figure 3 (118), col. 9 ln. 28). Based on a review of these sources, the Court concludes that the context of the patent requires that a plasma chamber include a means for ingress and egress of gases. Accordingly, the Court construes the term "plasma chamber" to mean a structure, with a means for ingress and egress of gases, that contains a plasma.

11. "Chamfer." Absent any definition in the specification or claims, "chamfer" shall be given its ordinary meaning. Therefore, a "chamfer" is an "inclined surface."

12. "A chamfer adjacent to said cavity." Consistent with the specification and claims, "adjacent to" shall be given its ordinary dictionary meaning. Therefore, "a chamfer adjacent to said cavity" shall mean "a chamfer close to, next to, or adjoining said cavity." 2

2 Defendant argues that plaintiff's definition is incorrect because Figures 7-9 of the '682 patent show a chamfer next to or adjoining the cavity. Absent any limiting language in the specification or claims, however, a patentee is not limited to the embodiments shown in the figures.

Chamfer Backrake Angle

The term "chamfer backrake angle" appears in claims in the '715 Patent. Baker Hughes contends "chamfer backrake angle" means:
The angle of the beveled area or cut off edge at the periphery of the central portion of the cutting face as measured backward from a line placed perpendicular (at a ninety degree angle) to the formation to be cut by the cutter in the intended direction of drill bit rotation.

ReedHycalog contends "chamfer backrake angle" means "the negative angle (expressed as a positive number), between a line oriented perpendicular to the subterranean formation to be engaged by a cutter and the portion(s) of the chamfer that engages the formation during drilling, measured in the direction of intended bit rotation." Baker Hughes's construction defines "chamfer" and combines that definition with its construction of "effective cutting face backrake angle." ReedHycalog's construction does not define chamfer but modifies its construction of "effective cutting face backrake angle" to apply to the "chamfer." Thus, the parties' dispute centers on whether "chamfer" needs construction.

A lay jury can understand "chamfer" and does not need it defined. The '715 Patent figures also clearly show the chamfer, and a further definition would not help the jury. Fig. 11 of the '715 Patent, annotated and displayed in Appendix C, shows the chamfer backrake angle, labeled $\beta_1$. '715 Patent col. 10:36-37 (defining "chamfer backrake angle" as $\beta_1$).

As shown, the chamfer backrake angle is the angle between the portion of the chamfer that engages the formation and a line perpendicular to the formation. ReedHycalog's construction is correct, and the Court adopts a modified construction. Thus, "chamfer backrake angle" means "the angle between a line oriented perpendicular to the subterranean formation to be engaged by a cutter and the portion(s) of the chamfer that engages the formation during drilling, measured in the direction of intended bit rotation, labeled $\beta_1$ in Fig. 11 of the '715 Patent." 4

--- Footnotes ---

4 Ref. No. 14 of Appendix B contains the disputed term "chamfer backrake angle" and its construction.

--- End Footnotes ---

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II. The District Court's Claim Construction

We turn next to the district court's construction of the claims of the '886 patent. Claim construction is a matter of law which we review without deference. Nazomi Commc'ns, Inc. v. Arm Holdings, PLC, 403 F.3d 1364, 1371 (Fed. Cir. 2005). When exercising the power to review claim construction, this court determines the meaning and scope of the relevant claim language and decides whether the district court's determination of the meaning and scope of the relevant claim language is coterminous with that construction. Where it is not, the district court has erred in its construction of the claims. Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1115 (Fed. Cir. 2004). However, in reviewing a district court's claim construction, this court takes into account the views of the trial judge. Nazomi, 403 F.3d at 1371. Though we review those views and the record de novo, "common sense dictates that the trial judge's view will carry weight." Id. (quoting Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454 (Fed. Cir. 1998) (Plager, J., concurring)).

The district court issued its claim construction order on April 11, 2008. At issue in this appeal are independent claim 17 and dependent claim 19 of the '886 patent. The district court construed these claims as follows:

Claim 17 of the '886 patent/886 Patent
A shoulder supported harness assembly for supporting percussion instruments, comprising:
- a shoulder supported carrier structure for supporting percussion instruments having changeable or adjustable shoulder supporting members for securing said structure on the

Construction
A harness device that allows the user to support a percussion instrument.
- The piece of the device that connects on the user's back to the back member and which then sits on the user's shoulders and performs the function of supporting the balance of the
shoulders of a user; and device while allowing the user to adjust the upper section of the device relative to the lower section and to replace, remove or substitute the shoulder supporting members with other shoulder supporting members of different sizes.

a back member that spans across and is secured to each of the shoulder supporting members. A back bar that spans across the user’s back to connect to each end of the shoulder supporting members.

Claim 19 of the ’886 patent

The securing mechanism from claim 17 wherein the securing mechanism locks the orientation of the shoulder supporting members and the back member.

Construction

The securing mechanism refers to a locking mechanism that is applied to the back member and shoulder supporting members such that they are affixed together in a manner that precludes any change in orientation, i.e., they are welded together or otherwise locked.

DEG argues that the district court erred in its claim construction because it failed to define the claim limitation of “changeable or adjustable shoulder supporting members.” Specifically, argues DEG, the court erred in removing the “adjustability” feature of the “shoulder supporting members” and thus broadened the scope of the claim to cover any adjustable drum carrier borne on the shoulders of the drummer. According to DEG, the court erroneously applied the limitation of “adjustability” to the carrier as a whole, rather than to the shoulder pieces specifically. Consequently, under the district court’s claim construction, as long as the adjustability feature can be found somewhere on the harness such that the upper section can be adjusted relative to the lower section, the adjustability limitation of the claim is met.

Since the district court provided no explanation of the reasoning behind its claim construction, and since we review claim construction de novo, we look first to intrinsic evidence in construing the claims, i.e., the language of the claims themselves, the written description portion of the specification, and the prosecution history. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83 (Fed. Cir. 1996). The critical claim language in claim 17 is "a shoulder supported carrier structure … having changeable or adjustable shoulder supporting members for securing said structure on the shoulders of a user." The language of the claim expressly teaches more than one "shoulder supporting member" and this language most clearly maps onto those portions of the harness that support the harness over the shoulder, viz., the two arched shoulder pieces. These likewise reasonably correspond to the "shoulder straps" described in the specification of the ’886 patent. The chest piece and the back bar can be excluded from this claim limitation because they are singular pieces and do not come into contact the shoulders of the drummer. Furthermore, the back bar is separately defined in the following limitations of the claim. The additional chest pieces and the drum carrier brackets comprise the remainder of the "shoulder supported carrier structure" of claim 17.

Moreover, the claim language teaches that the shoulder supporting members should be "changeable" or "adjustable": these terms immediately precede the term "shoulder supporting members" and the only reasonable construction, therefore, is that these shoulder supporting members themselves, rather than the entire assembly, should be adjustable or changeable. And, in the specification of the ’886 patent, the "shoulder straps" which correspond to the shoulder supporting members of claim 17, are not immovably or irretrievably fixed to the back bar and other portions of the supporting carrier, but rather are adjustable or removable so as to be interchangeable with other shoulder straps. For example, the specification describes one preferred embodiment in which the: "[v]est portion (the remainder of the carrier corresponding to the chest pieces) is removably secured to [the] shoulder straps by screws or bolts and has a pair of J-rod receptacles secured by screws or bolts." Likewise, a second embodiment is described in which the:

[back support or back member as shown in this figure is removably secured to shoulder straps by screws bolts or threaded fasteners and has padding. Bolts extend out from the removable back member, and extend into elongated slots located in the shoulder straps to allow for width adjustment on one or both shoulder straps. Alternately slots may be
incorporated into the back member, and a square neck carriage bolt may be used in prevent rotation of the bolt when tightening the nut. The back member may be secured to removable shoulder straps. Removable shoulder straps of various sizes can be used to accommodate different size users. Vest portion is adjustably and removably secured to shoulder straps by screws or bolts which extend through elongated slots which permits adjustment of the straps relative to the anterior vest portion of the harness.

And in every other embodiment described in the specification, the shoulder straps are described and depicted as being changeable or adjustable (or both). Even in those embodiments wherein the shoulder straps are spot welded to the back bar, they are still adjustable or removable with respect to the anterior vest portion of the harness.

We hold, therefore, that the district court erred in its construction of claim 17 (and, consequently, in its construction of dependent claim 19 as well). The district court's elision of the claim limitation (supported by the specification) that the shoulder supporting members are either changeable or adjustable is legal error because all the limitations in a claim must be considered meaningful. Cablestrand Corp. v. Wallshein, 29 F.3d 644 (Fed. Cir. 1994). We therefore amend the district court's language in the portion of its construction of Claim 17 which reads:

The piece of the device that connects on the user's back to the back member and which then sits on the user's shoulders and performs the function of supporting the balance of the device while allowing the user to adjust the upper section of the device relative to the lower section and to replace, remove or substitute the shoulder supporting members with other shoulder supporting members of different sizes

to read:

The adjustable or changeable pieces of the device that rest on the user's shoulders and perform the function of supporting the balance of the device and which connect the back member, situated against the user's back, with the upper portion of the device that rests on the user's chest.

B. "Changing a Blood Parameter"

In addition to the mixing limitation, Claim 1 also contains the following limitation: "changing a selected blood parameter in blood flowing in said circulating system to produce a distinguishable blood characteristic in blood which is delivered to the arterio-venous shunt." During oral argument the parties mainly agreed, as does the Court, that the terms "blood parameter" and "distinguishable blood characteristic" both refer to a "measurable physical characteristic of the blood." Therefore, the terms shall be construed accordingly.

While the parties agreed on this point, the parties disagree as to how "changing" occurs under this limitation. Plaintiff reads the limitation to anticipate any method by which a blood parameter may be changed. Defendant reads the limitation to require the addition of an indicator to the blood to achieve the recited "changing."

Like the term "mixing," however, the term "changing" is an ordinary term meaning to make different, modify, or alter. See e.g., WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY (1993). While defendant points to language in the prosecution history and specification in support of a more narrow construction of the term, nothing in the intrinsic evidence suggests that the plaintiff or PTO effectively re-defined the term "changing" for the purposes of patent '989. Moreover, there is nothing ambiguous about the term "changing." Therefore, as plaintiff suggests, the term "changing" "means to make different, modify, or alter. There is no restriction in [the] limitation as to how the 'changing' is caused." (Pl.'s Reply Brief Append. 1).

Defendant points to two pieces of intrinsic evidence to overcome this interpretation of the changing limitation. First, defendant points to a prosecution history notation in which the PTO states, "the step of changing a selected blood parameter occurs in the venous line where a volume of indicator is injected into the venous line." (Wong Decl. Exh. B, FH 989 0157). However, this statement merely recites an explanation of the preferred embodiment of the claim. It does not suggest that the inventor was claiming only changes brought about through the addition of an indicator. In fact, if anything, the isolated remark would suggest an intent to limit the patent to changes brought about by injection only -- not any means of adding an
indicator as proposed by defendant. 3

3 Defendant suggests that Southwall Technologies, Inc. v. Cardinal IG Co., governs this case and mandates the adoption of defendant's construction of this limitation. 54 F.3d 1570, 1576 (Fed. Cir. 1995). However, unlike in Southwall, it does not appear "from the patent and file history that the [term changing was] used differently by the applicant." Id. at 1578.

Similarly, the specification language relied on by defendant does not necessitate that the Court look beyond the plain meaning of the term "changing." Defendant accurately points out that the specification contains the following language: "measurement of blood flow in the shunt is obtained, in accordance with the invention, by injecting into venous line 32, as by way of an injection port 40, an indicator material. . . . In the preferred embodiment, this material . . . is saline solution." However, when read in context, it is clear that this passage in its entirety refers to the preferred embodiment of the device -- which has an injection port for an injectable indicator such as saline. Thus, because "particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments," the Court cannot limit Claim 1 to changes brought about through the addition of an indicator as requested by defendant. Rhine v. Casio, 183 F.3d 1342, 1346 (Fed. Cir. 1999).

NMT's appeal of the district court's grant of Transonic's motion for a preliminary injunction is based on the court's claim construction. Claim construction is a question of law that we review de novo. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 U.S.P.Q.2D (BNA) 1169, 1174 (Fed. Cir. 1998) (en banc). NMT argues that the court misconstrued the "mixing," "changing," and "calculating" and "determining" limitations of the asserted claims.

With regard to the "mixing" limitations, NMT raises the same arguments that it raised before the district court, asserting that the statement in the prosecution history regarding "complete mixing" limits the scope of the claims. NMT also cites external evidence, including correspondence between the inventors and their patent attorney and articles authored by the inventors, as demonstrating that "complete mixing" is a required aspect of the invention. Finally, NMT argues that the district court's construction of "mixing" renders the term meaningless because mixing will always occur as a result of the "delivering" steps.

NMT argues that the "changing" limitations are drafted in step-plus-function form and, therefore, must be construed in accordance with 35 U.S.C. § 112, P6. When so construed, NMT argues, "changing" requires the addition of an indicator because that is the only corresponding act disclosed in the specification. NMT argues that even if the "changing" limitations are not construed under § 112, P6, statements in the prosecution history made by the applicant and by the examiner limit the "changing" step to the addition of an indicator. NMT also argues that the district court erred when it determined that the "blood parameter" that is changed to produce a "distinguishable blood characteristic" includes chemical and biological characteristics of the blood, in addition to the physical characteristics disclosed in the specification.

After careful consideration, we reject NMT's arguments. We discern no error in the district court's construction of the "mixing and "changing" limitations or in its findings that those limitations are met by NMT's Delta H method. However, as far as the "calculating" and "determining" limitations are concerned, we believe that the district court's construction was too broad.

3. Channel

Plaintiff's proposed construction: A region of a connector configured to engage a vertical member.
Defendant's proposed construction: A space in the connector for receiving one of the substantially vertical members.

In their pre-hearing briefs, the parties disputed whether a channel is a region engaging a vertical member (plaintiff's construction) or a space receiving a substantially vertical member (defendant's construction). At the hearing it became clear that plaintiff was most concerned with the way the channel functions, arguing that there is a significant difference between receiving and engaging because the channel could merely receive a member without engaging it. Although defendant maintains that "receiving" should be used instead of "engaging," its main concern is that the members be described as "substantially vertical," which plaintiff agreed to at the hearing.

The term "channel" is mentioned only briefly in claim 14 and the specification. The claim states that the channel is for engaging the vertical member. The specification teaches that the face guard connector has at least two parallel channels, each which receives a portion of the face guard. '151 patent, col. 8, lns. 1-4. Because the claim language makes clear that the channel engages the members and I agree that there is a meaningful difference between receiving and engaging something, I will use "engage" in defining the term. The parties agreed that "portion" is an acceptable alternative to "region" and "space."

I conclude that the term "channel" as used in claims 14-19 of the '151 patent means a portion of the connector configured to engage the substantially vertical members.

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Kason's view that a "channel" is any u-like shape that can be drawn from a solid structure is contradicted by the ordinary meaning of the word "channel," the description of a channel in Claim One, the patent specifications and its prosecution history.

According to The Random House College Dictionary, a "channel" is "any structure member having the form of three sides of a rectangle." According to Webster's Third International Dictionary, a channel is "a metal beam or strip having a u-shaped section." The ordinary meaning is thus a distinct structural member or a metal beam in a u-shape.

The language of the claim does not assign any other meaning to the term "channel," rather, it too indicates that a channel is a distinct u-shaped piece, as it describes a "pair of internal channels" and a "pair of external channels." The patent specifications also indicate channels as individual elements that must be "joined together by means either of spot welding . . . or . . . double sided tape . . . or adhesive . . . ."

Finally, we know from the "Remarks" accompanying Kason's successful patent application, that what was uniquely patentable about the Katz design was the structural configuration of the four "channels."

Following Markman, this Court concludes that the term "channel" means an individual u-shaped bar or structural element, not simply any u-shape that can be imagined to exist within a unitary structure.
Claims 1, 10, and 11 of the '227 patent describe a "first interior channel in which said fluorescent tube is mounted" and a "second interior channel in which said electrical means is primarily housed." (App. To Def.'s Markman Br. Ex. B at Col. 4, L.L. 29-34, Col. 5, L.L. 10-13, and Col. 6, L.L. 12-14)(emphasis added). Lampi defines "channel" as an interior area where the fluorescent tube or electrical components are contained. APP responds that "channel" means an unobstructed tubular sleeve for enclosing and supporting the fluorescent tube or containing the wiring for the fluorescent tube. Based on the intrinsic evidence of record, there is considerable, if not abundant, support for APP's use of the term "sleeve." The '875 patent repeatedly claims (Claims 5, 6, 7, 9, 10, 16, 17, and 18) an interior space in the housing that forms "two contiguous sleeves" which extend in a direction parallel to one another. (See App. To Def.'s Markman Br. Ex. A at Col. 4, L.L. 40-50, Col. 4, L.L. 51-52, Col. 4, L.L. 55-57, Col. 4, L.L. 61-68, Col. 5, L.L. 1-8, Col. 6, L.L. 13-20, Col. 6, L. L. 22, and Col. 6, L. L. 27). The first sleeve houses the fluorescent tube and defines a window for the lamp. (Id. at Col. 4, L.L. 45-46 and L.L. 51-54). The second sleeve houses the electrical components needed to operate the fluorescent tube. (Id. at Col. 4, L.L. 46-47). The specification also describes a housing containing two "contiguous sleeves" which extend in a direction parallel to each other with one containing the fluorescent tube and the other the electrical components. (Id. at Col. 2, L.L. 35-68 and Col. 3, L.L. 1-18). Significantly, the '227 patent uses the term "channel" to describe the same structures and functions. (See App. To Def.'s Markman Br. Ex. B at Col. 2, L.L. 36-68, Col. 3, L.L. 1-20, Col. 4, L.L. 25-44, Col. 5, L.L. 5-19, and Col. 6, L.L. 5-20). Furthermore, the prosecution history reveals that "sleeve" was actually the antecedent to "channel." (See App. To Def.'s Markman Br. Ex. 1 at 7-8).

Lampi's interpretation of "channel" as an "interior area" conveniently ignores this compelling intrinsic evidence. Because "sleeve" was contemplated, and indeed claimed, by the patentee, we find that it is an appropriate interpretation of "channel."

The question remains whether "sleeve" is limited by "unobstructed" and "tubular." Lampi objects asserting that there is no support for these limitations in the claims or specification. We agree. APP summarily concludes that, given the relevant prior art, a "channel" must be both unobstructed and tubular. APP's interpretation, however, is rooted entirely in extrinsic evidence including prior art and technical dictionaries. When, as here, any ambiguity is resolved by the claims, specification, or prosecution history, there is no need to consult such extrinsic evidence. See Vitronics, 90 F.3d at 1582.

Accordingly, we conclude that "channel" means an interior sleeve where the fluorescent tube or electrical components are contained.

The district court interpreted the "first interior channel in which [the] fluorescent tube is mounted" limitation in claims 1 and 11 as meaning "an interior sleeve where the fluorescent tube is contained." Relying primarily on language in the claims and written description, the court concluded in its subsequent infringement analysis that the translucent cover of Model 7744 could not be part of the first interior channel, i.e., the court construed "first interior channel" as defined by elements of the housing that cannot include a translucent cover.

On appeal, Lampi argues that the district court erred in excluding the translucent cover, or plastic diffuser, of the 7744 model from being a part of the first interior channel. According to Lampi, the court misconstrued the words "comprising" in the preamble of claims 1 and 11, and the word "having" in the body of the claims as closed, i.e., excluding other components. In addition, Lampi contends that the court erred in construing the limitation as "an interior sleeve where the fluorescent tube is contained" because the claims themselves state that a fluorescent tube must be mounted in the first interior channel, rather than contained therein. In the alternative, Lampi argues that even if the district court's claim construction is correct, the accused device infringed under the doctrine of equivalents.

We conclude that the district court did not err in deciding that the translucent cover cannot be a part of the first interior channel, although our reasoning differs from that of the district court. Our conclusion is dictated by statements made by Lampi during prosecution of the '227 patent. "Explicit arguments made during prosecution to overcome prior art can lead to narrow claim interpretations . . . . By distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover." Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1378-79, 49 U.S.P.Q.2d (BNA) 1065, 1069.
In the second office action, the patent examiner rejected several claims under 35 U.S.C. §§ 102(b) and 103 based in part on U.S. Patent No. 4,045,665 (the '665 patent), issued to Williams et al. Williams claims a diffuser attachment for a fluorescent lamp fixture, as demonstrated below.

GET DRAWING SHEET 1 OF 2.

The figures "show a fluorescent lamp fixture A and a diffuser attachment B." '665 patent, col. 3, ll. 56-57. The patent explains,

The fixture body cover 10 acts as a housing for a fluorescent tube and the operative components required therefor. In [figure] 3, this fluorescent tube is generally designated 26 and is maintained in a position depending on from the [body] cover by a pair of conventional end mounted tube mounting and holding members, one of which is generally designated 28 in [figure] 3.

'665 patent, col. 4, ll. 12-18. Figure 3 is a cross-sectional view of the patented device, showing the walls of the translucent cover, denoted with numbers 52, 54, and 60, surrounding the fluorescent tube 26.

In response to the rejection, the patentee argued, "although Williams provides a housing, it does not have two interior channels, one of which houses the fluorescent tube and the second of which primarily houses the electrical means. . . . Williams only has one channel in which the tube and electrical means are housed." Thus, the patentee's position during prosecution was that a "first interior channel in which [the] fluorescent tube is mounted" cannot encompass a translucent cover such as that taught by Williams. Lampi cannot now assert a contrary interpretation. See Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2D (BNA) 1673, 1676 (Fed. Cir. 1995) (stating that claims may not be construed one way in order to obtain their allowance and a different way against accused infringers). For the same reasons, Lampi is estopped from asserting that Model 7744 infringes the patent under the doctrine of equivalents. For that reason, we conclude that the district court did not err in construing "first interior channel" to exclude the translucent cover of the 7744 device, and in concluding that Model 7744 does not infringe claims 1 and 11, literally or under the doctrine of equivalents.

1. "Channel" and "Fluid Impeding Channel"

Claim 1 of the Chappell patent teaches

An absorbent article comprising:

a. an absorbent; and

b. a channel positioned inward from and along at least a portion of an edge of such absorbent, said channel substantially defining in said absorbent an inner portion and an outer portion, wherein the density of said absorbent in said inner portion is greater than the density of said absorbent in said outer portion.

K-C believes that "channel" means "groove" and "fluid impeding" means "fluid slowing;" Tyco argues that "channel" means one channel. K-C also argues that "defining" means "distinguishing," whereas Tyco claims the term means "completely encircling."

A. The patent is not limited to one channel

The primary bone of contention seems to be the number of channels described in the patent or, alternately, whether "the" channel must completely encircle the napkin. K-C asserts that the invention is not limited to napkins having a single
channel, whereas Tyco believes it is. Tyco's basis for this assertion is the language of the claims themselves: the channel is discussed in the claims exclusively in the singular form as "a" or "the" or "said" channel. It also argues that only a single channel can completely encircle the napkin, and complete encirclement is required for the napkin to fully impede fluid flow.

K-C counters that in a patent the terms "a" or "the" are not dispositive of number and instead are simply inclusive terms. K-C is correct that under Federal Circuit precedent the use of singular articles does not imply anything about the number of the term that follows: "'a' or 'an' in patent parlance carries the meaning of 'one or more' in open-ended claims containing the transitional phrase 'comprising.'" Free Motion Fitness, Inc. v. Cybex Int'l Inc., 423 F.3d 1343, 1350 (Fed. Cir. 2005) (quoting KCI Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed. Cir. 2000)). Thus, the claims' use of the term "an absorbent article comprising . . . a channel" is not dispositive of the number of channels the claim describes.

Yet Tyco is correct that "a channel" can mean only one channel if other aspects of the patent make that limitation clear. Id. Tyco argues that the figures, the specification and the claims themselves speak only of a single channel, which means the inventor "evince[d] a clear intent by the patentee to limit the article to the singular." Id. at 1350. The most glaring problem for Tyco arises in figure 3, which is described as "an alternative embodiment of the present invention" and shows what appear to be two distinct channels -- marked as 22 and 22' -- with one on top and one on the bottom of the napkin. The specification states as follows: "Referring to FIG. 3 the fluid impeding channel 22' is embossed into all three layers of the sanitary napkin 10' so that the channel 22 resides in the body facing surface 13, the garment facing surface 15, and the absorbent 14 of the sanitary napkin 10'." (3:10-14.) 1 Substantial efforts in the briefs and oral argument were made by both sides in an attempt to explain figure 3. Tyco attempts to get around the fact that figure 3 appears to describe two channels by noting that the above-quoted language states that 22' is embossed into "all three layers" of the napkin -- 13 (body facing), 15 (garment facing) and 14 (the absorbent middle). If that is true, then it is physically impossible for there to be two distinct channels. That is, if 22' is embossed into all three layers of the napkin, there is no other part of the napkin into which another channel (22) could be embossed. Under this reading, it would seem that 22' and 22 are not two distinct channels but two parts of the same channel structure: 22' is the "up" facing part in the diagram and 22 faces "down." Both parts constitute the channel that is embossed in all three parts of the napkin. This seems to be how claim 15 treats the channel(s) as well: it claims "the absorbent article of claim 12 wherein said fluid-impeding channel is embossed into said absorbent, said body facing surface and said garment facing surface." (7:38-40.) This "double-channel" aspect is echoed in the specification, which suggests "[t]he channel 22 can be formed by compressing a portion of the body facing surface 13, a portion of the garment facing surface 15 (not shown) or a portion of both the body facing surface 13 and the garment facing surface 15 as seen in FIG. 3." (4:66-67; 5:1-2.)

1 Herein I will simply refer to the column and line numbers of the patent at issue.

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precedent, the fact that an aspect of the invention is described only in the singular does not, without more, limit the claims in the way Tyco suggests. Accordingly, I find the invention is not limited to single-channel napkins.

B. **The channel need not have particular fluid-impeding or pooling properties**

Tyco also proposes that the term "channel" is not just an ordinary channel but one that "impedes the flow of fluid and does not cause fluid to pool therein." For this proposition it relies on certain statements in the prosecution history and the specification which discuss the invention's enhancement of flow and conduction of liquid. For instance, the specification teaches that the channel should not be "so wide so as to allow the fluid to gather and pool in the channel." (5:49-50.) This statement, however, merely involves a preferential aspect of the channel size. Tyco also cites various statements in the prosecution history relating to the invention's conduction of fluids. Yet none of the statements can be read to impose a limitation that fluid does not pool ever in the channels. No one disputes that one of the goals of the patent is to teach a product having channels that conduct fluid, but Tyco presents no basis to read a purpose or functioning of the patent into the invention's physical description. Indeed, claims within the patent itself (e.g., claim 11) refer to a "fluid impeding" channel, which means that Tyco's preferred definition of embossed channel would be redundant.

C. **A channel is not a groove**

Citing a dictionary definition, K-C argues in its briefs that a channel is a groove. At argument, however, it indicated it was comfortable with the claim language as written. Rather than substitute a synonym, in my view the preferable approach is to retain the claim's own language where possible, and accordingly I will not redefine "channel" as "groove."

a. "channel for injecting fluids"

The parties have two disputes regarding this claim element. First, the parties dispute whether the "channel" element may be satisfied by the channel inherently provided by the lumen of the guide tube. Gore's proposed construction requires that the "channel for injecting fluids" must be "in addition to the lumen which is inherent in the guide tube" (emphasis added). Gore correctly observes that the only channel described in the specification is an additional channel provided within the wall of the guide tube. However, the limitations of an embodiment are not read into the claims, even if the specification describes only one embodiment. See Phillips, 415 F.3d at 1323. The specification does not suggest that this embodiment is intended to define the scope of the "channel" element or that the physical location of the channel is a significant detail. To the contrary, the only requirement found in the specification is that the channel must allow for the injection of fluids. Therefore, if the central lumen of the guide tube is a "channel" and permits the injection of fluids, it is within the scope of the claim language.

This construction is also confirmed by extrinsic evidence. Perouse cites a 1994 patent that describes administration of liquids through a guide lube lumen to the site of stent placement. (Golds Reply Decl. P 18, Ex. 29.) Though this reference postdates the filing of the patent, it nevertheless provides some support for Perouse's argument that a person of ordinary skill in the art would not have interpreted this claim term to exclude the central lumen from the scope of the "channel" element.

Gore argues that the "channel for injecting fluids" of claim 7 cannot be the central lumen because, under this construction, claim 1 and claim 10 would have the same scope. Cf. Comark Commc'ns, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998) ("While we recognize that the doctrine of claim differentiation is not a hard and fast rule of construction, it does create a presumption that each claim in a patent has a different scope."). The Court does not agree. Claim 10 requires a channel "for injecting fluids." Under Perouse's proposed construction, the central lumen is a "channel for injecting fluids" only if it can be used for injecting fluids. The central lumen of a guide tube may or may not be suitable for injection of fluids. While the central lumen of any guide tube falls within the scope of claim 1, only those which allow for the injection of fluids are within the scope of claim 10.
The parties also dispute whether "fluids" should be construed to mean "liquids" or "liquids and gases." The specification refers to a "liquid-tight" stent. (7'87 patent col.2 1.52). However, the patentee used the word "fluids," not "liquids," in claim 10. If the patentee had wanted to claim a channel for injecting liquids, it clearly was capable of doing so without ambiguity. The fact that the patentee used the term "fluids" instead indicates that "fluids" was chosen intentionally and was not intended to be synonymous with "liquids."

Accordingly, the Court construes "channel for injecting fluids," to mean "lengthwise running conduit or passageway (including the central lumen of the guide tube) through which liquids or gases can be forced." GO BACK

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5. Channel Member 24

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24 This term relates to the terms "at least partially received" and "guide means" discussed supra.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - - -

Claim 6 of the '456 patent depends on claim 1 and reads: "... wherein said guide means of said positioning ring comprise a channel member disposed on said positioning ring and extending at least partially thereacross." Defendants offer the following construction: "a groove formed on the upper surface of the positioning ring into which a portion of the cutting head assembly fits." (Defs. Br. at 46.) Plaintiff claims this construction is improper and accuse defendants of attempting to limit the channel member to an "L" shaped structure when the specification provides for a "C" shaped structure that includes no "groove." As discussed, supra, in the context of determining the corresponding structure for guide means and guide assembly, the only embodiment disclosed in the specification is a channel member with a toothed track which mates with the propulsion shaft to guide the cutting head assembly in an arcuate path. It is the teeth of this channel (combined with the power transmitted thereto) which form the heart of the guiding process. This is true whether the channel member is "C" shaped or "L" shaped. In terms of the "C" shaped structure, the written description of the '456 patent provides: "Thus, guide means 40 in the form of a generally "C" shaped channel member 42 is comprised by the combined structure of sidewall 36 and toothed track 43." Col. 8, Ins. 1-3. As discussed above, however, the channel member need not be formed on the upper surface of the ring; rather, it is extends along at least one side of positioning ring. The question of whether a portion of the cutting head assembly fits into a groove of the toothed track was also discussed above where this Court construed "at least partially received" to mean: a portion of the cutting head assembly that goes inside the guide means. I therefore conclude that the proper construction for the term channel member is: a groove formed along at least one side of positioning ring into which a portion of the cutting head assembly fits.

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Sub-element 3. Channeling structure being adapted to channel the entrained eggs toward the feeding end.

BAI argues that its working platform does not "channel" the egg slurry to the hose portals, it merely "contains" the slurry. Using an extrinsic definition from the Random House Unabridged Dictionary, BAI asserts that "channel" means to "direct toward or into some particular course," which implies an "automated fashion." By employing manual labor to move the slurry through the working platform, BAI contends that its device does not "channel" the slurry in a one-step procedure like Sanders' device, which does not require manual labor.

Claim 8 only requires the channeling structure to "receive water and entrained shrimp eggs at the channel receiving end and to channel the entrained eggs toward the feeding end." Col. 11, lines 17-20 (0'62 patent). BAI argues for limitations from the specification to be read inappropriately into the claims where the specification is providing enabling description of possible embodiments of the invention. The specification also supports a passive channeling effect of the structure. The figures in the
specification disclose the channel structure without any reference to automation or a one-step procedure. The water and entrained eggs are collected at the leading edge of the channeling structure where they fall or move into the funnel cavity. They are then drawn into the rearward feeding end where the suction holes are located. Col. 6, lines 35-39 ('062 patent). "Means are provided for maintaining the channeling structure approximately at the surface of the water … to direct brine shrimp eggs toward the narrow feeding end of the channel." Col. 2, lines 57-61 ('062 patent). The "channeling" effect is derived from the channeling structure's bottom surface, three side walls and the relative movement of the entrained eggs with respect to the channeling structure. The court declines to impose any requirement of an ambiguous one-step procedure or automated channeling structure to claim 8's channeling structure.

BAI argues an interpretation of a channeling structure which requires the structure to 1) receive water and eggs in a controlled manner, Col. 3, lines 38-40 ('062 patent); 2) allow the slurry to fall by gravitation into an inlet port, Col. 4, lines 8-9 ('062 patent); and 3) act as a concentrating funnel. Col. 5, line 13; col. 3, lines 34-35 ('062 patent). This court disagrees that these limitations be imposed on claim 8.

BAI argues that its working platform cannot receive a slurry mixture in a controlled manner and that a slurry cannot fall by gravitation to the inlet port because it has a "virtually flat bottom" and hose ports which are only 1/2 inch lower than the front of the working platform. Col. 3, lines 38-40; Col. 4, lines 8-9 ('062 patent).- Claim 8 imposes no such limitations. Preferred embodiments appearing in a specification will not be read into the claims when the claim language is broader than the specification. Electro Medical Systems v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054, 32 U.S.P.Q.2D (BNA) 1017, 1021 (Fed. Cir. 1994). While the claims are interpreted in light of the specification, not everything expressed in the specification must be read into all the claims. SRI International v. Matsushita Electric Corporation of America, 775 F.2d 1107, 1121, 227 U.S.P.Q. 577, 585 (Fed. Cir. 1985) This court declines to read language such as "controlled manner" and slurry "falling by gravity" in the specification as limitations on the claims.

Furthermore, these arguments appear to be disputes about the degree of control or ability of the slurry to fall by gravitation to the inlet ports. BAI's working platform is not flat, its hose ports are 1/2 inch lower than the front of the working platform. There is a descending slope from the front of the working platform to the inlet ports. Therefore, BAI argues that it is "virtually flat." In viewing the BAI devices contained in tabs 8, 9 and 10 of BAI's Appendix, it appears to the court that the hose ports are not located 1/2 inch below the front surface of the platform, but that the very top of the opening of each hose port is 1/2 below the platform surface. The descending surface appears more dramatic than BAI has represented and is obviously not flat. In any event, the court finds the shape of the BAI's working platform is "adapted to channel the entrained eggs toward the feeding end," as claimed in claim 8.

Claim 8 does not require the channeling structure to act as a concentrating funnel. The specification states that a funnel may be "anything that is capable of receiving a slurry mixture of salt water and eggs in a controlled manner." Col. 3, lines 37-40 ('062 patent). Claim 8 does not mention a concentrating funnel, therefore, no "concentrating" limitation will be read into claim 8's channeling structure. Even if the court interpreted the channeling structure and concentrating funnel as essentially the same structure, however, claim 8's language, "being adapted to receive water and entrained eggs … and to channel the entrained eggs toward the feeding end," would not be limited by the specification to a device that concentrates the slurry.

E. "Channels"

Claim 1 of the '418 patent describes "a plurality of continuous, parallel channels extending into the thickness dimension of the sheet, the channels being formed by cutting the second surface of the sheet . . . ." Plaintiffs contend that "channels" mean "grooves or furrows," while Gore claims that "channels" refers to "partial thickness openings."

Based upon the specifications of the '418 patent, a series of cuts or channels results in the individual villi and surface irregularity on the material. In a corresponding illustration, it is clear that the cuts or channels create grooves on the
material's surface. See U.S. Patent No. 6,921,418, at Fig. 12. The illustration contained within the specifications of the '418 patent shows that the inventor meant to give the term "channels" its commonly understood meaning: "grooves or furrows." Because nothing in the specifications indicates that the inventor intended to give the term "channels" a meaning other than its commonly understood meaning, the Court determines that "channels" means "grooves or furrows."

XVI. "Charger"

The Court next turns to the term "charger" from claims 9 and 10 of the '925 patent.

A. The Parties' Proposed Constructions

Black & Decker asserts that the term "charger" simply means "charger" and notes that it adopts the plain and ordinary meaning. Bosch argues that the Court should construe the term as "a device that receives the DC output voltage from the first power source and transforms that DC output voltage to a voltage equal to an input voltage of the battery to charge the battery."

B. The Parties' Arguments

Claim 9 of the '925 patent requires a "charger to charge said secondary rechargeable direct current power source from said first power source." Black & Decker contends that "charger" should simply have its plain and ordinary meaning, which Webster's New World College Dictionary, 4th Ed. (1999) provides as "an apparatus used to charge storage batteries." Bosch agrees that the "charger" charges batteries, but seeks to include additional limitations. Bosch, however, fails to point to any portion of the intrinsic record that requires a limitation on the term "charger" beyond its plain and ordinary meaning. The language of the claim itself plainly sets forth the scope of the term "charger" -- an apparatus that charges the secondary rechargeable direct current power source from the first power source. Adopting Bosch's proposed construction would render claim 9 of the '925 patent nonsensical and incorporate limitations into the claim that are not present. Accordingly, the Court adopts Black & Decker's proposed construction of "charger" which is "'charger,' having its plain and ordinary meaning, which is 'an apparatus used to charge stored batteries.'"

n16 The Court provides the construction in this format because the surrounding claim language of the term "charger" in claim 9 so thoroughly defines that term, that any proposed construction other than the term "charger," itself, would render the claim redundant when the factfinder substituted the Court's construction into the claim.

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n16 The Court provides the construction in this format because the surrounding claim language of the term "charger" in claim 9 so thoroughly defines that term, that any proposed construction other than the term "charger," itself, would render the claim redundant when the factfinder substituted the Court's construction into the claim.

--- End Footnotes ---

b. "Chassis"

Both parties request construction of the term "chassis." This term appears in the patentee's claim that the invention comprises "a plant support frame mounted on the chassis." It also appears in the claim terms that describe the head articulation and tail articulation means as connecting the lateral conveyors such that, when folded for transport, the conveyors "do[] not project laterally beyond the chassis."

The defendant requests that the Court construe "chassis" to mean "a pair of longitudinal beams." The plaintiff opposes this construction, and requests that the Court construe the term to mean "a structure onto which other elements are attached or mounted." The plaintiff urges that this term should be additionally construed to include, with respect to a tire-mounted screener, "the tire or wheel assembly (also known as a bogie) (including the tires), the support jack legs, the tire mud guards,
the laterally extending fixed platforms, and the axles." With respect to a track-mounted screener, the plaintiff requests the term be construed to include the "two tracks, the driven, guide and idler wheels, the frame, the roll-in bogie (including its tires, frames and mudguards), and the support jack legs."

The defendants support their narrower construction of chassis with language from the patent specification that states that "[t]he plant 1 comprises a chassis 2 having a pair of longitudinal beams mounted on wheels 3(a) and supported on jack legs 3(b)." (618 patent, col. 3, lns. 46-48.) The defendants read this to mean that the "chassis", identified with structure number 2, is separate from the "wheels" and "jack legs", identified with structure numbers 3(a) and 3(b), as well as the "wheel arches", identified elsewhere in the specification by structure number 33.

Further, the defendants point out that the chassis is identified in the patent's figures with a single lead line pointing to what appear to be beams running the length of the plant. See Figure 4 (above), structure 2. The defendants assert that this is especially significant in light of 37 C.F.R. § 1.84, the provision of the C.F.R. that regulates the figures included in a patent application. Section 1.84 provides in pertinent part:

(q) Lead lines. Lead lines are those lines between the reference characters and the details referred to. . . . They must originate in the immediate proximity of the reference character and extend to the feature indicated. . . .

(r) Arrows. Arrows may be used at the ends of the lines, provided that their meaning is clear, as follows:

(1) On a lead line, a freestanding arrow to indicate the entire section towards which it points;

The defendants contrast structure 2, the chassis, with structure 1, the plant itself. While structure 1 is identified with an arrow to indicate that multiple elements are incorporated into it, structure 2 is identified with only a lead line, indicating, in the defendants' view, the incorporation of only the longitudinal beams. See, Figure 4, above.

The plaintiff contends that, notwithstanding the use of different structure numbers to identify the chassis and the wheels, the patent commonly refers to a "wheelmounted chassis," indicating that the device's wheels are part of the chassis itself. Moreover, the plaintiff contends that, notwithstanding the patentee's use of lead lines and arrows, the drawings in the patent application show that the conveyors, when folded for transport, project well beyond the "longitudinal beams." According to the plaintiff, the chassis must comprise more than the longitudinal beams identified by the defendants because the patent states that the folded conveyor "does not project laterally beyond the chassis." The plaintiff argues that this can be seen in the depiction of the lateral conveyors, 20, in Figure 4 above. The plaintiff also cites to Figures 2 and 5, below, showing the preferred embodiment of the invention in operative and transport modes, respectively:

(SEE FIG. 2 IN ORIGINAL)

(SEE FIG. 5 IN ORIGINAL)

While Figure 2 identifies structure 2, the chassis, by pointing to the end of the longitudinal beams identified by the defendant, Figure 5 shows the collapsed conveyors extending well past these longitudinal beams to the very edge of the wheel arches, structure 33.

If possible, the Court is obligated to construed a patent so that the preferred embodiment is incorporated into the patent. On-Line Techs, 386 F.3d at 1138 ("a claim interpretation that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct" (internal quotations and citations omitted)). Here, the patent's figures show that, in the preferred embodiment, the device's conveyors extend beyond the longitudinal beams when folded for transport. According to this cannon, the Court must construe the chassis as comprising more than the longitudinal beams identified by the defendant.

Nevertheless, the defendants cite to Hockerson-Halberstadt, Inc. v. Avia Group Intern., Inc., 222 F.3d 951, 956 (Fed. Cir. 2000) for the proposition that, because the diagrams are apparently not drawn to scale, they cannot be used to interpret the relative dimensions of the invention. However, Hockerson stands only for the proposition that a court should not infer "precise proportions" and "particular sizes" from un-scaled patent drawings. Id. at 957. That is not what the Court is doing here. Figures 5 and 4 both plainly show the collapsed conveyor arms extending to the very extremity of the wheel arches. This is not a "precise proportion" being shown, but rather an important component of the design. Thus, the Court finds that
"chassis" must necessarily include not just the "longitudinal beams," but also the wheels and wheel arches of the invention in its preferred embodiment.

Nonetheless, there remains the more difficult question of how "chassis" should be defined more generally. The Court is wary of explicitly defining "chassis" to incorporate structures that are found only in the preferred embodiment of the invention. For similar reasons, the Court is also reluctant to explicitly construe "chassis" to include or exclude parts of the "tracks" on a "track-mounted screener." Unfortunately, the patent itself offers little in the way of generic description of a chassis, except to state that the "plant support frame" is mounted on it.

Finding the intrinsic evidence wanting, the Court finds most helpful the defendant Powerscreen's Spare Parts Listings for its mobile screeners. In its listing, Powerscreen uses the terms "track chassis" and a "wheel chassis" to refer to the entire assembly of supports, wheels, tracks, and other related parts on which would rest the other operative structures of the screening plant. (Decl. of Michael C. Stewart, Jun. 30, 2009, Ex. 29, PS 4511, 13.; Decl. of Steven A. Whyte, Jun. 29, 2009, P 18.) In the Court's view, this is evidence that "chassis", as used by one skilled in the art, refers to the entire assembly that rests beneath the functional parts of the screener. The evidence is particularly probative because, unlike the plaintiff, Powerscreen has no vested interest in using "chassis" in this manner. The Court finds this extrinsic evidence to be consistent with the intrinsic evidence in the patent itself, particularly the requirement that the chassis incorporate the wheels and the wheel arches in the preferred embodiment. The Court therefore construes the term "chassis" to mean "the entire assembly of parts that rest beneath the plant support frame."

D. As to the Construction of the Claim Term "Chassis"

In Metso I, the Court construed the claim term "chassis" to mean "the entire assembly of parts that rest beneath the plant support frame." Id. at 321. The defendants now challenge this construction, and advance a more limited construction of "chassis" that does not comprise, among other things, the wheels, wheel arches, tires, or support jacks that rest beneath the plant support frame.

The defendants challenge the Court's ruling based in large part on the Court's use of defendant Powerscreen's spare parts catalogue in construing the term "chassis." As described in Metso I, the Court construed the term "chassis" in part based on a Powerscreen spare parts catalogue that appeared to identify as a "chassis" the entire assembly of parts resting beneath the plant support frame of a screener. Id. at 321. The Court held that this evidence was consistent with the intrinsic evidence of the meaning of "chassis"—particularly the necessity that the term include the wheels and wheel arches—and therefore construed the term as described above. Id.

The defendants maintain that the spare parts catalogue on which the Court relied was not prepared contemporaneously with the drafting of the '618 patent, and that the catalogue is thus not an appropriate source for construing the term "chassis". Generally, a claim term has the meaning ascribed to it by those skilled in the art "as of the effective filing date of the patent application." Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005). The defendants interpret this rule to suggest that the Court should not consider evidence of the meaning of a claim term--such as the Powerscreen spare parts manual--that post-dates the drafting of that term.

The Court finds that the defendants' arguments do not merit any adjustment to the Court's construction of the term "chassis." First, assuming that Powerscreen's spare parts manual was drafted after the '618 patent was prepared, the Court nevertheless finds that the manual provides circumstantial evidence of the meaning of "chassis" at the time the patent was drafted. While it is possible that the understanding of the term "chassis" evolved after the '618 patent was prepared, there is no evidence to support that contention. Rather, the Court finds it more likely that the Powerscreen spare parts manual reflected the same understanding of chassis that existed at the time the '618 patent was drafted, even if the manual itself was prepared later. Moreover, even without considering this extrinsic evidence, the Court finds that the construction of the term "chassis" as set forth in Metso I is correct.

The Court has reviewed the defendants' other arguments with respect to this term and found them to be without merit. The Court therefore denies the defendants' motion for reconsideration of the construction of the claim term "chassis."
6. "a chassis comprising a front panel"

This term appears in the '408 patent claims 1 and 9. Rackable contends that "a chassis comprising a front panel" means a "frame or housing for the general purpose computer including the main board and including a front panel providing access as claimed." Supermicro asserts that "a chassis comprising a front panel" means "a frame or housing including a front panel."

The essence of the dispute is whether the "chassis" is for a general purpose computer, or whether it is simply any frame or housing. Again, Rackable argues for the narrower, more specific construction, and Supermicro the broad one.

Rackable argues that the claims themselves refer to "the computer" and the various components of the computer, supporting its construction. It further asserts that the specification and the "summary of the invention" explicitly state that the chassis is for a general purpose computer, and not simply any frame or housing. Additionally, Rackable argues that the embodiments support its construction, and demonstrate a chassis built up with certain components, including a main board.

In response, Supermicro argues that Rackable's construction is too limiting. Even if it were a chassis for a computer, Supermicro notes that contrary to Rackable's construction, it should not be construed only as a frame or housing for a "general purpose computer" or server. It argues that Rackable is attempting to import an inappropriate limitation into the term.

The court indicated at the hearing that Rackable's reference to "computer" in its construction of the term was redundant, given the fact that the broader context of the claim is the computer itself. In response to the court's inquiries, Rackable indicated agreement with Supermicro's construction. Because claims must be construed in a manner that avoids such redundancies, the court adopts Supermicro's definition, and construes the term "a chassis comprising a front panel" as a frame or housing including a front panel.

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9. Checkerboard Pattern

The parties are in substantial agreement concerning the phase "checkerboard pattern": "parallel vertical and horizontal impressions and crossing at right angles which results in a four sided impression." But defendants contend the phrase "approximately equidistant" should be added to the definition. This argument is based on the plain and ordinary meaning of "checkerboard pattern" and on defendants' expert's testimony that such a shape is square. Plaintiffs argue that adding "approximately equidistant" improperly narrows the construction in that a checkerboard pattern is not limited to perfect squares. Because of the second-stretch capacity of the netting arrangement, the indentations may not appear on the meat products as perfect squares but the basic shape of the netting arrangement is an approximate square. The plain and ordinary meaning of the term "checkerboard pattern" includes "approximately equidistant".

The Court construes "checkerboard pattern" as: "parallel vertical and horizontal impressions approximately equidistant and crossing at right angles which result in a four-sided impression."

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(g) "a plurality of chocks mounted to and extending downward from said primary frame members for contacting each of said cantilever sections of said arms and for transferring load from said primary frame members to said arms during dumping operations."
Boler's proposed interpretation relies heavily on its contention that the term "dumping operations" is a term of limitation. As discussed above, the court disagrees with Boler's contention. Boler also asserts that Watson limited the scope of claim 1 to "chocks" by replacing the term "chock means" with "a plurality of chocks" in element (g) in response to the examiner's initial rejection of Claim 1. Boler further argues that because Watson uses the term "chock" interchangeably with the term "saddle" on two occasions in the specification when describing a structure that is mounted to the frame members, the term "chock" should be defined as a "saddle-like structure." In contrast, Boler uses the dictionary definition of the term to define a "chock" as a block or wedge. The court concludes that simply because the preferred embodiment set forth in the specification uses the term chock and saddle interchangeably does not mean that a saddle-like structure is the only embodiment of the apparatus. Laitram Corp., 863 F.2d at 865. Accordingly, the court construes this element as "more than one block or wedge placed under a vehicular frame to keep it from moving, mounted on or attached to and extending below the primary vehicular framework members, adapted for touching the cantilever section of the arms, for stabilizing a vehicle by shifting or transferring the weight that a vehicle bears from the vehicular framework members to the arms."

To decide this appeal, this court must consider independent claims 22 and 30 and dependent claims 23, 26-29, and 31. The language of claims 22 and 30 contains no differences relevant to this appeal. For brevity, therefore, this court focuses its analysis on claim 22:

22. In a tool positioning system that is implemented as part of a workpiece processing system in which the workpieces are electronic circuit boards, the tool positioning system carrying out a method for cutting a predetermined hole pattern in at least first and second substantially identical circuit boards each having at least a first conductor layer, a dielectric layer, and a second conductor layer, comprising:

- generating at least first and second laser beams having respective first and second wavelengths;
- mounting the circuit boards on a slow positioner stage that effects a large range of relative movement between the laser beams and the circuit boards;
- providing at least first and second fast positioner stages that are coupled to the slow positioner stage to effect small ranges of relative movement between the laser beams and associated ones of the circuit boards; and
- coordinating the large and small ranges of relative movement such that the first laser beam cuts the predetermined hole pattern in the first conductor layer of the first circuit board while the second laser beam cuts the predetermined hole pattern in the dielectric layer of the second circuit board.

'960 patent, col. 20, ll. 15-37 (emphases added).

The district court construed the emphasized language to require simultaneous processing of "multiple, separated workpieces [but to] not claim a system for processing a single workpiece." Thus, the district court determined that the claim required separate "circuit boards," not a single workpiece that could be separated after processing. In that determination, the district court impermissibly limited claim scope. Properly construed, the claims require processing of multiple circuit boards without regard to whether those boards are separated or not.

To determine the meaning of "circuit boards," this court begins with the claim language. The preamble defines "circuit boards" as "at least first and second substantially identical circuit boards each having at least a first conductor layer, a dielectric layer, and a second conductor layer." References throughout the rest of the claim to "circuit boards" rely upon and derive antecedent basis from this preamble language. Therefore, this preamble definition limits the term "circuit boards" throughout the claim. Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620, 34 USPQ2d 1816, 1820 (Fed. Cir. 1995) ("[A] claim preamble has the import that the claim as a whole suggests for it."). This preamble definition narrows the meaning of "circuit boards" to at least two substantially identical boards. Nonetheless it does not state or suggest that those circuit boards must be separated.
The specification also supports the interpretation that the term "circuit boards" does not require separated workpieces: "Multilayer ECBs are typically manufactured by registering, stacking together, laminating, and pressing multiple 0.05-0.08 millimeter thick circuit board layers. Each layer typically contains a different interconnection pad and conductor pattern, which after processing constitutes a complex electrical component mounting and interconnection assembly." ‘960 patent, col. 14, l. 63 to col. 15, l. 2 (emphasis added). As the emphasized language shows, a workpiece becomes a circuit board following processing. Thus, a single workpiece could embrace multiple circuit boards. Or, in other words, the "circuit boards" need not be separate during processing.

This comports with common understanding in the field of electrical component fabrication. For example, Dr. Mark A. Shannon, expert for ESI, offered his uncontested declaration that multiple ECBs may be manufactured from a larger board or panel. Similarly, integrated circuits, such as computer processors, typically are produced many at a time from a single silicon wafer. Even before separation of the workpiece panel or wafer into separate circuit boards, design documents and software identify each ECB or integrated circuit individually, and govern their manufacture. For this same reason, a manufacturer does not separate a panel or wafer arbitrarily after processing. Having established an ECB's identity through design, the manufacturer may not ignore that identity when separating the panel without destroying the ECB.

GSI Lumonics contends, however, that the preamble and specification modify this customary meaning of ECB in this field of art to require physical separateness. Specifically, GSI Lumonics argues that the preamble defines ECBs as workpieces, ‘960 patent, col. 20, ll. 16-17, and that the preferred embodiment of the patent shows physically separate workpieces. ‘960 patent, Fig. 6.

To the contrary, neither the ordinary meaning of workpiece nor the inventor's preferred embodiment limits the claim scope. More particularly, even assuming that the preamble defines ECB as a workpiece, see Kropa v. Robie, 38 C.C.P.A. 858, 187 F.2d 150, 152, 88 USPQ 478, 480-81 (CCPA 1951) (Stating the preamble does not limit the claims unless it is "necessary to give life meaning and vitality" to the claims.), that definition imposes no separateness requirement. Workpiece is a broad term that means generally "the object which is worked on with a machine or tool." Oxford English Dictionary (2d ed. 1989); see also Robert C. Faber, Landsis on Mechanics of Patent Claim Drafting App. E-23 (4th ed. 2000) (Defining workpiece as "the thing or article operated on, altered, changed or reduced by a claimed apparatus or method."). Physical separateness, or lack thereof, simply does not enter into the ordinary meaning of workpiece. The term "workpiece" makes the ECBs the objects of work, but says nothing about physical separateness. An object may be worked upon irrespective of whether it is physically separate. The patentee has not altered this ordinary meaning. See Transclean Corp. v. Bridgewood Servs., Inc., 290 F.3d 1364, 1381, 62 USPQ2d 1865, 1877 (Fed. Cir. 2002) ("Because the patentee has not chosen to be his own lexicographer in this instance, 'resilient' should carry its ordinary meaning in the art.").

Figure 6 does depict a preferred embodiment that processes physically separate workpieces. The specification also identifies separate mounting of physically separate workpieces as one among other problems that the invention of the ‘960 patent is well suited to cure. See, e.g., ‘960 patent, col. 4, ll. 34-36, col. 13, ll. 27-28 (stating the invention "compensates for . . . workpiece placement, offset, rotation, and dimensional variations among the multiple workpieces" that is "introduced by mounting position variations among [the] workpieces."). Nowhere, however, does the specification teach that physical separateness is a required limitation of the invention. Nor does the specification teach that separate workpieces are the only source of the problems that the invention cures. The specification discusses other sources of misalignment problems. The specification simply does not narrow the claim language to require separate workpieces or circuit boards. In the context of the entire specification, the depiction of separate workpieces in Figure 6 does not limit the claim language. Laitram Corp. v. NEC Corp., 163 F.3d 1342, 1347, 49 USPQ2d 1199, 1203 (Fed. Cir. 1998) ("[A] court may not import limitations from the written description into the claims."); Electro Med. Sys. S.A. v. Cooper Life Sci., 34 F.3d 1048, 1054, 32 USPQ2d 1017, 1021 (Fed. Cir. 1994) ("Particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments."); SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1121, 227 USPQ 577, 585, n.14 (Fed. Cir. 1985) ("Specifications teach. Claims claim.").

The prosecution history of the ‘960 patent is also not a source of a separateness requirement. The examiner rejected claims 22 and 30 as obvious over U.S. Patent No. 5,262,707 (Okazaki) in view of U.S. Patent No. 5,425,275 (Ogawa). In response, the inventors amended their claims. Apart from those amendments, they explained that the "independent claims repeatedly recite multiple elements," including "circuit boards, lasers, and laser wavelengths." The inventors then argued that neither Okazaki nor Ogawa "describe or suggest any of the multiple elements and are completely silent regarding cutting holes in circuit boards, using laser beams as a hole cutting tool, and employing multiple laser wavelengths." Claims 22 and 30
clearly require multiple circuit boards in view of their plural language and this prosecution history. The claimed references
to multiple circuit boards and other components, however, does not require separate workpieces or separated circuit boards
at the time of processing. A single workpiece can encompass multiple circuit boards. Or, in other words, the claimed system
can produce multiple circuit boards by processing a single panel or wafer that later separates into the multiple ECBs.

The ordinary meaning of "multiple" and the specification's treatment of that term show that multiplicity and separateness
are not synonymous. Specifically, to be "multiple" is to "consist[ ] of or [be] characterized by many parts, elements, or
individual components." Oxford English Dictionary (2d ed. 1989). The meaning of "separate" is narrower: "Parted, divided,
or withdrawn from others; disjoined, disconnected, detached, set or kept apart." Id. The human body, for example,
comprises multiple individual cells. Those cells remain multiple though not separated or detached from other cells within
the body. Similarly, the specification teaches that the invention uses multiple lasers to process multiple workpieces. The
language of multiplicity does not require separateness. In sum, claims 22 and 30 do not require physically separate circuit
boards.

C. Construing and Applying the Claim Terms

Each of the independent claims includes directly or by incorporation a description of the "axially spaced circular ribs" on
the crimp sleeves. (See, e.g., Glazer Aff. Ex. A). The claims also indicate that the circular ribs, or at least some of them, are
"deformable into a hexagonal configuration." (See, e.g., id.). For example, Claim 1 of the '106 patent provides as follows:

1. An end connector for connecting a coaxial cable to a port, said cable being of the type having an electrical inner
conductor surrounded by and spaced inwardly from an electrical outer conductor, with a dielectric insulator interposed
between said inner and outer conductors, and with a dielectric jacket surrounding the outer conductor, said end connector
comprising:

....

a tubular body supported on the front end of said post at a location adjacent to said fastener means, said body having a
cylindrical second sleeve surrounding and spaced radially from said first sleeve to define an annular chamber there between,
said second sleeve having an open rear end leading to said annular chamber, said second sleeve having discrete axially
spaced circular grooves in its interior surface defining a plurality of discrete axially spaced circular serrations and having
grooves in its exterior surface defining a plurality of axially spaced circular ribs,

....

said ribs being deformable into a hexagonal configuration with an accompanying inward twisting deformation of said
circular serrations toward said first sleeve and indented mechanical engagement with said jacket.

(Id.) (emphasis added). "Circular" is not defined in the specification or elsewhere in the patent, and thus that term must be
"given [its] ordinary and accustomed meaning." Nike, 43 F.3d at 646.

Cabel-Con argues that "circular," both in common usage and as used in Mezzalingua's claims, means round or having the
form of a circle. Cabel-Con cites Webster's New Collegiate Dictionary for this definition. In addition, Cabel-Con notes that
the claim description states that the circular ribs are deformable to a hexagonal configuration, which suggests that circular
does not mean hexagonal. Cabel-Con claims also that the specifications refer to "diameters," and diameter is a quintessential
feature of a circle. Cabel-Con also notes that the '106 patent inventor has conceded that Figure 5 of the '106 patent defines a
perfect or reasonably perfect circle before the sleeves are crimped.

Mezzalingua, on the other hand, relies on Webster's Third New International Dictionary, which defines "circular" as "having
the exact or approximate form or outline of a circle: Round." Mezzalingua argues that an object such as a "circular saw" is
not perfectly circular, but rather approximates the form of a circle. Mezzalingua also contends that Cabel-Con cannot use
the illustration in Figure 5 as evidence of meaning, because that illustration is just a preferred embodiment. See Transmatic,
53 F.3d at 1277.

As a preliminary point, I reject Cabel-Con's "diameter" argument. The fact that both Cabel-Con's and Mezzalingua's devices have specified diameters is largely irrelevant to the meaning of "circular ribs". Clearly, Cabel-Con cannot effectively argue that Mezzalingua's designation of a diameter for its device means that its device is shaped in a perfect circle, and at the same time contend that its device, which also has a diameter in its specifications, is not in a circular shape. Moreover, neither party seems to grasp the fact that diameter is a measurement applicable to many geometric shapes besides circles. See Webster's Third New International Dictionary of the English Language Unabridged 623 (1981) (diameter is "a chord passing through the center of a figure or body (as a circle, conic section, sphere, cube") (emphasis added). 1

--- Footnotes ---
1 For similar reasons, I reject Mezzalingua's alternative argument that because Cabel-Con's devices have diameters, they literally infringe on Mezzalingua's device. I also reject plaintiff's argument that Cabel-Con's description of its rib as a ring means it is circular. The definition of "ring" include circular, but is not limited to circular. Websters Third New International Dictionary 1958 (1993).
--- End Footnotes ---

Next, I must construe the meaning of "circular" in Mezzalingua's claims. One definition of "circular", that to which Mezzalingua refers, is "having the exact or approximate form or outline of a circle." Webster's Third New International Dictionary of the English Language Unabridged 409. Another dictionary defines "circular" as "in the form of a circle; round; as, the sun appears to be circular." Webster's New Universal Unabridged Dictionary 368 (2d ed. 1983). Cabel-Con relies on a definition of "circular" as "having the form of a circle: ROUND [or] moving in or describing a circle or spiral." Webster's New Collegiate Dictionary 200 (1979). Another common dictionary defines "circular" as "of or pertaining to a circle" and "having the form of a circle; round." The Random House College Dictionary 244 (rev. ed. 1984).

Although it is apparent from the various definitions that an object need not be in the exact form of a circle to be circular, it also is clear that an object is not circular just because it has a continuous edge around it. For example, a square, though the four sides are drawn around it, cannot be circular, at least not as "circular" is commonly understood. Mezzalingua appears to contest this observation, noting that "things are commonly called circular when their peripheral edges do not form exact circles." Pl.'s Opp. Def's Mot. Part. Summ. J. at 6. Citing a prominent dictionary's use of "exact or approximate form or outline of a circle" in its definition of circular, Mezzalingua seems to place great reliance on the word "approximately." However, Mezzalingua's specifications strongly support a reading of "circular" that is far from approximate.

As used in Mezzalingua's claims, "circular" must refer to a shape perceivable to the ordinary eye as a circle, and not merely any shape which proceeds around an empty center. But see Monroe Eng'g Prods., Inc. v. J.W. Winco, Inc., 915 F. Supp. 901, 906 (E.D. Mich. 1996) (holding that it could not conclude as a matter of law that an octagonally-shaped coupling element did not literally infringe a patent describing a coupling element with an "annular configuration," because "annular" meant in the form of a ring, or circular in shape, though not necessarily forming a perfect circle, and a question of material fact existed as to whether an equilaterally-sided octagon product was in the form of a ring). As Cabel-Con notes, Figure 5 to the '106 patent and the description that accompanies it depict the ribs as perfect circles deformable into hexagons. The ribs clearly are perfectly circular in Figure 1 as well. While I am wary not to rely on the preferred embodiments that are frequently depicted in specifications, see Transmatic, 53 F.3d at 1277, there is little question from the figures and the language of the claims that the ribs are in the shape of perfect circles. These products are designed and presumably described by scientists and engineers. We must assume that they use mathematical and geometric descriptors carefully and intentionally. To argue that a hexagonal ring is a circular pattern plays loose with geometry. While a hexagon may be closer to resembling a circle than a pentagon or a square, to say that it literally is a circular shape would reduce the world of equally-sided polygons to circles. This is not an appropriate result, nor one fair to geometry and the English language.

Furthermore, I am persuaded by the fact that any other reading would render the distinctions in the claim itself nonexistent. If a hexagon is a circular pattern for the purposes of the claim, then deforming the circular pattern into a hexagon would be redundant.

Applying this definition to Cabel-Con's products, a reasonable finder of fact could not find literal patent infringement.
Cabel-Con's products have end connectors with external ribs, much like Mezzalingua's products, but Cabel-Con's ribs are essentially hexagonal prior to crimping, then more circular once crimped. The crimp sleeve ribs on Mezzalingua's products are circular prior to crimping, then more or less hexagonal after crimping. Regardless of how these distinctions would fare under the doctrine of equivalents, they are enough as a matter of law to defeat literal infringement.

We also find that the trial court properly construed "circular member," "stent member," "ring," and "endovascular support member" to have the same meaning as "stent." As the trial court found, none of these terms are present in the specifications. Where they are used in the claims, however, they are employed in a manner analogous to and interchangeable with the term "stent." See, e.g., '331 patent, col. 8, ll. 6-21; '278 patent, col. 6, ll. 53-63; '382 patent, col. 6, ll. 45-57; '053 patent, col. 7, ll. 10-27. Because the claims establish that Medtronic used the challenged terms synonymously with "stent," the trial court's construction is correct.

b. The groove

First, Dethmers contends that its EXCALI-BAR tow bar does not have a groove that "circularly surrounds" the inner tube as required by the '166 patent. The pertinent limitation of the '166 patent is the following:

What is claimed is as follows:

1. Arrestably Lockable Telescoping Tow-Bar Assembly comprising:

(A) an inner-tube having an outer-surface concentrically surrounding a directionally longitudinally extending central-
Thus, the EXCALI-BAR, which has at least two grooves that together define no more than a 240-degree arc of a circle
circularly surrounding said central-axis and located in a plane perpendicular to said central-axis[.] Patent No. '166, claim 1 (emphasis added). Dethmers contends that the proper interpretation of this limitation is that "circularly surrounding" means that the groove forms a complete 360-degree circle around the inner tube. However, on Dethmers's EXCALI-BAR, the grooves (plural) only partially encircle the inner bar. See "exploded" view, page 27 (at handwritten "A"). Automatic counters that a proper interpretation of the phrase "inward-groove circularly surrounding said central-axis" in claim 1 of the '166 patent is a groove that does not intersect the central axis, but defines the boundaries of a circle, either continguously or non-continguously, around the central axis. Automatic contends that the grooves on the EXCALI-BAR literally meet this limitation, because the grooves do define the boundaries of a circle.

i. Claim interpretation and literal infringement. As explained above, "proper claim construction requires an examination of the claim language, the written description, and, if relevant, the prosecution history," see Comark Communications, Inc., 156 F.3d at 1186, 1998 U.S. App. LEXIS 22117, *10, 1998 WL 614579 at *4, and "the appropriate starting point . . . is always with the language of the asserted claim itself." See id. The claim language here leaves the court in no doubt that what was actually claimed was a single continuous groove describing a complete circle around the inner tube. "Circularly," in the first instance, suggests a continuous, complete circle, because the term "circular" means "having the form of a circle: round," or "describing a circle or spiral." See, e.g., WEBSTER'S COLLEGIATE DICTIONARY (10th ed.). Although the parties have concentrated on the meaning of "circularly," each finding support in dictionary definitions for its interpretation, they have not apparently considered the effect of "circularly surrounding," which makes plain that the groove, in the form of a circle, is "to enclose on all sides" the inner tube. See, e.g., WEBSTER'S COLLEGIATE DICTIONARY (10th ed.). "Claims terms are . . . to be interpreted so as to give the terms their ordinary meaning, absent some clear special definition." Enercon GmbH, 151 F.3d at 1384, 1998 U.S. App. LEXIS 18752, *24, 1998 WL 469892 at *9 (emphasis added); Vitrronics, 90 F.3d at 1582; Athletic Alternatives, 73 F.3d at 1578. Automatic did not give "some clear special definition" to "circularly surrounding," such as defining it to mean a groove or series of grooves that describe or define a complete or partial circle about the central-axis of the inner tube. Although Automatic asserts that it is improper to add qualifying terminology to a claim that is not contained in the claim itself, citing Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 950 (Fed. Cir. 1993), when arguing that Dethmers reads the limitation to be "completely circularly surrounding" the inner tube, it is equally improper for Automatic to argue that the absence of a qualifier means that the limitation meant "completely and partially circularly surrounding." Addition of "completely" would simply be redundant; it is addition of the further qualifier "and partially" that is improper.

Nor does use of the language "at least one . . . inward-groove" cover a series of grooves that together define a circle about the inner tube. Rather, it is clear that "at least one" means that each of the grooves must have all of the characteristics that follow, i.e., each must be a single continuous groove describing a complete circle around the inner tube. In other words, there could be a series of such grooves spaced along the inner tube to provide for various locking positions for various extensions of the telescoping locking arms.

Looking briefly at the written description, see Comark Communications, Inc., 156 F.3d at 1186, 1998 U.S. App. LEXIS 22117, *10, 1998 WL 614579 at *4 ("Proper claim construction requires an examination of the claim language, the written description, and, if relevant, the prosecution history"); emphasis added), the court notes that "circularly surrounding" is also "completely circularly surrounding," such as defining it to mean a groove or series of grooves that describe or define a complete or partial circle about the central-axis of the inner tube. Although Automatic asserts that it is improper to add qualifying terminology to a claim that is not contained in the claim itself, citing Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 950 (Fed. Cir. 1993), when arguing that Dethmers reads the limitation to be "completely circularly surrounding" the inner tube, it is equally improper for Automatic to argue that the absence of a qualifier means that the limitation meant "completely and partially circularly surrounding." Addition of "completely" would simply be redundant; it is addition of the further qualifier "and partially" that is improper.

Thus, the EXCALI-BAR, which has at least two grooves that together define no more than a 240-degree arc of a circle around the inner tube, does not literally infringe this limitation of claim 1 of the '166 patent as a matter of law.
Claim 1 of the '701 Patent includes the term "circumferential array of vanes" around the impeller. The Court construes this term to mean "a number of flat or curved surfaces arranged around the outer part of the impeller, which is generally circular in shape." 2

Performance asserts that its proposed construction and TI Group's proposed construction of this term are fundamentally the same and, therefore, the Court adopts TI Group's proposed construction. However, the phrase "a number of is vague. Because this aspect of the claim term is not in issue, the Court does not define the term further.

The term "circumferential member" is not indefinite. The parties agree that the term "member" means a structural element. 145 Circumferential, used in this context, relates to the circumferential direction. Nonetheless, Guidant submits that a circumferential member is merely a loop. This interpretation is rejected. First, Guidant does not identify any part in the intrinsic record limiting "circumferential member" to a loop. Second, as Medinol correctly notes, Guidant's proposed definition of "circumferential meander" suffers from overinclusiveness, as it would includes loops with "end points that are not displaced from each other with respect to the stent's circumferential axis, such as reference numerals 18 . . . and 20 of Figures 1-4." 146 Accordingly, the term "circumferential member" describes a structural element extending in the circumferential direction, and the first and second circumferential members identify and differentiate two different circumferential members.

56. A balloon expandable stent for implantation into a lumen to support the lumen, said stent both in the unexpanded state and in the balloon-expanded state including: a plurality of flexible cells adjacent to one another both circumferentially and longitudinally each of said flexible cells comprising:

a) a first flexible link including an arc, the first flexible link having a first longitudinal end and a second longitudinal end;
b) a second flexible link including an arc, the second flexible link having a first longitudinal end and a second longitudinal end;

c) a first circumferential member disposed between said first longitudinal end of said first flexible link and said first longitudinal end of said second flexible link and;

d) a second circumferential member disposed between said second longitudinal end of said first flexible link and said second longitudinal end of said second flexible link,

e) at least one of said first circumferential member and said second circumferential member in each of said cells having a portion with a substantial longitudinal component that is also a portion with a substantial longitudinal component of a first circumferential member or a second circumferential member in a longitudinally adjacent cell,

wherein in the expanded state the first and second circumferential members have a substantial longitudinal component to provide coverage of the lumen.

'381 Patent, col. 9, ll. 56-57-col. 10, ll. 1-18.

146 Pl. Mem. at 23. See also '381 Patent, Figures 1-4.

--- End Footnotes ---

Crown's proposed construction is "[c]an end wall encircling the center of the can end and extending from the seaming panel." 91 Rexam's proposed construction is "[t]he end wall (or chuck wall) that begins where the seaming panel ends with a portion that has a different radius than the seaming panel." 92

--- Footnotes ---

91 Id. at 8.

92 Id.

--- End Footnotes ---

The court adopts Crown's proposed construction.

For the reasons discussed in connection with 16, above, Rexam's proposed construction is rejected as inconsistent with the court's determination that the seaming panel is not limited to a single radius. The court, therefore, adopts Crown's proposed construction as consistent with a plain reading of the claim language: "can end wall encircling the center of the can end and extending from the seaming panel."

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--- Footnotes ---

13 This term is found in dependent claims 2 and 11 of the '458 Patent and is found in dependent claims 2 and 8 of the '073
The parties ask the Court to construe this term and the term "circumferentially reinforced by a metal wire structure," found in independent claim 22 of the '736 Patent, in the same manner.

There is no dispute among the parties that this phrase should be construed to require more than one wire and that the wires are placed around the graft in a circular manner. It also is apparent that the parties agree that the wires are intended to strengthen or support the graft body, as the Court has defined that term. The parties again dispute whether the wires referenced in this phrase must be malleable. For the reasons set forth above in Section 8.2, the Court concludes that the wires are malleable.

The parties also disagree about the meaning of "along its length" and "separately spaced apart." With respect to "along its length," Cook argues that it means "from end to end," i.e. that the wires extend the entire length of the device. Cook, however, finds support for its position from a reference in the specification where the inventors state that because "the wires are arrayed along the length of the graft the complete position of the graft in the body can be continuously monitored" by X-ray. ('458 Patent, col. 3, II. 42-45.) Plaintiffs and Gore, in contrast, propose constructions that do not ascribe any special meaning to this term.

The claim language states that the wires are placed at "locations along its length." ('458 Patent, col. 6, II. 22-22.) The use of the word "locations" does not suggest that the wire must run the entire length of the device. In addition, the specification supports a conclusion that the wires do not need to run the entire length of the device. For example, in the Abstract, the inventors state that the invention may include a "plurality of wires spaced apart from each other and arranged to circumferentially reinforce said tubular graft body along a substantial portion of its length." ('458 Patent, Abstract (emphasis added).) The use of the term "substantial portion," rather than "along the entireity" or "along its entire length," support Plaintiffs' position that the phrase should not be construed to mean the wires extend from "end to end." Further support for the Court's conclusion stems from the fact that, in certain preferred embodiments, the invention includes a skirt portion that has no reinforcing wires. Thus, in these embodiments, the wires would not extend the entire length of the invention. See, e.g., Primos, Inc. v. Hunter's Specialties, Inc., 451 F.3d 841, 848 (Fed. Cir. 2006) (court normally should not interpret a claim to exclude a preferred embodiment).

Finally, Cook also argues that the inventors, in a later patent application, distinguished over prior art that disclosed wires that were located only at the end of the graft. (Cook Br. at 19-20; Cook Ex. 15.) To the extent that statement is relevant to construction of the patents-in-suit, there is nothing in the inventors' response that suggests the wires must be placed along the entirety of the device. Rather, a plausible interpretation of the inventors' remarks is that they distinguished the prior art by stating that the prior art had wires only at each end of the device, whereas the device they were claiming had reinforcing wires at additional locations and not only at the ends. (See Cook Ex. 15 at 14.)

Gore argues "separate spaced apart" means that the wires cannot touch or overlap. Plaintiffs argue that in most instances the wires will not touch one another. Plaintiffs' proposed construction draws upon the language quoted above from the Abstract, which refers to where the wires are placed along the graft body. The claim language uses the word "apart," which suggests that the wires are separated from one another, i.e. they are not touching. The figures of the patents-in-suit also show that the wires do not touch or overlap with one another. ('458 Patent, figs. 2-3, 5-7.) Further, in the "Disclosure of the Invention" the inventors state:

> It is preferred that the one wire has a greater amplitude than at least the next adjacent one or two wires. This allows the wires at the end of the graft to be positioned more closely together than would be the case if they were all of the same amplitude. … It is desirable to space the wires adjacent the end of the graft that will be placed "upstream" in the patient as close together as is possible as the neck of the aneurysm with which the graft is engaged can be quite short. Close spacing of the wires maximises the number of wires reinforcing that part of the graft in contact with the neck of the aneurysm. The spacing of the rest of the wires is desirably greater than those adjacent the one end of the graft as this avoids unnecessarily reducing the flexibility of the graft.

('458 Patent, col. 2, II. 36-48; see also id., col. 5, II. 47-57 (describing spacing of wires in manner in which wires do not come into contact with one another).) Although this portion of the specification teaches that the wires may be spaced closely together, it does not teach that the wires can come into contact with one another. Further, the description of the purpose of
spacing the wire also supports Gore's construction that the wires should not come into contact with one another.

Accordingly, the Court construes the phrase "circumferentially reinforced at locations along its length by a plurality of separately spaced apart wires" to mean: "The graft body or bifurcated base structure is strengthened by at least two malleable wires that do not contact or touch one another and that are placed circumferentially along the length of the material forming the graft body or bifurcated base structure."

3. "Each Having At Least Two Circumferentially Spaced Teeth" and "Each Disk Having At Least Two Circumferentially Spaced Teeth"

Claim 1's reference to the "cutting disks" "each having at least two circumferentially spaced teeth" is nearly identical to Claim 12's phrase "each disk having at least two circumferentially spaced teeth" and thus the two phrases will be construed together. The three parties agree that elements 1(h) and 12(e) mean, at a minimum, that "each cutting disk has at least two teeth for cutting that are spaced apart in the direction of rotation." They disagree, however, as to the function of the "spaced teeth." Fellowes submits that the "spaced teeth mean the disks are used to cross-cut paper." Michilin argues that the "spaced teeth with the additional transverse cutting edge allow for a cross-cut of the paper to occur." According to Intek, the "spaced teeth with additional cutting edges provide a cross-cut that produces a number of small, rectangular pieces."

Whatever the merit of Michilin's position that "cross-cutting" is impossible unless the "spaced teeth" have a "transverse cutting edge," see Hearing 147, the patent itself was unambiguously intended to apply to shredders that allow for "cross-cutting," as opposed to "strip cut" shredders. See '780 Patent, col. 1, line 4-5 ("The present invention relates to a cross cutting cylinder for shredding paper."); id. at col. 1 lines 11-14 ("Typically, the cutting is achieved by a pair of rotating cutting cylinders having a series of circular cutters or blades along the axis of a solid shaft."); id. at col. 1, lines 35-37 ("A cross cut shredder generally comprises a pair of parallel cutting cylinders that contain a series of offset cutting disks arranged along the axis of the cylinders."). Whatever the consequences in this litigation of the patentees' failure to include the word "transverse" in the '780 Patent, the Court finds it significant for the purposes of claim construction that the patent was approved even though the word "transverse" appears nowhere therein. Indeed, the specifications provide that ",...the particular construction and shape of the teeth is not important to the practice of the present invention so long as they provide a cross cut (i.e. chips of material)." Id. at col. 2, lines 39-42. Consequently, the Court will not add "transverse" to its construction of elements 1(h) and 12(e). For similar reasons, the Court does not see the need to specify, as Intek urges, that the "spaced teeth" have "additional cutting edges." Moreover, for reasons made clear in the Court's analysis of the "cross-cut cutting cylinder," the Court refuses to limit the '780 Patent to shredders that produce "rectangular pieces" and therefore rejects Intek's construction. See infra element 12(a). Accordingly, the Court FINDS that elements 1(h) and 12(e) both mean that "each cutting disk has at least two teeth for cutting that are spaced apart in the direction of rotation" and further that the "spaced teeth mean the disks are used to cross-cut paper." 8

--- Footnotes ---

7 The Court finds puzzling the apparent inconsistency between Michilin's definition of Claim elements 1(h) and 12(e), both of which concede that the '780 Patent relates to "cross-cut shredders," and the position taken by Michilin's counsel at the Markman hearing that the '780 Patent failed to cover a "cross-cut" shredder because it lacked a "transverse edge." See Markman Hr'g Tr. 147 ("[I]f you're going to say that their claim covers cross-cutting, you have to have that [transverse] edge.").

8 The Court notes that its use of the word "paper" in this construction is consistent with its construction of a "cross-cutting cylinder," element 12(a), and "cutting disks," element 12(d).

--- End Footnotes ---
4. "Circumscribing"

Jennmar proposes that "Circumscribing" means "Encircling or surrounding in whole." Excel originally proposed a definition of "Encircling or surrounding in whole or in part." Excel subsequently proposed to omit the last phrase, to avoid (or defer) the "in whole" versus "in part" dispute, such that the definition would simply be: "Encircling or surrounding."

After careful and deliberate consideration, the Court finds that Excel's revised construction is correct. There is no need to resolve whether the term "circumscribing," when used alone, contemplates encirclement "in whole" or "in part" because, in the '933 Patent, the author uses the term "at least partially circumscribing." (see, e.g., Abstract, Column 1) Jennmar's proposed definition would yield the awkward and self-contradictory reading "at least partially encircling or surrounding in whole." It is sufficient to construe "circumscribing" simply as "encircling or surrounding."

3. On December 22, 2000, the court issued its construction of disputed claim terms as follows:

a. "Aluminum alloy sheet product." As understood by one of ordinary skill in the art, an aluminum product with a maximum thickness of 1/4 inches.


c. "Clad" and "cladding." Structures containing an outer layer that provides protection against corrosion. Claims without reference to "clad" or "cladding" apply to both clad and unclad products.

1. "Clamp"

In this patent infringement action, two patents are at issue. The first is United States Patent No. 5,709,489 (the '489 patent), entitled "Keyboard Positioning System," issued on January 20, 1998. The '489 patent describes "a device for mounting a keyboard to a base and for positioning the keyboard in a backward tilted position." The device includes, inter alia:

a clamp engaged with said bracket said clamp being engagable [sic] with a keyboard such that the keyboard may be oriented in a backward tilted position defined by the rear end of the keyboard being disposed below the front end of the keyboard, to prevent the keyboard from falling off when the keyboard is oriented in said backward tilted position.

'489 patent, claim 1(b), col. 4, 11. 48-54.

"Clamp" is not defined in the claim itself or in the specification. Presumptively, then, the term should be given its ordinary and customary meaning, as understood by one of ordinary skill in the art. Prima Tek II, L.L.C. v. Polypap, S.A.R.L., 318 F.3d 1143, 1148 (Fed. Cir. 2003). The parties agree that "clamp" should be given its plain and ordinary meaning. Their respective proposed definitions, however, are different in one material respect. Plaintiffs' proposed definition:

A clamp is a structure that can provide gripping forces for supporting a keyboard and stops it from falling off when the key plane of the keyboard is negatively titled.

Defendants' proposed definition:
A clamp is a device that can grip or bind a keyboard by at least two opposing points to stop it from falling off when the keyboard is tilted backwards.

The dispute thus evolves around whether the clamp must grip the keyboard by at least two opposing forces.

Defendants contend the ordinary and customary meaning of clamp, as reflected in several dictionary definitions, contemplates a device or instrument designed to bind, constrict or press two or more parts together so as to hold them firmly. Indeed, the Oxford English Dictionary defines "clamp" most relevantly as "a name of various appliances, tools or instruments with opposite sides or parts which may be screwed or otherwise brought together, so as to seize, hold, compress, or pinch anything." Oxford English Dictionary Online, Oxford University Press, Second Edition (1989). Defendants thus argue that this pinching, binding or pressing action, by exertion of force at at least two opposing points, is integral to the nature and operation of a clamp, as opposed to instruments or structures that may use other means to hold an object in place. Applying the common meaning of "clamp," this Court agrees.

Plaintiffs insist that the claim language and specification do not support such a limitation. They argue that a "clamp" is any "support" or "support member" that keeps the keyboard from falling, whether or not any pinching, binding or pressing dynamic is used.

Yet, the limitation is unavoidably implicit in the term "clamp." A support member that holds an object in place without pinching, binding or pressing it between opposing points is simply not a "clamp," as that term is commonly understood. That this common, ordinary understanding prevails among those skilled in the art is attested to by Richard Benoit, a Steelcase Senior Sales Consultant, whose second declaration has, in this respect, not been rebutted. This construction is entirely consistent with the structure disclosed in the patent. It is also consistent with the prosecution history. Plaintiffs' arguments to the contrary are transparently meritless.

Accordingly, defendants' proposed definition of clamp shall be adopted by the Court for use in adjudicating plaintiffs' infringement claim:

A clamp is a device that can grip or bind a keyboard by at least two opposing points to stop it from falling off when the keyboard is tilted backwards.

With respect to the clamp means, claim 1 provides in pertinent part:

clamp means for automatically clamping an attachment end when in said predetermined alignment; …

said clamp means includes first and second resiliently biased spring means carried on said coupling and disposed within said first and second pockets, respectively, and directed to urge an element wall against a wall of said coupling upon insertion of said element wall between said outer and inner walls ….

The '243 patent, claim 1.

Again, the use of the word "means" invokes a presumption that § 112, P 6 applies. The function of the clamp means is "for automatically clamping an attachment end when in said predetermined alignment." Id. The claim fails to recite sufficient structure, material, or acts for performing the function of clamping. To perform this function, the clamp means requires "leaf springs 61 that include first and second halves 62, 64 disposed on opposite sides of spacing rib 56." Id. at col. 3: 63-65. The springs 62, 64 are biased toward the internal walls 48, and have terminal ends 65, "which are bent back to permit a leading end of the attachment ends to be inserted into the space 57." Id. at col. 3: 66 - col. 4: 1. Because additional structural limitations are required for the clamp means to perform its function, claim 1 fails to recite sufficient structure to perform the function. See Unidynamics Corp. v. Automatic Products Intern., Ltd., 157 F.3d 1311, 1319 (8th Cir. 1998); Laitram Corp., 939 F.2d at 1536 ("The recitation of some structure in a means-plus-function element does not preclude the applicability of
§ 112, P 6 [when it] merely serves to further specify the function of the means."). The presumption that § 112, P 6 applies is not rebutted.

The specification of the '243 patent describes the leaf springs as entirely placed within the spacing between the inner and outer walls. The specification calls for "leaf springs 61 placed within side space 57 on opposite sides of the coupling." The '243 patent, at col. 3: 59-62. The figures of the '243 patent confirm this interpretation.

The prosecution history provides further support for this construction. In response to a rejection, ADC asserted that the claim "calls for a coupling having inner and outer walls defining a pocket … with the spring carried completely within the pocket defined by the first and second opposing walls." Fiorella Decl., Ex. 11, Response to Final Office Action of June 23, 1992. ADC argued that both the inner and outer walls enclosed the spring means. ADC is bound by its own previous explanations in support of establishing the claim.

The proper construction of the clamp means is as a means-plus-function element to automatically clamp the attachment end in the coupler. The clamp means element includes resiliently biased spring means in the form of resiliently biased leaf springs disposed in the first and second pockets. The spring means must be entirely enclosed within the pockets and, therefore, must be entirely between the inner and outer walls of the alignment means. In order to be resiliently biased, the spring means must be under the influence of spring forces before the wall of the cable pathway defining element is inserted into the coupler.

1. Claims 1, 6, 7, and 8 ("clamp member")

Claims 1, 6, 7, and 8 (and all dependent claims) of the '286 Patent use the term "clamp member" as follows:

. "[A] clamp member supported adjacent to the cutting jaw, the clamp member being moveable in relation to the cutting jaw between an open position in which at least a portion of the clamp member is spaced from the cutting jaw and a closed position in which the clamp member and the cutting jaw are in substantially juxtaposed alignment," see '286 Patent, Claim 1(c) (emphasis added);

. "[A] rotatable member operatively associated with the vibration coupler, the clamp member and the cutting jaw, the rotatable member being rotatable to cause corresponding rotation of the clamp member and cutting jaw about a longitudinal axis of the instrument," see id. Claim 1(d) (emphasis added);

. "An ultrasonic instrument according to claim 1, wherein the clamp member includes a pair of tissue engaging stops," see id. Claim 6 (emphasis added);

. "[A] clamp member supported adjacent to the cutting jaw, the clamp member and the cutting jaw defining a tissue receiving area, the clamp member being moveable between open and closed positions in relation to the cutting jaw and having a tissue engaging stop positioned to engage tissue and prevent positioning of tissue beyond the proximal end of the cutting surface of the cutting jaw," see id. Claim 7(d) (emphasis added);

. "An ultrasonic instrument according to claim 7, further including an actuator tube slidably positioned about the vibration coupler, a distal end of the actuator tube including a cam slot configured to receive cam members formed on the clamp member, the actuator tube being moveable between advanced and retracted positions about the vibration coupler in response to actuation of the handle assembly to effect movement of the clamp member between the open and closed positions," see id.

Claim 8 (emphasis added). n4

Plaintiff proposes construing the term as: "A part configured to hold, grasp, or apply pressure to tissue, that is movable and works with a component of the instrument (e.g. the cutting jaw), for holding, grasping, or applying pressure to the tissue." Defendant proposes: "A part configured to hold, grasp, or apply pressure to tissue, that is movable and which is separate and distinct from the tissue contacting member."
The term is further utilized in dependent Claims 12, 14, 17 and 19.

The parties thus agree on the first phrase in this construction: that a "clamp member" is "a part configured to hold, grasp, or apply pressure to tissue, that is movable." Additionally, it is clear from the claim language and the specifications that the ordinary and customary meaning of "clamp member" in the context of this patent includes the feature that the "clamp member" works with the cutting jaw, for holding, grasping, or applying pressure to tissue. See e.g., '286 Patent Claim 1(c), Claim 1(d), Claim 7(d), 2:5-13.

The parties dispute, however, whether the "clamp member" is necessarily "separate and distinct from" the tissue contact surface. n5 The basis of the parties' dispute is the meaning of dependent Claim 17, which provides: "An ultrasonic instrument according to claim 7, wherein the clamp member includes a tissue contact surface removably fastened to the clamp member." Defendant argues that the "clamp member" must thus be separate and distinct from the "tissue contact surface" in order for it to be capable of being "removably fastened" to the tissue contact surface, as described in the claim and specifications. See Def. Claim Construction Br. at 16-17; Markman Tr. 124; see also '286 Patent 3:64-4:9. Plaintiff argues that it is improper to limit the claim language based on dependent Claim 17. See Pl. Claim Construction Br. at 22; Pl. Reply Br. at 5-6; Markman Tr. 25-26.

n5 While defendant proposes that the "clamp member" must be separate and distinct from the "tissue contacting member," the term actually used in Claim 17 of the '286 Patent is "tissue contact surface" and the patent's actual terminology will be used. See '286 Patent, Claim 17.

While plaintiff is correct that as a general matter claim language should not be limited by dependent claims, n6 the Federal Circuit has also held that a term used in multiple claims should be construed identically in each of those claims. See Nazomi Commun., Inc. v. Arm Holdings, PLC, 403 F.3d 1364, 1370 (Fed. Cir. 2005); Dayco Prods. Inc. v. Total Containment, Inc., 329 F.3d 1358, 1371 (Fed. Cir. 2003) ("If a claim term appears in more than one claim it should be construed the same in each."). Thus, because Claim 17 requires that the "clamp member" and the "tissue contact surface" be separate and distinct, such that they are capable of being "removably fastened," it is proper as a matter of claim construction for all those claims in the '286 Patent that invoke the term "clamp member" to be consistently construed to reflect that limitation. Accordingly, the Court construes the term as: "A part configured to hold, grasp, or apply pressure to tissue, that is movable, that works with a component of the instrument (e.g. the cutting jaw), and which is separate and distinct from the tissue contact surface."

n6 See Nazomi Commun., Inc. v. Arm Holdings, PLC, 403 F.3d 1364, 1370 (Fed. Cir. 2005) ("The concept of claim differentiation normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend.") (internal quotation and citation omitted).

III. "Clamp Member" in the '286 Patent

Lastly, Tyco seeks amendment of the Court's construction of the term "clamp member" in the '286 Patent, which includes the limitation that the clamp member is "separate and distinct from the tissue contact surface," arguing that the limitation is impermissibly imported from a dependent claim and is also inconsistent with the usage of the same term in the '050 Patent. Ethicon argues that there is no basis for the Court's construction of "clamp member" to be reconsidered because "the Court properly recognized that the plain language of Claim 17 requires that the 'clamp member' and the 'tissue contact surface' be separate and distinct, such that they are capable of being 'removably fastened.'" Ethicon Opp. at 3. Ethicon contends that the portions of the specification which "describe the clamp member and tissue contact member as separate, distinct parts are dispositive on this issue." Id.

While Ethicon contends that Tyco has simply "repackaged the same arguments it made the first time around in an attempt to persuade the Court that an error has been made," because reconsideration and amendment is appropriate where necessary to correct an error of law, the Court granted Tyco's reconsideration motion to correct any error of law. This use of a reconsideration motion is particularly valuable in the claim construction context, where the patent claims at issue are complex and difficult and any mistake is likely to affect the outcome of the infringement determination to be made in the
After reviewing the claim language and specification again, the Court believes that Tyco is correct that the original construction of "clamp member" was improperly limited by the language in dependent claim 17. See Nazomi Commc’ns, Inc. v. Arm Holdings, PLC, 403 F.3d 1364, 1370 (2d Cir. 2005) ("[T]he concept of claim differentiation normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend.") (internal quotation omitted). While the independent claims do not specifically describe the clamp member's relationship to the "tissue contact surface," it is dependent claim 17 which claims "an ultrasonic instrument according to claim 7, wherein the clamp member includes a tissue contacting surface removably fastened to the clamp member." Thus, the Court's prior reasoning that, in order for the clamp member to be removably fastened to the tissue contacting surface, it would have to be separate and distinct from that contacting surface, imports the limitation in claim 17 into the rest of the independent claims in the patent. As Tyco notes, there is no basis in the '286 independent claims for the "clamp member" claimed therein to be limited to a component with a removably fastened tissue contact surface, as opposed to a component including a tissue contact surface or with a permanently (i.e. not removably) fastened tissue contact surface.

Further, although the parties did not request construction of the term "clamp member" in the '050 Patent, Tyco is correct that the Court's initial construction of this term for the '286 Patent is inconsistent with the term as used in the '050 Patent and the Court will "presume, unless otherwise compelled, that the same claim term in the same patent or related patents carries the same construed meaning." See Omega Eng’g, Inc. v. Raytek Corp., 334 F.3d 1314, 1334 (Fed. Cir. 2003) (emphasis added). Because the '050 Patent discloses embodiments where the clamp member and the tissue contacting surface are made of the same part (as opposed to two separate parts removably fastened to each other), see '050 Patent, Figures 27, 28A, 28B, and 28C, the Court's initial construction of "clamp member" for the '286 Patent could not be applied to the '050 Patent without excluding disclosed embodiments and "a claim interpretation that excludes the device disclosed is rarely the correct interpretation." See Claim Construction at 35 (citing Playtex Prods., Inc. v. Procter & Gamble Co., 400 F.3d 901, 904 (Fed Cir. 2005)).

Thus, because the Court's initial construction impermissibly imported a limitation from dependent claim 17, and because the identical term in the related '050 patent should be capable of being construed to carry the same meaning, the Court amends its construction of "clamp member" in the '286 patent to: "A part configured to hold, grasp, or apply pressure to tissue, that is movable and that works with a component of the instrument (e.g. the cutting jaw)."

The term "clamp region," element [e] of Claim 1, is a major area of dispute between the parties. Thomas and Betts asserts that this term is limited to the embodiment described in the patent specification which describes an elongated C-shaped clamp. Senior Industries argues that a broader construction should be afforded to the clamping device based upon the ordinary meaning of the claim language. More specifically, Senior Industries claims that the proper interpretation of a clamping device connected to the utility box is "a clamp (possibly including several elements) having parts which (i) mechanically fasten the clamp to the utility box and (ii) electrically connect the clamp to the utility box".

Normally, an element in a patent claim should have its broadest meaning and not be limited to the embodiment in the specification, but the term "clamping device" is a vague and ambiguous term without adequate structure for one skilled in
the art to ascertain what Senior is claiming. One may be his own lexicographer and define an ambiguous term in the patent specification or prosecution history. Hoechst Celanese Corp. v. BP Chemicals Ltd., 78 F.3d 1575, 1578, 1996 U.S. App. LEXIS 4703 (Fed. Cir. 1996) Hence, one interpreting a vague or ambiguous claim must refer to intrinsic evidence to ascertain the intended definition of the term. The "clamping device" term lacks adequate structure for one skilled in the art to fully understand what Senior Industries is claiming.

Looking to the specification and file history, it is clear that the intent of this element was to embody an elongated C-shaped clamp wherein the base is longer than one of the sides of the metal box enclosure and having a pair of opposed arms so that the arms are connectable to the box on opposite sides. The specification reads as follows:

More specifically, the clamping device comprises an elongated C-shaped clamp which connects to the opposite sides of the utility box.

(Col. 2, lines 28-30).

It is a further object of this invention to provide an improved clamping device which is connectable to a metal box enclosure on opposite sides of the box and having a securing means for penetrating the outer surface of the box without penetrating the inside of the box, and including mechanism to prevent the inadvertent movement of the clamp while being clamped.

(Col. 3, Lines 3-9).

A clamp 30 having an elongated base 32 is mechanically and electrically connectable to utility box 10. The elongated base 32 is larger than one of the sides of the box so as to extend beyond the box side. A pair of arms then extend from the ends of the base to engage and clamp the box there between, as will be apparent.

(Exhibit A, Col. 4, lines 23-28)

Referring to Figs. 3-8, the novel clamp 30 can be considered an elongated C-shaped or U-shaped clamp and includes a first arm or side portion 36 and a second arm or side portion 38 extending upwardly from a common, elongated base 32.

(Exhibit A, Col. 4, lines 56-60).

Furthermore, in every figure of the patent in which the clamp appears, it is shown as an elongated C-shaped clamp having arms which are positioned on opposite sides of the metal box and the prosecution history reveals the elongated base to be substantially longer than the length of the arms. (Exhibit B, Amendment B, p.4). Therefore, it is proper to limit this term to the embodiment described in the specification. The term "clamping device" shall be defined in accordance with Thomas and Betts' construction "as an elongated C-shaped clamp wherein the base is longer than one of the sides of the hollow metal box enclosure and having a pair of opposed arms so that the arms are connectable to the box on opposite sides of the box. The base of the clamp is substantially longer than the arms".

A. "Clamping Engagement"

For the reasons stated below, the court construes the term "clamping engagement" in claims 19, 22, 37, 47, 50, and 54 to mean:

tight, high-pressure electrical contact maintained indefinitely.

To argue for their constructions, both parties cite to language from the summary of the invention section of the specification in part to argue for their constructions, which states:

The bail is rotated into its closed position with minimal effort by the installer thereby forcing the clip into tight
engagement with the outer conductor. The tight engagement between the clip and the conductor of the cable ensures high pressure electrical contact as required when a high-power condition occurs in the cable from a lightning strike.

(Ex. 3, Col. 2, ln. 29-34.) The parties agree that clamping engagement means "tight engagement," based on the first sentence of the above-quoted language. Beverly, however, relies on the second sentence's explanation that a tight engagement "ensures high pressure electrical contact as required when a high-power condition occurs in the cable from a lightning strike," (Ex. 3, Col. 2, ln. 32-34,) to argue that the construction of clamping engagement must also incorporate the requirement that high-pressure contact be maintained over a period of time. In further support of its construction, Beverly points to Andrew's description of the prior art and the failure of previous inventions to maintain high contact pressure over an extended period of time. (Ex. 3, Col 1, ln. 30-49.)

Andrew, however, argues to limit the construction of clamping engagement to mean that the "clip rests tightly against the exposed section of the electrical conductor," without reference to high-pressure contact. (Pl. Mem. at 13.) Refuting Beverly's construction, Andrew asserts that the high-pressure contact is only a desirable property and not a structural limitation. The court disagrees with Andrew's contention that the high-pressure contact was at most a desirable property. In reviewing Andrew's discussion of the prior art in the specification, the court determines that Andrew has differentiated the '056 patent from prior art in part on the invention's ability to maintain high contact pressure through the tight engagement of the clip with the outer conductor. Andrew notes that "Because grounding kits are designed for high current conditions, a high contact pressure must be maintained between the conductor and the ground wire," and that the prior art's copper straps and copper braided wires that wrapped around the conductor and attached to the ground wire would often loosen over an extended period of time. (Id. at Col. 1, ln. 30-50.) Andrew's invention was meant to address the need "for a durable grounding kit for transmission line cables that maintains high pressure contact with the cable over extended periods of time and after being subjected to multiple high-power conditions." (Id. at Col. 1, ln. 63-66.)

In support of its position that the clamping engagement does not include the definition of high-pressured contact, Andrew cites to the prosecution history where the examiner found that the "applicant does not claim any of these noted benefits," (Pros. Hist., Harwath 109), in response to Andrew's argument that the invention better retains the clip around the cable during power surges. (Pl. Reply at 12-13.) The court finds this citation to be not relevant to the issue of whether a clamping engagement should include the limitation of high-pressure contact maintainable indefinitely.

The court was also concerned with the timeframe for which the tight, high-pressured contact was maintained. At the oral argument, the court suggested that the contact be maintained over a period of multiple high-current conditions. Andrew clarified, however, that the contact was intended to be maintained "indefinitely," and so the court accepts Andrew's construction of the timeframe. (Tr. 15-16, ln.17-5.)

On March 23, 2007, prior to the commencement of discovery, Defendants filed their motion for summary judgment of non-infringement of the '305 Patent. Defendants' motion is premised entirely on the court's construction of a phrase found in each of the independent claims of the '305 Patent. The phrase requires that claimed device contain a "clamping force being sufficient to prevent sheet material from being drawn laterally inwards towards the rivet." The court construed this phrase to mean that the riveter or riveting method "significantly restrict the inward, lateral flow of sheet material that is subject to the clamping force." (10/25/06 Order at 38-40.) Now, Defendants argue that they are entitled to summary judgment because "[a]s shown by scientific testing, it is undisputable that Bollhoff's self-pierce riveter, and the riveting method performed with that riveter, do not 'significantly restrict the inward, lateral flow of sheet material that is subject to the clamping force,' as required by each of the independent claims of the '305 Patent." (Defs.' Mot. for Sum. J. at 1.) In order to support their motion, Defendants relied on the tests performed by Bollhoff's experts, Drs. Ulm and Flugge, who concluded that the clamping forces in Bollhoff's machines do not significantly decrease lateral flow, as compared to the prior art spring clamping riveter.
On appeal, Kwik argues that the district court erred in holding that §112, ¶6 applied to the term "clamping means" in claim 1 of the '666 patent. According to Kwik, because a clamp identifies a device that has a reasonably well understood meaning in the art, "clamping means" is not a means-plus-function limitation. Kwik contends that under the proper construction of "clamping means", there is no limitation that it comprise a pivotally mounted clamping member having a particularly located center of gravity, as supported by the doctrine of claim differentiation. Kwik also argues that the court erred in construing the term "spring" in claim 15 of the patent to be limited to extension and torsion springs. Kwik asserts that the ordinary and customary meaning of the term "spring" is not limited to the specific types of springs disclosed in the specification, and thus includes compression springs. Based on its construction of "clamping means" and "spring," Kwik contends that claim 1 is literally infringed and claim 15 is infringed under the doctrine of equivalents. Kwik points out that the slideably mounted clamping member of the accused device is equivalent to the pivotally mounted clamping member recited in claim 15 of the patent because it performs the same function (to clamp the string), in the same way (by being urged toward the opposed way under a spring force), to achieve the same result (fixing the string in the trimmer head).

Torvian responds that the district court correctly applied § 112, ¶6 to the term "clamping means" because the claim is written in classic means-plus-function format, and Kwik failed to rebut the presumption that § 112, ¶6 applies. According to Torvian, the court correctly limited "clamping means" to the structures identified in the specification: a pivotally-mounted clamping member, either biased by a torsion or extension spring against an opposing wall or completely unbiased (in which event the force is applied manually), and a strategically-placed center of gravity, which increases the clamping force while the trimmer head is spinning. Torvian also contends that the court correctly relied on the specification to construe the term "spring" as a torsion or extension spring, but not a compression spring because the patent's reference to a "generic" spring is ambiguous. Finally, Torvian argues that the accused device does not infringe claims 1 and 15 of the patent, either literally or under the doctrine of equivalents, because it contains a slideably-mounted clamping member, biased by a compression spring, whose clamping force is not influenced by the location of its center of gravity. Torvian points out that the accused device not only contains different structures from those disclosed in the '666 patent, but also functions in a different way, such that the force applied to hold the cutting string in place is applied rectilinearly rather than through circular or rotational application of force.

We agree with Torvian that the district court correctly construed the term "clamping means" in claim 1 as a means-plus-function limitation. A claim using the means-plus-function format will cover only the corresponding structure disclosed in the written description, as well as that structure's equivalents. 35 U.S.C. §112, ¶ 6; Personalized Media Commun., L.L.C. v. ITC, 161 F.3d 696, 703 (Fed. Cir. 1998). A claim limitation that actually uses the word "means" will invoke a rebuttable presumption that § 12, ¶6 applies. Id. at 703-04. In this case, claim 1 phrases the "clamping means" limitation in means-plus-function language, thereby triggering the presumption. Because Kwik has not rebutted that presumption, the claim must "be construed to cover corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112, ¶ 6.

Here, the specification of the '666 patent discloses a "clamping member [that] is pivotally mounted adjacent each aperture, opposite the corresponding pressing wall so that its center of gravity is disposed between the pivotal mounting and the corresponding pressing wall." '666 patent, col. 3, II. 4-7. Further, as the district court correctly observed, the specification refers to "two degrees of clamping force," one that is generated by springs that hold the string in place when the cutting head is not in use and a second that is generated when the cutting head rotates and creates a centrifugal force "that acts on the centers of gravity of the clamping members and enhances the gripping force thereof." Id., col. 3, II. 7-17. Therefore, the court did not err in construing the means-plus-function limitation "clamping means" to mean "a spring element working with a pivotally mounted clamping member with a strategically placed center of gravity." Opinion, 356 F. Supp. 2d at 318.

We reject Kwik's argument that the well understood meaning of "clamp" rebutted the presumption that § 112, ¶6 applies to the limitation "clamping means." Even assuming that the term "clamp" had a reasonably well understood meaning in the art, a clamp is not the same as a clamping means. Equally unpersuasive is Kwik's argument that claim differentiation requires a different interpretation of "clamping means." As we stated in Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533 (Fed. Cir. 1991), "[a] means plus function [element] is not made open-ended by the presence of another claim specifically claiming the disclosed structure which underlies the means clause or an equivalent of that structure." Id. at 1538. We further stated that "one cannot escape [the] mandate [of § 112, ¶6] by merely adding a claim or claims specifically reciting such structure or structures. " Id. Because we conclude that § 112, ¶6 applies to the limitation "clamping means" in claim 1, we do not address Kwik's remaining arguments as to the construction of that term.
Having affirmed the district court's claim construction of the term "clamping means," we also affirm its judgment of no literal infringement of claim 1. Kwik's argument that there was literal infringement of claim 1 depends entirely upon a finding that the term "clamping means" is not a means-plus-function limitation. Because § 112, ¶ 6 does apply to that term, the court made no clear error in determining that the accused device did not literally infringe claim 1 of the '666 patent.

B. Construction of the Claims of the '546 Patent

The parties agree that claim 1 of the patent requires two separate cleaning steps in two different locations of the machine. CoinBank contends that the term "cleaning" or "cleaning step" means the removal or separation of debris or waste from the coins and from the pathway through which the coins travel to help prevent jamming or damage to the machine. Coinstar contends that cleaning simply means the removal or separation of any non-coin material from the coins.

--- Footnotes ---

5 In its Points and Authorities in Opposition to the Motion for Summary Judgment, Coinstar seemed to concede that "foreign matter must be removed in a way that prevents jamming or damage to the machine" and that the "prior art did not adequately address this need to remove foreign matter." However, Coinstar retreated from this definition at the hearing on the motions for summary judgment.

--- End Footnotes ---

"Cleaning"

As stated above, when interpreting the meaning of the terms in a patent claim, the court looks to the claims themselves, the specification, and the prosecution history of the patent. "Cleaning" is not expressly defined within the claims of the '546 patent. However, the prosecution history contains numerous references to the purpose for the cleaning steps and why the '546 patent's cleaning steps differ from prior art.

The Federal Circuit and its predecessor, the Court of Claims, have emphasized the importance of looking to the file wrapper in interpreting the meaning of the words in a claim. In an often-quoted statement in Autogiro Company of America v. U.S., 181 Ct. Cl. 55, 384 F.2d 391, 398-399 (Ct.Cl.1967), the Court of Claims explained the purpose of examining the file wrapper:

The file wrapper contains the entire record of the proceedings in the Patent Office from the first application papers to the issued patent. Since all express representations of the patent applicant made to induce a patent grant are in the file wrapper, this material provides an accurate charting of the patent's pre-issuance history. One use of the file wrapper is file wrapper estoppel, which is the application of familiar estoppel principles to Patent Office prosecution and patent infringement litigation. The patent applicant must convince the patent examiner that his invention meets the statutory requirements; otherwise, a patent will not be issued. When the application is rejected, the applicant will insert limitations and restrictions for the purpose of inducing the Patent Office to grant his patent. When the patent is issued, the patentee cannot disclaim these alterations and seek an interpretation that would ignore them. He cannot construe the claims narrowly before the Patent Office and later broadly before the courts. File wrapper estoppel serves two functions in claim interpretation; the applicant's statements not only define terms, but also set the barriers within which the claim's meaning must be kept. These results arise when the file wrapper discloses either what the claim covers or what it does not cover.

In the prosecution history of the patent in suit, the patentee repeatedly emphasized to the examiner that the '546 patent differed from prior art in that it provided a device, that for the first time, could "accommodate the 'various other objects' that are input by untrained users." Amendment, p. 12, 13. The amendment also referred to language in the '546 patent that distinguishes it from prior art, stating prior art devices relied upon "trained personnel to avoid introducing foreign objects into the machine and thus were not constructed to accommodate a situation in which 'untrained users are likely to empty their personal containers, such as old cans or bottles, directly into the hopper without first inspecting the coins. Thus, lint, tokens, and various other objects will probably accompany the coins into the machine." The referenced passage then adds
"therefore, a method of waste management is necessary to insure that the machine is not damaged during use." The amendment emphasizes that the '546 patent, unlike prior art, has solved the "technical problem" of how to deal with "lint, tokens and other objects that accompany the coins when deposited by untrained users" by disclosing two different cleaning steps in two different areas of the machine. Amendment, p. 14, 17. The amended patent accomplished this asserted distinction of accommodating dirty coins by method and apparatus claims that specify "two steps of cleaning: a step that occurs in the 'first' (coin-receiving) area and a different cleaning step that occurs in a second, different area." Amendment, P. 17. 6

6 The original claim 1 did not provide that it was intended for use by untrained users, nor did it include either cleaning step. The original claim provided:

A method comprising the steps of: receiving from a user in a first location a plurality of coins of arbitrary denominations from a user; sorting said coins into groups, with each group being one of said denominations; determining a total amount of said coins; and dispensing a voucher redeemable in cash or merchandise for a value related to said total amount wherein said value is determined only after said steps of receiving and determining. Amendment, p. 1, 2.

The examiner initially rejected the '546 patent, in part because a prior patent (the De Meyer patent) disclosed an apertured pan which removed waste. To overcome this prior art, the patentee emphasized that the two different cleaning steps in two different locations "successfully addressed" the dirty coin problem. Amendment, p. 14.

Coinstar cannot broadly claim that the term "cleaning" is limited to simply the separation or removal of waste from coins, when it represented to the examiner that its cleaning steps went beyond the prior patent's mere removal of wastes and instead "successfully addressed" and "accommodated" the deposit of dirty coins from untrained users for the first time.

Therefore, based upon review of the claims, specification, and patent prosecution, the court interprets the term "cleaning" as the separation or removal of foreign matter from the coins in a manner that helps to prevent damage to the machine.

iii. "cleaning of semiconductor wafers"

The phrase "cleaning of semiconductor wafers" appears in the preamble of Claims 1 and 57 of the '532 patent. The parties agree, as does the court, that "cleaning of semiconductor wafers" refers to the removal of contaminants from the surface of the wafers.

iv. "treatment of semiconductor wafers"

The phrase "treatment of semiconductor wafers," appears in the preamble of Claims 54, 55 and 58. CFMT asserts that the phrase "treatment of semiconductor wafers" means all aspects of wafer processing, including but not limited to cleaning. Apparently, YieldUP agrees with CFMT's construction of the phrase because YieldUP requests an instruction that "treatment of semiconductor wafers" includes cleaning. Therefore, the court finds that the phrase "treatment of semiconductor wafers" refers to all aspects of wafer processing, including cleaning.
The parties agree that the phrase "cleaning section" has no "ordinary meaning" and must be viewed in light of the patent's specification to exclude structures that the inventor specifically disclaimed. In particular, the inventor disclaimed the use of cloth patches or rags. The parties agree that the term must be construed to exclude a cleaning section which utilizes a separate piece of cloth. They disagree, however, on the length limit and particular construction of the cleaning section.

Michaels asserts that the term "cleaning section" means a thickened integral compressible section attached to the gun barrel cleaning device sized and shaped to evenly contact and clean the inner surface of the gun barrel, and which is ready to use and does not require changing of cloths or patches to use. The phrase "cleaning section" includes foam compressible sections as shown in Figure 1 (elements 26 and 28 aligned with sheath 12) and Figure 4 (elements 26, and 28 detachably coupled to cable 30 via connectors 32 and 34). In another embodiment, the "cleaning section" comprises sections of a fabric sheath folded in on itself, which is shown in Figures 10 and 10A (elements 26, 28, and 48). Col 3, lines 55-61; Col 4, lines 22-25; Col 5, lines 7-9, 25-28, 37-38; Col 7, lines 48-50; Col 7, line 67 to Col 8, line 4; Col 9, lines 8-9; Col 10, lines 38-40. Michaels also asserts that there is no length limit, but the cleaning section cannot encompass the entire device.

Clean Gun proposes that a construction requiring that a short section of the gun barrel cleaning device have an increased diameter, such that the outer surface of the tubular sheath in the cleaning section is pressed firmly and evenly against the inside of the gun barrel as the device is pulled through the inside of the gun barrel, absorbing and removing debris from the inside of the gun barrel. The cleaning section is preceded and followed by sections of the gun cleaning device that have a smaller diameter than the cleaning section and do not press firmly against the inside of gun barrel. The cleaning section is a section of the sheath folded within itself and stitched and must be short in comparison to the gun barrel cleaning device. Abstract; Figs. 10 and 10A; Col 3, lines 24-35; Col 4, lines 30-33; Col 5, lines 7-10, 37-39; Col 6, lines 28-29, 58-63; Col 7, line 67 to Col 8, line 13; Col 9, lines 8-9; prosecution history.

In support of its construction, Clean Gun points to the patent's criticism of long cleaning sections that cause contact between most of the length of the device and the inner surface of the gun barrel:

Some cleaning devices utilize a cord which is pulled through the barrel, and drags a cloth patch, but which does not contain a metal brush feature. These pull-through devices are typically in the nature of a thick woven wick or rope-like cord. Such a wick or rope-like cord contacts the gun barrel along its entire surface. This requires that the resistance along the entire surface of the wick be a fairly low pressure against the inside of a gun barrel. A high pressure would make the wick impossible or difficult to pull through the gun barrel.

Col 3, lines 26-35.

The patent's solution to this problem is explained in a preferred embodiment which uses relatively thin body portions and brush area, and short, relatively thick cleaning sections. Col 7, line 67 to Col 8, line 1-13; Figs. 10 and 10A. With only the short thick sections pressing against the barrel, the patent avoids the criticized problem of applying too much pressure along the entire length of the device. Thus, Clean Gun argues that the patent's cleaning sections were designed to avoid these problems by having short cleaning sections with a relatively larger diameter, but with the remaining portions of the device having a relatively smaller diameter. In this way, the patent's cleaning sections are able to wipe the inner surface of the barrel clean, but the remaining sections are thinner so that they pull more easily through the barrel. All of the figures of the patent, including the elected device in Figures 10 and 10A, disclose this characteristic for a cleaning section.

However, the patent discloses two different ways to make such a short, thickened cleaning section. One type, in the embodiments of Figures 1 and 4, uses a foam insert inside the tubular sheath. The patent's other cleaning section, shown in Figures 10 and 10A, is a thickened section created by folding a sheath within itself and stitching it. As discussed above, this court is unwilling to limit the method claims to Figures 10 and 10A.

Accordingly, the phrase "cleaning section" means a thickened integral compressible section attached to the gun barrel cleaning device sized and shaped to contact evenly when cleaning the inner surface of the gun barrel, and which is ready to
use and does not require changing of cloths or patches to use. It has no length limit, but cannot encompass the entire device, and can include, but is not limited to, a fabric sheath folded in on itself.

The '359 patent has three independent claims at issue; claims one, thirteen and nineteen. All three independent claims contain the following claim limitation: "a cleaning station for . . . automatically draining and cleaning said suction canister after said suction port is disconnected from the vacuum source and said patient port is disconnected from the patient." This limitation describes the function of the cleaning station: draining and cleaning said suction canister. The "cleaning station" claim limitation is written in means-plus-function format and subject to 35 U.S.C. § 112, P 6. Therefore, the structure which drains and cleans the canister must be defined from drawings and descriptions in the specifications. See 35 U.S.C. § 112, P 6. The infringement analysis is controlled by the preferred embodiment, as there are no alternative embodiments presented in the specifications.

The draining and cleaning station claim limitation in the '359 patent has the identical function and result as the Dornoch product. Their function is to drain and clean the canister, and they both result in an empty and cleaned container. However, the process the products utilize is substantially different. The '359 patent completes the drainage process before the cleaning process begins. The drainage process begins when the operator places a full suction canister into the cleaning station and depresses the start button. A housing unit containing two probes automatically descends towards the canister. These probes are inserted into the suction canister, breaking the canister's seal. A drain pump then creates a suction inside the canister, whereupon the fluid inside the canister is pumped up the inner conduit of the main probe and out of the cleaning device to the hospital drainage line. The water pump is then activated by the controller. Water is mixed with cleaning solution and sprayed into the empty canister through the outer conduit of the main probe. The drain pump continues to create a suction and pumps the water mixture up into the probe's inner conduit and out of the cleaning device.

15 Here, "automatically" means without operator involvement.

The Dornoch product has a significantly different process of draining and cleaning its canister from the '359 patent's cleaning station element. The differences include: (1) Dornoch's plunger does not descend automatically, instead the operator pushes a flush jet downward, which in turn pushes the plunger downward and pushes the stopper out of the drain opening; and (2) the Dornoch product does not utilize suction to drain the canister by pumping fluid up a probe. Instead, spray from the flush jets and the plunger create a swirling action which, together with gravitation force, drains the canister. Due to these differences, no reasonable jury could find that the draining and cleaning station element in the '359 patent shares an equivalent method of draining and cleaning with the accused product.

The '822 patent has seven independent claims at issue; claims one, twelve, sixteen, seventeen, eighteen, twenty, and twenty-one. All seven independent claims contain a claim limitation which describes the draining process and/or the cleaning processes. These claims are all written in means-plus-function format, as they describe a function to be performed rather than a definite structure. Claim one's "draining and cleaning" claim limitation states, "a station for draining and cleaning said suction canister, . . . including a probe insertable into said suction canister to alter said indicator portion so as to provide a visual indication . . . that said suction canister has been drained and cleaned." This limitation provides no detail on the how the station cleans and drains, but rather describes the function to be performed. Similarly, claims twelve, sixteen, seventeen, eighteen, twenty and twenty-one contain a "draining station" limitation. This claim limitation describes the function the
station is to perform (draining), but does not detail how that process occurs. Therefore, under 35 U.S.C. § 112, P 6, the specifications control the scope of the "draining" claim limitation.

The specifications for the '822 patent mirror those for the '359 patent. As specified in the discussion of the '359 patent, the draining process for the '359 and '822 patents is materially different from the accused product. Therefore, the accused product's draining device does not infringe on the '822 patent.

The district court construed the term "clear" of independent claim 1 to mean "transparent" or "having the property of transmitting light without appreciable scattering so that bodies lying beyond are seen clearly." Therefore, the Court construes the "clear" limitation to mean "transparent" or "having the property of transmitting light without appreciable scattering so that bodies lying beyond are seen clearly," the tubular holder for the reflector must be transparent.

The district court construed the term "clear" of independent claim 1 to mean "transparent" or "having the property of
transmitting light without appreciable scattering so that bodies lying beyond are seen clearly." Order I at 7. Terlep challenges the district court's interpretation arguing that the term should be construed to also cover translucent holders. Terlep contends that the intrinsic record requires only that the word "clear" be construed to permit the passage of light. Brinkmann responds that the district court's construction is correctly informed by the written description, which states that the purpose of the holder is to maximize light output, and that any other interpretation would be inconsistent with the '433 patent. Brinkmann adds that the "translucent" argument was not made to the district court and, thus, was waived.

Claim 1 recites an omni-directional LED lamp that has three elements: an LED; a semi-spherical reflector; and a clear plastic tubular holder. The claim sets forth the positional relation between these elements such that the light emitted from the LED is rendered omni-directional after reflecting off the semi-spherical reflector. See '433 patent, col. 6, ll. 26-27. The reflected light passes through the holder, which holds the semi-spherical reflector. See id. at ll. 24-28. The text of claim 1 and the other claims provide little guidance on the meaning of the term "clear:"

The written description discloses a preferred embodiment in which the LED is surrounded by "tubular canopies" or holders that are made of "clear and pliable plastic material." Id. at col. 3, ll. 58-59. Another embodiment describes a colored lens cover that is made "from clear colored plastic." Id. at col. 5, l. 1. While these passages are not particularly helpful in discerning the meaning of the term "clear," other portions of the written description provide greater guidance. The Background and Prior Art sections state that various techniques for applying diffusion directly to the LED surfaces had been attempted in the past and were unsuccessful in rendering the light emitted from the LED omni-directional. Id. at col. 1, ll. 37-45. The Summary of the Invention section describes the invention as an omni-directional LED lamp that does not use a diffusion lens over the LEDs. Id. at col. 2, ll. 5-7. Implicit in these passages is the distinction between lenses or holders that diffuse or scatter light and those that transmit light without obstruction. The written description is thus consistent with and supports the district court's construction of the term "clear" to refer to holders that are "transparent or [have] the property of transmitting light without appreciable scattering so that bodies lying beyond are seen clearly." Order I at 7.

Terlep argues that the written description also is consistent with a "translucent" holder because it refers to an embodiment in which "the lens cover … can include a phosphorescent coating which glows when the LED … is on so as to diffuse light evenly over a wide viewing angle and amplify visibility." See '433 patent, col. 5, ll. 54-57. However, the text quoted by Terlep relates to the embodiment of Figures 4A-4C, which does not include a "clear plastic tubular holder" as recited in claim 1, at issue in this case. Because the "lens cover" described supra is not the same structure as the "clear plastic tubular holder," compare id., Figures 4A-4C & col. 5, ll. 54-57, with id., Figure 2A & col. 3, ll. 57-65, Terlep's argument is misplaced. Moreover, there is nothing in the description of the phosphorescent coating embodiment to warrant construction of the term "clear" as it relates to the "clear plastic tubular holder" of claim 1 to include translucent holders.

The prosecution history further supports the district court's construction. On August 9, 1995, the application that issued as the '433 patent was filed. In a February 7, 1996 Office Action, the Examiner, inter alia, rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,469,157 to Carpenter et al. in view of U.S. Patent No. 1,198,734 to Ludescher. In a May 6, 1996 Response ("Response"), Terlep amended claim 1 to add, inter alia, "a clear plastic tubular holder." Response at 1. Terlep distinguished the claimed invention from the prior art stating that the prior art disclosed rotating LEDs and LEDS having a top "flattened and … side surface(s) … sandblasted or otherwise roughened to diffuse the light output," whereas the "subject invention did not use any 'flattened' tops and/or 'sandblasted or roughened' sides." Response at 5. Because the "clear plastic tubular holder" limitation helped distinguish the prior art from the claimed invention, the prosecution history supports construing the term "clear" to exclude plastic holders that are translucent or otherwise diffuse the light emitted from the LED. See Seachange Int'l, Inc. v. C-Cor Inc., 413 F.3d 1361, 2005 WL 1523382, at *8 (Fed. Cir. 2005) ("Where an applicant argues that a claim possesses a feature that the prior art does not possess in order to overcome a prior art rejection, the argument may serve to narrow the scope of otherwise broad claim language.").

In construing the claims, the parties have cited several dictionaries. District courts are authorized "to rely on extrinsic evidence, which consists of all evidence external to the patent and prosecution history, including … dictionaries" as one of many claim construction tools. Phillips, 2005 U.S. App. LEXIS 13954, at *37 (internal citations omitted). The dictionary defines "clear" as "giving free passage to light or to the sight: easily seen through: not cloudy, turbid, or opaque." Webster's Third Int'l Dictionary 419 (1993). This definition lists "transparent" and "translucent" as synonyms. The definition also sets forth an express distinction between transparent and translucent: "transparent stresses complete absence of obstruction to vision" and "translucent applies to that which permits passage of light but bars clear and complete vision." Id. The distinction between these synonyms cannot be ignored. See Int'l Rectifier Corp. v. IXYS Corp., 361 F.3d 1363, 1374 (2004)
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

(holding that it was improper for the district court to adopt a definition that was attributed to a synonym of the disputed term while disregarding the distinction set forth in the usage note). Moreover, the distinction mirrors the distinction reflected in the written description and prosecution history between the unobstructed passage of light of the holder of the patented invention and the prior art structures that diffuse light. Here, the district court "attached appropriate weight" to the dictionary definitions in the context of the intrinsic evidence in reaching its construction of the claim term "clear." Phillips, 2005 U.S. App. LEXIS 13954, at *58.

Finally, Terlep argues that to define "clear" so as to exclude "translucent" is to import a functional limitation into the claim. Terlep asserts that "clear plastic tubular holder" is merely a structural limitation and that the district court erred in importing a functional limitation into a structural term. However, Terlep fails to recognize that the construction properly adopted by the district court merely assigned meaning to the claim term "clear" and did not impermissibly import a functional limitation. Merck & Co. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.").

We conclude that the district court correctly construed the term "clear" to mean "transparent or having the property of transmitting light without appreciable scattering so that bodies lying beyond are seen clearly," and that nothing in the claims or the written description warranted giving the term "clear" an expansive meaning that would cover "translucent" holders. Because Terlep's "translucent" argument is without merit, we need not consider Brinkmann's additional argument of waiver.

In this case, the parties disagree as to whether the district court correctly performed the first step with regard to the "clip (28)" limitation in claim 1 of the '182 patent. Teleflex contends that "clip (28)" should be construed to mean any device, of any shape, that holds two things together and also performs the functions of being manually insertable into and manually removable from a locked position. Teleflex argues that the claim language does not support the construction applied by the district court, "clip" is defined nowhere in the specification or the prosecution history, and the district court committed a "cardinal sin" of claim construction by importing limitations from the written description into the claims. See SciMed Life Sys., Inc. v. Adv. Cardiovascular Sys., Inc., 242 F.3d 1337, 1340, 58 U.S.P.Q.2D (BNA) 1059, 1062 (Fed. Cir. 2001). Ficosa argues that the district court correctly construed the claim term "clip (28)."

The parties also disagree as to whether the jury correctly performed the second step in the infringement analysis of the '182 patent. Ficosa argues that under the construction of "clip (28)" as determined by the district court, the record lacks substantial evidence on which the jury could have based its finding of infringement. Teleflex argues that under either the district court's construction of "clip (28)" or Teleflex's preferred construction, substantial evidence appears in the record supporting the jury's verdict of infringement.

We address each of the first and second steps of the infringement analysis below. Regarding the first step, we conclude that claim terms take on their ordinary and accustomed meanings unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope. Regarding the second step, substantial evidence appears in the record to support the jury's verdict of infringement, and therefore we affirm the district court's denial of Ficosa's motion for JMOL.

A. Claim Construction

The words used in the claims are interpreted in light of the intrinsic evidence of record, including the written description, the drawings, and the prosecution history, if in evidence. Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1331, 59 U.S.P.Q.2d (BNA) 1401, 1407 (Fed. Cir. 2001). The intrinsic evidence may provide context and clarification about the meaning of claim terms. York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1572, 40 U.S.P.Q.2d (BNA) 1619, 1622 (Fed. Cir. 1996). "Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2d (BNA) at 1576.

In the absence of an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning. York Prods., 99 F.3d at 1572, 40 U.S.P.Q.2d (BNA) at 1622. We indulge a "heavy presumption" that a claim term carries its ordinary and customary meaning. CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366, 62 U.S.P.Q.2d (BNA) 1658, 1662 (Fed. Cir. 2002). The ordinary meaning of a claim term may be determined by reviewing a variety of sources, including the claims themselves, see Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1357, 52 U.S.P.Q.2d (BNA) 1029, 1033 (Fed. Cir. 1999), other intrinsic evidence including the written description and the prosecution history, see, e.g., DeMarini Sports, Inc. v. Worth, Inc., 239 F.3d 1314, 1324, 57 U.S.P.Q.2d (BNA) 1889, 1894 (Fed. Cir. 2001), and dictionaries and treatises, see, e.g., Schaefer Fan Co. v. J & D Mfg., 265 F.3d 1282, 1288-89, 60 U.S.P.Q.2d (BNA) 1194, 1199 (Fed. Cir. 2001) (approving district court use of dictionaries to determine ordinary meaning); Maxwell v. J. Baker, Inc., 86 F.3d 1098, 1105, 39 U.S.P.Q.2d (BNA) 1001, 1005 (Fed. Cir. 1996) (citing footwear treatise for definition of shoe "upper"). But in any event the ordinary meaning must be determined from the standpoint of a person of ordinary skill in the relevant art. See Zelinski v. Brunswick Corp., 185 F.3d 1311, 1316, 51 U.S.P.Q.2d (BNA) 1590, 1593 (Fed. Cir. 1999).

Among the intrinsic evidence, "the specification is a always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2d (BNA) at 1576. "One purpose for examining the specification is to determine if the patentee has limited the scope of the claims." Watts v. XL Sys., Inc., 232 F.3d 877, 882, 56 U.S.P.Q.2d (BNA) 1836, 1839 (Fed. Cir. 2000). For example, an inventor may choose to be his own lexicographer if he defines the specific terms used to describe the invention "with reasonable clarity, deliberateness, and precision." In re Paulsen, 30 F.3d 1475, 1480, 31 U.S.P.Q.2d (BNA) 1671, 1674 (Fed. Cir. 1994). Such a definition may appear in the written description, see Intellical, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1388, 21 U.S.P.Q.2d (BNA) 1383, 1386 (Fed. Cir. 1992), or in the prosecution history, see Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2d (BNA) at 1576 (citing Hoechst Celanese Corp. v. BP Chem. Ltd., 78 F.3d 1575, 1578, 38 U.S.P.Q.2d (BNA) 1126, 1129 (Fed. Cir. 1996)).

The specification may limit the scope of the claims via other routes. The specification may assist in resolving ambiguity where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone. See Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1554, 42 U.S.P.Q.2d (BNA) 1737, 1741 (Fed. Cir. 1997), overruled on other grounds by Cybor, 138 F.3d at 1467, 46 U.S.P.Q.2d (BNA) at 1172. The patentee may demonstrate an intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope. See SciMed, 242 F.3d at 1344, 58 U.S.P.Q.2d (BNA) at 1065.

Likewise, the prosecution history may demonstrate that the patentee intended to deviate from a term's ordinary and accustomed meaning, i.e., if it shows the applicant characterized the invention using words or expressions of manifest exclusion or restriction during the administrative proceedings before the Patent and Trademark Office. "Arguments and amendments made during the prosecution of a patent application and other aspects of the prosecution history, as well as the specification and other claims, must be examined to determine the meaning of terms in the claims." Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2d (BNA) 1673, 1676 (Fed. Cir. 1995). In particular, "the prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452, 227 U.S.P.Q. 293, 296 (Fed. Cir. 1985).

The role of the specification in construing the claims is in dispute in this case. As we have often stated, the claims must be read in view of the specification, see Markman, 52 F.3d at 979, 34 U.S.P.Q.2d (BNA) at 1329, but limitations from the specification are not to be read into the claims, see Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186, 48 U.S.P.Q.2d (BNA) 1001, 1005 (Fed. Cir. 1998). "That claims are interpreted in light of the specification does not mean that everything expressed in the specification must be read into all the claims." Raytheon Co. v. Roper Corp., 724 F.2d 951, 957,
220 U.S.P.Q. 592, 597 (Fed. Cir. 1983). In SRI International v. Matsushita Electric Corp., we explained that our focus must be on the claims:

If everything in the specification were required to be read into the claims, or if structural claims were to be limited to devices operated precisely as a specification-described embodiment is operated, there would be no need for claims. Nor could an applicant, regardless of the prior art, claim more broadly than that embodiment. Nor would a basis remain for the statutory necessity that an applicant conclude his specification with "claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112. It is the claims that measure the invention.

775 F.2d 1107, 1121, 227 U.S.P.Q. 577, 585 (Fed. Cir. 1985) (en banc) (plurality opinion).

Ficosa argues that where only one embodiment is disclosed in the specification, claim terms are limited to the embodiment disclosed, citing Toro Co. v. White Consolidated Industries, Inc., 199 F.3d 1295, 53 U.S.P.Q.2D (BNA) 1065 (Fed. Cir. 1999), Wang Laboratories, Inc. v. America Online, Inc., 197 F.3d 1377, 53 U.S.P.Q.2D (BNA) 1161 (Fed. Cir. 1999), and Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 59 U.S.P.Q.2D (BNA) 1865 (Fed. Cir. 2001). A review of these cases and others demonstrates that our precedent establishes no such rule.

In Toro, we considered whether a claim that recited a cover "including" a restriction ring should be construed to require attachment of the ring to the cover. 199 F.3d at 1300, 53 U.S.P.Q.2D (BNA) at 1068-69. The specification described an embodiment showing the ring permanently attached to the cover and listed advantages of permanent attachment: "it automatically restricts the size of air inlet depending upon which operation is being conducted without having the operator manually insert or remove a replaceable ring." Id. at 1301, 53 U.S.P.Q.2D (BNA) at 1069. In our opinion concluding that "including" required attachment, we emphasized that the specification and drawings provided "context" for construction of the claims. Id. We noted that "clear statements of scope" in the specification and prosecution history determined the correct claim construction. Id. at 1302, 53 U.S.P.Q.2D (BNA) at 1070.

In Wang, we construed the claim term "frame" to be limited to "character-based protocols," even though the ordinary meaning of the term could arguably be applied to "bit-mapped protocols." 197 F.3d at 1382, 53 U.S.P.Q.2D (BNA) at 1166. Although we noted that the only system described and enabled in the specification used a character-based protocol, we also noted that the intrinsic evidence did not describe bit-mapped protocols as included in the invention, and a person skilled in the art would not have understood bit-mapped protocols to be included. Id., 53 U.S.P.Q.2D (BNA) at 1165. The applicant during prosecution distinguished the "pel [picture element] level" from the "character level," and presented the invention as involving a character-based system. Id. at 1384, 53 U.S.P.Q.2D (BNA) at 1165. We described the correct approach to the inquiry:

Although precedent offers assorted quotations in support of differing conclusions concerning the scope of the specification, these cases must be viewed in the factual context in which they arose. Whether an invention is fairly claimed more broadly than the "preferred embodiment" in the specification is a question specific to the content of the specification, the context in which the embodiment is described, the prosecution history, and if appropriate the prior art . . .

Id. at 1383, 53 U.S.P.Q.2D (BNA) at 1165.

In Bell Atlantic, we construed the term "modes" to be limited to the three categories described in the specification. 262 F.3d at 1273, 59 U.S.P.Q.2D (BNA) at 1875. Although the term's ordinary meaning may have supported a broader reading, id. at 1269, 59 U.S.P.Q.2D (BNA) at 1871, we found that "the patentees defined the term 'mode' by implication, through the term's consistent use throughout the '786 patent specification." Id. at 1273, 59 U.S.P.Q.2D (BNA) at 1874. We also noted that the claim language and the prosecution history supported this construction. Id., 59 U.S.P.Q.2D (BNA) at 1875. Thus, we construed "modes" based on clear indications throughout the intrinsic evidence. Id. at 1273-74, 59 U.S.P.Q.2D (BNA) at 1874-76.

In sum, the number of embodiments disclosed in the specification is not determinative of the meaning of disputed claim terms. As we explained in CCS Fitness, an accused infringer cannot overcome the "heavy presumption" that a claim term takes on its ordinary meaning simply by pointing to the preferred embodiment or other structures or steps disclosed in the specification or prosecution history. 288 F.3d at 1366, 62 U.S.P.Q.2D (BNA) at 1662. We hold that claim terms take on their ordinary and accustomed meanings unless the patentee demonstrated an intent to deviate from the ordinary and accustomed
meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.

In this case, nothing in the intrinsic evidence indicates that "clip (28)" should be limited to "a single pair of legs." The language of asserted claim 1 does not support limiting the claim to a "single pair of legs." Neither "single" nor "pair of legs" appears in claim 1. Neither the specification nor the prosecution history includes an expression of manifest exclusion or restriction demonstrating an intent to limit "clip (28)" to a single pair of legs. The term "clip" is not defined in the specification or in the prosecution history, and although the specification describes only one embodiment of the clip, no "clear statements of scope" limit the term "clip" to having a "single pair of legs." Furthermore, the ordinary meaning of "clip" is not restricted to having a "single pair of legs." The expert witnesses for Ficosa agreed that the ordinary meaning of "clip" is broad enough to encompass the accused Ficosa device in this case.

The district court thus erred by importing the "single pair of legs" limitation from the specification into the claim. Instead of using the specification as context, the district court apparently limited the "clip (28)" recited in claim 1 to the embodiment described in the specification. We have "cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification." See Comark, 156 F.3d at 1186, 48 U.S.P.Q.2d (BNA) at 1005 (quoting Texas Instruments, Inc. v. United States Int'l Trade Comm'n, 805 F.2d 1558, 1563, 231 U.S.P.Q. 833, 835 (Fed. Cir. 1986)). The specification describes only one embodiment of the claimed "clip (28)," but in the circumstances of this case the record is devoid of "clear statements of scope" limiting the term appearing in claim 1 to having "a single pair of legs." Absent such clear statements of scope, we are constrained to follow the language of the claims, rather than that of the written description. See SRI, 775 F.2d at 1121, 227 U.S.P.Q. at 585. To the extent that the district court construed the term "clip" to be limited to the embodiment described in the specification, rather than relying on the language of the claims, we conclude that the district court construed the claim term "clip (28)" too narrowly. We construe the term "clip (28)" in claim 1 to mean a structure that provides the dual functions of disposing the clip around and holding the female member through the slots in the female member and extending through the slots into the groove in the male member to lock the members together.

"clips" and "cavity clip"

Claims 1 and 6 of the '767 Patent contain the term "clips" and Claim 11 of the '767 Patent contains the term "cavity clip." SHURflo contends that "clips" means "pieces that are capable of holding something (i.e., a portion of a pump in place)," while Defendants contend that "clips" means "devices that are capable of gripping something (i.e., a portion of a pump)." Thus, the parties dispute whether "clips" should be construed to "hold" or to "grip."

SHURflo argues that because the specification states "the clips . . . act to hold the pump," this describes the functionality of the clip to encompass more than just gripping. Defendants contend that the patentee distinguished "clip" from "hold" in the prosecution history, making clear that "clipping" was more specific than just "holding." Defendants cite to the following sentence in the prosecution history: "All of Hess' protruding fingers are guides only; they are not clips that are adapted to hold (i.e., grip or secure) a pump as they must do in a vertically mountable holder." Defendants' Responsive Brief, Exhibit M, at 3. Although the prosecution history is relevant in showing the patentee's use of the words "grip" and "hold" with respect to the word "clip," a disclaimer of claim scope is not clear and unmistakable and thus, the doctrine of prosecution disclaimer does not apply in this case. See Computer Docking Station Corp., 519 F.3d at 1374. Defendants further assert that SHURflo's proposed construction exceeds the ordinary and plain meaning of "clips" and broadly encompasses any pieces capable of holding something in place such as a "hook" or a "pin." The specification discloses several mechanisms for holding--"pin," "clip," "hook," etc. Because these different elements are claimed as separate structures in the patent, SHURflo's proposed construction for "clips" is clearly too broad.

Further, although Defendants' proposed construction is truer to some "clip" embodiments, the specification also discloses a "clip" embodiment that holds something by pushing against it. For example, the cavity clip 20 in Figure 5 of the '767 Patent, produced below, holds the pump 50 by pushing against it. The pushing embodiment is also consistent with the ordinary meaning of "clips," which are sometimes configured like the specification's cavity clip (e.g., a clip board). Accordingly, the Court construes the term "clips" to mean "devices that assist in holding something by gripping it or pushing against it."
With respect to the term "cavity clip," the parties recognize that a "cavity clip" is a "clip" located within a cavity, but disagree both as to the cavity clip's function and whether the item being held by the clip must also be within the cavity. SHURflo contends that the term "cavity clip" means "a piece in the hollow portion of the housing that is capable of holding something," while Defendants contend that the term means "a device that grips something (i.e., a pump) in place within a cavity." Defendants argue that SHURflo's proposed construction fails to specify that both the cavity clip and the something (i.e., a pump) that is being gripped must be within the cavity. Defendants' Responsive Brief, at 21. In view of the specification and Figure 5 of the '767 Patent, it is apparent that the "cavity clip" is a clip within the cavity. However, the specification does not disclose that the entire item being gripped must also be within the cavity. Indeed, the claim language specifically claims a "cavity clip being adapted to hold the received portion of the pump in the cavity." '767 Patent, col. 8:67 & col. 9:1-2 (emphasis added). Thus, any construction requiring that the whole clipped item exist in the cavity would be more narrow than the claim, which merely calls for a "portion" to reside in the cavity. Accordingly, the Court construes "cavity clip" to mean "a device within a cavity that assists in holding something by gripping it or pushing against it."

The central issue is whether the Eastman Carbon Venture Blind has a "closable vertical opening," as required by the nine claims of the '338 Patent. Claims 1 and 7 are the independent claims of the patent. Claim 1 reads:

1. A portable and collapsible blind or shelter structure comprising:

   (a) a flexible fabric cover having four side walls and a top; wherein each side wall includes at least one window opening; wherein each said side wall includes opposite side edges and a top edge; wherein side edges of adjacent side walls are integral with each other; and further including a closable vertical opening along one of said side edges; wherein the perimeter of each side wall and the top is non-stretchable; and

   (b) a framework comprising five support members; wherein each side support member comprises four resilient leg members hingedly connected at one end to a central hub; wherein one said support member engages and supports said top; and wherein said leg members connected to each said hub can be pivoted towards each other to collapse said structure.

   ('338 Patent, col. 4, 11. 2-21). Claim 7 reads:

7. A portable and collapsible blind or shelter structure comprising:

   (a) a flexible, integral fabric cover having four generally-square side walls and a top; wherein each side wall includes at least one window opening; and further including a closable vertical opening along one vertical corner of said structure; wherein the perimeter of each side wall and the top is non-stretchable; and

   (b) framework comprising five support members; wherein each said support member comprises four resilient leg members hingedly connected at one end to a central hub; wherein one said support member engages and supports a respective side wall in a taut condition; wherein one said support member engages and supports said top; and wherein said leg members connected to each said hub can be pivoted towards each other to collapse said structure.

   ('338 Patent, col. 4, 11. 36-52). Claims 2-6 depend on claim 1. Consequently, those claims are limited by the term "a closable vertical opening along one of said side edges." Claims 8 and 9 depend on claim 7 and are limited by the term "a closable vertical opening along one vertical corner of said structure."

The plaintiff and defendant dispute the meaning of these claim limitations. The plaintiff contends that these phrases encompass an opening of any shape having a predominately vertical dimension which is positioned along or adjacent to a side edge or vertical corner of the structure. According to the plaintiff's construction, this claim language would cover a triangular flap extending into one side wall, so long as one side of the triangle is positioned along one side edge or vertical corner of the structure. The defendant disputes that interpretation, arguing that the claim language, the specification, and the prosecution history show that a "closable vertical opening" means "a slit-like opening that runs straight up and down or
perpendicular to the horizon." Eastman further asserts that the ordinary meaning of "along one of said side edges" is "over the length of or on a line or course parallel and close to one of the side edges of the blind," and that the ordinary meaning of "along one vertical corner of said structure" is "over the length of or on a line or course parallel and close to the vertical line formed where two side walls of the blind meet at an angle."

"It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996); see also Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996). The words of the claims are of primary importance. Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc); Vitronics, 90 F.3d at 1582 (Fed. Cir. 1996). "[T]he words of a claim 'are generally given their ordinary and customary meaning.' Phillips, 415 F.3d at 1312 (quoting Vitronics, 90 F.3d at 1582). "[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Phillips, 415 F.3d at 1313.

Eastman submitted the declaration of Mr. Jeffrey A. Pestrue, its chief engineer. Mr. Pestrue is person with expertise in the design, development and production of hunting blinds, and he stated that the phrase "closable vertical opening" has no special meaning in the hunting blind industry. (Pestrue dec. P 5). There is no other evidence on this point.

Resolution of this claim construction dispute involves the application of commonly understood words. The parties have focused attention on the meaning of the word "vertical." "The common-sense understanding of 'vertical' or 'vertically' is that those words convey a sense of perpendicularity with respect to the surface of the earth." Laser Diode Array, Inc. v. Paradigm Lasers, Inc., 114 F.Supp.2d 167, 172 (W.D.N.Y. 2000). General purpose dictionary definitions, which are a type of extrinsic evidence, may be considered in the context of the intrinsic evidence. See Phillips, 415 F.3d at 1314-19. The plaintiff cites Merriam-Webster's Collegiate Dictionary (10th ed. 1998) which includes the following definitions: "perpendicular to the plane of the horizon or to a primary axis: UPRIGHT … lying in the direction of an axis: LENGTHWISE." That source also states, "Vertical suggests a line or direction rising straight upward toward a zenith."

When construing claims, "the context in which a term is used in the asserted claim can be highly instructive." Phillips, 415 F.3d at 1314. In the disputed phrases, "vertical" modifies "opening." This context means that the opening itself must extend lengthwise, in a direction that is straight up and down or perpendicular to the plane of the horizon.

The claim language also requires that the closable vertical opening be along one of the side edges (claim 1) or along one vertical corner of the structure (claim 7). The position of the opening is described throughout the patent. The abstract states: "One corner of the structure includes a vertical opening to permit ingress and egress from the structure." The following statement appears in the summary of the invention: "An openable doorway is positioned vertically at one corner of the blind or shelter to enable ingress and egress. Closure means such as a zipper is used to close the opening." ('338 Patent, col. 2, II. 13-15). The following statement appears in the detailed description of the invention:

A zipper is incorporated in one corner of the structure where two side walls meet. The zipper is stitched in place with non-stretchable thread. The leg members must flex in order to enable the door opening to expand for ingress and egress. When the zipper is in an open position, the fabric adjacent to the opening can be pulled slightly away from the opening (which results in widening of the opening as the pegs flex.)

(Col. 3, II. 28-35). In Figure 1, a vertical slit-like opening positioned at the corner of the blind is shown as element 5. No other type of opening is mentioned in the patent.

The patent's prosecution history is also informative. The application claims were allowed without amendment. The Notice of Allowability included the following Examiner's Statement of Reasons for Allowance:

The primary reason for the allowance of the claims is the claimed foldable tent structure having a cover which includes a top wall and 4 side walls and a zipperred vertical opening at a cornered side edge, 5 frame members each has four resilient legs hingedly connected at one end to a central hub; each frame member engages and supports a respective side wall and the top wall in a taut condition; each leg is pivotable at the hub toward each other to collapse the tent structure. Said tent structure is not shown or taught by the prior art of record.
(Def's Ex. A-2). This statement demonstrates that the Examiner considered a vertical opening positioned at a cornered side edge to, be a distinguishing feature of the invention. Among the prior art patents cited as references in the '338 Patent are U.S. Patent No. 3,810,482 to Beavers (the "482 Patent") and U.S. Patent No. 4,819,680 to Beavers ("the '680 Patent"). These patents disclose a cube-shaped collapsible tent structure having a hub-style framework similar to that of the plaintiff's invention. One of the few distinctions between the plaintiff's invention and these prior art patents is that the plaintiff's invention has a vertical opening at a cornered side edge.

The plaintiff has provided the declaration of Rex E. Paulsen, Ph.D., P.E. Mr. Paulsen is a registered professional engineer and has some expertise relating to collapsible tents and patents. Mr. Paulsen's declaration constitutes extrinsic evidence, a category that is less significant than the intrinsic evidence. See Phillips, 415 F.3d at 1317. Mr. Paulsen's declaration suffers from errors and deficiencies and is not useful in ascertaining the meaning of the disputed terms. In his discussion of the prosecution history, Mr. Paulsen dismissed the significance of Examiner's Reasons for Allowance without any review of the prior art. Where he did address the '482 Patent, Mr. Paulsen mistakenly stated that the '482 Patent shows a three-sided tent, whereas the specification of the '482 Patent expressly states that the invention is not limited to a structure having three sides and a top. See '482 Patent, col 3, 11. 24-38 ("The frame 12 comprises a minimum of four and a maximum of six nearly identically constructed subframe assemblies ... [in the preferred embodiment] the subframe assemblies which could be positioned in the entryway 18 as well as in the floor area are both left out."). Figure 2 of the '482 Patent shows a tent having four side walls and top, with a triangular entryway in one of the side walls. A similar drawing is shown in the '680 Patent. Mr. Paulsen failed to appreciate the full teachings of the Beavers patents and other references cited in the '338 Patent.

The language of the '338 Patent claims, the specification, and the prosecution history support the construction urged by Eastman. The term "a closable vertical opening" means "a slit-like opening that runs straight up and down or perpendicular to the plane of the horizon." "Along one of the side edges" means "over the length of or on a line or course parallel and close to one of the side edges of a wall of the blind." "Along one vertical corner of said structure" means "over the length of or on a line or course parallel and close to the vertical line formed where two side walls of the blind meet at an angle." We agree with the district court that the term "a closable vertical opening" is properly construed as "a slit-like opening that runs straight up and down or perpendicular to the plane of the horizon." See, e.g., Ameristep, 2007 U.S. Dist. LEXIS 5436, 2007 WL 219961, at *5.

When construing claims, a court must begin by "look[ing] to the words of the claims themselves ... to define the scope of the patented invention." Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)). Words of a claim "are generally given their ordinary and customary meaning" as understood by a person of ordinary skill in the art in question. Id. at 1312-13. For this reason, "claims must be read in view of the specification, of which they are a part." Id. at 1315 (internal quotations omitted). Hence, the specification "is the single best guide to the meaning of a disputed term." Id. "In examining the specification for proper context, however, this court will not at any time import limitations from the specification into the claims." CollegeNet, Inc. v. ApplyYourself, Inc., 418 F.3d 1225, 1231 (Fed. Cir. 2005) (citing Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1326 (Fed. Cir. 2002)).

The district court concluded, based on expert testimony that Stumbo does not dispute on appeal, that the phrase "closable vertical opening" does not have any special meaning in the hunting blind industry. See, e.g., Ameristep, 2007 U.S. Dist. LEXIS 5436, 2007 WL 219961, at *3. Stumbo does not contest the common sense meaning of "vertical," defined as "perpendicular to the plane of the horizon or to a primary axis." Merriam-Webster's Collegiate Dictionary (10th ed. 1998). Rather, Stumbo contends that the district court misapplied the word "vertical" to the slit-like shape of the opening in the blind instead of to its orientation. In other words, according to Stumbo, the word "vertical" limits the opening only to shapes.
that are taller than wide. Under Stumbo's definition, a "vertical opening" would cover any shape of opening--i.e., rectangular, oval, or triangular--as long as the vertical height of the opening was greater than the horizontal width. The claims of the '338 patent read in light of the specification do not support such assertions.

Starting with the text of the claims, the phrases "along one of said side edges" in claim 1 and "along one vertical corner of said structure" in claim 7 are used to describe the word "opening" separately and in addition to the word "vertical." Therefore, construing the word "vertical" as referring to merely the orientation of the opening would render the phrases "along one of said side edges" and "along one vertical corner of said structure" superfluous, a methodology of claim construction that this court has denounced. Merck & Co. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so."); see also Bicon, Inc. v. Straumann Co., 441 F.3d 945, 950 (Fed. Cir. 2006); Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1307 (Fed. Cir. 2005). Only if "vertical" refers to the shape of the opening instead of redundantly to the orientation of the opening would each claim term have a distinct meaning.

That the word "vertical" refers to the slit-like shape of the opening is further supported by the specification of the '338 patent. The written description explicitly states that:

> [a] zipper is incorporated in one corner of the structure where two side walls meet. . . . The leg members must flex in order to enable the door opening to expand for ingress and egress. When the zipper is in an open position, the fabric adjacent to the opening can be pulled slightly away from the opening (which results in widening of the opening as the pegs flex).

'338 Patent col.3 ll.29-36 (emphasis added). The fact that the leg members must flex to enable entry and exit indicates that the opening in the '338 patent is a slit. Triangular loose door flaps, such as the openings in the accused products, certainly would not require leg members to flex.

In support of his construction, Stumbo points to the summary of the invention, which reads "an openable doorway is positioned vertically at one corner of the blind or shelter to enable ingress and egress." Id. col.2 ll.13-15. This sentence does not support Stumbo's proposed construction. An entry and exit pathway positioned along the side edges or vertical corners of a cube-shaped blind will necessarily be vertically positioned.

Stumbo also relies on CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359 (Fed. Cir. 2002), to argue that the district court improperly imported a limitation from the specification into the claims. CCS Fitness involved the construction of the claim term "reciprocating members," used to describe the longitudinal structures that facilitate the reciprocating elliptical motion of the footpads on a stationary exercise device commonly known as the elliptical trainer. Though the district court noted that nothing in the claims, specification, or prosecution history of the patent indicated what shape these structures had to take, it reasoned that the figures of the claimed invention illustrated the reciprocating members as single-component straight bars only and restricted the claim term as such. Id. at 1364. On review, we determined that the district court had erred. The drawings merely illustrated a particular embodiment, as the specification never required a certain number of components or shape for the reciprocating members. Id. at 1367. Because nothing in the intrinsic evidence narrowed the sub-structures encompassed under "reciprocating members," we concluded that the claim term covered all possible configurations, including a multi-component, curved beam or lever. Id.

By contrast, the specification of the '338 patent inherently requires a slit-like shape for the opening. The specification explicitly discloses that the "legs must flex in order to enable the door opening to expand for ingress and egress." 338 Patent col.3 ll.31-36. The fabric adjacent to the opening is then pulled slightly away from the opening, which results in a widening of the opening. Id. A linear slit is the only fathomable shape of an opening with the described characteristics. Figure 1, the only figure of an opening in the '338 patent, illustrates a vertical slit-like opening, further supporting this construction. Id. fig.1. There is nothing in the specification to suggest that the patentee contemplated that any other shape of opening could work with this invention.

In sum, the district court correctly interpreted the claims in the context of the claim language and the specification.
2. "In close proximity to" is construed to mean "near or close to."

B. 863/475 Patents. Only one term in these patents requires interpretation. The claim language requiring interpretation states: "a plurality of selectively removable mulcher baffles which close said throat portions to define a substantially cylindrical mulching chamber around each of said cutting blades." Filing No. 61, Ex. A, col. 6, lines 32-35, col 8, lines 1-4 ('475 patent); Ex. B, col. 6, lines 57-59, col. 8, lines 34-36 ('863 patent). At issue is the phrase "close said throat portions."

Toro contends that the phrase is an unambiguous functional description of what the removable mulcher baffles do: they "close the space between the first and second flow control baffles so that grass clippings are generally confined to the defined area of the cutting chamber for each cutting blade of the mower." Plaintiffs' Markman Brief at 25-26. By closing the throat portions, the pair of Y-shaped mulcher baffles defines a cylindrical mulching chamber around each blade. Neither the claims nor the prosecution history limit the height of the removable mulcher baffles.

Scag, for its part, moves beyond the language of the patent claims to consider how high the removable mulcher baffles must be to "close" the throat portions between the fixed front and back flow control baffles. Scag maintains that the claim language, as written, requires a removable mulcher baffle to close off the throat portion -- regardless of its height in relation to other baffles. Scag contends that the height issue arises because Exmark allegedly failed to disclose to the PTO its prior art removable mulcher baffles found in a mulching accessory. Toro, for its part, insists that Exmark did not disclose to the PTO the details of the prior art mulching accessory because its structure was different than the structure claimed in the '475 patent: the mulching accessory's removable mulching baffles could not "close" the throat portions since they were lower than the rear bird wing baffles. Toro's Brief in Support of Its Motion for Preliminary Injunction at 7, 10.

Pointing to Figure 3 of the '863/475 patents, Scag argues that the removable mulcher baffles in the patents are still lower than the rear bird wing baffles. Consequently, Scag says that the mulcher baffles cannot "close" the throat portions as required by the patents' claims. Scag therefore insists that the claims as written must be interpreted to mean that the removable mulcher baffles close the throat portions no matter what size they are in relation to the rear baffle.

I agree with Toro that the precise height of the removable mulcher baffles has nothing to do with their function when placed between the fixed front and back flow control baffles. The goal of a Markman hearing is to interpret claim language, not to make rulings about a patent's validity based on prior art. I here determine whether the removable mulcher baffles function to close the throat portion, not whether Exmark's prior art mulching kit also had removable mulching baffles that did or did not close the throat portions, and not whether the removable mulcher baffles claimed in this patent work correctly to close off the throat portions. Scag is free to raise the latter issues in a summary judgment motion or at trial when matters of validity are more properly addressed.

Accordingly, I adopt Toro's proposed definition: the phrase "close said throat portions" means that the removable mulcher baffles close the space between the first and second flow control baffles so that grass clippings are generally confined to the defined area of the cutting chamber for each cutting blade of the mower.

I.

Pactiv is the assignee of the 143 patent, which relates to a zipper profile for opening and closing plastic bags. The patent describes and claims a "rolling action zipper profile" that closes a bag, point by point, as a plastic U-shaped slider moves the zipper across the bag. 143 patent, col. 1, ll. 6-11. The moving action presses a male rib element together with a female groove element at the bottom of the profile and then "roll[s]" the profile closed toward the top. Id. at col. 5, ll. 16-21. The
exact same sequence in reverse opens the bag. A series of figures from the 143 patent depicts the rolling and interlocking of the male rib and female groove elements.

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Viewing Figures 5-7 sequentially as the zipper moves across the profile at a single point on the bag, as the profile begins to close (figure 5), 1 a part of the fastener apparatus called the "separator finger" (23) holds the top of the profile open while the slider's "shoulders" (21 and 22) push the bottom of the profile together. 143 patent, col. 5, ll. 61-66, Fig. 5. Meanwhile, this pushing action causes a realignment so that the rib (16) moves partially into the groove (17). Id. at Col. 6, ll. 8-10, Fig. 5. Then, as seen progressively from Figure 5 to 6 to 7, as the separator finger (23) becomes smaller, the groove element (17) rotates counter-clockwise until the rib (16) and groove (17) elements are interlocked and the profile is closed.

--- Footnotes ---
1 Figure 4 shows the profile completely open, as the rib element (16) is not connected to the groove element (17).
--- End Footnotes ---

Claim 1 of the 143 patent (with the crucial claim language emphasized) reads in pertinent part as follows: 2

A plastic reclosable fastener with slider particularly suited for thermoplastic bags and the like comprising a pair of flexible plastic strips having separable fastener means extending along the length thereof comprising reclosable interlocking male and female profile elements on the respective strips, said strips including profiled tracks extending along the length thereof parallel to the male and female elements, said male and female elements having complementary cross sectional shapes such that they are closed by pressing the bottom of the elements together first and then rolling the elements to a closed position toward the top thereof . . . .

Col. 6, ll. 53-64. SCJ's accused Slide-Loc bag has a U-shaped profile and a "plastic reclosable fastener" with at least one pair of interlocking rib and groove elements (the Slide-Loc has two rib and groove elements).

--- Footnotes ---
2 Though Pactiv asserts that SCJ's accused Slide-Loc bag infringes numerous claims of the 143 patent, the presence of the critical element requiring "rolling" appears in all but one of the asserted claims, which instead includes the phrase "rolling action." Neither party has asserted that the terms "rolling" and "rolling action" have different meanings.
--- End Footnotes ---

On November 12, 1999, the district court issued an order construing, inter alia, the claim term "rolling." See Tenneco Packaging Specialty & Consumer Prods., Inc. v. S.C. Johnson & Son, Inc., 1999 U.S. Dist. LEXIS 17937, No. 98 C 2679 (N.D. Ill. 1999) (claim construction order). After considering and rejecting the alternative definitions proffered by the parties, the district court relied on the patent specification and the term's ordinary meaning to construe "rolling" to mean "a rotational motion which is achieved because of the shape of the elements and because of the materials from which the elements are made, i.e., flexible plastic." Id.

Based on the district court's construction of the term "rolling," SCJ moved for summary judgment of non-infringement, while Pactiv filed a cross-motion for partial summary judgment of infringement. Ruling on the motions, the district court compared the rolling limitation, as construed, to the accused Slide-Loc bag and concluded, as a matter of law, that SCJ's product did not infringe the 143 patent either literally or under the doctrine of equivalents. Pactiv Corp. v. S.C. Johnson & Son, Inc., No. 98 C 2679 (N.D. Ill. 2000) (order granting summary judgment of non-infringement).

Instead of framing the infringement inquiry as whether the accused Slide-Loc bag exhibits "rolling" at some point during the closing process, the district court sought to determine whether the rib and groove elements in the accused device are "closed . . . by rolling." 143 patent, col. 6, ll. 63-64. After viewing computer animations depicting the closing of the accused device and considering the opinions of the parties' experts, the court determined that any rolling that satisfies the definition
noted above is "incidental" to the process of closing the Slide-Loc bag. Pactiv Corp. v. S.C. Johnson & Son, Inc., 2000 U.S. Dist. LEXIS 18877, No. 98 C 2679 (N.D. Ill. 2000). The court found that the testimony offered by Pactiv's experts described two types of rotational movement in the accused device. The first type of rotation consists of an arcing movement that necessarily occurs as a result of the Slide-Loc closing from the bottom of the zipper profile to the top. According to the district court, this tracing of an arc, which positions the rib and groove elements next to each other, "is outside the definition of the claim term as determined by the court." Id. The second type of rotational movement occurs after the rib element both deforms and enters the groove. That occurs when the groove rotates counterclockwise and returns to its original shape and the rib rotates downward to engage the groove and "settles into its final closed position." Id. The district court appeared to agree that this rotational motion occurs because of the shape of the rib and groove elements and because of the materials from which they are made and that the motion thus may fit within the definition of the claim term "rolling." The court determined, however, that the incidental nature of the rolling to the closing process precluded a finding that the "Slide-Loc device closes by rolling as that term is used in the 143 patent." Id. Simply put, since a device that rolls only incidentally in the closing process does not close by rolling, as the 143 patent requires, the district court held that the Slide-Loc bag does not infringe the patent literally as a matter of law.

As for infringement under the doctrine of equivalents, the district court applied the familiar standard that "the claim element and accused component 'perform substantially the same function in substantially the same way to achieve substantially the same result.'" Id., quoting Kraft Foods, Inc. v. Inl'l. Trading Co., 203 F.3d 1362, 1371, 53 U.S.P.Q.2D (BNA) 1814, 1820 (Fed. Cir. 2000). The district court determined that because the Slide-Loc bag does not close by the rolling process described in the 143 patent, it necessarily does not close in substantially the same way as the claimed device.

II.

Pactiv argues that the district court made two crucial errors in reaching the conclusion that the Slide-Loc bag does not infringe the 143 patent. First, it contends that the district court improperly added a limitation to the claims by requiring that "rolling" be non-incidental to the closing process. Such a construction, according to Pactiv, erroneously reads an unstated limitation into the claims in contravention of this court's settled precedent. See N. Telecom Ltd. v. Samsung Elecs. Co., 215 F.3d 1281, 1290, 55 U.S.P.Q.2D (BNA) 1065, 1072 (Fed. Cir. 2000). Second, Pactiv contends that irrespective of the presence of a non-incidental rolling requirement, the district court misapprehended the computer animations depicting the Slide-Loc's closing process and ignored Pactiv's expert testimony, both of which present substantial evidence of literal infringement and infringement under the doctrine of equivalents, so as to preclude a grant of summary judgment in favor of SCJ. We address these arguments in turn.

First, we do not agree that the district court improperly imported a limitation into the claims. On the contrary, we believe the non-incidental closing requirement follows clearly from the "closed . . . by rolling" language of the claims. 143 patent, col. 6, ll. 63-64. As the district court properly recognized, claim construction does not involve interpreting the claim language as a series of disjointed words. Instead, viewed in their proper context, the claims not only require the presence of rolling, but also that the profile be "closed . . . by rolling." Id. The non-incidental rolling requirement gives meaning to this claim limitation; the district court properly construed the claim in accordance with its plain language. 3

3 We also reject Pactiv's argument that the "such that [the elements] are closed . . . by rolling" language contains an open transition phrase ("such that"), thus permitting the profile to close by rolling as well as other methods. 143 patent, col. 6, ll. 63-64. Even if other motions, including snapping and deformation, may be present in the claimed invention, the open language does not obviate the requirement that the profile be "closed . . . by rolling." Simply put, an open-ended transition "does not free the claim from its own limitations." Kustom Signals, Inc. v. Applied Concepts, Inc., 264 F.3d 1326, 1332, 60 U.S.P.Q.2D (BNA) 1135, 1139 (Fed. Cir. 2001).
The district court construed the term "a closed chamber . . . adapted to retain a quantity of fluid" to mean "an enclosed cavity, or some other enclosure or system of enclosures, which is capable of being sealed or set apart from its surroundings to retain a quantity of fluid." SJ Order, 2008 U.S. Dist. LEXIS 109423 at *32. The district court arrived at this construction by referring to Figure 28 of the Besemer application. The district court created the following markup of Figure 28 to demonstrate its understanding of the "closed chamber":

Id. at 20. As the above figure shows, the district court concluded that the claimed closed chamber includes not only the cavity 310, but also "containers 2810 and 2820, and associated tubes." Id. at 18. Agilent challenges two aspects of the district court's construction.

A.

First, Agilent argues that the district court erroneously interpreted "a closed chamber" to mean a "system of enclosures." According to Agilent, the term is defined by the language of the claim itself, and should mean "the space between the inner surfaces of the first and second substrate, wherein at least one of the inner surfaces is functionalized." Appellant's Br. 43.

This court reviews a district court's claim construction without deference. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1451 (Fed. Cir. 1998) (en banc). This court generally assigns claim terms their ordinary and customary meanings, according to the customary understanding of a person of ordinary skill in the art who reads them in the context of the intrinsic record. See Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc). "[T]he claims themselves provide substantial guidance as to the meaning of particular claim terms." Id. at 1314.

The claim language in this case makes the district court's definition dubious. The district court's definition includes a "system of enclosures." The claim itself recites a closed chamber "define[d]" by "a first substrate and a second substrate having inner surfaces." Thus, the claim requires that the chamber be bounded by two discrete substrates. The chamber is not a nebulous space that could ambiguously span a "system of enclosures." Instead, it is an enclosure explicitly defined by two surfaces.

The specification further impeaches the trial court's definition. As discussed above, the district court erred by looking to the Besemer specification to derive this claim term's meaning. Because the specification "is the single best guide to the meaning of a disputed term," Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996), this was an error of no small consequence. The "closed chamber . . . " term should have been construed in light of Schembri's specification, which consistently uses this term to refer simply to the space between a first and second substrate. As the Summary of Invention section states:

The invention, in one embodiment, is an apparatus for mixing a film of fluid, particularly a chemical, biochemical, or biological fluid which typically comprises a reaction mixture, the apparatus comprising a first substrate having an inner surface and a substantially parallel second substrate having an inner surface that defines a closed chamber therebetween. The closed chamber is adapted to retain a quantity of fluid so that the fluid is in contact with both inner surfaces.

Schembri Patent col.2 II.44-52 (emphasis added). Indeed, the closed chamber is "define[d]" by two substantially parallel substrates with inner surfaces. Id. The Schembri specification provides no indication that a closed chamber is a "system of enclosures." Rather, it is an enclosure.

Consistent with the disclosure's focus on a method of mixing precise quantities of fluid, Schembri indicates at many points that the closed chamber is an interstitial space defined by two surfaces in which nucleated bubbles move in response to a temperature gradient to achieve mixing. See, e.g., id. col.6 II. 36-38 ("a second substrate 11 . . . is placed on top of the seal where the substantially parallel substrates define a closed chamber"); id. col.6 II.38-41 ("The closed chamber may be a micron to several millimeters in thickness, preferably from about 5 microns to about 100 microns in thickness."); id. col.7 II.9-15 ("The apparatus having closed edges, shown in FIG. 3, may additionally include a seal 15 between the two opposing inner surfaces . . . The apparatus preferably includes an opening in one of the substrates or in the seal for introducing fluid into the closed chamber.").

Moreover, the district court's interpretation ignores, or at the least frustrates, the explicit requirement that "at least one of
said inner surfaces is functionalized with [probe materials].” This language requires that probes attach to at least one (possibly both) of the chamber's two substrate surfaces for hybridization. Under the district court's 2008-1466 13 "system" definition, however, it makes little sense to speak of a hybridization chamber with only two microarray chamber substrates, let alone functionalizing "at least one" of these two substrates. In this context, if a chamber really means several chambers, the Schembri specification provides no guidance as to where, amongst the several chambers, the first and second substrates are located. Indeed, the Schembri patent uniformly teaches that a closed chamber is simply an enclosure formed by two substrates, at least one of which is functionalized. Thus, for various reasons, this court rejects the district court's expansive interpretation of "closed chamber." Instead the language of the claim and specification defines the chamber.

B.

Agilent further argues that the district court erred by construing a "closed chamber . . . adapted to retain a quantity of fluid" to mean a chamber that is "capable of being sealed or set apart from its surroundings to retain a quantity of fluid." As per Agilent, a "closed chamber" is a "chamber from which there is no egress of fluid." Appellants' Br. at 47.

Again, this court finds error in the district court's construction. A "closed chamber . . . adapted to retain a quantity of fluid" must mean something different than just a "chamber . . . adapted to retain a quantity of fluid." Otherwise, the word "closed" becomes superfluous. See Merck & Co. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so."); Mangosoft, Inc. v. Oracle Corp., 525 F.3d 1327, 1330-31 (Fed. Cir. 2008) (rejecting claim construction that "ascripts no meaning to the term . . . not already implicit in the rest of the claim."). At best, the district court's construction equates the term "closed" with "closable," contrary to the plain language of the claim.

Notably, the district court explicitly recognized that the ordinary meaning of "closed" in the context of a fluid retention chamber is simply "not open" or "sealed." SJ Order, 2008 U.S. Dist. LEXIS 109423 at *19. A sealed chamber does not allow fluid to escape. However, the district court compromised this ordinary meaning out of a need to harmonize its own assumptions that a) the claims should be construed in light of the Besemer application, and b) a "closed chamber" can be a "system of enclosures." No doubt, the various enclosures (containers, valves, channels, etc.) of Besemer's agitation systems are not always closed or sealed. But, as discussed above, Schembri, not Besemer, is the proper reference point for claim construction, and a "closed chamber" is not a system of enclosures.

In Schembri's disclosure, the closed chamber is not merely capable of being set apart from its surroundings - it is in fact set apart. Indeed, the hybridization chamber, once closed or sealed, allows no fluid to escape. At column 6, Schembri teaches that "a seal 15 can be attached to the outer periphery of the substrate, thus creating a chamber for the fluid with a defined thickness." Schembri Patent col.6 II.28-30. At this point in the explanation, the patent describes only a "chamber" that is capable of retaining a film of fluid. Next, however, "a second substrate 11, or a simple glass cover slip is placed on top of the seal where the substantially parallel substrates define a closed chamber 16." Id. col.6 II.36-38 (emphasis added). Thus, whereas a hybridization "chamber" is formed by attaching a seal to the substrate, that chamber becomes "closed" once another substrate is placed over the seal. This teaching of closing a chamber is repeatedly discussed in each example provided in Schembri. See id. col.7 II.49-53; col.8 II.20-25; col.8 II.53-55.

Thus, this court reverses the district court's construction, which was not grounded in the right disclosure and did not honor the customary meaning of the claim language to one of skill in the art. The proper meaning of a "closed chamber . . . adapted to retain a quantity of fluid" is "an enclosed cavity defined by the inner surfaces of the first and second substrates, from which there is no egress of fluid."

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c. "in a closed circulation process stream"

The phrase "in a closed circulation process stream" appears in Claims 1, 19, 20, 22 and 23 of the '123 patent, CFMT asserts that the phrase refers to the flow of process fluids in a closed manner into a vessel from a source, or inlet, and out of a vessel through a drain, or outlet. CFMT argues that the term "circulation" does not require that fluids travel in a complete loop or circle, or that they re-circulate. YieldUP, on the other hand, contends that the phrase "in a closed circulation process stream"
requires that the process fluids move in a circle.

The language of the independent claims in the '123 patent does not require movement of fluid in a circle. The '123 patent, however, includes dependent claims, such as Claims 2 and 11, that require "recirculation" or "recycling" of process fluids. The broader independent claims cannot properly be construed to include the limitation of re-use or recirculation of process fluids, when those additional limitations are set forth in dependent claims. See United States v. Teleelectronic, 857 F.2d 778, 783 (Fed. Cir. 1988) (holding that construction of a claim that renders another dependent claim superfluous is presumptively unreasonable). As advocated by CFMT, the court finds that the phrase "in a closed circulation process stream" refers to the flow of process fluids in a closed manner into a vessel from a source, or inlet, and out of a vessel through a drain, or outlet, but the phrase does not require that fluids travel in a complete loop or circle, or that they re-circulate.

1. "A generally cylindrical housing closed on one end and open on its other end"

Plaintiffs contend that the base of the accused devices, the Morton and TRW driver's side inflators, is the "housing" required by claim 1 of the '715 patent. Plaintiffs argue that "closed" means sealed to the passage of gases and, when the accused device is assembled, the base is sealed to the flow of gas. Defendants assert that the accused devices do not contain "a generally cylindrical housing closed on one end and open on its other end." Instead, Defendants claim that the bases of the Morton and TRW driver's side inflators are open on both ends, since each device's base has an opening through which the igniter is inserted. Further, Defendants argue that Plaintiffs are estopped from arguing equivalency because Lynch obtained the patent by limiting the housing element to exclude the type of housing with an opening through which a shaft extends.

The Magistrate Judge rejected Plaintiffs' interpretation as overbroad and rejected Defendants' interpretation as too narrow. First, the Magistrate Judge found that under Plaintiffs' interpretation the Stephenson device itself is closed on one end since the Stephenson opening is sealed to the flow of gas by a lip seal between the "housing" and the steering wheel shaft. Thus, the Magistrate Judge concluded that Plaintiffs cannot rely on an interpretation of "closed" as meaning only sealed to the passage of gases when the prosecution history of the patent show that they intended just the opposite. Second, the Magistrate Judge rejected Defendants' interpretation as too narrow, since it "would exclude a device from being 'closed on one end' if any part of the inflator assembly itself could be removed and thus 'open' the housing." (R&R at 22). The Magistrate Judge reasoned that "the Stephenson patent is directed to a device wherein the shaft through the center of the inflator is entirely separate from the inflator assembly. Thus if the inflator were removed from the steering column, the hole in the inflator would be exposed, e.g., the inflator assembly itself is open on both ends. Nothing in the '715 patent specification, claims, or prosecution history further limits interpretation of the claim language in question." (R&R at 21). In other words, the Magistrate Judge reasoned that the steering shaft of the Stephenson patent is "entirely separate from the inflator assembly," whereas the igniters in the accused inflators are a "part of the assembly itself."

Defendants object to the Magistrate Judge's recommendation, arguing that "the Report misinterprets the Stephenson Patent and the accused inflators in concluding that a claim interpretation is possible that distinguishes the Stephenson Patent but that may in fact cover the accused inflators." (Def.'s Obj. at 4). Rather, argue Defendants, there is no substantive difference between the steering column of the Stephenson patent and the igniter of the accused devices, because in each case the alleged "housing" has a central opening that becomes "closed" when a separate piece is inserted into the opening.

Accordingly, Defendants assert that Plaintiffs cannot establish literal infringement because either Defendants' interpretation, which excludes both the Stephenson Patent and the accused inflators, is correct, or else claim 1 is invalid in light of the Stephenson Patent. Further, Defendants argue that the prosecution history estops Plaintiffs from invoking the doctrine of equivalents because Lynch limited the "housing" required by claim 1 to exclude the type of housing disclosed in Stephenson, which Defendants assert is the only type of housing alleged to be present in the accused inflators. In response, Plaintiffs emphasize that the phrase "closed on one end" appeared in the original version of claim 1, so that it was not added to overcome the Stephenson patent. Further, Plaintiffs contend that patentability was established by the combination of elements which defined a system totally different from that of the Stephenson patent and, thus, the remark distinguishing Stephenson as not "closed on one end" does not create a separate estoppel respecting the individual distinction, but rather creates an estoppel only regarding the combined distinctions.
(a) Claim Interpretation

Because Defendants do not dispute that the base of the accused devices is "generally cylindrical" and "open" on one end, the key issue here becomes whether the other end of the base is "closed" as that term is used in the first limitation of claim 1. Defendants argue that the prosecution history limits the scope of the term "closed" because the first limitation "was crucial in distinguishing claim 1 from the prior art." (Def.'s Mem. in Supp. of Mot. for Summ. J. at 25). Defendants refer to the portion of Lynch's remarks to the PTO that "Claim 20 also recites that the housing is closed at one end and open at its other end. Stephenson's cuplike member is open at both ends since the steering shaft must enter one end and the gas must escape from the other end." Defendants argue that in order to obtain the '715 patent Lynch limited the "housing" element to exclude the type of housing disclosed in Stephenson -- a cylindrical housing with a central opening through which another element must extend during assembly.

However, Plaintiffs point to the claim language and argue that the housing "is sealed, or 'closed,' along one end with respect to the flow of gas generated within the inflator." (Resp. to Mot. for Summ. J. at 21). In other words, Plaintiffs contend that the Court should construe "closed" to mean sealed to the flow of gas. Further, Plaintiffs argue that "not one distinction over Stephenson was relied upon. Rather, a list of distinctions between the invention of claim 1 and the Stephenson patent was set forth to demonstrate the lack of materiality of the Stephenson patent." Thus, Plaintiffs conclude that the distinction in the prosecution history did not limit the term "closed."

Plaintiffs are correct to begin with the claim language itself. Significantly, Defendants' proffer an interpretation which implies that the limitation applies only to the unassembled inflator, arguing that the "housing" is open at both ends if an opening is present in which another element, such as a steering shaft, is inserted during assembly. The Court finds that the claim language itself intends "closed on one end and open on its other end" to describe the unassembled housing, as evidenced by the fourth limitation of claim 1, which recites "a plate member for closing the open end of the housing connected to the housing around its periphery, said member including gas passage means leading from the interior of the housing to the exterior thereof." (emphasis added). In other words, claim 1 discloses a "housing" element that, when separated from the assembled inflator, is closed on one end and open on the other, and, when assembled, is "closed" on both ends as that term is used.

The claim language similarly refutes Plaintiffs' interpretation of "closed" as meaning sealed to the flow of gas. The fourth limitation, discussed above, recites that the open end becomes closed, yet allows for the flow of gas. In other words, the term closed was explicitly used in the fourth limitation to mean not sealed to the flow of gas. Thus, to construe "closed" in the first limitation to mean sealed to the flow of gas would render claim 1 internally inconsistent in that the term closed would be used differently in different limitations within the same claim. As the Federal Circuit has explained, a term "cannot be interpreted differently in different claims because claim terms must be interpreted consistently." Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed. Cir.), cert. denied, 133 L. Ed. 2d 424, 116 S. Ct. 515 (1995) (emphasis added). Thus, the Court rejects Plaintiffs' proposed construction of the term "closed" as meaning sealed to the flow of gas. In the Court's view the phrase "closed on one end and open on its other end" describes the housing element before it is assembled with the other elements of the inflator, such that a housing with an opening through which another element of the inflator is inserted during assembly is "open" on the end with the opening.

The prosecution history corroborates this interpretation of the term "closed" found in the first limitation of claim 1. Defendants argue that Lynch's remarks during prosecution of claim 1, which distinguished the "housing" from the Stephenson patent, disclaimed an interpretation of "closed on one end" that reads on a housing with a central opening through which another element must extend during assembly and, thus, limited the interpretation of "closed on one end" so as to exclude that interpretation. Plaintiffs respond, albeit in opposing the application of prosecution history estoppel, that the distinction regarding "closed on one end" was not relied upon to obtain the patent. Notably, the use of prosecution history in claim construction is analytically distinct from prosecution history estoppel, which is relevant only to the doctrine of equivalents. Southwall, 54 F.3d at 1578. However, as another District Court has noted, "in practice, there does not appear to be a meaningful distinction between the use of prosecution history in claim interpretation and the operation of prosecution history estoppel." Abtox, Inc. v. Exitron Corp., 899 F. Supp. 775, 781 (D. Mass. 1995). Accordingly, the Court will construe Plaintiffs' grounds for opposing the application of estoppel as grounds for opposing the use of the prosecution history to limit the interpretation of "closed" as well. Indeed, both applications of the prosecution history are triggered by a distinction made in order to obtain the patent. Zenith Lab., Inc. v. Bristol-Myers Squibb Co., 19 F.3d 1418, 1422 & 1425 (Fed. Cir.), cert. denied, 130 L. Ed. 2d 409, 115 S. Ct. 500 (1994). Thus, in Zenith the Federal Circuit held that the
prosecution history did not limit the claim and did not estop the patentee from establishing infringement under the doctrine of equivalents because, inter alia, the distinctions were not relied upon by the examiner in allowing the patent to issue. Id. However, the instant matter is distinguishable from Zenith, where the Federal Circuit found that the examiner did not rely upon the distinction because the inventions distinguished "were never asserted as prior art by the examiner, and the examiner expressly indicated that [the applicant]'s assertions were not a factor in determining patentability." Id. at 1425. Moreover, the Federal Circuit has more recently explained that "clear assertions made during prosecution in support of patentability, whether or not actually required to secure allowance of the claim, may also create an estoppel." Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1583 (Fed. Cir. 1995), cert. denied, 133 L. Ed. 2d 424, 116 S. Ct. 515 (1995). Therefore, the Court finds that the inventor's remarks limited the interpretation of "closed on one end," such that a housing in not "closed on one end" if it has an opening on that end through which another element is inserted during assembly.

Plaintiffs rely upon Read Corp. v. Portec, Inc., 970 F.2d 816 (Fed. Cir. 1992) for the proposition that prosecution history estoppel does not apply to the first limitation because patentability was based upon a combination of distinctions rather than the individual distinction of the prior art's housing. Plaintiffs include this argument in the portion of their brief regarding claim interpretation, thus conflating the two analyses that apply the prosecution history. As explained above, the two analyses are distinct, yet similar in application. However, the Court is not persuaded that Read applies equally well to the use of prosecution history in claim construction, nor have Plaintiffs even articulated such a proposition. Accordingly, the Court will not consider the proposition for which Plaintiffs cite Read as proffered grounds for not applying the prosecution history to the claim construction analysis.

The R&R concludes that the prosecution history only excludes a housing with an opening for an element that is separate from the inflator assembly, because "the Stephenson Patent is directed to a device wherein the shaft through the center of the inflator is entirely separate from the inflator assembly. Thus, if the inflator were removed from the steering column, the hole in the inflator would be exposed, i.e., the inflator assembly itself is open on both ends." (R&R at 21). However, the Court does not construe the Stephenson steering shaft to be entirely separate from the inflator, as the product does not function without the steering shaft.

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A. Claim 1: "closely disposed about said outer periphery exhaust region"

The parties next dispute the construction of a phrase in paragraph five of claim one of the '843 patent: "closely disposed about said outer periphery exhaust region."

Johnson argues that "closely disposed about said outer periphery exhaust region" means "near and on the same plane as the outer boundary of the fan." Johnson argues that during the prosecution of the '843 patent, Ametek "disclaimed the distinguished structure" of the prior art and thereby disavowed the full meaning which the disputed claim language would ordinarily have.

Ametek responds first that Johnson's proposed definition "reads extraneous limitations from the specification into the claim." Ametek next responds that Johnson's proposed definition is improper because the "claim term at issue address[es] only proximity to the outer periphery exhaust region, and is totally silent as to any planer relationship."

Instead, Ametek argues that "closely disposed about said outer periphery exhaust region" means "placed near and all around the outside perimeter of the area where the air is let out." Specifically, Ametek argues that this definition is proper because it gives the disputed phrase its "ordinary and customary meaning" and is "consistent with the specification and drawings of the '843 patent."

The court agrees with Ametek that Ametek did not disavow claim scope. Specifically, the court concludes that in the context of claim one paragraph five of the '843 patent, the phrase "closely disposed about said outer periphery exhaust region" means "placed near to the outside perimeter of the area of the fan where the working air is let out of the fan."
12 The court has adopted Ametek's proposed construction of the disputed claim term with certain modifications. Ametek argued that the phrase means "placed near and all around the outside perimeter where the air is let out." The court construes the phrase to mean "placed near to the outside perimeter of the area of the fan where the working air is let out of the fan."

1. Claim Language

The court will first analyze how claim one of the '843 patent uses the phrase "closely disposed about said outer periphery exhaust region." Claim one of the '843 patent claims a "bypass motor assembly" containing, inter alia, with disputed language in italics,

[an] end bracket having a plurality of vanes [blades] that form a fan chamber that receives said working air fan wherein said plurality of vanes [blades] are closely disposed about said outer periphery exhaust region such that air expelled by said working air fan is re-directed by said vanes [blades] toward at least one exhaust aperture.

'843 patent, Cl.7, Ll.27-32 (emphasis added). This claim language describes how the working air fan (26) and the diffuser end bracket (24) function together in the '843 patent. First, the fan (26) expels air used by the motor, working air, through the fan's exhaust region (86). Next, the vanes (52) of the diffuser end bracket (24) re-direct the air toward the diffuser's "exhaust aperture[s]". See Exhibit 3: '843 patent.

The phrase "closely disposed about said outer periphery exhaust region" describes the placement of the vanes (52) in relation to the exhaust region (86) of the fan (26). The closeness of the vanes to the fan's exhaust region allows the "air expelled by" the "working air fan" to be "re-directed by said vanes toward at least one exhaust aperture" so that the air can flow out of the diffuser end bracket (24).

The court's construction of the disputed phrase reflects the way in which the claim uses the disputed language. It is the vane's "placement near to the outside perimeter of the area of fan where the working air is let out of the fan" that allows the vanes to re-direct the working air to the exhaust apertures. Furthermore, in contrast to Johnson's proposed definition, the claim is notably silent as to the planer relationship between the vanes and the exhaust region.

2. Specification

The specification supports the court's construction of the disputed language. The specification recites language similar to the disputed claim language:

The leading ends 56 of the vanes 52 are disposed closely about the outer periphery of the fan 26 around the exhaust region 86. Indeed, each vane 52 has a top edge 54 which is of such a height so as to be equivalent to or larger than the height of the exhaust region 86. Accordingly, almost as soon as the working air is expelled from the fan exhaust ports 84, it is deflected and captured by the leading ends 56 and received in the channels 64 formed by the adjacent vanes 52 and the shroud 94.

'843 patent, Cl.5-6, Ll. 60-1(emphasis added). See Exhibit 3: '843 patent. It is because the vanes are "disposed closely about the outer periphery" of the exhaust region, with "each vane" having a "top edge 54 which is . . . equivalent or larger that the height of the [fan's] exhaust region," that the air can flow from the fan, between the vanes, and out the exhaust openings.

In contrast to Johnson's proposed definition, the specification, like the claim, is silent about the planer relationship between the vanes and the fan's exhaust region. The court finds "nothing in the written description of the ['843] patent, much less the claim language" that dictates that the vanes must be located on the same plane as the fan's exhaust region. Superguide Corp. v. DirecTV Enters., 358 F.3d 870, 880 (Fed.Cir. 2004).

3. Prosecution History: Disavowal of Claim Scope

Johnson, however, argues that the prosecution history reveals that Ametek disavowed the full meaning of the disputed claim.
language and thereby limited the definition of "closely disposed about said outer periphery exhaust region" to mean "near and on the same plane as the outer boundary of the fan." Ametek argues that it did not disavow claim scope and the court agrees.

A patent's prosecution history may, in some instances, reveal that the patent holder "disclaimed or disavowed subject matter" thereby "narrowing the scope of claim terms." Superguide Corp. v. DirectTV Enters., 358 F.3d 870 (Fed.Cir. 2004) (quoting ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1091 (Fed.Cir. 2003)). In Superguide Corp. v. DirectTV Enters., 358 F.3d 870 (Fed.Cir. 2004), the Federal Circuit noted, however, that a "prosecution history may not be used to infer the intentional narrowing of a claim absent the applicant's clear disavowal of claim coverage." Superguide Corp. v. DirectTV Enters., 358 F.3d 870, 875 (Fed.Cir. 2004)) (quoting Amgen Inc. v. Hoechst Marion Roussel Inc., 314 F.3d 1313, 1327 (Fed.Cir. 2003)). In other words, a disavowal of claim coverage "must be made with reasonable clarity and deliberateness." Superguide Corp. v. DirectTV Enters., 358 F.3d 870, 875 (Fed.Cir. 2004)(quotation marks and citation omitted).

On March 12, 2002, Ametek wrote to the USPTO in an apparent attempt to distinguish the proposed '843 patent from the prior art:

A close review of the '462 patent clearly shows that the 'vanes' of that particular ['462 patent] diffuser are disposed in a plane below the bottom ring of the working air fan and nowhere near the outer periphery of the fan. In distinct contrast, the present invention ['843 patent application] now sets forth the vanes of the end bracket are closely disposed about the outer periphery exhaust region of the working air fan. This feature is clearly not taught or suggested by the '462 patent

(emphasis added). Ametek then requested that the USPTO amend proposed claim one (issued claim one) of the '843 patent application to add the phrase "wherein said plurality of vanes are closely disposed about said outer periphery exhaust region."

In the initial sentence of Ametek's statement to the USPTO, Ametek described two characteristics of the vanes in the prior art '462 patent. First, the vanes in the '462 patent were located "in a plane below" the bottom ring of the working air fan. Second, the vanes in the '462 patent were located "nowhere near the outer periphery of the fan." Ametek then contrasted the '843 patent with the '462 patent by pointing out one characteristic of the '843 patent: the "vanes of the end bracket are closely disposed about the outer periphery exhaust region of the working air fan." Ametek made no statement about whether or not the vane and the working air fan were on the same plane in the '843 patent.

Johnson asks the court to infer from Ametek's use of the phrase "in distinct contrast" in the prosecution history, that Ametek meant to disclaim coverage of all products in which the vane and working air fan are not on the same plane. Analysis of Ametek's statement as a whole, however, reveals that Ametek did not clearly or deliberately disclaim coverage of products in which the vane and working air fan are not on the same plane. Rather, Ametek described two characteristics of the prior art: (1) planer location, and (2) proximity. Ametek then distinguished the '843 patent on the basis of only one of these characteristics: proximity. In light of this analysis, the court declines to conclude that Ametek deliberately disavowed the scope of the disputed claim language.

4. Drawings 13

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13 Because the court has concluded that it can determine the meaning of the disputed terms through examination of the intrinsic evidence, the court need not turn to extrinsic evidence. See Phillips Petroleum Co. v. Huntsman Polymers Corp., 157 F.3d 866, 870 (Fed.Cir. 1998) (noting if "intrinsic evidence unambiguously delineates the scope of the patent, resort to extrinsic evidence . . . is unnecessary").

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - -

Finally, the court's construction of the disputed phrase is consistent with the '843 patent drawings. See Exhibit 3: '843 patent. The drawings illustrate that the vanes (52) are located are "near to the outside perimeter" of the fan's (26) exhaust region (86). See Rexnord Corp. v. The Laitram Corp., 274 F.3d 1336, 1342 (Fed.Cir. 2001).
1. "Closely Fit In and Extend Through"

Osteonics first contends that the "closely fit" language of the patent claim indicates that the Whiteside patent requires a rod that, as closely as possible, fills up the entire intramedullary canal, i.e., that it fits snugly. This, according to Osteonics, comports with the general desire of the Whiteside system that its intramedullary rod be collinear with the central long axis. Osteonics, on the other hand, asserts that its system relies on no such close fit because it seeks only an approximation of the central long axis and does not aim to duplicate it.

The Court agrees with Osteonics. The language in claim 6, especially when viewed in conjunction with the general methodology described in claims 1 through 5, indicates that "closely fit" means what it says. DCW attempts to avoid this common meaning of the words by pointing out that a tight fit is not often achieved because the people on whom knee replacements are most commonly performed, the elderly, tend to have canal spaces 1/2 inches or more in diameter at their narrowest parts. But whatever the practice might be, the patent claim is what matters. Moreover, the drawings submitted in the Whiteside patent specification certainly show a rod that is snugly fit into the intramedullary canal. See Whiteside patent, Fig. 16; see also Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985) ("The descriptive part of the specification aids in ascertaining the scope and meaning of the claims inasmuch as the words of the claims must be based upon the description."). The fact that the Whiteside patent description envisions the use of a smaller rod when a larger one is not practical does not loosen the meaning of the description "closely fit."

Similarly, the whole nature of the reaming process, which is absent in Osteonics' product, points toward Osteonics' suggested interpretation. The reamer's main purpose, according to Dr. Whiteside's own testimony, "is to clear the contents of the bone. So when you put the rod in, you don't push those intramedullary contents into the patient's veins." Exhibits to DCW's Oppos. to Osteonics' Mot. for Partial Summ. J., Ex. 2 at 305. That process makes more sense--and is more necessary--in the context of a rod designed to "closely fit" than in one merely inserted into the femur shaft.

3 DCW complains that relying on the reamer improperly reads a claim limitation from an earlier claim into claim 6, thereby violating the doctrine of claim differentiation. See D.M.I. Inc. v. Deere & Co., 755 F.2d 1570, 1574 (Fed. Cir. 1985). While a limitation may not be read from one claim into another, different claims within the same patent may certainly be used to shed light on how other claims are best construed. Minnesota Mining & Mfg. Co. v. Johnson & Johnson, 976 F.2d 1559, 1566 (Fed. Cir. 1992).

In 1991, Wright 1 sued Osteonics for patent infringement, alleging that Osteonics' STAT-IM artificial knee surgery device infringed claims 6-8 and 10. Independent claim 6, from which the other asserted claims depend, reads in pertinent part (with emphasis on the disputed claim terms):

1 The original suit was brought by Dow Corning Wright Corp. During the pendency of the first appeal, Wright Medical Technology, Inc. acquired the assets of Dow Corning Wright Corp., including the '177 patent.

As an article of manufacture, a distal femoral surface shaping guide comprising the combination of
(A) an intramedullary alignment guide comprising (1) an intramedullary rod portion adapted to closely fit in and extend through the narrowest portion of the human femur such that the central long axis of said femur passes through the central long axis of said intramedullary rod portion, (2) a guide handle attached to and set at a preselected angle with respect to said axis of the intramedullary rod portion and being adapted to receive at least one femoral surface modifying instrument in proper alignment with respect to said handle and (3) a means for securing the combination of (1) and (2) in a fixed position in the femur with

(B) at least one femoral surface modifying instrument which is adapted to cooperatively engage such handle and to assume an appropriate fixed relationship with respect to the distal femoral surface and to the central long axis of the femur . . . .

In 1993, the district court conducted a trial limited to the issue of infringement. Although the parties did not dispute how the STAT-IM device worked, they did contest the proper construction of the claims and, in particular, the terms "closely fit in," "extend through," and "in proper alignment." The jury returned general verdicts stating that each of the asserted claims was not infringed literally or under the doctrine of equivalents. Wright appealed from the denial of its motion for a new trial. Relying on the recently-decided Markman v. Westview Instruments, Inc., 52 F.3d 967, 983-84, 34 U.S.P.Q.2D (BNA) 1321, 1333 (Fed. Cir. 1995) (in banc), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384, 38 U.S.P.Q.2D (BNA) 1461 (1996), we held in a non-precedential opinion that the district court abused its discretion in denying the motion for a new trial because it did not construe the claims as a matter of law before submitting the issues of infringement to the jury. See Dow Corning Wright Corp. v. Osteonics Corp., 57 F.3d 1082 (table, text at 1995 WL 250991) (Fed. Cir. Apr. 28, 1995). We therefore vacated the jury verdict and remanded for a new trial.

On remand, the district court adopted all of Osteonics' claim construction arguments and granted Osteonics' motion for summary judgment of no literal infringement. The court also granted Osteonics' motion for summary judgment on Wright's claim for infringement under the doctrine of equivalents, holding that the doctrine of equivalents . . . is not relevant to this case. [Wright] admitted to the Federal Circuit that if Osteonics' claim interpretation were correct, there would be no infringement at all, whether literal or pursuant to the doctrine of equivalents, a fact noted by the Federal Circuit in its remand to this Court. Even without the concession, however, that seems to be an appropriate assessment of the situation at hand. "The doctrine of equivalents is not a license to ignore or 'erase structural and functional limitations of the claim' limitations 'on which the public is entitled to rely in avoiding infringement.'" If Osteonics is correct in its claim construction arguments, there is nothing in its system that is the functional equivalent of those claims.

No. 91-10962-GAO, slip op. at 9-10 (citations omitted). This appeal followed. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1) (1994).

DISCUSSION

We review a district court's grant of summary judgment de novo. Conroy v. Reebok Int'l, Ltd., 14 F.3d 1570, 1575, 29 U.S.P.Q.2D (BNA) 1373, 1377 (Fed. Cir. 1994). Summary judgment is appropriate when there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(e); Johnston v. IVAC Corp., 885 F.2d 1574, 1576-77, 12 U.S.P.Q.2D (BNA) 1382, 1383 (Fed. Cir. 1989). Thus, summary judgment may be granted when no "reasonable jury could return a verdict for the nonmoving party." Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986). In deciding whether summary judgment was appropriate, we view the evidence in a light most favorable to the party opposing the motion with doubts resolved in favor of the opponent, which in this case is Wright. See Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1274, 35 U.S.P.Q.2D (BNA) 1035, 1038 (Fed. Cir. 1995).

Regarding literal infringement, Wright first argues that because the phrase "adapted to closely fit in and extend through the narrowest portion of the human femur" is modified by the phrase "such that the central long axis of said femur passes through the central long axis of said intramedullary rod portion," the "closely fit" and "extend through" limitations are met by any intramedullary rod that meets the functional objective of the invention. See Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 858, 9 U.S.P.Q.2D (BNA) 1289, 1292 (Fed. Cir. 1988) (describing a phrase beginning with the term "so that" as a "definitional parameter"); Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 796 F.2d 443, 450, 230 U.S.P.Q. (BNA) 416, 421 (Fed. Cir. 1986) ("We hold that smooth means smooth enough to serve the inventor's purpose."). Thus, Wright argues that an infringing rod, provided it is sufficiently co-linear with the central long axis of the femur, need
only "engage" (i.e., enter into) the isthmus of the femur. Osteonics responds that the terms "closely fit" and "extend through" mean exactly what they say: an infringing rod must fit tightly into and extend all the way through the isthmus of the femur. We agree with Osteonics regarding the construction of these claim terms.

A determination of infringement requires a two-step analysis. The first step, claim construction, is a question of law which we review de novo. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 983-84, 34 U.S.P.Q.2D (BNA) 1321, 1329, 1333 (Fed. Cir. 1995) (in banc), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384, 38 U.S.P.Q.2D (BNA) 1461 (1996). The proper construction of the claims is based upon the claim language, the written description portion of the specification including any relevant drawings, the prosecution history, and if necessary to aid the court's understanding of the patent, extrinsic evidence. See id. 52 F.3d 967 at 979-81, 34 U.S.P.Q.2D (BNA) at 1329-31. Claim terms are given their ordinary and customary meaning in the field of the invention, unless a special definition is clearly stated in the specification. See id. at 980, 34 U.S.P.Q.2D (BNA) at 1330. Thus, "usually, [the specification] is dispositive; it is the single best guide to the meaning of a disputed claim term." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1577 (Fed. Cir. 1996).

The second step in an infringement analysis is determining whether a particular device infringes a properly construed claim, which is a question of fact. See Fromson v. Advance Offset Plate, Inc., 720 F.2d 1565, 1569, 219 U.S.P.Q. (BNA) 1137, 1140 (Fed. Cir. 1983). "Literal infringement exists if each of the limitations of the asserted claim(s) reads on, that is, [is] found in, the accused device. " Baxter Healthcare Corp. v. Spectramed, Inc., 49 F.3d 1575, 1583, 34 U.S.P.Q.2D (BNA) 1120, 1126 (Fed. Cir.), cert. denied, 516 U.S. 906, 133 L. Ed. 2d 194, 116 S. Ct. 272 (1995). Infringement may be found under the doctrine of equivalents when, absent stopgap, every limitation of the asserted claim, or its equivalent, is found in the accused subject matter, the latter differs from what is literally claimed only insubstantially, and it performs substantially the same function in substantially the same way to achieve substantially the same result. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 137 L. Ed. 2d 146, 117 S. Ct. 1040, 1054, 41 U.S.P.Q.2D (BNA) 1865, 1875 (1997); Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 608-09, 85 U.S.P.Q. (BNA) 328, 330-31, 94 L. Ed. 1097, 70 S. Ct. 854 (1950).

The district court did not err in construing the "closely fit" and "extend through" limitations. Because these terms are not given any special definition in the specification, we must give them their ordinary meaning. Thus, "closely fit in and extend through" mean more than merely "fit into" or "engage." Wright's argument would render the contested terms surplusage, leaving claim 6 to cover any "intramedullary rod portion adapted . . . such that the central long axis of said femur passes through the central long axis of said intramedullary rod." Wright does not seek to interpret the claim terms, as we did in Laitram and Bausch & Lomb, but seeks to eviscerate them. We therefore conclude that the district court did not err in construing the words "closely fit" to require a tight or snug fit between the rod and the isthmus of the femur or in construing the words "extend through" to require that the rod pass through the entire length of the isthmus. Because the parties agree that the intramedullary rods of the STAT-IM device do not fit tightly against or extend through the isthmus of the femur, the district court also did not err in granting summary judgment that there was no literal infringement.

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C. Claim language to be construed from Claims 3 and 6 -- "an electrical connector closing said connector end of said tube"

HEN contends that the term "closing" should be constructed to mean "spanning a diameter of the tube." (HEN CC Br. at 19.) HEN argues that its proposed construction would mean that the electrical connector does not necessarily seal the tube, and thus can have openings into the internal cavity of the tube. Minco, on the other hand, proposes that the term "closing" should be construed to mean "attached to the final physical endpoint of the tube without openings into the internal cavity of the conductive tube." (Minco CC Br. at 27.)

Minco asserts that it does not claim that "closed" means "sealed." (Id. at 30.) However, Minco's proposed construction is effectively a construction that the tube must be sealed by the connector because Minco's proposed construction states that the connector cannot have any openings into the internal cavity of the conductive tube. Other courts have found, and we agree, that there is a difference in the ordinary meaning of the terms "closed" and "sealed." See Pharmacia & Upjohn Co. v. Sicor, Inc., 447 F. Supp. 2d 363, 374 (D. Del. 2006) ("ordinary meaning of the term 'sealed' is different from, and encompasses something more than, the ordinary meaning of the term 'closed.'"); Protective Optics, Inc. v. PanOptix, Inc.,
the tube, regardless of whether there are or are not openings in the connector into the internal cavity of the conductive tube.

Consequently, based on the claim language and the specification, we construe "closing" to mean "spanning the diameter of the tube, regardless of whether there are or are not openings in the connector into the internal cavity of the conductive tube."

458 F. Supp. 2d 1053, 1063-64 (N.D. Ca. 2006) (noting that "close" is different from "close hermetically"); HBB Limited Partnership v. Ford Motor Co., 1996 U.S. Dist. LEXIS 4047, *17-18 (E.D. Ill. Mar. 29, 1996) ("closed" does not mean "sealed" to the flow of gas). The patent applicants in this case also understood that there was a difference between "closed" and "sealed" because the applicants state in the patent that the immersion end is "sealed by a plug of refractory heat resistant material such as cement," (Minco Ex. A, col. 2, ll. 30-32), but only refer to the connector as "closing said connector end." (Minco Ex. A, col. 4, ll. 42-43.) HEN argues that the figure in the specification supports its contention that the connector merely closes and does not seal the conductive tube. However, we find that the figure is inconclusive on this point because there is nothing in the figure to indicate that there is a difference between the refractory heat resistant plug (see id. at Figure 1, number 4), which "seals" the immersion end, and the connector plug (see id. at Figure 1, number 17), which "closes" the connector end.

Minco contends that the specification and prosecution history both support its contention that the connector must be located at the final physical endpoint of the conductive tube and that it cannot have openings into the internal cavity of the tube. However, it would be improper for us to use the specification to import a limitation into the claim that does not appear in the claim itself, and therefore, we find it inappropriate to conclude based on the specification that the connector must be located at the final physical endpoint of the conductive tube. See Electro Med. Sys., 34 F.3d at 1048 (stating that a court cannot add limitations appearing only in the specification). Moreover, we find that the specification does not show the connector only at the final physical endpoint of the conductive tube. The specification states that the connector has an electrically conductive sleeve in intimate contact with the conductive tube, and, in the figure contained in the specification, the connector sleeve extends up into the tube. (Minco App. A at Figure 1, number 13 and col. 2, ll. 51-53.) Consequently, we reject Minco's arguments based on the specification that the connector must be at the final physical endpoint of the conductive tube, opposite the immersion end.

With respect to the prosecution history, Minco argues that the PTO initially rejected the application in part because Jackson disclosed "an electrical connector (46/58/60/62/70) closing the connector end of the tube and providing electrical connections for the cell and the tube." (Minco App. 5E at HEN000312-313.) Minco contends that, in order to overcome Jackson, HEN distinguished Jackson as follows:

The Examiner is of the position that Jackson discloses a hollow electrically conductive tube 72 having an immersion end, connector end and an electrical connector 46/58/60/62/70 closing the connector end of the tube.

Jackson disclosed a spring collet 46 which encircles and engages the tube 72. (See Fig. 2). As shown in Fig. 3, the spring collet 46 has fingers 48 spaced apart by slots which extend up from the end of the collet 46 and open into the cavity of the device 10. Element 58 closes the cavity at a distance up the cavity from the end of the tube 72. Requestor respectfully submits that since the spring collet 46 has openings into the cavity of the probe, Jackson does not disclose an electrical connector providing electrical connections which closes the end of the tube 72, as recited in claims 1, 3, 5, and 6.

(Minco App. 5F at HEN000297-298.) Therefore, according to Minco, HEN argued that the electrical connector disclosed in Jackson with holes opening into the internal cavity of the conductive tube could not close the conductive tube as claimed in the '736 patent, because the connector had openings into the internal cavity of the probe. In response, HEN argues that Jackson does not have a connector at all, and therefore, HEN could not have distinguished Jackson by discussing its connector in comparison to the '736 invention. In the portion of the prosecution history relied upon by Minco, the applicant did not acknowledge that Jackson has a connector, rather it stated Jackson discloses a spring collet that has openings into the cavity of the probe, and therefore, does not disclose an electrical connector which closes the end of the tube as recited in the '736 patent. The Federal Circuit has warned that prosecution history often lacks clarity. See Phillips, 415 F.3d at 1317. We find that to be the case here. Thus, it does not help explain how the applicant understood the invention. Nevertheless, we do not find that the applicant made a clear disavowal of claim coverage that would require us to construe "closing" to mean that there cannot be any openings in the connector into the internal cavity of the conductive tube.

Consequently, based on the claim language and the specification, we construe "closing" to mean "spanning the diameter of the tube, regardless of whether there are or are not openings in the connector into the internal cavity of the conductive tube."
II. "Closure Device" as Used in the '689 Patent's Claims

Kensey submits that "closure device" as used in the claims is a general term that refers to "any type of closure device that can be arranged and positioned to enable the effective sealing of a puncture [in a vessel, lumen, or duct]." PIs. Mem. 2 at 34. Perclose submits a significantly narrower definition: a "closure device," as used in the claims, is "[a] device for sealing a percutaneous puncture in a vessel, duct, or lumen [and is] comprised of a sealing member within the puncture tract, an anchor member within the vessel, duct, or lumen, and a filament member connecting the anchor and sealing members in a pulley-like arrangement." Def.'s Mem. 3 at 35. Each party argues that the intrinsic evidence of record supports its favored definition.

Dr. Jerome Segal, a cardiologist and one of Kensey's experts, states that "closure device" can refer to any known means of wound closure, including an anchor-plug-and-filament closure, "a collagen plug, a needle and suture, a surgical staple, an adhesive, [or] a cauterization device." See Dec. of Dr. Jerome Segal (Doc. No. 33) at P 29. The court uses Segal's declaration as an indication of the term's meaning when used in isolation. Hence, at the outset, "closure device" is a general term that has one meaning. 4 It, of course, remains for the court to determine whether the term as used in the patent retains this definition.

A. Claim Language

Asserted Claims 1 and 25, the only independent claims in the patent, both use the term "closure" or "closure device." The pertinent parts of Claim 1 read as follows:

"A system for sealing a percutaneous puncture in the wall of a [fluid-filled] vessel, duct or lumen of a living being…

the puncture comprising an opening in the wall of the vessel, duct or lumen and a tract contiguous with the opening and extending through tissue overlying the vessel, duct, or lumen,

[a] said system comprising a closure device and a location detector,

[b] said location detector being arranged for introduction into the puncture to provide a perceptible signal indicative of the location of the wall of the vessel, duct or lumen, whereupon a desired position for said closure with respect to the vessel, duct or lumen may be determined…

[c] said closure device being arranged to be positioned within a portion of the puncture in accordance with said desired position to enable the effective sealing of the puncture by said closure device."

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2 Mem. of Law in Supp. of PIs.' Mot. for a Markman Ruling on Claim Interpretation (Doc. No. 33).


4 Perclose argues that Dr. Segal admits that "closure device" is an ambiguous term. However, the portions of deposition transcript cited to substantiate the claim fail to make Perclose's point. See Perclose's Opposition Mem of P. & A. on Claims Construction (Markman) Issues (Doc. No. 45) at 8-10. The transcript portions cited only confirm that Dr. Segal believes that "closure device" is a general term. Perclose also seems to argue that "closure device" is too vague to be meaningful. See id. at 6. This argument receives little substantiation, and certainly, general definitions may be vague but are not therefore meaningless.

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'689 Patent at 14:56-15:8 (emphasis and sentence division added). The pertinent parts of Claim 25 read as follows:

"A method for sealing a percutaneous puncture in the wall of a [fluid-filled] vessel, duct, or lumen of a living being,…

the puncture comprising an opening in the wall of the vessel, duct, or lumen and a tract contiguous with the opening and extending through tissue overlying the vessel, duct or lumen, said method comprising:

(a) providing a closure device and location detector;

(b) introducing the location detector into the puncture… [so as to] provide a perceptible signal indicative of the location of the wall of the vessel, duct, or lumen, whereupon a desired position for the closure with respect to the vessel, duct or lumen may be determined; and

(c) introducing the closure device within a portion of the puncture in accordance with the desired position to enable the effective sealing of the puncture by said closure device."

Id. at 16:47-68 (emphasis and sentence division added).

Parsing the claims' language makes more apparent the limitations imposed on the definition of "closure device." First, sections (b) of both claims state that the closure device's positioning is informed by a determination of the position of the punctured vessel, duct, or lumen wall. Second, sections (c) both claims state that the closure device envisioned by the patent is "positioned within a portion of the puncture" in such a way as to "enable the effective sealing of the puncture." Section (a) of Claim 1 clarifies that "puncture" refers to the opening in the vessel, duct, or lumen as well as the tract that leads to the opening. Thus, "closure device," as used in these claims, refers to the class of devices

(1) whose positioning can be informed by the determination of the position of the punctured vessel, duct, or lumen wall; and

(2) that effectuate wound closure by being positioned within a portion of the "puncture."

As compared to the definition of "closure device" as used in isolation, "closure device" as used in the claims bears a relatively narrower definition. For example, the term, as used in isolation, could refer to a band-aid; the term as used in these claims excludes bandages. However, despite this slight narrowing, the term as used in these claims nonetheless bears a definition broader than that submitted by Perclose.

Perclose argues that the phrase "positioned within a portion of the puncture..." requires that the closure device be entirely "located in the internal luminal space of, and [be] bounded by the wall of the vessel, duct, lumen, puncture or puncture tract[.]") Def's Mem. at 29. "Closure device" cannot, according to Perclose, refer to any device that "extends through the [vessel, duct, or lumen] wall." Id. This interpretation of the phrase would be accurate were "puncture" to refer only to a puncture in a vessel, duct, or lumen. However, the text of Claims 1 and 25, plainly uses "puncture" differently. "Puncture" refers to the class comprising the "opening in the wall of the vessel, duct or lumen" and the tract leading to the opening. A class "comprising" some list of features includes all things with those features and does not exclude things that have those along with other. See, e.g., Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261 (Fed. Cir. 1986). Hence, "puncture" refers to the vessel, duct, or lumen opening as well as the tract leading to the opening. Furthermore, although the opening and tract are the essential features of a "puncture," the use of the term does not exclude other features. Consequently, an item that is "within the puncture" must be within a feature, namely the opening or tract, and may also be within any nonessential feature, such as the body of the vessel, duct, or lumen wall.

Some of the remaining claims - all of which are dependent claims - can be read to define "closure device" consistently with or more narrowly than Claims 1 and 25. See, e.g., '689 Patent at 15:24-35 (Claim 7) ("… said closure comprising a first portion and a second portion coupled to said first portion.…"); 15:56-60 ("… said closure comprises an anchor member…."). The Federal Circuit endorses the common sense rule that a dependent claim, by nature, incorporates all the limitations of the claim to which it refers[.]" Jeneric/Pentron, Inc. v. Dillon Co., Inc., 205 F.3d 1377, 1383 (Fed. Cir. 2000) (citing 35 U.S.C. § 112, P 4 (1994)); but an independent claim does not ordinarily incorporate the limitations of a dependent
claim, see Karlin Technology Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999). Here, nothing in the dependent claims suggests that the general definition of "closure device" imposed by Claims 1 and 25 is inconsistent with the term's use in these dependent claims. Although a narrower definition of closure device, such as the definition suggested by Perclose, would be consistent with the use of the term in these claims, the claims' language does not necessitate such a narrow definition. Consequently, the only claim language relevant for determining the meaning of "closure device" is the language of Claims 1 and 25.

B. Specification

Perclose argues that Kensey acted as its own lexicographer and narrowly defined "closure device" in the patent's specification. Def.'s Mem. at 32-43. Kensey, on the other hand, argues that it did not act as its own lexicographer. Pls.' Mem. at 41; Pls.' Resp. 5 at 6-8. A patentee only acts as a lexicographer where the patentee "with reasonable clarity, deliberateness, and precision[""] gives a term a special definition. Renishaw, 158 F.3d at 1249; accord, e.g., Johnson Worldwide Assocs. Inc. v. Zebco Corp., 175 F.3d 985, 989 (Fed. Cir. 1999) (Patentee must "clearly" set forth special definitions for claim terms.); Karlin, 177 F.3d at 973 ("The claims of a patent are not limited to the preferred embodiments, unless by their own language.").

Here the specification does not show with clarity and precision that Kensey specially defined "closure device." Perclose points out that the specification section entitled "Detailed Descriptions of the Preferred Embodiment" states that

"… [the] closure has three basic components, namely, a sealing member, an intra-arterial anchor member, and a positioning member…. The positioning member comprises a filament…. The [filament] connects the anchor member and the collagen plug (sealing member) via a pulley-like arrangement which serves to move the anchor and plug together, to sandwich and lock the artery wall between the anchor and plug."

'689 Patent at 5:25-28; accord 6:65-7:40; 5:50-61; 6:11-15. Also, as Perclose emphasizes, the patent's sheet drawings also clearly indicate an anchor, plug, and filament closure device. See 2:56-3:2 (figs. 1-5); 3:30-33 (figs. 19-24); 3:66-4:2 (figs. 34-35); 4:8-12 (fig. 38). Furthermore, the specification does not envision alternative embodiments that are not anchor-plug-and-filament type closures. See id. at 7:40-46 (The only alternative embodiment in the specification is a closure with a plug, filament, and anchor that can be radiographically imaged.).

However, the specification's "Summary of Invention" section can be read to explicitly indicate that the anchor, plug, and filament closure device is just one example of a closure device:

"The closure device, e.g., an anchoring means, sealing means, and filament means connected between the anchoring means and the sealing means, is arranged for location within a portion of the puncture at a desired portion with respect thereto, e.g., the anchoring means within the vessel and the sealing means within the puncture tract, to enable the effective sealing of the puncture by the closure device."

Id. at 2:36-42 (emphasis added). Furthermore, the fact that the specialized definition to which Perclose points appears in a section of the specification entitled "Detailed Descriptions of the Preferred Embodiment" makes it apparent that the "closure device" described therein is a preferred embodiment but not necessarily the sole embodiment.

Perclose also argues that the root term "seal-," as used in the claims, refers to preventing or obstructing the passage of fluid from the interior of a vessel, duct, or lumen into and through a puncture tract, by placing a mass of material within the puncture tract. See Def.'s Mem. at 32-34. In support of this specialized definition, Perclose points out that wherever "seal" or "sealing" is used in the preferred embodiment section of the specification, it is used in conjunction with a reference to a plug or sealing member and that this plug or sealing member acts as a stop in the puncture tract. See '689 patent at 5:25-30;
13:66-14:1. Perclose's arguments again fall short of the mark. Although "seal" may mean what Perclose suggests, the specification does not necessitate such a definition. "Seal" may be read to bear its ordinary meaning - namely as a synonym of words or phrases like "tighten," "close," "bond," or "bring together" - or a special meaning. But the regular appearance of "seal" alongside references to a plug does not clearly give "seal" a special meaning.

C. Prosecution History

Kensey argues that the prosecution history confirms that "closure device" is a general term. See Pls.' Mem. at 45-46. Perclose, on the other hand, argues that the prosecution history indicates that "closure device" carries a more limited meaning. See Def.'s Mem. at 43-46. Of primary significance here is the line of continuation applications from which the '689 patent derives. See '689 patent at 1:6-25.

The bulk of Perclose's prosecution history arguments amount to patent invalidity arguments. Perclose argues that if "closure device" is understood as a general term, the application for the '689 patent fails to meet the requirements of 35 U.S.C. § 112. Perclose goes on to argue that because the court must make every attempt to construe the meaning or scope of a patent so as to preserve validity, "closure device" must be interpreted narrowly so as to meet the requirements of 35 U.S.C. § 112. In essence, Perclose urges the court to assess validity in rendering its claim construction. However, as specified in a prior order (Doc. # 51), this opinion addresses only claim construction.

The '689 patent issued in 1997 from an application that was filed as a continuation of the now abandoned application Serial No. 08/604,205, which in turn was filed as a continuation of the now abandoned application Serial No. 08/426, 371. This last abandoned application was a continuation of application Serial No. 07/154,882, which was a continuation of application Serial No. 07/846,322. These last two applications, respectively, yielded Patents 5,441,517 (" '517") in 1993 and 5,282,827 (" '827") in 1992. The earliest of these continuation applications, the 846,322 application, was a continuation-in-part of application Serial No. 789,704, which yielded Patent 5,22,974 (" '974"). Hence, the '517 patent is the '689 patent's parent and the '827 patent is the '689 patent's grandparent. And the '827 patent and its progeny owe their existence, via the continuation-in-part relation, to the '974 patent.

Kensey explicitly defines the term "closure means" in the '974 patent. The '974 patent's summary of invention states "the closure means comprises anchoring means, sealing means, and filament means. The filament means is connected between the anchoring means and the sealing means… The filament means is arranged to pull the anchoring means and the sealing means relative to each other to cause the sealing means to engage tissue contiguous with said puncture outside of the vessel," '974 patent at 2:3-29. Given that the '974 patent explicitly gives "closure means" a narrow definition, it is unlikely that the application for the '974 patent's application included a broader definition. Certainly, Kensey presents no arguments suggesting that the '974 patent's application or prosecution history justifies a definition broader than that contained in the patent itself. Furthermore, Kensey's November 8, 1991 amendment to the application that became the '974 patent disclaims a broader definition of "closure means." In response to the PTO rejection of Claim 1 of the application, Kensey specified that "closure means" included a filament that was arranged to "move the anchoring means and the sealing means relative to each other," Furniss Dec. at PO46865. 7 The amendment was issued in order to distinguish the closure from a prior Kensey patent which described a filament that connects an anchoring means and sealing means. It is amply clear that the '974 patent's invention was limited to an anchor, plug, and filament device arranged in a pulley-like configuration.


Kensey also explicitly defines "closure means" in the same way in the '827 patent. The '827 patent's summary of invention
states that the "closure means comprises anchoring means, sealing means, and filament means. The filament means is connected between the anchoring means and the sealing means…. The filament means is arranged to pull the anchoring means and the sealing means relative to each other to cause the sealing means to engage tissue contiguous with the puncture outside the vessel." '827 patent at 2:15-44. Finally, the '517 patent's summary of invention describes the "closure means" in exactly the same way. See '517 patent at 2:22-50. It is amply clear that the initial application's inventive concept involved a specific type of closure device.

The '689 patent does not use the term "closure means" but instead uses the term "closure device." However, the '689 patent's prosecution history establishes that the two terms must be understood to be synonymous. A continuation application is based solely on the disclosures of a parent application. See Transco Products, Inc. v. Performance Contracting, Inc., 38 F.3d 551, 555 (citing the Manual of Patent Examining Procedure § 201.07). The '827 patent's inventive concept is a design and method for use of a mechanism for sealing percutaneous incisions or punctures in blood vessels through the use of a closure means." See, e.g., '827 Patent 2:10-44 (invention summary); 15:21-48 (sole independent system claim); 18:19-46 (sole independent method claim); see also '827 Patent Abstract. The closure means comprises "anchoring means, sealing means, and filament means, [where] said filament means [is coupled to] said anchoring means and said sealing means…. "827 Patent 15:25-29. In order for the '689 patent to refer to the '827 patent's inventive concept, "closure device" must be understood to refer to "closure means." 8 Were "closure device" a broader term than "closure means," the '689 patent would refer to a different inventive concept.

8 During the Markman Hearing, Kensey's counsel stated that the closure means described in the '974 patent and the '689 patent were both "three-piece devices" composed of an anchor, collagen plug, and filament. See Kensey Nash v. Perclose, No. 98-1629 (EDPA March 2000) (Docket item 54, hearing transcript) at 37-39.

Furthermore, the '689 patent's prosecution history shows that Kensey did not seek to use "closure device" to include more than "closure means." "The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Southwall Tech, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995). Initially, the PTO's examiner determined that Kensey's initial application, if approved, would lead to a double patenting. See PTO Office Action Summary in Dec. of Daniel Furniss (Doc. 40) at 45776. The examiner noted that a claim in Kensey's '974 patent describes an instrument that seals percutaneous punctures in blood vessel walls through use of a closure means "comprising" an "anchoring means, sealing means, and filament means, wherein the filament means is operatively connected between the anchoring means and the sealing means for moving the anchoring means and the sealing means relative to each other …" Id. The inventive concept disclosed by all of the claims in the '689 application covers a percutaneous vessel-puncture sealing instrument "comprising a closure device of resorbable collagen and vessel location means having a valve." Id. The examiner reasoned that because the term "comprising" in the '974 patent does not exclude other elements, the prior patent's "closure means" covered the class of devices referred to by the '689 patent's "closure device." In other words, the examiner understand "closure device" to be either equivalent to a "closure means" as described in the '974 patent or a particular type of "closure means." Consequently, the examiner understood "closure device" to mean a closure device comprising an anchor, plug, and filament. At no point, in the remainder of the prosecution history, does Kensey attempt to assert a broader definition for "closure device."

In sum, based on the '974 patent's application's use of "closure means," "closure device" as used in the '689 patent must necessarily refer to the class of closure devices that use an anchor, plug, and filament bound together in a pulley like arrangement whereby the filament draws the anchor and plug together so as to effectuate a seal.

The district court construed "closure device," as recited in the '689 patent, to require that the device use "an anchor, plug, and filament bound together in a pulley like arrangement whereby the filament draws the anchor and plug together so as to effectuate a seal." Kensey Nash Corp. v. Perclose, Inc. 2000 U.S. Dist. LEXIS 18393, 2000 WL 1868391 (2000). Thus, the court restricted the meaning of closure device to a device using an anchor-plug-filament (A-P-F) setup.
The specification of the '689 patent supports the district court's construction of "closure device." The specification repeatedly refers to the "closure device" as having an anchor, a seal (i.e., plug), and a filament. For example, in the background section, the specification refers to an earlier Kensey patent as having a closure device. It then states: "The closure device comprises three components, namely, an anchor member, a sealing member, and a filament, e.g., suture." '689 patent, col. 1, ll. 45-47. While the background section normally refers to the prior art and not the claimed invention, here Kensey ascribes a definition to "closure device" in the background section and never alters that definition throughout the specification -- even when using that term in reference to the invention of the '689 patent.

Moreover, the prosecution history limited "closure device" to an A-P-F device. Original claim 1 of U.S. Pat. No. 5,441,517 (‘517 patent), the great-grandparent of the '689 patent, recited a "closure device" without reciting an anchor, seal, or filament. In a Rule 131 declaration filed during prosecution of the ‘517 patent, however, Kensey stated:

The claimed invention of this application is a closure device . . .

The broadest claims of this application call for the closure comprising a sealing portion arranged to be located outside of the interior of a blood vessel and an anchor portion to be located inside of the interior of the blood vessel. The detailed dependent claims call for among other things, the anchor portion including at least one chamber in which a radiopaque material is located.

Thus, even though claim 1 (the only independent claim of the ‘517 patent) refers only to a "closure device," Kensey represented to the examiner that the closure device had a seal on the outside and an anchor on the inside of the blood vessel. Relying on the doctrine of claim differentiation, Kensey argues that this representation is not limiting because dependent claims 2 and 4 add the anchor, seal, and filament as additional limitations. The doctrine of claim differentiation, however, is a guide only and does not trump a clear and express limiting reference made during prosecution.

Further, other portions of the prosecution history demonstrate that "closure device" is limited to an A-P-F device. During prosecution of the '689 patent, Kensey attempted to get a dependent claim directed to a suture type closure device (i.e., one using filament without an anchor and plug). The examiner rejected the claim on the basis that no such arrangement was shown or described in the specification. In other words, Kensey failed to obtain even a dependent claim from the United States Patent and Trademark Office that would cover a suture type closure device. Nevertheless, appellant's asserted claim construction before this court attempts to recapture the very scope rejected by the examiner.

The district court also relied on a double patenting rejection made during prosecution of the '689 patent to support its holding that "closure device" is limited to an A-P-F device. The '689 patent claims priority to U.S. Patent No. 5,222,974 (‘974 patent). The examiner rejected original claims 1-50 of the '689 patent as amounting to double patenting over claim 8 of the '974 patent. Claim 8 included language expressly limiting the closure to an A-P-F device. The examiner found that claim 8 would cover the invention in the pending claims, and likewise, that if allowed, the pending claims would cover claim 8. Kensey argues that this rejection is based on the fact the pending claims were broader than claim 8 of the '974 patent (i.e., genus claims for earlier species claim) -- rather than a finding that both claims covered an A-P-F device. Based on the examiner's rejection, however, it is clear that the examiner viewed the "closure device" of the pending claims as an A-P-F device.

This court has considered all of Kensey's arguments, but finds them unpersuasive given the clear limitation of "closure device" in the specification and prosecution history of the '689 patent. In this case, Kensey clearly ascribed a narrower meaning to "closure device" as being an A-P-F device, and it cannot escape that definition now. Thus, the district court's construction of "closure device" is correct.

III.

Sage's '849 patent covers a needle removal and disposal device. Figures 1 and 3 of the '849 patent illustrate the claimed device.
The claimed device includes a storage container 19 with cap 20. The cap 20 has a slot 22 therein, which is notched so that it grasps the hub 12 of a syringe needle 11 and allows the user to unscrew the needle 11 without touching it. Particularly important to the present dispute, the claimed device also includes a movable closure means that may control access to the slot. In the figures above, the closure means is element 21, a flat disc that rotates about its center point to selectively allow or deny access to slot 22. In another embodiment illustrated in the patent, the closure means is a hinged lid that drops downward into a locked position to prevent access to the slot or alternatively lifts upward to allow access.

The '849 patent contains two independent claims, both of which are at issue in this appeal. Claims 1 and 10 read (with emphasis to highlight disputed limitations):

1. A needle removal and disposal device for detaching single or double-ended sampling needles which are thread engaged to a syringe body and storing detached sampling needles, said device comprising:

   - storage container means;
   - cap means associated with said storage container means, said cap means having a plate means with slot means opening therethrough, said slot means including integral wall means depending into said storage container means, entry port means and a plurality of stepped notches each having a different gap dimension for accommodating different sized needle hub portions; and
   - closure means pivotably associated with said plate means and being movable with respect to said slot means for controlling access thereto;

   wherein said device is capable of engaging a sampling needle hub portion at a stepped notch whereby a syringe thread-engaged to a hub portion may be rotated with respect to the hub portion for detachment of a sampling needle, whereby detached needles and hub portions may be deposited through said entry port means into said storage container means, said device providing said storage container means for accumulation of sampling needles subsequent to detachment from syringes, and whereby said pivotable closure means is capable of moving to close access to said slot means and provide safe storage of sampling needles within said storage container means.

10. A needle removal and disposal device for use with single or double-ended sampling needles having hub portions thread-engaging a syringe at the hub portion, said device comprising:

   - cap means having a plate means with slot means opening therethrough, said slot means including entry port means and a plurality of stepped notches, each notch having a different notch gap dimension permitting engagement with different sized needle hub portions, said slot means further including depending wall means integral with said plate means,
   - movable closure means pivotably associating with said cap means at pivot means thereof, said movable closure means being selectively movable between an open access and closed access position with respect to said slot means,
   - storage container means, associating with said cap means, said slot means opening to said storage container means, and said wall means depending into said storage container means,

   wherein said device facilitates detaching a sampling needle from a syringe by engagement of a needle hub portion at a stepped notch and rotation of the syringe with respect to said sampling needle hub portion, whereby a detached sampling needle and associated hub portion may be deposited through said entry port means for storage within said storage container means therebelow.

The parties' dispute centers on the undisputed fact that Devon's accused product has a flat hinged lid that can be left open, or alternatively placed in a closed position. However, once closed, Devon's lid locks in place and does not reopen. Thus, the parties argue about whether the claims require the "closure means" or "movable closure means" to move freely from a closed position to an open position. This court upholds the district court's conclusion that the claims require this movable
As a starting point, the parties dispute whether the relevant element in each claim invokes means-plus-function treatment. The use of the word "means," which is part of the classic template for functional claim elements, gives rise to "a presumption that the inventor used the term advisedly to invoke the statutory mandates for means-plus-function clauses." York Prods., 99 F.3d at 1574, 40 U.S.P.Q.2D (BNA) at 1623; see also Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584, 39 U.S.P.Q.2D (BNA) 1783, 1786-87 (Fed. Cir. 1996). However, the presumption is not conclusive. For example, where a claim uses the word "means," but specifies no corresponding function for the "means," it does not implicate section 112. See, e.g., York Prods., 99 F.3d at 1574, 40 U.S.P.Q.2D (BNA) at 1624 (construing "means" in claim without reference to section 112, paragraph 6). Likewise, where a claim recites a function, but then goes on to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format. See, e.g., Cole v. Kimberly-Clark Corp., 102 F.3d 524, 41 U.S.P.Q.2D (BNA) 1001 (Fed. Cir. 1996).

In the present case, the "closure means" of claim 1 and the "movable closure means" of claim 10 use the word "means" and, thereby, presumptively implicate section 112, paragraph 6. Both claims recite a function for the "means" -- that is, closing the slot means. They also require that the closure means perform the additional functions of "controlling access" to the slot (claim 1) or being "selectively movable between an open access and closed access position" (claim 10). Neither claim explicitly recites the structure, material, or acts needed to perform these functions. Thus, the means-plus-function limitations invoke the interpretation regimens of section 112, paragraph 6.

After identifying the "specified function" of the unrecited means, a court must consult the specification to define the structure, material or acts corresponding to this claimed function. 35 U.S.C. § 112, P 6. As the district court observed, the specification makes clear the structure that corresponds to the "closing" function. There are two embodiments. In the first, a rotatable disc with an opening sits above the container cap. The disc rotates so that its opening exposes the slot means in the cap, or alternatively, so that it blocks access to the slot means. In this way, the rotatable disc allows the user selective access to the container. The second embodiment uses a hinged flap that can be pressed down to cover the slot means, or alternatively pulled up to allow access to the slot means. Both embodiments allow the user to move the closure means from the closed position to the open position and back.

B. Construction of the Claims

The essence of the dispute between the parties is whether the claims of the plaintiffs are construed to limit the patent grant to devices using a closure device fastenable at the surface of the backrest or equivalents, and, whether the claims are construed to require an armrest guard, or equivalents. Both of those disputed matters are within the scope of claim construction.

The plaintiffs' patent includes nine claims, with Claims Two through Nine dependent upon Claim One. Claim One includes a convertible seat including an adult size seat with a horizontal cushion for support, with the back support surface "having an aperture as an entrance to a cavity therein, with the operative having a closure means fastenable at the surface of the backrest." [emphasis added]. Claim One also includes "an armrest guard encircling the second cushion position when unfolded substantially parallel therewith and substantially vertical when folded."

The plaintiffs assert that the novelty of its claims are not dependent upon either the closure device (the method by which the smaller child's seat fits into the adult-sized seat) or the armrest. Relying upon the affidavit of Jerome Koziatek, the plaintiffs' assert that the "new and novel" aspect of the '216 Patent is the integration of a child seat into an adult seat.

The language of the claim itself, the prosecution history, and the prior art all refute the plaintiffs position. No fewer than three patents were issued prior to the '216 Patent which described various types of built-in automotive child seats. Previously issued patents clearly show an integrated child seat built into an adult size seat. The Bernier Patent (No. 3,094,354), for example, issued in 1963, shows one integrated child's seat which is pulled down from the back of an adult seat. (Appendix A) The same is true with respect to the Strahler Patent (No. 2,966,201) which describes an adult automotive opening and closing feature.
Further, in the "Background of Invention" accompanying the '216 Patent, it is expressly noted that "the possibility of storing a child's seat within the normal built-in seats of the automobile has not been overlooked in the past…" (Def. Ex. 1, column 1, lines 39-43) The plaintiffs themselves admitted as much when, in response to the initial patent application, an amendment was submitted which noted that "the prior art does not show an aperture having a closure means fastenable at the surface of the backrest…" (Def. Ex. 5, p. 51)

Moreover, the plaintiffs noted to the PTO in their amended filing that "…none of the references [to prior patents] have a construction wherein the armrest is foldable to a position encircling the top of the second backrest in the folded position." (Def. Ex. 5, p. 51) Only after the plaintiffs submitted such limiting descriptions of the invention did the patent actually issue.

In this case, the precise language of the claim, the state of the prior patents, the prosecutive history of the original application, and the specifications of the claim, all dovetail in the process of construing the claim. Claim One clearly references an aperture having a closure means fastenable at the surface. The claim does not limit the precise closure means. The claim therefore includes snaps, zippers, buttons, and similar devices fastenable at the surface. 3

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3 "Closure" is defined in Webster's Dictionary, Third Edition, as ".(1) a means of enclosure, (2) the action of confining…in an enclosed place…"
- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - - -

Other methods, such as an oversized cushion placed and maintained in the aperture through friction, are not fastenable at the surface but are instead held in place by pressure between the inserted cushion and the permanently placed surrounding seat cushion. Such pressure is asserted between the two at all points except the surface of the child's seat and the adult seat.

Claim One also includes specific reference to an armrest. The claim refers to an armrest which is substantially vertical when folded into the adult seat and substantially parallel to the child's seat when deployed. The armrest is described as "encircling the second cushion position when unfolded."

Under the heading "Background of the Invention," the patent document itself refers to "a secure guard encircling the child's upper body, a guard to receive the impact of the child's face in the event of a rapid deceleration." (Def. Ex. 1, column 1, lines 30-32) Further, in the description of the invention, it is noted that, "the armrest as it passes around the upper torso of the child serves as a guard for the descending face of the child if it [sic] should be thrown forward." (Def. Ex. 1, column 3, lines 18-21)

With respect to the elements of the claim at issue in this case, the Court construes the '216 Patent to require (1) a closure device fastenable at the surface which, through use of a zipper, buttons, hooks, or similar device, physically connects the surface of the backrest to the surface of the second cushion used as the foldable child's seat, and (2) an armrest guard which folds down from a vertical position and encircles the child, once such child is placed in the pulled down seat.

F. "Closure member for selectively closing said drinking hole"

The Defendants' proposed construction is "a closure member that the user chooses to engage or disengage in which the closure member, when engaged, completely covers the drinking hole (subject to the definition of 'drinking hole'). Sunbeam's proposed construction is "a structure adapted to cover the drinking hole to some extent ('drinking hole' being defined above)." Thus, the parties agree that this term incorporates the definition of the term "drinking hole," but dispute whether the "closure member" operates as a binary open/closed switch, or as a device that allows for varying degrees of closure. Sunbeam also asserts that the member need not effect only a complete closure.
1. Words of the Claim

Claims 9 and 10 of the ‘592 patent provide the relevant claim language framework for construction:

9. The assembly of claim 4 ["beverage container assembly for use with a blender"], wherein said cap has a drinking hole formed therein.

10. The assembly of claim 9, wherein said cap further comprises a closure member for selectively closing said drinking hole.

'592 Patent at 21:6-10 (emphasis added).

2. Specification and Prosecution History

The specification includes minimal discussion of this disputed claim term. The '592 patent does note that "[t]he removable cap 198 may include a drinking hole, and/or may include a closure tab to avoid spillage." '592 patent at 11:44-45.

In terms of the prosecution history, the Defendants cite the "Flores Reference," Def. Memo, at 23-24. The patent examiner references "Flores," which is a shorthand reference to a patent that discusses a "selectively actuated closure member for [a drinking] hole." The examiner observed that "a container . . . may be used for either storage or drinking of beverages," and, as such, the closure member is designed with these two types of uses in mind, "to allow for selective drinking and dispensing of the stored beverage." PI. Exh. 6, Part 2, at SB000171. The Defendants argue that, because the prosecution history references two types of uses, that supports a limitation that the closure member should have only two settings: open and closed. Sunbeam responds that "[t]he Examiner said nothing about the extent to which the closure member closes when actuated, nor did he indicate that the closure member completely covers the hole when actuated or engaged."

3. Extrinsic Evidence

Neither party has submitted extrinsic evidence pertinent to this claim term.

4. Proper Construction of "Closure member for selectively closing said drinking hole"

Neither Sunbeam's nor the Defendants' proposed construction is accurate in its entirety. There is nothing in the language of the claim or specification that limits "selective" closure to binary on/off selection. The claim encompasses degrees of closure that may include partial closure. However, Sunbeam's argument that "closure member" could refer to a device that does not allow for complete closure of the drinking hole is not reasonable.

Thus, the proper construction of the claim term is "a structure adapted to cover the drinking hole to an extent that the user may select, including fully open and fully closed, and which may allow the user to select a degree of opening somewhere between fully open and fully closed."

b. Meaning of "Closure Member Releasably Secured to Said One End of the Main Body"

The Court has not found, nor have the parties referred the Court to, anything in the patent specification that conveys an "express intent to impart a novel meaning," Optical Disc, 208 F.3d at 1334, to the claim term "closure member releasably secured." The term "closure member releasably secured" therefore takes on its ordinary meaning. Id.

The dictionary defines "closure" as "2. Something that closes or shuts" and "close" as "4. Having little or no space between elements or parts; tight and compact . . . 13. Fitting tightly." American Heritage(R) Dictionary. Therefore, the ordinary meaning of "closure member" is something whose purpose is to cause other parts either to fit tightly together, or to fit together such that the parts have little or no space between them.
"Secure" is defined as: "2. To make firm or tight; fasten." American Heritage(R) Dictionary. "Releasably" is the adverb form of "releasable," which the dictionary defines as: "2. Intended or configured to release." Id. The dictionary defines "release" as: "2. To free from something that binds, fastens, or holds back." Id. Thus, the ordinary meaning of "releasably secure" is something that is bound, fastened, or held back, but is configured such that it can be freed from being bound, fastened or held back.

Combining the ordinary meaning of "closure member" and "releasably secured" yields the following ordinary meaning for "closure member releasably secured": something whose purpose is to cause other parts either to fit tightly together, or to fit together such that the parts have little or no space between them; and whose configuration is such that the parts can be freed from being fit together.

4) "generating a clothes twist signal"

The parties also dispute the term "generating a clothes twist signal," which appears in Claims 1, 3, and 4. LG proposes construing the term to mean "generating a signal indicative of the bundling [i.e., uneven distribution] of clothes." (Id.) Whirlpool proposes instead that the term be construed to mean "generating a signal indicative of clothes that are entwined together." (Id.) For reasons already discussed, the Court will adopt Whirlpool's proposed construction. The term "generating a clothes twist signal" is therefore construed as "generating a signal indicative of clothes that are entwined together."


Claims 1, 23, 33, 59, 62, and 64 all recite some form of modulating clutch means. For example, Claim 1 recites:

a transfer case having a primary output shaft adapted to drive said primary wheels, a secondary output shaft adapted to drive said secondary wheels, modulating clutch means for selectively transferring torque from said primary output shaft to said secondary output shaft and substantially inhibiting torque transfer from said primary output shaft to said secondary output shaft.

Claims 23, 33, 62, and 64 all include similar limitations, which may be phrased "clutch means" or "adjustable clutch means." The use of the term "means" in each of the claim limitations, along with the recitation of a function, such as "selectively transferring torque . . ." raises the issue of the applicability of 35 U.S.C. § 112, paragraph 6, which deals with "means-plus-function" claims. 5 The parties' disagreement over the interpretation of this claim concerns the applicability of "means-plus-function" interpretation rules.

5 The paragraph provides that: "an element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material or acts described in the specification and equivalents thereof."
BorgWarner:

"Modulating clutch means" is a clutch that can transfer different amounts of torque from the primary output shaft to the secondary output shaft. The "modulating clutch means" may be a disk-pack-friction-plate clutch. The "modulating clutch means" does not include an actuator and may be actuated by any type of acceptable actuator. (Plaintiff's Markman Brief, at 20).

NVG:

A means-plus-function element, properly interpreted under § 112 P6 to be the structure described in the specification that performs the recited function, or its equivalent. The structure for performing the function must include clutch assembly 124, which includes an electromagnetic ball/ramp actuator, the drive and driven sprockets 160 and 166 and chain 164. (Markman Brief of NVG, at 16).

The use of the word "means" triggers a presumption that the inventor used the term advisedly to invoke the statutory mandate for "means-plus-function" clauses. Allen Engineering Corp. v. Bartell Industries, 299 F.3d 1336, 1347 (Fed. Cir. 2002). This area of patent law is a bit counterintuitive from the court's perspective. According to the Federal Circuit:

the question whether a claim element triggers section 112(6) is ordinarily not a difficult one. Claim drafters conventionally use the preface "means for" (or "step for") when they intend to invoke section 112(6), and there is therefore seldom any confusion about whether section 112(6) applies to a particular element.

Geenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996). It would seem to be a well-settled and simple rule and, consequently, it is puzzling why the patent in this case would employ the terminology if it was not meant to invoke § 112, P 6. That is what BorgWarner claims the patent does here, however, thereby creating the confusion which "seldomly" occurs.

True, there are two circumstances, however, in which courts have allowed that the presumption is not controlling. First, if a claim element employs the word "means" but recites no corresponding function, then § 57 Or. 541, 57 Or. 541, 112 P 6 is not applicable. Allen Engineering, 299 F.3d at 1347. Second, even if the claim recites a function, if it also recites sufficient structure or material for performing that function, § 112 P 6 does not apply. Id. It is this second circumstance that BorgWarner hopes to take advantage of in this case: according to it, a "modulating clutch means" is a structure sufficient to perform the stated functions of "selectively transferring torque . . . and substantially inhibiting torque . . . " from the primary output shaft to the secondary output shaft. NVG disagrees, but the difficulty here seems to be that both sides have support in the applicable case law.

Part of the problem here stems from somewhat murky, or at least less than specific, case law. As already noted, the court in Allen Engineering held that § 112 P 6 did not apply if the claim element "recites sufficient structure or material for performing that function." 299 F.3d at 1347. Then, the court went on to state that "[a] claim term recites sufficient structure if the term, as the name for the structure, has a reasonably well-understood meaning in the art." Id. In this case, we would be hard-pressed to disagree with BorgWarner that the term "modulating clutch" has a well-understood meaning in the art. Understandably, then, BorgWarner argues that "the clear reasoning of Allen Eng'r dictates that "modulating clutch means for . . . " does not invoke § 112 P 6 because it recites structure that has a reasonably understood meaning in the art." (Plaintiff's Post Markman Hearing Brief, at 10).

While the language of Allen Engineering might appear to allow such an argument, we feel it skips a step. The court was relying in part on Watts v. XL Systems, Inc., 232 F.3d 877 (Fed.Cir. 2001), which stated that "as an aid in determining whether sufficient structure is in fact recited by a term used in a claim limitation, this court has inquired into whether the term, as the name for structure, has a reasonably well understood meaning in the art." 232 F.3d at 880-81 (emphasis added). As such, we begin with the term, and we first query whether that term has a reasonably well understood meaning in the art. Certainly, "modulating clutch" is such a term. The analysis is not complete, however: the term may have a reasonably understood meaning, but it must "be understood by one skilled in the art as being adequate to perform the recited function." Budde v. Harley-Davidson, Inc., 250 F.3d 1369, 1377 (Fed. Cir. 2001). Based on the court's reading of these cases, it is not
enough that the term at issue simply have a reasonably well understood meaning in the art, as it is understood, it must also be adequate to perform the recited function.

With this understanding in mind, we can review what evidence the parties have compiled to support their contentions as to whether "modulating clutch" is a sufficient structure to perform the recited function. They rely, essentially, on expert reports (Plaintiff's Markman Brief, at 20-21; Markman Brief of NVG, at 20-21) although, as noted above, neither party presented expert testimony at the Markman hearing. As a result, the court is left to choose between dry statements, neither of which is subject to questioning from the court or cross-examination. According to BorgWarner, a "modulating clutch means" is a structure sufficient to perform the recited functions of "selectively transferring torque . . . and substantially inhibiting torque . . ." Its expert, John Starkey explains that:

A "clutch" is a device that provides an interruptible torque connection between two rotating elements. A "clutch" can use positive contact, friction, magnetic forces, or fluid pressure to transfer torques between two elements. A "modulating clutch" is an even more specific type of clutch that can transfer different amounts of torque. The dictionary definition of modulate is "to vary the amplitude." This is exactly what the modulating clutch does, i.e., vary the amount of torque transferred from none to full capacity. Such clutches use magnetic fields, fluid pressure, or friction plates to transfer the torque.

(Plaintiff's Markman Brief, at 20-21, citing App. V, Ex. A, pp. 6-7). NVG argues that this structure -- the modulating clutch -- cannot perform the function without an "actuator" which turns the clutch on and off, relying on its expert, Jeffrey Stein.

(Markman Brief of NVG, at 20, citing Ex. 9a, P 54). In his report, Mr. Stein stated:

a "friction clutch with multiple plates"-- is insufficient to perform the claimed function. One reason . . . is because the this[sic] "friction clutch" requires an actuator in order to "selectively" transfer torques (or as stated in some of the claims, "modulate or "adjust" torque levels). Dr. Starkey's "friction clutch with multiple plates" . . . would fail to perform this function this structure is missing an actuation mechanism (e.g. the electromagnetic actuation mechanism described in the specification). Additionally, the recited function requires that the torque is selectively transferred from the primary output shaft to the secondary output shaft. . . . a "friction clutch" alone cannot accomplish this function -- a chain and sprocket assembly is necessary to transfer torque from the "friction clutch" to the secondary output shaft.

(Id.). Indeed, another of BorgWarner's experts -- in patent law if not transfer cases -- Gerald Bjorge, testified -- tentatively, as he put it-- "that the term modulating clutch means by itself would not recite enough structure to be a nonmeans plus function element." (Markman Brief of NVG, Ex. 16, at 72). This automotive engineering version of "he said, he said" culminated at the deposition of BorgWarner's expert, who testified as follows:

Q: Now, what components make up that friction clutch with multiple plates?

A: The components which transmit the torque through the clutch.

Q: Can the friction plates transmit torque without an actuator of some type?

A: Clearly they need other enabling components to transmit the torque, but they are the ones that transmit the torque through the clutch.

(Markman Brief of NVG, App., Ex. 11 at 123-24). This is the type of thing that just goes back and forth and, unfortunately, the court did not have the opportunity to question the experts, and perhaps force them to commit to one position, at the Markman hearing. Significantly, though, for our purposes, the plaintiff's expert testimony stops short of asserting that the "modulating clutch" is sufficient to perform the recited function. 6 Considering all the evidence, and the varying opinions, it appears that, while "modulating clutch" may have a well understood meaning in the art, it is not a sufficient structure to perform the recited function. Accordingly, we find that § 112, P 6 is applicable.

--- Footnotes ---

6 Indeed, plaintiff's argument regarding the sufficiency of the structure to perform the recited function is without citation to the record:
The structure identified by the limitation "modulating clutch means" is sufficient to perform the functions identified in the claims. A modulating clutch clearly enables torque to be transferred from the primary output shaft to the secondary output shaft when the clutch is engaged a certain amount. Likewise, a modulating clutch will "substantially inhibit torque transfer" if the clutch is not engaged or only slightly engaged. Because a "modulating clutch" is a specific structure that both transfers torque and inhibits torque transfer from the primary output to the secondary output shaft, this limitation should not be interpreted under 35 U.S.C. § 112 P 6.

(Plaintiff's Markman Brief, at 21). These are all conclusory, unsupported assertions, however, and are inadequate, without more, to bolster BorgWarner's position.

Construction of a means-plus-function limitation involves two steps. First, the court must identify the claimed function. Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc., 296 F.3d 1106, 1113 (Fed. Cir. 2002)(citing Telemac Cellular Corp. v. Topp Telecom, Inc., 247 F.3d 1316, 1324 (Fed.Cir.2001)). The court must construe the function of a means-plus-function limitation to include the limitations contained in the claim language, and only those limitations. Cardiac Pacemakers, 296 F.3d at 1113. The court may neither narrow the scope of the function beyond the claim language, nor broaden the scope of the claimed function by ignoring clear limitations in the claim language. Id. Here, "modulating clutch means" must be interpreted to be the structure set forth in the specification that performs the claimed function of "selectively transferring torque from said primary output shaft to said secondary output shaft and substantially inhibiting torque transfer from said primary output shaft to said secondary output shaft."

Second, the court must determine what structure, if any, disclosed in the specification corresponds to the claimed function. Id. In order to qualify as corresponding, the structure must both perform the claimed function, and clearly associate the structure with performance of the function. Id. The court does this -- or at least attempts to -- from the perspective of a person of ordinary skill in the art. Id.

The parties, with some reliance on their respective experts, direct the court to two different structures disclosed in the specification that purportedly perform the claimed function. BorgWarner submits that:

the components that actually transfer torque and inhibit the transfer of torque are the components of the disc pack clutch assembly 150 described in the specification. Those components include interleaved friction plates or discs 152, clutch hub 155, and annular housing 156.

(Plaintiff's Markman Reply Brief, at 14 (citing Patent '024, col. 8, ls. 52-58)). NVG claims that this interpretation ignores the requirement that torque be selectively transferred, and that it be transferred between the two shafts. As NVG would have it:

The specification makes clear that the claimed function is performed by the clutch assembly 124 (including ball/ramp device), the chain drive sprockets 160 and 166, and the drive chain 164. The specification states that these components transfer torque from the primary output shaft 40 to the secondary output shaft 26 of the transfer case when energized, as is required by the claims.

(Markman Brief of NVG, at 21 (citing Patent '024, col.9. ls. 34-42). BorgWarner criticizes this interpretation as confusing the performance of the function with the enablement of that performance. Through several rounds of briefing, the parties offer no response to these respective criticisms.

In Asyst Technologies, Inc. v. Empak, Inc., 268 F.3d 1364 (Fed. Cir. 2001), upon which BorgWarner relies, the court attempted to differentiate between a structure that actually performed a recited function, and one that merely enabled the pertinent structure to operate as intended. In that case, the recited function was "receiving and processing digital information . . ." and the disputed structure was the line that transferred the information. Obviously, the line did not "receive and process" but merely enabled that function by transmitting, so it was found not to be pertinent structure. 268 F.3d at 1370-71. BorgWarner fails to expound upon the purported analogy to its position, however. (Plaintiff's Markman Brief, at 14). The function at issue is the selective transfer of torque between the two shafts. The structure cited by NVG is directly involved in the function, along with the clutch. If "transferring" were part of the function in Asyst, we suspect the line would
be pertinent structure. Accordingly, we must find that the structure for performing the function must include clutch assembly 124, which includes an electromagnetic ball/ramp actuator, the drive and driven sprockets 160 and 166 and chain 164.

We must address one final point regarding this claim dispute. After two rounds of briefing, BorgWarner came up with a new argument at the Markman hearing and in its post-Markman hearing brief: that NVG's interpretation violates the doctrine of claim differentiation. Under the doctrine of claim differentiation, there is a presumption that each claim in a patent is different in scope, especially if "there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims." Ecolab, Inc. v. Paraclipse, Inc., 285 F.3d 1362, 1375 (Fed. Cir. 2002). BorgWarner submits that claim 1, an independent claim, must be broader that its dependent claims, such as claim 10. It argues that NVG's interpretation -- that the "modulating clutch' of claim 1 must have a "electromagnetic ball/ramp actuator" -- renders claim 1 impermissibly narrower than claim 10.

The doctrine of claim differentiation, however, only guides the court's interpretation of the claims, it is not a "hard and fast rule of construction." Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1368, (Fed. Cir. 2000). Indeed, it is settled law that independent claims containing means-plus-function limitations do not have the same literal scope as dependent claims reciting specifically the structure that performs the stated function. Medtronic, Inc. v. Advanced Cardiovascular Systems, Inc., 248 F.3d 1303, 1313 (Fed. Cir. 2001). In Laitram Corp. v. Rexnord, Inc., the court held that "[a] means-plus-function limitation is not made open-ended by the presence of another claim specifically claiming the disclosed structure which underlies the means clause or an equivalent of that structure." 939 F.2d 1533, 1538, (Fed.Cir.1991). Thus, claim differentiation will not be applied to a situation where, as here, a dependent claim recites the only structure disclosed in the specification that could correspond to the means claimed in the independent claim. 7 Accordingly, our interpretation of this claim, then, remains unchanged: the structure for performing the function must include clutch assembly 124, which includes an electromagnetic ball/ramp actuator, the drive and driven sprockets 160 and 166 and chain 164.

7 BorgWarner argues that the case of Wenger Mfg., Inc. v. Coating Mach. Sys., Inc., 239 F.3d 1225 (Fed. Cir. 2001) mandates that the doctrine of claim differentiation be applied in a means-plus-function situation, such as in this case. (Plaintiff's Post Markman Hearing Brief, at 12). In Wegner, unlike here, the court was dealing with a dependent claim that recited a separate and distinct function from the independent claim. 239 F.3d at 1234. Accordingly, the court found that the structure that performed the function recited in the independent claim should not be interpreted as requiring structure to perform the additional function of the dependent claim. Id. Plaintiff does not explain how the holding applies to the instant case, which is more akin to the situation in Laitram.

4. "a pair of actuators that . . . co-act with the wings"

This phrase is used in claim 13 of the '992 Patent. WG seeks to construe this phrase as "two actuators that act together on each wing." Ion seeks to construe this term as "a pair of actuators that interact with the wings."

WG once again points out that the specification discloses one roll actuator and one pitch actuator, each of which are linked to both wings. Ion argues that its construction finds support in the prosecution history of this patent, which describes first and second actuators that "interact" with the wings to control the depth and lateral position of the underwater cable. Ion also points out that it is not necessary for both actuators to act on each wing. This Court once again agrees with Ion that it is not necessary to construe this term such that both actuators act on each wing by definition. While this is clearly the preferred embodiments of the invention, as explained above, there is no disavowal of the possibility left open by the claim terms that the each actuator may be assigned to a different wing. Moreover, although WG argues that its construction is more consistent with the plain and ordinary meaning of the term because "co-act with the wings" clearly means that the actuators are acting together on the wings, the Court does not find that this interpretation to be so obvious. The language of the claims does not make clear that the "co-actors" are the two actuators, rather than a single actuator co-acting with a single wing. Accordingly, absent a disavowal of claim scope, the Court will not construe this term as WG argues in order to limit its
scope. Therefore, the Court rejects WG's construction to the extent that it suggests that both actuators must act on each wing.

Furthermore, the Court notes that the context in which this claim term is used refers to the actuators co-acting with the wings "to adjust angular positions of the wings to control the depth and lateral position of the underwater cable in the water." (‘992 Patent, col. 30 ll. 41-44.) Accordingly, Ion's construction, which finds some support in the prosecution history, seems to offer the most logical construction of the term "co-act" as it is used in the context of the claim language. What is being described in the claim is clearly a device in which the actuators are interacting with the wings in order to adjust their angle, thereby influencing the position of the streamer. WG's use of the verb "act together," by contrast, does not offer a clear construction of the claim language, as it is not clear which mechanisms are acting together with what. Accordingly, because it most accurately reflects what is being described with the use of this claim term, the Court adopts Ion's construction, and construes this phrase as "a pair of actuators that interact with the wings."

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B. "Co-extrusion . . . within, or co-extruding . . . within" (Claims 1, 17, 25, 78, and 89)

Plaintiff contends that this claim limitation means a technique where two dissimilar materials, coming from an extruder and a pump, are combined within an extrusion die forming a first/inner component within a second/shell component. Defendants contend that based on the intrinsic evidence, the claim limitation means the act of forming components by jointly extruding two dissimilar materials such that the inner component is introduced into the interior of the formed shell component.

In support of their more limited construction, Defendants argue that the term "within" means "in or into the interior." Webster's Collegiate Dictionary 1359 (10th ed. 1996). Thus, "co-extrusion within" the shell component means "co-extrusion into the interior" of the shell component, and the shell component must already be in existence when the inner component leaves its extruding tube.

Defendants also argue that during the prosecution of the patent-in-suit, Plaintiff added the "co-extrusion within" limitation in response to the first rejection by the Examiner, in order to gain allowance of its claims over the prior art as patented by Repholz ("Prior Art"). According to Defendants, the Prior Art used slightly recessed tubes that extruded the inner component into the outer component, which was also extruded, and the combined components exited a die to form a third center-filled extrudate. See Defendants' Memorandum of Points and Authorities in Support of its Construction of the Asserted Claims, pg. 21, lines 4-17. Plaintiff stated to the Examiner that its claims were distinctly different from those of the Prior Art. See Jt. App., Exhibit B, pg. 136. Therefore, Defendants assert that the prosecution history, in combination with the ordinary meaning of the word "within," support their construction of the claim.

The intrinsic evidence in this case makes clear that "co-extrusion . . . within, co-extruding . . . within" simply means "a technique where two dissimilar materials are combined by means of two extruders or an extruder and a pump to form a product wherein one material is contained within the other." This interpretation is supported by the extrinsic evidence offered by Plaintiffs. See Scheider Decl., Exhibit 10, pg. 63 and Herberst Decl. P 11; see also Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1308-09 (Fed. Cir. 1999) (holding that a court may consider extrinsic evidence to ensure that the court's understanding of the technical aspects of the invention is not at odds with the understanding of one skilled in the art). In the section entitled, "Detailed Description of the Invention," the written specification states, "in one preferred embodiment of the invention, an extruded shell product includes an inner cream material pumped into a shell extruder die plate and distributed evenly within extruded ropes." Jt. App., Exhibit A, col.4, lines 55-58. Nowhere in this description or in any of the claims is there a detailed description of the exact mechanical process by which the extrusion technique is completed, or the type of apparatus by which the product is formed. While, as Defendants point out, Plaintiff did distinguish its proposed patent from the Prior Art in the prosecution history, there is no indication that the distinction is based on a difference between extruding the inner component in an already existing extrudate shell component, or combining the two components within an extrusion die. See Jt. App., Exhibit B, pg. 136. Therefore, importing Defendants' proposed limitation into the phrase is improper.
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I. Construction of "Coalesce," "Coalescence" and "Completion of Coalescence"

The '963 patent uses a form of the word "coalesce" 47 times in the specification and claims, but the term is not specifically defined in the patent. Both parties urge the court to apply the ordinary meaning of the term but disagree as to what that is. Plaintiff urges the court to adopt the following definition of "coalescence":

"The process of forming a uniform, homogeneous body, or combining into one body or growing together, through the merger of smaller particles of the same material."

Plaintiff's Memorandum in Support of Markman Hearing ("Plaintiff's Brief"), pp. 17-18. Defendants urge the following definition of "coalescence": "the uniting together of plastic particles to form a layer." Defendants' Markman Brief ("Defendants' Brief"), p. 15.

There is no dispute that "coalescence" is a process, but the parties disagree as to what that process encompasses. The parties illustrate their respective positions through reference to an illustration by defendants' expert, Paul Nugent. Plaintiff's Brief, p. 6; Defendants' Response Brief, Ex. 8, p. 4. The illustration shows plastic particulate adhering to the interior wall of a mold at seven successive stages. The parties agree that defendants' definition of "coalescence" corresponds to stages one though two or three, during which the particles form a layer on the interior wall of the mold or preceding layer. The caption under stage two is "Powder and Molten Layer," and the caption under stage three is "Uneven and Bubbles." The parties further agree that plaintiffs definition of "coalescence" corresponds to stages one through five, during which the particles form a smoother and denser layer then is present at the end of stage two or three. The caption under stage five is "Optimum." Stages 6 and 7 consist of undesirable over-curing.

The parties cite definitions from various sources in existence at the time the patent was issued to support their respective positions. Among these are the definitions of "coalesce" from: (1) Webster's Third New International Dictionary (1971), "1: to grow together . . .: unite by growth into one body . . . 2 a: to unite or join together into one body or product: become integrated into a whole"; (2) The Phillips Petroleum Glossary of Plastic Terms, 4th Ed. (1965), "[t]o combine into one body or to grow together"; (3) The Random House Dictionary of the English Language, 2nd Ed. (1987), "1. to grow together or into one body . . . 2. to unite so as to form one mass, community, etc . . . 3. to blend or come together . . . 4. to cause to unite in one body or mass."

Plaintiff asserts that defendants seek to impose a limitation that is not supported by the definitions-specifically that "coalescence" does not include any part of the process after the articles have formed a layer. The definitions support plaintiff's position that "coalescence" may include the subsequent part of the process leading to a more homogeneous body, i.e., one that is more dense and smooth. Plaintiff's position is supported by the inclusion in the definitions of the concepts of growing together, integrating or blending into one body, mass or product.

The parties also rely on the prior art to support their respective positions, including patent No. 3,936,565 obtained by Elmer Good in 1976 for a molded plastic article and method ("the Good patent"). Among other instances, the Good patent uses the term "coalesce" in the following manner:

"During the rotation of the mold assembly, with the first charge of plastic material in the interior of the mold, the particles initially adhere to the heated mold surface, and thereafter coalesce into a continuous skin element which follows the contour of the interior of the mold. Thereafter, and in sequence and while the mold assembly is still within the heated oven the second charge of plastic is introduced in to the interior of the mold, and the rotation continued until the second material coalesces over the first. In the event that a third charge is used, the third charge is thereafter sequentially released to form the inner skin element."

First Lee Aff., Ex. E, p. 6, Col. 7, ll. 21-33 (emphasis supplied). The Good patent describes the particles as initially adhering to the heated mold surface and thereafter coalescing into a continuous skin element. That use supports plaintiff's position that "coalescence" encompasses more than the forming of a layer, because the Good patent describes coalescence to include the process following the particles adhering to the mold surface, i.e., following their forming of a layer.
Likewise, the Good patent also provides:

"For purposes of explanation, and referring to FIG. 5b, a point is reached during the processing of the first introduced plastic material in which a continuous skin 36 is formed on the interior wall 33 of the mold, and an assemblage of particles 32 is adhered to the continuous skin 36 but not yet coalesced since the heat transfer through the mold wall and the skin is a progressive transmission of heat."

Id. at Col. 7, ll.60-67 (emphasis supplied). Here too the Good patent uses "coalescence" to include the process that follows the particles adhering the mold wall to form a layer. Figure 5b shows particulate plastic united to form a layer (32) over the continuous skin (36), and the description specifies that, at that point, the layer (32) has not yet coalesced. This supports plaintiff's position that "coalescence" is a process that includes more than the particles uniting to form a layer.

The parties also cite patent No. 3,455,483 obtained by P.A. Inklaar in 1969 for a "foam-sintering" molding process and products ("the Inklaar patent"). The Inklaar patent uses "coalesce" to describe a process that includes melting and fusion:

"The finely divided thermoplastic material to be used is one that will coalesce into a fused layer or film by melting." First Lee Aff., Ex. R, p. 3, Col. 3, ll. 37-39. Likewise, the Inklaar patent also provides:

"while heating the mold externally at a temperature above the melting range of the material of the charge until the heat passed through the mold and by conduction from said surface has coalesced such particles into a shape-retaining coherent fused layer of required thickness over said surface . . . ."

First Lee Aff., Ex. R, p. 6, Col. 10, ll. 40-45. Here too the Inklaar patent uses "coalesced" to refer to a process that produces a "coherent fused layer of required thickness." Inklaar's usage supports plaintiff's position that "coalescence" includes the process beyond the formation of a layer, in which the layer becomes more homogeneous and smooth.

Also at issue is the meaning of "completion" as used in the phrase "completion of the coalescence" contained in Claims 1 and 9. Specifically, Claim 1 provides:

"removing the mold assembly from the oven for cooling prior to completion of the coalescence of said second charge;"

"whereby the cooling of the mold assembly and the first layer is concurrent with completion of the coalescence of the second layer so as to shorten the elapsed time during the molding process."

First Lee Aff., Ex. J, p. 7, Col. 7, ll. 4-11 (emphasis supplied). Similarly, Claim 9 provides:

"removing the mold assembly from the oven prior to completion of the coalescence of the third charge;"

"air cooling the mold assembly after removal of the mold assembly from the oven while continuing mold assembly rotation during continued coalescence of the third charge; and"

"opening the mold assembly after coalescence of the third charge is completed while continuing to air cool the mold assembly so as to expose the mold cavity to cooling air."

Id. at Col. 8, ll. 37-47 (emphasis supplied). The meaning of "completion" is provided by dictionary definitions, since there is no indication that the '963 patent used the term in any sense other than its ordinary meaning. Thus, completion means: having all necessary parts, elements or steps; brought to an end; fully carried out. See First Lee Aff., Ex. X, p. 4.

In light of the intrinsic record and published definitions at the time of the invention, "coalescence" is the process of forming a uniform, homogeneous body, or combining into one body or growing together, through the merger of smaller particles of the same material. "Coalescence" is "complete" when it has all necessary parts, elements or steps, or is fully carried out.

This construction of "coalescence" and "completion of coalescence" is supported by the specification, which provides:

"Before completion of coalescing of the third charge as inside layer 16, the rotating mold assembly 22 is removed from
the oven 20 when door 32 is opened. Rotation continues in cooling area 30 as fans 34 blow air at mold assembly 22. During such early portion of the cooling time, the mold cavity remains closed and coalescing of the third charge continues. Inside layer 16 formed by the coalescing third charge will be intimately joined with insulating layer 14.

"When coalescing of the third charge is completed, the mold cavity is opened and rotation of mold assembly 22 continues as fans 34 continue to blow air on the assembly."

First Lee Aff., Ex. J, p. 6, Col. 6, ll. 3-16 (emphasis supplied). Here, inside layer (16) is described as being formed by the "coalescing" third charge. As such, it would be understood that "coalescence" is not complete merely because a layer has been formed. Furthermore, the specification teaches to open the mold cavity when coalescence of the third charge is complete. Under the construction urged by defendants, the specification would teach that the cavity should be opened for cooling when the inside layer consists of a powder and molten layer, or is uneven with bubbles, i.e., at stage two or three of the Nugent diagram. One of ordinary skill in the art would not understand that to mean that the mold cavity should be opened for cooling as soon as the particles had united to form a layer, because that would produce an unusable part. Rather, one of ordinary skill in the art would understand that to mean that the mold cavity should be opened for cooling when the particulate had reached its optimum state, such that the inside layer is appropriately smooth and homogeneous, to produce a useable part.

Defendants cite portions of the specification to support that "coalescence" means only to unite to form layer. These include:

"the first charge will begin to melt and coalesce on the mold cavity wall to form outer layer 12 of the laminate."

"After coalescing of the first charge in this manner and before cross-linking of outer layer 12 is completed, the second charge will be released from the insulating box. . . .

"After coalescence of the second charge as insulating layer 14, the third charge is released. . . ."

First Lee Aff., Ex. J, p. 6, Col. 5, ll. 51-68 (emphasis supplied). Defendants argue that, because "coalesce" is repeatedly used in tandem with terms describing the formation of a layer, it means to form a layer. However, if that were the case, it would not be necessary to include the words of limitation about the formation of a layer because it would be implicit in the term "coalesce" itself. The more reasonable interpretation is that the words of limitation were included to direct the user to a specific point in the longer coalescence process, which is consistent with plaintiff's position that "coalescence" incorporates the process beyond the formation of a layer, to the point when the plastic reaches its optimum state.

In sum, "coalescence" is the process of forming a uniform, homogeneous body, or combining into one body or growing together, through the merger of smaller particles of the same material. "Coalescence" is "complete" when it has all necessary parts, elements or steps, or is fully carried out. The construction of these terms bears on the next major issue: what does the patent teach regarding when to release successive charges? This issue, which the parties refer to as the "sequencing of steps," is addressed below.

With one minor exception, discussed later, both parties agree that the term "heat treated coated article" should be interpreted as "a coated article that has been heated to a temperature for a sufficient period of time to enable thermal tempering, bending or heat strengthening of the articles."

The parties major point of contention is how to interpret the claim term "coated article" by itself. AFG argues that the unmodified term "coated article" when used alone should be interpreted as an article "coated with a heat treatable coating." Guardian argues that AFG is impermissibly reading a limitation ("coated with a heat treatable coating") into the claim term.

Only the '050 patent, claims 9-22 and 24 use the unmodified "coated article," i.e. without any reference to the coated article being either heat treated or coated with a heat treatable coating. In contrast, claims 1-8 specifically refer to the coated article
as "after being heat treated (HT)." Similarly, claim 23 also states the "the coated article of claim 21, wherein the article is heat treated."

AFG argues that the '050 patent term "coated article" must be interpreted consistently throughout the patents. The consistent definition, according to AFG, would be that the term "coated article" refers to articles that are either heat treated or have a heat treatable coating. AFG also points to the invention's function to reduce haze and improve durability through heat treatment. "This invention is to provide a heat treatable low-E coating (or layer system) which is mechanically and/or chemically durable before and after heat treatment, the coating system having a visible transmittance of at least about 70%." '050, Col. 1 line 66 through Col. 2 line 4. Moreover, the specifications of the '050 patent describes the invention as relating to "heat treatable (low-E) coated articles." '050, Col. 1, lines 9-10. AFG's argues that their definition would support both the goals and description of the patents.

Guardian claims that no special interpretation is necessary for the claim term "coated article" and that the patent principle of claim differentiation should be employed.

The concept of claim differentiation . . . states that claims should be presumed to cover different inventions. This means that an interpretation of a claim should be avoided if it would make the claim read like another one. Claim differentiation is a guide, not a rigid rule. If a claim will bear only one interpretation, similarity will have to be tolerated.


The case for claim differentiation is supported by Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004). In that case, the Federal Circuit found that the patent principle of claim differentiation gave further support to the Plaintiff's interpretation where "the presence of a dependent claim that adds a particular limitation raises a presumption that the limitation is not found in the independent claim." Id. (citations omitted).

Guardian argues that by not reading the limitation of "heat treated" or "heat treatable coating" into the term in the '050 patent, the court would be adhering to the claim differentiation principle that ordinarily, different words in a patent have different meanings. Here the same type of relationship is present. For example, claim 21 is an independent claim without the "heat treatable coating" limitation. The dependent claim 23, then adds the particular limitation of "wherein the coated article is heat treated." Moreover, independent claim 9 and all of its dependent claims 10-17 never limit the term "coated article" as either being heat treated or being coated with a heat treatable coating.

AFG argues that claim differentiation should apply to the term "heat treated" since dependent claim 23 only differs from claim 21 in that it is "heat treated." However, AFG argues that this principle should not apply to the limitation it proposes to the term "coated article," i.e. "which has been coated with a heat treatable coating." The reason is that the limitation of claim 23 ("wherein the coated article is heat treated") relates to something that has already been heat treated, not whether the coated article can be heat treated or has a heat treatable coating. AFG argues that if claim 21 were not coated "with a heat treatable coating," then claim 23 would make little sense, since claim 23 is merely a coated article that has been heat treated. If the coated article were not coated with a heat treatable coating, then it could not have been heat treated in claim 23. Thus, according to AFG, the definition of "coated article" necessarily includes the limitation "which has been coated with a heat treatable coating."

If the court is to read the term "coated article" consistently and in line with the invention's goals and functions, the court agrees that the "coated article" must be able to withstand heat treatment. Since the generic "coated article" could be modified by being heat treated in claim 23, the "coated article" interpretation should include that it can be heat treated. However, the claim's terms and the specifications never discuss whether it is the coating that causes the article to be able to withstand heat treatment. Thus, this court will not read this particular limitation, "which has been coated with a heat treatable coating," into the claim. Instead, the court adopts the interpretation: a "coated article" is an "article that is coated and is heat treatable."

In their briefs, the parties present a subsidiary question of whether the definition of "heat treated coated article" should include the phrase "for a sufficient period of time" in its definition, "heating an article to a temperature for a sufficient period of time to enabling thermal tempering, bending, or heat strengthening." It is apparent from the face of the words that
heat treatment will take time. If the purpose of heat treatment is to allow for certain properties to come out (thermal tempering, bending or heat strengthening), it is clear that the heat treatment will require certain amount of time. Moreover, in the examples for both the '349 and '050 patents it states explicitly that the heat treatment definition includes heating a coated article to a temperature of at least 1100 degrees F "for a sufficient period to enable tempering." '349 Col. 23, lines 39-40 and '050 Col. 20, lines 16-17. The phrase "for a sufficient period of time" is properly included in the claim interpretation.

H. "at least one coating"

The term "at least one coating" appears clear and unambiguous on its face and should be construed as "a coating of one or more layers." There is nothing in the specification that limits the patent to a "coating which reflects electromagnetic radiation (specifically, infrared radiation emitted by the light-emitting element) back to the light-emitting element." See Sylvania's Br. at 18. The infrared reflective coating discussed by Sylvania is merely a preferred embodiment but is clearly not the only embodiment for the patented invention. As explained, unless the preferred embodiment is the exclusive invention disclosed by the patent, the patented invention is not limited to the preferred embodiment. Unless there is limiting language in the specification suggesting that the patented invention would not work with more than one coating on the envelope, or that such a requirement is an improvement over the prior art, then the scope of the claim is not limited to the preferred embodiments described in the specification. See Fuji Photo, 386 F.3d at 1106.

Further, the doctrine of claim differentiation, once again, does not support Sylvania's proposed construction. See Comark, 156 F.3d at 1187 (claim differentiation "create[s] a presumption that each claim in a patent has a different scope"). Here, Sylvania's proposed claim construction impermissibly reads into independent Claim 1 limitations that are explicitly present in dependent Claims 8, 10 and 11 but not present (explicitly or otherwise) in Claim 1. Accordingly, imposing such a construction on Claim 1 would render superfluous the language in Claims 8, 10 and 11.

For example, Claim 8 of the '017 Patent states:

A lamp according to claim 1, and further comprising a second coating on said envelope, one of said coatings comprising an infrared coating on one of the surfaces of the envelope, and the other coating including an ultraviolet reflecting layer on the other surface of the envelope.

See '017 patent, Claim 8. In addition to having all of the same limitations as Claim 1, Claim 8 requires that in addition to having "one or more coating" as required by Claim 1, the coating is an infrared coating. This is the exact same limitation Sylvania wants to read into Claim 1. Thus, I find that the doctrine of claim differentiation is applicable and imposing such as a construction on Claim 1 would render Claims 8, 10 and 11 superfluous.

6. "Coating At Least One of Said Outer Surfaces of Said Core With a Layer of Ink"

"Coating at least one of said outer surfaces of said core with a layer of ink" means, "Covering at least one of said outer surfaces of said core with a finishing layer of ink."

The only term in this phrase requiring construction is the word "coating."

Plaintiff's proposed definition is that "coating" means "covering." (Pl. Br. at 24.) Plaintiff cites Webster's, p. 219, for the ordinary meaning of "coating" as "2: to cover or spread with a finishing, protecting, or enclosing layer," and notes that the claims in the Patents specify that the layer is ink. (Pl. Br. at 24.)

Claim one of the '207 patent recites the coating step as follows:
(b) positioning said at least one electronic element . . . directly between said first and second plastic core sheets to form a core, said plastic core sheets defining a pair of inner and outer surfaces of said core, (c) positioning said core in a laminator apparatus, and subjecting said core to a heat and pressure cycle . . ., (d) coating at least one of said outer surfaces of said core with a layer of ink, and (e) applying a layer of overlaminate film to at least one of said outer surfaces of said core.

'207 patent, col. 6:22-38. The specification further provides, "... the use of matte finished laminator plates provides surfaces with a slightly roughened or textured quality which will facilitate the application of a coating thereto..." '207 patent, col. 4:54-58. The Summary of the Invention in the '207 patent describes that "at least one of the upper and lower surfaces of the core comprises a coating printed or otherwise applied thereon," '207 patent, col. 2:20-24, and further explains that the "core is coated on at least one of it's [sic] upper and lower surfaces with a layer of printing ink. This may be accomplished by a wide variety of printing techniques." '207 patent, col. 5:6-12.

The '099 patent contains similar language, using "coating" and "covering" interchangeably--"the sheet of plastic card stock . . . comprises at least core with at least one surface thereof covered by a layer of ink." '099 patent, col. 7:45-51 (numerical references omitted). The prosecution histories of the '207 patent and the '099 patent clarify that "coating" is used to mean more than merely "printing on."

It is important to note that the word "core" is used in all of the patents to describe what I have termed the "sandwich" -- that is, the electronic element and the two plastic sheets that directly touch it. Nothing more is included in the definition of the word "core." 9

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9 Note that the "book," referred to earlier, is comprised of the "sandwich" -- that is, the electronic element and the two plastic sheets that directly touch it. Nothing more is included in the definition of the word "core." 9

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Defendant proposes that "coating... with a layer of ink" means that "the ink layer must directly contact at least one of the 'outer surfaces' of the 'core.'" (Def. Br. at 34.) Defendant cites to the claim and specification language cited above in support of its definition. Defendant also notes that the '207 specification states that, "This printing step is performed to coat at least one surface of core with a layer of aesthetically pleasing ink." (Def. Br. at 35, quoting '207 patent, col. 5:6-17. (numeric references omitted.) Finally, Defendant notes that Leighton "did not disclose applying another layer with ink imprinted on it to an outer surface of the core itself," and then quotes the '207 patent, "This layer of ink cosmetically hides the one or more electronic elements that are embedded within core, and prevents these one or more electronic elements from showing through the relatively thin core." (Def. Br. at 35, quoting the '207 patent, col. 5:17-21 (numerical references omitted.) In sum, Defendant argues that the intrinsic evidence leads to the conclusion that "coating... with a layer of ink" means the ink is applied to at least one of the "outer surfaces" of the "core," so the layer of ink "directly contacts that outer core surface." (Def. Br. at 25.)

As is clear from the above language, Defendant is trying to preclude Plaintiff from claiming that the patent covers a process wherein something is applied directly to the surface of the core before the surface is covered with ink. The analogy used by the parties at the Markman hearing was as follows: Assume we are interpreting the sentence, "The table is covered with ink." Obviously, if a layer of ink is applied directly to the top surface of the table, the table is covered with ink. The question posed by the parties was whether, if a tablecloth were placed over the top surface of the table and the cloth were then covered with ink, the table would be covered with ink.

The answer is no. The table would then be covered with an ink-stained tablecloth. The ink would cover the cloth, and the cloth would cover the table. But the ink would not coat the table -- it would coat the cloth. This notion of immediacy (or what Defendant calls direct contact) is implicit in the dictionary definition of "coat," which is "to cover or spread with a finishing, protecting or enclosing layer." Ink applied otherwise than to the surface of the core itself would not "finish" or "enclose" the core.

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7. "coating layer"

Claim 1 recites a "coating layer substantially enveloping said plurality of cords." Otis asserts that "coating layer" should mean "a layer of material that separates individual cords and defines an engagement surface for engaging a traction sheave." Schindler proposes that the term be defined as "a material which surrounds, fully encases or encapsulates the cords at least around the circumference of the cords." Schindler asserts that Otis' interpretation is incorrect as the "separates individual cords" and "defines an engagement surface for engaging a traction sheave" language imports extraneous limitations into the term.

The Court will adopt a construction of "coating layer" that is similar to Schindler's proposed definition. First, as Schindler argues, the "separates individual cords" limitation should not be read into the term. See Sram Corp. V. AD-II Eng'g. Inc., 465 F.3d 1351, 1358 (Fed. Cir. 2005). Although it is true that most embodiments of the claimed tension member might have a coating layer that separates the individual cords, this separation is not mandatory. Otis listed the required functions of the coating layer in the specification and in an amendment to the patent-in neither instance did Otis recite a "separation" function. Just as the Court rejected Schindler's argument that the cords must be touching each other (see section III.A.6 above), it rejects Otis' assertion that the wires cannot be in contact with each other in any potential embodiment of the claim.

The Court will construe "coating layer" as "a layer of material that substantially surrounds, encases or encapsulates the cords, and defines an engagement surface for engaging a sheave."

5. "Coating of one or more inks forming a design on the lower surface and adapted to show through the plastic sheet to be seen through the top surface."

Microthin proposes that the phrase "coating of one or more inks forming a design on the lower surface and adapted to show through the plastic sheet to be seen through the top surface" should be construed to mean "coating of one or more inks forming a design that is reverse printed on the lower surface of the plastic sheet such that it can be seen through the plastic sheet on the upper surface and can be viewed correctly through the upper surface of the plastic." Here again, SiliconeZone argues that the phrase requires no special construction but should be construed according to its plain and ordinary meaning in the context of the claim language.

Microthin's proposed construction is only slightly different from the plain and ordinary meaning of the disputed phrase. The potentially confusing language in the phrase, as written in claim 1, is that the design is "adapted to show through the plastic sheet." Microthin's construction interprets this phrase to mean that the design is reverse-printed on the lower surface such that it may be viewed correctly through the upper surface. Microthin's construction is partially supported in the specification for the '311 Patent where it specifically speaks of a "reverse printing process" as the means for the mat to "contain suitable advertising, such as a multicolor logo, or a design, such as a picture, school emblem or logo, or other pictures or scenes, etc." Memorandum, Ex. F(a), Patent No. 5,942,311, at 3:45-54. However, the specification also discloses more general designs on the lower surface made through a series of screens for multiple colors that are visible through the upper surface of the mat. See Memorandum, Ex. F(a), Patent No. 5,942,311, at 3:40-44. Therefore, while the patent does mention "reverse printing" to achieve a "correctly viewed" picture or image, such a limitation is not required by the patent and the Court will not read such a limitation into the claim. See Johnson Worldwide Assoc., Inc. v. Zebeho Corp., 175 F.3d 985, 992 (Fed. Cir. 1999) ("[J]ust as the preferred embodiment itself does not limit claim terms . . . mere inferences drawn from the description of an embodiment of the invention cannot serve to limit claim terms."). Because there is a reasonably plain and ordinary meaning for the disputed phrase in the claim, and because Microthin's construction would effectively add a limitation to the claim, the Court construes the disputed phrase to mean exactly what the claim already says: "coating of one or more inks forming a design on the lower surface and adapted to show through the plastic sheet to be seen through the top surface."
Plaintiffs submit that the term "coaxially arranged" needs no construction because one skilled in the relevant art would know "that a coaxial arrangement of a pipe-in-pipe system merely requires that one pipe be fitted within another and generally centered." 11 Defendant originally proposed that the term "means that the inner tube and the outer tube share the same central axis for their entire lengths." 12 At the Markman hearing, Defendant retracted its suggestion that the tubes must be centered for the entire length of the pipeline, contending instead that the ordinary interpretation of the term means that "the inner and outer tubes are on a common axis." 13 Defendant particularly takes issue with Plaintiffs' attempt to interject the modifier, "generally," to broaden the claim meaning.

Although the definition of "coaxially arranged" may be obvious to one skilled in the art, as argued by Plaintiffs, it may not be so clear to a member of the jury. The term, therefore, requires construction in order to obviate the parties' desire to educate the jury regarding the understandings of one skilled in the art.

"Coaxially arranged" is not defined by the patentee in the claims themselves or anywhere in the intrinsic evidence. The court, therefore, finds it appropriate to turn to a dictionary definition. The 1994 edition of a scientific dictionary defines "coaxial" as "sharing the same axes." McGraw-Hill Dictionary of Scientific and Technical Terms 394 (5thed. 1994). Similarly, a Webster's desk-reference dictionary defines "coaxial" as "having or mounted on a common axis." Webster's II New Riverside University Dictionary 275 (1984). The term "arrange" is not defined in the scientific dictionary, but is given the following meaning by the Webster's dictionary: "to put in a specific order or relation." Id. at 126. Combining the two, "coaxially arranged" can be defined as associated in such a way as to share a common axis. The common axis in a pipe-in-pipe design is an imaginary line down the center of the inner pipe. Accordingly, the shared axis is "central."

Looking to the specification for confirmation, the court notes that the purpose of the coaxial pipe-in-pipe arrangement is to allow free space between the insulation and the outer pipe all the way around so that low pressure can be achieved and maintained between the pipes. 14 On the whole, the description suggests that some amount of space is critical to successful implementation of the invention, but not that absolute uniformity is required. In fact, the limitation in dependent clause 10, which teaches the use of centering spacers, suggests the patentee's recognition that, absent spacers, the pipes in claim 9 may not remain perfectly centered throughout the length of the pipeline. 15 On this point, the specification states, "According to still another feature of the invention, there is provided with advantage spacers aimed at centering the inner tube inside the outer tube by maintaining an adequate minimal gap between the inner and the outer tube sequentially from one portion to another through the entire length of the pipe." 16 Furthermore, the patent description recognizes that variations in wall thickness and roundness may occur during pipe manufacturing and are tolerated by persons skilled in the relevant art. 17

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11 Plaintiffs' Brief in Opposition to Defendant's Opening Claim Construction Brief, Docket Entry No. 27, p. 3.

12 Defendant's Brief on Claim Construction, Docket Entry No. 23, p. 9.

13 Defendant's Markman hearing arguments.


15 See id. at 9:56-10:2.

16 Id. at 5:61-66.
From these references, the court concludes that an annulus of perfectly equal free space throughout may be ideal, but is not necessary. On the other hand, the amount of free space called for by the patent is measured in millimeters, 18 which leaves little room for variance. The court certainly would not consider such a small deviation to warrant the interjection of the term "generally" into the definition. Overall, the court finds no justification for narrowing the term by requiring the pipes to be perfectly centered or for broadening the term by adding the modifier "generally."

Accordingly, the court recommends that "coaxially arranged" can be defined as put together in such a way as to share a common central axis.

"Cockpit":

The depression toward the center of the watercraft in or on which the paddler or paddlers sit.

(K) Reduced coefficients of friction

A ratio of the force that maintains contact between an object and a surface, and the frictional force that resists the motion of the object in the static state and in the dynamic state.

The court heard oral argument on the issue of claim construction in order to better understand the extent of the parties' disagreement about the construction of the claims. During oral argument, both parties focused primarily on the '273 patent. Since neither party has distinguished the facestock claims of the '273 patent from the facestocks claimed as part of the process patents, the court's reasoning in this opinion regarding construction of the '273 patent should be considered applicable to the '532 and '669 patents.

When considering the claims, the "terms of a claim will be given their ordinary meaning, unless it appears that the inventor used them differently." ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1579 (Fed. Cir. 1988) (citation omitted). Claim 19 of the '273 patent provides:

19. A multilayer facestock for use in pressure-sensitive label, tape or sign applications comprising a coextrudate of cojoined layers comprising a relatively thick core or base layer of polymeric film material of a stiffness of between 10 and 100 Gurley and which contributes the majority of the dimensional stability and stiffness of labels or signs cut or formed from the facestock, and at least one relatively thin skin layer, said skin layer being on the face side of the coextrudate and having an ink-printable surface, and a pressure-sensitive adhesive layer combined at the side of said coextrudate opposite said face side.
Claims 20 and 21 are dependant on claim 19 and necessarily incorporate by reference all the elements of claim 19. Claims 19-21 cover a plastic multilayer facestock or film. Claim 1 of the '532 patent provides:

1. A method of economically manufacturing die-cut labels or signs using roll or sheet facestock, comprising the steps of providing a plurality of at least two charges of film-forming resin, coextruding said charges to thereby form a construction in the form of a multilayer extrudate comprising a relatively thick core layer and at least one relatively thin skin layer, the former layer providing the majority of the dimensional stability and stiffness of the construction, preselecting the charge for said core layer, as by selection of density or flex modulus, to provide a degree of stiffness suitable for the label or sign application, preselecting the charge for said skin layer to provide a skin adapted to the intended decorating process, such as printability, or surface performance characteristics, such as weatherability of the facestock, and combining said extrudate with a pressure-sensitive adhesive layer to form label or sign facestock, combining said facestock with a liner, die-cutting said facestock to form a label or sign releasably adhered to said liner and surrounded by a matrix of excess facestock material to utilize non-tearing self-supporting properties of said material to pull said matrix away from the die-cut label or sign.

Claims 3 and 8 are dependent on claim 1 and claim 9 is dependent on claim 8. Claim 14 of the '532 patent provides:

14. A method of economically manufacturing die-cut labels or signs using roll or sheet facestock, comprising the steps of providing a plurality of at least two charges of film-forming resin, coextruding said charges to thereby form a construction in the form of a multilayer extrudate having a face side and a back side, said multilayer extrudate including stiffening layer means which contributes the majority of the stiffness of the construction, preselecting at least one of the charges, as by selection of density or flex modulus, to provide said stiffening layers means with a degree of stiffness suitable for the label or sign application, and combining said multilayer extrudate with a pressure-sensitive adhesive layer and release liner to form linered label or sign facestock, die-cutting said facestock to form a label or sign releasably adhered to said liner and surrounded by a matrix of excess facestock material, and stripping said matrix of excess facestock material to utilize non-tearing self-supporting properties of said material to pull said matrix away from the die-cut label.

Claim 16 is dependent on claim 14. Claim 1 of the '669 patent provides:

1. A method of economically manufacturing die-cut labels or signs using roll or sheet facestock, comprising the steps of providing a plurality of at least two charges of film-forming resin, coextruding said charges to thereby form a construction in the form of a multilayer extrudate comprising a relatively thick core layer and at least one relatively thin skin layer, preselecting the charge for said core layer, as by selection of density or flex modulus, to provide said facestock with a degree of stiffness suitable for the label application, preselecting the charge for said skin layer to provide a skin adapted to the intended decorating process, or surface performance characteristics, of the facestock and combining said extrudate with a pressure-sensitive adhesive layer and release liner to form linered label or sign facestock, die-cutting said facestock to form a label or sign releasably adhered to said liner and surrounded by a matrix of excess facestock material, and stripping said matrix of excess facestock material to utilize non-tearing self-supporting properties of said material to pull said matrix away from the die-cut label.

Claims 2, 3, 7, 8 and 9 are dependent on claim 1. Claim 11 of the '669 patent provides:

11. A method of economically manufacturing die-cut labels using roll or sheet facestock, comprising the steps of providing a plurality of at least two charges of film-forming resin, coextruding said charges to thereby form a construction in the form of a multilayer extrudate comprising a relatively thick core layer and at least one relatively thin skin layer, preselecting the charge for said core layer, as by selection of density or flex modulus, to provide said facestock with a suitable degree of stiffness and sufficient body and strength for the label application, preselecting the charge for said skin layer to provide a skin adapted to the intended decorating process, or surface performance characteristics, of the facestock, hot-stretching and combining said extrudate with a pressure-sensitive adhesive layer to form label facestock, combining said facestock with a liner, die-cutting said facestock to form a label, releasably adhered to said liner and surrounded by a matrix of excess facestock material, and stripping said matrix of excess facestock material to utilize non-tearing self-supporting properties of said material to pull said matrix away from the die-cut label.

The construction of the facestock claims' terms and phrases desired by the parties, especially "coextrudate of cojoined layers" and "comprising a relatively thick core or base layer," require the court to look beyond the language of the claims.
To aid in construction of the claims, the court must look at the patent specifications. "The specification acts as a dictionary when it defines terms used in the claims or when it defines terms by implication." Vitronics at 1582. The patent inventor is his or her own "lexicographer." ZMI at 1580. Therefore, "the specification aids in ascertaining the scope and meaning of the language employed in the claims inasmuch as words must be used in the same way in both the claims and the specification." Id. (citation omitted).

The patent specifications for the '273 patent offer several illuminating claim descriptions. The specifications for the facestock offer two prototypical examples in Figures 5 and 6. The coextrudates in these examples "comprise polymeric film materials, are formed by simultaneous extrusion from a suitable know type of coextrusion die, and are adhered to each other in a permanently combined state to provide a unitary coextrudate." Patent '273, Column 9, Lines 21-26. The elements of the facestock, as described in the specifications, are as follows: "a relatively thick core layer of polymeric film material . . . having a cojoined, relatively thin, ink-printable skin layer at least at the face side of the construction, and having a pressure-sensitive adhesive layer combined at the sides of the construction opposite the face side." Patent '273, Column 10, Lines 59-66. The facestock is produced "by coextruding a plurality of at least two charges of film-forming resin to form a coextrudate having a relatively thick core layer and at least one relatively thin skin layer . . . and combining the coextrudate with a pressure-sensitive adhesive layer." Patent '273, Column 10, Lines 67-68; Column 11, Lines 1-8.

The prosecution history of the patents provides similarly helpful evidence for this court. A patent's "prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985). The prosecution history reveals that in the application for the '273 patent, Serial No. 06/853,772, the inventor, Melvin S. Freedman, distinguished his facestock from a product which is "formed by adhering preformed layers." The patent examiner issued a restriction requirement on October 17, 1986 stating: "the product as claimed can be made by a materially different process such as by adhering pre-formed layers." Def's Resp. Ex. W. In an amendment filed October 27, 1986, Freedman responded: "The process pointed out by the Examiner, namely adhering preformed layers, cannot be used to form the claimed coextrudate, since if the layers were preformed they would not have been coextruded and would not constitute a coextrudate as called for in [the] independent product claims." Def's Resp. Ex. X.

Based upon a review of the entirety of the patent, including the claim language, specifications and prosecution history, the court concludes that claims 19-21 of the '273 patent should be plainly construed to cover a coextrudate which is a facestock, or plastic film, formed solely by simultaneous, or joint, extrusion of several materials through a die. The immediate result of this simultaneous extrusion, or coextrusion, is a multilayer film wherein the layers are firmly adhered to one another in a permanently combined state, i.e., the patented coextrudate. A facestock formed by adhering preformed layers is not within the scope of claims 19-21 of the '273 patent. Further, in claim 19, the coextruded product must have (1) a thick core or base layer (with a stiffness of between 10 and 100 Gurley); (2) at least one thin ink-printable skin layer on the face side of the product; and (3) a pressure-sensitive adhesive layer on the side opposite the face side. In claim 20, the product is the same as in claim 19 with the addition of a second skin layer between the core or base layer and the adhesive layer. In claim 21, the product is the same as in claim 19 with the addition of a releasable liner on the adhesive.

The parties, especially UCB Films, have also devoted substantial time to arguing that the phrase "core or base layer" in the claims must mean "core layer or base layer" (meaning the core must be made up of only one layer) and not, as Avery argues, "core" (which could have one or more layers) or "base layer." However, the court finds that the patent specifications, on which UCB Films primarily relies, use both the term "core" (e.g. '273 Patent; Column 10, Line 46) and the phrase "core layer" (e.g. '273 Patent, Column 10, Line 60). This court is thus unwilling to apply UCB Films' reading to the claims and cannot find on the basis of this argument that the claims are limited to a core composed of a single layer.

As stated previously in this opinion, the court's construction of the claims of the '273 patent is largely applicable to the facestock portions of the process patents. In light of the above claim construction, this court finds that there are disputed issues of material fact as to whether UCB Films infringed the patents and that infringement remains a question of fact to be submitted to a jury. The motions for summary judgment [154-1, 250-1] are therefore denied.
The Avery patents are directed to a facestock used for adhesive labels, tapes or signs. The claimed facestock is a multilayer coextrudate of a core layer, and at least one skin layer suitable for receiving printing. Claim 19 of the '273 patent is representative:

19. A multilayer facestock for use in pressure-sensitive label, tape or sign applications comprising a coextrudate of cojoined layers comprising a relatively thick core or base layer of polymeric film material of a stiffness of between 10 and 100 Gurley and which contributes the majority of the dimensional stability and stiffness of labels or signs cut or formed from the facestock, and at least one relatively thin skin layer, said skin layer being on the face side of the coextrudate and having an ink-printable surface, and a pressure-sensitive adhesive layer combined at the side of said coextrudate opposite said face side.

(Emphasis added). The patent specifications, which are substantially identical, state that the facestock is "formed by simultaneous extrusion" such that the layers of the facestock "are firmly adhered to each other in a permanently combined state to provide a unitary coextrudate." '273 patent, col. 2, ll. 57-63.

Before filing suit against FLEXcon, Avery asserted the same patents and claims against UCB Films. UCB Films manufactures a facestock film having the brand name "Rayoface" in England, and sells it to entities in the United States, including FLEXcon, who laminate an adhesive layer and removable liner to the UCB Films facestock and resell it. Because the same products and patents are involved in the UCB Films and the FLEXcon cases, the district court herein adopted the claim construction in the UCB Films case, Avery Dennison Corp. v. UCB Films, et al., No. 95-C-6351 (N.D. Ill. June 8, 2000).

The critical section of the UCB Films claim construction focuses on the "coextrudate" limitation, as follows:

The court concludes that claims 19-21 of the '273 patent should be plainly construed to cover a coextrudate which is a facestock, or plastic film, formed by simultaneous or joint extrusion of several materials through a die. The immediate result of this simultaneous extrusion, or coextrusion, is a multilayer film wherein the layers are firmly adhered to one another in a permanently combined state, i.e., the patented coextrudate.

The district court ruled that:

A facestock formed by adhering preformed layers is not within the scope of claims 19-21 of the '273 patent. Further, in claim 19, the coextruded product must have (1) a thick core or base layer (within a stiffness of between 10 and 100 Gurley); (2) at least one thin ink-printable skin layer on the face side of the product; and (3) a pressure-sensitive adhesive layer on the side opposite the face side.

The district court in UCB Films held that this construction also applied to the '532 and '669 process patents. Avery stipulated that it could not prove infringement by FLEXcon under the claim construction of the UCB Films case.

Avery's position is that the court erred in ruling that "A facestock formed by adhering preformed layers is not within the scope of [the claims]." That is the issue before this court.

DISCUSSION

It is not disputed that the Rayoface product is made by laminating two sheets of multilayer, coextruded film. Avery states that the UCB Films' lamination is an additional step in a process from which facestock is made by blown coextrusion and thus does not preclude infringement of the claims. Avery further states that the district court's requirement that the facestock be the "sole" and "immediate" result of coextrusion is an incorrect restriction of the claims' scope.

Claim interpretation is a matter of law that is reviewed de novo. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 U.S.P.Q.2d (BNA) 1169, 1174 (Fed. Cir. 1998) (en banc). Each of the asserted claims requires that the facestock either be a "coextrudate of cojoined layers" or be manufactured by "coextruding . . . to thereby form . . . a multilayer extrudate." Avery's proposed construction would have the claims read on any product used as facestock if it contains any coextruded layers, as opposed to products wherein the facestock itself is a coextrudate.
The district court's construction, that the facestock is the "immediate result of this simultaneous extrusion, or coextrusion," recognizes the specification's teaching that the facestock layers are "formed by simultaneous extrusion from a suitable known type of coextrusion die, and are adhered to each other in a permanently combined state to provide a unitary coextrudate." '273 patent, col. 9, ll. 23-26. Figure 8 of the '273 patent further illustrates the Avery process, wherein plastic components D, E, and F, are coextruded through die 70 to form a coextruded facestock with joined layers 54, 52, and 56:

[SEE FIGURE 8 IN ORIGINAL]

The district court's claim construction is also required by the prosecution history of the patents in suit. The patentee, in response to a restriction requirement for the parent application, explained that the claimed coextrudate is distinguished from a material "formed by adhering preformed layers," stating that "if the layers were preformed they would not have been coextruded and would not constitute a coextrudate as called for in independent product claims." These statements, and the undisputed fact that the UCB Films coextruded product does not literally infringe the Avery claims before it is laminated to form a facestock, negate Avery's argument that the UCB Films lamination is merely an extra step in the formation of an infringing product, and also bar access to the doctrine of equivalents to reach the laminated product. We have carefully considered all of the arguments and authorities presented by Avery, and conclude that the district court's judgment is correct.

C. The '136 Patent - Claim 6

Claim 6 of the '136 patent provides:

The method of claim 5 where said step of electrolytically disintegrating said connecting segment comprises the step of electrolytically corroding away at least a portion of a coil segment.

Claim 6 introduces a new phrase, namely, "coil segment." The parties dispute the proper construction of that phrase. Claim 6 depends from Claim 5. Thus, Claim 6 is a further limitation on the "electrolytically disintegrating" step of Claim 5.

By its language, Claim 6 requires that the step of Claim 5 of "electrolytically disintegrating of at least one portion of a connecting segment" be performed by "electrolytically corroding away at least a portion of a coil segment." There is no limitation in Claim 5 or 6 disclosing the connecting segment of Claim 6 as a coil. 7 Without such a limitation, Claim 6 is arguably indefinite because there is no disclosure that "said connecting segment" is a "coil."

--- Footnotes ---

7 It is permissible for an inventor, who has disclosed a device in general terms in an antecedent claim, to state in a subsequent dependent claim that the device is made in a particular configuration as a limitation on the device already disclosed. For example, in a claim, an inventor may specify a "connecting segment." The inventor may introduce in a dependent claim "where said connecting segment is a coil." Claim 6 refers to the "connecting segment" of Claim 5 as "said connecting segment" but does not state that the "connecting segment" is a "coil."

--- End Footnotes ---

In general, a claim ought to be construed to sustain its validity. Liebel-Flarsheim Co. v. Medrad, 358 F.3d 898, 911 (Fed. Cir. 2004). In this case, to preserve the validity of Claim 6, the Court interprets "coil segment" of Claim 6 to be a limitation on the "connecting segment" of Claim 5. This is because without the two phrases referring to the same element, there is no logical way for the corrosion of the "coil segment" to electrolytically disintegrate the "connecting segment."

The Court construes "coil segment" as it is used in Claim 6 of the '136 Patent the to mean:

- a connecting segment that is a coil, at least a portion of which can be corroded electrolytically
"coin type"

"Coin type" is used throughout claim 1 and the rest of the '799 patent. JVL argues that this term should be construed to mean that "coin types cannot be changed by the operator." Merit proposes a simpler construction, "type of coin."

Although the substance of JVL's construction is not inaccurate, it is unnecessary. In the description of the preferred embodiment found in Figure 3, which shows a designation for coin type, the patent states that the coin input is "set at the factory and cannot be changed by the game operator." '799 patent, at 5:38-40. In this context, this language indicates that the game operator cannot adjust the coin input column; but, it does not provide a basis for reading this limitation into the term "coin type" as used throughout the patent.

The meaning of "coin type" is clear from the surrounding claim language. It means, as Merit suggests, "type of coin" which is synonymous with "coin type." Therefore, the term requires no construction.

OO. "LEADING SURFACE BEING PLANAR AND COINCIDENT WITH A PLANE, THE PLANE INTERSECTING THE HANDLE PORTION"

In claim 27, the Court must also construe the claim term "leading surface being planar and coincident with a plane, the plane intersecting the handle portion." Plaintiff suggests that the claim term means "leading surface is planar and the reference plane containing the leading surface intersects the handle portion." Defendants divided the claim term, and suggest that "the leading surface of the pet engageable portion is planar" means "the leading surface of the pet engageable portion is flat"; "coincident with a plane" means "occupies part of the same place or plane"; and "the plane intersecting the handle portion" means "the plane having at least one point in common with the handle portion." The Court notes that this claim term is substantially similar to a previous claim term, "leading surface of the pet engageable portion is planar and is coincident with a plane, and the plane intersects the handle portion," which was construed to mean "the leading surface of the pet engageable portion is flat and occupies part of the same place or plane, and the plane intersects the handle portion."

Plaintiff's proposed construction of "leading surface being planar and coincident with a plane, the plane intersecting the handle portion" would be inconsistent with this earlier construction. On the other hand, Defendants' proposed construction is more in line with the previous construction, but the Court will impose a few changes for consistency. The claim term "leading surface being planar and coincident with a plane, the plane intersecting the handle portion" is construed to mean "the leading surface is flat and occupies part of the same place or plane, the plane intersecting the handle portion."

7. "A cold pan"

For the term "a cold pan," Foodie offers "a refrigerated container," while Jamba Juice offers "an open, shallow, refrigerated bin." The primary dispute over this term was whether or not to include "shallow" and "open" as descriptive modifiers, and whether the noun term should be "pan" or "container." At the Markman hearing, Foodie agreed to allow for the adjective "open" to be included, but only if "container" was the noun. Foodie objected to the use of "shallow" in the definition. Jamba Juice objected to the term "container" on the grounds that "pan" is narrower. In support of its argument for including "shallow," Jamba Juice argues that "the term container, which appears in the definition of the word pan, is modified by the adjective shallow in the definition." 5 (Def.'s Resp. Claim Constr. Br. 21.) Foodie argues in response that "shallow" need not be part of the construction because doing so would be reading a limitation in the claim unnecessarily. The Court agrees with Foodie.
5 At the Markman hearing, Jamba Juice also argued that the definition of "pan" includes "shallow."

The specification does not define "pan," nor does it discuss the cold pan in terms of being open or shallow. Adding such limitations would be based on purely extrinsic evidence. While the dictionary definition of "pan" does include "container," "open," and "shallow," the Court is hesitant to read those terms into the claim. There is little risk of jury confusion by failing to further elaborate on the term "pan," and potentially greater risk for the parties in narrowing or broadening the term with the other modifiers. Given the above considerations, and since both parties suggested "refrigerated" in their proposed definitions, the Court construes "cold pan" to mean "a refrigerated pan."

Literal Infringement

The '389 patent contemplates a CVD process sequence that starts with a cold reactor chamber, the chamber having been cooled in order to permit the operator to remove the coated substrates and insert uncoated ones. The '389 claims are directed to the removal of static attraction during the gaseous purge of the cooled chamber within which electrostatic contamination has formed. Although the parties dispute whether this requires treating at a "relatively low" temperature that is high enough to eliminate the static charges, or is accomplished solely by an infrared photon flux at low intensity, claim 1 appears to include both mechanisms, while claim 4 is specific to heating the wafer above about 180 degrees C. The '389 patent describes about 180 degrees C as the temperature above which static electricity does not form or exist.

The ASM Epsilon One reactor process also conducts an initial purge with inert gases as the first step in the deposition cycle. However, this purge is conducted at about 850 degrees C. Since in the Epsilon One reactor the substrates are removed and replaced mechanically, the chamber need not be cooled significantly to perform this step and does not acquire electrostatic contamination during the processing cycle. Thus although the Epsilon One process includes an initial gaseous purge below the deposition temperature, the temperature of this purge is stated to remain above 850 degrees C. ASM argues that this can not reasonably be deemed a "cold purge process." ASM states that the problem solved by the '389 invention does not exist at the Epsilon One operating conditions, and that the '389 specification makes clear that the invention relates to a process wherein the chamber is cooled to ambient temperatures, permitting electrostatic contamination to form, in order to remove it by raising the temperature to above 180 degrees C, but still at relatively low temperatures. ASM points out that the prior art shows the initial cold purging with inert gases, and that the sole "inventive" contribution of the '389 patent is removal of the electrostatic contamination that occurred below about 180 degrees C. ASM states that under its operating conditions, which do not drop below 850 degrees C during or between processing cycles, electrostatic contamination does not occur, and thus that it does not practice the invention of the '389 patent.

Applied Materials states that "cold purge" is a word of art for the initial gas purge step, and that "cold" is understood in this art as a relative term and means a temperature below the processing temperature. Applied Materials states that the claims require only that the initial gaseous purge is conducted below the processing temperature, and that ASM does so, literally. Applied Materials states that it is the claims that define the invention, and that it is incorrect to limit the claims to any specific temperature mentioned in the specification. Thus Applied Materials states that claim 1 reads literally on the Epsilon One process.

The construction of patent claims, as well as the meaning and scope of a disputed technical term or terms of art in a patent claim, are deemed to be questions of law and are determined de novo on appeal. Markman v. Westview Instruments, Inc., 52 F.3d 967, 34 U.S.P.Q.2D (BNA) 1321 (Fed. Cir. 1995) (en banc), aff'd, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). Although this court requires that no deference be given to the testimony of experts, id. at 983, 34 U.S.P.Q.2D (BNA) at 1333 ("when legal 'experts' offer their conflicting views of how the patent should be construed, or where the legal expert's view of how the patent should be construed conflicts with the patent document itself, such conflict does not create a question of fact nor can the expert opinion bind the court or relieve the court of its obligation to construe the claims according to the tenor of the patent. This opinion testimony also does not change or affect the de novo appellate review standard for ascertaining the meaning of the claim language."), we take note that extensive expert testimony was adduced at trial.
The district court first considered Applied Materials' argument that since the phrase "cold purge" appears only in the preamble of claim 1, it does not limit the claims as applied to the accused process. The district court concluded that "cold purge" is indeed an element of the claims, and "establishes a limitation which the accused device must meet in order to literally infringe the '389 patent." We reach the same conclusion.

Whether a preamble stating the purpose and context of the invention constitutes a limitation of the claimed process is determined on the facts of each case in light of the overall form of the claim, and the invention as described in the specification and illuminated in the prosecution history. See In re Stencel, 828 F.2d 751, 754, 4 U.S.P.Q.2D (BNA) 1071, 1073 (Fed. Cir. 1987) (the preamble is interpreted in light of the invention as a whole); Perkin-Elmer Corp. v. Computervision Corp., 732 F.2d 888, 896, 221 U.S.P.Q. (BNA) 669, 675 (Fed. Cir.), cert. denied, 469 U.S. 857, 83 L. Ed. 2d 120, 105 S. Ct. 187 (1984) (the limitations stated in the preamble give meaning to the claim and can serve to define the invention). It is thus appropriate to determine whether the term in the preamble serves to define the invention that is claimed, or is simply a description of the prior art.

The term "cold purge" has its roots in the specification, which states that in a typical deposition process of the prior art "both the nitrogen prepurge and hydrogen purge are carried out 'cold', that is, without heating." The specification explains that in the '389 process these initial purges are carried out at low radiant energy or low thermal energy. The district court found that "cold purge process" means temperatures below 180 degrees C, and that the '389 invention was directed to the use of heat sufficiently high to remove electrostatic contamination in the initial purge steps, that is, heat above about 180 degrees C, in a reactor whose operating conditions include temperatures below 180 degrees C. "Cold purge" is interpreted in light of the problem the '389 patent solved: the elimination of electrostatic contamination during the initial purge step. The specification states:

During the use of the above outlined process sequence, electrostatic attraction is operative almost exclusively during the cold purging steps (steps 1 and 2). It is substantially non-existent when the susceptor/wafer is at an elevated temperature, such as for example above about 180 degrees C.

'389 patent, column 9, lines 17-22. The specification also states that the purpose of the invention is the removal of contamination caused by this electrostatic attraction. Claims 1 and 4 include this requirement.

The district court correctly placed the term "cold purge process" in the context of the state of the art when the '389 invention was made. This context requires construing the literal meaning of the claims as limited to the process wherein electrostatic contamination is formed and removed. The Epsilon One reactor does not meet this criterion. We affirm the court's ruling that claim 1 is not literally infringed.


A. Cold UV

L&P's proposed construction of "cold UV" is "a UV light source which: (i) employs selected wavelengths to limit; or (ii) has been adapted to selectively reduce the amount of; radiation (and thus heat) that impinges upon a substrate." Vutek agrees with the first part of L&P's proposed construction, but wishes to qualify the radiation reduction referred in the second part to read "(ii) has been adapted to selectively reduce by at least 80% the amount of unwanted radiation (and thus heat) that impinges upon a substrate." Thus, the only issue for me to resolve is whether a UV light source must reduce unwanted radiation, or IR, by 80% -- or by any other specific amount -- in order to qualify as "cold UV." After reviewing both the intrinsic and extrinsic evidence, I find no basis to read such a limitation into the term "cold UV" and thus will adopt the proposed construction offered by L&P.
Turning first to the intrinsic evidence, neither the claims nor the specification support Vutek's narrow construction of "cold UV." Throughout the claims and specification, "cold UV" is defined broadly to encompass various types of UV light sources including selective bandwidth sources, as well as UV lights that use cold mirrors, filters, and water-cooling systems to reduce unwanted IR. The specification defines these sources by the types of adaptations they use and the effect that they have on heat-sensitive substrates, not by a common threshold of IR reduction that they all achieve. According to the specification, as long as a light source "limit[s] energy of wavelengths that are not effective to cure ink from otherwise striking or heating the substrate," the source is considered "cold UV."

While it is true that the preferred embodiment teaches the use of "cold UV" source that "absorbs approximately 80-85% of the infrared energy passing therethrough," there is no indication that this or any other specific percentage reduction is common to all "cold UV" sources. Indeed, such an inference would contradict the general rule that "claims of a patent are not limited to the preferred embodiment … or to the examples listed within the patent specification." Dow Chemical Co. v. United States, 226 F.3d 1334, 1342 (Fed. Cir. 2000).

Moreover, a review of the extrinsic evidence reveals that L&P's broad construction of "cold UV" is the only construction that would make sense to a person of ordinary skill in the art. Neither Richard Codos, the inventor of the '518 Patent, nor Daniel Whittle, Vutek's expert, could identify a specific range of IR reduction that is common to all "cold UV" sources. A survey of industry literature supports their understanding of the term, as "cold UV" is used to describe a variety of adaptations that reduce IR by a wide range of percentages. Additionally, the Patent Examiner identified two previous patents which taught the use of "cold UV," the Troue Patent, No. 4,048,490, and the Scheffer Patent, No., 4,563,589, yet neither of these patents mentions a specific percentage of IR reduction that is achieved with the use of the patent. In sum, after applying the available tools of claim construction, I find that L&P's proposed construction of "cold UV" appropriately captures the use of the term in both the intrinsic and extrinsic evidence.

Footnotes

2. For example, L&P produced evidence of various "cold UV" sources that were reviewed by Codos during his research and development of the '518 Patent. These sources include a Maxim TM UV-curing lamp which uses a "dichroic-coated quartz reflector" that reduces IR "by up to 50%," and an EYE UV brand UV-curing lamp which combines cold mirror and cut IR filter technology to reduce the "heat rise" in a substrate by "over 60%." L&P also introduced a technical paper written in 1983 which concludes that at best, use of a dichroic filter in a UV-curing lamp will reduce IR by 75%.

End Footnotes

Despite the lack of support for Vutek's narrow construction, Vutek contends that I must construe "cold UV" with the 80% restriction in order to maintain the validity of the '518 Patent. Generally, "[c]laims should be so construed, if possible, as to sustain their validity," Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed. Cir. 1999) (quoting Carman Indus., Inc. v. Wahl, 724 F.2d 932, 937 n. 5 (Fed. Cir. 1983)). Nevertheless, the Federal Circuit stated in Phillips that "we have certainly not endorsed a regime in which validity analysis is a regular component of claim construction." 415 F.3d at 1327 (citations omitted). Indeed, "claims can only be construed to preserve their validity where the proposed claim construction is 'practicable,' is based on sound claim construction principles, and does not revise or ignore the explicit language of the claims." Generation II Orthotics Inc. v. Med. Tech. Inc., 263 F.3d 1356, 1365 (Fed. Cir. 2001).

The Federal Circuit has instructed courts to refrain from rewriting claims so as to preserve validity. Rhine, 183 F.3d at 1345. I see no reason to disregard that instruction here. Not only is there no support in the intrinsic or extrinsic evidence for narrowing the term "cold UV" in this way, such a restriction would not be practicable. As Codos explained, there are many variables which determine the effect that a "cold UV" source will have on a substrate, including bulb type (mercury or halide), bulb wattage, heat tolerance of the particular substrate, printing speed, and print type, among others. These variables make it difficult to pin down a specific percentage of IR that must be reduced to qualify as "cold UV." Vutek's proposal is not practicable, and I lack a sufficient basis to conclude that it is necessary to preserve validity. I leave validity issues for determination at a later stage of this case, if necessary.

In the end, I am convinced that a person of ordinary skill in the art would understand the term "cold UV" to not be limited to sources that reduce IR by any specific percentage. For all these reasons, I reject Vutek's arguments in support of a narrow definition of "cold UV," and will adopt L&P's proposed construction.
Cordis contends that a "collapsed" balloon or sleeve is a balloon or sleeve that has been reduced in bulk by being folded (i.e., doubled over) into a more compact space. Cordis relies on the definition of "collapsed" as "[t]o fold compactly," provided in the American Heritage Dictionary of the English Language (1980). Cordis further relies on the definitions of fold as "to lay one part over another part of: double upon itself" (Webster's Third New International Dictionary of the English Language Unabridged (1986)) (hereinafter "Webster's Third"), or "to reduce the length or bulk of by doubling over." (Webster's New Collegiate Dictionary (1981)). In contrast, AGR proposes the following definitions of "collapsed": (1) "[t]o fold or come together compactly" (Webster's Twentieth Century Dictionary (1977)) (hereinafter "Webster's Twentieth"); (2) "to fall together or in" (Webster's Twentieth); (3) "[t]o fold compactly" (American Heritage Dict.); (4) "[t]o be made so that parts can be folded, placed, etc., together" (Random House); and (5) "to fall or shrink together abruptly and completely; fall into a jumbled or flattened mass through the force of external pressure" (Webster's Ninth).

The Court has reviewed all of the foregoing dictionary definitions of the word "collapsed" in the context of the other words used in the '1,653 Patent, as well as the corresponding specification and file history. The surrounding text, specification and file history support the following construction of the word "collapsed," which is the one the Court adopts: folded together compactly so that one part is laid over another part. The following statements included in the Patent claim and specification support such a construction of the word "collapsed" that is limited to materials that may be "folded" or "doubled over" to fit into a more compact space:

1. "[T]he sleeve is sufficiently flexible to be collapsed into a unit of relatively low bulk for ease of passage through the posterior pharynx and esophagus." (Summary of the Invention, 2:19-23) (emphasis added).

2. "Figure 5 of a view of the sleeve unit in a compacted condition . . ." (Brief Description of the Drawings, 3:3-4) (emphasis added). Figure 5 is a drawing showing the disclosed sleeve with its parts folded compactly with some of it parts laying over on or other parts and contained in what is referred to as a "dilator shell or cup." Figure 6 shows the parts of the sleeve unfolding, or coming apart, after the dilator shell or cup is removed. Dr. Rockey describes the process in Fig. 6 as follows: "Lower sections of the filaments . . . associated with the sheath [sleeve] 11 . . . unfold themselves along with the sheath [sleeve]." (Description of the Preferred Embodiment, 4:24-27) (emphasis added).


4. Referring to Figs. 5, 6 and 7, Dr. Rockey instructed that "[t]o facilitate introduction of the sleeve unit 10 into the stomach 32, the sleeve unit is folded on itself accordion fashion to reduce its length and diameter." (Description of the Preferred Embodiment, 4:9-12) (emphasis added).

5. "In its folded or compacted state, the sleeve unit 10 . . ." (Description of the Preferred Embodiment, 4:12-13) (emphasis added). Here, Dr. Rockey uses the words "folded" and "compacted" as synonyms.

6. In the preferred embodiment in Fig. 9, Dr. Rockey indicates that "[t]he collapsed state can be maintained by wrapping the sleeve 51 on itself." (Description of the Preferred Embodiment, 4:11-13; 6:43-44) (emphasis added), which is followed by insertion of the pressure of a liquid that inflates the balloon. "The pressure of this inflating fluid is sufficient to break the light heat bonds holding the folds of the sleeve . . . together and to expand the sleeve . . ." (Description of the Preferred Embodiment, 6:48:51) (emphasis added).

7. "The balloon . . . is formed of any suitable plastic or rubber material which may be folded and/or expanded." (Description of the Preferred Embodiment, 6:7-9) (emphasis added).

Thus, Dr. Rockey used the word "folded" to describe multiple drawings and embodiments disclosed in the '1,653 Patent, not just one preferred embodiment. The '1,653 Patent file history also uses the words "collapsed" and "folded" interchangeably.
The instances where Dr. Rockey uses the words interchangeably are numerous and will not recited here, but one example may be found in Dr. Rockey's '010 Application. The '010 Application is similar to the '1,653 Patent in its description of the preferred embodiment of the sleeve as being "sufficiently flexible to be collapsed into a unit of relatively low bulk" for ease of delivery through narrow body passageways. As advanced by Cordis, the original claims of that application call for a sleeve that is "sufficiently flexible to be folded on itself to thereby reduce its bulk... to facilitate initial placement of the sleeve into the body vessel." Although neither the word "fold" nor the phrase "folded on itself" was actually included in the language of Dr. Rockey's Patent claims, this language chosen by Dr. Rockey and included in his first application and throughout his three related patent file histories constitutes further evidence that when Dr. Rockey wrote "collapsed," he meant "folded," i.e., "doubled over." Accordingly, the requirement that the balloon and the sleeve must be "folded together compactly" may properly be read into claim 2 of the '1,653 Patent.

6. wherein the liner collapses when fluid is withdrawn from within the liner during operation of the gun

3M wherein the liner distorts without being ruptured when fluid is withdrawn from within the liner during operation of the gun

ITW the base of the liner keeps its shape while the side walls distort without rupture

The final disputed definition concerns the term collapses as it relates to base of the liner. ITW contends that the claim describes the base of the liner maintaining its shape when the paint is withdrawn. 3M contends that no such requirement exists. ITW finds support for its position in the specification because the need for a sturdy base is often highlighted and because the side walls are the only parts of the liner described as being distorted. The Court has already noted that the terms of a specification should not be used to make restrictions on the claims of a patent when the terms as used in the claims do not have such restrictions, and it will not do so for this term. Given that there is no requirement in the claims that the base maintains its exact shape when fluid is withdrawn, the Court adopts the definition proposed by 3M.

10. "Collar" This term shall be construed with its ordinary dictionary meaning, therefore "collar" shall mean "any of various ringlike devices used to limit, guide, or secure a machine part." 7

7 The American Heritage Dictionary 291, (2d ed. 1982). The patent specification is quite confusing and contradictory when discussing the "collar" component of the invention. At col. 6, 1. 64, the patentee first introduces "a crimped collar 82." However, at col. 6, 1. 65, and col. 7, 11. 2-4, the patentee proceeds to discuss another "collar 78." Most confusing, however, is that the patentee previously introduced component 78 as an "annular rib 78" or "rib 78." Col. 6, 11. 61-62. Similarly unclear, the patentee uses the term rib without a label or definition throughout the patent. See e.g., col. 2, 1. 28; col. 3, 1. 52; col. 6, 1. 10.

3. "collecting light scattered along said path for detecting anomalies"

The parties' arguments in regard to the phrase "collecting light scattered along said path for detecting anomalies" centers on whether the '710 and '551 patents require that collection of light and detection of anomalies occur within the same instrument or device such that the two operations are inseparable. D.I. 340 at 19-21; D.I. 314 at 23-26. The prepositional
phrase "for detecting anomalies" does modify "collecting light scattered along said path." The question, however, is whether or not said modification also imparts a single collecting/detecting device limitation on the claim element. In other words, since the claim element is not further modified by the phrase "in a single device," this court must determine whether the inventors nonetheless taught such an understanding of their invention. To make this determination, one must look to the intrinsic record.

Figure 3, as reproduced below, depicts one embodiment of the '710 and '551 inventions.

[SEE FIGURE 3 IN ORIGINAL]

In Figure 3, 110a, 110b, 111a, and 111b represent different instrumentalities connected to a processor 200 for the collection and detection of light scattered by anomalies on the surface of the inspected article. '710 at 7:19-24; '551 at 7:19-24 ("Detectors such as detector 111b collects light scattered by anomalies as well as the surface and other structures thereon along scan line 50 [See Figure 4 Above] and provides output signals to a processor in order to detect and analyze the characteristics of the anomalies."). Later in the disclosure, the '710 and '551 written description provides that "the processor 200 in FIG.3 for processing light detected by the collection or collector channels 110a, 110b, 111a, and 111b is such that a sample is taken…." '710 at 9:13-16; '551 at 9:13-16. The '710 and '551 disclosures clearly teach collection of scattered light in the collector channels represented by 110a, 110b, 111a, and 111b in Figure 3. The disclosures further specify that these collector channels produce signals sent to the processor "in order to detect and analyze the characteristics of the anomalies." '710 at 7:19-24; '551 at 7:19-24. The inventors having taught processing of the collected light by the processor 200, this court will not read the phrase "collecting light scattered along said path for detecting anomalies" as requiring collection of light and detection of anomalies to occur within the same instrument or device such that the two operations are inseparable.

4. Element 2

The parties agree that this element requires two or more collection elements. Defendants generally agree with Plaintiff's description of a "collection element" with the exception that Defendants would interpret "collection element" to be a pipe. Plaintiff responds that a collection element is a device, formed from a piece of pipe or something else and that nothing in the claim language limits the device to be formed specifically from pipe. Thus, "collection element" should be construed to include any device or apparatus having perforations that allow contaminant vapors to enter into the interior of the device or apparatus while preventing substantial soil entry.

The specification explicitly provides the meaning of "collection elements."

Each collection element is characterized by having a wall which defines a closed-end tube which has one end open to a chamber. The wall should be a thickness which will not be crushed under the use conditions herein defined. The wall materials should be selected to make the collection elements crush-resistant and not easily deformable in the use conditions described. Elongate collection elements formed of metal such as iron or steel and rigid plastic are preferred.

'407 Patent, Column 2, Lines 17-19. The specification further provides that the perforations "should be large enough to permit vapor entry but not so large as to permit substantial soil entry." '407 Patent, Column 1, Lines 27-28. Based on this language in the specification, the Court finds that "collection elements" means two or more perforated structures with a wall that defines a closed-end tube that has one end open to a chamber. The perforations in the structure should be large enough to permit vapor entry but not so large as to permit substantial soil entry.
The word "collector" is used in claims 1, 21, 25, 29, and 30 of the '259 patent.

1. ADE's Position

ADE asserts that "collector" should be construed consistent with its ordinary and plain meaning to mean "a structure capable of collecting scattered light." (D.I. 613 at 16.) In support, ADE argues that this meaning is consistent with the dictionary definition of the word. (Id. at 16-17.) ADE further asserts that nothing in the specification or prosecution history of the '259 patent would suggest limiting the construction of "collector" to "a lens," as proposed by KLA. (Id.)

2. KLA's Position

KLA suggests that the term "be construed to mean: 'a lens.'" (D.I. 594 at 17.) In support, KLA directs the Court to the '259 patent specification where the inventors describe collectors as lenses. (Id. at 18.) KLA also points to Figure 6 of the '259 patent. (Id.) In addition, KLA argues that, although the specification describes other lens arrangements, it makes clear that "these alternative embodiments merely envision different 'lens arrangements.'" (Id.)

3. Analysis

The '259 specification teaches that a "collector" "will be understood by those skilled in the art to be compound lenses . . ." (D.I. 627 at '259 Patent col. 7 II. 31-33.) The specification also provides that "other lens arrangements may also be used according to the present invention." (Id. at II. 33-34.) The inventors specifically defined a "collector" as "compound lenses . . . [and] other lens arrangements . . .." (Id.) Claims 1, 21, 25, 29, and 30, in which the term "collector" appears do not alter that definition of the term. (See id. at col. 12 I. 18 to col. 15 I. 36.) There is also nothing in the remainder of the '259 specification or prosecution history that a person of ordinary skill in the art could refer to that would create confusion as to what the inventors' intended when they used the word "collector" to claim their invention.

The Court, therefore, construes "collector," as the inventors defined the term, to mean compounded lenses or other lens arrangements. Serrano v. Telular Corp., 111 F.3d 1578, 1582 (Fed. Cir. 1997) ("The inventors' definition and explanation of the meaning of the [claim] word[s] . . ., as evidenced by the specification, controls the interpretation of . . . claim term[s].") (citing Vitronics, 90 F.3d at 1582).

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q. "colored textured material" Claim 8

The term "colored" means "having color." Merriam-Webster Online Dictionary (visited May 15, 2007) <http://www.m-w.com/dictionary/colored>. "Color" is defined as "a specific combination of hue, saturation, and lightness or brightness." Merriam-Webster Online Dictionary (visited May 15, 2007) <http://www.m-w.com/dictionary/color>. The Patent describes the color as one "desirable to the user." (‘514 Patent, col. 5, ln. 22) In addition, the Merriam-Webster Online Dictionary defines "texture" as "the visual or tactile surface characteristics and appearance of something." Merriam-Webster Online Dictionary (visited May 15, 2007) <http://www.m-w.com/dictionary/texture>. The Patent provides for a variety of surface textures, including "smooth with a few edges similar to pea gravel, . . ., or rough like tree bark, . . ., so that the surface has numerous ridges and valleys of differing heights and depths. Additionally, the texture can have only a few ridges on the surface texture resulting in a rubber particle having a surface similar to a wood chip." (‘514 Patent, col. 3, Ins. 56-62) The Patent also calls for "a variety of other natural mulches." (‘514 Patent, col. 3, Ins. 52-53) Thus, the undersigned construes the term "colored textured material" as "rubber particles with a specific combination of hue, saturation, and lightness or brightness that has the visual or tactile surface characteristics and appearance of pea gravel, tree bark, wood chips, and other natural mulches."
b. "Combination" (Claims 34, 43)

77. Claims 34 and 43 of the '656 patent define certain claim elements, particularly the movable link member, the movable element, and the movable projecting element, in terms of their functional operation before and after entry of a "combination". Consequently, the claim term "combination" represents a limitation on the functional definition, since the claims use the word "combination" as part of functional phrases.

78. The '656 patent specification speaks to a combination code. Col. 2, line 48; Col. 4, line 61; Col. 5, line 33; Col. 6, line 40, Col. 7, line 24. The code is entered by entering the proper sequence. Col. 7, line 19. The '656 patent incorporates by reference U.S. Patent No. 4,745,784 for some of the lock details. The '784 patent defines the combination in terms of "a predetermined sequential series of rotations". PX 9, col. 1, lines 19-21. The combination is also defined in terms of a "predetermined, sequential order corresponding to the code". Col. 4, lines 66-68.

79. The prosecution history of the '656 patent also describes a "combination code". PX 45, p. 111. The prosecution history references a number of prior art "combination" lock patents which require a sequence of letters or numbers to be entered to open the lock, e.g., PX 45, p. 49 (Diesel '702); p. 50 (Lee '114); p.50 (Gartner '667); p.51 (Uyeda '785); p.51 (Yueda '176); p.52 (Gartner '984); p. 172 (Herlong). Prior art, whether or not cited in the specification or the file history, may be used to demonstrate how a disputed term is used by those skilled in the art. McGill, Inc. v. John Zink Co., 736 F.2d 666 (Fed. Cir. 1984).

80. General and technical dictionaries may be relied upon to determine the meaning of technical and other terms. Hoescht Celanese Corp. v. BP Chemicals Ltd., 78 F.3d 1575, 1580 (Fed. Cir. 1996).

81. According to dictionary definitions, a "combination" is a "sequence of letters or numbers chosen in setting a lock". Thus, the Court finds that as used in the claims of the '656 patent, "combination" means an ordered sequence of letters or numbers which must be entered to open the lock. This term cannot be construed merely to cover a single switch closure.

A. Combining Region

The defendants contend that the patent requires a combining region to be a separate structure, such as a combining tube. In support of this contention, the defendants point to the fact that in the description of the drawings in the patent, it appears that combining region and combining tube are used interchangeably; both terms are utilized in describing Number 24 on the drawings. The plaintiff contends that a combining tube is simply one embodiment of a combining region and although the drawings depict the invention with a combining tube for the combining region, the claims do not require this or any other structure to be used as the combining region.

The defendants point to the prosecution history of the patent in an effort to support their contention that the combining region must be a separate structure and specifically the fact that in response to rejections by the Patent and Trademark Office ("PTO") the inventor made certain changes to its application.

For example, it added "a combining region" to its initial description of the direct contact steam injection heater so that it read as it read "a heater body having a steam inlet, a liquid inlet, a combining region and a heated liquid discharge outlet," as it does in the patent. The defendants contend that this change was necessary to distinguish the invention from the prior art, specifically United States Letters Patent No. 3,197,337 ("Schink"). However, the prosecution history of the '712 patent disproves this contention.

Schink also has a combining region. However, utilizing a combining tube as the combining region was not necessary to distinguish the '712 patent from Schink. Rather, what distinguished the '712 patent from Schink, in the view of the PTO, was
the direction of the flow. In Schink, the flow was helical; in the '712 patent, after the claims were amended, the flow is limited to being axial. The amendments made in response to the PTO's rejection of the application on the basis of obviousness, (see Docket No. 58 at 3-4), as well as the PTO's statements in rejecting the application, (Docket No. 58-4 at 6-7), demonstrate that it was the absence of this axial flow limitation that resulted in the rejection of the prior applications. Once these axial flow limitations were added, the application was approved. The court finds nothing in the prosecution history to indicate that these modifications somehow indicate that that the combining region must be a structure separate from the heater body.

In fact, the patent itself clearly supports the plaintiff's contention that a combining tube is simply one embodiment of the combining region. In the detailed description of the drawings, at column 5, lines 35-36, the patent states, "As depicted in FIG. 2, the combining region may take the form of an adjustably positionable combining tube." Column 5, lines 35-36 (emphasis added). If it may take the form of "an adjustably positionable combining tube," necessarily, it also may not.

Perhaps the argument could be made that the use of "may" still requires that the combining region be an independent structure, but not necessarily a tube. However, the court rejects this contention. The common and ordinary use of the word "region" connotes something amorphous as opposed to "structure," "unit," "device," or any number of other words including "tube" that would indicate a need for the combining region to be separate from the heater body. Thus, the court finds that the use of the word "region" is persuasive evidence that the combining region may be an ill-defined area within the heater body as opposed to discrete independent structure.

Further support for the conclusion that the combining region need not be a structure that is separate and distinct from the heater body can be found in the patent. The patent notes: "Alternatively, the invention can be carried in a heater in which the combining region is not an adjustably positionable combining tube." Column 5, lines 46-48. The patent then continues: "For example, see above incorporated U.S. Pat. No. 5,622,655 entitled 'Sanitary Direct Contact Steam Injection Heater 50 Method', by Bruce Cincotta et al. issuing on Apr. 22, 1997, which shows a combining region integral with the heater body." This patent, referred to here as the '655 patent, depicts a similar heater where there is no allegation that there is any structure in which the combining occurs other than the heater body, and thus it is clear that the '712 patent anticipates the combining region being an area within the heater body and not any sort of a separate structure.

The court finds further support for the conclusion that a combining tube, or any other structure, is not required for the combining region, in the fact that the term "combining tube" appears in the patent almost exclusively in the descriptions of the drawings. Although the drawings depict an embodiment of the invention where a combining tube is used as the combining region, and figures 2-5 depict a preferred embodiment of the invention, the patent is careful to note that "the invention is not limited to this specific embodiment." Column 6, lines 36-38. The only other use of the term "combining tube" is a single use in the abstract. Significantly, the term is entirely absent from the claims. In the claims, only "combining region" is used. Thus, the patent makes clear that a combining tube is a combining region but not all combining regions are combining tubes.

Finally, the court finds unpersuasive the defendants' contention that because the claims identify the heater body and the combining region as each having inlets and outlets means that the combining region must be a separate structure. Claims 1 and 16 state:

a heater body having a steam inlet, a liquid inlet, a combining region and a heated liquid discharge outlet;

the combining region having an inlet and an outlet located within the heater body in which steam and liquid are combined to generate heated liquid;

Even if the combining region is simply an amorphous space within the heater body, the fluid to be heated must come into it, and after combining with the steam, the heated fluid must exit. Likewise, the fluid to be heated and the heated fluid must enter and exit the heater body. Thus, the heater body and the combining region will necessarily have inlets and outlets. However, the patent does not require separate inlets and outlets for both the heater body and the combining region. The inlets for the combining region may be the same as those for the heater body and likewise the same single outlet may be the outlet for the combining region and the heater body. Even if a separate structure is used for the combining region, such as a tube, as is made clear by the defendants' Exhibit 2, the boundaries of the inlet and outlet for the combining region are merely arbitrary divisions along the path the liquid to be heated flows. There is nothing to indicate that the patent requires
an inlet or outlet to be a structure; rather, the inlet and outlets of the combining region may nothing more than arbitrary distinctions along the path the fluid flows through the heater.

Having determined that "combining region" means the area within the heater body, which may or may not be a structure separate from the heater body, where the fluid to be heated mixes with the high pressure steam, the court shall now turn to the remaining disputed claims.

3. "combining the associate value and the additional parameter to determine motion control commands" (claims 9 and 23)

Omax proposes to construe this phrase to mean "a computerized, mathematical combination of the associated value and the additional parameter to determine motion control commands provided to the machine tool to automatically adjust velocity or acceleration to achieve the desired quality of result." Flow argues that the phrase should be construed to mean "the mathematical combination of the associated value and the additional parameter to calculate the velocity (U) for a segment. It is insolubly ambiguous as to how the patented system utilizes the resultant velocity (U) for the segment to determine the incremental instructions to be sent directly to the machine tool."

Flow's proposed construction of this claim term has many shortcomings. First, by describing the claim as "insolubly ambiguous," the construction renders the claim invalid, despite the existence of a valid, equally plausible interpretation of the claim term. Modine Mfg. Co. v. U.S. Int'l Trade Comm'n, 75 F.3d 1545, 1557 (Fed. Cir. 1996) ("When claims are amenable to more than one construction, they should when reasonably possible be interpreted so as to preserve their validity."), abrogated on other grounds, Festo Corp. v. Shoketsu Kinzoku Kabushiki Co., Ltd., 234 F.3d 558 (Fed. Cir. 2000) (en banc). Second, Flow arrives at its construction improperly by importing an embodiment described in the specification, the formula at col. 15, 1. 9, to limit the terms of the claim to only providing for velocity along a straight line. Phillips, 415 F.3d at 1323. Finally, Flow's proposed construction contradicts other claim terms, which claim a method that adjusts velocity and acceleration, for the purpose of, among other things, improving dimensional accuracy around corners and curves. See, e.g., '596 Patent, claim 13; see also, Phillips, 415 F.3d at 1316 (requiring clear, intentional disclaimer to limit claim term). The Court adopts Omax's proposed construction of this claim, which is consistent with its ordinary meaning.

C. Commensurate

Claims 1(d) and 2(d) disclose a first internal bore of the compression ring with a diameter that is "commensurate" with the first diameter of the outer wall of the cylindrical sleeve "for allowing the first end of said compression ring to extend over the first end of said cylindrical body member." The ordinary meanings of "commensurate" include "equal in measure or extent," "proportionate," "adequate" or "corresponding in size, extent, amount or degree." See July 25, 2003 Op. and Order, dkt. # 41, at 10 (citing Merriam-Webster Dictionary online and Oxford English Dictionary online). In the context of the claims, I concluded in the July 25 opinion and order that "commensurate" means "just slightly larger than the cylindrical sleeve" so that it can "slide over the cylindrical sleeve encasing the tubular post."

Defendant contends that the full definition of "commensurate" should be "just slightly larger." However, such a definition would be incomplete. At the very least, the meaning of commensurate requires that there be a relationship or correspondence between the two diameters. A definition of "just slightly larger" would eliminate any such requirement.

At the same time, I recognize that there are ways that two diameters could correspond besides a situation in which one is just large enough to slide over the other. Defendant takes this observation one step further, seizing on the language "to extend over" to argue that there is no limitation in claims 1(d) and 2(d) that the compression ring slide over the cylindrical sleeve. I agree with defendant that defendant the claims do not contain a sliding limitation, but I do not agree that the phrase "extend over" should be read in isolation. The claims describe a compression ring that extends over a sleeve that is
"deformable." The parties do not suggest that a "compression ring" is anything but what it sounds like, namely, a ring that compresses the cylindrical sleeve. There are a limited number of ways that the diameter of a compression ring could be commensurate with the diameter of the object it compresses or deforms. Accordingly, I construe the term "commensurate" to mean that the diameter of the first internal bore of the compression ring is "large enough to extend over the cylindrical sleeve while compressing the deformable rear end portion of the cylindrical sleeve." As plaintiff points out, this construction is consistent with each of the preferred embodiments in the specification, which all refer to the compression ring as being "press-fitted" or "securely-attached" to the cylindrical body member. See Pat. '194, col. 2, lines 48-49; id. at col. 7, line 54-55; id. at col. 10, line 1-3.

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Claims 1-7 of the '376 Patent and Claims 1-5 of the '661 Patent

First, Claims 1 through 7 of the '376 patent and Claims 1-5 of the '661 Patent describe the corner piece apparatus. Claims 1, 4, 6 and 7 of the '376 patent contain the limitation that "... said corner pieces each having a corner section and a pair of legs extending angularly from said corner section, said corner piece corner section and said legs having a common front planar surface portion and a common rear planar surface portion. ..." (Emphasis added). Similarly, Claims 1 and 4 of the '661 patent contain the limitation that "... said corner section and said legs having a common front planar surface portion and a common rear planar surface portion. ..."

The Court construes the language "common front planar surface portion" to mean that the corner piece corner section has a front surface in the same plane as the plane of the front surfaces of the legs which contact the inside front wall of the flange. The Court finds that surfaces displaced out of that common front planar surface, except surface displacements that result from normal manufacturing tolerances, are not surfaces in that plane.

Next, the Court construes the language "common rear planar surface portion" to mean that the corner piece corner section has a rear surface in the same plane as the plane of the rear surfaces of the legs. The Court finds that surfaces displaced out of that common rear planar surface, except surface displacements that result from normal manufacturing tolerances, are not surfaces in that plane.

This construction gives ordinary meaning to the terms used in the patent claims and is consistent with the prosecution history and patent specifications. 3 Also, this construction is consistent with Plaintiff Ductmate's August 16, 1983 amendments to the '376 patent claims. There, Ductmate amended certain claims and distinguished the '376 patent from the Smitka '094 patent. Ductmate argued that "that there is no disclosure in Smitka of a corner piece that has a corner section with a planar portion and a pair of legs extending angularly from the corner section in substantially the same plane as the planar portion of the corner section. ..." Id. With this argument, Ductmate is stopped from arguing for a construction that includes corner piece corner sections that are not in the same front or rear planar surface as the corner piece legs, as the Court has construed those terms. 4

--- Footnotes ---

3 See Webster's Third New International Dictionary (Unabridged 1993), defining relevant terms. "Plane" (noun) means "a surface such that the straight line that joins any two points lies wholly in that surface"; (adj.) "having no elevations or depressions." Id. at 1730.

4 See File History to the '376 patent, Amendment to Ductmate's '376 patent dated August 16, 1983 at 20.

--- End Footnotes ---

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8. Common Plane of Tangency
The parties request that the Court interpret "common plane of tangency" which appears in claims 1, 32, and 52 of the '486 patent and claim 23 of the '836 patent. Unilin states that "common plane of tangency" is "a plane that is tangent to a contact surface of the lower lip at a point of contact with a contact surface of the tongue." (Unilin Open. Br. 19.) Unilin states that the term is defined in the specification. (Id.)

Alloc posits that "common plane of tangency" should be defined as "the common plane which is shared by the contact surfaces when they are abutting up against each other when the panels are coupled together." (Alloc Initial Mem. 17.) Alloc indicates that the term is defined in the '486 patent specification, which states "the common plane of tangency L which is determined by the common tangent at the meeting point or area of surfaces 38-39, hereby forms an angle A sloping inwardly and downwardly from an outer region to an inner region relative to the underside 7, which angle is smaller than 90 [degree]." (Id. (quoting '486 patent, 6:60-63).)

The term "common plane of tangency" appears in claim 1 of the '486 patent as follows:

said cooperative contact surfaces defined respectively by said protrusion and said recess, and configured, when engaged in a cooperative relationship upon coupling in a common plane of two identical ones of said panel, to meet each other at a common plane of tangency that with respect to the lower lip is inclined at an angle other than 90 [degree] relative to the common plane of the coupled panels, said angle extending inwardly and downward from a distally outer location to a proximal inner location.

('486 patent, 14:18-26)(emphasis added.)

In discussing figures 5 through 7 of the '486 patent, the specification states: "the common plane of tangency L which is determined by the common tangent at the meeting point or area of surfaces 38-39, hereby forms an angle A sloping inwardly and downwardly from an outer region to an inner region relative to the underside 7, which angle is smaller than 90 [degree]." ('486 patent, 6:60-63.) 11 In discussing figure 9 of the '486 patent, the specification states "the common plane of tangency L forms an angle A which is smaller than 90 [degree], and more preferably is smaller than 70 [degree]." ('486 patent, 7:37-38.)

The relevant figures of the '486 patent and '836 patent, which diagram L, the common plane of tangency, and A, the angle, are included at pages 65 through 66 and 68 through 69 of this decision.

Claim 23 of the '836 patent states, in pertinent part:

wherein said locking elements comprise a protrusion extending from the lower side of a tongue of said pairs of edges and a cooperating recess in said lower lip, said protrusion and recess fitting together when ones of said panel are coupled by said tongue and groove; wherein, when a complementary tongue and groove are coupled, said protrusion and recess meet each other at contiguous contact surfaces at a common plane of tangency that with respect to a common plane of the coupled panels is inclined inwardly from a distally outer area towards a distally inner area at an angle less than 90 [degree].

('836 patent, 19:8-19)(emphasis added.) In discussing figures 5 through 7, the '836 patent specification states: "[t]he common plane of tangency L which is determined by the common tangent at the meeting point or area of surfaces 38-39, hereby forms an angle A sloping inwardly and downwardly from an outer region to an inner region relative to the underside 7, which angle is smaller than 90 [degree]." ('836 patent, 6:62:67.) In discussing figure 9, the specification for the '836 patent states: "[t]he common plane of tangency L forms an angle A which is smaller than 90 [degree], and more preferably is smaller than 70 [degree]." ('836 patent, 7:39-41.)"Tangency" is defined as the quality or state of being tangent. (Jt. App. Ex. 4 1205.) "Tangent plane" is defined as "the plane through a point of a surface that contains tangent lines to all the curves on the surface through the same point." (Id.) Unilin's suggested definition of the "common plane of tangency" is supported by the claims and is consistent with the specifications.
Alloc also indicates that the parties do not have "a substantive disagreement" on the meaning of the phrase. (Alloc Resp. Mem. 19.) Therefore, the Court construes the "common plane of tangency" as "a plane that is tangent to a contact surface of the lower lip at a point of contact with a contact surface of the tongue."

Before the Court are the parties' respective proposed constructions for the term "common surface" in U.S. Patents Nos. 6,394,138 ("'138 Patent") and 6,435,215 ("'215 Patent"). 1 Having considered the parties' respective submissions, the Court rules as follows.

1 Neither party suggests the construction of "common surface" should vary based on either the claim or patent in which it is contained.

The Court declines to adopt either party's proposed construction.

Ultra Clean Technology Systems and Service, Inc. ("UCT") proposes that "common surface" be construed as "an undivided, continuous area." Such proposed construction, however, is inconsistent with the patents's use of "common surface" in Claims 1 and 6 of the '215 Patent, each of which includes as a limitation a "bridging component having an inlet and an outlet accessing a common surface of the bridging component." See '215 Patent col. 12 ll. 33-35; id. col. 13 ll. 1-3. The specification provides, as examples of bridging components, "U-tube type bridge connectors, having long connector legs and short cross tubes connected together by Cajon elbows," see id. col. 4 ll. 19-21, and contains an illustration of a "jumper," in the shape of a U, with an inlet accessing the base of one leg and an outlet accessing the base of the other leg, see id. col. 8 ll. 61 - col. 9 ll. 20; id. Figs. 17, 18. In other words, a preferred embodiment of the invention has a "bridging component" with an inlet and outlet accessing a "common surface" that is not continuous and undivided. The Court finds no basis to construe the claims in a manner that would exclude such preferred embodiment. See Vitronics Corp. v. Conceptronic, Inc., 90 F. 3d 1576, 1583 (Fed. Cir. 1996) (providing claim construction that excludes preferred embodiment "is rarely, if ever, correct and would require highly persuasive evidentiary support").

Celerity, Inc. ("Celerity") proposes that "common surface" be construed as "one or more surfaces lying in a common plane." Celerity's proposed construction likewise is inconsistent with the patent's use of "common surface" in Claims 1 and 6 of the '215 Patent, each of which includes the following limitations: "a first manifold having an inlet and an outlet accessing a common surface of the first manifold" and "a second manifold having an inlet and an outlet accessing a common surface of the second manifold." See '215 Patent col. 12 ll. 20-21, 26-27; id. col. 12 ll. 55-56, 61-62 (emphasis added). Such limitations cannot reasonably be interpreted as including an inlet and outlet accessing multiple surfaces of a single manifold. Similarly, Celerity's proposed construction is at odds with the specification of the '138 Patent, which describes "the common surface for each of the respective adjacent manifold blocks." See '138 Patent col. 3 ll. 41-43 (emphasis added).

In determining the proper construction of "common surface", the Court focuses on the specification. See Phillips v. AWH Corporation, 415 F. 3d 1303, 1315 (Fed. Cir. 2005) (holding specification is "usually dispositive" in claim construction analysis). Here, although at least one preferred embodiment described in the specification of the '138 Patent includes a "manifold block" with an inlet and outlet accessing a "common surface," see '138 Patent col. 14 ll. 19-21, that is continuous and uninterrupted, see id. Fig. 3 (illustrating inlet and outlet accessing upper surface of manifold), the specification of the '215 Patent, as discussed above, discloses at least one preferred embodiment that includes a U-shaped bridging component with an inlet and outlet accessing a "common surface," see '215 Patent col. 12 ll. 33-35, that is divided, see id. Fig. 17 (illustrating inlet and outlet located on bottom surface of said U-shaped component).

Accordingly, the Court finds "common surface" is properly construed as "the same surface, which surface may be either continuous or divided." 2

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2 The Court previously construed the term "each manifold block having a fluid passageway with an entrance port and an exit port accessing only a common surface," see '138 Patent, col. 14 ll. 19-21, as "each manifold block having a channel or fluid passageway and an inlet and outlet on the same surface of the manifold block," (see Order Construing Claims, filed September 29, 2006, at 2:16-19.) In its opposition to UCT's claim construction brief, Celerity requests, for the first time, that the Court reconsider such construction, specifically, to eliminate "of the manifold block" from the construction. Because Celerity has failed to comply with Civil Local Rule 7-9, Celerity's request for reconsideration is procedurally improper. In any event, Celerity fails to offer an adequate explanation as to why its proposed revision is necessary. Accordingly, such request is hereby DENIED.

iv. "communicates with"

180s urges this Court to define "communicates with" as "provides access to." In contrast, Gordini seems to--again, based on its construction of "an opening that communicates with the receptacle . . ."--urge two constructions: "[allows] for something such as a wire or jack to pass through the port when the apparatus is worn by a user" and/or "[provides] continued, unimpeded access by the wearer during use to allow the user to connect and disconnect a device such as an iPod."

I construe "communicates with" as "provides access to." Again, "continued, unimpeded access by the wearer" is imprecise and unnecessary. See supra Section II.B.iii. In claim 1, "the opening . . . communicates with receptacle." That is, the "opening" must "provide access to" the "receptacle." Whether that access is "impeded" or "continuous" is irrelevant and extraneous.

A more difficult question is whether "communicates with" means "provides access to [the receptacle] . . . for something such as a wire or jack to pass through the opening." First, Gordini's argument that the doctrine of prosecutorial disclaimer is applicable here is unpersuasive. This doctrine precludes a patentee from "recapturing through claim interpretation specific meanings disclaimed during prosecution." See Omega Eng'g, 334 F.3d at 1323-26. To trigger this rule, the disclaimer must be unambiguous. Id. Even if this the doctrine does not apply, however, prosecution history is relevant intrinsic evidence for claim construction, though less so than the claim language or specification. See Phillips, 415 F.3d at 1313-17. The Patent Office initially rejected the '645 patent as anticipated by the Siskin headphones/ear warmer, U.S. Patent No. 6,888,950 ("Siskin Patent"). In response, to distinguish it from the Siskin Patent, 180s amended its claim to require that the opening be "disposed proximate the interior side of the frame." (Def.'s Mem., Ex. 14 at 3; Rebuttal Claim Constr. Brief of Pls. 180s, Inc. and 180s, LLC ("Pls.' Response") at 15.) Although not entirely clear, Gordini seems to argue that 180s, in amending the '645 patent and responding to its initial rejection, accepted "provid[ing] access for something such as a wire or jack to pass through" as the meaning of "communicates with." More specifically, 180s allegedly distinguished the '645 patent from the Siskin Patent by noting that the Siskin Patent has "an opening (110), through which the control portion (108) of the electronic component is extended," whereas the corresponding "opening" in the '645 patent is on the "interior" side of the frame. Accordingly, Gordini argues "180s explicitly argued . . . that the purpose of the claimed opening is to allow for components of the apparatus to pass from the interior to the exterior so that they are accessible to a wearer during use." Although 180s may have unambiguously disclaimed any embodiment in which the "opening" was not on the interior of the ear warmer, 180s did not unambiguously disclaim any definition of "opening" that lacked a wire or jack passing through.

The claim language also supports the "provides access to" construction. To be sure, the claim language--"an opening that communicates with the receptacle"--is ambiguous, and 180s perhaps should have used the clearer phrase "provides access to." Additionally, "communicates with" is not a widely accepted synonym for "provides access to," but implicates the idea of facilitating communication (such as electrical communication). However, "communicates with" is also not synonymous with "provides access to for something such as a wire or jack to pass through." More importantly, as 180s stressed at the Markman hearing, the configuration of the ear warmer's electrical components are discussed in a different section of claim 1. Two paragraphs after "communicates with," claim 1 reads:
[A] first electrical wire having a first end electrically coupled to the speaker and a second end including a connector, the connector being disposed proximate to the opening of the receptacle and configured to be electrically coupled to a second electrical wire disposed outside of a housing of the device associated with sound generation.

(Pl.'s Mem., Ex. B at col. 10, ll. 14-20.) Nothing suggests that the portion of claim 1 that includes "communicates with" was intended to provide guidance regarding the electrical configuration of the patent. If Gordini wants to limit the '645 patent to a certain electrical configuration, it must find such a limitation in the claim language that pertains to the electrical configuration. Lastly, there is extrinsic support for the "provides access to" construction. One dictionary definition--though the third and last listed--of "communicate" is "to open into each other; connect." See MERRIAM-WEBSTER ONLINE DICTIONARY, http://www.merriam-webster.com/dictionary/communicate.

B. Construing Terms in the 420 Patent

1. "[A]n aperture communicating between . . ." and a "second opening communicating between . . ."

"An aperture communicating between the housing drive surface and the recess" means an opening through the housing where the housing drive surface is aligned with the recess. A "second opening communicating between the concavity and the external reaction drive surface" means an opening through the housing where the housing drive surface is axially aligned with the recess.

The court's construction of the terms adopts those provided by NPI in the Amended Joint Claim Chart (Dkt. # 49).

For both terms, the claim language and specification do not exclude the possibility of more than one opening or aperture. First, both Claims 1 and 15 use the transitional phrase "comprising" in their respective preambles. "Comprising" is an open-ended term which creates a presumption that the invention is made up of at least as many elements as described. Gillette Co. v. Energizer Holdings, Inc., 405 F.3d 1367, 1371-73 (Fed. Cir. 2005) (holding that "comprising . . . a group of first, second, and third blades" in patent for safety razors encompassed a four-bladed razor). Moreover, the use of the article "an" before "aperture" in Claim 1 tends to suggest the possibility of more than one such opening. Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 977 (Fed. Cir. 1999).

Claim 15 assigns an ordinal to the aperture element: "a first opening on the surface [of the housing concavity] . . . and a second opening communicating between the concavity and the external reaction drive surface . . ." 420 Patent, col. 13, lines 4-6 (emphasis added). The court construes the numbering in this instance as merely differentiating between multiple references to an element; as such, the term "second" does not confine the claim to include only one such opening. See Innovative Props. Co. v. Avery Dennison Corp., 350 F.3d 1365, 1371 (Fed. Cir. 2003) ("use of the terms first' and second' is common patent-law convention to distinguish between repeated instances of an element" and should not necessarily be interpreted to impose a serial limitation on a claim).

Without intrinsic support, Palmetto argues for an additional limitation that the opening's "entire purpose" is to provide a direct connection between two surfaces. Palmetto Resp. at 5. The specification teaches, however, that the purpose of the aperture is to allow for a drive shaft to pass through, a point which Palmetto conceded at oral argument. 420 Patent, col. 4, lines 66-67; 420 Patent, col. 4, lines 28-31. There is no indication from the claim language or the specification that such
purpose must be met via a pathway that provides a direct connection between the housing recess and the external reaction drive surface. Both Claims 1 and 15 refer to an opening that simply communicates between two "aligned" surfaces. 420 Patent, col. 11, line 8; id., col. 13, line 6. Palmetto's dictionary definition appears to undermine its argument: "communication" is a "means of connecting different places, such as a door, passage, road, or railway." The Concise Oxford Dictionary 268 (9th ed. 1995). By this definition, an aperture could provide a means for connecting two surfaces via a direct pathway or a passage that spans two distant places. Accordingly, the court declines to adopt Palmetto's limitations.

767 (9) "Communicating with." To have a common part, to be connected, join.

2. said passageway communicating with said reservoir

The term "said passageway communicating with said reservoir" appears in claim 1 and claim 12. Chip-Mender contends that it means "said channel open to said reservoir." Sherwin-Williams asserts that it means "a passageway [28] from the reservoir [22] that separates this fluid storage body from the nib and that allows paint to flow from the fluid storage body to the upper part of the nib."

According to Chip-Mender, the parties originally agreed on the definition of "passageway" as "channel," but Sherwin-Williams changed its proposed construction back to the undefined "passageway." In its papers, Chip-Mender asserts that it is not important whether "passageway" is construed as "channel," or simply left as "passageway." At the hearing, counsel for Chip-Mender stated that "channel" and "passageway" are the same term.

Chip-Mender bases its proposed construction of "communicating with said reservoir" on the specification, including Figure 2, and on the language of claims 1 and 12. In particular, Chip-Mender argues that the "passageway" must be "open" to the "reservoir." Chip-Mender asserts that the specification makes clear that the paint flows from the reservoir through the passageway to the nib. See '299 patent, col. 2, ll. 7-12. Chip-Mender also contends that extrinsic evidence also supports this construction, citing an Internet dictionary definition of "passageway" as "a path or channel or duct along which something may pass."

In its opposition, Sherwin-Williams argues that the plain and ordinary meaning of "passageway" does not require a structure that is always "open," and that Chip-Mender's proposed construction is inconsistent with the other claim language and the specification. Sherwin-Williams bases its proposed construction on the description of Figure 2. See '299 patent, col. 3, 48-60. In particular, Sherwin-Williams notes that the "passageway… permits the paint composition to flow." Sherwin-Williams contends that because the upper part of the nib is shown as residing inside the passageway, the "passageway" depicted in Figure 2 is not always unobstructed and is therefore not "always open."

Sherwin-Williams argues that the term "said passageway communicating with said reservoir does not prohibit a flow regulator or valve in the passageway, based on the fact that the claims require that the passageway include a part of the nib, and also based on the specification, which depicts a passageway including a structure in the passageway that would restrict flow (the nib).

The court finds that "said passageway communicating with said reservoir" means "said channel open to said reservoir." According to the claim language and the specification, the paint flows from the reservoir to the nib through the passageway. See '299 patent, col. 5,II. 35-37; col. 6, II. 24-26; col. 2, II. 7-10, 27-30. Therefore, the passageway must at some point be "open to the reservoir." There is no requirement in the patent claims and specification that the passageway be "always open," just that it be "open" in the sense that "when a force is applied to the paint composition in the reservoir either by gravity or by squeezing the housing," the paint "flows from the reservoir to the passageway and outwardly from the housing at the nib." Id., col. 2,II. 7-10.
CLAIM 15

The parties have requested construction of essentially all of the language of the claim, other than the "engine," as follows:

15. A fuel delivery system for removing undesired components from fuel delivered from a fuel tank to an engine comprising, in combination: [issue # 1]

an engine;

initial fuel filter means for removing water from fuel received from the fuel tank; and [issue # 2]

secondary fuel filter means including vessel walls defining an interior chamber having an outlet in fluidic communication with said engine, an inlet in fluidic communication with said initial fuel filter means for receiving fuel containing an undesired gas from said initial fuel filter means, and a return line opening; [issue # 3]

a filter element dividing said chamber into an inlet side and an outlet side, and providing means for preventing substantially all undesired gas in said fuel from passing through said outlet, said preventing means including said filter element separating said inlet side from said outlet side and having substantially no openings having a greater dimension than about 25 microns passing from said inlet side to said outlet side, said return line opening communicating with said chamber on said inlet side to receive air and fuel therefrom; and [issue # 4]

a fuel return line communicating with said return line opening and said fuel tank for delivery of air and fuel to said fuel tank. [issue # 5]

Claim 15; Issue 5 - The Fuel Return Line

Defendants again suggest the word "communicate" be construed as a connection with regard to this final element, while Plaintiffs assert no further definition is necessary. Although it is hard for the undersigned to envision how the fuel return line could provide communication between the return line opening and the fuel tank without it being "connected to" such elements, others skilled in the art may envision such a method, and such a limitation is not necessarily required by the claim's usage of the word "communication." The Court therefore adopts the same meaning of "communication" as with issue # 4, above, which meaning is similar to that used with regard to other claims, namely, permitting transfer between elements. As such, the Court finds that one skilled in the art would understand the final element of Claim 15 to mean as follows:

"A fuel return line provides communication or transfer between the return line opening and the fuel tank for delivering air and fuel from the opening to the fuel tank."

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6. "commutator bar"

This term appears in Claims 1 and 16. Plaintiff proposed construction is "a bar or segment connected to an armature of a motor or generator, which may include a carbon block bonded thereto." Defendant asserts that the term need not be construed, but, alternatively, proposes a construction as follows: "rigid piece of metal used for the electrical connection to the moving part of a motor." Again, both parties cite general purpose dictionaries in support of their proposed constructions, and Plaintiff also cites a portion of the specification that refers to commutator bars that have "been covered with a block of carbon material." Buckingham Decl. at Ex. A, col. 2:31-40. Webster's New Collegiate Dictionary (cited by Plaintiff) defines
"commutator" as "a series of bars or segments so connected to armature coils of a dynamo [i.e., a motor or generator] that rotation of the armature will in conjunction with fixed brushes result in unidirectional current." Buckingham Decl. at Ex. C. Similarly, Webster's College Dictionary (cited by Defendant) defines "commutator" as "(in a DC motor or generator) a ring or disk assembly that works to change the frequency or direction of current in the armature windings." Pospis Decl. at Ex. J.

"Bar" is defined as "a relatively long, evenly shaped piece of . . . metal . . . for some mechanical purpose." Id. Further, "armature" is defined as "the rotating part of a dynamo." Taking into account these common understandings of the relevant terms, the Court shall construe "commutator bar" consistent with Defendants' proposed construction as "rigid piece of metal used for the electrical connection to the moving part of a motor."

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B. "Compacting" (claims 1 and 11)

Plaintiff's proposed construction:

Extrusion under pressure, pressure rolling, prilling or other techniques which compact the agglomerated material into a form which has some degree of structural integrity, and which, following drying, can maintain its shape or be comminuted appropriately.

Defendant's proposed construction:

Extrusion under pressure, pressure rolling, prilling or other techniques which compact the agglomerated material into a form which has some degree of structural integrity, and which, following drying, can maintain its shape or be comminuted appropriately.

It is necessary, regardless of the means of compacting, that the uncompacted precursor contain enough binder, surfactant, water absorber, and like compounds, to produce a product which can withstand the rigors of further comminution (when practiced), storing, without breakdown into fine particles. The flakes, prills, etc., which are produced must also be a limited period of time as is well known.

The parties agree that the term "compacting" should be construed to include the requirements described in a definition of the term located in the patent specification, '499 pat., col. 6, lns. 42-47, which is why each parties' construction includes an identical paragraph. However, defendant contends that elsewhere the specification sets additional requirements on "compacting," '499 pat., col. 4, lns. 15-21, which explains the second paragraph defendant proposes.

I will not adopt defendant's proposed construction because the additional limitation does not add anything to what is already required. The two independent claims, claims 1 and 11, require the mulch product to undergo agglomeration and compaction. The parties agree that agglomeration, which occurs before or simultaneously with compaction, involves a "treatment . . . effective to allow the compacted and dried material to have sufficient integrity to withstand subsequent comminution, storage and shipment without generating excessive fines." Def.'s Br., dkt. 22, at 4. (The term "excessive fines," as it is used, appears to mean "too many fine particles.") Thus, by agglomeration, the product will come to "withstand the rigors" described in defendant's proposed construction. Although the limitation defendant requests emphasizes that the product must "contain enough binder, surfactant, water absorber, and like compounds" to withstand the rigors, it does nothing to specify how much of these compounds is "enough" or explain the scope of acceptable "like compounds" such that it could be said to impose a limitation on the type of materials that may be present in the mulch product before compaction. The language defendant identifies is more of a throw-away statement intended to summarize what is required of "agglomeration" than an additional limitation on "compacting." Defendant's proposed construction will be rejected and plaintiffs' proposed construction will be adopted.

**Court's construction:**

Extrusion under pressure, pressure rolling, prilling or other techniques which compact the agglomerated material into a form which has some degree of structural integrity, and which, following drying, can maintain its shape or be comminuted appropriately.
(2) "comparing a reference value with a difference between a slow spinning speed and a fast spinning speed of the drum"

The parties also dispute the term "comparing a reference value with a difference between a slow spinning speed and a fast spinning speed of the drum," which appears in Claims 3 and 10. LG proposes construing the term to mean "comparing a reference value [i.e., a known value for measuring against] with a difference [i.e., change] between a slow spinning speed and a fast spinning speed of the drum." (Chart at 26.) Whirlpool proposes instead that the term be construed to mean "subtracting a slow measured drum speed from a fast measured drum speed and comparing the result with a standard value." (Id.)

According to the written description for Figures 5 and 6, "[t]he imbalance sensing operation is performed by calculating the difference between a speed X2 at which the drum spins fastest so that the laundry is placed on the top of the drum, . . . and the speed X1 at which the drum spins slowest so that the laundry is placed in the lower part of the drum, . . . and then comparing the calculated difference with a reference value in step 55S." ('731 Patent, col. 3, ll. 49-55.) Figure 5 shows this calculation in step 55S as "X[2] -X[1]>reference value."

The summary of the patent describes "a drying method for a drum-type washing machine, the method including the steps of . . . comparing a reference value with a difference between a slow spinning and a fast spinning speed of a drum . . . and based on a result of the comparing step, controlling a spinning operation of the drum." (Id., col. 2, ll. 44-53.)

Based on the patent's use of the term "difference" when describing the comparison of values X[1] and X[2], and its use of a subtraction calculation to describe the comparison performed, the Court agrees with Whirlpool that the term refers to the subtraction of the two values.

With respect to the terms "slow spinning" and "fast spinning," however, Whirlpool has failed to identify any intrinsic support for construing the terms to mean "slow measured" and "fast measured." With respect to Whirlpool's argument that the term "standard value" should apply, the Court also finds no basis to support that argument.

The Court will therefore construe the term "comparing a reference value with a difference between a slow spinning speed and a fast spinning speed of the drum" to mean "subtracting a slow spinning speed from a fast spinning speed of the drum and comparing the result with a reference value."

3. "Comparing" fluorescence polarization

After the polyionic compound has been added to the reaction mixture and differentially associates with either the first reagent or the reaction product, the patents instruct that the fluorescence polarization of the first and second mixtures be compared. Caliper proposes that the term "comparing" be construed as: "The fluorescence polarization of the mixtures, which may be determined directly or indirectly, is compared."

MDC proposes: "The fluorescence polarization of each of the two things being compared is measured, and the difference is calculated to provide a measure of the amount of product produced or first reagent consumed." The central dispute is whether both mixtures, before and after the reaction has occurred, must be measured and directly compared, or whether the comparing may be done indirectly, or against a known value.

It is quite clear that the patent instructs that the first mixture (which comprises a first reagent having a fluorescent label) is compared with the second mixture (the first mixture converted to the second mixture by the addition of a second reagent, to produce a fluorescently labeled product having a substantially difference charge than the first reagent). ('774 Patent at 29:13-23.) In Claim 20, the first fluorescently labeled reagent is compared with the second mixture. ('774 Patent at 30:20-
30.) Again, in Claim 50, the patent instructs to compare the first and second levels of fluorescent polarization. ("774 Patent at 33:4-34:4.) There is no indication in the claim language itself regarding the timing of the measurement of the fluorescent polarization values of the first mixture. The specifications indicate that it was contemplated that the measurement of the polarization value may be either an absolute quantitative measurement, "where one has to determine or is already aware of the P value for completely bound label and completely free label. Alternatively, . . . one can measure the pre-reaction and post reaction fluorescence polarization, using the difference between the two as an indication of the amount of product produced." ("774 Patent at 10:2-7.)

The clear language of the claim is broad enough to encompass both methods of comparing the fluorescent polarization values of the first and second mixtures. The claim language merely instructs to compare the values of the first and second mixtures, but does not indicate whether the value of the original reagent is known or must be measured during the same process. However, although the Court agrees with Caliper's understanding of the term "comparing," the Court will not adopt the construction Caliper proposes which ambiguously defines the claim term to instruct that the polarization values of the mixtures could be determined either "directly or indirectly." Instead, the Court adopts a modified construction of the term "comparing the fluorescence polarization in the second mixture relative to the first mixture" to mean: comparing the fluorescence polarization of emitted light from the second mixture with the fluorescence polarization of the emitted light from the first mixture, which may be either measured or may be a known value.

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1. "battery compartment"

Claims 1, 3, and 10 of the '571 Patent describe a "battery compartment." Philips asserts that this term should be construed as "a part of an enclosed space within the defibrillator case to hold the battery." Cardiac Science contends that this term should be construed as "a defined space for containing batteries."

Similar to its arguments regarding the electrode compartment of the '969 Patent discussed above, Philips asserts that the battery compartment needs to be enclosed. Cardiac Science notes that the unenclosed nature of the battery compartment is demonstrated by the fact that the battery compartment still remains a compartment even when the AED lid is open.

The specification states that "electrical power is provided by a rechargeable twelve volt lead-acid cartridge battery 80 and a nine volt battery 82 which are removeably positioned within the battery compartment and connected to power generation circuit 84." ("571 Patent at c. 3, ll: 13-16.) Cardiac Science is correct in asserting that neither the claim language nor the specification requires the battery compartment to be enclosed. Consistent with the Court's construction of the term "electrode compartment" discussed above, the Court construes "battery compartment" as "a section within the defibrillator case that contains the battery or batteries."

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3. "electrode compartment"

Claim 1 of the '969 Patent describes an "electrode compartment." Philips asserts that this term should be defined as "a part of an enclosed space within the defibrillator case to hold the electrodes." Cardiac Science contends that the term "compartment" is commonly understood and need not be construed. Alternatively, Cardiac Science asserts that the term should be construed as "a defined space for containing electrodes."

The heart of the parties' dispute is whether the space of the compartment needs to be completely enclosed or not. Philips asserts that the defibrillator case lid 28 encloses the electrode compartment in the '969 Patent. ("969 Patent at c. 2, ll: 26-33.) However, Cardiac Science maintains that the space need not be enclosed. Specifically, Cardiac Science asserts that the electrode compartment is still referred to as a compartment even when the lid is open, thus demonstrating that Philips' construction is inappropriate. (Id. at c. 2, ll: 26-29.) The dictionary definition could support either party's construction. Merriam-Webster's defines "compartment" both as "a separate division or section" and "one of the parts into which an
TheCourtfindsthatPhilips'proposedconstructionismisguided. The "enclosed space" to which Philips refers, if anything, isthatofthedefibrillatorcase. Evenfollowingthedictionarydefinitionof"compartment"thatPhilipsadvances, the electrode compartment would merely be a division of an enclosed space, that enclosed space being the defibrillator case. But the compartment itself need not be enclosed, as Cardiac Science is correct in asserting that the electrode compartment stillremainsa "compartment" even when the lid is open.

Withtheseconsiderationsinmind, theCourtconstrustheterm "electrode compartment" to mean "a section within the defibrillator case that contains the electrodes."

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C. "So as to Compensate for Thermal Expansion of Said Chip" and "To Compensate for Differential Thermal Expansion of the Chip and Substrate"

Tessera proposes that the meaning of both "so as to compensate" terms is "to appreciably relieve the thermally induced stresses (strains) caused by the difference in thermal expansion of the chip and the substrate." Samsung proposes that the "so as to compensate" term shouldmean "to neutralize or counterbalance thermal expansion." Joint Claim Construction Statement at B3:1-2. Samsung contends that its proposed construction should prevail because the ordinary meaning of "compensate" is to "neutralize or counterbalance." Joint Claim Construction Statement at B3:1-2; B5:2. However, the specifications of the '304 patent do not require "so as to compensate" to go so far as complete neutralization or counterbalancing. Tessera's proposed construction of appreciable relief is supported by the specification, which refers to the terminals "accommodating" thermal expansion. See '304 patent at 15:57; 20:47.

TheCourtconstrusthemeaningofboth "so as to compensate" terms to be "to appreciably accommodate the thermally induced stresses (strains) caused by the difference in thermal expansion of the chip and the substrate."

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1. Complementary Coupling Part

The first term to be interpreted is "complementary coupling part." The phrase appears in claims 1 through 3, 10, 23, 26 and 27 of the '836 patent. Unilin's proposed construction is "a part that cooperates with another complementary coupling part to connect two panels together in the vertical and horizontal directions." (Unilin's Open. Br. 12.) Alloc's proposed construction is "the parts by which the panels are connected cooperate with one another while the panels are connected." (Jt. Claim Constr. Charts, '836 patent chart 1.)

A representative use of the "complementary coupling part" appears in claim 1 of the '836 patent as follows: "said side edges including complementary coupling parts configured to cooperate with identical cooperative complementary coupling parts of another one of said panel." (836 patent, 13:62-64) 2 (emphasis added).

Footnotes

2 The citation format used throughout this opinion for the patents is that the number preceding the colon denotes the column and the number(s) following the colon denote(s) the line(s).

End Footnotes

In construing the phrase, the Court is to give the words the ordinary and customary meaning that would have been attributed to them by a person of ordinary skill in the art at the time the invention was made. Phillips, 415 F.3d at 1312-13. Such a person is deemed to have read the term in the context of the entire patent, including the claims themselves, the specification,
and the prosecution history. Id. at 1313.

The specification discusses the coupling parts in the brief summary of the invention as follows:

To this aim, the invention relates to a floor covering, consisting of hard floor panels which, at least at the edges of the two opposite sides, are provided with coupling parts, cooperating which each other, substantially in the form of a tongue and a groove, wherein the coupling parts are provided with integrated mechanical locking elements which prevent the drifting apart of two coupled floor panels into a direction perpendicular to the related edges and parallel to the underside of the coupled floor panels.

('836 patent, 2:17-25)(emphasis added.)

The parties are in apparent agreement that "coupling" means some form of "connect." However, neither definition suggested by the parties is entirely consistent with the principles of claim construction. Alloc's proposed construction adds the limitation -- while the panels are connected. The limitation is inconsistent with the language of the claim which states that such parts are "configured to cooperate" indicating that there is a passive element to the complementary nature of the part. Such limitation is contrary to the '836 specification which states that the coupling parts also cooperate with each other while they are in the process of being coupled. (See '836 patent, 5:37-38.)

Unilin's interpretation is consistent with the patent claims and specification but is circular because the definition uses the term -- complementary coupling part -- which it is intended to define. Complementary means "as forming or serving a complement: complete." Webster's II, New Riverside University Dictionary, 290 (Riverside Publishing Co. 1984). "Part" means "component." Id. at 856. Thus, the Court interprets "complementary coupling part" as meaning "a completing component that cooperates with another completing component to connect two panels together in the vertical and horizontal directions."

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A

Rail fasteners typically keep rails in place on railroad ties by exerting a downward force on the flange of a rail. The '898 patent is directed at an improved rail fastener which is able to exert both a horizontal force as well as a downward force on the rail. The additional horizontal force helps reduce "rail creep," or the tendency of the rails to move in the direction of the train's travel.

The claim at issue in the '898 patent is claim 1, which reads in relevant part:

A rail fastening system comprising an elastic rail clip, a clip holder adapted to hold the clip in position on the flange of the rail and a locking element being adapted to lie between the rail flange, the rail clip and the clip holder,

....

said clipholder having an external face complementary in shape with said locking element to provide a wedge-like interfitting, the complementary shape being in the form of a U wherein the corners of the U have a radius of curvature sufficient to provide a wedging action which translates said movement of said locking element into said lateral pressure and where each side of the U is inclined at an angle to the base of the U sufficient to provide a wedging action which translates movement of said locking element into said lateral pressure.

'898 patent, col. 3, line 43 - col. 4, line 20.

The following figures depict the claimed rail fastener from a side and top view, respectively:

GET DRAWING SHEET 1 OF 1.
In brief, claim 1 of the '898 patent calls for a "locking element" (7) that is held in place on the rail flange by an elastic rail clip (12). The rail clip, in turn, is held in a clip holder (15) which itself is anchored into the concrete rail tie. The downward force is produced by the rail clip bearing down on the locking element, which sits atop the rail flange. The additional horizontal force is produced when the locking element, with its unique wedge-shaped ends (8), is dragged by the "creeping" rail in one direction or another, thereby causing a "wedging" action to occur between the rail clip and the rail flange.

* * *

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With respect to the '898 patent, Pandrol concedes that if the district court was correct in construing the term "complementary" so as to require both the locking element and the clip holder to have faces in "the shape of a U with curved corners," then Airboss's accused locking element, having no curves, does not infringe. Hence, we must determine whether the district court's construction of "complementary" was in fact correct.

Pandrol urges us to adopt a construction of the term "complementary" that would simply mean "a shape that accomplishes the function specified in the claim." Specifically, Pandrol argues that infringement should turn on "whether the accused [locking element] provides the lateral force that reduces rail creep." Under this construction, any conceivable shape would suffice, so long as the "wedging action" is produced. This construction is too broad.

The fact that the patentee chose to include the term "complementary" in the claim language must be given due significance. Perhaps, the term by itself does not require that the two faces be congruent, but at the very least, it indicates that the inside face of the locking element should bear some resemblance to the outside face of the clip holder. The actual claim language refers to the clip holder's outside face as "being in the form of a U wherein the corners of the U have a radius of curvature sufficient to provide a wedging action . . . ." '898 patent, col. 4, ll. 12-15. As noted by the district court in its claim construction order, this language indicates that a "complementary" locking element would at least have "a shape that is rounded to fit the clip [holder]." Pandrol II, slip. op. at 5. Hence, we hold that the district court did not err when it construed claim 1 so as to require both the locking element and the clip holder to possess "the shape of a U with curved corners."

Since Pandrol concedes that the accused locking element does not have curved corners, the accused device does not fulfill the requirement that the locking element be "complementary" with the clip holder.

2. The "Complementary Processing Head" Limitation

Semitool also argues that the district court erred by construing the "complementary base head" limitation in the '310 patent to require that the head and the bowl form a single unitary structure when in the closed position because neither the ordinary meaning of the word "complementary," the specification, nor the prosecution history support that interpretation. Novellus responds that Semitool did not raise this argument before the district court and therefore waived it on appeal.

Even assuming that Semitool failed to argue the meaning of the "complementary processing head" limitation to the district court, the court did construe that limitation, and in light of the continued vitality of the patent and the public interest in clarifying the scope of the claims, we exercise our discretion to review the district court's construction of that limitation. We agree with Semitool that the district court erred in its interpretation. It is undisputed, and in fact was so determined by the district court, that the head and the bowl in both patents do not form a "gas-tight" seal. Semitool I at 19. Thus, the head and the bowl cannot be said to form a "single component" when in the closed position. Rather, as taught in the '310 and '708 patents, the head is only "complementary" to the extent that, when lowered into the closed position, it forms a seal with the bowl that is sufficiently closed to permit effective gas processing. We therefore interpret the "complementary processing head" limitation to be synonymous with the "substantially closed" limitation, which does not require the head and the bowl to form a single component when in the closed position.
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B.

On appeal, defendants also challenge the district court's construction of the term "complete hermetic seal" in the limitation of claim 12 relating to a "flexible circular diaphragm." As seen, the court construed this term to mean "a seal that does not require any additional parts to retain nearly or largely all of the air in the bed." Markman Order, 2004 U.S. Dist. LEXIS 1202, at *16-17. Defendants argue that the court's construction of "complete hermetic seal" is inconsistent with the specification because the specification indicates that the language "complete hermetic seal" relates to the quality of the seal and not its mechanical completeness. They argue in addition that the prosecution history expressly indicates that the phrase "complete hermetic seal" refers to the degree of sealing, so a complete hermetic seal is one that is "impervious to air." Aero responds that the district court did not err in construing "complete hermetic seal" in claim 12 to mean that the valve does not require any additional parts to form a seal. It urges that the court's construction is not inconsistent with the specification and that the term "complete hermetic seal" was added during prosecution to distinguish prior art that required additional parts to form a seal, such as a lid.

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7 Defendants assert that there would be no infringement under their proposed claim construction of "complete hermetic seal"--namely, a seal that is "impervious to air"--because the accused Intex device leaks some air and thus is not "impervious to air."

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - -
the one-way valve provides a "substantially hermetic seal." Second, it explains to the reader how that "substantially hermetic seal" comes about: specifically, by air pressure causing a region of the outer surface of the diaphragm to become engaged against the valve seat. In other words, the claim language tells one of skill in the art the manner in which the claimed "substantially hermetic seal" is accomplished. While defendants' argument would have been squarely foreclosed had the inventor referred to "a completed hermetic seal," we are not prepared to hold that the inventor's less-than-perfect wording undermines the claim construction that emerges from the otherwise clear language of claim 12. We also think the district court was correct when it stated that interpreting the claimed seal as being a seal that does not allow any air to leak through would render the term "substantially" illusory. Markman Order, 2004 U.S. Dist. LEXIS 1202, at *16; see Merck & Co. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005) A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.

In sum, the claim language supports the district court's construction that "complete hermetic seal" means "a seal that does not require any additional parts to retain nearly or largely all of the air in the bed." Markman Order, 2004 U.S. Dist. LEXIS 1202, at *16-17.

We are not persuaded by defendants' argument that the district court's claim construction is at odds with the specification and the prosecution history. The specification requires little discussion. Referring to Figure 3 above, it simply states that, "[w]hen air has been placed within the mattress 10 under modest pressure, . . . and air pressure is removed from inflation input 322, the pressure of air in the mattress 10 urges the diaphragm 34 against valve seat 36 and produces a positive seal against the exit of air from the mattress." '726 patent, col.4, ll.12-18. This language does not, in any way, suggest that the seal of claim 12 must be "complete" in terms of being air-tight.

Turning to the prosecution history, the '726 patent issued from U.S. Patent Application No. 992,814 ("the '814 application"), which was filed on December 16, 1992, as a continuation-in-part of U.S. Patent Application No. 384,786 ("the '786 application"). As originally filed, independent claim 12 of the '814 application required a "substantially hermetic seal":

An inflatable bed comprising:

an inflatable bed having an interior and an inflation input;

a one-way valve disposed between the interior and the inflation input providing a substantially hermetic seal under low pressure conditions, such valve including:

a passageway having a generally circular cross section and a first end in communication with the interior and a second end in communication with the inflation input;

a circular lip, disposed peripherally in the passageway and protruding radially inward, having a first surface generally facing the interior, defining a valve seat; and

a flexible circular diaphragm, having an inner surface generally facing interior and an outer surface facing away from the interior, mounted for axial movement in the passageway away from and against the valve seat in respectively open and closed positions of the valve, so that an outer annular region of the outer surface of the diaphragm engages, against the valve seat when the valve is in the closed position.

(Emphasis added). Claim 12 and dependent claims 13 through 15 of the '814 application were rejected under 35 U.S.C. § 103 as being obvious in view of U.S. Patent No. 4,579,141, which issued to Heino Arff ("the Arff patent"). 8 The Examiner explained that it would have been obvious to a person of ordinary skill in the art to use the check valve taught by the Arff patent:

Arff shows a filling and discharge valve used for an inflatable body that comprises an annular flange . . . that includes a cylindrical portion . . . upon which a cap . . . can be screwed. A passage is defined through the flange which receives a spring loaded check valve . . . that includes an annular diaphragm . . . . The diaphragm rests against an annular sealing face defined by an annular sealing ring . . . . Note that the lower end of the sealing ring is defined by an annular surface that faces down and into the inflatable body, the valve diaphragm rests against this face to form the seal. While the Arff valve is used upon an inflatable boat, it is clear that its use is not so limited. Since it is well known in the art to use a one way check valve similar to Arff's upon an air mattress, it would have been obvious to one of ordinary skill in the art [to] use the specific check valve taught by Arff upon an air mattress.
In response to this rejection, the inventor amended claim 12 so that it reads, in its present form, as follows:

An inflatable [bed] body comprising:

- an inflatable bladder having an interior and an inflation input;
- a one-way valve disposed between the interior and the inflation input providing a substantially hermetic seal under low pressure conditions, such valve including:
  - a passageway having a generally circular cross section and a first end in communication with the interior and a second end in communication with the inflation input;
  - a circular lip, disposed peripherally in the passageway and protruding radially inward, having a first surface generally facing the interior, defining a valve seat; and
  - a flexible circular diaphragm, having an inner surface generally facing the interior and an outer surface facing away from the interior, mounted for axial movement in the passageway away from and against the valve seat in the respectively open and closed positions of the valve, so that (i) the act of inflation of the bladder under low pressure is sufficient to cause axial motion of the valve into the open position to permit the large influx of air and (ii) following inflation of the bladder, air pressure created in the interior the bladder by inflation thereof causes an outer annular region of the outer surface of the diaphragm to be urged into engagement against the valve seat to provide a complete hermetic seal when the valve is in the closed position; and
- stiffening means for reducing flexing of the diaphragm except in its outer annular region.

(Bracketed material removed, underlined material added). Aero explained that claim 12 had been amended to "claim the subject matter of the invention more distinctly." It also explained that claim 12 "as amended now requires stiffening means for reducing flexing of the diaphragm except in its outer annular region." Aero asserted that the amendment was supported by the specification. The Examiner thereafter issued a Notice of Allowance.

As seen, the term "complete hermetic seal" was added to claim 12 after a rejection based on the Arff patent. However, the Examiner did not cite the Arff patent against claim 12 because of the quality of the seal in claim 12. The inventor explained that claim 12 was being amended, in light of the Arff patent, to require a stiffening means. There is nothing in the prosecution history to suggest that claim 12 was being modified to add a requirement for a completely hermetic seal. Thus, contrary to defendants' argument, the language "complete hermetic seal" was not added to distinguish the Arff patent based on the limitation of a seal that is completely impervious to air, as defendants urge. In short, the prosecution history does not support defendants' claim construction argument.
material of the skirt, said skirt being completely free with respect to the pan with the exception of a ring which joins only the top edge of the skirt to the top edge of the pan and to which the latter is attached, said ring being of heat-insulating material which is continuously resistant to the temperature of the top edge of the pan.

13. The specification of the '312 Patent describes the metal pan spaced from the plastic skirt with at least three points of contact between the metal pan and the plastic skirt: a heating element, a thermostat, and the stabilizing connection at the bottom. Those elements are discussed in the text and shown in the drawings.

14. Claim 8 of the '312 Patent, which relates to independent claim 1, recites, in part, "the base of the pan has a vertical rod engaged in an opening formed in the base of the outer skirt and separated from the rod by a sleeve of heat-insulating material which affords resistance to the temperature of said rod."

15. The prosecution history of the '312 Patent shows that the phrase "completely free with respect to the pan" in claim 1 means that the skirt is thermally insulated from the pan with an air gap, not that it is free from any other contacts with the pan:

   . . . the skirt 3 is practically free with respect to the pan 1 or in other words that no thermal bridge is created between the pan and the skirt . . . .

16. In connection with the prosecution of the '312 Patent, SEB did not change the original language of the claims in any material respect. In the prosecution history, SEB distinguished the "cool wall" invention from a cited Onishi patent, which shows the use of the adiabatic (insulating) material between the pan and the skirt. That discussion had essentially nothing to do with the presence or absence of a thermally insignificant stabilizing element.

    *    *    *

33. SEB is likely to succeed on the merits because that test is met here: the accused product contains each element of claim 1 of the '312 Patent. Consequently its use and sale in the United States infringes the patent.

34. Montgomery Ward and Pentalpha, in essence, argue that the accused product does not infringe claim 1 because its skirt is not "completely free with respect to the pan" as stated in claim 1. Claim 1 recites in part:

   . . . said skirt entirely surrounding the lateral wall (1a) and the base (1b) of the pan and being separated from said wall and said base by an air space (4) of sufficient width to limit the temperature of the skirt (3) . . . . said skirt (3) being free with respect to the pan (1) with the exception of a ring (5) which joins only the top edge (3a) of the skirt to the top edge (1c) of the pan and to which this latter is attached, said ring (5) being of heat-insulating material . . . .

35. According to the '312 Patent, there are other points of contact between the skirt and the metal pan, such as a heating element, a thermostat and a stabilizing element at the bottom. These points of contact do not create the thermal bridges, which the patented invention seeks to prevent. Defendants contend, nonetheless, that the bottom of the fry pan is stabilized to the bottom of the skirt and, therefore, is not "completely free with respect to the pan." The intrinsic patent evidence, however, does not permit this claim interpretation.

36. When properly construed, claim 1 cannot mean that the skirt has no connection with the pan other than the heat-resistant ring. The specification of the '312 Patent unambiguously describes at least three other points of contact: a heating element, a thermostat, and a stabilizing connection at the bottom. Those elements are discussed in the text and shown in the drawings. According to defendants, claim 1 should be construed in a manner that would exclude the embodiment of the invention shown in the specification itself. This asserted claim construction is not correct. See Hoechst Celanese Corp. v. BP Chemicals Ltd., 78 F.3d 1575, 1581 (Fed. Cir. 1996), cert. denied, 519 U.S. 911, 136 L. Ed. 2d 198, 117 S. Ct. 275 (1996); Burke Inc. v. Bruno Independent Living Aids, Inc., 183 F.3d 1334, 51 U.S.P.Q.2D (BNA) 1295, 1300 (Fed. Cir. 1999).

37. The prosecution history confirms that the phrase "completely free with respect to the pan" means that the skirt is thermally insulated from the pan with an air gap, and not that it is free of any other contacts with the pan:

   . . . the skirt 3 is practically free with respect to the pan 1 or in other words that no thermal bridge is created between the
pan and the skirt.

38. Moreover, a connection between the skirt and pan is recited in dependent claim 8. Thus, it is clear that the claims of the '312 do not exclude all connections between the skirt and the metal pan.

39. This intrinsic patent evidence constitutes the public record on which competitors rely to determine the scope of the patented invention. Vitronics, 90 F.3d at 1577. Competitors who read the '312 Patent, look at its drawings and review its prosecution history, will learn that the claims cover a plastic skirt that is thermally insulated from the metal pan. They will understand that thermally insignificant contacts from the heating element, the thermostat and any stabilizing element do not create thermal bridges, and the appearance of these elements in a deep fryer does not remove it from the scope of the claimed invention. Defendants' asserted claim construction seeks to change the unambiguous public record, in violation of the principles of claim construction. Markman, 52 F.3d at 980-81.

40. Thus, SEB is likely to prove at trial that the Admiral deep fryer infringes at least claim 1 of the '312 Patent.

41. In addition to literal infringement, infringement may exist under the doctrine of equivalents, which applies where the differences between the claimed invention and accused device are insubstantial. Hilton Davis Chemical Co. v. Warner-Jenkinson Co., Inc., 62 F.3d 1512, 1517 (Fed. Cir. 1995).

42. Independent claim 1 is to be construed to cover the embodiment of the invention shown in the specification and drawings, which includes a vertical stabilizing rod which extends from the metal pan through an insulating sleeve into the plastic skirt.

43. The phrase "completely free with respect to the pan," as recited in claim 1 of the '312 Patent, means that the outer plastic skirt is thermally insulated from the hot oil frying pan. In other words, claim 1 means there are no thermal bridges between the skirt and the pan. Claim 1 of the '312 Patent covers a deep-fat fryer with a thermally insulated stabilizing element at the bottom of the hot oil pan.

III.

As a threshold matter, this court needs to address a claim construction issue. The district court, as a part of its preliminary injunction order in 1999, construed the limitation "completely free with respect to the pan" in claim 1 to mean "there are no thermal bridges between the skirt and the pan." Preliminary Injunction Opinion, 77 F. Supp. 2d at 405. A thermal bridge is an element that conducts heat. As a matter of context, this court notes that a vertical stabilizing screw secures the skirt of Pentalpha's fryer to the base of the pan. This screw, however, is not a thermal bridge. Thus, the stabilizing screw does not preclude the conclusion that the skirt is "completely free with respect to the pan" under the district court's claim construction. But if "completely free" means instead "no solid material between the pan and the skirt," as Pentalpha contends, then the stabilizing screw absolves Pentalpha's deep fryer of infringement.

This court, of course, reviews claim construction without deference. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1455-56 (Fed. Cir. 1998) (en banc). This court's prior affirmance of the district court's preliminary injunction order does not make the district court's claim construction in its 1999 opinion the law of the case. See Int'l Commc'n Materials, Inc. v. Ricoh Co., 108 F.3d 316, 319 (Fed. Cir. 1997) (claim construction for a preliminary injunction is not definitive "without the more complete record that the district court deemed necessary to its own final decision"). The words of a claim receive the meaning discernible by a person of ordinary skill in the art who has read the entire patent, including the specification, at the time of the invention. Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc). The claims themselves, both asserted and unasserted, govern the meaning of claim terms. Id. at 1314.

This court perceives a slight internal inconsistency with the district court's claim construction of "completely free" in the phrase "said skirt (3) being completely free with respect to the pan (1) with the exception of a ring (5)." The claim requires the ring to be "heat-insulating" and "continuously resistant to the temperature of the . . . pan." Thus, the ring is not a thermal bridge. If "completely free" merely meant "no thermal bridges between the skirt and the pan," the claim would not need to
exclude expressly the ring from the completely free limitation.

Despite this minor inconsistency, the district court's construction of "completely free" rings true. Claim 8 of the '312 patent, which depends from claim 1, adds an insulated stabilizing screw between the base of the pan and the base of the skirt. '312 patent col.6 ll.19-24. With this context, a person of ordinary skill in the art would not read the "completely free" limitation of claim 1 to mean "no solid material between the pan and the skirt" because that reading would not allow for the vertical rod of claim 8. See Phillips, 415 F.3d at 1314 ("Differences among claims can . . . be a useful guide in understanding the meaning of particular claim terms.").

Moreover, the only embodiment in the specification includes solid material between the pan and the skirt, namely, the vertical rod, id. at col.3 ll.55-65, as well as a thermostat attached to the base of the pan, id. at col.4 ll.3-7. "[A] construction that would not read on the preferred embodiment would rarely if ever be correct and would require highly persuasive evidentiary support." Chimie v. PPG Indus., Inc., 402 F.3d 1371, 1377 (Fed. Cir. 2005) (internal quotations and alterations omitted). Thus, with the preferred embodiment showing a vertical stabilizing screw, the "completely free" limitation cannot be read so broadly as to exclude this preferred embodiment.

Finally, the specification repeatedly highlights the inventiveness of eliminating thermal bridges to prevent heat transfer to the plastic skirt. For example, the specification notes that in the prior art, "the attachment of the metal pan within the plastic skirt is such that numerous thermal bridges exist between said pan and said skirt." '312 patent col.1 ll.38-40. Those thermal bridges required the skirt to be "formed of [costly] plastic material." Id. at col.1 ll.41-42. Following the theme of preventing heat transfer, the specification discusses a thermostat between the pan and the skirt but emphasizes its placement "remote from the base 21 of the skirt 3 of plastic material in order to prevent any thermal bridge which would be liable to heat this plastic material to an excessive extent." Id. at col.4 ll.3-8. Thus, the patent stresses that eliminating thermal bridges is not the same as eliminating any solid material.

Read in light of the entire specification and with an eye to the preferred embodiment, then, the term "completely free" means "practically or functionally free." Indeed, the specification uses the terms "completely" and "practically" interchangeably. Compare '312 patent col. 1 ll.65-66 ("Said skirt is completely free with respect to the pan . . ."). (emphasis added) with id. at col. 4 ll.28-35 ("[I]n addition to the fact that the skirt 3 is practically free with respect to the pan 1 or in other words that no thermal bridge is created between the pan and the skirt, this latter can be fabricated from inexpensive ordinary-grade plastic material, which does not afford resistance to high temperatures.") (emphasis added). This court often assumes that different terms convey different meanings. Symantec Corp. v. Computer Assocs. Int'l, Inc., 522 F.3d 1279, 1289 (Fed. Cir. 2008). That assumption, however, carries less weight when comparing a term in the claim to a term in the specification, especially where, as here, the specification only describes one embodiment. Cf. id. ("[T]here is nothing in the claims, the specification or the prosecution history that suggests that the preamble language 'as it is being transferred' has any different meaning than [the claim term] 'prior to storage.'").

Pentalpha supplies some evidentiary support for its proposed construction, but that support is not "highly persuasive" or sufficient to overcome the meaning that embraces the preferred embodiment. During prosecution of the '312 patent, the examiner rejected the proposed claims as anticipated by or obvious over U.S. Patent No. 4,672,179 ("Onishi"). Onishi discloses a rice cooker with the side walls of the pan and the side wall of the skirt separated by an adiabatic material, or a material that does not gain or lose heat:

[SEE FIG IN ORIGINAL]

Onishi at Fig. 1, col.2 ll.49-53.

To distinguish Onishi, the applicant stated

in ONISHI . . . , the two walls 1 and 3 are separated by an adiabatic material 2 (whose nature is not specified) whereas in the case of the present invention, the outer plastic skirt 3 is completely free with respect to the pan 1 with the exception of a ring 5. This means that the space comprised between the skirt 3 and the pan 1 is entirely occupied by air and that there is no solid material therebetween.

A-119 (emphasis added). Pentalpha argues that SEB thereby narrowed the claim limitation "completely free" during
prosecution and that the doctrine of prosecution disclaimer should preclude the district court's construction. See N. Am. Container, Inc. v. Plastipak Packaging, Inc., 415 F.3d 1335, 1346 (Fed. Cir. 2005) ("[W]e have previously explained that limitations may be construed to exclude a preferred embodiment if the prosecution history compels such a result.").

Contrary to Pentalpha's contentions, however, this court interprets this prosecution history as consistent with the district court's claim construction. As noted, this also allows this court to account for the only embodiment provided in the '312 patent's specification. Thus, read in context, the applicant's reference to "no solid material" refers only to the volume between the sides of the pan and skirt. As the quote from the prosecution history reveals, the applicant was only addressing the lack of "adiabatic material" in his invention to distinguish the Onishi reference. Indeed the applicant could not have intended his comment to preclude any solid material between the base of the pan and the base of the skirt because both Onishi and his own invention include a vertical stabilizing element.

Thus, this court does not read the prosecution history to alter or disclaim the district court's interpretation of the claim language. Pentalpha's attempt to create a disclaimer simply stretches this prosecution history too far. At most, the prosecution statement requires "completely free" to mean "no solid material between the sides of the pan and the sides of the skirt and no thermal bridges between the base of the skirt and the base of the pan." The additional precision of this construction would also avoid the slight internal inconsistency of excepting the ring from the "completely free" limitation. In any event, this court detects no reversible error in the district court's claim construction.

B. Claim Construction

Old Town argues in the alternative that JMOL of noninfringement was wrongly entered because the district court erred in its construction of the limitation "after coalescence of the third charge is completed." Although Old Town maintains that coalescence is a process that encompasses stages 1 through 5 of the Nugent diagram, Old Town urges that "coalescence can be completed by bringing the process 'to a halt.'" Old Town argues that because a dictionary definition includes "brought to an end" as a definition for "complete," the "completion of coalescence" limitation does not necessitate that coalescence reach its optimal state, but includes other stages at which an operator brings the process to a halt, such as stage 4 of the Nugent diagram, so long as a usable product is produced.

Confluence counters that Old Town admitted to the district court that coalescence is a process that ends at optimal stage 5 of the Nugent diagram, and that Old Town's proffered construction here attempts to define "complete" as "not complete." Confluence argues that the district court correctly held that the limitation requires the plastic laminate to reach the end of coalescence, that is, its optimum state at stage 5.

We begin our claim construction analysis with the words of the claim, which are generally given their ordinary and customary meaning. Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc) (citation omitted). Claim 9, the only independent claim at issue in this appeal, recites:

A rotational molding method for making a laminated plastic boat hull in a mold assembly mold cavity, comprising:

rotating the mold assembly containing the first charge of particulate thermoplastic material within the mold cavity within an oven heated to a temperature to coalesce the first charge along the cavity wall to form a first layer;

releasing into the mold cavity a second charge of a particulate thermoplastic material that includes a blowing agent while continuing rotation of the model assembly within the oven;

continuing such mold assembly rotation within the oven until the blowing agent foams and the second charge coalesces along the first layer to form a second layer;

releasing into the mold cavity a third charge of particulate thermoplastic material while continuing rotation of the mold assembly within the oven;
removing the mold assembly from the oven prior to the completion of the coalescence of the third charge;

air cooling the mold assembly after removal of the mold assembly from the oven while continuing mold assembly rotation during continued coalescence of the third charge;

opening the mold assembly after coalescence of the third charge is completed while continuing to air cool the mold assembly so as to expose the mold cavity to cooling air.

'963 patent, col. 8, ll. 18-46 (emphasis added).

In Phillips, we held that

there is no magic formula or catechism for conducting claim construction. Nor is the court barred from considering any particular sources or required to analyze sources in any specific sequence, as long as those sources are not used to contradict claim meaning that is unambiguous in light of the intrinsic evidence. For example, a judge who encounters a claim term while reading a patent might consult a general purpose or specialized dictionary to begin to understand the meaning of the term, before reviewing the remainder of the patent to determine how the patentee has used the term. The sequence of steps used by the judge in consulting various sources is not important; what matters is for the court to attach the appropriate weight to be assigned to those sources in light of the statutes and policies that inform patent law.

Phillips, 415 F.3d at 1324 (internal citations omitted). In construing the claim terms in this case, the district court began its analysis by referring to dictionary definitions presented by the parties. The district court's reference to the dictionary was not an improper attempt to find meaning in the abstract divorced from the context of the intrinsic record but properly was a starting point in its analysis, which was centered around the intrinsic record consistent with Phillips. The consulted dictionary definitions of "coalesce" include: (1) 1: to grow together . . . : unite by growth into one body . . . 2 a: to unite or join together into one body or product; become integrated into a whole. Webster's Third New International Dictionary (1971); (2) to combine into one body or to grow together. The Phillips Petroleum Glossary of Plastic Terms (4th ed. 1965); (3) 1: to grow together or into one body . . . 2: to unite so as to form one mass, community, etc . . . 3: to blend or come together . . . 4: to cause to unite in one body or mass. The Random House Dictionary of the English Language (2d ed. 1987). The consulted dictionary definition of "completion" is: having all necessary parts, elements, or steps; brought to an end; fully carried out. See Claim Construction Order, slip op. at 8-9.

The claim does not state explicitly whether the completion of coalescence means that the plastic particulate must reach its optimum state. However, the written description provides guidance in describing coalescence as being complete when it reaches an optimal state as opposed to when the process is brought to a halt. It states that "[d]uring such early portion of the cooling time, the mold cavity remains closed and coalescing of the third charge continues. Inside layer 16 formed by the coalescing third charge will be intimately joined with insulating layer 14." '963 patent, col. 6, ll. 7-11. Layers 14 and 16 are "tightly interconnected at their respective interfaces by virtue of the rotational molding process." Id., col. 5, ll. 9-11. The written description further describes the invention with reference to and as an improvement over the coalescence process shown in U.S. Patent No. 3,936,595 (filed May 3, 1974) ("the '595 patent"). The '595 patent describes the coalescing charge as initially adhering to the heated mold surface (i.e., forming an uneven layer) and thereafter coalescing into a continuous skin element. The '595 patent uses "coalescence" to include the process that follows the particles adhering to the mold wall, i.e., the process following the formation of a layer. It describes the process as a transformative one in which particles adhering to the mold surface (i.e., forming an uneven layer) progress to a point where the particles have become united to form a skin-like state (i.e., optimum stage 5). This supports the conclusion that one of ordinary skill in the art would understand the ordinary and customary meaning of coalescence to refer to a process that evolves beyond the point at which a layer is first formed, which marks not the completion of coalescence, but the start of the transformation of the particulate material from discrete particles to a consolidated layer. This is also consistent with the dictionary definitions, which indicate that "coalescence" is "completed" when the layer formed by the particulate is united to possess all necessary parts, elements, or steps, i.e., when it reaches its optimal state.

Nothing in the written description suggests that to achieve the stated objects of the invention, namely to shorten the time of the molding cycle and to reduce warping problems, coalescence could or should be stopped at some unspecified point prior to the optimum conclusion of the process. Indeed, the written description teaches that the molding time is not reduced by stopping coalescence prior to its completed state, but rather by removing the mold from the oven prior to the completion of...
coalescence and keeping the mold cavity closed to allow coalescence to continue to completion. '963 patent, col. 3, ll. 34-40. The written description also teaches that warping problems are reduced by providing a "cooling headstart" while coalescence continues to completion. Id., col. 4, ll. 39-45. As the district court found, if coalescence were complete merely because a layer had been formed, the mold assembly would be opened prematurely and that would produce an unusable part. See Claim Construction Order, slip op. at 8-9.

The prosecution history supports the conclusion that completion of coalescence means progress of coalescence to the optimum state as opposed to being brought to a halt at an arbitrary point by operator intervention. Originally, claim 1 recited that cooling was concurrent with coalescence, but did not specify whether coalescence would reach a point of completion. Concerned whether coalescence would continue to completion while the mold is cooling (versus come to a halt by virtue of the mold having been removed from the oven), the examiner rejected the pending claim. In response, the applicant amended claim 1 to require that cooling be concurrent with the completion of coalescence. The examiner also rejected claim 1 because "the times of removal and the temperature conditions are indeterminent [sic] and not understood." In response, the applicant argued that the removal times and temperature conditions "are matters within the ordinary skill in the art." The applicant stated that the understanding of those skilled in the art is illustrated in the '595 patent, which describes coalescence as a process that begins with particulate material, '595 patent, col. 7, ll. 15-21, "and [is] progressively formed into a skin," id., col. 8, ll. 19-21. Similarly, the applicant argued that U.S. Patent No. 3,455,483 (filed Nov. 3, 1964), also cited as prior art, uses "coalesced" to refer to a process that produces a "coherent fused layer of required thickness."

From the foregoing discussion of the written description and prosecution history, we conclude that the district court's constructions of "coalescence" and "complete" are correct and do not cover a process of coalescence that fails to reach optimum stage 5. Old Town is not entitled to a claim construction divorced from the context of the written description and prosecution history. See Nystrom v. Trex, Co., 424 F.3d 1136, 1145 (Fed. Cir. 2005) ("In the absence of something in the written description and/or prosecution history to provide explicit or implicit notice to the public -- i.e., those of ordinary skill in the art -- that the inventor intended a disputed term to cover more than the ordinary and customary meaning revealed by the context of the intrinsic record, it is improper to read the term to encompass a broader definition simply because it may be found in a dictionary, treatise, or other extrinsic source."). Nothing in the context of the intrinsic record explicitly or implicitly indicates that one of ordinary skill in the art would consider coalescence to be complete before the particulates have fully melted, flowed together, become cross-linked, and reached optimum stage 5. Thus, there is no basis to conclude that one of ordinary skill would have understood completion of coalescence, as used in claim 9, to mean anything other than reaching an optimum stage. See Phillips, 415 F.3d at 1316 ("The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." (citation omitted)).

We reject Old Town's argument that the completion of coalescence would include instances where coalescence is brought to an end through intervention to produce a product that is other than at its optimum stage. That definition would sweep within the scope of the claims points during coalescence that are beyond the ordinary meaning of the expression "completion of coalescence" and that find no support in the intrinsic record. For the foregoing reasons, we affirm the district court's construction that "coalescence" is "complete" when the process of forming a uniform, homogeneous body has all necessary parts, elements or steps, or is fully carried out, i.e., the layer formed from the particulate reaches its optimum state.

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A. "Compliance Structure."

The disputed term "compliance structure" was recited in claims 1, 2, 3, 16, and 17 of the patent in suit. It recited (col. 16:50-17:19):

1. An improvement in a bundle breaker for separating bundles from a log having a generally planar top surface, said log including a plurality of sheets each having a generally planar top surface and each sheet is formed with at least one weakened line, said weakened lines are vertically aligned in said log forming a weakened plane in said log, said bundle breaker including a first conveyor for conveying said log and having an upstream end for receiving said log and a downstream end, and a second conveyor having an upstream end positioned immediately adjacent to said downstream end of said first conveyor providing a gap therebetween defining a bundle breaking plane, said bundle breaker including first
clamp means mounted for vertical reciprocating movement above said first conveyor, and second clamp means mounted above said second conveyor and said second clamp means mounted for conjoint pivotal movement in relation to said bundle breaking plane for progressively breaking a bundle from said log along said weakened plane in said log, said improvement comprising:

a. a first compliance structure mounted on said first clamp means including,

(1) a first fluid pressurized structure having a first flexible member presenting a first engagement area for operative engagement with an upstream portion of said generally planar top surface of said log and on the upstream side of said weakened plane in said log; and

b. a second compliance structure mounted on said second clamp means including,

(1) a second fluid pressurized structure having a second flexible member presenting a second engagement with a downstream portion of said generally planar top surface of said log and on the downstream side of said weakened plane in said log.

Plaintiffs propose that "compliance structure" should mean "a structure that deforms to allow for a more uniform distribution of force." Defendant disagrees. Originally it argued that it should mean "a structure composed of deformable material that yields to changes in pressure and distributes substantially equal force across the structure."

Defendant concedes that the points of disagreement are actually quite small. In its opposition brief, defendant departs from the claim construction it proposed in the prehearing statement. According to defendant, both sides agree that the compliance structure is made of deformable material, and defendant says that it is willing to accept the second portion of plaintiffs' construction -- "allow for a more uniform distribution of force" -- and abandon its requirement that the force exerted by the compliance structure be substantially uniform. Defendant now proposes the construction "a structure composed of deformable material that yields to changes in pressure and allows for a more uniform distribution of force." The word "material" cuts a large figure in defendant's proposal.

Leaving aside the propriety of amending proposed constructions at this late stage, plaintiffs have a number of objections to this new construction. Looking at the claims, claim 1 describes the compliance structure as having a "fluid pressurized structure having a first flexible member presenting a first engagement area for operative engagement" with the log (col. 17:6-10). Claim 3 recited further that "said first and second compliance structures respectively having first and second fluid pressurized structures for engaging a plurality of logs in side by side relation with at least one log having a height greater than at least one other log" (col. 17:30-34). These claims indicate that the compliance structure can deform in shape to put pressure on logs of different heights simultaneously. This is consistent with the invention's stated purpose -- modifying the clamp means to secure logs of different heights at the same time. The specification taught that "the present invention can reliably process a plurality of side by side logs . . . which are of substantially equal height . . . when one or any number of logs have a different height" (col. 8:21-25).

Defendants' proposed construction, as originally expressed, would exclude one of the patentee's preferred embodiments because it would require the entire compliance structure to be made of deformable material. * One preferred embodiment taught a compliance structure that was formed of a flexible member attached to the downward extension of an upper rigid wall (col. 8:51-60). Clearly, this preferred embodiment did not entirely consist of deformable material since the upper wall is rigid. Additionally, nothing in the specification required that the compliance structure be made entirely of deformable material. Defendant so conceded at the hearing.

* "A claim construction that excludes a preferred embodiment . . . is rarely, if ever, correct." Sandisk Corp. v. Memorex Prods., Inc., 415 F.3d 1278, 1285 (Fed. Cir. 2005) (internal quotations omitted).

Defendant then proposed that the construction should make clear that the compliance structure need not be made entirely of
deformable material, so long as some of the structure was made of deformable material (like rubber). The problem is that although something within the compliance structure has to deform, it is far from clear that anything must be made of deformable material. A structure can be made of entirely of say, steel, and still be flexible, as in a tank tread that deforms to the earth. Even with the eleventh-hour caveat that the compliance structure need not be made entirely of deformable material, adding that requirement would not be helpful to the trier of fact. The functional construction proposed by plaintiffs is sufficient here to capture the need for the compliance structure to deform under pressure.

Accordingly, the term "compliance structure" is held to mean "a structure that deforms to allow a more uniform distribution of force."

F. Compliant

Tessera proposes that "compliant" means "ready, disposed, or likely to yield." Samsung advances that "compliant" means "a material with low elastic modulus that easily yields to an applied force." Joint Claim Construction Statement at B1:13-15. The essential difference between the parties' proposed constructions is that Samsung's construction includes "low modulus" material. Tessera's does not. The specification of the '977 patent describes one embodiment of a compliant material as having a low Young's modulus. '977 patent at 17:40-42. Young's modulus is a measure of elasticity. However, the specification describes another embodiment as a material with holes. Id. at 4:2-5; 4:31-36. Thus, the claim term "compliant" does not require a particular elasticity. The Court construes "compliant" to mean "yielding to an applied force."

Compliant, Compliant Layer, Compliant Material

The term "compliant" appears in the intrinsic record several times to describe materials or layers of materials with differing functions, and the parties have developed sharply divergent constructions as a result of the term's broad use. Tessera suggests that "compliant" should be defined as, "yielding to applied force," but Defendants argue that Tessera's definition is unhelpful because all materials in the universe yield to applied force, and submit that "compliant" should be defined as, "[a] layer/material, such as soft rubber, that can be appreciably compressed in the direction toward the chip sufficient to accommodate tolerances in typical semiconductor components and test equipment."

The Court finds that Tessera's construction would not provide sufficient guidance to a juror struggling to understand "compliant." See Sulzer 358 F.3d at 1366. If all known materials yield to an applied force, the term compliant provides no limitation and is effectively read out of the patent, rendering its presence superfluous and potentially confusing to a jury. See Curtiss-Wright Flow Control Corp v. Velan, Inc., 438 F.3d 1374, slip op. at 9 (Fed Cir. 2006) (rejecting a construction so broad as to render the limitation "nearly meaningless"). In addition to being unhelpful and possibly confusing, Tessera's construction is simply a modified dictionary definition, which after Phillips, is suspect in cases where the ordinary meaning of the claim language is not readily apparent to those not skilled in the art. Phillips, 415 F.3d at 1314; see also Brown v. 3M, 265 F.3d 1349, 1352 (Fed. Cir. 2001). Here, the meaning of the term compliant is not readily apparent because the patentee has used the term idiosyncratically and the Court must look to the claims, specification, and prosecution history to determine what a person skilled in the art would understand compliant to mean. Phillips, 415 F.3d at 1314; Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111, 1116 (Fed.Cir. 2004).

However, arriving at an appropriate and reasonably precise construction of compliant is not easily done because the construction must be exclusive enough to be helpful while successfully accommodating the myriad of uses of the term in the patents in suit. For example, a compliant layer can facilitate movement of the terminals in a parallel or perpendicular direction with regard to the chip (ITC Order at 154; '977 Specification at 7:57-61; '977 Patent Figure 3); a compliant encapsulate allows the flexible lead to facilitate the movement of the terminal relative to the chip as the interposer buckles and wrinkles during thermal cycling (‘977 Specification 11:13-17); compliant material may include elastomers or elastomeric material (Id. at 17:40-42, '977 Claim 3), a compliant layer may incorporate adhesives (Id. at 22:1-2) or be
incorporated by a flexible sheetlike element (‘977 Claims 1-2), and compliant materials can even include intermittent holes (‘977 Claim 4). Tessera's construction does not exclude any of these uses, but its wording is overly broad and unhelpful.

Although much of Defendants' construction is unnecessary and confusing, the concept that compliance requires compressibility is born out by the intrinsic evidence. Despite their differences, both parties' constructions embrace the idea that a compliant material or layer must yield because compliance is closely related to movement, and the Court agrees that this concept is at the heart of compliance. After reviewing the intrinsic evidence, the Court finds that compliance necessarily requires compressibility in a direction perpendicular to the substrate's surface.

Tessera disputes that compliance necessarily implies compressibility, and points out that the 977 specification provides for a "compliant, compressible layer." 977 Prosecution History, 10:43-44. If compliance necessarily implied compressibility, Tessera argues, "compressibility" would not have been included. Further, 627 Claim 4 provides, "[a] chip assembly as claimed in claim 1, wherein said dielectric element includes a compliant layer of a low modulus material, said compliant layer being disposed beneath said terminals," and Claim 7 provides, "[a] chip assembly as claimed in claim 4, wherein said compliant layer is formed from a compressible foam." When a dependent claim contains a limitation, a presumption arises that the limitation was not present in the independent claim. Phillips, 415 F.3d at 1314-1315; Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004). However, "that presumption can be overcome if the circumstances suggest a different explanation, or if the evidence favoring a different claim construction is strong." Medrad, 358 F.3d 910. Here, claim 7 adds the additional limitation of specifying the type of compliant material -- namely foam. Thus, Tessera's claim differentiation argument is without merit. Moreover, in this case, the evidence favoring a different construction is sufficiently clear to overcome any presumption and Tessera's reference to a "compliant, compressible layer" in the 977 specification.

Specifically, the Defendants highlight evidence from the prosecution of the parent application to the patents-in-suit and a divisional of that parent application whereby Tessera repeatedly defined that materials and layers are compliant because they deform by compressing in the direction perpendicular to their surfaces. For example, Defendants point to the prosecution history and specification of a divisional of the parent to the patents in suit, U.S. Patent No. 5,346,861 ("the 861 patent"). In Tessera's Response to the PTO distinguishing the Saito reference, it expressly defined compliant as, "compressible in the directions perpendicular to its first and second surfaces." App. No. 865,984 -- 10/26/92 Amendment and Response at 8. See also, App. No. 673,020 -- 1/10/92 Amendment and Response at 10-11 (explaining to the examiner that an ordinary sheet of note pad paper, placed atop the examiner's desk, was flexible, but not compliant because it was not appreciably compressible to forces applied perpendicular to its surface.). The 861 patent specification further provides that, "soft materials and foams provide a highly compliant interposer, i.e., an interposer which is readily compressible in the directions perpendicular to its surfaces and which therefore permits movement of the terminals in these directions." 861 Specification 14:40-46.

Defendants' evidence is express and on point, and the claims and specification require the same conclusion. It is clear that compliance is inextricably intertwined with movement, and that while compliant materials and layers can be flexible, they must be appreciably compressible in order to facilitate movement by some means other than just flexibility. Based on a thorough reading of the patents in conjunction with the express guidance in the prosecution history regarding compressibility, the Court is of the opinion that compliance necessarily implies compressibility, and construes a compliant layer/material to mean, "a layer/material that is appreciably compressible in a direction perpendicular to its surface."
Nothing in claims 1, 6 or 7 dictates a particular shape; instead, these claims demonstrate that the shape is defined by the function. To the extent other shapes would satisfy the functional specification (i.e., to the extent shapes other than those shown in the figures are "complimentary cross sectional shapes" that close "by pressing the bottom of the elements together first and then rolling the elements to a closed position toward the top thereof") those shapes fall within the scope of the '143 Patent. This conclusion is supported by claim 8, which is dependent on claim 7. Claim 8, unlike the other claims, does specify a particular shape for at least one of the elements: it discloses "[a] plastic reclosable fastener according to claim 7 wherein said groove element comprises a straight projection and a hook-shaped projection . . . ." U.S. Patent No. 5,007,143 at col. 8, lines 20-22 (emphasis added). To read the shape requirement into claim 7, the independent claim, would render claim 8 redundant in part, and we are unwilling to adopt such a construction. See Robotic Vision Systems, Inc. v. View Engineering Inc., 189 F.3d 1370, 1376 (Fed. Cir. 1999). See also Karlin Technology, Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999) (under doctrine of claim differentiation, limitations stated in dependent claims are not to be read into independent claim from which they depend) (citing Transmatic, Inc. v. Gulton Industries, Inc., 53 F.3d 1270, 1277 (Fed. Cir. 1995)). Accordingly, the Court finds that claims 1, 6 and 7 cover elements of any shape as long as they satisfy the function articulated in those claims.

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1. "[C]omponent: 1 "A single- or multiple-part structure having a cross-section in the shape of a triangle or wedge." This construction is consistent with the claims as well as the specification. (col. 2:21-23; col. 3:33; col. 4:41) The court finds no support for defendant's proposed construction requiring the component to be "solid." Defendant also seeks to limit this construction according to one embodiment of the invention which requires the component to have a hardness no greater than the hardness of the wiper strip. (col. 3:27-28) However, such an interpretation would render superfluous the hardness limitation of dependent claim 6, which requires that the component have "a hardness which is no greater than a hardness of said [] wiper strip." Moreover, in its traversal of Ludwig, the patentee explained the hardness relationship of these two items, noting that the wiper strip and the component "can have different hardnesses, which on the other hand they must not necessarily have as well." (D.I. 162 at JA00190-91)

--- Footnotes ---

1 '974 patent, claim 1 (and dependent claims).

--- End Footnotes ---

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B. "Composite"

Defendant asks the Court to construe "composite" primarily for purposes of contrasting the term "integral." However, "composite" does not require construction. In Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 2004), the court noted: "If . . . the body of the claim fully and intrinsically sets forth the complete invention, including all of its limitations, and the preamble offers no distinct definition of any of the claimed invention's limitations, but rather merely states, for example, the purpose or intended use of the invention, then the preamble is of no significance to claim construction because it cannot be said to constitute or explain a claim limitation." Such is the case here. The preamble to claim 1, where "composite" is found, adds nothing to the description of the invention claimed. Therefore, "composite" need not be construed.

--- Footnotes ---

4 The noun "composite" is defined by The Oxford Dictionary of English as "made up of several parts or elements" or, with respect to constructional material, "made up of recognizable constituents." This does not offer contrast to the construction of "integral." In fact, it supports the construction given by the Court. The claimed invention is a composite consisting of an
insulation roof board member (which itself has components: a main portion, and a top portion consisting of blocks) and a hard protective top layer.

A Group I comprises four patents, each of which includes claims to a polymer and wood fiber composition. The patents are: U.S. Patent Nos. 5,827,607 ("the '607 patent"); 5,932,334 ("the '334 patent"); 6,015,611 ("the '611 patent"); and 6,015,612 ("the '612 patent"). The four patents each contain claims to compositions in the form of a pellet, claims to compositions in the form of a linear extrudate, and claims to a "composite composition" without an explicit form limitation. Andersen concedes that the Fiberon products do not infringe any of the claims containing explicit pellet or linear extrudate limitations; thus, only the composite composition claims are at issue in this case.

A representative example of the asserted claims is claim 19 of the '334 patent, which provides as follows:

19. A thermoplastic composite composition, capable of extrusion into a dimensionally stable structural member, which consists essentially of a thermoplastic composition which comprises:

   (a) a continuous phase comprising a polyvinyl chloride homopolymer;

   (b) an effective amount of wood fiber having a minimum width of 0.1 mm and an aspect ratio of greater than about 1.8 to provide structural properties to the composite;

   (c) about 0.01 to 25 wt % of an intentionally recycled impurity comprising thermoplastic polymer, an adhesive, a paint, a thermoplastic resin or mixtures thereof; and

   (d) less than about 10 wt % water;

   wherein the polyvinyl chloride homopolymer and wood fiber are mixed at elevated temperature and pressure such that an intimate admixture is formed and the wood fiber is dispersed throughout the continuous thermoplastic polyvinyl chloride homopolymer phase and the composite has a Young's modulus of at least about 600,000 psi.

The relevant claims of the '607 and '611 patents similarly claim a "composite composition, capable of extrusion into a dimensionally stable structural member," while the '612 patent claims a "thermoplastic polymer composite composition capable of formation into a structural profile or member." The parties agree that the term "composite composition" has the same meaning in all four patents.

After considering the claim language, the specification, and the prosecution history, the district court determined that "composite composition" means "a solid pellet or a solid linear extrudate, which may subsequently be remelted and extruded to make a structural member." We agree with that construction. While nothing on the face of the asserted claims states that the term "composite composition" is limited to a mixture that is in pellet or linear extrudate form, the specifications make clear that the term, as used in the Group I patents, must be construed to be limited in that manner.

The asserted claims all recite that the "composite" or "composite composition" must have certain properties and be capable of extrusion into a structural profile or member. The common specification of the four Group I patents, which differs only slightly from patent to patent, describes how those properties are achieved. The specification explains that the claimed properties are attributable to the reduction of water content in the polyvinyl chloride and wood fiber composition and the "intimate mixing" of the components. The required "intimate mixture" is achieved, according to the specification, "by extrusion of the polyvinyl chloride and wood fiber composite through an extrusion die resulting in a linear extrudate that
can be cut into a pellet shape.” '607 patent, col. 4, ll. 45-47; ’334 patent, col. 5, ll. 6-8; ’611 patent, col. 4, ll. 38-40; ’612 patent, col. 4, ll. 39-41. As the specification explains:

During the pelletizing process for the composite pellet, the polyvinyl chloride and wood fiber are intimately contacted at high temperatures and pressures to insure that the wood fiber and polymeric material are wetted, mixed, and extruded in a form such that the polymer material, on a microscopic basis, coats and flows into the pores, cavity, etc., of the fibers. The fibers are preferably substantially oriented by the extrusion process in the extrusion direction.

'607 patent, col. 3, ll. 54-61; ’334 patent, col. 4, ll. 15-22; ’611 patent, col. 3, ll. 47-54; ’612 patent, col. 3, ll. 49-56. The composition, which is in pellet or linear extrudate form, is then remelted and re-extruded to produce the desired structural members. The specification explains that in the manufacturing process,

[T]he successful manufacture of structural members for windows and doors requires the preliminary manufacture of the polyvinyl chloride wood fiber composite in the form of a pellet wherein the materials are intimately mixed and contacted in forming the pellet prior to the extrusion of the members from the pellet material. We have found that the intimate mixing of the polyvinyl chloride, wood fiber, and waste in the manufacture of the pellet process with associated control of moisture content produces a pelletized product that is uniquely adapted to the extrusion manufacture of PVC/wood fiber components and achieves the manufacture of a useful wood replacement product.

’607 patent, col. 3, ll. 1-13; ’334 patent, col. 3, ll. 30-42; ’611 patent, col. 2, line 62, through col. 3, line 7; ’612 patent, col. 2, line 65, through col. 3, line 10. Although the specification generally refers to the process of pelletization and the use of pellets in the later extrusion step, it makes clear that the formation of pellets is convenient but not necessary, and that the linear extrudate from which the pellets are normally cut can be used without pelletization in the later extrusion step. See ’334 patent, col. 1, ll. 40-43 (“Alternatively, the extruded thermoplastic mass, in the form of a [sic] elongated linear extrudate without a pelletizing step, can be immediately directed after formation into an extruder or injection molding apparatus.”); ’612 patent, abstract (same). 1

1 Andersen argues that the statement that a pelletizing step is not required proves that the patent is directed to a composite composition unlimited to any particular form. A fair reading of that passage, however, indicates that it merely refers to the possibility of re-extruding the linear extrudate without first cutting it into pellets. Moreover, the quoted material supports the district court's claim construction by emphasizing that the thermoplastic mass must be extruded in pellet or linear extrudate form, thus implicitly excluding all other forms. The same answer applies to Andersen's argument based on the reference in the specification to "the composition material or pellet," '607 patent, col. 6, line 27; ’612 patent, col. 6, line 33, and to the pellet form as "preferred," '607 patent, col. 2, line 55. In context, it is clear those statements simply reflect that the extruded composite composition may be in either pellet or linear extrudate form.

Contrary to Andersen's contention, the district court's construction of the Group I claims as limited to compositions in pellet or linear extrudate form does not impermissibly limit the invention to particular embodiments. The district court did not construe the Group I claims to be limited to "composite compositions" in the pellet and linear extrudate forms on the ground that those are the only disclosed embodiments. Rather, the court construed the claims in that way because the patents use the term "composite composition" restrictively and state that the step of extruding the composite in pellet or linear extrudate form is "require[d]" in order for the composite composition to be capable of extrusion into a structural member having the claimed physical properties.

The Group I common specification repeatedly states that the steps of linear extrusion or pelletization are not merely embodiments, but are essential features of the claimed composite composition. For example, the specification of the ’334 patent states that "[t]he invention relates to a composition comprising a polymer and wood fiber composite that can be used in the form of a linear extrudate or thermoplastic pellet to manufacture structural members.” ’334 patent, col. 1, ll. 10-13; see also ’607 patent, abstract ("The composite can be used in the form of a linear extrudate or a thermoplastic pellet to manufacture structural members."); ’612 patent, abstract (same); ’611 patent, abstract ("A composition in the form of pellets
comprising a thermoplastic and wood fiber composite material suitable for forming structural members as a replacement for wood in the manufacture of doors and windows.”). The invention, according to the specifications, "relates to the use of polyvinyl chloride and wood fiber composite materials with a controlled water content in the form of a pelletized material wherein the wood fiber is intimately contacted and wetted by the organic materials." ‘607 patent, col. 3, ll. 11-15; ‘612 patent, col. 3, ll. 14-18.

The portions of the specification that describe how the physical properties of the claimed composite composition are obtained make clear that the formation of linear extrudates or pellets is not merely a preferred embodiment, but is a critical element in the process that produces those properties. See ‘607 patent, col. 3, ll. 1-7 ("[T]he successful manufacture of structural members for windows and doors requires the preliminary manufacture of the polyvinyl chloride wood fiber composite in the form of a pellet wherein the materials are intimately mixed and contacted in forming the pellet prior to the extrusion of the members from the pellet material.") (emphasis added); ‘334 patent, col. 3, ll. 30-36 (same); ‘611 patent, col. 2, line 62, through col. 3, line 1 (same); ‘612 patent, col. 2, line 65, through col. 3, line 4 (same). Those statements are not descriptions of particular embodiments, but are characterizations directed to the invention as a whole. As such, they make clear that the term "composite composition," as used in the Group I patents, does not encompass broader subject matter. See Phillips v. AWH Corp., 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc) ("[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess."); Microsoft Corp. v. Multi-Tech. Sys., Inc., 357 F.3d 1340, 1348 (Fed. Cir. 2004) (statements in common specification serve to limit claim language because they "are not limited to describing a preferred embodiment, but more broadly describe the overall inventions of all three patents"); Alloc, Inc. v. Int'l Trade Comm'n, 342 F.3d 1361, 1370 (Fed. Cir. 2003) ("[T]his court looks to whether the specification refers to a limitation only as a part of less than all possible embodiments or whether the specification read as a whole suggests that the very character of the invention requires the limitation be a part of every embodiment.").

Andersen argues that the Group I specification cannot be read to require that the composite composition be extruded in linear extrudate or pellet form, because on several occasions the specification refers to the invention as a "composite material," without adding any reference to the linear extrudate or pellet form. See, e.g., ‘612 patent, col. 1, ll. 14-29. That argument is unpersuasive, however, as the term "composite material" is just a synonym for "composite composition," and the use of that alternative term in the "Field of the Invention" portion of the specification is not inconsistent with the restrictive definition provided in the body of the specification where the invention is described in more detail.

2

The district court's claim construction finds additional support in the prosecution history. The Group I patents all stem from continuations based on U.S. Patent Application Serial No. 07/938,364 ("the '364 application"). The prosecution history of that parent application is highly instructive in light of the similarity between the claims of the application and those of the patents in suit. See Masco Corp. v. United States, 303 F.3d 1316, 1324 (Fed. Cir. 2004) (prosecution history of a parent application "may be considered in construing claim terms"); Biovail Corp. v. Andrx Pharmns., Inc., 239 F.3d 1297, 1301 (Fed. Cir. 2001) (claim language "must be read consistently with the totality of the patent's applicable prosecution history," including parent applications); see also Microsoft Corp., 357 F.3d at 1349; Elkay Mfg. Co. v. Ebo Mfg. Co., 192 F.3d 973, 980 (Fed. Cir. 1999) ("When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same limitation.").

The '364 application contained all three types of claims (pellet form, linear extrudate form, and "composite composition" form), and the language of the application claims is nearly identical to the language of the claims that eventually issued in the Group I patents. Responding to the examiner's rejection of all three types of claims, the applicants repeatedly distinguished the invention from the prior art by referring to the pellet form or the pelleting process as an essential part of the invention. For example, the applicants distinguished two prior art references by relying heavily on the role of pelleting in the claimed invention:

The invention resides in part in a thermoplastic composite pellet. The invention also resides in a vinyl chloride polymer and wood fiber composite material, with a controlled water content, in the form of a thermoplastic pellet, wherein the wood fiber is intimately contacted and wetted by the thermoplastic polymer. The moisture control combined with the intimate contact and wetting between the components in the pelleting process and other pellet characteristics ensures high quality physical properties in the extruded composite material after manufacture. . . . Applicant's invention comprises a pellet . . . .
The applicants further distinguished one of the two cited references by noting that it "does not teach the pelletizing of the composite material," while the claimed invention "first pelletizes the thermoplastic composite material, and then, manufacturer[sic] a structural member from the pelleted materials by melting and extruding the composite. Thus, [the reference] does not teach or suggest the manufacture or composition of the thermoplastic pellet materials of the Applicant's invention."

The applicants subsequently filed a continuation application, U.S. Patent Application Serial No. 08/224,396 ("the '396 application"), which is also common to all four Group I patents. Again, responding to a rejection of all three types of claims, the applicants distinguished their invention by stating (emphasis added):

[N]one of [the cited] prior art teaches the manufacture of a pellet intermediate between mixing the polyvinyl chloride and wood fiber and the final manufacture of a finished composite member. The manufacture of the pellet intermediate in this process, provides the opportunity to obtain an intimate mixing of a thermoplastic and fiber. The manufacture of the pellet is important in obtaining the final structural properties of the composite member... Applicants assert that the combination of the selection of polyvinyl chloride, the critical selection of particle size and aspect ratio, the water content and preparation of the pellet by ensuring that the polymer wets and penetrates the fiber and the fiber pores, results in a structural material with mechanical properties significantly superior to the prior art materials.

Throughout the prosecution of the Group I patents, the applicants continued to distinguish the claimed inventions from prior art references in the same manner. Thus, in the prosecutions leading to the patents at issue in this case, the applicants variously characterized their invention (including claims that referred only to the composition), by stating that the invention consists of "a resin and fiber composite thermoplastic pellet," that the invention "resides in a material that is a thermoplastic pellet," that the "recited invention is a composite thermoplastic pellet," and that the "manufacture of the pellet is important in obtaining the final structural properties of the composite member."

Those statements serve to limit the scope of the applicants' claimed subject matter. The statements about pelletizing were global--they applied to all the claims of the patent--and thus they served to limit all the claims.

3

Andersen challenges the district court's form-limited claim construction of the Group I claims on several additional grounds. First, Andersen argues that the court's construction violates the doctrine of claim differentiation. That doctrine is based on "the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope." Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999). "To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant." Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987).

Andersen argues that because the Group I patents claim pellets, linear extrudates, and composites (or composite compositions), the third category must be assumed to be different from the first two, and thus the composite composition claims must not be limited to pellets and linear extrudates. That inference would be a plausible one in the absence of evidence to the contrary, but here there is powerful evidence to the contrary, as we have discussed. In such cases, we have held that "the written description and prosecution history over come any presumption arising from the doctrine of claim differentiation." Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000); see also Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1480 (Fed. Cir. 1998) ("[T]he doctrine of claim differentiation can not broaden claims beyond their correct scope, determined in light of the specification and the prosecution history and any relevant extrinsic evidence... [C]laims that are written in different words may ultimately cover substantially the same subject matter.").

A further reason for not applying the doctrine of claim differentiation in this case is that the Group I claims are not otherwise identical but for the references to pellets, linear extrudates, and composite compositions, and thus the district court's construction does not make the composite composition claims redundant. Instead, there are numerous other differences varying the scope of the claimed subject matter. For example, in the '611, '607, and '334 patents, the pellet and linear extrude claims all require that the composition consist of "less than about 8 wt % water," while the composite
composition claims require "less than about 10 wt % water." The composition claims also include an additional limitation with regard to the amount of the impurities in the mixture, a limitation that is not found in the pellet and linear extrudate claims. Moreover, although Andersen argues that the district court's claim construction would render the '612 patent superfluous, that is not so, as the composite composition claims of each of the other Group I patents contain limitations not found in the '612 patent claims.

Even though the "composite composition" claims, as construed by the district court, cover substantially the same subject matter that is covered by the "pellet" and "linear extrudate" claims, overlapping patent claims are not unusual, and the overlap does not require us to construe the "composite composition" claims to cover subject matter that differs from the subject matter covered by the other two sets of claims. Under these circumstances, the doctrine of claim differentiation does not require rejection of the district court's construction of the claims.

Andersen also argues that the district court's claim construction is contrary to a 1996 restriction requirement issued with respect to the application that led to the '607 patent, in which the patent examiner found the "pellet and composite" claims to be patentably distinct from the "composition" claims. That distinction, which was based on the examiner's perception that the two groups of claims "are related as mutually exclusive species in intermediate--final product relationship," is not one that is pressed by Andersen, and it is unclear how the difference between "composite" and "composition," even if one could be discerned, furthers Andersen's argument. The argument based on the restriction requirement therefore does not support Andersen's position.

In sum, a review of the text and the prosecution history of the Group I patents leads us to agree with the district court that the "composite compositions" of those patents must be in the form of either pellets or the linear extrudate from which pellets may be cut.

III. "Composite Structural Member"

The Group II patents claim a "polymer wood thermoplastic composite structural member, suitable for use as a replacement for a wood structural member." ( '553, c. 17, 11: 1-2 & '027, c. 15, 11: 57-58 (using slightly different language).) The key disputed term in the Group II patents is "composite structural member." (Id.) The parties disagree about whether the composite structural member is limited by how it is formed. Fiber Composites proposes that this term is "limited to such parts, which are extruded or otherwise made, only by first forming the composite composition into a solid pellet or a solid linear extrudate from which the pellet can be made, and then using the solid pellet or linear extrudate to form the 'member.'" (Fiber Proposed Claim Construction Order at 2.) Andersen proposes that the term is defined as "an article having load bearing capability ('structural member'), made of polymer and wood fiber ('composite') and that is capable of being melted, shaped, remelted, and reshaped." (Andersen's Proposed Claim Construction and Br. in Supp. at 11.) Andersen also proposes that the term is directed to a "composite structural member obtained through an extrusion process." (Andersen's Proposed Claim Construction Order at 3.)

The Court first looks to the claim language itself. 8 Itron, 169 F. Supp. 2d at 1081. Claim 1 of the '553 patent describes a structural member "suitable for use as a replacement for a wood structural member." ( '553, c. 17, 11: 1-2.) There is no reference to a pellet or linear extrudate in the claim language. Rather, the claim language describes the product itself, which is a composite structural member that is a replacement for a wood structural member. The claim-at-issue is not claiming a product made by a specific process; it is claiming the product itself--the structural member. Giving the words their ordinary and accustomed meaning, the words of the claim define the structural member as a product that is a replacement for a wood structural member.

8 When the claims-at-issue use the same or similar language, reference will be made to only one of the Group II patents.
This definition, however, must be viewed in light of the specification and the prosecution history. See KCJ Corp., 223 F.3d at 1355. For the purposes of this construction issue, the specifications of the '553 and '027 patents are identical. Specifically, the specification defines the term "structural member" to mean "a linear member with a regular cross-section or complex cross-section." (‘553, c. 3, 11: 21-23 (emphasis added).) The specification teaches that it relates to "an improved structural member that can be used as a direct replacement for wood and metal components" (id., c. 1, 11: 13-15 (emphasis added)) and that the "structural members of the invention can also be extruded in complex shapes adapted to the assembly of windows and doors used in both residential and commercial structures." (Id., Abstract (emphasis added).) The superior qualities of the structural member include "strength, workability, faster retention, resistance to rot and insect attack, and thermal properties." (Id.) Thus, the specification teaches that the invention covers a structural member with specific structural properties that is used as a wood replacement. It does not teach that the structural member must be made by a certain process.

Andersen contends that with this intrinsic evidence as the guide, the preamble language of the claim-at-issue is properly construed as follows: "an article having load bearing capability . . ." (Andersen's Markman Br. at 12-13.) Fiber Composites disputes this and argues that the specifications of the Group II patents limit the claims to pellets or pelletizing. (Fiber Composites' Markman Br. at 24.) Fiber Composites, however, misapplies what the specification teaches. The specification details the preferred embodiment of the materials used to make the structural member. (See e.g., '553, c. 5, 11: 64-66.) It does not, however, limit the claimed invention to that preferred embodiment nor does it claim anything other than a "structural member" with superior strength, resistance to rot and insect attack, and other structural features.

In addition, Fiber Composites argues that the prosecution history of the Group II patents shows that Andersen "told the Patent office that the 'composite structural member' in the claims did not cover articles that were directly extruded from thermoplastic polymers and wood composite." (Fiber Composites' Reply Br. at 7, citing Ex. 32; pp. 7-8 (emphasis in original).) The Group II patents are continuations from the same parent application, the '365 Application, and like claims of the parent application of the Group I patent, the claims of the '365 Application were rejected as anticipated by several prior art references, including the Miani patent. Andersen states that Fiber Composites "misconstrues" the prosecution history because Andersen merely distinguished the prior art cited by the Patent Examiner based upon "structural properties [of the invention] and not any method of processing." (Andersen's Post Markman Br. at 6.) Thus, Andersen argues that the prosecution history reveals that it received its patent not because it disclaimed or claimed any method or process but rather because its invention had superior structural properties. (Id. at 5.) The Court agrees with Andersen. The prosecution history supports the construction that the subject of the Group II patents is the structural member itself, with its superior structural properties, without a limitation for how the member is formed.

Therefore, the Court finds that the term "composite structural member," when viewed in light of the claim language, the specification, and the prosecution history, means a polymer and wood article having load bearing capability, which can be obtained through a direct extrusion process or made from a composite material without a particular form.

C. Compressed Position

ICU argues that the term "compressed position" should be interpreted to mean "location in which the flexible element is depressed into less space in the cavity." RJCCPS at 4. Braun contends that the proper definition of the phrase is "the position of the flexible element when it is under axial compression and fully opens the valve." Id. The parties' central point of contention on this issue is whether "compressed position" requires full or complete compression, or put differently, whether partial compression is within the scope of the term. The parties also dispute whether the compression referred to is necessarily axial compression, or includes other directions of compression as well.

1. Fully Open

Reading "compressed position" in the context of the claim and specification, 4 it becomes clear that the term refers to a configuration of the flexible element in which the valve is in an open state and fluid is allowed to move through it. Col. 16:5-8 (describing "a compressed position in which fluid flow is permitted through said valve"). Thus the parties' disagreement can be described as whether the flexible element can be in a "compressed position" even though the flexible
element may still be partially obstructing the fluid from flowing through the valve.

--- Footnotes ---

4 The parties agree that the terms "compressed position" and "uncompressed position" in the claim are equivalent to the terms "compressed state" and "decompressed state," respectively, in the specification. Therefore, the use of the latter terms in the specification is relevant to the construction of the former terms.

--- End Footnotes ---

Braun's argument focuses on Claim 1's use of the word "between" in its statement that the flexible element is "movable between an uncompressed position... and a compressed position..." Col. 16:5-8. According to Braun, this requires that there is only one single compressed position in which the flexible element is fully compressed. However, there is nothing inherent in the word "between" that implies that the valve be fully opened. The flexible element could just as easily be understood to move "between" a closed position and a partially open position. Although Braun insists that ICU's understanding is an attempt to rewrite the claim language, it is Braun's interpretation that seeks an impermissible revision. Under Braun's construction the claim would be rewritten from "a compressed position in which fluid is permitted through said valve" to "a fully compressed position in which maximum fluid flow is permitted through said valve." This Court is not permitted to do so, and thus Braun's proposed limitation is rejected.

2. Axial Compression

Braun also argues that the compression referred to by the terms "compressed position" and "uncompressed position" may only be axial compression. This time Braun is correct. ICU contends that the claim contains no such limitation and gives as examples statements in the specification indicating that the flexible element exerts radial compression on the inner wall of the valve in both the compressed and uncompressed positions:

The seal in the decompressed state... bears against the wall structure near the opening to seal the opening... A fluid tight seal is maintained between the seal section and the wall structure as the seal is moved into the compressed state. The seal section bears against the wall structure...

Col. 3:38-48. However ICU must rip this excerpt from its context in order to retrieve the desired meaning. Immediately before this portion, the specification states "the third feature is that the resilient seal is adapted to be moved into a compressed state upon insertion of the tip of the medial [sic] implement into the opening and returns to a decompressed state upon removal of the tip." Col. 3:35-38. It is clear from this statement that the source of the compression is the insertion of the medical implement into the opening of the valve. The direction of that compression is axial, that is, it moves along the axis of the valve. See Random House Unabridged Dictionary 145 (2d ed. 1987) (defining axial as "situated in or on an axis"). The compression referred to in the excerpt cited by ICU is the force applied by flexible element against the inner wall of the valve while it under axial compression from the medical implement. If, on the other hand, ICU is claiming that the statement that the flexible element "bears against the wall structure" in the "decompressed state" demonstrates non-axial compression, then ICU refutes its own argument. As discussed more thoroughly below, it cannot be the case that the flexible element is experiencing any compression from the medical implement in the "uncompressed position."

In using the terms "compressed," "uncompressed" and "decompressed" the patent repeatedly, consistently and exclusively refers to axial compression. For example, the claim discusses the wall of the flexible element as "flexing to accommodate axial compression." Col. 16:11-12. The specification states that "[a] two-way valve eliminating dead space is used which includes a seal which, upon being compressed by the medical implement, is pierced to open the valve and reseals upon being decompressed... ." Col. 1:22-26 (emphasis added). ICU has failed to offer any statement in intrinsic evidence that contradicts this meaning. As such, this Court finds that the terms "compressed position" and "uncompressed position" refer only to axial compression.

Accordingly, the term "compressed position" is construed as the position of the flexible element when it is under axial compression from a medical implement 5 and opens the valve.

--- Footnotes ---
5 The addition of "from a medical implement" is described under the Court's construction of "uncompressed position."

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A. Compressed State / Decompressed State

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<th>RyMed's Construction</th>
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<th>Decompressed State</th>
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The terms "compressed state" and "decompressed state" appear in the asserted claims in the '866, '862, and '592 Patents. ICU contends that a compressed state is created upon insertion of the medical implement's delivery end into the opening of the valve's internal cavity. (D.I. 118, at 12.) Conversely, it contends that a decompressed state is created upon the removal of the medical implement from the valve's internal cavity. (D.I. 118, at 13.) Essentially, the crux of ICU's contention is that the states of compression and decompression referred to in the patents-in-suit are "about what happens when you push a medical implement in, and take it out," rather than abstract notions about the existence or absence of some compression. (D.I. 232, at 7:7-12.) RyMed contends that compressed and decompressed states refer to the condition of the seal when under axial compression and when under no axial compression, respectively. (D.I. 116, at 9.) RyMed opposes ICU's contention that compressed and decompressed states are to be understood in relation to the insertion or removal of a medical implement. (D.I. 116, at 9-10.) Specifically, RyMed argues that constructing the claim terms according to ICU's proposal improperly rewrites the claim language to allow for relative or partial states of compression. (D.I. 165, at 5-6.)

The Court concludes that ICU's proposed construction is more consistent with both the literal claim language and the Common Specification. The patent repeatedly and clearly explains that the resilient seal is compressed upon insertion of the medical implement, and decompressed upon its removal. See '866 Patent, col. 15: 41-46 ("a resilient seal which is adapted to be moved distally in the cavity into a compressed state upon insertion of the delivery end of the medical implement . . ., said seal . . . returning to a decompressed state upon removal of said delivery end"); '862 Patent, col. 15:37-43 ("a resilient seal . . . adapted to be moved distally in the cavity into a compressed state upon insertion of the delivery end of the medical implement . . ., said seal . . . returning to a decompressed state upon removal of said delivery end"); '592 Patent, col. 15: 49-53 ("a resilient seal which is adapted to be moved into a compressed state upon insertion of the of the [sic] medical implement into said opening to open the valve and returns to a decompressed state upon removal of said tip to close said valve"). RyMed's proposed construction ignores the integral role of the medical implement in what is claimed about the seal's condition.

Additionally, the Common Specification provides clear support for this interpretation. See Budde v. Harley-Davidson, Inc., 250 F.3d 1369, 1379-80 (Fed. Cir. 2001)(stating that the specification should be read, "if possible, in a manner that renders the patent internally consistent"). The claim term "compressed state" is consistently described by reference to the behavior of the seal when a medical implement is inserted into the cavity. See '866 Patent, col. 3, 37-39 ("In the compressed state, the seal section is pushed by the delivery end of the medical implement away from the opening and into the cavity."); id. at col. 1, 17-19 (the valve includes a "seal which, upon being compressed by the medical implement, is pierced to open the valve and reseals upon being decompressed").
RyMed's argument that ICU’s construction allows for relative states of compression is not persuasive. In Alaris, Judge Pfaelzer stated that "[b]oth the concept of the medical implement as the source of the compression and the concept of the valve being opened as a result of the compression are already included in the applicable claim language and thus do not need to be included in the construction of compression." Alaris, 2006 U.S. Dist. LEXIS 96077, at *16. However, concerns over relative or partial compression being read into the claim language are precisely why "compressed state" and "decompressed state" must be construed with reference to the source of the compression, as well as to the condition of the seal. See Braun, 344 F. Supp. 2d, at 671-72 (noting that the claim term "uncompressed" in the '673 Patent clearly referred to a lack of compression, but that the relevant question was what source of compression was being referenced). Thus, in light of the claim language and Common Specification, the Court concludes a "compressed state" means the state of the seal when a medical implement causes axial compression; a "decompressed state" means the state of the seal when a medical implement is not causing axial compression. Whether any compression exists in the valve in the abstract, not in relation to the medical implement, is outside the scope of the claim.

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a. "Two mold parts"

Turn-Key argues that this limitation must be construed to require that the two mold parts are a first mold part and a second mold part including all of their respective components. It asserts that these components can include mold plates, cavity inserts, alignment components, screws, heating and cooling assemblies, ejector assemblies, pins, blades, guide assemblies, etc. Pl's Opening Brief at 5. Conversely, Defendants argue that the two mold parts referred to are "not just any parts, but the two mating halves of an injection mold" and that though the mold "may have other components . . . these should not be confused with the two mold halves to which this claim term is intended to refer." Crest's Responsive Brief at 11. The parties thus appear to agree that the phrase "mold comprises two parts" signifies the mating halves of a mold and that the mold parts themselves may contain individual components. Crest's Responsive Brief at 11; Pl's Opening Brief at 5. The dispute is whether the phrase refers to the mold halves as wholes or whether it includes specific auxiliary parts.

The Court agrees with Defendants that though the mold halves can possess component parts, the "mold comprises two parts" language should be interpreted as "referring to the two mating halves of the mold as wholes, and not to their individual components." Crest's Responsive Brief at 11. This interpretation comports with the ordinary and customary meaning of the phrase which solely refers to "two parts" and the specification does not show that Sorenson, as patentee, intended to define the phrase in his own terms rather than by the terms' common, customary meaning. See Vitronics, 90 F.3d at 1584-85.

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"[C]omprising" means including but not limited to.

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B. "comprising"

AB/Sciex and Micromass dispute the construction of terms in the 736 patent's two independent claims, 1 and 14, for purposes of this Markman proceeding. Claims 1 and 14 both use the term "comprising" in their prefatory statements, before the claims go on to enumerate further claim limitations. AB/Sciex suggests that the court should define "comprising" as "including, but not limited to." Micromass does not disagree with AB/Sciex's proposed construction and admits that the term "comprising" permits the inclusion of additional elements beyond those recited, but argues that the court's construction of the term should not be used by AB/Sciex to evade the primary requirement of the term "comprising" -- that the invention must include all enumerated claim limitations.
It is well-established that "comprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.” Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501 (Fed. Cir. 1997); see also Phillips Petroleum Co. v. Huntsman Polymers Corp., 157 F.3d 866, 874 (Fed. Cir. 1998) (“The use of "comprising" and "which comprises" in the composition and process claims generally would mean that the claims require the presence of [the listed element], but that additional elements or process steps may be present."), Regents of Univ. of California v. Eli Lilly & Co., 119 F.3d 1559, 1572 (Fed. Cir. 1997) (“The word 'comprising,' as UC argues and as is well-established, permits inclusion of other moieties.”); Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1271 (Fed. Cir. 1986) (“In every case, the court has held that the open term 'comprising' does not exclude additional unrecited elements, or steps . . .”). Thus, "comprising" can neither narrow nor broaden the meaning of the claim limitations subsequently recited. It simply requires the presence of the enumerated claim limitations enumerated without prohibiting other unrecited elements, structures, or steps from being present in the invention. Because the court finds that AB/Sciex's construction of "including, but not limited to" is consistent with this well-understood construction of the term, the court hereby adopts that construction.

Contrary to the findings rendered by the district court, JSC argues here that claims 11, 12, 17, and 21 of the 280 patent do indeed disclose a device limited to three layers, with the outer layers in direct physical contact with an interior rigid layer. Independent claims 11 and 21 of the 280 patent state as follows:

11. A multiple-ply material comprising:
   a first layer of anti-static material;
   a second layer of anti-static material;
   a third layer of relatively rigid, electrically conducive material sandwiched between and contacting said first and second layers; and

   wherein said first and second layers have a surface resistivity of between 10<9> and 10<14> ohms per square inch and said third layer has a surface resistivity of less than 10<5> ohms per square inch.

21. A multiply-ply paperboard comprising:
   a first layer of anti-static material;
   a second layer of anti-static material;
   a third layer of high-carbon content paperboard sandwiched between and contacting said first and second layers; and

   wherein said first and second layers have a surface resistivity of between 10<9> and 10<14> ohms per square inch and said third layer of high-carbon content paperboard has a surface resistivity of less than 10<5> ohms per square inch.

(J.A. 508) (emphasis added). As more fully discussed below, neither this language nor the language of any of the other claims at issue limits the claimed invention to a three-layer structure, let alone one that must have the exterior layers in direct physical contact with the interior layer.

A. The 280 Patent is not Limited to a Three-Layer Structure

JSC contends that the 280 patent covers a three-layer device only, because that patent's Figure 7 "shows a three-layered laminated structure which utilizes a low density molten polyethylene material as a laminate in order to attach the low density polyethylene antistatic layers to the inner conductive layer." (Appellant's Br. at 33.) This argument is self-refuting, however, because the polyethylene that JSC describes is itself a layer that bonds the anti-static layers to the conductive layer. Additionally, because the claims here contain the language "comprising," the presence of additional layers in the
accused device does not remove that device from the scope of the 280 patent claims. See Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501, 42 U.S.P.Q.2d (BNA) 1608, 1613 (Fed. Cir. 1997) ("Comprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.). We therefore concur with the district court's construction that the claims are not limited to three layers and can include an additional layer or layers.

5. "The upper surface [of the flexible plate] having at least one concave portion"

The term at issue here is "concave," and the parties agree that the plain and ordinary meaning of "concave" is "hollowed or rounded inward like the inside of a bowl." They also agree that the plain and ordinary meaning of this term should apply. Akeva asserts, in addition, that this definition only applies when the surface is "viewed from the perspective where the surface is visible," which means that the upper surface of the plate must be viewed from above. The court sees no reason to deviate from the term's ordinary meaning. Neither the claims nor the specification contain any requirement regarding how the flexible plate should be viewed, and the court will not read additional requirements into the term. Akeva argues that adidas' expert views the flexible plate from below, but the court has not considered any expert testimony regarding claim construction. adidas makes note of the absence of any disclosure of a concave upper surface in the '300 Patent's specification, which discusses only convex or arched flexible regions or plates. The failure of the specification to discuss a particular embodiment is not enough to exclude that embodiment from the scope of the claims if the claims would otherwise encompass it. See CCS Fitness, 288 F.3d at 1368 ("[Defendant] cannot use the intrinsic evidence's silence to narrow the ordinary meaning of an unambiguous claim term.").

The term "concave" should be construed as "hollowed or rounded inward like the inside of a bowl."

The defendants argue that the term "conductive elastomeric seal" is indefinite because an "elastomeric seal" is a rubber, which cannot be conductive. Defendants contend that the resistance of elastomeric materials can vary enormously depending on attributes such as the compression forces applied to them. 11 The defendants argue that the '516 patent does not provide any standard for measuring the degree of conductivity and is, therefore, indefinite under Federal Circuit law. See Star Scientific, Inc. v. R.J. Reynolds Tobacco Co., 537 F.3d 1357, 1372 (Fed. Cir. 2008); see also Halliburton Energy Servs., Inc. v. M-I L.L.C., 514 F.3d 1244, 1255-56 (Fed. Cir. 2008) (finding the term "fragile gel" indefinite because it was ambiguous as to the requisite degree of the fragileness of the gel and failed to place any limit on the scope of what was invented beyond the prior art).

11 Defendants cite to an unrelated patent on conductivity of certain classes of elastomers. See U.S. Patent No. 3,806,471.

Plaintiff argues that a person with ordinary skill in the art would understand that an elastomeric seal is conductive if, as recited in the claim itself, it "provide[s] an electrical path." '516 patent, cl. 7, 10. Plaintiff contends that the claim is not so "insolubly ambiguous" that one skilled in the art cannot practice the invention because he or she cannot "understand the bounds of the claim when read in light of the specification." See Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001) (claims are indefinite "only if reasonable efforts at claim construction prove futile"). Indeed, as Volkswagen points out, a claim construction of this term is possible if the Court looks to extrinsic evidence to find some structural guidance. The McGraw-Hill Dictionary of Scientific and Technical Terms defines "conductive elastomer" as "a rubberlike silicone material in which suspended metal particles conduct electricity."

The Court does not find this term to be indefinite. Firstly, the Court finds that "the components of the term have well-
recognized meanings, which allow the reader to infer the meaning of the entire phrase with reasonable confidence."

Bancorp Services, L.L.C. v. Hartford Life Ins. Co., 359 F.3d 1367, 1374 (Fed. Cir. 2004). Moreover, a person of ordinary
skill in the art of the patent would understand how much conductivity a rubber seal would need in order to "provide an
electrical path" for signals such as those being transmitted from the sensor. '516 patent, col. 11, ll. 35-37. The embodiments
disclosed in the specification detail the circuits that may be used to generate the signal that needs to be transmitted.
Similarly, the use of a wheel as an antenna helps identify frequencies that may be used to transmit the signal. Additionally,
the use of the elastomeric seal as a seal that would effectively prevent air from escaping from the tire indicates the amount
of pressure or compression forces that the seal would be subjected to. Given this detail, a skilled person would easily
understand the characteristics of the current that would need to be conducted through the seal, and would thereby
understand the metes and bounds of the claim. See Exxon Research, 265 F.3d at 1375 ("If the meaning of the claim is
discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will
disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds."); Miles Labs., Inc. v.
Shandon Inc., 997 F.2d 870, 875 (Fed. Cir. 1993) (refusing to find a claim indefinite where "the patent disclosed adequate
information to enable a skilled artisan to make and use the claimed invention").

Based on the extrinsic evidence forwarded by the defendants, the Court construes the term to mean "a seal consisting of a
rubberlike silicone (or plastic) material which is conductive."

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C. "A Conductive Member Leading to Said Electrical Plane"

Claim 1 recites that a portion of the electrically conductive path extends through the fuel injection system component and "a
conductive member leading to said electrical plane."

Honeywell says that "conductive member" means "any electrically conductive part or component--whether or not part of the
fuel injection system--that forms at least part of the electrically conductive path that leads directly or indirectly to the
electrical plane." Honeywell says that "electrical plane" means "any electrically conductive mass that can be maintained at a
common electrical potential, including, without limitation, the body of an automotive vehicle."

Defendants say that "conductive member" means "an electrically conductive bracket directly attached to, or molded as a
part of, the fuel filter housing." Defendants say that "electrical plane" means "an electrically conductive mass of the motor
vehicle that is maintained at a predetermined electrical potential."

There are essentially two disagreements between the parties: (1) whether the "conductive member" can be any kind of
electrically conductive part or whether it must be an electrically conductive "bracket," and (2) whether the "conductive
member" may be physically separate from the housing or whether it must be attached to or molded as a part of the housing.
Defendants say that their interpretation, which is narrower than the ordinary meaning of the words, is warranted based on
limiting language in the specification and prosecution history.

Referring to the sole figure in the '879 patent, the specification provides:

The housing 12 is secured to the metal vehicle body, a portion of which is indicated at 38, by a bracket 40. The bracket 40
may be either a separate metallic member attached to the housing 12 or molded as a part of the housing 12 from the same
material used for the housing 12.

'879 patent, col. 2, ll. 14-19. The specification later states that the electrostatic charge build-up in the fuel cavity of the filter
"will be discharged through the electrically conductive path in bracket 40 to the body 38" to prevent arcing. Id., col. 3, ll.
41-47. The bracket 40 is the sole embodiment of a "conductive member" disclosed in the specification. However, the
specification does not specifically state that a bracket is the only possible embodiment, nor does it state that the "conductive
member" must be attached to the housing or molded as a part of the housing in every embodiment. The only requirement is
that the "conductive member" allow for an electrically conductive path from the filter housing to the electrical plane.

The prosecution history also does not support defendants' narrow interpretation. Defendants point to the following statement
in the applicant's March 9, 1998 amendment during reexamination:

Japanese Patent Document No. 63-54859 ("JP '859") was cited because it shows a fuel filter and includes structure for mounting the fuel filter to a vehicle. In more detail, the JP '859 document discloses a fuel filter 8 having a particular shape that conforms to a corner area of a vehicle to which it is mounted. Further, this reference teaches using a mounted portion 24 that is integrally formed with the case body 10 to mount the filter to the vehicle. This is done to avoid the necessity of using a bracket to mount the filter to the vehicle.

In any event, the JP '859 document is primarily concerned with the size and the shape of the fuel filter (and surrounding areas) disclosed therein, and is silent regarding materials of which the fuel filter or any other component of a fuel injection system is made. Patenpees thus respectfully submit that JP '859 neither teaches nor suggests a bracket made of an electrically conductive material.

Defendants say that in distinguishing JP-54859, the applicant effectively required a conductive bracket that is directly attached to or molded as a part of the fuel filter housing. The applicant's statement, however, does not represent a clear disavowal of claim scope, especially considering that the applicant was responding to a rejection based on JP-77878, not JP-54859.

Neither the specification nor the prosecution history overcome the broad ordinary meaning of the term. "A conductive member leading to said electrical plane" is interpreted as follows:

Any electrically conductive part or component--whether or not part of the fuel injection system--that forms at least part of the electrically conductive path that leads directly or indirectly to the electrical plane, which is any electrically conductive mass that can be maintained at a common electrical potential, including, without limitation, the body of an automotive vehicle.

The next disputed term in Claim 25, "discharge conduit," comes into play in the manufacturing process after the mixing chamber: the contents of the mixing chamber are discharged into it and then an aqueous foam is inserted into it through an inlet, "such that the foam is mildly agitated to thereby minimize destruction of the foam while uniformly dispersing the foam in the aqueous gypsum dispersion." Next, "the resultant dispersion from the discharge conduit" is discharged and deposited "onto a moving cover sheet." (635 Patent Claim 25.) In the court's view, both sides' proposed constructions of the term "discharge conduit" includes redundant terms. Plaintiff's construction again focuses on the involvement of a powered moving agitator. Defendants' construction downplays the purpose of the discharge conduit and seeks to incorporate Defendants' proposed construction of "mixing chamber" as something that the discharge conduit is not.

Defendants contend that the construction must make clear that the discharge conduit is not a mixing chamber because the
The court concludes both party's proposed constructions fail because they attempt to weigh down the terms with much more detail than is necessary. Parts of the method that are already included in the claim need not be incorporated into the construction of claim terms. Accordingly, the court begins and ends its construction with the plain and ordinary meaning of the terms. The jury will understand the word "discharge." "Conduit" may be unfamiliar, though, so the court will construe it as "passageway or channel." Accordingly, the court adopts the following construction for "discharge conduit:" "discharge passageway or channel."

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1. "Flexible enough to be formed or arranged." This construction is consistent with the claims as well as the specification. The parties agree in principal with this construction, diverging only with defendants' proposed additional limitation of "providing structural stability during manufacture." While the specification describes one embodiment directed to a configurable separator that provides structural stability, the court declines to import the limitations of a single preferred embodiment into this limitation. See Comark Commc'ns. v. Harris Corp., 156 F.3d 1182 (Fed. Cir. 1998).

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2. "configured to fit"

McHugh asserts that this term does not require construction, while H&B asserts that it does. H&B contends that whether or not there is an ultimate finding of infringement of the '091 Patent depends at least partly on a determination of what "configured to fit" means. "Victory in an infringement suit requires a finding that the patent claim covers the alleged infringer's product or processes, which in turn necessitates a determination of what the claim terms mean." Markman, 517 U.S. at 374. Thus, this Court will construe the term "configured to fit."

Although McHugh asserts that this term does not require construction, to the extent that it does, McHugh argues that "configured to fit" should mean "designed to fit." H&B also agrees to this construction. Accordingly, the Court adopts both parties' proposed construction and construes the term "configured to fit" to mean: "designed to fit."
The Court adopts RTI's construction of "front end configured to operate the retraction mechanism" in Claim 25 of the 077 Patent. "Front end" undisputedly refers to the plunger's end closest to the needle. "Configured" means "to set up for operation." MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 241 (10th ed. 2001). Thus, RTI's proposed construction, "the portion of the plunger closer to the injection end of the syringe that operates the retraction mechanism," mirrors the term's ordinary meaning. Nonetheless, NMT would limit the term's ordinary meaning to "a dislodgeable stopper fitted into the opening in the plunger at the end closest to the injection end of the syringe" based solely on a preferred embodiment discussed in the 077 Patent. See 077 Patent Col. 3 In. 54- Col. 5 In. 8. Nothing in the preferred embodiment indicates an intent to redefine the term and NMT cannot overcome the term's ordinary meaning simply by pointing to a preferred embodiment. Sunrace Roots Enter. Co., LTD, 336 F.3d at 1305.

The parties dispute whether a "confined area" must be sealed and whether a "seal" must be fire-proof or just firmly closed. The patentee gave an express definition for "confined area" in both patents. '965 patent, 2:63-3:3; '336 patent, 3:57-65. Although both patents do not use identical definitions, they are sufficiently similar for the Court to discern the common meaning. The '965 patent defines "confined area" to mean "an area of combustible material that is located at a site having normally limited ventilation and limited access in which combustion by-products can be confined and can pose a threat to personnel attempting to extinguish a fire at the site as well as providing additional combustible material to feed the fire and make extinguishing of such a fire, other than letting the fire burn itself out, even more difficult if not impossible." '965 patent, 2:63-3:3. The '336 patent simplifies the definition: "a site having normally [limited] ventilation and limited access for extinguishing a fire." '336 patent, 3:57-65 2 While it may appear at first glance that the Court is choosing between two different explicit definitions, the second definition is merely a simpler clarification of the first. "Confined area" has the same scope in both patents and will be construed consistently. See Omega Eng'g., Inc. v. Raytek Corp., 334 F.3d at 1334. The Court construes "confined area of a coal mine" to mean "a site in a coal mine having normally limited ventilation and limited access for extinguishing a fire."

2 The '336 specification uses the word "linked" rather than "limited." The context of this sentence and the corresponding sentence in the '965 specification make clear to the Court that the intended word was "limited."

I.

Manchak is the named inventor and owner of the '003 patent, entitled "Method of Transforming Sludge into Ecologically Acceptable Solid Material." Claims 1 and 2 recite a method for treating sludge with calcium oxide (commonly known as limestone or "quick lime"):

1. A method of transforming aqueous organic material containing sludge that may include virus and odor forming bacteria and toxic soluble compounds that are converted to substantially insoluble compounds in an alkaline environment into a solid, friable, and substantially odor free reaction product, said method comprising the steps of:

   a. sequentially moving said sludge from a source thereof at a first rate;

   b. sequentially moving calcium oxide from a source thereof at a second rate, with said second rate so related to said first rate that when sludge and calcium oxide are mixed an exothermic reaction is initiated in which said sludge and calcium oxide react with the evolution of steam to form a solid, friable, substantially odor free reaction product that has a pH of at least 12 and in which bacteria and virus initially present in said sludge are deactivated by said pH and the heat of said exothermic reaction, and said soluble toxic compounds initially present in said sludge are transformed to substantially water
insoluble compounds due to the high pH of the mixture of said sludge and calcium oxide as they transform to said reaction product;

c. providing an elongate confined space that has first and second ends;

d. directing said sludge and calcium oxide at said first and second rates into said first end of said confined space;

e. concurrently mixing and moving the mixture of said sludge and calcium oxide in said confined space from said first end towards said second end thereof, with the rate of longitudinal movement of said mixture in said confined space being such that said exothermic reaction has transformed said mixture to said reaction product by the time said reaction product has reached said second end;

f. withdrawing said steam from said confined space; and

g. sequentially removing said reaction product from said second end of said confined space.

2. A method as defined in claim 1 in which said mixture is concurrently mixed and moved longitudinally in said confined space by rotating a number of longitudinally spaced, transversely and angularly disposed rigid surfaces within the confines of said confined space.

(Emphasis added.)

Briefly summarized, sludge and calcium oxide simultaneously enter one end of an apparatus through two different openings and at two different rates. They are then mixed in the "confined space" of the apparatus to initiate an exothermic reaction. The reaction product exits the apparatus through a third opening at the opposite end, and the steam created by the reaction is withdrawn from the apparatus.

Sevenson, an environmental remediation firm, used the "Maectite process" in cleaning up the Marathon Battery Site in upstate New York. In the Maectite process, sludge is poured into a hopper covered by a screen to keep out branches and rocks. The hopper funnels the sludge onto a conveyor belt that in turn leads to a weigh belt. The weigh belt weighs the sludge and then dumps it into a second hopper. Lime is then poured into the second hopper at a rate dependent upon the weight of the sludge. The second hopper leads to a final conveyor belt, which feeds the sludge into an enclosed box-like structure called a "pugmill." Inside the pugmill, a series of intertwined rotating paddles mix the sludge with the calcium oxide and advance the mixture towards an opening on the other end. Notably, the pugmill has a safety screen on top that allows the steam formed by the exothermic reaction to freely escape. The pugmill forces the mixture out the second end for transport away from the site by truck or railcar.

In November 1995, Manchak brought a patent infringement suit in the United States District Court for the District of Delaware against six defendants. When ordered to select one defendant, Manchak chose Sevenson. The district court issued its claim construction opinion on May 1, 1997. On June 19, 1997, a jury found that Sevenson had literally infringed '003 claims 1, 2, 13, and 14 and awarded damages of $975,000. Because it found literal infringement, the jury skipped the questions of infringement by equivalents as the district court had instructed. 1

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - - -
1 The jury also found the '003 patent to be enforceable and not invalid, i.e., not anticipated, obvious, or not enabled. In January 1998, after the jury had reached its verdict but before the district court had ruled on the parties' post-trial motions, the Patent and Trademark Office ordered the reexamination of the '003 patent. On April 7, 1999, the examiner issued a Notice of Intent to Issue Reexamination Certificate, thereby confirming the patentability of the claimed invention. Sevenson does not appeal the jury's findings regarding enforceability or validity.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - - -

After the verdict, Sevenson renewed its motion for judgment as a matter of law of no literal infringement. On February 26, 1998, the district court granted Sevenson's motion with respect to claims 13 and 14, but denied it with respect to claims 1
and 2. The district court also invoked Rule 50(b) of the Federal Rules of Civil Procedure to find, in the alternative, that Sevenson had infringed claims 1 and 2 under the doctrine of equivalents. On June 26, 1998, after realizing that Manchak had never actually moved post-trial for judgment of infringement as a matter of law, the district court re-labeled its finding of infringement by equivalents as arising under Rule 49(a). The district court also declared the case to be "exceptional," and awarded Manchak $ 18,990.55 in attorney fees. This court has jurisdiction over this appeal under 28 U.S.C. § 1295(a)(1) (1994).

II.

A district court's construction of disputed claim terms is a question of law subject to plenary review on appeal. See Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 U.S.P.Q.2D (BNA) 1169, 1174 (Fed. Cir. 1998) (en banc). This court owes no deference to a jury verdict based on an improper claim construction, especially where the correct construction of the claims is dispositive on the issue of infringement. See Strattec Security Corp. v. General Automotive Specialty Co., 126 F.3d 1411, 1419, 44 U.S.P.Q.2D (BNA) 1030, 1036 (Fed. Cir. 1997).

In its May 1, 1997 claim construction opinion, the district court construed the term "confined space" in claims 1 and 2 as:

An elongate space that must confine the reaction product of calcium oxide and sludge. However, steam produced as a result of the reaction between calcium oxide and water in the sludge need not be so confined.

Sevenson contends that the district court erroneously construed "confined space" as only confining the reaction product of calcium oxide and sludge. Sevenson argues that the claims themselves, the written description, and the prosecution history establish that the "confined space" must confine steam. Because the pugmills that Sevenson used in its Maectite process indisputably lack a steam-confining top, Sevenson maintains that it cannot literally infringe upon claims 1 and 2 of the '003 patent. We agree.

The plain language of the claims themselves demonstrates that the "confined space" must also confine steam. Nothing in claim 1 suggests that "confined space" be narrowly construed as confining only reaction product of calcium oxide and sludge, but not steam. "Without an express intent to impart a novel meaning to claim terms, an inventor's claims take on their ordinary meaning." York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572, 40 U.S.P.Q.2D (BNA) 1619, 1622 (Fed. Cir. 1996). The step of "withdrawing said steam from confined space" in claim 1 also would make little sense if the steam were not confined in the space to begin with.

The district court's definition of "confined space" further conflicts with claims 5 and 7, which recite:

5. The method as defined in claim 1 in which said confined space is of such depth that a longitudinally extending space is provided in said confined space into which said steam can accumulate, and said longitudinally extending confined space in communication with a passage through which said steam may flow to the exterior of said confined space.

6. The method as defined in claim 5 which includes the further step of:

h. blowing a stream of air across said passage and substantially normal thereto to withdraw said steam from said longitudinally extending space.

7. The method as defined in claim 6 which includes the further step of:

i. directing the mixture of air and steam through a spray of water to remove foreign particled material from said steam prior to said air and uncondensed steam being discharged to the ambient atmosphere.

(Emphasis added.) Claim 5 requires that the "confined space" be of sufficient depth to allow steam to accumulate and provides a "passage" through which steam may "flow" to the exterior. These limitations presuppose a steam-confining top, but the only structure in claim 5 that can provide this top is the "elongate confined space" limitation of claim 1. Claim 5 does not otherwise add any new structure that would force steam to accumulate in, rather than passively rise out of, "said confined space." Claim 6 blows the steam out of the confined space via the passage provided in claim 5 to "withdraw" it. Claim 7 further recites the "discharge" of accumulated steam to the "ambient atmosphere" after washing away particulate
matter with water. This limitation would also make little sense unless the "said confined space" of claim 1 already prevented the steam from entering the "ambient atmosphere."

The written description tends to confirm this interpretation. It mentions the term "confined" in only one other context, i.e., "sumps are covered with plastic sheet or other impervious sheet to confine the smell." '003 patent, col. 7, ll. 36-37 (emphasis added). Since an inventor is presumed to have intended a consistent meaning for a term used in different portions of the written description, Manchak's illustration of a plastic sheet as "confining" gases implies that the "confined space" should also "confine" steam.

Finally, the prosecution history also tends to reinforce our interpretation of "confined space" as also confining steam. During the prosecution of the '003 patent, the examiner cited U.S. Patent No. 3,476,873 to Liljegren ("the '873 patent"). The '873 patent teaches the treatment of sewage with lime involving the pre-treatment of the sewage in "one or more sedimentation and/or flotation pools." '873 patent, col. 2, ll. 38-39. To distinguish claim 1 over the '873 patent, Manchak explained that "applicant requires no sedimentation and/or flotation pools" and, more significantly, advised that "during the reaction steam is formed in the confined space and removed therefrom." (Emphasis added.) Logically, steam cannot be "formed in the confined space" if the "confined space" does not also confine steam. Moreover, unless confined, steam would hardly need to be "removed therefrom."

The district court's unusual construction of "confined space" primarily resulted from its oversight of two sound principles of patent law. First, the district court held that independent claim 1 could not read on any process for allowing steam to accumulate in the elongate space, since the accumulation of steam in such space was a limitation appearing only in dependent claim 5. As this court has previously recognized, however, "it is axiomatic that dependent claims cannot be found infringed unless the claims from which they depend have been found to have been infringed." Wahpeton Canvas Co. v. Frontier, Inc., 870 F.2d 1546, 1553, 10 U.S.P.Q.2D (BNA) 1201, 1208 (Fed. Cir. 1989). The district court also improperly refused to consider the embodiment depicted in Figure 14 and described in columns 8 through 10 to aid its construction of "confined space," since it incorrectly assumed that the written description required more limitations than set forth in claim 1. The district court seemingly ignored this court's repeated statement that "claims must be read in view of the specification, of which they are a part." Markman v. Westview Instruments, Inc., 52 F.3d 967, 976, 34 U.S.P.Q.2D (BNA) 1321, 1326 (Fed. Cir. 1998) (en banc), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996).

Manchak advances several arguments to defend the district court's interpretation of "confined space." First, Manchak notes that dependent claim 5 requires that steam accumulate in the "longitudinally extending space" created by adding depth to the "confined space." Manchak argues that if the "confined space" of claim 1 also confines steam, dependent claim 5 would be superfluous. Under the doctrine of claim differentiation, a claim should not ordinarily be construed in such a manner that would render a related dependent claim superfluous. See Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187, 48 U.S.P.Q.2D (BNA) 1001, 1005 (Fed. Cir. 1998).

As we noted in Comark, however, "doctrine of claim differentiation is not a hard and fast rule of construction." Id., 156 F.3d at 1187, 48 U.S.P.Q.2D (BNA) at 1005. Rather, the doctrine is inapplicable where one or more added limitations distinguishes the allegedly superfluous dependent claim from its parent independent claim. See Mantech Envtl. Corp. v. Hudson Envtl. Servs., 152 F.3d 1368, 1374, 47 U.S.P.Q.2D (BNA) 1732, 1739 (Fed. Cir. 1998). Here, claims 5, 6, and 7 are distinguishable from claim 1 by their respective additions of a passage and increased depth to create a "longitudinally extending space," blowing step (h), and directing and steam-discharging step (i).

Manchak also advances the well-known principle that "claims .are not to be interpreted by adding limitations appearing only in the specification. . . . Although the specification may well indicate that certain embodiments are preferred, particular embodiments appearing in [the] specification will not be read into the claims when the claim language is broader than such embodiments." Electro Med. Sys. S.A. v. Cooper Life Sciences, 34 F.3d 1048, 1054, 32 U.S.P.Q.2D (BNA) 1017, 1021 (Fed. Cir. 1994) (citations omitted). Manchak argues that interpreting the "confined space" limitation as also confining steam would improperly incorporate the limitations of the preferred embodiment depicted in Figure 14 into claim 1.

We reject Manchak's characterization of our interpretation as erroneously reading limitations from the written description into the claim. Though columns 8 through 10 and Figure 14 of the '003 patent provide the only support for the method recited in claims 1 and 2, they nowhere describe a "confined space" as confining the reaction product, but not steam. As Sevenson properly notes, accepting Manchak's expansive construction of "confined space" would yield the anomaly of a
specification that nowhere describes or depicts a single embodiment illustrating such breadth of interpretation. See Laitram Corp. v. Morehouse Indus., 143 F.3d 1456, 1463, 46 U.S.P.Q.2d (BNA) 1609, 1614 (Fed. Cir. 1993) (viewing it as relevant that nothing in the written description suggests the rejected construction). Furthermore, "confined space" is a limitation contained in claim 1, not a feature shown only in the specification. Thus, while the meaning of "confined space" must be gleaned from the claims and the written description, our construction does not import the term from the specification into claim 1, since it is already there.

2. "the surface of said hollow plug being conformable to irregularities in the tissue or muscle wall defining the defect upon insertion of said hollow plug into the defect, said hollow plug being extremely pliable, allowing localized portions of the hollow plug to adapt to irregularities in the tissue or muscle wall defect."

The parties dispute the meaning of the claim limitation "the surface of said hollow plug being conformable to irregularities in the tissue or muscle wall defining the defect upon insertion of said hollow plug into the defect, said hollow plug being extremely pliable, allowing localized portions of the hollow plug to adapt to irregularities in the tissue or muscle wall defect."

Bard argues that this limitation should be construed to mean "and whose surface is capable of conforming to irregularities in the shape of the defect or hole when it is inserted into the hole, and which is extremely pliable, so that localized portions of the plug are able to adapt to irregularities in the shape of the defect or hole."

Defendant argue that the phrase "surface of said hollow plug being conformable" requires pre-formed pleats which render the plug "extremely pliable, allowing localized portions of the hollow plug to adapt to irregularities in the tissue or muscle wall defect."

a. means-plus-function claims

Defendant's proposed construction is based, in part, on an argument that claim 20 is written in means-plus-function language. Claims may be drafted in functional terms, as permitted by 35 U.S.C. § 112 P 6, which provides:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.


A claim may invoke 35 U.S.C. § 112 P 6 even though it does not recite the words "means" or "means for." 35 U.S.C. section 112 paragraph 6 governs only claim elements that do not recite sufficient structural limitations. See Al-Site Corp. v. VSI International Inc., 174 F.3d 1308, 1318-19 (Fed. Cir. 1999). When it is apparent that the element invokes purely functional terms, without the additional recital of a specific structure or material for performing that function, the claim element may be a means-plus-function element despite the lack of express means-plus-function language. See id.; see also Mas-Hamilton, 156 F.3d at 1214 (construing "lever moving element" in means-plus-function format).

b. U.S. Surgical's position

U.S. Surgical contends that claim 20 should be limited to a pleated implant. U.S. Surgical argues that claim 20, by itself, does not disclose any structure, material, or acts that would enable one skilled in the art to make a hollow plug that would perform all the claimed functions. Claim 20 recites that the implant should be "extremely pliable." U.S. Surgical asserts that
this is a functional limitation, and that a person of ordinary skill in the art would have to consult the specification to determine what structures to use to make an "extremely pliable" implant. U.S. Surgical argues that it is necessary to invoke 35 U.S.C. § 112 P 6 and construe the claim in light of the structures discussed in the specification. See Al-Site, 174 at 1318-19. U.S. Surgical contends that the specification repeatedly states that the use of pleats enhances the flexibility and pliability of the implant.

U.S. Surgical argues that the specification only discloses the use of a pleated structure, and that it would be inappropriate to broaden the scope of the claims beyond the scope of the invention. See Wang Laboratories, Inc. v. America Online, Inc., 197 F.3d 1377, 1383 (Fed. Cir. 1999). In Wang, Wang sued America Online and Netscape Communications for infringement of a 1984 patent directed to a system for providing users with textual and graphical information from computer-controlled databases via interactive two-way communications over a telephone network. The issue for claim construction and summary judgment was whether the claim term "frames of information" covered both character-based and bit-mapped-based protocols, or whether the term should have been limited to character-based protocols. The preferred embodiment of the invention was directed to character-based protocol systems, although the specification acknowledged that bit-mapped protocols were part of the prior art. The Federal Circuit found that a person of ordinary skill in the art would understand the specification to refer only to character-based systems, and affirmed the trial court's construction that limited the claims to character-based systems.

U.S. Surgical argues that this case is analogous to Wang. U.S. Surgical argues that the specification of the '432 patent is directed only to a pleated implant. U.S. Surgical asserts that to construe claim 20 to cover unpleated implants would grant coverage to embodiments not disclosed by the patent.

U.S. Surgical argues that the prosecution history demonstrates that claim 20 should be construed in means-plus-function format. U.S. Surgical contends that during the reexamination proceedings, the examiner specifically suggested putting claim 20 in means-plus-function format, such that the suggested "means for conforming" language would refer to the portion of the specification discussing pleats. U.S. Surgical asserts that after Bard amended its claims, the examiner granted the claims under the belief that the claims set forth a "means for conforming," as stated in his Notice of Intent to Issue Reexamination Certificate. U.S. Surgical argues that the examiner would not have granted the claim had he not interpreted the claim to be in means-plus-function format.

U.S. Surgical argues that, regardless if claim 20 is construed in means-plus-function format, the prosecution history nevertheless limits the claim's construction to a plug which has pre-formed pleats. U.S. Surgical contends that Bard distinguished its invention from Trabucco through reference to its "integrially formed pleats," and that the examiner would not have allowed the claims but for this statement.

U.S. Surgical argues, moreover, that statements made by Bard during the prosecution of Canadian and European counterpart patents of the '432 patent demonstrate that the scope of claim 20 should be limited to a pleated implant. After the Canadian examiner rejected all the claims in the application on the grounds that a plug "having a pleated surface is known and described in the prior art cited," Bard argued that the prior art devices "do not have a pleated surface and are, therefore, unable to completely fill the opening formed by an irregularly shaped defect." Bard amended its claims by substituting verbatim the claims of the United States '432 patent. U.S. Surgical argues that this amendment constitutes an admission by Bard that claim 20 of the '432 patent is limited to a plug with a pre-formed pleated surface.

U.S. Surgical further states that the European examiner rejected the only independent claim of Bard's application on the grounds that the prior art disclosed pleated plugs. In response to the rejection, Bard stated that its plug "is preferably formed by hot molding, which indicates beyond a doubt that the pleats are permanent and are inherent in the plug." According to U.S. Surgical, this statement is an admission that the invention of the '432 patent includes a pre-formed pleated surface.

c. Bard's position

Bard argues that, under the ordinary meaning of the words used in claim 20, the claim should not be construed to refer to pleats. Claim 20 refers to a structure that is "conformable" and "extremely pliable." Bard asserts that the ordinary meaning of the terms "conformable" and "extremely pliable" should control. Bard contends that additional structural limitations may be read into a claim only when the language of the claim invites reference to the remainder of the specification or the prosecution history. See Johnson Worldwide Associates, Inc. v. Zebco Corp., 175 F.3d 985, 989-90 (Fed. Cir. 1999).
In Johnson Worldwide, the patentee sought to enforce its claims to a steering control used with trolling motors. The patent at issue claimed a "heading lock coupled to a trolling motor." The defendant, Zebco, argued that statements made by the patentee during the prosecution history served to limit this claim to a directional indicator "physically attached" to the trolling motor. The Federal Circuit stated that there is a "heavy presumption" against importing additional limitations into claim language. See id. at 989. There are two situations, the court stated, in which a claim term should be accorded other than its ordinary and accustomed meaning. The first arises if the patentee has chosen to be his or her own lexicographer by clearly setting forth an explicit definition for a claim term. Id. at 990. The second is where the term or terms chosen by the patentee so deprive the claim of clarity that there is no means by which the scope of the claim may be ascertained from the language used. Id. The court found that the claim language was sufficiently clear that there was no need to import additional limitations from the specification and the prosecution history.

In this case, Bard contends that the limitations "conformable" and "extremely pliable" are sufficiently clear that it would be improper to import additional limitations from the specification and the prosecution history. Plaintiffs insist that neither term should be construed to refer to pleats, but rather that these are structural terms whose plain meaning should control.

Bard notes that the original patent application included a number of claims specifically reciting pleats, and other claims, including claim 20, that did not recite the use of pleats. Plaintiffs assert that the specification provides a written description of an embodiment of the invention that is not limited to pleats. The specification states: "in another embodiment of the invention, a filler body is positioned in a mesh cone and packs the implant when the plug is compressed by placement in the narrow hernia opening, providing the bulkiness believed to be essential for non-recurrate repair of abdominal wall hernias." Plaintiffs argue that this embodiment is not limited to pleats, and that it provides support for a construction of claim 20 without reference to pleats.

Plaintiffs further contend that the prosecution history demonstrates that Bard never intended to refer to pleats in claim 20. When the examiner inserted a pleat limitation into claim 5, the examiner did not require the addition of language into claim 20 to refer to pleats. In the reexamination proceedings, after the examiner suggested adding a "means for conforming" limitation to claim 20, Bard declined to adopt this language, and instead added the limitation "said hollow plug being extremely pliable . . . ." This additional language, plaintiffs contend, is a structural limitation that does not refer to pleats, and that does not invoke 35 U.S.C. § 112 P 6. Plaintiffs assert that claim 20 was allowed, not because it disclosed pleats, nor because it was limited to a plug that did not kink or buckle, but rather because it defined a plug whose extreme pliability allowed it to conform to a defect to a degree not achieved by the prior art. This reason for allowance is entirely consistent with the plain language of claim 20, plaintiffs state.

Moreover, Bard contends that it would be improper to invoke 35 U.S.C. § 112 P 6 to construe claim 20. Bard argues that it never intended to draft the claim in means-plus-function language. See Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1582 (Fed. Cir. 1996) (declining to construe claim in means-plus-function format when there was no evidence that the patentee intended to claim its invention in that fashion). Plaintiffs argue that claim 20 does not contain the words "means" or "means for," and so a presumption should apply that the claim is not written in means-plus-function language. Plaintiffs contend that the use of adjectives like "conformable" and "extremely pliable" to limit the structure is insufficient to trigger 35 U.S.C. § 112 P 6. See Personalized Media, 161 F.3d at 705 ("An adjectival qualification . . . placed upon otherwise definite structure . . . does not make the sufficiency of that structure any less sufficient for purposes of 35 U.S.C. § 112, P 6. Instead, it further narrows the scope of those structures covered by the claim and makes the term more definite."); see also Al-Site, 174 F.3d at 1317-19 (reversing trial court's determination that the claim limitation "attaching portion attachable to a portion of said frame of said pair of eyeglasses" was a means-plus-function element, because the limitation is not written in traditional means-plus-function format and because the claim supplies structural, not functional, terms).

Plaintiffs argue, moreover, that it would be improper under the doctrine of claim differentiation to construe claim 20 in means-plus-function format, because, under such a claim interpretation, the distinction between claims 19 and 20 disappears. Under the doctrine of claim differentiation, it is presumed that different words used in different claims result in a difference in meaning and scope for each of the claims. Clearstream Waterwater Systems, Inc. v. Hydro-Action, Inc., 206 F.3d 1440, 1446 (Fed. Cir. 2000). This doctrine cannot be used to make a claim broader than what is contained in the written description, but it prevents the narrowing of broad claims by reading into them the limitations of narrower claims. Id. The doctrine of claim differentiation is a guide to claim construction, not a rigid rule. IMS Technology, Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1432 (Fed. Cir. 2000).
Bard argues that the court should not interpret claim 20 in light of the statements it made during the prosecution of counterpart patents in Canada and Europe, as these statements were made in different factual and legal contexts. Bard contends that, in the Canadian application, it overcame the examiner's rejection by stating that "the flexible nature of the plug further allows it to compress radially upon insertion into the defect." And, Bard contends that the European application is irrelevant to the present proceedings, because the examiner had required Bard to use a single independent claim, and Bard complied with this requirement by choosing to claim only a pleated structure.

d. the court's construction

Two competing principles of claim construction are at issue in this case. One principle, advanced by plaintiffs, is that the court should not import additional limitations from the specification or the prosecution history unless the language of the claims, themselves, invites such analysis. See Johnson Worldwide, 175 F.3d at 989-90. As discussed above, Johnson Worldwide teaches that it is proper to introduce additional limitations into the plain meaning of claim terms only when the patentee is acting as its own lexicographer, or when the claim terms chosen by the patentee deprive the claim of clarity and provide no means for determining the scope of the claims. Id.

On the other hand, patent claims should not be construed to cover embodiments that are not supported by the specification. See Wang, 197 F.3d at 1383. Although it is generally improper to limit the scope of the claims to a preferred embodiment, see Eckchian v. Home Depot, Inc., 104 F.3d 1299, 1303 (Fed. Cir. 1997), claims should not be construed to encompass embodiments beyond those that are described and enabled in the specification. See Wang, 197 F.3d at 1382; see also Modine Manufacturing Co. v. International Trade Commission, 75 F.3d 1545, 1551 (Fed. Cir. 1996) ("When the preferred embodiment is described in the specification as the invention itself, the claims are not necessarily entitled to a scope broader than that embodiment."). To determine whether the claims encompass art that is not supported by the specification, it is proper to look to the specification and the prosecution history to determine the scope of the invention. See Wang, 197 F.3d at 1383 ("Whether an invention is fairly claimed more broadly than the 'preferred embodiment' in the specification is a question specific to the content of the specification, the context in which the embodiment is described, the prosecution history, and if appropriate, the prior art, for claims should be construed, when feasible, to sustain their validity.").

The crux of the present dispute is whether the specification describes an unpleated implant which is "extremely pliable, allowing localized portions of the hollow plug to adapt to irregularities in the tissue or muscle wall defect." Plaintiffs note that the specification states that "in another embodiment of the invention, a filler body is positioned in a mesh cone and packs the implant when the plug is compressed by placement in the narrow hernia opening, providing the bulkiness believed to be essential for non-recurrent repair of abdominal wall hernias." Although the quoted embodiment is not limited to a pleated implant, this embodiment does not describe that the implant should be "extremely pliable." The specification does use the term "extremely pliable," as it states on two occasions that "the pleated surface is extremely pliable." While the specification describes plugs that are extremely pliable, it does so only in the context of pleated plugs. Thus, the specification does not provide support for an unpleated plug that is "extremely pliable, allowing localized portions of the hollow plug to adapt to irregularities in the tissue or muscle wall defect."

Bard amended claim 20 to include the limitation "extremely pliable, allowing localized portions of the hollow plug to adapt to irregularities in the tissue or muscle wall defect" in order to distinguish the present invention from Trabucco. Bard amended claim 20 in this fashion after the examiner had rejected claim 20 in light of Trabucco, and after the examiner suggested adding the claim term "means for conforming." In support of his suggestion, the examiner referred to Col. 4, lines 44-48 of the specification, which specifies pleats as the structure that renders the implant "extremely pliable." After Bard made its final amendment to claim 20, the examiner appeared satisfied that Bard had added a "means for conforming" limitation, as he stated in his Notice of Intent to Issue Reexamination Certificate that "claims 19 and 20 set forth a means for conforming which renders the hollow plug extremely pliable."

Bard argues that the added limitation, "said hollow plug being extremely pliable," is a structural limitation that, by itself, served to distinguish the claimed invention from Trabucco. However, as noted above, the specification does not describe how to make a plug that is extremely pliable, other than to say that the plug should be pleated. There is no basis to conclude that the term "extremely pliable" is a distinct structural limitation that is supported by the specification. The court finds that it is unlikely that the examiner found the "extremely pliable" language to be a structural limitation that distinguished Bard's invention from Trabucco.
The court finds that the best reading of the prosecution history is that the examiner found Bard's "extremely pliable" limitation to represent a "means for conforming." The court finds that the examiner would not have allowed claim 20 but for his conclusion that the claim sets forth "a means for conforming which renders the hollow plug extremely pliable such that localized portions can adapt to irregularities in the tissue of muscle wall defect," as he stated in his Notice of Intent to Issue Reexamination Certificate. Because the examiner accompanied his suggested amendment with a reference to Col. 4, lines 44-48 of the specification, which recites pleats as rendering the plug "extremely pliable," the court finds that the "means for conforming" refers to pleats.

Although claim 20 is not written in traditional means-plus-function format, the court finds that the claim language is sufficiently lacking in structural elements that it is proper to invoke 35 U.S.C. § 112 P 6. As described above, the term "extremely pliable" is not a structural term that is supported by the specification. When this term is disregarded, claim 20 has no additional structure beyond that of claim 19, which the parties acknowledge is written in functional language.

The court does not find that the doctrine of claim differentiation, as advocated by plaintiffs, bars interpretation of claim 20 in means-plus-function format. It appears that, when claim 20 is read in a means-plus-function format, claims 19 and 20 refer to the same structure. While claim differentiation is a useful canon of claim construction, the court finds that the language of the claims and the prosecution history provide adequate justification for interpreting claim 20 under 35 U.S.C. § 112 P 6.

The court recognizes that the Federal Circuit has cautioned against reading examiners' statements into the scope of claims. See Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1556 (Fed. Cir. 1997), abrogated on other grounds, Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 1454-55 (Fed. Cir. 1998). In Eastman Kodak, the patent examiner during a Reexamination Proceedings Interview Summary wrote that a set of conditions recited in a crystallization procedure referred to "further crystallization" as opposed to "initial crystallization." The Federal Circuit affirmed the trial court's decision to exclude the "further crystallization" limitation from the claims, as to do so would improperly use prosecution history statements to vary the meaning of the claims. The present case is distinguishable from Eastman Kodak because the examiner's statements in this case were made in his Notice of Intent to Issue Reexamination Certificate, wherein he gave his interpretation as to why claim 20 was allowable. There is no indication in Eastman Kodak that the examiner's remarks were determinative of the meaning of the disputed claim.

Because the court is satisfied that the prosecution history of the '432 patent in the United States demonstrates that claim 20 should be limited to a pleated structure, the court will not consider the arguments raised by U.S. Surgical concerning Bard's foreign patent filings.

The court finds that the claim term "surface of said hollow plug being conformable" requires pre-formed pleats which render the plug "extremely pliable, allowing localized portions of the hollow plug to adapt to irregularities in the tissue or muscle wall defect."

II. Ordinary and Customary Meaning

Because we conclude that the district court's claim construction must be affirmed under either methodology offered by the parties, we begin by consulting the ordinary and customary meaning of the claim terms as requested by Bard.

Bard argues that the ordinary and customary meanings of the terms "conformable" and "pliable" do not require pleating. Bard proffers general-usage dictionary definitions for the terms "conformable" and "pliable." One representative definition of the term "conformable" is "corresponding; similar." American Heritage Collegiate Dictionary 292 (3d ed. 1993). A definition from the same dictionary for the term "pliable" is "easily bent," with synonyms including "flexible" and "supple." Id. at 1050-51.

Bard's dictionary definitions are largely unhelpful. First, even under the cases Bard cites, the ordinary and customary meaning of a term does not govern if the intrinsic record contains clear lexicography or disavowal of claim scope. Tex.
Digital Sys., Inc., 308 F.3d at 1204. Because we conclude below that the intrinsic record demonstrates that the plug in claim 20 must be pleated, the ordinary and customary definitions of "conformable" and "pliable" are not controlling. Second, because claim scope in this case turns most directly on the term "plug," the proffered dictionary definitions of "conformable" and "pliable" are largely inapposite. Finally, we question the need to consult a dictionary to determine the meaning of such well-known terms. Courts, including the Texas Digital Systems court, regularly forgo detailed dictionary analyses if the term is as commonplace as "conformable" or "pliable." See, e.g., Tex. Digital Sys., Inc., 308 F.3d at 1207 (determining the ordinary meaning of "controlling the durations" without referring to a dictionary). Indeed, Bard itself "submits that merely rephrasing or paraphrasing the plain language of a claim by substituting synonyms does not represent genuine claim construction."

III. Specification of the '432 patent

U.S. Surgical contends that the plug in claim 20 must be pleated because, in various ways and places, the specification defines the claimed plug as including pleats. In two places, the patent describes in general terms what it deems to be the invention. In both places, the patent unequivocally defines the claimed plug as having pleats. First, the Summary of the Invention begins by stating that "the present invention is an implantable prosthesis." '432 patent, col. 1, ll. 36. In the next paragraph, before the embodiments of the invention are described, the patent states that "the implant includes a pleated surface." Id. at col. 1, ll. 51-52 (emphasis added). Second, the Abstract describes "an implantable prosthesis including a conical mesh plug having a pleated surface which conforms to the contours of the defect being repaired." Id., Abstract (emphasis added).

--- Footnotes ---

3 Despite the suggestion to the contrary in the concurrence, this opinion's use of the term "define" is not intended to invoke the theory that the inventors acted as lexicographers and redefined words differently from their ordinary meaning in the art. Instead, we use the term merely to denote that "the specification makes clear at various points that the claimed invention is narrower than the claim language might imply" based on a reading of the specification as a whole. Alloc, Inc. v. ITC, 342 F.3d 1361, 1370 (Fed. Cir. 2003), cert. denied, 541 U.S. 1063, 124 S. Ct. 2390, 158 L. Ed. 2d 963 (2004). The term takes on similar meaning when applied in this opinion to the prosecution history.

--- End Footnotes ---

Bard claims that a statement in the specification is not "determinative of claim construction merely because it appears in the 'Summary of the Invention' section." Although a statement's location is not "determinative," the location can signal the likelihood that the statement will support a limiting definition of a claim term. Statements that describe the invention as a whole, rather than statements that describe only preferred embodiments, are more likely to support a limiting definition of a claim term. See Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1347 (Fed. Cir. 1998) (relying on "global comments made to distinguish the applicants' 'claimed invention' from the prior art" during the prosecution of the patent in construing a claim term). Statements that describe the invention as a whole are more likely to be found in certain sections of the specification, such as the Summary of the Invention. See Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1348 (Fed. Cir.) ("Those statements, some of which are found in the 'Summary of the Invention' portion of the specification, are not limited to describing a preferred embodiment, but more broadly describe the overall inventions of all three patents."). cert. denied, ___ U.S. ___, 543 U.S. 821, 124 S. Ct. 91, 160 L. Ed. 2d 31, 2004 WL 2058375 (2004). Accordingly, other things being equal, certain sections of the specification are more likely to contain statements that support a limiting definition of a claim term than other sections, although what import to give language from the specification must, of course, be determined on a case-by-case basis. In this case, the plug claimed by the '432 patent is defined globally as requiring a pleated surface, which limits claim 20.

Bard further contends that these statements do not limit claim 20 to pleated plugs because the statements are merely "passing references" and relies for this argument on Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898 (Fed. Cir.), petition for cert. filed, ___ U.S. ___, 2004 WL 1553522 (July 1, 2004). Liebel-Flarsheim involved patents related to powered fluid injectors used in medical procedures. Id. at 900. The trial court construed the claims as requiring the use of a "pressure jacket," reasoning that the term "syringe receiving opening" was ambiguous and that each of the two embodiments in the specification disclosed the syringe receiving opening being located at the front end of a pressure jacket. Id. at 904. This court rejected the trial court's reasoning for several reasons, the first of which was that "the specification does not define
'opening' restrictively, nor is there anything in the specification that supports the district court's conclusion that the term is ambiguous." Id. at 905.

Contrary to Bard's characterization, the holding of Liebel-Flarsheim did not depend on the number of times the term "pressure jacket" was used or on details of preferred embodiments. Instead, the Liebel-Flarsheim court rejected the trial court's reasoning because, inter alia, the specification did not clearly define the term in question, even implicitly. In this case, however, the specification explicitly defines the inventive plug as "having" or "including a pleated surface." See '432 patent, Abstract (first quotation); id. at col. 1, II. 52 (second quotation). Accordingly, Liebel-Flarsheim provides no support for Bard's position.

Bard finally contends that these statements do not define the terms "conformable" and "pliable" as requiring pleating. Even if true, this argument is irrelevant because the statements define the words "implant" or "plug." In the Summary of the Invention, the phrase "includes a pleated surface" modifies the word "implant." See '432 patent, col. 1, II. 51-55 ("The implant includes a pleated surface which increases the pliability of the implant"). In the Abstract, the phrase "having a pleated surface" modifies the word "plug." See id., Abstract (describing "an implantable prosthesis including a conical mesh plug having a pleated surface which conforms to the contours of the defect being repaired"). Accordingly, whether or not the patent describes pleating as the only way to achieve conformability or pliability is irrelevant because the patent requires the "implant" or "plug" to have a pleated surface.

This point can also be made from another perspective. Claim 20 covers a specific structure, namely the surface of a mesh plug. Whether or not the patent states that pleating is the only structure that could achieve certain effects, such as conformability or pliability, is irrelevant because the patent defines the claimed structure as including pleats. In other words, because the language requiring pleating applies to the structure, not to the effects produced by the structure, Bard's contention that the patent does not state that pleats are the only way to achieve conformability and pliability is simply beside the point.

Both parties also point to the preferred embodiments. Under our precedent, a patentee's choice of embodiments can shed light on the intended scope of the claim, but a patent claim term is not limited merely because the embodiments in the specification all contain a particular feature. See Liebel-Flarsheim, 358 F.3d at 907-08. On the other hand, a construction that excludes a preferred embodiment "is rarely, if ever, correct." Vitronics Corp., 90 F.3d at 1583.

Bard points to language in the specification that does not use the term "pleated" to argue that a construction in which the plug in claim 20 must have a pleated surface would exclude a preferred embodiment. That language states in pertinent part, "In another embodiment of the invention, a filler body is positioned in a mesh cone and packs the implant when the plug is compressed by placement in the narrow hernia opening, providing the bulkiness believed to be essential for non-recurrent repair of abdominal wall hernias." '432 patent, col. 2, II. 3-8 (emphasis added). Bard contends that construing claim 20 to require a pleated plug would improperly exclude this preferred embodiment, which describes a "mesh cone" without mentioning pleating.

We find this argument unpersuasive for two reasons. First, the "embodiment" to which Bard refers is merely a description of one aspect of the claimed implant, namely the filler body. That the patent does not explicitly mention the pleated structure of the plug's outer surface is unsurprising given the focus in that paragraph on the filler body, which is contained inside the surface of the plug. Second, because the patent globally defined the plug as having a pleated surface, the term "pleated" need not be repeated each time a term describing some other aspect of the plug is used. Accordingly, the failure to recite the term "pleated" before "mesh plug" does not mean that the patent discloses an embodiment with a non-pleated plug.

U.S. Surgical argues that the plug in claim 20 must be pleated because neither the embodiments nor the drawings describe a non-pleated plug. It is true that many of the descriptions of the plug in the specification explicitly require pleating and are strikingly similar to the language employed in claim 20. For example, the language of claim 20 --"said hollow plug being extremely pliable, allowing localized portions of the hollow plug to adapt to irregularities in the tissue or muscle wall defect"--can be compared with the following language describing a preferred embodiment --"The pleated conical plug is extremely pliable, allowing localized portions of the implant to adapt to the irregular contour 40 of the defect." '432 Reexamination Certificate, col. 2, II. 22-24 (first quotation); '432 patent, col. 4, II. 45-48 (second quotation). The only significant difference between these two quotations is an explicit description of pleating. Similarly close comparisons can be made between other descriptions of preferred embodiments and the disputed terms in claim 20. Id. at col. 1, I. 66 to col. 2, I.
Accordingly, the specification demonstrates that Bard clearly defined the terms "implant" and "plug" in claim 20 as requiring a pleated surface. Statements of general applicability clearly define the claimed plug as "having" or "including a pleated surface." See '432 patent, Abstract (first quotation); id. at col. 1, ll. 52 (second quotation). Further, statements describing preferred embodiments of the surface of the plug universally describe a "pleated conical plug." E.g., '432 patent, col. 4, ll. 45-48 (located in the Description of the Preferred Embodiments).

Although the statements in the specification suffice by themselves to demonstrate that the plug in claim 20 must be pleated, we also consider the prosecution history of the '432 patent, which confirms the analysis of the specification.

III. Prosecution History of the '432 patent

A. Initial Examination

The prosecution history of the '432 patent equally supports our conclusion that the plug in claim 20 requires a pleated surface. We begin with the initial examination.

On February 5, 1993, Bard filed a patent application with respect to the present invention by Drs. Rutkow and Robbins. The examiner rejected a number of the claims in the initial application that matured into the '432 patent, including claim 20 (application claim 21), on a variety of grounds. In response, Bard's attorney conducted an interview with the examiner and, thereafter, submitted an amendment and accompanying remarks. Of the amendments and arguments made by Bard, three merit discussion because they explicitly or implicitly address pleating.

First, the examiner rejected claim 20 (application claim 21) based on U.S. Patent No. 5,147,374 ("Fernandez"). Fernandez disclosed a device used in hernia repair in which (1) surgical mesh was rolled into a tight cylinder, (2) one end of the cylinder was slit to produce flaps, (3) the non-slit portion of the cylinder was inserted into the hernia defect, and (4) the flaps along with a flat sheet of surgical mesh were stapled to tissue adjacent to the hernia defect. To overcome Fernandez, Bard argued that "the implant disclosed in Fernandez does not contain pleats, is not conformable to an irregular shaped defect, is not compressible into a reduced configuration which approximates the shape of the defect upon insertion therein and does not contain a filler body or freely moveable mesh petals as is claimed." (Emphasis added.)

Second, to overcome the examiner's rejection based on the indefiniteness of the claim language on compressibility, Bard argued that "the claims do not recite that the surgical mesh fabric is compressible but, rather, that the implant formed from such material is compressible from a first configuration which is larger than the defect into a second configuration which approximates the shape of the defect." (Emphasis added.)

Third, in the interview, Bard demonstrated the difference in pliability and flexibility of the claimed device as compared to prior art devices. Bard later described this interview, arguing:

The claimed device easily assumed the shape of the irregular opening while the stiffer prior art devices left gaps around the boundary of the opening. It was also pointed out to the Examiner that the Fernandez plug does not contain pleats as is found in the preferred embodiment of the claimed device and as is expressly required by certain of the pending claims. It was further explained to the Examiner that it is the texturing of the implant which permits the claimed plug to conform to irregularities in the shape of the defect without kinking or buckling.
Pleating is implicated in each of the responses to the examiner's rejections described above. In distinguishing Fernandez and describing the interview, Bard explicitly relied on pleating as a material distinction over the prior art. Further, Bard argued that compressibility is based on the configuration of the mesh surface, not the nature of the mesh fabric itself. The emphasis on the configuration of the mesh implicates pleating. Such an implication is also supported by Bard's argument that "it is the texturing of the implant which permits the claimed plug to conform to irregularities in the shape of the defect."

Although pleating is explicitly or implicitly described by each of these arguments, limiting claim 20 to require pleating based solely upon amendments and arguments made during the initial examination would likely be improper. Most importantly, because pleating is described in alternative arguments and many claims contain an explicit pleating limitation, the pleating arguments do not necessarily apply to claim 20. For example, Bard argued, "It was also pointed out to the Examiner that the Fernandez plug does not contain pleats as is found in the preferred embodiment of the claimed device and as is expressly required by certain of the pending claims." (Emphasis added.)

B. Reexamination

Having determined that amendments and arguments made during the initial examination suggest a close connection between pleating and claim 20 but do not necessarily require the plug in claim 20 be pleated, we now turn to the reexamination. Bard requested that the '432 patent be reexamined because of certain art that was submitted to the examiner but not considered during the initial examination. 5

Footnotes

The reexamination focused on the latter of two articles authored by Ermanno E. Trabucco. See Ermanno E. Trabucco, A New Preperitoneal Plug Technic for Recurrent Groin Hernioplasty (undated manuscript) ("Trabucco"). In the request for reexamination, Bard described two ways in which the claimed device was distinguishable from Trabucco. First, Bard distinguished Trabucco by noting that the plug "disclosed in Trabucco I and II does not include a pleated surface." Second, the Trabucco plug "is stiff as compared to the flexible plug claimed in the '432 patent." Like arguments made during the initial examination, this argument describing pleating does not necessarily apply to and limit claim 20. Bard distinguished Trabucco using two alternative arguments, only one of which explicitly required pleating, and the reexamination initially involved all claims in the '432 patent.

The examiner allowed all device claims that expressly included pleating and rejected claims 19 and 20, which were the only device claims that did not expressly include pleating. The rejection of claims 19 and 20 was based on the examiner's determination that the Trabucco plug was radially compressible, flexible, and conformable.

In responding to the examiner's rejection, Bard clearly distinguished the plug claimed in claims 19 and 20 from Trabucco's plug on the basis of its plug having pleats. Bard began the response by addressing conformability, contending that it was demonstrated in the interview that the Trabucco plug was not radially compressible to the same degree as the claimed device. Next, in addressing flexibility and pliability, Bard stated:

As explained in the specification of the reexamination application, the surface of the inventive plug is pleated with [sic] enhances the flexibility and pliability of the implant, allowing the prosthesis to conform to irregularities in the shape of the hernia without kinking.

(Emphases added.) In the final argument, Bard again addressed conformability, arguing that the claimed device conforms "simply with insertion into the defect," whereas the Trabucco plug does not so conform. U.S. Surgical contends, and we
agree, that the statement "the surface of the inventive plug is pleated" is an unequivocal statement constituting a clear
disclaimer of scope in claim 20. In the initial examination and early stages of the reexamination, alternative arguments
based on pleating could not conclusively demonstrate that the plug in claim 20 must be pleated because other claims were at
issue and those other claims expressly required pleating. But the only claims at issue when Bard stated that "the surface of
the inventive plug is pleated" were claims 19 and 20, which were virtually indistinguishable from one another and neither of
which expressly required pleating. Bard counters that the statement "the surface of the inventive plug is pleated" referred
only to the pleated preferred embodiment demonstrated to the examiner during the interview and contends, therefore, that
the statement does not limit claim 20. Bard's argument is unpersuasive because the statement "the surface of the inventive
plug is pleated" referred to the claimed plug in general, not merely to the embodiment demonstrated during the interview.
This can be seen by the context of the statement, which was preceded by the words "as explained in the specification" and
was located in a different paragraph from the discussion of the interview. Additionally, the statement uses the term "the
inventive plug," whereas the discussion of the interview in the preceding paragraph describes "a plug embodying the
claimed invention." Bard further argues that the statement "the surface of the inventive plug is pleated" is merely an
inaccurate statement cannot override the claim language itself, which controls the bounds of the claim."). Bard, however,
provides no evidence demonstrating that its statement was inaccurate or otherwise a mistake. Further, the context of this
argument suggests that it was intentionally made to overcome a rejection by the examiner.

The examiner maintained the rejection of claims 19 and 20 but suggested that they would be allowed if specific means-plus-
function language were inserted at the end of both claims. The examiner cited language from the specification that described
a "pleated conical plug" in making this suggestion. In response, Bard stated that "in accordance with the Examiner's
suggestion, claims 19 and 20 have been amended to clearly distinguish the arrangement shown in the Trabucco article," but
Bard failed to add the specific means-plus-function language required by the examiner to claim 20. The examiner then
allowed claims 19 and 20, describing both as means-plus-function claims.

It is unclear what import, if any, to draw from Bard's failure to follow the examiner's suggestion for claim 20 as it did for
claim 19. Although Bard did not add the term "pleated" or explicit means-plus-function language to claim 20, they did adopt
language substantially identical to the language suggested by the examiner, which language implicitly required pleating.

C. Conclusion as to the Prosecution History

In examining the prosecution history, we note Bard made a number of arguments distinguishing the prior art on the basis
that the prior art did not disclose a pleated plug. Many of these arguments are not necessarily applicable to claim 20 because
the arguments related to claims in addition to claims 19 and 20 and were offered in the alternative with other arguments that
did not address pleating. But in the only response in which claims 19 and 20 alone were considered, Bard made a clear
statement to the examiner that "the surface of the inventive plug is pleated." This statement, when combined with the rest of
the prosecution history, demonstrates that Bard therein clearly defined the plug of claim 20 as having pleats. Accordingly,
the prosecution history provides an independent ground for construing claim 20 as requiring a plug with a pleated surface.

IV. Conclusion as to Claim Construction and Infringement

As described in detail above, Bard clearly defined the plug in claim 20 as having pleats in both the specification and the
prosecution history. Accordingly, we affirm the district court's claim construction requiring "pre-formed pleats." Claim
construction order, 102 F. Supp. 2d at 217. Because an analysis of the intrinsic record suffices to support this construction,
we do not consider, in the alternative, whether the district court properly construed claim 20 as containing means-plus-
function limitations requiring pre-formed pleats even though claim 20 did not include the words "means for" or similar
language. 6 We thus need not decide whether the presumption against such a conclusion is overcome by determining
whether claim 20, drawn to structure, fails to describe specific structure. We merely note that the district court's opinion
contains extensive and careful reasoning to support such a construction.

--- Footnotes ---

6 U.S. Surgical raises a number of additional arguments that need not be reached. These include whether claim 20 included
a "kinking and buckling" limitation and whether statements applicants made during the prosecution of foreign patent
applications limited the claims of the ‘432 patent.
Lastly, the parties dispute the term "conformable part" that is found in claims 1 through 5, 6, 9, 12, and 18 of the 848 Patent. At oral argument, Plaintiff stated that claims 3, 4, 5, and 12 of the 848 Patent were not going to be pursued. Accordingly, only claims 1, 2, 6, 9, and 18 need be addressed.

Claims 1 and 2 of the 848 Patent state, in pertinent part, "said body having at least a part that is conformable to a surface on the article … wherein the conformable part of the body is made from material that can be reconfigured into a plurality of different shapes and maintains itself in the plurality of different shapes, wherein the conformable part … comprises thermal setting rubber".

Claim 6 of the 848 Patent includes, in pertinent part, "the conformable part of the body is made from a material that can be reconfigured into a plurality of different shapes and maintains itself in the plurality of different shapes independently of the article to which the security apparatus is to be connected and without any external force applied to the body".

Claim 9 of the 848 Patent states, in pertinent part, "said body having at least a part comprising thermal setting rubber that is conformable to a surface on the article to which the security apparatus is attached".

Claim 18 of 848 Patent contains similar language: "the conformable part of the body is made from a material that can be reconfigured into a plurality of different shapes and maintains itself in the plurality of different shapes independently of the article to which the security apparatus is to be connected".

The written description of the 848 Patent draws an analogy of these limitations to putty, which retains different shapes so "there is little tendency of the body to peel off". The written description distinguishes the thermal setting rubber of the patented device to conventional plastic flexible material which, "while reconfigurable, tends to resume its undeformed shape".

During the prosecution of the 848 Patent, the "conformable part" was distinguished from the suction cup found in the previously issued Norrad Patent by reason that the conformable part can be placed in different shapes but does not spring back into an undeformed state once a conforming part is released or the conformable part is separated from an article to which it had been applied.

The 848 Patent does not explicitly define "conformable part". "Conformable" is defined as "corresponding in form". Webster's Third International Dictionary 477 (3d ed 1986).

Plaintiff argues that "conformable part" can/should be construed separately for each of the claims in which it is found. However, it proffers only one construction, stating that, "in most of the claims", conformable part should be defined as a material "that can be deformed under the application of a modest force and changed from an initial starting shape and maintained in shapes different than the starting shape with the part separated from an article". Defendant argues that the term should be construed to mean "a material that can be molded into different shapes and retains those shapes on its own".

The plain language of the above claims demonstrates that Plaintiff used the term "conformable part" consistently throughout the Patent and that it should be construed consistently throughout all of the claims of the Patent. See Rexnord, 274 F.3d at 1342. All of the claims, except for claim 9, state that the material can be reconfigured into different shapes and that the material maintains itself in those different shapes. Claims 6 and 18 also state that the material maintains its different shapes independent of the article to which it is attached. The written description of the Patent, in which the above-described limitations draw an analogy to putty, which retains different shapes so "there is little tendency of the body to peel off", and distinguishes the thermal setting rubber of the patented device to conventional plastic flexible material which, "while reconfigurable, tends to resume its undeformed shape", further supports a construction requiring the material to maintain its configured state independent of the article to which it had been attached. Furthermore, the prosecution history supports such a construction.
Based on the above, the conformable part of the 848 Patent is construed to mean "a material that can be reconfigured into a plurality of different shapes and maintains itself in the plurality of different shapes independent of the article to which it is attached".

"A Conical Beam of Light"

The "source of light" limitation of claim 2 reads: "a source of light mounted within said housing for directing a conical beam of light downwardly through said opening along said side of said vehicle below said window so as to be visible from in front of and from behind said vehicle." Ford argues that the term "a conical beam of light" should be construed as "all light from the source that passes through the housing opening." Ford claims that this construction is consistent with Krippelz's use of the term "beam of light" in the '903 patent because the patent "teaches that all of the light from the 'source of light' is part of the 'beam of light.'" Unfortunately, I see no such limitation in the patent that all of the light from the "source of light" is part of the "beam of light." While the "source of light" does generate a "beam of light," there is no provision explicitly teaching that the "source of light" cannot produce any other light (i.e., non-beam light), and I should not impose negative limitations on a claim that are not explicitly provided in the claim. See Omega Eng'g., Inc. v. Raytek Corp., 334 F.3d 1314, 1322 (Fed. Cir. 2003) ("When construing the functional statement in a means-plus-function limitation, we must take great care not to impermissibly limit the function by adopting a function different from that explicitly recited in the claim.") (quoting Generation II Orthotics, Inc. v. Med. Tech., Inc., 263 F.3d 1356, 1364-65 (Fed. Cir. 2001)).

2 In its reply brief, Ford offers a "slight" modification, proposing that the term be construed as "the real-world beam light from the source of light that actually passes through a lensless housing opening." However, because Ford in the same breath "reserves its right to seek review of the Court's Orders on appeal," I will fully explain my rejection of Ford's initial proposal before offering my final construction, which adopts a portion of Ford's revised proposal.

Furthermore, the description of the term "light beam" by the Board of Patent Appeals and Interferences ("the Board") during reexamination does not support Ford's proposed construction. The key phrase from the Board's description is that light must have some "defined sweep range" in order to be a beam, but there is no limitation in the patent that the "source of light" may produce some additional light outside of this "defined sweep range."

3 I treat the terms "light beam" and "beam of light" synonymously.

Moreover, I reject Ford's argument that Krippelz is estopped from arguing that claim 2's "source of light" produces "non-beam light" based on the Board's holding that Krippelz is estopped from claiming that "a similar source, using an incandescent bulb, or other light source generating light which is not a 'beam,' infringes the instant claimed invention." There is a difference between a light source that exclusively generates non-beam light (one which Krippelz is estopped from arguing infringes its patent) and a light source that generates both beam and non-beam light (one which Krippelz may argue infringes its patent).

Finally, I reject Ford's argument that adopting the distinction between beam and non-beam light would invalidate Krippelz's patent. Ford claims that patent would be invalid because it would fail to meet the statutory written description requirement of 35 U.S.C. § 112 because neither the claim specification nor the prosecution history contains a "disclosure of how anyone would determine which light rays are critical 'beam light' and which the irrelevant 'non-beam light.'" (emphasis added). However, the relevant inquiry under the written description requirement is that the patent specification "must clearly allow
persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed." Gentry Gallery v. Berkline Corp., 134 F.3d 1473, 1479 (Fed. Cir. 1998) (emphasis added). The claim specification here does indeed allow a person of ordinary skill in the art to determine the nature of the light generated by the "source of light," although it does not explicitly disclose precisely how one goes about doing so. As noted by the Board, beam light must have some "defined sweep range," and by inference, it must be possible to measure this "defined sweep range" and thus distinguish between non-beam and beam light.

Accordingly, the term "a conical beam of light" will be construed as "a conical light beam from the source of light that actually passes through a lensless housing opening." 4

4 I am confused as to what Ford's proposed "real world" term adds to this construction with the inclusion of its proposed term "actually passes through." Aside from the allure of some possible, but non-existent, connection to a long-running reality-based TV show, I see no need for this additional term.

1. "conical incident surface" and "conical exit surface"

There is, in many ways, more agreement than disagreement regarding the meaning of the terms "conical incident surface" and "conical exit surface." Both parties, for example, understand "incident surface" to denote the surface that light strikes and "exit surface" to denote the surface that light departs; in addition, both parties read "conical" to connote some type of cone shape, and the two seem to agree that such surfaces emit ring-shaped light patterns. All that the parties actually dispute is whether the phrase "conical . . . surface" mandates that the surface resemble a complete cone or, by contrast, that the surface resemble a cone in part. As it is used in the claim language, the word "conical" is plainly adjectival; it modifies and qualifies the kind of surface the light strikes. Basic semantics suggests that "conical" means cone-like, much like "pyramidal" means pyramid-like and "spherical" means sphere-like, and it also suggests that "conical [] surface" means nothing more than a surface with cone-like attributes. Simpler and more congruent with the claim text than either of the parties' somewhat diffuse definitions, a construction of "conical [] surface" to mean a surface with cone-like attributes is buttressed by the specifications' discussion of cone-shaped surfaces, see '336 Patent at 32:12-57, and of "incident" surfaces generally. Id. at 6:31-33; 13:35-39; 14:31-35; 40:5-12; see also id. at figs. 17-20; 31-33. The court thus construes "conical incident surface" to mean "a surface with cone-like attributes that light strikes." In the same manner and to the same effect, the court construes "conical exit surface" to mean "a surface with cone-like attributes from which light departs."

5. The term "connectable" should be interpreted as follows: "capable of being connected together; it does not require that the hanging means be removable."

13. "Connected to"

The term "connected to" appears in Claim 5 of the '477 Patent to describe the relation of the flexible tubes with the elongate members. See '477 Patent col. 10 ll. 10-11 ("one or more sterilized flexible tubes connected to said back of each of said one or more elongate members"). Here again, Gore argues that no construction is necessary. Millipore initially contended that this term should be construed as "joined or linked together" without requiring that there be contact between the two objects.
I agree with Millipore that the term "connected to" should be construed as "joined or linked together." See Webster's Third New International Dictionary at 480 (2002). However, because being "joined or linked together" in this setting specifically requires that there be contact between the tubes and the elongate members, I find, as Millipore now concedes, the remaining dimension to Millipore's initial construction irrelevant and therefore reject it.

d. Connected To

Claim 16 states "an eccentric weight portion connected to said cylindrical gear portion at a position radially outward of the axis of said cylindrical gear portion." '964 Patent, col. 11, ll 13-15. APE contends that the common and ordinary meaning of "connected to" is "joined together, united or linked." J&G construes the term to mean "formed of one-piece and specifically excludes bolting as the '964 patent teaches that prior art having bolted counterweights are not sufficiently durable and the '964 patent does not provide any other methods of 'connected to' other than casting from one-piece." Doc. 27 at 25.

APE first argues that other claims in the patent, 1, 6, 11, use the term "connected to" in the plain and ordinary sense of "separate items... that are joined together." Doc. 26, at 16. J&G agrees, but points out that the use of "connected to" in this sense is not disputed in those claims and, further, in each of the three instances, the term "connected to" is modified by the adverb "operatively," which is not used in claim 16. J&G argues that, although the use of a term in one claim may shed light on its meaning in another claim, the terms must be used in a similar context. This is not the case in the '964 patent. J&G again argues that "connected to" in claim 16 cannot mean a two-piece assembly because "in the Reexamination of the '964 Patent, patentee argued away from a two-piece counterweight having an eccentric weight portion that attached to a cylindrical gear portion. Exhibit A, at 6." Doc. 27 at 27. The Court has rejected this argument as not persuasive. Cf. pages 23-24 of this Memorandum on Claim Construction.

In addition J&G argues that APE "disavowed a bolted, two-piece assembly in the specification and cannot now claim that 'connected to' includes what was previously disavowed. Cf. '964 Patent, col. 1, ll. 41-45." Doc. 27 at 27. The cited language of the patent is found in the "Background of the Invention" section of the patent. After describing the prior art as including "a vibratory assembly with counterweights having a solid eccentric weight bolted to a portion of a cylindrical gear," the cited language reads, "These bolted counterweights are not sufficiently durable, because the bolts have a very undesirable tendency to break under the large stress loads generated during rotation counterweights." '964 Patent, col. 1, ll 39-45. As pointed out before, at page 20-21 of this opinion, the Background of the Invention section distinguishes the vibratory devices known in the industry and points out the disadvantages of both two-piece and one-piece vibratory devices. '964 Patent, col. 1, ll 39-51, Doc. 26, Exhibit A, at 6. Although J&G argues that the characterization of bolted counterweights as "not sufficiently durable," expresses exclusion of bolted counterweights, the statement is an expression of a problem to be solved and does not state or imply an express disavowal of two-piece assemblies. A specification disclaimer that operates to surrender subject matter from the scope of a claim must demonstrate an "intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Teleflex, 299 F.3d at 1325. It is interesting to note that all five of the previous opinions on the disputed term "connected to" rejected the argument J&G makes here that the term excludes "bolting." cf. footnote 4 above. All four opinions accept APE's construction of the term "connected to," as meaning "joined together, united or linked." This Court makes the same construction. The term "connected to" is construed to mean "joined together, united or linked."

The phrase "connected to" appears in asserted claims 1, 6, 11, and 16. The parties agree that the phrase generally means "joined together, united or linked" (Joint Disputed Claim Terms Chart), and the court finds this to be the ordinary meaning of the phrase. Geoquip, however, wishes the definition also to indicate that the phrase specifically excludes bolting as the '964 patent teaches that prior art having bolted counterweights are not sufficiently durable and the '964 patent does not...
provide any other methods of 'connected to' other than casting from one-piece." Id. Thus, in order to resolve the dispute between the parties, the court must examine whether the patentee has made a clear and unmistakable disavowal of bolted counterweights. See Phillips, 415 F.3d at 1316.

The court begins its analysis by looking to the claims themselves. Claim 1 describes the counterweight and then indicates that there is "at least one driving means operatively connected to said counterweight and adapted to rotate said counterweight about its rotational axis." '964 Patent, col. 9, ll. 51-53. Similarly, claims 6 and 11 describe a driving means as being "operatively connected to" the counterweight. Id. at col. 10, ll. 28-31, 64-66. Claim 16, however, uses the phrase "connected to" in a different manner, describing the counterweight as having "an eccentric weight portion connected to said cylindrical gear portion at a position radially outward of the axis of said cylindrical gear portion." Id. at col. 11, ll. 13-15. As opposed to the description in claim 19, in which the eccentric weight portion is integral with the cylindrical gear portion, claim 16 contemplates a two-piece counterweight in which the pieces are joined together in some manner. There is no mention in the claims, however, of excluding bolting as a means of connection. There is also no indication that the phrase "connected to" means something different in claim 16 than elsewhere in the '964 Patent. Because the claims do not define "connected to" explicitly, the court examines the specification for further guidance.

Geoquip argues that the patentee disclaimed bolting as a method of connecting the eccentric weight portion to the cylindrical gear portion, based upon the patentee's criticism of the prior art:

The prior art includes a vibratory assembly with counterweights having a solid eccentric weight bolted to a portion of a cylindrical gear. These bolted counterweights are not sufficiently durable, because the bolts have a very undesirable tendency to break under the large stress loads generated during rotation [of the] counterweights.

Id. at col. 1, ll. 39-45. APE responds that this statement was not a disclaimer of bolting, but rather a general discussion of the problems in the prior art. Indeed, in the rest of the paragraph, the patentee goes on to discuss problems that arose from certain one-piece, cast counterweights as well. See id. at ll. 45-51 ("These solid, cast counterweights, however, do not have sufficient mass to generate large enough vibratory forces to efficiently drive or pull piles."). As the preferred embodiment of the '964 Patent takes the form of a one-piece, cast counterweight, id. at col. 5, ll. 51-53, that embodiment is obviously not being disavowed.

Thus, the court finds that the discussion of bolting in the prior art does not provide a clear disavowal of that means of connecting the eccentric weight portion to the cylindrical gear portion. See Ventana Med. Sys., Inc. v. Biogenex Labs., Inc., 473 F.3d 1173, 1180 (Fed. Cir. 2006) (finding no disavowal of certain dispensing methods when discussion of prior art included the dispensing method of the preferred embodiment in addition to the those methods allegedly disavowed).

Because the court finds no reason to exclude bolting from the definition of "connected to," the court construes that phrase to mean simply "joined together, united or linked," as the parties agree, without the caveat suggested by Geoquip.

(4) connected to

This term appears in claims 1, 6, 11, and 16. However, in claims 1, 6, and 11 the term is used in the phrase "operatively connected to" to describe the drive assembly external to the counterweight. That is, the vibratory assembly is described in claim 1 as comprising, in addition to the counterweight, "at least one driving means operatively connected to said counterweight and adapted to rotate said counterweight about its rotational axis." '964 patent, col 9 lines 51-53. Claims 6 and 11 use similar language. '964 patent, col 10 lines 28-31, 64-66. The parties have not addressed this "operationally connected to" language in their briefs and arguments. It appears that their dispute revolves around the term "connected to" as it appears in claim 16, reciting "an eccentric gear portion connected to said cylindrical gear portion at a position radially outward of the axis of said cylindrical gear portion . . . " '964 patent, col. 11 lines 13-15.

The dispute surrounding this term, as with the term above, has been resolved by the Court's construction of the term "integral." Independent claim 16, and the following dependent claims, recite an invention in which the eccentric gear portion projects "radially outward" from the cylindrical gear portion. The "connected to" term, used in place of "integral" as found in disputed independent claims 1, 6, and 11, describes a counterweight in which the eccentric gear portion and the
cylindrical gear portion are separate and discrete, with no overlapping area.

Plaintiffs propose that the Court adopt the construction "joined together, united or linked." Joint Disputed Claim Terms Chart, Dkt. # 29-2, p. 8. Defendants propose the same language, with the addition that "connected to" specifically excludes bolting, based on the patentee's recitation of prior art which included bolting. The Court finds no basis for including the additional language, and construes the term "connected to" to mean "joined together, united or linked."

5. "connected to"

This phrase appears in asserted claims 1, 6 and 11. APE contends that the phrase should be construed to mean "joined together, united or linked. In this instance, the eccentric weight portion is joined with the cylindrical gear portion at a point radially outward of the axis of the cylindrical gear portion. 'Connected to' can mean that the two portions are separate pieces joined together so long as that connection is at a position radially outward of the axis." Bay contends that the phrase should be construed to mean "formed of one-piece and specifically excludes bolting as the '964 patent teaches that prior art having bolted counterweights are not sufficiently durable and the '964 patent does not provide any other methods of "connected to" other than casting from one-piece."

The court begins its analysis by first turning to the claims themselves. The phrase "connected to" is first introduced in claim 1, which provides: "A vibratory assembly for imparting a vibratory force to a pile, comprising: . . . at least one driving means operatively connected to said counterweight and adapted to rotate said counterweight about its rotational axis." Substantially similar language appears in claims 6 and 11. Claim 16 provides: "A cylindrical gear portion having a plurality of gear teeth around its circumference, said cylindrical gear portion being made of a first metal; an eccentric weight portion connected to said cylindrical gear portion at a position radially outward of the axis of said cylindrical gear portion . . . . " While the phrase "connected to" does not appear in claim 19, the court nonetheless finds that the language of this claim illuminates the meaning of this phrase. Claim 19, which depends from claim 16, provides: "The counterweight assembly of claim 16 wherein said eccentric weight portion is integral with said cylindrical gear portion, said first metal is cast steel, and said second metal is a tungsten."

As discussed above, because claim 19 would be superfluous if the phrase "connected to" meant the same thing as the term "integral," and because the presence of the limitation "integral" in claim 19 gives rise to a presumption that this limitation is not present in claim 16, the court, as noted above, construes the phrase "connected to" have a different meaning than the term "integral." However, because the claim language does not clearly define the phrase, the court turns to the specification for added insight.

The specification states that:

The counterweight 40 has a center bore 106 that extends fully through the gear portion 41 and the eccentric weight portion 43 . . . The center bore 106 has an inner diameter that is slightly larger than the outer diameter of the shaft 82, such that the center bore securely receives the shaft. The eccentric weight portion 43 has two threaded bores 108 that communicate with and are transversely oriented relative to the center bore 106. The threaded bores 108 are adapted to receive conventional threaded lock fasteners to lock the shaft 82 within the center bore 106, thereby securely connecting the counterweight 40 to the shaft for rotation with the shaft.


The specification further states: "At least one motor is operatively coupled to the counterweight and is adapted to rotate the counterweight to cause the vibratory forces." '964 Patent, col. 2, lines 39-42. In addition, the specification states that: "When the drive motor 42 is activated, the drive motor turns its shaft . . . causing the counterweight 40 to rotate on the shaft 82 . . . . " '964 Patent, col. 7, lines 25-31.

In this case, neither the claim language nor the specification expressly define or describe the phrase "connected to." Nor does the specification indicate explicitly or implicitly that the patentee intended to import a novel or specialized meaning to
the phrase "connected to" or the term "connected." Ordinarily, therefore, "connected" means "conjoined; fastened or linked together." Oxford English Dictionary (2d ed. 1989). In addition, the specification indicates that the word coupled is used interchangeably with "connected to" insofar as the specification uses coupled, rather than the phrase "connected to," as used in the claim language, to describe the relationship between the drive motor and the counterweight. The patent discloses no novel or specialized meaning of the word "coupled." Ordinarily, therefore, coupled means "tied, joined, linked, or associated together in pairs." Oxford English Dictionary (2d ed. 1989). Thus, while the word "coupled" appears in the specification, not in the claims, the court finds that it is meant to have the same meaning as "connected to."

Moreover, as the specification describes, and figure 4 illustrates, the shaft and counterweight are separate pieces or parts and the shaft is securely connected to the counterweight by threaded lock fasteners for rotation with the shaft upon the activation of the drive motor. The court construes this language to mean that "connected to" conveys the joining, uniting or linking of two separate pieces or parts.

Finally, to the extent that Bay asks the court to construe the term "connected to" to exclude bolting on the basis that the "'964 patent teaches that prior art having bolted counterweights are not sufficiently durable and the '964 patent does not provide any other methods of "connected to" other than casting from one-piece[,"] the court declines to do so. The court need not reach this issue to construe the phrase "connected to." Therefore, the court declines to adopt either party's proposed construction of the phrase "connected to." Instead, the court construes the phrase "connected to" to mean: "joined together, united or linked."

2. "a body connectable to the underwater cable"

This phrase is used in claim 13 of the '992 Patent. WG seeks to construe this term as "a device attached externally to the underwater cable." In support of this construction, WG offers largely the same argument as was made with respect to the previous claim term. Ion asserts that this phrase needs no construction. Ion argues that this claim need no construction.

The Court notes that the term "connectable" contains a different connotation from the word "mountable." Whereas, with the previous phrase, the plain and ordinary meaning of the claim terms connoted an external connection of some kind, the term "connectable" does not invoke the same relationship between two objects. At first glance, therefore, the Court must be suspect of WG's proposal, which seeks to construe this phrase and the previous phrase in an identical manner. As Ion correctly points out, such a construction would be contrary to presumption of claim differentiation, which counsels that identical construction of two claim terms that use different words is inappropriate. Seachange Int'l, Inc. v. C-COR, Inc., 413 F.3d 1361, 1368 (Fed. Cir. 2005) ("[D]ifferent words or phrases used in separate claims are presumed to indicate that the claim have different meanings and scope.")

Nonetheless, the Court is faced with a situation in which an externally connected body is the only device that is disclosed and described in the specification. Moreover, unlike several of the claims within the Bittleson and Zajac Patents, the claim terms here do not offer any reason to believe that the scope of this phrase should be construed more broadly than what the specification describes. In other words, "[n]o other structure is illustrated or described" and "[n]o other broader concept [is] described as embodying the applicant's invention." Toro, 199 F.3d at 1301. The '992 Patent appears to teach only a device wherein the body is attached externally to the underwater cable. Moreover, that the '992 Patent also teaches inductive coupling as part of the inventive system would also suggest that a body attached externally to the streamers which receives power though inductive coupling is a critical element of the patented device. The intrinsic evidence in the '992 Patent, therefore, offers no other interpretation for the term "connectable" other than the external connection for which WG advocates.

The Court declines, however, to adopt WG's construction wholesale, as it once again equates the term "body" with "device," which, in light of WG's own admission that a portion of Ion's invention that effectuates inductive coupling is located underneath the skin of the streamer, is improper. Accordingly, the Court will construe this term as "a body attached externally to the underwater cable." Although the Court recognizes that this construction is identical to that of the previous phrase, such identical constructions are proper in this case in light of the specification and the patent claims. See Nystrom v.
TREX Co., 424 F.3d 1136, 1143 (Fed. Cir. 2005) (holding that "[d]ifferent terms or phrases in separate claims may be construed to cover the same subject matter where the written description . . . indicate[s] that such a reading of the terms or phrases is proper").

With regard to the substance of the district court's claim construction, Searfoss argues that the district court erred in not giving the term "connecting" its ordinary meaning, as shown in general usage dictionaries, which encompasses both direct and indirect connections, and instead improperly limited its construction to direct connections. 2 Searfoss cites to several general usage, non-technical dictionaries, which it argues support a definition of "connecting" to encompass both direct and indirect connections. See Webster's Third New International Dictionary (1986) (defining "connect" as "to join, fasten or link together usually by means of something intervening"); see also Oxford English Dictionary (2d ed. 1989). According to Searfoss, neither the district court nor Pioneer has pointed to anything in the specification to overcome the "heavy presumption" of the "ordinary meaning" of "connect," and the proper construction must encompass both direct and indirect connections.

We disagree. The district court clearly acknowledged the competing general dictionary definitions of "connect," including direct and indirect connections. Markman Order at 7 ("Indeed, the court need not look to the dictionary at all, inasmuch as the court is familiar with the competing definitions advocated by the parties. The court need only decide which meaning, whether it be a direct connection or a tangential connection, is described in claim 3."). In construing the claim, however, the district court did not, and indeed must not, stop with the dictionary definitions offered by Searfoss. Instead, the district court did as it must, and consulted the written description. Bell Communications Research, Inc. v. Vitalink Communications, Corp., 55 F.3d 615, 619 (Fed. Cir. 1995) ("It is equally 'fundamental that claims are to be construed in light of the specifications and both are to be read in view of ascertaining the invention.'") (quoting United States v. Adams, 383 U.S. 39, 49, 15 L. Ed. 2d 572, 86 S. Ct. 708, 174 Ct. Cl. 1293 (1966)). The district court found that, as used in claim 3, the term "connecting" refers to a "direct pivotal connection between the tension bail and the extension assembly" because the patent referred to the term "connecting" as synonymous with "attaching." We agree. Throughout the specification we find references to direct connections between the legs of the tension bail and the legs of the extension assembly; and indeed, every pertinent figure depicts a direct connection between the legs of the tension bail and those of the extension assembly. See '955 patent, col. 3, ll. 39-44, col. 6, ll. 39-55, figs. 1, 5-8. Moreover, we agree with the district court that a construction of the word "connect" to include "indirect" and non-rigid connections (such that the canvas cover itself could be the connection between the tension bail and the extension leg assembly) is problematic because it would lead to a reading of the claim such that the cover (as the actuation means) is exerting a downward force upon itself. We hold that the district court was correct in interpreting "connecting" as used in this patent to include only direct, rigid, pivotal connections.

2. Connection segment

. Plaintiff's proposed construction: A portion of the face guard configured to engage a connector that secures the face guard to a helmet.
. Defendant's proposed construction: Wire member, projecting from the main body of a face guard, that extends rearwardly in order to be attached to the side of a helmet.

The dispute with respect to this term is similar to that for "receivers extending outwardly." Defendant argues that the claim requires the term "connection segment" to mean something more than just vertical members connecting to the connector, namely a "wire member, projecting from the main body of a face guard, that extends rearwardly in order to be attached to the side of a helmet." Defendant asserts that it is the projection that holds the two vertical members of the faceguard.

Claim 23 states that a "connection segment" has two substantially vertical members that are configured to engage the connector. Because this term is similar to the term "receivers extending outwardly" in claim 14, the two definitions should be consistent, as defendant asserts. However, plaintiff is correct when it argues that the claim specifically leaves out any reference to projecting or extending rearwardly. The specification also does not say that these members have to project or extend rearward. Therefore, I conclude that the term "connection segment" as used in claims 23 and 25 of the '151 patent means members of the face guard made of wire or other material that engage the connector on the helmet.

vi. "second end including a connector"

180s urges construing "second end including a connector" as "an end having or coupled to a connector." Gordini urges construing the term as a "second extremity forming one piece of a jack for establishing an electrical communications connection."

I adopt the following construction of "second end including a connector": "a second end having or coupled to something that establishes an electrical communications connection." 180s' construction of "second end including" as an "end having or coupled to" is consistent with the plain meaning of the phrase and the specification. However, 180s construction is incomplete; this term construction must clarify that the "connector" is an "electrical communications connection." The plain meaning of "connector" does not necessarily implicate electrical communication, so an ordinary fact finder would be easily misled into believing the "connector" lacks such a meaning. Yet the specification is unambiguous that "connector" in fact facilitates an "electrical communication connection," and 180s does not point to any claim language or specification language disclaiming such an understanding. Consequently, although "jack" may inappropriately limit the term "connector," defining "connector" as "something that establishes an electrical communications connection" is consistent with the specification. (See, e.g., Pls.' Mem., Ex. B. at col. 4, l. 59 - col. 5, l. 8 ("The connector 450 can be either a male or female connector and is configured to be coupled to another wire as illustrated, for example, by the wire W in FIG. 2. Note that connector 450 is illustrated as a female connector in FIG. 2 and as a male connector in FIG. 9.").)

1. "Connector."

The court shall apply the ordinary definition of the word "connector." The word connect means "to bind or fasten together; join or unite; link[.]

B. "A First Connector . . . Being Removable and Interchangeable . . . Defining a Parallel Flow Configuration"

The following chart contains both parties' interpretations of the disputed term "a first connector . . . being removable and interchangeable . . . defining a parallel flow configuration." Patent at Col. 19:57-62; 20:55, 61.

<table>
<thead>
<tr>
<th>Everpure's Interpretation</th>
<th>Selecto's Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>One or more structures that</td>
<td>One component of a fluid</td>
</tr>
<tr>
<td>(a) are capable of connecting</td>
<td>pair of fluid ports on the first fluid</td>
</tr>
<tr>
<td>one component of a fluid</td>
<td>treatment module to a corresponding pair</td>
</tr>
<tr>
<td>treatment system to another</td>
<td>component of a fluid treatment</td>
</tr>
<tr>
<td>system, (b) may be removed</td>
<td>module, (b) be installed in the same</td>
</tr>
<tr>
<td>from the fluid ports and</td>
<td>connection location as the second</td>
</tr>
<tr>
<td>interconnected with other</td>
<td>connector without changing the spatial</td>
</tr>
<tr>
<td>connectors and (c) when</td>
<td>relationship of the fluid ports on the first</td>
</tr>
<tr>
<td>connected between first</td>
<td>head relative to the fluid ports on the</td>
</tr>
<tr>
<td>and second fluid treatment</td>
<td>second head, and (c) by itself physically</td>
</tr>
<tr>
<td>modules, the first connector</td>
<td>and fluidly connect the first and second</td>
</tr>
<tr>
<td>allows the feed stream</td>
<td>fluid treatment modules such that the</td>
</tr>
<tr>
<td>entering the system to pass</td>
<td>stream of fluid entering the system is split</td>
</tr>
<tr>
<td>into the cartridge of the</td>
<td>into two distinct streams with one of the</td>
</tr>
<tr>
<td>first fluid treatment module</td>
<td>streams passing through only one of the</td>
</tr>
<tr>
<td>and the cartridge of the</td>
<td>fluid treatment modules, the other stream</td>
</tr>
<tr>
<td>second fluid treatment module</td>
<td>passing through only the other fluid</td>
</tr>
<tr>
<td>simultaneously.</td>
<td>treatment module, and the two streams</td>
</tr>
<tr>
<td></td>
<td>recombining into one output stream after</td>
</tr>
<tr>
<td></td>
<td>exiting the treatment modules.</td>
</tr>
</tbody>
</table>

The parties dispute three main aspects of the definition of this term: (1) whether the connector needs to connect "by itself" the first and second fluid treatment modules to create parallel flow or whether other structures may (or even must) be involved in the connection; (2) whether the connector needs to be a one-piece structure or can consist of a structure with more than one piece; and (3) whether, in order to constitute parallel flow under the patent, the flow from each of the fluid treatment modules must recombine or whether it may remain separate. 1

--- Footnotes ---

1 In their moving papers, Everpure also disputed two other minor parts of Selecto's definition, but it did not address--and essentially acceded--to Selecto's arguments on these points at the hearing and in the supplemental briefing. See Supplemental Briefing at 5 n.4. Namely, Everpure disputed whether "removable and interchangeable," should be interpreted to mean can "be installed in the same connection location as the second connector without changing the spatial relationship of the fluid ports on the first head relative to the fluid ports on the second head," as Selecto contends. The specification supports Selecto's definition. See Patent, Col. 14: 5-8 ("Additional plumbing and other fixtures need not be removed or installed in order to change between configurations by virtue (at least in part) upon the common module and port locations in both configurations." (emphasis added)). The specification also supports Selecto's use of the phrase "releasably fluidly connect" to describe the connection, since the specification uses that exact phrase. Patent, Col. 8: 26-39.

--- End Footnotes ---

1. Must the connector "by itself" connect the first and second fluid treatment modules?

Selecto argues that because the claim indicates that the first connector "defines" a parallel configuration, the connector must "by itself" connect the first and second fluid treatment modules. Selecto relies upon the Agilent and C.R. Bard cases to support its position as to the significance of the patent's use of the word "defining." Agilent Technologies, Inc. v.
Affymetrix, Inc., 567 F.3d 1366, 1375-77 (Fed. Cir. 2009); C.R. Bard, Inc. v. Medtronic, Inc., 140 F. Supp. 2d 346, 348 (D. Del. 2001). Both cases dealt with the interpretation of the word "defining." In Agilent, the Federal Circuit held that it was error for the district court to interpret the claim "a first substrateand a second substrate having inner surfaces that define a closed chamber therebetween, said chamber adapted to retain a quantity of fluid" to mean "an enclosed cavity, or some other enclosure or system of enclosures, which is capable of being sealed or set apart from its surroundings to retain a quantity of fluid." Agilent, 567 F.3d at 1375-77. Instead, the court found that the claim meant "an enclosed cavity defined by the inner surfaces of the first and second substrates, from which there is no egress of fluid." Id. In reaching its holding, the court reasoned,

The claim itself recites a closed chamber "define[d]" by "a first substrate and a second substrate having inner surfaces." Thus, the claim requires that the chamber be bounded by two discrete substrates. The chamber is not a nebulous space that could ambiguously span a "system of enclosures." Instead, it is an enclosure explicitly defined by two surfaces.

Id. at 1376. The C.R. Bard case also makes clear that "defining" cannot mean merely "allowing." The Federal Circuit's decision in C.R. Bard was unpublished but is quoted in a subsequent district court opinion. C.R. Bard, 140 F. Supp. 2d at 348. The district court notes that the Federal Circuit held that its interpretation of "a housing defining a substantially toroidal flow path" to mean "that the housing (although not necessarily toroidal in shape) must determine with precision a fluid flow path having the shape of a substantially closed curve which rotates about, but does not intersect or contain, an axis in its own plane" was erroneous. C.R. Bard, 140 F. Supp. 2d at 348. The Federal Circuit construed "the housing" limitation as requiring that the housing itself be toroidally shaped." C.R. Bard, Inc. v. Medtronic, Inc., 250 F.3d 760, at * 3 (Fed. Cir. 2000) (unpublished table disposition). Everpure tries to distinguish these cases, arguing that they are limited to their facts, but the phrasing of the claim terms here is strikingly similar to that in those cases.

In short, Federal Circuit decisions support the proposition that "defining" should mean more than "allowing." Selecto asserts that these cases suggest that here the first connector must "by itself" connect the first and second treatment modules in a parallel configuration. As Everpure pointed out in its moving papers and at the hearing, a connector between the modules cannot "by itself" create system of parallel flow since other portions of the system (such as plugs 136g and 136b on the outside of the modules in Fig. 2A) will be required to complete the system. See Transcript at 101:15-102:2 (testimony of Mr. Cartwright that a connector does not need to constitute parallel flow by itself). However, as Selecto argued at the hearing, a skilled artisan refers to the connection between two modules when describing a flow system, not extraneous plugs. See Transcript at 76:18-77:13 (testimony of Mr. Tadlock describing connectors 3A/3B and 3O/3P as defining a parallel flow configuration based on their connection between the modules alone). Moreover, this problem can be accounted for by clarifying that the connector "by itself (notwithstanding any plugs necessary to close the system)" establishes parallel flow.

2. Must the connector be a one-piece structure?

Even though the Patent indicates that the connector must by itself establish parallel flow, that does not necessarily mean that the connector must be a one-piece structure, as Selecto argues. 2 See Selecto's Post-Hearing Brief at 1. The specification does not speak directly on this point. 3 It does provide illustrations of embodiments of connectors--Figs. 3A-3P--several of which are multi-piece structures. See, e.g., Figs. 3J and 3L. Likewise, both experts testified at the hearing that certain of the connectors described in the specification are not one-piece structures. Transcript at 101:3-14, 72:2-7. However, the issue is not whether the generic connectors mentioned in the specification are one-piece structures. The issue is whether the claimed "first connector . . . defining a parallel flow configuration," Patent at Col. 19: 57-61, is a one-piece structure. "[T]he claims of the patent need not encompass all disclosed embodiments." TIP Systems, LLC v. Phillips & Brooks/Gladwin, Inc., 529 F.3d 1364, 1373 (Fed. Cir. 2008). However, a court should avoid excluding disclosed embodiments in the absence of clear intrinsic evidence to support their exclusion. See Verizon Services Corp. v. Vonage Holdings Corp., 503 F.3d 1295, 1305 (Fed. Cir. 2007) ("We normally do not interpret claim terms in a way that excludes disclosed examples in the specification.").

--- Footnotes ---

2 Selecto tries to extend its argument about the meaning of "defining" beyond the context of whether the connector must "by itself" create a parallel flow system into the question of whether the connector may be a multi-piece structure. Selecto offers no support for the proposition that a multi-piece structure cannot "define" parallel flow.
3 To support its position that the connector need not be a one-piece structure, Everpure cites to text in the specification, which states, "Although both fluid lines need not necessarily be defined in the same body or part . . . , a single connector element 136a can simplify assembly and disassembly while also reducing the number of parts of the system . . . ." Patent at Col. 8:48-53. However, this statement is referring to the advantages of a particular embodiment of a connector (136a) over a multi-piece system. It does not speak to whether the claimed first connector must be a one-piece structure.

Here, the Patent discloses several connectors, including Figs. 3J and 3L, which both Mr. Tadlock and Mr. Cartwright agree are multi-piece structures. Transcript at 101:3-14; 72:2-7. The only possible textual basis for finding that the connector must be a single-piece structure is that the claim itself refers to "a first connector and a second connector, each being removable and interchangeable." Patent at Col. 19:56-58 (emphasis added). But this statement only implies that the connector must be a single structure, not that it necessarily needs to be a one-piece structure. In the absence of clear evidence that the claimed connector must be a one-piece structure, the Court declines to exclude these illustrated embodiments.

Thus, the Court finds that the first connector may be a "one-piece or multi-piece structure."

3. Must the fluid output from each fluid treatment module recombine in order to constitute parallel flow?

Everpure argues, relying on the testimony of its expert, Mr. Cartwright, that streams that have been separated need not be recombined to create parallel flow. He testified at the hearing that a system containing multiple fluid treatment modules must be configured in either parallel or series--no other configurations are possible. Transcript at 87:22-88:5. He testified that anybody skilled in the art would consider Figure 6 in the specification--which illustrates a configuration in which the fluid flows through both fluid treatment modules concurrently but does not recombine-- to be an example of parallel flow. Id. at 102:12-103:15.

However, extrinsic evidence may not be employed to contradict intrinsic evidence, including the specification. See Vitronics, 90 F.3d at 1584 n.6; Phillips, 415 F.3d at 1318. Moreover, "the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs." Phillips, 415 F.3d at 1316. Here, in the portion of the patent that describes flow, each of the figures described--except for Figure 6--is referred to as an example of either "parallel" flow or "series" flow. See Patent at Col. 11:49-13:3. The section of the patent describing the flow through Figure 6 characterizes Figure 6's flow as neither "parallel" flow nor "series" flow, but instead as "yet another example of the various manners in which the system can be configured by virtue of the modular nature of the assemblies." Patent at Col. 12:56-58. This is the only passage in the discussion of flow where a given figure's flow is not described as either "parallel" or "series." See Patent at Col. 12:29 (describing Figure 2A as a system in which the assemblies are connected in parallel); 12:30 (describing Figure 4 as a system in which the assemblies are connected in series); 12:52-54 (describing Fig. 5 as a system in which the assemblies are connected in series). The specification clearly contemplates Figure 6 as illustrating neither parallel nor series flow, but something else entirely. The distinguishing feature between Figures 2A (parallel flow) and 6 is that the separated flow streams do not recombine in Figure 6. Tadlock Reply Decl. P 4. As the specification and Mr. Tadlock's testimony establish, the Patent contemplates parallel flow to require a re-combination of the separated fluid streams.

4. Conclusion

For these reasons, the Court interprets "a first connector . . . being removable and interchangeable . . . defining a parallel flow configuration" to mean

a one-piece or multi-piece structure that can: (a) physically, releasably, and fluidly couple a pair of fluid ports on the first fluid treatment module to a corresponding pair of fluid ports on the second fluid treatment module, (b) be installed in the same connection location as the second connector without changing the spatial relationship of the fluid ports on the first head relative to the fluid ports on the second head, and (c) by itself (notwithstanding any plugs necessary to close the system) physically and fluidly connect the first and second fluid treatment modules such that the stream of fluid entering the system is split into two distinct streams with one of the streams passing through only one of the fluid treatment modules, the other stream passing through only the other fluid treatment module, and the two streams recombining into one output stream.

The following chart contains both parties' interpretations of the disputed term "a second connector . . . being removable and interchangeable . . . defining a series flow configuration." Patent at Col. 19:57-62; 20:43, 49.

<table>
<thead>
<tr>
<th>Everpure's Interpretation</th>
<th>Selecto's Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>One or more structures that are capable of connecting one component of a fluid treatment system to another component of a fluid treatment system, (b) may be removed from the fluid ports and interchanged with other connectors and (c) when connected between first and second fluid treatment modules, the first connector allows the feed stream entering the system to first pass into the cartridge of the one of the fluid treatment modules and the outlet flow of the cartridge of that fluid treatment module to then pass into the cartridge of the other fluid treatment module.</td>
<td>a one-piece structure that can: (a) physically, releasably, and fluidly couple a pair of fluid ports on the first fluid treatment module to a corresponding pair of fluid ports on the second fluid treatment module, (b) be installed in the same connection location as the first connector without changing the spatial relationship of the fluid ports on the first head relative to the fluid ports on the second head, and (c) by itself physically and fluidly connect the first and second fluid treatment modules such that the entire stream of fluid passes first through one of the fluid treatment modules and upon exiting this treatment module the entire stream passes through the other fluid treatment module.</td>
</tr>
</tbody>
</table>

The parties' disputes over the definition of the second connector are identical to their first two disputes with respect to the definition of the first connector in section B, supra. The parties agree on the substance of what series flow means, although they phrase their interpretations slightly differently. Figure 4 exemplifies how the patent defines series flow configuration. See Patent at Col. 12:7-29. For the same reasons set forth above in the discussion of the first connector in section B, the Court construes "a second connector . . . being removable and interchangeable . . . defining a series flow configuration" to mean

a one-piece or multi-piece structure that can: (a) physically, releasably, and fluidly couple a pair of fluid ports on the first fluid treatment module to a corresponding pair of fluid ports on the second fluid treatment module or plug one or more of these ports, 5 (b) be installed in the same connection location as the first connector without changing the spatial relationship of the fluid ports on the first head relative to the fluid ports on the second head, and (c) by itself (notwithstanding any plugs necessary to close the system) physically and fluidly connect the first and second fluid treatment modules such that the stream of fluid entering the system passes first through one of the fluid treatment modules and upon exiting this treatment module the stream passes through the other fluid treatment module.

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

4 At the hearing, the Court proposed a hybrid of the two parties' definitions of series flow, which both sides agreed to. See Everpure's Supplemental Brief at 6 n.5; Selecto Supplemental Brief (not disputing the Court's proposed definition of series flow).

5 The addition of the phrase "or plug one or more of these ports" is necessary to describe a series flow configuration like
Figure 4, where two of the ports are plugged.

6 The Court deleted the modifier "entire" preceding "stream" in Selecto's definition because, as Mr. Cartwright explained in his Reply Declaration at PP 19-20, certain types of filters that the specification teaches may be employed in the cartridges (e.g., hollow fiber filters and reverse osmosis filters), Patent at Col. 7:48-60, do not allow for the entire stream of fluid to pass into the next cartridge.

826 b. "consisting essentially of"

Callicrate originally argued that the phrase "consisting essentially of" should be distilled to mean "having at least the following elements." During oral argument at the Markman hearing, however, Callicrate retreated from the position and proposed that the phrase instead be construed as, "having only the following material elements but may also include additional nonmaterial items." NAIC proposes the following interpretation: "having only the following essential items." NAIC suggests that the phrase must be interpreted as limiting the scope of the claim to include only the enumerated crucial elements, particularly limiting the claim to include only devices that contain one grommet. NAIC's reference to devices that contain one grommet refers to the phrase "connection means" and will be discussed infra, when the Court construes that phrase.

Claim Language

In patent parlance, the transitional phrase "consisting essentially of" has a special meaning. 30 "Consisting essentially of" is a transition phrase commonly used to signal a partially open claim in a patent. 31 "Typically, consisting essentially of precedes a list of ingredients in a composition claim or a series of steps in a process claim." By using the term "consisting essentially of," the drafter signals that the invention necessarily includes the listed ingredients and is open to unlisted ingredients that do not materially affect the basic and novel properties of the invention. 32 A "consisting essentially of" claim therefore occupies a middle ground between closed claims that are written in a "consisting of" format and fully open claims that are drafted in a "comprising" format. 33 Thus, the claim language supports the interpretation proposed by Callicrate at the Markman hearing.

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - - -


31 PPG Indus., 156 F.3d at 1354.

32 Id.

33 Id. (citation omitted).

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - - -
phrases in patent claims, it is highly unlikely that the examiner approved claim 34 with the phrase "consisting essentially of," if the examiner intended for the claim to be construed in a closed format. Moreover, Callicrate's amendment is consistent with the Examiner's suggestion that claim 34 be amended to include the term "consisting," as the Examiner did not specify whether he was referring to the partially open phrase "consisting essentially of," or the closed phrase "consisting of." The prosecution history, like the claim language, therefore supports Callicrate's proposed interpretation. As such, the Court will construe the phrase "consisting essentially of," to connote "having only the following material elements, but may also include additional nonmaterial items," according to its plain and ordinary meaning.

--- Footnotes ---

34 See Boeing Co. v. United States, 57 Fed. Cl. 22, 28 (Fed. Cl. 2003) (characterizing defendant's attempt to give the usually open-ended "consisting essentially of the closed-ended meaning ordinarily ascribed to "consisting of" as "linguistic legerdemain").

--- End Footnotes ---

7. Consists of (Claim 15)

The term "consists of" in Claim 15 presents an interesting construction challenge. Both parties agree that it is a term of art used in a patent to limit the claimed invention to those elements specifically listed in the claim. However, they disagree on what the term limits. Plaintiffs argue that "consists of" only refers to "a mixture" while the broader term "containing" refers to the particular ingredients of the mixture. Defendant contends that "consists of" belongs with the entire phrase, "a mixture containing a major portion of silica together with a minor portion of titanium dioxide," limiting the ingredients of the mixture to only silica and titanium dioxide.

--- Footnotes ---

80 Plaintiffs' Markman hearing arguments.

81 Defendant's Brief on Claim Construction, Docket Entry No. 23, p. 18; Defendant's Markman hearing arguments.

--- End Footnotes ---

Case law dictates that "consists of" or "consisting of" at the beginning of a claim means "the claimed invention contains only what is expressly set forth in the claim." Norian Corp. v. Stryker Corp., 363 F.3d 1321, 1331 (Fed. Cir. 2004) (interpreting a claim with "consisting of" in its introductory phrase). When inserted in a particular element of a claim, the phrase limits the invention to that which follows the words "consisting of." See Vehicular Techs. Corp. v. Titan Wheel Int'l Inc., 212 F.3d 1377, 1383 (Fed. Cir. 2000) (interpreting a phrase within a claim limitation).

In the 547 patent, claim 15 begins, "A heat-insulating double casing pipe to be especially used in offshore oil pipelines, characterized in that..." 82 The claim continues, "characterized further in that said microporous material consists of a mixture containing a major portion of silica together with a minor portion of titanium dioxide." 83 Immediately, the claim language asserts itself. The claim literally states that the insulation material consists of a mixture, not that the insulation material consists of silica and titanium dioxide or even that the mixture consists of silica and titanium dioxide. According to the claim, the mixture "contains" silica and titanium dioxide. "Mixture" and "contains" are both open-ended terms, not subject to an inference of restriction. See Mars, Inc. v. H.J. Heinz Co., 377 F.3d 1369, 1375 (Fed. Cir. 2004). On the other hand, reading "consists of" as applying only to "a mixture" fails to impose any real consequence on the patentee for his selection of words. Arguably, either interpretation is consistent with case law.

--- Footnotes ---

82 547 patent at 10:23-24.
Other language in the claim begins to clarify this ambiguity. In a subsequent "characterized further in that" limitation, the claim teaches that "the portion of titanium dioxide present in said material is comprised between 30 and 35% by wt. for a silica content of 60 to 70% by wt." Before addressing how the language helps to clarify the previous limitation, the court notes that this particular limitation neither contains the words "consists of" nor, because of its separate and distinct structure, is bound by those words. Moreover, this limitation refers back to "said material," rather than to "said mixture." Certainly, therefore, no proper reading of the claim would permit the conflation of this limitation with the previous one to further narrow the claim.

That said, the percentages taught in the limitation can shed some light on the prior claim language. Simple math reveals that the patentee left open the possibility that a very small percentage of the material might be something other than silica or titanium dioxide. When the uppermost percentage of silica is added to the lowermost percentage of titanium dioxide, the total is only ninety-five percent. If silica and titanium dioxide were intended as the only possible components of the microporous material, the patentee would not have disclosed sixty percent silica content without teaching a corresponding amount of titanium dioxide that, in combination, would total one hundred percent. Therefore, although the claim requires silica and titanium dioxide in percentages within the range provided, it does not eliminate the presence of a small percentage of other ingredients.

This conclusion is further supported by the specification, which favorably mentions contemporaneously manufactured microporous materials "wherein the proportion of titanium dioxide exceeds 20% by weight based on total weight, up to 30 to 35% by weight of silica, disregarding minor portions of other mineral oxides which represent all combined at least 5% by weight."

The court recommends that the phrase "consists of a mixture containing a major portion of silica together with a minor portion of titanium dioxide" does not require that the ingredients of the mixture be limited only to those ingredients listed in the claim.

Chaffin narrows the third phrase to be construed from "in constant fluid communication with substantially the entire contained chlorine supply" to "in constant fluid communication," and argues that this latter means that the end of the tube that is in such communication "allow[s] liquid or gas access at all times." Dkt. No. 21 at 10. Cecil's argues, by contrast, that the entire phrase means "able to continuously draw chlorine from substantially the entire contained chlorine supply regardless of the duration period of continuous sewage effluent recirculation." Dkt. No. 22 at 38. The key point of differentiation between the two constructions, then, appears to be the additional phrase in Cecil's' construction: "regardless of the duration period of continuous sewage effluent recirculation." That is, there appears to be little distinction between the
phrases "has access at all times" and "able to continuously draw." The question, then, is whether the Court ought to construe the term to include Cecil's additional limitation.

Cecil's "regardless of the duration period" language is at worst a limitation not called for by the patent's claims and at best a mere repetition of the concept that access is allowed "constant[ly]" or "at all times" or "continuously." The Court, then, construes "in constant fluid communication with substantially the entire contained chlorine supply" to mean "allowing liquid or gas access at all times to substantially the entire contained chlorine supply."

4. "in continuous communication with substantially the entire amount of chlorine supply"

The phrase "in continuous communication with substantially the entire amount of chlorine supply" is quite similar to the phrase discussed immediately above. Cecil's draws on this similarity to propose that it means exactly the same thing that Cecil's proposed "in constant fluid communication with substantially the entire contained chlorine supply" meant. Chaffin's proposition for this term differs little from his proposition for the above term as well.

In light of the recognized parallels between this phrase and the one discussed in Section 3 supra, the Court construes this phrase in an analogous way to the construction of the above phrase: "allowing access at all times to substantially the entire amount of chlorine supply."

b. Constant Thickness

The second disputed issue is the meaning of "constant thickness" in the rearfoot portion of Plaintiff's claim. Defendant argues that "constant thickness" means a uniform thickness and, therefore, it does not include a rearfoot portion of "varying thickness." Defendant Marathon Shoe Company's Opposition to Plaintiff's Cross Motion for Partial Summary Judgment of Infringement (Docket No. 51) at 2-3. Plaintiff claims that darker shading in figures 9-14 of his patent actually show a thicker edge around the entire rear portion of the sole. Because the Court assumes that Dr. Talarico did not intend to exclude a preferred embodiment of his own invention by the terms in Claim 1, the language in the specification describing the optional heel lift must be read in connection with the patent's description of a rear or heel portion of the sole of "constant thickness." Plaintiff argues that the term "constant thickness means "only that the rearfoot portion of the sole must not change the angular relationship of the heel with the ground" and "that the rearfoot portion of the sole is not angled to provide any compensation in that area." Plaintiff's Opp. to Defendant's Motion for Summary Judgment and Cross-Motion for Partial Summary Judgment of Infringement ("Plaintiff's Opp.") (Docket No. 34) at 9. The Court finds that the terminology "constant thickness" does not necessarily exclude a sole that is not entirely flat under the rearfoot.

The Court queries whether a contoured cup so distinguishes the angular relationships, however, as to remove it from the terms of Claim 1 of the 882 patent. Defendant urges the Court to construe the term "constant thickness" as excluding a "contoured-cup" edge around the heel. Plaintiff argues that his patent covers this type of "cupped" heel, and points to illustrations in his own patent to support this. Plaintiff alleges that his own drawings of a preferred embodiment include shading evidencing a slight cup shape. Plaintiff claims that the depictions in Figures 9-14 actually portray a rearfoot sole portion with edges of a higher or thicker depth than the middle portion of the heel. Plaintiff cites to 37 C.F.R. § 1.84(m), which states: "Shading is used to indicate the surface or shape of spherical, cylindrical, and conical elements of an object." Additionally, 37 C.F.R. § 1.84(l) provides that "lines and strokes [including shading] of different thicknesses may be used in the same drawing where different thicknesses have a different meaning." The Court construes the terms "constant thickness" to have their ordinary meaning of uniform thickness. "Constant thickness" read in the context of the remainder of the patent does not necessarily exclude a cupped shape edge. Plaintiff's statement, "that the rearfoot portion of the sole is not angled to provide any compensation" is not necessarily inconsistent with a tapering around the edge of the heel portion because, since the heel of a foot is rounded, a tapered edge would not necessarily affect the compensation or the angular relationship of the foot to the ground, but might simply enable the insole to be effectively placed into a shoe.
II

Cartner argues that the district court improperly construed the pertinent limitation because it discounted both the specification and prosecution history, instead relying heavily on the dictionary definitions of "constantly" and "operative." Accordingly, the district court's construction, which requires the "flow control orifice" to slow fluid flow even when there is no fluid flow in the third fluid line, is inconsistent with the '284 patent's specification. Cartner also contends that the prosecution history provides a clear definition of "said control orifice being constantly operative" that is inconsistent with the district court's construction.

Alamo responds that the district court, by relying on the plain meaning of claims 5 and 12, arrived at the correct construction. In addition, Alamo contends that the district court's construction properly "gives meaning to all the terms of the claims." Appellees' Br. 30. According to Alamo, this is so because the district court's construction requires the continuous slowing of fluid when the first valve is open or closed and, thus, takes into account the word "even" in the claim language. In addition, Alamo argues that the district court did not ignore the prosecution history, but instead found it unclear and "not explanatory." Under those circumstances, Alamo argues, the court was correct to discount the prosecution history.

III

We agree with Cartner. First, we think the district court's construction of "said flow control orifice being constantly operative" is contrary to the '284 patent's specification. The specification discloses that the "flow control orifice" is located in the third fluid line and "regulates the rate at which hydraulic fluid flowing through the third hydraulic fluid line 40 can reenter the first fluid line 14." '284 patent col.4 ll.15-30; fig.1. The "flow control orifice" can only regulate fluid flow when the third fluid line 40 contains fluid. However, regardless of whether the first control valve is open or closed, there are times when the third fluid line 40 does not contain fluid--namely, when the relief valve 42 is in the closed position, thereby preventing fluid from flowing into the third fluid line 40. Id. fig.1. Until relief valve 42 is in the open position, it prohibits fluid flow in the third fluid line 40. Significantly, both parties agreed to the construction of "as regulated by a relief valve" in the third fluid line to mean the "[r]elief valve controls whether and how much fluid may flow." Claim Construction, 2008 U.S. Dist. LEXIS 40797, 2008 WL 2169005, at *7 (emphasis added). In other words, because the relief valve controls whether fluid may flow into the third fluid line, there are instances when there is no fluid flow in the third fluid line. Thus, because the third fluid line does not always contain fluid, the district court's requirement that the flow control orifice continually slow fluid "when the first control valve is in the open or closed position" (regardless of whether there is fluid flow in the third fluid line) is contrary to the '284 patent's specification.

Of particular importance to the proper claim construction in this case is the prosecution history of the '284 patent. See, e.g., Mangosoft v. Oracle Corp., 525 F.3d 1327, 1332-33 (Fed. Cir. 2008) (finding further support for the proper construction in the prosecution history). Contrary to the district court's conclusion, the statements and amendments in the prosecution history are highly explanatory about the proper construction of "said flow control orifice being constantly operative." Specifically, the claims that would become claims 5 and 12 initially did not include the language "constantly operative" to describe the claimed "flow control orifice." In due course, the examiner rejected those claims in view of U.S. Patent No. 4,194,365 granted to Stoufflet et al. ("Stoufflet"). Stoufflet shows a "flow control orifice" (called an "adjustable constriction 53") located in a two-position "solenoid valve 48." Thus, the "adjustable constriction" in Stoufflet is only placed in the third fluid line, and therefore is only "operative," when the solenoid valve 48 is activated. See Stoufflet col.3 ll.54-67; fig.1. In other words, Stoufflet's "flow control orifice" (i.e., "adjustable constriction 53") is not permanently in the fluid line, but instead must be switched into the fluid line at certain operation times. Contrastingly, the "flow control orifice" of claims 5 and 12 in the '284 patent is permanently located in the third fluid line and does not need to be switched into that line at certain times. See '284 patent fig.1 item 44 (disclosing that flow control orifice 44 is not located in relief valve 42). Cartner's prosecuting attorney added the "constantly operative" limitation to reflect this difference, arguing that Stoufflet failed to teach a "flow control orifice, which is constantly operative, rather than being solenoid controlled." Thus, Cartner's prosecuting attorney did not add the term "constantly operative" to indicate that the "flow control orifice" "continuously slows fluid," as concluded by the district court. Rather, "constantly operative" was added during prosecution to explicitly describe the difference between the claims and the prior art--namely, that the "flow control orifice" was not located in a solenoid valve. Accordingly, the district court's construction of "constantly operative" is inconsistent with the meaning it
was given during prosecution.

For the foregoing reasons, we hold that the district court erred in its construction of the limitation "said flow control orifice being constantly operative" in claims 5 and 12. Taking into account the claim language, the specification, and the prosecution history as explained above, we construe "said flow control orifice being constantly operative" to mean "the flow control orifice continuously slows fluid flow when there is fluid flow in the third fluid line, whether the first control valve is in the open or closed position." Because we have revised the district court's claim construction, we vacate its judgment of invalidity of claims 5 and 12 pursuant to § 112. We therefore remand the case to the district court for further proceedings consistent with the claim construction we have set forth above.

Small Clearance Position

The parties dispute the meaning of the terms "small clearance position" and "contact." Claim 1 provides in relevant part:

Each segment of said seal ring including . . . an outer ring portion disposed within said seal ring groove for both axial and radial movement therein and having a pair of shoulders, extending axially in opposite directions for making radial contact respectively with said pair of spaced apart shoulders on said casing and thereby limiting said small clearance position . . . .

TurboCare does not dispute that the small clearance position limitation requires contact between the inward facing surface of the outer ring portion of the seal ring segment and the outward facing surface of the casing shoulders. It does dispute, however, the meaning of the term "contact." The district court construed that term as meaning direct contact, i.e. touching. In addition, the district court seemed to indicate that certain types of indirect contact such as indirect contact through "solely passive pads or buffers . . . to adjust the degree of clearance or compensate for wear and tear" would also constitute "contact" as that term is used in the claims of the '311 patent. TurboCare asserts that all indirect contact is "contact" within the meaning of the claims.

TurboCare points to language in the specification in which Brandon referred to "direct contact" between the neck of the seal segment and the casing. '311 patent, col. 2, ll. 62-64. TurboCare argues that this language implies that when Brandon used the term "contact" alone, he must have meant something other than direct contact. The language to which TurboCare directs us, however, is found in a discussion of the pressure seal that is formed between the neck of the seal segment and the casing as a result of axial fluid pressure. The use of the term "direct contact" to denote a pressure seal does not suggest that when the term "contact" is used elsewhere in the patent it must encompass objects that are in indirect contact, i.e., objects that do not touch one another but have other objects interposed between them. In the absence of a special definition of the term "contact" in the specification, that term should be given its ordinary and accustomed meaning. The district court properly construed the term, according to its ordinary meaning, to mean "touching." Whether so-called "indirect contact" could give rise to infringement is an issue of equivalency.

"contact" and "conductive" terms

The parties dispute the construction of various terms related to the conductive portion of the housing and the wheel, and the contact between the two. MHL argues that the term "contact" is a commonly used word in the electrical field and needs no construction. MHL contends that in the context of the '516 claim language and patent specification, "contact" merely refers to an electrical contact that allows a signal to be conducted from a conductive portion of the housing to the conductive wheel. MHL points to dependant claim 4 that recites a "conductive elastomeric seal" that is capable of providing an electrical path between the housing and the wheel. See '516 patent, cl. 4. Therefore, MHL argues, the claims strongly support the inclusion of indirect contact.
Defendants also cite to the claim language in response. Claims 1, 7 and 10 recite the "elongate portion being sized to allow . . . contact the conductive wheel to allow transmission of the signal using the conductive wheel." See, e.g., id. at cl. 1. Defendants argue that if the applicants intended to claim an indirect electrical connection that did not require "touching," the size of the elongate portion would be irrelevant. Defendants further argue that dependent claim 4 does not require an elastomeric seal to be "squeezed between" the housing and the conductive wheel. To the contrary, they contend that Figure 7 shows that the seal does not need to come between the two or prevent the housing from directly touching the wheel. Defendants direct the Court to the dictionary definition of "contact" to generally mean "touching." See, e.g., THE AMERICAN HERITAGE COLLEGE DICTIONARY, 299-300 (3d ed. 1993) ("contact" means "[a] coming together or touching, as of objects or surfaces"); THE NEW SHORTER OXFORD ENGLISH DICTIONARY, Vol. 1, 491 (1993) (defining "contact" as "[t]he state or condition of touching; an instance of touching").

Volkswagen argues that the description of various structures in the specification disclosed by the applicants as establishing electrical conductivity implies direct metal-to-metal contact between housing and wheel. For example, Volkswagen points to the patentee's disclosure of a "whisker connector 172" in Figure 4 to provide electrical conductivity between housing and the wheel rim in one. See id. at Fig. 4, col. 10, ll. 14-18. Moreover, Volkswagen argues, the applicants have used the term "contact" synonymously with a direct contact throughout the specification. See, e.g., id., col. 9, ll. 59-61; col. 8, ll. 53-55.

The Court is not persuaded by the defendants' arguments. The Court agrees that in absence of any conflicting disclosure in the specification, the ordinary meaning of the term "contact" would be "touching." See TurboCare Div. of Demag Delaval Turbomach. Corp. v. General Electric Co., 264 F.3d 1111, 1124 (Fed. Cir. 2001) (construing the ordinary meaning of the term "contact" as "touching"). However, the Court finds that the inventors here clearly anticipated and disclosed the use of a seal that would "prevent air within the tire from escaping." A person of ordinary skill in the art would indeed appreciate the need for a seal between the housing and the wheel. Similarly, the use of a protective coating on a metal wheel designed to guard against road conditions would not be novel to such a person. Further, the Court finds that the manner in which the housing contacts the wheel is not an essential element of the invention. As both sides argue, the focus of the invention is to be able to use the wheel as an antenna for transmission of the tire pressure signal. Cf. On Demand Machine v. Ingram Indus., 442 F.3d 1331, 1340 (Fed. Cir. 2006) (holding that the focus of a patent guides the determination of the scope of the invention claimed). The Court finds it unnecessary, therefore, to limit the manner in which a contact may be made between the housing and the wheel. See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004) (stating that claims are to be given their broadest meaning unless there is a clear disclaimer or disavowal).

The Court defines "contact" as "touching, either directly, or through a conductive seal."

Claim differentiation "refers to the presumption that an independent claim should not be construed as requiring a limitation added by a dependent claim." Curtiss-Wright Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380 (Fed. Cir. 2006). However, claim construction positions based on claim differentiation are rebuttable, taking a secondary role if an alternate construction is dictated by the written description or prosecution history. See Regents of the Univ. of Cal. v. Dakocytomation Cal., Inc., 517 F.3d 1364, 1375 (Fed. Cir. 2008). After reviewing the claim language, specification and prosecution history, the Court concludes that the term "does not contact" should be construed as AUO proposes, according to its plain meaning without the additional temperature and thermal contraction and expansion limitations from claim 9 that inform LGD's proposed claim construction. Claim 9
depends on claim 1 and adds the limitations that "when the frame is disposed in the second position, a first gap is formed between the first supporting portion and the first constraining portion, and the first gap is an allowance for film expansion or contraction due to temperature variation; when the frame is disposed in the first position, a second gap is formed between the second supporting portion and the second constraining portion, and the second gap is an allowance for film expansion or contraction due to temperature variation." '157 patent, col. 9, ll. 16-20. During prosecution of the application for the '157 patent, the Examiner did not require the applicant to combine the elements of claims 1 and 9 into a single claim, and instead determined that claim 1 was separately patentable without any of the limitations of claim 9. AUO-10 at AUO-LGD 0001333, 0001452, 0001487-88; Tr. 1202:21-1203:6 (Smith-Gillespie). LGD points out that the embodiments of the '157 patent refer to thermal considerations, however limitations from the specification should not be read into claims. Claim 1 has no limitation relating to thermal expansion or contraction, and the Court is persuaded that, consistent with the doctrine of claim differentiation, claim 1 should not be read in a manner so as to incorporate the limitations of claim 9.

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5. Contact Surfaces-Substantial Separation

The next term for interpretation is "contact surfaces" and "substantial separation" in claims 1 and 65 of the '486 patent. Unilin contends that "contact surfaces" and "substantial separation" as used in claims 1 and 65 of the '486 patent should be construed as "a surface on a locking element that comes into contact with a corresponding surface on an opposing locking element that prevents a sustained separation visible to the unaided eye of the user from a normal height viewing a flooring made up of joined panels." (Unilin Open. Br. 16-18.) Alloc maintains that "contact surfaces" should be interpreted as meaning "surfaces that abut one another when the panels are in their coupled position and prevent separation of the coupled panels in the horizontal direction away from each other at the joined edges." (Alloc Initial Mem. 12.)

A representative use of the terms appear in claim 1 as follows: "cooperative contact surfaces arranged to be engaged when adjacent identical ones of said panel are coupled together with their coupling parts cooperatively engaged to prevent substantial separation of two coupled identical ones of said floor panels at said upper side edges in a direction perpendicular to the edges of the panel sides and parallel to the undersides of the coupled floor panels." ('486 patent, 14:5-12)(emphasis added.)

The '486 patent specification provides background for the interpretation of the terms indicating that one of the "aims" of the invention is "a floor covering whereby the subsequent development of gaps is excluded or at least counteracted in an optimum manner, whereby also the possibility of the penetration dirt and humidity is minimalized." ('486 patent, 2:8-12.) In part, the invention consists "of hard floor panels which, at least at the edges of the two opposite sides, are provided with coupling parts, cooperating which [sic] each other . . . wherein the coupling parts are provided with integrated mechanical locking elements which prevent the drifting apart of two coupled floor panels into a direction perpendicular to the related edges and parallel to the underside of the coupled floor panels." ('486 patent, 2:14-22.)

The first portion of Unilin's proposed definition which states "a surface on a locking element that comes into contact with a corresponding surface on an opposing locking element that prevents a sustained separation," is largely consistent with the language of the claims and the patent specification. (Both Unilin and Alloc's proposed definitions use "surface" which is part of the phrases which they have asked the Court to define -- so apparently that term is understood by the parties and does not need interpretation. Indeed, "surface" is defined as "exterior or boundary of an object." See Jt. App. Ex. 4 1187. An attempt to substitute that term might make interpretation of the patent claims more difficult.)

But, what does Unilin mean by a "sustained" separation? And, is that synonymous with a "substantial" separation? Alloc's proposed definition omits the concept reflected by the word "substantial." The definition of "substantial" includes "significantly large." (Jt. App. Ex. 4 1176.) The definition of "substantial" is consistent with the specification and appropriately supplements the definition and, in the context of the patent claims and specification, is a more appropriate choice than "sustained."

Unilin also asserts that the term be interpreted to require that the contact surfaces lack separation visible to the "unaided eye of the user from a normal height viewing a flooring made up of joined panels." But, it has not demonstrated the basis for its contention. And, query, whose "normal height?" Is it the normal height of a person skilled in the art at the time of the
Alloc suggests that the language should also include that the separation prevented is that of "of the coupled panels in the horizontal direction away from each other at the joined edges." However, both claims 1 and 65 describe the directions in which separation is prevented so such descriptive language proposed by Alloc is superfluous.

Thus, the Court concludes "contact surfaces" and "substantial separation" as used in claims 1 and 65 of the '486 means "a surface on a locking element that comes into contact with a corresponding surface on an opposing locking element that prevents a significantly large separation."

B. "Sandwiched Between and Contacting" Includes Electrical Contact

JSC further argues that "sandwiched between and contacting" as used in claims 11 and 21 can only be interpreted as requiring direct physical contact between the exterior anti-static layers and the inner conductive layer. (Appellant's Br. at 35.) To support this assertion, JSC refers us to an amendment purporting to distinguish the claimed invention from the prior art. But nothing in the cited amendment indicates this contact must be direct physical contact, and JSC provides no additional evidence to support its contention. Meanwhile, Bradford's expert, Dr. Fowler, averred that:

"based on my experience (both teaching and industrial), the term 'contacting' in the claims of the 280 patent, as it would be understood by persons in the field of ESD [electrostatic discharge] materials considering the subject matter of the 280 patent, relates to the ability of an electrical charge to be transmitted through the [antistatic layer and the polyurethane layer] to [the interior conductive layer], so that there is an electrical contact between the layers. In other words, [the anti-static layer and the polyurethane layer] are in electrical contact with [the inner conductive layer]. . . . In all embodiments, regardless of whether there is direct or indirect physical contact, there is electrical contact.

(J.A. 177) (emphasis added). Nowhere in its brief does JSC attack this explanation. Accordingly, we likewise concur with the district court's construction that "contacting" as used in the 280 patent means electrical contact and direct or indirect physical contact.

5. "Contacting Relationship"

The bringing step calls for bringing "said corresponding contact surfaces of said electrically conductive terminals into contacting relationship with said corresponding contact surfaces of said conductor elements." Thomson argues that "contacting relationship" means "physical contact;" Innovatron argues that the term is one of art, meaning "a position favorable for correct alignment and electrical contact." The Commission held:

"We agree with the ALJ's construction that a contacting relationship is not established at the instant of physical contact, but instead when the card terminals and card reader elements reach a position favorable for making contact, that is, when they are roughly centered with regard to each other.

ITC at 6. The Commission further opined, "we agree that one of ordinary skill in the art would understand the bringing step to end with a position that allows a good chance of electrical contact." ITC at 7.

This Court is to interpret "contacting relationship" as one skilled in the art in 1978 would have understood the term. If the meaning were "physical contact" that meaning would be expressed far more readily by the phrase bringing the surfaces on the terminals "into contact" with the surfaces on the elements rather than "into contacting relationship." The term "relationship" adds a limitation. The Court holds that one skilled in the art would understand "contacting relationship" to mean that the terminals and elements are positioned favorably for good electrical contact."
2. Claim 16

The jury instruction is erroneous as to claim 16. Claim 16 requires only that the "housing contain[] a surface . . . which reflects light." '690 patent, col. 10, ll. 16-18 (emphasis added). The ordinary meaning of "contain" is "to have within." Webster's Third New Int'l Dict., 490-491 (1966). Thus, claim 16 does not require the reflecting surface to be located "on the inside wall of the housing cover."

However, to warrant a new trial, Ecolab must show that the erroneous jury instruction was in fact prejudicial. When the error in a jury instruction "could not have changed the result, the erroneous instruction is harmless." Environ Prods., Inc. v. Furon Co., 215 F.3d 1261, 1266-67, 55 USPQ2d 1038, 1043 (Fed. Cir. 2000) (citing 11 Charles Alan Wright & Arthur R. Miller, Federal Practice and Procedure § 2886, at 467-70 (2d ed. 1995) ("Errors in instructions are routinely ignored if . . . the error could not have changed the result."); Weinar v. Rollform Inc., 744 F.2d 797, 808, 223 USPQ 369, 376 (Fed. Cir. 1984) ("[A] reversal . . . is not available to an appellant who merely establishes error in instructions . . . . Where the procedural error was 'harmless,' i.e., where the evidence in support of the verdict was so overwhelming that the same verdict would necessarily be reached absent the error, or the error was cured by an instruction, a new trial would be mere waste and affirmance of the judgment is required."), cert. denied, 470 U.S. 1084, 85 L. Ed. 2d 143, 105 S. Ct. 1844 (1985).

This requires us to examine whether there was sufficient evidence at trial to support a finding of infringement under a correct instruction. We must therefore determine whether Ecolab presented sufficient evidence to support a finding that the Insect Inn IV trap "contains" at least one "surface . . . which reflects light" as required by claim 16. Ecolab argues that six surfaces qualify: (1) the shiny black plate located directly beneath the light source; (2) the portion of the white paper supporting the adhesive layer that is not hidden by the reflecting plate; (3) the Mylar strip behind the light source; (4) the support posts for the bulb; (5) the outer surface of the light bulb; and (6) the black matte inner wall of the housing cover. To determine whether any of these surfaces might qualify as a "surface . . . which reflects light" we consider the limitations of claim 16.

C. "An Ion Conductive Electrolyte Contained Within An Electrolyte Chamber Formed in Said Third Frame Member"

Defendants seek construction of the claim limitation "an ion conductive electrolyte contained within an electrolyte chamber formed in said third frame member." Defendants rely on The American College Dictionary (1964) to define the words "contain" and "within." The word "contain" is defined as "to have within itself; hold within fixed limits." The word "within" is defined as "in the compass or limits of; not beyond . . . ." Thus, defendants propose the phrase "contained within" means "within fixed limits and not beyond." Therefore, defendants contend the claim limitation means "the ion conductive electrolyte is within the fixed limits of an electrolyte chamber formed in the third frame member and not beyond." Defendants assert the patent specification is consistent with their definition because the embodiments show the electrolyte within fixed limits of, and not extending beyond, the third frame member. Moreover, defendants assert nothing in the prosecution history contradicts their proposed construction.

Dicon argues the meaning of the phrase "contained within" is clear to one of ordinary skill in the art and does not require a dictionary definition. Dicon asserts defendants' use of extrinsic evidence to interpret a term that is clear from the intrinsic evidence must be rejected and the phrase "contained within" should be given its ordinary and customary meaning. Further, Dicon contends defendants' attempt to make claim 1 read as if it were a "consisting of" claim that excludes other features, as opposed to a "comprising" claim that allows other features to be added, is erroneous. Dicon argues the preamble language quoted by defendants does not read "wholly contained within" and defendants are improperly placing limitations on the ordinary language of the claim.
Defendants' construction of "an ion conductive electrolyte contained within an electrolyte chamber formed in said third frame member" as meaning "the ion conductive electrolyte is within the fixed limits of an electrolyte chamber formed in the third frame member and not beyond," is sound. Nothing in the intrinsic evidence is inconsistent with defendants' proposed construction of the ordinary and customary meaning of the claim terms. Dictionary definitions may be used to assess the ordinary and customary meaning of claim terms. Tex. Digital Sys. v. Telegenix, Inc., 308 F.3d 1193, 1203 (Fed. Cir. 2002); Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002). Dicon does not argue defendants' definitions are incorrect. Instead, Dicon contends the meanings of the limitations are clear and do not need any definition. Nevertheless, the court construes "an ion conductive electrolyte contained within an electrolyte chamber formed in said third frame member" as meaning "the ion conductive electrolyte is within the fixed limits of an electrolyte chamber formed in the third frame member and not beyond."

b. "beverage container capture system . . ."; "container holder . . ."

* * *

The prosecution amendment of these phrases are similar to that of the previous phrases--"beverage container capture system" in claim 35 serves as the antecedent basis for "beverage container capture means" in claims 46, 47, 57, 58, 60, and 61 of the '930 patent, and "container holder" in claim 35 serves as the antecedent basis for "container holder means" in step (e) of claims 35, 41, 46, 57, and 58. Like the preceding phrases, however, these phrases are sufficiently descriptive. See '930 Patent, cl. 35, steps c-e (indicating that the "beverage container capture system" is operatively connected to a transporter and a controller; it is further capable of responding to a signal from the controller, capturing a beverage container from the container holder, and carrying it through the vend selection space to the delivery port); col. 28, ll. 42-47 (indicating that a "container holder" is a physical structure located in the internal cavity that physically forms at least one boundary of the vend selection space and is configured to hold a queue of beverage containers in an upright standing manner). The specification also provides a number of examples of the "beverage container capture system" and the "container holder." See '930 Patent, col. 9, ll. 40-49; col. 11, ll. 42-44; col. 14, ll. 30-39.

For these reasons, the court concludes that the terms are not subject to § 112, P 6.

III

Honeywell's infringement claim turns on the construction of claim 1 of the '501 patent. JVC argues that because the claim language requires that the mask be "contiguous" to the transparent member and that the transparent member be "contiguous" to the chip, claim 1 reads only on devices having a mask-transparent member-chip sequence. Honeywell, on the other hand, contends that neither the term "contiguous" nor anything else in the patent dictates that the elements must be arranged in that order.

This seemingly straightforward issue of claim construction is made difficult by the fact that the patent is so poorly drafted that it does not give a readily discernible answer to what would seem to be a basic question regarding the structure of the claimed invention. The district court struggled with the issue, as have we, and while we cannot fault the district court's efforts to make sense of the patent language, we conclude on the basis of all the evidence available to us that the district court's claim construction was too narrow.

A

Claim 1 recites that the transparent member containing the lenslets is "placed contiguous the chip," and that the opaque member having a plurality of transparent portions (i.e., the mask) is "placed contiguous the transparent member." The district court construed that language to require the mask to be placed on top of the transparent member and the transparent
member to be placed on top of the chip. In large part, the court premised that conclusion on its view that the term "contiguous" implied the absence of intervening structure. Thus, according to the district court, if the mask were positioned between the transparent member and the chip, the transparent member and the chip would not be "contiguous." From the court's remark that the transparent member would not be contiguous to the chip even if "the circuit chip is in contact with or next to the transparent member at the points of the holes," it appears that the court would regard the transparent member and the chip as not contiguous in such a structure, even if the two were touching.

Honeywell argues that the district court's claim construction is too restrictive. Honeywell correctly notes that claim 1 does not expressly require any particular ordering of elements, i.e., the claim does not explicitly require that the mask be on top of the transparent member and that the transparent member be on top of the chip. Honeywell further contends that the use of the term "contiguous" in claim 1 does not implicitly require that ordering of elements. In fact, as Honeywell interprets the term "contiguous," there need not even be contact between the elements in question. Rather, Honeywell argues, one element is contiguous to another if the two elements are simply near one another. In Honeywell's view, then, claim 1 reads on a device in which the mask is positioned between the transparent member and the chip, as long as there is close proximity between the mask and the transparent member, and between the transparent member and the chip.

Honeywell's proposed construction of "contiguous" is based on a definition of the term appearing in the prosecution history of the application that matured into the '501 patent. The definition offered by the inventor was as follows: "in actual contact; touching; also, near, though not in contact; neighboring, adjoining; near in succession." The inventor further explained that two elements would be "contiguous" if they were placed "in actual contact" or if they were "near, though not in contact."

The district court erred in not according more weight to the inventor's definition. It is well settled that a patentee may define a claim term either in the written description of the patent or, as in the present case, in the prosecution history. Mycogen Plant Science v. Monsanto Co., 243 F.3d 1316, 1327, 58 U.S.P.Q.2D (BNA) 1030, 1039 (Fed. Cir. 2001). Frequently, a definition offered during prosecution is made in response to a rejection, and is entered in conjunction with a narrowing amendment. See, e.g., Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2D (BNA) 1673, 1677 (Fed. Cir. 1995). Such a definition limits the scope of the claim, preventing the patentee from later recapturing what was previously surrendered. Although the inventor's definition does not have a narrowing effect, it is nonetheless relevant in indicating the meaning that the inventor ascribed to the term. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1577 (Fed. Cir. 1996) ("The record before the Patent and Trademark Office is often of critical significance in determining the meaning of the claims."); E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1438, 7 U.S.P.Q.2D (BNA) 1129, 1135 (Fed. Cir. 1988) (prosecution history "must be examined to ascertain the true meaning of what the inventor intended to convey in the claims").

The definition of "contiguous" set forth in the prosecution history--"in actual contact" or "near, though not in contact"--is taken from a standard English dictionary. Although the definition is broad--the most common meaning of "contiguous" connotes actual contact, not general proximity--that fact is not disqualifying, because the inventor made clear that he intended to invoke the broadest meaning of the term "contiguous," not just the most common meaning. We therefore conclude that the term "contiguous," as used in claim 1, does not require actual contact between elements that are described as "contiguous," and that the use of that term in claim 1 does not necessarily confine the scope of the claim to devices in which the elements are positioned in the mask-transparent member-chip order.

Admittedly, accepting Honeywell's definition of "contiguous" does not wholly resolve the issue of infringement, particularly with respect to the problem of intervening structure. The court rejected defining "contiguous" as "near" because it would "lead to the conclusion that the letter 'A' is contiguous the letter 'C'"--a proposition that the district court found untenable. The court then offered a second hypothetical to illustrate what it regarded as the limits imposed by the term "contiguous": "For example, if one makes a sandwich placing a piece of cheese between the bread and the bologna, the bread and the bologna are not contiguous regardless of whether the cheese is American or Swiss."

Because the structure of the accused device is not entirely clear from the record on appeal, we are unsure whether the "Swiss cheese" problem will be implicated in the determination of infringement on remand. We feel compelled, however, to offer some guidance on this issue, particularly since the district court focused on it so prominently.

To take the easiest case first, we think it evident that the bread and the bologna in the district court's example would be contiguous if they were touching through the holes in the Swiss cheese. It also seems obvious that the bread and the bologna
would not be contiguous if American cheese instead of Swiss cheese separated them so that the cheese intervened between the bologna and the bread at all points. We therefore reject what seems to be the broadest implication of Honeywell's argument—that two elements can be considered contiguous if they are near one another even if they are separated by an intervening structure at every point. The absence of intervening structure is inherent even in the broad definition of "contiguous." See, e.g., Webster's Third International Dictionary 492 (1966) ("contiguous" defined as "next or adjoining with nothing similar intervening . . . immediately preceding or following in time or sequence: without intervening interval or item"). The district court, however, seemed to be principally concerned with the thornier question whether the bread and the bologna are contiguous if they are not touching but there is nothing between them at the places where there are holes in the Swiss cheese. Under the definition of "contiguous" offered by Honeywell, we believe the answer to that question depends on whether, in context, it can be said that the bread and the bologna are "near" one another. That is, the question whether the two are contiguous depends in part on the thickness of the layer of Swiss cheese. Under Honeywell's definition of "contiguous" as "near, though not in contact," the bread and the bologna would be contiguous at the points where the holes in the Swiss cheese were located if the bread and the bologna were close to one another at those points.

By analogy, the transparent member would be contiguous to the circuit chip within the meaning of Honeywell's definition if the transparent member extended through the holes in the mask to touch or almost touch the circuit chip. On remand, then, the district court must determine whether there is some point at which the transparent member and the chip are not separated by some intervening structure, and whether the distance between the transparent member and the chip at that point is sufficiently small, in the context of the structure as a whole, to satisfy the requirements of contiguity recited in claim 1.

B

The district court's claim construction was heavily influenced by its interpretation of the written description of the '501 patent. The court interpreted the written description to require the claimed invention to solve both problems identified in the prior art: the exposed surface area problem and the surface imperfections problem. Because both problems are solved by the mask-transparent member-chip structure, but not by the transparent member-mask-chip structure, the district court concluded that the written description dictated that the claim must be construed to cover only the mask-transparent member-chip structure. In reaching that conclusion, the district court placed particular importance on the following sentence from the written description: "While the mask 30 could be placed adjacent the circuit board 10 and under the lenslet member 20 to likewise mask out the circuit areas on the chip 10, this arrangement would not help the problem of imperfections in the surface of member 20 causing scattering of light to strike other detectors." '501 patent, col. 2, l. 65 to col. 3, l. 2. The court found that this passage constituted a "clear case of disclaimer of subject matter," analogizing to SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337, 58 U.S.P.Q.2D (BNA) 1059 (Fed. Cir. 2001).

In SciMed, which involved patents on a type of medical catheter used in angioplasty, the common specification of the patents at issue stated that the catheters of "all embodiments of the present invention contemplated and disclosed herein" employed a coaxial lumen. Id. at 1343, 58 U.S.P.Q.2D (BNA) at 1065. We held that the "broad and unequivocal" language of the specification defined SciMed's invention in a way that excluded lumens that were not coaxial. Id. at 1344, 58 U.S.P.Q.2D (BNA) at 1065.

There is no similar disclaimer of subject matter in the '501 patent. The language in the '501 patent on which the district court relied is far less explicit than the "all embodiments" language in the patents at issue in SciMed. Moreover, the language in claim 1 of the '501 patent makes reasonably clear that the inventor did not intend to limit the scope of the claim to structures that would solve both of the prior art problems identified in the background section of the written description of the '501 patent.

Claim 1 recites that the opaque member is "placed contiguous the transparent member so as to permit radiation through the lenslets to reach the detector areas and to prevent radiation through the transparent member from reaching the circuit area." That language expressly requires that the opaque member must be positioned to solve the exposed circuit area problem. The claim does not, however, state that the opaque member must be positioned to prevent radiation from reaching the detector areas except through the lenslets. Thus, claim 1 does not require that the opaque member be situated to solve the surface imperfections problem.

That omission is significant. The fact that the patentee chose to include language in claim 1 relating to only one of the two cited prior art problems is persuasive evidence that the claim does not require the solution of both problems. Instead, the
natural implication is that embodiments within the scope of claim 1 must solve only the recited problem of radiation reaching exposed circuit areas. We therefore reject JVC's argument that the term "contiguous" must be construed in a manner that would lead to the solution of both prior art problems discussed in the written description, when claim 1 requires the solution of only one of those problems.

That conclusion is reinforced by the context of the sentence on which JVC relies. The sentence in the written description immediately following the purported disclaimer states:

It is therefore seen that I have provided a means for overcoming the problem of light passing through areas of a lenslet array in such a way as to be received by the circuit apparatus on an auto focus module thus overcoming the problem of spuriously generated signals.

'501 patent, col. 3, ll. 3-7.

That sentence is plainly intended to serve as a general characterization of the invention. Significantly, the sentence refers only to the exposed circuit area problem, i.e., the problem of light being "received by circuit apparatus," which can lead to "spuriously generated signals." There is no suggestion in that characterization that the invention must also solve the surface imperfections problem. We therefore conclude that the description of the mask-transparent member-chip structure, when considered in context, is not a disclaimer of subject matter, but simply an explanation of why the "mask on top" structure is a preferred embodiment of the invention. Such a description of a preferred embodiment does not, of course, limit the scope of the claims. See Electro Med. Sys. SA v. Cooper Life Sciences, 34 F.3d 1048, 1054, 32 U.S.P.Q.2D (BNA) 1017, 1021 (Fed. Cir. 1994).

Two other portions of the written description provide further support for Honeywell's argument that the invention of claim 1 is not required to solve both cited prior art problems. Like the language of claim 1, the Abstract mentions only the exposed circuit area problem. It states that the mask is positioned to "permit[] radiation to pass through the lenslets and be focused on the detector areas but prevent[] light from passing through transparent areas adjacent the lenslets and striking the circuit areas." The fact that the Abstract mentions only the exposed circuit area problem supports the argument that claim 1 should not be read as requiring a structure that will solve both that problem and the surface imperfections problem.

The Summary of the Invention, although not free from ambiguity, also contains language that supports Honeywell's proposed construction of the claim language. The Summary consists of a single sentence, which reads as follows:

The apparatus of the present invention utilizes a light aperture or masking means placed in the area adjacent the lenslets or adjacent the detector areas of the circuit chip which mask is opaque to light except in the areas of the aperture and thus prevents light from passing through the translucent member except through the lenslets and thus prevents light from reaching the circuit areas of the chip other than the detectors.

'501 patent, col. 1, ll. 47-54.

The first portion of that sentence, which states that the mask may be placed either "in the area adjacent the lenslets or adjacent the detector areas of the chip," is squarely contrary to JVC's argument that claim 1 requires the mask to be adjacent to the lenslets but not adjacent to the circuit chip, and it buttresses Honeywell's argument that the mask could either be placed above the lenslets and the chip or between the lenslets and the chip.

To be sure, the persuasive force of the Summary is undercut somewhat by the fact that the sentence contains an internal inconsistency. The second portion of the sentence states that the positioning of the mask "prevents light from passing through the transparent member." That would happen only if the mask were placed above the lenslets. Thus, while the first portion of the sentence suggests that the mask may be placed adjacent to the detector areas underneath the lenslets, the second portion describes a condition that would apply only if the mask were placed above the lenslets.

In light of the inconsistency between the two portions of the sentence quoted above, it appears that the Summary of the Invention was not well thought out. For that reason, we do not attach conclusive weight to the description of the invention that appears in the first portion of the Summary. Nonetheless, the first portion of the sentence so plainly contemplates placement of the mask either next to the lenslets or next to the detector areas of the chip that it is difficult to imagine that the
author of that passage could have intended claim 1 to be as narrow as JVC suggests.

C

JVC also contends that during the prosecution of the patent the inventor made a representation that the mask-transparent member-chip order was required by the claims. JVC argues that in view of that admission it would be improper to read the claims as broadly as Honeywell urges. As we read the prosecution history, however, there was no such admission.

When the application that matured into the '501 patent was filed, the inventor submitted several references, including a published Japanese patent application. Although the inventor stated that his invention "solves a somewhat different problem in a somewhat different way," he nevertheless indicated an intent to swear behind the Japanese reference. To that end, the inventor submitted affidavits from himself and two others describing the activity that predated the effective date of the Japanese reference.

The examiner found the affidavits insufficient to swear behind the Japanese reference. Specifically, the examiner complained that the affidavits and the accompanying exhibits did not show that the mask was placed contiguous to the transparent member and that the transparent member was placed contiguous to the circuit chip, as required by claim 1. The inventor responded by arguing that the affidavits did show that he had reduced to practice a device having "the proper positioning as required by the claims."

JVC contends that the statement by the inventor requires a construction of claim 1 in which the mask is situated above the lenslets. We disagree. The prosecution history contains no representation by the inventor that claim 1 requires a particular ordering of elements. Instead, the inventor made a much different representation--that an embodiment of the invention having a mask-transparent member-chip structural order satisfies the requirement of claim 1 that both the mask and the transparent member, and the transparent member and the chip be "placed contiguous" to one another.

The inventor was arguing that he had reduced to practice an embodiment of his invention that was within the scope of claim 1 prior to the effective date of the Japanese reference. In making that argument, the inventor took issue with the examiner's contention that the affidavits the inventor submitted did not demonstrate that the mask was contiguous to the transparent member and that the transparent member was contiguous to the circuit chip. In response, the inventor stated that in the embodiment of the invention referenced by his affidavits, the mask and the lenslets were contiguous because the mask was placed "on a lenslet and detector assembly." Similarly, the inventor stated that the lenslets and the chip were contiguous because the lenslets and detectors were referred to as "an assembly."

In making the latter point, the inventor recited the dictionary definition of "contiguous" referred to above and concluded that "placing the mask on the lenslet and detector assembly assures that these elements are either 'in actual contact' or are 'near, though not in contact.'" The inventor thus contended that his earlier embodiment of the invention had elements that were contiguous within the meaning of that term as used in the '501 patent. However, arguing that a particular embodiment satisfies the definition of "contiguous" is quite different from arguing that "contiguous" is limited to the order of elements found in that embodiment. When the inventor stated that he had demonstrated that the elements of the invention were "mounted as required by the claims," he was explaining that his assembly satisfied the requirement of contiguity; he was not arguing that the claims required that the elements of the claimed device be arranged in a specific order. For that reason, the prosecution history does not limit the express definition of the term offered by the inventor.

In sum, we conclude that the district court's claim construction was unduly restrictive. There are several possible structures that permit the transparent member to be contiguous to the chip and the mask to be contiguous to the transparent member even though the mask is not located on top of the transparent member. Although we decline Honeywell's invitation to decide that the broader claim construction that we adopt dictates a finding of infringement by JVC's imaging chips, Honeywell is entitled to an opportunity to show that JVC's chips infringe under this construction. We therefore reverse the judgment of non-infringement and remand for further proceedings on that issue.

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D. "Continuous"
Claim 1 of the '418 patent describes "a plurality of continuous, parallel channels extending into the thickness dimension of the sheet, the channels being formed by cutting the second surface of the sheet . . . ." Plaintiffs claim that "continuous" means "uninterrupted," while Gore contends that "continuous" means "endless."

In the context of the '418's specifications, based on the concentric series of parallel channels that appears in the '418 patent's specifications, the term "endless" accurately describes each channel because within each channel, there is no beginning or ending point. Additionally, "endless" is consistent with a plain and ordinary understanding of the word "continuous." See Pl. Claim Constr. Mem., Ex. H, Random House Dictionary of the English Language Second Edition, at 440 (defining "continuous" as "uninterrupted in time; without cessation"). Although "uninterrupted" is also an accepted meaning of "continuous," the term "uninterrupted" implies a temporal component. See id. With respect to descriptions of spacial dimensions, such as the descriptions of the parallel channels on a sheet, the term "endless" is more appropriate than the temporal term "uninterrupted." Accordingly, the Court determines that "continuous" means "endless."

D. "Continuous"

Claim 1 of the '418 patent describes "a plurality of continuous, parallel channels extending into the thickness dimension of the sheet, the channels being formed by cutting the second surface of the sheet . . . ." Plaintiffs claim that "continuous" means "uninterrupted," while Gore contends that "continuous" means "endless" because the preferred embodiment shows the channels to be in concentric hexagons, meaning that the channels are without beginning or end.

Gore's proposed narrow construction is inappropriate when looking at the claims and specifications of the entire patent. For example, claim 10 specifically claims the "sheet in claim 1 wherein the channels and ridges are straight." U.S. Patent 6,921,418 at 10:20-21. The claim 10 language concerning straight channels is instructive as to the meaning of the term "continuous" within claim 1. See Phillips, 415 F.3d at 1314. ("Other claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term."). There is no way for a "straight" channel to be without beginning or end on a finite surface; as such, construing "continuous" to mean "endless" is unworkable if meaning is to be given to the language in the claims of the '418 patent.

The language of claim 10 shows that the inventor contemplated more than just channels formed into concentric hexagons without a beginning or end and to ignore this would be a manifest error in construing the language of the claims. A better construction for "continuous" is "uninterrupted," proposed by Ledergeber, because it would make sense to one skilled in the art whether the channels are straight, concentric, or in some other form. Therefore, the Court construes the term "continuous" to mean "uninterrupted."

Plaintiff proposes the following construction for "continuous air flow generator" in Claim 1 of the '662 Patent:

The word "continuous" in the term "continuous air flow generator" refers to dynamic adjustments being made so that there will be a continuous or consistent baseline pressure based on the user selected amount. The continuous air flow generator is used to supply air pressure to the system to compensate for leaks in the system and repeated inhalation and exhalation of the user. Together with the pressure compensation feedback system, about which the Court will instruct you in a moment, the continuous air flow generator provides continuous, or dynamic, adjustments so that the user selected pressure can be continuously maintained.

To support such a construction, Plaintiff points to the specification and the prosecution history. Specifically, Plaintiff asserts that the specification and prosecution history discuss dynamic adjustments that are made in the device to maintain a user-
selected level of pressure in the air bladder. Plaintiff also contends that the term "continuous air flow generator" is synonymous with "positive air flow generator."

Defendant contends that "continuous air flow generator" must be construed as a generator that produces continuous or non-stop air flow.

In the context of the '662 Patent, the Court rejects Defendant's proposed construction because it disregards the specification language that describes the continuous air flow generator as one that provides dynamic adjustments to maintain a user-selected air pressure. The specification and the prosecution history point to such a construction.

First, the Summary of the Invention equates the continuous air flow generator with a "positive air flow generator" and provides that such mechanism compensates for leakage:

The present invention includes a positive air flow generator operably connected with the oscillatory air flow generator. The positive air flow generator compensates for any leakage in the system, including the hoses and bladder. Also, the positive air flow generator, in connection with a feedback system, maintains the desired peak pressure delivered by the bladder, independent of variations in the bladder and the patient.

( '662, c. 2, ll: 24-36.) Further, the specification provides:

Although diaphragm 19 approximates a perfect system in terms of displacement of air into and out of bladder 2 on each stroke, remaining parts of the closed system are less perfect. For example, bladder 2 typically leaks air at a variable rate that is difficult to model. The amount of air leakage is influenced by many factors, including variations in production of the bladder, age, use, and other factors.

Also, tubes 3 and the various connections within the system may leak. Additionally, the air pressure delivered to bladder 2 must be varied due to the repeated inhalation and expiration of the user during treatment, and also due to the size of the particular user. Therefore, positive air pressure generator 16 is used to supply positive air pressure to the system to compensate for the above-identified variables.

( '662, c. 5, ll: 226-40.) The specification also provides:

Positive air flow generator 16 and pressure-compensation feedback system 50 provide several advantages. First, positive air flow generator 16 dynamically adjusts the peak pressure in air chamber 17 to provide a consistent peak pressure based on the user selected peak pressure, independent of leaks in the system, size of the user, condition of the bladder, and the repeated inhalation and expiration of the user. Maintaining a constant peak pressure provides for increased efficacy of treatment.

( '662, c. 6, ll: 1-9.)

The prosecution history provides additional support for an interpretation of the term "continuous air flow generator" that encompasses dynamic adjustments. Specifically, the prosecution history's differentiation from the '263 Patent is instructive:

Applicants respectfully submit that claim 1, as amended, is patentable over Warwick, et al. (U.S. Patent No. 4,838,263). Claim 1 as amended, includes limitations not found in Warwick et al. First, Warwick does not disclose a "continuous air flow generator . . .". Warwick et al. only discloses a storage tank 130 for use in reinflating the vest during the expiration cycle of a breath when the user actuates switch 162 (column 6, lines 12-26). Storage tank 130 does not provide, and is not capable of providing, a continuous, baseline pressure as does the continuous air flow generator of the present claimed invention. As stated in the specification of the present application as originally filed, air flow generator 16 dynamically adjusts the pressure in air chamber 17 to provide a consistent pressure based on the user selected pressure, independent of leaks in the system, size of the user, condition of the bladder, and the repeated inhalation and expiration of the user. Maintaining the pressure also provides for increased efficacy of treatment. (See page 11, lines 3-11 of the specification.) The storage tank 130 of Warwick et al. does not perform this function and, consequently, does not provide the advantages of the present claimed invention.

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Thus, the Court finds that the specification and the prosecution history determine the construction of the term "continuous air flow generator" in this claim. In so holding, the Court acknowledges Defendant's contention that the term "positive air flow generator" in the claim was modified and renamed "continuous air flow generator" during the prosecution of the patent. See Response to First Office Action for '662 Patent at 4-5. It appears to the Court that this amendment was made to clarify the connection between the positive air flow generator and the associated feedback and control means and, thus, to distinguish the invention from prior art. See id. Thus, in the context of the '662 Patent, the terms "continuous air flow generator" and "positive air flow generator" are used somewhat synonymously. The continuous air flow generator is a positive air flow generator that is connected to a feedback and control system to provide dynamic adjustments in order to maintain a user-selected air pressure.

Therefore, the Court construes the term "continuous air flow generator" to mean a mechanism that is used to supply and maintain a user-selected air pressure in the air chamber, thus compensating for leaks in the system and for repeated inhalation and exhalation of the user. Together with the pressure compensation feedback system, the continuous air flow generator provides dynamic adjustments in order to maintain such a user-selected air pressure.

C. Contiguous Beam

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Plaintiff's Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Said array of light emitting diodes focused/configured to form a contiguous beam</td>
<td>the array of light emitting diodes are arranged to create a pool of light that illuminates objects</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Defendants' Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Said array of light emitting diodes focused/configured to form a contiguous beam</td>
<td>the array of light emitting diodes is designed to form a single beam that projects from the array forward and has no dark areas</td>
</tr>
</tbody>
</table>

The next disputed term in claim 1, "said array of light emitting diodes focused to form a contiguous beam," describes the purpose and arrangement of the LEDs in the patented invention. A substantially similar term, "said array of light emitting diodes configured to form a contiguous beam of light," appears in claim 12. The construction of both of these terms turns on the meaning of "contiguous beam," which the court presumes maintains the same meaning in both claims. See Paragon Solutions, LLC v. Timex Corp., 566 F.3d 1075, 1087 (Fed. Cir. 2009)(holding identical terms to have the same meaning when appearing elsewhere in the patent).

Essentially, the parties' constructions differ in how they would require the light emitted from the various LEDs to overlap. Plaintiffs' construction as "create[ing] a pool of light that illuminates objects," would require only that the light overlap at a single point, namely, the point at which a hypothetical object is in the wearer's view. Plaintiffs' construction would render the location of the light source or sources under the patent irrelevant; their proposed language would seem to encompass any arrangement of LEDs so long as the separate beams of each were directed to eventually converge at some point.

Neither the language of the claim, the context of the specification, nor the prosecution history supports Plaintiffs' reading. In allowing the '831 patent, the patent examiner found the production of a "contiguous beam" to be a novel achievement as compared to the prior art. (Notice of Allowability, Apx. 2, 113.) The Johnson patent, which involves distal light sources that are "separately mounted" such that their "axes converge at an acute angle . . . setting the focal point of the lamps at a predetermined location out from . . . the wearer's eyes," did not achieve a "contiguous beam" in the eyes of the patent...
examiner. (Id.) Yet, Plaintiff's proffered construction of "contiguous beam" would seemingly embrace even the separate distal headlamps of the preexisting Johnson patent. The court does not read the '831 patent to endow the term "contiguous beam" with the capacious meaning urged by Plaintiffs.

Defendant construes "contiguous beam" to require that light from adjacent LEDs join to form "a single beam" with "no dark areas." Though Defendant's reference to "no dark areas" is unnecessary surplusage, the court concludes that Defendant's construction is closer to the way a person of ordinary skill in the art would understand the term "contiguous beam.

The ordinary meaning of "contiguous" connotes objects that are "touching along a boundary or connected throughout in an unbroken sequence." WEBSTER COLLEGIATE DICTIONARY at 250 (10th ed. 1997). Specifically when describing two angles, "contiguous" means "having the vertex and one side in common." Id. at 250 ("of angles: ADJACENT 2"); Id. at 15. This ordinary meaning appears to be the usage employed in the patent. The patent specification describes each individual LED as "emitting a cone of light that spreads out at angles to about 20 degrees to each side of a central axis of the cone." (831 Patent, Col. 4, ll. 3-5). "If there are at least two LEDs aligned, then the LEDs can emit light fanned out to about 40 degrees from each other and maintain a beam with a continuous pool of light." (Id. Col. 4, ll. 5-8). The specification describes an LED array in which angled cones of light fully share one common side and appear, therefore, to create a single, unbroken beam of light. Thus, the specification's reference to a "continuous pool of light" describes a wholly continuous light along the entire length of the beam, rather than, as Plaintiffs would suggest, a single overlap of light at some distant point.

The patent describes an arrangement, by which multiple LEDs are "focused" and "configured" to form "a contiguous beam." This is one instance that necessitates a departure from the general rule of patent construction that a noun preceeded by the article "a" or "an" may refer to either the singular or plural form of the noun. See Tivo Inc. v. Echostar Comm. Corp., 516 F.3d 1290, 1303 (Fed Cir. 2008)(holding that the a patent's reference to two "components" combined into a "stream" clearly evidenced the singular form of the word "stream"). The language of the claim here refers to a single beam.

This interpretation is bolstered by consideration of the various embodiments of the patent. All depict a tight LED grouping, which (when the beam is depicted) is shown to project a single beam of light. While limiting a patent to a preferred embodiment is improper, the embodiments taken as a whole may be an important indication of how a person of ordinary skill in the art would understand the claims. See Phillips, 415 F.3d at 1323-24. In the court's view, the most illustrative example of a "contiguous beam" is found in Figure 22, which depicts a single, unbroken, conical beam of light emanating from a tight grouping of LEDs on the brim of the headgear. (831 patent, Fig. 22.) This depiction of a single, continuous, unbroken beam is reinforced by descriptive language in the specification:

The light emitting diodes can be aligned relative to each other in such a way as to project a beam of light. The beam of light can be contiguous, non-segmented or in a substantially conical shape either fanned out or oval shaped and the like. The beam has no dark areas. The LEDs can be parallel to each other or aligned such that the light emitted forms a contiguous pool of light that washes the objects that are illuminated by the beam.

(831 patent, Col. 3-4, ll. 61-1.) The specification clearly refers to a single beam, described as containing "no dark areas" and forming a "contiguous pool of light." Though the specification contemplates a beam with either an oval or fanned out shape, in both cases it describes a unified, continuous beam. The modification of "contiguous" with the related term "non-segmented" is also telling, as it suggests that the patent's use of "contiguous" is consistent with the term's ordinary meaning of "connected throughout in unbroken sequence" and, specifically with regard to angles, "having a vertex and one side in common."

Accordingly, the court adopts the following construction of "Said array of light emitting diodes focused/configured to form a contiguous beam": "The array of light emitting diodes is arranged to project what appears to be single, unbroken beam of light."
The parties propose the following constructions for "continuous retainer member surrounding the inner head," which is present in claim 43. Dkt. No. 114.

RTI
A nonretractable part of the retraction mechanism that encircles the inner head of the needle holder, and retains the retraction mechanism

BD
A nonretractable part of the retraction mechanism, separate from the needle holder, that encircles the inner head of the needle holder, and retains the retraction mechanism by frictional force with the wall of the syringe

RTI and BD proffer the same arguments as those discussed above in connection with the term "retainer member." Dkt. Nos. 111 at 13-14. Once again, the dispute between the parties is two-fold: (1) whether the holding force must be a frictional force, and (2) whether the needle holder and retainer member must be separate parts.

For the reasons stated above, this Court finds that the invention operates through the use of a clamping or frictional force and that there is no requirement that two components be separate parts. Accordingly, the Court finds that the term "continuous retainer member surrounding the inner head" means "a non-retractable part of the retraction mechanism that encircles the inner head of the needle holder and uses some clamping or frictional force to keep the needle in the projecting position until released."

The district court also erred in its construction of the term "continuous." The accepted meaning of "continuous" is: "marked by uninterrupted extension in space, time, or sequence." Webster's Ninth New Collegiate Dictionary at 284. Relying on this definition, the trial court construed "continuous slice" to mean a length of flattened food product without any interruptions. Schreiber Foods, 92 F. Supp. 2d at 860. The problem arises, however, in defining an interruption. To define "interruptions," the trial court again overemphasized the specification. 3 Specifically, the district court determined that "any creasing or cross-sealing across the width of the web of film and product, which pushes out some of the food product from that cleated or cross-sealed zone even if a thin layer of food product remains [] creates an interruption that results in separate or discontinuous slices or ribbons." Schreiber Foods, 92 F. Supp. 2d at 864 (emphasis added). This emphasis on "interruptions" impermissibly imported the limitation of "without any creases" into the term "continuous." The specification does not preclude any creases in a "continuous slice." Accordingly, this court reverses the district court's construction of the term "continuous."

5. What is the Proper Construction for the Phrase "continuous webbing structure" in the '311 Patent?

Claims 1 and 94 of the '311 patent contain the phrase "substantially continuous webbing structure." KXI contends this phrase means a thin, substantially continuous film or web which has the purpose to create a self-supporting structure for the
primary materials. KXI further contends the web is continuous but not solid, and it may have a large volume of voids or pores filled with air or gases.

Culligan contends this phrase is indefinite, as the specification offers no meaningful definition of the phrase. If the phrase is not indefinite, then Culligan contends an additional element must be added to the definition of the claim: that material compositions characterized as such are readily converted into fibers by the application of stress. In support of this element, Culligan cites the '311 patent's specification at column 5, lines 33-41 which reads:

an additional feature of the products formed by this process is that they can be 'fiberized.' The web matrix portion of the resulting structure, when formed from most common crystalline polymers can be converted to a matrix of fibers holding the primary particles in 'pockets.' This can be achieved through the application of even a mild shear.

Culligan also cites column 7, lines 27-36, which reads:

[continuous web matrix] materials have the unique characteristic that the binder within these structures, when a crystalline polymer, can be converted to a dense matrix of fibers by the application of stress to the structure. Such stress can be the result of pulling, cutting, or compressing the [continuous web matrix] structure.

According to Culligan, this is the only means offered by the patent specification "for anyone to determine whether or not they have a [continuous web matrix] structure as opposed to something else. . . ." According to KXI, it "does not dispute that the examination of fibers after the application of shear is one test that can be performed to determine if an article includes a continuous web matrix." KXI argues, though, this is not the only test, and alleges this test is particularly difficult to perform on end products using carbon primary particles ("testing for the formation of fibers is extremely subtle because the testing itself can destroy the structure."). Also, KXI argues, this test may not be accurate because only a portion of the binder need be converted to meet the claim limitations.

The court will not address Culligan's indefiniteness argument at this time, as this goes to the validity of the claim, and not how it should be construed. The court agrees in part with Culligan. The court finds that the specification defines "continuous webbing structure" as material compositions that can be converted into fibers. The court, however, finds that the term "readily" proposed by Culligan in its definition is an extraneous limitation. Accordingly, the court construes "continuous webbing structure" to mean a thin, substantially continuous film or 'web' which may have a large volume of pores or voids, and which has the purpose to create a self-supporting structure for the primary materials, and which is convertible into fibers.

2. The term "continuously heating" in claim 1 is construed as: "heating without interruption." 3 Plaintiff argues that this term did not require construction or, in the alternative, that the term be construed as "[a] process step in which the product pieces are heated as the product pieces are being carried in a continuous manner along a path of travel by a conveyor or other carrying system." Dkt. # 49, at 1. Defendant argues that the term should be construed as "[h]eating the product at a constant heating temperature." Dkt. # 51, at 16. By its plain meaning, this term refers to the manner and duration of heating, rather than the temperature at which products are heated. This is consistent with the language of the dependent claims, for example where "products are continuously heated . . . by continuously conducting said already cooked food products through an interior of a heating apparatus . . . ." '299 Patent, col. 12, Ins. 10-12. The specifications clearly contemplate applications in which the products are conducted through a heating or cooling apparatus. Further, the specifications focus primarily on the temperature of the products, rather than the temperature of the heating or cooling apparatus. Defendant argues that plaintiff described "continuously heating" as "heating at a constant temperature" during prosecution of the patent. Dkt. # 51, at 16. Plaintiff distinguished prior art, the Cygnarowicz-Provost (Provost) publication, by stating that "the pasteurization process in [Provost] does not take place at a constant temperature," Dkt. # 51-5, at 15, and the Provost procedure "was not a continuous process and . . . did not involve either steady state conditions or the use of a constant treatment temperature," Dkt. # 51-8, at 14. The Court finds that use of the term constant temperature to distinguish prior art in the prosecution history of the '299 Patent was not an unequivocal disclaimer of a meaning that does not require a constant temperature. Therefore, the claim need not be narrowed to include the requirement of a constant temperature. See Chimie,
3. The term "continuously cooling" in claim 1 is construed as: "cooling without interruption." For the same reasons as 2, supra, this construction is consistent with the plain language of the claim and patent specifications.

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H. "a control for activating said global positioning system for transmitting the position of said cellphone to the remotely located telephone or the Internet"

Minerva argues that the meaning of "a control for activating said global positioning system for transmitting the position of said cellphone to the remotely located telephone or the Internet" is self-evident and requires no construction. The defendants contend that the limitation at issue is a means-plus-function limitation, which lacks corresponding structure in the specification, so the claim is indefinite. The absence of the word "means" gives rise to a presumption that the claim term is not governed by 35 U.S.C. § 112, P 6. Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 703-04 (Fed. Cir. 1998) (internal citations omitted). The Federal Circuit has held, however, that "a limitation lacking the term 'means' may overcome the presumption against means-plus-function treatment if it is shown that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." Mass. Inst. of Tech. v. Abacus Software, 462 F.3d 1344, 1353 (Fed. Cir. 2006) (internal quotations omitted). The defendants allege that the term "control" does not recite sufficiently definite structure. They cite Biomedino, LLC v. Waters Technologies Corp., 490 F.3d 946 (Fed. Cir. 2007), which holds that "control" is "not a structure or material capable of performing the identified function." Id. at 950.

The plaintiff counters that the defendants have not overcome the presumption against means-plus-function treatment. Minerva argues that the Biomedino case is inapposite because the term at issue was "control means," not merely "control," so there was a presumption of a means-plus-function limitation. Id. (emphasis added). Therefore, according to Minerva, Biomedino merely holds that the recitation of a "control" is insufficient to overcome the presumption of means-plus-function when the term contained the word "means." Finally, Minerva argues that one of skill in the art would recognize that a control, in this context, is a button, switch, or similar device.

Read in the context of the written description, a control is a button or other mechanically-activated device. Therefore, the court construes the term "a control for activating said global positioning system for transmitting the position of said cellphone to the remotely located telephone or the Internet" to mean "a button or switch for activating said global positioning system for transmitting the position of said cellphone to the remotely located telephone or the Internet."

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A. "Control Structure"

The claim term "control structure" appears in both the '946 and '685 patents. As an initial matter, the Court will address defendant's argument that the claim term, as used in both patents, should be construed a means-plus function limitation under 35 U.S.C. §112, P 6.


Paragraph 6 of 35 U.S.C. § 112 states that "[a]n element in a claim for combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such a claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." Federal Circuit law states that:

"[A] claim limitation that actually uses the word 'means' invokes a rebuttable presumption that § 112 P 6 applies. By contrast, a claim term that does not use 'means' will trigger the rebuttable presumption that § 112 P 6 does not apply." The
use of the term "means" is "central to the analysis," because the term "means," particularly as used in the phrase "means for," is "part of the classic template for functional claim elements," and has come to be closely associated with means-plus-function claiming.

Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004) (internal citations omitted). The presumption that a limitation lacking the term 'means' is not subject to section 112 P 6 can be overcome if it is demonstrated that 'the claim term fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.' Lighting World, 382 F.3d at 1358, citing CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1369 (Fed. Cir. 2002) (quoting Watts v. XL Sys., Inc., 232 F.3d 877, 880 (Fed. Cir. 2000)). Federal Circuit "cases make clear, however, that the presumption flowing from the absence of the term 'means' is a strong one that is not readily overcome." Lighting World, 382 F.3d at 1358.

In the instant case, the claim term "control structure" does not contain the word "means." Therefore, the term triggers the rebuttable presumption that § 112, P 6, does not apply. The term does not recite a function. Moreover, claim 1 recites sufficiently, definite structure by stating that "a control structure" comprises "a travel bar . . . and a spring . . . ." (Doc. # 1-2, '946 patent, col. 9, lines 61-65). Claim 26 also recites sufficiently, definite structure by stating that "the control structure comprising a travel bar" and that "the control structure further comprising an actuating lever . . . and a spring . . . ." (Doc. # 1-2, '946 patent, col. 12, lines 17, 21). As such, defendant has not rebutted the presumption that § 112, P 6, does not apply. Based on the foregoing, the Court does not construe the claim term "control structure" as a means-plus-function limitation, and will next address the parties' proposed construction of the term in the context of both the '946 and '685 patents.

2. "Control Structure" in the '946 Patent

Plaintiff requests that the Court construe the claim term "control structure" in the '946 patent as "an arrangement of one or more part(s) and element(s) which govern the movement of hinge plates." (Doc. # 26-2, at 5). In support of its proposed construction, plaintiff primarily relies on dictionary definitions. (Doc. # 26-2, at 5-6; # 51, at 4-5).

Plaintiff contends that the patentee did not act as his own lexicographer because "[a] cursory review of the patent shows that the specification contains no clear, deliberate, and precise definition of the term control structure." (Doc. # 31, at 23) (emphasis in original). Plaintiff also argues that "[a] claim term should take on its ordinary and accustomed meaning' unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of [the] claim scope." (Doc. # 31, at 23) (citing Teleflex, Inc., v. Ficosa N. Am. Corp., 299 F.3d 1313, 1324 (Fed. Cir. 2002)). Plaintiff also argues that "[d]efendant should not be permitted to read descriptions of the preferred embodiment into the claims as limitations." (Doc. # 31, at 24) (citing CCS Fitness, 288 F.3d at 1366). Plaintiff next argues that defendant's proposed construction would not encompass the prior art. (Doc. # 31, at 24-25).

Finally, plaintiff refers the Court to the doctrine of claim differentiation, which states "that [t]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." (Doc. # 31, at 25) (citing Halliburton Energy Services, Inc. v. M-I LLC, 514 F.3d 1244, 1252 n.3 (Fed. Cir. 2008)). Plaintiff asserts that defendant's proposed construction violates the doctrine of claim differentiation by improperly incorporating the limitations of claims 10 and 14 of the '946 patent. Claim 10 states that the "control structure further comprises a connecting link pivotally connecting the travel bar to the hinge plates . . . ." (Doc. # 1-2, '946 patent, col. 10, lines 26-28). Claim 14 states that "the control structure further comprises an actuating lever pivotally mounted on the elongate plate . . . ." (Doc. # 1-2, '946 patent, col. 10, lines 43-44).

Defendant urges the Court to construe the claim term "control structure" in the '946 patent as "a control structure supported by the elongate plate . . . . The control structure includes a single actuating lever at one end of the mechanism, a travel bar, and two connecting links." 2 (Doc. # 26-2, at 5). Defendant argues "the patentee chose to be his own lexicographer with respect to the term 'control structure.'" (Doc. # 26-2, at 8). Defendant notes that, in Johnson WorldWide Associates, Inc. v. Zebeco Corp., 175 F.3d 985, 990 (Fed. Cir. 1999), the Federal Circuit held that "[w]hen a patentee chooses to be his or her own lexicographer, that definition must be applied to the claim." (Doc. # 26-2, at 8). Defendant refers the Court to the '946 patent specification, which states that "[t]he control structure 66 includes a single actuating lever 68 at one end of the mechanism, a travel bar 70, and two connecting links 72 which are supported by the elongate plate 32 and are movable relative to the elongate plate." (Doc. # 1-2, '946 patent, col. 4, lines 5-9). Defendant claims that the patentee, acting as a
Defendant also contends that "claim 1 requires including the only disclosed structures that correspond to the function of 'control structure,' being an 'actuating lever' and 'connecting links,' so that claim 1 does not exceed the breadth of the supporting disclosure. Otherwise, the claims of the '946 patent containing the term 'control structure' would be invalid." (Doc. # 26-2, at 9-10) (internal citations omitted). Finally, defendant argues that its proposed construction of the term "control structure" is "consistent with 35 U.S.C. §112, P 2, which requires that the claims of a patent 'particularly point out and distinctly claim the subject matter which the applicant regards as his invention.'" (Doc. # 26-2, at 10).

In the instant case, defendant suggests that the Court construe "control structure" to include "a single actuating lever at one end of the mechanism, a travel bar, and two connecting links." Independent claim 1 does not include the "a single actuating lever" or "two connecting links." Therefore, defendant's proposed construction improperly includes the limiting language of dependent claims 10 and 14 of the '946 patent to create "presumption that the limitation[s] in question [are] not present in the independent claim." Halliburton, 514 F.3d at 1252 n.3, citing Phillips, 415 F.3d 1303. "That presumption is especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim, and one party is urging that the limitation in the dependent claim should be read into the independent claim." SunRace Roots Enter. Co., Ltd. v. SRAM Corp., 336 F.3d 1298, 1303 (Fed. Cir. 2003). However, "the presumption . . . is 'not a hard and fast rule and will be overcome by a contrary construction dictated by the written description or prosecution history.'" Regents of Univ. of Cal. v. Dakocytomation Cal., Inc., 517 F.3d 1364, 1375 (Fed. Cir. 2008) (citing Seachange Int'l, Inc. v. C-COR, Inc., 413 F.3d 1361, 1369 (Fed. Cir. 2005)); see also ICU Med., Inc. v. Alaris Med. Sys., Inc., No. 2008-1077, 558 F.3d 1368, 2009 U.S. App. LEXIS 5271, 2009 WL 635630, at *4 (Fed. Cir. Mar. 13, 2009).

The Court rejects plaintiff's argument that defendant's proposed construction of the term "control structure" violates the doctrine of claim differentiation. As stated above, "[u]nder the doctrine of claim differentiation, 'the presence of a dependent claim that adds a particular limitation gives to a presumption that the limitation in question is not present in the independent claim.'" Halliburton, 514 F.3d at 1252 n.3, citing Phillips, 415 F.3d 1303. Therefore, defendant's proposed construction improperly includes the limiting language of dependent claims 10 and 14 of the '946 patent to create "presumption that the limitation[s] in question [are] not present in the independent claim [1]." The written description, however, overcomes this presumption because the '946 patent specification states that "[t]he control structure 66 includes a single actuating lever 68 at one end of the mechanism, a travel bar 70, and two connecting links 72 which are supported by the elongate plate 32 and are movable relative to the elongate plate." (Doc. # 1-2, '946 patent, col. 4, lines 6-9). Therefore, the Court finds that term "control structure" in the '946 patent means "control structure including a single lever at one end of the mechanism, a travel bar, and two connecting links."}

Plaintiff urges the Court to construe the claim term "control structure" as "an arrangement of one or more part(s) and element(s) which govern the movement of hinge plates." (Doc. # 51, at 2). Plaintiff again provides dictionary definitions to support its proposed construction. Plaintiff also contends that the '685 patent specification contains no definition of the term "control structure," and that "[d]efendant should not be permitted to read the[] descriptions of an embodiment into the
claims as limitations.” (Doc. # 55, at 23). Moreover, plaintiff asserts that “[d]efendant's proposed construction of the term control structure does not comport with the representation that the patentee made to the patent office within the specification of the ’685 patent.” Id. Plaintiff also argues that defendant's proposed construction includes the term "intermediate connector," which violates the doctrine of claim differentiation. Plaintiff contends that the term improperly incorporates the limiting language from dependent claims 12 and 14 of the ’685 patent.

Defendant requests that the Court construes the term "control structure" in the ’685 patent as:

[A] control structure supported by the housing and moveable relative to the housing between a first position and a second position for use in controlling the pivoting motion of the hinge plates, the control structure including an actuator and a hinge pin pivotally connecting the actuator to the housing for movement relative to the housing to cause movement of the control structure between said first and second positions; and . . . the control structure further comprising a travel bar operatively connected to the lever such that pivoting movement of the lever causes movement of the travel bar in translation relative to the housing from the position in which the control structure locks the hinge plates in the closed position to the second position in which the hinge plates are free to pivot to the open position. The control structure includes the actuating lever, an intermediate connector, an elongate travel bar, and either:

(a) at least one connecting link; or

(b) an opening arm, a closing arm and three blocking elements; or

(c) and opening arm and three angled blocking elements.

(Doc. # 51, at 2-3). 3 Defendant claims that the structures outlined in subsections (a) through (c) are "three alternative sets of structure for performing the[] functions" of the control structure. (Doc. # 51, at 7). Defendant asserts that the patentee, acting as his own lexicographer, explicitly described the three, separate descriptions of the term "control structure."

--- Footnotes ---

3 Because the Court does not construe the claim term "control structure" as a means-plus-function limitation, the Court will only consider defendant's alternative, proposed construction. (Doc. # 51, at 3 n.2).

--- End Footnotes ---

Defendant's proposed construction partially violates the doctrine of claim differentiation. Independent claim 1 of the ’685 patent does not mention "intermediate connector," but dependent claims 12 and 14 includes such language. Incorporation of the phrase into the independent claim 1 invokes the presumption that the limiting language "is not present in the independent claim." Halliburton, 514 F.3d at 1252 n.3. The ’685 patent specification states that "[t]he control structure 37 includes the actuating lever 15, an intermediate connector 39, an elongate travel bar 41, and three connecting links 43 . . . ." (Doc. # 51-2, ’685 patent, col. 5, lines 20-22). However, in the Office Action dated December 13, 2007, the patent examiner referenced U.S. Patent No. 2,004,570 (the ’570 patent) and rejected claim 1 of the ’685 patent because it described "control structure" as "the control structure including an actuator and a hinge pin" as was disclosed in the ’570 patent. (Doc. # 55-7, at 1, 6). Had the patentee understood "control structure" to include the phrase "intermediate connector," then the patent examiner would not have referenced the ’570 patent, because the ’570 patent description of "control structure" did not contain the term "an intermediate connector." Therefore, despite the written description, the ’685 patent prosecution history suggests that "control structure" does not contain the phrase "intermediate connector." As such, the Court believes that defendant has not overcome the heavy burden invoked by the doctrine of claim differentiation, and will not read the limiting language into the term "control structure" in the ’685 patent.

The Court also rejects defendant's attempt to define "control structure" in light of the three embodiments disclosed in the ’685 patent specification. Federal Circuit law states that:

Although claims must be read in light of the specification of which they are a part, it is improper to read limitations from the written description into a claim. Moreover, "although the specification may well indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is
broader than such embodiments."

Tate Access Floors, Inc. v. Maxcess Technologies, Inc., 222 F.3d 958, 966 (Fed. Cir. 2000). In the instant case, the first embodiment of the '685 patent specification states that "[t]he control structure 37 includes the actuating lever 15, an intermediate connector 39, an elongate travel bar 41, and three connecting links 43 . . . ." (Doc. # 51-2, '685 patent, col. 5, lines 20-22). The fourth embodiment describes a "[c]ontrol structure 337 [that] include[s] three blocking elements, . . . a closing arm 330 and an opening arm 332." (Doc. # 51-2, '685 patent, col. 10, lines 49-55). The sixth embodiment refers to the mechanism disclosed in the fourth embodiment. (Doc. # 51-2, '685 patent, col. 13, lines 33-34). As such, the sixth embodiment modifies the actuator to include "a flat opening arm" and "angled surfaces of the blocking elements [that] face the lever." (Doc. # 51-2, '685 patent, col. 13, line 51, col. 14, lines 19-20). The language in claim 1, however, only refers to "control structure" as "the control structure including an actuator and hinge pin . . . and a spring . . . and . . . further comprising a travel bar . . . ." (Doc. # 51-2, '685 patent, col. 16, lines 35-36, 40, 44-45). Thus, the claim language is broader than the preferred embodiments. As such, the Court will not read the limiting language disclosed in the embodiments into claim 1 of the '685 patent. Therefore, the Court finds that "control structure" in the '685 patent means "the control structure including a hinge pin, a spring, and a travel bar."

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A. "Control Structure"

The claim term "control structure" appears in both the '946 and '685 patents. As an initial matter, the Court will address defendant's argument that the claim term, as used in both patents, should be construed a means-plus-function limitation under 35 U.S.C. § 112, ¶ 6.


Paragraph 6 of 35 U.S.C. § 112 states that "[a]n element in a claim for combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such a claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." Federal Circuit law states that:

"[A] claim limitation that actually uses the word 'means' invokes a rebuttable presumption that § 112, ¶ 6 applies. By contrast, a claim term that does not use 'means' will trigger the rebuttable presumption that § 112, ¶ 6 does not apply." The use of the term "means" is "central to the analysis," because the term "means," particularly as used in the phrase "means for," is "part of the classic template for functional claim elements," and has come to be closely associated with means-plus-function claiming.

Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004) (internal citations omitted). "The presumption that a limitation lacking the term 'means' is not subject to section 112, ¶ 6 can be overcome if it is demonstrated that 'the claim term fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'" Lighting World, 382 F.3d at 1358, citing CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1369 (Fed. Cir. 2002) (quoting Watts v. XL Sys., Inc., 232 F.3d 877, 880 (Fed. Cir. 2000)). The Federal Circuit "cases make clear, however, that the presumption flowing from the absence of the term 'means' is a strong one that is not readily overcome." Lighting World, 382 F.3d at 1358.

In the instant case, the claim term "control structure" does not contain the word "means." Therefore, the term triggers the rebuttable presumption that § 112, ¶ 6 does not apply. The term does not recite a function. Moreover, claim 1 recites sufficiently, definite structure by stating that "a control structure comprising a travel bar . . . and a spring . . . ." (Doc. # 1-2, '946 patent, col. 9, lines 61-65). Claim 26 also recites sufficiently, definite structure by stating that "the control structure comprising a travel bar" and that "the control structure further comprising an actuating lever . . . and a spring . . . ." (Doc. # 1-2, '946 patent, col. 12, lines 17, 21). As such, defendant has not rebutted the presumption that § 112, ¶ 6, does not apply. Based on the foregoing, the Court does not construe the claim term "control structure" as a means-plus-function limitation, and will next address the parties' proposed construction of the term in the context of both the '946 and '685 patents.

2. "Control Structure" in the '946 Patent
Plaintiff requests that the Court construe the claim term "control structure" in the '946 patent as "an arrangement of one or more part(s) and element(s) which govern the movement of hinge plates." (Doc. # 26-2, at 5). In support of its proposed construction, plaintiff primarily relies on dictionary definitions. (Doc. # 26-2, at 5-6; # 51, at 4-5).

Plaintiff contends that the patentee did not act as his own lexicographer because "[a] cursory review of the patent shows that the specification contains no clear, deliberate, and precise definition of the term control structure." (Doc. # 31, at 23) (emphasis in original). Plaintiff also argues that "[a] claim term should take on its ordinary and accustomed meaning unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of [the] claim scope." (Doc. # 31, at 23) (citing Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1324 (Fed. Cir. 2002)). Plaintiff also argues that "[d]efendant should not be permitted to read descriptions of the preferred embodiment into the claims as limitations." (Doc. # 31, at 24) (citing CCS Fitness, 288 F.3d at 1366). Plaintiff next argues that defendant's proposed construction would not encompass the prior art. (Doc. # 31, at 24-25).

Finally, plaintiff refers the Court to the doctrine of claim differentiation, which states "that '[t]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim."’ (Doc. # 31, at 25) (citing Halliburton Energy Services, Inc. v. M-I LLC, 514 F.3d 1244, 1252 n.3 (Fed. Cir. 2008)). Plaintiff asserts that defendant's proposed construction violates the doctrine of claim differentiation by improperly incorporating the limitations of claims 10 and 14 of the '946 patent. Claim 10 states that the "control structure further comprises a connecting link pivotally connecting the travel bar to the hinge plates . . . ." (Doc. # 1-2, '946 patent, col. 10, lines 26-28). Claim 14 states that "the control structure further comprises an actuating lever pivotally mounted on the elongate plate . . . ." (Doc. # 1-2, '946 patent, col. 10, lines 43-44).

Defendant urges the Court to construe the claim term "control structure" in the '946 patent as "a control structure supported by the elongate plate . . . . The control structure includes a single actuating lever at one end of the mechanism, a travel bar, and two connecting links." 1 (Doc. # 26-2, at 5). Defendant argues "the patentee chose to be his own lexicographer with respect to the term 'control structure.'" (Doc. # 26-2, at 8). Defendant notes that, in Johnson WorldWide Associates, Inc. v. Zebco Corp., 175 F.3d 985, 990 (Fed. Cir. 1999), the Federal Circuit held that "[w]hen a patentee chooses to be his or her own lexicographer, that definition must be applied to the claim." (Doc. # 26-2, at 8). Defendant refers the Court to a description of preferred embodiment in the '946 patent specification, which states that "[t]he control structure 66 includes a single actuating lever 68 at one end of the mechanism, a travel bar 70, and two connecting links 72 which are supported by the elongate plate 32 and are movable relative to the elongate plate." (Doc. # 1-2, '946 patent, col. 4, lines 5-9). Defendant claims that the patentee, acting as a lexicographer, described the "control structure" as a "unique control structure." See (Doc. # 1-2, '946 patent, col. 4, line 1). Defendant also refers the Court to the '946 patent prosecution history, whereby the patentee states that the mechanism includes a "unique structure." (Doc. # 26-4, at 11-12; # 26-5, at 25).

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1 Because the Court does not construe the claim term "control structure" as a means-plus-function limitation, the Court will only consider defendant's alternative, proposed construction. (Doc. # 26-2, at 5 n.1).

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Defendant also contends that "claim 1 requires including the only disclosed structures that correspond to the function of 'control structure,' being an 'actuating lever' and 'connecting links,' so that claim 1 does not exceed the breadth of the supporting disclosure. Otherwise, the claims of the '946 patent containing the term 'control structure' would be invalid." (Doc. # 26-2, at 9-10) (internal citations omitted). Finally, defendant argues that its proposed construction of the term "control structure" is "consistent with 35 U.S.C. § 112, P 2, which requires that the claims of a patent particularly point out and distinctly claim the subject matter which the applicant regards as his invention." (Doc. # 26-2, at 10).

As stated above, "[u]nder the doctrine of claim differentiation, 'the presence of a dependent claim that adds a particular limitation gives to a presumption that the limitation in question is not present in the independent claim." Halliburton, 514 F.3d at 1252 n.3 (citing Phillips, 415 F.3d 1303). "That presumption is especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim, and one party is urging that the limitation in the
Defendant requests that the Court construes the term "control structure" in the '685 patent as:

limiting language from dependent claims 12 and 14 of the '685 patent. "connector," which violates the doctrine of claim differentiation. Plaintiff contends that the term improperly incorporates the element(s) which govern the movement of hinge plates. (Doc. # 51, at 2). Plaintiff again provides dictionary definitions to

In the instant case, defendant suggests that the Court construe "control structure" to include "a single actuating lever at one end of the mechanism, a travel bar, and two connecting links." Independent claim 1 does not include the phrases "a single actuating lever" or "two connecting links." Thus, defendant's proposed construction improperly includes the limiting language of dependent claims 10 and 14 of the '946 patent, which gives rise to the "presumption that the limitation[s] in question [are] not present in . . . independent claim [1]." Halliburton, 514 F.3d at 1252 n.3 (citation omitted). The Court also rejects defendant's attempt to define "control structure" in light of the description of one preferred embodiment in the '946 patent specification. Federal Circuit law states that:

Although claims must be read in light of the specification of which they are a part, it is improper to read limitations from the written description into a claim. Moreover, "although the specification may well indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than such embodiments."

Tate Access Floors, Inc. v. Maxcress Technologies, Inc., 222 F.3d 958, 966 (Fed. Cir. 2000). As discussed above, a description of one preferred embodiment states that "control structure" includes two connecting links; the '946 patent claim language, however, repeatedly refers to "control structure" as only "a control structure . . . comprising a travel bar . . . hinge plates . . . a spring[]" (Doc. # 1-2, '946 patent, col. 9, lines 57-65, col. 11, lines 19-29, col. 12, lines 21-29). Therefore, the claim language is broader than the preferred embodiment in the '946 patent specification. Without more, the Court will not read the description of the preferred embodiment into the broad claim language. See MBO Labs., Inc. v. Becton, Dickinson &Co., 474 F.3d 1323, 1333 (Fed. Cir. 2007) (holding that "to import limitations onto [a] claim from the specification . . . is fraught with 'danger.'"), citing Phillips, 415 F.3d 1303, 1323 ("although [patent] specifications often describe [] very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.") (citation omitted). Cf., ICU Med., 558 F.3d at 1375 (affirming the district court's claims construction that imported a written description in the patent specification, which "repeatedly and uniformly" narrowed the broad claim language). Therefore, the Court finds that term "control structure" in the '946 patent means "control structure including a travel bar, hinge plates, and a spring."

3. "Control Structure" in the '685 Patent

As with the '946 patent, defendant urges the Court to construe the claim term "control structure" in the '685 patent as a means-plus-function limitation. Since the claim term "control structure" in the '685 patent does not contain the word "means," the claim term invokes the rebuttable presumption that § 112, P 6, does not apply. Claim 1 recites sufficiently, definite structure by stating that "a control structure" includes "an actuator and a hinge pin . . . and a spring . . . ." (Doc. # 51-2, '685 patent, col. 16, lines 35-40). Claim 13 also states that "control structure" includes "a lever having a head, a hinge pin . . . and a travel bar . . . ." (Doc. # 1-2, '946 patent, col. 18, lines 27-31). Thus, the Court does not construe the claim term as a means-plus-function limitation, and will next address the parties' proposed construction of the claim term within the context of the '685 patent.

Plaintiff urges the Court to construe the claim term "control structure" as "an arrangement of one or more part(s) and element(s) which govern the movement of hinge plates." (Doc. # 51, at 2). Plaintiff again provides dictionary definitions to support its proposed construction. Plaintiff also contends that the '685 patent specification contains no definition of the term "control structure," and that "[d]efendant should not be permitted to read the [] descriptions of an embodiment into the claims as limitations." (Doc. # 55, at 23). Moreover, plaintiff asserts that "[d]efendant's proposed construction of the term control structure does not comport with the representation that the patentee made to the patent office within the specification of the '685 patent." Id. Plaintiff also argues that defendant's proposed construction includes the term "intermediate connector," which violates the doctrine of claim differentiation. Plaintiff contends that the term improperly incorporates the limiting language from dependent claims 12 and 14 of the '685 patent.

Defendant requests that the Court construes the term "control structure" in the '685 patent as:
A control structure supported by the housing and moveable relative to the housing between a first position and a second position for use in controlling the pivoting motion of the hinge plates, the control structure including an actuator and a hinge pin pivotally connecting the actuator to the housing for movement relative to the housing to cause movement of the control structure between said first and second positions; and . . . the control structure further comprising a travel bar operatively connected to the lever such that pivoting movement of the lever causes movement of the travel bar in translation relative to the housing from the position in which the control structure locks the hinge plates in the closed position to the second position in which the hinge plates are free to pivot to the open position. The control structure includes the actuating lever, an intermediate connector, an elongate travel bar, and either:

(a) at least one connecting link; or

(b) an opening arm, a closing arm and three blocking elements; or

(c) and opening arm and three angled blocking elements.

(Doc. # 51, at 2-3). 2 Defendant claims that the structures outlined in subsections (a) through (c) are "three alternative sets of structure for performing the [] functions" of the control structure. (Doc. # 51, at 7). Defendant asserts that the patentee, acting as his own lexicographer, explicitly described the three, separate descriptions of the term "control structure."

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2 Because the Court does not construe the claim term "control structure" as a means-plus-function limitation, the Court will only consider defendant's alternative, proposed construction. (Doc. # 51, at 3 n.2).

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Defendant's proposed construction partially violates the doctrine of claim differentiation. Independent claim 1 of the '685 patent does not mention "intermediate connector," but dependent claims 12 and 14 includes such language. Incorporation of the phrase into the independent claim 1 invokes the presumption that the limiting language "is not present in the independent claim." Halliburton, 514 F.3d at 1252 n.3. The '685 patent specification states that "[t]he control structure 37 includes the actuating lever 15, an intermediate connector 39, an elongate travel bar 41, and three connecting links 43 . . . ." (Doc. # 51-2, '685 patent, col. 5, lines 20-22). However, in the Office Action dated December 13, 2007, the patent examiner referenced U.S. Patent No. 2,004,570 (the '570 patent) and rejected claim 1 of the '685 patent because it described "control structure" as "the control structure including an actuator and a hinge pin" as was disclosed in the '570 patent. (Doc. # 55-7, at 1, 6). Had the patentee understood "control structure" to include the phrase "intermediate connector," then the patent examiner would not have referenced the '570 patent, because the '570 patent description of "control structure" did not contain the term "an intermediate connector." Therefore, despite the written description, the '685 patent prosecution history suggests that "control structure" does not contain the phrase "intermediate connector." As such, the Court believes that defendant has not overcome the heavy burden invoked by the doctrine of claim differentiation, and will not read the limiting language into the term "control structure" in the '685 patent.

The Court also rejects defendant's attempt to define "control structure" in light of the three embodiments disclosed in the '685 patent specification. As stated above, states that, "although the specification may well indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than such embodiments." Tate Access Floors, 222 F.3d 958. In the instant case, the first embodiment of the '685 patent specification states that "[t]he control structure 37 includes the actuating lever 15, an intermediate connector 39, an elongate travel bar 41, and three connecting links 43 . . . ." (Doc. # 51-2, '685 patent, col. 5, lines 20-22). The fourth embodiment describes a "[c]ontrol structure 337 [that] include[s] three blocking elements, . . . a closing arm 330 and an opening arm 332." (Doc. # 51-2, '685 patent, col. 10, lines 49-55). The sixth embodiment refers to the mechanism disclosed in the fourth embodiment. (Doc. # 51-2, '685 patent, col. 13, lines 33-34). As such, the sixth embodiment modifies the actuator to include "a flat opening arm" and "angled surfaces of the blocking elements [that] face the lever." (Doc. # 51-2, '685 patent, col. 13, line 51, col. 14, lines 19-20). The language in claim 1, however, only refers to "control structure" as "the control structure including an actuator and hinge pin . . . and a spring . . . and . . . further comprising a travel bar . . . ." (Doc. # 51-2, '685 patent, col. 16, lines 35-36, 40, 44-45). Thus, the claim language is broader.
than the preferred embodiments. As such, the Court will not read the limiting language disclosed in the embodiments into claim 1 of the '685 patent. Therefore, the Court finds that "control structure" in the '685 patent means "the control structure including a hinge pin, a spring, and a travel bar."

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7. control volume ('062 patent, claims 1, 16)

This term appears in independent claims 1 and 16 of the '062 patent. The '062 patent "relates to fluid flow control devices and, more specifically, to regulating pump pressures. In particular, the invention provides a method and apparatus for increasing the fluid flow rate in a fluid flow control device while maintaining desired pressure levels." '062 patent, 1:6-10.

Claim 1 recites

A method for regulating pressure at a distal end of a fluid line, the method comprising:

- providing a fluid control system, the fluid control system having at least one liquid volume in valved communication with the distal end, a control volume in pressure communication with the liquid volume, means for measuring pressure in the control volume, and means for adjusting the pressure in the control volume;

- calibrating the means for measuring the pressure;

- establishing communication between the liquid volume and the distal end;

- measuring a pressure of the control volume; and

- adjusting the pressure in the control volume in accordance with the measured pressure.

Claim 16 recites

A method for regulating pressure at the distal end of a fluid line, the method comprising:

- providing a fluid flow control system, the fluid flow control system having at least one liquid volume in valved communication with the distal end, a control volume in pressure communication with the liquid volume, a pressure traducer in communication with the control volume, and a pressure adjuster in communication with the control volume;

- calibrating the pressure traducer;

- establishing communication between the liquid volume and the distal end;

- measuring a pressure of the control volume; and

- adjusting the pressure in the control volume in accordance with the measured pressure.

The parties dispute whether "control volume" simply refers to a "volume" of gas or liquid that "regulates" or "guides" the flow control system; or whether "control volume" more specifically refers to that portion of the "pump chamber" that contains the pressurizing fluid, and which is separated (in that pump chamber) from the "liquid volume" by the "membrane."

Plaintiffs propose that "control volume" means "a volume of gas or liquid used in regulating and guiding the fluid flow control system. " Plaintiffs also accept Fresenius' expert's definition of "control volume," which is "a region in space which is mathematically defined with the purpose of analyzing the region." Fresenius proposes that "control volume" means "the portion of the pump chamber that contains the pressurizing fluid and is separated from the liquid volume by the membrane."
The claims and specification of the '062 patent do not explicitly define "control volume" to have a special meaning, but instead use "control volume" to refer broadly to a volume of fluid (gas or liquid, as the parties agree) used in regulating and guiding operation of the claimed device.

For example, Claim 1 recites "[a] method for regulating pressure at a distal end of a fluid line, the method comprising . . .," and includes the step of "measuring a pressure of the control volume," and then, to control the liquid flow control device, requires "adjusting the pressure in the control volume in accordance with the measured pressure." Id., 7:1-3.

In certain preferred embodiments, pressure measurements are taken at the control volume and used in calculations that form the basis for system adjustments - that is, to regulate and guide the fluid flow control system. The specification states that a "control volume" can be used to identify pressure correlations and calculate pressure values, which values the processor then uses to control the fluid flow control device:

The fluid flow control device preferably includes a control volume for each liquid volume, a transducer for each control volume, and a processor for reading and storing pressure values, computing and identifying a correlation between pressure values, and calculating pressure values based on identified correlations. The processor may estimate the elevation differential based upon the pressure values, and/or regulate fluid pump pressures.

Id., 2:8-15; see also id., 5:51-56 ("In process 514, the pressure transducer 315 measures the pressure in the second control volume 311, and the relative elevation is estimated in process 515 based on the pressure in the second control volume and the calibration constants generated during calibration"). In other words, the "pressure in the second 'control volume'" is used to estimate the relative elevation between the fluid control device and the distal end of the fluid line.

Fresenius' proposed construction ignores distinctions made by the claims and specifications. Fresenius argues that the claimed "control volume" must be "a portion of the pump chamber." However, this proposal is directly contradicted by the patent, as the specification clearly indicates that the control volume need not be a portion of the pump chamber. See id., 6:38-43 ("separate pumps, control volumes, and liquid volumes may be provided and . . . the liquid volumes and control volumes may be located at a different point from the pumps along the fluid pathway to the distal end of the fluid line"); id., 2:23-24 (in one preferred embodiment, "the liquid volume and the control volume themselves are parts of a pump").

Similarly, Fresenius defines "control volume" as containing "the pressurizing fluid" (e.g., only a gas or a liquid). However, the specification states that while pressurizing "may occur" through the use of a gas or a liquid, it may also occur through "other methods known in the art, such as pumps, pistons, pressurized reservoirs, valves, and vents." Id., 3:35-38. A construction that excludes embodiments of the invention described in the specification "is rarely, if ever, correct and would require highly persuasive evidentiary support." Vitronics, 90 F.3d at 1583. Fresenius offers no such highly persuasive support here.

Fresenius' proposal that the control volume must be "separated from the liquid volume by the membrane" is also contradicted by the patent. For example, claim 2, which depends from claim 1, requires that "the liquid volume includes a flexible membrane that separates the liquid volume from the control volume." Under the doctrine of claim differentiation, the requirement that the control volume is separated from the liquid volume by a flexible membrane cannot be read into claim 1, because it is a limitation that is recited in claim 2. See, e.g., Phillips, 415 F.3d at 1314-15 ("the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim"); Liebel-Flarsheim, 358 F.3d at 910 ("where the limitation that is sought to be 'read into' an independent claim already appears in a dependent claim, the doctrine of claim differentiation is at its strongest").

"Control volume" means "a volume of gas or liquid used in regulating and guiding the fluid flow control system."

9. "Controlled Flow"

The term "controlled flow" is construed to mean, "Regulated and directed forward continuous movement."
The phrase appears in claim 16 of the '207 patent:

(i) heating said core in said laminator, in the presence of minimum first ram pressure, to a temperature which causes controlled flow of said plastic which makes up said first and second plastic core sheets; (ii) applying a second pressure uniformly across said core for encapsulating said at least one electronic element within said controlled flow.

'207 patent, col. 8:22-28. The specification states that "A heat cycle is applied to the core sheets in the laminator thus liquefying or partially liquefying the sheets." '207 patent, col. 2:34-36. The specification further describes that the purpose of the "controlled flow" is to enclose the electronic element, "Once the heat cycle has been applied to the book as is set forth above, the ram pressure of laminator is increased to facilitate the flow of the plastic core sheets so that the one or more electronic elements are encapsulated thereby…” '207 patent, col. 4:48-52.

The meaning of the phrase "controlled flow" would appear to be self-evident. When a liquid "flows" it moves forward continuously. "Controlled" indicates some degree of restraint (Plaintiff's proposed term) or regulation or direction (my preferred term).

Defendant claims the phrase means that "the first and second plastic core sheets' at least partially liquefy so as to fully enclose the 'electronic element' at the ram pressure and heat applied to the 'core sheets' and allow the outer surfaces of the finished card before dye sublimation printing to assume a smoothness of approximately .0005 inches or better." (Def. Br. at 41.)

According to Defendant, "flow" is a technical term. (Id.) McGraw Hill defines "flow" to mean "the forward continuous movement of fluid, such as gases, vapors, or liquids, through closed or open channels or conduits." Defendant cites the language of the specifications quoted above as supporting the premise that the electronic element is fully encapsulated by the first and second plastic core sheets, which at least partially liquefy in order to "flow" and surround the electronic element. (Def. Br. at 42.) Defendant also notes that Leighton stresses in the '207 specification that his invention lies in producing a contactless card with a sufficiently smooth and regular surface to receive dye sublimation printing, and that this smoothness cannot be achieved unless the core plastic sheets at least partially liquefy and flow. (Id.)

I agree with Defendant to the extent that plastic, in the state we normally encounter it, would not "flow." And we know from the specifications and claims discussed above that the lamination process at issue here involves heating the plastic core sheets. So I do agree that the plastic core sheets only "flow" because they have been heated, intentionally, during lamination. However, Defendant's proposed definition of "controlled flow" attempts to introduce into the definition of that phrase concepts that are not even found in the claims -- a transparent effort to limit the meaning of this phrase to one disclosed embodiment. That is not the proper function of claim construction.

a. "controlling inflation of the airbag when deployment of the airbag is not suppressed"

Plaintiff argues that the court should construe this claim as "controlling inflation of the airbag by adjusting operation of the airbag." (Chart at 22.) In response, Defendant argues that Plaintiff's claim is indefinite because Claim 19 incorporates the method of Claim 14, which only includes "suppressing deployment" and does not contemplate any deployment. (Id.)

Paragraph 2 of 35 U.S.C. § 112 requires that a patent claim "particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention." 35 U.S.C. § 112 P 2. "A determination that a patent claim is invalid for failure to meet the definiteness requirement . . . is a conclusion 'that is drawn from the court's performance of its duty as the construer of patent claims [and] therefore, like claim construction, is a question of law.'" Bancorp Servs., L.L.C. v. Hartford Life Ins. Co., 359 F.3d 1367, 1371 (Fed. Cir. 2004) (quoting Atmel Corp. v. Info. Storage Devices, Inc., 198 F.3d 1374, 1378 (Fed. Cir. 1999)). "The terms used in the claims bear a presumption that they mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art." Honeywell Int'l, Inc. v. Int'l Trad Comm'n, 341 F.3d 1332, 1338 (Fed. Cir. 2003) (citing CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002)). A claim is presumed valid, and a court will only find a claim in definite if the "claim is insolubly ambiguous, and no narrowing construction can properly be adopted." Honeywell, 341 F.3d at 1338-1339 (quoting Exxon
Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001)).

Claim 14 states: "A method for controlling a deployable component in a vehicle, comprising the steps of . . . controlling the component . . . the step of controlling the component comprising the step of suppressing deployment of the component." (Chart at 19.) Claim 19 of the '516 Patent is: "The method of claim 14, wherein the component is an airbag, the step of controlling the component comprising the step of controlling inflation of the airbag when deployment of the airbag is not suppressed." (Chart at 21-22.)

Defendants are correct in noting the patent contradiction in Plaintiff's claim. Claim 14 includes the method of suppressing deployment of a component. Claim 19 incorporates this method, including suppressing deployment of the component," but Claim 19 itself describes a method for "controlling inflation of the airbag when deployment of the airbag is not suppressed" (emphasis added). Under Plaintiff's own construction, Claim 19 simultaneously requires the suppression and non-suppression of the same component. There is no reconciling this contradiction, and indeed, Plaintiff appears to have dropped this claim because Plaintiff offers no argument in opposition or to clarify the interpretation to avoid this finding. The court will therefore find this claim indefinite pursuant to § 112, P 2.

E. "Controlling the Operation of Said Heater"

The parties also dispute the proper construction of the term "controlling the operation of said heater" in the claims of the '585 Patent. TSI argues that no further construction is necessary. Defendants assert that the Court should construe the term to mean causing the heater to run a pre-programmed heater operation sequence to regulate the temperature of the element at or near a single, predetermined temperature above the element's Curie temperature. Defendants do not explain why this term is ambiguous in the context of the claims; nor do they point to any disclaimer or disavowal of claim scope. Thus, defendants rely solely on Microsoft in their attempt to add limitations to the scope of the claims.

The full claim language reads: "controlling the operation of said heater in response to information received from said tag." Defendants argue that since control is limited to responses from the tag, then the scope of the patent cannot include control by using actual temperature information. Rather, control can only be exercised from information identifying the object to be heated, thereby compelling the selection of a pre-programmed sequence relating to a pre-determined temperature.

The Court rejects defendants' proposed construction. Defendants cite only a single excerpt to the specification in support of this argument, but that excerpt does not contain any description of the invention with the limitation urged by defendants. Moreover, the Court has already rejected defendants' attempt to impose a claims limitation prohibiting the use of temperature information in the control process. See supra Part III.C. Defendants have not identified sufficient language in the specification to support importation of these limitations into the claims of the patent. Accordingly, the Court rejects defendants' proposed construction of this term and concludes that no further construction of the term is warranted.

A. Cool the Skin (Claims 1, 19)

Term | Court's Construction
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cool the skin surface in said | remove heat from the skin surface in
skin region to a selected depth | said skin region to a selected depth

The parties disagree as to whether the word "cool" means simply removing heat or instead indicates cooling or precooling that reduces the skin temperature below the pre-treatment level. The claims expressly contemplate optical radiation treatment with "at most minimal heating" of the skin while the cooling occurs, '844 Patent col.15 l.66 to col.16 l.11, col.17 ll.44-47, so the word "cool" necessarily has the more general meaning of removing heat rather than defendant's limited construction. The specification supports this interpretation because it references cooling below the pre-treatment level and the related concept of precooling only in the context of preferred embodiments. See, e.g., '844 Patent col.2 ll.35-43, col.5
The court therefore adopts plaintiff's construction of "cool" as "removing heat." Defendant also argues that "selected depth" should be construed to mean "a predetermined depth," but the court can discern no difference between the two phrases and finds that no further construction is needed.

(11) "said arms and said first and second magnetic members cooperating to stably support said auxiliary spectacle frame on said primary spectacle frame" (claim 12)

Plaintiffs contend that the term "cooperating" means "to work or act together toward a common end or purpose." JS, Exh. B at 21. Plaintiffs also contend that "stably" means "resistant to sudden change in position or condition." Id. "Support" is defined by Plaintiffs to mean "to maintain in position so as to keep from falling, sinking or slipping." Id. at 22.

Conversely, Defendant construes the entire phrase in question to mean:

the arms extending from the auxiliary spectacle frame must contact and be supported on the upper side of the side portion extensions of the primary spectacle frame and the magnets on the rear side of the extensions of the primary frame are positioned directly below although not in contact with the magnets on the arms of the auxiliary frame to cooperate in holding the arms in place on the extensions to allow the auxiliary spectacle frame to be supported by the primary spectacle frame.

JS, Exh. D at 2.

Defendant seeks to read into the instant phrase the limitation that the arms must contact and be supported on the upper side of the extensions of the primary frame; and that the primary frame magnetic members must be positioned directly below, although not in contact with the auxiliary frame magnetic members. Def.'s Opposition at 11:4-18. Defendant argues that its construction should be adopted because it is supported by "[t]he only figure in the '545 Patent [-Figure 7-] illustrating the relationship between the arms and the extension". Id. at 11:19-20. The Court rejects Defendant's argument because "the number of embodiments disclosed in the specification is not determinative of the meaning of disputed claim terms." Teleflex, Inc. v. Ficosa North America Corp., 299 F.3d 1313, 1327 (Fed. Cir. 2002). The fact that Figure 7 shows a particular embodiment does not, in and of itself, limit the entire patent to such embodiment. See Laitram Corp., 863 F.2d at 865.

Defendant further argues that its construction should be adopted under the "recapture doctrine" 16 because the patentee added the requirement that the arms must contact and be supported on the upper side of the extension during prosecution of the original '207 Patent to secure allowance of claim 1. Def.'s Opposition at 12:1-12. Claim 1, as originally submitted to the PTO, required that the arms be "engaged with and supported on said upper portion" of the primary frame. Koo Decl., Exh. D at 34-35. The only amendment to claim 1 made during the prosecution was by an Examiner's clarifying amendment which added the word "side" between "upper" and "portion." Id. at 49.

16 Under the recapture doctrine, claims in a reissue patent "that are broader than the original patent's claims in a manner directly pertinent to the subject matter surrendered during prosecution [of the original patent] are impermissible." Pannu v. Storz Instruments, Inc., 258 F.3d 1366, 1370-71 (Fed. Cir. 2001).

Additionally, and as is evident from the claims of the '545 Patent (the reissue patent), that same limiting language appears only in claim 1 and not in claims 12, 16 or 24. To this end, claim 12 of the '545 Patent simply requires that the arms and the magnetic members "cooperat[e] to stably support" the auxiliary frame on the primary frame. Koo Decl., Exh. B at 15, 11. 5-7.

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Based on the above, the Court construes the phrase "said arms and said first and second magnetic members cooperating to stably support said auxiliary spectacle frame on said primary spectacle frame" in claim 12 to mean said arms and said first and second magnetic members working together to maintain in position said auxiliary spectacle frame on said primary spectacle frame by resisting sudden change of position. See Webster's, Nicodema Decl., Exh. 5 at 126, defining "cooperate" as "to work or act together toward a common end or purpose"; id. at 153, defining "stable" as "resisting sudden change of position or condition"; id. at 155, defining "support" as "to maintain in position so as to keep from falling, sinking or slipping."

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The district court then construed the term "core member" to require "a fairly rigid core member with an annular band or ring at its base that can fit into the band or ring of the outer housing." Id. The district court looked to Hemphill's statements during prosecution of the 720 patent to determine that the purpose of the "annular band" is "to keep sticky fingers off the fibers," and to possess "an outer diameter which is at least equal to the inner diameter" of the band attached to the outer housing, "so that the two can fit thereby allowing the core to be secured within the band by a suitable adhesive." Id. The specification described the core member as "fairly rigid," and secured to the outer housing. Id. We find that the district court properly construed the term "core member."

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2. "Expansion strut pair corners" and "corners" of "expansion strut pairs."

Consistent with the claim language and its ordinary meaning 14 and the specification, 15 this court construes "corners" to mean "a place where two surfaces meet to form an angle."

14 D.I. 230, Ex. 5 at 452 (defining "corner" as "the place at which two converging lines or surfaces meet" and "the space between two converging lines or surfaces near their intersection; angle"); D.I. 233, Ex. 11 at 507 (defining "corner" as "the point or place where converging lines, edges or sides meet: ANGLE . . .").

15 '021 patent, col. 11, ll. 66-67 - col. 12, ll. 11.

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c. "Correct Combination" (Claim 3)

82. The claim term "correct combination" defines the function of the lever moving element moving means and defines when the moving element is activated. Thus, the term defines and limits the function of a particular claim element. This term should be construed to have the same meaning as defined above for "combination", and refers to a particular type of combination which will cause the lock to open. Thus, "correct combination", as used in the '656 patent claims, means the
C. "Compressed State/Position" and "Decompressed State/Position"

The terms "compressed state" or "compressed position" and "decompressed state" or "decompressed position" appear in different forms in all four patents in suit. The Common Specification and the earlier issued '866 and '862 patents use the term "state," whereas the more recently issued '592 and '509 patents contain claims that employ the term "position." Although the parties have agreed that "state" and "position" should be construed consistently with one another, Alaris emphasizes "state" and ICU emphasizes "position" in their respective proposed constructions. The patents also use the terms "uncompressed" and "decompressed," apparently interchangeably, and the court will treat these words as synonymous for purposes of claim construction.

The parties disagree on the precise claim language to be construed. Alaris urges the court to construe the term "into a compressed state" as "from a state (i.e. condition) of no axial compression to a state of axial compression" and the term "returning to a decompressed state" as "returning to a state (i.e. condition) of no axial compression." ICU urges the court to construe the term "compressed position" as "the position of the seal when it is under axial compression from a medical implement and opens the valve" and the term "decompressed position" as the position of the seal when it is not under axial compression from a medical implement and closes the valve." Because the words "into a" and "returning to a" from the claim language are not technical or obscure in their meaning, the court will follow ICU's lead and restrict its construction to "compressed position/state" and "decompressed position/state."

As noted above, although the parties agree that "state" and "position" should be construed similarly, they disagree over which word better captures the proper manner of viewing the role of axial compression in the claim language. Alaris, in focusing on the word "state," attempts to define compression in terms of the condition of the seal, i.e., either under axial compression or not. ICU, in focusing on the word "position," highlights the actual position of the seal and attempts to incorporate into the definitions the source of the compression, i.e. a medical implement, and the status of the valve, i.e. open or closed. A plain reading of the claim language itself makes clear that there is no need to import the source and valve status limitations into the construction of these terms, because they are already present in the claim language itself. For example, claim 1 of the '862 patent requires a seal that moves distally "into a compressed state upon insertion of the delivery end of the medical implement … and returning to a decompressed state upon removal of said delivery end from said opening…” Claim 1 goes on to describe the device in terms of "pushing said delivery end into the cavity to compress said seal sufficiently to allow the fluid to flow from said medical implement through [the] valve to the patient." Id. at 15:38-43 and 15:54-56. Both the concept of the medical implement as the source of compression and the concept of the valve being opened as a result of the compression are already included in the applicable claim language and thus do not need to be included in the construction of compression; indeed, to do so would render certain portions of the claim language superfluous or redundant.

Furthermore, the "into a" and "returning to a" language preceding the respective terms under construction make clear that what is at issue in the use of the terms "compressed state/position" and "decompressed state/position" in the claim language is best understood as referring to the condition of the Seal, irrespective of the source or purpose of the compression. As Judge Stotler concluded in the July 2004 Order,

… to move into an axially compressed state the claimed seal must first start in a state in which it is not axially compressed. Logically, the claim language describing the seal as "returning to an axially decompressed state" must then mean that the seal returns to the original state of no compression from which it moved initially."

July 2004 Order at Sec. III, P27. Nothing in this claim language discloses or suggests any intermediate condition of relative or partial compression.

Every claim term must have an antecedent basis in the specification. See Tandon, 831 F.2d at 1024; Lockwood, 107 F.3d at 1572. Here, the antecedent basis in the Common Specification for both "state" and "position" is "state," and the use of the term in the Common Specification confirms that the terms in question are best understood as referring to the condition of
the seal. As an example, the Summary of the Invention mirrors the claim language in describing the seal as moving "into a compressed state upon insertion of the tip of the medical implement into the opening and returns to a decompressed state upon removal of the tip." Id. at 3:32-35. The Common Specification further states that "[the application of pressure on the syringe … creates pressure on [the] seal cap," thereby suggesting that the seal was not initially under any pressure at all. Id. at 9:1-3: The Common Specification thus supports a straightforward reading of the claim language that suggests that "Compressed state/position" and "decompressed state/compression" are best understood in terms of the presence or absence of axial compression.

The proper construction of "compressed state/position" is thus "a state (i.e. condition) of axial compression," and the proper construction of "decompressed state/position" is thus "a state (i.e. condition) of no axial compression."

D. Whether the TFN and PFN Actively Compress Fractures by Means of a Bone Screw

The '406 patent claims a method of treating intertrochanteric fractures that includes the step of "compressing the fracture using the bone screw." (Column 8:17-20.) The court has interpreted this phrase to mean "squeezing together the fractured bone fragments by means of a screw." In the summary judgment order, the court concluded that this claim would cover "a compression method in which a screw is inserted into the area of a fracture without changing the position of any bone fragments, and a doctor rotates a nut around the screw to squeeze bone fragments together." (Order at 16.) At trial, Synthes requested reconsideration of this conclusion. Smith & Nephew claims that the method of using the TFN and PFN to treat intertrochanteric fractures violates claim 1(e) of the '406 patent.

At trial, Synthes reasserted the argument that it had made in favor of summary judgment: that the TFN and PFN do not practice this claim because compression does not occur simply by rotating the screw but instead requires the use of specially-designed, additional instruments. In support, Synthes points to the Recon Nail, the invention produced and sold by Smith & Nephew under the '406 patent. The only way for a surgeon using the Recon Nail to actively squeeze the bone fragments together ("active compression") is by continuing to tighten the lag screw inserted into the femoral head after the shoulder of the screw abuts the lateral cortex of the femur. (Tr. 365:23-366:23; TX 33.) The '406 specification discloses a similar method: "A hexagonally-shaped inset 52 in the head portion permits insertion of a suitable tool for compression of lag screw 50…. A hexagonal screwdriver or any suitable tool can be used to compress lag screw 50, 250 to a desired degree." (Column 5:18-21, 7:14-16.) Once the head-portion of the screw contacts the lateral cortex of the femur, additional turning of the screw will cause the threads to draw the opposed fracture surfaces together. (Tr. 810:11-813:8, 815:23-816:21, 3086:2-3087:8.)

A patent claim will not necessarily be limited to a preferred embodiment or the particular product sold under the patent. See, e.g., Nazomi Communications, Inc. v. ARM Holdings, PLC, 403 F.3d 1364, 1369 (Fed. Cir. 2005). Nevertheless, the embodiments cited by Synthes demonstrate that the method of active compression claimed in the '406 patent is not as narrow as Synthes argues. The embodiments rely on more than the screw itself to achieve the active compression claimed by the patent, each citing the need for "a suitable tool" to turn the screw. (Column 5:18-21, 7:14-16.) The Recon Nail and the TFN and PFN, therefore, require more equipment than "just the screw" to achieve active compression. Synthes' distinction appears to be that the Recon Nail and the '406 specification anticipate active compression by rotating the screw and the TFN and PFN employ the screw 14 only as an anchoring means.

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14 The court, above, has found that the Helical Blade is a "screw" under the '406 and '663 patents.

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When using the TFN device, a surgeon may compress a fracture by twisting the Buttress/Compression Nut (TX 9) around the Blade Guide Sleeve (TX 7), which is abutted against the handle of the Helical Blade Inserter (TX 11), which is in turn abutted against the coupling screw connected to the Helical Blade. All of these items must move in order to achieve active interfragmentary compression using the TFN. (Tr. 1669:17-1670:3, 1766:21-1768:24.) The PFN uses a similar mechanism.
to actively compress bone fragments. That these mechanisms have more physical components than those used by the Recon Nail or a traditional compression hip screw system does not mean that they avoid the claimed step of "compressing the fracture using the bone screw." A compression mechanism in which a screw plays an indispensable role compresses the fracture "by means of a screw." This mechanism may use only an intramedullary rod, a screw, and a screwdriver, or it may, like the TFN and PFN, be more complex. Thus, using the TFN and PFN to actively compress intertrochanteric fractures practices the claimed method of "compressing the fracture using the bone screw."

**Construction of "compression locked"**

Although, in the briefs, the parties asked for claim construction of the entire phrase "such that advancement of semi-spherical head against said retaining portion causes said head of said screw to be compression locked thereagainst," the focus of the dispute is on the meaning of "compression locked." The parties appear to agree that compression locking is the process by which the retaining portion, or socket, and the head of the bone screw become locked into a position relative to each other: something happens whereby the screw head is in contact with the retaining portion and can no longer move relative to it. The dispute appears to center on the nature of the forces at work, as well as the role of the retaining portion. Medtronic contends that compression locking requires application of an inward radial force to squeeze and crush the retaining portion around the screw head; the volume of the retaining portion is decreased. Fastenetix contends that compression simply refers to pressure, and that the claim is not limited to inward radial pressure, since there could also be downward axial pressure at work (the screw head pressing downward onto the retaining portion), nor is reduction of the volume of the retaining portion required.

From the start, Medtronic appears to be taking an extreme position, and one that disregards the obvious. Rather than contending that compression locking occurs in part through the application of inward radial force, Medtronic's extreme position is that locking occurs only through the application of inward radial force which crushes the socket against the screw head. This is seen in categorical statements such as this one, made after describing compression by inwardly directed radial force: "No other type of locking is contemplated, described, or enabled by the '089 patent." (Defs.' Br. 31.)

This extreme position disregards the obvious other process involved in locking described in the patent: that process in which downward axial force on the screw head presses it against the retaining portion. As will be seen in the discussion that follows, claim 12 clearly expresses that such a process is at least involved in compression locking. In view of this, Medtronic's categorical rejection of this kind of locking seems plainly contrary to the words in the claim.

Medtronic first contends that the surrounding claim language which describes characteristics of the retaining portion supports its proposed construction. It points to the fact that claim 12 specifies that the retaining portion has "a slot formed therein, said slot rendering a volume of said retaining portion to be adjustable." (‘665 Patent, col 11, ll. 29-31.) Medtronic does not explain, however, how this limits the process of compression locking. Medtronic next notes that the retaining portion is "shaped to seat in said retaining surface of said bottom chamber." (‘665 Patent, col 11, ll. 32-33.) Again, however, Medtronic does not explain how this characteristic limits the process of compression locking. Rather, it skips to the conclusion: "Thus, claim 12 requires that the 'compression lock' occur as the result of the shape of the retaining portion and the shape of the bottom chamber of the axial bore." (Defs.' Br. 22.) This conclusion does not appear to be logically grounded in the two antecedent observations about the structure of the retaining portion. The fact that the retaining portion is shaped so as to have adjustable volume, and to be seated in the bottom of the chamber, does not obviously limit the nature of the locking force or process. Conspicuously absent from Medtronic's position is any expert support for its proposition: if, given the structural characteristics of the retaining portion stated in the claim, one of ordinary skill in the art would understand that the locking could only occur due to the application of inward radial force producing volume reduction of the retaining portion, why has Medtronic offered no supporting affidavit from an expert? 7

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7 Medtronic did submit the rebuttal declaration of Robert E. Guldberg, Ph.D. with its responsive brief. The Court notes that Dr. Guldberg, in discussing "compression locked," merely parroted the legal arguments offered by Medtronic. (Guldberg Dec. PP 21-22.) Dr. Guldberg provided no technical or scientific analysis to support the proposition that locking can occur.
only due to the application of inward radial force producing volume reduction of the retaining portion.

Medtronic's position is also unpersuasive because it is inconsistent both with itself and with the plain language of the claim. Medtronic argues that the compression locking occurs because of "advancement of the semi-spherical head," and that this "must mean movement of the screw head toward the bottom of the axial bore." (Defs.' Br. 22.) If compression locking occurs following axial movement of the screw head toward the bottom, does that not describe the operation of axial force? Given that the claim expressly states that advancement of the semi-spherical head against the retaining portion causes the screw to be compression locked, how could compression locking exclude the operation of axial force? Medtronic's proposed "inward radial force" limitation is contradicted by the claim language describing how the device comes to lock the screw head, which is by the head's advancement against the retaining portion.

Claim 12 has much other language relevant to understanding compression locking. In addition to the language about the "advancement of the head" just discussed, the claim contains this detailed language about the locking process:

wherein said semi-spherical head portion is freely rotational within said retaining portion prior to being compressed onto said retaining portion, and

whereby when the rod is in said channel, downward movement of said top locking nut onto the rod results in a force upon said cap portion causing forcible advancement of the semi-spherical head of said screw thereby locking said screw, said coupling assembly and said body relative to one another.

('665 Patent, col 11, ll. 43-51.) Thus, in direct conflict with Medtronic's position, the claim clearly states that the head is "freely rotational . . . prior to being compressed onto said retaining portion." This is a clear statement that locking of the head (cessation of being freely rotational) proceeds from compression of the head onto the retaining portion -- the application of axial force to the head. The claim then repeats this even more clearly: "causing forcible advancement of the semi-spherical head of said screw thereby locking said screw, said coupling assembly and said body relative to one another." The patentee has clearly and repeatedly stated, within the claim itself, that application of axial force to the screw head causes it to lock against the retaining portion. Medtronic's position cannot be reconciled with this intrinsic evidence.

Moreover, Medtronic contends that, in compression locking, it is the retaining portion, or socket, that is compressed around the head of the screw. (Defs.' Br. 23.) Thus, in Medtronic's view, "compression" must involve the application of inward radial force to squeeze the socket portion against the screw head. This is contradicted by another use of "compressed" in the claim: "said semi-spherical head portion is freely rotational within said retaining portion prior to being compressed onto said retaining portion." ('665 Patent, col 11, ll. 43-45.) This shows that the applicants understood that the screw head could be compressed onto the retaining portion. Thus, if "compression" is limited in meaning to the application of inward radial force squeezing the socket portion against the screw head, the phrase just quoted becomes incomprehensible. This problem does not occur if one adopts the interpretation of Fastenetix: to compress is to apply pressure.

8 In its responsive brief, Medtronic defines "compression locking" as "inward forces reduce the volume of the socket by virtue of the slots until it locks the screw." (Defs.' Resp. Br. 14.)

9 This is supported by the use of "compression" in two other claims. Both claim 1 and claim 7 speak of "downward compression of a rod in said channel." ('665 Patent, col 9, ll. 24-25; col 10, l. 41.) Again, if compression is redefined as the application of inward radial force to squeeze, this claim language becomes incoherent. On the other hand, if compression is understood as simply the application of pressure, as Fastenetix contends, these phrases make sense. Similarly, the '665 patent abstract uses "compressed" to refer to both inward radial and downward axial pressure: the socket is said to be "radially compressed," but the cap is "compressed toward the socket portion," which can only involve downward axial force.

In its responsive brief, Medtronic responds to this argument about the two uses of "compression" in the patent. (Defs.' Resp. Br. 14.) Medtronic's reply is that this is irrelevant because the term in dispute is "compression locked." This comment itself
is ambiguous, and no further explanation is given. If the principle at work here is redefinition by implication, this Court does not perceive how the varied uses of forms of "compress" in the patent are irrelevant to understanding what the applicants meant by "compression locked."

Any proposed construction of "compression locked" in claim 12 must be evaluated in the light of the applicants' use of the same phrase in claim 18, which states, in relevant part:

wherein when a rod is placed in said channel, advancement of said locking nut produces a downward force on the rod translating into a downward movement of at least said cap portion and said screw causing deformation of said outer surface of said retaining portion within said nesting surface resulting in a locking force applied by said retaining portion against said semi-spherical head causing said screw to be compression locked within said body.

('665 Patent, col 12, ll. 36-44.) "Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims." Phillips, 415 F.3d at 1314. The use of this term in claim 18 thus gives important information about the meaning of "compression locked" in claim 12. In claim 18, deformation of the outer surface of the retaining portion causes a "locking force" to be applied by the retaining portion against the screw head, which causes the screw to be "compression locked." This is inconsistent with Medtronic's view of compression locking as requiring volume reduction of the retaining portion. In claim 18, compression locking occurs as a result of the application of force by the retaining portion against the head. The drafter has distinguished the deformation of the retaining portion from the application of locking force by it: they are separate concepts. For Medtronic to succeed with its argument, it must show that the applicants redefined "locking" so that it involves crushing of the retaining portion. 10 The language in claim 18 shows that the patentees did not redefine locking to include crushing of the retaining portion, but kept the concepts distinct and separate.

10 As will be discussed in the next paragraph, Medtronic contends that "compression locked" and "locking" have the same meaning. See, e.g., Defs.' Br. 31 ("The word 'locking' is used in one and only one context -- compression or crush locking the socket portion around the head of the screw.")

The parties have presented terms from three claims for construction. Each claim has a term which refers to locking: "compression locked" in claim 12, "locking contact" in claim 21, and "locking" in claim 27. Medtronic does not differentiate these terms. Rather, it contends that they all mean the same thing: "locking by the application of inward radial forces to crush the coupling element around the screw head." 11 (Defs.' Resp. Br. 25.) The failure to differentiate the terms creates significant problems in Medtronic's position.

11 This sentence is given as the construction of "locking" in claim 27, but Medtronic uses the same concepts to construe the locking terms in the other two claims. Compare to the quote in the preceding footnote, which comes from the construction of "locking contact" in claim 21; the definitions are essentially the same.

First, by making "compression locking" equivalent to "locking," this makes the word "compression" in claim 12 into meaningless surplusage. This strongly suggests that this construction must be wrong, since it is clear that the applicants did not use "compression" as a meaningless word.

Second, Medtronic overlooks the major difference in the use of "locking" in claim 27. In claim 12, the screw head and the socket portion are "compression locked." In claim 21, the screw head is moved into "locking contact" with the socket portion. Claim 27, however, refers to "locking the angle of the screw," not locking the screw head. Under Medtronic's
construction, this means that inward radial forces are applied to compress the socket around an angle, which makes no sense. This shows that "locking" cannot have been redefined by implication in the way that Medtronic contends. 12 Rather, given that the applicants wrote of locking a screw as well as locking an angle, it seems most likely that "locking" was not redefined so as to give it the specialized and unusual meaning Medtronic proposes.

12 Similarly, in describing the preferred embodiment, the specification states that the locking nut has a central post which provides "a central seating pressure point for locking the rod in the channel." (089 Patent, col 5, ll. 4-5.) This does not make sense if "locking" has been redefined by implication as Medtronic contends.

This view finds further support from the use of the phrase "locking nut," which appears in the specification of both patents as well as in claim 18 of the '665 patent. Claim 18 states that advancement of the locking nut produces a downward force on the rod. ('665 Patent, col 12, ll. 36-38.) This results in "a locking force applied by" the socket to the screw head "causing said screw to be compression locked." ('665 Patent, col 12, ll. 41-44.) Quite simply, if "locking" and "locked" have been redefined even just as applying inward radial forces -- setting aside the action of reducing the volume of the socket -- claim 18 becomes fully incoherent. Medtronic's proposed constructions regarding locking cannot be correct.

Furthermore, as Fastenetix notes, the patentees wrote other claims which clearly expressed the concept of crush locking. For example, both claims 1 and 7 in the '665 patent state that pressure on the socket portion "causes the forceable advancement of the socket portion into the tapered lower chamber portion of the axial bore, and locks the screw, coupling element and body relative to one another." ('665 Patent, col. 9, ll. 24-30; col. 10, ll. 42-47.) This claim language clearly expresses that the locking is produced by forcing the socket down against the tapered axial bore, implying the compression of the volume of the socket portion and the use of inward radial forces to crush lock the screw head. The applicants clearly expressed a locking process centered on the crushing action of inward radial forces in claims 1 and 7, but chose very different language to describe the locking in claim 12, which describes only the forcible advancement of the screw head, not of the socket portion. This supports the view that the applicant understood the locking process in claim 12 to involve the application of downward axial force on the screw head.

Medtronic also makes its "only one way" and "enablement" arguments -- the patent only enables one way to compression lock. As already established, this Court rejects these arguments. Medtronic does not point to language in the specification which constitutes a clear redefinition by implication. Moreover, even if Medtronic was correct and the specification did only describe locking through the use of inward radial force, claim 12 itself clearly states that forcible advancement of the screw head locks the screw, and so axial force must be a possible cause of compression locking.

Last, Medtronic contends that the "file history" supports its position. (Defs.' Br. 23.) Plaintiff points to this examiner's statement in the office action dated July 25, 2001: "the limitations 'expandable' and 'expansion' are unclear since it seems apparent that the retaining portion is instead compressed or contracted during use." (Gleason Dec. Ex. 8 at 2.) Again, even if this Court were to consider this statement as possibly relevant under an acquiescence theory, even though it was not made in regard to claim 12, and not made by the applicant, this statement does not have the meaning that Medtronic asserts. The examiner's thought that the retaining portion is compressed during use does not speak directly to the forces involved in compression locking and, at most, indicates that the examiner believed that, at some point during use of the device, the retaining portion was compressed. There is no way to know whether the examiner believed that this occurred during the compression locking, or at some earlier point. There is no reason to infer from this statement that the examiner understood locking to be limited to the application of inward radial force to crush lock the retaining portion around the screw head. This does not remotely resemble the clear and unambiguous disclaimer required by the Federal Circuit to serve as the basis for a finding of a claim limitation from the prosecution history. Nor does this appear to be the kind of binding acquiescence discussed above in TorPharm. There is no legal basis to find a claim limitation in this piece of prosecution history.

Fastenetix contends that the ordinary meaning of "compression locking" is the locking of two elements through the application of pressure. Medtronic seeks to limit this process to locking of the retaining portion and the screw head by inward radial force involving squeezing of the retaining portion around the screw head. This Court finds that Medtronic's construction is inconsistent with the plain language of claim 12 and finds no basis to limit "compression locking" as
Medtronic proposes.

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1. Claim Construction: "Compression Mechanism"

Both independent claims in the '615 patent contain a claim limitation that requires the presence of a "compression mechanism along a longitudinal axis of said mount" or "a compressive mechanism between said foot and said head." 24 Plaintiff defines "compression mechanism" as "any structure that can be used to generate a compressive force within the pole." 25 Defendant defines "compression mechanism" as "any mechanism that can be compressed to adjust the fit of a mounted curtain and released to pin the adjusted curtain in place." 26 As discussed in the section on infringement, below, the allegedly infringing device falls within the scope of one definition but not the other. The court must therefore undertake claim construction to determine the proper definition of "compression mechanism."

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25 Id. at 8-9.


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The court adopts Defendant's definition. The '615 patent claims, abstract, figures, summary of the invention, detailed description of preferred embodiments, and prosecution history conclusively show that a "compression mechanism" is any mechanism that produces action equivalent to a spring, by itself compressing a sufficient distance to aid in installing and adjusting the curtain while concomitantly generating an outward force when compressed to stabilize the curtain mount.

First, the plain meaning of the claims supports Defendant's construction. A "compression mechanism" is a mechanism that compresses or causes compression. Plaintiff reads "compression mechanism" as including ratchet and clamp devices, as well as bottle jack-type cylinders. 27 It is problematic to label a jack or ratchet-type device as a compression mechanism, since the jack or ratchet device functions (creates a force) by expanding and not compressing. Furthermore, Plaintiff introduces no evidence to suggest that jack or ratchet devices are commonly referred to as compression mechanisms. Plaintiff argues that a ratchet is a compression mechanism because the ratchet lengthens "the point where it creates a compressive force within the pole to hold the pole in place." 28 But that compression of the pole at that point is imperceptible. In contrast, a spring itself compresses.

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Second, the '615 patent abstract supports Defendant's construction. The patent Abstract describes "a spring-loaded curtain mount" including a "compression mechanism disposed between the proximal end of the mount and the head." 29 Further, the Abstract explains, "[d]uring installation . . . the length of the pole is adjusted such that the combined length of the pole and mount is slightly longer than the distance between the floor and ceiling. . . . The curtain and mount are raised to the ceiling and the mount and pole are compressed [generating a] compressive force [that] secure[s] the mount in place." 30 Figure 7E of the patent shows the device operating in this fashion, and Figures 4A and 6 also depict a device capable of being compressed. The Summary of the Invention echoes the Abstract, describing "a spring-loaded curtain mount [and]
adjustable pole, [where] the length of the pole is adjusted such that the combined length of the pole and mount is slightly longer than the distance between the floor and ceiling.” 31 In this way, the Abstract describes a "compression mechanism" that itself compresses to pin the curtain in place. In contrast, ratchet and clamp, screw, and jack-type devices do not operate in this fashion, but rather extend the pole to create a force that secure the device in place.

Furthermore, the '615 patent's Detailed Description of Preferred Embodiments describes "a compression mechanism, for example a spring," that "generates a force" "as the spring in the curtain mount compresses." 32 The patent refers to a "compressed spring," "longitudinal compression," a pole that "compress[es] the spring," a "spring in compression," and a "combined length of the curtain mount and pole [that] is sized slightly larger than the floor to ceiling distance . . . ." 33 The patent states that "[c]ompression mechanisms include springs, pneumatic devices and hydraulic devices," and depicts a pneumatic or hydraulic compression mechanism in Figure 9A. 34 Significantly, pneumatic and hydraulic mechanisms are depicted as operating exactly like springs -- only the internal components of the mechanism's cylinder change, while the mechanism's action remains constant. 35

Nowhere does the '615 patent indicate that a "compression mechanism" might include a ratchet, screw, or jack-type device. 36 Nowhere does the '615 patent's prosecution history suggest that a "compression mechanism" encompasses devices that operate like ratchets. Instead, the prosecution history demonstrates that the terms "compression mechanism" underwent successive revisions and added limitations, including the limitation in Claim 1 that "said compression mechanism [is] biased to urge said head away from said interface." 37 Whereas a spring is predisposed to resist compression and thereby urge the head of the pole upwards, a ratchet mechanism requires ratcheting to accomplish the same result.

36 Plaintiff's expert notes that hydraulic or pneumatic mechanisms operate like ratchet mechanisms in that "extending the pole 2-3 inches past the height of the ceiling would drive the head of the device through the ceiling" just like Defendant's ratchet and clamp mechanism. Slocum Decl. at P 13. This evidence fails to support Plaintiff's case for three reasons. First, the above assertion is unsupported by analysis and appears unconvincing to the court at least in regard to the pneumatic mechanism. Second, even accepting Slocum's analysis on this point, in context it at most establishes that Plaintiff erred in assuming that a hydraulic piston could provide the same action as a spring, but it does not change the clearly indicated definition of a "compression mechanism." Third, because the patent claims are not ambiguous after consulting intrinsic evidence, it is improper to rely on extrinsic evidence. Phillips, 415 F.3d at 1318 (stating that reliance on extrinsic evidence is proper only when claims are still ambiguous after consulting intrinsic evidence). This final reason alone precludes reliance.
on Plaintiff's expert.


In sum, the '615 patent claims, abstract, figures, summary of the invention, detailed description of preferred embodiments, and prosecution history show that a "compression mechanism" is a mechanism that provides the same action as a spring; i.e., the mechanism itself is sufficiently compressible to easily allow users to adjust the placement of the curtain mount, and when compressed generates an outward force.

Plaintiff was ultimately responsible for drafting the claims, and was obligated to communicate to the public a "full, clear, concise, and exact" description of the invention. 38 The court will not extend the scope of the claims to include devices not disclosed or contemplated in Plaintiff's specification. Plaintiff's broad construction of compression mechanism is rejected.


Finally, Medtronic argues that the district court failed to properly construe the "compression member" limitation as a means-plus-function limitation, and that under a proper construction, all three accused devices do not infringe. Relying on Mas-Hamilton Group v. Lagard, Inc., 156 F.3d 1206, 1213 (Fed. Cir. 1998), Medtronic argues on cross-appeal that "compression member" is properly construed as a means-plus-function limitation despite the absence of the term "means" and that when the claims are so construed, none of the accused structures infringe. Specifically, Medtronic argues that claim 1 of the '678 patent identifies "compression member" only in terms of function, not structure, and that no credible extrinsic evidence demonstrates that the term has a well-understood structural meaning in the relevant art.

DePuy counters that the absence of the term "means" creates a presumption that "compression member" is not a means-plus-function limitation, that all testifying engineers recognized that the term "compression member" referred to a well-known class of structures, that claim 1 itself imposes certain constraints on the structure of the compression member, and thus the district court's construction was correct.

"Means-plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function." Phillips, 415 F.3d at 1311 (citing Watts v. XL Sys. Inc., 232 F.3d 877, 880-81 (Fed. Cir. 2000)). "[A] claim term that does not use 'means' will trigger the rebuttable presumption that [35 U.S.C.] § 112 P6 does not apply." CCS Fitness v. Brunswick Corp, 288 F.3d 1359, 1369 (Fed. Cir. 2002). This presumption can be rebutted "by showing that the claim element recite[s] a function without reciting sufficient structure for performing that function." Watts, 232 F.3d at 880.

"Our cases make clear, however, that the presumption flowing from the absence of the term 'means' is a strong one that is not readily overcome." Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004).

Here, the "compression member" limitation does not use the term "means," and the presumption against means-plus-function treatment is not overcome. The claims and the specification unmistakably establish that "compression member" refers to particular structure. The claim language demonstrates that the compression member must fit inside the cylindrical opening and be of sufficient size to exert a force on the screw head, which implies structure. '678 patent, col. 4, ll. 22-24. The specification likewise makes clear that the term "compression member" refers to a particular cylindrical insert and is not simply a general reference to any structure that will perform a particular function. See id., col. 2, l. 58-col. 3, l. 16, col. 3, l. 44-col. 4, l. 6. The prosecution history, while in evidence, provides no further guidance one way or the other. However, dictionary definitions and experts on both sides confirm that "compression member" is an expression that was understood by persons of ordinary skill in the art to describe a kind of structure. See Lighting World, 382 F.3d at 1358 ("The task of
determining whether the limitation in question should be regarded as a means-plus-function limitation . . . is a question on which evidence from experts may be relevant.

Moreover, Mas-Hamilton is not applicable here. In that case, no other claim terms attributed structural significance to the elements at issue, and there was no evidence that the term at issue had an understood structural meaning in the art. Mas-Hamilton, 156 F.3d at 1213-15 ("[W]e do not see that the remaining terms in the claim limitation . . . provide any structure necessary to remove this limitation from the ambit of section 112, P6."); id. at 1215 ("The district court determined that there was no evidence that a 'movable link member' has a well-understood structural meaning in the art."). That is not the case here. Instead, the overall impression of the claims and specification of the '678 patent is that "compression member" implied structure to one of ordinary skill in the art. This is shown by the intrinsic record and confirmed by the extrinsic evidence. Accordingly, we reject Medtronic's argument that the district court erred in not construing "compression member" as a means-plus-function limitation and in not finding non-infringement of all three models on that basis.

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Compressive Strength of the Formation

Claims in the '930 and '631 Patents contain the terms "compressive strength" of the formation, "failure of the formation," and related terms. Baker Hughes contends "compressive strength" means "the confined, constrained, in situ, unconstrained or unconfined compressive strength." It does not construe "failure of the formation." ReedHycalog contends "compressive strength" means "the confined (in situ) compressive strength" and contends "failure of the formation" means "crush or indent any portion of (i.e. exceed the in situ compressive strength of) the particular subterranean formation."

The claim language in the '930 and '631 Patents only requires "compressive strength" and does not specify whether that strength is the confined or unconfined compressive strength. E.g. '930 Patent col. 15:47-48 ("so as to maintain a unit load on the formation below a compressive strength thereof"). The '930 and '631 Patents are directed towards subterranean drilling. See '930 Patent Abstract; '631 Patent Abstract. A person of ordinary skill in the art would determine the relevant compressive strength of the formation is the formation's compressive strength when in contact with the drill bit--in the borehole. This is the in situ compressive strength.

ReedHycalog's "failure of the formation" construction is accurate and will help the jury. The '930 and '631 Patents equate "substantially indent the formation" and "fail the formation." '930 Patent col. 3:5-8; '631 Patent col. 3:39-40. A drill bit will also fail the formation when it crushes the formation. Thus, the compressive strength and failure of the formation terms are construed accordingly.

22 Ref. No. 24 of Appendix B contains the disputed terms and their constructions.

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82. The second additional limitation of claim 24 describes "a compressor." Although the specification, indicates that "a standard, oil-lubricated, high pressure compressor" could be used in the invention, ('845 patent, col. 4, lines 52-53), the use of such a compressor is predicated on using the nitrogen gas component to inert the crankcase of the compressor. ('845 patent, col. 4, lines 42-52.) However, claim 24 contains no limitation requiring the use of the nitrogen gas component in such a manner. Accordingly, the court construes "a compressor" in this limitation as follows: a compressor, either oil-free or oil-lubricated, capable of compressing and delivering air at least at 3000 p.s.i.g.
"Comprised of"

The district court found that the meaning of "comprised of" has not been clearly resolved in patent-specific precedent, and therefore the court held that the "ordinary and customary meaning" should be used. The court ruled that "comprised of" does not have the same open-ended meaning as "comprising," which also appears in claim 1, and that "comprised of" should be construed as a closed-end term that excludes the presence of all elements beyond those presented in the "comprised of" clause. Thus the court defined "comprised of" as "a limiting description of composition," reasoning that "[t]his construction preserves the distinction between 'comprised of' and 'comprising,' the latter of which in fact is a patent term of art when used in a transitional phrase . . . ."

We conclude that this ruling is not correct. Although "comprised of" is not used as regularly as "comprising," and "comprised of" is sometimes used other than as a "transition phrase," nonetheless it partakes of long-standing recognition as an open-ended term. See generally 3 Chisum on Patents § 8.06[1][b], at 8-180-82 (2007) (claims usually are structured with a preamble, a "transition phrase," and the elements or steps that are necessary to the right to exclude). The usual and generally consistent meaning of "comprised of," when it is used as a transition phrase, is, like "comprising," that the ensuing elements or steps are not limiting. The conventional usage of "comprising" generally also applies to "comprised of."

Alliance argues that several judicial decisions have used "comprised of" to mean "consists of." However, these rare usages do not remove from "comprised of" its conventional meaning when used as a transition term. The only patent case that illustrates this casual usage appears to be Glaxo Grp. Ltd. v. Apotex, Inc., 376 F.3d 1339, 1343 (Fed. Cir. 2004), where the invention was a "highly pure amorphous form of CA [cefuroxime]," and the opinion described the accused product as "an amorphous co-precipitate comprised of 90% CA, 9% sorbitol, and 1% zinc chloride by mass." This usage of "comprised of" was not as a claim transition term, but was the court's description of the defendant's product; there was no issue of whether "comprised of" was a limiting term in patent claim style. Similarly, in Aro Mfg. Co. v. Convertible Top Replacement Co., 365 U.S. 336, 346, 81 S. Ct. 599, 5 L. Ed. 2d 592, 1961 Dec. Comm'r Pat. 635 (1961) the Court stated: "The decisions of this Court require the conclusion that reconstruction of a patented entity, comprised of unpatented elements, is limited to such a true reconstruction of the entity . . . ."; this linguistic usage is not concerned with claim drafting; and, if anything, it is open-ended and non-limiting.

The other cases to which Alliance directs us are not patent cases, and the usage is simply as descriptive text. An example is Admiral Fin. Corp. v. United States, 329 F.3d 1372, 1377 (Fed. Cir. 2003), where the court wrote that "Admiral . . . seek[s] total restitution in the amount of $14,395,075, comprised of $11,072,075, representing capital contributions to Haven, and $3,323,000, representing the amount that Admiral claims it saved the government." Similarly in Nissho Iwai Am. Corp. v. United States, 982 F.2d 505, 506 n.1 (Fed. Cir. 1992) the court explained that: "The parties estimated that the cars would be comprised of 57.45% Japanese-made components and 42.55% American-made components." These cases raise no issue of the conventional patent claim meaning of "comprised of."

In the patent claim context the term "comprising" is well understood to mean "including but not limited to." In Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc., 200 F.3d 795, 811 (Fed. Cir. 1999) the court explained that patent claims "use the signal 'comprising,' which is generally understood to signify that the claims do not exclude the presence in the accused device or method of factors in addition to those explicitly recited." In Georgia-Pacific Corp. v. United States Gypsum Co., 195 F.3d 1322, 1327-28 (Fed. Cir. 1999) the court explained that "the terms 'comprise' and 'consist' have different meanings; . . . 'comprising' . . . is inclusive or open-ended and does not exclude additional, unrecited elements or method steps . . . . From these definitions it is clear that 'comprise' is broader than 'consist.'" Similarly, our predecessor court explained that this usage of "comprising" also embraces "comprises" and "which comprises." Application of James F. Hunter, 288 F.2d 930, 48 C.C.P.A. 887, 1961 Dec. Comm'r Pat. 289 (CCPA 1961) (the term "comprises" does not limit the claim to the steps that are listed).

The contrast, in patent lexicography, is with "consisting of," not with variations of "comprises." It is equally well understood in patent usage that "consisting of" is closed-ended and conveys limitation and exclusion. See Norian Corp. v. Stryker Corp., 363 F.3d 1321, 1331 (Fed. Cir. 2004) ("consisting of" is a term of patent convention meaning that the claimed invention contains only what is expressly set forth in the claim . . . [however] it does not limit aspects unrelated to the
invention"); In re Gray, 53 F.2d 520, 19 C.C.P.A. 745, 1932 Dec. Comm'r Pat. 85 (CCPA 1931) (the use of the claim term "consists" is limited to the claim's enumerated alloy metals without other elements, unlike the term "comprising" which permits the inclusion of other metals than those claimed). Robert A. Faber, Landis on Mechanics of Patent Claim Drafting § 2:5, 2-15 (5th ed. 2006) also elaborates that "[o]ther words, less often used, have been given the same meaning in patent claim interpretation as 'comprising': 'including,' 'having,' 'containing,' and even 'wherein.'"

District court cases illustrate this routine construction of "comprised of" in the same way as "comprising," as meaning "including but not limited to." E.g., SKW Americas v. Euclid Chem. Co., 231 F. Supp. 2d 626, 637 (N.D. Ohio 2002) ("Because the hydraulic cement mix is 'comprised of' the four elements listed . . . it may include other elements as well."); B.F. Goodrich Flight Sys., Inc. v. Insight Instruments Corp., 22 USPQ2d 1832, 1840, 1992 WL 193112, at *9 (S.D. Ohio Feb. 25, 1992) ("Use of the term 'comprised' renders this claim an 'open' claim which will read on devices which merely add additional elements or steps."); aff'd, 991 F.2d 810 (Fed. Cir. 1993) (Table); Univ. of Fla. Research Found., Inc. v. Orthovita, Inc., No. 1:96-CV-82-MMP, 1998 U.S. Dist. LEXIS 22648, 1998 WL 34007129 (N.D. Fla. Apr. 20, 1998) ("comprised of" is broader than "consisting essentially of" when used in patent claims).

These cases reflect the general understanding and usage of "comprised of" in patent convention as having the same meaning as "comprising." For patent claims the distinction between "comprising" and "consisting" is established, along with the meaning of "comprised of" as related to "comprising," not "consisting of." Correctly construed, "comprised of" does not of itself exclude the possible presence of additional elements or steps.

Applying an incorrect construction of "comprised of," the district court ruled that "unique authorized information . . . comprised of machine-readable code elements coded according to a detectable series" is limited to coding by a detectable series, and that since the Alliance code systems include a "secret" series along with a detectable series, the limit imposed by "comprised of" bars infringement. On the correct construction of "comprised of," this reasoning does not support the court's ruling as to "secret" series. However, as we shall discuss, the prior art and prosecution history served to limit the scope of "unique authorized information" to a "detectable series" and to exclude a series that included "secret" information.

As to DDI's second argument, we acknowledge that the term "comprising" raises a presumption that the list of elements is nonexclusive. See Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501 (Fed. Cir. 1997). However, "'comprising' is not a weasel word with which to abrogate claim limitations." Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1380 (Fed. Cir. 1998). "Comprising" appears at the beginning of the claim-"comprising the steps of"-and indicates here that an infringing process could practice other steps in addition to the ones mentioned. Those six enumerated steps must, however, all be practiced as recited in the claim for a process to infringe. The presumption raised by the term "comprising" does not reach into each of the six steps to render every word and phrase therein open-ended-especially where, as here, the patentee has narrowly defined the claim term it now seeks to have broadened. The district court's limitation of the claim scope to exclude processes that produce some irregularly shaped particles is correct.
Federal Circuit found the construction "clear" and "not ambiguous." See id. at 1371-73 (citing, inter alia, Crystal Semiconductor Corp. v. TriTech Microelectronics Int'l, Inc., 246 F.3d 1336, 1347 (Fed. Cir. 2001) and Abbott Labs. v. Baxter Pharm. Prods., Inc., 334 F.3d 1274, 1280 (Fed. Cir. 2003)). Gillette found that the "language of the claims depending from claim 1 also support reading comprising' and group of' as open terms." Id. at 1373 (discussing the difference between "the span" and "a span" in claim 2 of the 777 Patent).

Next, the Federal Circuit construed the terms "first, second, and third" to be "terms to distinguish different elements of the claim, not terms supplying a numerical limit." Gillette, 405 F.3d at 1373. This construction was based on the Federal Circuit finding that the language of Claim 1 (a) provided different definitions in terms of location and exposure for the "first, second, and third" blades, (b) did not follow a consecutive order, and (c) used the open-ended terms "comprising" and "group of." Id. at 1372-74. "The specification provides further support for interpreting claim 1 to encompass razors with more than three blades" by the use of the phrase "plurality of blades" and the absence of disavowals of claim scope. Id. at 1373-74. In addition, the admissions of Schick in the "prosecution of patents related to the 777 patent also support reading claim 1 as an open claim." Id. at 1373.

Schick contends that new evidence and the intervening en banc decision of Phillips require reinstatement of this Court's original claim construction.

a. New Evidence

i. Gillette's statements in prosecuting counterparts to the 777 Patent in Australia and Malaysia

Schick submits that Gillette made multiple admissions that its invention is limited to three-bladed razors in the prosecution of Australian and Malaysian counterparts to the 777 Patent. (Defs.' Markman Br. 3-5.) Specifically, in prosecuting the Australian counterpart, Gillette submitted on October 2, 1997 that:

With respect the essence of the present invention, as recited in claim 1 (the sole independent claim), is not any multiple (more than 2)-bladed razor but only a 3-bladed razor with a specific relation of blade geometry (exposure and span). . . . Referring now to paragraph 4 of the Action, in the first place the cited U.S. Patent 3,786,563 is not relevant because it is concerned with a two-bladed razor whereas the present invention is limited to a three-bladed razor.

(Id. Ex. 2 10-11.) In prosecuting the Malaysian counterpart, Gillette submitted in almost identical language on June 24, 1999 that:

It should be respectfully pointed out to the Examiner that the essence of the present invention, as recited in claim 1 (the sole independent claim), is not any multiple (more than 2) -- bladed razor but only a 3-bladed razor with a specific relation of blade geometry (exposure and span). . . . Cited references US-A-3786563 and US-A-4146958 are not relevant because they each concern a two-bladed razor, whereas the present invention is limited to a three-bladed razor.

(Harris Summ. J. & Markman Decl. Ex. 1 GIL-Q 43492-93.)

Schick contends that these also blatant admissions are critical to construing the terms "first, second, and third" in this case because the Federal Circuit expressly relied on Schick's admission, regarding a related patent in front of the European Patent Office ("the EPO"), that an open interpretation of "comprising" would not exclude an arrangement with four or more blades. (Id.) Gillette agrees that it made the statements cited by Schick but disputes their relevance based on the different procedural and patent contexts in which they were made. (See Pls.' Opp'n to Defs.' Markman Br. 4-10.)

While Gillette's statements are admissions and relevant to what a person of ordinary skill in the art would understand the terms "first, second, and third" to mean, this new evidence does not necessarily alter the Federal Circuit's construction. Schick's admission to the EPO was not integral to the Federal Circuit's reasoning in Gillette. Two members of the Federal Circuit construed the terms "first, second, and third" based on their view of the language of Claim 1. The reference to Schick's admission in a three-sentence paragraph in the opinion merely provided the cherry on the top. Therefore, Gillette's admissions have only tangential significance.

Extrinsic evidence is "less significant than the intrinsic record in determining the legally operative meaning of claim
language," Phillips, 415 F.3d at 1317-19 (discussing the reasons as well for treating extrinsic evidence with less weight), and has "no bearing" on claim construction if it "conflicts with the intrinsic record," Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1304 (Fed. Cir. 2005) (citing Phillips, 415 F.3d at 1318). While the Federal Circuit has occasionally used statements made in front of foreign patent offices regarding related patents to determine what a person of ordinary skill in the art understands terms to mean, it has never made them a part of the intrinsic record for claim construction purposes. See Phillips, 415 F.3d at 1317 (defining intrinsic prosecution history to include "the complete record of the proceedings before the PTO and . . . the prior art cited during the examination of the patent" and extrinsic evidence to include "all evidence external to the patent and prosecution history" (quotations and citations omitted)); Gillette, 405 F.3d at 1374 (referencing statements made regarding related patent in front of foreign patent offices but not characterizing them as intrinsic prosecution history of patent at issue); C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 870 n.6 (Fed. Cir. 2004) (leaving the question unresolved of whether statements applicants made during the prosecution of foreign patent applications may limit claims when intrinsic record suffices to support the claim construction); Tanabe Seiyaku Co., Ltd. v. U.S. Int'l Trade Comm'n, 109 F.3d 726, 733 (Fed. Cir. 1997) ("In evaluating infringement under the doctrine of equivalents, representation[s] to foreign patent offices should be considered . . . when [they] comprise relevant evidence." (citation omitted)). Indeed, the rationales underlying according extrinsic evidence with less weight in comparison to intrinsic evidence seem to apply to such statements not only because the patent language may differ, as is the case here, but also because the patent regimes differ. Phillips, 415 F.3d at 1319 (noting that extrinsic evidence "is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence").

Therefore, Gillette's admissions, while relevant, do not necessarily alter the Federal Circuit's construction of the terms "first, second, and third" in Gillette.

ii. Clerical error of the Patent & Trademark Office ("the PTO")

Schick also submits that the Federal Circuit analyzed sua sponte the difference between the use of "the span" and "a span" in a dependent claim "evidently without considering a critical aspect of the record." (Defs.' Opp'n to Pls.' Markman Br. 10.) Claim 2 of the 777 Patent ("Claim 2"), which depends on Claim 1, recites:

A safety razor blade unit according to claim 1, wherein the span between the first blade edge and the guard is substantially smaller than a span between the edges of the first and second blades and the span between the edges of the second and third blades.

777 Patent col.4 11.16-20 (emphasis added). The Federal Circuit found that this language "also support[s] reading comprising' and group of' as open terms" because:

The patent drafter's use of "a span" between the first and second blades recognizes that more than one such span may exist. On the other hand, the drafter's use of "the span" to identify the span between the guard and first blade recognizes that only one such span is possible.

Gillette, 405 F.3d at 1373. 2 The dissenting opinion pointed out that the patent drafter would have used "spans" instead of "a span" to indicate plurality. See Gillette, 405 F.3d at 1376-77 (Archer, J., dissenting).

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2 The Gillette decision made no mention of the drafter's use of "the span" between the second and third blades in the same sentence.

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Schick contends that the difference between "a" and "the" in the 777 Patent is due only to the failure of the PTO clerk to properly enter an amendment to the patent application. (Defs.' Opp'n to Pls.' Markman Br. 10-11.) Indeed, the amendment cited by Schick requests that "the span" be changed to "a span" in four different claims. (See Harris Summ. J. Decl. Ex. 16 at G 0000101-06.) Gillette responds that the Federal Circuit's reasoning has continued vitality because "the span" remains in Claim 2. (Pls.' Reply to Defs.' Opp'n to Pls.' Markman Br. 6-7.)
Again, similar to Gillette's admissions, the Federal Circuit's misplaced reliance on a typographical error does cut support away from its conclusion that the terms "comprising" and "group of" are presumptively open-ended, but it does not eviscerate the core rationale of the two-member majority. Gillette found the "clear language" of Claim 1 to be "not ambiguous." Id. at 1371-73 (citing, inter alia, Crystal Semiconductor, 246 F.3d at 1347, and Abbott Labs., 334 F.3d at 1280). The discussion of definite and indefinite articles in claims depending on Claim 1 merely added support. Id. (noting that the language "also support[s] reading comprising' and group of' as open terms").

b. New Law

Schick submits that the Federal Circuit's subsequent en banc Phillips decision supersedes the reasoning in Gillette. Specifically, Schick contends that "the linchpin of the panel's majority decision was its observation that the 777 Patent contains no explicit disclaimer' or disavowal' of razors with more than three blades, and that this "approach to claim construction -- the view that a claim term encompasses any meaning not expressly defined away or disavowed in the patent -- plainly does not survive Phillips." (Defs. Opp'n to Pls.' Markman Br. 4.) Schick's argument fails.

Schick misinterprets Phillips in applying it to Gillette. Gillette stated that "words or expressions of manifest exclusion' or explicit' disclaimers in the specification are necessary to disavow claim scope." Id. at 1374 (citations omitted). The Federal Circuit did not reject this approach in Phillips. Indeed, as noted by Gillette, both Phillips and subsequent Federal Circuit decisions affirmed the doctrine. See Phillips, 415 F.3d at 1316 ("The specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor." (citation omitted); see, e.g., NTP, Inc. v. Research in Motion, Ltd., 418 F.3d 1282 (Fed. Cir. 2005) (finding that the "required words or expressions of manifest exclusion or restriction representing a clear disavowal of claim scope are not present in these passages from the prosecution history" after Phillips), rehe'g and rehe'g en banc denied (Oct. 7, 2005). Rather, Phillips overturned the approach of Texas Digital, where claim terms are construed to encompass all dictionary definitions consistent with the intrinsic record unless the specification contains a sufficiently specific alternative definition or disavowal. Phillips, 415 F.3d at 1319-20; Nystrom v. Trex Co., Inc., 424 F.3d 1136, 1144-45 (Fed. Cir. 2005).

Schick is correct, however, in emphasizing that Phillips reaffirmed the primacy of the specification in construing claim terms: "claims must be read in view of the specification, of which they are a part," and "the specification is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term." 415 F.3d at 1315 (citations omitted). In all of the post-Phillips cases cited by Schick, the Federal Circuit used the specification to interpret the meaning of a term where the meaning could not be conclusively discerned from the claim language. See Nystrom, 424 F.3d at 1143-44 (examining the specification and prosecution history to construe the term "board" when the claims established only a presumption that the term was not limited to wood); Network Commerce, Inc. v. Microsoft Corp., 422 F.3d 1353, 1359-61 (Fed. Cir. 2005) (examining the specification to construe the term "download component" when "the claim language is not clear as to what other programs are to be used with the download component" and when the parties agreed that the term "does not have a specialized meaning in the relevant art"); AquaTex Indus., Inc. v. Techniche Solutions, 419 F.3d 1374, 1380-82 (Fed. Cir. 2005) (examining the written description, prosecution history, and extrinsic evidence of record when the claims "offer little guidance as to the underlying composition of fiberfill batting material' apart from the functions it must be capable of performing").

Schick is also correct in emphasizing that the broad constructions of the terms at issue in those post-Phillips cases were rejected because the Federal Circuit panels unanimously found that the narrower meanings were contained consistently throughout the specifications. See Nystrom, 424 F.3d at 1143-44 (Fed. Cir. 2005) (construing the term "board" to be limited to wood material where "throughout the written description, Nystrom consistently used the term board' to describe wood decking material cut from a log"); Network Commerce, 422 F.3d at 1360-61 (construing the term "download program" to include a boot program that interacts with the computer operating system directly where "the specification repeatedly states that the download file contains the boot program" and "describes no programs mediating between the boot program and the operating system"); AquaTex, 419 F.3d at 1381 (Fed. Cir. 2005) (construing the term "fiberfill batting material" to be limited to purely synthetic fiber where the written description provides guidance only to materials "entirely of synthetic materials").

These latter arguments are persuasive, but Schick is preaching to the choir. While I respectfully disagree with the two-member majority in Gillette, I am bound by the construction of its opinion that the plain meaning of the claim language encompasses more than three blades. Perhaps based on a fuller record with the new evidence cutting away the support of the
U.S. Surgical claims the lockout in its open linear cutters is not in the staple cartridge, but rather in the "disposable loading unit" ("DLU"), which they contend is distinguishable from Ethicon's staple cartridge. Ethicon insists that the U.S. Surgical's disposable loading unit is actually a staple cartridge. Ethicon makes a very convincing argument that U.S. Surgical's DLU functions in a manner which in common parlance could be characterized as a cartridge. It is intended to be inserted and removed from a larger instrument, much like a cartridge for a VCR or a ball point pen. However, in the context of a patent, an inventor is his own lexicographer. United States v. Telelectronics, Inc., 857 F.2d 778, 781-82 (Fed. Cir. 1988). The meaning of any individual term in a claim is defined by the context of the patent itself. The Court must ascertain the meaning of words in a claim by interpreting the words "with regard to the other claims, the specification, and the prosecution history." Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1056 (Fed. Cir. 1988). Therefore, our inquiry is not simply whether U.S. Surgical's DLU functions as a cartridge in the ordinary layman's understanding of the term, but rather whether the U.S. Surgical's DLU reads on Ethicon's cartridge as defined in the Fox Reissue Patent. In our Order denying Ethicon's Motion for a Preliminary Injunction, we conducted an extensive discussion of this issue. Ethicon Endo-Surgery v. U.S. Surgical Corp., 855 F. Supp. at 1509-13. Having once again considered the matter in great depth, we are satisfied that our original interpretation of Claim 6 was correct. In our original holding, we relied primarily upon the language of claim itself, applying the same general rules of construction as any other written instrument. See Merrill v. Yeomans, 94 U.S. 568, 571, 24 L. Ed. 235 (1877) (patent interpretation requires the use of "well-settled rules of construing all instruments").

Claim 6 states:

6. In a staple cartridge insertable within a surgical stapler and containing staples and comprising [1] an elongated body including one or more longitudinal slots for slidably receiving one or more longitudinal pusher bars comprising a firing mechanism of said surgical stapler, and [2] a plurality of drivers engageable by said pusher bars for ejecting the staples from the cartridge, said staple cartridge releasably fastened to a said [sic] surgical stapler, the improvement comprising [3] a lockout mechanism connected to said longitudinal slots for preventing said pusher bars from passing more than one time through said longitudinal slots.

United States Patent No. Re. 34,519 (the "Fox Reissue Patent"), Column 5, Lines 47-58 (emphasis supplied). As our emphasis indicates, the elements of the staple cartridge listed in Claim 6 in addition to the staples themselves are (1) an elongated body, (2) a plurality of drivers and (3) a lockout mechanism. The elongated body is further described as "including one or more longitudinal slots." The slots are designed "for slidably receiving one or more longitudinal pusher bars" which comprise the "firing mechanism of said surgical stapler." In practice, the staple works by inserting the pusher bars in the longitudinal slots, displacing the drivers, which in turn push the staples through the tissue. The staples then contact an anvil which causes them to bend and seal.

The issue as Ethicon frames it is whether U.S. Surgical's DLU is really the Fox Reissue Patent's "cartridge" with additions. If so then the U.S. Surgical lockout device, located in the DLU would be located in the cartridge and would therefore read on the Fox Reissue Patent. U.S. Surgical contends that the cartridge of the Fox Reissue Patent is analogous to the "cartridge assembly" in their device. The cartridge assembly is a part of their DLU which contains the staples, drivers and which receives the pusher bars. U.S. Surgical's cartridge assembly does not contain a lockout mechanism, but rather it is located at the opposite end of the DLU. We are satisfied that U.S. Surgical's construction of "staple cartridge" is correct.

First, the wording of Claim 6 describes the staple cartridge as comprising longitudinal slots for receiving longitudinal pusher bars. These pusher bars are the firing mechanism for engaging the drivers and thus ejecting the staples. This description by our reading depicts the pusher bars as separate entities from the staple cartridge. Ethicon argues that since Claim 6 uses the patent term of art "comprising," we should conclude that the staple cartridge is not limited to the elements delineated in the claim. See Berenter v. Quigg, 737 F. Supp. 5, 6-7 (D.D.C. 1988) ("The word 'comprising' means the recited elements are only a part of the device; therefore, the claim is open.") However, the term of art simply indicates that elements
not enumerated may be included in the category as "comprised." We agree with Ethicon that its staple cartridge can be comprised of more than slots, but we interpret the language

comprising [1] an elongated body including one or more longitudinal slots for slidably receiving one or more longitudinal pusher bars comprising a firing mechanism of said surgical stapler
to indicate that the pusher bars are outside the staple cartridge. When elements are specifically described in a claim as separate and distinct, it would be inconsistent to assume that the author intended the one to be included in the other.

This reading is also consistent with the historical development of the U.S. Surgical device. The 1970's version of that device came with the package of disposable parts including a separate anvil, staple cartridge and cam bar-knife assembly. The package was labeled a "disposable loading unit." The surgeon would assemble these parts manually. Later U.S. Surgical combined the staple cartridge and cam bar-knife assembly elements into a DLU. However, they have retained the language "cartridge" or "staple cartridge" to refer to the plastic piece which contains the staples, staple drivers and slots for receiving the cam bars. This staple cartridge remains a distinct sub-element of the DLU.

In our previous decision, we found additional evidence of this in the specification of the Fox Reissue Patent. See Ziggity Systems, Inc. v. Val Watering Systems, 769 F. Supp. 752, 784 (E.D. Pa. 1990) (holding that a court can turn to the specifications and drawings in order to aid it in understanding the scope and meaning of the language employed in the claims). The inventor is allowed considerable latitude in the use of terminology, but words must be used in the same way in both the claims and the specification. United States v. Telelectronics, Inc., 857 F.2d at 781-82. Our limited reading of the meaning of cartridge in the Fox Reissue Patent is reinforced by the language of the specification:

[A] typical surgical stapler will have an upper jaw, firing means, a lower jaw . . . and a staple cartridge which fits within the lower jaw. . . The firing means will generally comprise a pusher bar or firing wedge . . The firing means will also contain a knife which generally will be placed between the firing wedges. . . When the firing wedge travels through the staple cartridge, and its activating drivers, it will come into contact with a lockout mechanism.

United States Patent No. Re. 34,519 (the "Fox Reissue Patent"), Column 2, Lines 45-54, Column 3, lines 2-5 (reference numbers omitted). Here again the staple cartridge is described as distinct from the pusher bar(s). The pusher bars travel through the staple cartridge. Our reading of Claim 6 leads us to conclude that in the context of the Fox Reissue Patent, the term staple cartridge has a specific meaning and that it does not include the firing means or pusher bar(s).

We are satisfied that our reading of Claim 6 is required by the language of the claim itself, as interpreted in the context of the remainder of the patent, in particular the specification. However, at the August hearing Ethicon presented cogent challenges to our reading. Ethicon's technical expert Dr. Collins testified that to one knowledgeable in the art, the staple cartridge in the Fox Patent was the same as U.S. Surgical's DLU. Dr. Collins demonstrated that some of U.S. Surgical's early patents seem to use the terms "cartridge" and "DLU" interchangeably. See for example United States Patents No. 4,520,817 & 4,127,227 ("Green '817 & '227"). Additionally, these Green patents apparently allow for the inclusion of pusher bars in the cartridge. Mr. Green himself in his deposition testimony seems to use the terms "DLU" and "cartridge" interchangeably.

U.S. Surgical responds to Dr. Collins testimony by making a distinction between the generic term cartridge, which admittedly describes its DLU and the more precise term "staple cartridge" as used in the Fox Patent. This is in line with our initial finding that the generic meaning of "cartridge" is not determinative of the same term used in the disputed patents. We have already concluded that both terms "staple cartridge" in Fox Patent and "DLU" in the Tompkins Patent are more restrictive than "cartridge" in the generic sense.

Finally, Dr. Collins raises a credible issue from the Fox prosecution history. Dr. Collins demonstrated how the PTO rejected claims in the original Fox Patent application citing as prior art the Noiles '077 Patent, which contains a lockout off the cartridge. Dr. Collins testified that since the examiner cited this patent as prior art, then he must have determined that Fox allowed a lockout outside the cartridge. U.S. Surgical's expert Mr. Nusbaum, who worked in the patent office for 17 years, agreed that some statements of the PTO in the Fox Reissue Patent prosecution history were inconsistent with U.S. Surgical's position. However, he was able to explain how the prosecution history taken as a whole supported the interpretation that the Fox Reissue Patent described a lockout mechanism in a staple cartridge.
In the process of our in-depth analysis of the Fox Reissue Patent prosecution history, inconsistencies were demonstrated by both Parties. If anything we gained an appreciation for the complex and difficult job of the patent examiner. It became evident that the patent application process involves a series of interactions between the applicant and the patent office. We came to realize that it is impossible to reconcile all the implications and inferences which could be made, based on the actions taken by the PTO in the extensive Fox Reissue Patent prosecution history. This rather unusual prosecution history includes: the original application and approval, a request for reexamination, the PTO's denial of that request, the PTO sua sponte reconsideration and subsequent reexamination, the reissue proceedings and subsequent reissue, as well as several interference actions. This realization reassured us that fundamentally it is the actual language of the patent itself which should be our primary focus. Additionally, the prosecution history, taken as a whole, strongly supports our reading.

As we noted above, the implications which could be drawn from the Fox Reissue Patent prosecution history are at times difficult to reconcile, but one statement of the PTO seems particularly clear. The PTO, upon reexamination, reconfirmed all twelve of the original Fox Patent claims, in a document dated July 7, 1991. This document, cited by both sides says in pertinent part:

The claims are confirmed because the prior art of record do not disclose or suggest a surgical staple cartridge comprising a lockout mechanism connected to longitudinal slots of the cartridge in the manner set forth in claim 6 wherein the lockout mechanism prevents the pusher bars from passing more than once through the longitudinal slots.

All of the references cited by the patent owner, with the exception of the Poirer reference and Auto Suture booklet, disclose devices having a lockout mechanism that allow its pusher bars to pass more than one time through the longitudinal slots. The devices shown by Poirier and the Auto Suture booklet do not have a lockout mechanism in the cartridge.

Notice of Intent to Issue Reexamination Certificate, United States Patent No. 4,892,244, July 7, 1991, Defendant's Memorandum in Opposition, Exhibit 14, Document 11. Our reading of this statement is that the PTO distinguished Fox from the prior art for two reasons: because the lockout is in a cartridge and because it prevents multiple firing.

The transition of claim 24 reads:

comprising the step of:

The parties agree that this is interpreted as the "method including but not limited to the following steps performable in any order unless inherently demanded by the nature of the step."

The parties disagree as to whether the order of the steps is fixed by the claim. Generally, steps are not fixed in the order presented unless the steps of the method actually require an order. Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1342 (Fed. Cir. 2000). When the method steps, however, implicitly require that they be performed in the order as laid out in the claim, that order becomes fixed. Id. Defendants claim that since it only makes sense that step (f) be performed after step (e), this fixes the order of the steps to the way they are listed in the claim. Plaintiff claims that the steps may occur in any order. It is not absolutely necessary that (e) (collapsing and removing) be performed before (f) (severing edges). In fact, one could envision a situation where the surgeon may sever the edges of the expended layer in order to facilitate the removal process. Therefore, the court interprets this claim as not requiring steps (e) and (f) to be performed in the stated order.

B. "comprising the steps of: seating …; suspending …; and driving …."

Plaintiff argues that each of the three steps in this method claim (seating, suspending, and driving) require specialized construction as step-for-function elements under 35 U.S.C. § 112 P 6. 15 The analysis of such elements is similar to that
applied to means-plus-function elements, and would be limited by the detail provided in the specification. Defendants contend that these elements require no construction at all.

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15 35 U.S.C. § 112 P 6 states: "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." (emphasis added).

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - - 

Determining whether a claim invokes the step-for-function application of § 112 ¶ 6 has been explained by the Federal Circuit accordingly:

Method claims necessarily recite the steps of the method, and the preamble words that "the method comprises the steps of" do not automatically convert each ensuing step into the form of § 112 P6. Nor does the preamble usage "steps of" create a presumption that each ensuing step is in step-plus-function form; to the contrary, the absence of the signal "step for" creates the contrary presumption.

Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc., 381 F.3d 1371, 1382 (Fed. Cir. 2004). Accordingly, this Court determines that the inclusion of the phrase "comprising the steps of" does not convert the elements of this method claim into steps-for-function. Thus, the steps of the method (seating, suspending, and driving) are construed the same as any other claim element. The Court finds that these words are readily understood and, therefore, no construction is required.

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The term "a method . . . comprising the steps" is found only in the method claims of the patents-in-suit. This term constitutes the preamble and transitional phrase of the method claims. Claim 1 of the 779 Patent claims: "A method of manufacturing a smooth garment seam between first and second garment components comprising the steps" (a) through (g). 779 Patent at 6:26-28 (emphasis added). Claim 1 of the 615 Patent claims: "A method of manufacturing a pucker free garment seam between first and second garment components comprising the steps" (a) through (g). 615 Patent at 6:28-30 (emphasis added).

Taltech originally asked the Court to construe "a method . . . comprising the steps" to mean that "elements (a)-(g) of these method claims may be performed in any order consistent with the language and logic of the respective method claim and consistent with the Taltech 779 and 615 patent specifications." In its supplemental brief, Taltech altered its proposed construction as follows:

Elements of the method claims may be performed in any order consistent with the language and logic of the respective method claim and consistent with the patent specification, provided that claim 1 of the 779 Patent recites a method requiring that steps (c), (d) and (f) be performed after step (b), and that step (g) be performed after step (e). Claim 1 of the 615 Patent recites a method requiring that step (d) be performed after step (c), step (e) be performed after step (d), step (f) be performed after step (e), and step (g) be performed after step (e). 7

Taltech relies on the claims, on the specifications, on the opinion of Taltech's expert, Mr. Nienke, on U.S. Bodle Patent No. 2,120,458 (Taltech's Markman Ex. 8) (the "Bodle Patent"), and on the video shown as part of Taltech's tutorial (Taltech's Markman Ex. 7).

7 The Court distributed a document entitled "The Court's Preliminary Construction of Claims Prior to Markman Hearing" to the parties prior to the Markman hearing to focus the parties' arguments. The Court's preliminary construction of claims was not binding on the parties and was not meant to be reviewed on appeal. The Court advised that any opinions contained therein were tentative and subject to change. Taltech altered its proposed construction of "a method . . . comprising the steps" in response to the Court's preliminary construction of the term. See Taltech's Supplemental Brief, docket no. 137, at
Esquel asks the Court to construe "a method . . . comprising the steps" to mean that the elements (a)-(g) of these method claims be performed in a particular order. Esquel proposes the following constructions for the two patents-in-suit:

Claim 1 of the 779 Patent recites a method requiring that step (b) be performed after step (a), step (c) be performed after step (b), step (d) be performed after step (b), step (e) be performed after step (b), step (f) be performed after step (e), and step (g) be performed after step (e).

Claim 1 of the 615 Patent recites a method requiring that step (b) be performed after step (a), step (c) be performed after step (b), step (d) be performed after step (c), step (e) be performed after step (d), step (f) be performed after step (e), and step (g) be performed after step (e).

Esquel relies on the claims, on the specifications, and on the prosecution history of the 779 Patent.

"Unless the steps of a method [claim] actually recite an order, the steps are not ordinarily construed to require one." Interactive Gift, 256 F.3d at 1342. To determine if the steps of a method claim that do not otherwise recite an order must nonetheless be performed in the order in which they are written, a court should first "look to the claim language to determine if, as a matter of logic or grammar, they must be performed in the order written." Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1369 (Fed. Cir. 2003) (citing Interactive Gift, 256 F.3d at 1342-43). For example, if the second step requires the presence of a structure that is formed in the first step, then the claim language itself shows that the steps must be performed in a particular order. See Loral Fairchild Corp. v. Sony Corp., 181 F.3d 1313, 1321 (Fed. Cir. 1999); but see Kemin Foods, L.C. v. Pigmentos Vegetales del Centro, 301 F. Supp. 2d 970, 993 (S.D. Iowa 2004) (not requiring steps (a) and (b) to be performed in the order listed even though step (b) refers to "said homogeneous liquid" formed in step (a), because one skilled in the art would understand steps (a) and (b) to be interchangeable). A particular order might also be required if each subsequent step referenced something logically indicating that the prior step had been performed. See Mantech Envtl. Corp. v. Hudson Envtl. Servs., Inc., 152 F.3d 1368, 1375-76 (Fed. Cir. 1998). If the claim language does not indicate a particular order, then a court should look to the specification to determine whether it "directly or implicitly requires such a narrow construction." See Interactive Gift, 256 F.3d at 1343. "If not, the sequence in which such steps are written is not a requirement." Altiris, 318 F.3d at 1370.

In the present case, the claims do not recite an order. Thus, the presumption is that no order is required. Under Altiris and Interactive Gift, the presumption may be overcome if the logic or grammar of the claim language requires a particular order, or if the specifications directly or implicitly require a particular order. See Altiris, 318 F.3d at 1369-70; Interactive Gift, 256 F.3d at 1343. The Court may look to expert testimony to determine whether the presumption is overcome because "the expert testimony serves the permissible purposes of aiding our understanding of the technology and in helping us view the patent through the eyes of the skilled artisan." Altiris, 318 F.3d at 1371 (considering expert testimony that it is technologically possible to achieve the invention's purpose by performing the steps in any order). Although Taltech's expert, Mr. Nienke, did not disclose an opinion on the term "a method . . . comprising the steps" in his expert report, see docket no. 85, Ex. J (part 1), the Court will consider his opinion in construing this term because Esquel has taken the opportunity to question Mr. Nienke regarding this term in a deposition on December 7, 2005. See Nienke Rebuttal Dep. (Esquel's Markman Ex. 2 -- complete transcript).

The first area of dispute between the parties is whether step (b) must come after step (a) in Claim 1 of the 779 Patent. These steps involve "placing" the first and second garment components and the bonding element into position to form a seam. The claim language, as read by a person of ordinary skill in the art, does not require a particular order. Mr. Nienke testifies on behalf of Taltech that he "absolutely" knows that steps (a) and (b) "can be reversed because the bonding element typically comes from a reel or a supply so that it's continuous and the bonding element is present typically under the foot before the garment components are introduced." Nienke Rebuttal Dep. at 30:23-31:13, 31:21-32:12, 47:15-23 (Taltech's Markman Ex. 13 -- highlighted deposition transcript); see also Nienke Rebuttal Decl., docket no. 110, P 5 (Taltech's Markman Ex. 11) (explaining how the bonding element can be present (i.e., step (b)) before the garment components are brought together (i.e., step (a)). Contrary to Esquel's argument, Mr. Nienke's testimony is not merely conclusory because he explains how step (b) may be performed prior to, or at the same time as, step (a) given how the bonding element comes from a reel and is typically under the foot before the garment components are introduced. Nienke Rebuttal Dep. at 31:21-32:12 (Taltech's Markman Ex. 13). Mr. Nienke's testimony is unrebutted. Furthermore, the specification of the 779 Patent implicitly requires
no particular order to steps (a) and (b) because the description of the seam manufacturing process in the specification begins with the sewing of the first stitch, not with the placement of the garment components and bonding element. 779 Patent at 4:4-7 ("After the bonding element 32, first garment component 20, and second garment component 22 are positioned as shown in [Figure] 3a, a first stitch 38 is sewn along the seam line defined by the first and second garment components."); Fig. 3a (showing first step with the garment components and the bonding element in place and the first stitch sewn). This specification implies that the timing of the positioning of the bonding element and the garment components together is unimportant. The Court concludes that the patent does not require step (b) in Claim 1 of the 779 Patent to come after step (a).

Similarly, the parties dispute whether steps (a), (b) and (c) in Claim 1 of the 615 Patent need to be performed in any particular order. These steps involve "providing" the first and second garment components and bonding element in positions relative to each other. Again, as with steps (a) and (b) of the 779 Patent, the claim language, as read by a person of ordinary skill in the art, does not require a particular order. Mr. Nienke testifies that steps (a) and (b) in Claim 1 of the 615 Patent can occur simultaneously and that step (c) can occur before, after, or simultaneously with either of steps (a) and (b). Nienke Rebuttal Decl., docket no. 110, P 6 (Taltech's Markman Ex. 11). He further testifies that the order of these steps does not affect the ultimate structure and folding described in the claim. Id. This testimony is analogous to the testimony in Altiris that it was technologically possible to achieve the invention's purpose by performing the setting' step before, during, or after the booting normally' step. See 318 F.3d at 1371. Mr. Nienke's testimony is unrebutted. Furthermore, as with steps (a) and (b) in Claim 1 of the 779 Patent, the specification of the 615 Patent begins its description of the seam manufacturing process with the sewing of the first stitch, thus indicating that the timing of the positioning of the bonding element and the garment components together is unimportant. 615 Patent at 4:5-8; Fig. 3a. The Court concludes that steps (a), (b) and (c) in Claim 1 of the 615 Patent do not need to be performed in any particular order.

Both parties agree that the first and second garment components and the bonding element must be in position before the first stitch is sewn. Thus, step (c) must come after steps (a) and (b) in Claim 1 of the 779 Patent, and step (d) must come after steps (a), (b) and (c) in Claim 1 of the 615 Patent.

Both parties also agree that the folding of the first garment component over the bonding element must occur after the bonding element is in place; thus step (d) must come after step (b) in Claim 1 of the 779 Patent, and step (e) must come after step (c) in Claim 1 of the 615 Patent. In Claim 1 of the 615 Patent, step (e) must also come after step (d) because step (e) requires the presence of the first set stitch introduced in step (d). 8

8 The parties agree that step (e) must come after step (d) in Claim 1 of the 615 Patent.

The next area of dispute is whether step (e) must come after step (b) in Claim 1 of the 779 Patent. 9 Step (e) involves the folding of a portion of the second garment component such that the lower surface of the second garment component abuts the lower surface of the bonding element. Mr. Nienke has testified that step (e) can occur before, after, or simultaneously with the "placing" of the bonding element in step (b). Nienke Rebuttal Decl., docket no. 110, P 7 (Taltech's Markman Ex. 11); Nienke Rebuttal Dep. at 51:4-13 (Taltech's Markman Ex. 13). The Court does not rely on Mr. Nienke's testimony given Taltech's clearly stated position that "in claim 1 of the 779 Patent, the logic and language of the claim indicates that step (d) occurs after step (b). . . . " Taltech's Supplemental Brief, docket no. 137, at 7. If step (d) must come after step (b), then step (e) must come after step (b) because step (d) involves the folding of the first garment component over the bonding element, and step (e) involves the folding of the second garment component over the bonding element. Both steps (d) and (e) require the presence of the bonding element. The Court concludes that the logic and the grammar in Claim 1 of the 779 Patent require step (e) to come after step (b).

9 Claim 18 of the 779 Patent makes it clear that step (e) may come before step (c). 779 Patent at 7:66-8:2 ("step (e) is performed prior to step (c)").

The next area of dispute is whether step (f) must come after step (c) or after step (b) in Claim 1 of the 779 Patent. In step (b), the bonding element is introduced. In step (c), the first stitch is sewn. In step (f), the second stitch is sewn. Esquel argues that step (f) must be performed after step (c). The Court agrees because the Court construes "first" and "second" stitch to be temporally limited to that order (see construction of "first stitch" and "second stitch," above). The Court concludes that step (f) must come after step (c) in Claim 1 of the 779 Patent.
Both parties agree that steps (f) and (g) must be performed after step (e) in Claim 1 of the 615 Patent and that step (g) must be performed after step (e) in Claim 1 of the 779 Patent. Indeed, the folding that takes place in step (e) must occur prior to these other steps.

This construction, which requires that certain steps be performed in a particular order, is consistent with the specifications' reference to the "progressive manufacturing steps" shown in Figures 3a-3c. 779 Patent at 3:36-37; 615 Patent at 3:37-38. The Court does not, however, impose the strict limitations imposed by the words "after" and "next" from the description of the preferred embodiment shown in Figures 3a-3c. 779 Patent at 4:4-25; 615 Patent at 4:5-26. For example, this preferred embodiment requires the first garment component to be folded over the bonding element (i.e., step (d)) after the first stitch is sewn (i.e., step (c)). Neither party proposed a construction requiring that step (d) come after step (c). To so require would be to improperly limit the claims by the preferred embodiment.

The prosecution history of the 779 Patent shows that Taltech distinguished the prior art (i.e., the Benstock patent) by stating that this invention prevents seam puckering during subsequent laundering "due to the novel sequence of steps and novel positioning of garment components and sewing with respect to a bonding element." 779 Prosecution History, March 11, 1996, Amendment Filed Under 37 C.F.R. § 1.115, docket no. 85, Ex. D (part 2) at 15 (emphasis added). Taltech's reference to the "novel sequence of steps" is not an "explicit argument" requiring that the steps be performed in the exact order as listed in the claims. See Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1378-79 (Fed. Cir. 1998) ("[E]xplicit arguments made during prosecution to overcome prior art can lead to narrow claim interpretations . . ."). This statement in the prosecution history is insufficient to overcome the presumption that no order is required.

Accordingly, the Court construes the term "a method . . . comprising the steps" as follows:

Claim 1 of the 779 Patent recites a method requiring that step (c) be performed after steps (a) and (b), that steps (d) and (e) be performed after step (b), that step (f) be performed after step (c), and that step (g) be performed after step (e).

Claim 1 of the 615 Patent recites a method requiring that step (d) be performed after steps (a), (b) and (c), that step (e) be performed after step (d), and that steps (f) and (g) be performed after step (e).

The '885 patent claims at issue include independent claims one and four. Claim one recites:

1. Apparatus for control of a dangerous prisoner to prevent unpredictable dangerous actions by said dangerous prisoner while in social context situations while nevertheless concealing such apparatus from public view, comprising:

   incapacitant delivery means,

   torso mounting means comprising a belt of sufficient extent to encircle a prisoner's torso and means for securing said incapacitant delivery means in contact with said prisoner's torso,

   said mounting means being adapted for concealment beneath garments ordinarily worn by ordinary persons in said social context to prevent said prisoner from being marked by observers in said social context as a person under restraint,

   said incapacitant delivery means being powered to deliver an incapacitating electrical shock to said prisoner,

   said mounting means further including means for receiving a remotely activated signal, and

   means in said mounting means responsive to said signal for delivering said incapacitating electrical shock to said prisoner.

(emphasis added). Claim four provides:

4. Nonobvious prisoner control apparatus for operation by a controlling authority located remotely from a prisoner, while
said prisoner is in clothing both appropriate to a public situation, and permitting normal functions of movement by said prisoner comprising:

- means concealable beneath said appropriate clothing of said prisoner to[ ] be controlled, securely banded around said prisoner[']s torso, for delivery of a nonlethal disabling electrical impulse to said prisoner,

- means connected to said electrical impulse delivery means for receiving a signal, including means for activating said electrical impulse delivery means upon receipt of said signal, and

- means, operable by said controlling authority, for generating and transmitting said signal for activating said electrical impulse delivery means to disable said prisoner.

(emphasis added).

Stun-Tech presented two primary arguments as to why its stun belts did not infringe these claims, both focusing on the concealability limitations. First, Stun-Tech argued that combination of the radio receiver and stun package in a single pouch produce a noticeable bulge when worn under clothing. Therefore, Stun-Tech urged, they are not "adapted for concealment" or "concealable" as required by the '885 patent claims. Second, Stun-Tech argued that the claim language about concealability created a hybrid apparatus and method of use claim which requires concealment in actual use. Stun-Tech asserted that its belts are primarily used in open prisoner transport situations often in combination with handcuffs and shackles - far from a concealment situation. Because of this allegedly non-infringing use, Stun-Tech sought to avoid direct infringement.

The district court did not agree with either of Stun-Tech's contentions. The district court rejected Stun-Tech's proposed "hybrid" claim interpretation, instead construing both claims solely as apparatus claims. According to the district court, Stun-Tech provided "absolutely no citation to authority [for its argument] that the R-E-A-C-T belts cannot infringe on the '885 patent because they are designed to be worn outside of the clothing." The district court added that "Stun-Tech's own characterization of how its product ought to be used cannot change the fact that the product otherwise infringes every element of the claims."

The district court then construed the concealability limitations to require only that the stun belts "when worn under clothing ordinarily worn by a defendant in social situations, [not] be noticeable, observable, or discernible as a prisoner control apparatus." The district court stated that "the apparatus must be concealable 'beneath garments ordinarily worn by ordinary persons in said social context to prevent said prisoner from being marked by observers in said social context as a person under restraint."

The district court continued: "This objective can be achieved by concealing the nature of the device while it is not necessary to conceal the very existence of the device." Based on this claim interpretation, the district court found that even though the accused devices produced a noticeable bulge under a prisoner's clothing, this did not avoid infringement of the '885 patent. The district court therefore granted RACC's motion for summary judgment. Stun-Tech appeals both the district court's claim interpretation and its grant of summary judgment of infringement.

II.


On appeal, Stun-Tech asserts that the district court erred in its claim interpretation. Stun-Tech argues that claims one and four should be construed as hybrid apparatus and method of use claims. Stun-Tech further contends that these claims, when properly construed, cannot be infringed unless the accused device is used according to method of use limitations in the claims. Stun-Tech cites In re Benson, 57 C.C.P.A. 797, 418 F.2d 1251, 164 U.S.P.Q. (BNA) 22 (CCPA 1969), In re Swinehart, 58 C.C.P.A. 1027, 439 F.2d 210, 169 U.S.P.Q. (BNA) 226 (CCPA 1971), and ZMI Corp. v. Cardiac Resuscitator
Corp., 844 F.2d 1576, 6 U.S.P.Q.2d (BNA) 1557 (Fed. Cir. 1988) in support of its unique hybrid claim argument. These cases, however, do not authorize this court to transform an apparatus claim into a hybrid apparatus and method of use claim. Rather, these cases merely acknowledge that an apparatus claim may include functional limitations. Similarly, in Intel Corp. v. U.S. International Trade Commission, 946 F.2d 821, 832, 20 U.S.P.Q.2d (BNA) 1161, 1171 (Fed. Cir. 1991), this court interpreted functional language in an apparatus claim as requiring that an accused apparatus possess the capability of performing the recited function. This court has never determined that functional language in a claim converts an apparatus claim into a method of use or hybrid claim.

Although claims one and four of the '885 patent contain recitations about concealability, the prosecution history demonstrates that this language does not make these claims method of use claims. Specifically, the prosecution history shows that the Examiner initially rejected all of the application's claims based on U.S. Patent No. 4,089,195 (Lai), which discloses a stun device in handcuffs. In response, RACC attempted to establish patentability of its claims over Lai based solely on intended use:

> By contrast the applicants' device can be worn comfortably by the prisoner without restriction of the prisoner's freedom of movement and without the need for the prisoner's restraint becoming noticeable to even the closest observer.

The Examiner rejected RACC's argument, however, and again rejected the claims based on Lai, noting that the concealability of the apparatus did not change the fact that the claims did not recite any structure different from Lai. Accordingly, RACC then amended its claims to recite structural differences from Lai, namely, a belt of sufficient length to fasten around the torso. With the addition of this structural limitation, the Examiner allowed the claims. This prosecution history shows that RACC was unable to distinguish its invention from the prior art based solely on intended use. Only by adding the structural limitation requiring torso mounting did RACC successfully overcome the prior art. Accordingly, the district court correctly decided that the functional language in claims one and four does not convert them into method of use or hybrid claims.

The claims do, however, recite concealability as a necessary limitation. Claim 1 recites a mounting means "adapted for concealment" while claim 4 recites a "means concealable beneath said appropriate clothing." This functional language limits the scope of these claims to devices that have the capability of being concealed. See Intel Corp., 946 F.2d at 832 (Regarding patent claims to an EPROM, "the accused device, to be infringing, need only be capable of operating in the page mode. . . . Actual page mode operation in the accused device is not required."). The district court therefore also correctly construed claims one and four as requiring the capability of being concealed although not requiring concealment in actual use.

Furthermore, the district court correctly construed the apparatus claims to cover an apparatus not "noticeable, observable, or discernible as a prisoner control apparatus." The specification, the prosecution history, and, most importantly, the claims themselves support this reading. The language of claim one is particularly telling. Claim one recites "mounting means . . . adapted for concealment . . . to prevent said prisoner from being marked by observers in said social context as a person under restraint." '885 patent, col. 9, ll. 1-5 (emphasis added). Thus, this language emphasizes a mounting means adapted for concealment in a courtroom setting. The specification of the '885 patent further clarifies that this language provides "means for control of dangerous prisoners in public trial without the stigma of visible restraints so as to enable the restrained accused to appear as a normal, ordinary member of society." Id. at col. 3, ll. 15-19. Furthermore, during prosecution of the '885 patent, RACC stated that its belt would allow a prisoner's freedom of movement, "without the need for the prisoner's restraint becoming noticeable to even the closest observer." (emphasis added). These defining statements support the district court's conclusion that the concealment limitations specify an apparatus not "noticeable, observable, or discernible as a prisoner control apparatus." The district court correctly determined that these claims require only that an ordinary observer would not identify the apparatus as a prisoner control device when worn under ordinary clothing. The district court therefore appropriately concluded that the noticeable bulge under the clothing when the accused device is secured to a prisoner's torso does not remove the accused device from the proper scope of the claims.

GO BACK

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2. Claim 36
Claim 36 relates to a method of preparing foamed gypsum board having a hard edge or edges. In the LNA Method, the edge streams are on the paper before the core stream. When the core stream is deposited on the paper, it is allowed to spread to reach the edge streams on each side of the paper. Defendants contend this is different from claim 36, which they contend provides that the core stream is deposited first and that, when the edge streams are deposited onto the paper, they are immediately next to the core stream. Defendants focus on the element of claim 36 that provides: "depositing the edge streams onto the cover sheet contiguous to one or both edges of the deposited core stream." Focusing on "deposited" being in the past tense, defendants contend this should be construed as meaning the core stream is deposited on the paper first. Defendants also contend that this element should be read as requiring that the edge stream be deposited onto the paper immediately contiguous to the core stream. USG contends that the use of "concurrently" in the preamble and the lack of any express statement of an order is consistent with the stated steps of the process having no particular order. It also contends that having the core and edge streams be contiguous at any step of the process is sufficient.

The use of "concurrently" in the preamble cannot be read as meaning that all steps in the process occur at the same time or in no particular order. It is clear that the mixing and agitating of the gypsum and water must occur before foam is added. It is also clear that the core and edge streams must be separated before the foam is added to only the core stream. Also, the second cover sheet cannot be added over the two streams until after they are deposited on the lower cover sheet. The reference to "continuously and concurrently" should be read as a reference to a plant line, where all the steps are continually run at the same time on the line as a whole, but can occur at different points of the line in a particular order as the materials move (stream) down the line. Claim 36 does not number each step of the process. However, the language used, basic grammar, understanding, or logic, and the understanding of wallboard production that a person skilled in the art would have indicate certain steps must be taken in a particular order. See Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1369-71 (Fed. Cir. 2003); Taltech Ltd. v. Esquel Enterprises Ltd., 410 F. Supp. 2d 977, 998-99 (W.D. Wash. 2006). In appropriate situations, the specification may be considered in construing whether a claim requires a particular order. Altiris, 318 F.3d at 1370.

As previously indicated, stating that a second cover sheet is applied over deposited streams necessarily means that the streams must first be on the face paper and a person skilled in the art would also know that this is how wallboard is manufactured. Stating that foam is added to the core stream, necessarily means that the core stream has previously been separated out of the aqueous dispersion. Since the core stream comes from the aqueous dispersion and the aqueous dispersion is described as being created from mixed and agitated calcined gypsum and water, it is also evident that the gypsum and water must be mixed before the core stream is separated out. Logically, since the foam is added to the core stream, adding of the foam also must occur subsequent to the mixing and agitation that created the aqueous dispersion. It is also noteworthy that each step that clearly must occur after another step is recited in order in claim 36. The question is whether any of the language supports that the core stream must be deposited before the edge stream.

In claim 36, the step of depositing the edge stream(s) is recited after the depositing of the core stream. This provides some support for reading claim 36 as providing that the core stream is deposited first. As defendants emphasize, stating that the method involves depositing the edge stream(s) when the core stream is deposited plainly provides that the core stream has already been previously deposited. USG contends that "deposited" is simply being used as a descriptive term to distinguish a core stream that has already had foam added from the core stream before being mixed with foam. The plain language of claim 36, however, is that the core stream is deposited first. USG does not point to any language in the specification supporting that the plain language of claim 36 should not be given its ordinary meaning.

Claim 36 is construed as providing that the core stream is to be deposited prior to the edge stream. Since the LNA Method deposits the edge stream prior to the core stream, there is no literal infringement.
A steam cooking utensil comprising:

[A] a base;

[B] a boiling water reservoir defined by the base;

[C] a heater, mounted in the base to heat liquid in the boiling water reservoir;

[D] thermostat means, mounted in the base and coupled to the heater, for switching off the heater when all the liquid in the boiling water reservoir has evaporated therefrom;

[E] a condensate trough, defined by the base and thermally insulated from the heater; and

[F] a food tray comprising an imperforate surface and a drainage surface, said food tray supported above the reservoir and trough such that said imperforate surface is aligned with the boiling water reservoir, said drainage surface is aligned with the condensate trough, and water flows from the imperforate surface to the drainage surface into the condensate trough, said reservoir, trough and tray cooperating substantially to prevent the flow of water from the imperforate surface into the reservoir.

Claim 2:

The invention of claim 1 wherein the food tray comprises a surface shaped to facilitate radial drainage to the drainage surface and into the condensate trough.

Claim 3:

The invention in claim 1 wherein the food tray defines a central baffle, vertically aligned with the heater, said baffle operative to direct heated water back to the vicinity of the heater in order to accelerate steam formation.

Claim 6:

The invention of claim 1 wherein the imperforate surface defines a multiplicity of raised surfaces effective to facilitate radial drainage through the drainage surface into the condensate trough.

Claim 31:

A steam cooking utensil comprising:

[A] means for defining a boiling water reservoir;

[B] a heater mounted adjacent a central portion of the reservoir to heat water contained in the reservoir;

[C] means for supporting food to be steamed above the reservoir, said supporting means defining an imperforate surface above the heater; and

[D] a baffle which extends downwardly from the supporting surface over the heater, said baffle shaped to define a partially enclosed region of the supporting surface in alignment with the heater;

[E] said baffle effective to impede the outward flow of water, heated by the heater and splashed by the heater against the partially enclosed region, radially away from the partially enclosed region.

Claims 1 and 31 are independent claims. Claims 2, 3 and 6 are dependent claims, being dependent upon Claim 1.

B. Markman Hearing
On November 18, 1997, this Court held a Markman hearing. See Markman v. Westview Instruments, 52 F.3d 967 (Fed. Cir. 1995) aff'd, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996). Markman sets forth a two-step process for resolving patent infringement claims. The first step requires that claim construction (determination of the meaning and scope of the claims) is an issue of law for the district judge to decide. 52 F.3d at 979. The second step is that of the jury looking at the claims and the court-determined definitions in order to determine whether an infringement of the patent took place.

Prior to the Markman hearing, this Court required the parties to brief the type of evidence to be heard at a Markman hearing, to identify any disputed language in the claims, the type of evidence used to resolve any disputes and to offer proposed definitions of the claims. The proposed definitions of both parties greatly assisted this Court during the claim construction phase.

Both Rival and Sunbeam agreed with that only "intrinsic" evidence should be used to construe the disputed claims. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Intrinsic evidence is made up of (1) the claims, 5 (2) the patent specification, and (3) the prosecution history. 6 Markman, 52 F.3d at 979. However, the claims should always be the first place a court looks to determine the scope of the claim. Vitronics, 90 F.3d at 1576.

5 The words in a claim should be given their ordinary and customary meaning. Vitronics, 90 F.3d at 1576.

6 Both parties were also required, prior to the Markman hearing to submit the prosecution history (or file wrapper) on each of their patents.

Extrinsic evidence is anything external to the patent, i.e. expert testimony, dictionaries, technical treatises and articles. Markman, 52 F.3d at 980. Even the plaintiff's product is extrinsic evidence. SRI Int'l v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1118 (Fed. Cir. 1985). Extrinsic evidence is only to be relied upon to resolve any ambiguity in a disputed claim term. CVI/Beta Ventures, Inc. v. Tura L.P., 112 F.3d 1146, 1153 (Fed. Cir. 1997); Vitronics, 90 F.3d at 1583.

The theory behind the admission of intrinsic evidence, and the exclusion of extrinsic evidence, has been explained by the Federal Circuit 7 in the following manner:

competitors are entitled to review the public record, apply established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention . . . . Allowing the public record to be altered or changed by extrinsic evidence . . . would make this right meaningless.

Vitronics, 90 F.3d at 1583.


Even though both parties agreed that only intrinsic evidence should be used to determine the claim construction, both parties attempted to influence this Court through the use of extrinsic evidence. Defendant Sunbeam used plaintiff Rival's product in the hearing and attempted to enter into evidence Sunbeam's products. During argument before this Court, Rival referred the court to dictionary definitions and expert testimony. However, this Court did not use any of this extrinsic evidence to determine the claim construction. In fact, this Court did not go beyond the actual claim language and patents in order to construe the disputed claims in the following manner:

1. "[A] boiling water reservoir defined by the base": a receptacle that holds boiling water. The water may be at one time
fresh, non-boiling water, but the water must actually come to a boil in the reservoir. To be defined by the base, the base must create or form the outline of the shape of the boiling water reservoir.

2. "Thermostat means . . . for switching off the heater when all the liquid in the boiling water reservoir has evaporated therefrom" : a thermostat that automatically switches off the heater when all of the water in the reservoir has boiled dry.

3. "[A] condensate trough, defined by the base": a receptacle for collecting condensate. To be defined by the base, the base must create or form the outline of the shape of the condensate trough.

8 These claim constructions will be hereinafter referred to as the "Markman definitions."

Dispute

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Claim 1, with emphasis added, is representative of the asserted claims and reads as follows:

1. A capacitive displacement sensor, comprising a vessel having a wall including at least two adjacent conductive wall segments,

   means for electrically insulating said wall segments from each other,

   a dielectric coating on the interior of at least one but not all of said wall segments, the interior of at least one conductive wall segment being exposed,

   a conductive liquid-like medium contained inside said vessel covering a variable part of at least one wall segment with said dielectric coating and at least one wall segment without said dielectric coating, and electronic means electrically connected to at least one wall segment with said coating and at least one wall segment without said coating for producing an output related to the capacitance between said liquid-like medium and said one wall segment with said dielectric coating,

   whereby displacement of said vessel causes relative movement between said vessel and said liquid-like medium and a concomitant detectable change in the capacitance between said liquid-like medium and the wall segment with the dielectric coating.

Eckhian filed suit against Lucas alleging that the Lucas "Accustar" inclinometers infringe every claim of the '140 patent. The accused device uses a vessel partially filled with liquid and has a thin film coating on an interior wall. Lucas denied infringement, claiming that the liquid in the accused device acts as a dielectric across which an electric field is generated and that, in any event, its liquid is not sufficiently conductive to be covered by the claims of the patent.

On Lucas's motion for summary judgment, the district court construed the claim term "conductive liquid-like medium" as requiring a conductivity similar to the examples contained in the specification, which exceed the conductivity level of the liquid in the accused device. The court held that in light of its claim construction and based upon prosecution history estoppel, the accused device did not infringe the patent, literally or under the doctrine of equivalents.

Discussion

We review a district court's grant of summary judgment de novo. Conroy v. Reebok Int'l, Ltd., 14 F.3d 1570, 1575, 29 U.S.P.Q.2d (BNA) 1373, 1377 (Fed. Cir. 1994). Summary judgment is appropriate when no genuine issue as to any material fact exists and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c). On summary judgment, the evidence must be viewed in the light most favorable to the party opposing the motion, Poller v. Columbia Broad. Sys., Inc., 368 U.S. 464, 473, 7 L. Ed. 2d 458, 82 S. Ct. 486 (1962), with doubts resolved in favor of the nonmovant, Cantor v. Detroit Edison Co., 428 U.S. 579, 582, 49 L. Ed. 2d 1141, 96 S. Ct. 3110 (1976); Transmatic, Inc. v. Gulton

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Determining whether a patent claim has been infringed requires a two-step analysis: "First, the claim must be properly construed to determine its scope and meaning. Second, the claim as properly construed must be compared to the accused device or process." Carroll Touch, Inc. v. Electro Mechanical Sys., Inc., 15 F.3d 1573, 1576, 27 U.S.P.Q.2D (BNA) 1836, 1839 (Fed. Cir. 1993). Claim construction is a question of law. Markman v. Westview Instruments, Inc., 52 F.3d 967, 983-84, 34 U.S.P.Q.2D (BNA) 1321, 1333 (Fed. Cir. 1995) (in banc); aff'd, 134 L. Ed. 2d 577, 116 S. Ct. 1384, 38 U.S.P.Q.2D (BNA) 1461 (1996). In construing the claims, the court looks to the patent itself, the prosecution history, and, if necessary, extrinsic evidence. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83, 39 U.S.P.Q.2D (BNA) 1573, 1576-77 (Fed. Cir. 1996).

Application of a properly construed claim to an accused device is a question of fact. On appeal from a grant of summary judgment of noninfringement, we must determine whether, on the patentee's version of the facts, the district court correctly concluded that the patentee had failed to show that a reasonable jury could find infringement. See Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986); Conroy, 14 F.3d at 1575, 29 U.S.P.Q.2D (BNA) at 1377 ("The moving party . . . may discharge its burden by showing the district court that there is an absence of evidence to support the nonmoving party's case.").

In construing the claims of the '140 patent, the district court declined to adopt Ekchian's proposed definition of "conductive" as "the slightest ability to carry a current" because it concluded that such an interpretation would render the limitation meaningless, essentially reading the term "conductive" right out of the claims. Because Ekchian's proposal would "include virtually all liquids (and, indeed, all materials) on the planet," the district court sought a narrower definition that would render the term meaningful. The court concluded that, as a matter of law, the claimed conductive liquid-like medium did not extend to the liquid in the accused device. In particular, it determined that the liquid in the accused device "is vastly less conductive" than the preferred liquid mentioned in the patent specification and that the two liquids appear to be used for different purposes, the invention employing a liquid as a capacitor plate and the accused device employing a liquid as a dielectric.

Ekchian argues that the district court erred in its claim construction by reading the conductivity of the preferred embodiment into the claims. Ekchian contends that the patent does not impart any special meaning to the term "conductive" and therefore that the term's ordinary meaning to those skilled in the art should control. Lucas, on the other hand, contends that the district court properly interpreted the claim in light of the specification and that the patent defines "conductive liquid-like medium" as being limited to liquids having a conductivity equal to or greater than the examples listed in the specification. To support its proposition, Lucas relies on the following sentence in the specification which states, "Accordingly, the label 'conductive liquid-like medium' used herein shall refer to materials of whatever kind whether liquid or not, meeting the foregoing requirements of flowability, conformity, horizontal surface retention and conductivity." '140 patent, col. 5, line 66 - col. 6, line 2.

Lucas argues that the examples of conductive liquids in the specification are the only "foregoing requirements of . . . conductivity" disclosed in the patent and therefore must be read as limiting the claim term. We do not agree. Contrary to the assertion by Lucas, the expression "the foregoing requirements" also refers to the enumerated requirements immediately preceding the quotation, which include, "in addition, all points beneath the horizontal upper surface of the liquid medium must be conductive, preferably but not necessarily uniformly conductive." '140 patent, col. 5, lines 60-63. The statement thus is not a reference only to the stated examples, as Lucas asserts.

More importantly, Lucas identifies nothing further to support its contention that the term "conductive" is limited to the conductivity levels inherent in the disclosed examples. While examples disclosed in the preferred embodiment may aid in the proper interpretation of a claim term, the scope of a claim is not necessarily limited by such examples. See Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865, 9 U.S.P.Q.2D (BNA) 1289, 1299 (Fed. Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations."); Texas Instruments, Inc. v. United States Int'l Trade Comm'n, 805 F.2d 1558, 1563, 231 U.S.P.Q. (BNA) 833, 835 (Fed. Cir. 1986) ("This court has cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification."). We therefore conclude that the term is not so limited.

Because the specification does not use the term "conductive" in a special or unique way, its ordinary meaning to one skilled
in the art controls. See Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 1580, 36 U.S.P.Q.2d (BNA) 1162, 1165 (Fed. Cir. 1995) ("The words of a claim will be given their ordinary meaning to one of skill in the art unless the inventor appeared to use them differently."); cf. Texas Instruments, Inc. v. Cypress Semiconductor Corp., 90 F.3d 1558, 1564, 39 U.S.P.Q.2d (BNA) 1492, 1497 (Fed. Cir. 1996) ("Although the dictionary broadly defines 'conductor' as any substance that conducts an electrical charge, the patent itself belies such a broad construction.").

Ekchian contends that those skilled in the art would recognize that the term "conductive liquid-like medium" in the context of the claimed invention refers to any material that is sufficiently more conductive than the dielectric so that a capacitor is formed. We agree. There is nothing in the patent specification that suggests that Ekchian intended to limit the meaning of that term to a specific range of conductivity. This does not mean that the claim term "conductive" is meaningless or superfluous. Both Lucas and Ekchian agree that the term "conductive" ordinarily means the ability to transport electric charge. Furthermore, it is undisputed that the specification and prosecution history both state that the liquid must act as a capacitor plate, which must necessarily store electric charge. Therefore, one skilled in the art of capacitor design would recognize that the term "conductive" modifies "liquid-like medium" in the claims to indicate that the liquid must act as a capacitor plate, i.e., that it must be sufficiently more conductive than the dielectric material so that it stores electric charge. Accordingly, we hold that the district court erred in its claim construction by incorrectly limiting the degree of conductivity permitted by the term "conductive liquid-like medium." Within the context of this patent, "conductive liquid-like medium" means a medium sufficiently conductive to perform its function as a variable capacitor plate.

Both parties dispute the meaning of the term "conduit." Plaintiff construes the term to mean any device or apparatus providing a channel or flow path for fluids including the contaminant vapors. Defendants argue that the "conduit" is a single channel, generally a pipe, placed in the shaft in a generally vertical position.

The Court construes the term "conduit" by looking at the claim language, the ordinary meaning of the term 'conduit", and the specification. The claim provides for "a conduit", hence the Court agrees with the Defendants that the claim language provides for only one "conduit." The ordinary meaning of the term "conduit" is "... 1: a natural or artificial channel through which water or other fluid passes or is conveyed ..." WEBSTER'S THIRD NEW INTERNATIONAL UNABRIDGED DICTIONARY ((c) 1961, 1993) at 474. In the specification, the Court finds that Plaintiff has explicitly provided in the '407 patent that his invention can be practiced without the use of a pipe as a conduit, and that the shaft itself can act as the conduit. '407 Patent, Column 4, Lines 14-18. From the ordinary meaning of the term and the limitation in the specification, the Court concludes that the term "conduit" means a channel through which the contaminant vapors are conveyed; the conduit may be a pipe in the shaft or the shaft itself.

The Court refuses to add the limitation that the "conduit" has to be vertical. This limitation is not found in the ordinary meaning of the term, neither is it explicitly provided for in the specification. However, as the conduit may be a pipe in the shaft or the shaft itself, it follows that the orientation of the conduit must be consistent with the shaft. Thus, one end must be open to the air while the other end is located to a point below the surface, in the contaminated area.

Finally, Claim 1 of the '227 patent describes a "conduit which connects said first interior channel to said second interior channel and allows said electrical means to pass therethrough." (App. To Def.'s Markman Br. Ex. B at Col. 4, L.L. 41-44) (emphasis added). Lampi defines "conduit" as a connecting passage which connects the area which contains the tube with the area which contains electrical components and allows the wiring to pass from the first area to the second area. APP, on the other hand, contends that "conduit" means a separate structure designed and used exclusively for enclosing and loosely holding wires passing from the unobstructed tubular sleeve which has two closed ends for enclosing the ends of the fluorescent tube (i.e. the first interior channel) to the unobstructed tubular sleeve containing the wiring for the fluorescent lamp. (i.e. the second interior channel).
In brief, the ordinary and customary meaning of conduit is a connecting passage which permits something (here wiring) to get from one place to another. Even after examining the briefs and the relevant prior art, we are uncertain as to what APP means by a "separate structure." Nor did counsel for APP explain this limitation at the hearing. In any event, there is no indication in the claims, specification, or prosecution history that the patentee claimed an entirely different structure as a means of connecting the two channels. On the contrary, it is clear that the patentee merely claimed a passage for connecting one channel to another. We accordingly adopt Lampi's definition of "conduit."

CONCLUSION

For all of the foregoing reasons, we interpret the disputed terms as follows:

"Comprising" means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim. More specifically, "comprising" denotes an open claim such that infringement may not be avoided merely by adding additional elements so long as the recited claims are present.

"Half-shells" mean two equal or corresponding parts forming a hard or firm outer covering into which the housing of the fluorescent lamp is divided.

"Identical" means the same or exactly alike.

"First interior channel" means an interior sleeve where the fluorescent tube is contained.

"Second interior channel" means an interior sleeve where the electrical components are contained.

"Conduit" means a connecting passage which connects the area containing the tube (first interior channel) with the area containing the electrical components (second interior channel) and allows the wiring to pass from the first channel to the second channel.

2. "Refrigerated source liquid conduit line"

For "refrigerated source liquid conduit line," Foodie offers a proposed construction of "at least one channel through which the source liquid is conveyed from the refrigeration unit," while Jamba Juice offers "a channel (or pipe) through which a refrigerated source liquid is conveyed." The only difference between the parties' proposals reflects the only dispute the Court must decide, namely whether the "remotely located refrigeration unit" must be connected to the "customer service station" through a "refrigerated source liquid conduit line."

Jamba Juice argues that the specification does not say that the refrigerated source liquid conduit lines are connected to the remotely located refrigeration unit. Instead, Jamba Juice contends the specification calls for the refrigerated source liquid conduit lines to be connected to the source liquid inside refrigerated liquid containers, not the unit itself. In support of its assertions, Jamba Juice offers the following lines from the specification: (1) "[a] most common form of containerized distribution provides such liquids to the retailer in pressurized steel, or similarly constructed metal tanks. In this instance, once connecting the refrigerated source liquid to refrigerated transport lines..." '448 patent col. 4 ll. 3-10, and (2) "[r]efrigerated source liquids such as juices, yogurt, etc. are refrigerated and stored in such remote facility until such time as they are needed." '448 patent col. 5 ll. 53-56. Foodie responds that the patent very clearly calls for a connection of the customer service station and the remote refrigeration unit via the refrigerated conduit lines, and offers the following as support: "[u]pon determining the consumer's refrigerated source liquid requirement(s), a [customer service station] beverage tapping mechanism 2.55 is engaged and such designated refrigerated source liquids are pumped or propelled, via refrigerated conduit lines 2.30 from the remote walk-in refrigerator 2.10 to the [customer service station]." '448 patent col. 6 ll. 3-8.

Both parties point to embodiments in the patent to support their contentions. Jamba Juice argues that embodiments four and
five show the refrigerated tanks connected to the conduit lines sitting beneath the counter, not connected to a refrigeration unit. '448 patent figs. 4-5. Foodie counters that in order to save space, which is the purpose of the patent, the conduit lines must connect the remote refrigeration unit and a customer service station, and claims that Figure 2 shows this to be the preferred embodiment. See '448 patent fig. 2. In response to Foodie's preferred embodiment argument, Jamba Juice claims that even if connection directly to the remote refrigeration unit was the preferred embodiment in the patent, there is no requirement that the Court limit the claim to the preferred embodiments. Only if the patentee expresses clear disavowal of any other configuration should the Court limit the claims only to the preferred embodiment. Conoco, Inc. v. Energy & Envtl. Int'l, L.C., 460 F.3d 1349, 1357-58 (Fed. Cir. 2006).

Finally, while Foodie claims the invention would not work if the conduit lines did not connect the source liquid in the refrigeration unit to a customer service station, Jamba Juice argues the patent does not mandate such an interpretation, and that the source liquid could be removed from the refrigeration unit and still connected to a customer service station without frustrating the purpose of the patent. Jamba Juice argues that the patent itself states "while this invention has been described in reference to illustrative embodiments, this description is not to be construed in a limiting sense," and that there are no manifest words of exclusion that should limit the patent solely to Foodie's proposed interpretation that the remote refrigeration unit is connected to a customer service station via the conduit lines in question. See '448 patent col. 7 ll. 18-20.

What the dispute amounts to is that certain embodiments in the patent show the refrigerated tanks inside the remotely located refrigeration unit. Foodie is essentially arguing for a narrower construction, saying that since the tanks are inside the refrigeration unit in Fig. 2, the conduit lines must therefore connect the refrigeration unit to a customer service station. Jamba Juice is arguing for a broader interpretation whereby a connection between the refrigeration unit and customer service station is not specifically required by the claims. In resolving this dispute, the Court begins, as it must, with the words of the claim. See Teleflex, 299 F.3d at 1324. Claims "must be read in view of the specification, of which they are a part." Markman, 52 F.3d at 968. After considering all of the arguments of the parties, the Court finds Jamba Juice's construction more persuasive.

The claims do not discuss the refrigerated source liquid conduit lines connecting the remote refrigeration unit and a customer service station. The only reference in the claims to any sort of connection to a customer service station refers to a connection between the source liquid and the consumer service station beverage tapping mechanism: "comprising … a customer service station including … at least one refrigerated source liquid conduit line, the refrigerated source liquid conduit line connecting said refrigerated source liquid and said consumer service station beverage tapping mechanism." '448 patent col. 8 ll. 11-15. While, as Foodie points out, the specification does discuss pumping refrigerated liquids via refrigerated conduit lines, that is not what the patent claims. The claims of the patent establish and limit the patentee's right to exclude, by describing the outer boundaries of the invention. CIAS, Inc. v. Alliance Gaming Corp., 460 F.3d 1349, 1357-58 (Fed. Cir. 2007). Here, the claims do not establish any boundary excluding the possibility that a customer service station might be connected to the source liquid in tanks outside the refrigeration unit, and the Court finds nothing in the specification which would limit the invention in such a manner. The Federal Circuit has cautioned against confining the claims to even specific embodiments. See Phillips, 415 F.3d at 1323. Particular embodiments appearing in the written description are not be used to limit claim language that has broader effect. Foodie's interpretation improperly limits the claims.

Therefore, the Court's construction leaves open the possibility that the conduit lines might convey source liquid from tanks outside the refrigeration unit. The Court finds that a "refrigerated source liquid conduit line" is "a channel through which a refrigerated source liquid is conveyed."

Cone, Nose, Flank, and Shoulder Region

Claims in the '249, '715, and '631 Patents contain the terms "cone" or "cone region," "nose" or "nose region," "flank" or "flank region," and "shoulder region." The parties dispute whether these regions extend around the circumference of the drill bit face or are limited to the blades of the drill bit face. The parties further dispute the construction of these regions with respect to each other.

Whether the Regions Extend Around the Circumference of the Drill Bit Face

- 1334 -
Baker Hughes contends "cone," or "cone region," means "the area or region extending around the entire circumference on the drill bit face and which is located radially closest to the centerline or longitudinal axis of the drill bit body (and which is shaped more or less like an inverted cone)." Baker Hughes proposes similar constructions for the other claim terms and contends these regions extend around the entire circumference of the bit face.

ReedHycalog contends "cone," or "cone region," means the "region, defined by the blades of the bit, radially between the nose and the center longitudinal axis of the bit." ReedHycalog proposes similar constructions for the other claim terms and claims these regions are defined by the drill bit blades and do not extend around the entire circumference of the bit face.

The specifications of the '249, '715, and '631 Patents support a construction that limits the "cone," "nose," "flank," and "shoulder" regions to the blades. The '249 and '715 Patents refer to the "cone," "nose," "flank," and "shoulder" regions as being regions within the bit profile. '249 Patent col. 5:66-col. 6:1; '715 Patent col. 9:34-39. As the blades define the bit profile, and each of these regions are located in the bit profile, the blades likewise define the "cone," "nose," "flank," and "shoulder" regions.

Second, figures in the '249, '715, and '631 Patents confirm that these regions are limited to the area defined by the drill bit blades. Fig. 10 of the '249 and '715 Patents, displayed in Appendix C and annotated, shows the "cone," "nose," "flank," and "shoulder" regions along the bit profile. Fig. 13 of the '715 Patent, a quarter-sectional side view of the three-region embodiment of the claimed drill bit, similarly shows the disputed regions along the bit profile. '715 Patent Fig. 13. Figs. 14A and 14B of the '631 Patent, reproduced in Appendix C and annotated, show the "cone," "nose," "flank," and "shoulder" regions on the blades of the drill bit. While Fig. 14C of the '631 Patent, annotated and shown in Appendix C, tends to support Baker Hughes's contention that the "cone region" extends circumferentially around the drill bit, the above intrinsic evidence more clearly shows that this region, in addition to the "nose," "flank," and "shoulder" regions, is limited to the drill bit blades. Thus, the Court construes these terms to only extend on the blades of the drill bit.

Radial Location of Each Region With Regard to Other Regions

Baker Hughes and ReedHycalog additionally dispute the definition of each region on the drill bit in relation to the other regions. In short, Baker Hughes defines "cone" as "... located radially closest to the centerline or longitudinal axis of the drill bit body ..." and subsequently defines "nose" as the area or region radially between the cone and the "flank," which includes the leading most point on the drill bit body. Similarly, Baker Hughes defines "flank" as the area or region radially between the "nose" and the "shoulder" or "gage," and "shoulder region" as the area or region radially between the "flank" and the "gage," although in a given drill bit, the "flank" and "shoulder" regions may be the same part of the bit.

ReedHycalog's constructions are similar, except that ReedHycalog starts with the "nose," which it construes as "extending radially and proximately about the leading-most point." ReedHycalog defines "cone" as the region radially between the "nose" and the longitudinal axis of the drill bit body, "flank" as the area or region radially between the "nose" and the "shoulder region," and the "shoulder region" as radially proximate the "gage."

The '715 Patent, in the Brief Summary of the Invention, describes "cone region" as the "radially innermost portion." '715 Patent, col. 3:14-15, 39-40. Similarly, the '631 Patent, in the Brief Summary of the Invention, describes the "cone" as "the region of the bit proximate the centerline of the bit." '631 Patent, col. 5:37-43. The patents do not disclose any area or region radially between the "cone" and the "nose."

The Court adopts a modified construction of "cone" and "cone region" to comport with the specifications. Thus, "cone," or "cone region," means "radially innermost region, defined by the blades of the bit, located radially between the nose and the center longitudinal axis of the bit, labeled 230 in Fig. 10 of the '249 and '715 Patents."

Footnotes

6 Ref. No. 5 of Appendix B contains the disputed terms and their construction.
3. Language in Dispute: "conical tapered tip" and "a truncated cone" 5

5 The parties have agreed that the ruling on claim 12 will be the same as the ruling on claim 19's construction. Thus, the word "cone" is equivalent to the word "conical" for purposes of this Markman decision. The language in dispute in claim 19 is: "...the distal end portion of said tube defining a truncated cone..."

Does "smooth conical tapered tip" mean (1) a shape with a circular base tapering to a point as in either a centered (right circular) cone or an off-center (oblique circular) cone or (2) a shape tapering evenly on all sides as in a right circular cone?

Does "cone" mean (1) a shape with a circular base tapering to a point as in either a centered (right circular) cone or an off-center (oblique circular) cone or (2) a shape tapering evenly on all sides as in a right circular cone?

Answer: Both "smooth conical tapered tip" and "cone" mean a shape with a circular base tapering to a point as in either a centered (right circular) cone or an off-center (oblique circular) cone.

a). Claim Language

The parties do not dispute that the limitation in this claim covers an ordinary centered (right circular) cone. Where they do not agree is whether the claim limitations also cover an off-center (oblique circular) cone. A right circular cone, or a centered cone, is a cone in which the apex is aligned with the center of the circle (i.e., an ice cream cone shape). In an oblique circular cone, or an off-center cone, the apex is above the circle, but not directly above the center of the circle. The Court holds the term "cone" includes both a right circular cone and an oblique circular cone. The claim language is helpful because in claim 12, it refers only to a "smooth conical tapered tip," whereas in claim 13, it specifies a type of cone when it states "said conical tip is substantially aligned with the axis of said cylindrical tube." Under the doctrine of claim differentiation, these two claims must mean different things. Thus, under claim 12, the cone may be either a right circular cone or an oblique circular cone and claim 13 is limited to only a right circular cone.

b). Written Description

The specification also supports construction of this claim as not limited to right circular cones. The specification states that in accordance with the invention:

the distal end portion of the tube 11 has a conical tip generally designated 20 which smoothly merges with the cylindrical body of the tube11. Preferably the apex of the conical tip 20 is centered on the axis of the cylindrical body of the tube 11 thus serving as a guidance point to uniformly distribute the frictional resistance encountered by the conical tip when the tube is inserted into the body cavity...Since the frictional resistance is uniformly distributed and the conical tip smoothly merges with the body of the tube 11, insertion trauma and kinking are minimized. ( '968 patent, col. 3, lines 47-54; 62-64). (Emphasis added).

In order for the frictional resistance to be uniformly distributed, the conical tip must be a right circular cone and not an oblique circular cone. The use of the term "preferably" indicates that the centered cone is Dr. Mahurkar's preferred configuration, but that he also contemplates other types of cones. Because claim 12 does not explicitly recite that the apex of the conical tip is centered on the axis of the cylindrical tube, claim 12 is not limited to this preferred approach. Had Dr. Mahurkar intended to limit claim 12 to right circular cones, he would simply have included the "centered apex" language of claim 13 within claim 12. See Rodime PLC v. Seagate Technology, Inc., 174 F.3d 1294, 1305 (Fed. Cir. 1999)("Had [the patentee] intended or desired to claim thermal compensation as a function of the positioning means in the asserted claims, it could have done it explicitly as in claim 11").
It is agreed that all of the figures in the '968 patent depict right circular cones, not oblique circular cones. Arrow claims that "conical" must be limited to the described preferred embodiment because "no other embodiment of a tip shape is shown or described in the '968 patent." (Def. Br., at p. 22). Arrow is wrong about the law. A claim term can be limited to the described preferred embodiment only when the specification clearly and unambiguously so limits that term. See e.g., Johnson Worldwide Associates, 175 F.3d at 991. And, "just as the preferred embodiment itself does not limit claim terms—, mere inferences drawn from the description of an embodiment of the invention cannot serve to limit claim terms." Id. at 992. 6

6 Arrow also suggests that the word "cone" is limited to the right circular cone shown in the figures because the '968 patent claims priority from a design application. This argument is contrary to well established law. In Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1565 (Fed. Cir. 1991), the Federal Circuit held that Dr. Mahurkar's claims in a utility patent may claim priority from a design application (which shows only figures) so long as the figures in the design application satisfy the written description and enablement requirements of 35 U.S.C. § 112, P 1. It is black letter law that a specification (or drawing) need not describe every possible embodiment covered by the claim to satisfy the written description requirement. See, e.g., Johnson Worldwide Assoc., 175 F.3d at 993. See also Lampi Corp. v. Am. Power Prods., Inc., 228 F.3d 1365, 1378 (Fed. Cir. 2001). Thus, whether the drawings in the design application showed off-center cones in addition to right circular cones is immaterial.

--- Footnotes ---

6 Arrow also suggests that the word "cone" is limited to the right circular cone shown in the figures because the '968 patent claims priority from a design application. This argument is contrary to well established law. In Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1565 (Fed. Cir. 1991), the Federal Circuit held that Dr. Mahurkar's claims in a utility patent may claim priority from a design application (which shows only figures) so long as the figures in the design application satisfy the written description and enablement requirements of 35 U.S.C. § 112, P 1. It is black letter law that a specification (or drawing) need not describe every possible embodiment covered by the claim to satisfy the written description requirement. See, e.g., Johnson Worldwide Assoc., 175 F.3d at 993. See also Lampi Corp. v. Am. Power Prods., Inc., 228 F.3d 1365, 1378 (Fed. Cir. 2001). Thus, whether the drawings in the design application showed off-center cones in addition to right circular cones is immaterial.

--- End Footnotes ---

c). Prosecution History

Arrow also seeks to support its narrow construction with passages from the prosecution history contending that Dr. Mahurkar was forced to distinguish a prior art oblique circular cone by limiting his claims to a right circular cone. During prosecution of the '968 patent, Dr. Mahurkar distinguished the Edelman structure. Arrow incorrectly characterizes Edelman's tip as an oblique circular cone. It is not. First, the Edelman tip has a rounded blunt end, not an apex. Second, one entire side of the Edelman tip is flat, and the base, therefore, is not a circle. The Edelman tip structure is perhaps best described as a "beak" or a "nose," not as a circular cone. The prosecution history statements cited by Arrow, therefore, do not support Arrow's argument.

Perhaps more importantly, the actual grounds upon which Dr. Mahurkar distinguished Edelman was that Edelman lacked the claimed smooth conical tip, not just that it lacked a conical tip. Regarding Edelman, Dr. Mahurkar described why his invention differed from Edelman's structure:

The Edelman et al. patent 4,403,983 shows a septum-type dual-lumen catheter in which the septum is inserted as a separate piece; the outer wall of one of the two lumens formed by the insertion of the septum is tapered toward the septum, and the other is cut off "normal to both the septum and the tube axis" (column 2, lines 59-60), thereby forming a sharply stepped tip which would also seem to produce high insertion trauma….None of these septum-type catheters has applicant's smooth conical tapered tip which smoothly merges with the surface of the cylindrical tube …. (Def. Ex. 2 at NSHN 128765-66.) This passage clearly shows that Dr. Mahurkar's primary concern with the Edelman structure was the sharp step between the tube and the tip. Dr. Mahurkar's claims distinguished this structure by reciting a smooth conical tapered tip that smoothly merges with the tube.

Dr. Mahurkar's statements during the prosecution history, therefore, never limited the word "cone" to right circular cones, and do not constitute a clear and deliberate surrender of claim scope. See Northern Telecom Ltd. v. Samsung Electronics Co., Ltd., 215 F.3d 1281, 1294-95 (Fed. Cir. 2000)("We cannot conclude that [the defendant] has demonstrated that the patentees -- with reasonable clarity and deliberation [citation omitted] - defined 'plasma etching' as excluding ion bombardment.").

d). Dictionary Definition

Medical dictionaries also support Plaintiffs' contention that "conical" is not limited to a centered (right circular) cone. Cone is defined as "a solid figure or body with a circular base tapering to a point." (Dorland's Illustrated Medical Dictionary,
Twenty-Sixth Edition). Cone is defined as "a solid figure or body having a circular base and tapering to a point, …" (Miller-Keane Encyclopedia & Dictionary of Medicine, Nursing & Allied Health (5th Ed. 1992)). Cone is defined as "a figure or anatomic structure tapering to a point from a circular base." (Melloni’s Illustrated Medical Dictionary (2nd Ed. 1985)).

4. Construction of "an analyte sensor configured and arranged to determine the concentration of the analyte from 500 nL or less of body fluid"

The parties next seek to construe the phrase "an analyte sensor configured and arranged to determine the concentration of the analyte from 500 nL or less of body fluid" found in Claim 16 of the '164 patent as follows:

A method for determining a concentration of an analyte in a body fluid of a patient, comprising the steps of: creating an unassisted flow of a body fluid from the patient; transporting a portion of the body fluid into an analyte sensor configured and arranged to determine the concentration of the analyte from 500 nL or less of body fluid…

Plaintiffs argue for the construction "a device to detect the presence and/or measure the concentration of an analyte that is constructed and disposed to determine the concentration of the analyte from 500 nL or less of body fluid" and Defendant for the construction "a coulometric sensor where the electrodes are separated by no more than .2 mm and the mediator is immobilized (i.e. entrapped or chemically bound) to the surface of the working electrode."

Defendant first contends that Claim 16 expresses a means plus function claim, and as such, is limited to the structures and materials disclosed in the specification for performing the invention pursuant to 35 U.S.C. § 112 P 6. It is not necessary to include the word "means" in the language of a means-plus-function claim. Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed.Cir.2004). However, a claim which does not include the word "means" raises a rebuttable presumption that the claim does not recite a means plus function element. Id. Defendant contends that the language at issue states a means-plus-function element because the claim does not convey a well-defined structure for an analyte sensor that is "configured and arranged to determine the concentration of the analyte from 500 nL or less of body fluid." The Court finds this argument unavailing. The contested language recites a step in Plaintiffs’ method claim; and the terminology "configured and arranged" states a limitation requiring the presence of an analyte sensor which has been designed for the purpose of determining the concentration of analytes in volumes less than 500 nL. Defendant points to nothing in the record indicating that Plaintiffs intended this language to recite a means-plus-function element within their process claim. Accordingly, the Court finds that Defendant has failed to overcome the presumption created by the absence of the "means for" language.

Defendant next contends that the invention is limited to only those analyte sensors which use the process of coulometry 8 to determine the concentration of analytes. 9 Defendant argue that the specification frames the invention within the context of the coulometric technique and that Plaintiffs specifically disclaimed other analytical methods during the patent application process. Defendant cites a portion of the prosecution history in which Plaintiffs distinguished the invention from the prior art before the PTO examiner, stating:

Claim 133- 142 were rejected… as being unpatentable over [prior art] Niwa,… The claim 133, and claims 134-147 by dependency on claim 133, are directed to a method for determining the concentration of an analyte in a sample by coulometry…. Niwa is cited as teaching the determination of the concentration of an analyte by amperometric methods… The examiner notes that this reference fails to teach the determination of an analyte by coulometry…. The advantages provided by a coulometric measurement as compared with other electrochemical methods are described in the specification…. these advantages include temperature independence… and a much smaller sample size. Mehta Declaration, Exh. 5, Plaintiffs Amendment Application to USPTO, Dec. 16, 1998,4-6.

Footnotes

8 Coulometry is a method for indirectly determining the concentration of a substance in a solution by submitting the substance to an electrolysis reaction, and then measuring the amount of electricity released during the reaction.
As its name suggests, "analyte" is the generic term for any substance which is to be analyzed.

Defendant asserts that these concessions were directed toward Claim 16, and that Plaintiffs limited the scope of Claim 16 in making these statements. However, there is no indication that this discussion was directed toward Claim 16, which is the claim at issue here. Rather, it appears that the portion of the prosecution history cited by Defendant was actually directed toward other claims which specifically include a coulometry limitation in the claim language. For example, Claim 1 recites, "[a] method for determining a concentration of an analyte in body fluid, comprising the steps of: collecting a sample of body fluid of about 500 nL…. and determining the concentration of the analyte in the sample using a coulometric technique." (164 Patent, Claim 1)(emphasis added). Plaintiffs explicitly limit the method in Claim 1 to the use of the coulometric process. By contrast, the method recited in Claim 16 does not identify any specific process for determining the concentration of an analyte.

Defendant's argument is undermined by the fact that Plaintiffs do identify specific techniques for determining analyte concentration in Claims 33,34, and 35, which are dependent upon Claim 16. Plaintiffs limit the methods claimed there to coulometry, amperometry, and optics, respectively. Under the doctrine of claim differentiation, "[t]here is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims." Tandon Corp. v. U.S. Intern. Trade Com'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987). "To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant." Id. Applying the doctrine of claim differentiation, the fact that Plaintiffs identify specific processes in Claims 33, 34, and 35, which are all dependent on Claim 16, implies that no such limitation exists in Claim 16.

Therefore, Defendant's contention that Claim 16 includes a coulometry limitation is belied by the limitations expressed in dependent Claims 34 and 35, which specifically identify alternative processes to coulometry.

The '164 patent states Claims 33 and 34 as follows, "33. The method of claim 26, wherein determining the concentration of the analyte comprises determining the concentration of the analyte using a coulometric technique. 34. The method of claim 26, wherein determining the concentration of the analyte comprises determining the concentration of the analyte using an amperometry." Claim 26 in turn is dependent on claim 16, as follows, "26. The method of claim 16, wherein the analyte sensor is an electrochemical sensor.

12 Defendant also contends that the specification "disparages" non-coulometric methods such as amperometry and that Plaintiffs disavow amounts to a disclaimer of such methods. For this proposition, Defendant cites Honeywell Intern., Inc. v. ITT Industries, Inc., 452 F.3d 1312 (Fed. Cir. 2006). The Honeywell court stated that where "the written description has gone beyond expressing the patentee's preference for one material over another…. repeated derogatory statements concerning one type of material are the equivalent of disavowal of that subject matter from the scope of the patent's claims," Id. at 1318. Defendant argues that Plaintiffs' repeated affirmations, within the specification, of the superiority of the coulometric technique amounts to a disavowal of non-coulometric techniques. The Court finds this argument unavailing. Defendant misconstrues the scope of Plaintiffs' statements. While the specification clearly states a preference for the coulometric technique, it does not disavow non-coulometric techniques. To the contrary, the patent specifically claims...
several non-coulometric techniques. (See Claims 34 and 35). It would make little sense to find that Plaintiffs disclaimed a technique that they claim in the same patent. Accordingly, the Court finds Honeywell distinguishable on this basis.

Defendant also argues that Claim 16 should be limited to sensors with electrodes located within 0.2 mm of each other and containing immobilized mediators. In support of this argument, Defendant cites the preferred embodiment portion of the specification in which Plaintiffs state, "(t)ypically, the thickness of the sample chamber [should be] less than about 0.2 mm." (164 Patent, 10:50-54). The preferred embodiment section also states, "More preferably, the redox mediators of the present invention are bound or otherwise immobilized on the working electrode to prevent undesirable leaching of the mediator into the sample. A diffusing or leachable (i.e., releasable) redox mediator is not desirable when the working and counter electrodes are close together (i.e., when the electrodes are separated by less than about 1 mm), because a large background signal is typically produced as the unbound mediator shuttles electrons between the working and counter electrodes, rather than between the analyte and the working electrode. This and other problems have hindered the development of low resistance cells and increased the minimum sample size required for determination of analyte concentration." (164 Patent, 6:26-40). The Court finds this argument unpersuasive. It is improper to read a limitation from the preferred embodiment into the claims. Liebel-Flarsheim at 905. Defendant's proposed reading would improperly impose limitations from the preferred embodiment. In light of the above analysis and the plain and ordinary meaning of the terms, the Court construes the disputed phrase to mean, "a device designed to measure the concentration of an analyte given a sample of 500 nL or less of body fluid."

10. Claim 17 - "configured for being manipulated into an erected position for containing a product placed therein during shipment and for subsequently being manipulated into a collapsed position for reducing the size of the container for return"

Bradford proposes that this term means "having a structure, design, arrangement, or shape that can be folded into an erected position for containing a product placed therein during shipment and for subsequently being folded into a collapsed position for reducing the size of the container so the container can be sent back while in the collapsed position." Defendants propose that this term means "having a structure, design, arrangement, or shape that can be manipulated into an erected position for containing a product placed therein during shipment and for subsequently being manipulated into a collapsed position for reducing the size of the container so the container can be sent back while in the collapsed position." Again, the difference between the parties' proposed definitions is Bradford's use of "folded" and Defendants' use of "manipulated".

For the reasons stated in Part IV A.3, this term should not be limited to "folded." The plain language of the claim uses the word "manipulated" and the Court sees no reason that "folded" should be substituted for "manipulated". "Manipulate" means "to treat, work, or operate with the hands or by mechanical means." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1376 (1971). "Manipulate" is certainly a broad enough term to encompass "folding" and accurately captures the erecting and collapsing operation of the container.

Finally, the Court observes that in Bradford's definition, the phrase "folded into an erected position" is illogical. Typically, objects are not folded into erect positions. For instance, to erect a card table, the legs are unfolded. Similarly, to erect a lawn chair, the legs are unfolded. These objects are folded in order to collapse them. Bradford's proposed definition, therefore, does not accurately define the erecting operation. Conversely, "manipulated" is a term which accurately describes both the erecting operation and the collapsing operation. Therefore, Bradford's definition is rejected.

Accordingly, the Court holds that "configured for being manipulated into an erected position for containing a product placed therein during shipment and for subsequently being manipulated into a collapsed position for reducing the size of the container for return" means "having a structure, design, arrangement, or shape that can be manipulated into an erected position for containing a product placed therein during shipment and for subsequently being manipulated into a collapsed position for reducing the size of the container so the container can be sent back while in the collapsed position."
3. Claim 1 - "configured for being moveable between an erected position for containing a product placed in the container and a collapsed position for reducing the size of the container for return"

Bradford proposes that the above term, which for ease of reference the Court will refer to as "configured for being moveable" means "having a structure, design, arrangement, or shape that can be folded between an erected position for containing a product placed in the container and a collapsed position for reducing the size of the container so the container can be sent back while in the collapsed position." (emphasis added). Defendants on the other hand, propose that "configured for being moveable" means "having a structure, design, arrangement, or shape that can be moved between an erected position for containing a product placed in the container and a collapsed position for reducing the size of the container so the container can be sent back while in the collapsed position." (emphasis added). Thus, the dispute over this term is between "folded" and "moved".

In support of its definition, Bradford relies principally on the specification and argues that each of the drawings therein depicts a folding operation to transform the container from an erect position to a collapsed position. In contending that "configured for being moveable" is not limited to folding operations, Defendants also rely on the specification. Defendants highlight Figure 5A in support of their argument. Figure 5A shows an alternative embodiment of the invention in which the container is collapsed by means of telescoping legs. The Court agrees with Defendants.

Contrary to Bradford's argument, and as Defendants correctly observe, the embodiments in the specification do not all depict folding operations to collapse the container. To fold, in common usage, means "to lay one part over another part of" or "to reduce the length or bulk of by doubling over or lapping over." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 882 (1971). "Moveable", on the other hand, means among other definitions, "capable of being moved: not fixed: not stationary: not fixed to one position or location." Id. at 1479 (emphasis added). As can be seen, although Defendants propose using "moved" in their definition, they essentially propose giving "moveable" its ordinary meaning.

Bradford does not contend that "moveable" has a special meaning to those skilled in the art of collapsible container invention. Therefore, the Court sees no reason to ascribe to "moveable" any other than its ordinary dictionary meaning. And, indeed, the term "moveable" best captures the essence of the invention -- the container is not fixed in one position or location. Rather, the container is capable of assuming two positions, erected and collapsed. Moreover, "moveable" is broad enough to include "fold" or "folded" within its scope. In the context of the embodiments disclosed in the specification, folding is but one method of changing the position of the container from erected to collapsed. Obviously, employing telescoping legs is another. In any event, it seems clear that Bradford's proposed definition selectively imports a limitation from the specification into the claims. Accordingly, Bradford's proposed definition of "configured for being moveable" is rejected.

The Court holds that "configured for being moveable means "having a structure, design, arrangement, or shape that can be moved between an erected position for containing a product placed in the container and a collapsed position for reducing the size of the container so the container can be sent back while in the collapsed position."

19. The '622 patent - Element [e]

72. Element [e] defines the "angulated portion" as including an outer surface, a second threaded bore "extending therein" having an axis forming a fixed angle with the axis of the first through bore and adapted to receive a fastening means for securing the dental prosthesis.

73. The phrase "an outer surface configured for receiving and supporting the dental prosthesis" is presumptively not a means plus function element because it does not use the phrase "means for." Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584 (Fed. Cir. 1996). Further, the phrase "configured for" has not been treated as a means-plus-function element.
by the Federal Circuit. For example, in National Presto Industries, Inc. v. The West Bend Company, 76 F.3d 1185, 1189 (Fed. Cir. 1996), the Court did not treat the phrase "retention chamber which is configured for reception within the retention compartment" as a means-plus-function element. In this case, the angulated portion is defined in terms of its structural features, since the "outer surface" and second threaded bore at an angle to the first threaded bore both define structure.

74. When this claim element is read as a whole, it is clear that the part of the outer surface which is configured for receiving and supporting the dental prosthesis is the part which defines the second threaded through bore, which receives the screw which fastens the dental prosthesis to the abutment.

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ii. a bridge configured to connect two retaining mechanisms and hold them together

Plaintiffs construe the phrase "a bridge configured to connect two retaining mechanisms and hold them together" as "the middle section of eyeglasses, designed to connect the rims, pins, screws or other mechanisms for supporting the lenses." Defendant interprets the same phrase to mean "middle section of eyeglasses, designed to connect rims."

In light of the court's constructions of the terms "bridge" and "retaining mechanism," the court construes the above phrase as "the middle part of the eyeglasses spanning the nose designed to connect the rims."

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With this language as our framework, the Court now turns to the disputed claim language. Claim 1 is representative of the independent claims that Stryker alleges Pioneer to have infringed. The relevant portion of the language of claim 1 is that which relates to Stryker's locking cap. It provides, "what is claimed is: 1. A device for securing a spinal rod to the spine comprising … b) a locking cap including a first portion configured to engage an interior surface of the head portion and a second portion having an elongated recess configured to engage an exterior surface of a spinal rod received by the channel … , the first portion of the locking cap being mechanically joined and configured to rotate relative to the second portion of the locking cap."

The language in dispute, as highlighted above, is "a first portion configured to engage an interior surface of the head portion." Specifically, the dispute concerns the proper interpretation of "configured to engage" as used in this context. Stryker offers no interpretation of the disputed claim language beyond asserting that the words should be given their "plain and ordinary meaning." Although the ordinary meaning of a claim term "is the meaning that the term would have to person of ordinary skill in the art," Phillips, 415 F.3d 1312-13, Stryker provides no interpretation as to how the disputed terms would be understood by someone skilled in the art. Rather, it simply concludes that every claim element in the '565 patent is present in Pioneer's pedicle screw system. With specific reference to the locking cap, it asserts that Pioneer's locking cap, like the one disclosed in the '565 patent, includes a first portion (with arcuate engagement flanges) configured to engage an interior surface of the head portion (i.e. arcuate engagement slots), and thus literally infringes the '565 patent.

Pioneer argues, in contrast, that, in light of the patent's specification, the claim language "a first portion configured to engage an interior surface of the head portion" must be construed to mean a first portion configured to cammingly engage an interior surface of the head portion. In support of this construction, Pioneer points out, as instructed by Phillips, that claims must be interpreted "not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." 415 F.3d at 1313. Pioneer argues that "the '565 patent's specification discloses only one approach for providing the force to lock the [spinal] rod in place." (Pl.'s Opp'n Def's Mot. Summ. J. Infringement at 3.) "Every one of the '565 patent's disclosed locking caps, in every embodiment," Pioneer notes, "requires inclined arcuate engagement flanges that rotate in inclined arcuate engagement slots within the head portion to create [a] downward, camming, force on the rod located in the head portion." (Pl.'s Supp. Mem. Re. Phillips v. AWH Corp. at 6.) The following description of the engagement between the arcuate engagement flanges on the upper portion of the locking cap with the inside of the head portion is representative of the descriptions of this engagement throughout the specification:
The flanged portion 64 of locking cap 20 is defined … by two diametrically opposed arcuate engagement flanges 82 and 84 which are dimensioned and configured for operative engagement with two complementary diametrically opposed arcuate engagement slots 86 and 88 defined in the interior surfaces of the opposed side walls 30 and 32 of head portion 22.

Engagement flanges 82 and 84 define ramped camming surfaces 92 and 94, respectively. Camming surfaces 92 and 94 are of opposite angular inclination with respect to one another. More particularly, each engagement flange has a low side … and a high side … whereby the low sides of the two flanges are diametrically opposed from one another as are the high sides. Actually, the camming surfaces of the flanges are mirror images of one another.

The arcuate engagement slots 86 and 88 in head portion 22 of fastener 14 have inclined surfaces which mate with the ramped camming surfaces 92 and 94 of flanges 82 and 84.

('565 Patent col. 6, l. 45 to col. 7, l. 1.) The patent's specification further provides:

Care must be taken to ensure that the upper portion 220a of locking cap 220 is positioned in such a manner so that the low sides of the flanges … are aligned with the high sides of the engagement channels …, or the flanges will not cammingly engage the channels upon rotation of the upper portion 220a of the locking cap 220 relative to the head portion 222.

Once the upper portion 220a of locking cap 220 has been properly oriented with respect to head portion 222 …, it is rotated … relative to the lower portion 220b of locking cap 220 …. Thereupon, the arcuate engagement flanges 284, 286 of upper portion 220 cammingly engage the corresponding engagement slots 284.

('565 Patent col. 11, ll. 15-30.) In light of this specification language, Pioneer concludes, the claim language "a first portion configured to engage an interior surface of the head portion" must be interpreted as requiring a first portion configured to cammingly engage an interior surface of the head portion (through the mating of inclined arcuate engagement flanges with inclined arcuate engagement slots), which produces the downward locking force needed to secure a spinal rod in place.

In interpreting claims, as instructed by Phillips, a court is to give the words of the claims their ordinary meaning as understood by a person of ordinary skill in the art. Phillips, 415 at 1312-13. The Phillips court also noted that "in some cases, the ordinary meaning of claim language … may be readily apparent …, and claim construction in such cases involves little more than the application of the widely accepted [i.e. general purpose dictionary] meaning of commonly understood words." Id. at 1313. Stryker appears to maintain that this is such a case. Although Stryker asserts that it is not proffering a dictionary definition of the phrase "configured to engage," (see Defs.' Resp. Re. Phillips v. AWH Corp. at 3), it must be advancing such an interpretation in maintaining this claim for literal infringement. This is so because the flanges on Pioneer's and Stryker's locking caps engage with the heads in their pedicle screw systems in different ways. Stryker's inclined flanges) as evidenced by the specification, cammingly engage inclined slots in the head portion, thus creating the force necessary to secure the rod, whereas Pioneer's flanges, which are not inclined, are merely pressed against the slots in the head portion of its system as the lower surface of Pioneer's upper cap cammingly engages the top surface of the saddle. For Stryker to successfully prosecute its infringement claim, then, it must be advancing an interpretation of "configured to engage" that is broader than "designed to cammingly engage." Its interpretation of "a locking cap including a first portion configured to engage an interior surface of the head portion" must be "a locking cap with a first portion 'designed to mesh or interlock' with engagement slots in the head portion" since, with such an interpretation, Pioneer's system would literally infringe the '565 patent, as its locking cap includes a first portion "designed to mesh or interlock" with engagement slots in a head portion.

Stryker's "dictionary definition," however, cannot serve as the definitive definition of the disputed claim language in this case. For one, this is not a case where the ordinary meaning of the disputed claim language as understood by a person of skill in the art is so readily apparent that the "claim construction involves little more than the application of the widely accepted meaning of" the disputed terms. It is true, of course, that the Court is not unacquainted with the words "configure" or "engage," in the sense that a lay judge could recite their dictionary definitions. Detached from their context, however, these words can be defined only very generally. For instance, Webster defines "configure" as "1. to shape according to some model, and 2. to arrange in a certain form, figure, or shape: give a configuration to." Webster's Third New International Dictionary 476 (1971). Similarly, Oxford English Dictionary defines "configure" as "to fashion according to something else as a model, and . . . to put together in a certain form or figure." Oxford English Dictionary, available at http://www.oed.com.
Webster defines "engage" as "to be or become in gear: interlock and interact," and by Oxford English Dictionary as "to interlock with, fit into a corresponding part." Webster's Third New International Dictionary 751 (1971); Oxford English Dictionary, available at http://www.oed.com. From the dictionary definition, then, the most one can say is that the phrase "a locking cap including a first portion configured to engage an interior surface of the head portion" means that the cap's first portion is shaped or arranged in a certain way to interlock or fit with the interior surface of the head portion. The way in which the locking cap is shaped or arranged to interlock or fit with the head portion, is, of course, indiscernible from the dictionary definition. Thus, in view of the fact that the ordinary meaning of the disputed terms is not readily apparent, the Court must look to the specification to properly construe the claims.

--- Footnotes ---

2 The Court notes that the phrase "configured to engage" is used twice in claim 1. (‘565 Patent claim 1) "a locking cap including a first portion configured to engage an interior surface of the head portion and a second portion having an elongated recess configured to engage an exterior surface of a spinal rod . . . .) The Phillips court noted that in construing a claim, "the context in which a term is used . . . can be highly instructive." 415 F.3d at 1314. For instance, the court explained, "because terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims." Id. In Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1356 (Fed. Cir. 1999), the court interpreted the term "discharge rate," which was used twice in the same claim, to mean the same thing in both usages, because identical language, which illuminated the phrase's meaning, was associated with the phrase in both usages. In this case, the phrase "configured to engage" is not used in the same way: the first usage relates to the engagement between the upper portion of the locking cap and an interior surface of the head portion while the second usage relates to the engagement between the lower portion of the locking cap and the spinal rod. There is no indication from the words of the claims that they should be interpreted to refer to the same form of engagement. Moreover, in light of the specification, a person of ordinary skill would not interpret the phrase to refer to the same type of engagement in both instances.

--- End Footnotes ---

Not only must the Court look to the patent's specification because the ordinary meaning of the terms is not readily apparent, but also because, as instructed by Phillips, "the person of ordinary skill in the art is deemed to read the claim . . . in the context of the entire patent, including the specification." 415 F.3d at 1313. Reading the disputed claim language in the context of the specification, the Court concludes that the phrase "a locking cap including a first portion configured to engage an interior surface of the head portion" requires a locking cap with a first portion configured to cammingly engage an interior surface of the head portion. The ‘565 patent's specification envisions a number of different approaches and embodiments for teaching a person skilled in the art to make and use the invention. For instance, the specification explicitly recognizes that the disclosure is not limited to the particular fasteners shown in the embodiment, but rather envisions that any component designed for attachment to a spinal rod could be used. (‘565 Patent col. 5, ll. 27-35.) Moreover, the specification also envisioned the following: both a one-piece and two-piece locking cap, (id. figs. 9 and 12(b)), a one-piece locking cap with transverse recesses on the bottom and one with a flat bottom surface, (id. col. 6, ll. 25-30), different tooling methods for rotation of the locking cap, (id. col. 6, ll. 37-40), and arcuate engagement flanges with and without radially inwardly directed tapers. (Id. col. 8, ll. 30-34.) The patent's specification, however, discloses one and only one approach for generating the force necessary to secure a spinal rod in place. That is, consistently throughout the specification, the embodiments contain a locking cap including an upper portion with inclined arcuate engagement flanges designed to cammingly engage inclined arcuate engagement slots in the head portion.

Stryker argues that an interpretation of the claim that requires a camming engagement between the first portion of a locking cap and the interior surface of a head portion would improperly "narrow the scope of the asserted claims to the embodiment disclosed in the specification of the '565 patent." (Defs.' Resp. Re. Phillips v. AWH Corp. at 3.) To avoid improperly limiting a claim's scope to an embodiment in the specification, the Federal Circuit has instructed that courts should "focus . . . on . . . how a person of ordinary skill in the art would understand the claim terms." Phillips, 415 F.3d at 1323. The Court concludes that not only would a person of ordinary skill in the art consult the specification to aid in determining the meaning of the disputed terms, but such a person would also conclude that the claims require a locking cap with a first portion configured to cammingly engage an interior surface of a head portion, for "there is nothing in the context [of the specification] to indicate that the patentee contemplated any alternative" for a locking cap other than the one disclosed. Snow v. Lake Shore & Mich. S. Ry. Co., 121 U.S. 617, 629-30, 30 L. Ed. 1004, 7 S.Ct. 1343, 1350-51, 1887 Dec. Comm'r Pat. 354 (1887).
Phillips, 415 F.3d at 1323 ("To avoid importing limitations from the specification into the claims," a court should read the specification with an eye towards "whether the patentee is setting out specific examples" to teach a person of ordinary skill in the art to make and use the invention, "or whether the patentee instead intends for the claims and the embodiments in the specification to be . . . coextensive."). Moreover, Stryker "is not entitled to a claim construction divorced from the context of the written description." Nystrom v. Trex Co., 424 F.3d 1136, 2005 U.S. App. LEXIS 19748, 2005 WL 2218632, at *7 (Fed. Cir. 2005). In this case, the written description consistently describes a device where the camming force necessary to secure a rod into place is generated by the engagement of inclined arcuate engagement flanges with inclined arcuate engagement slots in the inside surface of a head portion.

Stryker also asserts that the phrase "a first portion configured to engage an interior surface of [a] head portion" cannot be interpreted as requiring a camming engagement because it did not disavow the full scope of the claim terms' ordinary and customary meanings. Requiring a disavowal in the specification to construe a claim term more narrowly (or simply differently) than its dictionary definition "improperly restricts the role of the specification in claim construction." Phillips, 415 F.3d at 1320. As the Phillips court explained, "assigning such a limited role to the specification, and in particular requiring that any definition of claim language in the specification be express, is inconsistent with our rulings that the specification is 'the single best guide to the meaning of a disputed term.'" Id. at 1321 (citation omitted). Rather, a specification may not only expressly define a claim term, but it may also "define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents." Idento Access, Inc. v. Echostar Satellite Corp., 383 F.3d 1295, 1300 (Fed. Cir. 2004). In other words, "what Phillips now counsels is that in the absence of something in the written description . . . to provide . . . notice to the public . . . that the inventor intended a disputed term to cover more than the ordinary and customary definition as [revealed by the context of the intrinsic record, it is improper to read the term to encompass a broader definition simply because it maybe found in a dictionary." Nystrom, 424 F.3d 1136, 2005 U.S. App. LEXIS 19748, 2005 WL 2218632, at *7 (emphasis added). In this case, the Court will not read "configured to engage" in "a first portion configured to engage an interior surface of [a] head portion" to encompass the breadth of its dictionary definition where the phrase's meaning as revealed by the context of the intrinsic evidence demonstrates that the phrase must be interpreted as requiring a camming engagement between the first portion of the locking cap and the interior surface of the head portion.

Finally, the Court addresses Stryker's argument that Phillips, despite its extensive discussion of the importance of the specification in claim construction, supports its position that the disputed terms should not be read as requiring a "camming engagement." In Phillips, the dispute was over the meaning of the term "baffles." 415 F.3d at 1324. Both parties, stipulating to a dictionary definition, agreed that "the term 'baffles' refers to objects that check, impede, or obstruct the flow of something." Id. The dispute concerned whether "baffles," as used in the claims, must be disposed at angles other than 90 degrees. Although the specification contained no disclosure of baffles disposed at right angles, but rather only at acute or obtuse angles, Stryker notes, the court concluded that the definition of baffles did not exclude baffles disposed at right angles. Id. at 1327. Similarily, Stryker asserts, the Court should not limit the disputed phrase "configured to engage" as requiring a camming engagement simply because that is the only embodiment disclosed in the specification.

The Phillips court reached its conclusion that baffles as used in the claim did not exclude those disposed at 90 degree angles not because it advanced a dictionary interpretation of the disputed term above that revealed in the patent's intrinsic evidence. Rather, it reached its conclusion upon reading the disputed language in the context of the entire patent. That is, applying the doctrine of claim differentiation, the court noted that since the dependent claims provided specific functions, such as baffles "disposed at angles for deflecting projectiles," to avoid rendering the independent claim redundant, it construed the independent claim as not requiring baffles disposed at acute or obtuse angles. Id. at 1324-25. In this case, however, the doctrine of claim differentiation is not applicable, as no other claims reference how "a first portion [is to be] configured to engage an interior surface of [a] head portion." Rather, in this case, the disputed claim language is ambiguous, and it is not made clear by reference to the remaining claims. Recognizing that "the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim," id. at 1316, this Court consulted the remainder of the specification. Id. at 1316. Upon review of the specification, the Court concludes that it demonstrates that a "locking cap including a first portion configured to engage an interior surface of [a] head portion" requires a camming engagement between the first portion of the locking cap and the interior surface of the head portion.
III. "configured to nest"

Claim 1 of the '783 Patent provides:

said center link tang portions configured to nest between the sprocket teeth . . . .

The parties agree a "tang portion" consists of a portion of a saw-chain link that in some manner engages with a nose-sprocket gullet as the saw chain rotates.

Defendants contend "tang portions configured to nest between the sprocket teeth" should be construed to mean "[t]he tangs are symmetric with respect to an axis bisecting a line between the rivets on the center links and are shaped and sized to contact the entire radiused portion of the gullets." As noted, however, the Court already has determined Claim 1 does not necessarily require a radiused shape for the gullet.

Moreover, Defendants' proposed construction would largely render redundant the next disputed term, "bottom tang portion mated for engagement with the rounded bottoms in said gullets." Here the disputed term refers to tang portions configured to nest between sprocket teeth. In addition to seeking a construction of the relationship between the tang portions and the sprocket teeth, Defendants' construe the term to mean that the tang portions "are shaped and sized to contact the entire radiused portion of the gullets." The manner in which the tang portion engages the gullet bottom is more directly addressed by the fourth disputed term, however, which provides "bottom tang portion mated for engagement with the rounded bottoms in said gullets."

The Federal Circuit has cautioned against construing a claim in a manner that renders another limitation meaningless or superfluous. For example, in Primos, Inc. v. Hunter's Specialties, Inc., the court held the terms "engaging" and "sealing," both recited in a claim, could not mean the same thing without impermissibly rendering one of the terms superfluous. 451 F.3d 841, 848 (Fed. Cir. 2006). If the Court were to construe the disputed term ("tang portions configured to nest between the sprocket teeth") in a manner that included a construction of how a tang bottom interacts with the rounded bottom of a gullet, the Court could render the fourth disputed term meaningless. Thus, the Court concludes the proper construction here should be limited to defining how the tang portion must relate to the sprocket teeth.

Plaintiffs contend the term "tang portions configured to nest between the sprocket teeth" should be construed to mean "[t]he tangs are sized to be closely received such that they fit between the sprocket teeth." Again, this definition is more faithful to the specification than Defendants' proposed definition. The specification describes prior technology as follows:

The drive tang engages the nose sprocket in wedge-like fashion, i.e. the tang contacts the sprocket at two points along the upper portion of the gullet, i.e., at the sides of the adjacent sprocket teeth.

'783 Patent col.1 ll.47-51. This "wedge-like" contact can cause fatigue at the bottom of a gullet formation and result in cracking. '783 Patent col.5 ll.3-6. The '783 Patent, however, is designed so that the nose sprocket

receives the drive tang portion of the saw chain substantially along the entire semi-circular gullet formation 70 resulting in substantially compressive forces applied to the sprocket 47. Similarly, tangential forces, such as force vectors 62 illustrated in FIG. 1, result in tensile forces upon the conventional sprocket 80. In contrast, the close nesting of the drive tang portions 42 within the gullet formation 70 of the nose sprocket assembly 16 substantially reduces the effect of tangential force vectors by delivering such tangential force primarily as compressive forces.

'783 Patent col.5 ll.8-19. Thus, rather than the drive tang contacting the gullet in a wedge-like manner, the nose sprocket closely receives the drive tang "substantially along the entire semi-circular gullet formation" to produce compressive force on the sprocket. Accordingly, "nesting" is intended to distinguish a mere two-point, wedging contact in which the sprocket teeth are driven apart in favor of a close receiving of the drive tang and resulting compressive forces toward the bottom of the gullet.
For these reasons, the term "tang portions configured to nest between the sprocket teeth" is construed to mean "[t]he tangs are sized to be closely received such that they fit between the sprocket teeth."

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"The inner and outer spatial volumes are configured to provide a minimum prescribed absorbed dose"

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<thead>
<tr>
<th>Cytyc's proposed construction</th>
<th>Xoft's proposed construction</th>
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<tbody>
<tr>
<td>The inner and outer spatial volumes are configured to provide a minimum prescribed absorbed dose for delivering</td>
<td>(indefinite)</td>
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"The inner and outer spatial volumes are configured to provide a minimum prescribed absorbed dose"

<table>
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<tr>
<th>Cytyc's proposed construction</th>
<th>Xoft's proposed construction</th>
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<tbody>
<tr>
<td>Configuring the inner and outer spatial volumes to provide a minimum prescribed absorbed dose for delivering therapeutic effects to a target tissue.</td>
<td>(indefinite)</td>
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The phrases "the inner and outer spatial volumes are configured to provide a minimum prescribed absorbed dose" and "configuring the inner and outer spatial volumes to provide a minimum prescribed absorbed dose" are not indefinite for essentially the same reasons given in the previous section. As Cytyc again appears to be attempting to impermissibly broaden its claims to capture any therapeutic effect, despite the clear limitation provided by the patentee's definition of "brachytherapy," the court also cannot adopt Cytyc's proposed construction. No construction of the disputed language is necessary in light of the court's construction of other terms in the patent.

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<th>Claim Language</th>
<th>Court's Construction</th>
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<tr>
<td>&quot;the inner and outer spatial volumes are configured to provide a minimum prescribed absorbed dose&quot;</td>
<td>(no construction necessary)</td>
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Similarly, considering claim 7 in its entirety and the intrinsic evidence of record, we conclude that claim 7 requires a susceptor that resides proximally adjacent to the surface of a food item throughout the entire cooking process and conforms to almost the entire surface of the food item.

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Claim 7 requires "$[a susceptor] conforming generally to the shape of said food item and residing in a proximal relation thereto." The "conforming generally to the shape of said food item" phrase must be construed as generally enveloping the food item to take the shape of the food item's exterior, conforming to almost the entire surface of the food item. The specification leads to that construction. Where the surface topology of a food item makes it difficult to dispose a susceptor adjacent to the entire surface of the food item, such as in the case of onion rings and certain forms of potatoes, the susceptor may generally envelop the surface of the food item.

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3. THE CLAIM LANGUAGE AND UNDISPUTED PHYSICAL CHARACTERISTICS OF THE HUNT-WESSION BAG.
The "Orville Redenbacher" bag comprises two rectangular sides dimensioned 11 1/2" X 6". The sides are folded into three sections: two ends measuring 3 1/2" X 6" and the middle, measuring 4 1/2" X 6". The 6 1/2" X 5 3/4" susceptor is laminated between the bag's inner and outer layers of paper. It resides in one side of the middle section. Prior to cooking, the slurry of popcorn kernels, oil and seasonings form a cake which rests atop the susceptor. Although photographs submitted by General Mills suggest otherwise, the court accepts its contention that approximately 0.9 inches of the susceptor rests atop the cake by virtue of extending slightly into the upward-angled end panels.

Because the patentee must demonstrate infringement with respect to each limitation of the claims, each limitation is a material one. Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1389 (Fed. Cir. 1992). Claim 1 requires a "flexible" *wrapping material* which "conforms generally" to the shape of the food item. General Mills asserts that whether the Hunt-Wesson bag meets this description is a question of fact not susceptible of summary resolution. This argument is inconsistent with the ordinary meaning of these terms.

"Wrapper" is a synonym for "wrapping". Unsurprisingly, it means "that in which something is wrapped". Several examples are given, including: a tobacco leaf used for covering cigars; the paper cover of a book; a paper wrapped around a newspaper or magazine, or an article of clothing worn wrapped around the body. Webster's New Collegiate Dictionary (1977 ed.). These examples share an obvious similarity in that what is used for a wrapper "hugs", or envelops the material completely. Moreover, each is essentially formless without the support of the thing wrapped. This common sense reading of the term "wrapper" is, in this context, bolstered by the claim's requirement that the material "conform[] generally" to the food item. Each of the examples given above "conforms generally" to whatever is wrapped. Although a wrapper may not be in actual contact with every point of the item, its own shape is defined by the item, whose "shape, qualities or contour" it assumes. Id.

At a minimum, these limitations require that the shape of the putative "wrapping material" be dictated by the shape of the item. The physical description of the Hunt-Wesson bag is not in dispute. The photographic evidence submitted by General Mills conclusively establishes that the bag is not formless without the cake contained within. The shape of the bag is not dictated by the popcorn. Indeed, it is the mass of popcorn which is essentially formless; its shape is determined by the semi-rigid bag. Under General Mills' theory of permissible constructions of "wrapping material", almost anything which contained the food item would qualify, even a cardboard box with a susceptor on the bottom.

This view is further confirmed by the specification, and prosecution history of the '420 patent. In distinguishing the Tanizaki dish, Brastad noted that the prior art did not include a flexible susceptor which permitted the food to be "wrapped for direct heat transfer". Exh. 6 to the Decl. of James, at 34. It is clear that the flexibility of the susceptor must contribute to the ability of the device to directly impart heat from the converted microwaves. Therefore, the susceptor, consistent with the claim language, must be in a "close proximal relation" with the surface of the food item. Because a principal aim of the '420 is to provide browning precisely where previous attempts could not, the court interprets the claim as requiring that the entire food surface be subject to direct heat transfer.

3 The word "proximal" means "close". Regardless of whether the term "close proximal" means "really close" or is merely redundant, it clearly encompasses something stronger than "in the neighborhood".

Putting to one side the interesting technical question whether it is actually possible completely to wrap the surfaces of popcorn kernels grouped such as this, it is undisputed that the Hunt-Wesson bag only contains a susceptor on one side of the slurry. Even assuming General Mills' contention regarding the slight overlap of the susceptor, much of the top surface of the slurry is not subject to direct heat transfer from the susceptor. This is not to say that the topmost kernels are not hotter than they would be absent a susceptor. Rather, they are not hotter because of the direct transfer of heat from the susceptor. Any increase in temperature of the top surface at most represents indirect transfer as heat is transmitted upwards from kernel to kernel.

Finally, as detailed above, popcorn is not browned and crispened in the sense contemplated by the claim language. Given
the court's construction of the claim language, and the uncontested physical characteristics of the Hunt-Wesson bag, there are no material issues of fact precluding summary judgment of literal non-infringement.

2. "A Movable Member" Limitation

218. Based on the specification and prosecution history of the '275 patent, the phrase "a movable member to which a stylus is connectable" as used in claims 1 and 4 of the '275 patent, and as the phrase would be understood by those skilled in the pertinent art, must be construed to mean a rigid connection between the stylus and a movable member. Even Dr. Duffie agreed that the connection must be rigid. Tr 644-45.

219. According to claim 1, the movable member is in turn supportable at a plurality of spaced-apart locations or, with respect to claim 4, at three spaced apart locations. It is the engagement of the "convergent surfaces" at the spaced-apart locations which positively define the rest position for the movable member and therefore also for the rigidly connected stylus. Tr 637, 643-45, 1305-08. See PP 38, 41, 43, 48, 53-61 supra.

C. Term 6: "connected in series"

The Court construes the term "connected in series," which appears in claims 1, 9, 15, and 24 of the '325 patent and claims 1 and 9 of the '664 patent, to mean:

Connected in a sequential arrangement.

This is the construction proposed by Toro, Toro Opening Br. at 23, and it is consistent with the patent claims and written descriptions.

Textron argues that this term "means that the pressurized fluid is directed without branching from the wheel drive motors for the front wheels to the wheel drive motor for the rear wheel." Textron Opening Br. at 18 (emphasis added). The Court rejects Textron's proposed construction because it improperly adds the phrase "without branching" to the claim language.

The Court disagrees with Textron that the prosecution history mandates that the term "connected in series" be construed to incorporate the further qualification "without branching." Textron relies on Toro's statement, made in distinguishing the claimed invention over a prior-art reference that was the basis for the PTO's initial rejection of Toro's patent application, that the prior-art reference does not have "the claimed serial/parallel connection in which all of the flow from the source is directed without branching through at least one serially connected drive motor . . . ." JA 0086. This reference to "branching" -- made in the context of distinguishing a prior-art reference featuring an all-parallel-drive system -- does not require the narrow claim construction advocated by Textron.

It is apparent from the '325 and '664 patents and their prosecution history that the "connected in series" limitation describes the relationship between the motors on two different ends of a vehicle and the fluid source that supplies the motors. As long as the motors and the fluid source are connected serially -- i.e., "in a sequential arrangement" -- with respect to each other, it is immaterial whether objects other than motors might be found on "branches" of the drive circuit.

A rear motor, for instance, is "connected in series" relative to the front motors and to the fluid source if the fluid flows in sequence (though not necessarily without detours) from the source, to the rear motor, and then to the front motors. Even if the fluid flow passes through a "branch" between the source and the rear motor (say, to pass through a valve or gauge of some kind), or between the rear motor and the front motors, the motors remain "connected in series" within the meaning of the claim language as long as the fluid does not flow in parallel to the rear and front motors.
C. Claim 12

NMT challenges the district court's construction of Claim 12, arguing that the requirement that the collar be connected "directly" to the occluder improperly narrowed the claim. We agree with NMT that the district court erred by requiring this restriction.

As an initial matter, the '235 patent's specification demonstrates that the patentees actually used the word "directly" when they meant to describe a direct connection. For example, the specification describes Fig. 5e, below, as follows:

"In FIG. 5e, loops 82, 84 connected to individual occluder elements 12, 14 or 42, 44 are connected by means of an interconnecting link 86 to form, generally, a three link chain for interconnecting the individual occluder elements." '235 patent col.7 ll.33-37 (emphasis added). Contrast the specification's description of Fig. 5i: "Unlike the interconnection of FIG. 5h, the interconnection of FIG. 5i has replaced the pin with a second connecting rod 132 that connects directly to an occluder element." Id. col.8 ll.15-18 (emphasis added). The description of Fig. 5k uses basically identical language to describe a similar embodiment.

The specification therefore demonstrates that the patentees used the word "directly" when they meant to specifically point out that a connection was direct. Reading these claims in the context of the specification's usage of language, see Phillips v. AWH Corp., 415 F.3d 1303, 1315-17 (Fed. Cir. 2005) (en banc), there is no reason on the face of the patent to limit Claim 12 to embodiments that connect "directly."

Cardia argues that the claims should nevertheless be limited because the patentees disclaimed indirectly-connected embodiments during prosecution. See Phillips, 415 F.3d at 1317 ("[T]he prosecution history can often inform the meaning of the claim language by demonstrating . . . whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.") However, we have "declined to apply the doctrine of prosecution disclaimer where the alleged disavowal of claim scope is ambiguous." Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1324 (Fed. Cir. 2003).

Here, Cardia points out that what ultimately became Claim 12 of the '235 patent began prosecution reading simply "The device of claim 1 wherein the connector comprises a ball and collar assembly." The Examiner objected to this claim on indefiniteness grounds, because "it [was] unclear how the ball is interrelated with the collar, and how this assembly as a whole is connected to the occluders." After two amendments, the patentees were able to surmount the indefiniteness rejection by adding more detail about how the ball, collar, and occluders were interrelated. The Examiner did not object on definiteness grounds to a claim reading:

"The device of claim 1, wherein the connector means comprises a ball and collar [sic] assembly, said assembly comprises a collar connected to one of the first and second occluders with an aperture and a pin with a ball fitting connected to the other of the first and second occluders on at least one end thereof wherein a diameter of said ball fitting is larger that [sic] a diameter of the aperture in the collar." (emphasis added). Ultimately, this claim was rewritten into independent form and further amended to issue as Claim 12.

The issue here is whether these amendments amount to an unambiguous surrender of indirect connection. They do not. While the patentees added considerably more detail about the relationship between the ball, collar, and occluders, the amendments here do not refer at all to whether those relationships are direct in nature or if the connections are made through intermediate parts. As noted above, the term "connected" as used in the specification--the same specification which was before the Examiner at the time of these amendments--does not necessarily imply direct connection. When the patentees added limitations to their claim more specifically describing the organization of their invention's connected parts, they did
not somehow implicitly add other limitations about the specific nature of those connections.

Accordingly, the prosecution history provides no unambiguous basis to vary from the meaning of the claims as read in light of the specification. The correct construction of Claim 12 does not require "direct" connection between the enumerated parts: Since the district court relied on an incorrect claim construction, its summary judgment of noninfringement as to Claim 12 must be vacated.

2. "Connected to"

This phrase appears in asserted claims 1, 6, 11 and 16. APE argues that the proper meaning of the phrase should be:

. . . joined together, united, or linked. In this instance, the eccentric weight portion is joined with the cylindrical gear portion at a point radially outward of the axis of the cylindrical gear portion. 'Connected to' can mean that the two portions are separate pieces joined together so long as that connection is at a position radially outward of the axis.

See Joint Disputed Claim Terms Chart (Doc. No. 37), at 7. ECA proposes a definition of:

joined together, united or linked, but specifically excluding bolting as the '964 [P]atent teaches that prior art having bolted counterweights are not sufficiently durable. While the '964 [P]atent does not disclose any other ways to effect the condition of being 'connected to,' one of ordinary skill in the art likely would have known of other methods to effect the condition of being 'connected to,' such as welding or brazing.

See ECA's Proposed Claim Construction, Doc. No. 41 at 2. 5 The Northern District of California has construed "connected to" to mean simply "joined together, united or linked." Bay, 632 F. Supp. 2d 956, 2009 WL 1684611, at *17.

5 As the name of the document implies, ECA submitted proposed claim construction language along with APE in the Joint Disputed Claim Terms Chart. See Doc. No. 37. However, during oral argument before this Court on June 23, 2009, ECA argued proposed construction that did not appear in the joint document. ECA filed updated proposed claim construction language (i.e., the document entitled "ECA's Proposed Claim Construction") on July 21, 2009. As such, this Report and Recommendation does not consider ECA's proposed claim construction language from the joint document.

As required under the rules of claim construction, this Court first looks to the language of the claims themselves in order to discern the meaning of the phrase to a person having skill in the art. The phrase "connected to" appears first in claim 1, which recites, inter alia: "[a] vibratory assembly for imparting a vibratory force to a pile, comprising . . . at least one driving means operatively connected to said counterweight and adapted to rotate said counterweight about its rotational axis." '964 Patent, col. 9, 11. 33-53. The term is used in substantially the same manner in claims 6 and 11: as a description of the manner in which a driving mechanism is joined to the counterweight.

Claim 16 deviates from the above trend, reciting " . . . [a] cylindrical gear portion having a plurality of gear teeth around its circumference, said cylindrical gear portion being made of a first metal; an eccentric weight portion connected to said cylindrical gear portion at a position radially outward of the axis of said cylindrical gear portion . . . " '964 Patent, col. 11, 11. 10-15. This usage of the phrase "connected to" is the first and only time the phrase appears to describe the joining of the eccentric weight portion of the counterweight with the cylindrical gear portion of the counterweight. Furthermore, unlike the prior uses of phrase, it is unmodified by the term "operatively." However, despite these differences, and without arguments to the contrary by the parties, this Court presumes that the phrase "connected to" has the same meaning in claim 16 as it does in the other claims in which it is used. Given that there is no explicit definition of the phrase in the claims, the Court next turns to the specification for guidance.
The specification uses the term "connecting" to describe the joining of the counterweight to the shaft for rotation. Specifically:

[the eccentric weight portion 43 has two threaded bores 108 that communicate with and are transversely oriented relative to the center bore 106. The threaded bores 108 are adapted to receive conventional threaded lock fasteners to lock the shaft 82 within the center bore 106, thereby securely connecting the counterweight 40 to the shaft for rotation with the shaft.]

'964 Patent, col. 5, 11. 43-50. The specification also describes that "[a]t least one motor is operatively coupled to the counterweight," '964 Patent, col. 2, 11. 39-40. While this implies that "coupled" is synonymous with "connected to," the definition of the phrase, as it would be understood by someone having skill in the art, is still unclear.

At this point in the analysis, Judge Hamilton turned to the Oxford English Dictionary (2d ed. 1989) in order to construe the phrase, reasoning that "neither the claim language nor the specification expressly define or describe the phrase . . . [n]or does the specification indicate explicitly or implicitly that the patentee intended to import a novel or specialized meaning." Bay, 632 F. Supp. 2d 956, 2009 WL 1684611, at *11. While any use of extrinsic evidence is disfavored, it is still acceptable under case law so long as the extrinsic evidence is not contradicted by any intrinsic evidence. See Phillips, 415 F.3d at 1318-19. Judge Hamilton noted that the Oxford Dictionary gives "connected" the ordinary meaning of "conjoined; fastened or linked together," and the term "coupled," which is used in the specification in a manner that appears to be synonymous with "connected to," has the ordinary meaning of "tied, joined, linked, or associated together in pairs." 6 Bay, 632 F. Supp. 2d 956, 2009 WL 1684611, at *11.

6 The Northern District of California's opinion in Bay did provide pinpoint cites for the words "connected" or "coupled.". However, this Court notes that their definitions are exactly the same in another edition of the Oxford English Dictionary. See The Compact Edition of the Oxford English Dictionary, 520, 581 (1987).

Judge Hamilton determined that, in light of these definitions, the drawings of the invention in the patent, and the description of the invention in the specification, the phrase "connected to" indicated "joined together, united or linked." Bay, 632 F. Supp. 2d 956, 2009 WL 1684611, at *11-*12. As this definition is not contradicted by any intrinsic evidence, and both parties to the instant litigation have incorporated it as part of their proposed claim construction language, this Court accepts it as part of its construction of the term "connected to."

However, this Court's construction of this disputed phrase is not yet complete. ECA argues that any definition of "connected to" must exclude bolting as a method for "connecting" parts of the claimed device. ECA reads this limitation from the specification, pointing to the following wording in, column 1, lines 39-51, of the '964 Patent:

The prior art includes a vibratory assembly with counterweights having a solid eccentric weight bolted to a portion of a cylindrical gear. These bolted weights are not sufficiently durable, because the bolts have a very undesirable tendency to break under the large stress loads generated during rotation counterweights [sic]. Another prior art vibratory assembly avoids this breaking problem by using a cast, one-piece, solid counterweight having an eccentric weight portion that is integral with a cylindrical gear portion. These solid, cast counterweights, however, do not have sufficient mass to generate large enough vibratory forces to efficiently drive [sic] or pull piles.

See also Doc. No. 37 at 7. ECA argues that the identification of this problem with the prior art in the specification of the '964 Patent acts as a clear disavowal of the use of bolting as a method of connection for the claimed invention. See ECA's Resp. to APE's Opening Claim Construction Br. (Doc. No. 33), at 25-26.

APE responds that this statement, which comes early in the specification, merely acts as an identification of problems that existed in the prior art, and not as a disavowal of a specific method of connecting parts of the claimed invention. By APE's reasoning, the right to exclude under the '964 Patent extends to embodiments of the counterweight in which the gear and eccentric weight portions are connected to each other by bolting.
How to treat a limitation of the prior art that is stated in the specification of a patent is not a trivial issue. On one hand the rules of patent drafting encourage an inventor to state such problems in order to show the examiner, and the person having skill in the art, how the new invention is novel or useful. See M.P.E.P § 608.01(c) (Rev. 7, July 2008) (stating that "[w]here applicable, the problems involved in the prior art or other information disclosed which are solved by the applicant's invention should be indicated"). In contrast, a disclaimer of prior art that leads a person having skill in the applicable art to believe that the inventor had limited the scope of his or her patent protection could lead to such a limitation being read into the language of the claims. See Phillips, 415 F.3d at 1315-16.

Fortunately, the Court of Appeals for the Federal Circuit has provided some guidance on this issue. In Ventana Medical Systems, Inc. v. BioGenex Laboratories, Inc., Ventana owned patents relating to automated methods and apparatus for staining slides. See 473 F.3d 1173, 1176 (Fed. Cir. 2006). BioGenex argued that statements made in the "BACKGROUND ART" section of Ventana's patent that described the limitations of a number of prior art staining devices limited the scope of Ventana's patent protection from including the methods used by the named prior art. Id. at 1180 (emphasis in original). The court of appeals, noting that, under its standard in Phillips, 415 F.3d at 1316, language used in the specification could act as a disavowal of claim scope by the inventor in certain cases, rejected this argument. Ventana, 473 F.3d at 1180. That court decided instead that, in cases where general statements are used to identify limitations in the prior art, such statements, without more, "will not be interpreted to disclaim every feature of every prior art device discussed in the "BACKGROUND ART" section of the patent." Id. at 1181 (emphasis in the original). 7

Applying this precedent to the issue before this Court, it can be seen from the specification of the '964 Patent that several incarnations of prior art, and their shortcomings, are mentioned in the "BACKGROUND OF THE INVENTION" section. See '964 Patent, col. 1, 11. 39-68, col. 2, 11. 1-17. This prior art includes inventions that are connected by bolting as well as by casting, which is the method of "connecting" used in the preferred embodiment of the '964 Patent. The statements in this section are also general in nature. As such, this Court will not apply ECA's proposed limitation excluding bolting as a method of connecting parts of the '964 Patent.

Thus, for the reasons stated above, it is respectfully recommended that the phrase "connected to" be construed to mean: "joined together, united or linked."

--- Footnotes ---

7 Additionally, the Federal Circuit noted that the method used in Ventana's preferred embodiment had also been identified in its "BACKGROUND ART" section as having problems in its prior-art form. Ventana, 473 F.3d at 1180 (emphasis in original). This provided further indication to that court that BioGenex's argument was without merit. See id.

--- End Footnotes ---

A. Claim Construction

Hearth's motion seeks an interpretation of the following limitations in Claim 1:

1) "...and one of said remaining walls having a horizontal exhaust pipe connected thereto for insertion through said outside wall of the space to be heated."

2) "the wall having said horizontal exhaust pipe connected thereto comprising an inner plenum, a middle plenum and an outer plenum."

3) "Said horizontal exhaust pipe being connected to said inner plenum of said wall having said horizontal exhaust pipe connected thereto..."

The primary disagreement between the parties involves the proper meaning of the phrase "horizontal exhaust pipe." Although both parties concur that the pipe must be horizontal at the point at which it traverses the exterior wall, only FMI
asserts that it must also be horizontal at the point at which it is connected to the fireplace.

As stated previously, the Court may look to the claim language, specification, and prosecution history in an effort to divine the proper meaning of a claim. Several observations about the claim language itself suggest that FMI is correct in its interpretation of Claim 1. The phrase "horizontal exhaust pipe" must be given its ordinary meaning. Nothing in the claims, specification, or prosecution history suggests otherwise. In short, "horizontal" means "horizontal;" it does not mean "horizontal and vertical," "angled," or even "substantially horizontal."

In addition, Hearth contends that "connected to" does not mean "directly connected to." Hearth makes this assertion in an effort to circumvent the Court's construction of "horizontal." In other words, if a horizontal pipe may be "connected" to the fireplace through a secondary piece of vertical pipe, then the Court's construction of "horizontal" is irrelevant from Hearth's perspective. Hearth's construction of "connected to" is untenable. A wall with a pipe "connected thereto" implies that there is no intermediate link between the wall and the pipe. This construction of "connected to" applies equally to the phrase "said horizontal exhaust pipe being connected to said inner plenum of said wall…".

The contentious language of Claim 1 is therefore construed as follows: 5 "horizontal exhaust pipe" means the exhaust pipe which is horizontal both at the point at which it exits the building and the point at which it is connected to the fireplace; "connected to" means directly connected to without the presence of an intermediate link. This construction of Claim 1 largely comports with the specification. The descriptions and diagrams emphasize a horizontal exhaust pipe connected to an inner plenum.

5 FMI also urges the Court to interpret the limitation in Claim 1 as a requirement that the wall connected to the horizontal exhaust pipe be vertical or substantially vertical. In support of its contention, FMI relies on a theory involving the antecedent basis for "said remaining walls." FMI contends that "one of said remaining walls" can only refer back to the "said … vertical walls" phrase which immediately preceded it. Although the Court finds FMI's antecedent basis theory marginally persuasive, the patent examiner did not consider the imperfect antecedent basis to be problematic. Consequently, this Court will not adopt FMI's restrictive construction of "said remaining walls." 6 All descriptions and diagrams with the exception of Figure 5 depict a horizontal exhaust pipe connected to the inner plenum of a vertical wall. Although Hearth urges the Court to determine whether Figure 5 is within the purview of the '322 patent, FMI correctly points out that such a ruling would constitute an advisory opinion. See A.B. Dick Co. v. Burroughs Corp., 713 F.2d 700, 704 (Fed. Cir. 1983); DF & R Corp. v. American Int'l Pac. Indus. Corp., 830 F. Supp. 500, 509 (D. Minn. 1993). There is no justiciable issue involving Figure 5 directly before the Court at this time. The critical issue is whether Claim 1 or 14 reads on the DVF series based on the language of the claims as construed by the Court.

Our initial understanding of the meaning of Claim 6 was reinforced by the last four lines:

"the improvement comprising a lockout mechanism connected to said longitudinal slots for preventing said pusher bars from passing more than one time through said longitudinal slots."

Patent No. Re. 34,519 (Fox Reissue Patent) Column 5, Lines 55-58 (emphasis added). Claim 6 recites a lockout mechanism "connected to said longitudinal slots." In our earlier order, we interpreted this to mean directly connected to the slots. As we have noted the lockout device in the U.S. Surgical cutter never touches either the longitudinal slots or the pusher bars, but rather attaches to the cam bar retainer. Ethicon argues for a different interpretation of "connected." Ethicon asserts that the U.S. Surgical lockout is connected to its longitudinal slots, since one of the walls of its longitudinal slots is defined by a metal sheet which if followed beyond the longitudinal slots will eventually connect with the hooking clip. However, by this logic every piece of a linear stapler is eventually connected to every other piece. In order to give substantive meaning to the
assertion in the Fox Patent that the lockout is connected to the longitudinal slots, we must understand this to mean directly or operably connected. Since the longitudinal slots are part of the Fox Patent's cartridge, this reading of the term connected would require that the claimed lockout be part of the cartridge. Therefore, we interpreted these last four lines of Claim 6 to reinforce our reading of that entire claim. Claim 6 of the Fox Patent describes a lockout in a staple cartridge, directly and operably connected to the longitudinal slots. The allegedly infringing device of U.S. Surgical is a lockout which is outside the cartridge and which is not connected to the longitudinal slots.

At our August hearing, Ethicon presented a host of examples of the use of the expressions "connects," "connection," and "connecting." See for example U.S. Surgical's Patent No. 4,488,523 ("Schichman") and Patent No. 5,071,052 ("Rodak"). Ethicon apparently chose these examples to demonstrate that two elements of a mechanical device which were relatively far apart could be considered connected to each other. We find these arguments unconvincing. In each of the cases cited by Ethicon, the connection was described because that connection had some functional relevance to the operation of the device. For example, in the Schichman Patent we see this language:


It is true that the flexible shaft in Schichman is long and connects elements relatively distant from each other, but the functional import of the connection is obvious and the actual connection is direct. In order to give this same meaning to "connected to" in the Fox Reissue Patent, we must understand "connected to" to mean that the lockout is directly and functionally connected to the longitudinal slots. Such a reading would exclude the relationship between the slots and the lockout practiced by U.S. Surgical.

The term "connected to" was not casually chosen by Fox. That language was supplied in response to an objection by the PTO that the applicant must be more specific in terms of the location of the lockout, and how it functioned. Therefore, we can be assured that a technical and not a generic meaning should be attached to that language.

The phrasing ("connected to a source of water") used to describe the relationship between the first inlet port (24) and the source of water is also used to describe the relationship between the second inlet port (26) and the atomizing nozzle (40) ("a one-piece atomizing nozzle . . . connected to said second inlet port"). The connection between the second inlet port and the atomizing nozzle, as shown in figure 4, is direct, with the surfaces of the second inlet port and the atomizing nozzle in physical contact with each other.

Because the patent uses the same term ("connected to") to describe the relationship between the first inlet port and the source of water, the defendants argue that there must also be a direct connection between such source and the first inlet port, as there is between the second inlet port and the atomizing nozzle.

I disagree: there is nothing in the phrase "connected to" that, in ordinary usage, requires the two connected items to be joined physically or adjacent to each other. Two items often are located some distance from one another, and yet are connected by means of a line, pipe, or other medium. Indeed, when talking about a liquid, such as water, there would be relatively few instances where the point of its use for mechanical purposes is in direct contact with its source, without intermediate transmission by pipe or similar means. Faucets are far more commonplace than waterwheels.

To read the patent in the manner argued by the defendants would lead to the nonsensical requirement that the method and apparatus could be used primarily, if not only, in sub-marine applications, where water flowed directly into the first inlet port.

Replacement of the term "in communication with" with the term "connected to" clarifies the application's terms, rather than limiting its scope.
The fact, moreover, that the applicant continued to use the term "in communication with" in the specification does not compel adoption of the defendants' reading of the term "connected to.". In each instance, the terms are used with their ordinary meanings, no confusion or ambiguity arises, and the meanings are clear to all, including those skilled in the art.

Support for my interpretation of the term "connected to" is found in Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 93 F.3d 1572, 1575 (Fed.Cir. 1996). That case involved a surgical stapler, in which a "lockout mechanism [is] connected to ... longitudinal slots for preventing . . . pusher bars from passing more than one time through said longitudinal slots," so that only one staple would be ejected at a time. The allegedly infringing device employed a "cam bar retainer," which was not located at the point of ejection, to prevent multiple ejection of staples.

The patent holder argued that "connected to," as used in the patent, could "be read broadly to include two distant elements which are 'connected' by intervening elements." Id. at 1578. The Federal Circuit rejected this contention, stating:

the entire phrase "connected to said longitudinal slots" must be read narrowly. First, in what meaningful sense is it possible to "connect" the restraining member, which is a physical item, with the longitudinal slots, which are hollow passageways, unless "connected to" is understood to mean that the restraining member operatively interacts with the longitudinal slots by blocking them? Second, [the patentee's] argument proves too much. If, as [the plaintiff] argues, "connected to" should be read broadly to include elements which are connected directly or indirectly, then this language would read on a lockout mechanism located anywhere in the surgical stapler, and the "connected to" limitation would be meaninglessly empty.

Id.

Although "connected to" in Ethicon was interpreted to mean proximate, or in direct contact with, the court made clear that the phrase "connected to" did not always convey such a limited meaning: "We acknowledge that the term "connected to" could, in other contexts, be broadly construed." Id.

This is such a case. Whereas in Ethicon, the patented device could only function if the referenced components were in contact, in this case the method and apparatus will work only if "connected to a source of water" allows the water to be piped into the inlet port from some distance from the port. Cf. Hay & Forage Industries v. New Holland North America, Inc., 25 F. Supp. 2d 1170, 1177 (D. Kan. 1998) (phrase "connected to" did not denote an inflexible connection; the definition of connected as [joined or fastened together]; . . . cannot preclude all relative movement.); United States v. LaBerge, 267 F. Supp. 686, 690-91 (D. Md. 1967) (shed located about 190 feet from a house was "connected to" the house, as that term was used in a statute prohibiting distillation of spirits in any dwelling house or in any shed, yard, or inclosure connected with such dwelling house).

I conclude, accordingly, that the term "connected to," as used in Claims 1 and 7, does not require the source of the water to be proximate, or in direct contact with, the first inlet port. Instead, the water source can be located elsewhere, with the source and the inlet port being connected by an intermediate means of transmission.

Michaels argues that the phrase "connected to and aligned with the length of the gun barrel cleaning device" should be allowed its ordinary meaning and simply refers to a brush attached to the cleaning device, with its length in line with the rest of the cleaning device. There is no requirement that the brush be enclosed within a sheath. Col 5, lines 17-52; Col 9, lines 18-21; Col 9, line 66 to Col 10, line 5; Fig. 4, elements 14, 32, and 36; see also Fig 1 (elements 26 and 28 are connected to and aligned with sheath 12); Fig. 4 (elements 26 and 28 are connected to and aligned with the cable 30 via connectors 32, 34); Figs. 10 and 10A (elements 26, 28, and 48 are connected to and aligned with sheath 12).

In contrast, Clean Gun construes this phrase to mean that the brush must be encased within a length of the tubular sheath, instead of being connected to the device by hard metal parts exposed outside the sheath or by other twisted or crimped connections. Abstract; Figs. 5-10A; Col 2, line 62 to Col 3, line 1-25; Col 4, lines 30-33; Col 4, line 63 to Col 4, line 7; Col
For the reasons discussed above, this court finds no reason to adopt Clean Gun's proposed construction. Accordingly, the phrase "connected to and aligned with the length of the gun barrel cleaning device" must be afforded its ordinary meaning, that is, the cleaning section is coupled to the pull cord and extends longitudinally in alignment with the rest of the gun barrel cleaning device.

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a. "Connected to" Claims

We begin with asserted claims 4, 13, 16, 18, and 22, each of which require "supporting members connected to and projecting from the hanger bar that slidably guide the retainer bar." In arguing over the construction of these claims, the parties focus on the meaning of the phrase "connected to." According to defendants, "because the [Plaintiff's Patent] specification does not specifically mention the words connected to, case law supports assigning to the words connected to their ordinary meaning to those persons skilled in the art at the time of the [Plaintiff's Patent]." (Memorandum in Support of Defendants' Motion, at 9). Unfortunately, the defendants provide no support for their factual assertion nor, having apparently attended the Fermat School of Law, do they bother to cite any of the case law to which they refer. (Id.). The gist of defendants' argument, however, is that because the pins of its device are fixed to the retainer bar and are not fixed to the hanger bar, they are not connected to the hanger bar, as required by the asserted claims.

Plaintiff submits that "connected to" means "in physical contact with . . . and cannot be separated without physical modification" or "linked together." (Plaintiff's Opposition to Defendants' Motion, at 12). It explains that the pins in defendants' device are, then "connected to" the hanger bars because they are "in physical contact" or "linked." (Id.). Plaintiff also contends that because the term "fixed" is used throughout the Plaintiff's Patent specification, the term "connected to" must be interpreted more broadly.

The court in Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 (Fed. Cir. 1996) detailed the applicable rules of claim construction as follows:

- the court should look first to intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history.

  First, we look to the words of the claims themselves, both asserted and nonasserted, to defined the scope of the patented invention. Although words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history.

  Thus, second, it is always necessary to review the specification to determine whether the inventor has used any terms inconsistent with their ordinary meaning. The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication. . . . the specification contains a written description of the invention which must be clear and compete enough to enable those of ordinary skill in the art to make and use it. Thus, the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.

  Third, the court may also consider the prosecution history of the patent, if in evidence.

  In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is improper to rely on extrinsic evidence. . . . The claims, specification, and file history, rather than extrinsic evidence, constitute the public record of the patentee's claim, a record on which the public is entitled to rely.

Vitronics, 90 F.3d at 1582-83.

The words of the claim with which we begin here are:
A plurality of supporting members connected to and projecting from the hanger bar that slidably glide and support the retainer bar...

and:

a plurality of supporting bar members connected to and projecting from a hanger bar through the aperture in the retainer bar, said supporting members slidably gliding and supporting the retainer bar...

The ordinary and customary meaning of the disputed term, "connected to" is "joined or linked together." Webster's Third New International Dictionary, at 480 (1986). Obviously, as the parties' arguments demonstrate, this can range from "connected" as are two links of chain, to "connected" as are two blocks of wood by glue. It is, as plaintiff suggests, a very broad term. Our application of the rules of construction, however, leads us to the conclusion that plaintiff is not entitled to its entire scope.

The claims themselves suggest, if not mandate, that the pins or supporting members be affixed to the hanger bar, as opposed to the retainer bar -- they are claimed to be "connected to and projecting from the hanger bar." It would be something of a stretch to say that defendants' device has supporting members or pins connected to and projecting from the hanger bar; they are, more accurately, connected to and projecting from the retainer bar. Resolving doubt in plaintiff's favor, however, we are hesitant to find the claim language dispositive on this question, as the examiner did allow it to be broadly drawn.

The specification (emphasis added) is more instructive. The disclosure of the invention states that:

the retainer bar includes a plurality, typically a pair, of supporting members fixed to and extending from the hanger bar...

The best mode of carrying out the invention (emphasis added) is said to be as follows:

the retainer bar is provided with apertures to accommodate a pair of vertical supporting members that are fixed to the hanger bar. The supporting members each include a guide pin fixed to the hanger bar. The pin is rigidly fixed substantially perpendicular to the hanger bar by means of a . . . screw or bolt that passes through hanger bar apertures and threads into internal threads of the pin.

It is clear from this language that Plaintiff's Patent describes a device wherein the pins or supporting members are affixed -- like blocks of wood with glue rather than links of chain 2 -- to the hanger bar, as opposed to the retainer bar. This is a narrower sense of "connected to" than one might arguably take from the claim language, but this is the sense we must take in our construction of Plaintiff's Patent, reading the claims in view of the specification. Vitronics, 90 F.3d at 1582. "When there is an equal choice between a broader and a narrower meaning of a claim, and there is an enabling disclosure that indicates the [patentee] is at least entitled to a claim having a narrower meaning . . . the notice function of the claim is best served by adopting the narrower meaning." Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1581 (Fed. Cir. 1996). The claims and specification are dispositive in this case, meaning that consideration of the intrinsic evidence the parties have submitted would be inappropriate. Vitronics, 90 F.3d at 1584.

2 We leave mustache and toenail analogies to the parties.

The claims thus construed, we can say as a matter of law that defendants' device does not infringe on Plaintiff's Patent. The claims as construed are totally missing from the defendants' device. The device's supporting members or pins are affixed to the retainer bar, not the hanger bar as required by Plaintiff's Patent. To put it another way, in Plaintiff's Patent, the hanger bar and supporting members can be said to be a rigid assembly with respect to the moving retainer bar. In defendants' device, the retainer bar and supporting members can be said to be a rigid assembly and the moving part with respect to the hanger bar. Accordingly, we must find that the defendants are entitled to summary judgment on the question of literal infringement, and that the plaintiff's motion for summary judgment on this question must be denied.
1. "Connected to" Claims

Plaintiff's patent, in claims 4, 6, 7, 13, 16, 18, 22, 23, and 24, requires the presence of "supporting members connected to and projecting from the hanger bar that slidably guide the retainer bar." The parties' interpretations of that claim differ. Defendants move, and plaintiffs cross-move, for summary judgment on the issue of literal infringement.

Defendants maintain that, because the supporting members [pins] of its device are affixed to the retainer bar, rather than to the hanger bar, they are not "connected to" the hanger bar. Defendants assert that "connected to" means "fixed or secured to." (Mem. in Supp. of Defs.' Mot. for Summ. J. at 10.)

Plaintiff contends that the supporting members are indeed connected to the hanger bar, asserting that "connected to" means that the pins and the hanger bar are "in physical contact with [each other] . . . and cannot be separated without physical modification" or, that they are "connected to" one another because they are "linked together." (Pl.'s Opp'n to Defs.' Mot. at 12).

The parties' asserted meanings of "connected to" range from indirect to direct connections between objects. The Court's task is to construe the meaning of the disputed term. In Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 (Fed. Cir. 1996), the court laid out the applicable rules of claim construction:

the court should look first to intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history. . . .

First, we look to the words of claims themselves, both asserted and nonasserted, to define the scope of the patented invention. Although the words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history. . . .

Thus, second, it is always necessary to review the specification to determine whether the inventor has used any terms inconsistent with their ordinary meaning.

Id. at 1582 (citations omitted).

Plaintiff's claim requires not only that the supporting members be "connected to" the hanger bar, but also that they "project from" the hanger bar. The term "connected to," therefore, has been modified, and must be interpreted in conjunction with the limitation that the members also "project from" the hanger bar. Looking at the specification, the Court finds no special definition of "connected to," "projecting from," or "connected to and projecting from" that would mandate attributing unusual meanings to the terms. Therefore, the Court construes the terms according to their ordinary meanings. The ordinary meaning of "connected" is "joined or linked together." Webster's Ninth New Collegiate Dictionary 278. The ordinary meaning of "project," with regard to concrete objects rather than ideas, is "to throw or cast forward: thrust" or "to cause to protrude." Id. at 940. Synonyms for "projecting" include "jutting," "protruding," and "protuberant." Webster's New World Thesaurus 591.

While the term "connected" would permit an indirect relation between objects, the necessity that the supporting members also "project from" the hanger bar compels a more direct relation. We agree with Magistrate Judge Bobrick that the language mandates that the pins be affixed to the hanger bar. For example, a hat and the head on which it rests are "connected," but one would not ordinarily state merely because of that connection that one's head projected from the hat, rather than from one's neck. Rather, a protruding object, such as a pin, ordinarily projects from something to which it is affixed, not necessarily from something to which it is merely somehow connected. One might argue that a pin that has been stuck into a pin cushion projects from the cushion. In that example, however, there is only one object from which the pin could project. Where, as here, the pin is situated between two bars, it would be more accurate to differentiate the relation of the pin to the two bars by stating that it projects from the bar to which it is affixed. In the accused device, the supporting
members are affixed (by screws) to and project from the retainer bar, and the supporting members and the retainer bar move as one object -- a rigid assembly -- in relation to the hanger bar, which remains static. Plaintiff's patented claims, on the other hand, disclose a device in which the supporting members are affixed to the hanger bar, those two pieces constituting a rigid assembly that remains static in relation to the moving retainer bar. In a way, the accused device and plaintiff's claimed invention are mirror images.

This Court finds no ambiguity in the language of plaintiff's claim. Plaintiff has assigned no special meanings in his specification to the disputed terms. Therefore, this Court, as a matter of law, construes the patented claim that the supporting members are connected to and project from the hanger bar to mean that the supporting members must be affixed to the hanger bar. The supporting members of the accused device are affixed to the retainer bar. Thus, this Court finds no literal infringement of plaintiff's "connected to" claims.

Defendants' motion for summary judgment on the issue of literal infringement is granted. Plaintiff's cross-motion is denied.

**A. Construction of the '304 Patent Limitation**

As noted, in the '304 patent, claims 1, 9 and 15 each require a "plurality of annular shell rings" each ring being "non-jointed along its circumference" and "connected to form a generally cylindrical drum shell."

In construing the elements in plaintiff's independent claims, the words must be given "their ordinary and accustomed meaning, unless it appears from the specification or the file history that they were used differently." Carroll Touch, 15 F.3d at 1577. Reference to a dictionary to determine the ordinary and accustomed meaning of a word is appropriate. Miles Labs, Inc. v. Shandon, Inc., 997 F.2d 870, 876 (Fed. Cir. 1993), cert. denied, 510 U.S. 1100, 127 L. Ed. 2d 232, 114 S. Ct. 943 (1994). Webster's Dictionary defines plurality as "the state of being plural," or "the state of being numerous," or "a large number or quantity," or a "multitude." Webster's Third New International Dictionary 1745 (1986). Webster's defines "connected" as "joined" or "linked together." Id. at 480.

Nothing in the '304 patent's specification points to a definition of "plurality" different from Webster's. Indeed, the specification always refers in the plural to the rings which comprise the drum shell. For example, in defining the sounding ring, the specification states that "one or more of such rings function as sounding rings which have a greater outer radius than the other shell rings." (Lovelett Aff., Ex. A, col. 3, lines 21-23) (emphasis added). Therefore, each of plaintiff's independent claims -- 1, 9 and 15 -- requires a "multitude of" or "numerous" annular shell rings. The '304 patent does, however, define "connected." "Pins are positioned axially into adjacent rings to precisely position the rings relative to one another," and "pins . . . are embedded into adjacent rings to radially align and maintain the relative ring positions." (Lovelett Aff., Ex. A, col. 3, lines 17-19; col. 4, lines 19-22) Accordingly, "connected" in the '304 patent means linked together with the use of pins embedded in the rings. Finally, the term "drum shell," as used in the '304 patent, includes both the stacking and the sounding rings. (Id. col. 3, Line 62 - col. 4, Line 6)

**Claim 10**

Claim 10 requires "connecting a detachable tip to the handpiece . . . the tip comprising an irrigation tube . . . and a suction tube for aspirating irrigation fluid from the irrigation site . . . aspirating spent irrigation fluid from the irrigation site through the suction tube of the tip and directing the aspirated irrigation fluid along a path that is disposed exteriorly of the handpiece . . ." 452 Patent, Col. 8: 31-32, 33-34, 40-43 (emphasis added). As noted above, it is clear from the patent, that in order for the aspirated fluid to be disposed of externally of the handpiece, the tip must include a bypass path. Claim 10 states that the tip includes a suction tube that aspirates irrigation fluid along a path that is disposed "exteriorly of the handpiece." The Court reads this claim consistent with the entire patent and concludes that a person of ordinary skill in the art would understand that in order for the tip to dispose of the aspirated fluid "exteriorly of the handpiece" the tip must
contain a fluid bypass path. Consequently, the Court finds that the language in claim 10 must be read in a manner consistent with the language in claims 9 and 30 and that a person of ordinary skill in the art would conclude that the language of claim 10 requires that the tip include a bypass path.

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The first element in claim 17 that requires construction is the phrase "connecting a plurality of intraluminal grafts." To "connect" means to join or fasten together. Webster's II New College Dictionary (1995) at 239. A "plurality" means at least two. Webster's at 849. "Intraluminal" means within the inner open space of a tubular organ such as a blood vessel or other body passageway. Webster's at 581, 650. A "graft" is a structure that is "implanted . . . surgically . . . to compensate for a defect" in a body organ or tissue. Webster's at 483. Therefore, an "intraluminal graft" is a structure designed for use within the lumen of a body passageway to compensate for a defect in said passageway. (PX 1/API 1: '417 patent, col. 1, lns. 28-32; col. 6, lns. 23-54; col. 9, lns. 6-13) Neither the specification nor the claim language require that the intraluminal grafts be of any particular length; the court concludes, however, that each such "graft" must be functional, as would be expected in a method claim such as claim 17.

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Claim 17 - '417 patent

The first element in claim 17 that requires interpretation 4 is the phrase "connecting a plurality of intraluminal grafts." To "connect" means "to join, fasten, or link together usually by means of something intervening . . . ." Webster's at 480. A "plurality" refers to the state of being "plural," which relates to or consists of or contains more than one. Id. at 1745. "Intraluminal" means being within the lumen, or the cavity or passageway of a tubular organ such as a blood vessel. Id. at 1185, 1345. A "graft" is a structure that is "implanted . . . surgically . . . to compensate for a defect" in a body organ or tissue. Webster's II New College Dictionary 483 (1995). 5 Therefore, an "intraluminal graft" is a structure designed for use within a body passageway to compensate for a defect in said passageway. ('417 patent, col. 1, Ins. 28-35; col. 6, Ins. 23-54; col. 9, Ins. 6-13) The court continues to hold that each such "graft" must be functional; i.e., once it has "expanded and deformed," it must be capable of "serving to prevent a body passageway from collapsing . . . ." ('417 patent, col. 8, Ins. 60-63)

--- Footnotes ---

4 The court preliminarily construed disputed claim language for purposes of resolving motions for injunctive relief. To some extent, therefore, the following analysis may be repetitive of the court's July 17, 1998 memorandum opinion. (D.I. 284)

5 The court has relied more substantially in this opinion on Webster's Third New International Dictionary for definitions simply because it is the version purchased for and easily available to the court.

--- End Footnotes ---

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3. "connecting device" -- The parties are in disagreement about what kinds of "things" can be considered a "connecting device" as understood in Claim 2 and about whether the "connecting device" must be construed as a separate element from the rivet that mates with the pocket. As to the first issue, I agree with Amesbury that the term "connecting device" should not be limited to "retractable tabs", also referred to as "resilient tabs," as suggested by Caldwell in its written submissions. 17 Claim 2 describes a window balance comprising a "connecting device for attaching the balance shoe within the U-shaped channel of the window balance" without including any specifics about the "connecting device". This wording contrasts with the specific description set out in Claim 1 (which is not at issue here) that defines a "connecting device" as one "comprising one or more resilient
tabs for attaching the balance shoe within the U-shaped channel of the window balance, wherein the one or more resilient tabs extend at least partially through a corresponding number of the plurality of openings in the U-shaped channel.” In addition, there are three claims that are dependent on Claim 2 that limit the scope of the “connecting device” in those claims. Claim 3 refers to “the window balance system of claim 2 wherein the connecting device comprises a rivet”; Claim 4 refers to “the window balance system of claim 2 wherein the connecting device comprises a screw”; and Claim 5 refers to “the window balance system of claim 2 wherein the connecting device comprises a resilient tab”. Given this important overlap, I turn again to the doctrine of claim differentiation.

17 At the hearing, Caldwell proposed the following definition on page 33 of its handout:

A pair of retractable tabs or a screw used for attaching the balance shoe in the channel, separate from the pocket that mates with a rivet.

As discussed above, “the doctrine of claim differentiation create [s] a presumption that each claim in a patent has a different scope.” Free Motion Fitness, 423 F.3d at 1351 quoting Comark, 156 F.3d at 1187. "The difference in meaning and scope between claims is presumed to be significant to the extent that the absence of such difference in meaning and scope would make a claim superfluous.” Id. quoting Tandon Corp., 831 F.2d at 1023. Caldwell misunderstands the law in stating that “since the dependent claim specifically limits the connecting device' to a screw, the independent claim 2 presumptively does not encompass that structure.” See id. (holding that the "dependent claims limiting the claim to a single cable confirm that the independent claims may encompass more than one cable")

Here, Claims 3-5 incorporate Claim 2 and limit "connecting device" to three different types of fastening devices -- rivet (Claim 3), screw (Claim 4), and resilient tabs (Claim 5). Consequently, these specific references support Amesbury's construction that "connecting device" in Claim 2 ought to be given the broader meaning described in the specification. The specification explains that the "connecting device" can include one or more retractable tabs for engaging the right U-shaped channel" [368 Patent, col. 2, 11. 35-36] or "other connecting devices such as a screw." [368 Patent, col. 5, 11. 31-32.]

In addition, since Claim 1 specifically defines the connecting device as one comprising "one or more resilient tabs . . ., [which] extend at least partially through a corresponding number of the plurality of openings in the U-shaped channel" and Claim 2 does not specify any limits, the term in Claim 2 should be given the broad meaning suggested by the specification. Caldwell also incorrectly argues that "connecting device" should be limited to resilient tabs because dependent claims 3 and 4 are invalid for lack of enablement. As a basis for this argument, Caldwell cites to Pandrol USA, LP v. Airboss Ry. Products, Inc., 320 F.3d 1354 (Fed. Cir. 2003) and Toro Co. v. White Consol. Indus., 199 F.3d 1295 (Fed. Cir. 1999) without pin cites for the proposition that because "the patent drawings do not contain a picture of those claimed structures as required by 37 CFR § 1.83(a) 18, . . . those claims are not enabled." In doing so, Caldwell misinterprets Pandrol and Toro, the later of which actually stands for the proposition that a claim may be limited to the embodiment depicted if that is the only embodiment and "no other structure is illustrated or described." Toro, 199 F.3d at 1301. "It is well established that the preferred embodiment does not limit broader claims that are supported by the written description." Id.

18 37 C.F.R. § 1.83 Content of drawing. (a) The drawing in a nonprovisional application must show every feature of the invention specified in the claims. However, conventional features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box). In addition, tables and sequence listings that are included in the specification are, except for applications filed under 35 U.S.C. 371, not permitted to be included in the drawings.

The enablement requirement in 35 U.S.C. § 112, P 1, “provides in pertinent part that the specification shall describe the manner and process of making and using [the invention], in such clear and concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use [the invention].” AK Steel Corp. v. Sollac and Ugine, 344 F.3d 1234, 1243-44 (Fed. Cir. 2003) quoting 35 U.S.C. § 112, P 1. “The enablement requirement is satisfied when one skilled in the art, after reading the specification, could practice the ["full scope of the"] claimed invention without undue experimentation.” Id. at 1244 quoting In re Wands, 858 F.2d 731, 736-37 (Fed. Cir. 1988). The requirement for drawings, on the other hand, is set out in 35 U.S.C. § 113, which provides that:
The applicant shall furnish a drawing where necessary for the understanding of the subject matter sought to be patented. When the nature of such subject matter admits of illustration by a drawing and the applicant has not furnished such a drawing, the Director may require its submission within a time period of not less than two months from the sending of a notice thereof. Drawings submitted after the filing date of the application may not be used (i) to overcome any insufficiency of the specification due to lack of an enabling disclosure or otherwise inadequate disclosure therein, or (ii) to supplement the original disclosure thereof for the purpose of interpretation of the scope of any claim.

35 U.S.C. § 113. Consequently, it appears to me, that drawings in a patent may help overcome any insufficiency of the specification due to lack of an enabling disclosure, but they are not to be scrutinized for proper "enablement" or depiction of every "claimed structure" under 35 U.S.C. § 112, P 1 as suggested by Caldwell. Although 37 CFR § 1.83(a) of the PTO rules require that applications include drawings that "show every feature of the invention specified in the claims", I will not limit my construction of "connecting device" to retractable or resilient tabs because Claims 3 and 4 are not "enabled". "The fact that the drawings are limited to a particular embodiment does not similarly limit the scope of the claims. Rather, [the patentee] is entitled to the full breadth of claim scope supported by the words of the claims and the written description." TI Group, 375 F.3d at 1138 citing Anchor, 340 F.3d at 1306-07 ("The mere fact that the patent drawings depict a particular embodiment of the patent does not operate to limit the claims to that specific configuration.") Here, it is clear that the written description supports a broader meaning of the claimed term "connecting device" than the depicted embodiment, which uses retractable or resilient tabs. Thus, Caldwell has failed to convince me that 37 C.F.R. § 1.83(a) requires me to find that the other embodiments are not sufficiently "enabled."

As to the second issue, I am inclined to disagree with Caldwell that the "connecting device" must be a separate and distinct component of the window balance assembly from the fastener (rivet) that mates with the frame "pocket".

Claim 2 describes a window balance comprising a "connecting device for attaching the balance shoe within the U-shaped channel of the window balance" in addition to a balance shoe comprising a frame "wherein the second end of the frame of the balance shoe further forms a pocket positioned in the second end of the frame adapted to mate with a rivet." [368 Patent, col. 8, 11. 59-62.] This compares with Claim 1 where the frame of the balance does not have a pocket and the connecting device is specifically described as "one or more resilient tabs [that] extend at least partially through a corresponding number of the plurality of openings in the U-shaped channel." [368 Patent, col. 8, 11. 44-46.] It is clear that in "one embodiment of a method for securing the snap lock balance shoe within a rigid U-shaped channel with multiple openings" depicted in Figures 6A-6D shown below, [368 Patent, col. 6, 34-36], the fastener (the rivet) and the connecting device (resilient tabs) are different structures. The specification explains that under this method:

The first step, shown in FIG. 6A, is to place a fastener 635, such as a rivet, in one of the pairs of openings in the rigid U-shaped channel. The next step, as depicted in FIG. 6B, is to slide the snap lock balance shoe into the rigid U-shaped channel such that the fastener is received in the connection pocket of the snap lock balance shoe. As shown in FIG. 6C, the snap lock balance shoe is then rotated down so that the front frame surface is aligned with a bottom wall of the rigid U-shaped channel. FIG. 6D shows the last step of attaching the snap lock balance shoe within the rigid U-shaped channel. In this step, the connecting device 212 of the snap lock balance shoe snaps into one of the pairs of openings located on the rigid U-shaped channel. [368 Patent, col. 6, 40-53.]

Furthermore, in Figures 3A and 3B shown below, the patent depicts the connecting device 212 as "a pair of retractable tabs that snaps into the rigid U-shaped channel", [368 Patent, col. 5, 11. 29-31], and a connection pocket 213 that is sized to receive a "fastener located in the inverted window balance [that] can be used to further secure the connection between the snap lock balance shoe and the inverted window balance." [368 Patent, col. 5, 11. 34-36.] This suggests that the rivet (635 in Figs. 6A-6D) is only supposed to help the separate and distinct component called the connecting device secure the balance shoe.

[SEE FIGURE 6A IN ORIGINAL]  
[SEE FIGURE 6B IN ORIGINAL]  
[SEE FIGURE 6C IN ORIGINAL]  
[SEE FIGURE 6D IN ORIGINAL]  

[SEE FIGURE 3A IN ORIGINAL]  
[SEE FIGURE 3B IN ORIGINAL]
However, Figs. 3A and 3B only depict one embodiment of the snap lock balance shoe and Figs. 6A-6D only depict "one embodiment of a method for securing the snap lock balance shoe within the rigid U-shaped channel with multiple openings." [638 Patent, col. 6, 11. 34-36.] The patent also explains that in "some [other] embodiments, the snap lock balance shoe is attached to the rigid U-shaped channel with the fastener 635. In other embodiments, the snap lock balance shoe is attached to the rigid U-shaped channel without the fastener 635." [368 Patent, col. 6, 54-61.] The latter alternative embodiment appears to be captured by Claim 1 since that claim omits the "pocket" from the description of the balance shoe's frame. The former alternative embodiment appears to describe a balance shoe consisting of a pocket "adapted to mate with a rivet", wherein the rivet (the fastener) acts as the "connecting device for attaching the balance shoe within the U-shaped channel of the window balance." [368 Patent, col. 8, 11. 62, 66-67.]

Since the function of the "connecting device" is to "attach[] the snap lock balance shoe directly within an inverted window balance", [368 Patent, col. 5, 11. 19-21], Claim 2 ought to be construed to include the possibility that the rivet could serve as the "connecting device" when it locks into the frame "pocket" shaped to mate with it. Furthermore, the specification explains that the "connecting device can be integral with the frame", suggesting that as just described, the connecting device may not be integral to the frame and may be a "screw", [368 Patent, col. 5, 1. 32], or the rivet in addition to or instead of resilient tabs. As a result, I will not construe "connecting device" in Claim 2 as a structure necessarily distinct from the rivet that mates with the pocket.

Construction -- A device, such as a rivet, screw, or resilient tabs, that connects the balance shoe to the U-shaped channel of the inverted window balance.

ACS argues that the district court erred in its claim construction. It asserts that none of the asserted patents ascribe any significance to the orientation of the claimed connecting elements in relation to each other or to the stent's longitudinal axis. ACS notes that the phrase "generally parallel" appears nowhere in the specification, and only appears in some of the asserted claims, specifically independent claim 12, and dependent claims 13-15, 17, 18, and 20 of the '154 patent and dependent claim 2 of the '158 patent. ACS points out that only the drawings of the asserted patents show the connecting
elements generally parallel both to each other and the stent's longitudinal axis, and it contends that such a limitation, that only appears in the drawings, should not be read into the claims. ACS also contends that the district court gave too much weight to statements made during the prosecution of the '986 application because the '986 application specifically claimed "generally parallel connecting elements."

Scimed responds that the district court's claim construction was proper. Scimed argues that the only embodiments disclosed in the asserted patents depict the connecting elements in parallel alignment both with each other and with the stent's longitudinal axis. Scimed also argues that the asserted patents emphasize the longitudinal orientation of the connecting elements and the fact that this orientation prevents shortening and deformation of the stent upon expansion. In light of these teachings in the specification, Scimed asserts, the district court properly limited the described connecting elements to connecting elements that are generally parallel both to each other and to the stent's longitudinal axis. Scimed also argues that the inventors expressly disclaimed non-parallel connecting elements during prosecution by indicating that the "invention," not just the claims in the '986 application, was distinguishable from the Palmaz '417 patent because the Palmaz '417 patent disclosed connectors that were not parallel to the stent's longitudinal axis and therefore deformed upon expansion.

We agree with ACS that the district court erred in construing "connecting elements" and the similar terms "interconnected," "connecting members," and "struts for connecting" by requiring the stent's connecting elements to be generally parallel both to each other and to the stent's longitudinal axis. We reach this conclusion based on the intrinsic evidence of record--the claims, the specification, and the prosecution history, Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2d (BNA) 1573, 1576 (Fed. Cir. 1996).

We begin our analysis with the claim language. Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 U.S.P.Q.2d (BNA) 1161, 1165 (Fed. Cir. 1999) ("The starting point for any claim construction must be the claims themselves."). In that regard, none of the claims presently under discussion require the recited "connecting elements," "interconnected" members, "connecting members," or "struts for connecting," to be "generally parallel" both to each other and to the stent's longitudinal axis. For example, independent claim 1 of the '154 patent simply recites "a plurality of connecting elements." '154 patent, col. 8, l. 43. The claim continues, indicating that the connecting elements are "configured to interconnect only said cylindrical elements that are adjacent to each other . . . ." Id., col. 8, ll. 44-46. The claim has no other express structural limitations on the claimed connecting elements. In contrast, independent claim 12 of the '154 patent, which is discussed in Part III below, recites "a plurality of generally parallel connecting elements . . . ." Id., col. 9, l. 28 (emphasis added). Claim 12's language includes an express limitation on the described connecting elements, that they be generally parallel. Based on the claim language alone, the term "connecting elements," and the terms "interconnected," "connecting members," and "struts for connecting," are not limited to those connectors that parallel each other and the stent's longitudinal axis.

The specification further supports not requiring the connecting elements described in the asserted claims to be generally parallel both to each other and to the stent's longitudinal axis. "Claims must be read in view of the specification, of which they are a part." Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2d (BNA) 1321, 1329 (Fed. Cir. 1995), aff'd, 517 U.S. 370, 38 U.S.P.Q.2d (BNA) 1461, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). However, "while it is true that claims are to be interpreted in light of the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims . . . ." Sjoland v. Musland, 847 F.2d 1573, 1581, 6 U.S.P.Q.2d (BNA) 2020, 2027 (Fed. Cir. 1988). Here, the specification does not require the connecting elements be parallel to each other and to the stent's longitudinal axis. Scimed admits that the phrase "generally parallel" only appears in the patents in suit when it is used in a particular claim. At the same time, the specifications of the asserted patents do not discuss the orientation of the connecting elements in relation to each other or to the longitudinal axis of the described stent. Looking at the '154 patent for example, the specification's only discussion of the connecting elements' orientation states that the connecting elements are "disposed between adjacent cylindrical elements," '154 patent, col. 4, ll. 25-26, and that this adjacent placement "prevents shortening of the stent during the expansion thereof," id. at col. 5, ll. 50-51. See also id. at col. 3, ll. 1-4 (noting that the connecting elements should be joined at "either the peaks or the valleys of the undulating structure of the cylindrical elements . . . . In this manner there is no shortening of the stent upon expansion."). The specification's only other discussion of the connecting elements' orientation indicates that it is preferred to place them "on one side of the cylindrical element 12 . . . . to achieve maximum flexibility for a stent." Id. at col. 5, ll. 34-37. Contrary to Scimed's assertions, none of the specifications of the asserted patents teach that the connecting elements must be parallel both to each other and to the stent's longitudinal axis in order to prevent the shortening of the stent when the stent is expanded. As noted
above, the specifications teach that it is the attachment of the connecting elements to either the peaks or the valleys of the cylindrical elements, as demonstrated in Figures 3 and 4 of the '154 patent, not the parallel placement of the connecting elements, that prevents shortening upon the stent's expansion.

Scimed correctly notes that all of the drawings in the asserted patents depict the connecting elements in parallel alignment both with each other and the stent's longitudinal axis. However, this fact, by itself, does not support adding such a limitation to the claims. See Johnson Worldwide Assocs., Inc. v. Zebeco Corp., 175 F.3d 985, 992, 50 U.S.P.Q.2D (BNA) 1607, 1612 (Fed. Cir. 1999) (noting that "mere inferences drawn from the description of an embodiment of the invention cannot limit claim terms"). Without a "generally parallel" limitation in the claim or a discussion in the specification about the claimed connecting elements being generally parallel both to each other and to the stent's longitudinal axis, the drawings' depiction of the connecting elements in parallel relationship both with each other and the stent's longitudinal axis can not support the conclusion that such a limitation exists. Since nothing in the specification assigns significance to the fact that the drawings align the connecting elements parallel both to each other and to the stent's longitudinal axis, we will not allow this aspect of the drawings to be imported into the claims as a limitation. See, e.g., Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1367-69, 53 U.S.P.Q.2D (BNA) 1814, 1818-19 (Fed. Cir. 2000) (indicating that the claim term "protecting back panel" was limited to a "relatively stiff" panel because, in addition to other intrinsic evidence, the specification's text described the back panel in the patent's drawings as being "constructed of a relatively stiff material"); Torco Co. v. White Consol. Indus., Inc., 199 F.3d 1295, 1300-02, 53 U.S.P.Q.2D (BNA) 1065, 1069-70 (Fed. Cir. 1999) (construing the claim term "including" to mean "part of" and "permanently attached" because, in addition to the patent's drawings, the specification's text stressed that the claimed vacuum/blower's flow restriction ring was part of and attached to the invention's air inlet cover); Wang Labs., Inc. v. Am. Online, Inc., 197 F.3d 1377, 1382-83, 53 U.S.P.Q.2D (BNA) 1161, 1164-65 (Fed. Cir. 1999) (noting that the claims were limited to a character-based protocol because of the express teachings of such a protocol in both the patent's specification and the drawings). In this case, the specifications only discuss the orientation of the connecting elements in relation to the cylindrical elements, not to other connecting elements or the stent's longitudinal axis. Therefore, although the drawings show the connecting elements parallel both to each other and to the stent's longitudinal axis, the drawings do not require limiting the claimed connecting elements to a configuration in which they are in parallel alignment both with each other and with the stent's longitudinal axis.

Finally, we note that the prosecution history supports a claim construction that does not require that the recited "connecting elements" be generally parallel both to each other and to the stent's longitudinal axis. The prosecution history "is often of critical significance in determining the meaning of the claims;" Vitronics, 90 F.3d at 1582-83, 39 U.S.P.Q.2D (BNA) at 1577, since it may be used to determine the scope and meaning of the claims, Alpex Computer Corp. v. Nintendo Co., 102 F.3d 1214, 1220, 40 U.S.P.Q.2D (BNA) 1667, 1671 (Fed. Cir. 1996).

The prosecution history does not support the district court's claim construction. In prosecuting the '986 application, the inventors argued that, in contrast to the Palmaz '417 patent's non-parallel connecting members, "the independent claims of the present invention recite a plurality of generally parallel connecting elements." However, when making this argument, the inventors were referring to the specific language in the '986 application's claims, language that recited "a plurality of generally parallel connecting elements," to distinguish the '986 application from the Palmaz '417 patent. As discussed below in Part III, this language appears in other asserted claims of the '154 patent, specifically claims 12-15, 17, 18, and 20. The inventors explicitly limited their arguments to the '986 application's claims that recite "generally parallel connecting elements," not to claims that only recite "connecting elements." Therefore, the arguments do not apply to the invention's connecting elements in general, but only to connecting elements that are described, in the claims, as "generally parallel."

Scimed, however, points to statements that the inventors made that allegedly applied to their invention in general and that, therefore, were not exclusive to the '986 application's claim language. In distinguishing the Palmaz '417 patent, the inventors stated:

Moreover, Applicants' invention is superior to the stent disclosed in the Palmaz patent from a functional standpoint. As is clearly shown in Figs. 7 and 10 of the '417 Palmaz patent, due to its construction, upon expansion, the stent will substantially shorten as the slotted members of the stent body expand. Further, connecting members 100 and 102 deform upon expansion, as depicted in Figure 10, which adds to the shortening of the stent. . . .

The problem of stent shortening as taught by Palmaz has been solved by Applicants' invention due to its novel structure. The connecting elements of Applicants' invention are configured to "interconnect only said cylindrical elements that are

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adjacent to each other." Accordingly, as Applicants' stent is expanded from its first configuration to a larger configuration, the stent will not appreciably shorten . . . .

We reject Scimed's argument. Even if these statements could apply to the claims that are now at issue, the inventors argued that their invention's structure was superior to the Palmaz '417 patent because the Palmaz '417 patent allowed substantial shortening upon expansion while "the connecting elements of the inventors' invention are configured to 'interconnect only said cylindrical elements that are adjacent to each other.' Accordingly, as the inventors' stent is expanded from its first configuration to a larger configuration, the stent will not appreciably shorten." The inventors thus argued that their invention was superior to the Palmaz '417 patent because it configured the connecting elements to join adjacent cylindrical elements. The inventors did not argue that their invention was superior because its connecting elements were parallel to the stent's longitudinal axis. Finally, even if parts of the '986 application's prosecution history could be viewed as applying to asserted claims that do not explicitly describe "generally parallel connecting elements," the prosecution history does not support the district court's claim construction. As discussed below in Part III, nowhere in the prosecution history did the inventors indicate that their invention, in general, required that the connecting elements be parallel to each other and to the stent's longitudinal axis.

The district court erred in construing the claim terms "connecting elements," "interconnected," "connecting members," and "struts for connecting" as requiring connecting members to run parallel both to each other and to the longitudinal axis of the stent. The court's grant of summary judgment of no literal infringement or infringement under the doctrine of equivalents with respect to claims 11 and 12 of the '955 patent, claims 1-4, 9, and 23 of the '154 patent, claims 1-4 of the '721 patent, and claims 1, 2, 5, 6, 9, and 11-13 of the '158 patent was based on this incorrect construction, Adv. Cardiovascular IV, slip op. at 11-12. We therefore vacate the district court's grant of summary judgment with regard to those claims, and remand for further proceedings.

2. "Connecting elements" limitation

The court construed "connecting elements" to mean "segments of a stent that extend between adjacent cylindrical elements, connecting them together." 16 (D.I. 639 at 1884:3-7) Medtronic asserts that it is entitled to JMOL of non-infringement of the '154 patent because no reasonable juror could have found that its stents have "connecting elements" required by the claims. (D.I. 654 at 16-19) Medtronic introduced evidence at trial that its stents are formed by welding the crowns of individual segments together with a laser in a process known as "autogenous laser fusion," which does not add any new material to the crowns. 17 (e.g., D.I. 634 at 788:20-793:10) ACS's expert, Dr. Jerome Segal, M.D. ("Segal"), an interventional cardiologist, agreed that Medtronic's fusion welding process does not add any new material. (D.I. 633 at 596:11-18) Because it was unrefuted that Medtronic's fusion welds are not a discrete component, Medtronic argues, there was no evidence that the welds "extend between adjacent cylindrical elements" under the court's definition. (D.I. 654 at 19)

16 The court also gave this same definition to the terms "connecting members," "interconnecting elements," and "struts for connecting." (D.I. 639 at 1884:3-7)

17 Photographs of the welds were introduced into evidence. (D.I. 634 at 793:11-796:9; DTX-149A; DTX-150A)
C. "a connecting loop at the free end of said elongate member"

Defendants suggest a construction of this term to require that the loop be "secured to and extending from the outermost end of the elongate member," and points to a statement made by Plaintiff during prosecution as support: "Neither of the main references shows or suggest a connecting loop at the free end of an elongate, pliable member, from which a toy object is suspended via a connecting line." (Def's Ex. B at 40-41.) Since the claim already includes the limitation "at the free end of said elongate member" -- the language actually employed in the prosecution history--the Court finds no need to construe the term as limiting the connecting loop only to one placed at the "outermost end of the elongate member." Defendants' contention that the prior art references disclosed an assortment of loops may be true, but Plaintiff did not rely on his connecting loop to distinguish from these references, except as mentioned above, and the claim is limited as such. Thus, the term will not be construed with the limitation Defendants suggest.

3. "connecting said adjacent panels at a first pivot axis, and at least one center hinge assembly connecting said adjacent panels at a second pivot axis offset from said first pivot axis" -- Claim 1

Amarr's proposed construction is: "the pivot axis of at least one center hinge is located vertically below the pivot axis of the end hinges when the adjacent panels are in the vertical, or closed, position." Amarr's Opening Brief at 11.

The thrust of Amarr's proposed construction of this claim term is that it contends that "offset" should be read to mean "located vertically below." Amarr contends that this limitation is found in the specification and therefore limits the meaning of the term "offset" to mean "located vertically below." Wayne-Dalton not only disagrees, but notes that Amarr's proposed construction reads into Claim 1 an element of dependent Claim 3, rendering Claim 3 "superfluous and redundant," which is not permitted. Transcript at 134; see also Wayne-Dalton's Response Brief at 10.

This dispute points up one of the stickier areas of claims construction law:

On the one hand, claims "must be read in view of the specification, of which they are a part." Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995), aff'd, 517 U.S. 370, 134 L.Ed. 2d 577, 116 S. Ct. 1384 (1996). On the other hand, it is improper to read a limitation from the specification into the claims. . . . "The problem is to interpret claims 'in view of the specification' without unnecessarily importing limitations from the specification into the claims." E-Pass Techs., Inc. v. 3COM Corp., 343 F.3d 1364, 1369 (Fed. Cir. 2003); accord Tex. Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1204-05 (Fed. Cir. 2002).


In Acumed LLC v. Stryker Corp., 483 F.3d 800 (Fed. Cir. 2007), the court faced a similar situation, in which the party seeking construction argued that the language "transverse holes" in a claim should be construed as holes "perpendicular" to the nail shaft, because every description of the transverse holes in the patent contemplated a perpendicular hole and because the figure depicting the nail reflected a perpendicular hole. Id. at 807. The Federal Circuit declined to so limit the claim.
language, however, declaring that "[t]he plain meaning of Claim 1 covers more than the particular embodiment shown in the figures." Id. The court explained that:

The intrinsic evidence of the specification therefore suggests that the patentees knew how to restrict their claim coverage to holes passing through at right angles. They could have used the word "perpendicular," as they did in discussing their preferred embodiment. Instead, they chose a different term that implies a broader scope.

Id.

Similarly, here, the 872 Patent reflects that the patentee knew how to restrict the claim coverage to a pivot axis that is "offset vertically below" rather than merely "offset," because the more restrictive language is used in the specification, in description of the preferred embodiment and in Claim 3, which is dependent on Claim 1. Amarr has cited to nothing, however, tending to persuade the Court to abandon the general principle that "Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using 'words or expressions of manifest exclusion or restriction.' Teleflex[, Inc. v. Ficosa N. Am. Corp.], 299 F.3d [1313] at 1327 [Fed. Cir. 2002]." Liebel-Flarsheim Co., 358 F.3d at 906; see also Phillips v. AWH Corp., 415 F.3d 1303, 1323 (Fed. Cir. 2005) (stating that the Federal Circuit has "expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment."). Under this precedent, Amarr's argument fails.

The referenced language will be accorded its ordinary and customary meaning to one skilled in the art and the proposed limitation on the language will not be added.

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1. "connecting segment"

In the August 2005 Markman Order, the Court construed "connecting segment" to mean "a distinct portion of the device, capable of detaching the distal tip from the guidewire." (August 2005 Markman Order at 7.) This Order modifies that definition.

The phrase "connecting segment" is a coined phrase. The Court looks to the specification for a clear statement of the meaning of coined phrases. Vitronics Corp., 90 F3d at 1582.

In the written description and in various claims of the patents-in-suit, the inventors use the words "segment" and "portion" interchangeably to indicate discreet parts of their invention. For example, with respect to an embodiment of the "guidewire," the written description states that it has a "core wire," (a phrase which will be considered later in this Order) which has a distal "portion" which is a stainless steel "segment:"

The distal portion is an exposed stainless steel segment.

The stainless steel segment comprises a coil connected at its proximate end to the core wire and connected at its distal end to the tip portion of the guidewire.

('136 Patent, Col. 4:63-69.) As a further example, in describing the tip, the written description uses the words "portion" and "segment" interchangeably:

The tip portion is a long and substantially pliable segment and is comprised of a material not susceptible to electrolytic disintegration within blood.

('136 Patent, Col. 5:8-10.)

With respect to the subject phrase, "connecting segment," the written description provides:
The step of electrolytically detaching the distal tip from the guidewire comprises the step of electrolytically disintegrating at least one portion of a connecting segment extending between the guidewire and the distal tip.

The step of electrolytically disintegrating the connecting segment comprises the step of electrolytically corroding away at least a portion of a coil segment.

(‘136 Patent, Col. 4:25-32.)

The Court finds that a person of ordinary skill would understand that the "connecting segment" is a distinct segment of the guidewire which functions to connect other portions or segments. It would also be clear to one of skill in the art reading the patent documents that another function of the connecting segment is to perform the function of "detaching." In the plain language of Claim 5, the distal tip is detached from the guidewire by electrolytically disintegrating at least one portion of the connecting segment. Thus, the construction of "connecting segment" must be one which includes the "detaching" function. Before giving a construction to this part of the subject phrase, the Court considers the other disputed phrase.

2. "extending between said guidewire and said distal tip"

With respect to the "connecting segment," the parties dispute the proper construction of the phrase "extending between said guidewire and said distal tip" as it is used in Claim 5. The dispute is whether the phrase should be construed to mean "located between" or whether it should be construed to include both "located between and connecting spatially."

It is clear from the language of the Claim that the phrase "extending between" is a limitation on the relationship among three components: the "connecting segment;" the "guidewire" and the "distal tip."

One of ordinary skill in the art would understand the phrase "extending between" to be composed of non-technical words which have ordinary and customary meanings. The phrase "extending between" uses the common preposition, "located between," meaning "in or through the space that separates two things." See Webster's New Twentieth Century Dictionary, 177 (2d ed. 1983). A common definition of "extending" is "stretched out." Id., 649. The Court finds that one of ordinary skill in the art would understand the phrase "extending between" to mean that the connecting segment is not only "between" the guidewire and the distal tip but that it also "extends" from the guidewire to the distal tip. In other words, a person of ordinary skill in the art would conclude that the connecting segment is attached at one of its ends to the guidewire and at its other end to the distal tip. This construction of the claim language is supported by a statement in the written description, describing an embodiment with these connections:

The stainless steel segment comprises a coil connected at its proximate end to the core wire and connected at its distal end to the tip portion of the guidewire.

(‘136 Patent, Col. 4:65-68.)

The Court construes "connecting segment" as it is used in Claim 5 to mean:

A segment of the guidewire that is attached at one of its ends to the core wire and is attached at its other end to the distal tip. The connecting segment is capable of being operated on to detach the distal tip from the remainder of the guidewire.

6 The same definition applies to the phrase as it is used in Claims 5 and 14 of the ‘578 patent, which provides: "The method of claim 11 where said step of electrolytically detaching said distal tip of said wire electrolytically disintegrates a connecting coupling between said wire and said distal tip to effect separation."

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6 The same definition applies to the phrase as it is used in Claims 5 and 14 of the ‘578 patent, which provides: "The method of claim 11 where said step of electrolytically detaching said distal tip of said wire electrolytically disintegrates a connecting coupling between said wire and said distal tip to effect separation."

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3. Claim 6

The parties have submitted the following phrase in Claim 6 of the '194 Patent for construction by the court: for construction by the court (phrase for construction is underlined; phrase already construed in Claim 1 is italicized):

A method of making a wheel support assembly adapted to bolt to an axle of a vehicle for supporting a tire, said method comprising the steps of:

a. providing an outer annular rim having an outer annular surface configured to support a tire;

b. providing a single piece of sheet metal and stamp forming from the sheet metal as a single integrally formed unit a plurality of spoke arrangements, each of which is formed to include

i. at least two elongated spokes respectively including inner ends and outer ends and

ii. a cross-bar connecting together the inner ends of the spokes and configured to bolt to said axle for connecting the inner ends of said spokes to said axle, whereby to serve as part of a hub of said wheel support assembly, said plurality of spoke arrangements serving as the only spoke arrangements making up said wheel support arrangement and said single integrally formed unit serving as the only strength imparting structure between said rim and the hub; and

c. connecting the outer ends of said spokes to said rim.

The parties differ in their proposed construction of Claim 6(c). Plaintiff asserts that Claim 6(c) "is a function and must be analyzed under 35 U.S.C. 112 (6), using a step plus function analysis." (Pl.'s Br. at 29-30.) As a result, Plaintiff further states that Claim 6(c) is "limited to the connecting means disclosed in the specification: short flanges plus welding." (Id.)

Defendants, on the other hand, contend that Claim 6(c) is not a step-plus function but, instead, "[t]he 'connecting' in claim 6 is an act or step involved in effectuating the purpose described in the preamble, namely the making of a wheel support assembly." (Defs.' Reply at 12.)

The Claim 6 preamble sets forth a method of making a wheel support assembly, comprising a number of steps, but does not use the "step for" language that signals the claim drafter's intent to invoke section 112, paragraph 6. Masco Corp. v. United States, 303 F.3d 1316, 1326 (Fed. Cir. 2002); Utica Enters., Inc. v. Fed. Broach and Mach. Co., 109 F. App'x 403, 409 (Fed. Cir. 2004). Because Claim 6 uses the term "step of" instead, there is no presumption that the Claim 6 limitation is a step-plus function. Masco Corp., 303 F.3d at 1328. Indeed, "[w]here the claim drafter has not signaled his intent to invoke § 112, paragraph 6 by using the 'steps for' language, we are unwilling to resort to that provision to constrain the scope of coverage of a claim limitation without a showing that the limitation contains nothing that can be construed as an act." Id. at 1327; see also Utica, 109 F. App'x at 409; O. I. Corp., 115 F.3d at 1583. "In general terms, the 'underlying function' of a method claim element corresponds to what that element ultimately accomplishes in relationship to what the other elements of the claim and the claim as a whole accomplish. 'Acts,' on the other hand, correspond to how the function is accomplished." Seal-Flex, Inc. v. Athletic Track & Court Constr. 172 F.3d 836, 849-50 (Fed. Cir. 1999).

The disputed language, "connecting the outer ends of said spokes to said rim," merely claims a step by reciting and performing an act, not a function, necessary to complete the method of making a wheel support assembly. "Connect," according to the Oxford Dictionary's definition, means "join (one thing with another)," "join (two things)," and also "be joined or joinable." The Oxford Dictionary and Thesaurus 296 (Am. ed. 1996). "Connecting the outer ends of said spokes to said rim" should therefore be interpreted to describe not a function, but an act of joining the outer ends of the spokes to the rim, which is a step involved in the making of a wheel assembly. Because Claim 6(c) can be construed to contain an act, it is not a step-plus function claim subject to the requirements of § 112, paragraph 6.
3. Connection Means as Means-Plus-Function Format (claims 5 and 7)

The issue here is whether the term "connection means" is a means-plus-function limitation under 35 U.S.C. § 112, P 6. As noted above, both claims 5 and 7 state that the "connection means interconnect[s] said crank arms on said right and left hydraulic pumps." According to Toro, use of the term "connection means" does not create a presumption that this is a § 112, P 6 element because the term is not followed by the word "for." See, e.g., Personalized Media Communications, LLC v. International Trade Comm'n, 161 F.3d 696, 703 (Fed. Cir. 1998) (quoting Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584 (Fed. Cir. 1996) ("Use of the term 'means' has come to be so closely associated with 'means-plus-function' claiming that it is fair to say that the use of the term 'means' (particularly as used in the phrase 'means for') generally invokes [§ 112, P 6] and that the use of a different formulation does not."). Rather, Toro claims that the term "connection means" in the '961 patent 1) recites structure (the "connection," i.e., the linkage), and 2) describes the location (the crank arms on the right and left hydraulic pumps) and the extent of the structure (movable in a first and then a second direction).

As support, Toro depends on a disposable training pants case in which the patent claimed a "perforation means extending from the leg band means to the waist band means through the outer impermeable layer means for tearing the outer impermeable layer means for removing the training brief in case of an accident by the user." Cole v. Kimberly-Clark Corp., 102 F.3d 524, 526 (Fed. Cir. 1996). The court found that while the patent drafter "was clearly enamored of the word 'means'," the claim language did not create a means-plus-function element. Id. at 531. The court said that "an element with such a detailed recitation of its structure, as opposed to its function, cannot meet the requirements of [§ 112, P 6]." Id.

Toro maintains that its "connection means" -- like the perforation, leg band, waist band, and outer impermeable layer means of the disposable training pants case -- describes the structural character of the element as well as its location and extent. The plain meaning of the word "connection" means a joining together. In the mechanical arts, Toro says, that joining together "is accomplished by linkages which may include a shaft, rod or arm, or a combination of mechanical links." Toro's Markman Brief at 22. In claims 5 and 7, the crank arms secured to the shafts of the hydraulic pumps "are connected together by a common shaft or rod including available linkage components." Id. The linkage is indicated by use of term "means" in the claims. Thus, Toro contends that "connection means" should be construed "to cover a linkage between a speed control lever and a crank arm on each hydraulic pump which enables the input and output rates of both pumps to be changed by the same amount so that the drive wheels will be driven at the same rotational rate." Id.

Scag, however, contends that Toro has failed to rebut the presumption that its use of the term "connection means" creates a § 112, P 6 element since the connection means claims fail to recite any structure to interconnect the crank arms. Scag says that Toro's use of "connect" is therefore functional rather than structural since the claims themselves contain no structural language to override the presumption that § 112, P 6 applies. To construe the claims as Toro suggests, Scag says, would require the court to remove the term "means" and substitute the term "linkage," an impermissible rewriting of the claims.

I conclude that Toro's suggested reading of the term would require the court to infuse structure into the claims where no definite structure exists. Nothing prevented Toro from using the term "linkage" instead of the term "means" when writing the claims. Nothing prevented Toro from explicitly defining the structure with the function of "joining together" the crank shafts on the hydraulic pumps. The "perforation means" discussed in the Cole case is not analogous to the "connection means" in this case because the disposable training pants had an obvious, definite structure to perform the function of tearing the impermeable layer: the holes punched through the material forming the impermeable layer. Here, Toro can point to no such single, definite structure, only to some sort of functional "connection." In stating that the crank shafts could be connected by numerous types of "linkages," such as "a shaft, rod or arm, or a combination of mechanical links," Toro's Markman Brief at 22, Toro in effect attempts to cover any structure that will perform the function of connecting. I therefore find that the term "connection means" is to be construed as means-plus-function element governed by 35 U.S.C. § 112, P 6. 
Having either potentially or actually dodged one '172 Patent bullet by causing one layer of naturally-waterproof fabric to become non-water-impervious, Dometic must find a way to keep its customers dry while at the same time it keeps itself out of harm's way in the form of the '172 Patent's claims. To accomplish that, Dometic blithely abandons its insistence on looking at the intrinsic evidence of the patent itself by fabricating a distinction that is found only in its own mindset, not in the patent. Dometic Mem. 9-10 raises the straw man of "series" versus "parallel" types of awnings, urging in the Memorandum's ensuing discussion that the '172 Patent claims are directed only to the former type.

But that contention, which rests on Dometic's characterization of the invention as an "awning connection," amounts to reading something either into or out of the actual claims of the '172 Patent. Those claims clearly specify that the invention is a device connecting a metal awning cover to the recreational vehicle. That plain meaning of the '172 Patent's language appears to require no artificial gloss of the type contended for by Dometic's asserted division into "parallel" and "series" awnings.

This Court sees no need as part of the threshold Markman procedure to provide a construction other than the normal reading of the term "connector." It is however worth adding, in light of Dometic's arguments, that this Court does not expect to prevent the factfinding jury from considering the possibility that because of the stitching that Dometic has employed to create an integrated construction that will keep any water from penetrating that construction, Dometic's accused device may still be viewed as constituting a water-impervious strip (comprising the combined layers of fabric) that is connected to the recreational vehicle at one end and to the metal awning cover at the other.

III. The requirement for a "connector"
A. Claim Interpretation

Claims 4 and 21-24 of the '709 reissue patent and all of the claims of the '397 patent specify a "connector" for the lamp assembly. Claim 21 of the '709 reissue patent is representative in pertinent part: "A lighting system comprising . . . a submersible connector electrically coupled between said lamp assembly and said electrical lighting elements. . ." '709 reissue patent, col. 9, lines 6-8. Claim 1 of the '397 patent states in part: "A lighting assembly comprising . . . a lamp assembly . . ., said lamp assembly including a submersible connector on said socket enclosure and having electrical connector leads into said enclosure. . ." '397 patent, col. 5, lines 44-52. Finally, claim 2 of the '397 patent is representative in pertinent part: "A lighting assembly comprising . . . a submersible connector electrically coupleable between said lamp assembly and said electrical lighting elements; . . ." '397 patent, col. 5, line 64 - col. 6, lines 8-10.

Defendant's motion contends that the term "connector" is not limited to a plug-type connector capable of quickly connecting or disconnecting two things, but describes any type of connector including one intended to permanently connect two things together. Defendant argues that the term "connector" is used in several different places in the written description portion of the patents in suit. 12 According to Defendant, the only discussion of a "connector" in connection with the detailed description of the lamp assembly illustrated in the drawings of the patents does not include any description of the connector 64 as being a plug-type connector that enables a quick connect or disconnect of the lamp assembly 40 from the connector so that the lamp assembly might be removed from the housing. 13 Additionally, the inventor of Plaintiff's fixtures in question stated that "the term 'connector' is applied in the present context to either permanently or impermanently joined electrical conductors." Tyson Decl., p.2 Therefore, Defendant asserts that the term "connector" as used in Plaintiff's claims is not limited to a plug-type connector capable of so-called quick connect or disconnect, but includes any connectors whether they join things together permanently or impermanently.

Footnotes

12 "A method of creating such a wicking barrier includes the soldering of a portion of a stranded electrical connector and potting the soldered portion in the creation of the barrier.

"A wicking barrier is alternatively contemplated employing a bare, conductive metal strip held in a harness and submerged in potting material. Attachment elements may be mutually spaced on the strip to receive connectors in a displaced
arrangement." '709 reissue patent, col. 2, lines 8-17.

13 "At the bottom end of the socket enclosure 42, a submersible connector 64 is mounted through the wall. An electrical conductor 66 is associated with the submersible connector 64, extending to submersible connector leads 68. Socket leads 70 extend from the socket 60 and are electrically coupled with the leads 68. Solidified solder beads 72 join the paired leads with the leads not otherwise electrically coupled. By using a solder bead as the sole coupling between leads, water cannot pass through the stranded electrical connector from the socket 60 to the connector 64 of vice versa. Potting material 74 is then hardened in place about the leads and the solder beads 72 to provide a complete barrier to the passage of moisture along the electrical conductor 66 inwardly of the insulation. Outwardly of the insulation, the submersible connector 64 prevents such transmission of moisture in association with the potting material 74." '709 reissue patent, col. 3, line 62 - col. 4, line 11.

Plaintiff challenges Defendant's interpretation on the grounds that the term "submersible connector" has specific meaning in the industry, a meaning that is known to those of ordinary skill in the art of electrical components for lighting fixtures. Therefore, the term "submersible connector" needs no further clarification. It appears that Plaintiff's dispute is to Defendant's contention that the term "connector" also encompasses a cord seal such as item 36 shown in Figure 2 of Plaintiff's patents. 14 As such, the Court does not believe that Plaintiff raises any challenge to the position that the term "connector" can be used to describe any connector that may join things together permanently or impermanently. The Court thus determines that Plaintiff has not sufficiently disputed Defendant's interpretation that the term "connector" as used in the patents in suit is any type of connector, whether intended to permanently or impermanently connect two things together.

14 As to this issue, both parties rely on the deposition testimony of inventor Glenn Tyson. Defendant, citing Tyson's deposition, asserts that Tyson himself identified the cord seal as an example of a connector. However, Plaintiff notes that a corrected transcript conforms the cited portion of the deposition to testimony given later in the same deposition. It does not appear, for the interpretation Defendant is advancing, that the issue of the cord seal must be decided.

The first term requiring construction is "connector assembly." Pandora's construction, "any device which can be used to connect two elements together," is more persuasive. (Pandora's Brief at 15.) Chamilia's construction adds a term, "end cap," which does not even appear in the '507 patent. 6 The prosecution history, specifically the November 18, 2004 Preliminary Amendment that deleted the term "hook component" and broadened it by stating "a connector assembly for reversibly coupling the first end and second end of the strand," supports Pandora's construction, as does the ordinary meaning of "connector assembly," which one of ordinary skill in the art would understand to mean any device that can be used to connect two elements together. (Altobelli Dec. at P 10.) 7 Chamilia's construction, first advanced at the Markman hearing, adds a requirement ("threaded end caps") that is not supported by the claims, specifications, or prosecution history of the '507 patent.

6 Chamilia proposes that "connector assembly" be construed as "[e]lements attached to the end of the strand that enable the strand to be connected to form a loop. Threaded end caps are part of the connector assembly."

7 Nothing in Mr. Brown's declaration or deposition testimony contradicts this understanding. (See, e.g., Brown Dep. at 43-44.)
Claim 1 of the ‘460 patent recites:

A lighting fixture for fluorescent lighting comprising:

a) a plurality of support members, each having a mounting surface for receiving a fluorescent lamp;

b) a socket for receiving a fluorescent lamp mounted on said mounting surface;

c) a connector assembly for connecting each pair of adjacent support members, said connector assembly being pivotally connected to said pair of adjacent support members; and

d) said plurality of support members being movable relative to each other to form the lighting fixture into the desired shape.

‘460 patent, col. 4, ll. 27-39 (emphasis added). Because the "connector assembly" limitation does not contain the term "means," we begin with the presumption that section 112 P 6 does not apply to that limitation. The district court held that Birchwood successfully rebutted that presumption, but we disagree.

In an effort to rebut the presumption that section 112 P 6 does not apply, Birchwood introduced the declaration of Dr. Andrew Wortman. Dr. Wortman declared that the term "connector" encompasses "at least a single infinity of possible devices" and that the term "would not provide [him] or others of ordinary skill in the lighting fixture art with sufficient structural information to put [him] on notice as to what device or component would read on the claim element." Dr. Wortman's declaration, however, does not address the central issue in determining whether section 112 P 6 applies. Implicit in Dr. Wortman's statement is the premise that in order to be regarded as structural for purposes of section 112 P 6, a claim limitation must identify a specific structure and not use a generic term that includes a wide variety of structures. The district court adopted that view explicitly when it held that the claim language "connector assembly being pivotally connected to said pair of adjacent support members" was not structural because "it would cover every conceivable structure that could connect two elements and pivot."

That approach is unduly restrictive. In considering whether a claim term recites sufficient structure to avoid application of section 112 P 6, we have not required the claim term to denote a specific structure. Instead, we have held that it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function. See Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996); see also Apex, 325 F.3d at 1372; CCS Fitness, 288 F.3d at 1369; Watts, 232 F.3d at 880; Personalized Media Commun., 161 F.3d at 704.

In Greenberg, for example, we held that the trial court erred when it characterized the claim phrase "detent mechanism" as a means-plus-function limitation. The district court in Greenberg based its decision that section 112 P 6 applied on the following observations: (1) detent mechanism "did not describe a particular structure but described any structure that performed a detent function," 91 F.3d at 1583; (2) the proffered definitions for detent mechanism were expressed in functional terms, id.; and (3) the written description twice used the term "detent means" when referring to the specific structure disclosed and at other times used "detent mechanism," leading the district court to conclude that "mechanism" was synonymous with "means." In rejecting that evidence as insufficient to establish that the claim was subject to section 112 P 6, we explained that "the fact that a particular mechanism . . . is defined in functional terms is not sufficient to convert a claim element containing that term into a 'means for performing a specified function' within the meaning of section 112(6)." Id. We noted that the definitions made "clear that the noun 'detent' denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms." Moreover, we rejected the claim that because a term does not bring to mind a particular structure, it invokes section 112 P 6. Specifically, we said, "It is true that the term 'detent' does not call to mind a single well-defined structure, but the same could be said of other commonplace structural terms such as 'clamp' or 'container.'" Id.

We have made the same point in other recent cases dealing with the question whether particular broad claim language
should be considered functional for purposes of section 112 P 6 even though it is not in the traditional "means for" format. In those cases, based on the same analysis, we have rejected arguments that broad terms such as "digital detector" (Personalized Media Communications), "eyeglass hanger member" (Al-Site Corp.), "reciprocating member" (CCS Fitness), and "sealingly connected" joints (Watts) trigger section 112 P 6.

Thus, while it is true that the term "connector assembly" does not bring to mind a particular structure, that point is not dispositive. What is important is whether the term is one that is understood to describe structure, as opposed to a term that is simply a nonce word or a verbal construct that is not recognized as the name of structure and is simply a substitute for the term "means for." The court in Personalized Media Communications drew the pertinent distinction in holding that the term "detector," although broad, is still structural for purposes of section 112 P 6 because it "is not a generic structural term such as 'means,' 'element,' or 'device'; nor is it a coined term lacking a clear meaning such as 'widget' or 'ram-a-fram.'" 161 F.3d at 704.

In Greenberg and subsequent cases, we have looked to the dictionary to determine if a disputed term has achieved recognition as a noun denoting structure, even if the noun is derived from the function performed. See Greenberg, 91 F.3d at 1583 ("Dictionary definitions make clear that the noun 'detent' denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms."); Linear Tech. Corp., 371 F.3d at 1371 (technical dictionary makes clear that "circuit" is structural); CCS Fitness, 288 F.3d at 1369 (dictionary definitions consulted to determine that an artisan of ordinary skill would understand the term in question to have an ordinary meaning); Personalized Media Commun., 161 F.3d at 704 (same). Dictionary definitions in this case disclose that the term "connector" has a reasonably well-understood meaning as a name for structure, even though the structure is defined in terms of the function it performs. "Connector" is defined by Webster's Third New International Dictionary 481 (1993), as "something that connects." "Connect" is defined as "to join, fasten, or link together usu. by means of something intervening." Id. at 480; see also Random House Dictionary of the English Language 311 (1966) ("connector" defined as "one who or that which connects; . . . any of various devices for connecting one object to another.") Thus, in the context of claim 1, the term "connector assembly" means a unit that joins, fastens, or links each pair of adjacent support members. The fact that more than one structure may be described by that term, or even that the term may encompass a multitude of structures, does not make the term "connector assembly" any less a name for structure.

In addition to the fact that the word "connector" has a generally understood meaning as demonstrated by the dictionary definitions of the terms, it is clear that the parties in this case have used that term to denote structure. The written description of the '460 patent, for example, uses the term "connector assembly" as the name for structure. The patent recites:

The plurality of support and mounting sections 12a to 12h is connected in series to form the fluorescent lighting fixture track 20, wherein each pair of adjacent support members 12 is joined together by a connector assembly 22.

As shown in detail in FIGS. 1 and 2, each connector assembly 22 has a left and right hinge pin 24a and 24b that are hingedly or pivotally connected to hole openings 26 formed in the upper and lower surface walls 30 and 32 of the connector assembly 22, respectively. The hinge pins 24a and 24b of each connector assembly 22 are also pivotally attached to the adjacent ends of each support member 12 at hole openings 34. However, the first and last support members 12 of lighting fixture track 20 has [sic] the connector assembly 22 attached only to one of the ends of support member 12.

'460 patent, col. 2, ll. 38-53 (emphases added). As Lighting World's expert pointed out, the same thing is true of Birchwood's patent application on the invention corresponding to the Sydney model lamp fixtures. That application uses the term "connector" more than 40 times, and the context makes it clear that the term is used not in a purely functional manner designed to invoke section 112 P 6, but as a description of structure that is generally understood to persons of skill in the art. While the terms "connector" and "connector assembly" are certainly broad, and may in the end include any structure that performs the role of connecting, the same could be said of numerous other terms, such as "clamp," or "clip," or even "support member," another term that is used in the '460 patent. Those terms are routinely treated as structural by patent practitioners and courts, and we conclude that there is no reason to treat the term "connector assembly" any differently for purposes of section 112 P 6. The consequence of defining the term "connector assembly" free of the constraints of section 112 P 6 may be to render the claim more vulnerable to attack for invalidity, but that is a risk that a claim drafter assumes by choosing broad structural terms rather than choosing to claim in means-plus-function format under section 112 P 6.

In light of the principles discussed above, it is not surprising that we have seldom held that a limitation not using the term
"means" must be considered to be in means-plus-function form. In fact, we have identified only one published opinion since Greenberg in which we have done so, and that case provides a useful illustration of how unusual the circumstances must be to overcome the presumption that a limitation lacking the word "means" is not in means-plus-function form.

The exceptional case is Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206 (Fed. Cir. 1998). In that case, we held that the terms "lever moving element" and "movable link member" recited in a patent to a high security combination lock were in means-plus-function form. Id. at 1213-15. In addressing "lever moving element," the court stated, "While true that 'many devices take their names from the functions they perform,' the 'substantially non-resilient lever moving element' of claim 3 is not one of them." Id. at 1213 (quoting Greenberg, 91 F.3d at 1583). The only term in "lever moving element" that could denote structure is "element." Although the term "element" may be recognized as structural in some fields of art, the Mas-Hamilton court noted that the patentee had not directed the court "to any evidence demonstrating that the district court erred in determining that the term 'lever moving element' lacks a reasonably well understood meaning" in the relevant art. Id. at 1214.

The court in Mas-Hamilton also upheld the district court's ruling that there was no evidence that the term "movable link member" had a well-understood meaning in the art. Accordingly, the court held that the limitation reciting a "movable link member for holding the lever out of engagement with the cam surface before entry of a combination and for releasing the lever after entry of the combination" was in means-plus-function format. The court stated:

We note that the subsequent functional language requires two functions: (1) "for holding the lever out of engagement with the cam surface before entry of a combination," and (2) "for releasing the lever after entry of the combination." Such language is precisely what was intended by the statutory phrase in section 112, ¶6 requiring that means-plus-function limitations provide "a specified function." Further, we do not see that the remaining terms in the claim limitation other than those defining the two functions, i.e., "a movable link member," provide any structure as necessary to remove this limitation from the ambit of section 112, ¶6.

Id. at 1215 (citation omitted). Based on the entire record, the court concluded that the term "movable link member," like the term "lever moving element," was not a recognized term that identified structure, but was simply a way of describing any device that performed the recited functions. The prosecution record in Mas-Hamilton showed that the patentee had used the terms "member," "element," and "means" interchangeably, and in the patent itself the patentee described the "lever moving element" and the "movable link member" as the "means . . . for moving the lever," and the "means . . . for releasably maintaining the pivotable lever in a position substantially disengaged." U.S. Patent No. 5,307,656, col. 2, ll. 24-27. Thus, the court found that the terms "element" and "member," as used in the disputed claims, were mere proxies for the term "means for" and held that the presumption flowing from the absence of the term "means for" was overcome.

Unlike in Mas-Hamilton, in this case the pertinent patents and dictionaries indicate that the term "connector assembly" refers to a device that takes its name from the function it performs. The term "connector assembly" is therefore more like the "detent mechanism" of Greenberg than the "lever moving element" or "movable link member" of Mas-Hamilton.

On this record, Birchwood has not demonstrated that section 112 ¶6 should apply to the "connector assembly" limitation. The only evidence supporting Birchwood's position is the Wortman declaration, which as we have noted is based on an unduly restrictive standard that would require all structural terms to describe a particular device and would presumably treat general structural terms as functional in nature. Because the intrinsic record and dictionaries reflect that the terms "connector" and "connector assembly" are used as the names for structure, we conclude that the "connector assembly" limitation in claim 1 of the '460 patent is not in means-plus-function form. Accordingly, we vacate the district court's ruling that Birchwood's product does not literally infringe the '460 patent, and we remand the literal infringement issue to the district court for reconsideration in view of the proper claim construction.
with and without loss or damage). Given that the claim was drafted so that the connector could both fixedly and releasably fasten, or link together" which imply both permanent and non-permanent connections (or connections that can be separated of being released, Plaintiff does not offer anything to support the contention that a person of ordinary skill in the art would language of the claim that requires the connector to both fixedly and releasably engage. While some connectors are capable On the other hand, Plaintiff contends that "connector" should be defined as "anything that connects," but ignores the term "a device for detachably connecting," which is anything that connects, the second connector being capable of being releasably and fixedly engaged with the first connector."

The relevant dictionary definition of "connector" is "2: something that connects: as a: a flexible tube for connecting the ends of tubes b: a railroad coupling c: (1): a device for detachably connecting flexible electrical conductors together . . ." Webster's Third New International Dictionary 481 (1993). In turn, "connect" is defined as "1: to join, fasten, or link together usually by means of something intervening." Id. at 480. The examples of connectors provided in the dictionary definition, as well as those offered by Plaintiff, all describe a connector that can be later released. Indeed, one of the definitions included - - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

17 Because MDTech argues that claim 2 covers only the reusable embodiment of the invention, it only identifies structures that correspond to the structures of Fig. 1, not Fig. 5. Put another way, it argues that no structure in Fig. 5 performs the recited function.

The first question the Court must resolve is whether the use of the term "connector" recites sufficient structure for performing the recited function to overcome the presumption that the drafter intended to invoke Section 112, P 6, a presumption triggered by the use of the word "means". See Rodime, 174 F.3d at 1302. MDTech argues that a person of ordinary skill in the art would not have understood "connector" to perform both the functions of releasably and fixedly engaging; specifically, MDTech contends that "connector" is commonly understood as only performing the function of engaging or joining, not releasing. According to MDTech, absent evidence that the patentee intended to act as his own lexicographer and define connector as also performing a releasable function, the term "connector" does not recite sufficient structure to perform the recited functions and this clause must be given a means-plus-function limitation.

Plaintiff argues that the term "connector" is commonly understood as a structure that is inherently capable of releasably and fixedly engaging another mating connector. Plaintiff gives examples in the field of medicine that include mechanical connectors (for fluid transfer), electrical connectors (for monitoring vital signs), and computer connectors (for imaging equipment). Plaintiff contends that, in those examples, the connectors are capable of being removed or released after they have been fixedly engaged with the other connector.

The problem with both of the parties' positions regarding this term is that they are too extreme. MDTech essentially argues that no connectors are capable of being released after they engage another connector (i.e., that all connectors form permanent connections), and Plaintiff argues that all connectors are capable of being released. If the Court accepted MDTech's proposed construction, then this claim would be limited only to the precise structure in Fig. 1 - the quarter turn male thread on the spring guide - that performs this function in that one embodiment. That construction is too narrow. While it is true that some connectors may form a permanent connection and cannot be released, there are many aside from the screw-in cannula mount depicted in Fig. 1 that are capable of being released. For example, at the Markman hearing, the Court suggested that a hooking mechanism would operate as a connector that both fixedly engages and is releasable. (Tr. at 104.) MDTech's construction is improperly limiting.

On the other hand, Plaintiff contends that connector should be defined as "anything that connects," but ignores the language of the claim that requires the connector to both fixedly and releasably engage. While some connectors are capable of being released, Plaintiff does not offer anything to support the contention that a person of ordinary skill in the art would have understood that all connectors are capable of being released. The definition of "connector" includes the words "join, fasten, or link together" which imply both permanent and non-permanent connections (or connections that can be separated with and without loss or damage). Given that the claim was drafted so that the connector could both fixedly and releasably
engage, this term must be construed to reflect the language chosen by the drafter.

For the foregoing reasons, the Court first concludes that "second connector means" recites sufficient structure to perform the stated functions, thereby rebutting the means-plus-function presumption. In addition, however, the Court does not accept Plaintiff's proposed construction of "connector" as "anything that connects." The claim describes a connector that is capable of being released after engaging, and the Court's construction must take into consideration this language chosen by the drafter. In determining how to construe the limitation of being "releasably" engaged, the Court looks to the previous term because the patentee used the same term in the specification -"detachably" - in describing how the cannula mount connects to the spring guide as he did in describing how the stylet connects to the spring guide (or inner support rod, see infra, n. 13). Because the specification describes the cannula mount as being "detachably affixed" to the spring guide, it appears the patentee wrote the claim term "releasably engaging" with a similar meaning in mind. For the reasons stated in the previous term, the Court interprets the term "releasably" as requiring separation without loss or damage.

Accordingly, the Court construes this term to mean "the biopsy actuator comprising a second connector, which is anything that can connect and be released without loss or damage, the second connector being capable of being releasably and fixedly engaged with the first connector." 18

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18 Once again, the Court acknowledges that this construction of claim 2 may exclude coverage of the single use embodiment, but concludes that such a construction is not improper for that reason alone.

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In his challenge to the district court's construction of the '798 patent, Dr. Baran advocates a definition for the terms "detachable" and "releasably" that does not include the "without loss or damage" condition. Dr. Baran objects to that condition because it excludes the single-use embodiment from the asserted patent claim and therefore precludes his infringement claim against the BioPince, which is a single-use device.

As an initial matter, we accept Dr. Baran's assertion that the '798 patent "never discloses a stylet that is joined to a cannula." The specification indicates that the stylet 60 is attached to a support rod 14, and that the cannula 66 is attached to a spring guide 18. The full needle is then assembled by placing a coil spring "coaxially" onto the stylet and placing the cannula "telescopically" over the stylet and coil spring. The cannula remains an independent component that slides freely over the stylet.

[SEE FIG. 1 IN ORIGINAL]

The fact that the stylet is not attached to the cannula, however, is not favorable to Dr. Baran. If anything, it lends further credence to the district court's construction of "detachable" as meaning "separation without loss or damage," because the stylet and cannula as described in the specification are readily separable without loss or damage.

Of greater significance is the different language used by the patentee to distinguish the single-use embodiment from the reusable embodiment. In describing the reusable embodiment, the patent states that "the stylet 60 is received and detachably engaged within the clevis 46 of the spring guide 18. The thread 74 on the inner surface 72 of the collar 62 is engaged with the thread 56 on the spring guide 18 to secure the cannula mount 58 to the spring guide." '798 patent, col. 7, ll. 42-46. Figure 1 shows that the stylet is inserted into a notched recess on the support rod from which it can be easily removed, 1 and that the cannula is screwed onto the spring guide from which it too can be easily removed.
1 Although the specification states that the stylet is inserted into the clevis of the "spring guide," Figure 1 clearly shows that the clevis is located on the support rod.

By contrast, in describing the single-use embodiment, the patent states that the assembly of the device is "quite similar" except that "the stylet 262 is adhesively bonded within the recess 246, and the base 262 of the cannula mount 258 is similarly secured within the bore 255a." '798 patent, col. 10, ll. 22-27. Figure 5, which corresponds to the single-use embodiment, shows that the clevis is absent from the support rod, and that the screw threads are absent from the spring guide. Instead, the stylet and the cannula are glued permanently into the support rod and the spring guide, respectively.

[SEE FIG. 5 IN ORIGINAL]

The patentee used the term "detachably" in the specification to draw a direct contrast between the removable components of the reusable embodiment and the adhesively bonded components of the single-use embodiment. That usage effectively concedes that adhesively bonded components--including the single-use embodiment--are not "detachable" components within the meaning of the patent. We agree with the district court that "[t]his distinction suggests that the patentee intended 'detachable' to mean capable of removal or separation without breaking or causing damage through the necessary use of undue force." Baran v. Med. Device Techs., Inc., 519 F. Supp. 2d 698, 724 (N.D. Ohio 2007); see also K-2 Corp. v. Salomon S.A., 191 F.3d 1356, 1365 (Fed. Cir. 1999) ("Screws, unlike rivets and [adhesive] laminates, are meant to be unscrewed, that is, to be removed. A rivet or a laminate, to the contrary, is meant to remain permanent, unremovable unless one is bent on breaking the permanent structure apart."). Incorporating the "without loss or damage" condition into the claim construction has the additional advantage of comporting with the plain meaning of "detachable," as expressed by the several dictionary definitions cited by the district court.

We also agree with the district court that the terms "releasably" and "detachable" have the same meaning in the '798 patent. Dr. Baran argues that the use of different terms implies that they have different meanings, see CAE Screenplates Inc. v. Heinrich GmbH, 224 F.3d 1308, 1317 (Fed. Cir. 2000), but that implication is overcome where, as here, the evidence indicates that the patentee used the two terms interchangeably. See Tehrani v. Hamilton Med., Inc., 331 F.3d 1355, 1361 (Fed. Cir. 2003).

In a final attempt to bring the single-use embodiment within the scope of the asserted claim, Dr. Baran argues that the district court's claim construction improperly excluded a preferred embodiment and ignored the Summary of the Invention. There is no force to either of those arguments. It is not necessary that each claim read on every embodiment. In this instance, while claim 2 reads on only the reusable embodiment, a different claim of the '798 patent (claim 18) reads on both the single-use and the reusable embodiments,. See Helmsderfer v. Bobrick Washroom Equip., Inc., 527 F.3d 1379, 1383 (Fed. Cir. 2008) ("It is often the case that different claims are directed to and cover different disclosed embodiments."); Intamin Ltd. v. Magnetar Techs., Corp., 483 F.3d 1328, 1336-37 (Fed. Cir. 2007) ("[A] claim need not cover all embodiments."). As for the excerpt from the Summary of the Invention, it simply repeats verbatim the claim language that the "stylet means is . . . detachable from the cannula" and that the "second connector . . . releasably and fixedly engages the first connector." '798 patent, col. 3, ll. 50-60. The fact that those claim terms were used in the Summary does not mean that they must be read to encompass all the embodiments of the invention.

Because we do not disturb the district court's construction of "releasably," or the related constructions of "first connector means" and "second connector means," Dr. Baran's stipulation of noninfringement of the '798 patent remains effective.

7. "said proximal end having a first connector means secured thereto"

Like the preceding term, the dispute in interpreting this term concerns the phrase "first connector means." Plaintiff's proposed construction for "first connector means" mirrors his proposed construction for "second connector means" -
"anything that connects" - such that the entire term should be construed to mean, "said proximal end having a first connector, which is anything that connects, secured thereto." In its claim construction brief, MDTech originally proposed the construction, "the proximal end of the cutting cannula includes a first means to connect." At the Markman hearing, however, MDTech changed its proposed construction to defining this term as having a means-plus-function claim limitation under Section 112, ¶6. (Tr. at 107.) According to counsel for MDTech, the change occurred in order maintain consistency with MDTech's position that the phrase "second connector means" also constituted a means-plus-function claim and that the first connector means "would inevitably be that which communicates with the structure that is called for in the second connector means." (Id.) The structure MDTech identifies as correlating to the function of the "first connector means" is the cannula mount 58, which contains a female quarter turn thread 74 that interacts with the male quarter turn thread on the spring guide (the second connector means, according to MDTech).

For the reasons stated in connection with preceding term, the Court does not find that this is a means-plus-function clause, but it also does not find that "first connector means" can be defined simply as "anything that connects" because the first connector necessarily interacts with the second connector, which must be capable of being released. Therefore, the Court construes this disputed term as "said proximal end having a first connector, which is anything that can connect and be released without loss or damage, secured thereto."

1. Claim 1

Claim 1 of the patent states:

A variable torch apparatus comprising:

- a torch portion having a fuel canister and wick element, said torch portion constructed of a segment of copper pipe which has been capped and sealed;

- a vertical support portion constructed of a length of copper pipe and attached to said torch portion by a copper pipe reducer element; and

- a base portion connected to said vertical support portion, said base portion constructed of copper pipe material.

'371 Patent col.4 11.11-19. Both parties state this claim creates three parts for the invention: a torch portion, a vertical support portion, and a base portion. As the following discussion shows, these three parts can be manipulated into a variety of configurations: table-top torches, lawn torches, torches with one or multiple torch portions, and torches of various heights. Thus, "all . . . variations . . . result from the combination of the three basic components," id. col.3 1.46, col.4 11.1-2, and this makes the torch a variable torch apparatus.

One of the first disagreements is over the meaning of "copper pipe." While both parties state that pipe is a "hollow body," Gardendance argues that the meaning should be limited to cylindrical pipe. Such a limitation is unreasonable because although all the patent's figures use cylindrical pipe, none of the claims limit "pipe" to only cylindrical pipe. Moreover, the specification states that those "skilled in the art" of coppersmithing can make modifications without departing from the "spirit and scope" of this invention. Id. col.4 11.3-7. Thus, the specification shows the claim terms should be construed so that a slightly modified apparatus still falls under the claim terms. Changing the shape of the pipe is a minor change.

The torch portion has a fuel canister, or "a container for holding combustible matter" and a wick element, or "a bundle of fibers, or a loosely twisted or braided cord, tape, or tube" that draws up fuel. (Def.'s Markman Br. at 9, 12.) There is some confusion over what is "capped and sealed" in the torch portion. Gardendance proffers three possible interpretations. Gardendance's preferred interpretation is not clear from its argument. Woodstock only asserts that "the 'copper pipe' has been closed off and covered." (Id. at 14.)

The difference in the terms appears to be that "seal" is a more complete "closing off." The specific arrangement of what is capped and what is sealed, however, comes from the specification.

The copper pipe that forms the torch portion has a pipe fitting on the bottom with a plug in it, and "this creates a vessel or fuel canister." '317 Patent col.2 1.61. The bottom has a "cap," and this is where the "seal" is because a seal, or a complete closing off, prevents fuel from leaking. The top of the pipe has "a standard one and one-fourth inch copper cap" that has a hole drilled for a wick. Id. col.2 11.63-64. The cap can be friction fit or soldered, with the first option being the preferred method. In either case, there remains a hole in the top for a wick. This hole can allow fuel to evaporate. Thus, the top of the tank is not completely closed off; the top is merely capped. Thus, the torch portion is capped and sealed on the bottom so that fuel does not leak, and the top is only capped.

The vertical portion is copper pipe and connects to the torch portion by a copper pipe reducer element. A copper pipe reducer element is "a part that connects two hollow copper bodies of different sizes." (Def.’s Markman Br. at 13.) Thus, the vertical portion and torch portion are not of the same diameter pipe. The parties disagree over how the copper pipe reducer element is actually formed and the meaning of "connects."

The best interpretation of the '371 Patent is that the copper pipe reducer element does not have to be a separate piece. Woodstock argues that the copper pipe reducer element "need not be a separate and distinct item, but may simply be an integrated part of the 'torch portion' or an integrated part of the 'vertical support portion.'" (Id.) Gardendance argues the interpretation should clearly spell out that the copper pipe reducer element is a separate piece.

The best interpretation is that the element does not have to be a separate piece; the element can be one with another part of the torch, or it may be a separate element. Nothing in the claim states that the copper pipe reducer element is a separate piece from the torch portion. Also, the specification states that "it is obvious that modifications and changes . . . may be made by those skilled in the art" of coppersmithing "without departing from the spirit and scope of the invention." '371 Patent col.4 11.4-7. Thus, the specification shows that the claim terms should be construed to allow minor modifications that do not otherwise depart from the spirit and scope of this patent. Someone versed in coppersmithing, even if it takes as much time as Gardendance suggests in its brief, could make the torch portion and copper pipe reducing element into one unit and otherwise still construct the torch covered by this patent. When those two pieces are actually one piece, that torch retains its variable nature in that a user could still create a variety of torch units, including lawn and table-top units, and units with one, two, or more torches. One has a variable torch even if the two elements are actually one element. Making the torch unit and copper pipe reducing element into one is within the claim terms, and the copper pipe reducing element may or may not be a separate piece.

The parties also disagree over the term "connects," which appears in the third paragraph of Claim 1. The base portion, which neither party disputes is made of copper pipe, is "connected to [the] vertical portion." Id. col.4 1.18. The proffered definition is that "connects" means "to associate," which Gardendance suggests "is a definition meant in an intangible[] sense and not in a physical sense." (Pls.' Response Ct.'s Req. Final C1. Interpretation Submissions at 14.) While Gardendance's argument is not entirely clear, the argument seems to be that Woodstock wants "connect" to mean "associate" so that the Gardendance torch will more clearly infringe the '371 Patent.

The best interpretation is that "connects" means that the base part and the vertical portion join or associate together. The base portion may be in one of two configurations, which are discussed below at Claim 4. See infra Section II.B.4. The base may be a separate element or simply the end of the vertical portion (meaning it is one with the vertical portion, as the reducing element may be). In either case, the base portion connects to the vertical portion in that the separate element or the end of the vertical portion both join or associate with the vertical portion.
matter which the applicant regards as his invention.

If the limits of a patent are not adequately defined, a zone of uncertainty is created which would discourage invention. Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 1396, 134 L. Ed. 2d 577 (1996). If it is shown by clear and convincing evidence that claims are indefinite, they may be held invalid as a matter of law. Morton International, Inc. v. Cardinal Chem. Co., 5 F.3d 1464, 1470 (Fed. Cir. 1993). Whether a claim is invalid for indefiniteness requires a determination of whether those skilled in the art would understand what is claimed when the claim is read in light of the specifications. Id.; Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576 (Fed. Cir. 1986). Claims must "reasonably apprise those skilled in the art" as to their scope and be "as precise as the subject matter permits." Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 624 (Fed. Cir. 1985).

If the Court were to accept Semmler's arguments regarding the meaning of the terms "whenever the engine is overrunning" and "considerable fuel saving," the patent would be invalid for indefiniteness. As the Court noted in its Memorandum Opinion and Order of September 30, 1996, p. 11:

"Semmler's position is that overrunning as used in his patent occurs when the speed of the engine exceeds a pre-determined speed established by any fixed relationship between engine speed and throttle position. Under this definition, overrunning would be a hypothetical construct divorced from any consideration of engine load or demand. This definition would eliminate the necessity for using the word "overrunning," as the condition it defines would be completely described by simply stating that a fuel cut occurs whenever the engine speed exceeds the speed determined by the fixed relationship. Indeed, this is how Semmler originally expressed his claim. Under this definition Semmler would be free to select any fixed relationship between engine speed and throttle position and call it overrunning. In this way, he could confine overrunning to any condition of load or demand he might choose." (Emphasis in original)

If the Court were to adopt Semmler's definition of overrunning, those skilled in the art would not understand what is claimed in his patent.

The limiting language "considerable fuel saving" is problematic. The Court has construed the phrase to mean a fuel-saving that one skilled in the art in 1976 would have considered large, substantial or important. Even when construed in this manner, this claim fails to satisfy the definiteness requirement of 35 U.S.C. § 112. The difficulty in ascribing definiteness to this claim is demonstrated by the fact that Semmler's experts, who are highly skilled in the art, have taken the position that fuel savings of one percent, or even less, fall within the definition of "considerable". See p. 37 infra.

The Court concludes that the expression "considerable fuel saving" in the Semmler patent is like the term "partially soluble" in Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448 (Fed. Cir. 1985), and the expression "about" in Amgen, Inc. v. Chugai Pharmaceutical Co., Ltd., 927 F.2d 1200 (Fed. Cir. 1991). The term "considerable fuel saving" does not reasonably apprise those skilled in the art as to the scope of Semmler's claim, nor is it as precise as the subject matter permits. Semmler could have measured the fuel savings obtained by his device and expressed the limitation in terms of a percentage or range of percentages. The Court finds that this limitation of the Semmler patent does not satisfy the definiteness requirement of 35 U.S.C. § 112, and that Claims 1, 5 and 17 of the Semmler patent are invalid for indefiniteness.
well recognized meaning as a "middle ground" transitional phrase. Momentus agrees that the phrase "consisting essentially of" is a transitional phrase, but argues it is a phrase defined by law and needs no construction by the Court.

The transitional phrase "consisting essentially of" is commonly used to signal a partially open claim in a patent. PPG Indus. v. Guardian Indus. Corp., 156 F.3d 1351, 1354 (Fed. Cir. 1998).

Typically, 'consisting essentially of' precedes a list of ingredients in a composition claim or a series of steps in a process claim. By using the term 'consisting essentially of,' the drafter signals that the invention necessarily includes the listed ingredients and is open to unlisted ingredients that do not materially affect the basic and novel properties of the invention. A 'consisting essentially of' claim occupies a middle ground between closed claims that are written in a 'consisting of' format and fully open claims that are drafted in a 'comprising' format.


In the present case, Claim 1, as submitted in the original application, did not contain the phrase "consisting essentially of"; rather, it contained the term "comprising".

1. A golf swing trainer comprising a golf grip fixed about one end of a length of solid round stock having center of gravity substantially centered at a midpoint thereof.

Catalano's proposed amended Claim 1 read as follows:

1. A golf swing trainer comprising a golf grip fixed about one end of a length of sold [sic] round stock, said trainer having a center of gravity substantially centered at a midpoint [there] of a longitudinal axis of said stock.

However, the examiner proposed substantial modifications to Claim 1. He replaced the term "comprising" with the phrase "consisting essentially of." "Sold [sic] round stock" was changed to "round stock which is solid throughout it [sic] length and crosssection." 4 In a telephone interview on March 6, 1996, Catalano consented to the examiner's amendments.

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4 The examiner also added the following to the end of Claim 1 and eliminated Claims 11 and 12:

length of round stock, and the weight of said round stock being heavier than a typical golf club so that repeated swings of the trainer establishes a muscle memory of the path of the swing, breaking down the incorrect muscle memory and building the correct muscle memory of the path of the swing.

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The examiner unambiguously replaced the "open" transitional term - comprising -- with the "middle ground" transitional phrase - consisting essentially of. Therefore, the claim includes all listed elements and those unlisted elements that do not materially affect the basic and novel properties of the invention. PPG Indus., 156 F.3d at 1354. The "included" elements are a golf grip which (1) is fixed about one end of a length of round stock which is solid throughout its length and cross-section; (2) has a center of gravity substantially centered at a midpoint of a longitudinal axis of said length of round stock; and (3) the weight of said round stock being heavier than a typical golf club.

The trainer, therefore, is open to unlisted elements that do not materially affect its basic and novel properties. Id. The novel properties of the trainer, stated in the summary and restated in the descriptions, are a homogeneously weighted shaft with a center of gravity closely positioned to the center of gravity of an actual golf club. These novel properties cause the break down of incorrect muscle memory and simultaneously develop the muscle memory appropriate to the correct golf swing. Therefore, anything added to the trainer which alters those novel features would fall outside the scope of the invention.
During the prosecution of the patent, Momentus made a central concession regarding what fell outside the scope of the invention. The prosecution history must be viewed in light of the fact Momentus was defending all claims because its application was rejected in its entirety. Therefore, concessions made during the prosecution must be considered in conjunction and not in isolation.

One reason the application was rejected was because the examiner found the device was anticipated by or made obvious over the Wallo Weighted Practice Golf Club, U.S. Patent No. 3,231,281. To fully grasp what transpired later with regard to defining the '407 patent, it is necessary to review the details of the prior art. The Wallo patent, issued to Edward Wallo on January 25, 1966, reads, in pertinent part, as follows:

This invention relates to … a golf club designed specifically for practice swinging only.

It is the principal object of the present invention to provide a practice golf club constructed in such manner as to provide effective and proper toning and strengthening of the body muscles while simultaneously and automatically guiding the body movements into proper coordination.

The overall length of the practice golf club may be varied as desired, it being preferred that the length correspond approximately with the standard length of a long iron or medium wood, for example about 40". However, it is important that the total weight of the club be from three to five times the weight of a standard golf club in order to derive the proper benefit from its use. The standard medium wood club being approximately 14 ounces in total weight, the practice club of this invention therefore should have a total weight of at least about three pounds and preferably not exceeding five pounds.

Moreover, a substantial proportion of this total weight must be distributed substantially uniformly throughout the length of the shaft, with the remainder contained in the head. The shaft should constitute at least 75%, and preferably about 90%, of the total club weight. This provides the head with sufficient weight for proper feel. This weight distribution distinguishes markedly from the weight distribution in a conventional golf club, wherein approximately 75% of the total weight is concentrated in the head and the remainder in the shaft.

In the event the shaft and head are made of lighter material, such as aluminum piping, the proper weight may be provided by filling the hollow shaft and head with a material of appropriate density, such as sand, lead, synthetic resin, and the like, as indicated at 20 in Fig. 3.

In the use of the practice golf club of the present invention, the conventional stance and grip is taken. Because of the substantially increased weight of the club, a firmer grip is required for controlling the club. This contributes materially to the strengthening of the hands. Further, the excessive weight forces the back swing to be taken much slower than normal, thereby tending to correct the common fault of a fast and jerky backswing.

It will be apparent to those skilled in the art that various modifications may be made in the details of construction described hereinafter. For example, the practice club may be constructed from a conventional golf club by appropriate weighting of the shaft and head so as to provide from three to five pounds total weight with at least 75% of the weight distributed through the shaft. These and other modifications may be made, as desired, without departing from the spirit of this invention and the scope of the appended claim.

Having now described my invention and the manner in which it may be used, what I claim as new and desire to secure by Letters Patent is:

A practice golf club comprising:
(e) the total weight of the practice golf club being from about three to about five pounds, and the shaft thereof constituting about seventy-five to ninety percent of said total weight, the overall length of such club corresponding to that of a standard full swing golf club, …

(emphasis added).

To save its claim from rejection and to distinguish its device over the Wallo device, Momentus made the following argument:

The Examiner has rejected claims 1-12 under 35 U.S.C., Section 102 as anticipated by, or under 35 U.S.C., Section 103 as obvious over, Wallo. In Wallo, from 75 to 90% of the weight of the trainer is in the shaft, resulting in from 10 to 25% of the weight being in the head of the trainer (col 2, lines 18-24). The shaft is hollow (col 2, lines 25-40). The overall weight of the trainer is such as to require a firmer grip, to strengthen the hands and to slow the swing (col 2, lines 41-49). The down swing is resisted by the “excessive weight of the club” (col. 2, lines 58-59). The trainer causes “toning and strengthening of the muscles by swinging the excessive weight” (col. 2, lines 69-70). Unlike Wallo, applicant's trainer has a solid shaft, uses no club head and substantially 100% of the trainer weight is non club head weight. A hollow device having 10-25% club head weight cannot meet the requirement in applicant's claims that the center of gravity of the trainer be substantially at the center of a solid round stock. Furthermore, as explained above, and as set forth in greater detail in claim 11 and in even greater detail in claim 12 of the present application, the claimed weighting of applicant's device is related to changing the memory and not the strength of the muscles involved in the swing and to changing the path of the swing due to balance rather than changing the speed of the swing due to weight. Applicant therefore submits that applicant's present invention is neither anticipated by Wallo, which does not disclose the structure claimed by applicant, nor obvious over Wallo, which teaches an entirely different concept of golf swing training and is not applicable to the principles taught by applicant.

(emphasis added).

Defendants assert that the prosecution history shows Momentus conceded that a device having 10-25 percent club head weight cannot meet the requirements of its claims. Momentus denies this assertion stating the Defendants ignore that the statements were made to specifically distinguish its device from a hollow device. Momentus further argues the claim was allowed without a percentage limitation and one cannot be read into the claim.

Momentus overlooks the fact that the examiner initially rejected Momentus' application indicating the device was anticipated by or made obvious over the Wallo device despite the fact the Wallo device was hollow. That is, taken alone, Momentus' solid shaft design did not distinguish it from the Wallo device because a solid shaft was anticipated by the Wallo patent, which provided, "In the event the shaft and head are made of lighter material, such as aluminum piping, the proper weight may be provided by filling the hollow shaft and head with a material of appropriate density, such as sand, lead, synthetic resin, and the like." (Wallo Patent) (emphasis added). Moreover, Momentus had to distinguish other features as novel over Wallo, for instance, the weighted shaft which was common to both the Momentus device and the Wallo device.

As the above highlighted language from the prosecution history demonstrates, Momentus defended the novelty of its weighted design by clarifying that Wallo was 75-90 percent shaft weight with 10-25 percent club head weight, whereas, its own device normally had no club head and substantially 100 percent of the trainer weight was nonclubhead weight. 5 Momentus distinguished that was the combined characteristics of being solid and weighted and having no club head, which made its device novel over Wallo. Although Momentus suggests that independently each characteristic distinguishes the Momentus device from the Wallo device, that is not what the prosecution history reveals. Rather, the characteristics must be read in conjunction.

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5 Certainly Claim 9 contemplates the additional attachment of a club head at the end of the trainer, but the addition of a club head does not address the issue of added weight and the alteration of the center of gravity along the shaft. The device begins with a homogeneous shaft, for which the center of gravity would be precisely at the midpoint on the shaft. To this is added a
light weight grip at one end and normally a protective tip at the other, leaving the center of gravity essentially unchanged. At
some point the addition of weight at the distal end of the club would materially alter the essential features of the trainer. In
the absence of the prosecution history, specifically defining the point of departure would be an elusive task. In the presence
of the prosecution history, however, the specificity is provided by the patent applicant. See following discussion.

The specifications and the prosecution history repeatedly state that the novel feature of the Momentus trainer is the center
of gravity which is substantially at the center of the solid round shaft. To save its claim from rejection in view of prior art,
Momentus conceded that modifications which altered this defined center of gravity would fall outside the scope of its
claimed invention. Momentus cannot now gratuitously deny those concessions in order to broaden the scope of its
invention. Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1220 (Fed. Cir. 1995) ("[A] concession made or position
taken to establish patentability in view of prior art on which the examiner has relied, is a substantive position on the
technology for which a patent is sought, and will generally generate an estoppel."); Southwall Tech., Inc., 54 F.3d at 1576
("Claims may not be construed one way in order to obtain their allowance and in a different way against accused
infringers.").

Therefore, as discussed above, during the prosecution of its claim, Momentus conceded that the center of gravity of a device
with a club head weight of 10-25 percent would not be substantially centered at a midpoint of the shaft and therefore cannot
meet the requirements of Momentus' claims. Schumer v. Lab. Computer Sys., Inc., 308 F.3d 1304, 1313 (Fed. Cir. 2002)
("Thus, the prosecution history limits even clear claim language so as to exclude any interpretation that was surrendered
during prosecution, but only where the accused infringer can demonstrate that the patentee surrendered that interpretation
"'with reasonable clarity and deliberateness.'"') (quoting Pall Corp. v. PTI Techs. Inc., 259 F.3d 1383, 1393 (quoting N.
Telecom Ltd. v. Samsung Elecs. Co., 215 F.3d 1281, 1294-95 (Fed. Cir. 2000)), vacated on other grounds by PTI Techs.,
Inc. v. Pall Corp., 535 U.S. 1109, 122 S. Ct. 2324, 153 L. Ed. 2d 152 (2002))). The Court finds on this record the patentee
did deliberately and clearly provided the basis for this interpretation.

In construing the phrase "consisting essentially of" in Claim 1, the Court considers the fact that the examiner insisted on a
middle ground transitional phrase rather than an open transitional term. Therefore, the examiner intended that the Claim
would be open only to elements which "do not materially affect the basic and novel properties of the invention." PPG
Indus., 156 F.3d at 1354. The novel property of the Momentus trainer is that its center of gravity is substantially centered at
the midpoint of its solid round shaft, therefore, any element which materially affects this feature would fall outside the
scope of the patent. For the reasons stated, the Court must construe the phrase "consisting essentially of" in Claim 1 as
excluding any element, if added to the device would constitute more than 10 percent club head weight, because such an
element would materially alter the novel property of the invention.

CLAIM 9

Claim 9 reads, "A trainer according to claim 1 further comprising a golf club head fixed to another end of said length of
stock." 6

There is no dispute that Claim 9 is dependent on Claim 1 and includes all the limitations of Claim 1 as well as the
limitations of Claim 9. Consequently, the construction of Claim 9 is subordinate to the construction of Claim 1.

Plaintiff argues that Claim 9 clearly anticipates a golf swing trainer with a club head, and therefore a device with a club
head would not be outside the scope of Momentus' patent claims. 7 Defendants argue that despite the fact Claim 9
anticipates a club head, in prosecuting the patent, Momentus provided notice as to how much weight a club head, if added to
the end of the shaft, would take the device outside the scope of the claims. That is, a golf swing trainer having 10 percent or
more club head weight would be outside the scope of the patent claims. Defendants assert that to hold otherwise would run
afoul of the "fair notice" function of claiming.
The '407 specifications clarify the preferred parameters of a club head:

Some golfers have difficulty psychologically in associating their swing trainer swing to their actual golf club swing. To overcome this psychological difficulty, one preferred embodiment of the swing trainer may incorporate a clubhead 27 at the end of the shaft 11 as is shown in Fig. 11. However, the addition of the clubhead 27 tends to alter the center of gravity 17 of the trainer in more than a negligible amount. It is therefore desirable that the clubhead 27 be kept as light as possible. Furthermore, if a 1/2 inch stock is used for the shaft 11, the clubhead end of the shaft must be adapted to fit a standard d" golf club head connector or, in the alternative, a d inch stock could be used and the grip end of the shaft 11 adapted to accommodate the standard grip 13.

Thus, the club head included in Claim 9 is anticipated to provide only a cosmetic function, with essentially no impact on the center of gravity along the shaft, and no alteration of the novel weighting feature.

The prosecution history also shows that Momentus conceded certain limitations regarding the addition of a club head in defending its claims.

Claims 1, 11 and 12 have been amended so as to clarify that the midpoint is a position along the longitudinal axis of the stock and to further clarify that the relationship of the golf grip to the stock is such that the center of gravity of the trainer is substantially located at the longitudinal midpoint of the stock. Applicant respectfully submits that a structural configuration in which a solid piece of round stock fitted with a golf grip at one end with the components being so interrelated as to result in the center of gravity of the combined arrangement being substantially centered at the longitudinal midpoint of the solid round stock is critical to the operation of applicant's trainer and is the heart of applicant's claims. Claims 2 through 7 are specific limitations on this relationship. Specific options include the soft tip of claim 8, the club head of claim 9 and the indicia of claim 10. Claim 11 is intended to further define the relationship of the components of the invention defined in claim 1 in that the weight of the length of stock of the trainer is sufficiently heavier than conventional clubs used in actual play as to result in a new muscle memory related to the golf swing path. That is, and as is stated in some of the references cited by the Examiner, presently known weighted clubs are weighted so as to strengthen the muscles of the golfer and thus enable him to better manipulate or control the path of the swing. Applicant's device is not based on such manipulated control of the swing due to any increased strength or muscle development in the user, but rather is based on the structural balance of the trainer, that is the center of gravity of the trainer being substantially centered at the longitudinal midpoint of a sold [sic] round stock which is of sufficient weight in relation to the conventional golf club so as to cause the user's body parts to move in an appropriate golf swing path.

Momentus argues that substantially centered does not mean that the center of gravity is exactly at the center of the longitudinal midpoint. Momentus further argues the Defendants are trying to read a limitation into the claim that is not present. The Court disagrees.

Although Claim 9 provides for the addition of a club head on its device, as discussed above, any addition including a club head which alters the novel property of Momentus' trainer will fall outside the scope of the '407 patent.

Therefore, consistent with the construction of Claim 1, the Court construes Claim 9 to be limited by Claim 1 in that a club head comprising more than 10 percent of the weight of the device would affect the basic and novel property of the invention being its center of gravity substantially centered about the midpoint of the shaft and would fall outside the scope of the '407 patent.

GO BACK
BACKGROUND

Gentry owns the '244 patent, which is directed to a unit of a sectional sofa in which two independent reclining seats ("recliners") face in the same direction. Sectional sofas are typically organized in an L-shape with "arms" at the exposed ends of the linear sections. According to the patent specification, because recliners usually have had adjustment controls on their arms, sectional sofas were able to contain two recliners only if they were located at the exposed ends of the linear sections. Due to the typical L-shaped configuration of sectional sofas, the recliners therefore faced in different directions. See '244 patent; col. 1, ll. 15-19. Such an arrangement was "not usually comfortable when the occupants are watching television because one or both occupants must turn their heads to watch the same [television] set. Furthermore, the separation of the two reclining seats at opposite ends of a sectional sofa is not comfortable or conducive to intimate conversation." Id. at col. 1, ll. 19-25.

The invention of the patent solved this supposed dilemma by, inter alia, placing a "console" between two recliners which face in the same direction. This console "accommodates the controls for both reclining seats," thus eliminating the need to position each recliner at an exposed end of a linear section. Id. at col. 1, ll. 36-37. Accordingly, both recliners can then be located on the same linear section allowing two people to recline while watching television and facing in the same direction. Claim 1, which is the broadest claim of the patent, reads in relevant part:

A sectional sofa comprising:

- a pair of reclining seats disposed in parallel relationship with one another in a double reclining seat sectional sofa section being without an arm at one end . . .,
- each of said reclining seats having a backrest and seat cushions and movable between upright and reclined positions . . .,
- a fixed console disposed in the double reclining seat sofa section between the pair of reclining seats and with the console and reclining seats together comprising a unitary structure,
- said console including an armrest portion for each of the reclining seats; said arm rests remaining fixed when the reclining seats move from one to another of their positions,
- and a pair of control means, one for each reclining seat; mounted on the double reclining seat sofa section . . .

Id. at col. 4, line 68 to col. 5, ll. 1-27 (emphasis added to most relevant claim language). Claims 9, 10, 12-15, and 19-21 are directed to a sectional sofa in which the control means are specifically located on the console.

In 1991, Gentry filed suit in the District Court for the District of Massachusetts alleging that Berkline infringed the patent by manufacturing and selling sectional sofas having two recliners facing in the same direction. In the allegedly infringing sofas, the recliners were separated by a seat which has a back cushion that may be pivoted down onto the seat, so that the seat back may serve as a tabletop between the recliners. In response to Gentry's complaint, Berkline moved and was granted a transfer to the District Court for the District of Massachusetts of its earlier-filed action in the United States District Court for the Middle District of North Carolina seeking a declaration that the patent was invalid and not infringed. After that declaratory judgment action was consolidated with Gentry's infringement suit, Berkline added a counterclaim asserting that the patent was unenforceable because of inequitable conduct. The district court granted Berkline's motion for summary judgment of non-infringement, but denied its motions for summary judgment of invalidity and unenforceability. In construing the language "fixed console," the court relied on, inter alia, a statement made by the inventor named in the patent, James Sproule, in a Petition to Make Special (PTMS). See 37 C.F.R. § 1.102 (1997). Sproule had attempted to distinguish his invention from a prior art reference by arguing that that reference, U.S. Patent 3,877,747 to Brennan et al. ("Brennan"), "shows a complete center seat with a tray in its back." Gentry I, 30 U.S.P.Q.2D (BNA) at 1137. Based on Sproule's argument, the court concluded that, as a matter of law, Berkline's sofas "contain[] a drop-down tray identical to the one employed by the Brennan product" and therefore did not have a "fixed console" and did not literally infringe the patent. Id. The court held that Gentry was also "precluded from recovery" under the doctrine of equivalents. Id. at 1138.

Gentry then requested that final judgment be entered so that it could immediately appeal the non-infringement decision. Berkline requested that its invalidity and unenforceability counterclaims proceed to trial on the authority of Cardinal
Chemical Co. v. Morton International, Inc., 508 U.S. 83, 26 U.S.P.Q.2D (BNA) 1721, 124 L. Ed. 2d 1, 113 S. Ct. 1967 (1993). The court agreed with Berkline, stating "that further proceedings will be necessary on the issues of invalidity and inequitable conduct." After a bench trial, the court held that the patent was not invalid under 35 U.S.C. §§ 102 or 103 (1994), and that the claims in which the location of the controls is not limited to the console (claims 1-8, 11, and 16-18) are not invalid under 35 U.S.C. § 112, P 1 (1994). See Gentry II, 939 F. Supp. at 101-06, 41 U.S.P.Q.2D (BNA) at 1348-52. The court also held that Berkline had failed to prove that the patent was obtained by inequitable conduct and in so ruling noted that "the evidence at trial was not even close." Id. at 101, 41 U.S.P.Q.2D (BNA) at 1347. The court denied Gentry's motion for the attorney fees it had incurred in overcoming Berkline's allegation of inequitable conduct. The court expressed "sympathy for Gentry, especially in view of Berkline's insistence on pressing the case after prevailing on the infringement issue," but nonetheless concluded that "these circumstances do not permit consideration of an award of fees."

Gentry appeals from the decision of non-infringement and the court's refusal to award attorney fees. Berkline cross-appeals from the decision that the claims are not invalid under §§ 103 or 112. We have jurisdiction pursuant to 28 U.S.C. § 1295(a) (1) (1994).

DISCUSSION

A. Infringement

Gentry argues that the district court erred in construing the claim terms "fixed" and "console" in granting summary judgment of non-infringement. Gentry asserts that the term "fixed" merely requires that the sofa section be rigidly secured to the adjoining recliners and that the term "console" refers to any sofa section that separates two recliners and can function as a tabletop. Accordingly, Gentry argues that on the undisputed facts it, not Berkline, is entitled to summary judgment on the issue of infringement. Berkline argues that summary judgment was properly granted because the term "fixed" requires that no part of the console be movable, while Berkline's sofa has a center seat back that can pivot. Berkline also argues that Gentry effectively defined a center seat with a retractable seat back as not a "console" when it distinguished the Brennan reference in the PTMS. On the basis of Berkline's second argument, we agree that it is entitled to judgment as a matter of law that it does not infringe the '244 patent.

We review a district court's grant of summary judgment de novo. See Conroy v. Reebok Int'l, Ltd., 14 F.3d 1570, 1575, 29 U.S.P.Q.2D (BNA) 1373, 1377 (Fed. Cir. 1994). Summary judgment is appropriate when there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law. See Fed. R. Civ. P. 56(c); Johnston v. IVAC Corp., 885 F.2d 1574, 1576-77, 12 U.S.P.Q.2D (BNA) 1382, 1383 (Fed. Cir. 1989). A determination of infringement requires a two-step analysis. "First, the claim must be properly construed to determine its scope and meaning. Second, the claim as properly construed must be compared to the accused device or process." Carroll Touch, Inc. v. Electro Mechanical Sys., Inc., 15 F.3d 1573, 1576, 27 U.S.P.Q.2D (BNA) 1836, 1839 (Fed. Cir. 1993).

Because there is no dispute concerning the structure of the accused device, our infringement analysis involves only claim construction, a question of law which we review de novo. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979-81, 34 U.S.P.Q.2D (BNA) 1321, 1329-31 (Fed. Cir. 1995) (in banc), aff'd, 517 U.S. 370, 116 S. Ct. 1384, 38 U.S.P.Q.2D (BNA) 1461, 134 L. Ed. 2d 577 (1996). The proper construction of claims is based upon the claim language, the written description portion of the specification, the prosecution history, and if necessary to aid the court's understanding of the patent, extrinsic evidence. See id. Our present analysis of infringement under the doctrine of equivalents involves prosecution history estoppel, also a question of law which we review de novo. See Southwall Techs. Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579, 34 U.S.P.Q.2D (BNA) 1673, 1679 (Fed. Cir. 1995).

We agree with Gentry that the term "fixed" requires only that the console be rigidly secured to its two adjacent recliners. The term "fixed" and the explanatory clause "with the console and reclining seats together comprising a unitary structure" were added during prosecution to overcome a rejection based on a sectional sofa in which the seats were not rigidly attached. Thus, because the term "console" clearly refers to the complete section between the recliners, the term "fixed" merely requires that the console be rigidly attached to the recliners. Moreover, Berkline's interpretation of the term "fixed" unnecessarily excludes from the claim Sproule's preferred embodiment, in which the console can be opened by pivoting its lid. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583, 39 U.S.P.Q.2D (BNA) 1573, 1578 (Fed. Cir. 1996) (noting that a claim interpretation that excludes the preferred embodiment "is rarely, if ever, correct"). Accordingly, as there is no dispute that Berkline's center seat and recliners form a unitary structure, we conclude that the "fixed" limitation is met
by Berkline's sofas.

However, Berkline's sofas do not have a "console." The prosecution history indicates that the term "console" is not met by a sofa section having a seat back that folds down to serve as a table top, as in Brennan's seat or Berkline's sofas. As noted by the district court, Sproule's PTMS distinguished the Brennan reference in the following passage: 1

Even if one were to apply the disclosure of reclining vehicle seats such as Brennan . . . to furniture, one would not produce the pair of reclining seats joined by a center console as taught by [Applicant]. The tray units of Brennan . . . while disposed between tandem reclining vehicle seats, are freestanding retractable structures that are not, per se, consoles nor do they join the pair of reclining seats as taught by Applicant. Rather Brennan shows a complete center seat with a tray unit in its back.

Gentry I, 30 U.S.P.Q.2D (BNA) at 1137 (emphasis added). This statement unambiguously indicates that the tray units in Brennan are not "consoles" as that term is used in the patent, regardless of the term's ordinary meaning or the way in which Gentry now urges us to interpret it. The relevant feature of Berkline's sofas, viz., a center seat back that may be folded down to provide a table top between the adjacent recliners, is indistinguishable from the comparable feature in Brennan, a fold-down tray table. In the PTMS, that feature was distinguished from the claimed "console." Thus, we conclude that Berkline's sofas do not contain the claimed "console." See Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1304, 41 U.S.P.Q.2D (BNA) 1364, 1368 (Fed. Cir. 1997) ("Since, by distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover, he is by implication surrendering such protection."). The claims are therefore not literally infringed. Similarly, the argument advanced in the PTMS precludes recovery under the doctrine of equivalents because of prosecution history estoppel. Arguments made by an applicant in a PTMS can create an estoppel, and thus preclude a finding of infringement under the doctrine of equivalents. See 104 F.3d at 1303-04, 41 U.S.P.Q.2D (BNA) at 1368 (Fed. Cir. 1997) (regarding arguments made by an applicant in an Information Disclosure Statement). Accordingly, we affirm the judgment that Berkline does not infringe the patent.

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1 Gentry asserts that Sproule distinguished the Brennan reference on several other grounds. Such an observation is not relevant to our analysis of the prosecution history, for even if Brennan was distinguished on multiple grounds, any of those grounds may indicate the proper construction of particular claim terms and provide independent bases for prosecution history estoppel.

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GO BACK

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1. "heater is constructed and arranged to add heat to the fluid while the fluid is disposed within the tank"

Claim 5 of the '110 patent recites a system for cleaning hydrocarbons from a part "wherein the heater is constructed and arranged to add heat to the fluid while the fluid is disposed within the tank." '110 patent, col. 8, ll. 52-54. Plaintiff argues the phrase should be construed to mean "an apparatus that heats or provides heat and that is assembled and ordered to make the fluid that is in the tank warmer." Defendant contends this element should be construed as "an electric heating element that extends from the control panel into the depths of the tank, which is constructed and arranged to add heat to the fluid while the fluid is disposed within the tank." In essence, Defendant seeks to limit this element to the specific heater disclosed in the specification.

The specification explains that it is beneficial to maintain the cleaning fluid at a certain temperature in order to maintain viability of the microorganisms and to facilitate biodegradation. See id., col. 7, ll. 45-47 ("The cleaning fluid 72 is preferably maintained in a temperature range which supports the lives of the particular microorganisms employed within the parts washer 10."). Thus, the specification discusses the use of a heater and thermostat in order to maintain an optimal temperature range. See generally id., col. 7, ll. 36-56. With respect to the heater itself, the specification teaches that "the heater 76 is acceptably in the form of an electric heating element that extends from the control panel 30 into the depths of the tank cavity 44." Id. col. 4, ll. 32-34.
The claim language requires only that the heater warm the fluid while it is in the tank; it does not require that any particular kind of structure be employed to do so. Nor does the specification suggest that a particular kind of heater is required to heat the fluid. Though the specification reveals a heater in the form of an electric heating element extending from the control panel, it is clearly disclosed in the context of explaining a preferred embodiment. It is apparent from the claims and the specification that the Applicant did not intend to limit his claims narrowly to the specific heater discussed in the specification, and thus it is entitled to all forms of heaters which "add heat to the fluid while the fluid is disposed within the tank." See Phillips, 415 F.3d at 1323 ("Much of the time, upon reading the specification in . . . context, it will become clear whether the patentee is setting out specific examples of the invention . . ., or whether the patentee intends for the claims and the embodiments to be strictly coextensive.")

The Court construes "the heater is constructed and arranged to add heat to the fluid while the fluid is disposed within the tank" as "the heater warms the cleaning fluid while the cleaning fluid is in the tank."

6. "Consumer service station beverage tapping mechanism"

The parties agreed that the definition of "consumer service station beverage tapping mechanism" should at its base be "a mechanism located in the customer service station through which refrigerated source liquids are dispensed." However, Foodie wanted the word "operatively" included in the definition out of concern that if it was not included, embodiments where part of the operation is done outside the station(s) and part of it is in the station(s) might be precluded, which Foodie believes is inconsistent with the specification. At the Markman hearing, Foodie noted they could "live without" operatively being included in the definition, and the inclusion of "operatively" would seem to confuse the definition more than it would clarify the term. Accordingly, the Court adopts the parties' agreement, without the term "operatively," as the Court's construction.

Claim 31 continues:

said wall means including an expandable cover in contact with the layer of skin and subcutaneous tissue when the device is implanted,

The parties agree that the wall means includes a portion that is capable of increasing in size or area. The parties disagree as to how "contact" should be construed. The specification only discusses the device as being implanted "beneath the skin and subcutaneous tissue", col. 2, line 9; col. 3, lines 11-23, of the port "facing" the skin, col. 4, line 60, and of the base "paralleling and facing away from the overlying soft tissue" col. 4, lines 56-58. There is no discussion of how the cover "contacts" the skin and subcutaneous tissue, but it is impossible for the cover to be in direct contact with both the skin and the tissue. The word "contact" in this context is most clearly understood as used in place of "facing."

The court finds this limitation means "a portion of the wall means that can be increased in size which would face the layer of skin and subcutaneous tissue when implanted."

contacting

Plaintiff argues that the term contacting is unambiguous and requires no definition. Defendants propose the same definition to the term "contacting" as they proposed for the term "into engagement with" for Claim 1, Issue 5, i.e., "physically attached and retained by."
Defendants defend this definition by citing the same prosecution history previously cited. (See Pfl. Ex. A at 58.) Again, there is no citation to the patent language or patent specification by either party.

The Court finds the term "contacting" to be unambiguous and easily comprehensible by the finder of fact. It therefore declines to define such term.

Inverness contends that the proper construction of the term "contacting," as that term is used in independent claims 1, 14, and 59 of the Campbell patent, is "directly applying the sample and tracer to the binder." Its argument in favor of this construction is twofold. First, Inverness argues, with the support of its expert, Dr. Gunter, that the claims of the Campbell patent teach only the direct application of sample and tracer to the binder to create a "spot assay." Second, Inverness argues that because "lateral-flow" technology of the Rosenstein patent and the Inverness products was not developed at the time the Campbell patent issued in 1987, the term "contacting" should not include this later developed technology.

Dr. Gunter contends that the Campbell patent discloses only a "spot assay" and that therefore "[a] person of ordinary skill in the art would understand that the proper way to interpret "contacting" is that the user must directly apply the sample and tracer to the 'spot' of binder." He draws support for this conclusion from the patent's specification, and states, "after a thorough review of the Campbell patent, it is my opinion that the specification is directed to and only discloses 'spot' assays . . . ." Similarly, he states that "the specification describes that in use, the sample must be directly applied to the 'spot' of binder. . . . The specification also explains that the tracer is in a solution which is also directly applied to the 'spot' of binder." Dr. Gunter also finds support for his interpretation of "contacting" in the only figure of the Campbell patent, which depicts three spots of binder on a rectangular solid support, and in Example III of the patent, which teaches the user to pipet both urine and the tracer directly onto the spot of binder. According to Dr. Gunter, it is clear from the patent's examples and specification "that if the user does not directly apply the sample and tracer to the 'spot,' the assay would not work."

Inverness also finds support for his conclusion that "contacting" must mean "directly contacting" from the prosecution history of the Rosenstein patent. As set forth above, during the prosecution history of the Rosenstein patent, BD repeatedly acknowledged that the Campbell patent does not disclose the transfer of the tracer and sample to the binder across the solid support by capillary action.

Last, in support of Dr. Gunter's construction of the term "contacting," Inverness argues that any other construction that might result in the inclusion of its one-step lateral flow assays within the bounds of the Campbell patent is untenable. According to Inverness, because lateral flow assays were unknown at the time the Campbell patent issued, the term "contacting" must be construed to prevent its application to this later-developed technology. Inverness finds support for this argument in this court's opinion in IPPV Enters., LLC, v. Echostar Communications Corp., 106 F. Supp. 2d 595, 605 (D. Del. 2000). In IPPV Enters., the plaintiff's patent was addressed to encrypting television program signals. At the time of the invention, the television industry was broadcasting its signals in analog form. The patent exclusively discussed the encrypting of analog television signals. Subsequently, the industry began commercial broadcasts of digital signals. The defendants operated a direct broadcast satellite subscriber television service that transmitted encrypted video signals in a digital format. In response to plaintiff's infringement claim, defendants argued that because the patent exclusively discusses the encryption of analog television signals, the court should construe the phrase "television program signal" in the claim at issue as meaning "analog television program signal." The court agreed with defendants, but noted that this construction would not preclude plaintiff's claim that defendants infringed under the doctrine of equivalents. Id. at 605-06. In identifying its construction, the court relied upon two principles of claim construction: that the literal meaning of a claim is fixed at its issuance, see Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1320 (Fed. Cir. 1999), and that broadly written claims may, in certain instances, be construed to limit their scope to the technologies disclosed in the patent specification, see Wang Labs., Inc. v. America Online, Inc., 197 F.3d 1377, 1383 (Fed. Cir. 1999). IPPV Enters., 106 F. Supp. 2d at 605. Inverness contends that the same principles are relevant here and that therefore the meaning of "contacting" must be limited to cover spot assays, because only spot assays are revealed in the patent specification and the lateral-flow technology was not yet developed when the Campbell patent issued.
BD responds by arguing that the plain meaning of "contacting" is not limited to Dr. Gunter's suggested interpretation of "directly contacting." According to BD, the court must begin with meaning of the term "contacting" as it was known to those skilled in the art at the time the patent issued. BD contends that because the term "contacting" has no specialized meaning and has not changed since the Campbell patent issued, it should be interpreted consistently with its plain meaning. BD suggests that "contacting" is defined as "the coming together or touching of two objects or surfaces." American Heritage Dictionary of the English Language, 287 (Houghton Mifflin 1981).

Furthermore, BD notes that Inverness's suggested interpretation violates the rule of claim construction that the specification should not be used to import limitations into the claim language. According to BD, the Campbell patent's disclosure of only alleged "spot assays" cannot limit the breadth of the plain language of its claims or alter the meaning of "contacting." See Markman, 52 F.3d at 980 ("The written description part of the specification itself does not delimit the right to exclude. That is the function and purpose of claims.").

In evaluating the meaning of the term "contacting," as used in claims 1, 14, and 59 of the Campbell patent, the court must begin with the plain meaning of the claims. Vitronics, 90 F.3d at 1582. Inverness has not suggested that "contacting" had a specialized meaning to those with skill in the art at the time the Campbell patent was issued. Nor has it suggested that elsewhere in the Campbell patent the patentee assigned a particular meaning to the term "contacting." Thus the court adopts the definition proffered by BD, "the coming together or touching of two objects or surfaces" as its plain meaning.

Inverness's arguments that the term contacting has a more limited definition find their root in two places: the specification of the Campbell patent and BD's statements about the Campbell patent while prosecuting its application for the Rosenstein patent. Beginning with the Campbell patent, Dr. Gunter's report finds no support for his definition of the term in the patent claims themselves, but instead looks to the written description of the patent, a figure included with that description, and the examples given of how to employ the invention. The uses of the patent specification to define the terms of the patent claims is limited. If the claims are clear, the patent specification can only be used to determine whether a deviation from the claims is required, such as when the specification uses a term in other than its plain and ordinary meaning. Interactive Gift Express, 256 F.3d at 1331. If the claims are unclear, then the patent specification can be used more liberally to aid the court in resolving ambiguities and identifying a claim construction that properly delimits the bounds of the patentee's invention. Renishaw PLC, 158 F.3d at 1250. Inverness has not explained why the uses of the term "contacting" in claims 1, 14, and 59 are unclear or ambiguous on their face. Thus, there is no reason to use the patent specification to explain the claims and the claim language should be accorded its plain meaning.

Even were the court to find that the claim terms are ambiguous and employ the patent specification to resolve that ambiguity, Dr. Gunter's suggested definition of contacting still lacks support. Patent specifications cannot be used to import into the patent claims a limitation suggested only by the specification or the preferred embodiment of the invention. Intervet Am., 887 F.2d at 1053. In this case, Inverness is attempting to use the fact that the patent specification's written description, figure, and examples all disclose that a user should directly contact the sample and tracer to the binder. Because doing so would have the effect of diminishing or limiting the plain meaning of the claims, the court refuses to import into its claim construction a limitation purported to be required by the patent's specification.

Inverness also finds support for its definition of "contacting" in BD's statements to the PTO during the Rosenstein patent that a person of ordinary skill in the art at the time of the Campbell patent would not have known of using capillarity through the solid support to bring the analyte, tracer, and binder into contact. However, statements made during the prosecution history of another patent are extrinsic evidence. Such statements would only be intrinsic evidence if the patentee used those statements in the prosecution of the contested patent. See Georgia-Pacific Corp. v. United States Gypsum Co., 195 F.3d 1322, 1332 (Fed. Cir. 1999). "Relying on extrinsic evidence to construe a claim is 'proper only when the claim language remains genuinely ambiguous after consideration of the intrinsic evidence.'" Interactive Gift Express, 256 F.3d at 1332 (citation omitted). This court finds that the claim language is not genuinely ambiguous and thus resort to extrinsic evidence to construe the term "contacting" is unwarranted.

--- Footnotes ---

1 While the court acknowledges that the position currently taken by BD on the meaning of the claims of the Campbell patent may be inconsistent with its position during the Rosenstein prosecution, and that such inconsistency might be
relevant to other relief for Inverness, it does not change the meaning of the terms the court is asked to construe for purposes of this summary judgment motion.

Furthermore, Inverness's reliance on this court's opinion in IPPV Enters. is misplaced. While it is true that the literal meaning of a claim is fixed upon the issuance of the patent, Al-Site Corp., 174 F.3d at 1320, IPPV Enters., 106 F. Supp. 2d at 605, the important distinction here is the nature of the disputed term. Inverness disputes the meaning of the term "contacting." In IPPV Enters., the parties disputed the term "television program signal." While it was asserted that the meaning of the latter had changed over time due to technological progress, the meaning of the former has not. While technological progress in the field of immunoassays may have been significant, it has not altered the meaning of the term "contacting" and therefore has not restrained the types of contacting covered by the Campbell patent.

Inverness also relies on the statement in IPPV Enters, that broadly written claims may be construed to limit their scope to the technologies disclosed in the patent specification. IPPV Enters., 106 F. Supp. 2d at 605 (citing Wang Labs., 197 F.3d at 1383). 2 The court in IPPV Enters. employed this principle to construe the phrase "television program signal" as meaning "analog television program signal." Inverness argues this case is analogous because the patent specification in this case discloses only "spot assays" and lateral-flow technology had not been developed at the time. While it may be true that lateral-flow technology is not disclosed in the specification of the Campbell patent, the court's primary inquiry is into the scope of the claims themselves. Markman, 52 F.3d at 980 ("The written description part of the specification itself does not delimit the right to exclude. That is the function and purpose of claims."). Because the court has concluded that the meaning of the term "contacting" is clear, the court need not resort to the claim specification unless it contains some indication that the claims do not use the term "contacting" in its ordinary sense. Interactive Gift Express, 256 F.3d at 1331.

Thus, the court finds that the term "contacting," as used in claims 1, 14, and 59 of the Campbell patent means "the coming together or touching of two objects or surfaces." The term does not require a user of the Campbell patent to directly apply the solution of analyte and the tracer to a spot of binder; it only requires that those components come together or touch.
of contact arms, although we hold that claim 9 can also encompass a contactor with a single contact arm.

The language of claim 9 does not mandate that the spring and the contact arms be connected to each other; indeed, it provides only that the "contactor [has] a spring . . . and at least one contact. . . ." '900 Patent col.11 1.36-40. Furthermore, the Summary does not actually preclude the spring and the contact arms from being separate, as it provides that "the electrical contact may be connected with one end of the spring for electrical connection with the first terminal of the battery." '900 Patent col.2 1.6-8 (emphasis added). Perimeter's reliance on the written description as well as the drawings is misplaced.

Furthermore, the doctrine of claim differentiation supports a reading of claim 9 whereby the spring and contact arms are separate. The doctrine of claim differentiation stems from "the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope." Seachange Int'l, Inc. v. C-Cor Inc., 413 F.3d 1361, 1368 (Fed. Cir. 2005) (quoting Karlin Tech. Inc. v. Surgical Dynamics, Inc, 177 F.3d 968, 971-72 (Fed. Cir. 1999)). Here, claim 21 provides for "a contact connected with one end of the spring," '900 Patent col. 13 1.12-13, while claim 9 makes no reference to the spring and contact arms being connected. Although claim 21 is an independent claim, under claim differentiation "there is still a presumption that two independent claims have [a] different scope when different words or phrases are used in those claims." Seachange Int'l, Inc., 413 F.3d at 1369 (citing Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1365-69 (Fed. Cir. 2000)). Thus, claim 21 is presumed to have a narrower scope than claim 9. 11

"The doctrine of claim differentiation is not a hard and fast rule of construction," and therefore "claims that are written in different words may ultimately cover substantially the same subject matter." Id. (citations omitted). The presumption created by the doctrine, however, can only be overcome "by a contrary construction dictated by the written description or prosecution history." Id. (citing Kraft Foods Inc., 203 F.3d at 1368). Here, the language from the Summary quoted above hardly suggests, let alone dictates, that the contact arms and the spring be connected.

In light of the foregoing, the Court finds that claim 9 does not mandate that the spring and the contact arms be connected.

Invisible Fence includes "or equivalent thereof" in its proposed construction of "a contactor," explaining that this phrase was added to preserve a potential argument under the doctrine of equivalents. The Court, however, is not to consider the doctrine of equivalents when construing claims, because whether the claim includes an equivalent is a question of infringement rather than an issue of claim construction. See Dayco Prods., Inc. v. Total Containment, Inc., 258 F.3d 1317, 1327 (Fed. Cir. 2001) ("We do not reach the issue of the infringement under the doctrine of equivalents, because that issue must be addressed first under a proper claim construction."); Microsoft Corp. v. Multi-Tech Sys., Inc., 2002 U.S. Dist. LEXIS 15960, Nos. Civ. 00-1412ADMRLE, Civ. 00-1627ADMRLE, 2002 WL 1949755, at *4 (D. Minn. Aug. 16, 2002) (declining to address any issues related to the doctrine of equivalents because it is an infringement issue); Jackson v. Thomson Consumer Elecs., Inc., 39 F. Supp. 2d 995, 1003, 1008 (S.D. Ind. 2001) (articulating that the doctrine of equivalents analysis "is a fact question not at issue in claim construction"). Thus, the Court declines including "or equivalent thereof" in its construction of "a contactor." 12

12 Also included in Perimeter's proposed construction of "a contactor" is the notion that the contactor is an "electrically-conductive component." (Joint Statement 3.) Neither of the parties discuss this specific construction, ostensibly because the contactor must be an electrically-conductive component if it is to make electrical connection with the first terminal of the battery. Therefore, we will include this definition in our construction of "a contactor."
6. Claim 7 - "to contain"

Claim 7 depends from claim 1 and adds to the invention a catalytic combustion flask "to contain" a combustible liquid. Plaintiffs argue that the present invention, as recited in claim 1, is a catalytic combustion burner and that claim 7 adds a flask designed to hold the catalytic combustion burner, the flask being present "to contain a combustible liquid." However, Plaintiffs contend that the combustible liquid is not itself a part of the present invention. Defendants, on the other hand, propose that claim 7 should be construed to require a flask containing a combustible liquid.

Because this claim includes all of the limitations of claim 1, the Court finds that the "combustible liquid" is a required limitation of this claim as well. Further, the ordinary language of the claim itself requires "a wick (4) dipping into said liquid. . . See '061 patent, claim 7. As Defendants posit, if the liquid is not there, how can the wick be "dipping" into the liquid? The claim language not only states "a wick (4) to dip;" the claim clearly states "a wick dipping into said liquid." Id. This additional language demonstrating the active tense of the verb "dipping" into the liquid further supports Defendants' position that the liquid is part of the claim.

Thus, as it did in claim 1, the Court finds that the "liquid" referenced in claim 7 is itself part of the claimed invention and is, therefore, a required limitation of the claim.

A. Container/Canister

The meaning of the term "container" or "canister" is disputed by the parties. Microfil asserts that the term "container" should be limited to a "unitary structure" as embodied in Figure 3 of the AutoMed patents. (Def. Resp. SJ for Infr. 7). Microfil's proposed claim construction for the term "container," however, is entirely wrong. Looking at the intrinsic evidence, the patentee clearly did not limit the container to one specific design. In fact, the written specification explicitly states that the "canister may be of any suitable design that allows dispensing of countable oral solid drugs." ('927 Patent Col. 6 L. 15-24). The specification further states that "canister 130 is preferably an assembly of components . . . ." (Id.). Accordingly, because the patentee used language that did not limit the term "container" to a specific "unitary structure," a container as defined in the AutoMed patents shall include any suitable design that allows dispensing of countable oral solid drugs.

3. "Container" and "Canister"

As an alternative basis for affirmance, Microfil challenges the district court's construction of "container" and "canister," as "any suitable design that allows dispensing of countable oral solid drugs." Claim Construction Opinion, 2005 U.S. Dist. LEXIS 26032, slip op. at 17. Microfil contends that these terms, which the parties agree are synonymous, should be limited to a unitary structure. AutoMed counters that nothing in the intrinsic record compels this narrow construction. Having considered the claims, the written description, and the figures of the '927 and '671 patents, we agree with the district court's refusal to read in this additional limitation. See '927 patent, col.6 ll.15-17 ("The canister may be of any suitable design that allows dispensing of countable oral solid drugs within an automated drug dispensing system."); '671 patent, col.6 ll.17-19 (same). We accordingly affirm the district court's construction of these terms.
9. Container

Defendants' Proposed Construction: A "container" is a receptacle for holding items.
Plaintiff's Proposed Construction: Leave undefined.
The Court's Claim Construction: A "container" is a receptacle for holding items.

MPT does not dispute Defendants' definition of container. Instead, it claims that it would confuse the jury to provide a definition for this non-technical term. However, the Court perceives no harm in providing this definition to the jury and adopts Defendants' definition.

The critical claim in this matter is Claim 1. Claim 1 provides that the invention has a "main body portion" that "contains" an "FM transmitter" and "power/charging circuitry." '085 Patent col.6 ll.1-6. "Contains" is the critical word in this claim, and nothing in the claim terms defines "contains." Furthermore, "contains" does not appear to be a technical term, and common-use dictionaries might illuminate possible relevant meanings for this everyday, commonly understood word. "Contain" means "to keep within limits," "to have within," and to "enclose, bound." Merriam-Webster Online Dictionary, http://www.m-w.com/dictionary/contains (last visited May 17, 2006); accord Webster's Seventh New Collegiate Dictionary 180 (1970). In light of these definitions, Claim 1 describes a product in which the FM transmitter and the power supply/charging assembly are "enclosed," "bound," or "kept within" the same housing unit.

This definition does not conflict with the other relevant evidence. The patent's entire content reflects that the invention has the FM transmitter and power supply/charging assembly within one unit. The patent's other language states that "[t]he present invention provides an integrated FM transmitter and power supply/charging assembly for an MP3 player." '085 Patent col.2 ll.64-66 (emphasis added). "Integrated" shows that this invention's critical feature is that the FM transmitter and the power supply/charging assembly are housed within one unit. Such language is consistent with Claim 1's "contains."

This construction is also consistent with the prosecution history. In his "Reasons for Allowance," the patent examiner stated he approved the '085 Patent because the patent application described, unlike other patent applications, a product that contained the FM transmitter and power supply/charging assembly within one main body. Thus, that single unit allowed not only "FM transmission . . . of audio content when played by the MP3 player in the docking cavity," but also the "transmission of electrical power through the modular docking unit . . . for charging of a battery of the MP3 player and/or powering of the MP3 player, as specified in the claim." (Birdwell Decl. Ex. 16 at 4.) Thus, in communicating his reasons for allowing the patent, the patent examiner focused on the single, integrated unit having two separate functions. In light of this evidence, Claim 1's plain language as illuminated by dictionaries, and the patent's entire content, the '085 Patent protects an invention where one module houses, contains, or holds within itself two separate functions: a fully functioning FM transmitter and power supply/charging assembly.

2. "Contaminated Underground Areas"

Plaintiff claims that the phrase "contaminated underground areas" means subterranean area of ground soil. He claims that as numerous references have been made in the specification to soil and soil conditions, the purpose and application of the invention is for removal of volatile contaminants from soil. Defendants argue that the phrase is self-explanatory. They argue there is the requirement for the underground areas to be contaminated. They further argue that the phrase "underground areas" cannot be limited to soil, as the specification contains numerous references to the "contaminated area" without limiting the reference to "soil."

The Court finds that the phrase "contaminated underground area" is unambiguous. In the claim, this phrase is not limited to "soil." Also, the claim unambiguously limits the underground area with the term "contaminated." Thus, the plain language of the claim leads to the Court to conclude that the underground areas are not limited to soil, and that such areas must be
contaminated. The specification does not alter this result. Plaintiff makes various references to soil and soil conditions, yet he does not clearly indicate that the underground areas are limited to "soil" or "soil conditions."

4) "Said visor being adjustably rotated into contiguous relation with said sheet rear surface"

This phrase means that the vehicle visor is rotated so that it contacts the rear surface of the sunshade. When in operation, the visor is "contiguous" in that it lies flat against the rear surface of the sunshade, touching the sunshade.

"Continually"

The district court properly construed the term "continually" to mean "at all times, after the manufacturing process of the balloon is completed when the balloon is not inflated." C.R. Bard, Inc. v. Boston Scientific Corp., No. 95-CV-215, slip op. at 2. However, BSC argues that the term "continually" should be construed to require that the tension from the wire exist prior to the completion of manufacture. BSC quotes claim 1 in support of its argument: "the balloon being mounted on the catheter in a manner that when the balloon is not inflated, the wire will apply continually a longitudinal tension . . . ." '246 patent, col. 6, ll. 43-45. BSC misinterprets "being mounted" as the action of mounting the balloon onto the catheter. However, as is common and accepted in patent practice, the plain claim language uses "being" in a static manner, as in "in a state of being." Thus, the claim merely refers to the balloon at any point after it has been mounted, not during the act of mounting. This reasoning alone causes BSC's proposed interpretation of "continually" to fail.

Once the catheter is completely assembled, the term "continually" as well as all other terms in the claim apply. To require that any apparatus claim term apply before completion of manufacture would be incongruous because the claim covers the apparatus and not the method of manufacturing the apparatus. As long as the accused device contained each claim limitation or its equivalent during its existence, the device infringed, and whether it infringed or did not infringe prior to the completion of a time in its existence labeled as "manufacture" is irrelevant. See Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 622-23, 34 U.S.P.Q.2D (BNA) 1816, 1822 (Fed. Cir. 1995) (stating that part-time infringement is still infringement).

The foundation of BSC's proposed claim construction is logically flawed. Any apparatus which is a composite of other apparatuses must be assembled at some point during its existence. In this case, the catheter apparatus is not complete until it has been fully assembled. The claim terms would not apply to a partially assembled apparatus, as BSC contends. Infringement of an apparatus claim is based on whether the accused device includes each claim limitation or its equivalent.

3. continually detecting the instantaneous flow rate

This phrase is found in Claims 3 and 24 of the '802 Patent and Claims 9, 44, and 53 of the '193 Patent.

Phrase: continually detecting the instantaneous flow rate

Construction: Without interruption, creating a signal corresponding to the flow rate at a particular point of time.

Reasoning: At its core, there is little dispute between the parties as to the meaning of this phrase. Both parties agree that the computer circuitry detects the instantaneous flow rate by creating a signal corresponding to the instantaneous flow rate. The real dispute between the parties is over the meaning of "flow rate", which we have already construed above.
B. A Continuous Piece of Fabric

The parties also dispute the meaning of "a continuous piece of fabric," which is contained in claims 4, 9 and 16. The issue is whether a combined "back piece" and "nursing flap" must be made of one piece of fabric or may be made of two or more pieces of fabric sewn together to form a continuous piece of fabric. Claim 16, which is the same as claims 4 and 9, states that: "a nursing garment in accordance with claim 13, wherein said back piece back and internal nursing flap are one continuous piece of fabric." Plaintiff contends that the construction should be read as: "the back piece and the nursing flap are sewn together to form a continuous piece of fabric," while Defendants' proposed construction is: "the back piece and internal nursing flap are a single continuous piece of fabric."

Plaintiff submits that this is a dependent claim, and that claims 4, 9 and 16 add a feature -- that the separate pieces be sewn together -- to form one continuous piece of fabric. According to Plaintiff, the back piece and internal nursing flap are separate pieces of fabric and the continuity is achieved by sewing the two pieces together. Plaintiff contends that normally one continuous piece of fabric is sewn or joined together and not cut from only a single piece of fabric. Defendants, however, contend that claims 4, 9 and 16 require the back piece and internal nursing flap to be formed from the same, single bolt of fabric. Defendants claim that to construe the term otherwise is to ignore the plan meaning of the term "one continuous."

In the specification, Plaintiff explains that in the alternate embodiment where the back piece is joined to the internal nursing flap, they are described as separate fabric panels. In figure 4, they are also shown as separate panels, however, both share a common reference numeral "8" which Plaintiff claims means the two panels could be sewn together as joined components. Defendants contend that construing a continuous piece of fabric conflicts with the specification, which states "for additional support, internal nursing flaps 8A and the back pieces of fabric 8B may alternatively be constructed using one piece of fabric extending around the torso, in the same manner that the elastic chest band extends around the torso." '029 Patent, col. 3, ln 24-8. Defendants argue that one piece simply means one piece and the drawings reflect only one piece of fabric and not two sewn together.

The Court agrees with Plaintiff's construction of "a continuous piece of fabric" to mean that "the back piece and the nursing flap are sewn together to form a continuous piece of fabric." Based on the plain meaning of the term as well as the specification, a continuous piece of fabric requires at least one seam to join it together. It is not necessary that the two components -- a back piece and the nursing flap - be cut from the same bolt of fabric. Rather, this can be accomplished by sewing or joining together the two parts to combine as a continuous piece of fabric.

Continuous source of illumination

The phrase "continuous source of illumination" appears in the '823 and '302 patents. Gekko's proposed construction is "illumination with an uninterrupted source of current." Gekko contends that for illumination to be continuous, the source of current must be uninterrupted. Gekko offers no intrinsic evidence to support its construction; it only offers its expert's assertion that "[Gekko's definition] is consistent with the specification of the '823 and '310 patent specification."

An expert's conclusory allegations are entirely unhelpful to the Court. Phillips, 415 F.3d at 1317. Because neither Gekko nor its expert offers any supporting evidence to show how its construction is consistent with the specifications, the assertion is conclusory and unhelpful.

Gekko's proposed construction would render the '823 patent's Claim 1 incompatible with dependent Claim 2. Although Claim 2 is not asserted, it is helpful in construing this phrase. See Phillips, 415 F.3d at 1314 (usage of a term in one claim can often illuminate the meaning of the same term in other claims). Claim 2 is dependant upon Claim 1, which requires the light elements' illumination level to be controlled using pulse width modulation ("PWM"). '823 patent, Col. 31:2-17. Neither
parties disputes that PWM involves interrupting the power current. Claim 2 requires the light elements to provide a "continuous source of illumination." Id. at Col. 31:18-20. Applying Gekko's construction of "uninterrupted current" would render Claim 1 incompatible with Claim 2.

Gekko's construction focuses on the power source for the illumination, but the intrinsic evidence does not support this view. The proper focus is the visible effect not the power source. The specification discusses controlling visible effects, such as "strobing," "dimming," "pulsation," and "pattern generation." See id. at Cols. 19:7-52; 20:36-38. In one embodiment, the specification teaches "the lighting assembly 4600 can provide continuous light or, if applicable, various lighting effects." Id. at Col. 22:40-44. The positioning of continuous light as an alternative to "various lighting effects" further supports that the specification focuses on the effect as perceived by the eye and not on the power source.

The specification does not prescribe a special meaning for "continuous source of illumination." As Gekko stated in its moving papers, one skilled in the art of photography lighting would readily understand this phrase. Also, a lay juror would have no problem understanding what "continuous source of illumination" means. Therefore, the Court does not construe this term.

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11. **Continuously**

Again, Vision Advancement argues that this term, found in Claim 1 of the '461 patent, should be given its plain and ordinary meaning and does not require construction. Vistakon proposes a construction of, "The lens surface has no discontinuities in progressivity." Vistakon supports its argument by pointing to the prosecution history and the examiner's disallowance of claim language allowing correction power to change "substantially continuously." The Court disagrees with Vistakon. The Examiner rejected the use of "substantially" because of the "inherent vagueness" of that word. Vistakon's Br., Ex. R at VIST029104. That does not provide an explicit basis to graft onto the term a requirement of "no discontinuities in progressivity." Without such a clear showing, the Court finds no need to construe this term.

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7. **"Continuously Curved" (230 Patent, Claims 1, 7, 13)**

"Continuously curved" is construed as "rounded without interruption in the longitudinal direction."

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"**Contoured**: A surface shaped to fit the outline or form of something.

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2. **"contoured to complement"**

Schindler asserts that "contoured to complement" should mean "configured so as to mutually complete so that there is no gap in between." Otis proposes: "shaped to guide engagement of the tension member with the sheave."

Schindler makes three arguments in support of its interpretation. First, it cites a dictionary definition of complement as "one of two mutually completing parts." Second, Schindler relies on the figures in the patent depicting a completely engaged
tension member and sheave. Third, Schindler argues that a gap between the engagement surface and the sheave would go against a stated purpose of the invention (i.e., reduce pressure on the tension member by increasing traction forces between the tension member and sheave).

This Court disagrees with Schindler, and finds the "no gap" limitation proposed by Schindler to be inappropriate. First, the dictionary definition Schindler relies upon is inapposite, because as noted above in Section III.H.1, the entire engagement surface of the tension member need not come into contact with the sheave. Therefore, even if the tension member surface and sheave surface were a precise fit (i.e., contoured to be perfectly complementary), they still might not be in full contact at all times. Next, as previously noted, strict reliance on the figures contained in the patent is improper. See MBO Labs, Inc., 474 F.3d at 1333; Kara Technologies, 582 F.3d 1341, 2009 U.S. App. LEXIS 21120, at *13. Finally, Schindler's assertion that the existence of any gap between the tension member and sheave would reduce overall friction is not accurate. For example, if a belt was contoured in a wave pattern (such as the belt contained in Figure 5) it may have more surface contact with a similarly contoured sheave than a comparable flat-surfaced belt and flat-surfaced sheave-even if there were slight gaps between the contoured belt and sheave in particular locations. For these reasons, the Court does not find Schindler's arguments in support of its construction of "contoured to complement" to be compelling.

Otis' suggests that the Court construe "contoured to complement" to mean "shaped to guide engagement of the tension member with the sheave." This functional description of the contours of the tension member is appropriate, as it "tells us something about the structural requirements" of the claim. K-2 Corp. v. Salomon S.A., 191 F.3d 1356, 1363 (Fed. Cir. 1999) (noting that where a functional purpose requires a certain structure, the statement of function can serve as a claim limitation).

The Court will adopt Otis' construction, and interpret "contoured to complement" to mean "shaped to guide engagement of the tension member with the sheave."

IMS contends that the district court erred when, based on the preambles of claims 1 and 7, it limited those claims to a "control system for machine tools rather than an entire machine tool apparatus." To the extent that the district court's claim interpretation precludes a finding of infringement by a machine tool apparatus that includes the claimed control-related limitations, we agree that the district court improperly limited the claims.

"[A] claim preamble has the import that the claim as a whole suggests for it." Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620, 34 U.S.P.Q.2D (BNA) 1816, 1820 (Fed. Cir. 1995). If the preamble adds no limitations to those in the body of the claim, the preamble is not itself a claim limitation and is irrelevant to proper construction of the claim. See Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 U.S.P.Q.2D (BNA) 1161, 1165-66 (Fed. Cir. 1999). That is the case here. The phrase "control apparatus" in the preamble merely gives a descriptive name to the set of limitations in the body of the claim that completely set forth the invention. Its use does not limit the claims, as Haas contends, to a control apparatus that is separate from the machine tool. The claim is infringed by any apparatus encompassing all of the limitations in the body of the claim. Such an infringing apparatus may be a machine tool apparatus that includes the claimed control features or a control apparatus that is separate from and communicates with a machine tool apparatus.

The prosecution history is consistent with this interpretation. In a restriction requirement, the PTO recognized that the claimed invention, a machine tool control, was part of a machine tool. In sum, the applicant's choice to elect claims directed to machine tool control rather than machine control structure does not limit the scope of the claims to a control apparatus that is separate from the machine tool itself.
7. "control button" or "first [or second] control button that enables a first [or second] player to activate or deactivate the first beam emitting device"

<table>
<thead>
<tr>
<th>Plaintiff's Construction</th>
<th>Defendants' Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>A &quot;control button&quot; is a structure that can control the operation of a device. In the context of the patent-in-suit, the &quot;control button&quot; controls the operation of a beam emitting device (for example, a laser)</td>
<td>The phrase &quot;first [or second] control button that enables a first [or second] player to activate and deactivate the first beam emitting device&quot; is a control button means, that is permanently mounted to the raised periphery surrounding the game board adjacent to the first [or second] beam emitting device, which is likewise permanently mounted to the game board, for enabling a first [or second] player to activate and deactivate the first beam emitting device</td>
</tr>
</tbody>
</table>

a. Innoventions' Proposed Construction

Innovention insists that its invention does not require a raised periphery surrounding the game board, which means that the claims do not require that the "control buttons" be permanently mounted to such a structure. Innovention asserts that Claim 13 specifically locates the "control buttons" on the "game board" but that the claims themselves imply that claims 1, 15, and 25 require no such further limitation. Finally, Innovention contends that the defendants' reliance on the prosecution history is misplaced because Innovention did not raise any distinction as to the location of the "control buttons."

b. Defendants' Proposed Construction

The defendants contend that Innovention's proposed construction fails to account for the plain language of the term, the specification, and explicit statements made to distinguish the invention from prior art. The defendants point out that the claims themselves do not recite the location of the control button; instead, the claims specify only the function that the control button performs. However, the defendants insist that, when read in their entirety, the language of the claims clarifies the location of the control button. 14 The plain meaning of the claims, say defendants, is also supported by the specification, which states that the control buttons (designated by numerals 19 and 20) are positioned at opposite ends of the raised periphery of the game board, as shown in Figure 1. Finally, the defendants point to the prosecution history: the defendants insist that, to overcome prior art, Innovention argued that the prior art did not describe any laser control buttons on the game board.

14 The defendants say that it logically follows from the language of Claim 1, which recites that the first and second beam emitting devices are mounted to the game board and that the first and second control buttons enable players to activate and deactivate the beam emitting devices, that the control buttons must also be mounted on the game board.

c. The Court's Proposed Construction

As used in the claims, "control buttons" are used to activate and deactivate beam emitting devices -- the latter are taught by the claims as being mounted to the game board. The Court finds that an ordinary person skilled in the art of laser board games would be sufficiently apprised of the meaning of "control button" from the ordinary meaning of the term and its contextual use in the claims. Accordingly, the "control button" is simply "A structure that activates a beam emitting device."
2. Meaning Of "Control Head".

Claim 1(c) of the '904 patent discloses "a control head for operator control by a person in the vehicle." Dependent claims 6, 7, and 8 further provide that the control head is mounted inside the vehicle, includes a power on/off switch and a record/stop switch subject to operator control, and includes an LED display for displaying the date, time, and operational status of the surveillance system.

The specification of the '904 patent discusses the "control head" as being mounted in the driver's compartment of the vehicle, within "easy reach of the police officer" to facilitate operation of the system. The LED display lights indicate when the tape is nearing the end and whether the microphone is operational. The control head also is discussed as including a light indicating whether the system is on. To insure the integrity of the videotape, the control head is designed so as to prevent rewinding and erasure by recording over the video tape.

Neither plaintiffs nor defendant has introduced any prosecution history to support their proposed interpretations of "control head." The prosecution history provides that the vault which holds the video recorder is in a locked compartment of the vehicle. When read in the context of the specification, this statement confirms that the "control head" provides a means for remotely operating the video recorder.

From the patent claims, specification, and prosecution history, the court construes "control head" to mean a control panel that is located within the vehicle and is accessible to the vehicle operator, and that provides a means for remotely operating the video recorder.

3. Claim 8(f) -- "pipe path control means"

Limitation (f) of claim 8 states "pipe path control means for determining a pipe path within said piping between a pair selected from among said first and second containers, said filter unit and said first and second coupling attachments". (Dkt. entry no. 1, Ex. A, '511 patent, at col. 12, lines 11-15.) The parties agree that this language is subject to a means-plus-function analysis. (RTI Br., at 28;Defs. Br., at 29.) However, the parties disagree about the structure that corresponds to the recited function of determining a pipe path within the piping. RTI asserts that "the 'pipe path control means' recited as element (f) of claim 8 encompasses any manual or electrical system that performs the recited function of determining a pipe path within the piping between a pair of structures selected from the first and second containers, the filter unit, and the first and second attachments." (RTI Br., at 28.) In contrast, the Defendants contend that the mental process of determining a pipe path cannot be claimed, and thus, the Court must limit its interpretation of "pipe path control means" to a plurality of electrically operated valves and a microprocessor based controller for sending operating signals to those valves to select a pipe path. (Defs. Br., at 29.)

The function explicitly recited in limitation (f) of claim 8 is determining a pipe path within the piping between a pair selected from the first and second containers, the filter unit, and the first and second coupling attachments. See Versa Corp., 66 Fed.Appx. at 855. The specification contains the following statements, which reference structures corresponding to this recited function:

Selecting the pipe path selected for an appropriate cycle can be accomplished either by manually opening and closing appropriate valves as is discussed below, or electronically through a controller such as a panel controller that provides signals to the appropriate valves when a particular cycle is selected. Microprocessor controls for controlling the opening and closing solenoid operated valves are well known. (Dkt. entry no. 1, Ex. A, '511 patent, at col. 6 lines 46- 53.)

The various operation cycles and manually operated valves may be completely or partially automated, using microprocessor based controls. (Id. at col. 10, lines 46-49.)
See Omega Eng'g, Inc., 334 F.3d at 1322 (explaining that once the function is identified, the Court must determine what structures disclosed in the specification correspond to that function); Epcon Gas Sys., Inc., 279 F.3d at 1032 (explaining same). Accordingly, the specification indicates that manually or electronically operated valves are the structures that correspond to the recited function of determining a pipe path. See Linear Tech. Corp., 379 F.3d at 1322 (noting that Section 112, paragraph 6 permits a claim element to embrace alternative described structures for performing a claimed function).

The Court notes, as previously discussed, that some level of human intervention is permissible in a patent's claims as long as a human is not a claimed structure, but instead merely operates a claimed structure. See Default Proof Credit Card Sys., 412 F.3d at 1300 (stating that a human being cannot constitute a "means", and noting that it must determine what structure the human being operates to perform the recited function). Here, the '511 patent's specification describes a manual system where a human being will operate a structure such as a knob, which in turn opens or closes a valve that determines or selects a pipe path between certain structures. Therefore, construing limitation (f) of claim 8 as encompassing manual as well as electronic systems for performing the recited function does not infer that human intervention is claimed as part of the corresponding structure.

"speed control means including a control panel"

Precor urges the Court to apply a means-plus-function construction to the disputed claim element "speed control means including a control panel" found in claims 3, 4, 13, and 21. Life Fitness argues that this disputed claim element should be assigned its ordinary meaning. The Court finds that this disputed claim element should be given its ordinary meaning, and declines to adopt a further construction.

The Court recognizes that the use of the word "means" in this disputed claim element creates a presumption of means-plus-function format. However, the Court finds that the phrase "control panel" discloses sufficient structure to overcome this presumption.

The use of the phrase "control panel" in prior art bolsters Life Fitness' proposed construction. See '822 patent at column 3, lines 65-66 (Rodriguez Dec., Ex. I) ("As generally indicated at 25, a control panel is provided at the front end of exercise treadmill 1."); U.S. Patent No. 4,643,418 ("'074 patent") at column 4, lines 29-32 (Rodriguez Dec., Ex. K) ("A control panel 21 extending between and secured to arms 20b, 20c includes a timer having a settable knob 23, and adjustable speed control knob 25 and a speedometer 152."). Moreover, figures and illustrations used in prior art depict many different types of control panels. See U.S. Patent Nos. 4,792,134; 4,643,418; 4,659,074; 4,749,181 (Rodriguez Dec., Exs. Y, J, K, L).

Because the disputed claim element discloses structure of a type clearly meaningful to one of ordinary skill in the art, the Court finds that "control panel" has an ordinary meaning and that no further claim construction is required.
(d) a pressurized source of generally incompressible liquid operatively connected to said frame, said pressurized source having an output;

(e) a valve having an input and an output;

(f) a fluid conduit mechanism connected between the output of said pressurized source of generally incompressible liquid and the input of said valve;

(g) a fluid conduit connected between the output of said valve and the inputs of each of said plurality of fluid nozzles;

(h) control mechanism for controlling the operation of said valve and the movement of said frame over the turn to be treated such that the valve periodically releases high pressure jets of generally incompressible liquid from the output of the nozzles at an output pressure commensurate with the speed of the frame over the turf and the spacing of said nozzles so that said jets of liquid penetrate through the turf into the soil such that the dispersion pattern from the output of each nozzle in the soil generally coacts with the dispersion pattern of adjacent nozzles so as to lift and fracture the soil and reduce the general turf and turf subsoil density.

As will be discussed, the parties do not agree on which specific clauses are disputed in claim 17. Plaintiff alleges that (b) and (h) are in dispute, while defendant seems to argue, without explanation, that clauses (d) and (e) are in dispute. (Def.'s Mem. Opp. Summ. J. at 24.) Defendant fails to brief this claim sufficiently, and in a conclusory fashion asserts that, "for the same reasons, Deere does not infringe claim 17 of the '744 patent either." (Id. at 30.) In a footnote, defendant also indicates that clause (h) of claim 17 must be construed as a means-plus-function limitation since it recites insufficient structure. (Id. at 29.) Given this inexactitude and the court's ultimate finding of non-infringement on this claim, the court will limit its construction to clauses (b), (e) and (h) of claim 17.

Clause (b) recites "a drive mechanism connected to [the machine's] frame for moving [the machine] in a given direction, and at a controlled speed, over the turf to be treated." (Patent '744, Col. 13, Lines 31-33.) The court concludes that this is not a means-plus-function clause. This clause does not lack sufficient structure to warrant construction under a means-plus-function analysis, nor is there language signaling that § 112, P 6 should apply. An ordinary interpretation and construction of this claim therefore must include two components: (1) a drive mechanism, i.e., some form of mechanized propulsion; 6 that is (2) connected to the machine's frame for providing this propulsion. The common understanding of the word "connected" suggests: "joined, linked or incapable of being separated." See, e.g., Merriam Webster's Collegiate Dictionary 244-245 (10th ed. 1998).

Clause (e) indicates "a valve having an input and output." (Patent '744, Col. 13, Line 41.) There is also no means-plus-function language in this clause nor paucity of sufficient structure. Thus, this limitation must be construed to reflect the ordinary meaning of the language, in other words, a valve that has in and out ports.

Clause (h) does not disclose a function nor fails to disclose sufficient structure, the court also concludes that there is no means-plus-function language invoked by this clause. It must therefore be construed to recite its ordinary and unambiguous language of delineating a "control mechanism for controlling the operation of [the conduit] valve and the movement of [the device's] frame over the turf to be treated in a way that the valve periodically releases high pressure jets … from the output of the nozzles at output pressure commensurate with the speed of the frame over the turf" so as to create the lifting and fracturing coaction needed to reduce subsoil compaction. (Id., Col. 13, Line 48-60.)
The parties agree that these phrases should be given their ordinary meanings. However, Fox argues that these phrases constitute a means-plus-function element, and should be limited to the means disclosed in the specification. Such a specially claimed element is defined in 35 U.S.C. § 112, P 6:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

When a claim does not use the term "means," a rebuttable presumption arises that the element is not a means-plus-function element. CCS Fitness, 288 F.3d at 1369. Claim 16 does not use the term "means." The presumption therefore arises that these phrases are not a means-plus-function element.

Fox can rebut that presumption by showing that the phrases recite a "function without reciting sufficient structure for performing that function." Id. The presumption is strong and not easily overcome. Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004). "Control" has an ordinary meaning of "a device for regulating and guiding a machine." RANDOM HOUSE COLLEGE DICTIONARY 285 (Rev. ed. 1984); see also WEBSTER'S NEW ENCYCLOPEDIA DICTIONARY 219 (1993). Within the context of the '049 Patent, the phrase "fluid circulation control unit" means "a device that regulates the circulation of fluid within the system." That many different structures may be so described does not make this a means-plus-function element. Lighting World, 382 F.3d at 1361. The phrase is also used as the name for a structure within the parent. (7:13-14; Fig. 8) Id. Fox has failed to overcome the presumption that § 112, P 6 does not apply.

The district court restricted the meaning of "controlled" to require control of the inclination of the arms "throughout the range of motion of the pivotable joint." The district court erred in so restricting the function of the "joint means" of claim 1 of the '169 patent, which literally recites merely "allowing controlled medial and lateral inclination of each rigid arm relative to the pivotable joint."

The construction of the function of the "joint means" in the present case is analogous to our construction of the "weighing means" means-plus-function limitation in Micro Chem. In that case, the recited function of the "weighing means" was "weighing different weights of" additives or "determining the weights of" additives. Micro Chem, 194 F.3d at 1258, 52 U.S.P.Q.2D (BNA) at 1263. Because the specification disclosed multiple methods of weighing, and at least one method of weighing was disclosed as being "too slow or too inaccurate" for handling additives, id. at 1255, 52 U.S.P.Q.2D (BNA) at 1261, the district court limited the function of "weighing" to include only the sequential and cumulative weighing described in the preferred embodiments of the invention, id. at 1258, 52 U.S.P.Q.2D (BNA) at 1263. Despite the fact that there were multiple methods of weighing disclosed in the specification, at least one of which was disclosed as being undesirable, this court refused to limit the function of weighing beyond its ordinary meaning. Id. at 1258, 52 U.S.P.Q.2D (BNA) at 1263. The court reasoned that to do so would impermissibly limit the claim by adopting a function different from that explicitly recited in the claim, and such an error in identification of the function could improperly alter the identification of the structure corresponding to that function. Id.

In this case, Med Tech argues that because there are different types of control, i.e., static control and dynamic control, and because the teaching of the specification implies that the "joint means" performs only dynamic control, the "control" function must be restricted to dynamic control. However, under the teachings set forth in Micro Chem, we decline to restrict the claimed function of "controlled" to either static or dynamic control. To do so would impermissibly limit the claim by
adopting a function different from that explicitly recited in the claim, and such an error in identification of the function could improperly alter the identification of the structure corresponding to that function.

Med Tech likens the term "controlled" to the term "when" at issue in Renishaw PLC v. Marposs Societa’ per Azioni, 158 F.3d 1243, 48 U.S.P.Q.2D (BNA) 1117 (Fed. Cir. 1998). Med Tech's assertion lacks merit for a number of reasons. First, in the present case, we are construing the functional statement in a means-plus-function limitation. When construing the functional statement in a means-plus-function limitation, we must take great care not to impermissibly limit the function by adopting a function different from that explicitly recited in the claim. Micro Chem, 194 F.3d at 1258, 52 U.S.P.Q.2D (BNA) at 1263.

Second, in Renishaw, this court found in the specification a clear intent of the inventor to limit the term "when" to a more specific "at the time of or immediately thereafter." The court relied on several passages in the specification indicating that the invention was aimed at making the delay between stylus contact of the workpiece and signal generation "as small as possible." Id. at 1253, 48 U.S.P.Q.2D (BNA) at 1124.

Med Tech's application of Renishaw to the facts of this case is flawed, because defining the term "when" to include instantaneous generation of the trigger signal was clearly necessary to give effect to the patentee's description of the invention as having but a singular purpose, namely producing a machine that provides very accurate, very precise probe readings by maintaining tight control over the position of the stylus. Such readings could only be obtained if the probe triggers very soon after contacting the workpiece. In the present case, although Med Tech asserts that the "whole purpose" of the claimed brace "is the dynamic application of force to an osteoarthritic knee as the knee joint is flexed and extended," we find no evidence in the record that control throughout the entire range of motion of the knee brace is the singular purpose of the invention described throughout the specification by the patentee. To the contrary, the written description specifies that the treatment of osteoarthritis entails "applying a force to the knee as the knee moves to extension," emphasizing the importance of controlling the force applied to the knee when the leg is in a fully extended, weight bearing position and suggesting that the purpose of the invention is served by control over less than the entire range of motion of the knee brace. '169 patent, col. 1, ll. 12-14 (emphasis added).

"Controlled dose"

Cytyc's proposed construction
(no construction required)

Xoft's proposed construction
(indefinite)

"To reduce or prevent necrosis in healthy tissue proximate to the expandable surface"

Cytyc's proposed construction
(no construction required)

Xoft's proposed construction
(indefinite)

"Providing a controlled dose at the outer spatial volume expandable surface to reduce or prevent necrosis in healthy tissue"

Cytyc's proposed construction
Controlling the ratio of the dose at the expandable surface of the outer spatial volume to the prescribed dose at the depth of interest in the target issue so that the dose at the expandable surface is not so high that it lethally damages cells in healthy tissue in contact with the expandable surface

Xoft argues that the patent does not reveal how one goes about controlling a dose using the device and that "reducing necrosis" is a hopelessly vague concept, making the '204 patent indefinite. Xoft, however, has presented no evidence that one skilled in the art would not be able to understand the patent and has again failed to meet its burden of proof. The court will therefore adopt Cytyc's construction proposals. "Providing a controlled dose at the outer spatial volume expandable
surface to reduce or prevent necrosis in healthy tissue" means "controlling the ratio of the dose at the expandable surface of the outer spatial volume to the prescribed dose at the depth of interest in the target issue so that the dose at the expandable surface is not so high that it lethally damages cells in healthy tissue in contact with the expandable surface."

<table>
<thead>
<tr>
<th>Claim Language</th>
<th>Court's Construction</th>
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<tbody>
<tr>
<td>&quot;controlled dose&quot;</td>
<td>(no separate construction necessary)</td>
</tr>
<tr>
<td>&quot;to reduce or prevent necrosis in healthy tissue proximate to the expandable surface&quot;</td>
<td></td>
</tr>
<tr>
<td>&quot;providing a controlled dose at the outer spatial volume expandable surface to reduce or prevent necrosis in healthy tissue&quot;</td>
<td>controlling the ratio of the dose at the expandable surface of the outer spatial volume to the prescribed dose at the depth of interest in the target issue so that the dose at the expandable surface is not so high that it lethally damages cells in healthy tissue in contact with the expandable surface</td>
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B. Controller

The term "controller" is disputed by the parties. Microfil asserts that the term "controller" should be limited to a single device that controls the entire automated pill dispensing system. (Def. Resp. SJ for Infr. 6). AutoMed, on the other hand, asserts that the modifier "single" does not appear in the claims, the specifications, or the prosecution histories and that the term should be construed to mean a device or system that regulates a process or another device. AutoMed's construction, however, is inconsistent with the written specification. In the written specification, the patentee clearly states that a control system regulates all aspects of the automated pill dispensing device. For example, the written specification states that "the control system places a refill request with the vibratory dispenser," that the "control system assigns at least one accumulation receptacle," and that the control system controls the various processes employed by the system. ('927 Patent Col. 9 L. 48-51, Col. 10 L. 12-14, Col. 11 L. 43-46; '671 Patent Col. 9 L. 61-63, Col. 10 L. 14-16, and Col. 11 L. 44-47). Accordingly, while the patentee did not modify the term controller with the word single, the specification indicates that a single control system regulates the entire process.

1. "Controller"

The district court construed the term "controller" to mean "a single control system [that] regulates the entire process." In so doing, the district court rejected AutoMed's preferred construction of "a device or system that regulates a process or another device" as inconsistent with the specification. AutoMed Techs., Inc. v. Microfil, LLC, No. 04-CV-5596, 2005 U.S. Dist. LEXIS 26032, slip op. at 17-18 (N.D. Ill. Oct. 26, 2005) ("Claim Construction Opinion"). In applying this construction, the district court then held that "multiple controllers . . . coordinated by a master computer" could not constitute a single control system. Infringement Opinion, 2006 U.S. Dist. LEXIS 2439, slip op. at 8. In effect, the district court's application treated the "single control system" as referring to a single control device. Id. (emphasis added). AutoMed argues that the district court erred by limiting "controller" to a single control device, while Microfil urges us to adopt a definition from a technical dictionary, which defines "controller" as "[a] module or specific device which operates automatically to regulate a controlled variable or system." Charles J. Sippl, Microcomputer Dictionary 85 (2d ed. 1981). Microfil misrepresents this definition in its brief, however, by introducing the modifier "single" before "module or specific device," and by ignoring the first definition listed, which recites "[a]n element or group of elements . . . ." See id. (emphasis added). The cited dictionary
definition does not limit the term "controller" to a device as distinguished from a group, collection, or system of devices.

We agree with the district court's initial construction, with the clarification that the "controller" need not be limited to a single device, as applied by the district court and asserted by Microfil. We see no basis in the intrinsic record to warrant reading the term "controller" to be limited to a single device or to any particular hardware or software. The specifications of the '671 and '927 patents support a broad interpretation of "controller." While the specifications differ in some respects, these differences are not material to our analysis here; we rely on text common to both specifications. Moreover, "the same term or phrase should be interpreted consistently where it appears in claims of common ancestry." Epcon Gas Sys. v. Bauer Compressors, Inc., 279 F.3d 1022, 1030 (Fed. Cir. 2002). The specifications disclose at least two structures that perform control functions: a "controller 180," which apparently controls only the rate of vibration; and a "control system 80," which seems to control many aspects of the entire process. Compare, e.g., '927 patent col.8 ll.51-59, with id. col.11 ll.43-46.

Unfortunately, the specifications fall short of clarity in outlining the exact functions and details of the control system software and hardware. Even though the relationship between these structures is not entirely clear from the written description, what is unmistakable is that no single device is disclosed which performs or is capable of performing all of the functions recited in claim 1 of the '927 patent, namely, to receive a patient's prescription information and to control the entire apparatus, including the vibratory dispenser, the container transport assembly, and the vial transport assembly. See '927 patent claim 1. To the contrary, the patents describe only in general terms the control of several distinct systems and processes. E.g., '927 patent col.8 ll.1-2 (drive unit vibration); id. col.10, ll.58-62 (vial transport); id. col.11, ll.47-63 (patient entry process). With all due respect to the view expressed in the dissent, a construction of the term "controller" to be "a single module or specific device which operates automatically to regulate a controlled variable or system," as argued by Microfil, would fly in the face of the specification and would engraft onto the claims an unwarranted limitation. See Phillips v. AWH Corp., 415 F.3d 1303, 1322-23 (Fed. Cir. 2005) (en banc) (cautioning that dictionary definitions cannot be used to "contradict any definition found in or ascertained by a reading of the patent documents" (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 n.6 (Fed. Cir. 1996))). Without a clear indication from the patentee that a single device must control these varied functions, it is improper to limit the term "controller" to a single device rather than a single system. Accordingly, while we affirm the district court's initial construction of "controller" to mean a "single control system that regulates the entire process," we clarify that the controller need not be limited to a single device, nor to any particular hardware or software.

6. "controlling"

Claim 14(h) states "controlling the kinetic energy of ions entering said first rod set to maintain such kinetic energy at a relatively low value." Micromass asserts that the proper construction of "controlling" is "to exercise restraining or directing influence over," "regulate," or "to have power over." It then argues that the claim specification nowhere discloses how one might practice the method of "restraining or directing influence over" the kinetic energy of ions, other than perhaps the use of an offset voltage between 1 and 30 volts, and possibly up to 40 volts, between the inlet orifice and the first rod set. Although it does not say so, it appears that Micromass is proposing to the court a definition of "controlling" that would require the practitioner of the invention to use these voltage parameters.

AB/Sciex disagrees. It argues that the meaning of "controlling" is clear and does not require construction by the court. Moreover, Micromass's proposed construction seeks to import from the specification limitations not listed in the claim.

The court agrees. As Micromass notes, the meaning of "controlling" is well understood as "exercising restraining or directing influence over." This meaning is unambiguous and clear from the claim. The fact that the specification may recite particular voltage levels by which the control can be administered neither contradicts this construction nor introduces further clarity. Instead, Micromass is seeking to import parameters existing only in the specification to the claim limitations themselves. It may not do so. See Intervet Am., Inc., 887 F.2d at 1053.
B. Controlling a Parameter of the Light Beams

The dispute about the construction of "controlling a parameter of the light beams" centers on whether time is a parameter of the light beams. The term "parameter" is used in Claim 1 of the 272 patent as follows: "controlling a parameter of the light beams to produce spots of different sizes whereby the appearance of smoothed edges are given to the generated shapes." 272 pat., col. 6, ll. 27-30. Thus, based on the claim language, relevant parameters are any parameters that may be controlled to produce "spots of different sizes," which are used to generate shapes with "smoothed edges." Id. The plain meaning of the claim indicates that more than one parameter is disclosed. The issue is thus whether the 272 patent disclosed time as a parameter that may be controlled to produce such spots of different sizes.

The court finds that time is a parameter claimed in the 272 patent. As the Federal Circuit said:

The 272 patent teaches two methods for varying toner dot size. First, as illustrated in Figure 1 of the 272 patent, an intensity modulator 64 can be attached to the source of the light beam. The degree of exposure on the photoreceptor is determined by two factors: (1) the intensity of the beam of light; and (2) the length of time that the beam of light remains in contact with the surface of the photoreceptor (which factor is termed the pulse width).

Pitney III, 182 F.3d at 1302. The ordinary meaning of a parameter is "a typical element." Webster's II New College Dictionary (1995). The pulse width or duration for which a light beam is on is a "typical element" of a light beam just as the intensity of the beam and the diameter of a beam are typical elements of a light beam. Thus, under its ordinary meaning, time is a parameter of a light beam.

In addition, the plain meaning of the language of Claim 1 indicates that the claim is not limited to the specific parameters of intensity and duration. Claim 1 claims a method for "controlling a parameter of the light beams to produce spots of different sizes . . ." 272 pat., col. 6, ll. 27-28. Such language is inclusive. The claim provides for a method for controlling a parameter, meaning any parameter, not for controlling only specified parameters. 2 Thus, under the ordinary meaning of the claim language, time is a parameter of the light beam. The issue is whether Pitney disclaimed time as a parameter in either the specification or the prosecution history.

During oral argument on April 24, 2001, Hewlett argued that, under the recent Federal Circuit decision in Netword v. Centraal Corp, 242 F.3d 1347 (2001), the claims at issue could not be construed to include time as a parameter of a light beam. In Netword, the Federal Circuit affirmed the district court's construction of a claim term where the district court relied on the specification and the explanation of an expert witness to limit the system at which the claim at issue was directed. Id. at 1351. The Federal Circuit stated:

Netword's argument that the district court improperly limited the scope of claim 1 by importing the caching and pulling functions from the specification misperceives the role of claim construction in infringement analysis. The role is neither to limit nor to broaden the claims, but to define, as a matter of law, the invention that has been patented. The claims are always construed in light of the specification, of which they are a part. The role of the specification includes presenting a description of the technologic subject matter of the invention, while the role of claims is to point out with particularity the subject matter that is patented. The claims are directed to the invention that is described in the specification; they do not have meaning removed from the context from which they arose.
Id. at 1352 (internal citations omitted). Hewlett argues that, based on this language, time cannot be a parameter of a light beam because the specification does not describe it as such.

Unlike Netword, however, the specification in this case does not contain language that specifically limits parameters to intensity and diameter. In Netword, the specification stated that the local server database that was the issue of the claim construction "contains only certain of the Resource Aliases and their records" and that the central registry computer "maintains the entire collection of Resource Aliases in its database." Id. at 1351 (emphasis added). The 272 patent specification does not similarly specify intensity and diameter as the only parameters or indicate that time is not a parameter. Pitney does not, therefore, disclaim time as a parameter in the specification.

Further, the specification refers to the on-off gating of the modulator. 272 pat., col. 2, ll. 20-23; col. 3, ll. 10-11. The intensity modulator, used to control toner dot size, is attached to the source of the light beam and controls the degree of exposure on the photoreceptor by controlling either the intensity of the beam of light or the length of time that the beam of light remains in contact with the surface of the photoreceptor. 272 patent, Fig. 1. While not explicitly listing time, or pulse width, as a parameter of a light beam, the references to the on-off gating of the modulator in the specification indicate that Pitney did not intend to disclaim it as a parameter.

Hewlett argues that the only parameters Pitney refers to in the prosecution history prior to the reexamination are intensity and diameter and, therefore, Pitney disclaimed time as a parameter. Hewlett points to Pitney's response to the Examiner's rejection on September 23, 1981. HP Ex. K. One of the concerns raised by the Examiner was that it was unclear how one photoreceptor would distinguish between a plurality of beams and how one or both beams would be controlled. Pitney responded that "use of such plural beams is only one parameter that may be used for controlling dot sizes." Id. at 3. Pitney noted that "the size of a dot can be controlled by varying the intensity." Id. Hewlett argues that, because Pitney did not mention duration as a parameter, it cannot be considered one. There is nothing to suggest in its response that Pitney was making an exclusive list of the parameters that could be varied. It was responding to a specific concern about the use of plural beams and mentioned another parameter, intensity, that could be controlled. This response was not a disclaimer of time as a parameter.

Hewlett also argues that time cannot be considered a "parameter" of the light beams because of the Examiner's treatment during reexamination of a character rounding technique disclosed in an article by J. R. Kinghorn ("Kinghorn"). HP Ex. S. Such character rounding is accomplished by controlling the duration for which the electron beam is on. HP Ex. S at 230. Hewlett argues that, because the Examiner did not cite Kinghorn as an invalidating reference but did reference prior art that disclosed the parameters of diameter and intensity, the Examiner did not consider time a parameter of the light beams. There is no basis to assume, however, that the Examiner excluded the Kinghorn cite because she did not consider time a parameter of the light beam, as opposed to some other reason.

Hewlett finally argues that Pitney disavowed time as a parameter of the light beams in distinguishing the Spicer reference during the reexamination. Spicer discloses a system for generating dot matrix characters in a CRT display that uses a technique for "smoothing between the parts of a character in one row and the next." U.S. Patent No. 4,095,216 ("Spicer patent"), col. 3, ll. 11-12. Pitney distinguished Spicer first by noting that Spicer is "directed towards a display of alphanumeric data on TV receivers. Thus, no light beams are involved in the creation of this display." HP Ex. G at 40. Pitney further distinguished it from the 272 patent because Spicer "generates dot matrix characters in which a diagonal line in a character is formed by causing the focused scanning beam to turn on for a longer period of time." Id. at 40-41. Thus, Spicer applies "full length traces and half length traces next to each other . . . There is no change in spot size, only in the length of the trace on the CRT screen." Id. at 41. Pitney did not disavow time as a possible parameter of a light beam in distinguishing Spicer because Pitney distinguished Spicer based on the fact that Spicer does not disclose a light beam and does not disclose a means for changing spot size. In making this distinction, Pitney did not state that time was not a parameter of a light beam controlled by the method disclosed in the 272 patent.

During the reexamination of the 272 patent, Pitney made several statements in which it described time as a parameter of the light beams. Arguments made during reexamination proceedings "are relevant prosecution history when interpreting claims." E.I. Du Pont De Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1439 (Fed. Cir. 1988); accord Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1270 (Fed. Cir. 1986). These statements were made during reexamination while this litigation was pending and may, therefore, be self-serving statements, which should be "accorded
no more weight than testimony of an interested witness or argument of counsel." Moleculon, 793 F.2d at 1270. Hewlett
attempts, however, to use other statements made during the reexamination as evidence that Pitney gave up time as a
parameter. For example, as discussed above, Hewlett argues that Pitney disclaimed time as a parameter in distinguishing
the 272 patent from the Spicer patent during reexamination and that the PTO did not consider time a parameter because of its
treatment of Kinghorn. Hewlett cannot have the court examine some remarks but ignore others made during the same
proceeding.

During the reexamination proceedings, Pitney described time as a parameter when it explained that 'intensity and duration
have equivalent effects on the size of the spot on the photoconductor, as does laser beam diameter.” Affidavit of Katie
Crosby in Support of Pl. Pitney Bowes 'Mem. on Claim Constr., Dkt. No. 269 [hereinafter PB Ex.], Ex. 17 at 25. Pitney also
stated 'it can be seen that the spot size of the discharged area on the photoreceptor is a function of the exposure of that area
to the laser beam. Therefore, varying the exposure or energy (either intensity or duration) of the laser beam, will create
different size spots on the photoreceptor.” Id. at 13-14. Finally, Pitney noted that "according to the invention, if the intensity
is reduced, or its equivalent time of exposure is made shorter, a smaller spot is produced." Id. at 41. Such statements indicate
that Pitney did not disclaim time as a parameter. In addition, the statements demonstrate that, even if prior art controlled the
time that a laser was left on, the patent office reissued the patent over such prior art when Pitney specifically claimed that
time was one of the parameters that the method in Claim 1 controlled.

Because the ordinary meaning of parameter includes the pulse width and because neither the specification nor the
prosecution history demonstrate that Pitney intended to exclude pulse width as a parameter, the court concludes that the
term "controlling a parameter of the light beams" includes controlling the length of time that the beam of light remains in
contact with the photoreceptor. The parameters or typical elements of the beams that may be varied to produce spots of
different sizes to smooth the edges of generated shapes include intensity time, and beam diameter.

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9. controlling a pressure of the flow of breathing gas delivered to a patient based on a product of . . .

This phrase is found in Claims 29 and 32 of the '517 Patent.

Phrase: controlling a pressure of the flow of breathing gas delivered to a patient based on a product of the expiratory gain
and the fluid characteristic during at least a portion of an expiratory phase of such a patient's breathing cycle, so that a
pressure of the flow of breathing gas delivered to the patient during at least a portion of the expiratory phase varies with
fluctuations of the fluid characteristic.

Construction: controlling the pressure of breathing gas delivered to a patient during at least part of the expiratory phase so
that it fluctuates in relation to the patient's flow rate, by multiplying the constant expiratory gain value by the flow rate.

Reasoning: The dispute between the parties as to the meaning of this phrase centers around whether and how the step-plus-
function limitation applies to it under 35 U.S.C. § 112, P 6. However, we can see no validity in defendant's argument on this
point. The portions of the prosecution history on which defendant relies do not even address the claims that are being
asserted in this case. For instance, defendant cites to an amendment to Claim 45, which corresponds to claim 1 in the final
published patent. That claim specifically recites a "processing means". Claims 29 and 32 are not discussed in the office
action response on which defendant relies.

Construing this claim element is straightforward after dispensing of defendant's step-plus-function argument, and
considering previous constructions that this court has given to the term "gain" and the phrase "fluid characteristic."

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(b) controlling said supply of gas . . . based on said fluid characteristic signal and said first gain
This phrase is found in Claim 23 of the '575 Patent.

Phrase: controlling said supply of gas . . . based on said fluid characteristic signal and said first gain

Construction: The supply of gas is controlled based on the flow rate signal and a constant value that is applied to either boost or reduce the delivered pressure.

Reasoning: There is little dispute remaining regarding the proper construction of this phrase. We have previously defined fluid characteristic to mean flow rate. The first gain is simply a constant value. The patent defines gains as constant values that, when applied to other values or signals, are used to either reduce or boost pressure. '575 Patent, cl. 13, lns. 36-52; cl. 15, lns. 8-35. We reject defendant's argument that this phrase is limited to any particular formula or illustration of its concepts.

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"Controlling the partial pressure of at least one of the vapors"

Although neither the language of the claim nor the specification of the patent sets forth any particular method for controlling the partial pressure, ASM argues that the pressure must be controlled through use of a feedback loop. ASM's expert, Martin Hammond, states that the specification shows the maintenance of a constant pressure in the reaction chamber by various feedback loop mechanisms. (Brown Decl., Ex. F (Hammond Expert Report) at 9.) Hammond points to the presence of mass flow controllers at several points in the specification. (See, e.g., '568 patent 5:19-27.) According to Hammond, one of ordinary skill in the art knows that mass flow controllers would be required to achieve the necessary precision, and that they use measurement and feedback control. (Hammond Expert Report at 9-10.) Hammond also points to the specific subatmospheric pressure of 350 Torr cited at column 5, lines 53 and 63, and the fact that the native oxide is etched within ten to twelve seconds ('568 patent 5:59-61, 6:68, 7:13). Hammond contends that one of ordinary skill in the art would recognize that such a result would require active pressure measurement and control using feedback mechanisms. (Hammond Expert Report at 10.) Hammond also argues that the specific temperature control of vaporizers set forth at column 6, lines 10-39, and the controls specified therein for the total pressure and flow rate of the inert gas through each temperature-controlled vaporizer inherently require measurement and feedback mechanisms to achieve repeatable results under dynamic conditions. (Hammond Expert Report at 10.)

All of Hammond's examples, however, are from the description of a preferred embodiment, which does not limit the language of the claims. Genus' expert, William Oldham, notes that the summary of the invention does not set forth any method of controlling the pressure but simply states that "the temperature of the substrate and/or vapor and/or the pressure of the vapor are controlled to prevent vapor from condensing on the substrate until the native oxide is removed." (568 patent 3:8-11.) Oldham states in his rebuttal expert report that "mechanisms for 'controlling' the partial pressure are not discussed in the '568 patent, because one of ordinary skill in the art would have known that there are multiple mechanisms by which such control can be obtained and that the appropriate mechanisms would depend on the design of a particular reactor and a particular process." (Brown Decl., Ex. E (Oldham Rebuttal Report at 9-10.) Oldham states that one such method for adjusting the pressure is simply to adjust the flow rate. (Id. at 10.)

As the summary of the invention and the plain language of the claim support Genus' contention that the '568 patent does not require any particular method of controlling the partial pressure, the Court rejects ASM's construction, and finds that "controlling the partial pressure" needs no construction.

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On its face, the meaning of "controlling the temperature of the substrate" is clear. There must be a method of changing and maintaining the temperature of the substrate. ASM argues, however, that the specification clearly indicates that the substrate must be heated in a particular way.

ASM points to the following language from the specification, which is the only portion of the specification that discusses the desired temperature of the substrate:

Since native oxide can be etched with HF/H[2]O vapor and HF/HCl/H[2]O vapor before condensation of the vapor on the thermal oxide surface, condensation of the vapor on the thermal oxide is preferably controlled to increase the time available to etch the native oxide before initiation of thermal oxide etch. Temperatures and pressures are controlled to defer initiation of condensation. It has been discovered that in the HF/H[2]O vapor process of the present invention, the liquid HF/H[2]O does not condense if the wafer temperature is above about 27[degree]-28[degree] C. Accordingly, applicants' process includes provision for heating the wafer above about 27[degree]-28[degree] C. such as up to 30[degree] C. via the semiconductor substrate heater described in U.S. Pat. No. 4,778,559 or with infrared or ultraviolet energy. Alternatively, the water vapor partial pressure in the reactor can be reduced to delay condensation of water vapor on the thermal oxide.

('568 patent 7:21-38.) This language appears in the section of the specification entitled "Description of the Preferred Embodiment," however. Nothing in the specification or the prosecution history requires the substrate to be heated in any particular way. As Genus points out, it is black letter patent law that "limitations from elsewhere in the specification will not be read in where, as here, the claim terms are clear." Tate Access Floors, 279 F.3d at 1371. "References to a preferred embodiment, such as those often present in a specification, are not claim limitations." Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988). "In the course of construing the disputed claim terms, a court should not ordinarily rely on the preferred embodiments alone as representing the entire scope of the claimed invention." CCS, 288 F.3d at 1370 (emphasis added). The language ASM cites to is not a definition of the term "controlling," but simply provides examples of several ways to control the temperature of the substrate.

Accordingly, the Court adopts the plain meaning of the claim language and finds that no construction is necessary.

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Conventional Rotary Drag Bit

Claims in the '715 Patent contain the term "conventional rotary drag bit." Baker Hughes argues this term does not need construction. ReedHycalog contends the Court should construe this term to mean "a rotary drag bit having either highly backraked cutters distributed over generally the entire face of the bit or having more aggressive cutters positioned in the cone region of the bit and relative less aggressive cutters positioned toward the gage region of the bit."

The Court agrees with Baker Hughes. The term "conventional rotary drag bit" does not require construction. 15

15 Ref. No. 17 of Appendix B contains the disputed term "conventional rotary drag bit" and its construction.
In the "Amended Joint Claim Construction Chart," Durr proposes that this phrase should be construed to mean "a device capable of moving workpieces to be painted." (Am. Joint Claim Construction Chart at 1; FANUC's Ex. 1.) Durr does not support this proposed construction with any argument in its briefs, but neither does FANUC propose an alternate construction, either in its brief or in the "Amended Joint Claim Construction Chart." The court finds this construction to be supported by the ordinary meaning of "conveying device" and consistent with the intrinsic evidence. In the absence of any substantive objection by FANUC, the court will adopt the construction proposed by FANUC.

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Having properly put back into the claims the "at least two" limitation, we next interpret the term "conveyor." "Terms in claims are to be given their ordinary and accustomed meaning, unless it appears that the inventor used them differently." Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759, 221 USPQ 473, 477 (Fed. Cir. 1984). The term conveyor is neither ambiguous nor highly technical. More importantly, there is nothing in the claims, the specification or prosecution history that would suggest a meaning other than its ordinary meaning.

The district court properly concluded that the ordinary meaning of conveyor was applicable and correctly set forth its meaning as "an apparatus that transports articles from one place to another." 5 Nevertheless, as discussed below, the district court subsequently embraced Lantech's erroneous "conveying or moving surface" definition. The term conveyor, as used in the claims and described in the specification always refers to an operative device or structure which would ordinarily be considered a conveyor. A conveyor necessarily includes components such as belts, slider plates, and drives, in addition to a moving surface.

--- Footnotes ---

5 As defined in the American Heritage Dictionary of the English Language (1981).

--- End Footnotes ---

The claims require two or more conveyors or conveyor means and not two or more moving surfaces. There is nothing in the specification or prosecution history to suggest that a conveyor is defined as merely a moving surface. While a conveyor has a moving surface, a moving surface alone is not a conveyor.

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Conveyor is the only disputed claim term that we must construe in order to determine Garvey's likelihood of success. 2 This term is used in claim 1 when describing the second conveying means:

(b) second conveying means for receiving products from the first conveying means, for accumulation and movement of products on and around the second conveying means and for delivery of products to the first conveying means for movement to the downstream destination, said second conveying means solely comprising a single, continuous looped path, curvilinear shaped conveyor, the conveyor path being substantially located in the same transverse plane as the first conveying means, at least one section of the second conveying means being in substantial adjacent alignment with at least one section of the first conveying means, both conveying means, at all times when in adjacent alignment, moving in the same direction.

(R. 27, Defs.' Resp., Ex. 1. U.S. Patent No. 6,575,287, col. 7, lines 7-20 (emphasis added).) The ordinary meaning of conveyor, according to Merriam-Webster's Online Dictionary, is a "mechanical apparatus for moving articles or bulk material from place to place (as by an endless moving belt or a chain of receptacles)." Merriam-Webster's Online Dictionary, at http://www.m-w.com (last visited March 18, 2005). A more technical definition of conveyor, found in the IoPP Glossary of Packaging Terminology, provides a slightly broader definition:
A horizontal, inclined, or vertical device for moving or transporting bulk materials, packages, or objects in a path predetermined by the design of the device and having points of loading and discharge fixed, or selective; included are skip hoists and vertical reciprocating and inclined reciprocating conveyors. Typical exceptions are those devices known as industrial trucks, tractors and trailers, tiering machines (truck-type), cranes, hoists, monorail cranes, power and hand shovels, power scoops, bucket drag lines, platform elevator or conveyor designed to carry passengers or the elevator operator, and highway or rail vehicles. Basically a conveyor is made up of one or more sections that transfers (via an intermittent or continuous media) such inputs (bottles, hags, caps, cartons, product, etc.), packages, cases, or pallets from one location or position to another. Each section may be driven independently at varying speeds or employ gravity as a method of transfer.

Institute of Packaging Professionals, IoPP Glossary of Packaging Terminology (Walter G. Soroka & Paul J. Zepf eds., 1998). Using these definitions, we find that the ordinary meaning of conveyor is: "a device for moving products in a path predetermined by the design of the device." We relied more on the technical definition than the ordinary definition because: (1) it provides "the full range of [conveyor's] ordinary meaning as understood by persons skilled in the relevant art," Texas Digital, 308 F.3d at 1202; (2) "device" is more appropriate than "mechanical apparatus" because some conveyors, such as gravity-powered slides, have no mechanical parts; and (3) "in a predetermined path" is more appropriate than "from place to place" because it distinguishes industrial devices such as forklifts and cranes.

2 The parties also have a small grammatical dispute: whether conveyor is modified by the preceding term "single." We find that "single" modifies "conveyor" because the indirect article "a" modifies conveyor and indicates that conveyor is a singular word. Furthermore, claim 32 uses the phrase "continuous looped path of the conveyor," which also indicates that "single" should modify "conveyor." (R. 27, Defs.' Resp., Ex. 1, U.S. Patent No. 6,575,287, col. 10, lines 37-38.)

Defendants asserted during the preliminary injunction hearing that the term conveyor should be limited by the patent's written description to conveyors that are "constructed of interlocked segments." (Col. 4, line 14.) The written description can be used to construe claim terms, but it cannot be used to limit the scope of the patent's claims. Liebel-Flarsheim, 358 F.3d at 904. Accordingly, we decline to incorporate this limitation into our construction of the term conveyor. Defendants also assert that Garvey disclaimed the use of multiple conveyors while prosecuting this patent. (R. 27, Def.'s Resp. at 11.) Garvey's disclaimer, however, has already been incorporated into the patent's claims because the second conveying means solely comprises a single conveyor. After reviewing the patent's claims, written description, and prosecution history, we accord the term conveyor the ordinary meaning provided above because this construction does not render any claim language meaningless or unamenable to construction. 3 See Prima Tek, 318 F.3d at 1148.

3 Garvey also requested that this Court construe the term conveyor as a device that moves articles from place to place in the same direction or without reversing their direction. (R. 35-2, Pl.'s Reply at 11.) There is nothing in the patent to support this construction, and Garvey provides no extrinsic evidence other than a self-serving declaration. Moreover, Garvey, while prosecuting this patent, distinguished prior art because it used "various conveyors, traveling in opposite directions." If a conveyor by definition never reverses direction, Garvey would not have specified that those conveyors "traveled in opposite directions." (R. 27, Defs.' Resp., Ex. 7, Prosecution History at 5.) Thus, we also reject Garvey's proposed construction.

a. "Conveyor Drive Means"

During claim construction, Magistrate Judge Valdez construed the term "conveyor drive means" as simply a "drive for the conveyor." Magistrate Judge Valdez concluded that this was not a means-plus-function term because the claim recites
sufficient structure for performing the recited function. Neither Goss nor the Defendants objected to this construction and it was adopted by Judge Manning. Although none of the parties raised, briefed, or argued the issue before Special Master Harmon, he nevertheless recommended that the Court overrule Judge Manning's construction of the term "conveyor drive means." Goss objects to this new construction.

As discussed above, while there is a presumption that a claim element that uses the word "means" is a means-plus-function term, that presumption can be rebutted if the claim element includes sufficient structure for the claimed function. See TriMed, Inc. v. Stryker Corp., 514 F.3d 1256, 1260 (Fed. Cir. 2008). Here, the claim language "conveyor drive" provides sufficiently definite structure to overcome the means-plus-function presumption. The structure is a "drive," that includes a "variable speed motor," or "a motor." (see U.S. Patent No. 6,082,724 col. 14 ll. 48-65; col. 19-20 ll. 25-32, 1-30.) Thus, the Court sustains Goss's objection to Special Master Harmon's recommendation to construe the term as a means-plus-function limitation and adopts Judge Manning's construction of the term.

3. "Convex Top Surface"

The district court construed "convex top surface" to mean "an upper surface with an outward curve that has a ratio of its radius of curvature to width of the board between 4:1 to 6:1." Claim Construction Order, 2002 U.S. Dist. LEXIS 27501 at *23. It noted that "the specification does not contain any indication that the term convex top surface is to be assigned a specific range of curvature." 2002 U.S. Dist. LEXIS 27501 at *21. The district court relied on statements the applicant made in the prosecution history that "the preferred [radius of curvature] ration [sic, ratio] is about 5:1." 2002 U.S. Dist. LEXIS 27501 at *22.

Nystrom argues that the district court erred by ignoring the ordinary and customary meaning of this claim term, which is "an upper surface with an outward curve," and by importing additional limitations into this claim term from the written description. He observes that claim 1 does not provide an explicit radius of curvature ratio, and that such radii measurements are recited only in dependent claims 3, 7, and 13. Nystrom also argues that the district court erred in finding that he restricted the term to a specific radius of curvature to overcome a rejection based on the Zagelmeyer reference. He thus contends it was error for the court to construe "convex top surface" to include a specific radius of curvature ratio. TREX responds that the district court properly held that Nystrom limited his claim to a particular radius of curvature in the range of 4:1 to 6:1 to distinguish the invention over the prior art Zagelmeyer reference.

The dictionary definition of the claim term "convex" is "having a surface or boundary that curves or bulges outward, as the exterior of a sphere." American Heritage Dictionary of the English Language 402 (4th ed. 2000). This is consistent with the specification of the '831 patent. See, e.g., '831 patent, col. 3, ll. 10-14 ("More importantly, the board of the invention has a slightly rounded upper surface 13 that slopes gradually off to either side of the center of the board, defining a convex surface that promotes the running off of water. This surface may have a radius of curvature R1, for example, of about 24 inches."). The district court relied on statements Nystrom made during prosecution to distinguish the Zagelmeyer reference as limiting the expression "convex top surface" to a surface with a radius of curvature in the range of 4:1 to 6:1. Claim Construction Order, 2002 U.S. Dist. LEXIS 27501 at *19-20. Nystrom stated in a supplemental amendment amending claim 16 of the issued patent (referred to as claim 19 during prosecution):

Applicant then began trying different radiuses of curvature, but some were too shallow and when the board tried it tended not to shed water. Others had too short a radius of curvature and a distinct sensation of an uneven surface. Eventually, by trying a variety of curvatures, applicant discovered that a ratio of radius of curvature to width of the board of about 5:1 produced the desired result, i.e., it shed water and did not produce and uneven sensation to someone standing on it.

Claim 19 [claim 16 in the issued patent] and the claims dependent therefrom (the remaining claims have been previously allowed), are directed to a decking board that has a particular configuration which produces specific results not achieved with any of the prior art. . . . It should be noted, however, that the ratio of the radius of curvature of a board to its width can vary within certain relatively narrow limits, e.g. from about 4:1 to about 6:1, and still meet the basic objectives of the
invention, although the preferred ratio is about 5:1. Anything much outside this range does not provide satisfactory performance and/or is not acceptable to the consumer.

Supplemental Amendment, Sept. 7, 1994, at 2-3 (emphasis added). The district court noted that Nystrom's statement that "anything much outside this range . . . is not acceptable" implied that his statements regarding the radius of curvature ratio applied to the entire patent, and was not intended to apply solely to issued claim 16.

The district court erred in its analysis of the prosecution history. Nystrom's statements were expressly directed to issued claim 16. There is no indication that Nystrom intended the term "convex top surface" in all of the pending patent claims to be limited to a specific radius of curvature ratio. The district court ignored the fact that the language of claim 16 at the time Nystrom made the disputed statements included the following claim language expressly providing for a radius of curvature ratio of approximately 5:1: "said top surface having a radius of curvature that is approximately five times as great as the width of the board, thereby defining a smoothly shaped and shallow convex top surface that sheds water . . . ." Supplemental Amendment, Sept. 7, 1994, at 1 (emphasis added).

Other statements in the prosecution history support this view. Nystrom points to the examiner's prior rejection of claims 1, 2, 5, 6, 11 and 12 under 35 U.S.C. § 102(b): "This rejection is being made over the broad claims since they fail to specify any particular degree for the curve of the board." Examiner's Action, Mar. 24, 1994, at 2. The examiner eventually allowed claims 1-14 and 18 because the "prior art failed to teach both sides of the board with a curved configuration," not because the invented board specified a particular radius of curvature ratio. Examiner's Action, Dec. 8, 1994, at 4. The prosecution history did not redefine or disclaim "convex top surface" in claim 1 to be limited to a particular radius of curvature ratio. Accordingly, we hold that the correct construction of the expression "convex top surface" as used in claim 1 is the ordinary and customary meaning of an upper surface that curves or bulges outward, as the exterior of a sphere.

2. Cooling Member

The parties also dispute the meaning of the term "cooling member" in claim 1. The patent does not define or otherwise refer to a "cooling member." Plaintiff argues that the "cooling member" limitation requires "active cooling." Defendants assert that the ordinary meaning of a "cooling member" is "a part that cools" regardless of whether it utilizes passive or active cooling.

Plaintiff states that "active cooling" involves some mechanism or system effort to dynamically cool a target. Reitman Supp. Decl. P 38. Plaintiff does not define "dynamic." According to plaintiff, an example of active cooling from the 624 patent is the flow of coolant to dissipate heat from the skin. Id. In contrast, plaintiff states that a heat sink is an example of "passive cooling" because it cools the skin surface by removing heat through the scientific properties of conduction inherent in all materials in nature. Id.

There is no specific limitation in the claim that requires "active cooling." All that claim 1 requires is a "cooling member." Although various embodiments describe the delivery of a cooling fluid, the Federal Circuit has cautioned against reading limitations from the specification into the claim. See Burke, Inc. v. Bruno Indep. Living Aids, Inc., 183 F.3d 1334, 1340 (Fed. Cir. 1999); Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1989) ("References in a preferred embodiment, such as those present in a specification, are not claim limitations."). Further, plaintiff has not offered a definition of "dynamic" nor is any definition apparent from reading the patent and other embodiments.

The Court has adopted a broad definition of surface and similarly adopts defendants' broad definition of "cooling member" as "a part that cools." The Polaris WR system literally infringes the cooling member limitation of claim 1 because the light guide and electrodes act as a heat sink to conduct heat away from the skin. See Grundfest Supp. Decl. P 30. Therefore, plaintiff has shown that defendants' Polaris WR system likely infringes claim 1 of the 624 patent.
F. "cooperating to provide a desired three dimensional and/or topographic structure"

The parties dispute the meaning of the term "cooperating to provide a desired three dimensional and/or topographic structure" as it appears in claims 37, 41, and 45 of the '748 Patent. Synovis contends that no construction is necessary, but if the Court decides to construe the term, that it should be construed as "cooperating to provide a structure that is not flat." (Joint Statement at 10.) Gore, on the other hand, asserts that the Court should construe this term as "forming an integral raised center portion." (Id.)

Synovis asserts that a jury is capable of understanding the term without further construction. Alternatively, Synovis asserts that its proposed construction is consistent with the claims and intrinsic evidence, including the file history, and that the term "not flat" encompasses the concepts of "three dimensional" and "topographic." Synovis relies on the specification, which Synovis asserts provides examples of buttress material with a structure that is three dimensional and/or topographic. Synovis further argues that the three-dimensional structure of the claimed buttress material contrasts with the prior art reference U.S. Patent No. 6,656,193, which Synovis asserts disclosed two flat circular buttress material embodiments. Synovis asserts that the examiner allowed independent claims 37 and 45 because they explicitly included limitations on the buttress material structure, specifically that the buttress material must include at least two portions that cooperate to provide a desired three-dimensional and/or topographic structure. Synovis claims that Gore's proposed construction seeks to introduce a limitation that does not exist in the claims, lacks support in the intrinsic evidence, and is an attempt to improperly limit the scope of the claim to a single preferred embodiment.

Gore contends that Synovis' proposed construction is too general and that the patent provides no support for a reinforcement wherein the three-dimensional structure is not in the central, raised region. Instead, Gore asserts that its proposed construction, "forming an integral raised center portion," is supported by Figure 3 of the patent, which Gore asserts shows the second region as having an integral raised center portion that is three-dimensional on its own. Gore asserts that this second region does not need to "cooperate" with the first region to provide a three-dimensional structure. Gore further asserts that written description and the prosecution history of the '748 Patent support its proposed construction. In particular, Gore asserts that in a January 3, 2006 Office Action, the USPTO expressly allowed the claims because the examiner concluded that "[n]one of the prior art of record . . . discloses a kit with a buttress material portion . . ., where each of the portions comprise, inter alia, a circumferential disc with an integral raised center portion." (Gore Ex. 7 P 9.) Gore further asserts that Synovis acquiesced to the inclusion of the subject matter of Paragraph 18 of the published application into all of the asserted claims. Gore maintains that Paragraph 18 makes clear that the second region provides the three-dimensional structure.

The Court first looks to the claim language, which expressly provides for "the first and second regions cooperating to provide a desired three dimensional and/or topographic structure." This language, on its face, contradicts Gore's proposed construction, which does not require the second region to cooperate with the first region to provide an integral raised center portion that is three-dimensional. Further, the specification provides examples of buttress material with three dimensional structure. The Summary of the Invention provides that buttress material portions can "retain three dimensional structure and/or topographic features (e.g., raised/indented portions, ridges) that permit them to be positioned in a secure fashion upon a restrictive stapler component, e.g., by press fit or friction fit onto the corresponding grooves, apertures, ridges and edges of the stapler device component." (See ‘748 Patent c. 3, 11: 29-35.) The specification also contains an example of a buttress material structure with a three-dimensional structure. Figures 2 and 3 both show a buttress material with a circumferential disc and an integral raised center portion. With respect to Figure 2, the specification calls the "interior circumferential regions" of the buttress material "nonplanar." (‘748 Patent c. 5, 11: 46-47.) The specification also indicates that buttress structure is defined by the shapes they are adapted to fit onto. The Detailed Description explains: "The actual buttress
portions used are defined by the shapes they are adapted to be positioned upon, which for a circular stapler are typically the staple cartridge and the anvil components." (‘748 Patent c. 7, 11: 7-10.)

In addition, differences in the language of other claims suggest that claims 37, 41, and 45 are not limited to "forming an integral raised center portion." As explained above, claim 1 of the ’748 Patent recites "a circumferential disc having an integral raised center portion," while claim 37 does not. Instead, claim 37 requires the first and second regions to cooperate to provide a three-dimensional or topographic structure.

Gore relies primarily on the prosecution history to limit the claim term. Gore's arguments are similar to those made with respect to the construction of the "second region of buttress material." The Court similarly rejects those arguments here. In addition, the Court concludes that Gore's proposed construction ("forming an integral raised center portion") is not supported by the intrinsic evidence. The Court further concludes that the term has a meaning that is readily understandable and no construction is necessary.

2. Construction of "Cooperatively Engaging"

The parties dispute the meaning of the phrase."cooperatively engaging". Plaintiff Lisle seeks to construe the phrase to mean "work together to interlock." (Pl. Br. at 11). Defendant A.J.'s proposed construction of the phrase is "the retainer and the slots of the hollow tube work at the same time so that the tabs of the c-shaped wrench disc are locked into position." (Def. Br. at 16). However, the parties agree that "the plain meaning of cooperatively is to work together and that of engage is to interlock with." (Def. Br. at 16).

Before embarking on construction of this phrase, the Court will recite the phrase in its full context in claim 1: "said tube having a retainer at one end and at least two slots for cooperatively engaging the tabs of the wrench disc". (Pl. Ex. A at col. 4, line 21-24). Lisle asserts that the disputed phrase only relates to the slots of the tube and the tabs of the disc. (Pl. Br. at 11-12). A.J.'s proposed construction, on the other hand, would relate the disputed term to the slots of the tube, the tabs of the disc, and the retainer.

Looking solely at the plain language of this segment of the claim, it seems to be a victim of grammatically imprecise drafting. Reading the claim from left to right, "at one end" could refer only to "having a retainer" and "cooperatively engaging" could refer only to the slots and the tabs. It is clear from the specifications and the drawings, though, that the phrase "at one end" modifies both "a retainer" and "at least two slots". An alternative, and more precise, way of phrasing the same portion of the claim then would be: "said tube having at one end a retainer and at least two slots for cooperatively engaging the tabs of the wrench disc." This must be what the inventor intended to convey, as the invention can only accomplish its intended purpose if the tabs, the slots, and the retainer work together. This intrepretation is consistent with part (a) of claim 1, which indicates the C-shaped wrench has "outwardly projecting tabs for cooperation with a retainer". (Pl. Ex. A at col. 4, line 19-20). The Court finds that the disputed phrase "cooperatively engaging" refers to the tabs, the slots on the tube, and the retainer to operate together.

Beyond that, the Defendant has not presented any compelling arguments that the terms themselves should mean anything beyond their plain meaning. The plain meaning of the term, again, is "work together to interlock." A.J. seeks a further construction that working together requires the parts to function simultaneously. There is a danger in relying upon dictionary definitions of words that are themselves definitions of other words. As the distance from the original term ("cooperatively") increases, the precision with which any dictionary can produce the plain or ordinary meaning of the term decreases. A.J. rightly points out that "together" ordinarily connotes simultaneity, but the Court believes that "work together" is a sufficiently precise definition of "cooperatively." It would begin to move too far from the language of the claim to impose a further definition.

A.J. also seeks a further construction of "interlock" to mean "lock into position." This again presents the risk of moving too far from the claim language in constructing the claim. The term "engage" does not necessarily suggest that the retainer, tabs, and slots must "lock into position." Moreover, "lock into position" does not offer much of an advantage over "interlock" as a definition of the "engage." To function properly, the invention Rather than drift further away from the language of the claim,
the Court constructs engage to mean "interlock."

To sum up, then, the Court finds that the disputed phrase "cooperatively engaging" refers to the tabs of the C-shaped wrench disc, the retainer, and the slots of the tube. The phrase itself is constructed to mean "work together to interlock."

2. Hub Legs Collapsible by Pivoting from Coplanar Spread Configuration to Non-coplanar Configuration

Regalo also contends that the legs of the accused device do not pivot about their pivot connection into and out of the plane defined by each hinged member of the central hub to a compact non-coplanar configuration, but, rather, the leg pairs remain in the same plane as the hinged members.

Graco responds that Regalo's hub legs in the spread/open configuration diverge radially from the hub member and are coplanar with each other. The legs in the compact or folded position are substantially parallel and non-coplanar. Thus, according to Graco, the reference in the claim to a "compact non-coplanar configuration" only refers to the change in relationship between and among the legs when they arrive at the folded position. (Graco's Reply at 7.)

Regalo counters that Plaintiff ignores the fact that Claim 1 requires each hub leg to be "pivotably coupled at one end portion" to the "hub member" and at the same time requires that all of the hub legs to "diverge radially outwardly" from the "hub member" while the legs are in a "substantially co-planar spread configuration." According to Regalo, "if the legs diverge 'radially outwardly' from the hub member AND at the same time are 'co-planar,' the hub must have a plane in common with the legs. Otherwise, the adjective 'radially' has no context or meaning." (Def.'s Reply in Supp. of Mot. for Partial Summ. J. at 4.) That being said, Regalo takes this one step further and argues, under its claim interpretation, that since "coplanar" refers to the legs having a common plane with the central hub in the spread configuration, than "non-coplanar" must refer to the legs not sharing a common plane with the central hub in the folded position. Based on the above, Regalo submits that because the hinged members of its central hub fold into the same plane as the legs, or become "coplanar" with the legs, when the playyard collapses, there can be no infringement based on the limitation in the '437 patent that the hub legs be in a "non-coplanar" position when they are collapsed (assuming "non-coplanar" refers to the position of the legs with respect to the "unitary central hub member" of the '437 patent).

Despite Regalo's arguments, a review of the claim language at issue shows that there is no requirement that the central hub be substantially coplanar with the legs in the spread configuration; rather, only the hub legs need be substantially co-planar in the spread configuration. As Graco points out, "while it may be reasonable that the plane defined by the legs in the spread configuration is within the plane defined by the hub member, there is no requirement that any part of the hub member be within the same plane as the legs." (Graco's Surreply Brief at 3) (citing '437 patent, Fig. 4, hub member (166) and hub legs (206) and (212), and Fig. 10, which shows a cross-section through hub leg (208) and the hub member in the open or spread configuration of the hub legs).

Thus, Regalo's concern that the term "radially" has no meaning unless the "coplanar" and "noncoplanar" language of Claim 1 is interpreted to include the legs with respect to the hub is unfounded. An examination of the language of Claim 1 makes clear that "radially" merely refers to how the legs diverge from the hub in the coplanar spread configuration. Moreover, the final part of the of the claim language at issue specifically refers only to the hub legs, which, upon collapsing, form "a compact non-coplanar configuration where said hub legs are substantially parallel" with no reference to the central hub. Based on the above, this Court concludes that the terms "coplanar" and "noncoplanar" refer to whether or not all of the hub legs lie in the same plane. In other words, all of the hub legs lie within the same plane, or are coplanar, when the lower frame assembly is in the spread configuration, and all of the hub legs do not lie within the same plane, or are non-coplanar, when in the collapsed position.

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9 During oral argument, Regalo's counsel stated that Claim 1 lacks the prepositional phrase that explains what the hub legs are "coplanar" and "non-coplanar" to. (Tr., dated 7/28/00, at 39-40.) However, an examination of the entire paragraph at issue reveals that, despite referencing the central hub when describing the position of the legs in the spread configuration,
the patentee consistently used "coplanar" and "non-coplanar" when referring to just the hub legs, and the choice not to specifically reference the central hub when describing the legs in the collapsed position indicates to this Court that the terms "coplanar" and "non-coplanar" refer to whether or not all of the legs lie in the same plane. Therefore, this Court concludes that Regalo's attempt to read into the claim language the requirement that the "coplanar" and "non-coplanar" language references the position of the legs with respect to the hub is unsupported by the patent itself.

10 Counsel for Graco convincingly makes the point that because Regalo has admitted infringement with respect to its early model playyards, which contain a unitary central hub member that is structurally the same as in the Graco playyard, it is difficult to understand how its current models do not fit the claim language and, thus, do not infringe on the '437 patent. (Tr., dated 7/28/00, at 20-22, 27-28.) Indeed, although this Court is mindful of Regalo's stated position with regard to how the bi-fold hub in its current model playyards makes the structure of the lower frame of Regalo's playyard distinguishable from that of the Graco playyard, such a distinction becomes insignificant when employing this Court's interpretation of the "coplanar" and non-coplanar" language of Claim 1 of the '437 patent as referring to whether or not all of the hub legs lie in the same plane.

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3. "cords"

Otis asserts that "cords" should be defined as "load-carrying groups of strands." Schindler contends that no construction of the term is necessary. Alternatively, Schindler disputes Otis' inclusion of the "load-carrying" limitation.

The Court, again, agrees with both parties in part. "Cords" are properly defined as "groups of strands." However, the term "cords" need not contain the "load-carrying" limitation.

4 The Court, above, has already determined that the invention is limited to use as a tension member in an elevator system. See section III.A.2. Therefore, the "load-carrying" function of the cords is already implied.

2. "Core." The singular component of the golf ball that occupies the geometric center of the sphere of the golf ball.

a. Because the invention of the Sullivan patents is directed to the inner and outer cover layers, there is not much discussion in the specifications about the "core" of the golf balls. Instead, the specification simply refers to the fact that the golf balls can be produced by injection molding or compression molding the inner cover layer about wound or solid molded cores . . . . Although either solid cores or wound cores can be used in the present invention, as a result of their lower cost and superior performance, solid molded cores are preferred over wound cores.

('293 patent, col. 15, ll. 16-26)

b. Although multi-component cores were known in the art at the time the patents in suit were filed, 6 Mr. Sullivan referred to "conventional solid cores" 7 without further description. Given the common understanding of the word "core," 8 I conclude that the above construction is consistent with both the intrinsic and extrinsic evidence of record.

3. Core

The parties next dispute the interpretation of the limitation requiring the claimed blocks be free from cores. See, e.g., '713, claim 61(e) ("The block is free from cores extending through the block, either from the upper to the lower surface, or from one side to the other."). CP argues a "core," as recited in the Patent claims, is "an opening extending through the block from the upper to the lower surface." Def.'s Mem. at 3C. Anchor states that "core" ordinarily means "a central and often foundational part usually distinct from the enveloping part by a difference in nature." Pl.'s Mem. at 15 (quoting Merriam-Webster's Collegiate Dictionary).

The general understanding of "core" conveyed by dictionary definitions such as that cited above, is the central or interior part of something, such as a piece of fruit or the earth. See, e.g., Webster's Third New International Dictionary 506 (unabridged ed. 1993) (defining core in the first instance as "the central and often foundational part of a body, mass or construction …"). The meaning of "core," however, like so many words, varies depending on the context of use.

The Patents do not include an express definition of this term, but do offer indicia of the understanding of the meaning of
"core" in relation to the inventions. The '015 Patent specification, particularly, provides some insight into the usage of "core" in the context of concrete retaining wall blocks. See '015, col. 10: 2-7. In discussing the manufacturing of the blocks, "core forms" are indicated as a means of preventing the formation of portions of interior mass so as to "lighten the block." Id. at col. 10: 5. As part of the molding process, the core forms prevent mix from entering the areas of their positions, thereby creating voids in these areas in the final block. Id. Figs. 11-13, col. 8: 55-56, cols. 9-10: 65-13. The representative figures indicate multiple interior voids bounded by block mass. See id. Figs. 11-13.

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2 Drawings in the specification may play a significant role in construing the meaning of a claim term. See CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1153 (Fed. Cir. 1997).

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The prosecution history of the '713 Patent provides further contextual meaning: Referencing Figures 11-13, which depict the core forms used in the molding process, these remarks explain Anchor's understanding of the industry definition of a core. "Cores, as known in the industry, are larger openings in blocks which extend at least partially through the block from bottom to top, although they can go entirely through a block …. Alternatively, cores can extend through a block from side to side." Amendment and Response of 10/29/99 at 17 (Ali Decl. Ex. C). Additional support for this interpretation is found in the prosecution history of the '015 Patent, which references and discusses U.S. Patent No. 4,909,010, issued March 20, 1990 (the "Gravier" Patent). Amendment and Verified Response at 40 (Ali Decl. Ex. D). Anchor sought to distinguish this prior art, in part on the basis of the Gravier Patent's "upwardly-opening cores." Id. Figures associated with the Gravier Patent show two large voids in the body of the block that extend through and are therefore visible through the top surface. Gravier Patent, Figs. 1, 7 (Moore Decl. Ex. 17).

These materials, along with the specification, which is the primary source of interpretive evidence, establish a particular application and meaning in the art, similar to and supported by ordinary understanding. See Vitronics, 90 F.3d at 1582, 1583. Based on the usage revealed in the intrinsic Patent records, "core" is construed as "a relatively large void of constituent mass bounded by the body of the block." As explained in the specification and prosecution history, cores lessen the weight of the block and may extend partially or fully through a block.

The claim construction dispute centers around the classification of wrapped strands as either part of the "core" or part of the "cover" within the meaning of the claims of the patent. Both independent claims require, inter alia, that the core of the yarn contain at least two strands, one of which must be fiberglass. 2 Each of World's accused yarns in dispute contains a single strand of fiberglass wrapped first by a strand of Spectra (R), an extended chain polyethylene, at a rate of just greater than four turns per inch and then by two additional strands, the type of which varies among the different World yarns, at a rate of close to eight turns per inch. Whether these yarns infringe the patent depends upon whether the strand of Spectra (R) wrapped around the fiberglass strand is part of the core or part of the cover within the meaning of the patent claims. If the Spectra (R) strand is part of the cover, then World's yarns do not meet the limitations of the claims because they contain only one strand in their core.

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2 While differences exist between the two independent claims, both require that the core contain at least two strands. Because we conclude that a strand wrapped around a central fiberglass strand is part of the cover and that, therefore, the cores of the World yarns contain only one strand, we do not discuss the claims separately.

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Therefore, the inquiry before this court is whether a strand wrapped around a central fiberglass strand is a member of the core of the yarn or a member of the cover of the yarn within the meaning of the patent claims. In determining the proper construction of the claims, a court may consult both intrinsic and, where necessary, extrinsic evidence. See Vitronics Corp.
v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2d (BNA) 1573, 1576 (Fed. Cir. 1996). The court should first look to the intrinsic evidence of the record, including the claims, the specification and, if in the record, the prosecution history. See id.

In examining the intrinsic evidence, the court looks to the language of the claims, both asserted and nonasserted. See id. Because a patentee can be his own lexicographer and give words in the claim meanings other than their ordinary and customary meaning, the specification must always be examined to determine if the patentee has defined any term in a manner inconsistent with its ordinary meaning. See id.

In the present appeal, the language of the claims provides only limited guidance in distinguishing which strands are part of the core and which strands are part of the cover of any particular yarn. Both independent claims limit the scope of the claimed invention, inter alia, by defining what strands must be included in the core and in the cover. Claim 1 specifies that the core must include a strand of fiberglass and a second strand that is "substantially parallel" to the fiberglass strand. Claim 11, the only other independent claim, specifies that the core must include a strand of fiberglass and a strand formed of an extended chain polyethylene. However, the claims alone do not provide conclusive guidance on how to determine whether a strand is part of the core or part of the cover. Both independent claims describe the cover as being wrapped on the core, but, while this favors a conclusion that a strand that is wrapped around a core strand is part of the cover, it does not explicitly define all strands so wrapped as part of the cover.

The specification provides more helpful guidance in determining whether a strand wrapped around a central fiberglass strand is part of the core or part of the cover. While the specification does not provide an explicit method for identifying a core strand, the specification does provide enough information about the scope of the invention that a person of ordinary skill in the art would conclude that a strand of Spectra (R) wrapped around a central fiberglass strand is part of the cover for the purposes of the claims.

The specification states on lines 36-40 of column 5 that "the yarn, according to the principles of the present invention, may be formed on a standard hollow spindle covering machine with the coverings or wrappings being at a rate of 4-12 turns per inch, with 8 turns per inch being preferred." While this statement does not, as World argues, explicitly define any strand wrapped between 4-12 turns per inch as part of the cover, it favors the conclusion that a strand wrapped at such a rate is part of the cover. Further, the interchangeable use of the words "coverings" and "wrappings" further supports the conclusion that a strand so wrapped is considered part of the cover for the purposes of the patent.

Examination of the figures and the descriptions of those figures would also lead one skilled in the art to conclude that World's innermost wrapped Spectra (R) strand is part of the yarn's cover. Figures 1 through 5 depict yarns composed of varying numbers of strands in their respective cores and covers. Without exception, every strand depicted to be and described as "wrapped" plainly constitutes part of the cover of that particular yarn. Figures 3 and 5 are particularly illuminating. Figure 3 shows a yarn composed of two parallel strands around which three strands are wrapped. The written description of figure 3 defines the two parallel strands as the core and three wrapped strands as the cover. As the three strand cover of the yarn in figure 3 is identical to the three wrapping strands in each of World's yarns in terms of the number of wrapping strands, their respective wrapping directions and their type, the description of the innermost wrapping strand in figure 3 is highly probative of the question of the proper claim construction. The relevant strand, the innermost of the three wrapping strands in figure 3, is described as being part of the cover.

Figure 5 depicts a single strand of fiberglass wrapped by two other strands. The description of the figure defines the single strand of fiberglass as the core and the two wrapping strands as the cover. This figure and its description are notable for two reasons. First, the figure demonstrates that, for the purposes of defining the word "core" as it is used by the patentee, a single strand of fiberglass can alone comprise the core. Second, the figure and its description show that a strand wrapped around a single fiberglass strand is part of the cover. Taken together, the figures strongly suggest that an innermost wrapped strand, such as the innermost Spectra (R) strand of each of World's yarns, is considered part of the cover, as that word is used in the patent.

--- Footnotes ---

3 The yarn depicted in figure 5 is not an embodiment of the claimed invention. As originally filed, the claims included a yarn with a single strand of fiberglass for a core. However, subsequent amendments during prosecution limited the invention
to yarns with cores of at least two strands. The figure and its description, however, are still relevant for determining the meaning of the words "core" and "cover."

Kolmes can only cite a single sentence in the specification in support of his argument that the core can include wrapped strands. In describing the two strand core illustrated in figure 1, the specification states that "the strands are illustrated as being placed parallel to each other, although it is within the spirit of the present invention that the core strands may be wrapped, twisted or braided together." Based on this passage, Kolmes argues that the core can include strands that are wrapped around other strands. However, the cited passage only provides that two strands "wrapped together" are considered the core of a yarn included in the claimed invention. In other words, the core can consist of two strands wrapped about one another. Presumably, the definition of "wrapping" as being at a rate between four to twelve turns per inch distinguishes "wrapping together" from "twisting together" which would presumably have a much higher rate of turns per inch. This sentence therefore does not speak to the currently relevant situation wherein a single strand of fiberglass is wrapped by other strands but does not itself wrap about any strands. Indeed, this is the only way to read this sentence in a manner consistent with the rest of the specification.

Moreover, if this sentence were to be read to include strands wrapped around other strands and if the claims were to be interpreted such that strands wrapped around other strands could be part of the core, as Kolmes argues, then it would be impossible for a person of ordinary skill in the art to determine which strands of a given yarn are part of the core and which are part of the cover. Such a construction would be impermissible as rendering the claims invalid for indefiniteness.

Taken as a whole, the intrinsic evidence requires a claim construction that would designate a strand wrapped around a central fiberglass strand as part of the cover and not the core of the yarn. While the claims and the specification do not state this explicitly, the patent when read as a whole can only lead to this construction of the claims.

The extrinsic evidence in the form of the testimony of the inventors bolsters this conclusion. Specifically, both inventors testified to the effect that a strand wrapped around a single fiberglass strand depicted in particularly exhibits or figures was part of the cover and not the core of the yarn. Such conclusions by the inventors support a claim construction that places a Spectra (R) strand wrapped around a central fiberglass strand in the cover rather than in the core.

Kolmes argues that the district court erred in placing reliance on this extrinsic evidence and cites Vitronics. However, Vitronics only states that reliance on extrinsic evidence is improper in cases where the intrinsic evidence "unambiguously describes the scope of the patented invention." Vitronics, 90 F.3d at 1583, 39 U.S.P.Q.2D (BNA) at 1577 (emphasis added). Moreover, Vitronics was concerned with the use of extrinsic evidence to alter or contradict clear statements within the intrinsic evidence. Id. at 1583-84, 39 U.S.P.Q.2D (BNA) at 1577. In the present case, the district court only turned to the extrinsic evidence after concluding that ambiguity existed in the intrinsic evidence with regard to the proper interpretation of the claims. In addition, the testimony of the inventors is consistent with the guidance provided by the patent itself. Therefore, the district court did not err in its use of the inventors' testimony.

Both the intrinsic and the extrinsic evidence support a claim construction that a strand of Spectra (R) wrapped around a central fiberglass strand is part of the cover and not the core of the yarn. As the infringement issue turns on the legal question of claim construction, the material facts not being in dispute, we hold that World's yarn styles 331, 332, 334, and 336 do not infringe the patent as a matter of law. Therefore, the district court's denial of Kolmes's motion to hold World in contempt was proper.
from the apparatus with the core pins forcing the plastic washing machine basket to shift relative to the mold core as the cavity sidewall members are shifted away from the mold core due to the engagement of the core pins in the beveled apertures of the plastic washing machine basket.

The '809 patent, Claim 8 (emphasis added).

ii. The parties' definitions and arguments. The parties' proffered definitions of this term are shown below, with bold font indicating differences between their definitions. Also, the authority on which each party relies for its definition is shown just below that party's definition.

"CORE PINS FORCING THE PLASTIC WASHING MACHINE BASKET TO SHIFT RELATIVE TO THE MOLD CORE"

<table>
<thead>
<tr>
<th>Maytag's Definition</th>
<th>Electrolux's Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;the core pins provide a lifting or axial force to shift or slightly move the washing machine basket about the mold core&quot;</td>
<td>&quot;the formed plastic washing machine basket is separated from the mold core by the operation of the core pins when the cavity side wall members are shifted away from the mold core&quot;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maytag's Authority</th>
<th>Electrolux's Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>'809 patent, col. 6, 11. 6-44; claim 8</td>
<td>'809 Patent at col. 2, lines 16-19; col. 6, lines 10-15 and lines 24-27.</td>
</tr>
</tbody>
</table>

In its initial brief, Maytag argues that Claim 8 of the '809 patent not only states that the core pins aid in ejecting the basket from the mold core, but describes how this is done. Maytag contends that this language is so clear on its face that any claim construction should closely track the language used in the claim. The precise language Maytag has chosen in its construction, Maytag contends, is consistent with this clear language and the pertinent part of the specification. On the other hand, Maytag asserts that Electrolux's use of "separating" to mean "shifting" is improper, because the two terms have different meanings. Maytag also contends that describing the washing machine basket as "separated from the mold core" is a "backdoor" approach to redefining the claim to confuse "ejection" with "removal."

In its initial brief, however, Electrolux contends that this claim limitation is directed to the use of the core pins to cause the molded product to shift and separate from the mold core when the sidewalls, where the pins are located, are shifted. Electrolux contends that Maytag attempts to collapse this claim term with the previous claim limitation, "utilizing the core pins to aid in ejecting." Indeed, Electrolux contends that Maytag's construction would make the two limitations essentially synonymous. Electrolux also contends that Maytag is importing claim limitations, such as "axial" force and "slightly," that are not found in the claim language or the file history.

In its rebuttal brief, Maytag asserts that Electrolux's construction is improper, because "shift" connotes a minor adjustment, while "separate" connotes a major adjustment and potentially even complete removal of the basket from the mold core. However, Maytag points out that the specification uses the word "separate" in the context of removing bores from guide rods. In short, Maytag contends that Electrolux's definition again improperly requires complete removal of the basket. For its part, Electrolux asserts in its rebuttal brief that, while asserting that the construction of this term should closely track the claim language, Maytag improperly imports two limitations not found in the claim: "axial force" and "slightly." However, Electrolux contends that neither importation is supported by the claim language, the specification, or the file history, and Maytag does not even offer supporting citations from such sources. Moreover, Electrolux argues that the specification makes clear that the molded product is moved to the "ejection position," so that "slightly" moving the washing machine basket is a misleading construction. Finally, Electrolux contends that nothing in the patent requires that the lifting force be an "axial" force.
In its surrebuttal brief, Maytag asserts that it is not attempting to import any limitations into the claim language. Rather, Maytag contends that its proposed construction uses "to shift or slightly move" to define "shift," so that "slightly" only modifies "move," not "shift." Maytag contends that such a definition of "shift" is what would be understood by one of ordinary skill in the art and is consistent with dictionary definitions. However, Maytag contends that it would be content to let "shift" speak for itself. Maytag also contends that Electrolux's argument about "axial force" is a red herring, because not only would one of ordinary skill in the art understand the core pins' force on the basket to be "axial," but that this term is tangential to the real dispute between the parties. Therefore, Maytag asserts that it would be willing to drop "axial" from its definition, and instead, urges the court to construe the term to mean "the core pins provide a lifting force to shift the washing machine basket about the mold core." This construction, Maytag asserts, removes all of Electrolux's concerns. In its surrebuttal, Electrolux contends that no further response is required.

iii. Analysis. Beginning with the language of the claim in which the disputed language appears, see Nystrom, 424 F.3d at 1142 (construction begins with the words of the patent); Biagro, 423 F.3d at 1302 (same), it appears to the court that there is little or nothing about this term that requires construction. The court observed, just above, in reference to the other term in Claim 8 that is "in dispute" at this time, that Claim 8 expressly states how the core pins "aid," that is, are "used to assist," in ejecting the washing machine basket from the apparatus: the core pins "force the plastic washing machine basket to shift relative to the mold core as the cavity sidewall members are shifted away from the mold core due to the engagement of the core pins in the beveled apertures of the plastic washing machine basket." The '809 patent, Claim 8. The court finds nothing inherently vague or confusing about this language. Nevertheless, the court will consider, albeit briefly, specific aspects of the parties’ constructions.

While the core pins "aid" in "ejecting the washing machine basket from the apparatus," which suggests that the washing machine basket is ultimately "separated" from the mold core, the precise portion of the claim language now at issue relates only to the extent of the "aid" provided by the core pins, which is only to "force the washing machine basket to shift relative to the mold core." Id. (emphasis added). Therefore, the court agrees with Maytag that it is inappropriate, in light of the claim language, to adopt Electrolux's use of "to separate from" as synonymous with "to shift relative to." Indeed, to the extent that guidance from a standard dictionary is helpful to determine the ordinary meaning of the word, see Free Motion Fitness, Inc., 423 F.3d at 1348 ("Phillips confirms that courts may "rely on dictionary definitions when construing claim terms" and that "dictionaries . . . are often useful to assist in understanding the commonly understood meaning of words.") (quoting Phillips, 415 F.3d at 1322, in turn quoting Vitronics Corp., 90 F.3d at 1584 n.6), "shift" means, for example, "to change the place, position, or direction of: MOVE," not "to separate." See, e.g., MERRIAM-WEBSTER’S COLLEGIATE DICTIONARY (10th ed. 1995) (definition of "shift vt). The court also finds that the plain language of the term supports Maytag's elimination of "slightly" and "axial force" from the construction of the claim, because "shift" requires no further modifier, and "axial force" is found nowhere in the patent claim or pertinent part of the specification.

The final issue is whether Maytag is correct to include a definition of the nature of the "forcing" by the core pins as "providing a lifting force." Such language concerning the force provided by the core pins does, indeed, appear in the specification. See the '809 patent, col. 6, ll. 23-26 ("During the initial lifting of stripper ring 96, each of the core pins 191 will be engaged within a respective aperture 44 of basket 2 to provide a lifting force about the entire periphery of mold core 90.") (emphasis added). However, to import this language might be improper, because it would be reading a limitation from the specification into the construction of the term, where no such limitation is actually claimed or necessary to the understanding of the claim language. See Playtex Prods., Inc., 400 F.3d at 906 ("The court must take care in its analysis, when locating in the written description the context for a disputed term, not to import a limitation from that written description. It must use the written description for enlightenment and not to read a limitation from the specification [into the construction of the term].") (citing Comark Comms., 156 F.3d at 1186-87). Consequently, the court finds "forcing" sufficient by itself.

Therefore, the court concludes that the claim term "core pins forcing the plastic washing machine basket to shift relative to the mold core" is unambiguous, so that no further construction is required.
The parties dispute the proper construction of the phrase "core wire." This phrase is neither a phrase of common use in the English language nor is it a commonly used technical term. The phrase "core wire" was coined by the inventors to describe a part of the invention.

On the face of Claim 21, the phrase was coined by the inventors to describe a segment of the guidewire. Earlier in this Order, the Court gave its modified construction of the word "guidewire." It is also clear from the language of Claim 21 that the core wire has a "distal portion," and that "coupled to" the "distal portion" of the core wire is an "elongated tip portion."

The Summary of the Invention of the '136 Patent discusses all of these portions:

The invention is also a guidewire for use in electrothrombosis and used in combination with a microcatheter comprising a core wire. The core wire has a distal portion susceptible to electrolytic disintegration in blood. A tip portion is coupled to the distal portion of the core wire.

('136 Patent, Col. 4:54-59.) This description in the Summary is significant because it is not limited to a particular embodiment. Therefore, the Court considers that unless a particular claim states otherwise, the phrase "core wire" should be construed to provide that its distal portion is susceptible to electrolytic disintegration in blood. Significantly, this excerpt from the Summary also makes it clear that the "tip portion," which is "coupled to the distal portion of the core wire," is not a part of the "core wire."

In a description of Figure 1, "stainless steel guidewire 10," "reduced diameter section 16," and "threadlike section 18," are collectively included in the definition of a "core wire" of that embodiment:

The stainless steel guidewire 10, comprised of that portion disposed within the microcatheter body, tapered section 12, reduced diameter section 16 9 and threadlike section 18, is collectively referred to as a core wire which typically is 50-300 cm. in length.

In the illustrated embodiment the portion of the core wire extending from tapered section 12 to second bonding location 22 is collectively referred to as the grinding length and may typically be between 20 and 50 cm. in length.

('136 Patent, Col. 6: 3-12.)

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9 Figure 1 has no reduced diameter section 16. The Court assumes that the written description was intended to read, "reduced diameter section 14." This apparent mistake does not affect the Court's claim construction.

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Figure 1 shows a component other than those which are listed "collectively" as the core wire, namely, stainless steel coil 26. The issue becomes whether the inventors meant the phrase "core wire" to include this additional component. Before addressing that issue, the Court considers how, if at all, the phrase "core wire" is used in descriptions of other embodiments of the invention.

With respect to the "second embodiment of the invention, illustrated by Figure 2, the written description states:

FIG. 2 illustrates in enlarged partially cross-sectional view a second embodiment of the invention. Stainless steel core 32 terminates in a conical distal portion 34. Stainless steel coil 36, shown in cross-sectional view, is soldered to distal portion 34 of guidewire 32 at bonding location 38. The opposing end of the stainless steel coil 36 is provided with a soldered, rounded platinum tip 40. In the illustrated embodiment, stainless steel core wire 32 is approximately 0.010 inch in diameter with the length of stainless steel coil 36 being approximately 8 cm. With the longitudinal length of platinum tip 40 being between 3 and 10 mm. The total length of guidewire 32 from tip 40 to the proximate end is approximately 150 cm.

The embodiment of FIG. 2 is utilized in exactly the same manner as described above in connection with FIG 1 to form a thrombic mass within an aneurysm or other vascular cavity. The embodiment of FIG. 2 is distinguished from that shown in
FIG 1 by the absence of the extension of stainless core 32 through coil 36 to tip 40. In the case of the embodiment of FIG. 2 no inner core or reinforcement is provided within stainless steel coil 36. Threadlike portion 18 is provided in the embodiment of FIG 1 to allow increased tensile strength of the guidewire. However, a degree of flexibility of the guidewire is sacrificed by the inclusion even of threadlike tip 18, so that the embodiment of FIG 2 provides a more flexible tip, at least for that portion of the microguidewire constituting the stainless steel coil 36.

("136 Patent, Col. 6:66 - 7:26.) In their description of the second embodiment, the inventors use "stainless steel core" and "stainless steel core wire" interchangeably.

The "third embodiment" of the invention, illustrated in Figure 3, does not use the phrase "core wire." However, the description of the third embodiment refers to components which have the same names and descriptions 10 as the components which are included in the definition of "core wire" in the first embodiment:

Turn now to the third embodiment of the invention as shown in FIG 3. FIG 3 shows an enlarged side view of a guidewire, generally denoted by reference numeral 42, disposed within a microcatheter 44 shown in crossectional view. Like the embodiment of FIG 1, a stainless steel coil 46 is soldered to guidewire 22 at a first bonding location 50. A thin threadlike extension 52 is then longitudinally disposed within stainless steel coil 46 to a second bonding location 54 where stainless steel guidewire 46 and threadlike portion 52 are soldered to a soft platinum coil 56. Platinum coil 56 is not prebiased, nor does it contain any internal reinforcement, but is a free and open coil similar in that respect to stainless steel coil 36 of the embodiment of FIG. 2.

("136 Patent, Col. 7:42-55.)

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10 "Threadlike section 18" of the first embodiment is included in "core wire." The third embodiment discloses "thin threadlike extension 52." The Court finds that a skilled artisan would conclude that the components are the same for purposes of defining "core wire."

11 Figure 3 does not contain a drawing labeled "guidewire 22." The Court considers this reference to be an erroneous reference to guidewire 42.

12 Figure 3 does not contain a drawing labeled "guidewire 46." The Court considers this reference to be an erroneous reference to guidewire 42.

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The phrase "core wire" is used in other claims of the '136 Patent. Claim 13 discloses a guidewire comprising a "core wire" with a "distal portion" and an "elongated tip portion." Claim 14 discloses a guidewire as disclosed in Claim 13 in which the "distal portion" of the core wire is a "stainless steel segment." Claim 15 discloses a guidewire as disclosed in Claim 14 in which the "stainless steel segment" of the "distal portion" of the "core wire" is a "coil." 13

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13 The language of Claim 14 imposes a limitation on the distal portion of the core wire. The limitation imposed by Claim 14 is that the distal portion of the core wire "is an exposed stainless steel segment." Claim 15 imposes a limitation on the stainless steel segment, namely, that the segment "is a coil." Thus, Claim 15 claims a distal portion of the core wire which is a coil. A potential ambiguity is introduced within Claim 15, however, because it also imposes the limitation that the "coil" be connected to the "core wire." If the distal portion of the core wire "is" a coil, it is arguably ambiguous to say that the coil "is connected to the core wire." It is unnecessary for a dependent claim to claim that a coil is connected to the core wire if in that dependent claim the coil is a part of the core wire. The Court has chosen to treat the arguable ambiguity as a valid claim in that it is permissible in a dependent claim to define the coil as part of the "core wire" if the dependent claim discloses connecting the coil to the core wire.

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Accordingly, the definition of "core wire" must be broad enough to include a coil. However, in every claim, the "elongate tip portion" is excluded from the definition of "core wire." Therefore, the definition of the "core wire" must exclude the elongate tip portion.

The Court construes "core wire" as it is used in Claim 21 of the '136 Patent to mean:

The guidewire of the invention, except for the elongate distal tip.

C. "Corners"

Finally, Bridgeport challenges the district court's construction of the "corners" limitation of Claim 15. This limitation appears in the following context: "corners connecting said side edges of said sides which are adjacent one another with said sides furthermore capable of having their corners removed to increase the degree of flexing about said axis through said face member to increase the amount of flexibility." '674 patent, col. 8, ll. 31-36. The district court construed this limitation as follows:

The word corners in Claim 15 refers to the meeting place of two lines or surfaces. They are capable of being removed to increase flexing. The corners can be removed but need not be removed. The corners are removable, but there is no requirement that the corners contain cut lines, score lines, or other physical features indicating that the corners are intended to be removed.

Trial Tr., Vol. 5 at 120. Bridgeport maintains, again on the basis of an embodiment described in the specification, that "the only correct construction . . . is that the corners must be specially constructed to flex or to be cut or removed to 'increase the degree of flexing.'" Bridgeport's attempt to read in limitations from the specification, and its general assertion that the district court's construction causes validity problems and is thus erroneous, fail for the same reasons described above. We find no error in the district court's construction of this limitation.

7. Corners of the First Frame

a. The Parties' Constructions

LPL argues that the "corners of the first frame" are areas located in or near the edges of the first frame and positioned on or inside the border of the flat display panel. Tatung asserts that the corners are the area at the back surface of a flat-panel display device near the intersection of two of its side edges. ViewSonic construes the corners as places on the first frame where two of its side edges intersect.

b. The Special Master's Construction

Claims 38 and 39 recite that the fastening holes are at the corners of the first frame. In the context of the common specification, the Special Master is of the view that the corners of the first frame as they relate to the fastening elements are not at the exact place where two of its side edges intersect, as urged by ViewSonic. For example, as seen in Figure 4C of the patents, the holes 15 extend through the frame but not the edges themselves. Moreover, as discussed above regarding the term "rear mountable," the fastening elements are not necessarily on or inside the border of the flat display panel. It follows that the phrase "corners of the first frame" is also not limited to being "on or inside the border of the flat display panel," as asserted by LPL.

Accordingly, the Special Master's construction is as follows:
Superior argues that the district court erred in construing the claims of BBA's '413 patent. Superior argues that "corona means," as a means-plus-function limitation, is limited to embodiments disclosed in the specification and equivalents, and the only embodiment disclosed in the '413 patent shows the corona means within the four walls of the attenuator. Superior argues that during prosecution, the applicant distinguished prior art by limiting the position of the corona means to be "within" the slot draw attenuator at a location above the exit slot of the attenuator. Superior argues that its accused device includes an electrostatic device positioned below the exit slot of the attenuator, and thus the claims, which require that a collection surface be positioned adjacent the exit slot, fail to read on the accused device.

The district court's claim construction of August 17, 2001, addressed the arguments raised by Superior on appeal. The district court agreed that the corona means of claim 1 is a means-plus-function limitation, but found that the claim also includes further language designating location, "positioned for electrostatically charging the filaments . . . before they are deposited on said collection surface." The district court found that the language of the claim permits the corona means to be outside, albeit connected to, the attenuator. The district court addressed Superior's prosecution history argument but found that the prosecution history failed to limit the claims in the way argued by Superior.

Claim 1 recites, inter alia,

d) corona means cooperating with said attenuator and positioned for electrostatically charging the filaments so that repelling forces are induced in the filaments to more uniformly spread the filaments before they are deposited on said collection surface to form a web.

'413 patent, col. 9, ll. 32-37.

As the district court correctly concluded, the limitation "corona means" is in means plus function form, and thus is subject to the requirements of 35 U.S.C. § 112, paragraph six. See B. Braun Med., Inc. v. Abbott Lab., 124 F.3d 1419, 1424, 43 U.S.P.Q.2D (BNA) 1896, 1899 (Fed. Cir. 1997) ("Because this limitation is expressed in 'means plus function' language and because it does not recite definite structure in support of its function, it is subject to the requirements of 35 U.S.C. § 112, P 6 (1994).") Construction of such a limitation requires the court to first identify the function of the means-plus-function limitation and next identify the corresponding structure in the written description necessary to perform that function. Micro Chem., Inc. v. Great Plains Chem. Co., 194 F.3d 1250, 1258, 52 U.S.P.Q.2D (BNA) 1258, 1263 (Fed. Cir. 1999).

Superior argues that the recited function includes "for electrostatically charging the filaments . . . before they are deposited on said collection surface to form a web." We disagree. The district court correctly identified the recited function:

The "function that corresponds to the "means" in this portion of Claim 1 stems from the word "corona"; that is, the claim is properly read as if it said "means for forming a corona."

Superior's proposed construction ignores the word "positioned" in claim 1, as the district court observed. Rather than reciting the function of the corona means, the expression following the word "positioned" describes where the corona means is located and is a separate limitation not subject to section 112, paragraph 6. What the "corona means" is and where it is located are two different things.

Superior's argument that the "corona means" must be "within" the slot draw attenuator is misplaced. The "within" limitation proposed by Superior does not appear in the claim. The prosecution history shows that the applicant described a prior art reference, Japanese Pat. No. 60-94663, by noting that it "discloses applying a corona to filaments after the filaments have
exited an attenuator," but the applicant did not distinguish this reference on that basis. Instead, the applicant distinguished this reference as referring to "tube-type round attenuators and not to a slot draw attenuator," and having a different filament configuration. We can find no error in the district court's finding that the intrinsic evidence does not require that the corona means be "within" the attenuator.

Superior's argument that the claims fail to read on the accused device, due to the "adjacent" limitation, is similarly unpersuasive. Claim 1 recites, "a collection surface positioned adjacent said exit slot of said attenuator." '413 patent, col. 9, ll. 28-29. Superior's contention, that the collection surface cannot be adjacent the exit slot if the corona means is not within the attenuator, is without merit. Just because the corona means is located outside the attenuator, and connected to the attenuator, does not mean that the collection surface is precluded from being adjacent to the attenuator exit slot. Again, Superior invites us to ignore the "positioned" limitation in favor of restricting the corona means to that shown in the patent figures. Because Superior's construction reads a limitation out of the claims, we decline Superior's invitation.

We find Superior's arguments concerning claims 8, 9, and 13 to be unpersuasive for similar reasons.

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5. Corona Treatment

The definition proposed by Avery for Corona treatment is: "The discharge of a high voltage field onto a surface to raise the surface energy of the surface treated." Whitlam proposed this definition: "The discharging of up to 10,000 volts of electricity from a ceramic electrode to a ground roll over which a film is passing to alter the surface of the film by raising the surface energy of a film (measured in terms of dyne level) to allow for enhanced printing." Whitlam's proposed definition corresponds almost exactly with the discussion of Corona treatment in the specifications of the patents, column 3, lines 2-8 in both patents. This part of the specification states,

"Corona treating involves discharging up to about 10,000 volts of electricity from a ceramic electrode to a ground roll over which the film is passing. This high voltage field called 'corona' alters the surface of the film. Treating the surface of the film alters the surface energy of the film (measured in terms of dyne level) and allows for enhanced printing."

This definition would limit the voltage, electrode type, and purpose of Corona treatment as used in this patent. As in the preceding four definitions it is an impermissible attempt to limit a claim by language in the specification. See e.g. Intervet America, Inc. v. Kee-Vet Laboratories, Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989). As such, the Court adopts the following definition of Corona treatment: "The discharge of a high voltage field onto a surface to raise the surface energy of the surface treated."

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10. Correction power being caused to vary

This phrase is found in Claim 1 of the '461 patent. Vistakon urges a construction of, "the dioptric power varies due to the design of the surface of the lens." Vision Advancement contends that "vision correction power" has already been construed and that this phrase does not require any further construction. Further, Vision Advancement argues that the term should not be limited to the "design"of the lens, nor should it reference the physical structure of the "surface" of the lens, as correction power is an optical property. The Court finds nothing in that phrase or the specification cited by Vistakon that would require inserting the "design of the surface of the lens" into that phrase. Accordingly, the Court declines to construe this phrase.

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Claim 1 of the '813 patent states:
An improved correlated set of iron-type golf clubs, each club having a head which includes a face for impacting a golf ball, a back surface, a heel portion, a toe portion and a sole, said sole having a trailing edge extending between said heel and toe portions, the improvement comprising at least a central portion of said trailing edge being indented toward said face at least 1/16 of an inch and having at least the lower portion of said back surface adjacent said indented trailing edge configured to conform to said indented trailing edge by sloping upwardly and inwardly from said indented trailing edge toward said face.

('813 patent, col. 7, line 40 to col. 8, line 6 (emphasis added).)

First, all of the '813 claims-at-issue require a "correlated set of iron-type golf clubs." ('813 patent, col. 7, lines 40-41; Id., col. 8, lines 18-19.) The '813 patent may not be infringed by individual golf clubs, it may only be infringed by a "correlated set."

Cleveland argues that the prior art cited in the '813 patent refers to U.S. Patent 3, 655, 188 ("'188") (1972) entitled "Correlated Golf Club Set," which defined a complete correlated set of iron-type golf clubs to be irons No. 1 to No. 11, 12, or 13, but commonly only Nos. 2-10 or 11. (‘188 col. 2, lines 37-41.) A "short set" was defined as consisting of irons Nos. 3, 5, 7, 9 and 11, only. ( Id. at 41-42.) Regardless of the number of clubs in the set, Cleveland argues that Karsten's '813 patent claims require that each club in the set have all the characteristic elements recited in the '813 patent claims. Cleveland asserts that it made and sold the 792 irons in Nos. 1-9 and P, D, S and L wedges and that each and every "correlated set" sold by Cleveland did not contain the elements of the '813 patent.

Karsten argues that "correlated set" means that "two or more clubs comprising a set are related to each other." (Response, p. 9.) Karsten posits that the '813 patent illustrates a correlated set of clubs by virtue of the fact that FIGS. 4-10 illustrate a 5-iron, 2-iron, and 8-iron in which the structure of the loft angles is "clearly 'related' or 'correlated.'" (Id.) This Court finds Karsten's argument problematic at best.

Karsten's argument defies common sense. In essence, Karsten submits that the claim term "correlated set" may be implicitly defined by the illustrations contained in the patent. This basic thesis is plausible. Unfortunately, Karsten's definition lacks any relationship to the number of clubs depicted in the patent's illustration. The patent depicts several clubs, yet Karsten submits two or more define a correlated set. There is no relationship between Karsten's definition of "correlated set" and the illustrated figures found in the '813 patent.

This Court finds that a "correlated set," comprises two or more clubs which contain the same design characteristics. While a single club can not constitute a correlated set, a short set, a set of wedges, or even a set comprised of a 1 and 2 iron may constitute a correlated set if all of clubs possess the same design characteristics and they are sold together as a set.

The Correlated Set

The district court ruled that a "correlated set" is a claim limitation, and "comprises two or more clubs which contain the same design characteristics [and] are sold together as a set." The court recognized the commercial usage "short set," and held that when two or more iron-type clubs are sold as a set, each iron must embody the claimed characteristics. Cleveland Golf sells its accused clubs in sets of 1-9 irons and P, D, S, and L wedges. The district court held that this is a "correlated set," and required that all of the clubs in the Cleveland set must embody all of the claim limitations in order to infringe the claim.

Karsten states that the district court erroneously interpreted the term "correlated set" to preclude infringement if the set of iron-type clubs is not completely correlated, that is, if any club does not have the claimed structure. Karsten argues that it suffices if at least two of the irons in a set of clubs have the claimed structure, however large the "set." Karsten states that the term "correlated set" was used in the specification and claims to distinguish fairway irons from putters and woods, and that the '813 invention does not require that every iron-type club that is included in a set must have the claimed structure. Karsten points out that the district court's construction would enable an infringer to avoid the claim simply by including one non-conforming club in the set.
Karsten also argues that this limitation appears only in the preamble and is irrelevant to the patentability of the claims. Karsten states that a preamble term that states an intended use does not limit the claimed device to that specific use, see Rowe v. Dror, 112 F.3d 473, 478, 42 U.S.P.Q.2d (BNA) 1550, 1553 (Fed. Cir. 1997), particularly when as here the use was not argued as relevant to patentability. The district court, however, deemed the "correlated set" a limitation of claim scope, in view of Karsten's description of the invention in the specification as relating to a correlated set of irons, and Karsten's inclusion of this term in all of the claims.

We agree with the district court that this term, appearing in every claim, does not simply refer to the prior art or to a possible use, but describes and limits the invention being claimed. See Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1306, 51 U.S.P.Q.2d (BNA) 1161, 1166 (Fed. Cir. 1999). The district court correctly defined the term "correlated set" in the context of the specification and the evidence of customary usage. We confirm the court's ruling that the claims require that each iron-type club in a set of at least two clubs that are sold together must embody the claimed elements.

3. "Corresponding Contact Surfaces"

The method taught by claim 1 requires a "removable article having electrically conductive terminals and [an] electric device having conductor elements, both said electrically conductive terminals and said conductor elements having corresponding contact surfaces." Col. 9, lns. 57-61. It is "plain" to Thomson -- but not to the ALJ nor the Commission -- that the term "corresponding contact surfaces" means "that all, not just a subset, of the corresponding contact surfaces of the electric device and the removable article be brought into electrical contact." Thomson's Post-Markman Reply (Proposed Order) [hereafter "Thomson's Prop. Or."]. Thomson argues that the natural reading of the plural is that the surfaces correspond in a one-to-one manner. Thomson argues for a one-to-one correspondence so that Claim 1's step (b), which calls for "testing said corresponding contact surfaces for the existence of correct alignment and electrical contact between said corresponding contact surfaces," requires that all surfaces be tested.

However, the cases Thomson cites do not support its "plain language" argument. See Texas Instruments v. United States International Trade Comm'n, 988 F.2d 1165, 1172 (Fed. Cir. 1993) (reading plural to mean all on the basis of "the specification, the drawings and TI's own witness"); see also Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1346 (Fed. Cir. 1998) (discussing term "areas" in description to interpret claim term "slice data").

Thomson also argues that during prosecution of a different claim, Moreno changed "at least one corresponding contact surface" to "corresponding contact surfaces" to overcome an indefiniteness objection.

Rejecting these arguments, the Commission held that "no language in the claim requires that all the card terminals and card reader elements be brought into contact and tested. We also agree with the ALJ that the use of the plural form indicates 'more than one' but does not necessarily mean 'all.'" In the Matter of Certain Removable Electronic Cards, Inv. No. 337-TA-396 (ITC Aug. 13, 1998) [hereafter "ITC"] at 5.

This Court finds the term "corresponding contact surfaces" ambiguous as it can mean either that the surfaces correspond one-to-one or that the surfaces on the removable article's conductive terminals correspond sufficiently to allow for electrical connection (less than one-to-one correspondence) with the surfaces on the electric device's conductor elements. Nor does Claim 1 require that the number of conductive terminals and conductive elements on which the "corresponding contact surfaces" rest match in a one-to-one fashion. Resort to the specification also does not require the limitation that Thomson would read in. Finally, the amendment during prosecution does not necessarily lead to the conclusion that all surfaces must be brought into contact. For these reasons, the term "corresponding contact surfaces" will be construed to mean "more than one contact surface, but not necessarily all contact surfaces."

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Plaintiff proposes no definition and argues that the term is unambiguous and readily comprehensible to the finder of fact. Citing a dictionary definition of "corresponding," Defendants propose the term be construed as: "having the same or nearly the same."

No citation from the patent is provided by either party. **The Court finds that this term requires no definition and is unambiguous and readily comprehensible.**

4. Claim Construction of the Term "Corresponding"

Defendants also contend that the Contessa chair does not include the limitation of "a flexible membrane coupled to and extending between said side members and having a second bowed section corresponding to said first bowed sections of said side members." '741 Patent, col. 22, ll. 53-56 (emphasis added). Specifically, defendants argue that the specification, and in particular, Figures 1 and 20, demand that "corresponding" means that the bowed section of the membrane correspond exactly to the bow shaped side members.

Plaintiff disputes defendants' interpretation, contending that "corresponding" requires that the second bowed section--the bowed section of the membrane--generally takes the shape of the bowed shaped sections. According to plaintiff, defendants' asserted definition is wrong because the term "corresponding" in no way requires conformity or agreement without any deviation whatever.

The court agrees with plaintiff that the term "corresponding" does not require "exact" agreement such that no deviation in the shape of the second bowed section is permitted. The plain meaning of the term does not require such strict identity of shape. Rather, the individual bowed sections are required merely to correspond to one another. As a starting point, the court notes that the Merriam-Webster Dictionary defines "correspond" "to be in conformity or agreement: suit, agree: match." Webster's Third New International Dictionary of The English Language Unabridged 511 (3rd ed. 2002); see Old Town Canoe Co. v. Confluence Holdings Corp., 448 F.3d 1309, 1316 (Fed. Cir. 2006) ("reference to the dictionary was not an improper attempt to find meaning in the abstract divorced from the context of the intrinsic record but properly was a starting point in its analysis, which was centered around the intrinsic record consistent with Phillips"). In the instant case, the specification simply fails to shed even a modicum of light on the term, and the court finds the Figures referenced by defendants to be entirely unhelpful because it is impossible to determine from them whether there is or is not "exact" agreement. In other words, neither the claims themselves nor the specification provide any assistance in deciphering the meaning of the "corresponding."

Accordingly, the court finds that this situation lends itself to giving greater weight to the dictionary definition of the term. As the court in Phillips stated:

In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words . . . . In such circumstances, general purpose dictionaries may be helpful. 415 F.3d at 1314 (citations omitted).

It would be inimical to the plain meaning of the term to construe "corresponding" so narrowly without any guidance from the specification. Indeed, incorporating "exact" into the ordinary meaning of the definition would be akin to rewriting the claim. Therefore, this court finds the limitation "a second bowed section corresponding to said first bowed section" to contemplate the bowed shape portion of the membrane to maintain general agreement with the shape of the first bowed shaped section.
3. Corrugated

Habasit contends that the term "corrugated" means "formed into or having a series of either straight or rounded ridges and valleys." In defending its construction, Habasit argues that corrugated should be read in the context of the 941 patent specification and understood to identify the "corrugated portion." Habasit further contends that the term corrugated does not require that the ridges and valleys be "parallel" or "even," as Rexnord insists. (D.I. 62 at 8.) First, Habasit argues that the term "parallel" is inappropriate because, while the vertical walls of the corrugated portion are parallel, the curved walls are not. Second, Habasit contends that the term "even" is repetitive because the term "sinusoidal" in the claim requires the corrugated portion to have a regular frequency and height.

Rexnord responds that "corrugated" means "having even parallel ridges and furrows." (D.I. 57 at 18.) Since the term does not have a special meaning in the art, Rexnord refers to Webster's dictionary for its definition. Rexnord argues that its proposed dictionary definition is consistent with the specification of the 941 patent which states, "The corrugated portion forms a series of ridges and valleys . . ." (941 patent, col. 3, 1. 50-51.)

After considering the claim language, specification, and prosecution history of the 9.41 patent and the parties respective positions, the Court agrees with Habasit's interpretation of the language. Corrugated must be read in the context of the specification as "corrugated portion." Claim 1 states, "the corrugated portion has a sinusoidal shape comprising a series of regularly spaced ridges and valleys . . ." (941 patent, col. 6.) The preferred embodiment of the specification further supports this understanding. The intrinsic evidence clearly sets forth the meaning of corrugated, thus eliminating the need to consult outside dictionaries. Moreover, the Court finds that the addition of the terms "even" and "parallel" are confusing and unnecessary for the construction. Thus, the Court concludes that corrugated means "formed into or having a series of either straight or rounded ridges and valleys."

1) "counterbalance weight"

Plaintiff's proposed definition of "counterbalance weight" is "a mass that provides significant dynamic balance for the reciprocating effective mass of the piston." (Dynamic balance is "the state of having the weight (of a pulley, shaft, or the like) so distributed that there will be no vibration when running." Merriam-Webster New International Dictionary 206 (2d ed. 1958).) Defendant proposes that "counterbalance weight" be defined as "a weight that counters forces associated with movement of a piston."

The 166 patent's written description distinguishes between counter weights, which counter only the primary forces of piston reciprocation, and counterbalance weights, which counter primary and secondary forces of piston reciprocation. '166 patent, col. 1, Ins. 26-40. The innovation behind the 166 counterbalance weight system is its ability to guide the counterbalance weight to reduce the vibrations caused by piston reciprocation. The invention does this by improving the engine's dynamic balance. Defendant's proposed construction fails to capture the essential difference between counterweights and counterbalance weights as described in the patent. Therefore, I will construe the term "counterbalance weight" to mean a mass that provides significant dynamic balance by countering forces associated with the movement of a piston.

1. Counterbalanced

Momentus contends that the plain meaning of "counterbalance" is that two weights are in perfect equilibrium about an axis, as two weights would balance on a legal scale. CSI argues for a broader definition of the term. In their initial response to
Momentus's interrogatory on their definition of the term, CSI offered several dictionary definitions that alternatively offer constructions as narrow as that which Momentus seeks, and ones that are as broad as that CSI claims, which is that "counterbalance" simply means weights opposing or acting against each other. Just one example is the definition given by the American Heritage Dictionary of the English Language: "1. To act as a counteracting force, influence, or weight to; counterpoise. 2. To oppose with equal force; offset." Other dictionary definitions provided by CSI confirm that the common usage of "counterbalanced" yields two possible interpretations, a narrow one claimed by Momentus and a broad one claimed by CSI. 1

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1 Merriam Webster's WWWebster Dictionary: 1: a weight that balance another 2: a force or influence that offsets or checks an opposing force.

Cambridge International Dictionary of English: a weight or force which balance another one.

Online Plain Text English Dictionary: To oppose with an equal weight or power; to counteract the power or effect of; to countervail; to equiponderate; to balance.

--- End Footnotes ---

The evidence strongly points to CSI's broader interpretation of the term "counterbalanced." First, there is language in the patent specification, which is the first place a court should look in interpreting claim language beyond the claim itself, which states "as appropriate, the weight at one end may be different from the weight at the opposite end." '307 Patent, col. 2: 44-46. 2 Momentus explains this language away by citing Unique Concepts, Inc. v. Brown, 939 F.2d 1448, 1562 (Fed. Cir. 1991) which held that a patentee cannot use an exception to a limitation discussed in their patent specification to get around the limitation in general. This argument, however, is badly circular. Momentus argues that the specification language that states that the weights need not be equal is an exception to the general limitation that the weights are equal. Therefore the Court should conclude the weights must be equal. Indeed, this argument assumes its conclusion, that a limitation exists which requires the equality of the weights. In fact, nearly all the intrinsic and extrinsic evidence contradicts this assumption.

--- Footnotes ---

2 Momentus claims that this specification language is used in reference to a baseball-related device that was ultimately excluded from the patent, but a reading of the paragraph in question simply does not support this.

--- End Footnotes ---

The patent specification explains that the problem the invention seeks to solve is that "additional weight on the end of the golf club shaft adversely affects the balance of the golfer. The weight tends to pull the golfer toward the weight." '307 Patent, Col. 1:8-11. Thus, the balance that the weight on the other end of the club is intended to strike is not that of a pendulum, requiring precisely equal weights, but the balance of a golfer, holding the club at an angle, which may not require equal weights.

While not at all dispositive, an impressive piece of extrinsic evidence is that Momentus itself uses the term "counterbalance" to describe its device, the Momentus Strength Trainer. Thus, Momentus argues that the Court should apply a narrower definition to CSI's '307 Patent than Momentus, presumably a practitioner skilled in the art, uses for its own product.

One other nondispositive item of extrinsic evidence weighs in favor of Momentus's interpretation. In a deposition of the inventor listed on the '307 Patent, Larry Huffman, Mr. Huffman testifies that he intended the weights in the device patented by the '307 Patent to be equal. Nevertheless, the Federal Circuit made it clear in Markman that "the subjective intent of the inventor when he used a particular term is of little or no probative weight in determining the scope of the claim (except as is documented in the prosecution history)." Momentus argues that this rule seeks only to bar the self-serving claims of an inventor in favor of the patent owner, which is not the case here; however, the Federal Circuit in Markman offered a quite separate rationale for disregarding the claims of the inventor.
Commonly the claims are drafted by the inventor's patent solicitor and they may even be drafted by the patent examiner in an examiner's amendment (subject to the approval of the inventor's solicitor). While presumably the inventor has approved any changes to the claim scope that have occurred via amendment during the prosecution process, it is not unusual for there to be a significant difference between what an inventor thinks his patented invention is and what the ultimate scope of the claims is after allowance by the PTO.

Markman at 985 (citation omitted). See also Solomon v. Kimberly-Clark Corp., 216 F.3d 1372, 1380 (Fed. Cir. 2000). Given the alienability of patents from their inventors, this rule would be skewed if it only discounted an inventor's testimony with respect to the scope of claim construction when the inventor's incentives are in favor of broad construction. Such a rule would put patent purchasers at risk that the inventors may turn up and give testimony that could narrow the scope of their claims. Moreover, such a rule would require district courts to open the claim construction process to evidence regarding an inventor's intentions. Such a step would transmogrify the claim construction process from one of legal construction, as dictated by Markman, into a broad fact-finding exercise that the Court is supposed to defer until the resolution of patent infringement and validity.

The Court interprets "counterbalanced" to mean that the weights oppose or act against each other. The Court does not infer from this term that the weights in a device patented by the '307 Patent must be equal or must balance on a fulcrum between the weights.

Claim 1 of the '516 patent reads, in relevant part:

A forming roller for use with a heated thermoplastic film as brought to this forming roll and when in contact with an outer diameter surface portion of said roller is vacuum-shaped and cooled to bring this heated film to a condition whereat said film is weldable to another film, this roller including:

* * *

(b) a central axial bore formed in this metal roller and having a precise size and with a counterbore formed in each end of the roller and substantially concentric with the axial bore;

* * *

(d) a multiplicity of fluid-conducting passageways formed longitudinally and substantially parallel to the axis of said roll, each of these passageways open at each end to a counterbore; . . . .

'516 patent at col. 5, l. 20 - col. 6, l. 15 (emphases added). Independent claim 10 was also at issue. Limitation (b) of claim 10 reads: "a central axial bore formed in this metal roller and having a precise size." '516 patent at col. 6, ll. 65-66 (emphasis added). Other than this limitation, the district court found claims 1 and 10 similar in all respects.

On May 3, 2001, the district court granted Caputo personal access to review the March 30, 2001 opinion, even though the opinion contained restricted confidential information. Based upon this review, Caputo filed a motion for reconsideration on March 6, 2002, approximately eleven months after the March 30, 2001 opinion. The court issued a second opinion on August 8, 2002 addressing various motions from both parties. The court dismissed Caputo's motion for reconsideration as untimely and denied both parties' motions for sanctions and attorney's fees. The court also reprimanded Caputo for retaining an unredacted copy of a page from Sealed Air's brief in support of its motion for summary judgment (in violation of the protective order), but nevertheless, declined to impose sanctions. Final judgment was entered on September 3, 2002. Caputo appealed to this court and we have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

Footnotes

1 From approximately this time until the present, Caputo has been arguing this case pro se.
DISCUSSION

Our review of a grant of summary judgment of patent infringement or noninfringement is plenary. Cole v. Kimberly-Clark Corp., 102 F.3d 524, 528, 41 USPQ2d 1001, 1004 (Fed. Cir. 1996). We first determine whether "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Unidynamics Corp. v. Automatic Prods. Int'l, Ltd., 157 F.3d 1311, 1316, 48 USPQ2d 1099, 1102 (Fed. Cir. 1998) (quoting Fed. R. Civ. P. 56(c)). "In determining whether there is a genuine issue of material fact, the evidence must be viewed in the light most favorable to the party opposing the motion, with doubts resolved in favor of the opponent." Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1307, 46 USPQ2d 1752, 1755 (Fed. Cir. 1998). "Claim construction, as a purely legal issue, is subject to de novo review on appeal." Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1451, 46 USPQ2d 1169, 1171 (Fed. Cir. 1998) (en banc).

On appeal, Caputo alleges a host of errors by the district court. They can be reduced to the following: (1) Sealed Air continues to infringe the '516 patent, as evidenced by the district court's April 4, 2001 opinion; (2) the district court improperly granted trade secret status to Sealed Air's roller; (3) Sealed Air offered misleading evidence, testimony, and argument; and (4) the burden to prove that the bubble wrap produced by Sealed Air does not use Caputo's patented process shifts to Sealed Air under 35 U.S.C. § 295.


The district court properly construed limitation (b) to mean that the forming roller requires "a counterbore formed in each end of the roller and substantially concentric with the axial bore." The court noted that these counterbores provided a reservoir for fluid that passes through limitation (d). The district court construed limitation (d) to mean that "within the roller is another set of longitudinally formed water-conducting passageways that run substantially parallel to [the] axis of the roller." The district court noted that at least one purpose of these passageways was to control temperature along the roller during operation. We find both these constructions to be correct.

Zebco's second interpretive argument is that the term "coupled" in the phrase "[a] heading lock coupled to a trolling motor" found in the preamble of claim 1 is limited to a mechanical or physical coupling. We are unpersuaded. Even assuming--as did the district court and Zebco--that the language of the preamble of claim 1 constitutes limitations on the claim rather than mere description, see Bell Communications, 55 F.3d at 620, 34 U.S.P.Q.2D (BNA) at 1820 (Fed. Cir. 1995) When the claim drafter chooses to use both the preamble and the body to define the subject matter of the claimed invention, the invention so defined, and not some other, is the one the patent protects.

As with "heading signal," Zebco (a) recognizes that the unmodified term "coupled" generically describes a connection, and does not require a mechanical or physical coupling; and (b) does not suggest that "coupled," as used in the preamble, lacks clarity. Instead, Zebco points to passages of the written description implying the relationship between elements of the
preferred embodiment, and argues that such language constitutes a special (and limited) definition of "coupled." For example, Zebco argues that the phrase "feedback means for providing a feedback signal to the control means, wherein the feedback signal is indicative of the direction of thrust," '825 patent, col. 2, lines 32-34, defines "coupled" to mean "mechanically coupled." However, just as the preferred embodiment itself does not limit claim terms, see Renishaw, 158 F.3d at 1248, 48 U.S.P.Q.2D (BNA) at 1120, mere inferences drawn from the description of an embodiment of the invention cannot serve to limit claim terms, e.g., Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1571, 7 U.S.P.Q.2D (BNA) 1057, 1064 (Fed. Cir. 1988), as they are insufficient to require a narrower definition of a disputed term.

Zebco also identifies statements in the prosecution history which purport to indicate the true (and limited) meaning of "coupled." Specifically, Zebco points to the aforementioned June 17, 1992 amendment of the '586 application, where the applicant argued that "it is not obvious to affix a compass to a propulsion device in a matter recited by [the] claims." However, as we noted above, that statement lends no support to Zebco's position, as it was made in reference to original claims 4 and 14, each of which expressly required that the compass be fixed to the trolling motor.

Because Zebco has not shown a sufficient reason to alter the clear meaning of the term "coupled," we agree with the district court that the term is not limited to a mechanical or physical coupling.

ii. Analysis

The claim construction analysis in this case focuses on the meaning of the term "coupled" in the '818 Patent. Desert Aire argues that the term should be construed to mean "connected, either directly or indirectly." Pl.'s Resp. 5. AAON asserts that it should mean "the linking of adjacent components without intervening control valves." Def.'s Mot. 11. The precise meaning of the term is significant because the '818 Patent, depicted in Figure 1, 2 claims:

(1) a "first condenser [(No. 55)] being coupled to said compressed refrigerant outlet [(No. 65)]," (from Claim 1); and

(2) "an electroresponsive flow-throttling valve [(No. 61)] having an inlet [(No. 67)] coupled to said outlet [(No. 65)] of the compressor [(No. 62)] and to said inlet [(No. 73)] of said first condenser [(No. 55)]," (from Claim 4).

Def.'s Mot. Ex. A col. 10 11. 22-23, col. 11 ll. 30-32, Fig. 3 (emphasis added). AAON argues that a control valve positioned between the first condenser and both the compressor and flow-throttling valve in the accused devices sets them outside the claims of the '818 Patent, because the presence of such an intervening valve means the adjoining compressor, valve, and first condenser are not "coupled" to each other.

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2 Figure 1 depicts the preferred embodiment from the '818 Patent specification. At this point the Court refers to this diagram for illustration only, and not to impose any limitation from the specification onto the claims.

--- End Footnotes ---

Both of the parties' proffered definitions are consistent with the presumed ordinary and accustomed meaning of the word "coupled" in the context of the claims, yet they are not coextensive. The first part of each parties' interpretation--Desert Aire's "connected" and AAON's "linking of adjacent components"--is indistinct from "coupled." The dispute arises over the scope of the claim term. Desert Aire broadly asserts that components coupled under the '818 Patent can be "connected . . . directly or indirectly," while AAON asserts a more narrow scope of coupled components being "link[ed] . . . without intervening control valves."

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Figure 1: Depiction of the Preferred Embodiment in the '818 Patent. Def.'s Mot. Ex. A.
AAON's narrow interpretation is not apparent from the context of the claims themselves. Nor does the use of the term "coupled," which appears in the '818 Patent's four claims seventeen times, invalidate Desert Aire's broader interpretation of "directly or indirectly." Def.'s Mot. Ex. A cols. 10-12. AAON argues that the claims' use of "coupled to" with the "inlet" or "outlet" of a component as the prepositional object indicates that the components are directly adjacent, or at least lack an intervening control valve; but the use of "inlet" or "outlet" of a successive component could simply indicate the direction of flow, and not exclude intervening components, so this argument fails.

Both parties often refer to the '818 Patent's specifications to support their constructions, especially the description of the preferred embodiment and its depiction in '818 Patent (Figure 1). The specification lends support to Desert Aire's construction including indirect connections of non-adjacent components. The diagram and related text indicate an intervening "manually-operable valve 72" between the "coupled" "throttling valve 61" and "second condenser 70." Def.'s Mot. Ex. A col. 6 ll. 11-14. There is also, among other components, an intervening "liquid line solenoid valve 86" between the "coupled" "[second] condenser 70" and the "expansion valve 88." Def.'s Mot. Ex. A col. 7 ll. 8-17, col. 10 ll. 36-37.

AAON refers to the specification to counter Desert Aire's construction and support its own interpretation, arguing that the intervening components in the preferred embodiment, including the manually operable and solenoid valves, do not restrict flow of the refrigerant during the normal operation of the system, and are thus not intervening control valves. AAON's assertion may be correct, but it does not serve AAON's limited scope of construction. Although the specification may be used to clarify claim terms, "[i]n examining the specification for proper context . . . this Court will not at any time import limitations from the specification into the claims." CollegeNet, Inc. v. ApplyYourself, Inc., 418 F.3d 1225, 1231 (Fed. Cir. 2005); see also Teleflex, Inc., 299 F.3d at 1326.

Although there is no clear limit to the scope of "coupled" in the language of the claims or the specification, a reading of the prosecution history clearly shows that Desert Aire adopted a more narrow definition of the disputed term, similar to that asserted by AAON, by disclaiming a configuration with an intervening control valve in order to gain patent approval.

United States Patent Number 3,926,008 (the "Webber Patent") claims a: "condenser means including, in series with said first passageway, an aircooled [sic] condenser through which said refrigerant flows, and [a] thermostatically-controlled valve means for connecting said compressor directly to said air-cooled condenser and bypassing said first-mentioned passageway." Def.'s Mot. Ex. G col. 4 ll. 22-27. The Webber Patent's preferred embodiment is depicted in Figure 2. The specification more clearly describes "a valve 42 connected between the compressor 16 and the condenser 20 and a by-pass valve 44 connected between the compressor 16 and condenser 22." Id. col. 2 ll. 59-61.

GET DRAWING SHEET 1 OF 1

Figure 2: Depiction of the Preferred Embodiment in the Webber Patent. Def.'s Mot. Ex. G.

In rejecting Desert Aire's patent application in the July 23, 1998 office action, the patent examiner stated:

Claim 1 is rejected under 35 U.S.C. [§] 103(a)3as being unpatentable over Webber in view of Considine. 4Webber shows a refrigeration system having a first condenser 20 a second condenser 22 a solenoid on/off valve 44 having an inlet coupled to the outlet of compressor 16 and the inlet of [first condenser] 20, [valve] 44 having an outlet coupled to the outlet of [first condenser] 20 and the inlet of [second condenser] 22. Considine at 11-17 shows on-off and throttling (proportional-position) at 11-21 with the conclusion that throttling provides more stable flow. In order to achieve more stable flow it would have been obvious to provide throttle flow for [valve] 44 in Webber. Claim 1 is an "open" claim since it recites "including". Therefore the presence of valve 42 in Webber does not prevent claim 1 from being readable on Webber.

Def.'s Mot. Ex. I.

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3 35 U.S.C. § 103(a) provides: "A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the
AAON argues that the basis of the patent examiner's rejection was that the '818 Patent's claims read on the prior art of the Webber Patent's two-control-valve configuration. Desert Aire contends that although it "presented arguments that, based on its analysis of the Webber Patent, . . . the piping and valve configuration claimed in the '818 Patent was different than that of the Webber Patent," it "never argued that the reason its configuration was novel and patentable was because Plaintiff used a single valve." Pl.'s Resp. 11. Desert Aire is correct that its arguments to the patent examiner were not so explicitly stated, but its disclaimer is nonetheless clear from the context of the prosecution history.

Desert Aire argues that in its Amendment B--After Final ("Amendment B"), filed March 19, 1999, it offered the patent examiner "a combination of three elements" in its proposed amendment to Claim 1 that distinguished its invention from the Webber Patent's claims. Referencing the diagram in Figure 1, the appeal states that:

(1) "there is substantially unimpeded flow through conduits 65 and 73 to reheater [(first condenser)] 55;"
(2) "the outflow from condenser 55 can travel via conduits 74 and 71 to the secondary condenser 70;" and
(3) "in additional to having parallel, or shunt paths, all the liquid passing through both condensers is returned via line 80 to the evaporator."

Def.'s Mot. Ex. K at 3. Desert Aire argues that it specifically contended to the examiner that, in the Webber Patent (Figure 2), "there is no path by means of which the outlet from condenser 22 can enter the inlet of the second condenser 20." Id.

Only Desert Aire's first asserted element, that "there is substantially unimpeded flow through conduits 65 and 73 to reheater 55," could have validly distinguished its invention from the Webber Patent, as its remaining two elements were based on a confused reading of the Webber Patent that was contradicted by the patent examiner. Desert Aire first asserted to the patent examiner in its Amendment A, filed November 13, 1998, that "condenser 22" of the Webber Patent be considered the first condenser, and "condenser 20" be considered the second condenser. Pl.'s Resp. Ex. Q at 2. The patent examiner apparently rejected this confused reading of the Weber Patent in his January 19, 1999 office action, stating: "The applicants arguments are based upon different modes of reading the reference on the claim, but none of these mode [sic] is the one used by the Examiner. The arguments are therefore not considered germane to the Examiner's rejection." Def.'s Mot. Ex. J at 2. The patent examiner had previously stated in the July 23, 1998 office action that "Webber shows a refrigeration system having a first condenser 20 a second condenser 22."

There is no evidence in the record that the patent examiner reversed his interpretation, and it is consistent with the language of the Webber Patent, which states that "condenser 20" is bypassed by "clos[ing] the valve 42 and open [ing] the valve 44 to conduct refrigerant directly from the compressor 16 to and through the air-cooled condenser 22." Def.'s Ex. G col. 2 11. 59-68, col. 3 11. 1-3 (emphasis added). When "condenser 20" and "condenser 22" are correctly compared to the '818 Patent's first and second condensers, respectively, it is clear that the condensers are arranged in series so that, in both inventions: (1) refrigerant always passes from the first condenser to the second condenser; and (2) the refrigerant from both condensers is returned to the evaporator. Desert Aire's final contention that, in the Webber Patent, "there is no path by means of which the outlet from condenser 22 can enter the inlet of the second condenser 20" is inconsistent with a correct interpretation of the Webber Patent specifications. Def.'s Mot. Ex. K at 3.

As to the remaining valid distinction, there is further dispute between the parties as to the meaning of the term "substantially unimpeded flow." AAON asserts that the diagram referred to by Desert Aire in the '818 Patent specification (Figure 1) does not include any component "along conduits 64 and 73 to reheater 55." Thus in distinguishing its invention from the Webber Patent by the "substantially unimpeded flow" between the compressor and first condenser, Desert Aire disclaimed patent coverage of a structure with a control valve between the compressor and first condenser. Desert Aire counters by arguing that the term "substantially" has been determined in patent law to mean "'largely but not necessarily wholly'" and thus "the
claimed elements of the ’818 Patent could be expected to incorporate a certain degree of impedance in the indicated flow path," including an intervening control valve. Pl.'s Reply 3 (quoting LNP Eng'g Plastics, Inc. v. Miller Waste Mills, Inc., 275 F.3d 1347, 1354 (Fed. Cir. 2001)).

Desert Aire's semantic argument is not convincing when the asserted "substantiated unimpeded flow" between the compressor and first condenser is considered in the context of Desert Aire's response to the July 23, 1998 rejection by the patent examiner. The examiner concluded that, because the replacement of "on-off" valves with more stable "throttling" valves was obvious, Desert Aire's invention was otherwise readable on the two-valve configuration specified in the Webber Patent. Def.'s Mot. Ex. I. "[T]he presence of valve 42 in Webber" (the valve between the compressor and the first condenser), did "not prevent claim 1 from being readable on Webber," because Desert Aire's Claim 1 is an "open' claim"--it recites a system "including" certain elements without explicitly excluding others. Id.; see SanDisk Corp. v. Memorex Products, Inc., 415 F.3d 1278, 1284 (Fed. Cir. 2005) ("includes" is a patent law term of art that permits the presence of additional elements in a device that do not satisfy the stated claim limitations). In other words, Desert Aire claimed a "flow-throttling valve having an inlet coupled to said outlet of the compressor and to said inlet of the first condenser," but such a valve configuration was readable on the Webber Patent, despite the presence of a second valve between the compressor and first condenser in the Webber Patent, as such had not been excluded from Desert Aire's open claim. Def.'s Mot. Exs. H, I (emphasis added).

By arguing that "substantially unimpeded flow" between the "coupled" compressor and first condenser distinguished its invention from the Webber Patent, Desert Aire excluded the use of a second control valve to proportion the flow from the compressor to the first condenser from the scope of the ’818 Patent. Def.'s Mot. Ex. K at 3. Although, as Desert Aire argues, "substantially unimpeded flow" can have other meanings, there is only one use apparent in the prosecution history that distinguishes Desert Aire's single flow-throttling valve concept from the two-valve configuration in the Webber Patent. The clear distinction between "the flow through conduits 65 and 73," i.e., from the compressor (No. 62) "to reheater 55" (the first condenser) in the ’818 Patent diagram (Figure 1), and the flow from the compressor (No. 16) to the first condenser (No. 20) in the Webber Patent diagram (Figure 2) is an intervening valve controlling flow to the first condenser present in the Webber Patent. Because Desert Aire's other asserted distinctions were based on a confused reading of the Webber Patent's specifications, the valve-configuration disclaimer is the only valid distinction that would be apparent to one skilled in the art. Following the filing of Amendment B the ’818 Patent was not rejected based on any readability on the Webber Patent.

It would be reasonable then for one skilled in the art, upon reviewing the entire ’818 Patent file, to rely on Desert Aire's statements to the patent examiner in the context of the prosecution history and make the same conclusions as this Court as to the scope of the ’818 Patent's claims. The Court will not "recaptur[e] through claim construction" additional elements that were clearly "disclaimed during prosecution in order to obtain the patent." Omega Eng'g, Inc, 334 F.3d at 1323. The Court thus narrows the scope of the claim term "coupled" in the ’818 Patent and construes it to mean "connected without an intervening valve that may impede flow to the first condenser during normal operation." Such a construction, albeit cumbersome, is consistent with the claims and specifications of the ’818 Patent, as it permits the presence of intervening components and other valves that may impede flow when the system is not operating, 5 while providing the necessary limits to exclude the configuration disclaimed by Desert Aire to avoid the Webber Patent.

--- Footnotes ---
5 E.g., the manual (Nos. 72 and 78) and solenoid (No. 86) valves in the ’818 Patent specification (Figure 1).

--- End Footnotes ---

b. "coupled"

The term "coupled" appears in claim 1. Boston Scientific proposes that the term be construed as "directly or indirectly linked." ev3 argues that "coupled" should be construed as "the filter must be directly attached to the wire and not be attached to a tube that rides on the wire." After reviewing the intrinsic evidence, and the prosecution history in particular, the Court construes "coupled" as "adjacent and directly connected to."
Evergreen alleges that Biomed's sputum collector infringes claim 1 of Evergreen's '346 patent. The disputed portion of claim 1 reads:

A specimen collecting device comprising: . . . graspable means releasably coupled to said supporting means, releasably holding said cap means in said supporting means when said supporting means is secured thereto, said graspable means being adapted to be grasped while holding said cap means as said closing means is coupled to and/or released from said container, whereby said graspable means aids in the coupling and/or releasing of said cap means.

'346 patent, col. 6, lines 36, 47-55 (emphasis added to disputed language).

Biomed argues that its device does not literally infringe claim 1 for two reasons which are dealt with seriatim.

1. Biomed contends that its device does not have "graspable means releasably coupled to said supporting means," i.e., a base stand cover. Evergreen responds that this limitation is met by the funnel lid which is "releasably coupled to the base unit via the collection tube." The Court concludes that the word "coupled" does not support Evergreen's interpretation. See ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1579 (Fed. Cir. 1988) (patents must be interpreted in accordance with the plain meaning of the claims). "Coupled" signifies direct contact between two objects. The specification uses the word "coupled" a multiple of times when referring to the direct contact of two objects. '346 patent, col. 3, lines 52-56; col. 4, lines 3-5, 7-10, 23-24. The other claims use the word "coupled" in the same way. See, e.g., '346 patent, col. 6, lines 66-69; col. 7, lines 22-29, 40-44. The part of Biomed's device which holds the vial cap is not, therefore, "coupled" to the base.

B. Noninfringement of the '096 and '916 Patents

Bradford argues that the district court erred in its construction of the term "coupled to" and related terms by requiring that the dunnage structure of the claimed containers be attached directly to the frame or side structures of the containers.

Bradford points out that both the '916 patent and '096 patent, by incorporation of the '119 patent, clearly disclose dunnage attached to a rail, which is attached to a side structure, and that nothing in the specification requires dunnage to be directly attached to the container frame. On the contrary, Bradford argues, given that dependent claim 10 of the '096 patent recites dunnage indirectly fixed to the frame through a rail, the doctrine of claim differentiation mandates a reading of the term "coupled to" as not limited to directly attached. ConTeyor NA and ConTeyor NV do not respond to Bradford's arguments on this issue.

We agree with Bradford that the district court erroneously construed the term "coupled to," and we hold that the term should be construed broadly so as to allow an indirect attachment. We review claim construction de novo on appeal. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). We begin a claim construction analysis by considering the language of the claims themselves. See Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc). However, "claims must be read in view of the specification, of which they are a part." Id. at 1315 (quotation marks omitted). "[A] court should also consider the patent's prosecution history, if it is in evidence. . . . Like the specification, the prosecution history provides evidence of how the [Patent Office] and the inventor understood the patent." Id. at 1317 (citations and quotation marks omitted).

Although it properly gave the term "coupled to" a broad construction in its earlier order, the district court appears to have unnecessarily narrowed it in ruling on defendants' invalidity contentions. Invalidity Opinion, 2007 U.S. Dist. LEXIS 31975, at *25 (holding that a prior art reference that showed that the dunnage structure coupled to support bars was different from the '916 patent claims, which required dunnage coupled to the frame of the container). Thereafter, the court determined that its invalidity decision mandated that the term "coupled to" be restricted to a direct attachment to the frame or side structure of the container. Noninfringement Opinion, 628 F. Supp. 2d at 762-64 (basing its noninfringement finding on the fact that in
its invalidity decision, the court had held that the "patents-in-suit do not encompass containers in which the dunnage is coupled to support bars or support rails"). Given that the accused device uses bars or rails to hold the dunnage structure, the court concluded that, under its claim construction, there was no infringement of any of the asserted claims. Id. at 764.

We agree with Bradford that the doctrine of claim differentiation supports a reading that allows an indirect coupling of the dunnage to the frame of the container. Dependent claim 10 of the '096 patent recites a dunnage structure that is coupled to rails which in turn are coupled to the side structures. In light of a dependent claim that clearly states an indirect attachment of the dunnage structure, the scope of independent claim 1 is presumed to be broader to allow for other types of indirect attachments. See Comark Commc'ns, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998) ("The doctrine of claim differentiation creates a presumption that each claim in a patent has a different scope.").

While the doctrine of claim differentiation, contrary to arguments regularly made in this court, is not a conclusive basis for construing claims, we find nothing in the '096 patent specification or the prosecution history that would allow us to overcome its effect here. On the contrary, the '096 patent specification clearly discloses dunnage coupled to the side structure through a rail. '096 patent fig.3; id. at col.9 ll.24-31; see also '119 patent figs.1 & 1A. Similarly, the use of words such as "operably" and "movably" in the claims suggests that the dunnage structure is not fused to the frame, but rather attached flexibly allowing for intermediate parts between the frame and the dunnage structure such that the dunnage is operable or movable. In light of such clear disclosure in the patent, the term "coupled to" is entitled to a broader scope than the district court allowed. We therefore reverse the court's revised claim construction of the term "coupled to." Because the court based its noninfringement finding solely on its revised construction of that term, we remand the question of infringement to the district court for a determination using its original and correct claim construction.

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2. Claim 1 - "coupled to"

Bradford proposes that "coupled to" means "linked together, connected, or joined." Defendants, on the other hand, argue that "coupled to" means "at least temporarily, linked together with." The basic dispute here is Defendants' addition of the temporal limitation "at least temporarily" to "coupled to".

Defendants contend that the temporal limitation comes from the '119 Patent, specifically Figures 10 and 11 of the specification. Figures 10 and 11 show an alternative embodiment of the invention known as a sleeve pack container. In this embodiment, a container is formed by means of a collapsible sleeve which contains dunnage structures. The sleeve fits into a peripheral groove on a pallet base. The assembly is completed by placing a cover or top on the sleeve. '119 Patent, col. 16, ll. 8-19, 43-44. To disassemble the sleeve pack, the cover is removed from the sleeve and the sleeve is lifted from the pallet base. To collapse the container, the sleeve is then folded along hinge lines on the side walls. Id. col. 16, ll. 52-55.

Admittedly, in this embodiment, the coupling between the side walls and the pallet base is only temporary. Indeed, it has to be temporary because if the side walls were permanently coupled to the pallet base, the container would not be collapsible. Nonetheless, Figures 10 and 11 do not support importing the temporal limitation proffered by Defendants to this term. The plain language of Claim 1 only requires the "side walls" to be "coupled to" the bottom. There is no temporal restriction in this claim. The embodiment in Figures 10 and 11 fulfills this requirement because the side walls connect to the pallet base via the peripheral grooves. None of the other embodiments in the specification suggest that the "side walls" are "coupled to" the bottom "at least temporarily". Hence, Defendants' definition of "coupled to" improperly imports a limitation from the specification into the claim. Therefore, Defendants' definition of "coupled to" is rejected.

The Court holds that "coupled to" means "linked together, connected, or joined."

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17. Coupled to/Removably coupled to/Decoupled

Synventive proposes
"coupled" means the ring holds the valve pin to the piston while allowing side-to-side (radial) motion between the valve pin and the piston. When the valve pin is "decoupled" from the piston, it is not retained by the piston. "Removably coupled" means the valve pin can be decoupled from the piston without requiring removal of the valve pin from the manifold and with the valve pin assembly remaining secured to the manifold in alignment with the piston.

Husky proposes "'coupled' means 'secured;' 'decoupled' means 'unsecured;' 'decoupling' means 'unsecuring;' 'removably coupled' and 'being removably coupled to' means 'can be unsecured from;' 'removably coupling' means 'can secure and unsecure.'"

These terms are not used in the patent claims in any specialized fashion. The ordinary meaning of "coupled" as "fastened" or "secured" adequately conveys the meaning where these terms are used throughout the patent claims. Thus "coupled to" means "fastened to" or "secured to;" "removably coupled to" means "removably fastened to" or "removably secured to;" "decoupled" means "unfastened" or "unsecured."

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2. "[A] drive shaft coupled to" and "a drive shaft coupled at one end to a suction cup"

"[A] drive shaft coupled to" means a drive shaft linked with and "a drive shaft coupled at one end to a suction cup" means a drive shaft with an end portion linked to a suction cup.

The parties dispute whether the term "coupled," found in Claims 1 and 15, describes a connection between two distinct parts. Palmetto argues that the suction cup and drive shaft are separate features, while NPI contends that the two can exist as an integrated piece.

The court declines to read a limitation into the broad term "coupled." See Verizon Cal. Inc. v. Ronald A. Katz Tech. Licensing, L.P., 326 F. Supp. 2d 1060, 1077 (C.D. Cal 2003) ("One of ordinary skill in the art understands the term 'coupled' to connote a broad range of associations between two things."). The parties agree that the ordinary use of the term means to join or link together. It does not follow that the term necessarily implies the physical joining of two separate components. Id. at 1078; see Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 992 (Fed. Cir. 1999) (holding that "coupled" does not necessarily require a mechanical or physical coupling). Indeed, one embodiment in the specification indicates a drive shaft and suction cup "integral" molded of the same material. 420 Patent, col. 7, lines 12-18. Even so, Palmetto argues that these "few lines" from the specification contradict the clear language of the claims. Palmetto Resp. at 6-7. Thus, according to Palmetto, the inventor may have disclosed such an embodiment, but failed to claim it. The court disagrees. There is no contradiction between the specification and the claim given the broad definition of the term "coupled." The court rejects Palmetto's veiled attempt to limit the claim in such a way as to exclude one embodiment. See Vitronics, 90 F.3d at 1581 (an interpretation that would exclude an embodiment "is rarely, if ever, correct").

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2. "electrocardiograph module coupled to a handheld module by a cable"

Plaintiffs' construction: electrocardiograph (ECG) module that is external to and attached to the handheld module by a cable

Defendant's construction: a module that measures electrical potential difference across the chest and is attached to the handheld module by a cable

The parties' disagreement with respect to this term is whether the electrocardiograph module must be external to the handheld module. Defendant faces an uphill struggle in promoting its proposed construction. First, the claim language itself distinguishes three separate components, including a handheld module, a transducer assembly and an electrocardiograph module. This strongly suggests that they are separate from each other. However, even if this leaves some room for
interpretation, the patent specification does not. The second sentence of the abstract supports plaintiffs' construction squarely and unambiguously: "An external electrocardiograph (ECG) unit is also disclosed." '566 pat., Abstract (emphasis added). The Court of Appeals for the Federal Circuit has recognized on multiple occasions the importance of the abstract in construing the scope of a claim term. Pandrol USA, LP v. Airboss Ry. Products, Inc., 320 F.3d 1354, 1363 (Fed. Cir. 2003); SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337 (Fed. Cir. 2001). Defendant advances no argument for disregarding it in this case.

The same understanding of the invention is repeated in the Summary of the Invention. In describing the invention, the patent states that "ECG capacity is also described using a separate module to preserve weight in the handheld instrument." '566 pat., col. 2, lns. 24-26.

Defendant attempts to dismiss these references in the specification as discussions of embodiments, but its efforts are unconvincing. It argues that the description of a separate electrocardiograph unit is limited to situations where it is necessary to " preserve" the lightweight nature of the device. However, the references in the Summary of the Invention to the "separate" electrocardiograph module are made in the context of discussions of "the present invention." Therefore, this limitation may be properly applied to the invention as a whole. Verizon Services Corp., 503 F.3d at 1308; C.R. Bard, Inc., 388 F.3d at 864.

**Court's construction:** electrocardiograph (ECG) module that is external to and attached to the handheld module by a cable

**1006**

c. "a side cover is coupled to an outer side surface of said engine block"

Honda argues that this term should be construed to mean "a cover that is removably attached to a generally exterior side surface of the engine block," and Coast argues that it should be construed to mean "a cover that is removably attached to an exterior surface of the engine block, defining a plane that is generally aligned with the long axis of the cylinder head, and is not a head cover." As an alternative, Coast suggests that the term be construed to mean "a cover that is removably attached to a generally exterior side surface of the engine block, and is not a head cover."

Honda argues that the claim language does not support Coast's proposed construction, to the extent it includes the language "defining a plane that is generally aligned with the long axis of the cylinder head." Coast argues that this language is necessary because Coast's construction "leaves room for ambiguity about which 'side' is the 'side surface of the engine block.'" (Opp. Br. at 20:18-10.) However, the claim states that the side cover is "coupled to an outer side surface of said engine block on a side of the engine block opposite from said parting plane." (273 Patent at 6:48-50.) Thus, there is no ambiguity in the claim as to the location of the side surface of the engine block. Accordingly, the Court rejects this aspect of Coast's proposed construction.

The claim language also is broad enough to include a "head cover." Coast argues, however, that the inventors specifically disclaimed a broad interpretation of the claim term in order to distinguish over prior art. On August 17, 2000, the Examiner rejected proposed Claim 1 on the basis that it was anticipated by Japanese Patent No. 177441 ("JP '441"). According to the Examiner, that reference "shows a valve cover at 2 that is deemed to be at a 'side' of the engine and opposite the oblique plane. The claim must set forth more detail of the relationship between the valve drive elements, the cover, and the engine block to overcome the art of record." (Shariati Decl., Ex. L at 2.)

In response to this Office Action, the inventors amended the relevant portion of the claim to read "a side cover is coupled to an outer side surface of said engine block [which is] on a side of the engine block opposite from said parting plane, so as to define a valve operating chamber for accommodation and support of a valve operating mechanism between said side cover and said outer side surface." (Id., Ex. M at 2.) The inventors also explained that they had amended Claim 1 "to clarify that the side cover serves to support the valve operating mechanism in cooperation with the outer side surface of the engine block on the side opposite from the parting plane." (Id. at 3.)

The inventors then distinguished the prior art reference and state that "element 2 of JP '441," which the Examiner referred to as a valve cover, "is a cylinder head." (Id.) The inventors note that "[t]he applied reference teaches that engine body E is
formed of a cylinder block 1, a cylinder head 2 and a crankcase half 3 which are integrally molded. ... In the applied reference the valve operating mechanism T is disposed inside the engine body E and, more specifically, within the cylinder head 2. No separate side cover is used. The valve operating mechanism T is located on the same side as the parting plane, which is further away relative to the claimed invention." (Id. at 3-4 (emphasis added).) Finally, the inventors argue that "the side cover as recited in Claim 1 is not taught or suggested in the cited reference." (Id. at 4.) Thus, the inventors distinguished their invention from JP ’441, because that reference did not include a "separate" side cover and because its valve operating mechanism was not located on the opposite side of the parting plane.

The Court finds that no clear disclaimer exists in this case. The inventors discuss JP ’441 in the specification. In describing the invention taught by that patent, they note that it is difficult to reduce the distance between the first and second bearing portions, because the valve operating mechanism poses an obstacle due to its location. ('273 Patent at 1:28-33.) The inventors also state that in order to assemble the engine, "a portion of the valve operating mechanism is obliged to be temporarily attached to the crankshaft before coupling the first and second case halves to each other." (Id. at 1:36-39.) The inventors then note that their invention attempts to solve these problems by placing the valve operating mechanism in a space between the side cover and the outer side surface of the engine block, which is formed of a first case half, a cylinder barrel and a cylinder head. (Id. at 1:44-2:4, 2:65-67.) This arrangement also allows for the valve operating mechanism to be assembled when the side cover has been removed. (Id. at 17-20.) There is nothing in the specification that would exclude a side cover from including a head cover. In addition, the prosecution history suggests that the inventors distinguished their invention from the prior art because their invention used a "separate" side cover. Again, nothing in that statement lends support to Coast's argument that this "separate" side cover could not include a head cover.

Accordingly, the Court construes the term "a side cover is coupled to an outer side surface of said engine block" to mean: "a cover that is removably attached to a generally exterior side surface of the engine block."

D. Coupled to Said Crown

The phrase "coupled to said crown" appears in claims 2 and 13 of the patent and describes the location at which the power source is attached to the headgear. The parties do not appear to seriously dispute the meaning of "coupled." Their proffered terms, "connected" and "attached," can be used interchangeably. The court prefers "attached" because it adequately reflects the "fastening" and "link" connotated by the term "couple." MERRIAM WEBSTER COLLEGIATE DICTIONARY at 267 (10th ed. 1997).

The parties' main dispute focuses on how to construe or limit "crown." Plaintiffs contend that the word speaks for itself. Defendant offers a lengthy definition: "the generally dome-shaped portion that extends upward from the lower edge of the headgear to cover the top of the head." Independent claims 1 and 12 identify the "crown" as an integral structural component of headgear, distinct from the "brim." The specification demonstrates that the patent's references to the "brim" and "crown," maintain the same meaning in the patent that they have in ordinary usage. "][A] ball cap generally comprises a crown contoured for covering part of the user's head when worn, [and] a brim disposed exteriorly of and attached to the crown at a lower edge such that the brim extends outwardly from the crown." ('831 Patent, Col. 3, ll. 33-37.) The ordinary and undisputed meaning of the term "crown," as distinct from the brim, is apparent enough to anyone who has either worn or seen a baseball cap. There is nothing to be gained by weighing down the term with excess verbiage.

Defendant's wordy construction is apparently aimed at distinguishing the "crown" of the headgear from another structural component of many ball caps: the "sweatband." 2 There is substantial support in the patent for this distinction. The '831
The court can resolve the parties' dispute merely by distinguishing the "crown" from other structural components of headgear, further construction of the term is unnecessary. O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., 521 F.3d 1351, 1361 (Fed. Cir. 2008). The court adopts the following construction for the phrase "coupled to said crown": "attached to the crown, as distinct from the brim or the sweatband, of the headgear."

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A. "the handle coupled to the contraceptive device by an elongate body" / "a deployment shaft having a proximal end and a distal end releasably coupled to the contraceptive device"

The claims themselves provide guidance as to the meaning of the term "couple." For example, the method in claim 5 covers an apparatus having a handle with "an actuator," where manipulation of the actuator retracts a protective sheath surrounding the contraceptive device. Similarly, in the apparatus covered by claim 14, "movement" of an "actuator mounted on the handle . . . releases the contraceptive device from the . . . deployment shaft."

This "handle" and "actuator" are easily visualized by two disclosed embodiments shown below in FIGS. 7 and 11J.
As shown in FIG. 7, the handle (denoted by 30) may contain numerous actuators (denoted by 33 and 39) that perform different actions once the contraceptive device is properly positioned within the fallopian tube. These actions may include the release of the contraceptive device from the installation apparatus or retraction of a protective sheath around the contraceptive device (col. 8:47-64). FIG. 11J shows an alternative embodiment of such a handle being held by the user, and illustrates how the actuators can moved (in this particular embodiment, the thumb rotates the actuator). To show how the handle fits in with the entire apparatus, an exemplary embodiment of the complete apparatus is shown below in FIG. 1B.

As seen in FIG. 1B above, the handle (denoted as 30) is only one component of the entire installation apparatus. On the opposite end of the apparatus is the contraceptive device (denoted by 12). Connecting the handle and contraceptive device to each other are various components, including a protective sheath (14), a release catheter (16), and a core shaft (18). Important to this order, however, is the fact that the various components are interconnected as to allow the actuators on the handle to retract the sheath (claim 5) or release the device within the fallopian tube (claim 14).

In light of this intrinsic evidence, it is clear that the term "coupled" as used in the asserted claims means something more than the components of the apparatus being simply "paired to or joined with" each other, as proposed by Conceptus. A person having ordinary skill in the relevant art at the time the patent was filed -- after reading the entire patent -- would have understood the term "coupled" as used in the asserted claims as requiring a more interactive connection. Stated differently, the components of the device must be "coupled" together in a way that allows the actuator(s) on the handle to trigger activity elsewhere on the device. This is the principal object of the invention (col. 2:32-34).

The claims themselves, however, do not limit or describe how this interactivity between components of the invention must be achieved. Nevertheless, Hologic argues that the components of the invention must be "mechanically attached" to each other using "threads, cooperating key/slots, connectors, or the like." This construction of the term "coupled" was taken directly from the description of one particular embodiment of the present invention (see col. 10:30-33).

Hologic's proposed construction, however, is too limiting. While it is true that the specification only disclosed embodiments featuring mechanical attachments between the various components of the invention, a person having ordinary skill in the relevant art at the time the patent was filed would have understood that the required interactivity between various components could have been achieved by mechanical or electronic means. For example, nothing in the claims limit the "actuators" on the handle of the apparatus from being digital (i.e., based on electronic circuitry) rather than mechanical. Pressing this button could send an electronic signal to the deployment shaft or contraceptive device, triggering the mechanical retraction of the sheath (in claim 5) or release of the device (in claim 14). Indeed, claim 14 also expressly covers an apparatus that can administer RF energy to a portion of the fallopian tube (to promote scar tissue formation). A person having ordinary skill in the relevant art at the time the patent was filed would have understood that triggering this RF energy would likely involve electronic, rather than mechanical, actuation.

In light of this analysis, this order finds that a person having ordinary skill in the relevant art at the time the patent was filed would have understood "coupled" in claims 5 and 14 to allow for the components of the apparatus to be mechanically or electronically connected to each other. Accordingly, the following constructions will govern:

The phrase "the handle coupled to the contraceptive device by an elongate body" from claim 5 will be construed as "the handle mechanically and/or electronically connected to the contraceptive device by the elongate body." Similarly, the phrase "a deployment shaft having a proximal end and a distal end releasably coupled to the contraceptive device" from claim 14 will be construed as "a deployment shaft having a proximal end and a distal end that is mechanically and/or electronically configured to attach to and detach from the contraceptive device."

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3. "wherein the wings are coupled to the first and second actuators"

This phrase is used in claim 1 of the '992 Patent. WG seeks to construe this term as "wherein each actuator is linked to both wings." Ion seeks to construe this term as "wherein the wings are connected to the first and second actuators." WG argues that its construction is appropriate because the specification only discloses having one roll actuator and one pitch actuator, each linked to both wings. WG also points out that Ion relied on the actuator to distinguish prior art. Ion argues that WG is improperly importing a limitation from the disclosed preferred embodiments into the claim language. More precisely, Ion argues that the specification does not require that each actuator has an individually dedicated function such that it must be linked to both wings.

This Court agrees with Ion. Although WG may be correct that the preferred embodiment of this invention requires each wing to be coupled to the first and second actuators, one of which controls roll and one which controls pitch, the Court cannot hold that the scope of claim should be limited according to this embodiment. The language cited by WG from the specification is consistent with the notion that it is the preferred embodiment of Ion's Patent that one actuator is the roll actuator and the other is a pitch actuator. (See Pl. Resp. Br., Doc. No. 71, at 12.) However, nothing in the claim language or in the specification constitutes a disavowal of the possibility that each actuator may control both roll and pitch and be linked to a separate wing. Indeed, the only claim that specifically teaches one actuator controlling the roll or the pitch of both wings is claim 4. Because, however, this claim is a dependent claim, independent claim 1 and dependent claims 2 and 3 need not be read as having an identical scope as this claim. Therefore, the claim language allows for a broader interpretation than the embodiment that is disclosed in the specification. Innova/Pure Water Inc., 381 F.3d at 1117 (stating that "[p]articular embodiments appearing in the written description will not be used to limit claim language that has a broader effect"). In addition, nothing in the specification indicates that having each actuator dedicated to a separate function is a necessary or critical element of the invention's functionality. See Andersen, 474 F.3d at 1367.

Therefore, the Court will construe this phrase according to its apparent plain and ordinary meaning to a person of ordinary skill in the art, as made apparent through the parties' arguments. Both WG and Ion offer extrinsic evidence to suggest that the term "coupled," as it is used here, can be defined as "linked." Accordingly, the Court will construe this term as "wherein the wings are linked to the first and second actuators."

12 Defendants claim that the court's construction of the term "coupled to the independent poles and rebounding mat" implies that any component of the safety enclosure connected to any element that ultimately connects to the rebounding mat may be considered "indirectly" connected to the rebounding mat and thus covered by the patent. That interpretation of the claim construction is overbroad. Given the interconnected nature of the invention described in the Jumpsport patent, all the elements of the invention could conceivably be considered to be "indirectly connected" to the mat under defendants' interpretation. The plain meaning of the term "coupled . . . to the rebounding mat" does not encompass such a broad definition. The court therefore clarifies its construction of "coupled to the independent poles and rebounding mat" as: connected to the independent poles and to the rebounding mat, either directly or through a discrete coupling device that is not an element of the trampoline or enclosure.
3T moves for a summary finding of non-infringement of claim 1 of the '784 patent, which reads:

1. A system for dispensing money orders at least one retail establishment comprising:
   [a.] a money order dispenser for dispensing money orders at a retail establishment;
   [b.] a digital processor for controlling the operation of the dispenser;
   [c.] a memory associated with the digital processor for storing the transaction data and control data;
   [d.] a printer with a compartment for storing blank money order forms and coupled to the money order dispenser for receiving a blank money order form from said compartment and printing alphanumeric indicia thereon;
   [e.] a host device remotely located from the retail establishment and coupled to the money order dispenser for management and control of the dispenser system;
   [f.] a data collector remotely connected to the money order dispenser for issuing a polling command; and
   [g.] means in the data collector for receiving transaction information from the money order dispenser upon issuance of said polling command.

(Powell Aff. Ex. C, cols. 71-72.) Unlike the claims at issue in the '275 and '596 patents, claim 1 of the '784 patent does not recite any security features.

3T alleges that the printer claim element of the '784 patent should be construed to cover a physically secure "internal" printer located within the money order dispenser itself. First, 3T points to the language of the limitation, which describes the printer as "coupled to" the dispenser and having a "compartment for storing" blank money order forms. Travelers argues that the claim language does not support such a construction because the claim does not recite the terms "internal" or "physically secure."

To ascertain the ordinary and customary meaning of claim terms, the court may rely on dictionary definitions and treatises. 3M Innovative Props. Co. v. Avery Dennison Corp., 350 F.3d 1365, 1370-71 (Fed. Cir. 2003). Here, the plain meaning of the claim terms supports a construction similar to 3T's argument. The definition of "coupled" is "mechanically or electrically connected." Webster's Third New International Dictionary 522 (1993). Although that definition of "coupled" may include printers physically or electrically attached to a dispenser, the definition of the verb "couple" provides greater clarity. "Couple" means "to fasten together, to connect" or "to join." Id. at 521. Furthermore, the definition of "couple" in the electrical sense applies only to electric circuits or devices. See id. According to these definitions, the coupling of a mechanical device such as a printer should consist of a mechanical connection. The court therefore construes claim 1 of the '784 patent as covering a printer that is mechanically or physically connected to the dispenser, rather than merely electrically connected.

The meaning of a "compartment for storing" money orders does not suggest a physically secure system, however. "Compartment" means "a small chamber, receptacle, or container," and the verb "store" means "to have space for, provide storage room for" or "hold." Id. at 462, 2252. These definitions do not contemplate or mention physical security. Furthermore, the claim language refers to the function of the storage compartment as simply that part of the device from which the printer receives blank money orders. There is no suggestion of security in the context of the term's use. Therefore, the court does not construe the claim as requiring a secure storage compartment as part of the printing system.

Once the parties identify a disputed claim term and the court ascertains its plain meaning to the ordinarily skilled artisan, the court then examines the written description and drawings "to confirm that the patentee's use of the disputed terms is consistent with the meaning given to it by the court." Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001). First, the specification language shows that a physically or mechanically connected printer was contemplated by the "compartment for storing" and "coupled to" terms in the claim element. In particular, the specification provides for an "output throat" for the storage compartment cover, "through which the printed money orders are dispensed." ('784 patent, col. 5, 11. 27-29.) Further, the printing mechanisms move "the money orders through the dispenser." (Id. 11. 29-32.) This
language describes how the printer, storage compartment and dispenser are mechanically connected.

The specification also mentions the preferred security features of the printing system including a physically or electronically locked storage compartment and fan-folded money orders. (See, e.g., id. 11. 17-23.) However, the specification text does not explicitly state that the "compartment for storing" must be physically secure. Therefore, the court's construction is not in conflict with the language of the specification.

Second, the specification drawings confirm the court's construction of the disputed terms. Figure Two depicts a dispenser with an internal printer and storage compartment. (See id. Fig. 2.) The flow chart represented in Figure Three labels the modem and journal printer as "external," but does not identify the money order printer as external. (See id. Fig. 3.) These drawings support the construction of the printer as being physically or mechanically connected to the dispenser.

The prosecution history also supports this construction. The claim was originally rejected over Foudos. The applicant then added among other things the following underlined language to overcome the patent rejection: "a printer with a compartment for storing blank money order forms and coupled to the money order dispenser for receiving a blank money order form from said compartment and printing alphanumeric indicia thereon." (Powell Aff. Ex. I at 105 (emphasis in original).) The added language clarifies that the printer itself is coupled to the dispenser and that the storage compartment contains the blank money orders until they are printed and dispensed. Therefore, the physical or mechanical connection of the printer to the dispenser is emphasized by the prosecution history.

**C. Coupling Member**

As highlighted in the joint submission of the parties at oral argument, the recitation of "coupling member" appears in the Claim 1(e) of the '456 patent: 13 "a coupling member structured and disposed to detachably couple said cutting head assembly and said positioning ring and including means for permitting movement of said cutting head assembly relative to said positioning ring along said generally arcuate path."
Again, the primary dispute between the parties with respect to this term is that defendants argue that § 112, P 6 is invoked, while plaintiff contends it is not. Defendants propose the following construction: the function should be construed as a "separate element for coupling the cutting head assembly to the positioning ring," and the corresponding structure should be comprised of: a retaining segment 92, including an aperture 94 formed therein; and a pivot segment 95 structured and disposed to be coupled to the rigid upstanding member 44 of the positioning ring 32 and to permit coupling member 90 and accordingly, the cutting head assembly 50 connected thereto, to pivotally move about post member 45. (Court Reference Sheet at 1.) Plaintiff counters with the following construction: "the term "coupling member" is a structure that detachably joins the cutting head assembly and the positioning ring." (Id. at 2.)

As with the guide terms, the defendants essentially argue that "coupling member" connotes only the most generic structure and is therefore subject to a means-plus-function analysis. Plaintiff counters that the term invokes sufficiently definitive structure to those skilled in the art to escape § 112, P 6. The dictionary definitions provided by plaintiff define coupling as "a pairing or joining," Dorland's Illustrated Medical Dictionary (25th ed. 1974), "a device that serves to connect the ends of adjacent parts or objects," Webster's Ninth New Collegiate Dictionary at 299 (1987), "something that links or connects, as a railroad coupler," The American Heritage Dictionary at 332 (Second College ed. 1985), and define member as "[a] structural unit such as a wall, column, beam, or tie, or a combination of any of these," McGraw-Hill Dictionary of Scientific and Technical Terms (5th ed. 1994). Dr. Akin, an expert for the plaintiff, defines coupling member as "a mechanism or device to join two or more elements." (Pl.'s Ex. 10, Akin Report at 7.) Dr. Slade, plaintiff's rebuttal expert, offers this definition: "a structural element that detachably couples the cutting head and the positioning ring together." (Pl.'s Ex. 11, Slade Report at 6.) Plaintiff's own proposed construction mirrors that of its experts. These definitions essentially rely on the generic shapes of a "device," "structure," "something" and "mechanism" to accomplish the function of joining, linking, or connecting. I therefore conclude that for the same reasoning which led me to conclude that the guide and drive terms invoked § 112, P 6, coupling member is also under its ambit. None of these definitions indicate that the term would call to mind for those skilled in the art a range of structures sufficient to escape a means-plus-function analysis. To hold otherwise, would be to include every conceivable device. See Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1214 (Fed. Cir. 1998).

17. Coupling in a Common Plane

The parties disagree on the proper construction of "coupling in a common plane," and request that the Court interpret the term. Alloc maintains that "coupling in a common plane" as used in claim 1 of the '486 patent is "an obvious reference" to joining the panels by shifting them in a common plane which is sometimes referred to as "snapping" them together. (Alloc Resp. Mem 10.) It asserts that the limitation is subsumed in the limitation that arises out of the file history calling for the panels to be assembled alternatively by sliding the panels toward each other laterally or by rotating the panels together. (Id.)

Unilin maintains that "coupling in a common plane" makes no reference to how the panels are coupled. (Unilin Reply Br. 3.) Rather, states Unilin, a reading of the phrase in context discloses that it describes the position of the panels in relation to each other after they are coupled. (Id.)

The phrase "coupling in a common plane" appears in claim 1 of the '486 patent as follows:

said locking means comprising a locking element in the form of a downwardly extending protrusion located on the lower side of the tongue and an upwardly facing cooperating locking recess in the lower lip, said locking recess being located at a position that is at least partially distally beyond a distal edge at which the upper lip terminates, said cooperative contact surfaces defined respectively by said protrusion and said recess, and configured, when engaged in a cooperative relationship upon coupling in a common plane of two identical ones of said panel, to meet each other at a common plane of tangency that with respect to the lower lip is inclined at an angle other than 90 [degree] relative to the common plane of the coupled
panels, said angle extending inwardly and downward from a distally outer location to a proximal inner location.

('486 patent, 14: 16-26) (emphasis added.)

Claim terms must be read in the context of the claim. Phillips, 415 F.3d at 1313. Having carefully considered the phrase "coupling in a common plane" in context as required under claim construction law, this Court concludes that the term describes the panels once they are coupled. The panels become "engaged" in a cooperative relationship once they are joined. The use of the past tense of engage, "engaged," indicates that the panels have been joined. Alloc's definition is inconsistent with the patent specification. Unilin's definition comports with the language in claim 1 of the '486 patent.

Also, comparison with the language in claims 23, 29, 38, 39 through 40, and 65 of the '486 patent shows that when "laterally shifting in the common plane," is required the limitation is explicitly stated in the claim. Alloc's interpretation would render meaningless the claim language of dependent claims 23, 29, 38 through 40. Again the doctrine of claim differentiation suggests that Alloc's interpretation is incorrect. See Liebel-Flarsheim Co., 358 F.3d at 910.

In light of the foregoing, the Court concludes that the phrase "coupling in a common plane" describes the position of the panels in relation to each other after they are coupled.

B. Claims Construction in the '415 Patent

On September 19, 2003, the Court held a hearing in accordance with Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996), to construe the disputed terms and phrases of the asserted claims. The Court's October 7, 2003 Order Following Claims Construction Hearing construed the following disputed terms in the '415 patent which are relevant to the present findings on validity and invalidity:

"implant delivery assembly"  
"an apparatus for delivery of occlusive devices, such as embolic coils that comprises three distinct components: a pusher, a coupling, and an implant"

"pusher"  
"any device or structure intended to push another device or structure"

"selectively operable coupling"  
"a connecting device that connects the implant to the pusher and that can be selectively operated by the user"

"coupling"  
"a connecting device that connects the implant to the pusher and that can be selectively operated by the user"

"said coupling operable by fluid pressure so that when a sufficient amount of fluid pressure is applied to the coupling, the fluid pressure a user causes the occlusive implant to separate from the pusher"  
"the coupling is a connecting device that can be operated by selectively applying fluid pressure to the coupling to separate the implant from the pusher, and the application of the fluid pressure by the user to the coupling causes the detachment of the implant at the coupling"

"delivering fluid pressure through the pusher such that the implant detaches from the pusher"  
Plain and ordinary meaning applies, no specific construction
1. Construction of "coupling assembly"

Medtronic contends that "coupling assembly" means "a two-piece interlocking coupling element that mounts around the screw head." (Defs.' Br. 18.) Medtronic begins its argument by noting that "[t]here is no accepted plain and ordinary meaning for 'coupling assembly' in the prior art of multi-axial pedicle screws." (Id.) Medtronic then turns to the claim language and observes that the two text sections following "comprising" describe a cap portion and a retaining portion, and finds in this language two limitations: 1) the coupling assembly has two pieces; and 2) the two pieces are interlocking. As to the first point, as Plaintiff contends, "[w]hen a patent claim uses the word 'comprising' as its transitional phrase, the use of 'comprising' creates a presumption that the body of the claim is open. In the parlance of patent law, the transition 'comprising' creates a presumption that the body of the claim is open. In the parlance of patent law, the transition 'comprising' creates a presumption that the recited elements are only a part of the device, that the claim does not exclude additional, unrecited elements." Crystal Semiconductor Corp. v. Tritech Microelectronics Intl, Inc., 246 F.3d 1336, 1348 (Fed. Cir. 2001). Thus, the use of "comprising" creates a presumption that the coupling assembly is not limited to two parts, but consists of at least two parts.

As for the argument that the coupling assembly is limited to interlocking pieces, Medtronic here makes its first use of the "only one way" redefinition by implication argument: because the specification describes only one embodiment, and in this embodiment the parts are interlocking, the interlocking limitation should be read into the claim. As discussed above, there are numerous problems with this argument. Here, specifically, Medtronic invokes the principle of redefinition by implication, but does not actually explain how the words "coupling assembly" have been implicitly redefined. Moreover, astonishingly, Medtronic concedes that "the '665 patent [specification] does not use the term 'coupling assembly.'" (Defs.' Br. 19.) How the specification redefines the claim term by implication without ever actually using it is an unexplained mystery. Medtronic is merely trying to read the preferred embodiment into the claims, and calling it redefinition by implication does not make it so. Medtronic has not pointed to anything in the specification that clearly redefines the phrase "coupling assembly" so as to justify importing the proposed limitation into the claim.

Medtronic next points to statements in the specification in which the applicant says what the invention "is." This argument has a number of problems, but the first comes from the fact that Medtronic's evidence from the specification ignores the context in which these statements appear. Medtronic first points to the statement that "the present invention relates to a screw . . . via a two-piece interlocking coupling element" in the "Background of the Invention." ('665 Patent, col 1, ll. 22-26.) Now, consider the statement in context:

This invention relates generally to a polyaxial screw and coupling apparatus for use with orthopedic fixation systems. More particularly, the present invention relates to a screw for insertion into spinal bone, and a coupling element polyaxially mounted thereto, via a two-piece interlocking coupling element . . .

('665 Patent, col 1, ll. 20-26.) The fact that the first statement characterizes the invention more broadly, while the second statement characterizes it more particularly, informs the reader that the second statement has a narrower scope than the first and does not provide the definitive description of the invention. Medtronic ignores this, and proceeds to make the same mistake again, as it quotes out of context from the "Summary of the Invention." ('665 Patent, col 1, ll. 22-26.) Now, consider the statement in context:

The preceding objects of the invention are achieved by the present invention which is a polyaxial locking screw and coupling element for use with rod stabilization and immobilization systems in the spine. More particularly, the polyaxial screw and coupling element assembly of the present invention comprises a bone screw having a head which is curvate in shape, for example semi-spherical, and a two-piece interlocking coupling element mounted thereto.

('665 Patent, col 3, ll. 2-9.) Again, Medtronic ignores the fact that these statements contain the same structure: a broader statement about the invention is followed by a narrower, more detailed one. The "interlocking" description is thus preceded by the qualifying phrase "more particularly," which notifies the reader that what follows is not a general statement of the
outer bounds of the scope of the invention.

These statements, read in context, are actually significant evidence against Medtronic's position. What we find is that, as the first sentence of the two major sections preceding the description of the preferred embodiment, the sections headed "Background of the Invention" and "Summary of the Invention," the patentees have begun with a very broad statement about the invention. These statements have a scope that is very much broader than the preferred embodiment. In particular, the statement that the "invention [] is a polyaxial locking screw and coupling element for use with rod stabilization and immobilization systems in the spine" is significant evidence that the inventor did not intend to limit the scope of the invention to the preferred embodiment. (’665 Patent, col 3, ll. 2-5.)

Medtronic turns to Honeywell for legal support for its position, but this backfires. The Honeywell Court did indeed find significance in such statements about what the present invention is and stated that "the public is entitled to take the patentee at his word . . ." Honeywell, 452 F.3d at 1318. The public is indeed entitled to take the patentee at his word, but the evidence shows that the patentees' words begin with general statements about what the invention is that are very broad in scope. This is significant evidence against Medtronic's main argument in claim construction, that claim scope should be limited to the preferred embodiment. These specification statements clearly show that the patentees described the invention at different levels of generality at different points, and that their initial broad statements were followed by narrower, more particular statements. The public is very clearly on notice that the patentees have an understanding of the invention that is quite broad in scope, and that their detailed example of the invention does not define the outer limits of the territory of the invention. This, in and of itself, constitutes significant evidence against the majority of Medtronic's arguments in the present claim construction disputes.

-Footnotes-

6 Again, the first sentence of the "Summary of the Invention" states: " . . . the present invention [] is a polyaxial locking screw and coupling element for use with rod stabilization and immobilization systems in the spine." (’665 Patent, col 3, ll. 2-5.) This Court notes that this statement of what the invention is contains no limitations concerning partial slots, inward radial forces for crush locking, top-loading, or tapering of the axial bore.

-End Footnotes-

The Federal Circuit's guidance in Phillips can now be applied: "Much of the time, upon reading the specification in that context, it will become clear whether the patentee is setting out specific examples of the invention to accomplish those goals, or whether the patentee instead intends for the claims and the embodiments in the specification to be strictly coextensive." Phillips, 415 F.3d at 1323. Given what has just been described -- the express use of broad initial statements of the invention, followed by narrower statements with increasing detail -- the specification indicates that the patentees were setting out examples of the invention; they did not intend for the claims and the embodiments to be strictly coextensive. Following Phillips, the claims should not be confined to the preferred embodiment.

In its responsive brief, Medtronic contends that the "only enabled construction" of "coupling assembly" is a two-piece interlocking element. (Defs.’ Resp. Br. 8.) As discussed above, this Court rejects the "only enabled construction" approach Medtronic uses here.

Fastenetix proposes that "coupling assembly" means "a collection of parts in adjustable association," a phrase which on its face is so vague that, if this Court were to declare that Fastenetix is right, it would have succeeded only in obscuring, rather than clarifying, the meaning of "coupling assembly." Furthermore, given that "coupling assembly" is followed by a fairly lengthy description of the two parts which comprise it, this Court does not see at this point why any construction of the phrase is needed. This Court has rejected the importation of the "two-piece" and "interlocking" limitations into the construction of the phrase, and the parties have not put into focus any other specific dispute over its meaning. In the absence of a specific dispute over a specific material issue, claim construction becomes an abstract and purely advisory exercise. Should the parties find a specific, material dispute over the meaning of this phrase, they will be given the opportunity to request further claim construction.

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2. "detaching a coupling between said distal tip and said wire"

Claim 25 is a method claim. The parties dispute the proper construction of the phrase: "detaching a coupling between said distal tip and said wire." Specifically, the parties dispute the proper construction of the word "coupling" in the disputed phrase.

The word "coupling" is used in the specification in two different ways. In the following excerpt, "coupling" is used as a verb:

The invention comprises a core wire and a detachable elongate tip portion extending the core wire for a predetermined lineal extent. The core wire is adapted to being packed into the vascular cavity to form the occlusion in the vascular cavity and is coupled to the distal portion of the core wire. The tip portion includes a first segment for disposition into the cavity and a second segment for coupling the first portion to the core wire.

('133 Patent, Col. 5:63 - 6:1.)

Claim 29 of the '133 Patent uses the word "coupling" as a verb:

The method of claim 28 where said step of detaching said distal tip of said wire electrolytically disintegrates a connecting segment coupling said wire to said distal tip to effect separation.

In contrast, in the following excerpt, the word "coupling" is a gerund, which is used as a noun:

Depicted in FIG. 6 is an embodiment of the invention wherein such mechanical thrombosis can be achieved. Wire 10 has a tapering end portion 14 covered with a Teflon laminate 24 similar to that described in connection with the embodiment of FIG. 1. Wire 10 is attached by means of a mechanical coupling 100 to a platinum coil 102 which has a plurality of filaments or fine hairs 104 extending therefrom. In the illustrated embodiment, hairs 104 have a length as may be determined from the size of the vascular cavity in which coil 102 is to be used.

(133 Patent, Col. 9:67-10:10.)

One skilled in the relevant art would understand "coupling" as used in Claim 25 to be used as a noun. 24 The commonly understood meaning of the noun "coupling" is "a joining together; a pairing; a device for joining two railroad cars together."

See Webster's New Twentieth Century Dictionary, 419 (2d ed. 1983). Thus, a "coupling" could be a separate device, such as a sleeve which joins two separate objects on either end. Alternatively, a "coupling" could be a description of the condition of two things being joined or "coupled" to each other joint without any separate device, such as the twisting or "coupling" of two wires together. There is nothing in Claim 25 or in the specification which would lead to the conclusion that one definition should be used to the exclusion of the other.

24 Grammatically, the noun "coupling" would be the direct object of the verb detaching.
5. Coupling means

The parties dispute whether the term "coupling means" as used in claims 1, 2, 7, 9 and 16 of the '480 patent is a means-plus-function limitation. The claims' use of the word "means" raises the presumption that the limitation is means-plus-function. Plaintiff contends that the word "coupling" provides sufficient structure to overcome the presumption, placing the limitation outside the scope of § 112 P6. Plaintiff is mistaken.

All the relevant claims provide for the same element: "a coupling means for selectively connecting and disconnecting said accessory unit to said vehicle." E.g., '480 pat., col. 8, lns. 53-54; col. 9, lns. 6-7. As with "switch," "coupling" can refer to a device defined by its function. E.g., New Oxford American Dictionary 388 (2d ed. 2005) ("a device for connecting parts of machinery"). However, the remainder of the claim language does not provide any additional information about the proper structure for the coupling means, other than the function of the coupling. Moreover, "coupling" needs to be narrowed to some structure because the term standing alone could encompass too many structures that do not fall in line with the invention. For example, a screw and bolt connecting two steel plates could connect and disconnect the accessory unit to the vehicle. However, it is clear from the patent that such a coupling would fall outside the scope of the invention, which intended to use the "coupling means" as a way to connect the electrical circuits of the accessory unit to the vehicle's energy source. '480 pat., col. 3, lns. 34-35. Therefore, "coupling means" is a means-plus-function limitation.

According to the claims, a "coupling means" functions to selectively connect and disconnect the accessory unit to the vehicle. The only "coupling means" described in the specification are conventional "female and male plow plugs 60 and 78" and "female and male batter plugs 62 and 80." Id., col. 3, lns. 36-39. Figure 2 provides a visual representation of these type of plugs:

[SEE FIGURE IN ORIGINAL]

Thus, the structures clearly linked with the claimed function are conventional female and male plow plugs and female and male battery plugs and their equivalents.

Defendant contends that the specification's specific examples of female and male battery plugs and female and male plow plugs should be included in the construction. The specification lists the preferred embodiment of the battery plugs as (1) a two-pin plug for the male battery plug and a two-receptacle plug for the female battery plug and (2) a 12-pin plug for the male plow plug and a 12-receptacle plug for the female plow plug. '480 pat., col. 3, lns. 45-68 and col. 4, lns. 1-8. However, those specific versions of the different plugs are not clearly linked to the claimed function. In other words, whether the plugs have 2 pins or 100 pins, all that matters are that they are male and female and that they function to connect and disconnect the electrical circuits of the accessory unit to the vehicle. Further, even though the specification lists the male plow plug as a 12-pin plug, the figure shows only a 6-pin plug. Id., col. 3, lns. 57-68 and col. 4, lns. 1-5. The specification notes that the function of the other six pins is not explained because "they are not part of the operation of the invention." Id., col. 4, lns. 4-5. Accordingly, including the specific plugs listed in the specification would read in functions not listed explicitly in the claims.
connected to a first end of a corresponding foot link; (b) a double wheel flywheel supported for rotation about the pivot axis, each wheel being pivotally connected directly to the first end of a corresponding foot link; or (c) equivalent structures thereof." Alternatively, Fitness Quest argues that the claim should be construed as:

A pair of members, each of which: (1) is directly connected to a component defining the pivot axis; (2) is directly connected to the first end of the foot link at a single connection point defining a common axis between the member and the foot link; (3) permits rotational movement of the foot link relative to the member about the common axis; and (4) maintains a fixed distance between the common axis and the pivot axis.

Fitness Quest proposes this construction if the Court does not conclude that the claim should be construed as means-plus-function.

Pursuant to § 112 P 6, a means-plus-function claim is a claim that is "expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112 P 6. Unless a claim includes the phrase "means to" and then describes a function, the Court typically will not construe the claim as invoking § 112 P 6. Greenberg v. Ethicon Endo-Surgery, 91 F.3d 1580, 1584 (Fed. Cir. 1996) ("the use of the term 'means' has come to be so closely associated with 'means-plus-function' claiming that it is fair to say that the use of the term 'means' (particularly as used in the phrase 'means for') generally invokes section 112(6) and that the use of a different formulation generally does not."). Fitness Quest does not rebut this presumption.

The Court agrees with the reasoning in Judge Zilly's construction and from a prior Federal Circuit opinion that the term "member" specifically describes 'a structural unit such as a . . . beam or tie, or a combination of these' which connotes a definite structure to someone of ordinary skill in the art. CCS Fitness v. Brunswick Corp., 288 F.3d 1359, 1367 (Fed. Cir. 2002). The patent does not lose its definiteness by modifying "member" with the adjective "coupling." Rather, it specifically describes a range of devices that are structural units which couple.

The CCS Fitness opinion also counsels against Fitness Quest's alternative proposed construction, which limits the scope of the claims by requiring the coupling member to provide a direct connection between the foot links and the pivot axis. That opinion identifies a "member" as a specific term for a component that can attach different parts through a variety of structural arrangements. To the contrary, Fitness Quest's proposed construction seems like a way to limit the coupling member to bell cranks and fly wheels without specifically mentioning these types of components. The Court therefore rejects Fitness Quest's alternative proposed construction of coupling members.

The Court is not persuaded by Fitness Quest's argument from the Markman hearing that CCS Fitness and Judge Zilly's opinion relying thereon should be discounted because they are pre-Phillips decisions. First, Phillips only discounted the priority of extrinsic evidence in the scheme of claim construction, and not its validity. Second, CCS Fitness's definition of "member" has not been called into doubt by subsequent decisions and is therefore valid precedent. Finally, Fitness Quest fails to show, other than through conclusory assertions, that the term "member" does not denote a specific set of structures, as established in CCS Fitness. While the Court acknowledges Fitness Quest's argument that pre-Phillips claim construction principles are suspect, no persuasive competing theories have been offered in the instant action.

Fitness Quest's other citations are unavailing. In Mas-Hamilton Group v. LaGard, the Federal Circuit held that the claim term "lever moving element" lacked "a reasonably well understood meaning in the relevant lock art" that would "save it from application of [§ 112, P 6]." 156 F.3d 1206, 1214 (Fed. Cir. 1998). The court in that case observed that while "many devices take their names from the functions they perform," the patent holder failed to "directly to this court any evidence demonstrating that the district court erred in determining that the term. lacks a reasonably well understood meaning in the relevant lock art." Id. This opinion does not dictate the result in the instant case because "coupling" is easily understood to provide more structural information than "lever moving." 1 The disputed claim terms in the remainder of Fitness Quest's cases are equally distinguishable. Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc., 422 F. Supp. 2d 446 (D.Del. 2006) ("soft start circuit," a "soft start" could be accomplished in numerous ways); Aspex Eyewear, Inc. v. Altair Eyewear, Inc., 386 F. Supp. 2d 526 (S.D.N.Y. 2005) ("retaining mechanisms for supporting," "supporting" provides inadequate structural guidance for an object as vague as a "mechanism"); Verizon Cal. Inc. v. Ronald A. Katz Technology Licensing, L.P., 326 F. Supp. 2d 1060 (C.D.Cal. 2003) ("credit verification structure," the function of "credit verification" could be accomplished in far too many ways to provide any meaning to the "structure" it described).
1 Indeed, during cross-examination at the Markman hearing, Fitness Quest's expert strongly implied that, to him, a "coupling member" had a specific structural meaning when he denied that a number of different arrangements (e.g., numerous levers connected by numerous pivoting joints or a pulley system) proposed by counsel for Precor could be considered a member that coupled the first lever to the last lever.

Furthermore, the proposition that the '829 patent's use of the term "coupling member" is intended to be a generic term for a set of structural units that couple the foot links to the pivot axis is also suggested in the specification, which asserts that "various mechanical arrangements may be employed to couple the foot links." Col. 4, lines 28-29. Claim 2 proposes an embodiment of claim 1 that includes bell cranks. This intrinsic evidence implies that bell cranks are only one potential embodiment of the coupling members. See Comark, 156 F.3d at 1187 (claim differentiation). Different types of coupling members other than flywheels and bell cranks are also implied in the specification, where the motion of the foot link end is described as "arcuate," which is defined as "a circular oval or other such closed, curved path of travel." If only bell cranks and flywheels were taught, then the path of travel would only need to be described as a circle.

The second major point of disagreement between the parties' constructions of this claim is the meaning of the phrase "predetermined distance." Fitness Quest argues that this phrase should be understood to mean a "fixed distance." Precor argues that this Court should employ Judge Zilly's definition, which rejected "fixed distance" and construed the phrase literally, to mean "a distance determined beforehand." 2 The Court employs Precor's proposed construction based on the doctrine of claim differentiation and because of the Court's conclusion that "arcuate" does not mean only circular.

2 Judge Zilly's actual construction for "predetermined distance" was "the amount of separation between one end of a foot link and the pivot axis before use of the claimed device; this amount of separation need not be unvarying while the machine is in use." Order at 17.

First, the doctrine of claim differentiation dictates the conclusion that the end of the foot link is not always at a fixed distance from the axis in the generic embodiment because claim 73 teaches a device "wherein said first and second coupling members couple their respective foot links to said pivot axis at a fixed distance therefrom." '829 Patent, Col. 8, lines 5-8 (emphasis added). In order for this claim to mean something different than a claim that describes the distance as pre-determined, the term "pre-determined" cannot mean "fixed." Juxtaposing these terms renders the difference obvious: Pre-determined means simply "determined beforehand" while fixed means "always the same."

Second, it is clear that if the path of the foot links can be circular or non-circular, as the Court concludes that arcuate means, the distance from the end of the foot link to the axis will not necessarily be the same. If the foot link path is circular, then the distance will be fixed and pre-determined. If the foot link path is oval or some other closed curved path of travel, then the distance will be variable and pre-determined.

The Court therefore construes this phrase as follows: "a first and a second structural unit which couples, each associated with a foot link, that attaches its associated foot link to the pivot axis at a distance from the axis that is not necessarily unvarying while the machine is in use, but is determined beforehand."

FieldTurf's Proposed Construction: "Relatively distinct, substantially continuous layer"
SCG's Proposed Construction: "Distinct, continuous, separate and uniform covering of material of a depth determined before the covering is applied across an entire area"

The Court's Claim Construction: "Relatively distinct, substantially continuous layer"

SCG argues that its construction of a "course" "is taken directly from FieldTurf's own Specification." It then makes three references to the specification. The first describes "[a] unique infill layer of two graded courses of particulate matter disposed interstitially between the upstanding ribbons upon the upper surface of the backing and at a depth less than the length of the ribbons." '689 patent, 5:10-15. The second reference is to point to Figure 1 and describe that figure as showing "a distinct, continuous, separate and uniform covering of material of a depth determined before the covering is applied across an entire covered area." In support of this description, SCG explains that "there are no breaks or gaps in the bottom course 5 or the top course 6[,]" "there are no peaks in the bottom course 5 or the top course 6[,]" and "there are no valleys in the bottom course 5 or the top course 6." The third reference to the specification notes that it contains the words "resistance to particle displacement" and uses this language to support its argument that particles that migrate to form a course after installation cannot infringe the patent.

The Court will address the third argument first. As the Court explained above, the issue of migrating particles or the time of infringement is an infringement issue, not a claim construction issue. 13

12 FieldTurf presented the claim construction of "course" as integral to each of the two courses described in the claim. Because its proffered definition for course is consistent, the Court will address "course" independently.

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Moving to the second argument, the Court declines to import SCG's characterization of the drawings, unsupported by the specification, into the claims. Rather, the specification appears to disclose two courses with some level of particle movement between the courses. '689 patent, 7:44-45. As is explained in great detail earlier in the specification, the mixed bottom course may have a similar size, size distribution and shape such that there is little migration within that layer. '689 patent, 7:11-32. However, the bottom course particles may be smaller than the top course particles such that they can migrate from the top course. '689 patent, 7:63-8:9.

The first argument is the only one that references relevant specification language. However, the only portion of the proposed definition arguably supported is the concept "of a depth determined before the covering is applied across an entire covered
area." However, the "depth" reference in the specification is actually referring to the entire layer depth, not a course depth. Moreover, to the extent a depth is determined in the specification it is defined by a maximum value of less than the length of the ribbons, not a specific "depth determined before the covering is applied across an entire covered area." Finally, with respect to the layer, there is no need to include language regarding the layer depth in the claim as the claims in the patents-in-suit explicitly state that the layer depth is less than the ribbon length.

Defining what constitutes a vacuum-blower's "cover" is a critical issue. Toro defines "cover" functionally. As used in element iv of claim 16, "cover" refers to whatever is used to exclude fingers or clothing from the impeller, while permitting air flow to the impeller. The term "cover" does not imply any particular design. (Pl. Supplemental. Mem. at 2).

So construed, Toro argues that the White air inlet "cover", which includes a hinged outer lid and a removable baffle, is contemplated by claim 16 because both pieces together function as a cover. (Pl. Mem. at 12). The two-piece White cover, like the one-piece Toro cover, "perform[s] the covering function of restricting access to the air inlet." (Pl. Supplemental Mem. at 2). Toro asserts that the language of claim 16, which defines "cover" functionally, is broad enough to include both the "one-piece and two-piece [covers], and protects the full scope of the removable cover versions." (Pl. Mem. at 16-18). Thus, any cover that restricts access to the air inlet necessarily "includes means for increasing pressure." (Pl. Mem. at 18).

White rejects Toro's functional definition. White does not explicitly present its own definition. Instead, White refers to limitation vi of claim 16 to show that a "cover including a means for increasing pressure" means the '528 patent claims a removable one-piece air inlet cover with a pressure ring attached to or included as part of the cover. (Def. Mem. at 18).

White further argues that Toro has repeatedly admitted in its pleadings that the pressure increasing means described in the '528 patent are claimed as part of the air inlet cover and not as a separate removable competent. (Id. at 19).

According to the common dictionary definition, the noun "cover" means: "1: Something that protects, shelters, or guards 2: something that is placed over or about another thing ... a: LID, TOP." Webster's Third New Int'l Dictionary 524 (1986). Both the outer lid component and the baffle of the White "cover" cover the air inlet during blowing operation and are both removed from the air inlet cover during vacuuming. Both pieces lie over and conceal the air inlet cover and guard the impeller when needed and can be removed as needed. As the Second Circuit has stated, "It is not an avoidance of infringement to make any two separate pieces while in the patent they are made one integral piece or vice versa." See Hookless Fastener Co. v. G.E. Prentice Mfg., Co., 75 F.2d 264, 267 (2d Cir.), cert. denied, 295 U.S. 748, 79 L. Ed. 1693, 55 S. Ct. 826 (1935). Moreover, as Toro points out, removable covers may take many forms other than the designs at issue in this case. See (Pl. Mem. at 14).

The court has reviewed the ordinary meaning of the claim language, as well as the definitions offered by the parties. The court concludes that "cover" as used in the '528 patent includes the entire cover assembly and not only the air inlet lid as White argues. Thus, the '528 patent claims both one-piece covers and two-piece covers that include a separately removable pressure ring.

The Defendants' proposed construction is: "a removable cover that the user chooses to engage or disengage in which the cover, when engaged, completely covers the open top portion of the container (subject to the definition of 'open top portion')." Sunbeam's proposed construction is: "a removable structure adapted to mount to the end of a container to cover the end of the container to some extent." As the Defendants note, the parties agree that "cover" means "cap" and that this definition incorporates the construction of "open top portion," leaving the sole area of disagreement as the phrase "selectively covering."
1. Words of the Claim

The relevant claim language is the same as for the term "open top portion:"

A beverage container assembly for use with a blender, comprising:

- a beverage container having an open top portion and a closed bottom portion;
- a first removable cover for selectively covering said top portion of said container, said first cover adapted to be removably mountable on and off a blender and comprising an adapter portion for mounting said container on a blender; and
- a second removable cover for selectively covering said open top portion of said container, said second cover comprising a cap, and wherein said first and second covers are interchangeable on said container.

'592 Patent at 20:50-63 (emphasis added).

2. Specification and Prosecution History

The Defendants assert the following specification language as supportive of their construction:

A removable cap 198 (FIG. 2) is provided that may be screwed onto the male threads 196. The removable cap 198 may include a drinking hole, and/or may include a closure tab to avoid spillage.

* * *

The cap 198 may then be screwed onto the single serving beverage container 38, and the single serving beverage container is ready for use.

By the Defendants' reasoning, the phrase "may be screwed onto the . . . beverage container" reveals that the "selection" contemplated within the words "selectively covering" is one of whether or not to screw on the cap.

There is nothing in the prosecution history pertinent to this claim term. Although the Defendants reassert the "Flores reference," that was made respecting prior art that does not appear relevant to claim construction. Def. Memo. at 29; Sunbeam Exh. E, part 2, at SB000169-71.

3. Extrinsic Evidence

Neither party has submitted any pertinent extrinsic evidence.

4. Proper Construction of "Second removable cover for selectively covering said open top portion"

Nothing in the record reveals any greater specificity or any limitations regarding this claim term. Although the phrase "selectively covering" could be construed as a simple selection of whether or not to affix the cap, it could also refer to a selection within the cap itself of how much of the open top portion should be covered, through a device such as a "closure member."

Thus, the proper construction of the claim term is: "a cap that either allows the user to cover the drinking hole, through a mechanism such as a closure member to an extent that the user may select, including fully open and fully closed, and which may allow the user to select a degree of opening somewhere between fully open and fully closed; or a cap that may be screwed onto the beverage container by the user and which covers some or all of the open top portion."
1. "Cover layer having a Shore D hardness." This limitation requires that Shore D hardness be measured "on the ball."

a. The court recognizes, at the outset, that there is support for both parties' respective claim constructions in the intrinsic and extrinsic evidence of record. For instance, the specifications of the Sullivan patents refer to both "on the ball" and "off the ball" measurements of Shore D hardness. Notably, however, the "off the ball" measurements are called out in relation to raw materials, while the "on the ball" measurements are called out when comparing the characteristics of the finished products, in this case, actual golf balls. 2 The prosecution history is not inconsistent with this observation. 3

b. There is record evidence that, in the art, those of ordinary skill take Shore D hardness measurements "in accordance with ASTM test 2240" both "on the ball" and "off the ball." 4 In this regard, of course, it is evident that Mr. Sullivan could have specified, but failed to do so, whether he meant "on the ball" or "off the ball" measurements. However, given that claim construction is a matter both of science and of semantics, when the science (such as it is) is ambiguous, the claim construction exercise becomes more a matter of semantics, i.e., the words and grammar the patentee actually used to describe the invention.

c. In this case, the claim language refers to a "cover layer having a Shore D hardness," not the material comprising the cover layer. Therefore, I conclude that the language of the claims at issue is more consistent with a finding that Shore D hardness is measured "on the ball," since one does not have a cover layer until an actual golf ball is produced.

Acushnet argues that the determinations that the claims were not invalid were based upon a faulty interpretation of the phrase "cover layer having a Shore D hardness," which appears in each of the asserted claims. Acushnet contends that the district court's on-the-ball construction led it to improperly reject Acushnet's invalidity arguments, which in part depended on prior art disclosing the off-the-ball hardness of polyurethane materials that can be used to make golf ball covers. We review the district court's claim construction de novo. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). We generally assign to claim terms "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc).

Acushnet argues that the district court's claim construction is erroneous because the specification notes in several places that the hardness values therein are "measured in accordance with ASTM method D-2240." '293 patent col.7 ll.21-22. 5 The ASTM D-2240 standard states that hardness should not be tested on a rounded or curved surface, which Acushnet argues precludes measuring hardness on the rounded and irregular surface of a golf ball. ASTM D-2240, at 2. Thus, Acushnet contends, a person of ordinary skill in the art would understand "cover layer having a Shore D hardness" to mean the hardness of a flat sample of the material used for the cover layer at issue, tested off the ball.

We disagree. The Sullivan patents make clear that, when read in context, the reference to ASTM D-2240 does not require hardness of the cover layer to be tested off the ball. To the contrary, the claims speak of "[a] golf ball" with a "cover layer" having a certain hardness, rather than focusing on the hardness of the material used to create the cover layer. E.g., '293 patent col.23 ll.49-60. Likewise, the specification points to the hardness of the assembled ball (rather than of the cover materials in isolation) as the relevant characteristic. E.g., id. col.5 ll.7-8 ("The hardness of the ball is the second principal property involved in the performance of a golf ball." (emphasis added)). While there are examples providing off-the-ball measurements of commercially available materials in the patent, the examples directed to golf balls as opposed to starting materials specifically disclose hardness measurements taken on intermediate and finished balls. E.g., id. col.22 l.14 (Table 8,
showing "Shore D" hardness measurements on finished balls); see also id. col.17 ll.36-37, 41 (Table 5, showing "Shore C Hardness" of "Molded Intermediate Balls" with inner cover); id. col.18 ll.52-53, 57 (Table 6A, showing "Shore C Hardness" of "Molded Finished Balls" with outer cover in place); id. col.19 ll.63, 66 (Table 6B, same). These examples confirm that hardness was to be measured on the ball. 6 Indeed, as the district court noted, there is no "cover layer" to measure until a golf ball is produced. Markman Order, 523 F. Supp. 2d 388, 2007 WL 4165415, at *1.

6 Acushnet notes that some unasserted claims also specify a flexural modulus for the cover layers, which must be measured off the ball. See, e.g., '130 patent col.24 ll.1-2. Unlike modulus, however, hardness can be measured on the ball, and as discussed above, the patent makes clear that the claims refer to on-the-ball measurement of hardness.

Moreover, here there was evidence at trial from Acushnet's own witnesses showing that those of skill in the art typically took Shore D hardness measurements on the ball. Jeff Dalton, for example--Acushnet's Vice President of Product Development--testified that the golf ball industry commonly conducted hardness tests in substantial compliance with ASTM D-2240, with the exception of the requirement that the test not be conducted on the ball: "[W]e--technical people in the golf ball industry deviate from that standard by not measuring [hardness] on the kind of test specimen that is called for in ASTM [D-2240]. We generally measure it on the ball." Trial Tr. 514:21-515:1 (emphasis added). 7 Such evidence of accepted practice within the art, when not at variance with the intrinsic evidence, is relevant to the question of how a person of skill in the pertinent field would understand a term. See Phillips, 415 F.3d at 1318 ("[E]xtrinsic evidence in the form of expert testimony can be useful to . . . establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field."); see also Symantec Corp. v. Computer Assocs. Int'l, Inc., 522 F.3d 1279, 1289 n.3 (Fed. Cir. 2008). The district court did not err in holding that the phrase "cover layer having a Shore D hardness" refers to an on-the-ball hardness measurement.

7 See also Trial Tr. 344:13-14 (Acushnet Senior Vice President of Research and Development William Morgan noting that "it was our standard practice at the time to measure the Shore D hardness directly on the golf ball").
that disclosed in Schnyder could not operate on a circular container.” However, because the sliding cover was merely an embodiment of the ’658 patent, 6 this prosecution history does not restrict the type of cover described in Claim 1.

6 This fact is made apparent by Claim 5 which specifically states, "The smoking system of claim 1 wherein said cover is slidably mounted on said receptacle between a pair of guides associated with said receptacle." The fact that the sliding cover was specifically described in dependent Claim 5 means that the type of cover described in Claim 1 must be more broad. See McGill, 736 F.2d at 674.

Finally, Defendant argues that the term "cover means" contained in Claim 1 invokes a means-plus-function under 35 U.S.C. § 112, P 6. The Court agrees. As noted above, the sliding cover structure used in Claim 1 was merely an embodiment of the claim and cannot be used to limit or define the claim. There is no other indication of what particular structure is contemplated by the term "cover means" other than the fact that it lies "across said openings of said cavities" and is "movable to alternatively close or expose one or both of said cavities." While the position of the cover means is described, its meaning truly lies in the function assigned to it. Thus, it must be considered a means-plus-function element under section 112, paragraph 6.

The sixth disputed claim language states:

said cover member being removably integratable into said storage structure to improve the structural integrity of the storage structure.

Joint Statement, Table X, at 72-73. The language is clear and does not need construction. The language describes a cover member that can be integrated into the grain bin structure. Sukup argues that the phrase must be interpreted under the means plus function method. The Court disagrees. The word "means" is not used so there is no presumption. The language also describes an object, a cover member. The means plus function analysis therefore does not apply.

a. Parties' Positions

The parties propose the following constructions for "cover plate partially enclosing said fin structures," which is present in claim 2 of the ’631 Patent. Here, the dispute is whether "side walls" are required as urged by Defendants.

Plaintiff
A generally planar member positioned generally below the fin structures (relative to the top plate) which partially encloses the fin structures

Defendants
A flat member positioned on top of the fin structures having opposed side walls and a slot for directing forced air flow only into the air inlet path between said fin structures

b. Court's Construction
Again, the claim language does not support Defendants' exclusive entry argument. While the cover plate may block some of the air, there is no guarantee that the cover plate will actually prevent air from entering from any direction other than through the gaps. As urged by Plaintiff, the opening is a hole which allows air through the cover plate.

Regarding Defendants' proposed "side walls," this proposal is inconsistent with the word "plate." Notwithstanding the use of the term "plate," Defendants assert the cover plate must be "U"-shaped with side walls extending up from the base. The requirement is also inconsistent with the non-specific phrase "partially enclosing." The fact that the cover plate "partially encloses" the fin structures does not mean that side walls are mandatory. It is sufficient if the cover plate "partially encloses" the fins by sitting below them to minimize stray air escaping out the bottom (just as the "top plate" keeps air from escaping out the top). The modifier "partially" demonstrates that the claim does not require any particular extent of enclosure and not the tight seal that Defendants claim to be "essential."

Finally, Defendants suggest that the opening in the cover plate must be a "slot." To the extent Defendants assert that this term connotes a particular shape, the claim language would not support Defendants' assertion nor would the "cautionary language" of the specification which notes that the "shapes" and "dimensions" used in the described embodiments are non-essential. ('631 Patent at 7: 7).

In light of the foregoing, the Court construes "cover plate partially enclosing said fin structures" to mean "a flat member positioned to partially enclose the fin structures."

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CLAIM 9:

The parties are also disputing the meaning of the word "covered" as used in Claim 9 which states, in pertinent part, "said magnetic member is covered with a non-ferromagnetic material." Defendants argue that "covered" means a thin film layer. Plaintiff contends that the term "covered" should be interpreted as being structural in nature. Plaintiff notes that claim 10, which defendants are not accused of infringing, provides that the "magnetic member is coated with a non-ferromagnetic material." Plaintiff asserts that accepting defendants' interpretation of claim 9 would result in the words "covered" and "coated" as having the same meaning. Plaintiff contends that by allowing both claims to survive, the examiner obviously recognized that claims 9 and 10 are claiming two different things. Additionally plaintiff argues that the doctrine of claim differentiation precludes claims 9 and 10 from being interpreted to mean the same thing as it would render one of the claims superfluous. Thus, plaintiff maintains that since claim 10 refers to a layer of non-ferromagnetic material coating the magnet, claim 9 must invariably refer to a physical structure comprised of non-ferromagnetic material which covers the magnet.

The word "cover" can be used as either a noun or verb. Used as a noun it would refer to a device such as a lid or cap that is placed over or upon something else. Claim 9 uses the compound verb "is covered." The verb "cover" has the following primary meanings: "to place something upon or over, so as to protect or conceal;" "to overlay or spread with something;" and "to spread upon the surface of." The American Heritage Dictionary of the English Language, supra, at 432. Claim 10 uses the compound verb "is coated." The verb "coated" means "to cover with a layer." Id. at 363. When an object is coated with a material, the material forms a continuous film over the surface of the object. See e.g., Astra Aktiebolag v. Andrx Pharms., Inc. (In re Omeprazole Patent Litig.), 222 F.Supp.2d 423, 464 (S.D.N.Y. 2002) (quoting McGraw-Hill Dictionary of Scientific and Technical Terms, 5th ed. at 394 (1994)), aff'd sub nom. Aktiebolag v. Andrx Pharms., Inc. (In re Omeprazole Patent Litig.), 84 Fed. Appx. 76, 2003 WL 22928641 (Fed.Cir. 2003). Thus, in the context of claims 9 and 10, the terms "covered" and "coated" are used in such a manner as to render them with an identical meaning. See e.g., Leighton Technologies LLC v. Oberthur Cord Sys., S.A., 358 F.Supp.2d 361, 379 (S.D.N.Y. 2005); Yanova, Inc. v. Johnson, 2005 U.S. Dist. LEXIS 497, 2005 WL 66610, *4 (S.D.N.Y. Jan. 12, 2005); Revlon Consumer Prods. Corp. v. Estee Lauder Cos., 2003 U.S. Dist. LEXIS 13004, 2003 WL 21751833, *16 (S.D.N.Y. July 30, 2003) (citations omitted).

Such a finding runs afoil to the doctrine of claim differentiation. Under this doctrine, it is presumed to be a difference in meaning and scope when different words are used in different claims. Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1366 (Fed.Cir. 2000); Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed.Cir. 1987); "To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant." Tandon, 831 F.2d at 1023. Thus, the Court should
avoid interpreting a claim in such a manner if it would make the claims read like another claim. However, claim differentiation "is not a hard and fast rule of construction," but rather it only creates a rebuttable presumption that each claim has a different scope from one another. Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed.Cir. 1998); see also, ATD Corp. v. Lydall, Inc., 159 F.3d 534, 541 (Fed. Cir. 1998)(quoting Autogiro Co. of Am. v. United States, 384 F.2d 391, 404, 181 Ct. Cl. 55 (Ct.Cl. 1967) ("The presumption that separate claims have different scope is a guide, not a rigid rule."). Despite the fact that interpretations that would render a portion of the language of a claim superfluous are disfavored, "where neither the plain meaning nor the patent itself commands a difference in scope between two terms, they may be construed identically." Power Mosfet Technologies, L.L.C. v. Siemens AG, 378 F.3d 1396, 1410 (Fed.Cir. 2004). If the claim can only bear one interpretation, similarity must be tolerated. Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed.Cir. 1991) (quoting Autogiro Co., 384 F.2d at 404). "Although the doctrine of claim differentiation may at times be controlling, construction of claims is not based solely upon the language of other claims; the doctrine cannot alter a definition that is otherwise clear from the claim language, description and prosecution history." O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1582 (Fed.Cir. 1997) (citation omitted). The doctrine does not permit a claim to be broadened beyond its correct scope as determined by the specification and claims as filed, as well as the prosecution history and any relevant extrinsic evidence. Toro Co. v. White Consol. Indus., 199 F.3d 1295, 1302 (Fed.Cir. 1999); Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1480 (Fed.Cir. 1998); ATD Corp., 159 F.3d at 541; Tandon, 831 F.2d at 1024. "The words of patent claims have the meaning and scope with which they are used in the specification and prosecution history." Kinik Co. v. Int'l Trade Comm'n, 362 F.3d 1359, 1365 (Fed.Cir. 2004); see also, Toro Co., 199 F.3d at 1301 (a word in a claim should not be construed in a "lexicographic vacuum," but rather it is interpreted in the context of the specification and drawings.).

In the case at bar, the specification and prosecution history overcome any presumption arising from the doctrine of claim differentiation. The prosecution history reveals that when claim 9 was originally submitted to the PTO, it read that the magnet was "covered and/or coated with non-ferromagnetic material." Claim 9 was initially rejected because the examiner found that the use of the phrase "and/or" was too vague. Additionally, the original specification contained two references to the placement of the non-ferromagnetic material on the magnet. First, it stated that the magnet "can be coated with a non-ferromagnetic material." Further in the text it stated that the magnet "can be coated with a non-ferromagnetic material." With regard to the latter statement, the examiner deleted the words "be coated" and replaced it with the word "covered." As a result, the official specification is silent with regard to the magnet being "coated" with the non-ferromagnetic material. The specification contains the following two references to the magnet being covered with the material:

The magnetic member can be covered with a non-ferromagnetic material as illustrated in FIG. 1. In the embodiments of FIGS. 1 and 2 which include end walls, a space can be defined between the end wall and the magnetic member. The space can be either opened or filled with the non-ferromagnetic material as illustrated in each of FIGS. 1 and 2. The non-ferromagnetic material stabilizes the magnetic member.

* * *

Similar to the embodiments of FIGS 1-4, the magnetic member can be covered with a non-ferromagnetic material and a space can be defined between the magnetic member and the end walls . . . The space can be filled with the above-noted non-ferromagnetic material or can be open.

Thus, the prosecution history reveals that the applicant was using the terms "coated" and "covered" interchangeably. Additionally, despite claim 10 stating that the magnet is coated with non-ferromagnetic material, the specification makes no mention with regard to the magnet being coated with such material. Rather, the specification indicates that the magnet is covered with the material. Moreover, the specification does not provide that a tangible structure is placed over the magnet. Similarly, none of the schematic drawings depict a physical structure over the magnet. "The drawing in a nonprovisional application of the invention must show every feature of the invention specified in the claims." 37 C.F.R. 1.83(a).

Plaintiff contends that since the specification provides that the magnet is covered with non-ferromagnetic material to stabilize the magnet, a solid physical cover, as oppose to a film covering, would be necessary. There is no basis to conclude that the act of stabilizing the magnet cannot be accomplished by covering the magnet with a layer of non-ferromagnetic material in a liquid or gelatinous form which can form a protective membrane over the magnet. Additionally, the specification provides that the space between the magnet and end wall can also be filled with the non-ferromagnetic material. Such a statement further indicates that the non-ferromagnetic material is in a liquid-type state capable of being used to fill an existing open space.
To construe claim 9 as requiring a physical entity made of non-ferromagnetic material which is physically placed over the magnet would improperly broaden claim 9 beyond the specification, the drawings depicting the invention, and the prosecution history. Thus, claim 9 is construed to mean "a magnetic snap as described by claim 1 in which the magnet is covered with a film layer of non-ferromagnetic material."

4. "covering"

Agere argues that the term "covering" should be construed as "lying or spreading over." Atmel argues that the term "covering" should be construed as "directly contacting from above." The Court concludes that neither construction is appropriate and therefore will provide its own construction of the term "covering."

The Court has referred to Webster's Third New International Dictionary, which provides a number of definitions for "cover." The definition which is clearly most relevant to the instant context is: "to lie over: spread over: be placed on or often over the whole surface of." Webster's Third New International Dictionary of the English Language 524 (1986). Employing this ordinary meaning of the term "covering" in claim 1 in its entirety would allow for the possibility, but would not necessarily require, that a glue layer "covering" a dielectric and an exposed underlying material would be in direct contact with both the dielectric and the exposed underlying material. Thus, it is not clear from the face of the claim language and the ordinary meaning of the claim language whether direct contact is required.

The specification provides some guidance as to whether direct contact is necessary. The specification states: "The glue layer film may be deposited, through openings in the dielectric, directly on the silicon or on a conducting material, such as a silicide, overlying the silicon. Of course, the glue layer is also deposited on the dielectric." '335 Patent at col. 3:7-11 (emphasis added). This language indicates that the patentee contemplated that the glue layer would be in direct contact with both the dielectric and the exposed underlying material, and indicates that one of ordinary skill in the art, reading the patent, would have so understood the term "covering."

Moreover, the prosecution history reveals that the patent applicants distinguished their invention from the prior art based on the requirement that there be direct contact between the glue layer and the exposed underlying material. The patent applicants distinguished their purported invention from a prior art reference by pointing to the language in claim 1 referring to the glue layer "covering said dielectric and said exposed underlying material," and asserting that the claim language "clearly recite[s] that the aluminum layer contacts not only the insulating layer but also the underlying material." Exhibit AG 006893 from 12/05/02 Hearing. The patent applicants further asserted that in the prior art reference, which employed a thin aluminum layer to improve adhesion, "the aluminum layer touches only the insulating layer; it apparently does not contact the underlying silicon substrate." Exhibit AG 006896 from 12/05/02 Hearing. The applicants argued that "such contact is clearly recited in the applicants' own claim, rendering the applicants' claim "unobvious." Id. Thus, the patent applicants relinquished a construction of the term "covering" that would not require direct contact between the glue layer and both the dielectric and the exposed underlying material. See also Exhibit AG 006874 from 12/05/02 Hearing.

Accordingly, the term "covering" is construed as "lying over and directly contacting."
10. "[C]able covering:" means to insulate and protect the cable that is exterior to the interior support and insulated conductors disposed in the open spaces of the interior support. This construction is consistent with the specification, in which the patentee evinces its understanding that a cable covering serves to "insulate and protect" the cable. (col. 5:39-45) Figure 1A is described as "provid[ing] an example of an acceptable cable covering" including an "outer jacket, shield, drain spiral and binder . . . ." (col. 5:42-45) This exemplary language does not, however, work to further narrow this limitation to the recited components.

13 Id.

"[C]overing a majority surface area of said tool body"

This phrase is contained in independent claims of the 787 patent, 64 the 781 patent, 65 the 386 patent, 66 and the 539 patent. 67 The 787 and 781 patents claim magnet members covering a majority surface area of the tool body; the 386 and 539 patents claim magnet assemblies covering a majority surface area of the tool body. As to this phrase, the Court construes the following meaning: "covering a majority surface area of said tool body" means the actual, physical magnet (or assembly) takes up more than half of the exterior of the tool body. To put it another way, at least half of the outer surface area of the tool body contains the physical magnetic material itself rather than the undefined magnetic field created by the magnets.

64 Col. 6, line 14-15.
65 Col. 6, line 17-18.
66 Col. 5, line 62-63, col. 6, line 49-52.
67 Col. 6, line 8-9.

All four patent Abstracts, whether method or apparatus claims, contain explicit language declaring that the device contains "a plurality of magnet members... covering a majority surface area of the tool body." 68 All four summaries of the invention contain explicit language that the device contains "a plurality of magnets encircling the body of the tool and covering a surface area greater than one half of the tool body." 69 All four patents contain drawings that illustrate that more than half the tool body visibly contains magnets. The language is explicit that it is the surface area of the tool itself that is covered by magnets (or assemblies).

69 787 patent, col. 1, line 58-60; 781 patent, col. 1, line 67 through col. 2, line 2; 386 patent, col. 1, line 67 through col. 2,
The Court is not persuaded that the phrase can be expanded to include the area subjected to any magnetic field created by the magnets, as argued by Plaintiff. References in the specifications of the four patents to the magnets providing 360-degree "coverage" explicitly refer to what happens when the tool is rotated, and the magnetic field thus created, but not to the physical layout of the magnet on the tool itself. Plaintiff's argument that the phrase should be interpreted in a parallel manner to a spotlight or water sprinkler covering a yard is also unconvincing. A spotlight, when operated, provides an area with illumination coverage, and a water sprinkler, when operated, provides a lawn with water coverage. This phrase cannot be stretched to say that the spotlight or the water sprinkler itself covers a majority of the surface area of the yard.

While comparison of an accused device to a patent is not relevant to claim construction, the Court notes that it is also not persuaded by Plaintiff's argument that "more than one-half of the longitudinal length of the Bilco tool is occupied by magnets, and the magnets are arranged to provide 360-degree coverage, that is, coverage over the blue area as well as over the magnet assemblies, thereby resulting in magnets that effectively cover a majority surface area of the tool body." No amount of torturing the simple phrase "covering a majority surface area" can allow for the interpretation that placement of magnets "effectively covers" more than half the tool body when the actual magnets themselves -- and not any magnet field -- are at issue according to the claim. The language of the Abstracts, the specifications, and the claims is explicit, and cannot be expanded beyond the patent itself. In addition, the drawings accompanying the patents support this interpretation. The requirement that the language of the patent, when read as a whole, be full, clear, concise, and exact, so that inventors are protected but innovation is still permitted, demands that the plain language "covering the majority surface area of the tool body" means exactly that and no more.

The "forming" step

Claim 1 of the '361 patent states, in relevant part:

1. A method of making a pizza comprising the steps of: . . . (c) covering each food portion with an unbaked dough section of sufficient dimensions to cover said food portion thereby forming a separate closed pocket about each food portion."

Defendant says that the "forming step" of claim 1 requires pinching the dough cover pieces to the dough base, including between adjacent food portions, to form closed pockets. Plaintiff contends that pinching is not required in claim 1, but that simply covering the food portions with dough is sufficient to form the closed pockets.

The interpretation of a disputed claim term requires reference to other claims, and, unless there is "a clear indication to the contrary" a term must be interpreted consistently in all claims. Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d
1570, 1579 (Fed. Cir. 1995). Claims 3 and 4 of the '361 patent, which are dependent on claim 1, expressly describe a "forming" step that is separate from "covering," and involves pinching dough sections together, including in between food portions.

Plaintiff concedes that "forming" is a separate step from "covering" in its memorandum that claim 3 further defines "the placing step and covering step including the step of forming closed pockets" (emphasis supplied).

Plaintiff argues that interpretation of the term "forming" with reference to other claims is improper under the doctrine of claim differentiation, which requires a difference in scope among the claims. But the doctrine of claim differentiation applies only where a claim construction would render another claim superfluous. Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998). Where there are other differences between the claims, the element at issue may be construed to cover "the same subject matter" that is expressed differently in other claims. Tandon Corp. v. U.S. International Trade Commission, 831 F.2d 1017, 1023 (Fed. Cir. 1987).

Claim 1 recites no particular method of covering; claim 3 recites a covering step that involves folding an outside peripheral strip of the dough base over the food portions; and claim 4 recites a different covering step that involves covering food portions with an unbaked dough section separate from the dough base. Because there are differences in the recitation of the "covering" step in claims 1, 3, and 4, the "forming" step may be construed to "cover the same subject matter" in all three claims.

Although the specification says that the general method of making a pizza with pockets of enclosed food portions "may be accomplished in a number of specific ways," the only "ways" it refers to involve making the dough covers, and not the formation of the pockets. In fact, the specification discloses no method of forming a pocket other than by pinching the outside edges of the cover piece to the dough base.

Where a patent specification suggests only one meaning of a claim limitation, it may be construed no more broadly. See Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1480 (Fed. Cir. 1998) ("claims may be no broader than the supporting disclosure, and . . . a narrow disclosure will limit claim breadth").

Plaintiff's suggestion that the forming step in claim 1 may include merely touching the two dough surfaces together to form a seal if inherently "sticky" dough is used is completely without support in the specification and thus cannot be considered in construing the claim.

The prosecution history also supports the construction of "forming" as requiring pressure placed around the pocket area. In the December 16, 1985 office action the examiner observed that the claimed method was similar to the prior art by requiring "pinching (crimping) the edges of the dough to form a filled pocket." The amendments that followed did nothing to correct that interpretation.

Plaintiff also argues that the photograph of the "forming" step in the record, number five, shows "a first pocket being formed" by merely folding the dough over without pinching. But photograph number seven shows the "completion" of the process, and the pinched edges of the pockets in that photograph are clearly visible.

The court concludes that the "forming" step is an affirmative step separate from "covering," and requires pinching dough areas to the dough base, including in between food portions. Merely draping the dough over the filling is insufficient to perform the claim.

Playtex argues that the court should construe "said thin membrane covering said opening in said passageway" to mean that "the thin membrane prevents liquid from flowing from the interior of the container through the opening to the outside (i.e., making the container spill-proof)." Plaintiffs did not respond to Playtex's argument on this issue. The phrases "said thin membrane," "said opening," and "said passageway" have antecedent basis and therefore the novelty of this claim element is
that it claims a membrane that covers the opening in the passageway. "Covering" is defined "as covers." Webster's, supra, at 525. The relevant definition of "cover," in turn, is "something that is placed over or about another thing." Id. at 524. "In" is simply "a functional word to indicate location or position." Id. at 1139. The ordinary meaning of these words does not require the court to import a limitation requiring the membrane to make the container spill proof. Certainly, this claim limitation attempts to describe a structure that has that intended function, and if the court needed to construe an ambiguity in the claim this consideration might carry some weight. Absent any such ambiguity, however, the court sees no reason to import the intended function into a structural limitation. Accordingly, the court construes this aspect of claim element 7(e) to mean said thin membrane being placed over or about the opening in the passageway.

1. "Covers"

The parties dispute the meaning of the term "covers" as it relates to a portion of the facer covering a portion of the backer, namely the edge surface. (Claims 2 and 18 of '018 Patent; claim 7 of '493 Patent.) Specifically, the parties dispute whether "covers" means "completely overlays" as Plaintiff argues or "overlays" as Defendants assert. As indicated by the parties in their proposed constructions, the only issue is whether the Court should include the word "completely" in its construction.

Plaintiff argues that the inventors describe surfaces that are less than completely covered as "partially" covered, so the inventors clearly expressed an intent for "covers" to mean completely covered. For example, in claim 3 of the '493 Patent, the overhang portion of the facer extends beyond the edge surface of the backer and wraps around the edge surface so that the facer "covers at least a portion" of the backer's opposite side. Also, the specification of the '018 Patent states that the overhang portion is folded over and wrapped around the edges of the backer "so that it covers a perpendicular side edge of the backer and a portion of the backer's opposite side." ('018 Patent, col. 6:18-22 (emphasis added).) However, as Defendants point out, the inventors also described surfaces that are completely covered as "entirely cover[ed]." (Id. col. 6:25-27.)

The claims at issue do not limit the term "covers." The specification suggests that when the term "covers" is used with regard to the opposite side of the backer, it either means partially (id. col. 6:18-22) or entirely (id. col. 6:25-27). From this, the Court cannot conclude that the term "covers" necessarily means "completely covers." The Court therefore construes the term "covers" to mean "overlays" and declines to read the word "completely" into the term.

The parties also dispute the meaning of the term "covers" as used in claim 23 of the '018 Patent, which claims that "said plurality of liner panels include a plurality of discrete said backers sharing a common said facer, so that said common facer covers said vertical posts." (Claim 23 of '018 Patent.) In other words, claim 23 claims a trailer that has more than one liner panel, each of which includes a plurality of backers sharing a common facer so that the common facer covers the vertical posts to which the liner panels are attached. Plaintiff proposes the following construction: "multiple liner panels in which each liner panel has more than one backer sharing a single facer, arranged so that the facer completely overlays more than one vertical post." Defendants, on the other hand, contend that the phrase means "a single metal facer covers all the posts such that the facer extends the entire length of the side wall inner surface and covers more than one backer." The key dispute is whether (1) the common facer covers all the vertical posts on the side wall inner surface of the trailer, or (2) the common facer only covers "more than one" post.

Claim 23 of the '018 Patent is ultimately dependent on claim 1, and it is also dependent on claims 14, 15, and 16. Claim 1 claims a trailer comprising:

- a plurality of wheels;

- a floor supported by said wheels; and

- a side wall extending vertically upward from a longitudinal side of said floor, said side wall including an exterior surface, and

- a liner panel inward of and spaced apart from said exterior surface, said liner panel including a stiff backer and a tough
facer attached to an inward side of said backer so that said facer at least partially defines a planar inner surface of said side wall, wherein said facer defines an overhang portion that extends beyond an edge of said backer.

Claims 14, 15, and 16 recite the trailer as in claim 1 with "a plurality of spaced-apart" vertical posts extending up from the floor between the exterior surface and the liner panel and "a plurality of vertically-aligned" liner panels, each pair of which is attached to a vertical post between the adjacent liner panels. Claim 23 recites that the plurality of liner panels "include a plurality of discrete said backers sharing a common said facer, so that said common facer covers said vertical posts."

Defendants argue that claim 23 claims a single common facer for each side wall because claim 23 recites one common facer that covers "said vertical posts"-which Defendants contend refers to the vertical posts that form the skeleton of one of the trailer's side walls. Defendants also point the Court to the specification, which refers to an example in which the "backers share a common facer [] so that the facer passes over the front surface of all vertical posts in the side wall." ('018 Patent, col. 8:9-13; Fig. 22.) The Court does not, however, conclude that claim 23 requires one common facer that covers an entire side wall of the trailer. First, the description of one possible embodiment in the specification cannot be read to limit claim 23 because there is no clear disavowal of claim scope. Second, referring back to claims 14, 15, and 16, there is no indication that the vertical posts referenced in claim 23 are all of the vertical posts of one of the side walls. Accordingly, the Court construes the phrase "said plurality of liner panels include a plurality of discrete said backers sharing a common said facer, so that said common facer covers said vertical posts" to mean that "at least two of the liner panels include at least two backers that share a common facer so that the common facer for the liner panel covers the vertical posts to which the liner panel is attached."

The point of contention between the Parties is the definition of the covers for the holes of the vent. To determine the scope of the claim, the Court must, therefore, define the terms and establish the elements prescribed therein. Looking first to the language of the claims, the Court notes that both Claims 1 and 6 contain the following language describing the covers:

> an array of cowls integral with and positioned on the exterior surface of the plate, each of said cowls formed of an inflexible material, each cowl for shielding one of the holes, said holes and cowls, being sized shaped, and oriented to inhibit entry of fluids through the holes and into the envelope interior while allowing generally unrestricted air circulation between the envelope interior and exterior . . . .

Defendants argue that the definition of an array of cowls cannot encompass a strip of adjacent holes with a louver or slat covering that does not create separate hoods. Plaintiff asserts that a cowl is a more general term for hood than Defendants contend and that in fact Defendants' louver hood does fall within the scope of the claim. Furthermore, Plaintiff argues that the claim language does not require that there be multiple, individual or separate cowls and holes, but that even if the Court determines the claim so indicates, Defendants' vent contains multiple, individual holes which each have their own cowl, the fact that they are adjacent to one another notwithstanding. Based on these arguments, the Court must define the terms "array" and "cowl" and the phrase "each cowl for shielding one hole."

--- Footnotes ---

2 In the instant case, Plaintiff Bickerstaff alleges infringement of claims 1, 4, 6 and 9 of the '911 Patent. Claims 1 and 6 are independent claims, while claims 4 and 9 are dependent on claims 1 and 6 respectively. Thus, if the scope of claims 1 and 6 cannot include Defendants' vent, then Plaintiff's assertion of infringement necessarily fails as to all four claims.

--- End Footnotes ---

An array is alternatively defined as "a rectangular arrangement of quantities arranged in rows and columns, as in a matrix," "an orderly, often imposing arrangement," or "an impressively large number, as of persons or objects." THE AMERICAN HERITAGE DICTIONARY 102 (3d Ed. 1996). When this language is reviewed in light of the figures attached to the specification of the patent, it becomes clear that the intended definition of an array in this context is the first definition. See Fig. 2. Given that the prosecution history provides no contrary argument, the Court finds that the term "array" as used in patent '911 refers to "a rectangular arrangement of quantities arranged in rows and columns."
Next, the Court confronts the term "cowl." Again, looking initially to the plain meaning of the term, the Court finds that, generally speaking, a cowl refers to a hood or cover some sort. Reference to the specification and the remaining claims in this case does not provide a more specific definition of the term. Indeed, such review reveals that a cowl may refer to hoods of different shapes. For instance, figure 6 presents "another embodiment of the cowl" as do claims 2, 3, 7 and 8. In addition, the prosecution history indicates that the shape of the cowl has no impact on the patentability and, thus, the scope of the claim. The Court, therefore, finds that a cowl as used in these claims refers to a hood of any shape.

3 Cowl: "1.a. The hood or hooded robe worn especially by a monk. b. A draped neckline on a woman's garment. 2. A hood-shaped covering used to increase the draft of a chimney. 3. The top portion of the front part of an automobile body, supporting the windshield and dashboard." THE AMERICAN HERITAGE DICTIONARY 433 (3d Ed. 1996).

4 Both Parties refer the Court to portions of Mr. Talbot's deposition testimony. Upon review, however, the Court concludes that, because Mr. Talbot's use of the term is inconsistent, his testimony does not aid the Court in making this determination. Furthermore, given that the intrinsic evidence provides a clear definition of the term, the Court need not make reference to extrinsic evidence, such as Mr. Talbot's testimony.

We conclude that the district court did not err in its construction of the term "cowl."

2. Claim 6, Step (b)

Claim 6, Step (b) reads: "applying cranial traction to the epidermis severed from the ungual crest to displace the distal edge of the epidermis cranially …." Defendant argues that the words "cranial" and "cranially" render this step indefinite. Although both parties agree that the definition of "cranial" is "towards the animal's head," Defendant asserts that the word can only be used to describe any action occurring above a cat's carpus, which is the group of joints in each leg of a cat that allows the cat to walk with its paws flexed. Here, Defendant argues, the word describes actions occurring below the cat's carpus; thereby rendering Step (b) insolubly ambiguous because one skilled in the relevant art would not understand in which direction to pull the incised skin. Plaintiff counters that Defendant's expert, while disagreeing with the way in which the '579 patent uses the word "cranial," had no trouble understanding its meaning. Moreover, Plaintiff notes that the word's meaning is made clear by Figure 2, which uses an arrow, labeled T, to depict the "cranial" direction in which the surgeon must pull the skin.

6 It is often analogized to the human wrist. Olsen Decl. at P 16.
Plaintiff's argument is well-taken. It is well-established that only claims "not amenable to construction" or "insolubly ambiguous" are indefinite. See Novo Indus., L.P. v. Micro Molds Corp., 350 F.3d 1348, 1353 (Fed. Cir. 2003); Honeywell Int'l, 341 F.3d at 1338. Here, Defendant's experts Dennis Olsen, DMV, although intending to disagree with Plaintiff's use of the word, ultimately demonstrated the ease with which it can be construed by noting, in his declaration, that "cranial means towards the animal's head." See Olsen Decl. at 1115. See Rosemount, Inc. v. Beckman Instruments, Inc., 727 F.2d 1540, 1547 (Fed. Cir. 1984) (finding an indefiniteness argument undermined by the defendant's "own ease in applying "close proximity" ... in its briefs here, [and] its own witness' statement that he had no trouble understanding the claims of the '525 patent ... "). In sum, the Court finds that one skilled in the art would understand the meaning of the word "cranial" when read in light of the specification. Id. 7

7 With regard to Defendant's objection to Plaintiff's use of the word "cranial" in Claim 6(c), the Court reaches the same conclusion.

3. Creases

Claim 5 describes the patented device as having "a plurality of creases formed in said member which are oriented in vertical and horizontal directions." Plaintiff suggests defining "creases" as "thin integral strips of pliable material defined by grooves or ridges in the flat rectangular shaped member about which the member is folded in use," Pl. Brief on Claim Construction (DE # 40) at 12, or as "a line, a groove, or a ridge made by folding a pliable substance." Tr. at 10. Defendants would define creases as "marking line, marks, or ridges made by slits in an outer layer of the material, folding a pliable substance, and not hinges or living hinges." Def. Claim Construction Chart (DE # 38). Defendants argue that hinges were specifically disclaimed by Plaintiff when he stated that "the use of a hinged apparatus can by no stretch of the imagination be considered equivalent to an apparatus employing creases." in order to distinguish his invention from a "Garment Folding Tray" patented in 1928. Def. Mem. in Support of Proposed Claim Construction (DE # 37) at 2. Defendants assert that living hinges must be specifically excluded from the definition because Plaintiff's patent does not include instructions for making living hinges, and because living hinges cannot cross each other in the manner shown in the patent. Id. at 15-16. Defendants' arguments go more to whether the patent is enabled for construction in plastic, rather than the definition of "crease." Accordingly, this Court will construe "crease" to mean a line, a groove, or a ridge made by folding a pliable substance and not a hinge.

15. "Creating said anatomic space" means the act of pushing tissue aside to make an accessible open working space outside the inflated balloon.

5. "crimp"

Braun construes "crimp" to mean "a portion of the needle which is sufficiently small to allow the needle to move axially along the catheter but which is greater in width than the opening." (D.I. 74 at 21) Alternatively, Braun has no objection to defining the term "crimp" as a "bulged section" or "segment of increased width." (D.I. 99 at 18) Terumo proposes that "crimp" should be given its ordinary and customary meaning and, therefore, has not provided a proposed construction. (D.I. 71 at 25) I recommend adopting Braun's original construction. 13
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

13 Initially, the primary dispute between the parties was whether the "crimp" must be manufactured through a traditional crimping process. Terumo insisted it must be, while Braun disagreed. (D.I. 71 at 26 n.13; D.I. 74 at 23) At the hearing, Terumo stated that it is no longer requesting that the Court's construction of "crimp" require that it be "something produced by crimping." (Tr. at 99; see also D.I. 97 at 16-17.)

Braun's proposed construction is derived from the specification's description of a "crimp." For example, the specification states: "The safety catheter illustrated in FIGS. 1C and 1D is the same as that illustrated in FIGS. 1A and 1B, except that the slot 60 in the needle shaft in the latter is replaced in the former by a crimp 61 whose width is greater than that of the opening 58 in the vertical arm 54." ('613 patent, col. 6 lines 58-62; see also id. col. 9 lines 18-22 ("The safety catheter illustrated in FIGS. 7D and 7E is the same as that illustrated in FIGS. 7A and 7B, except that the slot 60 in the needle shaft in the latter is replaced in the former by a crimp 61 whose width is greater than that of the opening 58 in the vertical arm 54."); id. col. 9 lines 49-53 ("The needle 16 includes a[] crimp 138 which is sufficiently small to allow the needle 16 to move axially along the catheter 24 but is greater in width than the opening 134 . . . ."); id. col. 11 lines 61-64 ("The needle 16 includes a[] crimp 138 which is sufficiently small to allow the needle 16 to move axially along the catheter 24 but is greater in width than the opening 134 . . . .") (all emphasis added).)

Terumo asserts that the ordinary meaning of "crimp" is "a structure withinwardly extending depressions and corresponding outwardly extending bulges." (D.I. 71 at 26 n.13) Braun does not disagree, but it contends that this type of "crimp" is only a preferred embodiment. On this point, Braun is correct. As the specification states:

"[T]he crimp 138 formed in the needle 16 preferably defines a pair of generally opposed, inwardly extending depressions 138b, which are disposed generally orthogonally with respect to the bulges 138a. The bulges 138a define a crimp 138 having a width, dimension W, which is small enough to facilitate movement of the needle 16 within the catheter 24, as shown in FIG. 14, and which is too large to pass through the central opening 134 formed in the end wall 126 of the needle guard 120, as discussed above.

The crimp 138 may be formed by any contemporary crimping process, such as those processes wherein two jaws of a vise or crimper come together so as to squeeze the needle 16 in a manner which forms the depressions 138b of FIG. 19, thereby consequently also forming the bulges 138a.

('613 patent, col. 13 lines 9-19) (emphased added) "[T]he use of the term 'preferably' makes clear that the language describes a preferred embodiment, not the invention as a whole." Cordis Corp. v. Medtronic A VE, Inc., 339 F.3d 1352, 1357 (Fed. Cir. 2003).

Terumo also points to the prosecution history, and complains that adopting Braun's proposal will deprive Terumo of an inequitable conduct defense that may otherwise be meritorious. In addition to Braun's invention disclosure documents, appearing to illustrate the conception of a "crimp" as early as February 1998 (Tr. at 95-96, 107), 14 the prosecution history reveals that the crimp (along with Figures 10A and 10B depicting it) has been in the specification since June 1998 -- although the word "crimp" did not appear until August 2000, when "crimp" was substituted for the prior version's "bulge" (Tr. at 94-95, 101). 15 As Braun explained: "The originally filed applications depicted and described 'crimps,' albeit calling some of them bulges. The examiner permitted without objection the subsequent substitute specification substituting the term 'crimp' for 'bulge' in certain places to describe the identical subject matter." (D.I. 74 at 23) Terumo's argument about the impact Braun's construction has on Terumo's inequitable conduct defense -- see Tr. at 100-01 ("If you go with their construction, these very legitimate defenses go away. Because if it's just a bulge section, they're able to say, well, that was in the patent from the beginning.") -- is not a persuasive basis for adopting Terumo's construction.

14 With respect to invention disclosure, Braun illustrates with various documents that the inventors apparently conceived of a "crimp" as early as February 1998. See, e.g., D.I. 99 at 17; D.I. 100 Exs. A, B & C). This was before filings within the '613 patent family tree such as U.S. Patent No. 6,117,108 ("the '108 patent"), filed in June 1998; U.S. Patent No. 6,287,278 ("the
For example, in the '278 patent application, filed in October 1998, the preferred embodiment depicted in Figure 10A was described as "[t]he needle 16 includes an increased diameter bulge 138, which is sufficiently small to allow the needle 16 to move axially along the catheter 24, but greater in width than the opening 134." (D.I. 75 Ex. E at FIG. 10A & col. 8 lines 44-48) (emphasis added) In connection with Figure 10B, the same '278 patent stated: "If an attempt is made . . . to pull the needle further to the right, as viewed in Fig. 10, out of the needle guard, the bulge 138 on the needle shaft will come into contact with the end wall 126, and since its diameter is greater than that of opening 134, the end wall 126 will at this point prevent any further axial movement of the needle out of the needle guard." (D.I. 75 Ex. E at FIG. 10B & col. 9 lines 9-15) (emphasis added) In the '630 patent, filed in August 2000, the same preferred embodiment was depicted in the same Figure 10A, but now it was described as: "[t]he needle 16 includes a crimp 138 which is sufficiently small to allow the needle 16 to move axially along the catheter 24 but is greater in width than the opening 134." (D.I. 75 Ex. F at BBM-TER0001289) (emphasis added) In connection with Figure 10B, the '630 patent stated: "If an attempt is made . . . to pull the needle further to the right, as shown in FIG. 10B, out of the needle guard, the crimp 138 on the needle shaft will come into contact with the end wall 126, and, since its width is greater than the diameter of the opening 134, the end wall 126 will at this point prevent any further axial movement of the needle out of the needle guard." (D.I. 75 Ex. F at BBM-TER0001290) (emphasis added)

Terumo also again relies on the deposition testimony of inventor Wynkoop. Again, however, this testimony is not much help to Terumo. In response to the question "do you think, for example, people in the shop, when someone says, 'We need to crimp this,' they know what that is?" Wynkoop replied, "In my shop? I would say most of them, yes." (D.I. 140 Ex. B at 130-31) As an initial matter, in the deposition question the word "crimp" is used as a verb, while in the claims it is used as a noun. Second, even assuming that everyone in Wynkoop's shop is a person having ordinary skill in the art, all that Wynkoop stated was that he would "think" (but is evidently not sure) that "most of them" (not all) would know what it means to crimp something. Finally, to the extent the Court must construe the claims in a manner that will help a jury to understand the meaning the claims have to one of ordinary skill in the art, Wynkoop's testimony provides no basis for confidence that lay jurors would know (without construction) the ordinary meaning of a "crimp." (See generally D.I. 140 Ex. B at 131 (Wynkoop explaining workers in his shop would understand "crimping" "[b]ecause of their mechanical ability and the things that we do in the shop") (emphasis added).

16 See generally Power-One, Inc. v. Artesyn Technologies, Inc., 599 F.3d 1343, 1348 (Fed. Cir. 2010) ("The [claim] terms, as construed by the court, must ensure that the jury fully understands the court's claim construction rulings and what the patentee covered by the claims.") (internal quotation marks omitted); see also D.I. 71 at 26 n. 13 (Terumo inviting Court to consider if "it would assist the jury to provide a construction [of 'crimp'] beyond the ordinary meaning"); but see Riddell, Inc. v. Schutt Sports, Inc., 2009 U.S. Dist. LEXIS 56316, 2009 WL 1444217, at *1 (W.D. Wis. May 21, 2009) (refusing to construe claim terms where the only proffered purpose of such a construction was that "construction of the limitations will assist the jury in its deliberations").

Hence, I recommend that the Court construe "crimp" to mean "a portion of the needle which is sufficiently small to allow the needle to move axially along the catheter but which is greater in width than the opening."
<table>
<thead>
<tr>
<th>Term, Patent, and Ind. Claim</th>
<th>Pl.'s Interp.</th>
<th>Def.'s Interp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>cross brace 3 member</td>
<td>Lifetime's interpretation: &quot;an elongated member with a longitudinal axis transverse to that of the table top, that either reinforces the center of the table top or that serves to connect the distal ends of the support braces (or other structures) either to the table top or to the frame.&quot;</td>
<td>FDL's interpretation: &quot;[a structure that] lies across the mounting surface of the table top, connects one or both support braces to the table top and provides structural support to the center of the table top.&quot; (FDL's Mem. in Opp. (69) at 16.)</td>
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</table>

--- Footnotes ---

3 This term also appears in claims 19 and 37 of the '331 Patent, and claims 48, 50, 54, and 56 of the '404 Patent. (FDL's Mem. in Supp. (69), Ex. 2, '331 Patent at col. 21, lns. 54 and 57, and col. 24, lns. 62 and 65; FDL's Motion for Invalidity (originally document 24 in 1:03CV0013TC) Ex. 1, '404 Patent at col. 34, lns. 18-23, col. 25, lns. 38-33, col. 27 lns. 42-47, and col. 28, lns. 53-58.) Because the Lifetime Patents are related and all proceed from one application, the interpretation of this term will be the same for, and will be guided by, the '331 and '404 Patents as well.

4 The number given in parentheses in citations to the parties' briefs denotes the docket number for the particular brief being cited.

--- End Footnotes ---

As shown by their interpretations in Table 1, the only significant disagreement over the interpretation of cross brace member, which is part of the retaining assembly structure used to connect the table pedestals (legs) to the table, is whether it extends entirely across the mounting surface of the table top (the underside). Lifetime argues that to require the cross brace member to completely extend from side to side would effectively limit the claim to the preferred embodiment. FDL responds that if this limitation is not imposed, then the claim is anticipated by U.S. Patent No. 4,951,576 to Cobos (the "'576 Patent").

Looking first at the ordinary meaning of the claim language, "cross" means "to lie or pass across; "intersect" means "to lie or be athwart; intersect," and "to move, pass, or extend from one side or place to another." Webster's New Universal Unabridged Dictionary 479 (1996) (hereinafter "Webster's"). "Brace" is defined as "something that holds parts together or in place, as a clasp or clamp" and "anything that imparts rigidity or steadiness." Id. at 250. A "member" is "a constituent part of any structural or composite whole." Id. at 1198-99.

The specification confirms that, for at least one preferred embodiment, the cross brace member extends completely across the underside of the table, or in other words, from one side rail to the other:

In one presently preferred embodiment, each of the retaining assemblies 36a, 36b, comprise a cross-brace member having opposing ends and an intermediate body portion formed there between. … The opposing ends of the first and second cross-brace members 36a, 36b, respectively, are configured so as to be introduced and retained within corresponding retaining apertures 46 formed in opposing side rails 42, 44 of the frame 40 or, in the alternative, within opposing, interior side walls of the table top 12.

(FDL's Mem. in Opp. (69), Ex. 1, '092 Patent at col. 13, lns. 29-44; see also id. at Fig. 4 (showing cross brace members 36a and 36b extending full width of table); id. at Fig. 5 (similar); FDL's Mem. in Opp. (69), Ex. 2, '331 Patent at col. 6, lns. 19-23; FDL's Mem. in Opp. (69), Ex. 3, '404 Patent at col. 22, lns. 19-22; FDL's Mem. in Supp. (69), Ex. 2, '404 Patent at col. 22, lns. 23-27; FDL's Motion for Invalidity (originally document 24 in 1:03CV0013TC) Ex. 1, '404 Patent at col. 34, lns. 18-23, col. 25, lns. 38-33, col. 27 lns. 42-47, and col. 28, lns. 53-58.)
24 (similar.) This specification language, however, is not dispositive. The quoted language suggests that other, non-preferred embodiments would still fall within the meaning of the term if the cross brace member did not extend completely across the underside of the table.

The specification also teaches that the retaining assembly, of which the cross brace member is a part, provides support for the table:

As best shown in FIGS. 1, 2, and 3, the distal ends 28, 34 of each pivotal support brace 24, 30 are engageably secured to the retaining assembly 36 (e.g., cross brace member). … It will be appreciated by those skilled in the art that the retaining assembly 36 generally provides structural support to the center of the table top 12 of the utility table 10.

(FDL's Mem. in Opp. (69), Ex. 2, '331 Patent at col. 6, lns. 13-26.) Accordingly, the correct construction of cross brace member must include a strength component.

The specification is also helpful in deciding what particular shape or spatial arrangement is required for the cross brace member. The preferred embodiment shows that the cross brace member is a long and thin bar. (FDL's Mem. in Opp. (69), Ex. 1, '092 Patent at col. 13, Ins. 29-44; see also id. at Fig. 4 (showing cross brace members 36a and 36b as thin bars extending full width of table); id. at Fig. 5 (similar); (FDL's Mem. in Opp. (69), Ex. 2, '331 Patent at col. 6, Ins. 19-24 (similar).)

Pointing to the prosecution history, FDL contends that the '576 Patent to Cobos, which was before the examiner during the prosecution of the Lifetime Patents, bars a definition of cross brace member that includes the bracket and pin arrangement shown in the '576 Patent. To attach the table legs in such a manner to allow them to fold--the function of the cross brace member--the '576 patent uses brackets with pins to secure the support brace (and the table legs) to the underside of the table. One side of the bracket is secured to the underside of the table, and the legs or support braces are attached to the bracket with a short pin. 5

5 The '576 Patent discloses every other limitation of claim 76 of the '092 Patent. As required by claim 76 of the '092 Patent, the '576 Patent table has a table top with first and second ends, a working surface (topside) and a mounting surface (underside) that may be constructed of blow-molded plastic. (FDL's Mem. in Opp. (69), Ex. 8, '576 Patent at col. 6, Ins. 34-37, 49-60, Figs. 1-6.) The '576 Patent table also has a frame with parallel side raits and pivotally connected pedestals, or folding legs. (Id. at col. 7, Ins. 18-20, col. 8, Ins. 51-54, Figs. 3, 6, 7, 8, 11, and 14.) Lastly, the '576 Patent has support braces that pivotally connect to both the table legs and the mechanism for securing the support braces to the underside of the table. (Id. at col. col. 8, Ins. 51-54, Figs. 5, 6, and 14.)

The Federal Circuit has noted that: "it is sometimes difficult to balance a patentee's broad claim reading against an assertion that the claims at some indefinite breadth may" read on prior art. Abbott Labs. v. Baxter Pharm. Prods., Inc., 334 F.3d 1274, 1282 (Fed. Cir. 2003). Because the '576 Patent was before the examiner, however, Lifetime has "acquiesced" to the conclusion that the '576 Patent "indicate[s] the scope of the ['092 Patent] claims." Liquid Dynamics, 355 F.3d at 1367-68. "In other words," the '576 Patent helps define "what the [092 Patent] claims do not cover." Id.

Moreover, because patents are presumed valid, and when possible courts must interpret claims "to preserve their validity," the court must, if possible, give a construction to cross brace member so as to preserve its validity over the '576 Patent. Modine, 75 F.3d at 1557. Here, this obligation is heightened by the fact that the '576 Patent was before the examiner. Ultra-Tex Surfaces, Inc. v. Hill Bros. Chemical Co., 204 F.3d 1360, 1367 (Fed. Cir. 2000).

In view of the above, the court concludes that the correct construction of cross brace member is a long thin device that: (1) is longer than it is wide; (2) is used as part of the structure that connects the table legs to the table top; (3) imparts strength to the table; (4) lies transverse to, and some distance across, the underside of the table top; and (5) cannot be the bracket and pin arrangement of the '576 Patent to Cobos.
Because it includes devices that extend completely from one side of the table to the other as well as those that do not, this construction preserves the maximum breadth of the claim language without limiting it to the preferred embodiment.

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10. "A Cross-Cutting Cylinder"

As noted above, Claim 12, an independent claim, teaches:

A cross-cutting cylinder comprising:

a. a plurality of cutting disks with each disk having at least two circumferentially spaced teeth, with the disks arranged in a longitudinal direction of the cutting cylinder to provide a helix; and

b. a spacer located between each adjacent disk, wherein a surface of the spacer has a linear measure greater than the distance between each adjacent disk.

'780 Patent, col. 4, lines 39-47. The Court having construed most of the disputed language in Claim 12, the only part requiring construction is the term "a cross-cutting cylinder," element 12(a).

Fellowes and Michilin agree that a "cross-cutting cylinder" is a "device for cutting paper that has a generally cylindrical overall shape and cuts materials into a number of small pieces both lengthwise and widthwise." Intek submits that a "cross-cutting cylinder" is a "device for cutting that has a generally cylindrical overall shape and cuts materials into a number of small rectangular pieces." The only differences between Intek's construction and the other parties' is that Intek removes the word "paper" from its definition of what the "cutting cylinder" cuts, and substitutes the words "small rectangular pieces" for "small pieces both lengthwise and widthwise."

Fellowes correctly notes that the specifications refer to the shredder being used to shred paper. See '780 Patent, title "("PAPER SHREDDER SHAFT") (emphasis added); id. at col. 3, lines 36-38 ("The shredder cylinder of the present invention . . . creates small paper chips."); id. at col. 1, lines 4-5 ("The present invention relates to a cross cutting cylinder for shredding paper") (emphasis added). In addition, the Court finds it significant that both Fellowes and Michilin agree that a "cross-cutting cylinder" cuts paper; it is Intek, which is represented by the same counsel as Michilin, that is at odds with the other parties. As sophistry becomes a science, it is wonderful if a party can position itself on both sides of an issue at the same time. It is hard to lose that way—but in this case, lose someone must. Although the '780 Patent could be read as applying to a "cross-cut" shredder that shreds non-paper items, the Court will add the word "paper" to its construction of "cutting cylinder" because such a reading is supported by the patent language and is agreed to by Fellowes and Michilin.

Finally, although the difference between "small rectangular pieces" and "small pieces [which are cut] both lengthwise and widthwise" may be immaterial, the Court finds the latter definition to be more in line with the somewhat more ambiguous word "chips" used in the patent. See '780 Patent, col. 1, line 55 ("paper chips"); id. at col. 2, line 43 ("chips of material"); id. at col. 3, lines 37 ("small paper chips"). The Court adopts the construction proposed by Fellowes and Michilin and FINDS that a "cross-cutting cylinder" in Claim 12 is a "device for cutting paper that has a generally cylindrical overall shape and cuts materials into a number of small pieces both lengthwise and widthwise."

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C. Cross-Laminated Section

The parties seek a construction of the term "cross-laminated section," which appears in both the preamble and bodies of claims 1 and 21. The preambles of claims 1 and 21 recite "[a] method of injection molding a plastic product, with a cross-laminated section that includes a first plastic layer and a second plastic layer . . . ." 268 Patent, col. 8, lines 11-13; col. 10, lines 53-55 (emphasis added). The bodies of the claims recite, in step (e) of the claimed method:
(e) solidifying the flowed second plastic in the second-layer-defining-mold-cavity-section to thereby form said second plastic layer, so that the second plastic layer has a second-direction-flow-record which is positively different from said first-direction-flow-record, to thereby form said plastic product with said cross-laminated section that includes both the first plastic layer and the second plastic layer.

'268 Patent, col. 8, lines 37-45; col. 11, lines 11-19 (emphasis added).

As an initial matter, the court notes that Turn-Key has directed its arguments towards the language appearing in the preambles of claims 1 and 21, and it appears that it wishes the court to construe this preamble language. However, claim preambles do not always limit the scope of the claimed invention, and, in fact, the Federal Circuit has noted that "generally, . . . the preamble does not limit the claims." DeGeorge v. Bernier, 768 F.2d 1318, 1322 n.3 (Fed. Cir. 1985). Later cases have clarified, however, that "a claim preamble has the import that the claim as a whole suggests for it," and "when the claim drafter chooses to use both the preamble and the body to define the subject matter of the claimed invention, the invention so defined, and not some other, is the one the patent protects." Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed. Cir. 1995). In this case, the same language that appears in the preamble also appears in the body of the claims, i.e. a "cross-laminated section that includes both the first plastic layer and the second plastic layer." Thus, even if the preamble language does not limit the '268 claim scope, this particular term does limit the claims by virtue of its inclusion in the claim body, and therefore the court will construe this term.

The claim recites a "plastic product with said cross-laminated section that includes a first plastic layer and a second plastic layer." Thus, by its own terms the claim requires that the cross-laminated section contain at least two different layers: the first plastic layer and the second plastic layer. Furthermore, the claims dictate that the first plastic layer and second plastic layer that form the cross-laminated section have flow records that are "positively different." '268 Patent, col. 8, lines 37-45. As discussed above, the court has construed "positively different" to mean definitely or certainly not alike. Therefore, the claims themselves define "cross-laminated section" as a section of the injection molded plastic product that contains both a first and a second plastic layer, where the first and second plastic layers have definitely different flow records.

As it did with respect to the meaning of "positively different," Koito argues that "cross-laminated section" requires that the flow records of the two layers intersect at 90 or substantially 90 degree angles. In making this argument, Koito raises many of the same arguments that it did with respect to its proposed construction of "positively different," including its reliance on the preferred embodiments, which show 90 degree angles between flow records in the cross-laminated section. The court rejects those arguments here for the same reasons as it did above. However, with respect to the "cross-laminated section" limitation, Koito also marshals an extensive array of technical dictionaries and treatises that define a "cross-laminate" as "a laminate in which the grain direction of some layers of material is oriented at right angles to the grain of the remaining layers." J. Shields, Adhesives Handbook 341 (3d Ed. 1985); see also A. Landrock, Adhesives Technology Handbook 21 (1985) (defining cross laminate as "[a] laminate in which some of the layers of material are oriented at right angles to the remaining layers with respect to the grain or strongest direction in tension"); McGraw-Hill Dictionary of Scientific and Technical Terms 455 (4th Ed. 1989) (defining cross-lamination as "construction of a laminated composite material so that some layers are oriented at right angles to the other layers with respect to the grain or the strongest direction in terms of tension"); T. Whelan, Polymer Technology Dictionary 93 (defining cross-laminate as "[a] laminate in which some of the layers of material are oriented approximately at right angles to other layers; used to make, for example, strong film for packaging").

Based on the breadth of technical materials Koito presents and the consistency of the definitions provided therein, it seems clear that "cross-lamination" ordinarily does refer to layers oriented at 90 degree angles to one another, and thus Koito's proposed definition of "cross-laminated section" is more consistent with the ordinary understanding of "cross-laminate" in the polymer arts than is Turn-Key's. However, a patentee is free to depart from the ordinary meaning of a term like "cross-laminated section," so long as the patentee's definition is provided in the intrinsic evidence. See Bell Atl. Network Servs., Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001); Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1249 (Fed. Cir. 1998). Here, as discussed above, the patent claims themselves define the cross-laminated section as including two layers that have "positively different" flow records, and the patent uses "positively different" to refer to angles other than 90 degrees. That the other "positively different" angles are between flow directions rather than flow records does not change the fact that the patentee clearly did not use the phrase "positively different" to refer to angles of only 90 degrees. And, because a cross-laminated section is defined as including two layers with positively
different flow records, the broad meaning of "positively different" espoused by the patentee results in an equally broad meaning of "cross-laminated section."

For the reasons discussed above, the court construes "cross-laminated section" to mean a section of the injection molded plastic product that contains both a first and a second plastic layer, where the first and second plastic layers have positively different flow records--meaning that the flow records of the two layers are definitely not alike.

F. Cross Support Structured for Support of the Person's Leg

Brike contends the term "cross support structured for support of the person's leg" means a support which contacts the leg. Brike relies on the same arguments as for the term "foot and leg support."

Invacare contends the term "cross support" should be construed to be a support that supports the leg by contacting the foot, ankle, or leg, but does not necessarily require contact with the leg. Invacare also relies on its same arguments.

For the reasons just stated, I construe "cross support structured for support of the person's leg" to mean a support that supports the leg by contacting the foot, ankle or leg, but does not necessarily require contact with the leg.

6. Claim 10: "cryogenic" and "cryogenically"

"Cryogenic" and "cryogenically" are construed to mean "pertaining to or causing the production of low temperatures."

III. "Cup Shaped"

Finally, both Claims 1 and 5 require a "cup shaped" cover and holder. ( '969 Patent Col 5, Ln. 49); ( '969 Patent Col 6, Ln. 12, 17). U.S. Can argues that the term "cup shaped" should be construed to mean "generally round; although the base can also be generally rectangular, star shaped, or another preferred shape," as is stated in the specifications for the '969 Patent. (P Resp. 11). Limited argues that the term "cup shaped" should be construed to mean "a structure formed by a generally round or circular sidewall . . . ." (D Mem. 14).

The Federal Circuit has made it clear that "claims must be read in view of the specification, of which they are a part [that] the specification 'is always highly relevant to the claim construction analysis [and that] usually, it is dispositive.'" Phillips, 415 F.3d at 1315 (quoting Markman, 52 F.3d 967 at 979, and Vitronics, 90 F.3d at 1582). The Federal Circuit has also stated that "the inventor's lexicography governs." Phillips, 415 F.3d at 1316. In the instant action, the summary of the invention states that the patent "includes a cup shaped generally circular or rectangular holder" and the specification states that the cup-shaped base is "generally round [even though] it can also be generally rectangular, star shaped, or another preferred shape." ( '969 Patent Col 1, Ln. 51-52); ( '969 Patent Col 2, Ln. 32-34). It is clear from this language in the patent that the term "cup shaped" is intended to include a hollow structure that is generally round, although it can also include hollow structures that are generally rectangular, star-shaped, or any other shape.

Limited argues that the prosecution history of the '969 Patent supports its interpretation of the term "cup shaped." Specifically, Limited argues that the original Claim 1, which was rejected by the Patent Examiner as being anticipated by United States Patent Number 6,155,451, Pietruch et al. ("Pietruch Patent"), did not include the "cup shaped" limitation. Accordingly, Limited argues that U.S. Can "is now estopped from arguing that its patent covers anything other than [round] cup shaped tins." (D Mem. 13). The Federal Circuit has stated that "the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the
innovation in the course of prosecution, making the claim scope narrower than it would otherwise be." Phillips, 415 F.3d at 1317. However, Limited's interpretation of the prosecution history of the '969 Patent is misplaced. Limited correctly states that the Patent Examiner did reject Claim 1 for anticipating the Pietruch Patent. However, the Examiner did not in any way state that the rectangular shape of the prior art was the reason that the original Claim 1 was rejected. Moreover, the prosecution history shows that the original Claim 1 was also rejected for being anticipated by United States Patent Number 5,879,151, Schultz et al. ("Schultz Patent"), which discloses a round base. If U.S. Can's amendment had limited Claim 1 to holders and covers that were circular or round, as Limited contends, Claim 1 would still have been anticipated by the Schultz Patent. Accordingly, the prosecution history in this case does not support Limited's contention relating to the meaning of the term "cup shaped." Therefore, based on the above, we agree with U.S. Can and construe the term "cup shaped" to mean a hollow structure that is "generally round" or "generally rectangular, star shaped or another preferred shape."

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6. Claim 15 ("curved along the longitudinal axis")

Claim 15 of the '286 patent uses the term "curved along the longitudinal axis" in the following context: "An ultrasonic instrument according to claim 7, wherein the cutting surface of the cutting jaw is curved along the longitudinal axis of the instrument." '286 Patent, Claim 15 (emphasis added). Plaintiff's proposed construction of the term is: "Deviating from a straight line along the lengthwise dimension," while defendant's proposed construction is: "Curved outwardly and downwardly in the distal direction."

Defendant urges that its proposed construction is appropriate because the intrinsic evidence in the patent abstract and specifications describes a cutting jaw that "is curved outwardly and downwardly." See '286 Patent, Abstract ("The cutting jaw has a blade surface which is curved downwardly and outwardly in the distal direction with respect to the longitudinal axis . . . "), 1:65-67 ("The cutting jaw has a blade surface which is curved outwardly and downwardly along its surface and thus, curved with respect to the axis of vibration"), 4:26-28 ("Cutting jaw 58 includes a curved blade surface 59 that slopes downwardly and outwardly in the distal direction."), Figure 4. Plaintiff argues, however, that the references to "outward" and "downward" in the intrinsic evidence indicate that the patentees clearly knew how to include explicit language in the claims if they wanted to, and chose not to do so.

As noted in Phillips, the specifications are properly consulted in order to ascertain the ordinary meaning to be given to claim terms, particularly where the claim terms themselves are vague. See Phillips, 415 F.3d at 1315. However, as discussed above, courts must avoid importing limitations from the specifications into the construction of the claims. To avoiding importing limitations, "it is important to keep in mind that the purposes of the specification are to teach and enable those of skill in the art to make and use the invention and to provide the best mode for doing so." Phillips, 415 F.3d at 1323.

One of the best ways to teach a person of ordinary skill in the art how to make and use the invention is to provide an example of how to practice the invention in a particular case. Much of the time, upon reading the specification in that context, it will become clear whether the patentee is setting out specific examples of the invention to accomplish those goals, or whether the patentee instead intends for the claims and the embodiments in the specification to be strictly coextensive. . . . The manner in which the patentee uses a term within the specification and claims usually will make the distinction apparent.

Id.

In this case, while the intrinsic evidence does describe a cutting surface that is curved outwardly and downwardly, nothing in the intrinsic evidence requires that the cutting surface be so curved. Indeed, as Ethicon's counsel acknowledged at the Markman hearing, the cutting surface could be curved along the lengthwise axis "up or down," as long as it did not curve "side to side" - which curvature, the Court notes, would no longer be along the longitudinal axis, but a curve along the latitudinal axis. See Markman Tr. at 115 (emphasis added). Additionally, as Tyco argues, the intrinsic evidence demonstrates that the patentees clearly knew the appropriate terminology to use in their claims had they sought to limit their claimed invention to one with a blade surface that curved outward and downward; the patentees chose not to do so. n10 Accordingly, the Court will not import any limitations from the specification into its claim construction and will adopt plaintiff's proposed
construction: "Deviating from a straight line along the lengthwise dimension." n11

The parties also dispute whether the patent background and prosecution history are relevant and, if so, the import of these sources. Defendant argues that these sources (both of which describe blades that curve outwardly and downwardly) indicate a specific need that the patentees sought to address, by remediating past deficiencies in earlier technology. See Def. Claim Construction Br. at 19-20 & n.11, 22-23 (citing, inter alia, CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1160 (Fed. Cir. 1997) ("In construing claims, the problem the inventor was attempting to solve, as discerned from the specification and the prosecution history, is a relevant consideration."); Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1347-50 (Fed. Cir. 2004) (finding that prosecution history was relevant to the interpretation of claim terms, given that the prosecution history included statements made regarding an earlier and related patent)). Plaintiff argues that defendant's suggestion that the patent history is relevant and supports its construction is "legally and factually wrong," given that (1) the law provides that the prosecution history cannot be used to "enlarge, diminish or vary the limitations of the claims," (2) the inventions in the earlier patents differed from the '286 Patent, and (3) the patent history demonstrates that if the inventors had wanted to use the term "outwardly and downwardly," they knew how to do so. See Pl. Claim Construction Br. at 25, Pl. Reply Br. at 7.

The Court declines to consider the patent background and prosecution history, however, because the claim language and intrinsic evidence provide adequate guidance to construe the claims. Moreover, the Court agrees with plaintiff's contention that the patent history in this instance is ambiguous - it could be read as demonstrating that the inventors sought to remedy a problem by using a blade surface that curves "outwardly and downwardly," or it could be read as indicating that the patentees knew how to specify the "outward and downward" direction of the blade if they wanted to, and chose not to do so. Cf. Phillips, 415 F.3d at 1317 (noting, "because the prosecution history represents an ongoing negotiation between the [Patent & Trademark Office] and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes").

n11 At the Markman hearing, counsel for Ethicon also argued that plaintiff's proposed use of the phrase "deviating from a straight line . . . " was contrary to the claim language, which provides that the blade surface is "curved along the longitudinal axis." See Markman Tr. at 117-18 (plaintiff's language "contradicts the claim language itself where you have language that says you must curve along the axis, and then you are saying, well, it can deviate from the axis, that's just contrary to the plain language of the claims"). The Court is constrained to disagree based on the claim language. Plaintiff's proposed language - "deviating from a straight line . . . " is simply plaintiff's description of the curvature of the blade; the balance of plaintiff's proposed construction describes the nature of the curvature - "along the lengthwise dimension." Contrary to Ethicon's contention, the claim language does not provide that the blade surface exactly follows the longitudinal axis - if it did, the blade surface would not be curved at all, but would be straight - instead, the claim language provides that it is curved "along the longitudinal axis" - i.e., curved in the up or down direction.

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II. "Curved Along the Longitudinal Axis" in the '286 Patent

Next, plaintiff contends that while the Court adopted its construction for this claim term as "deviating from a straight line along the lengthwise dimension," see Claim Construction at 26, the Court should clarify its comments regarding this claim term because "the Court's opinion may be read to suggest an apparent misinterpretation that is inconsistent with this construction and will lead to confusion in applying this term for purposes of determining infringement and validity." Tyco Motion at 2. Tyco refers to the Court's comments that the cutting surface would not curve "side to side," but only "in the up or down direction." Claim Construction at 25, 26 n.11. Tyco argues that the claim language "is not so limiting" and that by suggesting "that the curve must be in the up or down direction, the Court appears to be doing precisely what it avoided doing in rejecting Ethicon's 'outwardly and downwardly' construction - importing a limitation that is not present in the claim language." Tyco Motion at 2. Ethicon opposes Tyco's motion, arguing that "[u]nder the guise of seeking 'clarification' of [the Court's] construction, [plaintiff] seeks to change it entirely - and impermissibly - in a way that would eliminate an express limitation from the claim." Ethicon Opp. at 5.

Because reconsideration is appropriate where a need is shown to correct a clear error of law, at oral argument the Court granted Tyco's motion for the purpose of considering whether the Court's comments in its Claim Construction improperly

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Thus, blade curves up, down, or to one side or the other is not static and is only defined by the perspective of the user. "outward" and "downward" in the specification suggests that they knew how to articulate that curvature if they had sought the longitudinal axis. Further, as the Court noted in its Claim Construction ruling, that the inventors used the descriptions of direction with respect to the longitudinal axis" suggests that the surface could curve in other directions and still be along the Patent Abstract describing a cutting jaw with "a blade surface which is curved downwardly and outwardly in the distal curved." See Claim Construction at 23-25 (citing, inter alia, '286 Patent, Abstract, 1:65-67). Indeed, the language in the specifications into its construction of the claims, and "nothing in the intrinsic evidence requires that the cutting surface be so "outwardly and downwardly" "with respect to the longitudinal axis," the Court must avoid importing limitations from the specifications into the construction of the claim term at issue. As the Court addressed in its Claim
illustrate Tyco's characterization of the "longitudinal axis" as a line, rather than a plane. These conflicting analogies from which they deviate along this axis to from the curve." Tyco Reply [Doc. # 67] at 5 n.3. These conflicting analogies that "what [plaintiff] wants the Court to do is rewrite the claim to remove an express limitation." Ethicon Opp. at 6. As it did in the original claim construction phase, Ethicon also refers to the prosecution history of the patent to argue that the inventors intended a blade surface that "curved outwardly and downwardly" to improve on ultrasonic instrument technology by allowing the user to vary the force applied by the blade surface by adjusting the location of the tissue on the blade. Id. at 10. Ethicon cites the deposition testimony of one of the two named inventors of the patent discussing this improvement and stating he never considered a blade that curved "outward," "instead of up or down." Id. at 11 (citing deposition of Corbett Stone, Ethicon Opp. at Ex. 1 at 144:6-8, 161:21-22).

Ethicon also addresses an argument advanced by Tyco - that because the instruments are designed to rotate and be used in multiple different orientations, there is no meaningful difference between a cutting surface that curves up and down or side to side - contending that this explanation conflicts with the language of patent, which specifies a curve along the longitudinal axis. Ethicon compares the curved cutting surface described in the claim language to a road going straight, due North, ")it may go down a hill (i.e., curve downward), or it may go up a hill (i.e., curve upward), but it continues going straight North. Its surface is curved along the longitudinal axis. If its surface were the cutting surface of a cutting jaw, the cut it would make would be a straight line." Ethicon Opp. at 7. Ethicon compares a surface curving "side to side" to a road that is also going straight, due North, and then turns West, "now its surface is curving away from the longitudinal axis. If its surface were the cutting surface of a cutting jaw, the cut it would make would be a curve." Id. Tyco demonstrates an alternative illustration of "water shot under high pressure from a pipe pointing upwards. The tube of the pipe defines a longitudinal axis. As the water exits the pipe and shoots into the air, it will curve off this longitudinal axis in any number of ways (left, right, forward, backward, etc.). These curves are deviations along the longitudinal axis regardless of the direction from which they deviate along this axis to from the curve." Tyco Reply [Doc. # 67] at 5 n.3. These conflicting analogies illustrate Tyco's characterization of the "longitudinal axis" as a line, rather than a plane.

The Court agrees that Tyco's illustration is more accurate and that Ethicon's comparison and arguments would import a limitation from the specifications into the construction of the claim term at issue. As the Court addressed in its Claim Construction, although the specification describes an embodiment with a cutting jaw having a blade surface curved "outwardly and downwardly" "with respect to the longitudinal axis," the Court must avoid importing limitations from the specifications into its construction of the claims, and "nothing in the intrinsic evidence requires that the cutting surface be so curved." See Claim Construction at 23-25 (citing, inter alia, '286 Patent, Abstract, 1:65-67). Indeed, the language in the Patent Abstract describing a cutting jaw with "a blade surface which is curved downwardly and outwardly in the distal direction with respect to the longitudinal axis" suggests that the surface could curve in other directions and still be along the longitudinal axis. Further, as the Court noted in its Claim Construction ruling, that the inventors used the descriptions of "outward" and "downward" in the specification suggests that they knew how to articulate that curvature if they had sought to so limit what they were claiming. Additionally, as Tyco argues, the instrument is meant to be rotated and thus whether the blade curves up, down, or to one side or the other is not static and is only defined by the perspective of the user.

Thus, the Court withdraws its comments regarding whether the blade surface could curve "side to side" as impermissible importing a limitation from the specification into the claim language. The language of the claim provides a curve "along the
longitudinal axis," and the Court's construction - "deviating from a straight line along the lengthwise dimension" - should not be read to limit that curvature to surfaces curving only up or down. 2

2 For the same reason that it rejected Ethicon's arguments concerning patent prosecution history in its Claim Construction, the Court declines to consider the patent background and prosecution history here. See Claim Construction at 25 n.10. Additionally, the inventor testimony to which Ethicon refers could just as easily be describing a preferred embodiment as suggesting a limitation in the claim language and thus is inconclusive. Further, while Ethicon claims that a blade that curved "side to side" would not achieve the enhanced blade force advantage described in the "Background" section of the patent, as Tyco noted at oral argument the patent also states that "the curved blade surface provides better visibility at the surgical site," see '286 Patent, 4:37-38, an advantage that would be gained even if the curve was "side to side."

Claim 6 and dependent Claim 8 of the '544 Patent include the claim term "curved blade surface" in the following context: "An ultrasonic instrument according to claim 1, wherein the jaw member includes a curved blade surface," '544 Patent, Claim 6 (emphasis added), and "An ultrasonic instrument according to claim 6, wherein the curved blade surface includes a longitudinally extending cutting edge," '544 Patent, Claim 8 (emphasis added). Plaintiff's proposed construction of the Claim 6 term is: "Blade surface that has a deviation from a straight line," while defendant proposes: "Surface adapted to be used for cutting that is curved outwardly and downwardly in the distal direction."

As in the case of the '286 Patent claim term, discussed above, defendant supports its proposed construction by pointing to the specifications in the '544 Patent that describe a blade surface that is "curved outwardly and downwardly." See '544 Patent 1:67-2:2, 4:31-55, Figure 4. Nevertheless, nothing in the '544 Patent requires that the blade surface be curved outwardly and downwardly and, as discussed above, counsel for Ethicon acknowledged that the blade surface could curve upward, as well as downward. Markman Tr. at 115. Additionally, the presumption that similar claims in related patents should be construed consistently applies here, counseling for construing the '544 Patent claim term consistently with the '286 Patent claim term described above. See Omega Eng'g, 334 F.3d at 1334. Accordingly, the Court adopts plaintiff's proposed construction of the claim term.

11. "curved [curving] in a non-radial direction of the stent"

This phrase is found only in the '255 patent, specifically in claims 11-18, and 25. See Joint Statement, '255 Patent. Plaintiffs contend that "curved [curving] in a non-radial direction of the stent" should be construed to mean "curved or curving such that the [arcuate U-shape or flexure member curved portion] does not extend substantially outside the outer surface or inside the inner surface of the tubular wall." Defendants contend that the phrase should be construed to mean "curved in at least one direction other than the radial direction." The intervenor, by contrast, contends that the proposed construction should be "curving along the tubular surface." 7

7 Although the intervenor has presented a differing proposed construction, the intervenor's supporting brief does not include argument regarding the particular proposed construction at issue.
For support of their positions, plaintiffs rely on the prosecution history, while defendants base their arguments on a practical application of directional concepts to the claim language. Specifically, plaintiffs contend that the prosecution history of the '255 Patent reveals that the phrase at issue was included in order to distinguish the claimed invention from the prior art Orth patent, which was directed to a stent that had connectors projecting outside the outer surface of the tubular wall in order to keep the stent in place against the blood vessel wall. The '255 Patent, by contrast, covers flexure members that do not extend substantially outside or inside the surface of the tubular wall, and which instead stay within the curved plane of the walls. For that reason, plaintiffs assert that their proposed construction, which would construe flexure members curving "in a non-radial direction of the stent" as flexure members that do not "extend substantially outside the outer surface or inside the inner surface of the tubular wall," is consistent with the prosecution history.

Defendants, for their part, preliminarily define the three directions applicable to cylindrical stents -- the radial direction (i.e., extending away from the stent wall), the longitudinal direction (i.e., extending along the stent's length), and the circumferential direction (i.e., extending around the stent's circumference). From this premise, they argue that "curving in a non-radial direction" of a stent must be construed to mean simply that a stent's flexure members or connectors must curve in at least one non-radial direction. In other words, as long as the connectors curve in a non-radial direction (e.g., the longitudinal or circumferential direction), then the claim language is satisfied, regardless if the connector also curves in a radial direction.

Given that neither party has squarely invoked reliance on either the claim language or the specification, the court turns straight away to the prosecution history. A review of the prosecution history reveals that the '255 Patent applicants, in traversing the patent examiner's earlier prior art rejections regarding certain claims, represented to the examiner that: (a) the flexure members claimed by the patent "comprise[] a curved shape, curved in a plane of the pair of side walls"; (b) that "projecting barb 22" of figure 4A of the Orth patent "does not curve in the plane of the pair of side walls"; and (c) that "projecting barb 22" of figure 4A of the Orth patent "does not comprise a U-shape in a non-radial direction of the stent," whereas the claimed flexure member does. See Jelenchik Decl., Ex. E at AB0732126-27. Looking in turn at figure 4A of the Orth patent, and specifically at "projecting barb 22" -- labeled as element 22 on the figure -- it is apparent that element 22 projects outside the stent walls - i.e., in a radial direction. See, e.g., U.S. Patent No. 5,591,197 ("Orth Patent"), Fig. 4A; see also id. at 8:52-56 (describing "projecting barb 22" as "form[ing] radially outwardly"). 8 Comparing both Figure 4A of the Orth patent and the prosecution history to the claim language, therefore, the logical conclusion to be reached is that any outward (or inward) projection from the stent walls constitutes a curvature in a radial direction. And since the claim language covers flexure members that extend in a "non-radial direction," the claim language necessarily refers to flexure members that do not significantly project either outwardly or inwardly from the tubular walls of the stent. This is so, regardless whatever other directions in which the flexure members are curved. Defendants' proposed construction, which would cover stents with flexure members curved in both the radial and non-radial directions, cannot be reconciled with the prosecution history or the claim language.

Footnotes

8 The Orth Patent -- along with other patents referenced by the parties -- was not originally submitted for the court's consideration in connection with the present motion. At the hearing on the present matter, however, the court highlighted the parties' failure to include relevant documentation, and plaintiffs thereafter submitted the Orth Patent and other prior art references.

Accordingly, the court hereby adopts plaintiffs' proposed construction, and construes "curved [curving] in a non-radial direction of the stent" as: "curved or curving such that the [arcuate U-shape or flexure member curved portion] does not extend substantially outside the outer surface or inside the inner surface of the tubular wall."

B. Proper Construction of the Term "Curved Internal Passageway"
Donnelly argues their GMT900 power sliding rear window does not infringe upon the '769 Patent due to the absence of:

[a] block or bracket that forms a passageway that is curved in shape and that is internal to the block or bracket to guide a drive cable from an entry point into proper alignment with a cable channel.

[Def.'s Br., Doc. No. 201, p.10]. As discussed supra, Phillips instructs this Court to construe the phrase "curved internal passageway" not only through examination of the actual claim language, but within the context of the entire patent.

Both Dura and Donnelly concede in their briefs that the phrase "curved internal passageway," as used within the '769 Patent, is clear and unambiguous. 1 [See Def.'s Br., Doc. No. 201, p.8; Pl.'s Br., Doc. No. 250, p. 8]. Thus, the Court agrees with the parties, and in construing the instant claim of the '769 Patent, adopts the construction outlined by the Plaintiffs in their brief:

"[t]he plain meaning of the claim language is an internal passageway that is curved." [Pl.'s Br., Doc. No. 250, p.9].

1 In its brief, Donnelly characterizes the "curved internal passageway" as being "serpentine" in nature [See Def.'s Br., Doc. No. 201, p.8], a distinction Dura regards as unnecessarily narrowing the '769 Patent's terms [See Pl.'s Br., Doc. No. 250, p.9]. While the Court notes that Dura itself describes the required passageway as "serpentine" within the "Preferred Embodiments" section of the '769 Patent [See '769 Patent, Def.'s Ex. 1, p.MD000923 ("...A serpentine passageway 60 extends from socket 58, guiding drive cable 42. . .")], the Court holds this distinction to be one which does not make a difference in the outcome of this motion, and thus declines to resolve this dispute between the parties.

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1. "Curved shank"

The main dispute between the parties on construction relates to the claim requirement of a "curved shank," construed by the district court to mean a shank that "has a bend or deviation from a straight line without sharp corners or sharp angles." Stryker challenges that interpretation, arguing that the better reading of the term is "a nonangular continuous bend."

When construing claims, a court must begin by "look[ing] to the words of the claims themselves . . . to define the scope of the patented invention." Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)). The task of comprehending those words is not always a difficult one. "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." Id. at 1314. "[C]urved," as it is used in the '444 patent, is not a "term[] that ha[s] a particular meaning in a field of art." Id. Its ordinary meaning encompasses "curvature" made up of small discontinuities. Consider, for instance, an archway made from rectangular bricks. The bricks are at angles with respect to each other, but the overall effect is to describe an arc. It would be unreasonable to say that such an archway is not "curved." If the word "curved" is given its ordinary, lay meaning, the district court's construction is correct.

Stryker argues that "curved" is implicitly assigned a different, narrower meaning by virtue of the context in the written description in which it appears. See id. at 1316 ("[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs."). That argument is based on a particular manner of implanting the nail disclosed and touted by the written description. The '444 patent's Summary of the Invention section states that "[t]he tapered shape of the present invention permits it to be inserted into a cavity formed by a broach tool having the same shape as the nail." '444 patent col.1 ll.49-51. A broach tool is "essentially a rasp having the same profile as the hole it is intended to form." Id. col.3 ll.27-28. The patent teaches that broaching is advantageous, since, inter alia, it "generally causes less tissue damage than a rotating drill bit or reamer." Id. col.3 ll.32-33. However, "[b]roaching is only suitable for certain shapes of holes and objects" -- in particular, it is useful only for an object that "largely passes through its own envelope." Id. col.3 ll.37-40. "Objects with angled bends or small radius curves (relative to the object length) do not pass through their own envelope on insertion, and are not well suited to
The parties agree that claim 7's limitation that the arm "curves forwardly slightly" means that the arm can have a small base unit as it proceeds upwardly away from said longitudinal axis of said handle.

Stryker's argument is essentially an assertion that since the patent says broaching is desirable, the term "curved" must be construed to cover only embodiments whose curvature allows them to be inserted into a broached hole, excluding "angled bends or small radius curves." That assertion is flawed: it is an attempt to import a feature from a preferred embodiment into the claims. See Phillips, 415 F.3d at 1323 (“Although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”). Neither use with a broaching tool nor suitability for such use is claimed. Indeed, the application which led to the '444 patent originally included claims to the method of implanting the nail with a broaching tool, but the patentee elected to withdraw those claims from the application after the Examiner noted they were directed to a separate, distinct invention.

The fact that usability with a broaching tool is merely a feature of a preferred embodiment provides sufficient grounds for refusing to read "curved" narrowly. We also note, though, that the patent's Claim 13 (not asserted by Acumed in this case) covers "[t]he nail of claim 1 having a profile that substantially passes within its own envelope." '444 patent col.6 ll.26-27. "[T]he presence of a dependent claim that adds a particular limitation raises a presumption that the limitation in question is not found in the independent claim." Liebel-Flarsheim Co v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004); see also Wenger Mfg., Inc. v. Coating Mach. Sys., Inc., 239 F.3d 1225, 1234 (Fed. Cir. 2001); Comark, 156 F.3d at 1187; Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987). "That presumption is especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim, and one party is urging that the limitation in the dependent claim should be read into the independent claim." Sunrace Roots Enter. Co. v. SRAM Corp., 336 F.3d 1298, 1303 (Fed. Cir. 2003); see also Ecolab Inc. v. Paraclipse, Inc., 285 F.3d 1362, 1375-76 (Fed. Cir. 2002); Wenger Mfg., 239 F.3d at 1233 ("Claim differentiation . . . is clearly applicable when there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims."). If we were to give "curved" in Claim 1 the meaning which Stryker advances, Claim 1 would cover only nails that "substantially pass[] within [their] own envelope[s]." Such a restrictive reading would render Claims 1 and 13 identical in scope. Since independent claims are presumed to have broader scope than their dependents, the presumption is that Claim 1 should not be limited in the manner Stryker urges. For the reasons discussed above, that presumption has not been rebutted.

Stryker also argues that the district court's exclusion of "sharp corners or sharp angles" renders the construction insufficiently definite, since the court did not specify precisely how "sharp" is too sharp. However, a sound claim construction need not always purge every shred of ambiguity. The resolution of some line-drawing problems -- especially easy ones like this one -- is properly left to the trier of fact. See PPG Indus. v. Guardian Indus. Corp., 156 F.3d 1351, 1355 (Fed. Cir. 1998) (“[A]fter the court has defined the claim with whatever specificity and precision is warranted by the language of the claim and the evidence bearing on the proper construction, the task of determining whether the construed claim reads on the accused product is for the finder of fact.”); Modine Mfg. Co. v. U.S. Int'l Trade Comm'n, 75 F.3d 1545, 1554 (Fed. Cir. 1996) (whether claim limitation requiring diameter of "about 0.040 inch" embodied a matter of "technologic fact"); see also Abbott Labs. v. Baxter Pharm. Prods., Inc., 471 F.3d 1363, 1368 (Fed. Cir. 2006) (where result is the same under any reasonable construction, "we need not construe [the disputed] phrase with numerical exactitude."). Here, the accused product has a rounded-off six-degree angle in its shaft. A reasonable jury could have found that in the context of this sort of nail, a rounded bend of six degrees was not a "sharp angle." The jury's conclusion is bolstered by the testimony of Stryker's own technical expert, who noted in reference to the Stryker nail that "there's no sharp angle there." There may be some area of imprecision within the district court's "without sharp angles" construction, but this accused product is in no danger of falling within that area. The construction is correct, and the jury's finding that the Stryker nail possesses a "curved shank" is supported by substantial evidence.
amount of curvature. The only difference between the parties' proposed constructions is that Oreck refers to a small curvature "that is designed to be easily grasped by the hand." Joint Claim Constr. Statement at A-4. Oreck argues that this additional detail is justified by reference to the specification, which states that the "rounded compound curvature of arm surface 16 . . . is also helpful in that it tends to nest in the cupped inner portion 27 of the operator's closed hand 28 when arm 15 is grasped." '315 Patent at 4:4-8. But the language Oreck quotes does not purport to describe the slight curve contemplated by claim 7. Rather, as is clear from figures 3 and 7 of the '315 patent, the "rounded compound curvature of arm surface 16" to which the specification refers is the "curved outer rear surface" disclosed by claim two. This statement from the specification therefore has no relation to curvature along the length of the graspable arm, as described by claim 7. Accordingly, Oreck's additional language is unnecessary. The Court therefore construes claim 7 as simply permitting the graspable arm to have a small curvature along its length in the direction of the base unit.

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IV. Buttons curving from the front of the top surface to the top of the front surface (Claims 1, 6-10, 18-21)

The plaintiff's proposed definition is "curved buttons that run from the forward area of the top of the mouse to the upper area of the front of the mouse." The defendant's proposed definition is "the mouse buttons extend upwardly to a ridge from which the mouse's top surface slopes downwardly to the rear."

The Court finds the claim language to be sufficiently clear and self-explanatory, especially considering the detailed drawings contained in the specification, so that no further definition is necessary.

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II

On appeal, Hill-Rom asserts that KCI's original and modified triadynne beds infringe claims 1 and 10 of the '346 patent. Hill-Rom's principal argument on appeal is that the district court erred in construing the term "cushion," which is used in both claims 1 and 10. The court's claim construction error, Hill-Rom argues, resulted in an erroneous ruling of noninfringement.

The district court interpreted the term "cushion" to mean "an inflatable enclosure or bag, which, when inflated, should provide basic support and comfort, but which does not necessarily have to be inflated at all times." Hill-Rom argues that the term "cushion" should have been interpreted more broadly, to mean "an enclosure or bag capable of being inflated." In Hill-Rom's view, nothing in the claims, specification, or prosecution history requires that cushions provide basic comfort and support.

We reject Hill-Rom's arguments and hold that the trial court correctly construed the term "cushion" to mean a structure that provides basic support and comfort. The trial court's interpretation of the term "cushion" is consistent with the ordinary meaning of the word, which denotes an object providing some sort of support or comfort. See Webster's Third New International Dictionary 559 (1976 Ed.) (defining "cushion" as "a bag or case made typically of cloth, upholstery or matting that is stuffed with a soft, resilient material and used for sitting, reclining, or kneeling: pillow, pad"). Because the court's construction is consistent with the ordinary meaning of the term, we agree with KCI that the trial court did not import extraneous functional limitations into the claim. See York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572, 40 U.S.P.Q.2d (BNA) 1619, 1622 (Fed. Cir. 1996).

The trial court's interpretation of the term "cushion" is also consistent with intrinsic evidence from the '346 patent itself. The abstract of the disclosure emphasizes the support and comfort provided by the upper and lower inflatable layers, which are identified in claims 1 and 10 as consisting of sets of cushions. The abstract states that "the inflatable structure preferably has two components: a) lower inflatable layer which is selectively operable to provide basic support for the patient," and "a second inflatable layer including a plurality of zones for establishing optimal patient interface pressures and patient comfort levels." * In addition, the written description portion of the patent recites that the "lower support layer" and the "upper overlay assembly" operate in conjunction to provide support and comfort to the patient, See '346 patent, col. 13, ll. 31-55.
Moreover, the written description notes that the head section cushions of the lower layer "will lie under, and . . . will support, the patient's head," Id. at col. 9, ll. 41-48, and that "the lower inflatable layer has utility for supporting a patient directly, without the intervening upper support layer," Id. at col. 18, ll. 4-7.

* Citing 37 C.F.R. § 1.72(b), which provides that the abstract of the patent "shall not be used for interpreting the scope of the claims," Hill-Rom argues that it would be improper for us to consider the abstract in determining whether the district court correctly construed the claims of the '346 patent. Section 1.72(b), however, is a rule of the Patent and Trademark Office that governs the conduct of patent examiners in examining patent applications; it does not address the process by which courts construe claims in infringement actions. we have frequently looked to the abstract to determine the scope of the invention, See, E.g., United States Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1560, 41 U.S.P.Q.2d (BNA) 1225, 1230 (Fed. Cir. 1997); Stryker Corp. v. Intermedics Orthopedics, Inc., 96 F.3d 1409, 1412, 40 U.S.P.Q.2d (BNA) 1065, 1066 (Fed. Cir. 1996); Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1269, 229 U.S.P.Q. (BNA) 805, 810 (Fed. Cir. 1986), and we are aware of no legal principle that would require us to disregard that potentially helpful source of intrinsic evidence as to the meaning of claims.

the specification thus clearly teaches that one of the major objectives of the cushions recited in the claims is to provide support for the patient, even though that function may be performed in part by the upper support assembly. Because the patent contemplates that the lower layer may be used to support the patient directly, without the upper support layer, the lower layer must have the capacity to provide that function by itself.

Hill-Rom argues that the written description portion of the patent associates the function of providing comfort solely with the upper inflatable support layer, which claim 1 describes as "disposed generally above" the two longitudinal cushion sets. The written description, however, describes the upper layer as providing "optimal patient comfort," See id. at col. 2, l. 59, from which it can fairly be inferred that the upper layer can be adjusted to optimize the patient's comfort, but that the upper layer does not perform the entire task of providing comfort for the patient.

That inference is supported by an examination of independent claim 10. Claim 10, unlike claim 1, does not require an upper layer consisting of "an inflatable support layer disposed generally above said first and second cushion sets." instead, claim 10 requires only a "patient contacting assembly" between the patient and the first and second sets of longitudinal cushions. Nothing in the patent suggests that the "patient contacting assembly" of claim 10 necessarily provides all the required comfort and support. For purposes of claim 10, then, the lower layer, i.e., the layer consisting of sets of cushions, must be capable of providing whatever support and comfort is provided to the patient.

In arguing that the specification supports its broad construction of the term "cushion," Hill-Rom relies heavily on a sentence in the written description stating that the pressure in the working cushions of the invention will typically be equal within each cushion group "and will typically range between 0 and 20 inches of water." '346 patent, col 13, ll. 41-44. If the pressure inside the cushions can drop to zero, Hill-Rom argues, the cushions must not be required to provide comfort and support.

We do not attribute the same significance to that statement that Hill-Rom does. While the statement indicates that each cushion within the several sets of cushions in the lower layer of the patented support assembly has the capacity to operate at a pressure range from zero to 20, and thus particular cushions may not provide support and comfort at some point, such as during the patient rotation process, that does not cast doubt on the correctness of the district court's definition of the term "cushion" as a structure capable of providing comfort and support. The fact that at some point during the operation of the device a cushion may cease to have a "cushioning" effect does not make it any less a cushion, just as an automobile tire is no less a tire when it is deflated, even though it functions in its normal manner only when it is filled with air.
The sole issue presented with the parties' request for a partial Markman determination is the meaning of the term "cushioning" as it appears in the plaintiff's patent claims. The '401 patent includes 22 claims which describe an article of footwear which includes an "angled strip of resilient elastic material" that acts as an "external cushioning spring" fixed on the midsole such that a vertical force on said footwear created by a wearer of said footwear striking said outsole on a solid surface causes said angled strip to bend between said ends and absorb a portion of said force. The term "external cushioning spring" appears in claims 1, 2, 15 and 16 of the '401 patent and claims 1-4 and 45-48 of the '051 patent.

The ordinary and accustomed meaning of the term "cushioning" as defined by the dictionary, and as pertinent here, is "to protect against or absorb shock." Websters II, New Riverside University Dictionary (1984), p. 340.

The '041 patent abstract explains that the invention is useful because it acts to "absorb a portion of the force" created by the wearer when he walks, runs or engages in other sporting activities. In the summary of the invention, the patentee explains that the proposed angled elastic strip placed on the mid sole of the shoe is "fixed in a manner" such that the angled strip bends and absorbs a portion of the force. The specification also explains two particular advantages of the design and placement of the angled strip: the first being a "stabilizing effect" to minimize pronation; the second is expressed as follows:

The spring is particularly advantageous when used on athletic footwear for persons running at high speeds, e.g. during races, and for persons who constantly jump up and down, e.g. in basketball. Because of the shock-absorbing effect of the springs the vertical impact forces associated with such sports are reduced, and thus chronic and acute injuries to the lower limbs [are] prevented or reduced.

The defendant argues that the term "cushioning" as used in the plaintiff's patents necessarily includes a reduction in vertical impact forces to prevent or eliminate injuries to the lower limbs of the wearer. Defendant relies upon the above quoted language in the patent specification and the use of the term "cushioning" in prior art. Plaintiff contends that "cushioning" simply means the absorption of a portion of the vertical force of the shoes' wearer.

At the Markman hearing, defendant offered expert testimony from Dr. Joseph Hamill, a professor of biomechanics from the University of Massachusetts. Dr. Hamill is an expert in footwear biomechanics and, according to his testimony, the term "cushioning" as used in the footwear design industry generally means the absorption, reduction or "attenuation" of shock from vertical forces. Thus, in this case, there is no meaningful distinction between a layman's understanding of the term "cushioning" and that term as it is used in the footwear design industry. Therefore, the ordinary and accustomed meaning of the term "cushioning" is the absorption of vertical force. This is the definition urged by the plaintiff; because the defendant urges a different interpretation given other language in the file specification, defendant bears the burden of proving that its alteration is required. See K-2 Corp., 191 F.3d at 1362.

--- Footnotes ---

3 Dr. Hamill's industry definition appears on page 19 of his power point presentation. While Dr. Hamill ultimately agrees with Nike's definition of the term "cushioning," he did so only in reference to plaintiff's patent.

--- End Footnotes ---

The plaintiff's proffered construction is consistent with the actual claim language and the ordinary and accustomed meaning of the term "cushioning." The claims themselves repeatedly reference the absorption of force. The language of the specification relied upon by the defendant, when viewed in its full context, states a claimed advantage. As the court in Dow Chemical Co. v. Astro-Valcour, Inc. held, a stated advantage in a claim specification may not be relied upon to "limit the scope of the invention itself by adding a requirement not found there." 47 F. Supp. 2d at 298. Specifications may be used to assist in interpreting a claim, but may not be used to alter a claim. E.I. DuPont, 849 F.2d at 1433. Defendant's counter definition would violate this principal of claim construction. Further, defendant's own expert was unable to quantify the amount of force absorption necessary to prevent injuries given the large number of variables involved in activity related injuries. Thus, the plaintiff's failure to specify a claimed absorption rate does not create an ambiguity in the claim terms.

--- Footnotes ---

4 During oral argument, defendant argued that the amount of force absorption performed by several of the accused devices...
found on Nike shoes is so infinitesimal as to have no significance. The court notes that whether the accused devices have any viable function, so as to be patentable at all, goes to a separate question regarding patent viability and/or infringement defenses-- issues not presently before the court.

Finally, the defendant claims that the court must accept its claim construction because to do otherwise would render the term "spring" superfluous. Defendant argues that because plaintiff has defined the term "spring" as a device that absorbs a portion of force, the term "cushioning" must mean something else.

Defendant's argument construes the plaintiff's deposition testimony and his claim construction far too narrowly. Plaintiff's definitions of the terms "cushioning" and "spring" are not identical: plaintiff defines a "spring" as a device that absorbs some degree of force and then returns that force; plaintiff defines "cushioning" as absorbing and reducing vertical impact force. As defined by the plaintiff, "cushioning" does not repel force and a "spring" would not necessarily reduce vertical impacts.

CONCLUSION

Based upon the foregoing, I recommend that the plaintiff's definition of the term "cushioning" be sustained and the alternative definition urged by the defense be rejected. As such, the term "cushioning" should be construed to mean: "to reduce vertical impact forces."

In his Findings and Recommendation, Judge Ashmanskas found that "cushioning" had an ordinary and customary meaning, as defined by the dictionary. He concluded that plaintiff's proffered claim construction was consistent with that dictionary meaning.

Defendant contends that there is no ordinary and customary meaning of "cushioning" to one of ordinary skill in the art, and that Judge Ashmanskas should have resorted to the specification and to prior art in construing the claims. Nike urges that "cushioning" be construed to mean "to reduce vertical impact forces by a meaningful amount, i.e., absorb shock in an amount sufficient to prevent or reduce chronic or acute injuries to the lower limbs of the wearer."

I agree with Judge Ashmanskas that there is "no meaningful distinction" between a layman's understanding of the term and that term as it is used in the footwear industry. I further agree that the claim language is consistent with that understanding. I am not persuaded by defendant's contentions that 1) Judge Ashmanskas should have looked for guidance to the specification or the prior art and 2) that the specification and the prior art support defendant's proffered construction.

Accordingly, I ADOPT Magistrate Judge Ashmanskas's Findings and Recommendation filed April 9, 2002 (doc. # 292). The term "cushioning" is construed to mean "to reduce vertical impact forces."

Infringement

Claim 1 of the '739 patent, from which the three remaining asserted claims depend, claims:

A bumper edge member for chairs and the like which have structural portions defining perimeter edges, the edge member comprising:

a continuous resilient member having an elongate body portion and a pair of spaced flanges extending outwardly from said body member, said flanges being located on said body member to receive therebetween a structural portion of a chair;
a first cushioning means defined in said body member, said first cushioning means including a hollow chamber defined in said body member to be located between said flanges in front of an edge of said structural portion;

a second cushioning means defined in said body member to be located between said flanges; and said second cushioning means being positioned in said body member to be located between a chair structural portion edge and said first cushioning means.

'739 patent, cols. 3-4, ll. 27-12 (emphasis added). Because the final element of this claim is expressed in means-plus-function language, the district court looked to the specification for descriptions of corresponding structures. See 35 U.S.C. § 112(6) (1994). The specification describes corresponding structures to the second cushioning means in the following context: "the second [air space] is the space between the edge of the plywood 22 or other structural member and the convex outer surface 14 of the section of the bumper edge member which extends between the flanges 11 and 12." '739 patent, col. 2, ll. 61-65. The specification also includes the following figure:

[SEE FIGURE IN ORIGINAL]

Based on the specification, the district court held the second cushioning means to include "that portion of the bumper edge with a convex surface and any equivalent shape having an air space between the bumper edge and the edge of the chair." The court then determined that a concave surface would be a section 112(6) structural equivalent to the claimed convex surface of this second cushioning means and found Infanti's chairs to infringe Gasser's patent literally.

Infanti argues that its concave structure does not fulfill the same function as the convex structure disclosed in the '739 patent, which function it defines as "supporting the bumper edge in maintaining its position on the chair edge . . . by providing support against lateral forces at the limited point of contact between the convex surface and perimeter edge of the chair, and thus diverting those forces away from the flanges to prevent the staples from being pulled out." Thus, Infanti argues, its concave bumper edges cannot be a section 112(6) structural equivalent to the claimed convex structure. See, e.g., Pennwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931, 934, 4 U.S.P.Q.2D (BNA) 1737, 1739 (Fed. Cir. 1987) (literal infringement of a section 112(6) structure is not possible where the identical function is not performed). To support its definition of the function of the second cushioning means, Infanti cites to statements made by Gasser while prosecuting the '739 patent. Infanti argues that Gasser disclaimed structures that do not form a limited contact area between the bumper edge and the chair edge, or that consist primarily of air space between these two edges.

Infanti's definition of the function performed by the second cushioning means improperly reads in a function not recited by the disputed claims. Claims 1-4 call for merely a structure that performs a cushioning function. The statements identified by Infanti come from portions of the prosecution history related to claim 5, which depends from claim 1 and states: "said second cushioning means includes a portion of said body member which is convex in shape relative to said body portion to provide a limited area of contact with respect to a structural portion engaged thereagainst." '739 patent, col. 4, ll. 24-28 (emphasis added). Claim 5 is not at issue in this case, and to the extent that these statements could have identified an additional function of the second cushioning means in claims 1-4, there was sufficient expert testimony for the court to find that Infanti's concave bumper provided a limited contact area and therefore would perform the function identified by Infanti. While greater than the contact area of a convex bumper edge or a bumper edge shaped like the letters "T" or "V," a concave bumper edge's contact area is also limited.

Infanti's argument that Gasser disclaimed any structure that consists primarily of air space is equally incorrect. The statement to which Infanti refers reads as follows: "And Claim 1 does not require that the second cushioning means include, a hollow chamber space. All that is required is that the second cushioning means be disposed between the first cushioning means and the structural portion of the chair which defines the perimeter edge." This statement was not made to overcome prior art and merely explains that the second cushioning means in claim 1 does not require an air space. It cannot preclude from consideration as a structural equivalent a concave bumper edge that consists primarily of air space.

We agree that a concave structure presents an equivalent means for performing the cushioning function identified in the patent, and hold that the district court did not err in considering Infanti's structure as an equivalent. Because we affirm the finding of literal infringement, it is unnecessary to address Gasser's argument that Infanti infringes the '739 patent under the doctrine of equivalents.
4. "A customer service station"

For its proposed construction, Foodie offers the following: "any area(s) from which a customer can be served." Jamba Juice proposes: "a specific location where an employee stands to dispense the refrigerated source liquid and delivers the consumer consumption vessel to the consumer. All elements contained within the customer service station are within reach of a stationary employee." The main disputes between the parties regarding "customer service station" are whether the claims are limited to a single station, whether a customer service station and product finishing station can be one station or must be separate, and the boundaries or size of a customer service station.

Regarding whether the patent precludes more than one customer service station, the Federal Circuit has repeatedly held that an indefinite article "a" or "an" in patent parlance carries the meaning of "one or more" in open-ended claims containing the transitional phrase "comprising." KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed. Cir. 2000); Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 977 (Fed. Cir. 1999); Abtox, Inc. v. Exitron Corp., 122 F.3d 1019, 1023 (Fed. Cir. 1997). When the claim language or context calls for further inquiry, courts consult the written description for a "clear intent to limit the invention to a singular embodiment." KCJ Corp., 223 F.3d at 1357. "When claim language or context suggests an ambiguity in application of the general meaning of an article, [the] court undertakes an examination of the written description and the prosecution history to ascertain whether to limit the meaning of "a" or "an." Id.

The Court notes that the claim uses "comprising" in conjunction with "a customer service station," which under Federal Circuit precedent does not preclude multiple customer service stations. The next step in the analysis requires courts to comb through the patent and determine if there was an overt attempt to limit the object or place associated with the article "a" or "an" to a single unit. In the present circumstances, there is no significant evidence in the specification indicating that the article "a" forecloses the possibility of more than one station. Jamba Juice argues that the definition of "station" is singular, and also that Figure 2 in the patent indicates two separate areas, thereby indicating (along with the claims) separate "customer service station" and "product finishing station" areas comprised of separate things. Jamba Juice claims that Foodie is trying to expand the construction such that the items the patent states are within the "customer service station" could be located in any part of the store without any relation to each other, thereby expanding the term "customer service station" to include most anything and everything. Jamba Juice's argument ultimately does not necessitate looking past the guidance provided by the Federal Circuit. While "station" is indeed singular, under Federal Circuit precedent the use of "comprising a" to reference a location or item means one or more unless otherwise limited in the patent. Finding no such limitation, the Court's construction of the term also does not preclude more than one "customer service station."

Regarding whether the "customer service station" must be a separate area from a "product finishing station," both parties note that the claims are silent on the question. Reading the claims, the "customer service station" includes certain items, and the "product finishing station" includes certain other items. However, it does not appear that the stations must be separate. So long as the items mandated in the claims are present in specific discernible location(s), the patent does not appear to preclude the possibility that the stations could overlap or even be one.

Finally, Jamba Juice argues that Foodie's construction is an overbroad definition. Jamba Juice claims Foodie is proposing that, while the claims mandate that certain items are in the customer service station, the items do not necessarily need to be located together. The Court agrees with Jamba Juice that the patent's claims and the specification seem to indicate that the "customer service station" is meant to be a specific area encompassing the items stated in the claims. However, Jamba Juice's arguments that "station" means an area within reach of an employee are not supported by the specification or claims. At the Markman hearing, Jamba Juice stated they offered this portion of the construction largely out of concerns for limiting the boundaries of the area(s). The best support for defining the boundaries of the customer service station's area comes from the claim itself. In the claim, "customer service station" is said to be comprised of certain items, including things such as a drip pan and breath guard. '448 patent col. 8 l. 11-12. The drawings accompanying the patent include the items stated in the claim, and seemingly limit the "customer service station" to a specific area(s) extending a short distance beyond the enumerated items stated in the claims.

With all of the above in mind, the Court's construction of "customer service station" attempts to take all of the parties'
concerns into account: "A station from which a customer can be served, and includes a cold pan, a drip pan, a breath guard, at least one refrigerated source liquid conduit line, and the refrigerated source liquid conduct line connecting said refrigerated source liquid and said consumer service station beverage tapping mechanism." 4 The Court's construction does not preclude more than one customer service station, and remains consistent with the claims by limiting the bounds of a customer service station to the inclusion of, at a minimum, the items stated in the claim. The construction also takes into account Jamba Juice's concerns that Foodie was expanding the boundaries beyond what the patent claims by using "station" instead of "area" or "location." A "station" inherently is easier to conceptualize as a limited area than more expansive terms such as "area" or "location." Station is in turn defined by what the claims mandate the "customer service station" encompasses, and is further limited to a station(s) where customers can be served.

4 In the parties' original proposed constructions, both parties included some language referencing service to the customer as part of their construction of "customer service station," which the Court construes as agreement between the parties on the "from which a customer can be served" portion of the Court's definition.

--- Footnotes ---

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B. Effect of Prior Litigation

As stated above, SunTiger prevailed in a prior patent infringement suit against Scientific Research Funding Group (SRFG) on the same patents now in question. Both SunTiger and Sunglass Products have stipulated that the claim construction in the prior suit will control here:

The patents-in-suit have already been construed by the U.S. District Court for the Eastern District of Virginia [and that] construction . . . is binding on the parties in this case. To the extent that the terms in the asserted claims were not construed in the said prior litigation, the parties are asking the Court to make a claim construction based on the arguments submitted in the summary judgment motions.

Stipulation at 1-2. "In a patent litigation action, where the parties do not dispute any relevant facts regarding the accused product but disagree over possible claim interpretations, the question of literal infringement collapses into claim construction and is amenable to summary judgment." Rheox, Inc. v. Entact, Inc., 276 F.3d 1319, 1324 (Fed. Cir. 2002).

The relevant terms and their stipulated construction are as follows:

<table>
<thead>
<tr>
<th>Term</th>
<th>Stipulated Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;substantially block&quot;</td>
<td>&quot;... in reference to wavelengths, it is defined as blocking over 99% of the incident radiation at each and every wavelength&quot; and &quot;[in] reference to polarization, it is defined as blocking 80% or more of the horizontally polarized incident radiation at each and every wavelength&quot;</td>
</tr>
<tr>
<td>&quot;substantially transmit&quot;</td>
<td>&quot;... in reference to wavelengths, [it] is defined as transmitting more than 1% of the incident radiation at each and every wavelength&quot; and &quot;[in] reference to polarization, it is defined as transmitting more than 20% of the horizontally polarized incident radiation at each and every wavelength&quot;</td>
</tr>
<tr>
<td>&quot;sharp cut-on&quot;</td>
<td>&quot;... sharp cut-on is defined in the context of a dye or filter, having a cut-on slope that at some concentration or dye density rises more than one half percent (0.5%) change in transmission for every one nanometer of...&quot;</td>
</tr>
</tbody>
</table>
increasing wavelength change. The cut-on slope is
that portion of the transmission spectra of a cut-on
dye that represents the transition between [the]
substantially blocking and the substantially
transmitting region."

"cut-on filter"  "... an optical filter that substantially blocks all
wavelengths shorter than the cut-on wavelength and
substantially transmits all wavelengths that are longer
than the cut-on wavelength. The cut-on wavelength is
that wavelength in the transition zone at which the
transmission is 1%."

"portion"  "... part or share of something"


Plaintiff SunTiger contends that this Court cannot apply the stipulated construction in a way that would contradict the
finding of the Eastern District of Virginia that YE-82 infringed SunTiger's patents. Pl.'s Mot. at 1 ("[T]he YE-82 lens
material must literally infringe whatever claim construction the Court adopts in this case."). In essence, SunTiger argues the
following: (1) the parties have stipulated to the prior construction, (2) the decision in the prior suit does not bind this Court,
but (3) any ruling that this Court issues must not be inconsistent with the fact that YE-82 was found to infringe its patents.

I disagree with this assessment. My decision is not foreordained by the result in SunTiger, Inc. v. Scientific Research
Funding Group. SunTiger attempts to elevate the prior claim construction to the level of a decision. Despite the parties'
agreement that the prior claim construction would be binding, that prior court's decision applying its own construction is
only persuasive. Although the parties have agreed to be bound to the use of the prior construction, they have not agreed that
this Court's application of that construction must be consistent with prior decisions involving a different defendant and
different lenses. Indeed, were consistency with prior results necessary, that would be tantamount to an improper form of
collateral estoppel against a current party, i.e., Sunglass Products, which was not a party (nor a party in privity) to SunTiger
1994) ("[D]ue process requires that the party to be estopped must have had an identity or community of interest with, and
adequate representation by, the losing party in the first action as well as that the circumstances must have been such that the
party to be estopped should reasonably have expected to be bound by the prior adjudication.").

E. Means-Plus-Function Revisited: "Cutter"

Ken identifies the "cutter" of claim 12 as a means-plus-function claim. That claim is directed to a "system for folding
metallic ribbon stock comprising," inter alia,  "a cutter for cutting said ribbon stock at a predetermined location." Here Ken
seeks to limit the claimed cutter to that disclosed in the '919 patent and its structural equivalents. 35 U.S.C. § 112, P 6.
Again Ken points to the specification: "The above [referring to Figure 1] cutting molding unit 100 is applied from [Korean]
A detailed explanation for the cutting molding unit is therefore omitted below."

--- Footnotes ---

12 The original specification, erroneously referring to "Japan Patent No. 80607" (instead of "Korean Patent No. 80607"),
was later amended by a Certificate of Correction. Gilman Decl. Exh. 4 at 127. This discrepancy, already the subject of a
summary judgment motion and extensive oral argument, will not be further discussed. See March 28, 2000 Order denying
Ken's motion for summary judgment concerning inequitable conduct.

--- End Footnotes ---
SDS again objects that the absence of "means" language precludes application of the means-plus-function statute. SDS Br. at 32. And, it argues, the word "cutter" is "about as structural as one can get." SDS Br. at 32.

Once again, the court must determine whether the "cutter" is "expressed as a means . . . for performing a specified function without the recital of structure, material, or acts in support thereof." 35 U.S.C. § 112, ¶ 6. The court first notes the Federal Circuit's comment that the mere coincidence that a device takes its name from its function should not convert a claim into the means-plus-function format. Greenberg, 91 F.3d at 1583 (listing "filter," "screwdriver," "suture applicators" and "cutters") (emphasis added). The court next turns to the dictionary relied upon by defendant, the International Association of Diecutting and Diemaking "Glossary of Terms," which stipulates: "CUTTER -- A term used to describe a bench tool used to cut steel rule stock in the manufacture of steel rule dies." SDS Exh. 46. This definition, evidently familiar to those skilled in the diemaking and diecutting art, supports the legal presumption that the cutter, with no reference to "means," should not be analyzed under Paragraph 6. Like the elongate member, it is structure. See Envirco, 209 F.3d at 1365 ("The term 'baffle' itself is a structural term.").

The court adopts the I.A.D.D.'s definition of the disputed "cutter" in claim 12. That device is not expressed in means-plus-function terms; Ken's contention to that effect is rejected.

A. The '949 Patent

Landers asserts that the district court erred in construing the "cutter head" limitation of claim 33 as a means-plus-function limitation. Landers notes that the limitation does not contain the term "means," which presumptively indicates that it is not a means-plus-function limitation. Moreover, Landers argues that Sideways did not provide any evidence demonstrating that the term "cutter head" lacks sufficiently definite structure to justify its construction as a means-plus-function limitation. Instead, Landers contends that the court should have given the limitation its ordinary and customary meaning.

We agree with Landers that the district court improperly construed the term "cutter head" as a means-plus-function limitation. "A claim limitation that does not use 'means' will trigger the rebuttable presumption that § 112, P6 does not apply." CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1369 (Fed. Cir. 2002) (citations omitted). The presumption may be rebutted by demonstrating that the claim term fails to recite sufficiently definite structure. Id. Despite Sideways' argument to the contrary, however, the presumption has not been rebutted here. Indeed, claim 33 contains several limitations providing structure to the cutter head, e. g., the cutter head must rotate, it is connected at one end to a "flexible shaft," and it must be moveable through the "inlet" and "outlet" of an L-shaped "passageway." Moreover, the court found that a person of ordinary skill in the art would have understood the term to "encompass[] a number of different cutting mechanisms." See Watts v. XL Sys., Inc., 232 F.3d 877, 880-81 (Fed. Cir. 2000) ("To help determine whether a claim term recites sufficient structure, we examine whether it has an understood meaning in the art.").

That the district court's construction, which limited "cutter head" to a ball cutter and its equivalents, is erroneous is further supported by dependent claim 34. Under the doctrine of claim differentiation, it is presumed that different claims will have different scopes. See Phillips v. AWH Corp., 415 F.3d 1303, 2005 U.S. App. LEXIS 13954, Nos. 03-1269, -1286, slip op. at 13 (Fed. Cir. July 12, 2005) ("the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim"). Claim 34 limits the "cutter head" recited in independent claim 33 to "a ball cutter." Thus, while the doctrine of claim differentiation is not absolute, it works against the court's interpretation, which gives claims 33 and 34 the same scope.

To support the district court's interpretation of the term "cutter head" as a means-plus-function limitation, Sideways argues that the term should not be given its ordinary meaning. According to Sideways, the patentee experimented unsuccessfully with many different types of cutter heads and succeeded only with a ball cutter. This argument, however, misses the point. The relevant inquiry is how a person of ordinary skill in the art would have understood the simple term "cutter head," not whether other cutter heads succeeded or failed in cutting well casings. Moreover, we note that the patent specification does not indicate that only a ball cutter is capable of making a hole in a well casing.
We also reject Sideways' contention that the term "cutter head" was properly construed as a means-plus-function limitation because it lacks sufficiently definite structure. Specifically, Sideways argues that the patent specification and claims do not provide any structural detail concerning the cutter head. The law does not require, however, that the specification and claims contain exacting details of every structure recited in the claims. As we explained above, the relevant inquiry focuses on whether a person of ordinary skill in the art would have understood the limitation "cutter head" to have a sufficiently definite structure.

Unless the intrinsic evidence compels a contrary result, a claim limitation should be given its ordinary and customary meaning. Phillips, 2005 U.S. App. LEXIS 13954, slip op. at 9. We note that Landers, in its appellate briefing, has provided a good starting point for this task on remand by providing examples of "cutter heads" in the prior art. 2 Appellants' Opening Br., at 23-25. Accordingly, we vacate the district court's finding of noninfringement of the '949 patent, to the extent that that finding was based on an erroneous claim construction of the term "cutter head." Furthermore, we remand for the court to give the term "cutter head" its ordinary and customary meaning, and redetermine whether Sideways' device meets that limitation.

--- Footnotes ---

2 Sideways argues that the district court did attempt to construe, to no avail, the term "cutter head" by applying its ordinary and customary meaning. Appellee's Opposition Br., at 17 n. 7. But Sideways provides no citation showing, nor can we discern any from the record ourselves, the court engaging in any relevant analysis.

3 On remand, we caution the district court regarding its reliance on testimony from any patent attorney on technical issues, as opposed to issues concerning legal procedure. In particular, a patent expert should not be permitted to construe claim terms unless he is first qualified as an expert in the pertinent art.

--- End Footnotes ---

1. "Cutting Disks"

The Court will begin with the term "cutting disks" as it appears in independent claims 1 and 12, elements 1(g) and 12(d), of the '780 Patent. Fellowes proposes that "cutting disks" are "generally round or ring-shaped elements that are designed for cutting paper." Michlin proposes the same definition with the limitation that such "cutting disks" "include end surfaces which lie in parallel planes." Intek argues that "cutting disks" are "unitary, flat, disk-shaped elements that include side surfaces which lie in parallel planes."

The Court will start with the claim itself. Claim 1 specifies that the "cutting disks" are "spaced apart," have "at least two circumferentially spaced teeth and a spacer," and are "displaced in the longitudinal direction of the cutting cylinder." '780 Patent, cols. 3-4, lines 46-48, 1-4. As stated above, Claim 12 provides:

A cross-cutting cylinder comprising:

a. a plurality of cutting disks with each disk having at least two circumferentially spaced teeth, with the disks arranged in a longitudinal direction of the cutting cylinder to provide a helix; and

b. a spacer located between each adjacent disk, wherein the surface of the spacer has a linear measure greater than the distance between each adjacent disk.

Id. at col. 4, lines 39-47. Claim 12 expressly limits the "cutting disk" to having "at least two circumferentially spaced teeth" and being "arranged in a longitudinal direction of the cutting cylinder to provide a helix." Id. at col. 4, lines 39-43. None of the limiting adjectives proposed by the defendants--"parallel," "unitary" or "flat"--appear, either expressly or inferentially, in Claims 1 or 12.
Moreover, the '780 Patent specifications do not support the view that the "cutting disks" are necessarily "flat" or "parallel." The specifications provide that the "cutting the [sic] disks" may have the construction and shape shown in U.S. Pat. Nos. 5,676,321 ["the '321 Patent"] and 5,295,633 ["the '633 Patent"], each of which is incorporated by reference. Id. at col. 2, lines 43-45. The Court has reviewed the '321 Patent and the '633 Patent, both of which involve "cutting disks" used in shredders, and nowhere in either patent did it find that the "cutting disks" must be "parallel" or "flat." Id. at FE 000366-71; id. at FE 000383-93. Intek correctly points out that the embodiment of the "cutting disk" shown as 14 in Figures 1, 2, and 3 of the '780 Patent appears to be "flat" and has "side surfaces" or "end surfaces" which, at least arguably, "lie in parallel planes" insofar as they were drawn using straight lines. Id. at figs. 1, 2, 3. The Court refuses to rely upon the specifications, however, in order to limit the definition of "cutting disks." See Electro Med. Sys., 34 F.3d at 1054 ("[C]laims are not to be interpreted by adding limitations appearing only in the specification.").

Michelin and Intek argue that the phrase "the distance between each adjacent disk" (emphasis added) in Claims 1 and 12 means that there must be only a single distance between the "cutting disks," and therefore the disks must be "flat" and "parallel." Markman H'g Tr. 141-145; Intek Br. 17. Although the word "the" in the phrase "the distance between two adjacent disks" could reasonably be read as meaning that the distances between two adjacent disks are identical at all points of the disks, this one word does not compel such a construction, and is, not in the Court's view, enough to justify limiting the "cutting disks" to being "flat" or "parallel." Although the Court may rely on dictionary definitions to construe claim terms, Phillips, 415 F.3d at 1317, any reliance on dictionaries must accord with the intrinsic evidence in the patent. Id. In any event, dictionaries consulted by the Court do not resolve whether a "disk" or "disc" is flat. See WEBSTER'S THIRD NEW INT'L DICTIONARY 651 (3d ed. 1981) ("a thin circular object"); THE RANDOM HOUSE COLL. DICTIONARY 381 (4th ed. 1973) ("any thin, flat, circular plate or object and "any surface that is flat and round, or seemingly so"); Michelin Ex. 3009 (Google.com definition of "disk" as, inter alia, "something with a round shape like a flat circular plate" and "a general term that is used to describe flattened circular objects").

An additional issue is whether, as Intek contends, the "cutting disk" is a "unitary" structure, or whether, as Fellowes argues, it can be either a single piece or comprised of multiple pieces. During prosecution of the '780 Patent, the USPTO rejected Claim 1, among others, as anticipated by Patent No. 5,988,542 ("Henreckson" or "'542 Patent"). '780 Patent, FE 000424. The invention disclosed in Henreckson relates to "document shredding devices mountable on various waste receptacles for shredding paper." Id. at FE 000431 ('542 Patent). The USPTO rejected Claim 1 pursuant to 35 U.S.C. 102(e), stating, "Henreckson et al disclose the apparatus as can be best understood in view of the 35 USC 112, second paragraph rejection set forth above. Note Fig. 8, V-shaped spacers between cutting disks '38' on shredding rollers '30' and '36'." 6 Id. at FE 000427. In an effort to overcome the USPTO's rejection, the patentees filed a July 21, 2000, response in which they argued:

Henreckson et al. disclose a conventional straight cut shredder. The shredder of Henreckson et al. cuts the paper into strips. Henreckson et al. do not disclose the crosscut shredder of the present invention. In a cross-cut shredder and according to the present invention, the cutting disks of the present invention are somewhat displaced in the longitudinal direction of the cutting cylinder so that a large pitch helix is formed.

It is respectfully submitted that Henreckson et al. do not disclose a separate spacer between cutting disks where the linear measure of the spacer along its surface is greater than the distance between two adjacent disks. It is respectfully submitted that Henreckson et al. teach the abutment of two cutting disks against each other to form a single cutting unit separated from other cutting units by spacers 30 and 36. The linear measure of the spacer of Henreckson et al. is equal to the distance between adjacent disks.

Id. at FE 000507 (emphasis added). According to Intek, the patentees' effort in the quoted text to distinguish between "cutting disk" and "cutting unit" (the latter being a combination of abutting "cutting disks") limits the term "cutting disk" in the '780 Patent to mean "one unitary cutting disk, not a combination of pieces." Intek Br. 12. The Court disagrees with Intek. The term "cutting units" appears nowhere in the '780 Patent itself. Moreover, neither the '321 Patent nor the '633 Patent, which are "incorporated by reference" into the '780 Patent on the question of the "construction and shape" of the "cutting disks," specify that the "cutting disk" is comprised of a single part or multiple parts. Consequently, the Court refuses to construe the "cutting disk" as being "unitary" and refuses to construe it as being comprised of multiple pieces. The Court FINDS that "cutting disks" are "generally round or ring-shaped elements that are designed for cutting paper."
6 35 U.S.C. § 112 P 2 provides: "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."

The 949 Patent contains the following claims:

1. A method for penetrating a well casing and surrounding earth strata comprising the steps of:
   - inserting an upset tubing having an elbow on an end thereof a preselected distance into a well casing;
   - inserting a flexible shaft having cutting means on an end thereof into said upset tubing, said cutting means extending through said elbow;
   - rotating said flexible shaft and said cutting means cutting a hole in said well casing;
   - removing said flexible shaft and said cutting means from said upset tubing;
   - inserting a flexible tube having a nozzle on an end thereof into the upset tubing and said channel;
   - pumping a fluid into the flexible tube and nozzle; and, cutting an extension of said channel in said earth's strata.

2. The method of claim 1, said nozzle being a nozzle blaster, with a fluid chamber therein in fluid communication with said flexible tube, said nozzle blaster having a front conical portion and a rear base portion, said nozzle blaster having a plurality of first openings therein in said conical portion extending into said chamber, said first openings being directed forwardly of said nozzle blaster and a plurality of second openings in said base portion directed rearwardly of said nozzle blaster.

3. The method of claim 1, said cutting means including a cutter and means to prevent said cutter from extending into said strata after making a cut in a well casing.

4. The method of claim 3, said means to prevent said cutter from extending into said strata including an elbow at the terminating end of said upset tubing, said elbow being octagonally shaped with an inlet on a top surface thereof and an outlet opening on a side at a 90 [degrees] angle from said inlet, said opening being larger at said inlet than said outlet, said flexible shaft having a plurality of balls at its cutting end with said cutter at a terminating end of said cutting end, said cutter having a maximum diameter less than a maximum diameter of at least an adjacent ball.

5. The method of claim 4, said cutter being a ball cutter.

6. An apparatus for cutting a hole in a well casing comprising:
   - a cutter;
   - a flexible shaft having said cutter on one end thereof; means to position said cutter at a preselected position within a well casing, said means to position said cutter includes an elbow at a terminating end of an upset tubing in a well casing through which said cutter is received there through, said elbow including a bowed channel between an inlet and an outlet, said bowed channel having a bottom portion, said bottom portion having an upslope towards said outlet.

7. The apparatus of claim 6 wherein said means to rotate includes a fluid motor coupled to said flexible shaft.
8. The apparatus of claim 7 wherein said means to rotate includes a speed reducer coupled to said fluid motor wherein said speed reducer is coupled to said flexible shaft.

9. The apparatus of claim 8 wherein said output of said speed reducer is from about 20 to 30 rpm.

10. The apparatus of claim 6, said elbow being octagonally shaped wherein said inlet is on one side thereof and said outlet is on another side at 90 [degrees] angle from said inlet, said opening being larger at said inlet than said outlet.

11. The apparatus of claim 10, said cutter being a ball cutter, said flexible shaft having a plurality of balls at a cutting end with said ball cutter at a terminating end of said cutting end, said ball cutter having a maximum diameter less than a maximum diameter of at least an adjacent ball.

12. The apparatus of claim 6, said upslope being approximately 5 [degrees].

13. The apparatus of claim 6, said means to rotate said flexible shaft being a motor.

14. The apparatus of claim 13, including means to prevent rotation of said motor.

15. The apparatus of claim 14, said means to prevent rotation of said motor including a vertically extending motor detent insert, said motor detent insert having diametrically opposed slots which receive detent wings of said motor.

16. The apparatus of claim 6, said cutter being a ball cutter.

17. The apparatus of claim 6, said flexible shaft having a plurality of balls at a cutting end with said cutter at a terminating end of said cutting end, said cutter having a maximum diameter less than a maximum diameter of at least an adjacent ball.

18. An apparatus for cutting a hole in a well casing and then a lateral channel outwardly from the casing, the apparatus comprising:

   a cutter head, a flexible shaft and a motor, said flexible shaft being connected between the motor and the cutter head;

   a cutting nozzle and flexible hose;

   an elbow providing an inlet and outlet with a passageway therebetween for the cutter head and the flexible shaft;

   guide tracks aligned with the inlet to the passageway;

   said guide tracks guiding the motor for movement of the cutter head and the flexible shaft down the well casing to move the cutter head out the outlet into cutting engagement with the well casing when the motor drives the flexible shaft;

   said elbow passageway being configured to guide said cutting nozzle and said flexible hose as the flexible hose is fed through the inlet and outlet so that the nozzle can cut the lateral passageway; and

   said motor, flexible shaft and cutter head being removable from the elbow to be replaced by said nozzle and said flexible hose.

19. The apparatus of claim 18, said cutter head being a ball cutter.

20. The apparatus of claim 18, said elbow inlet being larger than said elbow outlet.

21. The apparatus of claim 18, said guide tracks having diametrically opposed slots and said motor having detent wings, said detent wings being received within said diametrically opposed slots.
22. The apparatus of claim 18, said elbow passageway including a bowed channel.

23. The apparatus of claim 18, said bowed channel having a bottom portion, said bottom portion having an upslope towards said outlet.

24. The apparatus of claim 23, said upslope being approximately 5 [degrees].

25. The apparatus of claim 18, said flexible shaft having a plurality of balls at its cutting end with said cutter head at a terminating end of said cutting end, said cutter head having a maximum diameter less than a maximum diameter of at least an adjacent ball.

26. The apparatus of claim 25, said cutter head being a ball cutter.

27. An apparatus for cutting a hole in a well casing and then a lateral channel leading outwardly from the well casing, the apparatus comprising:
   upset tubing to be lowered down the well casing and having a lower end;
   an elbow fixed to the lower end of the upset tubing, said elbow providing an inlet and an outlet with a passageway therebetween and the outlet facing the well casing;
   a motor, flexible shaft and a cutter head, the flexible shaft drivingly connecting the motor to the cutter head, said flexible shaft having a plurality of balls at its cutting end with said cutter head at a terminating end of said cutting end, said cutter head having a maximum diameter less than a maximum diameter of at least an adjacent ball.

28. The apparatus of claim 27, said cutter head being a ball cutter.

29. The apparatus of claim 27, said inlet into said passageway being larger than said outlet.

30. The apparatus of claim 27, said elbow passageway including a bowed channel.

31. The apparatus of claim 30, said bowed channel having a bottom portion, said bottom portion having an upslope towards said outlet.

32. The apparatus of claim 31, said upslope being approximately 5 [degrees].

33. An apparatus for use with upset tubing having a lower end in a well casing to cut a hole in the wall of the casing and a lateral channel extending outwardly from the casing, the apparatus comprising:
   an elbow to be mounted on the upset tubing at its lower end to be lowered into the well casing, said elbow providing an inlet and outlet with a passageway therebetween, said inlet opening upwardly in the upset tubing and said outlet opening outwardly toward the wall of the casing;
   a motor, a flexible shaft and a cutter head, said flexible shaft extending between the motor and the cutter head to provide a rotary drive connection, said flexible shaft and cutter head being movable through the passageway to have the cutter head engage the well casing adjacent the outlet to cut a hole in the casing; and,
   a cutting nozzle and hose configured to be lowered into the elbow passageway to exit the outlet and cut the lateral channel outwardly from the hole by fluid pressure from the nozzle.

34. The apparatus of claim 33, said cutter head being a ball cutter.

35. The apparatus of claim 33 said passageway inlet being larger than said passageway outlet.

36. The apparatus of claim 33 said passageway including a bowed channel.
37. The apparatus of claim 36, said bowed channel having a bottom portion, said bottom portion having an upslope towards said outlet.

38. The apparatus of claim 37, said upslope being approximately 5 [degrees].

39. The apparatus of claim 33, said flexible shaft having a plurality of balls at its cutting end with said cutter head at a terminating end of said cutting end, said cutter head having a maximum diameter less than a maximum diameter of at least an adjacent ball.

The first independent claim of the 949 Patent is Claim 1. Claim 1 is a means-plus-function limitation because it utilizes the word "cutting means" and does not adequately define what it meant by that term. The only cutting means within the specification to which this limitation can refer is that of a ball cutter, a cutter head, or simply a cutter. The terms "cutter head" and "cutter" are not expressly defined within the patent. Nonetheless, the Court concludes that a person skilled in the art of oil drilling would conclude that the terms "cutter" or "cutter head," as used in the 949 Patent specification, refer to a ball cutter since those terms have no precise meaning and the specification expressly references a ball cutter. Although those skilled in the art of oil drilling would certainly understand the terms "cutter" or "cutter head" as encompassing a number of different cutting mechanisms, the Court does not believe that they would have known which particular mechanism would be capable of performing the claimed function -- i.e., penetrating through well casing. In fact, even Landers himself had to experiment with several cutters before finding one which met the application that he sought. Therefore, the terms "cutter" and "cutter head" must be construed as referring to a ball cutter.

C. Do the MPS 350 and the TRACC Have a "Cutting Section"?

The parties dispute the definition of "cutting section" and whether the MPS 350 and the TRACC have the claim 6 "cutting section" limitation. KKI defines "cutting section" as "the area where the claimed 'cutting means' cuts the claimed 'cutable member.'" (Def.'s Prel. Inj. Hrg. Ex. 68, Pl.'s Answers to Def.'s Interrogatories at 4). KKI asserts that "cutting section" does not refer to a structure, but rather is "[used] as a locative term to simply identify the area where the claimed cutting takes place." (Docket Entry No. 58, p. 12). KKI relies on the specification of the '003 Patent and Dr. Sicking's testimony to support its proposed definition.

Trinity defines a "cutting section" as "a structure that includes the 'cutting means,' that is aligned with the 'cutable member' and the 'impact head' along a common axis, and that is moved with respect to the 'cutable member' by the 'impact head' during an impact." (Pl.'s Prel. Inj. Hrg. Ex. 70, p. 6). Trinity relies primarily on the specification of the '003 Patent to support its proposed definition. Trinity contends that "the 'cutting section,' among other things, must be a structure." (Docket Entry No. 59, p. 20).

Claim 6 states that: (1) the "terminal" includes an "cutting section"; (2) the "cutting section" is "positioned in the energy-absorption terminal"; (3) the "cutting section" is "aligned" with the "cutable member" and the "impact head"; (4) "cutting section" and the "cutable member" are "forced together when the impact head . . . is impacted by a vehicle"; and (5) the "cutting section" and the "cutable member" are "moved with respect to each other by the impact head." (Docket Entry No. 33, Ex. A, col. 9, ln. 50 - col. 10, ln. 2). Trinity asserts that a structure can be "forced together" with another structure and "moved with respect to" another structure, but that an area or location in space cannot. (Docket Entry No. 59, p. 21).

Trinity points to the specification to support its position that the term "cutting section" describes a structure, not simply a location. The "Summary" section of the '003 Patent states that "the cutting section includes a tube having one or more cutting members within it and a deflection plate." (Docket Entry No. 33, Ex. A, col. 2, ln. 43-44). The "Detailed Description" section uses the words "cutting section" in the following ways:

. . . [the terminal's] narrower end connected to one end of the cutting section . . . (col. 4, ln. 26-27);

. . . [a vehicle] pushes the impact head 30 and the cutting section 36 forwardly along the guardrail . . . (col. 4, ln. 31-32);
the guardrail 16 may be severed into partly separated portions or only scored to provide partial grooves, depending on the nature of the cutting section . . . (col. 4, ln. 33-35);

. . . allow the guardrail to be fed through the cutting section . . . (col. 4, ln. 48);

the cutting section 36 is open, having supports such as support 44 forming a guide the receives the W-beam as the cutting section 36 and impact head 30 are moved with respect to the W-beam 16 so that the W-beam moves into the hollow portion of the cutting section 36 and hits the cutters . . . (col. 5, ln. 13-17);

the cutting section 36 includes a cutter holding section 52 and a hollow receiving section 42, each aligned with the other and fastened together so that there is a continuous passageway . . . (col. 5, ln. 40-43);

the cutting section 36 includes a square tubular steel frame 56 having the cutters 40A-40C welded within it to be horizontal . . . (col. 5, ln.55-57).

The language in the specification shows that the applicants used "cutting section" to refer to a structure, not simply a location in space where a certain activity occurs. The clearest illustrations are the language stating that the narrow end of the terminal is "connected to one end of the cutting section" and that the vehicle "pushes . . . the cutting section forwardly along the guardrail." (Docket Entry No. 33, Ex. A, col. 4, ln. 26-27 & ln. 31-32). The "cutting section" is described as having "supports," including a tube with cutters mounted or welded within it, and as moving with respect to a beam. These statements in the specification are inconsistent with KKI's proposed interpretation of "cutting section" as a location or area where an action takes place.

The drawings and summary of drawings in the '003 Patent support this court's finding. Figure 8 is described as "a fragmentary end view of a cutting section." (Id., col. 3, ln. 42). It shows three cutter blades spaced within a rectangular and hollow structure; the entire structure, including the blades, is labeled as the "cutting section." Figure 9 is described as "another cutting section [] having a single steel wedge [] having a forward pointed edge [] welded to the sides of the steel open frame [] of the cutting section." (Id., col. 7, ln. 16-19).

KKI relies on extrinsic evidence, including Dr. Sicking's testimony and Albritton's deposition testimony, to support its position that the term "cutting section" refers to a location or area, not a structure. If the intrinsic evidence, including the claim language and the specification, unambiguously define a claim term, resort to extrinsic evidence is inappropriate. See Vitronics, 90 F.3d at 1584; Markman, 52 F.3d at 983. The intrinsic evidence clearly defines a "cutting section" as a structure, making reliance on inconsistent extrinsic evidence, such as expert testimony, inappropriate.

Trinity's definition incorporates multiple elements of claim 6 that describe the function and position of the "cutting section." Trinity defines "cutting section" as "a structure that includes the 'cutting means,' that is aligned with the cuttable member and the impact head along a common axis, and that is moved with respect to the cuttable member by the impact head during an impact." (Docket Entry No. 59, p. 20). This court addresses the position and function of the cutting section separately, because they relate to the "alignment" and "cutting means" limitations of claim 6, rather than to the definition of "cutting section." Claim 6 clearly defines the "cutting section" as including the "cutting means." The specification of the '003 Patent consistently describes the "cutting section" as a structure that includes the "cutting means" and in which cutting occurs. The intrinsic evidence leads this court to conclude that "cutting section" in claim 6 means "the structure(s) or part(s) of a structure in which cutting occurs, including the cutting means." 9

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9 This definition is similar to a definition that Trinity proposed earlier in the proceedings. In its Disclosure of Claims Terms Interpretation before the preliminary injunction hearing, Trinity defined "cutting section" as "a portion or part of an object where something is wholly or partly penetrated." (Pl.'s Prel. Inj. Hrg. Ex. 14, p. 2).

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The TRACC and the MPS 350 have a "cutting section" under this definition. KKI identified the "cutting means" in the
accused devices as the cutter plate and the backup plates. In the TRACC and MPS 350, cutting occurs as the outside angled edges of the cutter plate contact the rip plates, which are held in place by the backup plates. The "cutting section" includes the cutter plate and the sections of the backup plates that hold in place the sections of the rip plates that are cut.

KKI has met its burden of showing a reasonable likelihood of success in proving that each of the accused devices includes a "cutting section."

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a. Element b.

Cannondale argues its suspension system does not contain an "inner, hollow cylinder" or its equivalent, as found in element b. Cannondale argues its head suspension system "comprises an inner tube having flat sides and a basically square, not cylindrical, shape which flat sides mate with a corresponding flat sides inner bore in an outer tube." Motion at 7:14-16 (emphasis omitted). Essentially, Cannondale contends a "cylinder" must be perfectly circular at each end, and because its suspension system has an inner tube with flat sides, it is not a "cylinder" and does not infringe element b.

This limiting definition of the term "cylinder" belies a dictionary definition, an understanding of the term "cylinder" by one of ordinary skill in the art, Cannondale's own bicycle suspension patent language, and the statements made by Cannondale's patent attorney. The term "cylinder" is defined as "a surface bounded by parallel planes and generated by a straight line moving parallel to the given planes and tracing a curve bounded by the planes and lying in a plane perpendicular or oblique to them." Webster's Dictionary, Second Ed. 1997. There is nothing in the definition or the common understanding of the term which mandates the "curve traced" must be perfectly circular. Cannondale's own suspension patent supports this understanding of "cylinder." Despite the flat edges of Cannondale's inner tube and Cannondale's contention the tube is "basically square," Cannondale's patent describes it as "essentially a hollow cylinder." Sam Stone, Cannondale's patent attorney who prosecuted the head tube suspension patent, testified in deposition Cannondale's design consists of "two telescoping cylinders" 4 as did Michael Harrison, one of Cannondale's inventors responsible for Cannondale's head tube suspension system. Plaintiff also provides evidence that, in the bicycle engineering industry, many closed geometric tubular shapes are referred to as "cylinders" or "cylindrical," whether they have round, square, rectangular or other shapes of cross sections.

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4 While Mr. Stone later "corrected" his deposition by replacing all references to "cylinders" with "tubes," his original language is evidence of a common understanding of the term.

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As a matter of law, Cannondale's device incorporates element b. of Claim 1 of the '185 patent.

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1. cylindraceous housing

* * *

The dispute that existed between the parties concerning the construction of "cylindraceous housing" was whether the entire housing has to be of cylindrical shape.

In its briefs, the plaintiff had argued that the dictionary definition of the term is appropriate here, noting that the term "cylindraceous" is not defined in the specification or file history of the '516 patent. MHL cited to the Oxford English Dictionary which defines cylindraceous as "of the form of or resembling a cylinder; cylindrical." See Oxford English
Dictionary (2d. ed. 1989). Based on this definition, MHL argued that the ordinary meaning of cylindraceous is not the same as cylindrical. 3 As such, MHL argued, the term "cylindraceous housing" only requires that a portion - not the entirety - of the housing be cylindrical.

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3 MHL points out that The Webster's Third New International Dictionary of the English Language Unabridged (1993) has a similar definition: "somewhat like a cylinder." MHL notes that the suffix -aceous means "resembling."

--- End Footnotes ---

Defendants' position is that plaintiff's proposed construction would in effect rewrite the claims to say that only a portion of the housing - no matter how small - has be cylindraceous, thereby completely reading the term "cylindraceous" out of the claim. Further, defendants contend that use of the word "resembles" in plaintiff's proposed constructions imports a degree of subjectivity into the claims that is inappropriate. 4

--- Footnotes ---

4 With regard to this term, defendant Volkswagen separately argues that the housing resembles a "right circular cylinder" as shown in Figures 4-7 of the '516 patent. Volkswagen takes the position that the term should be limited to the embodiments disclosed in those figures.

--- End Footnotes ---

At the hearing, the defendants devoted a portion of their argument to convince the Court that it would be appropriate to construe the term "cylindraceous" as being "generally cylindrical." The plaintiff, in rebuttal, indicated that it was in agreement with the defendants on this construction. Therefore, the Court rejects plaintiff's proposed construction that only a portion - any portion - of the housing needs to be cylindrical. It adopts the parties agreed construction that the term "cylindraceous" means "generally cylindrical." "Cylindraceous housing," therefore, means "a housing that is generally cylindrical in shape."

Although it agrees with the defendants that the antecedent basis of term "the housing" is "cylindraceous housing," MHL insists that "the housing" does not warrant any further construction by the Court. The Court clarifies that the term "the housing" refers to "the cylindraceous housing."

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Element 3 of Claim 29 requires "an inner contour of said scroll plate means having a cylindrical configuration in a vicinity of an axial median plane of the fan and extending towards an inlet side of the fan." This term refers to the inner surface of the fan housing surrounding the fan blades. The parties dispute the proper meaning of the term "cylindrical."

Papst argues that the Court should broadly construe the term "cylindrical" to mean "substantially cylindrical." In support of this construction, Papst relies on the following language in the specification: "The channel wall 67 which only for manufacturer tolerances is not exactly cylindrical, extends toward the inlet side from the center plane A . . . ." '015 patent, col. 4, l. 67 - col. 5, l. 1. Papst contends that the specification teaches that the inner surface of the housing is not exactly cylindrical in view of imperfections inherent in the manufacturing process.

Sunon argues that the term "cylindrical" is unambiguous, and that the ordinary dictionary definition of "cylindrical" controls. The Court agrees. There is a heavy presumption that the ordinary meaning of a word in a claim applies. 4 CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002). The Court may consult dictionaries, encyclopedias and treatises to determine the ordinary meaning of a word. Texas Digital, 308 F.3d at 1202-1203. "As a general rule, the

4 The "heavy presumption" can be overcome by any of four ways, none of which is relevant here. "First, the claim term will not receive its ordinary meaning if the patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim term in either the specification or prosecution history. . . . Second, a claim term will not carry its ordinary meaning if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention. . . . Third, . . . a claim term also will not have its ordinary meaning if the term 'chosen by the patentee so deprive[s] the claim of clarity' as to require resort to the other intrinsic evidence for a definite meaning. . . . Last, as a matter of statutory authority, a claim term will cover nothing more than the corresponding structure or step disclosed in the specification, as well as equivalents thereto, if the patentee phrased the claim in step- or means-plus- function format." CCS Fitness, 288 F.3d at 1366-67.

5 Because Sunon does not disclose the year in which its cited dictionary was published, the Court consults the 1981 edition of Webster's. The Court notes, however, that the definitions from the 1981 edition do not differ materially from the definitions proposed by Sunon.

The dictionary definition of "cylindrical" is "relating to or having the form or properties of a cylinder." Webster's Third New Int'l Dict. at 565 (Merriam-Webster Inc. 1981). The definition of "cylinder" is "the surface traced by any straight line moving parallel to a fixed straight line and intersecting a fixed curve." Id. Accordingly, the Court construes the term "cylindrical configuration" to mean that the inner contour of the fan housing must form a surface that is parallel to the axis of rotation of the fan at the mid-point between the inlet and outlet sides of the fan.

Papst complains that Sunon improperly reads the additional word "exactly" into the claim, and that in any event, Sunon's definition is overly technical and "mathematical." Papst contends that "nothing in the claim language . . . limits the term 'cylindrical configuration' to an exactly cylindrical shape." (R. 99-1, Pl.'s Claim Constr. Br. at 8.) Papst's argument is misguided. Papst--not Sunon--is improperly adding words to the claim. Sunon's proposed construction comports with the ordinary meaning of the word "cylindrical." In contrast, Papst's proposed construction incorporates the word "substantially," a broadening modifier that alters the ordinary meaning of the word "cylindrical." If Papst did not intend for the word "cylindrical" to take on its ordinary meaning, then Papst should have modified it with an adjective such as "generally," "substantially," "essentially," or "practically" when it drafted the claim. Papst hinges its argument on language from the specification, but fails to explain why the Court should look to the specification to alter the ordinary meaning when the term has a readily ascertainable ordinary meaning. See CCS Fitness, 288 F.3d at 1366-67. Papst cannot rewrite the claim to add the broadening modifier "substantially."

Accordingly, the ordinary meaning of "cylindrical" applies, and the Court construes Element 3 to mean that the inner contour of the fan housing must form a surface that is parallel to the axis of rotation of the fan at the mid-point between the inlet and outlet sides of the fan. Additionally, the cylindrical configuration must extend from the mid-point towards the inlet side of the fan.
3. "Length less than diameter" limitation

The court construed "cylindrical element" to mean "a radially expandable segment of a stent having a longitudinal length less than its diameter ["L<D"] with a circumferential undulating pattern." 20 (D.I. 639 at 1883:16-20) Medtronic asserts that all of its accused stents, except for the Driver and the MicroDriver stents, have longitudinal lengths greater than their diameter in the stents' non-expanded, or "crimped" state and, thus, can not have a cylindrical element with L<<D as required by the claims. (D.I. 654 at 19-22) ACS objects to Medtronic's interpretation that L<<D can only be met in the "crimped" state on several grounds: (1) Medtronic did not suggest that L<<D must be met in a particular state during Markman proceedings, and can not argue a narrower claim construction for the first time in connection with its JMOL motion; and (2) at trial, Medtronic asserted that all of the asserted Lau claims are invalid over various prior art references which it asserts disclose L<<D in the expanded state. (D.I. 673 at 23-25)

20 The court also gave this same definition to the terms "cylindrically shaped element" and "cylindrical ring." (D.I. 639 at 1883:16-20)

C. "Cylindrical Outer Surface Constantly in Surface-to-Surface Contact with a Cylindrical Inner Surface of the Drum"

Ramsey contends that the phrase "cylindrical outer surface constantly in surface-to-surface contact with a cylindrical inner
surface of the drum" should be defined as "a cylindrical outer surface in tight contact at all times and at substantially all points with a cylindrical inner surface of the drum."

Warn argues that the phrase "cylindrical outer surface constantly in surface-to-surface contact with a cylindrical inner surface of the drum" should be construed as "at least a portion of the outer cylindrical surface of the cylinder stays in close proximity with the inner cylindrical surface of the drum sufficient to establish a heat conducting connection." According to Warn, a portion of the outer surface of the stator must be in close proximity to, if not touching, the inner cylindrical surface of the drum at all times to enable the heat conduction. Warn argues, however, that the claim does not require direct physical contact with the drum at all points, as Ramsey contends, and that "constantly" is a temporal limitation. Warn notes the explanation in the specification that the tightness of the fit varies with the amount of heat. Further, the "surface-to-surface contact" occurs in a completely unheated state, when contact might be limited to a single line where the stator rests on the inner surface of the drum.

The phrase "surface-to-surface" is used a second time in Claim 1:

said one end surface providing the brake surface whereby axial movement of the braking member produces surface-to-surface braking engagement in the manner of a disk brake


Ramsey argues that the second use must mean physical contact between the two surfaces in order for the brake to function. Thus, it argues that the second use supports its position that "surface-to-surface" means the parts must be in actual contact. Claim terms are presumed to be used consistently throughout a patent. Research Plastics, Inc. v. Fed. Packaging Corp., 421 F.3d 1290, 1295 (Fed. Cir. 2005). Warn agrees with the legal proposition but argues that the second usage of the phrase does not support Ramsey's contention that the contact of the stator and the drum must be "substantially at all points." In particular, Warn argues that the braking contact is tight when the brake pad is cammed fully into the brake surface and less tight when the brake pad is not fully cammed into the brake surface.

I agree that the second use supports the contention that there must be actual contact, or in the case of the second use, the braking engagement would not take place. I do not agree, however, that it supports the contention that the contact must be "substantially at all points."

Ramsey argues that the specification describes the fluid conduction of heat between the stator and the drum as though they were one unified metal object.

The modification [of the prior art] basically includes a cylindrical stator which is fixed within the drum. The stator is produced from heat conductive metal and is in tight surface-to-surface fixed contact with the inner surface of the drum.


The stator is in effect an extension of the drum in that heat generated by the pad acting against the end surface is conducted through the stator material to the drums outer surface.


However, heat will cause expansion of the stator 72 and produce a tight fit of the stator to the inner wall of the drum.


The stator 72 is a highly heat conductive metal material that conducts heat from the faces 80,82 to the drum 10, through the drum wall and thus to the atmosphere.


Certainly the dissipation of heat is an important objective of the '255 patent. The claims specify structure to accomplish the
objective. There is no guarantee, however, that the claims specify the most efficient way to attain the objective.

Ramsey argues that the prosecution history supports its interpretation requiring contact "at all times" and "at substantially all points" because Warn had to distinguish U.S. Patent 5,261,646 ("the '646 patent").

Warn contends that the May 3, 1995 Amendment Ramsey cites was to contrast the '646 patent from the '255 application concerning the constancy of the contact and the conductivity of the stator material. Warn notes that the Amendment resulted in changes to the claims requiring the stator to be "constantly" in surface-to-surface contact and made from "heat conductive" material but did not require the contact to be tight or at substantially all points.

In reviewing the Amendment, it appears that the applicant was distinguishing the '646 patent in two main respects: (1) the '646 patent had brake pad segments composed of brake lining material which generally has a lower heat conducting capacity; and (2) the '646 patent's brake pads were allowed to move inwardly away from the interior surface of the drum, allowing them to retain a substantial quantity of heat within the interior of the drum. Heuser Decl. Ex. B at 2, 4:17-24, 4:11-21, 5:4-10, 6:7-10, 7:6-7. The Amendment does not illuminate the definition of "surface-to-surface."

Inventor Thomas Telford testified that the inventors "very deliberately in this patent design made sure that the stator in this case was in continuous contact around the circumference of the stator to the drum." Heuser Decl. Supp. Ramsey Mot. for Summ. J. as to Claim Construction Ex. C at 134.

I agree with Warn that "constantly" modifies time and not space. Moreover, the intrinsic evidence does not support Telford's explanation that the inventors wanted the stator to be in continuous contact with the drum around its entire circumference. On the other hand, there is no support for Warn's argument that close proximity is sufficient, even if it would allow heat conduction from the stator to the drum, albeit it less efficiently. Further, with the specification's acknowledgment that heat expansion will change the fit, I do not agree that the contact must be defined to be "tight" because that would have to be the case even when the device was cold.

Thus, I again construe the disputed term differently than either party. I conclude that "cylindrical outer surface constantly in surface-to-surface contact with a cylindrical inner surface of the drum" is defined as "a cylindrical outer surface in physical contact at all times but in a varying number of points with a cylindrical inner surface of the drum."

1. **Cylindrical Portion**

The parties' proposed constructions are as follows:

<table>
<thead>
<tr>
<th>Plaintiffs</th>
<th>Defendant</th>
</tr>
</thead>
<tbody>
<tr>
<td>A portion that has the general shape of a cylinder, including variations in diameter along the length of the cylinder.</td>
<td>An opening shaped like a cylinder having walls that are parallel to each other in cross-section and to a central axis of the opening.</td>
</tr>
</tbody>
</table>

Unlike the term "cylindrical" in the '160 patent, the parties actually dispute the meaning of the term "cylindrical portion" in the '291 patent. The parties' dispute revolves around whether this portion of the implant must have parallel walls.

Plaintiffs have presented evidence showing that the standard dictionary definition of "cylindrical" is "relating to or having the form or properties of a cylinder." (Plf's Ex. 12 (Webster's) at 565.) Defendant has presented evidence that the standard dictionary definition of "cylinder" refers to an object with parallel walls. (Def.'s Opening Brief 10; Dugger Decl. P 5.)

Plaintiffs contend that the term "cylinder" and "cylindrical" have a special meaning in the dental implant industry. Specifically, Plaintiffs contend that the terms "cylindrical" and "cylinder" refer to cylindrically shaped implants with tapered, as well as parallel, walls. (Plf's Opening Brief 20.)
The language of the claim does not define the term "cylindrical portion." The claim simply states that the interlock chamber has a "cylindrical portion." (Swaroop Decl. Ex. 2, col. 9, l. 56.) The claim does not specifically describe the precise shape of that cylindrical portion.

The specification likewise lacks a precise definition of the contours of the "cylindrical portion" of the interlock chamber. The specification does, however, state that the interlock chamber includes a "substantially cylindrical portion." (Swaroop Decl. Ex. 2.) The Federal Circuit has previously explained that "substantially" generally means "considerable in . . . extent . . . or largely but not wholly that which is specified" and is "a descriptive term commonly used in patent claims to avoid a strict numerical boundary to the specified parameter." Ecolab, Inc. v. Envirotech, Inc., 264 F.3d 1358, 1366-7 (Fed. Cir. 2001) (internal citations omitted). The Court finds the inventor's use of the word "substantially" helpful in determining the meaning of the term "cylindrical portion" because such use indicates that the inventor may have wanted to avoid a strict interpretation of the term "cylindrical." Logically, it would make sense that the inventor would allow for some deviation from strictly parallel walls because the specification explains that the implant's body may be tapered, conical, or cylindrical. (Swaroop Decl. Ex. 2, col. 4, ll. 61-63.) Thus, to the extent the implant body is tapered or conical, the internal interlock chamber may need to be modified to accommodate the externally tapered walls.

Plaintiffs rely on various types of extrinsic evidence to support their contention that "cylindrical portion" includes a cylinder with tapered, as well as parallel, walls. Plaintiffs' expert has explained that "tapered cylinders are frequently referred to as 'cylinders' in dental implantology." (Brunski Decl. P 42.) Plaintiffs also point out that they market several types of implants and accessories that are referred to as "cylinders," but have tapered walls. (Swaroop Decl. Exs. 4, 7, 8, 9.) Plaintiffs have also presented evidence showing patents for other dental implants and accessories refer to objects as "cylinders" or "cylindrical" even though they have tapered walls. (Swaroop Decl. Exs. 20-21.) Plaintiffs also point out that, according to the Glossary of Oral and Maxillofacial Implants, a "cylindrical implant" is an "[i]mplant of variable design and configuration, depending on the implant system. One such design, determined either in cross-section or three-dimension, follows the shape of a cylinder for an endosteal implant." (Swaroop Decl. Ex. 3 at 41.)

Defendant contends that Plaintiffs' extrinsic evidence does not actually support their contention. At the Markman hearing, Defendant's counsel stated "that in, save one, every example cited by the plaintiff of a tapered cylinder uses the phrase tapered cylinder . . . so when the phrase tapered cylinder is used in the dental implants, we would concede, yes, when you talk about a tapered cylinder, that is a shorthand term that might be used in the field of dental implants to refer to something which is more precisely determined or denoted . . . as a frustocone. Tapered cylinder is a shorthand way of referring to a frustocone, but the patent doesn't say tapered cylinder. The patent says cylinder or cylindrical." (7/24/09 Transcript 76-77.) Defendant, however, appears to have overstated its position because Plaintiffs have actually presented evidence of several instances of the use of "cylindrical" or "cylinder," without the modifier "tapered," to refer to an object with tapered walls. (Swaroop Decl. Exs. 7-9.)

As a result, to the extent Defendant contends that "cylindrical portion" refers to a cylinder with strictly parallel sides, the Court declines to adopt Defendant's construction because it is not supported by the language of the patent nor use of the term in the dental implant field. However, to the extent Plaintiffs' proposed construction includes a cylinder that tapers sharply from one end to the other, the Court likewise rejects that construction as not supported by the language of the patent and too broad because, as Defendant's counsel pointed out at the hearing, it would include an object that is more accurately described as a frustocone.

In light of the foregoing, the Court adopts the following construction: a portion that has the substantial shape of a cylinder including slight variations in diameter along the length of the cylinder.

H. Cylindrical Sleeve

Defendant defines this term to mean "a non-tapered cylinder into which an object or device fits." This proposed construction has multiple problems. First, it is not useful because it fails to define the term "cylindrical sleeve" in the context of the '194 patent. Also, defendant attempts to read in a "non-tapered" limitation that is not included in the claims. Defendant argues that the ordinary meaning of "cylindrical" excludes objects that are tapered, but defendant's own definition of "cylindrical"
demonstrates the fallacy of this argument. Citing the American Heritage Dictionary, defendant defines "cylindrical" to mean "of, relating to, or having the shape of a cylinder, especially of a circular cylinder." Nothing in this definition, which is substantially the same as the one provided by Merriam-Webster, requires "cylindrical" objects to be perfect circular cylinders. A tapered object can still be "cylindrical." Even if the ordinary meaning of "cylindrical" required a perfect cylinder, it is clear that the patentee did not intend this definition to apply in the context of the '194 patent. The patent also discloses a "cylindrical body member," but it is clear from the various figures in the specification that the cylindrical body member is not a perfect cylinder; each of them has various irregularities. Thus, so long as the object is cylinder-like, it is still "cylindrical" within the meaning of the term as it is used in the '194 patent.

Defendant also points to the prosecution history of the '194 patent to support its construction. Defendant notes that, at one point, the application for the '194 patent included a claim describing a cylindrical sleeve with a "tapered section," but this limitation was absent from the patented claims. See Aff. of Jeffrey Morgan, dkt. # 94, exh. # 2, at 89-90 (July 21, 2000 Preliminary Amendment, at claim 11). Although accurate, this observation does little to further defendant's position. It does not follow from the absence of a requirement for a tapered cylindrical sleeve that the '194 patent prohibits a tapered sleeve. Without any language in the claims limiting the cylindrical sleeve to one that is non-tapered, I cannot infer such a limitation, particularly when one of the preferred embodiments includes a tapered cylindrical sleeve. See Pat. '194, col. 9, lines 30-32 ("As shown in Fig. 9, the connector body or cylindrical body member wall tapers as at 145 to facilitate the generally radial movement of the connector body.")

Plaintiff defines "cylindrical sleeve" as "the portion of the connector body that is not in contact with the tubular post," but this definition has potential problems as well. Plaintiff points to the specification's description of the second preferred embodiment (Fig. 7), which provides: "The inner surface of connector body 124 includes a cylindrical sleeve which is radially spaced from post member 126 to define a first outer cavity 138 at a first end accessible via opening 140." Pat. '194, col. 9, lines 10-15. However, this definition does not match the one provided by plaintiff. The specification states that the inner surface of the connector body includes a cylindrical sleeve; plaintiff's definition of cylindrical sleeve includes both the inner and outer wall of the connector body.

To complicate matters further, there is another description of "cylindrical sleeve" suggested in the description of the first embodiment (Fig. 1): "the inner surface or inner wall of the connector body 24 or the cylindrical sleeve." Pat. '194, col. 7, line 5-6. Again, this description suggests that the cylindrical sleeve includes only the inner wall of the cylindrical body member. (The patent uses the terms "cylindrical body member" and "connector body" interchangeably. See Pat. '194, col. 6, lines 48-50.) In addition, this definition suggests that the cylindrical sleeve encompasses the entire inner wall of the cylindrical body member and not just the portion of it that is "radially spaced" from the tubular post.

Despite these two descriptions in the specification, it is understandable that plaintiff would not limit its definition of "cylindrical sleeve" to include only the inner wall of the connector body. To do so would contradict the claims themselves, which disclose a cylindrical sleeve with both an "inner wall" and an "outer wall." However, the claims do not further define "cylindrical sleeve," with the exception that claims 1(c) and 2(c) state that the "first end" of the cylindrical body member "include[s]" the cylindrical sleeve.

Neither party addresses any of these apparent inconsistencies between the claims and the specification. Of course, to the extent that the specification contradicts the claims, it is the language in the claims that controls. See RF Delaware, Inc. v. Pacific Keystone Technologies, Inc., 326 F.3d 1255, 1265 (Fed. Cir. 2003) ("courts may not use the teaching of the specification to contradict the clear language of the claims"). If the definitions in the specification are rejected in favor of the claim language, this leaves unresolved the precise location of the cylindrical sleeve. However, this lack of certainty does not appear to be a problem for the purposes of this case. The central dispute between the parties regarding this term is whether the cylindrical sleeve may be tapered. I have concluded that the patent permits either a tapered or non-tapered cylindrical sleeve. The parties agree that the "cylindrical sleeve" includes at least the portion of the cylindrical body member that overlaps with the compression ring. Accordingly, I construe the term "cylindrical sleeve" as including "the portion of the cylindrical body member that is inside the compression ring when the compression ring is fully installed." To the extent that the parties believe this definition is incomplete, they may seek to supplement it at trial.
The second term in dispute is "said handle comprising a D-shaped portion." The shape of the handle claimed by the inventor is at the heart of the parties' dispute. One World would construe this claim as "the handle includes a portion generally in the shape of a 'D,'" while Rexon would construe the claim as "a portion of the handle is formed in the shape of a capital letter 'D' which, by definition, is uniplanar." The parties agree that "D-shaped handle" has an ordinary meaning to persons skilled in the relevant art. In fact, "D-type" handles or "D-handles" are a conventional structure for miter saw handles, well known to persons of ordinary skill in the art. In its review of prior art, the '976 Patent discusses three "common" handle shapes, including "a horizontal D-handle." (Id. at Col. 1, ll. 31-34.) The specification also discusses how the rotatable handle feature found in a preferred embodiment can be used in a "D-handle type miter saw handle." (Id. at Col. 4, ll. 31-35.)

Though the parties did not discuss this standard in their briefs or at oral argument, those of ordinary skill in the art would appear to be individuals with experience designing and using handtools, including miter saws.

One World does not cite to any part of the specification in support of its effort to broaden the ordinary meaning of D-shaped handles to handles "generally" in the shape of the letter "d." The inventor's use of the term "D-shaped" within the claim is consistent with references to the D-shaped handles common in the art that appear throughout the specification. The prosecution history also references conventional D-type handles commonly known in the art, and distinguishes these handles--on grounds other than shape--from the handle of the proposed invention. Nothing in the history suggests that the handles of the prior art or of the invention need be only generally in the shape of the letter "D." In sum, the intrinsic evidence does not support One World's effort to expand the ordinary meaning of "D-shaped."

Rexon's proposed limitation of the term is more challenging: it asks me to find that the shape disclosed by the invention is uni-planar. Rexon argues that its proposed construction does not improperly narrow scope of the claim, but only elucidates the inherent meaning of the term "D-shaped." Pointing primarily to the drawings and descriptions found in the '976 specification and prior art, Rexon argues that these indicate only uniplanar handles. Rexon argues that "something shaped like a 'D' must be generally uni-planar so that it resembles and can be recognized as having the shape of the letter." Although both the drawings and the descriptions in the '976 Patent specification depict the D-shape of the handle from the perspective of a single plane, I find no evidence that this aspect of the specification was intended as a strict limitation on the claim, or that it is otherwise inherent in the definition of "D-shaped." Therefore, I decline to adopt the limitations proposed by either party. Both the specification and the prosecution history support the ordinary meaning of the claim terms: that a portion of the handle is formed in the shape of the letter "D."

During oral argument, counsel for Rexon drew an analogy to a rectangular block of wood. Viewed from a single plane, the block would be recognized as rectangular by any elementary school student. Nevertheless, if held at a particular angle, the rectangle might appear more like a square: an optical illusion of a sort. While it is an interesting analogy, there is no evidence in the specification or prosecution history that one of ordinary skill in the art would find such a limitation inherent within the meaning of D-shaped.

1. "damaged tissue" (claims 1, 4, 7, 8, 9, 10, 11, 12, 13, and 15)
Plaintiff argues that this term means "injured tissue" while Defendant argues that it means "abnormal tissue." The specification reflects that the invention may be used to heal tissue injured as a result of trauma. See e.g., 1:23-32; 5:61-6:5; 17:4-15; Fig. 5a; 17:17-32; Fig. 5b. For example, the specification addresses wrapping the device around fractures to heal the tissue surrounded by the fracture. See 6:26-36; 6:44-49. The '760 patent, however, also encompasses tissue that is "damaged" by some means other than trauma. For example, at col. 6, ll. 5-10, the patent specification shows that the invention can be used to treat tissue affected by infection, disease, or other soft tissue metastases. See 6:5-10. Accordingly, the court construes the term "damaged tissue" to mean "tissue that has been injured by trauma as well as tissue that is abnormal because of disease, infection, or other soft tissue metastases."
The Data Surface comprises a writing surface such as paper or other material upon which the stylus can be used to form marks or to write a message and from which an instant original hard copy can be obtained without first requiring data processing and printing.

Each of the independent claims 1, 10 and 16 recite the term "data surface." Anoto initially argued that the term "data surface" is properly interpreted to mean: "A writing surface containing a detectable, human eye visible indicia." (Anoto's Claim Construction at 2.) However, in its last filing before this court Anoto apparently abandons this definition and it argues for the definition the court adopts above. (Anoto's Reply at 22.) Sekendur argues that no revision should be made to the term "data surface" because it is unambiguous. However, Sekendur also provided this court with a chart reflecting each side's position on the disputed language where Sekendur defines "data surface" as: "a data surface . . . whereby said data surface comprises a writing surface." (Sekendur's Resp. at 6.)

The definition this court adopts is the definition provided by Sekendur to overcome an obviousness objection asserted by the United States Patent and Trademark Office ("PTO"). (B0057.) This definition was also provided in the prosecution history of the '012 patent to overcome a similar objection from the PTO. (A0131.) 6 Anoto argues that Guttman, Inc. v. Kopykake Enter., 302 F.3d 1352, 1360-61 (Fed. Cir. 2002) stands for the proposition that a "district court err[s] in construing a claim term contrary to the explicit definition provided by the applicant in the prosecution history where nothing in the intrinsic evidence casts doubt on that definition." (Anoto's Reply at 22.) This court agrees with Anoto's conclusion that Sekendur has defined the claim term "data surface," but this case is not as directly on point as Anoto would have this court believe.

- - - - - - - - - - - - Footnotes - - - - - - - - - - - - -

6 On its face, the definition in the '434 prosecution history relied upon by this court purports to define the term "data space," not "data surface." However, this discrepancy in terms must be due to typographical errors. The '434 patent does not utilize the term "data space," but the '012 patent did. While the claim terminology in the '434 patent utilized "data surface" and not "data space," Sekendur used the term "data space" interchangeably with "data surface" in the section of the prosecution history of the '434 patent where he provided a definition of the term to distinguish his application from prior art. (B00057.) This use of term "data space" during the prosecution of the '434 patent, instead of "data surface", is likely explained by the fact that Sekendur seems to have, during the prosecution of the '434 patent, resubmitted the exact same materials he used in the prosecution of the '012 patent. Therefore, Sekendur defined the term "data surface," during the prosecution of the '434 patent despite the fact that he failed to update his materials. This error does not negate Sekendur's action of defining the term "data surface" in an attempt to distinguish prior art.

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - -

In Jack Guttman, the Federal Circuit reversed the district court for not giving effect to the definition provided by the patentee in the specification. Id. at 1360 ("In this case, the definition of photocopy machine provided in the specification does indeed dispose of the claim construction dispute, and it was error for the district court to overlook it."). A definition in the specification, as opposed to Sekendur's alleged definition that is in the prosecution history, may be more "explicit," and therefore provide a stronger basis for holding the patentee to the definition. Nevertheless, case law relied on by the court in Jack Guttman explains that "a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996); see also Markman, 52 F.3d at 979 ("For claim construction purposes, the description [in the specification] may act as a sort of dictionary, which explains the invention and may define terms used in the claims.") (citation omitted). And at least one other Federal Circuit opinion has not found it necessary to distinguish between the prosecution history and the specification when considering whether a patentee has provided an explicit definition of a claim term. Mycogen Plant Science v. Monsanto Co., 243 F.3d 1316, 1327 (Fed. Cir. 2001) ("[A] patentee is free to be his own lexicographer, so long as the special definition of a term is made explicit in the patent specification or file history."). Therefore, this court rules that a patentee is bound by the definition the patentee provided in the prosecution history.

Jack Guttman is also distinguishable because in that case the patentee's attempt to define a word was much more explicit than what Anoto alleges is Sekendur's attempt to define the term "data surface." In Jack Guttman, the patentee explicitly
signaled the use of a definition by attaching to that definition the words "as that term is used herein." Jack Guttman, 302 F.3d at 1360. Sekendur utilizes no similar language in the portion of the prosecution history Anoto alleges provides a definition of the term "data surface." Nevertheless, the prosecution history makes clear that Sekendur was defining the term in order to distinguish prior art, despite the absence of words clearly signaling a definition such as "as that term is used herein." Scimed Life Systems v. Advanced Cardiovascular, 242 F.3d 1337, 1343 (Fed. Cir. 2001) (explaining that it is not necessary to use a "definitional format" to define a claim term). Accordingly, this court rules that Sekendur has defined the claim term "data surface."

2. "Dead Band Distance"

Formula argues that this term should be construed based on the definition of "dead band" found in the section of the patent that discusses the background art. That definition provides that dead band is the travel between the start position of the piston and the timing port. SRAM, by contrast, points to the other end of the patent document, where claims 19 and 20 specify that "the distance between a leading edge of the seal and the port defines a dead band." Thus, the parties do not disagree that the dead band ends at the timing port; they part company with regard to where the dead band begins and how its length is shortened.

According to Formula, the start of the dead band is dependent on the starting position of the piston. As the piston moves up the chamber, the dead band corresponds. As the piston moves back toward the other end of the chamber, the dead band expands, reaching its maximum distance when the lever returns to its rest position. Formula contends that axial movement of the piston and the seal connected to it is required, so other types of movement, specifically rotational movement of the seal to adjust the starting point of the dead band, should not fall within this term as construed. In support of its assertion that the invention does not contemplate rotational movement of the seal, Formula points to discussion within the specification regarding the need to minimize rotation of the piston to prevent the integrity of the seal from being impaired or compromised. Col. 6, ll. 65-67; Col. 9, ll. 61-63.

SRAM insists that the mention of piston movement within the discussion of the background art is a generalized description of the term "dead band" and that the patent provides other descriptions that culminate in the definitions found within the claims themselves. A review of the specification reveals no fewer than five explanations of the term dead band or dead band distance, some of which refer to it in terms of the piston and some of which refer to it in terms of the seal. According to SRAM, the claims are the most appropriate place to look to decide which of these explanations defines the scope of the invention.

After considering the context of the instances in which the term appears, we conclude that SRAM's construction is the more accurate. Formula's assertion that SRAM disclaimed rotational movement of the piston is unpersuasive. The language to which they point appears in the description of the preferred embodiment, not within the summary of the invention or some other portion of the patent document referring to the invention as a whole. A description of a preferred embodiment does not necessarily exclude other embodiments that satisfy the requirements set forth in the patent claims. See, e.g., Phillips, 415 F.3d at 1323.

The cases Formula cites in its supplemental memorandum in support of its argument do not mandate a different outcome. In one, the inventor expressly disclaimed the aspect that was later asserted to be within the invention's scope. Safetcare Mfg., Inc. v. Tele-Made, Inc., 497 F.3d 1262, 1270-71 (Fed. Cir. 2007). In another, the Federal Circuit noted that inclusion of a feature of an invention in the general description of the invention as a whole accompanied by emphasis on the inferiority of products without that feature was tantamount to an express disavowal of the feature. Astrazeneca AB v. Mutual Pharmaceutical Co., 384 F.3d 1333, 1340 (Fed. Cir. 2004). Neither of these scenarios is present in this case. The language upon which Formula relies in the '534 patent does not evidence an intention to disclaim or a criticism of a system including rotation of the seal. The phrasing to which Formula points is most consistent with a description of an embodiment that does not include rotation of the piston or seal, making it preferable over other embodiments that include the rotational feature that could present problems for the integrity of the seal. Moreover, unlike the language disputed in Astrazeneca, it appears in the description of the preferred embodiment, not the general summary of the invention as a whole.
Formula also cites a third case: Motionless Keyboard Co. v. Microsoft Corp., 486 F.3d 1376, 1380 (Fed. Cir. 2007). However, the portion of the case to which they direct our attention stands for the unremarkable proposition that a court will not construe a claim term broadly if the language of the claim, when read in the context of the specification, will not support the asserted breadth. In the case at bar, the specification does not counsel against an interpretation of dead band that is broad enough to include rotation of the seal. Rather, as discussed above, the language upon which Formula relies addresses the preferred embodiment, which does not prevent the patent as a whole from having a broader application.

Correspondingly, we construe the term "dead band" as the space within the cylinder before the leading edge of the seal engages and then passes the timing port, thus pressurizing the hydraulic fluid and engaging the brake.

1079

"Deck":

The top of a kayak.

1080

"deck support structure"

Claims 3, 4, 13, and 21 refer to the "deck support structure" portion of Life Fitness' treadmill. Precor asks the Court to construe this claim element as limited to only those deck support structures that necessarily permit limited longitudinal movement of the deck. Life Fitness argues that the phrase "deck support structure" should be given its ordinary meaning.

The Court finds that the patent language does not limit "deck support structure" to those structures which permit certain types of movement. The deck support structure is specifically described by the claim language itself. Precor's proposed construction is an attempt to read the preferred embodiment into the claim. The specification to the patent does not indicate that all embodiments of the claimed invention require a deck support structure which limits longitudinal movement of the deck. The disputed claim element will be given its ordinary meaning. The Court declines to read any additional or limiting meaning into this language.

1081

H. Claim 40

A device as in claim 39 wherein the thickness of the differential expansion portion decreases in a direction away from the limited expansion portion.

The court finds that this limitation means "a device as in claim 39 wherein the differential expansion portion has a lesser thickness at a point further from the limited expansion portion than it does at a point closer to the limited expansion portion."

1082

"Define" means to make or create.
2. "an air channel of a cross-sectional size defined by a member associated with the blades"

Plaintiff's Proposed Construction: "an air channel of a cross-sectional size defined by a member associated with the blades"

Defendant's Proposed Construction: "the cross-sectional size of the air channel is determined by the cross-sectional size of the member"

The Court’s Construction: "an air channel of a cross-sectional size defined by a member associated with the blades"

Plaintiff again asks the Court to apply the ordinary meaning of this phrase. Defendant asks the Court to substitute the word "determined" for "defined."

The Court agrees with plaintiff that this phrase should be construed to have its ordinary and customary meaning. Nothing in the specification or prosecution history is to the contrary. Defendant's arguments do nothing to persuade the Court that the word "defined" should be replaced by the word "determined." The Court finds the dictionary definitions supplied by defendant are not helpful.

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5. The term "drain opening defined by the erosion control housing" (claim 9)

The Court construes this term as follows:

A drain opening is "defined by the erosion control housing" if it is an opening whose boundaries are formed by, and found within, the erosion-control housing.

As noted above, "drain opening" does not need to be construed. This larger phrase containing the term "drain opening" also may not need to be construed, but the Court construes it because a jury of laypersons may not be familiar with how the word "define" is used. The most common meaning of the word "define" is "to state the precise meaning" of something or "[t]o describe the nature or basic qualities" of something. American Heritage Dictionary of the English Language at 476 (4th ed. 2000). To "define" an opening, however, is to establish its boundaries. See id. (providing additional definitions of "define": “2a. To delineate the outline or form of: gentle hills that were defined against the sky. b. To specify distinctly: define the weapons to be used in limited warfare. 3. To give form or meaning to . . . .”).

The boundaries of an opening in an object are "defined" by that object because they are formed by, and found within, that object. This construction of the word "defined" in claim 9 is consistent with how the word is used in claim 6 and claim 12, the only other places in the '207 patent where the word is used. 11

11 Claim 6 describes a "storm sewer inlet having an opening on a lateral side of the grate frame above the grate opening and defined in the street curb . . . ." '207 Patent col. 4:35-37 (emphasis added). The "opening" of the storm sewer inlet is "defined" in the street curb because its boundaries are formed by, and found within, the street curb. Claim 12 describes "an opening for overflow defined by portions of the erosion control housing . . . ." '207 Patent col.6:4-5 (emphasis added). The boundaries of this "opening for overflow" are formed by, and found within, portions of the erosion-control housing.

GO BACK
3. "wherein, when in use, said second connecting edge defines at least a portion of a leg opening"

For this disputed claim term, First Quality proposes that no construction is necessary and the phrase be given its ordinary and customary meaning. (doc. 168 at 20.) KC proposes a construction that includes additional language, "such that the elastomeric ear contacts the skin of the wearer directly," because "First Quality has taken a position in its invalidity contention that this limitation is disclosed by prior art." (doc. 150 at 42.) In support, KC cites to portions of the specification that explain "in use, the elastomeric ears 24 may contact the skin of a wearer directly, and first connecting edge 38 may form part of the waste opening, and second connecting edge 40 may form part of a leg opening of the diaper 10 when in used on a wearer." U.S. Patent No. 5,496,298, col. 3, ll. 35-40; see also (doc. 150 at 43.) In response to KC's argument, First Quality contends that KC is attempting to limit the scope of the Claim 1 because it is concerned with the validity of the claim.

An examination of the claim and specification language reveal no evidence unequivocally supporting KC's proposed construction. As First Quality argues, the specification language offered in support by KC is permissive language that merely indicates that, when in use, the elastomeric ears "may contact the skin of a wearer." This language does not require that the elastomeric ears must contact the skin of the wearer directly. KC's construction would place just such a limitation into the claim without proper intrinsic support. Therefore, we reject KC's proposed construction, and construe "wherein, when in use, said second connecting edge defines at least a portion of a leg opening" to mean "wherein, when in use, the second connecting edge defines at least a portion of a leg opening."

iv. Defining a frontal plane

Plaintiffs interpret the phrase "defining a frontal plane" to mean "delineating, by rims or other means, the plane of glasses parallel to the lenses." Defendant disagrees with Plaintiffs' construction, in part because it rejects the notion that pins or screws can define a "plane," because three points all in a common line cannot define a plane, as there are infinitely many planes that contain a straight line in three-dimensional space. Rather, Defendant insists that a plane is a surface with the property that any line joining two points on the surface is contained entirely within the plane.

The phrase "defining a frontal plane" also clearly describes a function of the "retaining mechanisms." As such, the court finds that "defining a frontal plane" means "delineating, by rims, the plane of glasses parallel to the lenses."

1. The '010 Patent

Claim 1 of the '010 Patent reads as follows:

1. A concrete block for use in construction of retaining walls and the like, said block including:
   a. bottom, top, rear, side and frontal surfaces,
   b. said bottom, rear and side surfaces being generally planar and arranged generally normal to one another;
   c. said top including a first support area defined over a predetermined area of said top for the support of additional blocks, a vertically extending shoulder adjacent said frontal surface of said block and extending entirely therealong to provide a continuous block positioning member in close association to said frontal surface and a second top surface at the uppermost end of said extending shoulder;
d. said frontal surface defining a lower vertical portion normal to said bottom and an upper, rearwardly inclined portion extending from said vertical portion terminating at said second top surface;

e. said support area and said vertical shoulder providing a locating surface to receive an additional vertically positioned block thereon wherein the additional block is positioned rearwardly from the front surface of the receiving and supporting block whereby a wall of tiers of such blocks extend rearwardly and upwardly from a support surface.

The phrase "said frontal surface defining a lower vertical portion normal to said bottom" appears in claim 1(d) of the '010 Patent. Allan Block asserts that "normal to" is commonly understood and needs no further construction. To the extent that construction is warranted, Allan Block urges the Court to adopt the following meaning:

The lower portion of the front surface must be normal to the bottom surface of the block, meaning that the plane of the lower portion must make an angle with the plane of the bottom surface that is approximately 90 [degree]. The lower portion need not abut the bottom surface in order for the lower portion to be normal to the bottom surface.

County Materials asserts that this phrase should be construed as "the frontal surface has a lower vertical portion which is normal to (i.e., intersects to form a right angle with) the bottom surface."

The Court determines that the ordinary meaning of the disputed language is readily apparent. Claim 1 recites bottom, top, rear, side and frontal surfaces; said bottom, rear and side surfaces being generally planar and arranged generally normal to one another. Further, the claim language requires that the block have a lower vertical portion of the frontal surface that is "normal to" the bottom surface. The parties agree, at least in part, that "normal" means "forming a right angle" or "right-angled." The parties dispute whether the language "normal to" also requires the surfaces to abut. The Court notes that by definition an "angle" is formed by two lines extending from the same point. See Merriam-Webster's Collegiate Dictionary 44 (10th ed. 2001). Because the claim language expressly requires that the lower vertical portion of the frontal surface form a right angle with (be normal to) the bottom surface, the two surfaces necessarily meet. Or in other words, the surfaces must abut. See id. at 5 ("abut . . . 1: to touch along a border or with a projecting part . . . 2a: to terminate at a point of contact").

The specification supports a construction of "normal to" that requires the surfaces to abut. First, throughout the specification, the lower vertical portion of the frontal surface and the bottom surface are consistently depicted as meeting to form a right angle. For example, FIGS. 1, 4, 6, and 7, illustrate views of the block wherein the frontal and bottom surfaces abut to form a right angle. The specification also contrasts two different embodiments of the concrete block, one where the end (side) surfaces and the front surface are "in normal arrangement" to each other (forming a right angle), and a second embodiment where the end (side) surfaces "converge inwardly" (forming an acute angle). The specification provides:

The block 10 is generally rectangular in shape and of a predetermined height and, as best illustrated in the side elevation of FIG. 4 includes a bottom surface 15, a rear side 16, a frontal surface consisting of a rearwardly and upwardly directed portion 17a and a vertical portion 17b and end surfaces 18-19 in normal arrangement to the frontal surface 17b or which may be angularly arranged thereto as will be further described with consideration of form 12.

'010 Patent, col. 3, ll. 48-56.

In order to form a curved front surface the sides 18-19 may be directed to converge inwardly as illustrated by the dotted line configuration, designated 12 in FIG. 3. Obviously this same modification could be provided to include sides 18-19 which would converge in a forward direction such that curvilinear effects of both convex and concave design would be attainable. This requires a slight modification from the normal side elements in the straight line arrangement.

Id. at col. 5, ll. 14-22. Allan Block argues that the above-cited portions of the specification demonstrate that "normal" is used only to refer to the angle formed by the two surface's planes and does not bear on whether the surfaces abut. The Court disagrees. First, the specification does not mention the surface's planes; instead, the specification discusses the relationship between the surfaces themselves. Second, both embodiments are depicted as having end (side) surfaces that meet with or abut the front surface. In one embodiment, the surfaces meet to form a right angle; in the other, the surfaces meet to form an acute angle. That both embodiments require the abutment of the end (side) and front surfaces is consistent with the definition of angle, which, as discussed above, requires that the surfaces meet.
Consistent with the claim language, the specification, and the prosecution history, the Court concludes that the ordinary and customary meaning of "normal to" as used in claim 1 of the '010 Patent requires that two surfaces meet to form a right angle. Accordingly, the Court construes "said frontal surface defining a lower vertical portion normal to said bottom" as follows: "the frontal surface has a lower vertical portion which is normal to (i.e., abuts to form a right angle with) the bottom surface."

**1088**

a. "said first end cap defining an air inlet aperture"

The phrase "said first end cap defining an air inlet aperture" appears in claim 1 of the '366 Patent. The parties' arguments regarding the construction of "said first end cap being an open airflow inlet" in claim 7 of the '712 Patent apply to the construction of this phrase. For the reasons discussed above, the Court declines to construe this phrase.

**1089**

C. Whether Certain Versions of the TFN Have a "Larger Wall Thickness Defining the Head"

The '663 patent claims an intramedullary rod with "a second, larger wall thickness defining the head." (Column 8:12-14.) Similarly, claim 9 of the '406 patent recites a treatment method using an intramedullary rod wherein "the side wall of the rod is thicker at the head than the side wall of the rod at the distal stem." (Column 8:36.) The court has interpreted the limitation in claim 1 of the '663 patent to mean "the wall thickness of the head is thicker than the wall thickness of the stem; the thicker wall defines the head as distinct from the stem." (Markman Op. at 11.) The head of the intramedullary rod is defined as the "upper portion of the intramedullary rod extending from the end closest to the hip to the stem and includes any transitional wall thickness leading up to the stem." (Markman Op. at 11.) Smith & Nephew sought to show at trial that every version of the TFN infringed this element of the patents in suit.

The transitional portion in the head of every version of the TFN rod is thicker than the corresponding stem wall. In its prior summary judgment order, the court rejected Smith & Nephew's argument that the 'greater thickness in this transitional portion alone made the TFN rods infringe the patents in suit, instead holding that there was an issue of material fact about which portion or portions of the head wall were required by the patents in suit to be thicker than the stem wall.

In describing the disadvantages of the prior art, the specification states that "there is not sufficient mechanical support to allow usage of the locking screw in the direction towards the femoral head because the second pair of coaxial holes weaken the nail when loaded in that direction." U.S. Patent No. 5,167,663, Column 2:41-45. The application that became the patents in suit was initially rejected in light of prior art, particularly the Marino patent. After an interview that occurred on February
21, 1992, the Examiner noted that "Applicant has agreed to amend the scope of the claims to more fully describe the proximal portion to emphasize the coaxial bores and thickened wall portion for better sliding." (Pretrial Stip. 6.46.) (emphasis added). The proposed claims in the '663 patent were again rejected and, after another interview, the Examiner concluded that "it appears the suggested language overcomes the prior art." (Pretrial Stip. 6.48.)

Brumfield, the applicant, thereafter filed a "Response to Final Office Action," in which claim 1 of the '663 patent was amended to require a "hollowed" intramedullary rod and to claim only an intramedullary rod with a "second, larger wall thickness defining the head." Brumfield argued that "the apparatus allows a heavier load to be carried at the top of the rod due to the thickened portion provided in the proximal head region. These advantages were discussed with the Examiner during the recent interview and have now been incorporated into the claims by these amendments. The Marino device does not provide the thickened wall portion as claimed." (Pretrial Stip. 6.49.)

Brumfield's ultimately successful argument to the Examiner invoked his earlier statements that a thickened head wall portion would provide "better sliding." Only a thicker portion where the coaxial holes are located would provide for better sliding because the proximal screws would have more surface area on which to slide. This statement indicates that the head wall is meant to be thicker at a portion through which the coaxial holes are bored, not at the more distal transition portion between the head and stem. Thus, it appears that the "thicker portion defining the head" does not denote the transitional portion.

As noted in the order on motions for summary judgment, the claim language in the patents in suit, read within the context of the specification, is somewhat ambiguous as to which portion(s) of the head wall must be thicker than the stem wall. In such situations, the particular embodiments described in the specification are particularly instructive. See Astrazeneca AB v. Mutual Pharmaceutical Co., Inc., 384 F.3d 1333, 1340 (Fed. Cir. 2004) ("the patentee's choice of preferred embodiments can shed light on the intended scope of the claims"). In the specification of each of the asserted patents, the transition portion is shown to be no thicker than the upper part of the head. (TX 20 at Fig. 3, 12; Tr. 461; 23-463:6.) There is nothing in the specification or prosecution history of the '663 patent that suggests that the transition portion has or is meant to have a larger wall thickness as opposed to the upper part of the head where the screw holes are located. (Tr. 756:5-758:4.) Thus, it appears that the "greater wall thickness defining the head" describes the proximal portion through which the holes are bored.

The evidence offered at trial further supports this conclusion. Brumfield testified that downward weight-bearing forces on the proximal screw engaging the femoral head would exert a "cantilever" force on the intramedullary rod. Thus, the portions of rod that must withstand primary forces are immediately below the proximal hole nearest the femoral head and immediately above the opposite proximal hole, not in the transitional portion of the head. (Tr. 763:15-764:8; TX 54.)

Thus, the court concludes that those versions of the TFN in which only the transitional portion of the intramedullary rod has a thicker wall than the stem do not have a "greater wall thickness defining the head" and, therefore, do not practice claim 1 of the '663 patent. Excluding the transitional portion, the head wall thickness of all versions of the TFN rod is 3.175 mm. (Tr. 763:15-764:22; TX 55.) For all 11 mm and 12 mm versions of the TFN, this wall thickness is less than the wall thickness in the stem of the rod. For the foregoing reasons, the court concludes that the 11 mm and 12 mm versions of the TFN rod do not infringe the '663 patent, and the use of those versions of the TFN to treat intertrochanteric fractures does not infringe claim 9 of the '406 patent, which describes a device in which "the side wall of the rod is thicker at the head than the side wall of the rod at the distal stem."

1090

i. Type of Deformation

Throughout their briefs and oral arguments, the parties refer to two types of deformation: (1) horizontal, or "in-plane," changes to the substrate; and (2) vertical, or "out-of-plane," changes to the substrate. L&P contends that "deform" only encompasses the latter type of change. Vutek maintains that the term "deform" is used broadly to include both in-plane and out-of-plane changes to the substrate. After reviewing the '518 Patent and its specification, I agree with Vutek that the term "deform" does not contain any directional limitations.

The express limitations and qualifications which accompany the term "deform" in the claims demonstrate that the drafters of
the '518 Patent did not believe a person of ordinary skill in the art would understand "deform" to contain inherent limitations on the direction a substrate may move. For example, in both claims 1 and 10, the particular substrate on which this invention is designed to print is identified as a "rigid substrate formed of a material that has a tendency to at least temporarily deform in the direction of the printhead if exposed to radiant curing energy while at a printing station." (Emphasis added). Both of these claims qualify "deform" as referring only to out-of-plane movements of the substrate, that is, movement upward from the plane for printing and towards the printhead. If persons of ordinary skill in the art understood "deform" to only apply to out-of-plane movements, the explicit qualifications of claims 1 and 10 would be superfluous. See Phillips, 415 F.3d at 1324-25 ("Independent claim 17 further supports [the proposition that the term 'baffle' should be defined broadly]. It states that baffles are placed 'projecting inwardly from the outer shell at angles tending to deflect projectiles that penetrate the outer shell.' That limitation would be unnecessary if persons of skill in the art understood that baffles inherently service such a function.").

Similarly, a comparison of the three independent claims, 1, 10, and 20, demonstrates that "deform" should not be defined with inherent directional limitations. Claim 1 describes the amount of thermal energy provided by the '518 Patent's UV curing assembly as an amount sufficient "to substantially cure the ink without impinging radiation that would heat the substrate so as to deform it, even temporarily, while at the printing station." Likewise, claim 20 teaches the application of "sufficiently low thermal energy to the substrate in the vicinity of the printhead to avoid even temporary deformation of the substrate where ink is being jetted thereon." Claim 10, however, describes the required level of energy as enough "to substantially cure the ink jetted onto the substrate without heating and thermally deforming, even temporarily while at the printing station … so that the surface of the material being printed upon does not move from the plane for printing." (Emphasis added).

In review, claims 1 and 20 contain no limitation on the type of deformation that the invention was designed to prevent, while claim 10 explicitly limits the deformation to movement "from the plane for printing." In TurboCare Div. of Demag Turbomachinery Corp. v. General Elec. Co., the Federal Circuit faced a similar situation and held that claim terms should not be read to contain a limitation "where another claim restricts the invention in exactly the [same] manner." 264 F.3d 1111, 1123 (Fed. Cir. 2001). Likewise, "deform" should not be read in claims 1 and 20 as including the vertical limitation that is explicitly contained in claim 10.

Finally, as a matter of physics, even if "deform" were intended to apply only to situations where the substrate bubbled, rose, or warped toward the printhead, such movement is the product of both in-plane and out-of-plane changes in the substrate. L&P acknowledged this in the prosecution history when it stated that "[w]ith a heat sensitive rigid substrate … heat from the lamps expands the surface of the substrate relative to the core and opposite surface of the substrate and causes the substrate to bubble or bow away from the support and toward the printhead." For the foregoing reasons, I reject L&P's attempt to read any directional limitation into the term "deform," as it is used in the '518 Patent.

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ii. Degree of Deformation

The second issue raised with respect to the term "deform" is whether there is a threshold level of movement that the substrate must undergo before it can be said to have deformed. L&P proposes construing "deform" to refer only to a change in a substrate "which unacceptably degrades print quality." Vutek argues that "deform" should encompass any change in substrate shape "measurable by those of ordinary skill in the art." After reviewing the intrinsic and extrinsic evidence, I conclude that a person of ordinary skill in the art would interpret "deform" to mean a change in a substrate which degrades print quality such that the print is commercially unacceptable for its intended purpose.

First, as both parties' proposed constructions suggest, the term "deform" is inherently limited by degree. Not all changes in a substrate necessarily rise to the level of "deformation." Codos explained that it is a physical fact that exposure to any level of light, regardless of the level of IR, will result in some movement of the particles that make up a substrate. Thus, a person of ordinary skill in the art would not read the claim language "without heating and thermally deforming, even temporarily" to exclude any movement of the substrate particles.

The issue thus becomes where to draw the line. Vutek proposes to draw this line at those changes in substrate shape
"measurable by those of ordinary skill in the art." L&P proposes to draw this line at changes in a substrate "which unacceptably degrade print quality."

Although the claims themselves do not qualify the term "deform" by any threshold of degree, the specification and prosecution history demonstrate that the '518 Patent was solely concerned with changes in the substrate that affect print quality. There are numerous excerpts throughout the specification which establish the cause-and-effect relationship between deformations in the substrate and degradations in print quality. The drafters of the '518 Patent reinforced their concept of deformations as those changes in a substrate which degrade print quality in following remarks during the prosecution of the Patent:

The claims have been amended to more clearly focus the claims on the problem solved by the invention. The present invention deals with problems of temporary substrate deformation, and deformation at the printing site. This deformation changes the distance between the printhead and the substrate, which affects print quality.

(Emphasis added). I find that the specification and prosecution history would indicate to a person of ordinary skill in the art that deformations which do not affect print quality are outside the scope of the '518 Patent.

--- Footnotes ---

3 "[E]ven temporary deformation can adversely affect the print quality if it exists when ink is being jetted onto the substrate." Col. 1, ln. 50-52.

"Deformation of the substrate surface that occurs due to heat in spot curing can extend to the portion of the substrate that is still to be printed, thereby changing the printhead-to-substrate spacing and adversely affecting the quality of the ink jet printing operation." Col. 3, ln. 18-23.

"Deformation at the printing site, even if temporary such that the material returns to its undeformed state when it cools, adversely affects the print quality because spot curing deforms the substrate as the ink jets are making single or multiple passes over the print area." Col. 3, ln. 41-44.

"Where carriage mounted UV curing heads are used and the freezing of the dots at the point of jetting is desired, deforming the substrate at the location where the ink drops are being deposited would degrade the printed image." Col. 7, ln. 66 - Col. 8, ln. 3.

--- End Footnotes ---

Print quality depends on many variables including the type of printer, the substrate, the ink, and the intended use of the print. Once these parameters are determined, however, I find that a person of ordinary skill in the art would know what can be sold and what can't be sold. As Whittle explained in his deposition, by speaking with customers and considering the viewing conditions for a particular print, one can determine what print quality standard will be commercially acceptable. A particular print quality standard, of course, will not necessarily be acceptable to every customer or for every use. It is reasonable to expect, however, that those customers demanding a higher standard would be willing to pay more to satisfy their higher quality demands. In sum, I conclude that the ordinary meaning of "deform" to one of ordinary skill in the art only includes those changes in a substrate which degrade print quality such that the print is unacceptable for its intended purpose.

iii. Use of Mechanical Restraints

Vutek contends that an additional limitation should be included in the construction of "deform" which would provide that "deformation must be determined without use of a vacuum or other mechanical restraint to control deformation." According to Vutek, the '518 Patent does not teach the use of a vacuum or any other mechanical restraint to minimize the impact of
deformation of the substrate. L&P maintains that the ‘518 Patent does not prohibit the use of a vacuum or other mechanical
restraint to hold substrates flat on the printing plane. For several reasons, I agree with L&P.

First, while the claims may be silent as to the use of mechanical restraints, the are open-ended claims, and thus do not
preclude the addition of other elements. Specifically, claims, 1, 10, and 20 are prefaced with the word "comprising," a word
that "indicates that the claim is open-ended and allows for additional steps." Invitrogen Corp. v. Biocrest Mfg., L.P., 327
F.3d 1364, 1368 (Fed. Cir. 2003).

Second, the preferred embodiment of the ‘518 Patent explicitly teaches the use of a vacuum. In the written description of
the conveyor belt system, the specification provides that the conveyor "belt has a high friction rubber-like surface to help
prevent a horizontal sliding of a panel resting on it, through which an array of holes or open mesh is provided to facilitate
communication of the vacuum from the table to the substrate." Col. 5:6-10 (emphasis added).

Finally, Whittle confirmed during his testimony at the Markman hearing that vacuum tables are common throughout the
printing industry. In fact, all of the printers that Whittle himself had developed used some sort of fan or vacuum device
to ensure that the substrate remains flat during printing. For the foregoing reasons, I conclude that a person of ordinary skill
the art would not interpret the ‘518 Patent to preclude the use of a vacuum when determining whether a deformation has
occurred.

2. Deformable Base

The parties apparently substantially agree upon the meaning of the phrase "deformable base;" their major point of
disagreement centers around whether the entire needle head is housed, matingly engaged or locked by the deformable base.
Compare Pls.’ Reply, at 19-20 with Defs.’ Mem. in Opp’n, at 17. SDP argues that the claims and the specification only
require that the deformable base house, matingly engage or lock "at least a portion of the needle head." Pls.’ Reply, at 20
(emphasis added by Plaintiffs). In addition, SDP argues that the deformable base does not necessarily need to be made from
an elastomer. Id. at 19-20.

In contrast, rather summarily, NMT avers that the deformable base "houses, matingly engages, and locks the entire head of
the needle." Defs.’ Br. in Opp’n, at 17. In support of its construction NMT cites the ‘952 patent at column 2, lines 5-10,
column 5, lines 23-30, column 6, lines 7-32, column 7, lines 40 and 44, column 10, lines 30-37 and 76, column 11, line 51,
and column 12, line 32. Id. Further, NMT asserts that the deformable base must be made of an elastomer. Id.

The Court primarily agrees with SDP’s Construction and finds that the phrase "deformable base" means a portion of a
syringe that is made of a material that can move down around a needle head when pressure is applied against it, that
substantially houses, matingly engages or locks a portion of a syringe needle head, and that forms a liquid-tight seal
between the needle and the syringe barrel.

As it must, the Court starts with the claim language:

26. A syringe comprising:

    * * *

    a deformable base within said barrel intermediate said [sic] first and second end;

    * * *

    wherein a fluid can move from within said barrel through said needle as said plunger moves through said barrel to said
deformable base, and when said rupturable web contacts said deformable base, continued movement of said plunger moves
said deformable base toward said first end, said rear end of said needle thereby tearing said web wherein said rear end loses
contact with said deformable base . . . .

- 1530 -
30. A process for retracting a needle . . . comprising the steps of:

forcing a plunger of a syringe downwardly within said syringe to force a deformable base engaging a head of said needle downwardly around said head . . . .

38. A syringe apparatus comprising:

a deformable base positioned within said barrel adjacent needle [sic] assembly and defining a passage therethrough;
energy storing means within said passageway;
a hollow needle passing through said passageway;
an enlarged head on said needle engaged within said passage of said deformable base; . . .

. . . continued movement of said plunger moves said deformable base downwardly until such time as sufficient force is imparted to said rupturable web by said enlarged needle head of said needle to tear said rupturable web, said deformable base then releasing said needle . . . .

40. The apparatus according to claim 38 wherein said deformable base is cylindrical.

Other claims of the '952 patent that are not disputed by the parties also refer to a deformable base. Those references are recited here as additional context for construction of this claim term. The relevant claims state in part:

1. A syringe apparatus comprising:

a deformable base positioned within said barrel adjacent said [sic] needle assembly and defining a passage therethrough;
an enlarged head on said needle engaged within said passage of said deformable base; . . .

. . . continued movement of said plunger flexes said supports and moves said deformable base downwardly until such time as sufficient force is imparted to said rupturable web by said enlarged head of said needle to tear said rupturable web, said deformable base then releasing said needle with said enlarged head due to force applied thereto . . . .

2. The apparatus according to claim 1 wherein said enlarged head is generally matingly engaged by said deformable base.
A review of these claims, and other claims in the patent that reference a deformable base, reveals that the deformable base must house, matingly engage or support one end of a syringe needle. See id. col. 12, ll. 65-67; col. 13, ll. 3-5; col. 13, ll. 22-24; col. 14, ll. 55-60; col. 15, ll. 8-10; col. 15, ll. 16-21; col. 15, ll. 25-27; col. 15, ll. 32-40; col. 16, ll. 22-25; col. 16, ll. 27-29. The claims themselves provide no limitation that the entire head of the needle must be contained within the deformable base. Moreover, the claims reveal that the deformable base must move down around the needle and/or needle head as pressure is applied to the deformable base until the needle or needle head is free of the deformable base. See col. 13, ll. 12-18 ("continued movement of said plunger flexes said supports [on the deformable base]; and moves said deformable base downwardly until such time a sufficient force is imparted to said rupturable web by said enlarged head of said needle to tear said rupturable web, said deformable base then releasing said needle with said enlarged head"); col. 15, ll. 2-6 ("continued movement of said plunger moves said deformable base toward said first end [of the syringe barrel], said rear end of said needle thereby tearing said web wherein said rear end loses contact with said deformable base"); col. 15, ll. 25-27 ("forcing a plunger of a syringe downwardly within said syringe to force a deformable base engaging a head of said needle downwardly around said head"); col. 16, ll. 27-42 ("continued movement of said plunger moves said deformable base downwardly . . . said deformable base then releasing said needle").

Apparently, both parties agree that it is implied by the description of the apparatus and the process in the '952 patent that the deformable base must also provide a liquid-tight seal between the needle and the syringe barrel. See Defs.' Mem. in Opp'n, at 17; Pls.' Reply, at 20. This is a logical conclusion based on the function of the deformable base to house, matingly engage or support the needle head through which medication will be injected. The apparatus claims of the '952 patent that reference a deformable base state that the fluid from the barrel flows through the hollow needle. Id. col. 13, ll. 11-12; id. col 14, ll. 66-67; id. col 16, ll. 36-37. For that to happen in the apparatus described in those claims, the deformable base must create a seal between the barrel and the needle. Otherwise, medication would get trapped between the barrel and the needle assembly rather than get injected into the patient.

The specification supports such a purpose for the deformable base. The specification reads in pertinent part:

"Positioned between the passageway within the needle assembly and a shelf on an internal wall of the syringe barrel is a deformable base, with internal flexible supports. The deformable base forms a liquid tight seal with the barrel, at the needle end of the barrel. The deformable base houses an enlarged head of the needle which enlarged head is in contact with energy storage means within the passageway in the needle assembly."

Id. col. 2, ll. 5-12. Further:

"Upon completion of an injection, the boot-covered plunger contacts the deformable base, and upon application of force at the plunger, moves such base downward. Continued application of force causes the flexible supports to flex and move over the needle assembly, permitting the deformable base to move the enlarged head of the needle downward until further movement of the enlarged head is blocked by the needle assembly, continued force at the plunger causes the deformable base to move around the enlarged needle head."

Id. col. 2, ll. 16-27. In addition, "as the plunger moves the deformable base still further, the enlarged needle head looses [sic] contact with the deformable base . . . ." Id. col. 2, ll. 34-36. Clearly these passages teach that the deformable base houses an enlarged head of a needle and, upon application of force, is moved downwardly around the enlarged head until the needle is completely free of the deformable base. Moreover, the specification also teaches that the deformable base forms a liquid-tight seal at the needle end of the barrel. Id. col. 2, ll. 8-9.

Similarly, the description of the '952 patent's alternative embodiment reveals the purpose of the deformable base. The specification reads:

"In an alternative embodiment . . . the deformable base is positioned between sacrificial supports in the needle assembly and an internal wedged end of the barrel. Upon completion of injection, the boot contacts the deformable base, and upon application of force at the plunger, moves the base downward, initially breaking the liquid tight seal between the base and"
the barrel. Continued application of force causes the sacrificial supports within the needle assembly to sever, permitting the deformable base to move the enlarged head of the needle downward until further movement of the enlarged head is blocked by the passageway in the needle assembly. With the enlarged needle head blocked by the passageway, continued force at the plunger causes the deformable base to move around the enlarged needle head. As the deformable base moves forward, the enlarged needle head begins to protrude from the deformable base and come into contact with a thin, rupturable web on the boot of the plunger. Continued force causes the enlarged needle head to penetrate the web of the boot, positioning the enlarged needle head just inside a hollow portion of the plunger. As the plunger moves the deformable base still further, the enlarged needle head loses contact with the deformable base . . . .

Id. col. 2, ll. 51-67 to col. 3, ll. 1-7.

Therefore, the deformable base must house or matingly engage the head of a needle, must be capable of moving down around the needle head when pressure is applied against it until the needle is completely free, and, at least initially, it must provide a liquid-tight seal at the needle end of the syringe barrel.

The specification also reveals more about the inventors' intended position for the needle head within the deformable base. The description reads:

. . . By appropriately positioning the enlarged needle head 13 within deformable base 11 for a substantially mating engagement, the geometries of top 14 and area 15 of enlarged head 13 can be substantially mated and locked within deformable base 11 so that a liquid tight seal between needle head 13 and deformable base 11 is created at top 14 of enlarged head 13. As seen if FIG.1, all of enlarged head 13 but a portion of the bottom portion is contained within the deformable base.

* * *

. . . Deformable base 11 is designed to substantially matingly engage enlarged head 13. As seen in FIG. 4 base wedge 6 is provided, below where top 14 of enlarged head 13 can fit, for proper positioning of the needle in the deformable base. Further, cylindrical barrel seals 8 are provided to create proper sealing action between base 11 and barrel 5. The diameter and width of the barrel seals 8 can be made to create an optimum seal, while minimizing static and dynamic friction between base 11 and barrel 5. Also illustrated in FIG. 4 are supports 31, preferably formed as opposing, semicircular cantilevered beams projecting from the upper body 12 of base 11. Each support 31 has an inward engaging flange 32 for engaging a tower portion of enlarged head 13 and an end of the needle assembly, as shown in FIG. 1. needle head seal 10 is further illustrated in FIG. 4 and is where top 14 of enlarged head 13 can fit. The diameter and width of needle head seal 10 is designed to provide optimum sealing with top 14, while minimizing static and dynamic friction between enlarged head 13 and base 11.

Id. col. 5, ll. 23-31; id. col. 6, ll. 7-25. In this description, only a portion of the needle head is enclosed within the deformable base. The bottom portion remains free of the base until pressure is applied to force the deformable base downwardly. Moreover, the description uses the word "substantially" to describe the mating engagement of the deformable base and the needle head, which implies a majority, but not all of the needle head is contained within the deformable base.

Similarly, the alternative embodiment description reads:

Needle 103 has an enlarged head 113 mounted within deformable base 111. Enlarged head 113 has a wedge portion 115 and a circular flange portion 117. By appropriately positioning the enlarged head 113 within deformable base 111, the geometries of the flange portion and wedge portion of enlarged head 113 substantially lock such enlarged head portion within the deformable base, while also creating a liquid tight seal between needle head 113 and deformable base 111.

Id. col. 10, ll. 30-38. Again, this description uses the word "substantially" to describe the position of the needle head relative to the deformable base. This implies a portion of the needle is not "locked" by the base.

In a description of yet another embodiment, the position of the needle head within the deformable base is also discussed:

. . . This embodiment . . . includes a cylindrical deformable base 163 having a central passage therethrough which
matingly engages a cylindrical enlarged needle head 165 . . . . Enlarged needle head 165 includes two cylindrical sections of different diameters with the larger section being held entirely within base 163 prior to initiation of needle retraction and the lower cylindrical section extending partially into the needle assembly and having a contacting portion 175 on an end thereof for contacting spring 173. Base 163 is biased in position by spring 173 against shelf 177 and by friction from barrel 171 prior to initiation of needle retraction.

Id. col. 12, ll. 20-38. This description clearly contemplates that the lower portion of the needle head is not engaged within the deformable base, but "extends partially into the needle assembly." Id. col. 12, ll. 33-34.

In summary, although these descriptions reveal that the deformable base houses of matingly engages a substantial portion of the needle head, it is clear the inventors contemplated that a portion of the needle head would not be housed, matingly engaged or locked into the deformable base. The specification supports the broader construction revealed in the claims themselves that the deformable base must house, matingly engage or lock a portion of the needle head, but not all of the needle head. Moreover, the description also supports the inference that the deformable base is intended to create a liquid-tight seal between the needle and the barrel.

Finally, NMT argues that the deformable base must be made of an elastomer. The Court finds that although at least one description of the preferred embodiments states that a preferred material for the deformable base is an elastomer, see id. col. 6, ll. 28-29 ("A preferred material for base 11 is an elastomer."), there is no requirement that the deformable base must be an elastomer as NMT suggests. The '952 patent claims describe how the deformable base must function when other parts of the syringe put force or pressure upon it. As long as a part that houses, matingly engages, or locks the needle head can move down the needle head when pressure from the plunger is applied against it, any material that allows for such movement could be used for that part. The inventors merely suggest that an elastomer would be preferred over other materials; it is not part of the claims.

In the context of the '952 patent, the Court finds that the phrase "deformable base" means a portion of a syringe that is made of a material that can move down around a needle head when pressure is applied against it, that substantially houses, matingly engages or locks a portion of a syringe needle head, and that forms a liquid-tight seal between the needle and the syringe barrel.

1094

a. "deformable grommet"

Claim Language

Callicrate proposes that the phrase "deformable grommet" be defined as "a grommet that is capable of being deformed." On the other hand, NAIC argues that the phrase means "a single deformable grommet, preferably made from rolled flat wire," but provides no analysis or argument to support its proposed interpretation. The ordinary meaning of "deform" is "to alter the shape of by stress." 58 The ordinary meaning of "grommet" is "a flexible loop that serves as a fastening, support, or reinforcement." 59 A limitation or preference that the grommet be made of rolled flat wire is thus not suggested by giving the phrase "deformable grommet" its ordinary meaning.

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - - -


59 Id. at 514.

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - -

Specification

The specification does refer to a grommet consisting of rolled flat wire. The specification states: "more preferably, the
grommet is comprised of rolled flat wire with a length and width sufficient to prevent the ligature material from slipping through the grommet 32 after the grommet 32 is deformed upon the endless loop 100." 60 This reference to rolled flat wire clearly evidences a preferred embodiment and does not limit the claim. The Court notes that the specification also states that the grommet "can be formed from aluminum or other deformable material" and "can be of any desired shape and dimension." Thus, the Court declines to limit the grommet to one "preferably consisting of rolled flat wire," and instead adopts Callicrate's proposed construction.

--- Footnotes ---

60 Emphasis added.

--- End Footnotes ---

Claim one of patent '340 states that ". . . said barbs prevent said hanger hook from exiting the slot absent deformation or destruction of at least one of said barbs. . ." (emphasis added). In particular, this Court focuses here on whether the term "deformation" included in Claim one of the patent encompasses both temporary and permanent deformation as Johannson maintains, or merely permanent deformation as Rose contends. 1 This is a decision exclusively for the Court. Markman, supra.

--- Footnotes ---

1 In simpler terms, Rose argues that its device is intentionally designed to snap on and off and still do the job, whereas the '340 patent claims a device that cannot be removed without permanently deforming at least one of the barbs.

--- End Footnotes ---

In determining the scope of a claim, the terms used in the patent are given their ordinary meaning unless another meaning is specified or evident from the patent history. Transmatic Inc. v. Gulton Industries, 53 F.3d 1270, 1277 (Fed. Cir. 1995); Carroll Touch, Inc. v. Electro Mechanical Sys., Inc., 15 F.3d 1573, 1577 (Fed. Cir. 1993). If there is a question raised about the appropriateness of the plain language approach, the court must look to the ordinary skill of the art in question. The court may use extrinsic evidence to determine the skill of the art to clarify any ambiguity. Markman v. Westview Instruments, Inc., 52 F.3d 967, 986 (Fed. Cir. 1995), aff'd, Markman v. Westview Instruments, Inc., 116 S. Ct. 1384, 1996 WL 190818, *8-10 (U.S., April 23, 1996). In this case, however, the plain language approach is applicable since there is no indication that the term deformation has any special meaning under the ordinary skill of the art. See Transmatic, 53 F.3d at 1277.

Johansson points to the affidavit of Dr. Mary Boyce, a mechanical engineering professor at MIT and an expert in polymers. Dr. Boyce states that Rose's marker undergoes both permanent and temporary deformation. However, Dr. Boyce does not maintain that the definition of deformation should include temporary deformation, nor would she be qualified to make such an assertion since she makes no claim that she is basing her opinion on the patent history. In short, Johannson attempts through the Boyce Affidavit to equate the ordinary wear and tear that the Rose device would undergo in use, to permanent deformation. Johannson's characterization of permanent deformation is the equivalent of stating that a knit hat undergoes both temporary and permanent deformation when worn, since some stretching of the wool occurs when worn and such stretching of the weave would eventually result in a slightly larger hat. This Court rejects the Johannson characterization of deformation.

For a court to find infringement of a patent, each and every element of the patent must be present in the allegedly infringing item. Carroll Touch, Inc., 15 F.3d at 1576 (Fed. Cir. 1993); London, 946 F.2d at 1538-39; Lemelson v. United States, 752 F.2d 1538, 1551 (Fed. Cir. 1985). The court does not have the freedom to determine what aspects of a claim are material and important, and what aspects are insignificant. See Becton Dickinson and Co. v. C.R. Bard, Inc., 922 F.2d 792, 798 (Fed. Cir. 1990). Therefore, this Court must assume that "all limitations in a claim are material and must be met exactly or equivalently in an accused device to find that the accused device works in the same way." Id. If this Court finds that even one structural limitation is not present in the accused device, summary judgment for the accused is proper. See id. Claim one
of the '340 patent requires that the marker contain barbs that "prevent said hanger hook from exiting the slot absent deformation or destruction of at least one of said barbs." As noted previously, Rose's marker does not contain barbs that undergo destruction or deformation when removed from a hanger hook. Therefore, an element of the '340 patent is not present in the Rose marker and thus the Rose marker cannot be said to infringe upon the '340 patent.

Claim 1 is the only independent claim of the '340 patent. The portion of the claim in dispute relates to the way in which the barbs restrain the marker on the hanger hook, and recites (emphasis added):

such that the clothes hanger hook in pushing through said slot and said passage, deflects the barbs away from each other to permit entry of the hook into the center of the cylindrical ring but said barbs prevent said hanger hook from exiting the slot absent deformation or destruction of at least one of said barbs, and wherein said marker further comprises a plurality of hook locating lugs extending from the inner periphery of the ring wall towards the center of the cylindrical ring wall, at circumferentially spaced positions. . . .

The parties dispute whether the barbs on Rose's accused MINI WISERSIZER clothing marker undergo the "deformation or destruction" required by the claims when removing the marker from the hanger hook.

Before the district court, the parties made cross-motions for summary judgment on the issue of infringement. In his motion, Johansson contended that Rose's barbs undergo the necessary deformation or destruction recited in the claims. He supported his motion, inter alia, with an affidavit of Dr. Mary C. Boyce. Dr. Boyce calculated the stress on the barbs of the MINI WISERSIZER during "pop-off" (i.e., the point during the removal of the marker from the hanger hook when maximum force is exerted on the barbs and the marker is removed from the hook) and conducted a series of experiments in which she analyzed the stresses during pop-off. Dr. Boyce concluded that after five to ten cycles of putting the marker on the hanger hook and popping it off, the barbs on the MINI WISERSIZER had undergone visible deformation. In a cross-motion for summary judgment of noninfringement, Rose asserted that the MINI WISERSIZER did not have "hook locating lugs extending towards the center of the cylindrical ring wall," as required by the claims.

The district court denied Johansson's motion and granted Rose's cross-motion. The court, however, did not base its ruling on Rose's argument that the MINI WISERSIZER did not contain hook locating lugs extending toward the center of the ring wall, and Rose does not renew that argument on appeal. Rather, the court ruled that "Rose's marker does not contain barbs that undergo destruction or deformation when removed from a hanger hook." Johansson appeals. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1) (1994).

II


Determining whether a patent claim has been infringed involves a two-step examination: First, the claim must be properly construed to determine its scope and meaning. Second, the claim as properly construed must be compared to the accused device. Carroll Touch, Inc. v. Electro Mechanical Sys., Inc., 15 F.3d 1573, 1576, 27 U.S.P.Q.2D (BNA) 1836, 1839 (Fed. Cir. 1993). The first step, claim construction, must be conducted without regard for the accused device or process. Young Dental Mfg. Co. v. Q3 Special Prods., Inc., 112 F.3d 1137, 1141, 42 U.S.P.Q.2D (BNA) 1589, 1592 (Fed. Cir. 1997).

A

Claim construction begins with the words of the claim. See Bell Communications Res., Inc. v. Vitalink Communications Corp., 55 F.3d 615, 619-20, 34 U.S.P.Q.2D (BNA) 1816, 1819 (Fed. Cir. 1995). As to the meaning of "deformation," claim
I merely requires that the barbs prevent the hanger hook "from exiting the slot absent deformation or destruction of at least one of said barbs." Because claim 1 refers to "deflection" ("deflects" the barbs) to describe temporary (elastic) deformation, the parties agree that where the claim uses the term "deformation," it requires some level of permanent (plastic) deformation. Beyond that, however, there is no agreement.

The district court did not explicitly define "deformation." The court stated that the question was whether "deformation" encompasses both permanent and temporary deformation or merely permanent deformation. However, the only analysis announced by the court simply rejected the notion that ordinary wear and tear could constitute deformation, and then concluded that Rose's barbs do not undergo the requisite deformation. A court must construe a claim before determining whether there is infringement; as a result, a court may not look to the accused device in construing the claims. See SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1118, 227 U.S.P.Q. (BNA) 577, 583 (Fed. Cir. 1985) (in banc). The district court's analysis does not indicate that the court formulated a claim construction before looking to the accused markers. We therefore conclude that the district court erred.

Deformation is a "change in either shape or size of a material body or of a geometrical figure," while destruction is "demolition or complete ruin [or] killing or annihilation." Webster's Third New Int'l Dictionary 593, 615 (1966). The claim describes the barbs functionally by stating that they are to hold the claimed marker on the hanger hook until they are deformed or destroyed.

The written description also speaks of deformation in several locations. The Summary of the Invention states:

The marker has a locking device which makes it impossible to remove the marker from the hook, except by use of excessive force, thus securely affixing the marker to the hook with connection thereto readily effected.

'340 Patent, col. 2, lines 15-19. The Description of the Preferred Embodiment notes:

It will be virtually impossible to remove the marker from the hook, unless excessive force is used sufficient to deform the barbs 5 backwards and also to deform the marker ring wall 2.

'340 Patent, col. 2, line 67 to col. 3, line 2. Like the claim language, these passages suggest the function to be performed by the barbs, i.e., to retain the hook until the barbs are deformed or destroyed. As a corollary, once the barbs are deformed or destroyed, they are no longer capable of retaining the hook. We thus conclude that "deformation," as used in the patent claims, is permanent deformation that impedes the proper use of the clothing marker. If an accused device experiences such deformation within a reasonable number of uses (i.e., mountings and demountings on hanger hooks), it literally meets the deformation limitation of the claims.

Rose contends that deformation, as used in the '340 patent, is synonymous with destruction, as demonstrated by the fact that the two terms are always spoken of together in the patent. We disagree. First, the ordinary meanings of deformation and destruction are different; deformation is a change in shape or size, while destruction is demolition or complete ruin. See supra. Second, we strive to give meaning to every term in a claim. Cf. Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572, 1579, 40 U.S.P.Q.2D (BNA) 1019, 1024 (Fed. Cir. 1996) (explaining that if the terms "pusher bar" and "pusher assembly" described the same item, one would expect the claim to refer consistently to this element as either, but not both). The mere fact that the two terms are used together in the specification cannot, in light of the above considerations, prevent the two different words from having different meanings.

B

Under this construction of the claim and viewing the evidence in the light most favorable to Johansson, there is a genuine issue of material fact precluding summary judgment on the ground that the accused devices do not undergo destruction or deformation when removed from a hanger hook. In her affidavit, Dr. Boyce stated that through calculations and actual observation of the forces on the MINI WISERSIZER barbs and the strains resulting from those forces, she concluded that the barbs underwent both temporary and permanent deformation. She concluded: "After a relatively small number of cycles (5-10) the amount of damage accumulation becomes quite noticeable. By visually inspecting a marker, I can identify whether or not the marker is unused, even if it was used only once." In contrast, the declaration of Per I. Wernius, relied upon by Rose to establish noninfringement, is conclusory, based upon an improper claim construction, and, at best, merely
creates a triable issue of fact.

C

Rose nonetheless argues that there can be no infringement because the prosecution history limits the claim to "unidirectional" markers, i.e., markers that readily permit entry of a clothes hanger hook but prevent its removal. Rose asserts that its markers are bi-directional because they do not contain barbs that undergo deformation or destruction when removed from a hanger hook. Rose's argument here is dependent in part on its contention that deformation is synonymous with destruction. The argument thus loses much of its force when that contention falls.

Furthermore, contrary to Rose's assertion, the prosecution history does not make clear that the claims should be read to exclude markers such as Rose's MINI WISERSIZER. In the portion of the prosecution history at issue, Johansson distinguished his invention from the prior art Gantz reference, stating:

It is obvious [in Gantz] that the hook of the hanger may be pressed through the slot 20 inwards and outwards with the same amount of pressure. Thus, slot 20 acts as a two way slot, allowing the marker to be put on the hanger and removed therefrom with the same effort.

In contrast, the present invention is unidirectional, meaning that the flexible barbs move away from each other to permit the marker to be placed on the hook and centered therewith but it cannot be removed off the hook without deforming or destroying the marker or at least the bars.

Johansson later distinguished a prior art PCT Publication by noting that it had locking beads which were "symmetrical when it comes to mounting and demounting of the marker." The first comment, regarding the Gantz reference, simply repeats what is apparent from the claims and specification, i.e., that a unidirectional device undergoes deformation or destruction upon demounting but not upon mounting. As such, there are material disputed facts indicating that Rose's MINI WISERSIZER may or may not undergo such deformation or destruction.

The second comment distinguishes bi-directional devices as those that are symmetrical with respect to mounting and demounting. The barbs of the device in the PCT publication are directly opposed to each other and are perpendicular to the path of the hanger hook both during mounting and demounting. In contrast, the barbs of the MINI WISERSIZER marker point inward toward the center of the marker and converge as they near the center. The barbs are not perpendicular to the path of the hanger hook and thus are not symmetrical with respect to mounting and demounting. A simple analysis of the marker using a free-body diagram indicates that the forces for mounting the marker should differ from the forces for demounting the marker.

In conclusion, we hold that the "deformation" claim limitation calls for a device that is permanently deformed in such a way that its use is substantially impeded. Dr. Boyce's affidavit raised a disputed issue of material fact on this issue. We therefore vacate the summary judgment and remand for further proceedings consistent with this opinion.

The next phrase in dispute in the '648 patent is also contained in Claim 16 (and thus Claims 17, 18 and 22 as dependent claims), and reads as follows: "...said retaining means including a deformation of said housing first end against said exterior peripheral surface of said sealing means, said first end deformation applying axially directed forces to said sealing means." Specifically, the parties disagree as to the meaning of "a deformation." The court concludes that "a deformation" should be construed as a structure which is the result of a change or alteration in shape.

It is undisputed that the element "deformation" is a part of a means-plus-function claim, but it is not the means and therefore does not have to be construed as one. The "retaining means" is the means in this phrase, and "a deformation" is to be included as a part of that means. Therefore, deformation is construed independently of the means-plus-function element.

However, this does not mean the court ignores the function of the deformation, which is to apply axially directed forces to said sealing means. The function sheds light on the meaning of the term, as does the specification, including the drawings.
While the specification never uses the word "deformation," it does repeatedly discuss the use of swaged end members or a retaining member to apply the axial forces. For example, column 2, lines 36-42 read: "A retaining member carried by the first end of the housing can be used to retain the sealing member within the housing. The retaining member can be generally U-shaped. Alternately, the retaining member can be formed as a coiled spring. The retaining member applies axially directed forces to the sealing member."

The specification also indicates how the retaining member becomes U-shaped or a coil spring. Column 8, lines 40-41 state: "The first end has been swaged to form an annular U-shaped retaining member," while column 9, lines 41-43 state: "The first end can be swaged so as to form an annularly shaped, spiral, spring like member." Taking these parts of the specification as a whole, it becomes apparent that what is meant by "a deformation" in Claim 16 is the result of an alteration of the shape of the first end, namely by swaging.

Further illustrative of this conclusion are the figures contained in the specification. Figures 19, 20, 21, 24 and 26 show the first end of the housing before it has been changed in shape. Figures 22, 23 and 25 show the resultant structure, or deformation. It is quite clear from these figures, taken together with the specification, that plaintiff was describing the result of a changing of the shape by swaging.

Further support for the court’s conclusion can be found in the ordinary, literal meaning of the word "deformation", which is defined as the action of deforming or the state of being deformed. Thus, the definition of "deform" becomes relevant. Deform means to alter the shape of or to change the shape of a body by the action of forces. Therefore, "a deformation," as used in Claim 16, is the state after the change in shape.

Plaintiff has tried to argue that "a deformation" is broader than the court's interpretation, and that it should not take into account the process of making this structure. However, it is impossible to define this word, specifically chosen by the plaintiff in drafting the claims, without reference to its root word "deform." As Sheehan stated in his testimony, the process is inherent in the word itself. "A deformation" is simply the result of this process.

3. "deformation absorbing member"

Agere argues that the term "deformation absorbing member" should be construed as "at least one part of a paddle support arm that can localize deformation and maintain the desired physical characteristics of the paddle support arm." Atmel argues that the term "deformation absorbing member" should be construed as "a structure located on the paddle support arm(s) that performs the following functions at the following times: a) localizes deformation that may occur; b) during paddle downsetting; and c) thereby maintains the desired physical characteristics." The only significant difference between these two constructions is the absence in Agere's proposed construction of a reference to the fact that the deformation that is sought to be "localized" is the deformation that occurs "during paddle downsetting." The only reason offered by Agere for the omission of this language is that the claim language already includes such a reference, and therefore including such a reference in the definition of "deformation absorbing member" would be redundant. If this reasoning were accepted, both proposed constructions would be wholly redundant and unacceptable, as all of the language in both constructions already appears in (and is in fact taken directly from) the claim language itself.

The Court generally agrees with the premise, implied in both parties' constructions, that the meaning of the term "deformation absorbing member" is clear from the face of the claim language itself, and the Court perceives no reason why including the language "during paddle downsetting" is any more redundant than a reference to "localizing deformation" or "maintaining desired physical characteristics." Therefore, the Court will adopt Atmel's proposed construction, with a slight modification for purposes of simplicity. The Court construes "deformation absorbing member" as "a structure located on a paddle support arm that localizes deformation during paddle downsetting and maintains desired physical characteristics."
To reach the gist of the present dispute, this Court is able to make some initial, and what it considers obvious, determinations. Potassium polyacrylate as used in the Red-Z Zafety Pac meets an element of independent Claims 1,6,11 & 15 of the '266 Patent (and of all claims dependent therefrom, with the exception of Claims 2,8,13,14 & 17, which call specifically for sodium polyacrylate) in that it is a "first material" as described therein. Further, this Court concludes that potassium polyacrylate is the equivalent (as defined infra) of sodium polyacrylate, which is an element of Claims 2,8,13,14 & 17. Further, the biocide sodium disocyanurate as used in the Red-Z Zafety Pac meets an element of independent Claims 1,6,11 & 15 (and all claims dependent therefrom) of the '266 Patent in that it is a "second material" as described therein. To the extent that the Red-Z Zafety Pac was shown to be used and is usable in the environment claimed in Claims 6 & 15 (and claims dependent therefrom) of the '266 Patent, it meets such element. Additionally, the envelope used for the Red-Z Zafety Pac and that described in the '266 Patent each has its "physical properties impaired" in that a closed envelope which opens can be said to have its physical property impaired. Whether this means that the Red-Z Zafety Pac degrades or is degradable is another question -- the central question that remains regarding infringement.

This question is one of claim construction, a question of law. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976-979 (Fed. Cir.) (noting and resolving inconsistencies in this standard and rejecting prior case law that stated that claim construction was a mixed question of law and fact), cert. granted, U.S. , 116 S. Ct. 40 (1995); Read Corp. v. Portec, Inc., 970 F.2d 816, 822 (Fed. Cir. 1992). The claims identify what the patentee regards and what has been allowed as his invention. 35 U.S.C. § 112. To ascertain the meaning of a claim, a court may consider the claim, the specification and the prosecution history. Read Corp., 970 F.2d at 823. Expert testimony, or other extrinsic evidence, may be used to assist the court in determining the meaning of a claim by describing how those skilled in the art would interpret the claims, to define the terms therein or to demonstrate the state of the prior art. Markman, 52 F.3d at 979-981. Max Daetwyler Corp. v. Input Graphics, Inc., 583 F. Supp. 446 (E.D. Pa. 1984). A patentee may act as his own lexicographer, assigning a chosen meaning to a term he uses, regardless of the term's technical or common meaning. But when an inventor does so, his intended meaning must be found within the patent's disclosure. "The Alice-in-Wonderland view that something means whatever one chooses it to mean makes for enjoyable reading, but bad law." Autogiro Company of America v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 397 (Ct. Claims 1967). "So long as the meaning of an expression is made reasonably clear and its use is consistent within a patent disclosure, an inventor is permitted to define the terms of his claims." Intellicall, Inc. v. Phonometrics Inc., 952 F.2d 1384, 1388 (Fed. Cir. 1992).

It is clear and undisputed that the '266 Patent teaches a combination of already-existing elements used in a new invention -- consisting of a first material that absorbs and immobilizes and a second material that treats the absorbed and immobilized liquid to nullify an undesirable quality thereof, both of which materials are contained in a degradable envelope that degrades upon contact with liquid, permitting the first and second materials to come into contact with the liquid and absorb, immobilize and treat said liquid. The essence of the dispute lies in the meaning of the terms "degrade" and "degradability" in Claims 1 & 6 and the absence of these terms in Claims 11 & 15.

When adding Claims 11-18, Multiform remarked as follows to the PTO:

"The word 'degrade' includes the definitions of 'to deprive of standing or true function' and 'to impair in respect to some physical property.' Thus when the envelope is dry and not degraded, its true function is to contain its contents. However, once it is exposed to liquid, it is deprived of its standing or true function and it has its physical property of containing its contents impaired."

Such statement was made, however and admittedly, after Multiform had become aware of the Red-Z Zafety Pac. 13 It is also noted that such statement of intended meaning is not disclosed by the patent itself. In light of the timing of such statement, this Court is inclined to accept that the Red-Z Zafety Pac prompted such. Indeed, Multiform continued: "the term 'degradable' may be subject to argument as to its meaning because others, in the event of an infringement, may tend to interpret this term as synonymous with 'disintegrate,' which is not necessary for the packet to function properly." Nonetheless and as was pointed out at trial, one does not degrade a door to enter a room. While "degrade" and "degradable" might not be synonymous with "disintegrate" or "dissolve" and their variant forms, the meanings with which Multiform attempts to imbue these former terms goes too far.
patents and prior art sufficiently support this Court’s rejection of Multiform’s overly-expansive meanings of degrade and the art would consider degrade to mean. Common usage, dictionaries, the file wrapper of the ‘266 Patent and certain other treating the absorbed liquid. Finally, this Court discounts Multiform’s expert testimony offered to show what those skilled in the art does not support Multiform’s proffered and broad meaning of that term. The McCabe Patent notes that Multiform’s BIODEGRADABLE.” Ibid. Likewise and to the extent that it might bear upon giving life to the term degradable, the prior

dictionary at 298 (1976) (Deft’s Exh. 105). Additionally, Medzam points out that the same dictionary used by INTERNATIONATL THESAURUS, at 903 (4th ed. 1977) (Deft’s Exh. 106); WEBSTER’S NEW COLLEGIATE DICTIONARY at 298 (1976) (Deft’s Exh. 105). Additionally, Medzam points out that the same dictionary used by Multiform to define "degrade" for the PTO -- viz., "to deprive of standing or true function" and "to impair in respect to some physical property" -- also defines "degradable" as "capable of being chemically degraded * * * << detergents> - compare BIODEGRADABLE." Ibid. Likewise and to the extent that it might bear upon giving life to the term degradable, the prior art does not support Multiform's proffered and broad meaning of that term. The Lastovich Patent notes that Multiform's starch paper envelope is slow to dissolve completely and that its invention improves upon this characteristic. The McCabe Patent discloses a packet partially comprised of dissolvable paper. Multiform distinguished this invention to the PTO, not by asserting a distinction between degrade and dissolve, but by noting that the ‘266 Patent included a second material for permitting the remainder of the soluble paper to dissolve even if the discontinuous coating is insoluble in the liquid in which the soluble paper is immersed." This discontinuous pattern is retained in the '266 Patent. The purpose of such, as the above screams out, is to increase the extent to which the starch paper envelope will dissolve (or disintegrate). In no other manner is the impairment of the envelope's physical properties -- e.g., its tearing, opening, bursting, rupturing, unsealing or peeling -- discussed. The language of the '069 Patent and of the '266 Patent specifications suggests that the term 'degrade' clearly encompasses "dissolve" and "disintegration" (which are themselves treated more or less as synonyms). To this effect it is noted that the '266 Patent lists "DISSOLVO" as a trade-name for the "degradable" starch paper envelope. Further, the term "degradable," while proffered by Multiform as the mere adjective form of its expansively-construed "degrade," is actually more closely associated with the terms "decomposable," "disintegratable" and "biodegradable." ROGET’S INTERNATIONAL THESAURUS, at 903 (4th ed. 1977) (Deft's Exh. 106); WEBSTER’S NEW COLLEGIATE DICTIONARY at 298 (1976) (Deft's Exh. 105). Additionally, Medzam points out that the same dictionary used by Multiform to define "degrade" for the PTO -- viz., "to deprive of standing or true function" and "to impair in respect to some physical property" -- also defines "degradable" as "capable of being chemically degraded * * * << detergents> - compare BIODEGRADABLE." Ibid. Likewise and to the extent that it might bear upon giving life to the term degradable, the prior art does not support Multiform's proffered and broad meaning of that term. The Lastovich Patent notes that Multiform's starch paper envelope is slow to dissolve completely and that its invention improves upon this characteristic. The McCabe Patent discloses a packet partially comprised of dissolvable paper. Multiform distinguished this invention to the PTO, not by asserting a distinction between degrade and dissolve, but by noting that the ‘266 Patent included a second material for treating the absorbed liquid. Finally, this Court discounts Multiform's expert testimony offered to show what those skilled in the art would consider degrade to mean. Common usage, dictionaries, the file wrapper of the '266 Patent and certain other patents and prior art sufficiently support this Court's rejection of Multiform's overly-expansive meanings of degrade and dissolve.
degradable. Degrade need not, however and as Medzam asserts, be considered synonymous with, e.g., the total disintegration, dissolution or disappearance of the envelope. The '266 Patent's specification states that an envelope can be "degraded" although "complete disintegration might not be obtained" because the portions of the starch paper coated with polyvinyl acetate may not have "dissolved." This Court concludes that "degrade" and "degradability" are most synonymous with "partially disintegrate" or "partially dissolve," and their adjective forms, but also encompass, e.g., dissolve and disintegrate. They cannot be taken to mean what was demonstrated to this Court to be the bursting of a closed envelope via the eruption of inner forces.

Claims 1 and 6

In the '266 patent the packet is claimed as a combination of the degradable envelope, the absorbing material, and the treating material. A second group of claims describes the envelope in terms of its function, in the form authorized by 35 U.S.C. § 112 P6; these claims are discussed post. Claims 1 and 6 are representative of the first group of claims:

1. A packet for absorbing and immobilizing a liquid comprising an envelope which is degradable in said liquid, a first material in said envelope for absorbing and immobilizing said liquid, and a second material confined in said envelope for additionally treating said liquid which is absorbed and immobilized to nullify a specific undesirable quality thereof.

6. In an outer container having an inner container with liquid from which said liquid can leak, an absorbent packet located between said inner and outer containers for absorbing and immobilizing said liquid, and a second material confined in said envelope for additionally treating said liquid which is absorbed and immobilized to nullify a specific undesirable quality thereof.

(Emphases added.) Medzam conceded that its packet contains all of the elements of claims 1 and 6 except the "degradable" envelope. Medzam argued that its envelope is not degradable, when that term is correctly construed, and thus that the claims are not infringed.

The disputed issue is the meaning of the term "degradable" in characterizing the claimed envelope. The district court defined this term with an eye to the accused envelope. The court held that the terms "degrade" and "degradable," as used in the '266 patent, mean that the envelope at least partially dissolves and thereby disintegrates in the liquid. The court held that this meaning of "degradable" does not include the mode of operation of the Medzam packet, wherein the envelope bursts open by expansion of the contents but the envelope itself does not dissolve and disintegrate by direct action of the liquid.

Multiform states that this claim construction is incorrect, and that upon correct construction a finding of infringement is inevitable. Multiform argues that "degradable" must first be construed based on the '266 patent documents, without reference to the accused device, see Jurgens v. McKasy, 927 F.2d 1552, 1560, 18 U.S.P.Q.2D (BNA) 1031, 1037 (Fed. Cir. 1991) ("claim is construed without regard to the accused product"); Scripps Clinic & Research Found. v. Genentech, Inc., 927 F.2d 1565, 1580, 18 U.S.P.Q.2D (BNA) 1001, 1013 (Fed. Cir. 1991) (the words of the claims are independently construed, focussing on the disputed elements), and that as used in the '266 patent "degradable" is not limited to dissolution and disintegration, but means any loss in the containment function of the envelope. Multiform cites dictionaries showing this broader meaning, and states that a person of ordinary skill would construe "degradable," as applied to these envelopes, as meaning a loss in their containment function.

It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed. Such person is deemed to read the words used in the patent documents with an understanding of their meaning in the field, and to have knowledge of any special meaning and usage in the field. The inventor's words that are used to describe the invention -- the inventor's lexicography -- must be understood and interpreted by the court as they would be understood and interpreted by a person in that field of technology. Thus the court starts the decisionmaking process by reviewing the same resources as would that person, viz., the patent specification and the prosecution history. These documents have legal as well as technological content, for they show not only the framework of the invention as viewed by the inventor, but also the issues of patentability as viewed by the patent examiner.
During patent prosecution Multiform submitted dictionary definitions of "degradable" from Webster's New Collegiate Dictionary (1976), explaining the submission as follows:

The word "degrade" includes the definitions of "to deprive of standing or true function" and "to impair in respect of some physical property." Thus when the envelope is dry and not degraded, its true function is to contain its contents. However, once it is exposed to liquid, it is deprived of its standing or true function and it has its physical property of containing its contents impaired.

Multiform states that this definition is comprehensive of the degradation of the Medzam envelope that bursts apart and thus loses its true function, and is not limited to an envelope that degrades by dissolving. Multiform states that it is not necessary for the packet to disintegrate in order to degrade. Medzam responds that Multiform offered these definitions only after Multiform became aware of the Medzam packet, and that the definitions are at odds with the plain reading of the specification.

Multiform argues that, in keeping with the rule that an inventor may be his own lexicographer, its definition of "degradable" must prevail. When the meaning of a term is sufficiently clear in the patent specification, that meaning shall apply. See Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1388, 21 U.S.P.Q.2d (BNA) 1383, 1387 (Fed. Cir. 1992); Lear Siegler, Inc. v. Aeroquip Corp., 733 F.2d 881, 889, 221 U.S.P.Q. (BNA) 1025, 1031 (Fed. Cir. 1988). This rule of construction recognizes that the inventor may have imparted a special meaning to a term in order to convey a character or property or nuance relevant to the particular invention. Such special meaning, however, must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of the invention.

Thus we review, de novo, the meaning of "degradable" in claims 1 and 6. We start with the specification. See Slimfold Mfg. Co. v. Kinkead Industries, Inc., 810 F.2d 1113, 1116, 1 U.S.P.Q.2d (BNA) 1563, 1566 (Fed. Cir. 1987) ("Claims are not interpreted in a vacuum, but are part of and are read in light of the specification.") The '266 specification describes the Multiform envelope as made of soluble starch, such that "when the aqueous solution comes into contact with the envelope, it degrades it . . ." '266 patent, col. 1, lines 21-23. The specification explains that degradation of the envelope results from dissolution of the soluble envelope material. The specification illustrates an envelope whose inner layer contains a dot matrix pattern of insoluble material that permits heat-sealing, and in discussing this pattern the specification explains that it is the soluble portion that results in degradation of the envelope: "The dot matrix pattern, or any other suitable discontinuous pattern, permits liquid, which may not otherwise be able to dissolve the material of coating 17, to completely degrade envelope 11 because there are uncoated spaces 18 between the dots of the coating 17 through which liquid can pass." '266 patent, col. 3, lines 5-10. The district court discussed the specification in reaching its conclusion, and also reviewed the prosecution history. The court referred to United States Patent No. 4,124,116 to McCabe, which describes a water-soluble envelope that releases its contents upon contact with spilled aqueous liquid. The McCabe envelope is made of two sheets, one of which is made of soluble starch. The district court observed that "Multiform distinguished this invention to the PTO, not by asserting a distinction between degrade and dissolve, but by noting that the '266 Patent included a second material for treating the absorbed liquid." 1995 WL 737929 at *11. We agree that this analysis is correct.

The district court concluded that the specification and the prosecution history do not support a meaning of "degradable" that would include an envelope that bursts open from inner pressure without any dissolution. The district court defined "degradable" in light of the mode of action of the accused device, a pragmatic expedient relevant to the issue in litigation. Thus the court held that Multiform's dictionary definitions added during patent prosecution, although stating a broad definition of "degradable," could not serve to enlarge the scope of the claims in order to cover the Medzam device. The district court did not accept Multiform's position that the dictionary definitions provided during the prosecution simply clarified the inventor's original usage of "degradable." We agree with this analysis.

Courts must exercise caution lest dictionary definitions, usually the least controversial source of extrinsic evidence, be converted into technical terms of art having legal, not linguistic, significance. The best source for understanding a technical term is the specification from which it arose, informed, as needed, by the prosecution history. The evolution of restrictions in the claims, in the course of examination in the PTO, reveals how those closest to the patenting process -- the inventor and the patent examiner -- viewed the subject matter. See Hoechst Celanese Corp. v. BP Chemicals Ltd., 78 F.3d 1575, 1578, 38 U.S.P.Q.2d (BNA) 1126, 1129 (Fed. Cir. 1996) ("A technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent and
the prosecution history that the inventor used the term with a different meaning.") When the specification explains and defines a term used in the claims, without ambiguity or incompleteness, there is no need to search further for the meaning of the term.

We conclude that the meaning of "degradable" in claims 1 and 6 (and the claims dependent thereon) is limited to the dissolution/degradation of the envelope as described in the specification. The court correctly excluded the meaning whereby the envelope "degrades" by bursting instead of dissolving, and correctly held that "degradable" means that there must be at least partial dissolution of the envelope. Upon this claim interpretation, the district court concluded that there could not be literal infringement of claims 1 and 6. We agree, for this claim interpretation eliminated the Medzam envelope, which bursts but does not dissolve, from the literal meaning and scope of the claims.

1101

11. "Controlled degree of freedom." An independent motion or direction of motion that the robot manipulator is capable of making.

1102

12. "At least one controlled degree of freedom." The robotic manipulator has at least one, but may have more than one, controlled degree of freedom. Usually the number of degrees of freedom the robot manipulator has corresponds to the number of independent motorized joints the robot manipulator has.

1103

"Delivering a prescribed absorbed dose"

<table>
<thead>
<tr>
<th>Cytyc's proposed construction</th>
<th>Xoft's proposed construction</th>
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<tr>
<td>(no construction required)</td>
<td>(indefinite)</td>
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</table>

Xoft argues that the patent does not reveal how one goes about prescribing a dose using the device, and that the phrase "delivering a prescribed absorbed dose" is therefore fatally indefinite. The '204 patent, however, describes a tool for treating proliferative tissue disease. A patent could adequately describe and claim a new apparatus or method for making the corrective curves in contact lenses, but a description of the particular curves a patient might require would not be necessary. If those skilled in the art would know how to use the disclosed invention, describing how to use it is unnecessary--the patentee merely needs to adequately describe the invention. Since Xoft bears the burden of proving that those skilled in the art would not know how to use the tool or method described in the patent and has presented no evidence on the subject, the court rejects Xoft's contention that the phrase is indefinite. No construction is necessary.

<table>
<thead>
<tr>
<th>Claim Language</th>
<th>Court's Construction</th>
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<tr>
<td>&quot;delivering a prescribed absorbed dose&quot;</td>
<td>(no construction necessary)</td>
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1104

B. Claims Construction in the '415 Patent

On September 19, 2003, the Court held a hearing in accordance with Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996), to construe the disputed terms and phrases of the asserted claims. The Court's October 7, 2003 Order Following Claims Construction Hearing construed the following disputed terms in the '415
jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

...patent which are relevant to the present findings on validity and invalidity:

"implant delivery assembly"  
"an apparatus for delivery of occlusive devices, such as embolic coils that comprises three distinct components: a pusher, a coupling, and an implant"

"pusher"  
"any device or structure intended to push another device or structure"

"selectively operable coupling"  
"a connecting device that connects the implant to the pusher and that can be selectively operated by the user"

"coupling"  
"a connecting device that connects the implant to the pusher and that can be selectively operated by the user"

"said coupling operable by fluid pressure so that when a sufficient amount of fluid pressure is applied to the coupling, the fluid pressure a user causes the occlusive implant to separate from the pusher"

"the coupling is a connecting device that can be operated by selectively applying fluid pressure to the coupling to separate the implant from the pusher, and the application of the fluid pressure by the user to the coupling causes the detachment of the implant at the coupling"

"delivering fluid pressure through the pusher such that the implant detaches from the pusher by the fluid pressure"  
Plain and ordinary meaning applies, no specific construction by the Court

(The Markman Order at 22-29, Docket Item No. 177.)

1105

3. Density
A. Density means density

The Chappell patent claims an invention in which "the density of said absorbent in said inner portion is greater than the density of said absorbent in said outer portion." (6:38-40.) Tyco seeks to append to the standard definition of density the qualification that it is density "as measured by industry standard measuring techniques and taking measurement errors into account." Tyco argues that measuring density on something like a sanitary napkin is difficult and suggests that it has no way of knowing whether its napkins would infringe absent a more concrete method of measurement. Measurements obtained in the course of this litigation, it asserts, suggest that density in one portion might vary significantly. As both parties agree, density is not a term of any particular complexity and was not a sui generis term essentially invented in the patent. The fact that the patent does not describe how density is to be measured does not mean that the definition of density itself is somehow unclear or in need of further elaboration. This is made clear by the case Tyco relies on, Duplan Corp. v. Deering Milliken, Inc., 444 F. Supp. 648 (D.S.C. 1977). There, the court found that "[t]he ’397 patent provides no definition of what mechanical spatial shrinkage is, how to determine it, how to measure it, or how to set up a machine to obtain it. At trial, no witness was able to determine whether a given processing specification would infringe the ’397 patent without resorting to a series of complex tests developed by defendants’ expert, Mr. Platt, which purported to delineate shrinkage resulting from relaxing the yarn by overfeeding from shrinkage resulting from heat." Id. at 737. Because the term was so unclear, the court found, it would essentially require alleged infringers to play Russian roulette. Id. at 738. Here, in contrast, there is no debate about the meaning of the word "density" or how density should be measured. If errors or variations do arise in standard...
industry testing, as Tyco asserts, then that seems a matter of fact best left for the infringement stage rather than a concept capable of being imported into the very claim terms themselves. See also Superior Graphite Co. v. Timcal SA, 2006 U.S. Dist. LEXIS 29935, 2006 WL 1234926, *9 (N.D. Ill. 2006) (construing term "bulk density" and rejecting defendant's argument that term was indefinite because the patent failed to specify the method of density measurement.)

4. "Density" means "mass per unit volume."

GO BACK

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4. Density

The term density is used in the embodiments of the '529 Patent that include an electronic controller to control the meter of the device. The phrase "stored particulate matter density value" appears in Claim 40 of the '529 Patent. Plaintiffs assert that "stored particulate matter density value" should be construed as "a stored value that calibrates the desired weight to a unit of measure so that the weight of the particulate matter dispensed approximates the desired weight." Defendants, on the other hand, contend that the term "density" should be construed consistently through the '529 Patent as "a value that represents the mass of a particulate material per unit of volume that is kept within the controller." Defendants assert that the term "density," as used in Claim 49 of the '529 Patent ("density of the particulate matter"), should be construed as "a value that represents the mass of the particulate material per unit of volume." Plaintiffs assert that a separate construction of the phrase "density of the particulate matter" is not required.

The '529 Patent does not explicitly define the term "density" as it is used in the Patent. Nor does the Patent specifically define the terms "stored particulate matter density value" or "density of the particulate matter." The Court agrees with Defendants that the ordinary meaning of the term "density" is a value that represents the quantity of something per unit of measure (see American Heritage Dictionary of the English Language 499 (3d ed. 1996)) or the mass of a substance per unit volume (see Merriam-Webster's Collegiate Dictionary 309 (10th ed. 1998)). However, the Court must determine whether the terms "stored particulate matter density value" and "density of the particulate matter" are phrases that reflect a definition that has been created by the inventors.

The specification of the '529 Patent states that "in some instances, the controller is adapted to receive an operator input representing a desired weight of matter to be released and to calculate, based upon at least this input and a stored particulate matter density value, a corresponding volume of matter to be released." ('529, c. 2, ll: 19-23.) The specification further states:

Where the device includes an electronic controller for controlling the meter of the device, the method may further include, prior to the step of motivating, entering a value into the controller representing a desired amount of particulate matter to be released. The method may also include, prior to the step of motivating, entering a value into the controller representing the density of the particulate matter to be released.

('529, c. 3, ll: 14-21.) Further, the specification states that the calibration factor entered into the device at the time of calibration "represents the density of the bulk material, in pounds per pocket." ('529, c. 7, ll: 26-27.) Plaintiffs appear to argue that in the context of the '529 Patent, the terms "stored particulate matter density value" and "density of the particulate matter" refer to the relating value, or calibration factor, that is entered into the controller of the device. (See Plaintiffs' Opposition to Defendants' Motion for Summary Judgment on Noninfringement and Invalidity at 25.)

In the claims that use an electronic controller, the controller must initially be calibrated for use with a certain particulate matter. (See '529, c. 7, ll: 40-45.) As described to the Court, in order to calibrate the commercial embodiment of the '529 Patent, an individual enters a calibration factor and a desired weight of material and starts the machine. Plaintiffs note that this calibration factor "implicitly accounts for the density of the material" that is being dispensed through the machine. (See Plaintiffs' Opposition to Defendants Motion for Summary Judgment of Noninfringement and Invalidity at 25.) During the initial calibration steps, rather than allowing the material existing the bin to enter the liquid stream as it would during ordinary operation of the device, the individual performing the calibration catches the particulate material in a bucket. Once the device has finished running, the user weighs the particulate material that was dispensed on a separate scale that is not a part of the device and compares it to the weight that was entered into the controller. If the desired weight and the dispensed
weight do not match, the user adjusts the calibration factor and continues to repeat the exercise until, by trial and error, the desired weight equals the dispensed weight.

As the calibration process has been described to the Court throughout Plaintiffs' oral arguments at the Markman hearing and in the patent tutorial provided to the Court, the person who calibrates the commercial embodiment of the ‘529 Patent never enters the actual value of the bulk density of the particulate matter. The process of calibrating the machine, as described by Plaintiffs, is not nearly that precise. Although density is certainly one of many factors that are implicitly considered when arriving at this calibration factor, the density figure itself is not entered into the electronic controller. Rather, the calibration factor implicitly takes into account the bulk density of the particulate matter along with other factors that determine how the particulate material flows through the machine, including the wear on the surface of the auger, the angle of repose, and general flow factors. Certainly, these considerations include the bulk density of the material, but the bulk density value is not the only factor to be considered when an individual is determining the stored particulate matter density value or the calibration factor, however it is referred to.

Plaintiffs' description of the calibration factor as a number that is not directly correlated with density appears to be an accurate reflection of the commercial embodiment of the ’529 Patent. The Court agrees with Plaintiffs that a person calibrating the commercial embodiment need not precisely know the bulk density of the particulate matter. However, the ’529 Patent language and its prosecution history do not reflect this commercial embodiment. The ‘529 Patent does not specifically define the terms "stored particulate matter density value," "density of the particulate matter," or "calibration factor." The language of the ’529 Patent does not point to the broad construction of the term "density" that Plaintiffs assert encompasses the ordinary meaning of density along with all of the other flow factor variables. If the Court were to adopt Plaintiffs' construction, the Court would be required to construe the terms "stored particulate matter density value," "density of the particulate matter," and "calibration factor" as having one consistent meaning that is not specifically stated in the ’529 Patent claims, the specification, or the prosecution history. Plaintiffs' asserted construction reflects the commercial embodiment of the ’529 Patent, not the '529 Patent itself. The Court is not willing to adopt such a construction.

Thus, the Court is left to construe the term "density" by its ordinary meaning. The Court construes the term "density" to mean a value that represents the quantity of something per unit of measure, especially per unit of length, area, or volume. Likewise, the term "stored particulate matter density value" is construed as a value that represents the quantity of something per unit of measure, especially per unit of length, area, or volume, that is stored within the controller.

1107

a. Claim Construction: "barrier means depending vertically downward from the top of said tank"

The parties dispute the meaning of the following phrase of Claim 1-16: "barrier means depending vertically downward from the top of said tank."

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Defendant's Proposed Construction</th>
<th>Plaintiff's Proposed Construction</th>
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<tr>
<td>&quot;barrier means depending vertically downward from the top of said tank&quot;</td>
<td>&quot;a barrier that hangs vertically downward from, and is attached to, the top of the tank&quot;</td>
<td>&quot;This element describes a wall or plate that forces the oil-water mixture to flow toward the baffle and then the bottom of the tank before flowing to the outlet end of the tank.&quot;</td>
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Defendant PSI resorts to an extrinsic source, a generalist dictionary, to argue that the plain meaning of the term "depends" is "to hang down; be held up by being attached to something above." Defendant's Memorandum, at 23 (citing "Webster's Third International Dictionary," at p. 604). In light of this proffered definition, the Court notes the Federal Circuit's cautionary language, in both Phillips and other cases, regarding the weight to be assigned to extrinsic evidence, such as dictionaries. See, e.g., Phillips v. AWH Corp., 415 F.3d 1303, 1324 (Fed. Cir. 2005); Ferguson Beauregard/Logic Controls v. Mega Systems, LLC, 350 F.3d 1327, 1338 (Fed. Cir. 2003). Defendant PSI also offers another piece of extrinsic evidence, the
expert opinion of George Wharton, who defined "depend" to mean "to hang down, for example, a vine depending from a tree." Defendant's Memorandum, Appx. Ex. N., at 3. Defendant also argues that a "plain reading" of the specification shows that the "barrier means" is attached at the top of the tank. Defendant's Memorandum, at 23.

Plaintiff's briefing does not appear to directly challenge Defendant's argued construction. Upon assessment of this claim in the context of the specification, the prosecution history, and the expert reports, the Court finds that Defendant's interpretation is accurate. In particular, the specification assists in arriving at this construction, explaining as follows:

"Assembly 62 comprises a barrier member 64 which depends vertically downwardly from the top of the tank and across the entire upper hemisphere of tank 60 to segregate an inlet zone 66 which comprises a relatively small region of tank 60 to the left of the barrier 64." '800 Patent, 7:36-42.

Therefore, the phrase "barrier means depending vertically downwardly from the top of said tank" is hereby construed as meaning, as interpreted by one having ordinary skill in the art at the time of the patent filing, that the barrier means hangs vertically downward from, and is attached to, the top of the tank.

The phrases "deploying the filter" and "filter . . . deployment capabilities" appear in independent claim 1 and the preamble to independent claim 9, respectively. Boston Scientific proposes that the phrases be construed as "expansion of the filter from a smaller collapsed size to a larger open size" and "the ability to have the filter expand from a smaller collapsed size to a larger open size," respectively. ev3 argues that the phrases mean "manually releasing or manually expanding the filter by some additional action after and in addition to uncovering a filter."

There is no indication in the context of the claim language or elsewhere in the intrinsic evidence that the phrases "deploying the filter" or "filter . . . deployment capabilities" require manual action. The Court therefore construes "deploying the filter" and "filter . . . deployment capabilities," respectively, as "expanding the filter from a smaller collapsed size to a larger open size" and "the ability to have the filter expand from a smaller collapsed size to a larger open size."

Here the parties argue as to whether the "depression" or "indentation" contemplated by the patent claims require a structure that has two differing degrees of thickness. 4 Defendant maintains that it does, while plaintiff contends that claims 25 and 41 do not require the depression to be formed with absorbent layers of differing thickness. 5

4 The various claims use these terms interchangeably. Plaintiff does not argue that the court should consider them to have different meanings.

5 Plaintiff apparently concedes that claims 1 and 33 do require the depression to be made of differing thickness. See claim 1 ("a depression means in said relatively thick layer of disposable absorbent material, said depression means including a substantially thinner layer of disposable absorbent material . . . "); claim 33 ("said relatively thick inner layer of disposable absorbent material includes said disposing means for forming an elongated indentation portion of relatively thin absorbent material").
The present invention teaches a disposable woman's protective menstrual panty for holding a feminine napkin. A relatively thick layer of disposable absorbent material is provided with a depression including a substantially thinner layer of disposable absorbent material operably disposed longitudinally in the crotch area of the panty and extending at least partially upward in both the front and rear portions. The depression means is dimensioned for retainably receiving a feminine napkin therein for positioning same during use.

(Def. App. II Ex. E at KC 015.) Defendant accurately notes, the specification explicitly teaches that the depression means is made up of a "substantially thinner layer of disposable absorbent material." Nevertheless, plaintiff posits several arguments as to why this is not so.

First, plaintiff contends that reading the depression means as requiring differing thicknesses in the absorency layer "is inconsistent with the accepted definition of the term 'depression.'" 6 (Resp. at 14.) This argument is unpersuasive. The definition plaintiff provides states that a "depression" is "a depressed or sunken place or part; an area lower than the surrounding surface." (Id.) (quoting the Webster's Encyclopedic Unabridged Dictionary) Based on this definition there is nothing inconsistent with a depression being formed by absorbent layers of two different thicknesses. Such a formation would most certainly create both "a depressed or sunken place or part" and "an area lower than the surrounding surface." That a depression can be created by something other than material with differing layers of thickness does not mean that a formation with differing layers of thickness cannot also form a depression.

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6 Again, for the reasons stated previously, the Patent Examiner's "rejection" of defendant's argument is not dispositive. See Section A, supra.

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Plaintiff also argues that because only claims 1 and 33 require the depression to be made by a relatively thinner layer of absorbent material, it would be error to read such a limitation into claims 25 and 41 as well.

The court finds this to be a difficult issue. A review of the claims at issue shows plaintiff's contention to be correct--claims 25 and 41 do not make mention of differing thicknesses with reference to the formation of the depression. 7 Moreover, the Federal Circuit has repeatedly cautioned that

"There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant." Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987). "Where some claims are broad and others narrow, the narrow claim limitations cannot be read into the broad whether to avoid invalidity or to escape infringement." Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044 at 1054-55 [(Fed. Cir. 1988)] (quoting D.M.I., Inc. v. Deere & Co., 755 F.2d 1570 at 1574).

United States v. Telectronics, Inc., 857 F.2d 778, 783-84 (Fed. Cir. 1988). The Federal Circuit has also told courts to look first at "the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention." Vitrionics, 90 F.3d at 1582. Based on these principles, then, it would appear that because a depression (as that term is generally defined) does not have to be created by material of non-uniform thickness, 8 the presence of such "differing thickness" descriptions in claims 1 and 33, coupled with the absence of such descriptions in claims 25 and 41, means that the depression in these latter claims need not be formed by material of differing thickness. 9 However, there is more here than meets the eye.

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7 Claim 25 states, in relevant part:

said disposing means including an elongated depression in said thick inner layer of disposable absorbent material, said
elongated depression being dimensioned for receiving said feminine napkin therein positioning said napkin during use.

(Def. App. II Ex. E at KC 023.)

Claim 41 states, in relevant part:

means for forming an elongated, feminine napkin-shaped depression in said relatively thick inner layer of absorbent material along the center of the crotch area . . . said depression being formed by said layer of relatively thick, absorbent, material surrounding said feminine napkin shaped depression.

(Id. at KC 024.)

8 A canoe is an excellent example of just such a depression.

9 Despite the foregoing discussion, defendant argues that claims 25 and 41, because they require that the depression be formed "in said relatively thick inner layer of disposable absorbent materials," mandate that the depression be formed by differing levels of thickness within the relatively thick inner layer. This argument has a persuasive allure.

Conversely, plaintiff's interpretation of this language would allow the depression to be formed by having a bow in the middle of uniformly thick inner layer absorbent material, similar to that of a canoe. While that is a possible interpretation, its plausibility would be greatly enhanced if the claims revealed a depression of, rather than in, the relatively thick inner layer. However, the court need not resolve this issue, for assuming that plaintiff's interpretation is correct, as will be seen there is no literal infringement in any event.

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Specifically, there is the problem of the specification language itself. As noted above, the specification defines the depression as "including a substantially thinner layer of disposable absorbent material." Although the court must begin its analysis by looking at the claims themselves, because "a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning," reference to the specification "is always necessary." Vitronics, 90 F.3d at 1582.

The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication. As we have repeatedly stated, "claims must be read in view of the specification, of which they are a part." The specification contains a written description of the invention which must be clear and complete enough to enable those of ordinary skill in the art to make and use it. Thus, the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.

Id. (citations omitted) (alteration in original).

Clearly, the meaning of the "depression" required by the '381 patent is disputed. While plaintiff contends that "depression" is used throughout the patent in its ordinary and customary meaning, i.e., that the bottom layer need only be recessed like a cradle--without reference to how that cradle is created--the specification quoted above indicates otherwise. Plaintiff, by stating in her specification that the depression includes a substantially thinner layer of absorbent materials, has defined the make up of the depression required by her panty. See id. She simply cannot avoid it.

Moreover, a review of the diagrams accompanying plaintiff's patent only confirms this conclusion. As figures 3-5, 8-10 and 12 make abundantly clear, the elongated depression required by the panty is formed by creating a trough within the relatively thick absorbent material. That is to say, the depression is formed by differing levels of thickness within the absorbent material. It is clearly depicted as a hollowed out structure. This is damning to plaintiff's position.

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10 While plaintiff contends that, "in numerous places, the Specification of the Southwell Patent makes clear that the 'depression' need not be 'a portion of reduced thickness,'" a review of the specification citations provided failed to support plaintiff's statement.
In sum, although claims 25, 41 and 45 omit reference as to how the depression is formed, a review of both the specification and the figures depicting the panty make clear that the depression is formed by creating a trough within the absorbent layer itself. This trough or hollowed out structure is, in essence, a second, "substantially thinner layer of absorbent materials." Indeed, it is plaintiff's arguments to the contrary that ring hollow. 11

11 Defendant calls attention to the prosecution history of the '381 patent as evidence that the depression requires a hollowed out or multi-thickness type structure. Specifically, it argues that in trying to distinguish her patent from the prior Rickard patent, plaintiff is now bound by prosecution history estoppel. In light of the court's decision, it need not address this argument here. This argument does receive extensive treatment, however, in the court's analysis of the doctrine of equivalents. See Section II.D., infra.

A. The "Depression" Limitation

Solomon argues that the district court misconstrued the claim term "depression" by requiring the depression to be formed by material having two different thicknesses. Specifically, Solomon asserts that the district court improperly read limitations that appear in the specification and in claims 1 and 33 into claims 25, 41, and 45. Solomon asserts that the term is not limited to a depression formed by a relatively thin layer surrounded by a relatively thick layer, which is simply the best mode for practicing the invention, but not the only mode. Solomon contends that while claims 1 and 33 are expressly limited to this mode, other claims that do not specify how the depression is formed are not so limited. To support her arguments, Solomon cites a passage in the specification that states that the depression may be formed by either "removing" a portion of the relatively thick material or by "altering" it. We are not persuaded of the correctness of her arguments.

The district court extensively analyzed the patent specification in order to construe the term "depression." In the summary of the invention portion, the specification states,

A relatively thick layer of disposable absorbent material is provided with a depression including a substantially thinner layer of disposable absorbent material operably disposed longitudinally in the crotch area of the panty and extending at least partially upward in both the front and rear portions. The depression means is dimensioned for retainably receiving a feminine napkin therein for positioning same during use.

Solomon is bound by this definition. The district court correctly noted that the "depression" in the disputed claims is formed "in said relatively thick" material and that every disclosed embodiment contains a depression using a "hollowed out" structure. We agree with the district court that the claims contemplate a depression only being formed as described in the specification, i.e., by a substantially thinner layer surrounded by a thicker layer. The specification's use of the word "indentation" interchangeably with "depression" further supports this interpretation. There is no hint in the specification that the two-thickness structure was simply the best of a number of possible modes of practicing the invention. Accordingly, we agree with the district court that the term "depression" as used in the specification is formed by surrounding a region of substantially thinner material with a region of thicker material.


There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of
claim differentiation states the presumption that the difference between claims is significant.

This doctrine is inapplicable here. It addresses the situation in which an interpretation of one claim renders another claim superfluous, where an otherwise broad claim is interpreted narrowly such that it is coextensive with a narrower claim appearing in the patent. This is not such a case. Here, no claims are rendered superfluous under the district court's construction of the term "depression." Each claim in dispute has a different scope. For example, claim 15, cited by Solomon as being superfluous under the district court's construction of claim 25, requires a top portion having a mesh that is lightweight, relatively thin, and paper-like. Claim 25, however, only requires a lightweight mesh.

Because it is undisputed that the accused product's "cradle" is not formed by a combination of thick and thin layers as required by the claims, the district did not err in granting Kimberly-Clark's motion for summary judgment that the accused product does not literally infringe the '381 patent.

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I. Depressions

3M proposes that "depressions" be defined as "a depressed or sunken place or part of the carrier web." (Pls.' Claim Constr. Br. at 5), and contends that Avery's process of softening the carrier web and then pressing the inkdots into the EZ Liner carrier web creates depressions. Avery contends that its EZ Film does not have depressions because the inkdots are inserted into the carrier web leaving a flat surface without hollows or sunken places. 3 Avery proposes that "depressions" be defined as "a hollow or open area below the surface which is capable of being filled." (Def's Claim Constr. Br. at 12.)

3 The Court notes that the inkdots are removed from the carrier web when the carrier web is stripped from the film, indicating that the ink dot material does not combine with the carrier web material.

The express language of claim 1 dictates that the depressions referred to must be in the surface of the carrier web. (Col. 9, 11. 32-37)("A carrier web, comprising: at least one surface that has . . . an array of depressions"). Additionally, there can be little dispute that a "depression" is commonly understood to be a lower or sunken area of a surface. See Random House Webster's New Unabridged Dictionary (2d ed. 2001)(defining depression as "a depressed or sunken place or part; an area lower than the surrounding surface"); Webster's Third New Int'l Dictionary (1993)(defining depression as "a place or part that is depressed," and depressed as "to cause to sink, fall, or assume a lower level, position, point, situation, or attitude"); Webster's II New Riverside Dictionary (1st ed. 1984)(defining depression as "a sunken or depressed area: hollow").

Avery argues, however, that the definition of depression, as used in claim 1 of the '930 patent, must be limited to include only lower or sunken areas that, at the time of embossing or immediately thereafter, are empty of any other material. According to Avery, the patent distinguishes "depressions" from "filled depressions," requiring that the term be limited, for purposes of claim 1, to empty, or not yet filled, depressions. In support of this argument, Avery points to method claim 12, which recites "a method of using a web of claim 1 as a release liner for a pressure sensitive adhesive, comprising the step of filling the multiple embossed pattern with a pressure sensitive adhesive." (Col. 10 11. 40-43.) According to Avery, if the depressions in claim 1 are not empty, then they cannot be filled using the method of claim 12.

In considering 3M's appeal of this case, the Federal Circuit addressed the argument that because method claim 6 clearly indicated a sequential embossing process, "multiple embossed patterns," as used in claim 1, must be defined as involving a sequential embossing process. The Federal Circuit rejected this argument, stating that "the limitation of serial embossing clearly present in method claim 6 cannot be read into claim 1." 3M v. Avery Dennison, 350 F.3d at 1372.

The Court finds the instant argument very similar to that presented to the Federal Circuit. Essentially, Avery asserts that method claim 12 indicates a sequential process of depressions being created in one step and then filled in a second, later step. For the same reasons that the Federal Circuit rejected such a process based argument, this Court must also reject
Avery's process based argument. Claim 1 describes a structure, which contains depressions. The Federal Circuit has clearly indicated that claim 1 does not describe a product-by-process claim. 3M v. Avery Dennison, 350 F.3d at 1371-2 (noting that the specification language "neither transforms claim 1 into a product-by-process claim nor even limits the scope of the claim to a serial method of manufacture"), 1374 ("The patent does not limit how the embossed pattern, as defined in the specification, is created."). Claim 1 makes no mention of whether the depressions are empty or filled, or when or how the depressions might be filled or emptied. It is clear that the depressions described in claim 1 will often be filled with some material. However, nothing in the intrinsic evidence of the patent requires that a limitation of sequential creation of the depressions followed later by filling the depressions should be included in claim 1. Just as the Federal Circuit found with respect to method claim 6, the sequential limitation of claim 12 cannot be read into claim 1. 4 The Court therefore concludes that the term "depressions," as used in claim 1, may be either empty or filled according to any number of processes and uses and is most appropriately defined broadly as "lower, sunken, or depressed areas of the carrier web."

4 Furthermore, the Court concludes that the examples in the specification of depressions being filled in a second step are non-exclusive examples of uses of claim 1 that cannot be imported into claim 1. This conclusion is supported by the variety of uses described in the patent involving depressions that remain empty throughout (see e.g. col. 7 11. 46-63), that are filled and then emptied as part of the manufacturing process (see e.g., col. 2 11. 18-22), or remain filled (see eg., col. 211.27-33).

7. Depth: Echometer's position is that depth, as used generally in the claims of the '399 Patent, means the measure of distance below a reference level; as used within the context of the asserted claims, Echometer states that the reference level is the top of the borehole. Lufkin's position is that depth is the distance in the borehole below the well surface. Having no basis to find to the contrary, this Court concludes that the parties' agreed definition of this term holds. Depth, as used within the context of the asserted claims, means the distance in the borehole below the well surface.

IV.

Unlike claim 1, however, claim 32 does not explicitly limit the height of the ridge members forming the load locks in the sidewalls. Instead, claim 32 describes the load lock in terms of depth:

32. A protective liner for a cargo bed of a vehicle, said protective liner allowing a structure positioned in the trunk cargo bed to be supported and affixed in position in the vehicle cargo bed, including:

a liner floor portion having elevated portions formed thereupon to conform to wheel wells protruding from the cargo bed floor;

upwardly extending liner sidewall portions extending upwardly from opposite sides of the liner floor portion an upwardly extending liner frontwall portion extending upwardly from a front end of the liner floor portion; and

means formed on the upwardly extending liner sidewall portions including a plurality of spaced apart, vertically extending ridge members protruding from the liner sidewall portions and forming load locks in gaps separating adjacent ones of the ridge members, said load locks having a depth sufficient to anchor a structure positioned and supported in the cargo bed.

(Emphasis added). Despite the differences between claim 1 and claim 32, the district court interpreted claim 32 to require "the ridge member . . . [to] extend from near the bottom of the sidewall to near the top of the sidewall."

While the last paragraph of claim 32 begins with the word "means," what follows is a detailed recitation of structure. The clause begins with a description of "members formed on the . . . sidewall portions including . . . ridge members." This language describes generally, indeed expressly includes, ridge members that serve as anchors for load locks. The clause then refers to "load locks having a depth sufficient to anchor a structure positioned and supported in the cargo bed.).

The claim language, however, does not link the term "means" to a function. In language again suggestive of structure, the claim notes that the "means" "protrude from the liner sidewall portions and form[] load locks." This language vaguely hints at the function of anchoring a load in the cargo bed. Nowhere does the claim language following "means" state that function. Instead, the claim recites structure. Without an identified function, the term "means" in this claim cannot invoke 35 U.S.C. § 112, P 6. Without a "means" sufficiently connected to a recited function, the presumption in use of the word "means" does not operate. In any case, the express structural limits of the claim language limit its scope. Thus, this court construes this claim without reference to section 112, P 6.

Neither the language of claim 32, nor the specification, requires that the ridges extend over the entire height of the sidewalks. The claim language does not include a height limitation. Instead of referring to height, the claim discloses "load locks having sufficient depth." The specification supports this construction. For example, the specification calls for "gaps separating adjacent ones of the ridge members [to] form load locks of a depth sufficient to anchor an end of the structure." In other words, for this claim, the necessary height of the ridge members depends on the height of the structure to be anchored.

Figure 2 illustrates the height of ridge members necessary to form a load lock. Figure 2 designates a plurality of ridge members above the level of the wheel well as 28A. Similarly, Figure 2 designates the ridge members below the level of the wheel well as 28B. A support member which need not rise above the level of the wheel well might be fully anchored by and between only the 28B ridge members. In other words, a load lock may be formed using only ridge members 28B, which do not extend the entire height of the sidewalk. In sum, claim 32 contains no limitation analogous to the "substantially" language in claim 1. No limitation in the claim or the specification requires that the ridge members extend any distance beyond that sufficient to form a load lock.


In this case, the inventor's conduct during the administrative process for acquiring a patent did not evince a clear disavowal of claim scope. The art prior to the '876 patent, specifically Rye, U.S. Patent No. 4,767,149, shows a support surface in a truck bed liner that reaches about two-thirds the height of the sidewalk. Although the examiner at first rejected one claim based on Rye, the inventors eventually swore behind that reference to remove it as prior art. Moreover, the file history does
not contain a single statement that the inventors conceded any coverage based on Rye. In sum, the administrative record discloses no disavowal of coverage, unmistakable or otherwise, due to Rye. Therefore, the prosecution history does not supply any reason to construe claim 32 to contain a height limitation.

In sum, the language of claim 32, unlike claim 1, contains no height limitation referenced to the height of the sidewall. Instead, claim 32 keys the load lock to the depth "sufficient to anchor the structure." Therefore, the district court erred by reading the height limitation from claim 1 into claim 32.

The Court has construed the limitations of Claim 1, in relevant part, as follows:

"Active" means producing an intended action or effect: active ingredients.
"Pharmacologically effective" means an amount that is medically effective.
"Complex carbohydrates" means a polymer comprising more than two sugar moieties, such as heparin, hyaluronic acid, chondroitin sulfate 1, dermatan sulfate, keratan sulfate and acemannan, for example.
"Amount effective" means a quantity that produces a result.
"Allow penetration of the dermis of mammals by the complex carbohydrate" means the combination of the complex carbohydrate and the essential oil produces a treatment effect by the complex carbohydrate. That treatment effect is pain relief.
"Dermis" means the sensitive connective tissue layer of the skin located below the epidermis, containing nerve endings, sweat and sebaceous glands, and blood and lymph vessels.

These terms are a Markush group, as stated above. After consideration of each party's proposed definition, the undersigned finds that this phrase should be defined as "having the size and outer surface texture of pea gravel (a smooth surface with a few rough edges, as in figure 2), wood chips (a surface with only a few ridges), or tree bark (a rough surface with numerous ridges and valleys of differing heights and depths, as in figure 1), but not a combination of any of the three. (514 Patent, col. 3, lns. 50-62)

Claim 12 of the patent is directed to "[t]he apparatus as in claim 1 wherein the material containing a radionuclide comprises a plurality of radioactive solid particles placed at predetermined locations within the inner spatial volume to provide a desired composite radiation profile." Xoft argues claim 12 is indefinite on two grounds: first, that "desired composite radiation profile" is not defined, and second, that "inner spatial volume" is indefinite because no physical structure bounds
it. The court rejects Xoft's second argument for the reasons given when construing "inner spatial volume" above. The court rejects Xoft's first argument because it presents no evidence that one skilled in the art would not understand "desired composite radiation profile." 8 Cytyc's proposed construction does not clarify the meaning of claim 12. However, since the language is understandable as is, no construction of "a plurality of radioactive solid particles placed at predetermined locations within the inner spatial volume to provide a desired composite radiation profile" is necessary or appropriate.

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<th>Claim Language</th>
<th>Court's Construction</th>
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<td>&quot;A plurality of radioactive solid particles placed at predetermined locations within the inner spatial volume to provide a desired composite radiation profile&quot;</td>
<td>(no construction needed)</td>
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--- Footnotes ---

8 It would seem that for one skilled in the art, it would be a relatively simple matter to add up the individual radiation profiles of individual particles. See Tr. at 75-76.

--- End Footnotes ---

1117

Construction of "determining a desired prescriptive correction."

57. To a person having ordinary skill in the art in 1995, the claim element "determining a desired prescriptive correction for a patient's eye" would have meant nothing more than the ordinary meaning of that phrase -- the correction that is desired relates to a doctor's prescription for improving the patient's visual acuity. The phrase "desired prescriptive correction" contains no technical terms of art. The Court agrees with Defendants that Plaintiff has offered no evidence to support its contention that the claim phrase "desired prescriptive correction" should be construed to mean a "mathematically precise, optically correct, measurement in terms of power (in diopters) of myopia (nearsightedness) and hyperopia (far-sightedness) and astigmatism (power and axis) for correction of a patient's eye." In fact, the 303 Patent's Detailed Description clarifies that the claim language is simply referring to a doctor's prescription:

The change in the corneal surface using the surgical device of the present invention will be determined by an optical correction formed into a custom made member or insert based upon a doctor's prescription. The prescription is similar to the prescription a doctor might give to an optical laboratory for the purpose of grinding lenses for eye glasses or for contact lenses.

Ex. 1 Col. 5, 11. 5-11. Plaintiff has not shown how or why the vague and subjective limitations of "mathematical precision" and "full correction" should be read into the claim term. The Court therefore finds that the word "prescriptive" in Claim 1 should be interpreted according to its ordinary meaning to describe that the "correction" that is "desired" relates to a doctor's prescription for improving a patient's visual acuity.

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"Desired shape of the expandable surface element"

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<th>Cytyc's proposed construction</th>
<th>Xoft's proposed construction</th>
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<tr>
<td>(no construction required)</td>
<td>(indefinite)</td>
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Xoft has again presented no evidence to back up an argument that the phrase is indefinite and therefore again fails to carry its burden of proof. No construction of "desired shape of the expandable surface element" is necessary.
Claim 1 reads:

A disposable diaper comprising:

- a body portion having two enlarged end portions and a narrowed intermediate portion therebetween, the body portion being shaped so that said diaper may extend about a waist and crotch of a wearer and have an inside and an outside with respect to the wearer;

- each end portion having a respective waistband portion at an edge thereof so that when the diaper is worn, the waistband portions gird the waist of the wearer;

- at least two body-portion layers including a layer of liquid-absorbent material and a plastic layer having an edge at the edge of the diaper;

- a soft padding member located along at least one of said waistband portions, being adjacent to said plastic layer edge, the soft padding member being distinct from all of said body-portion layer, the soft padding member including a material formed from a soft substance presenting a soft surface along at least a portion of said inside of the diaper waistband portion despite said plastic layer edge.

Claim 2 reads:

The diaper according to claim 1 wherein said padding member comprises a first strip of soft padding parallel to the waistband, the first strip providing an additional absorbent barrier against leakage.

U.S. Pat. No. 5,797,824 cl. 1, 2 (emphasis added to elements at issue in this motion). Tracy alleges infringement of two types of Arquest products: (1) the Arquest Diapers and (2) the Arquest Pants. As these two types of products contain different structural components, separate infringement analyses are required.

C. Despite Said Plastic Layer Edge

Tracy argues that the elastic member "present[s] a soft surface along at least a portion of said inside of the diaper waistband portion despite said plastic layer edge." Arquest argues that the elastic member does not satisfy the claim language because:

1. it does not wrap around the plastic layer edge as depicted in the only disclosed embodiment of the invention and
2. it does not otherwise provide protection from the plastic layer edge in its Arquest Diapers.

Claim 2 does not explicitly reference a soft padding member that wraps around a plastic layer edge, thereby protecting the baby's skin from the plastic layer edge. Arquest, however, maintains that claim 2, read in light of the specification and prosecution history, requires the padding member to wrap around the plastic edge. Tracy, on the other hand, urges us to avoid reading any limitations from the specification and prosecution history into the claims. The Federal Circuit has held that "foremost among the tools of claim construction is of course the claim language itself, but other portions of the intrinsic evidence are clearly relevant, including the patent specification and prosecution history." All Dental Prodx, LLC v. Advantage Dental Prods., 309 F.3d 774, 780 (Fed. Cir. 2002). Since the meaning of the claim language "despite said plastic layer edge" is not clearly discernible from reviewing the claim itself, we will examine the specification and prosecution history.

The specification discloses only one embodiment of the diaper invention. That embodiment employs a soft padding member wrapped around the plastic layer edge of the waistband. Tracy argues that it is merely a preferred embodiment of the invention while Arquest argues that it is the only embodiment of the invention. A specification does not need to specifically
illustrate all the subject matter of a particular claim in order to support that claim. Wang Labs. v. America Online, Inc., 197 F.3d 1377, 1383 (Fed. Cir. 1999). In order to be covered by that claim, however, the subject matter must be sufficiently described so as to enable a person of ordinary skill in the art to practice the claimed invention. Id. Furthermore, although invalidity is not at issue in this motion, we will not construe the claims "to have a meaning or scope that would lead to their invalidity for failure to satisfy the requirements of patentability." Id. Thus, claim 2 is limited to embodiments that the specification enables.

The specification of the '824 patent discloses a soft padding member (50) which wraps around plastic border sections (40 and 42) at the waistline. Together, the border sections (40 and 42) form the plastic layer edge referred to in the claims. Thus, in the absence of soft padding member, the plastic layer edge has three exposed surfaces. The plastic layer edge includes the plastic border section (40) exposed on the interior, baby-facing side of the waistline, the plastic border section (42) exposed on the exterior, mommy-facing side of the waistline, and both border sections (40 and 42) exposed at the termination of the waistline (in the upward direction when the diaper is worn by a baby standing upright). The soft padding member (50) is divided into three sub-parts (50a, 50b, and 50c) that cover all three exposed areas of the border sections (40 and 42). Claim 2 requires a soft padding member to present a soft surface along the inside of the diaper waistline. It does not require padding at the top or outside of the diaper waistline. With respect to the specification, claim 2 claims protection when the interior baby-facing side of the border section 40 is protected by sub-part 50c of the soft padding member 50 (for example, when sub-parts 50b and 50c are not necessarily present). Since claim 2 is enabled as written, there is no cause to read in the wrap-around feature.

The prosecution history simply readdresses the preferred embodiment in the specification and, for the same reasons, does not limit Tracy to embodiments having soft padding members that wrap around.

Although we have construed claim 2 to not require a wrap around feature, we must still construe the claim language "despite said plastic layer edge." The claim language appears to imply that, but for the soft padding member, a plastic layer edge would present a non-soft surface along the inside of the diaper. Indeed, the specification and prosecution history command this interpretation. In the specification, Tracy discloses a sub-part of the padding member (50c) that covers an otherwise exposed plastic layer edge (40). Moreover, in amending the claims to include "despite said plastic layer edge", she made the following representation to the PTO:

None of the prior art addresses the problem solved by the claims as amended . . . [A] problem addressed by the invention is that a plastic edge is involved. In the manufacture of diapers, the plastic edges may be heat sealed edges and/or may be sharp edges. The present invention adds soft padding located along a waistband portion. The effect of this is to provide some protection against the edge of the plastic.

Arquest 56.1 Statement, Exhibit C at 7. (emphasis added). Additionally, when distinguishing her invention over the prior art, she represented to the PTO Board of Patent Appeals and Interferences that she was claiming a "soft padding member located in the waist region and intended to avoid direct contact with the skin of the wearer of an edge portion of a plastic layer of the diaper." Arquest 56.1 Statement, Exhibit D at 5. (Emphasis added). In light of the specification and prosecution history, we interpret "despite said plastic layer edge" to mean that the plastic layer edge would be otherwise more exposed to the wearer's skin but for the padding member there between.

None of the prior art addresses the problem solved by the claims as amended . . . [A] problem addressed by the invention is that a plastic edge is involved. In the manufacture of diapers, the plastic edges may be heat sealed edges and/or may be sharp edges. The present invention adds soft padding located along a waistband portion. The effect of this is to provide some protection against the edge of the plastic.

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L. No Destructive Lesion is Formed on a Disc

Smith & Nephew proposes that "no destructive lesion is formed on a disc" should be construed to mean "no ruinous change in the structure of tissue on a disc." ArthroCare would interpret the term to mean "a pathological change in tissue resulting in structural degradation, death and/or removal of tissue." The American Heritage Dictionary defines "destructive" as: "causing or wreaking havoc; ruinous." THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (4th ed. 2000). The American Heritage Dictionary defines "lesion" as: "a localized pathological change in a bodily organ or tissue." THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (4th ed. 2000).

The claims, specification and prosecution history do not counsel against giving the term its plain meaning. Thus the court
sees no reason not to combine the dictionary definitions of "destructive" and "lesion" to define "no destructive lesion" as "no ruinous change in the structure of tissue on a disc."

ArthroCare argues that this definition does not clarify the original term, but proposes no better construction. The patent states "discs with fissures can be treated non-destructively with or without the removal of nucleus tissue..." U.S. Patent No. 6,261,311, Column. 22:13-14. This patent language contemplates nondestructive procedures on the disc that involve the removal of tissue. This language contradicts ArthroCare's definition, which implies that removal of tissue necessarily has a negative impact on the intervertebral disc. Additionally, the phrase "structural degradation" and the word "pathological" are ambiguous and do not clarify the term "destructive lesion."

For these reasons "no destructive lesion" is defined as "no ruinous change to the structure of tissue on a disc."

1. **Claim 14 of the '977 patent**

Claim 14 of the '977 patent describes a method for augmenting the power of a gas turbine by "adding increasing amounts of liquid water comprising liquid droplets to the working fluid acquired by the compressor, with the mass flow rate of the liquid droplets being increased over time to avoid destructive thermal stresses within the gas turbine which are related to the providing of increased amounts of liquid water to the working fluid. . . ." The parties presently dispute the term "destructive" thermal stresses. As indicated above, the parties stipulated to the definition of "thermal stresses" to mean "forces, induced by heat, which tend to deform a body." (Doc. 185 at 6). 22 Destructive is not a technical term. Its ordinary meaning is causing destruction or tending to destroy; destroy, in turn, means "to ruin the structure, organic existence, or condition of." Merriam Webster's Collegiate Dictionary (10th ed. 1996). 23

2. **Footnotes**

22 While the Markman Order specifies that "thermal stresses" appeared in Claim 16 of the '990 patent, the parties have not argued that thermal stresses in the claims of the '977 patent should be defined differently.

23 The Federal Circuit has indicated that courts may use technical treatises and dictionaries at any time to understand the technology at issue, and may rely on dictionaries to construe claim limitations, as long as the dictionary definition does not contradict any definition found in or ascertained from reading the patent documents. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 n.6 (Fed. Cir. 1996).

The patent specifications do not provide a definition of "destructive" that is inconsistent with its ordinary meaning. The patent specifications refer to "destructive stresses" (P2, col. 22, l. 25) and "destructive thermal and mechanical stresses" (Id. at col. 24, l. 59). "Destructive stresses" is used to refer to a problem that can arise from cooling a portion of the housing unequally, which can then lead to "a stall or a rotating stall leading to destructive stresses in the components of the axial compressor section 103, or such distortion can induce mechanical rubbing between components of the axial compressor section 103, resulting in either damage to these components or, possibly in the most extreme case, a compressor wreck." (Id. at col. 22, ll. 24-30). "Damage" is defined, in pertinent part, as "harmful alteration of any of the components of the gas turbine beyond that which would be anticipated in the course of reasonable use and operation." (Id. at col. 11, ll. 11-13). "Destructive thermal and mechanical stresses" is used in the specifications to describe that increments should be added or subtracted so as to minimize such stresses.

The patent history of the '977 patent reveals that Claim 14 24 originally contained the following limitation: "adding liquid water comprising liquid droplets to the working fluid acquired by the compressor, the mass flow rate of the liquid droplets being modified with respect to time to moderate thermal stresses within the gas turbine which are related to the providing of liquid water to the working fluid." (P3, tab 1 at 152) (emphasis added). This claim was rejected by the patent examiner because the claim indicated both that the first paragraph (the one quoted here) calls for the mass flow to be varied, but the second paragraph indicates that the mass flow is "substantially constant" over time. (Id., tab 7 at 71). When the applicants
amended the claim language after the examiner's rejection of the claim, the applicants altered the language from "to moderate thermal stresses" to "avoid destructive thermal stresses."

24 In the patent application, Claim 14 was originally listed as Claim 32.

Finding that the patent specifications and patent history do not demonstrate that the inventors intended "destructive" to mean something different than its ordinary meaning, the Court defines "destructive thermal stresses" as "forces, induced by heat, which have a tendency to destroy, or ruin the structure of, a body."

3. Construction of "Said Retainer Being Detachably Cooperative with the Tabs to Rotate the Disc and a Tie Rod Engaged Therewith"

The parties also dispute the meaning of the phrase "said retainer being detachably cooperative with the tabs to rotate the disc and a tie rod engaged therewith." Whereas the previous phrase suffered from mere grammatical imprecision, this phrase has been hit by a grammatical tornado. The juxtaposition of "detachably" with "cooperative" creates an apparent oxymoron for which neither party offers an adequate explanation. Additionally, it is unclear which part or parts of this phrase are "engaged therewith." It could be that the disc is "engaged therewith" the tie rod; or it could be that the disc and the tie rod together are "engaged therewith" the tabs; a third option would be that the disc and the tie rod are "engaged therewith" "said retainer"; a fourth option would be that the disc and tie rod are "engaged therewith" the tabs and "said retainer." Each of these constructions of this language would be plausible using only grammatical rules. For this reason, examination of the plain language of this phrase is unlikely to result in a conclusive claim construction.

The parties do offer proposed constructions of this disputed phrase. Defendant A.J. believes it should be defined to mean: "the retainer separates or disengages the tabs of the C-shaped wrench disc from their locked position, but acts at the same time as the tabs to rotate the disc and a tie rod locked into position therewith." (Def. Br. at 19). Plaintiff Lisle suggests the disputed phrase should be construed to mean: "the retainer separates or disengages from, but works together with, the tabs to rotate the disc and a tie rod that is interlocked with the disc."

Rather than get into the meaning of this disputed phrase, A.J. asserts that the parties' dispute over this claim duplicates the dispute over "cooperatively engaging". Simply because this phrase contains the word "cooperative" and the word "engage" does not render the dispute over the meaning of this phrase coextensive with the dispute over the previous phrase. While it is true that A.J.'s proposed construction is rooted in its proposed construction of "cooperatively engaging," that does not mean that the conclusive construction of "cooperatively engaging" in the prior portion of the claim will be conclusive as to this portion. When the two words combine to form one phrase as an adverb (cooperatively) and verb (engaging), the meaning of the single phrase is likely to be different from the meaning of the words when cast into a different context.

Lisle again proposes to construe this claim according to "its ordinary meaning." (Pl. Br. at 13-14). The proffered ordinary meanings of cooperative and engage are the same as in the previous phrase, that is, "to work together" and "to interlock" respectively. (Pl. Br. at 13). The proffered ordinary meaning of detachable is "separates or disengages from." (Pl. Br. at 12-13).

Lisle's proposed construction tackles the "engaged therewith" portion of the claim, positing that it should be the tie rod that is "engaged therewith" the C-shaped wrench disc. The invention does require that the tie rod and the C-shaped wrench disc engage. Additionally, both the disc and the tie rod would rotate when the invention was operating properly. In light of the nature of the invention, the Court agrees with Lisle that the latter portion of the disputed phrase should be construed to relate only to the disc and the tie rod. This construction also comports with the dictionary definition of "therewith" ("with that") 2, which implies that this somewhat archaic term modifies "that" which immediately preceded it.
Lisle did no better than A.J. at addressing the apparent oxymoron of "detachably cooperative." Both parties urge the same plain meaning of detachable, i.e. "to separate or disengage from." As an adverb, "detachably" must modify the adjective "cooperative", so, if the language and grammar is to be believed, the separation or disengagement must be part and parcel of the cooperation between the retainer and the tabs. While the Court can imagine items that would separate or disengage while they work together (the acorn and the oak, for example), the inner tie rod tool that is the subject of the '776 patent is not among them. In the context of this patent, where the tabs, slots, and retainer must "work together to interlock," it is unimaginable for the tabs and retainer to be "detachably cooperative."

In light of this enigmatic language, the Court consults the prosecution history for an answer to the riddle. In the prosecution of the patent, Lisle emphasized to the patent examiner in its request to reconsider that the patent "specifies the retainer is detachably cooperative with the tabs." (Pl. Ex. F at LIS 000871) (emphasis in original). This feature was clearly significant to the patentee. It is also clearly separate from the cooperative engagement between the tabs and the retainer, which was described immediately before the "detachably cooperative" feature in the request to reconsider. (Pl. Ex. F at LIS 000870). Although the patent history reveals that this is a salient feature of the invention, it does not provide a definite answer to the construction.

Under Lisle's proposed construction, the conjunction "but" separates the definition of detachable from the definition of cooperative. The effect of this construction would be to sever "detachably" from "cooperative" and interpret both terms separately, i.e. the retainer and the tabs are detachable from each other, and they are also cooperative with each other. A.J.'s proposed construction accomplishes the same results, though its language is slightly different.

While it is true that the retainer and tabs are both detachable and cooperative, the term "detachably cooperative" attempts to capture both concepts at once. Rotation is necessary both for engagement with the tabs and for detachment from the tabs. To engage the tabs, the tabs must be inserted into the slots on the tube, and then rotated into the retainer. To detach the tabs from the retainer, the retainer must be rotated so the tabs are aligned with the slots to permit full detachment. In order to capture the full meaning of the phrase "detachably cooperative" while remaining true to the claim of the '776 patent, the Court finds that this phrase refers to the rotation of the retainer and the tabs.

Consequently, the disputed phrase “Said retainer being detachably cooperative with the tabs to rotate the disc and a tie rod engaged therewith” is constructed to mean: Rotation of the retainer and the tabs can result in separation or disengagement or it can result in rotation of the disc and a tie rod that is interlocked with the disc.

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i. Claim 1 of the '776 patent

Claim 1 is the only independent claim of the '776 patent. It is directed to an inner tie rod removal tool. Here is the text of the claim, with the disputed claim language depicted in bold and underlined:

1. A tool for removal of inner tie rods comprising in combination:

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(a) a nut engaging, C-shaped wrench disc having spaced arms for engaging a nut, and outwardly projecting tabs for cooperation with a retainer; and

(b) a hollow tube for placement over a tie rod, said tube having a retainer at one end and at least two slots for cooperatively engaging the tabs of the wrench disc and means for cooperation with tube rotation means at the opposite end, said retainer being detachably cooperative with the tabs to rotate the disc and a tie rod engaged therewith.

In its claim construction, this Court construed the disputed claim language in claim 1 as follows. The term "retainer" means "any of various devices used for holding something." The term "cooperatively engaging" means work together to interlock." The phrase "said retainer being detachably cooperative with the tabs to rotate the disc and a tie rod engaged therewith" means "rotation of the retainer can result in separation or disengagement or it can result in rotation of the disc and a tie rod that is interlocked with the disc."

At the most basic level, the accused tools match up with the subject matter of the invention disclosed by the '776 patent. It is beyond dispute that the accused tools are "tool[s] for removal of inner tie rods." Claim 1 goes on to recite that the tool would have two major components. The first component, described in part (a) of Claim 1 of the '776 patent, is a "nut engaging C-shaped wrench disc having spaced arms for engaging a nut, and outwardly projecting tabs for cooperation with a retainer." The accused tools utilize a C-shaped wrench disc, which A.J. refers to in its literature as a "crows foot." The C-shaped wrench disc of the accused tools has spaced arms for engaging a nut and outwardly projecting tabs. In order to meet all the limitations of part (a) of Claim 1, these outwardly projecting tabs must also be "for cooperation with a retainer." Reading this limitation in light of the Court's claim construction, the tabs must be "for cooperation with a device used for holding something."

The tabs of the C-shaped wrench discs in the accused tools are meant to cooperate with the retaining end of the accused tools. The retaining end of the accused tools is structured to hold the discs in place. A.J. disputes whether the retaining end of the accused tools should properly be considered the tube or the retainer. The Court will address that contention below in the analysis related to the limitations of part (b) of Claim 1. For now, it suffices to assert that the outwardly projecting tabs on the C-shaped wrench disc of the accused tools are present to hold the discs in place as the discs cooperate with the retaining end of the accused tools. This matches with the final limitation of part (a) of Claim 1.

Part (b) of Claim 1 discloses the other major component of the invention: "a hollow tube for placement over a tie rod, said tube having a retainer at one end and at least two slots for cooperatively engaging the tabs of the wrench disc and means for cooperation with tube rotation means at the opposite end, said retainer being detachably cooperative with the tabs to rotate the disc and a tie rod engaged therewith." Part (b) of Claim 1 is more conceptually dense than part (a), so it must be parsed a little more closely.

Beginning with the basics, the accused tools meet the first limitation of part (b). They contain "hollow tube[s] for placement over a tie rod." The next limitation is that the tube must have a retainer at one end. A.J. concedes that the accused tools have a retainer at one end. A.J.'s contention is that the T-shaped slots at the retaining end of the accused tools constitute the retainer. In order to match all the limitations of part (b) of Claim 1, the retaining end of the tube must also have "at least two slots." In A.J.'s view, its device defeats literal infringement because the slots in the retaining end of the accused tools would be slots in the retainer not slots in the tube. A.J. misperceives the nature of the invention. The invention contains two primary components: the C-shaped wrench discs and the hollow tube. The hollow tube has a retaining end and a rotating end. At the retaining end, the tube has two claimed features: some structural component that will permit it to hold the C-shaped wrench discs in place, i.e. the retainer, and at least two slots that permit the outwardly projecting tabs on the wrench discs to engage with the retainer. The accused tools combine the slots and the retainer into one structural component: the T-shaped slots. The vertical aspect of the T-shaped slots are the "at least two slots" that the claim limitation requires. The horizontal aspect of the T-shaped slots in the accused tools functions as the retainer, or the device to hold the C-shaped wrench disc in place.

The slots at the end of the tube, the retainer, and the tabs of the wrench disc must "cooperatively engage" or, as construed by the Court, "work together to interlock." These three features of the accused tools meet this limitation. Although it is not in dispute, the Court notes that the accused tools do have "means for cooperation with tube rotation" at the end opposite the retaining end.
The final limitation of part (b) of Claim 1 is "said retainer being detachably cooperative with the tabs to rotate the disc and a tie rod engaged therewith." The Court construed this portion of the claim to mean "rotation of the retainer can result in separation or disengagement or it can result in rotation of the disc and a tie rod engaged therewith." In the accused tools, the retainer has been integrated into the structure of the tube rather than added as a separable component. Consequently, rotation of the tube in the accused tools will ipso facto result in rotation of the retainer. With the accused tools, rotation of the tube can result in separation or disengagement from the discs or it can result in rotation of the disc and the tie rod engaged therewith. The accused tools meet this limitation as well.

The accused tools contain each limitation of the '776 patent exactly. Consequently, the Court holds that the accused tools infringe Claim 1 of the '776 patent. The remaining claims are dependent, but the infringement analysis must be conducted on them as well.

ii. Claim 2 of the '776 patent

Claim 2 of the '776 patent incorporates all of the limitations in claim 1 and adds that the "means for cooperation with tube rotation means comprise a socket." In other words, the rotating end of the hollow tube (as opposed to the retaining end) would have a socket as the means to begin rotation. There is no dispute but that A.J.'s accused tools contain a "socket" on the rotating end. Therefore, the Court finds that the accused tools literally infringe claim 2 of the '776 patent.

iii. Claim 3 of the '776 patent

Claim 3 of the '776 patent incorporates all of the limitations in claim 1 and adds that the C-shaped wrench disc "include first and second tabs radially projecting outwardly in opposite directions from the center of the disc." The C-shaped wrench disc in the accused tools contains outwardly projecting tabs that extend in opposite directions from the center of the disc. Therefore, the Court finds that the accused tools literally infringe claim 3 of the '776 patent.

iv. Claim 4 of the '776 patent

Claim 4 of the '776 patent incorporates all of the limitations in claim 1 and further requires that the "retainer include slots therein for the receipt of the tabs." The Court construed this term to mean "the retainer contains slots for receipt of the tabs on the C-shaped wrench disc." The retainer on A.J.'s accused tool does contain slots for receipt of the tabs on the C-shaped wrench disc. In fact, in the structure of the accused tools, the entire structure of the retainer consists solely of the horizontal slots of the T-shaped slot. A.J. contends that this raises a claim differentiation problem, as the slots of the retainer must be different from the retainer itself. This Court disagrees. The doctrine of claim differentiation, at its core, dictates that the limitations of a broad claim must not be so defined that they are the equivalent of the limitations of a dependent narrow claim. See U.S. v. Telelectronics, Inc., 857 F.2d 778, 784 (Fed. Cir. 1988) (holding that district court cannot construct limitations of a broader claim so that they are the same as the limitations of a narrower claim). Claim 1 of the '776 patent sets forth the invention in its broadest terms. Under the limitations of Claim 1, the retainer can be "any of various devices used for holding something." The limitations of Claim 4 dictate that the retainer must be structured in such a way so that it contains slots for receipt of the tabs of the C-shaped wrench discs. The accused tools have a retainer, as described in the analysis relating to Claim 1. As it happens, the retainer of the accused tools meet the limitations of Claim 4 as well. Therefore, the Court finds that the accused tools literally infringe claim 4 of the '776 patent.

v. Claim 5 of the '776 patent

Claim 5 of the '776 patent incorporates all the limitations in Claim 1 and adds that the tools include a plurality of different-sized C-shaped wrench discs to cooperate with different-sized inner tie rods. The parties do not dispute that the accused tools include a variety of different-sized discs to cooperate with different-sized inner tie rods. Therefore, the accused tools meet the limitations of Claim 5. Therefore, the Court finds that the accused tools literally infringe claim 5 of the '776 patent.

CONCLUSION

For the reasons given in this opinion, the Court denies A.J.'s Motion for Reconsideration of the claim construction opinion based on the asserted ground of indefiniteness. The Court, sua sponte, reconsidered its claim construction and enters the
following amended construction of the term "said retainer being detachably cooperative with the tabs to rotate the disc and a tie rod engaged therewith" to mean:

Rotation of the retainer can result in separation or disengagement or it can result in rotation of the disc and a tie rod that is interlocked with the disc.

The Court denies A.J.'s Motion for Summary Judgment of invalidity and non-infringement in its entirety. The Court grants Lisle's Motion for Summary Judgment on infringement in its entirety. Thus, the only issues remaining for trial relate to whether the '776 patent is invalid for the reasons discussed in parts II.B, II.C, and II.D of this opinion.

With respect to the claim limitation "said retainer being detachably cooperative with the tabs to rotate the disk and a tie rod engaged therewith," we will clarify the district court's claim construction. In its proposed claim construction, A.J. asserts a hyper-technical reading of the limitation that requires the wrench disc and the hollow tube to simultaneously detach from one another and rotate the tie rod. Obviously, that cannot be, since the tool disclosed by the patent is incapable of simultaneously detaching the wrench disc from the hollow tube and rotating a tie rod. We therefore reject A.J.'s proposed claim construction and instead rely on the patent specification to attain a common-sense meaning of that claim limitation.

As explained above, an object of the patented invention is to provide a single tool that can be used on many different tie rod configurations. Id. at col. 1, II. 56-68. That objective, however, is only realized because the retainer allows the body of the tool to engage or disengage the wrench discs. Id. at col. 1, II. 44-50. Moreover, figure 7 of the '776 patent illustrates that although the wrench disc is detachable, only when it is secured onto the body of the tool can it perform its stated function of rotating the tie rod. Given this disclosure, the meaning of the disputed claim limitation becomes apparent: the wrench disc is detachable from the body of the tool, but when not detached, the tabs of the wrench disc and the retainer work together to rotate the wrench disc and the tie rod that is interlocked with the wrench disc.

As to this phrase, the Court construes the following meaning: each magnet is secured to the tool body in a fashion that prevents it from being able to rotate except with the tool as the tool rotates, but that allows the individual magnet to be removed and replaced, if damaged. None of the five Abstracts mentions detachable securing of the magnets. 78 The 787 patent specification, 79 the 781 patent specification, 80 the 386 patent specification, 81 the 539 patent specification, 82 and...
the 117 patent specification reference this particular language. Further, the 117 patent specifies that "Each magnet member is individually secured and can be replaced, when necessary, without affecting other magnet members..." Even though the specifications do not go into detail explaining these concepts beyond the language in the 117 patent, the meanings of detachable and non-rotatable are readily apparent.

--- Footnotes ---
78 Page 1 of each patent contains the Abstract; the Court notes the 787, 781, 386, and 539 Abstracts are identical.
79 Col. 2, line 66 through col. 3, line 2.
80 Col. 3, line 10-11.
81 Col. 3, line 10-11.
82 Col. 3, line 10-11.
83 Col. 3, line 46-52, without reference to non-rotatable.
84 Col. 3, line 49-52.

--- End Footnotes ---


C. Claim Construction of "Detector"

Claim 1 of the '454 Patent claims an "apparatus for chemical polishing (CMP) of a wafer comprising: . . . (c) an endpoint detector." Defendants seek to have the term "detector" construed as the detection component of a laser interferometer because the specification only uses the term "endpoint detector" to refer to the detection component of a laser interferometer. Plaintiff's argue that the term "detector" should be given its plain and ordinary meaning as a device used in determining when the polishing or planarization process should be terminated.

To construe the term "detector," Plaintiff points to the Background section of the '454 Patent that discusses the early devices and methods used in prior art to perform in situ detection of endpoints during the CMP process. None of the discussed devices or methods involve the use of lasers. ('454 Patent, Col. 2, lines 23-43). On the other hand, Defendants argue that the summary section of the specification expressly describes the "endpoint detector" as a component of CMP that includes a laser interferometer.

The intrinsic evidence does not provide much guidance as to the proper construction of the term "detector." A "detector" is only mentioned in Claims 1 and 22 without much description. As Defendants point out, the specification describes the endpoint detector as a component of the laser interferometer. However, as with the construction of the term "light," the term "detector" cannot be narrowly construed based on the preferred embodiment of the patent. Phillips, 415 F.3d at 1323. Accordingly, the Court deems it proper to consult extrinsic evidence to define the term "detector." Defendants' expert, Dr. Gutmann, agreed that "a person of ordinary skill in the art would understand from reading the '454 specification that there were other end-point detector devices other than a laser interferometer device." (Gutmann Transcript at 210.) Additionally, Merriam-Webster defines "detector" as a device for detecting the presence of electromagnetic waves. Both of these sources provides broader definitions than that proffered by Defendants. Accordingly, the Court FINDS that the term "detector" refers to a device for detecting the presence of electromagnetic waves and is not confined to the detection component of a laser interferometer.
E. “detector operable to detect a fluorescence optical signal”

In its claim construction brief, Stratagene urged the court to construe "operable" as meaning "capable of being used." However, the claim is perfectly clear on its face, and there is no significant disagreement between the parties as to its meaning. Stratagene has done little to argue that this term needs to be construed, and it does not press this point in its post-hearing brief. Therefore, it is unnecessary to construe this term.

4) the word "detent" means "a mechanical stop or catch;"

83. As defined in the '656 specification, a "detent" is a ball comprising a spherical or curved surface which can project, extend or protrude outwardly of the solenoid housing. Col. 6, lines 12-22; Col. 7, lines 31-34; Col. 7, lines 43-46; Col. 7, lines 51-56; Figures 1, 3, 4-7. In the specification, "detent" is not described or illustrated in any way other than as a spherical ball capable of being projected above the surface of the solenoid housing. Thus, this definition is of controlling significance. McGill, Inc. v. John Zink Co., 736 F.2d 666, 674 (Fed. Cir. 1984).

84. In the usual engineering sense, a "detent" is a spring-loaded element that is driven into either a recessed area in another component or a slot or slide. A detent is almost without exception spring-loaded, or a spring-loaded component that goes into a mating hold slot, ridge, or the like. A detent may also be described as a mechanism that slides two pieces of metal together with a spring and ball to lock the pieces of metal together. A tooth on a gear is not considered a "detent".

85. The claims of the '656 patent also define a "detent" in terms of a member movable from one position to another (Claim 1) and where the "detent" protrudes from another member (Claims 8, 9, 14, 21). The claims of the '656 patent also define a "detent" in the conventional sense, as "spring-biased". See claims 10, 11, 12, 13, 15, 16, 17, 18. Both asserted and non-asserted claims may be used to define claim terms. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996).

86. Thus, as used in the '656 patent claims, "detent" means a separate spring-biased element such as a ball, which is movable from one position to another and that goes into a mating hole, slot or ridge in the blocking element and is capable of being driven by the solenoid into a position where it can contact the detent engaging member on the cam.

87. As used in the claims of the '656 patent, the detent engaging member is a member located on the cam wherein rotation of the dial drives the member against a detent which has been moved to the detented position.
8) in claim 23 of the '583 Patent, the limitation "detent means disposed on the corner surface thereof for engaging said first ridge to lock said tab to said tab holder" is subject to 35 U.S.C. § 112 P 6. The required function is to secure the tab to the tab holder to prevent the tab from being pulled off. The structure is "a mechanical stop or a catch;"

The primary dispute between the parties concerns the proper legal interpretation of certain language in claim 1 of Dr. Greenberg's patent. Claim 1, which describes his surgical instrument, reads as follows:

A surgical instrument comprising a pair of axially matable and relatively slidable shafts each having at their distal ends cooperating working tools, a sleeve mounted adjacent the proximal end of said shafts, one of said shafts being fixedly attached to said sleeve for conjoint movement therewith, the other of said shafts extending freely through said sleeve and being exposed at its proximal end, a pair of handle members pivotally attached to each other and arranged scissor-like for manipulation by one hand, one of said handles being attached to said sleeve for conjoint axial movement and relative free rotary movement therewith, said sleeve and said one handle being arranged so that said sleeve is manipulatable by a finger of the same hand simultaneous with the manipulation of said handle, a radially enlarged wheel on said sleeve and said wheel and said one handle having a cooperating detent mechanism defining the conjoint rotation of said shafts in predetermined intervals, said other handle being universally attached to the exposed proximal end of said freely extending shaft, said shafts being caused to reciprocate relative to each other on manipulation of said handle members and to rotate about their common axis by manipulation of said sleeve, whereby said tools may be operated and moved into selected rotary positions relative to the axis of said shafts.

Ethicon and Dr. Greenberg dispute the proper interpretation of the underlined phrase: "cooperating detent mechanism defining the conjoint rotation of said shafts in predetermined intervals." Specifically, they dispute whether this language is structural or functional. The characterization of the claim language is critical because functional and structural elements are subject to different tests for literal patent infringement. In essence, if the language is structural, as Dr. Greenberg contends, then the patent encompasses comparable instruments containing any detent mechanism. If the language is functional, as Ethicon asserts, then the claim language is governed by 35 U.S.C. § 112, P6, and Dr. Greenberg's patent covers only the specific detent mechanism recited in his specification and structural equivalents thereof.

Although Dr. Greenberg is asserting claims 2 and 3 against Ethicon as well as claim 1, he has conceded that claims 2 and 3 flow from claim 1. Therefore, if claim 1 is not infringed, neither are claims 2 and 3.

DISCUSSION
I. Summary Judgment Standard

Summary judgment is appropriate in a patent case, as in any other case, when the moving party demonstrates that no genuine issue of material fact remains for decision and that the moving party is entitled to judgment as a matter of law. DMI Inc. v. Deere Co., 755 F.2d 1570 (Fed. Cir. 1985). The moving party has the burden of demonstrating the absence of any disputed material facts and the court must resolve all ambiguities and draw all inferences in favor of the non-movant. Thompson v. Gjivoje, 896 F.2d 716, 720 (2d Cir. 1990).

The patentee in a patent infringement suit bears the burden of proving infringement by a preponderance of the evidence. To prove infringement, the patentee must prove that every limitation of the asserted claim is found in the structure of the accused device. An accused infringer is entitled to summary judgment if he can demonstrate that the patentee has failed to put forth evidence sufficient to support a finding that any one limitation of the asserted claim is found in the accused device. Scripps Clinic & Research Fdn. v. Genentech, Inc., 927 F.2d 1565. 1570-71 (Fed. Cir. 1991); Johnston v. IVAC Corp., 885 F.2d 1574, 1578 (Fed.Cir. 1989).


Determining whether a patent is infringed involves two steps: 1) interpreting the claims; and 2) comparing the properly interpreted claims to the accused device. The Federal Circuit has recently clarified that claim interpretation is exclusively a question of law for the court. Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed. Cir. 1995). The comparison of the

In order to determine whether there is a genuine issue of fact regarding infringement, the Court must first determine the scope of Dr. Greenberg's patent as a matter of law. The primary dispute over the scope of the patent concerns the interpretation of the following language in claim 1 of Dr. Greenberg's patent: "cooperating detent mechanism defining the conjoint rotation of said shafts in predetermined intervals."


An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

Under this provision, the use of means-plus-function language has a "string attached." Valmont Indus., Inc. v. Reinke Mfg. Co., 983 F.2d 1039, 1042 (Fed. Cir. 1991). To satisfy a means-plus-function limitation literally, the accused device must perform the identical function required by the limitation. Moreover, the accused device must employ as the means for performing that function either the precise structure disclosed in the specification or a structural equivalent thereof. Id.; Johnston v. IVAC Corp., 885 F.2d 1574, 1580 (Fed. Cir. 1989); Pennwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931, 934 (Fed. Cir. 1987).

Ethicon argues that the phrase "cooperating detent mechanism defining the conjoint rotation of said shafts in predetermined intervals" recites means-plus-function language, because "detent mechanism" is a means and "defining the conjoint rotation of said shafts in predetermined intervals" is a function. According to Ethicon, Dr. Greenberg's patent therefore covers only the exact structure disclosed in his specification and structural equivalents thereof.

Dr. Greenberg insists that Ethicon has "parsed" his claim incorrectly and that the correct identification of the element at issue is as follows: "a radially enlarged wheel on said sleeve and said wheel and said one handle having a cooperating detent mechanism defining the conjoint rotation of said shafts in predetermined intervals." He claims that, when parsed in this way, the disputed element contains four well-defined structures: 1) a radially enlarged wheel; 2) a sleeve; 3) a handle; and 4) a detent mechanism. Therefore, he contends, the element is structural and 35 U.S.C. § 112, P6 does not apply. Dr. Greenberg further claims that, even if the element at issue is, as Ethicon claims, "cooperating detent mechanism defining the conjoint rotation of said shafts in predetermined intervals," that phrase recites structural language because the term "detent mechanism" has a specific structural connotation in the scientific community.

Dr. Greenberg's "parsing" argument has no merit. The Court of Appeals for the Federal Circuit has applied 35 U.S.C. § 112, P6 to means plus function "limitations" (In re Donaldson Co., 16 F.3d 1189, 1195 (Fed. Cir. 1994); Valmont Indus., Inc. v. Reinke Mfg. Co., 983 F.2d 1039, 1042 (Fed. Cir. 1993); Laitram Corp. v. Rexnord, 939 F.2d 1533, 1538 (Fed. Cir. 1991)); means plus function "language" (Donaldson, 16 F.3d 1189 at 1193; Valmont, 983 F.2d at 1042; Laitram, 939 F.2d at 1535); means plus function "clauses" (Laitram, 939 F.2d at 1536); means plus function "terms" (Valmont, 983 F.2d at 1044; Biodex Corp. v. Loredan Biomedical, Inc., 946 F.2d 850, 862 (Fed. Cir. 1991)); and means plus function "elements" (Johnston v. IVAC Corp., 885 F.2d 1574, 1580 (Fed. Cir. 1989)).

In this Court's view, Dr. Greenberg's position that the language "cooperating detent mechanism defining the conjoint rotation of said shafts in predetermined intervals" is structural does not withstand scrutiny. He and his expert, Dr. Joseph Dyro, repeatedly assert that the term "detent mechanism" is not functional because it refers to a "well known mechanical structure." Plaintiff's Memorandum in Opposition, at 8; A408. Yet every definition of "detent mechanism" that Dr. Greenberg provides describes what a detent mechanism does, but not what it is structurally. In response to an interrogatory, for example, Dr. Greenberg gave the following definition:

Any device for positioning and holding one mechanical part in relation to another so that the device can be released by
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

force applied to one of the parts is a detent mechanism within the meaning of the claims of the '501 patent. A136. A123.

In his deposition, Dr. Greenberg described a detent mechanism in "lay terms": "Anything that periodically stops the rotation is part of a detent mechanism." A365. And Dr. Dyro provides a similar definition of "detent mechanism":

a device for locking and unlocking one mechanical part in relation to another so that the device can be released by a force applied to one of the parts." A443.

Finally, the dictionary definition of "detent" which Dr. Greenberg relies upon reads:

a device (as a catch, dog, or spring-operated ball) for positioning and holding one mechanical part in relation to another so that the device can be released by force applied to one of the parts. Webster's Ninth Collegiate Dictionary.

All of these definitions describe a detent mechanism in terms of what it does ("position[s] and hold[s] one mechanical part in relation to another," "periodically stops the rotation," "allows the locking and unlocking of another part . . ."). While stating on the one hand that "detent mechanism" has a specific structural connotation, Dr. Greenberg insists on the other hand that every structure which operates as a detent, and there are concededly many, 1 satisfies the definition of "detent mechanism." A408. The inconsistency of this position is evident.

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1 Dr. Greenberg's dictionary definition alone suggests that there are several structures that can operate as a detent -- catch, dog, spring-operated ball, etc. See also Interspiro USA v. Figgie Int'l, 815 F. Supp. 1488, 1498 (D. Del. 1993).

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - - 

Interspiro USA, Inc. v. Figgie Intern. Inc., 815 F. Supp. 1488 (D. Del. 1993), is directly on point. At issue in that case was claim language which read: "detent means . . . for moving and maintaining said moveable member. . ." The district court held that the language "detent means" must be construed in accordance with 35 U.S.C. § 112, P6 and that therefore the patent at issue encompassed only the specific type of detent which was described in the specification and structural equivalents thereof. The Court of Appeals for the Federal Circuit implicitly ratified the district court's finding that "detent means" is means-plus-function language:

Specifically at issue are two limitations contained in claim 1 that are written in means-plus-function format: one reciting . . . and the other directed to a "detent means." Interspiro USA v. Figgie Int'l, 18 F.3d 927, 930 (Fed. Cir. 1994).

Although Dr. Greenberg's claim uses the term "mechanism" rather than "means", it is clear that a claim need not contain the precise term "means" in order to constitute means-plus-function language. Expressions such as "mechanism", "device" and the like have long been construed as means-plus-function language. See Lipscomb's Walker on Patents § 11.16; Ex parte Stanley, 121 USPQ 621, 627-28 (Pat.Off.Bd.App. 1958); Davis Sewing Mach. Co. v. New Departure Mfg. Co., 217 F 775 (1914); Ex parte Demming, 1884 C.D. 18. In fact, Dr. Greenberg himself has implied that the terms "mechanism" and "means" are synonymous. In his own summary of his invention, he referred to the detent mechanism several times as a "detent means." A4, column 2, lines 28 and 55. Likewise, the court in Interspiro used the two terms interchangeably. Interspiro, 815 F. Supp. at 1498.

The prosecution history of Dr. Greenberg's patent is consistent with the limitation of the patent to the patent specification and structural equivalents thereof. Dr. Greenberg initially made very broad claims to one-handed rotation and the use of a detent mechanism to fix the rotation of the shafts of the surgical instrument. His broad claims were rejected, however, as obvious in light of the prior art. The claim which was ultimately allowed was limited to the very specific detail which reads as follows:

a radially enlarged wheel on said sleeve and said wheel and said one handle having a cooperating detent mechanism defining the conjoint rotation of said shafts in predetermined intervals.

The Court finds that the language of the disputed phrase is functional and therefore governed by 35 U.S.C. § 112, P6.
Accordingly, Dr. Greenberg's patent encompasses only the detent mechanism recited in the specification and structural equivalents thereof.

Following discovery, Ethicon moved for summary judgment. Ethicon's motion focused on the "detent mechanism" element of claim 1 of the '501 patent, the claim on which Dr. Greenberg's lawsuit was principally based. After briefing and argument, the district court granted the motion.

Claim 1 of the '501 patent reads as follows, with the "detent mechanism" element highlighted:

   A surgical instrument comprising a pair of axially matable and relatively slidable shafts each having at their distal ends cooperating working tools, a sleeve mounted adjacent the proximal end of said shafts, one of said shafts being fixedly attached to said sleeve for conjoint movement therewith, the other of said shafts extending freely through said sleeve and being exposed at its proximal end, a pair of handle members pivotally attached to each other and arranged scissor-like for manipulation by one hand, one of said handles being attached to said sleeve for conjoint axial movement and relative free rotary movement therewith, said sleeve and said one handle being arranged so that said sleeve is manipulatable by a finger of the same hand simultaneous with the manipulation of said handle, a radially enlarged wheel on said sleeve and said wheel and said one handle having a cooperating detent mechanism defining the conjoint rotation of said shafts in predetermined intervals, said other handle being universally attached to the exposed proximal end of said freely extending shaft, said shafts being caused to reciprocate relative to each other on manipulation of said handle members and to rotate about their common axis by manipulation of said sleeve, whereby said tools may be operated and moved into selected rotary positions relative to the axis of said shafts. S=I

After analyzing the term "detent mechanism" as used in the '501 patent, the district court concluded that the element containing that term set forth a means for performing a specified function and thus was subject to the provisions of 35 U.S.C. § 112, paragraph six (hereafter, section 112(6)). That statute permits a patent applicant to express an element in a combination "as a means or step for performing a specified function without the recital of structure . . . in support thereof," but provides that when an applicant drafts a claim element in that fashion, the element will be construed to cover only "the corresponding structure . . . described in the specification and equivalents thereof."

The district court determined that the detent-type mechanisms in each of the Ethicon devices performed the function set forth in the "detent mechanism" element: "defining the conjoint rotation of [the] shafts in predetermined intervals." The court concluded, however, that the evidence Dr. Greenberg proffered in response to Ethicon's summary judgment motion was inadequate to show that the detents found on Ethicon's devices were structurally equivalent to the detent mechanism disclosed in the specification of the '501 patent. According to the district court, the only evidence of structural equivalence appeared in an affidavit and accompanying materials submitted by Dr. Greenberg's expert, Dr. Joseph Dyro. The court ruled that Dr. Dyro's assertions of structural equivalence were "extremely conclusory" and that they were therefore insufficient to raise an issue of fact as to infringement under section 112(6).

The district court also rejected Dr. Greenberg's argument that Ethicon's devices infringed under the doctrine of equivalents. With respect to that issue, the court again found that Dr. Greenberg had failed to raise a genuine issue of fact, principally because in the court's view Dr. Dyro's evidence was insufficient to raise a triable factual question of equivalency.

Dr. Greenberg's principal contention on appeal is that the district court erred in construing the "detent mechanism" element of claim 1 of the '501 patent as a "means-plus-function" element within the meaning of 35 U.S.C. § 112(6). Dr. Greenberg argues that the "detent mechanism" element recites structure and is not in "means-plus-function" form. Accordingly, he contends that the "detent mechanism" element should not have been limited to the particular detent mechanism disclosed in the specification and its structural equivalents.

As this court has observed, "the record is clear on why paragraph six was enacted." In re Donaldson Co., 16 F.3d 1189, 1194, 29 U.S.P.Q.2D (BNA) 1845, 1849 (Fed. Cir. 1994) (in banc). In Halliburton Oil Well Cementing Co.
v. Walker, 329 U.S. 1, 71 U.S.P.Q. (BNA) 175, 91 L. Ed. 3, 67 S. Ct. 6 (1946), the Supreme Court held invalid a claim that was drafted in means-plus-function fashion. Congress enacted paragraph six, originally paragraph three, to overrule that holding. In place of the Halliburton rule, Congress adopted a compromise solution, one that had support in the pre-Halliburton case law: Congress permitted the use of purely functional language in claims, but it limited the breadth of such claim language by restricting its scope to the structure disclosed in the specification and equivalents thereof. See Valmont Indus., Inc. v. Reinke Mfg. Co., 983 F.2d 1039, 1041-42, 25 U.S.P.Q.2d (BNA) 1451, 1453-54 (Fed. Cir. 1993); In re Fuetterer, 50 C.C.P.A. 1453, 319 F.2d 259, 264 n.11, 138 U.S.P.Q. (BNA) 217, 222 n.11 (CCPA 1963).

The question whether a claim element triggers section 112(6) is ordinarily not a difficult one. Claim drafters conventionally use the preface "means for" (or "step for") when they intend to invoke section 112(6), and there is therefore seldom any confusion about whether section 112(6) applies to a particular element. In this case, the pertinent claim language ("detent mechanism defining the conjoint rotation of said shafts . . .") is not in "means plus function" form, but the district court found that the claim language is equivalent to the more conventional "means plus function" formulation and should be accorded the same legal effect. The district court gave two principal reasons to support its ruling. First, the court concluded that "detent mechanism" in itself invoked section 112(6), because the term did not describe a particular structure but described any structure that performed a detent function. The court noted that both the dictionary definition of the word "detent" (i.e., "a device for positioning and holding one mechanical part in relation to another") and the definition of "detent mechanism" provided by Dr. Greenberg's expert (i.e., "any device for positioning and holding one mechanical part in relation to another so that the device can be released by force applied to one of the parts") were expressed in functional terms.

In addition, the district court reasoned that although claim 1 of the '501 patent employed the term "detent mechanism," the summary of the invention twice used "detent means" when referring to the detent that defined the rotation of the shafts at predetermined intervals, and that the two terms should therefore be viewed as synonymous, at least as used in the '501 patent. Thus, the court concluded that the term "detent mechanism" was equivalent to "means for," and the phrase "defining the conjoint rotation of said shafts in predetermined intervals" stated the function performed by the means.

We disagree with the district court's conclusions. In our view, the factors on which the district court relied do not justify treating the claim language at issue in this case as falling within the purview of section 112(6).

First, the fact that a particular mechanism -- here "detent mechanism" -- is defined in functional terms is not sufficient to convert a claim element containing that term into a "means for performing a specified function" within the meaning of section 112(6). Many devices take their names from the functions they perform. The examples are innumerable, such as "filter," "brake," "clamp," "screwdriver," or "lock." Indeed, several of the devices at issue in this case have names that describe their functions, such as "graspers," "cutters," and "suture applicators."

"Detent" (or its equivalent, "detent mechanism") is just such a term. Dictionary definitions make clear that the noun "detent" denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms. See Random House Unabridged Dictionary 541 (2d ed. 1993) ("a mechanism that temporarily keeps one part in a certain position relative to that of another, and can be released by applying force to one of the parts"); Webster's Third New International Dictionary 616 (1968) ("a part of a mechanism (as a catch, pawl, dog, or click) that locks or unlocks a movement"); G.H.F. Nayler, Dictionary of Mechanical Engineering (4th ed. 1996) ("A catch or checking device, the removal of which allows machinery to work such as the detent which regulates the striking of a clock."). It is true that the term "detent" does not call to mind a single well-defined structure, but the same could be said of other commonplace structural terms such as "clamp" or "container." What is important is not simply that a "detent" or "detent mechanism" is defined in terms of what it does, but that the term, as the name for structure, has a reasonably well understood meaning in the art.

Second, we do not agree with the district court that the term "detent mechanism" in the '501 patent should be treated as synonymous with the term "detent means" simply because the patent uses the term "detent means" in place of "detent mechanism" on two occasions in the "summary of the invention" portion of the specification. The drafter of the application that matured into the '501 patent appears to have been enamored of the word "means," as the word is used repeatedly in the summary of the invention. A close reading of the specification reveals, however, that the term is used in that portion of the patent simply as a shorthand way of referring to each of the key structural elements of the invention. Each of those elements is subsequently described in detail, without the use of the term "means," in the "description of the invention" portion of the
specification, and each is subsequently claimed, again without the use of the term "means," in claim 1 of the patent.

Finally, we disagree with the district court that the decision in Interspiro USA Inc. v. Figgie Int'l Inc., 815 F. Supp. 1488, 27 U.S.P.Q.2D (BNA) 1321 (D. Del. 1993), aff'd, 18 F.3d 927, 30 U.S.P.Q.2D (BNA) 1070 (Fed. Cir. 1994), is directly on point here. One of the elements in that case claimed "detent means . . . for moving and maintaining [the] movable member" in a breathing regulator for a fireman's mask. The district court in Interspiro characterized that element as containing means-plus-function language and therefore invoking section 112(6), see 815 F. Supp. at 1504, 27 U.S.P.Q.2D (BNA) at 1329, a characterization with which this court concurred on appeal, see 18 F.3d at 930-31, 30 U.S.P.Q.2D (BNA) at 1072.

While the language in the Interspiro case was in classic "means-plus-function" format, the language in Dr. Greenberg's patent was not. Section 112(6) provides that an element in a claim for a combination "may be expressed" as a means for performing a function, which indicates that the patentee is afforded the option of using the means-plus-function format. The question then is whether, in the selection of claim language, the patentee must be taken to have exercised that option.

In the Interspiro case, the patentee's choice of "means-plus-function" language made it clear that the patentee had elected to invoke section 112(6). In this case, by contrast, the element in question did not use conventional "means-plus-function" language, no other element of the claim was in means-plus-function form, and nothing cited to us from the prosecution history or elsewhere suggests that the patentee intended to claim in that fashion. There is therefore no reason to read the claim language in this case as reciting a means for performing a function, within the meaning of section 112(6).

We do not mean to suggest that section 112(6) is triggered only if the claim uses the word "means." The Patent and Trademark Office has rejected the argument that only the term "means" will invoke section 112(6), see 1162 O.G. 59 n.2 (May 17, 1994), and we agree, see Raytheon Co. v. Roper Corp., 724 F.2d 951, 957, 220 U.S.P.Q. (BNA) 592, 597 (Fed. Cir. 1983), cert. denied, 469 U.S. 835, 83 L. Ed. 2d 69, 105 S. Ct. 127 (1984) (construing functional language introduced by "so that" to be equivalent to "means for" claim language). Nonetheless, the use of the term "means" has come to be so closely associated with "means-plus-function" claiming that it is fair to say that the use of the term "means" (particularly as used in the phrase "means for") generally invokes section 112(6) and that the use of a different formulation generally does not. In this case, because we have found no reason to depart from that general principle, we conclude that the phrase "cooperating detent mechanism defining the conjoint rotation of said shafts in predetermined intervals" was not intended to invoke section 112(6) and should not be construed to do so.

Because we conclude that the district court erred by holding that the "detent mechanism" element of claim 1 of the '501 patent is governed by the rule of construction set forth in section 112(6), we vacate the district court's order granting summary judgment to Ethicon and remand the case for further proceedings.

Because we conclude that the district court erred by holding that the "detent mechanism" element of claim 1 of the '501 patent is governed by the rule of construction set forth in section 112(6), we vacate the district court's order granting summary judgment to Ethicon and remand the case for further proceedings.

1134

c. "detent plate structure defining a plurality of gear positions"

The term "detent plate structure defining a plurality of gear positions" means a structure of irregular notches positioned on a lower edge of the center flange for engagement by the shift lever that correspond to the PRNDL shift positions of an automatic transmission. The structure can be molded as part of the rear section of the center flange or a separate plate attached to the center flange.

1135

f. "Detented Position" (Claim 1)

88. In the '656 patent specification, the "detented" or engagement position is defined as the position where the spherical or curved surface detent ball 96 can project, extent or protrude outwardly of the solenoid housing. Col. 6, lines 16-19.

89. Thus, as used in the '656 patent claims, the "detented position" is the location that the detent extends, projects or

- 1572 -
protrudes to by the solenoid by entry of the combination so that the detent can be contacted by the detent engaging member on the cam.

1136
12. "[D]etent shoulder:" 12 "Part of a structure [support element or base body] that secures that structure to another." This construction is consistent with the specification. (col. 4:39-45; Figs. 3-5)

1137
18. "[D]etent tooth that protrudes from the longside of the support element:" 18 "A protrusion, one surface of which defines a detent shoulder." This construction is supported by the specification. While the specification describes the detent teeth of Figure 6 as having an angular structure (col 5:38-40), the court will not import the requirement that detent teeth have an angular structure based on one embodiment. See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004).

1138
1. "determining and generating motion instructions that are adjusted to compensate for lead or taper errors" (claims 1 and 16)

Flow argues for the following construction: "Creating movement directives that compensate for lead and taper errors. Adjusting does not require readjusting after the motion control commands have been determined and generated (e.g. after the program is built and sent for execution)." Omax argues that it should be understood to mean: "the motion control commands are changed or altered after having been determined and generated."

The argument here stems from the meaning of the word adjusted. Flow argues that the determining and generating process "adjusts" the instructions so that, when that process is done, they are already "adjusted" to compensate for errors. Omax argues that adjusted means modified, and suggests that after the instructions are determined and generated, they are then adjusted to compensate. Contrary to Omax's argument, both uses of this word constitute "plain meaning": "adjusted adj 1 a: accommodated, altered or revised to suit a particular set of circumstances or requirements b: having achieved a harmonious relationship with the environment or with other individuals." Webster's Third New International Dictionary 27 (1981). Because both approaches are consonant with the word's plain meaning, the Court looks to the specification for guidance. Phillips, 415 F.3d at 1313 ("[T]he person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.").

The specification supports Flow's approach, which construes "adjusted" as signifying that the motion instructions are already adjusted upon their determination and generation. According to the specification, after the "optimal values for the taper and lead angles at each endpoint of each drawing entity as a function of the speed of the cutting head at that point" are
generated, the Dynamic Waterjet Control System ("DWCS") then "builds the final motion program making adjustments to the motion program data structure as necessary for the particular jet controller in use." '452 Patent, col. 8, 11. 2-21. In figure 5 of the '452 patent, the building process occurs in step 507, and afterward instructions are sent to the controller for execution. Thus, there is no adjustment after the determination and generation of the instructions. The Court adopts Flow's proposed construction.

Home Diagnostics Inc. ("HDI") filed a declaratory relief action seeking a judgment that its blood glucose monitoring systems do not infringe United States Patent No. 5,843,692 owned by Lifescan. Claim 1, from which all of the asserted claims depend, reads:

A method for measuring a glucose concentration in a sample of whole blood using a reflectance-reading device, which comprises the steps of:

(a) providing a test strip for placement in the reflectance reading device, the test strip having a matrix pad with a sample receiving surface and a testing surface opposite the sample-receiving surface, which matrix pad further comprises a reagent for reacting with the glucose in the blood sample and creating a change in reflectance at the testing surface indicative of the glucose concentration in the sample;

(b) applying a sample of whole blood to the sample-receiving surface and allowing at least a portion of the sample to travel to the testing surface and react with the reagent;

(c) initiating a predetermined incubation period upon a change in reflectance at the testing surface sufficient to indicate that at least a portion of the sample has reached the testing surface;

(d) taking a reflectance measurement at the end of the predetermined incubation period, without having determined the time at which the sample was initially applied to the matrix pad; and

(e) determining the glucose concentration in the sample from the reflectance measurement.

U.S. Patent No. 5,843,692, col. 23, II. 1-27 (emphasis added). The district court construed the phrase "a predetermined incubation period" to mean "a time period determined in advance, which requires presetting the length of time of the incubation period, either directly or by reference criteria such as glucose concentration." The court later clarified that this requires knowledge of the duration of the incubation period prior to the test. Lifescan argues that the correct construction defines the incubation period by a set of events that define the beginning and the end of the period, in which the precise duration of the period is not necessarily known and set in advance. This proposed claim construction is unsupported by the intrinsic evidence. The specification only refers to the incubation period in terms of time, only discloses time-based measurements, and from the correspondence between the examiner and the applicant, it is clear that the claim was prosecuted based upon an understanding that incubation period meant time. *

* Alternatively Lifescan argues, based on the specification, that even if the patent is construed to refer to a time period, the length of the predetermined time period may depend on the glucose concentration that it encountered during the test (20 seconds for one concentration and 30 seconds for another), and that "predetermined incubation period" should be construed to include a choice of a time period that is affected by the results of the test while it is being conducted. Whether or not that is so, there is no contention here that the allegedly infringing product requires a choice to be made among predetermined time periods known in advance. Rather, the time period for the test in the allegedly infringing method is constantly variable, depending on the conditions encountered during the test.
amount of glucose contained per unit volume in the sample." It further determined that the phrase meant the actual concentration of the sample, not a premature or intermediate measurement. Lifescan argues that the open-ended article "a" is used to refer to "glucose concentration" in the preamble, and the specification discloses embodiments in which intermediate glucose determinations are made, a proper construction would not exclude intermediate or premature measurements. Lifescan's argument fails because such a claim construction would conflict with the plain meaning of the claim. The claim requires determining the glucose concentration of the blood sample; the blood sample can have only one glucose concentration. The intermediate measurements that Lifescan seeks to encompass within "glucose concentration" are not measurements of the glucose in the sample; they are measurements of the rate of reaction of the glucose in the sample with the chemicals found on the testing strip.

The Court concludes that because the preamble is not limiting in the context of this claim, "device" refers to "a device having the limitations called out by the body of the claim." The present claim construction dispute is not the first opportunity for this Court to construe the '760 patent. In a prior case, the Court was asked to construe the term "device" as a "sheet." Saffran v. Boston Scientific Corp., No. 2:05-CV-547 (TJW), 2008 U.S. Dist. LEXIS 52557, 2008 WL 2716318, at *6 (E.D. Tex. July 9, 2008). The Court refused then, and for the reasons below, the Court again refuses.

A. Parties' Construction Arguments

Defendants seek a construction of "device" as "a single sheet of material." Defendants argue the specification limits "device" to a single sheet of material and the prosecution history shows repeated disclaimers. Defendants note several places in the specification where the "device" is referred to as a "sheet." For example, Defendants point out that the specification in one place unequivocally states "the device, 1, is composed of a single sheet of material." 13:38-40. In addition, Defendants argue there are no embodiments other than a single sheet of material. Even though Plaintiff claims, for example, in Figure 6(a) the "device" is a "spray" and not a "sheet," Defendants argue that even the "spray" embodiment creates a "sheet"—the "sheet" is sprayed on. See Fig. 6(a). Regarding the prosecution history, Defendants point out that Plaintiff, when arguing around the prior art by Gaskill, stated his "device is a sheet rather than a pre-formed chamber." Applicant's 9/13/96 Response to Examiner's 6/12/96 Office Action, at 5, attached as Ex. 13 to Defendants' Amended Answering Brief, Dkt. No. 102. Defendants argue this is a disclaimer in prosecution.

Plaintiff argues that "device" should not be construed as a "single sheet of material" because there is no clear intention to limit the claim scope to a "sheet" in the specification. Instead, Plaintiff argues the specification shows that a "sheet" is merely a preferred embodiment of the "device." Plaintiff argues there are also other embodiments of the "device" disclosed in the specification such as "spray" or "coating" embodiments. See, e.g., 18:30-33 ("the invention can be applied to the site of injury as a spray"). Therefore, "device" cannot be limited to "sheet" because then it could not encompass the "spray" or "coating" embodiments discussed in the specification. Although there is language in the prosecution history potentially limiting "device" to "sheet," Plaintiff argues these citations are made merely to distinguish the prior art. For example, the patentee stated "[t]he device is a sheet rather than a pre-formed chamber (Gaskill)." Applicant's 9/13/96 Response to Examiner's 6/12/96 Office Action, at 5, attached as Ex. 13 to Defendants' Amended Answering Brief, Dkt. No. 102. Plaintiff argues these statements are not words of manifest exclusion or restriction to a "sheet"; instead, these statements exclude a preformed chamber like Gaskill's.

Plaintiff asks the Court to construe "device" as "at least the layer recited previously in the respective claims." Plaintiff argues that "device" should have its ordinary meaning and that "device" takes on its ordinary meaning by "simply pointing to the preferred embodiments disclosed in the specification." (Dkt. No. 97. at 21.) Plaintiff's rationale for its construction is not clear in its briefing, but at the hearing Plaintiff clarified that Plaintiff's proposed construction for "device" is related to the "comprising" language used in claim 1. Plaintiff argues that given the open-ended "comprising" language in claim 1, the inventor has claimed "at least" the layer recited in the claim language.
B. Analysis

The Court refuses to read in Defendants' "sheet" limitation for the term "device." The Court will first consider the intrinsic evidence. Defendants point out that the specification refers to the "device" as a "sheet" in multiple places. See, e.g., 12:21-22 ("single layered, flexible, minimally porous sheet having macromolecular restraint means"); 13:38-40 ("the device, 1, is composed of a single sheet of material"). Nevertheless, the Court agrees with Plaintiff that a "sheet" is merely a preferred embodiment of the "device." The specification states that the "sheet" is the "principal embodiment" or merely "one embodiment" of the "device." 7:57-60; 13:39-41. Defendants' references to the specification where it states, for example, that the device is composed of a single sheet of material are not enough to give rise to a "clear intention to limit the claim scope using 'words or expressions of manifest exclusion or restriction.'" Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004) (quoting Teleflex, 299 F.3d at 1327). The Federal Circuit has cautioned that "limitations appearing in the specification will not be read into claims, and . . . interpreting what is meant by a word in a claim is not to be confused with adding an extraneous limitation appearing in the specification, which is improper." In re Cruciferous Sprout Litigation, 301 F.3d 1343, 1348 (Fed. Cir. 2002) (citing Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989)) (internal quotes omitted). In Defendants' proposed claim construction, they seek to do what the Federal Circuit has cautioned against by adding the "sheet" limitation into the claim language. By reading in the "sheet" limitation proposed by Defendants, the Court would be ignoring the "spray" and "coating" embodiments disclosed by the patentee. "We normally do not interpret claim terms in a way that excludes disclosed examples in the specification." Verizon Servs. Corp. v. Vonage Holdings Corp., 503 F.3d 1295, 1305 (Fed. Cir. 2007). The specification gives several examples of other embodiments of the "device" besides a "sheet," such as a "coating" and a "spray." See, e.g., 6:49-50 ("The invention is to be provided as a flexible sheet, spray or tube . . . ."); 7:11-13 ([T]he present invention . . . can be applied as a spray film."); 12:64-65 ("Spray stream that forms the invention when the spray hits a solid surface."); 21:8-9 ("this invention being used to coat a stent"). Hence, the Court refuses to construe the "device" as a "sheet" because it would exclude the patentee's disclosure of other embodiments such as the spray, tube, or coating.

The Court also rejects Defendants' prosecution disclaimer argument. To be a disclaimer, the statement in prosecution history must be clear and unambiguous and constitute a clear disavowal of the scope. Verizon, 503 F.3d at 1306. In addition, the prosecution history is often less informative than the specification. Phillips, 415 F.3d at 1315. The patentee stated in prosecution, for example, that "[t]he device is a sheet rather than a pre-formed chamber (Gaskill)." Applicant's 9/13/96 Response to Examiner's 6/12/96 Office Action, at 5, attached as Ex. 13 to Defendants' Amended Answering Brief, Dkt. No. 102. While the patentee may have clearly disavowed a pre-formed chamber, the patentee did not clearly disavow every possible embodiment besides a sheet. The disclaimer must be unambiguous, and the only unambiguous disclaimer here was the pre-formed chamber. The specification as discussed above shows other embodiments besides a sheet, and the specification speaks with more clarity than the prosecution history in claim construction. Therefore, the Court rejects Defendants' prosecution disclaimer argument.

The Court additionally rejects Plaintiff's construction of "device" as "at least the layer recited previously in the respective claims." The Court is not persuaded by Plaintiff's argument that this language is necessary to reflect the "comprising" language in the claims. The term "comprising," as used in claim 1 and other independent claims in the patent-in-suit, is a transitional term in patent law that is inclusive or open-ended and does not exclude additional elements or steps. CollegeNet, Inc. v. ApplyYourself, Inc., 418 F.3d 1225, 1235 (Fed. Cir. 2005). Of course, as a patent law term of art, the "comprising" term will be given its customary meaning, but this Court need not construe "device" to reflect the open-ended nature of the "comprising" language because such a construction would be redundant and unnecessary given the "comprising" language already in the claim.

In all, the Court concludes that because the preamble is not limiting in the context of this claim, "device" refers to "a device having the limitations called out by the body of the claim." The term "device" is in the preamble of claim 1. See Claim 1, 22:29-31 ("1. A flexible fixation device . . . comprising: . . . ."). After the preamble, "device" is referenced on an antecedent basis in the body of claim 1; therefore, at all times in claim 1 the term "device" is referring to the "device" introduced in the preamble. See Claim 1, 22:29-43 ("1. A flexible fixation device . . . comprising: . . . the device being flexible in three dimensions by manipulation by human hands, the device being capable of substantially restricting the through passage of at least one type of macromolecule therethrough."). Further, in other claims, the term "device" is either referring to the "device" in claim 1 or a method for using such a device in claims 8 though 18.

There the court was reviewing a construction of the phrase "control apparatus" in the preamble of the patent-in-suit. Id. The particular claim, which was claim 1, read as "[a] programmable microcomputer control apparatus for controlling the relative motion between a tool and a workpiece comprising: . . . ." Id. at 1427. The court determined that the preamble was not a claim limitation and was irrelevant to the proper construction of the claim. Id. at 1434. The court stated that "[t]he phrase 'control apparatus' in the preamble merely gives a descriptive name to the set of limitations in the body of the claim that completely set forth the invention . . . [so] [t]he claim is infringed by any apparatus encompassing all of the limitations in the body of the claim." Id.

The reasoning from IMS Tech. applies here. As in IMS Tech., the phrase "device" used in the preamble merely gives a descriptive name to the set of limitations in the body of the claim that set forth the invention. Later references to "device" in claim 1 or other claims either refer to the "device" in the preamble on an antecedent basis or are referring to a method of using that device. To put it another way, in claim 1, which is a machine or apparatus claim, the inventor uses the label "device" to refer to the machine or apparatus that contains the set of limitations set forth in the body of the claim. Therefore, "device" refers to "a device having the limitations called out by the body of the claim."

C. "Device"

Claim 3 describes the invention, in pertinent part, as consisting of "a power unit supported on the chassis to supply power to the device and the display screen . . . wherein the device is a computing device." (the '178 patent, claim 3). The Plaintiff seeks to classify the "device" as a computer. The Defendant argues that the term "device" is indefinite in claim 1. The parties agree that the term in claim 3 is dependent upon the term in claim 1. Claim 1 does not describe "the device" in any way.

The Defendant relies on 35 U.S.C. § 112 for the proposition that a patent applicant must draft claims "particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." Because claim 1 is indefinite, the Defendant argues, claim 3 must also be indefinite. However, such a cursory dismissal of the term would be counter to the presumption that each claim of a patent is presumed valid independent of other claims. 35 U.S.C. § 282. A claim is presumed valid "even though [the dependent claim is] dependent upon an invalid claim." Id. In fact, only clear and convincing evidence of indefiniteness can overcome this presumption. Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1348 (Fed. Cir. 2005). Even "a difficult issue of claim construction does not ipso facto result in a holding of indefiniteness." Id. at 1347. Thus, "the failure to provide explicit antecedent basis for terms does not always render a claim indefinite." Energizer Holdings, Inc. v. International Trade Com'n, 435 F.3d 1366, 1370 (Fed. Cir. 2006) (quoting The Manual of Patent Examining Procedure § 2173.05 (8th ed. 2004)). Further, a claim will not be invalid for lack of an antecedent basis if the meaning of the claim could reasonably be understood by persons of ordinary skill when read in light of the specification. Energizer Holdings, Inc., 435 F.3d at 1370. "Intrinsic evidence in the form of the patent specification and file history should guide a court toward an acceptable claim construction." Datamize, LLC, 417 F.3d at 1348.

The intrinsic evidence shows that the claim should not fail for indefiniteness. Throughout the patent, it is clear that the device refers to a computer. For instance, the horizontal tray could support "a computer terminal having a display screen." (the '178 patent, Col. 6, lines 2-3). The "horizontal tray [supports] the wireless computer terminal." (the '178 patent, Col. 6, lines 65-67). The specifications describe a workstation with a power unit and battery charger for a "wireless computer terminal." (the '178 patent, Col. 7, lines 20-23). The keyboard within the work station "communicates with the computer terminal through a conventional electrical connection so that the keyboard can be easily connected to the computer terminal whenever the wireless computer terminal is stored within the mobile workstation." (the '178 patent, Col. 7, lines 49-53).

Although indefinite on its face, the weight of intrinsic evidence that the device was meant to be a computer does not even make this "a difficult issue of claim construction." Datamize, LLC, 417 F.3d at 1348. The device should be defined as a computing device.
The first disputed term -- "device" -- appears in the preamble of claim 23. Defendant contends that in the context of the '344 patent, the term refers exclusively to collapsible flotation devices, and that claim 23 therefore does not describe objects like the HoverDisc that are not intended for flotation. Plaintiff, conversely, contends that the term "device" can be used to describe "almost anything," and thus that it does not limit the scope of claim 23. As an initial matter, neither party contends that the patentee of the '344 patent acted as his own lexicographer with respect to the term "device," or that the term has a specialized, technical meaning in the relevant fields of industrial art. Accordingly, the starting point in the claim construction inquiry is the ordinary and customary meaning of the term "device." Tex. Digital, 308 F.3d at 1201-02.

The dictionary definition of "device" is a "thing adapted for a purpose or designed for a particular function," or "something devised or contrived." THE CONCISE OXFORD DICTIONARY 262 (7th ed. 1983); MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 317 (10th ed. 1999). The term "device," therefore, encompasses items and instruments of any function and purpose, not merely, as defendant claims, the specific purpose of aquatic flotation.

The principle of claim differentiation confirms that the term "device" should be construed in accordance with this ordinary and customary meaning. While claim 23 uses only the naked term "device" as a preamble, claim 2 of the '344 patent begins with the preamble "a collapsible floatation device," and claims 1, 9, and 18 begin with the preamble "a collapsible device." '344 patent, col. 4, l. 27 (claim 2); col. 4, l. 15 (claim 1); col. 4, l. 59 (claim 9); col. 5, l. 26 (claim 18). Thus, construing the term "device" to include the qualities of flotation and collapsibility would render portions of these other claims superfluous, and for that reason a broader construction of "device" is required. See Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1326 (Fed. Cir. 2003) ("When a patent claim 'does not contain a certain limitation and another claim does, that limitation cannot be read into the former claim in determining either validity or infringement.'" (quoting SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1122 (Fed. Cir. 1985))).

The fact that the term "device" appears only in the preamble of claim 23 points to the same conclusion. As previously stated, a claim preamble is generally not construed as a limitation on claim scope. See Allen, 299 F.3d at 1346. Here, nothing about the phrase "a device" serves to "recite[] essential structure or steps" or "give life, meaning, and vitality" to claim 23 in a manner that would permit a limiting construction. See In re Cruciferous Sprout, 301 F.3d at 1347. A cursory comparison of the preamble of claim 23 with preambles held to limit claim scope will illustrate this point. In In re Cruciferous Sprout Litigation, for example, the Federal Circuit held that the preamble "a method of preparing a food product rich in glucosinolates" limited the scope of the claim at issue because it had helped distinguish the claimed invention from other food-preparation methods during prosecution. Id. Similarly, in Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1306 (Fed. Cir. 1999), the preamble "a method of producing on a photoreceptor an image of generated shapes made up of spots" was held to be "intimately meshed with the ensuing language in the [body of the] claim," such that it was necessary to construe the preamble and the body as "one unified and internally consistent recitation of the claimed invention." By contrast, the mere phrase "a device" provides no insight at all into the nature or purpose of the invention at issue here, and thus cannot serve to limit the scope of claim 23.

Seeking to avoid this result, defendant, invoking the principle that claims "must be read in view of the specification," Markman, 52 F.3d at 979, contends that the '344 patent specification contains "a plethora of globally defining references regarding the term 'device,'" that establish that the scope of claim 23 is narrower than the ordinary and customary meaning of "device" implies. Def.'s Reply Mem. at 7-8. In particular, defendant cites the facts that:

(i) the "Field of the Invention" states, "In particular, the present invention relates to inflatable flotation devices which are
defendant argues, limit the meaning of the term "device" because they "define the invention overall," rather than merely specific embodiments of it. Id. In support of this argument, defendant cites C.R. Bard, 388 F.3d at 858, in which the Federal Circuit held that language appearing in the "Summary of the Invention" and "Abstract" sections of the patent specification, while not constituting express lexicography or a disavowal of claim scope, id. at 863 n.3, nonetheless narrowed the meaning of the term "plug" to mean a plug with a pleated surface, id. at 866. The specific phrases at issue in C.R. Bard were:

(i) "the present invention is an implantable prosthesis…. the implant includes a pleated surface"; and

(ii) "implantable prosthesis including a conical mesh plug having a pleated surface ...."

Id. at 864. The Federal Circuit in C.R. Bard concluded that these phrases narrowed the meaning of "plug" based on the facts (i) that they appeared in sections of the specification that describe the invention as a whole, rather than merely preferred embodiments, id.; and (ii) that they "expressly defined the inventive plug as 'having' or 'including a pleated surface,'" id. at 865. The court went on to state that the prosecution history of the patent provided an independent ground for the same conclusion, holding that in the course of prosecution, the plaintiff "made a clear statement to the examiner that 'the surface of the inventive plug is pleated,'" in order to distinguish the invention from prior art. Id. at 869.

Here, defendant's reliance on C.R. Bard is misplaced for at least three reasons. First, of the statements in the '344 specification that defendant cites, only one, "A collapsible flotation device is described which includes a coilable spring and a flexible panel," comes from a specification section directed to the invention as a whole, i.e., "Summary of the Disclosure"; the others appear in sections directed to related art or specific embodiments and thus are unlikely to have been intended as "global" and limiting definitions. See C.R. Bard, 388 F.3d at 864. Second, the term "device" in the '344 patent is not analogous to the term "plug" in the patent at issue in C.R. Bard; "device" appears in only the preamble of claim 23, and serves merely to identify the claimed invention as a tangible object rather than a process or method; "plug," by contrast, appeared in the body of the claim at issue in C.R. Bard and described the very substance of the claimed invention in that case. Third, despite defendant's conclusory allegation to the contrary, nothing in the record suggests that the term "device" had to be construed as "collapsible flotation device" during prosecution to distinguish the '344 patent from prior art. 8 Unfortunately for defendant, C.R. Bard does not stand for the principle that the use of term in the claim preamble that defines a broad universe of objects and essentially serves only to identify the claim as a product rather than a process claim, must somehow be construed to apply to a small subset of that broad universe. Instead, the holding in C.R. Bard is a narrow one, arguably resting as much on the patent's prosecution history as on the specification. See id. at 870 (Prost, J., concurring) ("Because the inventors clearly disclaimed coverage of non-pleated plugs in the reexamination ... we may [resolve the dispute] on that basis alone; accordingly, I find it unnecessary to reach the remaining grounds for affirmance relied upon by the majority."). In sum, to accept defendant's argument regarding the proper construction of "device" would be to engage in the impermissible exercise of reading a limitation from the patent specification into the claims. See Tex. Digital, 308 F.3d at 1204-05. For that reason, defendant's argument that the term "device" should be construed to mean "collapsible flotation device" must fail.

- - - - - - - - - - - Footnotes - - - - - - - - - - -

7 '344 patent, col. 1, ll. 52-53.

8 Indeed, neither party has adduced evidence suggesting that the term "device" was relevant in any way in the prosecution
For the foregoing reasons, the term "device," as used in the preamble of claim 23, does not limit the scope of claim 23.

3. "Device Acting Between" for Lateral Constraining

261. Based on the claim language, the specification of the '904 patent, and the prosecution history, the "device acting between said stylus holder and said housing for constraining said stylus holder . . . the device including a seating and at least one constraining spring distinct from the biasing means . . . and providing lateral constraint from the axial biasing" of claim 2 of the '904 patent must be construed to mean (1) a separate mechanical device ("a device acting between") located between the stylus holder and housing, (2) the device having a "seating," and (3) the device having at least one constraining "spring" distinct from the bias spring to constrain the stylus holder against lateral movement. Tr 1369, 1389-90, See PP 84-87, 91, 93 supra.

262. During prosecution of the application that resulted in the '904 patent, Renishaw amended the claims to add the "device acting between" language in order to locate the device and thus overcome an objection by the Patent Examiner. PX 500, 501; DX 1150, p. 63-64, 78-79.

263. With reference to the specification of the '904 patent, the "device acting between . . . providing lateral constraint" and including a seating and at least one distinct constraining spring, corresponds in every embodiment to the Boys joint kinematic mount which includes a seating and a planar spring which constrains the movable member against lateral movement. These structures, together, constitute a separate mechanical device between the stylus holder and the housing and provide lateral constraint from axial biasing. Tr 928-29.

264. Accordingly, in view of the specification and prosecution history, the claimed "device acting between" cannot be construed to cover a touch probe which does not have a separate mechanical device located between the stylus holder and housing, or a touch probe that does not have a distinct laterally constraining spring as a part of the lateral constraint device. Tr 1390-93.

A. "A device for the amusement of pet animals free and untethered to the device"

As discussed in regard to the preamble of Claim 1, Plaintiff relied upon the preamble during prosecution to distinguish the claimed invention from the Postings and McMurry references, thereby requiring deviation from the general rule against construing preambles as limiting claim elements. See Catalina, 289 F.3d at 808-809. Statements of intended use may limit the claims in those instances where the patentee "clearly and unmistakably relied on those uses or benefits to distinguish prior art." Id. at 809.

In this instance, Plaintiff clearly relied on the "free and untethered" clause of the preamble to distinguish from the Postings and McMurry references when, in a response to the USPTO examiner's initial rejection, he stated:

"[W]ith [the Postings] exercising device the dog is tethered to the device and enticed with food or the like to run in a circle around the base. In contrast, no such incentive is provided in McMurry, where one or more dogs are tethered along arm 80 . . . [T]he device in both Postings and McMurry is clearly not for the free amusement of a pet unsecured to the device, but for the tethering and forced or encouraged exercising of a dog.

(Def's Ex. B at 35-37 (emphasis in original).) Thus, the Court will construe the preamble phrase "a device for the
amusement of pet animals free and untethered to the device" as "a device for the amusement of an animal kept for pleasure or companionship, rather than solely for utility, in which the animal is free and untethered to the device."

1. Whether the low and high liquid level responsive switching devices in Claim 1 can be incorporated into a single unit or device. Answer: Yes.

Plaintiff argues that the low and high liquid level responsive switching devices can be incorporated into a single unit or device. Plaintiff claims that Figure 4 is simply one preferred embodiment of the invention and that the claim construction should not be limited to the preferred embodiment. Plaintiff contends that the plural reference in Claim 1 to the "low and high liquid level responsive switching devices" merely reflects the notion that the device performs both on and off functions, not that it must be two physically separate devices. Specifically, Plaintiff points out that the written description expressly states that the liquid level sensing device used is old art, and that one invention of old art consists of a single liquid level sensing device with a single liquid level switching device.

Bunn-O-Matic proffers that the low and high liquid level responsive switching devices cannot be incorporated into a single unit or device because the language of the claim expressly calls for the plural form "devices." Furthermore, Defendant contends that Claim 1 is directed toward a preferred embodiment and that Claim 1 fails to encompass any other alternative embodiment, such as the single float actuated switching device. In addition, Defendant maintains that if the patentee wanted the patent to cover a single switching device, as opposed to two switching devices, the patentee should have included an alternative embodiment in the patent with only one switching device. Finally, Defendant asserts that, because the inventor amended the claim language from "low liquid level and high liquid level switching means" to "low and high liquid level responsive switching devices" in response to a rejection from the PTO, Claim 1 now requires two separate switching devices.

The Court holds that the low and high liquid level responsive switching devices in Claim 1 can be incorporated into a single unit or device.

a) Claim Language

The language of Claim 1 calls for "a liquid level sensing device carried by the housing and depending into the tank and including low and high liquid level responsive switching devices, a control circuit connected with an electric power source remote from the unit and with said motor, on and off valve and said high and low liquid level responsive switching devices." (Col. 14:64). The plain language of the claim calls for the plural "devices," indicating that there must be more than one switching device included in the single sensing device. The term "device" is a somewhat generic, non-specific term, thus, the Court looks to other intrinsic evidence for clarification.

b) Written Description

Rules of claim construction provide that limitations cannot be read into a claim from the written description, however, once a term is included in the claim, one may look to the written description to define the term and to provide context. Thus, the Court next turns to the patent specification to provide context and definitions for the liquid level sensing device and liquid level responsive switching devices included therein.

The claim description provides the following in pertinent part:

The liquid level sensing means L can be in the form of a float actuating switching device or, as shown, can be in the form of a resistive probe, with spaced apart pairs of electrodes which depend into the tank T. The lower ends of one pair of electrodes terminates at the lower liquid level in the tank and the lower end of at least one electrode of the other pair of electrodes terminate at the high liquid level in the tank. The beverage in the tank is a conductor and serves as a switching gate between the ends of the pairs of electrodes. With this form of liquid level sensing means, when the liquid level drops below the lower ends of the first or lower most set of electrodes, the circuit therebetween is open and when the liquid level rises in the tank to contact the lower ends of the upper set of electrodes, it closes the circuit therebetween. Accordingly, the
two pairs of electrodes cooperate with the liquid in the tank T to establish liquid level responsive normally closed and normally opened switches. The lowermost switch which is normally closed is a recycling or cycle starting switch and the other or upper normally open switch is a cycle stopping or stop switch.

In practice, one of the electrodes of each of the noted switches can be established by a common electrode with the result that three electrodes function to establish the noted pair of switches.

It is to be noted that the form of liquid level sensing means illustrated and described above is old in the art and is the full mechanical equivalent of those float actuated switching devices and means which have long been provided to effect control of electrical circuits in response to the level of liquids being worked upon and which are well known to all of those who are familiar with or skilled in the art to which my invention relates.

( '664 Patent Col.11:58 - Col.12:23)

This language expressly indicates that the patent encompasses more than one type of liquid level sensing device, such as a float device, a common electrode, or, as in the preferred embodiment, a probe with a pair of electrodes. It also indicates that the liquid level sensing device is not new art, and that the preferred embodiment performs the same function as the floating actuating switching device. This supports Plaintiff's argument that the patent as shown is only one embodiment, and that the invention encompasses other embodiments. Rules of claim construction mandate that the claims must not be limited to the preferred embodiment. Therefore, the various forms and combinations of sensing devices and switching devices set forth in prior art are within the purview of this invention and Claim 1. Accordingly, the liquid level sensing devices and the liquid level responsive switching devices that are included in a float actuating switching device, a resistive probe with a pair of electrodes, and a common electrode are within the boundaries of Claim 1. The Court considers the prior art of the float actuating switching device referred to in the patent to assist the Court in its understanding of the patent, but not to vary or contradict the terms of the claim. Markman, 52 F.3d at 980-1.

c) Prosecution History

Claim 1 of the original application to the PTO was denied by the Examiner due to prior art, specifically the inventions by Popinski, Greenfield, and Cartwright. In response, the inventor challenged the Examiner's rejection based on prior art, calling the rejection "not well-founded." The inventor explained that the present invention's "basic combination and relationship of parts is not anticipated or made obvious by the teachings of the prior art (independent from that which applicant teaches) and is clearly patentable." (Pl. Ex. 6 p.17). In short, the inventor conceded that many of the individual elements of his invention were found in prior art, including the liquid level sensing device and the liquid level responsive switching device. However, the novelty, and thus the patentability, of his invention lay in the overall combination of many elements into a single housing unit that sits atop a holding tank.

In support of this proposition, the inventor stated,

It is submitted that the broad aspects of applicant's invention might properly support and justify the allowance of a claim similar to Claim 1 in which the particular liquid level sensing device which is recited in Claim 1 is not recited. In accordance with the foregoing, the recitation of the high and low liquid level switching devices of the liquid level sensing means, which are recited to include sufficient structure and make the claim definite, should be afforded the broadest possible interpretation.

(Pl. Ex. 6 p. 17).

Therefore, the prosecution history makes it clear that the inventor envisioned that the invention could justify a claim similar to Claim 1 without the liquid level sensing device, and accordingly, the liquid level responsive switching device included therein should be broadly, not narrowly, construed.

Furthermore, the inventor stood his ground, successfully defended his application, and amended Claim 1 not because of the Examiner's rejection, but because he thought it loquacious. In addition to defending his position regarding the prior art, the inventor, believing Claims 1,2,10, and 11 to be wordy, took it upon himself to simplify the language and "carefully amended" the claims "to delete all language which was found to be redundant and/or otherwise unnecessary and/or which
could be deleted without rendering it structurally deficient." (Pl. Ex. 6 p. 9).

After considering the amended application along with the applicant's arguments, the Examiner was persuaded by the applicant's reasoning as to the prior art and approved the patent without substantial changes. The Examiner set forth the reasoning for his allowance: "The primary reason for the allowance of claims 1-18 was the combination of the supply tank and attachment unit, said attachment unit comprising a housing mounted atop said tank and enclosing dry powdered beverage concentrate and water discharge apparatus which operate in response to the level of beverage in the tank. The above was found in all the claims but not in the prior art." (Pl. Ex. 7 p. 2).

d) Prior Art, Technical Treatises and Dictionary Definition

Extrinsic evidence is to be considered to the extent necessary to assist in the Court's understanding of prior art and the patent at issue, not to contradict the terms of the claim.

As to the prior art, the invention must be read in light of the prior art to which it makes reference and to which the prosecution history makes reference. Specifically, United States Patent No. 3,643,835 by Leonard Popinski ("the Popinski patent") teaches a float actuating switching device in which a main float means, i.e. the liquid level sensing device, is comprised of a floating rod containing a single control switch, which may be a conventional mercury switch. (Popinski patent Col. 3: 43). The single switch has an on-position and an off-position. Id.

The Popinski patent liquid level sensing floating device, switching device, and the circuit work together in the following way to add beverage to the tank when the beverage lowers to a low level and to stop when the beverage reaches a high level:

When the rod portion 70 of the main float means 68 falls below a predetermined level, the main level switch 72 closes to its on-position and impresses 12 v. AC across the relay coil 92 causing the relay switch 91 to close; thereby connecting line 1 of the 115 v. AC to the pump means 34 and the electric water valve 42. With the power circuit closed, the pump means 34 operates and the water valve 42 opens, The pump means pumps the concentrate from tank 28 into the bowl 14 and the water simultaneously flows through valve 42 into the bowl 14 under the water pressure at output 57 originally set by the water pressure adjustment means 60 of the regulator. When the main float means 68 is buoyed upward with the addition of the concentrate and water and returns to the predetermined level, control switch 72 switches to its off-position, relay means 90 deenergizes, and relay switch 91 moves to its open-position and thereby disconnects the 115 v. AC from the pump means 34 and water valve 42 causing the proportioner device 20 to stop operating.

(Popinski patent Col. 4: 32).

Furthermore, a mercury switch "consist[s] of a glass tube containing mercury and two stationary contact members located in opposite ends of the tube." AMERICAN ELECTRICIAN'S HANDBOOK 4-4 (Terrell Croft & Wilford I. Summers eds., 12th ed. 1992)(emphasis added). "As the tube is tilted, the mercury moves until it bridges the electrodes and makes electrical contact." IAN R. SINCLAIR, SWITCHES 75 (1988). Thus, the mercury switch is a single unit, i.e. one glass tube, and can be in either the on or off position.

Therefore, the prior art included in the written description and the prosecution history of the '664 patent makes reference to a single liquid level sensing device with a single switching device, such as a mercury switch. The single switch has both an on function and an off function. Therefore, the liquid level sensing device in the patent at issue can include either a single switching device or multiple switching devices. Accordingly, the high and low liquid level responsive switching devices included in Claim 1 can be incorporated into a single unit or device. From the context of the written description and prosecution history, it is apparent that the "devices" cited in Claim 1 refer to the two off and on functions of high and low responsive switches, not two separate devices.

Defendant's arguments that the claim must be limited to the preferred embodiment and that the inventor should have included alternative embodiments if he had wanted the patent to encompass a float actuating device with a single switching device are without merit. There exists a wealth of case law in support of the notion that claims are not limited to the preferred embodiment. "The law does not require the impossible. Hence, it does not require that an applicant describe in his specification every conceivable and possible future embodiment of this invention. The law recognizes that patent
specifications are written for those skilled in the art, and requires only that the inventor describe the "best mode" known at the time to him of making and using the invention." SRI, 775 F.2d at 1121. As opposed to requiring the inventor to describe every possible embodiment, as Defendant would have the Court do, the law requires one considering the use of a device that might infringe on an existing patent to look into the prior art referred to in the written description and prosecution history before embarking on a course of action that would infringe on an existing patent. In this case, the inventor's reference in both the written description and prosecution history to the Popinski patent gives the public sufficient notice that the '664 patent includes as an element the prior art of the Popinski patent, specifically the single liquid level sensing device with a single switching device.

The dictionary definition of device tells us that device is broadly defined as "something constructed or devised for a particular purpose, esp. a machine used to perform one or more relatively simple tasks." WEBSTER'S II NEW RIVERSIDE DICTIONARY 370 (1994). This definition further supports Plaintiff's contention that a single switching device in Claim 1 can be used to perform both the high liquid level switching function and the low liquid level switching function.

2. Whether Claim 1 is limited to two physically separate liquid level responsive switching devices. Answer: No.

This issue is substantially similar to the first issue, with the parties offering substantially the same arguments. Plaintiff argues that nothing in the claim limits the responsive switching devices to two physically separate devices, while Defendant contends that the mere use of the plural "devices" supports the notion that the claim calls for two physically separate devices. The Court, for reasons set forth under the first issue regarding the liquid level responsive switching device or devices, holds that Claim 1 is not limited to two physically separate liquid level responsive switching devices.

A. "Devoid of Transverse Projections"

The '584 patent contains two independent claims. Independent claims 1 and 7 recite an in-line roller skate comprising, inter alia, two sidewalls that are (1) devoid of lateral projections, (2) formed of a different material than the heel and toe plates, (3) releasably detachable from the heel and toe plates, and (4) configured to directly attach to axles that carry skate wheels. The sidewalls extend down to create a cavity to receive the wheel axles. Representative claim 1 is set forth below:

1. An in-line roller skate comprising:
   a boot having a sole surface with toe and heel portions;
   a frame comprising:
   a toe plate having an upper, a lower, and a pair of lateral faces, said upper face being affixed to said sole surface toe portion;
   a heel plate having an upper, a lower, and a pair of lateral faces, said upper face being affixed to said sole surface heel portion;
   spaced-apart first and second downwardly extending sidewalls formed of a material different than said toe and heel plates, said sidewalls having inner and outer surfaces devoid of transverse projections; and
   fastening means for releasably attaching said first and second sidewalls to respective ones of said toe and heel plate lateral faces;
   a plurality of axles mounted to and between said first and second sidewalls; and
   a plurality of wheels, each of which is rotatably mounted between said spaced-apart sidewalls on a respective axle. (emphasis added.)
The '584 patent does not explicitly define the meaning of the term "devoid of transverse projections."

In its motion for summary judgment, Benetton argues that the term "devoid of transverse projections" should be construed to require sidewalls whose "major surfaces are completely flat." In support of its claim construction, Benetton observes that the '584 patent states that the "inward and outward directions comprise the 'transverse dimension,'" 3:47-49, and that the term "projection," is defined by Webster's Third New International Dictionary to mean "a part that projects or juts outs." From these two observations, Benetton concludes that the plain meaning of the term "devoid of transverse projections" requires sidewalls that are flat and lack any portion that projects out from its surface.

Benetton asserts that the '584 patent specification lends additional support for its claims construction of the term. Specifically, Benetton notes that the '584 patent specification states that the sidewalls are "devoid of lateral projections," which "greatly simplifies their manufacture [because] the sidewalls can be formed by simply cutting the appropriate shape from sheet metal or other material rather than requiring additional machining steps." 5:30-36. Moreover, according to Benetton, the '584 specification explains that flat sidewalls simplify replacement "because the sidewalls … are substantially structurally identical (which results from the absence of lateral projections thereon), skaters no longer need to carry with them both left and right side replacement sidewalls." 5:67-6:3. Benetton also claims that the prosecution history buttresses its proffered claim construction. Namely, Benetton notes that to distinguish the claimed configurations over the prior art, Wrike, the inventor, stated that difficult to form materials, such as titanium, have had very limited use in skate frames because they are "extremely difficult to machine and thereby form into nonplanar shapes." Polk Decl., Exh. 31 at 6.

V-Formation contends the claimed sidewalls must only be "essentially flat" and that strengthening/ decorative undulations or ridges do not affect the essentially planar nature of the sidewalls within the meaning of the '584 patent. V-Formation asserts that Benetton's reliance upon the dictionary is improper and unnecessary, and argues that the '584 patent specification confirms the meaning of the term proffered by V-Formation. V-Formation alleges that the '584 patent specification discusses prior art "that disclose non-planar sidewalls with large projections in the transverse (lateral) direction." and that the inward/ outward projections from prior art sidewalls destroy the generally planar configuration of the sidewalls. In response to Benetton's argument that the '584 patent's description of substantially structurally identical sidewalls provides further support for the view that the claimed sidewalls must be flat on both major surfaces, V-Formation points to the dependent claims of the '584 patent, which recite that the left and right sidewalls are "substantially structurally identical." Thus, according to V-Formation, under the doctrine of claim differentiation, claims 1 and 7 may not be construed so narrowly as to essentially make the dependent claims read like the independent claims.

Claim construction should begin with the ordinary meaning of the disputed term, which may be gleaned from dictionaries of the English language. CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002). Because none of the parties argue that the disputed term has an established specialized meaning in technical dictionaries, encyclopedias, or treatises of the relevant field of art, I find that a standard English dictionary is a proper starting point to understand the ordinary meaning of the disputed term. See, e.g., Inverness Medical Switzerland GmbH v. Princeton, 309 F.3d 1365, 2002 WL 31429033, at *4 (Fed. Cir. Oct. 31, 2002). Given the fact that the term "projection," is defined by Webster's Third New International Dictionary to mean "a part that projects or juts outs" and that the claimed sidewalls are "devoid" of transverse "part[s] that project or jut out," I find that, under the ordinary meaning of the disputed term, sidewalls having the disputed claim limitation is properly construed as: sidewalls that are flat.

I find the specification and prosecution history consistent with the construction of the disputed claim term. The patent examiner, during the prosecution of the application leading to the '584 patent, rejected some of the claims in the patent application for obviousness in view of French Patent No. 7,566,762 ("the Baladi patent"). In response to the rejection, Wrike wrote that "only when the present inventor conceived the recited configuration, in which the side walls are devoid of lateral projections, could titanium and other difficult to form materials be effectively employed in skate frames." Declaration of Louis F. Polk ("Polk Decl."), Exh. 31, p. 6. According to Wrike, titanium had very limited utility in skate frames because they could not be readily formed into nonplanar shapes. Id. The '584 patent specification provides examples of such nonplanar shaped sidewalls in the prior art by reference to United States Patent Nos. 4,418,929 ("the '929 patent"), 4,666,169 ("the '169 patent"), and 5,277,437 ("the '437 patent". 1:57-61). Figure 2 in each of the respective patents shows embodiments of sidewalls having lateral projections. Evidently, Wrike overcame the difficulty of using titanium in skates by avoiding the need to machine the material into such nonplanar shapes (i.e., sidewall shapes having "lateral projections"). Indeed, the '584 patent specification explains that because the sidewalls are "devoid of lateral projections," they may be manufactured by simply cutting the appropriate shape from sheet metal or other material, thereby avoiding additional
machining steps. 5:30-36. Thus, "as a result, lightweight, high durability materials ... can be employed, and machining that alters the thickness of the sheet material is not required in the forming process." Id., 5: 36-40. In view of the ordinary meaning of the disputed term, Wrike's argument highlighting an innovation of the claimed invention over the prior art and statements by the specification that the claimed sidewalls, as a consequence of being "devoid of lateral projections," avoid the need for additional machining steps that either change the planarity or thickness of the sidewalls, I am persuaded that the term "devoid of lateral projections" limits the sidewalls to embodiments whose major surfaces are flat. Seimed Life Systems, Inc. v. Advanced Cardiovascular Systems, 242 F.3d 1337, 1341 (Fed. Cir. 2001); Elkay, 192 F.3d at 979; Vitronics, 90 F.3d at 1582.

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c. Other Claim Limitations

In its claim construction ruling, the Court of Federal Claims held that the term "dial" in Claim 1 of the '068 patent must include divisions. Claim construction ruling Masco, 47 Fed. Cl. at 458. Masco argues that the term should not be limited to dials bearing divisions. It cites a general dictionary definition, which states that "dial" means "[a] movable control knob or other device on a radio or television receiver used to change the frequency." Masco also cites passages from the specification in which the dial is described simply as a part that is rotated, causing internal parts to move. Masco also refers to the testimony of Mas-Hamilton's director of engineering from Mas-Hamilton I, describing a knob without divisions as a "dial."

We discern no error in the court's construction. The court found that the plain language of the claim did not resolve the issue, but noted a general dictionary definition of "dial" as "a plate or disk with graduations or figures, as for the indication of pressure, number of revolutions, etc., as by the movements of a pointer." Claim construction ruling Masco, 47 Fed. Cl. at 458 (quoting The American College Dictionary 333 (1970)). In considering the intrinsic evidence, the court noted that the section of the specification describing related art states that "one class of lock is the electronic dial combination lock which uses a dial having divisions to enter a combination code . . . ." '068 patent, col. 1, ll. 21-24. The specification also distinguishes between the dial and the knob: "A dial 76 of well-known configuration is mounted to the external end of the shaft and includes a knurled knob 78 for both rotating and axially moving the dial." '068 patent, col. 5, ll. 7-10. The dial, which both the specification and a dictionary definition indicate has divisions, is thus distinguished from the knob, which does not. Accordingly, the term "dial" cannot be construed to cover knobs lacking divisions, and we affirm the court's construction of this limitation.

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G. Diameter

ICU defines "diameter" as a "straight line passing through the center of an object from side to side." RJCCPS at 4. Braun counters that it means "a straight line passing through the center of a circle and meeting the circumference or surface at each end." Id. The disagreement, then, concerns whether a "diameter" can pass through a non-circular object.

Once again, both parties begin their definition of the term with the dictionary, which defines "diameter" as:

1 . . . a. a straight line passing through the center of a circle or sphere and meeting the circumference or surface at each end. b. a straight line passing from side to side of any figure or body, through its center. 2. The length of such a line. 3. the width of a circular or cylindrical object.

Random House Unabridged Dictionary 547 (2d ed. 1987). The parties are consequently asking this Court to choose between two equally applicable dictionary definitions. In this context, the Federal Circuit has instructed that,

because words often have multiple dictionary definitions . . . the intrinsic record must always be consulted to identify which of the different possible dictionary meanings of the claim terms in issue is most consistent with the use of the words.
by the inventor. . . . If more than one dictionary definition is consistent with the use of the words in the intrinsic record, the
claim terms may be construed to encompass all such consistent meanings.

WL 2248109 (Fed. Cir. 2004). Under this rule, this Court finds that Braun's definition is "most consistent" with the use of
the word in the patent.

ICU points to two examples in the specification that it contends demonstrates the correctness of its interpretation. First, ICU
points to the statement in the context of the description of an embodiment that "during compression of the seal 36a, the
diameter of the ringed wall portions 94 expand outward in the radial direction." Col. 12:13-15. However the "ringed wall" is
circular and thus is consistent with Braun's definition. Second, ICU cites a preferred embodiment that "has a bell-shaped
skirt and an upper, preferably cylindrical, conduit." Col. 6:65-67. Apparently it is ICU's contention that the excerpts use of
the term "preferably" alludes to the possibility of non-circular shapes. The excerpt, however, doesn't even use the term
"diameter." Moreover, the shapes it does refer to are circular, in that a cross section of a "bell-shaped skirt" or a "cylindrical"
conduit would be a circle.

Each of the specification's uses of the term "diameter" correspond with circular objects. Col. 4:4-5 ("The O-ring elements
have increasing diameters, with the smallest diameter element begin [sic] adjacent the proximal end of the cavity."); Col.
7:12-24 (referring to the "outer diameter" of the "upper conduit" in Figs. 4, 5 and 19, which the diagrams depict as circular).

The term "diameter" shall thus be construed as proposed by Braun.

TFY disputes Cannon's charge that the district court improperly failed to apply the ordinary meaning in construing the claim
limitation "diaphragm disposed in the body." TFY basically repeats the analysis contained in the court's Markman decision,
which noted that the '850 patent specification uses the phrase "in the body" to describe an entirely-contained diaphragm and
uses the phrase "mounted thereon" to describe a partially-contained diaphragm. TFY also asserts that the prosecution history
supports the court's claim construction. According to TFY, in response to a § 112 rejection, the patentee amended the
language of the original claims from "mounting a [] diaphragm" to "diaphragm disposed in the body." Presumably viewing
the term "mounting" to encompass only a partially-contained diaphragm, TFY argues that Cannon should not be allowed to
recapture previously surrendered subject matter. TFY also downplays Cannon's reliance on a statement in the "Summary of
the Invention" as being too ambiguous to overcome the clear distinction in the way the specification describes entirely-
versus partially-contained diaphragms in the body.

We agree with Cannon that the district court improperly added the limitation "entirely" in its interpretation of the claim
limitation "diaphragm disposed in the body." As an initial matter, we note that the term "in" is a simple, non-technical term,
and that under its ordinary meaning, a "diaphragm disposed in the body" includes both diaphragms contained entirely and
partially in the body. See Brown v. 3M, 265 F.3d 1349, 1352 (Fed. Cir. 2001) (recognizing that claim terms may not be
technical terms of art, and do not require elaborate interpretation). For example, a trash bag is "in" a trashcan even though a
portion of it is hanging outside of the trashcan.
Moving on from the question of plain meaning, we next address whether there is any justification for deviating from it. As discussed in Phillips v. AWH Corp., 415 F.3d 1303, 1316-17 (Fed. Cir. 2005), we may depart from the plain meaning of a claim term when the patentee has acted as a lexicographer or when the patentee has clearly limited the scope of the invention through a disclaimer in the specification or prosecution history. We conclude that neither situation occurred here.

As the district court recognized, the patent uses the phrase "in the body" in one instance to describe a diaphragm that is contained entirely within the body of the pump, and the phrase "mounted thereon" in another instance to describe a diaphragm that is contained partially within the body of the pump. These two cited instances, however, do not clearly indicate that the patentee intended to assign a more narrow definition to the phrase "in the body" than it would otherwise possess. See, e.g., Elekta Instrument S.A. v. O.U.R. Scientific Intl, 214 F.3d 1302, 1307 (Fed. Cir. 2000) (for a patentee to act as its own lexicographer defining a claim term differently from its ordinary meaning, the specification must clearly indicate the patentee's intent to do so). Although the phrase "mounted thereon," which indicates that at least a portion of the diaphragm is on the outer surface of the body of the pump, may have a somewhat different meaning than the phrase "diaphragm disposed in the body," the two phrases are not mutually exclusive, viz., a diaphragm "mounted thereon" the body can also be a "diaphragm disposed in the body," as the second embodiment of the specification shows. Thus, the specification uses different words to highlight the different ways that a diaphragm may be placed in the body of the pump. Moreover, contrary to TFY's position, the specification unambiguously uses the phrase "in the body" in the "Summary of the Invention" section to refer to diaphragms that are contained both entirely and partially in the body of the pump. '850 patent, col. 2, ll. 16-24. And the fact that the specification contains figures of embodiments that are both entirely and partially in the body is a strong indication that the claims were intended to encompass both.

Our review of the prosecution history also does not clearly indicate that the patentee intended to disclaim coverage in the claims for diaphragms that are not contained entirely within the body of the pump. See Omega Eng'g v. Raytek Corp., 334 F.3d 1314, 1325-26 (Fed. Cir. 2003) (requiring a disclaimer of subject matter in the prosecution history to be "clear and unmistakable"). Although the patentee amended the claims, which originally recited "mounting a [] diaphragm," to a "diaphragm disposed in the body" in response to a § 112 indefiniteness rejection, that was not a clear disavowal of subject matter that was not completely in the body. In his correspondence, the patent examiner did not reject the originally-filed claims on the grounds that the claims containing the limitation "mounting a [] diaphragm" read on the prior art or was unsupported by the specification as filed. Rather, the examiner took issue with the apparatus claims being "narrative in form and replete with indefinite and functional or operational language." In making the amendment, the patentee merely replaced "operational" language, i.e., "mounting a [] diaphragm," with definite structural language, i.e., a "diaphragm disposed in the body." We are thus hard-pressed to conclude that there has been a surrender of subject matter when the patentee has merely amended the claims to replace an original phrase with a different, but not narrower, amended phrase. At a minimum, this was not a "clear and unmistakable" disclaimer.

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2. What is the Proper Construction of the Terms "barrel" and "die" in the '092 and '948 Patents?

Claim 1 of the '092 patent and claim 1 of the '948 patent contain the terms "extruder barrel" and "die." KXI and Culligan dispute where the "extruder barrel" ends and the "die" begins. KXI contends in both patents the "extruder barrel" and "die" are co-joined tubes, the "extruder barrel" the part that houses the extrusion screw, and the "die" the part that does not house the extrusion screw. Essentially, KXI's position is that the die begins where the helical flights of the extrusion screw end. Culligan contends in both patents the "die" is a distinct structure from the "barrel." Culligan contends the "die" is the structure that imparts shape and form to the feed mixture, and the "barrel" is the structure that houses the feed screw.

In support of its construction, KXI cites column 3, lines 2-5, 19-20, and 35-42 of the '092 patent, and column 3, lines 8-11, 25-26, and 41-48 of the '948 patent. Here, the specifications state:

The feed bin 10 feeds into an extruder barrel 12 which contains a feed screw 14. The feed screw 14 comprises a solid core 16 surrounded by conventional helical flights 18. . . . The output end of the extruder barrel 12 feeds the input end of a die assembly 24 . . . .
KXI argues this passage defines the term "extruder barrel" as the structure containing the feed screw.

In support of its construction, KXI cites a 1996 letter written by Joseph Jochman, Esq. to Plymouth. Jochman was Plymouth's outside patent counsel at the time. The letter concerned changes Plymouth contemplated making to its carbon block extruder. Plymouth had contemplated removing flights from the extrusion screw. Jochman stated "the removal of a few downstream flights from the extruder screw would result in a de facto extension in the upstream direction of the die cavity. In other words, the flightless part of the extruder barrel in effect becomes part of the die." KXI argues the Jochman letter is extrinsic evidence, and should be considered to show that Culligan, through its patent counsel, agrees with KXI's interpretation of the terms "extruder barrel" and "die."

In support of its construction, Culligan cites figures 1 and 3 accompanying the '948 and '092 patents, reproduced supra. These figures depict the extruder, including the extruder barrel, referred to as "12," and the die, referred to as "26." Culligan argues that the figures depict the extruder barrel (12), and the die (26), as two separate tubular structures. Culligan argues the separate structures are distinguished by the beginning and end of their respective tubes, and not by the ends of the extrusion screw's flights. Culligan argues the position of the "input end of the die" as depicted in the figures accompanying the '948 and '092 patents is downstream from the expansion flange (56) and well downstream from the points where the flights on the feed screw terminate in the barrel (12).

Culligan argues KXI's definitions of the terms "extruder barrel" and "die" are inconsistent with the '948 and '092 patents' specifications. According to Culligan, the patents describe the extruder barrel and die as two structures, and do not define either one by the extrusion screw. Culligan cites the '092 patent at column 3, line 2-5 and the '948 patent at column 3, lines 8-11, which state that the extruder barrel "contains a feed screw 14" and that the feed screw "comprises a solid core (16) surrounded by conventional helical flights 18." Culligan cites the '092 patent's specification at column 3, lines 25-26 and the '948 patent's specification at column 3, lines 31-32, which state that "the input end of the die 26 is provided with heating elements 28[.]"

Culligan argues that KXI's interpretation of the meaning of the terms "extruder barrel" and "die" is not supported by the prosecution history. During the prosecution of the '948 patent, the application was rejected over the prior art Zavasnik extruder, which does not contain a feed screw. Culligan points out that both the patentee and the examiner described the Zavasnik extruder as having an "extruder barrel (11)" and an "extruder die (26)." Culligan argues this description "directly undercut[s] current logic, which would define the entire Zavasnik extruder as a 'die' because no portion of the extruder tubes contains a screw."

KXI responded that Culligan's argument is based on a mistake. The Zavasnik patent includes figures that depict the invention, reproduced supra. The different parts of the invention are numbered in the figures. According to KXI, during prosecution of the '948 patent, the examiner called the structure denoted as "11" the "barrel," and the patentee called it the "die." KXI argued that throughout the prosecution, the patentee's position was that "11" represented the "die." According to KXI, however, the patentee accidentally adopted the examiner's terminology and called "11" the "barrel" "once, maybe twice" during the prosecution.

Culligan argues that KXI defines the terms at issue contrary to the common meaning of "die." As support for its position, Culligan cites the McGraw Hill Dictionary of Scientific and Technical terms which defines "die" as "[a] tool or mold used to impart shapes to, or to form impressions on, materials such as metals and ceramics." McGraw-Hill Dictionary of Scientific and Technical Terms (4th ed. 1989).

The court finds there is no reason to define the term "extruder barrel" by where the extruder screw ends. The court gives the ordinary meaning to the terms. Accordingly, the court will construe "extruder barrel" and "die" as separate structures, the "extruder barrel" being the structure that houses the feed screw, and the "die" being the structure that imparts shape and form to the extrudate.
In construing the claims of a patent, "the inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation." Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). "The person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." Id.

During prosecution, a patent applicant may consistently and clearly use a term in a manner either more or less expansive than it is used in the relevant art, thereby expanding or limiting the scope of the term in the context of the patent claims. However, in order to disavow claim scope, a patent applicant must clearly and unambiguously express surrender of subject matter during prosecution. Middleton, Inc. v. Minn. Mining & Mfg. Co., 311 F.3d 1384, 1388 (Fed. Cir. 2002).

In construing patent claims, a court should consult the patent's prosecution history so that the court can exclude any interpretation that was disclaimed during prosecution. Phillips, 415 F.3d at 1317. Disclaimers based on disavowing actions or statements during prosecution, however, must be both clear and unmistakable. Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1326 (Fed. Cir. 2003). Moreover, "it is the applicant, not the examiner, who must give up or disclaim subject matter that would otherwise fall within the scope of the claims." Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1124 (Fed. Cir. 2004); see also Bell Atl. Network Servs., Inc. v. Covad Comm'n's Group, Inc., 262 F.3d 1258, 1273 (Fed. Cir. 2001) (Holding that, unlike the statement of an applicant, the statements of an examiner will not necessarily limit a claim.)

In this case, the language in claim 1(e) requires that the first and second materials have "different characteristics." The claim does not limit these differences to any particular sub-set of the broad term "characteristics." In other words, according to the claim language any difference in characteristics between the two injected materials would satisfy the claim language. Thus, a difference in color alone would satisfy the "different characteristics" limitation. The color would be the characteristic that differs.

In the context of the invention, the primary point of a sequential molding method would seem to call for some differences in the separately molded materials. Obviously a product made of a single uniform material could be produced in a single molding step. As long as the sequential materials differ in some respect, however, the patent does not specify any particular characteristic that must differ to satisfy the "different characteristics" limitation. The breadth of the claim language suggests that any difference in characteristics justifies the sequential molding process. As long as the characteristics differ, the patent does not specify further the nature of the difference.

To reinforce this interpretation of the claim language, the specification of the '184 patent states: "The first and second plastic materials may be either the same material or different materials." '184 patent, col. 9, ll. 17-18. This passage emphasizes that the material injected into the molds may be "the same." This reference suggests again that the first and second injection could use plastic with the same molecular structure. In that case, the "different characteristics" limitation would require some difference other than molecular structure, such as color.

In the specification the inventor also offers examples of a number of characteristic differences in materials that would justify separate molding steps. One of these is transparency. See '184 patent, col. 3, ll. 11-43. Differences in transparency, like differences in color, are differences that may or may not be associated with molecular structure. Thus, the inventor made clear in the examples as well that a difference characterizeable in terms other than molecular structure would satisfy the "different characteristics" limitation. However, the inventor does not limit the invention to these examples. In other words, the inventor does not disclaim, in the specification or claims, any particular difference in characteristics of the materials used in the sequential molding steps. In sum, the claim language and the specification show that color differences would suffice to satisfy the broad "different characteristics" limitation.

The prosecution history of the '184 patent similarly shows no disavowal of claim scope in relation to material characteristics. The inventor amended claim 1 a number of times in response to rejections for obviousness over prior art. In the original application, claim 1(b) specified "injecting a first plastic material into the first mold cavity," and claim 1(e) specified "injecting a second plastic material into the second mold cavity while the first plastic material component is contained therein." The examiner rejected claim 1 under 35 U.S.C. § 103 as obvious, citing U.S. Patent Nos. 4,422,995 (filed Dec. 7, 1981); 3,543,338 (filed Nov. 6, 1969); 3,832,110 (filed June 16, 1972); and 4,459,256 (filed March 22, 1982). To the examiner, these references would have made it obvious at the time of invention to use "the concept of a stabilizing region" in a multi-step molding process. In the rejection, the examiner noted that "the particular materials selected to be
molded area mere matter of choice depending on the product desired and are of no patentable consequence to the claimed process." This comment showed that the examiner based the obviousness rejection upon stabilization in a multi-step process, not on the characteristics of the materials used in the injections.

On January 11, 1989, the inventor attempted to overcome the obviousness rejection by amending claim 1 to specify that the final product would require laminated walls. The inventor also modified steps 1(b) and 1(c) to specify that the first or second plastic material would be injected until it reaches the parting line between the common mold part and the complementary mold part. On April 27, 1989, the examiner again rejected the amended claims for obviousness over the same prior art.

On July 11, 1989, the examiner had a telephone interview with the inventor concerning the amended (and rejected) claim 1. The examiner's record of this interview, in its entirety, is:

Discussed meaning of parting line and fact that two different materials with different properties are used. An amendment changing these limitations may not be entered.

Two weeks later the inventor filed a continuing application, amending claim 1 to include a requirement, in the preamble, that the molded product contain "a closed end and an open end terminating in a rim at the open end," and adding the phrase "having different characteristics than the first plastic material" to claim 1(e). 1 The inventor also amended the abstract with the addition: "A second plastic material having different characteristics than the first plastic material is injected until it reaches the portion of the second mold cavity that defines the rim of the product to form a laminated wall." The inventor explained these changes as:

better distinguishing the present invention over the art of record by defining a rim of the molded product, pointing out that both the injection of the first plastic material and the injection of the second plastic material reach the respective portions of the first and second mold cavities that define the rim of the product, and further pointing out that the first and second plastic materials have different characteristics.

The examiner then allowed the claims.

Footnotes

1 The inventor also changed claims 1(h) and 1(i) to point out that the first and second plastic materials reached the portion of the relevant mold cavity that defines the rim of the product.

This final exchange between the inventor and the examiner during prosecution appears to have misled the administrative judge. Nevertheless, the exchange in no way shows a clear and unambiguous disavowal of the broad scope of the claim language. In other words, the prosecution history does not disavow the broad scope of the claim language and specification that permit any difference in characteristics, including color. See Omega Eng'g, Inc., 334 F.3d at 1324. On this record, this court perceives no disavowal of scope. The claim thus excludes no specific differences in characteristics, and in particular differences in color, in the molded materials.

B. "Greater Than"

The '050 and '023 patent claims require that the insert means projections have a length that is "different from" the length of the inner hose recesses, and the '752 and '822 patents claim require that the insert means projections have a length that is "different than" the length of the insert means recesses. While the district court properly construed the claims of '050 and '023 patents to require that the length of the insert means projections be "different from" the length of the inner hose recesses, the court inexplicably construed the claims of the '752 and '822 patents to require that the length of the insert means recesses be "greater than" the length of the insert means projections. We believe the '752 and '822 patent claims
should have been construed similarly to the '050 and '023 patent claims to require that the length of the insert means recesses be different from or "not equal to," rather than "greater than," the length of the insert means projections. Since the structure and wording of the '752 and '822 patent claims is similar to the structure and wording of the '050 and '023 patent claims, we see no reason to construe the claims of the former two patents more narrowly than those of the latter two patents. Moreover, the structure and wording of the claims in these four patents is distinctly different from the language of the '686 patent claims, which requires that the recesses of the insert means be defined by a radius that is "longer than" a radius defining the length of the insert means projections. Thus, we construe the claims of the '752 and '822 patents to require that the insert means have projections and recesses, where the length of the projections is not equal to the length of the recesses.

3 The district court, however, mysteriously construed the term "predetermined length" in reference to the '050 and '023 patents, even though this term does not appear in any of the claims of those patents.

TCI argues that the district court's claim construction was correct in light of the patent specification's description of insert means recesses with a greater length than the insert means projections. We disagree, because although we construe claims in light of the teaching of the specification, we do not treat characteristics of a preferred embodiment as claim limitations.

GO BACK

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"Second Cleaning Step"

Unlike the first cleaning step, claim 1 does not limit how cleaning may occur in the second cleaning step, except that it must be different from the first cleaning step in the first location of the machine. Claim 1(e) provides a method for performing a second step of cleaning said coins, different from said first step of cleaning, while said coins are in said second location." Therefore, the only limitations upon the construction of this claim is that (1) separation of liquid or debris must take place while the coins are in the second location of the apparatus but before the coins reach the sorter; (2) separation must occur in a manner that will prevent damage to the machine; and (3) the method of cleaning must be different from the first step of cleaning.

7 CoinBank contends that the method of cleaning in the second location must not be performed by a restriction in the flow of coins, arguing that Coinstar expressly disclaimed this method of cleaning in overcoming the examiner's earlier rejection of the patent in suit based on prior art. CoinBank asserts that the De Meyer patent disclosed a mounting plate that restricted the flow of coins from a funnel to a storage hopper, similar to the blocking plate on the CBII and CBIII. In arguing to the examiner that the '546 patent was distinguishable from the De Meyer patent, Coinstar emphasized that the '546 patent had two different cleaning steps in two different locations of the machine. Since De Meyer had a cleaning step in the coin depository (a perforated bottom plate) and a mounting plate that restricted the flow of coins in the second location, CoinBank asserts that a restriction in the flow of coins cannot be claimed as a second cleaning step.

The problem with this contention is that the drawings in the De Meyer patent indicate that the mounting plate "flow restricter" is actually larger than the gap through which the coins slide from the coin depository to the internal funnel (and mounting plate) of the De Meyer device. If the gap through which the coins enter the machine from the coin depository is narrower than the mounting plate, then this restricted path flow could not have performed a "cleaning" function in the De Meyer patent.
4. "arms of different lengths," "arms have dissimilar lengths," and "the at least one and the second arm have dissimilar lengths"

Braun construes the phrases "arms of different lengths," "arms have dissimilar lengths," and "the at least one and the second arm have dissimilar lengths" to mean "arms which have different ending points on the axial dimension." (D.I. 74 at 19) Terumo instead believes these phrases should be given their ordinary and customary meaning and, therefore, has not provided any proposed construction. (D.I. 71 at 28) The issue is whether these "arms of different lengths" terms refer to ending points (Braun's view) or instead refer to a measurement of distance from one end of the arms to the other (Terumo's view). I believe they refer to ending points.

Braun relies on the specification to support its construction. (D.I. 99 at 15) For example, the patent states: "the end walls 130 overlap one another at a location distally in front of the needle tip, thereby to form a barrier that prevents inadvertent contact with, and distal movement of, the needle tip." (‘613 patent, col. 10 lines 6-9) Braun emphasizes that overlapping arm ends are necessary to block the needle tip, which is the essence of the invention. (See, e.g., Tr. at 82 ("[T]he needle guard has to fit into a small catheter hub and the overlapping arms permit a double protection mechanism from the tip escaping within the small space."); id. at 83 ("[I]f you didn't have overlapping arm ends, the arms wouldn't effectively block the needle tip."); id. at 84 ("The purpose, the whole purpose behind having the arms of different lengths is the overlapping end.").) As Braun further points out, "nowhere in the patent specification does the patent suggest measuring arm lengths or measuring lengths from Point A to Point B as the determination for meeting this claim term." (Tr. at 83)

It is true, as Terumo has explained, that one can accomplish different ending points with arms of the same length. (D.I. 97 at 22-23) ("[A]t least in some embodiments, it is possible to use arms of the same length to achieve arms with different end points in the axial dimension. For example, if the proximal wall was angled (rather than being perfectly vertical), then two arms of the same length extending from the proximal wall would have different ending points in the axial dimension.") Nothing about Braun's proposed construction neglects this reality nor excludes such an embodiment from the scope of the patent claim. Indeed, at the hearing, Braun's counsel conceded the basic geometric fact that arms having the same absolute length (i.e., distance from front to back) can still have different ending points and accomplish the purpose of the invention. (Tr. at 84) This demonstrates that the "arms of different lengths" terms in this patent are not being used in their ordinary meaning.

Therefore, I recommend that these terms be construed to mean "arms which have different ending points on the axial dimension."

"a plurality of different sets of elements"

Claim 5 of the '662 Patent and Claims 1, 11, and 18 of the '767 Patent contain the term "a plurality of different sets of elements." SHURflo contends that "a plurality of different sets of elements" means "at least two or more sets of elements, the sets different from one another in either the number of elements in each set or the kind of elements in each set." Defendants contend that the term means "at least two or more sets of elements lacking common elements whereby each set is uniquely tailored to a particular pump configuration." The parties disagree as to whether a set of elements can share common elements with another set of elements.

SHURflo asserts that its proposed construction is consistent with the ordinary meaning of the words, but presents no support for its narrowing of the claim language by inserting a limitation that the differences in each set be differences in number or kind of elements only. The claim language and specification allow for a situation where two different sets may have the same number and kind of elements, but are perhaps arranged differently to hold differently configured pumps to the housing. Thus, SHURflo's proposed construction is too narrow and improper.
Defendants assert that the specification and the prosecution history support their proposed construction. Specifically, the specification provides that "[e]ach set of elements or features preferably is exclusive in that element or elements in any given set do not cooperate with the element or elements of any other set in holding a pump to the housing." '662 Patent, col. 2:12-15. In addition, Defendants argue that the prosecution history supports their proposed construction because the patentee argued during prosecution that the different sets of elements were novel in order to overcome the Hoss prior art reference cited by the U.S. Patent and Trademark Office. Defendants focus on the following paragraph in the prosecution history:

With reference to FIG. 12 and to column 4, line 35 to 5, line 60 of Hoss, these sets 58, 60 of support elements are clearly designed for one specific type or "configuration" of engine and not for more than one engine having different configurations. Similarly, none of the other references cited by the Examiner employ different sets of elements adapted to hold or secure different types of pumps as claimed in each of claims 4, 5, 7, 34, and 41 of the present application. In each case, the sets of elements used are specifically adapted to hold one (and only one) type or "configuration" of device.

Defendants' Responsive Brief, Exhibit K, at 3. Defendants contend that the italicized phrase is referring to the claims of the '662 Patent, not the prior art references, and that the phrase represents the patentee's narrowing of the claim term during prosecution.

In response, SHURflo first argues that Defendants' proposed construction seeks to limit the claims to the preferred embodiment of the invention. A preferred embodiment disclosed in the specification is not a claim limitation, and the Court refuses to import the "exclusivity" limitation from the preferred embodiment into the claims. See Phillips, 415 F.3d at 1323. Second, SHURflo contends that Defendants' reliance on the prosecution history to support its "exclusivity" argument is misplaced. SHURflo argues that the italicized phrase is referring to the prior art references, not the claims of the '662 Patent, and nowhere does the patentee assert the absence of common elements in any of the plurality of "different sets of elements."

The prosecution history does not support Defendants' argument. In the quoted paragraph above, the patentee is merely arguing that each of the different sets of elements was adapted for differently configured pumps, not that the sets of elements could not share elements or that each set of elements could only fit one pump. Because the disclaimer of claim scope is not clear and unmistakable, the doctrine of prosecution disclaimer does not apply in this case. See Computer Docking Station Corp., 519 F.3d at 1374. Accordingly, the Court rejects both parties' proposed constructions and construes the term "a plurality of different sets of elements" to mean "two or more sets of elements where no two sets are the same."

IV. Different Size and Shape"

Claim 11 claims the kit of claim 1 wherein one of the stems "has a different size and shape" as another of the stems (9:8-10), claim 12 claims the kit of claim 1 wherein one of the bodies "has a different size and shape" of another of the bodies (9:11-13), and claim 13 claims the kit of claim 11 wherein one of the bodies "has a different size and shape", of another of the bodies (9:14-16). DePuy argues that the terms "size" and "shape" should simply be given their ordinary and/accustomed meanings. Zimmer, on the other hand, argues that "different shape" is indefinite under 35 U.S.C. § 112 P 2, rendering claims 11-13 invalid, and moves for summary judgment accordingly.

35 U.S.C. § 112 P 2 states that patent claims must "particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention." The standard for determining whether a patent claim is sufficiently definite to satisfy this statutory requirement is whether "one skilled in the art would understand the bounds of the claim when read in light of the specification." Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001). In other words, the standard is "whether the claims at issue are sufficiently precise to permit a potential competitor to determine whether or not he is infringing." Id. (internal quotation omitted). Determination of claim indefiniteness is a question of law drawn from my duty as construer of patent claims. Id. at 1376.

While DePuy asks me to look at the terms "size" and "shape," and Zimmer asks me to examine the meaning of "different shape," the only way to proceed is to determine whether, in their entirety, the claims containing the "different size and shape" language can be construed. If a claim is insolubly ambiguous such that no narrowing construction can properly be
adopted, the claim is statutorily indefinite. Id. at 1375. If, however, the meaning of a claim is discernible, "even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree," the claim is sufficiently clear to avoid invalidity on indefiniteness grounds. Id.

The phrase "different size and shape" is susceptible to two distinct meanings. The first reads "different size and shape" as meaning "different size and different shape," and thus objects that are the same shape but different sizes or objects that are the same size but different shapes are not of "different size and shape." The other way to read the phrase "different size and shape" is to read it as meaning "not the same size and shape," that is, as the opposite of "same size and shape." Under this reading, if two objects do not have both the same size and the same shape as one another, they are of "different size and shape." Reading the specification, it becomes clear that this second reading is the proper interpretation of the claim. The specification indicates that the purpose of a kit containing components of various shapes and sizes is to provide a wide variety of options in creating a prosthesis to fit an individual patient. (3:46-50.) This purpose is satisfied so long as each of the various types of components are not identical to one another. For example, a kit containing two heads of the same size and shape, two bodies of the same size and shape, and two stems of the same size and shape would not provide the flexibility described in the specification. It is immaterial, however, whether the two heads, two bodies, and two stems have only different sizes, only different shapes, or both. If the kit contained, for example, two different shaped bodies of roughly the same size, the described flexibility would still be present. Likewise, if the kit contained two bodies of the same shape in two different sizes, the described flexibility would be present. Thus, the specification points toward the proper interpretation of "different size and shape" as meaning "not the same size and shape." Further, because the proper meaning of "different size and shape" has thus been discerned, the claims are not invalid on indefiniteness grounds. See Exxon Research & Eng'g Co., 265 F.3d at 1375.

The next limitation in claim 31 provides:

and a second differential expansion portion adjacent said limited expansion portion expandable by said initial injected fluid with the limited expansion portion above the collapsed implantation position

The parties agree that the differential expansion portion is a second portion or part of the cover capable of expanding further than the limited expansion portion and that can expand with the limited expansion portion by the initial injected fluid above the collapsed position. The written description only describes the two cover portions as being "joined," col.2, lines 4-7, and all the figures show that limited expansion portion next to or connected to the differential expansion portion. It appears that for this particular term, the general usage of the word "adjacent" is what the inventor intended.

The court finds this limitation means "another portion of the cover, joined to the limited expansion portion either directly or through a tapered portion, capable of expanding differently from but expandable with the limited expansion portion by the initial injected fluid above the collapsed position."

As used in the claims, a diffuser is used to add the nitrogen to the foam concentrate (i.e., "introducing a gas comprising nitrogen under pressure to said stream of foam concentrate/liquid mixture by a diffuser/dispenser apparatus"). The specification explains that "[t]he foam is expanded and dispersed through a diffuser/dispenser apparatus that functions to introduce pressurized nitrogen into the water/foam concentrate stream to expand the foam and to dispense the expanded foam." '965, 4:62-65. The Court construes "diffuser" to mean "an apparatus that introduces pressurized nitrogen into the water/foam concentrate stream to expand the foam." The Court construes "diffuser/dispenser apparatus" to mean "an apparatus that introduces pressurized nitrogen into the water/foam concentrate stream to expand the foam and to discharge the expanded foam."
5. Diluting and Will Again Tumble

The construction of the phrase "diluting…and spinning…such that said fabric will again tumble" is in dispute. It appears in the following context: "after said first period of time, diluting said concentrated detergent solution to a lesser detergent concentration level, no less than 0.28 % by weight, and spinning said wash chamber to effect less than a one gravity centrifugal force on said fabric such that said fabric will again tumble" ('370 patent, claims 1, 8, 15.)

Whirlpool argues for the following construction: "This claim step means that after the first period of time, the detergent solution is diluted to a lower detergent concentration level of at least 0.28 % by weight. Also, after the first period of time, the wash chamber must again be spun at a speed effecting less than one gravity of centrifugal force on the fabric such that the fabric 'will again tumble' in the wash chamber. This diluting claim step occurs at some point following the first period of time; therefore this step must occur after the recirculating spray and the tumbling action have stopped (i.e., actions which characterize the first period of time)."

LG argues for the following construction: "After the first predetermined period of time (i.e., predetermined concentrated wash period), diluting the concentrated detergent solution to a fixed, lesser detergent concentration level, no less than 0.28 % by weight, and spinning the wash chamber…to cause the fabric to tumble in a wash chamber. Dilution of the concentrated detergent solution is initiated as the result of the completion of the predetermined concentrated wash period (i.e., not as a result of maintaining a predetermined liquid level in the wash chamber)."

The issue in dispute is whether the claim requires the tumbling action to stop between two steps. Whirlpool argues that the recirculating spray and tumbling action occurs in a first step, then stops during the dilution, and then resumes again in a second step. LG maintains that the claims permit the recirculating spray and tumbling action to continue uninterrupted, with no intermittent termination of wash chamber rotation. The Court can find nothing in the plain language of the claims requiring the tumbling to stop and start again. Whirlpool's dictionary definitions do not require the construction it seeks. The word "after" defined as "behind in place or order" or "at a later time than" contains no requirement for an interruption between two actions-it only requires that the one follow the other. See AMERICAN HERITAGE DICTIONARY. Likewise, "again" defined as "once more; a new" does not require an interruption. See AMERICAN HERITAGE DICTIONARY. The claim states that "after the first period of time," the fabric will "again tumble," which can be understood to mean that when the first period ends and the next step ensues, the fabric continues tumbling without having stopped. 1 Neither does the word "then" separating two steps necessarily require a break in an action; a first step can occur, and then another step following it, without the tumbling action ceasing and restarting. 2

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1 Fabric can alternate between tumbling and not tumbling without a stop in the chamber's spinning. Fabric tumbles when the rotation is at less than 1 gravity, while it sticks to the outside of the chamber when rotating at more than 1 gravity due to centrifugal force.

2 Whirlpool illustrates its construction of the word "then" with the following example: "He stayed up late watching the movie, then went to bed." The person in Whirlpool's example watches a movie, stops, and then does something else. But the word "then" can readily be used in a context involving no stopping and starting, but rather an uninterrupted transition. For example, "He drove at 65 miles per hour, then drove at 55 miles per hour."

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - -

Whirlpool argues, and the Court agrees, that the prosecution history discloses a process involving distinct steps. In response to the examiner, Whirlpool characterized its invention as involving "two distinct spraying steps," first, "a concentrated spray and tumble step," and second, "a diluted spray and tumble step." (Response to Second Office Action at 3, Whirlpool Br. Ex. 12.) This description evinces that the difference between the two steps is that in the first step the spray is concentrated, where as in the second step the spray is diluted. Nothing in this description, however, suggests that the tumbling must stop and restart between the steps, even if the chamber spins at different speeds at various times.

Accordingly, the Court adopts LG's construction that "diluting and tumbling again after the first period of time" does not require the tumbling to stop between steps. The claim includes a scenario where clothes continuously tumble without
"Dimension" appears at various points throughout the '511 Patent, in the same context as the effective active region and the radiant energy detector previously discussed. Plaintiff argues that the term means the length or width of the interface between the detector and the incident x-ray beam, and Defendant has not proposed a definition. However, the Court does not find any language about length or width in the '511 claims. The Court finds neither the specification nor the patent prosecution history useful in defining this term. Since the intrinsic evidence does not provide much guidance as to the proper construction of the term, the Court finds it appropriate to consult the dictionary. "Merriam-Webster dictionary defines "dimension" as "measure in one direction, one of three coordinates determining a position in space." Accordingly, the Court FINDS that "dimension" as defined in the '511 Patent means a measure in one direction.

a. "dimensionally stable"

DuPont proposes this construction of the term "dimensionally stable": "a polymeric substrate that results in a flexographic printing plate having thermal distortion of less than 0.03% when developed at temperatures between 100 and 180[degree]sC, or [results in] an individual polymeric substrate having less than 0.07% distortion when heated to temperatures from 110 to 180[degree]sC". (DuPont Opening Br. at 21.) The first component of this proposed construction deals with the meaning of the term "dimensionally stable" as used in claim 1. ('758 Patent at col. 8, lines 18-25.) The second component addresses the use of this term in claim 19. (Id. at col. 10, lines 1-6.)

MacDermid proposes this construction, which it actually modified over the course of the claim construction proceedings:

A flexible polymeric substrate whose dimensional stability has been controlled through a special annealing process, namely an annealing process that: (1) is in addition and subsequent to the heat treating steps associated with manufacturing the polymeric film, (2) is not the process of bonding the photosensitive elastomer layer to the polymeric substrate, and (3) comprises: (i) heating the substrate to a temperature above its glass transition temperature but below its melting temperature and at or greater than the temperature to which the substrate is later subjected during thermal development, (ii) at tensions of less than 200 psi, and (iii) for a time greater than the time required to bring the film to the annealing temperature, such that a specially annealed substrate has less thermally induced distortion than a non-specially annealed substrate.

(MacDermid Supplemental Br. at 3-4.) The parties devoted much attention to this term in their briefing, with the supplemental briefing exclusively concerned with the proper construction of this term, and at the Markman hearing. They raise a range of complicated issues, but the heart of the dispute appears to be over whether the claim term at issue here should be construed as limited to a so-called "special annealing process."

DuPont argues that: (1) its own construction is supported by (a) the plain language of claim 1, which defines "dimensionally stable" by reference to the thermal distortion limit of 0.03%, and (b) the specification, which also indicates that the term should be defined by reference to the thermal distortion limit and otherwise states that "[t]he present invention is a flexographic printing plate having a very low degree of thermal distortion during development" ('758 Patent at col. 1, lines 51-53); (2) MacDermid's proposed construction improperly imports process limitations from the specification into a product claim and otherwise improperly limits the claim to a preferred embodiment; (3) the specification lacks the clear disavowal required to adopt MacDermid's proposed construction; (4) the term "special annealing process" is not used in the claims; (5) the specification only mentions the term "special annealing process" once, in the context of discussing a preferred embodiment using semicrystalline polymers; (6) such semicrystalline polymers are actually claimed in dependent claim 7, and, under the doctrine of claim differentiation, this embodiment should not be read into the broader claim 1; (7) because of the examiner's determination that the applicants had to choose between the product and the process claims, the applicants
responded to the examiner's 35 U.S.C. § 103 obviousness rejection by stating:

Indeed, in their August 1995 response, the applicants repeatedly emphasized the whole notion of annealing. Aspirations repeatedly relied upon the "special annealing process", and the Appeals Board cited their annealing arguments to reverse the examiner's rejections; (9) the prosecution history otherwise lacks any such disavowals; (10) MacDermid's requirement in subsection (1) of its proposed construction that the annealing process be in addition and subsequent to the heat treating steps associated with manufacturing the film is not found in the claims themselves; (11) MacDermid's additional requirements, found in subsections (2) and (3) of its proposed construction, also are not found in either the claims, the specification, or the prosecution history; and (12) these additional steps are actually covered in dependent claims 9 and 16 and therefore it would be inappropriate to read them into claim 1 given the claim differentiation doctrine. (DuPont Opening Br. at 17-20; DuPont Responsive Br. at 2-12; DuPont Supplemental Br. at 1-20; Tr. at 69-84, 186-94.)

MacDermid, in contrast, argues that: (1) DuPont's proposed construction ignores the requirement of a special, further, and important annealing step, which was used by the applicants to secure the issuance of the '758 patent; (2) DuPont's proposed construction collapses the term "dimensionally stable" into the term "thermal distortion", thereby effectively eliminating the "dimensionally stable" limitation from the claim itself; (3) DuPont's approach improperly grants it a right to exclude as to all thermally developed plates with favorable thermal distortion regardless of how this distortion result is achieved and even though the patent itself describes only one means to achieve this result; (4) the specification supports MacDermid's proposed construction because it: (a) describes the problem of thermal distortion, (b) states that a "special annealing process" solves this problem, (c) identifies the "special annealing process" as comprised of the three parameters of temperature, tension, and time, (d) discusses these three parameters in some detail, (e) notes that various annealing methods exist, such as air oven annealing, hot can annealing, or combinations of such methods, and (f) provides four examples wherein the annealed samples are compared to non-annealed samples; (5) the prosecution history further supports its proposed construction because -- to overcome the examiner's rejections, distinguish prior art, and prevail on appeal -- the applicants repeatedly relied upon the "special annealing process", and the Appeals Board cited their annealing arguments to reverse the examiner's rejections; (6) the extrinsic evidence, including the deposition testimony of an inventor, supports the "special annealing process" construction; and (7) as a matter of law, (a) the applicants intentionally and clearly disclaimed or disavowed the claim scope and otherwise disparaged non-annealed substrates and photosensitive plates made with non-annealed substrates, (b) the claims must be construed in light of the prosecution history, as the applicants successfully argued that their claims were enabled and distinguished from prior art due to the "special annealing process", (c) the extrinsic evidence, although less significant than the intrinsic evidence, should be viewed as supporting the proposed construction, (d) MacDermid's proposed construction does not improperly import limitations from a preferred embodiment, as it relies on the specification's identification of the "special annealing process" as the inventors' "discovery", and (e) the "special annealing process" should be treated as part of the product claims because the process steps form an essential part of the invention. (MacDermid Opening Br. at 8-20; MacDermid Responsive Br. at 15-25; MacDermid Reply Br. at 1-8; MacDermid Supplemental Br. at 1-29; Tr. at 92-142.)

Both parties have presented reasonable -- if complicated -- arguments for the Court to consider. But the Court agrees with MacDermid's proposed construction, in view of the specification and the prosecution history of the '758 patent itself.

As MacDermid explains, the patent specification repeatedly highlights the importance of annealing. The specification even states that "[t]he desirability of such semicrystalline polymers arises from the discovery that dimensional stability of these polymer substrates may be controlled through a special annealing process." (758 Patent at col. 2, lines 55-59.) In addition to mentioning different annealing methods, the specification explains this annealing process, focusing on temperature, tension, and time. (Id. at col. 2, lines 59-67, col. 3, lines 1-26.) The specification then provides four examples, in which the crucial distinguishing feature of the testing was whether the tested samples were in fact subjected to annealing. (Id. at col. 5, lines 26-66, col. 6, lines 1-67, col. 7, lines 1-67, col. 8, lines 1-16.) In turn, the applicants significantly found that the annealed samples showed less thermal distortion than their non-annealed counterparts. (Id.)

The prosecution history also supports MacDermid's proposed construction. In overcoming the examiner's rejections, the applicants repeatedly emphasized the whole notion of annealing. Indeed, in their August 1995 response, the applicants responded to the examiner's 35 U.S.C. § 103 obviousness rejection by stating:
The concept that all flexographic printing plates, including those disclosed in Martens and Prioleau, will have some "inherent" degree of thermal distortion, does not overcome Martens' and Prioleau's lack of teaching or suggestion as to the importance or desirability of dimensional stability. There is no basis for the inference that the inherent degree of distortion in Martens' and Prioleau's plates is in the range claimed. In fact, the Examples in the specification show that absent a critical annealing step, many polymeric films, including PEN and PET films, and plates made from such films do not meet the low distortion levels claimed in the present invention.

(Postruction History at 7-5 (emphasis added).) As to the 35 U.S.C. § 112 enablement rejection, the applicants argued "that Examples 3 and 4 additionally provide support and enablement for the invention as described in Claim 1." (Id. at 7-3.) In their subsequent January 1996 response, the applicants defended their claims against an anticipation rejection under 35 U.S.C. § 102 by asserting:

The rejection indicates that, nevertheless, Martens or Prioleau anticipate the present claims because they disclose substrate materials, e.g., polyethylene terephthalate, which the Examiner asserts "inherently have the characteristic of experiencing"low thermal distortion. There is no basis for the assertion that Martens' and Prioleau's plates or substrates inherently possess the degree of distortion in the range claimed. In fact, the Examples in the specification show that absent further treatment by annealing, many polymeric films, including polyethylene naphthalate and polyethylene terephthalate films, and plates made from such films do not meet the low distortion levels claimed in the present invention. Example 4, which discusses plates made with polyethylene terephthalate substrates, clearly demonstrates that not all polyethylene terephthalate films will yield plates having the claimed maximum distortion levels. The other examples show similar findings for polyethylene naphthalate films. Therefore, the specification clearly rebuts the assertion that polyethylene terephthalate films and plates made from such inherently have the characteristic of low thermal distortion as required by the claims. In view of the clear evidence set forth in the specification, Applicants respectfully assert that this rejection under 35 U.S.C. 102(b) is improper and should be withdrawn.

(Id. at 9-3 to 9-4 (emphasis added).) Responding to the obviousness rejection, the applicants again emphasized the importance of the annealing process:

The Martens patents and Prioleau are addressed to photosensitive plates and flexographic printing plates made therefrom having specific chemistry and construction. These patents do disclose that the plates can have polymeric substrates. The Examiner acknowledges that these references do not teach the important annealing step which enables one to achieve the very low degrees of distortion. Locey teaches a specific method of heat treating film to avoid draw lines which are out-of-plane distortions of biaxially oriented film. Lu teaches an alternate method of providing films that have thermal distortions less than 0.5%. However, Lu does not contain any specific showing that distortions of 0.07% or less can be obtained.

(Id. at 9-5 (emphasis added).)

The brief filed by the applicants with the Appeals Board contained even more pointed references to the "special annealing process." At the end of the "Summary of the Invention" section, the applicants stated:

Applicants have achieved such reduced levels of thermal distortion by subjecting the substrate of the plate to a special annealing process. This process is described at page 4, line 15 through page 6, line 190 of the specification.

(Id. at 12-6 (emphasis added).) They then reiterated many of the same arguments they had previously made to the examiner. Dealing with the anticipation rejection, the applicants stated that "the examples in the specification of the present invention show that absent further treatment by annealing, many polymeric films (including polyethylene naphthalate and polyethylene terephthalate films) and plates made from such films do not meet the low distortion levels claimed in the present invention." (Id. at 12-9 (emphasis added).) The applicants discussed the four examples, noting the different thermal distortion results obtained based on whether the samples had been annealed. (Id.) As to the issue of obviousness, the applicants emphasized that "[t]he Examiner acknowledges that these references do not teach the important annealing step which enables one to achieve the very low degrees of thermal distortion." (Id. at 12-11 (emphasis added).)

The applicants' contentions were successful, and the Appeals Board allowed the patent to be issued. The Appeals Board even relied on the annealing arguments in its June 29, 2000 decision, stating that:
Each of the § 102 rejections before us on this appeal is based upon the examiner's proposition that the respective plates of the applied references inherently possess limited distortion within the here claimed ranges because the prior art and here claimed plates may be manufactured from the same polymeric material, namely, polyethylene terephthalate. The appellants point out, however, that polyethylene terephthalate printing plates which are not annealed in accordance with their disclosed invention (i.e., the plates of Martens, Gibson or Worns) do not necessarily and inherently possess distortion values within the appealed claim ranges as evidenced by Example 4 including Table IV on pages 13 and 14 of the subject specification. Significantly, the examiner has not responded meaningfully to the appellants' point on this matter.

. . . . Under the circumstances recounted above, it is clear that the record before us on this appeal reflects that polyethylene terephthalate printing plates which have not been subjected to the annealing process disclosed by the appellants, that is, the plates of the references under consideration, do not necessarily and inherently possess the appellants' claimed distortion values.

(Id. at 18-3 to 18-4 (emphasis added).) The Appeals Board then "perceive[d] substantial merit in the appellants' arguments against the examiner's conclusion of obviousness." (Id. at 18-4.)

The Court thus construes the term "dimensionally stable" in light of the clear and unambiguous statements regarding the annealing process made in both the specification and over the course of the prosecution history. Cf., e.g., Novo Nordisk A/S v. Sanofi-Aventis U.S., No. 07-3206, 2009 U.S. Dist. LEXIS 62657, 2009 WL 2185905, at *8 (D.N.J. July 22, 2009) ("The Court concludes that the specification and the prosecution history do not include expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope, that demonstrate an intent to limit the invention to devices that have a gearbox and a non-rotatable piston rod" (citing Teleflex, 299 F.3d at 1327-28)). The Court therefore adopts the construction proposed by MacDermid.

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J. Claim 46

A device as in claim 31 wherein the wall means includes a dimensionally stable base.

The parties essentially agree that the wall means includes a part that is resistant to sudden change in width or length. The court finds this limitation means "a device as in claim 31 wherein the wall means includes a lower or bottom part that is resistant to sudden change in width or length."

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a. Preliminary Construction of Claim 1

The Court has received only excerpts of the '464 Patent's prosecution file history. The Court therefore will undertake only a preliminary construction of Claim 1 for the purposes of this preliminary injunction motion.

In construing claim terms, "the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history. Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." Vtronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) (citation omitted). The Court should give the disputed claim terms "their ordinary and accustomed meaning as understood by one of ordinary skill in the art." Bell Atlantic, 262 F.3d at 1267; Phillips v. AWH Corp., 415 F.3d 1403, 1313 (Fed. Cir. 2005).

In addition to examining the intrinsic evidence, the Court may consider certain extrinsic evidence, "including expert and inventor testimony, dictionaries, and learned treatises." Markman v. Westview Instruments, Inc., 52 F.3d 967, 980 (Fed. Cir. 1995). While extrinsic evidence may be useful in "shed[ding] … light on the relevant art," it is "less significant than the intrinsic record in determining the 'legally operative meaning of disputed claim language.'" C.R. Bard, Inc. v. U.S. Surgical

For the purposes of this preliminary injunction motion, the parties agree that the only term in Claim 1 that requires construction at this time is the phrase "each said opening being dimensioned for the passage therethrough of a main body portion of a second identical tie down strap for the redirection of the second identical tie down strap when the elastic main body portion defining said opening is elongated."

Precision contends that the first part of this limitation, "each said opening being dimensioned for the passage therethrough of a main body portion of a second identical tie down strap" should be construed to mean that the openings along the main body portion of the strap must be large enough (i.e., "dimensioned") to allow the main body portion of a second identical tie down strap to pass through the opening. Precision contends that while this limitation implies a relative limit on the cross-sectional size of the main body portion, there are no limitations directed to the size of the main body portion found in the claim. Thus, it is Precision's position that the test for whether this claim limitation is satisfied is met is simply whether it is possible to pass the main body portion of another identical strap through the openings. [Doc. 38 at 16-17].

With respect to the second part of this limitation, "for the redirection of the second identical tie down strap when the elastic main body portion defining said opening is elongated," Precision contends that this phrase should be construed to refer to the impact of passing the second tie down strap through an opening in the main body portion of the first tie down strap. Precision argues that this limitation is best illustrated in Figure 10, which shows one of the straps (49) being forced to deviate from its straight-line path (44) by its placement through an opening in the crossing strap (38). [Doc. 38 at 18].

The Defendants contend, on the other hand, that the phrase "each said opening being dimensioned for the passage therethrough of a main body portion of a second identical tie down strap for the redirection of the second identical tie down strap when the elastic main body portion defining said opening is elongated" should be construed to mean that upon elongation of the first strap, the plurality of openings in the strap become dimensioned for the passage therethrough of a main body portion of a second identical tie down strap, thus permitting redirection of the second identical tie down strap. Specifically, the Defendants argue that the phrase "dimensioned for the passage therethrough" means that, upon elongation of the first strap, either:

(1) the width (X) of the openings of the first strap is greater than the depth (D) of the second strap and the length (Y) of the openings of the first strap is greater than the width (W) of the second strap; or

(2) the width (X) of the openings of the first strap is greater than the width (W) of the second strap and the length (Y) of the openings of the first strap is greater than the depth (D) of the second strap.

[Doc. 39 at 15].

Based on the record presented, the Court finds that the Plaintiff has failed to make a sufficiently strong showing that this claim should be construed to mean that the openings of the strap are large enough so that it is possible to pass a second strap therethrough. Plaintiff's proposed construction effectively reads out the "dimensioned for the passage therethrough" limitation required by the claim. The intrinsic evidence in the record makes clear that the strap becomes "dimensioned" for the passage therethrough of a second strap by the elongation of the first strap. See '464 Patent Abstract ("The openings . . . are dimensioned to receive therethrough a main body portion of another strap when the main body portion defining the opening is elongated"); Col. 2, lines 23-29 ("each opening being dimensioned for the passage therethrough of a main body portion of a tie down strap when the elastic main body portion defining the openings is stretched or otherwise elongated"); Col. 2, lines 54-55 ("each opening is stretchable to accommodate the passage therethrough by another strap"); Col. 5, lines 5-7 ("Hence, upon elongation of the strap 10, each opening 20 becomes dimensioned for receipt therethrough of a like but unstretched strap according to the present invention."); Col. 5, lines 12-14 ("the strap of the present invention features openings which are dimensioned upon elongation of the strap for receipt therethrough of another like strap"); Col. 5, lines 28-31 ("the elongated strap 10 through which a strap is twice extended"); Col. 5, lines 38-42 ("each one of the openings in the main body portion of each strap is dimensioned so that, upon elongation of its respective strap, a main body portion of another strap may pass therethrough").
This construction of "dimensioned" is also consistent with statements made by the Applicant during the prosecution of the '464 Patent in distinguishing the prior art. See Doc. 39-7 at 20 ("One of ordinary skill in the art at the time of the invention would be taught by Hartman the benefits and techniques for drastically limiting the degree to which a tie down strap can be stretched, i.e., to the point where the tie down strap is just stretchable enough for facilitating hooking and unhooking of S-shaped hooks through anchor holes in the strap, which is substantially less than the degree of stretching required for the main body portion of a strap to pass through an anchor hole.") (emphasis added).

The Defendants urge the Court to further construe this limitation as requiring that the openings be of particular relative dimensions (i.e., X>D and Y>D or X>W and Y>D). This construction, however, finds no support in the plain language of the claim. Rather, this proposed limitation is taken directly from the description of the preferred embodiment of the invention as set forth in the specification. The Federal Circuit has cautioned that a claim term should not be limited to its preferred embodiments. See C.R. Bard, 388 F.3d at 865. Moreover, the description of the preferred embodiment on which the Defendants rely itself states that the ratio of length to width or width to depth is merely "preferable." See '464 Patent, Col. 4, line 67 to Col. 5, line 4 ("the elongated dimension Y' of the opening in the lengthwise direction preferably becomes greater than the width W of an unstretched strap, and the contracted dimension X' of the opening 20 in the widthwise direction of the strap 10 preferably remains greater than the depth of the strap D") (emphasis added). Thus, this particular construction of the claim language must be rejected.

Based on the record presented, the Court concludes that the phrase "each said opening being dimensioned for the passage therethrough of a main body portion of a second identical tie down strap for the redirection of the second identical tie down strap when the elastic main body portion defining said opening is elongated" should be preliminarily construed to mean that upon elongation of the first tie down strap, the plurality of openings in the strap become dimensioned for the passage therethrough of a main body portion of a second identical tie down strap, thus permitting redirection of the second identical tie down strap.

BACKGROUND

Both the '717 patent and the '411 patent, as well as the accused products, are directed toward connecting sections of pipe together. Their primary application is in the oil well industry in which miles of pipe may need to be dropped into a hole. Such a pipe consists of a large number of sections, called joints, which are typically forty feet long and twenty inches wide and are connected together. The joints are commonly connected together in one of two ways. The first uses an integral connection in which the joints themselves have mating threads allowing the joints to be connected directly to each other. The second uses a coupling connection in which the joints still have threads, but are connected to a coupling which is disposed between two successive joints. The coupling has a much smaller length than the joint. The '717 and '411 patents disclose joints and couplings with increased sealing and strength characteristics to accommodate the large and varied forces to which oil well pipes are exposed.

Watts is the inventor of both the '717 patent and the '411 patent, which is a continuation-in-part of the '717 patent. This appeal concerns only claims 2 and 18 of the '717 patent and claim 1 of the '411 patent. Each of the three claims includes substantially the same two functional statements and these statements are the only limitations that the parties contest. The parties agree that claim 18 of the '717 patent is representative. Claim 18 reads as follows:

18. A high efficiency connection for joints of oilwell tubing or the like, comprising: at least two pipes joined together and forming joints of pipe, each joints of pipe having a first end with no increase in wall thickness relative to the average pipe wall thickness and formed with tapered internal threads; the joints each having a second end formed with tapered external threads dimensioned such that one such joint may be sealingly connected directly with another such joint; the threads being of sufficient length and taper such that the pipe wall strength of the first end in the area of the smallest diameter of thread engagement is at least three-fourths of the average pipe wall strength of the joints of pipe.
DISCUSSION

A. Standard of Review

We review a district court's grant of summary judgment de novo, reapplying the standard applicable at the district court. See Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1301, 50 U.S.P.Q.2D (BNA) 1429, 1434 (Fed. Cir. 1999) (citing Conroy v. Reebok Int'l, Ltd., 14 F.3d 1570, 1575, 29 U.S.P.Q.2D (BNA) 1373, 1377 (Fed. Cir. 1994)). Summary judgment is only appropriate where "there is no genuine issue as to any material fact and ... the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c). We draw all reasonable inferences in favor of the non-movant. See Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 255, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986). The determination of infringement is a two-step process. First, this court construes the claims and, second, we compare the properly construed claims to the accused device. See Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454, 46 U.S.P.Q.2D (BNA) 1169, 1172 (Fed. Cir. 1998) (en banc).

B. Applicability of 35 U.S.C. § 112, paragraph 6

Section 112, paragraph 6 provides that "an element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof." 35 U.S.C. § 112, para. 6 (1994). In Personalized Media Communications, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 48 U.S.P.Q.2D (BNA) 1880 (Fed. Cir. 1998), building upon a line of cases interpreting 35 U.S.C. § 112, paragraph 6, we stated that the failure to use the word "means" in a claim element created a rebuttable presumption that 35 U.S.C. § 112, paragraph 6 did not apply. See Personalized Media, 161 F.3d at 703-04, 48 U.S.P.Q.2D (BNA) at 1886-87. We also reiterated that in determining whether a presumption is rebutted, "the focus remains on whether the claim ... recites sufficiently definite structure." Id. at 704, 48 U.S.P.Q.2D (BNA) at 1887. We noted, however, that the claim limitation need not "connotate a precise physical structure." Id. at 705, 48 U.S.P.Q.2D (BNA) at 1888. The following year, we further clarified that the presumption that § 112, paragraph 6 did not apply could be rebutted by showing that the claim element recited a function without reciting sufficient structure for performing that function. See Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1302, 50 U.S.P.Q.2D (BNA) 1429, 1434 (Fed. Cir. 1999) (explaining the converse rules for rebutting a presumption that § 112, paragraph 6 does apply). As an aid in determining whether sufficient structure is in fact recited by a term used in a claim limitation, this court has inquired into whether the "term, as the name for structure, has a reasonably well understood meaning in the art." Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580 at 1583, 39 U.S.P.Q.2D (BNA) 1783 at 1786 (1996). If § 112, paragraph 6 applies, then we follow the guidelines to claim construction specified in the statute: "such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112, para. 6. If § 112, paragraph 6 does not apply, then our precedent for the construction of limitations that are not means-plus-function limitations is applied in the customary way.

Footnotes

In this case, in determining that the sealingly connected limitation 3 should be construed as a means-plus-function limitation, the district court stated that the limitation was "drafted as a function to be performed . . . rather than as a definite structure." Watts, slip op. at 4. Watts argues that the district court was wrong, contending first that because the sealingly connected limitation does not use the word "means," it is presumptively not a means-plus-function limitation. Next, Watts argues that the sealingly connected limitation is not purely functional because the claim describes a precise structure by reciting tapered internal and external threads. XL responds that the sealingly connected limitation is a means-plus-function limitation because it does not include structure capable of entirely performing the recited function. XL maintains that the tapered internal and external threads do not seal, but merely provide the location of the seal, and that the seal is created by misaligned taper angles. Finally, XL argues that public policy mandates that functional claims be restricted to the disclosed embodiments.

3 As will be shown, the first functional statement disposes of the case. Therefore we need not, and do not, address the second functional statement. See Carroll Touch, Inc. v. Electro Mech. Sys., Inc., 15 F.3d 1573, 1577 n.3, 27 U.S.P.Q.2D (BNA) 1836, 1839 n.3 (Fed. Cir. 1993).

**We hold that the sealingly connected limitation is not a means-plus-function limitation.** First, the presumption applies that because the limitation does not recite the word "means" it is not a means-plus-function limitation. Second, the presumption is not rebutted because the claim limitation recites or refers to terms that are reasonably well understood in the art as names for structure and which perform the recited function of sealing. Specifically, the claim limitation recites "a second end formed with tapered external threads" and refers to "a first end" with "tapered internal threads." These terms clearly have reasonably well understood meanings in the art as names for structure. Further, the specification makes it clear that the sealing function is performed with these interlocking threads. See '717 patent, col. 2, l. 48 - col. 3, l. 14; see also Unidynamics, 157 F.3d at 1319, 48 U.S.P.Q.2D (BNA) at 1104 (looking to the specification to determine the scope of "spring means").

XL's arguments are unavailing. The threads represent the sole structural configuration effecting the seal and clearly are not mere indicators of the location of the seal as XL has argued. Although the use of misaligned taper angles, as well as a variety of other mechanisms, may increase the strength of the seal, the claimed sealing function is accomplished by the claimed threads. See '717 patent, col. 2, l. 48 - col. 3, l. 66. Finally, because the limitations are not purely functional, XL's public policy argument is inapplicable.

The other two claims at issue include the same structural language, and the '411 specification includes the same discussion of how the seal is created and how its strength can be increased. Therefore, our holding that the sealingly connected limitation of claim 18 of the '717 patent is not a means-plus-function limitation also applies to claim 2 of the '717 patent and claim 4 of the '411 patent.

C. Construction of the Sealingly Connected Limitation

Having held that § 112, paragraph 6 is not applicable, we proceed to a standard claim construction. In construing a claim, a court principally consults the evidence intrinsic to the patent, including the claims, the written description, and the relevant prosecution history. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996). While limitations contained in the specification are not ordinarily read into the claims, see Intervet Am., Inc. v. Kee-Vet Lab., Inc., 887 F.2d 1050, 1053, 12 U.S.P.Q.2D (BNA) 1474, 1476 (Fed. Cir. 1989), it is important to examine the specification. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2D (BNA) 1321, 1329 (Fed. Cir. 1995) ("Claims must be read in view of the specification, of which they are a part."); aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). One purpose for examining the specification is to determine if the patentee has limited the scope of the claims. See O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1581, 42 U.S.P.Q.2D (BNA) 1777, 1781 (Fed. Cir. 1997) (limiting

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claims because the specification described only non-smooth or conical passages and distinguished over the prior art based on these characteristics); Wang Lab., Inc. v. America Online, Inc., 197 F.3d 1377, 1382-83, 53 U.S.P.Q.2D (BNA) 1161, 1164-65 (Fed. Cir. 1999) (limiting claims to the only embodiment described, a character-based protocol, and specifically not encompassing a bit-mapped protocol); Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551, 37 U.S.P.Q.2D (BNA) 1609, 1612 (Fed. Cir. 1996) ("When the preferred embodiment is described in the specification as the invention itself, the claims are not necessarily entitled to a scope broader than that embodiment.").

The district court, in its alternative ruling, held that the sealingly connected limitation was expressly defined in the specification and prosecution history "as including only misaligned taper angles to effect a seal." Watts, slip op. at 4. According to the district court, the specification stated that the seal was created with misaligned taper angles and the prosecution history distinguished over the prior art with this sealing structure. See id.

Watts maintains, however, that the district court erred by reading in a limitation from the specification. Watts argues that the district court did not identify any term in need of a definition and it was therefore improper for the district court to import into the claims any definition from the specification. At oral argument before this court, Watts also argued that the specification was not, in fact, limiting, and that one of ordinary skill would be familiar with many ways of achieving a sealing connection. With regard to the prosecution history, Watts argues that it does not limit claim 18 because claim 18 was not pending at the time any amendments were made.

XL responds that both the specification and the prosecution history specifically limit the sealingly connected limitation to the disclosed embodiment, which utilizes misaligned taper angles. XL further responds that because the prosecution history distinguishes over the prior art by virtue of the misaligned taper angles, it is clearly applicable to claim 18, even though it was later added, and creates an estoppel.

We hold that the sealingly connected limitation is limited to structures utilizing misaligned taper angles. As explained below, we base our decision on the words of the limitation, the specific disclosure of the '717 patent, and the distinguishing remarks contained in both the specification and in the prosecution history of that patent.

The sealingly connected limitation includes the recitation that the "external threads [are] dimensioned such that one such joint may be sealingly connected directly with another such joint." '717 patent, col. 8, ll. 12-14. We hold that the claim language "dimensioned such that" is not clear on its face. Accordingly, we resort to the specification for clarification. We reject Watts' contention that we cannot consider the specification in this case. First, as just stated, the terms of the sealingly connected limitation are not clear on their face. Second, even if they were clear on their face, we must consult the specification to determine if the patentee redefined any of those terms. See Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2D (BNA) at 1576.

The specification only describes one method in which "tapered external threads [are] dimensioned" to achieve the sealing connection, as required in claim 18 of the '717 patent. That method is to misalign the taper angles of the internal and external threads. See '717 patent, col. 3, ll. 3-14. Moreover, the specification actually limits the invention to structures that utilize misaligned taper angles, stating that "the present invention utilizes [the varying taper angle] feature." '717 patent, col. 3, ll. 12-14.

We are not persuaded by Watts' two arguments, advanced at the oral hearing, that the specification was not limiting. First, Watts argued that one of ordinary skill would be aware of myriad ways to effect a sealing connection, such as by using o-rings. While this may be true, it does not overcome the fact that the specification specifies that the invention uses misaligned taper angles. See O.I., 115 F.3d at 1581, 42 U.S.P.Q.2D (BNA) at 1781; Wang, 197 F.3d at 1382-83, 53 U.S.P.Q.2D (BNA) at 1164-65; Modine, 75 F.3d at 1551, 37 U.S.P.Q.2D (BNA) at 1612.

Second, at the oral hearing Watts also argued that the description of the preferred embodiment uses permissive language in describing the use of misaligned taper angles. We assume that Watts is referring to the specification language stating that "so as to ensure a seal diameter for the connection of least diameter ... the taper of the external thread may be made slightly less than the taper of the internal thread." '717 patent, col. 4, ll. 64-67 (emphasis added). Examining the context of this statement and the entirety of the disclosure, we do not agree that this statement discloses an embodiment without misaligned taper angles. See Amhil Enters. Ltd. v. Wawa, Inc., 81 F.3d 1554, 1559, 38 U.S.P.Q.2D (BNA) 1471, 1474 (Fed. Cir. 1996) (stating that the court must "review the entire specification"). The specification does not explicitly discuss an embodiment
without misaligned taper angles and, as discussed earlier, actually limits the invention to embodiments with misaligned taper angles. See '717 patent, col. 3, ll. 3-14.

The invention is similarly limited in the prosecution history, in which Watts distinguished the primary reference based on the invention's misaligned taper angles. Watts stated that in the primary reference "no thread interference' is claimed which teaches away from the present invention." It is clear that the phrase "no thread interference" refers to the interference caused by the misaligned taper angles. Thus, Watts cannot now maintain that his invention does not require misaligned taper angles. See Biodex Corp. v. Loredan Biomedical, Inc., 946 F.2d 850, 862-63, 20 U.S.P.Q.2D (BNA) 1252, 1262 (Fed. Cir. 1991) (affirming the use of prosecution history to construe a claim, while also noting the clear distinction between such a use and the doctrine of prosecution history estoppel which estops later expansion of a claim's protection under the doctrine of equivalents).

We find Watts' argument that the prosecution history does not apply to the sealingly connected limitation of claim 18 to be baseless. It is irrelevant in this case whether Watts' prosecution history remarks were directed to claim 18 specifically because there is no clear indication that they were not. See Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579, 34 U.S.P.Q.2D (BNA) 1673, 1679 (Fed. Cir. 1995) ("Arguments made during prosecution regarding the meaning of a claim term are relevant to the interpretation of that term in every claim of the patent absent a clear indication to the contrary."). While Watts' remarks occur in a discussion of the rejection of claim 1, they are general in nature and apply to any claim that contains the sealingly connected limitation. This characterization is reinforced by the fact that Watts had already canceled claim 1. Moreover, the context of his remarks suggests that he was distinguishing the primary reference from the newly presented claims, including claim 16 (which later became claim 2). Further, Watts stated in a subsequent response to the U.S. Patent and Trademark Office that newly added claim 32 (which later became claim 18) was "another embodiment of allowed claim 16."

Our analysis applies to all three claims in suit. The '411 specification includes the same statement limiting the invention to structures utilizing misaligned taper angles. See '411 patent, col. 5, ll. 23-32. The context of the prosecution history reveals that the remark which distinguishes the primary reference applies equally to all of the claims of the '717 patent. See Southwall Techs., 54 F.3d at 1579, 34 U.S.P.Q.2D (BNA) at 1679. Further, the prosecution history of the '717 patent also applies to claim 1 of the '411 patent because: (1) the '411 patent is a continuation-in-part of the '717 patent; (2) claim 1 of the '411 patent also has a sealingly connected limitation; and (3) the prosecution history of the '411 patent contains nothing to the contrary. See Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 980, 52 U.S.P.Q.2D (BNA) 1109, 1114 (Fed. Cir. 1999) ("When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation."); Southwall Techs., 54 F.3d at 1579, 34 U.S.P.Q.2D (BNA) at 1679.

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As to the term "dipping," there is a dispute among the parties. Shen Wei argues that this term should carry its ordinary and customary meaning: "to plunge briefly into a liquid, usually in order to wet, coat, or saturate." See American Heritage Dictionary, at 399 (2nd Coll. ed. 1982). K-C submits that the term "dipping" should take its definition from the text of the '154 patent. K-C also argues that applying Shen Wei's proffered construction of the term "dipping" to the '154 patent would impermissibly add to the scope of the term "dipping" a means of applying aloe vera specifically surrendered by the patentee during the prosecution of the '154 patent to avoid prior art.

Claim construction is a matter of law. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995). Claim interpretation begins with an examination of the intrinsic evidence, the claims, the specification and, if in evidence, the prosecution history of the patent. CCS Fitness, 288 F.3d at 1366 (citations omitted). Courts may also use extrinsic evidence, expert testimony and treatises, to resolve the scope and meaning of a claim term. Id.

Generally speaking, there is a heavy presumption that a claim term carries its ordinary and customary meaning, see CCS Fitness, 288 F.3d at 1366 (citations omitted), and dictionary definitions may establish a claim term's ordinary meaning. Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1344 (Fed. Cir.2001) (using Random House Unabridged Dictionary to define the ordinary meaning of "portion" as encompassing both a one-piece and a two-piece structure); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 n. 6 (Fed. Cir.1996) ("Although technical treatises and dictionaries fall within the
category of extrinsic evidence, as they do not form a part of an integrated patent document, they are worthy of special note. Judges are free to consult such resources at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents.

A court may, however, limit the ordinary meaning of a claim term when: (1) the patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim term in either the specification or prosecution history, see e.g., Johnson Worldwide, 175 F.3d at 990; (2) the intrinsic evidence shows that the patentee distinguished the claim term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention, see e.g., Spectrum Intern., Inc. v. Sterilite Corp., 164 F.3d 1372, 1378 (Fed. Cir. 1998) (narrowing a claim term's ordinary meaning based on statements in intrinsic evidence that distinguished claimed invention from prior art); Scimedi Life Sys., Inc. v. Adv. Cardiovascular Sys., Inc., 242 F.3d 1337, 1343-44 (Fed. Cir. 2001) (limiting claim term based in part on statements in the specification indicating that "all embodiments" of the claimed invention used a particular structure); (3) the term chosen by the patentee so deprives the claim of clarity as to require resort to the other intrinsic evidence for a definite meaning, see e.g., Johnson Worldwide, 175 F.3d at 990; or (4) the patentee phrased the claim in step- or means-plus-function format. 35 U.S.C. § 112 P 6; Watts v. XL Sys., Inc., 232 F.3d 877, 880-81 (Fed. Cir. 2000) (construing § 57 Or. 541, 112 P 6).

In this case, upon analyzing the ordinary meaning of the term "dipping" to the '154 patent, this court finds that the term "dipping" must be limited from its ordinary meaning because: (1) the ordinary meaning of the non-technical term "dipping" is sufficiently broad and amorphous such that the scope of the term "dipping" can only be construed with recourse to the written description; and (2) the patentee distinguished the term "dipping" from prior art during the prosecution of the '154 patent.

In looking at the specification of the '154 patent, the first suggestion as to the appropriate scope of the term "dipping" can be found within the summary of the '154 patent which teaches: "After drying, the gloves are turned inside out and dipped into a prepared Aloe Vera solution to saturate the outer surface." ( '154 patent, Shen Wei's In Camera Response In Opposition to Kimberly-Clark's Motion For Summary Judgment of Non-Infringement, attached Exhibit D, KC 001984: Col. 2, 30-33). From this statement, notwithstanding the ordinary meaning of the term "dipping," the invention claimed by the '154 patent includes a process by which the gloves must be "dipped" until saturated.

Next within one preferred embodiment of the '154 patent, the '154 patent teaches: "To associate Aloe Vera with the surface of the glove [turned inside out], Aloe Vera solution can be sprayed onto the surface of the glove. Alternatively, the glove can be immersed into the Aloe Vera solution." (Id. at KC 001985: Col. 3, 57-60). From this statement, this court is left to infer that "dipping" as claimed in the '154 patent is either association by spraying until saturated or association by immersion until saturated. The '154 patent also states: "The latter method [association by immersion] is preferred because it creates a complete and even distribution of the Aloe Vera solution," (Id. at KC 001985: Col. 3, 60-62), and continues: "In one preferred embodiment, the dipping process is accomplished by grouping a number of gloves in a batch … The gloves are immersed in the solution [of Aloe Vera] for at least 10 minutes to allow adequate absorbency." (Id. at KC 001985: Col. 3, 63-67). As such, since association by immersion will create a complete and even distribution of the Aloe Vera solution, which is specifically claimed by the '154 patent, see (id. at KC 001985: Claim 5, Col. 4, 48-49), the only logical conclusion is that the term "dipping" is equivalent to association by immersion until saturated.

--- Footnotes ---

2 Based on the language of the '154 patent, the court must also infer that the term "saturated" must mean "adequate absorbency."

--- End Footnotes ---

In looking at the prosecution history of the '154 patent, in a December 6, 2000, Patent Office action, the Patent Examiner rejected the '154 patent in part based on prior art stating: "Buchanan reads on a disposable medical glove comprising rubber latex and a moisturizing composition containing aloe vera (via powder or spray coating) to the interior of the glove." (Shen Wei's In Camera Response In Opposition to Kimberly-Clark's Motion For Summary Judgment of Non-Infringement, attached Exhibit D, Prosecution History at KC 002048)(emphasis added). In order to avoid prior art, the Examiner stated: "Claim 1 [of the '154 patent] would be allowable if the following limitations were added to the claim to clearly recite how the aloe vera is applied to the glove: "wherein the aloe vera is attached to the flexible material by dipping the glove into a
solution of comprising aloe vera …" (Id. at KC 002049-KC002050). Based on upon this limitation added to Claim 1 by the patentee, it is clear that the term "dipping" is not equivalent to association by spraying until saturated, leaving association by immersion as the only alternative.

Accordingly, upon review of the intrinsic evidence of the '154 patent, the patentee has defined the term "dipping" by implication through his consistent use of the term "dipping" throughout the '154 patent. See e.g., Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1273 (Fed. Cir. 2001)("the patentees defined the term "mode" by implication, through the term's consistent use throughout the 786 patent specification)(citing Vitronics, 90 F.3d at 1582). As such, this court construes the claim term "dipping," as used in the '154 patent, to mean association by immersion until saturated. This court also finds that the term "saturated" is defined within the '154 patent, also by implication, to mean adequately absorbed, and that the term "immersion," as used within the '154 patent, carries its ordinary meaning: "to cover completely in a liquid; submerge". See American Heritage Dictionary, at 643 (2nd Coll. ed. 1982).

Shen Wei's proffered definition of the term "dipping" cannot be correct because Shen Wei's construction of the term "dipping" would include association by spraying. 3 As discussed previously within this section, the term "dipping" cannot include association by spraying because: (1) the Patent Office specifically rejected the patentability of the '154 patent claiming association by spraying causing the patentee to surrender association by spraying during the prosecution of the '154 patent, (Prosecution History at KC 002048-KC002050); and (2) the '154 patent specifically distinguishes the term "dipping" from association by spraying and equates "dipping" to association by immersion. ('154 Patent, KC 001985: Col. 3, 57-67).

Moreover, Shen Wei's proffered construction of the term "dipping" reads out express limitations as to the scope of the term "dipping" found in the prosecution history of the '154 patent, and therefore must be rejected. See, e.g., Texas Instruments v. U.S. Intern. Trade Com'n, 988 F.2d 1165, 1171 (Fed. Cir. 1993)("Relying on the claim language, the specification, prosecution history, and the testimony of the inventors and experts all support the conclusion that the fluid insulating material is injected through a gate on the other, or opposite side, of the electrical conductors. Indeed, to construe the claims in the manner suggested by TI [Texas Instruments Inc.] would read an express limitation out of the claims."). Where Shen Wei's current methodology is a process that immerses a glove into a solution comprising aloe vera until the aloe vera is adequately absorbed onto the surface of the glove and is evenly distributed onto the insides of the glove to a thickness of about 0.01 mm. See ('154 Patent, KC 001985: Claims 4-6, Col. 4, 45-53), Shen Wei's proffered construction of the term "dipping" is so broad, the proffered construction disregards whether the aloe vera is evenly distributed throughout the interior of the glove and also disregards whether the aloe vera is at a thickness of 0.01 mm.

In summary, while the ordinary meaning of the term "dipping" supports a broader meaning than the construction articulated today by this court, Shen Wei proffered construction of the term "dipping" would alleviate the need to include the term "dipping" within the '154 patent and therefore is incorrect.

2. Step 3

Step 3 of the '458 patent requires a "direct shift" from neutral into an appropriate rolling start gear ratio. Defendants maintain that this step is taught by the Dobson reference, which in at least the embodiment plaintiff focuses on, teaches shifting from neutral to a preset gear. Plaintiff argues that Dobson teaches delaying the shift until the engine speed slows down to the appropriate RPM for the preselected gear, and that such a delay is by definition not a "direct shift".

--- Footnotes ---

3 Shen Wei explains that spraying is typically done in an on-line process where gloves pass through multiple spray nozzles that project aloe vera onto the surfaces of the gloves. Based on this explanation, it is clear that a typical spraying operation would cause the gloves to be plunged briefly into a liquid in order to wet, coat, or saturate their inner surfaces with aloe vera.

--- End Footnotes ---
The term "direct" was not identified as a disputed term during claim construction. Because claim construction is a legal issue, not a factual one, the Court must determine what the term "direct" means in the '458 patent. The dictionary defines the term "direct" as "straight; undeviating < a direct line >." Black's Law Dictionary, 7th ed. (1999). This definition does not include a time element, but rather describes a movement from point A to point B without any intervening stops along the way.

The '458 patent uses the term "directly" a second time, in the description of the preferred embodiment, as follows:

If, in sixth gear as shown, the operator moves the lever forward three times in quick succession, then allowing its return to rest, he will skip two gears in effect, and achieve a skip shift directly into ninth speed (i.e., seventh and eighth speed will not be engaged) almost instantaneously.

(458, col. 6, ll. 18-23) (emphasis added). This use of the term "directly" suggests the absence of an intervening point, as it points out in the parenthetical that the intervening gears are not engaged. The abbreviation "i.e." means "that is", Black's Law Dictionary, 7th ed. (1999), so in the parenthetical the patent explains what it means when it uses the term "directly". The patent language does go on to state that the shift is almost instantaneous, but that is an additional feature of the shift, and not a definition or an elaboration of the word "directly".

"Direct" is not a technical term, and its meaning in the context of the patent claim is "without engaging any intervening gears" as follows: when the transmission is in neutral and the vehicle speed exceeds a minimum reference value, a single movement of the shift lever in the upshift direction will be interpreted as a shift from neutral to an appropriate rolling start gear determined as a function of current vehicle speed without engaging any intervening gears.

Crown's proposed construction is "[m]eans clause Subject to [35 U.S.C.] § 112, P 6: A second score groove that is near the end of the primary score and the hinge segment and that performs the function of directing the fracture of metal of the hinge segment in a direction away from the end of the primary score. The structure for performing this function described in the specification is an anti-fracture score in which the tail portion 25 has a score residual differential less than that of the remaining portions of the anti-fracture score." 141 Rexam argues this is not a means-plus-function limitation under 35 U.S.C. § 112 P 6 and its proposed construction is "[t]he second score is near the second end of the primary score and near the hinge segment to provide a path for a fracture of the hinge segment along the second score." 142

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The parties agree that this claim term contains a functional limitation, they dispute whether it should be construed as a means-plus-function limitation under 35 U.S.C. § 112, P 6. "A claim limitation that actually uses the word 'means' will invoke a rebuttable presumption that § 112 P 6 applies. By contrast, a claim term that does not use 'means' will trigger the rebuttable presumption that § 112 P 6 does not apply." 144 Here, the claim limitation does not use the word "means," therefore, there is a presumption that § 112, P 6 does not apply. That presumption can be rebutted if it is demonstrated "that the claim term fails to 'recite sufficiently definite structure' or else recites a 'function without reciting sufficient structure for performing that function.'" 145 The court determines that Crown has failed to rebut that presumption.

Crown acknowledges that a claim does not have "to recite a precise physical structure to avoid the applicability of 35 U.S.C. § 112, P 6" but argues that "the mere recitation of a 'second score groove' does not provide sufficiently definite structure to perform the fracture-directing function." 146

The court agrees with Rexam that the claim recites both a structure ("a second score groove") and the location of that structure ("adjacent to the second end of said primary score and adjacent to said hinge segment"). If there is a second score line in the central panel, it necessarily has some depth and is, therefore, not as thick as the non-scored metal of the hinge segment. 147 The structural location of the second groove, between the hinge segment that may fracture and the second end of the primary score groove, functions to divert a fracture from the primary groove. The court agrees with Rexam that "a person of ordinary skill in the art would understand the recited structure to be sufficient to accomplish the directing away function," i.e., that "the fracturing metal will follow the path of least resistance" along the second score. 148

The court, therefore, determines that the disputed claim term is not subject to 35 U.S.C. § 112, P 6 and adopts Rexam's proposed construction: "the second score is near the second end of the primary score and near the hinge segment to provide a path for a fracture of the hinge segment along the second score."
2. Construction of "directional flow"

The parties next seek construction of the term "directional flow", which is found in Claim 11 of the '890 patent as follows:

11. An electrode strip... comprising: an elongated electrode support defining a sample transfer path for directional flow of the sample from an application point along said electrode support ...

Plaintiffs urge the Court to interpret "directional flow" as "substantially linear movement of a fluid" and whereas Defendant proposes "flow of a sample in a uniform manner in the sample transfer path mesh layer." Defendant contends that the term "directional flow" necessarily implies the presence of a mesh layer since that is the only method disclosed in the specification for creating a directional flow. The Court is not persuaded by this argument. Defendant points to nothing in the intrinsic evidence indicating that the inventor intended that the structure guiding the sample through the electrode support to be limited to "mesh layers." The plain language of Claim 11 indicates no such limitation. For reasons similar to those articulated above, Defendant's interpretation is undermined by the fact that subsequent dependent claims explicitly add a mesh layer limitation. See, '890 Patent, Claims 13-21. This implies that Claim 11, from which the dependent claims are derived, contains no such limitation. Id. Defendant's proposed construction would effectively require the Court to read in an additional limitation from the specification, which the Court declines to do. See Electro Medical Systems, S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994)("Claims are not to be interpreted by adding limitations appearing only in the specification.")

The specification does shed some light on the intended meaning of the term "directional flow." The specification states, "the preferred embodiments are those where the reference electrode... lies downstream (in the direction of sample flow) of the working electrode... and a remote application point at an aperture... for the sample is provided upstream of the reference electrode ..." ('890 Patent, 4:44-48). The use of the terms "downstream" and "upstream" indicate that transfer path is intended to orient and guide the sample in a particular direction, as in the described embodiment, where the path is structured to have the sample flow from the aperture opening to the reference electrode. There is further support for this interpretation of "directional" flow as a guided orientation of the sample. The claim language immediately following the disputed term indicates that the intended orientation of the sample is "from an application point" "along" the electrode support, indicating that the claimed structure is designed to guide the sample along a specific path. Accordingly, the Court construes "directional flow", in light of the specification, as "the orientation and guidance in a particular direction."

1169
d. The "directly" limitation

Claim 1 requires the first reflector be "directly" above the first LED. 12 Defendants submit that the ordinary and customary meaning of "directly" has several definitions. One of these definitions is "in a direct line, way or manner; straight." 13 Terlep agrees that the ordinary and customary meaning of "directly" is "in a direct line or manner; straight." 14 However, Terlep goes on to argue the Court should adopt a definition for directly of "placed in axial alignment." Terlep's proposed definition is not from a dictionary. Also, Terlep does not use "directly" in a way inconsistent with "in a direct line or manner; straight." Therefore, the Court construes "directly" to mean "in a direct line or manner; straight."

12 Doc. 29, Ex. 1 (The '433 patent), column 6, lines 26-27.


The parties are in agreement that the first reflector and the first LED must be close together. Terlep submits another customary and ordinary meaning of "directly" is "without intervening space." 15 Defendants then argue the Court should
adopt a definition of "directly" to include, "in immediate proximity." If more than one definition is consistent with the use of
the words in the intrinsic record, the claim terms may be construed to encompass all such meanings. Texas Digital Systems,
308 F.3d at 1203. The Court believes this definition is consistent with an ordinary and customary meaning of "directly" and
with the intrinsic evidence. Therefore, the Court construes "directly" to also mean "in immediate proximity." Therefore, the
first reflector must be "in a direct line or straight" above and "in immediate proximity" to the first LED.

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C. Interpreting "means located on said beam for attaching said S-cam bearing directly to said beam" and "means for directly
attaching said brake chamber to said beam."

As earlier described, claim 16 of the '237 patent, provides, in part:

In an axle bearing suspension system . . . an S-cam assembly comprising an S-cam bearing, . . . the improvement
comprising: means located on said beam for attaching said S-cam bearing directly to said beam, and means for directly
attaching said brake chamber to said beam.

Claim 17 of the '237 patent describes the same means for attaching the S-cam bearing and the brake chamber as claim 16 of
the '237 patent. The specifications of the '237 patent do not suggest any different structure for Claim 17 from that suggested
for Claim 16.

Regarding construction of "means for directly attaching said brake chamber to said beam," Defendant Neway Anchorlok
says this Court must construe this phrase as requiring "nuts and bolts that cause the brake components to abut the beam
without any intervening parts."

After reviewing the intrinsic evidence of the '237 patent, the Court finds that "means for directly attaching" should be
construed to require a direct attachment of the brake components to the beam (element 59 of the '237 patent) and not to the
axle. In claim 16 of the '237 patent, its inventor says that attachment of the brake components on the beam distinguished the
invention from the prior art which had attached the brake chamber and S-cam bearing to the axle. Accordingly, the "means
for directly attaching" the brake components to the beam does not allow attachment to the axle.

Interpreting "directly attaching," the Court finds this term should be given its regular meaning. Giving such an
interpretation, the Court finds "directly" requires that the brake chamber and the S-cam bearing be attached "without any
intervening space." Webster's Third New International Dictionary, at 641. The Court finds that "attaching" requires the brake
actuating mechanism to "fasten firmly," "to make fast or join" to the beam. See id. at 140.

The Court therefore construes "means located on said beam for attaching said S-cam bearing directly to said beam," and
"means for directly attaching said brake chamber to said beam" discloses a function of fastening firmly without any
intervening space the air brake chamber and S-cam bearing to the beam. The Court finds that the structure used to
accomplish this is an S-cam bearing and brake chamber brackets or appendage to the beam to which the S-cam bearing and
brake chamber are attached through a combination of nuts and bolts, or its equivalent thereto.

Sandt also argues that the district court erred in construing the term "directly behind" in claim 1 so as not to require that the
second plate actually touch the first plate. The Resco cover, Sandt argues, is "spaced" from the opening in the first plate,
thus permitting access to the housing.

The district court noted the amount of space between the first and second plate in terms of depth or distance between the plates is "marginally larger" in the Resco cover than in the Bodyguard. However, nothing in the claims or the specification of the '057 patent requires that the second plate be in a contacting or an abutting relationship with the rear end of the front plate. The specification states only that the second plate is "mounted between the outer plate . . . and the upper housing." '057 patent, col. 5, ll. 18-19 (emphasis added). The Resco plate clearly has a second plate that is mounted behind the first plate, in a position that is directly behind the opening in the first plate. Thus, it contains this limitation of claim 1.

### 1172

3. "Directly"

"Directly" means, "In immediate physical contact."

Plaintiff states that "directly" appears in each claim in the following context, "positioning said at least one electronic element in the absence of a non-electronic carrier directly between said first and second plastic core sheets." (Pl. Br. at 21; Cohen Decl., Exh. L.) Defendant refers to the same language in claims 1 and 16 of the '207 patent. (Def. Br. at 25.) Both parties cite to Webster's for the definition of "directly" as meaning "in immediate physical contact." (Pl. Br. at 21; Def. Br. at 25.) Plaintiff rests on this. Defendant urges additional language, however, defining "directly" to mean that "there is nothing between the 'electronic element' and the first plastic core sheet and nothing between the 'electronic element' and the second plastic core sheet." (Def. Br. at 25.) That just says the same thing in more words that add nothing to the definition. I therefore elect to go with Plaintiff's sparer and more elegant version.

### 1173

The '158 patent presents a more difficult issue. The '158 patent describes a projector that conducts air from outside the projector directly through the power unit in order to cool it more effectively. Seiko Epson asserted infringement of two independent claims. Claim 1 recites a projector comprising:

- a power unit including a ventilating path provided inside the power unit for circulating cooling air;
- an outer case that stores the optical unit and the power unit;
- a first cooling air intake port located on the outer case that provides cooling air from outside of the outer case to the optical unit; and
- a second cooling air intake port located on the outer case that directly conducts cooling air from the outside of the outer case to the ventilating path, said second cooling air intake port comprising:
  - an air inlet provided on the power unit, and a duct connecting said second cooling air intake port and the air inlet.

Similarly, claim 5 recites a projector comprising:

- a power unit including an air inlet and an air outlet;
- an outer case that stores the optical unit and the power unit;
- a first cooling air intake port located on the outer case that provides cooling air from outside of the outer case to the optical unit;
a second cooling air intake port located on the outer case that directly conducts cooling air from the outside of the outer case to the air inlet; and

an exhaust vent provided on the outer case that directly conducts air exhausted from the air outlet to the outside of the outer case.

At the claim construction hearing, Seiko Epson proposed that the phrase "directly conducts cooling air" be construed to mean "transmits cooling air without substantial contamination by internal sources of heat." The district court agreed in essence with Seiko Epson's proposed construction, but modified it to "transmits cooling air without [increasing] its temperature to that of the air inside the outer casing of the projector." The court explained that the change was necessary because Seiko Epson's proposed construction was "not limited to the air's temperature." The court also noted that the modified construction was consistent with how the patent distinguished the prior art, which was described as being less efficient because the air used to cool the power unit "had already been heated by many other elements located in the outer case."

We hold that the district court erred in its construction of "directly conducts cooling air," and we adopt Seiko Epson's narrower construction. Claims 1 and 5 recite that the second air intake port directly conducts not just "cooling air," but "cooling air from the outside of the outer case." The inclusion of that additional phrase indicates that air from outside of the case must be conducted directly to the power unit without substantial contamination by the air inside the case. Moreover, it reveals that the modifying term "cooling" is merely descriptive rather than definitional, since all air from outside of the case is presumed to be cooler than the air inside the case.

That interpretation is further supported by the specification, which clarifies that the term "cooling" is used in the patent solely in reference to "fresh" air from outside of the case. For instance, the abstract of the patent states that the second air intake port "directly conduct[s] fresh air into the ventilating path. Because the interior of the power unit is cooled by fresh air which is cooler than the air inside the outer case, cooling efficiency is enhanced." The Summary of the Invention section of the specification reiterates that the invention "directly conduct[s] fresh air from outside the outer case from the cooling air intake port to the inlet of the ventilating path. Because the cooling air conducting means directly conducts fresh air to the ventilating path, and because fresh air is cooler than the air in the outer case, the interior of the power unit can be cooled with high efficiency."

The patent also notes that the duct recited in claim 1, which connects the second air intake port and the air inlet of the power unit, "only introduces fresh air from the cooling air intake port to the ventilating path . . . [and] prevents the air from the outer case, which is hotter than the fresh air, from entering into the ventilating path." Id., col. 3, ll. 18-21. Those statements demonstrate that the thrust of the invention is not simply to pass any form of cooler air through the power unit, but rather to inject "fresh" air from outside the case directly into the ventilating path.

Because we are satisfied that "cooling air from the outside of the outer case" has a more limited meaning than "cooling air," and that directly conducting such air to the power unit requires a narrower construction than the one provided by the district court, we vacate the district court's grant of summary judgment as to the '158 patent. On motion for summary judgment, the district court held that the asserted claims of the '158 patent were invalid in light of Japanese Patent Application No. 4-271334 ("Nakamura"). The Nakamura reference, however, plainly fails to satisfy our construction of "directly conducts cooling air from the outside of the case." Although Nakamura teaches a second air intake port located in the vicinity of the power unit, it does not provide an uninterrupted path from that port to the power unit. Instead, the figures in the Nakamura reference indicate that the fresh air entering through the second air intake port mixes with ambient air from inside the case before reaching the power unit. Consequently, the fresh air entering through the second air intake port is not directly conducted to the power unit as required by the '158 patent.

D. "a toy object secured to the opposite end of said connecting line for suspension directly downwardly from the free end of said elongate member"
Defendants suggest construing this term to mean "directly beneath the free end of the elongate member." The Court, however, finds that the phrase is readily understood. Thus, the term shall not be construed.

The parties first dispute the construction of the term "disc" as found in claims 1 and 15 of the 183 Patent as found in the "disc-shaped element" and "mounting disc". Specifically, the parties dispute the meaning of "disc".

Claim 1 of the 183 Patent includes, in pertinent part, "said attaching means comprising a disc-shaped element … one of the disc-shaped element surfaces facing in a first direction … the one disc-shaped element surface being generally perpendicular…." Claim 15 of 183 Patent states, in pertinent part, "said second attachment means comprising a mounting disc…." 

The terms, including "disc", are not explicitly defined in the specification. A 183 Patent drawing depicts the "disc-shaped element" as a flat circular plate.

Plaintiff seeks to define disc as "a relatively thin object with opposite facing surface…." Plaintiff arrives at this definition by looking to synonyms of disc, including "sheet", "panel", "pane", or "slab". Plaintiff does not cite any authority where a term was construed based on a synonym of that term. Plaintiff also seeks the Court take judicial notice of a conventional computer disc, which Plaintiff alleges is a thin, plate shape with a square peripheral shape.

Defendant argues that the term "disc" should be given its plain meaning.

"Disc' ["Disk"] is defined as a "thin circular object". Webster's Third International Dictionary 651 (3d ed 1986). A review of the Patent description and drawings do not evince that Plaintiff set forth a definition different in scope than that of its plain meaning. Instead, the Patent drawing supports the plain meaning. Furthermore, contrary to Plaintiff's argument, a conventional computer disc, while encased in a square, is actually circular.

Based on the above, the term "disc" is defined as a "thin circular object".

3. "Discharge Conduit"

The term "discharge conduit" appears in Claim 2. Claim 2 recites:

2. The apparatus of claim 1 in which the discharge conduit has at least two longitudinal discharge openings, each of which discharge openings is located at opposite ends of the discharge conduit and which create a longitudinal force vector in the water jet discharged from said openings.

'133 patent, col. 24, lines 27-31. Intex conceded that it agreed with Aqua's construction of the term "discharge conduit" except insofar as it relied on Aqua's proposed construction of the term "pump discharge outlet." (Tr. at 52.) Because "pump discharge outlet" has been construed as "the point where water exits the pump" there is no dispute between the parties with respect to "discharge conduit." Accordingly, the term will be construed to mean "the conduit through which water is discharged from the cleaner."
Claims 1 and 16 of the '829 Patent describe the precipitate as being located in "discrete region(s)." '829 Patent, col. 11, II. 53, 57, 59, & 61; col. 12, II. 59, 60, & 66-67. Despite offering different constructions of the term "discrete region(s)," both Eppendorf and Nanosphere argued that the term describes areas that are unconnected and contained (Pls.' Opening 13, Docket No. 60; Def.'s Opening 18, Docket No. 63), and conceded that their proposed constructions are "similar" (Pls.' Resp. 5, Docket No. 74; see also Def.'s Resp. 24, Docket No. 73 (noting that the parties are "for the most part," "in agreement").

The Court has concluded that the simplest and most appropriate construction of "discrete region(s)" is "finite areas that do not overlap." This definition is supported by the specification, which describes the discrete areas as being unconnected: "These locations or spots have preferably a diameter comprised between 10 and 500 μm and are separated by distance of similar order of magnitude . . . ." '829 Patent, col. 3, II. 36-39 (emphasis added). The words "finite" and "do not overlap," which appear in Eppendorf's proposed construction, are marginally more effective at conveying the unconnected nature of the regions in question, than the words "separate and distinct." which Nanosphere has proposed. Moreover, the remaining portion of Eppendorf's proposed construction relating to the content of the discrete areas, namely "capture molecules," is unnecessary and redundant, because both of the claims in which the term "discrete region(s)" appears already describe such contents: Claim 1 reads "each of said discrete regions being fixed with one species of capture molecule," id. col. 11, II. 53-54, and Claim 16 reads, "each of said discrete regions being fixed with one species of capture molecule which recognizes a target compound," id. col. 12, II. 60-61.

D. Discrete Sites

Plaintiff's Proposed Construction: sites that are sufficiently distinct to permit individual detection

Defendant's Proposed Construction: sites that are non-contiguous with other sites

The parties dispute whether the word "discrete" means non-contiguous, that is, whether each site must not touch another site. In its briefs, defendant relied on several lay dictionary definitions, but, at the claim construction hearing, defendant conceded that some of those definitions support a view that "discrete" can be defined to mean "distinct," as plaintiff suggests. In addition, plaintiff gave a number of examples of things that are touching, such as the squares on a chess board, but are still "discrete" because they are individually identifiable.

The question is whether the patent has chosen a more specific meaning for the word "discrete." Unlike the other two terms, the specification does not include an explicit definition of this term. The figures in the patent seem to support defendant's proposed construction because all of the "discrete sites" depicted in the figures are spaced apart, but that is not necessarily dispositive because the figures represent embodiments rather than the invention as a whole. E.g., Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1365 (Fed Cir. 2004).

The most substantial discussion of the term appears in column 8 of the patent:

'The sites may be a pattern, i.e. a regular design or configuration, or randomly distributed. A preferred embodiment utilizes a regular pattern of sites such that the sites may be addressed in the X-Y coordinate plane. "Pattern" in this sense includes a repeating unit cell, preferably one that allows a high density of beads on the substrate. However, it should be noted that these sites may not be discrete sites. That is, it is possible to use a uniform surface of adhesive or chemical functionalities, for example, that allows the attachment of beads at any position. That is, the surface of the substrate is modified to allow attachment of the microspheres at individual sites, whether or not those sites are contiguous or non-contiguous with other sites. Thus, the surface of the substrate may be modified such that discrete sites are formed that can only have a single associated bead, or alternatively, the surface of the substrate is modified and beads may go down anywhere, but they end up at discrete sites.

'841 pat., col. 8, Ins. 42-53.

Both parties rely heavily on this paragraph, but each focuses on a different portion. Defendant cites the following passage:
"it should be noted that these sites may not be discrete sites. . . . That is, the surface of the substrate is modified to allow attachment of the microspheres at individual sites, whether or not those sites are contiguous or non-contiguous with other sites." I agree with defendant that the passage is as close as the specification comes to defining what the inventor means by "discrete." By stating that the sites "may not be discrete sites" and then following that with the explanatory phrase "[t]hat is, . . . those sites [may be] contiguous or non-contiguous with other sites," the specification seems to be equating the word "discrete" with the word "non-contiguous." If the phrase is not a definition, plaintiff fails to identify another purpose for the phrase. In fact, plaintiff ignores the phrase entirely in its argument.

Plaintiff does not argue that the passage is not controlling because it is a discussion of an embodiment. Further, plaintiff does not point to any portion of the passage or any other part of the specification that uses its proposed construction. Instead, plaintiff's argument is devoted to showing that defendant is reading the passage incorrectly. Plaintiff focuses on the last two clauses in the paragraph: "beads may go down anywhere, but they end up at discrete sites." Plaintiff interprets this to mean that there is no limitation on where one site is in relation to another, but one problem with this interpretation is that it conflates the site with the bead sitting on the site. The specification does not state that the sites may be "anywhere," only that the beads "may go down anywhere." The use of the phrase "end up at discrete sites" suggests that the beads may not "end up" where they started. That is, one interpretation is that the beads discussed in the last sentence must "end up" at non-contiguous sites regardless where they "go down."

Although the last sentence of the passage could favor plaintiff's or defendant's proposed construction, plaintiff's proposal becomes more problematic when viewed with the rest of the paragraph. The passage makes it clear that, in some instances, sites "may not be discrete sites" and, in other instances sites are discrete. Under defendant's view of the passage, this simply means that the sites may be contiguous in some instances and non-contiguous in other instances. Plaintiff's view is more complicated. According to plaintiff, even if sites do not start out as discrete sites, they all "end up" that way once the beads go down. However, plaintiff does not explain how a site may be transformed from "non-discrete" to "discrete" with the introduction of a bead. In particular, plaintiff points to nothing in the specification suggesting that a bead changes the character of the site. To the extent plaintiff means to argue that the site can be detected individually because a bead has been placed on it, this seems to be another example of conflating the bead and the site.

To be sure, the meaning of the passage is not immediately transparent. On one hand, the inventor seems to be saying that sites "may not be discrete sites" if they "allo[w] the attachment of beads at any position"; on the other hand, the inventor says in the same paragraph that beads "end up at discrete sites" even if "beads may go down anywhere." However, defendant's understanding of the passage is more internally consistent than plaintiff's. Further, I agree with defendant that, to the extent ambiguity exists, the notice function of the patent is best served by choosing the narrower construction. Athletic Alternatives, Inc. v. Prince Manufacturing, Inc., 73 F.3d 1573, 1581 (Fed. Cir. 1996).

Plaintiff advances two other arguments, but neither is persuasive. First, plaintiff relies on the specification's use of the word "discrete" in another passage:

In a preferred embodiment, the second substrate is an optical fiber bundle or array, as is generally described in U.S. Ser. Nos. 08/944,850 and 08/519,062, PCT US98/05025, and PCT US98/09163, all of which are expressly incorporated herein by reference. Preferred embodiments utilize preformed unitary fiber optic arrays. By "preformed unitary fiber optic array" herein is meant an array of discrete individual fiber optic strands that are co-axially disposed and joined along their lengths. The fiber strands are generally individually clad. However, one thing that distinguished a preformed unitary array from other fiber optic formats is that the fibers are not individually physically manipulatable; that is, one strand generally cannot be physically separated at any point along its length from another fiber strand.

841 patent, col. 8, Ins. 3-16. Plaintiff argues that "discrete" cannot mean non-contiguous because the passage uses the word "discrete" to describe fiber optic strands that are joined together.

This passage does not provide guidance for two reasons. First, it uses the word "discrete" in a very different context. Although plaintiff argues that the passage shows that defendant's proposed construction is wrong, plaintiff overlooks the fact that its own proposed construction could not apply in the context of this passage. It would make little sense to define a strand in this context as "sufficiently distinct to permit individual detection" because the strand is not being "detected" by anything. Thus, regardless what the inventor meant by "discrete" in the context of fiber optic strands, that understanding of "discrete" may be different from the one in the context of sites on a projection.
Even if I assume that the inventor meant "discrete" to mean the same thing everywhere in the patent, this passage does not necessarily contradict defendant's proposed construction. One could read "an array of discrete individual fiber optic strands that are co-axially disposed and joined along their lengths" to include an element of time. That is, the clause could mean that, initially, the strands are "discrete" and then they are "joined along their lengths." Plaintiff is correct that the passage does not require such a reading, but it does not forecast that reading either.

Finally, plaintiff cites dependent claim 7, in which the array locations contain up to "2,000,000,000 bioactive agents per square centimeter." Although plaintiff argues that such a densely packed location shows that some sites will be contiguous, plaintiff cites no evidence showing that it would be impossible to have that number of bioactive agents in that amount of space unless the sites were contiguous.

Accordingly, I agree with defendant that the term "discrete sites" is defined in the specification to mean "sites that are noncontiguous." Because the parties agree that "noncontiguous" means that the sites do not touch another site, I will adopt that as the construction for this term.

**Court's construction:** sites that do not touch another site

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1. "Discrete." Used in Claims 9 and 42.

Nike proposed "individually distinct." Adidas suggests "each support element must be completely separate and distinct from other support elements." Both parties include "distinct" in their definitions. Since the parties have agreed that "plurality" means more than one, we know we are dealing with two or more different items. Claims 9 and 42 describe "said support elements extending between upper and lower portions of said cavity to provide support for the foot in said heel portion…" This establishes that the support elements are all located together in the same cavity of the sole of the shoe. Every embodiment described, including the preferred embodiment, and every diagram, has the support elements resting on, attached to, formed with, or embedded in the bottom of the cavity.

Adidas' proposal of "completely separate and distinct from other support elements" implies no contact between the elements, as if only one of the support elements can be in the shoe, with the others located perhaps in the pocket or hand of the wearer. This goes too far, as adidas seems to recognize by stressing in its brief that its definition would not exclude columns joined at the top and bottom. But that is not the import of adidas' proposal, as written.

A claim should be interpreted, if practicable, so as to give it effect rather than to have it fail. Nazomi Communications Inc. v. Arm Holdings, PLC, 403 F.3d 1364, 1368 (Fed. Cir. 2005). An interpretation that strains to exclude all described embodiments, including the preferred embodiment is not likely to be correct. See Pfizer, Inc. v. Teva Pharmaceuticals, USA, Inc., 429 F.3d 1364, 1374 (Fed. Cir. 2005).

Adidas also seems concerned with the possibility that a columnar support may touch one of the walls or sides of the cavity. Nothing in the claim language or specification prevents that, and Figures 5, 8, and 12 seem to show such an embodiment. But the supports are still distinct and separated from each other.

The diagrams illustrate, and the specification describes, support elements that are distinct, and separated from each other, although they may be connected at the top and bottom. See '796 patent, Figs. 3, 4, 6, & 7; '796 patent, col. 6, 11. 54-55; '796 patent, col. 6, 1. 66 - col. 7, 1. 3. Construction of "discrete" as "individually distinct" and "separated" would be appropriate in the context of the rest of the claim language, be in line with the specification, and would comport with the common definition of the term. See THE MERRIAM-WEBSTER THIRD NEW INTERNATIONAL DICTIONARY, UNABRIDGED (2002) ("discrete" means "consisting of distinct, unconnected, or unrelated parts."). Therefore, this term is construed as follows:

"Discrete" support elements means: support elements that are "individually distinct, and which are separated from each other, though they may be connected at the top, the bottom, or both."
The parties do not appear to dispute the term "plurality." The term "plurality" simply means "more than one." The specification confirms that this term is to be given its ordinary and plain meaning, stating that "in the embodiment described, the number of switches included in the P Terminal 12 is 45, with five switches being included in each of the nine line displays . . . . naturally, this number could be varied to suit particular applications." '845 patent, col. 5, ll. 42-46; see also '845 patent, Fig. 7.

The parties, however, vigorously dispute the proper construction of the term "discrete switches." NCR proposes that the court construe discrete switches to mean "transparent switches on the panel each having an individually distinct identity such that a specific area identified on the panel causes a distinct action when that area is actuated." Handspring and Palm propose that the court construe discrete switches more narrowly to mean an array of distinct and separate physical devices that can be individually actuated, manually or mechanically, to make, break, or change the connections in an electrical circuit.

The differences between the parties' proposed constructions for this claim term are significant. According to NCR, a "switch" exists when there is "a specific area identified on the panel [that] causes a distinct action when that area is actuated." NCR's construction of a switch is broad enough to cover the continuous resistive touch screen digitizer employed to enable data entry in the accused devices, which when combined with software renders the appearance of separate physical areas on the screen without including actual physical switches. In contrast, Palm and Handspring's construction would not cover such technology, because under their definition the claim limitation requires a plurality of separate and distinct physical structures.

**a. Palm and Handspring's Position**

In support of their proposed construction, defendants first point out that the definition of the term "switch" is well-accepted. According to the McGraw-Hill Dictionary of Scientific and Technical Terms, Fifth Edition, a "switch" is "a manual or mechanically actuated device for making, breaking, or changing the connections in an electric circuit." Defendants further contend that their definition comports both with the claim language, "switches for entering data when actuated," and the description of the structure and operation of such "switches" in the specification, which states:

> when a user wishes to actuate one of the plurality of switches 30, as for example that one associated with key area 28-9 in Fig. 4, the user simply depresses that area 28-9 causing the conductor 52-5 in Fig. 7 to pass through the hole 60-9 and thereby contact the conductor.

'845 patent, col. 6, ll. 58-63.

Defendants also argue that the term "discrete" should be construed as "separate," "individually distinct," and "opposed to continuous," as so defined by the American Heritage Dictionary for the English Language, Fourth Edition and the Oxford English Dictionary. This construction is supported by the specification, which describes using forty-five separate and distinct physical switches, made up of five top conductors and nine bottom conductors, in order to enable users to enter data on the P Terminal device. See '845 patent, col. 5, ll. 42-45; Fig. 7. Furthermore, Palm and Handspring point out that the specification makes clear that the claimed plurality of discrete switches are actual physical structures that are always present and that are distinct from the display areas. See id., col. 5, ll. 50-54 ("While the actual (physical) switches in the plurality of switches 30 are always present on the top panel 24, they are outlined or highlighted only when they become necessary for a particular function or instruction being executed by the P Terminal 12."). Defendants thus conclude that "discrete switches" refers to the actual (physical) switches in the plurality of switches 30, id., col. 5, ll. 50-52, formed by the contact of two conductive elements with each other. See Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1303 (Fed. Cir. 1997) (finding that "examples disclosed in the preferred embodiment may aid in the proper interpretation of a claim term").

**b. NCR's Position**
In response, NCR contends that Palm and Handspring's construction impermissibly limits the claim to cover only the preferred embodiment in the patent. Phonometrics, 133 F.3d 1459 (noting that "claims are not necessarily restricted in scope to what is shown in the preferred embodiment."). It argues that the disclosure of the patent specification supports its broader construction. See Rexnord Corp. v. Laitram Corp., 274 F.3d 1336 (Fed. Cir. 2001). To support this position, it points to the following language from the specification:

Although the fabrication of switches 30 has been described in a specific manner, it is not intended to exclude other alternative methodologies to fabricate "transparent" switches such as homogeneous or discrete capacitive-film switches and electrostatic-sensitive switches, for example.

'845 patent, col. 7, II. 5-10. Based on this portion of the specification, NCR contends that "discrete switches" must be construed to include "other 'transparent' switches [besides the 'micromotion' type switches detailed in the preferred embodiment] such as homogeneous or discrete capacitive-film switches and electrostatic-sensitive switches."

NCR contends that of the two potential dictionary definitions for discrete -- (i) composed of separate and distinct parts; and (ii) having an individually distinct identity -- the meaning used in the claims must be the latter. The court notes that NCR does not dispute the defendants' proposed construction of the terms "plurality" or "switch." Nonetheless, NCR contends that the term "discrete switches" should be construed to mean that the transparent switches on the panel each have an individually distinct identity in that a specific area identified on the panel causes a distinct action when that area is actuated.

c. The Court's Construction

The court begins the task of construing this term by turning the claim language itself. The court also turns to the specification for guidance as to the proper scope of the claims, because it details the claimed invention. Markman, 52 F.3d at 979 ("Claims must be read in view of the specification, of which they are a part"). While NCR is correct that, as a matter of law, it is improper to import limitations from the preferred embodiments into the claim, neither should a court should give a claim term a broader construction than is supported by the specification and claim language. See Netword LLC v. Centraal Corp., 242 F.3d 1347, 1352 (Fed. Cir. 2001) ("Although . . . the claims are not limited to the preferred embodiment of the invention, . . . neither do the claims enlarge what is patented beyond what the inventor has described as the invention."); Wang Labs. Inc. v. America Online, Inc., 197 F.3d 1377 (Fed. Cir. 1999) (holding that because "the only embodiment described in the '669 patent specification is the character-based protocol, . . . the claims were correctly interpreted as limited thereto").

The language of the claim, stating that one element of the claimed data handling device is "a plurality of discrete switches for entering data when actuated," provides some help in choosing between the proposed constructions offered by the parties. First, the court notes that the specific use of the terms "plurality" and "discrete," before the term "switches" in the claim language does give some indication that the claim element is referring to an array of separate switches. The claim language also specifies that these "discrete switches" are "positioned in overlapping relationship with the display elements relative to the panel of the claimed device "to enable said switches to be actuated from said panel," and requires in addition that the display elements can be selectively energized "so as to present on said panel the key information . . . which are associated with those of said discrete switches . . . " This demonstrates that the "switches" are distinct elements from the display elements or areas on the display.

The specification explains the claimed relationship between the discrete switches and the key information presented by the display elements in the following passages:

The top panel 24 has a plurality of switches 30 positioned relative to the top panel 24 as shown in Fig. 7. When a particular switch of the plurality of switches 30 is to be involved in one of the choices which is to be made available to the user, the associated switch area on the top panel 24 will be visually outlined by the display 26 to make this choice apparent to the user . . . .

The labels or designations are provided by the display 26 which lies below the plurality of switches 30. While the actual (physical) switches in the plurality of switches 30 are always present in the top panel 24, they are outlined or highlighted only when they become necessary for a particular function or instruction being executed by the P Terminal 12 . . . .
The switch areas 28-1 through 28-9, alluded to with regard to the discussion of Fig. 4, area aligned, respectively, with holes 60-1 through 60-9 shown in Fig. 7. When a user wishes to actuate one of the plurality of switches 30, as for example that one associated with key area 28-9 causing the conductor 52-5 in Fig. 7 to pass through the hole 60-9 and thereby contact the conductor 56-9.

Col. 4, II. 46-54; col. 5, II. 48-54; col. 6, II. 55-63 (emphasis added).

From the above language, it is clear that the claim term "discrete" means "distinct and separate," as each switch is individually distinct and separate from any other switch in the claimed plurality of switches. Being distinct and separate from one another, each switch is associated with a particular key area or switch area that can be outlined or highlighted by the display screen so that the user can selectively actuate that particular switch from among the plurality of switches. When a particular distinct switch is actuated, it closes the circuit in a specific area, such that the device can determine what corresponding display area on the screen was touched.

It is also clear that the specification defines the claimed invention as requiring "actual (physical) switches" in the claimed plurality of switches, that are distinct from the "areas" on the display with which they are associated. The specification makes clear that the switches are actual physical structures that are "always present," regardless of what is being displayed or what function or instruction is being executed. It describes in detail how the switches are to be arrayed in rows and columns. Further, it draws a distinction between the "actual (physical) switches," which are always there, and "switch areas," which are areas on the panel outlined by the display. The "switch" is the actual physical structure that is actuated to enter data, while the corresponding "areas" merely show the user where to press. This distinction between "switches" and images created by the display is also drawn in the claims themselves, in that each is recited as a separate claim element.

Both the common definition of switch and the specifications of the patents-in-suit belie NCR's assertion that a "switch" exists when there is "a specific area identified on the panel [that] causes a distinct action when that area is actuated." First, the ordinary meaning of a "switch" is a "manual or mechanically actuated device for making, breaking, or changing the connections in an electric circuit." This meaning should apply here, as there is no evidence that the inventors intended to impart a novel meaning to that term.

York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1572 (Fed. Cir. 1996) ("Without an express intent to impart a novel meaning to claim terms, an inventors' claim terms take on their ordinary meaning"). Second, the patent clearly distinguishes between the actual (physical) switches and their associated display areas. Thus, a switch cannot be defined simply as a "specific area identified on the panel." The claims and specification make clear that in the invention of the patents-in-suit, an array of switches lies under the specific areas on the panel; the switches are separate claim elements.

NCR argues, however, that in construing the claims, the court must look at other embodiments mentioned in the specification. The phrase in the specification that NCR relies upon to demonstrate that a broader construction is proper, states that "although the fabrication of switches 30 has been described in a specific manner, it is not intended to exclude other alternative methodologies to fabricate 'transparent' switches such as homogeneous or discrete capacitive film switches and electrostatic-sensitive switches, for example."'845 patent, col. 7, II. 5-10. NCR argues that this portion of the specification requires that definition of "discrete switches" to be broad enough to encompass homogeneous capacitive film switches.

The court does not agree with NCR's reading of this phrase. First, if indeed homogeneous modifies "switches" and not "capacitive film," the reference to "homogenous" switches in the specification cannot act to expand the definition of the claim term "discrete switches" to include "homogeneous switches" or "continuous switches." The claims do not claim "switches" generally, and certainly do not claim "homogeneous switches." Rather, only "discrete switches" are claimed. As a result, the claim term "a plurality of discrete switches" does not cover "homogeneous capacitive-film switches." See Novo Nordisk of No. Am., Inc. v. Genentech, Inc., 77 F.3d 1364, 1369 (Fed. Cir. 1996) ("The claims, . . . not the specification, measure the protected patent right to exclude others."); see also Johnson & Johnston Associates Inc. v. R.E. Service Co., Inc., 285 F.3d 1046, 1052 (Fed. Cir. 2002) (noting that "the claims, not the specification, provide the measure of the patentee's right to exclude" and that "when a patent drafter discloses but declines to claim subject matter . . . this action dedicats that unclaimed subject matter to the public"). If the court construed discrete switches to include homogeneous or continuous switches, it would impart no meaning to the claim term "discrete." Thus, because of the claim language requiring "discrete switches," homogeneous switches," which the patent specification makes clear are distinct from...
"discrete switches," are outside the scope of the claims. Second, and similarly, a fair reading of the phrase relied upon by NCR, indicates only that the specification teaches that "homogeneous or discrete capacitive-film switches and electrostatic-sensitive switches," whatever their actual structures may be, are contemplated by the inventors to be examples of other methods of fabricating "the plurality of discrete switches." Such potential embodiments do not affect of the plain meaning of "plurality of discrete switches." Any of the referenced methodologies must still result in the fabrication of two of more manually or mechanically actuated devices that make, break, or change connections in an electric circuit, which are individually distinct and separate from one another.

--- Footnotes ---

5 Palm's expert, Louis E. Tannas, Jr., points out in his declaration that "a more natural reading of the reference in the patent is that the term 'homogeneous' modifies the term 'capacitive-film' (the dielectric) rather than 'capacitive-film switches.' In other words, it is the capacitive film (the dielectric) that is homogeneous rather than the conductors. Moreover, [the use of the term] 'switches' would indicate that the conductors were partitioned to make multiple switches." Tannas Decl. P14. Tannas also notes that the Hale patents do not disclose the A/D converter and software needed to implement a capacitive touch screen. Id. at P15.

--- End Footnotes ---

Finally, the court notes that, contrary to NCR's assertion, this is not a case of limiting a construction to a preferred embodiment. 6 Rather, it is a case of construing the claims in line with the disclosed invention. The specification of the '845 and '478 patents describes only one embodiment of the claimed "plurality of switches." A construction that construes the invention as broader than what was disclosed and claimed is not supportable.

--- Footnotes ---

6 Neither is it, as NCR argues, a case where the court's construction of the term "discrete" as "individually distinct or separate from each other" would read out the preferred embodiment. NCR asserts that the switches disclosed in its patents are not "discrete" in that sense. The patents confirm that NCR is incorrect. They show forty-five different and distinct switches in the array of switches that are formed by forty-five holes at the intersections of the top and bottom conductors. See, e.g., Fig. 7. These switches are actuated by pressing a particular top conductor through a particular one of the forty-five holes to contact a particular bottom conductor. That each switch itself is not made of separate or distinct parts is of no moment. Each switch is distinct from each other in that each may make, break, or change its connection in an electric circuit. Accordingly, the defendants definition of a "plurality of discrete switches" does, in fact, read directly on the preferred embodiment.

--- End Footnotes ---

Here, NCR argues that the keys and buttons display generated by the software application fall within the claimed "plurality of discrete switches" of the invention. But nothing in the specification or claims teaches that the claimed "plurality of switches" may be generated by software. This contention that the display and software create a "plurality of discrete switches" runs counter to the display and software create a "plurality of discrete switches" runs counter to the claims' and specifications' distinction between switches and images. It also runs counter to the ordinary and undisputed meaning of a switch as a device, i.e., a physical structure. If anything, the specification teaches only that the switches are "fabricated" in some manner, implying that they are constructed out of various hardware components, rather than rendered functional by a software component. Moreover, the specification teaches that "the actual (physical) switches in the plurality of switches 30 are always present on the top panel 24." By contrast, software generated "switches" would disappear from the panel once the rendering application quits running.

For the above stated reasons, the court construes the claim term "plurality of discrete switches" as two or more distinct and separate manual or mechanically actuated devices for making, breaking, or changing the connections in an electric circuit. This definition, proposed by the defendants, best comports with the ordinary meaning of the claim terms as read in light of the claim language and the specification. See Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998) ("The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention, will be, in the end, the correct construction").
The Court next addresses "dislodge" as used in Claim 22 of the 011 Patent. Both RTI and NMT agree that the ordinary meaning of "dislodge" is "to be moved from a settled position" or "to cause to shift from a fixed position." Nevertheless, NMT would interpret "dislodge" to mean "to slide the stopper relative to the plunger until it is free from the opening in the plunger." According to NMT's briefing, it offers such a construction because the specification does not permit something to be "dislodged" by breaking off.

In short, the Court does not find any intrinsic evidence which limits the ordinary meaning of "dislodge" as used in Claim 22 of the 011 Patent. First, the claim language does not limit "dislodge" in any way from its ordinary meaning. Second, the Court does not find manifest intent to limit the definition of "dislodge" from statements in the 077 Patent describing a preferred embodiment. NMT argues that the Court should limit Claim 22 to a preferred embodiment because "the only embodiment disclosed in the patent specification is a plug slidingly mounted in the opening of the plunger that slides relative to the plunger until it is free of the plunger opening." However, as the Federal Circuit has mandated, "an accused infringer cannot overcome the 'heavy presumption' that a claim term takes on its ordinary meaning simply by pointing to the preferred embodiment or other structures or steps disclosed in the specification or prosecution history," Teleflex, Inc., 299 F.3d at 1327. The Court does not find evidence sufficient to overcome the heavy presumption that "dislodge" carries its ordinary meaning in the language NMT cites from either the 011 or 077 Patents. Thus, "dislodge" means "to be moved from a settled position."

DISCUSSION

The sole issue on appeal is the proper construction of the claim term "dispensing" in asserted claims 1, 2, 3, 5, 6, and 8 of the '861 patent. Of the asserted claims, claims 1 and 5 are independent. Both cover "[a] method of dispensing reagents onto a slide." Claim 1 reads:

1. A method of dispensing reagents onto a slide, the method comprising the steps of:

   providing at least one reagent container;

   providing at least one slide on a slide support;

   automatically identifying the reagent container using a computer;

   automatically determining whether reagent in the reagent container should be dispensed onto the slide; and

   dispensing the reagent in the reagent container onto the slide based on the determination of whether the reagent in the reagent container should be dispensed onto the slide,

   wherein the step of automatically determining whether reagent in the reagent container should be dispensed onto the slide includes the steps of:

   providing a bar code reader;

   reading a slide bar code placed on the slide using the bar code reader thereby acquiring slide information, the slide information indicating reagents to be applied to the slide; and
sending the slide information to the computer.

'861 patent, col. 24, l. 53 - col. 25 l. 6 (emphases added). And claim 5 reads:

5. A method of dispensing reagents onto a slide, the method comprising the steps of:

providing a plurality of reagent containers in a reagent support, each of the reagent containers having a reagent barcode;

providing at least one slide on a slide support, the slide having a bar code;

providing a bar code reader;

reading the bar codes on the reagent containers;

determining reagents in the reagent containers based upon the reading of the bar codes on the reagent containers;

reading the slide bar code on the at least one slide;

determining a sequence of reagents to be applied on the at least one slide based upon the reading of the slide bar code on the slide; and

dispensing the reagents in the reagent containers based upon the sequence of reagents to be applied.

The district court construed the "dispensing" claim limitation to require "direct dispensing," meaning that "the reagent is dispensed directly from the reagent container" onto the slide, rather than utilizing an intermediate transport mechanism to transfer reagent from the reagent container to the slide. Claim Construction Order, slip op. at 5-7. The district court held that the context in which the "dispensing" term is used in the claim "necessitates 'direct dispensing' by stating that the reagent in the reagent container is dispensed onto the slide, meaning the reagent is dispensed directly from the reagent container." Id., slip op. at 6. The district court also noted that the written description and figures supported a narrow construction of "dispensing" because all of the disclosed embodiments dispense reagent directly from the bottom of the reagent container without using any intermediate transfer device. Id., slip op. at 7.

After construing the term "dispensing" to mean "direct dispensing," the district court held that the inventors disclaimed a particular type of dispensing, "sip and spit" dispensing, during the prosecution of an ancestor application. In "sip and spit" dispensing, an intermediate transport mechanism such as a pipette uses suction to "sip" the reagent from the reagent container and then releases or "spits" the reagent onto the slide. The '861 patent issued from a continuation of a continuation of a division of a continuation of U.S. Patent Application No. 07/924,052 (the "'052 application"), which originally presented 93 claims. 1 Independent claim 1 of the '052 application provided:

1. A biological reaction apparatus for dispensing a selected reagent directly to a sample, said biological reaction apparatus having:

   a reagent carousel having a plurality of reagent container supports thereon;

   homing and indexing means, operatively coupled to the reagent carousel, for identifying the position of each reagent container support with reference to a home position; and

   drive means, engaging the reagent carousel and operatively coupled to said homing and indexing means, for rotating the reagent carousel and positioning a preselected reagent container support in a reagent supply zone wherein said reagent supply zone is oriented so that a reagent in a container in said preselected reagent container support is dispensable directly to a sample.
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

(emphases added). The examiner rejected independent claim 1 and dependent claims 2-3 and 5-6 of the '052 application under 35 U.S.C. § 103 as being unpatentable over two prior art references, Wakatake et al. and Assmannet al. In response, the inventors argued that neither the Wakatake nor the Assmann reference disclosed the capability to dispense reagent "directly to a sample":

"Even in the unlikely event that Wakatake and Assmann were successfully combined into one system, the resulting system would still lack the present invention's novel capability to dispense reagent "directly to a sample" as set forth in Applicants' Claim 1, at line 16.

....

.... [T]he recited apparatus provides for direct dispensing of reagent from a reagent container to a sample. .... The present invention uses the "drive means to rotate the "reagent carousel." The reagent carousel holds the reagent containers. As can be seen in the Figures, the Reagent carousel is positioned above the samples and the reagent containers are oriented within the carousel with their outlet nozzles pointing down such that they are ready to dispense reagent directly to the sample below. ....

In contrast, Wakatake et al teaches reagent tables positioned side by side with a reaction table. (Wakatake et al, Figure 2). This side by side configuration precludes dispensing of the reagent "directly to a sample" or the incorporation of a "reagent delivery zone" as set forth in Claim 1 of the present invention. The Wakatake side by side configuration requires an additional device, a reagent pipetting device, to transfer the reagent between tables and mediate the dispensing of reagent to the sample. The reagent pipetting device is used to suck up an aliquot of reagent from a reagent container on one of at least two reagent tables, pivot so that the pipetting tube of the device is held just above a selected reaction vessel on a separate reaction table, and dispense the aliquot of reagent to the vessel (Wakatake at column 4, line 42 to column 5, line 10). Such devices are referred to in the trade as "sip and spit" devices.

The district court held that these statements during prosecution amounted to a "clear and unmistakable" disclaimer of "sip and spit" dispensing from claim 1 of the '052 application. Claim Construction Order, slip op. at 11. The district court further held that this disclaimer attached to claims 1 and 5 of the '861 patent

because there is a common claim limitation to which the disclaimer is directed: "direct dispensing." The court has already construed the claim term "dispensing" in the '861 patent to mean "direct dispensing" and thus, the '052 application and '861 patent have the same claim limitation. The "sip and spit" disclaimer may properly attach to the '861 patent (direct) dispensing limitation.

Id.

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1 The six patents that share a common disclosure with the '861 patent are all descendants of the '052 application.

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II

This court reviews claim construction de novo. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). On appeal, Ventana argues that the district court improperly limited the scope of the term "dispensing" to cover only those methods of dispensing in which the reagent container is also the reagent dispenser (i.e., "direct dispensing"). Accordingly, Ventana asks this court to reverse the district court's claim construction and construe the phrase "dispensing" to mean "to apply reagent to the slide." We agree that the district court improperly imported limitations from the specification when it construed the term "dispensing" to require "direct dispensing."

Claim terms "are generally given their ordinary and customary meaning." Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)). And "the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the
art." Id. at 1313. In this case, Ventana argues that there is nothing in the record to suggest that a person of ordinary skill in
the art would interpret the disclosure and claims of the '861 patent to mean that the term "dispensing" is limited to "direct
dispensing." We agree.

To start with, claims 1 and 5 do not contain any language that could be read to limit the term "dispensing" to require "direct
dispensing." Although "direct dispensing" is one type of dispensing, BioGenex does not appear to dispute that other types of
dispensing, such as "sip and spit" dispensing, also fall within the ordinary meaning of "dispensing." Though the district
court held that the word "onto" in the language of the claim necessitated "direct dispensing" because the claims require that
reagent in the reagent container be dispensed "onto" the slide, BioGenex agreed at oral argument that the word "onto" does
not by itself exclude the "sip and spit" method of dispensing from the ordinary meaning of "dispensing."

Instead, BioGenex argues that the patent's specification compels a narrow construction of "dispensing." BioGenex first
points to the "BACKGROUND ART" section of the patent, which discusses a number of prior art automated staining
devices, including a device that BioGenex alleges employs the "sip and spit" method of dispensing. '861 patent, col. 2, ll. 6-
16. BioGenex argues that because the patent goes onto state that "[t]he previously known devices are limited in their
performance and unable to satisfy the needs for automated, high precision immunohistology" and that it was an object of the
invention to "provide a device which provides more rapid, reliable and more reproducible results than standard methods," id.
at col. 2, ll. 26-31, the patent makes clear that the invention does not practice the "sip and spit" method of dispensing.

We decline to interpret these general statements by the inventors to effect a complete surrender from the claims of the '861
patent of all types of dispensing except "direct dispensing." For one thing, the "BACKGROUND ART" section includes
discussion of a number of different prior art devices that employ a number of different dispensing techniques, including a
device that employs a "direct dispensing" technique. Id. at col. 1, l. 65 - col. 2, l. 5 ("Stark, E. et al, J.Immunol.Methods.
107:89-92 (1988) describes a microprocessor controlled system including a revolving table or carousel supporting radially
positioned slides. A stepper motor rotates the table, placing each slide under one of the stationary syringes positioned above
the slides. A predetermined volume of liquid, determined by a dial, is delivered to a slide from each syringe."). Thus, if
BioGenex's argument were correct, the inventors have also disavowed coverage of "direct dispensing," which is the type of
dispensing employed by the patent's preferred embodiment. For this reason, BioGenex's argument cannot be correct.

Moreover, this is not a case in which the inventor's distinguishing the invention over the prior art in the specification results
in a disavowal of coverage by the inventor of features in the prior art. In Phillips, we recognized that in certain cases, "the
specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor." Phillips, 415 F.3d at 1316.
In such cases, this court interprets the claim more narrowly than it otherwise would to give effect to the inventor's intent to
disavow a broader claim scope. Id.; Honeywell Int'l, Inc. v. ITT Indus., Inc., 452 F.3d 1312, 1319-20 (Fed. Cir. 2006);
SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1342-44 (Fed. Cir. 2001). Here, however,
BioGenex points to only general statements by the inventors indicating that the invention is intended to improve upon prior
art automated staining methods: "The previously known devices are limited in their performance and unable to satisfy the
needs for automated, high precision immunohistology. It is an object of this invention to provide a device which provides
more rapid, reliable and more reproducible results than standard methods..." 861 patent, col. 2, ll. 26-31. Such general
statements, without more, will not be interpreted to disclaim every feature of every prior art device discussed in the
"BACKGROUND ART" section of the patent.

Next, BioGenex points out that all of the '861 patent's disclosed embodiments employ a "direct dispensing" method of
dispensing. BioGenex submits that when the specification is read in its entirety, one of skill in the art would come to the
"inescapable conclusion that the novelty of Ventana's invention is the birthday cake or over/under carousel arrangement for
direct dispensing." As a result, BioGenex argues, the specification has implicitly defined the term "dispensing" to mean "direct dispensing."

There are, however, several problems with this argument. "It is a 'bedrock principle' of patent law that 'the claims of a patent
define the invention to which the patentee is entitled the right to exclude.'" Phillips, 415 F.3d at 1312 (quoting Innova/Pure
Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1115 (Fed. Cir. 2004)). "[A]lthough the specification often
describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those
embodiments." Id. at 1323. While the fact that the disclosed embodiments are limited can assist in interpreting claim
language, the mere fact that the '861 patent discloses embodiments in which the reagent container is also the reagent
dispenser does not in and of itself mean that the method claims at issue are limited to the disclosed embodiments.
The second problem with BioGenex's argument is that each claim does not necessarily cover every feature disclosed in the specification. When the claim addresses only some of the features disclosed in the specification, it is improper to limit the claim to other, unclaimed features. Id. at 1327; see also Golight, Inc. v. Wal-Mart Stores, Inc., 355 F.3d 1327, 1331 (Fed. Cir. 2004) ("[P]atentees [are] not required to include within each of their claims all of [the] advantages or features described as significant or important in the written description."); E-Pass Techs., Inc. v. 3COM Corp., 343 F.3d 1364, 1370 (Fed. Cir. 2003) ("An invention may possess a number of advantages or purposes, and there is no requirement that every claim directed to that invention be limited to encompass all of them."). Here, the claims of the '861 patent are directed toward automated methods of dispensing that use bar codes to determine which reagents should be dispensed onto which slides. Although the preferred embodiments also contain a "direct dispensing" feature, the inventors were not required to claim this feature in the '861 patent and, indeed, did not do so.

III

Ventana also argues that the district court erred in holding that the inventors of the '861 patent disclaimed coverage of "sip and spit" dispensing during prosecution of the '052 application, an ancestor of the '861 patent. BioGenex responds that the inventors disclaimed "sip and spit" dispensing when they distinguished the prior art "sip and spit" devices because of those devices' inability to dispense reagent "directly to a sample," as required claim 1 of the '052 application.

BioGenex thus raises the doctrine of prosecution disclaimer. "[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." Phillips, 415 F.3d at 1317. Accordingly, we examine the patent's prosecution history, when placed in evidence, to determine whether the inventor disclaimed a particular interpretation of a claim term during the prosecution of the patent in suit or during the prosecution of an ancestor application. Id.; Advanced Cardiovascular Sys. v. Medtronic, Inc., 265 F.3d 1294, 1305-06 (Fed. Cir. 2001). But the doctrine of prosecution disclaimer generally does not apply when the claim term in the descendant patent uses different language. Invitrogen Corp. v. Clontech Labs., Inc., 429 F.3d 1052, 1078 (Fed. Cir. 2005) ("[T]he prosecution of one claim term in a parent application will generally not limit different claim language in a continuation application."); ResQNet.com, Inc. v. Lansa, Inc., 346 F.3d 1374, 1383 (Fed. Cir. 2003) ("Although a parent patent's prosecution history may inform the claim construction of its descendant, the [parent] patent's prosecution history is irrelevant to the meaning of this limitation because the two patents do not share the same claim language."); Advanced Cardiovascular Sys., 265 F.3d at 1305-06.

In this case, the allegedly disclaiming statements were made with respect to claim language that expressly required reagent in the reagent container to be "dispensable directly to a sample." Indeed, in distinguishing the prior art, the inventors stated that the prior art "sip and spit" devices lacked "the present invention's novel capability to dispense reagent 'directly to a sample' as set forth in Applicants' Claim 1, at line 16" (emphasis added). Because claims 1 and 5 of the '861 patent use different claim language -- that is, they do not require that reagent be "dispensable directly to a sample" -- the alleged disclaimer of "sip and spit" dispensing during the prosecution of the '052 application does not apply to the asserted claims of the '861 patent.

2 BioGenex makes a number of arguments in response to a perceived argument by Ventana that a disclaimer made during prosecution of the '052 application does not apply to the claims of the '861 patent because the '861 patent resulted from a divisional application as opposed to a continuation application. We do not understand Ventana to be making this argument, however, so we need not address BioGenex's responses to it. Regardless of whether the '861 patent resulted from a divisional application or a continuation application, the alleged disclaimer of "sip and spit" dispensing does not apply to the asserted claims of the '861 patent because claim 1 of the '052 application and the asserted claims of the '861 patent do not share a common claim term in dispute.

Indeed, we agree with Ventana that the prosecution history of the '861 patent supports a broad construction of "dispensing." For example, during the prosecution of the application that led to the '861 patent, the examiner issued a restriction requirement. With respect to the application claims that eventually resulted in claims 1 and 5 of the '861 patent, the
examiner observed that "the process as claimed can be practiced by another materially different apparatus or by hand, such as a manual pipette means." This statement shows that the patent examiner did not consider the "dispensing" claim term to be limited to the "direct dispensing" embodiment disclosed in the specification. Moreover, the inventors did not rely on "direct dispensing" as a distinction between the claims at issue in this case and the prior art. Instead, in response to rejections over the prior art, the inventors limited their arguments to the ability of the claimed inventions to address the shortcomings of manual reagent identification and manual determination of reagent dispensing protocols.

IV

BioGenex next argues that the inventors disclaimed "sip and spit" dispensing from claims 1 and 5 of the '861 patent during the prosecution of two later-issued patents, the '901 patent and the '029 patent. The district court did not address the relevance, if any, of the prosecution histories of the '901 and the '029 patents in its claim construction opinion. Nevertheless, for the reasons described below, we agree with Ventana that the prosecution histories of these later patents do not inform the proper construction of "dispensing" in claims 1 and 5 of the '861 patent.

The '861 patent issued from U.S. Patent Application No. 09/452,309 (the "'309 application"). Each of the later-issued patents resulted from continuations of the '309 application. 3 Independent claim 72 of the '169 application (which issued as claim 1 of the '901 patent) provided, in part:

72. A biological reaction apparatus for dispensing a selected reagent to a slide containing a sample, said biological reaction apparatus comprising:

   a reagent carousel having a plurality of reagent container supports thereon;

   a homing and indexing device, operatively coupled to the reagent carousel, for identifying the position of each reagent container support with reference to a home position;

   [and] a motor engaging the reagent carousel and operatively coupled to said homing and indexing device, for rotating the reagent carousel and positioning a preselected reagent container support in a reagent supply zone, wherein said reagent supply zone is oriented so that reagent in a container in said preselected reagent container support is dispensable to a slide and wherein each of the reagent container supports is arranged to accommodate a reagent container such that it is positioned above a slide when in the reagent supply zone whereby the reagent is dispensable from a lower end of said container onto the slide . . . .

( emphases added).

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3 The '901 patent issued from U.S. Patent Application No. 10/137,169 (the "'169 application"), which was a continuation of a continuation of the '309 application. The '029 patent issued from U.S. Patent Application No. 10/054,535 (the "'535 application"), which was a continuation of the '309 application.

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In responding to a obviousness rejection of application claim 72 and its corresponding dependent claims, the inventors distinguished a prior art "sip and spit" reference because it transferred reagents "by pipettes into cuvettes 106 held in sample analysis carousels 102 that are adjacent to and not below the reagent carousel" as required by the claims. In distinguishing another prior art reference, the inventors stated that

the invention of claim 72 et al. includes a sample carousel arranged beneath a reagent carousel [and] the reagent is dispensed onto a slides

[sic] position below the reagent carousel. . . .
Locating the carousel including samples containing slides below the reagent carousel is an important feature of the claimed invention because it allows the reagent to be applied directly to the samples on the slides.

BioGenex asserts that these statements amount to a disclaimer of "sip and spit dispensing" that should be applied to the claims of the '861 patent.

We have held that statements made by the inventor during continued prosecution of a related patent application can, in some circumstances, be relevant to claim construction. See Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1349 (Fed. Cir. 2004) (recognizing that "the prosecution history of one patent is relevant to an understanding of the scope of a common term in a second patent stemming from the same parent application"). As with statements made by the inventor during the prosecution of an ancestor application, statements made during the continued prosecution of a sibling application may "inform the meaning of the claim language by demonstrating how the inventor understood the invention." Phillips, 415 F.3d at 1317.

But here, once again, BioGenex points to statements made with respect to claim language that expressly required the reagent to be "dispensable from a lower end of [the] container onto the slide." Because claims 1 and 5 of the '861 patent do not contain this claim language, these statements are not relevant to the construction of "dispensing" in claims 1 and 5 the '861 patent.

Similarly unpersuasive is BioGenex's assertion that the inventors disclaimed "sip and spit" dispensing during prosecution of the '029 patent. Independent claim 92 of the '535 application (which issued as claim 17 of the '029 patent) called for "a method of dispensing reagents onto a slide" where the reagent container and the slide support are moved" relative to one another to position the reagent container over the slide." In response to an obviousness rejection, the inventors distinguished a prior art "sip and spit" device because it positioned the reagent containers adjacent to the receptacles into which the reagents were dispensed. Thus, the prior art device did not position the reagent container "over the slide," as required by the claim. Claims 1 and 5 of the '861 patent, however, do not contain this language. Consequently, the statements pointed to by BioGenex are not relevant to the construction of "dispensing" in claims 1 and 5 the '861 patent.

4 BioGenex also points out that the patent examiner issued an obviousness-type double patenting rejection of all of the claims of the '535 application over the claims of the '861 patent. The inventors responded to the obviousness-type double patenting rejection by filing a terminal disclaimer. BioGenex argues that the filing of the terminal disclaimer represents an admission by the inventors "equating all claims of the '535 application to all claims of the '861 Patent." As a result of the terminal disclaimer, BioGenex argues, any prosecution disclaimer of "sip and spit" dispensing in the '535 application applies to the claims of the '861 patent. We disagree. For one thing, "the filing of a terminal disclaimer simply serves the statutory function of removing the rejection of double patenting, and raises neither presumption nor estoppel on the merits of the rejection." Quad Envtl. Techs. Corp. v. Union Sanitary Dist., 946 F.2d 870, 874 (Fed. Cir. 1991). Moreover, the inventors' filing of a terminal disclaimer does not change the fact that the asserted claims of the '861 patent do not contain the "over the slide" limitation present in claim 92 of the '535 application. As a result, arguments made during prosecution of the '535 application with respect to whether the prior art "sip and spit" devices positioned the reagent container "over the slide" are irrelevant to the construction of "dispensing" in claims 1 and 5 the '861 patent.

I respectfully dissent from the majority's decision to vacate and remand based upon its construction of the term "dispensing." I believe that the district court correctly construed the disputed term in light of the specification and, for that reason, I would affirm.
"[T]he person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). The specification "is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term." Id. at 1315 (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)). When read in the context of the specification, the claim term "dispensing" clearly means "direct dispensing."

The '861 patent is part of a family of six other patents sharing a common specification, although only claim 15 of the '707 patent expressly recites "direct dispensing." Claim 1 of application 07/924,052, which eventually was abandoned, was amended to include the word "direct dispensing" in order to overcome prior art. Claim 1 of the '861 patent is broader and makes no reference to dispensing directly. Nonetheless, the claims must be construed in light of the specification, which is the same for all seven patents and which repeatedly describes dispensing reagent directly from a reagent container onto a slide.

The Summary of the Invention describes "positioning a preselected reagent container support and associated reagent container in a reagent supply zone. The apparatus has a reagent delivery actuator means positioned for engaging a reagent container positioned on a container support in the reagent supply zone and initiating reagent delivery from the reagent container to a slide supported on a slide support in the reagent receiving zone." '861 patent, col. 2, ll. 53-59. The Summary further describes using a "volumetric pump means, and a reagent delivery actuator means positioned for activating the volumetric pump means, thereby effecting delivery of reagent from a reagent container by the volumetric pump to the reagent delivery zone." '861 patent, col. 3, ll. 53-56. Those statements of delivery from a reagent container to a slide describe direct dispensing. They describe the essence of the invention and clearly show that the reagent is dispensed directly from a reagent container positioned in a support onto a slide.

Such statements are repeated throughout the rest of the specification. For example, in the Detailed Description of the Invention, the specification describes that "[t]he carousel 10 is rotated by the stepper motor 14 drive belt 16 to a position placing a selected reagent bottle 12 in the reagent delivery position under the air cylinder reagent delivery actuator 18 over a slide to be treated with reagent." '861 patent, col. 6, ll. 54-57. The specification further indicates that the "reagent delivery actuator 18, supported by support arm 216, contacts reagent bottle 218, directly over slide 214." '861 patent, col. 9, ll. 24-26 (emphasis added). The text accompanying Figure 15 describes the dispensing: "Delivery of pressurized air to the cylinder 18 causes rod 304 and its attached foot 306 to move downward against a reagent container 12 positioned in the reagent delivery zone. Downward movement of reagent container 12 causes emission of a precise volume of reagent liquid 310." '861 patent, col. 11, ll. 40-45. Finally, Figures 1, 2, 3, 4, 11, 15 depict the apparatus that employs direct dispensing. The figures depict reagent containers in a carousel placed directly over a slide to dispense the reagent from the container onto the slide.

Statements describing dispensing reagent directly from a reagent container onto a slide are thus found in the abstract, the summary of the invention, the detailed disclosure of the invention, and the figures. Those statements do not merely describe a preferred embodiment of the invention; they broadly disclose the overall invention of all seven patents. The majority points out that, because the preferred embodiment discloses direct dispensing, we should not limit the claims to only that which is the disclosed embodiment. However, this is not a case of limiting the claims by looking at a preferred embodiment. Direct dispensing is the essence of the invention, and the specification supports that conclusion. The specification, shared by all seven patents, leads to the "inescapable conclusion" that the invention of the '861 patent consists of "direct dispensing." Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1348 (Fed. Cir. 2004) (citing SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1342 (Fed. Cir. 2001)). Moreover, nowhere does the specification suggest that the invention includes the alternative "siphon and spit" dispensing method, involving dispensing reagent from an upright container by means of a pipette. Accordingly, I believe that the district court correctly construed the claims to require "direct dispensing."

An examination of the prosecution history confirms that Ventana viewed its inventions as limited to direct dispensing. In a related grandparent application, in order to overcome an examiner's rejection, Ventana argued that the prior art lacked the "present invention's novel capability to dispense reagent 'directly to a sample'" and that the "apparatus of the present invention" uses a reagent carousel and reagent container supports, "which minimize the time required to apply a given reagent, and the time between the application of multiple reagents, by dispensing reagent 'directly to a sample.'" Ventana
further stated: "As can be seen in the Figures, the reagent carousel is positioned above the samples and the reagent containers are oriented within the carousel with their outlet nozzles pointing down such that they are ready to dispense reagent directly to the sample below." Those statements made in the prosecution of the related patent application, having the same specification, reflect that Ventana understood its own invention to be limited to direct dispensing. We cannot construe the claims to cover subject matter broader than that which the patentee described in its specification, regarded as comprising its invention, and represented to the Patent and Trademark Office.

Even though those statements from the prosecution were made in a grandparent patent application, they relate to the common specification and reflect Ventana's own understanding of its invention. I believe, therefore, that the statement in the prosecution of the '052 application is indicative of the proper interpretation of the same claim term in the later-issued '861 patent.

In sum, the district court appropriately considered the specification and related prosecution history and determined the ordinary meaning of "dispensing" in light of all the intrinsic evidence. I see no error in the court's approach or result. Accordingly, I would affirm the district court's claim construction.
Although Smiths argues that MiniMed has offered a "myriad" of conflicting definitions for the term "dispensing protocol," the definition appears straightforward. The PDR Medical Dictionary lists only one definition for "protocol": "a precise and detailed plan for the study of a biomedical problem or for a regimen of therapy." PDR Medical Dictionary, 1446 (1st ed. 1995). Further, Merriam-Webster's Dictionary lists only one definition of protocol applicable to the medical field; "a detailed plan of … treatment, or procedure." Merriam-Webster's Collegiate Dictionary, 936 (10th ed. 2002). The ordinary meaning of "dispensing protocol" in this context is a "a plan or regimen for the delivery of medication."

Smiths' argument that the intrinsic evidence supports its more narrow construction is unconvincing. Nowhere in the specification has the patentee "demonstrated a clear intention to limit the claim scope." Liebel-Flarsheim, 358 F.3d at 906. Smiths relies on a statement in the specification, that "the medication dosage and frequency are, of course, developed according to a dispensing protocol to meet the needs of each patient" to show that the patentee narrowed the scope of "dispensing protocol" to "dosage rate." (D.I. 190 at 16 (citing '065 patent, col. 1:54-56, col. 2:14-20, col. 5:1-14).) Frequency and dosage are apparently two of the factors considered when creating a dispensing protocol. Therefore, such language is consistent with the plain meaning of "dispensing protocol."

With respect to the prosecution history, the one excerpt on which Smiths relies is taken out of context and is inconsequential. In the office action in question, the patentee distinguished the prior art by noting that it did not recommend a dosage rate. (D.I. 192, Ex 26, at 6.) As a "dispensing protocol" is made up of a series of "dosage rates" and could presumably be just one "dosage rate," in some instances, it is axiomatic that if the prior art did not suggest a "dosage rate" it also could not suggest a "dispensing protocol" because "dispensing protocol" encompasses "dosage rate." Therefore, the patentee was not limiting the definition of "dispensing protocol."

As to Smiths' last argument, that MiniMed's own expert supported Smiths' construction of the term in question, the quote relied on again appears to be taken out of context. During a deposition, the expert was asked the question "what did the algorithms recommend? Did they recommend a pattern?" (D. I. 193, Ex. 44 at 44.) In response, he answered "No. They recommend a rate." (Id.) It appears, however, that the expert was addressing one embodiment of the invention where the invention is continually changing the dosage rate throughout the day in response to blood glucose readings and not the meaning of "dispensing protocol" as used in Claim 1. (Id. at 44-45, 54-55.)

**H. "dispersed in all directions"**

This term describes in which directions light hitting the coating is reflected. Defendants propose that the word "all" be given its ordinary meaning because there is no basis to depart from the standard presumption in favor of the ordinary meaning. The Court disagrees. In this case, the inventor has not used the word "all" in its ordinary sense, but instead has imparted a special meaning. This special meaning is apparent in the specification, as well as in the words of the claim at issue.

First, from the claim itself it can be seen that the term "dispersed in all directions" does not stand alone, but is part of a clause that works as a unit to describe where and how the glitter particles are positioned within the coating. The first part of the clause--"whereby substantially all light incident on said body is reflected"--indicates that the glitter particles are evenly distributed throughout the coating and in such close proximity to each other that all but an insignificant amount of light is reflected. The second part of the clause--the one at issue--describes how the flat glitter particles are oriented within the coating. The term states that the glitter is oriented so that light incident on the coating is reflected in "all directions."

There is an infinite number of directions. If light is to be reflected in "all" of them, then the ordinary meaning of the word "all" would require a finite number of glitter particles to be oriented upon an infinite number of planes. This peculiar implication of the ordinary meaning renders unclear the meaning of the term "in all directions" in the context of an invention defined as having only a finite number of glitter particles. Thus, it is appropriate to refer to the specification to ascertain its meaning. See Johnson Worldwide Assoc., Inc. v. Zebo Corp., 175 F.3d 985, 990 (Fed. Cir. 1999) (disputed term invites reference to the specification when term chosen by patentee deprives claim of meaning).
Furthermore, it appears that the patentee did not use the term "all" in its ordinary sense, requiring light to be dispersed in an infinite number of directions, but rather has set forth a different definition. The specification states that light is reflected "in a very large plurality of directions." ( '160 Patent, col. 2, line 12.) Although this term itself is somewhat ambiguous, fortunately the patentee defines exactly what is meant by "a very large plurality of directions" later in the specification: light is reflected from the coating at "as many different angles . . . as there are [glitter] particles." ( '160 Patent, col. 3 line 5.) The Court is convinced that this interpretation is the one mandated by in view of the claim language and the specification.

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a. "Displaceable" and "Linearly Displaceable"

The term "displaceable" appears in independent Claim 1 and the term "linearly displaceable" in dependant Claim 2 of the '477 Patent. See '477 Patent col. 8 ll. 48-50 ("the elongate members being displaceable between 'open' and 'closed' positions such that fluid can flow.") (Claim 1); id. col. 8 ll. 61-63 ("each of said elongate members are linearly displaceable within one of said shafts between said 'open' and 'closed' positions.") (Claim 2). Millipore initially argued that the term "displaceable" should be given its ordinary meaning, namely "physically movable out of a position." Additionally, Millipore contended that the term "linearly displaceable" contained in Claim 2 should be given the same meaning, except that it should be limited to a linear movement as distinct from a rotational movement.

The first issue is therefore to determine whether the limitation contained in Claim 2 can be read into Claim 1, thereby excluding rotational movement. Under the doctrine of claim differentiation in patent law, "the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." Phillips, 415 F.3d at 1315. Consequently, I conclude that the limitation found in Claim 2 should not be read in Claim 1. This conclusion is further supported by the prosecution history, which suggests that there is a difference between linear and rotational movement. For instance, in prosecuting the patent, Millipore characterized the elongate member of the sampling device as being "capable of linear and rotation [sic] movement to be selectively moved from a closed to open position." '477 Patent, Prosecution History Record, p. 60. Additionally, articulated the broad scope of the term "displaced" to mean that "claim 1 [as filed] is not limited to either movement [linear or rotational] and that the claims as filed have always covered both movements." Id. at 107.

This treatment of the term "displaceable" is consistent with ordinary usage as reflected in dictionaries. As noted in Phillips, a court may rely on dictionary definitions, "so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." 415 F.3d at 1322-23 (quoting Vitronics, 90 F.3d at 1584 n.6). Because I find that the dictionary definitions provided for the term "displaceable" are not contradicted by the specification or any other patent documents, I construe this term, as Millipore now concedes, to mean "that can be displaced," i.e. "that can be put out of place." See Webster's Third New International Dictionary at 654 (2002). Accordingly, I construe the term "linearly displaceable" in the same fashion with the exception that the movement be limited to linear and not rotational.

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11. Displacing, Displacement, and Displaceable

This section of the decision addresses the related terms displacing, displacement, and displaceable. "Displacing" appears in claims 1(d), 10(d), 19(c), 23(c), 27(d), 31(d), 35(c), and 39(c) of the '267 patent. "Displacement" appears in claims 39, 49, and 50 of the '410 patent; and, in claims 1, 21, and 22 of the RE '439 patent. "Displaceable" appears in claims 1, 3, 5, 7, 12, 13, and 14 of the '907 patent.

Relying on the ordinary meaning of the terms, the Plaintiffs assert that displacing means "putting something in a different place;" displacement is the "process of being put into a different place;" and, "displaceable" means "the capability of being put in a different place." (Pls. Open. Br. 36-37.) The Plaintiffs also contend that displaceable is not restricted to "no appreciable force." (Id.)
Pergo maintains that "displacing" in the context of the '267 patent claims means "easily sliding joined panels relative to one another along their joined edges, because a play exists between the joined edges," and "displaceable" means "the joined panels can easily slide relative to one another along their joined edges because a play exists between the locking groove and the locking element." (Unilin's Open. Br. 27-31.) Pergo also states that "displacement" should be defined with respect to RE '439 patent claims 1, 21, and 22 as "the joined panels can easily slide relative to one another along their joined edges because a play exists between the locking groove and the locking element," (Unilin's Open. Br. 32.), and with respect to claims 29, 49, and 50 of the '410 patent as "so constructed to allow the mutual displacement of the panels in the direction of the long edges." (Pergo's Reply Br. Ex. F 1.)

The Court notes that "unless compelled otherwise, a court will give a claim term the full range of its ordinary meaning as understood by persons skilled in the relevant art." Gemstar-TV Guide Int'l, Inc. v. Int'l Trade Comm'n, 383 F.3d 1352, 1364 (Fed. Cir. 2004). The ordinary and customary meaning of a claim term may be determined by reviewing a variety of sources, which may include the claims themselves; dictionaries and treatises; and, the written description, the drawings, and the prosecution history. Id. The construction of claims is simply a way of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims." Embrex, Inc., v. Serv. Eng'g Corp., 216 F.3d 1343, 1347 (Fed. Cir. 2000) (internal quotations and citation omitted).

Claim 39 of the '410 patent includes the terms "displacement" and "displacing" as follows:

A flooring system comprising a plurality of rectangular floor panels which are mechanically connectable to each other in parallel rows along adjacent long edges and short edges, respectively, of the panels, said floor panels being provided with means for mechanically locking together their long edges as well as their short edges in a first direction at right angles to a principal plane of the panels, thereby forming first mechanical connections between the panels, each panel, at a rear side thereof, being provided: (i) with a locking strip at one long edge and at one short edge, each locking strip extending throughout substantially an entire length of the corresponding edge of the panel and being provided with a projecting locking element, and (ii) with a locking groove at an opposite long edge and at an opposite short edge, each locking groove extending parallel to and spaced from the corresponding edge and being open at the rear side of the panel, said locking strips and locking grooves forming second mechanical connections locking the panels to each other in a second direction parallel to the principal plane and at right angles to the joint edges such that a locking strip of a first one of two joined panels projects on the rear side of the second panel with its locking element received in the locking groove of the second panel, the first and the second mechanical connections are so constructed as to allow mutual displacement of the panels in the direction of the long edges, the second mechanical connection along the long edges is so constructed as to allow the locking element to leave the locking groove if the panel associated with the locking groove is turned about its long edge angularly away from the strip, and each locking strip at the short edges is flexible and resilient such that two of the floor panels, having already been mechanically joined to a common long edge of a third of the floor panels, can be mechanically joined together at their adjacent short edges by displacing said two panels horizontally towards each other, while resiliently urging the flexible strip at one of said short edges downwards, until said adjacent short edges of the two panels have been brought into complete engagement with each other horizontally and the locking element at said one short edge thereby snaps into the locking groove at the adjacent short edge.

('410 patent, 14:14-59.) (Emphasis added).

The Plaintiffs' definitions of the displacement terms are vague. Moreover, their definitions are not presented within the context of the specification or the patent claims.

Pergo's proposed definitions relate to the patent claims and specification. Each of Pergo's proposed definitions of the terms include some form of the word "slide." In discussing the role of "play" in the invention, Alloc, 342 F.3d at 1369, states that the specification teaches that play permits displacement between the components of the locking joint; i.e., allows the panels to "slide" relative to one another. The court also noted that the prosecution history for the '621 parent patent indicated that representations distinguishing the invention from the prior art were based on the invention's ability to displace panels ("slide movably") and to release adjacent panels by rotation about the joint. Id. at 1371.

The term "slide" means "to move over a surface while maintaining a smooth, continuous contact." Webster's II New Riverside University Dictionary, 1094. Some ease of movement is inherent in the term slide. Pergo has not shown that the modifier "easily" is supported by the patent claims or specification. "Play" permits displacement. However, there is no basis
for including "play" in the definition of the displacement terms. Although Pergo has suggested rather elaborate proposed definitions, it also succinctly states that "displacement refers to the ability of two panels to slide alongside of each other along their joined edge." (Unilin's Open. Br. 28.) (Emphasis added). Based on the claims, the specification, and Alloc, the Court construes the noun "displacement" as "the act of sliding movably." The verb "displacing" is construed as "sliding movably." The Court further construes "displaceable" as "having the capability of sliding movably."

To dispose of this appeal, we need only address one aspect of the Commission's claim construction and infringement analysis. Because we uphold the Commission's construction of step (c) of claims 1 and 8 of the '464 patent, and because we agree that under that construction there was no proof of infringement by the DSS products, we sustain the Commission's ruling that Innovatron failed to prove a violation of section 337.

Step (c) of the claimed method requires:

- displacing said corresponding contact surfaces relatively, in a direction tangential to said corresponding contact surfaces if said testing determines non-alignment and non-existence of correct electrical contact, and stopping the relative displacement of corresponding contact surfaces when said testing determines said alignment and existence of correct electrical contact.

The Commission held that the act of "displacing . . . in a direction tangential" includes only relative movement of the corresponding contact surfaces while those surfaces are in contact and that the act of "stopping the relative displacement of corresponding contact surfaces" results from a positive test for correct alignment and electrical contact and occurs nearly instantaneously after a successful test.

We agree with the Commission that "displacing . . . in a direction tangential" includes only relative movement of the corresponding contact surfaces when those surfaces are in contact. That construction is consistent with the plain language of step (c). Moreover, contrary to Innovatron's arguments, it is fully supported by the written description, which explains that step (c) requires

- displacing in an oscillatory or alternating and relative fashion the two contact surfaces, around a median point, in a direction tangential to their surface, at least as long as these surfaces are in contact. This oscillatory movement can be carried out while the two contact surfaces are constantly in contact and it may equally be carried out by successive passes, i.e. by a repetition of the contacting process.

The phrase "at least as long as these surfaces are in contact" means that the displacement, i.e., the oscillatory or alternating movement about a median point, must take place while the corresponding contact surfaces are in contact. That the process may be "carried out by successive passes" does not mean that displacement can take place while the surfaces are out of contact; it suggests, rather, that displacement can be halted and restarted when contact is broken and reestablished. Accordingly, we construe "displacing . . . in a direction tangential" to require relative movement of the corresponding contact surfaces while those surfaces are in contact. The displacement can be interrupted either by stopping the relative movement or by breaking contact, but the periods of interruption are not themselves part of the displacement.

Innovatron makes two arguments against that construction. First, it argues that construing "displacing . . . in a direction tangential" to require the corresponding contact surfaces to be in contact would prevent claims 1 and 8 from reading on the preferred embodiment. The preferred embodiment operates as follows: (1) contact is established; (2) there is continuous displacement consisting of, at most, a single oscillation about a median point (i.e., the card is moved fully forward and back); (3) if there is no successful test before the oscillation is complete, contact is broken; (4) if there has been no successful test, the process is repeated. Contrary to Innovatron's contention, the preferred embodiment does "displace . . . in a direction tangential," because, although the periods of displacement may be interrupted while contact is broken, there is relative movement of the corresponding contact surfaces while those surfaces are in contact.
Innovatron's second argument against this construction is that it does not read on one of the embodiments that is disclosed as an alternative to the preferred embodiment. In the section entitled "Description of Preferred Embodiments," the written description discloses the following:

The translationally movable drawer may be replaced by a jointed shutter which is rotationally and translationally movable (in the same fashion as introduction mechanisms for magnetic cassettes in tape readers).

According to Innovatron, in a system with a jointed shutter rather than a drawer, there is no displacement while the corresponding contact surfaces are in contact. The exact operation of the jointed shutter mechanism is not apparent from the disclosure, but it is clear that the jointed shutter shares a critical characteristic with the preferred drawer mechanism; namely, both the drawer and the jointed shutter are "translationally movable." In the detailed description of the preferred embodiment, it is clear that it is the translational movement of the drawer that gives rise to the "displacement . . . in a direction tangential." Whatever the properties of a jointed shutter card insertion system, it is apparent from the plain text of the disclosure that such a system, like the preferred drawer system, must be "translationally movable." Our construction of "displacing . . . in a direction tangential" does not, therefore, cause the disclosed jointed shutter card insertion mechanism to fall outside the scope of claims 1 and 8.

B

We also agree with the Commission that "stopping the relative displacement" requires two things: the stopping must (1) result from a positive test for correct alignment and electrical contact and (2) occur nearly instantaneously after a successful test. Contrary to Innovatron's arguments, the stopping required by step (c) is not satisfied by any mechanism that does not restart after a successful test. Our construction of "displacement . . . in a direction tangential" dictates the proper construction of "stopping the relative displacement." The "displacement" to be stopped is the relative movement of the corresponding contact surfaces, not the overall process of seeking satisfactory contact and alignment. The movement is stopped because of and immediately after a successful test. Otherwise, a primary objective of the invention--to identify quickly and with minimum contact wear a relative position in which there is satisfactory contact and alignment--would likely be thwarted.

When the DSS products are used in the accused manner, i.e., when they are inserted and, following an unsuccessful test, removed and reinserted, the displacement of the CAM cards occurs while the cards are being inserted and stops when the cards are fully inserted and before the testing begins. Consequently, the displacement is not stopped as a result of a successful test, and users of the DSS products do not infringe claim 8 of the '464 patent when using those products in the accused manner. Because Thomson's products do not infringe claim 8 of the '464 patent, their importation does not violate section 337. We affirm the Commission's decision on that ground.

In view of the parties' arguments, one final comment is appropriate. Innovatron suggests that if CAM cards are "jiggled" when they are inserted, rather than removed and reinserted, there may be infringement. Given the proper construction of claim 8, a user who infringes in this manner must "jiggle" the CAM card so that there is testing during the resulting relative movement of the corresponding contact surfaces (i.e., the movement does not cause the sensor at the back of the card slot to indicate that no card is present) and the movement must be stopped immediately after, and as a result of, a successful test. The Commission found, however, that Innovatron failed to prove that users had "jiggled" CAM cards in the precise manner that would be necessary to infringe claim 8. Innovatron has not demonstrated that the Commission's finding was unsupported by substantial evidence. The "jiggling" argument therefore does not affect our disposition of this case

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3. Housing; Display Case/Case

a. The Parties' Constructions

LPL argues that "housing" should be given its ordinary and customary meaning. Defendants assert that "housing" should be limited to a case and body of a portable computer. Defendants argue that the inventors became their own lexicographers, when in response to an objection by the examiner, they stated a definition of housing as a display case or case and body. 16
b. The Special Master's Constructions

Unless a patentee becomes his own lexicographer by using terms in a manner other than their ordinary meaning by clearly stating the special definition in the specification or prosecution history, words in a claim are given their ordinary meaning. Vitronics, 90 F.3d at 1582. The Special Master is of the view that no such clear statement of a special definition exists. In fact, the intrinsic evidence contains no explicit definition connecting "housing" to a portable computer.

Addressing the Defendants' argument that housing was defined in response to the examiner's objection, the Special Master is mindful that a patent examiner's objection is distinct from a rejection. In this regard, an objection does not relate to the patentability of the claims. According to M.P.E.P. § 706.01: "[t]he refusal to grant claims because the subject matter as claimed is considered unpatentable is called a 'rejection.' The term 'rejection' must be applied to such claims in the examiner's action. If the form of the claim (as distinguished from its substance) is improper, an 'objection' is made." The amendments made by the inventors addressed a formality raised by the examiner's rejection, i.e., antecedent basis, and were therefore non-substantive and, to coin a phrase, "merely cosmetic." Cf. AK Steel Corp. v. Sollac & Ugine, 344 F.3d 1234, 1242 (Fed. Cir. 2003) ("There was no indication that the amendment was made to relinquish claim scope; rather it was made in response to the examiner's request to replace language that he found vague with language that he felt 'more specifically defined' the same material. Under those circumstances, the amendment clarified the claims without changing their scope."). Moreover, "an inventor may choose to be his own lexicographer if he defines the specific terms used to describe the invention 'with reasonable clarity, deliberateness, and precision.'" Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002) (quoting In re Paulsen, 30 F.3d 1475, 1480 (Fed. Cir. 1994)) (emphasis supplied). Further, the Special Master finds it noteworthy that the amendment resulted in housing being expressed two different ways, one somewhat more specific than the other, but in no event in the Special Master's view, in a way clearly stated. 17 Because "housing" was not defined with reasonable clarity, deliberateness, and precision, the Special Master concludes that "housing" should be accorded its ordinary meaning.

CLAIM TERM | SPECIAL MASTER CONSTRUCTION
--- | ---
Housing | An outer casing or enclosure
display case | The portion of the housing onto which the flat-panel display device is arranged and attached

Accordingly, the Special Master's constructions are as follows:

17 "Together, the case and body may be referred to as a housing …" '641 patent, 4:48-49. "… the body (first portion) and the display case (second portion) (collectively referred to as a housing) …" '641 patent, 6:6-8.

See '641 and '718 patents, 4:54-56 and 6:12-15.
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A. The Parties' Proposed Construction

Plaintiff proposes the following terms construction:

1. Spaced relation to the uppermost portion of the first quantity of explosive material: There is an air-gap in the borehole between the top of the lower-most explosive material and the bag-like device above it.

2. First relatively large quantity of explosive material: The larger quantity of explosive material placed within the borehole.

3. Second relatively small quantity of explosive material: The smaller quantity of explosive material placed in the borehole.

4. Disposed or disposing: Placed, placing, or causing to be placed.

5. Bag-like device: An item similar to, or characteristic of, an inflatable body of flexible material that is made, or adapted, to perform a function. 4

---Footnotes---

4 See plaintiff's memorandum, footnote 2. Plaintiff proposed this definition anticipating that the court would decline to separately define the term "bag."

---End Footnotes---

In contrast, defendants propose the following:

1. Spaced relation to the uppermost portion of the first quantity of explosive material: The bag-like device is sufficiently spaced within a borehole above the top of the explosive material to form an air gap in the borehole between the bag-like device and the explosive material, with the air gap being approximately 8% to 16.7% of the borehole.

2. First relatively large quantity of explosive material: The major charge or quantity of total explosive material within the borehole.

3. Second relatively small quantity of explosive material: The minor charge or quantity of explosive material within the borehole, with the major charge being 3-5 times the quantity of the minor charge.

4. Disposed or disposing: The bag-like device while in a flat and uninflated state is placed in a particular order or place to accomplish the special effect or purpose of the device.

5. Bag-like device: A device comprised of multiple polymeric sheets sealed along the edges thereof and capable of being closed at one end which lies flat when uninflated. 5

---Footnotes---

5 Defendants modified their proposed definition at the Markman hearing on July 29, 2005, after the release of Phillips by the Federal Circuit. Defendants' initial proposed construction was "a flexible device capable of being closed at one end comprised of at least one polymeric sheet sealed along the edges thereof which lies flat when uninflated, of disc-like, square, tubular, or doughnut conformation."

---End Footnotes---
C. "Disposed" or "disposing"

Defendants suggest that "the parties['] proposed definitions are similar, except that [plaintiff's] proposed definition departs from the context of his '233 [p]atent because it does not include the important teaching that the inflatable device is uninflated and flat while being disposed within the borehole . . ." (Def. Mem. at 17.) In support, defendants argue that the patent claims "recite separate steps for 'disposing' and 'inflating.'" (Def. Resp. at 13.) Indeed, according to the patent, the "inflatable devices of the invention are positioned within boreholes in a deflated condition and are inflated at the desired location. . ." ('233 patent, "Summary of the Invention," Column 2, Lines 25-27.)

It is noted, however, that neither the claims nor the specification appear to limit disposition to inflatable materials. Various claims, for example, refer to disposing "explosive material" or "stemming material" or "material," none of which would constitute the disposition of an inflatable device. These articles almost certainly do not inflate, and likely do not lie flat. Thus, defendants' proposed requirement that disposition occurs only while an article is in a "flat and uninflated state" is unrealistic inasmuch as it imposes undue limitations on the general use of that term throughout the '233 patent. Moreover, while the patent may teach that certain articles are disposed in an uninflated position, defendants have offered no support for their contention that the articles must lie "flat" prior to disposing.

The court adopts the construction given by plaintiff to the terms "disposed" or "disposing" and set forth in numbered item 4 at page 6, supra, except that the court declines to adopt the phrase "causing to be placed", inasmuch as it appears that "placed" or placing" adequately defines the terms "disposed" or "disposing" in the '233 patent.

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(10) "Said first and said second ends disposed a variable longitudinal distance from each other." The flexible compensating member or flexible link is positioned so that, upon expansion of the stent, the distance between its two ends changes along the stent's longitudinal axis.

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As to the '001 patent, "disposed about" means that one substance completely surrounds and encircles a second substance. The resulting configuration being one where there are no gaps or discontinuity found in the circumference or the axial direction of the first substance said to be "disposed about" the second substance. See Figures 1, 6, Column 2, lines 20-23.

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C. Claim Construction of "Window Disposed Adjacent to the Hole"

Claim 1 refers to a rotatable platen "having a hole formed therethrough" and an endpoint detector compromising "a window disposed adjacent to the hole formed through the platen, the window rotating with the platen and intermittently providing a pathway for the light beam to impinge on the wafer." ('454 Patent, Col. 16, lines 26-28, 35-38). Plaintiff argues that the claim only requires that the window rotate with the polishing pad. Specifically, Plaintiff points to the three (3) figures that are a part of the patent specification. Figures 3A-3C represent simplified cross-sectional views of respective embodiments of the windows. Figure 3A shows a window as an insert made of light transmissive material which is mounted securely in a hole in the platen.

[SEE FIG. 3A IN ORIGINAL]

Figure 3B represents an embodiment that allows the pad itself to be used as a window. The light is transmitted through the hole in the platen and through a light-transmissive portion of the polishing pad surface, thereby allowing light to transmit
through the pad.

[SEE FIG. 3B IN ORIGINAL]

Figure 3C - the window is essentially a plug that is inserted into the pad.

[SEE FIG. 3C IN ORIGINAL]

Defendants argue that Figure 3A does not conform with the specification because the claim requires that the window be a part of the pad. Defendants focus on the limitation that the "window moves with the polishing pad." Defendants' interpretation would require that when the pad is removed from the machine, the window must still be attached.

The Court does not interpret the claim the same. Looking at the claim language, it is clear that Plaintiff intended to incorporate all three figures as part of the patent. Dependent Claim 2 states "wherein the window compromises an insert mounted within the hole in the platen, the insert being transmissive to the light beam" and is depicted as Figure 3A. Dependent Claim 6 describes the window as comprising "a portion of the polishing pad, the portion being at least partially transmissive to the light beam" as depicted in Figures 3B and 3C. (454 Patent, Co. 16, lines 57-59). Several other dependent claims also refer to both embodiments of the window:

. Dependent Claim 14: "wherein the window comprises a light-transmitting insert mounted in a hole through the platen." (454 Patent, Col. 17, lines 23-25).

. Dependent Claim 18: "wherein the window comprises a light-transmitting portion of the polishing pad." (454 Patent, Col. 17, lines 39-40).

. Dependent Claim 25: "wherein the polishing pad support comprises a metal portion and the window comprises a hole through the metal portion of the polishing pad support." (454 Patent, Col. 18, lines 17-20).

. Dependent Claim 26: "wherein the window comprises a light-transmitting portion of the polishing pad." (454 Patent, Col. 18, lines 22-24).

Defendants' construction is inconsistent with the claim language and seeks to limit the claim language only to the embodiment in dependent Claim 6.

Additionally, the specification clearly describes Figures 3A-3C as part of the preferred embodiments of the apparatus. The specification goes into great detail to explain the difference in the figures and how to achieve the results as tested in the embodiment. (454 Patent, Cols. 6-7). There is no additional evidence provided by the prosecution history.

The plain and ordinary meaning, which is not contradicted by the intrinsic evidence, would leave a person to conclude that the window must move with the polishing pad while the machine is in motion. Accordingly, the Court FINDS that the "window disposed adjacent to the hole formed through the platen" encompasses windows that are both in and near the hole of the platen.

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element to mean "placed beside or on a line parallel to the lengthwise centerline of the housing." (Id.; D.I. 138 at 31.) Later, AMO accepted Alcon's suggestion that the full plain and ordinary meaning of the term "along," means "to be placed through, on, over, or continuously beside or on a line or course parallel and close to." (D.I. 192 at 7.) Alcon, however, does not propose that I accept what even it has offered as the "plain and ordinary meaning" of "along," but rather that I construe "along" to mean "on." (D.I. 164 at 2.) In support of its narrow construction, Alcon refers to Figures 2 and 3 in the specification, as shown below, depicting the only embodiment disclosing the outlet's position in relation to the lengthwise centerline of the housing, in which the outlet is depicted directly on the lengthwise centerline of the housing. 5 (D.I. 171 at 16.)

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5 Figures 1, 2, and 3 are reproduced below. Figures 2 and 3 depict the housing, including the longitudinal axis (34) and the aspiration fluid outlet (42) and chamber (36).

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GET DRAWING SHEET 1 OF 3

Alcon thus proposes that I construe "disposed along" to mean "placed on," such that the claim element means "placed on the lengthwise centerline of the housing." (D.I. 164 at 2; D.I. 171 at 15.)

AMO asserts that Alcon's limited construction for the term "along" is too narrow because it unnecessarily limits what Alcon has admitted to be the plain and ordinary meaning of the term "along" to only part of that meaning based on the disclosure in the specification. (See D.I. 192 at 6-8.) Thus, AMO argues that Alcon's proposed construction "would impermissibly import a narrowing limitation from the specification to the claims." (Id. at 7 (internal quotation and citations omitted).)

Alcon asserts that a person of ordinary skill in the art would look to the specification as a source to determine the meaning of the term. (D.I. 171 at 15 (citing Toro Co. v. White Consol. Indus., Inc., 199 F.3d 1295, 1299, 1301 (Fed. Cir. 1999)).) Alcon correctly notes that the only embodiment disclosed in the patent is shown in Figures 2 and 3 and illustrates that the outlet (42) is placed directly on the longitudinal axis (34), which the parties agree is "the lengthwise centerline of the housing." (Id. at 16.) Alcon also asserts that if I were to accept AMO's initially proposed construction for "along," "arranged or placed beside or on a line parallel to the lengthwise centerline of the housing," the construction would improperly exclude the only embodiment disclosed in the specification because AMO's proposed construction did not include that "along" could mean "on." (D.I. 192 at 25-27.) In addition, Alcon argues that if I were to accept AMO's later proposal, to construe "along" to mean "continuously beside or on a line or course parallel and close to," the term would be indefinite because there would be no limit to the allowable distance that would be considered "close to" the lengthwise centerline of the housing. (Id. at 26.)

In response, AMO asserts that Alcon's indefiniteness argument is not supported in the case law, 6 that "one of ordinary skill in the art would understand that if the chamber outlet is 'along' the axis it must be in proximity to the axis," and that the chamber and its outlet must be placed in the housing and connected to the aspiration pump, which provide "a specific limit to how far away from the housing longitudinal axis it could be." (D.I. 192 at 8.) AMO relies on the Federal Circuit's opinion in TI Group Auto. Sys. (N. Am.), Inc. v. VDO N. Am., L.L.C., 375 F.3d 1126 (Fed. Cir. 2004), for its legal argument that the "presumption that the ordinary meaning of a term applies may not be rebutted simply by pointing to the preferred embodiment disclosed in the patent." (D.I. 192 at 6 (citing TI Group, 375 F.3d at 1136).) Alcon attempts to distinguish TI Group, by pointing to the Federal Circuit's observation that the patentee was "entitled to the full breadth of claim scope supported by the words of the claims and the written description," 375 F.3d at 1138, and arguing that "the written description [in that case] provided independent support for the meaning asserted." (D.I. 187 at 28.) Alcon further argues that "unlike the TI Group case, in this case, nothing in the written description supports a construction that would permit the outlet be placed anywhere other than on the lengthwise centerline of the housing." (Id.)

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6 AMO relies on Verve LLC v. Crane Cams, Inc., 311 F.3d 1116, 1119-1120 (Fed. Cir. 2002) and Andrew Corp. v. Gabriel Elecs., Inc., 847 F.2d 819, 821-22 (Fed. Cir. 1988) to support its position. (D.I. 192 at 8.)
ii. The Court's Construction

There is a heavy presumption that the patent inventors intended the ordinary meaning of a term to apply. See Teleflex, 299 F.3d at 1325. Alcon admits that the ordinary meaning of "disposed along" is "to be placed through, on, over, or continuously beside or on a line or course parallel and close to." (D.I. 171 at 16.) AMO agrees that the term "along," "implies some degree of proximity or closeness" and accepts Alcon's version of the plain and ordinary meaning of the term, even though AMO repeats the definition without explicitly including the "close to" language. (D.I. 192 at 7.) AMO, however, apparently accepts that portion of the construction of "along," because the construction it initially proposed, included the words "close to." (See D.I. 164 at 2 (AMO proposed that the term "along" be construed to mean "continuously beside or on a line or course parallel and close to.").) Thus, both parties apparently accept that the full plain and ordinary meaning of the term "along" is "to be placed through, on, over, or continuously beside or on a line or course parallel and close to." (See D.I. 171 at 16; D.I. 164 at 2; D.I. 192 at 7.)

The Federal Circuit in TI Group was presented with a similar issue. See, 375 F.3d at 1135-36. The plaintiff in that case argued for a broader construction of the term "within" while the defendant proposed a narrower construction for that term. Id. The defendant asserted that the structures illustrated in the drawings of the written description supported the narrower construction and that no structure supported the broader definition proposed by the plaintiff. Id. at 1136. In response, the Federal Circuit reiterated the rule that "the mere fact that the patent drawings depict a particular embodiment of the patent does not operate to limit the claims to that specific configuration." Id. (quoting Anchor Wall Sys. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1306-07 (Fed. Cir. 2003) (citing Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc., 222 F.3d 951, 956 (Fed. Cir. 2000))). The court continued, "the drawings, without more, are insufficient to cabin the scope of the ordinary and customary meaning of the term … in this case." Id. Thus, that the figures in the written description depict only one embodiment showing the outlet placed on the housing longitudinal axis, does not, in and of itself, narrow the scope of the ordinary and customary meaning of the term.

Alcon also cites to the Federal Circuit's construction of another claim term in that same case to argue that the written description there affirmatively supported a broader construction of the disputed claim term, whereas the specification in this case does not. (D.I. 187 at 28.) A full reading of the Federal Circuit's opinion, however, reveals that the court placed the burden on the defendant to find evidence in the written description that the claim term should be limited to a more narrow construction than its plain and ordinary meaning would suggest. TI Group, 375 F.3d at 1138 (the plaintiff "is entitled to the full breadth of claim scope supported by the words of the claims and the written description. [Defendant's] argument again focuses on a single, narrow dictionary definition, when many equally apt, and broader, definitions are also provided. The written description does not restrict the ordinary and customary meaning of [the claim term] in any respect. Therefore, we conclude that the [claim term] is not restricted [to the narrow construction argued by the defendant]."). Since, in this case, Alcon has not pointed to any such evidence, I construe "along" to mean "to be placed through, on, over, or continuously beside or on a line or course parallel and close to." Thus, the claim element "disposed along the housing longitudinal axis" means "to be placed through, on, over, or continuously beside or on a line or course parallel and close to the lengthwise centerline of the housing." I do not, however, pass judgment on Alcon's argument that the construction I have adopted renders the claim indefinite, except to note that there is a factual dispute regarding this issue that is not pertinent to the construction of this claim term.

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(2) "Disposed and adapted to cooperate so that upon expansion of said stent said first loops and said second loops change shape to compensate for the tendency of said stent to foreshorten when said stent is expanded." The two sets of loops must be oriented in different directions, one a generally vertical direction and one a generally horizontal or longitudinal direction. This limitation encompasses growth of one of the sets of loops in the longitudinal direction that is caused by expansion of the stent by a balloon or other mechanical means.
9. "disposed between"

Floe proposes that this phrase be construed as "arranged or placed in the space that separates two structures or points." Newmans, however, contends that this phrase should be construed as "with one edge connected to the upper edge of the deck protective surface and the opposite edge connected to the longitudinal edge of the lower portion." Floe asserts that its proposed construction is consistent with the plain meaning of the phrase "disposed between." Floe also contends that dictionary definitions of "dispose" and "between" are consistent with its proposed construction. For example, Merriam-Webster's Collegiate Dictionary 109 (10th ed. 2001), defines "between" as "in the time, space, or interval that separates: in intermediate relation to[.]", and "dispose" as "to put in place: set in readiness: ARRANGE[.]". Floe also points out that the Federal Circuit has defined "between" to mean "in or through the space that separates (two things)." See Elekta Instrument S.A. v. O.U.R. Sci. Int'l, Inc., 214 F.3d 1302, 1307 (Fed. Cir. 2000). Additionally, Floe contends that its proposed construction is consistent with the specification.

Newmans, on the other hand, does not disagree that Floe's construction is consistent with the plain meaning of the phrase "disposed between." Instead, Newmans asserts that the prosecution history contains a clear disclaimer of scope. Newmans first asserts that various choices by the patentee in drafting various claims of U.S. Patent 5,421,612 (the '612 Patent"), to which the '379 Patent claims priority, support its proposed construction. But aside from being a different patent from the one at issue here, Newmans' arguments regarding the '612 Patent are based on ambiguous and speculative inferences. These inferences do not constitute a clear disclaimer of the plain meaning of the phrase "disposed between." Additionally, Newmans asserts that the patentee disclaimed the plain meaning of "disposed between" when, after his claims were rejected, the patentee amended the claims to read "disposed between" instead of "disposed." (See Decl. of Douglas J. Frederick in Support of Newmans' Claim Constructions ("Frederick Decl." at P 3, Ex. B at FL000175-77.) Further, Newmans asserts that in amending the claims, the patentee distinguished Pittman on the ground that the "ramp surface" in Pittman "is joined at only one edge" to the deck protective surface "and has one edge unconnected." Thus, according to Newmans, the "ramp surface" of Pittman is not "disposed between" anything because it "has one edge unconnected."

The Court, however, disagrees with Newmans that the patentee's response to the Examiner's rejection unequivocally disclaimed a construction that would "encompass a ramp surface connected at one edge to the upper edge of the edge protecting surface and having the opposite edge of the ramp surface left as an unconnected edge." (Defendant's Opening Markman Brief at 24.) The Court finds that the patentee made the relevant amendments to clarify that, unlike Pittman, Claims 1 and 6 require an inclined ramp surface. Here, the patentee never clearly indicated that "disposed between" should be defined as Newmans asserts. Thus, consistent with the plain meaning of the phrase "disposed between," the Court construes the phrase as "arranged or placed in the space that separates two structures or points."
592 (defining "insert" as "to put or thrust in" and "to put or introduce into the body of something"); D.I. 151, ex. E at 221 (defining "central" as "containing or constituting a center" and "situated at, in, or near the center"); 625 (defining "insert" as "to put or thrust in" and "to put or introduce into the body of something"); see also Random House Dictionary of the English Language 335 (2d ed. 1987) (defining "center" as "the middle point").

13 The '264 patent specification does not alter the plain ordinary meaning of inserting. Compare '264 patent, col. 1, ll. 52-54; col. 2, l. 67 - col. 3, l. 1; col. 4, ll. 66-68; col. 5, ll. 24-27; fig. 5 with '264 patent, col. 2, ll. 31-34; col. 3, ll. 25-27; col. 4, ll. 63-66.

The '264 patent specification also shows that the preassembly is positioned to include the middle point of the length of the tubular body. '264 patent, col. 2, l. 66 - col. 3, l. 1; col. 3, ll. 27-29; figs. 1, 4, 5-10.

B. Disposed Circumferentially

The second disputed term -- "disposed circumferentially" -- appears in the body of claim 23 and describes the placement of the inflatable bladder component of the invention. Defendant contends that "disposed circumferentially" describes a bladder placed along the perimeter of an object or space such that it encircles and defines an interior area. Plaintiff, however, argues that the phrase reads on any bladder occupying the perimeter of a defined area, even if it also occupies the interior of that area. Plaintiff claims, in other words, that a bladder "disposed circumferentially" can fill, rather than simply surround, an interior space, provided that "its edge extends along the circumference or perimeter area within the interior area." Pl.'s Mem. of Opp. at 11. As with the term "device," neither party contends that the inventor acted as his own lexicographer with respect to the phrase "disposed circumferentially," or that the phrase has a specialized, technical meaning in the relevant fields of industrial art. Accordingly, analysis of the intrinsic evidence must begin with the ordinary and customary meaning of the plain language of claim 23. Tex. Digital, 308 F.3d at 1201-02.

Conveniently and appropriately, the parties are largely in agreement with respect to the plain meaning of the language at issue. First, the parties agree that the word "circumferentially" refers to the perimeter of a generally circular object or area. Second, the parties also agree that the phrase "disposed circumferentially" describes the placement of the bladder in the overall invention, not the shape of the bladder. By mutual agreement, therefore, the phrase "an inflatable bladder coupled to [a] spring and … disposed circumferentially within [an] interior area" describes a bladder placed along the perimeter of an interior area defined by a surrounding spring. This agreed ordinary and customary meaning, however, does not answer the question whether a bladder thus described necessarily encircles a second interior space, i.e., is annular in shape.

Comparing the language of claim 23 to that of other claims in the '344 patent, however, provides some support for a construction of "disposed circumferentially" that requires encirclement. Claim 24, for example, describes "the device of claim 23, said inflatable bladder defining a second interior area, further comprising a panel coupled within said second interior area." The phrase beginning, "said inflatable bladder," serves to clarify that the referenced bladder -- claim 23's bladder -- encircles a second interior area. Contrary to plaintiff's contention that the phrase actually highlights a difference between claims 23 and 24, the difference between the claims is plainly set forth through the use of the phrase "further comprising," which goes on to differentiate claim 24 from claim 23 by requiring that a panel be placed in the interior area defined by the bladder. Thus, the plain language of claim 24 supports the argument that "disposed circumferentially" should construed to require encirclement of an interior area.

Opposing this conclusion, plaintiff offers a different comparison of claim terms from the '344 patent. As plaintiff points out, claim 2 describes an inflatable bladder "disposed circumferentially about" an interior panel. Seizing on claim 2's substitution of the word "about" for "within," plaintiff contends that claim 2 necessarily describes an encircling bladder, and, conversely, that the bladder of claim 23 should not be construed necessarily to encircle. The weakness in this argument is that while it clearly distinguishes the meanings of the terms "about" and "within," it offers no instruction as to the inherent contextual meaning of "disposed circumferentially." Thus, while the principle of claim differentiation makes clear that the bladder described in claim 2 is located outside an interior panel, and that the bladder described in claim 23 in located inside an
exterior spring, it does not establish whether claim 23's bladder must encircle an interior area or may converge to the center of the interior space.

The '344 patent specification provides further guidance on the question whether, in context, a bladder "disposed circumferentially" necessarily encircles an interior area. The "Summary of the Disclosure" section, which describes the invention as a whole rather than merely the preferred embodiments, states that the invention "includes a coilable spring and a flexible panel," and that "along the outer edge of the flexible panel is a perimeter pocket into which the coilable spring and at least one inflatable chamber are placed." This description is consistent with a reading of "disposed circumferentially" that requires encirclement. The fact that the Summary goes on to state that "in addition to or instead of the perimeter pockets, the central portion of the flexible panel may include pockets into which inflatable chambers may be placed," does not alter this conclusion, as it highlights the contrast between "central" and "perimeter," i.e., circumferential, placement.

--- Footnotes ---

9 See C.R. Bard, 388 F.3d at 864 (stating that sections describing the invention as a whole are more likely to support "a limiting definition of a claim term").

10 '344 patent, col. 1, ll. 52-56.

11 '344 patent, col. 2, ll. 3-6. Additionally, although not part of the claim construction analysis, it is nonetheless worth noting that the specification drawings and descriptions all depict bladders that encircle a flexible panel on which a person might lie. In the one suggested alternative configuration that includes bladders in the central portion of the flexible panel, the central bladders merely cross the panel rather than fill the central space and thus are not "disposed circumferentially" under either party's definition. See '344 patent, fig. 4. Accordingly, the specification draws a clear distinction between centrally-located bladders and bladders "disposed circumferentially."

--- End Footnotes ---

The prosecution history of the '344 patent also supports a construction of "disposed circumferentially" that requires encirclement. Among other things, it reflects that the phrase "disposed circumferentially" was added after the predecessor of claim 23 was rejected by the patent examiner in January 2002 as anticipated by U.S. Patent No. 6,171,100 ("the '100 patent"), which described a device composed of a closed-loop spring surrounding a circular bladder. See Exhibit 2. The written summary of the rejection states that the inventor and examiner discussed "circumferential disposal of the spring and/or bladder" as potential claim language to distinguish claim 23 from the '100 patent. Because the prior art sought to be avoided by the use of a bladder "disposed circumferentially" included a circular, centrally-located bladder, the phrase "disposed circumferentially" cannot be reasonably be construed to read on a bladder occupying the center of an interior area. While plaintiff correctly notes that the drawings in the '100 patent do not depict the bladder extending all the way to the perimeter defined by the spring -- and thus do not depict a bladder "disposed circumferentially" under its proposed construction of that phrase -- it is difficult to discern a patentable distinction between a circular, centrally-located bladder that occupies the entire area defined by a closed loop spring and a circular, centrally-located bladder that occupies less than all of that area. Accordingly, construing "disposed circumferentially" to require encirclement rather than mere occupation of a perimeter creates a clearer distinction between the '344 patent and the '100 patent. Additionally, the prosecution history reflects that the examiner described several pieces of prior art as having a bladder "disposed circumferentially," and that in each case the bladder so described encircled rather than filled an interior space. As with the specification, therefore, the prosecution history of the '344 patent makes clear that as used in claim 23, the phrase "disposed circumferentially" describes an encircling object.

For the foregoing reasons, the phrase "disposed circumferentially" does not describe an object that entirely fills the interior of a defined area even if it also occupies the perimeter portion.

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3. "disposed exteriorly about at least a portion of the perimeter of the bottom portion"
Claim 1 teaches that the bolster must be "disposed exteriorly about at least a portion of the perimeter of the bottom portion." 502 patent at col. 3, l. 44. The issue here is whether this language represents a means-plus-function claim that invokes 35 U.S.C. § 112, P 6. Defendants contend that § 112, P 6 applies, and the function of "disposing" the bolster should be construed to cover fasteners, straps, or equivalents secured to the interior of the outer covering. Flexi-Mat argues that this claim falls outside § 112, P 6.

Section 112, P 6 allows for an element in a claim to be expressed "as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof." 35 U.S.C. § 112, P 6. Such limitations are generally known as "means-plus-function" claims. Apex, Inc. v. Raritan Computer, Inc., 325 F.3d 1364, 1371 (Fed. Cir. 2003). Means-plus-function claims allow a patent applicant to claim a functional element without reciting specific structures for performing those functions. Id. When § 112 applies, claim construction consists of two steps: (1) identifying the function and (2) identifying the structure described in the specification that performs that function. ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1087 (Fed. Cir. 2003).

The Federal Circuit has established a framework for determining whether a claim invokes § 112, P 6. Micro Chemical, Inc., v. Great Plains Chemical Co., Inc., 194 F.3d 1250, 1257 (Fed. Cir. 1999). If the word "means" appears in association with a function, § 112, P 6 is presumed to apply. Id. This presumption may be rebutted if the "claim itself recites sufficient structure, material, or acts to perform the claimed function." Id. If the word "means" does not appear in the claim language, "a claim element is presumed to fall outside means-plus-function strictures." Id. This presumption collapses "when an element lacking the term means' nonetheless relies on functional terms rather than structure or material to describe performance of the claimed function." Id.

Because claim 1 does not use the word "means," it is presumed that § 112, P 6 does not apply. The analysis then turns on whether claim 1, "as understood by one of ordinary skill in the art, . . . fails to recite sufficiently definite structure or else recites a function without reciting sufficient structure for performing that function." Apex, 325 F.3d at 1373.

The relevant portion of claim 1 provides:

a bolster removably disposed within the interior of the outer covering and substantially all of said bolster disposed exteriorly about at least a portion of the perimeter of the bottom portion without being secured to the removable cushion

502 patent at col. 3, ll. 42-46. This language describes the bolster as "disposed exteriorly." These are non-technical words whose meanings to one skilled in the art are readily apparent: "disposed" means "to put in place," and "exteriorly" means external or situated at the outer surface. See Webster's Third New International Dictionary (1986). Thus, the term "disposed exteriorly" explains that the bolster is positioned alongside the surface of the outer edge of the bottom cushion. "Disposed exteriorly" is not a specific function; rather, it is a description of the location of a structure -- the bolster -- relative to other structures.

The construction of "disposed exteriorly" as structural rather than functional makes sense in light of the specification. The specification repeatedly describes, and the figures each depict, the bolster as "disposed about at least a portion of the perimeter of the bottom portion." 502 patent at col. 2, ll. 2-5, 52-53. In describing the advantages of securing the bolster to the interior of the cover, the patentee explains that "holding the bolster in the bolster pocket keeps the bolster relatively fixed in position with respect to the perimeter of the bottom portion of the pet bed." Id. at col. 3, ll. 4-7. This language suggests that the invention consisted of a bolster that was located in a certain position relative to the bottom cushion. The term "exteriorly" makes clear that the position is along the outer edge of the base.

Defendants contend that claim 1 includes the function of "disposing" the bolster exteriorly about at least a portion of the perimeter of the bottom portion." Docket No. 79 at 16. They argue that the structures for performing this function are the fasteners or straps mentioned not in claim 1, but in claims 4, 5, 6, 9, 10, 11 and in the specification at col. 2, ll. 11-12, 61-68 and col. 3, ll. 1-7.

This interpretation distorts, and consequently misconstrues, the claim terms. "Disposing the bolster" could be construed as functional language claiming the function of positioning the bolster in place. But this is not the language that the patentee used. Claim 1 clearly states that the bolster is "disposed exteriorly," not that some later-claimed structure is "disposing the
bolster." The fact that the patentee also claimed structures -- fasteners or straps -- for holding the bolster in place does not convert his description of the bolster in claim 1 into a means-plus-function claim.

Thus, the claim language and specification indicate that the presumption against applying § 112, P 6 stands, and the strictures of that provision do not limit the construction of "disposed exteriorly about at least a portion of the perimeter of the bottom portion."

"Disposed generally opposite." The first and second loops, defined as horizontally-facing structural elements, are positioned across from each other and approximately aligned with each other along the longitudinal axis of the stent.

A Thumb-Associable Cluster of Input Keys Disposed Generally Over Three Mutually Intersecting Surfaces

Microsoft argues that this phrase should be construed to mean that the thumb keys must be disposed over three distinct surfaces, with each surface sharing an intersection with the other two surfaces, and that "the keys of the thumb cluster cannot be in a uni-planar array," i.e., on one planar surface. Microsoft's Memorandum in Support of Non-Infringement of '477 Patent, p. 11. Plaintiff does not contest Microsoft's proposed construction or offer an alternative construction for this phrase.

I agree that the claim language does not refer to a device with the thumb keys located on one generally planar surface; rather, the three surfaces must "mutually intersect." "Mutual" means "shared in common." See Goff Decl., Ex 8 (Wester's Ninth New Collegiate Dictionary, p. 783). Further, the patent specification describes the surfaces of the clusters as forming a "keyboard sub-amphitheater" as depicted in Figure 1; this corner formation is distinct from a "uni-planar" surface. See '477 Patent, Col. 4:19-23 and Figures 1, 2, 6.

Notably, during prosecution of the M47 patent, the PTO rejected certain claims of the '477 patent as indefinite. Goff Decl., Ex. 3, pp. 2-3. 1 Specifically, the PTO found that the term "three mutually intersecting surfaces" was indefinite, because it was "recited in an inferential manner, there being no positive recitation of three surfaces and the manner in which they intersect." Id. at Ex. 3, p. 2. In response, Gambaro emphasized "that claims are read in light of the specification, including any drawings" and argued that "it is abundantly clear what is meant by three mutually intersecting surfaces by brief reference to Fig. 1 and the description of surfaces 34a, 34b, 34c of thumb key sub-amphitheater 34." Id. at Ex. 4, p. 9. As noted above, the patent specification and drawings describe and depict a corner formation housing the thumb key clusters.

Plaintiff contends that prosecution estoppel applies only when the applicant offers an amendment to the patent claims, but not when an applicant provides an explanation or clarification to the PTO. Plaintiff is incorrect. "Just as prosecution history estoppel may act to estop an equivalence argument under the doctrine of equivalents, positions taken before the PTO may bar an inconsistent position on claim construction under § 112, P 6." Alpex Computer Corp. v. Nintendo Corp. Ltd., 102 F.3d 1214, 1221 (Fed. Cir. 1996); see also Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 979 (Fed. Cir. 1999) ("Arguments made during the prosecution of a patent application are given the same weight as a claim amendment .... [It] is irrelevant whether [the patentee] relinquished [a] potential claim construction in an amendment to the claim or in an argument to overcome or distinguish a reference"). Therefore I find that Gambaro's representations to the PTO narrow the scope of the claim language.
Finally, the PTO also found that the '477 claims were not patentable over the prior art Malt keyboard, United States Patent No. 4,244,659. In response, Gambaro distinguished the Malt keyboard as having thumb keys placed in a "uni-planar array," rather than "disposed over three mutually intersecting surfaces" as recited in Claim 1 of the '477 patent. Goff Decl., Ex. 4, p. 15. "[A] concession made or position taken to establish patentability in view of prior art on which the examiner has relied, is a substantive position on the technology for which a patent is sought, and will generally generate an estoppel." Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1220 (Fed. Cir. 1995).

Accordingly, I construe this claim to mean that the thumb key clusters must be spread over three distinct and separate surfaces, with each surface sharing an intersection with the other two surfaces.

The second disputed element requires a "smoking pipe means removably disposed in said first cavity." Defendant cites the Court to various definitions of the word "in" to indicate that the pipe must be disposed "entirely within" the first cavity. This is far too narrow a definition. A person can be standing "in" a pool of water; that does not mean that he must be submerged over his head. The more sensible reading of the second element is that some part of the smoking pipe must be disposed within the first cavity so as to hold it in place there. The fact that the smoking pipe in the particular embodiment described in the '658 patent is contained entirely within the first cavity cannot be used to limit the claim itself. Laitram, 863 F.2d at 865; Specialty Composites, 845 F.2d at 987; Du Pont, 849 F.2d at 1433; SRI Int'l, 775 F.2d at 1121.

2. "disposed in a known geometric orientation"

NOMOS contends that the phrase "disposed in a known geometric orientation" used in paragraph (c) of Claim 6 of the '026 Patent means "that the orientation of the ultrasound probe must be known with respect to the frame of reference of the radiation therapy device." (D.I. 80 at 16). NOMOS further contends that the Court should specify in its claim construction order that "the ultrasound probe is disposed [i.e. arranged] in a known geometric position under circumstances where the position of the ultrasound probe with respect to the radiation therapy device is indicated." (D.I. 80 at 16).

BrainLAB contends that "disposed in a known geometric orientation" means "placed or arranged to move with respect to the frame of reference of the linear accelerator." (D.I. 82 at 26). BrainLAB relies both on the language of the specification and on the prosecution history for its construction.

In response to BrainLAB's argument, NOMOS contends that the phrase "to move" is not found in the specification, and thus, BrainLAB's construction improperly limits the claim language to the preferred embodiment. (D.I. 84 at 21). BrainLAB has agreed to change its definition to "place or arrange with respect to the frame of reference of the linear accelerator," in order to eliminate the parties' dispute over the phrase "to move." (D.I. 84 at 34).

After reviewing the claim language in light of the specification and the prosecution history, the Court concludes, as BrainLAB contends, that "disposed in a known geometric orientation" means "arranged with respect to the frame of reference of the linear accelerator." The term "disposed" has previously been construed to mean "arranged," and the parties apparently agree with this construction. The parties' dispute centers on the phrase "known geometric orientation." In discussing the concept of a "known geometric orientation," the specification states:

- Preferably, the known geometric orientation is the orientation of the ultrasound probe 422 with respect to the coordinate system, or frame of reference of the linear accelerator 401, which is along the longitudinal axis of the treatment table 404 . . .

( '026 Patent, col. 7, 11. 60-65). However, during the prosecution history of the '026 Patent, NOMOS clarified that the phrase "known geometric orientation" must relate to the linear accelerator, and that such relation to the linear accelerator was not merely "preferable," but necessary to the invention. To this effect NOMOS stated:
It is necessary that the ultrasound probe 422 be disposed in a known geometric orientation with respect to the frame reference of the linear accelerator 401.

(D.I. 82, Ex. B at 5) (emphasis added). Accordingly, the Court's construction of this phrase is consistent with the specification of the '026 Patent as clarified by the patentee during the prosecution history.

8. Claim 6: Step (c)

Text:

(c) generating at least one two-dimensional ultrasound image of the lesion in the patient's body, with the ultrasound image generating means being disposed in a known geometric orientation for each ultrasound image generated;

'026 Patent, col. 12, ll. 47-51.

NOMOS's Proposed Construction:

The ultrasound probe is disposed (i.e. arranged) in a known geometric position under circumstances where the position of the ultrasound probe with respect to the radiation therapy device is indicated.

NOMOS Opening Brief at 15.

ZMED's Proposed Construction:

This step requires using the ultrasound probe to generate a two dimensional ultrasound image (which is the direct 2D output of the ultrasound probe) for use in identifying the position of the lesion and knowing the orientation and position of the probe at the time the image is made.

ZMED Opening Brief at 27.

Construction:

This step means "placing a conventional, commercially available ultrasound probe that generates a two-dimensional ultrasound image in a known geometric orientation when each ultrasound image is generated of the lesion in the patient's body."

Commentary:

The plain language of step (c) compels this reading, once the meaning of "disposing" is established.

"Filter Means" in Claim 1

Footnotes

Both parties agree that the discussion that follows in the text also covers two other claim elements:

1. Claim 10 in the '433 Patent (W. Mem. 20, M. Mem. 22 n. 13):
filter means in said soil container for filtering said soil-laden water of non-settling soil particles, maintaining said non-floating and non-settling particles with said soil container chamber, and emitting cleansed liquid.

2. Claim 16 in the '433 Patent (W. Mem. 23, M. Mem. 24 n. 15):

filter means disposed in said soil container for filtering non-settling soils from said soil laden portions, and providing a cleansed liquid.

Next the parties dispute the meaning of this highlighted phrase in claim 1:

filter means disposed in said third wall for filtering soil particles from said soil-laden portion of said wash liquid.

That language is in means-plus-function form and relates to this language in the specification (col. 5, ll. 58-60):

Fine mesh filter segments 32 in cover 30 permit flow of cleansed wash liquid to return to dishwasher space 14 for recirculation.

That last-quoted sentence identifies the "filter means" as the combination of the filter segments and the cover. Hence the "filter means" is "disposed in said third wall" by way of the filter-segments-plus-cover combination. Though it must be said that this reading involves an awkward and unusual use of the phraseology "disposed in" (something that would ordinarily be expected to refer to physical placement "in" or "within" the third wall), this Court cannot punish Whirlpool's patent writer for poor drafting by disregarding what is actually disclosed. Instead it reads the language (strained though this may seem) as calling for the filter means "disposed" (that is, positioned) in the third wall only in the sense that the cover is "disposed over and secured to" the third wall (col. 4, ll. 5-6) as discussed in the preceding section. Maytag loses this argument.

The parties also dispute the term "disposed in the gap." LG proposes construing the term to mean "placed in the gap." (Chart at 22.) Whirlpool proposes instead that the term be construed to mean "placed in a space between the lower side of the
vibrating disc and the inner surface of the bottom wall of the washing tub." (Id.)

The Court notes that the parties agree that the term "disposed" should be construed to mean "placed." Claim 1 describes "[a] low frequency vibration type washing machine comprising . . . a rigid vibrating disc having a lower side . . . , the lower side of the vibrating disc disposed in uniformly spaced relation to the inner surface to create a gap . . . ." (‘886 Patent, col. 3, l. 34 to col. 4, l. 9.) The machine also comprises "shrinkable shielding means disposed in the gap to prevent clothes from becoming jammed in the gap during a clothes washing operation." (Id., col. 4, ll. 10-12.) Moreover, in construing the above terms, the Court has already noted that it is the space between the lower side of the vibrating disc and the inner surface of the bottom wall that creates the relevant gap.

The Court therefore agrees with Whirlpool that "disposed in the gap" should be construed to mean "placed in the space between the lower side of the vibrating disc and the inner surface of the bottom wall of the washing tub."

The parties also dispute the term "the lower side of the vibrating disc disposed in uniformly spaced relation to the inner surface to create a gap." LG proposes construing the term to mean "the lower side of the vibrating disc disposed in uniformly spaced relationship to the inner surface [i.e., consistent degree of spacing between the lower side of the vibrating disc and the inner surface of the bottom portion of the washing tub] to create a gap." (Chart at 17-18.) Whirlpool proposes instead that the term be construed to mean "all points on the lower side of the vibrating disc have the same spacing relative to the inner surface of the bottom wall of the washing tub during vibration." (Id.)

Claim 1 describes "[a] low frequency vibration type washing machine comprising . . . a rigid vibrating disc having a lower side . . . , the lower side of the vibrating disc disposed in uniformly spaced relation to the inner surface to create a gap . . . ." (‘886 Patent, col. 3, l. 33 to col. 4, l. 9.) The summary of the patent states that an object of the invention is "to provide a low frequency vibration type washing machine having shrinkable shielding means . . . whose shielding means totally or partially shields the gap between the low frequency vibrating disc and the tub bottom from the outside." (Id., col. 1, ll. 60-67.)

Figures 2, 3, and 4 are embodiments of the claimed invention. Each one depicts the gap as the one between the lower side of the vibrating disc and the inner surface of the bottom wall. The written description for Figure 2 states that "[i]n this first embodiment, the shrinkable shielding means for prevention of clothes jamming comprises a shrinkable shielder 4 which is annularly placed in the gap between a low frequency vibrating disc 2 and the inner bottom of a washing tub 1 at the lower edge of the disc 2." (Id., col. 2, ll. 37-41.) The written description for Figure 3 refers to the gap as "between the inner bottom of the tub 1 and the vibrating disc 2." (Id., col. 3, ll. 11-12.) The written description for Figure 4 also refers to the gap as "between the inner bottom of the washing tub 1 and the disc 2 at the lower edge of the disc 2 . . . ." (Id., col. 3, ll. 23-25.) The Court therefore agrees with Whirlpool that the "inner surface" refers to the inner surface of the bottom wall.

With respect to the rest of Whirlpool's proposed construction, however, it has identified no intrinsic evidence in support of its construction. The Court will therefore reject the other aspects of Whirlpool's proposed construction of the term.

For these reasons, the Court construes the term "the lower side of the vibrating disc disposed in uniformly spaced relation to the inner surface to create a gap" to mean "the lower side of the vibrating disc disposed in uniformly spaced relation to the surface of the bottom wall to create a gap."

FieldTurf's Proposed Construction: "Located between"
SCG's Proposed Construction: "Placed into unoccupied spaces"

The Court's Claim Construction: "Located between"

It is the infill layer that is "disposed interstitially" between ribbons in the claims. FieldTurf points to the specification, which describes a "unique infill layer of two graded courses of particulate material disposed interstitially between the upstanding ribbons" and "[d]isposed interstitially between the upstanding ribbons 2 upon the upper surface 1 is an infill layer 3 of particulate matter." '689 patent, 5:10-21; 9:48-56. FieldTurf argues that these passages support its claim construction of "disposed interstitially" as requiring a structural relationship (i.e, relative location) as opposed to the active meaning proposed by SCG.

The only portion of the specification cited by SCG to support its claim construction, '689 patent, 9:48-50, does not say anything that would equate "disposed interstitially" with actively placing the infill layer into unoccupied spaces. Indeed, where the FieldTurf patent describes the active steps in manufacturing the turf it did so explicitly. See '689 patent, 10:33-34 ("After the mixed lower infill layer is laid a substantially pure rubber particulate material is placed as a resilient top layer). FieldTurf chose to write its claims as product claims, and those claims define the invention by its structure. Hazani v. ITC, 126 F.3d 1473, (Fed. Cir. 1997) (explaining that a claim is properly characterized as a product claim where the "limitation, read in context, describes the product more by its structure than by the process used to obtain it"). Accordingly, unless there is something in the claim language that quite clearly demonstrates that method steps are claimed, courts decline to read method steps into the claims. Vanguard Prods. Corp. v. Parker Hannifin Corp., 234 F.3d 1370, 1372 (Fed. Cir. 2000) (explaining that "[t]he method of manufacture, even when cited as advantageous, does not itself convert product claims into claims limited to a particular process"). Similarly, there is nothing to indicate that these claims at issue are product-by-process claims, 10 wherein a product (here the synthetic grass assembly) is claimed by the process used to manufacture that product (i.e., placing a first course between ribbons, placing a second course between ribbons). The claim is easily defined and understood through structural language. SmithKline Beecham Corp. v. Apotex Corp., 439 F.3d 1312, 1315 (Fed. Cir. 2006) (explaining that "[t]he purpose of product-by-process claims is to allow inventors to claim an otherwise patentable product that resists definition by other than the process by which it is made").

----------------- Footnotes ----------------

10 "A product-by-process claim is 'one in which the product is defined at least in part in terms of the method or process by which it is made.'" SmithKline Beecham Corp. v. Apotex Corp., 439 F.3d 1312, 1315 (Fed. Cir. 2006) (quoting Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 158, 109 S. Ct. 971, 103 L. Ed. 2d 118 n. (1989)).

----------------- End Footnotes ----------------

What is really at issue with this claim term, and a number of claim terms that follow, is a premature attempt by SCG to have the court decide certain infringement issues. As the Court noted above, the ultimate conclusion of infringement or noninfringement is a two-step process. The only part of that process at issue here is claim construction. Nonetheless, SCG is seeking a construction which requires the layer or courses of the claims to be placed or installed at a particular time. The reason is apparent from the following arguments which are repeated a number of times:

FieldTurf further admits that the invention is limited to artificial turfs having "resistance to particle displacement." Column 7, lines 42-47. In other words, where the resilient granules or the hard granules migrate and are not resistant to particle displacement, the artificial turf does not and cannot infringe the patent. Migrating or displaced granules are not "placed" by SCG. Migrating or displaced granules are placed by whatever forces (e.g. weather, gravity, wear) cause the granules to migrate or become displaced. Displaced granules are not, and cannot be, placed granules.

Doc. 59, p. 27.

Simply put, the claims themselves do not support a claim construction as method claims, in which placing of layers or courses could be required elements. The manner or order of construction of artificial turf is not the issue for a product claim--the physical relationship of the structural components is the issue. The Court acknowledges that this issue is likely to come up in a future infringement analysis if an SCG artificial turf is demonstrated to infringe the claimed structure and if
that infringing structure is the result of a change over time--i.e., the SCG structure would not infringe as installed. But as
SCG's brief acknowledges, that is an infringement issue. 11 Doc. 59, p. 27 ("Though SCG denies infringement in the case at
bar, defendants are never responsible for infringement as a result of changes that occur over time."). The Court declines to
opine on infringement issues at this time.

11 That this is an infringement issue is also supported by the cases cited by SCG. For example, Elyria Nat'l Rubber Heel
Co. v. I.T.S. Rubber Co. explained that "normally, the monopoly is to be judged at the time of the sale." 263 F. 979, 981 (6th
Cir. 1920); see also Stash, Inc. v. Palmgard Int'l, Inc., 937 F. Supp. 531, 537 (D. Md. 1996) (explaining that "where the
alleged infringement . . . occurs, if at all, only over a period of some time, such action does not constitute infringement").

a. "disposed on opposite sides of said chamber"

i. The Parties' Proposed Constructions

AMO initially proposed that I construe "disposed on opposite sides of said chamber" to mean that the "the chamber inlet
and outlet [are] to be arranged facing each other with the chamber, the intervening space, between them." (D.I. 138 at 34
(emphasis added).) AMO later proposed that I construe the term to mean "the chamber inlet and outlet are arranged with
the chamber, the intervening space, between them." (D.I. 164 at 3-4.) Alcon proposes that I construe "disposed on opposite
sides of said chamber" to mean "placed across from one another on the outer portion of the chamber." (D.I. 164 at 3; D.I.
171 at 22.)

AMO argues that Alcon is "impermissibly attempting to 'read in' a limitation from the specification that does not exist"
because "the claim language makes no reference to the 'outer portion' of the chamber." (D.I. 138 at 34.) Additionally, AMO
asserts that because claim 3, which is dependent upon claim 2, claims a chamber with the chamber inlet along the chamber
perimeter, the doctrine of claim differentiation creates a strong presumption that claim 2 should not be interpreted to require
that the chamber inlet and outlet be placed on the "outer portion" of the chamber. 8 (Id. at 34-35.)

8 The same arguments apply to claim 8, which also includes the element "disposed on opposite sides of said chamber," and
claim 9, which depends from claim 8 in the same manner in which claim 3 depends from claim 2.

ii. The Court's Construction

I construe "disposed on opposite sides of said chamber" to mean "placed across the chamber from one another on the outer
portion of the chamber." First, the parties do not disagree that the term "disposed" means "placed or arranged." (D.I. 164 at
3.) Second, the plain and ordinary meaning of "opposite," when used to describe how two objects are positioned in relation
to each other, is "across an intervening space from and usually facing or on the same level with." Webster's Third New
International Dictionary 1583 (1996). The intervening space in claim 2 is clearly the chamber. Third, the plain and ordinary
meaning of "side" is "a boundary line of a geometrical figure," in this case the circular or toroidal chamber. Id. at 2111. The
boundary line of the chamber is clearly its outer portion. Thus, I do not believe that Alcon has impermissibly "read in" limitations from the specification, but rather proposed a construction that is entirely consistent with the claim element's plain and ordinary meaning. AMO's construction, on the other hand, does not attribute any meaning to the term "side" as used in the claim element.

Additionally, the doctrine of claim differentiation does not prevent the term "side" from being construed to mean the outer portion because claim 3 contains an additional limitation not included in claim 2, and, as such, is not rendered superfluous. 9 See Telemac Cellular Corp. v. Topp Telecom, Inc., 247 F.3d 1316, 1325-26 (Fed. Cir. 2001). Therefore, I construe "disposed on opposite sides of said chamber" to mean "placed across the chamber from one another on the outer portion of the chamber."

9 Claim 3 contains the additional limitation of "means, orienting said chamber inlet along the chamber perimeter, for causing circulation of the introduced fluid within said chamber in order to inhibit settling of particulate material, in the introduced fluid, in said chamber." ('765 patent, col. 5, ll. 16-19.) Thus, this additional limitation further narrows the scope of claim 3 to a way in which the inlet is oriented.

2. "disposed on the base layer"

Claim 1 of the '102 Patent describes a first electrode with a gel layer "disposed on the base layer." Philips renews its disclaimer arguments as to this term, as set forth in Section II.D.1, above, and further asserts that this term should be construed as "spread directly on the surface of the base layer (i.e., without any conductive contact layer, such as a homogeneous, thinly deposited metallic layer, a conductive ink material, or a flexible metal mesh, between the gel layer and the base layer)." Cardiac Science contends that "disposed on" means "placed on."

Similar to the Court's construction of the term "overlaying the base layer" in the '919 Patent, the Court finds that the '102 Patent does not state that the gel layer is directly disposed on the base layer, as Philips contends. The '102 Patent specification offers no further support, other than the illustrations at Figures 13 and 14, which are merely embodiments of the patent. The dictionary defines "dispose" as "to put in place." Merriam-Webster's Collegiate Dictionary, supra, at 361. Consistent with the dictionary definition of the term, the Court construes the term "disposed on the base layer" as "placed on the base layer."

The '483 Patent

Claim 1 of the '483 patent recites three main elements: (1) a substrate, (2) a sub-circuit, and (3) a capacitor with three sandwiched layers -- each "disposed over a portion" of the underlying layer. The tri-layered structure has a first conductive layer of a material such as polysilicon. This layer lies over the semiconductor substrate. A second conductive layer of a material, such as a metal, lies over the first layer surrounded by a guarding capacitor structure. A third layer of a material, such as a metal, lies over the second layer. An insulating layer separates each of these three layers from one another. Thus the invention describes a sandwiched structure as depicted in Figure 2 of the '483 patent (the first, second, and third layers labeled as 34, 36, and 38 respectively).

The disputed portion of claim 1 recites:
a capacitor having first and second plates formed on the first face of said semiconductor substrate, said capacitor having:

a first conductive layer disposed over a portion of the first face of said semiconductor substrate and separated therefrom by a first insulating layer,

a second and shielded conductive layer disposed over a portion of said first conductive layer and separated therefrom by a second insulating layer,

a third conductive layer disposed over a portion of said second and conductive layer and separated therefrom by a third insulating layer,

... a fourth conductive layer disposed in substantially the same plane as said second shielded conductive layer and disposed a predetermined distance therefrom and a third connecting device for connecting said fourth conductive layer to a predetermined voltage.

(emphasis added). The trial court construed "disposed over a portion" to require an "area of coincidence between the two layers greater than zero." Thus, the court interpreted claim 1 to encompass capacitor structures with layers covering anywhere from a small area to the entire area of the underlying surface.

Claim language itself sets the claim scope. Vitronics Corp v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1577 (Fed. Cir. 1996). This court has consistently emphasized that the indefinite articles "a" or "an," when used in a patent claim, mean "one or more" in claims containing open-ended transitional phrases such as "comprising." KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356, 55 U.S.P.Q.2D (BNA) 1835, 1839 (Fed. Cir. 2000); see Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 977, 52 U.S.P.Q.2D (BNA) 1109, 1112 (Fed. Cir. 1999); AbTox, Inc. v. Exitron Corp., 122 F.3d 1019, 1023, 43 U.S.P.Q.2D (BNA) 1545, 1548 (Fed. Cir. 1997). "Under this conventional rule, the claim limitation 'a,' without more, requires at least one." KCJ at 1356 (emphasis added).

Based on this conventional rule, because claim 1 is open-ended, the limitation "disposed over a portion" means "disposed over at least one portion." This claim construction comports completely with the district court's claim construction. Thus, claim 1's proper construction does not limit "disposed over a portion" to only a portion of the layer beneath. In other words, claim 1 includes within its scope a capacitor structure with layers disposed over the entirety of the underlying surface. Claim 1 does not require a capacitor structure shaped like a three-tiered wedding cake, with the first layer being largest in surface area and the third layer being smallest, or stacked like staggered, partly overlapping layers.

When a patent claim uses the word "comprising" as its transitional phrase, the use of "comprising" creates a presumption that the body of the claim is open. In the parlance of patent law, the transition "comprising" creates a presumption that the recited elements are only a part of the device, that the claim does not exclude additional, unrecited elements. See KCJ, 223 F.3d at 1356.

The transition "having" can also make a claim open. Regents of the Univ. of Cal. v. Eli Lilly & Co., 119 F.3d 1559, 1573, 43 U.S.P.Q.2D (BNA) 1398, 1410 (Fed. Cir. 1997). However, the term "having" does not convey the open-ended meaning as strongly as "comprising." "Having," for instance, does not create a presumption that the body of the claim is open. Therefore, this court examines the claim in its full context to determine whether Crystal's use of "having" limits claim 1 to its recited elements.

The language of claim 1 itself does not limit the term "having" to a closed meaning. The '483 patent discloses a capacitor structure that shields the sensitive plate of the capacitor from stray noise. The "Background of the Invention" describes typical prior art capacitors with a two-plate structure. Col. 1, ll. 58-68. The top plate served as a "sensitive 'virtual ground' capacitor plate" while the bottom "shielded the sensitive node from substrate noise." Id. These two-plate capacitors were "still susceptible to noise coupling onto the sensitive top plate through passivation and packaging dielectrics." Id. at 66-68. The claimed tri-layered structure improves noise shielding. The first and third layers are connected together and operate "to shield... the second conductive layer, from noise resulting from external sources or from the semiconductor substrate."
Col. 2, ll. 19-24; col. 4, ll. 8-11 ("The upper metal plate 38 is operable to shield the shielded plate 36 from noise resulting from signals that are disposed above the plate 38.").

Figure 6 illustrates that the preferred embodiment of the claimed '483 invention shields against noise by entirely covering the middle layer (36):

[SEE FIGURE 6 IN ORIGINAL]

According to the written description, the fourth conductive layer (also called the conductive ring 82) "is disposed between the contacts 84 and 85, and the shielded plate 36 to substantially eliminate stray capacitance between plate 34 and sensitive plate 36." Col. 5, ll. 10-15. Contacts 84 connect the upper conductive layer to the intermediate interconnection strip 83 as depicted in Figure 6. Col. 5, ll. 42-50. Contacts 85 connect the lower conductive layer to the same interconnection strip to link the upper and lower layers. Because the conductive ring "is disposed between plate 34 and contacts 84 and 85," a capacitor structure with such a conductive ring must have a middle layer that is smaller in surface area than the upper and lower layers. In other words, because claim 1 recites this fourth conductive layer, the written description requires claim 1 to encompass a capacitor structure wherein the third layer covers the entirety of the second layer.

The written description thus shows the intent to make claim 1 at least partially open to permit the limitation "disposed over a portion" to mean "disposed over at least one portion." Any assertion that "disposed over a portion" means "disposed over only one portion" would contradict the clear purpose of the invention as described in the written description, depicted in Figure 6, and recited in claim 1. Such an assertion would also impermissibly read the preferred embodiment out of claim 1. Vitronics, 90 F.3d at 1583.

The accused Model 931 device has first and third layers of approximately equal size and a smaller second, or middle, layer. Because each layer overlies a portion of the underlying layer, the Model 931 literally infringes claim 1 of the '483 patent. Therefore, this court detects no error in the district court's reading of the "over a portion" limitation and its application of that claim language to the accused device.

b) The Patent Claim at Issue Here

16. Claims 1 and 14 are the independent claims of the ’306 Patent, with claims numbered 2 through 13 dependent, directly or indirectly, upon Claim 1, and claims numbered 15 through 33 dependent, directly or indirectly, upon Claim 14. (LX-16,Cols. 9 through 12.)

17. Laminations has asserted infringement of independent Claim 14. Claim 14 reads as follows:

14. A reservoir container assembly for growing plants comprising

[1] first container means for holding a liquid and having a wall,

[2] second container means for holding a plant growing medium,

[3] conduit means extending from the interior of said first container means through said wall into the interior of said second container means,

[4] said conduit means having means for assisting the transfer of liquid from said first to said second container means,

[5] said second container means having a surface portion that, in use, faces substantially vertically upwardly and a first opening in said surface portion for allowing plant growth therethrough,

[6] said second container means also having a second opening disposed remote from said first opening and for allowing evaporation of liquid therethrough.
18. In short, Claim 14 describes a "reservoir container assembly for growing plants."

b) The Second Opening Disposed Remote from the First Opening

The inventor of the '306 Patent used the term "opening" in relation to a surface portion of the second container facing substantially vertically upwardly to describe the area where evaporation through the surface portion of the second container was to occur, and employed the phrase "disposed remote" to describe the location of the second opening in the surface portion. There is no evidence that the inventor intended these terms to have anything but their ordinary and customary meaning.

An "opening" is ordinarily understood as a gap, a passage, or an open space. (See LX-23 ("opening" defined as an "open space serving as a passage or gap").) The meaning of opening, therefore, is straightforward. Laminations, however, has injected ambiguity into the construction of this element by implying that the open space need not be completely bounded. Whether the second opening means a bounded or unbounded open space can be resolved by an examination of the claim language and the specification.

The term "opening" appears twice in Claim 14 -- the first "opening" and the second "opening." "Claim terms are presumed to be used consistently throughout the patent, such that the usage of a term in one claim can often illuminate the meaning of the same term in other claims." Research Plastics, Inc. v. Fed. Packaging Corp., 421 F.3d 1290, 1295 (Fed. Cir. 2005). This presumption logically takes on greater force where, as here, the identical terms are used in the same claim. In this regard, Mr. Whisenant described the "first opening" in the surface portion of the second container in connection with the second embodiment as follows: "By using a flexible rim for opening 120, the edge of the opening is maintained in intimate contact with the stem growing therethrough." (LX-16, Col. 7, Lines 51 through 53.) The natural inference from this description is that the first opening must be bounded on all sides, an inference supported by Figures 1, 5, and 7 of the '306 Patent. Therefore, the opening, as that term is used in relation to the "second opening," must be an open space bounded on all sides.

The phrase "disposed remote" is also defined by its ordinary and customary meaning. The term "disposed" means "to assign to a particular place or position." Webster's Third International Dictionary 654 (unabridged ed. 1993). The term "remote" is understood as "far removed" from a particular point. (See Defs.' Proposed Findings of Fact, Dkt. Entry 35, P 72.) Thus, as used in Claim 14, the second opening is "disposed remote" from the first opening when it is located at a point "far removed"
from the first opening.

How "far removed" the second opening must be from the first opening can be ascertained by considering the objective of the '306 Patent, as well the written specification. One of the disadvantages of the prior art noted by Mr. Whisenant was the accumulation of salt and minerals caused by localized evaporation around the plant growth, the consequence of which was "stunted plant growth or death of the plant." (Id., Col. 1, Lines 31 through 34.) The '306 Patent purports to eliminate this disadvantage with an opening disposed remote from the plant growth. This, in turn, will facilitate evaporation, and the "salt and minerals [that] build up at the site of evaporation are kept away from the roots of developing plants." (Id., Col. 4, Lines 30 through 36; see also id., Col. 7, Lines 1 through 4; Col. 8, Lines 10 through 13.) This objective, however, can be achieved only if the opening surrounding the plant growth is "spaced a suitable distance from . . . the evaporation opening." (Id., Col. 7, Lines 62 through 63.) Therefore, the second opening is "disposed remote" from the first opening when it is located a suitable distance away from the first opening ensuring that evaporation and the accumulation of salt and minerals does not occur anywhere near the growing plant.

In summary, after considering the relevant language of Claim 14, the ordinary and customary meanings of "opening," "disposed," and "remote," and the written specification of the '306 Patent, the Court construes the sixth element of Claim 14 as: a second open space in the surface portion of the second container, bounded on all sides, that is located a sufficient distance away from the first opening to ensure that evaporation and the accumulation of salt and minerals do not occur adjacent to the growing plant.

Disposed Substantially at the Radius

The '930 Patent claims also require exterior structures, features, or bearing segments "disposed substantially at the radius" of their associated superabrasive cutters. Baker Hughes and ReedHycalog dispute whether these terms require the exterior structures, features, or bearing segments to be centered at the same radius as their associated superabrasive cutters. ReedHycalog contends the patents require the abovementioned centered placement of these structures; Baker Hughes argues the patents are not so limited.

The '930 Patent claims do not contain a "centered" limitation. Despite this claim language, ReedHycalog points to Figs. 1, 2, and 2A of the '930 Patent and the accompanying description to support its construction.

However, the '930 Patent figures do not delineate the centers of the superabrasive cutters or the exterior structures, features, or bearing segments. The figures do not indicate that the centers of the exterior structures, features, or bearing segments lie along the same radius as the centers of the associated superabrasive cutters. The supporting text in the specification also does not describe or impose any requirement that the exterior structures, features, or bearing segments be centered at the same radius as the center of their associated superabrasive cutters.

ReedHycalog further contends Baker Hughes, to overcome a 35 U.S.C. § 102(b) rejection by the Examiner, narrowed its claim language to require the exterior structures, features, or bearing segments to be "centered" at the same radius as the center of their associated superabrasive cutters. During prosecution of the '930 Patent, the Examiner rejected the claim that contained the "disposed substantially at the radius" language under 35 U.S.C. § 102(b) in light of U.S. Pat. No. 4,554,986 (the "Jones Patent"). As Baker Hughes argued when it amended the claims, the Jones Patent discloses bearing structures that extend from center outward and not structures placed at substantially the same radius as an associated superabrasive cutter. Nowhere in the claim amendment did Baker Hughes mention a centered limitation, nor is one necessarily implied to distinguish the claims in the '930 Patent from the Jones Patent. Thus, the prosecution history of the '930 Patent does not support ReedHycalog's contention that the exterior structures, features, or bearing segments must be centered at the same radius as their associated superabrasive cutters.

For the abovementioned reasons, the claim term does not include a "centered" limitation. Therefore, "disposed substantially at the radius" means "located close to the radius." 19
Disposed upon is essentially the same as disposed interstitially, and as such, the Court adopts the same analysis as above, wherein disposed refers to a location, not a method of placing something. With respect to SCG's various arguments, the Court recognizes that the patents-in-suit disclose a method of manufacturing the artificial turf. However, they also disclose a structure and it is that structure (or product) that is claimed. SCG's various arguments for reading the method elements into the claim because they are disclosed in the specification again fail, because there is nothing to indicate that the preferred method of manufacture must be read in the claim or has been defined as the claim as a whole. Once again, the Court also recognizes SCG's noninfringement argument that an artificial turf constructed without the claimed structure may not infringe the patents-in-suit. But that is an infringement issue that may require significant factual details regarding the accused products.

Bradley argues that when it distinguished the '960 Patent over the prior art U.S. Patent No. 2,282,152 (the "Babbin Patent"), the Court required the multiple response thermostat of the '960 Patent invention to be fully exposed in the mixing chamber. Defs.' Opp'n to Claim Constr. at 11-14. Therefore, disposed within means fully exposed in. Id. at 14. In contrast, Lawler argues that for a multiple response thermostat to be disposed within the mixing chamber, only the functional portions of the thermostat that contribute to the response rate must be exposed to the fluid in the mixing chamber. Pl.'s Reply to Claim Constr. at 15-17.

The Court primarily agrees with Lawler. Reading the claims in light of the specification, the Court finds that the phrase a multiple response thermostat disposed within the mixing chamber means that the temperature sensing portions of the thermostat are immersed in the fluid contained in the mixing chamber. Starting with the plain language of claim 1, it appears that, at a minimum, the first and second thermostat portions of the multiple response thermostat must come in contact with the fluid in the mixing chamber between the valve assembly outlet and the flow control valve means. '960 Patent, col. 9, ll. 35-42. Those are the parts of the thermostat that are delineated by claim 1 as being part of the multiple response thermostat that is disposed within the mixing chamber. The purpose of the thermostat is to sense the temperature of the mixed fluid as it mixes in and is let out of the mixing chamber. Therefore, the temperature sensing thermostat portions must come in contact with the fluid mixture in the mixing chamber to perform as required.

The specification reveals that "in order to reliably react to a change in the temperature of the fluid mixture, the thermostat must be immersed in the mixture." Id. col. 4, ll. 53-55. Similarly, another part of the specification teaches that the importance of immersing the thermostat in mixed fluid is "to assure that the thermostat receives a proper indication of the temperature of the exiting fluid." Id. col. 5, ll. 18-20. Clearly, the important part of the thermostat is the temperature sensing portions rather than either the rod that acts in response to changes in those temperature sensing portions, or any support
The Court finds that the phrase disposed within means that the temperature sensing portions of the multiple response thermostat are immersed in the mixed fluid contained in the mixing chamber.

E. Disposed Within a Void of a Main Panel of Said Brim

The next term appears in claim 3, which states: "The illumination headgear of claim 1, wherein said array of light emitting diodes is disposed within a void of a main panel of said brim." The parties agree that "void" means "cut-out, groove, or other opening" and that "disposed" means "located." They dispute whether the claim should be construed to refer to a single void or to several possible voids. Plaintiff relies on the general rule of patent construction that a noun following the article "a" or "an" indicates both the singular and plural form of the noun. See Baldwin Graphic Sys., Inc. v. Siebert, Inc., 512 F.3d 1338, 1343 (Fed. Cir. 2008). As demonstrated by the court's discussion of "contiguous beam," however, the general rule alone does not end the inquiry. The court must still look at the context of the term to determine whether the specific usage is more naturally understood to refer to one particular object. Tivo Inc., 516 F.3d at 1303; Norian Corp. v. Stryker Corp., 432 F.3d 1356, 1359 (Fed. Cir. 2005). Here, the context of the term "a void" does not warrant departure from the general rule.

The patent specification clearly contemplates the possibility of multiple "voids." "Alternatively, the light source and the electrical conducting path are mounted to a preexisting main panel within voids such as cutouts, grooves, or the like (not shown) and secured with stitching, adhesive, or the like." ('831 patent, Col. 5, ll. 24-27)(emphasis added.) The use of the plural in the specification supports Plaintiffs' construction. Further, there is nothing in the context of the claim itself to suggest that "a void" could not also encompass multiple, proximate voids. Use of the singular form of the noun "array" in the claim does not preclude the possibility of multiple voids because an "array" is an arrangement comprised of several lesser components. An "array" of LEDs could easily be situated in multiple, proximate voids, and yet still be configured to produce what appears to be a "contiguous beam" of light.

As nothing in the claims, specification, or prosecution history necessitates a departure from the general rule, the court finds that claim 3's reference to "a void" may mean one or more voids. Accordingly, the court adopts Plaintiffs' construction of "disposed within a void of a main panel of said brim" as: "located within a cut-out, groove, or other opening of the main panel of the brim."

6. "Disposing a light influencing material in said at least one opening" ('682 Patent, claims 22, 25, and 26; '711 Patent, claim 4) (Claim Element 6)

a. The Parties' Positions
ATI proposes that essentially the plain meaning of this claim element be adopted. Dkt. No. 81 at 13-14. Specifically, ATI proposes that the following construction be adopted: "Placing a light influencing material in said at least one opening." Id. The only difference between ATI's proposed construction and the plain meaning is that ATI suggests that the term "disposing" be replaced with the term "placing." Id. Defendants, however, propose the following construction: "Placing light influencing material in at least one hole in the substantially opaque material, in the proper order or arranged as by injection." 12 Dkt. No. 84 at 24-25. In support of this proposed construction, DNP uses The American College Dictionary to define the word "dispose." Id. DNP claims this definition supports a construction that this light influencing material "must be disposed in a particular arrangement or manner." Id.

--- Footnotes ---

12 Sharp provides no briefing on this issue. Dkt. No. 83. Instead, in the Chart, Sharp states that it "agrees with DNP." Dkt. No. 113 at 3.

--- End Footnotes ---

In response, ATI argues that Defendants' proposed construction includes two additional and potentially erroneous limitations: (1) that the disposing is conducted in a special order and (2) that the disposing is achieved by injection. Dkt. No. 81, Pages 13-15. ATI also argues that if the "disposing" need only be in one opening, it is unclear what "order" would be used. Id.

b. Construction

As an initial matter, this Court has not adopted Defendants' proposed construction that the term "opening" be replaced with the term "hole." Therefore, this issue will not be addressed again. Additionally, Defendants' proposed construction that this process must be completed "in the proper order or arrangement as by injection" cannot be adopted for several reasons. First, the plain language of the claims themselves merely require that the "disposing" be in "at least one opening." If only one opening is required, it is unclear how the disposing could be done in any "proper order or arrangement." Accordingly, Defendants' proposed construction of this claim element contradicts this claim element's plain language.

Second, DNP's only support for this proposed construction is a non-technical dictionary that does not necessarily establish the "ordinary and customary meaning" for someone skilled in the art, and, accordingly, this Court is not required to adopt this proposed construction. Phillips, 415 F.3d at 1313. Third, these claims do not require that this step be completed by "injection." DNP argues that the specification supports such a construction that injection is required. See, e.g., Col. 3, Lines 52-57. DNP is correct that one preferred embodiment provides for injection. Id. However, this restriction from one preferred embodiment should not be imported to the claim terms. Phillips, 415 at 1323. Accordingly, this Court rejects Defendants' proposed construction and adopts the following construction for Claim Element 6: "Placing a light influencing material in at least one opening."

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1. "disposing on the treatment table a means for generating an ultrasound image"

In construing the term "disposing on," NOMOS breaks the term into its components, "disposing" and "on." NOMOS contends that these words should be construed in accordance with their normal dictionary meaning. Specifically, NOMOS contends that "disposed" should be construed to mean "arranged," and "on" should be construed to "indicate a position . . . near a specified part of something." (D.I. 80 at 12-13). Taken together, NOMOS contends that the phrase "disposing on" should be construed to mean "arranging the position of [the patient or ultrasound probe] near the treatment table." (D.I. 80 at 13).

In response, BrainLAB contends that "disposing on the treatment table" means "arranging the 'means for generating an ultrasound image' in physical contact with and supported by the treatment table." (D.I. 82 at 22). BrainLAB agrees with NOMOS that the term "dispose" can be construed as "arrange," but BrainLAB disagrees with NOMOS insofar as the construction of the term "on" is concerned. BrainLAB contends that the term "on" is more accurately defined using the
alternate definition provided by the dictionary, i.e. "in a position above, but in contact with and supported by; upon." (D.I. 82 at 24) (citing Webster's New Word Dictionary, p. 993, Prentice Hall Press (Second College Edition 1986)).

In its claim construction, NOMOS contends that "on" cannot be construed in accordance with this alternate dictionary definition. Using the preferred embodiment as an illustration, NOMOS contends:

While the patient is in 'contact' with the treatment table (i.e. that which supports from beneath), the ultrasound probe, even in the preferred embodiment of the invention of the '026 Patent, is not in contact with the treatment table. Rather in the preferred embodiment of the '026 Patent, the ultrasound probe is attached to a bracket which is above the treatment table and the bracket is only preferably fixedly attached to the treatment table.

(D.I. 80 at 13) (emphasis in original).

After reviewing the claim language in light of the specification, the Court concludes, as BrainLAB contends, that "disposing on the treatment table a means for generating an ultrasound image" means "arranging the means for generating an ultrasound image in physical contact with and supported by the treatment table." In the Court's view, this construction is supported by both the specification and the manner in which the phrase "disposing on" is used in the claim language. The specification of the '026 Patent uses the phrase "disposing on" to denote a physical connection or contact. For example, the specification provides:

Ultrasound probe 422 is disposed upon and mounted to, treatment table 404 as by a bracket 423 which is preferably fixedly secured to treatment table 404. Ultrasound probe 422, by means of any suitable conventional connection 423, is mounted so that it can be moved upwardly and downwardly with respect to bracket 423.

('026 Patent, col. 7, 11. 14-20). Further, the drawings in the specification all depict the ultrasound probe as being in contact with or connected to the treatment table, albeit by virtue of the bracket or other fixation device.

In the Court's view, this definition is also consistent with the claim language. That the term "disposing on" denotes a physical connection is apparent in the manner in which the phrase is used elsewhere in the claim. For example, the term "disposing on" is used in paragraph (a) of Claim 6 which provides "disposing the patient on a treatment table of a radiation therapy device." ('026 Patent, col. 12, 11. 43-44). When used in this sense, it is evident that the term "on" denotes a physical contact between the patient and the treatment table, and not merely that the patient is "near" the treatment table as NOMOS's definition suggests.

NOMOS contends that BrainLAB's definition of the term "on" improperly limits the invention to the preferred embodiment. However, in this case, the preferred embodiment is the only embodiment described by the specification. In the Court's view, its construction of this term is consistent with the specification. That this construction happens to be consistent with the preferred embodiment, as well, is the result of the patentee's use of the preferred embodiment in the specification and not the result of the Court improperly limiting the invention to the preferred embodiment.

NOMOS also contends that BrainLAB's construction of the phrase "disposing on" runs afoul of the doctrine of claim differentiation. According to NOMOS, claim 20 of the '026 Patent indirectly depends on claim 6, and claim 20 specifies that the ultrasound probe is disposed on the treatment table by mounting the ultrasound probe perpendicular to the treatment table. NOMOS contends that it is error for the limitation of Claim 20 to be read into Claim 6. In support of its contention, NOMOS directs the Court to the Federal Circuit's decision in Environmental Designs, Ltd. v. Union Oil Co. of California, 713 F.2d 693, 699 (Fed. Cir. 1983), cert. denied, 464 U.S. 1043, 79 L. Ed. 2d 173, 104 S. Ct. 709 (1984), for the proposition that "it is improper for courts to read into an independent claim a limitation explicitly set forth in another claim." Id.

The Court is not persuaded that its claim construction runs afoul of the doctrine of claim differentiation. Under the doctrine of claim differentiation, claims should be presumed to cover different inventions. Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir. 1991). Stated another way, a claim should not be construed in a manner that would make it read like another claim. Id. However, the doctrine of claim differentiation is merely a construction guideline, and not a rigid rule. Id. Thus, "if a claim will bear only one interpretation, the similarity [between the two claims] will have to be tolerated." Id.

In pertinent part, Claim 20 of the '026 Patent reads:
The method of claim 17, wherein the ultrasound image generating means is disposed on the treatment table by mounting the ultrasound image generating means perpendicular to the treatment table.

(‘026 Patent, col. 14, ll. 21-24). Claim 20 is dependent on Claim 17, which is in turn dependent on Claim 6. Claim 20, however, adds the limitations of Claim 17, and thus, Claim 20 does not have the same scope as Claim 6. Further, the Court's construction of the image generating means (as construed in the context of Claim 1) includes an ultrasound probe and a bracket which maintains the ultrasound probe perpendicular to the treatment table and equivalents of that structure. Where, as here, a dependent claim recites a structure corresponding to an independent means-plus-function claim, the Federal Circuit has concluded that claim differentiation is maintained. IMS Technology Inc. v. Haas Automation Inc., 206 F.3d 1422, 1431 (Fed. Cir. 2000) (claim differentiation is maintained when the disclosed structure corresponding to an independent P6 claim is recited in a dependent claim) (citing Laitram Corp., 939 F.2d at 1538). Accordingly, the Court concludes that its construction of the paragraph "disposing on" is not inconsistent with claim differentiation principles.

6. Claim 6: Step (a)

Text:

(a) disposing the patient on a treatment table of a radiation therapy device;

‘026 Patent, col. 12, ll. 43-44.

NOMOS's Proposed Construction:

Arranging the position of the patient in relation to or near the treatment table . . . (i.e. positioned in relation to the treatment table, and in fact in contact with it).

NOMOS Opening Brief at 14-15.

ZMED's Proposed Construction:

This step requires placing the patient on a treatment table of a radiation therapy device.

ZMED Opening Brief at 25.

Construction:

Step (a) means "placing the patient on (in contact with and supported by) a treatment table of a radiation therapy device."

Commentary:

This dispute centers on the construction of the words "disposing" and "on." A term should be given its ordinary meaning unless the patent owner chooses to be his or her own lexicographer. Monroe Eng'g Prods., Inc. v. J.W. Winco, Inc., 915 F. Supp. 901, 905 (E.D. Mich. 1996), aff'd in part, rev'd in part, Monroe Eng'g Prods., Inc. v. J.W. Winco, Inc., 121 F.3d 728 (Fed. Cir. 1997). Here, the term "disposing" is not defined in the patent, but is used repeatedly. See, e.g., ’026 Patent, col. 5, In 32; col. 6, l. 16; col. 7, ll. 8, 14, and 56; and col. 8, ll. 32, 34. By comparing the various places in which the term is used, I conclude that, in context, "dispose" means "to place." Meaning is least strained by this definition across Steps (a)-(c) of claim 6.

The word "on," of course, has a range of meanings. Here, the most reasonable construction of the word, and the one which reflects its ordinary and common use, Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759 (Fed. Cir. 1984), is "in contact with and supported by."
5. "Dissection" refers to the act of rupturing or breaking connected tissue.

15. "Distal End" and "Proximal End."

The court shall apply the ordinary definition of the terms "distal" and "proximal." The term "distal end" shall be construed to mean "the end situated away from the point of origin or attachment." The term "proximal end" shall be construed to mean "the end situated toward the point of origin or attachment."


3. A "distal end portion" is the farthest point from the proximal end portion, and may include a bladder inflatable from a contracted condition to an expandable condition.

G. "said arm links having a first portion coupled to a corresponding foot link and a second distal portion coupled to said frame"

This term arises in claim 17, which reads in full: "17. The exercise device according to claim 7, wherein said guide comprises arm links, said arm links having a first portion coupled to a corresponding foot link and a second distal portion coupled to said frame." The parties disagree on the meaning of the word "distal" in the context of the proper construction of the phrase "a second distal portion." Precor argues that "distal" simply means "at a distance" or, in other words, "at some distance away." The extent of that distance relative to any other of the arm link is not established by this construction. Fitness Quest argues that "distal" should be construed as "beyond the mid-point." In other words, the second portion of the arm link would be shorter than the first portion.

Finding no guidance from the specification or extrinsic evidence, the Court concludes that the words of the claim itself imply that "distal" simply means "further away from." In other words, the second portion of the arm link is further away from the foot link than the first portion. The Court is unpersuaded by Dr. Brienza's conclusory assertion that someone of ordinary skill in the art would interpret "distal" as meaning at a point beyond the mid point of the arm link. To the contrary, nowhere in the claims is there any implication about the lengths of the first and second portions of the arm link. Based on the proposed embodiments in the figures that include arm links, the Court concludes that "distal" means only that the second portion is further away than the first portion from the foot links that are described in the same claim. Thus, the construction of claim 17 is as follows: "17. The exercise device according to claim 7, wherein said guide comprises arm links, said arm links having a first portion coupled to a corresponding foot link and a second portion, which is further away from said foot links, coupled to said frame."
2. "distal portion of a first length"

The plaintiff proposes "the distal extremity of the guide wire tube in which the inner diameter is decreased in size for a short distance" whereas the defendant contends that no construction is needed. There are two main disputes - 1) whether to include an inner diameter limitation and 2) whether the phrase should be limited to the "distal extremity" covering a "short distance."

The plaintiff argues that its proposed construction meets the four criteria established in SciMed Life Systems, Inc v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337 (Fed. Cir. 2001), for construing claims by reference to the single embodiment disclosed in the specification. First, the abstract states that the guide wire tube must have a decreased inner diameter at the distal extremity. Second, the decreased diameter in the distal extremity distinguishes the invention over prior art because it combines several benefits inherent in the invention, e.g., reduced blood in the guide wire lumen, free movement of the catheter relative to the guide wire, etc. Third, the specification states that "the invention" includes a distal extremity of the guide wire tube decreased in size for a short distance. '358 patent, 2:48-49, 6:11-13. Fourth, the patent discloses this feature as the single embodiment because the specification states that it is applicable to all balloon catheters with guide wire lumens. '358 patent, 1:54-56, 2:42-45, 6:22-25.

The defendant argues that this phrase does not mention the inner diameter, and that the inner diameter is actually discussed in later claim language. According to the defendant, adding the inner diameter limitation would result in an impermissible reading of a limitation into claim terms.

The defendant also argues that adding the "short distance" limitation is incorrect for four reasons. First, the defendant contends that the claim already defines the relative length of the distal portion - "a distal portion of a first length and a proximal portion of a second length longer than the first length." According to the defendant, this does not mean that the distal portion extends only for a "short distance," but only that the proximal portion is longer than the distal portion.

Second, the defendant contends that the specification does not compel a "shortness" limitation. The defendant argues that this aspect is just one embodiment and the limiting language ("all embodiments of the present invention") in the SciMed case is not present in the specifications of the patents. The defendant also contends that SciMed does not apply because the specifications do not provide a way to determine what constitutes a "short distance," and, therefore, it cannot be a limitation necessary to distinguish prior art.

Third, the defendant contends that the prosecution history counsels against adding a "shortness" limitation. The defendant points out that when the examiner rejected the original claims because they did not specify the length of the guide wire lumen's distal portion, the applicants amended their claims to state that the proximal portion was longer than the distal portion. According to the defendant, if the applicants wanted to limit the length of the distal portion to a "short distance," then they would have done it in their amended claims.

Fourth, the defendant contends that "short" is an ambiguous word and would not aid in construing the meaning of the term.

The Court agrees with the defendant that the inner diameter size and the "short distance" limitation should not be included in the construction of this phrase. The inner diameter size is already discussed in a subsequent part of the claim. The language in Claim 1 states that the inner surface of the guide wire lumen has "a first diameter for the distal portion of the guide wire tube and a second diameter larger than the first diameter for the proximal portion of the guide wire tube." '358 patent, 7:18-22.

In addition, "short distance" is an ambiguous term. Subsequent claim language specifies the limitations for selecting the length of the distal portion (e.g., it must substantially prevent blood from entering the proximal portion, etc.). See '358 patent, 7:28-38. The Court rejects the plaintiff's argument that, in this case, SciMed requires a construction limited to the specification. In SciMed and the other cases cited by the plaintiff, the court limited the scope of the asserted claims to the structures described as distinguishing, or improving upon, prior art. See SciMed, 242 F.3d at 1342-43; Honeywell Int'l, Inc.
v. ITT Industries, Inc., 452 F.3d 1312, 1318 (Fed. Cir. 2006); On Demand Machine Corp. v. Ingram Industries, Inc., 442 F.3d 1331, 1340 (Fed. Cir. 2006); Inpro II Licensing, S.A.R.L. v. T-Mobile USA, Inc., 450 F.3d 1350, 1356 (Fed. Cir. 2006). Here, the patents-in-suit do not distinguish the prior art solely on the basis of having an inner diameter decreased for a "short distance." The Court also notes that the abstract does not identify the inner diameter of the distal portion of the guide wire as being decreased for a "short distance." Cf. SciMed, 242 F.3d at 1342 (stating that the limitation was identified from the outset of the specification, in the abstract section). Accordingly, the Court concludes that this term requires no further construction.

1. "a distal portion of a first length"

The plaintiffs propose "the distal extremity of the guide wire tube in which the inner diameter is decreased in size for a short distance." The defendants propose that this term carry its plain meaning.

The plaintiffs propose the same construction as they advanced in Medtronic AVE Inv., et al. v. Cordis Corp., 2:03-cv-212, ("the Cordis case"), and reassert that their proposed construction of this term is proper in light of SciMed Life Sys., Inc. v. Cardiovascular Systems, Inc., 242 F.3d 1337 (Fed. Cir. 2001). The defendants do not present any arguments on this term in their briefing.

The court previously addressed this term in its Claim Construction Order issued on April 23, 2007 (Dkt # 229 in the Cordis case) ("the Cordis Order"). After carefully considering the arguments raised by the parties in this case, the court is not persuaded to alter its construction from the Cordis Order at 8-10. Accordingly, the Court concludes that this term does not requires construction.

A. "Distal Section"

As described above, in the course of construing claim one of the Sirhan patent, the Court found that the term "distal section," when read in light of the specification, was sufficiently clear to enable a person skilled in the art to identify the distal section of ACS' balloon dilatation catheter. The Court noted that the specification teaches that the distal section is between ten and forty centimeters long and is contiguous to the balloon. Furthermore, the Court stated, certain criteria known to persons skilled in the art, such as the flexibility and profile of the catheter and the type of procedure for which the catheter was designed, would, when coupled with the description in the specification, allow a person skilled in the art to identify with adequate precision the distal section of the Sirhan '275 patent catheter. In reaching these conclusions, the Court rejected SciMed's arguments that the term "distal section" was fatally indefinite because the specification stated only that the distal section is preferably between ten and forty centimeters in length and ACS' expert conceded that there was no clear-cut definition in the industry for distal.

SciMed raises no new arguments in opposition to ACS' motion for reconsideration. Patner, it continues to rely on the testimony of ACS' expert, Mr. Corso, that there is no industry-wide definition for distal, and that different factors might be considered in determining where the distal section begins in a catheter, including the type of procedure for which the catheter is designed, the change in flexibility along the catheter shaft, and the patient upon whom the catheter is being used. See Flannery Dec., Ex. 17 at 32:6-7, 45:17-23, 474:20-475:10. As the Court previously concluded, this testimony does not demonstrate that the term "distal section" is indefinite.

The specification of the Sirhan '275 patent states that in the preferred embodiment, the distal section is between ten and forty centimeters long and is situated contiguous to the balloon. See Hansen Dec., Ex. 1 at 7:62-67. In addition, it identifies the distal section as that section that enters the patient's coronary anatomy during intravascular procedures and that has decreased dimensions and improved flexibility. See id. at 2:29-39, 3:6-21, 7:64-67. Mr. Corso states that the term "distal" is "among the most common terms of reference in the art of intravascular catheters." Id., Ex. 31 at 2. This conclusion is
supported by SciMed's use of the term "distal shaft" in its product literature, see id., Ex. 30, and the repeated use of the term "distal section" in the opinion letter SciMed obtained from outside counsel. See id., Ex. 32.

The fact that "distal section" is not defined more precisely is insufficient to overcome these factors. Mr. Corso and Dr. Drasler testified that the portion of the catheter that is designed to extend into the coronary arteries of a patient varies by procedure. See id., Ex. 14 at 178:11-19 (the portion of the catheter that is inserted in the coronary artery ranges from ten to fifteen centimeters); id., Ex. 31 at 4 (the catheter is designed to extend approximately ten centimeters into the patient's coronary arteries, and from twenty to twenty-five centimeters in more extreme circumstances). Likewise, the arched portion of the guide catheter, through which the distal section must also extend, varies in length. See id., Ex. 3 at 3-4 ("In PTCA catheters . . . the distal section is the portion of the catheter that navigates through the curved portion of the guide catheter (around the aortic arch) and into and through the coronary arteries. . . . The catheter should be designed with a portion that can readily flex about the arched portion of the guide catheter, which may typically be about 10-15 cm long."). Thus, the patent specification's description that the distal section is between ten and forty centimeters long is as precise as the subject matter permits. The Court concludes that this estimate, when considered in conjunction with the other criteria used to identify the distal section, including its location immediately adjacent to the balloon, its flexibility, and its decreased dimensions, renders the term "distal section" in claim one sufficiently definite that those skilled in the art would understand what is claimed when the claim is read in light of the specification.

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6. "The Distance Between the Two Adjacent Disks" and "The Distance Between Each Adjacent Disk"

The next issue in Claim 1, element 1(n), is the meaning of the italicized portion of the following language: "[T]he surface of the spacer has a linear measure greater than the distance between the two adjacent disks." Because Claim 12, element 12(k), is nearly identical--it refers to "the distance between each adjacent disk"--the Court will presently consider both. 11 Fellowes argues that "the distance between the two adjacent disks" in Claim 1 means "the linear distance of the space between the two cutting disks measured parallel to the shaft." Michilin proposes that it means "the linear distance of the space having the width that is constant circumferentially and between each set of adjacent cutting disks measured parallel to the longitudinal axis of the shaft." Intek's construction is identical to Michilin's except without the word "circumferentially."

11 Fellowes' definition of Claim 12, element 12(k), is identical to its definition of Claim 1, element 1(n) except that it swaps the words "the two" with the word "adjacent" in element 12(k) as follows: "the linear distance of the space between adjacent cutting disks measured parallel to the shaft." Michilin and Intek, by contrast, both define elements 1(n) and 12(k) to be identical. Finding the word "adjacent" to make no material difference in this context, the Court will construe 1(n) and 12(k) identically.

The only material difference between the parties' constructions of elements 1(n) and 12(k) is that the defendants use the term "constant" or "constant circumferentially" to describe the distance between the "cutting disks," while the plaintiff imposes no such limiting language. The defendants' construction is simply another effort to get the Court to construe the "cutting disks" as "flat" and lying in "parallel planes." Although the diagrams in the '780 Patent depict "spacers" whose widths appear to be "constant," Claim 1 does not limit the width of the "spacers" as such. Having already rejected the defendants' arguments on this point, and concluding that Fellowes' construction gives the phrase "the distance between the two adjacent disks" its plain and ordinary meaning, the Court FINDS that "the distance between the two adjacent disks" in Claim 1, and "the distance between each adjacent disk" in Claim 12, both mean "the linear distance of the space between the two cutting disks measured parallel to the shaft." The Court sees no need to add defendants' proposal that the "cutting disks" are "measured parallel to the longitudinal axis of the shaft," as the word "longitudinal" is missing in the patent and including it would seem to be redundant.

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Moore contends that the district court erroneously construed the "distance sufficient" limitation of claim 1 of the '798 patent as constrained by the particular specifications of the IBM 3800 printer. Moore emphasizes that claim 1 recites "a printer used to process the mailer during pausing of the printer," and not "an IBM 3800 printer." Moore argues that the district court, by requiring that the "distance sufficient" be "more than one quarter inch," improperly imported a limitation from the written description into the claim in contravention of multiple decisions of this court, including SRI International v. Matsushita Electric Corp., 775 F.2d 1107, 227 U.S.P.Q. (BNA) 577 (Fed. Cir. 1985) (en banc). The district court's reliance on the title of the '798 patent, "Pressure Seal Adhesive Pattern for IBM 3800 Printers," Moore maintains, was also unjustified, because there is no case in which the title of a patent was used to read a term into the claims.

Moore argues that, contrary to the district court's belief, nothing in the prosecution history requires reading the particular specifications of the IBM 3800 printer into the claims. According to Moore, the prosecution history in fact overwhelmingly militates against such a construction. During the prosecution of the '798 patent, the applicant responded to the examiner's indefiniteness rejection with respect to the "distance sufficient" limitation by declaring:

It is respectfully pointed out that regardless of the fact that different printers have different spacings, the invention is entitled to a scope that covers all printers. The fact that a claim is broad does not mean that it is vague or incomplete.

(emphasis added). In response to the examiner's continued rejection that claim 1 was indefinite "because it is impossible to determine the distance claimed in the last paragraph," the applicant again responded:

[The "distance sufficient" limitation] is a functional description, providing a complete, definite and accurate statement of what the spacing should be. The fact that the spacing is not in numerical terms is irrelevant since a functional term such as this, so long as it is itself definite, is entirely appropriate. This is exactly what In re Hammack [57 C.C.P.A. 1225, 427 F.2d 1378, 166 U.S.P.Q. (BNA) 204 (C.C.P.A. 1970)] holds. In Halleck, the exact numerical amount of chemical added to the animal feed was not critical or specified, but rather the functional term "an effective amount for growth stimulation". That is the same situation here. The exact numerical spacing is not critical, and will vary from printer to printer, just as the effective amount of growth hormone in Halleck varied from animal to animal. . . .

. . .

It is impossible for the applicant to anticipate printers with pauses that come out on the market in the future, and measure the exact distance that is necessary for such printers with pauses in the future, but that does not mean that applicant should be denied the rights to his invention. Anyone can determine whether or not they infringe by comparing their product with the functional recitation of claim 1, which is entirely definite. . . .

. . .

Claim 1 is not indefinite, merely broad enough to protect the applicant's real invention.

Moore maintains that these excerpts from the prosecution history, coupled with the examiner's subsequent allowance of the claims, clearly reveal the applicant's intent and the examiner's understanding that "distance sufficient" is not limited to the particular specifications of the IBM 3800 printer.

Notably, SRC does not dispute that the "distance sufficient" limitation is not limited to the IBM 3800 printer for claim construction purposes (though it contends otherwise for infringement purposes). In fact, SRC goes so far as to suggest that the district court did not "assume that the only printer that the limitations of the claims could relate to is an IBM 3800 printer," as Moore maintains. SRC concedes that:

it is obviously possible that, in the future, some other company will put out a printer that functions in the same way as the IBM 3800 printer or that IBM will put out another printer that functions in that same way. If that occurs, and if SRC were to
put out a form designed for use with that printer in the fashion specified by the claims in the '798 patent, then those forms
would infringe.

We agree with the parties that the "distance sufficient" limitation is not limited to the particular specifications of the IBM
3800 printer. We first note that the plain language of claim 1 recites a "printer" generally, and nowhere mentions the IBM
3800 printer. The preamble, for example, refers to "a printer having rollers, and operated to occasionally pause." '798 patent,
col. 6, ll. 50-51.

While the written description refers repeatedly to the IBM 3800 printer, it clarifies that a form for use on an IBM 3800
printer is only the preferred embodiment. See '798 patent, col. 1, ll. 40-41 (discussing the "present invention" and referring
generally to a "printer used to process the mailers"); id., col. 1, ll. 52-56 (discussing "one aspect of the present invention"
and referring to the use of an "IBM 3800 printer having fuser and backup rollers"). Such "references to [the] preferred
embodiment . . . are not claim limitations." See Laitram, 863 F.2d at 865, 9 U.S.P.Q.2D (BNA) at 1299. That the title also
refers to an IBM 3800 printer does not change our analysis, since the bar on importing limitations from the written
description into the claims applies no less forcefully to a title. See Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d
1298, 1312, 51 U.S.P.Q.2D (BNA) 1161, 1171 (Fed. Cir. 1999) ("If we do not read limitations into the claims from the
specification that are not found in the claims themselves, then we certainly will not read limitations into the claims from the
patent title.").

The prosecution history further informs our analysis. The examiner's indefiniteness rejection with respect to the "distance
sufficient" limitation reveals the examiner's belief that the limitation was not restricted to any particular printer. The
applicant's responses to these rejections clearly demonstrate a similar understanding on his part. That the examiner yielded
to the applicant's arguments by allowing the claims does not, as the district court suggested, establish that the "distance
sufficient" limitation must be limited to the particular specifications of the IBM 3800 printer. On the contrary, the
examiner's acquiescence indicates his acceptance of the "distance sufficient" limitation as functionally claimed and as
properly definite under 35 U.S.C. § 112, P 2. We note that there is nothing wrong with defining the dimensions of a device
in terms of the environment in which it is to be used. See Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565,
1575-76, 1 U.S.P.Q.2D (BNA) 1081, 1087-88 (Fed. Cir. 1986) (holding that the limitation that the claimed wheelchair have
a "front leg portion . . . so dimensioned as to be insertable through the space between the doorframe of an automobile and
one of the seats thereof" was not indefinite).

While SRC implies that the district court's claim construction is consistent with the preceding discussion, we cannot agree.
The district court plainly concluded that "the 'distance sufficient' limitation in claim 1 is in reference to the IBM 3800
printer." Moore I, slip op. at 8; see also id. at 6 ("In other words, the 'distance sufficient' limitation, according to plaintiff,
would be a variable that depends on the type of printer used. The court disagrees."). Despite SRC's attempt to disavow this
statement, we agree with Moore that the district court must have meant what it said, and consequently erred. As we explain
below, however, this error was entirely harmless.

6. distensibility

The plaintiffs propose "the percent radial expansion of a balloon calculated using the equation [shown in the '364 patent at
4:15]." The defendants propose "a value calculated according to the definition provided at 4:12-18 of the '364 patent…all
measurements take place at about 37 degrees C."
Both parties agree that the correct equation for the "wall tensile strength" is:

\[
\frac{\text{Diameter of balloon at 10 bars}}{\text{Nominal balloon diameter} - 1} \times 100\%
\]

The arguments for this term are identical to the "wall tensile strength." Accordingly, the term "distensibility" means "a value calculated according to the equation [shown in the ’364 patent at 4:15] where measurements are taken at or about normal human body temperature."

### 1232

**a. Distributed manufacturing plant**

ITI suggests that the phrase "distributed manufacturing plant" appears in the preamble and appears to argue that the language does not constitute a claim limitation. A preamble is considered a claim limitation only if, when read in the context of the claim as a whole, it recites essential structure or steps or is "necessary to give life, meaning, and vitality" to the claim. Eaton Corp. v. Rockwell Intern. Corp., 323 F.3d 1332, 1339 (Fed. Cir. 2003) (quoting Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 808 (Fed. Cir. 2002)). If, therefore, the limitations in the body of the claim "rely upon and derive antecedent basis from the preamble," then the preamble acts as a necessary component of the claimed invention and constitutes a limitation. Id. Several limitations within claim 18 derive antecedent basis from the "distributed manufacturing plant" language in the preamble. Specifically, the claim mentions "the plant," six times, which clearly refers to the "distributed manufacturing plant" language in the preamble. Accordingly, the phrase constitutes a claim limitation and must be construed.

ITI contends that the limitation refers to a plant which makes a variety of products using different machines. Defendants counter that the phrase means a manufacturing plant consisting of unconnected machines that are spread out over the manufacturing plant. Defendants claim that the patent supports its inclusion of "unconnected" in the definition. They cite a sentence under the section "Description of the Prior Art" that states, "Most manufacturing plants or factories are distributed in that they consist of heterogeneous, unconnected workstations." U.S. Patent No. 4,796,194, col. 1, lines 21-23. Because this sentence appears within a discussion describing prior art and the term does not appear elsewhere in the patent, the Court is hesitant to conclude that the claim phrase denotes a manufacturing plant with unconnected workstations. When defining terms, courts are directed to give words their broadest reasonable construction that is consistent with the use of the term in the patent. See In re Am. Acad. of Sci. Tech Ctr., 367 F.3d 1359, 1364 (Fed. Cir. 2004). In short, the Court sees no reason to limit distributed manufacturing plants to those with unconnected workstations.

Later in the section describing prior technology, the specification states in general terms that "[a] distributed manufacturing plant is capable of fabricating a variety of products through ordered-process sequences of process steps. Each process step can be performed by at least one workstation in the factory." U.S. Patent No. 4,796,194, col. 1, lines 27-30. The Court concludes that "distributed manufacturing plant" should be construed as a factory that makes a variety of products using machines in workstations throughout the plant.

### 1233

1. "Whereby an air flow into said inlet between said two fin structures is divided, with a respective portion of said air flow being directed through each of said two fin structures."

**a. Parties' Positions**

The parties propose the following constructions for this term which is present in claim 2 of the ’631 Patent. The main disputes are whether this term includes an "exclusive entry" requirement; a "perpendicular entry" requirement; and an "exclusive exit" requirement as urged by Defendants.
b. Court's Construction

Defendants assert the claims of the '631 Patent must be construed to require "the 'essential' [split feed transverse] air flow configuration called out by the patent." (Plaintiff's brief at 7); see also MBO Labs., Inc. v. Becton, Dickinson & Co., 474 F.3d 1323, 1330 (Fed. Cir. 2007) (construing claims to "ensure that they" require an "essential feature" described in the specification and the prosecution history). The '631 specification provides a basic description of the split feed transverse flow configuration as follows:

[T]he novel structure of the present invention utilizes a split feed transverse flow heat sink configuration where air flow enters the structure through a slot and is then divided into two flow paths, one flowing through each of two separate fin structures.

('631 Patent at 2:23-28). According to Defendants, the claims of the '631 Patent must be construed to require a structure that provides for three essential elements of air flow:

(1) Air enters the heat sink through a slot.

(2) All of the air is then divided (i.e., split) into two flow paths.

(3) Each flow path flows transversely through one of two separate fin structures.

Defendants further assert Figure 1 of the '631 Patent, which the specification refers to twice as the "heat sink assembly of the present invention" (4:12-13; 4:40), provides a helpful illustration of a basic heat sink assembly having these three elements of the split feed transverse flow configuration.

Defendants contend the language of the specification teaches that the '631 heat sink has a single air inlet. (See, e.g., 2:4-8 (Statement of the Invention) ("[T]he air flow path between inlet and outlet should be minimized."); 6:58-60 ("The split feed transverse flow configuration reduces the thermal path between inlet and outlet . . . .") (emphasis added)). Therefore, Defendants' proposed construction requires that the inlet be the exclusive entry point of forced air into the heat sink, not simply one among many entry points.

Defendants' proposed construction also requires the configuration to split the forced air after the air enters the inlet and that all of the split air flows through the fin structures. Relying on claim 2, which states that the respective portions of air flow divided by the slot are "directed through the fin structures," Defendants argue the split feed transverse flow configuration requires that each of the two flow paths flows through a fin structure. ('631 Patent at 2:23-29)("[T]he novel structure of the present invention utilizes a split feed transverse flow heat sink configuration where air flow enters the structure through a slot and is then divided into two flow paths, one flowing through each of two separate fin structures."); ('631 Patent at 3:29-32)(the '631 invention "utilizes a novel split feed transverse flow configuration where the structure automatically divides the air flow with half flowing through each of two separated fin structures" (i.e., with all air flowing collectively through both of the two fin structures)) (emphasis added).

While both sides agree that the '631 Patent calls for a novel, "split feed transverse flow" configuration, Defendants seek to incorporate several additional details that are not essential elements of the configuration. Specifically, they assert that a split feed transverse flow configuration not only permits, but actually requires that air flow must enter the fin structures exclusively from the "gap" and that all air flow which enters the gap must then flow exclusively into the fin structures. These additional elements of air flow are not essential elements of the "split feed transverse flow" configuration as urged by
Defendants.

Neither claim imposes any requirement to employ any more specific configuration of the gap or the air flow, including any configuration described in the preferred embodiments. (’631 Patent at 7:6-11). Nor is there any requirement that the fin structures must capture the entirety of the air flow. (’631 Patent, Fig. 1; 2:3-4, and 3:10-16). Although the split feed transverse flow configuration calls for air to flow into a gap created between fin structures and then to be split before respective portions flow transversely through the fin structures, the Court finds persuasive Plaintiff’s argument that

Defendants’ exacting standard is inconsistent with basic principles of air flow physics and, as a result, with how persons skilled in the relevant arts would understand the claim language. Importantly, the ’631 Patent never purports to define the “air source.” Thus, any definition of split feed transverse flow must be flexible enough to deal with different “air source” configurations. Claim 2, unlike claim 3, calls for a cover plate that would at least partially shield the fin structures from below. An accurate depiction of what is “essential” to a split feed transverse flow configuration must be consistent with both claims, not just claim 2.

There is no requirement that air must enter the fin structures only through the gap. Rather, the only requirement is that some air must enter the gap. Claim 2 says that there must be a path created between two fin structures and then describes what happens to air which enters that path. Claim 2 does not say that all air generated by the air source must find its way into the path created between the fin structures, nor does it purport to describe what happens to such stray air. Claim 3 likewise says only that the gap must be "configured for receiving air," not "all air."

As urged by Plaintiff, Defendants’ assertion that all of the air which enters the gap between the fin structures must then proceed through the fin structures is also inconsistent with principles of air flow. The claim language avoids saying that all air will flow through the fin structures. Claim 2 only requires that a "respective portion" of "an air flow" should flow through each fin structure. 3 Claim 3 similarly says that "air" flowing towards the second surface (not "all of the air" or even "the air") will be divided into two portions, and the "portions" will be directed to the two separate fin structures. This phrasing allows for the possibility that some parts of the air flow will not be effectively captured, a point which is consistent with how persons skilled in the relevant arts would view the claim language. (Rippel Dec. P 6).

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

3 Defendants claim that because no other destination is specified, it follows that all air must go through the fin structures. However, Defendants give no reason why the claims would have been expected to specify where any "stray" air would have gone.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

Given the fluid and dynamic nature of air flow, one skilled in the relevant art would not necessarily assume that all air which enters the gap would inevitably flow exclusively through the fin structures. Even considering Fig. 1, there is nothing to prevent some air from "spilling out" over the walls. Embodiments which lack Fig. 1’s shielding would expect even more "stray" air. Figs. 6-8 provide another embodiment in which the "ends" of the gap are not sealed by a side wall as in Fig. 1. Rather, the "walls" are cut in the shape of a "V," as reflected in Fig. 8. Plaintiff asserts this embodiment would permit the sort of "spill out" that should not be possible if Defendants’ interpretation of this term were adopted by the Court.

Finally, the Court agrees with Plaintiff that there is no requirement that air must flow into the gap at a strictly "perpendicular" angle. There is no reason why, for instance, an air source cannot direct a "cone" of air towards the top plate, the vast bulk of which would follow an "angled" path. (Rippel Dec. P 7).

In light of the foregoing, the Court construes "whereby an air flow into said inlet between said two fin structures is divided, with a respective portion of said air flow being directed through each of said two fin structures" to mean "whereby an air flow into said inlet is divided, such that respective portions of the air flow are directed through separate fin structures."
CLAIM 15

The parties have requested construction of essentially all of the language of the claim, other than the "engine," as follows:

15. A fuel delivery system for removing undesired components from fuel delivered from a fuel tank to an engine comprising, in combination: [issue # 1]

an engine;

initial fuel filter means for removing water from fuel received from the fuel tank; and [issue # 2]

secondary fuel filter means including vessel walls defining an interior chamber having an outlet in fluidic communication with said engine, an inlet in fluidic communication with said initial fuel filter means for receiving fuel containing an undesired gas from said initial fuel filter means, and a return line opening; [issue # 3]

a filter element dividing said chamber into an inlet side and an outlet side, and providing means for preventing substantially all undesired gas in said fuel from passing through said outlet, said preventing means including said filter element separating said inlet side from said outlet side and having substantially no openings having a greater dimension than about 25 microns passing from said inlet side to said outlet side, said return line opening communicating with said chamber on said inlet side to receive air and fuel therefrom; and [issue # 4]

a fuel return line communicating with said return line opening and said fuel tank for delivery of air and fuel to said fuel tank. [issue # 5]

* * *

Claim 15; Issue 4 - The Filter Element

The parties appear to be in agreement that the language pertaining to the filter element is not ambiguous, but offer differing constructions of the language. Defendants again offer a proposed construction that a "filter element" is a "filter which allows fuel to pass but not air," and in their argument assert that a filter element is an "air filter, as opposed to a water filter or particulate filter, which allows fuel to pass but not undesired gas." As set forth above, the Court can perceive no reason either to define the air filter in terms of what it is not or to expressly distinguish it from other types of filters that it does not purport to be. The Court also again rejects Defendants' limitation that the filter "allows fuel to pass by not air." The claim language itself states that the filter element prevents "substantially" all undesired gas from passing through to said outlet, and references a filter having openings of 25 microns or less. Moreover, as set forth more fully in the discussion of earlier claims, the specification consistently references the separation of entrained and entrapped air or air bubbles. See, e.g., col. 2, lines 22-35; col. 4, lines 40-45; col. 5, lines 21-49.

The filter element also includes a "providing means for preventing substantially all undesired gas in said fuel from passing through said outlet." Although drafted as a means-plus-function claim, the Court agrees with Plaintiffs that the claim itself provides sufficient structure such that § 112, P6 does not apply. See Sage Prods., 126 F.3d at 1427-28. The claim language specifies that the filter element separates the inlet side from the outlet side, and is composed of a filter with openings no greater than 25 microns to prevent substantially all air from passing from the inlet side to the outlet side, and that the fuel return opening communicates with the inlet side to receive fuel and air from the inlet side.

Defendants suggest the word "communicate" be construed as a connection, while Plaintiffs assert no further definition is necessary. While not the picture of proper English grammar, the Court finds that the term "said fuel return line communicating with said chamber on the inlet side" is not ambiguous as used in the claim. Nor is it defined in the specification in a manner inconsistent with its ordinary meaning. Similar to this Court's prior determinations, the term "communicating" as used herein is defined to mean that it permits transfer.

Defendants further assert that the filter element must be submerged below the surface of the fuel. Such a requirement is in fact consistent with the preferred embodiment, but it is not contained within the language of this particular claim. The submersion limitation is expressly referenced in other claims, such as claim 8, but is not contained in this claim, which
purports to describe a more general "fuel delivery system." As such, it is fair to assume the absence was intended. Modine Mfg. Co. v. U.S. Intern. Trade Com'n, 75 F.3d 1545, 1551 (Fed. Cir. 1996) ("Ordinarily a claim element that is claimed in general descriptive words, when a numerical range appears in the specification and in other claims, is not limited to the numbers in the specification or the other claims.").

Moreover, one can easily envision an embodiment of this claim in which the filter element presents vertically within the entire length of the vessel, to create an inlet side on one side, and an outlet side on the other, which would not necessarily require submersion of the entire filter element.

Based on the claim language and the specification, the Court finds that one skilled in the art would understand the filter element to mean the following:

"A filter element divides the chamber into an inlet side and an outlet side, and provides a means for preventing substantially all undesired gas in the fuel from passing through the outlet. The filter element which separates the inlet side from the outlet side has substantially no openings greater than 25 microns. A return line opening is in communication with the chamber in the inlet side to receive air and fuel therefrom. "Communication" means that the air and fuel can transfer from the inlet side to the return line opening."

The critical claim construction issue is whether the phrase "dome-shaped region" as used in claims 1, 5 and 15 should be construed to require concavity to the inside of the cup or alternatively, to require the flow of liquid from the concave to the convex side of the region. Plaintiff contends that the language of the asserted claims do not literally include such limitations. Defendants argue that the claim language, when viewed in light of the specification necessarily requires the additional limitations. The competing positions require the Court to discern the "fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification." Commark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186-87 (Fed. Cir. 1998). The Federal Circuit recently offered this advice to aid in performing the task:

However, the line between construing terms and importing limitations can be discerned with reasonable certainty and predictability if the court's focus remains on understanding how a person of ordinary skill in the art would understand the claim terms. For instance, although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.... That is not just because section 112 of the Patent Act requires the claims themselves set forth the limits of the patent grant, but also because persons of ordinary skill in the art rarely would confine their definitions of terms to the exact representations depicted in the embodiments.

Phillips v. AWH Corp., 415 F.3d 1303, 1323 (Fed. Cir. 2005). Careful examination of the claims language and specification leads to the inescapable conclusion that one of ordinary skill in the art would not believe that the term "dome-shaped region" includes a directional limitation. To find a directional limitation in the term would plainly be an impermissible importation of a limitation from the preferred embodiment. See Callicrate v. Wadsworth Manufacturing, Inc., 427 F.3d 1361, 1368 (Fed. Cir. 2005).

The disputed language of the asserted claims, "dome-shaped region," does not include any technical terms. The ordinary meaning of the phrase is "readily apparent, even to lay judges." Phillips, 415 F.3d at 1314. The ordinary meaning does not carry any particular directional component. There is no real dispute that the valves of the accused devices include dome-shaped regions in the ordinary sense of that term. The direction of the dome, either in reference to the interior of the cup or the direction of flow, is an additional limitation which would typically be described separately and is not inherent in the phrase dome-shaped region in any ordinary sense.

Furthermore, there is nothing in the surrounding language of the asserted claims themselves or in other claims in the patent which would suggest a directional meaning was intended. Id. at 1314-15. Indeed, dependent claims 8 and 10 include limitations that there be two dome-shaped regions which are concave in opposite directions, making it entirely clear that directional orientation is irrelevant to the meaning of the term "dome-shaped region".

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Defendants rely primarily on the preferred embodiments of the specification in support of their claim construction position. In each instance where the specification describes a valve in a dome-shaped region the flow of liquid or air is from the concave to the convex side of the dome-shape. See, e.g., col. 2, ln. 27; col. 2, ln. 57-8; col. 4, ln. 27; Figs. 1, 2, 4 and 7. The specification never suggests flow in the opposite direction (from convex to concave). However, preferred embodiments ordinarily do not limit claims because those of skill in the art would rarely confine their definition of terms to the representations in the embodiments. Phillips 415 F.3d at 1323.

Much of the time, upon reading the specification [in context as enabling and teaching a best mode] it will become clear whether the patentee is setting out specific examples of the invention to accomplish those goals, or whether the patentee instead intends the claims and the embodiments in the specification to be strictly coextensive.

Id.

The '245 specification leaves no doubt the patentee was providing best mode examples and not intending the claims and embodiments to be coextensive. The specification includes several examples of how to practice the invention, some of which include dome-shaped regions and others which do not. Apart from the paragraphs generally describing the inventions at col. In 59-col. 2 ln. 13 (which include no reference to valve shape), the embodiments are prefaced by statements that the "valves may comprise" dome-shaped regions which are concave toward the interior of the cup. The specification expressly provides that "other valve formations are feasible." The preface to the discussion of the drawings expressly provides that they are "by way of example only."

The specification language also reveals that the patentee did not intend the phrase "dome-shaped region" to inherently include a direction either in relation to the cup or flow. The inventor consistently modifies the term with language specifying the direction. col. 2, ln. 20-24; ln. 39-41; ln. 57-60. It is therefore very unlikely that the inventor intended to implicitly include such a limitation when using the same term in the claims. In fact, the absence of the same type of modifying language in the claims strongly suggests that the limitation was intentionally excluded and the claim was intentionally left broad.

This conclusion is supported by the prosecution history. The claims of the original application included as a limitation "a dome-shaped region concave towards the interior of the cup-shaped container and having a slit to allow flow from concave to convex side but not in the opposite direction" thus expressly including the limitation which defendants now seek to read into the claims. The elimination of this language from the redrawn claims evidences the intent of the patentee to broaden the claims so as not to include the limitation.

It is also telling that in distinguishing the invention of the '245 patent from Brown, the patentee made no mention of the directional difference in the dome-shaped region of the valve. Brown could have been readily distinguished by the valve shape if that had been a limitation of the patent claims. Instead it was distinguished on the basis that it taught to open the valve by increasing internal pressure rather than by the reduction of external pressure through suction.

The patentee's mention of the dome-shaped region in distinguishing her claims from Coy did not rely on the direction of the dome-shape, but on the fact that the Coy valve region was not dome-shaped at all. Furthermore, the primary basis for distinguishing Coy was the exclusive use of suction, rather than lip pressure, to activate the valve. Considered as a whole it is apparent that the patentee intentionally left the claims as broad as possible, eliminating the earlier directional limitation since it was not necessary to distinguish the invention from the prior art. The claims language, the specification and the prosecution history consistently support an interpretation which does not impose a directional limitation on the dome-shaped region.

Defendants place considerable emphasis on plaintiff's assertion during the prosecution of the '457 patent that the prior art (including the British predecessor to the '245 patent) did not teach to use a dome-shaped region convex to the direction of flow. Defendants argue that this proves that the '245 claims are limited to dome shapes concave to the direction of the flow. This argument is logically flawed because it is built on the false premise that a patent must teach everything that falls within its claims. "The scope of a patent's claims determines what infringes the patent, it is no measure of what it discloses." In re Benno, 768 F.2d 1340, 1346 (Fed. Cir. 1985). Hence, the original 1840 telegraph patent may be broad enough to read on a modern telex, though the latter would not have been conceived of at the time of the original patent. Id.
A relatively broader patent does not estop a later improvement patent, nor does the failure of the broader patent's prosecution history to mention the specific improvement suggest that the original patent does not encompass it. Integra Lifesciences I, Ltd. v. Merck KGAA, 331 F.3d 860, 869 (Fed. Cir. 2003). In this case the '245 claims read on, but the patent specification does not disclose, valves comprising a dome-shaped region convex to the direction of flow.

III. DISCUSSION

The parties dispute the proper construction of portions of Claims 1 and 20 of the '689 patent. Claim 1 in pertinent part states:

> the control bars are supported such that the confined shape does not change as the control bars are moved and stopped closer to or farther from each other in their respective planes to vary the area of the confined shape at each of the plurality of different positions, whereby the movement of the control bars toward and away from each other changes the opening in the bag evenly from all sides and minimizes tearing stresses.

Plaintiff contends that proper construction "in view of the patent specification … means that:

> When the control bars are contacting the bag opening, the confined shape defined by the bars does not substantially change so that the control bars gather the bag opening evenly from all sides and minimizes tearing stresses on the bag."

"Plaintiff's Motion For Claim Construction" (Document No. 62 at 2) (emphasis added).

Defendant's interpretation of the proper construction of claim 1 would require that:

> The first control bar and the second control bar define an opening between them. The opening has a predetermined shape (or spatial contour that is decided beforehand). The neck of a bag to be constricted is placed in this opening. The control bars are supported such that the confined shape (or spatial contour) does not change or become different when the control bars are moved closer to or farther from each other. The confined shape (or spatial contour) changes only in area as the control bars move in their respective planes to each of several different positions.

"Defendant's Memorandum In Support Of Its Motion…" (Document No. 77 at 4) (emphasis in original).

A. Claim 1

After careful review of the '689 patent in its entirety, the undersigned finds Defendant's interpretation of claim 1 to be most consistent with the language of the patent and thus reaches a similar construction of the disputed term. Plaintiff has forcefully argued that the Court should construe the patent with a focus on the intrinsic evidence, and the Court has done so. Nevertheless, the undersigned still finds that Defendant's narrower interpretation of the '689 patent is proper and consistent with an "ordinary and customary meaning" of the key terms. While the undersigned has not totally disregarded extrinsic evidence, the use of the disputed terms within the four corners of the '689 patent has been the focus of the undersigned's analysis.

First, claim 1 describes the opening between the control bars as a "predetermined confined shape … such that the confined shape does not change as the control bars are moved." (Patent P. 6, L. 36-39). The undersigned construes both "predetermined confined shape" and a confined shape that "does not change" as descriptions of a shape or contour that is preset by the apparatus and is not altered by the functioning of the apparatus. The patent's summary of the invention specifically states that "the confined shape does not change, but varies in area…." (P. 2, L. 51-52). The language of that sentence, juxtaposing "shape does not change" with "but varies in area" reinforces that the shape remains the same, whereas the area varies, or changes. The patent's author could have easily stated that the shape also varies, or that it does not change much, or does not change substantially or significantly, but there is no such clarification. The language of the patent simply states, "shape does not change."
"Plaintiff's Supplemental Brief In Support Of Its Motion For Claim Construction" (Document No. 78) cites a 2005 decision by the Federal Circuit to bolster its position that it is necessary to consider the claim terms in the context of the entire patent, and specifically noting that a "claim construction that excludes a preferred embodiment…is rarely, if ever, correct." Pfizer, Inc. v. Teva Pharmaceuticals USA, Inc., 429 F.3d 1364, 1374 (Fed. Cir. 2005). In the instant case, the undersigned has carefully considered the preferred embodiment which describes in one pertinent part: "[a]s can be seen in FIG. 3, the predetermined shape of the opening 20 is maintained at all times, and it changes only in size as the control bars 12, 16 are moved toward or away from each other." (Patent P.4, L.15-17).

[SEE Fig. 3 IN ORIGINAL]

Here the language of the preferred embodiment further defines "not change" as "maintained at all times" - emphasizing a change "only" in size. The patent's author could have left the description at "maintained" but instead added "at all times" or could have written "changes in size" but instead wrote "changes only in size." (Emphasis added). This additional modifying language leaves the interpretation of "shape does not change" in the context of this patent as unambiguously opposed to any change of shape.

The next paragraph of the preferred embodiment begins "[b]ecause the opening 20 changes only in size, the stresses that are placed on the neck of the bag are much more evenly distributed…." (P. 4, L. 26-29) (See also Fig. 4 below). Again, the patent describes a change only in size, and excludes any mention of any change in shape.

Defendant's proposed construction is more consistent with the language of the patent itself than is Plaintiff's. Plaintiff construes "not change" in claim 1 as "not change substantially" while the patent itself equates "not change" with "maintained at all times" and "changes only in size." Reading the patent as a whole and in a manner that is internally consistent as insisted upon by the Plaintiff, and required by Pfizer, leaves no doubt that the predetermined shape of the apparatus' opening should not change at all. See Pfizer, 429 F.3d at 1373-74.

[SEE Fig. 4 IN ORIGINAL]

In fact, claim 7 of the '689 patent identifies the apparatus of claim 1 as "a rectangle" and claim 8 goes on to describe in greater detail that

[[t]he apparatus of claim 1, wherein the angled relationships are such that, when the first control bar and the second control bar are moved in relation to one another, the overlapping of the angled relationship of the first control bar with the angled relationship of the second control bar at all times forms a rectangle….

(Patent P. 7, L. 12-19) (Emphasis added). The definition of rectangle has not been argued thus far in these proceedings; nevertheless, Merriam Webster's Collegiate Dictionary, Tenth Edition, unequivocally confirms the Court's understanding that a "rectangle" is "a parallelogram all of whose angles are right angles."

Furthermore, claim 1 describes the movement of the control bars toward and away from each other as changing the opening in the bag evenly from all sides. The undersigned construes even changes in this context as synonymous with equal changes. If an opening is changed evenly from all sides, then that opening would keep, or maintain its shape. As discussed above, under the '689 patent, that would mean the "predetermined confined shape" stays the same, or constant. If that shape is a rectangle, and the sides of that rectangle move evenly toward or away from each other, then the shape of that rectangle will remain the same and only the area of the rectangle will change.

The last sentence of the '689 patent's abstract reinforces this interpretation; "the predetermined confined shape changes only in area and evenly exerts force upon all sides of the neck of the bag, thus minimizing stresses." Apparently, it is critical to this invention that the force of the closing apparatus be even on all sides to minimize tearing stress. This objective is re-stated in the summary of the invention: "[i]t is a further object of the present invention to adjustably vary the opening in a bag by exerting evenly displaced stresses upon the neck of the bag to minimize the possibility of tearing the bag." (Patent P.2, L.2-5).

If the sides move evenly toward and away from each other, then the shape will not change. Put another way, if the shape...
changes, the sides must not be moving evenly and therefore there would be an increased risk of tearing the bag. Plaintiffs cannot argue that an object of their patent - even force on all sides to minimize tearing - should be interpreted to mean something different than what it describes. The Court interprets the purpose of the '689 patent as to protect a device that keeps its predetermined shape, while it alters the area of the opening, so that the forces exerted are evenly dispersed on all sides of the neck of a bag.

The two Haney patents relate to a stationary sander for sanding a surface of a work piece, such as a piece of wood. The sander operates in such a way as to eliminate undesirable cross-grain scratching that can occur during sanding. Claim 20 of the '794 patent reads as follows:

20. An orbiting sander comprising:
   a frame;
   a platen;
   a double-drive mechanism interposed between and connecting the platen and frame, where the double-drive mechanism imparts at least one translational orbital movement super imposed on another movement to the platen relative to the frame; and
   an abrasive held in operative position on the platen.

The three asserted independent claims of the '342 patent -- claims 2, 3, and 17 -- read as follows:

2. A method of sanding products comprising:
   placing a product on a conveyor that moves the product through an abrading area; and
   abrading the product in the abrading area by a sander having a platen, an abrasive sheet, a securing device for holding the abrasive sheet on the platen, a frame, a subframe, a first drive mechanism interconnecting the platen and the subframe for moving the platen in a first motion and a second drive mechanism interconnecting the subframe and the frame for moving the subframe and the platen in a second motion, where the first and second drive mechanisms superimpose the first and second motions on the platen while they move the platen, and where the abrasive sheet's motion is solely dependent on and controlled by the platen's motion.

3. A sander comprising:
   a frame,
   a subframe,
   a platen,
   an abrasive sheet,
   a securing device for holding the abrasive sheet on the platen,
   a first drive mechanism interconnecting the platen and the subframe for moving the platen in a first motion, and
   a second drive mechanism interconnecting the subframe and the frame for moving the subframe and platen in a second motion,
where the first and second drive mechanisms superimpose the first and second motions on the platen while they move the platen, and

where the abrasive sheet's motion is solely dependent on and controlled by the platen's motion.

17. A sander comprising:

a frame,

a subframe,

a platen,

an abrasive sheet,

a securing device for holding the abrasive sheet on the platen,

a first drive mechanism interconnecting the platen and the subframe for moving the platen in a first motion at a first speed, where the first drive mechanism includes at least two power-driven shafts connecting the platen and the subframe at spaced locations on the platen thus to stabilize the platen, and

a second drive mechanism interconnecting the subframe and the frame for moving the subframe and platen in a second motion at a second speed less than the first speed,

where the first and second drive mechanisms superimpose the first and second motions on the platen while they move the platen, and

wherein the abrasive sheet's motion is solely dependent on and controlled by the platen's motion.

Timesavers manufactures and sells a line of sanders known as the "Series O/B Orbital Brush Sanders." The accused device, which is from this line, includes a first motor that moves a platen in a circular orbit and a second motor that moves the platen in a reciprocal linear motion. The reciprocal linear motion is superimposed on the circular motion to produce a combined motion of the platen. The result of the motion of the platen in the accused device is also to prevent undesirable cross-grain scratching of the work piece.

Determining whether a patent claim is infringed requires a two step inquiry: "First, the claim must be properly construed to determine its scope and meaning. Second, the claim as properly construed must be compared to the accused device." Carroll Touch, Inc. v. Electro Mechanical Sys., 15 F.3d 1573, 1576, 27 USPQ2d 1836, 1839 (Fed. Cir. 1993). The decision of the district court turned on claim construction, and in particular on construction of the drive mechanism limitations of the asserted claims. As far as the '794 patent was concerned, the court concluded that the double-drive mechanism limitation in claim 20 is primarily a functional claim limitation because it defines the claimed element in terms of its function rather than its structure. Consequently, the court viewed the double-drive mechanism limitation as subject to paragraph 6 of 35 U.S.C. § 112 (1988). It therefore limited the scope of the claim to the structure disclosed in the specification of the '794 patent for performing the function of producing the combined motion, and equivalents thereof. Based upon this claim construction, the court determined that there were no genuine issues of material fact and held that the accused device did not infringe claim 20 because the accused device did not meet the double-drive mechanism limitation of that claim, either literally or under the doctrine of equivalents.

Turning to the '342 patent, the district court determined that "the interpretation of claims 2, 3 and 17 . . . is limited by 35 U.S.C. § 112, para. 6 because the 'first and second drive mechanisms' of claims 2, 3 and 17 are defined in terms of function." Accordingly, the court limited the scope of these claims in the same way that it had limited the scope of claim 20 of the '794 patent. Based on its construction of the independent claims of the patent, the court found no genuine issues of material fact and held that the accused device also did not infringe the asserted claims of the '342 patent because they did not meet the drive mechanism limitations of those claims, either literally or under the doctrine of equivalents.
The district court erred as a matter of law in its construction of the foregoing claims. Turning to the '794 patent, we do not view the double-drive mechanism limitation of claim 20 as subject to § 112, paragraph 6. The clause "a double-drive mechanism interposed between and connecting the platen and frame" recites structure. This recitation of structure in concert with accompanying function -- "where the double-drive mechanism imparts at least one translational orbital movement superimposed on another movement to the platen relative to the frame" -- removes the claim from the purview of § 112, paragraph 6. In ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 6 USPQ2d 1557 (Fed. Cir. 1988), the issue was the correct construction of the limitation "a pair of electrodes having nonmetallic skin-contacting members that provide low current density to reduce stimulation of local sensory nerves and resulting pain." Id. at 1578, 6 USPQ2d at 1559. This court did not apply 35 U.S.C. § 112, paragraph 6 to the limitation. Rather, we stated, "The reduction of pain through the transmission of a low current density to the skin is intended to be a functional limitation on the nonmetallic members, or the electrodes." Id. at 1581, 6 USPQ2d at 1561. Accordingly, we concluded that the claims at issue, as properly construed, were limited to an electrode "which functions to lower the current density . . . applied to the patient's skin . . . ." Id. In much the same way, claim 20 is limited to a double-drive mechanism which functions to impart the two described motions "to the platen relative to the frame," and is not limited to the structures described in the specification and equivalents thereof under § 112, paragraph 6. For the same reasons, claims 2, 3, and 17 of the '342 patent, which recite additional structure, also are not limited by § 112, paragraph 6 to the structures described in the '342 patent and equivalents thereof.

In sum, none of the claims at issue in this case is subject to 35 U.S.C. § 112, paragraph 6. Therefore, the claims are not limited to the structure disclosed in the '794 and '342 patents, and equivalents thereof. When the claims are properly construed, disputed issues of material fact exist relative to the issue of infringement. Thus, the district court's grant of summary judgment in favor of Timesavers was improper. Lemelson v. United States, 752 F.2d 1538, 1552, 224 USPQ 526, 534 (Fed. Cir. 1985) (trial court's erroneous construction of a claim, which was sole basis for finding of non-infringement, renders that finding clearly erroneous). Accordingly, as indicated above, the judgment of the district court is vacated and the case is remanded for further proceedings consistent with this opinion.

1. Interpretation of "Double Walled Construction"

Claim 1 of the '277 patent and Claim 3 of the '843 patent require the element of "a lower wall portion adjacent and integral with the floor, wherein said lower wall portion is of double-walled construction and includes an interior lower wall portion and an exterior lower wall portion connected by a top surface."

Norseman asserts that the phrase requires an exterior and interior wall connected at the top. Rehrig contends that asserted Claims 12-15 of the '843 patent and Claims 1 and 2 of the '277 patent do not include the "connected at the top" language. Rehrig therefore argues that proper construction of the Claim elements is "a structure that includes an interior lower wall portion and an exterior lower wall portion, [connected to each other by a top surface]" where the bracketed language applies to those Claims 1-5 of the '843 patent and 3-5 of the '277 patent.

The Court construes the term "doubled walled construction" to limit these Claims to wall structures comprising two distinct and continuous walls and requiring a top surface connecting the two walls for Claims 1-5 of the '843 patent and 3-5 of the '277 patent.

C. "Disposed at downward angle with respect to [another object]"/
"Formed at a downward angle with respect to [another object]"

The parties also dispute the meaning of the phrases "disposed at/formed at a downward angle with respect to [another object]." 15
15 The parties each propose identical definitions for the two phrases, and therefore appear to interpret "disposed at" and "formed at" in the context of the claim terms in pari materia. The Court follows the parties' approach.

The claim language details that the upper surface of the second rail extrusion is "disposed at a downward angle with respect to" the upper surface of the first rail extrusion. 16 The Forecast patents' drawings show (see Figure 4 attached) that: first, the position of the upper surface [47] of the second rail extrusion [42] as vertically lower and to the right of the upper surface [41] of the first extrusion [40], and second, that the upper surface [47] of second rail extrusion [42] is itself inclined at a downward angle with respect to (that is, sloping downward from) the upper surface [41] of the first rail extrusion [40] (which is represented as a flat surface). (712 patent; Fig. 4 (attached)).

TBC proposes a definition of the downward angle limitation that, although difficult to interpret, appears to be directed mainly at the latter concept (an inclined surface), and Forecast proposes a definition that is stated in the alternative to encompass either concept (a positional relationship or an inclined surface). 18

By stating the definition in the alternative, Forecast proposes a construction that would substantially broaden the scope of its claims to include a device that maintained either feature. As set forth below, the Court rejects Forecast's construction because the disputed phrase, the Court concludes, speaks at least in part to an "inclined" orientation of the object.

The disputed claim term is not a model of clarity, but the Court concludes that the best construction is one that, as set out below, encompasses both concepts: that the upper surface of the second rail extrusion is inclined with respect to surface of the first rail extrusion, and that it is in a position vertically lower than the first.

The claim language here offers little in the way of elaboration. But the specification's description of the invention is helpful in providing the necessary context for the Court's construction. It states in relevant part:

"Preferably, the top of the steel frame is inclined so that the upper surface of the second rail extrusion is disposed at a downward angle with respect to the upper surface of the first rail extrusion when both are mounted to the steel frames. Thus, when mounted to the second rail extrusion, the console box will be oriented at a slight downward angle with respect to the desktop for ergonomic purposes."

(712 patent; col. 6, lines 64-67; and col. 7, lines 1-4 (emphasis added.).) The use of the phrase "downward angle with respect to" in this part of the specification lends support to a definition that refers in part to an angle of incline. First, as provided in this preferred embodiment, when the second rail extrusion is mounted atop an inclined steel frame, the upper surface of the second rail extrusion will be both inclined, and below and to the right of, the upper surface of the first extrusion. Second, Forecast concedes in its memorandum that the "downward angle" limitation in the patents' description of
the console box above refers at least in part to its inclined orientation. Such an orientation is "thus" assured if the surface of
the second rail extrusion is also oriented at an incline.

The Court notes that the relative angle of incline of the second rail extrusion (and in this case the console box supported
thereon) is not an insignificant detail in the specification, but instead, plays a substantial part in the invention: if the console
box were not oriented at an incline (as in the attached Figure 3) then the user of the workstation could not, at the same time,
see a screen that was simply below (and behind) the desktop unit. ('712 patent; Fig. 3 (attached).) It is, in other words, the
relative angle of incline that permits the workstation's ergonomic set up.

Finally, the prosecution history also supports the Court's construction. As noted above, the Forecast patents were re-
examined at the request of TBC. In its submissions, Forecast explicitly relied on the "downward angle" limitation as
distinguishing the prior art. Forecast's invocation of the exact claim language sheds little light on its meaning. However, the
Court notes that the Statement of the Examiner also referred to the second extrusion as itself having "angled surfaces."
(Defs. Reply, Ex. C.) The examiner understood that not only the position of the surface was at some relative angle, but that
the surface itself was also angled or inclined. 19

--- Footnotes ---

19 The Court notes that Claim 9 of the '088 patent, in describing an alternative structure for the rail extrusion, refers to a
second "inclined surface," that is "disposed at a downward angle" with respect to a first surface. Forecast thus argues that
"downward angle" must mean something other than "inclined," because that term is already used to describe the orientation
of the surface. The Court concludes, however, that the reference to "inclined" in the claim language is best understood as
a case of duplicative draftsmanship, rather than a true case of the claim term's differentiation. It should not, in any case, trump
what is, in the context of the entire patent record, the better fitting construction.

--- End Footnotes ---

Thus, the Court construes the phrases "[disposed/formed] at a downward angle with respect to [another object]" as:
"Disposed in location below and to the left or right of the other object and having a greater angle of incline than the other
object."

A. "Dragged" and "drag forces"

Whirlpool contends that the term "dragged" should be construed to mean "pulled with friction." Defendants contend that
"dragged" should be defined as "to move by force."

The Oxford English Dictionary Online defines drag as:

To draw or pull (that which is heavy or resists motion); to haul; hence to draw with force, violence, or roughness; to draw
slowly and with difficulty; to trail (anything) along the ground or other surface, where there is friction or resistance.

Webster's Third New International Dictionary, Unabridged defines "drag" as "to pull along by main force: draw slowly or
heavily." The American Heritage Dictionary of the English Language (4th ed.) defines "drag" as "To pull along with
difficulty or effort."

Whirlpool contends that friction is part of the defining characteristic of drag. The '722 Patent specification supports
Whirlpool's construction:

However, when the impeller 40 oscillates, the frictional engagement between the impeller 40 and the cloth items in the
lower transfer zone LTz adjacent the impeller 40 creates forces on the cloth items in the lower transfer zone LTz such that
cloth items in the transfer zone LTz are dragged along with the impeller 40.
However, if wash liquid is introduced to a degree that the cloth items are allowed to float in the wash basket 42, the impeller 40 will not sufficiently frictionally engage the cloth items to drag the cloth items along an arc-like path.

According to Defendants, Whirlpool is attempting to narrowly interpret the term "drag" to require frictional engagement to avoid invalidity over prior art, even though this narrow concept was specifically included in certain dependent claims, and intentionally excluded from most of its claims. The term "frictional engagement" is found in dependent claims 4, 6, 9, 10, 19, 27, and 29. Defendants contend that if the concept of friction was already part of the understanding of "drag" in independent claims 1, 8, 17, 25, and 28, then the introduction of the term "frictional engagement" in the dependent claims would be rendered redundant and superfluous. See 35 U.S.C. § 112 P 4 ("a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed").

It would be improper to interpret claims in a manner rendering recitations in other claims (the dependent claims) redundant or superfluous. See AK Steel Corp. v. Sollac, 344 F.3d 1234, 1242 (Fed. Cir. 2003) ("Under the doctrine of claim differentiation, dependent claims are presumed to be of narrower scope than the independent claims from which they depend."). However, the Court does not agree with Defendants' contention that Whirlpool's incorporation of "friction" into the definition of "dragged" would render any of the dependent claims redundant or superfluous.

The dependent claims have other limitations over the independent claims besides the insertion of the concept of "frictional engagement." Claim 1 recites that "cloth items above the impeller are dragged in an oscillatory manner along with the impeller." '722 Patent, Claim 1 (emphasis added). Where the term "frictional engagement" is used in Claims 4, 6, 9, 10, 19, 27, and 29, it is not used as an alternative way of describing how the clothes are moved. Instead, the dependent claims describe controlling the water level such that the clothes will not "lose" frictional engagement with the impeller. For example, Claim 4 recites "supplying a quantity of wash liquid into the wash chamber sufficient to wet the cloth items but insufficient to cause the impeller to lose frictional engagement with the cloth items." '722 Patent, claim 4 (emphasis added). This stated desire to prevent loss of "frictional engagement" between the impeller and the clothes implies that such frictional engagement already existed in the independent claims. Accordingly, the use of the term "frictional engagement" in the dependent claims supports Whirlpool's position that the term dragged means "pulled with friction."

The abstract for the '722 Patent also supports Whirlpool's proposed construction of the term:

The method includes loading cloth items into the wash chamber and then supplying a quantity of wash liquid into the wash chamber sufficient to moisten the cloth items but insufficient to cause the cloth items to lose frictional engagement with the impeller as the impeller oscillates.

Defendants also object to Whirlpool's definition of drag because they contend Whirlpool is referring to friction that causes something to move, when in fact the dictionary definition of drag uses the term friction to describe a force that resists movement.

Whirlpool denies that it is employing friction to refer to the force that causes movement. The '722 Patent recites that the cloth items are dragged in an oscillatory manner along with the impeller, i.e., they are pulled with friction in an oscillatory manner by the impeller, in contrast to movement by liquid force or fluid force which would not involve friction or dragging.

Defendants' suggested definition of "to move by force" does not include the resistance or difficulty that is implied in the term drag and it is inconsistent with the premise in the patent specification that there is some frictional engagement that would be lost when too much wash liquid is added. Accordingly, the Court will construe "dragged" as "pulled with friction" and "drag forces" as "forces that pull with friction."
4. The term "drain opening" (claim 9, claim 12) 

The Court agrees with WIMCO that this term does not need to be construed. The words "drain opening" are ordinary words, used in their ordinary sense, and any further definition or paraphrasing would serve no useful purpose.

Lange argues that "drain opening" means "bottom of standpipe." JCCS at 3; Def. Claim Constr. Br. at 36-37. Lange's argument relies primarily on the fact that the '207 patent specification discloses only one type of drain, a hole at the bottom of the standpipe. This is true, but it is not a sufficient reason to limit the broad term "drain opening" to cover only a single embodiment. In so limiting the term, the Court would be wrongly importing a limitation from the specification into the claims.

Claim fifteen is the only independent claim at issue in the '255 patent. This claim contains the following claim limitation: "a drainage device including a mechanism for removing said plug from said opening to provide communication with said chamber and thereby drain the contents of said chamber." This limitation describes the function of the drainage device: removing the plug and draining the chamber. The "drainage device" claim limitation is written in means-plus-function format subject to 35 U.S.C. § 112, P 6, as the limitation describes a function to be performed rather than a definite structure. Therefore, the structure which removes the plug and drains the contents of the chamber must be taken from drawings and descriptions in the specifications. See 35 U.S.C. § 112, P 6. Figures ten and eleven most closely resemble the accused Dornoch product. The description of the third alternative embodiment specifies that the plug is pushed "up into the container so that fluid flows out of the container through the openings . . . ."

The drainage device in the '255 patent does have the same function as the drainage device in the Dornoch product. The two drainage devices also achieve the same result, drainage of the chamber. However, no reasonable jury could find that the drainage device described in the '255 patent's specifications operates in the same or in a substantially equivalent way as the Dornoch drainage device. A conduit in the '255 patent pushes a plug in the bottom of the chamber up and into the chamber. Gravity then causes the chamber to drain through the bottom hole, preferably assisted by a vacuum suction. 13 The Dornoch product, however, does not rely on a vacuum suction or on the force of gravity alone. Instead, a flush jet pushes a plunger rod downward, which is attached to a stopper, thereby pushing the stopper out of the drain opening. Spray from the flush jet
then enters the chamber, which, together with the plunger rod, creates a swirling action to assist in drainage. The inclusion and reliance on the flush jet spray and the plunger rod in Dornoch's drainage device indicates that the drainage device does not operate in a substantially equivalent way as the Bemis drainage device.

The independent claim at issue in the '476 patent is claim eight. Similar to claim fifteen in the '255 patent, claim eight has a "drainage device" claim limitation. This claim is written in means-plus-function format, as it describes a function to be performed, rather than the specifications for accomplishing that function. The drainage device is designed to automatically open the drain and drain the contents of the container. However, the claim limitation provides no guidance on how the device operates. Therefore, the scope of the claim limitation is found in the specifications. As in claim fifteen of the '255 patent, figures ten and eleven along with the description for the third alternative embodiment most closely resemble Dornoch's drainage device. For the reasons discussed above, the 'way' the '476 patent's drainage device operates is not a substantial equivalent to Dornoch's drainage device's method of operation.

With respect to the "drawing out" phrase, the Court has construed all of the constituent terms except the phrase "drawing out at least a portion of the ambient atmosphere." The parties agree that "to draw out" means "to remove." The parties appear to dispute whether "ambient atmosphere" means "air." US Foam did not offer a definition for "ambient atmosphere" while Defendants propose "air." The specification explains that the conventional method of fighting a coal mine fire includes the step of "drawing out as much air as possible from the involved areas." '336 patent, 4:49-50. Later, it explains that "it is preferred that the atmosphere in the sealed area is drawn out so as to reduce as much as possible the oxygen in the sealed area to limit or slow the progress of the fire." '336 patent, 5:4-8. The remainder of Claim 10 of the '965 patent further explains that the purpose of the "drawing out" is to "thereby . . . reduce the amount of oxygen and gaseous fuel available to the fire." '965 patent, claim 10. Although conventionally the method would draw out air, the patentee chose not to so limit his invention to a single type of gaseous fuel. The Court construes "drawing out at least a portion of the ambient atmosphere" to mean "removing at least some of the ambient atmosphere, such as air, from said area involved in fire after it has been sealed."
The Magistrate Judge considered both the specification and the prosecution history of the patent when he made his recommendation. Specifically, the Magistrate Judge noted after reviewing the specification that it "supports the broader interpretation of 'drill list data corresponding to positions on workpieces where holes should be drilled' that does not require the data to identify specific positions." The Magistrate Judge also noted the prosecution history of the patent did not narrow the scope of the phrase "drill list data corresponding to positions on workpieces where holes should be drilled" because the patentees did not narrow the meaning of the phrase during the prosecution by a "clear and unmistakable disavowal of scope."

In rejecting Defendant's proposed construction of the phrase "drill list data corresponding to positions on workpieces where holes should be drilled," the Magistrate Judge reasoned:

[T]he prosecution history should not restrict the scope of the term "drill list data corresponding to positions on workpieces where holes should be drilled." Thus, the term "drill list data corresponding to positions on workpieces where holes should be drilled" should be given its plain and ordinary meaning as supported by the specification. The specification supports a broader interpretation of the term that does not limit it to identifying specific positions. However, the data still must "correspond to positions," so it cannot merely be "data corresponding to the formation of a hole," which conceivably could include no positional data whatsoever. While the specification clearly states that "drill list data" alone can include data other than positions, such as the depth or angle of the hole, the claims only recite "drill list data corresponding to locations on workpieces where holes should be drilled." Thus, the data must contain some information with which the system can ascertain the location where the hole(s) should be drilled. The definition that Precision proposes in its supplemental brief, that "drill list data corresponding to positions on workpieces where holes should be drilled" should be construed as "data relating to the formation of holes in desired positions on a workpiece," captures the idea that the data must relate in some fashion to a position on the workpiece.

Findings and Recommendation at 17-18.

The Court has reviewed the pertinent portions of the record de novo and does not find any error in the Magistrate Judge's Findings and Recommendation as to the construction of the phrase "drill list data corresponding to positions on workpieces where holes should be drilled."

A. Motion for Reconsideration of Claim Construction

In an Order dated May 14, 1998, this court construed the claims of the '100 Patent as follows: 1). "Boring, when turned, a hole in bone mass" was defined as "making a cylindrical hole by the removal of material with a rotary tool." The court further held that "[a] drill means does not include a screw or a pin or a nail or a trocar tip or any other object that does not have cutting edges and flutes." (Slip Op. at 5-6). "Thread means that includes a plurality of thread flights formed in the anchor distal from said drill means end to turn into the bone mass following the drill means" was defined to include "thread means that overlap the drill means so long as a greater number of thread means are distal from the drill means." 3). "Means for securing a suture to said anchor to extend therefrom after said anchor is seated in the bone mass" was defined as "a structure having a suture permanently attached to a retention disk positioned internally within the anchor." In construing the claim this court relied on the claim itself, the specification and the prior art as revealed in the prosecution history. The court did not rely on extrinsic evidence except for a general understanding of the patent.

Mitek's Motion for Reconsideration of Claim Construction argues that the court committed errors in its construction of the terms "drill means" and "means for securing". Mitek does not request modifications of the court's definition of "thread means". Mitek argues that the question of whether or not a drill means includes a screw, a pin, a nail or a trocar tip is a question for the jury and not a question of law for the court. This court disagrees. Mitek argued and presented evidence at length to support its contention that a drill means includes a trocar tip, a pin, a nail or a screw and requested that this court construe the term "drill means" to include these devices. Only when this court disagreed with Mitek's definition did it argue that this was an issue for the jury. The conclusion that a drill means does not include objects that do not have cutting edges and flutes is fully supported by the intrinsic evidence. Further, the Federal Circuit has affirmed claim construction rulings that define functions or structures that are excluded from the coverage of a claim. See, e.g. The Gentry Gallery, Inc., v. The
Berkline Corp., 134 F.3d 1473, 1477 (Fed. Cir. 1998) (term "console" construed to exclude tray unit) and General American Transp. Corp. v. Cryo-Trans, Inc. 93 F.3d 766, 770 (Fed. Cir. 1996) (opening "adjacent" to a side was construed to exclude opening adjacent to an "end wall").

Mitek further argues that the court committed error in defining "means for securing" to exclude a freely sliding suture. As stated above, this court may properly define functions or structures that are excluded from the coverage of a claim. Mitek also argues that the court may not use the prior art to limit the range of structures that may be equivalent to the structure disclosed in a specification for performing an identified function. Once again, this court disagrees. It is well established that the prior art as cited by the applicant is part of the intrinsic evidence upon which the court must rely to construe the claims. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996). The prior art relied upon by the applicant "gives clues as to what the claims do not cover." Autogiro Co. of America v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 399 (Ct Cl. 1967). The holding that the structure of the means for securing cannot include an eyelet is full supported by the intrinsic evidence. Therefore, Mitek's Motion to Reconsider Claim Construction is denied.

Drill Means

Mitek argues that the court erred by limiting the claim to cover only anchors with one or more cutting edges and flutes due to the "drill means" limitation, thus excluding disclosed embodiments and all equivalents. However, the court correctly limited this means element as required by 35 U.S.C. § 112 P 6. A means element in a claim covers only the structure disclosed in the specification and its equivalents. See Fonar Corp. v. Gen. Elec. Co., 107 F.3d 1543, 1551, 41 U.S.P.Q.2D (BNA) 1801, 1807 (Fed. Cir. 1997). In this case, every reference to the drill means in the specification refers to the structure of the drill means as containing flutes, i.e., "the one anchor end includes a fluted drill …." U.S. Patent No. 4,632,100, col. 5, l. 6. Mitek's argument that references in the specification to devices in the prior art are adequate to disclose a structure with a trocar or conical tip is unpersuasive because those devices can be used with a variety of drill bits.

In addition, the specification may describe specific means outside the coverage of the means-plus-function claim to delineate the boundary of the claim's scope. See Sofamor Danek Group, Inc. v. DePuy-Motech, Inc., 74 F.3d 1216, 1220, 37 U.S.P.Q.2D (BNA) 1529, 1531 (Fed. Cir. 1996). In discussing the structure of a flat drill, which by definition has no flutes, the patent specification teaches away from its use for boring by stating "a drill portion … preferably consisting of two flutes, which … makes possible a use of a lesser diameter drill than would be possible with other drill shapes such as … a flat drill." U.S. Patent No. 4,632,100, col. 9, lines 17-24. Thus, the specification expressly excluded the use of a flat drill from the meaning of "drill means" and mentions the flat drill as part of the prior art that is being improved upon.

B. "Drilling"

"Drilling" is used in the patent to describe the process by which a passageway through the tip is formed. (Doc. 29, Ex. A). Dentsply argues that drilling means "bor[ing] or driv[ing] a hole in." (Docs. 34, 55). Hu-Friedy contends that the term should be construed as "using a drill to mechanically cut [sic] a hole by rotating abrasion. " (Docs. 42, 46). Hu-Friedy asserts that "drilling" must be differentiated from "electric discharge machining," known as "EDM," a process by which an electric pulse is used to bore a hole through metal. (Docs. 42, 46, 55).

The language of the claims and specifications supports a broader interpretation of "drilling," to include any type of boring. Although the claims differentiate between drilling and EDM, they suggest that the latter is a subset of the former. The first claim of the patent, with the broadest coverage, provides for the "drilling" of a passageway through the tip. A subsequent claim provides for a more limited version of the invention in which the passageway is formed through EDM. (Doc. 29, Ex. A). That EDM is used for the same purpose as drilling and appears in a more limited version of the claim strongly suggests that EDM is merely one type of drilling.
This conclusion is buttressed by language in the specifications. The specifications state that the fluid passageway may be formed by "a number of techniques[,] including drilling and boring." Although listed separately, "drilling" and "boring" are later used interchangeably. The section describes the use of a lathe as alternatively a "boring" and a "drilling" process. (Doc. 29, Ex. A). Other language similarly equates the two terms. Thus, by identifying EDM as "a preferred boring method," the specifications also identify EDM as "a preferred [drilling] method."

The broad construction of "drilling" is confirmed by reference sources. Dictionaries define "to drill" as "to make a hole with" and a "drill" as "[a]n implement . . . for boring holes in hard materials." E.g., AMERICAN HERITAGE COLLEGE DICTIONARY 429 (4th ed. 2002). The interpretation proposed by Dentsply is supported by intrinsic and extrinsic evidence. Accordingly, the court will construe "drilling" as "bor[ing] or driv[ing] a hole in."

1. Drilling a Stepped Endosseous Orifice

The parties' proposed constructions are as follows:

<table>
<thead>
<tr>
<th>Plaintiffs</th>
<th>Defendant</th>
</tr>
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<tr>
<td>Creating a hole with at least one sudden, marked change in the slope of the wall along its length, thus forming a step.</td>
<td>Drilling a hole in a patient's bone which has the appearance of stair-steps when viewed in cross-section.</td>
</tr>
</tbody>
</table>

The parties' dispute over this term revolves around the meaning of "stepped." (Plf's Opening Brief 6; Plf's Reply Brief 1; Def's Opening Brief 18.) The standard dictionary definition of "stepped" is "having a step or series of steps: arranged or constructed in steps . . ." (7/24/09 Transcript 16; Plf's Ex. 12 (Webster's) at 2237.) The dictionary definition of "step" includes "something to put the foot on in ascending or descending" and "a steplike shoulder or bench on an otherwise smoothly rising hillside or slope: one of a series of terraces rising vertically from a valley floor." (Plf's Ex. 12 (Webster's) at 2236.)

The language of the claim does not define "stepped" nor does it specifically describe the shape of the steps created in the orifice. (Swaroop Decl. Ex. 1, col. 6, ll. 25-50.) It merely refers to "drilling a stepped endosseous orifice" in a patient's jawbone into which a dentist inserts a tapered implant. (Id.) The claim also explains that the orifice is "step drilled" so that the steps line up with the shape of the implant so as to laterally compress the cancellous tissue. (Id.) The portion of the claim that describes the tapered implant likewise fails to precisely define the contours of the implant in a way that would necessarily shed light on the shape of the steps that are drilled in the orifice. (Id.)

According to the specification, the purpose of drilling a stepped orifice in which the dentist inserts the implant is to create a greater initial strength between the implant and the porous, spongy cancellous bone tissue. (Swaroop Decl. Ex. 1, col. 1-4.) To that end, the '160 patent seeks to achieve this purpose by step-drilling the orifice and laterally compressing the cancellous bone tissue to create an orifice that is the size or slightly smaller than the implant, so that when the dentist installs the implant, the cancellous tissue is compressed laterally and puts less pressure on the bottom of the implant. (Swaroop Decl. Ex. 1, col. 2, ll. 49-56, col. 4, ll. 56-61.)

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Nonetheless mean that the orifice must contain such ledges. Has not explained why removing from the final patent the portion of the drawing depicting the horizontal ledges would drawings. Moreover, to the extent that Plaintiffs altered the drawing in Figure 4 to remove the horizontal ledges, Defendant courts generally do not rely on schematic drawings to limit the scope of a patent to the embodiment depicted in such drawings. See Anchor Wall, 340 F.3d 1298, 1306-7 (Fed. Cir. 2003) (explaining that "the mere fact that the patent drawings depict a particular embodiment of the patent does not operate to limit the claims to that specific configuration").

Nonetheless, Defendant contends that Figure 8 shows that the drill used to create the stepped orifice has horizontal ledges, which would create steps that resemble stair-steps. The Court, however, declines to use this drawing to limit the scope of the patent to a stepped orifice created using the stepped osteotome depicted in Figure 8. First, courts generally do not rely on schematic drawings to limit the scope of a patent to the embodiment depicted in such drawings. See Anchor Wall, 340 F.3d at 1306. Second, the specification explains that Figure 8 is an example of a stepped osteotome that "can be used to form a stepped orifice." (Swaroop Decl. Ex. 1, col. 3, ll. 26-28.)(emphasis added). According to the specification, a dentist may use a stepped drill or osteotome or a plurality of drills or osteotomes. (Swaroop Decl. Ex. 1, col. 4, ll. 27-30.) The specification does not require a dentist to use the type of osteotome depicted in Figure 8. Third, the specification states the cutting edges of the osteotome are not depicted in Figure 8. Fourth, even if the Court limited this term to steps created by the type of osteotome depicted in Figure 8, the Court still would not adopt Defendant's proposed construction because the osteotome in Figure 8 contains some "steps" that lack horizontal ledges and do not resemble stair-steps. Thus, by adopting Defendant's proposed construction, the Court would be improperly excluding the preferred embodiment. See Vitrionics, 90 F.3d at 1583. Finally, the specification specifically states that "[v]ariations in both the implant and the method are within the scope of the invention." (Swaroop Decl. Ex. 1., col. 3, ll. 34-36.)

Footnotes

8 Presumably, if the inventors believed that the method for drilling the stepped orifice required the dentist use the type of osteotome depicted in Figure 8, they could have simply said so. They did not. Likewise, if the inventors believed that the steps must resemble stair-steps in order to properly compress the cancellous tissue, they could have simply said so. They did not.
Defendant also relies on prior art, the Schulte patent, to support its contention that the steps must resemble stair-steps. Defendant, however, has not explained why this prior art necessarily means that the stepped orifice or step drill described in the '160 patent must necessarily contain horizontal ledges and resemble stair-steps. While it is true that the Schulte patent appears to use the term "stepped" to refer to steps that resemble stair-steps and that the '160 patent refers to that patent as illustrating an implant in a stepped orifice, nothing in the '160 patent suggests that the inventors limited the term "stepped" to include only steps that resemble stair-steps, like the Schulte patent. (Def.'s Exs. 1, 10.)

Moreover, at the hearing, counsel for Defendant conceded that steps need not contain precisely horizontal ledges. (7/24/09 Transcript 70.) Specifically, Mr. Hurey stated "[w]e are not saying the steps have to be precisely 90 degrees, precisely vertical, precisely horizontal." (Id.) Defendant's expert also conceded this point. (Plf's Ex. 43 at 112.)

As to extrinsic evidence, Plaintiffs have presented evidence supporting their contention that the steps need not contain horizontal ledges. Specifically, in addition to the dictionary definitions described above, Plaintiffs rely on an article in the International Journal of Oral and Maxillofacial Implants that depicts a "stepped" drill that creates a "stepped" orifice that has sloped, not horizontal, steps. (Plfs' Dem. Ex. Bahat Article.)

The Court, however, declines to adopt Plaintiffs' proposed construction as currently drafted because it is slightly inaccurate. Specifically, Plaintiffs' proposed construction refers to creating a hole with at least one marked change in slope, but Plaintiffs' expert conceded that in order to create one step, there needs to be two, not one, marked changed in slope. (Brunski Depo. 65-66.) As a result, adopting Plaintiffs' proposed construction would not be consistent with creating a "stepped" orifice because it could include an orifice that has only one marked change in slope and thus does not contain even one step.

In light of the foregoing, the Court adopts the following construction: Creating a hole in the bone with at least two sudden, marked changes in the slope of the wall along its length, thus forming at least one step.

F. "Drilling the Passageway Through" and "Forming in Said Tip Body"

These phrases appear in several claims of the patent related to the method of producing the fluid passageway within the tip body. (Doc. 29, Ex. A). Dentsply argues that neither phrase requires a directional limitation. (Docs. 34, 55). Hu-Friedy asserts that both contemplate the drilling or forming of the passageway "in the direction from the fluid inlet end to the bend of the tip." (Docs. 49, 55).

Dentsply's proposed construction is supported by the claims and specifications. The claims themselves provide only that the passageway is to be "drilled" or "formed," without indicating from which direction the process should begin. The specifications state that the passageway could be formed by drilling from the fluid inlet end, but do not connote an intention to exclude other methods of drilling. Indeed, one of the claims instructs that the tip should be bent "to form . . . a location for an opening of a passageway," suggesting that the drilling process may start at the bend of the tip, where the discharge orifice is located. (Doc. 29, Ex. A (emphasis added)).

Hu-Friedy's attempt to interpose a directional limitation in the claims is contrary to law. Specifications may be read to limit otherwise broad claim terms only when the patentee clearly demonstrates such an intent. E-Pass Techs., Inc. v. 3COM Corp., 343 F.3d 1364, 1367-69 (Fed. Cir. 2003). The specifications cited by Hu-Friedy contain no such indication. They all describe only one embodiment of the device, without suggesting that the description should serve as a limitation. To the contrary, the patent clearly states that the specifications are not intended to limit the "scope [of the invention] as set forth in the . . . claims." (Doc. 29, Ex. A). The court will construe the phrases "drilling the passageway through" and "forming in said tip body" as incorporating no directional limitation.
B. "Drinking Cap"

The Defendants' proposed construction of "drinking cap" is "a removable cover that completely covers a beverage container or drinking container, and allows a user to drink a beverage through said removable cover by means other than a hole." Sunbeam's proposed construction is "a removable structure adapted to mount to the end of a container to facilitate drinking." Again, the parties dispute the extent to which the "drinking cap" must cover the beverage container, while also disagreeing as to whether the cap "facilitates" drinking or "allows" drinking.

1. Words of the Claim

Claim 3 of the ‘592 patent describes "[a] method of mixing ingredients in a drinking container, comprising:

- placing ingredients in a drinking container;
- attaching a blade base to the drinking container;
- inverting the blade base and drinking container;
- attaching the blade base to a motorized blender base and operating the blender base to mix the ingredients in the drinking container;
- removing the blade base and drinking container from the blender base;
- inverting the blade base and drinking container;
- removing the blade base from the drinking container; and
- attaching a drinking cap to the top of the drinking container."

‘592 Patent at 20:35-49 (emphasis added). A "drinking cap" is also mentioned in Claim 1 of the ‘659 patent, "an independent apparatus claim," which is listed as "[a] blender assembly comprising:

- a blender base;
- a collar removably mountable on said blender base and having a first interface;
- a blender jar removably mountable to said collar and having a second interface configured to mate with said first interface;
- a beverage container removably mountable to said collar and having a third interface configured to mate with said first interface; and
- a drinking cap removably mountable to said beverage container and having a fourth interface configured to mate with said third interface."


3 The original text of the patent reads "a drinking can," which, in context, is an obvious typographical error.
"The term 'drinking cap' is not used in the common specification of either the '592 or '659 Patents." Def. Memo, at 15. Nor is any aspect of the term illuminated by the prosecution history.

3. Extrinsic Evidence

In addition to the lay dictionary definition of "cap" discussed earlier, the Defendants proffer a dictionary definition of "facilitate" to oppose Sunbeam's proposed construction that the drinking cap with the drinking hole "facilitate[s] drinking." The Defendants cite a definition of "facilitate" as "to make easy or easier," Merriam-Webster.com, and contend that a drinking cap having a drinking hole does not make drinking easier, but rather that it makes drinking possible. Def. Memo, at 13. Sunbeam counters, "[o]ne could obviously drink from a container that does not have a drinking cap, but the drinking cap simply facilitates the act." Reply at 11.

4. Proper Construction of "Drinking Cap"

As differentiated from the term "cap," the term "drinking cap" is necessarily narrower; it is a subset of "cap" that is not intended to be used purely for purposes of storing the vessel's contents, but rather one that is intended to be used for drinking. As differentiated from the narrower disputed claim term "drinking cap having a drinking hole" (which is necessarily a subset of "drinking cap") discussed infra, a "drinking cap" includes not just a cap with a hole through which a person may drink. It also includes a cap with a notch or other portion cut out so that the cap itself does not have a hole, but that the user has an opening through which to drink when the cap is affixed. Thus, with such a "holeless" drinking cap, drinking from the vessel is possible while the cap is in place despite the absence of a hole in the cap itself. See Sunbeam Oral Argument Slide 26. This explains the distinction between Claim 4 of the '592 Patent, 20:51-63 (describing a cap "selectively covering [the] open top portion of the container") and Claim 9, 21:6-7 (stating that "[t]he assembly of claim 4, wherein said cap has a drinking hole formed therein"), which implies that there is a type of drinking cap that does not have a drinking hole. In comparing the terms "drinking cap" and "drinking cap having a drinking hole," it is evident that the limitation "having a drinking hole" is not present in the claim term "drinking cap."

Additionally, the language of the claim specification respecting "cap" makes clear that any sort of cap — including a "drinking cap" and a "drinking cap containing a drinking hole" — contains an interface by which the cap screws onto the container. x 592 Patent at 11:55-59 (describing the process by which "the agitator collar is screwed off" and "[t]he cap may then be screwed on["].

The record shows that the claim language, liberally interpreted, does not produce any lack of clarity or inconsistency when the term "drinking cap" is defined in terms of its plain and ordinary meaning. Although, as the Defendants argue, the "holeless drinking cap" to which Sunbeam points as evidence to show the distinction between the claim terms may be shown not to be practicable in the context of a screw-on interface, or may be shown not to have been embodied in a product, it shows how the plain language of the terms does not produce any confusion as to the scope of any claim term.

Thus, the term "drinking cap" is construed as "a cap which, when screwed onto the beverage container, allows a person to drink the contents of the beverage container." Although the cap may indeed facilitate drinking, the crucial distinction to be drawn between "cap" and "drinking cap" is that the latter necessarily enables drinking while the cap is affixed.

C. "Drinking Cap Having a Drinking Hole"

The Defendants' proposed construction of "drinking cap having a drinking hole" is "a removable cover that completely covers a beverage container or drinking container, said removable cover having a hole therein that is substantially smaller than the circumference of the beverage container cover or drinking container cover, and through which a user can drink a beverage." Sunbeam's proposed construction is "a removable structure adapted to mount to the end of a container to facilitate drinking having an opening of any size through which a user can drink." Thus, the parties disagree as to whether the claims contain any inherent limitation on the size of the drinking hole in relation to the size of the opening of the beverage container.
1. Words of the Claims

The language of Claim 1 of the '592 patent states:

- a drinking container having a first interface at its top;
- a blade base removably mountable on and off a blender and having a blade unit thereon and a second interface thereon, the second interface configured to mate with the first interface, the blade base and the drinking container forming a sealed container; and
- a drinking cap having a drinking hole and a third interface, the third interface configured to mate with the first interface.

'592 Patent at 20:22-34 (emphasis added).

2. Specification and Prosecution History

The parties identify the same specification language as raised with respect to the term "cap." As noted above, the '592 Patent specification, at 11:39-59, notes that "[t]he removable cap 198 may include a drinking hole, and/or may include a closure tab to avoid spillage." The specification further notes that "[t]he cap 198 may then be screwed onto the single serving beverage container 38, and the single serving beverage container is ready for use." This would evidently apply whether or not the cap has a drinking hole.

The prosecution history does nothing to clarify the term. See Def. Memo, at 12 (finding no history relevant to the term "drinking cap having a drinking hole").

3. Extrinsic Evidence

Other than dictionary definitions of "cap" and "facilitate," discussed above in reference to the term "drinking cap," there is no extrinsic evidence presented that relates to the proper construction of "drinking cap with a drinking hole."

4. Proper Construction of "Drinking Cap Having a Drinking Hole"

For the reasons described above with respect to the proper construction of the term "drinking cap," a "drinking cap having a drinking hole" is simply a subset of the term "drinking cap." In practice, it is likely that most drinking caps have a hole through which the person drinks, but not all drinking caps necessarily have such a hole. Thus, the plain language of the claims distinguishes the terms, and there is little for the court to construe.

The term "drinking cap having a drinking hole" is thus construed as "a cap which, when screwed onto the beverage container, allows a person to drink the contents of the beverage container through a hole in the cap."

8. "A drip pan"

For "a drip pan," Foodie offers "a pan for collecting drippings," while Jamba Juice offers "an open, shallow bin for droppings located in the product finishing station." The Court has already elaborated on its reasoning for not including the modifiers "open" and "shallow" in the term, and the specification provides no more support for reading these modifiers into "a drip pan" than they did for "a cold pan." See supra discussion pp. 13-14. At the Markman hearing, Jamba Juice indicated they would be amenable to taking out the "located in the product finishing station" language in the definition, and the Court agrees that it need not be included. There appears to be no substantial difference between "drippings" or "droppings," though the patent itself uses "drip," and in the interest of consistency, the Court will also adopt drippings as a derivation of the word drip. Therefore, the Court construes the term "a drip pan" to mean "a pan for collecting drippings."
The Court of Federal Claims interpreted the term "to drive" as meaning "to push." Masco challenges this interpretation, stating that the word "drive" is broader than the word "push" and that the court improperly read in limitations from the preferred embodiment. **We affirm the court's construction of this limitation.**

We begin, as did the Court of Federal Claims, with the words of the claim itself. The court cited a general dictionary definition defining "to drive," in part, as "to push, propel, or press onward forcibly." Claim construction ruling Masco, 47 Fed. Cl. at 457 (quoting The American Heritage Dictionary of the English Language 563-64 (3d ed. 1996)). However, the court found that the plain language of the claim did not resolve the question of the scope of "to drive." Masco, 47 Fed. Cl. at 456. Although the definition cited suggests that the force moves away from the actor, other definitions do not indicate this. For example, a definition of "drive" taken from the field of mechanical engineering defines the term simply as "the means by which a machine is given motion or power . . . or by which power is transferred from one part of a machine to another." McGraw-Hill Dictionary of Scientific and Technical Terms 616 (Sybil P. Parker et al. eds., 5th ed. 1994). Because the plain meaning did not resolve the construction of the term, the court properly turned for guidance to the intrinsic record, consisting not only of the claims themselves, but also the specification and the prosecution history that was in evidence. See Teleflex, Inc. v. Ficosa N. Am. Corp., 2002 U.S. App. LEXIS 12361, 299 F.3d 1313, 63 U.S.P.Q.2D (BNA) 1374, 1380 (Fed. Cir. 2002); Vtronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996) (holding such intrinsic evidence to be "the most significant source of the legally operative meaning of disputed claim language"). The court found that the specification implicitly equates "to drive" with "to push":

When the proper combination has been entered, all parts of the lock are linked. The critical point is the junction between the camshaft wheel, which has a "boss," and the solenoid housing, which has a "detent." The specification states that "the solenoid cam surface includes a small sloped protrusion or boss 92 . . . for engaging and pushing an extended detent in the solenoid housing 62 upon rotation of the cam wheel." Col. 5, lines 49-54. Correspondingly, "the solenoid housing 62 is a rigid body or element, . . . for positively operating, driving or moving the lever from its disengaged position to a position for engaging the nose part 48." Col. 5, lines 59-63.

The cam surface and the solenoid housing operate together. The cam surface "pushes" the solenoid housing and the solenoid housing "drives" the lever. Therefore, there is a clear, if implicit, equalization between "to drive" and "to push" in the specification.

Claim construction ruling Masco, 47 Fed. Cl. at 456.

The Court of Federal Claims also made reference to the prosecution history of the parent '656 patent, which was properly in evidence, and which the parties "agreed . . . was intrinsic evidence to be used in construing the '068 patent and the '711 patent." Id. The prosecution history of a parent application may be considered in construing claim terms. Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 980, 52 U.S.P.Q.2D (BNA) 1109, 1114 (Fed. Cir. 1999) ("When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation."); Jonsson v. The Stanley Works, 903 F.2d 812, 818, 14 U.S.P.Q.2D (BNA) 1863, 1869 (Fed. Cir. 1990); see also Mark I Marketing Corp. v. R.R. Donnelley & Sons Co., 66 F.3d 285, 291, 36 U.S.P.Q.2D (BNA) 1095, 1100 (Fed. Cir. 1995) (holding that, for estoppel purposes, the relevant prosecution history included not only the application upon which the patent issued but also the parent and grandparent applications). The court determined that the prosecution history of the '656 patent showed that "the applicants thought of the 'driving' force as a 'pushing.'" Claim construction ruling Masco, 47 Fed. Cl. at 457. The court found support for this in the following passage from a proposed Amendment After Final Rejection that was submitted on August 20, 1993:

Consider briefly Applicant's invention. One aspect of Applicant's invention is directed to a combination lock having improved tamper resistance. The present invention also provides more predictable operation of the lock by positively engaging the fence lever with the cam wheel when the nose part on the fence lever and the slot in the cam wheel are properly aligned. The tamper resistance and improved operation features of the lock in one aspect of the invention are provided, in part, by either (1) holding the lever out of engagement with the cam wheel, (2) providing a positive driving
mechanism for pushing the lever into engagement with the cam wheel, and/or (3) providing a means by which the cam
wheel can push a link mechanism such as a shaft or rod to push the lever into engagement with the cam wheel when a
portion of the cam wheel is properly aligned with a portion on the shaft so as to allow the cam to push the shaft after entry
of a proper combination.

Masco, 47 Fed. Cl. at 456-57.

The term "to drive" was inserted into Claim 1 of the issued '068 patent in an amendment submitted on May 2, 1994. This
amendment was made in response to a rejection of the claim as anticipated by a German patent, number 3,817,696. In the
lock described in the German patent, a tension spring pulls the lever into engagement with the cam wheel surface after an
electromagnetic blocking element has been moved. The pertinent part of the amendment reads as follows:

transmitting a force applied to [rotating] the dial to the lever after the lever and the dial have been operably connected to
drive [move] the lever to a position where the protrusion can contact the surface of the cam wheel in such a manner that the
lever will be pulled by the cam wheel during rotation of the cam wheel.

Masco argues that "drive" is a part of the description of the action in which the force that moves the lever is transmitted
from the dial, not supplied from some other source such as the spring in the German patent. Masco relies on the explanatory
argument in the same amendment, which distinguished the German reference:

the force generated by the spring is not applied to the dial. Nor is it transmitted from the dial to the lever. Thus, in contrast
to the present invention, the German reference fails to teach or suggest a combination of method steps including the step of
"transmitting a force applied to the dial to the lever . . . to drive the lever."

Masco points out that it did not argue that "drive" distinguished prior art that pulled or explicitly define "drive" to mean
"push." Because of this, Masco argues, the amendment did not distinguish pushing and pulling, nor did it limit the direction
of force.

We do not agree. The addition of "transmitting a force applied to the dial to the lever" to the claim by itself made clear that
the force that moves the lever is transmitted from the dial, not from some other source. As the Court of Federal Claims
found, the patentee's use of the term "drive" in the specification equated driving with pushing. The amendment
distinguished the pushing action of the claimed invention from the pulling action disclosed in the German patent by
inserting the word "drive," denoted in the specification as a pushing action, in place of the word "move," which had no
directional connotations. Masco's proposed definition of "drive" to encompass pulling actions is inconsistent with the
specification of the '068 patent and with the prosecution history of the '068 patent and its parent patent. See Litton Sys., Inc.
broad construction of a claim limitation as "inconsistent with the prosecution history"). Because the amendment
distinguished the pulling action found in the German patent, Masco cannot now maintain that the proper scope of the "to
drive" term is broad enough to encompass that pulling action.

The phrase "drive assembly" means "an assemblage of two or more parts that act together to impart motion to the flexible
cover sections and substantially parallel supporting bows from an unspecified source."

B. "Drive Bay Slot"

Comaper suggests that this term means "the relatively narrow opening in the housing of a computer that leads to the drive
bay." (Pl.'s Constr. Mem. at 4.) Comaper arrives at this definition by interpreting the individual meaning of the words within
the term. A "slot", Comaper contends, is a well-known term for an opening or passage; a "drive bay" is a common term for
the particular space inside a computer that is dedicated to accommodate a drive. Id. Comaper further argues that there is no special meaning ascribed to the term "slot" in the intrinsic record, and therefore the plain and ordinary meaning should prevail in its interpretation. Id. at 5.

Antec interprets the term "drive bay slot" to mean "the area inside a computer enclosure having an independent opening capable of housing a drive." (Defs.' Constr. Mem. at 10.) Antec contends that Comaper's construction contradicts its use of the term in Claim 1 which recites "a case configured to mount within said drive bay slot of said computer such that said case occupies substantially the entire drive bay slot." Id. According to Antec, a case would be "far larger" than the narrow slot leading to the drive bay. Id. Antec also reasons that the term "slot" cannot mean opening because opening was used during the application process, and yet the Examiner still insisted on inserting the term opening. (Defs.' Reply Mem. at 11.) Using Antec's construction would result in "drive bay slot" and "drive bay" meaning the same thing. This was not the intent of the patentee.

The Court concludes that the term "drive bay slot" means "the relatively narrow opening in the housing of the computer that leads to the drive bay." The prosecution history supports this construction. As stated above, courts are free to consider the prosecution history, the record of correspondence and communications between the inventor and the PTO, which is kept on file at the PTO and made available for public inspection. "Although the prosecution history can and should be used to understand the language used in the claims, it too cannot 'enlarge, diminish, or vary' the limitations in the claims." Markman, 52 F.3d at 980 (citation omitted). "If a patentee takes a position before the PTO, such that a 'competitor would reasonably believe that the applicant had surrendered the relevant subject matter,' the patentee may be barred from asserting an inconsistent position on claim construction." Katz v. AT&T Corp., 63 F. Supp. 2d 583, 591 (E.D. Pa. 1999) (citing Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 1457 (Fed. Cir. 1998)); see also Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed. Cir. 1996).

The parties agree that the term "slot" was added during prosecution at the Examiner's insistence. (See Pl.'s Constr. Mem. at 4;Defs.' Reply Mem. at 11.) Furthermore, Comaper concedes that the term was added as a way to distinguish the '955 Patent from the device in Pollard. (Pl.'s Constr. Mem. at 4.) It is also clear that the term "opening" existed elsewhere in the patent language and the use of the term "slot" was to convey a different meaning than a mere opening.

The district court construed the term "drive bay slot" to mean "the relatively narrow opening in the housing of the computer that leads to the drive bay." Claim Construction Order, 2006 U.S. Dist. LEXIS 67363, 2006 WL 2709382, at *6. Antec argues that the drive bay slot is not the opening in the computer housing but rather the area inside the computer behind the opening where a drive may be installed. Antec essentially asks us to equate the terms "drive bay" and "drive bay slot," despite their separate use in the '955 patent. There is an inference, however, that two different terms used in a patent have different meanings. Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 93 F.3d 1572, 1579 (Fed. Cir. 1996). While this inference is not conclusive, Bancorp Servs., L.L.C. v. Hartford Life Ins. Co., 359 F.3d 1367, 1373 (Fed. Cir. 2004), the intrinsic evidence supports the district court's construction that "drive bay" and "drive bay slot" have different meanings.

The meaning of the term "drive bay slot" was made clear during prosecution. During the prosecution of the '955 patent, the application was repeatedly rejected as anticipated by and obvious in light of U.S. Patent No. 5,171,183 ("Pollard"). Pollard disclosed a case module for installing a 3.5-inch form-factor removable-media disk drive into a 5.25-inch drive bay. The module included a cooling unit that would draw in ambient air to cool the drive. Once installed, both the front of the disk drive and the vent for the cooling unit could be seen on the front of the module, such that the drive and vent would together occupy the opening in the computer housing leading to the drive bay in which the module was installed. In order to distinguish the application of the '955 patent from Pollard, the inventors and the examiner agreed that a limitation would be added to the claims wherein the "case occupies substantially the entire drive bay slot"--i.e., unlike Pollard, the cooling unit itself would occupy substantially the entire drive bay slot. Because the phrase "case occupies substantially the entire drive bay slot" was added to distinguish Pollard, the use of the term "slot" in Pollard is significant. Pollard clearly describes a "slot" as the two-dimensional opening in the computer housing: "A common PC enclosure has 5.25 inch form factor slots (5.75 inches wide by 3.25 inches high) in the face of the enclosure . . . ." Pollard col.1 ll.18-20 (emphasis added). Therefore,
it is appropriate for the term "drive bay slot" in the '955 patent to have a similar meaning, and we conclude that the district court correctly construed "drive bay slot" to mean "the relatively narrow opening in the housing of the computer that leads to the drive bay."

--- Footnotes ---

3 The examiner's stated reason for allowing the '955 patent was that "the case for the cooling device mounted in the drive slot does not provide housing a disk drive which is different from the Pollard et al reference wherein the case houses both the cooling device and the disk drive." J.A. 212.

--- End Footnotes ---

--- 1257 ---

5. "a drive circuit for the motor" (claims 1, 14, 22)

Omax proposes that this phrase should be construed as the "portion of a machine tool that receives motor commands and electronically controls motor functions. It may or may not include one or more controllers that interpret and adjust motor commands." Flow's interpretation uses the same first sentence, and then continues: "The drive circuit may contain a force command interpreter, a position command differentiator, or a position command interpreter, as defined in the patent. The drive circuit does not include add-in cards or intermediate command interpreting controllers."

This Court already has concluded that "the specification as a whole does not suggest 'that the very character of the invention requires the [direct connection] limitation [suggested by defendant] to be part of every embodiment.'" Order, Dkt. # 52 at 6 (quoting Alloc, Inc. v. Int'l Trade Comm'n, 342 F.3d 1361, 1370 (Fed. Cir. 2003)). Flow has attempted to account for this conclusion by suggesting that the claim be construed as allowing certain intermediate connectors, but not the add-in card or other controllers that are the hallmark of the Flow device. The Court continues to hold that the character of the invention does not require the absence of the intermediate steps that Flow attempts to preclude through its proposed construction. The Court therefore adopts Omax's proposed construction.

--- 1258 ---

Clause (b) recites "a drive mechanism connected to [the machine's] frame for moving [the machine] in a given direction, and at a controlled speed, over the turf to be treated." (Patent '744, Col. 13, Lines 31-33.) The court concludes that this is not a means-plus-function clause. This clause does not lack sufficient structure to warrant construction under a means-plus-function analysis, nor is there language signaling that § 112, P 6 should apply. An ordinary interpretation and construction of this claim therefore must include two components: (1) a drive mechanism, i.e., some form of mechanized propulsion; 6 that is (2) connected to the machine's frame for providing this propulsion. The common understanding of the word "connected" suggests: "joined, linked or incapable of being separated." See, e.g., Merriam Webster's Collegiate Dictionary 244-245 (10th ed. 1998).

--- Footnotes ---

6 Such as an engine system comprised, in part, of a hydraulic drive motor as disclosed in the patent specification. (See Patent '744, Col. 5, Lines 58-60; and Col. 6, Lines 50-53.)

--- End Footnotes ---

--- 1259 ---

A. Element 1: "Drive Motor Means"
Element 1 contains the term "drive motor means." The use of the word "means" creates a presumption that section 112, P6 applies. Personalized Media Communications, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 702 (Fed. Cir. 1998). Sunon contends that section 112, P6 applies to Element 1, and that the recited "function" of the "drive motor means" is to "drive the blades of the fan." (R. 96-1, Defs.' Claim Constr. Br. at 11.) Papst argues that section 112, P6 does not apply because the claim does not recite a function that corresponds to the means. The Court agrees with Papst.

The claim language does not state a function. Rather, the claim term "drive motor means" recites a definite structure, i.e., the drive motor. See Cole, 102 F.3d at 531; see also Pirelli Cable Corp. v. Ciena Corp., 988 F. Supp. 424, 434 (D. Del. 1997) (holding that the term "optical coupling means" recites a definite structure, "the optical coupler"). Sunon fails to identify any language within Claim 29--or anywhere else in the patent--that suggests that the term "drive motor means" has a corresponding function, and that the corresponding function is "to drive the blades of the fan." Because there is no corresponding function for the "means," section 112, P6 does not apply to the "drive motor means" term. Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1302 (Fed. Cir. 1999); Sage Prods., 126 F.3d at 1427; York Prods., 99 F.3d at 1574.

Papst argues that the Court should define the term "drive motor means" to mean any type of electric motor that is used to drive a fan. The parties do not dispute the meaning of the word "motor," and the specification indicates that the "drive motor" is simply an electric motor that drives the fan. See '015 patent, col. 5, ll. 51-53. Papst contends that the Court should further construe the term "drive motor means" to specifically include both types of motors that are typically used to drive fans--AC motors and DC motors. Papst argues that Figure 2 of the '015 patent depicts a squirrel cage motor, which one skilled in the art would recognize as an AC motor. Nothing in the claim language or the specification, however, expressly includes or excludes any particular type of electric motor from the scope of the claim. Accordingly, the Court interprets Element 1 to mean any type of electric motor that is used to drive a fan.
1. Means-Plus-Function Analysis

Under 35 U.S.C. § 112, P6 9, "an applicant can describe a limitation of his invention by the result accomplished or the function served, rather than describing the item or limitation to be used . . . " Warner-Jenkinson v. Hilton Davis Chemical Co., 520 U.S. 17, 117 S. Ct. 1040, 1048, 137 L. Ed. 2d 146 (1997). The use of the word "means" triggers a presumption that the inventor used the term advisedly to invoke the statutory mandates for means-plus-function clauses. York, 99 F.3d at 1574. However, this presumption is not conclusive. See Sage Products, Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427 (Fed.Cir. 1997). Where a claim uses the word "means," but specifies no corresponding function for the "means," § 112, P6 is not implicated. See id. (quoting York, 99 F.3d at 1574). Similarly, if a claim has sufficient structure within the claim itself which can entirely perform the recited function, the language of the claim is not in means-plus-function format. See 126 F.3d at 1427-28 (quoting Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed.Cir. 1996), cert. denied, 139 L. Ed. 2d 20, 118 S. Ct. 56 (1997)).

--- Footnotes ---

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claims shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

--- End Footnotes ---

In the '959 Patent, the "drive system assembly means" of both claim 1 and claim 7 employ the word "means," and thereby presumptively implicate § 112, P6. See York, 99 F.3d at 1574. Claim 1 states in relevant part:

... (d) drive system assembly means mounted on said plate in order to sum reciprocating motion into continuous and fluid rotary motion, said drive system assembly means having a right pedal sprocket, a left pedal sprocket and a drive sprocket, wherein said drive sprocket is driven by either said right sprocket or said left sprocket in one direction only and said right and left sprocket are free to overrun in the opposite direction...

Col. 7, line 64 through Col. 8, line 4 (emphasis added). Similarly, claim 7 states in relevant part:

... (c) drive system assembly means for summing motion into continuous and fluid rotary motion, said drive system assembly means having a right pedal sprocket, a left pedal sprocket and a drive means, wherein said drive means is driven by either said right sprocket or said left sprocket in one direction only and said right and left sprocket are free to overrun in the opposite direction...

Col. 9, lines 18-25 (emphasis added).

StairMaster believes the "drive system assembly means" of both of these claims recites only structure, with no function advanced. Procycle disagrees that no function is recited and states none of the functions to be performed by the "drive system assembly means" can be accomplished by the structure recited in the claim. Because the parties' dispute centers around how much structure is sufficient to bring into play the means-plus-function analysis, the Court briefly turns its attention to this question.

The Federal Circuit Court of Appeals has in numerous instances discussed the amount of structure necessary to be recited in claim language before the means-plus-function section of the patent statute, 35 U.S.C. § 112, P6, is applicable. Recently, the Federal Circuit stated: "Where a claim recites function, but then goes on to elaborate sufficient structure, materials, acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format." Sage Products, 126 F.3d at 1427-28 (citations omitted) (emphasis added). It follows the structure recited in claims 1 and 7 is sufficient to avoid analysis under § 112, P6 if the recited structure is capable of performing entirely the recited function. As the York case makes evident, in most cases this will mean the claim language must recite predominantly structure; however, York also makes clear that recitation of some structure is not necessarily sufficient to take a claim out of the means-plus-function rubric. See York, 99 F.3d at 1574-75 (quoting Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1536 (Fed.Cir. 1991))
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

("Mere incantation of the word 'means' in a clause reciting predominantly structure cannot evoke section 112, P 6 . . . .
[However,] the recitation of some structure in a means plus function element does not preclude the applicability of section
112(6).")

10 Federal Circuit of Appeals precedent soundly rejects StairMaster's thesis that any reference to structure removes a claim
from interpretation under the means-plus-function statute. Clearly, the recitation of "some structure" does not preclude
applicability of § 112, P6 in all cases. See York, 99 F.3d at 1574.

Applying this analysis, both the "drive system assembly means" of claim 1 and 7 function by summing reciprocating motion
of the pedals into continuous and fluid rotary motion. Turning to the structure of these devices, the "drive system assembly
means" of claim 1 includes a "right pedal sprocket," a "left pedal sprocket," and a "drive sprocket." 11 The structure of the
"drive system assembly means" of claim 7 includes a "right pedal sprocket," a "left pedal sprocket," and a "drive means."
Because the Court finds the "right pedal sprocket", the "left pedal sprocket," and the "drive sprocket" or "drive means" is a
clause reciting predominantly structure and capable of performing entirely the recited function of summing reciprocating
motion into continuous and fluid rotary motion, application of the means-plus-function analysis is inappropriate for the
"drive system assembly means" of claim 1 and claim 7.

11 Additionally, claim 1 also refers to the "drive system assembly means" being mounted on a plate. However, this plate
does not play any consequential role in the recited function of the claim language.

12 Although the drive shaft is also an essential structure which allows the "drive system assembly means" to sum
reciprocating motion into rotary motion, as will be discussed more fully below, the Court construes the "drive sprocket" and
"drive means" as requiring a "drive sprocket" linked to a "drive shaft."

As a predicate matter, the court finds Nikon's reliance on claim differentiation doctrine logically puzzling. The doctrine of
claim differentiation requires this appendix because claim 19--a dependent claim of claim 1--states "wherein the drive includes a
mask drive to move the mask stage and an object drive to move the object stage."

Though it risks making the claim construction process an inherently circular enterprise, the parties appear to agree that the
proper construction of "a drive to move the mask stage and the object stage" should include the words of the term itself. The
parties disagree, however, regarding whether the court should append the phrase "which may include a mask drive to move
the mask stage and an object drive to move the object stage" to its construction. According to Nikon, the doctrine of claim
differentiation requires this appendix because claim 19--a dependent claim of claim 1--states "wherein the drive includes a
mask drive to move the mask stage and an object drive to move the object stage."

As a predicate matter, the court finds Nikon's reliance on claim differentiation doctrine logically puzzling. The doctrine of
claim differentiation requires that terms in independent claims--like this one--be read more broadly than comparable (and
narrower) terms in dependent claims--like claim 19. See Transmatic, Inc. v. Gulton Industries, Inc., 53 F.3d 1270, 1277-
1278 (Fed. Cir. 1995) ("Consistent with the claim differentiation doctrine, the term 'light housing' in claim 1 is broader in
scope than in claim 3 and the other dependent claims."); United States v. Teletronics, Inc., 857 F.2d 778, 783-84 (Fed. Cir.
1574 (Fed. Cir. 1985) ("Where some claims are broad and others narrow, the narrow claim limitations cannot be read into
the broad."). The foundation of this doctrine is that reading a dependent claim more broadly than its governing independent
claim would make the two claims concomitantly inconsistent and inverted. Id. There is no risk of violating the rule in
eschewing Nikon's limitation. In fact, to assert, as Nikon has, that claim differentiation doctrine requires the court to import
a limitation from a dependent claim gets claim differentiation doctrine precisely backwards. The limitation in claim 19 does
not compel the court to append a limitation to the plain-meaning construction of the claim 1 term; indeed, the claim 19 limitation unavoidably, if indirectly, suggests that the court should construe claim 1's terms to be "broader in scope" than the identical terms in claim 19. Id.

Nor can the court agree with Nikon that construing claim 1 absent claim 19's limitation would render claim 19 meaningless. As the court understands the relevant claims, the converse is true; if the court were to exclude claim 19's limitation from its construction of claim 1, the two claims would avoid redundancy and retain independent, if interrelated, meaning. If, by contrast, the court were to read claim 19's limitation into claim 1, claim 19 would become superfluous, repeating what claim 1 already says. Neither claim differentiation doctrine nor common sense require the court to read dependent claims into nugatoriness. Specification language for the '500 patent contemplates separate drives moving each stage. See '500 Patent at 4:24-56; figs. 1, 2, & 5. Consistent with this specification language, and consistent with the plain meaning of the claim term, the court construes the phrase "a drive to move the mask stage and the object stage" term to mean "components used to move the mask stage and to move the object stage."

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1. Claims 1-7, 9

With respect to claims 1-7 and 9, the parties have only one minor dispute involving the term "drive units", specifically the "first drive units" and the "second drive units". The parties agree that they refer to an "assemblage of components responsible for rotation" at a rate of one ω and two ω, respectively. The dispute is whether the proper construction of the "drive units" includes (or does not include) the tubing and vessel which are rotated. Plaintiff Haemonetics contends that the tubing and vessel are part of their respective drive units while the defendants argue that the assemblage is exclusive of both.

Claim 1, upon which the other referenced claims are dependent, reads:

A centrifugal device for liquids containing suspended particles, such as blood, comprising:

- a centrifugal unit with a center and a rotation axis;
- a peripheral separation chamber;
- a plurality of channels connecting the center of the centrifugal unit to said separation chamber, each channel having a central extremity;
- a plurality of tubes having first and second extremities, the central extremities of the respective channels attached to the first extremities of the tubes and the second extremities of the tubes being angularly stationary and coaxially located with respect to the rotating axis;
- first drive units to turn the tubes around said rotating axis at an angular speed ω; and
- second drive units to turn the centrifugal unit around said rotating axis at an angular speed 2ω wherein the centrifugal unit has a radius between 25 and 50 mm and a height between 75 and 125% of the radius.

(emphasis added).

The defendants assert that the drive units were clearly intended to exclude the components that are rotated. In support, they cite to the language in Claim 1 (excerpted above) which delineates the six components comprising a centrifugal device. The vessel, tubing, first drive units and second drive units are all separate items on that list. Furthermore, defendant Fenwal contends that because the patent drawings themselves assign a different reference number to the vessel, tubing and drive units, the intent was to treat the drive units as separate from the vessel and tubing. Accordingly, the defendants contend that the natural interpretation is that the drive units are not inclusive of the vessel and tubing.

Haemonetics argues that the defendants are improperly attempting to read limitations into the claims from the specification.
It contends that "drive units" is simply a reference to the drive mechanism and that there is no basis for limiting the particular construction based on its particular application to the tubing and centrifugal vessel.

Although the plaintiff is correct that a written description should not be taken as unduly limiting claims without evidence of an intent to do so, the Court finds that argument misapplied in this case. According to the Court's reading of the Claim and specifications, the construction of the subject term is not about reading limitations into the claim but rather about whether the tubing and vessel, two separate structures, should be included within the term "drive units". It seems clear from the plain language of the claim itself that the structures are distinct claim elements. They are enumerated separately from the drive units, themselves. Moreover, the specifications and the drawings accompanying the patent underscore the delineation between the vessel, the tubing and the two drive units by assigning separate reference numbers to each component.

Having concluded that the drive units are separate components from the tube and the vessel that they rotate, the question is whether a drive unit should be construed in such a way as to be inclusive of those separate structures. The Court concludes that there is nothing to indicate that the term should be so construed. As in the case of Bradshaw v. Igloo Products Corp., 1996 U.S. App. LEXIS 29761, 1996 WL 663310 (Fed. Cir. Nov. 15, 1996), in which the Federal Circuit rejected an attempt to define "handle" in a manner which would be inclusive of both "lifting handle" and "pulling handle", the Court here rejects the plaintiff's attempt to define "drive unit" in such a broad manner. In Bradshaw, the Federal Circuit noted that the patent "consistently speaks of the lifting handles and the pulling handle as distinct elements" and that "the drawings so indicate". Id. 1996 U.S. App. LEXIS 29761, [WL] at *2. Likewise, in this case, both the language and the drawings in the patent clearly treat the drive units as separate from the objects which they rotate.

Accordingly, "first drive units" will be construed as: "the assemblage of components responsible for rotating the tubes around the designating axis at an angular speed \( \omega \). The assemblage does not include the tubes or vessel." And, "second drive units" will be construed as "the assemblage of components responsible for rotating the centrifugal vessel (or centrifugal unit) around the designated axis at an angular speed 2\( \omega \)."

C. "driving the elongate member to rotate and move the toy object in a path around the base member"

Defendants cite to various passages of the specification for the proposition that this step of Claim 12 should be construed as meaning "to drag the object on the ground in a path around the base." However, reading such a limitation into the claim language would mean committing "one of the cardinal sins of patent law" -- reading specific limitations in a specification's disclosed embodiment into the broader claim. Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc., 418 F. Supp. 2d 1021, 1029 (S.D. Ind. 2006) (citing Phillips, 415 F.3d at 1320, 1323). It is clear that in the preferred embodiment of the device, and the accompanying method, the object would be dragged along the ground. (See, e.g., '448 Patent Abstract ("object ... is preferably arranged to be dragged along the ground"); Summary of Invention at Column 1, Line 36 ("object may be directly secured to the free end of the wire but is preferably secured to it by a length of string so that it is dragged along on the ground"); Description of Preferred Embodiment at Column 2, Line 38 ("[t]he cord or wire is of sufficient length to enable object 22 to be dragged along the ground") and Column 3, Line 45 ("In order to operate the toy device, the motor is actuated and the wire 20 will then be rotated, dragging object 22 on the ground in a path around housing 12.") (emphasis added.)

However, it is equally clear that the "claim language, specification, and prosecution history do not disclaim" all other embodiments of the device, or methods, in which the object is not dragged along the ground. Cardiac Pacemakers, 418 F. Supp. 2d at 1029; see also Phillips, 415 F. 3d at 1323 ("[W]e have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.") The use of the phrase "preferably" would be rendered superfluous if other possible arrangements (in which the object was not dragged on the ground) were not included within the claimed invention. As such, the Court declines to construe this element as requiring the object to be dragged on the ground.

a. "Drivingly Engages" in Claim 1
As before, the Court first starts with the language of the claim itself. "Drivingly engages" as used in claim 1, Col. 8, lines 10 and 14, refers to an engagement between a right or left pedal means and a left or right pedal sprocket. See Col. 8, lines 5-15. Because a claim is circumscribed by its structural limitations, see York, 99 F.3d at 1574, and this claim requires the engagement of two sprockets, this claim language requires a chain engagement. The specification language supports this construction: "The chain 72 is made to pass over and drivingly engage the teeth of a right sprocket 76 . . . ." Col. 5, lines 32-34 (emphasis added). Similar language is found for a left chain 90 drivingly engaging a left sprocket. See Col. 5, lines 58-60. The Court is not importing language from the specification into the claims. Rather, it is simply looking to the specification to understand what might "drivingly engage" a sprocket. The claim language itself requires a sprocket and chain engagement, and there is nothing in the prosecution history 20 that refutes this interpretation. The Court therefore finds that "drivingly engages" of Claim 1, Col. 8, lines 10 and 14 refers to a chain and sprocket mechanical engagement.

b. "Drivingly Engages" in Claim 7 and 11

Next, the Court considers the claim language "drivingly engages" in claim 7, Col. 9, lines 32 and 37, and claim 11, Col. 11, lines 30 and 35. The relevant claim language states that a left or right pedal means "drivingly engages" either a right or left pedal sprocket (claim 7) or a right or left one way clutch (claim 11). See Col. 9, lines 26-38; Col. 11, lines 24-36. Unlike claim 1, however, this claim language gives no hint as to how the left or right pedal means engages the pedal sprockets or the one way clutches. Accordingly, the Court turns to the specification. The specification states in pertinent part:

The left and right sprockets operate in conjunction with clutch bearings 110 and 112, respectively. As viewed in FIGS. 3 and 4, when the right sprocket turns counterclockwise, the sprocket and clutch bearing positively lock with the shaft to turn the shaft counterclockwise . . . . Thus, when the shaft 106 is rotated counterclockwise, the drive sprocket 108 will clockwise be rotated counterclockwise.

Col. 6, lines 6-15; see also Col. 3, lines 51-57 (same). It therefore appears in the specification the pedal sprockets and one way clutch bearings drivingly engages a drive shaft which has a drive sprocket linked to it. However, as this preferred embodiment is not required by the language of the specification, it is improper to import this language into the claim where the claim language appears to be broader. See Specialty Composites v. Cabot Corp., 845 F.2d 981 at 987; Electro Medical, 34 F.3d at 1054; see also CVI/Beta Ventures, 112 F.3d at 1158. Therefore, "drivingly engage" in claim 7 and 11 can cover engagement of any of a number of mechanical connections. Nor does the specification require any special definition for this claim language. Accordingly, the claim should be interpreted according to its ordinary and customary meaning. See Vitronics, 90 F.3d at 1582.

Consulting the dictionary, "engage," as used in this context, means "to come into contact or interlock with, mesh." See Webster's Third New Int'l Dictionary at 751. "Drivingly" is defined in the following manner: "with driving force or energy." See id. at 692. Consequently, the customary meaning of "drivingly engages" is to come into contact, interlock, or mesh with driving force or energy. There being nothing to the contrary which limits this claim language to any narrower definition, the Court construes "drivingly engages" to cover any mechanical connection which comes into contact, interlocks, or meshes with driving force or energy. The Court therefore finds that the language "drivingly engages" of claim 7, Col. 9, lines 32 and 37, and claim 11, Col. 11, lines 30 and 35, refers to any type of mechanical engagement between a pedal means and a pedal sprocket or one way clutch that is capable of coming into contact, interlocking, or meshing with driving force or energy.
VII. Drop member

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Davis-Lynch's Proposal</th>
<th>Weatherford's Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;drop member&quot;</td>
<td>A ball, plug, dart, rod, shaft, or any other design for using fluid pressure.</td>
<td>A ball, dart, plug, or similar apparatus dropped from the surface into the wellbore.</td>
</tr>
<tr>
<td>Claims 34, 35, 37</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The '336 patent describes two different embodiments for releasing the inner tubular. In the "drop embodiment," the tool is sent to the appropriate depth in the wellbore, and then a drop member is pumped from the surface down the wellbore towards the tool. '336 patent 7:47-48. Fluid is continually pumped down the wellbore until the drop member reaches the drop member receptacle and restricts the flow of fluid through the inner tubular. This restriction causes fluid pressure to build up in the wellbore and break the mounting member, thus releasing the inner tubular. '336 patent 8:61-66. In the "cage embodiment," the drop member is mounted to a cage-like catcher/seat above the drop member receptacle, and sent down the wellbore with the tool. Fluid pressure is used to break the cage and then push the drop member into the drop member receptacle to restrict the flow of fluid through the inner tubular. '336 patent 7:56-64. As with the drop embodiment, this restriction causes the inner tubular to be released. Weatherford argues that the term "drop member" refers exclusively to the drop embodiment, and that an "activation ball" is used in the cage embodiment. Davis-Lynch argues that the terms "drop member" and "activation ball" are interchangeable.

The Court must begin its analysis by consulting the claim language itself. Phillips, 415 F.3d at 1312. The claim at issue in this case, claim 34, is broadly written to cover both the drop embodiment and the cage embodiment. Therefore, unless the patentee has explicitly or implicitly limited the term "drop member" to only refer to the drop embodiment, the Court will construe claim 34 to encompass both embodiments. See Aloft Media, LLC v. Microsoft Corp., No. 6:07-cv-50, 2009 U.S. Dist. LEXIS 24124, 2009 WL 803133 at *3 (E.D. Tex. Mar. 24, 2009) ("Although consistent usage may define a term, particular embodiments and examples appearing in the specification should not be read into the claims.").

Weatherford argues that the patentee implicitly limited the scope of the term "drop member" by consistently using it to describe the drop embodiment. See Bell Atl. Network Servs., Inc., 262 F.3d at 1271 ("when a patentee uses a claim term throughout the entire patent specification, in a manner consistent with only a single meaning, he has defined that term 'by implication'"). In every figure depicting the claimed invention, the object which lands in the drop member receptacle is labeled as element 23. Figures 2, 3, 4, and 5 contain a catcher/seat (element 23A), thus depicting the cage embodiment. See '336 patent 7:46-66, 8:54-66. Figures 6, 7, 8, and 9 do not contain a catcher/seat, thus depicting the drop embodiment. See '336 patent 9:32-58. When discussing figures 2, 3, 4, and 5, element 23 is referred to as a "ball," "activation ball," or "operation ball." '336 patent at 7:46-47, 7:58-66, 8:62-64. When discussing figures 6, 7, 8, and 9, element 23 is referred to as a "ball," "drop ball," "drop element," or "drop member." '336 patent at 9:39, 9:49, 10:15-16, 10:59, 11:36-37.

This sort of consistent usage could lead one of ordinary skill in the art to conclude that the terms "activation ball" and "drop member" refer to two different embodiments. See Bell Atl. Network Servs., Inc., 262 F.3d at 1271. However, the only term used to describe an element that employs fluid pressure to convert the inner tubular in any of the 54 claims of the '336 patent is "drop member." In particular, Claims 12, 17, 18, and 54 claim "a drop member mounted adjacent to said inner tubular." 11 This language parallels cage embodiment language in the specification which describes an activation ball as "mounted adjacent" to the tool. '336 patent 7:49-51. Furthermore, Claim 18 describes using a first fluid pressure to cause the drop member to break a release member, and a second fluid pressure to cause the drop member to engage the inner tubular. Thus, claims 12, 17, 18, and 54 use the term "drop member" to describe the cage embodiment, and show that the terms "drop member" and "activation ball" must be interchangeable. See Phillips, 415 F.3d at 1314 ("Other claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term.").

--- Footnotes ---

11 Claim 12 recites "a drop member mounted adjacent to said moveable member."
The Court finds that the patentee has not implicitly limited the term "drop member" to refer exclusively to the drop embodiment. Therefore, the Court will not impose a narrow restriction on the broad claim language of claim 34 as Weatherford proposes. The Court adopts Davis-Lynch's proposed construction as consistent with the way drop member/activation ball is described in the patent. See '336 patent at 7:57-60.

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5. "dropping"

* * *

Claim 20 of the '930 patent is exemplary of the usage of the disputed term:

c. removing a bottled beverage from said one of said ordered queues by means of a robotic assembly, in response to said customer selection input; and

d. smoothly moving said bottled beverage by said robotic assembly in a generally vertical X-Y plane within a vend selection space of the vending machine, to a delivery port of the machine; wherein said removing and moving steps are performed without dropping or subjecting the bottled beverage to sharp impact forces. (emphasis added).

The claim language requires the removing and vending steps to be performed "without dropping" the beverage. The question for the court is whether the patent's use of the phrase "without dropping," distinguishes a "free fall" from other events, such as sliding or rolling.

After hearing the arguments, the court concludes that Crane's argument is persuasive. One of the stated purposes of the patents is to "address[] the described deficiencies of prior vending machines . . . ." '930 Patent, col. 3, ll. 5-6. One of the deficiencies is the vertical drop vending process. In describing the vertical drop vending process, the patents delineate between "vertically drop[ping] the beverage container from the front end of the shelf on which it is stored, to a lower chute" and "redirect[ing] the container to a delivery area . . . ." '930 Patent, col. 2, ll. 17-20; see also id. at col. 2, ll. ("virtually all vending machines that operate on the principle of dropping and delivering the vended product by gravity"). Furthermore, a preferred embodiment of the patent contemplates "enable[ing] beverage containers carried thereby to slide by gravity toward the open front . . . ." '930 Patent, col. 10, ll. 33-34; see also id. at col. 14, ll. 30-34 (describing the "robotic arm" embodiment). Thus, the term "dropping" refers to "an unconstrained free-fall, with no guidance."

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I. Construction of "Drum"

Ramsey contends that the term "drum" should be construed as "a one-piece cylindrical part on which a cable is mounted."

Ramsey argues that to differentiate "drum" from "drum assembly," the "drum" cannot be a collection of parts but must be a single part. If "drum" were construed to allow an additional part that rotated with the drum but was not integral to it, Ramsey continues, "drum" would mean essentially the same thing as "drum assembly." Ramsey notes that the preferred embodiment shows the drum as a single piece 10, seen most easily in Figure 3. Ramsey argues that gaps between multiple parts would diminish the efficiency of the heat dissipation from the stator to the drum's outer surface and on to the atmosphere.

Ramsey notes that the specification considers the stator separate from the drum, even though the two are closely connected:
a cylindrical stator which is fixed within the drum … and is in tight surface-to-surface fixed contact with the inner surface of the drum. The stator is in effect an extension of the drum in that heat generated … is conducted through the stator material to the drums outer surface.


Warn contends that the term "drum" should be construed as "the hollow, open-ended cylinder that surrounds the brake mechanism."

Warn cites Free Motion Fitness, Inc. v. Cybex Intern., Inc., 423 F.3d 1343 (Fed. Cir. 2005), for its holding:

"[A]" or "an" in patent parlance carries the meaning of "one or more" in open-ended claims containing the transitional phrase "comprising." This convention is overcome only when the claim is specific as to the number of elements or when the patentee evinces a clear intent to … limit the article.

Id. at 1350 ("a cable linking" means "one or more cables linking") (internal quotation and citation omitted); see also KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed. Cir. 2000) ("a . . . continuous . . . chamber" covers one or more continuous chambers, and reads on the accused device air mattress's separate inflatable chambers for the head, body, and legs of the patient). Warn argues that under this law, any mention in the '255 patent of "a drum" or "the drum" cannot support the argument that the drum, or the heat conductive cylinder from my previous ruling, must be a single piece.

The cited cases discuss a different issue than Warn addresses. Free Motion and KCJ discuss situations in which there are multiple instances of the item, namely multiple cables and multiple chambers. Warn is arguing for multiple pieces making up one instance of the item. The two cases do not directly apply.

Warn contends that nothing in the claim, specification, or prosecution history shows a clear intention to limit the "drum" to one piece. Warn states that the specification only recognizes three features of the "drum": (1) the central portion that surrounds the brake assembly and on which the cable is wound; (2) the ends that engage the housing; and (3) the flanges that define the area of the drum width on which the cable can be wound. Warn argues that the "drum" can differ from the "drum assembly" without the "drum" being required to be a single piece. Warn further contends that it is common for a drum to contain a liner or an outer sleeve to change the diameter for a particular application.

Ramsey also submits extrinsic evidence to support the argument that one of ordinary skill in the art would understand the term "drum" to mean a single-piece cylindrical part. The evidence consists of parts manuals for eight winches from multiple manufacturers which all label a drawing of a single-piece cylindrical part as the drum. Warn contends that it cannot be determined from the parts manuals if the drums are actually a single piece or made from multiple pieces. I do not think there is a need to rely on extrinsic evidence here.

From the specification:

Basically the winch includes a cable drum 10 that is supported in the winch housing at its ends by bushings 13 for axial rotation relative to the stationary housing 9. A cable 16 wound on the drum 10 (and confined by drum flanges 15) is either wound onto or off of the drum with winding or unwinding rotation of the drum. Housing end 12 houses a motor that turns a shaft assembly 18 that extends through the center of the drum 10 and engages a planetary gear assembly 20 contained in housing end 14. The planetary gear assembly 20 is engaged with the cable drum 10. Thus the motor rotatively drives the shaft assembly 18 which rotatively drives the planetary gear assembly 20. The function of the planetary gear assembly is to reduce the rate of rotation so that the drum 10 is rotated by the planetary gear assembly at a rate that is a fraction of the rotation of the shaft assembly 18. Such gear reduction multiplies the torque produced by the motor as transmitted to the drums.

A brake mechanism 22 is mounted to the shaft assembly 18. The brake mechanism 22 functions to lock the shaft assembly 18 to the drum 10. The planetary gear assembly 20 is thus unable to generate the rotational difference between the shaft assembly 18 and the drum 10. The drum, the shaft and the winch housing are thus interlocked and rotation of the shaft and the winch is thereby stopped or braked.
'255 patent, 2:45-3:1

The drum's purpose in the claim is to have the cable wound on and off the drum. The drum is also connected to the brake mechanism and to the shaft assembly in such a way that torque allows easier winding and unwinding of the cable and the cable can be completely braked.

Warn's proposed construction says nothing about the cable. Ramsey's proposed construction adds the requirement that the drum cylinder be a single piece. Certainly this would be the most common, as shown by the parts manuals, and is drawn in the preferred embodiment, but I see no requirement in the claim or even the specification that this be the case. Thus, I again choose a construction that differs from what the parties propose.

I conclude the term "drum" is defined to be "the cylindrical part on which a cable is mounted."

II. Construction of "Drum Assembly"

The term "drum assembly" is not mentioned in the specification.

Ramsey contends that the term "drum assembly" should be construed as "a collection of parts, including a drum, that rotate together with respect to the housing."

Ramsey contends that the drum assembly includes the drum, which provides the cylindrical surface, and an additional part defined in the claim as "a brake surface on said cable drum assembly." '255 patent, 5:5. Ramsey notes part of Claim 1:

a brake surface on said cable drum assembly, a movable braking member provided on said brake shaft and rotatable therein and moveable between engaged and disengaged frictional braking engagement with said braking surface of the drum assembly

'255 patent, 5:5-9. Based on this language from the claim, Ramsey argues that the movable braking member that rotates with the brake shaft is not part of the drum assembly. It contends that the braking members, also called brake pads in the specification, are claimed as separate structures that rotate with the brake shaft and come into frictional contact with the brake surfaces on the stator contained within the drum assembly.

Ramsey relies on the specification's discussion of the brake surfaces to support its argument that the stator is part of the drum assembly:

A cylindrical stator 72 is fixedly secured to the inner wall of the drum 10. . .The stator has a center bore 78 that allows passage therethrough of the shaft assembly. Spring 58 and retaining ring 64 are also located in the center bore 78. Cylindrical faces 80, 82 at each end provide braking surfaces.

'255 patent, 3:62-4:3.

Warn contends that the term "drum assembly" should be construed as "the drum, and the brake mechanism (comprising at least the stator and movable braking member) disposed within the drum which is adapted to lock the shaft assembly to the drum."

Both Warn and Ramsey agree that the "drum assembly" includes the drum and the stator. Warn, however, argues that it also includes the movable braking member that is adapted to lock the shaft assembly to the drum.

Warn relies on part of the specification:

A brake mechanism 22 is mounted to the shaft assembly 18. The brake mechanism 22 functions to lock the shaft assembly 18 to the drum 10.
Warn contends that Figure 1 generally includes both the stator and the brake members in brake mechanism 22. Thus, Warn contends that "drum assembly" is used to refer to the drum and the brake mechanism. The proper construction is delineated in the claim language. The parties agree that the stator is part of the drum assembly because the stator provides the brake surfaces. I agree with Ramsey, however, that the movable braking member is called out as a separate part that engages, or not, with the braking surface of the drum assembly that is found on the stator end face. Consequently, I will use Ramsey's proposed construction with a slight twist. Since the construction calls out the drum as one component, I think it should also expressly call out the stator. I conclude the term "drum assembly" is defined as "a collection of parts, including a drum and a stator, that rotate together with respect to the housing."

As noted, in the '304 patent, claims 1, 9 and 15 each require a "plurality of annular shell rings" each ring being "non-jointed along its circumference" and "connected to form a generally cylindrical drum shell."

In construing the elements in plaintiff's independent claims, the words must be given "their ordinary and accustomed meaning, unless it appears from the specification or the file history that they were used differently." Carroll Touch, 15 F.3d at 1577. Reference to a dictionary to determine the ordinary and accustomed meaning of a word is appropriate. Miles Labs, Inc. v. Shandon, Inc., 997 F.2d 870, 876 (Fed. Cir. 1993), cert. denied, 510 U.S. 1100, 127 L. Ed. 2d 232, 114 S. Ct. 943 (1994). Webster's Dictionary defines plurality as "the state of being plural," or "the state of being numerous," or "a large number or quantity," or a "multitude." Webster's Third New International Dictionary 1745 (1986). Webster's defines "connected" as "joined" or "linked together." Id. at 480.

Nothing in the '304 patent's specification points to a definition of "plurality" different from Webster's. Indeed, the specification always refers in the plural to the rings which comprise the drum shell. For example, in defining the sounding ring, the specification states that "one or more of such rings function as sounding rings which have a greater outer radius than the other shell rings." (Lovelett Aff., Ex. A, col. 3, lines 21-23) (emphasis added). Therefore, each of plaintiff's independent claims -- 1, 9 and 15 -- requires a "multitude of" or "numerous" annular shell rings. The '304 patent does, however, define "connected." "Pins are positioned axially into adjacent rings to precisely position the rings relative to one another," and "pins . . . are embedded into adjacent rings to radially align and maintain the relative ring positions." (Lovelett Aff., Ex. A, col. 3, lines 17-19; col. 4, lines 19-22) Accordingly, "connected" in the '304 patent means linked together with the use of pins embedded in the rings. Finally, the term "drum shell," as used in the '304 patent, includes both the stacking and the sounding rings. (Id. col. 3, Line 62 - col. 4, Line 6)

The '806 patent, inventor Dr. Charles B. Hilton, is directed to a method of reducing iodide contamination in organic medium, particularly acetic acid. When the acetic acid is catalytically converted to vinyl acetate, the presence of iodide in more than about one part per billion poisons the catalyst. Such iodide contamination was known to be removable by contacting the acetic acid with silver-charged gel ion exchange resins, but the process was slow and impractical in large commercial volume. In seeking to improve the Celanese commercial process, Dr. Hilton discovered that by using a macroreticulated (sometimes described as macroporous) silver-charged cation exchange resin having specified characteristics, he obtained effective, rapid, large-volume removal of minute traces of iodine, to a degree of effectiveness, practicality, and utility not previously available.
When BP encountered iodide contamination in the commercial production of acetic acid BP sought other methods of removal before adopting the method, using a macroreticulated silver-charged cation exchange resin, that is charged with infringement. Celanese brought suit, asserting that the BP method infringed claims 2 and 6 of the '806 patent. Claim 2 is shown, with claim 1 from which it depends:

1. A method for removing iodide compounds from a non-aqueous organic medium comprising contacting the medium containing said iodide compounds with an ion exchange resin characterized in that the resin is a macroreticulated strong-acid cation exchange resin which is stable in the organic medium and has at least one percent of its active sites converted to the silver or mercury form.

2. The method of claim 1 wherein the non-aqueous organic medium is acetic acid and from about 25 to about 75 percent of the active sites are in the silver form.

The question of infringement turns on the meaning of the word "stable" in the claims. It is no longer disputed that all of the other claim elements and limitations are present in the BP method.

B. Review Procedure

Trial was to a jury, lasting for seven days. The jury found that the '806 patent was infringed and that the infringement was willful. The district court, denying duly made motions for a new trial and for judgment as a matter of law, entered judgment on the jury verdict. In its opinion the court identified the evidence in support of the jury verdict, identified the evidence supporting each party's theory of the meaning of certain disputed terms in the patent, and stated its own view of the meaning of these terms. In following this procedure the court relied on Read Corp. v. Portec, Inc., 970 F.2d 816, 822 n.3, 23 U.S.P.Q.2D (BNA) 1426, 1432 n.3 (Fed. Cir. 1992), as requiring or advising that a judicial statement be made of the meaning of disputed claim terms.

BP points out that Read v. Portec has been superseded by the decision in Markman v. Westview Instruments, Inc., 52 F.3d 967, 34 U.S.P.Q.2D (BNA) 1321 (Fed. Cir.) (en banc), cert. granted, 116 S. Ct. 40 (1995), and that Markman requires the Federal Circuit to decide de novo disputed questions of claim interpretation without deference to the trier of fact. BP points out that the disputed question of the meaning of the claim term "stable" is dispositive of the issue of infringement, and therefore that no deference need be given to the jury's finding of infringement. We agree that Markman so requires, and that the issue of infringement is decided by the meaning of "stable" as used in the claims. See Markman, 52 F.3d at 999, 34 U.S.P.Q.2D (BNA) at 1346 (Newman, J., dissenting) (pointing out that the disputed meaning of technical terms often decides the fact of infringement).

"Stable" is defined in the body of the specification as turning on the meaning of "dimension." Although "dimension" appears in the specification, not in the claims, implementation of the Markman decision appears to require that the meaning of "dimension" be given the same de novo determination by the Federal Circuit as the meaning of "stable" in the claims, lest we add further complexities to the trial of patent cases.

C. Construction of the Terms "Stable" and "Dimension"

A technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent and the prosecution history that the inventor used the term with a different meaning. ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1579, 6 U.S.P.Q.2D (BNA) 1557, 1560 (Fed. Cir. 1988); Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387, 21 U.S.P.Q.2D (BNA) 1383, 1386 (Fed. Cir. 1992).

The meaning of "stable" as used in the claims is defined in the specification, col. 4, lines 31-35, as follows:

By the term "stable," it is meant that the resin will not chemically decompose, or change more than about 50 percent of its dry physical dimension upon being exposed to the organic medium containing the iodide compounds.

Thus the meaning of "stable" depends on the meaning of "dry physical dimension." On the BP position that "dry physical dimension" refers to volume, the BP process does not infringe; but on the Celanese position that "dimension" is a linear
measure, there is literal infringement. Celanese states that linear dimension is the plain meaning of "dimension" as understood by persons of skill in this field and as used by the inventor. The BP position is that the term "stable" refers to volume as the physical dimension being measured, pointing out that the resin is in the shape of spherical beads and that the inventor in his research measured volume change. BP states that since its resin changes by more than 50% in volume when exposed to acetic acid, there can not be infringement.

The parties have provided us with photographs and experimental data, the testimony of the scientists who produced the data and interpreted it, and the testimony of experts in the field. Markman limits appellate reliance on extrinsic evidence to evidence in explanation of the technology and technical terms:

Through this process of construing claims by, among other things, using certain extrinsic evidence that the court finds helpful and rejecting other evidence as unhelpful, and resolving disputes en route to pronouncing the meaning of claim language as a matter of law based on the patent documents themselves, the court is not crediting certain evidence over other evidence or making factual evidentiary findings. Rather, the court is looking to the extrinsic evidence to assist in its construction of the written document, a task it is required to perform.

52 F.3d at 981, 34 U.S.P.Q.2D (BNA) at 1331. However, we have found it necessary to rely on the evidence presented at the trial and credit certain evidence over other evidence, for we are not personally qualified to know the scientific meanings of "stable" and "dimension" as applied to macroreticulated cation-exchange resins in organic medium.

The evidence was sharply in conflict. The technical expert presented by Celanese testified as follows:

Q. The second part of this has to do with its dimension. What does that mean?

A. For the case of a spherical resin, it typically means its diameter.

Q. The word "dimension," does it mean volume dimension?

A. There is no such thing as volume dimension.

In turn, the BP expert testified that "dimension" meant volume dimension, stating that volume is what one skilled in the art would understand the term to mean:

Q. Okay. Is that all the reasons [why you believe the term "stable" refers to volume]?

A. There are at least two, perhaps three, additional very important reasons. One is that really it is the common practice of measuring changes that a resin experiences as it swells in a solvent in terms of volume percentage swelling. That is very amply documented in the literature. It is the easiest thing to do. Conversely, it is rather difficult to pick a single bead, measure the change in diameter of that bead, for example, because not every one bead in a sample of resin is identical to the rest of the beads. . . .

The other rather important reason is that it is clearly the objective of this patent to distinguish between a resin that works because it has a porosity independent of swelling, such as Amberlyst 15, and another type of resin which has a porosity that depends upon swelling. That would be the gel type resin in the language used by the patent.

Both sides cite dictionary definitions that support their respective positions. Webster's Ninth New Collegiate Dictionary at 355 (1988) defines "dimension" as:

measure in one direction; specif. one of three coordinates determining a position in space or four coordinates determining a position in space and time.

In partial contrast, the Concise Oxford Dictionary of Current English at 327 (8th ed. 1990) defines "dimension" as:
a measurable extent of any kind, as length, breadth, depth, area, and volume.

This court has occasionally relied on general and technical dictionaries to determine the meaning of technical and other terms. In this case the dictionaries do not distinguish in a dispositive manner between the contested technical meanings. Further, a general dictionary definition is secondary to the specific meaning of a technical term as it is used and understood in a particular technical field. See Hormone Research Found., Inc. v. Genentech, Inc., 904 F.2d 1558, 1563, 15 U.S.P.Q.2D (BNA) 1039, 1043-44 (Fed. Cir. 1990), cert. dismissed, 499 U.S. 955 (1991). Thus we return to the testimony at trial.

Dr. Hilton, the inventor, testified under direct examination as follows:

Q. What is meant by that sentence? In other words, how much swelling does that definition of stable accommodate?

A. A 50 percent change in dimension. The dimension is a distance. A dimension is not volume. Okay? It's the distance between my hands, or it's the distance across my chest. It's the radius of a sphere. A dimensional change in a spherical particle of 50 percent would lead to a swelling or a volume increase of 337 percent.

Dr. Hilton was challenged as to his assertion that "dimension" means distance or linear dimension, for he had measured the swelling volume of these resins during his research. The following exchange occurred on cross-examination:

Q. When did you first form a view that dimension means something other than volume dimension, dimension in this definition of stable?

A. I have never thought of volume as being a dimension. Dimension is not -- volume is not a dimension. Volume of a sphere formula, four thirds pi, distance cubed, radius cubed, distance times distance times distance. Dimension is a distance.

Q. You've never heard the term "volume" used as a dimension?

A. No.

Q. Yet you consider the volume expansion in order to design a guard bed, do you not?

A. Yes, you do.

Q. How many dimensions does volume have?

A. Volume has three dimensions.

The district court called Dr. Hilton's testimony "highly credible." Although we are at a disadvantage in attempting to make credibility determinations, the inventor's testimony reads as that of an expert in the field. See Palumbo v. Don-Joy Co., 762 F.2d 969, 976, 226 U.S.P.Q. (BNA) 5, 9 (Fed. Cir. 1985) (concluding that particular inventor's declaration as to claim meaning was by a "knowledgeable declarant"), overruled on other grounds, Markman, 52 F.3d at 979, 34 U.S.P.Q.2D (BNA) at 1329. Markman requires us to give no deference to the testimony of the inventor about the meaning of the claims. Id. at 983, 34 U.S.P.Q.2D (BNA) at 1332. However, we have treated Dr. Hilton's testimony as cumulative to the other evidence, and as enlarging our understanding of the technology and the usage of the disputed terms.

In addition, the specification of the '806 patent shows the resin characteristic of mesh size of the dry resin, a linear measure based on diameter. The specification also contains swelling data stated to be from the Technical Bulletin for Amberlyst (R) 15 and which, according to the inventor's testimony, is the percentage of swelling by volume. A videotaped "swelling test" that was presented to the jury is stated to have shown that Celanese's preferred Amberlyst (R) 15 resin expanded slightly more than 50% by volume in acetic acid, while BP's Purolite (R) resin of the same chemical composition (polystyrene cross-linked with divinylbenzene) expanded 103% by volume but less than 50% in linear dimension upon exposure to acetic acid.

The district court observed that BP's interpretation of "stable" as meaning dimension by volume would exclude from the claims the Celanese preferred embodiment that is described in the specification. However, if stable is measured by linear
dimension, the claims include the resin that Celanese specifies in its invention. We share the district court's view that it is unlikely that an inventor would define the invention in a way that excluded the preferred embodiment, or that persons of skill in this field would read the specification in such a way. See Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1550, 37 U.S.P.Q.2D (BNA) 1609, 1612 (Fed. Cir. 1996) (claim interpretation that would exclude the inventor's device is rarely the correct interpretation).

We find that the more reasonable explanation is that volume has three dimensions, and we give weight to the argument that on the BP definition the Celanese preferred embodiment would not be within the claims of the Celanese patent. Thus we conclude that "dry physical dimension" as used in the specification means linear dimension. On this definition of dimension, and defining "stable" accordingly, the claims read literally on the BP process.

With regard to literal infringement, the only ground we detect for disturbing the judgment is the claim clause "replacing said rinsing fluid with said drying vapor," which appears in each of the asserted claims. After holding a Markman hearing prior to trial, the district court construed the claim term "drying vapor" as "a vapor that facilitates the removal of liquid from a surface," wherein a "vapor" is "the gaseous state of a substance that, under ordinary circumstances, is usually a liquid or solid." CFMT, Inc. v. Steag Microtech, Inc., No. 95-442-RRM, slip op. at 11 (D. Del. Nov. 25, 1997) (unpublished memorandum opinion). Additionally, the court construed the claim term "replacing" as "taking the place of." Id. at 12. We have considered Steag's arguments that the district court's construction of "drying vapor" is wrong; however, we are not persuaded. Rather, we agree with these aspects of the district court's claim construction.

"Duct" appears at least forty five times in the claims of the '130 application, thirty-one times in the claims of the '609 patent, and six times in the claims of the '958 patent. See '130 application claim 21 at 40 ("a housing defining a central duct with gas inlet and outlet openings defined at opposite ends thereof"); '609 patent claim 37 at 23:34-35 ("a valve housing defining a tubular interior duct having gas inlet and gas outlet apertures at opposite ends thereof"); '958 patent claim 8 at 18:50-51 ("a housing defining a duct with gas inlet and gas outlet openings defined at opposite ends of said duct"); see also '130 application claim 38 at 45; '609 patent claim 1 at 17:55-56, 17:60-67, 18:5-9, claim 18 at 21:15-16, 21:21-27, 21:27-30, claim 37 at 23:36-45, 23:54-56; '958 patent claim 8 at 18:57-59; 18:63-64. The term does not appear in the claims of the '674 patents.

Aqua-Lung seeks to have "duct" defined as "a conduit formed in the housing that leads gas through the housing and which is filled with pressurized gas when the housing is connected to a source of gas." This is the same definition it proposed for "passageway." Two Forty proposes that "duct" be defined as "a passage or channel." Aqua-Lung argues that "duct" is the same as "passageway." The hearing helped shed some light on the scope of "duct" compared to "passageway" and "bore." Two Forty acknowledged that "bore" was the broadest of the three terms because it connoted a hole, while passageway was more of a path. For "duct," however, Two Forty contended that it was similar to "passageway." Comparing the claims presented above with the claims for "passageway" reveals that the two terms are similar in that "duct" does appear to stand in the stead of "passageway" in certain claims. Interestingly, the term "duct" does not appear in the specification of the '130 application or any of the patents-in-suit outside of the claims. Nonetheless, looking at the embodiments and seeing how "passageway" was used in the specification leads to the conclusion that "duct" and "passageway" refer to the same disclosed structure. A person skilled in the art would look at the embodiments and interpret "duct" in no other way. While the patentee selected different names to refer to the same structure, the coverage of the patents cannot be expanded on that basis alone. Doing so would expand the coverage beyond what the patentee invented. Based on the intrinsic record, the Court will adopt the same definition for "duct" that it did for "passageway," and therefore construes the term to mean "a conduit formed in the housing that allows gas to pass through it."
b. "a duct for the passage of cooling air"

The parties dispute whether the term "duct" in the claim phrase "a duct for the passage of cooling air" requires the duct to be enclosed. Alcon contends that a duct must be enclosed, arguing that the term means "an enclosed channel or conduit with at least one inlet and one outlet." Brembo construes the term as simply denoting "a passage or a conduit" without reference to whether it is an enclosed passage.

Brembo's proposed definition is consistent with the ordinary meaning of the term. Webster's Third New Int'l Dictionary at 699. Alcon argues that the term must be limited to an enclosed passageway, because persons skilled in the relevant technology would understand that to control the flow of air, a duct through which air is conveyed must be enclosed. In this regard, Alcon relies in part on the affidavit submitted by its expert. Def. Ex. B, Declaration of Terry L. Satchell P 67. It is appropriate for a court to rely upon expert testimony to understand the underlying technology of a device. Playtex Prods. v. P&G, 400 F.3d 901, 908 n.1 (Fed. Cir. 2005). A court may not, however, use expert testimony to construe a claim in a way that is at odds with the intrinsic evidence. Id. There is nothing in the ordinary meaning of "duct" or its usage in the patent claims or specification that requires the duct to be entirely enclosed except for openings at either end. Ducts often have multiple openings. Consider, for example, a heating duct in a home.

For these reasons, the Court construes "a duct for the passage of cooling air" to denote a passage or conduit through which cooling air may pass.

B. "Dumping Assembly"

As noted, "dumping assembly" is included in the "assembly extendable to the curb side of the vehicle." See 245 Patent, col. 8, lines 1-5. Plaintiff argues that "dumping assembly" should be construed as "the structure that inverts and dumps the contents of the curb side container, including a hydraulic cylinder or other motor." (See Pl's Proposed Order at 2:5-7.) Defendant argues that "dumping assembly" should be construed as "an assembled collection of parts used for letting the contents of a curbside refuse container fall in a heap or mass into the intermediate container, which collection of parts include the motor powered means to empty as interpreted below." (See Def.'s Proposed Order at 2:9-11.)

Both parties' proposed constructions focus on the function of the claimed "dumping assembly." Although the parties offer differing language, each has proposed a construction that is, essentially, in accord with the specification's teaching as to the function of the "dumping assembly," specifically, that it causes the contents of a curb side refuse container to be emptied, i.e., "dumped," into the intermediate container. See 245 Patent, col. 7, lines 32-34; Figs. 4, 7.

Accordingly, "dumping assembly" is construed as "the structure that dumps the contents of a curb side refuse container."

4. Claim 1 - "dunnage structure"

Bradford proposes that "dunnage structure" means "a number of flexible parts held or put together in a particular way for separating and protecting the products shipped in the container." Defendants propose that "dunnage structure" means "partitions or elements for keeping products apart from each other or otherwise protecting products during shipping." The essential difference between the parties' definitions is Bradford's addition of the "flexible" limitation to the term.

In support of its definition, Bradford points out that throughout the specification, "dunnage" is variously referred to as being
"pliable" or "collapsible". Bradford also points out that the specification states that the dunnage "does not affect the operation and collapsibility of the container." '119 Patent, col. 3, ll. 35-37. Bradford observes that rigid dunnage would affect the collapsibility of the container. Thus, Bradford argues, the specification contemplates dunnage materials that are flexible instead of nonflexible.

Conversely, Defendants argue that "dunnage structure" does not require flexible elements. In support of its definition, Defendants first point to col. 2, ll. 12-15 of the '119 patent, which state: "For example, it may be necessary to utilize dunnage elements, such as partitions or separating structures, in the container during shipment for separating and protecting the products shipped in the container." Defendants contend that this sentence indicates that the "dunnage structure" need not be flexible. This sentence, however, does not support Defendants' argument. In context, this sentence, which is from the "Background of the Invention" section, is describing drawbacks to existing collapsible and reusable containers. This sentence is not describing the claimed invention. Therefore, it does not support Defendants' construction of "dunnage structure".

More significantly, Defendants observe that Claim 1 does not contain any limitation regarding pliability or flexibility of the dunnage structure. They point out further that the "pliable" limitation is not introduced until dependent claims 12 and 13. Under the claim differentiation doctrine, the "pliable" limitation would be presumed not to be present in Claim 1. Defendants also point out that Bradford's website indicates that dunnage can be rigid and that rigid dunnage can be collapsible simply by folding it.

While the Court appreciates Defendants' claim differentiation argument, this appears to be a situation where it would be appropriate to read a limitation from the specification into the claim. As Bradford correctly argues, throughout the specification the dunnage is described in terms that are synonymous with flexible. Additionally, as indicated, the "Background of the Invention" describes the problems and drawbacks of rigid dunnage elements - they must be handled separately from the container and the manufacturer often has to buy or construct new dunnage elements when the container is returned for reuse. '119 Patent col. 2, ll. 10-35. Thus, manufacturers using prior art containers have higher shipping costs. Therefore, it would be contrary to one or more of the basic objectives of the claimed invention, i.e., to reduce shipping costs and the time and labor associated with handling the container, id. col.2, ll. 44-64, if the definition of "dunnage structure" were not limited to flexible elements. See, e.g., Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559, 1566-67 (Fed. Cir. 1992) (relying on the specification's description of the drawbacks with the prior art to define "lubricant" and "pre-lubricated resin coated sheet"). The specification also states that the dunnage structures are ready for reuse simply by erecting the container. '119 Patent, col. 3, ll. 25-29. There is no need to separately handle the dunnage structures. Id. ll. 32-37. Defendants' definition eliminating the "flexible" limitation reimplies the disadvantages of the prior art the claimed invention seeks to avoid. Therefore, Defendants' definition of "dunnage structure" is rejected.

Accordingly, the Court holds that "dunnage structure" means "a number of flexible parts held or put together in a particular way for separating and protecting the products shipped in the container."

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5. Durably Assume A Diameter At Least As Small As The Reduced Diameter Achieved In The Step Of Pre-shaping" (Claim 1, '433 Patent)

Vnus argues "durably assume a diameter at least as small as the reduced diameter achieved in the step of pre-shaping" should be construed in the same manner as "durably assumes a smaller size"/"durably assumes a reduced size," specifically, "assumption and retention of compressed diameter after treatment smaller than pre-treatment." Defendants argue "durably assume a diameter at least as small as the reduced diameter achieved in the step of pre-shaping" should be construed in the same manner as "durably assumes a smaller size"/"durably assumes a reduced size," specifically, "the [hollow structure/vein] must maintain this smaller but non-zero diameter with a reduced but continued fluid flow for a lasting (i.e. non-temporary) period. The [hollow structure/vein] must maintain this smaller but non-zero diameter with a reduced but continued fluid flow for a lasting (i.e. non-temporary) period."

The Court, for the reasons stated by Vnus, finds "durably assume a diameter at least as small as the reduced diameter achieved in the step of pre-shaping" is properly construed as "assumes and retains a compressed diameter after treatment.
4. Durably Assumes A Smaller Size (Claim 1, '084 Patent)/Durably Assumes A Reduced Size (Claim 1, '803 Patent)

Vnus argues the term "durably assumes a smaller size"/"durably assumes a reduced size" should be construed as "assumption and retention of compressed diameter after treatment smaller than pre-treatment." Defendants argue the term "durably assumes a smaller size"/"durably assumes a reduced size" should be construed as "the [hollow structure/vein] must maintain this smaller but non-zero diameter with a reduced but continued fluid flow for a lasting (i.e. non-temporary) period. The [hollow structure/vein] must maintain this smaller but non-zero diameter with a reduced but continued fluid flow for a lasting (i.e. non-temporary) period."

The Court, for the reasons stated by Vnus, finds "durably assumes a smaller size"/"durably assumes a reduced size" is properly construed as "assumes and retains a compressed diameter after treatment smaller than pre-treatment."

During optimization

The Court also finds that the term "during optimization" in Claim 1 means "during any process for optimizing the roller cone bit." The plain language of "during optimization" means "during a process for making better." The Court finds no support for Smith's assertion 11 that "during optimization" means "during the sequence of steps recited in the claim." Neither the claim, nor any other intrinsic evidence limits "optimization" to the steps recited in Claim 1. Moreover, the 262 Patent's specification provides that the 225 Patent's methods and optimizations "can be used . . . in synergistic combination with the methods described in the present application." Col. 5, Ins. 64-67. Thus, the specification contemplates other "optimization" steps than those included in the 262 Patent claims.

11 Smith's argument on this point in particular is unclear. In its response to Haliburton's claim construction brief, Smith argued that "during optimization" meant "during the sequence of steps recited in the claim." However, Smith changed its argument for presentation at the Markman hearing and in the supplemental Construction of Agreed and Disputed Terms document. Smith offers no briefing or explanation in support of its new construction, and, Smith's oral argument is unenlightening. See footnote 6 supra. In fact, the Court can only guess at how Smith's new construction ("during the process for optimizing the roller cone bit design") differs from Haliburton's proposed construction ("during a process for optimizing the roller cone bit"). Although Smith has arguably abandoned its prior position, the Court will consider Smith's briefed arguments in the interest of fairness.
The parties dispute the meaning of the phrase "the gripping member having a different durometer characteristic than the resilient grip body." This phrase shall be construed to mean "the gripping member has a different hardness than the resilient grip body." 1

1 Ranir's construction invites the court to import a limitation from a dependent claim into Claim 1, which is contrary to Federal Circuit precedent. See Comark Communics. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998) ("'[w]hile . . . claims are to be interpreted in light of the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims.'") (internal citation omitted). Further, "[n]or may [the court], in the broader situation, add a narrowing modifier before an otherwise general term that stands unmodified in a claim." Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1249 (Fed. Cir. 1998).

2. "dynamically" (claim 1)

Flow proposes that this claim term means a "potentially changing activity or item, such as changing under variable process conditions, as contrasted with static." Omax largely agrees with this construction, but argues that this definition must not include "Omax's static processes, where all calculations are done in advance then the fully determined motion commands are exported to the controller for actual machining." The Court again finds that the parties do not manifest a meaningful dispute on this issue, and adopts Flow's construction. The jury will determine the question of infringement.

2. "dynamically isolated"

Like "reaction frame," the term "dynamically isolated" lacks established technical meaning. The specification language for the '500 patent refers to "physical[] isolation" of a stage to "prevent[] [] reaction forces from vibrating the projection lens," '336 Patent at 2:44-47, and it discusses how the mechanism should avoid "coupling" of the reaction force into the base structure, id. at 5:15-17, but nowhere is the ungainly "dynamically isolated" phrase specifically defined in the specification language. Still, a pair of points are clear: First, "dynamic isolation" does not demand "complete isolation." Neither party suggests--and nothing in the patent implies--that a reaction frame will reduce vibration to zero, no matter how effective or firmly fastened to the ground. All that "dynamically isolated" connotes, and all that is physically possible in the context of the photolithographic machine, is that vibration--i.e., the relevant reaction forces--transmitted from one frame to the next be minimized sufficiently to permit the projection apparatus to function accurately. See, e.g., '500 Patent at 2:40-47 (discussing reduction of undesirable movement such that the projection lens can operate accurately); see also In the Matter of Certain Microlithographic Machines and Components Thereof, Investigation No. 337-TA-468 at 41-45.

Second, nothing in the claim or in the specification language compels the conclusion that this vibration-minimization occurs through motorized means. Indeed, as ASML noted during the court's Markman hearing, Nikon expressly disclaimed use of active motors when securing a patent (viz., the '128 patent) directly germane to the '500 patent claims. Cf. Georgia-Pacific Corp. v. U.S. Gypsum Co., 195 F.3d 1322 (Fed. Cir. 1999); see also Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 2004 U.S. App. LEXIS 1595, *26-28 (Fed. Cir. 2004) ("Any statement of the patentee in the prosecution of a related application as to the scope of the invention would be relevant to claim construction, . . . not only to [patents issued after the predicate patent], but also to [] earlier issued [] patent[s].") (emphasis added). The court has located nothing in the intrinsic record suggesting that the patent contemplates motorized means of vibration-minimization, and recognizing that the claim term is inherently ungainly, the court construes "dynamically isolated" to mean that "the two frames are sufficiently free of transferred vibrations and reaction forces that the photolithographic machine can perform accurately."
This construction is not inconsistent with the gloss recently placed on "dynamically isolated" by the Board of Appeals and Patent Interferences of the PTO. See Decision on Prelim. Motions and Judgment, Interference No. 104,813 (defining "dynamically isolated" as the state in which "reaction forces, e.g., dynamics of the one frame, are not transmitted to the other frame"); see also Decision on Preliminary Motions, Interference No. 104,814 (noting that two frames are not "dynamically isolated" if "some vibrations or reaction forces [are] transferred between the two frames"). The court does not read these recent statements to suggest that no vibration could ever possibly be transferred between the two frames, as that kind of segregation would not be physically possible given the construct of the relevant art; rather, the court assumes, consistent with the construction the court offers, that the vibrations are reduced / not transferred such that the invention can operate effectively.

"dynamically modifiable library of code" (claim 20)

Flow argues that this phrase should be construed as a "potentially changeable code in a collection of code." Omax argues that this phrase appears "to indicate a group of source code that is modifiable on the fly in real time by the user." The Court construes the term "dynamically" consistent with its prior definition of the term, and therefore adopts Flow's proposed construction.

Each

Genlyte asks the Court to construe the term "each" as meaning "any or all." Lutron, however, argues that the proper interpretation of "each" is "every" when the word is used as an adjective, and "every one" when the word is used as a pronoun. The parties agree that "each" applies to every control in the mimic mode, and seem to agree that "each" is either irrelevant or does not apply to the master/slave mode. Indeed, Genlyte argues that in master/slave mode, 'each' is not manifest in (i.e., is irrelevant to) the system or product," and Lutron argues that "there is no plausible interpretation of ‘each' that is consistent with [the master/slave] mode." Therefore, the Court will only concern itself with the meaning of "each" in the mimic mode.

The parties' disagreement is one of semantics. Genlyte and Lutron agree that "each" only applies to the mimic mode of the invention. The parties also agree that "any" or "every one" of the individual light controls or "all" or "every" individual light control operates in the same manner while in the mimic mode. Only because Lutron's proposed construction offers more consistency, by stating which term is used according to how the word "each" is used, the Court adopts its construction. Nevertheless, the terms which both parties seek to use could be interchangeable. For example, Lutron offers that in claim 1, where it says "A multi-room controller for controlling a plurality of individual light controls, each light control adapted to control directly," the claim should be construed to read "A multi-room controller for controlling a plurality of individual light controls, every light control adapted to control directly." Similarly, Genlyte would have claim 1 read "A multi-room controller for controlling a plurality of individual light controls, all light controls adapted to control directly." Therefore, the Court adopts Lutron's construction of "each," which is "‘each’ is ‘every’ when the word is used as an adjective, and ‘each’ is ‘every one’ when the word is used as a pronoun." Nevertheless, the Court believes Genlyte's proposed construction accomplishes the same purpose.
ii. "Immediately After"

Medtronic asserts that "immediately after" means "without any events between the application of cardioverting energy to the atria and the enabling of the atrial pacing." Medtronic argues that, according to its dictionary, "immediately" means "without intermediary." American Heritage Dictionary 643 (2d college ed. 1982). Medtronic argues that the Parties agree that the ordinary meaning of the term "immediately" prohibits an intermediary or intervening event, such as a ventricular pacing pulse supplied by the device, between shock and the initiation of atrial pacing.

Guidant argues that within the context of pacing the atria, "immediately" means pacing as soon as it would be effective within the first heart cycle after the cardioversion shock is applied. Guidant asserts that this definition is appropriate because one of ordinary skill in the art would know that events take place in both the heart and the device between applying the shock and enabling the pacing, such as restoration of normal atrial activity and repolarization. For support, Guidant cites language in the '569 Patent itself:

"After applying the cardioverting electrical energy to the atria, the microprocessor 60, through the disable stage 63, enables the pacer 92 which has been preprogrammed . . . . This begins the post-cardioversion atrial pacing of the heart. The pacing of the heart continues, preferably at a rate greater than a bradycardia pacing rate, for a finite time until the occurrence of a predetermined event."

'569 Patent at 6:11-18.

Guidant asserts that the reason for pacing "immediately after" the cardioverting shock is to eliminate the time required to confirm whether the shock was successful in restoring normal cardiac activity. However, the Court cannot limit its claim construction based on the perceived purpose of the invention. See E-Pass Techs., Inc. v. 3COM Corp., 343 F.3d 1364, 1370 (Fed. Cir. 2003).

The Court agrees with Medtronic. The cited language says nothing about waiting to determine the results of cardioversion. In addition, the specification states that the pacing begins "immediately after each cardioversion attempt," '569 Patent at 6:22-23, not immediately after each successful cardioversion attempt. Moreover, the claim itself says nothing about waiting to determine the success of the cardioversion.

Medtronic also asserts that the claimed atrial pacing must be performed after every application of cardioverting energy. The ordinary meaning of the word "each" is "every one of two or more considered individually or one by one." The Random House College Dictionary 414 (rev. ed. 1982). The specification and claim language do not change this ordinary meaning. Therefore, the Court will include the word "every" in its interpretation of this claim.
An array is alternatively defined as "a rectangular arrangement of quantities arranged in rows and columns, as in a matrix," "an orderly, often imposing arrangement," or "an impressively large number, as of persons or objects." THE AMERICAN HERITAGE DICTIONARY 102 (3d Ed. 1996). When this language is reviewed in light of the figures attached to the specification of the patent, it becomes clear that the intended definition of an array in this context is the first definition. See Fig. 2. Given that the prosecution history provides no contrary argument, the Court finds that the term "array" as used in patent '911 refers to "a rectangular arrangement of quantities arranged in rows and columns."

Next, the Court confronts the term "cowl." Again, looking initially to the plain meaning of the term, the Court finds that, generally speaking, a cowl refers to a hood or cover some sort. 3 Reference to the specification and the remaining claims in this case does not provide a more specific definition of the term. Indeed, such review reveals that a cowl may refer to hoods of different shapes. For instance, figure 6 presents "another embodiment of the cowl" as do claims 2, 3, 7 and 8. 4 In addition, the prosecution history indicates that the shape of the cowl has no impact on the patentability and, thus, the scope of the claim. The Court, therefore, finds that a cowl as used in these claims refers to a hood of any shape.

Having defined the terms "array" and "cowl," one limitation remains to be defined.

As noted above, Plaintiff argues that the phrase "each cowl for shielding one of the holes" does not require that each hole have a separate cowl. However, upon reference to the specification, the Court finds that that is precisely the meaning of that phrase. At page 4, the specification indicates that: "Each of the holes is shielded by deflecting means comprising a separate scoop or cowl. . . ." In addition, reference to the prosecution history provides further support for this reading of the claim. Indeed, the first amendment Talbot made to the claim after initial rejection was to change the language of this element from referring generally to "shielding the holes" to the present language "each cowl for shielding one of the holes." Moreover, in combining the first and second claims of the original application as part of the first amendment, Plaintiff included the phrase "each cowl for shielding one of the holes" to replace of the phrase "an individual cowl for shielding each hole." Thus, the plain meaning of the language, the specification and the prosecution history all require the Court to find that for a device to literally infringe on this patent, it must have one separate cowl for each hole.
require a one-to-one correspondence between the number of cowls and the number of holes. Dr. Shrink contends, however, that such a one-to-one correspondence is exactly what is required by the claim language. Dr. Shrink also argues that the claim language cannot be construed to include a louver covering a number of holes, which is how Dr. Shrink describes the accused device.

Claim construction is an issue of law reviewed de novo and requires consideration of the claim language, the written description and, if relevant, the prosecution history. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996).

The claim language in this case is clear on its face. That is, for each cowl in an array of cowls one corresponding hole is covered. The specification also supports this construction: "Each of the holes is shielded by deflecting means comprising a separate scoop or cowl," with "each [cowl] partially covering one of the holes." '911 patent, col. 4, lines 12-13; col. 5, lines 27-29. The prosecution history further supports this construction. During prosecution, the claim language was modified to narrow the scope of the claims to include this one-to-one limitation ("each cowl for shielding [the] one of the holes"). Therefore it does not appear that the district court erred by requiring a one-to-one correspondence between cowls and holes.

Mr. Bickerstaff cites to the following language in the specification to support his argument: "Cowls [can be] of different shapes which protect two or more holes without departing from the spirit of the present invention." '911 patent, col. 4, lines 35-37. Mr. Bickerstaff disclosed the foregoing, but he did not claim it. The claim language here is clear; Mr. Bickerstaff claimed a one-to-one correspondence between cowls and holes. He cannot now discard that limitation.

The district court concluded that not only must there be a one-to-one ratio of cowls to holes, but each cowl must be "separate." The record does not bear out this interpretation. Nothing in the claim language or prosecution history requires that the cowls cannot be adjacent or abutting. The preferred embodiment shown in figure 2 of the '911 patent shows the cowls being separated from each other by portions of the surface of the central portion of the vent. The specification describes each of this preferred embodiment's holes as being covered by "a separate scoop or cowl." '911 patent, col. 4, lines 12-15. However, the word "separate," which is being used to describe a preferred embodiment, did not find its way into the claims. A preferred embodiment and the specification's description of it do not necessarily limit the claims. See Texas Instruments, Inc. v. United States Int'l Trade Comm'n, 805 F.2d 1558, 1563, 231 U.S.P.Q. (BNA) 833, 835 (Fed. Cir. 1986) ("This court has cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification."). The district court erred by inserting this "separate" limitation where it is not required by the claim language, specification, or prosecution history.

6. "[W]herein each crosspiece disposed at the end sections of the two spring strips is provided with a covering cap:" 6 "Crosspieces must be located at the terminal portions of the spring strips." The construction is consistent with the specification of the '512 patent, which does not disclose an embodiment having crosspieces located other than at the terminal portions of the spring strips. It is likewise consistent with the prosecution history, in which the examiner rejected the claims of the '512 patent as anticipated by several prior art wiper blades having crosspieces disposed at the ends of the spring strips. (D.I. 165 at JA01077) The applicant did not traverse this rejection by noting that the crosspieces of the '512 patent could be disposed elsewhere along the spring strips. (Id. at JA01106) Nor can plaintiff convincingly invoke the doctrine of claim differentiation in its argument that dependent claim 4, which requires "at least one crosspiece . . . disposed at each end section[,]" mandates a broader interpretation of independent claim 1. See Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1367-68 (Fed. Cir. 2000) (written description and prosecution history rebut any presumption arising from the doctrine of claim differentiation).

Footnotes

6 '512 patent, claim 1 (and dependent claims).

End Footnotes
1. "each extension including a rear end having a first flange extended downward"  

Defendant objects to the magistrate judge's recommended construction of "each extension including a rear end having a first flange extended downward." To review, the magistrate judge recommended that this disputed element be construed as: "each extension includes a rear end, a portion of which reaches in a downward direction relative to the remaining portions of the extension and facilitates attachment of the auxiliary frame to the primary frame." See Report and Recommendation at 20. In recommending this claim construction, the magistrate judge rejected Defendant's argument that "the claim terms are clear enough and need no real construction, especially if it adds extra claim requirements." Id. at 11 (quoting Def. Resp. at 6). The magistrate judge essentially adopted the Plaintiffs' proposed construction of the term with the deletion of what she described as "extraneous language." Id. at 12. 3

3 Plaintiffs recommended the following definition: "each extension including a rear end having a first flange extended downward" as "each extension includes a rear end having a portion of the extension which protrudes from the rear end thereof and facilitates attachment of the auxiliary frame to the primary frame and where such portion of the extension reaches in a downward direction relative to the remaining portions of the extension." See Def. Open. Br. at 10.

In response to Defendant's objections, Plaintiffs contend that the term "portion" used by the magistrate judge in her recommended claim construction "significantly" broadens the "specific structural shape" of flange 23 illustrated in Figure 3 of the patent, because she recommends the use of the word "portion." See Def. Obj. at 16. According to Defendant, "redefining 'flange' under the guise of claim construction to mean a 'portion' having any shape which reaches in a downward direction relative to the remaining portions of the extension and facilitates attachment impermissibly broadens Claim 12." Def. Reply to Pl. Resp. at 9-10. Defendant further objects to the magistrate judge's incorporation of functional language, namely, "facilitates attachment of the auxiliary frame to the primary frame," in her construction. Defendant argues that such use of the functional language is inconsistent with the claim language, since Claim 12 requires the flanges to be located behind the studs "to further secure the auxiliary frame to the primary frame," and such a requirement is different from merely "facilitating attachment" of the frames. Def. Obj. at 16. Based on these arguments, Defendant proposes the following definition: "each extension includes a rear end having a flange which extends in a downward direction relative to the remaining portions of the extension to further secure attachment of the auxiliary frame to the primary frame as required by other elements of the claim." Id. Defendant further states that its preference is to omit the "further secure" language. Id.

As to Defendant's objection that the magistrate judge incorporated functional language, namely, "facilitates attachment of the auxiliary frame to the primary frame," Plaintiffs argue that Defendant's "position exalts form over substance," since the words "secure" and "attach" both mean essentially the same thing in this context. Plaintiffs also argue that the magistrate judge's proposed definition of "'flange" to include a so-called "functional element" is consistent with its ordinary meaning, a part used "to strengthen an object, hold it in place, or attach it to another object." Id.
Having considered the magistrate judge's findings and conclusions, the parties' legal briefing and applicable law, the court overrules Defendant's objections. The court rejects Defendant's selective argument that "portion" impermissibly broadens the scope of "flange." Defendant is relying on one possible embodiment of the claim. The Federal Circuit has cautioned against this approach to claim construction, "even when a specification describes very specific embodiments of the invention or even describes only a single embodiment, unless the specification makes clear that 'the patentee . . . intends for the claims and the embodiments in the specification to be strictly coextensive.'" J.V.W. Enterprises, Inc. v. Interact Accessories, Inc., 424 F.3d 1324, 1335 (Fed. Cir. 2005) (citing Phillips, 415 F.3d at 1323); SRI Int'l v. Matsushita Electric Corp. of America, 775 F.2d 1107, 1121 n.14 (Fed. Cir. 1985) (en banc) ("Specifications teach. Claims claim. . . . That a specification describes only one embodiment does not require that each claim be limited to that one embodiment."). In any event, the term "portion" used by the magistrate judge in her recommended claim construction tracks Figure 3 very closely. As shown in Figure 3, the flange 23 is the portion of the extension 22 located at its rear end; it extends downward relative to the rest of the extension; and it facilitates attachment of the auxiliary frame to the primary frame.

As to Defendant's objection that the magistrate judge's use of the terms "facilitates attachment of the auxiliary frame to the primary frame," the court agrees with Plaintiffs that Defendant's position exalts form over substance. In the context of the patent, the court can conceive no difference between the words "secure" and "attach." Moreover, the functional language is consistent with the claim language itself, which provides that "the flanges are located behind the studs to further secure the auxiliary frame." '747 Patent, Col. 6 lines 15-16. The court agrees with the magistrate judge that in such a situation, the construction recommended by the court properly "gives meaning to all the terms of the claim[.]" Report and Recommendation at 12 (citing Terlep v. Brinkmann Corp., 418 F.3d 1379, 1384 (Fed. Cir. 2005) (finding that district court's construction of term "clear" as "transparent or having the property of transmitting light without appreciable scattering so that bodies lying beyond are seen clearly" did not impermissibly import a functional limitation, but reflected an appropriate assignment of meaning to the disputed term); see also Hill-Rom Co., Inc. v. Kinetic Concepts, Inc., 209 F.3d 1337, 1341 (Fed. Cir. 2000) (finding that district court's construction of the term "cushion" as "a structure that provides basic support and comfort" did not impermissibly import extraneous functional limitations into claim, because the construction was consistent with the ordinary meaning of the term and the abstract and description of the patent, noting that the objective of the cushion was to provide support).

Microsoft argues that this phrase should be construed to mean that for each cluster of finger keys, "the angles between the adjacent keys [must] alternate between an obtuse angle (between 90 and 180 degrees) and a reflex angle (greater than 180 degrees)," and that for each finger there must be at least two alternating angles between three keys. Microsoft's Memorandum in Support of Non-Infringement of '477 patent, p. 18. Plaintiff offers no alternative construction for this phrase and does not contest Microsoft's proposed construction. The ordinary meaning of the claim terms require that the planes of each key intersect one another in a "mixed" pattern of obtuse and reflex angles. This pattern would include one reflex angle and one obtuse angle, with two angles between three keys. Microsoft's construction is further supported by the specification drawings. See '477 Patent, Figures 3-8. Therefore, I adopt Microsoft's construction as set forth above.

3. Each Key in Which is Arranged Facialy to Confront, in Close Proximity and in Parallel Planar Relationship, One of Various Different, Underside, Finger-Expanse Portions of an Associated, Adjacent Finger

Microsoft argues that this phrase should be construed to mean that "each key of each non-thumb finger cluster must be positioned to face in close proximity and be parallel to the tip or the underside of the adjacent finger of a user." Microsoft's Memorandum in Support of Non-Infringement of '477 patent, p. 15. In other words, Microsoft argues that "[t]he cluster cannot be disposed along a uniform curved convex surface." Id.
Microsoft maintains that the ordinary meaning of the term "confront" requires that each key face and be parallel to the "finger expanse portions," i.e., the underside, of the corresponding finger. Goff Decl., Ex. 7 (American Heritage Dictionary of the English Language, 4th Ed., p. 387). Microsoft further contends that the key clusters cannot be arranged along a uniform convex surface, because the underside of each finger must "alternate[] between various angles" to correspond with the keys. See '477 Patent, Figure 8.

Plaintiff disputes Microsoft's construction and argues that "[d]evices embodying the invention may or may not have a uniformly curved convex surface, but must have the keys oriented to confront, in parallel planar relationships, two or more portions of the underside of the fingers." Plaintiff's Opposition to Defendants' Motions for Summary Judgment, p. 30. Put simply, plaintiff contends that the claim language encompasses keys placed on a uniform, convex surface so long as the keys correspond with the underside of the associated finger.

It is true that plaintiff is entitled to all reasonable constructions of the claim language; however, the construction must be consistent with the claim language and the description of the invention in the specification. Here, the claim language requires that keyboard be designed to correspond with the "underside architecture of the hand." Id. Col. 4:26-27. Further, the specification describes the keyboard portion as "a sort of curvilinear keyboard amphitheater," depicted in the specification drawings. See '477 Patent, Col. 3:47-48, Figures 1-4. Notably, the specification drawings shown in Figures 1, 3, 4, 7, and 8 show a concave corner housing with keys placed in varying angles to conform to the underside and tip of the corresponding finger. See also '477 Patent, Col. 3:13-18 (Figures 7 and 8 illustrate "the nominal position of a user's finger with respect to this structure" and the "different gesture motions used by a finger").

Additionally, the specification explains that along the length of a key cluster, the planar surfaces supporting the keys "intersect one another" as detailed in Figure 3. '477 Patent, Col. 5:8-12, Figure 3. "[T]he keys mentioned above in cluster 26 may be thought of as having actuation axes, respectively, which intersect normally the respective underlying support planed provided for the keys." Id. Col. 5:36-39. Thus, the claim language and specification describes a corner sub-amphitheater housing keys placed in intersecting planes and excludes a uniform, convex surface.

Finally, plaintiff's construction extending to a convex surface is contrary to Gambaro's representations to the PTO. As established by defendants' submissions, Gambaro unambiguously disavowed that a uniform convex curved surface was claimed by the '477 patent. Specifically, Gambaro distinguished several prior art keyboard references containing key clusters that were "uniformly curvilinearly convex in two orthogonal axes" and not "arranged in a cluster to confront in close proximity and in parallel planar relationship an associated finger-expanse portion." Goff Decl., Ex. 4, pp. 13-14. Gambaro stated: "Nothing could be further from what applicant claims as his invention" and directed the PTO to Figures 7 and 8 for clarification. Id. Ex. 4, p. 14.

Plaintiff argues that Gambaro merely explained to the PTO that the Malt keyboard did not include the claimed element of keys arranged to confront the underside of the finger as opposed to the tip, but that Gambaro's clarifications cannot invoke prosecution estoppel. Plaintiff is incorrect. Gambaro did not merely clarify the elements of his invention; he specifically distinguished prior art in order to secure issuance of the patent. Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1583 (Fed.Cir.1995) ("Clear assertions made during prosecution in support of patentability, whether or not actually required to secure allowance of the claim, may also create an estoppel."). For example, Gambaro explained that the importance of the cluster limitation was to correspond with the underside of the finger, "an important distinction over prior art keyboards, the structure of which enable only the traditional fingertip keystroking . . . " Goff Decl., Ex. 4, p. 14 (emphasis added). Prosecution estoppel thus precludes plaintiff from claiming that the claim language encompasses devices with a uniformly convex surface. See Wang Lab., Inc., 103 F.3d at 1578 (arguments distinguishing prior art made during prosecution of patent "presumably give rise to prosecution history estoppel").

Accordingly, I construe the phrase to mean that each key of each finger cluster must be positioned parallel and in close proximity to the tip and the underside of the adjacent finger, and that the clusters be disposed along a concave surface.

Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

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(6) "Each of said flexible links including a plurality of portions with neighboring portions having an area of inflection there
between." The flexible links are loops.

Defendant's only apparent point of departure from Plaintiffs' construction is the additional requirement that the first flange "extends downward to hook over and contact the rear portion of an extension on the primary frame." JS, Exh. C at 107 (emphasis added). Claim 12 has no such limitation. Instead, Claim 12 simply require that the magnetic materials of the primary frame "magnetically engage . . . in a lateral manner" the magnetic materials of the auxiliary frame." Koo Decl., Exh. C at 22, Col. 6, 11. 6-8. The section of the patent describing the summary of the invention is also consistent with this interpretation. See Koo Decl., Exh. C at 20, Col. 1, 11. 41-44; Col. 2, 11. 3-5.

Therefore, the Court declines to adopt Defendant's limitation requiring that the flange hook over and contact the rear portion of the extension of the primary frame. Instead, the Court construes the instant phrase to mean that each side having an extension and each extension including a rear end having a portion of the extension which protrudes from the rear end thereof and facilitates attachment of the auxiliary frame to the primary frame and where such portion of the extension reaches in a downward direction relative to the remaining portions of the extension.

Defendant objects to the magistrate judge's recommended construction of: "each stud is extended over by one of the extensions, and can support that extension to prevent the auxiliary frame from moving downward relative to the primary frame."

The magistrate judge noted that the parties' primary dispute concerned whether the court should adopt a construction requiring the primary frame studs to physically contact the extensions in order to provide support for the auxiliary frame. Essentially adopting the Plaintiffs' proposed claim construction, the magistrate judge recommended that this disputed claim element be construed to mean: "at least some portion of each of the extensions reaches above and across the corresponding stud, and is capable, with or without direct contact, of maintaining the corresponding extension in position so as to keep it from falling, sinking or slipping and thus prevent the auxiliary frame from moving downward relative to the primary frame." Report and Recommendation at 20 (emphasis added).

Defendant argues that the magistrate judge's recommended construction is incorrect because: (1) the patent discloses an embodiment in which the extensions directly contact the studs; (2) reading the claim to cover configurations in which the extensions do not directly contact the top surfaces of the studs requires magnetic attraction not disclosed in the patent; and (3) the patent says that engaging contact between the extensions and studs is part of the invention. Def. Obj. at 4-10.

The court overrules Defendant's objections. While the parties appear to agree that the stud can directly contact the extension to provide the claimed support, the dispute concerns whether the claim requirement can be provided by a magnetic support without direct contact between the extension and stud. As argued by Plaintiffs, Patent '747, column 3 lines 4 through 9 of the patent specification discloses that magnetic attraction alone may be used to "solidly secure[]" the auxiliary frame to the primary frame. The patent does not state that physical contact between the extension and the upper side of the stud is required for the invention. Moreover, in support of its objection, Defendant points once again to the embodiment of the invention shown in the patent's drawing in the specification, which does show contact. As already stated, the Federal Circuit has cautioned against this approach to claim construction, "even when a specification describes very specific embodiments
of the invention or even describes only a single embodiment, unless the specification makes clear that 'the patentee . . . intends for the claims and the embodiments in the specification to be strictly coextensive.'" JVW Enterprises, 424 F.3d at 1324 (citing Phillips, 415 F.3d at 1323). Moreover, as the magistrate judge correctly noted, "while Defendant points to a drawing that shows contact, Defendant points to nothing else in the specification, or in Claim 12, indicating that contact between the stud and extension is required." Report and Recommendation at 12.

In addition, as Plaintiffs correctly point out, the patent Abstract, a condensed summary of the invention, provides:

An eyeglass combination includes a primary frame having a bridge and two side studs. An auxiliary frame includes a bridge and two side extensions each having a rear flange for engaging with the stud and for allowing the auxiliary frame to be secured to a typical primary frame. The rear flanges each includes a magnet for engaging with another magnet engaged in the studs or for engaging with the studs of magnetic material.

See Ex. 1 to Pl. Resp (cited in Pl. Resp. at 11-12) (Plaintiffs' emphasis). 4 Thus, Defendant's contention that the patent discloses only direct contact is incorrect.

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4 The court rejects Defendant's argument that the magistrate judge relied only on the oral argument of Plaintiffs' counsel at the claim construction hearing to find that physical contact between the extension and the studs was not required. While the magistrate judge did make note in her Report and Recommendation that she found "compelling" Plaintiffs' arguments to support their assertion that the stud and extension need not have contact (see Report and Recommendation at 16), her Report and Recommendation makes clear that she considered the parties' written submission, including the patent, joint claim construction statement and parties' briefs. See id. at 1, 17.

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II. "each tapered side diagonally approaching one of said second parallel sides"

Ethicon's proposed construction of this claim term is: "Each tapered side has a generally diagonal orientation and extends toward the second set of parallel sides. The term 'approaching' does not require connection of the tapered sides to the second parallel sides." U.S. Surgical proposes the following: "Diagonally approaching' means the tapered side constitutes a straight line displaced angularly between, and connecting, a first and second parallel side."

Thus, the first dispute is whether the term "approaching" as used in Claim 1 includes "connecting." Ethicon argues that the plain meaning of approaching is "to come nearer to," and that it does not require nor connote a "connection." Ethicon also relies on the doctrine of claim differentiation, a presumption that different patent claims have a different scope. See, e.g., Kraft Foods, Inc. v. Int'l Trading, 203 F.3d 1362, 1368 (Fed. Cir. 2000). Independent and unasserted Claim 5 describes the tapered sides as "connected" to both sets of parallel sides, not "approaching" the second parallel sides as phrased in Claim 1. (While Claim 1 addresses a "stapler" and Claim 5 addresses a "staple cartridge," the parties do not address this possible difference in scope nor ascribe any distinction that might be relevant to the use of the words "approach" vs. "connect.") Ethicon also notes that the Summary of the Invention states the tapered side "culminates" at the second parallel side. This, says Ethicon, demonstrates that the drafter made deliberate, different choices in describing the connection of the two sides, with no intent to equate all of these terms. Ethicon admits that most specification references and the embodiments include connections between the tapered and second set of parallel sides. Indeed, other than the Summary's use of "culminates" and "approaching" used in Claim 1, the patent uniformly describes the tapered sides as connected to the second parallel sides. But Ethicon relies on the well-established rule that, absent explicit limiting language, claims are not limited to the specific embodiments, even if the patent describes only a single embodiment. See, e.g., Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1371 (Fed. Cir. 2003). Ethicon asserts that nothing in the specification explicitly limits "approaching" to "connecting" nor limits the claimed invention to the preferred embodiment.

U.S. Surgical argues that the repeated references in the specification to the "connection" between the tapered and parallel
The parties also dispute whether the tapered sides (described as "diagonally approaching" the second set of parallel sides) synonymous with "connecting." Whether the specification adequately supports this construction, or whether the claim may be construed to construe "approach" to have a meaning different from "connect." The drafter apparently intentionally used the word "approaching" to mean "connecting." While there is room for doubt, the Court is here, U.S. Surgical contends that the specification's consistent description of the "connecting" sides supports a conclusion that the claim term "within the vessel" to mean that the chamber was co-extensive with the vessel.

Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." Id. at 1346-1347. The Court limited its opinion in Phillips, the Court again noted that the specification "is always highly relevant to the claim construction analysis. The dispute was whether the claims were limited to communications over a "telephone line" or could also include communications over a "packet-switched network" (e.g., the Internet). While a few of the claims explicitly used the term "telephone line," some were much broader, making no reference to a telephone line and, standing alone, did not exclude communications over a packet-switched network. The Court observed: "Nonetheless, the claims must be interpreted in light of the specification, which is identical for all three patents and which repeatedly and consistently describes the local and remote systems of the claimed inventions as communicating directly over a telephone line." Id. at 1347-1348. However, the Court also noted and relied on the extensive prosecution history of the patents, which explicitly supported the construction of the claims as limited to a telephone line. In this case, the claims were approved almost exactly as submitted by the applicant. (See Doc. 52, Exhibit 2, File Wrapper for the '823 patent, at pp. 19-20, which discloses only one Examiner's Amendment to Claim 5. Authorization for this amendment, adding the words "in a staple cartridge" to the claim, was given in an unrecorded telephone interview with the applicant's counsel.) Hence there is no prosecution history here that could assist in resolving this question.

More recently, in Semitool, Inc. v. Dynamic Micro Systems, 444 F.3d 1337 (Fed. Cir. 2006), the Federal Circuit construed a claim term and affirmed a judgment of noninfringement based on the Circuit's own construction. The dispute concerned whether a condenser in a semiconductor cleaning machine was inside or outside of the machine's "processing chamber." The answer depended on whether the "chamber" was defined as the entire interior space of the "processing vessel," or some smaller portion of that interior. The disputed claim simply described the chamber as "within" the vessel. The Court turned to the specification, which the Court concluded clearly defined the chamber as coextensive with the vessel. Quoting from its opinion in Phillips, the Court again noted that the specification "is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." Id. at 1346-1347. The Court limited the claim term "within the vessel" to mean that the chamber was co-extensive with the vessel.

Here, U.S. Surgical contends that the specification's consistent description of the "connecting" sides supports a conclusion that the claim term "approaching" must be limited to mean "connecting." While there is room for doubt, the Court is constrained to construe "approach" to have a meaning different from "connect." The drafter apparently intentionally used "approaching" in Claim 1, as distinguished from "connect" in Claim 5. "Approaching" is not ambiguous, and is not synonymous with "connecting." Whether the specification adequately supports this construction, or whether the claim may be invalid, are matters for another day.

The parties also dispute whether the tapered sides (described as "diagonally approaching" the second set of parallel sides)
must be straight. Ethicon asserts that the plain meaning of "tapered" does not include nor require that the tapered side be straight. Ethicon admits that the specification and preferred embodiments depict a generally "straight" tapered, diagonal line. But Ethicon again argues that the claim cannot be limited by the specification or the preferred embodiment.

The Court previously construed "tapered" to mean progressively narrowed. While many things can "taper" (thunder storms, for instance, "taper" off), the question here is not the meaning of taper. The question is the construction of the phrase "diagonally approaches" to describe the tapered side's relationship to the second parallel side of the pocket.

Webster's Ninth defines the adjective diagonal as "joining two vertices of a rectilinear figure that are nonadjacent" or, "inclined obliquely from a reference line." When used as a noun, diagonal means a "diagonal straight line or plane." The Oxford English Dictionary similarly defines the words. "Diagonally" means "In a diagonal direction; so as to extend from one angle or corner to the opposite." "Diagonal" (n.) is defined as "Extending, as a line, from any angular point of a quadrilateral or multilateral figure to an opposite or non-adjacent angular point."

Every definition consulted, as well as common usage, confirms that "diagonal" is an obliquely inclined line that joins two defined points. The claim phrase "each tapered side diagonally approaching" is therefore construed as a generally (but not mathematically precise) straight line that lies at a measured angle of inclination from the first parallel side. This construction is also supported by the fact that "diagonally" describes a "side" of a pocket. "Side" commonly means a line or a surface that is more or less straight.

Ethicon argues that a construction requiring the diagonal, tapered lines to be "straight" imposes an extraneous limitation on the claim that finds no support in the patent language. The Court disagrees. There is nothing in the claim, or in the patent as a whole, that supports a construction other than that the tapered sides of the resultant pocket are generally straight.

B. "Each Within At Least One Compartment"

Claim 10 states that a heater comprises a housing that consists of: (1) "at least one" compartment or chamber and; (2) a plurality of heating elements "each within the at least one compartment for heating the water." Seitz asserts that the term "a plurality of electronically powered heating elements each within the at least one compartment for heating the fluid" means that each heating element must be within a compartment, and more than one heating element may be within a compartment, but not every compartment must contain a heating element. (Docket Entry No. 76 at 4-5). Envirotech asserts that the term means that if there is more than one compartment, each compartment must contain at least one heating element. (Docket Entry No. 78 at 2).

The plain meaning of the terms does not support Envirotech's argument. The words do not say that every compartment must have a heating element. Rather, the words say that there must be a plurality of electrically powered heating elements. Each of these heating elements must be within a chamber for heating the fluid. In other words, no heating element can be outside a chamber or compartment. If the housing consists of more than one compartment, Claim 10 requires that every heating element must be in a compartment, but does not require that every compartment must have a heating element. If the housing consists of only one chamber, all the heating elements must be within that chamber. But if there is more than one chamber or compartment, there does not need to be a heating element in every compartment.

Envirotech's reading would require that in a multi-chamber configuration, every compartment must have a heating element. The words of Claim 10 do not support this reading. Rather, the words of the claim require two or more heating elements and one or more compartments, with each heating element inside one of the compartments, but not that each compartment contain at least one heating element.

The specifications permit the more flexible construction offered by Seitz. Both the '971 and '880 Patent summaries include the general description, "The present invention provides a flow-through or tankless water heater having multiple heating elements powered by one or multiple power supplies." ('880 Patent, col. 4, ll. 58-60; '971 Patent, col. 4, ll. 57-59). The specifications reference "[a] first heating element" and then "successive and remaining heating elements." ('880 Patent, col. 5, ll. 18-21; '971 Patent, col. 5, ll. 17, 19-20). The '971 and '880 Patents both include the following language, "A preferred
embodiment of this invention uses four 7,000 watt heating elements connected electronically in parallel and arranged in series with respect to fluid flow through the water heater, as shown in FIG. 1." ('880 Patent, col. 17, ll. 52-55; '971 Patent, col. 17, ll. 52-55). The description refers to Figure 1, which shows a single heating element located in each heating chamber. In column 20 of the '880 and '971 Patents, however, the specifications state that although the described embodiments disclose "the use of multiple chambers each having a respective heating element therein," the control scheme could be applied to multiple heating elements in a single chamber or a single multi-section heating element. ('880 Patent, col. 20, ll. 28-37; '971 Patent, col. 20, ll. 28-34). This language permits flexibility on the number of chambers or elements in each chamber, limited only by the requirement that if there is only one compartment, it must contain two or more heating elements. If the patentee had wanted to require that at least one of the plurality of heating elements be located within one of a plurality of compartments, the language of dependent claim 16 would have been used: "a plurality of electrically powered heating elements each within a respective one of the plurality of compartments for heating the fluid." ('880 Patent, col. 24, ll. 3-5; '971 Patent, col. 22, ll. 50-52). Claim 10 is not so limited.

This court construes the term "each within one compartment" in Claim 10 of the '880 and '971 patents to mean that each heating element must lie within a compartment, but if there is more than one compartment, not every compartment must contain a heating element. The claim requires two or more heating elements and one or more compartments, and each heating element must be within a compartment. If the heater's housing contains only one chamber, all of the heating elements lie within that chamber. If the heater's housing contains more than one chamber, all the heating elements must lie within a chamber, but not within every chamber.

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a. Eccentric Weight Portion

APE maintains that "eccentric weight portion" in the claim language, given its "ordinary and customary meaning," refers to "that portion of the counterweight that contributes to the eccentric moment (i.e., it 'position[s] the center of gravity of the counterweight 40 radially away from its rotational axis' which creates eccentric moment)." Doc. 31, at 7, quoting '964 Patent, col. 3, ll 49-51. In other words, the term "eccentric weight" modifies the term "portion." "Eccentric weight portion" is defined, as is "cylindrical gear portion," by its purpose: just as the cylindrical gear portion is whatever portion of the counterweight that serves as a "substantially cylindrical" gear, the eccentric weight portion is whatever portion that serves to shift the centre of gravity radially outward from the axis of rotation of the counterweight.

J&G, on the other hand, argues for a delimited structural definition of the two terms that makes them definitely distinct: the cylindrical gear portion is the cylindrical gear structure and the eccentric weight portion is that structure extending forward from the front face of the cylindrical gear portion. Under J&G's definition, the claims set out that where one portion ends the other begins. Under APE's definition, it is possible for the two definitions to describe shared volume.

J&G first focuses upon the specification, which describes the "eccentric weight portion" as "[that] portion of the counterweight, which is formed integral with the gear portion, [and] extends forward from the front face of the gear portion." '964 Patent, col. 3, ll 49-51 (emphasis added). APE argues that the claim language nowhere requires the eccentric weight portion to protrude from the front face of the gear portion, and that the description in the specification is that of a preferred embodiment that does not limit the claims. Cf. Specialty Composites, 845 F. 2d at 987("[P]articular embodiments appearing in the specification will not generally be read into the claims.")

J&G counters that the language of the specification cannot be disregarded in the claim construction, but APE points out that the patent gives notice 6 that the specification describes a preferred embodiment of the invention and references five drawings (Figures 1, 2, 3A, 3B, and 4) of the preferred embodiment. '964 Patent, col. 3, ll 9-25. Because a description of the preferred embodiment in a specification cannot limit the patent claim, the language in the specification requiring the eccentric weight portion to protrude from the front face of the gear portion cannot be read into the claim. Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994). J&G argues that within the detailed description, which is illustrated by the drawings, the descriptive language going before Col 5, line 26 are not of the preferred embodiment, but of the invention. Doc. 27 at 11. It is only on line 26 that the description recites, "In the preferred embodiment. . . ." J&G argues that it is only the language following this specific statement that describes the preferred embodiment. J&G's assertions, first, ignore the language of column 3 that specifically states that the following detailed
description is of the preferred embodiment, and second, would have the Court construe the broad claim of the patent as the precise language of the specification. Such a construction would unduly read limitations in the specifications onto the claims. Phillips, 415 F.3d at 1323. The Federal Circuit in Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1373 (Fed. Cir. 2007) compared the district court's task in distinguishing between reading the claims of a patent in light of the specification and improperly reading in a limitation from the specification to walking a tightrope. Given the fact that the Court's job in drawing the line between construing terms and importing limitations can be aided by focusing upon "understanding how a person of ordinary skill in the art would understand the claim terms" Phillips, 415 F.3d at 1323. Phillips goes on to point out that persons of ordinary skill in the art "rarely would confine their definition of terms to the exact representations depicted in the embodiments." Id.

6 "The present invention will be more clearly understood from the following detailed description of the preferred embodiment taken in conjunction with the attached drawings." '964 Patent, col. 3, 11 9-12.

APE also points to a rule of patent construction, which holds that two differently named elements may contain a common structure if at least some structure is different. Faber, Landis Mechanics of Patent Claim Drafting, Sec. 21 (4th ed. 1999). The claims' language does not preclude the cylindrical gear portion and the eccentric weight portion from having common structure, and the specification describes the gear portion as having structure that contributes to the dynamic forces, that is, eccentric moment, generated upon rotation of the gear portion about its rotational axis. '964 Patent, col. 5, ll 53-60. That structure of the gear portion, under the laws of physics, is an eccentric weight. APE argues that it follows that "even if no further weight were added to the counterweight," be it weight extending outward from the front face of the gear portion or weight from heavy metal inserts, "the counterweight would still contain an eccentric weight portion because the structure of the gear portion would contribute to moving the center of gravity of the counterweight radially away from its axis of rotation." Doc 26 at 9.

J&G argues that APE's assertion that "under the law of physics these apertures or cavities makes [sic] the cylindrical gear portion eccentric and eliminates [sic] the need for an 'eccentric weight portion' that extends forward from the front face of the gear portion," is contrary to law. Doc 27, at 13, referencing Doc 26 at 9. It is contrary to law, J&G argues, because the law grants the patentee a license to be his own lexicographer, and, as his own lexicographer, he can define a term through the specifications and the arguments made in the file history. Citing the file history at Reexamination Control No. 90/007,337 for U.S. Patent No. 5,355,964 File History--June 6, 2006 Reply to Office Action, page 4, attached at Exhibit A to Doc 27, J&E argues that APE made arguments to the Patent Office that prevent the volume rearward of the front face as being construed as the eccentric weight portion. Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc. 222 F.3d 951, 956 (Fed. Cir. 2000) ("[S]tatements made during prosecution commit the inventor to a particular meaning of a claim term that is binding during litigation," citing CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1158 (Fed. Cir. 1997) ). Doc. 27 at 14.

When the '964 Patent was re-examined, the examiner issued a rejection of APE's application based on U.S. Patent No. 3,224,514 (Hornstein et al.). This patent disclosed four rotors geared together with each rotor having ten cavities. The three cavities on the bottom of each rotor could receive tungsten inserts, thus creating an eccentrically weighted gear for pile driving. J&G argues that in order to distinguish APE's application over the Hornstein Patent, APE responded to the rejection with a statement of the intended meaning for "eccentric weight portion."

As best seen in FIGS 3A and 3B, . . . [t]he eccentric weight portion 43 of the counterweight 40, which is formed integral with the gear portion 41, extends forward from the front face 96 of the gear portion. . . . In the preferred embodiment, the eccentric weight portion 43 has a substantially semi-cylindrical portion 100, and the bottom portion 104 constitutes over one-half of the area of gear portion 41. Accordingly, the counterweight 40 has a large mass of material integral to and projecting from the bottom portion 104 of the gear portion 41. . . .
J&G argues that APE's argument implies "that Hornstein's tungsten inserts were only in the gear, and because these gears did not include any materials extending forward from a front face, Hornstein did not obviate Plaintiff's claims." Id. J&G discounts APE's argument in its claim construction brief as being different from the argument made to the Patent Office at the time of the rejection. In its claim construction brief, J&G argues, APE is taking "a very different view . . ., [t]hat is, the eccentric weight portion does not just extend forward from the front face as stated in the specification and to the Patent Office during prosecution, but also extends rearward sharing a common volume with the gear portion." Id.

Further J&G points to Reexamination Control No. 90/007,337 for U.S. Patent No 5,355,964 File History--September 14, 2006 Reply to Office Action, page 9 (Attached as Exhibit B ('Ex. B')), an additional portion of the file history, that J&G argues includes APE's "argument that a cavity or aperture by itself cannot be an 'eccentric weight portion.'" Id. "Again, it is only after the prosecution has closed that Plaintiff is attempting to recapture this 'structure.'" Id.

APE addresses J&G's file history arguments in its Claim Construction Reply Brief, Doc. 31, making the point that "prosecution history estoppel does not modify the plain and ordinary meaning of the claim terms." Doc. 31, at 12. APE begins by stating the standard for argument-based estoppel. "To invoke argument-based estoppel, the prosecution history must evince a 'clear and unmistakable surrender of subject matter.'" Eagle Comtronics, Inc. v. Arrow Communication Labs., Inc., 305 F.3d 1303, 1316 (Fed. Cir. 1999) (citing Pharmacia Upjohn Co. v. Mylan Pharmaceuticals, Inc., 170 F.3d 1373, 1377 (Fed. Cir. 1999). APE argues that the standard cannot be met in this case because neither was the argument based on the issue of the asserted estoppel (citing Eagle Comtronics, 305 F.3d at 1316 and AquaTex Industries, Inc. v. Techniche Solutions 419 F.3d 1374, 1383 (Fed. Cir. 2005)), nor was the statement more than a mere clarification of the examiner's mistake. APE further points out, "[w]here a patentee disputes an examiner's statement on the record, and makes no amendment based on the examiner's statement, such statement usually [will] not be construed as a basis for argument-based prosecution history estoppel." Doc. 31, at 13, quoting Dow Chemical Co. v. Sumitomo Chemical Co., 257 F.3d 1364, 1382 (Fed. Cir. 2001).

APE explains that during the reexamination by the Patent Office, the examiner rejected most of the patent's claims, including each of the independent claims, 1, 6, 11, and 16 as anticipated, under 35 U.S.C. Sec. 102(b) by Hornstein '514. The examiner believed that every element of the claim was found in Hornstein '514 because a "claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.' M. P. E. P. Sec. 2131 (Rev. 6, Sept 2007)"), quoting Verdegaal Bros. v. Union Oil of California, 814 F.2d 628, 631 (Fed. Cir. 1989)." Doc. 31 at 14. APE responded to the rejection by arguing that not all of the elements were present in the Hornstein '514 Patent, making three alternative arguments. If any one of the three arguments were successful, the section 102 rejection would be overcome. APE sets out the three arguments made to the patent office, which it admits may have been "inartfully" made, but were made "without the intent to surrender subject matter." Doc. 31, at 14. The arguments were that Hornstein '514:

1) did not have an eccentric weight portion into which an insert could be inserted; 2) if the weighted inserts placed within the rotor of Hornstein '514 was considered to be the eccentric weight portion, then the eccentric weight portion was not integral with the cylindrical gear portion; and 3) if the weighted inserts placed within the rotor of Hornstein '514 was considered to be the eccentric weight portion, then the eccentric weight portion and the cylindrical gear portion were not of a first metal, but of different metals.

Id.

APE argues that the first argument points out that the eccentric weight portion moves the center of gravity of the counterweight radially away from its rotational axis and that the claimed invention had an eccentric weight portion before weighted inserts were inserted, in contrast to Hornstein '514, which disclosed a non-eccentric rotor, that is, one without eccentric moment, that became eccentric only when a weighted insert was inserted into the rotor. That weighted insert became "the eccentric weight portion because it was the only weight contributing to the eccentric moment of the device." Doc 31 at 14-15, referencing Doc 27, Exhibit B at 4-5.

The second argument 7 made to the patent office concerned the weighted inserts of Hornstein '514, which, if construed to be the eccentric weight portion element discussed above, were not "integral" with the cylindrical gear portion. Rather, the weighted inserts were "a separate element added to the rotor" Doc. 27, Exhibit B, at 6 "and did not have the integral, one
Perhaps unartfully, the patentee was arguing that the weighted inserts of Hornstein '514 could not be both the eccentric weight portion that is integral with the gear portion and also be the "solid insert member" of the claims that is positioned within the eccentric weight portion. The weighted inserts of Hornstein could not be both positionable and also have the integral, one-piece-nature of the eccentric weight portion.

Id.

Footnotes

7 The second and third arguments are more relevant to the disputed claim term "integral," but are placed with the first argument so that all three arguments may be viewed in context.

End Footnotes

APE characterizes the third argument as "corollary to the second argument." Again, "if the weighted inserts of Hornstein '514 were construed to be the eccentric weight portion, then the counterweight was not made of a first metal. The weighted inserts of Hornstein '514 were made of a heavy metal that differed from the metal of the rotor. The counterweight could not be made of a "first metal" if the weighted inserts that were required to make the rotor eccentric were made of a different metal. Id.

The Court finds that, concerning the disputed claim term, "eccentric weight portion," when the file history is considered in its entirety there is nothing contained therein that reveals APE's arguments in the prosecution history relinquished subject matter. "[A] competitor would not reasonably believe that the applicant has surrendered the relevant subject matter." Pharmacia, 170 F.3d at 1377. Accordingly, the Court finds that the ordinary and customary meaning of "eccentric weight portion" must be used, and, as such, APE's construction is adopted. "Eccentric weight portion" is construed to mean, "that portion of the counterweight that contributes to the eccentric moment of the counterweight. The portion is part of the whole counterweight, but need not be a separate component piece or part."

Eccentric Weight Portion

The phrase "eccentric weight portion" is found in asserted claims 1, 3, 6, 11, and 16, as well as unasserted claims 19, 21, 26, and 27. APE seeks to define the phrase functionally, which would allow for the eccentric weight portion to share common structure with the cylindrical gear portion, whereas Geoquip seeks to define the phrase structurally, which would require the eccentric weight portion to be physically distinct from the cylindrical gear portion. Specifically, APE proposes the following definition:

Eccentric weight portion -- is that portion of the counterweight that creates the eccentric moment of the counterweight.

The portion is part of the whole counterweight, but need not be distinct from the cylindrical gear portion.

The eccentric weight portion has one or more areas for receiving an insert.

In contrast, Geoquip proposes the following definition:

Eccentric weight portion -- The mass that extends forward from the front face of the bottom portion of the gear portion of the counterweight such that the counterweight has more weight at its bottom portion than its top portion.

Id.
The court begins its construction of "eccentric weight portion" by looking to the claims themselves. Claim 1, which is representative of the asserted claims, describes a "counterweight having a cylindrical gear portion and an eccentric weight portion integral with said cylindrical gear portion, said eccentric weight portion having at least one insert-receiving area formed therein." '964 Patent, col. 9, ll. 39-43. Although "eccentric weight portion" is used in a consistent manner in the remaining claims, the claims do not define the phrase explicitly. Thus, the court turns to the specification for additional guidance.

The specification provides the following description:

As best seen in FIGS. 3A and 3B, the gear portion 41 of the counterweight 40 is substantially cylindrical and has a rear face 94, a front face 96, and a plurality of gear teeth 98 around its perimeter. The eccentric weight portion 43 of the counterweight 40, which is formed integral with the gear portion 41, extends forward from the front face 96 of the gear portion. The gear portion 41 has a weight distribution with less weight provided by a top portion 102 and more weight provided by a bottom portion 104 as a result of the eccentric weight portion 43 being connected thereto. In the preferred embodiment, the eccentric weight portion 43 has a substantially semi-cylindrical portion 100, and the bottom portion 104 constitutes over one-half of the area of gear portion 41. Accordingly, the counterweight 40 has a large mass of material integral to and projecting from the bottom portion 104 of the gear portion 41, thereby forming a counterweight having a center of gravity located radially outward from the rotational axis of the gear portion.

Id. at col. 5, ll. 17-36 (emphasis added). In the portion of this passage that precedes the phrase "in the preferred embodiment," the patentee describes the eccentric weight portion structurally, as being that portion of the counterweight that extends forward from the front face of the gear portion. While the court does not presume that the phrase "in the preferred embodiment" automatically transforms the preceding language in this paragraph into claim limitations, the court does assume that the phrase was inserted to distinguish in some manner the preceding description from the one that followed. Indeed, the repeated invocation of the preferred embodiment throughout the specification must serve some purpose, namely that of distinguishing more general descriptions of the invention from more specific descriptions of the preferred embodiment itself. See, e.g., id. at col. 3, ll. 61-62; col. 5, ll. 27-28, 51, 65; col. 7, ll. 35, 55; col 8, ll. 32-33.

APE, in response, argues that all discussions of the figures in the specification refer to the preferred embodiment alone, relying on a boilerplate disclaimer found in the '964 Patent. See id. at col. 3, ll. 9-12 ("The present invention will be more clearly understood from the following detailed description of the preferred embodiment taken in conjunction with the attached drawings."). Although the court declines to accept this boilerplate language as decisive, see, e.g., Les Traitments Des Eaux Poseidon. Inc. v. KWI, Inc., 135 F. Supp. 2d 126, 135 (D. Mass. 2001) (assigning "little weight" to boilerplate language in specification indicating general description of invention was "non-restrictive"), the court is also wary of improperly reading limitations from the specification into the claims. See Phillips, 415 F.3d at 1323. Thus, the court looks to the specification as a whole to determine whether a person of ordinary skill in the art would conclude the eccentric weight portion to be structurally distinct from the cylindrical gear portion in every embodiment of the claimed invention. See Alloc, 342 F.3d at 1370.

In addition to the passage cited above, the court finds illustrative several other portions of the '964 Patent. First, the abstract of the invention indicates that the "counterweight has a cylindrical gear portion and an eccentric weight portion integrally formed therewith." '964 Patent, Abstract (emphasis added). The abstract does not say that the eccentric weight portion is integrally formed "therein" with respect to the cylindrical gear portion, but rather that it is integrally formed "therewith," which connotes a physical distinction between the two. 3 This description belies APE's assertion that the "eccentric weight portion," being any portion of the cylindrical gear portion to create eccentric moment, may be wholly contained within the cylindrical gear portion. Instead, the description supports Geoquip's characterization of the "eccentric weight portion" as being physically distinct from the gear portion.

3 Within the specification itself, the patentee uses the word "thereto," which like "therewith" suggests physically distinct components. '964 Patent, col. 5., l. 27. By comparison, the eccentric weight portion has "dense, solid, metal inserts 45 mounted therein." Id. at col. 3, ll. 47-48 (emphasis added).
In addition, the specification gives no indication that the "eccentric weight portion" was intended to include, as APE suggests, that portion of the gear portion containing unbalanced weight. When the specification refers to the apertures in the top portion of the gear portion that are designed to increase the eccentric weight found in the bottom portion of the gear portion, there is no mention of that offsetting weight being part of the "eccentric weight portion," as that phrase is used throughout the '964 Patent. See id. at col. 5, ll. 53-60. If the patentee intended the offsetting weight to be part of the "eccentric weight portion," a person of ordinary skill in the art might expect some indication to that effect.

Indeed, the specification's description of the balancing process further refutes APE's position that the "eccentric weight portion" is functionally defined:

Each counterweight 40 is balanced again on the balancing device to assure that the eccentric weight portion 43 hangs at its lowest point of a revolution when the counterweight is at the equilibrium position. If the eccentric weight portion 41 [sic] does not hang properly, metal may be removed from the eccentric weight portion to achieve a properly balanced counterweight.

Id. at col. 9, ll. 11-17. In order for the "eccentric weight portion" to be capable of hanging at "its lowest point," that phrase must be conceived of in a physical, structural manner, rather than in a functional one, as APE suggests. Thus, implicit within the specification is the understanding that the eccentric weight portion is defined structurally and is physically distinct from the cylindrical gear portion.

While the patentee could have defined "eccentric weight portion" in another manner if he had chosen to do so, the court finds that a person of ordinary skill in the art at the time of the invention would have understood the eccentric weight portion and the cylindrical gear portion to be physically distinct in every embodiment of the claimed invention. See Alloc, 342 F.3d at 1370. Nevertheless, although the court agrees with Geoquip that the eccentric weight portion extends outward from the cylindrical gear portion, the court does not agree that the eccentric weight portion must extend forward, as opposed to rearward. The court, therefore, construes the phrase "eccentric weight portion" to mean "that portion of the counterweight that extends either forward or rearward from the front or back face of the gear portion such that it shifts the center of gravity radially outward from the gear's rotational axis."

While the notion that the eccentric weight portion is physically distinct from the cylindrical gear portion is pervasive throughout the '964 Patent, the basis for limiting the eccentric weight portion to extending forward rather than rearward is limited to an isolated description in the specification. See '964 Patent, col. 5, ll. 20-23. As the court does not believe that extending forward rather than rearward is part of the "very character" of the claimed invention, the court refuses to limit the claims in that manner. See Alloc, 342 F.3d at 1370.
proposes the following construction for this term:

Eccentric weight portion -- is that portion of the counterweight that creates the eccentric moment of the counterweight.

The portion is part of the whole counter weight, but need not be distinct from the cylindrical portion.

The eccentric weight portion has one or more areas for receiving an insert.

Joint Disputed Claim Chart, Dkt. # 29-2, p. 1. Defendants propose the following construction:

Eccentric weight portion -- The mass that extends forward from the front face of the bottom portion of the gear portion of the counterweight such that the counterweight has more weight at its bottom portion than its top portion.

Id.

The term is first used in claim 1, describing a counterweight as "having a cylindrical gear portion and an eccentric weight portion integral with said cylindrical gear portion, said eccentric weight portion having at least one insert-receiving area formed therein . . . " '964 patent, col. 9 lines 39-43. Although not defined in the claims, the term is used consistently in subsequent claims, each time describing a portion of the counterweight. There is no expressed intent to give the term a different meaning in other claims.

At the Markman hearing, both parties referred to the specification to define the term. However, each side cited a different area of the specification. Plaintiff referred the Court to the introductory lines of the detailed description of the invention, wherein it states that

The vibratory assembly generates substantially vertical vibratory forces by rotating at high speeds two counterweights within a housing. Each counterweight has a gear portion and an eccentric weight portion that is integral to the gear portion. The eccentric weight portion has dense, solid, metal inserts 45 mounted therein to increase the mass of the eccentric weight portion, and to position the center of gravity of the counterweight radially outward from its rotational axis.

'964 patent, col. 3 lines 41-51 (numbered references to drawings omitted). Defendants referred the Court to language in the specification that describes a shape and location for the eccentric weight portion:

As best seen in FIGS. 3A and 3B, the gear portion of the counterweight is substantially cylindrical and has a rear face, a front face, and a plurality of gear teeth around its perimeter. The eccentric weight portion of the counterweight, which is formed integral with the gear portion, extends forward from the front face of the gear portion. The gear portion has a weight distribution with less weight provided by a top portion and more weight provided by a bottom portion as a result of the eccentric weight portion being connected thereto. In the preferred embodiment, the eccentric weight portion has a substantially semi-cylindrical portion, and the bottom portion constitutes over one-half of the area of gear portion. Accordingly, the counterweight has a large mass of material integral to and projecting from the bottom portion of the gear portion, thereby forming a counterweight having a center of gravity located radially outward from the rotational axis of the gear portion.

'964 patent, col. 5 lines 17-36.

Defendants contend that since language defining the location of the eccentric weight portion precedes the description of the preferred embodiment, it is broader in application than the preferred embodiment, and defines the location of the eccentric weight portion for all embodiments of the invention. However, the Court finds that adopting defendants' proposal would require that a limitation expressed in the specification be imported into the claims, where it does not appear. While the drawings and detailed descriptions thereof are helpful in understanding the preferred embodiment of the invention, they do not express the only embodiment. The claims themselves do not at any point suggest or limit the location of the eccentric gear portion within the counterweight, other than to specify that it is "integral with the cylindrical gear portion" (claims 1, 6, 11, 19, 21, 27). One claim describes the eccentric weight portion as "connected to said cylindrical gear portion at a position radially outward of the axis of said cylindrical gear portion" (claim 16), but this language does not specify whether it extends outward from the front or the rear of the cylindrical gear portion. Two claims describe a counterweight in which the
eccentric weight portion and cylindrical gear portion are "coaxially aligned" so that an aperture can extend through both (claims 21, 27), but again this does not limit the location of the eccentric weight portion to one side or the other of the cylindrical gear portion.

The Court therefore finds, after reviewing the claim language and the specification, that the phrase eccentric weight portion should be construed to mean "that portion of the counterweight that creates the eccentric moment of the counterweight by having unbalanced weight offset from the axis of rotation. The eccentric weight portion has one or more inset receiving areas."

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4. "Eccentric Weight Portion"

The phrase "eccentric weight portion" is found in asserted claims 1, 3, 6, 11 and 16, as well as in unasserted claims 19, 21, 26 and 27. APE argues that the phrase "eccentric weight portion" should be defined functionally as "... that portion of the counterweight that contributes to the eccentric moment of the counterweight. The portion is part of the whole counterweight, but need not be a separate component piece or part." 10 Doc. No. 37 at 4. ECA, however seeks a structural definition of the phrase, positing that it should be construed as "[t]he mass that extends forward from the front face or rearward of the rear face of the gear portion of the counterweight and causes an unequal weight distribution about the rotational axis." Doc. No. 41 at 1. After examining the papers and arguments in the Bay case, Judge Hamilton of the Northern District of California construed the phrase to mean "the bottom portion of the counterweight, which extends forward from the front face of the gear portion, containing more weight than the top portion due to its larger mass, including at least one insert-receiving area therein adapted to receive at least one solid tungsten rod." Bay, 632 F. Supp. 2d 956, 2009 WL 1684611, at *6.

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10 APE defines "eccentric moment" as being weight multiplied by the distance from the axis of rotation from the center of gravity. See Doc. No. 30 at 4, n.1. This term is not defined in the language of the claims or specification of the '964 Patent, but instead appears to be a term of art from the physical sciences. APE's definition of eccentric moment is not contested by ECA.

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In order to construe this phrase, this court turns first to the language of the claims themselves. Claim 1 recites, inter alia: "[a] vibratory assembly for imparting a vibratory force to a pile, comprising . . . [a] counterweight having a cylindrical gear portion and an eccentric weight portion integral with said cylindrical gear portion, said eccentric weight portion having at least one insert-receiving area formed therein, said counterweight being made of a first metal." '964 Patent, col. 9, ll. 33-44. Throughout the claims, certain structural attributes are assigned to the eccentric weight portion: (1) it is part of the counterweight; (2) it is integral with the cylindrical gear portion; 11 (3) it is made of a first metal; and (4) it is designed to hold at least one insert-receiving area. The Court is satisfied that the meaning of "eccentric weight portion" is consistent throughout the claims. However, as there is no explicit definition of the term in the claims, this Court must turn to the specification for guidance.

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11 The Court takes notice that in claim 16, the eccentric weight portion is described as only being "connected to" the cylindrical gear portion, which implies a less complete form of joining than integral. See '964 Patent, col. 11, l. 13.

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The specification states that vibratory pile driving / pile extracting apparati are able:

to generate extremely high driving and pulling forces by rapidly rotating large counterweights within vibratory [sic]
assembly. The counterweights are large cylindrical, eccentrically weighted gears, i.e., they have an uneven weight distribution around the body of the gear such that its center of gravity is radially outward from the gear's rotational axis.

'964 Patent, col. 1, ll. 23-29. The specification further provides:

The vibratory assembly 34 generates substantially vertical vibratory forces by rotating at high speeds two counterweights 40 . . . Each counterweight 40 has a gear portion 41 and an eccentric weight portion 43 that is integral to the gear portion. The eccentric weight portion 43 has dense, solid, metal inserts 45 mounted therein to increase the mass of the eccentric weight portion, and to position the center of gravity of the counterweight 40 radially outward from its rotational axis.

'964 Patent, col. 3, ll. 42-51. The two above sections of the specification demonstrate that the unbalanced, or eccentric, nature of the counterweight is a necessary part of this invention. Furthermore, these passages provide notice to the person having skill in the art that the "eccentric weight portion" is the part of the counterweight that, at least partially, provides that unbalanced, eccentric weight.

Central to ECA's argument that the eccentric weight portion is limited to structure extending from the gear face is the following passage from the specification:

As best seen in FIGS. 3A and 3B, the gear portion 41 of the counterweight 40 is substantially cylindrical and has a rear face 94, a front face 96, and a plurality of gear teeth 98 around its perimeter. The eccentric weight portion 43 of the counterweight 40, which is formed integral with the gear portion 41, extends forward from the front face 96 of the gear portion. The gear portion 41 has a weight distribution with less weight provided by a top portion 102 and more weight provided by a bottom portion 104 as a result of the eccentric weight portion 43 being connected thereto. In the preferred embodiment, the eccentric weight portion 43 has a substantially semi-cylindrical portion 100, and the bottom portion 104 constitutes over one-half of the area of gear portion. Accordingly, the counterweight 40 has a large mass of material integral to and projecting from the bottom portion 104 of the gear portion 41, thereby forming a counterweight having a center of gravity located radially outward from the rotational axis of the gear portion.

'964 Patent, col. 5, ll. 17-36. However, as was noted above, Figures 3A and 3B are explicitly stated in the specification to show only the preferred embodiment of the counterweight. See '964 Patent, col. 3, ll. 9-24. Given that the above passage, by reference, refers only to the preferred embodiment of the invention, this Court must determine whether a person having skill in the art would read the limited physical structure of the preferred embodiment onto the language of the claims. This Court believes that such a person would not do so.

The physical structure of the preferred embodiment of the invention in the '964 Patent, as exemplified in the specification, is not necessary for the invention, in general, to carry out its task in the manner described in the claims and the specification. For example, this Court can imagine a hypothetical construction of the claimed counterweight, in which the structure of the eccentric weight portion does not extend from a gear face, but is instead completely enclosed within the cylindrical gear portion. There is no evidence before this Court that such a hypothetical embodiment would necessarily behave in a substantially different way from the preferred embodiment described in the specification, or that it would read on prior art. As such, ECA's argument that a person having skill in the art would limit the eccentric weight portion to some physical structure that is attached to the gear face in the preferred embodiment is unpersuasive.

However, it is important to note that there is one significant limitation to the structure of the eccentric weight portion: it cannot be defined to include the solid, heavy metal member that is housed in the insert area. This limitation comes from the prosecution history. During the 2006 reexamination, the patent owner, in an attempt to differentiate the '964 Patent from the Hornstein patent, argued that the two inventions differed because the counterweight recited in the '964 Patent had eccentric weight independently of its inserts, and Hornstein's invention did not. See Doc. No 35-2 at 5. Since this argument was persistently made and eventually accepted by the examiner, this constitutes a clear and unambiguous disavowal of broader protection. See J.A. of Intrinsic Evidence, Ex. D (Doc. No. 38-5), at 10; see also APE's Compl., Ex. A (Doc. No. 1-3), at 14-15.

After weighing the above evidence, this court recommends that "eccentric weight portion" be construed as meaning: "the portion of the counterweight, being made of a first metal, that provides unbalanced weight to the counterweight with respect to the counterweight's axis of rotation, and with at least one insert-receiving area."
This phrase appears in asserted claims 1, 3, 6, 11 and 16. The phrase also appears in unasserted claims 19, 21, 26 and 27. APE contends that "eccentric weight portion" should be construed to mean "that portion of the counterweight that contributes to the eccentric moment of the counterweight. The portion is part of the whole counterweight, but need not be a separate component piece or part." Bay contends that "eccentric weight portion" should be construed to mean "the portion of the counterweight that extends forward from the front face of the gear portion as defined in the specification."

To begin its analysis, the court first turns to the claims themselves. The phrase "eccentric weight portion" is first introduced in claim 1, which provides: "A vibratory assembly for imparting a vibratory force to a pile, comprising: . . . a counterweight. . . . having a cylindrical gear portion and an eccentric weight portion integral with said cylindrical gear portion, said eccentric weight portion having at least one insert-receiving area formed therein, said counterweight made of a first metal; a solid insert member securely positioned in one of said at least one insert-receiving areas said solid insert member being made of a second metal . . ." Claim 2 provides that the first metal is steel and the second metal is tungsten. Claim 3 provides that the insert-receiving area is a bore in the eccentric weight portion and the solid insert is a tungsten rod.

As to the other claims in which the phrase appears, e.g., claims 6-9, 11-13 and 16-19, the relevant language is substantially similar to the language in claims 1-3 insofar as those claims indicate that the counterweight is comprised of an "eccentric weight portion" and a "cylindrical gear portion"; the "eccentric weight portion" has at least one "insert-receiving area"; at least one solid insert is inserted into an "insert-receiving area"; the counterweight is made of steel; and the solid insert is a tungsten rod.

Based on the court's review of the claim language, two things are evident. First, the term "eccentric weight portion" is meant to have the same meaning in each claim, since there is no indication that the phrase is to be given a specific definition in any one claim versus another, and no indication that the phrase has been particularly defined, or referred to in a materially different way, in any specific claim. Second, the claim language does not define the phrase, but rather describes that the "eccentric weight portion" is a portion of the counterweight with at least one insert-receiving area therein adapted for receiving at least one solid tungsten rod. Accordingly, the court must turn to the specification for added insight.

The specification explains that the "vibratory assembly of the present invention . . . generates substantially vertical vibratory forces by rotating at high speeds two counterweights 40. . . . Each counterweight 40 has a gear portion 41 and an eccentric weight portion 43 that is integral to the gear portion. The eccentric weight portion 43 has dense, solid, metal inserts 45 mounted therein to increase the mass of the eccentric weight portion, and to position the center of gravity of the counterweight 40 radially outward from its rotational axis." '964 Patent, col. 3, lines 39-51 (footnote added). The specification further provides:

As best seen in FIGS. 3A and 3B, the gear portion 41 of the counterweight 40 is substantially cylindrical and has a rear face 94, a front face 96, and a plurality of gear teeth 98 around its perimeter. The eccentric weight portion 43 of the counterweight 40, which is formed integral with the gear portion 41, extends forward from the front face 96 of the gear portion. The gear portion 41 has a weight distribution with less weight provided by a top portion 102 and more weight provided by a bottom portion 104 as a result of the eccentric weight portion 43 being connected thereto. In the preferred embodiment, the eccentric weight portion 43 has a substantially semi-cylindrical portion 100, and the bottom portion 104 constitutes over one-half of the area of gear portion. Accordingly, the counterweight 40 has a large mass of material integral
to and projecting from the bottom portion 104 of the gear portion 41, thereby forming a counterweight having a center of gravity located radially outward from the rotational axis of the gear portion.

'964 Patent, col. 5, lines 17-36.

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2 "The preferred solid insert 45 is a tungsten rod . . ." '964 Patent, col. 6, line 5. "A tungsten rod is used as the preferred solid insert 45 because the metal is very dense and has a melting point temperature far greater than temperatures experienced by the counterweight 40 during operation of the vibratory assembly 34." '964 Patent, col. 6, lines 11-15.

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As the specification describes, and figures 3A and 3B illustrate, the counterweight has a top portion and a bottom portion. The bottom portion extends forward from the front face of the gear portion and contains more weight than the top portion as a result of the "eccentric weight portion," which has at least one dense, solid, metal insert, i.e., tungsten rod, mounted therein to increase the mass of the "eccentric weight portion." The specification teaches that the function of the "eccentric weight portion" is to create an uneven weight distribution around the body of the gear such that the center of gravity is located radially outward from the rotational axis of the gear portion, thereby allowing the counterweight to generate substantial vibratory forces upon rotation.

After reviewing the claim language and the specification, the court declines to adopt either party's proposed construction of the phrase "eccentric weight portion." Instead, the court construes the phrase "eccentric weight portion" to mean: "the bottom portion of the counterweight, which extends forward from the front face of the gear portion, containing more weight than the top portion due to its larger mass, including at least one insert-receiving area formed therein to receive at least one solid tungsten rod."

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c. "eccentrically coupled"

The term "eccentrically coupled" appears in claim 1. Boston Scientific Enhanced Coverage Linking argues that the term should be construed as "not concentrically coupled (with respect to the elongate member)." ev3 asserts that "eccentrically coupled" should be construed as "residing eccentrically about something to which the object is directly attached." The Court declines to construe the term "eccentrically coupled."

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1302
1. "economy safe"

Tidel proposes this term means "a safe that is performing at a lesser capacity than the intelligent safe." FKI proposes the term means "safes comprised of just a safe and a bill validating unit, without a PC board and printer." The specification describes an arrangement where one central "intelligent safe" can be coupled to a plurality of "economy models of the safe." [4:23-30] Tidel points out that the specification describes that "economy models of the safe (i.e., comprised of just a safe and a unit 16, without a PC board and printer) can be placed at various locations throughout a retail establishment and coupled to the above-described 'intelligent' safe for processing of data by bill receiving unit and by totals." [4:22-34] Tidel argues, therefore, that "economy safes" need only perform at a lesser function than the "intelligent safes" that process data from them. Tidel argues the parenthetical is only a description of one embodiment, and that "economy safes" may, or may not, have a printer or PC board.

Tidel fails to meaningfully explain the applicant's choice of "i.e.," instead of "e.g." Tidel's argument that the parenthetical only shows an example of a preferred embodiment is unpersuasive. "[T]his interpretation of ‘i.e.’ is contrary to the literal
meaning of this abbreviation for the Latin id est, meaning 'that is'' Caritas Techs., Inc. v. Comcast Corp., 2:05-CV-339, 2006 U.S. Dist. LEXIS 98006 at *43 (E.D. Tex. 2006) (Folsom, J.) (citing Oxford English Dictionary). The Federal Circuit has found that "i.e." defined the meaning of a term. Abbot Labs. v. Novopharm Ltd., 323 F.3d 1324, 1330 (Fed.Cir. 2003). Only when the intrinsic evidence supports an alternate definition of the term preceding "i.e." has the Federal Circuit found that the definition following "i.e." does not control. See Pfizer, Inc. v. Teva Pharms., USA, Inc., 429 F.3d 1364, 1373 (Fed.Cir. 2005). The specification in Pfizer referred to "saccharides (i.e. sugars) . . ." Id. at 1373. The specification, however, also contained an entire section labeled "SACCHARIDES," with a detailed explanation. The Federal Circuit found, therefore, the definition of "saccharides" was not as narrow as what followed "i.e."

The '034 patent's specification has no alternate definition for "economy safe." Indeed, the term "economy safe" is not used but one time in the specification. Following that only instance is the parenthetical "(i.e., comprised of just a safe and a unit 16, without a PC board and printer)." The court, therefore, construes the term "economy safe" to mean a "safe comprised of just a safe and a bill validating unit, without a PC board and printer."

5. "Edge"

The parties dispute the meaning of the term "edge" and the following related phrases: "edge" (claims 1, 2, and 18 of '018 Patent and claim 7 of '493 Patent); "edge surface" (claims 2, 3, and 18 of '018 Patent and claims 7 and 12 of '493 Patent); "edge of said backer" (claims 17 and 22 of '493 Patent); and "vertical edge" (claim 12 of '493 Patent). Specifically, Plaintiff contends that "edge" means "a boundary where a thing begins or ends" and that "edge surface" means "a surface where the backer begins or ends that is generally perpendicular to the inner surface of the trailer side wall." Defendants argue that "edge" means "the end of the backer panel" and that "edge surface" means "the vertical surface at the end of the backer panel." The parties dispute whether an edge must be at the end of the backer or may be present anywhere a surface ends on the backer. The Court agrees with Plaintiff that a backer may contain edges not at the end of the panel so that an edge is a place where a surface on the backer begins and ends, but not necessarily where the backer itself begins or ends. The Court thus adopts Plaintiff's proposed definition of "edge": "a boundary where a thing begins or ends."

Based on their representations during the Markman hearing, the parties do not appear to dispute the general concept of "edge surface." In light of the Court's construction of the term "edge," the Court adopts Plaintiff's proposed construction and construes "edge surface" to mean "a surface where the backer begins or ends that is generally perpendicular to the inner surface of the trailer side wall." Also in light of the Court's construction of the term "edge," the Court finds that it is not necessary to construe the phrase "edge of said backer." With regard to the term "vertical edge," the Markman hearing revealed that there is no real dispute between the parties about the general concept of "vertical edge." In a nutshell, the vertical edge is the corner or boundary between the horizontal surface of the backer and the edge surface. The Court adopts Plaintiff's proposed definition: "a boundary where the backer begins or ends that is generally perpendicular to the ground on which the trailer is located."

3. "edge"

Floe asserts that "edge" should be construed as "border." Newmans, on the other hand, contends that this term should be construed as "boundary or point where a surface begins or ends." Both parties allege that the language in Claim 1 and dictionary definitions support their proposed constructions.

The Court rejects Floe's assertion that an "edge" may be the border of a surface, but that "edge" is not necessarily limited to surfaces. Here, Claim 1 requires a ramp member having:

a deck edge protecting surface extending upwardly from said deck support surface and having an upper edge, a lower portion having a longitudinal edge, and having a ramp surface disposed between said upper edge and said longitudinal edge.
at a predetermined angle less than ninety degrees to said deck support surface and arranged to protect an edge of a deck to be supported by said deck support surface.[.

('379 Patent, c. 6, l: 62-c. 7., l: 3.) Given this claim language, the Court finds that in order to have an "edge" there must be some surface that defines that edge. The Court notes that dictionary definitions are not particularly helpful because they support both parties' proposed constructions. Thus, consistent with the claim language, the Court construes "edge" as "boundary or point where a surface begins or ends."

1305

A "top substantially slanted edge" must be given its ordinary and customary meaning. From the plain meaning of the words and the context of the patent, it is clear that there must be some type of substantially sloping visible line from one corner of the top of the shape to the opposite corner. The term "edge" must mean the beginning or end of the shape itself and not some invisible line that may be imagined descending from one part of the shape to the other. Given this meaning, it is clear that the allegedly infringing device does not have a top slanted edge. It lacks a sloping line that connects two opposite corners at the top of the shape. Furthermore, such an edge does not exist at the top of the challenged plate. The top edges are straight, not substantially sloping, and are parallel to the other edges.

1306

Effective Cutting Face Backrake Angle(s)

Claims in the '249 and '715 Patents contain the terms "effective cutting face backrake angle(s)" and "negative effective cutting face backrake angle"; claims in the '631 Patent contain the term "effective backrake angle." Baker Hughes contends these terms should be construed to mean:

the net overall backrake angle of the cutting face as measured backward from a line placed perpendicular (at a ninety degree angle) to the formation to be cut by the cutter in the intended direction of drill bit rotation, and as determined by a combination of any one or more of the cutter backrake angle, the chamfer backrake angle, the chamfer angle, chamfer width, and depth of cut.

ReedHycalog contends the terms mean "the negative angle (expressed as a positive number) between a line oriented perpendicular to the subterranean formation to be engaged by a cutter and the portion(s) of the cutting face of the cutter that engages the formation during drilling, measured in the direction of intended bit rotation." At the claim construction hearing, ReedHycalog stated it was willing to replace "negative angle (expressed as a positive number)" with the term "angle."

The '249, '715, and '631 Patents specifications give little guidance. Fig. 11 of the '249 Patent, which is substantially identical to Fig. 11 in the '715 Patent, is helpful to determine the terms' meaning. With reference to Fig. 11 of the '249 Patent, annotated and depicted in Appendix C, the specifications appear to communicate the following. 1

1 Appendix C contains the Court's annotations of certain figures. Given the nature of these patents, the figures are extremely helpful in discussing some of the concepts presented in this Opinion.

At a shallow depth of cut ("DOC 1") where only the chamfers engage the formation, the effective cutting face backrake angle is the chamfer backrake angle, shown in Fig. 11 as [beta] [1]. '249 Patent col. 7:13-13; '715 Patent col. 10:39-49. At a deeper depth of cut ("DOC2") where the cutting face engages the formation, the effective cutting face backrake angle is [beta] [2], which in Fig. 11 appears to be the angle between the portion of the cutting face that engages the formation and a line perpendicular to the formation. '249 Patent col. 7:13-21, col. 7:48-56; '715 Patent col. 10: 49-57, col. 11:16-21. It also
appears that at some depth of cut deeper than DOC2, the effective cutting face backrake angle will converge to the cutter backrake angle [\(\delta\)], assuming the cutting face is oriented substantially perpendicular to the cutter's longitudinal axis. '249 Patent col. 7:48-56; '715 Patent col. 11:49-57, col. 11:16-21. Therefore, it appears [\(\beta\)_1] and [\(\delta\)], are, respectively, the upper and lower bounds of the effective cutting face backrake angle, and [\(\beta\)_2] lies somewhere between.

The Court agrees with ReedHycalog's modified construction. Thus, "effective cutting face backrake angle(s)," "negative effective cutting face backrake angle," and "effective backrake angle" mean "angle(s) between a line oriented perpendicular to the subterranean formation to be engaged by a cutter and the portion(s) of the cutting face of the cutter that engages the formation during drilling, measured in the direction of intended bit rotation." 2 At shallow depths-of-cut where only the chamfer engages the formation (DOC 1), this angle is the chamfer backrake angle. At some depth of cut, the effective cutting face backrake angle will converge to the cutter backrake angle, assuming the cutting face is oriented substantially perpendicular to the cutter's longitudinal axis.

--- Footnotes ---

2 Ref. No. 3 of Appendix B contains the disputed terms and their constructions.

--- End Footnotes ---

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### 1307

3. Effectively Occlude (Claim 1, '803 Patent)

Vnus argues "effectively occlude" should be construed as "significantly reduce the flow of blood through the treated hollow anatomical structure, including, but not limited to, full-lumen closure." Defendants argue "effectively occlude" should be construed as "to shrink the inner diameter of the [hollow structure/vein] to be no smaller than the electrode device, thus reducing but not eliminating the flow of fluid (e.g., blood) through the lumen after the electrode device is removed. The [hollow structure/vein] must maintain this smaller but non-zero diameter with a reduced but continued fluid flow for a lasting (i.e. non-temporary) period."

The Court, for the reasons stated by Vnus, finds "effectively occlude" is properly construed as "significantly reduce the flow of blood through the treated hollow anatomical structure, including, but not limited to, full-lumen closure."

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### 1308

**A. THE "EITHER OF SAID CHAMBERS" ELEMENT**

Element (f) of Claim 27 defines "a vent means for venting either of said chambers to atmosphere." Quantachrome argues that this element is not literally found in the accused device.

Quantachrome argues that the claim language indicates that the vent means is capable of venting either the sample or the expansion chamber, each mutually exclusive of the other, to atmosphere. Quantachrome states that the accused device cannot vent either chamber mutually exclusive of the other. Rather, to vent the sample chamber of the accused device, one must also vent the expansion chamber. See Ultrapycnometer Flow Diagram, attached as Exhibit B. 2 The sample chamber vents to the expansion chamber which then vents to the atmosphere.

--- Footnotes ---

2 For purposes of clarification, the Court has labeled on Exhibit B what it refers to as the "sample chamber" and the "expansion chamber."

--- End Footnotes ---
Micromeritics argues that the "either of said chambers" language does not indicate a means for venting one chamber mutually exclusive of the other. Rather, Micromeritics argues that the "either" language means that in different embodiments of the invention, either the sample chamber or the expansion chamber is capable of being vented to atmosphere.

Section 35 U.S.C. 112 P6 provides direction in interpreting an element of a claim framed in what is commonly known as "means-plus-function" language. As the Federal Circuit stated in Pennwalt Corp.,

To determine whether a claim limitation is met literally, where expressed as a means for performing a stated function, the court must compare the accused structure with the disclosed structure, and must find equivalent structure as well as identity of claimed function for that structure.

833 F.2d at 934 (discussing 35 U.S.C. § 112 P6).

In the '146 Patent the specification discusses alternate embodiments of the invention. See '146 Patent, col. 2, lines 31-38. In the preferred embodiment, gas is introduced into the sample chamber and then eventually vented to atmosphere through the expansion chamber. '146 Patent, col. 2, lines 31-35; col. 4, lines 61-68. In an alternate embodiment, gas is introduced into the expansion chamber and then eventually vented to atmosphere through the sample chamber. '146 Patent, col. 2, lines 35-40. Thus, the Court finds that "either" means that either the sample chamber or the expansion chamber is capable of being vented to atmosphere depending on the embodiment.

This claim interpretation is strengthened upon further reviewing the description of the preferred embodiment discussed in the patent specification. '146 Patent, col. 4, lines 31-68. It is obvious from the specification that the means discussed is not capable of venting either chamber mutually exclusive of the other.

Also, Fig. 5, included in the '146 Patent, and attached hereto as Exhibit C, 4 unmistakably indicates that the invention vents only through one of the chambers. In that figure, it is plain that the '146 Patent invention vents in exactly the same manner as the accused device.

The Court has considered Quantachrome's other arguments presented in its briefs and at the hearing, and the Court is unpersuaded by any of these arguments that element (f) requires that each chamber be capable of venting mutually exclusive of the other.

Therefore, after carefully analyzing the language of Claim 27 in light of the patent specification, and comparing the Ultrapycnometer Flow Diagram (Exhibit B) with Fig. 5 of the '146 Patent (Exhibit C), the Court finds that Element (f) of Claim 27 of the '146 Patent ("vent means for venting either of said chambers to atmosphere") reads on the accused device.

Since this element is the only element of Claim 27 that Quantachrome asserts does not read on the accused device, the Court finds that Claim 27 as a whole reads on the accused device.
However, Quantachrome argues that even if Claim 27 reads on the accused device, there is no infringement because the '146 Patent is invalid as anticipated by the prior art.

2. The Ejection Limitation

Doyle argues that the district court erred in construing the ejection limitation of claim 21 to require a "direct" ejection from the mixing zone to atmospheric pressure. Doyle contends that the ejection limitation must be differentiated from the parallel limitation in claim 1 due to the absence of the "completely and instantaneously vaporizing" language in claim 21, which requires an immediate pressure drop from the mixing zone to atmospheric pressure. Doyle also argues that the ordinary meaning of "ejecting" does not require an ejection to be either "direct" or "indirect" (i.e., gradual in nature).

Crain responds that the plain language of claim 21 and the disclosure of only a "direct" ejection in the written description clearly supports the district court's construction of the pressure limitation. Crain further contends that the post-expansion of the foam produced by the reaction of water and the diisocyanate adequately explains the absence of the "completely and instantaneously vaporizing" language in claim 21.

Terms in a claim are to be given their ordinary meaning absent an express intent to impart a novel meaning. Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1249, 48 U.S.P.Q.2D (BNA) 1117, 1121 (Fed Cir. 1998); see also Carroll Touch, Inc. v. Electro Mechanical Sys., 15 F.3d 1573, 1577, 27 U.S.P.Q.2D (BNA) 1836, 1840 ("The words of a claim are generally given their ordinary and accustomed meaning, unless it appears from the specification or the file history that they were used differently by the inventor."). In addition, "under the doctrine of claim differentiation, two claims of a patent are presumptively of different scope." Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1366-67, 53 U.S.P.Q.2D (BNA) 1814, 1817 (Fed. Cir. 2000) (citing Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187, 48 U.S.P.Q.2D (BNA) 1001, 1005-06 (Fed. Cir. 1998)). Moreover, "where some claims are broad and others narrow, the narrow claim limitations cannot be read into the broad whether to avoid invalidity or to escape infringement." D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1574, 225 U.S.P.Q. (BNA) 236, 239 (Fed. Cir. 1985).

We agree with Doyle that the district court erred in construing the ejection limitation of claim 21. The ordinary meaning of "ejecting" does not require the ejection to be direct, instantaneous, gradual, or otherwise. Webster's New World Dictionary 435 (3d ed. 1988) (defining "eject" as "to throw out; cast out; expel; emit; discharge"). Rather, given its ordinary meaning, "ejecting said mixture from said mixing zone to atmospheric pressure" merely requires that the mixture leave the mixing zone and end up at atmospheric pressure.

This interpretation of claim 21 is supported by the language of claim 1. Claim 1 has an ejection limitation, but adds the condition that the ejection "completely and instantaneously vaporize said blowing agent to provide substantially total expansion of said mixture," which makes it clear that a "direct" ejection is intended. '770 patent, col. 7, l. 67 to col. 8, l. 2. Thus, because that language is not in claim 21, there is a presumed difference in scope between the ejection limitations in claims 1 and 21. Comark at 1187, 48 U.S.P.Q.2D (BNA) at 1005-06. Accordingly, the "direct" ejection limitation of claim 1 may not be used to narrow the scope of the broader ejection limitation in claim 21. D.M.I. at 1574, 225 U.S.P.Q. (BNA) at 239.

Crain's assertion that the specification discloses only a "direct" ejection is belied by the fact that the Summary of the Invention section discloses both an embodiment containing the "completely and instantaneously" language and an embodiment without such language. '770 patent, col. 2, ll. 18-62. We therefore conclude that the ejection limitation is properly interpreted as encompassing both ejections that directly eject the mixture to atmospheric pressure, and those that do so in a gradual manner.
6. Element (e)

Element (e) of Claim 1 requires "Ejecting the plastic product into said guide conduit." Joint Statement at 12. Turn-Key argues that this element must be construed to require "Removing the plastic product from one of the mold parts" into the substantially enclosed conduit. Id.; Pl's Opening Brief at 14-15. Defendants conversely argue that the phrase means "forcefully discharging each molded plastic product from a surface of the mold cavity so that it enters the guide conduit and so that it is free to move within the guide conduit and is not held away from the walls of the guide conduit by any intervening structure." Joint Statement at 38; Crest's Responsive Brief at 15-16; KM, MC, & Concord's Brief at 10.

The dictionary defines "eject" as: 1. To drive or force out; expel. 2. To dismiss, as from office. 3. To evict. 4. To throw out or throw off. 5. To propel oneself from a disabled airplane, especially by an ejection seat. Random House Webster's College Dictionary at 419. In applying this definition to the '998 patent, the Court construes Element (e) to require that the plastic product be expelled or otherwise driven into the substantially enclosed conduit. 8 The Court, however, declines to construe Element (e) as requiring either that the plastic product be free to move within the guide conduit after its ejection or that it is not held away from the walls of the guide conduit by any intervening structure on the grounds that they represent extra limitations not present in the claim language. The patent's language does not disclose a specific ejection method to be utilized and the specification's references to particular methods (i.e. stripper plate) should not be read into the actual claim itself. See Laitram, 863 F.2d at 865 ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations."); see also '998 patent at Col. 5 ll 6-11; ll.15-17; 23-25 ("While the above description contains many specificities, these should not be construed as limitations on the scope of the invention, but rather as an exemplification of a preferred embodiment thereof . . . . Molds may also be employed which do not have a stripper plate, but where ejection is accomplished by some other means such as pins or sleeves . . . The scope of the invention should be determined not by the embodiments illustrated, but by the appended claims and their legal equivalents.").

During oral argument, Turn-Key insisted that the Court clarify its interpretation of "ejecting" so as to expressly allow for a pulling motion to be encompassed within the definition of the term. Defendants agreed that "ejecting" could encompass a pulling motion as long as force was applied. The Court concludes that "ejecting" can entail a pulling action and that the ordinary meaning of "pull" necessarily involves the application of force. See Random House Webster's College Dictionary at 1055. The Court notes that "force" is utilized in a broad sense here so that the application of gravity upon an object would constitute "force," as would the conventional means by which one removes dishes from a dinner table.

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c. The third disputed term in Claim 7: "Ejecting the washing machine basket . . . by separating the mold core and cavity cover member and shifting the cavity sidewall member away from the mold core"

i. Claim language. The third disputed claim term in Claim 7 of the '809 patent is "ejecting the washing machine basket . . . by separating the mold core and cavity cover member and shifting the cavity sidewall member away from the mold core." Claim 7, with the disputed term italicized, states the following:

7. A method of making an integral, smooth and uniformly constructed plastic washing machine basket having a base wall including a peripheral portion from which extends an annular sidewalk that diverges radially outwardly to a terminal edge in an apparatus including a mold core, cavity sidewall members spaced about the mold core which carry core pins each having a beveled tip portion adapted to abut the mold core during a molding operation and a cavity cover member spaced about an end of the mold core and abutting the cavity sidewall members so as to define a cavity between the mold core and both the cavity cover member and the cavity sidewall members comprising:

injecting a plastic material to fill the cavity while flowing around the beveled tip portion of each of the core pins to form a plastic washing machine basket having sidewalks provided with a plurality of spaced beveled apertures; and ejecting the washing machine basket from the apparatus by separating the mold core and cavity cover member and shifting the cavity
sidewall members away from the mold core.

The '809 patent, Claim 7 (emphasis added).

ii. The parties' definitions and arguments. The parties' proffered definitions of this term are shown below, with bold font indicating differences between their definitions. Also, the authority on which each party relies for its definition is shown just below that party's definition.

"EJECTING THE WASHING MACHINE BASKET . . . BY SEPARATING THE MOLD CORE AND CAVITY COVER MEMBER AND SHIFTING THE CAVITY SIDEWALL MEMBERS AWAY FROM THE MOLD CORE"

<table>
<thead>
<tr>
<th>Maytag's Definition</th>
<th>Electrolux's Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;preparing the formed plastic washing machine basket for removal from the mold by performing steps including at least separating the mold core and the cavity cover member and moving the cavity sidewall member away from the mold core&quot;</td>
<td>&quot;Removing the formed plastic washing machine basket from the mold core by the operation of moving the cavity cover member away from the mold core n12 and shifting the sidewall members&quot;</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Maytag's Authority</th>
<th>Electrolux's Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>'809 patent, col. 6, 11.3-48; claims 8 &amp; 9; col. 2, 11, 15-23.</td>
<td>'809 Patent at col. 6, lines 3-13 and lines 17-23.</td>
</tr>
</tbody>
</table>

n12 Again, this is the statement of Electrolux's construction of this claim term in its initial Markman brief, rather than the somewhat different construction stated in the Corrected Joint Claim Construction Statement, because the court assumes that the construction in the Corrected Joint Claim Construction Statement included a typographical error. See supra, note 5.

In its initial brief, Maytag contends that the patent specification "sets the stage" for what is intended by "ejecting" at col. 6, ll. 3-48. Specifically, Maytag contends that, based on this portion of the specification, "ejecting" refers to the "initial ejection phase," in which the cavity cover member shifts away from the cavity sidewall members, and the cavity sidewall members also shift relative to the mold core, at which time a stripper ring pushes on one end of the basket until it reaches the "ejection position" shown in Figure 4, reproduced above at page 18. Only thereafter, in the second phase of "ejection," is the basket removed from the molding apparatus by a robot arm or similar device. Thus, Maytag contends that the patent specification makes a clear distinction between "ejecting" the basket from the mold core, which Maytag defines as preparing to remove the basket from the mold, and actually "removing" the basket from the molding machine. Maytag contends that it is the first step that is claimed in Claim 7. Maytag contends that dependent Claims 8 and 9 describe the details of the "ejection" step, but that the separate step of removing the basket from the molding machine is not part of the claimed invention. Maytag contends that Electrolux's construction ignores the distinction between "ejecting" and "removing" in the '809 patent.

In its initial brief, Electrolux argues that its construction is mandated by the words of the claim itself, because the ejection, i.e., the removal, of the washing machine basket from the molding apparatus is achieved by moving the cavity cover members and sidewall members away from the mold core. Electrolux contends that Maytag's construction rewrites the claim terms to mean "preparing" the basket for ejection, by performing steps "including at least" the steps stated in the claim. Electrolux argues that the plain language of the claim stands against construing "ejecting" to mean "preparing the basket to be ejected." Electrolux also argues that the Examiner rejected Maytag's present construction during the prosecution of the application for the '809 patent and that, in response, Maytag surrendered a "preparing" claim, which claimed "preparing for removal of the plastic washing machine basket from the apparatus by outward movement of sidewall assemblies with the core pins relative to the mold core," in favor of the current "ejecting" language. Thus, Electrolux argues that Maytag is
improperly attempting to recapture surrendered subject matter.

In its rebuttal brief, Maytag argues that Electrolux's construction completely ignores the context of the "ejecting" language in the '809 patent specification. First, Maytag reiterates that "ejecting" and "removing" have two distinct meanings in the context of the patent, specifically, that the washing machine basket must be "ejected" so that it can be "removed." Where Claim 6 uses "remove" and Claim 7 uses "eject," Maytag argues that the terms are presumed to mean different things, and that the patentee has also shown that it chose not to use the term "remove" in Claim 7. This same intrinsic evidence, Maytag contends, shows that there is no imperativeness in its own definition of "ejecting" as "preparing the basket for removal." Maytag also contends that Electrolux has blatantly misrepresented the prosecution history, because what the patentee did in response to the Examiner's rejection was to add a limitation requiring that the basket be removed from the apparatus after being prepared to be removed, and the Examiner withdrew his objection to the "preparing for removal" limitation. Maytag contends that the patentee subsequently cancelled the "preparing to remove" claim for unrelated reasons, but that the cancelled application claim was not the precursor of patent Claim 7. Maytag also contends that Electrolux is improperly attempting to limit the manner in which the cavity cover member is separated from the mold core.

In its rebuttal brief, on the other hand, Electrolux reiterates that Maytag's construction is improper, because it attempts to regain claim scope that was expressly surrendered during prosecution of the '809 patent and imports the limitation "at least," thereby rewriting the claim by removing the requirement that the step be performed "by" the stated movement of the molding apparatus, not "at least by" such movement. Electrolux contends that Maytag's arguments concerning "ejecting" and "removing" are a red herring, because Electrolux can accept the construction "moving the formed plastic washing machine basket from the mold core to the ejection position by the operation of moving the cavity cover member away from the mold core and shifting the sidewall members away from the mold core." What Electrolux cannot accept, however, is that this "ejecting" is accomplished by "at least" these steps, when the claim states that "ejecting" is accomplished "by" these steps.

In its surrebuttal, Maytag argues that Claim 7 states the method for making a washing machine basket "comprising," inter alia, the ejection process. Maytag asserts that it is black letter law that "comprising" before a list of elements does not exclude additional, unreified elements or method steps. Maytag contends that Electrolux is reading "comprising" to mean "consisting of," that is, to exclude any elements, steps, or ingredients not specified in the claim. Maytag contends that use of "comprising" means that the words "at least and potentially more" are inherently implied into each limitation of Claim 7. Electrolux's construction, Maytag argues, would exclude Claims 8 and 9, which are dependent claims stating additional steps in the ejection process, as Electrolux contends that the ejection must be accomplished only by the steps in Claim 7. Similarly, Maytag asserts that Electrolux's concession about "ejecting" and "removing" is just another moving target, but also cements Maytag's construction, "preparing the formed plastic washing machine basket for removal from the mold core," as the proper construction. In its surrebuttal, Electrolux reiterates that Maytag surrendered the "preparing to remove" construction to avoid rejection during prosecution of the patent by amending the claim to require actual removal of the basket and cannot now recapture such a meaning for the claim language.

The parties returned to construction of this claim at the Markman hearing oral arguments. However, the parties' oral arguments were in response to the court's proposed construction of this term in the tentative draft of this ruling circulated to the parties prior to the Markman hearing. Therefore, the court will address the parties' oral arguments below, in the context of the court's construction.

iii. Analysis. Beginning, as always, with the language of the claim in which the disputed language appears, see Nystrom, 424 F.3d at 1142 (construction begins with the words of the patent); Biagro, 423 F.3d at 1302 (same), the court finds neither party's construction of the first clause of this term to be entirely satisfactory. First, the court finds that the claim language "ejecting the washing machine basket from the apparatus," see the '809 patent, Claim 7 (emphasis added), simply will not support Maytag's construction of the term as "preparing the formed plastic washing machine basket for removal from the mold." The claim language plainly signifies something more that preparation to do something to the washing machine basket; instead, it plainly indicates doing something to or with the washing machine basket, specifically, "ejecting [it] from the apparatus." Maytag's construction does not indicate that the washing machine basket is even moved relative to the mold core, let alone "ejected" from the apparatus.

Nor is the court persuaded that nonasserted Claim 6, a dependent claim to Claim 5, necessarily teaches that "ejecting" means something different from "removing," as Maytag contends. But see Nystrom, 424 F.3d at 1143 ("When different
words or phrases are used in separate claims, a difference in meaning is presumed."). Claim 6, in its entirety, claims the following:

6. A method for manufacturing as set forth in claim 5 wherein the step of displacing the molded tub from the mold core is performed simultaneously with the step of displacing the mold side dies, and is followed by the step of extending a rod member to further remove the molded tub from the mold assembly.

The '809 patent, Claim 6 (emphasis added). The italicized language suggests a step of "dispelling" the molded tub from the mold core, which appears to be at least roughly analogous to "ejecting the washing machine basket from the apparatus," as stated in the disputed portion of Claim 7, and then indicates that the molded basket is "further removed" from the mold core by extending a rod member, which suggests that "removing" is the same as "dispelling" or "ejecting." It does not suggest that "removing" means only removal from the apparatus, while "ejecting" means displacement or separation from the mold core, nor does it suggest that the "ejecting" is only "preparation" for removal of the washing machine tub from the apparatus.

Moreover, the portions of the specification cited by Maytag do not support Maytag's construction. See Phillips, 415 F.3d at 1314-16 (the specification remains of "central importance" to determining the proper construction of the term and may even be "dispositive"). Rather, both cited portions of the specification support the notion that there is a two-step "ejection process" to remove the plastic washing machine basket, first, from the mold core and, second, from the apparatus. See the '809 patent, Summary Of The Invention, col. 2, 11. 15-23 ("After cooling of the plastic material, the various core pins are used to remove the molded plastic washing machine basket from the mold core during an ejection process by shifting the basket relative to the mold core through the interengagement of the core pins with the apertures formed in the sidewall of the basket. A stripper ring and an ejection system, are also provided to aid in removing the molded basket from the mold core."); Detailed Description, col. 6, 11. 3-48 (describing the method for removing the washing machine basket, first, from the mold core, and second, from the apparatus). The fact that the "ejection process" involves at least two steps in the Detailed Description does not necessarily mean that the first step is merely "preparation" for the other.

More specifically, the portion of the Detailed Description cited by Maytag does not support Maytag's construction of "ejecting" as "preparing the washing machine basket for removal," even though that portion appears to distinguish between steps for removal of the washing machine basket from the mold core and removal of the washing machine basket from the entire apparatus. Rather, it describes an "initial ejection phase" for the basket, involving "removing a molded article from a mold core," and a final stage in which the "basket 2 can be removed [from the apparatus] by means of a robot arm or other transport system." See the '809 patent, col. 6, 11. 3-42. Indeed, this portion of the specification describes both steps as involving "removing" the basket, albeit in the first instance from the mold core and in the second instance from the entire apparatus. Thus, Maytag is making a distinction in the use of words that is not apparent from the claims or the specification, even where the claims and the specification distinguish between the steps for "removing" the washing machine basket from the mold, and "removing" the washing machine basket from the entire apparatus. n13

n13 Because Maytag's "preparing" construction plainly is not supported by the plain language of the claims or by the specification, the court finds it unnecessary to consider the parties' dispute over whether the prosecution history reveals that Maytag surrendered a "preparing" construction.

At this point, because the court has not found that the patentee acted as its own "lexicographer" to provide a definition of "ejecting" that must govern, compare Phillips, 415 F.3d at 1316 (the patentee may act as lexicographer, and when the patentee does so, its definition must govern), and the court has not found the specification to be "dispositive" in this case, compare id. at 1314-16 (the specification remains of "central importance" to determining the proper construction of the term and may even be "dispositive"), the court finds it appropriate to look to a standard dictionary definition of "ejecting" to assist in discovering the commonly understood meaning of the word. See Free Motion Fitness, Inc., 423 F.3d at 1348 ("Phillips confirms that courts may "rely on dictionary definitions when construing claim terms" and that 'dictionaries . . . are often useful to assist in understanding the commonly understood meaning of words.") (quoting Phillips, 415 F.3d at 1322, in turn quoting Vitronics Corp., 90 F.3d at 1584 n.6). For example, definitions of "eject" include "to drive out especially by physical force," and "to throw out or off from within." See MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY (10th ed. 1995) (definitions 1 a and 2 of "eject vt"). These dictionary definitions suggest that defining "ejecting" merely as "removing," as Electrolux has proposed, misses the point concerning the manner of removal, i.e., by force.
Thus, the court proposed in its tentative draft of this ruling that the ordinary meaning of "ejecting the washing machine basket from the apparatus," even to one of skill in the art reading the term in the context of the patent claim and specification, is "forcing the washing machine basket out of the apparatus." The court found that this construction of "ejecting . . . from" in Claim 7 as "forcing . . . out of" is reinforced by the language of Claim 8, which also pertains to "ejecting the plastic washing machine basket from the apparatus," this time specifically by "forcing the plastic washing machine basket to shift relative to the mold core." However, Maytag asserted at the Markman hearing oral arguments that the court's construction should be refined to be "forcing . . . from," rather than "forcing . . . out of," because the actual claim language is "ejecting . . . from," and "out of" improperly implies complete removal from the apparatus. Electrolux concurred in this amendment of the court's proposed construction, and the court sees the wisdom of closer adherence to the claim language. Therefore, the court finds that the ordinary meaning of "ejecting the washing machine basket from the apparatus," even to one of skill in the art reading the term in the context of the patent claim and specification, is "forcing the washing machine basket from the apparatus."

At the Markman hearing oral arguments, Maytag also asserted that the construction of this term should recognize that the "ejection" is only to an "ejection position," not completely out of the apparatus, which is accomplished in a subsequent step, for example, by a robot arm, but which is not actually claimed as part of the invention. Maytag contended that simply including "ejecting . . . from . . . to the ejection position" would suffice, as the "ejection position" is plainly shown by the "solid" washing machine basket partially out of the mold in Figure 4, not by the "dashed" washing machine basket shown fully out of the mold. See the '809 patent, Fig. 4 (reproduced above, on page 18). Electrolux concurred that some indication of the "ejection position" should be part of the construction of this term, but contended that "ejection position" should be defined as "a position from which the washing machine basket can be readily removed from the mold core." Maytag, however, rejected this further definition of "ejection position," because the claim does not define "ejection position," so that Electrolux's definition would improperly import a limitation from the preferred embodiment. Electrolux rejoined that the reading of the claims must be informed by the specification, and that the specification clearly states what "ejection position" means. The court is not persuaded that any further indication of the position to which the washing machine basket is "ejected" is required. Claim 7 unambiguously states that the washing machine basket is "ejected," at this step, "from the apparatus." See the '809 patent, Claim 7. As explained above, this step is distinct from "removing" the washing machine basket from the apparatus entirely, for example, by means of a robot arm. The court declines to import a limitation from the specification into what is unambiguous claim language. See Playtex Prods., Inc., 400 F.3d at 906 ("The court must take care in its analysis, when locating in the written description the context for a disputed term, not to import a limitation from that written description. It must use the written description for enlightenment and not to read a limitation from the specification [into the construction of the term].") (citing Comark Comms., 156 F.3d at 1186-87). Therefore, the court declines to add any specification of the position to which the washing machine basket is "ejected" in Claim 7.

The second clause of this disputed term concerns what element in the claimed invention actually does the "ejecting." Claim 7 states that the "ejecting" is done "by separating the mold core and cavity cover member and shifting the cavity sidewall members away from the mold core." Maytag contends that the "ejecting" is done "by performing steps including at least separating the mold core and the cavity cover member and moving the cavity sidewall members away from the mold core." Electrolux, on the other hand, contends that the "ejecting" is done exclusively "by the operation of moving the cavity cover member away from the mold core and shifting the sidewall members." Again, the court finds neither party's construction of this clause of the term to be satisfactory.

Maytag is correct that this claim of the '809 patent uses "comprising" before a list of elements. See the '809 patent, Claim 7 ("A method of making an integral, smooth and uniformly constructed plastic washing machine basket . . . comprising . . . ."). Maytag is also correct that "comprising," when used in a patent claim, is an "open' transition phrase" that "may cover devices that employ additional, unrecited elements," in contrast to "consisting of," which is a "closed' transition phrase" that is "understood to exclude any elements, steps, or ingredients not specified in the claim." AFG Indus., Inc. v. Cardinal IG Co., Inc., 239 F.3d 1239, 1244-45 (Fed. Cir. 2001) (explaining that this has been the "consistent" understanding of these phrases by the Federal Circuit Court of Appeals). Such an understanding of "comprising" does not bring the court to the conclusion Maytag intends, however. It is clear that the "method of making an integral, smooth and uniformly constructed plastic washing machine basket" is claimed in Claim 7 as "comprising" the "injecting" and "ejecting" steps, and thus, "may cover devices that employ additional, unrecited elements." Id. However, Maytag has cited no authority for its contention that the "open' transition phrase" "comprising" must also be read into each limitation of Claim 7. In other words, the "method of making an integral, smooth and uniformly constructed plastic washing machine basket" may ...
"comprise" additional, unrecited steps besides the "injecting" and "ejecting" steps expressly claimed, but that does not mean that each step as expressly claimed is not complete in and of itself.

Moreover, the court simply is not persuaded by Maytag's assertion that reading "by" to mean simply "by" in the disputed portion of Claim 7 instead of reading "by" to mean "by performing steps including at least," as Maytag advocates--somehow reads dependent Claims 8 and 9 out of the patent. Dependent Claims 8 and 9 claim the following:

8. The method of claim 7, further comprising: utilizing the core pins to aid in ejecting the plastic washing machine basket from the apparatus with the core pins forcing the plastic washing machine basket to shift relative to the mold core as the cavity sidewall members are shifted away from the mold core due to the engagement of the core pins in the beveled apertures of the plastic washing machine basket.

9. The method of claim 8, further comprising: aiding in ejecting the washing machine basket by substantially, linearly shifting a stripper ring, that engages the terminal edge of the plastic washing machine basket, relative to the mold core.

The '809 patent, Claims 8 & 9. These dependent claims do not claim that the "ejecting of the washing machine basket" is accomplished "by" anything other than "separating the mold core and cavity cover member and shifting the cavity sidewall members away from the mold core," as claimed in the disputed portion of Claim 7. Rather, dependent Claims 8 and 9 claim the method of Claim 7 (or Claim 8, in the case of Claim 9) "further comprising" limitations that only "aid[] in ejecting the plastic washing machine basket." See the '809 patent, Claims 8 & 9 (emphasis added). In other words, the additional limitations claimed in the dependent claims only assist "separating the mold core and cavity cover member and shifting the cavity sidewall members away from the mold core" in "ejecting the plastic washing machine basket." Maytag has cited no authority for the proposition that, where a patentee claims in one claim that certain means are sufficient, in and of themselves, to accomplish an end--in this case, that "separating the mold core and cavity cover member and shifting the cavity sidewall members away from the mold core" are sufficient to "eject[] the plastic washing machine basket," as the patentee has claimed in Claim 7 of the '809 patent--it would be inconsistent for dependent claims to claim additional structures on the elements ("core pins" on the "cavity sidewall members" in Claim 8) or even additional elements ("substantially, linearly shifting a stripper ring" in Claim 9) in an independent claim that "aid" in accomplishing the same end.

Finally, the court finds unpersuasive Electrolux's construction of this last clause as "by the operation of moving the cavity cover member away from the mold core and shifting the sidewall members." First, inserting "by operation of" simply adds unnecessary words to what is unambiguously claimed as "by separating" certain members (the mold core and cavity cover member) and "by shifting" other members away from each other (the cavity sidewall members away from the mold core). Furthermore, Electrolux's construction does not take into account the relative motion of the "sidewall members" when "shifting," which according to the unambiguous claim language is "away from the mold core." See the '809 patent, Claim 7 (emphasis added).

Therefore, the court construes the disputed claim term "ejecting the washing machine basket from the apparatus by separating the mold core and cavity cover member and shifting the cavity sidewall members away from the mold core" as follows: "forcing the washing machine basket from the apparatus by separating the mold core and cavity cover member and shifting the cavity sidewall members away from the mold core."

In the present case, the first step in the infringement analysis--claim construction--is relatively straightforward. The only claim-term relevant to Defendant's motion for summary judgment is "elastic," which is used in the '474 Patent to describe the invention's stimulator and polishing rods. In interpreting the term "elastic," the Court first looks to the words of the claim itself to define the scope of the patented invention. See Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed.Cir.1995). Unless otherwise specified, words in a patent claim are given their ordinary and customary meaning. Markman, 52 F.3d at 980. As Plaintiff notes in his brief in opposition to Plaintiff's motion for summary judgment, the adjective, "elastic," is generally understood as analogous to "flexible." Thus, an "elastic" material is one that is "capable of returning to an initial state or form after deformation." WEBSTER'S II NEW RIVERSIDE UNIV. DICTIONARY 421 (1994). Claim construction does not, however, end with reference to Webster's. The Court also
considers the prosecution history of the patent to determine the meaning of the claim-term. Markman, 52 F.3d at 980. As previously discussed, the Patent Examiner amended the claim specifically to exclude nylon from the definition of "elastic." Recognizing that nylon rods are "elastic" in the commonly understood sense of the term, the Patent Examiner specified that nylon is "not considered to be 'elastic' as recited by the claim." Therefore, in the specialized context of the '474 patent, the term "elastic" is used to describe any material, other than nylon, "capable of returning to an initial state or form after deformation."

A determination of infringement requires a proper interpretation of the scope and meaning of the claim followed by a comparison of the accused product to that claim scope. Omega Eng'g v. Raytek Corp., 334 F.3d 1314, 1320 (Fed. Cir. 2003); Carroll Touch, Inc. v. Electro Mech. Sys., Inc., 15 F.3d 1573, 1576 (Fed. Cir. 1993). In the context of a grant of summary judgment of no infringement, this court reviews the entire infringement inquiry without deference. Omega Eng'g, 334 F.3d at 1320. "Summary judgment is therefore appropriate when there is no genuine issue of material fact or when, drawing all factual inferences in favor of the nonmoving party, no reasonable jury could return a verdict for the nonmoving party." Omega Eng'g, Inc. v. Liberty Lobby, Inc., 477 U.S. 242, 248, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986).

In construing claims, "this court … considers the prosecution history to determine whether the applicant clearly and unambiguously disclaimed or disavowed any interpretation during prosecution in order to obtain claim allowance." 3M Innovative Props. Co. v. Avery Dennison Corp., 350 F.3d 1365, 1371 (Fed. Cir. 2003) (internal quotations and alterations omitted); accord Omega Eng'g, 334 F.3d at 1324; Middleton, Inc. v. Minn. Mining & Mfg. Co., 311 F.3d 1384, 1388 (Fed. Cir. 2002); Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985).


The first and only time the examiner discussed the "elastic" limitation was in the Examiner's Statement of Reasons for Allowance. The examiner did not at any time reject a claim of the '149 application containing the "elastic" limitation as anticipated or obvious in view of the prior art. Other than the remarks in the Examiner's Statement of Reasons for Allowance, the prosecution history does not contain any discussion of the "elastic" limitation by either the examiner or the applicant. Nonetheless, the district court excluded nylon from the scope of "elastic." Order at 5. Specifically, the district court found that the remarks in the Examiner's Statement of Reasons for Allowance "amended the claim specifically to exclude nylon from the definition of " elastic." Id. Thus, this appeal requires this court to decide whether unilateral statements of an examiner in stating reasons for allowance can create a clear and unambiguous disavowal of claim scope and give rise to prosecution history estoppel.

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2 Claims of the '149 application containing the "elastic" limitation were rejected by the examiner for reasons not pertinent to this appeal.

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The regulations in force during the prosecution of the '149 application state:

If the examiner believes that the record of the prosecution as a whole does not make clear his or her reasons for allowing a claim or claims, the examiner may set forth such reasoning. The reasons shall be incorporated into an office action rejecting other claims of the application or patent under reexamination or be the subject of a separate communication to the
applicant or patent owner. The applicant or patent owner may file a statement commenting on the reasons for allowance within such time as may be specified by the examiner. Failure to file such a statement shall not give rise to any implication that the applicant or patent owner agrees with or acquiesces in the reasoning of the examiner.

37 C.F.R. § 1.109 (1996) (emphasis added). 3 These regulations offer the applicant an opportunity to respond to the examiner's unilateral reasons for allowance. The regulations also state, however, that the applicant does not acquiesce in those reasons if the applicant declines to respond.

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3 37 C.F.R. § 1.109 has since been amended and now appears at 37 C.F.R. § 1.104(e) (2003).

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This court has recognized that an Examiner's Statement of Reasons for Allowance "will not necessarily limit a claim." ACCO Brands, Inc. v. Micro Sec. Devices, Inc., 346 F.3d 1075, 1079 (Fed. Cir. 2003). Consequently, an applicant's silence regarding statements made by the examiner during prosecution, without more, cannot amount to a "clear and unmistakable disavowal" of claim scope. See 3M Innovative Props., 350 F.3d at 1373-74 ("Prosecution history … cannot be used to limit the scope of a claim unless the applicant took a position before the PTO. Schwing GmbH v. Putzmeister Aktiengesellschaft, 305 F.3d 1318, 1324-25 (Fed. Cir. 2002) (emphasis added). An applicant's silence in response to an examiner's characterization of a claim does not reflect the applicant's clear and unmistakable acquiescence to that characterization if the claim is eventually allowed on grounds unrelated to the examiner's unrebutted characterization."). After all, the applicant has disavowed nothing.

Procter & Gamble concedes that the law precludes drawing inferences from an applicant's decision to decline comment on an Examiner's Statement of Reasons for Allowance, yet argues that Mr. Salazar should be bound by "the message he sent to the public" by his silence.

Procter & Gamble supports its position with this court's language that, on its face, appears to support Procter & Gamble. However, a closer inspection of those cases reveals that Procter & Gamble either cites to dicta or to cases addressing issues different from this case. Procter & Gamble first quotes TorPharm Inc. v. Ranbaxy Pharmaceuticals, Inc., 336 F.3d 1322, 1330 (Fed. Cir. 2003):

"Whether the patentee chooses to dispute the examiner's view of matters is relevant to claim interpretation, for there a court may need to ascertain exactly what subject matter was actually examined and allowed by the PTO. Patent examination would serve little purpose unless the scope of the exclusive patent right correlated with the matter allowed by the PTO. Accordingly, in ascertaining the scope of an issued patent, the public is entitled to equate an inventor's acquiescence to the examiner's narrow view of patentable subject matter with abandonment of the rest. Such acquiescence may be found where the patentee narrows his or her claims by amendment, or lets stand an examiner's restrictive interpretation of a claim."

(Internal citations omitted) (emphases supplied by Procter & Gamble). TorPharm addresses a different issue from that before this court. In TorPharm, the applicant added limitations to claims to overcome an obviousness rejection. Later during litigation, the defendant discovered and showed that the added limitation was also in the prior art. The defendant asserted that the patentee had acquiesced in the obviousness of its invention by amending its claims. Therefore, according to the defendant, the patentee could not challenge its obviousness contentions. This court in TorPharm held that the applicant's " acquiescence" in the obviousness rejection by amending its claims did not preclude the patentee from contesting obviousness in litigation. Id. at 1331. Thus, TorPharm does not hold that a patentee's silence in the face of an examiner's unilateral statements in a Notice of Allowance amounts to a clear disavowal of claim scope.

Procter & Gamble next quotes the following passage from Inverness Medical Switzerland GmbH v. Princeton Biomeditech Corp., 309 F.3d 1365, 1372 (Fed. Cir. 2002):

Even where the ordinary meaning of the claim is clear, it is well-established that the prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution. A broader definition may be disclaimed, for example, where the examiner adopts a narrow definition and the applicant does not object.
The parties only contest whether the applicant's silence to the examiner's remarks in the Examiner's Statements of Reasons for Allowance governed the construction of the claim term at issue. Id. at 1373.

Moreover, the cited quotations from both TorPharm and Inverness rely on Elkay. In Elkay, the examiner rejected some claims in the application for obviousness. 192 F.3d at 978. In response, the applicant did not substantially amend the claims, but overcame the rejection by arguing around the prior art cited by the examiner. Id. At trial, the patentee discounted its own prosecution arguments that had overcome the examiner's obviousness rejection. The patentee sought to show that those arguments were insignificant and should not provide a basis to narrow the scope of the claims. Id. at 979. This court rejected the patentee's argument. In crediting the applicant's narrowing arguments during prosecution, this court noted that the examiner expressly accepted those arguments in the Statement of Reasons for Allowance. Id. Thus, Elkay holds that the Examiner's Statement of Reasons for Allowance may help show that the applicant's own arguments during prosecution constitute a clear disavowal of claim scope. See also Lemelson v. Gen. Mills, Inc., 968 F.2d 1202, 1207 (Fed. Cir. 1992) (holding that a patentee acquiescing in an examiner's rejection of a broad claim by filing narrower claims cannot later regain the broader scope previously abandoned); ACCO Brands, 346 F.3d at 1079 (relying on comments made in an Examiner's Statement for Reasons of Allowance to limit claim scope because "in this case the examiner simply repeated the arguments that the patentee had presented").

In sum, Procter & Gamble does not present any case law that stands for the proposition that an examiner's unilateral statements in a Notice of Allowance constitute a clear and unambiguous disavowal of claim scope. Once again, the applicant has disavowed nothing. This court refuses to create a rule or presumption that the applicant in this case disavowed claim scope by silence.

Procter & Gamble admits that Mr. Salazar was not required to answer the examiner's statement, but argues that "it does not follow that the patent examiner's comments then should be ignored." Although unilateral statements by an examiner do not give rise to a clear disavowal of claim scope by an applicant, it does not necessarily follow that such statements are not pertinent to construing claim terms. Statements about a claim term made by an examiner during prosecution of an application may be evidence of how one of skill in the art understood the term at the time the application was filed. However, as explained above, an applicant's silence regarding such statements does not preclude the applicant from taking a position contrary to the examiner's statements when the claim terms are construed during litigation.

The district court relied upon the same remarks in the Examiner's Statements for Reasons of Allowance to find that prosecution history estoppel bars Mr. Salazar from asserting infringement of the "elastic" element under the doctrine of equivalents. Order 2003 U.S. Dist. LEXIS 26574, [WL] at 6-7. Although the claim language was not altered in response to the examiner's remarks in the Examiner's Statement for Reasons of Allowance, the district court found that the examiner's remarks "amended" the "elastic" element of the claim. 2003 U.S. Dist. LEXIS 26574, [WL] at 7. However, as previously discussed, this court finds that the examiner's unilateral remarks did not alter the scope of the claim. 4 An examiner's statement cannot amend a claim. Consequently, the district court clearly erred in finding that claim 1 was "amended." Moreover, as the regulation and this court's reasoning above discuss, the examiner's unilateral remarks alone do not affect the scope of the claim, let alone show a surrender of claimed subject matter that cannot be recaptured under the doctrine of equivalents. Thus, this court reverses the district court's holding that prosecution history estoppel bars Mr. Salazar from asserting infringement of the "elastic" element under the doctrine of equivalents.

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4 The parties do not dispute that introducing claim 7 based on the allowable subject matter of dependent claim 3 of the '149 application was not a narrowing amendment for purposes of patentability and, therefore, does not by itself give rise to prosecution history estoppel. See Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 736, 152 L. Ed. 2d 944, 122 S. Ct. 1831 (2002) (stating that an amendment that is "truly cosmetic" does not give rise to prosecution history estoppel).

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The parties only contest whether the applicant's silence to the examiner's remarks in the Examiner's Statements of Reasons...
for Allowance amounts to a clear disavowal of claim scope as found by the district court. Because such statements do not amount to a clear disavowal of claim scope by the applicant, this court vacates the portion of the district court's claim construction excluding nylon from falling within the scope of the "elastic" element. This court affirms the remaining portion of the district court's claim construction that "elastic" means "capable of returning to an initial state or form after deformation." Whether the accused products satisfy the "elastic" limitation in the asserted claims is a factual matter that this court leaves for the district court to resolve in the first instance.

1. Claim Construction

Claims 1, 11 and 34 recite a finished product, described in the abstract and titled in the 322 patent as a "Fitted Mattress Cover." Thus this finished product is comprised of each and every element of Claim 1, or Claim 11, or Claim 34 when constructed. Each claim must be read as an integrated unit of elements which together comprise that finished product.

The parties have spent a great deal of time parsing individual words in the claims, attempting to derive discrete definitions for each word. We do not view our task as claim constructionist to require that each term or phrase be defined in the classical sense of the term "definition." Rather, it is our task to ascertain each element as it exists in the claim. It is claim construction, not element definition, which we must perform. No element of a claim has any useful meaning to the court independent of the other elements of that claim, since it is the composite of all elements of the claim which comprise the finished product. We conclude, then, that we must construe each element as it exists in dynamic operation with the other elements of the claim. Only in this way can we determine the parameters of the claim elements.

Claim 11 (as well as product claim 1 and process claim 28) recites an "elastic material." The claim recites that this elastic material is "attached to [a] layer of material in a plurality of spaced apart parallel lines of attachment..." By contrast, Claim 34 recites "elongated elastic cords," and is therefore limited to that form of elastic material. The doctrine of claim differentiation prohibits the incorporation of a narrow claim limitation ("elongated elastic cords") into a broad one ("elastic material"). Therefore "elastic material" is not limited to elongated elastic cords.

We agree with this construction of this portion of Claim 11.

4. Elastic Means

Claims 7, 8, and 10-12 of the '828 patent refer to an "elastic means" which comprises a length of rubber-like material. The specification states that the elastic means is an elastic member, also referred to as the elastic compression means, which "elastically compresses the warmth-retaining means in such a manner as to reduce the cross-sectional area of the inner cavity." ( '828 Patent, col. 1, lines 45-47; col. 2, lines 44-50; figs. 1, 3-7.) The elastic means is "preferably" provided at least in the portion of the sleeping bag near the head opening, id. col. 1, lines 48-50, and is sewn to the inner or outer cloth lining sheet, or both. Id. col. 1, lines 54-56 and 66-col. 2, line 2.

According to the specification, when the sleeping bag is used, "the elastic member serves to press the portion of the warmth-retaining bag into resilient contact with the sleeper's body." Id. col. 3, line 4-7. The elastic means contracts the warmth-retaining means into close contact with the user, so that the gap between the user's body and the inner cloth lining sheet of the warmth-retaining means is reduced, thus suppressing the movement of air in the sleeping bag and lessening the dissipation of heat. Id. col. 2, lines 3-11. The prosecution history defines the elastic compression means as follows:

[The] elastic compression means cause radial compression of the [sleeping] bag at at least one point axially along its length. This allows the interior surfaces of the bag to be brought into close conformity with the user and reduces the loss of body heat that may result from a flow of air between the user and the interior surface of the bag. This feature . . . provides localized compression to inhibit air flow longitudinally within the bag.
The elastic members also allow the user to move around, without restriction, within the inner cavity. ( '828 Patent, col. 3, lines 21-27 and lines 40-44.)

In its claim construction brief, Mont-Bell claims that when the sleeping bag is used, the elastic means, if expanded, press the warmth-retaining bag into resilient contact with the user. (Pl.'s Br. Cl. Const. at 4-5.) Mountain Hardwear challenges this because, according to Mountain Hardwear, the sleeping bag device is "already" in resilient contact with the occupant prior to any expansion. (Def.'s Opp'n at 3.) Review of the specification suggests that, although some portion of the inner cloth lining sheet is necessarily in contact with the sleeper's body prior to any expansion of the elastic means, the elastic means serves to reduce the cross-sectional area of the inner cavity such that at least some remaining gaps between the sleeper's body and the inner cloth lining sheet of the warmth-retaining means are reduced, and movement of air is suppressed.

The Court finds that the specification and prosecution history clearly define the elastic means as those lengths of rubber-like material, sewn into the lining cloths of the warmth-retaining means, which, when the sleeping bag is in use, compress the warmth-retaining means into closer contact with the user's body, reducing the cross-sectional area of the inner cavity so that the gap between the body and the inner cloth lining sheet is reduced, but also allowing less restricted movement within the bag.

For the foregoing reasons, the Court construes claims 7, 8, and 10-12 of the '828 patent as claiming sleeping bags which have elastic means (or elastic compression means, or elastic members) which, when expanded, compress the inner lining of the warmth-retaining means, reducing the cross-sectional area of the inner chamber, which is in turn defined by the inner lining of the warmth-retaining means. The inner chamber of the sleeping bags serves to accommodate the user's body; and the head opening of the bags allows users to enter and exit the bags.

4. elastic stress response

The plaintiffs propose "a measure of the elasticity of a balloon calculated using the equation [shown in the '364 patent at 5:8]." The defendants propose "a value calculated according to the definition provided at 4:66-5:13 of the '364 patent."

Both parties agree that the correct equation for the "elastic stress response" is:

\[
\frac{\text{Balloon diameter at 5 bars after inflation to 10 bars/Balloon diameter at initial 5 bar inflation-1}}{\times 100}
\]

The disagreement between the parties is whether the claim should be limited to the conditions under which this measurement is made. The plaintiffs' proposal is that the term means the above equation without any qualification. The defendants argue that the following language from the specification should be used to define this term: "Elastic stress response is determined by inflating a balloon to 5 bars at about 37 [degree] C and measuring the balloon's diameter. The balloon is then inflated to a pressure of 10 bars in about 20 seconds and held for an additional 20 seconds at 37 [degree] C. The balloon's diameter is then measured. The internal pressure of the balloon is then decreased to 5 bars and the 'new' 5 bar diameter of the balloons is determined." '364 Patent at 4:66-5:5.

The plaintiffs contend that the passage cited by the defendants is just an embodiment and it would be improper to read in these limitation since the defendants do "not even attempt to apply the SciMed test." Plaintiffs' Reply Brief at 14. The defendants argue that a construction consisting of only the equation would be a partial and incomplete construction.

The court agrees that "[a] reasonable reading of the entire paragraph starting at col. 4, line 66 of the '364 patent… that the measurement conditions… are part of the definition." Defendants' Response Brief at 28. The phrase "for this invention" precedes the formula; however, the formula's parameters are explicitly defined prior to this phrase. Reading the paragraph as a whole, the patentee has chosen to define a measurement in specific terms with specific test conditions. In other words, the patentee is his own lexicographer for the term "elastic stress response."

Accordingly, the term "elastic stress response" means "a value calculated using the equation [shown in the '364 patent at
5:8] determined by inflating a balloon to about 5 bars at or about normal human body temperature and measuring the balloon's diameter. The balloon is then inflated to a pressure of about 10 bars in about 20 seconds and held for about an additional 20 seconds at or about normal human body temperature. The balloon's diameter is then measured. The internal pressure of the balloon is then decreased to about 5 bars and the 'new' 5 bar diameter of the balloons is determined."

12. Elastically Bendable Portion

Because the parties could not agree, they requested that the Court interpret "elastically bendable portion" as it appears in '836 patent claims 1 through 7, and claim 26. Unilin states "elastically bendable portion" means "a resilient portion of a coupling part." (Unilin Open. Br. 25-26.) Alloc states it has no substantial disagreement. (Alloc Resp. Mem. 13.)

Claim 1 states in pertinent part:

at least one of said coupling parts including an elastically bendable portion having a relaxed unbent position, and which, when in a coupled condition, is at least partially bent out of its normal relaxed position and thereby provides said biasing force; wherein the elastically bendable portion of said one of said coupling part comprises a lower lip defined at least in part by a lower side of the groove of said coupling parts, said lower lip cooperating with a mating portion of a tongue of a cooperating coupling part; wherein said lip when bent extends in a downward direction relative to the panel underside when the panel is coupled by cooperative complementary coupling parts to another one of said panel; wherein the panel comprises a core comprising a material selected from the group consisting of HDF and MDF board; said lower lip is substantially formed of said core; one of said locking elements comprises a recess in said lower lip, said recess having a lowermost bottom area; said groove having a deepest point within the panel; and wherein said elastically bendable portion of the lower lip comprises a portion of said lower lip located between the deepest point of said groove and the lowermost bottom area of said recess; wherein the bendable portion of the lower lip includes a side wall of said recess that slopes downwardly in a direction extending from a distally outer area of said lip towards a proximally inner area of said lip.

('836 patent, 14:12-40)(emphasis added.) Unilin's proposed construction is consistent with the language of the claims and the specification. Therefore, the Court adopts the definition of "elastically bendable portion" as meaning "a resilient portion of a coupling part."

G. Term 8: "elastically return to a predetermined shape"

The Court finds that it need not construe either the phrase "elastically return to a predetermined shape" in claims 17 and 28 of the '291 patent, or the related phrase "elastically returning to a predetermined shape" in claim 1 of the '291 patent.

AGA and the University have two distinct disagreements with respect to this claim language. First, they disagree about the meaning of "predetermined shape." According to AGA, "predetermined shape" means "a shape that is determined prior to placement of the device in the catheter." Am. JCCS Sched. B at 24. But a "predetermined" shape is necessarily a shape determined in the past, and thus AGA's proposed construction, at first glance, seems to add nothing to the claim language. A jury will be able to determine whether, once an accused device is deployed in a human body, that device returns to a shape that was determined beforehand --i.e., a predetermined shape.

Both the University and AGA, however, seem to interpret AGA's proposed construction as imposing some kind of exactness requirement. In other words, the parties seem to believe that, if AGA's proposed construction were adopted, it would require the "predetermined shape" to be a shape that is determined with great precision before the device is deployed. See Univ. Opening Br. at 41; AGA Opening Br. at 43-44. The Court doubts that AGA's proposed construction of "predetermined shape" would in fact impose an exactness requirement. More importantly, though, the patent does not support imposing such a requirement. The patent covers a device made of flexible materials, to be deployed inside a human heart. It is obvious to a
layman that the device's two disks, when deployed, will have to conform to nearby human tissue and will not be ideal, Platonic circles. Because AGA's proposed construction either does nothing at all (on the Court's interpretation) or imposes an exactness requirement not supported by the patent (on the parties' interpretation), the Court rejects AGA's proposed construction.

AGA and the University also disagree, with respect to claim 1 only, about what portion of the device must "elastically return" to the predetermined shape. According to AGA, the device's "membrane" itself must exert a force to return to a predetermined shape. AGA Opening Br. at 42. That is, AGA contends that claim 1 covers only a device made with a membrane that is itself elastic, and not a device made with, say, a non-elastic cloth membrane attached to an elastic frame.

The Court agrees with AGA that the thing in claim 1 that elastically returns to a predetermined shape is indeed the membrane. The relevant claim language covers a "disk comprising a . . . membrane capable of being collapsed for passage through a catheter and elastically returning to a predetermined shape . . . ." '291 patent claim 1. The words "capable of" modify "membrane," and the phrases "being collapsed" and "elastically returning" are parallel. Thus, it is the "membrane" in claim 1 that is "capable of being collapsed . . . and [capable of] elastically returning . . . ."

It is not obvious from the language of claim 1, however, that a membrane that is "capable of . . . elastically returning" to a shape must be a membrane that is capable of elastically returning to a shape itself-- that is, without any "help" from a frame or other external force -- as AGA would have it. One could say that a membrane "elastically returns" to a shape when the membrane is part of a structure that, as a whole, "elastically returns" to a shape. Suppose, for instance, that a small child is part of a family that is traveling by car across the country, and the child's father is doing all of the driving. It would be natural to say that the child is "driving cross-country," even though only the father is actually "driving," and even though the child is an infant.

In light of the '291 patent's specification, the Court finds that claim 1 of the '291 patent requires a membrane that elastically returns to a predetermined shape either through its own force or through some external force. The preferred embodiment that is discussed at greatest length in the '291 patent is a device with a spring-like external frame and a fabric-type membrane. See '291 patent col. 4:56 to col. 8:40. In such a device, the elasticity may (depending on the membrane) come from the frame, and not from the membrane (which might be made of "silk" or another inelastic fabric, '291 patent col. 4:60-67). Because the '291 patent is so clearly intended to cover a device with an elastic frame and an inelastic membrane, the Court rejects AGA's proposed construction of the phrase "elastically returning."
having a minimum of 3% heat-recoverable shape-memory, a yield strength greater than 30,000 psi and at least 3% elasticity.

1 The citation in the text is to the '955 patent at column 13, line 33 to column 14, line 5.

Each party has advanced a different interpretation of the claim term "3% elasticity." Plaintiffs assert that "elasticity" describes "the ability or tendency of a given material to recover or "spring-back" to its original shape, partially or completely, after a deforming force is removed." Pl. Mem. at 9. Defendants argue that the term elasticity describes the ability of a material to return completely and spontaneously to its precise original shape after a deforming force is released. Def. Mem. at 5.

As demonstrated by the undisputed evidence at trial, metallurgists use specific techniques for measuring the elasticity of metals. Simply put, the metal being tested for elasticity is pulled, and the pulling force, or stress, is then released. Measurements are made of the degree to which the metal is strained, or stretches when pulled, and the degree to which it recovers from that strain, or returns to its original shape, after the stress is released.

The parties agree that data developed by applying these measurement techniques are typically expressed in graphic form. These graphic depictions of elasticity are referred to as stress-strain curves. The stress to which the metal being tested is subjected, or the force with which it is pulled, is measured on the vertical axis of a stress-strain curve. The horizontal axis is used to plot the strain which the metal being tested exhibits at any given amount of force, or the degree to which it stretches when pulled and returns to its original shape when the pulling force is reduced or released. The strain is measured as a percentage of the tested item's original length. For example, a metal rod 100 centimeters long which stretches to 103 centimeters when pulled with 1000 pounds per square inch of force is said to exhibit 3% strain when subjected to a stress of 1000 pounds per square inch. Similarly, if the same rod, when pulled with a force of 1200 pounds per square inch stretched to 105 centimeters, the rod would be said to exhibit 5% strain when subjected to a stress of 1200 pounds per square inch. These percentages are calculated by dividing the change in the length of the rod (3 centimeters and 5 centimeters, respectively) by the original length of the rod, which in this example is 100 centimeters.

The difference in the definitions of elasticity advanced by the parties concerns the behavior exhibited when the stresses on the rod are released. Plaintiffs assert that the term 3% elasticity refers to the ability of a metal item to "spring back" or recover in an amount equal to 3% of its original length after being subjected to stress. For example, to exhibit 3% elasticity as interpreted by plaintiffs, a metal rod 100 centimeters in length, after being stretched to a length of 105 centimeters when stressed, must, when the stress is released, "spring back" by an amount equal to 3% of its original length, or 3 centimeters, to a length of 102 centimeters.

According to defendants, 3% elasticity requires that a metal item return precisely to its original shape after being strained by at least 3% of its original length. In other words, to exhibit 3% elasticity as interpreted by defendants, a rod 100 centimeters...
necessarily complete, power to return to their original shape nevertheless exhibit elasticity.

return to its original shape is extremely great." Tr. 1640-41. Suzuki's definition suggests that materials with great, but not necessarily to return precisely to its original dimensions. Tr. 571 (Krumme), 966-67, 1207 (Beshers). Even Suzuki, who was plaintiffs' trial expert, testified that the term elasticity, particularly when used in the context of shape memory alloys like those described in the suit patents, refers to the ability of material to spring back towards its original shape, and not those materials with great, but not necessarily to return precisely to its original dimensions. Tr. 571 (Krumme), 966-67, 1207 (Beshers). Even Suzuki, who was plaintiffs' trial expert, testified that the term elasticity, particularly when used in the context of shape memory alloys like those described in the suit patents, refers to the ability of material to spring back towards its original shape, and not necessarily complete, power to return to their original shape nevertheless exhibit elasticity.

Prior to trial, plaintiffs moved for summary judgment on infringement and asserted, among other things, that defendants' frames exhibited more than 3% elasticity over the sixty-degree temperature range required by claim 1 of the suit patents. By Memorandum and Order dated November 21, 1994, this Court denied plaintiffs' motion for summary judgment, and permitted the parties to proceed to trial and argue their competing contentions about the meaning of the disputed claim term to the jury. The verdict returned after trial indicates that the jury accepted plaintiffs' definition of the term.

After the trial of this case, the Federal Circuit issued its decision in Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed. Cir. 1995), cert. granted, U.S. , 116 S. Ct. 40 (1975). The Court held in Markman that it was improper to allow a jury to decide the meaning of disputed claim terms. Although the Court in Markman acknowledged that some of its prior holdings indicated that "claim construction may have underlying factual inquiries that must be submitted to a jury," 52 F.3d at 976, it nevertheless held that the meaning of a patent claim is a question of law and, as such, must be resolved by the Court.

This Court's Memorandum and Order denying plaintiffs' motion for summary judgment on infringement addressed the parties' dispute over the meaning of the term 3% elasticity. After reviewing the specifications and the prosecution history of the suit patents, the definition advanced by defendants was determined to be correct. As this Court has made clear in the course of prior proceedings in this action, however, because the decision was to deny summary judgment, it has little or no precedential significance. Moreover, since rendering that decision, the Court has had the opportunity to review the specifications and prosecution history at great length, to hear testimony from experts about the meaning of technical terms, including elasticity, and to consider additional arguments made by the parties, both at trial and in connection with the motions now pending. Accordingly, the meaning of the patent terms in dispute is now reviewed de novo, without regard or reference to the discussion in the Memorandum and Order issued prior to trial.

The Federal Circuit's decision in Markman, which now requires this Court to decide the meaning of the claims in the patents in suit, offers guidance to Courts attempting to construe technical terms in a patent claim. The primary sources for determining the meaning of a patent claim are the claim language itself, the patent specification and the prosecution history. In addition, the Court in Markman specifically held that "expert and inventor testimony … may be helpful to explain scientific principles, the meaning of technical terms, and terms of art that appear in the patent and prosecution history." 52 F.3d at 979-81.

B. The Language of the Patent Claims

The claims of the suit patents, quoted above, use the terms 3% elasticity and 4% elasticity without elaboration. Accordingly, standing alone, the language of the patent claims is of no assistance in resolving the definitional dispute between the parties.

Defendants assert that the commonly understood ordinary meaning of the term "elasticity" supports the definition they advance. In their memorandum, defendants recount the trial testimony of several witnesses, including John Krumme, Dr. Daniel Beshers, and Yuichi Suzuki, each of whom presented their own interpretation of elasticity. Def. Mem. at 6 n.6. Defendants assert that the testimony cited in their memorandum establishes that the term elasticity is typically used to refer to the ability of a strained material to return to its original shape when the stress causing the strain is removed.

The testimony relied upon by defendants, however, is taken out of context. Krumme, one of the two inventors, and Beshers, plaintiffs' trial expert, testified that the term elasticity, particularly when used in the context of shape memory alloys like those described in the suit patents, refers to the ability of material to spring back towards its original shape, and not necessarily to return precisely to its original dimensions. Tr. 571 (Krumme), 966-67, 1207 (Beshers). Even Suzuki, who was called as a witness on behalf of the defendants at trial, described elasticity as "meaning that the recovery power for it to return to its original shape is extremely great." Tr. 1640-41. Suzuki's definition suggests that materials with great, but not necessarily complete, power to return to their original shape nevertheless exhibit elasticity.
More importantly, the real issue of claim interpretation presented by this case is not the meaning of elasticity in the abstract, but rather the meaning of a measure of elasticity expressed as a percentage. In other words, whatever elasticity may mean, the term 3% elasticity clearly means something less than, for example, 100% elasticity. Thus, even assuming that defendants are correct in their assertion that the term elasticity refers in general to the ability of a material to return to its original shape, the question of what behavior constitutes 3% elasticity remains.

C. The Specifications of the Patents in Suit

As discussed above, elasticity measurements are frequently displayed in graphic form as stress-strain curves. The suit patents contain several such curves, labelled as figures 2A through 2H. The parties each contend that the graphs contained in the suit patents, as well as the patent specifications, support their respective definitions of the term 3% elasticity.

Footnotes

3 The same graphs appear in both the '112 and '955 patents.

4 The term "specifications" is used in the plural to refer to the specifications of both the '112 and '955 patents.

Defendants point in particular to figures 2F and 2H, and to passages taken from the specifications indicating that these graphs illustrate the properties of the invention described in claim 1 of the suit patents. Figures 2F and 2H depict materials which, having been strained by approximately 6% of their original length, return completely to their original shape when the stress upon them is released. The use of these figures in the patent specifications thus lends strong support to defendants' definition of the term 3% elasticity. Defendants further correctly assert that the patent specifications suggest that the behavior illustrated in figures 2F and 2H -- spontaneous return precisely to original shape from strains of up to 6% -- can be achieved by the claimed invention at temperatures as low as -20 [degrees] C.

While it is certainly appropriate to consider a patent specification when construing a disputed claim term, it is not proper to read limitations into a claim from the specification. SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1121 (Fed. Cir. 1985); see also Markman, 52 F.3d at 980 (noting that the specification "does not delimit the right to exclude. That is the function and purpose of the patent claims."); Electro Medical Sys. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994)(holding that "claims are not to be interpreted by adding limitations appearing only in the specification"). Figures 2F and 2H are therefore relevant only insofar as they inform the meaning of the term "3% elasticity," and not simply because the patent specifications in the suit patents suggest -- even if inaccurately -- that the behavior which these curves illustrate can be achieved by the claimed invention at temperatures as low as -20 [degrees] C.

Footnotes

5 In considering whether the discussion of figures 2F and 2H in the specifications inaccurately implies that the claimed invention can achieve a spontaneous return to original shape from 6% strains over a sixty-degree temperature range, it should be noted that the specifications state that figures 2F and 2H represent "ideal characteristics." 112:4:45-46; 955:5:19.
conclusion that 3% elasticity requires that a component return spontaneously and completely to its original shape.

6 Although there is a mention of the term "6% elasticity" at 955:6:24, it is clear from the context that this term is not being used to refer to the behavior depicted in figures 2F and 2H. Moreover, the complete phrase, "greater than 6% elasticity," could not possibly be describing the behavior shown in figures 2F and 2H, because these figures illustrate behavior which, even by defendants' definition, would constitute slightly less than 6% elasticity.

In fact, when carefully reviewed in their entirety, the specifications and figures in the suit patents in fact provide persuasive support for plaintiffs' definition of 3% elasticity. This support derives in particular from the language of claim 5 and the discussion of figure 2G in the specifications. In both the '112 and '955 patents, claim 5 uses the same term -- "3% elasticity" -- which appears in claim 1 of the '955 patent. 7 When describing the behavior constituting 3% elasticity in the context of claim 5, the specifications use this term precisely as do plaintiffs in connection with the motions now pending before the Court. For example, the '112 patent describes an embodiment of claim 5 which provides "a fully recoverable strain potential of at least 6%." 112:5:45-46. In the text immediately following, it is further explained that this 6% recovery is comprised of "a minimum of 3% heat-recoverable shape-memory … and at least 3% elasticity." 112:5:53-55. Thus, the '112 patent specification describes a component as exhibiting 3% elasticity even though the component retains a 3% strain recoverable only with the application of heat.

7 As noted above, claim 1 of the '112 patent uses the term "4% elasticity," but is in all other material respects identical to claim 1 of the '955 patent.

Similarly, the '955 patent, in discussing an embodiment of claim 5, describes a component which has been subjected to a 7.5% strain. This strain is completely recovered when, "upon unloading[,] the component gives 3.7% elastic spring back and imparts 3.8% shape memory recovery when heated." 955:6:60-62. The specification further states that "from the above, it can be seen [that eyeglass frame components may be made] . . . having a minimum of 3% heat-recoverable shape-memory . . . and at least 3% elasticity." 955:7:10-14. The reference to "3.7% elastic spring back" is the only behavior described in the text which could possibly support the conclusion that "from the above . . . 3% elasticity [can be seen]." A second embodiment of claim 5 using similar language and providing similar support for the definition of 3% elasticity advanced by plaintiff is described at 955:6:63-955:7:9.

Clearly, then, the 3% elasticity described in the cited text of the '112 patent, and the 3.7% "elastic spring back" described in the cited text of the '955 patent, are provided as examples of the 3% elasticity required by claim 5. It is also clear that this elastic behavior must be combined with at least 3% "heat-recoverable shape-memory" behavior before the components, having been subjected to strains of 6% and 7.5%, respectively, return to their original shape. Thus, the term "3% elasticity," as it is used in claim 5, plainly does not require that a component return spontaneously and completely to its original shape. The same claim term, 3% elasticity, is of course used in claim 1, and cannot be consistently construed to require that a component spontaneously return to zero.

Defendants contend that the portions of the specifications discussed above do not support plaintiffs' definition of 3% elasticity. Rather, according to defendants, the heat-recoverable shape-memory and elasticity described in claim 5 are separate and distinct characteristics, each of which must be measured independently by straining a component to about 3% of its original length.

The cited portions of the specifications discussed above, however, demonstrate that the shape-memory and elasticity components of claim 5 are intended to operate in tandem upon an eyeglass frame subjected to strains in excess of 6% of original length. This construction of the shape-memory and elasticity elements of claim 5 is further supported by the references to figure 2G in the specifications of the suit patents. Figure 2G depicts a component which has been strained.
slightly less than 8%. When the deforming stress is released, the component springs back by almost 5%, with a strain of about 3% remaining. This remaining 3% strain is then recovered with heat, which returns the component to its original shape. Consistent with plaintiffs' definition of the term 3% elasticity, the specifications describe the "spring back" of 5%, from 8% strain to the remaining 3% strain, as illustrating the component's elastic properties. 112:3:23-24; 955:3:47-48. Furthermore, the specifications make it clear that figure 2G is intended to illustrate the behavior of a component covered by claim 5. 955:6:26, 35.

As discussed above, the '955 specification uses the phrase "spring back" to describe the behavior of a component which meets the requirement of 3% elasticity in claim 5. Moreover, the suit patents each employ figure 2G, which illustrates only a partial return toward original shape absent heat, to depict the "at least 3% elasticity" described in claim 5. It therefore follows that the term 3% elasticity as used in claim 5 refers not to the spontaneous return of a component to its original shape, but rather to the ability of a component to "spring back" by an amount equal to 3% of its original length. Moreover, the term is used in claim 5 precisely as it is used in claim 1, and there is no reasoned basis to apply different definitions to the same term used in two claims of the same patent. See Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed. Cir. 1995), petition for cert. filed, 60 U.S.L.W. 3250 (Sept. 19, 1995) (No. 95-475); Fromson v. Advance Offset Plate, Inc., 720 F.2d 1565, 1570 (Fed. Cir. 1983) (holding that "evidence of the scope of a particular claim can be found on review of other claims"). This Court concludes, therefore, that the specifications support plaintiffs' contention that the 3% elasticity requirement in the claims of the suit patents is satisfied by a component which, upon the application of force, is strained in excess of 3% of its original length, and which, when the deforming force is released, springs back by at least 3% of its original length.

D. The Prosecution History

Defendants next assert that the prosecution history of the suit patents supports their definition of 3% elasticity. Like a patent specification, a patent's prosecution history may properly be considered when construing the language of a claim, but may not be used to vary the claim's limitations. Markman, 52 F.3d at 980. Accordingly, as with the specifications, the prosecution history is relevant only insofar as it indicates how the term "3% elasticity" was defined by the inventors and understood by the Patent and Trademark Office (the "PTO"). To the extent the inventors asserted during the prosecution history that their invention could achieve results even more impressive than those described in the patent's claims, such assertions, whether accurate or not, are not in and of themselves relevant to the claim construction question defendants now raise.

Defendants rely upon cited passages from several documents generated during the prosecution history in which the inventors emphasized the highly elastic properties claimed for their invention by referring to figures 2F and 2H and to the term "optimized elasticity." Defendants argue that these passages demonstrate that the inventors attempted to persuade the patent examiners that frames made pursuant to their patent would spontaneously return to their original shape when a deforming stress was released.

The documents cited by defendants, however, do not purport to define the claim term 3% elasticity or otherwise express a measure of elasticity in percentage terms. 8 Indeed, when describing pseudoelastic behavior, the inventors did not refer to a percentage of elasticity, but instead used the phrase, "the strain will spontaneously return to zero." PX 3 at 14. 9 Similarly, when describing the behavior depicted in figure 2H during the prosecution history, the inventors did not describe that figure as illustrating 6% elasticity, but rather as depicting the behavior of "totally elastic" material. Id. Thus, when describing the ability of an item to return to its original shape -- a behavior characteristic of pseudoelasticity and depicted in figure 2H -- the inventors used terminology, such as spontaneous return to zero or total elasticity, which does not express elasticity as a percentage. The terms used by the inventors during the prosecution history thus support the conclusion that the claim terms, which do express elasticity as a percentage, do not require the complete and spontaneous return of an item to its original shape.

--- Footnotes ---

8 Defendants argue that the inventors used the term optimized elasticity to mean the same thing as pseudoelasticity, and defined pseudoelasticity as the spontaneous return to original shape. Defendants correctly describe the inventors' definition of pseudoelasticity. 955:1:48-55. Defendants' contention that the inventors used optimized elasticity to mean the same thing as pseudoelasticity, however, is incorrect. The '955 patent specification specifically states that optimized elasticity is achieved by combining the pseudoelastic and superelastic properties of shape-memory alloys, and emphasizes that the terms
pseudoelasticity and superelasticity refer to different properties. 955:1:36-44; 955:2:29-33. Similarly, at least once during the prosecution history, the inventors described optimized elasticity as a combination of pseudoelasticity at higher temperatures and other properties at lower temperatures. This is reflected in a document cited by defendants, in which the inventors discussed

the optimized elasticity combination of properties which utilize the soft pseudoelastic effect in concert with a resistance to turning weak and staying bent when deformed at a temperature below the material's transformation temperature.

DX 17B at 6-7. 9 PX 3 refers to plaintiffs' trial exhibit 3. DX is used herein to refer to defendants' trial exhibits.

The only discussion of elasticity expressed in percentage terms which the Court has found among the prosecution history documents cited by the parties supports plaintiffs' definition of the term 3% elasticity. In a request for reexamination, the inventors discussed a prior art reference referred to as the "Mercier article." The inventors described a stress-strain curve in the Mercier article as illustrating a component strained by a deforming force to 11.1% which returns, or springs back, approximately 8.1% after the deforming stress is released. The request for reexamination describes this curve as illustrating 8.1% elasticity at the expense of a 3% retained strain. PX 3 at 19. (The 3% retained strain refers to the difference between the 11.1% strain to which the component was subjected and the 8.1% spring back exhibited by the component when the stress upon it was released.) Clearly, the inventors' statement to the PTO, describing a component which recovered only partially when stress was released as exhibiting 8.1% elasticity, supports plaintiffs' interpretation of 3% elasticity.

Defendants argue in their reply that the inventors' discussion of Mercier was based upon an inaccurate reading of the defendants' position during the reexamination proceeding. More specifically, defendants contend that it was their position on reexamination that the Mercier curve did not depict any retained strain. Def. Reply at 23 n. 15. Even assuming that defendants are correct in this regard, plaintiffs' misunderstanding has no bearing on the proper construction of the claim term in dispute. The significance of the statements made by the inventors during the prosecution history about the Mercier curve does not depend upon the accuracy or persuasiveness of their arguments about the curve, but instead upon the meaning attributed by the inventors to the expression of elasticity in percentage terms. It is clear that, in the passage from the prosecution history cited above, the inventors argued to the PTO that the curve in Mercier depicted a retained strain, yet nevertheless characterized that curve as illustrating 8.1% elasticity. The description of a stress-strain curve which is understood to depict a component which only partially returns to its original shape as exhibiting 8.1% elasticity supports the definition of 3% elasticity advanced by plaintiffs.

E. The Extrinsic Evidence At Trial

As noted above, the Court in Markman specifically held that expert testimony may be helpful to explain scientific principles and the meaning of technical terms. 52 F.3d at 979-81. Dr. Daniel Beshers, who has been a professor of metallurgy and material science at Colombia University since 1957, testified for plaintiffs as an expert at trial. In the course of his testimony, Beshers stated that elasticity expressed as a percentage, particularly when discussing shape memory alloys, is widely understood to refer to the ability of a component to "spring back" upon the release of stress to a degree indicated by the percentage of elasticity stated. Tr. 966-67, 1157, 1160. 10 Beshers' expert opinion thus supports the definition of 3% elasticity advanced by plaintiffs.

10 The reference at Tr. 1157:21 to 97 millimeters should read "197 millimeters."

Defendants argue that, because Beshers is not one of ordinary skill in the art, his expert opinion should have no bearing upon the construction of the disputed claim language. Beshers, however, testified that the definition he gave at trial was "universal" and that "everybody would agree [to it]," and that it was "widely recognized" as an accurate definition in the context of shape memory alloys. Tr. 1157, 1160. Moreover, Beshers testified that he had little experience with or specialized knowledge of shape memory alloys and their properties before he was retained by plaintiffs, he devoted special study to the
subject, particularly in connection with the fabrication of eyeglass frames, after plaintiffs engaged him. Tr. 949-50, 952. Presumably, one of ordinary skill in the art -- a fabricator of metal eyeglass frames lacking detailed familiarity with shape-memory alloys -- would undertake a similar course of study and investigation. Finally, defendants offered no evidence at trial that one of ordinary skill in the art would, by virtue of training and experience, understand the term 3% elasticity differently than did Beshers. 11 Accordingly, I conclude that it is appropriate to consider Beshers' expert testimony about the meaning of the term 3% elasticity.

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11 The only expert testimony about the meaning of elasticity presented by the defendants at trial was the testimony of Walter Johnson. Like Beshers, Johnson had little or no experience with shape memory alloys prior to being retained in this case, and had no experience whatsoever with the fabrication of eyeglass frames. Tr. 2224-25. Accordingly, Johnson was no more one of ordinary skill in the art than was Beshers. Moreover, Johnson opined during his testimony in any event that "there [are] as many definitions of elasticity as there are metallurgists." Tr. 2236.

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* * *

Based upon the language of the claims of the suit patents, the specifications and drawings they contain, the history of their prosecution and the extrinsic evidence at trial, this Court concludes that the term 3% elasticity is properly construed to refer to the behavior exhibited by a component which, when strained by a deforming force to a length in excess of 3% of its original length, springs back by at least 3% of its original length when the force is released. Defendants' contention that the evidence at trial was insufficient to support the jury's finding that their products exhibited 3% elasticity as required by claim 1 is premised upon the definition of that claim term advanced by defendants. That definition having been rejected for the reasons stated above, defendants' motion for judgment as a matter of law on this ground is denied.

II.

As seen above, the claim construction issue in this case centers on the "elasticity" limitations of independent claims 1 and 5 of the '112 and '955 patents. On appeal, Tura advances the same argument it raised before the district court. Thus, it contends that the "greater than 3% elasticity" limitation in claim 1 of the '955 patent describes the ability of an eyeglass frame component to return completely and spontaneously to its original shape after being stretched by more than 3% of its original length. Under Tura's construction of claim 1, the concept of "elasticity" requires complete recovery with zero residual strain - at least up to the point at which the component is strained to such an extent that it exceeds what we may call its "elastic limit." When the component is stretched to such an extent that it exceeds its elastic limit, it is permanently deformed. CVI/Marchon urges that the district court's claim construction - under which complete recovery to zero is not required - is correct.

In determining the proper construction of a claim, "the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification, and if in evidence, the prosecution history," Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996). We have described such intrinsic evidence as "the most significant source of the legally operative meaning of claim language." Id. Extrinsic evidence (e.g., expert testimony) also may be used in claim construction. Id. However, when "an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term," it is improper to rely on extrinsic evidence. Id. at 1583, 39 U.S.P.Q.2D (BNA) at 1577.

As used in the '112 and the '955 patents, respectively, 4% and 3% "elasticity" are technical terms. We have stated that "[a] technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent and the prosecution history that the inventor used the term with a different meaning." Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578, 38 U.S.P.Q.2D (BNA) 1126, 1129 (Fed.Cir. 1996) Thus, "it is always necessary to review the specification to determine whether the inventor has used
any terms in a manner inconsistent with their ordinary meaning." Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2D (BNA) at 1577.

The claims of the '112 and '955 patents do not define the terms 4% and 3% "elasticity." We thus turn to the specifications. 5 In that regard, the patent drawings are highly relevant in construing the elasticity limitations of the claims. Of particular importance are Figures 2 F. 2G, and 2H, which are reproduced below:

The figures are graphs depicting, in the form of stress-strain curves, stress-strain behavior at different temperatures (T). In each graph, the stress (or the pulling force) to which the alloy being tested is subjected is measured on the vertical axis. The horizontal axis plots the strain which the alloy being tested exhibits at any given amount of stress. In other words, the horizontal axis shows the degree to which the alloy stretches when it is pulled and the degree to which it returns to its original shape when the pulling force is reduced or released. '112, col. 3, lines 20-27; '955, col. 3, lines 43-54. Figures 2F and 2H show, up to a certain limit, complete release of stress causing strain to return to zero. Although for different temperature ranges, Figures 2F and 2H both show an alloy (i) being subjected to stress resulting in a strain of approximately 6% and (ii) then returning to its original shape when the stress is released. Figure 2G shows partial return of strain to zero. Figure 2G shows an alloy (i) being subjected to stress resulting in a strain of between 6 and 8% and (ii) then returning to between 3 and 4% of its original shape when the stress is released. Figure 2G also shows strain returning to zero upon the application of heat. Referring to Figure 2H above, the specifications for both the '112 and the '955 patent state as follows: "Thus, throughout the temperature region of interest for eyeglass frames, the component acts completely elastically up to strains of 6% or more." '112, col. 5, lines 24-26; '955, col. 5, line 68-col. 6, line 3. The specification for the '955 patent continues in the immediately following paragraph to give an example of an embodiment of claim 1. The example states that a "suitable component" will "support a stress of over 150 ksi . . . at 4% tensile strain and show complete elastic spring back at room temperature." '955, col. 6, lines 5-14. The specification concludes the discussion of the indicated example by stating that "from the above, it can be seen that an eyeglass frame may be constructed with portions thereof exhibiting optimized elasticity, such portions . . . having greater than 6% elasticity over a temperature range from -20 C. to +40 C." '955, col. 6, lines 19-25.

5 The specification for the '112 patent contains a typographical error. Under the heading "DESCRIPTION OF THE PREFERRED EMBODIMENT," the reference in column 4 at line 64 to "FIG. 2g" should be to "FIG. 2f." This is clear from the context.

The specification for the '112 patent contains no examples of the claim 5 embodiment. Each example of a claim 5 component in the '955 patent specification exhibits some degree of retained strain, which is removed by heating. The first example is of a component which, after having been subjected to a 7.5% strain and then having the strain released, "gives 3.7% elastic spring back and imparts 3.8% shape-memory recovery when heated." '955, col. 6, lines 60-62. The second example is of a component which, when subjected to a 7.25% strain and then having the strain released, "gives 5.0% elastic spring back and imparts 2.25% shape-memory recovery" when heated. '955, col. 7, lines 3-5. Figure 2G above depicts the behavior of an alloy possessing both "elasticity" and "heat-recoverable shape-memory."

We turn next to the prosecution history. We have stated that "arguments made during prosecution regarding the meaning of a claim term are relevant to the interpretation of that term in every claim of the patent absent a clear indication to the contrary." Southwall Techs. Corp. v. Cardinal IG Co., 54 F.3d 1570, 1579, 34 U.S.P.Q.2D (BNA) 1673, 1679 (Fed. Cir.), cert. denied, 133 L. Ed. 2d 424, 116 S. Ct. 515 (1995). Prosecution history "limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Id. at 1576, 34 U.S.P.Q.2D (BNA) at 1676. See also Biodex Corp. v. Loredan Biomedical, Inc., 946 F.2d 850, 863, 20 U.S.P.Q.2D (BNA) 1252, 1282 (Fed. Cir. 1991) (a particular interpretation of a claim can be disclaimed by the inventor during prosecution).

We consider first statements made by the inventors during the prosecution of the '112 patent. Claims 1-16 in the application for the '112 patent originally were rejected by the examiner as being unpatentable over various Japanese patent references. In that regard, what was then an amended version of claim 1 was rejected under 35 U.S.C. § 103 as obvious over Japanese reference P56-89717 (the '717 reference). The '717 reference teaches eyeglass frames having at least a portion made from shape-memory alloy. It also teaches work-hardening as part of the fabrication process. The applicants amended claim 1
In its discussion of Mercier, CVI referred to excerpts from Mechanical Metallurgy by G.E. Dieter, Jr. (McGraw-Hill). CVI noted that the 3% permanent deformation would result in significant distortions in the original shape of the frame. CVI argued that a frame which is deformed by 3% strain yet exhibits 8.1% elasticity is to indicate how much a material can be elastically deformed. Once a material is plastically deformed, it no longer will return to its original shape. The material covered by Claim 1 of the '955 patent exhibits at least 3% elasticity over the temperature range of -20 C. to +40 C. Under these circumstances, CVI stated, "Mercier does not provide any suggestion of the unique combination of properties which can be obtained with nickel-titanium alloys in the work-hardened pseudoelastic state." CVI then contrasted the meaning of "8.1% elasticity" in Mercier with the "3% elasticity" of claim 1:

"Mechanical Properties of the Cold-Worked Martensitic NiTi Type Alloys" ("Mercier"). Among other things, Mercier discusses the pseudoelastic properties of nickel-titanium alloys. Tura LP argued that claims 1-4 of the '955 patent would have been obvious over Mercier because "Mercier et al. fully disclose the nickel-titanium based shape-memory alloy defined in claims 1-4.

In making its obviousness argument, Tura LP pointed to Figure 2H from the '955 patent. It asserted that Figure 2H illustrated "the behavior of the alloy in the work-hardened pseudoelastic state" and that "in this condition, the alloy is claimed to have greater than 3% elasticity over a temperature range from -20 C. to +40 C." It then turned to Figure 4 of Mercier, which is shown below:

[App. 7031]

Tura LP argued that curve EC'DE of Mercier "perfectly anticipates Fig. 2H of the Zider et al. patent." That curve, it elaborated, "shows an elasticity, between points C' and E of 8.1%, which anticipates 'greater than 3% elasticity' set forth in the patent." Thus, in the reexamination proceeding, Tura advanced the construction of the term "greater than 3% elasticity" which the district court adopted and which CVI/Marchon urges. This is so because Figure 4 of Mercier clearly shows (i) a deforming stress resulting in a strain of 11%, (ii) release of that stress, and (iii) a recovery of 8.1% (which is a recovery of more than 3% but not a return to zero.)

CVI responded by seeking to distinguish claim 1 of the '955 patent over Mercier. Noting that Figure 4 of Mercier exhibited a "3% retained strain" when the deforming stress was removed, CVI argued that

Figure 2H of the '955 patent shows how the work-hardened pseudoelastic material covered by claim 1 will behave at temperatures between Ms and M[d] and it can clearly be seen that the material is totally elastic when a stress of about 115 ksi is applied and removed. The sample of Mercier shown in Figure 4 clearly does not exhibit the properties shown in Figure 2H of the '955 patent when a load of 1150 N/mm is applied and removed.

CVI also argued that a person of ordinary skill in the art would not consider the test at 100 C. shown in Figure 4 of Mercier as being pertinent in designing eyeglass frames to be worn at temperatures of -20 C. to +40 C. Continuing in this vein, CVI asserted that Mercier provided no information as to what the properties of the sample tested at 100 C. in Figure 4 would be in the temperature range of -20 C. to +40 C. Under these circumstances, CVI stated, "Mercier does not provide any suggestion of the unique combination of properties which can be obtained with nickel-titanium alloys in the work-hardened pseudoelastic state." CVI then contrasted the meaning of "8.1% elasticity" in Mercier with the "3% elasticity" of claim 1:

The third party [Tura] contends that the 8.1% elasticity shown in Figure 4 anticipates the 3% elasticity of claim 1. The 8.1% elasticity shown in Figure 4 of Mercier comes at the expense of a 3% retained strain, that is, the material will not return to its original shape. The material covered by Claim 1 of the '955 patent exhibits at least 3% elasticity over the temperature range -20 to +40 degrees C. The elasticity set forth in Claim 1 is attainable prior to the onset of permanent deformation. Otherwise, the recited elasticity properly [sic] would be meaningless. That is, elasticity measurements are used to indicate how much a material can be elastically deformed. Once a material is plastically deformed, it no longer will return to its original shape. With respect to the data shown in Figure 4 of Mercier, if the sample prior to testing corresponded to a finished part, after applying a load of 1150 N/mm and releasing the load, the part would be deformed such that it exhibited 3% retained strain. In the context of eyeglass frames, a frame which is deformed by 3% strain yet exhibits 8.1% elasticity is of no value since the 3% permanent deformation would result in significant distortions in the original shape of the frame.

Finally, in its discussion of Mercier, CVI referred to excerpts from Mechanical Metallurgy by G.E. Dieter, Jr. (McGraw-Hill)
Experience shows that all solid materials can be deformed when subjected to external load. It is further found that up to certain limiting loads a solid will recover its original dimensions when the load is removed. The recovery of the original dimensions of a deformed body when the load is removed is known as elastic behavior. The limiting load beyond which the material no longer behaves elastically is the elastic limit. If the elastic limit is exceeded, the body will experience a permanent set or deformation when the load is removed. A body which is permanently deformed is said to have undergone plastic deformation.

In affirming the patentability of the claims of the '955 patent, the examiner rejected Tura LP's argument that Mercier anticipated claim 1. Considering Mercier, the examiner noted that Mercier involved a different alloy than the one in the '955 patent and that it exhibited "desired properties in a temperature range outside that limited by the claim." Under these circumstances, the examiner wrote, "the materials of Zider et al are not anticipated by Mercier et al. Further, since the results of a change in materials are unpredictable, there is no suggestion that such a change would have been obvious, or that such a change would produce desirable results."

III.

Having reviewed the patent specifications and the prosecution histories, we conclude that the district court erred in its claim construction. We conclude that, as used in claims 1 and 5 of the '112 and the '955 patent, the word "elasticity" refers to the ability of an eyeglass frame component to return completely and spontaneously to its original shape after it is subjected to stress and the stress is removed, provided that the stress to which the component is subjected does not cause the component to exceed its elastic limit. We also conclude that the percentages appearing before the word "elasticity" in claims 1 and 5 of the patents refer to the amount of strain to which the eyeglass frame component is subjected. Thus, "greater than 3% elasticity" in claim 1 of the '955 patent means that a 100 centimeter rod must fully return to its original shape when stretched to some length over 103 centimeters. By the same token, "at least 3% elasticity" in claim 5 of the '955 patent means that the same rod must fully return to its original shape when stretched to any length under 103 centimeters.

6 We view this as a case in which reliance on extrinsic evidence (e.g., expert testimony) is not necessary.

Even standing alone, the specifications suggest this construction. Figures 2F and 2H above plainly show complete return to zero after the release of stress. At the same time, the specifications for both patents refer to Figure 2H and use the term "completely elastically" when referring to the desired behavior of eyeglass frame components. '112, col. 5, lines 24-26; '955, col. 5, line 68-col. 6, line 3. Likewise, the specification for the '955 patent states that a "suitable component" will show "complete elastic spring back at room temperature." '955, col. 6, lines 5-14. Finally, the reference to complete elasticity "up to strains of 6% or more" in both patents, and the reference to a similar degree of elasticity "at 4% tensile strain" in the '955 patent support the conclusion that the percentages appearing before the word "elasticity" in the patents indicate the amount of strain to which the eyeglass frame component is subjected.

CVI/Marchon correctly notes that the specification for the '112 patent recites that Figures 2F and 2H "represent the ideal characteristics for use in eyeglass components," and that the specification for the '955 patent states that Figures 2F and 2H represent "the ideal characteristics for use in purely elastic eyeglass components . . . ." '955, col. 5, lines 19-21. CVI/Marchon argues that "neither the '112 nor the '955 patent claims are limited to the 'optimum' embodiment."

CVI/Marchon is correct that, as a general matter, the claims of a patent are not limited by preferred embodiments. See Sjolund v. Musland, 847 F.2d 1573, 1581, 6 U.S.P.Q.2d (BNA) 2020, 2027 (Fed. Cir. 1988) (noting that while claims are to be interpreted in light of the specification, it does not follow that limitations from the specification may be read into the claims); Constant v. Advanced Micro-Devices Inc., 848 F.2d 1560, 1571, 7 U.S.P.Q.2d (BNA) 1057, 1064 (Fed. Cir. 1988) ("Although the specification may aid the court in interpreting the meaning of disputed language in the claims, particular embodiments and examples appearing in the specification will not generally be read into the claims."). However, as discussed above, through statements made during prosecution or reexamination an applicant for a patent or a patent owner,
During the prosecution of the '112 patent, the inventors stated that "the memory plus elasticity properties of a claim 5 frame are depicted in Figure 2G of the '955 specification. Figure 2G shows "a combination of elastic 3% heat-recoverable shape-memory, a yield strength greater than 30,000 psi and at least 3% elasticity." The elastic frame of claim 5, on the other hand, is in "the work-hardened and heat-treated condition." It must show "a minimum of temperature range, respectively. According to the inventors, claim 1 frames embody the concept of "optimized elasticity."

We note first the statement made during the prosecution of the '112 patent that amended claim 1 of the application was "specific to Applicants' first embodiment of frame components with optimized elasticity" and that "the figure which illustrates this embodiment is Fig. 2H." Figure 2H clearly shows return to zero after the release of deforming stress. Thus, the inventors clearly tied "elasticity" in claim 1 of the '112 patent to the concept of total recovery. The statements in the '112 and '955 specifications that Figures 2F and 2H represent "ideal characteristics" are not inconsistent with this meaning for "elasticity."

We find compelling the statements made by CVI during reexamination of the '955 patent to overcome Tura LP's arguments that Figure 4 of Mercier rendered claim 1 obvious. As seen above, CVI responded that "Figure 2H of the '955 patent shows how the work-hardened pseudoelastic material covered by claim 1 will behave at temperatures between Ms and Md and it can clearly be seen that the material is totally elastic when a stress of about 115 ksi is applied and removed." CVI continued that "the sample of Mercier shown in Figure 4 clearly does not exhibit the properties shown in Figure 2H of the '955 patent when a load of 1150 N/mm is applied and removed." In our view, this statement could hardly be clearer. The only meaning we are able to draw from it is that CVI was telling the examiner, "Claim 1 relates to an eyeglass frame component where there is total spring back to zero after the removal of a deforming force, as seen in Figure 2H of the patent. That is not what is shown in Figure 4 of Mercier, because that figure shows 3% retained strain." That also is the thrust of CVI's additional statement that "the 8.1% elasticity shown in Figure 4 of Mercier comes at the expense of a 3% retained strain, that is, the material will not return to its original shape." In addition, CVI emphasized to the examiner that an eyeglass frame which was "deformed by 3% strain" would be "of no value" even if, as depicted in Figure 4 of Mercier, it exhibited "8.1% elasticity."

In support of its claim construction, CVI/Marchon points to claim 5. It argues that, as used in claim 5 in both the '112 and the '955 patents, the term "at least 3% elasticity" cannot require "full recovery." This is so, CVI/Marchon asserts, because claim 5 shows a combination of "3% heat-recoverable shape-memory" and "3% elasticity." Put another way, if a component is stretched and then does not recover through its "elasticity" alone, unaided by "heat-recoverable shape-memory," then necessarily "elasticity" cannot mean full recovery, as Tura urges. According to CVI/Marchon, claim 5 and the related portions of the '955 specification thus provide support for its argument with respect to the construction of claim 1 of the patents.

This argument is flawed. First, CVI/Marchon's proffered meaning of "elasticity" is squarely at odds with the meaning of the term that emerges from our examination of the specifications and the prosecution and reexamination histories, as detailed above. CVI/Marchon cannot now turn its back on the meaning of "elasticity" which it embraced for claim 1 during the prosecution of the '112 patent and during the reexamination proceeding relating to the '955 patent. At the same time, we are obliged to construe the term "elasticity" consistently throughout the claims. See Fonar Corp. v. Johnson & Johnson, 821 F.2d 627, 632, 3 U.S.P.Q.2D (BNA) 1109, 1113 (Fed. Cir. 1987) (the meaning of a term in a claim must be defined in an manner that is consistent with its appearance in other claims in the same patent).

Moreover, contrary to CVI/Marchon's suggestion, it is not inconsistent to have "elasticity," as it appears in claim 5 of both patents ("at least 3% elasticity"), mean total recovery. The eyeglass frame of claim 5 is different from the frame of claim 1. Taking the '955 patent, the frame of claim 1 is in "the work-hardened pseudoelastic metallurgical state." It must show complete recovery from "greater than" 3% strain "over a temperature range from -20 C. to +40 C." The elastic properties of a claim 1 frame are depicted in Figure 2H of the '955 specification. In Figure 2H, the temperature range limitation is indicated by the symbol Ms < T[2 ] > Md, where Ms and Md represent the lower and upper ends of the useful ambient temperature range, respectively. According to the inventors, claim 1 frames embody the concept of "optimized elasticity."

The frame of claim 5, on the other hand, is in "the work-hardened and heat-treated condition." It must show "a minimum of 3% heat-recoverable shape-memory, a yield strength greater than 30,000 psi and at least 3% elasticity." The elastic properties of a claim 5 frame are depicted in Figure 2G of the '955 specification. Figure 2G shows "a combination of elastic and shape-memory properties" at the low end of the useful ambient temperature range (T < Ms). '112, col. 3, lines 23-24; '955, col. 3, lines 47-50. During the prosecution of the '112 patent, the inventors stated that "the memory plus elasticity
embody[ment] [of the invention] is shown in Figure 2G.” The inventors continued by describing the advantage which flows from having heat-recoverable shape-memory in addition to work-hardening: "Conversely, if the same material were left in a fully work-hardened condition, the properties shown in Fig. 2F would result, and the component would be very springy but would not give a complete shape-memory recovery if deformed past the component's elastic limit." (Figure 2F shows stress at T < Ms.) In short, the heat-recoverable shape-memory limitation of claim 5 speaks to the situation in which an alloy is stressed to the point that its inherent elasticity is not enough to enable it to return to its original shape when the deforming force is removed. In other words, the alloy's elastic limit is exceeded. As noted above, this retained strain is seen in the examples in the '955 specification which discuss the embodiment of claim 5. That is not the case in claim 1. As CVI stated during reexamination of the '955 patent, "the elasticity set forth in Claim 1 is attainable prior to the onset of permanent deformation."

A claim 5 component has two distinct attributes at T < Ms, elasticity and heat-recoverable shape-memory. Thus, the component can fully recover its original shape if it is subjected to a deforming force which stretches it up to 3% of its original length. Up to that point, only the component's elasticity properties are in evidence. If, however, the component is subjected to a deforming force which stretches it more than 3% of its original length, so that its elastic limit is exceeded, as in the examples in the '955 specification, it draws on its shape-memory properties when heat is applied, thereby enabling it to return to its original shape. The meaning given to "elasticity" by the inventors works in both claims 1 and 5.

Finally, our interpretation of the claims is consistent with and furthers the purpose of the invention. Eyeglass frames normally are carefully fitted to the wearer's particular facial configuration. If the fit is not correct, the eyeglasses are unlikely to perform their vision-correcting function properly or to be comfortable or acceptable to the wearer. When the shape of the frames is suddenly altered, such as by dropping them or sitting on them, distortion of the shape makes the frames less useful or attractive to the wearer. A frame whose elasticity enables it to correct the entire change by returning the frame to its original shape would be the most useful and most desired by the wearer. In these circumstances, it is reasonable to conclude that the references to 3% and 4% "elasticity" in the claims was intended to describe an eyeglass frame that would have that desirable and important property. In construing claims, the problem the inventor was attempting to solve, as discerned from the specification and the prosecution history, is a relevant consideration. See Applied Materials v. Advanced Semi. Materials, 98 F.3d 1563, 1573, 40 U.S.P.Q.2D (BNA) 1481, 1488 (Fed. Cir. 1996).

7 In CVI/Beta Ventures, Inc. v. Custom Optical Frames, Inc., 1996 U.S. App. LEXIS 14763, Nos. 96-1070, 95-1486 (Fed. Cir. 1996), 1996 WL 338388, a different panel of this court, in a nonprecedential opinion, upheld the grant of a preliminary injunction against infringement of the '112 and '955 patents. See CVI/Beta Ventures, Inc. v. Custom Optical Frames, Inc., 893 F. Supp. 508 (D. Md. 1995). In so doing, the panel affirmed an interpretation of the 3% elasticity limitation which did not restrict the claim to complete recovery. In its opinion, the panel stated that it could not conclude "in the context of the preliminary injunction proceedings that the district court erred in rejecting Custom Optical's proffered claim construction." The panel noted, as well, that the parties would have the opportunity at the merits stage to expand their arguments and to present any additional arguments. In this appeal, we review a different trial court's final claim construction as part of our review of the judgment on infringement. Therefore, unlike the earlier appeal, this appeal required us to construe the asserted claims based upon the final and complete record in the case. See International Communication Materials, Inc. v. Ricoh Co, Ltd., 108 F.3d 316, 319 (Fed. Cir. 1997) ("We review only the district court's tentative claim construction and its resulting finding on the likelihood of successfully proving infringement, which form an adequate basis for our affirming its denial of the preliminary injunction.").
Otis proposes that the term be defined as "a material, usually synthetic, having elastic properties akin to those of rubber." Schindler asserts that "elastomer" should be interpreted as "a material, usually synthetic, having elastic properties."

Otis' proposed definition is taken verbatim from the LAROUSSE DICTIONARY OF SCIENCE. Relying on such a source is appropriate where a term is not defined by intrinsic evidence. See Markman, 52 F.3d at 980. Schindler responds that the prosecution history discredits rubber as a coating layer, and therefore the "akin to those of rubber" language should be removed. Specifically, it points to Otis' statement to the PTO that rubber "provide[s] adequate traction but does not provide adequate wear when subjected to the shear loads applied by the cords in an elevator application." This, however, is inapposite. The phrase "properties akin to those of rubber" simply provides an illustration of the elastic properties that are characteristic of elastomers-- the fact that natural rubber itself is not an effective coating layer does not make Otis' construction deficient. The Court will define "elastomer" as "a material, usually synthetic, having elastic properties akin to those of rubber."

"elastomer"

Xinyi proposes that the term "elastomer" be construed as "a high molecular weight polymer with the property of elasticity," drawing this definition from a technical dictionary. Saint Gobain says no construction is necessary. The Court agrees with Saint Gobain, finding that a person of ordinary skill in the relevant art is readily familiar with the meaning of the term "elastomer." Resort to extrinsic evidence from a technical dictionary is, under the circumstances, unnecessary.

A device as in claim 31 wherein the cover is formed of an elastomer material.

The parties agree that the cover is formed of an elastic rubber-like material. The court finds this limitation means "a device as in claim 31 wherein the cover is formed from a substance having the elastic properties of rubber."

F. Claim 37

a. "elastomeric ligature material"

Callicrate's proposed interpretation of the phrase "elastomeric ligature material" is "a length of ligature material having elastic properties." NAIC proposes the following meaning: "the band of rubber or surgical tubing." While NAIC seeks a different construction of the phrase than Callicrate, NAIC does not provide any argument to support its construction.

Claim language

As always, the Court begins by examining the language of the claim itself, giving terms their ordinary meaning. The ordinary meaning of "elastomeric" is "any of various elastic substances resembling rubber." 35 Unlike NAIC's construction of the term, the ordinary meaning does not restrict elastomeric ligature material to rubber or surgical tubing. Rather, the ordinary meaning of the term supports Callicrate's proposed interpretation.

Specification

The specification of the 329 patent sheds light on Callicrate's intended meaning of the phrase "elastomeric ligature material." The specification states as follows:

In a preferred embodiment, the endless loop is manufactured from an elastomeric material having resistance to e [sic] strength that is resistant to abrasion and tearing. More preferably, the elastomeric material is comprised of non-hollow rubber material either molded or extruded to produce a finished elastomeric product with ends. As such, one aspect of the present invention relates to an endless ligation loop wherein the endless loop comprises a non-hollow elastomeric material.

The specification's reference to non-hollow tubing also suggests that NAIC's proposed interpretation, which would limit the ligature material to hollow surgical tubing is in error. Thus, the Court adopts Callicrate's proposed construction of the phrase "elastomeric ligature material," and construes the phrase to mean "a length of ligature material having elastic properties."

Consistent with the claim language and its ordinary meaning and the specification, the court construes "elastomeric material" to mean "a material that is able to stretch or expand without breaking, and to return to its original dimensions."

Tessera defines "elastomeric material" as "a material that behaves like an elastomer, such as synthetic rubber or plastic, which can be stretched or deformed under stress, and after release of the stress, will return to its approximate original shape." Samsung's definition is "a rubber-like material that can be stretched or deformed under low stress at least two times its original length and, after the release of the stress, will return with force to its approximate original shape." Joint Claim Construction Statement at B1:15-16. The essential dispute between the parties is that Tessera insists on a reference to "synthetic rubber or plastic" and "Samsung" insists on "rubber-like." Samsung contends that its construction is more helpful to a jury because reference to synthetic materials is misleading and confusing. Samsung relies upon the McGraw-Hill Dictionary of Scientific and Technical Terms (4th ed.) for its proposals that the elastomer must be stretched to "at least two times its original length" and return to its original shape "with force." However, there is no basis in the claims or specifications for such limitations. The Court construes "elastomeric material" as "a material that behaves like an elastomer, such as synthetic rubber, which can be stretched or deformed under stress, and after release of the stress, will return to its original dimensions."
approximate original shape.'"

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(I) "processing … to form an elastomeric seal"

The elastomeric composition is formed into a seal and the seal is cured sufficiently to develop elastomeric properties.

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C. Term 4: Electric wall box (as used in claims 1 and 23).

Lutron contends that Term 4 means "An 'electrical wallbox' is a small, often metal box that is designed to be placed in a wall to mount light switches or other electrical controls. It is open on the front side, with dimensions prescribed by the National Electrical Manufacturers Association (NEMA)." 42 Control4 contends the term means "A box that is designed to contain one or more electrical components and is designed to be installed in a wall."

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42 "NEMA" refers to the National Electrical Manufacturers Association.

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Although a patent's specification cannot add a limitation to a claim, it can help define the meaning of a term. 43 Here, the background of the invention describes an electrical wallbox as that of standard size. 44 The summary of the invention discusses the confined space of a standard electrical wallbox. 45 Indeed, throughout the entire specification, the electrical wallbox is small, confined, and standard in size. 46

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43 See Vitronics Corp., 90 F.3d at 1582.


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Control4 contends, however, that the term should not refer to size because the electrical box can vary depending on the electrical device that is being controlled. The specification indicates that "the antenna of the present invention can be applied to the communication of signals relating to the control and status of other devices, for example, communication equipment, motors, security systems, appliances, HVAC systems (heating, ventilating and air conditioning)." 47 Because such electrical devices may be larger than NEMA-standard wallboxes, Control4 argues the size of the electrical wallbox should not be limited.

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47 '103 Patent, col. 1:40-46.

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While it is true that different electrical devices may require larger electrical boxes, this patent pertains only to the electrical wallbox for the control device. The fact that the antenna may send signals to control larger electrical devices does not require that the electrical wallbox for the control device vary in size. The object of the patent is to have a control device of compact size that fits within "the small space available in electrical wallboxes. 48 Thus, the concept of "small" is inherent in the patent.

48 '103 Patent, col. 4:41.

The wallbox also is described as having an opening. 49 The embodiment describes the opening as outwardly facing. 50 Claims 1 and 23 refer to a "faceplate for an outwardly facing opening of said wallbox." 51 The Court therefore concludes the term means, "A box of a size and design generally used by the electrical industry to contain electrical switches for residential and office application."

51 '103 Patent, col. 15:42-44; 17:15-17.

5. "Electrically Conducting Fluid" and "Electrically Conductive Fluid."

Consistent with the ordinary definition, "electrically conducting fluid" and "electrically conductive fluid" shall be construed to mean "any fluid that facilitates the passage of electrical current." Examples of electrically conducting fluids are blood and saline.

We disagree, however, with the district court's construction of the claim term "electrically conductive fibers" to the extent that it encompasses carbon fibers. This court has recognized that "[w]here the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question." Scimed Life Sys. v. Advanced Cardiovascular Sys., 242 F.3d 1337, 1341 (Fed. Cir. 2001). It is true, as the district court noted, that the '879 patent's written description did not expressly define "electrically conductive fibers," as it did for "fuel injection system component." Nevertheless, based on the disclosure in the written description, which demeaned the properties of carbon fibers, we conclude that the patentee thereby disavowed carbon fibers from the scope of the '879 patent's claims.

The written description contains the following disclosure:

Stainless steel also has the advantage of requiring smaller quantities for providing the required conductivity than other conductive fillers, such as carbon black. '879 Patent, col.3 ll.56-60 (emphasis added).
Other electrically conductive fillers, such as the aforementioned carbon, act as stress concentrators and, at the relatively high filler loadings required to achieve conductivity, restrict the ability of the resin matrix to yield under stress. Id., col.4 ll.1-5 (emphasis added).

Also, stainless steel fibers are ductile and non-rigid unlike straight or metallized carbon fibers. . . . This allows stainless steel fibers to maintain their integrity better during melt-processing. Id., col.4 ll.5-10 (emphasis added).

Unlike the non-metallic fibers, stainless steel fibers also do not increase mechanical strength or stiffness of the base resin significantly. Other metal fibers with high aspect ratios can be satisfactorily substituted for stainless steel. Id., col.4 ll.10-14 (emphasis added).

In making the above statements, the patentee informed its readers specifically why carbon fibers would not be suitable as "electrically conductive fibers" in the claimed invention. If the written description could talk, it would say, "Do not use carbon fibers." There is no other way to interpret the written description's listing of all the reasons that metal fibers fare better than carbon fibers for use in the claimed invention, even though both materials are electrically conductive, viz., that metal fibers require smaller quantities to achieve the desired conductivity than carbon fibers, create less stress concentration, are more ductile, are less rigid, and increase the mechanical strength of the polymer housing. Contrary to the district court's understanding, the written description has gone beyond expressing the patentee's preference for one material over another. Its repeated derogatory statements concerning one type of material are the equivalent of disavowal of that subject matter from the scope of the patent's claims.

In reaching this decision, we reject Honeywell's argument in support of the district court's construction of "electrically conductive fibers." Honeywell argues that the written description did identify carbon fibers as electrically conductive fibers, and that stainless steel fibers were merely preferred embodiments. Honeywell's argument misses the point. It is precisely because the written description has identified carbon fibers as electrically conductive, and yet it denigrated carbon fibers' applicability to the claimed invention, that we find a disavowal of that subject matter. Moreover, it is irrelevant whether stainless steel fibers are a preferred embodiment of the claimed invention. We are not here modifying the district court's claim construction to limit its scope to stainless steel fibers. We only modify it to exclude carbon fibers from the scope of the '879 patent claims.

4. The "electrically conductive layer" limitation

The accused Nevamar products are of two classes: those using a phenolic resin and those using a melamine resin in the conductive layers. Making all reasonable inferences in favor of Charleswater, the resistivity of the conductive layers containing phenolic resin is as low at 4,200 ohms per square and the resistivity of the layers containing melamine resin is 145,000 ohms per square or greater.

2 Nevamar argues that the resistivity of the phenolic resin-impregnated paper is at least 88,000 ohms per square and that the resistivity of the melamine resin-impregnated paper is at least 108 ohms per square.

The district court construed the "electrically conductive layer" limitation to mean that the measured resistivity of the layer in the final product must be less than 30,000 ohms per square. The district court based this construction on the definition of "conductive" provided in the written description of the '040 patent as well as this court's previous construction of the term "nonconductive" as used in the '040 patent to mean "resistivity greater than 30,000 ohms [per square]." See Charleswater Prod. Inc. v. Spaulding Fibre Co., 12 U.S.P.Q.2D (BNA) 1916, 1918 (Fed. Cir. 1989) (nonprecedential). Based on this construction, the court concluded that the "electrically conductive" limitation does not read on the accused Nevamar products in which the alleged conductive layer comprises a melamine resin, either literally or under the doctrine of
equivalents, because the lowest measured resistivity of the layer in the finished product is higher than 30,000 ohms per square. The district court also concluded that a genuine issue of material fact exists as to whether this limitation reads on the accused products in which the alleged conductive layer comprises a phenolic resin and denied Nevamar's noninfringement summary judgment motion concerning those products. We hold that the district court's judgment concerning this limitation is correct with respect to both classes of products.

a. Literal infringement

Charleswater argues that the district court erred in construing the "electrically conductive" limitation and asserts that determining whether an alleged layer is electrically conductive is properly based on "indicia of conductivity." Charleswater also appears to argue in the alternative that determining whether a layer is conductive or not should be done by determining the relative conductivities of the alleged conductive and nonconductive layers. Both of these arguments fail.

The written description of the '040 patent states that a layer is conductive if its resistivity is less than about 30,000 ohms per square. See '040 patent, col. 1, ll. 15-17 ("approximately 30,000 ohms per square surface resistivity or less, for example, 5,000 ohms"); id. at ll. 38-42 ("less than about 30,000 ohms/square inch; for example, 10,000 or 5,000 ohms/square inch of surface resistance"). Charleswater cannot avoid this definition by its argument that "indicia of conductivity" is an equivalent or more accurate method of determining whether a layer is conductive, because the resistivity definition is in the written description and the "indicia" definition is not. Similarly, determining whether a layer is conductive or not by comparing its resistivity to the resistivity of the nonconductive layer is not discussed in the written description. Whether technically plausible or not, these arguments cannot overcome the resistivity measurement-based definition of a conductive layer provided in the written description. See Unidynamics, 157 F.3d at 1317, 48 U.S.P.Q.2D (BNA) at 1103 ("In defining the meaning of key terms in a claim, the court may refer to the specification, the prosecution history of a patent, prior art, and other claims.").

Viewing the evidence and making all reasonable inferences in favor of Charleswater, there is no genuine issue of material fact as to whether the "conductive layer" limitation literally reads on the accused products in which the conductive layer comprises a melamine resin because their lowest measured resistivity is 145,000 ohms per square. As a matter of law, this claim limitation does not literally encompass those products. However, because the lowest measured resistivity of the conductive layer in the accused products containing a melamine resin is less than 30,000 ohms per square, there is a genuine issue of material fact as to whether the "conductive layer" limitation literally encompasses those products.

3. The "polymeric, film-forming, particulate binder material" limitation

The district court appeared to construe the "polymeric, film-forming, particulate binder material" limitation in subpart (b) of the claim as excluding the use of paper as part of the conductive layer, stating that paper is not a film. The court concluded that this limitation does not read on the alleged conductive layer in the accused Nevamar products. This analysis is incorrect.

There is no dispute between the parties that the alleged conductive layers in the accused products consist of paper that has been "loaded" with carbon and impregnated with a polymer resin. There can be no reasonable dispute that paper itself is not a polymer and is not film-forming. However, there is no dispute that the paper-impregnating polymer used by Nevamar in the accused products, a phenolic resin or a melamine resin, is a film-forming polymer that essentially fills the interstices of the paper to act as the carbon particle binder material.

The construction issue concerning this limitation therefore simplifies to this: in a claim which uses "open" language (i.e., "comprises"), is the "electrically conductive layer of a polymeric, film-forming, particulate binder material" limitation met where paper is present in addition to a film-forming polymer that acts as a particulate binder? The answer must be affirmative, because an "open" claim is infringed by a material that embodies all of the claim limitations even if the material includes additional elements.

Therefore, viewing the evidence and making all associated reasonable inferences in favor of Nevamar, there is no genuine
issue of material fact precluding summary judgment concerning this issue and Charleswater is entitled to JMOL that the "polymeric, film-forming, particulate binder material" claim limitation encompasses the accused Nevamar products, even though the alleged conductive layers in the Nevamar products contain paper.

3. "Electrically Coupled to the Motor of the Shredder Mechanism"

The next issue is Claim 1's requirement that the "on/off switch" be "electrically coupled to the motor of the shredder mechanism," element 1(o). Fellowes proposes that this means that the "on/off switch" "transmits an electrical signal to the shredder mechanism's motor." Michilin and Intek both submit that it means that the "on/off switch is electrically coupled to the shredder mechanism's motor."

The differences between "electrically coupled" and "transmits an electrical signal" are seemingly immaterial and received scant attention in the parties' briefs. Both parties' constructions are consistent with the plain language of Claim 1, which reveals that in order to turn the shredder on and off, i.e. to operate it, the "on/off switch" must be capable of enabling and disabling the delivery of electric power to the motor. See '559 Patent, col. 6, lines 46-54 (describing the "on/off switch" as "movable . . . between at least (a) an on position wherein the switch enables delivery of electric power to the motor and (b) an off position disabling the delivery of power to the motor"). The Court adopts Fellowes' construction because it is consistent with the claim language, as well as the Court's construction of the phrase "provided on an exterior of the housing," and FINDS that "electrically coupled to the motor of the shredder mechanism," element 1(o), means "the on/off switch transmits an electrical signal to the shredder mechanism's motor."

--- Footnotes ---

5 Fellowes and Michilin briefly addressed the construction of "electrically coupled to the motor of the shredder mechanism" at the Markman hearing and in their opening briefs. Markman Hr'g Tr. 21-27; Fellowes' Opening Br. on Claim Construction 28; Michilin's Markman Proceeding Opening Br. 22-23. Although Intek discussed this element in its amended brief, Fellowes did not mention it in its response to Intek's amended brief. See Intek Br. 23; Fellowes' Resp. to Intek's Br.

--- End Footnotes ---

1. "A Modulating Electromagnetic Clutch Assembly"

Claims 10 and 17 recite, in part:

a modulating electromagnetic clutch assembly defining a sole torque transfer path between said primary output and said secondary output, said modulating clutch including a first plurality of clutch plates coupled to said primary output interleaved with a second plurality of clutch plates coupled to said secondary output.

The dispute over this claim is multi-faceted. Essentially, it involves whether the term "electromagnetic" can be read apart from the term "clutch." That is, whether "electromagnetic" is an adjective simply modifying "clutch" or "electromagnetic clutch" is, itself, a term of art with its own meaning. It would also seem to involve whether "electromagnetic clutch" can be read apart from the terms "modulating" and "assembly."

BorgWarner:

A "modulating electromagnetic clutch assembly" is a clutch that can transfer different amounts of torque from the primary output shaft to the secondary output shaft and that is actuated using an actuator that uses the principles of electromagnetism to convert electric current into a magnetic force. The modulating electromagnetic clutch assembly includes a disk-pack-
friction-plate clutch. The actuator can be any electromagnetic actuator including a coil and armature or an electric motor. (Plaintiff's Markman Brief, at 31; Plaintiff's Post Markman Hearing Brief, at 17).

NVG:

A disk-type clutch that is actuated by the electromagnetic attraction between a current carrying coil and a ferromagnetic clutch plate, i.e., armature. An electric motor actuated clutch is not an "electromagnetic clutch" because it does not use magnetic attraction between a coil and clutch plate, i.e., armature, to actuate the clutch. (Markman Brief of NVG, at 32).

In this claim dispute, the parties give a passing nod to claim interpretation and bolt ahead to infringement. Throughout the portion of the Markman hearing devoted to this claim, the argument was mostly over whether this patent claim reads on an electric motor actuator. (Markman Hearing transcript, at 379-458). Indeed, NVG's counsel admitted that NVG's arguments were focused on the issue of whether its device, which included an electric motor, infringed on the patent. (Id., at 422). This is, of course, beyond the scope of a Markman proceeding. "In claim construction the words of the claims are construed independent of the accused product." Embrex, Inc. v. Service Engineering Corp., 216 F.3d 1343, 1347 (Fed. Cir. 2000). Only after claim construction does the fact finder compare the properly construed claims to the accused device or process. Catalina Marketing International, Inc. v. CoolSavings.com, Inc., 289 F.3d 801, 812 (Fed.Cir. 2002). While there are cases where the issues of construction and infringement may collapse within one another, neither party has argued that such is the case here. The court will, therefore, focus on the interpretation of the claim rather than the issue of infringement.

According to BorgWarner:

The ordinary meaning of the term "clutch" is a device that provides an interruptible torque connection between two rotating elements. The term "modulating" further limits "clutch" to mean a clutch that can transfer different amounts of torque ranging from none to full lock up. Accordingly, the "modulating clutch assembly" refers to a modulating clutch. The ordinary meaning of the term "electromagnetic" is a device that operates on the principles of electromagnetism. In the context of a clutch, an electromagnetic device converts electricity into an actuation force using magnetism. Accordingly, the electromagnetic portion of this claim limitation refers to an electromagnetic actuator.

(Plaintiff's Markman Brief, at 32(citing Patent '488, col. 8, ls. 5-19; App. V, Ex. A, at 7)).

BorgWarner continues its argument by noting -- or stating the obvious -- that "the ordinary meaning of the term "electromagnetic" is a device that operates on the principles of electromagnetism. (Plaintiff's Markman Brief, at 33). A bit more helpfully, BorgWarner goes on to explain that:


(Plaintiff's Markman Brief, at 33)

NVG argues that the term "electromagnetic clutch" is a term of art, and relies on the definition from the McGraw-Hill Encyclopedia of Science and Technology (1992 edition):

Magnetic coupling between conductors provides a basis for several types of clutches. The magnetic attraction between a current carrying coil and a ferromagnetic clutch plate serves to actuate a disk type clutch . . . multiple interleaved disks alternately splined to the driving and driven shafts provide a compact structure. There are three basic types of electromagnetic clutches: magnetic fluid and power, eddy-current 8, and hysteresis.

(Markman Brief of NVG, at 32-33). NVG's expert interpreted an "electromagnetic clutch" to be a clutch actuated by the translation of an armature towards an energized electromagnetic coil due to the magnetic field caused by that coil. He submitted that:
the term 'modulating electromagnetic clutch assembly' requires at least an electromagnetic coil, a linearly translatable armature, and first and second pluralities of clutch plates, the plates being specifically recited in the claim. The electromagnetic coil, when energized with electric current, creates a magnetic field that attracts and causes linear translation of an armature, which in turn causes frictional engagement of the first and second plurality of clutch plates.

(Markman Brief of NVG, at 33; Ex. 9a, P 95).

--- Footnotes ---

8 At the Markman hearing, Borg Warner briefly argued that an eddy-current clutch was defined as employing a motor. It also conceded, however, that had no application to the patent. (Markman Hearing Transcript, at 412).

--- End Footnotes ---

When the issue of whether NVG's device, which apparently includes an electric motor, infringes on Borg Warner's patent is set aside, it is clear that the parties' definitions are not at all that dissimilar. Had the parties focused on the interpretation of the claim, rather than whether it construed to read on an electric motor, this question could have been resolved more convincingly. Their presentations and the record leave the court with the conclusion that "electromagnetic clutch" must be interpreted only as a disk-type clutch that can transfer different amounts of torque from the primary output shaft to the secondary output shaft and is actuated by the magnetic attraction between a current carrying coil and an armature.

1335
g. "Electromechanical Device" (Claim 33)

90. This term is not mentioned in the specification of the '656 patent. The only type of electromechanical device described in the specification is a solenoid. Thus, this term should be construed to be no broader than a solenoid and equivalent structures. Consequently, as used in the '656 patent "electromechanical device" means a device which imparts mechanical movement upon application of an electrical signal, such as a solenoid, to move the link element after entry of the combination.

1336
3. "Electronic Chip"

The district court provided the jury with the following construction of "electronic chip" (emphasis added):

"Chip" is not used in whatever technical sense it may have; here, it means the same thing as an electrical component, whether it is a complex integrated circuit of several subparts or a single resistor. A resistor itself is made of two leads, case, and resistant core, at a minimum, making it a packaged electronic component.

Although we do not agree with the district court's construction, for it appears from the definition given to the jury that the district court was confusing a "packaged electronic component" (i.e., the claimed invention as a whole) with an "electronic chip" (i.e., an element of the claimed invention), this aspect does not appear to have been material to the result, and any error appears to have been harmless.

1337
j. "Electronic Combination Lock" (Claims 3, 34, 35, 38, 39, 43)
93. The '656 patent specification states that the "invention relates generally to electronic combination locks". Col. 1, lines 6-7. The "electronic dial combination lock" is described as "a dial having divisions to enter a combination code to gain entrance to the secured area . . . . A circuit contained in the secured region senses the electrical connections and detects when a certain subset of connections has been made corresponding to the lock's combination and initiates an electrical signal within the secured region. The signal may be used, e.g., to operate a solenoid . . . .". Col. 1, lines 15-31. Throughout the specification, the lock is described in terms of its electronic and combination features, e.g., that the solenoid plunger is actuated "when the correct combination is entered into the printed circuit board and an appropriate signal is produced from an output on the printed circuit board to the coil 108 in the solenoid, as would be known to one skilled in the art". Col. 6, lines 39-43. Consequently, the entire specification of the patent describes the "invention" as part of an "electronic combination lock", not as a separate mechanical mechanism.

94. It is also appropriate to determine whether the term in the preamble serves to define the invention that is claimed or is simply a description of the prior art. Applied Materials Inc. v. Advanced Semiconductor, 98 F.3d 1563, 1573 (Fed. Cir. 1996). Here, the patentees used the preamble to define the "invention" itself, not simply to describe prior art.

95. The patentee chose to define its alleged "invention" as an "electronic combination lock", using both the preamble to define the electronic and combination aspects of the lock, as well as the remainder of the claim limitations. Consequently, the preamble forms a limitation of the claim.

96. Where the claim refers back to the preamble, e.g. by stating "said" [preamble], the preamble phrase becomes a limitation to the claim. Bell Communications, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 621 (Fed. Cir. 1995). The last paragraph of Claim 3 refers to "said combination". The claim language also refers back to electronic activation of the moving element. Claim 34 and the claims dependent on that claim (Claim 35, 38, and 39) refer back to "the combination" of the preamble. The body of Claim 43 similarly refers back to "the combination". Consequently, in all of the claims, if no "combination" is present, there is nothing to describe the function of the mechanical elements, and the claim would not define an operable device. Thus, "electronic combination lock" must be interpreted to form a limitation of each of the claims.
no other type of lock is mentioned in the context of the "invention".

98. The description "electronically operated lock" should also be interpreted as a limitation to the claim. In Claim 1, the "invention" is described as being "in an electronically operated lock". Consequently, the alleged "invention" cannot exist apart from the electronically operated lock. Further, the solenoid is described as "electronically actuated". If the lock were not electronic, this claim limitation would be meaningless. Thus, the preamble terms must be limitations to the claim since they are required to give meaning to the claim and properly define the invention. In re Paulsen, 30 F.3d 1475, 1479 (Fed. Cir. 1994). Claim 31 also defines the "invention" as "in an electronically operated lock". Thus, both the preamble and the body of this claim are also used to define the subject matter of the claimed "invention". Bell Communications, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed. Cir. 1995).

Anascape contends that these limitations are not means-plus-function limitations under § 112, ¶ 6. Anascape states that if the court considers these limitations to be a means-plus-function limitation, it agrees with Microsoft that the corresponding function is the function listed after the "means for" language and that the corresponding structure is an "ASIC or microcontroller integrated circuitry, and equivalents thereof.

Each of the seven phrases incorporates the "means for" language that gives rise to a presumption that the patentee used the term advisedly to invoke §112 P6. Rodime PLC v. Seagate Tech. Inc., 174 F.3d 1294, 1302 (Fed. Cir. 1999), cert. denied, 528 U.S. 1115, 120 S. Ct. 933, 145 L. Ed. 2d 812 (2000). If a claim term recites no function this presumption disappears. Id. In each of these claims the phrase "means for" is followed by a verb describing what the "means" does - a function of the invention.

The court must next determine whether the claim language recites sufficient structure for performing the function. Id. Anascape argues that "electronics" preceding "means" in four of the claims, and "active electronic" preceding "means" in the other three terms sufficiently recite the structure.

In Rodime, the "means for" language was followed by a list of structural items, which together performed the function. See Rodime 175 F.3d at 1303. In the present case none of the seven claims at issue recites such a list. Similarly, "a pair of rotatable shafts projecting downwardly from said frame means and defining a biaxial plane" sufficiently describes "gearbox means for rotating said blade means." Allen Engineering Corp. v. Bartell Indus., 299 F.3d 1336, 1348 (Fed. Cir. 2002). The seven claims at issue do not have such a description.

The term "second baffle means" was held to recite sufficient structure because the word "baffle" is a structural term. Environco
Anascape points to claim 70 of the '991 patent in support of its argument that "electronics" recites sufficient structure. The means-plus-function presumption can be overcome only if the "claim itself" recites sufficient structure "to perform entirely the recited function." Sage Prods., Inc. v. Devon Indus., 126 F.3d 1420, 1427-28 (Fed. Cir. 1997). Claim 70 is a different claim that does not contain the "means for" language. Whether Claim 70 describes sufficient structure is irrelevant. Because the four terms that begin with "electronics means . . ." do not recite limited and definable structure, the court concludes that they are means-plus-function limitations. Given this finding, Anascape agrees with Microsoft that the structure is "ASIC or micro-controller integrated circuitry, and equivalents thereof."

The other three terms claims use "active electronic means for interpreting . . ." Anascape states that this discloses sufficient structure to overcome the means-plus-function presumption. The specification defines the term: "Active electronics 46 (i.e., ASIC or microcontroller integrated circuitry, etc.) which in addition to having normal circuitry of a typical game controller such as a prior art controller also has circuitry for interpreting the analog output of sensor material 36 and converting it into a digital signal. . . ." '991 patent, col. 11, ll. 10-15.

Microsoft argues that it is improper to look to the specification to determine whether a term in a phrase using "means" recites structure. A patentee can be his own lexicographer. There seems little difference between the Enviroco Court's discerning structure from a word with a common structural definition, such as "baffle," and making the same use of a phrase defined in the specification. Phillips could be used to argue that looking to the specification for a definition is preferable to consulting a general use dictionary.

As with "baffle" in Enviroco, "active electronic" imparts structure. The three claims that include "active electronic means" are not means-plus-function clauses. Evidently recognizing the definition in the specification, neither party argues for an alternative construction of "active electronic."

The World Wide Plaintiffs and AnazaoHealth have proposed two constructions of the term "element" as used in Claim 1, which differ primarily in the breadth to be ascribed to this term. The World Wide Plaintiffs ask the Court to construe this term as meaning "anything intended for use in brachytherapy, including radioactive seeds and/or spacers." The World Wide Plaintiffs argue that "seeds," "spacers," and "radioactive seeds" were simply illustrative examples of elements that might be used in a brachytherapy procedure. Instead, they maintain that if an object, material or device used in connection with the treatment of cancer is designed to fit inside a needle and is implantable, it should be included in the definition of "element."

AnazaoHealth proposes a more narrow definition of "elements," that is limited to "radioactive seed(s), spacer(s) and/or drug(s)." AnazaoHealth asserts that the language of the specification indicates that the "therapeutic elements" contained within the needle and implanted in the body are radioactive seeds and spacers. AnazaoHealth argues that the World Wide Plaintiffs' definition is overly broad and would encompass every aspect of brachytherapy treatment, including ultrasound probes or x-rays used to identify where the radioactive seeds were deposited or the materials used pre- and post-operatively to assist in a patient's treatment. It further submits that the term should not be construed to include "markers," which do not appear anywhere in the intrinsic evidence, and there is no indication that markers formed any part of the alleged invention. It maintains that there is no basis in the intrinsic record to conclude that the patentees had anything in mind other than radioactive seeds and spacers.

Claim 1 refers to "therapeutic elements" and "a line of elements." ('760 Patent col. 5, ll. 43, 45, 50-51.) Additionally, the term "element" appears in Claims 3, 9, 10, 11, and 16, which refer to a "line of elements," (id. at col. 5, ll. 54-55; col. 6, ll. 14-15, 17-18, 19-20, 23-24, 41), and in Claims 9 and 18, which refer to "therapeutic element(s)." Id. at col. 6, ll. 9, 51. A
person of ordinary skill in the art is deemed to read a claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification. Phillips, 415 F.3d at 1313. The purpose of the specification is to teach and enable those skilled in the art to make and use the invention and to provide a best mode for so doing, which is often done by example. Id. at 1323. The specification has been described by the Federal Circuit as the "single best guide to the meaning of a disputed term [and] the primary basis for construing the claims." Id. at 1315.

Here, the specification speaks in terms of "a line of therapeutic elements, for instance, radioactive seeds." (760 Patent col. 3, ll. 56-57 (emphasis added).) The specification makes clear that radioactive seeds are but one type of therapeutic element that might be implanted in a brachytherapy procedure using the patented device. Although several of the claims use the term "seeds" rather than "elements," from which one might infer that "elements" should be limited to "seeds," id. at col. 5, ll. 56; col. 6, ll. 21, 44, even AnazaoHealth concedes that the term "element" must encompass more than seeds and spacers and could include drugs. The Court finds no basis for including drugs yet excluding other substances or materials used in connection with the treatment of cancer and which are designed to fit inside a needle assembly for implantation into a patient. The invention itself relates to the device for implanting therapeutic elements. It is not limited to certain types of therapeutic elements. Thus, the Court rejects AnazaoHealth's definition that limits "elements" to radioactive seeds, spacers, and drugs.

When the term "element" is read in the context of the entire patent, the claims and specification make clear that an "element" within the needle assembly is something more than seeds and spacers and is something that is intended for implantation in the body for the purpose of treating cancer. See Phillips, 415 F.3d at 1321; Visto Corp. v. Sproqit Techs., Inc., 445 F. Supp. 2d 1104, 1112 (N.D. Cal. 2006). The World Wide Plaintiffs' definition includes the limitation "intended for use in brachytherapy." Therefore, the Court adopts the construction urged by the World Wide Plaintiffs, that being "anything intended for use in brachytherapy, including radioactive seeds and/or spacers."

2. "Element"

The parties agree that the ordinary meaning of "element" is "part" or "component" or, as Akeva proposes, "a constituent part." adidas, however, argues this broad definition cannot be used because it does not particularly point out and distinctly claim the subject matter of the invention, and applying ordinary meaning would cause the claim to fail the requirements of [1781]
35 U.S.C. § 112 2. Because all shoes have parts or components, this would not be enough to let others know what specific kinds of parts were being claimed. adidas also argues that the specification uses the term "element" in a much narrower sense than simply a "part" of the shoe, and the term should be given this more narrow definition. In the written description, this part is described as a "stiffening member[]. . . that may be used to increase the spring generated by the rear sole." See '471 Patent, col. 11, ll. 54-57.

Generally, matters of "ambiguity, undue breadth, vagueness, and triviality are matters which go to claim validity for failure to comply with 35 U.S.C. § 112 U 2, not to interpretation or construction." Intervet Am., Inc. v. Kee-Vet Laboratories, Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989). However, it is a familiar axiom of patent law that when a claim term is ambiguous, it should be construed to sustain its validity. Liebel-Flarsheim, 358 F.3d at 911. This axiom does not apply "unless the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous." Id. A court must look to the intrinsic evidence "to understand the claims before their breadth is limited for purposes of preserving validity." Nazomi Comms., Inc. v. Arm Holdings PLC, 403 F.3d 1364, 1368-69 (Fed. Cir. 2005) (emphasis added). "Otherwise the construing court has put the validity cart before the claim construction horse." Id. at 1369. In analyzing a claim of patent indefiniteness under 35 U.S.C., § 112 P 2, "a court must determine whether those skilled in the art would understand what is claimed when the claim is read in light of the specification." Bancorp Servs., L.L.C. v. Hartford Life Ins. Co. 359 F.3d 1367, 1371 (Fed. Cir. 2004). If a claim term's meaning is discernible, then it is not invalid for indefiniteness. Id. Even if a claim is determined to be ambiguous, the court may only construe the claim and may not rewrite it to preserve validity. Liebel-Flarsheim, 358 F.3d at 911. A court also may not add limitations from the specification that do not appear in the claim. Intervet Am., 887 F.2d at 1053.

Although it must be presumed that a claim is valid, 35 U.S.C. § 282, if a claim term is ambiguous, the court may choose the interpretation that preserves validity. A claim term is ambiguous if it is susceptible to more than one interpretation. In Claim 1 of the '471 Patent, the claim term "element" is followed by additional requirements of the object's location between the top and bottom walls and its structure that includes an interior sidewall. While the term is quite broad, it is not ambiguous because it is susceptible to one interpretation -- that of a component or part of the shoe that possesses the additional characteristics listed in the claim. adidas may be correct that this claim term is not sufficiently described to give one skilled in the art a clear idea of what the inventor intended, but it gives enough information to render the term unambiguous, and thus not amenable to added limitations. Any further issues of validity cannot be addressed at this time.

With regard to adidas' second argument, the descriptions in the specification cannot be used to limit this claim term. The language adidas references is an embodiment of the invention that appears to be intended as an example and not as any limitation on the claim's scope.

Therefore, the term "element" should be given its plain and ordinary meaning of "a constituent part."

b. "Article Feeder Element"

The Defendants also object to Special Master Harmon's decision not to construe the term "article feeder element" because they believe that the term requires means-plus-function treatment. Because the term does not include the word "means," this Court presumes it is not a means-plus-function claim element. See, e.g., Net MoneyIN, 545 F.3d at 1366.

The Defendants' primary argument is that the use of the term "element" in "article feeder element" cannot provide sufficient structure to avoid means-plus-function treatment. While terms like mechanism, device, and element alone do not provide sufficient structure to avoid means-plus-function treatment, an adjectival modifier to those terms may provide sufficient structure. See Welker Bearing, 550 F.3d at 1096-97 (holding "mechanism for moving said finger" did not disclose sufficient structure to avoid means-plus-function treatment); Massachusetts Inst. of Tech. & Elecs. for Imaging, Inc. v. Abacus Software, 462 F.3d 1344, 1354 (Fed. Cir. 2006) (holding that "color selection mechanism" did not disclose sufficient structure to avoid means-plus-function treatment since the adjective "color selection" was not defined in the specification, had no dictionary definition, and had no general understanding in the art); but see Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996) (holding "detent mechanism" disclosed sufficient structure to avoid means-plus-function treatment since the term "detent" was an understood structure in the art). When the term "element" is used, the...
focus turns to whether sufficient structure is disclosed in the adjectival modifiers or elsewhere in the claim. See Welker Bearing, 550 F.3d at 1096-97.

Special Master Harmon looked to Magistrate Judge Valdez's construction for the term "article feeder means" for guidance on whether "article feeder" recited sufficient structure to avoid means-plus-function treatment. He concluded that there was sufficient structure even when the word "element" is used. In the context of the claims, "article feeder element" refers to a structure within that article feeder means that is moved by a variable speed motor to feed sheet material articles. U.S. Patent No. 6,082,724 col. 15 ll. 1-2. This is a definite structure similar to the "detent mechanism" in Greenberg and is sufficient to avoid means-plus-function treatment. Thus, the Court overrules the Defendants' objection and adopts Special Master Harmon's decision to not treat the term "article feeder element" as a means-plus-function element.

Apart from their objection to the use of the word "element," the Defendants also object to Special Master Harmon's decision not to construe the term. Claim construction is not required for every limitation in a claim. U.S. Surgical Corp., 103 F.3d at 1568. A term can be given the ordinary meaning that it would have to a person of ordinary skill in the art. See Phillips, 415 F.3d at 1313. Here, the sole basis for the Defendants’ objection is their opinion that a jury will be confused by the term "article feeder element." Nevertheless, as described by its use in the claims, an "article feeder element" is that which is moved by a variable speed motor to feed sheet material articles. The Defendants do not point to, and this Court does not notice, any particular issue a jury would have with interpreting the term "article feeder element." Thus, the Court overrules the Defendants' objection and adopts Special Master Harmon's decision not to construe the term "article feeder element."

11. Claim 13: "elevated structure" "Elevated structure” is construed to mean "something constructed, such as a building, raised above the ground."

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<tr>
<td>&quot;elevator control&quot;</td>
<td>&quot;a device for controlling the operation at least one elevator&quot;</td>
<td>&quot;an existing device that controls the operation of the elevator - the identical elevator control that was in place before modernization&quot;</td>
</tr>
</tbody>
</table>

('861 Patent claims 1, 2, 3, and 11); ('465 Patent claims 1, 2, 3, and 10)

The critical distinction between the proposed constructions submitted by Plaintiff and Defendants is whether the "elevator control" must be "existing," i.e., "the identical elevator control that was in place before modernization." Defendants' position is that the Patents-in-Suit contemplate that the elevator control itself is not replaced as part of the modernization process, rather the same elevator control is reused during modernization. Defendants rely upon the prosecution history to the Patents-in-Suit, in which Plaintiff submitted amendments to the specification in order to distinguish its patents from prior art. These amendments state

The present invention, in contrast, is a modernizing device that is temporarily connected to an existing elevator installation (such as that shown in Fig. 1) having an elevator control that operates in response to call reports generated from hall call transmitters and car call transmitters. The modernizing device, a computing unit and floor terminals are temporarily connected to the existing elevator control for generating destination calls and converting the destination calls into call reports that can be used by the existing elevator control to operate the elevator during modernization. Once modernization of the elevator installation is complete, the modernizing device is removed.
Neither the Sirag Jr. patent nor Schuster patent shows or suggests the claimed modernizing device that is temporarily connected to an existing elevator control wherein destination call reports are generated and converted to call reports that can be used to continue to operate the existing elevator control during modernization.

(Defs.' Opening Markman Br. Appx. 116) (emphasis added). The "Sirag Jr." patent referenced above "shows a permanent elevator control with software for controlling car allocation in an elevator installation via destination call control." (Id. at 115.) The "Schuster" patent referenced above "shows a permanent elevator control that provides for user input of operating program modifications." (Id.)

Defendants rely upon this language in arguing that the Patents-in-Suit require re-use of the existing elevator control, such that new or modified controls are outside the scope of the patents. In order for statements in the prosecution history to limit a claim, the disavowal must be unambiguous. See Abbott Labs., 566 F.3d at 1288. Here, the amended submission to the PTO cited by Defendants makes clear that the Patents-in-Suit relate to an "existing" elevator control. Therefore, the Court finds that Defendants' limitation is proper based on Plaintiff's attempt to distinguish the Patents-in-Suit from the "Sirag Jr." and "Schuster" prior art. See Seachange Int'l, Inc. v. C-COR, Inc., 413 F.3d 1361, 1372-73 (Fed. Cir. 2005) ("Where an applicant argues that a claim possesses a feature that the prior art does not possess in order to overcome a prior art rejection, the argument may serve to narrow the scope of otherwise broad claim language.").

Furthermore, Defendants cite to the following two instances in which Plaintiff described the Patents-in-Suit with respect to an "existing" elevator control:

(1) The device reads the destination signal, converts it into at least one call report and controls an existing elevator control by the call report.


(2) In the present case, the existing elevator control 14, 14' is controlled by the computing unit 30 indirectly by way of the modernizing device 36, 36'.

(Id., col. 7:35-38.) (emphasis added).

These references support the construction that the elevator control contemplated by the Patents-in-Suit must already be in place prior to the modernization process, thereby precluding any new or modified elevator controls from being encompassed by the Patents-in-Suit.

Plaintiff appears to concede the point that the elevator control must be "existing" in its brief submitted for the Markman hearing. (See Pl.'s Opening Markman Brief 2) ("The computing unit executes the destination dispatch algorithm, assigns elevators to particular passengers, and controls the existing elevator control equipment via the modernizing devices.") (emphasis added); (id. 4) ("The destination signals are received by the modernizing devices 36, which in turn instruct existing elevator controls 14 to execute the appropriate instructions . . . .") (emphasis added); (id. 5) ("These call reports may then be issued to existing elevator control 14 by signal generator 362 over, for example, a plurality of electrical lines.") (emphasis added).

Based upon the prosecution history and implied definition provided by the abstract and specification, the Court concludes that the term "elevator control" means "an existing device that controls the operation of the elevator - the identical elevator control that was in place before modernization."

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Plaintiff's Proposed Construction</th>
<th>Defendants' Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;elevator installation&quot;</td>
<td>&quot;a group of elevators that convey users in a&quot;</td>
<td>&quot;the entire group of associated elevators that convey passengers&quot;</td>
</tr>
</tbody>
</table>
The term "elevator installation" is recited in Claim 1 of each of the Patents-in-Suit. In order to construe this claim, the Court will look first to the language of the claim itself, and then to the existing intrinsic evidence where the definition is not clearly stated in the claim itself.

The parties dispute whether this claim requires only one elevator control for the group of elevators or that each elevator be controlled by its own elevator control. The relevant claim language explicitly recites an elevator installation as "having at least one elevator and at least one elevator control for controlling the elevator in response to call reports." ('861 Patent, col. 11:7-10). Importantly, the claim language provides that the "elevator installation" includes an elevator control for "controlling the elevator." The singular form used by the claim language suggests that one elevator control is necessary for each elevator. Thus, as the claim language itself is at least ambiguous as to whether a separate elevator control is required for each elevator, the Court will review the available intrinsic evidence to resolve the ambiguity. See Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002) ("The specification may assist in resolving ambiguity where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone.")

Turning to the specification, the Background Section to the '465 Patent states that 
"[t]he elevator installation consists of a group of elevators that convey passengers in a building, where each elevator is controlled by an elevator control." ('465 Patent, col. 1:24-26.) (emphasis added). This phrasing is more consistent with Defendants' proposed interpretation that each elevator is controlled by its own elevator control. See Bell At. Network, 262 F.3d at 1271 ("[W]hen a patentee uses a claim term throughout the entire patent specification, in a manner consistent with only a single meaning, he has defined that term 'by implication.'") (quoting Vitronics Corp., 90 F.3d at 1582). Accordingly, the Court concludes that "elevator installation" means "a group of elevators that convey passengers in a building, where each elevator is controlled by an elevator control." 6

--- Footnotes ---

6 Defendants contend that the term "elevator installation" should be defined as the "entire group of associated elevators" since the entire elevator installation is to be modernized together. (See Defs.' Opening Markman Br. 39.) Defendants provide no citation in support of such an argument, and the Court refuses to read such a limitation into the claim where it is not contained in either the claim itself or the corresponding specification.

- - - - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - -
Looking to the claim term itself, I find that the term "ellipse having a major diameter" unambiguously connotes the geometric definition of "ellipse", a shape defined by the formula:

\[ \frac{x^2}{a^2} + \frac{y^2}{b^2} = 1 \]

where "a" and "b" are constants. The inclusion of the phrase "having a major diameter" invokes the very "mathematically precise" meaning that Bose now wishes to disavow. A "major diameter," as stated above, is the longest chord, or straight line segment, joining two points on a curve. The major diameter passes through the center of an ellipse.

The prosecution history supports this narrow interpretation of the phrase "ellipse having a major diameter." Bose amended claim 1 several times, and, at least in response to its last three amendments (Amendments D through F), the Examiner rejected proposed claims which would have been elliptical, broadly speaking, but which left room for a short, flattened section. In Amendment D, for example, Bose sought coverage for a port tube with "cross-sectional area progressively decreasing from each end toward the center for substantially the distance between each end and the center."

Bose offers alternative dictionary definitions of the term "ellipse" as meaning an "oval" or "elongated circle," as well as the affidavit of its electroacoustical engineer, Michael O'Connell, who asserts that "ellipse" is understood by O'Connell and those skilled in the art of speaker design to mean "an elongated circle or symmetrical oval, a portion of which corresponds to a section along the length of the continuously curved inside surface of the port that is of tapered cross section . . . ." As a threshold matter, courts may not look to extrinsic evidence to construe a claim term unless the intrinsic evidence is ambiguous or insufficient. See Bell & Howell Document Management Prods. Co. v. Altek Sys., 132 F.3d 701, 706 (Fed. Cir. 1997). Here, I find that the intrinsic evidence is sufficient to properly construe claim 1.

But even assuming that some ambiguity arose in the intrinsic evidence, Bose's proposed constructions fail on their own terms as well. As to the "oval" definition, the dictionary discloses definitions for "oval" which range from "a racetrack in the shape of an oval or a rectangle having rounded corners" to "having the shape of an egg . . . broadly elliptical." Merriam Webster's Collegiate Dictionary 827 (10th ed. 1993). The former definition of "oval" stands in contrast to Bose's repeated insistence that its port tube boundary is continuously curved. In fact, this is the basis upon which Bose distinguished the Furukawa prior art.

Both of the dictionary "oval" definitions are so broad that they would eviscerate the "having a major diameter" qualification in claim 1. The "major diameter" language undercuts Bose's argument that "ellipse" should not be confined, at least for literal infringement purposes, by its geometric definition. See Vitronics, 90 F.3d at 1584 n.6 (approving the use of dictionaries in construing claim terms, so long as dictionary definitions do not contradict meanings ascertained by reading the patent documents); Bai v. L & L Wings, Inc., 1997 U.S. Dist. LEXIS 12649, No. 95-10824, 1997 WL 527870, at *2 (S.D.N.Y. 1997) (finding that geometric definition found in dictionary was in accord with patent specifications, and concluding that "hemisphere" meant "less than a sphere, but nevertheless part of a sphere"), aff'd, 160 F.3d 1350 (Fed. Cir. 1998).

Finally, the "elongated circle" definition Bose proposes actually bolsters JBL's argument. JBL's expert Professor Robert Greene provides the following definition:

An ellipsis is, by definition, a closed plane curve generated by a point moving such that the sum of its distances to two fixed points (called "foci") is a constant (larger than the distance between the two fixed points). This definition is also exactly equivalent, however, to another characterization that is easier to understand intuitively and easier to check in practice. Namely, an ellipse is the curve obtained by enlarging a circle in one direction while leaving it unchanged in the perpendicular direction.

(emphasis added). Thus, an "elongated circle" is equivalent to an ellipse.

Having thus construed claim 1, I conclude that no reasonable jury could find that the JBL accused port tubes with LinearA and Exponential curves literally infringe the '721 patent. The literal infringement analysis here is straightforward: the port tube boundaries in JBL's accused products are not defined by ellipses with major diameters, but rather by the LinearA and Exponential curves. Since claim 1 of the '721 patent specifies that the port tube boundary of Bose's invention is "an ellipse having a major diameter," JBL's eleven disputed models do not literally infringe. 4
4 Of course, the JBL models that admittedly have port tube boundaries defined by an ellipse do literally infringe the ‘721 patent, since those port tubes also contain every other limitation of claim 1 of the ‘721 patent. As to these models, JBL relies upon successfully proving its affirmative defense of invalidity to avoid liability.

At the heart of the parties' disagreement is the meaning of the word "elliptical" in claim 4. The primary definition of elliptical is "of, relating to, or shaped like an ellipse." WEBSTER'S COLLEGIATE DICTIONARY, at 375. Cobra argues that claim 4's requirement of an "elliptical" hosel cross section shape means a cross section shape that is rounded and symmetrical along both the X and Y axes, with no flat or irregular surfaces. Fenton insists this definition unduly limits the meaning of elliptical, and that the term is broad enough to encompass a host of elongated, non-circular cross section shapes, not only those in the form of a mathematically perfect ellipse.

5 Courts may make limited reference to dictionary definitions even before moving to the extrinsic evidence stage of inquiry. As the Federal Circuit has explained, although technical treatises and dictionaries fall within the category of extrinsic evidence, as they do not form a part of an integrated patent document, they are worthy of special note. Judges are free to consult such resources at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents.

Resolution of this issue is appropriate on summary judgment. "A mere dispute over the meaning of a term does not itself create an issue of fact. This is true even where the meaning cannot be determined without resort to the specification, the prosecution history" or extrinsic evidence. Johnston v. IVAC Corp., 885 F.2d 1574, 1579 (Fed. Cir. 1989).

1. Claim Construction
   a. Intrinsic Evidence

Intrinsic evidence includes the language of the claims themselves, the language of the specification, and prosecution history. As discussed below, the court concludes that the intrinsic evidence in this case supports Cobra's argument that its product does not infringe claim 4.

i. Words of the Claims

Claim 4, the only claim that uses the term elliptical, does not expressly define the term. The other claims shed some light on the definition, however. Claim 3 reads, "The head portion of the golf club of claim 1, wherein the hosel has a cylindrical cross-sectional shape," (12M Ex. 2, at col. 12, ll. 55-59), and claim 9 reads, "The head portion of the golf club of claim 1, wherein an outside diameter of the hosel is in the range of from 0.250 inches to 1.250 inches." (Id. at col. 13, ll. 4-6.) Taken together with claims 3 and 4, claim 9 appears to be a catch-all to cover those irregularly-shaped hosel cross sections which are not either elliptical (claim 4) or cylindrical (claim 3). The existence of a claim with catch-all language would seem to be inconsistent with the notion that the term elliptical is intended to describe a broad spectrum of irregularly-shaped cross
ii. Specification

The specification describes several forms of the claimed invention. In particular, the specification notes that hosels are not only cylindrically shaped, and cites an elliptically shaped hosel as an alternative possibility. (Id. at col. 9, ll. 55-56 ("It is to be understood that the hosel may instead be of other shapes, such as elliptical.").) The specification makes reference to an illustrative drawing when it discusses hosels with an elliptical shape: it states that Figure 6 (here, Exhibit 1) "illustrates an elliptical hosel." (Id. Ex. 2, at col. 9, l. 60.) As noted, the illustration in Figure 6 shows a hosel with a symmetrical, rounded oval cross section shape.

These passages from the specification suggest two related points: 1) that hosels come in a variety of non-cylindrical shapes, only one of which is an elliptical hosel; and 2) that a hosel having an elliptical cross section looks like Figure 6. This implies that a hosel with an irregular, non-cylindrical shape is not elliptical, but rather is another of the "other shapes" referenced (though not enumerated) in the specification. This conclusion logically follows, and supports the interpretation urged by Cobra.

Fenton protests that "while examples disclosed in the preferred embodiment may aid in the proper interpretation of a claim term, the scope of a claim is not necessarily limited by such examples." (Pl. Resp., at 8 (quoting Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1303 (Fed. Cir. 1997))). The rule cited by Fenton, however, is designed to prevent reliance on language that exists only in the specification as a basis for limiting the claim. See Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989) ("Limitations appearing in the specification will not be read into claims, and . . . interpreting what is meant by a word in a claim is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.") (quotes omitted). Here, the term elliptical is part of the claim, and the use of this term in the specification sheds light on its proper meaning. See CCPI Inc. v. American Premier, Inc., 966 F. Supp. 276, 282 (D. Del. 1997) (permissible to use specification "to hone the meaning of murky language already in the claims").

Fenton also argues that the Figure 6 cross section is not actually symmetrical, because the illustration shows indentations on the outer wall of the hosel. This is technically true; however, the drawing also represents the overall shape of the cross section as symmetrical. In the court's view, the significance of Figure 6 is as an illustration of hosel shape notwithstanding indentations, since every hosel pertinent to the patent would have such indentations.

The only other mention of the term "elliptical" in the specification occurs in the discussion of hosels with an upper "male" portion (as opposed to those with a bore hole into which the shaft fits). In describing this variation of the invention, the specification observes that the first portion of the hosel "may be generally cylindric, elliptical or other form in shape." (12M Ex. 2, at col. 11, ll. 43-44.) According to Fenton, this means "the invention can be practiced by using hosel shapes other than those meeting the precise, mathematical formula of an 'ellipse.'" (Pl. Resp., at 9.)

There are two difficulties with this argument. First, this language in the specification is part of the narrow discussion of an alternative type of hosel configuration where the shaft fits over the hosel, so the court is reluctant to attach broad significance to it. Cf. Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1562 (Fed. Cir. 1991) (inventor may not avoid a limitation in the claim by stating in the specification an alternative lacking the limitation). Moreover, as the court reads it, the phrase "may be generally cylindric, elliptical or other form in shape" does not mean that the term "elliptical" should be broadly construed, but rather that, as a general matter, there exist cylindrical, elliptical, and "other form[s]" of hosels. That the specification indicates that the invention can be practiced by using various hosel shapes does not support Fenton's position that the definition of "elliptical" encompasses all those variations in cross section shape.

In sum, only one portion of the specification speaks to the meaning of the term "elliptical," and it does so by particular reference to Figure 6 as an illustration of an elliptical shape. Figure 6 is offered not as an example but as an illustration of the meaning of the term. The cross section in Figure 6 is oval, rounded, and appears symmetrical about both the X and Y axes. Therefore, the specification weighs strongly in favor of the definition of elliptical advanced by Cobra.

iii. Prosecution History

The record of proceedings before the PTO with regard to a patent may shed light on claim construction. The prosecution
history "cannot 'enlarge, diminish, or vary' the limitations in the claims," Markman, 52 F.3d at 980 (citation omitted); it only "limits the interpretation of the claim terms so as to exclude any interpretation that was disclaimed during prosecution." Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995). The court looks also to the history of the parent patent. See Jonsson v. Stanley Works, 903 F.2d 812, 818 (Fed. Cir. 1990) (prosecution history of parent application is relevant to understanding scope of claims issuing in a continuation-in-part application).

The history of the '109 patent and its parent do not support the broad reading of the word elliptical in claim 4 for which Fenton argues. The PTO rejected the parent application which used the term "generally elliptical," and cited prior art which indicated that hosels with "generally elliptical" shape were "old in the art." 6 (12 Ex. 5, at 6.) The '109 patent dropped the "generally" modifier, and utilized only the term elliptical. Fenton nonetheless urges that elliptical in the '109 patent essentially means generally elliptical. In fact, this parent prosecution history yields the opposite inference, i.e. that Fenton intended a term with a narrower scope when it used the word elliptical in the '109 patent, in order to distinguish the prior art cited by the PTO when it rejected the parent claims.

--- Footnotes ---

6 Fenton also finds significant that the PTO referred to two patents teaching teardrop shaped hosels as "having elliptical configurations." (12M Ex. 5, at 6.) The court disagrees. The PTO used the expression "elliptical configurations" as part of its discussion of "generally elliptical shape." In that context, the court perceives the expression to be shorthand, rather than a binding definition of the term elliptical, as Fenton argues.

--- End Footnotes ---

Additionally, in applying for the '109 patent, Fenton described two other patents as teaching a "tear-shape" or "tear drop shape" when disclosing pertinent prior art in the IDS submitted with its Petition to Make Special. Fenton contends that these statements in the IDS were "mere characterizations," not attempts to argue or distinguish the prior art, and therefore the court should accord them no weight. As Cobra notes, however, the purpose of this disclosure made in conjunction with the Petition to Make Special was to provide the PTO with details as to "how the claimed subject matter is distinguishable" from the prior art. See Mark I Marketing Corp. v. R.R. Donnelley & Sons Co., 66 F.3d 285, 290 n.5 (Fed. Cir. 1995) (discussing the requirements of a Petition to Make Special). Having offered the IDS to the PTO for this purpose, Fenton cannot now disclaim its references to prior art as meaningless characterizations. Indeed, if the IDS descriptions were not provided to differentiate the prior art from Fenton's claimed invention, they would seem to have no utility to the PTO. Thus, while Fenton's argument in the IDS was not extensive, Fenton plainly sought to distinguish prior art from what it claimed in the '109 patent on the grounds that the prior art was teardrop shaped. This significantly undermines Fenton's present contention that the term elliptical is broad enough to cover a hosel with a non-symmetrical cross section shape.

The prosecution history relevant to the scope and meaning of the term elliptical is not extensive, but neither is it ambiguous. Fenton's prosecution of the '109 patent and its parent militate in favor of a narrow definition of elliptical.

b. Extrinsic Evidence

For purposes of claim construction, extrinsic evidence generally includes expert testimony, inventor testimony, dictionaries, and technical treatises. Vitronics, 90 F.3d at 1584. Both Fenton and Cobra direct the court to evidence of this sort, in the form of secondary and tertiary dictionary definitions, citation to calculus textbooks, and testimony from several golf club designers. None of this evidence is particularly illuminating. For instance, designer Samuel Simmons, when asked if the King Cobra hosel cross section was elliptical, said "yes." (Simmons Dep., at 79, 81.) On cross, he agreed that the shape "appears like a cylindrical hosel, with something added on the back"; on re-direct he admitted, "I don't know exactly what [the hosel shape is] called. You people are confusing me." (Id. at 89.) He finally conceded, "A portion of it is elliptically shaped." (Id.) Rob Hirsch, Cobra Vice President of Research and Development, offered similarly equivocal testimony, stating that the allegedly infringing clubs "might look elliptical to me, but that doesn't mean by the technical definition it is an ellipse. Because an ellipse is a very definite equation." (Hirsch Dep., at 159.)

In any event, the court need not consider this evidence. Where the intrinsic evidence resolves any ambiguity regarding the meaning of a disputed claim term, reliance on extrinsic evidence is improper. Vitronics, 90 F.3d at 1583. Such is the case here, and consequently the court will not consider the extrinsic evidence submitted by each side.
c. The Meaning of Claim 4

Claim 4 reads, "The head portion of the golf club of claim 1, wherein the hosel has an elliptical cross-sectional shape." The claims, specification and prosecution history of the '109 patent lead to only one conclusion. For the reasons discussed above, the court construes "elliptical cross-sectional shape" to mean a rounded oval shape, symmetrical about both the X and Y axes.

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13. Claim 1 of the '101 patent describes a method of coiling three or more metal strands into uniformly tight coils. See PX 1 ('101 patent), col. 1 ("This invention relates to the rewinding of strands … into uniformly tight coils…"). The stipulated facts and extrinsic evidence supports Defendants’ assertion that the term "multiple strands" in Claim 1 is shackled to the meaning of the term of art "mults" which means three or more strands. The scope of the '101 patent encompasses the method of slitting steel into three or more strands and does not encompass splitting operations which produce two strands.

14. Claim 1 of the '101 patent further intended the strands to be selectively worked while moving through the process of reverse bending. See PX 1, col. 2 ("I preferably work the strands selectively by subjecting them to repeated reverse bending under tension less than the tensile yield strength of the metal.").

15. Recognizing that the tension of the pay-off reel, slitter, and recoiler alone is insufficient to elongate and thin the strands, Claim 1 of the '101 patent intends the stated sources of tension must be combined with repeated reverse bending of the strands to achieve the result of elongation and thinning of thicker strands relative to the thin. See PX 1, col.2 ("Tension in the strands … is a function of the current supply to the drive motors of the pay-off reel, slitter, and recoiler, the work of the slitting process, and the work associated with the repeated bending strain reversals… While tension alone below the tensile yield strength of the metal will not elongate and thin the strands, tension in combination with repeated bending reversals of the strands can elongate them and reduce their thickness."); PX 1, col.3 ("The net effect is to elongate and thin the thicker strands relative to the thin, which is an object of this invention.").

16. Claim 2 of the '101 patent is intended to specify that, utilizing the method of claim 1, the thicker strands are not permanently deformed to substantially the same thickness as the thinner strands. See PX 1, col. 2 ("…I selectively work the strands so as to elongate and simultaneously thin out the thicker strands more than the thinner strands."). There was much dispute by the parties as to this issue. Ultimately, the Court is persuaded by the language in the prior art statement that distinguishes the patent in suit from the Kinnavy patent. The language used to describe the '101 patent is:

The method of selectively working the strands comprises subjecting all strands to reverse bending while applying tension thereto less than the tensile yield strength of the strands. The thicker strands thereby elongated more than the thinner strands.

The Kinnavy patent discloses a method of permanently elongating strip by applying tension thereto and reverse bending it so as to exceed the yield strength of the metal. It does not deal with the tensioning of slit strip in multiple.

17. The Court finds this language to describe two primary distinctions between the patent in suit and the Kinnavy patent. First, the Kinnavy patent worked by permanently elongating strip, that is in the plastic range of the metal, while the '101 patent works by temporarily elongating the metal, that is in the elastic range. Second, the '101 patent method applied to multiple strands of slit metal, while the Kinnavy patent worked only with a single strip or uncut metal.

18. The Court is not persuaded by Plaintiff that the term "elongate" without a modifier means "permanent elongation" in the industry. The term can mean both permanent and temporary elongation. The language used by Mr. Fornataro in the prior art statement suggests he was describing his process as utilizing temporary elongation as opposed to Kinnavy's method utilizing permanent elongation.

19. Claim 3 of the '101 patent describes selective working of the strands, utilized in the method of Claim 1, as the combination of reverse bending and tension below the tensile yield strength of the metal. See PX 1, col. 2 ("I preferably
work the strands selectively by subjecting them to repeated reverse bending under tension less than the tensile yield strength of the metal.

20. Claim 4 of the '101 patent specifies that the reverse bending of Claim 3 is effectuated by passing the strands between an unspecified number of parallel but offset rolls. PX 1, col. 2 ("Those strands are passed through a strand tensioning apparatus comprising a plurality of parallel upper rolls, offset respectively in the direction of strand travel from a plurality of parallel lower rolls, but overlapping them in the path of strand travel so as to bend the strand downwardly and upwardly in reverse fashion as the strands pass through the rolls.").

21. Plaintiff's evidence fails to establish that the repeated reverse bending element of Claim 1 reads on the accused process. The '101 patent effectuates the elongation and thinning of metal strands by combining tensions from the pay-off reel, slitter, and recoiler with the tension created in the repeated reverse bending. The accused process cannot be found to read on to the '101 patent because the accused process achieves thinning and elongation through the application of sheer tension above the yield strength in the pull of the recoiler. Additionally, the '101 patent works the strands for elastic deformation while the accused process effectuates plastic deformation. Consequently, Plaintiff failed to prove by a preponderance of the evidence that the accused process literally infringes the '101 patent.

22. Neither has Plaintiff proven by a preponderance of the evidence that the accused process infringes the '101 patent under the doctrine of equivalents. The '101 patent effectuates the temporary elongation and thinning of metal strands by combining tensions from the pay-off reel, slitter, and recoiler with the tension created in the repeated reverse bending below the yield strength. Conversely, the accused process effectuates thinning and elongation through the application of sheer tension above the yield strength in the pull of the recoiler to achieve permanent elongation. The single up and down reverse bending in the accused process is insufficient to add any significant amount of tension, unlike the '101 patent where repeated reverse bending is necessary to effectuate the elongation. The accused process does not perform in substantially the same way to achieve the same result. Therefore, Defendants did not induce infringement of the '101 patent.

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"an elongate handle extending generally along a handle axis"


19. As an initial matter, the Court notes that in the first clause, the term handle axis is preceded by the indefinite article "a" while the second clause uses the definite article "the." This use of indefinite and definite articles in a patent claim indicates simply that the handle axis referred to in the second clause is the same thing as a handle axis referred to in the first clause, according to a universally recognized requirement for precise language in the drafting of patent claims. Def. Ontel Ex. HH ('846 patent) (Claim 1); Manual of Patent Examining Procedure, § 2173.05(e); Phillips, 415 F.3d 1323, 1338 (Fed. Cir. 2005); North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1575-76 (Fed. Cir. 1993) (citing Robert C. Faber, Landis on Mechanics of Patent Claim Drafting 351 (3d ed. 1990)); Baldwin Graphic Sys., Inc. v. Siebert, Inc., 2005 U.S. Dist. LEXIS 15527, at *10-15 (N.D. Ill. July 28, 2005) (citing MPEP § 2173.05(e)).

20. A "handle portion" for the aforementioned grooming tool would commonly be understood to one of ordinary skill in the art as the part of the grooming tool designed to be grasped by the hand. This meaning is consistent with the written description and drawing of the handle in the patent. See Def. Munchkin Ex. A, Porter Patent Figure 1; Col. 2, ll. 24-40. The specification also describes the "handle portion" consistently with the common dictionary definition of the term, which defines "handle" as "a part of a thing made specifically to be grasped or held by the hand." Def. Munchkin Ex. LLL, Random House College Dictionary 599 (Rev. ed. 1984).

21. The definition of the term handle axis is found in the language of the first clause--specifically, in the use of the words "elongate" and "extending" in "a grooming tool having an elongate handle portion extending generally along a handle axis." Def. Ontel Ex. HH ('846 patent) (col. 3, ll. 62-63); Phillips, 415 F.3d at 1313-14 (cannot look at claim terms in a vacuum; the context in which a term is used in the asserted claim can be highly instructive).
definite articles are used in patent claim drafting in order to define precisely when the second or third or tenth reference to a
axis can refer to one or many different possible axes. The Court rejects this argument. As described earlier, indefinite and
32. Finally, FURminator has argued that the indefinite article "a" in the phrase "a handle axis" means that the term handle
history of '846 patent).
31. Although FURminator has adopted the terms "lateral axis," "longitudinal axis" and "transverse axis" to support its
proposed claim construction in this litigation, there is no mention of any of these three axes anywhere in the claims,
specification or prosecution history of the patent. Def. Ontel Ex. HH ('846 patent); Def. Munchkin Ex. B (prosecution history of '846 patent).
30. Constructions that result in words of the claims being rendered meaningless or superfluous are almost certainly
Perkin-Elmer, 822 F.2d at 1533 n.8); Key Pharms. v. Hercon Labs. Corp., 161 F.3d 709, 716-17 (Fed. Cir. 1998) (citing
Markman, 52 F.3d at 981); Vitrionics Corp., 90 F.3d at 1584.
29. Further support for this construction of the term handle axis is found when it is compared to the construction suggested by FURminator.
Specifically, adopting FURminator's proposed construction of the term handle axis would mean that there are not one or
even three but an infinite number of possible axes extending in all possible directions from the elongate handle. This
construction leads to absurd results because if the handle axis extends in any possible direction, then other clauses in the
patent claims no longer carry any meaning, such as "pulling the handle portion generally along the handle axis" and
"extending away from the blade edge segments generally in a direction perpendicular to the handle axis." Def. Ontel Ex. HH
('846 patent) (col. 4, ll. 3, 49-51; col. 6, ll. 11-13).
28. At no point in either the specification or the prosecution history do the inventors ever mention or even suggest that the
handle axis might refer to some axis other than the one corresponding to the longest dimension of the elongate handle. Def. Ontel Ex. HH
('846 patent); Def. Munchkin Ex. B (prosecution history of '846 patent).
27. Support for this construction is also found in the specification itself, where the inventors make it clear
that the handle axis is the axis defined by or corresponding to the longest dimension of the elongate handle and is oriented
26. Support for this construction of the term handle axis is found in the specification itself, where the inventors make it clear
that the handle axis is the one specific axis that
In other words, the clause defines the handle axis as the one specific axis that corresponds to the longest dimension of the elongate handle.
25. Incorporating the plain language definitions of "elongate" and "extending" into the original patent claim, the clause becomes
"a grooming tool having a handle portion of greater length than width that is stretched or spread out to greater or
fullest length generally along a handle axis." In other words, the clause defines the handle axis as the one specific axis that
24. There are no special definitions of the terms "elongate" or "extending" shown in either the specification or prosecution
history of the '846 patent. Def. Ontel Ex. HH ('846 patent); Def. Munchkin Ex. B (prosecution history of '846 patent); Joint
Claim Construction Statement at 14-15, 23.
23. The ordinary, plain language meaning of the word "extending" is "stretching or spreading out (something) to greater or
fullest length." Def. Ontel Ex. W (dictionary); Def. Ontel Ex. tHH ('846 patent) (col. 2, ll. 32-34 and figs. 1-2); Def.
Munchkin Ex. G (dictionary); Joint Claim Construction Statement at 14-16, 23; Phillips, 415 F.3d at 1314.
22. The ordinary, plain language meaning of the word "elongate" is "having more length than width." Def. Ontel Ex. W
(dictionary); Phillips, 415 F.3d at 1314 ("In some cases, the ordinary meaning of claim language as understood by a person
of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than
the application of the widely accepted meaning of commonly understood words. . . . In such circumstances, general purpose
dictionaries may be helpful.") (citation omitted).

the most rudimentary understanding of the English language understands that 'at least one piezo-electric crystal means quoting Kistler Instrumente AG v. United States, 224 Ct. Cl. 370, 628 F.2d 1303, 1318 (Ct. Cl. 1980) (“Anyone with even one’ means that there could be only one or more than one.” Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed. Cir. 1999) (also some of the dependent claims, refers to an invention with one or more such elongate members. “Use of the phrase ‘at least one retractable elongate member” described in independent claims 1, 8 and 12, and some of the dependent claims, refers to an invention with one or more such elongate members. "Use of the phrase 'at least one' means that there could be only one or more than one." Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed. Cir. 1999) (also quoting Kistler Instrumente AG v. United States, 224 Ct. Cl. 370, 628 F.2d 1303, 1318 (Ct. Cl. 1980) (“Anyone with even the most rudimentary understanding of the English language understands that 'at least one piezo-electric crystal means

33. FURminator has also argued that the term "a" in patent claim can also indicate "one or several in number." The Federal Circuit has found, however, that this construction of the article "a" is only permitted when there is some basis in the patent specification for concluding that "a" can mean "one or several in number." Conversely, when the patent specification describes a thing as being one in number, then the article "a" cannot mean "several." See Manual of Patent Examining Procedure, § 2173.05(e); MercExchange, LLC, 401 F.3d at 1338; North Am. Vaccine, 7 F.3d at 1575-76 (citing Faber, supra at 351).

34. Accordingly, the Court finds that the construction of the term handle axis offered by Ontel and Munchkin--that is, "the axis defined by the longest dimension of the elongate handle"--is the correct one.

35. The correct construction of the term handle axis leads to a finding of non-infringement in favor of Munchkin and Ontel, as described in greater detail below.

36. Finally, FURminator has also argued that, as a matter of claim construction, the words "as quickly and as effectively as the toothed blades disclosed in the '846 patent" must be added to the clause "to cause the blade edge to engage the loose hair of the pet and pull it from the pet without cutting or pulling the non-loose hair from the pet." There is no basis for adding this language to the patent claims. First, the "as quickly and as effectively as a prior art toothed blade" limitation does not appear anywhere in the patent claim itself--which means that adding this limitation in the course of claim construction would be undoubtedly incorrect as a matter of well-established law. The "as quickly and as effectively" limitation also does not appear anywhere in the specification or prosecution history of the patent. Adding the proposed language is incorrect as a matter of patent law and must be rejected. Def. Ontel Ex. HH ('846 patent); Phillips, 415 F.3d at 1312 (holding it would be unjust and an evasion of the law to construe claims in a manner different from the plain import of its terms; "It is a 'bedrock principle' of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude"); Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 950 (Fed. Cir. 1993) (rejecting district court's incorporation of a size limitation into the claim term 'straw shaped' and holding it is improper to add extraneous limitations to a claim); Texas Instruments, Inc. v. United States ITC, 988 F.2d 1165, 1171 (Fed. Cir. 1993) ("courts can neither broaden nor narrow claims to give the patentee something different than what he has set forth") (citation omitted).
lodged within said component means,' to mean one or more crystals. Certainly, if the patentees intended that claim 1 was to cover one and only one piezoelectric crystal, they would have changed the above-quoted language to read 'one piezoelectric crystal means lodged within said component means.'}). In the definiteness analysis above, this court concluded that the "retractable elongate member" of the claims is the same part as the "folding member 330" named in the patent specification.

The patentee acknowledges that portions of the specification appear to describe an invention with two elongate members. Figure 3 shows two sets of guide holes 323a and 323b set in the rotary bodies 320a and 320b to accommodate elongate members, and Figure 2 portrays two folding members 330. Yet SDS notes that the specification describes only a preferred embodiment of the invention -- and "particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments. . . . [a] limitation should not be read from the specification into the claims" Rhine, 183 F.3d at 1346; see also Specialty Composites v. Cabot Corp., 845 F.2d 981, 987 (Fed. Cir. 1988). Patentee explains that "if a need exists," two elongate members can be employed, but such is not required by the claims. See col. 6, ln. 8.

Further, SDS quotes from the specification at col. 3, Ins. 47-58: "The guide holes . . . are provided to insertably receive a folding member 330, to facilitate movement thereof . . . Although an example of the guide holes . . . is shown in the figures wherein each guide hole has a folding member set therein, it is preferable that only one folding member is set at a given time during operation." (Emphasis added.) And, at col. 4, Ins. 4-5: "Although two folding members 330 are shown in the drawings, for exemplary purposes, only one can be set." (Emphasis added.) Finally, Figure 5 shows only one folding member and maps its arc as it bends the cutting blade. SDS claims that, were a second folding member used while a first folding member was in operation, "one would interfere with the other." SDS Br. at 11.

Ken responds that the elongate member should be understood as a means-plus-function element under 35 U.S.C. § 112 P 6, a contention which the court will address below. Defendant continues: "The structure that performs [named] functions in the specification are the two folding members identified as item 330. The specification, along with Figs. 2, 4 and 6 indicate that retractable elongate member refers to each folding member. . . . The only structure taught by the specification is a unit that includes two folding units." Ken Br. at 27.

At this point, the court is persuaded by two maxims of patent construction to accept SDS' interpretation. First, the patentee follows clear authority that "the language of the claim frames and ultimately resolves all issues of claim interpretation." Abtox, Inc. v. Exitron Corp., 122 F.3d 1019, 1023 (Fed. Cir. 1997), and that claim language may not be narrowed to preferred embodiments disclosed in the specification. See Rhine, 183 F.3d at 1346; see also Transmatic, Inc. v. Gulton Industries, Inc., 53 F.3d 1270, 1277 (Fed. Cir. 1995). Second, "in construing a claim, claim terms are given their ordinary and accustomed meaning unless examination of the specification, prosecution history, and other claims indicates that the inventor intended otherwise." Transmatic, 53 F.3d at 1277. Following those guidelines, the court will call the disputed "rose" a "rose" unless persuaded otherwise by the prosecution history or the other claims (via the doctrine of claim differentiation).

ii. Claim Differentiation

As another clue, SDS looks to the dependent patent claims. Claim 1 describes a "metallic ribbon stock folding apparatus" comprising, inter alia,

- at least one retractable elongate member, said elongate member mounted for movement between a retracted position where said elongate member is disengaged from at least one of said rotary bodies and an extended position where said elongate member engages both said first and second rotary bodies. . . .

(Emphasis added.) In turn, dependent claim 3 reads in full: "The metallic ribbon stock folding apparatus as recited in claim 1 comprising two elongate members."

Dependent claims, which add limitations, are presumed narrower than the independent claims from which they spring. See, e.g., Wilson Sporting Goods Co. v. David Geoffrey & Assoc., 904 F.2d 677, 686 (Fed. Cir. 1990); Specialty Composites, 845 F.2d at 987-88 (holding that a limitation recited in dependent claims does not imply such limitation in independent claims: to the contrary, such is evidence that the broader independent claims do not contain the limitation). And, "where some claims are broad and others narrow, the narrow claim limitations cannot be read into the broad." D.M.I., Inc. v. Deere
8 Finally, the doctrine of claim differentiation teaches that "there is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in the meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant." United States v. Telelectronics, 857 F.2d 778, 783-84 (Fed. Cir. 1988) (citation omitted).

The court accepts SDS' claim differentiation argument. Dependent claim 3 tracks independent claim 1 in all respects, except that claim 3 describes exactly two elongate members. Because claim 1 is presumed both different from and broader than dependent claim 3, the court concludes that claim 1 must recite some number of elongate members other than, or in addition to, exactly two. This interpretation supports a reading of the "at least one" language to include an invention with only one elongate member.

iii. Prosecution History

Finally, the parties focus on the prosecution history of the '919 patent in suit, as well as of the parent '391 application which issued as the '750 patent. 9

9 Though SDS initially asserted infringement of the '750 patent, it later dismissed that infringement claim with prejudice. Only the '919 patent remains at issue in this suit.

Ken's argument stems from two events that occurred during SDS' prosecution of the parent '391 application. Claims submitted to the PTO in June 1996 included claim 2, describing a single "folding member," and dependent claim 3, "wherein said folding member is at least set with plural numbers." Gilman Decl. Exh. 2 at 35-36. On July 9, 1997, the patent examiner rejected all pending claims (claims 1-11) for various reasons, including:

Claims 1 and 9 are rejected under 35 U.S.C. 102(a), (b), (e) as being anticipated by Tyler (5,461,893). See Figure 5 where the first and second driving means is shown for revolving the folding means and moving the folding means in a straight line direction, i.e., in an "isolated position".

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paine (3,584,660) in view of Tyler (5,461,893). See Figure 5 where the first and second driving means is shown for revolving the folding means and moving the folding means in a straight line direction, i.e., in an "isolated position".

Warshavsky Decl. Exh. S at 82-83. In response, on October 16, 1997, the inventor amended claim 1 to recite, inter alia, a folding means, "the folding means including at least two folding members." Warshavsky Decl. Exh. T at 90.
added). That amendment also referenced "a pair of rotary bodies, rotatably connected to the ends of the fixing body for revolving the folding members, said pair of rotary bodies having a pair of guide holes formed therein for revolving the folding members." Id. (Emphasis added). And in that submission, the inventor represented:

 applicant's, inter alia, 'folding means including at least two folding members . . .'. In contrast thereto, with the Tyler '893 device, as discussed above, the bending bar and the single bending tool must be withdrawn and disengaged completely from the metal rule so that the bending tool may be rotated to a second position. Advantageously in the present invention, two folding members are provided which may be alternatively positioned adjacent the cutting blade by the second driving means. Therefore, the cutting blade of the present invention remains within its guide member throughout the bending process.

Warshavsky Decl. Exh. T at 8-9 (emphasis added). In response to the inventor's October 1997 amendments, the examiner allowed the '750 patent to issue. See Notice of Allowability, Gilman Decl. Exh. 2 at 117. It is undisputed that the '750 patent includes the limitation "the folding means including at least two folding members." See '750 Patent, Gilman Decl. Exh. 2 at 14, claim 1; see also dependent claim 2 (". . . wherein the at least two folding members having [sic] a substantially triangular cross-section.").

From these events, Ken argues: "As used in the '919 patent specification, and the prosecution history of its parents, 'at least one retractable member' must be interpreted as two or more folding members. Otherwise, Tyler '893 anticipates the invention by disclosing one bending pin." Ken Br. at 30. The defendant charges that SDS is, by this motion, now attempting to reclaim subject matter that it expressly disclaimed in the prosecution history: an invention involving only one bending pin. Id. Ken thus relies on a variant of prosecution history estoppel: 10

Arguments made during the prosecution history are relevant in determining the meaning of the terms at issue." . . . The prosecution history of a patent contains: all express representations made by or on behalf of the applicant to the examiner to induce a patent grant. . . . Such representations include amendments to the claims and arguments made to convince the examiner that the claimed invention meets the statutory requirements of novelty, utility, and nonobviousness. Thus, the prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance.


--- Footnotes ---

10 The doctrine of "prosecution history estoppel," sometimes called "file-wrapper estoppel," "precludes a patentee from obtaining in an infringement suit protection for subject matter which it relinquished during prosecution in order to obtain allowance of the claims." Lockwood v. American Airlines, Inc., 107 F.3d 1565, 1574 (Fed. Cir. 1997). It is typically invoked to bar or limit a patentee's assertions of infringement under the doctrine of equivalents. Id.; see also K-2 Corp. v. Solomon S.A., 191 F.3d 1356, 1367 (Fed. Cir. 1999). The doctrine is not squarely applicable to the claim construction context, but has a close variant: "Interpreting claims in view of the prosecution history applies as a preliminary step in determining literal infringement. Prosecution history estoppel applies as a limitation to the doctrine of equivalents after the claims have been properly interpreted and no literal infringement is found." General Elect. Co. v. Nintendo Co., 179 F.3d 1350, 1362 (Fed. Cir. 1999) (citation omitted).

--- End Footnotes ---

SDS disputes Ken's estoppel argument (which, as said, is based solely upon comments made during prosecution of the parent application) by reference to the prosecution history of the '391 application, which issued as the '919 patent in suit. The patentee cites claims submitted in its July 1998 preliminary amendment: One claim required two retractable elongate members, see dependent claim 12 ("The metallic ribbon stock folding apparatus as recited in claim 10 comprising two elongate members."). but several others were limited to "at least one," see, e.g., claim 10 (including "at least one retractable elongate member mounted for movement between a retracted position and an extended position"). See '391 Application, Gilman Decl. Exh. 4 at 44-48. In August 1998, the patent examiner issued his only official action which, in addition to
formal matters, rejected certain claims as unpatentable over prior art references Tuit (3,420,279) and Ritter (3,823,749). Id. at 53-59. The examiner did not cite to the Tyler patent as an invalidating prior art reference. Id.

SDS concludes that what made the '750 claims patentable was not, as Ken says, the presence of two elongate members. Instead, "it was the structure whereby the elongate member engages both the first and second rotary bodies [parts 320a and 320b of the preferred embodiment]." SDS Br. at 17. The crux of SDS' argument is that while the claims of the '750 patent, issued from the parent application, admittedly limited the invention to include two retractable elongate members, the claims of the '919 patent are not likewise narrowed.

The record supports the patentee's argument. The '919 patent claims that issued were closely modeled on claims suggested by the examiner in October 1998. See Gilman Decl. Exh. 4 at 77-82. The examiner's comments focused heavily on the physical relationship between a single elongate member and the two rotary bodies, but not on the number of elongate members. For example, he suggested the phrasing "a rotary assembly having first and second rotary bodies spaced to receive ribbon stock therebetween, said elongate member engaging both first and second rotary bodies when in the extended position;" and "at least one retractable elongate member, said elongate member mounted for movement between a retracted position where said elongate member is disengaged from said rotary bodies and an extended position where said elongate member engages both first and second bodies." Id. at 77-79, claim 10 (examiner's additions underlined). The prosecution history also contains an "interview summary" by the patent examiner, recording a telephone conversation discussing with the inventor the positioning of the elongate member. Id. at 70. Finally, the court finds compelling SDS' remark that the examiner failed to even mention the Tyler reference as prior art in his August 1998 rejection of the '919 claims. See '391 Application, Gilman Decl. Exh. 4 at 53-59. Such omission would be startling if, as Ken suggests, the Tyler prior art reference invalidated every diemaking machine equipped with only one elongate member/bending pin.

Ken's argument that SDS deliberately relinquished rights to an invention with only one elongate member fails. 11 Estoppel or limitation of the '919 claims to that effect would be inappropriate. The prosecution history leading to the '919 patent supports the court's initial finding that "at least one retractable elongate member" means one or more. See '919 Patent, independent claims 1, 8 and 12, and some dependent claims.

11 During the Markman hearing, Ken advanced for the first time the argument that the claimed invention would be inoperative if it used only one elongate member: it analogized such machine to a car that could turn in only one direction. The court finds that argument unpersuasive in light of the specification, which directs that "it is preferable that only one folding member is set at a given time during operation." See col. 3, ins. 53-54. Moreover, determinations of operability involve a separate inquiry from the Markman analysis.

As said, Ken makes one remaining argument concerning the elongate member: the defendant asserts that it must be understood as a means-plus-function element under 35 U.S.C. § 112, P 6, which states:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

Broadly stated, "a claim deserves means-plus-function treatment when 'expressed as a means . . . for performing a specified function without the recital of structure [or] material . . . in support thereof.'" Seal-Flex, Inc. v. Athletic Track and Court Constr., 172 F.3d 836, 848 (Fed. Cir. 1999) (Rader, J., concurring) (citations omitted); see also O.I. Corp. v. Tekmar Co. Inc., 115 F.3d 1576, 1583 (Fed. Cir. 1997) (paragraph 6 is implicated "only when means plus function without definite structure are present"). If defendant is correct, the statute acts to limit the elongate member claims to the structure disclosed in the patent specification or their structural equivalents. The Federal Circuit describes the quid pro quo encompassed in this means-plus-function provision:
[Paragraph 6] language permits a patent applicant to express an element in a combination claim as a means for performing a function. The applicant need not recite structure, material, or acts in the claim's means-plus-function limitation. . . . The second clause of the [] paragraph, however, places a limiting condition on an applicant's use of means-plus-function language. A claim limitation described as a means for performing a function, if read literally, could encompass any conceivable means for performing the function. This second clause confines the breadth of the protection otherwise permitted by the first clause. The applicant must describe in the patent specification some structure which performs the specified function. . . . [Paragraph 6] limits the applicant to the structure, material, or acts in the specification and their equivalents.

Valmont Indus. v. Reinke Mfg. Co., 983 F.2d 1039, 1042 (Fed. Cir. 1993) (citations omitted). SDS strenuously objects that the '919 patent contains no means-plus-function language; the court therefore addresses the issue.

Patent drafters conventionally invoke 35 U.S.C. section 112, Paragraph 6 "by using only the words 'means for' followed by a recitation of the function performed." Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed. Cir. 1996). Thus, use of the word "means" in claims triggers a presumption that the inventor sought to invoke means-plus-function analysis. O.I. Corp., 115 F.3d at 1579. And, "when an element of a claim does not use the term 'means,' treatment as a means-plus-function claim element is generally not appropriate." Al-Site Corp. v. VSI Intern., Inc., 174 F.3d 1308, 1318 (Fed. Cir. 1999).

However, that analysis is deceptively simple: the dispositive issue is whether the claims recite structure. "Mere incantation of the word 'means' in a clause reciting predominantly structure cannot evoke section 112, P 6. Conversely, 'the recitation of some structure in a means plus function element does not preclude the applicability of section 112(6)." O.I. Corp., 115 F.3d at 1579 (citation omitted). Therefore, even if "means" language is present, "the presumption that § 112, P 6 applies is overcome if the claim itself recites sufficient structure or material for performing the claimed function." Al-Site Corp., 174 F.3d at 1318.

Ken argues that the '919 patent claims do not define the structure of the elongate member. Ken Br. at 25. "Indeed, there is no structure at all in this claim element." Id. Further, the defendant asserts that the elongate member is not defined either in the patent specification or in the prosecution history. Id. at 26.

SDS responds that the element is described as "elongate" and "retractable." And, plaintiff asserts, Ken's argument fails: "under Ken's analysis, the 'at least one retractable elongate member' is a means-plus-function element without a function!" SDS Reply Br. at 4. See generally Rodime PLC v. Seagate Technology, Inc., 174 F.3d 1294, 1302 (3rd Cir. 1999) (Paragraph 6 not invoked if claim either recites sufficient structure for performing stated function, or if it recites no function corresponding to stated means).

Initially, the court notes that the elongate member phrase nowhere includes the operative "means for" language -- all claims of the '919 patent are devoid of that phrase. Therefore, the court presumes that Paragraph 6 does not apply. And dictionary definitions, not to mention common sense, point to the word "member" (descriptive modifier notwithstanding) as a structural term. See Webster's New International Dictionary (2d ed. 1956) defining "member" as, inter alia, "... 5. A part of a whole; an independent constituent of a body, structure, or any organized thing, or a unit in a series ... 12. Engin. Any essential part of a framed structure." Analogously, the Federal Circuit, reviewing the phrase "detent mechanism," stated:

It is true that the term "detent" does not call to mind a single well-defined structure, but the same could be said of other commonplace structural terms such as "clamp" or "container." What is important is not simply that a "detent" or "detent mechanism" is defined in terms of what it does, but that the term, as the name for structure, has a reasonably well understood meaning in the art.


Following that reasoning, this court invokes its earlier analyses of the "elongate member," its equivalence to "folding unit," "folding device," or "folding means" 300 of the patent specification, and to Ken's proffered "bending pin." See also Envrco Corp. v. Clestra Cleanroom, Inc., 209 F.3d 1360, 1365 (Fed. Cir. 2000) (interpreting "second baffle means" element: 'The term 'baffle' itself is a structural term. The definition of the word 'baffle' is 'a device (as a plate, wall or screen) to deflect, check, or regulate flow.' Because the term 'baffle' itself imparts structure, meaning a surface which deflects air, its use in the claims rebuts the presumption that § 112, P 6 applies."") (emphasis added and citation omitted). The court finds no
support for Ken's proposition that the claimed elongate member connotes function without structure. Means-plus-function treatment of this element is inappropriate and denied.

1. "Elongate Members"

Millipore argues that the terms "elongate members" used in Claims 1 and 5 of the '477 Patent should be construed as "a part of extended length." Gore contends, however, that the proper construction of the "elongate members" is "a rigid and monolithic structure of extended length." Gore's argument is derived from the specification. See '477 Patent col. 4 ll. 57-58 ("[e]ach of the elongate members 30 are monolithic and rigid."). The issue is therefore whether such a limitation can be read into the claims.

Because the specification is highly relevant to the claim construction analysis, it is considered to be "the single best guide to the meaning of a disputed term." Phillips, 415 F.3d at 1315 (quoting Vitronics, 90 F.3d at 1582). Nonetheless, "[w]hen consulting the specification to clarify the meaning of claim terms, courts must take care not to import limitations into the claims from the specification." Abbott Labs. v. Sandoz, Inc., 566 F.3d 1282, 1288 (Fed. Cir. 2009) (en banc). The Federal Circuit has recognized that "the distinction between using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim can be a difficult one to apply in practice." Phillips, 415 F.3d at 1323. In construing claim terms, "the court's focus [must] remain [] on understanding how a person of ordinary skill in the art would understand the claim terms." Id. For example, "although the specification often describes very specific embodiments of the invention," the Federal Circuit has "repeatedly warned against confining the claims to those embodiments." Id. In particular, "[w]hen the specification describes a single embodiment to enable the invention, [a] court will not limit broader claim language to that single application unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction." Abbott, 566 F.3d at 1288 (internal quotation marks and citation omitted).

Here, I find Millipore's intention to limit the claim term to "rigid and monolithic" elongate members to be clear from the language of the claims and the specification, as well as from the prosecution history. First, the term "rigid" is expressly provided in Claim 1 to describe the elongate members. See '477 Patent col. 8 ll. 42-43 ("rigid elongate members"). Second, the specification expressly emphasizes the need for elongate members to be rigid:

The mechanisms underlying the operation of the fluid sampling device 100 call for a certain rigidity in the configuration of elongate members 30. Aside from durability, the rigidity allows the members to be pushed through the shaft into their open positions with sufficient and appropriate force to overcome the frictional forces that create the liquid tight seal, without the elongate members flexing, bending, crumpling, or otherwise deforming, such circumstances potential leading to sampling failures, and/or more catastrophically, breach of extant sterile conditions.

Id. at col. 7 ll. 9-18. Third, Millipore's intention to limit the claim term is also reflected in the prosecution history record during which Millipore expressly distinguished the '477 Patent over the Arthun device, because that product "fails to teach a rigid and/or monolithic elongate member." '477 Patent, Prosecution History Record, p. 57. Similarly, Millipore stated in the prosecution history record that "Claim 13 [issued as Claim 1] requires a rigid monolithic elongate member which is neither taught nor suggested by Arthun." Id. at 58.

--- Footnotes ---

2 See Section II.B.10. infra for the construction of the term "rigid" used in Claim 1 of the '477 Patent to describe the elongate members.

--- End Footnotes ---

Consequently, I construe the claim term "elongate members" as "a rigid and monolithic structure of extended length."
The district court concluded that Delta's slitting line did not infringe Herr-Voss's patented method on two grounds. The first ground rested on the district court's interpretation of a disputed term in the claim. The claim recites the step of:

working the multiple strands selectively by reverse bending between the same rolls, so as to reduce and elongate the thicker strands more than the thinner strands.

(Emphasis added.) At trial, the parties vigorously disputed whether the elongation recited in the claim referred to elastic (i.e., temporary) or plastic (i.e., permanent) elongation. Under the former interpretation, Delta's slitting line does not infringe the claimed method since, as both parties concede, Delta's line effects plastic elongation of the strands.

At the conclusion of the trial the district court adopted Delta's proposed claim interpretation and held that the claimed method requires elastic elongation of the slit strands. The district court reached this conclusion primarily on the basis of a piece of prosecution history in which Herr-Voss distinguished its invention from an earlier patent issued to Kinnavy. As Herr-Voss explained to the patent office:

The method of selectively working the strands comprises subjecting all strands to reverse bending while applying tension thereto less than the tensile yield strength of the strands. The thicker strands are thereby elongated more than the thinner strands.

The Kinnavy patent discloses a method of permanently elongating strip by applying tension thereto and reverse bending it so as to exceed the yield strength of the metal. It does not deal with the tensioning of slit strip in multiple.

(Emphasis added.)

Generally speaking, applying tension to metal below the tensile yield strength results in only elastic deformation. The district court therefore inferred from the above representation that Herr-Voss's invention differed from Kinnavy in that Kinnavy concerned plastic deformation while the invention concerned elastic deformation.

Having reviewed the '101 patent and those portions of the prosecution history and trial transcript made part of the appellate record, and especially the testimony of the inventor, Fornataro, we are convinced that the district court erred in its claim interpretation. We hold that the term "elongate" in the claim refers to plastic, rather than elastic, deformation.

Most persuasive on this point is the sentence in the specification which states:

While tension [from the recoiling] alone below the tensile yield strength of the metal will not elongate and thin the strands, tension in combination with repeated bending reversals of the strands can elongate them and reduce their thickness.

As Delta's expert witness, Dr. Watson, conceded at trial, this sentence is incorrect if the elongation being described is elastic elongation because tension below the yield strength of the metal will elastically elongate the metal. Thus, the patent specification itself uses the word "elongate" to refer to plastic elongation.

The aforementioned representation made by Herr-Voss during prosecution is not inconsistent with our interpretation of "elongate." That representation merely states that in Kinnavy the combination of tension and reverse bending exceeds the yield strength of the metal, while in Herr-Voss's invention the tension by itself is less than the metal's yield strength. Consequently, it does not support the district court's holding that the word "elongate" refers to elastic elongation. Instead, as the district court also recognized, this representation was made to distinguish Kinnavy on the basis that the Kinnavy reference worked only with a single strip of uncut metal whereas the '101 patent applies to multiple strands of slit metal. We therefore cannot affirm the district court's holding of noninfringement on the first ground articulated by the district court.

In its second ground, the district court focused on the language in the claim requiring that the reverse bending of the strands contribute to their elongation ("reverse bending . . . so as to . . . elongate the thicker strands"). This limitation, the district court found, was absent from the method performed by Delta's accused slitting line. As the district court explained:
The '101 patent effectuates the elongation and thinning of metal strands by combining tensions from the pay-off reel, slitter, and recoiler with the tension created in the reverse bending. The accused product cannot be found to read on to the '101 patent because the accused process achieves thinning and elongation through the application of sheer tension above the yield strength in the pull of the recoiler.

In its brief, Herr-Voss argues that the record contains no evidence to support the district court's finding that Delta's slitting line stretches the thicker strands using "sheer tension . . . in the pull of the recoiler" rather than a combination of that tension with the reverse bending as claimed in the '101 patent. In fact, Herr-Voss adds, what evidence there is supports the opposite conclusion. Specifically, it points to testimony by Mr. Savariego, owner of Delta, in which he specifically admits that his slitting line employs reverse bending in order to decrease the amount of tension necessary to deform the steel. In response, Delta points to no evidence to support the district court's factual finding that reverse bending does not contribute to elongation of the thicker strands in Delta's slitting line. Consequently, we must conclude that this finding by the district court is unsupported by the evidence and is thus clearly erroneous. Since we find that both grounds of noninfringement relied on by the district court were erroneous, we vacate the noninfringement portion of the district court's judgment.

At oral argument, counsel for Delta sought to support the district court's decision on this point by arguing that the claim requires contributions of "tension" from both the reverse bending and the recoiler, while in Delta's slitting line, the reverse bending serves only to reduce the amount of tension required to permanently elongate the strands. In our opinion, this argument is more semantic than substantive. Whether one calls the contribution from the reverse bending "tension" or whether one views the contribution from the reverse bending as decreasing the amount of tension necessary to achieve permanent elongation, the method steps performed in practicing the invention are the same. Thus, in both the claimed invention and Delta's slitting line, a combination of reverse bending and tension from the recoiler is necessary to permanently elongate the strands.

1356
F. "an elongate, rod-like member"

Plaintiff proposes that this phrase be construed as a "shaft having a length." The Court finds that such a construction would be unhelpful to a jury, as it remains quite vague in its employment of the phrase "having a length." Defendants' proposal of "a long, slender rod-like structure" appears to be supported by the patent specification and the dictionary definition of elongate, and it also gives some additional definition to the phrase. Accordingly, "an elongate, rod-like member" shall be construed as "a long, slender rod-like structure."

1357
11. "elongated"

Floe contends that this term should be construed as "stretched out, extended, or lengthened." Newmans, on the other hand,
asserts that this term should be construed as "a web member that has a height from bottom to deck bearing surface that is greater than other frame members." Floe alleges that its proposed construction is consistent with the ordinary meaning of "elongated" and that Claim 6 uses this ordinary meaning. Floe also contends that its proposed construction is consistent with standard dictionary definitions that define "elongated" as "stretched out" and "extended; lengthened." See Merriam-Webster's Collegiate Dictionary 375 (10th ed. 2001); Random House Dictionary of the English Language 633 (2d ed. 1987).

Newmans, on the other hand, contends that its proposed construction is consistent with the specification's description of the preferred embodiment. Specifically, Newmans points out that the specification states, "[c]hannel member 18 can be 3.5 inch [sic] from bottom to deck bearing surface 72, and deck edge protection surface 76 will be high enough to cover the edge of the selected deck material." ('379 Patent, c. 5, ll: 35-38.) Additionally, Newmans points out that the specification refers to all frame members having the same height. Finally, Newmans contends that increasing the height of the web member, as compared to other frame members to be used, improves the visibility of the lights that are mounted to the elongated web member. For these reasons, Newmans contends that its proposed construction is consistent with the specification.

The Court finds that Claim 6 uses the ordinary meaning of "elongated." Here, Claim 6 requires, "an elongated web member having a predetermined length substantially coextensive with and below said deck support member and joined to said deck support member at a second predetermined angle." ('379 Patent, c. 7, ll: 52-55.) The Court finds that Newmans' proposed construction would limit the claim to the structure disclosed in the preferred embodiment. Thus, consistent with the ordinary meaning of "elongated," the Court construes this term as "stretched out, extended, or lengthened."

C. The Elongated Guide Means

Claim 24 recites a step of "conveying eggs . . . to elongated guide means." '505 Patent, col. 13, ln. 37-38. Plaintiffs argue that this limitation is recited in means-plus-function form and therefore should be interpreted in accordance with 35 U.S.C. § 112, P 6. But the claim recites no function linked to the "elongated guide means" limitation. The Court therefore rejects Plaintiffs' argument and construes "elongated guide means" in accordance with its ordinary meaning: any structural guide that is elongated.

9. "[E]longated magnet member"

This term is contained in two independent claims in the 386 patent, 123 an independent claim in the 539 patent, 124 and an independent claim in the 117 patent. 125

As to this term, the Court construes the following meaning: the actual, physical magnets themselves are elongated, rather than that they may be arranged in an elongated fashion. The drawings of all five patents support this interpretation, each showing explicit illustrations of a long magnet by itself, and also long magnets incorporated into representative drawings of the tool body. The Abstracts of the patents use the word longitudinal to describe the magnet members, 126 which also supports this interpretation. While this is a widely accepted meaning of a commonly understood word, and not a technical
term, out of an abundance of caution the Court also cites the Oxford English Dictionary definition of elongated: "1. Made longer; drawn out or extended to an unusual or unnatural length. 2. That is excessively long in proportion to its breadth, as if drawn out or extended." The Court is not persuaded that this term can be enlarged to encompass a series of completely round magnets that have been arranged in an "elongated" fashion, as the Plaintiff argues. The requirement that the language of the patent, when read as a whole, be full, clear, concise, and exact, so that inventors are protected but innovation is still permitted, demands that the plain language "elongated magnet member" means exactly that.

126 The Court notes that another embodiment of the tools calls for arcuate magnets, discussed later.
"member" does not mean "grip."

H&B further argues that if the Court construes "member" to mean "component," that construction could potentially encompass pads, which H&B claims the '091 Patent teaches against. (Opp. at 20.) In this case, if the specification were to disparage all pads generally, the claims could not be construed to encompass all pads generally. See Honeywell Int'l, Inc. v.ITT Indus., Inc., 452 F.3d 1312, 1319 (Fed. Cir. 2006) (where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question). However, the '091 Patent does not clearly set forth what "resilient" materials are. McHugh offers several dictionary definitions for resilient, such as "that which returns to its original shape following a deformation in shape." Thus, the specification does not clearly set forth what "resilient" materials are. McHugh argues for a proposed construction of only the term "elastic" in the specification, but does not mention anything about "flexible material." Thus, the claim language indicates that the term "elongated" is not tied to a specific length limitation.

Next, the Court may look to external evidence for guidance. Surveying many dictionaries, McHugh finds a general consensus as to what "resilient," and the Court adopts this definition. The Court may look to external evidence for guidance. Surveying many dictionaries, McHugh finds a general consensus as to what "resilient" means. McHugh offers several dictionary definitions for resilient, such as "that which returns to its original shape following a deformation in shape." Thus, the specification does not clearly set forth what "resilient" materials are. McHugh argues that during the prosecution of the patent McHugh narrowed his claims in order to avoid prior art and therefore he should not now be allowed to broaden his claims to capture abandoned subject matter. Specifically, H&B points out that in prosecution of the patent, McHugh stated that "elongated member" means that the member has a total length greater than three times an average thickness and greater than three times an average width. (Opp. Br., Ex. 8.) Meanwhile, McHugh points out that in a response to an Office Action, McHugh stated that "elongated" means "long and narrow." (Reply at 5.) Ultimately, McHugh abandoned the length limitation language for the current width and thickness limitations at the recommendation of the examiner. (Brief, Ex. 9.) In this case, the Court does not need to look to the prosecution history because the claim language and the written description are sufficient to determine what "elongated" means.

Lastly, both parties dispute the meaning of "resilient." McHugh argues for a proposed construction of only the term "elastic" and H&B argues for a proposed construction of "plastic, rubber, or other flexible material." On this point, neither party's arguments are very persuasive. McHugh refers to extrinsic evidence such as dictionaries to support its proposed construction, without referring to any intrinsic evidence. H&B argues that the specification provides insight as to how "resilient" should be construed. The patent summary states that the "member can be constructed of plastic, rubber, or other material that provides flexibility and easily accommodates the user's fingers." Further, the written description states that "any type of resilient material, such as plastic or rubber, can be used for the invention." H&B attempts to hybridize these two statements to show that "resilient" means "plastic, rubber, or other flexible material." However, a close reading of the written description demonstrates that this interpretation is incorrect. First, limiting "resilient" to plastic or rubber is an improper limitation of the claim language. "Limitations from the specification (such as from the preferred embodiment) may not be read into the claims, absent the inventor's express intention to the contrary." Secondly, the patentee does describe "resilient material" in the specification, but does not mention anything about "flexible material." Thus, the specification does not clearly set forth what "resilient" materials are. McHugh offers several dictionary definitions for resilient, such as "that which returns to its original shape following a deformation in shape." In the absence of clear language in intrinsic evidence, the Court may look to external evidence for guidance. Surveying many dictionaries, McHugh finds a general consensus as to how a person would interpret "resilient," and the Court adopts this definition.
Accordingly, the Court construes the term "member" to mean: "long and thin component which returns to its original shape following a deformation in shape."

In this case, we have already completed the first step of the analysis by construing three elements of claim 4 of the '514 patent:

"Material for finishing" This claim element means a material that makes more durable the underlying surface of the floor, and is applied for that purpose.

"Elongated sheet" This claim element does not require the presence of material that covers the entire floor but instead can encompass material that covers less than the entire floor; nor does this claim element exclude a "panel" of material otherwise meeting the limitations of the claims.

"an elongated user support"

The parties agreed that this element required construction; they initially disagreed on the proper construction to give it.

As previously discussed, when a court is asked to construe a claim, it must first determine whether construction is necessary, giving the words of the claim their plain, ordinary meaning as understood by one skilled in the art at hand. Where, as here, the parties have agreed that construction is necessary, but disagree about the proper construction, the Court must consider the original language and the proffered constructions.

The Court agrees that construction of the language is necessary; greater specificity is needed. That said, Fitness Quest's originally proposed language was too narrow -- including a requirement relating to "prone back extension exercise" -- and Monti's originally proposed language was too broad.

Fitness Quest has modified its original proposed construction, as reflected in the attached Appendix B. Review of the transcript of the hearing reveals that the parties discussed the following construction: "A central support and stationary stabilizing member that is longer than it is wide." See Transcript of June 26, 2007 Markman Hearing ("Transcript") at 88, 93. Fitness Quest's post-hearing brief reflects essentially this construction. Doc. 43 at 5.

In his post-hearing brief, however, Monti argues that the word "stationary" should not be "read into" the claim. Monti Amended Post-Hearing Brief (Doc. 45) at 7. He further offers a single sentence stating that the words "main central" should not be included in the claim, either, but without any further discussion. Id.

This Court finds that a combination of the proposed constructions offered by the parties is appropriate, as follows: "a central support and stabilizing member that is longer than it is wide."

C. Interpretation and Infringement Analysis of the Term "Embedded" As Used in the Asserted Claims of the '981 Patent.

Claims 1 and 6 of the '981 patent explicitly contain the disputed term "embedded." Specifically, claim 1 states:

a gapless and seamless cylindrical inextensible layer over said compressible layer, said inextensible layer including a circumferentially inextensible material embedded in a second gapless and seamless tubular body of elastomeric material. . .
(‘981 patent, col. 12, lns. 25-29). Claim 6 states:

a gapless and seamless cylindrical inextensible layer over said compressible layer, said inextensible layer including a circumferentially inextensible material embedded in a gapless and seamless tubular body of elastomeric material. . .

(‘981 patent, col. 13, lns. 36-40).

In interpreting the above phrase, Mitsubishi and Harris both turn to the dictionary definition of the term "embed." WEBSTER'S II NEW RIVERSIDE UNIVERSITY DICTIONARY defines "embed" as "to fix securely in a surrounding mass." Further, both parties rely on the same examples in illustrating the correct interpretation of the term, namely, "a knife embedded in wood" and "a brick firmly embedded in mortar." However, in explaining the practical effect of the above definition, the parties’ positions diverge. Specifically, Mitsubishi contends that an object is only "embedded" in a given material if the object is totally surrounded on all sides by that material.

We disagree. While it is true that one way to "embed" an object in a material is to totally surround the object in that material, a review of the patent in its entirety convinces us that this was not the definition intended by the patentee. Specifically, in setting forth the preferred embodiments of the invention, the patentee provided several different methods for forming the inextensible layer. One of the embodiments requires the inextensible thread to be "impregnated" with the elastomeric material (‘981 patent, col. 7, lns. 9-13; col. 11, lns. 30-32), while another calls for the thread to be "encapsulated" in elastomeric material (‘981 patent, col. 9, lns. 46-48). Turning once again to WEBSTER'S, we are left with the following definitions: to "encapsulate" is to enclose in a protective coating or membrane, and to "impregnate" is to fill throughout or to saturate. WEBSTER'S II NEW RIVERSIDE UNIVERSITY DICTIONARY. In light of these distinctions, it is clear that, when the patentee intended for the thread to be completely surrounded by elastomeric material, he specifically provided for such treatment in the patent's specification. Thus, acceptance of Mitsubishi's argument would render meaningless and redundant the distinctions explicitly provided in the patent.

We adopt the dictionary definition advanced by the parties and hold that "embed" means "to fix securely in a surrounding mass." WEBSTER'S II NEW RIVERSIDE UNIVERSITY DICTIONARY. We further hold that an object is "embedded" in a material if the object is sufficiently surrounded by the material to be bonded to it.

As a result of the forgoing, we adopt the dictionary definition advanced by the parties and hold that "embed" means "to fix securely in a surrounding mass." WEBSTER'S II NEW RIVERSIDE UNIVERSITY DICTIONARY. We further hold that an object is "embedded" in a material if the object is sufficiently surrounded by the material to be bonded to it.

The plaintiff contends that no construction is needed. To the extent that a construction is needed, the plaintiff proposes "incorporated in a casing which surrounds internal parts of a device." The defendants propose "the claimed device is formed in a single housing and all components are either located in that housing or permanently attached to it." This phrase does not involve technical terms and can be understood through its plain and ordinary meaning. It does not require construction.
propose "at least one key that is permanently attached to the housing and that can be manually depressed." The defendants again cite only to a preferred embodiment in the specification to support its incorrect contention that a "key" can be "manually depressed" by the user. However, the plaintiff does agree with the defendants that a "key" attached via cable would not satisfy the limitation of "embodied in said housing." Accordingly, the court construes "at least one user interface key embodied in said housing" as "at least one user interface key permanently attached to the housing."

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14. at least one of which is not embodied in the housing

The plaintiff contends that no construction is needed. The defendants propose "one or more of the flash memory reader, the mass storage device, and the battery are not embodied in the housing." The court agrees with the plaintiff that the defendants' proposed construction merely reiterates the claim language. Accordingly, the court concludes that this phrase requires no construction.

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(2) "First Embossed Pattern of Depressions"

The parties also dispute the meaning of the term "first embossed pattern of depressions." While defendant claims that the first embossed pattern consists of depressions in the liner surface and that its ink deposits are embedded rather than embossed into the liner surface (Def.'s Opp. to 3M's Mot. for a Prelim. Inj. at 14), plaintiff fails to define this term. Instead, plaintiff states that "the point is that Avery subsequently presses these 'ink deposits' into the deformable release liner, and from that point on, the liner has a 'first embossed pattern of depressions.'" (P's Reply Mem. in Supp. of Mot. for Prelim. Inj. at 2.) Here, the specification of the 930 Patent expressly defines "embossed:"

"Embossed" means a topography on a web or on tooling having an effective three-dimensional pattern that generates a difference in surface planar dimension in the liner or the tooling.

(Adkisson Decl., Ex. A., Col. 1, In. 60-64.) Based upon this definition in the specification, the court concludes that the meaning of the term "embossed" is a topography created on material by impressing a corresponding inverse topography on its surface:

While the court need not look to extrinsic evidence to construe the term "embossed," technical dictionaries support this understanding of the term. See Bell Atlantic v. Covad Communns. Group, Inc., 262 F.3d 1258, 1267 (Fed. Cir. 2001) (providing that courts may rely upon scientific dictionaries). The TAPPI 1993-1994 Technical Information Sheets define "embossing" as "creating a finish or design imparted by compressing a material between matched rigid surfaces or rigid and ductile surface having the desired raised or depressed surface pattern." (Hadley Decl., Ex. 6.) Moreover, as defendant argues, plaintiff's own witness agrees with that definition of embossing:

Q. So embossing means creating a series of impressions which are the inverse of a pattern on the embossing tool?

A. That's the way I would define it.

(Hadley Decl., Ex. 7, Calisto Dep. at p. 101.)

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B

The district court also erred when it defined the term "embossed" by imposing a limitation related to the process by which
the embossed surface is made. See 3M I, 185 F. Supp. 2d at 1040-41 (defining embossed as "a topography created on material by impressing a corresponding inverse topography on its surface"). Because 3M expressly acted as its own lexicographer by providing a definition of embossed in the specification, the definition in the specification controls the meaning of embossed, regardless of any potential conflict with the term's ordinary meaning as reflected in technical dictionaries. See Tex. Digital Sys., 308 F.3d at 1204; Rexnord, 274 F.3d at 1342.

The specification expressly states that "'embossed' means a topography on a web or on tooling having an effective three-dimensional pattern that generates a difference in surface planar dimension in the liner or the tooling." '930 patent, col. 1, ll. 61-64. This definition defines "embossed" materials to include both the web and the tooling (a device that can be used to impress a pattern into a web), provided each has a "topography" that has "an effective three-dimensional pattern that generates a difference in surface planar dimension." 5 This definition is entirely structural. 3M defines an "embossed" material as one that has particular surface characteristics: a "topography" with an "effective three-dimensional pattern," the pattern creating "a difference in surface planar dimension."

--- Footnotes ---

5 If the district court's definition were correct, then the definition provided in the specification (which of course cannot be ignored) would create a problem of infinite recursion: the tooling itself would have to be created "by impressing a corresponding inverse topography on [the tooling's] surface"; the "corresponding inverse topography" that creates the tooling, itself a meta-tooling, would have to be created "by impressing a corresponding inverse topography on [the meta-tooling's] surface," etc. At oral argument, Avery argued that the definition in the specification must be ignored because it is nonsensical. Cf. CCS Fitness, 288 F.3d at 1367 (noting that a claim term will not be given its ordinary meaning if the term deprives the claim of all clarity). The only interpretation under which the definition of embossed provided in the specification is nonsensical is Avery's.

--- End Footnotes ---

The district court erred when it introduced a process limitation of embossed by requiring the topography to be created by impression of a corresponding inverse topography. The patent does not limit how the embossed pattern, as defined in the specification, is created.

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r. "outer surface that is embossed" Claim 8

According to the '514 Patent, "the surface of the rubber materials is embossed, so that the surface will have ridges and valleys which will give the materials a rough feel." ('514 Patent, col. 2, Ins. 19-20) While Green Edge provides a different definition from a dictionary, it is unnecessary to go beyond the intrinsic evidence of the Patent itself. Thus, the Court finds that "outer surface that is embossed" means "the outside surface with ridges and valleys which will give the materials a rough feel."

1370
1. Embossed Channels

K-C argues that "embossed channels" means "fold lines," but Tyco suggests instead that they are "passages or grooves made by compressing absorbent material, which do not act as a barrier to flow of fluid and which provide for the pooling of fluid." Thus, K-C wants to expand "embossed channels" by equating them to fold lines, whereas Tyco rejects this interpretation and seeks to limit the term still further by virtue of a functional qualifier.

I will begin with Tyco's preferred reading. As to the proposed functional limitation, Tyco argues that in the prosecution history and specification, K-C made it clear that the embossed channels did not act as fluid barriers and that they provided
instead for the pooling of fluid. That is, it asserts that K-C acted as its own lexicographer and narrowed the standard
definition of channels by disclaiming any channels that acted as a barrier. For instance, the specification clearly states that
the channels are not barrier lines: "It is relevant to note that these embossed channels or fold lines are not barrier lines, that
is, lines which are intended to stop the flow of body fluids beyond their boundary." Instead, the description continues, "the
embossed channels 3 of the present invention are designed to reduce leakage by pooling body fluids during use." (4:37-43.)
Although these statements make clear that the purpose of the channels is not to create a fluid barrier, to accept Tyco's
argument would be to import a functional limitation from the specification into the physical description contained in the
claims, a practice I have rejected above based on Federal Circuit precedent. "[T]he fact that the claimed composition was
designed to solve certain problems of the prior art and the fact that the patentee noted the functional import . . . does not
mean that we must attribute a function to the nonfunctional phrase." Ecolab, 264 F.3d at 1367. Moreover, even giving Tyco
the benefit of the doubt, its argument is based on a faulty premise. That is, the fact that K-C's invention was not intended to
be a barrier -- as the description states -- does not mean that any embodiment of the invention cannot have channels that act
as a barrier. Thus, even if K-C had specifically disclaimed a particular purpose of the channels, it does not follow that such a
purpose could not have been achieved in any embodiment.

Similarly, Tyco's attempt to describe the pooling function of the channels must also be rejected. Specifically, it argues that
K-C deliberately defined channels as channels that provide for the pooling of fluid. But again, the specification merely
states that the channels are "designed to" pool fluids and thereby reduce leakage. (4:42-43.) This description of the
invention's purpose and novelty cannot somehow serve as a narrowing limitation on the claims themselves. In fact, it is
presumed that the claims themselves are designed to achieve the purposes set forth in the description.

Finally, Tyco asks that "channels" be read as "passages or grooves." It asserts this interpretation based on a standard
dictionary definition as well as the inventors' repeated use of the term "grooves" during the patent's prosecution. 2 Although
the inventors use the term "groove" several times in the prosecution history, nowhere in the quotations Tyco cites did the
inventors suggest that the channels in the invention were to be viewed as though they were merely grooves. Instead, in each
instance, the inventors are discussing the groove-like properties possessed by the channels, i.e., the fact that they act as
hinges allowing the flaps to fold upwards. In that respect, it is true that the channels may be deemed grooves. But in other
respects, such as fluid-retarding or disbursing, they may also be viewed as channels. The fact that the channels may also be
deemed grooves does not mean that the inventors sought to limit "channels" to "grooves," and the few instances Tyco cites
in the prosecution history certainly do not suggest otherwise. Accordingly, I see no reason to alter the meaning of "channels"
in the manner Tyco suggests.

--- Footnotes ---

2 The citations from the prosecution history are found at Tyco's opening brief, p. 14, and its response brief at p. 2.

--- End Footnotes ---

K-C asserts instead that embossed channels are "fold lines." For support, it notes that on numerous occasions the
specification refers to the embossed channels or fold lines interchangeably. For instance, the description notes that the "fold
lines 3 which are embossed channels adjacent to the longitudinal edges 1 are formed by compressing the layers of the pad a
sufficient amount to remain intact throughout the intended use of the pad." (4:34-37.) In summarizing the invention, the
specification states that "the present invention concerns an absorbent sanitary napkin with fold lines or embossed channels."
(1:17-18.) In addition, K-C notes, the title of the invention is "Reduced Leakage Menstrual Pad With Built-In Fold Lines."
Finally, K-C argues that the entire purpose of the invention is to allow for the folding up of the flaps, or edges, to pool fluid.
Thus, it asserts, it has effectively redefined "embossed channels" as "fold lines."

Although the specification might refer to the embossed channels as fold lines -- just as it refers alternately to both channels
and grooves -- that merely means that the embossed channels are also fold lines. The channels are certainly a type of fold
line, but fold lines could presumably consist of grooves, creases or any other line that indicates a fold, a point K-C conceded
at argument. In other words, fold lines are a broader category than embossed channels, and nothing about the term "fold
lines" suggests that they must be embossed channels: the two terms are simply not synonymous, and nothing in the
specification suggests that the embossed channels may merely be fold lines. Thus, because nothing in the specification or
claims implies that any sort of fold line will do, I conclude that they must be embossed channels.
This is made clear by reference to the claims themselves. Specifically, claim 1 -- standing on its own -- already accounts for the fold-line properties and qualities K-C now cites. In particular, claim 1 states that the embossed channels are to allow "said napkin edges to fold upward at said embossed channels to form an occlusive volume." (6:13-15.) Read as a whole, the claim essentially sets forth an invention having (1) embossed channels that (2) act as fold lines. This explains why the specification might, at times, use the two terms interchangeably; but the fact remains that the claims describe not all fold lines but merely fold lines that are implemented through embossed channels. This is a limitation clearly set forth in the claims, and I therefore do not find K-C's attempt to expand the claim terms persuasive.

1. "Embossed channels" means "embossed channels."

A. Claim Construction

The claims of both the '577 and '543 patents recite layers of metal foil having "a plurality of embossments" that separate the layers and establish gaps of insulating air between the layers. Lydall's position is that its foil layers are not "embossed"; ATD argues that they are, and that the district court erred in its construction of this term, leading to error in the ensuing decisions of non-infringement.

The district court drew on the two patent specifications for the meaning of "embossments" as used in the claims. See Slimfold Mfg. Co. v. Kinkead Industries, Inc., 810 F.2d 1113, 1116, 1 U.S.P.Q.2D (BNA) 1563, 1566 (Fed. Cir. 1987) (claims are understood in light of the specification of which they are a part). When "the specification explains and defines a term used in the claims, without ambiguity or incompleteness, there is no need to search further for the meaning of the term." Multiform, 133 F.3d at 1478, 45 U.S.P.Q.2D (BNA) at 1433. However, when such definition is challenged it is often appropriate, despite facial clarity and sufficiency of the specification and the prosecution history, to receive evidence of the meaning and usage of terms of art from persons experienced in the field of the invention. See Fed. R. Evid. 702-706.

The specifications of both patents in suit define the embossments as "depressions" and "bumps or projections," the numbers referring to Fig. 2 supra:

The embossments 6 form depressions on one side of a respective one of the layers 2 and bumps or projections on an opposite side of the respective layer.

'743 patent, col. 7, lines 37-39; '577 patent, col. 7, lines 41-44. The district court observed that this definition is consistent with the dictionary definition of "emboss" as meaning to "raise in relief from a surface." ATD argues that this definition supports its position, since Lydall's foil layers have "bumps and indentations." ATD argues that there is no reason to believe that the inventor used the term differently from its dictionary meaning, leaving no ambiguity and thus no need for "claim construction." ATD states that the district court erred in law in construing "embossments" as also requiring that the bumps and indentations reach from layer to layer of the foil. Thus ATD argues that since the claims are not ambiguous, and since "embossments" has a clear meaning, it is incorrect to add to the definition of "embossments" the requirement that they also serve to separate the layers of metal foil by the depth of the embossments that contact the adjacent layer of foil.

The specifications teach that the embossments make point contact between the adjacent layers of foil:

The pad 1 can include two layers 2 only one of which includes the embossments 6. In a preferred embodiment, however, at least two of the layers adjacent to each other include a pattern of the embossments 6, the layers being offset with respect to each other such that at least some of the embossments are not aligned in the vertical direction. With this arrangement, the layers 2 can be provided in point contact to minimize heat transfer therebetween in the vertical direction A.

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'743 patent, col. 7, lines 9-17; '577 patent, col. 7, lines 13-21. The district court also reviewed the patent drawings, and correctly described them as showing "the embossments as being raised reliefs on the various layers such that the embossments come in direct point contact with adjacent layers (Figures 2 and 5 of the '743 and '577 patents.)" The court concluded that "embossments" as used in the claims require raised reliefs that separate adjacent layers of foil by point contact.
ATD states that the district court erroneously incorporated into the definition of "embossments" in the claims in suit the structural feature of "point contact" from non-asserted claim 11 of the '743 patent, which reads:

11. The pad of claim 1, wherein said pad is flexible and at least some of said embossments form depressions on one side of a respective one of said layers and bumps on an opposite side of said respective layer, said embossments providing point contact between the layers.

(Emphasis added.) ATD argues that point contact is described in the specification as simply a preferred embodiment, and is not a limitation to the claims that do not include it. ATD states that a definition of embossments without point contact is also supported by the description in the '743 and '577 specifications of an embodiment wherein layers of a heat-resistant mesh or scrim are interposed between foil layers. ATD states that since claim 1 is generic to the various embodiments shown in the specification, it was an error of law to restrict the broadest claim to the embodiment illustrated in Fig. 2 wherein the embossments are in point contact with adjacent foil layers.

Lydall responds that the mere fact that non-asserted claim 11 specifically states that the embossments are in point contact does not preclude the construction of claim 1 as requiring that the embossments separate the layers. Lydall points out that for the embodiment in which ATD uses mesh between some foil layers, the specification shows that at least some of the layers are separated by point contact of the embossments. Non-asserted dependent claim 14 of the '743 patent, which specifies one or more layers of scrim, also incorporates the claim 1 limitation of at least two "layers including a plurality of embossments therein separating said layers in said insulating area so as to provide gaps therebetween."

The separation of layers and ensuing provision of insulating gaps arise from the point contact. Thus we agree that the correct interpretation of the claims in suit is that, whether or not mesh is used between some of the foil layers, the embossments serve to separate at least some of the layers. The doctrine of claim differentiation can not broaden claims beyond the scope that is supported by the specification. Multiform Desiccants, 133 F.3d at 1480, 45 U.S.P.Q.2D (BNA) at 1434 ("claim differentiation can not broaden claims beyond their correct scope"); Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023, 4 U.S.P.Q.2D (BNA) 1283, 1288 (Fed. Cir. 1987) ("Whether or not claims differ from each other, one can not interpret a claim to be broader than what is contained in the specification and claims as filed.") The presumption that separate claims have different scope "is a guide, not a rigid rule." Autogiro Co. of America v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 404, 155 U.S.P.Q. (BNA) 697, 708 (Ct. Cl. 1967).

ATD also argues that the district court improperly added a method limitation to the product claims when it interpreted the method claims as requiring the embossments to be made on the metal sheets before the assembly process. The district court held that "the specifications make clear that the 'embossments' as contemplated under the patents are made on the metal sheets prior to any assembly process" (district court's emphasis), and that "the '577 patent is very clear on pre-assembly embossment." The court cited the specification of the '577 patent:

The method according to the invention can also include a step of embossing a plurality of the layers 2 such that a plurality of the embossments 6 are formed therein, the embossing step being performed by simultaneously embossing a plurality of overlapping sheets 2 of the metal foil, each of the sheets after the embossing step comprising a respective one of the layers. The embossments can be provided in a random or uniform repeated pattern. It is also within the scope of the invention to emboss each sheet separately. The embossments can be provided by passing a single sheet or stack of sheets between a pair of rollers having the desired embossment pattern thereon.

'577 patent, col. 8, lines 32-44 (district court's emphasis).

This aspect is relevant to both the product and the method claims, for it was not disputed that in the Lydall pad a pattern of impressions is produced on the metal foil after the foil is assembled into layers, by compression of the foil against the intervening mesh. The specifications make clear that the "embossments" of the '743 and '577 patents are "something more than 'impressions' on the surface of the foil layers which are merely 'incidental,'" in the district court's words. The claims require that the "embossments" be deep enough to separate the adjacent layers of foil; the product claims are not dependent on how the embossments are made, and were not construed otherwise.

Upon plenary review we confirm the district court's claim construction. The '743 and '577 specifications show and the
claims require that the insulating gap between at least some of the metal foil layers is formed by the embossments that space apart the foil layers. In the patent specifications the presence of embossments making contact with adjacent layers of foil to separate the layers is described as a material aspect of the invention. The use of a mesh or scrim between some of the layers, even without "embossments" in those layers, does not defeat the requirement of even the broadest claims that the pad contain at least two layers of foil bearing embossments that separate the layers. Claim 1 of the '743 patent, correctly interpreted, embraces generically the use of mesh between some of the foil layers, but also requires that embossments on some of the foil layers make contact with and separate adjacent foil layers. All of the claims of both patents require embossments that serve this function, and the specifications make clear that this is essential to the patented invention. We conclude, as did the district court, that "embossments" as used in the '743 and '577 patents means depressions or bumps that separate and form a gap between at least some of the foil layers by point contact of the embossments with adjacent layers. This definition applies to all the claims in suit.

Step 3 of Claim 9 requires the emitting [of] said laser energy into the blood vessel through said laser emitting section of said emitting means, thereby decreasing the diameter of the blood vessel.

Diomed argues that this should be construed to mean "emitting sufficient laser energy at the bare tip of the fiber optic line to cause vessel wall tissue damage (e.g. fibrosis) to lead to a decrease in the diameter of the blood vessel." Diomed's Claim Construction Memorandum, at 18. Diomed's argues that the definition of Step 3 is straightforward. The term "thereby" signals how much laser energy should be emitted and the amount that is required is the amount that will "decrease the diameter of the blood vessel." No further limitations are disclosed.

Defendants for their part counter that Step 3 requires: emitting the amplified monochromatic light or other electromagnetic radiation into the interior surface of the artery, capillary or vein through the uncoated tip of the fiber optic line while maintaining the tip-interior surface physical contact to decrease the diameter of the artery, capillary or vein.

AngioDynamics' Claim Construction Motion, Exhibit 2, at 2. Defendants complain that Diomed's construction would eliminate the limitation requiring that the laser tip deliver energy directly to the wall of the vein, so long as the procedure ultimately succeeded in decreasing the diameter of the blood vessel. Defendants argue persuasively that the method described in the 777 patent requires that the laser emit energy into the cylindric walls of the blood vessel and not merely into the vein's interior or the blood within it. This is true, not only because Diomed said so in differentiating its invention from Goldman's, but also because the steps of Claim 9 are sequential. In the previous Step 2, the tip of the fiber optic line is inserted into the blood vessel and then "placed . . . into intraluminal contact with the blood vessel at a treatment site." Step 3 then requires that laser energy be emitted. It must be emitted into the blood vessel wall because that is where the fiber optic tip is to be placed to decreased the diameter of the vein. Consequently, the court will construe Step 3 to require the maintaining of the tip-interior surface in physical contact with the vessel wall while laser energy is emitted to decrease the diameter of the blood vessel. 6

6 Defendants' attempts to import additional limitations, for example, that the laser energy be "amplified monochromatic light or other electromagnetic radiation," has no support in the patent language.
Finally, the parties seek construction of the term "emptying" as it is used in dependent Claim 10. The claim states in pertinent part: "the method of claim 9, further comprising emptying the blood vessel prior to emitting said laser energy." Defendants argue that this phrase must be construed to mean "making the interior space of the artery, capillary or vein empty." AngioDynamics' Claim Construction Motion, Exhibit 2, at 2. Diomed maintains that the act of emptying is a process that embodies "removing some or all of the blood from the blood vessel," and does not require, as defendants claim, the application of the laser to an "empty" blood vessel. Diomed's Claim Construction Memorandum, at 19. I find the following observation in Kumar v. Ovonic Battery Co., Inc., 351 F.3d 1364, 1369 (Fed. Cir. 2003), to be instructive.

Precedent teaches that qualifications such as "completely" or "normally" are to be given significance in interpreting the specification. See E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1369 (Fed. Cir. 2003) . . . There is [however] no indication in these passages or anywhere else in the specification that the term "completely amorphous" was used synonymously with the term "amorphous." The fact that the 686 patent refers to the "random atomic" structure or orientation of both amorphous and completely amorphous alloys does not indicate that the patent defines the terms interchangeably. The terms "random atomic structure" or "random atomic orientation" can themselves mean completely random or partially random.

In the same vein, the court will construe the term "emptying" in claim 10 to mean "the process of emptying most, but not necessarily all of the blood from the blood vessel," since the term "emptying" is not modified by the term "completely."

(1) Limitation (iii):

"Enabling Flexing" of the Shaft

(a) Claims Construction

(i) Patent Language and Specification

Limitation (iii) of claim 1 states that the 023 patent improvement consists of the stem shaft portion located between the affixation surface and the distal tip "having a diameter smaller than the corresponding diameter of the distal tip for enabling flexing in the shaft portion." Patent at 7:3-7.

Although the term "enabling flexing" is not defined in the patent specification, understanding the problems the patent sought to address and a reading of the patent specification enables the Court to interpret the meaning of the term.

In describing the problems which led to the invention, the patent states in its "Background of the Invention" that certain components of the forces exerted upon the prosthesis during use are transferred to distal portions of the stem, rather than being accommodated by the proximal portion of the prosthesis. This results in concentration of stresses at non-proximal portions of the femur and a corresponding reduction in stresses at the proximal portion of the femur, a condition described above as stress shielding. Moreover, forces on the ball of the prosthesis will tend to swing the prosthesis about the proximal end of the stem, "thereby exerting bending stresses on the stem and establishing forces tending to move the distal end of the stem" in a transverse direction relative to the femur, a condition described above as toggling, and axially relative to the femur. Patent at 1:31-36.

The patent specification explains that the invention's distal tip is essentially locked onto the distal end of the stem by a system of complementary tapers, so that movement by the distal end of the stem will result in a corresponding movement by the distal tip. By using a distal tip that is the same diameter as the reamed passage inside the femur, the distal tip engages or presses against the harder portion of cortical wall inside the femur. By so pressing against the wall, the tip prevents transverse movements of the stem within the reamed passage, i.e., prevents toggling, while at the same time allowing the transverse force at the distal end to be transmitted to the femur. Significantly, by creating a cylindrically shaped distal tip with a fixation-resistant surface that prevents the tip from affixing to the femur, the distal tip prevents stress shielding by (1) allowing the bending movements of the stem to displace the distal tip, and thus the distal end of the stem, axially upwards, (2) allowing the bending forces to displace the distal tip axially downward in certain cases, and (3) allowing the tip to rotate.
about its central axis in response to torsional forces. Patent at 4:4-44.

Moreover, in order to reduce the stress in the area of contact of the distal tip's surface and the cortical bone of the femur, the external surface of the distal tip must be of sufficient length to maintain a relatively low stress in that area. However, the length of the surface of the distal tip must also be short enough "to preserve flexibility in the shaft of the stem." As described in the specification:

Flexibility in the shaft enables the stem to respond in the manner indicated [bending, and moving axially upward] so that the combination of the prosthesis and the femur can manage the forces to be applied to the prosthesis. It is desirable that the shaft have sufficient flexibility to preclude excessive stiffening of the femur by the prosthesis along the implant site. In the preferred configuration, the diameter of the shaft of the stem above the distal tip is made smaller than the diameter of the external peripheral surface of the distal tip itself so as to render the shaft flexible, while still providing a contact area between the distal tip and the wall of the femur great enough to maintain relatively low contact stresses.

Patent at 5:44-57 (emphasis supplied).

Thus, in the Court's view the specification explains that shaft flexing is the ability of the shaft to bend in response to forces transmitted to the stem from loads applied to the femur, resulting in a corresponding axial movement of the distal end of the stem relative to the femur. Significantly, the specification also explains that the patent "enables flexing" by requiring the diameter of the stem shaft above the distal tip to be smaller than the diameter of the distal tip itself. By enabling such flexing, the proximal portion of the femur is kept rejuvenated and alive.


The patent's prosecution history (Plaintiff's Exh. 568; Defendant's Exh. AKR) corroborates this interpretation of the term "enabling flexing" found in the third limitation of claim 1. The language of the third limitation was found in claim 14 of initial disclosure of the patent filed with the Patent Office on January 19, 1988. The initial patent disclosure described the bending of the shaft and corresponding axial movement of the distal tip. (Plaintiff's Exh. 568 at 8-10, 24).

After reviewing the disclosure, the Patent Examiner rejected claims 1 and 14, along with other claims, in a letter dated July 14, 1988. The grounds for the rejection of the relevant claims were that claim 1 was anticipated by the Lord patent, and claims 1 and 14 were unpatentable over the Witzel and Freeman patents. (Plaintiff's Exh. 568 at 33, 35).

The Patent Examiner did not discuss the Lord patent. In discussing the Witzel patent, the Patent Examiner concluded that the Witzel device performed the same function as the 023 patent, because the stem of the Witzel patent moved axially within a distal tip:

Wherein Witzel's tip (25 resin) moves axially within the tip in response to axial and bending loads applicant's device, as claimed, has a tip (metal) fixed to the stem and the stem moves axially in the medullary canal in response to axial and bending loads. It is noted that both devices perform the same function: they both transfer and distribute stresses at the tip to the calcar bone . . . by permitting the stem of the prosthesis to move axially with respect to the bone thereby transferring and distributing bending stresses from the offset loading on the hip socket ball to the calcar bone through the tip.

(Plaintiff's Exh. 568 at 35).

With regard to the Freeman patent, the Examiner concluded that patent also performs the same function as the 023 patent:

Freeman discloses a typical stem-type femoral prosthesis made of metal with a substantially circular stem. End tip fits onto the tapered end of the stem with a matching taper surface. . . . It is also clear . . . that [the] stem is narrower (at least in portions) than the tip. . . . It is presumed that the taper surfaces of the tip and stem lock the two together. . . . It is also noted that Freeman also, as Witzel, uses the tip for stress distribution of the forces at the distal end of the stem due to the loading of the ball.

(Plaintiff's Exh. 568 at 37).
In response to the Patent Examiner's rejection, the 023 applicant responded by, among other things, amending claim 1 in the initial patent disclosure to include the language of limitation (iii) of the present claim 1. The applicant also distinguished the 023 patent from the Lord, Witzel and Freeman patents, based on stem shaft flexibility.

In distinguishing the 023 patent from the Lord patent, the applicant indicated that the Lord device failed to enable flexibility in the stem shaft, because the diameter of the Lord stem was greater than or equal to the diameter of the distal tip:

[\textit{W}hatever the function of the Lord distal tip, the distal tip disclosed in Lord has a diameter which is the same as, or less than, the diameter of the remainder of the femoral stem, and no part of the stem has a diameter less than any diameter of the distal tip. Accordingly, the reference does not contemplate flexing of the stem to flex in response to loads placed on the implant during service. The subject matter of the present claims includes structures which enable the femoral stem to flex in response to loads placed on the implant during service, and provides an uncoupled distal tip which is displaced axially within the medullary canal, relative to the bone of the femur, as the femoral stem is flexed, to accommodate the flexing without deleterious effects. Thus, all of the present claims set forth that the femoral stem includes a shaft portion with a diameter smaller than the corresponding diameter of the distal tip for enabling the aforesaid flexing of the shaft portion and axial displacement of the distal tip.]

(Plaintiff's Exh. 568 at 49-50) (emphasis supplied).

Similarly, in distinguishing the Witzel patent the applicant indicated that the distal sleeve in the Witzel device was fixed to the canal, and thereby did not provide any axial displacement of the sleeve. This results in relatively higher stresses at the distal end of the Witzel device:

In Witzel, a small sleeve of synthetic resin material is first secured in the medullary canal, and then the shaft of the femoral stem is inserted into the sleeve. The shaft can move relative to the sleeve, but there is no displacement of the sleeve relative to the bone of the femur during service. In the construction of the present claims, the distal tip is affixed to the distal end of the stem . . . and flexing of the shaft . . . during service is accommodated by displacement of the distal tip relative to the surrounding bone of the femur. The difference in structure yields several advantages. Among those advantages is the distribution of stresses during service. . . . Thus, in the Witzel construction, the articulating surfaces between the stem and the sleeve are of limited area, resulting in higher stresses[.]

(Plaintiff's Exh. 568 at 50-51).

With regard to the Freeman patent, the applicant explained that the Freeman device was not similar to the 023 patent, because it used a distal tip affixed to the bone that acted as a "stop" to centralize the stem shaft, and which was not intended to move during use of the stem. (Plaintiff's Exh. 568 at 52).

These claims were ultimately accepted by the Patent Office and the 023 patent was issued.

Thus a review of the patent's prosecution history corroborates that the term "enabling flexing" is construed as allowing the stem shaft of the prosthesis to flex and move axially upwards, by the use of a distal tip secured to the distal end of the stem which (i) is of a larger diameter than the stem shaft, and (ii) is not affixed to the bone.

(iii). Evidence from Extrinsic Sources.

The scientific principles of shaft flexing were also explained by DR. ALBERT H. BURSTEIN, who is a biomechanical engineer and expert in the field of hip implant devices. Dr. Burstein has "fabricated over 3,000 total joint implants" of which 25 percent were hip implants. Dr. Burstein is a person considered skilled in the art of the subject matter of the 023 patent during the relevant time period involved in this law suit.

During direct examination concerning the 023 patent teachings as compared to the APR II, he explained that the flexing movement of the shaft -- which is only on the order of a thousandth of an inch, i.e., less than a hair's breadth -- follows well established bio-mechanical principles:

A Now the way you prevent bending loads from being transmitted distally is to make the stem flexible. Then if it
deforms a little bit it doesn't transmit much bending load. The stiffer the stem, the more bending load it can transmit when the bone deforms.

So the patent teaches that the way you prevent the transmission of bending loads is to make a portion of the stem of diameter smaller than the sleeve so that it is flexible, so that you have enabled flexing of that portion of the stem that's above the sleeve.

Now when you load it, this portion flexes more freely than if it would have if it were a constant big diameter and transmit proportionately less bending load down here on the bone. It transmits more bending load up on the proximal area, it transmits more proximally. That's a well-known principle in biomechanics and taught by the invention and it shows you how to practice that invention by reducing this diameter.

Q What does the patent teach with respect to the surface characteristics of the sleeve or the tip?

A The patent teaches in order for this to work it must be free to move up and down in the bone in accordance with how much the prosthesis normally wants to move. That is, under load this prosthesis will move on the order of a thousandth of an inch or two, and it must be free to do so, and in order to do so, you cannot allow the distal end sleeve or tip to become fixed to the bone. If it becomes fixed to the bone it transects the bone. So by having an affixation resisting surface, that will not allow the bone to grow into or onto the surface, it becomes free to move up and down.

Q Dr. Burstein, would you look at Column 5, lines 34-44, and tell the Court in your own words what that means or what that teaching is?

A What the patent is . . . teaching . . . is it is telling the practitioner of the art [of] how long the sleeve can be made and still function according to this patent. It is saying the sleeve or tip has to be made long enough, that is, it must have some minimum length, so that when it is in the body and you put the load on the prosthesis [the tip] pushes against the side of the bone. . . . The tip should not create a stress condition on the femur that the femur cannot accept. In plain language it shouldn't push to hard.

The way you control it is to make the tip long enough so it has enough conduct [sic contact] area on the surface so it shouldn't push too hard.

[The patent] also says there's another limit. The longer you make it, the less stem there is left over to produce the flexibility you want. So don't make it so long as to not leave enough stem left over so that you have flexibility, and it tells you essentially the longer you make it, the more reduced the flexibility will be in the leftover portion of the system.

(Tr. at 131-135) (emphasis supplied). Dr. Burstein's elucidation of flexibility is consistent with the Court's interpretation of the patent limitation.

Enabling movement between first and second positions relative to said primary display

The Court construes the phrase as “allowing a secondary display to move between a first and second position relative to said primary display.” As with “rotation of . . . to said primary display,” the Court previously construed all the terms except for “enabling movement.”

MASS and Dell agree that the terms’ plain and ordinary meanings apply. Both parties agree that the term “movement” should be construed as “to move.” MASS proposes “enabling” be construed as “permitting,” and Dell proposes it be construed as “allowing.” Both parties’ constructions are commonly known synonyms. Accordingly, the Court construes the phrase as “allowing a secondary display to move between a first and second position relative to said primary display.”
Both Tessera and Samsung's experts agree that "encapsulant" is a term of art in the electronic packaging field. Qu Dec. P 70; Prince Dec. P 21. Tessera's proposed meaning of "encapsulant" is "a material used to seal up or cover an element or circuit for mechanical and environmental protection." Samsung's proposed meaning is "a material that is used to surround and encase by being in physical contact with." Joint Claim Construction Statement at B2:3-4. However, the '326 patent teaches that the encapsulant may merely cover, as opposed to surround, a single side of the element. '326 patent at 30:2-5. Similarly, Samsung has not referred to any place in the patent claims or specifications where physical contact between the element and the encapsulant is required. Accordingly, the Court construes "encapsulant" to mean "a material used to seal up or cover and element or circuit for mechanical and environmental protection."

5. "Encapsulated By and Encapsulating"

The phrase "encapsulated by" is construed to mean, "Enclosed by," and "encapsulating" is construed to mean, "Enclosing."

Plaintiff again argues that the plain meaning of these words suffices to construe them for the jury. I agree.

The phrase "encapsulated by" appears in claim 1 of the '207 patent as follows: "positioning said core in a laminator apparatus, and subjecting said core to a heat and pressure cycle. . . applying first pressure to said core for a second period of time such that said at least one electronic element is encapsulated by said core." (internal numerical references omitted). See also claim 17 of the '099 patent; claim 20 of the '367 patent; claim 1 of the '155 patent. Claim 16 of the '207 patent recites the term in the second step of the heat and pressure cycle "applying a second pressure uniformly across said core for encapsulating said at least one electronic element within said controlled plastic flow."

Defendant proposes that the phrase means:

that the 'core' must fully enclose the 'electronic element' which has been placed 'directly' between the 'first and second plastic core sheets' so that even the sides of the 'electronic element' are surrounded by the 'first and second plastic core sheets.' That is, if the 'electronic element' is not placed directly between the 'first and second plastic core sheets' or has been already encapsulated by other material, the 'first and second plastic core sheets' cannot encapsulate the 'electronic element.'

(Def. Br. at 31.)

Defendant again uses far too many words to define a simple phenomenon. Webster's non-technical definition of "encapsulate" is "to enclose in or as if in a capsule." (Def. Br. at 31.) "Capsule" is defined as "a compact often sealed and detachable container or compartment." (Id.) Thus, according to Defendant, when an element is encapsulated by something, that something fully encloses the element, as though it were contained within a sealed compartment. Defendant notes that in the '207 specification, for example, the electronic element is "fully" sealed in by the plastic core sheets after lamination, and that nothing "intervenes between the core sheets and the electronic element." (Def. Br. at 32-33.) Leighton apparently amended "encapsulated in said core" to "encapsulated by said core" during the prosecution of the '207 patent, a revision the Defendant views as highly significant. (Def. Br. at 33, citing Office Action Response, p. 75 (emphasis added).) According to Defendant, "encapsulated in" would allow an intervening material, such as "air." By contrast, according to Defendant, "encapsulated by" precludes air and requires that the plastic core sheets completely surround and make contact with the electronic element. (Id.)

All this is interesting, but when parsed (as we did at the Markman hearing), it is apparent that Defendant is again trying to read the specifications out of the definition -- and to render the patent meaningless. The patent discloses a process in which the first step is to place an electronic element between two sheets of plastic, thus making what the Court called "a
sandwich." In this sandwich, the element touches both sheets of plastic and is not shielded from them. However, for the plastic to touch every square millimeter of the electronic element at the moment the sandwich is made (which is while the plastic is still a solid, before it has been heated and liquefied), the element would have to be completely planar. The electronic elements shown in the disclosed embodiments -- such as microchips, wire coil antennas, circuit boards, transponders -- are not completely planar. They are three dimensional objects, and they can have irregular surfaces. This means that, when the "sandwich" is made by placing the element between the two sheets of plastic, it is possible that not every square millimeter of the element will be touching the plastic. But these infinitesimal pockets of air do not take the "sandwich" out of the ambit of the claims in suit, because they do not "protect" the element from the plastic (so that when the plastic melts it will touch every square millimeter of the element) and so do not cross the great divide between this family of patents and the prior art '024 patent, which placed the element in a little container before melting the plastic sheets.

The parties dispute construction of the term "encapsulating" of Claim 1. Marley contends that the term should be construed to mean "to provide a coating about the wood fiber particles with the polymer resin and prevent or minimize the penetration of moisture into the fiber particle." Mikron contends that the limitation should be construed to mean "completely enclosing each wood flour particle with polymer resin".

"Encapsulate" is defined as "to surround, encase, or protect in or as if to capsulate". Webster's Third New International Dictionary 745 (3rd ed. 1986). The specification states that "the present process is understood to encapsulate or provide a coating about the wood fiber particles with the polymer resin and prevent or minimize the penetration of moisture into the fiber particle."

Defendant attempts to add the requirement that the wood fiber be "completely" enclosed. However, such a requirement is not suggested by the ordinary and accustomed meaning of the term or supported by the patent specification. Accordingly, the term encapsulate is construed to mean "to surround or encase".

1) "Neck Encircling"

In claim 1 of the parent '619 patent, Garth claimed "an elongated neck encircling band . . . having front, side and back portions." In his reissue application, Garth attempted to claim simply "an elongated neck encircling band." [PX 522 at 13]. Eventually, after several rejections and amendments, Garth and the examiner settled upon "an elongated neck encircling band . . . having front, side and opposite side portions." Garth testified at trial that this change in claim language was motivated by Garth's belief that the patent should cover a cervical collar which had no back portion such as the NecLoc collar. The NecLoc collar was a two-piece collar which was sometimes promoted as being useable without the back portion. [Tr. 289:19-292:3].

Garth's trial testimony on this issue is precisely the sort of extrinsic evidence which the Markman decision found was not to be considered in construing patent claims. The relevant arguments are those made by Garth during the prosecution of the reissue application, not those made at trial. While Garth stated numerous times in the prosecution history that he sought to remove the limitation requiring that the band have a back portion, he never sought to alter or remove the limitation which required the band to encircle the neck. The Court finds that the plain and ordinary meaning of "neck encircling" is that the band must surround the patient's neck so that it forms a circle around the patient's neck.

The front and back band sections of the 911 collar clearly encircle a patient's neck. CalMed also contends, however, that the front band section, acting in concert with a velcro strap, would also constitute a neck encircling band. The Court finds that the front band section alone does not "encircle" the neck within the meaning of the '219 patent, and for that reason a
hypothetical Tecnol collar formed solely of the front band section and a Velcro strap would not be "neck encircling" unless the Velcro strap could be considered part of the "band". This issue is discussed below as part of the Court's discussion of the "entirely" limitation.

9. "A release sleeve encircling said second cylindrical surface." The term "encircling" shall be given its ordinary dictionary meaning "to form a circle around or surround." 6

Footnotes


The parties also dispute whether "on its end" refers to the end of the balloon, which is Cordis' construction, or the end of the catheter, AGR's construction. According to AGR, this limitation indicates that the catheter has both a collapsed inflatable balloon and a collapsed sleeve encircling the balloon on the end of the catheter. That is, the claim requires that each of those two elements -- the collapsed balloon and the collapsed sleeve-- be "on its end," referring to the catheter; otherwise, there would be no information as to where the inflatable balloon is located on the catheter. Thus, AGR argues, that, when properly read, the phrase indicates that this element of the claim includes a catheter that has both a collapsed inflatable balloon and a collapsed sleeve located at the end of the catheter.

Figure 9 from the '1,653 Patent specification shows that the sleeve and the balloon are both located at the extreme or last part lengthwise of the catheter, and not at or near an extremity. This picture of one preferred embodiment is the only intrinsic evidence that supports the meaning of end as "the extreme or last part lengthwise." There is no language in the Patent itself or in the specification or history that limits explicitly or implicitly the meaning of end to "the extreme or last part lengthwise." Therefore, the Court will not construe the term to include such a limitation.

Based on the drawing in Figure 9, the disclosed sleeve encompasses or covers the balloon, but is not on the end of the balloon; that is, the sleeve in the disclosed embodiment is located over the balloon and not at either end of the balloon. Moreover, there is other evidence contained within the specification that renders the "on its end" limitation applicable to the end of the catheter rather than the end of the balloon. In the description of the embodiment depicted in Figure 9, Dr. Rockey wrote "catheter 54 having a dilator annular balloon 50 at its free end [the end of the catheter that is not being "manipulated" by the user of the invention as indicated in the next claim limitation: "manipulating the catheter axially along the vessel to
cause the balloon and sleeve to enter the area to be treated"") and the sleeve 51 surrounding the balloon is threaded through
the vessel 52 from an incision made in the vessel…” (emphasis added). Here, too, he describes a catheter having a balloon
and a sleeve on the "free end" of the catheter.

The construction of the term "end" that is most consistent with the surrounding text and the specification is the part at,
toward, or near an extremity lengthwise. Accordingly, the phrase "encircling the balloon on its end" requires that the sleeve
encircle the balloon on a part at, toward or near an extremity of the catheter.

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i. "enclosed"

The term "enclosed" appears in the preamble of each of the asserted independent claims. CFMT argues that the term refers
to an apparatus that substantially prevents unwanted contaminants or substances from entering the apparatus from the
outside environment. YieldUP, on the other hand, argues that "enclosed" means not open to what surrounds it. YieldUP
bases its construction on the dictionary definition of "enclosed."

In the specification of the '532 patent, the inventors explain the importance of using an enclosed vessel to practice the
invention.

In addition to the wafer vessel and the wafer carriers disclosed in the above-identified copending application, enclosed
wafer vessels of other designs may be used. However, it is important for the processes of the present invention that the
wafer vessel be closed. That is, the wafer vessel should not be open to the ambient atmosphere except when it is opened to
load or unload wafers.

The evidence does not suggest, as CFMT argues, that "enclosed" refers to a process that "substantially" prevents
contaminants from entering from the atmosphere. Therefore, the court finds, as advocated by YieldUP, that the term
"enclosed" means not open to the ambient atmosphere.

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D. "an enclosed lamp envelope"

TLI asserts that the term "an enclosed lamp envelope" simply means an enclosure and should be given its ordinary and
customary meaning. See TLI's Br. at 13. Sylvania, however, contends that the term envelope should be construed to require
that the envelope be either elliptical or spherical in shape. In support of this construction, Sylvania argues that the only
envelope shapes disclosed in the '017 patent are spherical or elliptical, and therefore the patent should be limited to those
restrictions. See Sylvania's Br. at 11.

The description of the preferred embodiment or the invention provides that the "lamp envelope … preferably has a
substantially elliptical shape." '017 patent, col. 18, lines 57-59. (Emphasis added). The description of the preferred
embodiment further states that "[a]s will be apparent to those skilled in the art, regardless of whether the elliptical or
spherical shape is used, the geometry of [the] lamp envelope … provides the maximum amount of reflectance back to [the]
light-emitting element … and thus provides more heat to [the] element … to, in turn, generate more light." '017 patent col.
19 lines 19-25. (Emphasis added). Notably, the specification simply indicates a preference for an elliptical or spherical
shaped lamp envelope, but does not specifically limit the envelope to those two shapes. The specification describes only one
or two preferred or potential embodiments of the patented invention. See Northern Telecom Ltd. v. Samsung Electronics
Co., Ltd., 215 F.3d 1281, 1293 (Fed. Cir. 2000)(indicating that the Federal Circuit Court of Appeals "consistently declines to
construe claim terms according to the preferred embodiment.") Unless there is limiting language in the specification
suggesting that the patented invention would not work absent a sphere or ellipses, or that the sphere or ellipses is an
improvement over the prior art that warranted issuance of the patent, then any "enclosure," with its broadest ordinary
meaning supported by the specification, is acceptable. Because the specification and prosecution history of the '017 patent

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do not exclude or limit the shape of the lamp envelope in any way, I find that the term "an enclosed lamp envelope" means "an enclosure."

D. "Enclosed Spaces"

The phrase "enclosed spaces" appears in claims: 13, 16, and 18 of the '120 Patent; and 6 and 7 of the '982 Patent. Medinol contends that the phrase "enclosed spaces" is used consistent with its ordinary meaning, referring to "the area defined by the structural elements of a cell." Alternatively, Guidant construes this term as simply identifying "[a] cell."

Guidant's proposed definition is improper for at least two reasons. First, "enclosed space" is distinguished from "cell" in the patent specification. For instance, in describing Figure 4 of the '303 Patent, the patentee includes the following language: "When the stent expands, both meander patterns 11 and 12 expand (i.e. all loops 14-20 open up). As can be seen, the expanded stent has two types of enclosed spaces, a large space 42 between meander patterns 12o and 12e and a small space 44 between meander patterns 12e and 12o." As depicted in Figure 4, "enclosed spaces" refers to the area contained within first and second meander patterns. By contrast, the word "cell" is used to refer to the structural elements outlining the enclosed spaces. For example, in Figure 8, the invention is described as "an expandable stent defining a longitudinal aperture 80 having a longitudinal axis or extension 79 and a circumferential axis or extension 105, including a plurality of flexible connected cells 50 . . . . Each cell 50 . . . ."

Second, the language cited by Guidant as supportive of its definition does not amount to an unambiguous disavowal of the claim scope, justifying a departure from Medinol's plain meaning definition for "enclosed spaces." That is, the specification states:

FIG. 8 illustrates the pattern of FIG. 7 in an expanded format. Since there are no even and odd horizontal meander patterns, in the expanded format of FIG. 8, there are no large and small spaces. Instead, all spaces are of the same size, i.e., the stent is comprised of a plurality of spaces or cells 50 defining a uniform cellular structure.

But this passage does not clearly indicate that "enclosed spaces" and "cells" are interchangeable terms used to identify the same structure. One skilled in the art could have read the cited passage as suggesting that the uniform cellular structure is described as comprising either enclosed spaces or cells. Because the cited language is not a clear disclaimer of the
A. "Enclosing said bed surface"

Claims 1 and 10 of the '855 Patent claim an apparatus comprising a frame, bed surface, and "at least one side rail movably connected to said frame along said periphery of said bed surface for enclosing said bed surface." '855 Patent, Col. 7, Claim 1; Col. 8, Claim 10. The parties dispute the meaning of the claim term "enclosing said bed surface." Pedicraft argues that this term requires that the side rails "together extend completely around the periphery of the bed so as to leave no substantial gaps through which the patient can pass when all of the side rails are in the uppermost position." Dkt. 65, pg. 4. Stryker, in contrast, claims this phrase should be interpreted to mean "surrounding the bed surface sufficiently to prevent the patient from falling off the bed surface," in accordance with Webster's Third International Dictionary, pg. 746 (1986). Dkt. 66, pg. 32.

According to Pedicraft, its expert, David Lance Lockwood, testified that one skilled in the art and design of hospital beds would understand the phrase "enclosing said bed surface," when involving movable side rails such as the present invention, to mean not only to prevent the patient from falling out of bed but also to avoid entrapment between the rails. Dkt. 62, pp. 22-24. Pedicraft further contends that this interpretation not only comports with the ordinary meaning of the phrase, but is in accordance with the intrinsic evidence as well. Pedicraft highlights the Detailed Description section of the '855 Patent and illustrated embodiment as showing a "continuous" single side rail, and it points out that in response to inquiries from the Patent Examiner, it distinguished prior art as not containing side rails that sufficiently "enclose" the bed surface. Dkt. 65, pp. 5-6. Such intrinsic and extrinsic evidence therefore purportedly demonstrates that one skilled in the art would understand "enclosing" to mean not only the prevention of falling out of bed, but also side rails that "extend completely around the periphery of the bed so as to leave no substantial gaps through which the patient can pass when all of the side rails are in the uppermost position." Id.

Stryker contends that its construction of "enclosing said bed surface," requiring only that the patient be prevented from falling off the bed surface, comports with the ordinary dictionary meaning of "enclose" as "to close in" or "surround." Dkt. 66, pp. 32-33. Moreover, it claims that during the prosecution of the patent, Pedicraft actually distinguished prior art as not including side rails that sufficiently enclose the bed surface, thus "placing the patient at risk of falling off of the bed surface." Id. Stryker points out that Pedicraft's proposed construction of this phrase differs from Stryker's simply through its inclusion of the concept of preventing "entrapment" of the patient, yet nowhere in the patent itself or in the prosecution history is the concept of "entrapment" mentioned by the patentee. As such, Stryker argues that the public record conclusively supports its construction of the phrase "enclosing said bed surface," regardless of any extrinsic and unsupported testimony from the Plaintiff's expert, Mr. Lockwood.

The Court agrees that there is no intrinsic support for including the concept of "entrapment" of the patient in the ordinary meaning of the phrase "enclosing said bed surface." See Vitronics, 90 F.3d at 1585; Southwall, 54 F.3d at 1578. The Court will not rely on the extrinsic and strained testimony of Mr. Lockwood to contradict the ordinary definition of "enclosure," which only requires that the side rails "close in" or "surround" the entire peripheral bed surface. Accordingly, the Court finds that one of ordinary skill in the art of hospital bed designs and functions would understand the claim term "enclosing said bed surface" to mean that the side rails surround the surface sufficiently to prevent the patient from falling off the bed.
4. "Enclosure"

a. Parties' Positions

The parties propose the following constructions for "enclosure" which is present in claim 8 of the '631 Patent. The parties' main dispute is whether the construction should include the terms "housing," "fan/blower," and "mounted on an inner surface."

Plaintiff

A structure which generally encloses at least the fin structures and the gap between the fin structures

Defendants

A housing which encloses the heat sink assembly and a fan or blower, and to which the heat sink assembly is mounted on an inner surface

b. Court's Construction

Plaintiff asserts claim 8 of the '631 Patent provides that the fin structures must be in the enclosure, yet not totally enclosed, as there must be openings through which air flows in and out of the enclosure; the gap between fin structures must be adjacent to such an inlet. See Claim 8. Beyond that, Plaintiff asserts there is no requirement to employ any other particular shape or design of the enclosure, including any shape or design described in the preferred embodiments. ('631 Patent at 7:6-11).

Defendants' proposed construction is based on the description of the enclosure as implemented in the preferred embodiment. The preferred embodiment cannot, alone, serve to impart a restriction of claim scope. Phillips, 415 F.3d at 1323 ("[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments."). The Court will not import a limitation from the preferred embodiment into the claims. Simply put, there is no basis in the claim language for requiring the enclosure to be a "housing" nor is there any requirement that the heat sink assembly be "mounted" to the enclosure. Nor is there any requirement that the air source (e.g., a fan or blower) must be positioned within the enclosure. All of these are possible embodiments of the "enclosure," but no such embodiment is essential.

In light of the foregoing, the Court construes "enclosure" to mean "a structure which generally encloses at least the fin structures and the gap between said fin structures."

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F. "so that the heel portion of said user's foot travels in a path which does not encompass said pivot axis"

Precor states that this claim should be construed exactly as it is written, because the words are clear to an individual of ordinary skill in the art. Fitness Quest argues that these terms would be ambiguous to a lay jury, contrary to the guidance in Phillips, 415 F.3d at 1314. Fitness Quest proposes instead a broader interpretation that construes the claim as including any potential action where the user's foot crosses the vertical plane created by the pivot axis: "the user's heel never passes rearward beyond a vertical plane contain the pivot axis." Fitness Quest's construction reflects the purpose of the claim, which was proposed by the claim examiner as a way of distinguishing another patent.

However, Fitness Quest's proposed construction is problematic because it means something different than the meaning of the words in the claim. In fact, it is more broad. Fitness Quest's construction of the claim would include a variation of this
exercise device which allowed a user's heel to cross a vertical plane established by the pivot axis, but not encircle the pivot axis. Although it is not clear that such a motion is possible using the claimed device, it is preferable to use Precor's more limited instruction. Because "encompass" may be a non-obvious term to a lay jury, however, the Court will add the term "encircle" to clarify: "so that the heel portion of said user's foot travels in a path which does not encompass or encircle said pivot axis."

C. "end," "high front end," and "low back end"

Defendants contend that "end" should be construed to mean "either extremity of an object having length," that "high front end" should be construed to mean "the end of the wakeboard traction pad that has a height that is greater than the other end," and that "low back end" should be construed to mean "the end of the wakeboard traction pad that has a height that is less than the height of the high front end and is opposite the high front end." Messer suggests that "end" need not be construed independently of the claim terms in which it invariably appears, "high front end" and "low back end," and contends that "high front end" should be construed to mean "one end of the wakeboard traction pad, having a height," and that "low back end" should be construed to mean "located opposite from the front end, an actual or construed end located near the mid-point of the wakeboard, having a height that is equal to or less than the front end."

Both sets of proposed constructions suffer from the flaw that the two kinds of "end" are each defined as constituting an extremity of a "wakeboard traction pad," because Claim 21 describes the "wakeboard traction surface" as "defined between a high front end and a low back end," '051 Patent, 12:36-37, the terms must be construed as equally applicable to wakeboard traction pads and surfaces.

Moreover, Messer's proposed construction violates the ordinary and customary meaning of the words used in the claim terms, without any basis for doing so. Messer's construction would permit the high front end and low back end to be of equal height, whereas the patent claims clearly specify that the low back end shall have a height lower than the high front end.

For the foregoing reasons, I reject the construction proposed by Messer, and conclude instead that the term "end" should be construed to mean "one of the two opposite extremities either of an object having length or of a sloped surface," that the term "high front end" should be construed to mean "an end that has a height greater than the height of its opposite end," and that the term "low back end" should be construed to mean "an end that has a height less than the height of its opposite end."

"End" or "Strap End"

The parties also dispute the meaning of the term "end", as in "strap end." Defendant contends that "the end of a strap portion, member or element is that portion of the strap which terminates at the point of attachment on the golf bag." (Defendant's Opening Brief at 19) Plaintiff, on the other hand, maintains that "'ends' need not be 'ends' of separate straps but can be 'ends' of portions or members of a single strap. (Plaintiff's Responding Brief at 8). For example, plaintiff notes that claims 1 and 8 refer to at least 4 "ends," even though these are actually just points on a single strap. Plaintiff further states that strap "ends" need not "terminate" at an attachment location. For example, plaintiff notes that, as set forth in the patent, the "ends" of two separate sections of strap may actually form a unitary strip that passes through a "D" ring or other securing means.

The Court finds that the term "end" is used different ways at different times within the patent. For example, in claims 1 and 8, where the entire strap apparatus is comprised of a single strap divided into two main sections, the "ends" are the four portions of strap on either side of the two strap pads. Thus, while it is true, as defendant contends, that an "end" is the point at which a designated portion of strap may be said to "terminate", this does not necessarily mean that the strap physically ends there. Rather, the term "end" also refers to the point where one designated section of strap ends and another begins.
Moreover, a strap end need not be "affixed directly" to the golf bag itself as defendant suggests (Def. Brief at 19), but may, instead, be the point where the particular section of strap passes through or is attached to the securing means, such as a strap or ring, which is in turn attached directly to the golf bag.

"A First End, A Second End"

The parties' proposed constructions are set forth in Table 4.

Table 4 - Parties' Claim Constructions for Claim 92 of the '092 Patent

<table>
<thead>
<tr>
<th>Term, Patent, and Ind. Claim</th>
<th>Pl.'s Interp.</th>
<th>Def.'s Interp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a first end, a second end</td>
<td>&quot;the meaning of end includes the part of an area that lies at the boundary,&quot; which allows a round table to have &quot;ends.&quot; (Lifetime's Rep. in Supp. (30) at 14.)</td>
<td>Correll's interpretation: end means &quot;the extreme or last part lengthwise,&quot; which prevents a round table from having &quot;ends.&quot; (Correll's Mem. in Opp. (22) at 24.)</td>
</tr>
</tbody>
</table>

The ordinary meaning of "end" is "the last part or extremity, lengthwise, of anything that is longer than it is wide or broad," "a point, line, or limitation that indicates the full extent, degree, etc., of something; limit; bounds" and "a part or place at or adjacent to an extremity." Webster's at 641. The first definition--"the last part or extremity, lengthwise, of anything that is longer than it is wide or broad"--supports Correll's argument because round tables are not longer than they are wide. The remaining definitions, however, require only that an end be a limit, a boundary, or an extremity.

Correll argues that its round table cannot have ends. Lifetime responds that the word "end" merely means the part of an object near its boundary, and therefore a round table has ends.

Accordingly, the table top 12 and the frame 40 may be configured in a variety of shapes and configurations, including, but not limited to, a circle, polygon, square, rectangle, triangle, or any other suitable geometrical configuration.

(Sears Decl., Ex. A, '092 Patent at col. 7, ins. 13-17 (emphasis added).)

Correll's contention that the limited definition of end applies here is not persuasive in view of this instruction from the Federal Circuit: "If more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all such consistent meanings." Texas Digital, 308 F.3d at 1203. Here, the broader construction--that end means the limit or boundary of an object--is proper because it encompasses, and is consistent with, the narrower construction advanced by Correll.

Based on the above, a first end and a second end mean the limit or boundary of an object, or in other words, at the edge of the round table.
By itself, the term "end" is undeniably ambiguous. Merriam Webster Online offers more than a dozen definitions for the noun form of the word. Plaintiff's definition is "concluding part." Initially, defendant's proposed definition was narrower, "the outside or extreme edge or physical limit; a boundary." In its reply brief and at the claim construction hearing, defendant wavered slightly, arguing that an "end" must at least include the extreme edge or tip, or what plaintiff refers to as the "very end."

There does not appear to be any dispute that the concluding part of an object includes the extreme edge or tip. However, to the extent that defendant adheres to its initial proposed construction, I agree with plaintiff that it is too narrow. To be sure, in some of the embodiments, the patentee appears to equate the "end" of a part with its extreme edge. See Pat. '194, col. 11, lines 57-59 (equating "first end" with "first opening" in Fig. 17). However, the claim language itself demonstrates that an "end" in the '194 patent may include more than just the extreme edge. For example, claims 1(c) and 2(c) disclose "a cylindrical body member having a first end and a second end, the first end of said cylindrical body member including a cylindrical sleeve." Thus, one "end" of the cylindrical body member includes the cylindrical sleeve, which the parties agree encompasses more than just the extreme edge of the cylindrical body member.

In sum, it appears that the patentee did not use the term "end" to mean the exact same length with respect to each object. Rather, depending on the context, an "end" could be as small as the tip of an object or as large as half of the object. The only definition of "end" that would be consistent with these different lengths is one similar to plaintiff's definition, which includes the extreme edge but is not limited to that portion. Accordingly, I construe the term "end" to mean "the concluding part."

Free Motion proposes that the meaning of the word end is the end region, not limited to the terminus. (Pl. Opposition II. at 15-16.) Nautilus proposes that the end is the "portion of an object having length that includes the terminus and does not extend beyond the terminus of the object." (Nautilus Brief at 11.) The Court is persuaded that the ordinary and accustomed use of the term end is the portion having length, not limited to the terminus.

The parties offer the following constructions for "end cap," which is present in claims 43 and 47. Dkt. No. 114.

RTI
Back end of the plunger

BD
A separate piece that caps the open end of the plunger

RTI contends that BD's proposed construction improperly limits this term. Dkt. No. 111 at 30-31. RTI believes that nothing in the specification requires the end cap be a separate piece or that it cap the open end of the plunger. Id. Instead, RTI contends that the "force fit plug" is the separate piece that caps the end of the plunger, while the end cap is a part of the plunger itself. Id. (citing '224, 7:22-24 & Figs. 1-7). In addition, one claim specifically recites that "the end cap has an
opening and a closure is installed in the opening." Id. (citing '224, 24:16-17 (claim 54)).

In response, BD contends that RTI's proposed construction does not make sense in light of the claim language. Dkt. No. 112 at 32. Specifically, the claims require a "back end with an end cap," and BD believes that RTI's construction would make this requirement nonsensical--a back end with a back end. Id. (citing '224, 22:65-23:9 (claim 43)).

b. Court's Construction

The Patent figures depict the end cap as a part of the plunger rather than a separate piece. See '224, Figs. 1-7. The Federal Circuit has held that an interpretation of a claim, which would not include a preferred embodiment disclosed in the specification, is "rarely, if ever, correct." Vitronics, 90 F.3d at 1583. This Court finds no reason to require the end cap to be a separate piece, as such a construction would not include the embodiments depicted in Figures 1-7. This Court, however, also finds no reason to limit the term to these embodiments, in which the end cap is a part of the plunger. The Patent could conceivably cover an alternative embodiment in which the end cap was a separate piece.

In addition, the Patent states that it is the "force fit plug" rather than the end cap that closes the retraction cavity--the open end--at the back of the plunger. '224, 7:33-36. The end cap itself has a "central opening for permanently receiving [the] force fit plug." Id. As such, the end cap, in contradiction with the plain meaning of the word "cap," does not necessarily close the open end of the plunger. Instead, it allows the force fit plug to accomplish that function once it is permanently installed within the end cap's opening. This Court, however, also finds no reason to limit the term to this one preferred embodiment--it is possible that the Patent could cover a syringe in which the end cap and force fit plug were a single piece, rather than two separate parts.

Finally, because it is located at the back of the plunger, the Patent describes the end cap as a portion of the plunger with which the thumb contacts during depression. Id. ("Plunger has end cap for depression of the plunger by the thumb.").

Accordingly, the Court finds that the term "end cap" means "a component at the back of the plunger, which may be contacted by the thumb during depression.

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E. "End Faces"

Ramsey contends that "end faces" should be defined as "exterior surfaces defining the ends of a structure." Ramsey notes that the claim uses the words "face" and "surface" interchangeably: "[a cylinder,] and having opposed end faces, one of which is disposed in a plane normal to the axis of the drum, said one end surface providing the brake surface. . . ." '255 Patent, 5:15-18. Because the end face provides a surface for braking, Ramsey contends that it cannot be located internal to the structure because it could not engage the brake pads there.

Warn contends that "end face" should be construed as an "outward facing planar surface." Warn observes that in the claim, the function of the end face is to be "the brake surface whereby axial movement of the braking member produces surface-to-surface braking engagement." '255 Patent, 4:18-20. Warn notes that the '255 patent uses the word "end" throughout to mean the end portion as opposed to the middle, and not to mean the outermost edge of the structure. As an example, Warn points to Figure 2, described in the specification as:

the winch includes a cable drum 10 that is supported in the winch housing at its ends by bushings 13. . . .

'255 Patent, 2:45-48. The bushings are at the end portions of the drum but are inset slightly from the very endpoint of the drum structure.

From the specification:

The cylindrical end faces of the stator define the braking surfaces.
Cylindrical faces 80, 82 at each end provide braking surfaces.

The cam actuator 56 and cam follower 48 have abutting end faces 68, 70 respectively that are cam shaped as illustrated in Fig. 3.

The specification also contemplates two end faces on the stator, and not more. '255 Patent, 2:17-18 ("to affect equal braking action of both pads against the two end surfaces of the stator").

I reviewed Research Plastics, Inc., 421 F.3d at 1297 (construing "rear end" of a tube to mean "a reference point defined by the rear edge of the tube" and not an undefined area or region). It provides some support for Ramsey's construction, essentially that the word "end" must be given some meaning, with which I agree.

Claim 1 specifies a cylinder having opposed end faces. The plain meaning would be the two circular ends of a cylinder, which are opposed. The specification contemplates that one brake pad is fixed and the other brake pad is cammed into the braking surface of the stator which pushes the stator into the fixed brake pad "to affect equal braking action of both pads against the two end surfaces of the stator." '255 Patent, 2:8-19. Warren's proposed "outward facing planar surface" describes a more complicated mechanism because there could be more than two. The proposal also does not give meaning to "end."

I conclude that the term "end faces" is defined as "exterior surfaces defining the ends of a structure."

There is only one term of the '211 Patent claims that is expressly in dispute. The parties disagree as to the meaning of the term 'end' as used to describe elements of the length of hair that is connected to the invention's elastic loop. The language at issue in the first claim reads: "a connection securing the first end of the length of hair strands to a portion of the elastic loop." '211 Patent, col. 6, ll. 48-9. The term 'first end' in the above limitation refers back to an earlier limitation of claim 1 that describes the "hair piece comprising: a length of hair strands having a first end and a second end." '211 Patent, col. 6, ll. 40-1. Defendant claims that "the 'first end' and 'second end' of the 'length of hair strands' must be the same as the collective ends of the hair strands themselves." Defendant's Memorandum at 5. Plaintiff contends that "the 'first end' recited in claim 1 be properly construed as the proximal end of a collection or bundle of hair strands and not as limited to end extremities of linear or unidirectional strands of hair." Plaintiff's Memorandum, at 6 (emphasis in original).

Neither party claims that this disputed language has a particular meaning to persons skilled in the art of designing artificial hair pieces. We turn, then, to the contextual clues in the claim itself. A requirement of claim one is that the hair piece consists of "a length of hair strands having a first end and a second end." In this language, the entire length of hair itself has two ends. There is no indication that the ends referred to are the specific ends of the particular, individual hair strands comprising the length of hair. It appears instead that one end of the entire length of hair is secured by a connection to a portion of the elastic loop.

Defendant relies for support of its interpretation almost exclusively on language in the specification. Defendant points to the Summary of the Invention which states that "[t]he apparatus comprises a length of artificial hair...having a plurality of individual hair strands. First ends of the strands are connected to a pony tail securing member. ...The opposite or distal ends of the strands can be free or can include a second securing member." '211 Patent, Col. 3, ll. 38-43. Claire's contends that "[t]hus, it is the ends of the strands that are attached to the pony tail securing member, not the middle of the strands as in a loop of doubled over hair. " Defendant's Memorandum at 6. In Defendant's view, the specification emphasizes that the invention "consists of non-doubled over hair." It does so, according to Claire's, because it mentions the "opposite or distal ends of the strands." Since there is no separation between the ends of the strands on the Accused Products, Claire's maintains that these ends cannot be deemed "opposite." But this simply begs the question of, what "ends" the specification
is referring to. It appears to the Court that the plain meaning of these words within the context of the claims and specification taken together is that one end of the length of hair is opposite to the other. The first end is attached to the elastic loop, the other hangs opposite to it (that is, distally from the elastic loop). The language of the claim, and indeed, the invention, are no more complicated than this. As the Federal Circuit has stated: "a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history." Vitronics v. Conceptron, 90 F.3d at 1582 (emphasis added).

Indeed, as Plaintiff emphasizes, the specification refers in multiple locations to a 'length' of hair, in the singular, again providing no support for the interpretation that one 'end' of the 'length' indicates the ends of each of the individual strands of hair. There are 14 separate instances in the specification referring to the "length" of hair strands, and not to individualized ends of strands. See Plaintiff's Memorandum at 7. These references in the specification reinforce the language of claim 1 itself, which comprises "a length . . . having a first end and a second end." It is the entire length of hair itself that has two ends, and not the ends of the individual hair strands. I construe 'end' in claim one to mean either extremity of the entire length of hair. The claim refers to the end that is proximal to the elastic loop as the 'first end' and the extremity of the length of hair that is distal to the elastic loop is described as the 'second end'.

Defendant attempts to overcome this plain meaning of the claim and specification language by pointing to the single instance in which the plural 'ends' is used in the Summary of the Invention. While the Summary of the Invention is "a pertinent place to shed light upon what the patentee has claimed," Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1345 (Fed. Cir. 2001), a statement in the Summary of Invention is not on its own determinative of the meaning of the terms of the claims. Defendant discusses several Federal Circuit opinions in support of its contention that "Courts that have found a statement limiting the invention in the Summary of the Invention have uniformly held that the statement limits the scope of the claims." Defendant's Reply Memorandum, at 4. However, the holdings in all the cases upon which Defendant relies do not support Defendant's statement of the law. None of the cited cases depends, as Claire's does here, on a singular use of language appearing only in the Summary of the Invention to limit the scope of the claims. Instead, each case reads the Summary of the Invention within the context of the patent as a whole, including claim language, specification, and prosecution history. Moreover, in each case the language relied upon in the Summary of the Invention is nowhere near the ambiguous statement that Claire's relies upon here. See Genzyme Corp. v. Transkaryotic Therapies, Inc., 346 F.3d 1094 (Fed. Cir. 2003) ("Throughout the...specification, the applicant consistently uses the term 'integrated' to refer to a foreign gene inserted into a host cell chromosome"); C.R. Bard, Inc. v. United States Surgical Corp., 388 F.3d 858, 864 (Fed. Cir. 2004) ("the patent unequivocally defines the claimed plug as having pleats"); Microsoft Corp. v. Multi-Tech Systems, Inc., 357 F.3d 1340, 1348 (Fed. Cir. 2004) (where court examined the Abstract, Statement of the Invention, other parts of the specification, as well as the prosecution history in supporting defendant's construction of claim language, court stated that specification "repeatedly and consistently describes the...claim inventions as communicating directly over a telephone line"); Cytyc Corp. v. TriPath Imaging, Inc., 2005 U.S. Dist. LEXIS 29850, 2005 WL 3177877 (D. Mass. Nov. 28, 2005) (disputed term appears one hundred sixty-one times throughout the whole patent "either implicitly or explicitly" indicating the court's construction).

Because the language of claim 1 must be construed to require only that the length of hair strands be connected to the elastic loop with a second extremity distal to that loop, Defendant's Accused Products are covered by the literal scope of the '211 Patent. By the terms of the Agreement between Claire's and Pony Pal, Claire's is liable for breach of contract for failing to pay royalties for sale of products covered by the '211 Patent. Complaint, Ex. B PP 1(b), 7.

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G. "located end to end" and "aligned"

Claim 1(c) requires that "said first rod set being located end to end with said second rod set so that said first and second spaces are aligned." Claim 1(d) also uses the term "aligned" and requires "an interchamber orifice . . . aligned with said first and second spaces." Claim 14's preamble similarly requires "first and second rod sets each comprising a plurality of rod means and defining longitudinally extending first and second spaces respectively located end-to-end with each other . . . ." The parties agree that because the first and second spaces are defined by area of the first and second rod sets, respectively, the terms "located end to end" and "aligned," as used in claim 1, are related. The court will therefore address them concurrently.
Micromass's proposed construction of "located end to end" 1 is "characterized by having the end of one object placed against the end of another." This construction of "located end to end" is described by Micromass as consistent with the plain meaning of "end to end." Its proposed construction of "aligned" is similar. Micromass argues that "aligned" must mean that the end of the first rod set or space is placed at or near the end of the second rod set or space so that the two abut. According to Micromass, this construction of "aligned" is required by the prosecution history of amended claims 25 and 26. Given these constructions, it is Micromass's argument that claim 1(c) and 14 would not be infringed if another structure separated the rod sets or spaces because the additional structure would prevent the rod sets or spaces from being "end to end" or "aligned."

AB/Sciex contends that "located end to end" and "aligned" do not prohibit the use of other intervening structures. The proper construction of "located end to end," according to AB/Sciex, is defined in functional terms by the claim itself as "so that first and second spaces are aligned." This is consistent, AB/Sciex explains, with the claim's recitation of the path of ions "through said inlet orifice, through said first space, through said interchamber orifice and through said second space." 736 Patent, Claim 1(d). AB/Sciex goes on to define "aligned" as requiring only that ions travel on the specified path.

AB/Sciex argues that Micromass's plain meaning arguments have no support in the patent itself. It contends that nowhere does the patent specification require that the two spaces or rod sets be adjoining or near one another, only that they be near enough to accomplish the patent's function of permitting an ion stream to proceed from the first rod set and space to the second rod set and space. Furthermore, AB/Sciex notes that the patent claims themselves require a wall and interchamber orifice between the rod sets and spaces, thereby proving that they need not abut.

As Micromass asserts, "end to end" is defined as "characterized by having the end of one object placed against the end of another." Webster's Third New International Dictionary, Unabridged 750 (1986). AB/Sciex does not propose an alternative construction, but rather argues that "end to end" only means "that the first and second spaces are aligned." Were the court merely evaluating which of these two constructions is most likely to be the plain meaning of "end to end," it would choose Micromass's proposed construction. But "end to end" is used in the context of the overall structure of claim 1. Thus, AB/Sciex responds to this "plain meaning" argument by noting that claim 1 requires a wall (36) that divides the two vacuum chambers (30 and 38), thereby preventing the rod sets (32 and 40) from being strictly "end to end," as Micromass suggests. This argument is a convincing rejoinder to Micromass's proposed construction. If the rod sets are separated by a wall, as required by claim 1(a), the end of the first rod set cannot be placed against the end of the second rod set. Similarly, in claim 14, the spaces described as "end to end" terminate at the end of each rod and are then separated from each other by an interchamber orifice. Thus, the two spaces cannot abut ends.

In further support of its argument that "end to end" means only that the first and second spaces are aligned and not adjacent, AB/Sciex points to Figures 1 and 12 in the patent specification, which not only show a wall (36) with interchamber orifice between the two rod sets (32 and 40), but also an undefined amount of space. Moreover, the initial description of the structure of the invention states that there must be "a first rod set in said first vacuum chamber extending along at least a substantial portion of the length of said first vacuum chamber," thereby explaining that the inventors did not believe the first rod set (32) was required to extend to the end of the first vacuum chamber (30). 736 Patent, Col. 1, Inn 63-65. AB/Sciex argues that the specification therefore contradicts Micromass's construction that the rod sets in claim 1 must be end to end.

Turning for a moment to the meaning of "aligned," it is readily apparent that construing the meaning of this term is not as difficult as "end to end." "Align" is defined as "to bring into line or alignment," or "to be in or come into precise adjustment or correct relative position." Webster's Ninth New Collegiate Dictionary 70 (1991). Nothing in the claims of the patent or the specification indicates that the claims use "aligned" any differently than its traditional definition.

1 Neither party attaches significance to the fact that "end-to-end" in claim 14 is hyphenated and "end to end" in claim 1 is not.

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Micromass's position is thus a tenuous one. While it argues that "end to end" must mean that the ends of the elements are abutting, that construction of the term would seem to conflict with both the other terms of the claim and the patent specification. And while it asserts that "aligned" must mean that the end of the first rod set or space are placed at or near the end of the second rod set or space, the plain and ordinary meaning of "aligned" would appear only to require the elements be in precise adjustment or correct relative position.

Lacking other support, Micromass argues that the prosecution history of claims 25 and 26 support its proposed construction of "end to end" and "aligned." In rejecting claim 25, which added to claim 1 a limitation that the longitudinal axes created by the rod sets intersect, the PTO examiner took the position that "if the two rod sets are aligned, they are by definition parallel." The PTO examiner used the same reasoning to reject claim 26, which added a limitation that the longitudinal axes created by the rod sets be parallel. In distinguishing the limitations of claim 25 and 26 from the requirements of claim 1, MDS argued that "aligned" meant only that the elements "be in or come into precise adjustment or correct relative position." (citing Webster's Ninth New Collegiate Dictionary). Response After Final Office Action, 2. Therefore, AB/Sciex argued, the longitudinal axes of the rod sets (32 and 40) and the spaces they define could be aligned and at the same time either be non-parallel and intersect (claim 25) or be parallel (26). Micromass focuses on a statement made by MDS while making this argument. MDS stated, "the first and second spaces, for instance, may be 'aligned' when an end of the first space terminates near an end of the second space whereby ions can travel through the first rod set and into the second rod set." Id. at 3 (emphasis added). MDS also stated, "the first space could be at an angle relative to the second space and the two spaces could be aligned by having the ends precisely located relative to each other so that their ends abut." Id. at 4 (emphasis added).

Micromass argues that because MDS made these statements in arguing the definition of "aligned," and because "aligned" and "end to end" are related terms, both claims should be construed to require that the rods or spaces be near or abut. This argument is unpersuasive. First, in explaining the meaning of "aligned," AB/Sciex was not commenting on the meaning of "end to end," and thus it cannot be said that the prosecution history supports Micromass's proposed construction of that term. Second and more important, MDS did not disclaim any particular construction of "aligned" by making these statements. Indeed, it introduced each of the sentences that Micromass relies upon with language such as "for instance, may be . . ." and "could be." MDS was not describing the meaning of "aligned," but instead was describing how its invention might be structured if it were to use non-parallel rod sets. MDS never asserted that "abutting" rod sets and spaces was how the claims had to be construed. The court therefore does not find MDS disclaimed any particular construction of "end to end" or "aligned" in its prosecution history.

The court will therefore adopt AB/Sciex's proposed construction of "aligned." Micromass's proposed construction of the term lacks support in the claims themselves, the specification, or the prosecution history. In contrast, AB/Sciex's proposed construction, also explained during the prosecution of dependent claims 25 and 26, is consistent with the plain meaning of that term -- "being in or coming into precise adjustment or correct relative position."

The proper construction of "end to end" presents a more difficult question because its dictionary definition is contrary to the other claim limitations and the specification, which both show structures between the elements described as "end to end." But the correct construction of "end to end" is revealed by the claims, which require only that ions move "through" the elongated spaces formed by the rods. Indeed, the claims describe the transmission of ions from the inlet orifice, through the first space created by the first rod set, through the inlet orifice, and through the second space created by the second rod set. Thus, the claims adopt a functional description of the path of the ions that takes the ions longitudinally from one elongated space and through the next. Claims 1 and 14 do not require that the axes of the rod sets be parallel or on the same axis, only that the ions travel in this manner successfully. The prosecution history of dependant claim 25 even suggests that the longitudinal axes of the two rod sets in claim 1 might be both non-parallel and intersecting and still accomplish this function. Because functionality, and not any particular angle or distance is required by the claims, the court will therefore adopt AB/Sciex's proposed construction of "end to end" -- that the rod set (Claim 1) or space (claim 14) must be arranged in a manner that ions may be successfully transmitted from the end of the first rod set or space to the end of the second rod set or space.

GO BACK
A. The '802 Patent

The heart of the parties' disagreement as to the shape of the groove described in the 802 patent is whether the "end tract" is composed of cross-sections that are non-circular throughout, or non-circular only in part. Plaintiff contends that most cross sections of the end tract would be semi-circular on the bottom (in the parabolic area that has not yet begun to taper and that retains its semi-circular shape) and "roughly elliptical on their lateral portions" where the tapering has begun. Pl.'s Brief at 5. Plaintiff then contends that cross-sections taken closest to the exit edge of the end tract would be entirely non-circular, since the semi-circular parabolic region would have ceased by that point.

Defendants disagree with Plaintiff's characterization of what comprises the "end tract." Defendants assert that the patent claims and specifications define the "end tract" only as the tapered portion of the groove, marked on the patent's Figures by cross-hatched lines. Defendants recognize that the bottom of the groove, in the parabolic area, remains semi-circular. They do not, however, agree that this area should be included in the definition of "end tract." Therefore, Defendants claim that cross-sections of the end-tract do not include any semi-circular shapes, but rather include only the shape of the tapered area, which Defendants assert is purely elliptical.

The Court agrees with Defendants that the patent claims define the "end tract" only as the tapered area marked by cross-hatched lines. The Court finds, however, that the "end tract" as defined is entirely non-circular, but not "purely elliptical."

The language of Claim 1 of the 802 patent clearly defines the end tract as the tapered area of the groove, distinct and apart from the semicircular portion of the groove. The words "end tract" in the claim are always followed by "(2)," referring to the cross-hatched network of lines in Figure 1 that represent the tapered area, in contrast to the rest of the semi-circular shaped groove. Claim 1 itself never describes the end tract as including the semicircular portion of the groove. The language of the claim is supported by the specification, which states in pertinent part:

As can be observed in FIG. 1, the shaped groove countermatrix of the present invention has a semicircular section except in an end tract 2, shown by a network of lines. Such a tract, as can be observed from FIGS. 4 and 5, is tapered both in the transversal and in the longitudinal sense, according to substantially elliptical profiles.

802 Patent, Col. 2, lines 50-55. Therefore, the actual wording of the claim, as well as the language of the specification and the illustrative embodiments, supports Defendants' position that the "end tract" describes only the tapered area of the groove, and does not include the semicircular portion in the parabolic area.

Having concluded what constitutes the end tract, the Court must now construe the shapes of the end tract's cross-sections. The Court agrees with Defendants that the end tract does not include cross-sections that are circular in part. It does not follow, however, that the cross-sections of the end tract must be elliptical, as Defendants would have it. The claim describes the end tract as "being tapered, according to substantially elliptic profiles." The term "substantially," as Plaintiffs point out in their brief, "modifies the term 'elliptical' such that the elliptical portions of the cross-sections need not describe a mathematically exact ellipse." Pl.'s Brief at 6. The Court may not construe the claim as to read out the word "substantially." Therefore, according to the plain language of Claim 1 of the 802 patent, cross-sections of the end tract, while they may not include circular arcs, are not limited to purely elliptical shapes.

Preformed Endless Loop

The district court construed this term to mean "a loop of ligation material, regardless of size, having either a unitary, circular structure, or formed by joining the ends of a linear length of ligation material." Claim Construction Order, 217 F. Supp. 2d at 1112. While mostly correct, this construction is slightly too broad because it reads out the "preformed" limitation and thus transforms the limitation into simply an "endless loop."

As described in the summary of the invention, a "pre-formed" loop is limited to those loops which are "formed prior to insertion of any band material into a ligation device[,]” '329 patent, col. 2, ll. 63-64. "Use of a pre-formed loop . . . eliminates the need for cumbersome lengths of ligation material used in conventional ligation operations and enables an
operator to slip pre-formed loops over his/her arms or legs, thus facilitating easy access to such loops when performing multiple ligation procedures." '329 patent, col. 2, l. 63-col.3, l. 2. Thus, Callicrate expressly defined "pre-formed" in the specification and highlighted the significance of this distinction over other loops. The district court's interpretation does not limit "preformed endless loops" to those formed before insertion into the castration tool. To that degree, the district court's interpretation does not fully reflect the claim language. See Playtex Prods., Inc. v. Procter & Gamble Co., 400 F.3d 901, 909-10 (Fed. Cir. 2005) (claim construction was flawed in part because it read "substantially flattened" as "flat," effectively ignoring the "substantially" qualifier in the claim).

The district court properly construed the remaining "endless loop" portion of this term. Accordingly, the word "endless" restricts this term to loops without an end. The '329 patent discloses at least two "endless" loop embodiments in Figures 13 and 14. As shown in Figure 13, one such endless loop comprises a circle of ligature material similar to a rubber band:

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Unlike the loop of Figure 13 which literally has no end, Figure 14 forms an "endless" loop by joining the ends of a straight length of ligature material to prevent separation of the two ends:

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'329 patent, col. 9, ll. 47-53. The loop shown in Fig. 14 is "endless" despite its two cut ends, because it has a substantially circular structure when tracing a path through the grommet 32 and forward loop 108. The specification describes both of the loops in Figures 13 and 14 as "endless." Thus, the specification as well supports the district court's construction which covers both embodiments. Addition of the "pre-formed" limitation simply limits the district court's construction to those "endless loops" formed before insertion into the castration tool.

The district court also properly rejected a number of arguments that would construe "preformed endless loop" more narrowly. For instance, the claim language does not suggest that this term "is confined to a loop that is large enough to pass over the animal's scrotal pouch without stretching." Claim Construction Order, 217 F. Supp. 2d at 1111. This argument attempts to read great importance into comments made during prosecution of the '329 patent in traversing a rejection over U.S. Patent No. 2,125,404 (the '404 patent).

A careful reading of the prosecution history impeaches the argument that the applicant disclaimed and narrowed the "endless loop" limitation. In an Office Action dated March 26, 1996, the Examiner rejected various claims in the pending application as anticipated by the '404 patent. The '404 patent discloses a loop of elastomeric material attached to a ligation tool with a bow-like structure. Callicrate responded to this rejection: "The device described by [the '404 patent] is structurally distinct and considerably different than the claimed invention" and "functions in an entirely distinct way than the present invention. . . . [I]t does not teach any method for securing the loop so that it maintains pressure around the body part of an animal." These comments highlight differences between the castration tools. These comments do not, however, distinguish the preformed endless loop in the claimed tool from loops in the '404 patent. Thus, this exchange did not disclaim subject matter within the scope of the "endless loop" limitation.

In addition to distinguishing the '404 patent by argument, Callicrate also amended the claims to require the use of a grommet in securing the loop once tightened about a body part. This amendment limits the amended claims to applications with a grommet (or some other "securing means" as recited in claim 14); this prosecution history does not place any restriction on the size of the loop. In fact, the record actually suggests the exact opposite - a loop that is larger than the body part being ligated would need tightening and securing with some sort of securing means. Otherwise, the loop would apply no pressure to the ligated body part upon removal of the tool. Thus, the district court correctly refused to narrow the "endless loop" limitation.

The district court also correctly rejected an argument that a preformed endless loop must include a mechanical connection device (e.g., a grommet) attached thereto prior to installation in the castration tool. The only support for this argument was an amendment during prosecution to claims 1-6 and 8-10 of the '329 patent (which have not been asserted). The applicant amended these claims to traverse a prior art rejection over U.S. Patent No. 2,642,057 (the '057 patent) and U.S. Patent No. 5,459,905 (the '905 patent). Based on this amendment, Wadsworth argues that the preformed endless loop recited in claims 7, 11, 18, 19, 22, 25, 27, and 30 of the '329 patent should be narrowly construed as having a mechanical connection device
(grommet) attached thereto before installation in the castration tool. This argument, however, overlooks that claims 1-6 and 8-10 claim an entirely different embodiment than the asserted claims. Thus, the amendments to these claims, as the district court properly observed, have nothing to do with the claims asserted by Callicrate.

To be specific, claims 1-6 and 8-10 claim an endless ligation loop. They do not claim a castration tool (or use thereof) as recited in the asserted claims. During prosecution, the '329 patent applicant amended claim 1 to specifically claim the loop embodiment shown in Figure 14. The amendment distinguished the Figure 14 embodiment from loops in the '057 and '905 patents. As amended, the claim recites a deformable grommet slidably attached to an endless band of ligature material to form a loop by connecting the ends of the ligature with wire. This amendment was necessary because this focused claim lacked the other novel features of the castration tool or method of using said tool. Nonetheless the claims in the patent without the specific limitations of claim 1 are not necessarily limited to the Figure 14 embodiment.

Of course, this court interprets claim terms consistently throughout various claims of the same patent. See Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001). In this case as well, this court construes the term "endless loop" consistently throughout the '329 patent. Claims 1-6 and 8-10, however, contain additional limitations that limit those claims to the specific embodiment shown in Figure 14. In contrast, asserted claims 7, 11, 18, 19, 22, 25, 27 and 30 broadly claim castration tools that use endless loops such as those shown in Figure 13 as well as in Figure 14. In sum, the district court properly declined to limit the "endless loop" limitation.

Method claim 22 also includes language referring to the endless loop and a grommet. This language, however, does not limit this claim to preformed endless loops with a grommet attached before the loop enters the castration tool. Claim 22 recites:

22. A method for castrating an animal, comprising:

positioning a preformed endless loop of elastomeric ligature material into a receiving end of a tool, said endless loop having a forward end, a rearward end, and a grommet attached between said forward end and said rearward end; attaching said rearward end of said endless loop to a means for pulling said endless loop;

passing said forward end of said endless loop around the scrotum of an animal;

pulling said rearward end of said endless loop to cause said forward end of said endless loop to constrict around said scrotum of said animal; and

securing said forward end of said endless loop to maintain pressure around said scrotum of said animal.

'329 patent, col. 14, l. 65-col. 15, l. 12 (emphasis added). The highlighted language requires that the preformed endless loop contain a grommet. The claim language does not compel attachment of that grommet at any particular time. Rather, the language permits attachment of the grommet even after the preformed endless loop enters the tool body. To make this point clear, the specification notes a preference for pre-attached grommets, but specifically permits grommets attached later. See '329 patent, col. 3, ll. 2-4; col. 10, ll. 38-43. Thus, the district court correctly declined to limit claim 22 to preformed endless loops with a grommet attached prior to installation in the tool body.

"endless, moveable surface"

Claims 3, 4, 13, and 21 refer to an "endless, moveable surface." Precor urges the Court to adopt a means-plus-function construction of this claim element, while Life Fitness argues that the disputed element should be given its ordinary meaning. The Court concludes that this claim element includes terms which are clearly understood. No further construction is needed, and the Court construes this claim element as invoking its ordinary meaning. The ordinary meaning of this disputed element, as construed by one of ordinary skill in the art, can include a belt and/or a series of slats attached to a band. This construction is supported by the '951 patent itself. '951 patent at column 1, lines 31-39 (background of the invention).
This construction is also supported by the embodiments found in the prior art. See U.S. Patent No. 4,616,822 ("'822 patent") at column 1, lines 19-20 (Declaration of Ricardo Rodriguez, Ex. I); U.S. Patent No. 4,643,418 ("'418 patent") at column 3, line 13 (Rodriguez Dec., Ex. J); U.S. Patent No. 4,842,266 ("'266 patent") at column 2, line 47 (Rodriguez Dec., Ex. O); U.S. Patent No. 4,749,181 ("'181 patent") at column 2, line 16 (Rodriguez Dec., Ex. L); U.S. Patent No. 4,792,134 ("'134 patent") at column 2, lines 48-49 (Rodriguez Dec., Ex. N); U.S. Patent No. 4,708,337 ("'337 patent") at column 4, lines 1, 16, 25, and 39-41 (Rodriguez Dec., Ex. R).

1. Endoscope

The first disputed claim term "endoscope" is found in Claims 1 and 35 as set forth above.

Erbe's Proposed Definition: A flexible medical instrument having a plurality of working channels.  

Canady's Proposed Definition: A rigid or flexible device having at least one working channel for use in performing surgery and having reliable insulation both externally and in the instrument channel.

(Docket No. 42, pp. 2-3).

a. Flexible vs. rigid or flexible

To begin with, I agree with Defendants that the term "endoscope" is not limited in the claim to a flexible or rigid device. (Docket No. 42, Ex. 1, Claim 1). Furthermore, the specification notes that "[i]n accordance with the invention, an electrosurgical device for achieving coagulation of biological tissue preferably comprises an attachment….The attachment can be provided on a rigid or flexible endoscope…."

Docket No. 42, Ex. 1, col.2, II. 17-19, II. 46-47. The specification further notes that "[i]n accordance with another embodiment of the invention a tube out of electrically not conducting material is arranged in a movable manner in the working channel, which tube is preferably a flexible hose, so that in the case of a rigid and also in the case of a flexible endoscope a desired alignment of the distal end of the hose or a tilting of the end of the hose can be performed….." Id. at col. 3, II. 1-7.

Erbe suggests that the invention is specifically directed to endoscopic uses in the gastrointestinal tract. (Docket No. 54, pp. 16-17 and Docket No. 68, pp. 6-8). While it is true that the specification describes specific embodiments of the invention as concerning the gastrointestinal tract, such example is non limiting. See, Phillips, 415 F.3d at 1323 (warning against confining the claims to those listed in the embodiments). For example, Erbe directs the Court's attention to the following sentence in the specifications: "In the case of the invention which allows endoscopic use in the gastrointestinal tract……." Docket No. 68, p. 7, quoting, Docket No. 42, Ex. 1, col.6, II. 58-61. The plain and unambiguous reading of this sentence leads to the conclusion it may be used in the gastrointestinal tract, as well as other endoscopic surgeries. In fact, the specifications disavow limiting the term endoscope to a flexible endoscope: "Although the invention has been described with reference to a particular arrangement of parts, features and the like, these are not intended to exhaust all possible arrangements or features, and indeed many other modifications and variations will be ascertainable to those of skill in the art." Docket No. 42, Ex. 1, col. 11, II. 4-8. Consequently, I will not read such a limitation into the term endoscope. As such, I construe the term endoscope, in part, to mean a rigid or flexible medical instrument.

b. Plurality of working channels vs. having at least one working channel

The parties further dispute whether an endoscope comprises a plurality of working channels or has at least one working channel. Docket No. 66, p. 28; Docket No. 68, p 12. The claim language itself is unambiguous in defining an endoscope as having "a plurality of working channels…." Docket No. 42, Ex. 1, col. 11, I. 14 and col. 15. Because I find this language unambiguous, I need not look to any further intrinsic evidence to define the term. A plain, ordinary and customary reading of this language means that there is more than one working channel.

c. Reliable insulation both externally and in the instrument channel
Canady argues that the term endoscope should include reliable insulation both externally and in the instrument channel.

Docket No. 66, p. 29. The claim language itself does not reference insulation. Both parties agree, however, that the specification states: "For argon plasma coagulation only endoscopes should be used whose electric insulation is absolutely reliable both exteriorly and in the instrument channel." Docket No. 42, Ex. 1, col. 10, ll. 21-23. I recognize that there is a fine line between "using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim…" Phillips, 415 F.3d at 1323, citing Comark Commun. v. Harris Corp., 156 F.3d 1182, 1186-87 (Fed.Cir.1998). I agree with Erbe that reading such a limitation into the claim term endoscope would be importing a limitation from the specification. Consequently, I will not read such a limitation into the term.

According, the claim term endoscope is construed to be a rigid or flexible medical instrument with more than one working channel.

Claim interpretation is a question of law amenable to summary judgment, Johnston v. IV AC Corp., 885 F.2d 1574, 1579-80 (Fed. Cir. 1989), and disagreement over the meaning of a term within a claim does not necessarily create a genuine issue of material fact. Becton Dickinson & Co. v. C.R. Bard, Inc., 922 F.2d 792, 797 (Fed. Cir. 1990).

Claim 36 of the '249 patent contains no dimensional limitations and would on its face apply to any endoscopic automatic multiple clip applier used in combination with a trocar cannula in which the jaws are sufficiently narrow to fit through a cannula without closing the jaws. In Claim 36, the trocar cannula is described only as "a tubular cannula having a given internal diameter." Likewise, no limitations are recited for the jaw member or the surgical clips referred to in the claim. Furthermore, there are no dimensional limitations in the specification or the drawings.

Plaintiff argues that a trocar of a "given" diameter in combination with an "endoscopic" clip applier means a 10/11 millimeter trocar and a clip applier capable of applying medium/large clips. The words of a claim must be given their ordinary meaning unless it appears that the inventor used the terms differently. "Although a patentee can be his own lexicographer, as we have repeatedly said, the words of a claim will be given their ordinary meaning, unless it appears that the inventor used them differently." Hoganas AB v. Dresser Industries, Inc., 9 F.3d 948, 951 (Fed. Cir. 1993); see also Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387 (Fed. Cir. 1992).

The '249 patent contains no special definitions of the words "given" or "endoscopic." Therefore in construing Claim 36, the words "given" and "endoscopic" should be given their ordinary meaning. Thus, "a tubular cannula having a given internal diameter" would mean a tubular cannula having an assumed or hypothetical internal diameter, i.e. one of no fixed or specific diameter. See Webster's Third New International Dictionary. Likewise, "endoscopic" would mean any device capable of being used with an endoscope, an instrument for visualizing the interior of a hollow organ or body cavity. "Endoscopic" would not connote any size limitation, except perhaps the general limitation of a size sufficiently small to be able to be inserted into an orifice or incision in the human body.

Plaintiff argues that notwithstanding the absence of any special definitions of these words in the patent, one skilled in the art would understand that "given internal diameter" and "endoscopic," as used in Claim 36 signify that the cannula referred to in the claim is a 10/11 millimeter cannula and that the surgical clips referred to in the claim are medium/large surgical clips, since these are the standard in the field of endoscopic surgery. This argument is unavailing because it is undisputed that medium sized surgical clips are used in endoscopic surgery and are thus, "endoscopic." In fact plaintiff itself markets an endoscopic clip applier designed for use with medium sized surgical clips. 4 Plaintiff's contention that one skilled in the art would understand that Claim 36 includes the limitations of a 10/11 millimeter trocar and a medium/large surgical clip does not present a genuine issue of material fact. The Court likewise finds no merit in plaintiff's argument that testimony regarding the intent of the inventors or spatial relationships depicted in the unscaled patent drawings raise genuine issues of fact regarding size limitations in Claim 36.

--- Footnotes ---

4 It is also undisputed that there are minor variations in the sizes of trocar cannulas and surgical clips within categories made by various manufacturers and that there is no precise or uniform standard dimension for a medium or medium/large
surgical clip.

Plaintiff further argues that part of the prosecution history of the '249 patent includes representations regarding the dimensions of the trocar cannula and surgical clips which supply the limitations it wishes to read into Claim 36. Plaintiff refers to the remarks section of its Response to Office Action, Dated April 30, 1992 in which its patent counsel summarized an interview with the patent examiners. The remarks include, inter alia, the following description of a demonstration of plaintiff’s device at the interview:

As was demonstrated at the interview, applicant's commercial embodiment of applicant’s device is not only automatic, but can apply medium/large clips having about a 5.33 millimeter width between the outer surfaces of their legs. This permits the instrument to be used with a trocar having a cannula with an internal diameter of about 10 millimeters.

"It is elementary that resort must be had in the first instance to the words of the claim which define the metes and bounds of the invention." Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759 (Fed. Cir. 1984). Limitations not found in the language of a claim cannot be read into the claim. E.I. Du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430 (Fed. Cir. 1988), cert. denied, 488 U.S. 986, 102 L. Ed. 2d 572, 109 S. Ct. 542 (1988). Limitations appearing in the patent specification cannot be read into the claims. Id. Nor is it permissible to inject into claims limitations referred to in the prosecution history. Intervet America, Inc. v. Kee-Vet Labs, Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989).

While limitations contained in the specification or prosecution history may be used where necessary to interpret what the patentee meant by a word or phrase in a claim, see e.g., Minnesota Mining & Mfg. v. Johnson & Johnson, 976 F.2d 1559 (Fed. Cir. 1992), there is no warrant for resorting to the prosecution history for such a purpose in this case. The words of Claim 36 are plain, they do not include any dimensional limitations on the size of the trocar or the surgical clip. The absence of limitations and the use of the word "given" when referring to the internal diameter of the cannula reflect a conscious intent by the drafter of this claim to make it as broad as possible so as to include a trocar of any size in combination with a clip applier having jaws of any size. In oral argument on this motion, counsel for plaintiff admitted that Claim 36 was so intended:

There could be, the reason the claim is not written with specific numerical dimensions, art does change. Things may be available later on with the advent of better suturing, when you are coming out of the abdomen, you can use larger trocars, and then we could use larger jaws, larger clips, etc.


Likewise, in opposing defendant's motion for summary judgment of non-infringement, plaintiff said with respect to Claim 36:

In construing a patent claim, the focus must be on the language of the claim itself. That is crucial because it is the claim -- rather than statements in the prosecution history or the patent specification -- that defines the metes and bounds of the invention…

If, as is the case here, the claim was drafted so as to obtain the broadest coverage with the fewest "limitations" on the scope of coverage, it is entitled to be so construed.

Ethicon's Memorandum in Opposition to Richard-Allan's Motion For Summary Judgment, Doc. 48, pp. 17-18. Plaintiff offered in support of this proposition the declaration of John P. Milnamow, its outside patent counsel who prosecuted the application for the '249 Patent. Mr. Milnamow stated:

Thus, not only is this prosecution history consistent with my intent and the objective construction which a facial reading of Claim 36 compels, but it reinforces my intention to have this particular claim contain as broad coverage as possible. The only objective limitations in the claim are the jaws, which extend outwardly from the shaft and must be wide enough to receive the clip but narrow enough to be entered into a trocar without compressing, and the single trigger… It was my intent and it remains my professional opinion that any endoscopic multiple clip applier having these characteristics infringes this
The prosecution history plaintiff relies on to import limitations into Claim 36 consists only of a description of a demonstration of a device. There is no suggestion in the description that plaintiff's patent lawyers represented to the patent examiners that plaintiff intended that the claims of the patent would be limited to the dimensions of the device demonstrated. Even if the Court were persuaded that it was proper to consider this part of the prosecution history to interpret Claim 36, it would add nothing of value to the interpretation and would raise no genuine issue of fact relating to the existence of dimensional limitations in that claim.

Plaintiff solved the problem of designing an endoscopic automatic multiple clip applier for medium/large clips with jaws narrow enough to fit through a 10/11 millimeter trocar cannula with the jaws in the open position. It did so by incorporating a design feature in the jaws which plaintiff refers to as a "primary heel." The claims of the '249 patent relating to the jaw and other specific aspects of the Ethicon device may well be valid and enforceable. In this case, however, Ethicon has elected to assert only the broadest claim in its patent, Claim 36 which, by its own admission fails for obviousness in the absence of size limitations which do not appear in the claim and which the Court concludes cannot properly be read into the claim. Accordingly, defendant's motion for summary judgment on the issue of obviousness is well taken.
The language of claim 31 makes clear that "engage" means more than simply "make contact." Claim 31 uses the term "engage" in describing the interaction between the yoke and the barrel nut:

said U-shaped supporting yoke including engagement surfaces configured to cooperatively engage an outer surface of said barrel nut and thereby support said upper handguard piece relative to said barrel nut.

'465 Patent col. 17, ll. 9-13 (emphasis added). As engagement of the yoke and the barrel nut is meant to provide enough structure to support the upper handguard piece relative to the barrel nut, engagement must entail more than mere contact. However, defining "engage" as "interlock with" may go too far. The dictionary definition of "interlock" is "to unite or join closely as by hooking or dovetailing" or "to connect together . . . so that the individual parts affect each other." The American Heritage Dictionary of the English Language, supra. There is nothing in claim 31 to suggest a requirement of hooking or dovetailing, but claim 31 could encompass a connection such that the individual parts affect each other by working together to provide support. A proper definition must fall in between "contact" and "interlock," establishing contact between the yoke and barrel nut sufficient to provide support for the upper handguard piece. 3

3 This sentiment was shared by the Patent Examiner who conducted an Inter Partes Reexamination of the '465 Patent. "It is the Examiner's opinion that the term 'engage' or 'engagement' necessarily requires at most some type of mechanical interaction or interlocking of parts, or at least direct contact between two parts when configured in their final completed assembly." (Inter Partes Reexamination 6.) The Inter Partes Reexamination was not filed as an exhibit.

As used in claim 31 of the '465 Patent, "engage" means to make contact with another part such that the resulting interaction can provide support.

B. "Engage"

No claim in either patent defines the term "engage." The '932 and '799 patents' description of the preferred embodiment explains the engagement process as follows:

The adapter sleeve 62 has an external surface 70 that is dimensioned to fit inside the cylindrical collar 48 of the BNC connector 38 and engage in the electrical contact therewith. A pair of posts 72 project from the sleeve external surface 70 on diametrically opposite sides of the sleeve. The posts 72 are positioned on the sleeve to engage in the pair of slots 52 of the BNC connector collar 48 when attaching the connector to the adapter. The engagement of the posts 72 in the adapter collar slots 52 enables the BNC connector 38 to be attached on the external surface 70 of the adapter by merely rotating the BNC connector one quarter turn. Thus, the BNC connector 38 can also be disconnected from the external surface of the adapter 36 by turning the BNC connector one quarter turn in the opposite direction.

'932 patent, col. 5, ll. 36-49 (emphasis added); '799 patent, col. 6, ll. 12-26 (emphasis added).

Based on this part of the '932 and '799 specification, defendants urge the court to construe the term "engage" to mean a connection requiring a "quarter turn." But the term "engage" is simple and straightforward, and should be construed in accordance with its ordinary and customary meaning. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996); see also Altiris Inc. v. Symantec Corp., 318 F.3d 1363, 1369 (Fed. Cir. 2003) (dictionaries may be useful in determining a term's ordinary meaning). Of the forty-two claims in the '932 and '799 patents that require an adapter post to "engage" with the slot of a BNC connector, only three specifically require the engagement to occur through a one-quarter turn. See '932 patent, claims 8 and 9; '799 patent, claim 8. A narrowing limitation present in one claim should not be read
into other claims in which the limitation is absent. See, e.g., Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999).

Webster's provides the following definitions, among others, for the verb "engage": (1) "to interlock with, to cause (mechanical parts) to mesh"; (2) "to bring together or interlock (weapons)"; and (3) "to come together and interlock (as of machinery parts)." Merriam-Webster

The court will construe the term "engage" to mean: "to come together and interlock." 

K. **Engage** (13i)

In the context of Claim 6, engage means come in contact with or attach to, to the extent there is any ambiguity in the word.

The phrase is to be construed as follows:

**come in contact with or attach to**

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1407

Engage a Formation

Claims in the '930 and '631 Patents require a cutter to "engage" a formation or be in the process of "engaging" a formation. Baker Hughes contends a cutter engages a formation when the cutter to cuts into it. ReedHycalog claims the cutter must maintain continuous and uninterrupted contact with the subterranean formation to engage the formation but did not brief the term in its Response to Baker Hughes's Opening Markman Brief.

The '930 and '631 Patents use the term "engage," with respect to the cutters, synonymously with "cut into" and do not require the cutters to maintain continuous and uninterrupted contact with the formation. See, e.g., '930 Patent col. 2:55-61 ("PDC cutters of the bit are engaged with the formation to their design DOC"); '631 Patent col. 3:16-21 (same); '930 Patent col. 14:40-48 ("DOCC features will prevent . . . cutters from engaging the formation at too great a depth"); '631 Patent col. 4:58-62 ("PDC cutters are prevented from engaging the formation to a greater depth of cut"); id. at col. 18:46-53 ("DOCC features will prevent . . . cutters from engaging the formation to too great a depth"); id. at col. 24:64--col. 25:2 (stating cutters create a formation cutting, or chip, as "cutters engage the formation at a given DOC"). Thus, "engage" means "cut into," and "engaging" means "cutting into." 26

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Footnotes

26 Ref. No. 29 of Appendix B contains the disputed terms and their construction.

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End Footnotes

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1408

14. "Locking means travels … to engage said ridge, said cavity and said chamfer." The term "engage" shall be given its ordinary dictionary meaning "to interlock or cause to interlock." 4

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Footnotes

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- 1840 -
3. Engage to form a positive stop

The parties also dispute the meaning of the phrase "engage to form a positive stop." Phoenix proposes, "contact to prevent," and Silgan proposes, "the abutting of a surface on one member against a surface on another member to preclude movement of one member in one direction relative to another member."

Read in context of the entirety of claim 3, Silgan's definition includes redundant language. It includes a description of how the abutting surfaces "preclude movement of one member in one direction relative to another member," though claim 3, following the phrase "positive stop," already reads, "to lower engagement of the cap with respect to the container." In other words, Silgan's definition includes words and ideas that are already present in other parts of the claim -- namely, preventing or stopping "lower movement of the cap with respect to the container." See Merck & Co. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so."). Silgan's definition is also unnecessarily complex insofar as it rejects Phoenix's simpler, "contact," for its own, "abutting of a surface on one member against a surface on another member." Because contact is synonymous with the phrase chosen by Silgan, we construe the claim language "engage to form a positive stop to" as follows: contact each other and prevent.

3. "Engageable"

Plaintiff argues the term "engageable" in claim 1 of the '685 patent means "[c]apable of working in contact to ensure coordinated action." (Doc. # 51, at 25). Plaintiff contends that the patentee's use of the term does not depart from the term's common and ordinary meaning. Plaintiff, therefore, relies on dictionary definitions to support its proposed construction.

Defendant argues that the term means "interlocking." (Doc. # 51, at 25). Defendant contends that the intrinsic evidence supports its proposed construction. Defendant refers the Court to the '685 patent specification, which states that "[t]he first free end 49 of the torsion spring 45 (FIG. 8B) engages the lever 15 while second free end 51 engages the housing 11 and intermediate connector 39. Thus, the torsion spring 45 is oriented to resist movement of the control structure 37 in a direction tending to open the ring members 35." (Doc. # 51-2, '685 patent, col. 7, lines 5-10). Defendant relies on Figures 9B and 11B in the specification to argue that "the spring is 'interlocking' with both the lever and the housing." (Doc. # 51, at 26). Defendant also asserts that its proposed construction is consistent with the dictionary definition of the term. Finally, defendant contends that its proposed construction will maintain the validity of claim 1 under 35 U.S.C. § 112, P 2.

The claim language, specification, and prosecution history do not make clear the definition of "engageable." Accordingly, the Court will consult a dictionary to determine the ordinary and common meaning of the claim term. The dictionary provides no definition for the word "engageable." However, the mechanical definition for "engage" is "to cause (gears or the like) to become interlocked; interlock with." RANDOM HOUSE DICTIONARY (1980). "Interlock" is defined as "to fit into each other, as parts of machinery, so that all action is synchronized." Id. The dictionary definition supports plaintiff's proposed construction. Therefore, the Court finds that the term "engageable" in the '685 patent means "capable of working contact to ensure coordinated action."
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1412

1. Defining "Engageable." The term "engageable" is not defined in the patent. When considering the language of the claim, "there is a 'heavy presumption' that the terms used in claims 'mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art.' Resonate, Inc. v. Alteon Websystems, Inc., 338 F.3d 1360, 1364 (Fed. Cir. 2003) (quoting Tex. Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1201 (Fed. Cir. 2002)). "The ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Phillips, 2005 U.S. App. LEXIS 13954, 2005 WL 1620331 at *5. Ordinarily, "the inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation." Id. In this case, the court credits Pfizer's expert's assertion, uncontested by Ajx, that "the claim term 'engageable,' when read in context with the claim, specifically, 'thereby providing a releasable connection,' does not have a precise and generally understood meaning to one of ordinary skill in the art." Decl. of Dr. Mansoor Amiji [Doc. No. 139] P 24.

The court must, therefore, interpret the term "engageable." The court may first consider whether the ordinary meaning of claim language is "readily apparent even to lay judges" and whether this is a case that "involves little more than the application of the widely accepted meaning of commonly understood words." Phillips, 2005 U.S. App. LEXIS 13954, 2005 WL 1620331 at *6. The word "engage" has many meanings. The applicable definition in this context is "to fasten" or "to attach." Oxford English Dictionary (2d ed. 1989); see also Acromed Corp. v. Sofamor Danek Group, Inc., 253 F.3d 1371, 1382 (Fed. Cir. 2001) (construing the term "engage" to mean "to fit together"). While recent case law cautions against the use of dictionaries, dictionaries "are often useful to assist in understanding the commonly understood meaning of words." Phillips, 2005 U.S. App. LEXIS 13954, 2005 WL 1620331 at *15. Particularly in a case where a term does not have a generally understood meaning among those skilled in the art, the court ought to understand the common meaning of the term as it is most likely to guide an understanding of the inventor's intention is using that term. The term "engageable," then, would be commonly understood to mean "able to engage" and to describe an object that is able to or has the capacity to fasten or to attach.

The court next looks to the claim itself for instruction on the use of the term "engageable." See Phillips, 2005 U.S. App. LEXIS 13954, 2005 WL 1620331 at *6-*7. "Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims." Phillips, 2005 U.S. App. LEXIS 13954, 2005 WL 1620331 at *7. The same is true of a term used twice in the same claim. The use of the term "engageable" to describe both the permanent and temporary locks strongly suggests that the term does not incorporate the
amount of force necessary to separate the locked components. Furthermore, the use of the term "releasable" to describe the connection between the "engageable" areas suggests that the term "engageable" is not intended to incorporate the amount of force necessary to separate the components. Were the term "engageable" to be read as Pfizer argues, the term "releasable" would be redundant. The court reads the term "engageable" to refer to the ability of the cap and body to connect, not to the amount of force necessary to pull them apart.

The specification, while it ought not be read into the claims, should be used as necessary and appropriate to construe claim terms. "Although it is improper to read a limitation from the specification into the claims, claims must be read in view of the specification, of which they are a part." Microsoft Corp. v. Multi-Tech Systems, Inc., 357 F.3d 1340, 1347 (Fed. Cir. 2004) (internal citations, quotations, and alterations omitted). "Though understanding the claim language may be aided by the explanations contained in the written description, it is important not to import into a claim limitations that are not a part of the claim." Resonate, Inc., 338 F.3d at 1364.

Pfizer urges the court to adopt an extremely specific definition of "engageable." According to Pfizer, the Preferred Embodiment requires the court to read the term narrowly. The Preferred Embodiment describes a number of different forces associated with effecting a preliminary and permanent lock and with releasing a preliminary lock. Specifically, the prefit force is defined as "the force which is needed to open a prelocked capsule for filling." 267 patent, col. 4, ll. 44-45 (emphasis added). The patent specifies that the prefit force "must neither be too high (otherwise separation problems will arise in the filling station) nor too low (danger of the capsule parts falling apart during transport)." 267 patent, col. 4, ll. 46-48. The patent describes a technique for measuring such forces and explains the role of the capsule's component parts on the prefit force. For example, Pfizer determined that a protrusion with circular crosssection resulted in reduced variation of prefit forces among capsules. 267 patent, col. 9, ll. 1-3. The patent further states that "in the present design, a reduction of the PREFIT force was desired" and that "protrusion heights in the range of 40 to 80 [microns]" reduced the prefit force by approximately 30% from that of the prior art. 267 patent, col. 9, ll. 36-38.

Given the importance of the prefit force to the '267 capsule, Pfizer argues that the term "engageable . . . is properly interpreted to mean that the pre-lock area on the body interacts with the pre-lock area on the cap so as to reduce the pre-lock force needed to separate the body and cap for filling (e.g., below approximately 21.6 grams." Pl.'s Memo. of Law in Opp. to Ajix's Mot. for Summ. J. of Invalidity and Infringement (hereinafter "Pfizer Br.") [Doc. No. 135] at 30.

This analysis is flawed in two fatal respects. First, the term "engageable" is used to describe both the prelock and the permanent lock. "The same word appearing in the same claim should be interpreted consistently." Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1345 (Fed. Cir. 1998). Therefore, the term "engageable" cannot be interpreted to specify the force required to separate the cap from the body in the prelock position because that force will be significantly greater with respect to the engageable permanent lock areas. The capsule, when in the permanent lock position, should not be easily separated. '267 Patent, Col. 1, ll. 47-52 (describing potential difficulties should capsule components separate after pharmaceutical material has been placed in the capsule).

Second, the definition of "engageable" put forward by Pfizer is simply counter to common definitions of the word. In the instant case, the term has no intelligible meaning to persons skilled in the relevant art. "To engage," when used to describe a physical action, means to attach or to fasten. To interpret the term "engageable" to refer to the separation of two objects is illogical. It is simply more reasonable to analyze the term to describe two objects' ability or capacity to attach to one another. The instant context--a patent teaching a capsule with two components designed to interact with one another--only buttresses this view. Counter to Pfizer's contention, the instant context does not support a finding that the term "engageable" defines the force needed to separate the cap from the body. Indeed, the term "releasable," '267 patent, col. 11, l. 67, would be redundant if "engageable" were interpreted as Pfizer insists.

The court exercises discretion in determining what evidence to consider and what weight to give that evidence when construing a claim. Phillips, 2005 U.S. App. LEXIS 13954, 2005 WL 1620331 at *11. This claim construction prioritizes intrinsic evidence, the language of the claim itself, over extrinsic sources, such as dictionaries and expert testimony. To read the term "engageable" as Pfizer suggests is to ignore the plain language of the claim itself and to allow Pfizer to read the specification into the claim.

GO BACK
The next claim term to construe is "pet engageable portion," which appears in claim 1 of the '540 Patent. Plaintiff suggests that this claim term means "portion of the grooming tool having a blade portion and a plurality of teeth." Plaintiff argues that this construction is consistent with the patent claims and the specification, which states, "[t]he pet engageable portion includes a blade portion and a plurality of teeth." ('540 Patent, doc. # 1-3, p.7 col.2 ll.5-6, p.8 col.3 ll.2-4). Defendants suggest an entirely different definition, "a one-piece blade for an electric animal hair clipper removed from the clipper, such as an Oster A5 40 or 50 blade." Defendants state that their proposed construction is based on similar language that appears in the '540 Patent specification. ('540 Patent, doc. # 1-3, p.7 col.2 ll.16-6-p.8 col.3 l.2). The Court finds that Plaintiff's proposed definition is more appropriate than Defendants' proposed definition, however, it is necessary to further define "plurality of teeth," another claim term that this Court construes in a subsequent section. See infra Section III(I). Accordingly, the Court will construe the claim term "pet engageable portion" to mean "portion of the grooming tool having a blade portion and more than one tooth."

This definition incorporates the actual language of the patent claims, as adapted to include the Court's construction of the claim term "plurality of teeth". For example, the definition adopts the language of claim 1 of the '540 Patent, which provides: "the grooming tool comprising . . . a pet engageable portion secured to the handle portion, the pet engageable portion including a blade portion and a plurality of teeth." ('540 Patent, doc. # 1-3, p.8 col.4 ll.19-24 (emphasis added)); see Phillips, 415 F.3d at 1314 (noting that the words of the claims "provide substantial guidance as to the meaning of particular claim terms"). The definition is also consistent with the patent specification, which states "[t]he pet engageable portion includes a blade portion and a plurality of teeth," ('540 Patent, doc. # 1-3, p.7 col.2 ll.5-6), and "[t]he pet engageable portion 24 includes a blade portion 30 (FIGS. 4 and 5) and a plurality of teeth 32." ('540 Patent, doc. # 1-3, p.8 col.3 ll.2-4); see Phillips, 415 F.3d at 1315 (noting that "claims must be read in view of the specification, of which they are a part").

Defendants' suggested construction of "pet engageable portion" is "a one-piece blade for an electric animal hair clipper removed from the clipper, such as an Oster A5 40 or 50 blade." The Court recognizes that this language is taken directly from the '540 Patent. However, the Court notes that the '540 Patent specifically provides that: "[t]he pet engageable portion may consist of a one-piece blade for an electric animal hair clipper, such as an Oster A5 blade (size 40 or 50, but preferably size 40) commercially available from Sunbeam Corporation." ('540 Patent, doc. # 1-3, p.7 col.2 ll.16-6-p.8 col.3 l.2 (emphasis added)). Thus, it appears that the language relied on by Defendants to support their construction is merely an example of what the blade portion could be, not a definitive statement of what it actually is. By adopting Defendants' suggested construction, this Court would be improperly limiting the patent claims to exclude certain blades that would otherwise be included. The Court declines to do so.

Thus, the Court will construe the claim term "pet engageable portion" to mean "portion of the grooming tool having a blade portion and more than one tooth."

SM filed suit against Procycle, alleging that claims 1, 7, and 11 of the '959 patent were infringed literally and under the doctrine of equivalents by all of the Procycle steppers, and that the Quantum steppers further infringed claim 9. In a Markman opinion, the district court construed the terms "engaged" and "engaging" in claims 11 and 7, respectively, to mean "any type of mechanical engagement capable of coming into contact, interlocking, or meshing [two separate components]." StairMaster Sports/Medical Prods., Inc. v. Groupe Procycle, Inc., 1998 U.S. Dist. LEXIS 8228, No. 97-396, slip op. at 30 (D. Del. May 20, 1998) ("StairMaster I"). The court held that the "means for engaging" limitation of claim 7 was in means-plus-function format, pursuant to 35 U.S.C. § 112, P6, and identified the claimed function as "engaging the transmission output with the dynamic brake means," and the corresponding structure disclosed in the specification of the '959 patent as continuous belt 148, which connects the transmission output and the brake in the preferred embodiment. Id. at 25-26; see also '959 patent, Col. 10, line 59 through Col. 11, line 2.
The parties filed cross-motions on summary judgment and, on July 29, 1998, the court granted Procycle's motion for summary judgment that the Procycle devices did not infringe claims 1, 7, or 11 of the '959 patent, either literally or under the doctrine of equivalents. See StairMaster II, 25 F. Supp. 2d at 276-77. With regard to claim 9, the court granted summary judgment of no literal infringement, and held that prosecution history estoppel barred application of the doctrine of equivalents. See id. at 281-82. Finally, the court denied Procycle's motion for summary judgment on invalidity, concluding that claims 7-11 of the '959 patent were not invalid under the reissue statute, 35 U.S.C. § 251. See id. at 291. This appeal followed, vesting this court with jurisdiction pursuant to 28 U.S.C. § 1295(a)(1) (1994).

II

We review the grant of summary judgment de novo. See Johnson Worldwide Assocs., Inc. v. Zebraco Corp., 175 F.3d 985, 987, 50 U.S.P.Q.2D (BNA) 1607, 1609 (Fed. Cir. 1999). The de novo standard also applies to this court's review of claim construction. See Augustine Med., Inc. v. Gaymar Indus., Inc., 181 F.3d 1291, 1297, 50 U.S.P.Q.2D (BNA) 1900, 1904 (Fed. Cir. 1999). Summary judgment is appropriate only if there is no genuine issue of material fact. See Fed. R. Civ. P 56(c). To this end, the court must draw all reasonable factual inferences in favor of the nonmovant. See Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 255, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986). In reviewing a grant of summary judgment of noninfringement, as with any infringement inquiry, we must first determine the correct claim scope as a matter of law. See Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1247-48, 48 U.S.P.Q.2D (BNA) 1117, 1120 (Fed. Cir. 1998). We then compare the properly construed claim to the accused device to determine, as a matter of fact, whether all claim limitations are present in the accused device, either literally or under the doctrine of equivalents. See id.

SM argues that the district court interpreted the term "engage" incorrectly and that, under the interpretation SM proffers, Procycle's steppers infringe claims 7 and 11, both literally and under the doctrine of equivalents. We disagree with SM. Terms in a claim are to be given their ordinary and accustomed meaning, within the context of the claim, unless (1) a different meaning is clearly set forth in the written description or the prosecution history; or (2) the meaning of the term is unclear from the context of the claim. See Johnson, 175 F.3d at 989-90, 50 U.S.P.Q.2D (BNA) at 1610. We have reviewed the language of the claims, the specification and the prosecution history of the '959 patent, and we agree with the district court's construction of the terms "engaged" and "means for engaging . . ." in claims 11 and 7, respectively. Because the single integrally-molded brake wheel of the Procycle steppers does not "engage" the transmission output and the brake input, or perform the identical function of "engaging" those components, the district court correctly concluded that the accused Procycle steppers do not literally infringe claims 7 and 11 of the '959 patent. See Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1535, 19 U.S.P.Q.2D (BNA) 1367, 1369 (Fed. Cir. 1991) ("The failure to meet a single limitation is sufficient to negate infringement of the claims.").

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1. "Determining when the cruise control is engaged"

With respect to the second element of Claim 1, Detroit Diesel contends that the cruise control must be either engaged or not engaged, that the cruise control is engaged when the on/off switch is closed, and is not engaged when the switch is open or the brake or clutch is depressed. To support the meaning it ascribes to the word "engaged," Detroit Diesel refers the court to the portions of the specification that explain that "when the switch 48 is closed, a signal is passed to the road speed limit and cruise control 44 to engage the cruise control mode of operation," col. 4, lines 29-31, and that "when either the brake pedal 52 or clutch 54 is depressed," the "cruise control mode of operation" is "disengaged." Detroit Diesel also refers the court to Figure 1 of the '597 patent, in which switch (48) is represented as "ON/OFF."

Caterpillar asserts that the cruise control is engaged when the on/off switch is activated, a vehicle speed is entered, and vehicle speed control is released from the throttle to the engine controller. To support its definition of "engaged," Caterpillar refers the court to the "set" step (50) in the patent's Figure 1, and to the affidavit of Michael Moncelle, the first named inventor of the '597 patent. Mr. Moncelle explains that "it is common and accepted knowledge to one of ordinary skill in the art for engine cruise control systems that an engine cruise control is 'engaged' when it is activated and capable of controlling the engine to maintain a specified vehicle speed," which occurs "only after the cruise control has been activated by turning the feature on, and the vehicle speed has been entered through the set or resume functions." Moncelle Aff., P 4. Caterpillar also cites the affidavit of its expert, James Amend, who explains that "the only interpretation of the word 'engage' in Claim 1
which is consistent with how a cruise control works, the purpose of the invention and the preamble to Claim 1, is that it means: on and set above the minimum, and not disengaged by depressing the brake or clutch." Amend Aff., P 29.

Although the portion of the specification that states that "when the switch 48 is closed, a signal is passed to the road speed limit and cruise control 44 to engage the cruise control mode of operation," col. 4, lines 29-31, appears to define the cruise control as "engaged" when the switch (48) is "on," reference to the entire specification confirms that the second element of Claim 1 uses "engaged" in its ordinary sense, i.e., "employed." American Heritage Dictionary of the English Language 433 (1981). The cruise control is engaged when it is operating to control the vehicle's speed. This definition is consistent with the patent's preamble, which describes the invention as a "method of operating a vehicle engine (12) equipped with a cruise control (44) which is engageable to control the speed of the vehicle . . . ." It is also consistent with the patent's purpose, described in the specification: "Thus, when the cruise control is engaged, a higher engine output power is available, if needed, so that an operator is less likely to have to downshift in order to provide the torque required to maintain the actual vehicle speed at the desired vehicle speed." The use of "engaged" in this context cannot simply mean that the on/off switch is closed; the purpose of the patent is to make more torque available when the cruise control is actually in use, i.e., controlling vehicle speed, to encourage the use of cruise control and decrease the need to downshift. These purposes would not be served if the higher torque were available simply based on the cruise control on/off switch.

The specification describes the cruise control's operation, see col. 4, lines 20-44, and Figure 1 shows the inputs the cruise control receives. The operation of the cruise control as depicted in the specification, including Figure 1, is consistent with the explanation of Caterpillar's expert James Amend. In his affidavit, Mr. Amend explains that one of ordinary skill in the art would know that a cruise control feature on a manual transmission vehicle could have six operational states: (1) activation switch off; (2) activation switch on; no vehicle speed set; (3) activation switch on and speed set, but the set speed is below a pre-programmed minimum set speed; (4) activation switch on and speed set above minimum, but operator pressed the clutch or the brake; (5) activation switch on and speed set above minimum, but operator used throttle to exceed set speed; and (6) activation switch on, speed set above minimum, and operator neither presses brake or clutch, nor exceeds set speed through use of throttle. Amend Aff., P 26; see also Moncelle Aff., P 4. The cruise control is "engaged," i.e. controlling the vehicle speed, only in the final state.

D. "Said Lower End and Said Capturing Bracket Engaged By a Fastener So As To Remain Engaged Despite Failure of Said Fastener"

As noted above, one of the improvements accomplished by the '515 Patent was to use two methods to secure the leg support rather than a single fastener. The leg support sits in the capturing bracket and also is held in place by a "fastener" going through the leg support and the capturing bracket. If the fastener breaks or otherwise fails, the capturing bracket continues to hold the leg support in place. The Court construes the term "said lower end and said capturing bracket engaged by a fastener so as to remain engaged despite failure of said fastener" in Claim 1 to mean that "the lower end of the leg support and the capturing bracket are engaged by the fastener so that if the fastener fails to perform its function, the lower end of the leg support and the capturing bracket remain in place and the capturing bracket continues to hold the leg support."

3. The phrase "said lower end and said capturing bracket engaged by a fastener so as to remain engaged despite failure of said fastener"
believes that the figures depict a U-shaped bracket.

The Court construes this phrase to mean:

The lower end of the leg support is inserted within the capturing bracket; a fastener connects the lower end and the capturing bracket to each other; and the lower end will remain within the capturing bracket even if the fastener breaks or fails.

This construction is consistent with the construction adopted in Forest Group, 2007 U.S. Dist. LEXIS 10487, at *11 (construing this phrase "to mean that the lower end of the leg support and the capturing bracket are engaged by the fastener so that if the fastener fails to perform its function, the lower end of the leg support and the capturing bracket remain in place and the capturing bracket continues to hold the leg support").

Warner does not propose any construction for this term, preferring instead to imply that it is somehow nonsensical. Joint Markman Subm. at 4. Forest proposes a construction that incorporates a definition of "capturing bracket," id., and Warner apparently does not object to Forest's proposed construction (except to argue that Warner's stilt does not infringe based on that construction). Pl. Markman Memo. at 10. But because "capturing bracket" is a separate term, the Court rejects Forest's proposed construction of this phrase, which would effectively require that "capturing bracket" be subject to two different constructions.

This particular phrase, which requires that the capturing bracket still confine the leg support if a fastener fails, was added by the patentee to overcome a rejection by the Patent Office. Pl. Markman Memo. Lacy Decl. Exh. D part 5 at 2 [Docket No. 43]. In particular, this limitation was added to distinguish the claimed invention from U.S. Patent No. 3,902,199 to Emmert (the '199 patent), which is incorporated by reference in the '515 patent. '515 Patent col. 1:22-23; Pl. Markman Memo. Lacy Decl. Exh. D part 5 at 1-2. Figure 2 of the '199 patent shows a leg support attached to a stilt at the top by a yoke, and at the bottom by a single bolt through the end of the leg support. If the single bolt at the bottom of the leg support broke, the leg support could rotate more-or-less freely about the single point of attachment provided by the yoke or could slide downward through the yoke.

A key purpose of the '515 patent was to improve upon the '199 patent's method of attaching the leg support; that purpose was achieved through this final phrase of claim 1 relating to the capturing bracket, the leg-support end, and the fastener connecting the two. As the patent states, "[t]he lower leg support attachment employing the capturing bracket and the yoke structure serve to prevent the leg support from accidently becoming detached from the stilt." '515 Pat. col. 1:61-64. By contrast, in prior-art stilts, "the leg support member had a tendency to loosen and become detached from the stilt. . . ." Id. col. 1:39-41. With respect to the fastener attaching the leg-support end to the capturing bracket, in particular, "[i]n the event that nut and bolt assembly 6 should come loose or break, capturing bracket 48 will still hold leg support lower end 46 in place." Id. col. 3:9-12.

Another phrase in contention in claim 11 is the term "engaged with." See Col. 12, lines 2 and 5. The relevant claim language recites:

... (e) a speed increasing transmission having an input and an output, said transmission input being engaged with said drive means; (f) a brake dissipating the work of the user in the form of heat, said brake being engaged with the transmission output . . .

Col. 12, lines 1-6 (emphasis added). Similar language has already been interpreted with regards to claim 7, clauses (f) and (h), in the interpretation of "means for engaging." See supra, at 24-27. As in clause (f) of claim 7, clause (e) of claim 11 also refers to a connection between the transmission input and the drive means. As in clause (h) of claim 7, clause (f) of claim 11
refers to a connection between a brake and a transmission output. However, because this language of claim 11 is not in
means-plus-function form, the interpretation of "engaged with" is not limited to the corresponding structure found in
the specification and equivalents thereto, as the "means for engaging" were. Instead the Court must consult the specification,
and any relevant prosecution history, in order to better understand the claim language.

While the specification mentions a chain for the first connection and a belt for the second connection, see Col. 6, lines 48-
50; Col. 6, lines 65-67, the claim language is not so limited where it is broader than the preferred embodiment and no
particular structure is required in the specification. See Specialty Composites, 845 F.2d at 987; Electro Medical, 34 F.3d at
1054; see also CVI/Beta Ventures, 112 F.3d at 1158. Being nothing in the intrinsic evidence which provides a special
meaning for "engaged with," the Court again employs the customary and ordinary meaning of "engage," as coming into
contact, interlocking, or meshing. As such, the Court construes the language "engaged with," found in claim 11, Col. 12,
lines 2 and 5, to mean any type of mechanical engagement capable of coming into contact, interlocking or meshing a drive
means and transmission input or a transmission output and a brake.

C. "Engagement Assembly"

The "engagement assembly," which is "carried" on the "extendable element," is, along with the "dumping assembly,"
included in the "assembly extendable to the curb side of the vehicle and carried by said intermediate container." See 245
Patent, col. 8, lines 1-5. The "engagement assembly" is described as "having motor powered means to hold the refuse
container during the emptying operation." See 245 Patent, col. 8, lines 9-11.

Plaintiff argues "engagement assembly" should be construed as "the structure that engages the curb side container, including
a hydraulic cylinder or other motor." (See Pl's Proposed Order at 2:8-9.) Defendant argues "engagement assembly" should
be construed as "an assembled collection of parts coming into contact or interlocking, which collection of parts must include
motor powered means to hold the refuse container during the emptying operation as interpreted below." (See Def.'s
Proposed Order at 2:16-18.)

As with "dumping assembly," the parties' respective constructions focus on the function of the claimed "engagement
assembly." The specification teaches that the function of the "engagement assembly" is to "securely attach[]" a curb side
refuse container before its contents are emptied into the intermediate container. See 245 Patent, col. 7, lines 10-15, Figs. 7b-
7d.

Accordingly, "engagement assembly" is construed as "the structure that securely attaches to a curb side container."

m. "Engagement Position" (Claim 31)

100. The specification of the '656 patent uses this term as synonymously with "detented position". See, Col. 6, lines 18-19.
Thus, "engagement position" means the location that the detent extends, projects or protrudes to by the solenoid by entry of
the combination so that the detent can be contacted by the detent engaging member on the cam.

1. "the engagement surface of the tension member"

Schindler proposes that "the engagement surface of the tension member" be defined as "an outermost layer or surface of the
tension member where the entire outermost layer or surface comes into contact with a corresponding surface of the sheave."
Otis proposes that the term be construed as "the portion of the tension member that is in contact with a sheave and receives
traction forces from the sheave." Each parties' definition imposes an extraneous limitation.

Schindler's proposed definition is too narrow. It provides that the entire outermost layer comes into contact with . . . the sheave." Schindler relies on the figures contained in the patent to support this proposition. The figures, however, depict preferred embodiments of the claims--they do not define the precise boundaries of the invention. See MBO Labs, Inc. v. Becton, Dickinson & Co., 474 F.3d 1323, 1333 (Fed. Cir. 2007); see also Kara Technologies Inc. v. Stamps.com Inc., 582 F.3d 1341, 2009 U.S. App. LEXIS 21120, at *13 (Fed. Cir. 2009). The entire surface of the tension member does not need to come into contact with the sheave in every potential embodiment of the invention.

Otis' definition requires that the tension member "receives traction forces from the sheave." This is also an extraneous limitation. The patent specification explicitly states that other secondary applications of the invention, also related to elevator systems, do not use a traction sheave. Accordingly, the term cannot include the "receives traction forces from the sheave" language proposed by Otis.

The Court will construe "the engagement surface of the tension member" as "the portion of the tension member that comes into contact with the corresponding surface of the sheave."

28. "[E]ngagement tab:" A locking tab or structure on the inside surface of the side walls that assists in the coupling of a hook arm to the connector." This construction finds support in the specification. (See col. 4:15-30) The court rejects plaintiff's proposed construction, which seeks to conflate additional language from the claims into this limitation, i.e., requiring that the locking tab (1) extend inwardly from the wing, (2) be partially formed by a cut-out in the wing, and (3) whose outward displacement and deflection is accommodated by a cavity in the wing.

At the claim construction hearing, AFT raised "engagement with" as a term requiring construction. Tr. (Dkt. No. 106) 48-49. The term appears in claims 1 and 10. AFT proposes the Court construe the term to mean "to interlock with." AFT's Post-Hearing Br. at 12. It asserts that this definition, found in the Merriam-Webster's Ninth New Collegiate Dictionary, is appropriate as the intrinsic evidence provides no alternative definition and no specialized meaning for the term exists in the pulp industry. 11 AFT's Post-Hearing Br. at 12. J&L counters that the Court should construe "engagement with" simply to mean "in contact with," stating that this definition is consistent with the intrinsic evidence, AFT's general use dictionary, and related definitions found in the McGraw Hill Dictionary of Scientific and Technical Terms. J&L Post-Claim Construction Hearing Br. (Dkt. No. 108) ("J&L Post-Hearing Br.") at 13-16. Under J&L's construction "engaged" components "remain
separate, in contact with one another, and capable of movement." Id. at 15.

11 The most relevant definition found in Merriam-Webster's Ninth New Collegiate Dictionary defines "engage" as "to interlock with: MESH; also: to cause (mechanical parts) to mesh." Dkt. No. 82, Ex. D.

The Court adopts AFT's proposed construction. "Engagement" does not appear to have any specialized meaning in the art. Thus, a general use dictionary provides valuable insight into the term's ordinary meaning. 12 "Interlock" comports with the specification and claims, whereas mere "contact with" fails to do so. The specification describes individual components firmly secured to one another as "engage[d]." '940 patent, Col. 3, Lns. 5-10 (explaining that by registering the backing and screening plates together, then securing one to the other, "[t]he backing plate thus engages the screening plate"); see also id., Col. 3, Lns. 28-31 (stating that "shrink-fitting one plate to the other may be itself sufficient to secure the plates to one another"); id., Col. 6, Lns. 41-53 (describing a method of manufacturing a preferred embodiment of the present invention that includes "shrink-fitting the cylinders into engagement one with the other"). The fact that the specification indicates that an additional fastener, e.g. a weld, rivet, or screw, is generally added does not require the limitation J&L suggests. Accordingly, "engagement with" means to interlock or mesh with.

12 The term is not defined in the technical dictionary J&L supplies.

The parties dispute the meaning of the term "engages" in limitation (g)'s claim that "the lid engages the liner so that the liner can be lifted from the outer container together with the lid." '111 patent col.16 ll.44-46. 3M argues that the Court does not need to construe the language because it carries its plain and ordinary meaning. In the alternative, 3M asks the Court to construe the term "engages" as "comes into contact, fits together, or interlocks with," resulting in a construction whereby "the lid comes into contact, fits together, or interlocks with the liner so that the liner can be lifted from the outer container together with the lid." Gerson argues that the Court should construe the term "engages" to mean "interlocks with and securely holds."

The Court begins with the claim language, which claims "removing the liner from the outer container together with lid, wherein the lid engages the liner so that the liner can be lifted from the outer container together with the lid." '111 patent, col.16 ll.43-46. The claim language thus depicts a type of engagement between the lid and liner "so that the liner can be lifted from the outer container together with the lid." '111 patent col.16 ll.45-47. The specification teaches a variety of engagements between the lid and the liner, and describes alternative embodiments for the claimed invention:

- "Advantageously, the lid . . . is formed with barbs . . . on its surface to engage and hold the top of the liner." '111 patent, col.6 ll.21-22.

- "As a further alternative, the lid . . . could be formed as an integral part of the liner . . . to which it could be connected by a hinge joint . . . . In that case, there is no need for the lid to fit inside the mouth of the liner to ensure that the lid and liner will be removed together from the container after use[,]" Id. col.7 ll.27-34.

- "If more positive engagement is required between the lid . . . and the liner . . . , the lid could be snap fit with the liner instead of push-fit as shown. The liner could, for example, be formed with an internal circumferential rib positioned to engage in a corresponding groove on the adjacent surface of the lid." Id. col.7 ll.42-47.
- "The form of the shaped portion . . . allows the lid . . . to be pushed into the mouth of the liner and also provides a recess . . . into which the edge of the liner can contract so that the lid is securely located." Id. col.7 ll.56-59.

The Court concludes that no construction of the term "engages" is necessary. First, "[a] claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so." Merck & Co., Inc. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005). Construing "engages" to require that the lid "securely hold" the liner — as proposed by Gerson — would render superfluous the remainder of the claim language in limitation (g), i.e., "so that the liner can be lifted from the outer container together with the lid." See Gen. Am. Transp. Corp. v. Cryo-Trans, Inc., 93 F.3d 766, 770 (Fed. Cir. 1996) (rejecting a district court's claim construction because it rendered superfluous a claim requirement).

Second, the specification teaches a variety of potential embodiments and engagements between the lid and the liner, and describes varying degrees of strength of such engagement. Therefore, "engages" covers a broader range of connections between lid and liner than the term "interlocks with and securely holds."

Accordingly, the Court rejects Gerson's proposed construction and concludes that the term "engages" has its ordinary and plain meaning.

1. Disputed terms 1-3: "an upper portion of the height of the band extends above the upper edge of the pants or skirt and engages against the torso" (claim 2); "... engages against the body or underclothing" (claims 6 and 14) and "... engages against the body." (claim 9)

In its briefing, Plaintiff argued that the first disputed term should be construed as: "an upper portion of the height of the band extends above the upper edge of the pants or skirt and engages against the torso; but the pants or skirt need not be in direct contact with the woman's skin." Pl.'s Claim Const. Brf. at 5. Defendant proposed the following construction: "an upper portion of the height of the band extends above the upper edge of the pants or skirt and engages against the torso of the pregnant woman." (italics added). In these three claims, Plaintiff proposed that the following language to the disputed phrase be added: "but the pants or skirt [or band] need not be in direct contact with the woman's skin." Defendant disagreed. And in all three phrases, Defendant sought to insert the modifying term "pregnant" before the term "woman."

a. "But the pants or skirt [or band] need not be in direct contact with the woman's skin"

The Court addresses first the question of whether the disputed term requires the addition of the phrase "but the pants or skirt [or band] need not be in direct contact with the woman's skin." At the claim construction hearing held in this matter, the parties stipulated that there is no requirement in the patent that the pants or skirt have direct contact with the woman's skin. The Court concludes that the disputed phrase must be understood to include the concept that the band need not touch a woman's skin. However, the Court declines to construe this term as having any reference to whether the clothes of a woman must touch her skin.

The specification supports the interpretation that the band need not contact skin. The specification states "the band garment of the invention preferably is formed of smooth knit fabric which, with the elastic in the fabric, comfortably hugs a woman's lower abdomen, flattening and shaping any fabric underneath." '775 Patent, 3:8-21 (emphasis supplied). Because the patent specification refers to a situation in which there would be fabric beneath the band, rather than bare skin, insertion of the proposed language prevents a limitation that would be contrary to the patent specification. The specification also contains...
embodiments where the band is worn with a top tucked into the band, and where the band is stretched over the top of the pants. "775 Patent, 5:38-42 (claim 3); 2:67-3:3. In such an instance, the band would be placed on top of both the lower edge of the shirt or blouse, and the upper edge of the pants. Under this scenario, the band would not necessarily be touching the woman's skin.

However, the disputed phrases cannot be interpreted to include any reference to whether a woman's clothes touch her skin. There is nothing in the specification or the claims that makes any reference to this issue. Therefore, the Court rejects Plaintiff's request to interpret the claims in this manner.

b. The modifier "pregnant"

Next, the Court addresses whether the word "pregnant" must be inserted into the disputed phrases as proposed by Defendant in its claim construction brief. The Court concludes that it does not.

While Defendant is correct that the independent claims 1, 5, 8 and 13 (on which claims 2, 6, 9 and 14 depend) recite that the band is worn around the "pregnant" woman's torso or body, the Court is not persuaded that this requires the further addition of the word "pregnant" everywhere that the word "woman" appears in the patent. It is clear from the patent that the band is worn around the body of a pregnant woman. Moreover, at the hearing in this matter, Plaintiff stipulated that the wearer of the present device -- with respect to all claims in the patent -- is a pregnant woman. The addition of the word "pregnant" is redundant and superfluous. Claim construction is necessary when the terms of the patent require clarification for use in the determination of infringement. It is not "an obligatory exercise in redundancy." NTP, Inc. v. Research in Motion, 418 F.3d 1282, 1311 (Fed. Cir. 2005), cert. denied, 546 U.S. 1157, 126 S. Ct. 1174, 163 L. Ed. 2d 1141 (2006) (citation omitted).

The Court therefore declines to adopt Defendant's proposed modifier "pregnant." The Court construes the terms as follows:

"an upper portion of the height of the band extends above the upper edge of the pants or skirt and engages against the torso; but the band need not be in direct contact with the woman's skin." (Claim 2); "an upper portion of the height of the band extends above the upper edge of the pants or skirt and engages against the body or underclothing; but the band need not be in direct contact with the woman's skin." (Claims 6 and 14); "an upper portion of the height of the band extends above the upper edge of the pants or skirt and engages against the body; but the band need not be in direct contact with the woman's skin." (Claim 9).

Footnotes:

72 Def.'s Opp'n at 17; Def.'s Reply at 9-10.

73 See '076 patent, col.16 l. 23-24.

74 See Phillips, 415 F.3d at 1314 ("Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims.").
2. "engaging"

The district court construed "engaging" to mean "coming together and interlocking." Literal Infringement Op. 2007 U.S. Dist. LEXIS 78564 at *3-4. Felix argues for a broader construction of "contacting or bringing together." Appellant's Br. at 23. In support of this broader construction, Felix offers two arguments.

First, Felix argues that the dictionary definition of "engaging" should control, because the meaning of the term is not discussed in the claims, specification, or prosecution history. Felix then argues that "the dictionary defines 'engage' as 'to bring together'"--citing page 612 of the Joint Appendix. Id. at 24. This statement is false and misleading in several respects. First, there is no definition of "engage" on page 612 of the Joint Appendix; that page includes a dictionary definition of "mount." The only dictionary definitions of "engage" appear several pages later. Second, the only dictionary definition of "engage" anywhere in the Joint Appendix that includes "bring together" is--in full--"to bring together or interlock (weapons)." J.A. 618. Thus, for a second time, Felix's brief has omitted a parenthetical qualification--here, "weapons"--that significantly limits the quoted definition. But even more inexcusably, Felix's brief excluded the phrase "or interlock" from the quoted definition. This is particularly misleading because the only substantive difference between the district court's construction and Felix's proposed construction is that the district court's construction requires the additional element of "interlocking." We reject Felix's misleading dictionary definition argument. We further remind counsel of the importance of providing full, accurate, and undistorted quotations and citations in briefing before this court.

Second, Felix argues that the district court's construction excludes every embodiment of the invention of the '625 patent, because the drawings of the patent show the gasket merely coming into contact with the lid. This argument is without merit. The gasket limitation requires the gasket to engage the lid when the lid is "in its closed position." '625 patent col.6 l.2. Of the drawings, only figure 2 shows the lid in its closed position, and figure 2 does not depict the gasket at all. Id. fig.2. The remaining figures all show the lid in its open position. There is nothing in those figures that is inconsistent with the gasket "interlocking" the lid when the lid is closed.

Although we reject all of Felix's arguments, we nevertheless conclude that the district court erred by construing "engaging" to require "interlocking." The specification includes a single clause directed to the relationship between the lid and the gasket when the lid is closed: "a closed position (FIG. 2) with the gasket 18 sealingly engaging the lid 22 adjacent to its edges 22a-d on the lid lower surface 22." Id. col.3 ll.24-26 (emphasis added). The specification's use of the phrase "sealingly engaging" makes clear that the way that the gasket engages the lid is by forming a seal. This, of course, is the normal function of a gasket. See, e.g., Means Illustrated Construction Dictionary 275 (3d ed. 2000) (defining "gasket" as "[a]ny of a variety of seals made from resilient materials and placed between two joining parts (as between a door and its frame, an oil filter and its seat, pipe threads and their fitting, etc.) to prevent the leakage of air, water, gas, or fluid"); Don Goodsell, Dictionary of Automotive Engineering 97 (2d ed. 1995) (defining "gasket" as a "static seal used to contain pressure and prevent leakage . . ."). In contrast to "sealing," "interlocking" suggests that some part of the gasket must be constrained or in some manner held by some part of the lid, beyond simply being sealed to the lid. Like the specification, the prosecution history of the '625 patent nowhere suggests that "engaging" means "interlocking." Because we find no basis for such additional limitation in the specification or prosecution history, we modify the district court's construction of "engaging" as used in claim 6 of the '625 patent to mean "coming together to form a seal." Even though the district court erred in including "interlocking" in its claim construction, the error is harmless as it does not affect the district court's determinations of either literal infringement or infringement under the doctrine of equivalents.

I. Claim Construction

The question of literal infringement of claim 21 of the '567 patent turns entirely on the district court's construction of the term "engaging." Claim construction is a question of law reviewed de novo. Cybor Corp. v. FAS Techs., Inc. 138 F.3d 1448, 1454-56 (Fed. Cir. 1998) (en banc). Hunter's Specialties argues that the court erred in construing the term "engaging" in the
phrase "second roof-of-mouth engaging yieldable sealing portion" to mean "to come into contact with." According to Hunter's Specialties, the proper construction of the term "engaging" is "sealing" or "interlocking." As support for its construction, Hunter's Specialties notes that claim 21 uses the word "engaging" to describe a seal created between the edge of the frame and the roof of the user's mouth. Also, Hunter's Specialties observes that the specification describes the edge as "sealing" against the roof of a mouth. In addition, Hunter's Specialties finds support for its construction in a dictionary definition that describes "engaging" as "to come together and interlock." Hunter's Specialties points out that this definition is consistent with the way the term is used throughout the patent.

Primos responds that the district court correctly construed "engaging" as "to come into contact with." According to Primos, the intrinsic evidence does not support the selective dictionary definition put forth by Hunter's Specialties. In particular, the claims use both terms, "engaging" and "sealing," and thus each term is presumed to have a distinct meaning. Also, Primos asserts that to construe "engaging" as "sealing" or "interlocking" would exclude a preferred embodiment of the patent because the figures in the patent show the membrane as not interlocking with the roof of a mouth. In addition, Primos observes that while "interlocking" might be an appropriate construction of "engaging" for an invention relating to mechanical machinery with gears, it is not appropriate in the context of diaphragm mouth calls.

We agree with Primos that the district court correctly construed the term "engaging" to mean "to come into contact with." As this court explained in Phillips v. AWH Corp., we ordinarily construe claim terms to have their customary meaning as understood by a person of ordinary skill in the art. 415 F.3d 1303, 1312-17 (Fed. Cir. 2005) (en banc). In ascertaining the ordinary and customary meaning of a claim term, a court's primary focus should be on the intrinsic evidence of record, viz., the claims, the specification, and, if in evidence, the prosecution history. Id. Starting with the language of claim 21, the terms "engaging" and "sealing" are both expressly recited in the claim and therefore "engaging" cannot mean the same thing as "sealing"; if it did, one of the terms would be superfluous.

Turning to the specification, although the word "engaging" is not expressly mentioned in the specification, figures 1 and 3 aid our understanding of that term. Figure 3, as depicted below, shows a call device positioned in a user's mouth.

As shown in the figure above, there are several points of contact between the roof of a user's mouth (the top striped structure in the figure above) and the diaphragm mouth call— one such point is with the plate 24 and another is with the peripheral edge of the frame 12. That figure shows the plate touching the roof of the mouth, but does not reveal an interlocking relationship because there is no depicted means from which the frame can "interlock" with the roof of a user's mouth. The figure therefore supports a construction of "engaging" as to "come into contact with," while discouraging a construction of "interlocking." While we are mindful that we cannot import limitations from the preferred embodiments into the claim, we also should not normally interpret a claim term to exclude a preferred embodiment. See Burke, Inc. v. Bruno Indep. Living Aids, Inc., 183 F.3d 1334, 1341 (Fed. Cir. 1999). Interpreting "engaging" to mean "interlocking" would exclude the embodiment shown in the figure and is not consistent with the rest of the specification which does not suggest an interlocking relationship between the roof of a mouth and the mouth call. 2 We therefore agree that the district court's construction of the term "engaging" to mean "to come into contact with" is supported by the intrinsic record and is correct.

2 We do not discuss the prosecution history here because it is not relevant to the construction of the term "engaging."

The district court interpreted claim 5 of the '311 patent as a means-plus-function claim. The district court next construed the "means integral" as the body portion and tapering shoulder portion of the screw. The trial court then defined "engaging" as "fitting together." Danek argues that the district court's claim construction is incorrect and that under the correct claim construction, four of the five allegedly infringing screws do not infringe.
Danek asserts that "engaging" requires the narrow construction that the body portion of the screw forces cancellous bone tissue forward and radially outward into the thread space left behind by the screw thread or the tap. According to Danek, its four screws with a thread diameter larger than 5.5 mm cannot push bone with their body portions during insertion because this screw thread diameter is larger than the diameter of the screw body portion. Danek's expert, Dr. Pope, testified that these screws would not "ram in" and "displace material upwards and outwards" as described in the '311 patent.

The word "engage" means "to interlock" or "mesh." Webster's II New Riverside University Dictionary 433 (1988). This meaning matches the district court's construction that "engage" means to "fit together." The written description of the '311 patent does not depart from or narrow this meaning. The '311 patent uses "engage" to define three interfaces: (1) threaded engagement of the screw threads with the bone opening "to attach the bone screw to the bone," col. 2, ll. 68-69; claims 1, 5, 10, 15 and 16; (2) engagement of the body portion with a portion of the surface defining the bone opening "to restrict movement of the bone screw" and to block "fluid flow from the opening of the bone," col. 3, ll. 8-12; claims 4, 5, 15 and 16; and (3) engagement of the seat portion (top plane of the screw's body portion) with the connecting member (e.g., the spine plate) "to establish the axial location of the connecting member along the bone screw," col. 3, ll. 19-21; claims 14 and 16. These three uses of the term require a meaning broad enough to apply to each of these interfaces. Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1345 (Fed. Cir. 1998) ("The same word appearing in the same claim should be interpreted consistently."); Fonar Corp. v. Johnson & Johnson, 821 F.2d 627, 632, 3 U.S.P.Q.2D (BNA) 1109, 1113 (Fed. Cir. 1987) (holding that the meaning of a term in a claim must be consistent with its appearance in other claims in the same patent).

Contrary to Danek's assertion, "engage" cannot mean only "to push material forward and outward." In engaging a connecting member, one of the uses of the term, the seat portion of the screw does not push any part of the connecting member forward and outward. Accordingly, the interpretation "fitting together" best accommodates the various usages of the term in the patent. Thus, the seat portion of the screw has a flat surface that "fits together" with a spine plate to axially locate the spine plate along the bone screw. Likewise, the body portion and tapering shoulder portions "fit together" with the surrounding bone to restrict movement of the bone screw and to block effluence from the opening in the bone portion.

Further contrary to Danek's assertions, construing "engage" as "fit together" does not impede the function of the claims. Even if the body portion does not completely block all of the thread gaps left in the bone by the threaded portion, the tapered shoulder portion of these screws is wider in diameter and does block the bone opening, thereby restricting effluence.

3. "engaging"

Floe asserts that this term should be construed as "fitting together." Newmans, on the other hand, contends that this term should be construed as "coming into contact with." Floe contends that its proposed construction is consistent with the plain meaning of "engaging" as used in the claim. Newmans asserts that Claims 14 and 15 are instructive as to how the Court should construe the term "engaging." In particular, Newmans cites the description of the "lip means" in Claim 14, which provides "for engaging the loading surface when the frame structure is postured for loading." (379 Patent, c. 8, ll. 47-49.) Newmans also points out that Claim 15 states, "An improved loading frame member as in claim 14. [sic] wherein said angle for engaging the surface is approximately forty-five degrees." (Id. at ll: 50-52.) Further, Newmans cites the specification, which refers to figure 10 stating, "In this arrangement the lip surface 82 is in contact with the surface . . . ." (Id. at c. 6, ll: 35-37.) Therefore, according to Newmans, "engaging" means "coming into contact with."

The term "engaging" appears in the "edge protection means" limitation, which states, "edge protection means coupled to said trailer bed support means for protecting the edge of the loading portion of the trailer bed, wherein said edge protection means has an upper edge and is positioned above and substantially perpendicular to said trailer bed support means for engaging the edge of the loading portion of the trailer bed,[ ]" (379 Patent, c. 8, ll. 18-24.) Consistent with how "engaging" is used in the claims and the specification, the Court construes "engaging" as "becoming interlocked with."
5. Engaging

The parties dispute the proper construction of "engaging." Caponey proposes to construe "engaging" as receiving or aligning and receiving. (Pl.'s Claim Construction Br. 12.) ADA Enterprises proposes to construe engaging as interlocking or meshing. (Def.'s Claim Construction Br. 12.) The specification of the '400 Patent states that "[t]he forks . . . are aligned with and slidably received by the fork channels . . . ." (Id. Ex. A ('400 Patent, col. 5, lines 52-53).) Therefore, the court construes "engaging" as aligning with and being received by.

WMA finally argues that we should hold that the Glide-Traks do not infringe on the '201 patent's claim of having "a pusher member having . . . a pair of flanges engaging said rails." 9 This claim element describes the aspects of the 201's pusher member (a flat vertical surface that urges merchandise along the divider member towards the shelf's edge) that fits around the divider member's rails and allows the pusher to remain in continuous contact with and ride along the divider member's track rails. WMA offers two dictionary definitions of "flange" that are not disputed by RTC:

Random House (1988): 1. a projecting rim, collar, or ring on a shaft, pipe, machine housing, etc., cast or formed to give additional strength, stiffness, or supporting area, or to provide a place for the attachment to other objects.

Webster's New Universal (1983): 1. a raised or projecting edge, rib, or rim, for strength, as in a T-rail, for guidance, as on a rail to keep wheels in place, for connection with some other object, as in some pipes.

9 WMA does not dispute that both Glide-Trak models contain "pusher members." Our analysis will therefore focus on whether the pusher members contain a "pair of flanges engaging said rails."

WMA asks that we adopt the Random House (1988) definition of "engage" and interpret the word to mean: "8. Mech. To cause (gears or the like) to become interlocked; to interlock with." While RTC points to other dictionary definitions for "engage," that support a significantly broader reading of the term, for the sake of argument we will accept WMA's proffered definition. That being said, Webster's Third New International Dictionary (1981) defines "interlock" to mean: "to engage or inter-relate with one another . . . to connect in such a way that the motion of any part is constrained by another part." This definition is consistent with a '201's claim of its flanges allowing the pusher member to be "operationally slidable on the rails" of the divider member. However, as was discussed in our analysis of the rails, there is nothing in the ordinary meaning of the language of the claim, or in the specifications, to suggest that the "pair" of flanges be identical or mirror images of one another.

We thus construe "a pusher member having . . . a pair of flanges engaging said rails" to mean: A pusher member having two similar or corresponding projecting rims or edges that interlock or connect with the rails for the purpose of constraining and guiding the pusher member along the rails. This definition aptly describes the portion of the '201's pusher member that connects it to the divider member's track rails (by surrounding the top, bottom, and outer edge of each of the two rails) and restricts the pusher member's motion to moving either up or down the rails.

Claim 1 teaches a door having "vertically extending projection[s]" stretching along the vertical edge of the door's skins. (Id. Ex. A sheets 2-3 & col. 4-6) According to claim 1, the projections "engage" the frame of the door. (Id. at col. 4) Figure 5 and figure 6 make clear that the skins' projections engage the frame by forming complete, direct contact with the stile (the vertical part) of the perimeter frame. (Id. at sheet 3, Fig. 5 & Fig. 6) The contact depicted in figures 5 and 6 between the skin and the frame is neither indirect nor accidental nor partial. (Id.) Thus, the element "projection engaging said rectangular
frame" is interpreted as meaning that the projection and the frame form complete, direct, intentional contact with one another.

The Court's definition of the term "engage" as complete, direct, intentional contact is consistent with the '540 patent's specification. The portion of the specification that relates to the vertically extending projections reads:

A plurality of vertically extending projections 40 are positioned inwardly from the inner sides 28 of the skins 21,22. As best shown in FIGS. 5 and 6, the projections 40 engage the stiles 34 of the perimeter frame 23. In the present embodiment, a pair of the vertically extending projections 40 are provided or defined along each edge of the skin 21 or 22.

(McQuillen Decl. Ex. A Col. 3) In a separate portion referring to the relationship between the horizontal rails and the rail positioning members (also called rail stops), the'540 patent (referring to figure 9) directs: "the rails 33 abut the rail positioning members 38" and the "rail stops engage the rails[.]") (Id. col. 3, 4 & 6 & fig. 9 (emphasis added)) The fact that the term "abut" is used interchangeably with the word "engage" in the '540 patent's specification concerning the relationship between the rails and the rail stops lends further support to the Court's construction of the term "engage" as requiring direct contact, identical to an abutting relationship. The contact between a rail and a perpendicularly abutting rail positioning member or rail stop (whose role is to stabilize the rail) would be ineffective were the contact between the rail and the rail stop indirect. If an intermediary piece of material, such as a shim, were placed in between the rail and the rail stop such that the rail made indirect contact with the rail stop through the shim, the goal of dimensional stability would be thwarted, and the rail would no longer abut the stabilizing rail stop.

The claim language also distinguishes between the outer side and the inner side of the skin. (McQuillen Decl. Ex. A col. 4) The depictions make clear that the outer side of the skin on all sides of the door faces out toward the world, while the inner side of the skin faces the door's internal construction, and makes contact with the frame and the polyurethane foam. This distinction is important, because the claim specifically locates the vertical projection on the "vertical edge of said inner side" of the skin. (Id.) Furthermore, the claim requires the vertical projection to be positioned facing inward, toward the door's internal construction. (d.)

4. "Capable of Engaging the Support Surface"

PLC asserts that the words "capable of engaging the support surface," '693 patent, col. 4, ll. 46-47, mean that the recessed protrusion is "able to penetrate the support structure." Joint Claim Construction Statement, Attachment A at 4. Bidco, on the other hand, asserts that while the word "engaging" includes penetration, it does not require penetration and therefore, PLC's proposed construction improperly limits the scope of claim 1. The Court concludes that Bidco is correct.

In support of its proposed construction, PLC cites a dictionary definition of "engage" as meaning "to become meshed or interlocked." PLC Brief at 14 (quoting Webster's II New Riverside University Dictionary, 1994, at 433). PLC cites further to the written description, in which the word "engage" is used to connote penetration on at least two occasions. Id. (quoting '693 patent, col. 3, ll. 44-48 (describing a screw as "engaging" the supporting surface) and col. 3, ll. 9-13 (describing prongs as "engaging" the support surface). Finally, PLC cites the prosecution history, quoting the following statement by the inventor in response to the PTO's rejection of original claim 1:

Another advantage of the recessed protrusion is that when a screw or nail is placed in the recessed protrusion to engage a support surface, the protruding part of the support surface extending from the bottom of the clip . . . the protruding part can also engage the support surface to prevent the clip from moving around.


The Court is not persuaded that the word "engaging" is limited to penetration. First, the dictionary definition of "engagement" encompasses any kind of intermeshing or interlocking. Although penetration is one type of intermeshing or interlocking, it is not the only type of engagement. Second, although the inventor used the term "engage" in the specification to signify penetration by screws and prongs, the Court does not find a clear intent on the part of the inventor to limit the
result, the doctrine of prosecution history applies, and Greenkeepers cannot now construe "to enhance traction" more lateral stability and enhanced traction to the plane of a golf swing." (Defs.' Opening, Ex. N, at SS_00005888-89.) As a result, the doctrine of prosecution history disclaimer applies, and Greenkeepers cannot now construe "to enhance traction" more grass or turf to be engaged and hence, more traction," and thus, "[i]t is clear that the outward angulation . . . provides such as the Bouyer patents, that were not outwardly angled on the basis that the '047 Patent's outward angulation "permits prosecution history, however, demonstrates that Greenkeepers then sought to distinguish cleats covered by other patents, cleats covered by the '047 Patent with cleats covered by the Deacon patents for purposes of lateral stability and traction. The claim specification plainly indicates that Greenkeepers sought to compare "the object of the present invention is to provide an improved golf shoe cleat which has better traction and lateral stability," id., col.1, 11.21-38, and "the biggest complaints" of such patents, '047 Patent, col.1, 11.2-3, 15-17, & col.8, 11.16-17, the parties again dispute whether the presumption of definiteness applies. In addition, the parties dispute how to characterize cleats in relation to which the cleats provide improved lateral stability and traction.

1. The Parties' Contentions

Greenkeepers reassert that claim terms are entitled to a strong presumption of validity and definiteness, and that here, tests are available to test lateral stability and traction, as evidenced by a cleat test measuring cleats' relative traction on varying surfaces under different conditions that was conducted by MacNeill, one of the defendants in a related patent case brought by Greenkeepers that has since settled. (Pls.' Resp. 24-25.) According to Greenkeepers, the patent specification indicates that the covered cleats aim to provide "better" traction and stability than existing golf cleats, that being, the cleats referenced in the patent application. (Pls.' Opening 22-23.) Greenkeepers continue that the discussion in Defendants' proposed construction of "substantially similar cleats that are not outwardly angled" or "all types of teeth . . . that are not outwardly angled" has no basis in the intrinsic record and is a veiled non-infringement argument. (Pls.' Opening 23.)

Defendants respond that Greenkeepers have failed to articulate an objective measure for finding enhanced stability and traction or to show how outward angulation in fact provides an enhancement. (Defs.' Reply 12-14.) As for the MacNeill traction test, Defendants contend that this test found little statistical difference in traction among many cleats, because the cleats' performance changed when they were worn in different shoes. (Defs.' Reply 13-14.) Defendants further aver that the '047 Patent's background section cites to prior art patents that cover a wide range of cleats, including ones that were never made, and that Greenkeepers never compared its cleats to this prior art. (Defs.' Reply 11-12.) As for the relevant comparison group, Defendants argue that the claim language indicates that stability and traction are enhanced by the outward angulation of the spikes' outer surface. (Defs.' Opening 23-24;Defs.' Reply 11.)

2. Analysis

Turning first to definiteness, having found "lateral stability and traction through the swing of a golf swing" to be definite, the Court is not persuaded that merely adding the words "to enhance" renders the term indefinite. Greenkeepers have identified one test, the MacNeill test, that was able to objectively measure traction. (Pls.' Resp. 24-25.) Although the MacNeill test arguably showed that traction may also be affected by other factors such as the shoe in which the cleats are attached, this falls short of presenting "clear and convincing evidence," Cement Mfg., 587 F.3d at 1351, that the traction of the golf cleats themselves cannot be measured. As the Federal Circuit has clarified, a "patentee need not define his invention with mathematical precision in order to comply with the definiteness requirement." Oakley, 316 F.3d at 1341. Defendants, therefore, have not met their evidentiary burden and the definiteness presumption applies.

As for the relevant comparison group, the "Background and Brief Description of the Invention" section of the '047 Patent describes the prior art plastic Deacon patents and the "biggest complaints" of such patents, '047 Patent, col.1, 11.21-38, and then explains that "[t]he object of the present invention is to provide an improved golf shoe cleat which has better traction and lateral stability," id., col.1, 11.39-41. The claim specification plainly indicates that Greenkeepers sought to compare cleats covered by the '047 Patent with cleats covered by the Deacon patents for purposes of lateral stability and traction. The prosecution history, however, demonstrates that Greenkeepers then sought to distinguish cleats covered by other patents, such as the Bouyer patents, that were not outwardly angled on the basis that the '047 Patent's outward angulation "permits more grass or turf to be engaged and hence, more traction," and thus, "[i]t is clear that the outward angulation . . . provides more lateral stability and enhanced traction to the plane of a golf swing." (Defs.' Opening, Ex. N, at SS_00005888-89.) As a result, the doctrine of prosecution history disclaimer applies, and Greenkeepers cannot now construe "to enhance traction"
or "enhanced lateral stability and traction" as comparing cleats covered by the '047 Patent to only the plastic Deacon cleats, as opposed to prior art cleats that are not outwardly angled. Accordingly, the Court construes "to enhance traction" and "enhanced lateral stability and traction" to be "for the outward angulation of the tooth traction surface to provide more lateral stability and traction than prior art teeth that are not outwardly angled." The Court views this construction as being less confusing than Defendants' and ECCO's additional proposed constructions.

1. "An elongated cylindrical body having a pair of enlarged diameter cylindrical end portions." Consistent with the claim language, 23 and the specification, 24 the court construes "an elongated cylindrical body having a pair of enlarged diameter cylindrical end portions" to mean "a portion of each end of the elongated body has a larger diameter than the portion of the body containing the middle point of the body."

--- Footnotes ---

23 Claim 1, '476 patent, col. 6, ll. 28-43.

24 ‘476 patent, col. 2, ll. 12-14, 47-58; col. 3, ll. 4-10, 49-63; col. 4, ll. 16-20; figs. 1, 9, 10.

--- End Footnotes ---

B. The Claims of the '902 Patent

Spotless claims that plaintiff's products infringe claims 1, 2, 17, 18 and 19 of the reexamined '902 patent. Claim 1 was deemed patentable with certain amendments; claim 2 is dependent on claim 1; claims 17, 18 and 19 were added in their entirety during the reexamination. See TX-23. The text of the claim 1, with the amendments effected during the reexamination in italics, is as follows:

1. In combination, a hanger for garments and other articles comprising:
   a hook having a top contour adapted to engage a rail or other supporting means, said hook having an enlarged display portion extending from the hook such that it projects above the top contour of the hook; and
   an indicating device having a hollow body attached to said display portion, wherein at least a part of the display portion is received within the hollow body of said indicating device; and said indicating device being readily visible when the hanger is in use by virtue of its position on said hook.

TX-23. Claim 2 is dependent on claim 1, and claims 17-19 are substantially similar to claim 1 except that they include the additional requirements that the hanger and indicator be made of molded plastic (both 17 and 18) and that the indicator be color coded (claim 18). 4

--- Footnotes ---

4 The text is as follows:

2. The hanger of claim 1, wherein said indicating device has a body portion formed with means for releasably attaching the said body portion to said display portion.

17. In combination, a molded plastic hanger for garments and other articles and a molded plastic indicating device, said combination comprising:
a hook having a top contour adapted to engage a rail or other supporting means, said hook having an integrally molded plastic flange which forms an enlarged display portion extending from the hook such that it projects above the top contour of the hook which engages said rail or other supporting means; and

said molded plastic indicating device which receives said molded plastic flange to attach said indicating device to said enlarged display portion, said indicating device being readily visible when the hanger is in use by virtue of its position on said hook.

18. In combination, a garment hanger and a color-coded size indicator which is readily visible when the hanger is in use, said combination comprising:

(a) a molded plastic garment hanger, said garment hanger having an integrally molded hook having a top contour to engage a rail or other supporting means;

(b) an enlarged display support integrally molded with said hook and extending upwardly from said hook above the top contour of the hook which engages said rail or other supporting means;

(c) a molded plastic size indicating device mounted on said enlarged display support, said device having a base and formed with a cavity defined within to receive said display support therewithin, said size indicating device being color coded and readily visible from all directions when the hanger is in use by virtue of its position on said hook; and

(d) means for releasably attaching said size indicating device to said enlarged display portion.

19. The hanger of claim 17, wherein said indicating device has a body portion formed with means for releasably attaching said body portion to said display portion.

All of these claims require that the hanger hook contain an "enlarged display portion." Plaintiff has consistently maintained that its products do not infringe the '902 patent because they lack an "enlarged display portion." See TX-179; Pl. Tr. Brief at 17; Tr. at 67. At trial, plaintiff's counsel acknowledged that if plaintiff's products did contain an enlarged display portion, then they would infringe the '902 patent. See Tr. at 512-13. Thus, the salient issue with respect to the infringement claim is what exactly comprises an "enlarged display portion" and whether plaintiff's products contain it. However, to resolve both this infringement issue, as well as the invalidity claim, it is necessary to analyze the prosecution history (or the "file wrapper") of the '902 patent.

C. Prosecution History of the '902 Patent

(1)

When Frank C. Lenthall initially submitted his application to the PTO it contained 17 figures. See TX-60 at 5-24. In the course of the first office action, the patent examiner informed the inventor that the application actually contained five distinct inventions (or species), only one of which Lenthall would be permitted to prosecute. Species A was embodied in figures 1-4, species B was embodied in figures 5-7, species C was embodied in figures 8 and 9, species D was embodied in figures 10-13, and species E was embodied in figures 14-17. See TX-60 at 26; Tr. 290-93.

In this original submission to the PTO, the inventor promulgated a definition of the phrase "enlarged display portion" in the abstract by reference to figure 12, part of species D, of the application. Specifically, he stated: "in the modification shown in Figures 12 and 13, the indicator is basically the same construction as the previous embodiment [figure 10] except that the hanger hook H is not formed with an enlarged display area A." TX-60 at 11. Figure 10 shows a hanger with a protuberance (which the defendants refer to as a "bump") on the side of the hanger hook and a sizer that fits on top of and totally overlaps the protrusion. See TX-60 at 19. Figure 12, by contrast, shows a hanger hook that is perfectly regular in shape, meaning that it lacks any protuberance and looks, quite frankly, like an unadulterated hanger hook. See id. The size indicator fits over the entirety of the hanger hook in figure 12 but extends beyond, or hangs outside, the contour of the hook. See id. As will be
discussed, plaintiff maintains that the protuberance comprises the "enlarged display portion," while defendants insist that it is not the protuberance, but a combination of other qualities that defines the "enlarged display portion."

Confronted with the dilemma of choosing among the five species contained in his original submission, the inventor decided to prosecute species E, which consisted of figures 14-17. The inventor canceled claims 1-14 (which described species A-D) and added claims 15-30. See TX-60 at 29-32. The examiner rejected new claim 15 on the basis of 35 U.S.C. § 102 as anticipated in light of the Ostroll patent, 5 and rejected new claims 16-22 on the basis of 35 U.S.C. § 103 as obvious in light of Ostroll in view of either the Bross patent 6 or the O'Keefe patent. 7 See id. at 36-37. The examiner withdrew from further consideration claims 23-30 "as not readable on the elected species." Id. at 36. Converted to plain English, this appears to mean that the claims were not encompassed within species E, the one the inventor chose to prosecute.

5 The Ostroll patent is TX-220. Ostroll shows (or "teaches") an indicator that is removeably secured to the hook of the hanger, but is positioned on the hook so that it is capable of being viewed from only one end of the hanger. See TX-220; TX-60 at 47.

6 The Bross patent is TX-212. Bross teaches a display card attached to a complex wire indicating guard that is then attached to a regular garment hanger.7 The O'Keefe patent is TX-215. O'Keefe teaches a device that extends above the top of a wire hanger hook to prevent the entanglement of the hangers. In addition to the fact that O'Keefe is restricted by its construction to hangers with wire hooks, it also "only incidently suggest[s] . . . that the device may be formed . . . to receive identifying indicia of various types." TX-60 at 48.

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In response to this office action, the inventor canceled claims 15-22 and added new claims 31-40. See TX-60 at 43-45. Proposed claim 31, on which plaintiff relies for part of its non-infringement argument reads as follows:

a hook adapted to engage a rail or other supporting means, said hook having a supporting means extending from the hook such that it projects above the top contour of the hook; and

an indicating device attached to engage a rail or other supporting means, said indicating device comprising a body formed with a cavity having an entrance opening which receives said supporting means, said indicating device being readily visible from all directions when the hanger is in use by virtue of its position on said hook.

Id. at 43. In the corresponding office action, the patent examiner finally rejected claims 23-30 because they were dependent upon canceled claims, and rejected the new claim 31, quoted above, as obvious "over Ostroll in view of O'Keefe or Conger (TX-217)." TX-60 at 57. According to the examiner: "Ostroll shows the hanger hook provided a support member to receive an indicating element as in the proposed invention and to merely locate it at the top contour of the hook would be obvious from O'Keefe or Conger." Id. at 57. Claim 32 was rejected for the same reasons; claims 33-39 were objected to because they are dependent on a rejected claim; claim 40 was allowed. The inventor then had an interview with the examiner; they discussed the Ostroll, O'Keefe and Conger patents and decided that claim 31 would be amended "to structurally distinguish over references." Id. at 58.

In the next go around, the inventor added proposed claim 41, which harkened back to claim 23 (part of his first submission). This claim reads:

a hook adapted to engage a rail or other supporting means, said hook having an enlarged display portion extending from the hook such that it projects above the top contour of the hook; and

an indicating device attached to said display portion, said indicating device being readily visible when the hanger is in use by virtue of its position on said hook.

TX-60 at 60. As noted, original claim 23 had been dependent on claim 15 (which had been rejected on November 6, 1980 because of anticipation). See id. at 56-57. 8 Claim 23 originally provided: "the hanger according to claim 15, wherein said
hook is formed with an enlarged display area at least adjacent the top of the hook, said display area being formed to
releasably receive said indicating device." TX-60 at 31. Ultimately, the '902 patent was issued by the Patent and Trademark
Office, with claim 41 appearing as claim 1 of the patent. See TX-22 at 5.

8 Although not inconsistent, it appears that claim 23 had been initially "withdrawn from further consideration as not
readable on the elected species" on April 16, 1980. TX-60 at 36. It is unclear to the court why claim 23, after being
withdrawn on April 26, was subsequently further considered and rejected on November 6, 1980. See id. at 56-57.

The inventor continued to press claims 31 and 32 (which did not contain the delimiting "enlarged display support"
terminology). See TX-60 at 62-71. However, in an Advisory Action dated April 27, 1981, claims 31 and 32 were rejected,
see id. at 71, and so the inventor finally abandoned these claims. See id. at 72-73.

To round out this history for purposes of claim construction, it is worth noting that the '902 patent cites six references to
prior art, four of which become significant in this litigation. See TX-22 at 1. In the detailed description of the invention of
the '902 patent, which was not altered upon reexamination, it is described as having one embodiment in which the indicator
is in the form of a trapezium, 9 and:

In another aspect the invention provides a hanger adapted for use with an indicating device, said hanger being
characterized by an enlarged display area attached to or forming part of the hanger and being visible when the garment is on
the hanger, said display area being formed to detachably receive an indicating device which imparts information regarding
the size and/or manufacturer and/or retailer and/or some other garment characteristics.

Id. at 4 (emphasis added). No further guidance is given in the original patent as to what constitutes an "enlarged display
area."

9 This trapezium embodiment is not at issue in this case and thus has not been a part of this discussion.

The history of the '902 patent does not end here, however. For on September 23, 1994, in response to the instant litigation,
defendant requested that the PTO reexamine the '902 patent. See TX-38 at 6-11. During the course of the reexamination,
defendants proposed (and after protracted discourse with the examiner) were permitted to add claims 17, 18 and 19 to the
patent, which are now being asserted against the plaintiff. See id. at 179-82. These claims essentially mirror claim 1, but add
the requirement that the hanger and size cap be made of molded plastic.

Interestingly, however, the reexaminer initially determined that original claim 1 was rejected as being anticipated by
Haimowitz, TX-208, being anticipated by Bruening, TX-209, being anticipated by Cohen, TX-211; claims 1 and 2 were
rejected was being anticipated by Conger, TX-217; and claims 1-4 were rejected as being anticipated by Bross, TX-212. See
TX-38 at 68-69. However, defendants amended these claims to include the requirement that the top sizer be hollow and be
received by the enlarged display portion and they were thereafter accepted by the examiner. See id. at 129, 144. In addition,
defendants had to amend claim 1 to include the requirement that the hanger have a top contour, so that there would be a
proper antecedent for the reference to a top contour later in the claim. See TX-38 at 119-20; 144-45.

Defendants also sought to add a new claim 21, which provided:

[A] hook having a top contour adapted to engage a rail or other supporting means; and an indicating device having a
hollow body formed to interengagingly receive a top portion of said hook; said indicating device being readily visible when
the hanger is in use by virtue of its position on said hook.
TX-38 at 127. However, the examiner rejected this claim, stating that it enlarges the scope of the patent because it "does not include the limitation that the hook has an enlarged display portion" and because it is anticipated by O'Keefe, TX-215, and Richardson, TX-221. TX-38 at 143-44.

During the course of the reexamination of the '902 patent, the PTO examined the following United States patent documents: Cohen, Ostroll, McAuley, Montan, Haimowitz, Bruening, Stuppell, Cohen, Bross, Magnuson, Solow, O'Keefe, Morrish, Conger, Haggar, Bachand, Ostroll, Richardson, Phillips, Johansson, Indelicato and Batts. See TX-23 at 1. The reexamination certificate was issued on January 2, 1996. See id.

1. Claim Construction

In order to engage in proper claim construction, courts must first look to the intrinsic evidence, i.e. the words of the patent claims themselves, the patent's specification and the prosecution history, to glean the meaning of claim terms. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). According to the Federal Circuit, "[i]n most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is improper to rely on extrinsic evidence [e.g. expert testimony]." Id. at 1583 (citations omitted).

"In construing a claim, claim terms are given their ordinary and accustomed meaning unless examination of the specification, prosecution history, and other claims indicates that the inventor intended otherwise." Nike Inc., 43 F.3d at 646 (citations omitted). It is an oft-repeated patent law maxim that an inventor may choose to be his own lexicographer and to give the terms in his claims special, uncommon meanings. See, e.g., Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387-88 (Fed. Cir. 1992). However, in order to vest a claim term with a special meaning (in contradistinction to its ordinary meaning) the inventor must "clearly state[] [the special definition of the term] in the patent specification or file history." Vitronics Corp., 90 F.3d at 1582. Moreover:

The place to [specially define claim terms] is in the specification of the inventor's application, and the time to do so is prior to that application acquiring its own independent life as a technical disclosure through its issuance as a United States patent. The litigation-induced pronouncements of [the inventor], coming nearly at the end of the term of his patent, have no effect on what the words of that document in fact do convey and have conveyed during its term to the public.


It should be noted that, in toto, this guidance somewhat begs the question of how precisely courts should determine a term's "ordinary and accustomed meaning" which is subsequently compared to some special meaning that may be vested in the claims, specification and file wrapper by the inventor. Courts seem to look to dictionary definitions for some semblance of clarity in the morass of semantic murkiness that penetrates claim construction. See Nike Inc., 43 F.3d at 647 (describing with approval the use of a dictionary definition by the district court).

Recently the Federal Circuit has instructed that, although dictionaries constitute extrinsic evidence, "judges are free to . . . rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." Vitronics Corp., 90 F.3d at 1584 n.6; see General American Transp. Corp. v. Cryo-Trans, Inc., 93 F.3d 766, 769-70 (Fed. Cir. 1996) (describing with disapproval the use of a dictionary definition by the district court because it contradicted the definition provided by the prosecution history), cert. denied, Cryo-Trans, Inc. v. General American Transp. Corp., 137 L. Ed. 2d 493, 117 S. Ct. 1334 (1997). That said, according to Webster's Third New International Dictionary, "enlarged" is defined as: "larger or greater than that formerly, usually, or normally present." Thus, it will be assumed that this is the usual and ordinary meaning of the term "enlarged" (as in "enlarged display portion"). Now it must be determined whether or not this definition is consistent with that found in the claims, specification and prosecution history of the '902 patent.

Plaintiff urges that this usual definition is consistent with the intrinsic evidence. First, it argues that because claim 16 contains the term "display portion," then the use of the term "enlarged display portion" in claims 1, 2, 17, 18, and 19 goes to the issue of size and instructs that an enlarged display portion be bigger than a regular display portion. See Pl. Post Tr. Brief at 3-4 (noting that "each word in a claim must have some meaning") (citing Exxon Chem. Patents, Inc. v. Lubrizol Corp., 64
Next plaintiff argues that the prosecution history reinforces, rather than contradicts, the usual meaning of the term "enlarged display portion." In his original application to the PTO, the inventor distinguishes figure 12 from figure 10 by noting that it describes "the same basic construction . . . except that the hanger hook H is not formed with an enlarged display area A." TX-60 at 11, 19. In addition, plaintiff points out that during the reexamination of the '902 patent, the examiner cited five prior art references with what he contemplated as enlarged display portions: Haimowitz, TX-208, Bruening, TX-209, Cohen, TX-211, Conger, TX-217, and Bross, TX-212. See TX-38 at 68-69. All of these teach a display portion that is bigger, in either height or width, so that information can be displayed, than the usual shape of the hook. Thus, according to plaintiff, the intrinsic evidence supports the definition of "enlarged display portion" that requires some kind of protrusion, bump, or protuberance on the hanger hook.

--- Footnotes ---

10 It is agreed that portion and area mean the same thing here. See Def. Post Tr. Brief at 4 n.9.

--- End Footnotes ---

Spotless, however, states an entirely different definition for the term "enlarged display portion," one having nothing to do with size per se. Spotless urges that an enlarged display portion actually has six features:

1) To be formed integrally with the hook of a hanger.
2) The hook has a top contour which is the surface of the hook that engages a rail that supports the hook.
3) The enlarged display portion projects above the top contour of the hook.
4) The enlarged display portion is received in the hollow body of an indicator in a releasable manner so the indicator is detachable but yet restrained against undesirable movement.
5) The enlarged display portion must be large enough to display the indicator so the indicator is visible, i.e. to be seen and read by a normal customer when viewed from a normal distance and visible when the garment is on the hanger.
6) The enlarged display portion must be large enough, i.e. enlarged, to restrain against undesirable movement. In fact enlarged enough to inhibit movement of the indicator.

Def. Post Tr. Br. at 7-8. To justify this special definition, defendants point to the specifications of the '902 patent, arguing that they require only the above qualities, and not that there be any "enlargement" (in a deviating protuberance fashion) from a normal hook. See Def. Post Tr. Br. at 3-7.

Simply put, defendants' definition doesn't really work. In addition to the fact that this counterintuitive, special definition is not clearly stated in the claims, specifications, or prosecution history of the '902 patent, it also fails to account for the differentiation of "display portion" and "enlarged display portion." In spite of the fact that the inventor did not choose to prosecute species D, which contained figure 12 (whose only distinction from figure 10 is that it lacks the enlarged display portion), "through statements made during prosecution or reexamination an applicant for a patent or a patent owner . . . may commit to a particular meaning for a patent term, which meaning is then binding in litigation." CVI/Beta Ventures, Inc., v. Tura LP, 112 F.3d 1146, 1158 (Fed. Cir. 1997). It is also noteworthy that in the CVI case, because the patents did not define the term "elasticity," the Federal Circuit turned to the specifications and found that "the patent drawings are highly relevant in construing the claim. Id. at 1153.

--- Footnotes ---

11 Defendants have pointed out that the drawings are only illustrations and that they do not bind or supercede the claims. This is clearly true. See Def. Post Tr. Brief at 9 (citing Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994)). But it does not mean that it is improper to analyze the patent drawings during the course of claim.
construction in order to grasp what the inventor was telling the PTO, and the world, about his invention.

Spotless promulgates an inventive, intelligent, but ultimately unpersuasive attempt to tailor claim language to meet the needs of present litigation. In many ways, its complexity alone betrays its failure. One of the principal purposes of a patent claim is to put the world on notice of one's invention, and "competitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention." Vitronics Corp., 90 F.3d at 1583 (citation omitted). A special definition that requires so intricate a twisting of claim and specification language fails to achieve the proper function of a definition within the patent law on a macro level.

Thus, plaintiff's urged definition of the phrase "enlarged display support" will be accepted for purposes of this litigation. Because this definition comes clearly from intrinsic evidence, it would be improper to consider extrinsic evidence, such as the testimony of defendants' expert, on this issue. See Vitronics Corp., 90 F.3d at 1585 (finding that expert testimony regarding the proper construction of claims "may only be relied upon if the patent documents, taken as a whole, are insufficient to enable the court to construe disputed claim terms. Such instances will rarely, if ever, occur.")

As is often the case, Spotless's infringement argument turns on claim construction. Each of the asserted claims recites a hanger hook having "an enlarged display portion [or support]" that projects above the top contour of the hook and receives an indicating device. The district court construed the term "enlarged display portion," in accordance with the dictionary definition of the term "enlarged," to mean a display portion that is "larger or greater than that formerly, usually, or normally present." Despite Spotless's contentions to the contrary, the court found nothing in the claims, written description, or prosecution history of the '902 patent to suggest that the term "enlarged display portion" should be accorded a different meaning for purposes of the '902 patent. The court therefore rejected Spotless's proposed definition of the term "enlarged display portion," which did not require that the display portion be "enlarged" in the usual sense of that word, but required only (1) that the display portion be "large enough to display the indicator" and to "restrain against undesirable movement" by the indicator, and (2) that the display portion be "received in the hollow body of an indicator in a releasable manner but yet restrained against undesirable movement." Based on its claim construction, the district court found no literal infringement, because the display portion of Carlisle's products do not extend beyond the normal configuration of the hanger hook and thus lack an "enlarged display portion."

The district court's claim construction was correct. Although, as the district court noted, Spotless's proposed construction of the term "enlarged display portion" is "inventive," it does not comport with the ordinary meaning of the term, nor does it find any support in the language of the patent or its prosecution history. "Enlarged" is a relative term; to be "enlarged" means that the "enlarged" object must be larger than some reference object. Spotless's definition of "enlarged display portion" does not come to terms with this basic point. Rather than pointing to some reference object compared to which the claimed display portion is "enlarged," Spotless defines "enlarged" as meaning simply large enough to be inserted into the hollow portion of an indicator and to restrain the indicator from undesirable movement. That definition, however, could be satisfied by a display portion that did not extend beyond the normal contour of the hanger hook; indeed, Spotless's definition could even cover a display portion that was significantly smaller than the normal size of the hook. The district court properly rejected Spotless's definition in favor of the definition suggested by common usage of the term "enlarged."

Accepting the district court's claim construction, we must sustain the court's conclusion that the accused products did not literally infringe any of the asserted claims of the reexamined '902 patent. Spotless does not argue that Carlisle's products literally infringe if the court's claim construction was correct, and we hold that the court was not clearly erroneous in finding that the "display portion" of the accused products is not larger than the normal size of the hanger hooks on those products.
b. "Enlarged Heads"

Claim 1 requires a bone engaging fastener with an "enlarged head." Several claims of U.S. Patent No. 6,533,786 contain a similar limitation, "enlarged heads," which the Court construed in its Order on Cross-Motions for Partial Summary Judgment re: Infringement of the 786 Patent, issued simultaneously with this Order. (See Order at part II.A.2.g.) The Court adopts the same conclusion as to the 927 Patent. "Enlarged head" means a head with a diameter larger than the diameter of the shank. 1

--- Footnotes ---

1 The 927 Patent limits "enlarged heads" by requiring the heads to define "a partially spherical surface complementary to said spherical recess of said at least one hole." The parties do not dispute this portion of the claim.

--- End Footnotes ---

The Court disagrees with Plaintiff's assertion "enlarged head" in the 927 Patent means a head with a greater height than the head of a locking screw. Claim 1 does not refer to locking screws. Many limitations of the 927 Patent contain cross-references to elements of other claim limitations. This shows that, if the drafter of the 927 Patent wanted to compare the head of the bone engaging fastener to the head of the locking screw, he knew how to make such an express comparison.

7. "First Enlarged Interior Diameter"

a. Claim Term:

". . . a first enlarged interior diameter of said PVC pipe at said female end, said first enlarged interior diameter being larger than said predetermined interior diameter . . ."

b. Parties' Contentions

CertainTeed's proposed construction of "first enlarged interior diameter" is "a portion of the interior surface of the female end of the pipe which has an interior diameter greater than the predetermined interior diameter." CertainTeed asserts that this proposed construction is taken directly from the plain meaning of the phrase.

Modern Products' proposed construction of "first enlarged interior diameter" is "a portion of the interior surface of the female end of the pipe which, prior to having threads, has an interior diameter greater than the predetermined interior diameter." In support of this proposed construction, Modern Products states that Claim 1 describes the "first enlarged interior diameter" section as "having internal threads." Thus, it describes the "first enlarged interior diameter" in terms distinct from the "threads" themselves. Therefore, Modern Products avers that the relevant dimension is the interior diameter of this section prior to having threads. This construction is consistent with the surrounding words of the claim, and it is also consistent with the specification. In sum, Modern Products asserts that the threads are distinct from but carved into the first enlarged interior diameter.

c. Court's Construction

The Court concludes that "first enlarged interior diameter" means "a portion of the interior surface of the female end of the pipe which has an interior diameter greater than the predetermined interior diameter." The Court agrees with CertainTeed that this construction encompasses the plain and ordinary meaning of the term. This Court does not read the specification or the actual claim language to support Modern Products' assertion that the term "first enlarged interior diameter" is distinct.
from the "threads." In fact, the claim language states that the first enlarged interior diameter is (1) larger than said predetermined interior diameter and (2) has internal threads to mate. There is no indication from the plain meaning of this limitation that the first enlarged interior diameter is to be considered separate from its threads, when, as stated in the claim, having internal threads is one of the first enlarged interior diameter's defining characteristics. Further, as stated previously, it is improper to rely on the specification to read limitations into the claim, as Modern Products has attempted to do with this term. Liquid Dynamics Corp., 355 F.3d at 1368.

2. "Entering"

The claim language establishes that "entering" means "physically introducing" because the object that is "enter[ed]" is a physical object—the first "carrier." (Filing 64-3, Ex. C, Claim 1 ("entering the first carrier into the LAS . . . .") (emphasis added).) The "first carrier" plainly is a physical object because, among other things, it is marked with a code, the first specimen is placed into it, and it is directed to a workstation for specimen testing. (Id.)

Whereas the inventor used "entering" to refer to the physical introduction of the carrier, he used a different term—"inputting"—to refer to introducing information or data, such as specimen information and test results, into the LIS computer. (Id. ("inputting information regarding the specimen and tests to be conducted on the specimen into a computerized laboratory information system.").) Consistent with the plain claim language, the two terms should not be construed so as to cover the same activity.

Second, the court's construction is supported by dependent claim 2, which discloses the LAS "determining a subsequent location for the first carrier upon reentry of the carrier onto the LAS conveyor system." (Filing 64-3, Ex. C, Claim 2.) This language confirms that "entering" in claim 1 means "physically introducing" because "reentry" in claim 2 expressly refers to determining a (physical) location of the carrier after (physical) reentry of the carrier onto the LAS conveyor system.

Third, the specification further confirms the court's construction. For example, the specification confirms that a physical specimen is "entered" into the LAS in claim 1, not information or data, as would arguably be covered by Plaintiffs' construction: "The physical specimen(s) obtained from the patient is then entered in the laboratory automation system (LAS) designated generally as box 20." (Id. at 3:43-47 (emphasis added).) The specification is consistent with the claim language and further explains that the first carrier is "entered" when physically directed onto a conveyor, to which it is later physically returned.

The carrier is then entered into the LAS by directing the carrier onto a conveyor or other transport media connecting all of the workstations of the laboratory. . . . After completion of a test, a carrier is returned to the conveyor or other transport media of the LAS and directed to any subsequent workstations for other testing . . . .

(Id. at 2:56-68 (emphasis added).)

The preferred embodiment, including figure 2, also confirms that "entering" means the carrier's physical introduction onto the LAS conveyor system at the receiving station. The specification explains that it is "a schematic diagram of specimen movement throughout the laboratory automation system." As explained in the specification, "[t]he specimen arrives at a specimen receiving station 22, where the specimen is entered on a conveyor system designated generally at 24." (Id. at 3:56-59 (emphasis added).)

Finally, when describing the related "reentry" step of claim 2, the specification again confirms that "entry" is a physical introduction of the carrier. Specifically, it explains that after the carrier is physically moved on the system, "reentry" means a physical "reintroduc[tion]" of the carrier onto the conveyor system, followed by a physical "removal from [the] conveyor":

Carrier 26 is then reintroduced on conveyor system 24 to follow the closed loop around to the next workstation assigned to the specimen. Once the testing has been completed, the specimens are forwarded to the specimen archiving station 36 for removal from conveyor 24 and appropriate storage.
Accordingly, the claim language and specification repeatedly show that the carrier is an object that is physically introduced into the LAS, such that the term "entering" in the '415 patent means "physically introducing."

C. "entire outer surface"

Nichols asserts that the term "entire outer surface" should be construed to mean "the greater part of the surface which is exposed to light." In offering this construction, Nichols seeks to modify the term in two ways: first, by altering "entire" to mean something less than the whole and second, by defining "outer surface" of the lure body to mean only that part of the lure body that is exposed to light. The Court addresses each element separately below.

1. "entire"

In its pre-hearing Markman brief, Nichols explained that accessories such as plastic eyes, skirts, hooks, and shanks are often attached directly to the bodies of fishing lures. These accessories create small areas on the lure body that may not be covered by the glitter-containing coating. Thus, Nichols argues that "entire" cannot mean that every bit of surface area is covered by the coating; instead, it must mean that only the "greater part" of the surface of the body is covered by the coating.

Unlike the term "resin coating" construed above, the term "entire" is not ambiguous, nor does it appear from the specification that the patentee has qualified the term in any way. To the contrary, a plain reading of the specification shows that the word "entire" is intended in its ordinary sense. "Entire" means "having no element or part left out" or "complete in degree." Webster's Ninth New Collegiate Dictionary 415 (1987). According to the summary, the "resin coating is applied to all external surfaces of the body of the lure." ( '160 Patent, col. 2, lines 32-33.) Accordingly, claim 1 must be construed to mean that the outer surface of the body of the lure must be completely covered by the coating. In other words, no part of the external surface may be left uncovered by the resin coating.

2. "outer surface"

Nichols argues that the term "outer surface" means only that part of the surface of the lure that is exposed to light. In support of this argument, Nichols explains that the object of the invention is to produce a light-reflecting coating that reflects substantially all of the light incident on the body of the lure. Thus, Nichols argues, portions of the body of the lure that may not receive light because they are covered, for example, by a skirt of trailing plastic streamers, are not the "outer" surface of the body. In other words, only the portions of the lure body that are exposed to light constitute the "outer" surface.
Although this argument has superficial appeal, close examination reveals that it is not consistent with either the claim or the specification. First, even assuming that parts of the lure that are covered by a loose skirt of streamers are not exposed to light, which is by no means obvious, Nichols' interpretation is not supported by the language of the claim. The purpose of the term at issue is to indicate where the resin coating is to be applied—over the "entire outer surface"; it does not address the light-reflecting properties of the coating. (‘160 Patent, col. 5, line 25.) By contrast, it is the following clause that explains how the coating reflects light—by glitter particles. It states: "said glitter particles being substantially uniformly dispersed throughout said coating, whereby substantially all light incident on said body is reflected." (‘160 Patent, col. 5, lines 31-33.) This language demonstrates that the light-reflecting ability of the lure is a function of the amount of glitter in the resin coating and not a function of where the coating is applied.

When the claim is viewed in this way it is clear that Nichols' argument collapses two distinct elements of the claim: one, that the body is covered by the coating, and two, that the glitter in the coating reflects light. Thus, Nichols attempts to modify the first element by inferring a limitation applicable to the second, or in other words, to redefine "outer" surface by reference to the light-reflecting characteristic of the glitter. However, the Court is restricted to interpreting the words of the claim and to accept Nichols' construction would be to expand the claim beyond what the language supports.

Second, Nichols' construction is inconsistent with the specification. Figures 1 and 2, and the drawing on the first page of the patent all depict a lure having a skirt comprised of "a plurality of plastic streamers." (‘160 Patent, figs. 1, 2; ‘160 Patent, col. 3, lines 48-49.) The drawings show a skirt placed over portions of the body that have been covered by the glitter-containing coating (indeed, the skirt covers the entire head of the lure). Thus, it cannot be the case that coating is only applied to those areas of the lure that are not covered by a skirt.

In sum, the Court concludes that no modification of the term "outer surface" is warranted.

5. Claim 8, Element 1, "entirely plastic"

BMS offers no special definition of this term, but argues that it need not be separately defined. Endura proposes that the definition be "exclusively plastic with no non-plastic materials, such as metal screws or staples."

As noted above, the parties have agreed on the definition of "plastic." Nothing in the claim language, the rest of the specification, or the prosecution history, even hints that "entirely" has a special meaning or is a technical term. Endura's definition seems to be an attempt to incorporate its arguments on the types of joints that are permitted, into the definition of the non-wood "second" portion of claim 4. Some type of joint is anticipated, and the interpretation of the material of the second portion is not the place to impose limitations on the way the portions are connected.

"Entirely" is defined as "wholly or fully." Websters Encyclopedic Unabridged Dictionary of the English Language 476 (1989). It is also defined as "to the full or entire extent." Meriam-Websters Collegiate Dictionary 386 (10th ed. 2002).

The court will define this term as follows:

"entirely plastic" means: "made only of plastic."

5. Claim 2: "causing fuel to be entrained through the opening into the interior of the reservoir."

Claim 2 is construed to mean "that fuel is drawn through the opening into the interior of the reservoir."
a. The Envelope

The relevant language of the claim pertaining to the first issue is "an envelope formed of recycled synthetic plastic material encasing said tube throughout its length and outer surface, said envelope having an upper end, a lower end and an outer surface, said envelope upper end comprising an enlarged head adjacent said tube upper end." There is no indication that the term "envelope" was intended to have a novel meaning or that "envelope" is a term of art subject to various meanings. Thus, the Court must presume that the ordinary meaning of the term applies and may look to the dictionary definition of the term. Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 2002 WL 1358720, at *7 (Fed. Cir. 2002).

The word "envelope" means "something that envelops; a wrapper, integument, or surrounding cover." The Random House Dictionary of the English Language 650 (7th ed. 1987). To "envelop" means "to wrap up in or as in a covering." Id. While the claim does not expressly state that the envelope is a single piece which includes the plastic sleeve and the enlarged head, the description of the envelope indicates that the enlarged head is an integrated part of the envelope, i.e., a single covering. The "envelope" consists entirely of "recycled synthetic plastic material," and has an upper and lower end, with the upper end consisting of "an enlarged head". The claim thus describes a single plastic piece which covers the entire length of the tube. This construction is consistent with the drawing and specification. Element 14 of the drawing depicts the envelope, which includes both the plastic sleeve, or lower end (26), and the enlarged plastic head (16), which is part of the upper end (22). The plastic covering is shown as a continuous piece. Similarly, the specification, which states that the "synthetic plastic envelope 14 … usually includes an enlarged head formed by the plastic material which may be in the illustrated spheroid configuration," suggests that the enlarged head is integral part of the envelope. The specification also states that "the synthetic plastic envelope 14 includes an upper end 22, upon which the head 16 is defined." Therefore, the Court concludes that the enlarged plastic head is part of the envelope, and Shane Group cannot demonstrate literal infringement.

5. "the envelope defined by the underwater cable"

This phrase is used in claim 7 of the ‘992 Patent. WG argues that this phrase is indefinite and should be struck. Ion argues that the phrase needs no construction and clearly refers to the physical boundary of the underwater cable. Ion maintains that its position is supported by intrinsic evidence within the claim term such as language regarding the reduction of drag and noise.

The Court recognizes that indefiniteness is a high standard, and that, in determining whether a claim is indefinite, all presumptions must be rendered in favor of the patentee. Bancorp Services LLC v Hartford Life Ins. Co., 359 F.3d 1367, 1371 (Fed. Cir. 2004). However, this Court is unable to assign any meaning or construction to this particular phrase as it is used in the claim in question. While Ion may be correct that this phrase was intended to refer to the physical boundary of the underwater cable, nothing in the claim language, the specification, or the prosecution history makes this meaning clear or even readily apparent. Moreover, even taking into account the many ways in which the term "envelope" may ordinarily be understood, the Court is unable to point to any extrinsic evidence that would make the meaning of this term more clear. The Court therefore agrees with WG's expert that the meaning of this phrase cannot be determined with any degree of specificity or definiteness. Accordingly, the Court will, under 35 U.S.C. § 112, P 2, strike the particular clause of claim 7 that contains this phrase, or "wherein the axes of rotation of the wings extends towards the envelope defined by the underwater cable."

3. Claim 6, Step (c)

Step (c) reads: "Forming a second circumferential incision in the epidermis about 3 millimeters cranial to the first circumferential incision, thereby severing at least some of the subcutaneous fascia from the ungual crest ...." Defendant argues that Step (c) is invalid for indefiniteness in two ways.

First, Defendant asserts that the phrase "about three millimeters" provides no instruction to those skilled in the art and is
thus indefinite. Defendant relies primarily on In re Oetiker, 23 U.S.P.Q.2d 1641 (Bd. Pat. App.1990) (finding indefinite the phrase "length on the order of 5 mm" to describe leg portions of a patent), and Ex parte Brummer, 12 U.S.P.Q.2d 1653, 1989 Pat. App. LEXIS 11 at *4 (Bd. Pat. App. 1989) (holding patent claims to a bicycle seat indefinite because the seat's measurements were based on a percentage of the rider's height and weight, reasoning "the same bicycle might fall within this language … when ridden by a rider or one combination of weight and build, but not when ridden by a rider of another"). Plaintiff, pointing to the specification, argues that this terminology has a clear meaning. The specification explains: "The position of the second incision 3 millimeters cranial of the first incision is based upon the average size of the household cat. For smaller animals the distance will be smaller, and for larger animals the distance will be larger." Id.

As stated above, when a "word of degree" is used in a claim, a court "must determine whether the patent's specification provides some standard for measuring that degree." Datamize, LLC, 417 F.3d at 1349. In In re Oetiker, the court held "have a length of the order of 5 mm" indefinite because "there are no guidelines in appellant's specification to enable one skilled in the art to determine whether or not a given leg portion has a length of the order of 5 mm." 23 U.S.P.Q.2d 1641, 1990 Pat. App. LEXIS 37 at *15. In contrast, the '579 patent's intrinsic evidence provides at least some guidance as to the second incision's location and purpose. The specification, which is accompanied by Figure 2, explains:

The traction in the direction T causes the epithelium to release from its distal attachment and permits a second circumferential incision of the redundant epithelium approximately 3 millimeters cranial from the first incision along the line B-B. This second incision allows slightly deeper subcutaneous fascia to be moved cranially over the ungual crest as well.

The position of the second incision 3 millimeters cranial of the first incision is based upon the average size of the household cat. For smaller animals the distance will be smaller, and for larger animals the distance will be larger.

The Federal Circuit, considering similar allegations of indefiniteness, has permitted approximate measurements if the words used are "as accurate as the subject matter permits." See Orthokinetics v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576 (Fed. Cir. 1986). In Orthokinetics, the court found valid the term "so dimensioned," which the patent used to describe the measurements of a pediatric wheelchair that helped disabled children in and out of cars:

In a wheelchair having a seat portion, a front leg portion, and a rear wheel assembly, the improvement wherein said front leg portion is so dimensioned as to be insertable through the space between the doorframe of an automobile and one of the seats thereof whereby said front leg is placed in support relation to the automobile and will support the seat portion from the automobile in the course of subsequent movement of the wheel chair into the automobile …

Id. at 1568 (emphasis added). The court acknowledged that "one desiring to build and use a travel chair must measure the space between the selected automobile's doorframe and its seat and then dimension the front legs of the travel chair so they will fit in that particular space in that particular automobile," but found that "the claims were intended to cover the use of the invention with various types of automobiles" and that the phrase was "as accurate as the subject matter permits, automobiles being of various sizes." Id. at 1576. The court emphasized that "patent law does not require that all possible lengths corresponding to the spaces in hundreds of different automobiles be listed in the patent, but that all that can be listed in the claims." Id; see also Andrew Corp. v. Gabriel Elecs., 847 F.2d 819 (Fed. Cir. 1988) (finding the words "approach each other," "close to," "substantially equal to" and "closely approximate," which described the configuration of a horn reflector microwave antenna used in long distance telephone and data networks, specific enough because "the same bicycle might fall within this language … when ridden by a rider or one combination of weight and build, but not when ridden by a rider of another"). Rosemount, Inc., 727 F.2d at 1547 (Fed. Cir. 1984) (finding the phrase "close proximity," which described the distance between a mounted transistor and high impedance material, acceptable because the description was "as accurate as the subject matter permits").

In light of Orthokinetics, Andrew Corp. and Rosemount, the Court finds that Defendant has not proved by clear and convincing evidence the phrase "about three millimeters" is indefinite. The claim could be more definite, but in light of the specification, Figure 2 and the variation inherent in cat sizes, the Court finds that one skilled in the art would know where to make the second incision. 8

8 At oral argument, Defendant presented an exhibit depicting five photographs of post-operative cat claws. Dr. Young
testified that he believed the cat claws numbered 3 and 5 were larger-than-average; yet, when defense counsel measured the distance between the striation marks of the first and second incisions, it was less than 3 millimeters. Defendant argues that this in-court exercise demonstrates the indefiniteness of the 3 millimeter estimate and the specification's statement that "for smaller animals the distance will be smaller, and for larger animals the distance will be larger." Although the specification contains the preferred embodiment, which states that the distance between incisions correlates to the size of the cat, the Court will not narrow Claim 6, step (c) accordingly. While the phrase "about three millimeters" is not as precise as possible, the claim avoids indefiniteness because it is not "insolubly ambiguous." Honeywell Int'l, 341 F.3d at 1338; see also Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001).

Second, Defendant contends that Step (c)'s use of the word "epidermis" renders it indefinite. Defendant queries how the epidermis, which it defines as "the surface layer of the skin," can be incised in Step (c) if the epidermis has already been incised in Step (a) ("forming a first circumferential incision … in the epidermis …"), 9 noting that the top layer of skin cannot be incised twice. The specification only adds to the confusion, Defendant asserts, because it instructs the surgeon to make a "second circumferential incision of the redundant epithelium approximately 3 millimeters cranial from the first incision." Defendant notes that a medical dictionary defines epithelium as "the covering of internal and external surfaces of the body." See DORLAND'S ILLUSTRATED MEDICAL DICTIONARY 400 (26th ed. 1981). In other words, Defendant argues that the definitions of epidermis and epithelium are mutually exclusive because cutting into the epithelium requires cutting through the epidermis and the underlying layers; thus, both terms cannot be used to describe the skin to be incised in Step (c). Plaintiff counters that "epithelium" and "epidermis" can be used interchangeably when referring to a feline's claw.

A word will not render a claim invalid if it can be given any reasonable meaning: "If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds." Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1347 (Fed. Cir. 2005) (citing Exxon Research & Eng'g, 265 F.3d 1371, 1375 (Fed. Cir. 2001)). In this case, the '579 patent's subject matter, the other steps in Claim 6, the specification's language, and Figure 2, all taken together, adequately instruct a person skilled in the art that the word epidermis, as used throughout Claim 6, simply means "skin," and does not refer only to the skin's top layer. 10 The patent's intrinsic evidence conveys that the second incision must occur after the first incision during which some skin will have already been retracted. The intrinsic evidence also makes clear that the second incision's purpose is to retract more skin for covering the post-operative wound. Although the claim is certainly not an example of clear drafting, a person skilled in the art would be able to discern the meaning of the word "epidermis" as used in Step (c). Thus, the word does not render the claim indefinite.

10 Indeed, this more general definition has been used in at least one respected medical dictionary. See TABLER'S CYCLOPEDIC MEDICAL DICTIONARY (17th ed. 1993) (defining "epidermis" as "skin").
written in the Jepson 8 format that the phrase "equal flexion and extension gaps" recites a limitation on the scope of the claim. Defendants argue that the phrase "equal flexion and extension gaps" means "the flexion and extension gaps must be measured and formed equal to each other, as the instruments are used to make each resection."

8 A "Jepson" claim is so named after Exporte Jepson, 1917 C.D. 62, 243 O.G. 526. Such a claim is traditionally indicated when the transition phrase begins with the phrase, "wherein the improvement comprises:" Generally, a Jepson claim contains in the following order: "(1) a preamble comprising a general description of all the elements or steps of the claimed combination which are conventional or known; (2) a phrase such as "wherein the improvement comprises"; and (3) those elements, steps, and/or relationships which constitute that portion of the claimed combination which the applicant considers as the new or improved portion." See, 37 C.F.R. § 1.75(e) (1996).

The Language of the Patents' Claims Concerning "Equal Flexion and Extension Gaps."

The preamble of Claim 1 of the '885 patent recites:

1. In a system for making triplanar bone resections for total knee replacement, the system including a set of instruments for resecting the anterior and posterior femoral condyles, the proximal tibia, and the distal femur, the resections being made to provide equal flexion and extension gaps, (Claim 1 of the '885 apparatus patent, emphasis added).

Claim 1 of the '885 is an apparatus claim. Accordingly, the subject matter of claim 1 must be some tangible structure rather than a process. The act of creating equal flexion and extension gaps is a result of using some device. Thus, to provide equal flexion and extension gaps suggests a purpose of a device rather than a structure in a device. Further, the structural limitations in the body of the claim, the L-shaped guide rod and guide member, do not refer back to the phrase equal flexion and extension gaps in the preamble. Therefore, the limitations in the body of the claim are intrinsically set apart from the phrase "equal flexion and extension gaps" in the preamble.

The Specification's Use of "Equal Flexion and Extension Gaps."

The specification's use of phrase "equal flexion and extension gaps" implies that the gaps are a result or purpose of the invention. "The triplanar knee resection system of the present invention ensures equal flexion and extension gaps while providing for proper valgus alignment." (‘885 patent, Col. 8, Lines 37-40.)

The Prosecution History Concerning "Equal Flexion and Extension Gaps."

In the Amendment, plaintiff explained to the examiner that for the prosthesis to be stable in flexion and extension, the gap
between the femur and the tibia should be equal with the knee in both positions. However, plaintiff did not rely on this phrase in his arguments to overcome the cited art. Most notably, the examiner in making his rejection did not consider the phrase equal flexion and extension gaps as a limitation of the claim. In rejecting the '203 patent application, the examiner considered as limitations "inserting the L-shaped guide rod," "affixing the guide member having a slot," "resecting the distal femur," and "the sequential procedure of placing the knee in the flexion and extension position."

Plaintiff and Defendant both assert that the preamble of claim 1 of the '885 patent is written in Jepson form 10. Plaintiff asserts that the Jepson form preamble describes only the environment or purpose in which the claim limitations will function. Therefore, claim 1 is not limited by the phrase equal flexion and extension gaps. Further, plaintiff did not rely on phrase of equal flexion and equal gaps in distinguishing his invention over the reference art. Defendants rely on Rowe v Dror, 112 F.3d 473 (Fed. Cir. 1997), to argue that the preamble of the Jepson form claim is considered to positively and clearly include all of the elements or steps recited therein as limitations on the claimed combination. Rowe, 112 F.3d at 479. However, the Federal Circuit's reasoning in Rowe belies a blanket application of that rule to the instant case. In Rowe, the recited structure in the preamble was a balloon angioplasty catheter. Id. At issue was whether the term "angioplasty" as an adjective acted as a limitation on the balloon catheter. Id. at 477. The court reasoned that "the so-called 'Jepson' form [itself], suggests the structural importance of the recitations found in the preamble." Id. at 479. However in the instant case, the phrase "equal flexion and extension gaps" does not suggest a particular type of general structure; rather, the phrase describes a result achieved by use of the apparatus defined in the claim.

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10 The transition phrase, "the improvement comprising:" signifies a traditional Jepson claim.

--- End Footnotes ---

Conclusion on the meaning of the phrase "equal flexion and extension gaps" located in the preamble of claim 1 in the '885 patent.

The court finds the phrase of "equal flexion and extension gaps" merely describes a purpose of the invention claimed in the '885 patent and does not act as structural limitation on the claimed invention.

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The parties dispute the meaning of equal surface area as used in claims 1 and 17 of the '197 patent. Hasbro, referencing a technical dictionary, observes that surface area is generally understood as "a measure of how much area the solid would have if you could somehow break it apart and flatten it out." Barron's Dictionary of Mathematical Terms 327 (Douglas Downing ed., 2d ed. 1995). This construction is important to Hasbro's claim because, under this definition, the facets of a die would not have surface areas equal to one another, as the '197 patent claims, unless those facets were flat. In other words, a die with indented indicia could not, as a matter of mathematics, have facets of equal surface area. See Merriam-Webster Dictionary 257 (1997) (defining "equal" as "of the same measure, quantity, value, quality, number, degree, or status as another."). This is because an indented indicium, whether an arabic numeral or a combination of pips, 4 augments the surface area of a given facet to a greater or lesser extent than another indented indicium. For example, if you were able to break apart a six-sided die, flatten out its facets, and compare them individually, you would see that the facet with six pips would cover more area than the facet with only one pip. No two facets have the same number of pips (the die would not randomly generate numbers otherwise), so it follows that no two facets would have the same surface area. According to Hasbro, because the plain meaning of equal surface area is readily understandable in light of the technical definition above, construction is at an end. Bowling responds that Hasbro's construction contradicts how a person of ordinary skill in the art of game playing would interpret equal surface area, ignores the specification, and, if accepted, would exclude the preferred embodiment of the invention.

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4 A pip is a type of indented indicium that resembles a polka dot.
Without endorsing all of Bowling's characterizations of the '197 patent, the Court agrees that Hasbro's construction cannot withstand a fair reading of the specification, and that its reliance on the extrinsic evidence of dictionary entries is, under the circumstances here, misplaced.

The construction of patent claims is a matter of law properly subject to summary disposition. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 977-79 (Fed. Cir. 1995). "It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1115 (Fed. Cir. 2004). In construing claims, inquiring courts are to give claim terms "their ordinary and customary meaning," which is the meaning the terms "would have to a person of ordinary skill in the art in question at the time of the invention." Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." Id. at 1314. On such occasions, general purpose dictionaries may assist the court in ascertaining the correct construction of the claims. Id.

Where, as here, the claim terms are not so readily susceptible to interpretation, Phillips outlines what sources the district court may consider and teaches how much weight a particular source deserves. First and foremost, the intrinsic record, which consists of the claims themselves, the specification, 5 sometimes referred to as the written description, and, where relevant, the prosecution history, 6 provides the best guidance as to a claim's meaning. Id. at 1313-15. Among the sources of intrinsic evidence, Phillips places primary importance on the claims themselves, but recognizes that the claims "are part of 'a fully integrated written instrument,' consisting principally of a specification that concludes with the claims." Id. at 1315 (quoting Markman, 52 F.3d at 978). For this reason, "claims 'must be read in view of the specification, of which they are a part.'" Id. (quoting Markman, 52 F.3d at 979). Indeed, "the specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" Id. at 1315 (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)); see Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings, 370 F.3d 1354, 1360 (Fed. Cir. 2004) ("In most cases, the best source for discerning the proper context of claim terms is the patent specification wherein the patent applicant describes the invention."); Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1478 (Fed. Cir. 1998) ("[t]he best source for understanding a technical term is the specification from which it arose, informed, as needed, by the prosecution history"); Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985) ("The descriptive part of the specification aids in ascertaining the scope and meaning of the claims inasmuch as the words of the claims must be based upon the description. The specification is, thus, the primary basis for construing the claims.").

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5 Section 112 of Title 35 of the United States Code defines the patent specification as follows:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6 The prosecution history "consists of the complete record of the proceedings before the PTO [the Patent and Trademark Office] and includes the prior art cited during the examination of the patent." Phillips at 1317. Although generally not as useful in construing a claim as the specification, the court may consider the prosecution history if it is in evidence. Like the specification, the prosecution history "can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." Id.; see also Chimie v. PPG Indus., Inc., 402 F.3d 1371, 1384 (Fed. Cir. 2005) ("The purpose of consulting the prosecution history in construing a claim is to exclude any interpretation that was disclaimed during prosecution.") (internal quotations and citation omitted). In this case, neither party uses the prosecution.
history of the '197 patent to support their respective construction of the disputed claims. Hasbro urges the Court to take judicial notice of the prosecution history (along with other material most of which need not be addressed), but did not formally move it into evidence. This writer's review of the material Hasbro submitted, if it constitutes the entirety of the prosecution history, has revealed nothing of significance to the present question.

Additionally, extrinsic evidence, such as dictionaries, treatises, and expert testimony, may provide guidance in certain circumstances, although such sources should be used with caution. In all its forms, extrinsic evidence is recognized as "less significant than the intrinsic record in determining the 'legally operative meaning of disputed claims language.'" C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 862 (Fed. Cir. 2004) (quoting Vanderlande Indus. Nederland BV v. Int'l Trade Comm'n, 366 F.3d 1311, 1318 (Fed. Cir. 2004)). Of particular relevance here, a dictionary definition cannot trump an inventor's definition of claim language in the specification if the two are irreconcilable. See Phillips, 415 F.3d at 1320-24; see also Autogiro Co. of Am. v. United States, 384 F.2d 391, 397, 181 Ct. Cl. 55 (Cl. Ct. 1967) ("Often the invention is novel and words do not exist to describe it. The dictionary does not always keep abreast of the inventor. It cannot."). Phillips discussed this point at length:

The main problem with elevating the dictionary to such prominence is that it focuses the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent. Properly viewed, the "ordinary meaning" of a claim term is its meaning to the ordinary artisan after reading the entire patent. Yet heavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification. The patent system is based on the proposition that claims cover only the invented subject matter.

Phillips, 415 F.3d at 1321. Accordingly, "a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning," Boss Control, Inc. v. Bombardier Inc., 410 F.3d 1372, 1377 (Fed. Cir. 2005), and, if he does, his lexicography governs. This is true whether the specification expressly defines, modifies, or redefines terms used in the claims, Texas Digital Sys., Inc. v. Telegénex, Inc., 308 F.3d 1193, 1204 (Fed. Cir. 2002) ("[T]he presumption in favor of a dictionary definition will be overcome where the patentee, acting as his or her own lexicographer, has clearly set forth an explicit definition of the term different from its ordinary meaning"), or whether the specification does so by implication, Vtronics Corp., 90 F.3d at 1582; see also Irdeto Access, Inc. v. Echostar Satellite Corp., 383 F.3d 1295, 1300 (Fed. Cir. 2004) ("Even when guidance is not provided in explicit definitional format, the specification may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents.") (internal quotation marks and citation omitted); Bell Atl. Network Servs., Inc. v. Covad Comm'ns Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001) ("[A] claim term may be clearly redefined without an explicit statement of redefinition.").

The critical question here is whether an ordinary artisan would read equal surface area in the '197 patent as a mathematical absolute, limited, as Hasbro maintains, only by the bounds of mechanical perfection. Or is equal surface area something less exacting, as Bowling contends? The claims themselves offer no guidance. Claim 2 states simply that "discrete facets include printed indicia," and a separate component of claim 17 says that "extension member facets having indicia thereon indicating a number," but these claims make no mention of indented indicia, or how such impressions (necessarily causing variances in surface area among facets) would affect claims 1 and 17.

The claims become more susceptible to interpretation when read in the contextual light of the specification. In pertinent part, the specification states: "Preferably, each of the discrete facets are identically shaped and have equal surface areas to each other. That is, each of [the] facets has a surface area which is equal to and no greater and no less than the surface area of any other of the facets," (emphasis supplied), and, further along, "Preferably, each of the facets has a surface area of about 0.0089 to 0.89 sq. in., typically about 0.089 sq. in." (Emphasis supplied.) A superficial read of the written description would seem to indicate that a die with flat facets is the preferred embodiment of the invention. However, the patent illustrations show that such a construction could not have been intended. The illustrations of Bowling's six-sided die, provided below, unmistakably display facets with indented arabic numerals. See, e.g., Permutit Co. v. Graver Corp., 284 U.S. 52, 60, 52 S. Ct. 53, 76 L. Ed. 163, 1931 Dec. Comm'r Pat. 745 (1931) (recognizing that "drawings may be referred to for illustration and may be used as an aid in interpreting the specification or claim"); Playtex Prods., Inc. v. Procter & Gamble Co., 400 F.3d 901, 909 (Fed. Cir. 2005) (examining patent illustrations to support the construction of a claim term); Autogiro, 384 F.2d at 397 ("In those instances where a visual representation can flesh out words, drawings may be used in
the same manner and with the same limitations as the specification."); cf. Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1565-67 (Fed. Cir. 1991) (noting that "drawings alone may provide a 'written description' of an invention"). Under Hasbro's strict construction, the claims would exclude the very die depicted below (not to mention the dice that Bowling has manufactured and marketed). This is an absurd result that this writer refuses to reach. Cf. Chimie, 402 F.3d at 1377 (refusing to read the claim "dust-free and non-dusting" in its hyper-literal sense, i.e., that the invention creates absolutely no dust, and instead construing the term to mean a very low level of dust because the former would not read on the preferred embodiment and there was no "highly persuasive evidentiary support" to suggest otherwise).

Even if perfectly flat facets were the preferred embodiment, this would not be the only embodiment that the '197 patent protects. Use of the word "preferably" would be superfluous were a die with facets of perfectly equal surface area the only (and not just the best) example of the invention. The very purpose of the specification is "to teach and enable those of skill in the art to make and use the invention and to provide a best mode for doing so." Phillips, 415 F.3d at 1323. "One of the best ways to teach a person of ordinary skill in the art how to make and use the invention is to provide an example of how to practice the invention in a particular case." Id. Often, these examples will be very specific to aid instruction. Confining the claims to those embodiments, without indication that the claims and the embodiments are to be strictly coextensive, would defeat this purpose. See, e.g., Nazomi Commc'n's, Inc. v. ARM Holdings, PLC, 403 F.3d 1364, 1369 (Fed. Cir. 2005) (noting the specification's different emphasis on subject matter); Playtex, 400 F.3d at 905-06 (consulting the specification is "for enlightenment and not to read a limitation from the specification"); Phillips, 415 F.3d at 1323 (observing that "although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments"); Gemstar-TV Guide Int'l, Inc. v. Int'l Trade Comm'n., 383 F.3d 1352, 1366 (Fed. Cir. 2004) (same); Scimed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1340 (Fed. Cir. 2001) (reading a limitation from the specification into the claims is "one of the cardinal sins of patent law").

Hasbro argues that the indented indicia depicted in the illustrations could be filled in and made flush with the facets, thus complying with its proposed construction of the claims. This argument, although creative, is unsupportable and therefore rejected. Hasbro does not identify any intrinsic evidence to explain away the clear disconnect between its construction and the patent illustrations. (The claims are altogether neutral in this regard, as discussed above; the specification is the same: "]extension member 28 functions to display indicia such as polka dots, or numbers or digits.") As for extrinsic evidence, Hasbro points to three state regulations that establish minimum standards for dice used in table games, i.e., gambling. These regulations require that such dice contain indented pips (or an equivalent) that are filled in with a compound and made perfectly flush with the surrounding facet. 68 Ind. Admin. Code § 14-3-3 (1996); accord Mo. Code Regs. Ann. tit. 11, § 45-5.260 (1999); N.J. Admin. Code § 19:46-1.15 (1997). If anything, these regulations, which are, by definition, less reliable than the specification into the claims are "one of the cardinal sins of patent law").

Other extrinsic evidence cuts against Hasbro's position -- itself an observation that underscores the primacy of the intrinsic record in claims construction. See Phillips, 415 F.3d at 1318 ("[T]here is a virtually unbounded universe of potential extrinsic evidence of some marginal relevance that could be brought to bear on any claim construction question . . . . [E]ach party will naturally choose the pieces of extrinsic evidence most favorable to its cause."). For instance, Bowling's expert witness, Kevin Cook, who boasts the world's largest collection of dice, testified that the dice in the '197 patent are for role-playing games, like Dungeons & Dragons. These types of games do not require dice with the precision of gambling dice. As long as the die remains a "fair playing die," as specified in the written description, negligible variances in surface area are acceptable. Thus, according to Cook (and Bowling, who testified as well), the '197 patent covers both "precision dice" (dice with perfectly equal surface area that would be acceptable for table games) and "loose dice" (dice with negligible
variances in surface area commonly used in role-playing games).

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7 Expert testimony is valuable for providing background on the technology at issue, explaining how an invention works, or describing a distinctive use of a term in a particular field. However, like dictionaries, expert testimony is less reliable than intrinsic evidence for the interpretation of claims. Phillips opined, for example, that expert testimony is "generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence." Phillips, 415 F.3d at 1318. The Court refers to expert testimony here simply to counter Hasbro's claim that the extrinsic evidence in this case supports its proposed construction.8 Cook testified via video deposition, which was admitted into evidence.

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Hasbro, of course, objects to the notion that the '197 patent covers anything other than precision dice. To support this argument, Hasbro relies upon the description of "center of symmetry," which the specification defines as follows:

By "center of symmetry", it is meant a point that is related to a geographical figure in such a way that for any point on the figure, there is another point on the figure such that a straight line joining the two points is bisected by the original point. Each of the surface area of discrete facets of extension member 28 are equal. The combination of the center of symmetry being the center and the equal surface areas of facets 32 provides for a fair playing die. That is, no one facet 32 is more likely to be rolled than any other of the facets 32.

For reasons that are not so easily explained, indented indicia distort a die's center of symmetry. However, this argument suffers from the same flaws as Hasbro's earlier argument. At best, precise center of symmetry is, like perfectly equal surface area, just the preferred (and not the only) embodiment of the invention. Additionally, the paragraph immediately preceding the discussion of center of symmetry reinforces Cook's commentary about role playing:

The inventor has discovered that the configuration of the die 20 is advantageous. In particular, the shape of the end caps 24, 26 provides for more bounce when dropping die 20 onto a surface. That is, to generate a random number, the user hold die 20 above a surface at a sufficient distance, such that when die 20 is dropped onto the surface, die 20 rolls before eventually resting upon one of the facets 32 of the extension member 28. . . . The shapes of the end caps 24, 26 provide for more bounce and randomness when die 20 is dropped onto a surface. The tapered, triangular shapes of end caps 24, 26 provide for surfaces which can abut and engage the surface on which die 20 is being dropped, to create a more interesting and amusing outcome.

In the final analysis, the intrinsic evidence, on the whole, rejects Hasbro's rigid construction of equal surface area. The technical dictionary, state regulations, and expert testimony (all extrinsic evidence) are either inconclusive or tend to support Bowling's construction. Accordingly, "discrete facets being identically shaped and having equal surface areas" shall be construed as discrete facets being identically shaped and having equal surface areas, without regard to negligible variances in surface area caused by indented indicia, and "extension member facets being equal in surface area" shall be construed as extension member facets being equal in surface area, without regard to negligible variances in surface area caused by indented indicia.

GO BACK

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11.1 The Claim Language of Claim 10

10. [The combination according to claim 1] Lighting apparatus including in combination:

- reflector means having a base end of first size and a light-emitting end of a second size larger than said first size and having a center line extending from the center of the base end to the center of the light-emitting end thereof;
lamp support means located within said reflector means at the base end thereof or supporting a plurality of compact fluorescent lamps substantially equally angularly displaced about said center line within said reflector means between the base end and the light-emitting end thereof; said lamp support means including at least two lamp support surfaces on said lamp support means on opposite sides thereof and angled toward the base end of said reflector means for causing compact fluorescent lamps supported thereby to extend outwardly at an angle from said center line toward the light emitting end of said reflector means to substantially parallel said reflector means;

means for supplying operating electric power to lamps supported by said lamp support means; and

wherein said lamp support means includes eight equally-spaced lamp support surfaces thereon.

11.2 Claim Interpretation Analysis

Claim 10 is identical to Claim 1 except for the following additional limitation: “wherein said lamp support means includes eight equally-spaced lamp support surfaces thereon.” Claim 10 should therefore be interpreted identically to Claim 1 except that it includes a further limitation requiring the presence of eight lamp support surfaces which are equally spaced relative to one another. “Equally spaced” means spacing which is equal and requires equal spacing between all eight lamp support surfaces.

1. Eschar 10

10 ConMed argues that I should define eschar "simply the same as the disputed term 'improved eschar'…." Docket No. 58, p. 12-13. I disagree. Where possible, I should try to give each term an independent meaning, such that no term is rendered superfluous. In doing so, I must construe the term eschar separate from the term improved eschar, since they appear separately in the claim. See, Docket No. 58, Ex. A, col. 36, ll. 67-68, and col. 37, l. 9.

The first disputed claim term "eschar" is found in Claim 1.

ConMed's Proposed Definition: A layer of tissue at its surface which has been altered by electrical current to promote a physiological seal against oozing blood and natural fluids.

Canady's Proposed Definition: A dry scab formed after a burn. 11

(Docket No. 58, Ex. B, p. 1; Docket No. 66, p. 47). After a review of the claim term itself, it is evident that one of ordinary skill in the art would understand the term eschar to mean a dry scab formed after a burn. See, The Random House College Dictionary, p. 450 (Revised Ed. 1980)(defining eschar as a hard curst or scab, as from a burn). This is supported by the specifications. Docket No. 58, Ex. A, col. 5, ll. 11-13. Consequently, I construe the term "eschar" to mean a dry scab formed after a burn.

11 Contrary to ConMed's position, Canady's proposed definition is not a raised scab formed after a burn but a dry scab formed after a burn. Compare, Docket No. 67, p. 12; with Docket No. 66, p. 47.
1452

F. Fills Essentially Completely

ICU's Construction    RyMed's Construction
(No construction necessary)

Fills all or almost all Fills all of or almost all of
the cavity adjacent to the opening to prevent fluid from leaking between the seal and the wall structure

The claim term "fills essentially completely" appears in claim 1 of the '866 Patent, and claims 1 and 2 of the '862 Patent. RyMed contends the claim term need not be construed, but that ICU had insisted it needs construction. (D.I. 116, at 32.) However, in its Answering Brief, ICU concedes that, "in an effort to reduce the number of terms for the Court to consider, and because it appears that this will not make a difference in the infringement or invalidity analysis, ICU can agree to the construction proposed by RyMed." (D.I. 172, at 20.) Thus, the Court concludes that "fills essentially completely" means "fills all of or almost all of the cavity adjacent to the opening to prevent fluid from leaking between the seal and the wall structure."

1453
c. ESSENTIALLY DEVOID: Intrinsic Evidence

Plastpro next argues that "essentially devoid" should be construed as "lacking or having an absence of, except for trace or residue amounts." Therma-Tru contends that the term is more appropriately defined as "virtually or in essence devoid," but offers no intrinsic or extrinsic evidence to support its construction. Therma-Tru reasons that while the phrase does not connote the absolute exclusion of glass fibers from the surface of the skin, the proper construction of the term must functionally prevent a surface that wicks stain. Plastpro objects to Therma-Tru's proposed meaning because its inherent ambiguity does not provide a meaningful standard against which infringement can be judged.

The intrinsic evidence does not contain an explicit definition of "essentially devoid." However, the '540 specification and the prosecution history do offer some helpful assistance. The '540 patent's enumeration of the supposed advantages of a fiber-free surface is prefaced by: "The elimination of glass fibers from the surface of the exterior side provides the present structure with several advantages." (McQuillen Dec., Exh. A, col. 3, ll. 16-18.) (emphasis added). Similarly, an amendment to the '549 CIP application contained the following Remark: "The combination of opposed SMC panels . . . where the exterior surface is devoid of glass fibers . . . results in a door assembly which is far superior to prior art doors." (Id., Exh. D, at 47) (emphasis added). In other words, the unqualified use of the terms "elimination" and "devoid" indicates a complete lack of fibers. A fair and plain reading of these descriptions suggests to a person skilled in the art that no glass fibers should be present in the outer 0.005 inch of the door skins.

Logically, then, "essentially devoid" must mean as near as possible to a complete absence, or at most trace amounts of glass fibers. Plastpro's cited dictionary references support such a meaning. See McQuillen Dec., Exh. AA, THE RANDOM HOUSE COLLEGE DICTIONARY 451 (listing "essentially" as synonymous with "fundamentally," "inherently," or "intrinsically"). Unlike Therma-Tru's "virtually or in essence devoid," Plastpro's construction is not only consistent with the specification and prosecution history, but lends itself to quantification and therefore provides a standard for infringement. If the meaning of "essentially devoid" is ambiguous, "virtually devoid" does little to clarify it. The phrase "essentially devoid" is interpreted as meaning "lacking or having an absence of except for trace or residue amounts."

Restated in light of these constructions, the fiber-free claim limitation becomes: "outside of said skin lacking or having an absence of glass threads or filaments or pieces thereof except for trace or residue amounts for a predetermined depth of at
least 0.005 inch." The Court need not construe the phrase "predetermined depth" because it is not necessary to resolve this infringement action.

1454

Essentially

This term is used in claim 16 of the '990 patent to describe the location of the means for nebulizing water (spray racks): "positioned essentially in said air duct constructed portion." (emphasis added). This term can be viewed in the context of the specification, column 8 at lines 59 through 61 and reference to Fig. 1, which depicts the various parts of the inlet air duct. According to the specification (column 11, line 67 through column 12, line 5), the spray rack can be positioned anywhere between the inlet air filter and the compressor inlet, but preferably in the constricted portion (137) of the inlet air duct.

Dow reads this term as meaning "inside the constricted portion of the duct or near enough to achieve the stated purpose." 2 Mee, however, contends that "essentially" as used in this context means "in or substantially in." Thus, the question becomes, does "essentially" mean that the spray rack needs to be at least partially within the constricted portion of the duct, or merely near it?

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2 See '990 patent, column 12, lines 6 through 13.

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - -

The Court finds that as used in this context, "essentially" means that the spray rack must be located within the constricted portion of the inlet air duct or at least partially therein. 3 Otherwise, the claim would have referred to the means as positioned in or near the constricted portion. If the inventor intended the spray rack to simply be near the constricted portion, he could have easily said so. Thus, "essentially" must be read more narrowly.

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3 As commonly understood, something that is wholly outside a defined space (albeit near it) cannot be "essentially" in it. Dow has offered no evidence that anyone skilled in the art would assign a different meaning to the term.

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - -

Accordingly, the Court finds that "essentially" means:

In or partially in.

1455

4. "A Structure That Is Essentially One Piece"

The phrase "a structure that is essentially one piece" is used in all of the independent claims at issue. Rhino argues that this phrase should be construed to cover a structure "that is basically, fundamentally, substantially or virtually a single piece in its basic form or use." (Doc. 31 at 11-12; Doc. 81 at 11-12.) Berg contends that the phrase means "a structure assembled from separate individual components using both screws and a waterproof glue type adhesive to form a permanent one-piece structure that cannot be disassembled." (Doc. 75 at 19-20.) Neither proposed construction is supported by the language of the claims and specification.
As discussed supra Part III.A.1, Berg's proposed "separate individual components" limitation is inconsistent with the entire '889 patent, which clearly discloses and claims a plastic molded ramp. Likewise, Rhino's attempt to define "essentially one piece" as referring to the structure while it is in use is unavailing. Within the claims of the '889 patent, this phrase is only used as part of the claimed function of the means-plus-function element, see supra Part III.A.3, as follows:

[Means interconnecting all internal interlocking longitudinal and transversal cross members with the sides, inclined, rear and top [plane or surface] of the structure to form a structure that is essentially one piece . . . .

(Doc. 1, Ex. A at cols. 5-6 (emphasis added)). As is clear and unambiguous from this claim language, "essentially one piece" does not refer generally to the ramp while it is in use; it refers to the ramp after it has been constructed or assembled with the corresponding structures defined supra Part III.A.3. This conclusion is buttressed by the language in the specification. Like in the claims, the specification's only reference to an "essentially one piece" structure involves the construction of the ramp: "All components are held together . . . making the entire structure essentially one piece." (Doc. 1, Ex. A at col. 3, lines 61-64.)

Accordingly, the court will construe "a structure that is essentially one piece" as "a structure that is basically, fundamentally, substantially, or virtually a single piece after being constructed or assembled with (1) screws and a waterproof glue type compound, (2) plastic, or (3) their equivalents."

1457

The second relevant clause in claim 1 of the '527 patent is found within limitation part '(c),' and provides for "establishing continuous fluid communication between the interior drainage space of the basket and a treated water outlet conduit." Contech argues that "establishing continuous fluid communication" between the drainage space and the outlet conduit commences only at the moment when "siphoning begins." (Pl.'s Opp. Mem. at 15.) According to Contech, "the moment of establishing continuous fluid communication, as explained in the specification of the '527 patent, corresponds to the moment at which siphoning begins when the interior drainage space fills with water to purge air." (Id. at 17.) BaySaver and AccuBid, however, argue that if the construction now offered by Contech is adopted, then a continuous fluid communication necessarily requires some kind of siphon priming valve, as demonstrated in the '527 patent specification. (See Def.'s Mem. at 17-19; see also '527 patent, col. 3, ln. 40-46.) Additionally, BaySaver and AccuBid appear to argue in the alternative a definition of continuous fluid communication that was offered by the plaintiff Stormwater Management, Inc. ("Stormwater"), Contech's predecessor, in the previous matter of Stormwater Management, Inc. v. CDS Techs., Inc. (Case No. CV 04-414) (the "Oregon litigation"). In that case, Judge Michael W. Mosman of the District of Oregon agreed with Stormwater and defined "establishing continuous fluid communication" as "to bring into existence or cause a stream of fluid without any interruptions breaking the stream into unconnected segments." Id.

Again, because there is no indication that the '527 patent defines the "establishing continuous fluid communication" clause in an idiosyncratic fashion, the words in the claim should be given their "ordinary and accustomed meaning." Frank's Casing, 292 F.3d at 1374. The construction offered by Judge Mosman provides the ordinary meaning of the clause, and is consistent with Stormwater's prior claim construction argument in the Oregon litigation. As Stormwater argued in that case, "establishing continuous fluid communication means establishing a stream of fluid from the interior drainage space to the treated water outlet conduit that is not completely interrupted by one or more gaps that break the stream into unconnected segments." (Def.'s Mem. at Ex. J, Stormwater Mem. at 16.) Finding no reason to stray from the ordinary meaning of the clause, "establishing continuous fluid communication" will be construed as meaning to bring into existence or cause a stream of fluid without any interruptions breaking the stream into unconnected segments.
Disputed Claim Language
Evacuating the chamber of gases from the chamber.

ASM's construction
Removing reactant gases

Genus's construction
Reducing the pressure in the chamber with a vacuum pump to remove the gases.

As with the '590 patent, the parties dispute whether evacuating the chamber of the reactant gases requires a vacuum pump, or should be more broadly construed to encompass any method of removing the reactant gases from the chamber.

There are only five places in the specification of the '365 patent that discuss evacuation. Twice during the discussion of the '430 patent, the specification states that the excess gaseous reactants are removed by "evacuating the chamber with a vacuum pump." ('365 patent 1:59-60; 1:67.) The other three uses of the word appear during the description of the preferred embodiment illustrated by Figures 1 and 2, where the specification repeatedly states that the reactor vessel is evacuated with a vacuum pump. (Id. 6:26-43.) Thus, the only explicit mentions of "evacuation" in the specification all refer to the use of a vacuum pump. The '365 patent's description of the flow system of the '973 patent does not use the word "evacuate," but instead states that in the invention of the '973 patent "the excess of each gas is removed by flowing a purge gas through the reactor between each exposure cycle." (Id. 2:12-14.)

The abstract of the '365 patent twice states that the excess reactants are removed by a pump. ('365 patent, Abstract). The summary of the invention describes only one embodiment, in which pumps are used to remove excess reactants. ('365 patent 5:9-20.) Figure 1 which describes one preferred embodiment, shows a vacuum pump to evacuate gases, and does not show any other method of emptying the chamber. ('365 patent 5:53-6:25.) Genus' expert, Dr. Oldham, also opines that a person of ordinary skill in the art would understand clearly that the specification's description of a chamber that is sealed with O-rings, flanges and valves describes a non-flow vacuum system. (Oldham '365 Expert Report at 6.) Similarly, Figure 2, which illustrates a process cycle, employs a vacuum pump. ('365 patent 6:27-43.) Figure 3, which describes another preferred embodiment, also shows no way of emptying the chamber other than by use of a vacuum pump. 5 The only other section of the specification where removal of the gases from the reaction chamber is mentioned in the context of the invention of the '365 patent also discusses the use of a pump to remove the gases. ('365 patent 7:52-59.)

5 Although the inventor, Arthur Sherman, testified at deposition that the radical generator and the vessels for the first reactant could be used to introduce inert gases into the chamber, he acknowledged that he did not describe that use in the patent. (Gasner Decl., Ex. 14, Sherman Dep. 65:7-16.)

In sum, the '365 patent uses the term "evacuate" only to describe removal of gases with a vacuum pump. In addition, every description of the removal of excess reactant gases in the context of the invention of the '365 patent also mentions the use of a vacuum pump.

ASM argues that because the '365 patent defines "sequential chemical vapor deposition" by reference to '973 patent, which does not use a vacuum pump to remove excess reactants, the patent is using "evacuation" broadly enough to encompass the method of the '973 patent. Although the Court agrees that "sequential chemical vapor deposition" is used broadly enough to encompass the '973 patent, it does not necessarily follow that "evacuation" is used so broadly. In fact, the claims define specific types of sequential chemical vapor deposition processes, in each of which the chamber is evacuated of gases. Nothing in the patent language itself suggests that "evacuation" is accomplished in any way other than by using a vacuum pump.

Other language in the claims also demonstrates that "evacuation" cannot be performed with a purging gas. Claims 1 and 16, and their dependent claims, all require "evacuating the chamber of gases" immediately after inserting the part into the reaction chamber, before any reactant gases are introduced into the chamber. (Id. 9:55, 11:13.) Thus, the gases that must be evacuated cannot be limited to the reactant gases, but must include all gases in the chamber. The same language,
"evacuating the chamber of gases," is used in each claim after the first reactant gas is introduced into the chamber, and after the second gas is introduced into the chamber. To be consistent, each step must require removal of all gases from the chamber, not just the reactant gases. Genus' expert, Dr. Oldham, states in his expert report that one of ordinary skill in the art would know that removal of all of the gases in the chamber would require a reduction of pressure in the chamber with a vacuum pump. (Oldham '365 Expert Report at 5.) If a purging gas is used to remove the reactant gases from the chamber, the purging gas obviously is in the chamber, and the chamber is not evacuated of all gases. Thus, this language also supports Genus' argument that evacuation must be used to refer to removal of gases with a vacuum pump.

ASM argues, to the contrary, that "evacuation" is just a synonym for "removal" because the patent specification describes both "evacuating the chamber with a vacuum pump" and "removing by vacuum pumps." (See, e.g., '365 patent 1:59-60, 2:22.) The prosecution history has similar language. (See, e.g., Sarboraria Decl., Ex. D at '365 FH-055.) This argument is unpersuasive. It is not disputed that by evacuating the chamber of gases, one is removing the gases from the chamber. The question is whether "evacuation" is limited to one method of removal, specifically, removing the gases with a vacuum pump, or whether it encompasses another method of removal, the use of a purging gas. There is no place in the patent language where using a gas to purge the chamber is referred to as "evacuation."

ASM also argues that because the claims of the '365 patent address processes, rather than apparatuses, they should not be limited to apply only to processes that use vacuum pumps to remove gases from the chamber. The Court's duty, however, is to determine the definition of the claim terms. Based on the intrinsic evidence, the Court concludes that, because the claim terms all use the term "evacuating," the claims are limited to processes in which gases are removed by means of a vacuum pump, and do not encompass processes in which reactant gases are removed by means of a purging gas.

Turning to the extrinsic evidence, Genus points to two 1999 internal memoranda from Raaijmakers, ASM's Chief Technology Officer, to other high ranking ASM executives, in which he discusses whether ASM should purchase the '365 patent from Sherman. (Sarboraria Supp. Decl., Exs. E and F.) In one memorandum, Raaijmakers states:

In my opinion the claims [of the '365 patent] are restricted to a "classic" ALCVD method, i.e. in which the chamber is pumped down between cycles. The claim does not foresee the use of radicals in a so-called "travelling wave reactor."

(Id., Ex. E.) It is the Court's understanding that a travelling wave reactor uses a continuous flow of gas in which pulses of reactant gases are separated by a flow of non-reactant gas. In the other memorandum, he states "we would not infringe in our traveling wave reactors," but "this could become an argument later." (Id., Ex. F.) The Court interprets these statements as an objective, pre-litigation, opinion that although the claims of the '365 patent cover only methods in which the chamber is pumped down between cycles, the patent might nonetheless be asserted against their traveling wave reactors later if they did not purchase the rights now. Raaijmakers acknowledged as much at his deposition:

Q: You understood that -- it was your understanding that the ASM reactors that do not perform a pump-down would not fall within the Sherman patent so they didn't need to pay a royalty; correct? I'm not saying that's what this says, but that's what you were understanding when you were making recommendations to senior management of ASM?

A: I recognized it could become an argument. That's probably what becoming the argument is, which is exactly the argument we are talking about now.

(Sun Decl., Ex. 7, Raaijmakers Dep. 125:7-16.) 6

6 Although Genus' supplemental claim construction brief at two points describes the Raaijmakers deposition testimony discussed in this section as relating to the '590 patent, it actually relates only to the '365 patent. The Court assumes the error was inadvertent.

It is undisputed that Raaijmakers is a person of ordinary skill in the art. These internal memoranda discuss whether ASM should attempt to acquire all rights to the '365 patent. At that time, ASM had every motive to view the patent carefully and...
objectively in these internal discussions. The Court finds that these prelitigation admissions by ASM are both reliable and highly probative of how the ordinary person of skill in the art would interpret the claims of the '365 patent. Raaijmakers' view of the '365 patent in this 1999 memorandum is in accord with the intrinsic evidence that "evacuate" means removal by use of a vacuum pump.

At deposition, Raaijmakers testified that "Sherman called me that he had this great invention and he disclosed that it was ALD with radicals and he disclosed also that it was a pump-down." (Sarboraria Supp. Decl., Ex. B, Raaijmakers Dep. 110:23-25.) Raaijmakers also testified that "I've gone through a process where initially I have thought evacuation to mean pump-down, whereas in a period of a year there was mounting evidence that evacuation also included purging." (Id. 157:22-25.) He now says he believes that "'evacuate' could include 'purge.'" (Id. at 117:24-25.) "'Evacuate' in the different applications could have different meanings. I am not sure whether we used the word consistently." Id. 157:18-20.)

Raaijmakers also testified that his opinion in these memoranda was only based on discussions with Sherman about his preferred embodiment, and were not intended to opine on the scope of the claims of the '365 patent. (Sun Decl. Ex. 7, Raaijmakers Dep. 104:12-21.)

I'm not representing what the scope of the claims are; I cannot do that. What I am saying is that in the opinion I formed during my long discussions with Art Sherman where he disclosed repeatedly his preferred embodiment to me, based on that opinion, I thought at that time, okay, he describes a pump-down process.

(Id.) He testified that he was describing the preferred embodiment that Sherman disclosed to him. (Id. 105:16-17.) He acknowledged, however, that he was able to view claims from the perspective of one skilled in the art, and that by using the term "the claims" he was referring to the claims of the patent. (Id. 105:7-9.) He acknowledged that he had read the claims when he prepared the memoranda, and that he made his best effort to understand what the claims covered. (Id. 106:2-22.) Raaijmakers also noted in his deposition that his view of the '365 patent at the time these memoranda were written was different from Sherman's view, and that their difference of opinion was over how to interpret the word "evacuate." (Id. 106:24-108:16.)

Genus points out that, despite Raaijmakers' current position that "evacuate" is not limited to pumping down with a vacuum, he has filed patent applications as recently as 2001, in which he has distinguished evacuation from purging excess reactants. Brown Supp. Decl., Ex. B at P 0080 (describing the use of a gas to purge the reaction chamber, and then noting that "in other arrangements, the chamber may be completely evacuated[.]"); id., Ex. C at P 0060 (similar language); Id., Ex. D at P 0065. Raaijmakers testified at deposition that his change of opinion about the meaning of "evacuate" was triggered by a statement by the Patent Cooperation Treaty office:

Sherman mentioned clearly that evacuation included purging, whereas was at the time of this, in September '99, I was of the opinion that it did not.

Later there were PCT applications filed from Sherman, and there was a clear reaction from the PCT office that evacuation included purging, and that made me change my mind.

(Sun Supp. Decl., Ex. 7, Raaijmakers Dep. 152:16-23.) This testimony is apparently a reference to PCT/US00/10267, a PCT written opinion issued on January 26, 2001, which appears to address an international patent application that is a continuation-in-part of the '365 patent. (Sun Supp. Decl. Ex. 2 at ASM 26681.) That opinion, without any written analysis, interpreted "evacuate" in the context of the '365 patent to refer only to purging. (Id. at ASM 26682.) As this opinion is devoid of analysis, the Court is unable to follow the analysis that led to this conclusion, but disagrees with it, for the reasons already set forth in this opinion.

The Court is not persuaded by Raaijmakers' attempt to explain away his earlier view of the '365 patent. Raaijmakers' objective view of the '365 patent before this litigation began, as one skilled in the art, was that "evacuate" meant pump-down, and that, therefore, the '365 patent covered only processes that used a vacuum to pump-down the reaction chamber. The Court finds that view more relevant and persuasive than his current, litigation-driven viewpoint. Raaijmakers' original view is in accord with the Genus' construction of the term "evacuate," and with the way the term is used in the intrinsic evidence.
Genus's expert, Dr. Oldham, states in his expert report that a person of ordinary skill in the art would understand "the claim language 'evacuating the chamber of gases' to mean pumping out the gases in the chamber, that is, reducing the pressure in the chamber with a vacuum pump to effect the removal of the gases." (Oldham '365 Expert Report at 4-5.) ASM's expert, Dr. Glew, states that in the context of the '365 patent, one of ordinary skill in the art would interpret the phrase "evacuating the chamber of gases" to mean "removing reactant gases from the chamber by any number of methods commonly known in the art the time including but not limited to evacuation through a pressure drop and evacuating by purging with an inert gas." (Glew Expert Report at 11.) The Court finds Oldham's explanation to be more persuasive, as it is based on a more detailed and careful analysis of the language of the '365 patent than is Glew's opinion.

Genus also points to documents produced by ASM, which appear to be materials used by Sherman to teach a course on atomic layer deposition. (Sarboraria Supp. Decl., Ex. G.) These materials contain a slide that describes ALD reactors as "vacuum pumped systems" and "flow purged systems." (Id. SHE 002281). They also contain a slide entitled "Evacuation vs. Flow Systems," which states that "flow systems use inert gas purging rather than evacuation[]." (Id. at SHE 002529.) Although Genus contends that these materials predate the litigation, they are undated, and Genus has not submitted any evidence to establish when they were prepared. Nonetheless, these materials suggest that Sherman himself distinguishes between evacuation and purging.

ASM argues that the Court should not consider these slides, citing North American Vaccine, 7 F.3d 1571 at 1578. In that case, the district court erred in limiting the scope of patent claims because of an article and speech in which the inventor discussed his research. Id. at 1578. The Court held:

A patent is to be interpreted by what it states rather than by what the inventor wrote in a scientific publication.

There is no inconsistency between writing a paper (or giving a speech) on a particular embodiment of an invention and then claiming one's invention more broadly in a patent application.

Id. That case is distinguishable, however, because Sherman's class materials do not address any particular embodiment, but demonstrate that he makes the same general distinction between purging and evacuation that is apparent from a close reading of the intrinsic evidence. The Court is not using the class materials to limit the scope of clear patent claims, but instead is reviewing it to confirm that one of ordinary skill in the art makes the distinction between the two terms that also appears from a close reading of the patent language.

Finally, Genus points to Sherman's inventor notebook for the '365 patent. This document was not used as an exhibit during briefing but only first presented at the claim construction hearing itself. ASM made no objection to the exhibit, however, and thus the Court will consider it. In that notebook, dated May 24, 1996, Sherman wrote:

An essential requirement of this new process is that it be done in a vacuum chamber, with each step of the process involving a dosing and then an evacuation. It would be much more difficult to do in a flowing system such as used by Suntola in Finland.

(Genus' illustrative exhibit 26, '365 claim construction hearing.) Sherman's inventor notebook also supports the Court's conclusion that the claims of the '365 patent are limited to processes in which the reaction chamber is evacuated with a vacuum pump.

For the reasons set forth above, the Court finds that, on the whole, the extrinsic evidence supports the meaning of "evacuate" that is apparent from the intrinsic evidence. The Court construes "evacuate" in the context of the '365 patent to refer to removal of gases with a vacuum pump. The term does not encompass the use of an inert gas to push gases out of the reaction chamber.

ASM asserts that Genus infringed claims 1 and 16 of the '365 patent. Claim 1 provides:
A process of growing thin film by a sequential chemical vapor
deposition process, comprising the steps of:

placing a part in a chamber;
evacuating the chamber of gases;
exposing the part to a gaseous first reactant, including a non-semiconductor element of the thin film to be formed,
wherein the first reactant adsorbs on the part;
evacuating the chamber of gases;
exposing the part, coated with the first reactant, to a gaseous second reactant of radicals, wherein the radicals convert the
first reactant on the part to one or more elements, wherein a thin film is formed; and

evacuating the chamber of gases.

Claim 16 is substantially identical to claim 1, differing only in ways that are irrelevant to the disputed claim terms. ASM
contends that the district court erred in construing the phrase "evacuating the chamber of gases."

The district court construed the phrase "evacuating the chamber of gases" in the '365 patent in the same way that it
construed the term "evacuation" in the '590 patent. Specifically, the court ruled that the phrase refers to removal of the gases
with a vacuum pump and does not encompass the use of an inert gas to push the gases out of the reaction chamber. ASM
claims that the court's construction is contrary to the evidence and improperly reads into the '365 patent a limitation from the
'590 patent that appears nowhere in the '365 patent.

ASM first contends that the district court improperly imported from the '590 patent the requirement that the evacuation be
accomplished by a vacuum pump. ASM argues that the district court should not have placed constraints on how the gases
are removed from the chamber. Under ASM's proposed construction, "evacuating the chamber of gases" could include using
an inert gas to purge the chamber.

ASM asserts that its construction is supported by the specification. In discussing the prior art, the specification states that in
a prior art patent, "the excess of each gas is removed by flowing a purge gas through the reactor between each exposure
cycle." '365 patent, col. 2, ll. 12-14. Therefore, according to ASM, the purge gas can be said to "remove" the gas.

That argument, however, ignores the plain meaning of the claim language and mischaracterizes the specification. Obviously,
the statement "evacuating the chamber of gases" means only that the gases in the chamber must be removed. We therefore
reject ASM's contention that the phrase includes the act of pushing more gas into the chamber. Additionally, ASM's
reference to the specification fails to acknowledge that the prior art patent to which ASM refers was describing removing a
specific type of gas; namely, excess reactant gas. That process, which involves removing a specific type of gas, is quite
different from evacuating all gases from a chamber.

ASM further asserts that the phrase "evacuating the chamber of gases" should be limited to mean evacuating the chamber of
reactant gases. Nothing in the specification or the claims, however, supports that interpretation. In the first place, the
language of the claim does not limit the type of gas that must be removed from the chamber. Additionally, the structure of
the claim supports the district court's construction. The term "evacuating the chamber of gases" appears three times in claim
1. The last two times, the phrase appears after reactant gases have been inserted into the chamber. However, the first time it
appears is prior to the introduction of any reactant gases. Presumably, there are no reactant gases to evacuate initially or else
the process would have already begun. Therefore, ASM's requirement that evacuation include the removal of only reactant
gases leads to a nonsensical result for the first instance of evacuation. For the term "evacuating the chamber of gases" to be
used consistently throughout the claim, the step must mean evacuating the chamber of all types of gases.

Moreover, nothing in the specification suggests that the patent claims a system that employs selective removal of certain
gases from the chamber. Rather, the specification repeatedly refers to the evacuation of the chamber of gases using a vacuum pump. See, e.g., '365 patent, col. 6, ll. 27-28; id. at col. 6, ll. 33-34. More importantly, the specification distinguishes between evacuation and purging with an inert gas. For example, the Background of the Invention portion of the specification describes both the ALD process that requires "evacuating the chamber with a vacuum pump," id. at col. 1, ll. 56-60, and, separately, the process that uses inert gas to carry away excess reactant gas, id. at col. 2, ll. 12-15. The extrinsic evidence further supports the conclusion that a person of ordinary skill in the art would believe that the term "evacuate" means to pump out the gases. For instance, when ASM was considering purchasing the '365 patent, the company's own Chief Technology Officer stated that the claims of the '365 patent were limited to processes "in which the chamber is pumped down between cycles," and that the claims did not cover the use of a purging gas to remove the reactants. Indeed, the evidence shows that even the inventor of the '365 patent, Dr. Arthur Sherman, considered evacuation to be different from the use of a purge gas. In his notebook for the '365 patent, Dr. Sherman wrote that "an essential requirement of this new process is that it be done in a vacuum chamber, with each step of the process involving dosing and then an evacuation." He distinguished that process from the prior art systems that used a flowing, inert gas to purge the chamber. That distinction is further supported by slides that Dr. Sherman used in teaching a class on ALD. The slides noted that there are two types of ALD systems: "vacuum pumped systems" and "flow purged system." In addition, the slides stated that "flow systems use inert gas purging rather than evacuation."

In sum, the district court was on firm ground in ruling that the term evacuate refers to the removal of gases with a vacuum pump and does not encompass the use of an inert gas to push gases out of the chamber. Because ASM does not contend that Genus's device infringes under that construction, we uphold the district court's summary judgment of noninfringement of the claims of the '365 patent.

ASM asks the Court to construe the following terms from the claims of the '590 patent.

<table>
<thead>
<tr>
<th>Disputed Claim</th>
<th>ASM's construction</th>
<th>Genus's construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>Evacuate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The removal of reactant residues in the vapor phase with the assistance of a pump that is connected to the reaction space.</td>
<td>Reducing the pressure in the reaction space with a vacuum pump to remove gas from the reaction space.</td>
</tr>
</tbody>
</table>

The dispute here is whether evacuation requires the use of a vacuum to suck the reactants out of the reaction space (which the parties often refer to as "pump-down"), or whether it encompasses removal of the reactants by any means, including using another gas to push the reactants out of the reaction space (which the parties sometimes refer to as "purging"). Genus argues for the former construction, while ASM argues for the latter. ASM concedes, in its response to Genus' supplemental claim construction brief, that one common usage of "evacuation" is to describe a pump-down. ASM argues that "evacuation" is also commonly used as a generic term for removal, however, and that this latter definition applies in the context of the '590 patent.

The specification of the '590 patent expressly defines "evacuation."

In the context of the present invention, the term "evacuation" is used generally referring to the removal of reactant residues in the vapor phase. The evacuation of the reaction space can be accomplished by purging the gas volume of the apparatus by means of at least one pumping cycle capable of lowering the internal pressure in the apparatus to a sufficiently high vacuum. When required, the apparatus may be simultaneously filled with an inactive gas which promotes the purging of the reactant residues from the reaction space.

( '590 patent 3:64-4:5.) 1 This definition is somewhat ambiguous. On the one hand, it clearly states that "evacuation" is used generally to refer to removal of reactant gas. The second sentence makes it clear that evacuation can be accomplished by a pump-down. On the other hand, the next sentence does not make it clear whether the use of an inactive gas to purge the reactant gases from the reaction space is part of the evacuation step, or whether it is a separate event that takes place.

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simultaneously with evacuation.

--- Footnotes ---

1 Although the parties often refer to the use of an inert gas to push the reactant gas out of the reaction chamber as "purging," this definition also uses "purging" to describe a pump-down.

--- End Footnotes ---

The language of claim 1 suggests that evacuation is separate from the use of an inert gas to purge the reactant gases from the reaction space. Claim 1 provides:

> evacuating said reaction space between two successive vapor phase pulses by connecting the reaction space to a pump so that substantially all of said reactants remaining in said reaction space and adsorbed on inner walls of said reaction space are removed to a level of less than 1% prior to the inflow of a second pulse of said two successive vapor phase pulses; and

> feeding an inactive gas into said reaction space simultaneously with said evacuating step.

( '590 patent, 11:53-12:4 (emphasis added).) Although claim 1 does not specifically state that the pump must suck the gas out of the reaction space (as opposed to a bellows-like pump that pushes the gas out), the specification makes it clear that only a vacuum-type pump is used. "The invention can be implemented using any suitable pump capable of establishing a sufficient vacuum in the reaction space and having a sufficient capacity." ( '590 patent, 5:44-46.) The parties do not argue otherwise. As the claim language states that feeding the inactive gas into the reaction space occurs simultaneously with the evacuation step, it suggests that using the inactive gas is not part of the evacuation step.

Other language in the patent also distinguishes the evacuation step from the step of introducing an inactive gas to push out the reactant gases. At one point, the specification refers to "the evacuating steps and possible complementing step of flushing with an inactive gas." ( '590 patent 8:12-13.) The claims, of course, require both steps, but this language also supports Genus' contention that evacuation does not encompass the use of an inert gas to push the reactant gases out of the reaction space. The specification also provides that "an inactive gas may advantageously be introduced to the reaction space during the evacuation." ( '590 patent 11:37-39.) This language is a little more ambiguous, but adding the inactive gas during the evacuation does not necessarily mean that the addition of the inactive gas is considered to be part of the evacuation, particularly in light of the other language cited above.

There is also language, however, that can be read to equate evacuation with the use of the inert gas.

Advantageously, the interval between the successive pulses is kept so long as to permit the evacuation of the reaction space using at least a double or triple purging gas volume during the interval between the pulses. To achieve maximally efficient evacuation of reactant residues, the reaction space is purged with an inactive gas during the interval between the reactant pulses and the total volume of gas evacuated from the reaction space during the interval between the reactant pulses amounts to at least 2-10 times the volume of the reaction space.

( '590 patent 5:15-22.) This language arguably supports ASM's argument that "evacuation" simply means removal, and includes using an inert gas. It also can be read, however, to mean only that evacuation is enhanced by the simultaneous use of the inactive gas. In other words, although evacuation is the process of sucking the reactant gases out of the reaction space, that process works more efficiently when the reactant gases are also pushed out from the other side by adding an inert gas into the reaction space.

ASM also argues that the specification states that the apparatus of United States Patent No. 4,389,973 (the '973 patent) is suited to implement the invention. ASM contends that the '973 patent uses a traveling wave reactor in which the reactants are separated by a diffusion barrier of inert gas. If the '973 apparatus is suited to practicing the invention of the '590 patent, then, according to ASM, this shows that "evacuation" in the context of the '590 patent must be broad enough to include the use of an inert gas to clear the reaction space of reactant gases, because that is the only process the '973 patent uses. ASM's argument fails, however, because the '590 patent does not state that the '973 apparatus is suitable for practicing the invention of the '590 patent. Rather, the '590 patent states: "The ALE method is described in the FI patent publications 52,369 and
57,965 and in the U.S. Pat. Nos. 4,058,430 and 4,389,973, in which also some apparatus suited to implement this method are disclosed." ('590 patent 2:15-18.) In context, the reference to "this method" refers back to the "ALE method," and does not refer to the invention of the '590 patent. Thus, this language of the '590 patent simply makes the innocuous assertion that the '973 patent discloses an apparatus for performing ALE, which no one disputes.

Genus points out that the prosecution history distinguishes between evacuation and using an inert gas to push the reactant gases out of the reaction chamber. The patent examiner rejected certain claims as anticipated by, and obvious in light of, U.S. Patent No. 4,975,252 ("the Nishizawa patent"). (Gasner '590 Decl., Ex. 6 (Prosecution History) at 149). The patent examiner took the position that the Nishizawa patent taught the use of an ultrahigh vacuum to remove the reactant gases from the reaction space. Id. The inventors of the '590 patent responded that their invention was different because it used both a vacuum pump and the feeding of an inert gas into the chamber to evacuate the reaction space. Id. at 165. The inventors stated that:

Nishizawa teaches discharging the reactor by evacuating it to an ultrahigh vacuum. This necessarily indicates that a very low pressure must be maintained in the reaction chamber between successive pulses.

In contrast, by using the inactive gas and the evacuation technique taught by the claimed invention, the reactor space is discharged at pressure that is decades above the pressure required by the Nishizawa reference. Thus, the solution taught by the claimed invention can be implemented using pumps that are both smaller and more economical than the pumps employed with conventional methods.

This feature is disclosed in the specification. For example on page 8, lines 24-27, it is stated: "The invention can be implemented using any suitable pump capable of establishing a sufficient vacuum in the reaction space having a sufficient capacity ...." The ultrahigh vacuum required by Nishizawa is more difficult to achieve than the sufficient vacuum as described in the patent specification. Thus, Nishizawa does not teach nor suggest that a reaction space can be evacuated without using an ultrahigh vacuum.

In addition, Nishizawa does not teach nor suggest the use of an inactive or inert gas to be fed into the reactor space between successive pulses. Nishizawa only describes discharging the reactor by evacuating it to an ultrahigh vacuum. In contrast, the claimed invention teaches that by feeding gas into the reactor space between pulses, the inert gas pushes out the previous pulse from the reactor apparatus. Therefore, in contrast to the Nishizawa, an ultrahigh vacuum (i.e., ultra low pressure in the reaction chamber) between pulses is not required by the claimed invention.

Id. By referring to "the inactive gas and the evacuation technique taught by the claimed invention," the inventors appear to exclude the use of the inert gas from the definition of "evacuation." This language also supports Genus' contention that "evacuation" is limited to the use of a vacuum, i.e., a pump-down, and does not encompass purging the reaction chamber with an inert gas.

The fact that a vacuum pump is used does not require, as Genus contends, that there must be a pressure drop in the reaction space during evacuation, however, in the context of the invention of the '590 patent. Evacuation of the reaction space occurs simultaneously with the feeding of an inactive gas into the reaction space. Claim 1 and the specification make it clear that the gases in the reaction space are both pumped out and pushed out simultaneously. If the vacuum pump is stronger than the input feed for the inactive gas, then there will be a pressure drop. If the inactive gas is being fed into the reaction space at the same volume and rate or faster than the vacuum pump is sucking the gases out, however, then the gases will still be removed from the reaction space, but there will be no pressure drop. The inventors' statements to the patent examiner about using a "sufficient vacuum" only distinguished the ultrahigh vacuum, as used in the Nishizawa patent, from the invention of the '590 patent, which can evacuate the reaction space without using an ultrahigh vacuum.

It is true, as a matter of law, that "the prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." Pall Corp. v. PTI Technologies, Inc., 259 F.3d 1383, 1393 (Fed. Cir. 2001) (quoting Standard Oil., 774 F.2d at 452-53). "The public notice function of patents requires that a patentee be prevented from expressly stating during prosecution that the claims do not cover a particular device and then later suing for infringement by that same device." Id. Here, however, the inventors only disclaimed an evacuation process that uses an ultrahigh vacuum. They did not disclaim any other evacuation process. In other words, by stating that their process worked without an ultrahigh vacuum in the reaction space, they did not
disclaim a process that removed gases from the reaction space with a lesser vacuum or a process in which there is no pressure drop during removal of the reactants. As the invention of the '590 patent uses a vacuum pump at the outlet of the reaction space to remove reactant gases, coupled with a simultaneous inflow of an inert gas at the inlet of the reaction space, the pressure in the reaction space depends on the comparative partial pressures of the incoming and outgoing gases, as explained above, which may or may not create a pressure drop in the reaction space.

It is undisputed that all ALD processes operate in a vacuum. (See, e.g., Glew Expert Report at 4; Glew Rebuttal Expert Report at 3.) In all ALD processes, the vacuum pump is always operating so that the reaction chamber is always at a lower pressure than the outside atmosphere. (Glew Expert Report at 4.) Thus, it appears that every flow system includes both a purging gas and a vacuum pump. In order to distinguish flow systems from the system of the '590 patent, it is necessary to distinguish the vacuum used to suck the gases out of the reaction chamber from the ordinary vacuum that is always present in the reaction chamber. The relevant claim language requires "evacuating said reaction space between two successive vapor phase pulses by connecting the reaction space to a pump." ( '590 patent 11:53-55.) It appears to the Court that, in the '590 process, the vacuum pump must increase its suction between vapor phase pulses in order to evacuate the reaction space, that is, the vacuum pump operates at different rates at different times in the process. This does not necessarily create a pressure drop, however, because an inactive gas is simultaneously being fed into the chamber to purge the chamber of reactants. If the increase in suction is met by an identical increase in the flow of the inactive gas, there will be no pressure change in the reaction chamber, yet the chamber will still be emptied of reactant gases.

The parties also point to extrinsic evidence of the meaning of "evacuate" in some of the patents cited in the '590 patent, each of which uses "evacuate" to describe a pump-down. See Brown Decl., Ex. I, United States Patent No. 4,058,430 at 5:67-6:2 ("the reaction chamber being evacuated between consecutive steps by action of a vacuum pump (not shown) which draws the gas out"); Ex. J, United States Patent No. 4,975,252 at 3:33-34 ("evacuating means for evacuating the crystal growth vessel to a [sic] ultrahigh vacuum"); Ex. K, United States Patent No. 4,933,357 at 3:55-58 ("instead of supplying a flushing gas, the chamber may also be evacuated between the supplying of the compound of the element or elements"). The Federal Circuit has held that "prior art cited in the prosecution history falls within the category of intrinsic evidence." Tate Access Floors, Inc. v. Interface Architectural Resources, Inc., 279 F.3d 1357, 1371 n.4 (Fed. Cir. 2002). This intrinsic evidence also supports Genus' position.

Accordingly, the Court concludes from the intrinsic evidence that "evacuation" means removal by a vacuum pump, and does not include the use of inert gas to push the reactant gases out of the reaction space.
technical terms, as opposed to non-technical terms in general usage or terms of art in the claim-drafting art, such as 'comprising.' Indeed, a patent is both a technical and a legal document. While a judge is well-equipped to interpret the legal aspects of the document, he or she must also interpret the technical aspects of the document, and indeed its overall meaning, from the vantage point of one skilled in the art.

182 F.3d at 1309. A majority of the panel in Pitney-Bowes also noted that:

The process of claim construction at the trial court level will often benefit from expert testimony which may (1) supply a proper technological context to understand the claims (words often have meaning only in context), (2) explain the meaning of claim terms as understood by one of skill in the art (the ultimate standard for claim meaning), and (3) help the trial court understand the patent process itself (complex prosecution histories -- not to mention specifications -- are not familiar to most trial courts).

182 F.3d at 1314. Thus, after Pitney-Bowes, it is clear that the Court may consider trustworthy extrinsic evidence, even when the meaning of the disputed terms is clear from a review of the intrinsic evidence. It may not, however, rely on that evidence to contradict the meaning of claim terms that is clear from the intrinsic evidence. Id. at 1308; see also Bell & Howell Document Management Products Co. v. Altek Systems, 132 F.3d 701, 705-07 (Fed. Cir. 1997) (reversing claim construction because the district court relied on expert testimony to construe claim language in a manner that contradicted the clear and unambiguous meaning set forth in the intrinsic evidence).

In AFG Industries, Inc. v. Cardinal IG Co., Inc., 239 F.3d 1239 (Fed. Cir. 2001), the Circuit quoted at length from the deposition testimony of the president of the defendant's company, as a person of ordinary skill in the art, in determining the correct construction of certain claim terms. Id. at 1246. The deposition testimony supported the opposing party's claim construction. The court noted that "this case presents a good example of how extrinsic evidence can and should be used to inform a court's claim construction, and how failure to take into account the testimony of persons of ordinary skill in the art may constitute reversible error." Id. at 1249.

Earlier this year, the Federal Circuit held that "Courts may also use extrinsic evidence (e.g., expert testimony, treatises) to resolve the scope and meaning of a claim term." CCS, 288 F.3d at 1366. There, however, the Federal Circuit found that it did not need to examine expert testimony because the meaning of the term at issue could be determined by resort to the intrinsic evidence and dictionary definitions. Id. at 1368. The Court noted that even if it reviewed the expert testimony presented there, including that of the inventor himself, the expert testimony was not helpful because it was in conflict. Id. The Court noted, however, that the inventor was presumably a person of ordinary skill in the art, and thus suggested that consideration of the inventor's testimony would be proper. Id. This is consistent with the Federal Circuit's earlier decision, Voice Technologies Group, Inc. v. VMC Systems, Inc., 164 F.3d 605 (Fed. Cir. 1999), in which the court held that "an inventor is a competent witness to explain the invention and what was intended to be conveyed by the specification and covered by the claims." Id. at 615. The inventor cannot, however, "by later testimony change the invention and the claims from their meaning at the time the patent was drafted and granted." Id. at 615. Similarly, the Federal Circuit held in Solomon v. Kimberly-Clark Corp., 216 F.3d 1372 (Fed. Cir. 2000) that inventor testimony should not be used to invalidate a patent for indefiniteness under § 112 P 2 because once the patent issues, the claims and written description must be viewed objectively from the standpoint of a person of skill in the art. 216 F.3d at 1379-80. Thus, although inventor testimony, like other extrinsic evidence, may be considered by the Court, it may not be relied upon to contradict the meaning of patent language that is clear from the intrinsic evidence.

Despite this plethora of recent authority holding that the Court may consider trustworthy extrinsic evidence during claim construction, ASM contends that an earlier Federal Circuit decision, Water Technologies Corp. v. Calco, Ltd., 850 F.2d 660 (Fed. Cir. 1988), bars this Court from considering statements made about the patents at issue during the prosecution of later patents. In Water Technologies, the exclusive licensee of two earlier patents argued, during the prosecution of later patents on improvements to those inventions, that the claims of the earlier patents were limited in a certain way. Id. at 667. The Federal Circuit, in a cursory discussion, held: "We see no reason why arguments made by a later attorney prosecuting later patent applications for a different inventor should be used to limit an earlier-issued patent[..]" Id. (emphasis in original). The Federal Circuit noted that claims must be construed in light of the claim language, the other claims, the prior art, the prosecution history, and the specification. Id. (emphasis in original). The court did not even discuss, however, whether it could also rely on extrinsic evidence of the meaning of the claims by persons of ordinary skill in the art. The post-Markman cases cited above make it clear that the Court may, and sometime must, consider such evidence. To the extent that Water
Technologies holds that such statements can never be relevant to claim construction of the earlier patents, it is no longer good law. The law is now clear that the Court may consider trustworthy extrinsic evidence during claim construction, as long as it does not rely on such evidence to construe the claims in a way that contradicts the clear meaning of the claims as determined from a review of the intrinsic evidence.

Genus' expert William Oldham states in his expert report that the term "evacuate," in the semiconductor manufacturing industry, is not normally used to refer to any method of removing gases, but rather is used to refer to the reduction of pressure in an enclosed space to a vacuum. (Oldham Expert Report at 5.) "Specifically, 'evacuate' is used to describe the method in which the materials being moved are being sucked out (as opposed to pushed out or adsorbed onto the walls, for example)." Id. ASM's expert, Alexander D. Glew, does not opine in his expert report on how the term "evacuate" is generally used in the semiconductor manufacturing industry. Instead, he limits his expert opinion to how a person of ordinary skill in the art would interpret the term in the context of the '590 patent. (Glew Expert Report at 7.)

Genus also points to statements made to the Patent Office by patent counsel for ASM's Chief Technology Officer, Ivo Raaijmakers, in connection with a pending patent application. The Patent Office rejected certain claims in that application as obvious in light of the '590 and '365 patents. (Sun '590 Reply Decl. Ex. 2 at 7.) Raaijmakers' counsel filed a Response to Office Action on November 2, 2001, arguing that:

the present invention does not disclose evacuating the excess gas between sequential introduction of reactants. Rather, the present invention describes keeping carrier gas flowing over the substrate and providing concentration pulses of reactant gases in the carrier gas …. There is no evacuation of the chamber between pulses of reactant gases. This is a fundamental difference between the present invention and the references cited [the '590 and '365 patents].

(Id. at 8.)

Even if Suntola [the '590 patent] were combined with Sherman [the '365 patent], the present invention would not be obvious to one of ordinary skill in the art because neither Suntola nor Sherman utilizes a carrier gas that flows through the deposition process. Suntola and Sherman teach away from the present invention because both Suntola and Sherman require evacuation of the chamber between pulses of reactants.

Genus argues that ASM's argument that the '590 patent "teaches away" from the use of "a carrier gas flow that flows throughout the deposition process" because the '590 patent requires "evacuation of the chamber between pulses" is directly inconsistent with ASM's litigation position here that the term "evacuation" in the '590 patent is broad enough to encompass any type of removal, including removal assisted by the use of inactive gas. 3

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3 Genus also argued that ASM should be judicially estopped from taking any position on the '590 and '365 patents that is inconsistent with the argument they made about those patents to the Patent Office in the Raaijmakers application. This argument was based primarily on the fact that the Patent Office had issued a Notice of Allowance on the Raaijmakers application, and thus ASM purportedly had obtained a benefit from its different interpretations of the '590 and '365 patents. As explained above, the representations made to the Patent Office are not inconsistent with ASM's position here. Moreover, this argument is now moot because ASM filed a Request for Continued Examination of the Raaijmakers application on June 14, 2002. The Court is disappointed that ASM failed to bring this to the Court's attention (or to Genus' attention) promptly, for example at the June 17, 2002 claim construction hearing, before the Court and Genus had expended time on a moot issue.

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While there is some tension between ASM's positions regarding the two patents, they are not completely at odds. As ASM points out, the invention described in the Raaijmakers application does not require removal of the first reactant gas from the reaction chamber before the second reactant gas is introduced into the chamber. One of the problems the invention sought to address was the time delay caused by evacuating the reaction chamber between pulses of reactant gases. (Glasner '590 Decl., Ex. 13 at 2:22-26.) The invention described in the Raaijmakers application uses sequential pulses of reactants in a flow of carrier gas, delivered with sufficient intervening delay times to minimize undesirable reaction between reactants in adjacent
pulses in the gas phase. (Gasner '590 Decl., Ex. 13 at 24:1-8.) "The use of reactant pulses separated in time and space in a carrier gas flow significantly increases the speed of processing because intervening chamber pump down steps are not required." (Id. 4:17-19.) In the invention described in the Raaijmakers application, there is no requirement that the reaction chamber be evacuated between pulses. In fact, one of the figures in the application explicitly shows that the first reactant gas has not yet left the chamber when the second reactant gas is introduced. (Gasner '590 Decl., Ex. 13 at 5:7-22; Sun '590 Reply Decl. Ex. 3, Fig. 3B). Thus, the language cited by Genus does not necessarily focus on a distinction between "evacuation" and using a carrier gas to remove reactants from the reaction chamber. It can be read as an attempt to demonstrate that the invention described in the application, unlike the inventions described in the '590 and '365 patents, does not require that each reactant be removed from the reaction chamber before the next pulse of reactant gas enters the chamber.

Genus also points to a statement in Raaijmakers' recent deposition in this case, which Genus contends shows that until this litigation began, Raaijmakers associated the term "evacuate" with "pump-down." Raaijmakers testified:

I've gone through a process where initially I have thought evacuation to mean pump-down, whereas in a period of a year there was mounting evidence that evacuation also included purging. It includes pump-down; it includes purging.

(Sarboraria Supp. Decl. Ex. B at 157:22-158:1.) His purported change of heart was not based on any change in the usage of the term by skilled practitioners in the semiconductor industry, however, and is too akin to a litigation conversion to be entirely persuasive. He also testified equivocally that the use of "evacuate" in different patent applications could have different meanings, and that "I am not sure whether we used the word consistently." (Id. 157:18-20.) Genus points to other recent patent applications filed by Raaijmakers to show that as recently as 2001, Raaijmakers distinguished evacuation from purging. Brown Supp. Decl., Ex. B at P 0080 (describing the use of a gas to purge the reaction chamber, and then noting that "in other arrangements, the chamber may be completely evacuated[,]" id., Ex. C at P 0060 (similar language). The parties do not dispute that Raaijmakers is a person of ordinary skill in the art. This evidence provides some modest support for Genus' position that "evacuation" does not include using a non-reactive gas to purge the reaction chamber of reactant gases.

Countering with its own extrinsic evidence, ASM points to a November 7, 2000 e-mail from Ofer Sneh, who was then a vice president at Genus, and general manager of its atomic layer deposition group. In evocative prose, Sneh wrote that he had just finished a "painful word by word reading" of the '590 patent, and thought that it claimed "the horizontal flow idea with a bunch of obscured engineering solutions." (Sun '590 Reply Decl., Ex. 4.) ASM argues that this statement goes against Genus' contention that "evacuation" must mean using a vacuum pump to pull the reactants from the chamber. Sneh is not opining about the meaning of "evacuate," however, but is discussing the '590 patent as a whole. Each of the claims of the '590 patent requires (1) evacuation of the reaction space by connecting the reaction space to a vacuum pump and (2) feeding an inactive gas into the reaction space simultaneously with the evacuation step. This combination of feeding an inactive gas into the reaction space while pulling the reactants out with a vacuum pump is essentially a hybrid of the vacuum pump-down and horizontal flow methods. ASM also points to Sneh's deposition testimony, but Sneh testified at deposition that "[a] pump-down system is a flow system, too, and it's all in the same direction[,]" (Sun Supp. Decl. Ex. 6 at 65:5-6.) Thus, ASM's contention that when Sneh referred to a "horizontal flow idea," he was necessarily distinguishing that concept from a pure pump-down system is unpersuasive.

ASM also cites the deposition testimony of Carl Galewski, Genus' former Director of Strategic Technologies. In discussing his own patent, United States Patent No. 6,398,954, Galewski was asked to interpret the phrase, "After ALD of the barrier layer 401, the barrier layer precursors are evacuated through the CVD process tool 500." (Sun Supp. Decl. Ex. 5 at 52:11-14.) He testified that "evacuated means removed in this case." (Id. 52:24-25.) When asked whether the precursors could be removed with a pump down step or a purge gas, Galewski responded: "Well, I'm speculating. If -- again, it calls for some speculation, you know, only reading this section; but evacuation can be purging the chamber or the pressure -- I mean pumping the chamber down or maybe a combination of the two." (Id. 53:14-19.) Later in the deposition, when asked whether the precursors could be evacuated with a pump down step, Galewski testified:

You can do that by pumping it down or flushing it with an inert gas or maybe a combination of the two. And they're all commonly used in the industry. Either steps or a combination of the two.

(Id. 57:1-12.) Late in the deposition, on examination by Genus' counsel, Galewski was asked what the word "evacuate" is ordinarily used to mean in the semiconductor industry. (Sarboraria Supp. Decl. Ex. C at 241:24-25.) Galewski responded
that "the ordinary meaning of it would be a pump down." (Id. 242:4-5.) He also testified that he used the term "evacuate" in a broader sense in the section of the patent discussed above. (Id. at 242:6-243:2.) No party has argued that Galewski is not a person of ordinary skill in the art. Thus, although Galewski's testimony supports Genus' position that "evacuate" means "pump-down," it also supports ASM's contention that "evacuation" can be used by persons of ordinary skill in the art as a general term meaning "removal," which can be accomplished by pump-down, purging, or a combination of the two.

In general, the extrinsic evidence supports the Court's conclusion, from reviewing the intrinsic evidence, that evacuation is accomplished by using a vacuum pump to suck the gases out of the reaction space. The vacuum pump does not operate at the same rate throughout the process, as may be the case in a pure gas flow system, but must operate at a higher intensity during the evacuation step. Evacuation does not encompass using an inert gas to push the gases out of the reaction space. There is no requirement that the pressure always drop in the reaction space during evacuation, however, because the claims of the '590 patent require simultaneously feeding in an inert gas to push the gases out of the reaction space.

While the specification makes clear exactly which portion of the ALD device must be evacuated, the evidence is more ambiguous as to what the term "evacuation" means. The district court construed the term evacuation as follows:

Evacuation is accomplished by using a vacuum pump to suck the reactant gases out of the reaction space. Evacuation does not encompass using an inert gas to push the reactant gases out of the reaction space.

ASM contends that this construction of evacuation does not accord with the plain meaning of the term and that it improperly reads limitations from the specification into the claim.

In the first place, ASM asserts, there is no indication in the claim that evacuation requires the use of a vacuum pump. Rather, the claim requires only that the evacuation occur "by connecting the reaction space to a pump"; it does not specify the type of pump used in the evacuation. That argument fails, however, for several reasons. First, it is clear that a person of skill in the art would understand the term "pump" to mean "vacuum pump." ASM's own expert, Alexander Glew, stated that all ALD technology uses a vacuum pump as a necessary component. The specification also supports that interpretation. In describing the invention, the patent discloses a "pump capable of evacuating the reaction space to a vacuum." '590 patent, col. 3, ll. 41-42. Furthermore, the specification states that the "invention can be implemented using any suitable pump capable of establishing a sufficient vacuum." Id. at col. 5, ll. 44-46. Finally, during prosecution, the patentee used "pump" and "vacuum pump" interchangeably, noting that the patent would allow a user to use "pumps that were smaller and more economical than the pumps employed" in the prior art because the patent required only a "sufficient vacuum," rather than an "ultrahigh vacuum." We conclude, therefore, that the district court correctly construed the term "pump" to be synonymous with "vacuum pump."

ASM's main argument on appeal is that the district court erred in construing the term "evacuation" to mean sucking the reactant gases out of the reaction space, and not to include using an inert gas to push the reactant gases out of the reaction space. In support of its argument that the definition of the term "evacuation" is broader than the definition given by the district court, ASM relies on the definition of "evacuation" given in the specification:

In the context of the present invention, the term "evacuation" is used generally referring to the removal of reactant residues in the vapor phase. The evacuation of the reaction space can be accomplished by purging the gas volume of the apparatus by means of at least one pumping cycle capable of lowering the internal pressure in the apparatus to a sufficiently high vacuum. When required, the apparatus may be simultaneously filled with an inactive gas which promotes the purging of the reactant residues from the reaction space.

'590 patent, col. 3, line 64, to col. 4, line 5. ASM argues that the quoted portion of the specification establishes that the term evacuation refers to any process that removes reactant gases from the reaction chamber.

When a patentee defines a term in the specification, that definition ordinarily controls. See Renishaw PLC v. Marposs

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Societa' Per Azioni, 158 F.3d 1243, 1249 (Fed. Cir. 1998); PPG Indus. v. Guardian Indus. Corp., 156 F.3d 1351, 1355 (Fed. Cir. 1998). ASM invokes that principle, but the proposed definition on which it relies does not support its claim construction.

The portion of the specification on which ASM relies states that evacuation can be accomplished by pumping the gas to a "sufficiently high vacuum." The next sentence states that an inactive gas can be used to purge the reactants from the reaction space, but it does not suggest that the purging step is part of the evacuation. Moreover, any doubt on that score is resolved by the language of claim 1, which sets forth evacuation and purging as two distinct steps. For the evacuating step, the claim requires evacuation "by connecting the reaction space to a pump so that substantially all of said reactants remaining in said reaction space and adsorbed on inner walls of said reaction space are removed." The claim then sets forth the purging step as "feeding an inactive gas into said reaction space simultaneously with said evacuating step." The patent clearly requires evacuation through use of a vacuum pump as well as an entirely separate step of feeding an inactive gas into the reaction space.

The distinction between the evacuating step and the purging step is further supported by the prosecution history, which provides a rationale for feeding the inactive gas into the reaction chamber. In distinguishing the invention in the '590 patent over a prior art patent to Nishizawa, the patentee stated that "Nishizawa teaches discharging the reactor by evacuating it to an ultrahigh vacuum. This necessarily indicates that a very low pressure must be maintained in the reaction chamber between successive pulses." The patentee then stated that "[i]n contrast, by using the inactive gas and the evacuation technique taught by the claimed invention, the reactor space is discharged at pressure that is decades above the pressure required by the Nishizawa reference." Thus, the patentee explained, a cheaper "sufficient" vacuum was all that was needed for the invention, rather than a more expensive "ultrahigh vacuum." See also '590 patent, col. 5, ll. 44-46. That explanation clearly illustrates that the patentee regarded evacuation as encompassing the act of discharging the reactant gas to a vacuum. By contrast, the insertion of inactive gas is intended to increase the internal pressure in the chamber to allow for a weaker pump to perform the evacuation. Thus, the introduction of the inactive gas is not part of the evacuation, but is an additional step that makes the evacuation more efficient.

ASM responds by pointing to the applicant's statement in the prosecution history that "in contrast [with Nishizawa], the claimed invention teaches that by feeding gas into the reactor space between pulses, the inert gas pushes out the previous pulse from the reactor apparatus." ASM argues that this statement bolsters its contention that the introduction of inert gases is part of the evacuation step. Additionally, ASM refers to portions of the specification that, when read alone, give the impression that inserting an inert gas is part of evacuation. For instance, the specification states that "the interval between the successive pulses is kept so long as to permit the evacuation of the reaction space using at least a double or triple purging gas volume." '590 patent, col. 5, ll. 16-18.

These arguments are unavailing, however, because when the specification and the prosecution history are read as a whole, it becomes clear that the insertion of inert gas may help render the process of evacuation more efficient, but is not part of the evacuation itself. For instance, the specification states that "the evacuation steps and possible complementing step of flushing with an inert gas also contribute to the efficient removal of molecules." '590 patent, col. 8, ll. 12-14. The specification also states that "an inactive gas may advantageously be introduced to the reaction space during the evacuation." Id. at col. 11, ll. 37-39. It is clear that the patent treats evacuation and the introduction of an inert gas as distinct concepts, which is why claim 1 lists evacuation and the introduction of inert gas as discrete steps. See, e.g., id. at col. 4, ll. 6-28 (listing other uses of introducing the inert gas into the chamber for reasons unrelated to evacuation). We therefore agree with the district court's definition of evacuation.

F. Evaluating

The preamble of claim 1 of the '196 Patent discloses 'a currency counting and evaluation device for receiving a stack of currency bills, rapidly counting and evaluating all the bills in the stack and then re-stacking the bills . . ." '196 Patent, Col. 31, ll. 41-46. Cummins argues that as a word in the preamble, the word "evaluating" should not be given any specific limiting meaning. To the extent it requires limitation, however, Cummins argues that the dictionary meaning of "evaluating" is synonymous with "denominating." Glory argues that this word means both the evaluation of the value of the bill and the
evaluation of the genuine vs. counterfeit bills. The parties agree that any construction of "evaluating" applies to both the '196 Patent and the '806 Patent.

While the word "evaluation" appears only in the preamble of claim 1 of the '196 Patent, the claims of the '806 Patent provide more guidance. The '806 Patent use both "evaluate" and "denominating" in the same independent claim, claim 16. When two terms are used together in the same claim, they are presumed to have different meanings. Bancorp Services, L.L.C. v. Hartford Life Ins. Co., 359 F.3d 1367, 1373 (Fed. Cir. 2004) (use of two terms in "close proximity in the same claim gives rise to an inference that a different meaning should be assigned to each"). Glory's position is consistent with this principle. Additionally, Cummins has claimed a patent for a machine that both (i) determines whether a bill is genuine or spurious, and (ii) attaches a denomination to those bills that the machine finds to be genuine. Given the presence of these two functions, the Court agrees with Glory that "evaluating" encompasses determining for each bill whether that bill's value can be determined.

1. "Excessive Manual Force"

Whether a claim term is sufficiently definite depends on whether the terms can be given "any reasonable meaning." Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1347 (Fed. Cir. 2005). General principles of claim construction apply: intrinsic evidence should guide the court, but courts are authorized to rely on extrinsic evidence as well. Id. at 1348. "When a word of degree is used the district court must determine whether the patent's specification provides some standard for measuring that degree." Id. at 1351 (citation omitted). "The scope of claim language cannot depend solely on the unrestrained, subjective opinion of a particular individual purportedly practicing the invention." Id. at 1350. Thus in Datamize, the claim term "aesthetically pleasing" was declared indefinite, because the term "does not just include a subjective element, it is completely dependent on a person's subjective opinion." Id.

Not all subjective or comparative terms, however, are impermissibly indefinite in a patent claim.

[W]ords of approximation . . . such as "approach each other," "close to," "substantially equal," and "closely approximate" are ubiquitously used in patent claims and [] such usages, when serving reasonably to describe the claimed subject matter to those of skill in the field of the invention and to distinguish the claimed subject matter from the prior art, have been accepted in patent examination and upheld by the court.

Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1310-11 (Fed. Cir. 2003) (citation omitted). "[W]hile ideally, all terms in a disputed claim would be definitively bounded and clear, such is rarely the case in the art of claim drafting." Id. at 1311. When considered in the context of the primary intrinsic evidence and the secondary extrinsic evidence, courts have found terms such as "generally parallel," id. at 1310-11; "substantially constant wall thickness," Verve, LLC v. Crane Cams, Inc., 311 F.3d 1116, 1119-20 (Fed. Cir. 2002); and "substantially uniform," Ecolab, Inc. v. Envirochem, Inc., 264 F.3d 1358, 1367 (Fed. Cir. 2001), to be sufficiently definite in a patent claim.

The term "excessive manual force" is similarly definite. While the term is "mathematically imprecise," Anchor Wall, 340 F.3d at 1310, the meaning of the term is sufficiently clear. The purpose of the invention as described in the specification (to "preclude[ the user from replacing standard steady-burning bulbs with non-standard twinkle bulbs") and the prosecution history (in particular, Sienna's efforts to distinguish its invention from the prior art GE light set) assists in providing a "reasonable meaning" to the claim term "excessive manual force."

The dictionary definition of the word excessive is entirely consistent with the obvious import of the term. "Excessive" is defined as "exceeding a normal, usual, reasonable, or proper limit." Am. Heritage Dictionary (4th ed. 2000). Considered in the context of the intrinsic evidence, the term "reasonably . . . describe[s] the claimed subject matter to those of skill in the field of the invention and . . . distinguish the claimed subject matter from the prior art." Anchor Wall, 340 F.3d at 1311.

Defendants argue that the term "excessive manual force" is too imprecise since not all individuals are equally strong. The defendants are impermissibly raising the standard that is required to meet definiteness; mathematical precision is not required. See id. at 1310. In the context of forcing a light bulb into a socket, the ordinary meaning of the word "excessive" is
Defendants further contend that the clause "notwithstanding the use of excessive manual force to attempt to overcome such interference" is an impermissible mix of statutory classifications. The Federal Circuit has recently held that "reciting both an apparatus and a method of using that apparatus renders a claim indefinite under [35 U.S.C.] section 112," because "a manufacturer or seller of the claimed apparatus would not know from the claim whether it might also be liable for contributory infringement because a buyer or user of the apparatus later performs the claimed method of using the apparatus." IPXL Holdings, L.L.C. v. Amazon.com, Inc., 430 F.3d 1377, 1384 (Fed. Cir. 2005). 3

3 In IPXL, a claim reading "[t]he system of claim 2, wherein the predicted transaction information comprises both a transaction type and transaction parameters associated with the transaction type, and the user uses the input means to either change the predicted transaction information or accept the displayed transaction type and transaction parameters," was held to impermissibly mix both a system and a method. IPXL, 430 F.3d at 1384.


On appeal, Koepnick argues that the district court's decision was based on an erroneous construction of the claim limitation "excising." According to Koepnick, by interpreting "excising" to mean "cutting out" rather than "removing tissue," the court failed to give the contested term its ordinary meaning, as defined in dictionaries and relevant patents and articles. Koepnick also contends that because the claims contain both the words "cutting" and "excising," they should be presumed to mean different things. Koepnick argues that the ordinary meaning of the term "excising" encompasses non-cutting mechanical techniques such as laser ablation and the court unduly narrowed the scope of the claims by importing the word "intact" from the specification into the element "excising a second disk" and relying on the statement in the specification that one advantage of the invention was "reversibility." Koepnick also maintains that its failure to dispute the PTO examiner's statement during prosecution that the invention relates to "cutting" two disks from the eye could not have restricted the scope of the claims because the statement was not directed to any specific claim or the scope of the claims. Finally, Koepnick argues that the failure of the ‘303 patent to describe how to use a laser to remove corneal tissue in a mathematically precise way to achieve emmetropia should not preclude recovery because, at the time the patent issued, the use of lasers in refractive eye surgery, although disclosed in the prior art, had not yet been perfected.

Alcon and B&L respond by essentially repeating the analysis contained in the district court's Claim Construction Order. Alcon and B&L assert that the claim language and specification consistently use "excising" to mean "cutting out," and the prosecution history confirms that understanding because the PTO examiner recognized that the invention required cutting the second disk. Alcon and B&L also note that the ‘303 patent specification contrasts "excising" with removal by laser "ablation" and distinguishes LASIK procedures as prior art. According to Alcon and B&L, the written description and drawings require the "excised" second disk to have a specific shape, which does not occur when eye tissue is removed by laser ablation. Alcon and B&L point out that the "Summary of the Invention" section supports this interpretation because it touts "reversibility" as one of the invention's many advantages over LASIK procedures. Finally, Alcon and B&L argue that the claim limitation "excising" cannot be read to encompass future improvements that were not possible when the ‘303 patent was filed, such as accurate removal of eye tissue with laser ablation.

We agree with Alcon and B&L that the district court properly construed the claim limitation "excising" to mean "cutting
out." Our primary focus in determining the ordinary and customary meaning of a claim term is to consider the intrinsic evidence of record, viz., the patent itself, including the claims, the specification and, if in evidence, the prosecution history, from the perspective of one of ordinary skill in the art. Phillips v. AWH Corp., 415 F.3d 1303, 1312-17 (Fed. Cir. 2005) (en banc). Here, the construction of "excising" that is consistent with the claims, specification, and prosecution history is "cutting out," and thus we give the claim limitation that ordinary and customary meaning.

We begin with the language of the claims. Claim 1 requires "excising a second disk, said second disk being shaped to provide said prescriptive correction." '303 patent, col. 15, II. 13-15. Claim 6 further requires that the second disk must have a "positive or negative meniscus shape." Id. at col. 15, II. 28-30. Because the claims make clear that the excised second disk has a defined shape, the scope of what constitutes "excising" is expressly limited to surgical techniques that create such a defined shape. Koepnick urges a construction of "excising" as "removing tissue." However, that interpretation is inconsistent with the requirements of the claim because it would encompass methods in which the "excised" tissue does not have a defined shape, such as laser ablation. As the district court correctly observed, "ablating with a laser cannot fall within the scope of the claim because the ablated tissue has been vaporized into a gas, and therefore, has no shape." Id. The claim therefore requires a construction of "excising" that excludes laser ablation.

The specification supports that interpretation of "excising" as "cutting out." The term "excising" is unambiguously used to mean cutting with a knife blade in both the "Abstract" and "Summary of the Invention" sections. '303 patent, Abstract; col. 2, II. 31-32. Further, every embodiment disclosed in the patent uses a knife edge to make a cut in the cornea. There is no evidence supporting Koepnick's assertion that "excising" also refers to laser ablation. Indeed, the specification makes clear that LASIK procedures are an existing surgical technique, i.e., that they are not the invention. The written description repeatedly distinguishes the invention from procedures involving lasers. Id., col. 2, II. 1-4; col. 13, II. 9-17. The "Detailed Description" section also contrasts "excising" with laser "ablation," noting that, in the prior art LASIK procedures, a disk is first "excised" before a laser is used to "ablate" the second disk of tissue from the eye. Id., col. 13, II. 9-17.

Moreover, the "Summary of the Invention" section explains that the "invention has many advantages over mechanical keratomes, radial lasers and radial keratectomy. One major advantage is that surgery utilizing the device is reversible . . . by simply replacing the [second] excised corneal disk or by excising another disk from a donor cornea using the same insert as used for the original operation." '303 patent, col. 2, II. 53-60 (emphasis added). Although a disk of tissue cut with a knife edge can be put back onto the eye as described in the specification, a disk of tissue that is vaporized by laser ablation cannot be replaced as contemplated in the specification. We conclude therefore that the specification does not support Koepnick's proposed construction of "excising" as encompassing laser ablation.

The prosecution history further confirms the district court's construction of "excising" as "cutting out." The PTO examiner asserted in the Notice of Allowance of the '303 patent that "the primary reason for allowance is that the prior art of record fails to teach or adequately disclose the steps of cutting two disks from the eye." J.A. at 3246 (emphasis added). Koepnick did not challenge the examiner's characterization of its invention. Indeed, Koepnick concedes that at the time of filing, the inventor did not believe that claim 1 encompassed LASIK procedures. Appellant's Br. at 29 (explaining that "lasers in 1995 could not remove corneal tissue in a mathematically precise way to achieve emmetropia."). Consistent with that understanding, the claims do not describe a surgical method of refractive eye surgery using lasers. Indeed, Koepnick disclaimed the only claim directed to LASIK procedures, claim 13, 3 by filing a statutory disclaimer in the PTO on July 22, 2003. Although we find the timing of the disclaimer on the eve of the lawsuit to be interesting, to say the least, we express no opinion as to the reason why Koepnick decided to disclaim claim 13, and whether it was related to issues of patentability or validity. Irrespective of the reasons for the disclaimer, the result of the disclaimer is to strip the claims of any reference to lasers, even though the technology was discussed elsewhere in the specification. 4 We therefore conclude that the claim language, specification, and prosecution history support a construction of "excising" as "cutting out."

--- Footnotes ---

3 Independent claim 13 reads as follows:

A method of performing refractive surgery comprising the steps of:

placing a keratome device on an eye, said keratome device having an element with surface portion recess the depth epithelium of said eye;
operating said keratome device such that vacuum is applied to said eye urging said eye into contact with said recess;

operating said keratome device in an automatic mode such that a knife edge traverses said element to excise a flap, said knife edge being stopped before said flap is severed;

removing said keratome device;

utilizing a laser to remove corneal tissue to produce a prescriptive correction; and

replacing said flap.

'303 patent, col. 16, II. 41-56 (emphasis added).

4 We have not yet addressed the issue whether a statutory disclaimer filed after the patent was issued is considered as part of the prosecution history during claim construction, and whether that statutory disclaimer may operate during claim construction to preclude a patentee from recapturing subject matter it has surrendered in certain instances. We will not decide that issue here because it is otherwise clear from the claims, specification, and prosecution history that the ordinary and customary meaning of "excising" does not encompass laser ablation.

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Construction of "Excising a Second Disk from Said Eye"

48. The real dispute here centers around the definition of the word "excising". The Court begins its analysis with dictionary definitions of the word.

49. The word "excise" is not a unique technical term in ophthalmology. Dictionary of Ophthalmic Optics does not include a definition of "excise" or "excision". Ex. 209. Non-medical dictionaries define excising to mean "cut out." The Oxford English Dictionary (2d ed., 1989) defines "excise" as to "cut out (a limb, organ, etc.)." Ex. 218. Webster's New World Dictionary & Thesaurus (1996) defines "excise" as to "remove by cutting out." Ex. 220. The Barnhart Concise Dictionary of Etymology (1995) defines "excise" to mean "cut out." Ex. 221.

50. Medical dictionaries define "excising" to mean "cutting out." Dorland's Illustrated Medical Dictionary (28th ed. 1994) defines "excise" as "to cut out" or "off" and defines "excision" as "removal, as of an organ, by cutting." Ex. 207. The American Heritage Stedman's Medical Dictionary (2002) defines "excise" to mean, "to remove by cutting" and defines "excision" to mean "surgical removal by cutting, as of a tumor or a portion of a structure or organ." Ex. 212. The Dictionary of Eye Terminology gives cutting out as a possible definition of "excision". Ex. 164.

51. The Court finds that "to cut out" is the customary meaning of the term excise. The Court further finds that defining excise to mean "to remove tissue" is inconsistent with the intrinsic record. As the Court stated above, the 303 patent consistently uses the term "excising" to mean "cutting out". The Parent and Grandparent Patents are also consistent with the ordinary meaning of "excising" as "cutting out". Further, the 303 Patent distinguishes prior art LASIK and uses the term ablate when referring to removing tissue by vaporization with a laser. Finally, the prosecution history of the 303 Patent is consistent with the ordinary meaning of "excising" as "cutting out".

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -
52. Because the claim requires that the "second disk" have a particular shape, the scope of what constitutes "excising" is expressly limited. "Ablating" with a laser cannot fall within the scope of the claim because ablated tissue has been vaporized into a gas and therefore has no shape. Through the consistent use in the written description of "excise" to describe the action of a mechanical cutting device or method, and by contrasting it with "ablate" to describe the action of an excimer laser, the patentee has confirmed that the definition of "excise", as used in the patent, conforms with the term's ordinary meaning and therefore means cutting out. See Vitronics, 90 F.3d at 1582.

53. If the Court were to construe this claim limitation to include removal of corneal tissue by laser, then the invention's "major advantage" of reversibility is effectively read out of the description. See Toro Co. v. White Consol. Indus., Inc. 199 F.3d 1295, 1301 (Fed.Cir. 1999)(construing claim as limited to a "unitary structure" where the specification describes the advantages of the unitary structure as important to the invention.); see also O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1581 (Fed. Cir. 1997)(limiting claim construction to certain characteristics because the written description distinguished over the prior art based on these characteristics). Here, the patentee stated that a "major advantage" of his invention over refractive techniques using an excimer laser is reversibility, (Ex. 1, Col. 2, ll. 53-59). And in every disclosed embodiment in the 303 patent, reversibility theoretically can be achieved because there is an intact disk that can be replaced on the corneal stroma. On the other hand, when an excimer laser is used, tissue is vaporized and no longer exists and, as a result, that tissue cannot be replaced on the corneal stroma to achieve reversibility.

54. Where more than one claim construction is possible, the Court should not choose a construction that is broad enough to encompass prior art. ACS Hasp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577 (Fed. Cir. 1984). If the Court were to construe the third element of Claim 1 to cover the reshaping of the cornea with an excimer laser, then the patent would be invalidated by the wealth of prior art LASIK procedures. See also SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1343 (Fed. Cir. 2001)(holding that the fact that the written description stated a particular feature that offered advantages over the prior art construction of the claims cannot be read so broadly as to encompass the distinguished prior art.)

55. The Court also finds that the patentee's failure to not dispute the examiner's sole stated reason for allowance -- "that the prior art of record fails to teach or adequately disclose the steps of cutting two disks from the eye" (Ex. 215) provides further support that the term excising should be interpreted to mean "cutting out". The examiner's view of the invention's breadth was restrictive, and the patentee allowed it to stand. The Court considers the patentee's lack of response as a factor in the prosecution history limiting the interpretation of the patent, Elkay, 192 F.3d at 979.

56. Plaintiff attempts to dismiss the examiner's reasons for allowance by citing to 37 C.F.R. § 1.104(c) and to the administrative decision of Ex Parte Yamaguchi, 61 U.S.P.Q.2d 1043 (Bd. Pat. App. & Int. 2001) for the proposition that, when Mr. Koepnick filed is patent application, a patent applicant had no duty to respond to "erroneous" statements in an examiner's statement of reasons for allowance. But irrespective of the duty to respond during the prosecution of the patent, Federal Circuit authority holds that a patentee's acquiescence in the patent examiner's reason for allowance, and the examiner's narrow view of the patentable subject matter, may nevertheless be relied on for purposes of claim construction. The Elkay case stands for the proposition that the Court may consider an examiner's statements in the reasons for allowance to interpret the claim terms. The Court notes that the examiner's statement in Elkay was filed, and the patent issued, during the same period that the version of the PTO rule cited by Plaintiff(37 C.F.R. § 1.104(c)) was in effect and before the examiner's statement was filed in the 303 patent's prosecution. (Ex. 214). In fact, Ex Parte Yamaguchi even cites Elkay as a warning that claim construction inferences may be drawn by a failure to respond to an examiner's statement of reasons for allowance. 61 U.S.P.Q.2d at 1047 n. 4. Thus, the examiner's statement in this case, that "the prior art record fails to teach or adequately disclose the steps of cutting two disks from the eye" and the fact that Plaintiff did not dispute it, may properly be used by this Court in construing the meaning of the term excise.

(5) "executing a clothes untwisting mode"

The parties also dispute the term "executing a clothes untwisting mode," which appears in Claims 1, 3, and 4. LG proposes
construing the term to mean "executing a mode to unbundle [i.e., evenly distribute] clothes." (Chart at 8.) Whirlpool proposes instead that the term be construed to mean "carrying out an operation for separating clothes that are entwined together." (Id.)

Claim 1 states that what is claimed is "[a]n apparatus for determining a twist of clothes being washed in a washer . . . ." (‘474 Patent, col. 9, ll. 43-44.) The apparatus comprises a "clothes twist sensing means," "correlation coefficient operating means," and "a microprocessor for performing a control for executing a clothes untwisting mode . . . ." (Id., col. 9, ll. 45-60.) The summary of the patent states that:

[a]n object of the invention is to provide an apparatus for and a method of determining a twist of clothes being washed in a washer, wherein a sensing signal indicative of the twist of clothes is analyzed, to determine whether the clothes twist signal is a meaningful signal or a noise, so that when the clothes twist signal is the meaningful signal, an operation in a clothes untwisting mode is carried out for minimizing a damage of the clothes . . .

(Id., col. 1, ll. 49-57.) The intrinsic evidence shows that the claimed invention determines whether to carry out an operation for untwisting clothes.

The Court will therefore construe the term "executing a clothes untwisting mode" to mean "carrying out an operation for separating clothes that are entwined together."

1467

"exercise surface"

Claims 3, 4, 13, and 21 of the ‘951 patent refer to an "exercise surface." Precor urges the Court to adopt a means-plus-function construction of this claim element, and argues that the "exercise surface" should be limited to the upper run of the "endless, moveable surface" discussed above. Precor provides no compelling basis for such a limitation.

The Court concludes that the disputed claim element is not in means-plus-function format, but is instead a feature of the "endless, moveable surface" recited elsewhere in the same claims.

1468

14. "Exerting force on said layers with said inflated balloon" requires exerting force with the inflated balloon, other than by balloon inflation, to cause dissection beyond that caused by the step of balloon inflation to create the open working space, such as by the act of moving the inflated balloon.

1469

1. Exit Station (Claims 1 and 21) 1

1 As to all of the terms construed, where the Court has adopted a party's proposed construction, that construction is set forth below without further discussion. Where the Court has adopted one party's construction, but with some modification, or has not adopted either party's proposed construction, an explanation is provided.

Plaintiff argues "exit station" should be construed as "a portion of the processing machine where wafers are moved after processing." Defendant argues "exit station" should be construed as "a place dedicated to the removal of the wafer from the
The Court finds "exit station" is properly construed as "a portion of the processing machine where wafers are moved after processing and from which said wafers exit the processing machine." 2

2 Unless otherwise indicated, the parties' respective proposed constructions as set forth herein are taken from the Joint Claim Construction Statement filed May 1, 2006.

The Court has not adopted either party's proposed construction. Plaintiff's proposed construction is overly broad because it does not require that wafers "exit" from the "exit station." Defendant's proposed construction is too narrow; assuming, arguendo, the "exit station" described in the specification is "dedicated" to the removal function, defendant fails to show why the claims are limited to the preferred embodiments.

Accordingly, the Court construes the term "expand" (and its variations) to mean: "to enlarge from a first to a second larger dimension."

8. "Expand" and variations.

Medtronic contends that the Court should construe this term, and its variations, to mean "enlarge from a first to a second larger dimension." Medtronic's proposed construction is in accord with the plain meaning of the term "expand." See, e.g., Webster's Ninth New Collegiate Dictionary at 436 ("to open up; to increase the extent, number, volume or scope of"). Gore, in contrast, argues that the Court should construe this term, and its variations, to require that the device expanded is a "low memory metal stent," which is expanded by a balloon rather than by its own resilience. For the reasons previously stated, the Court rejects Gore's proposed construction.

The Court finds further support for its conclusion from the claims of the '062 Patent, which do not contain the "balloon-expandable" limitation proposed by Gore. In contrast, dependent claim 2 of the '219 Patent does contain such a limitation, whereas independent claim 1 of that patent, does not. (See Bianrosa Decl., Ex. 6 ("219 Patent, 8:2-I 1.) Similarly, dependent claim 15 of the '828 Patent requires the use of a balloon, whereas claim 14 of the '828 Patent, from which claim 15 depends, contains no such limitation. (828 Patent, 8:29-59.) Moreover, the use of the balloon in the dependent claims is the only meaningful distinction from the independent claims. Thus, the presumption of claim differentiation weighs against Gore's proposed construction. See SunRace Roots, 336 F.3d at 1303.

Accordingly, the Court construes the term "expand" (and its variations) to mean: "to enlarge from a first to a second larger dimension."

"Expandable surface element"

Cytyc's proposed construction
(no construction required)
or
A device that can be expanded or inflated, such as an expandable cage or an inflatable balloon.

Xoft's proposed construction
Deflated balloon or collapsed cage.
Xoft's basic argument is that "expandable surface element" must be a deflated structure because once something is fully inflated, it is no longer expandable. Xoft also points out that part (d) of claim 1 refers to the "isodose profile" being "substantially similar in shape to the expandable surface element" without specifying whether the expandable surface element is fully expanded. It is apparent that the patentee intended "expandable surface element" to refer to a structure whether it was fully inflated or not. Xoft's proposed construction would have this element wink out of existence at full inflation, leaving the "outer spatial volume" unbounded and giving the "isodose profile" no shape. The court agrees with Cytyc that no construction of the term is necessary.

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**Claim Language** | **Court's Construction**
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"expandable surface element" | (no construction needed)

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1472

a. "expanding the filter"

The phrase "expanding the filter" appears as part of a separate method step in claim 1. In pertinent part, claim 1 provides 

"[a] method for deploying a percutaneous medical instrument, comprising steps of: . . . expanding the filter downstream of the region of interest." Boston Scientific proposes that the phrase "expanding the filter" is readily understandable and needs no further construction. ev3 argues that the phrase should mean "expanding the filter by some additional action after and in addition to withdrawing the sheath." The Court declines to insert a limitation requiring manual action into the phrase "expanding the filter" and concludes that the phrase need not be construed.

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6 Likewise, the phrase "expanding the filter" in the '505 Patent need not be construed.

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1473

C. Term Two

As noted above, the second disputed claim term is "expands to conform to the shape and diameter of the inner lumen." As, expand, conform, shape, and diameter are common words, the ordinary meaning of the phrase is readily apparent to the Court. The phrase at issue is part of a broader claim which states that "a fragmentation member . . . automatically expands to conform to the shape and diameter of the inner lumen of the vascular conduit upon deployment of the fragmentation member." 191 patent Cl. 1. The ordinary definition of 'expand' is "to open up" or "to increase the extent, number, volume or scope of." Webster's New Collegiate Dictionary 436 (Merriam-Webster, 1986). To 'conform' is "to give the same shape, outline or contour to" or "to be similar or identical." Id. at 276. Thus, the expanding fragmentation member opens up to have the same shape, outline or contour as: (1) the diameter; and (2) the shape of the inner lumen. The specification states that the benefit of the invention is that it can accommodate for changes in the dimensions' of the vessel caused by the presence and removal of a thrombus in a three-dimensional vessel. 191 patent Col. 1 Ln. 62-66. Accordingly, the phrase describes the ways in which the fragmentation member changes to be the same as the inner lumen.

As a diameter is a chord passing through the center of a circle, diameter relates to the fragmentation member's expansion in a horizontal cross-section of a vessel. Thus, expanding to conform with the "diameter" means that the fragmentation member, looking at a cross-section, expands in such a way that it contacts the inner lumen in all directions and adjusts for the presence of a thrombus. That is, if the thrombus makes the vein less circular the fragmentation member compensates so that it touches the perimeter of the horizontal cross-section regardless of whether it forms a circle.

As claim components should not be interpreted to be redundant, Boeing Co. V. U.S., 57 Fed. Cl. 22, 28 n9 (Fed. Cl. 2003) (citing Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 93 F.3d 1572, 1578 (Fed. Cir. 1996)), conforming to the "shape"
relates to a different function of the fragmentation member. Conforming with the shape refers to the capability of the
fragmentation member to automatically adjust to remain in contact with the sides of the inner lumen along its length, i.e. a
'vertical' cross-section. See 191 patent Col. 3 Lns. 4-9 (describing a three dimensional basket expanding and applying
pressure against the thrombus). Indeed, as the specification notes that the device conforms to the inner dimensions of the
vessel lumen, the Court concludes that the device expands to be similar to the lumen in three dimensions. Id. Col. 2 Lns 65-
66. This means that if the vessel curves, then the fragmentation member curves and if a thrombus exists, then it
automatically expands to compensate for the varying size of the thrombus along the length of the vessel. Conforming to
the shape of the inner lumen means that the fragmentation member conforms to the diameter across many horizontal cross-
sections at once even though the individual cross-section diameters may vary. That is, looking at a cross section along the
'length' of the vessel, the fragmentation member conforms to that shape.

Datascope points the Court to Nystrom v. TREX Co., Inc., 424 F.3d 1136 (Fed. Cir. 2005), where the Court sought to define
the meaning of the noun, "board." That Court noted that the descriptions in the specification informed the construction of
the term "board" and to what it referred. The phrase at issue here, however, involves only function, there is no indication in
the claim or elsewhere that this particular phrase defines or somehow limits the structure which accomplishes that function.
The structure is left to the discussion above construing the term "fragmentation member." Accordingly, the phrase "expands
to conform to the shape and diameter of the inner lumen" means that the fragmentation member in the 191 and 551 patents
and the distal end in the 704 patent expands and adjusts to remain in contact with the inner lumen in three dimensions along
its length and width.

6. expansion chamber

Rose Art construes "expansion chamber" to mean "a concave structure at the outlet orifice of the nozzle that is designed to
accelerate the exiting stream from the airbrush." (Def. Pre-Markman Hr'g Br. at 41.) P&M agrees with this construction
except in so far as it imports an unnecessary functional limitation, "accelerating the exiting stream from the airbrush," from
the specification. 6 (Pls. Supp. Br. at 22-23.) The Court cannot add functional limitations appearing only in the specification
to the construction of the disputed claim term. Electro Med. Sys., 34 F.3d at 1054. Accordingly, the term "expansion
chamber" is construed to mean "a concave structure at the outlet orifice of the nozzle." Since the entirety of the intrinsic
evidence with regard to this term is not ambiguous, the Court did not consider the extrinsic evidence submitted by the
parties with respect to this term.

Footnotes

6 The specification describes the function of the expansion chamber as follows: "as the air enters and passes through the
expansion chamber it accelerates thereby inducing a swirling motion which ensures effective removal of liquid particles
from the nib 14 of the pen 2." ('300 patent, col. 3, ll. 32-38.)

End Footnotes

1. Construction

The parties dispute the meaning of the word "expelling" in claim 15; Smith & Nephew construes the term to mean pressure
that removes the anchor member from the needle, while Biomet appears to interpret the term to require the use of an
expelling member to propel the anchor member from the needle.

At oral argument, Biomet expanded its analysis of claim 15. Biomet asserted that "expelling" comes from within the
apparatus, not from some external means. A review of the specification, according to Biomet, supports this interpretation:
"[a] tube (16, 55) [that] fits within the needle (14, 54) and is pushed toward the needle tip to expel the anchor member (10, 50) into or behind the tissue to be manipulated or anchored." Ex. A, Abstract.

Smith & Nephew replies that Biomet is trying to read the disclosed embodiments into the claims. According to Smith & Nephew, Biomet's definition of "expelling" means "by the expulsion member," as in the preferred embodiments of the 691 patent. However, there is no mention of an expulsion member in the claim. The term "expel" was not given any particular meaning in the specification or in the prosecution history, and does not involve a term of art; it must be construed using the widely accepted meaning of the term.

According to Smith & Nephew, dictionary definitions suggest that "expel" means removing the anchor member from the needle by force, or forcing the anchor member out of the needle.

I agree with Smith & Nephew that Biomet's construction of the claim improperly inserts "by the expulsion member" into the claim. The claim calls for the expelling of the anchor member, but does not specify how that is accomplished. Although throughout the written description and in all of the embodiments, the anchor member is expelled from the hollow member in only one way-by the expulsion member, "this court has expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004). Since the patent does not in any way restrict the scope of the coverage, I do not read into the claim a requirement that the anchor member must be expelled by an expulsion member.

In addition, the term "expelling" is presumed to have its ordinary and customary meaning, unless the patent has clearly set forth a definition that is different from the term's ordinary and customary meaning. The patent is silent with respect to the meaning of "expel." Dictionaries almost uniformly define "expel" to mean to force out, eject, to drive out, or dislodge. See American Heritage Dictionary 644 (3d ed. 1996), Merriam Webster's Collegiate Dictionary 408 (10th ed. 1996), Webster's Third New International Dictionary 799 (1993), Webster's New World College Dictionary 478 (3d ed. 1996).

I find "expelling the anchor member" to mean that the anchor member is forced out, ejected, driven out or dislodged from the "hollow member."

--- Footnotes ---

15 Card USA correctly noted during the hearing that Fiala narrowed Claim 12 to require that the magnetic strip be exposed in order to overcome prior art. Tr. at 32-35. Therefore, there is no doubt that patent '909 excludes products covered by the prior art, where the magnetic strip lies unexposed within the boundaries of the package.

16 Based on its detailed and conscientious review of the record, the Court finds that Card USA does not advance a particular construction of this phrase of Claim 12. On the contrary, Defendant agrees with Plaintiff that Claim 12 requires that the "card having a data-encoded strip must project from some definable ascertainable periphery or outer perimeter of the package or panel holding the card." Tr. at 31. Instead, what Card USA actually asks the Court to do is to identify a particular point in time when the magnetic strip must be exposed. See Tr. at 34 (where Card USA argued "this flap [the Tracfone flap] means quite a bit. You have to look at the structure as it is made, as it is initially manufactured, and that if its manufactured to look like Hill and McIntire, it cannot fold. It does not then have this outer perimeter that was incorporated as a limitation at the end of the patent examination process for the express purpose of overcoming the references to Hill and McIntire.")

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The Court declines Card USA's request. Defendant's argument goes to the heart of the infringement claim. The language of Claim 12 does not specify particular time when the magnetic strip must be exposed, or demand that one be set. Thus, the Court will not read a time limitation into the text of Claim 12. Card USA must wait until the second stage of the analysis to raise this argument.

For instance, the Court concludes that the term "exposed" has its ordinary meaning of open to view, not shielded or protected. Webster's at 438. Similarly, the "at least" portion of the phrase takes its ordinary meaning to mean at a minimum. Id. at 756. Combined, the phrase requires that, at a minimum, a portion of the data-encoded strip must be open to view.

Additionally, the language of Claim 12 requires that the magnetic strip be "displaced externally". As with the previous terms, the word displaced takes its ordinary meaning. Id. at 365 (defining the word displace as "removing physically out of position"). The card must be displaced externally, meaning outside, the perimeter of the package. Id. at 440. The card is displaced externally remote "from the outer perimeter of said first panel." The term outer perimeter is used in its usual and customary sense to define the outer boundary. Id. at 874. In this case, the limit of the first panel or the border of the package.

The final requirement details the exact position of the card. Claim 12 demands that the card be placed in a direction "substantially parallel to the plane of said first card." All the terms in this phrase adopt their ordinary meaning. The Court agrees with Fiala that "there is no constraint placed [in this language] as to whether the first panel is coplanar with, or above, or below the first card, only that a portion of the data-encoded strip is outside a portion of the outer perimeter of the first panel in a direction substantially parallel to the plane of the first card." Pl.'s Brief at 25. All that is required is that the data-encoded strip be placed in a position as to be lying parallel to the edge of the package. The specifications confirm this interpretation. All the drawings depict an exposed card with an exposed magnetic strip, where the strip is parallel to the edge of the package. See U.S. Patent, Figs. 1, 5, 8, 12, 15, 20, 21, 27, 31, and 33.

In sum, the second subparagraph of Claim 12 requires, at a minimum, that a portion of the magnetic strip on the card be open to view, and that this magnetic strip be parallel to one of the edges of the package.

C. Terms in the '448 Patent

1. The term "exposing said food product to infrared energy" in claims 12 and 22 requires no construction. Cooper's proposed construction is "heating all of the outer surface which surrounds the food product by exposing the food product to infrared energy." Dkt. # 61-2, at 28. Unitherm argues that this term does not require construction or, in the alternative, proposes "exposing the food product to radiant energy in the infrared range." Dkt. # 60, at 22.

Again, Cooper attempts to read a limitation into the claims by requiring that all of the outer surface be exposed to infrared energy. This would directly contradict further language in claim 12, which describes a process for surface pasteurizing by continuously conveying a food product through an infrared oven "such that substantially all of said outer surface of said food product is directly irradiated with [ ] infrared energy." '448 Patent, col. 5, lns. 65-67 (emphasis added). "Substantially all" simply does not mean "all." The Court will not read the modifier "substantially" out of the claim. Further, Cooper's proposed construction would render the method of claim 22 impossible. Claim 22 is for a method of surface pasteurizing a food product by exposing it to infrared energy by continuously conveying said food product on a carrying run through an infrared oven. Id. at col. 6, lns. 38-43. The portion of the product's surface that rests on the carrying run would not be exposed to infrared energy. Therefore, "exposing said food product to infrared energy" cannot mean "exposing all of the food product to infrared energy."

The Court further finds that the term "infrared energy" does not require construction.
c. "Exposure"

Claim 1 recites:

the first blade defining a blade edge nearest the guard having a negative exposure not less than -0.2 mm, and the third blade defining a blade edge nearest the cap having a positive exposure of not greater than +0.2 mm, said second blade defining a blade edge having an exposure not less than the exposure of the first blade and not greater than the exposure of the third blade.

777 Patent col.4 11.7-14 (emphasis added). Claim 1 thus defines each of the "first, second, and third blades" in part by the term "exposure."

The specification contains an explicit definition of the term "exposure."

The blade exposure is defined to be the perpendicular distance or height of the blade edge measured with respect to a plane tangential to the skin contacting surfaces of the blade unit elements next in front of and next behind the edge. Therefore, for the three-bladed blade unit of the invention, the exposure of the first or primary blade is measured with reference to a plane tangential to the guard and the edge of the second blade, and the exposure of the third or tertiary blade is measured with reference to a plane tangential to the edge of the second blade and the cap.

777 Patent col.1 11.50-59 [hereinafter "the Specification Exposure Definition"]. In addition, the specification illustrates the progressive increase in blade exposure in Fig. 2 to the 777 Patent:

"FIG. 2 shows a schematic representation of a transverse cross-section through the preferred embodiment." 777 Patent col.2 11.60-62. As illustrated, the blade unit "has a frame 1 defining a guard 2 and a cap 3. As shown the cap comprises a lubricating strip 4 mounted on the frame. Carried by the frame are primary, secondary and tertiary blades 11,12,13 having parallel sharpened edges." Id. col.3 11.3-8. In the Fig. 2 embodiment, the primary (11), secondary (12) and tertiary (13) blades have exposures of -0.04 mm, zero, and +0.06 mm, respectively. See id. col.3 11.42-50.

The parties disagree on how the Court should construe the term "exposure." At issue is how "the exposure of the third or tertiary blade is measured with reference to a plane tangential to the edge of the second blade and the cap." Id. col.1 11.57-59. The Court addresses the intrinsic evidence first and refers to Fig. 2 and its labels in its analysis.

Gillette contends that the "exposure" of the third blade (13) is measured by drawing a plane tangential to the edge of the second blade (12) and the skin contacting surface of the cap lip, which is the skin contacting surface both closest to the third blade (13) and part of the cap (3). Gillette bases this construction on the phrase "plane tangential to the skin contacting surfaces of the blade unit elements next in front of and next behind the edge." Id. col. 1 11.52-53 (emphasis added).

Schick asserts, however, that the "exposure" of the third blade (13) is measured by drawing a plane tangential to the edge of the second blade (12) and the "topmost boundary" of the cap (3), which Gillette concedes could include the lubricating strip (4). Therefore, under Schick's proposed construction, if in Fig. 2 the lubricating strip (4) were constructed so that it extended vertically above plane P and the cap (3) remained unchanged, the "exposure" of the third blade (13) would be measured by drawing a plane tangential to the edge of the second blade (12) and the "topmost boundary" of the lubricating strip (4). 1 Schick bases this construction on a different interpretation of the same phrase used by Gillette: "plane tangential to the skin contacting surfaces of the blade unit elements next in front of and next behind the edge." Id. col.1 11.52-53. But under Schick's interpretation, "next in front of and next behind" refers to "the blade unit element," and "the skin contacting surface" means the entire portion of "the blade unit element."

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Based on the intrinsic evidence, the Court finds that the term "exposure" is ambiguous. The phrase "next in front of and next behind" of the Specification Exposure Definition could modify "the skin contacting surfaces" (as Gillette contends), "the blade unit elements" (as Schick contends), or both "the skin contacting surfaces" and "the blade unit elements" (which would essentially be the same as Gillette's proposed construction). The dashed line that measures the "exposure" of the third blade (13) in Fig. 2 of the 777 Patent supports both proposed constructions because the plane touching the cap lip also touches the lubricating strip. Aside from the specification, none of the claims defines the term "exposure," and the parties have pointed to nothing in the prosecution history of the 777 Patent pointing in either direction. Therefore, the extrinsic evidence becomes critical for the Court to construe the term "exposure."

Pointing to dictionary definitions, Schick contends that the term "the skin contacting surface" means the entire portion of a blade unit element's skin contacting surface. (See Defs.' Markman Br. 12.) This definition would support Schick's proposed construction of the term "exposure" even if, as asserted by Gillette, the phrase "next in front of and next behind" of the Specification Exposure Definition modifies "the skin contacting surfaces." If the "exposure" of the third blade (13) were measured by drawing a plane tangential to the edge of the second blade (12) and the entire portion of the cap's (3) skin contacting surface, the dictionary definitions of the words "tangential" and "surface" would direct the plane to be drawn to the "topmost boundary" of the cap (3). See American Heritage College Dictionary (2d ed. 1982) (defining the word "tangential" as "of . . . or moving along or in the direction of a tangent," the word "tangent" as "making contact at a single point or along a line; touching but not intersecting," and the word "surface" as "the outer or the topmost boundary of an object").

The extrinsic dictionary definitions, however, do not resolve the ambiguity of the term "exposure." The crux of Schick's argument is that the use of a definite article in the term "the skin contacting surfaces" signifies that each blade unit element has one and only one skin contacting surface: "the' signifies that the phrase refers to the entirety of the blade unit element's skin contacting surface." (Defs.' Markman Br. 12.) The pertinent excerpt of the Specification Exposure Definition states, however, "plane tangential to the skin contacting surfaces of the blade unit elements next in front of and next behind the edge." 777 Patent col.1 11.52-53 (emphasis added). This language is ambiguous because it is unclear whether the plural word "surfaces" refers (a) to multiple surfaces on the same blade unit element or (b) to the combination of the singular "surface" on the blade unit element "next in front of" the edge and the singular "surface" on the blade unit element "next behind the edge." Therefore, Schick's argument based on extrinsic dictionary definitions is not conclusive.

More persuasively, Gillette points to extrinsic evidence in the form of another patent, deposition testimony from Schick's own expert, and Schick's own Quattro production specification as demonstrating that persons of ordinary skill in the art understand the term "exposure" under Gillette's proposed construction. Specifically, U.S. Patent No. 3,660,893 (filed Mar. 24, 1970) (issued May 9, 1972) ("the Welsh Patent"), which the 777 Patent cites as a reference, defines the term "exposure" as "the perpendicular distance from the cutting edge to the plane tangent to the skin-engaging surfaces disposed in front of and behind the cutting edge." Welsh Patent col.4 11.53-55. While Schick's briefs attempt to distinguish the Welsh Patent as defining a different "protocol" for measuring "exposure" based on the different language used, Schick's own technical witness, William Vreeland, testified that he understood that the Welsh method of measuring "exposure" was the same method disclosed in the 777 Patent. (Pls.' Surreply to Defs.' Markman Br. Ex. 1.) In addition, Schick's own production specification for the Quattro razor illustrates that in measuring the "exposure" of the blade closest to the cap, a plane is drawn tangent to the cap lip, which is the skin engaging surface next behind the blade as Gillette contends. The plane is not drawn tangent to the cap or the entirety of the cap's skin engaging surface as Schick contends. (See Pls.' Ex. 39.) This extrinsic evidence thus reveals that persons of ordinary skill in the art understand the term "exposure" under Gillette's proposed construction.

Therefore, the Court construes the term "exposure" according to the explicit definition of the specification, where the phrase "next in front of and next behind the edge" modifies "the skin engaging surfaces." With regard to the "exposure" of the third blade (13), the Court adopts Gillette's proposed construction, where the plane is tangential to the edge of the second blade (12) and the skin contacting surface that is both closest to the third blade (13) and part of the cap (3).
C. "Exposure to the Smoke Cooled to Between 0 [degree] and 5 [degrees] C."

Additionally, TPI and HISI disagree about the meaning of the Yamaoka Patent's claim to the process of "smoking the tuna meat at extra-low temperatures by exposure to the smoke cooled to between 0 [degree] and 5 [degrees]." HISI argues that this phrase should be construed so as to limit the Yamaoka Patent to processes in which the smoke is first cooled, and then the tuna is exposed to the already-cooled smoke. It argues that the Yamaoka Patent does not extend to cover a process by which the tuna is exposed to smoke, and then both the tuna and the smoke are simultaneously cooled to between 0 [degree] and 5 [degrees] C. TPI argues, however, that its claim should not be so limited and that the Yamaoka process does not require that the smoke be cooled prior to its exposure to the tuna.

TPI's position is contradicted by the plain language of the claim itself. First, the use of the definite article "the" in "the smoke cooled to between 0 [degree] and 5 [degrees] C" indicates that it is some particular smoke, not smoke in general, which is being referred to in this step. The only plausible referent for "the smoke cooled to between 0 [degree] and 5 [degrees] C" is the smoke discussed in the preceding step of the claim, which describes "cooling the smoke passed through the filter in a cooling unit to between 0 [degree] and 5 [degrees] C." Claims can require that their steps be performed in a certain order where "the sequential nature of the claim steps is apparent from the plain meaning of the claim language and nothing in the written description suggests otherwise." Interactive Gift Exp., Inc. v. Compuserve Inc., 256 F.3d 1323, 1342 (Fed. Cir. 2001). That is the case here. Smoke is cooled to between 0 [degree] and 5 [degrees] in one step; the subsequent step then describes how "the smoke cooled to between 0 [degree] and 5 [degrees]" is exposed to the fish.

Moreover, even disregarding the presence of the definite article "the," the use of "cooled" to modify "smoke" indicates that the smoke has already been cooled before the fish is exposed to the smoke. In other words, even if the claim had been written as "exposure to a smoke cooled to between 0 [degree] and 5 [degrees] C," it would still describe only a process in which the smoke has already been cooled prior to exposure. "Cooled" is a participial adjective that modifies the word "smoke." It is formed from the past participle of cool, which is "cooled," and then used as an adjective rather than a verb. Because it is derived from the past participle, rather than the present participle, the use of "cooled" as an adjective indicates that the action has already taken place or already been completed. Here, that means that the smoke has already been cooled to a specific temperature, namely, to between 0 [degree] and 5 [degrees] C.

With these principles in mind, we turn to the appropriate construction of one of the disputed terms. We turn to the third disputed limitation, that of "smoke cooled to between 0 [degrees] and 5 [degrees] C." TPI argues that the district court erred by construing that limitation as requiring a process that first cools the smoke and later applies the cooled smoke to the tuna. According to TPI, under the language of the claim, the smoke can be applied to the tuna first, and then cooled to the stated temperature range. In support of that interpretation, TPI notes that the "smoke cooled" limitation does not introduce the smoke using the word "said," which is traditionally used by claim drafters to reference previously-mentioned limitations. Here, the claim instead refers to the smoke as "the smoke cooled," which, in TPI's view, introduces a new element to the claim.

HISI, in contrast, urges us to affirm the district court's construction which requires the smoke to have been cooled before exposing it to the tuna. HISI interprets the phrase "the smoke cooled" as referring to the smoke filtered in the previous step of claim 1's method. According to HISI, the use of the past tense "cooled" precludes any reading that would permit the cooling and smoking steps to be performed simultaneously or in reverse order. Furthermore, HISI argues, the specification of the '619 patent confirms the order of the cooling steps in the smoking process.

We agree with HISI that to infringe the '619 patent, a method must cool the smoke before the smoke contacts the tuna. The plain language of claim 1 demonstrates that the district court was correct in placing a temporal limitation on the steps of the smoking method. As the district court noted, this case is one in which the "sequential nature of the claim steps is apparent
from the plain meaning of the claim language and nothing in the written description suggests otherwise." Tuna Processors, 2007 U.S. Dist. LEXIS 77396 at *19 (quoting Interactive Gift Exp., Inc. v. Compuserve, Inc., 256 F.3d 1323, 1342 (Fed. Cir. 2001)).

Claim 1 describes a multistep process of creating smoke within a particular temperature range and then cooling that smoke to another temperature range. In each step of the method, the smoke is referenced by using a past participle describing the action that occurred in the previous step. To illustrate this, the steps of the '619 patent are reproduced below with the smoke references underlined:

burning a smoking material at 250[degrees] to 400[degrees] C. and passing the produced smoke through a filter to remove mainly tar therefrom;

cooling the smoke passed through the filter in a cooling unit to between 0[degrees] and 5[degrees] C. while retaining ingredients exerting highly preservative and sterilizing effects; and

smoking the tuna meat at extra-low temperatures by exposure to the smoke cooled to between 0[degrees] and 5[degrees] C.

In the first step of claim 1, the smoke is "produced" by burning a smoking material. In that same limitation, the smoke is passed through a filter. The smoke filtration aspect of the first step, which must occur after the smoke is produced, refers to the smoke as "the produced smoke." The use of the past participle confirms that the smoke must be produced prior to being filtered. The second step of claim 1, the cooling step, refers to the smoke as "the smoke passed through the filter." Again, the use of the past participle "passed" leads to the conclusion that the cooling of the smoke occurs after the smoke has passed through the filter. In both the first and second steps, the smoke from a previous limitation is referenced using a past participle, indicating that the previous limitation must have occurred prior to the present limitation. In other words, "the smoke produced" must have been produced prior to filtration, just as the "smoke passed through the filter" must have been filtered prior to being cooled. In the same manner, the use of the past participle in "the smoke cooled" in the disputed third step requires that the smoke have been cooled prior to contacting the tuna meat for infringement to occur.

Nothing in the specification dissuades us from reading a temporal limitation in the third step of claim 1. Indeed, the specification confirms the appropriateness of such a temporal limitation. The second step of claim 1 states that the smoke is cooled in a "cooling unit." '619 Patent, Cl.1. The Summary of the Invention of the '619 patent instructs that the smoke from the "smoke-cooling unit" is exposed to the tuna in a separate location, "a smoking chamber." Id. col.1 ll.63, 65; see also id. fig.1, col.4 ll.13-14 (drawing of separate locations for the smoking chamber and smoke-cooling unit). The presence of two distinct locations for the cooling step and the exposure step eliminates the possibility of simultaneous cooling and exposure. The Summary of the Invention further indicates that the smoking chamber is where pieces of tuna are placed together and "exposed to smoke from the smoke-cooling unit." Id. col.1 ll.66-67. Thus, the smoke must have been cooled prior to being introduced into the smoking chamber. Numerous other references in the specification confirm this sequential ordering of steps. See id. col.3 ll.33-40 (teaching that the smoke from the smoke-cooling unit is "brought into contact" with fish in the smoking chamber); col.4 ll.66-col.5 l.1 ("The smoke-cooling unit 3 delivers the smoke cooled to between 0[degrees] and 5[degrees] C. through the pipe 32 to the smoking chamber 4.").

TPI's argument that the use of the definite article "the" in the third step somehow indicates that the smoke used in that step is different from the smoke in the previous step is without merit. As demonstrated above, all of the steps of claim 1 clearly refer to the same smoke. There is nothing in the claims or specification of the '619 patent that would indicate that smoke different from the filtered and cooled smoke of the first and second steps is introduced in the last step of the method. The '619 patent is concerned with creating smoke having a particular temperature, preservative ability, and flavor in order to optimally cure tuna fish. TPI's claim that a new type of smoke is introduced during the last step of the process runs contrary to the entire purpose and design of the '619 patent and its claims. It simply is an attempt to cloud the issue.

Furthermore, TPI's claim drafting argument misstates traditional claim drafting practice. Indeed, the introduction of a new element is accomplished through the use of an indefinite article, not through the use of a definite article. See, e.g., Robert C. Faber, Faber on Mechanics of Patent Claim Drafting, App. D-1 (6th ed. 2008) ("the definitive article THE is used to refer to an ELEMENT which has been established earlier in a claim."); see also 2 Manual of Patent Examining Procedure, ch. 2173.05(e) (8th ed. 2006) (giving an example of an indefinite claim caused by use of the term "the lever" without an
antecedent introduction of "a lever"). Thus, the use of the definite article in the third step of claim 1 supports our conclusion that "the smoke cooled" is the smoke from the previous step.

In light of all of the above, we conclude that the third step of claim 1 of the '619 patent must occur after the smoke has been cooled to between 0[degrees] and 5[degrees] C for infringement to exist. Having reached that conclusion, we affirm the district court's final judgment of noninfringement. It is not necessary for us to consider the other contested claim terms in light of the stipulation.

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The district court also construed the limitation of a "conductive rail being adapted to extend the length of the fixed device part" to mean the conductive rail must run the end length of the track to which it is attached. Initial Decision, slip op. at 10. Specifically, the district court construed the term "length" to mean "extent from end to end -- distinguished from width." Id. In other words, the district court applied the ordinary meaning to the term "length" and found that the plain meaning of the term referred to the full length of the fixed device part. Id. at 12. In the patent's roller coaster embodiment, this limitation would require the conductive rail to extend the entire length of the roller coaster.

In the claim, the "fixed device part" refers to the framework of the amusement device, i.e., the track for the roller coaster or tower drop. The "conductive rail" refers to a metal rail, part of which will have a conductive coating. The rail and the coating make up the conductive part. This "conductive part," in turn, passes through the array of magnets to generate the braking force or vice versa, depending on the configuration. This court must determine the meaning of "length" as a reference to the full length of the fixed device part, as the district court construed, or to the direction or orientation of the conductive rail.

The claim language uses the term "length" in the context of a longer phrase: "adapted to extend the length of the fixed device part." The verb "extend" already suggests that the "length" reaches from one end to another. Moreover, the term "length" imparts information about the "fixed device part," once again suggesting that the "length" will encompass the entire dimensions of that structure. In sum, the claim term "length" in context in the claim encompasses the full length of the fixed device part, as the district court correctly discerned.

The district court further recognized that the specification nowhere uses "length" to refer to direction or orientation. Initial Decision, slip op. at 11-12. Rather, the district court found correctly that the term referred to the entire length of the fixed device part. Id. at 12. The patent specification uses "length" consistent with its meaning as a distance, rather than merely a direction. Thus, the context supplied by the specification underscores the meaning of claim 1 of the '350 patent that expressly states that the conductive rail extends the length of the fixed device part.

For example, the '350 patent uses the term "length" to discuss the braking distance. '350 patent col.2 l.13; col.4 l.66. It also uses the term to refer specifically to the length of the magnetic elements. '350 patent col.5 ll.32, 34, 41-42. Both uses of "length" consistently refer to distance or dimension, quantitative applications of the term "length." In comparison, when the '350 patent references a direction as opposed to a distance, it uses language such as "along drop directions." '350 patent col.3 ll.36-38 ("Both the energizing and conducting parts (5,6) are designed in the form of a rail and stretch along the drop directions.").

Intamin argues that the intrinsic evidence supports its proposed claim construction because when the inventors were trying to convey an entire distance, they used a modifier such as "whole height." '350 patent, col.7 ll.37-40; col.4 ll.31-34. While Intamin argues that no modifier requires the length to extend the entire length of the fixed device part, the flip side of this argument also applies: no modifier instructs one skilled in the art to interpret the phrase as extending to only part of the fixed device. Thus, the context and word choice of the claim language itself establishes that "extend the length" means the length of the fixed device part. In other words, the intrinsic evidence confirms the meaning conveyed by the claim language.

Intamin argues that this interpretation would not permit the claim to read on embodiments of the invention specifically mentioned in the patent specification. For example, the patent discloses a roller coaster-type embodiment where the passenger car or movable device houses the conductive part. Under the proper claim construction with the conducting rail extending the length of the fixed device, the claim may well not cover this embodiment. Nonetheless, this court has
acknowledged that a claim need not cover all embodiments. See Telemac Cellular Corp. v. Topp Telecom, Inc., 247 F.3d 1316, 1326 (Fed. Cir. 2001) ("We conclude that only those embodiments involving communications established by the host processor meet the functional requirement of the claim."); see also Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1324-25 (Fed. Cir. 2003); Phillips Petroleum Co. v. Huntsman Polymers Corp., 157 F.3d 866, 875 (Fed. Cir. 1998). A patentee may draft different claims to cover different embodiments.

In addition, Intamin argues that the proper claim interpretation would render another claim, dependent claim 10, invalid. Dependent claim 10 addresses the embodiment where the conductive portion is connected to the movable device. With claim 1 specifying that the conductive rail extends the length of the fixed device, dependent claim 10 may well be improper. Thus, Intamin urges this court to construe claim 1 to retain the validity of claim 10. Under the proper construction of claim 1, dependent claim 10 erases entirely a limitation of the fixed device part and is thus an improper dependent claim. Of course, dependent claim 10 has that effect under any reading of "length" in claim 1. Because claim 1 requires the conductive portion to reach the length of the fixed device part and claim 10 places the conductive portion on the passenger car, claim 10 is an improper dependent claim. Thus, construing claim 1 to mean end to end length does not in itself render claim 10 invalid. In any event, the claim construction of claim 10 is not before this court. Thus, this court considers but gives no weight to Intamin's argument relative to claim 10.

Given this construction, the district court initially determined that Magnetar's Soft Stop brakes did not infringe because they placed the conducting rail on the passenger car. Initial Decision, slip op. 12. The district court determined it could not find on summary judgment that Magnetar's brakes would not infringe this limitation under the doctrine of equivalents. Id. However, the district court granted summary judgment to Magnetar because it determined that Magnetar did not contain an intermediary. Id. at 13. Intamin requested reconsideration and the district court determined that there was a triable issue as to whether Magnetar's brake system can be configured such that the conducting rail was attached to the track. Reconsideration Decision, slip op. at 4. Thus, this court remands to the district court for a determination of whether Magnetar's brakes would infringe this limitation, either literally or under the doctrine of equivalents. 2

2 The parties in this appeal discuss additional claim limitations that were not construed by the district court. This court encourages the district court to consider all of the limitations of claim 1 of the '350 patent on remand.

2. Analysis

This Court has the "power and obligation to construe as a matter of law the meaning of language used in the patent claim." Markman, at 979. The specific language at issue reads:
separate member including an extended flange that is positioned against a back surface of the raised panel portion, said extended flange being secured to the raised panel portion adjacent said unfinished edge during assembly of the shutter.

The specification contained in the patent and the prosecution history identify the "extended flange" as (1) an additional part, (2) that is positioned against the back surface of the raised panel portion, and (3) that provides a structural member for securing the separate panel end section. Additionally, the Court's examination of extrinsic evidence at a status conference further substantiates that an "extended flange" is a substantial and separate structural part. In considering the patent language, its specifications, and its prosecution history, the Court interprets an "extended flange" to mean a separate and substantial structural part that is positioned and secured to the back surface of the raised panel portion.

Plaintiffs construe the phrase "extended over" to mean "that at least some portion of each of the extensions reaches above and across the corresponding stud." JS, Exh. A at 23. Plaintiffs also contend that the phrase "can support" means "that the studs, either directly or indirectly, are capable of maintaining the extensions in position so as to keep them from falling, sinking or slipping." Id. at 25. Plaintiffs further contend that the term "prevent" means "to impede, obstruct or keep from happening." Id. at 27.

Conversely, Defendant contends that the entire phrase in question means that "the arms or extensions from the auxiliary frame contact and are supported on the upper side of the extensions [sic] 21 at the outer edges of the primary frame to prevent the auxiliary frame from moving downward with respect to the primary frame." JS, Exh. C at 109. Defendant's construction seeks to limit the instant phrase by requiring the extensions from the auxiliary frame to "contact" and be supported on the "upper side" of the studs at the "outer edges" of the primary frame.

In this case, it is clear from the language of claim 12 that the magnetic material in the auxiliary frame is located in the flange that extends downwards. See '747 Patent, Koo Decl., Exh. C, Col. 5, 11, 41-43. The Court has already held that the magnetic attraction between the magnetic material in the auxiliary frame and the magnetic material in the primary frame can take place with or without physical contact. See supra, section "III B 2 b (4)". As such, and since there need not be physical contact between the back side of the stud and the downwardly extending flange, there must be physical contact between the upper side of the stud and the extension; otherwise, it would be physically impossible to support the auxiliary frame on the primary frame.

Therefore, the Court construes the instant phrase to mean that at least some portion of each of the extensions reaches above and across the corresponding stud, and each stud is capable, with direct contact, of maintaining the corresponding extension in position so as to keep it from falling, sinking or slipping and thus prevent the auxiliary frame from moving downward relative to the primary frame. See Webster's, Nicodema Decl., Exh. 5 at 130, defining "extend" as "to stretch or spread out to
full length”; id. at 144, defining "over" as "[a]bove and across from one end or side to the other," id. at 155, defining "support" as "[t]o maintain in position so as to keep from falling, sinking, or slipping."

23 The Court does not find it necessary to construe the term "prevent."

The parties disagree about the proper construction of the term "extending." RYMSA argues that "extending" means "lengthening in one or more direction(s)," while Kathrein argues that "extending," as recited in Claims 1 and 24, should be given its ordinary and customary meaning, i.e., "lengthening." (See '130 Patent, Claim 1, Col. 5, ll. 61-67 & Col. 6, ll. 1-19; id., Claim 24, Col. 8, ll. 10-38.)

The Court agrees with Kathrein. Adding the limitation of "in one or more direction(s)" to the definition of "extension" is improper because the intrinsic evidence does not require such a limitation. Claim 1 claims "the second connection line is disposed with respect to the second stripline section by extending the first connection line which leads to the first tapping section," and Claim 24 claims "the respective connection line is disposed with respect to a next, further outward stripline section by extending an inward connection line which leads to a respective further inward tapping section." (Id.) In both claims, the term "extending" does not mean a lengthening of the connection line in one or more directions, but rather, it merely means a lengthening of the connection line to a tapping section. It would only be necessary to add the limitation "in one or more direction(s)" if, like the pointer element or point element, the first and second connection line were treated as one. However, unlike the pointer element or point element discussed above, the language of the claims shows that each connection line is its own.

The specification also supports this construction. The specification states

[t]he tapping element 25 includes a first connection line 31a. Connection line 31a extends from the coupling section 33 in the overlapping area of the center tap 29 to the tapping point 27a on the inner stripline segment 21a. The region which projects as an extension beyond this tapping point 28a forms the next connection section or connection line 31b.

(Id., Col. 4, ll. 24-29.)

Because the specification also states that each connection line is treated separately with regard to the exemplary embodiment shown in Figure 2, it is unnecessary to add the limitation "in one or more direction(s)" because it necessarily follows that the connection lines as depicted in Figure 5, which "shows two straight striplines . . . which are . . . offset with respect to one another through 180[degrees] with respect to the pivoting axis" (id., Col. 5, ll. 32-35), would also be treated as separate parts. (See id., Col. 5, ll. 43-44 ("Description of similarly labeled elements in FIG. 2 will not be repeated here.")

Thus, in Figure 5, connection line 31a extends from center tap 29 to the tapping point 27a and connection line 31b extends from center tap 29 to the tapping point 27b.

In sum, the claim language and the specification show that RYMSA's "in one or more direction(s)" interpretation is improper. Because it is possible to construe the term "extending" by examining the intrinsic evidence, contrary extrinsic evidence is not useful to the Court. Accordingly, the Court construes the term "extending" to mean "lengthening."
Bradford proposes that "extending" means "reaching or reach." Defendants propose that "extending" means "reaching, at least in combination with an additional component(s), completely from the bottom member to the top member." This term is a further limitation on "legs" in that the legs must extend between the top member and the bottom member. The dispute over this term is essentially the same as the disagreement over "spanning between" discussed, supra, Part IV.A.6. The Court rejects Defendants' construction of "extending" for essentially the same reasons.

The Court finds that the term "extending" is not limited to "at least in combination with additional components." Where a specification does not require a limitation that limitation should not be read from the specification into the claims. Lemelson v. United States, 752 F.2d 1538, 1551-52, (Fed. Cir. 1985).

The Court notes that in regard to the embodiment depicted in Figure 4, the specification states that the legs are "hingedly coupled to the base members 62 and top member 64 by appropriate fasteners, such as rivets or pins[]." '916 Patent, col. 12, ll. 31-33. The entire specification, however, does not limit this embodiment to attachment with only other components, such as fasteners. In regard to the embodiment depicted in Figure 5A, which employs telescoping legs, the specification states that the "bottom segment [of the telescoping leg] 88d is coupled to base member 62 while the top segment [of the telescoping leg] 88a is mounted to top member." Id. col. 13, ll. 53-55 (emphasis added). As the Court held supra at Part IV.A.2, "coupled to" means "linked together, connected, or joined." Figure 5A does not indicate that any additional components are required to connect or join the telescoping leg to the bottom member or mount it to the top member. Presumably, the legs could be connected to the bottom member by welding or brazing. The specification states that the top segment of the telescoping leg is fixed to the top member by a stand-off structure. Id. col. 13, ll. 55-57. It appears that the stand-off structure is not a separate component but rather is machined or formed so that it comprises a piece of the top member. See id. Drawing Sheet 5A. Connecting the legs to the members by such methods would not require the use of any additional components. Therefore, Defendants' proposed inclusion of the limitation "in combination with other components" is not required by the specification and should not be incorporated to limit the scope of the claim. Indeed, the specification demonstrates an alternative method for extending the legs between the members which does not require use of additional components. Consequently, Defendants' proposed construction of "extending" is rejected.

Accordingly, the Court holds that "extending" means "reach or reaching".
The structure of the claim supports Plaintiff's interpretation. 59 Claim 35 is separated into two clauses. The first clause says that the clip has a plurality of legs. The second clause states that those legs "extend[] about at least one side surface." By separating the limitations that there be two legs and that the legs extend from at least one side surface, the claim language indicates a requirement that there be a plurality of legs in total, and that those legs extend from a side surface as opposed to some other surface.

Defendant argues that its interpretation must be correct, because otherwise the requirement that the legs extend from at least one side would be meaningless. It is true that Plaintiff's interpretation simply requires a plurality of legs in total. But this requirement does not render the second clause meaningless. The prosecution history reveals that Plaintiff added the extra clause after the examiner objected to the original language on the basis of a prior art reference where a leg protrudes from the face of the clip. 60 In this way, the added claim language in the '004 patent simply identifies that the legs extend from one or more sides of the clip instead of from the face of the clip.

Defendant also argues that the patent specification supports its meaning. Figures 4A and 4B depict a clip with two legs on one side and one leg on another. But this figure is also consistent with Plaintiff's definition. It would be improper to read from the specification a limitation that there be more than one leg on one side, where the language and structure of the claim indicate that all that is required is a plurality of legs in total. 61

Because the structure of the claim reveals its meaning, and because the prosecution history and the specification are consistent with this meaning, the court adopts Plaintiff's construction and finds that claim 35 covers a clip with a plurality of legs in total where those legs extend from more than one side.

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1. "Extending Above a Top Surface"

Claims 1, 3, 19, 33, 39, 48 and 55 of the '874 patent, 11 and 23 of the '002 patent and Claim 1 of the '176 patent use this language. Three variants arise using the "above a top surface" language. Each variant requires a column, recess or similar means "extending above a top surface of one of said side walls." Claim 23 of the '002 patent uses "disposed" instead of "extending." Claims 39, 48, and 55 of the '874 patent add "at least" in front of the term "above a top surface of one of said side walls." Claims 1, 11, and 23 also use
"first" in place of "one" of the side walls.

a. Norseman's Position

Norseman argues that the language must be interpreted to mean that a column, recess or structure must extend higher than the peaks of the sinusoidally patterned side walls, i.e. the topmost surface of the side walls. Motion, at 13.

b. Rehrig's Position

Rehrig argues that the plain and proper meaning of this language requires "a column, recess or similar means that extends to a height above that of a top surface of one of the side walls of the bottle case. It is not required that the column, recess or similar means extend above the topmost surface of the side wall." Opposition, at 15.

C. Court's Construction

The debate between the parties' competing constructions centers primarily around the definition of "a top surface." Norseman's interpretation of the language requires a column or other structure that extends in height beyond the topmost surface of the side walls. Norseman contends that the language "a top surface" must be given different meaning: "the top surface." (Emphasis supplied). Rehrig argues that there are several top surfaces and that the language merely requires a column or structure extending above one of these "upper or top surfaces" of the side wall. Rehrig supports its position by citing cases indicating that Claims using the opening term "comprising," such as utilized in this Claim, are generally understood in patent claim parlance to allow for 'one or more' articles. See Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 977 (Fed. Cir. 1999). Additionally, Rehrig contends that the doctrine of Claim differentiation rebuts Norseman's construction because some claims use "top" and "topmost" in the same Claim, thereby implying that the language needed to express Norseman's construction was available and not consciously not utilized. Opposition, at 16.

The Court construes the language to mean that the column or recess must extend beyond above the topmost surface of one of the said side walls as opposed to simply extending beyond any top surface. For the purpose of determining the top of the wide wall, the column or recess is not part of the side wall.

The Court similarly construes language in Claim 31 of the '002 patent and Claim 4 of the '176 patent. Claim 31 uses the language that bottle supporting means includes "a portion extending above the height of a top surface of a first of said side walls." 10 Claim 4 of the '176 patent includes language that the structure "extends above said outer shell." For each of these claims, the Court construes the language to require the structure at issue to extend beyond the topmost surface of the side wall as opposed to any top surface, or indeed the top most surface of the crate as a whole.

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10 Claim 7 of the '176 patent uses similar language "a portion thereof which extends above a top surface of one of the said side walls."

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Insight and Glock dispute the meaning of "extending along" and "extends along" as used in phrases in claims 1 and 32. In both claims, the first structural member of the housing for the auxiliary device is described as "extending upward from a first side of the housing and extending along at least a portion of a length of the first side of the housing." The second structural member "extends along at least a portion of a length of the second side of the housing such that it is substantially parallel to the first structural member, and wherein both the first and second structural members are substantially parallel to a central, longitudinal axis extending along a length of the housing." The spring-biased mechanism is described as
"extending across and along a top surface of the housing." SureFire states that "the ordinary meaning of this term to a person of ordinary skill in the art is clear and does not require any construction by the Court." SureFire does not, however, articulate the clear meaning that it perceives.

1. Parties' constructions.
Glock and Insight concur that "extending across" as used in the disputed phrase to describe the spring mechanism means extending or spanning from one side of the top surface of the housing to the other. Put more simply, "extending across" means that the mechanism traverses or is perpendicular to the longitudinal axis of the housing. The parties agree that longitudinal means the long axis of the body. To the extent there is disagreement about whether "extending across" requires the mechanism to cover the entire distance from one side of the housing to the other, the phrase is construed to mean the orientation but not necessarily the size of the mechanism.

Glock contends that "extending along at least a portion of a length of the . . . side of the housing" should be construed to mean "spanning over at least a portion of the length (but not necessarily over the entire length) of the side of the housing." Glock contends, however, that "extending along," as used to describe the spring mechanism, means "spanning . . . over the length of (along) the top surface of the housing." In other words, Glock interprets "along" to mean length. Glock also contends that "extending along" means covering the entire length of the housing. In ordinary parlance, "along" does not necessarily incorporate the direction of length. 7 If Glock's construction of "extending along," which equates "along" with "length" and adds a size requirement, were added to the phrase pertaining to the structural members, it would make that description nonsensical: the structural member would span over the length, meaning the entire length, of at least a portion of a length of a side of the housing. Glock's two constructions of the same phrase are inconsistent and do not comply with the ordinary meaning of "extending along."

Insight contends that "extending along" as used to claim the spring-biased mechanism means "situated substantially parallel and close to the top surface of the housing." In other words, Insight construes the term to provide the location, close to the top of the housing, as distinguished from a location within or on the bottom of the housing, but also adds the requirement that the mechanism be parallel to the top of the housing. Insight uses the same concepts in interpreting the phrase in the context of the structural members: "the structural members must extend on a line or course substantially parallel and close to the surface of the side of the housing." The question Insight's interpretation raises is whether "extending along" is properly construed to mean both close to and substantially parallel to the top of the housing.

Both Insight and Glock argue that other parts of the specification support their differing interpretations of the phrase. Their arguments, however, are not persuasive. Therefore, the various uses of "extending" and "along" in the specification do not appear to solve or even provide substantial guidance on the appropriate meaning of the word as used in claims 1 and 32. 8

8 To the extent Glock relies on the magistrate judge's report and recommendation, denying Insight's motion for a preliminary injunction against SureFire, to show that "extending along" means covering the entire length of the top of the housing, its reliance is misplaced. See, e.g., Univ. of Tex. v. Camenisch, 451 U.S. 390, 395, 101 S. Ct. 1830, 68 L. Ed. 2d 175 (1981); Glaxo Group Ltd. v. Apotex, Inc., 376 F.3d 1339, 1346 (Fed. Cir. 2004); Jack Guttman, Inc. v. Kopykake Enters., 302 F.3d 1352, 1361 (Fed. Cir. 2002). Further, the court is not persuaded that Insight's position and the construction found by the magistrate judge there are necessarily inconsistent with the construction offered here.

The practical effect of the two constructions is to define the scope of claims 1 and 32 with respect to the spring mechanism.
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Glock's construction limits the claims to a mechanism using a cantilever spring, which extends down the entire length of the housing. Insight's construction would cover both a cantilever-spring mechanism and a leaf-spring mechanism, regardless of size. Therefore, the dispute focuses on the use of the phrase "extending along" to describe the spring mechanism.

2. Prosecution history.

The parties both point to the prosecution history to support their differing interpretations of the disputed phrase. "Like the specification, the prosecution history provides evidence of how the PTO and the inventor understood the patent." Phillips, 415 F.3d at 1317.

The patent examiner concluded that Insight's initial application included separate inventions, designated according to the figures as Species A (Figures 4 and 6), Species B (Figure 5), Species C (Figure 3B), and Species D (Figure 7). He required Insight, "under 35 U.S.C. § 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable." 9 Ex. E at 2. 10 Insight elected Species A, which Figures 4 and 6 show to be the embodiment using a cantilevered spring in the second positioning mechanism, while Species B, based on Figure 5, used a leaf spring.

9 Section 121 provides in pertinent part:

If two or more independent and distinct inventions are claimed in one application, the Director may require the application to be restricted to one of the inventions.

10 Insight's exhibits referenced for the prosecution history are attached to its claim construction brief filed in Insight v. Glock, 03-cv-253, doc. no. 48.

After amendment, rejection, and further amendment, the application included claim 94 that claimed: "a spring-biased mechanism oriented substantially perpendicular to the central, longitudinal axis of the housing along a top surface of the housing, and wherein the bias of the spring forces the mechanism to move in a direction normal to the top surface of the housing." Ex. H at 2. In response, the examiner again imposed a restriction requirement, using the same language as quoted above. Insight again elected Species A and withdrew certain claims. Insight also amended that part of claim 94 pertaining to the spring-biased mechanism as follows: "a spring-biased mechanism extending across and along a top surface of the housing, and wherein the spring-biased mechanism is configured to be biased in a direction normal to the top surface of the housing." Ex. J at 3. As approved, claim 94 became claim 1 of the '901 patent.

Glock contends that by electing Species A, Insight abandoned Species B, the embodiment of the invention that used a leaf-spring mechanism, so that "extending along" is properly interpreted in a way that excludes the leaf spring embodiment. Insight agrees that two elections occurred in the course of the prosecution history but argues that it did not abandon the other embodiments, as shown in the figures of the '901 patent. Insight asserts that claim 1 and claim 32 of the '901 patent are generic and, therefore, overcame the species election as provided in the statement of the patent examiner.

"Because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes." Phillips, 415 F.3d at 1317. That appears to be the situation in this case. While the prosecution history shows that Insight twice elected Species A over the other species of the invention, including Species B that claimed a leaf spring, the patent examiner left open the possibility that a generic claim would be approved that would cover the non-elected species. The question remains as to whether that occurred. 11

11 Glock's assertion that no generic claim was allowed because the patent examiner never so stated misses the point. If a generic claim was allowed in the '901 patent, as approved, no further statement is required.

3. The '901 patent.

The '901 patent describes the generic form of the invention as follows: "In generic form, the auxiliary device is attached to the weapon frame using a first positioning mechanism and a second positioning mechanism. The first positioning mechanism preferably comprise [sic] complementary engaging surfaces on the auxiliary device and weapon frame. . . . The second positioning mechanism preferably comprises a device which under normal conditions, sufficiently retains the auxiliary device in a predetermined position relative to the weapon frame." 8:46-50 & 8:63-66. Claim 1 and claim 32 are not as generic as the form described in the specification in that they include particular elements of the two positioning mechanisms. Importantly, however, the claims do not specify any particular spring or other biasing mechanism. Further,
neither claim 1 nor claim 32 references Figures 4 and 6 or excludes Figure 5. Therefore, claims 1 and 32 appear to be generic with respect to the nature of the biasing force used, albeit with the limitations that the spring-biased mechanism extend across and along a top surface of the housing and that the mechanism be biased "in a direction normal to the top surface of the housing." 10:66 -- 11:2.

In contrast, claim 25, a dependent claim for a "latching mechanism," is limited explicitly to a cantilevered spring. Dependent claim 24 claims "the auxiliary device of claim 1, wherein the spring-biased mechanism comprises a latching mechanism." Dependent claim 25 describes "the auxiliary device of claim 24, wherein the latching mechanism comprises a cantilevered spring, the cantilevered spring being operable to bias the latching mechanism into engagement with a complementary position associated with the weapon."

"The doctrine of claim differentiation creates a presumption that each claim in a patent has a different scope." Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 423 F.3d 1343, 1352 (Fed. Cir. 2005) (internal quotation marks omitted). That doctrine provides a limited tool for claim construction, giving force to the presumption only as long as the resulting construction does not conflict with a clear meaning provided by the specification. Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 2006 WL 335609 (Fed. Cir. 2006)(only Westlaw citation is currently available). Under the claim differentiation doctrine, when dependent claims are limited to a particular meaning or scope, the independent claim is presumed to have a broader meaning and scope. Free Motion, 423 F.3d at 1351. In the context of this case, because claim 25 is explicitly limited to a cantilevered spring, presumably claim 1 is not so limited in scope.

The specification of the '901 patent supports a broader interpretation of "extending along" than Glock proposes and undermines the theory that Insight abandoned any species of the invention that would include the leaf spring in the spring-biased mechanism. In the specification, the embodiment depicted in Figure 5 is described as having a second positioning mechanism that includes "a transverse bar 6 which under the biasing force of the leaf-spring 60 is preferably securely positioned within an opening 64 formed in the top of the auxiliary device 10, and held in place in a suitable manner. The leaf-spring 60 normally biases bar 6 upwards and away from recess 64." 7:7-13. Therefore, Figure 5, a disclosed embodiment of the invention, includes a leaf spring, which is contrary to Glock's interpretation of "extending along" in claims 1 and 32. Further, the specification states: "The leaf-spring 60 of the embodiment of FIG. 5 and the cantilevered spring 70 in the embodiment of FIG. 6 are but two of many possible biasing mechanisms that may be used in the embodiments of the invention." 10:31-34.

"It is [ ] entirely appropriate for a court, when conducting claim construction, to rely heavily on the written description for guidance as to the meaning of the claims." Phillips, 415 F.3d at 1317. Further, "[a] claim construction that does not encompass a disclosed embodiment is rarely, if ever, correct." Medrad, Inc. v. MRI Devices, Corp., 401 F.3d 1313, 1320 (Fed. Cir. 2005). To construe a claim in a way that would eliminate a disclosed embodiment "would require highly persuasive evidentiary support." Johns Hopkins Univ. v. CellPro, Inc., 152 F.3d 1342, 1355 (Fed. Cir. 1998)(quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996)). Glock falls far short of providing highly persuasive support for its interpretation of the disputed phrases, which interpretation would eliminate the embodiment described in the specification as depicted in Figure 5.

4. Construction.

Therefore, "extending along" must be construed in a way that would also claim a leaf spring as part of the spring-biased mechanism. The parties appear to agree that Glock's construction would exclude a leaf-spring embodiment. Insight's proposed construction would encompass the leaf-spring embodiment but imposes the additional requirement of parallelism, which is not evident in the claim language.

With respect to the use of "extending along" and "extends along" to describe the structural members of the housing, the terms provide the location of those structures with reference to the housing. That is, the two structures are located on either side of the housing, opposite each other and substantially parallel to each other, and span at least part of the length of the side of the housing. Similarly with respect to the spring-biased mechanism, "extending across and along a top surface of the housing" means that the mechanism both traverses the housing and is located on the top of the housing, although not necessarily in direct contact with the surface of the housing. 12

12 This interpretation is reinforced by the original version of claims 1 and 32. Claim 94 described a spring-biased mechanism "oriented substantially perpendicular to the central longitudinal axis of the housing along a top surface of the
housing." In claims 1 and 32, "oriented substantially perpendicular" was changed to "extending across," suggesting that term sets a transverse orientation while "extending along a top surface" was retained with the same meaning, setting the location on the top surface of the housing.

B. "Extending Along said Electrode so as to Provide a Path for Arcing"

Claim 1 also states that a '210 electrode must have at least one ridge "extending along said electrode so as to provide a path for arcing." '210 patent col. 6, 11. 53-54. Defendant proposes alternative contextual meanings for the term "along." First, it argues that dictionary definitions and the figures that illustrate the invention's preferred embodiment demonstrate that "along" means "lengthwise over the longest side surface." Somewhat less restrictively, it contends that the patent's prosecution history demonstrates that "along" means "over the side surface." I examine each argument in turn.

Neither party argues that "along" has a specialized meaning. Thus, general use dictionaries serve as a useful starting point for analysis. One such dictionary defines "along" as (1) "by the length; in a line with the length; lengthwise" and (2) "by the length of, as distinguished from across." WEBSTER'S REVISED UNABRIDGED DICTIONARY (1996). In another, "along" is defined as (1) "Over the length of" and (2) "On a line or course parallel and close to; continuously beside." THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (4th ed. 2000). A third defines "along" as (1) "through, on, beside, over, or parallel to the length or direction of, from one end to the other of" and (4) "by the length; lengthwise." THE RANDOM HOUSE DICTIONARY OF THE ENGLISH LANGUAGE (2d ed. 1987). In still a fourth, "along" is defined as "in a line with the length, parallel to the longest dimension or course (of something understood) . . . ." THE COMPACT EDITION OF THE OXFORD ENGLISH DICTIONARY (1971). Neither party disputes the validity of these definitions. Rather, they disagree first over which definition to invoke, and next over how that definition should apply in this case.

Although all of the above-cited dictionaries recognize that "along" generally connotes a lengthwise orientation, the definitions do not support defendant's more restrictive interpretation that a ridge extends along an electrode only to the extent that it extends lengthwise over the electrode's longest surface. An electrode may have many surfaces of varying lengths that together comprise an electrode that is longer than it is wide. In such cases, a ridge that extends lengthwise in a line over the electrode's entire surface from one end to the other will extend over multiple surfaces. Some of these surfaces may be parallel to the electrode's longest surface and others may not. Nevertheless, each segment of such a ridge has a lengthwise orientation with respect to the electrode as a whole regardless of whether the segment is on or parallel to the electrode's longest surface. The dictionaries cited by the defendant in no way foreclose such an interpretation because they do not require that the lengthwise orientation must be with respect to an object's longest surface rather than the object as a whole.

To further support its position, defendant points to figures depicting the invention's preferred embodiment. Although defendant correctly claims that these figures depict cylindrical electrodes that have ridges only on their cylindrical side surfaces, such figures cannot be used to read into the claim a limitation that it does not contain. See Fuji Photo Film Col, Ltd. v. International Trade Comm'n, 386 F.3d 1095, 1106 (Fed. Cir. 2004). Claim 1 is quite clear in stating that the ridges that comprise the invention must extend along the electrode rather than along the electrode's longest side surface. This usage leaves no room for defendant's narrower interpretation.

Defendant alternatively argues that the patent's prosecution history demonstrates that along means "extending over the side surface." This argument is based on the history of the amendment to the original application that added the phrase "extending along said electrode" to what ultimately became claim 1. The original application included a claim 1 ("original claim 1"), which was ultimately abandoned, and a claim 10 ("original claim 10"), which ultimately became what is now claim 1. Original claim 1 provided in pertinent part for "relief means on said side surface [of the electrode] extending over a portion of said side surface intermediate said ends so as to provide a path for arcing . . . ." Original claim 10 initially provided in pertinent part for an "electrode having at least one ridge formed thereon, said ridge being located substantially in said arc chamber." The examiner rejected both claims based in part on Patent No. 3,296,410 (the "Hedger Patent"), which describes an "induction plasma generator that has as one element an electrode with a barbed projection at one end. In response, the applicants explained that their claims differed from the Hedger Patent because they claimed a ridge which,
unlike the barb claimed in the Hedger Patent, provided a "definition of length" and a "path to direct the arc." They went on to state that

Since independent claim 1 already recites that the relief means on the side surface is "extending over a portion of said side surface intermediate said ends so as to provide a path for arcing between the electrode . . ." (emphasis added), it is believed that this amended claim defines over the Hedger reference. By this amendment, dependent claim 10 has been amended to recite that the ridge is "extending along said electrode means."

--- Footnotes ---

2 Although this reference refers to original claim 10 as a dependant claim, all other references to the claim in the prosecution history claim the claim as an independent claim. Moreover, the claim does not appear to be a dependant claim because it does not contain, as it must, a "reference to a claim previously set forth." 35 U.S.C. § 112. Accordingly, I assume for purposes of analysis that original claim 10 was intended to be an independent claim.

--- End Footnotes ---

Pl.'s Response to Oct. 16, 1987 P.T.O. Official Action at 3. Defendant argues that this passage demonstrates that the patentee incorporated original claim 1's side surface limitation into original claim 10 when it amended that claim.

I am unpersuaded by the defendant's argument. The Federal Circuit has repeatedly warned district courts that "it is inappropriate to limit a broad definition of a claim term based on prosecution history that is itself ambiguous." Mars Inc. v. H.J. Herz Co. L.P, 377 F.3d 1369, 1377 (Fed. Cir. 2004); Inverness Med. Switz. GmbH v. Warner, 309 F.3d at 1382. The prosecution history cited by the defendant does not come close to providing unambiguous support for its position. If, as defendant claims, the applicants intended original claim 10 to include original claim 1's side surface limitation, one would expect that the applicants would have explicitly included the side surface limitation in the amendment to original claim 10. Moreover, although the applicants' intentions are not clear, a fair reading of the above-cited passage suggests that they most likely intended the amendment merely to emphasize that their invention, unlike the Hedger Patent, taught a ridge that had a "definition of length" and therefore provided a path for arcing. In short, the evidence relied on by defendants is too weak to justify a reading of "along" that is contrary to its customary meaning. 3 Accordingly, I decline to adopt either of defendant's proposed interpretations of "along."

--- Footnotes ---

3 Plaintiff asserts that "along" is synonymous with "on." Thus, from its perspective, the orientation of the ridges is irrelevant. I decline to adopt this proposed construction because I am not satisfied that I must do so to resolve this case. I lack the power to give advisory opinions concerning the meaning that patent terms may have in cases that are not before me. Accordingly, until it becomes clear that I must either adopt or reject plaintiff's proposed interpretation to resolve this case, I decline to do so. It is sufficient at the present time to merely state that defendant's proposed interpretations are unjustifiably narrow.

--- End Footnotes ---

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A pivotal issue here is whether Claims 1, 4 and 7 require that the "stiff plastic member" recited in each claim extend along the bottom and both sides of the laptop carrying case. In interpreting a patent claim, "the general rule is, of course, that terms in the claim are to be given their ordinary and accustomed meaning . . . [A] court must presume that the terms in the claim mean what they say, and unless otherwise compelled, give full effect to the ordinary and accustomed meaning of claim terms." Johnson Worldwide Assocs., 175 F.3d at 989 (internal citations omitted).

Claim 1 reads in pertinent part as follows:

. . . said computer case further comprising relatively stiff members extending along said pair of sides and
said bottom of said case, said relatively stiff member being formed by a pair of substantially rigid elongated members with a stiff plastic member disposed between them . . . .

Claim 4 reads in pertinent part as follows:

. . . said case further comprising a relatively stiff member extending along all said sides and said bottom, said relatively stiff member being formed by a pair of wires with a stiff plastic member disposed between them.

Claim 7 reads in pertinent part as follows:

. . . said briefcase further comprising a relatively stiff member extending along said side edges of said briefcase and said bottom edge of said briefcase, said relatively stiff member being formed by a pair of wires with a stiff plastic member disposed between them.

Based on the ordinary and accustomed meaning of the terms, the proper conclusion is that the "relatively stiff member" extends along the bottom and both sides of the carrying case, and that the component parts of that "relatively stiff member" are a pair of wires (or in Claim 1, a pair of substantially elongated members) and a stiff plastic member, which is disposed between the pair of wires (or in Claim 1, a pair of substantially elongated members). Thus, it is also the proper conclusion that the components that form the relatively stiff member (i.e., the pair of wires (or in Claim 1, the pair of substantially elongated members) and the stiff plastic member) also extend along the bottom and both sides of the carrying case. The plain language of the claims allows for no other reasonable interpretation.

The plaintiff fails to proffer any interpretation of the claim language to dispute that urged by the defendant. Without addressing at all the defendant's analysis of the construction of the plain language of the claims, the plaintiff simply argues that the scope of each claim is "computer cases with 'relatively stiff members.'" (Plaintiff's Opposition (Doc. No. 80) ("Plaintiff's Opp.") at 12). However, such a construction reads out of the claims the explicit limitations that were added to overcome the PTO Examiner's rejection of the application.

The plaintiff also argues that the specification, which appears to narrow the scope of the claims by suggesting a preferred embodiment, should not be "read into the claims." 4 (Plaintiff's Opp. at 8) (citing Wenger Mfg. Inc. v. Coating Mach. Sys. Inc., 239 F.3d 1225, 1233 (Fed. Cir. 2001).) However, in arriving at the claims construction set forth above, the court did not read the preferred embodiment into the claims. There are no alternative theories presented here as to the plain meaning of the "stiff plastic member" limitation recited in Claims 1, 4 and 7 of the '806 Patent. It is therefore unnecessary to look to the specification and/or prosecution history for guidance in interpreting the claim language. The plain meaning of the language in the claims is what establishes that the "stiff plastic member" extends along the bottom and both sides of the case.

4 The specification to the '806 Patent contemplates a preferred embodiment in which "four bladders 514 are supported within a single continuous wrap around bendable, but relatively stiff plastic member 520, which extends completely around the perimeter of bag 510." (Speranza Aff., Ex. A) (emphasis added).

Accordingly, the court concludes, based on the ordinary and accustomed meaning of the terms set forth in Claims 1, 4 and 7, that each claim requires that the stiff plastic member extend along the bottom and both sides of the case.

1. Language in Dispute: "extending alongside said flow diversion means"
Does extending "alongside" said flow diversion means mean (1) that the extension tubes can extend on either opposite sides or the same side of the Y-connector or (2) that each extension tube extends on the opposite side of the Y-connector?

**Answer:** Extending "alongside said flow diversion means" means that the extension tubes can extend on either opposite sides or the same side of the Y-connector.

a). Claim Language

The claim language calls for the flexible extension tubes to extend "alongside" the "flow diversion means," the Y-connector, to form a bend. The Court having already determined the meaning of "flow diversion means," must now construe the word "alongside." The common and ordinary meaning of "alongside" is, next to a side or being positioned on a side. In other words, the claim language in claim 21 means the bent extension tubes must extend next to a side of the catheter, or be positioned on a side of the catheter. The word "alongside" does not specify which side; it can be the same side or the opposite side. Thus, the extension tubes can extend along opposite sides or on the same side and still fall within the ordinary and accustomed meaning of the term "alongside."

For example when sportscasters are announcing a horse race and they say "Point Given" and "AP Valentine" are coming around the turn right "alongside" "Congaree," it is possible that the two horses are both on the left side of "Congaree," that they are both on the right side of "Congaree," or that "AP Valentine" is on the left of "Congaree" and "Point Given" on the right and vice versa. Thus, the two horses may be alongside the predicted winner if they are on the same side or on opposite sides of "Congaree."

b). Written Description

The specification of the '561 patent supports construing the phrase "alongside said flow diversion means" as the extension tube can extend on either opposite sides or the same side of the Y-connector. The specification reads, "the extension tubes are bent back toward the distal end of the catheter, preferably extending along the sides of the catheter ..." ('561 patent, col. 5, lines 56-57). (Emphasis added). The term "preferably" conveys the message that a particular method is desirable or a first choice; it does not convey the idea that something is mandatory. Thus, Dr. Mahurkar prefers the tubes extend along the opposite sides of the catheter, but has contemplated embodiments where the two extension tubes can extend along the same side of the Y-connector.

c). Dictionary Definition

The dictionary definition also supports construing the claim language extension tubes "extending alongside said flow diversion means" as the extension tubes can extend on either opposite sides or the same side of the Y-connector. The dictionary definition of "alongside" is "along, near, at or to the side." (Webster's II New Riverside University Dictionary 95 (1994)). Again, there is no specification as to whether something must be on the same side or the opposite side. Thus, the extension tubes may extend along the same side or opposite sides of the said "flow diversion means."

2. Language in Dispute: "Extending Axially."

Does material "extending axially from the second opening to the distal end of said cylindrical tube" mean (1) material present in the second lumen between the inlet opening and the tip or (2) material to run continuously from the inlet opening through the tip?

**Answer:** Material "extending axially from the second opening to the distal end of said cylindrical tube" means material to run continuously from the inlet opening through the tip.

a). Claim Language
The issue in construing this language is whether the material must run continuously from the inlet opening through the tip. Dr. Mahurkar argues the term "extends axially" means that the material extends, or reaches toward the base of the conical tip from the inlet opening, but does not have to be continuous.

Arrow argues the claim language requires the relative concentration of material extend continuously from the second opening to the distal end of the cylindrical tube which has a conical tip. Therefore, the distal end includes the tip and the language extending axially from the second opening to the distal end requires there to be continuous material throughout. Thus, in order for the material to go from the opening through to the tip axially, in that direction, it must go continuously.

The Court holds the claim limitation requires the relative concentration of material to go continuously from the inlet opening to the tip. The use of the term "extends axially" describes both the direction and the fact that it is continuous in that direction. To extend means to straighten out or to stretch out to full length. (Webster's II New Riverside University Dictionary 456 (1994)).

b). Written Description

Figure 7 is the only illustration in the patent of the "relative concentration of material." Arrow argues this figure is consistent with its construction of claim 12 because it depicts a solid material which runs continuously from the opening of the inlet through the tip.

The specification regarding figure 7 says, "As shown in fig. 7, the inlet lumen 14 terminates at the inlet aperture 19 and in place of the inlet lumen the relative concentration of material extends axially from the aperture to the distal end of the tube at the truncated apex of the conical tip." ( '968 patent, col. 4, lines 21-25). The parties agree the specification calls for the relative concentration of material to be continuous, however Dr. Mahurkar argues this is one embodiment, and is not a requirement. The Court holds the written description accurately describes the claim.

c). Prior Litigation

In the earlier litigation, Judge Easterbrook stated that "extending axially" means " a relative concentration 'extending' from intake through outlet." In re Mahurkar, 831 F. Supp. at 1382. To demonstrate what the court meant by "extending axially," Judge Easterbrook provided the following example, "One would suppose that a highway 'extending' from Chicago to Milwaukee goes all the way: just so a relative concentration 'extending' from intake through outlet." Id. However, Judge Easterbrook noted in the opinion, "Because Mahurkar and Quinton would not be entitled to any relief under Claims 12 and 25 that they do not obtain under claims 1 and 19, it is unnecessary for me to decide who is right." In re Mahurkar, 831 F. Supp. at 1382. Thus, although Judge Easterbrook did not make a ruling, this Court finds his reasoning to be correct and adopts it.

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1. Claim 1 ("extending between")

Claim 1 (and dependent Claim 7) of the '407 Patent uses the term "extending between" in the following context: "[A] vibration coupler having a proximal and a distal end, the vibration coupler being positioned within the housing and extending between the elongated body portion and the handle portion." '407 Patent, Claim 1 (emphasis added). Plaintiff's proposed construction is "stretching from one object to another object" and defendant proposes "spanning the distance that separates." Defendant argues that while the patent repeatedly describes the vibration coupler as "extending through" the elongated body, it does not describe "any embodiment where the vibration coupler "extends between" the elongated body portion and the handle portion. See '407 Patent 4:49-51, 6:32-34, 8:65-9:3, 12:19-22. Defendant argues that accordingly, the claim term "extending between" must be construed as written, and thus as differentiated from the term "extending through," which is used in the specifications. See Def. Claim Construction Br. at 13. Plaintiff responds that defendant's definition "directly contradicts" prior claim language, which, plaintiff contends, "makes clear that [the elongated body portion and the handle portion] are connected" and therefore the "distance that separates" to which defendant refers in its proposed construction does not in fact exist. See Pl. Claim Construction Br. at 3 (referring to '407 Patent, Claim 1 ("An ultrasonic surgical instrumental comprising: a housing including an elongated body portion and a
handle portion")) (emphasis added). At the Markman hearing, plaintiff argued further that "there is nothing that precludes the handle portion and the elongated tube from being right up against one another, and still the vibration coupler would be going between the two or extending between the two." Markman Tr. at 20. Plaintiff compared the disclosure in Claim 1 to "the roadway on the Lincoln Tunnel or Holland Tunnel," reasoning, "it certainly extends between New Jersey and New York, but also New York and New Jersey touch one another. . . . Extending between doesn't require that there be a gap." Id. Because the Court agrees that nothing in the claim language or specification requires that there be any space ("the distance," as proposed by defendant) between the elongated body portion and the handle portion, the Court adopts plaintiff's construction, "stretching from one object to another object."

2. "extending between said guidewire and said distal tip"

With respect to the "connecting segment," the parties dispute the proper construction of the phrase "extending between said guidewire and said distal tip" as it is used in Claim 5. The dispute is whether the phrase should be construed to mean "located between" or whether it should be construed to include both "located between and connecting spatially."

It is clear from the language of the Claim that the phrase "extending between" is a limitation on the relationship among three components: the "connecting segment;" the "guidewire" and the "distal tip."

One of ordinary skill in the art would understand the phrase "extending between" to be composed of non-technical words which have ordinary and customary meanings. The phrase "extending between" uses the common preposition, "located between," meaning "in or through the space that separates two things." See Webster's New Twentieth Century Dictionary, 177 (2d ed. 1983). A common definition of "extending" is "stretched out." Id., 649. The Court finds that one of ordinary skill in the art would understand the phrase "extending between" to mean that the connecting segment is not only "between" the guidewire and the distal tip but that it also "extends" from the guidewire to the distal tip. In other words, a person of ordinary skill in the art would conclude that the connecting segment is attached at one of its ends to the guidewire and at its other end to the distal tip. This construction of the claim language is supported by a statement in the written description, describing an embodiment with these connections:

The stainless steel segment comprises a coil connected at its proximate end to the core wire and connected at its distal end to the tip portion of the guidewire.

(136 Patent, Col. 4:65-68.)

3. "extending distally of," "extend distally of"

Braun construes the terms "extending distally of" and "extend distally of" to mean "extends in a distal direction of." (D.I. 74 at 18) As part of its proposed construction, Braun also requests that the Court state that this disputed claim term "[d]oes not require the referenced arm(s) to be directly attached to the proximal wall." (Id.) Terumo takes the position that these terms require no construction beyond stating that the ordinary meaning applies. (D.I. 71 at 29) Further, Terumo argues "the claimed arms must be integral with or attached to the proximal wall based on the ordinary meaning of the claim as a whole (not just the phrase 'extending distally of')." (D.I. 155 at 1) I recommend largely adopting Braun's proposed construction, with some modification.

The issue in dispute in connection with the "extend[ing] distally of" claim terms is whether the arms are required to be attached to the proximal wall. (Tr. at 80) Looking at the claims as a whole, Braun emphasizes the distinction between claims 1 and 9, on the one hand, and claim 20 on the other:

Claim 1: "and two resilient arms of different lengths extending distally of the proximal wall"
Claim 9: "two arms that intersect one another and extend distally of the proximal wall"

Claim 20: "at least one arm attached to and extending distally of the proximal wall" (emphasis added)

('613 patent, col. 15 lines 31-32; id. col. 16 lines 13-14, 59-60) Only claim 20 expressly requires that an arm be "attached to and extending distally of the proximal wall" (emphasis added), suggesting that claims 1 and 9 do not contain the same requirement. (See D.I. 74 at 18-19; D.I. 160 at 2-4; Tr. at 68.)

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10 As Terumo points out, claim 20 speaks of one arm "attached to" not "directly attached to." (Tr. at 77) (emphasis added) I see no basis to recommend the phrase "direct" attachment, which would import additional ambiguity (for Braun does not explain the implicit distinction between "indirect" and "direct" attachment).

--- End Footnotes ---

In opposing Braun's construction, Terumo points out that every embodiment in the specification shows arms attached to the proximal wall. (D.I. 71 at 30) (referencing '613 patent at Figures 1-14) Braun does not disagree. (Tr. at 70) However, again, there is no basis here to limit the claims to the embodiments disclosed in the specification. See, e.g., Kara Tech. Inc. v. Stamps.com Inc., 582 F.3d 1341, 1348 (Fed. Cir. 2009) ("The patentee is entitled to the full scope of his claims, and we will not limit him to his preferred embodiment or import a limitation from the specification into the claims.""); see also Acumed LLC v. Stryker Corp., 483 F.3d 800, 805 (Fed. Cir. 2007).

Terumo's principal argument against Braun's proposed construction is that the issue of whether attachment is required is not a matter for claim construction but, rather, a question of infringement, which should not be resolved at this point in the case. (Tr. at 78-79; D.I. 71 at 30; D.I. 155 at 1-2) I disagree. The parties have a fundamental dispute regarding the scope of these claim terms: whether or not they encompass products where the arms are not attached to a proximal wall. Braun says yes and Terumo says no. It is appropriate for the Court to resolve this dispute in connection with claim construction. See O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., 521 F.3d 1351, 1362 (Fed. Cir. 2008) ("[C]laim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. When the parties present a fundamental dispute regarding the scope of a claim term, it is the court's duty to resolve it.") (internal quotation marks and citation omitted).

Relatedly, nearly one month after the Markman hearing, Terumo offered a "compromise position," stating that it "is willing to agree that the specific phrase 'extending distally of,' standing alone, does not require 'direct attachment' -- so long as the record is clear that Terumo's position is that the larger phrase 'and two resilient arms of different lengths extending distally of the proximal wall' does require the arms to be integral with or attached to the proximal wall." (D.I. 155 at 1, 3) 11 As Braun notes, "Terumo's new reliance on the 'larger phrase' in the claims is a distinction without a difference." (D.I. 160 at 2) The dispute as to whether the arms must be attached to the proximal wall remains. (See, e.g., D.I. 155 at 2 ("Terumo believes the Court's construction should make clear that the arms must be 'integral with or attached to' the proximal wall.").) That dispute has been placed before the Court in the context of a dispute as to the proper construction of the "extending distally of" terms. Hence, again, I believe the Court should address that dispute now, in the course of construing the disputed claim terms.

--- Footnotes ---

11 On March 5, 2010, nearly a month after the February 9, 2010 Markman hearing, Terumo filed an uninvited four-page single-spaced letter which "clarifies Terumo's position regarding whether or not 'direct attachment' is required by the disputed term 'extending distally of.'" (D.I. 155 at 1) During the hearing, Terumo's counsel had expressly stated "[w]e have never said direct attachment is required. . . We're not going to get up and tell the jury direct attachment is required." (D.I. 126 at 72) In the post-hearing letter, however, Terumo indicated it "wants to clarify that while it does not intend to argue the specific phrase 'extending distally of requires 'direct attachment,' it does intend to argue that the claimed arms must be integral with or attached to the proximal wall based on the ordinary meaning of the claim as a whole (not just the phrase 'extending distally of')." (D.I. 155 at 1) The Court provided Braun an opportunity to respond to Terumo's untimely post-
hearing submission (which Terumo did not seek leave to file), and Braun did so on March 15, 2010. (D.I. 160) The Court also offered Braun the opportunity to file a motion seeking additional relief (D.I. 157), but Braun chose not to do so.

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Based on the foregoing analysis, I recommend that "extending distally of" and "extend distally of," as those terms are used in claims 1 and 9, respectively, be construed as "extending [or extend] in a distal direction away from the proximal wall, without the necessity of being attached to the proximal wall." 12

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12 The language I have recommended will, while remaining true to the claims and the specification, be easier for the jury to understand. "Extend[ing] of" is a grammatically awkward phrase. (See Tr. at 74.) While Braun has resisted "extend[ing] from" (even though it is less awkward), this resistance stems from Braun's concern that "extend[ing] from" would require a "direct attachment" between the arms and the proximal wall. (See Tr. at 69-70.) The addition in the construed claim of the phrase "without the necessity of being attached to the proximal wall" addresses this concern.

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The court adopts Simmons' proposed construction of this claim:

The claim term "first side portion extending in the longitudinal direction and extending downward from the first edge; a second side portion extending in the longitudinal direction and extending downward from the second edge"

The claim term "first side portion extending in the longitudinal direction and extending downward from the first edge" means a structure forming at least part of a lateral side of the ski which extends from a higher to a lower position from the first lateral edge of the snowmobile ski base.

The claim term "second side portion extending in the longitudinal direction and extending downward from the first edge" means a structure forming at least part of a lateral side of the ski which extends from a higher to a lower position from the second lateral edge of the snowmobile ski base.

Bombardier argues that the side portions need not be perpendicular to the ground. The court does not read the construction of Simmons to require such a limitation. However, the side portions do "extend[] downward" from an edge, thus suggesting that, in general, such side portions will be approximately perpendicular to the ground, as for example when a person falls "downward" off the "edge" of a cliff. A strong wind might carry such a person away from the cliff at the same time they are still falling downward so that there is some slope to their fall, however, such a person is still traveling downward. Thus, downward is defined as "from a higher place to a lower . . . moving or extending from a higher to a lower place." 15

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

15 RANDOM HOUSE WEBSTER'S UNABRIDGED DICTIONARY, at 1507.

- - - - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

More important, inasmuch as the court's prior definition of the words "base" and "edge" demonstrate that the "side portions" are a part of the base, i.e., "portion" (defined as "a part of any whole, either separated from or integrated with it . . . ." refers to a portion of the "base") Bombardier's other objections to the proposed claim construction disappear.

GO BACK
A. SHOULD THE TERM "EXTENDING FROM" IN CLAIMS 1 AND 37 BE LIMITED TO PRODUCTS THAT ARE MECHANICALLY CONNECTED OR SHOULD IT BE CONSTRUED TO ALSO INCLUDE PRODUCTS THAT ABUT EACH OTHER BUT HAVE NO MECHANICAL CONNECTION?

i. Patent Language Arguments

An analysis of the '925 patent language indicates that the term "extending from" is not limited to "integral or mechanically connected" structural relationships. Interpreting "extending from" as limiting the structural relationship between the secondary flange and the frac mandrel to being either an integral or mechanical connection, improperly confines the term "extending from" to specific embodiments of the invention. Phillips v. AWH Corp., 415 F.3d 1303, 1323 (Fed. Cir. 2005) (although the specification describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.)

Cameron disagrees. Cameron first argues that the "extending from" language is not specifically defined in the '925 patent. Cameron asserts that a structural relationship characterized as an abutment, as opposed to being integral or mechanically connected, is not contemplated by the purported invention disclosed and claimed in the '925 patent. Cameron, however, fails to explain why the patent's failure to contemplate the structural relationship of an abutment limits the "extending from" clause to being integral or mechanically connected. In essence, Cameron requests that the court interpret the patent's "extending from" language to give it the meaning, "integral or mechanically connected," which goes beyond the patent's express language to add a meaning that is neither obvious nor required. The structural relationship of an abutment contemplates a relationship where two structures that abut (are in contact or adjacent to each other) "extend from" each other.

Cameron next argues that Duhn Oil's interpretation of "extending from" is inconsistent with the "wherein" clause and would render the claimed device inoperable. According to Cameron, Duhn Oil's interpretation only requires that the secondary flange be positioned "outward" of the frac mandrel with no requirement that the flange be connected to the frac mandrel, or even be touching the frac mandrel in any way. Cameron argues that this proposed definition is overbroad. According to Cameron, under Duhn Oil's construction there would be no way for the force to transmit from the frac mandrel to its secondary flange because it does not require that the secondary flange even touch the frac mandrel. It only requires that it be "positioned outward."

However, the "wherein" clause does not require that the "secondary flange" be mechanically connected to, or integral with, the frac mandrel as Cameron contends. The axial force could be reacted to independently by the "first tubular member flange" and the "secondary flange" if they are in contact without being integrally connected. Claim 12 8 states the wellhead assembly of claim 4 wherein the secondary flange is separate from the elongate annular member (frac mandrel). Since a dependent claim is narrower in scope than the independent claim on which it depends, claim 1 includes embodiments of the wellhead assembly wherein the secondary flange is either separate from or connected to the frac mandrel. Similarly, claim 46 claims the wellhead assembly of claim 37 "wherein the first tubular member and the secondary flange are fastened together," thereby demonstrating that claim 37 also claims embodiments of the wellhead assembly wherein the secondary flange is either separate from or connected to the frac mandrel. The construction of the term "extending from" taken in conjunction with the "wherein" clause of claims 1 and 37 is consistent with the scope of those claims and does not render either of those claims inoperative.

--- Footnotes ---

8 Claim 12 reads: "A wellhead assembly as recited in claim 4 wherein the secondary flange is separate from the elongate annular member (frac mandrel)."

9 Claim 4 reads: "A wellhead assembly as recited in claim 1 further comprising a seal between the elongate annular member second end portion and the first tubular member."

--- End Footnotes ---

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ii. Specification Arguments

When construing the "extending from" term in light of the specification, Figure 4b of the patent shows that the term is broader than Cameron asserts. For example, Fig. 4b depicts an embodiment of the claimed invention where the "lock screws 40...are threadedly retracted to allow unrestricted access through bore 92 defined through the secondary flange." Because the lock screws 40 are retracted in this embodiment, they do not interact with the annular groves 212, 214 of the frac mandrel 60, and therefore cannot be said to be "mechanically connected" to the elongate annular member 60 (frac mandrel). Fig. 4b, thus, explicitly discloses an embodiment of the present invention where the "secondary flange" is not integral with or mechanically connected to the frac mandrel 60."

[SEE FIG. 4B IN ORIGINAL]

Cameron argues that Duhn Oil's construction is inconsistent with the disclosure set forth in the '925 patent specification. According to Cameron the '925 patent specifications reveal that the use of the term is limited to reference to "integral" parts of a single structural component of the wellhead assembly described in the patent. For example, the '925 Patent describes an integral flange that connects to a fracturing tree as "[a] radial flange 208 [that] extends from an upper end of the wellhead isolation tool." Moreover, the non-integral secondary flanges 70 and 110 illustrated in the '925 Patent are never described as "extending from" the mandrel. Only in the claims of the '925 Patent is the secondary flange first described as "extending from" the mandrel. Thus, although '925 Patent describes non-integral alternatives for the secondary flange, interpreting the recitation "extending from" in a manner consistent with the written description suggests that this recitation is limited to an integral or one-piece relationship. Cameron also argues that term "extending from is never defined and there is no explanation of the term found in the prosecution history."

According to Cameron the relationship between the frac mandrel and the secondary flange is described in three different ways in the patent specifications:

1. Mechanically connected: Duhn Oil emphasizes that the secondary flange is disclosed as a separate part slid over the frac mandrel and positioned outwardly of the frac mandrel but fails to address the fact that the secondary flange is mechanically connected.

2. Integral: the secondary flange is described as being an "integral" part of the frac mandrel at Col. 3, lines 25-27, and at Col. 7, lines 22-24.

3. Threaded Connection: the "secondary tie down flange" described as secured to the frac mandrel with a threaded connection. (Col. 3, lines 28-37, and Col. 7, lines 17-22.)

Cameron argues that there are no other possible configurations contemplated or disclosed in the '925 Patent. There is no suggestion in the '925 Patent that the secondary flange is or may be disposed around but not connected to the mandrel. Cameron argues that the entire context of the '925 Patent evidences that the secondary flange is, at a minimum, mechanically connected to the mandrel. Lastly, Cameron argues that every described embodiment of the invention requires some sort of mechanical connection between the secondary flange and the mandrel and that the mechanically extending flanges are not just examples of flanges but are the only extending flanges contemplated and claimed in the '925 patent. According to Cameron, the only logical conclusion is to construe "extending from" as either integral or having a mechanical connection. Because Cameron's products merely abut each other, Cameron argues that they do not infringe.

Cameron correctly argues that the "extending from" language is not specifically defined in the '925 patent. However, it does not follow that an abutment relationship is not included merely because the term "extending from" is not defined. To determine the meaning of the term "extending from" an analysis of the term's use in the patent language and a comparison to the specifications is required.

Claim 1 describes a first tubular member flange "extending from" the first tubular member. In a separate provision, Claim 1 also describes "a plurality of fasteners fastening the secondary flange to the first tubular member flange." If the term "extending from" were to only contemplate a mechanical connection, then the term describing the relationship between the secondary flange and the first tubular member through a plurality of fasteners would not be necessary.
Claim 3 describes "a wellhead assembly as recited in claim 2 wherein said annular lip extends radially inward defining an opening having a first diameter, wherein the elongate annular member first end portion comprises an inner surface having a second diameter and wherein the portion of the production tubular member comprises an inner surface having a third diameter, wherein said first, second and third diameters are equal." An embodiment of this claim is found in Fig. 3. A close analysis of Fig. 3 shows the annular lip "extending" into the inner bore. There is no mechanical connection contemplated in this diagram or description. Both the diagram and the description show an abutment but not a connection.

[SEE FIG. 3 IN ORIGINAL]

Claim 37 describes, "A wellhead assembly comprising… a generally elongate annular member (frac mandrel) suspended in the first tubular member and said annular member having a first end portion extending above the first tubular member and a second end portion below the first end portion within the first tubular member 10, wherein the elongate annular member comprises an outer surface before the first and second ends, wherein a portion of a section of the outer surface of the elongate annular member mates with the smaller diameter inner surface section of the first tubular member."

An analysis of this claim and a comparison of Fig. 1 indicates that the lower portion of the frac mandrel is encased by the upper portion of the first tubular member flange. A visual assessment of Fig. 1 reveals that the upper portion of the frac mandrel abuts from the first tubular member. Further, the fact that the frac mandrel is "suspended" in the first tubular member indicates a relationship where the first tubular member is holding the frac mandrel in place by encasing it rather than through a threaded or mechanical connection. There is no description of any mechanical connection in either the language of this claim or in the visual description of the embodiment in Fig. 1.

Claim 50 describes "A wellhead assembly as recited in claim 37 further comprising a third flange extending from the generally elongate annular member spaced apart from the second flange." In Fig. 1 the third flange is indicated by no. 208 on the diagram. There is no mechanical or threaded connection contemplated in the relationship between the third flange and the frac mandrel. The third flange abuts the frac mandrel.

Claim 59 describes "A wellhead assembly as recited in claim 52 wherein a portion of the first tubular member extends within a casing head coupled to the casing, the wellhead assembly further comprising… an annular hanger suspended in the casing head... wherein the first tubular member comprises a lower section within the upper inner surface section of the annular hanger and wherein the second end portion of the elongate annular member extends to the intermediate inner surface section of the annular hanger sandwiching a portion of the first tubular member lower section between the outer surface of the elongate annular member and the upper inner surface of the annular hanger..."

Similarly, the language of claim 50 compared to Fig. 1 does not indicate a threaded or mechanical connection between the frac mandrel, the casing head, and the first tubular member. According to Fig. 1, all three components meet at the area of the inner surface section of the annular hanger. The components abut each other in Fig. 1 and have a relationship where some components are "suspended" by others in the relationship. Neither the language nor the diagram indicates any mechanical connection.

Based on a comparison between the language of the claims and the attached diagrams of the patent, it cannot be said that the term "extending from" was meant to only be limited to components that are mechanically connected.

iii. Prosecution History

The Patent Examiner who is skilled in the art, interpreted the term "extending from" to cover a wide variety of different structural relationships between the flange and the member it "extends from." The common feature of all these configurations is that the flange is "located or stretching outwardly from the frac mandrel." During the prosecution the
Examiner used the term "extending from" to cover various flange structures including a use where the structure was "integral," but he did not limit the application of "extending from" to that structure. Duhn Oil cites the Examiner's references to prior art in the prosecution history of the '925 patent.

For example in the Smith '194 patent The Examiner describes flange 20 threaded on member 19 as "extending from" that member. He also describes Flange 22 slipped over member 34 as "extending from" that member. (Doc. 40, Ex. 2, Part 6., P. 247, Office Action dated 10/05/2004).

In the Cornelssen et al '386 Patent, Flange 120, which rests on top of member 10 but has a wider diameter than member 10, is described by the Examiner as "extending from" that member. (Id.)

In the Van Bilderbeek '596 patent: The Examiner describes flange 330 as "extending from" the member of which it is an integral part. (Doc. 40, Ex. 2, Part 8, P. 316, Office Action dated 1/18/2005).

Based on the prosecution history of the patent, regardless of in what configuration the term "extending from" is used, all of the uses comprise a structure which is projecting from or abuts another structure. This is consistent with the ordinary meaning of "extending from" which describes the relative position of two components or portions of a component, not how they are connected.

Cameron disputes Duhn Oil's use of the prosecution history arguing that Duhn Oil's proposed construction is inconsistent with the arguments it made before the USPTO during the prosecution of the application that issued the '925 Patent and it should be estopped to deny the position it then took. Cameron first argues that Duhn Oil is precluded from asserting the "extending from" language of the Smith '194 patent and the Cornelssen '386 patent because the USPTO's references to the Smith '194 patent and the Cornelssen '386 patent were made in rejecting Duhn Oil's then pending patent claims. Cameron argues that the Examiner rejected a number of Duhn Oil's claims including claims 1 and 37 in the office action of October 5, 2004. Defendant asserts that Duhn Oil then "refused to agree that the flanges and frac mandrels identified by the Examiner disclosed the claimed 'secondary flange' and frac mandrel of the issued claims 1 and 37 in the '925 patent." According to Cameron, Duhn Oil effectively asserted that the "secondary flange" identified by the Examiner was not "extending from" the frac mandrel disclosed in the Smith and Cornelssen prior art patents because Duhn Oil referred to those flanges and frac mandrels as the "alleged" secondary flange and the "alleged" frac mandrel. 11 This argument does not follow. Referring to the secondary flange and the frac mandrel as "alleged" in the Smith and Cornelssen patents is not the logical equivalent asserting that those two components do not extend from each other.

11 In support of its argument, Cameron cites Cybor Corp. v FAS Technologies, Inc., 138 F.3d 1448, 1457 (Fed. Cir. 1998.) for the rule that when a patentee takes a position before the USPTO during prosecution of a patent application, the patentee should be barred from asserting an inconsistent position on claim construction. However, Duhn Oil did not take an inconsistent position during the prosecution of the case.

However, the secondary flange, which was added along with the "extending from" phrase and is one of the components that participates in the reaction to fracturing force, was the element added to overcome the rejection based on the Smith '194 patent. Duhn Oil argues that the presence of the secondary flange, and not its particular location, was the point of distinction. The amendment does not limit Duhn Oil's ability to claim the definition of "extending from" to include the relative location disclosed in the '194 patent.

iv. Extrinsic Evidence
In support of its argument, Duhn Oil refers to the dictionary meaning of the terms. The ordinary meaning of the terms "extend" and "from" are readily apparent, and it is proper to use a dictionary definition to ascertain their meaning. Phillips 415 F.3d at 1314 (in some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words… In such circumstances, general purpose dictionaries may be helpful.)

The term "extending" is commonly defined as "to jut out: stick out: protrude, project." (Doc. 45. Schwartz Decl., Ex. 3, Filed September 5, 2006.) Further the term "from" is commonly defined as "used as a function word to indicate a starting point." (Id.) Thus, the phrase "extending from" means to "protrude" from a "starting point." However, the definitions of "extending" or "from," separately or in combination do not require that whatever is "protruding" from the "starting point" be "integral or "mechanically connected" to the "starting point." The '925 patent only requires that one structure be positioned so as to stretch or protrude outwardly in relation to the other structure.

JVI argues that the phrase should be interpreted as "two faceplate returns extending from opposite ends of the faceplate, each of the faceplate returns forming an angle of approximately 90[degree] degrees with the faceplate." Universal originally argued that the phrase requires two limitations: (1) opposing faceplate returns that extend from the central faceplate, which returns are a different structure than the flattening bends/embedded legs; and (2) that the opposing faceplate returns extend from the central faceplate at approximately a 90[degree] degree angle from the faceplate, where the angle is the outer angle formed between the faceplate and the return. Contrary to Universal's original assertions regarding a different structure, the '897 patent refers to a "onepiece" steel member. The Court need not address this argument, however, because Universal abandons it in its Response stating that the returns are simply separate elements.

Therefore, the dispute is whether the 90[degree] degree angle is the outer angle formed between the faceplate and the return. JVI argues that the claim does not mention inner or outer angles. Likewise, neither the specification nor the prosecution history mentions inner or outer angles. Universal argues that since the claimed angle is formed between the faceplate and each return, it must be either the inner angle or the outer angle between the two claim elements. Since the angle is 90[degree] whether one measures the inner or outer angles, there does not appear to be a real disagreement on this phrase of the claim. Thus, the Court accepts JVI's definition because it is more in line with the plain meaning of the claim's words.
JVI's proposed construction is: first and second flattening bends that extend from the opposing faceplate returns. Universal proposes the phrase should be interpreted to require (1) that the flattening bends extend from opposing faceplates returns and (2) that the first flattening bend extends from the upper portion of the first faceplate return, and the second flattening bend extends from the lower portion of the second faceplate return.

In support of its proposed construction, Universal argues that throughout the specification, including the abstract, the figures, the summary of the invention and description of the preferred embodiment, only one description of the invention is given. That description is a configuration where one flattening bend extends from the upper portion of a faceplate return and the other flattening bend extends from the lower portion of the opposing faceplate return. Additionally, the specification refers to the configuration as the "present invention." In the specification, the inventor also distinguished the invention from other faceplates where both legs are either upward to downward. '897 Patent, Col.2, 11. 19-27. Thus, Universal argues, the configuration is not the preferred embodiment, but the only embodiment. See Honeywell Intern., Inc. v. ITT Industries, Inc., 452 F.3d 1312, 1318 (Fed. Cir. 2006).

JVI argues that Universal attempts to impermissibly import a limitation from the specification into the claims. It does not dispute that the preferred embodiment described in the '897 patent has one flattening bend that extends upward and one that extends downward. However, JVI argues that the preferred embodiment is merely one way to practice the invention. Further, JVI argues, the language of Claim 4 proves that such a limitation should not be imputed to Claim 1. Claim 4 is expressly limited to flange connectors in which one of the flattening bends extends from the upper portion of the return and the other extends from the lower portion. Aside from this limitation, Claim 4 is identical to Claim 1. Thus, JVI argues, Universal's construction violates the claim differentiation doctrine, which states that one should not read limitations of a dependent claim into an independent claim when doing so would render the dependent claim superfluous. Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005).

The patent construction doctrine of "claim differentiation" refers to a presumption that an independent claim should not be construed as requiring a limitation added by a dependent claim. Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1379 (Fed. Cir. 2006). Although claim differentiation serves as a guideline, rather than a rule, the Federal Circuit has noted that it works best when dependent claims show a distinction over a related independent claim. Id. ("Indeed the statute stresses that a dependent claim must add a limitation to those recited in the independent claim."); see also, Fiber Optic Designs, Inc. v. Seasonal Specialties, LLC, 172 Fed. Appx. 995, 999 (Fed. Cir. 2006); Fantasy Sports Properties, Inc. v. Sportsline.com, 287 F.3d 1108, 1115-16 (Fed. Cir. 2002). In this case, the only distinction between Claim 1 and Claim 4 is the limitation in Claim 4 that the first bend extends from the upper portion of the first return and the second bend extends from the lower portion. Thus, reading this limitation into Claim 1 would make Claim 4 superfluous. As a result, the Court accepts JVI's interpretation of this disputed phrase.

III. "Extending from the Top Surface to the Bottom Surface"

With respect to the second phrase to be construed, the parties dispute whether the top and bottom of the pylons discussed above must be molded into the top and bottom surfaces of the docking section in order to "extend[] from the top surface to the bottom surface." The Defendants argue that the term at issue requires a "kiss-off" between the pylon and the top wall of the docking section; that is, the pylon must be molded into the plastic shell forming the top surface of the dock. For this assertion, they rely principally on statements in the specification and the prosecution history regarding the function the pylons serve; they "provide additional structural support for the docking member as well as preventing sagging of the deck under applied pressure," and offer rigidity to the docking member.

The specification again points up a difficulty with the Defendants' arguments. The specification states that, "the struts desirably include pylons with an arcuate top connected by slightly taller and wider pylons." For some pylons to be slightly taller than other pylons, it is evident that not all of the pylons can be the same height. If, however, the Defendants' proposed construction applied, such that all pylons must be molded into the plastic that forms the top surface of the dock, all of the pylons would be the same height. Thus, the Defendants' proposed construction of "extending from the top surface to the bottom surface" would exclude what the inventors indicated was a desirable embodiment of the patent. As discussed above, a party who advances a claim construction that excludes from its scope a preferred embodiment must come forward with
highly persuasive evidentiary support for that construction. Bowers, 302 F.3d at 1345. The Court has considered Defendants arguments, based on prior art references, and concludes that they are not highly persuasive evidence of EZ Dock's intent to claim only pylons that have been molded into the top surface of the deck.

Conclusion

Based on the foregoing and all of the files records and proceedings herein, IT IS ORDERED that

1. Defendants' Motion to Strike the Affidavit and Expert Report of EZ Dock's Patent Law Expert and Other Extrinsic Evidence (Doc. No. 106) is DENIED; and

2. The following claim terms in United States Patent No. 5,281,055 have the following meanings:

<table>
<thead>
<tr>
<th>Claim language</th>
<th>Court's construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>extending from the top surface</td>
<td>stretching between the top surface and the bottom surface</td>
</tr>
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</table>

GO BACK

1502

. "base also extending in a lateral direction between a first and second edge thereof"

The court adopts Simmons' construction of the above terms with the exception of the additional word "approximately" and the substitution of the word "base" for "ski". The changes are noted in italics:

The claim term "base also extending in a lateral direction between a first edge and a second edge thereof" means the structure which supports all of the other claimed structures of the snowmobile ski (base) extends the width of the snowmobile ski in a direction approximately perpendicular to the longitudinal direction between first and second edges of the base. The term "edge" means the end or outermost lateral boundary of the snowmobile ski base.

The court agrees with Bombardier that "lateral" is not limited to being perfectly perpendicular to a longitudinal center line. For example, while longitudinal and lateral lines on a globe are perpendicular at the equator, they do not remain perfectly perpendicular around the surface of the globe. Thus, the limitation of "perpendicular" is not required by the claim language. However, it is clear that the claim terms "longitudinal" and "lateral" in the claim are referring to opposing directions so that the term "approximately perpendicular" gives the language its plain and ordinary meaning.

The primary dispute in this case is over the single word "edge." "Edge" can mean, as put forth by Simmons, "a line or border at which a surface terminates." 10 Thus, Simmons argues that "edge" must be the outermost lateral boundary of the snowmobile ski base. The court accepts this definition because of the context of the claim.

10 RANDOM HOUSE WEBSTER'S UNABRIDGED DICTIONARY at 620.

Bombardier would have this court define "edge" so as to make the side portions a component separate and apart from the base. It is true, as Bombardier argues, that the claim language clearly contemplates the base extending in a lateral direction between the two edges of the base and not necessarily the edges of the entire ski. Nevertheless, subsequent language in the claim makes clear that the base does in fact extend the entire width of the ski. The plain and ordinary meaning of the term base is something which "supports" a structure. Webster's defines "base" as "the bottom part of anything: the support or foundation . . . ." 11 When referring to the base of a particular structure (as is the case here) the plain and ordinary meaning of base is clearly something which generally bears the weight of that structure -- in this case, the weight of the ski. Thus, any ski which fits within the language of claim 1 is going to have "side portions" which are part of the "base" for the simple
fact that it is the side portions which will bear the weight of the ski. This is clear from the fact that the guide rods are "disposed on a bottom" of the side portions. The purpose of the guide rods requires that they touch the ground and have weight upon them while the ski is in use.

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"Claim language is given its plain, ordinary, or accustomed meaning to one of ordinary skill in the relevant art . . ." 12 Thus, in construing the plain meaning of this claim, the court must think of a person "of ordinary skill in the relevant art." If a "base" is something which supports a structure and the 594 patent describes a ski whereby the weight of the ski is going to be supported by the side portions with guide rods on the bottom of the side portions, clearly the side portions are a part of the "base." As such, the 594 patent clearly describes a "base" which extends laterally to the "edge" of the ski.

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Bombardier would have this court adopt a definition of base whereby the only portion of Simmons' Flexi-Ski (and the Fritz Ski upon which Bombardier demonstrates its definition of "edge") would have a base that would be the only portion of the ski not actually touching the snow and not bearing any weight of the ski. In other words, the "edges" which Bombardier identifies on the Fritz Ski may indeed be termed edges, but they clearly cannot be termed edges of the base of the ski. This would nullify the plain and ordinary meaning of the term base. Thus, "edge" must be defined in the context of the phrase of which it is a part because it "finds context in the surrounding words." 13 While a court cannot import limitations into the claim language, nor can the court interpret claim language so broadly as to negate the context it resides in. The construction put forth by Simmons is more in accord with the "ordinary and accustomed meaning of the claim terms." 14

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1503

C. Does the PG1 Gearset Literally Infringe the Semicircular Lever Limitation?

Before the Court addresses whether the PG1 gearset literally infringes the semicircular lever limitation, it must first construe that limitation, which states: "said lever extending in a semicircle around said gear." Corsello Decl. Ex. A at 9, Col 6:11-12. JSB proposes that this limitation should be construed to mean that "the lever surrounds or encompasses a portion (approximately one-half) of the cylindrical internal gear." Joint Statement of Disputed and Undisputed Terms, Ex. A ("Disputed Terms") at 17. Bosch proposes that this limitation should be construed to mean that "the lever is formed, at least in part, in the shape of an arc that follows the outline of part of a circle." Id.

In construing disputed claim terms, the court should look first to intrinsic evidence. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996.). Intrinsic evidence includes the language of the claims, the specification and the file history, if in evidence. Id. The file history is often important intrinsic evidence because any interpretation that is either provided or disavowed in the file history affects the claim scope. Renishaw, 158 F.3d at 1249 n.3. In most situations, analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. Vitronics, 90 F.3d at 1583.

Absent a special and particular definition created by the inventor, e.g., the inventor acted as his own lexicographer, terms in a claim are to be given their ordinary and accustomed meaning. Renishaw, 158 F.3d at 1249. The court must review the specification to determine whether disputed terms have been used by the inventor in a manner other than their ordinary meaning. Vitronics, 90 F.3d at 1582.

The Court agrees with Bosch that JSB's proposed construction of the semicircular lever limitation -- a lever that surrounds or encompasses a portion of the internal gear -- reads out of that limitation the words "in a semicircle." Were the Court to accept JSB's proposed construction, a rectangular or even pointed lever would also literally infringe the semicircular lever limitation. See Bosch's Markman Memorandum at 2 (illustrating a rectangular or pointed lever that would meet JSB's proposed construction of the semicircular lever limitation). This result is clearly incorrect and defies common sense. Moreover, it is a well-settled canon of claim construction that Courts should not read limitations out of a claim. Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 93 F.3d 1572, 1582 (Fed. Cir. 1996) (citation omitted). The Court agrees with Bosch's unremarkable proposition that the semicircular lever limitation requires that the lever have a shape that is semicircular.

Bai v. L & L Wings, Inc., 1997 U.S. Dist. LEXIS 12649, 1997 WL 527870 (S.D.N.Y. Aug. 22, 1997), aff'd, 160 F.3d 1350 (Fed. Cir. 1998), is directly analogous to the present case. There, the patent at issue recited, in relevant part, "a glove formed of a hemispherical dish-shaped rigid plastic member." 1997 U.S. Dist. LEXIS 12649, [WL] at *1. The defendant argued that its product did not literally infringe this claim "because the plastic glove member of the accused structure is not 'hemispherical.'" 1997 U.S. Dist. LEXIS 12649, [WL] at *2. Rather, the glove member of the accused structure was "not part of a sphere, having a perceptibly flattened surface." Id.

The plaintiff argued that, despite its use of the word "hemispherical" in the patent claim, it had chosen to be its own lexicographer because the drawings that accompanied the claims depicted a rigid glove that was less than a hemisphere. The court held that even though the drawings depicted the glove as being less than a hemisphere, they were, nonetheless, "a part of a sphere." Id. Because the defendant's glove member was not part of a sphere at all, the court concluded that defendant had not literally infringed plaintiff's patent.

Here, JSB advances a similar argument that it chose to be its own lexicographer because the preferred embodiment of the lever does not depict the lever as a perfect half-circle. Rather, the depicted lever has a stepped segment on either side of circular segment that is less than 180 degrees (i.e., less than a semicircle). See Corsello Decl. Ex. A at 5 (two drawings of the preferred embodiment of the lever claimed in the '833 patent). Although the claimed lever is less than a semicircle, it is, nonetheless, part of a circle. For the word "semicircle" to have any meaning (i.e., to avoid reading this term entirely out of the patent), the lever must contain at least part of a circle.

Under this construction, Bosch's PG1 gearset does not literally infringe the '833 patent. The lever in the PG1 gearset does not contain part of a circle. See Cotter Decl. Ex. D at 178 (side-by-side drawings of the claimed lever and the accused lever). Instead, it extends around the internal gear in a series of five straight line segments, and is in the shape of a semi-octagon (like the top half of a stop sign). Therefore, the Bosch drill does not literally infringe the semicircular lever limitation in the '833 patent.

It is well-established that, in interpreting the claims, the court should look to three sources: the claims themselves, the patent specification and the patent's prosecution history. Markman v. Westview Instruments, Inc., 52 F.3d at 979 (citations omitted); Stryker Corp. v. Intermedics Orthopedics, 891 F. Supp. 751, 766 (E.D.N.Y. 1995). The court may also consider expert testimony, "including evidence of how those skilled in the art would interpret the claims," in construing the claims at issue. Markman v. Westview Instruments, Inc., 52 F.3d at 979 (quoting Fonar Corp. v. Johnson & Johnson, 821 F.2d 627, 631 (Fed. Cir. 1987)). The prosecution history of the patent may be significant in that disclaimers made during prosecution limit the interpretation of the claims. Southwall Technologies, Inc. v. Cardinal IG Company, 54 F.3d 1570, 1576 (Fed. Cir. 1995) (citing ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580 (Fed. Cir. 1988); Senmed, Inc. v. Richard-Allan Med. Indus., Inc., 888 F.2d 815, 818-20 (Fed. Cir. 1989)); Stryker Corp. v. Intermedics Orthopedics, 891 F. Supp. at 767.

In the case at hand, the court already has determined the scope of the '647 Patent on American Permahedge's motion for an injunction. Specifically, the Court found: (1) the phrase "extending laterally" means that bristles extend perpendicularly from the wire twig; and (2) the phrase "planar array" refers to "the branches themselves, rather than the overall hedge." American Permahedge v. Barcana, Inc., 857 F. Supp. at 321-22. This decision was reached after evaluating the language of the claims, the patent specification and drawings, the patent's prosecution history and evidence presented at the hearing including expert testimony on the meaning of the relevant claim language. See id. at 320-22. The Court was also heavily persuaded by statements made by plaintiff during the prosecution of the '647 Patent. Specifically, the Court noted that, in distinguishing the '647 Patent from the Goodridge Patent:

The patentee stated that the needles of Goodridge "are bent permanently at an angle to the axis so that a planar array capable of forming shrubbery is not possible. As a result, Goodridge could not provide a densely packed contiguous planar array simulative of shrubbery."

Id. at 321-22 (quoting Amendment, dated Mar. 1, 1989, annexed to the Horwitz Aff. as exh. "H4"). The Court concluded that, based on the patentee's decision to restrict the scope of its claims to acquire the '647 Patent, American Permahedge "is estopped from now asserting that 'laterally extending' means anything other than perpendicular." Id. at 322.

Under Markman, this Court is now obligated to interpret the meaning of the claims as a matter of law. As this issue was thoroughly addressed in the 1994 Opinion, for the reasons set forth there and as briefly described above, the Court finds as a matter of law that (1) the phrase "extending laterally" means that bristles extend perpendicularly from the wire twig; and (2) the phrase "planar array" refers to the branches themselves, rather than to the overall hedge.

To determine whether American Permahedge can succeed on its literal infringement claim, however, the Evergreen Hedge must be compared to the claims as construed by the court. See Markman v. Westview Instruments, Inc., 52 F.3d at 976. In particular, to establish literal infringement, the plaintiff must establish that every element in the '647 Patent is present in the Evergreen Hedge. Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d at 1575 (citing Becton Dickinson & Co. v. C.R. Bard, Inc., 922 F.2d 792, 796 (Fed. Cir. 1990)). Although American Permahedge correctly argues that such a comparison is essentially a factual determination, there is no genuine issue of fact that the test for literal infringement cannot be met here. 2 The parties do not dispute that the needles of the Evergreen Hedge extend at an angle from the wire twig rather than perpendicularly as set forth by the claims. Moreover, the Evergreen Hedge needles are twisted and therefore are incapable of creating the planar array described by the '647 Patent. As it is thus undisputed that every element in the '647 Patent is not present in the Evergreen Hedge, Barcana's motion for summary judgment dismissing American Permahedge's claim is granted to the extent its claim is based on a theory of literal infringement.

Footnotes

2 American Permahedge cites to Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512 (Fed. Cir. 1995), for the proposition that infringement is a question of fact. This is an accurate statement of the law in that, as set forth above, the second step of the analysis requires the factfinder to compare the accused product to the claims as construed by the court. This determination may in many instances require resolving factual issues. Contrary to Barcana's assertion, however, there
is no indication that the Hilton Davis court was overruling the clear holding of Markman which requires courts to construe claims in the first instance.

We first address the literal infringement issue with respect to the limitation that the needles "extend laterally of the axis" of the branch. The district court held that the limitation requires that the needles radiate at right angles from the branch, and found noninfringement because the accused Barcana product has the needles radiating at about a 45 degrees angle to the axis of the branch.

In construing a claim limitation, we look to the claim language, the specification and the prosecution history. Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 1580, 36 U.S.P.Q.2D (BNA) 1162, 1165 (Fed. Cir. 1995), cert. denied, 134 L. Ed. 2d 666, 116 S. Ct. 1567 (1996). As the district court properly found in reference to The American Heritage Dictionary (2d ed. 1976), the term "lateral" in its usual dictionary usage means "coming from the side." The court properly noted that there is nothing in the dictionary definition that would limit the term "lateral" to "perpendicular."

The specification confirms the above interpretation. The term "extending laterally" is used several times in the specification. The most illuminating passage on the issue is found at col. 4, lines 1-5 (emphasis added):

Each transverse element itself includes a pair of twisted wires 612 and 614 that support a plurality of densely packed laterally extending filaments 616, in all respects similar to filaments 16 described above.

The above passage describes the embodiment of the patent in Fig. 7. As shown in Fig. 7, filaments 616 extend from twisted wires 612 and 614 at an angle of about 45 degrees - definitely not perpendicularly. Thus, it is clear from the above passage that the patentee used the term "laterally extending" based on its ordinary meaning: extending sideways irrespective of the angle.

The district court, in reaching a contrary conclusion on the "extending laterally" issue, relied on the following passage from the specification: "Manual fluffing of the filaments 16 will tend to brush out any filaments 16 that remain other than essentially perpendicular from the support axis." The district court also relied heavily on the embodiment shown in Fig. 1 (and the accompanying text) that shows the needles extending out perpendicularly. However, that embodiment and the accompanying passage do not limit the claim term "extending laterally" to extending perpendicularly. Claims, not the specification embodiments, define the scope of the protection. See Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865, 9 U.S.P.Q.2D (BNA) 1289, 1299 (Fed. Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations."). If anything, the text relied on by the district court simply demonstrates that the patentee used the word "perpendicularly" when he meant "perpendicularly."

The district court, in deciding the "extending laterally" issue, seems to have been most influenced by a statement made by American Permahedge during prosecution regarding a prior art patent to Goodridge. The Goodridge patent (U.S. Patent No. 3,343,357) discloses a new method of making an artificial Christmas tree branch. The branch disclosed in Goodridge is essentially a circular brush with the needles radiating in all directions and attached to the stem at an upward angle (rather than perpendicularly as in prior art Christmas tree branches) to simulate real Christmas tree needles more closely. During prosecution, American Permahedge sought to distinguish Goodridge by the following statement (emphasis added):

In Goodridge the fibers are bunched together in discontiguous clumps, leaving defined spaces between each clump at the root, i.e. where the wires are twisted. Further, the fibers are bent permanently at an angle to the axis so that a planar array capable of forming shubbery [sic] is not possible. As a result, Goodridge could not provide a densely packed contiguous planar array simulative of shubbery [sic]. Goodridge provides a tree branch but not shubbery [sic].

The district court interpreted the above statement to mean that the patent in suit could not cover any product that had needles extending at an angle other than 90 degrees. That was error. We think that by the above statement the patentee only represented the Goodridge tree branch as having needles permanently bent at a fixed angle, radiating in all directions so that
those needles cannot be flattened out to form a flat plane. Thus, as we discuss below, the above passage is pertinent on the "planar array" issue, but not on the "extending laterally" issue. We therefore conclude that the "extending laterally" limitation simply means extending from the side, with no limitations on the angle.

1506

1. "A projection extending laterally from a top wall of the offset power box"

There are six disputed phrases within Claim 1 requiring the Court's interpretation. Panduit asks the Court to construe the first disputed phrase, "a projection extending laterally from a top wall of the offset power box," as meaning that "the claimed 'projection' is formed integrally with a top surface of the offset power box. The projection extends laterally toward the trunking duct." HellermannTyton counters by arguing that "to require a projection that extends laterally from a top wall of the offset power box means that the top wall of the offset power box cannot be the extension itself, otherwise the 'top wall' would not have an extension." Thus, with respect to disputed phrase one, it appears the parties disagree about only one thing: whether the "projection" constitutes a separate piece from the top wall (HellermannTyton's interpretation), or is formed integrally with the top surface of the offset power box (Panduit's interpretation).

Panduit supports its claim by arguing that HellermannTyton's interpretation would exclude the preferred embodiment. HellermannTyton disputes this, claiming that the preferred embodiment has both a top wall and a separate lateral extension. After reviewing the illustrations that depict the '732 Patent's preferred embodiment, the Court agrees with Panduit. Based on these diagrams, the Court finds that the "projection" is integrated entirely with the "top wall," forming a single element.

As a result, the Court accepts Panduit's interpretation of disputed phrase one. Although HellermannTyton's reading has some linguistic appeal, "a claim construction that excludes a preferred embodiment is rarely, if ever, correct." Dow Chem. Co. v. Sumitomo Chem. Co., 257 F.3d 1364, 1378 (Fed. Cir. 2001). HellermannTyton has given the Court no reason to depart from this general rule. Therefore, the Court finds for Panduit as to the construction of disputed phrase one.

1507

4. "a fixed attachment extending laterally from the attachment plate at the top of the knife body in the implement plane"

Plaintiff proposes the fixed attachment is a part of the attachment structure, which in turn is part of the attachment plate and extends rigidly therefrom. The fixed attachment includes first and second portions between which the pivotable gate extends. The fixed attachment does not extend from the top of the knife body or from either of the sides of the knife, but is a part of, and extends from, the attachment plate at the top of the knife body.

Defendant proposes "a fixed structure used for attachment extending out laterally from the attachment plate at the top of the knife body in the implement plane."

The court finds this language to be clear on its face. Accordingly, no claim construction is necessary.

1508

Drive Shaft Extending Lengthwise

Here, the parties dispute whether the word "lengthwise" refers to the length of the discharge control member through which the drive shaft extends or simply to the orientation or direction of the drive shaft itself. For the following reasons, the Court will hold that the term refers to the length of the discharge control member. First, the Court finds that the phrase does not have a plain meaning and therefore it is necessary to consult the specification. The specification does not define either the phrase in issue or the term "lengthwise," although the Court notes that Figures 4 and 5 depict the drive shaft extending through the pivoting discharge control member along an axis which corresponds with the length, or greatest dimension of
the discharge control member. U.S. Patent No. 5,423,268 figs. 4-5 (filed Dec. 7, 1992). Having exhausted the intrinsic
evidence, the Court next looks to a dictionary definition. One popular dictionary defines "lengthwise" as being "[o]f, along,
or in reference to the direction of the length; longitudinally." The American Heritage Dictionary of the English Language
(4th ed. 2004). Finally, although the Court credits inventor testimony evidence with little weight, the inventor admitted in
his deposition that in this context, "lengthwise" refers to the drive shaft extending "[f]rom one end of the door to the other." (Bounds dep. 52:2-11, Aug. 15, 2007.) The Court concludes that the phrase "drive shaft extending lengthwise" means that
the drive shaft extends from one end of the pivoting discharge control member to the other.

1509

7. "Extending outside the opening"

Claim 9 includes "a contactor having a spring . . . and at least one contact. . ., the contact extending outside the opening of
the battery holder for electrical connection with the first terminal of the battery. . .." '900 Patent col.11.36-41 (emphasis
added). Invisible Fence's proposed construction asks us to read the phrase as "extending or protruding from the battery
holder," while Perimeter proposes the construction, "the electrically-conductive elongated arms of the contactor must extend
through and beyond the open end of the battery holder through which the battery is inserted." 21 (Joint Statement 5.)

21 The terms "contactor" and "opening" were construed supra, Part III.B.1 and Part III.B.3, and do not require further
discussion here.

Invisible Fence claims that the contact arm is not required to extend through the opening of the battery holder, arguing
instead that the contact arm must only "extend from the battery holder in an area outside the opening, such that the one or
more contacts can electrically connect with the electronic device." (Pl.'s Opening Br. 32.) In support of this argument,
Invisible Fence cites to language in the Summary, which provides that "the battery holder also includes . . . at least one
contact extending externally of the battery holder," while Perimeter proposes the construction, "the electrically-conductive elongated arms of the contactor must extend through and beyond the open end of the battery holder through which the battery is inserted." 22 '900 Patent col.2 1.11.

 Indeed, Invisible Fence's proposed construction would read the term "the opening" out of the claim, rendering it essentially
superfluous, whereas the claim itself necessarily entails that the contact arms will extend through the opening to reach
outside the battery holder.

Moreover, fig. 3 and the Description, when considered along with the language of claim 9, supports a construction requiring
the contact arm to extend through the opening. See Alloc, Inc., 342 F.3d at 1370. For example, the specification provides,
"When the contactor . . . is inserted into the battery holder . . . each contact arm . . . extends generally from the base . . . of
the battery holder beyond the opening of the battery holder . . . [.] The ends of the contact arms . . . that project from the
open end of the battery holder are rounded and flared. . .." 22 '900 Patent col.6 1.55-60.

22 The specification also describes two notches, which are "along the outer periphery of the retaining ring . . . to provide
passageways for the ends of the contact arms . . . projecting from the open end of the battery holder." '900 Patent col.7 1.32-
36. During the claim construction hearing, Invisible Fence argued that the notches ostensibly were not part of the opening,
suggesting that the contact arms could not possibly extend through the opening. This argument seemingly flows from their
previous claim, discussed supra Part III.B.1, that the central aperture and the opening are one and the same after the
retaining ring is attached. However, as we concluded above, the central aperture does not describe or define the opening.
Additionally, the specification ostensibly defines the notches as part of the opening, since the notches provide a
"passageway" for the contact arms to "project[,] from the open end of the battery holder." '900 Patent col.7 1.32-36.
Therefore, we construe the term "extending outside the opening" to mean "extending through and beyond the opening."

1. Receivers extending outwardly

   . Plaintiff's proposed construction: Portions of the face guard that extend rearwardly from the front portion or main body of the face guard.

   . Defendant's proposed construction: Wire members, projecting from the main body of a face guard, that extend rearwardly in order to be attached to the side of a helmet.

The primary dispute with respect to this term is whether the members only "extend" or whether they "extend and project" from the main body of the face guard. Both parties agree that the term "rearwardly" better describes the direction in which the receivers extend.

In support of its proposal, defendant relies on depictions of the receivers in the specification. However, nothing in the claims language or the specification dictates that the receivers extend and project. Defendant argues that "project" needs to be included to distinguish receivers from other portions of the faceguard that extend toward the back. I disagree. The terms "project" and "extend" have similar definitions. The common meaning of project is to extend or protrude beyond something else. Including both terms in the construction would be duplicative. Further, as plaintiff points out, claim 14 makes clear that the face guard consists of a plurality of intersecting members, including first and second receivers extending outwardly from the main body. The patent prosecution history shows that the claim's important distinction from the prior art is that the members are configured to engage the connector, not that they extend or project. Dkt. # 30, Exhs. R-T.

Accordingly, I conclude that the term "receivers extending outwardly" as used in claims 14-19 of the '151 patent means members of the face guard made of wire or other material that extend rearwardly from the main body of the face guard.

1511

As with the "having" term, plaintiff does not challenge defendant's suggestion that the terms "extending" and "outwardly" should be accorded their plain and ordinary meanings. Instead, plaintiff merely persists in his blanket assertion that the ridge is only limited by the language set forth in claim 4, (i.e., that the ridge (1) extends outwardly opposite the rear surface of the tongue, (2) that it extends across the tongue, and (3) that it is generally parallel to and in a spaced relation to the tooth.) Plaintiff's assertions are unhelpful, however, because they offer the court no assistance in construing those terms.

According to Webster's, "extending," the present participle of the verb "extend," is defined as "to cause to project in one or more directions: stick out," Webster's Third New International Dictionary 804, and "outwardly" is defined as "on the outside" or "toward the outside: in an outward direction." Id. at 1605. Taken together, and read in the context of claim 4, those words suggest--and, therefore, support the court's construction of the word "having" -- that the lower ridge is a part of the tongue structure itself, projecting from or sticking out in an outward direction from the tongue.

Absent any dispute or alternate definition of those terms, and further in light of the lack of any indication from the patent itself that Mr. Pehr intended otherwise, the court accepts defendant's proposed construction of the "extending outwardly" language to mean that the lower ridge must project from the tongue. As set forth above, this construction fully comports with the court's interpretation of the word "having," and, as was the case with that term, is consistent with the illustrations of plaintiff's invention as set forth in the patent specification.
II.

Sage's '728 patent discloses a disposal container that allows a user to deposit hazardous medical waste without touching waste already in the container. Figure 3 of the patent, reproduced below, illustrates the claimed features. The disposal container 10 includes a container body 12 with an elongated slot 16 at its top. A barrier, having a first constriction 18 and a second constriction 20, restricts access to the interior of the container body. Closure 28 closes the container.

[SEE ILLUSTRATION IN ORIGINAL].

The only independent claim of the '728 patent (with emphasis to highlight disputed elements) reads:

1. A disposal container comprising:
   a. a hollow upstanding container body,
   b. an elongated slot at the top of the container body for permitting access to the interior of the container body,
   c. barrier means disposed adjacent said slot for restricting access to the interior of said container body, at least a portion of said barrier means comprising
      i. a first constriction extending over said slot, and
      ii. a complementary second constriction extending beneath said slot, and
   d. a closure disposed adjacent said slot.

The district court properly interpreted "top of the container body" to mean the "highest point, level, or part of." The court also properly interpreted "extending over said slot" to require that the first constriction be "above" the elongated slot. The patentee nowhere indicated any intention to deviate from these ordinary meanings of the claim terms. Thus, they control. See York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572, 40 U.S.P.Q.2D (BNA) 1619, 1622 (Fed. Cir. 1996) ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning.").

3. "the cavity extending parallel to and spaced outwardly from the plane of travel of the blade"

Plaintiff argues this should be construed as

the recess or cavity in the handle has a dimension that extends parallel to the plane of travel of the blade. The plane of travel of the blade is the recited reference plane. Thus, the relative dimensions of the blade or handle and the cavity are not constrained by this claim.

Defendant argues this portion of the claim should be construed as "the cavity extending parallel to the length of the handle and spaced outwardly from the plane of travel of the blade."

The court finds this term is clear on its face, requiring no construction. The argument that the cavity must be parallel to the length of the handle is unpersuasive.

1514

Aspex maintains that "having two side portion extensions extending rearwardly therefrom" should be construed to mean "has two portions that extend outwardly and rearwardly of the sides of the lenses or the lens rims (if provided) to pivotally connect to the legs." Ps. Br. 10. E'Lite contends the limitation means "having extensions for pivotally coupling to a leg,
extending rearwardly from the sides of the primary spectacle frame." D. Br. 5.

The principal dispute over this limitation is the addition of "outwardly" to describe the direction in which the extensions extend. Aspex's proposed addition of "outwardly" to the disputed limitation rests on two arguments. First, it contends that the "configuration and location of extension 11 in the patent drawings" show that the "side portion extensions" extend both rearwardly and outwardly, not just rearwardly. Second, it maintains that E'Lite agreed with Aspex's proposed construction in an October 23, 2003 Joint Claim Construction Statement (the "2003 Statement").

E'Lite responds that "outwardly" should not be imported into the claim language, because the drawings are not enough to overcome the presumption that the plain claim language controls its meaning. E'Lite does not address Aspex's second contention.

E'Lite's proposed construction relies on the specification, drawings, and claim language. It posits that the specification identifies distinct extensions attached to the "outer rim portions" of the primary spectacle frame, and that these extensions are defined by the specification, drawings, and claims as being for "pivotally coupling a leg thereto." D. Br. 6. Aspex responds that E'Lite's proposed construction is imprecise, because it fails to acknowledge that the extensions extend outwardly as well as rearwardly, and it fails to define properly the "side portions" of the primary spectacle frame from which the extensions extend, because the "outer rim portions" can be located either at the sides, top, or bottom of the lens rims.

The court rejects Aspex's first basis for adding "outwardly" to the description of the extensions. This ground relies solely on the patent drawings and does not comport with the ordinary and customary meaning of the claim terms, as interpreted in light of the specification and claim language. Although drawings may aid in interpreting claim language, e.g., Autogiro Co. of America v. United States, 384 F.2d 391, 398, 181 Ct. Cl. 55 (Ct. Cl. 1967), drawings that depict a particular embodiment do not operate to limit the claims to that specific configuration. E.g., TI Group Auto. Sys. (N. Am.), Inc. v. VDO N. Am., L.L.C., 375 F.3d 1126, 1138 (Fed. Cir. 2004) ("[T]he fact that the drawings are limited to a particular embodiment does not similarly limit the scope of the claims."); Prima Tek II, LLC v. Polypap, S.A.R.L., 318 F.3d 1143, 1148 (Fed. Cir. 2003) ("[T]he mere fact that the patent drawings depict a particular embodiment of the patent does not operate to limit the claims to that specific configuration"). Therefore, the court will not limit the scope of the claimed invention by interjecting "outwardly" into the construction on the sole basis of the patent drawings. See, e.g., Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc., 222 F.3d 951, 956 (Fed. Cir. 2000) (rejecting patentee's argument that patent drawings define precise proportions of claim elements).

Nor can the court accept Aspex's second ground. The 2003 Statement is not a binding party admission regarding the construction of claim 18. In the 2003 Statement

[[the Parties were only able to reach agreement . . . [that] the phrase "two side portion extensions" as used in Claims 12 and 16 [should be interpreted to mean] those portions of the primary spectacle frame which extend outwardly and rearwardly of the lenses or lens rims (if provided) to pivotally connect to the legs.

Ps. Br. Ex. 11 at 1 (emphasis added). E'Lite did not agree to a construction of "two side portion extensions," as that term is used in claim 18. Because the 2003 Statement applied only to claims 12 and 16, E'Lite is not bound by this construction in the context of claim 18.

The court recognizes that "claim terms are normally used consistently throughout the patent." E.g., Phillips, 415 F.3d at 1314 (citing Rexnord Corp., 274 F.3d at 1342). But the 2003 Statement is extrinsic evidence regarding the construction of claim 18. See Markman, 52 F.3d at 979 ("To ascertain the meaning of claims, we consider three sources: The claims, the specification, and the prosecution history." (emphasis added) (citations omitted)). "If the meaning of a claim is unambiguous from the intrinsic evidence, then a court may not rely on extrinsic evidence for purpose of claim construction." Avia Group, 222 F.3d at 955. The intrinsic evidence unambiguously excludes importing "outwardly" into this disputed limitation. Thus it would be improper to consider extrinsic evidence, including the 2003 Statement, to alter the meaning clearly conveyed by the intrinsic evidence. 8

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -
Moreover, Aspex has failed to explain adequately why the court should adopt the same construction of the term as it is used in claim 18.

Having determined that this limitation should not be construed to provide that the extensions extend "outwardly," the court now considers the parties' disagreement concerning the place from which the "side portion extensions" extend. Aspex argues that the extensions extend from "the sides of the lenses or the lens rims (if provided)." Ps. Br. 10. E'Lite maintains that the extensions extend from "the sides of the primary spectacle frame," although it later argues that they extend from "the outer rim portions of the frame." D. Br. 5.

Claim 18 speaks of "a primary spectacle frame having two side portion extensions extending rearwardly therefrom." D. App. 9. "Therefrom"—the place from which the "side portion extensions" extend—refers to the primary spectacle frame. The plain language of the claim does not support Aspex's contention that "side portion extension" could extend directly from the lenses. Moreover, neither party adequately explains the introduction of the phrase "lens rims" into this claim. Thus the court adopts E'Lite's proposed construction that comports most closely with the original claim language: "sides of the primary spectacle frame."

The parties both propose adding language to this limitation concerning the coupling with the legs. The parties' proposed constructions ("for coupling to a leg" and "to connect to the legs") convey essentially the same meaning, and the parties do not challenge this portion of their proposed constructions in their briefs. The court therefore construes "having two side portion extensions extending rearwardly therefrom" to mean "having two extensions extending rearwardly from the sides of the primary spectacle frame to pivotally connect to the legs."

The phrase "extending therefrom" describes the direction of the two spaced apart and resilient leg portions of the head portion. The legs are displayed in Fig. 7 as 76 and 78. They are an integral part of the head portion of the female fastener 46 at one end, and extend downwardly from it through the seat shell aperture 38. The specification describes them in col. 7, ll 45-47 as follows:

Resilient legs 76, 78 pass through aperture 38 and extend into inner portion of seat shell 14.

There is no ambiguity in the phrase. It simply describes the direction in which the legs point, i.e., downwardly, from the head portion of the female fastener through the seat shell aperture into the inner portion of the seat shell.

The phrase is to be construed as follows:

The downward direction of the leg portion of the head portion.

The parties next dispute the meaning of the phrase in Claim 1: "wires, including conductor wires from said light emitting source, extending through one of said housing walls."

a. Claim language

Maxconn argues that the ordinary meaning of the claim language indicates that the conductor wire from the light emitting
source itself extend through a wall of the housing with no intervening connections. Plaintiffs, conversely, argue that the claim contains no limitation that the wire be formed of one continuous strand originating at the LED. They say that regardless of whether the wire is formed of one continuous strand or more than one strand joined end-to-end, it remains a conductive wire from the light emitting source.

The Court agrees with Maxconn that the claim language itself suggests that a single strand of conductive material extends from the LED itself out through an opening in the housing wall. While it is common knowledge that the term "wire" includes materials that are in actuality composed of more than one piece of conductive filament laid more or less end to end (e.g., telephone wires, cable wires, and electrical wires), this particular claim relates to a very short segment of wire, not one stretching over feet, yards, or miles. While two pieces of wire joined end-to-end may serve the precise functional equivalent of a single wire, the ordinary meaning of the claim is that one continuous piece of wire extends from the LED out through the housing.

b. Specification

Maxconn argues that the specification describes a continuous LED wire passing through, along, or above various walls in the connector and plugging into the printed circuit board. Plaintiffs do not genuinely dispute this, but argue that the limitations of the specification should not be read into the claim. The Court agrees with this point of law. See E.I. DuPont De Nemours, 849 F.2d at 1433 (limitations of the specification should not be read into a claim).

Plaintiffs also argue that the specification states explicitly that the internal wiring can be accomplished in a variety of ways and is not a limitation to the invention. The Court disagrees. While it is true that the specification provides that "RJ connector[s] [are] available in a variety of sizes and internal configurations and may be molded in a number of ways commonly known in the art and is not a limitation to the present invention," Pocrass '317 patent, col. 4:24-27, this language refers explicitly to configurations of RJ connectors "commonly known in the art," and not to the novel and nonobvious improvements contained in the Pocrass '317 patent. The key novel and nonobvious improvement is the incorporation of an LED connected to a wire which extends through the connector housing. Accordingly, the quoted passage from the specification does not explicitly refer to LED wiring methodologies.

c. Prosecution history

Maxconn argues that the prosecution history reveals that the patentees, to promote the goal of achieving certain rigidity and spacing, specifically called for the patent to include one piece of wire running from the LED to the printed circuit board. Plaintiffs on the other hand argue that rigidity and spacing features refer to the relationship between the wires and the housing wall, and not to any requirement that the wires each be of one-piece construction.

The Court has no trouble agreeing with Plaintiffs. The prosecution history reveals that Pocrass distinguishes his invention from the Clark device by pointing out that the LEDs in Clark are positioned directly on the printed circuit board such that no wires from the LEDs go through a wall of the connector housing which is simply slid over the LEDs. Pocrass states: "The conductor wires from the LED device of Clark et al. do not extend through a wall of the device as required in the present claims." Amendment mailed December 28, 1989, at 7. "This claimed feature provides rigidity to the conductor wires and provides the required predetermined spaced array for subsequent insertion in a like array of holes presented in a printed circuit board." Amendment mailed December 28, 1989, at 7.

Accordingly, the prosecution history, while it does not develop Plaintiffs’ proposed construction, also fails to support Maxconn’s proposed construction.

d. Extrinsic evidence

The parties have not submitted any extrinsic evidence which illuminates the meaning of this disputed phrase.

e. Interpretation

The Court concludes that nothing in the specification or prosecution history serves to alter the plain meaning of the subject phrase. Accordingly, the Court construes the terms as meaning that a continuous wire extends from the light source out
Claim 8:
1. "wherein there is a push rod extending through the cavity and connecting the blade to the spring"

Plaintiff's proposed construction is a rod that has a portion of its length in the cavity and another portion outside the cavity so as to transmit the force of the spring to the blade. The spring does not itself need to connect to the blade. Rather, it is the push rod, which is positioned between the spring and the blade, that serves to provide the connection of the spring to the blade.

Defendant's proposed construction is "wherein there is a thin straight bar, which is pushed back and forth along its long axis, extending through the cavity and connecting the blade to the spring."
Defendant argues that the push rod is always integral with the spring, so if the push rod is connected to the blade, the spring is also connected. Defendant's argument ignores the specific language of this claim, which sets out that the push rod connects the spring to the blade. If the spring and push rod were always one unit, then the description of the push rod as "connecting the spring to the blade" would be meaningless.

The specification is the "single best guide to the meaning of a disputed term." Vitronics, 90 F.3d at 1582. Here, the specification indicates that the push rod and spring may be, but are not required to be, integral:

The bias element can be a material such as spring, wire or equivalent thereof as shown in each of FIGS. 2-6 and 8-10. Furthermore, the bias element or spring may include an integral pushrod as shown in FIGS. 3-6, 9 and 10. As seen spring, wire or equivalent thereof and may include an integral pushrod, as seen in FIG. 3 [sic].

Moreover, claim forty-four establishes the more narrow embodiment defendant argues is established in this claim. In claim forty-four the bias element includes a push rod and spring that are one integral unit. If this claim established that the spring and push rod were one integral unit, claim forty-four would be superfluous.

Defendant's construction also includes the requirement that the movement of the push rod must be back and forth along its long axis. However, the specification of the patent teaches both axial and perpendicular movement for its push rods, without specifying or requiring a particular directional force.

The court concludes that the proper construction is "A push rod that has a portion of its length in the cavity and another portion outside the cavity so as to transmit the force of the spring to the blade. The push rod connects the spring to the blade."

F. "extending upwardly therefrom"

The court will construe "extending upwardly therefrom" as "rising in an upward direction from the top surface."

Claim 1 describes a "top surface" with a "supporting structure extending upwardly therefrom." Defendant would construe "extending upwardly therefrom" as "rising in an upward direction from the top surface wherein the supporting structure is symmetrical about the longitudinal axis of the mounting base." Defendant argues that the supporting structure is identified with the mounting base, which Defendant argues is subject to a requirement of longitudinal symmetry. However, the court will find that the claim does not impose a requirement of symmetry and will therefore reject Defendant's construction as too limiting. The court will adopt Plaintiff's proposed construction, as set forth above.
The '974 patent contains eleven claims. Claims 1 through 9 require:

- a groove having a predetermined depth…formed in the end surface of said flange opposite said shank portion such that said groove extends along the outer circumference of the base end of said chuck sleeve

'974 patent, col. 13, lines 24-30. Claims 10 and 11 require:

- a ring shaped groove therein immediately adjacent said chuck sleeve, the ring-shaped groove having a circumferentially arranged inner cylindrical surface which joins with the outer circumferential surface of the chuck sleeve immediately adjacent said ring-shaped groove.

'974 patent, col. 14, line 64 - col. 15, line 2. Heartech argues that the accused device does not infringe the '974 patent because it does not contain a groove that "extends along the outer circumference of the base end of [the] chuck sleeve" or is "immediately adjacent said chuck sleeve.

"In construing claims, the analytical focus must be centered on the language of the claims themselves, for it is that language that the patentee chose to use to 'particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention.'" Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001) (quoting 35 U.S.C. § 112, par. 2). There is a heavy presumption that the terms used in the claims have the ordinary meaning that would be attributed to those words by persons skilled in the relevant technology. See CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002); see also, K-2 Corp. v. Salomon S.A., 191 F.3d 1356, 1362-63 (Fed. Cir. 1999). A claim term is to be given the full range of its ordinary meaning as understood by persons skilled in the relevant technology unless there is a compelling reason not to do so. See Rexam Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001); see also Johnson Worldwide Assoc's., Inc. v. Zebco Corp., 175 F.3d 985, 989 (Fed. Cir. 1999).

The Federal Circuit has recently indicated that a court can and should consult dictionary definitions in construing claim terms. Texas Digital Systems, Inc., v. Telegenix, Inc., 308 F.3d 1193, 1202 (Fed. Cir. 2002). Dictionaries that are publicly available when the patent was issued "are objective resources that serve as reliable sources of information on the established meanings that would have been attributed to the terms of the claims" by persons skilled in the relevant technology and thus "may be the most meaningful sources of information" to be used in claim interpretation. Id. at 1203.

Because particular words may have multiple dictionary definitions, some of which may have no relation to the claimed invention, the intrinsic record must always be consulted to identify which of the different possible dictionary meanings of the claim terms in issue is most consistent with the inventor's use of the terms. Texas Digital, 308 F.3d at 1203. The intrinsic record must also be examined to determine whether the presumption of ordinary and customary meaning is rebutted. If, for example, the specification contained in the patent uses a term in a manner "clearly inconsistent" with the ordinary meaning as shown by a dictionary definition, then the dictionary definition must be rejected. Id. It is inappropriate, however, to consult the intrinsic record to determine the meaning of claim terms before attempting to discern the ordinary and customary meanings attributed to the words themselves. Id. To do so would violate the rule that limitations from the specification may not be imported into the claims so as to limit their scope. Id.; see generally Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277 (Fed. Cir. 1995) ("[A] patent claim is not necessarily limited to a preferred embodiment disclosed in the patent."); SRI Int'l, Inc. v. Matsushita Elec. Corp., 775 F.2d 1107, 1121 n. 14 (Fed. Cir. 1985) (en banc) ("That a specification describes only one embodiment does not require that each claim be limited to that one embodiment.")

Heartech's motion for summary judgment turns on the meaning of the term "along" found in claim 1 of the '974 Patent. Heartech argues that a groove extending "along" the base end of the chuck sleeve requires that the groove come in contact with the outer surface of the chuck sleeve. By contrast, Lyndex contends that the ordinary meaning of the word "along" does not require the groove to touch the outer surface of the chuck sleeve. The Court agrees with Lyndex.

Consistent with Texas Digital, a court should "resort initially to the relevant dictionary definitions to determine the ordinary meaning of the [disputed] term." E-Pass Technologies, Inc. v. 3Com Corp., 343 F.3d 1364, 1367 (Fed. Cir. 2003). The American Heritage(R) Dictionary of the English Language says that "along" means "on a line or course parallel and close to; continuously beside: rowed along the shore; the trees along the avenue." American Heritage Dictionary of the English Language 50 (4th ed. 2000). This definition and the illustrative examples it provides reflect that an object can be "along" another object even if the two do not come in contact. Rather, the two objects need only be "parallel" and "close to" each
The next question is whether the context in which the term "along" is used in the claim indicates a departure from the term's ordinary meaning. E-Pass, 343 F.3d at 1368. It does not. Nothing in the context suggests that the groove must touch the outer surface of the chuck sleeve.

There is a heavy presumption that the term "along," as used in the claim, should carry its ordinary meaning. E.g., E-Pass, 343 F.3d at 1368; Sunrace Roots Enterprise Co. v. SRAM Corp., 336 F.3d 1298, 1302 (Fed. Cir. 2003). As indicated in Texas Digital, however, we next look to the specification to see if the presumption has been rebutted. Texas Digital, 308 F.3d at 1204; E-Pass, 343 F.3d at 1369. This occurs when the patentee "acted as his own lexicographer and imbed the claim terms with a particular meaning or 'disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction.'" E-Pass, 343 F.3d at 1369 (quoting Texas Digital, 308 F.3d at 1204). Such is not the case here. It is true, as Heartech points out, that the specification and the diagrams accompanying the patent show the groove to be in contact with the outer circumference of the chuck sleeve. But the specification is simply the "preferred embodiment" of the patent, see '974, col. 6, line 35, there is nothing to suggest that it describes the patent's sole embodiment, or to put it another way, that the patentee intended to restrict the claims in this manner. The Federal Circuit has aptly pointed out that "interpretation of descriptive statements in a patent's written description is a difficult task, as an inherent tension exists as to whether a statement is a clear lexicographic definition or a description of a preferred embodiment." 343 F.3d at 1369. But in this case it is clear that the latter is what was intended, not the former; Heartech points to nothing in the description of the preferred embodiment that reflects an intent or effort by the patentee to define the term "along", as opposed to simply describing a particular embodiment of the patent. See id. Under the circumstances, to read the term "along" in the manner urged by Heartech would improperly limit the patent to its preferred embodiment.

In its reply brief, Heartech argues that the groove's function in the patent can be accomplished only if it is in contact with the chuck sleeve. This argument is forfeited because it was not made in Heartech's opening brief, but even if not forfeited it would be meritless, as Heartech has failed to provide any factual support for its assertion (aside from an attempted interpretation of the preferred embodiment, which is improper for the reasons previously discussed).

Literal infringement exists when the accused device contains every limitation in the asserted claims. E.g., Kraft Foods, Inc. v. International Trading Co., 203 F.3d 1362, 1370 (Fed. Cir. 2000). The absence of even one such limitation compels a finding of non-infringement. See, e.g., Watts v. XL Systems, Inc., 232 F.3d 877, 884 (Fed. Cir. 2000). In arguing that it is entitled to summary judgment on the issue of literal infringement, as to claims 1-9, Heartech relied exclusively on its proposed construction of the claim term "along." Because the Court has rejected that construction, Heartech is not entitled to summary judgment of non-infringement on these claims. Under the circumstances, no purpose would be served by addressing at this time its arguments regarding literal infringement as to claims 10 and 11 and infringement under the doctrine of equivalents.

II. "wherein said pin extends into said security slot"

In the earlier round of claim construction briefing that took place in 2005, plaintiff construed the term "extends" to be an intransitive verb, while defendants construed the term as an active verb and having a temporal scope. In the present claim construction, defendants change their position, asserting that the concept of a pin "extend[ing] into said security slot" is "clear on its face and does not require a special construction." Def. Resp. at p. 1. This is indeed the initial position of plaintiff, who has stated that the claim terms are "unambiguous and should not be construed." Pl. Opening Brief at 1 n.2.

Absent a showing to the contrary, the Court finds that the term "extends" is an intransitive verb as it is used in the '794 patent. First, nothing in the claim term "wherein said pin extends into said security slot" suggests that the verb "extends" is active or contains a temporal scope. It is therefore improper to add extraneous limitations to the claim by construing the term in such a way. Second, the embodiments in the specification, including Figures 11, 13A and 13B, show the pin to extend into the security slot before the locking member is placed into a locked position, thereby supporting the construction that "extends" does not carry with it a temporal meaning. Lastly, plaintiff's construction is supported by the prosecution history of the '794 patent, which shows that the Patent Examiner explicitly required the term "extends into" in claim 73.
(which later became claim 1 of the '794 patent) to be limited by physical and spatial restrictions, but omitted any temporal restriction on the placement of the pin. In sum, plaintiff's construction of the claim term "extends" is supported by the claim language and other intrinsic evidence.

10. "[A] magnet protector that extends outwardly from an exterior of said tool body"

This phrase is contained an independent claim in the 386 patent, 127 and an independent claim in the 117 patent. 128

As to this phrase, the Court construes the following meaning: each magnet protector extends beyond the outer circumference of the tool body in such a manner as to create an uneven surface on the exterior of the tool. The drawings accompanying all five patents support this interpretation, illustrating a cross section of the tool with a near pinwheel appearance. The patent specifications, as addressed in numbers four and five above, explicitly explain that the protectors are taller, or farther out from the tool body, than are the magnets, to deflect the striking force of particles and to create trap spaces for secondary settling areas during rotation of the tool. Conformity with previous constructions of phrases associated with magnet protectors supports this interpretation. The requirement that the language of the patent, when read as a whole, be full, clear, concise, and exact, so that inventors are protected but innovation is still permitted, demands that the plain language "extending outwardly" means exactly that and no less.

E. "Extends toward"

Defendants contend the following phrase should be subjected to claim construction: elongated weather stripping at least some of which extends toward the adjacent insert track. Their proposed construction is: looking at a vertical section of the door frame in cross-section, at least one of the opposing pieces of weather stripping that resides in the screen track has a discernible directional orientation that points toward the adjacent insert track in the cross-sectional plane of the door frame. Defendants' proposed construction is a strained, narrow construction of the phrase "extends toward" that is not supported by the claim language, specification or prosecution history.

The Court finds the phrase "extends toward" is in its simplest form and does not require claim construction.

K. "Extension"

"Extension" must be defined for purposes of claims 28 of the '303 Patent and 51 of the '018 Patent. 136 Medinol would define "extension" to mean "dimension." 137 Guidant views this term as equivalent to "an axis." 138
Defining "extension" as an "axis" makes little sense in light of the claim language. Claim 51 of the '018 Patent recites, in relevant part:

A generally longitudinally extending tubular stent which is substantially uniformly flexible with respect to its longitudinal axis, said stent consisting essentially of: a plurality of flexible cells, each having a longitudinal extension parallel to said longitudinal axis and a circumferential extension parallel to an arc of a circle around the circumference of the stent . . . .

The use of the words "axis" and "extension" in the same clause indicates that Medinol intended for these words to have different meanings. It is thus clear that "extension" does not mean "axis." The ordinary understanding of extension is "the property of a body by which it occupies space," or "dimension." Because this definition is consistent with the intrinsic record, there is no reason to depart from it and therefore, "extension" is defined as dimension.

The appellee argues that, even if the terms "modular" and "stem extension" do not limit the stem extension to a single piece, the prosecution history evidences a disclaimer of a one-piece stem extension, relying particularly on an amendment in the course of prosecution. The examiner rejected claim 1 (among other claims) as being anticipated by U.S. Patent No. 4,963,155 to Lazzeri, et al. ("Lazzeri"). The applicant amended claim 1 by adding the phrase "central longitudinal" before the word "axis" both times it appeared in the claim. The applicant noted that "the first and second longitudinal axes of applicant's Claim 1 are both in the stem extension component" but also stated that the claim was patentable over Lazzeri because "the first and second axes are offset from each other, . . . not coincident with each other." (J.A. at 187, 189.) Thus, the distinction between the '313 patent and Lazzeri is the offset between the axes, not whether the stem extension includes one or more pieces. The applicant's statements therefore do not rise to the level of a clear and unambiguous disclaimer of a stem extension containing more than one piece. See, e.g., Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1324 (Fed. Cir. 2003) ("We have . . . declined to apply the doctrine of prosecution disclaimer where the alleged disavowal of claim
We hold that the term "stem extension" in claim 1 encompasses both one-piece and multiple-piece stem extensions. We thus conclude that the district court erred in reading a one-piece limitation into claim 1.

3. extension arm

Free Motion argues that the "extension arm" is "a part similar to a human arm, such as a long part projecting from a central support, and specifically includes structure that comprises the arm's locking means." (Pl. Brief I at 11.) Cybex posits that the extension arm cannot be read to include the casting of the FT 360 because they do not extend away from the exercise apparatus for use by the exerciser. (Cybex Reply at 7.) Nautilus submits that the extension arm includes all of the parts that extend from the frame including the swivel assembly (or casting). (Nautilus Brief at 16.)

The '061 patent states that "the cable crossover apparatus 110 includes a pair of extension arms 112, 114 positioned to facilitate a wide range of lifting type exercises." ('061 Patent, col. 7, lines 30-32.) Claim 8 states that each extension arm includes a locking means for selectively locking the extension arm in various positions. ('061 Patent, col. 8, lines 54-60.) Thus, Claim 8 and its specification suggest that the casting that houses the locking means is also part of the arm. 4

--- Footnotes ---

4 The specification describes the locking means: "the first extension arm 112 includes a locking hole 170 located adjacent a pivot hole 172 through which a pivot point pin 174 passes to pivotally couple the first extension arm 112 to the semicircular flange assembly 178, and ultimately, the weight stack 124. The locking hole 170 is aligned with a series of flange holes 176 formed in the semicircular flange assembly 178 of the weight stack 124. In practice, and as those skilled in the art will readily appreciate, a locking pin 180 is passed through an aligned locking hole 170 and flange hole 176 to lock the first extension arm 112 at a desired angular orientation relative to the weight stack 124. ('061 Patent, col. 6, line 65 - col. 7, line 9.)

--- End Footnotes ---

The Court construes the "extension arm" to include both the extension device and the casting which locks the extension arm in various positions.

3. extension arm

(3) "two side portion extensions" of the primary spectacle frame (claims 12 and 16):

Plaintiffs contend that "two side portion[s]" means "those portions of the primary spectacle frame beginning at the point where a line drawn through the midpoints of the lenses and lens rims (if supplied) would intersect the top and bottom of the primary spectacle frame, and terminating at the pivot point where the legs are attached to the extensions." JS, Exh. B at 4. Additionally, Plaintiffs state that "extensions" means "those portions of the primary spectacle frame which extend outwardly and rearwardly of the lenses or lens rims (if provided) to pivotally connect to the legs and which secure the first magnetic members." Id., Exh. B at 7.

Conversely, Defendant construes the phrase "two side portion extensions" as "essentially bars which extend outward from the outer edge of the lens rims." Id., Exh. D at 1.

In this case, the two side portion extensions are described as follows in the specification of the '545 Patent: "The primary spectacle frame 10 includes two side portions each having an extension 11 extended rearward therefrom for pivotally
coupling leg 12 thereto." Koo Decl., Exh. B, Col. 2, 11. 33-36. The Court finds Defendant's use of the term "bar" to describe each side portion extension to be somewhat vague. Additionally, Plaintiffs' use of the midpoints of the lenses and lens rims to define the instant phrase is also vague and confusing. 7 Moreover, the Court does not find it necessary to bifurcate the construction of the instant phrase as Plaintiffs suggest. Instead, and based on the specification and the drawings of the '545 Patent, the Court construes "two side portion extensions" to mean those portions of the primary spectacle frame which extend outwardly and rearwardly of the lenses or lens rims (if provided) to pivotally connect to the legs.

7 Specifically, Plaintiffs define the starting point of each side as follows: where a line drawn through the midpoint of the lens and lens rims (if provided) would intersect the top and bottom of the frame. The Court notes that since each lens is, geometrically speaking, not a line or an arc, it is not clear where its midpoint would be (or that of the lens rim). See Webster's Encyclopedic Unabridged Dictionary of the English Language, defining "midpoint" as "a point at or near the middle of or equidistant from both ends as of a line," and "the point on a line segment or an arc that is equidistant when measured along the line or the arc from both endpoints."

19 Ref. No. 22 of Appendix B contains the disputed term "disposed substantially at the radius" and its construction.

The '930 Patent claims include the terms "exterior structure," "exterior surface," "exterior feature," "bearing segments," "bearing area," and "at least one feature." ReedHycalog contends the claims should be limited to structures that rotationally precede the associated cutters. Baker Hughes contends the '930 Patent is not limited to structures that rotationally precede the associated cutters, as the claims of the '930 Patent do not contain the term "rotationally preceding."

Baker Hughes argues the doctrine of claim differentiation indicates there is no limit on the rotational placement of the bearing structures in independent claims. As stated above, courts presume a difference in meaning and scope when a patentee uses different phrases in separate claims. Phillips, 415 F.3d at 1314-15. The presumption is especially strong when a party seeks to limit an independent claim with language that appears in a dependant claim. Liebel-Flarsheim Co., 358 F.3d at 910. However, the doctrine of claim differentiation is not a "hard and fast rule," and courts cannot use the doctrine to broaden claims beyond their correct scope, determined in light of the intrinsic record and relevant extrinsic evidence. Seachange Int'l, Inc., 413 F.3d at 1369; see also Phillips, 415 F.3d at 1312-15.

Claims 1 and 17 of the '930 Patent claim an "exterior structure" or a "feature" to limit the depth of cut of at least one superabrasive cutter. '930 Patent col. 15:42-48, col. 16:64--col. 17:2. Claim 2 requires the "exterior structure" claimed in claim 1 to comprise "a plurality of bearing segments." Id. at col. 15:49-59. Claim 18 requires at least one "feature" claimed in claim 17 to comprise "a plurality of bearing segments." Id. at col. 17:3-13. Claims 3 and 19 require at least some of the "bearing segments" claimed in claims 2 and 18, respectively, to rotationally lead, in the direction of bit rotation, one superabrasive cutter of the plurality of superabrasive cutters. Id. at col. 15:60-64, col. 17:14-17.

ReedHycalog's construction renders claim 3 redundant with claim 1 and claim 19 redundant with claim 17. Therefore, ReedHycalog's construction raises the presumption that the "bearing segments" claimed in claims 2 and 18, and the associated "exterior structures" and "feature" claimed in claims 1 and 17, are not limited to structures that rotationally lead the cutters. The presumption of claim differentiation also applies to similar terms in claims 37, 42, 44, and 49 ("exterior feature"), claim 47 ("exterior surface feature"), and claims 52, 53, 55, and 57 ("bearing area"), as these structures function almost identically to the "bearing segments" in claims 3 and 19. Id. at col. 15:49-59 (claiming "a plurality of bearing
segments having bearing surfaces . . . wherein a combination of bearing surfaces of the plurality exhibits sufficient surface area"; id. at col. 17:3-13 (substantially similar use of "bearing segments" and "bearing surfaces"); id. at col. 18:49-64 (claiming "at least one exterior feature . . . sufficient to support the bit thereon under a weight on bit at least as great as the total weight on bit without failure of the at least one formation . . . "); id. at col. 19:29-43 (substantially similar use of "at least one exterior feature"); id. at col. 20:8-21 (claiming "at least one exterior surface feature . . . sufficient to preclude plastic failure of the at least one formation under at least the total weight on bit"); id. at col. 20:53-63 (claiming "a bearing area . . . to distribute the excess weight on bit sufficient to achieve a unit load by the bearing surface area on the formation less than a compressive strength of the formation"); id. at col. 21:11-23 (substantially similar use of "bearing area"); id. at col. 20:64--col. 21:6 (claiming "a bearing area . . . 21:28-22:4 (substantially similar use of "bearing area").

The '930 Patent specification rebuts the presumption of claim differentiation. The specification describes Figs. 10A, 10B and 12, which depict bearing surfaces that rotationally lead their associative cutters, as "according to the present invention." Id. at Figs. 10A, 10B, 12, col. 4:49-51, col. 4:55-59. In total, the '930 Patent only discloses embodiments where the depth of cut control structures rotationally lead their associative cutters. Id. at Figs. 1, 10A, 10B, 12.

The specification also distinguishes between the prior art and the present invention in terms of the rotational location of the depth of cut limiting structures. The specification describes Fig. 4 as a comparison between prior art following structures and leading structures "according to the present invention." Id. at Fig. 4, col. 4:26-30. The specification further distinguishes the rotationally leading placement "according to present invention" from the prior art, as the rotationally leading placement reduces cutter and depth of cut limiting structure wear and vertical misplacement in comparison to the rotationally trailing placement of depth of cut limiting structures known in the prior art. Id. at col. 8:51--col. 9:40.

In total, the specification shows that application of the doctrine of claim differentiation would improperly broaden the claim terms. See O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1582 (Fed. Cir. 1997) ("Although the doctrine of claim differentiation may at times be controlling, construction of claims is not based solely upon the language of other claims; the doctrine cannot alter a definition that is otherwise clear from the claim language, description, and prosecution history."); see also SciMed Life Sys. v. Advanced Cardiovascular Sys., 242 F.3d 1337, 1341 (Fed. Cir. 2001) ("Where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims . . . might be considered broad enough to encompass the feature in question."). Thus, the "exterior structure," "exterior surface," "exterior feature," "bearing segments," "bearing area," and "at least one feature" must rotationally precede the respective associated cutters. 20

--- Footnotes ---

20 Ref. No. 23 of Appendix B contains the disputed terms and their constructions.

--- End Footnotes ---

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Designed to the Particular Formation to be Drilled

ReedHycalog claims the "exterior structure," "bearing segments," and "features" claimed in the '930 and '631 Patents must be "tailored" to or "designed" for the particular subterranean formation to be drilled. Baker Hughes argues a "tailored" or "designed" limitation should not be read into the claims.

ReedHycalog bases its construction on the '930 and '631 Patents specifications, which note the failure of prior art depth of cut limiting structures to implement an "engineered approach" to achieve a target rate of penetration and a predictable, stable bit performance. '930 Patent col. 2:36-41; '631 Patent col. 2:53-57. Further, ReedHycalog supports its construction with language from the '930 and '631 Patents specifications which state the invention provides a bit design that may be tailored to specific compressive strengths. '930 Patent col. 2:46-51; '631 Patent col. 3:2-7.

ReedHycalog also bases its construction on statements Baker Hughes made to the U.K. Patent Office during prosecution of the U.K. counterpart to the '930 Patent. In response to a rejection by the U.K. Patent Office Examiner, Baker Hughes stated...
it was "the first to recognize the need to tailor the area of the bearing surfaces to the compressive strength of a particular subterranean formation to be drilled so as to optimise the rate of penetration by obtaining a controlled depth of cut . . . ."

ReedHycalog's Response to Baker Hughes's Opening Markman Brief, Exh. 12 at 1-2. Further, Baker Hughes stated "the present invention is not limited to any particular type of formation but rather lies in matching the depth of cut controlling features of the drill bit to the formation drilled, by reference to the compressive strength of the formation." Id. at 2.

Nothing in the '930 or '631 Patents indicates the claims should contain a "tailored" or "designed" limitation. The claims themselves do not contain a "tailored" or "designed" limitation. The specification states the prior art failed to implement an "engineered approach" and mentions that the bit design may be tailored, but these statements are not sufficient to import a "tailored" or "designed" limitation into the claims.

Baker Hughes's statements to the U.K. Patent Office also do not justify importation of a "tailored" or "designed" limitation, as "differences in international requirements for patent prosecution could make reliance on representations before foreign patent offices inappropriate" in the context of claim construction. Burns, Morris & Stewart Ltd. v. Masonite Int'l Corp., 401 F. Supp. 2d 692, 698 (E.D. Tex. 2005) (Clark, J.) (citing TI Group Auto. Sys. (N. Am.), Inc., v. VDO N. Am., L.L.C., 375 F.3d 1126, 1136 (Fed. Cir. 2004)). To clarify its statements to the U.K. Patent Office Examiner, Baker Hughes added "through a formation of determined or predicted compressive stress" to the claims of the U.K. counterpart patent. ReedHycalog's Response to Baker Hughes's Opening Markman Brief, Exh. 12 at 2. This, or similar, claim language is not present in the '930 or '631 Patent claims. Therefore, the terms "exterior structure," "bearing segments," and "features" do not contain a "tailored" or "designed" limitation.

--- Footnotes ---

21 Ref. No. 23 of Appendix B contains the disputed terms and their constructions.

--- End Footnotes ---

1529

1. "External Threads"

a. Claim Term:

"... a male end of said PVC pipe which has external threads . . . ."

b. Parties' Contentions

CertainTeed's proposed construction of "external threads" is "helical or spiral ribs or grooves on the outer surface of the male end of the PVC pipe." Pl's Markman Brief at 10. In construing this phrase, the parties agree on two issues: (1) the word "threads" should be construed to mean "helical or spiral ribs or grooves;" and (2) the word "external" should be construed to mean that the threads are "on the outer surface of the male end of the PVC pipe." Id. However, this is where the agreement ends. CertainTeed contends that Modern Products, in support of its proposed construction, relies on extrinsic evidence, namely a specification from the American Society for Testing and Materials, to go beyond the scope of the unambiguous and ordinary meaning of this term. Further, CertainTeed argues that Modern Products' proposed construction is inconsistent with the specification of the '480 patent and the sole preferred embodiment disclosed therein, as the specification does not draw or suggest any distinction between those male end threads that engage the female end threads and those that do not. If Modern Products wanted the term "external threads" to mean only those threads which actually engage the female end threads, it would have made that distinction explicit.

Modern Products' proposed construction of "external threads" is "helical or spiral ribs or grooves on the outer surface of the male end of the PVC pipe which mate with corresponding helical or spiral ribs or grooves disposed within the interior
surface of the female end of a similar adjacent PVC pipe." In support of this contention, Modern Products states that only threads which can mate with and engage the opposite threads of a similar adjacent PVC pipe qualify as "external threads" as specified in the claim. This construction is necessitated by the context of the surrounding words in the claim. For example, Claim 1 recites that the "external threads" are intended for "threading." "Threading" means interlocking. Def's Claim Construction Brief at 23. Therefore, only interlocking or mating threads are contemplated by the term "threads." The specification also contemplates that external threads are intended for threading. Specification, Col. 3, Lines 46-48. Further, the ordinary meaning of the word "thread" as defined in dictionaries, supports Modern Products' claim that threads are only those which "screw together" or are "connecting and holding together." Def's Claim Construction Brief at 24.

c. Court's Construction

This Court concludes that the term "external threads" means "helical or spiral ribs or grooves on the outer surface of the male end of the PVC pipe which mate with corresponding helical or spiral ribs or grooves disposed within the interior surface of the female end of a similar adjacent pipe." This term is construed in accordance with the claim and specification, and dictated by its ordinary and customary meaning. The Court agrees with Modern Products' proposed construction because it is supported by the claim language, in the context of the entirety of the invention, and construed in accordance with the specification. See Markman v. Westview Instruments, Inc., 52 F.3d 967 at 979 (Fed. Cir. 1995) (stating that claims must be read in view of the specification of which they are a part.). Claim 1 qualifies the term external threads by their ability "to mate with each other." Claim 1 also recites that the external threads are threading. CertainTeed has agreed that threading means interlocking. Def's Claim Construction Brief at 23. The Claim mentions mating and/or threading; mating or threading, after all, is the only functional purpose of the threads. Further, the specification states, "threads of second end are intended for threading onto threads to provide this water tight connection." Specification, Col. 3, Lines 46-48. Consequently, only threads that can mate with and engage the opposite threads of a similar adjacent PVC pipe qualify as external threads, as specified in the claim.

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"Externally mounted" Intercooler

The parties do not dispute that an intercooler is a heat exchanger. The dispute is what it means that the intercooler is "externally mounted." Rice proposes that it simply means that the heat exchanger is mounted anywhere outside either the low pressure compressor or the high pressure compressor. Rolls-Royce proposes that the heat exchanger must be not only outside the compressor structures but also that it must be located away from them in a separately supported arrangement.

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2 Defendant's proposed construction adds "for cooling air flow between compressors" but the Court finds the additional language unnecessary that can be ascertained from the rest of the claim.

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In support Rice argues for a plain meaning. In addition, Rice points to characterizations of the prior art made by an examiner during the prosecution of the '204 patent, which is not at issue in this litigation. Specifically, Rice notes that the examiner there characterized prior art structures as being for "external mounting." See Rice Br. at 16. The particular prior art was the '745 Price patent (U.S. 2,563,745). Def's Surreply Br. 1-3; Exh. 16. The intercoolers 23 in the '745 Price patent are located outside the engine housing 40. While the examiner's comments during the prosecution of the '204 patent are not controlling as to the construction of the claim language in the '499 patent, as Rice notes, it would be reasonable for a person of ordinary skill in the art to conclude that an "externally mounted" intercooler is one such as shown in the '745 Price patent. Rice Br. 16.

Indeed, the '499 specification shows in Figs. 2 and 3 depictions of an intercooled gas generator "of the present invention." Col. 5, lines 40-45. As shown in them, the flanges on the ducts 36 and 42, which are to be connected to the intercoolers 38 and 40 (not shown), establish a mounting location that is outside the casing 72. This indicates to one skilled in the art that the externally mounted intercooler is not only outside either compressor but is also outside the casing. However, the
proposal by Rolls-Royce that the intercooler be "located away" from the compressors does not capture with sufficient specificity the meaning that should be accorded the term.

The prosecution history, as an additional piece of intrinsic evidence, provides further insight into the meaning to be ascribed to the term "externally mounted intercooler." During the prosecution, claim 69 was rejected as being anticipated by Hull (U.S. Patent No. 3,273,340) in an Office Action dated April 11, 1989. The examiner specifically identified Hull as having an intercooler 16. In Hull, the intercooler 16 is shown inside the casing 11 of the engine, which encloses the compressors. Rice filed a response on July 7, 1989, amending claim 69 to include the further limitation that the recited intercooler was "externally mounted." Rice then remarked that "Hull uses annular ducting and intercooler and not separate piping to an externally mounted intercooler." Resp. 8. The scope of Rice's disclaimer during prosecution goes only to locating the intercooler outside the engine casing. Rice made no comment as to the mounting arrangement for the recited intercooler in contrast to the intercooler 16 of Hull.

Accordingly, the Court construes the term "externally mounted intercooler" to mean "a heat exchanger located outside the casing containing the low and high pressure compressors."

The parties have three main disputes with respect to the "extinguish" terms. First, they dispute whether the preambles containing the word "extinguish" are limiting. Second, they dispute whether extinguishment requires complete cessation of burning, or only partial cessation. Third, the parties dispute whether the surface temperature must be reduced to 90 degrees in order for a mine fire to be extinguished.

"In general, a preamble limits the invention if it recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim. . . . A preamble is not limiting where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention." Vizio, Inc. v. Int'l Trade Com'n, 605 F.3d 1330, 1340 (Fed. Cir. 2010) (internal citations and quotations omitted). In dispute are the preambles of claims 1, 4, and 9 of the '965 patent, and claim 1 of the '336 patent. The '965 patent, claims 1, 4, and 9 all recite essential structure in the preamble. In claims 1 and 9, the preamble recites "mine shaft," which reappears in the first step as "said mine shaft."

Likewise, in Claim 4 of the '965 patent, the preamble recites "poorly ventilated area," which provides the antecedent basis for "said poorly ventilated area" in the last step of the method. Moreover, the phrase "extinguishing a fire" is "the essence or fundamental characteristic of the inventions. See id. at 1341 (finding that "decoding" as used in the preamble "was properly construed as a claim limitation . . . because [the term] is the essence or a fundamental characteristic of the claimed invention"). The Court will construe the preambles.

The next issue for the Court to resolve is whether "extinguishing a fire" requires complete extinguishment, as Defendants contend. Defendants rely on statements in the prosecution history, arguing that the patentee overcame a prior art reference in which "a mine cavity could [not] be completely filled to smother hot spots on the sides and top portions of [a mine] shaft." Amendment, Sept. 1, 2005. This language does not support Defendants' argument. The language merely shows that the invention provided a superior manner of covering and smothering a fire, not that the fire needs to be extinguished completely. Nonetheless, the Court finds support in the specification for Defendant's position. Explaining the problems associated with confined areas, the specification recites, "providing additional combustible material to feed the fire . . . make[s] extinguishing of such a fire, other than letting the fire burn itself out, even more difficult if not impossible." '965 patent, 3:1-3. If a fire need only partially cease burning to be extinguished, "letting the fire burn itself out" is an excessively limited view of available options in the absence of a seal to keep air out of the burning area. A partially extinguished fire that has been allowed to "burn itself out" will refuel if the confined area is opened to permit miners to reenter. Moreover, the quote from the "Mine Fires" book also indicates that extinguishment, as understood by the patentee, must be complete. 

"[H]igh expansion foams have not yet extinguished a real mine fire." '965 patent, 4:11-12. Certainly some foams had been able to cease at least some burning, i.e., "extinguish" according to US Foam. Upon reading this sentence, one of ordinary skill in the art would understand the invention to be directed toward complete extinguishment, or ceasing the burning of combustible materials in whole. The Court declines to include "in whole or in part" as part of the construction for any of the "extinguish" related terms.

Finally, with respect to the 90-degree limitation, Defendants argue that a fire is only extinguished when the surface
temperature is reduced to 90 degrees or lower. Defendants rely on the patentee's pervasive statements throughout the '336 patent that "90 degrees Fahrenheit is the temperature that is accepted as the point at which the fire is considered to be extinguished." '336, 5:52-57. See also '336, 6:30-35; 9:42-46; 10:53-59; 9:65-10:1; 11:1-4. The Court must be careful not to import a limitation from the specification, "[b]ut 'the line between construing terms and importing limitations can be discerned with reasonable certainty and predictability if the court's focus remains on understanding how a person of ordinary skill in the art would understand the claim terms.'" ICU Medical, Inc. v. Alaris Medical Systems, Inc., 558 F.3d 1368, 1375 (Fed. Cir. 2009) (internal quotations omitted). In light of the repeated statements that a fire is extinguished only if it reaches 90 degrees, one skilled in the art would understand "extinguished," as claimed in the '336 patent, to require just such a reduction in temperature. See id. See also Chamberlain Group, Inc. v. Lear Corp., 516 F.3d 1331 (Fed. Cir. 2008) (finding that the patent restricted "binary code" to a narrower meaning than otherwise understood).

Ordinarily, the same claim term appearing in related patents would carry the same meaning. See Boss Indus., LLC v. Yamaha Motor Corp., 333 Fed.Appx. 531, 536-37 (Fed. Cir. 2009) ("[B]ecause each patent-in-suit is derived from the same parent application and shares many common terms with its sister patents, the district court correctly interpreted [the disputed term] consistently across all of the asserted patents.") (citing NTP, Inc. v. Research In Motion, Ltd., 418 F.3d 1282, 1293 (Fed. Cir. 2003)); Omega Eng'g., Inc. v. Raytek Corp., 334 F.3d 1314, 1334 ([W]e presume, unless otherwise compelled, that the same claim term in the same patent or related patents carries the same construed meaning."). The '336 patent is a continuation-in-part of the '965 patent and, the specifications have significant differences that are material to the Court's construction of "extinguish." The '965 patent makes no mention whatsoever of any temperature limitations, let alone a 90-degree limitation for extinguishment. Reading the '965 patent independently of the '336 patent, a person of ordinary skill in the art would not understand "extinguish," as used in the '965 patent, to require a reduction in temperature to 90 degrees or below. By defining "extinguish" in the '336 patent, the patentee chose to give the continuation-in-part a narrower scope than its parent. This is a rare case where the same claim term in two related patents does not share the same meaning.

What causes the Court concern, however, is the Defendant's introduction of "borehole temperature readings" to the definition of "extinguish." The term "borehole" never appears in the specification and Defendants resort to extrinsic evidence to support the additional limitation. While Defendants may be correct that coal miners customarily check the temperature at the surface of the mine by reading borehole temperatures, there is no support in the intrinsic record for limiting the manner in which miners measure temperature. The Court construes "extinguishing a fire," as used in the '336 patent, to mean "ceasing the burning of combustible material, as shown by mine surface temperatures of 90 degrees Fahrenheit or less." The Court construes "extinguishing a fire," as used in the '965 patent, to mean "ceasing the burning of combustible material." "Fighting a coal mine fire" means "attempting to extinguish a coal mine fire." "Initiate the suppression of the fire" means "to begin extinguishing the fire."

B. The '962 Patent - Claim 10

Claim 10 provides:

The catheter wire of claim 1 wherein although prebiased said detachable coil is extremely soft and its overall shape is easily deformed such that, once advanced from a microcatheter into said cavity, it will loosely deform to said interior shape of said cavity.

The parties dispute the proper construction of the phrase "extremely soft." Claim 10 is a dependent claim of Claim 1. The disputed phrase is a limitation on the detachable coil, namely that it be extremely soft.

The word "soft" is a commonly used adjective meaning "giving way easily under pressure, easily shaped, delicate. See Webster's New Twentieth Century Dictionary, 1728 (2d ed. 1983). The word "extremely" is a commonly used adverb meaning "in the utmost degree; exceedingly." Id., 652. The language of Claim 10 ("overall shape is easily deformed" and "will loosely deform to said interior shape of said cavity") supports construing the phrase in accordance with these commonly understood definitions.

Although the phrase "extremely soft" can be given a commonly understood definition, the issue becomes whether the phrase
is so broad and so subjective as to make Claim 10 indefinite under 35 U.S.C. § 112 p. 2. Because the patent claims perform the fundamental function of delineating the scope of the invention, the purpose of the definiteness requirement is to ensure that the claims use language that adequately notifies the public of the inventor's rights to exclude. Honeywell Int'l, Inc., v. Int'l Trade Commission, 341 F.3d 1332, 1338 (Fed. Cir. 2003). In evaluating whether or not a phrase such as "extremely soft" is so broad and so subjective as to make the claim indefinite, 20 the Court examines the intrinsic evidence for any description which would add meaning to the scope of "extremely soft."

20 Consideration of whether a patent claim meets the definiteness requirement is normally a part of later proceedings after the claim has been construed. However, it is an appropriate consideration during claim construction because the Court must construe the claim consistent with the scope of the words used in the claim. The Court may decline to construe a broadly worded, subjective claim if it is so broad as to be ambiguous and its scope cannot be ascertained. The Court examines the written descriptions for definitive language in light of these considerations.

In the written description, one embodiment of a detachable coil is described as "soft" and another embodiment is described as "extremely soft." The coil depicted on Figure 1 is described as "extremely soft:"

The distal end of secondary coil 28 is provided with a platinum soldered tip 30 to form a rounded and smooth termination to avoid puncturing the aneurysm or tearing tissue.

Although prebiased to form a cylindrical or conical envelope, secondary coil 28 is extremely soft and its overall shape is easily deformed. When inserted within the microcatheter (not shown), secondary coil 28 is easily straightened to lie axially within the microcatheter. Once disposed out of the tip of the microcatheter, secondary coil 28 forms the shape shown in FIG. 1 and may similarly be loosely deformed to the interior shape of the aneurysm.

('962 Patent, Col. 7:52-63.)

The coil depicted in Figure 3 is described as "soft:"

Turn now to the third embodiment of the invention as shown in FIG. 3. FIG. 3 shows an enlarged side view of a wire, generally denoted by reference numeral 42, disposed within a microcatheter 44 shown in cross-sectional view. Like the embodiment of FIG. 1, a stainless steel coil 46 is soldered to a conical portion 48 of wire 22 at a first bonding location 50. A thin threadlike extension 52 is then longitudinally disposed within stainless steel coil 46 to a second bonding location 54 where stainless steel wire 46 and threadlike portion 52 are soldered to a soft platinum coil 56. Platinum coil 56 is not prebiased, nor does it contain any internal reinforcement, but is a free and open coil similar in that respect to stainless steel coil 36 of the embodiment of FIG. 2.

('962 Patent, Col. 10:54-67.)

The description of coil 28 as "extremely soft" is accompanied by a description of the composition material, diameter, shape, and length of coil 28:

The distal end of stainless steel coil 26 is soldered to the distal end of threadlike portion 18 of wire 10 and to the proximal end of a platinum secondary coil 28 at second bonding location 22. Secondary coil 28 itself forms a spiral or helix typically between 2 to 10 mm. in diameter. The helical envelope formed by secondary coil 28 may be cylindrical or conical. Like wire 10 and stainless steel coil 26, secondary coil 28 is between approximately 0.010 and 0.020 inch (0.254-0.508 mm) in diameter. The diameter of the wire itself forming stainless steel coil 26 and coil 28 is approximately between 0.001-0.005 inch.

('962 Patent, Col. 7:41-51.)

Similarly, the written description of coil 56, described as "soft" is accompanied with a description of some of its parameters:
Platinum coil 56 is not prebiased, nor does it contain any internal reinforcement, but is a free and open coil similar in that respect to stainless steel coil 36 of the embodiment of FIG. 2.

However, platinum coil 56 is particularly distinguished by its length of approximately 1 to 50 cm. and by its flexibility. The platinum or platinum alloy used is particularly pliable and the diameter of the wire used to form platinum coil 56 is approximately 0.001-0.005 inch in diameter. The distal end of platinum coil 56 is provided with a smooth and rounded platinum tip 58 similar in that respect to tips 30 and 40 of FIGS. 1 and 2, respectively.

('962 Patent, Col. 8:64-9:8.)

Absent any extrinsic evidence to the contrary, the Court concludes that these descriptions would provide a person of ordinary skill in the art with an understanding of what kinds of features were meant by the inventors as making a coil "soft" or "extremely soft."

Notwithstanding the disclosure of features of a preferred embodiment which is called "extremely soft," the stated parameters of the embodiment should not be adopted into a construction of the phrase as a limitation on Claim 1. Ordinarily, if a claim element is stated in general words, even if the written description of a preferred embodiment contains parameters such as a range of values which would add a measure of specificity, unless that embodiment is the only embodiment of the claim, the Court should not read the numerical range into the claim. See Modine Manufacturing Co., 75 F.3d at 1551.

The Court construes "detachable coil is extremely soft" to mean: 21

The material composition, dimension and other configuration of the coil make it exceedingly deformable to the interior shape of the cavity with substantially no influence from any inherent shape.

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21 The fact that the Court finds the phrase sufficiently specific for definition is not intended by the Court as a final ruling that the phrase meets the definiteness requirement.

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4. Extruded

The final claim term in dispute is "extruded." According to AVI, extruded means foam created by using the well-known extruder apparatus that uses a screw-device to continuously force pressurized polymer gel through a die into a lower pressure area. Dow's definition, by contrast, is that of forcing a polymer gel through a die under a compressive force.

Essentially, the point of disagreement between the parties is whether extruded should be limit to any one type of process or to the use of any specific apparatus. As to this construction issue, I side with Dow. The language in the specifications of the perforation patents does not limit the term extruded to a specific type of process and apparatus. See Du Pont, 849 F.2d at 1433; American Standard Inc., 722 F. Supp. at 93; Hoganos 9 F.3d at 950. Rather, the specifications state, in pertinent part:

Providing the plastic foam comprises blending of various components, including a resinous melt of a foamable polymer and a blowing agent, under pressure to form a foamable plastic gel and extruding the foamable gel through a conventional die (not shown) to a region of lower pressure to form the foam. The blending of various components of the foamable gel may be accomplished according to known techniques in the art. Suitably a mixer, extruder, or other suitable blending device (not shown) may be emphasized to obtain homogeneous gel. The molten foamable gel is then be [sic] passed through conventional dies to form the foam.

'016 patent, col. 4, lines 16-27 and '058 patent, col. 4, lines 33-44 (emphasis added). Furthermore, no limitation on the term
is provided anywhere in the patents or the prosecution histories. Although the example in the '016 patent utilizes an extruder apparatus that appears to be of a conventional screw-type, it is improper to read this extraneous limitation in the specification into the claims. See, e.g., Du Pont, 849 F.2d at 1432; Intervet, 887 F.2d at 1056.

Accordingly, I find that extruded means forcing a polymer gel through a die under a compressive force.

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2. What is the Proper Construction of the Terms "barrel" and "die" in the '092 and '948 Patents?

Claim 1 of the '092 patent and claim 1 of the '948 patent contain the terms "extruder barrel" and "die." KXI and Culligan dispute where the "extruder barrel" ends and the "die" begins. KXI contends in both patents the "extruder barrel" and "die" are co-joined tubes, the "extruder barrel" the part that houses the extrusion screw, and the "die" the part that does not house the extrusion screw. Essentially, KXI's position is that the die begins where the helical flights of the extrusion screw end. Culligan contends in both patents the "die" is a distinct structure from the "barrel." Culligan contends the "die" is the structure that imparts shape and form to the feed mixture, and the "barrel" is the structure that houses the feed screw.

In support of its construction, KXI cites column 3, lines 2-5, 19-20, and 35-42 of the '092 patent, and column 3, lines 8-11, 25-26, and 41-48 of the '948 patent. Here, the specifications state:

The feed bin 10 feeds into an extruder barrel 12 which contains a feed screw 14. The feed screw 14 comprises a solid core 16 surrounded by conventional helical flights 18 . . . . The output end of the extruder barrel 12 feeds the input end of a die assembly 24 . . . .

KXI argues this passage defines the term "extruder barrel" as the structure containing the feed screw.

In support of its construction, KXI cites a 1996 letter written by Joseph Jochman, Esq. to Plymouth. Jochman was Plymouth's outside patent counsel at the time. The letter concerned changes Plymouth contemplated making to its carbon block extruder. Plymouth had contemplated removing flights from the extrusion screw. Jochman stated "the removal of a few downstream flights from the extruder screw would result in a de facto extension in the upstream direction of the die cavity. In other words, the flightless part of the extruder barrel in effect becomes part of the die." KXI argues the Jochman letter is extrinsic evidence, and should be considered to show that Culligan, through its patent counsel, agrees with KXI's interpretation of the terms "extruder barrel" and "die."

In support of its construction, Culligan cites figures 1 and 3 accompanying the '948 and '092 patents, reproduced supra. These figures depict the extruder, including the extruder barrel, referred to as "12," and the die, referred to as "26." Culligan argues that the figures depict the extruder barrel (12), and the die (26), as two separate tubular structures. Culligan argues the separate structures are distinguished by the beginning and end of their respective tubes, and not by the ends of the extrusion screw's flights. Culligan argues the position of the "input end of the die" as depicted in the figures accompanying the '948 and '092 patents is downstream from the expansion flange (56) and well downstream from the points where the flights on the feed screw terminate in the barrel (12).

Culligan argues KXI's definitions of the terms "extruder barrel" and "die" are inconsistent with the '948 and '092 patents' specifications. According to Culligan, the patents describe the extruder barrel and die as two structures, and do not define either one by the extrusion screw. Culligan cites the '092 patent at column 3, line 2-5 and the '948 patent at column 3, lines 8-11, which state that the extruder barrel "contains a feed screw 14" and that the feed screw "comprises a solid core (16) surrounded by conventional helical flights 18." Culligan cites the '092 patent's specification at column 3, lines 25-26 and the '948 patent's specification at column 3, lines 31-32, which state that "the input end of the die 26 is provided with heating elements 28[.]"

Culligan argues that KXI's interpretation of the meaning of the terms "extruder barrel" and "die" is not supported by the prosecution history. During the prosecution of the '948 patent, the application was rejected over the prior art Zavasnik extruder, which does not contain a feed screw. Culligan points out that both the patentee and the examiner described the Zavasnik extruder as having an "extruder barrel (11)" and an "extruder die (26)." Culligan argues this description "directly
undercuts plaintiffs' current logic, which would define the entire Zavasnik extruder as a 'die' because no portion of the extruder tubes contains a screw."

KXI responded that Culligan's argument is based on a mistake. The Zavasnik patent includes figures that depict the invention, reproduced supra. The different parts of the invention are numbered in the figures. According to KXI, during prosecution of the '948 patent, the examiner called the structure denoted as "11" the "barrel," and the patentee called it the "die." KXI argued that throughout the prosecution, the patentee's position was that "11" represented the "die." According to KXI, however, the patentee accidentally adopted the examiner's terminology and called "11" the "barrel" "once, maybe twice" during the prosecution.

Culligan argues that KXI defines the terms at issue contrary to the common meaning of "die." As support for its position, Culligan cites the McGraw Hill Dictionary of Scientific and Technical terms which defines "die" as "[a] tool or mold used to impart shapes to, or to form impressions on, materials such as metals and ceramics." McGraw-Hill Dictionary of Scientific and Technical Terms (4th ed. 1989).

The court finds there is no reason to define the term "extruder barrel" by where the extruder screw ends. The court gives the ordinary meaning to the terms. Accordingly, the court will construe "extruder barrel" and "die" as separate structures, the "extruder barrel" being the structure that houses the feed screw, and the "die" being the structure that imparts shape and form to the extrudate.

I. Construction of "Extrusion"

Neither party asserts that the patents express an intent to impart a novel meaning to the term "extrusion" or that the term lacks clarity. Instead, each contends that the language of the claims and other intrinsic evidence support its construction. Velcro interprets "extrusion" to mean simply "material exiting extruding equipment," while Paiho interprets it as "a form produced by an extruding process that holds a shape defined by the extruding die after exiting the extruding die."

To support its reading, Paiho points out that claims 7 and 22 of the '028 patent refer to the extrusion as "strip-like," while claim 7 also describes it as the product of "forming." Paiho further notes that both of these claims, as well as claim 1 of the '243 patent, use "extrusion" as the object of "directing" between the rollers or "between said forming roller and said pressure means," in the case of claim 22. Velcro, on the other hand, emphasizes that the claims uniformly refer to the extrusion as being "of molten plastic material" that "fills [the] hook-forming cavities" after its direction through the rollers or between the forming roller and the pressure means.

The court agrees with Velcro that "Paiho fails to explain how material that is 'molten' could 'hold a shape' for some unidentified period after exiting extruding equipment." Velcro Repl. at 3-4. Moreover, "a form . . . that holds a shape defined by the extruding die" could not "fill" the cavities on the forming roller as the claims describe. Yet an extrusion could be "strip-like," the product of "forming," and the object of "directing" without having to maintain a shape imparted by the die. The adjective "strip-like" conveys a suggestion of configuration, rather than a defined shape; "forming" can denote mere creation, rather than casting in a defined shape; and an object need not have a defined shape to undergo "directing." The language of the claims therefore does not bear Paiho's narrow construction of "extrusion." To imbue the term "extrusion" with "the full breadth of [its] ordinary and customary meaning[]," NTP, 392 F.3d at 1345, the court must construe it as Velcro suggests, i.e., simply "material exiting extruding equipment." 3

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3 Indeed, the court notes that this construction hardly differs from the one that Paiho specifically asserts is supported by the plain language of the claims: "a form produced by an extruder that can be directed between a forming roller and a pressure roller." Paiho Cl. Constr. Br. at 9, 13. Again, Paiho does not explain why an extrusion needs to hold its shape in order to be directed.

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Having thus concluded that the definition of "extrusion" is clear from the language of the claims, the court peruses the remaining intrinsic evidence for the sole purpose of "determining if a deviation from the clear language of the claims is specified." 4 Interactive Gift, 256 F.3d at 1331. Paiho argues that the specification makes clear that the extrusion must hold its shape after passing through the die by indicating the preferred thickness and width of the extrusion. '028 patent, col. 9, lines 7-10. Paiho also characterizes the drawings in the patent as rendering the extrusion "as a form that is holding a shape defined by [the] extruder head . . . ." Paiho Cl. Constr. Br. at 10, 13. According to Paiho, this "disclosure teaches that the extrusion has an ascertainable shape and size." Id.

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4 The court also cannot use the dictionaries and technical treatises offered by Paiho to contradict the clear meaning of "extrusion" mandated by the claims. E.g., Vitronics, 90 F.3d at 1584 n.6. Because those sources provide definitions of the term that vary with each other and with Paiho's proposed interpretation, compare Paiho Cl. Constr. Br. at 8-9 with Velcro Reply at 2-3, the court does not consider the dictionaries and treatises instructive on the construction of "extrusion."

--- End Footnotes ---

Specifying the dimensions of the extrusion, however, does not mean that it has a defined shape, for the same reason that describing it as "strip-like" throughout the claims does not require that interpretation. Furthermore, like the claims themselves, the specification repeatedly alludes to the extrusion as molten or as filling the cavities in the roller. See, e.g., '028 patent, col. 2, lines 60-61; col. 3, lines 21-24, 31-33, 42-48, 61-64; col. 5, lines 26-29; cols. 7, lines 60-68. The drawings also refer to "an enlarged 'bank' . . . formed just upstream of the interface" of the rollers (and downstream of the extruder head), the creation of which "assures the presence of an adequate supply of molten plastic material for complete filling of the hook-forming cavities." Id. col. 8, lines 9-17. Taken in their entirety, then, the written description and drawings are consistent with the language of the claims. See Innova/Pure Water, 381 F.3d at 1120-1122.

In any event, as Velcro points out, the specification attributes dimensions to the extrusion only in describing the "preferable" way of using polypropylene plastic material to run the process, id., col. 9, lines 7-10, and notes that nylon can also be used. Id. col. 8, lines 57-65. A preferred embodiment of the invention noted in the written description does not serve to restrict the meaning of a term in the claim. 5 See, e.g., Arlington Indus. v. Bridgeport Fittings, Inc., 345 F.3d 1318, 1327 (Fed. Cir. 2003); Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1370 (Fed. Cir. 2003). Accordingly, even if the specification supported Paiho's reading of "extrusion" by giving its dimensions, it is clear that those dimensions describe only the preferred embodiment of the process and therefore do not limit the scope of "extrusion" as used in the claims. See SuperGuide Corp. v. DirecTV Enters., 358 F.3d 870, 875 (Fed. Cir. 2004) ("The written description … is not a substitute for, nor can it be used to rewrite, the chosen claim language.")

--- Footnotes ---
5 "Similarly, the mere fact that the patent drawings depict a particular embodiment of the patent does not operate to limit the claims to that specific configuration." Anchor Wall, 340 F.3d at 1306-1307.

--- End Footnotes ---

Finally, Paiho argues that the prosecution history of the '028 patent supports its construction, noting that it contains "no indication . . . that the term 'extrusion' does not mean a form produced by an extrusion process that holds a shape defined by the extrusion die after exiting the extrusion die." Paiho Cl. Constr. Br. at 10. Because the claims themselves do not bear that interpretation, however, the fact that the prosecution history does not contradict it is irrelevant. See, e.g., Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342-43 (Fed. Cir. 2001) (describing consultation of prosecution history as "confirmatory measure" undertaken "to confirm that the patentee's use of the disputed terms is consistent with the meaning given to it [sic]

by the court").

Paiho also suggests that an amendment to Fischer's application to the '028 patent "acknowledged the difference between" the "extrusion" described in the claims and "the direct injection of a plastic melt directly onto a molding drum." Paiho Cl. Constr. Br. at 11, 13-14. In the amendment, Fischer referenced an existing patent cited by the examiner and granted to one
Rochlis, explaining that it called for "moldable material" to be applied directly to the "molding drum" through a nozzle and then "forced into the cavities by way of [a] belt and roller arrangement." Amendment rec'd Feb. 22, 1988, at 16-17. Fischer offered this explanation in response to the examiner's concern that the Rochlis patent and another existing invention could be combined to render Fischer's claims obvious. Id. at 16.

In Nystrom v. Trex Co., 374 F.3d 1105 (Fed. Cir. 2004), the Federal Circuit rejected an argument nearly identical to Paiho's. The patentee had submitted an amendment in response to the examiner's contention, like that of the examiner of the '028 patent, that a combination of existing inventions would make the patentee's claims obvious. Id. at 1113. Based on the patentee's statement in the amendment that one of the existing patents was "clearly not concerned with materials made from wood," the defendant argued that the term "board" in the patent-in-suit should be construed to exclude "boards that were not made from wood cut from a log." Id. The Federal Circuit disagreed, reading the statement "not as a disavowal or disclaimer that [the patentee's] claimed invention is limited to wood decking boards, but as an argument against the examiner's obviousness rejection." Id. The court therefore held the statement "insufficient to restrict the scope of [the] claims." Id.

Like the Federal Circuit in Nystrom, this court declines to read Fischer's response to the examiner's concerns over obviousness to limit the scope of the term "extrusion" in the way Paiho suggests. The court concludes that neither the specification nor the prosecution history warrants a departure from the ordinary meaning of "extrusion" as used in the claims. Indeed, the meaning of term is clear from the language of the claims themselves. Accordingly,

the court construes "extrusion" to mean "material exiting extruding equipment," rather than "a form produced by an extruding process that holds a shape defined by the extruding die after exiting the extruding die."

Footnotes

6 The court therefore does not consider the extrinsic evidence submitted through the conflicting affidavits of the parties' expert witnesses. CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1368 (Fed. Cir. 2002).
This court reviews the district court's claim interpretation without deference. See Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454-56, 46 U.S.P.Q.2D (BNA) 1169, 1172-75 (Fed. Cir. 1998) (en banc); Markman, 52 F.3d at 979-81. This court has delineated several rules for claim drafters to invoke the strictures of 35 U.S.C. § 112, P 6. Specifically, if the word "means" appears in a claim element in combination with a function, it is presumed to be a means-plus-function element to which § 112, P 6 applies. See Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427, 44 U.S.P.Q.2D (BNA) 1103, 1109 (Fed. Cir. 1997); Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d at 1580, 1583, 39 U.S.P.Q.2D (BNA) 1783, 1785 (Fed. Cir. 1996). Nevertheless, according to its express terms, § 112, P 6 governs only claim elements that do not recite sufficient structural limitations. See 35 U.S.C. § 112, P 6. Therefore, the presumption that § 112, P 6 applies is overcome if the claim itself recites sufficient structure or material for performing the claimed function. See Sage, 126 F.3d at 1427-28 ("Where a claim recites a function, but then goes on to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format."); York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1574, 40 U.S.P.Q.2D (BNA) 1619, 1623 (Fed. Cir. 1996); Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531, 41 U.S.P.Q.2D (BNA) 1001, 1006 (Fed. Cir. 1996).

Although use of the phrase "means for" (or "step for") is not the only way to invoke § 112, P 6, that terminology typically invokes § 112, P 6 while other formulations generally do not. See Greenberg, 91 F.3d at 1583-84. Therefore, when an element of a claim does not use the term "means," treatment as a means-plus-function claim element is generally not appropriate. See Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1213-15, 48 U.S.P.Q.2D (BNA) 1010, 1016-18 (Fed. Cir. 1998). However, when it is apparent that the element invokes purely functional terms, without the additional recital of specific structure or material for performing that function, the claim element may be a means-plus-function element despite the lack of express means-plus-function language. See, e.g., Cole, 102 F.3d at 531 ("Merely because an element does not include the word 'means' does not automatically prevent that element from being construed as a means-plus-function element."); Mas-Hamilton, 156 F.3d at 1213-15 (interpreting "lever moving element" and "movable link member" under § 112, P 6).

Under this established analytical framework, the "eyeglass hanger member" elements in the claims of both the '345 and the '726 patents do not invoke § 112, P 6. In the first place, these elements are not in traditional means-plus-function format. The word "means" does not appear within these elements. Moreover, although these claim elements include a function, namely, "mounting a pair of eyeglasses," the claims themselves contain sufficient structural limitations for performing those functions. As noted above, claim 1 of the '345 patent describes the eyeglass hanger member as "made from flat sheet material" with an "opening means formed . . . below [its] upper edge." This structure removes this claim from the purview of § 112, P 6. Similarly, according to claim 1 of the '726 patent, the eyeglass hanger member has "an attaching portion attachable to a portion of said frame of said pair of eyeglasses to enable the temples of the frame [to be opened and closed]." This structure also precludes treatment as a means-plus-function claim element. The district court therefore improperly restricted the "eyeglass hanger member" in these claims to the structural embodiments in the specification and their equivalents.

2. Eyelet strip

Claim 1 recites a "first flap carrying a first eyelet strip having a set of lace eyelets, and second flap carrying a second eyelet strip having a set of lace eyelets." (Emphasis added). Similarly, claim 10 recites "an eyelet carrier strip." (The parties do not contend that there is any difference between the terms "eyelet strip" and "eyelet carrier strip.") Plaintiff contends that an "eyelet strip" means "a strip that is part of the removable flap, which has or contains one or more eyelets." Defendant argues that an "eyelet strip" is "a part of each flap that is comparatively long and has multiple eyelets." To the extent that the parties' definitions refer to the number of eyelets on the eyelet strips, their dispute is derivative of their arguments regarding construction of the word "set" and need not be revisited. However, defendant maintains that in accordance with the ordinary meaning of the word "strip," the court should define an eyelet strip as being a "comparatively long" part of the removable flaps. As noted above, claim construction analysis begins "with the ordinary meaning of the disputed claim term." It "is well settled that dictionary definitions provide evidence of a claim term's ordinary meaning." Inverness Medical Switzerland v. Warner Lambert Co., 309 F.3d 1373, 1378 (Fed. Cir. 2002); see also Vanguard Products Corp. v. Parker Hannifin Corp., 234
F.3d 1370, 1372 (Fed. Cir. 2000) ("A dictionary is not prohibited extrinsic evidence, and is an available resource of claim construction."). Because the parties do not suggest that the term "strip" has any specialized or technical meaning for practitioners of the relevant art, "standard dictionaries of the English language are the proper source of [the] ordinary meaning of the phrase." Id.

A "strip" is "a long, narrow piece of cloth, paper, plastic or some other material: a strip of linen." The New Oxford American Dictionary at 1687; see also The American Heritage Dictionary of the English Language at 1716 ("strip" defined as "a long narrow piece, usually of uniform width: a strip of paper, strips of beef"). This definition is consistent with the drawings in the patent specification, which show a comparatively long, narrow strip "corresponding in length from top to bottom" with the main body of the brace. See '002 Pat. figs. 1, 3, 6 and 7; col. 3, lines 43-45. Plaintiff suggests no reason why the term "strip" should not be defined in a manner consistent with its ordinary meaning. Accordingly, I conclude that the term "eyelet strip" means a part of each flap that is comparatively long and narrow and has two or more eyelets.

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4. "Facial Features"

Hoodlums defines "facial features" as "[p]ertaining to the face, including but not limited to the forehead, nose, mouth and cheekbones, etc. as shown in Figures 5 through 9 of the '972 patent." (Doc. 37, Ex. B at 4.) Redtail defines "facial features" as "[p]rominent and distinctive characteristics of the face." (Id.)

As noted above, the court defined "skull facial features" as "pertaining to the bones of the face, including, but not limited to, a mouth feature and a nose feature, as shown in Figures 5 through 9 of the '972 patent." When construing terms in a claim, there is a "presumption that the same terms appearing in different portions of the claims should be given the same meaning" unless the specification and prosecution history clearly indicate otherwise. Fin Control Sys. Pty, Ltd. v. OAM, Inc., 265 F.3d 1311, 1318 (Fed. Cir. 2001). In this case, the specification and the prosecution history do not provide a different meaning to the term "facial features."

Between "skull facial features" and "facial features," the latter lacks only the "skull" modifier. This context can be highly instructive; a term's usage in one claim often illuminates that same term's meaning in another claim. See Phillips, 415 F.3d at 1314 (explaining that the term "steel baffles" strongly implied that the term "baffles" did not inherently mean objects made of steel). Removing the "skull" modifier removes the "bones of the face" phrase from the definition.

Mindful that identical terms should be given the same meaning even in different claims, the court defines "facial features" as "pertaining to the face, including, but not limited to, a mouth feature and a nose feature, as shown in Figures 5 through 9 of the '972 patent."

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II

In the proceedings below, a primary dispute between the parties was the proper construction of "facilitate positioning" in claim 1. OPW argued that the term means to "assist in positioning and support," JA at 96, whereas Franklin argued that it "means only that the opening be large enough to 'allow' a spill collector to be positioned in the hole," JA at 20. The district court, after noting that "the ordinary meaning of the word 'facilitate' is to make easier or to assist," began its analysis by looking to the language of the claim itself for guidance. Franklin Elec. Co., Inc. v. Dover Corp., No. 05-598, slip op. at 17, 2006 U.S. Dist. LEXIS 27247 (W.D. Wisc. May 4, 2006)("SJ Decision"). In so doing, the court observed that the upward and downward extensions must mate to form "at least one access hole being of proper size, shape and orientation to facilitate positioning of a spill collector therein." Id., slip op. at 17-18, 2006 U.S. Dist. LEXIS 27247; see also '257 patent col.6 ll.9-14, col.6 ll.22-30. Based on that observation, the court inferred an "intent by the inventor that the internal surface of the downward extension assist in positioning the spill collector," SJ Decision, slip op. at 17, 2006 U.S. Dist. LEXIS 27247, and that "the opening formed by the mated extensions play a role in positioning the spill collector," id., slip op. at 18,
The district court sought additional guidance by looking to the figures and the specification. Most persuasive to the court was "the only depicted embodiment," Figure 7 (reproduced above), "which . . . illustrates that the spill collector is inserted into the space formed by the mated extensions where it contacts and is held in position by both the upward and downward extensions." Id. The court found this to be consistent with both "the claim requirement that both extensions facilitate positioning," as well as "[t]he related specification language . . . specifying an o-ring to form a seal where the spill collector contacts the downward extension." Id.; see also '257 patent col.4 ll.61-68, col.5 ll.15-19. The court also looked to the inventor's use of "similar language to mean the same thing in a different context . . . in describing the relationship between the sump and the sump shield which rests on it: 'Such positioning allows frame 18 to overlap extension 17 of containment sump 11 and facilitates proper positioning of sump shield 16 to effectively eliminate water intrusion into containment sump 11.'" SJ Decision, slip op. at 18-19,2006 U.S. Dist. LEXIS 27247 (emphasis added by district court). This further confirmed the court's construction because, "[a]s illustrated by figure 7 to which the language refers, 'positioning' is 'facilitated' by physical contact between the frame, sump and shield in identical manner to the way positioning is facilitated by physical contact between the upward extension, downward extension and spill collector." SJ Decision, slip op. at 19, 2006 U.S. Dist. LEXIS 27247.

As a final step in its claim construction analysis, the district court reviewed the prosecution history. Here, too, the court found confirmation of its construction in the inventor's comments accompanying his amendment to overcome the examiner's obviousness rejection. The court reasoned that "[t]he argument in support of allowance that the containment assembly 'acts as a housing for containing and supporting a spill collector' which would eliminate the prior art need that the collector 'be concreted into the ground' leaves no doubt that the ['facilitate positioning'] limitation was intended to require physical communication between the spill collector and the extensions and that contact between the extensions and the spill collector was a basis on which the device was distinguished from the prior art in order to obtain allowance from the examiner." Id. (quoting JA at 369). Thus, the district court rejected Franklin's proposed construction in favor of the construction proposed by OPW.

The court then proceeded to explain that, based upon its construction of "facilitate positioning," summary judgment of noninfringement was appropriate:

"There is no question that the claim element requiring the upward and downward extensions to "facilitate positioning" of the spill collector is absent from the accused product. The optional water shroud boot of defendant's containment system is the structure analogous to the mated upward and downward extensions of claim 1. [n.2: the Court makes no finding concerning whether the water shroud boot embodies these additional elements.] However, the water shroud boot plays absolutely no role in positioning the spill collector. The water shroud boot is optional and need not be present on the device. When it is included in defendant's containment system it is added only after the spill collector has been fully positioned and installed. It is soft and pliable and does not come into contact with the spill collector. There is no reasonable sense in which the water shroud boot could be said to assist in the positioning of a spill collector. Its presence or absence is irrelevant to the positioning of a spill collector. Because defendant's device lacks this element of the only independent claim of the '257 patent its accused containment system does not infringe and it is entitled to summary judgment.

SJ Decision, slip op. at 20-21, 2006 U.S. Dist. LEXIS 27247 (footnote in original). Accordingly, OPW's motion for summary judgment was granted, and final judgment was entered against Franklin. Franklin subsequently appealed to this court. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

III

"We review the district court's claim construction and the grant of summary judgment based thereon without deference." Novartis Pharm. Corp. v. Eon Labs Mfg., 363 F.3d 1306, 1308 (Fed. Cir. 2004). "Summary judgment is appropriate if there is no genuine issue as to any material fact and the moving party is entitled to a judgment as a matter of law." Honeywell Int'l, Inc. v. ITT Indus., 452 F.3d 1312, 1317 (Fed. Cir. 2006) (citing Fed. R. Civ. P. 56(c)). "The evidence of the non-movant is to be believed, and all justifiable inferences are to be drawn in his favor." Honeywell, 452 F.3d at 1317 (quoting Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 255, 106 S. Ct. 2505, 91 L. Ed. 2d 202 (1986)).

IV
We read the district court's claim construction of "facilitate positioning" to impose two requirements: (1) both extensions must physically contact the spill collector, and (2) the upward and downward extensions must assist in the act of positioning the spill collector. As to the first requirement, OPW conceded at oral argument, and we agree, that nothing in the language of claim 1 requires physical contact between the extensions and the spill collector. See Digital audio recording: Oral Argument in Case No. 2006-1442, at 16:30 (Feb. 8, 2007) ("Oral Argument"). Likewise, we find no such requirement in the specification. To be sure, some uses of the word "facilitate" in the specification lend arguable support to OPW's position. In the two uses identified by the district court, the phrase "facilitate[s] proper positioning" arises in the context of creating a tight seal between certain parts of the assembly. '257 patent col.4 ll.24-26, col.5 ll.30-34. And, as the district court also pointed out, the specification twice discusses the formation of a seal via contact between the downward extension and the spill collector. Id. col.4 ll.65-68, col.5 ll.15-19. It is therefore clear from these examples that the "facilitate positioning" language of claim 1 does not preclude physical contact between the extensions and the spill collector.

It does not necessarily follow, however, that the term "facilitate positioning" requires physical contact. In fact, the specification uses the term "facilitate" in several ways to describe interactions in which physical contact is unnecessary. For example, the specification provides that the "[s]ump cover 13 may include one or more lids 14 and 15 to facilitate entry into containment sump 11." '257 patent col.2 ll.64-66 (emphasis added). In no sense does entry into the containment sump through an uncovered hole in the sump cover require physical contact with the lid; once the lid is open, entry is continuously facilitated with no contact whatsoever. Similarly, the specification explains in another section that "one or more upward extensions 19 and/or 21 may be provided to facilitate access for filling and/or evacuation of pipes or instrumentation." Id. col.3 ll.21-24 (emphasis added). Again, the hole defined by the upward extensions continuously facilitates access without any contact. In yet another example from the specification, it is stated that:

Hole 25 is provided in sump cover 13 to facilitate insertion of threaded section 28 of bolt 90 there through. Hole 25 may include a counter sink 41 to facilitate use of a bolt 90 with a countersink-type head 42, as shown in FIG.5, or may include a counter sink 48 as shown in FIG. 6 to facilitate use of a bolt 90 having a hex head 29 as shown.

'257 patent col.4 ll.4-10 (emphasis added). As before, neither holes nor counter sinks require physical contact in order to "facilitate" their associated tasks. In the case of a tapered counter sink-type head, while physical contact between the head and the contours of the counter sink is likely preferred, that possibility does not mean physical contact is an absolute necessity for the counter sink to "facilitate use" of such a bolt. Indeed, in the case of a hex-headed bolt, physical contact between the head and the contours of the counter sink is likely undesirable if there is a need to accommodate a wrench around the head.

Perhaps the most notable aspect of the specification is that although it contemplates contact between the downward extension and the spill collector, there is no mention of contact between the upward extension and the spill collector. Admittedly, figure 7 appears to depict contact between the right side of the spill collector and the upward extension. Yet, a close examination of figure 7 also reveals that any such contact might be incidental because, on the opposite side of the spill collector, there is a small but distinctive space between the upward extension and the spill collector. The only arguable contact in that portion of the figure is provided by an ambiguous line extending from the top of the upward extension to the side of the spill collector. That line might have been intended to indicate a connection, it might have been accidental, or it might have been intended to indicate something else altogether.

We need not resolve the ambiguity here because patent figures are generally not intended to convey such detail. Cf. Hockerson-Halberstadt, Inc. v. Avia Group Int'l, 222 F.3d 951, 956 (Fed. Cir. 2000) ("Under our precedent . . . it is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue."). Moreover, even if figure 7 unambiguously depicted contact between the upward extension and the left side of the spill collector, as it seems to depict between the upward extension and the right side of the spill collector, we would not necessarily conclude that such contact is a required
limitation of the claims because figure 7 is merely a preferred embodiment of the invention. '257 patent col.5 ll.42-48. See Burke, Inc. v. Bruno Indep. Living Aids, Inc., 183 F.3d 1334, 1341 (Fed. Cir. 1999) ("[A]n attribute of the preferred embodiment cannot be read into the claim as a limitation."). Put simply, any contact inferable from figure 7 is not relevant to our claim construction analysis. Accordingly, we find nothing in the specification indicating that the term "facilitate positioning" requires physical contact.

At oral argument, counsel for OPW stated that the inventor's remarks during prosecution in response to the examiner's obviousness rejection provide the best support for his client's position. Oral Argument, at 18:05. In particular, counsel concentrated heavily on the following passage:

[W]hen the pipe connecting the spill collector and the gas tank fails, the sump cover containment assembly of the present invention prevents intrusion into the surrounding soil. Thus, the invention of amended claim 1 is capable of much more than is the prior art of record. It acts as a housing for containing and supporting a spill collector, as well as acting as a secondary containment system which facilitates access for maintaining a spill collector utilized therewith. Thus, the spill collector no longer needs to be concreted into the ground as was previously required.

JA at 369 (emphasis added). According to counsel, because the amendment related to the interplay between the extensions and the spill collector, the word "It" must refer to the upward and downward extensions. And since "It" serves "as a housing for containing and supporting a spill collector," OPW argues that the inventor explicitly disclaimed any apparatus in which the upward and downward extensions (i.e., "It") do not provide such housing and support.

We find this argument unpersuasive. The word "It" plainly refers to "the invention of amended claim 1," see JA at 369 (emphasis added), and therefore encompasses the entire claimed assembly; "It" does not refer to the upward and downward extensions alone. At most, the inventor disclaimed any apparatus in which the spill collector is not supported by something within the assembly. However, there is no requirement that the support be provided by physical contact with both the upward and downward extensions. The mere fact that the preferred embodiment depicted in figure 7 shows physical contact between the spill collector and the downward extension does not mean that such contact is a claim limitation, see Burke, 183 F.3d at 1341, and it certainly does not mean that contact between the spill collector and the upward extension is a claim limitation.

Counsel for OPW also contended that we should infer physical contact from the inventor's statement that "the sump cover containment assembly of the present invention prevents intrusion into the surrounding soil" "when the pipe connecting the spill collector and the gas tank fails." JA at 369. Although we do not fully understand the argument, counsel seemed to be saying that there must be physical contact in order to prevent the spill collector from becoming displaced in the event that the pipe below breaks. If that is in fact the argument that was being made, then it amounts to nothing more than a restatement of the argument rejected above that only physical contact with both extensions can be the source of support for the spill collector. Just as it might be the case that the upward extension could add nesting support for a tapered spill collector, it might also be the case that a sufficiently tight o-ring seal between the spill collector and the downward extension could render such additional nesting support unnecessary. Therefore, we reject the physical contact limitation imported into the claim by the district court.

As to the second requirement of the district court's construction-that the upward and downward extensions must assist in the act of positioning the spill collector-we note that claim 1 is an apparatus claim, and as such, it contains no "positioning" step with which the extensions might assist. Consequently, it does not matter when a space is created to house the spill collector; a structure can still infringe claim 1 if the space only exists after the full device is constructed. Howmedica Osteonics Corp. v. Tranquil Prospects, Ltd., 401 F.3d 1367, 1375 (Fed. Cir. 2005). While it may be true that an apparatus claim could recite a limitation merely capable of assisting with an anticipated assembly process, we discern no indication from the portions of the intrinsic record before us that the inventor intended to provide the extensions as a means of overcoming some difficulty in the prior art with the act of positioning the spill collector. Rather, the comments submitted in response to the examiner's rejection reveal that the inventor was principally concerned with providing a secondary housing for the spill collector separate from the containment sump itself. See JA at 369 ("Thus, the invention of amended claim 1 is capable of much more than is the prior art of record. It acts as a housing for containing and supporting a spill collector, as well as acting as a secondary containment system which facilitates access for maintaining a spill collector utilized therewith."). Therefore, we hold that the extensions need not assist with, or even be capable of assisting with, the act of positioning the spill collector.

Instead, we agree with Franklin that the upward and downward extensions need only "allow" the spill collector to be
positioned in the hole.

OPW argues that even if we hold--as we do--that Franklin's proposed construction of "facilitate positioning" is correct, summary judgment of noninfringement is still appropriate because the water shroud boot of the accused device, which is only optionally installed after the proper placement of the spill collector, "plays no role whatsoever in positioning" the spill collector. Appellee's Br. at 36. For the sake of clarity, we repeat our holding announced above that the extensions need not assist with, or even be capable of assisting with, the act of positioning the spill collector. A necessary corollary to this holding is that a proper infringement analysis requires a comparison of the limitations of the claims to the accused device, regardless of what process was used to assemble the device.

20. Facing

The Plaintiffs request construction of the term "facing" as the term is used in claim 39 of the '410 patent, 21 and in claim 1 of the RE '439 patent. They propose that "facing" be defined as "to look forward or in the direction of." (Pls.' Open. Br. 35-36.) Pergo has not responded to the definition proposed by the Plaintiffs.

--- Footnotes ---

21 The Court has not located the term "facing" in claim 39 of the '410 patent. It does appear in claim 49 of the '410 patent.

--- End Footnotes ---

Claim 1 of the 'RE '439 patent states in relevant part:

the locking device comprising a strip integrated with the second edge of each of said building panels, said strip extending throughout substantially an entire length of the second edge and being provided with a locking element projecting from the strip, such that when two adjacent building panels are joined together, the strip projects from the rear side of the second edge of the panels with its locking element received in the locking groove of an adjacent building panel, the building panels, when joined together, can occupy a relative position in said second direction where a play exists between the locking groove and a locking surface on the locking element that is facing the first and second edges and is operative in said second mechanical connection, the first and the second mechanical connections both allow mutual displacement of the building panels in a direction of the first and second edges, and the second mechanical connection enables the locking element to leave the locking groove if the respective building panel is turned about its first edge angularly away from the strip.

(RE '439 patent, 10:52-67; 11:1-7.) (Emphasis added). Facing is defined as to be turned or placed with the front toward a specified direction. Webster's II New Riverside University Dictionary 459. Since the term refers to inanimate objects, the Court has replaced "look" with "oriented." Having considered "facing" in the context of the claims, the Court defines "facing" as "oriented in the direction of."

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F. "Facing" and "Facing One Another"

Claims 1 and 17 use the terms "facing" and "facing one another" in the following manner:

1. . . . said housing including a waveguide . . . said waveguide including a planar portion facing said leaf spring portion.

17. A coaxial jack device according to claim 16 wherein a plurality of said projections are fin-shaped, each having a planar portion facing one of said moveable portions of said switch.
'378 patent at 10:32-35, 14:16-19 (emphasis added). Claims 1 and 16 use the phrase "facing one another" in the following phrase:

an electronically grounded housing having a rear end, a front end, a top wall, a bottom wall, and two side walls defining generally planar surfaces facing one another, wherein said front and rear ends, and said top, bottom and side walls form an enclosed housing.

Id. at 13:27-31.

Switchcraft asks the Court to adopt the third definition in Webster's New Collegiate Dictionary for "facing": "to bring face-to-face." Supra at 406. Switchcraft argues that, to ensure the term is used consistently in each claim, the term "facing" must mean "face-to-face." In support of its argument, Switchcraft notes the platform waveguide illustrated in the specifications is "well below the leaf springs, such that no face of the platform sees a leaf spring, as is the case with [fin-shaped waveguides.]" Def.'s Markman Brief [Docket No. 46] at 13. Switchcraft argues it would be inconsistent to construe facing to cover such a configuration. Switchcraft also notes "the specification establishes that not all of the disclosed waveguide embodiments are "facing" a leaf spring." Id. Based on language that "each waveguide defines a generally planar surface facing at least partially toward each leaf spring member in the preferred embodiment," Switchcraft concludes its interpretation of "facing" is correct. '378 patent at 8:61-67 (emphasis added). It interprets the "facing at least partially toward" phrase to indicate that the patent modified "facing" when it did not want it to mean "face-to-face."

ADC argues "facing" is a non-technical term with a commonly understood meaning and does not require construction. However, in the event construction is necessary, ADC argues "facing" should be interpreted to mean "oriented toward." ADC notes dictionaries broadly define "facing" as "occupying a position with the face toward" and "to stand or sit with the face toward; to have a front oriented toward." The American Heritage (R) Dictionary of the English Language, 632 (4th ed. 2000); Merriam-Webster's Collegiate Dictionary, supra at 447. ADC argues Switchcraft's proposed definition of "face-to-face," fails to consider that one object may face the back or side of another. ADC argues "facing" as used in the '378 patent, encompasses a broader meaning than face-to-face, as evidenced by the phrase "facing at least partially towards."

The Court finds "facing" should be interpreted as "with the face oriented toward." This interpretation corresponds with the definitions listed in the dictionaries cited by both parties and is in keeping with the use of the term in the patent claims and specifications. In addition to the definition proposed by Switchcraft, Webster's New Collegiate Dictionary also defines "facing" as "to have the face or front turned in a specified direction." Supra at 406. Both dictionary definitions cited by ADC note it is the "face" that is oriented towards something. ADC's proposed definition, "oriented toward," does not convey this important facet of the definition.

Switchcraft's proposed definition, "face-to-face," would improperly narrow the definition of facing, which clearly permits one object to face another even if the second object is itself facing in another direction. Switchcraft's proposed interpretation would render the phrase "facing one another" redundant. Furthermore, the language of claims 1 and 17 clearly state that all waveguides include a planar portion facing either a leaf spring portion or a movable portion. The preferred embodiment shows seven waveguides (six fin-shaped waveguides and one platform waveguide), each of which is "facing at least partially toward" the leaf springs. The use of "facing" in the specification indicates that "facing" in the claims has a broader meaning than "face-to-face." Adopting Switchcraft's construction would require a finding that the platform waveguide described in the specification as "facing at least partially toward" an object is not facing the object. "A claim interpretation that excludes a preferred embodiment from the scope of the claim is 'rarely, if ever, correct.'" On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH, 386 F.3d 1133, 1138 (Fed. Cir. 2004) (quoting Globetrotter Software, Inc. v. Elan Computer Group, Inc., 362 F.3d 1367, 1381 (Fed. Cir. 2004). The construction "with the face oriented towards" best captures the meaning of facing reflected in the claims and the specification.

For the same reasons as set forth for "facing," the Court also interprets "facing one another" to mean "with the faces oriented towards one another."

1. Fasteners
Plaintiff contends that "fasteners" should be limited to threaded fasteners. Defendants argue that the term "include[s] any mechanism used for attachment" and should be defined as "a device for attaching or connecting elements."

Figure 4 of the '451 Patent shows fasteners being inserted through openings (in 34) and into holes (in 31):

To support its more limited interpretation, Plaintiff argues that the fasteners in Figure 4 appear to be threaded, and the specification mentions fasteners being inserted into threaded holes. '451 Patent col. 4, ll. 16-17.

The language of claim 1, however, is unlimited by the word "threaded." Plaintiff's argument is a transparent effort to import limitations from the specification into the claim, contrary to the rules of claim interpretation. The meaning of "fasteners" is clear from the language of the claims, as a means of attachment for two components of the device.

As used in claims 1, 6, and 10 of the '451 Patent, 

"fastener" means a device for attaching or connecting elements.

9. Fastening Part/Element

a. The Parties' Constructions

LPL asserts that based on the claim language, "fastening element" should be construed as an element that provides the capability of mounting one component to another. Defendants point to the common specification to limit their constructions of the term to specific structures, such as a hole together with the material defining the hole, pegs, screws, hooks, bolts, ribs, nails or other similar fasteners including a fastener with a compressible head. ViewSonic asserts that LPL's construction introduces redundancy into the claim and improperly converts the term into a means-plus-function.

b. The Special Master's Constructions

Initially, the Special Master agrees with the parties that "fastening element" and "fastening part" are interchangeable. For simplicity, only fastening "element" is discussed.

That the term itself connotes a function, i.e., fastening, cannot be dismissed as mere redundancy. The function of fastening is supported in the Special Master's view by the context of the claims which recite that the flat display panel is fixed to the housing via the fastening element. See claims 35, 55, and 56 of the '641 patent and claim 33 of the '718 patent. Moreover, "where a claim recites a function, but then goes on to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format." Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427-28 (Fed. Cir. 1997). In this case, sufficient structure is recited in the claims. Given the stipulated construction of the term "fastening," the Special Master's construction is as follows: 20

<table>
<thead>
<tr>
<th>CLAIM TERM</th>
<th>SPECIAL MASTER CONSTRUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>fastening element/part</td>
<td>An element that provides the capability for attaching firmly or fixing securely so as to be supported, one component to another component</td>
</tr>
</tbody>
</table>

20 Because the terms first frame and fastening element/part have been construed, the phrase "the first frame having a fastening element/part" does not need to be defined.
10. Fastening Hole

a. The Parties' Constructions

LPL's asserted construction of a "fastening hole" is similar to its construction of "fastening element" in that it incorporates the function of fastening. Defendants construe "fastening hole" simply as any hole.

b. The Special Master's Construction

The Special Master concludes that like the term "fastening element," the term "fastening hole" requires the function of fastening. This is supported by the claim language itself. For example, dependent claim 36 (incorporated into independent claim 35) recites the "first frame … being fixed to a housing … through the fastening hole at the rear surface of the first frame." Thus, the "fastening hole" is not just any hole, but instead must fasten one component to another. Additionally, during prosecution of the patents, the inventors amended the common specification in response to an objection by the examiner. In doing so, the inventors described "fastening hole" relative to "fastening element"; that is "a fastening hole … which together with the material defining the hole may be … a fastening element." See 4:60-64 of the '641 and '718 patents.

Thus, to meet the function of fastening, one skilled in the art would understand that the "fastening hole" necessarily includes the material defining the hole. Coupled with the common and ordinary meaning of a "hole," the Special Master's construction is as follows:

<table>
<thead>
<tr>
<th>CLAIM TERM</th>
<th>SPECIAL MASTER CONSTRUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>fastening hole</td>
<td>An opening, together with the material defining the opening, that provides the capability for attaching firmly or fixing securely so as to be supported, one component to another</td>
</tr>
</tbody>
</table>

Presuming the jury found literal infringement, J. Baker contends that such a finding was necessarily made in relation to a claim interpretation that cannot be sustained. Maxwell argued the term "fastening tab" as used in the patent claims does not merely designate a tab separate from the shoe but also encompasses shoe parts. The evidence at trial focused on the element in claim 3 that requires a part of the "fastening tab" extend "horizontally between the outer sole and the inner sole of the shoe and [be] firmly secured thereto" and the element in claim 1 that requires the first part of the "fastening tab" extend "horizontally between the inside surfaces of the outer sole and inner sole of the shoe and [be] firmly secured thereto."

Maxwell's patent expert, Malcolm Moore, opined that the loop and the counter pocket or lining together perform like the "tab" described in the patent claims. Relying on the reference in the claims to the fastening tab as an "integral sheet," Moore stated that the counter pocket and shoe lining are properly considered part of the fastening tab. Moore opined that the loop, combined with the portion of the counter pocket or upper lining which is stitched to the loop and extends between the soles of the shoes, provides a "tab" within the literal meaning of claims 1 and 3. Because the counter pocket or lining to which the loop is attached extend horizontally to the bottom of the shoe and are secured between the inner and outer soles, Moore concluded that the accused systems include "fastening tabs" secured where claims 1 and 3 literally require.

The claim language, specification and prosecution history all belie Maxwell's claim interpretation. Maxwell's interpretation differs from the ordinary meaning of "tab." The fastening tab, both as described in the claims and depicted in the drawings, is an item separate from the counter pocket, the lining or the upper of the shoe. There is nothing in the patent language to indicate that the term "tab" is used in an uncommon way. Nor does the patent language indicate that "fastening
"tab" includes other shoe parts.

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3 The dictionary may be consulted to establish the "ordinary" meaning of a disputed term. Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 951 & n.8 (Fed. Cir. 1993). See Webster's II New Riverside University Dictionary (1984) (defining "tab" as "a projection, flap, or short strip attached to an object to facilitate opening, handling or identification."); Random House Dictionary of the English Language (1969) (defining "tab" as "a small flap, strap, loop, or similar appendage, as on a garment, used for pulling, hanging, decoration, etc.").

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The specification of the '060 patent does not indicate that Maxwell intended the term "tab" to have another meaning. In fact, the opposite is true. The statement in the specification that the patented system "comprises in combination a pair of shoes, each of which has a fastening tab firmly secured thereto" indicates that the tab is a separate item and does not encompass shoe parts. Maxwell patent, col. 1, lines 49-50. The specification also states that "each fastening tab is formed from elongated narrow strong sheet material, such as synthetic resinous plastic material and each fastening tab has two parts." Id. col. 1, lines 55-58.

The specification notes that, "[although shown as rectangular, the tab may obviously have rounded ends or may be in the form of an elongated oval, or the like." Id. col. 3, lines 10-12. Moreover, the statement that the second part of the tab "extends upwardly along the inside surface of the upper body of the shoe, but spaced therefrom," demonstrates that the tab is an item different from the lining or upper. Id. col. 1, lines 64-66. The statement that "the tabs may be stitched into a lining seam of the shoes at the sides or back of the shoes," also indicates that neither the lining, the upper nor the counter pocket are part of the fastening tab itself. Id. col. 2, lines 41-43. 4

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4 See also Maxwell patent, col. 1, lines 59 & 62-63 ("one end of the elongated tab … the opposite end of the elongated tab"); Id. col 1., line 68 and col. 2, line 1 ("loops caused by doubling the tabs"); Id. col. 2, lines 21-26 ("At the time of manufacture, each shoe is provided with a fastening tab … [the tab] is thin flat and elongated formed from strong sheet material, such as plastic impregnated cloth, polyester film such as Mylar, or similar strong material which is resistant to tearing."); Id. col. 3, lines 5-7 ("typically the fastening tab may be between about 1/4 to 3/4 inch in width and 1 1/2 to 3 inches in length"); Id. col. 3, lines 8-10 ("Approximately one-half of the length of the tab should be secured between the inner and outer soles."); Id. abstract ("The tab comprises a length of narrow strong sheet material having a hole or loop at one end for receiving a fastening filament.").

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The use of the term "tab" in the prosecution history also undermines Maxwell's interpretation. See Maxwell's Amendment under Rule 111 filed February 4, 1985 ("Claim 1 requires a tab on the inside of the shoe upper as opposed to [an] outside tab"); Id. ("once the fastening element is cut from the shoes, there is no disfiguring remainder. The shoes are ready to be worn. The tabs simply rest along the inside surface of the shoe upper."); Maxwell's Amendment under Rule 111 filed May 8, 1985 ("the present invention as defined by claim 1 wherein the ends of a piece of material are held under the insole and a loop projects upwardly along the interior sidewall of the shoe.").

If Maxwell wished or intended to use the term "tab" in some particular way other than that understood by one of ordinary skill in the art at the time the patent application was filed, she must have defined it in the patent prior to issuance. This she did not do. Nothing in the patent or the specification would have put one of ordinary skill in the art on notice that the term "tab" meant other than what it says. Thus, the term "tab" must be given its ordinary meaning. Accordingly, other parts of the shoe -- including the counter pocket, the shoe upper, the upper lining and the sock lining -- cannot be considered part of the "fastening tab" described in the '060 patent.

Maxwell's argument that the counter pocket and top line systems literally infringed the '060 patent turned on her claim interpretation. Having rejected Maxwell's interpretation, the court also concludes that the claims as properly construed are
not literally infringed by the counter pocket and top line systems and that no reasonable jury could so find. The patent claims require that a part of the "fastening tab" extend horizontally between the inner and outer soles of the shoe and be firmly secured thereto. The tabs in the counter pocket and top line systems are secured in a different location within the shoe. There is no literal infringement as the tabs in those systems are not secured between the inner and outer soles of the shoe as required by claims 1 and 3 properly construed.

There is substantial evidence to support a finding of literal infringement based on J. Baker's use of a shoe connection system identical to the one described in the patent. Between 1985 and 1990, J. Baker ordered pairs of shoes connected together with a filament passed through loops "under the sock." The evidence, taken in favor of Maxwell, showed that in response the vendors provided J. Baker shoes with loops secured between the inner and outer soles rather than with loops secured between the sock lining and the inner sole. The court concludes that a reasonable jury could find that the "under the sock" system in practice was identical to the patented system. Accordingly, the jury's finding of literal infringement based on shoe connection systems used by J. Baker, other than the counter pocket and top line systems, is supported by substantial evidence.

1. Claim Construction

Both parties agree that the key claim limitation for purposes of this appeal concerns Claim 1's requirement that a "fastening tab" extend "horizontally between the inside surfaces of the outer sole and inner sole of the shoe." Col. 3, ll. 34-36. The district court construed the claim language to require that the fastening tab extend from between the inner and outer shoe soles. Moreover, the court construed the claim to require that the fastening tab be a separate piece from any other shoe part, including the counter pocket, the shoe lining, and the sock lining. Maxwell, 875 F. Supp. at 1379-80. On appeal, J. Baker does not challenge the court's claim construction. However, Maxwell asserts that its claims are broader than the district court's claim construction. In particular, she argues that the term "fastening tab" should be construed to cover a loop connected to a counter pocket lining, or other interior lining structure, which extends from between the shoe's soles.

We disagree with Maxwell's attempt to expand the claims. Claim 1 requires the tab to extend "from one edge of the inner sole and vertically upward along but spaced from the inside surface of the shoe upper." Claim 3 requires the tab to extend "upwardly along the inside surface of the shoe upper." Thus, both claims require a separate tab that extends along the shoe upper. Moreover, as Figure 2 of the patent illustrates, one of ordinary skill in the shoe industry would recognize that a shoe upper includes the outside portion of the shoe and the inside lining of the shoe. See also Cuccinelli, Maribeth, The Art and Science of Footwear Manufacturing 64 (Norman V. Germany ed., 1974) (defining a shoe "upper" as "all of the upper parts of a shoe stitched together and ready for lasting and bottoming. It includes both the outside and lining of the shoe."). Thus, to accept Maxwell's claim interpretation that the inside lining of the shoe is part of the tab, we would have to ignore the claim limitations that require the tab to be separate from and extend along the shoe upper, which includes the inner shoe lining. See Texas Instruments Inc. v. United States Int'l Trade Comm'n, 988 F.2d 1165, 1171, 26 U.S.P.Q.2D (BNA) 1018, 1023 (Fed. Cir. 1993) ("To construe the claims in the manner suggested by TI would read an express limitation out of the claims. This we will not do . . . ."); see also Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1563, 19 U.S.P.Q.2D (BNA) 1500, 1504 (Fed. Cir. 1991) ("Our interpretation gives full effect to the recitation of two distinct elements in the claimed structure: linear border pieces and right angle corner border pieces.").

Neither the patent specification nor the prosecution history indicates that the claims should be interpreted differently. To the contrary, the specification makes clear that the claims, as properly construed, require the fastening tab to be separate from the inside shoe lining. The specification indicates that "the [fastening] tab extends around the edge of the inner sole of the shoe and vertically upwardly along the inside surface of the upper body of the shoe, but spaced therefrom." Col. 1, ll. 62-66. In addition, the specification suggests that the fastening tab, as an alternative to placing it between the inner and outer soles, may be "stitched into a lining seam of the shoes at the sides or back of the shoes [emphasis added]." Col. 2, ll. 42-43. Accordingly, Maxwell must have contemplated that the tab be separate from the shoe's lining seam in order for the tab to be stitched into the lining. Thus, the court properly construed the claims to require the fastening tab to be a separate piece from the counter pocket lining or other inside shoe lining.

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3. On December 22, 2000, the court issued its construction of disputed claim terms as follows:

a. "Aluminum alloy sheet product." As understood by one of ordinary skill in the art, an aluminum product with a maximum thickness of 1/4 inches.


c. "Clad" and "cladding." Structures containing an outer layer that provides protection against corrosion. Claims without reference to "clad" or "cladding" apply to both clad and unclad products.

d. "Minimum" and "maximum." A level referring to guaranteeable property values established by repeated testing of many pieces of metal to establish consistent, uniform values.

e. "Long transverse yield strength." As understood by one of ordinary skill in the art, the stress, applied across the width of a product, that a product can sustain before yielding or breaking.

f. "Fracture toughness." Consistent with the understanding of one of ordinary skill in the art, resistance to extension of a crack, often measured in terms of the stress-intensity factor (K) at which applying progressively greater stress to a structure that contains a pre-existing crack causes the onset of rapid catastrophic propagation of that crack.

g. "Fatigue crack growth rate." Consistent with the understanding of one of ordinary skill in the art, the rate of crack extension caused by cycles of stressing and relaxing, expressed in terms of average crack extension per cycle (da/dN).

6. "feather angle mode"

This phrase is used in claim 7 of the '017 and '607 Patents, claim 8 of the '967 Patent, and claims 1, 2, 18, and 19 of the '520 Patent. WG seeks to construe this term as "a control mode that attempts to set and maintain each streamer in a straight line offset from the towing direction by a certain feather angle." Ion seeks to construe the term as a "mode wherein the global control system attempts to keep each streamer in a straight line offset from the towing direction by a certain feather angle." The primary difference between these proffered constructions is that Ion seeks to construe the term so that it is the global control system that acts to affect the streamer positions when the feather angle mode is triggered.

WG points out that the '017, '607, and '967 Patent claims in which this phrase is used explicitly state that the global control system is the actor in implementing the feather control mode. However, as the phrase is used in the '520 Patent, no mention is made of the global control system. Instead, the claims refer only to a "control system." According to WG, absent a clear and unmistakable disavowal of the claim scope, the construction of the term should not be limited according to how the phrase is used in some but not all of the patent claims. Ion, however, points out that the specification, when describing the control modes of the inventive system as a whole, teaches that the feather angle mode is where "the global control system attempts to keep each streamer in a straight line offset from the towing direction by certain feather angle." ('017 Patent, col. 9 ll. 55-58.)

The Court once again holds that, although Ion's description tracks the language used in the specification to describe how the feather control mode is implemented, it must read the specification in the context of the patents as a whole. Absent a clear and unmistakable disavowal or limitation on the claim scope, the Court will not impose the claim limitation that Ion proposes. While it is clear that the preferred or typical embodiment of the patent will involve the global control system acting to implement the feather control mode, the Court must acknowledge that several of the claims teach a method of implementing the feather control mode wherein the global control system is not mentioned. Innova/Pure Water Inc., 381
F.3d at 1117 (stating that "[p]articular embodiments appearing in the written description will not be used to limit claim language that has a broader effect"). Therefore, because it is consistent with the meaning revealed through the claim language as well as the specification description, the Court will adopt WG's construction of this term and finds that it should be construed as the "a control mode that attempts to set and maintain each streamer in a straight line offset from the towing direction by a certain feather angle."

C. "Feed assembly"

The parties agree on the construction of the term "feed assembly" and the Court finds this construction is consistent with the claim language, the specification and the prosecution history. Accordingly, the construction of "feed assembly" in the '998 Patent is: a structure at the free end of the screen that helps to guide the screen in the screen tracks.

83. The court construes the third additional limitation of claim 24, "a compressor feed line supplying said [nitrox] component to a compressor inlet," as follows: a line which connects the permeate outlet of the permeable membrane gas separator to the inlet of the immediately above-described compressor.

As for independent claims 1 and 5, the evidence shows that Dr. Jacob administered to human patients a nonzero amount of MSM that does not occur naturally in, and is in addition to, food actually eaten. The only argument MSM Investments makes against anticipation is that the Jacob Clinic activities do not meet the claim terms "feeding" and "increasing the amount of metabolizable sulfur." MSM Investments's argument rests completely on the premise that these terms include a temporal limitation and a nutritional use limitation. Because the Court interprets claims 1 and 5 as not including these limitations, the Court finds no merit in MSM Investments's argument. The terms "feeding" and "increasing" are not limited temporally and do not require the performance of acts on an ongoing or habitual basis. See Claim Construction Order, at 9:12-11:11.

Because the nutritional use limitation was not raised or addressed in the Court's Claim Construction Order, the Court addresses this limitation herein. At the hearing on this motion, MSM Investments pointed to the ordinary meaning of "feed" and the '878 patent specification as supporting a use limitation requiring nutritional, as opposed to pharmaceutical, use. According to MSM Investments, the reference to "nourishment" in the dictionary definition of "feed" indicates a nutritional purpose. In addition, MSM Investments argues, the '878 patent specification teaches using MSM for nutritional purposes as a dietary supplement. The Court does not find support in either the claim language or the specification for this limitation. The term "feeding," on its face, simply does not suggest any limited purpose and certainly does not exclude giving food or supplying nourishment for pharmaceutical purposes, as MSM Investments suggests. MSM Investments's reliance on "nourishment" is completely unsupported. And, while the '878 patent specification teaches taking MSM as a dietary supplement, it also teaches taking MSM for pharmaceutical or pharmacological purposes (see e.g., '878 patent, col. 13:53-14:62). Based on the claim language, the '878 patent specification, and file history, the Court interprets the term "feeding" in claim 1 as not limited to using MSM for nutritional purposes, as proposed by MSM Investments.

5 MSM Investments argued that the term "feeding" includes a nutritional use limitation for the first time after the Court issued its Claim Construction Order. The parties previously agreed that the ordinary meaning of "feed" is "to give food to; to supply nourishment." See Claim Construction Order.
A. "Felt"

 Defendants' proposed construction of the term "felt" is also wrong as a matter of law. (See Reply, at 6:22-12:5.) There is nothing in the language of Claim 1 or the patent's specification to suggest a particularized definition of "felt" that differs from the term's ordinary meaning, as follows: a fabric made directly from fibers, in which the fibers are held together through the physical entanglement of the fibers, chemical bonding, or thermal bonding, rather than through knitting or weaving. (See Ex. 2; Ex. 19 [Fairchild's Dictionary of Textiles]; Ex. 20 [Dictionary of Fiber & Textile Technology published by KOSA]; Ex. 21 [Textile Institute's Textile Terms & Definitions]; Ex. 22 [American Society for Testing Materials]; Ex. 23 [IWDA Nonwovens Glossary]; Ex. 24 [Needlepunch Nonwoven Primer].) 1

--- Footnotes ---

1 For purposes of construing the disputed terms of Claim 1 of the '971 Patent, the Court has avoided reliance upon expert declarations in light of the following legal principle: it is "only when the claim language remains genuinely ambiguous after consideration of the intrinsic evidence," that a trial court may resort to "extrinsic evidence" to further elucidate the claims' meanings. Bell & Howell Doc. Management Products Co. v. Altek Systems, 132 F.3d 701, 706 (Fed. Cir. 1997). Such extrinsic evidence is that evidence which is external to the patent such as expert testimony. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 (Fed. Cir. 1996). In the instant case, the disputed claim term language (i.e. felt, adhere, etc.) is not ambiguous from viewing the claim itself and the specification. This finding is further supported by reference to dictionaries.

--- End Footnotes ---

Defendants' contention that a felt requires roughly equal numbers of fibers pointing in all directions, and that it be of roughly equal strength in all directions, lacks support and is without merit. Defendants rely on a single source, the website of Resil Chemicals Private Limited of Bangalore India. (Ex. 53, at 9, 29; Ex. 30, at 2.) As Plaintiffs assert, the definition provided on the Resil website refers specifically to wool felts. Moreover, the definition on which Defendants rely specifically states that the fibers of a felt are "non-directional," i.e. the fibers point in all directions. (Ex. 30, at 2.) A reading of the definition nowhere requires an equal number or approximately equal number of fibers to point in all directions. Instead, the language makes specific reference to some fibers pointing in all directions. (Ex. 30, at 2.) Moreover, none of the six technical dictionary definitions on which Plaintiffs rely require that the fibers in felt point in roughly equal numbers in all directions (Exs. 19-24); and Defendants do not challenge any of the dictionary sources relied on by Plaintiffs.

Defendants also assert that a felt that has been saturated in polyurethane is no longer felt. (Ex. 51, at 107:15-25.) However, none of the definitions of felt provided by either party include any restriction on the materials that may be incorporated among the fibers of a felt. (See Exs. 19-24, 30.) To the contrary, the source dictionaries relied on by Plaintiffs explain that felt may include binders among the fibers to both bind the fibers and increase the strength of the felt. (Exs. 19, 23, 24.) Moreover, none of the intrinsic or extrinsic evidence excludes as felt materials that have been saturated in polyurethane or other materials. In fact, both parties agree that felt saturated in asphalt is still felt. (Vaughn Decl. PP 6, 3641; Exs. 19-24, 31; Ex. 51, Meirowitz Depo., at 107:7-15; 108:23-109:7.)

The '971 Patent does not suggest a particularized definition of felt that differs from the term's ordinary meaning. The patent does not, for example, require or even suggest that a felt must have a roughly equal number of fibers oriented in all directions. (Ex. 2.) The patent also does not suggest that a felt may not be saturated in another material, such as polyurethane. (Ex. 2.) Defendants attempt to limit the construction of the term "felt" in ways that do not comport with either the intrinsic or extrinsic evidence. Accordingly, the Court adopts the standard and widely accepted industry definitions that provide for a general construction of felt as a fabric made directly from fibers without weaving or knitting, and the Court construes the term without limitations on fiber number, orientation, or incorporation with other materials, as neither the intrinsic nor extrinsic evidence support such constructions.

GO BACK
B. A Female Fastener (5d)

The female fastener is clearly a structure with an opening which is designed to receive a second structure, in this case, the stud. The two in combination secure the insert with the seat shell. All of this is described in col. 5, ll 37-41 and col. 5, ll 45-48 as follows:

While sliding seat rearwardly studs are lowered and inserted through central aperture of their respective female fastener

* * *

the cooperative arrangement between studs and their respective female fasteners acts to securely retain the forward portion of seat insert to seat shell

ASC's interpretation of the phrase includes the word "fastener" and is circular.

A straight forward construction of the phrase is as follows:

A structure, female in form, that receives a stud, male in form, which together along with other elements, secures the insert to the seat

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6. ferromagnetic (claims 1, 2); magnetic material pins (claim 5); unmagnetized magnetic material (claim 8)

Fargo ferromagnetic: of or relating to a class of substances characterized by abnormally high magnetic permeability, definite saturation point, and appreciable residual magnetism and hysteresis magnetic material pins: pins made of a magnetic material unmagnetized magnetic material: magnetizable material that is not permanently magnetized

Iris ferromagnetic: a material that exhibits ferromagnetism, but is not magnetized magnetic material pins: pins made of a material that is capable of being magnetized, but is not magnetized unmagnetized magnetic material: material that is capable of being magnetized but, in the absence of an applied external magnetic field, is not magnetized

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n5 Iris offered this proposed construction at oral argument.

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The focus of Iris's arguments regarding these terms is that, within the context of the patent, they all refer to material that is capable of being magnetized, but is not magnetized. Iris highlights evidence in the prosecution history where the applicant sought to distinguish prior art on the basis that the supply rolls have "no magnets." (Fink Aff., Ex. C, pt. 4, at C61-C62.) The document states:
Claim 11 [issued Claim 8] is specific to the positioning of the identifier indicia, using an unmagnetized magnetic material. This feature is very important, again, from a pollution control standpoint, because there are no magnetic materials that are utilized on the roll, but yet the reliability of a magnetic sensor can be utilized using one stationary detector of the present invention.

* * *

With the present invention the magnetic material pins are cheap, they are non-polluting, and since there are no magnets, there are no plurality [sic] requirement. They can be placed on the supports or inserted into the apertures without regard to polarity.

The doctrine of prosecution disclaimer prevents a patentee from recapturing a specific meaning that it disclaimed during prosecution. Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1323 (Fed. Cir. 2003). The disclaimer must have been clear and unambiguous for the doctrine to apply. Id. at 1324. Fargo argues that there is no clear and unmistakable disavowal of the ordinary and customary meaning of "magnetic material pins." The problem with Fargo's argument, however, is that its proposed construction for "magnetic material pins" is "pins made of a magnetic material." Yet the prosecution history clearly indicates that the "invention" has "no magnets." Neither Fargo's arguments nor its proposed definition help explain how "material" that is "magnetic" is nevertheless not a "magnet."

At oral argument, Iris offered a new definition for "unmagnetized magnetic material" to counter any objection that its previous definition might have excluded the pins in the patent because they are briefly magnetized as they pass through the magnetic field that is part of the sensor. The resulting definition, "material that is capable of being magnetized but in the absence of an applied external magnetic field is not magnetized," is a better definition than Fargo's because it avoids the ambiguity of the word "permanent." In light of the prosecution history indicating that the supply rolls have "no magnets," the Court will adopt this definition for "unmagnetized magnetic material" and a similar definition for "magnetic material pins:" "pins made of material that is capable of being magnetized but in the absence of an applied external magnetic field is not magnetized." In so doing, the Court is aware that it is defining different terms to have essentially the same meaning. Although a patentee's use of different terms normally indicates that it intended those terms to carry different meanings, a reading of the patent and prosecution history does not reveal what that difference might be in this case, and Fargo's objections to Iris's proposed definitions ignore the clear statement in the prosecution history regarding the lack of magnets.

Finally, in light of that same prosecution history, the Court will adopt Iris's definition of "ferromagnetic," modified as follows: "a material that exhibits ferromagnetism, but, in the absence of an applied external magnetic field, is not magnetized." Because Iris concedes that Fargo's definition of "ferromagnetic" is correct "in the abstract," the Court will adopt Fargo's definition of "ferromagnetic" insofar as it is necessary to define the word "ferromagnetism" in Iris's definition of "ferromagnetic."

B. Dictionary Definitions Compel the Conclusion That "Fiberfill" Means Synthetic Fiber

With these legal principles in mind, the Court turns, then, to the first step of the claim construction process. The parties provide a number of helpful definitions for the term "fiberfill" from a variety of objective sources. The Dictionary of Composite Materials Technology (1989) defines "fiberfill" as "synthetic fibers with a specified linear density, cut length, and crimp for use as a filling material." (Docket Entry No. 46 at 296.) Resil's Textile Dictionary similarly defines the term as "virgin man-made fibers especially engineered as to linear density, cut length, and crimp for use as a textile filling material." (Id. at 298.)

The Dictionary of Fabric Terms states "fiberfill" is "specially engineered manufactured fibers, which are used as filler material in pillows, mattresses, mattress pads, sleeping bags, comforters, quilts, and outerwear." (Id. at 300, 362.) The American Heritage(R) Dictionary of the English Language (4th ed. 2000), defines "fiberfill" as "lightweight synthetic fiber used as filling or insulation, as in comforters, pillows, and outerwear." (Id. at 301, 302.) Encarta(R) World English Dictionary, North American Edition defines "fiberfill" as "synthetic material used for stuffing or insulation, for example, in cushions, comforters, or clothing[.]" (Id. at 303.)
Random House Collegiate Dictionary defines "fiberfill" as "synthetic fibers, as polyester, used as a filling or (sic) insulating cushions, comforters, winter garments, etc." (Id. at 304.) The Random House Dictionary of the English Language (2d ed., unabridged, 1987) gives the same definition and adds a notation suggesting the words "fiber" and "fill" were added together to make a new word sometime between 1960 and 1965. (Id. at 307.) Internet dictionary services, such as Infoplease and Fact Monster provide the same definition. (Id. at 308, 309.) Merriam-Webster Dictionary (online) also defines "fiberfill" as "synthetic fibers used as a filling material (as for cushions)." (Id. at 310.)

The DuPont Sleep Products Glossary (online) defines "fiberfill" as "filling for sleep products consisting of manmade polyester fibers; available in different types for different properties." (Docket Entry No. 46 at 341, 343.)

The United States International Trade Commission recognizes that polyester staple fiber, "a synthetic fiber similar in appearance to cotton or wool fiber when baled" is "known in the industry as 'fiber for fill,' as it is primarily used as polyester fiberfill." (Id. at 311.) The Commission notes the "subject fiber is distinguished from other staple fiber by its diameter, 3 denier or more; length, 1 to 5 inches; and in some cases by the finish and the 'crimp' of the fiber." (Id.) The United States Customs Service lists "fiberfill" as a "Fiber Trade Name," for the generic term, "polyester." (Id. at 325.)

The online glossary at rtwear.com suggests the term "fiberfill" may be used as a generic term "for all stuffing fibers or materials used in battings, quiltings, sleeping bags, pillows etc." (Docket Entry No. 52, Ex. 9.) Hawley's Chemical Dictionary defines "fiberfill" as a "fiber designed specifically for use as a filling material in such products as pillows, comforters, quilted linings, furniture battings, e.g., sisal, jute." (Docket Entry No. 52, Ex. 7.) Sisal and jute are natural fibers derived from plants. 6 (Batra Dep., Docket Entry No. 52, Ex. 16 at 37.)

6 According to Dr. Subhash K. Batra, Defendant's expert, the Hawley's definition is similar to what Dr. Batra calls the "colloquial definition" of "fiberfill." Dr. Batra also testified coconut husk produces a fiber called "coir" which is used as a cushioning material. (Batra Dep., Docket Entry No. 52, Ex. 16, pages 37-38.) (Id.)

The American Textile Manufacturers Institute defines "fiberfill" as a "filling specially prepared for use in pillows, comforters and furniture upholstery. Most fiberfill produced today is made of polyester. Polyester is used predominantly for fiberfill since it retains its loft longer and better than natural fibers." (Docket Entry No. 52, Ex. 11.)

All but two of the objective definitions listed above classify "fiberfill" as synthetic fiber. While the parties disagree which of these definitions should be applied, a dispute over the ordinary and customary meaning of a term does not imply that such a meaning does not exist. K-2 Corp. v. Salomon S.A., 191 F.3d 1356, 1365 (Fed. Cir. 1999).

The Court concludes as a matter of law that the ordinary and customary meaning of "fiberfill," as viewed by a person of ordinary skill in the art, is synthetic or man-made fiber, most commonly polyester, that has a specified linear density, cut length, and crimp making it ideal for use as a filling material in various products.

That the term "fiberfill" may also be used colloquially to include filling material comprised in whole or in part of natural fiber does not change the Court's legal conclusion. The broader, colloquial definition of "fiberfill" is not consistent with the intrinsic record of this case, as discussed more fully below. See Teleflex Inc., 299 F.3d at 1325; Vitronics Corp., 90 F.3d at 1582.

C. The Intrinsic Evidence Confirms the Ordinary Meaning of "Fiberfill" is Synthetic Fiber

Once the Court has arrived at the ordinary and customary meaning of a claim term, the Court must examine the specification of the patent to decide if the patentee rebutted the ordinary and customary meaning. Intellectual Property Dev., Inc., 336 F.3d at 1316; Texas Digital Sys., Inc., 308 F.3d at 1204. "The presumption will be rebutted where the patentee, acting as his or her own lexicographer, has clearly set forth a definition of a claim term that is different from the term's ordinary and customary meaning." Intellectual Property Dev., Inc., 336 F.3d at 1316. The presumption is also rebutted if,
during the patent prosecution process, the inventor disavowed or disclaimed the scope of the claim coverage by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope. Id. Notwithstanding the fact the claims must be read in view of the specification, the Court may not read limitations from the specification into the claims. Prima Tek II, L.L.C., 318 F.3d at 1148.

The intrinsic evidence in this case does not rebut the heavy presumption that the ordinary and customary meaning of "fiberfill" is synthetic fiber. See Texas Digital Sys., Inc., 308 F.3d at 1203. The '977 patent specification and drawings do not define "fiberfill," nor do they disclose any express intent of the patentee to give the word "fiberfill" a novel meaning, including the colloquial meaning of the term. See Teleflex, Inc., 299 F.3d at 1325.

To the contrary, the specification in the '977 patent states that "commercial fiberfill" maybe used in the embodiments of the invention. As supported by the dictionary definitions listed above, those persons of ordinary skill in the art would assume, if not know, that "commercial fiberfill" refers to synthetic fiber. This seems especially true in light of the specification in the '977 patent which emphasizes that certain forms of synthetic "fiberfill" used in the garments will provide higher protection from the extreme temperatures of fire or from physical impacts than will other forms of synthetic fiberfill.

D. The Patent Prosecution History Confirms the Ordinary Meaning of "Fiberfill" is Synthetic Fiber

Having examined the specification, the Court must perform the same exercise with regard to the patent prosecution history. Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1343 (Fed. Cir. 2001). The prosecution history must be applied to exclude any interpretation of a claim the patentee may have disclaimed or disavowed during prosecution to obtain the patent. Teleflex, Inc., 299 F.3d at 1326.

The '977 patent prosecution history confirms the Court's analysis that "fiberfill" means synthetic fiber. The patent examiner initially rejected Claims 1 and 9 of the '977 patent as anticipated by the Zafirogou '297 patent. The Zafirogou patent specified fiberfill batting material made of a mixture of synthetic polymer pulp or wood pulp.

In response to the examiner's rejection and to obtain the '977 patent, Plaintiff distinguished the Zafirogou '297 patent on the ground that it failed to "disclose or suggest the fiberfill batting and polymeric fibers and/or particles of the composite material in the claimed method." Also, Plaintiff contended the '297 patent disclosed "a compress that is made from an elastic fabric and comprises a hydrogel-forming polymeric material. The absorbent polymer filler material maybe particulate, and may be accompanied by a diluent filling material." Persuaded by Plaintiff's remarks, the patent examiner withdrew the rejection and allowed the Claims of Plaintiff's '977 patent.

Plaintiff now insists that Vizorb(R), the product Defendant uses in the absorptive layer of its evaporative cooling garments, is manufactured from a mixture of natural wood cellulose and synthetic fibers. Yet, Plaintiff seeks to hold Defendant liable for contributory infringement despite Plaintiff's earlier successful action in disavowing or disclaiming similar aspects of the Zafirogou patent. "Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers." Southwall Technologies, Inc., 54 F.3d at 1576. The patent prosecution history confirms the Court's legal construction of the term "fiberfill" as a synthetic fiber.

Because the Court is able to construe the claims as a matter of law by observing the ordinary and customary meaning of the term "fiberfill," as confirmed by the intrinsic evidence of record, the Court cannot, and will not, consider the extrinsic expert and lay opinion testimony submitted in depositions and affidavits. See Northern Telecom Ltd. v. Samsung Elecs. Co., 215 F.3d 1281, 1288 (Fed. Cir. 2000) ("The use of extrinsic evidence to construe the scope of a claim is improper where the ordinary and accustomed meaning of a claim term does not render the scope of the claim unclear and where the patentee has not chosen to be his own lexicographer."); Markman, 52 F.3d at 983 (noting conflicting views of experts do not create genuine issues of material fact and cannot bind court or relieve court of its obligation to construe claims according to tenor of patent), aff'd 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996).
whether Vizorb (R) constitutes "fiberfill" as required by the '977 patent for literal infringement because Vizorb (R) contains a combination of natural and synthetic fibers. Whether Techniche is liable for contributory infringement depends upon this issue.

Turning to the specification of the '977 patent, we examine the context of the term "fiberfill" in the claims themselves. Both claims 1 and 9 call for a method of cooling a person by evaporation through use of "a multi-layered, liquid-retaining composite material comprising a fiberfill batting material, and hydrophilic polymeric fibers [particles in claim 9] . . . " As used in this context, the fiberfill batting material, in conjunction with other polymeric fibers or particles, must be capable of liquid retention and evaporation. The claims, however, offer little guidance as to the underlying composition of "fiberfill batting material" apart from the functions it must be capable of performing.

The written description, on the other hand, does provide guidance as to the composition of "fiberfill batting material." In the detailed description of the invention, AquaTex dictated that "the particular fiberfill is not known to be critical. That is, any commercial fiberfill may be used as long as it does not adversely affect the performance of the end composite." '977 patent, col. 3, ll. 47-50. From this statement, the patentee has informed the public that any commercial fiberfill that is capable of performing the claimed functions will suffice. The written description continues by describing numerous examples of commercial grade fiberfill, all of which are comprised entirely of synthetic materials.

Because AquaTex chose to incorporate by reference the teachings of three United States Patents to define the scope of the term "fiberfill," these publications are highly relevant to one of ordinary skill in the art for ascertaining the breadth of the claim term. In United States Patent No. 4,304,817, the specification teaches that "polyester fiberfill is used commercially in many garments and other articles because of its desirable thermal insulating and aesthetic properties . . . . Most commercial polyester fiberfill has been in the form of crimped polyester staple fiber." col. 1, ll. 11-16. Similarly, the remaining two patents describe "fiberfill" in terms of a synthetic, normally polyester, fiber for use as a filling material. None of the patents discusses the possibility of using natural fibers as commercial fiberfill batting.

"In addition to consulting the specification . . . a court 'should also consider the patent's prosecution history, if it is in evidence."' Phillips, 415 F.3d at , 2005 U.S. App. LEXIS 13954 (quoting Markman v. Westview Instr., Inc., 52 F.3d 967, 980 (Fed. Cir. 1995) (en banc)). In interpreting "fiberfill," the trial court relied heavily upon statements made during prosecution of the '977 patent as a clear disavowal of natural fibers for use as "fiberfill batting material." The prosecution history, however, is ambiguous and does not directly address the composition of "fiberfill." Thus, we disagree with the trial court that AquaTex's arguments foreclose potential compositions of fiberfill, and we decline to give the prosecution history much weight. See Phillips, 415 F.3d at , 2005 U.S. App. LEXIS 13954 (because the prosecution history represents an ongoing negotiation, "it often lacks the clarity of the specification and thus is less useful for claim construction purposes"). Particularly, the examiner represented that the prior art '297 patent contained a blend of fiberfill batting comprised of synthetic polymer pulp and wood pulp. Instead of addressing the composition of the fiberfill batting in the prior art, AquaTex chose to traverse the rejection by distinguishing how the overall composition of materials was used, and by pointing out that the prior art composition of materials was designed to retain liquid for long periods of time. The representations made during prosecution neither support nor discredit any particular meaning of the term "fiberfill." They are not a clear disavowal of claim scope.

The extrinsic evidence of record, in the form of technical dictionaries, supports construing "fiberfill" as a purely synthetic fiber because it is consistently defined as such. The definitions given in all but one of the dictionaries relied upon by the trial court define "fiberfill" as either a synthetic fiber or as a man-made material used as a filler for various items. The contradictory source was a chemical dictionary that simply gave two examples of natural materials that could constitute "fiberfill." Other extrinsic industry sources examined by the trial court lend support to construing "fiberfill" as a synthetic or polyester fill material. The United States Customs Service, in its publication "Fiber Trade Names and Generic Terms" Nov. 1999, lists "Fiberfill" as a "Fiber Trade Name" for the generic term "Polyester." Similarly, the United States International Trade Commission issued a ruling that polyester staple fiber is known in the industry as "fiber for fill." Certain Polyester Staple Fiber from Korea and Taiwan, Investigation Nos. 731-TA-825-826 (Final) (May 5, 2000).

While we adhere to the adage that limitations from the specification must not be imported into the claims, see, e.g., Nazomi Communications, Inc. v. ARM Holdings, PLC, 403 F.3d 1364, 1369 (Fed. Cir. 2005), based upon the teachings of the specification, one of ordinary skill in the textile manufacturing industry would understand that commercial "fiberfill batting material" is made of synthetic or polyester fibers. The combined teachings within the specification of the '977 patent, the
patents incorporated by reference, and the consistent interpretations in the industry publications would lead one skilled in the art to this conclusion. Therefore, we affirm the district court's determination that the accused Techniche products do not literally infringe claims 1 and 9 of the '977 patent.

14. **Fibers**

FieldTurf's Proposed Construction: "Synthetic ribbons fabricated from polypropylene, polyethylene, nylon and plastic"

SCG's Proposed Construction: "Chemical compositions such as polypropylene, polyethylene, nylon and plastic used to make strips of sheet"

**The Court's Claim Construction: "Material"**

Claim 17 reads as follows: "A synthetic grass assembly according to claim 1, wherein the synthetic ribbons are fibers selected from the group consisting polypropylene, polyethylene, nylon and plastic." The term "fibers" is used in the "Background of the Art" section of the specification to refer generally to the materials used to simulate grass on an artificial playing surface. '689 patent, 3:56-4:26. In other words, a ribbon is one type of fiber that allows a granular infill between the fiber. '689 patent, 4:13-26; 11:3-8. FieldTurf's proposed construction is therefore more appropriate, except that it is redundant to include "synthetic ribbon" in the construction or to state that the fiber is "from the group consisting of polypropylene, polyethylene, nylon and plastic." Accordingly, the Court will construe "fiber" as a "material."

15. **Fibrillated**

FieldTurf's Proposed Construction: "To split apart ribbon ends or portions of ribbon"

SCG's Proposed Construction: "Splitting or fraying a flat sheet with a brush"

**The Court's Claim Construction: "Split or frayed"**

Claim 18 of the '689 patent states as follows: "A synthetic grass assembly according to claim 1, wherein the upper portion of the synthetic ribbons are fibrillated into individual strands of a width in the range between 1.0 to 15.0 mm." The dispute over fibrillated is actually fairly minor. Both SCG in its claim construction and FieldTurf in its claim construction and brief agree that fibrillated means to "split or fray." As for the remainder of FieldTurf's claim construction, it is not incorrect but it is duplicative of the remainder of the claim language. Thus, the only dispute is whether to include "a flat sheet with a brush" in the claim construction. The Court declines to do so. First, this is a dependent claim and the ribbons have already been defined. There is simply no reason to reinsert SCG's "flat sheet" argument into this dependent claim. Second, the reason a flat sheet is in the claim is because SCG wishes to import a method of manufacture--brushing a flat sheet--into a structurally-defined product claim. As with a number of other claim terms discussed above, SCG fails to provide any proper support for doing so. Accordingly, the Court construes "fibrillated" as "split or frayed."

4. **"Fibrous Absorbent Layer"**

Claim 16 of the '693 patent refers to a fibrous absorbent layer. Claim 16 provides in part, "a foldable sheet having a water-vapor-impermeable polymeric layer disposed between a printable layer and a fibrous absorbent layer. . . ." Fort James suggests that this term has plain meaning to a POSITA and need not be interpreted. 48 Coating Excellence suggests the
following: "a fibrous layer having a distinct sublayer of fibers bearing foraminous hydrophobic water-vapor permeable pellicle and a sublayer having highly absorbent material comprising an ionic complex of two essential ingredients: a water-soluble anionic polyelectrolyte, and a polyvalent metal cation."

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48 Plaintiffs' Final Proposed Claim Constructions [Dkt No. 175] at pp. 3-4.

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Coating Excellence, in short, asserts that the abstract and certain other references in the specification require the finding that each reference to absorbent layer in the claims of the '693 patent is a reference to an absorbent layer containing highly absorbent material. Coating Excellence also asserts that the absorbent layer must be a "sublayer." In response, Fort James takes the view that, while certain embodiments encompass highly absorbent material in the form of the sublayer, claim 16 is not so limited and claim differentiation supports the point. 50

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49 Hearing Transcript at p. 127, lines 7-23.


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Beginning with the claim language, the undersigned finds that the term "fibrous absorbent layer," as it appears in claim 16, has an ordinary meaning to a POSITA and requires no construction unless intrinsic evidence requires a contrary conclusion. 51 See Biotec, 249 F.3d at 1349.

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51 Defendants' Amended Claim Construction Statement [Dkt. No. 176] at Ex. A, p. 7 contains no reference to the file history or any extrinsic evidence; therefore, none has been considered.

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Coating Excellence correctly notes that the title of the patent refers to "Highly Absorbent Wrap Material" and that the abstract indicates that the "absorbent layer will include highly absorbent material." There also is at least one specification reference linking the invention to the highly absorbent material. (E.g., '693 patent, col. 6, lines 38-58.) However, these intrinsic record references do not end the analysis.

As noted above, the Background of the invention describes the invention without any mention of highly absorbent material. The sandwich wrap of the present invention provides greatly improved moisture control while decreasing adhesive tendencies between sandwich components and the absorbent inner layer by interposing a foraminous hydrophobic water-vapor-permeable pellicle on fibers positioned between the sandwich and the moisture-vapor-impermeable polymeric layer." (Id., col. 1, lines 60-66.) The specification then goes on to describe how, "In preferred embodiments, highly absorbent materials are included in at least a portion of the absorbent layer." (Id., col. 2, lines 3-5.) Similarly, at the beginning of the section entitled "Description of the Preferred Embodiments," the inventors first describe the invention in part by stating that it has a first absorbent layer bearing the pellicle. (Id., col. 4, lines 29-32.) Then, the inventors go on to describe a certain type of highly absorbent material that may be present in preferred embodiments. (Id. at col. 4, lines 34-37; see also col. 3, lines 1-17."In a preferred embodiment, at least a portion of the [absorbent material] layer will also include highly absorbent material. . . .")

In summary, the undersigned finds that the intrinsic record as a whole makes clear that the highly absorbent material is just one aspect of the invention (i.e., part of the preferred embodiments) and should not be construed to be a limitation of claim 16. See Seachange Int'l, Inc. v. C-Cor Inc., 413 F.3d 1361, 1377 (Fed. Cir. 2005) (noting that it is improper to import
limitations from a preferred embodiment into a claim); Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 908 (Fed. Cir. 2004) ("The fact that a patent asserts that an invention achieves several objectives does not require that each of the claims be construed as limited to structures that are capable of achieving all of the objectives."). 52 Microsoft Corp. v. Multi-Tech Systems, Inc., 357 F.3d 1340, 1348 (Fed. Cir. 2004), relied upon by Coating Excellence, is distinguishable. In that case, the patent specification repeatedly referred to data transmission via telephone lines and no where referred to the use of a packet switching network. Consequently, in light of the specification as a whole, the court found that the communications must be via telephone. Id. Here, in contrast, the '693 patent plainly indicates that the use of highly absorbent materials is one embodiment of the invention, but not required for all embodiments of the invention. ('693 patent, col. 4, lines 34-37; col. 3, lines 1-25.)

52 Fort James also notes that certain other claims specifically include a limitation describing one form of highly absorbent material, supporting the notion that the inventors understood how to draft such limitation when they so desired. For instance, claim 20, which is dependent upon claim 16, contains a limitation directed to the highly absorbent material described in the specification. Reading "highly absorbent material" into claim 16 would violate the theory of claim differentiation, which requires that an independent claim not be construed to contain a limitation added by a dependent claim. Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380-81 (Fed. Cir. 2006).

The undersigned likewise rejects Coating Excellence's attempt to read a "sublayer" limitation into claim 16. Again, as was the case with the pellicle, there is support (e.g., Fig. 4) for the existence of sublayers of highly absorbent material and pellicle bearing fibers residing in separate sublayers in certain embodiments of the invention, but claim 16 is not so limited. The word "sublayer" does not appear in claim 16 and should not be read into claim 16. Finally, Coating Excellence suggests that "fibrous absorbent layer" be construed to be a sublayer comprised of a certain type of highly absorbent material: "a water-soluble anionic polyelectrolyte, and a polyvalent metal cation." 53 While this may describe a specific embodiment of the invention, there is no intrinsic support for limiting claim 16 to such absorbent material.

For the above reasons, the undersigned finds that no construction of the term "fibrous absorbent layer" is necessary or appropriate. See Biotec, 249 F.3d at 1349.

A. Fibrous batt of fibers

With regard to the term "fibrous batt of fibers," Lydall argues that the district court incorrectly believed that there was only one embodiment disclosed in the '260 patent. In making this error, Lydall contends, the district court applied its own Honeywell decision instead of following our decision in Phillips. Lydall asserts that the claim language is clear and unambiguous and does not suggest that the batt must be layered. Lydall argues that, in addition to describing the claimed invention, the specification uses the term "fibrous batt" to describe the prior art, which included single-layer batts. Lydall contends that the specification expressly teaches that organic fibers may be used throughout the batt and that the binding fibers and the insulating fibers can be made of the same material, thus indicating that the term "fibrous batt of fibers" includes a homogenous batt made of one material. Lydall asserts that the specification expressly states that the drawing reference numerals used in the claims are not meant to be limitations and that the file history expressly indicates the same. Lydall also argues that the prosecution history indicates that the inventors intended to cover a homogenous batt in claim 1,
which uses the same language as claim 45. Finally, Lydall asserts that claim differentiation of dependent claim 48, which includes a limitation for a three-layer, non-homogenous batt, requires a presumption, which Lydall argues is unrebutted, that claim 45 does not include such a limitation.

In response, Federal-Mogul argues that Lydall has failed to acknowledge that this court upheld the district court's decision, including its claim construction, in Honeywell after we issued the Phillips decision. Federal-Mogul asserts that, as in Honeywell, the '260 specification disclosed only one invention: a multi-layered composite batt of fibrous materials with tufts of fibers formed on each side by two-sided needling. Federal-Mogul contends that all references in the specification to "batt" describe an insulating layer sandwiched between binding layers. Federal-Mogul argues that the broadest configuration in the specification is an insulating layer that is "at least in part" organic, but even that configuration, Federal-Mogul asserts, does not indicate that the term "fibrous batt of fibers" encompasses a single-layer, homogenous batt of all organic fibers. Federal-Mogul contends that Lydall cannot rely on its statements during the reissue prosecution to expand the scope of the '260 patent when the specification clearly limits the invention to a narrower scope. Finally, Federal-Mogul argues that claim 45 has only one interpretation, so claim differentiation does not apply because the written description and claims overcome the presumption of claim differentiation. Regardless, Federal-Mogul asserts that claim 48 also contains other limitations that distinguish it from claim 45.

We agree with Federal-Mogul that the specification of the '260 patent discloses a single embodiment of the invention, viz., an insulating shield that includes a fibrous batt consisting of an insulating layer sandwiched between two binding layers that is, as discussed infra, needled on two sides. Although Lydall is correct in saying that the claim language "fibrous batt of fibers" does not, in isolation, suggest a layered batt, Lydall's arguments completely ignore the consistent use of the term "batt" in the specification. It is fundamental that we give due weight to the specification when construing this claim term. Phillips, 415 F.3d at 1315.

We have stated that "when the preferred embodiment is described in the specification as the invention itself, the claims are not necessarily entitled to a scope broader than that embodiment." Chimie v. PPG Indus., 402 F.3d 1371, 1379 (Fed. Cir. 2005); see Honeywell, 452 F.3d at 1318 (construing claim term to include fuel filter because "[o]n at least four occasions, the written description refers to the fuel filter as 'this invention' or 'the present invention'"); SciMed, 242 F.3d at 1343 (construing term to include feature characterized as "the present invention"). In other words, when a patentee consistently describes one embodiment as "the present invention," "[t]he patentee is entitled to a presumption that the claims are limited to the embodiment as described in the specification." Honeywell, 452 F.3d at 1318; see also SciMed, 242 F.3d at 1341 ("Where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question."). Such is the case here. The specification identifies a three-layered batt as "the present invention." '260 patent col.6 ll.55-56. In addition, the specification repeatedly describes the batt as having an insulating layer disposed between two binding layers. See id. col.6 ll.63-65, col.9 ll.24-25, col.13 ll.19-23. Lydall's consistent description of "the present invention" as including a three-layered batt makes clear that the claimed "fibrous batt of fibers" must have three layers, an insulating layer sandwiched between two binding layers. The fact that the specification discloses that the insulating fibers may "at least in part" be made up of the same organic fibers as the binding layers does not dissuade us from our conclusion. It may be that the insulating layer and the binding layers are made from the same material, but the batt still has three layers. It is not, therefore, a single, homogenous layer.

We also agree with the district court that Lydall's reliance on the prosecution history and the doctrine of claim differentiation is unpersuasive. "Representations during prosecution cannot enlarge the content of the specification." Biogen, Inc. v. Berlex Labs., Inc., 318 F.3d 1132, 1140 (Fed. Cir. 2003). Thus, when the prosecution history appears in conflict with the specification, any ambiguity must be resolved in favor of the specification. See id. The specification is the "best source for understanding a technical term," to be supplemented, "as needed, by the prosecution history." Phillips, 415 F.3d at 1315 (quoting Multiform Desiccants, Inc. v. Medzam Ltd., 133 F.3d 1473, 1478 (Fed. Cir. 1998)). Here, the specification is clear. The sole embodiment of the invention includes a batt that has three layers.

The patentee's efforts during the prosecution of the reissue patent to enlarge the claims beyond what the specification discloses also must fail. Similarly, Lydall cannot rely on claim differentiation to expand the scope of the claim term. See Nystrom v. Trex Co., 424 F.3d 1136, 1143 (Fed. Cir. 2005) ("[S]imply noting the difference in the use of claim language does not end the matter. Different terms or phrases in separate claims may be construed to cover the same subject matter where the written description and prosecution history indicate that such a reading of the terms or phrases is proper.").
addition, as Federal-Mogul asserts, claim 48 can be differentiated from claim 45 by other limitations. Thus, we conclude that the district court properly construed "fibrous batt of fibers" as "a composite batt having a layer of insulating fibers sandwiched between layers of binding fibers."

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C. "Field and Commutation Portions"

The term "field and commutation portions" appears in independent Claim 9 of the '028 patent. Similar terms "field magnet portion" and "commutation magnet portion"-are also included in Claim 1. Rotron argues that the Court should construe these terms in the following manner:

The terms "field magnet portion" and "commutation magnet portion" require the field and commutation portions to be axially displaced portions on an integral magnet. The "commutation magnet portion" of the integral magnet is the portion of the integral magnet that takes the place of separate commutation magnets, and provides a magnetic field to effect commutation. The "field magnet portion" of the integral magnet is the portion of the integral magnet that takes the place of separate field magnets, and is that portion of the remainder of the integral magnet that provides a magnetic field to effect rotation of the magnet. The claims do not preclude the commutation magnet portion from also having an effect on rotation of the magnet, and do not preclude the field magnet portion from having an effect on commutation.

Rotron argues that its functional construction is supported by the intrinsic evidence and notes that the limitations of dependent claims such as 6 and 7, which describe the magnetization patterns of the field and commutation magnet portions, should not be used to limit the term in Claim 9. Rotron also argues that extrinsic evidence-the expert testimony and prior art-indicate that its definition reflects the ordinary meaning of the term.

Nidec contends that the following construction should be adopted: "The terms 'field magnet portion' and 'commutation magnet portion' mean axially displaced and non-overlapping portions of an integral rotor magnet, each having a different magnetization pattern. The 'field magnet portion' is coextensive with the stator and the 'commutation magnet portion' is adjacent to the Hall device." Nidec reasons that because the novelty of the '028 patent is that two areas of different magnetization-the field and commutation portions-are formed on a single piece of magnetized material rather than from separate magnets, the proper construction of those terms should emphasize their distinctness. In support of its proposed construction, Nidec notes that the preferred embodiment and prosecution history discloses axially displaced magnetized portions which indeed have different magnetization patterns. Finally, Nidec argues that the field and commutation portions should be defined in part by their location to distinguish the prior art.

Claim 9 describes the position and certain characteristics of the field and commutation portions. In particular, it states that the portions are

- at axially displaced first and second locations, said commutation portion comprising integral alternating oppositely radially magnetized commutation magnet sectors in close succession around the annular commutation magnet portion and the field magnet portion comprising integral oppositely radially magnetized field magnet sectors and integral substantially magnetized sectors of substantial angular length angularly adjacent radially magnetized sectors in the field magnet portion and defining null sectors.

'028, col. 6, ll. 54-63. "Although words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition is clearly stated in the patent specification or file history." Vitronics, 90 F.3d at 1582. Here, it may be possible to interpret Claim 9 as an attempt by the patentee to define the term "field and commutation portions." However, the Claim does not contain explicit language indicating that the patentee intended the phrases following the term "comprising" to be construed as a definition, see, e.g., Hoechst Celanese Corp v. BP Chems. Ltd., 78 F.3d 1575, 1578 (Fed. Cir. 1996) (discussing a specification that contains the language "By the term 'stable,' it is meant . . ."). and neither party argues that the patentee intended such a meaning. Further, the term "comprising" means that the invention includes the listed elements, but does not exclude others. See Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 229 U.S.P.Q. (BNA) 805, 812 (Fed. Cir. 1986). Thus, the Court will interpret the term "field and commutation portions" according to the ordinary meaning of
the words by one skilled in the art, in light of the recited description and other intrinsic evidence.

The intrinsic evidence indicates that several distinct features characterize the "field and commutation portions." First, as both parties agree, the "field and commutation portions" are axially displaced portions on an integral magnet. This construction is supported by the language of the claims, see, e.g., '028 pat., col. 5, l. 57 (describing the commutation magnet portion at a second location "axially displaced" from the first location); col. 6, l. 11 (describing the field and commutation portions as axially displaced"; col. 6, l. 48-51 (stating that "the first and second locations of the field and commutation portions are at opposite ends of the annular one piece magnet"), and is confirmed by the prosecution history. See Defs.' Ex. 6, at 11 (stating that Claim 25, which was eventually re-numbered as Claim 9, "emphasizes the axial displacement of the two portions of the annular magnet").

The intrinsic evidence also indicates that the field and commutation portions are defined-and in fact distinguished-by the unique "null sectors" of the field magnet. Claim 9 clearly describes the magnetization of each area and indicates that the structural feature that distinguishes between them is the "substantially unmagnetized sectors of substantial angular length" that are "angularly adjacent" to the magnetized areas of the field magnet. See '028 pat. col. 6, ll. 52-63. The importance of this feature is confirmed by other portions of the specification. See, e.g., '028 pat. col. 1, l. 61- col. 2, l. 15 (describing the patterns of magnetization); col. 3, l. 64 - col. 4, l. 43 (same). At the same time, however, it would be improper to read any specific magnetization pattern from the preferred embodiment (aside from the field magnet's null sectors contained in Claim 9 itself) into the definitions of "field and commutation portions," see Renishaw, 158 F.3d at 1248, particularly given the fact that the preferred embodiment itself states that "The number and lengths of the unmagnetized and magnetized segments of the field portion, and the number and relative sizes of the commutation segments will differ with the number of poles of a particular DC motor and the particular commutation circuit, for example." '028 pat. col. 4, ll. 38-43. Thus, while the construction of the term "field and commutation portion" should include the substantially unmagnetized sectors of the field portion, the Court will not define the magnetization pattern with any further specificity. 7

7 Still, Nidec's proposed construction, which states that the "field and commutation portions" should be defined in part by the fact that they "each have a different magnetization pattern," misconstrues the novelty of the '028 patent. While the patterns do appear to be different, the distinguishing feature are the nulls contained in the field portion.

Still, structural characteristics alone do not fully describe the full meaning of "field and commutation portions." The evidence indicates that Rotron's functional constructions accurately reflect the meaning of this term. The summary of the invention indicates that the magnetic sections are "of the required size, angular extent and polarity for its particular purpose," and states that commutation magnet interacts with the Hall device. '028 pat., col. 1, ll. 48-54. The specification further notes that the "commutation magnet sections of an integral magnet secured on the rotor regularly alter the condition of the Hall device to effect commutation," '028, col. 3, ll. 54-58, and that "the Hall device is "located proximate the commutation portion of the magnet and circuit means for altering the energization of the winding in dependence on the annular position of the commutation magnet portion." '028 pat., col. 6, ll. 33-36. This functional understanding of the term commutation portion is further supported by the extrinsic evidence, as Dr. Alexander Kusko confirms in his deposition that the commutation portion "provides the magnet field which is sensed by the Hall element to provide the commutation switching signal." Pl.'s Ex. 1 at 43. Similarly, Claim 6 states that the motor includes at least one "stator field winding for establishing a stator field in the location of the field magnet portion of the integral magnet." This description suggests that the purpose of the field magnet is to interact with the windings by way of the stator field. Kusko's deposition also indicates that a functional definition of a field portion is consistent with the ordinary meaning of the term as understood by someone of ordinary skill in the art. See Pl.'s Ex. 3 at 385 (characterizing Nidec's magnet as a field portion "since the magnetic flux from the entire rotor magnet interacts with the stator poles").

Nidec correctly points out that the specification, extrinsic evidence, and prior art repeatedly describe the proximity of the field portion and the commutation portion to the stator and Hall device, respectively. However, the exact location of each magnetic area with respect to these features is not meaningful in and of itself. Instead, it is apparent from the specification language quoted above that the significance of the positioning is the purpose that each will effect. This understanding is also suggested by at least two examples of prior art. For instance, Claim 3 of U.S. Patent No. 3,988,654 to Takahashi
("Takahaski '654") describes the two magnetized segments of the assembly according to their purpose, stating that the "permanent magnet rotor" has "a first magnetization portion magnetized through a first magnetization angle for interaction with said selectively energized driving coils and a second magnetization portion magnetized though a second magnetization angle for selective activation of said magnetically responsive element means." '0654 pat., col. 6, ll. 12-18. Similarly, in the Japanese Laid-Open Patent Application No. 53-23008 ("JLOPA '008"), the equivalent of the commutation magnet is actually referred to as the "Hall element-driving magnet," in contrast to the "rotor magnet" which effects rotation. Defs.' Ex. 21, at 6. Thus, the functional definition appears to be appropriate in light of the prior art.

Finally, the evidence suggests that the term "field and commutation portions" should be construed to distinguish those areas from the separate field magnets and commutation magnets disclosed in the prior art. See, e.g., '028 pat., col. 5, ll. 52-54 (claiming "an integral annular [sic] field and commutation magnet for a brushless DC motor formed on a single piece of permanently magnetized material"); col. 1, ll. 30-54 (distinguishing the '028 patent from other magnets whose parts are separately made and magnetized); col. 2, ll. 23-26 ("The flux conducts flux through the single piece of permanently magnetizable material that becomes the integral field and commutation magnets."); col. 3, ll. 7-10 ("By providing a one piece unitary magnet . . . the number of parts is reduced and the relationship of the commutation segments and field magnets is always the same.").

Accordingly, the Court adopts the following construction of the term "field and commutation portions":

The terms field and commutation portion mean axially displaced portions of an integral rotor magnet. The commutation portion takes the place of separate commutation magnets, and provides a magnetic field to effect commutation. The field portion takes the place of separate field magnets, and provides a magnetic field to effect rotation of the magnet. The field magnet is comprised in part of substantially unmagnetized sectors of substantial angular length.

1563

D. "Fills Essentially Completely"

Alaris's proposed claim construction for this term is "fills almost entirely a portion of the cavity adjacent to the opening to prevent fluid from leaking between the seal and the wall structure." At the Markman hearing in connection with this Order, attorneys for ICU indicated that they were amenable to this definition provided that the words "fills almost entirely" be replaced with "fills all of or almost entirely," and the word "swabbing" be inserted before the word "fluid." To the court's knowledge, no final agreement was reached between the parties. Nevertheless, the court will use the proposed ICU changes to the Alaris definition as a basis for discussing the construction of the claim.

The issue with respect to ICU's first proposed change is easily resolved. The words "essentially completely," while embracing a seal that allows for a slight gap between the seal and the wall so long as leakage is prevented, certainly does not foreclose the possibility of a complete seal. As to ICU's second proposed change, while swabbing fluid is likely to be the main concern in terms of leakage, the court finds no compelling reason why the seal function should not - and in fact would not - also apply to blood, pharmaceuticals, water, or any other fluid matter.

The proper construction of "fills essentially completely" is thus "fills all of or almost entirely a portion of the cavity adjacent to the opening to prevent fluid from leaking between the seal and the wall structure."

1564

2. Film

A film is a thin layer of material. A film may have voids, cracks, or other discontinuities.
Dandy first argues that the court erred in not requiring the terms “filter” and “porous material” to mean a single or unitary structure. Dandy asserts that the claims, specification, and the prosecution history all consistently use "an" or "a" or refer to "the filter." Such references are not enough to limit the claims to a unitary structure. KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356, 55 USPQ2d 1835, 1839 (Fed. Cir. 2000) ("An indefinite article 'a' or 'an' in patent parlance carries the meaning of 'one or more' in open-ended claims containing the transitional phrase 'comprising.'"). Further, there is no language in the patent or prosecution history that disclaims multiple structures or expressly defines the filter as a single or unitary structure. See, e.g., Teleflex, Inc. v. FICOSA N. Am. Corp., 299 F.3d 1313, 1327, 63 USPQ2d 1374, 1382 (Fed. Cir. 2002). Dandy also argues that the purpose of the invention -- providing an environmental filter system that is easy to install and maintain -- would be frustrated were multiple pieces to be used. This is because, Dandy asserts, filling several gravel bags is time-consuming and each of the multiple bags is heavy to lift and install. Dandy does not, however, explain why multiple pieces would so completely frustrate the purpose of the invention as to take such products outside of the claim language. Indeed, it seems that multiple, smaller bags could have some maintenance advantages, such as ease of cleaning, and installation advantages, such as being adaptable to drains of multiple sizes. In sum, Dandy has not shown that non-unitary structures were disclaimed.

3. "filter," "porous medium," "interposing," "positioning"

In certain embodiments of the invention, the patents-in-suit contemplate a "filter" being "positioned" or "interposed" in the flowpath. For example, claim 8 of the '835 patent recites a parts washing system wherein the "parts washer further includ[es] a filter interposed within [the] flowpath." '835 patent, col. 9, ll. 21-22; see also id., col. 10, ll. 3-4 (same); '125 patent, col. 9, ll. 11-12 ("the step of] positioning a filter within the flowpath"); id., col. 10, ll. 33-34 ("the step of interposing a filter within the flowpath"). In the separately prosecuted '226 patent, the Applicant placed a similar limitation on the parts washing method. Claim 1 of that patent recites a method of washing parts, including a step of "passing the cleaning fluid that has contacted the part through a porous medium." '226 patent, col. 10, ll. 27-28. At the Markman hearing, the parties agreed that "filter" and "porous medium" were equivalent terms. Thus, the Court will construe "filter" with the understanding that "porous medium" shall have the same construction.

Plaintiff argues the "filter" terms should be construed as "a porous material through which a liquid is passed in order to separate the fluid from suspended particulate matter." Defendant argues the terms should mean "a webbed and/or woven material having a spacing of 10 or more microns positioned between the drain and the tank in the course followed by the fluid from the drain to the tank." Defendant also makes several arguments that relate to its position that the flowpath must be defined by reference to structure.

The specification describes the filter pad as serving as a mechanical filter. 6 Its purpose is to trap particulate matter while allowing the hydrocarbons and microorganisms to pass through and deposit in the tank so that biodegradation may take place. See, e.g., '110 patent, col. 6, ll. 55-57 ("The filter pad 60 preferably functions to trap the particulate matter and allow the organic contaminants and cleaning fluid 72 to pass therethrough."); see also id., col. 6, ll. 47-51 ("The cleaning fluid 72, organic waste, and remaining particulate matter then encounter the filter pad 60. Subsequently, the fluid 72 and organic contaminants pass through the support grid 58, and drain hole 52 to deposit into the tank cavity 44."); id., col. 4, ll. 63-66 ("The microorganisms . . . readily pass through the filter pad 60."); id., at col. 6, ll. 57-59 ("Because the filter pad 60 does not collect the organic contaminant, it is capable of being disposed of as a solid waste.").

6 The specification also explains that the filter may serve "as an initial transport medium for the microorganisms," see generally '110 patent, col. 5, ll. 23-64, but this feature of the filter pad is not at issue.
Any construction of filter must take into account these dual purposes. The parties would generally agree with this proposition (see Pl.'s Opening Brief at 31 (“[T]he Court should construe 'filter' and 'porous medium' broadly to encompass all known types and structures of filters as long as they: (i) allow the cleaning fluid, microorganisms, and hydrocarbons to pass through; and otherwise (ii) trap 'particulate' matter.”) (internal footnote omitted)), but Defendant seeks to impose additional limitations to serve these objects. Namely, Defendant requests the Court restrict the "filter" terms to "a webbed and/or woven material having a spacing of 10 or more microns." These proposed limitations come not from the claims, but directly from the specification's description of the preferred embodiment. See '110 patent, col. 5, 26-31 ("The filter pad 60 is acceptably constructed, for example and not limitation, from cotton, cellulose, polyolefin fibers, polyester fibers, fiberglass, or the like. . . . Further, the filter pad 60 is acceptably a ten micron filter or larger."). Examples set forth in the specification may not be used to narrow the scope of the claims, unless the Applicant intends the claims and the preferred embodiment to be "strictly coextensive." Phillips, 415 F.3d at 1323; see also Vulcan Eng'g, 278 F.3d at 1376 ("This court has often explained that the claims are construed in light of the specification, and are not limited to a designated 'preferred embodiment' unless that embodiment is in fact the entire invention presented by the patentee.").

It is apparent that the materials discussed in the specification, on which Defendant relies in arguing for these further limitations, are merely examples of materials that would effectuate the purposes of the filter and were not intended to constrain the claims. Thus, the Court declines to import the proposed limitations into the claims. The Court construes "filter" to mean "a porous material through which the cleaning fluid is passed in order to trap particulate matter while allowing the cleaning fluid, hydrocarbons, and microorganisms to pass through."

The Court has previously rejected Defendant's argument regarding the requirement of structure and does so here as well. The claim phrases related to "interposing" or "positioning" a filter in the flowpath carry their plain and ordinary meaning and are thus construed to mean "placing a filter in the flowpath."

a. "filter"

ev3 proposes that the term "filter" be construed consistently across all patents-in-suit and given its plain and ordinary meaning as a "device for separating suspended particulate matter from liquid that can be made from a variety of materials." Boston Scientific argues that the term "filter" is used in an ordinary, generic fashion in the Boston Scientific patents-in-suit and need not be construed. Because the Court discerns no ambiguity as to the meaning of the term "filter" and because "filter" is readily understood, the Court declines to construe the term as it is used in the '520 Patent.

1 Likewise, the Court declines to construe the term "filter" in all of the Boston Scientific patents-in-suit and will not address the term in each patent separately.

3. "filter" and "filter element" (as used in the ev3 patents-in-suit)

The terms "filter" and "filter element" appear throughout the claims of the ev3 patents-in-suit. 12 ev3 suggests that "filter" is a commonly understood term that should be construed as "a device for separating suspended particulate matter from liquid that can be made of a variety of materials." Boston Scientific disagrees and asserts that both "filter" and "filter element" as used in the ev3 patents-in-suit should be construed as "filter made of resilient metal fabric."
12 Each ev3 patent-in-suit is entitled "Method and Device for Filtering Body Fluid" and is a continuation of a series of patent applications originating with a parent application filed July 8, 1994. The ev3 patents-in-suit share the same specification. Because the ev3 patents-in-suit derive from the same parent application and share many common terms, the Court interprets the claims consistently across them. See NTP, 418 F.3d at 1293.

There are references in the specification to a filter made from a resilient metal fabric. 13 Consistent use of a term throughout the specification can narrow a claim term. See Nystrom v. Trex Co., 424 F.3d 1136, 1144-45 (Fed. Cir. 2005). In addition, when a term is characterized in the specification as part of the "present invention," it serves as strong evidence that the claims should not be read to encompass an opposite structure. SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1343 (Fed. Cir. 2001); see Honeywell Int'l, Inc. v. ITT Indus., Inc., 452 F.3d 1312, 1318 (Fed. Cir. 2006). However, it is also well established that patent claims may cover embodiments other than those revealed in the specification. See Phillips, 415 F.3d at 1323 (rejecting the contention that the claims of a patent must be construed as being limited to the preferred embodiment of the specification). Here, ev3 concedes that the common specification only teaches the use of metal in connection with "filter," but argues that the claims of its patents-in-suit cover a broader range of filters. The Court agrees and determines that "filter" and "filter element" have not acquired the meaning proposed by Boston Scientific. Instead, "filter" and "filter element" are not limited to filters made of "resilient metal fabric."

The present invention provides a reproducible, relatively inexpensive method of forming devices for use in channels in patients' bodies, such as vascular channels, urinary tracts, biliary ducts and the like, as well as devices which may be made via that method. In forming a medical device via the method of invention, a metal fabric 10 is provided.

13 For example, the Summary of the Invention refers to a metal fabric: "The present invention provides a method for forming intravascular devices from a resilient metal fabric and medical devices which can be formed in accordance with this method." '103 Patent, col. 2, ll. 53-56; '019 Patent, col. 2, ll. 53-56; '375 Patent, col. 2, ll. 53-56. The Detailed Description of the Preferred Embodiments does the same:

The present invention provides a reproducible, relatively inexpensive method of forming devices for use in channels in patients' bodies, such as vascular channels, urinary tracts, biliary ducts and the like, as well as devices which may be made via that method. In forming a medical device via the method of invention, a metal fabric 10 is provided.


Looking first to the claim language, the Court notes that the independent claims of the ev3 patents-in-suit recite a "filter" without indicating that it be comprised of any particular type of material. For example, claim 1 of the '019 Patent provides in part: "A device for filtering fluid through a lumen defined by the wall of an anatomical structure comprising: . . . a filter element carried on a distal portion of the guidewire . . . ." Similarly, the independent claims of the '375 and '103 Patents recite a "filter device," "filter element," or "filter." In contrast, the ev3 patents-in-suit also contain dependent claims that limit the "filter" to those made of "metal mesh" or "filter mesh." For example, claim 14 of the '019 Patent recites "]the device of claim 1 wherein the filter element comprises a metal mesh." Under the doctrine of claim differentiation, the presence of the dependent claim reciting a "metal mesh" raises the presumption that the "metal mesh" limitation is not present in the independent claim. See Phillips, 415 F.3d at 1315; Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004).

Although the claim-differentiation presumption here is challenged by the repeated reference to metal filters in the specification, an examination of the prosecution history supports the conclusion that the term "filter" is not limited to resilient metal fabric. The ev3 patents-in-suit are continuations of U.S. Patent No. 6,605,102 ('102 Patent). The specification of the '102 Patent is the same as the specification shared by the ev3 patents-in-suit. Unlike the claims of the ev3 patents-in-suit, however, two of the '102 Patent's independent claims recite a trap made of metal fabric. 14 The omission of the term "metal fabric" from the independent claims of the ev3 patents-in-suit supports ev3's argument that those claims are not limited to filters made of resilient metal fabric. The prosecution history also reveals that the use of both metallic and non-metallic materials in filters was well known to one of ordinary skill in the art before the ev3 patents-in-suit were granted. As part of the prior art, ev3 disclosed filters made with a wide range of materials, including polyester fabric mesh, woven or
braided fabric made from polymeric or natural fibers, porous membranous material, woven or braided fibers, microporous membrane or other suitable filtering or netting type material, and porous resilient fabric.

14 Claim 1 of the '102 Patent provides "[a] trap for trapping particulate matter entrained in a fluid within a channel of a patient's body, comprising . . . a metal fabric, the metal fabric having a first end carried by the distal segment and a second end slidable along the guidewire." Claim 3 of the '102 Patent recites "[a] trap for trapping particulate material entrained in a fluid within a channel of a patient's body, comprising . . . a resilient metal fabric and a cover, the metal fabric having a first end carried by the distal segment and a second end slidable along the guidewire."

Taking into consideration the entirety of the intrinsic evidence, including the prosecution history, the Court concludes that one of ordinary skill in the art would find that the terms "filter" and "filter element" as used in the ev3 patents-in-suit are not limited to a "filter made of resilient metal fabric." Because the claim language is not limited by the specification and creates no ambiguity as to the meaning of "filter" or "filter element," the Court declines to construe the terms.

8. Filter Assembly

The term "filter assembly" only appears in one independent claim in the '609 patent, the '958 patent, and the '674 patent. See '609 patent claim 5 at 20:6-7; '958 patent claim 1 at 17:60-61; '674 patent claim 1 at 26:43-44. Looking at claim one of the '958 patent, which is illustrative of the other patents, it states in pertinent part:

A filter assembly for use with a regulator device, said filter assembly comprising:

a housing defining an internal passageway having a gas inlet opening near an upstream end of said housing, and a gas outlet opening spaced from said gas inlet opening, said housing having a first attachment portion configured for connection of an upstream end of said filter assembly to a pressurized source of breathable gas and a second attachment portion configured for connection of a downstream end of said filter assembly to said regulator device, said gas inlet opening defining an upstream rim which is substantially flush with or upstream of an upstream end of said first attachment portion.[

Claim 1 at 17:60-18:6 (emphasis added). Thus, "filter assembly" appears in the preamble of those claims and a preliminary question arises again as to whether the preamble is a separate limitation. As it did for "fluid flow control valve," Aqua-Lung argues that "filter assembly" in the body of the claims is a limitation and its use in the preamble acts as the antecedent basis.

For the same reasons mentioned above for "fluid flow control valve," however, Aqua-Lung's argument similarly fails here. "Filter assembly" is not a claim limitation, but instead provides nothing more than context for the body of the claim. "Filter assembly" can be excised from the body of the claims without any resulting collapse in understanding them.

Having determined that the preamble does not add any limitations, the remaining step is to construe the term. As noted above, the term "filter assembly" only appears in one independent claim in each of the patents-in-suit. See '609 patent claim 5 at 20:6-7; '958 patent claim 1 at 17:60-61; '674 patent claim 1 at 26:43-44. The term also appears in a number of dependent claims. See '609 patent claims 6-17; '958 patent claims 2-7; '674 patent claims 2-8. It does not appear in the original '130 application and was therefore added by amendment during the prosecution of the '609 patent.

Aqua-Lung proposes that "filter assembly" be defined as: "A valve, including a housing which defines a central passageway having gas inlet and outlet openings, a gas pressure-responsive closure element disposed within the passageway for selectively opening and closing of the inlet opening to gas flow in response to gas pressure exerted thereon at the inlet opening, a spring that urges the gas pressure responsive closure element toward its closed position, a filter disposed within the passageway and a c-clip that holds the closure element, spring and filter within the passageway against the spring force." This is the same definition proposed for "fluid flow control valve." Two Forty seeks to have the term defined as "a device,
or collection of parts, which includes a portion through which a gas or fluid (such as air or water) can flow, but which prevents passage of particles or impurities."

Aqua-Lung's proposed definition seeks to incorporate the limitations that follow "comprising," as explained above, and attempts to move all such limitations into the definition of the preamble term itself. For example, the portion of Aqua-Lung's proposed definition that reads, "passageway for selectively opening and closing of the inlet opening to gas flow in response to gas pressure exerted thereon at the inlet opening" goes beyond the filter assembly itself to describe a "passageway." If Aqua-Lung's proposed definition was adopted, "filter assembly" would be read with its definition followed by a claim that is redundant and nonsensical as it would repeat the previous definition. In light of this problem, Aqua-Lung represented at the hearing that its proposed construction could be simplified considerably to include just the main components or elements from the claim body. Their amended construction would read "a valve, which includes the housing that defines the passageway, the pressure-responsive element, bias exerting mechanism, filter, and retainer device." Such a rendering still is too narrow.

Two Forty alleges that its proposed construction is based on the claim language as well as the use of the term within the specification. First, there is a problem with construing "filter assembly" under the claim language as meaning "any collection of parts including a filter" given that what the patentee invented was a valve with a set number of specified parts. Regarding the alleged support for their definition in the specification, Two Forty quotes two passages from the '609 patent where the term language supposedly appears in the specification, yet these refer to a prior art scuba regulator. See '609 patent 3:53-54, 7:40-41. In fact, the term "filter assembly," appears nowhere in the specification as filed. While "filter assembly" is not used outside of the claims, nothing in the intrinsic record indicates that the "filter assembly" is anything other than what is described in each of the disclosed embodiments.

The end result is that neither construction proposed by the parties is adequate. While the claim is limited by everything to the right of the word "comprising," any definition should not import unnecessarily those limitations into this introductory term. Nor will it render the limitations following "comprising" as superfluous. Any other reading would seem contrary to the intent of the inventor. See Phillips, 415 F.3d at 1316 (stating that claim interpretation should comport with the inventor's intent). Accordingly, the Court construes "filter assembly" to mean "a device consisting of parts through which a gas or fluid can flow, but which prevents passage of particles or impurities."

Turning to the merits of the claim construction, we hold that the trial court improperly construed the claim terms "filter bed" and "first particulate filter media" as requiring multiple layers. The court erred in improperly importing limitations of the specification into claims of the '124 and '630 patents and erred in reading limitations of narrower or dependent claims of the '124 patent into a broader independent claim.

(1) The '124 patent

Claim 1 of the '124 patent teaches a method of washing an upflow filter that includes "a filter bed having a non-buoyant particulate media filter layer." Claim 7, another independent claim, teaches a similar method that provides a filter bed "having a non-buoyant particulate media filter layer and a particulate non-buoyant static flocculation layer." Claim 12, which depends from claim 7, also includes "a transitional layer of particulate material between the flocculation layer and the filter layer." In the specification, the '124 patent discloses a filter bed 26, a flocculation layer 52, a transitional layer 54, and a filter layer 56. '124 patent, Fig. 1. In "the most preferred embodiment of the invention," the filter bed 26 "includes a lower static flocculation layer 52, a transitional support layer 54 and a clarifier or filter layer 56." Id. col. 6, ll. 21-25.

The district court interpreted the term "filter bed" and concluded that "filter bed" in the '124 patent must encompass flocculation, transitional, and filter layers. Finding that the term was not defined in independent claim 1, the court stated that it "must review the other claims to determine whether the term 'filter bed' has been further defined." RF Delaware, CV-01-PT-0348-M, slip op. at 40. The court thus incorporated a flocculation layer from claim 7 and a transitional layer from claim 12. Id. at 41. Next, the court examined the specification and determined that the written description and drawings were
consistent with its conclusion that the filter bed was multi-layered. Moreover, "the Description of the Preferred Embodiment of the Invention" section further dictates this conclusion" because "in this section RFD provides that 'the most preferred embodiment of the invention includes a lower static flocculation layer 52, a transitional support layer 54 and a clarifier or filter layer 56.' Id. at 43. To refute RFD's argument that the court should not consider the preferred embodiment, the district court emphasized that "the preferred embodiment describes the claimed invention" because description of the preferred embodiment corresponds to various dependent claims. Id. at 44.

It is well established that, generally, patent terms are given their plain, ordinary, or accustomed meaning to one of ordinary skill in the relevant art. Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1341, 60 USPQ2d 1851, 1854 (Fed. Cir. 2001). Under the doctrine of claim differentiation, "each claim in a patent is presumptively different in scope." Wenger Mfg., Inc. v. Coating Mach. Sys., Inc., 239 F.3d 1225, 1233, 57 USPQ2d 1679, 1685 (Fed. Cir. 2001). Although claim differentiation is not a "hard and fast rule of construction," it is applicable where "there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims." Id. Moreover, claims are not necessarily and not usually limited in scope simply to the preferred embodiment. See Altiris, Inc. v. Symantec Corp, 318 F.3d 1363, 1370, 65 U.S.P.Q.2d 1865, 1870 (Fed. Cir. 2003) (holding that the district court improperly read limitations from the specification into the claims). Thus, when a claim term is expressed in general descriptive words, it typically will not be limited to a numerical range that may appear in the written description as referring to a preferred embodiment or in other, narrower claims. Modine Mfg. Co. v. U.S. Int'l Trade Comm'n, 75 F.3d 1545, 1551, 37 USPQ2d 1609, 1612 (Fed. Cir. 1996).

Here, the language of claim 1 is clear on its face that the filter claimed includes "a filter bed having a non-buoyant particulate media filter layer." Nowhere in this claim do words appear that could refer to a flocculation layer or a transitional layer. In the specification, the filter bed, filter layer, flocculation layer, and transitional layer are separately described, each given different numeric designations and plainly describing the "most preferred embodiment." To construe the "filter bed" of claim 1 as including a flocculation, a transitional, and a filter layer conflicts, moreover, directly with the claim language of "a filter bed having a . . . filter layer." Such construction also renders redundant or meaningless the limitation "a flocculation layer" in claim 7 and the limitation "a transitional layer" in claim 12. Furthermore, such construction is not supported by the doctrine of claim differentiation, especially as the only meaningful difference between claims 7 and 12 is the limitation regarding a transitional layer, and a major difference between claim 1 and claim 7 is the latter's addition of a flocculation layer.

The district court also erred in reading the limitations of the specification incorporating the "most preferred embodiment" into the claim limitation "filter bed." A basic claim construction canon is that one may not read a limitation into a claim from the written description. Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1248, 48 USPQ2d 1117, 1120 (Fed. Cir. 1998). Although one may look to the written description to define a disputed term already in a claim limitation, "the resulting claim interpretation must, in the end, accord with the words chosen by the patentee to stake out the boundary of the claimed property." Id. Here, to the extent there is any dispute regarding the plain meaning of the term "filter bed," to interpret it as requiring a filter layer, a flocculation layer, and a transitional layer runs afoul of the patent boundaries expressly set by the patentee with different claims. The patentees chose to use the limitation "filter layer" for a filter bed in claim 1, the limitations of "filter layer" and "flocculation layer" for a filter bed in claim 7, and the limitations of "filter layer," "flocculation layer," and "a transitional layer" for a filter bed in claim 12. A court may not use the specification to reset the clearly defined boundaries of the different claims.

The district court concluded that the preferred embodiment described the entire claimed invention, because it found correlation between the teachings of the preferred embodiment and the various dependent claims. However, the opposite conclusion would follow from the court's findings. An independent claim usually covers a scope broader than the preferred embodiment, especially if the dependent claims recite the precise scope of the preferred embodiment. 4 Thus, although claim 12 recites the "most preferred embodiment" taught by the specification, in which a filter bed includes a filter layer, a flocculation layer, and a transitional layer, the court may not import the same limitations to the filter bed in claim 1 or 7, as the patentee clearly set a different boundary by claiming a filter bed with only "a" filter layer in claim 1 and a filter bed with only a filter layer and a flocculation layer in claim 7.

--- Footnotes ---

4 Although Pacific points out one sentence in the specification, which indicates that a filter bed with a flocculation layer is
more effective than one without the flocculation layer, that sentence alone does not lead to the conclusion that the filter bed in claim 1 is inoperative without a flocculation layer. Whether a filter bed with only a filter layer can work goes to validity of the claim (not in issue here), not how it is construed, because in the present case the claim language is clear on its face.

The district court also noted that a "filter bed in accordance with this invention" was described as including a flocculation layer in the Summary of the Invention. The relevant sentence reads:

A filter bed in accordance with this invention includes an upstream, static flocculation layer of particulate, non-buoyant material having a porosity and particle size for providing a velocity gradient in the range of approximately 40-60 reciprocal seconds at liquid flow rates in the range of 10-15 gallons per minute/sq.ft., to thereby promote the mixing and flocculation of the coagulated liquid influent.

'124 patent, col. 4, ll. 42-49. In the Summary of the Invention, the first paragraph describes a filter bed having a filter layer only. The next seven paragraphs, which precede the sentence regarding the flocculation layer, all refer to "the most preferred embodiment." Thus, the description of the flocculation layer, in the last paragraph of the Summary of the Invention, seems to logically refer to the most preferred embodiment, especially in view of the specificity of the description. Moreover, the description of the flocculation layer quoted above correlates precisely with the limitations of claim 17. To read the above description of the flocculation layer into the term "filter bed" in all claims of the patent renders claim 17 meaningless.

We thus conclude that the "filter bed" of the '124 patent has its ordinary meaning of being a structure with filtering functions. The filter bed of claim 1 has "a non-buoyant particulate media filter layer." The filter bed of claim 1 does not require a flocculation layer or a transitional layer, although the filter beds of claim 7 and its dependent claims have a filter layer and a flocculation layer, and the filter bed of claims 12-13 is multi-layered with the filter, flocculation, and transitional layers.

(2) The '630 patent

Claim 1 of the '630 patent teaches a method for clarifying water using a filter system which allows influent water to be "passed upwardly in a first zone through first particulate filter media" and "providing said first particulate media with a filter layer." The district court "turned to the Specification for a detailed written description and visual depiction of the invention." RF Delaware, CV-01-PT-0348-M, slip op. at 47. From examining the written description and drawings, the court concluded that the first "filter media" must have a multimedia, non-buoyant filter bed containing multiple layers: a flocculation layer, a transitional support layer, and a clarifier or filter layer.

Again, we hold the court improperly imported limitations from the specification into the broad claim. Claim 1 provides the first particulate media with a filter layer, which is clearly described and indicated as element 56 in the specification. Although the specification teaches that the most preferred embodiment contains a multi-layered filter bed 26 having a flocculation layer 52, a transitional layer 54, and a filter layer 56, the patentee only chose a single filter layer for the first particulate media filter to set the boundary of claim 1. The district court interpreted claim 1 as requiring a multi-layered filter bed because "the Specification describes the process of Claim 1 in detail," "the preferred embodiment includes three layers," and "these three layers are visually depicted in Figures 1 and 2 of the patent." Id. at 47-48. However, courts may not use the teaching of the specification to contradict the clear language of the claims. To require the filter media of claim 1 to be multi-layered would impermissibly read limitations from the specification into the claim. See Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187, 48 USPQ2d 1001, 1005 (Fed. Cir. 1998) (declining to limit the term "video delay circuit" to the specific function disclosed in the preferred embodiment).

We therefore conclude that the term "filter media" must be construed as requiring only one filter layer as is taught by claim 1 of the '630 patent.

II

An infringement analysis involves two steps in which the court first determines the correct claim scope, and then compares the properly construed claim to the accused method or device to determine whether all of the claim limitations are present.
either literally or by a substantial equivalent. Renishaw, 158 F.3d at 1247-48. Although claim construction is a question of law, infringement, either literal or under the doctrine of equivalents, is a question of fact. Bai v. L & L Wings, Inc., 160 F.3d 1350, 1353, 48 USPQ2d 1674, 1676 (Fed. Cir. 1998). Thus, viewing the facts and inferences in the light most favorable to RFD, summary judgment of non-infringement is proper only if no genuine issues of material fact remain. Bell Atl. Network Servs., Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1266-67, 59 USPQ2d 1865, 1869 (Fed. Cir. 2001).

A

We hold that the district court improperly granted summary judgment of non-infringement. The district court granted summary judgment of non-infringement based on its incorrect interpretation of the claim terms "filter bed" and "first zone through first particulate filter media" as requiring multiple layers. The court found that use of Pacific's Version 1 or 2 did not literally infringe the methods of the '124 or the '630 patents because they lacked the flocculation and/or the transitional layer. The court also found that use of Version 1 or 2 did not infringe under the doctrine of equivalents because these devices were not insubstantial or unimportant changes from RFD's three-layer filter bed, and a finding of equivalent infringement would allow the patent claims to encompass the monomedia sand filter in prior art as described in a 1968 article by Carl Hamann and Ross E. McKinney, and finding infringement without the presence of a transition layer would violate the "all elements" rule.

Having determined that the filter bed in claim 1 of the '124 patent and the filter media in claim 1 of the '630 patent do not require layers other than a filter layer, we conclude that the district court's infringement analysis was premised on an erroneous claim construction. The court required a filter bed or media to be multi-layered, even though neither the flocculation nor the transitional layer is a limitation of claim 1 of either of the patents. As a result, the court's finding of substantial difference was not legally supportable as it was comparing the alleged infringing method to a patent claim that required a filter bed having all of the filter, flocculation, and transitional layers.

The district court's application of the "all elements" rule also fails. Under the "all elements" rule, there can be no infringement under the doctrine of equivalents if even one limitation of a claim or its equivalent is not present in the accused device or method. Kustom Signals, Inc. v. Applied Concepts, Inc., 264 F.3d 1326, 1333, 60 U.S.P.Q.2d 1135, 1140 (Fed. Cir. 2001). Here, the district court conducted its "all elements" rule analysis on the premise that claim 1 of the '124 and '630 patents requires a three-layer filter bed. Finding that Pacific's system did not have RFD's three-layer filter bed or its equivalent, the court concluded that there could be no equivalent infringement. Again, the court's conclusion based on the "all elements" rule is erroneous because the element it found lacking from the accused infringing system is not a limitation of claim 1 of the '124 and '630 patents.

The district court further improperly adopted Pacific's practicing prior art argument. To prove that it was merely practicing prior art, Pacific needs to establish that its method is in the prior art. Fiskars Inc. v. Hunt Mfg. Co., 221 F.3d 1318, 1323, 55 U.S.P.Q.2d 1569, 1573-74 (Fed. Cir. 2000). There is no evidence in the record to show that the single article cited or any of the upflow filters disclosed in the article anticipate or render obvious the patented invention covering the accused infringing method. 5 Simply because a filter having a monomedia filter layer is in the prior art does not establish that the remaining limitations of the claimed invention are also in the prior art.

5 RFD notes that Pacific did not raise the prior art defense until after the district court issued a draft opinion on the issue of equivalence of the filter bed. RFD states that it was never provided any discovery on the issue. On remand, the district court may allow the defense to be properly raised and discovery conducted.

Thus, we reverse the district court's summary judgment of non-infringement as based on the improper claim interpretation of requiring a filter bed or media to contain all of the filter, flocculation, and transitional layers, and remand the case for trial or further analysis consistent with the proper claim construction.
Pacific argues that regardless of whether its devices infringe the '124 or the '630 patent when being used, it committed no infringing acts because, as a manufacturer and seller of water treatment equipment, it does not perform the methods that are covered by the patents. Pacific also argues that it did not have knowledge of the RFD patents at the time it sold its products to be liable for inducement of infringement or contributory infringement. The district court granted Pacific's motion for partial summary judgment of no infringing acts without specific findings.

"A method claim is directly infringed only by one practicing the patented method." Joy Techs., Inc. v. Flakt, Inc., 6 F.3d 770, 775, 28 U.S.P.Q.2d 1378, 1382 (Fed. Cir. 1993). "Although not direct infringement under 35 U.S.C. § 271(a), a party's acts in connection with selling equipment may, however, constitute active inducement of infringement or contributory infringement of a method claim under 35 U.S.C. § 271(b) and (c)." 6 F.3d at 774. If the court finds on remand that one who uses Pacific's products infringes the '124 or '630 patent, Pacific may be liable for inducement of infringement if it actively induces the infringement. 35 U.S.C. § 271(b) (2000). In the event that direct infringement exists, Pacific could also be found liable for contributory infringement if it knows the products to be "especially made or especially adapted for use in an infringement of such patent, and not a staple article or commodity of commerce suitable for substantial noninfringing use." 35 U.S.C. § 271(c) (2000).

RFD contends 6 that Pacific directly infringed the '124 and '630 patents by testing its products at a pilot plant and by starting up its products at the specific installations of its customers. RFD notes a declaration by Pacific's president, Michael Morris, that Pacific "trains the operators, starts up the plant and verifies the quality of the water treated by the equipment." RFD also argues that Pacific committed inducement or contributory infringement because it manufactured and sold its allegedly infringing products knowing the products were patented and infringing. Mr. Morris stated at his deposition that sometime in 1999 he discussed with people at IDI a patent infringement suit between RFD and IDI. On October 4, 2000, a director at Pacific's parent company sent a facsimile to IDI mentioning discussions with Mr. Morris about "the Roberts Filter Patent Dispute." Attached to that facsimile were figures 1 and 2 of the '124 and '630 patents and claims 1-3 of the '124 patent.

6 RFD did not address this issue until Pacific filed its response brief, although RFD in its opening brief mentions that it believes the district court based its summary judgment on its claim construction and would reply to the "no acts of infringement" issue if Pacific raises it in its brief. Pacific rightly complains that this is improper and biases it because it will not have a chance to respond to RFD's arguments made only in RFD's reply brief. However, in this particular case, we find RFD's improper briefing is not material to the conclusion of the case.

We conclude that there are genuine issues of material fact regarding whether Pacific tested or started up any infringing equipment, thereby committing direct infringing acts. There are also genuine issues of material fact concerning whether Pacific sold systems knowing about the '124 and '630 patents and that its equipment would infringe when used.

Thus, the district court erred in granting summary judgment of non-infringement on the ground that no infringing act was committed. We note, however, liability for either active inducement of infringement or for contributory infringement is dependent upon the existence of direct infringement by customers. Joy Techs., 6 F.3d at 775. "Either form of 'dependent infringement' cannot occur without an act of direct infringement." Id.

CONCLUSION

We hold that the claim terms "filter bed" and "filter media" as used in claim 1 of the '124 or '630 patent only require a single filter layer. In construing the terms as requiring a filter layer, a flocculation layer, and a transitional layer, the district court erred in importing limitations of the specification and of narrower or dependent claims into broad, independent claims. As a result, we reverse the court's grant of summary judgment of noninfringement, which was premised on erroneous claim construction, and remand the case for infringement analysis consistent with the proper claim interpretation. We also reverse the district court's grant of summary judgment of no infringing acts because genuine issues of material fact remain. However, further proceedings on indirectly infringing acts are not needed if the court finds no direct infringement by customers when the accused infringing system is in use. Accordingly, the judgment of the district court is, in all respects challenged on appeal,
B. Filter element support

Claims 1, 3-6, 8, 10-13, 15, 16, and 18 require that the claimed device have a "filter element support" which is "located within the housing and centrally disposed with respect to the substantially toroidal flow path." The term "filter element" is defined in claims 4 and 11 as follows:

The filter element comprises: a layer of highly porous material and a layer of fine, porous filter material adjacent the highly porous material to form a layered filter sheet, the layered filter sheet being pleated into a substantially cylindrical configuration.

(Col. 8, Ins. 53-59; col. 9, Ins. 49-55) This definition is consistent with the language of the specification:

In the preferred embodiment, the filter element 16 is formed of multiple layers of filter material. The filter material 16 includes a sheet of webbed netting material layered adjacent a thin, finely-pored filtered fabric. The webbed, netting layer comprises the inner layer of the pleated sheet. The smooth, finely-pored filter fabric comprises the outer filter screen. The smooth finish of the outer filter screen obviates the need for harsh, rigorous and prolonged agitation which would otherwise be required to dislodge bubbles trapped in a large-pored material, such as the netting screen, during a priming process or during actual filtration use.

(Col. 5, Ins. 43-54) The specification describes the filter element as being substantially cylindrical in shape and located concentric with the central longitudinal axis of the housing:

The cylindrical filter element 16 is contained inside a filter element chamber defined by the cylindrical housing 12. The filter element 16 rests on the housing bottom 26 and extends approximately to the housing lip 24, where the filter housing 12 meets the housing cover 14. The filter element 16 is concentric with the central longitudinal axis of the housing such that the central cavity of the cylindrical filter element 16 encircles the fluid outlet port 28 located at the center of the bottom 26 of the housing 12.

(Col. 5, Ins 24-32)

The term "support" should be given its ordinary meaning: "To bear the weight of, especially from below; To hold in position so as to keep from falling, sinking, or slipping." (D.I. 77, Ex. G) The language in the specification of the '474 patent is consistent with the dictionary definition of "support."

Unlike certain conventional arterial filters which require a central support shaft or core for supporting a filter element, the upper and lower potting configurations 30 of the illustrated embodiment provide[] secure retention of the pleated cylindrical filter media, obviating the need for an additional support structure.

(Col. 6, Ins 59-64)

The prosecution history includes the following relevant information. As noted above, the Examiner initially rejected all of the claims, citing the Siposs '135 patent. In response to the Examiner's rejection, Bard argued that its claims were patentable over the Siposs patent. Among other arguments, Bard stated:

Siposs employs a center cone 26 extending upward from the bottom of the filtered chamber to hold the end plates 34 and 28. The filter element is, therefore, fully supported by the center cone 26 and need not be supported by the central indentation in the cap. Thus, Siposs provides no suggestion or motivation for providing a central indentation, much less enhancing a filter element support with a central indentation, as suggested by the Examiner.

(D.I. 71, Ex. E at 13) (emphasis in original). In an Office Action dated January 11, 1995, the Examiner stated that having fully considered Bard's arguments he was again rejecting all claims in the continuation application. The Examiner did
indicate that claims 25, 42, and 33 would be patentable if amended to include additional limitations. At that point, Bard's patent lawyer held an interview with the Examiner. The Examiner's Interview Summary Record states:

No agreements. Examiner did however indicate that he would reconsider rejection and claim 25 would be allowable if amended to include limitations in claims 26 and 27 and filter element support means centrally located in the toroidal flow path.

(D.I. 71, Ex. G at 1) Medtronic argues that the phrase a "filter element support means centrally located in the toroidal flow path" limitation was substituted for "a central indentation, centrally located with respect to the substantially toroidal flow path" limitation. According to Medtronic, the new language describes the limitation functionally as opposed to structurally, an interpretation consistent with the specification which describes one function of the central indentation as such:

The indentation is coupled to the top of the cylindrical filter element to support and hold the filter element in place within the filter housing, . . .

(Col. 2, Ins 39-41)

There is no dispute that the central indentation described in the preferred embodiment "enhances" the filter element support, as evidenced by the prosecution history. Neither the specification nor the claim language require that the filter element be supported by such a structure, however. Indeed, the specification expressly provides that the upper and lower potting alone provide secure retention of the filter element. (Col. 6, Ins. 59-64) Thus, it is appropriate and consistent with the specification to interpret the "filter element support" to include the upper and lower potting material, but not support from the top by a structure descending from the housing cap.

4 This interpretation is also consistent with the legal principle that claims should not be limited by what is disclosed in the preferred embodiment. See, e.g., Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559, 1566 (Fed. Cir. 1992) ("In defining the meaning of key terms in a claim, reference may be had to the specification, the prosecution history, prior art and other claims . . . . This is not, however, to be confused with reading into a claim a limitation appearing in the specification but not in the claim."); Intervet America, Inc. v. Kee-Vet Lab, Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989) ("Limitations appearing in the specification will not be read into the claims, and . . . interpreting what is meant by a word in a claim 'is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.'"); Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations.")

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The district court also construed the "filter element support located within the housing and centrally disposed with respect to the toroidal flow path" limitation, although it focused on the term "support" and did not construe the location of the support. The court determined that the term "support" included "the upper and lower potting material," but did not require "support from the top by a structure descending from the housing cap." C.R. Bard, Inc. v. Medtronic, Inc., 1998 U.S. Dist. LEXIS 23197, at *23, C.A. No. 96-589-SLR, slip op. at 20 (May 7, 1998) (Memorandum Order).

Medtronic argues that this claim limitation should have been construed as requiring a filter element support provided at the top of the filter element and centrally disposed within the toroidal housing. Medtronic asserts that the district court's construction is erroneous because the court failed to give weight to the recitation that the filter element support be "centrally disposed with respect to the toroidal flow path," and because the '474 patent does not suggest that potting material alone can support the filter element. Medtronic contends that the only filter element support described in the '474 patent comprises the central indentation in the housing lid.

Medtronic also points to the prosecution history of the '474 patent as supporting its construction of this claim limitation.
Specifically, Medtronic argues that this limitation was added to distinguish U.S. Patent No. 4,806,135 to Siposs ("Siposs"). Because Siposs discloses a filter element support where potting material is used at the upper and lower ends of the filter element, Medtronic argues that the filter element support of the '474 patent should not be construed as requiring only upper and lower potting material.

Bard's primary response to Medtronic's arguments is that Medtronic's construction would impermissibly limit the scope of the claims to the preferred embodiment described in the '474 patent and recited in claim 2. Bard also cites column 6, lines 59-64, of the patent as supporting the district court's construction that potting material alone provides secure retention of the filter element:

Consequently, unlike certain conventional arterial filters which require a central support shaft or core for supporting a filter element, the upper and lower potting configuration 30 of the illustrated embodiment provides secure retention of the pleated cylindrical filter media, obviating the need for an additional support structure.

Bard also argues that the prosecution history cited by Medtronic relates to the "central indentation" limitation of claim 2, not to the "filter element support" limitation. Bard therefore contends that this prosecution history is irrelevant to the proper construction of the "filter element support."

A careful review of the '474 patent reveals that it discloses only one embodiment of the filter element support. In this embodiment, the filter element support is formed by the indentation in the housing cap that forms the center of the toroid. See, e.g., '474 pat., col. 3, ll. 3-16, col. 5, ll. 15-23, col. 5, ll. 36-41, col. 6, ll. 19-23, col. 6, ll. 42-64. Although the patent teaches that potting material is used to adhere the filter element to the central indentation, it does not suggest that the potting material itself is a "support." The full paragraph of the passage cited by Bard states:

Thus, the pleated cylindrical filter element 16 is supported and firmly retained in place by adhering the ends of the filter element 16 to the indentation 22 and the housing bottom 26. This adhesive support arrangement prevents shifting or collapse of the filter element 16 during use as fluid impinges upon the filter material. Consequently, unlike certain conventional arterial filters which require a central support shaft or core for supporting a filter element, the upper and lower potting configuration 30 of the illustrated embodiment provides secure retention of the pleated cylindrical filter media, obviating the need for an additional support structure.

Id. at col. 6, ll. 53-64 (emphasis added). When the sentence referring to the "potting configuration" is read in context, it is clear that the referenced configuration consists of the potting material, the central indentation and the housing bottom, not the potting material alone. Indeed, potting material alone would not act as a support--the potting material must adhere the filter element to some supporting structure. Thus, the district court erred when it construed the "filter element support" as requiring upper and lower potting material alone.

The district court's construction also ignores the recitation that the support be "centrally disposed with respect to the toroidal flow path." The prosecution history surrounding the addition of this limitation to the claims indicates that the support must be in the toroidal flow path, which is at the top of the filter element. During prosecution of the patent, the claims were rejected over Siposs, alone and in combination with another patent. The examiner indicated that the claims would be allowable if amended to include, among other limitations, a "filter element support means centrally located in the toroidal flow path." In response to this suggestion, Bard amended the claims to include the filter element support limitation.

Although Bard chose language somewhat different from that proposed by the examiner, it indicated in its amendment that it had amended the claims "in the manner suggested by the examiner." The language used by the examiner, "filter element support means centrally located in the toroidal flow path" (emphasis added), clearly requires a support that is located in the center of the toroidal flow path. The language used in the claim, "filter element support . . . centrally disposed with respect to the toroidal flow path," also indicates that the support is located in the center of the toroidal flow path. Because the toroidal flow path exists at the top of the filter element, in the space between the filter cap and the ceiling of the housing cap, in order to be located in the center of the toroidal flow path the support must be at the top of the filter element.

In view of the teachings in the '474 patent and the prosecution history surrounding the addition of this limitation to the claims, we construe the "filter element support" limitation as requiring a structural support for the filter element (not just potting material) that is centrally disposed with respect to the toroidal flow path, at the top of the filter element.
Because the jury verdict as to Medtronic's infringement of the '474 patent and the district court's denial of Medtronic's request for JMOL of noninfringement were based on an erroneous claim construction, we vacate the judgment of infringement and the denial of Medtronic's JMOL of noninfringement, and remand for a determination of the infringement issue under the correct claim construction.

6. The term "filter support" (claim 9)

The Court agrees with WIMCO that this term does not need to be construed. Both "filter" and "support" are ordinary words used in their ordinary senses.

WIMCO proposes to define "filter support" to mean "[t]he portion of the erosion control housing that holds up, serves as a foundation for, serves as a prop for, or braces the filter." JCCS at 3; Pl. Claim Constr. Br. at 18. The Court rejects this proposed construction because it does little more than provide a series of synonyms for the word "support." The synonyms are accurate enough, but they add nothing useful to already-straightforward claim language. 12

12 Indeed, WIMCO says as much, and offers its proposed construction of this term while noting that the term's meaning "should be sufficiently clear from its plain language . . . ." Pl. Claim Constr. Br. at 18.

7. The term "filter support to support a filter to filter water entering the open top and exiting the drain opening" (claim 9)

The Court agrees with WIMCO that this term does not need to be construed. The Court has already held that it need not construe the individual terms "filter support" and "drain opening" within this longer term. The remainder of this longer term simply uses ordinary language to describe the functions of the filter support: It "support[s] a filter"; that filter, in turn "filter[s] water"; the water first "enter[s] the open top"; and, after that, the water "exit[s] the drain opening."

The only word in this term that could conceivably benefit from additional construction is the word "filter." Indeed, it appears that Lange would like the Court to construe "filter" in this phrase to mean "filter sock," although Lange has buried this proposed construction within a proposed construction of the term as a whole that is somewhat inconsistent with Lange's proposed construction of "filter support" standing alone. Lange contends that a "filter support" is a "standpipe." JCCS at 3; Def. Claim Constr. Br. at 37-38. If that were true, a "filter support to support a filter to filter water" would be a "standpipe to support a filter to filter water." But Lange asks the Court to define a "filter support to support a filter to filter water" as a "filter sock around a standpipe to filter water." JCCS at 4; Def. Claim Constr. Br. at 39. It seems that Lange intends to argue that a "filter support to support a filter to filter water" should be construed to be a "standpipe [i.e., a filter support] to support a filter sock [i.e., a filter] to filter water."

The Court will not construe "filter" in this term to mean "filter sock." The claim language is not so limited, and there is no more reason to limit a "filter" to a preferred embodiment (a "filter sock") than there is to read a "standpipe" limitation into the claims. Given that a standpipe would necessarily be fitted with a filter around its circumference, i.e., a filter sock, Lange's argument that "filter" means "filter sock" is really just a different way of arguing that "filter support" means "standpipe." That argument has already been rejected.
3. The term "a filter supported in the basin below a top opening of the open top receptacle" (claim 6) 7

--- Footnotes ---

7 Lange asks the Court to construe the entire phrase "a filter supported in the basin below a top opening of the open top receptacle" and then to separately construe the words "top opening" within the phrase. The Court sees no need to do so. In construing the phrase as a unit, the Court necessarily construes the components of the phrase.

--- End Footnotes ---

The Court construes this term to mean:

a filter supported in the basin below the open top of the receptacle.

Lange argues that this means "a filter sock supported on a standpipe, having a top opening, extending from the bottom of an open top erosion control basin." JCCS at 2; Def. Claim Constr. Br. at 33. WIMCO proposes a construction that repeats the claim language, but provides an additional gloss on the term "open top receptacle," defining it as "the erosion control basin." JCCS at 2 (proposing this construction: "A filter supported in the basin below a top opening of the open top receptacle, the open top receptacle also being known as the erosion control basin."). The Court adopts neither proposed construction.

Lange's proposed construction rests largely on the fact that the patent discloses only basins with standpipes. Def. Claim Constr. Br. at 33-34. For the reasons already given in connection with the term "filtered drain from the erosion control basin," the Court declines to limit otherwise broad claim language (in this term, the words "filter supported in the basin") to the preferred embodiments disclosed in the '207 patent.

The Court also disagrees with Lange's contention that the words "top opening" must be construed as the top of a standpipe because the specification refers to "the top of the drainpipe" and provides that the "upper opening of the tube, which forms a standpipe type structure, is left open . . . ." See Def. Claim Constr. Br. at 33-34; '207 Patent Abstract; '207 Patent col. 1:47-48. The "top opening" of the standpipe is not the only "top opening" disclosed in the patent; the basin itself obviously has a top opening. Just as obviously, it is the basin's top opening to which the disputed language in claim 6 refers; after all, as described at length above, claim 6 does not even require a standpipe.

The Court rejects WIMCO's proposed construction because it is inconsistent with the language of claim 6. As noted above, claim 6 is directed to an "erosion control basin comprising" three things: an "open top receptacle," a "filtered drain," and a "deflector wall." '207 Patent col. 4:37-43 (emphasis added). Because the "open top receptacle" is but one component of the "erosion control basin," the Court cannot construe the "open top receptacle" to be identical to the "erosion control basin," as WIMCO proposes.

Nonetheless, the Court agrees in substance with WIMCO that the "top opening of the open top receptacle" is the top opening of the receptacle portion of the basin, not the top opening of a standpipe within the basin. Claim 6 (which, again, does not require a standpipe) provides that the "top opening" at issue is the top opening "of the open top receptacle." The Court's claim construction is dictated by this language.

The Court's claim construction does, however, appear to conflict slightly with one aspect of the claim language and with an amendment made during the prosecution history. Wimberger originally proposed claim language almost identical to the Court's claim construction. The now-disputed language, which reads "a filter supported in the basin below a top opening of the open top receptacle," originally read "a filter supported in the basin below the open top." Westman Decl. Ex. N (Amend. Oct. 25, 1995) at 4 (emphasis added). It was the patent examiner, in a telephone conversation with the patent prosecutor, who required that "below the open top" be replaced with "below a top opening of the open top receptacle." Smith Decl. Ex. G (Examiner's Amend./Cmt.) at 2 [Docket No. 29]. Admittedly, the Court's construction effectively reverses this amendment. But a full review of the prosecution history -- along with an understanding of the sometimes-strange dialect and customs of claim drafters -- establish that the Court's construction is nonetheless correct.

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The patent examiner, in his summary of his telephone interview with Wimberger's patent lawyer about this amendment, said that Wimberger's lawyer authorized the amendment to overcome an indefiniteness problem under 35 U.S.C. § 112, paragraph 2. Examiner Int. Summary Nov. 18, 2005, available at http://portal.uspto.gov/external/portal/pair (search for U.S. Patent No. 7,052,207, then select tab labeled "Image File Wrapper"). How was the phrase "below the open top" in the claim as originally submitted indefinite under § 112, paragraph 2? Most likely, a "layperson" would not have found "below the open top" to be indefinite at all. The claim, before the examiner's amendment, referred to "the open top receptacle including a filter supported in the basin below the open top . . . ." Westman Decl. Ex. N (Amend. Oct. 25, 2005) at 4 (emphasis added). The typical lay reader would undoubtedly conclude that "the open top" below which the "filter is supported" must be the same "open top" found in the phrase "open top receptacle."

Patent drafters and examiners, however, speak their own peculiar dialect. In that dialect, the noun phrase "the open top" (following the preposition "below") must have some "antecedent basis" -- that is, it must refer back to an earlier use of that noun phrase. See Robert C. Faber, Landis on Mechanics of Patent Claim Drafting § 3:11 at 3-49 (2007) ("To avoid such a problem [i.e., rejection for indefiniteness], be sure that every reference-back word -- whether "said," "the," or others that might be used, like "this," "each," and "every" -- has the actual antecedent which the reference-back word implies."). A linguist would recognize that the words "open top" in the phrase "the open top receptacle" is, in fact, a noun phrase being used as an attributive modifier, and not an adjective (as it might appear to most nonlinguists), and that "the open top" in the phrase "below the open top" therefore does have a clear antecedent. 8

8 See Rodney Huddleston & Geoffrey K. Pullum, The Cambridge Grammar of the English Language Ch. 6 § 2.4.1(a) at 537 (discussing attributive modifiers), Ch. 19 § 3.3(b) at 1643 ("School grammars tend to say that in expressions like the Clinton policy the word Clinton is (or 'is used as') an adjective but . . . this is to confuse the word-category adjective with the function modifier of a noun. Any noun (other than a pronoun) can occur in this function, given a suitable head noun, so the appropriate way to handle such data is in terms of syntax (the distribution of nouns), not in terms of word-formation (the creation of new words.").

But patent drafters and examiners are not linguists, and they expect noun phrases like "the duck" to refer back to "a duck" that has already been defined. The word "duck" used as an attributive modifier (as in "duck blind") does not identify "a duck" in a way that satisfies the expectations of patent drafters and examiners. The leading treatise on drafting patent claims instructs as follows:

The first time an element or part is mentioned, it should not be preceded by a definite article ("the") or by "said." Instead the indefinite article ("a" or "an") should be used . . . : "a container," "a base," etc. . . . When each previously identified element or part is referred to again, the definite article should be used, as "the container," "the base" . . . .

Id. at § 3:11 at 3-48 (footnote omitted); see also id. at § 10:7.4 at 10-44 ("A new element or step is introduced with an indefinite article 'a' or 'an.' . . . On the other hand, when a previously identified element or step is repeated, it is introduced by a definite article 'the' or 'said.'").

Recall that the patent examiner changed "below the open top" to "below a top opening of the open top receptacle." Smith Decl. Ex. G (Examiner's Amend./Cmt.) at 2 (emphasis added). This change follows naturally from the practice, in drafting patent claims, of always using the indefinite article the first time a claim element is introduced, and of considering the claim element "the duck" to be indefinite if it has not already been introduced as "a duck." Claim 6, as originally drafted, referred to "the open top" without ever having recited "an open top." Westman Decl. Ex. N (Amend. Oct. 25, 2005) at 4. The examiner's amendment corrected this fancied defect in the original claim language. 9 The examiner's interview notes make clear, however, that this was a technical change, not a substantive one. The Court's construction simply rephrases the claim language in a way that a layperson can understand, without changing that language's meaning.

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A different examiner's amendment introduced an error into claim language that had previously been correct. Claim 11, as originally submitted, was drawn to a basin designed to "support a slatted grate that overlies the grate frame." Westman Decl. Ex. K (Amend. Jun 16, 2005) at 5. The examiner required Wimberger to changed "slatted grate" -- i.e., a grate with slats -- to "slated grate," which demonstrates that the examiner overlooked principles of English orthography. See Westman Decl. Ex. L (PTO Office Action Summary July 26, 2005) at 3.

The term "filtered drain from the erosion control basin" (claim 6)

3 Lange asks the Court to construe separately the whole term "filtered drain from the erosion control basin" and the words "filtered drain" within that term. JCCS at 2. The Court sees no need to do so. In construing the entire term, the Court necessarily construes the term's components.

The Court agrees with WIMCO that this term does not need to be construed. See JCCS at 2. The words in this term are ordinary words, used in their ordinary sense, and any further definition or paraphrasing would serve no useful purpose.

Lange contends that "filtered drain" means "standpipe with filter sock." JCCS at 2; Def. Claim Constr. Br. at 30-31. Lange also contends that "from the erosion control basin" means "located in the interior of the erosion control basin." JCCS at 2; Def. Claim Constr. Br. at 32. Both of these contentions flow from the same premise: Lange contends that the intrinsic evidence compels the conclusion that the claims of the '207 patent cover only basins that incorporate a filtered drain made up of a perforated standpipe covered with a filter sock and located inside the basin, even if the claim language does not seem to be so limited. The Court disagrees.

Lange relies primarily on two sources for its contention that a "filtered drain" must be a "standpipe with filter sock." First, Lange points out that this is the only type of drain described in the patent. Def. Claim Constr. Br. at 30-31. Second, Lange argues that the prosecution history mandates Lange's claim construction because Wimberger, during the course of prosecution, distinguished the claimed invention from the prior art on the basis that the claimed invention had a standpipe with filter sock. Id. at 31. Although both the patent specification and the prosecution history provide some support for Lange's proposed construction, these two sources do not provide enough support to overcome the straightforward claim language.

Claim 6 is directed to an "erosion control basin comprising [1] an open top receptacle . . . [2] a filtered drain from the erosion control basin to filter water draining from the open top receptacle including a filter supported in the basin below a top opening of the open top receptacle, and [3] a substantially imperforate deflector wall along one side of the erosion control basin . . . ." '207 Patent col. 4:37-43. This claim language does not limit the basin's "filtered drain" in any way. In this respect, claim 6 contrasts sharply with claim I, which covers an erosion-control basin having "a drain from the basin comprising an upright pipe . . . said upright pipe having a wall with a plurality of openings therethrough, and a sock filter surrounding said upright pipe . . . ." '207 Patent col. 3:45-51 (emphasis added). Under Lange's construction, the generic claim term "filtered drain" in claim 6 should be limited to the very specific type of drain claimed in claim 1. Both the doctrine of claim differentiation and simple common sense render it unlikely that the term "filtered drain" in claim 6 has such a narrow meaning. 4 Claim I leaves no doubt that Wimberger knew how to claim a standpipe with a sock filter and easily could have done so in claim 6 had he wanted.

4 See Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1369 (Fed. Cir. 2007) ("Th[e] doctrine [of claim differentiation] is based on 'the common sense notion that different words or phrases used in separate claims are presumed
to indicate that the claims have different meanings and scope.' Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999). 'To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant,' Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987).

Lange also notes that every one of the embodiments described or depicted in the '207 patent features a filter sock around a standpipe. Def. Claim Constr. Br. at 30-33. But it is black-letter law that patent claims are not, as a rule, limited to preferred embodiments. Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1122 (Fed. Cir. 2004) ("[T]he law does not require the court, where an applicant describes only a single embodiment, to construe the claims as limited to that one embodiment. Indeed, such a construction is not encouraged or presumed.") (citations omitted). Further, the section of the '207 patent in which the preferred embodiments are described concludes with an express reminder that the preferred embodiments do not limit the claims: "Although the present invention has been described with reference to preferred embodiments, workers skilled in the art will recognize that changes may be made in form and detail without departing from the spirit and scope of the invention." '207 Patent col. 3:30-34.

Lange's strongest argument with respect to the patent specification is that, in describing the invention as a whole, Wimberger characterizes it as featuring a standpipe with a filter sock. For example, the patent's "Abstract" section describes the "erosion control basin" and says that "[a] filter is formed around an upright perforated drain pipe that is on the interior of the basin and which opens to an outlet." '207 Patent Abstract. Moreover, the "Summary of the Invention" section provides: "The present invention relates to a drain catch basin . . . . The catch basin has a center perforated tube forming a drain tube, that is covered with a filtration sock, or fine mesh, to filter out large debris but yet let water pass through for draining as necessary. The upper opening of the tube, which forms a standpipe type structure, is left open . . . ." '207 Patent col. 1:41-48 (emphasis added).

Lange correctly notes that when a patent specification describes "the invention" as a whole in narrow terms, claim language is sometimes construed narrowly to cover only the specific thing that is identified as "the invention" in the specification. Def. Resp. Claim Constr. Br. at 9-12 [Docket No. 38]; see C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 864 (Fed. Cir. 2004); Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1348 (Fed. Cir. 2004); Alloc, Inc. v. Int'l Trade Comm'n, 342 F.3d 1361, 1370 (Fed. Cir. 2003) ("[W]here the specification makes clear at various points that the claimed invention is narrower than the claim language might imply, it is entirely permissible and proper to limit the claims."). The Court finds, however, that the '207 patent specification does not expressly limit the claimed invention to a basin that features a standpipe. The broad language of claim 6 plainly covers structures that are not standpipes with filter socks, while the narrow language of claim 1 just as plainly covers only structures that are standpipes with filter socks. Further, as noted above, the specification asserts that "changes may be made in form and detail without departing from the spirit and scope of the invention." '207 Patent col. 3:32-34. Claim 6 of the '207 patent therefore differs significantly from the claims of patents that the Federal Circuit has held to be limited to particular embodiments by virtue of narrowing language in patent specifications. Cf. C.R. Bard, 388 F.3d at 864; Multi-Tech Sys., 357 F.3d at 1348; Alloc, Inc., 342 F.3d at 1369-70.

The '207 patent's prosecution history does not change the Court's analysis. Lange argues that, in the course of prosecution, Wimberger disclaimed coverage of anything other than a basin with a standpipe, and that claim 6 must be construed accordingly. Although the general principle of prosecution disclaimer is relevant to claim construction, application of that principle does not mandate the construction advocated by Lange. 5

5 Prosecution disclaimer is related to, but distinct from, prosecution-history estoppel. See Ventana Med. Sys., Inc. v. Biogenex Labs., Inc., 473 F.3d 1173, 1182 (Fed. Cir. 2006) (explaining and applying "the doctrine of prosecution disclaimer"); see also 5B Donald S. Chisum, Chisum on Patents § 18.05[4][b] (2007). The doctrine of prosecution disclaimer provides that if a patentee clearly disclaims certain claim scope in the course of securing a patent, the patentee's claims cannot be construed to literally cover the disclaimed material. Prosecution disclaimer is therefore a doctrine that limits claim construction. The doctrine of prosecution-history estoppel (also known as Festo estoppel), however, provides that when a patentee clearly disclaims certain claim scope in the course of securing a patent, the patentee cannot, when attempting to prove infringement, use the doctrine of equivalents to effectively reacquire the claim scope that the patentee
disclaimed. Prosecution-history estoppel is therefore a doctrine that limits infringement analysis. See 5B Donald S. Chisum, Chisum on Patents § 18.05[4][b] at 18-1159 (2007) ("Interpreting claims in view of the prosecution history applies as a preliminary step in determining literal infringement. Prosecution history estoppel applies as a limitation to the doctrine of equivalents after the claims have been properly interpreted and no literal infringement is found.").

Claim 6 was not added until quite late in the prosecution of the '207 patent. The patent application as it was first considered by the U.S. Patent and Trademark Office ("PTO") included five claims: four apparatus claims directed to a basin with a standpipe and one method claim directed to a "method of constructing a storm drain" that was not limited to using a basin with a standpipe. Westman Decl. Ex. A (Patent Application) at 7-9, Ex. B (Preliminary Amend.) at 2-3.

The patent examiner understood that the apparatus claims in the '207 patent application, as first considered by the PTO, were limited to basins with standpipes. Indeed, the examiner required Wimberger to restrict his application to either the apparatus claims or the method claim, because the method claim "can be practiced by another materially different apparatus [i.e., one other than the device claimed in the apparatus claims], such as a filtering basket in the basin without the upright drain pipe wrapped around with filtering material." Westman Decl. Ex. C (PTO Office Action Mar. 17, 2004) at 2 (emphasis added).

In response, Wimberger elected to pursue only the apparatus claims. Wimberger also responded to arguments that the examiner had made in rejecting a related patent application (which issued as U.S. Patent No. 6,609,852), although the examiner had not yet raised those arguments in connection with the application that issued as the '207 patent. Wimberger argued that his apparatus claims were patentable over two prior-art references, Williamson (U.S. Patent No. 6,287,459) and Singleton (U.S. Patent No. 5,843,306). Wimberger asserted that there was no suggestion in the prior art that would lead to his invention, i.e., "a basin that has a peripheral wall that encircles the basin, and surrounds an upright drain pipe." Westman Decl. Ex. D (Amend. Apr. 19, 2004) at 5 (emphasis added). Wimberger repeatedly emphasized the importance of the standpipe to his claimed invention, and distinguished it from the prior art on the basis that "the present device . . . has a bottom wall with an upright pipe in the bottom wall, and with a filter around the upright pipe to accomplish filtering of silt and debris before being transferred out through an opening in the bottom wall." Id. at 7.

6 In addition, Wimberger argued:

[T]here is no suggestion in the Williamson patent that a filter that filters round a pipe that is spaced from the peripheral walls would be possible, or desirable. . . . In fact, there is no suggestion that the basin of Williamson would support an upright pipe connected on a bottom wall . . . . The open bottom of the filter frame shown in Figure 3 of Williamson will not support an upright pipe that has openings and a filter around the pipe. . . . Since there is no bottom wall in the Williamson device that can support an upright pipe with a filter around it, if the unit shown in the Singleton patent was placed into that frame [i.e., the frame disclosed in the Williamson patent], water would flow out around the corners, and [the unit] would not work for its intended purpose."


These remarks make clear that, as initially conceived, the invention claimed in the '207 patent covered only a basin with a standpipe. But at the time that Wimberger made these remarks, the only claims before the PTO were apparatus claims that expressly included a standpipe -- claims that eventually issued as claims 1 through 5 of the '207 patent. There is no dispute that claims 1 through 5 cover only basins with standpipes, and those claims have not been asserted in this case.

The examiner disagreed with Wimberger's arguments about the prior art and, on June 23, 2004, rejected what are now claims 1 and 5 as obvious in light of the prior art. Westman Decl. Ex. F (PTO Office Action June 23, 2004) at 3-4. The examiner also rejected all of the claims as obvious in light of Wimberger's related patent, U.S. Patent No. 6,609,852 (the '852 patent), but advised Wimberger that this ground of rejection (obviousness-type double patenting) could be overcome if
Wimberger filed a terminal disclaimer to limit the term of what became the '207 patent to the term of the '852 patent. Id. at 4-7.

Meanwhile, before he received word of the PTO's June 23 rejection, Wimberger again amended his claims, adding for the first time apparatus claims that were not expressly directed to a basin with a standpipe. Those new claims, which were directed to an erosion-control basin with "a filtered drain," eventually issued as claim 6 (an independent claim) and claims 7 to 8 (dependent claims based on claim 6). See Westman Decl. Ex. E (Suppl. Amend. June 21, 2004) at 4. In submitting the new claims, Wimberger did not mention that they covered basins without standpipes. Instead, he asserted that the new claims "relate specifically to an erosion control basin of the type present in [what was then] claim 8" -- i.e., in current claim 1, which includes a standpipe. Id. at 5. Wimberger pointed out only one difference between the new, non-standpipe-specific claims and the earlier standpipe-specific claims, asserting that "[t]he feature of the new claims is the deflector wall that aids in controlling overflow water and diverts or deflects water from an overflow opening forming part of the storm sewer inlet on a lateral side of the grated frame." Id. (emphasis added).

In August 2004, in response to the amendment including these new claims, the patent examiner reiterated his earlier rejection of the standpipe-specific claims as obvious in light of the prior art, as well as his earlier rejection of those claims based on obviousness-type double patenting (a rejection that could be overcome by a terminal disclaimer). Westman Decl. Ex. G (PTO Office Action Aug. 27, 2004) at 3-8. But as to the new, non-standpipe-specific claims, the examiner did not reject them as obvious (apparently because of the inclusion of the deflector wall); rather, he found that they would be allowable if Wimberger filed a terminal disclaimer. Id. at 8. The examiner did not mention anything about the fact that the new claims were not drawn to basins with standpipes.

If the prosecution history had ended at that point, the Court would likely agree with Lange that, based on the prosecution history, Wimberger disclaimed coverage of basins without standpipes. Wimberger first distinguished his invention from the prior art on the basis that the prior art did not disclose a standpipe. Westman Decl. Ex. D (Amend. Apr. 19, 2004) at 5-7. He then described his non-standpipe-specific claims as "of the type present" in claims that featured standpipes, and pointed out a single difference -- a deflector wall -- in the new claims without pointing out an arguably more-significant difference -- the lack of a standpipe. Westman Decl. Ex. E (Suppl. Amend. June 21, 2004) at 5.

WIMCO argues that Wimberger described the new claims as "of the type present" in the earlier-submitted, standpipe-specific claims only to point out that they were apparatus claims, in contrast to the abandoned method claim. Pl. Reply Br. Supp. Claim Constr. at 7-8 [Docket No. 35]. Perhaps this was Wimberger's subjective intent, but that subjective intent is irrelevant. The doctrine of prosecution disclaimer is grounded in the notion that the public should be able to rely on statements made by a patentee in the course of obtaining a patent. The public does not have access to the subjective intentions of a patentee or his lawyer; accordingly, only the objective import of the patentee's statements is relevant. See Vitronics Corp. v. Conceptor, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996) ("The claims, specification, and file history, rather than extrinsic evidence, constitute the public record of the patentee's claim, a record on which the public is entitled to rely. In other words, competitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention.").

By the time Wimberger added the non-standpipe-specific claims, he had already abandoned the method claim. See Westman Decl. Ex. D (Amend. Apr. 19, 2004) (electing to prosecute apparatus claims). Thus it is highly unlikely that an objective reader of the prosecution history would construe Wimberger's statement that the non-standpipe-specific claims were drawn to a basin "of the type present" in current claim 1 to mean merely that they were apparatus claims (something that was readily apparent from the face of the claims and that did not need to be pointed out to the PTO). Rather, an objective reader would take that statement to mean that the new claims were drawn to an apparatus like the apparatus that had already been claimed, with one difference (the only difference noted by Wimberger): The new claims featured a deflector wall.

The prosecution history did not, however, end at this point. Wimberger responded to the examiner's August 2004 rejection of the standpipe-specific claims by again emphasizing the standpipe, but he emphasized it only in connection with the standpipe-specific claims, and not in connection with the new, non-standpipe-specific claims. Westman Decl. Ex. H (Amend. Nov. 19, 2004) at 6-9. At the same time, Wimberger filed a terminal disclaimer to overcome the rejection of the non-standpipe-specific claims. The PTO then allowed, without comment, all of the previously rejected claims, both standpipe-specific and non-standpipe-specific. Westman Decl. Ex. J (Notice of Allowability Mar. 23, 2005).
A few months after the PTO's allowance of the claims, Wimberger filed a "Request for Continued Examination" to reopen prosecution of the patent and to amend it by adding additional claims. Westman Decl. Ex. K (Request for Cont. Exam. June 16, 2005). Specifically, the main purpose of the amendment was to add four new non-standpipe-specific claims, which eventually issued as claims 9 through 12. In response, the examiner not only rejected the new claims, but he also rejected the non-standpipe-specific claims that he had previously allowed. Westman Decl. Ex. L (PTO Office Action Summary July 26, 2005). In doing so, the examiner clearly demonstrated his understanding that the non-standpipe-specific claims were drawn to a basin that did not necessarily include a standpipe. The examiner rejected the claims that eventually issued as claims 6 through 12 as either anticipated or obvious in light of U.S. Patent No. 5,405,539 to Schneider, which discloses an L-shaped, mesh-covered structure for filtering water at storm-sewer inlets. See Westman Decl. Ex. L (PTO Office Action Summary July 26, 2005) at 3-5; U.S. Patent No. 5,405,539. The structure disclosed in Schneider filters water through two flat, mesh-covered surfaces, the first of which is parallel to the ground and the second of which is perpendicular to the first. Schneider includes nothing even vaguely resembling a standpipe.

Wimberger responded to this rejection by making minor amendments to his claims and by distinguishing the rejected claims from Schneider. In distinguishing Schneider, Wimberger emphasized that his claimed basin had a different frame from the Schneider invention and featured a deflector wall and an overflow opening that were not found in Schneider. Westman Decl. Ex. N (Amend. Oct. 25, 1995) at 7-9. The examiner was apparently persuaded, because he allowed the challenged, non-standpipe-specific claims, which issued as claims 6 through 12.

The examiner's rejection of Wimberger's non-standpipe-specific claims in light of Schneider put the world on notice that Wimberger's patent was not limited to basins with standpipes. That rejection (which Wimberger eventually overcame) also establishes that Wimberger did not secure allowance of his claims by misleading the PTO as to their nature. Even if Wimberger, early in the prosecution history, tried to distract the patent examiner from the fact that some of his claims did not require a standpipe, the examiner was well aware of this fact by the time he allowed the claims that issued as the '207 patent. The doctrine of prosecution disclaimer does not, therefore, mandate construing the broad term "filtered drain from the erosion control basin" in claim 6 to cover only the narrow embodiment of a "standpipe with filter sock located in the interior of the erosion control basin," as Lange contends.

1. "Filtering"

HISI contends that "filtering" includes "not just the use of filters, but also settling of taste causing components by cooling and/or storage over time, or aging of the smoke so as to allow time for the taste causing components to settle or weaken in strength." (HISI Brief 19.) TPI argues, however, that the specifications of the Kowalski patent distinguish "filtering" from cooling and settling, and so "filtering," as used in Claim 67, cannot be read to encompass these other terms. TPI points to the statement in the specifications that "complete super purification of smoke can be accomplished using one method, or a combination of methods, in current practice, including filtering, separating, distilling, scrubbing, cooling, freezing, inertial impact, centrifugal force, or settling." (Kowalski Patent, Col. 12, at 13-17.) TPI argues that because "filtering," "cooling," and "settling" are each listed as distinct means of achieving "super-purification," the word "filtering" cannot be read to include cooling and settling when used in Claim 67.

In response, HISI points to other places in the specifications where cooling and settling are included within the definition of filtering. These include the Kowalski Patent's discussion of prior art techniques that include "cooling" and "settling" as types of "filtering methods," 3 (Kowalski Patent, Col. 12, at 24-26), as well as its explanation that "allowing the phenols, and any other remaining carcinogens, in the smoke to settle, or 'age' . . . is the final backup filtering step in the process," (Kowalski Patent, Col. 14, at 19-23). Moreover, the Kowalski Patent's preferred embodiment discloses a process in which the smoke is "partially filtered by the ice" through cooling and condensation (Kowalski Patent, Col. 18, at 33-34), and is then eventually put through a final "settling step of aging the smoke" (Kowalski Patent, Col. 19, at 43).

3 This discussion, in its entirety, reads as follows.
The amounts of tar, soot, ash, char and other microscopic particulates have been filtered and minimized by many methods in current practice including tar settling systems, baffling systems, and washing systems in the line form the smoke generator to the smoking chamber. In addition, cooling and storage reduces the concentrations of phenolic particulate through settling. Some of these filtering methods . . .

(Kowalski Patent, Col. 8, at 19-26 (emphasis added).)

There is little doubt that the Kowalski Patent discloses settling and cooling processes to remove certain particles from smoke; the issue is whether the word "filtering," as used in Claim 67, encompasses these processes. The Court finds that it does. While the specifications do occasionally use "filtering" in its narrow sense, they more often use it in a broader sense that does include both cooling and settling processes. This is particularly so when the specifications are read as a whole, in context, from beginning to end. The overview of different filtering processes discussed in the "Background Art" section of the specifications recognizes cooling and settling as two types of filtering. And while filtering is initially used in its narrow sense early in the "Summary of the Invention" section, the later parts of the summary make it clear that "filtering" is a much broader term. (See Kowalski Patent, Col. 14, at 19-23.) Thus, viewed in their entirety, the Kowalski specifications demonstrate that "filtering" is a broadly-defined process including not only passing a gas or liquid through a porous material, but also the cooling and settling of the smoke.

Lifestream adds that the district court appeared to unduly limit the claim scope because of concern that the claim language was overly broad. We disagree that such concern, if present, lead to it to erroneously conclude that the arguments of the patent applicant should apply to the claims at issue.

Each side levels charges that the other has waived arguments that both press on appeal. We find the charges are either without merit or moot. Lifestream also complains that the district court improperly relied upon testimony from Polymer Tech's expert, Dr. Smith, to support the claim construction. As far as we can tell, the district court neither cites nor mentions Dr. Smith as a basis for its analysis. We find no merit to Lifestream's complaint.

Lastly, Lifestream contends that the district court, as a result of clerical error, confused the definition of "test membrane" with the term "filtering membrane." 2 Polymer Tech submitted no argument to rebut Lifestream's contention. We agree that it appears that the district court confused the two types of membranes. The '716 patent informs us that the filtering membrane blocks "LDL and VLDL precipitates and prevents them from reaching the plasma collecting test membrane." '716 patent, col. 4, ll. 23-25. "Its function is to block the precipitated particles from reaching the test zone." Id., col. 3, ll. 26-31. Thus, Lifestream is correct in asserting that the filtering membrane "receives blood or plasma, retains LDL and VLDL precipitates from the blood or plasma, and passes filtered plasma to the next adjacent level." By contrast, the test zone, corresponding to the test membrane, "contains enzymes and chromogens for cholesterol assay so that plasma reaching it (now devoid of LDL and VLDL components) reacts with the reagents in plasma collecting test membrane 6, producing a colored reaction, the intensity of color being proportional to HDL cholesterol concentration." Id., col. 4, ll. 34-41. In other words, the test membrane "gathers filtered plasma without LDL or VLDL precipitates and performs a measurable reaction with the filtered plasma." We agree with Lifestream that the district court confused "filtering membrane" with "test membrane." The term "filtering membrane" should have been construed to mean: "A thin, soft pliable layer that receives blood or plasma, retains LDL and VLDL precipitates from the blood or plasma, and passes filtered plasma to the next adjacent level."

2 The district court had construed "filtering membrane" to mean:

A thin, soft pliable layer that gathers filtered plasma without LDL or VLDL precipitates and performs a measurable reaction
with the filtered plasma.

2. "Fin structure"

a. Parties' Positions

The parties propose the following constructions for "fin structure" which is present in claims 2 and 3 of the '631 Patent. Here, the primary dispute is whether the claim term should include a sheet material requirement and whether there is a "vertical stacking" requirement as urged by Defendants.

Plaintiff
An arranged grouping of fins

Defendants
A structure formed from sheet material and defining plural, vertically stacked air passages extending parallel to the second surface

b. Court's Construction

Plaintiff asserts a "fin structure" contemplates an arranged grouping of fins. According to Plaintiff, "fins" and "fin structures" refer to the technology used in heat sinks in which metal protusions extend from the surface of the heat sink in order to increase its surface area, thereby facilitating greater heat dissipation. ('631 Patent at 1:20-52).

Defendants propose that there must be "vertically stacked air passages extending" from the surface of the heat sink, "parallel" to the surface. Defendants' reference to a fin structure which incorporates "vertically stacked air passages" stems from a particular embodiment of the invention described in the specification. The specification discusses an embodiment involving a "serpentine"-style fin structure. ('631 Patent at 6:50-58). The "primary structure" of this particular fin style employs "a series of integral vertically extending fin supports," resulting in vertically stacked air passages. Id.

However, this feature of this particular embodiment is not described as a necessary feature of any claim. ('631 Patent at 6:7) (discussing this embodiment as merely "one particular version of the third embodiment of the invention"). The specification acknowledges that the vertically-extended "primary structure" of this serpentine-style embodiment is not a feature of the other embodiments. ('631 Patent at 5:43-46) ("[A] third embodiment of the invention, which is disclosed in FIGS. 6-9, differs from the first two embodiments not only in fin structure but also in the primary structure which supports the fin material."). While the specification recognizes that the invention permits vertical stacking, ('631 Patent at 2:62-64), Defendants' proposal would require vertical stacking. Not only does the specification undercut Defendants' proposal that vertical stacking be construed as a general limitation on the claim language, but the claims themselves also fail to reference "vertically stacked air passages."

Defendants argue that "optimal" fin spacing and length are requirements of the '631 Patent. (Defendants' Response at 11). According to Defendants, the patent discloses three configurations of fin structures-- honeycomb, corrugated and serpentine--that achieve the patent's stated objectives. Defendants assert each of these configurations includes vertically stacked air passages that extend parallel to the second surface. Although acknowledging the patent is not limited to the three embodiments, Defendants assert the vertical stacking permits the optimality required of the essential transverse flow, minimizing the air flow path while increasing the air flow cross section. Thus, Defendants argue the patent is limited to structures that include vertically stacked passages because only those structures are capable of providing the surface area needed to dissipate heat over such short fin lengths as contemplated in the '631 Patent. However, Defendants' argument ignores the specification's references to how the invention does not guarantee optimality, but merely seeks to approach it more closely. ('631 Patent at 1:55 - 2:23 & 3:14-16).
Although the specification discusses vertical stacking as an attractive option, nowhere is vertical stacking described as essential. The Court is also not convinced the structures must be formed from sheet material. Rather than utilize Plaintiff's proposed construction, "an arranged grouping of fins," the Court construes the term "fin structure" to mean "an arrangement of fins and air passages."

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A. "Finger"

1. Parties' contentions

The patent documents describe the various components of the workstation as having a "finger" that engages longitudinal slots along the rail extrusions to support the component and to permit its horizontal adjustment along the length of the console.

TBC proposes that "finger" be defined as: "A member, projecting from and part of a first object and designed to interface with a second object so as to limit or direct movement of the first object with respect to the second object."

Forecast agrees with TBC that a "finger" is ",[a] member that projects from the a first object to effect, direct, or restrain motion when brought into contact with the second object." Forecast, however, rejects that part of TBC's proposal, which limits the definition of "finger" to a member that must be "part of" the first object. Instead, Forecast proposes that the definition of "finger" be clarified to provide that a "finger may be formed integrally with the first element or may be permanently or removably fitted thereto or therethrough. 8

8 The parties use the example of a removable "bolt" to give content to this latter concept.

The parties thus disagree as to whether a finger must not only project from the first object, but must also be an integrated part thereof. As set forth below, the Court discerns no such limitation on the meaning of "finger" in the context of the Forecast patents. 9

9 Forecast and TBC both assert in their memorandums that it is unnecessary for the Court to consider extrinsic evidence in construing the claim terms. The Court agrees, and does not find particularly helpful in its analysis either the general usage dictionary definition of "finger" submitted by Forecast or the "Bosch" product catalogue submitted by TBC as part of the parties' claim construction papers.

2. Intrinsic evidence

a. Claim language

The term "finger" is found in claims 1, 6, 8, 9, 13, 15 of the '712 patent; claims 1, 5, 7, 9, 11, 12 in the '088 patent; and claims 1, 7, 9, 11, 13 of the '803 patent. The language in those claims dictates that a "finger" is (1) a member that projects from the first object (often, a component); (2) which engages a longitudinal slot found on the second object (here, the rail extrusion); (3) so as to support the component and to permit its horizontal adjustment along the length of the console. The claim language does not suggest, much less require, that a finger must also be "part of" the component object from which it projects.

b. Specification
The Court next turns the Forecast patents’ specification. TBC argues that the Forecast patents’ specification demonstrates an intention to limit the definition of finger to a device that must be part of the object from which it projects. According to TBC, the patents’ illustrations represent a finger as a physically integrated member, not as a member that must be fitted or fastened to the component object. According to TBC, a physically integrated finger is not merely a preferred embodiment of the Forecast invention, it is its only intended embodiment. The Court disagrees.

The Federal Circuit has expressly rejected the contention that “if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.” Phillips, 415 F.3d at 1323; see Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004) (collecting cases). The question instead is whether the patentee intends for the embodiment to define the outer limits of the claim term. Phillips, 415 F.3d at 1323. As set forth below, the Court discerns no such intention from the patent documents.

First, TBC is, in any case, incorrect that the Forecast patents strictly limit the concept of a "finger" to an integrated member. Claim 9 of the '088 patent recites that a vertical support stand - used for horizontally translating a piece of audiovisual equipment, such as a monitor, along the length of the console - has a "finger" engaged in a longitudinal slot on the upper surface of the first rail extrusion. The disclosed structure for supporting the vertical support stand is a T-shaped "bolt", which, the parties agree, is the paradigm for a non-integrated (that is, permanently or removably fitted) member. TBC's proposed definition of finger would exclude the Forecast patents' preferred embodiment of the device used to attach the vertical support stand recited in claim 9. 10 Such a construction, the Federal Circuit teaches, is "rarely, if ever, correct." Vitronics, 90 F.3d at 1583.

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10 The specification in relevant part recites that the "vertical support stand [76] includes a leg [78] having a T-shaped finger or fitting [70] fixed thereto, for example, by a bolt." (Col. 7, lines 9-12 (emphasis added).) The number "70" is a typo, however, as the "T-shaped finger or fitting" referred to is the structure labeled as "80" in the relevant drawing. (Fig. 4.)

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Finally, when read as a whole, the Forecast patents do not disclose an intention that TBC's proposed limitation be a part of every embodiment. The premise of the Forecast patents are that "in all embodiments" the components of the workstation are "mounted to the master rail system to permit their horizontal adjustment along the length of workstation." ( ’712 patent; col. 4, lines 7-10.) The specification's detailed description of the invention does not suggest that this adjustment is always or necessarily accomplished by a finger that is part of the component object. 11 The "very character of the invention" does not require the finger to be so constructed. Alloc, Inc. v. Int’l Trade Comm’n, 342 F.3d 1361, 1370 (Fed. Cir. 2003) ("[T]his court looks to . . . whether the specification read as a whole suggests that the very character of the invention requires the limitation to be a part of every embodiment."); see Sunrace Roots Enter. Co. v. SRAM Corp., 336 F.3d 1298, 1305 (Fed. Cir. 2003) (recognizing that although "the patentee was primarily focused on an [particular] embodiment of the invention . . ., nothing in the patent limits the claims to that embodiment").

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11 The Federal Circuit's analysis in Toro Company does not, as TBC contends, indicate a contrary result. In Toro Company v. White Consol. Indus., Inc., 199 F.3d 1295, 1300-01 (Fed. Cir. 1999), the specification and drawings of the patent at issue showed a restriction ring as "part of" and "permanently attached to" the air the blower cover at issue. The court found that the patent required the cover and ring be a single component. But, in doing so, the court relied on the specification, which described the restriction ring as "buil[t] . . . as part of the air inlet cover," and further described "the advantages of the unitary structure as important to the invention." Id. Here, the specification does not describe the "finger" as part of the component, nor does it describe any of the perceived benefits of such a unitary structure.

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The very character of the Forecast invention requires only that a member finger project from the component and engage a longitudinal slot, to support the component and permit its horizontal adjustment. Thus, the Court construes "finger" to mean;
"A member that projects from a first object to effect, direct, or restrain motion when brought into contact with a second object. A finger may be formed integrally with the first object or may be fitted thereto or therethrough." 12

12 The Court notes that this definition eliminates certain aspects of the Forecast proposal that could inject unnecessary ambiguity into the definition; namely, its use of the word "element" in place of "object," and its use of the adverbs "permanently or removably" to modify "fitted" in the definition's last sentence.

A. Finger Placement Indicia

Defendant asks the court to construe the "finger placement indicia" language of claim 1 to mean "markings placed on the surface of a single baseball cover to indicate location of the index and middle fingertips for both right and left handed pitchers." Plaintiff disagrees. According to plaintiff, the claim language should be interpreted literally. That is, the plaintiff disclaims any interpretation of "indicia" that requires markings applicable to both right and left handed pitchers or that is limited to fingertips.

The court agrees with the plaintiff and adopts a literal reading of the unambiguous claim language; claim 1 discloses a baseball that has markings for left handed students, right handed students, or both. The court's conclusion is grounded in the plain language of claim 1. Nothing in the claim limits its scope to both right and left handed indicia. Moreover, the court's conclusion is grounded in the doctrine of claim differentiation, which presumes that there is a difference in scope among the claims of a patent. See Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998) ("There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant." (citation omitted)). Claim 1 describes finger placement indicia which need not, on the face of the claim, apply to both left and right handed pitching students. Claim 3, dependent upon claim 1, alters claim 1 only by adding the further limitation that the finger placement indicia include markings for left and right handed pitching students. Under the doctrine of claim differentiation, the court presumes that the finger placement indicia of claim 1 are not limited to indicia for both left and right handed pitchers because to so find would render claim 3 superfluous.

The defendant argues against the court's reading by pointing to the patent specification, which makes multiple references to the "both-right-and-left-handed" concept. See, e.g., '193 patent, col. 2, lines 7-10 ("indicia . . . for both left and right handed students"); '193 patent, col. 1, lines 48-50 ("for both left and right handed students of pitching"). The court hesitates to so limit claim 1, however, because "while . . . claims are to be interpreted in light of the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims." Sjolund v. Musland, 847 F.2d 1573, 1581 (Fed. Cir. 1988). The Federal Circuit has recognized "that there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification." Comark Communications, Inc., 156 F.3d at 1186 (finding the defendant's sought claim construction without merit because the disputed term had a clear and well-defined meaning and because the defendant sought to borrow a limitation appearing directly in the preferred embodiment section of the specification).

Although the question here is much closer than it was in Comark Communications, the court does not believe the '193 patent specification language is sufficient to overcome the presumption that claim 3 is not completely superfluous. Cf. ATD Corp. v. Lydall, Inc., 159 F.3d 534, 541 (Fed. Cir. 1998) (claim differentiation presumption overcome where dependent claim was not rendered completely superfluous by defendant's proposed interpretation, patent specification specifically referred to defendant's proposed interpretation, and text of independent claim itself implicitly supported defendant's proposed interpretation). Defendant's reliance on the '193 patent specification carries some appeal because, unlike Comark Communications, it is based not merely on the preferred embodiment of the '193 patent but on the background and summary of the invention, as well. On the other hand, the language of the claim itself here, although not entirely precise, unlike ADT
Corp. and like Comark Communications, is not ambiguous. The court believes that a person of reasonable skill in the art would understand the "finger placement indicia" limitation not to exclude baseballs having only indicia for right or left handed students. Moreover, like Comark Communications and unlike ADT Corp., nothing on the face of claim 1 implicitly supports the defendant's proposed interpretation.

The defendant also relies on the prosecution history, which, according to the defendant, indicates that the plaintiff relied on the both-right-and-left-handed concept before the Patent and Trademark Office and the Board of Patent Appeals and Interferences. As an initial matter, the court rejects the defendant's argument because the defendant has not sufficiently demonstrated on the record before the court that the plaintiff understood or otherwise represented during the patent's prosecution that "finger placement indicia" refers only to both-right-and-left-handed indicia. The defendant asks the court to find that the case here is akin to Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1479-80 (Fed. Cir. 1998) (reversing bench trial factual finding that patent was not invalid for failure to comply with written description requirement of § 112 par. 1 where original disclosure was not broad enough to support broad reading advanced by plaintiff). Whatever the merits of this argument, however, it is premature because a determination of validity under § 112 par. 1 is an issue of fact and is thus inappropriate for determination in a Markman proceeding. See Tronzo v. Biomet, 156 F.3d 1154, 1158 (Fed. Cir. 1998); Gentry Gallery, Inc., 134 F.3d at 1479. Although the Federal Circuit has explained that where, after all intrinsic-evidence-based canons of claim construction have been exhausted, "there is an equal choice between a broader and a narrower meaning of a claim, and there is an enabling disclosure that indicates that the applicant is at least entitled to a claim having the narrower meaning, we [will adopt] the narrower meaning," see Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1581 (Fed. Cir. 1996), cited in Digital Biometrics v. Identix Inc., 149 F.3d 1335, 1344 (Fed. Cir. 1998) (canon applies only after consideration of intrinsic evidence fails to resolve doubt about the exact meaning of the claim terms), the canon has no application here. As explained above, consideration of intrinsic evidence leaves the court confident that the finger placement indicia limitation of claim 1 does not require both-left-and-right-handed markings.

Finally, the defendant claims that its reading of the disputed language must be adopted because adopting the plaintiff's reading would cause claim 1 to read directly on United States Patent 2,925,273, issued in 1960 to Pratt (the "Pratt patent"), and cited in the prosecution history of the patent in suit. 2 When construing a claim, it is appropriate to consider prior art patents that have been cited in the prosecution of a patent in suit. See Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1555 (Fed. Cir. 1997), overruled on other grounds by Cybor Corp. v. FAS Techs., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). The court must endeavor to construe claims in such a way that their validity will be upheld. Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 1584 (Fed. Cir. 1995).

The court rejects the defendant's Pratt-based argument because the court does not believe it can conclude that the construction adopted today reads on Pratt as a matter of law. See 35 U.S.C. § 102(b); Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1052 (Fed. Cir. 1994) (anticipation requires the presence of each and every element of a claimed invention within a single prior art disclosure); Lewmar Marine, Inc. v. Barent, Inc., 827 F.2d 744, 747 (Fed. Cir. 1987) ("That which would literally infringe if later in time anticipates if earlier than the date of the invention.") (emphasis omitted). Specifically, Pratt may not have "means for indicating the orientation of the baseball relative to the palm of the hand" as required by claim 1. During prosecution of the '193 patent, the Board of Patent Appeals and Interferences of the Patent and Trademark Office concluded that Pratt does not disclose orientation means. Ex parte McGinley, No. 94-1121, slip op. at 15 (Bd. Patent App. Feb. 10, 1994) (expressly overruling patent examiner's conclusion that Pratt discloses orientation means). Of course, the defendant may litigate in this case whether Pratt discloses orientation means, but the issue is not appropriate for determination in this Markman proceeding because it is an issue of fact—not law. See Electro Med. Sys. S.A., 34 F.3d at 1052; Haney v. Timesavers, Inc., 900 F. Supp. 1375, 1378 (D. Or. 1995) (narrow claim construction based on asserted prior art anticipation under broad reading is inappropriate where anticipation is a disputed issue of fact); Elf Atochem North America, Inc. v. Libbey-Owens-Ford Co., 894 F. Supp. 844, 860 (D. Del. 1995) ("to preserve Atochem's right to a jury trial on the [disputed] issue of anticipation, this court will not look to the [prior art] patent in construing the words in claim 1 of the [patent in suit]").
finger plate

It is Plaintiff's position that the term "finger plate" is unambiguous and is readily comprehensible to the finder of fact. Defendants provide the following definition of finger plate: "[S]urface area of the lever to which the user's finger will come in contact during operation."

Plaintiff argues that Defendants' construction does not add clarity and will, in fact, confuse the finder of fact. Plaintiff further argues that "during operation" is unclear.

Although the Court agrees that the term "finger plate" requires no definition, the Court's reasoning differs from that of Plaintiff. Defendants' definition will not confuse the fact finder because the term "finger plate" speaks for itself. Moreover, the operation of a finger plate is obviously to open the binder. This is not unclear.

The specifications provide that the release lever includes a "thumb or finger plate." ('729 patent, col. 3, ll. 36-37.) The claim language teaches that the finger plate is sized to receive a finger of the user. (Id. at col. 5, ll. 1-3.) Defendants cite the prosecution history which repeats what is in the patent claim and specification -- the finger plate is sized to receive the finger of a user, allowing for greater leverage. (Pl Ex. A at 57.)

The Court finds no mystery here. Therefore, the Court declines to define this unambiguous term.

3. Claim 3

The parties seek construction of the following highlighted term of Claim 3: "Apparatus as claimed in claim 1 wherein the locating surfaces comprises a plurality of fins extending inwardly from the casing interior." ('300 patent, col. 4, ll. 47-49.) P&M construes "fins extending inwardly from the casing interior" as "long, narrow longitudinally-extending locating surfaces." (Pls. Opening Mem. at 30.) Rose Art construes "plurality of fins" as "three wing-like ridges" because the specification refers to "three fins." (Def. Pre-Markman Hr'g Br. at 43.) Although the specification refers to three fins in describing a preferred embodiment, the Court cannot limit the claim to one preferred embodiment. Electro Med. Sys., 34 F.3d at 1054. Moreover, the word plurality, used to describe the number of fins comprising the locating surface, means two or more, not necessarily three. Dayco Prods. Inc. v. Total Containment, Inc., 258 F.3d 1317, 1327-28 (Fed. Cir. 2001) ("In accordance with standard dictionary definitions, we have held that "plurality," when used in a claim, refers to two or more items, absent some indication to the contrary.") (citation omitted). Accordingly, the term "plurality of fins extending inwardly from the casing interior" is construed as "two or more long, narrow longitudinally-extending locating surfaces."

C. "first" and "second"

Claims 1 and 14 of the 736 patent use "first" or "second" to modify various claim elements, such as "vacuum chamber," "rod set," and "space." The construction of "first" and "second" is important because the tandem mass spectrometer asserted as prior art is alleged to have elements similar to those in the 736 patent, but in a different order of ion travel. The construction is also important because Micromass's Quattro Ultima has an empty vacuum chamber before the hexapole ion bridge chamber alleged by AB/Sciex to be the "first vacuum chamber" in the 736 patent. Thus, the construction of "first" and "second" could dictate which element must come first in the claimed invention and the order in which subsequent elements must follow.
Micromass proposes that the plain meaning of "first" is "preceding all others in time, order, or importance," and the plain meaning of "second" is "next to the first in place or time." Webster's Ninth New Collegiate Dictionary 466, 1060 (1991). In the context of the 736 patent therefore, "first" and "second" sets where each element is located in the path an ion travels in the device. For example, the "first vacuum chamber" must be "the very first vacuum chamber encountered by the ions" and "second vacuum chamber" must be "the very next vacuum chamber encountered by the ions." In this way, Micromass contends "first" and "second" dictate the absolute position of each particular element in the device.

AB/Sciex proposes that "first" and "second" only identify separate, but distinct, elements. That is, the 736 patent discloses two vacuum chambers and the terms "first" and "second" should be understood as separately identifying "a vacuum chamber" and "another distinct vacuum chamber," respectively, without specifying a particular order.

AB/Sciex's position that "first" and "second" do not establish positions in the claimed invention and are mere identifiers is premised on the following three arguments. First, AB/Sciex argues that it is well-established practice among the patentees to use "first" and "second" as identifiers of similar, but distinct, elements. It notes that numerous cases and treatises demonstrate that patent drafters use the terms "first" and "second" to identify separate elements. See, e.g., Envrco Corp. v. Clestra Cleanroom, Inc., 209 F.3d 1360, 1365-66 (Fed. Cir. 2000) (distinguishing "the 'second' from the 'first baffle means'"); Canon Computer Sys., Inc. v. Nu-Kote Intl, Inc., 134 F.3d 1085, 1089-90 (Fed. Cir. 1998); Neomagic Corp. v. Trident Microsystems, Inc., 98 F. Supp. 2d 538, 544 (D. Del. 2000); Robert C. Faber, ed., Landis on Mechanics of Patent Claim Drafting, § 19, at III-16 (4th ed. 1999); 2 Irving Kayton et al., Patent Practice § 10.22 (f) (6th ed. 1998). None of the cases or treatises cited, however, state that "first" and "second" are only identifiers and that they do not also explain the position of elements. Indeed, most of the cases and treatises have no discussion of the meaning of "first" or "second," or the terms thereby modified, at all. Thus, it is not clear that patent drafters using "first" and "second" do not also intend to impart positional significance to those terms.

Second, AB/Sciex notes the claims state, for example, either "first and second vacuum chamber" or "a first rod set" and "a second rod set." The claims do not state "the first rod set" or "the second rod set." AB/Sciex argues that because the claims do not use the definite article "the," the claims cannot be interpreted to mean "the very first rod set" or "the very next rod set." This argument is unpersuasive, however, because AB/Sciex does not explain how the use of either no article, the indefinite article "a," or the definite article "the" explains how "first" and "second" should be properly construed.

Looking only at these arguments, Micromass's reliance on the plain meaning of "first" and "second" might be persuasive. Were "first" and "second" merely identifiers, as AB/Sciex suggests, the drafters of the 736 patent could just as easily have said, for example, "a vacuum chamber" and "another vacuum chamber," or "vacuum chamber A" and "vacuum chamber B." Either would have identified separate vacuum chambers without also suggesting a positional hierarchy.

But relying on the plain meaning of "first" as "preceding all others in time, order, or importance" and the plain meaning of "second" as "next to the first in place or time" does not necessarily provide a correct construction of the use of those terms in the patent. Nowhere in the claims themselves is it stated that "first" must mean "preceding all other in the path of ion travel," as opposed to, for example, "preceding all others in importance." While the use of "first" and "second" in the patent is consistent with "first" and "second" in the path of a traveling ion, this construction is not required by the claims themselves. Therefore, Micromass's plain meaning argument does not necessarily support its contention that "first" and "second" establish the absolute position of the elements.

Importantly, Micromass's proposed construction of "first" and "second" as setting the absolute position of elements is inconsistent with one of the preferred embodiments in the specification. Were the court to adopt Micromass's position that "first" and "second" must mean "the very first" and "the very second," Figure 12 would be excluded from coverage under the claims. While Figure 1 of the 736 patent shows the more basic embodiment of the invention with only two vacuum chambers (30 and 38), Figure 12 presents a slight variation in which an empty vacuum chamber (70) is added, after the ionization chamber (16') but before the ion guide chamber (30'). If the term "first vacuum chamber" is construed to mean the very first vacuum chamber in the path of ions, the preferred embodiment in Figure 12 would be excluded from coverage by the claims because claim 1 requires "a first rod set in said first vacuum chamber." AB/Sciex correctly notes that a claim construction that excludes a preferred embodiment "is rarely, if ever, correct and would require highly persuasive evidentiary support." Vitronics Corp., 90 F.3d at 1583.

[SEE FIGURE IN ORIGINAL]
Micromass argues that regardless of whether Figure 12 is covered by the claims, its construction is compelled by the prosecution history. See Elekta Instrument S.A. v. O.U.R. Scientific Int'l, Inc., 214 F.3d 1302, 1308 (Fed. Cir. 2000) (preferred embodiment may be excluded from patent's claims when patentee disclaimed the construction that would cover the embodiment). Micromass contends that when MDS distinguished the tandem mass spectrometer references during reexamination, it adopted a construction of "first" and "second" inconsistent with the position it now takes. As noted previously, ions traveling in a tandem mass spectrometer first encounter an AC-DC rod set in a low pressure vacuum chamber, then an AC-only rod set in a high pressure collision cell, and finally another AC-DC rod set in a low pressure vacuum chamber. In distinguishing this structure, MDS stated:

The French application also differs from the system of the invention in other ways. For instance, whereas the first rod set in the invention receives essentially an AC-only voltage, the first section in the French application receives both AC and DC voltages. Whereas the first vacuum chamber of the invention has a product of its pressure with the length of the first rod set equal or greater than 2.25 x 10^{-2} torr cm, whereby the pressure is at least 1.5 millitorr for a 15 cm rod set, the first section in the French application states that the pressure must be maintained low, typically at 10^{-5} torr. Further, whereas the second rod set in the invention receives both AC and DC voltages to act as a mass filter, the second section in the French application receives an AC only voltage and is for inducing dissociation of ions. The second chamber of the invention is at very low pressure while the French application states that the pressure in the second section may be varied from 0.1 millitorr to 10 millitorr.

Request for Reexamination at 13-14 (emphasis added); see also id. at 16 (Finnegan abstract), 19 (Finnigan paper), and 21 (Caldecourt article). Because MDS distinguished the tandem references based on which elements were "first" and "second," Micromass argues that the correct meaning for those terms must be "preceding all other elements in the path of ion travel" and "next to the first element in the path of ion travel."

It is apparent from the manner in which MDS uses "first" and "second" in the above passage that it intended to refer to "first" and "second" in the path of ion travel relative to each other. If MDS were only using "first" and "second" as identifiers of separate elements, and not the order of those elements, MDS's distinction would fail because the mere presence of the elements, in any order, would satisfy the claim limitations. Indeed, MDS made clear that it was using "first" and "second" as positions in the order of ion travel in distinguishing the Finnigan abstract, another tandem mass spectrometer reference.

The Finnigan abstract does not disclose or suggest that ions having a relatively low kinetic energy travel through an inlet orifice into a first vacuum chamber having a first rod set for receiving essentially only an AC voltage. The Finnigan abstract further does not disclose or suggest that ions then travel through an interchamber orifice to a second chamber having a second rod set receiving both AC and DC voltages.

Id. at 16 (emphasis added). From these statements, it is clear that MDS is relying on positional differences to distinguish the tandem references, and therefore disclaimed a more broad construction that the terms are mere identifiers of separate elements. In such cases, the Federal Circuit "has endorsed narrowing the interpretation of the claim to be consistent with a narrow claim scope urged by the applicant during the prosecution of the patent." Pall Corp. v. PTI Techs., Inc., 259 F.3d 1383, 1392-93 (Fed. Cir. 2001).

Although MDS disclaimed its proposed construction of "first" and "second" as mere identifiers, this "disclaimer" does not compel the court's adoption of Micromass's "absolute position" construction. AB/Sciex, in explaining its comments from the reexamination, set forth an alternative construction -- that "first" and "second" only define where in the invention the element is located relative to the other listed element. That is, regardless of how many vacuum chambers and rod sets there might be in the structure and where they are, the invention only requires that "first" come before "second." Or, put simply, the ion guide elements must precede the mass filter elements. MDS did not disclaim this construction of "first" and "second" on reexamination and, in fact, its comments were consistent with this construction.

This "relative positioning" construction of "first" and "second" is persuasive because it would cover Figure 12. The existence of an empty vacuum chamber prior to the vacuum chamber containing the ion guide is immaterial to whether the "first vacuum chamber" claimed in the invention precedes the "second vacuum chamber" claimed in the invention. Thus, the court will construe "first" to mean "an element" and "second" to mean "an element coming after, in the path of ion travel,
the first such element." This construction sets a relative relationship between the "first vacuum chamber" and "second vacuum chamber" consistent with the plain meaning of those terms and the reexamination history. The court does not believe that this construction reads the word "first" out of the claims. Rather, the court's constructions of "first" and "second" together establish the relative positions of those elements listed in the claims without regard to the existence or placement of similar elements not mentioned in the claims.

Therefore, the court finds that the construction of the terms "first" and "second" that best comports with the plain meaning of those terms, the patent's specification, and the reexamination history, is that they define the position, in the path of ion travel, of the elements in the invention relative to the similar elements also mentioned in the claims. Thus, "first" is construed to mean "an element." "Second" is construed to mean "an element coming after, in the path of ion travel, the first such element."

1. "first vacuum chamber" and "second vacuum chamber"

Consistent with the court's conclusion, it will further define the specific applications of "first" and "second" in the various elements. The court construes "first vacuum chamber" as "a vacuum chamber." The court construes "second vacuum chamber" as "a vacuum chamber coming after, in the path of ion travel, the first vacuum chamber." The parties agree that the term "vacuum chamber" means a chamber held at a pressure lower than atmospheric pressure.

2. "first rod set" and "second rod set"

The court construes "first rod set" as "a rod set." Similarly, the court construes "second rod set" as "a rod set coming after, in the path of ion travel, the first rod set."

Other than the adjective "first," Micromass raises two additional limitations that it argues are in the term "rod set." First, Micromass argues that "rod set" must be comprised of just that -- rods -- and that other shapes of electrodes, such as the rings of the latest Quattro Ultima design, cannot infringe the claims. It maintains that MDS, in distinguishing the ion trap references that use AC-only voltage during reexamination, disclaimed that the term "rod set" permits anything other than "rods." AB/Sciex agrees, but believes such a construction by the court to be unnecessary because "a rod is a rod." The court agrees and believes the proper construction of rod to be self-evident.

Micromass also contends that the "rod set" must be arranged as a quadrupole. It notes that the patent specification repeatedly refers to the arrangement of rods as a quadrupole in the preferred embodiment. See 736 Patent, Col. 4, ln. 21-23. Nowhere, however, do the claims of the 736 patent use the word quadrupole. Instead, claim 1 only requires "a plurality of elongated parallel rod means spaced laterally apart a short distance from each other." Claim 14 has a similar requirement. It is well-established that limitations not existing in the claims cannot be imported from specification. See Dayco Prods., Inc. v. Total Containment, Inc., 258 F.3d 1317, 1326 (Fed. Cir. 2001) ("although we construe claims in light of the teaching of the specification, we do not treat characteristics of a preferred embodiment as claim limitations"). Thus, the court finds that the term "rod set" in the claims of the 736 patent require only a plurality, meaning two or more, of rods in each rod set and do not require a quadrupole.

3. "first space" and "second space"

Claim 1(c) of the 736 patent discusses a space within each vacuum chamber and rod set such that "each rod set comprising a plurality of elongated parallel rod means spaced laterally apart a short distance from each other to define an elongated space therebetween extending longitudinally through such rod set." The preamble of claim 14 is similar. The court construes "first space" in both claims as "a space." Similarly, the court construes "second space" in both claims as "a space coming after, in the path of ion travel, the first space."

A. "a first and a second foot link, each having a foot engaging portion"

The Court adopts Precor's proposed construction of this term, which is the exact words that are used in the claim: "a first
Where the claim terms are susceptible to an ordinary meaning, that is the meaning the Court should adopt. Phillips, 415 F.3d at 1312-13. Fitness Quest does not suggest that someone of ordinary skill in the art would interpret the term any differently. Johnson Worldwide Assocs., Inc. v. Zebe Corp., 175 F.3d 985, 989 (Fed. Cir. 1999). Instead, Fitness Quest supports its construction of the phrase by arguing that the phrase "foot supporting link" that engages the "user's" foot is more accurate. This is because the "supporting" function is logically implied by the other claims, and suggested by the figures. Thus, including a few additional terms and re-organizing the phrase would simply make what is clear to someone of ordinary skill in the art also clear to the lay jury, as required by Phillips, 415 F.3d at 1314. Fitness Quest's proposed construction goes beyond this innocuous proposal by reading additional limitations onto this claim based on the specifications. The Court must not read limitations into a claim simply because they might be suggested in the specifications or figures. Comark Commun. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998).


28. The words "first and second impervious fluoropolymeric end caps" in the context of the claims of the 465 patent means that each end cap is a unitary structure that is applied to respective unsealed ends of a "filter arrangement." In the context of the Miller 465 patent, the filter arrangement is an element having a generally annular cross-section and includes a cylindrical microporous fluoropolymeric filter (e.g., PTFE membrane) and a cylindrical fluoropolymeric structure adjacent the filter for supporting the filter (e.g., core). In other words, each claimed "impervious end cap" cannot comprise two separate components, wherein the first component is welded to one end of an unsealed filter arrangement to provide a liquid-tight sealed end, and the second component is welded onto the previously-formed sealed end. Tr. 508-09.

29. The words used in claims 1 and 9 of the Miller 465 patent other than "impervious fluoropolymeric end caps" should be afforded their plain and ordinary meaning.

30. The claimed end caps function to support the filter arrangement and to prevent the destructive fluid from bypassing the filter arrangement. PTX 1 at col. 3, lines 15-17.

31. This claim construction is consistent with an embodiment of the filter disclosed in the drawings and written description of the Miller 465 patent. PTX 1. Figure 1 of the patent is set forth below:

[SEE FIG. 1 IN ORIGINAL]

PTX 1. The written description of the patent identifies the various components included in the figures (e.g., Figure 1) as follows:

<table>
<thead>
<tr>
<th>Indicia</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>top end cap (open)</td>
</tr>
<tr>
<td>13</td>
<td>bottom end cap (closed)</td>
</tr>
<tr>
<td>14</td>
<td>filter composite (PTFE membrane sandwiched by two net supporters)</td>
</tr>
<tr>
<td>16</td>
<td>inner perforated core</td>
</tr>
<tr>
<td>32</td>
<td>sealing ring (O-ring)</td>
</tr>
<tr>
<td>27</td>
<td>cylindrical protrusion</td>
</tr>
</tbody>
</table>
As to the remaining disputes about the shape of the patented device, Medtronic’s construction is again too narrow. Medtronic would limit the apparatus to a three-dimensional, disk shape with parallel upper and lower surfaces and with an aperture going through the entire device running in a north-south direction. But the patent requires neither a disk shape nor parallel upper and lower surfaces. It simply mandates a shape with three surfaces (upper, lower, and outer). The terms "first and second longitudinal directions" mean simply opposing directions, and not anything more specific, such as 180-degree angles. A "cavity" is simply an opening in the aperture -- regardless of whether the aperture is fully enclosed -- which houses the cam member and whose width is larger than the opening of aperture to prevent the cam member from falling out.

First and second positions relative to said primary display

The Court construes the phrase to mean “two different positions relative to the primary display.”

MASS proposes that the phrase means “a first position for viewing by a user while the primary and secondary displays are in use, and a second position in which the secondary display is retracted to lie flat against the primary display when not in use.” MASS is attempting to narrow the independent claims by incorporating limitations from dependent claims.

“Claim differentiation . . . is clearly applicable when there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims.” Wenger, 239 F.3d at 1233. MASS’s proposed “second position” is a limitation found in claim 21, which depends on claim 20. See ‘170 patent, Col. 6:50–56 (“a top edge of said secondary display extends along a side of said primary display for compactness”). The only “meaningful difference” between independent claim 20 and dependent claim 21 are claim 21’s requirements for “first position” and "second position.”14 See id. Thus, a strong presumption exists that claim 20 does not include claim 21’s position limitations. MASS has not overcome this presumption.

As discussed above, the first and second positions required in independent claims 15 and 20 are broader than the dependent claims. The written description describes the first and second positions as “during and before use.” See id., Abstract; Col. 1:65–2:1. As no special meaning is ascribed to either term; their plain and ordinary meanings apply. See Enercon, 151 F.3d at 1384. Here, the descriptors “first” and “second” simply refer to two distinct positions, but those positions are not specifically defined. Accordingly, the Court construes “first and second position relative to the primary display” as “two different positions relative to the primary display.”

First Cylindrical Stage

Claim 1 of the ‘644 Patent recites "the first cylindrical stage presenting a first mating surface for mating with the filter apparatus manifold . . ." ‘644 Patent at 6:61-6:63. The parties dispute whether the mating surface presented by the first cylindrical stage includes the horizontal surface from which the second cylindrical stage depends. Plaintiffs argue Claim 3 of the ‘644 demonstrates that the said horizontal surface is not a "mating surface" presented by the first cylindrical stage. Claim 3 recites:

The filter cartridge of claim 1 wherein the connecting wall between the recess first cylindrical stage and recess second cylindrical stage has a tapered projection thereon, the tapered projection acting to engage a valve disposed in the filter apparatus manifold, said engagement opening said valve when the filter cartridge is brought into operable engagement with the filter apparatus manifold.
Id. at 7:12-7:18. Claim 8 of the '644 Patent also refers to a "connecting wall": "the second stage diameter being less than the first stage diameter and having a first end operably coupled to the second end of the first cylindrical stage by a connecting wall and having an opening being defined at the second end thereof . . . ." Id. at 8:32-8:37. Claim 14 of the '884 Patent uses identical language in referring to a "connecting wall." '884 Patent at 8:51-56.

Plaintiffs contend that Claim 3 of the '644 Patent shows that the horizontal "connecting wall" is between, and therefore not part of, the recess first and second cylindrical stages. Accordingly, Plaintiffs argue that: (1) the horizontal connecting wall is not a mating surface, and (2) the horizontal connecting wall is not presented by the first cylindrical stage of the two-stage recess. Plaintiffs' first argument requires little analysis. Plaintiffs conclusorily assert that the horizontal connecting wall does not present a surface for mating. Pls.' Mem. in Opp'n at 21. However, regardless of whether the horizontal connecting wall is part of the first cylindrical stage of the two-stage recess, the horizontal connecting wall is a "mating surface" because it fits with the manifold. Plaintiffs fail to explain how the vertical cylindrical walls of the two-stage recess mate with the manifold and yet the horizontal connecting wall does not.

Plaintiffs' second argument is that the horizontal connecting wall is not presented by the first cylindrical stage of the two-stage recess. This argument requires a limited claim construction of whether the term "first cylindrical stage" includes a horizontal surface. Again, Plaintiffs rely on the language in Claim 3, which depends from Claim 1, that the connecting wall is between the first and second cylindrical stage. However, Claim 6 of the '644 Patent, which also depends from Claim 1, and Claim 9 contradict Plaintiffs' argument. Claim 6 of the '644 Patent recites:

The filter cartridge of claim 5 wherein the inlet/outlet means includes a flow inlet and a flow outlet, the flow inlet being at least one bore intersecting the recess first cylindrical stage and depending therefrom to define a depending flow passageway to the filter means, the flow outlet being defined by the recess second cylindrical stage, the recess second cylindrical stage forming a flow passageway in flow communication with the filter means.

'644 Patent at 7:31-7:38 (emphasis added); see also '644 Patent Claim 9. The illustration of the preferred embodiment in the specification of the '644 Patent makes clear that the flow inlet "bore" intersects the horizontal surface that connects the vertical cylindrical walls of the recess first and second cylindrical stages. See '644 Patent Figure 1 (35 - inlet port). Under the plain language of Claims 6 and 9, the horizontal surface that the flow inlet bore intersects is part of the recess first cylindrical stage. This horizontal surface is the "connecting wall" referred to in Claim 3. Thus, Claim 3 and Claims 6 and 9 of the '644 Patent are inconsistent regarding whether the connecting wall is part of the first cylindrical stage: in Claim 3, the horizontal connecting wall is "between the recess first cylindrical stage and recess second cylindrical stage," whereas in Claims 6 and 9 the horizontal connecting wall is part of the recess first cylindrical stage.

"Claims are not interpreted in a vacuum, but are part of and are read in light of the specification." Slimfold Mfg. Co. v. Kinkead Indus., Inc., 810 F.2d 1113, 1116 (Fed Cir. 1987). The '644 Patent's Description of the Preferred Embodiment supports the conclusion that the horizontal connecting wall is part of the recess first cylindrical stage of the two-stage recess. For example, the preferred embodiment states that "[p]rojecting from the first of the 2 stages 36, 49 at the recess 8 is a raised, tapered projection 72 that engages the stem valve 60 with the fitting and the rotation of the cartridge 10 to the manifold 4 . . . ." '644 Patent at 4:37-4:40. Figure 3 of the specification demonstrates that the "raised, tapered projection" projects from a horizontal surface. Id. Figure 3 (72 - tapered projection). Therefore, according to the specification, the first cylindrical stage of the two-stage recess contains a horizontal surface. This horizontal surface corresponds to the "connecting wall" referred to in Claim 3 of the '644 Patent.

The Court finds that the claims and the specification of the '644 Patent demonstrate that the horizontal connecting wall referred to in Claim 3 is part of the first cylindrical stage of the two-stage recess. This limited construction of "first cylindrical stage" as including the horizontal connecting wall is also consistent with the claims of the '844 Patent. For the purpose of Defendants' Motion for Summary Judgment, it is unnecessary to further define the term "first cylindrical stage."
a. The Parties' Constructions

LPL argues that based on its ordinary meaning and when read in context of the claim, the term "first frame" broadly means a structure enclosed by the housing supporting the flat display panel. Defendants, on the other hand, define the first frame more specifically as a rear structure that alone or together with the second frame sandwiches and assembles multiple layers to form the device. Both LPL and Defendants construe the "second frame" in relation to the "first frame." LPL, however, merely requires that the second frame be located such that the flat display panel is between the first and second frames. Commensurate with their construction of "first frame," Defendants argue that the second frame is a front structure that together with the first frame sandwiches and assembles multiple layers to form the device.

b. The Special Master's Constructions

Read in context with the claim language, the Special Master concludes that the first frame is at the rear of the flat-panel display device. In this regard, for example, each of claims 35, 55 and 56 of the '641 patent requires that the flat display panel be mounted to a housing "through a fastening part at the rear surface of the first frame." Given that the claims recite that the flat-panel display device is "rear mountable," it follows that the first frame, which, by the claim language, includes the fastening part at its rear surface for that rear mounting, must be at the rear of the device. And because the flat display panel is between the first and second frames, the second frame (located opposite to the first frame) is necessarily at the front of the device. In the Special Master's view, the common specification supports this construction through its consistent description of the frames in relation to each other, and the depictions of the first and second frames as the structures at the rear and front, respectively, of the device. '641 patent, Figs. 4A-4C, 8, 9, 12-14, 4:21-22.

Finally, as discussed above, the plain claim language locates the flat display panel between the first and second frames. Nothing in the claim language, however, specifically requires multiple layers or that the frames assemble the layers or components of the device.

Accordingly, the Special Master's constructions are as follows:

<table>
<thead>
<tr>
<th>CLAIM TERM</th>
<th>SPECIAL MASTER CONSTRUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>first frame</td>
<td>The structure at the back of the flat-panel display device that together with the second frame structure sandwiches at least the flat display panel</td>
</tr>
<tr>
<td>second frame</td>
<td>The structure at the front of the flat-panel display device that together with the first frame structure sandwiches at least the flat display panel</td>
</tr>
</tbody>
</table>

2. "first layer" and "second layer"

"[F]irst Layer" found in Claims 1, 5, 16, and 18 of U.S. Patent No. 5,745,922; Claims 1, 2, 9, and 16 of U.S. Patent No. 6,098,203; Claims 1 and 5 of U.S. Patent No. 6,260,211; and Claims 19, 20, 26, and 27 of U.S. Patent No. 7,000,260, and "second layer" found in Claims 4, 5, 7, 17, 18 and 20 of U.S. Patent No. 5,745,922; Claims 1 and 2 of U.S. Patent No. 6,098,203; and Claims 19, 20, 26, and 27 of U.S. Patent No. 7,000,260 are both in dispute. KC argues "first layer" and "second layer" should be construed to mean "first operative layer" and "second layer that may or may not be a contiguous," respectively. In response, First Quality proposes they be given their ordinary and customary meaning.

After review, we agree with KC's construction of "first layer", but decline to adopt KC's proposed construction for "second layer." First, the specification teaches that the "first layer" is an "operative layer, generally extending functionally from the first edge through the crotch to the second edge." U.S. Patent No. 5,745,922, col. 2, ll. 24-27. Furthermore, the language of Claim 1 instructs that a "garment blank subassembly" is comprised of "a first layer, extending from the first end through the crotch to the second end." U.S. Patent No. 5,745,922, col. 16, ll. 19-21. When viewed as a whole, the above language
indicates that a "first operative layer" is synonymous with a "first layer," and thus a "first layer" must be a "first operative layer." This construction of the claim term does not import a limitation into the claim language that is not supported by the intrinsic evidence nor does it alter the meaning of the word "layer". Instead, it gives the claim term the meaning that the term would have to a person of ordinary skill in the art. In contrast, KC's proposed construction for "second layer" seeks to add a limitation that is not supported by the specification or claim language. As the specification makes clear, "an unsecured space' may include an area where the front layer element and the back layer element of the second layer may or may not be contiguous." U.S. Patent No. 5,745,922, col. 2, ll. 60-62 (emphasis added). This permissive language, on which KC relies, only indicates that an "unsecured space" could include areas of the front and back layer elements that may or may not be contiguous. The above language does not support the construction that a "second layer" itself may or may not be contiguous. Based on this reasoning, we decline to adopt KC's construction of "second layer," and thus will give it its ordinary and customary meaning.

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15. first location on said wall ('875 patent, claim 32)

Crown's proposed construction is "first location on the can end wall." 70 Rexam's proposed construction is "[t]he point on the wall of the can end that becomes the lowermost extent of the double seam." 71

70 Id. at 5.

71 Id.

The court adopts Rexam's proposed construction.

Crown's prosed construction provides no additional information to the claim language being construed whereas Rexam's construction provides additional clarity to the disputed phrase and is supported by the claim language.

Claim 32 of the '875 patent is directed at "[a] method of forming a double seam between a can body and a can end." It describes a can end having a "peripheral cover hook comprising a seaming panel to be formed into a portion of said double seam during a seaming operation." The can end also has "a circumferentially extending wall comprising a first and second portion." The first wall portion is "to be formed into another portion of the double seam [along with the seaming panel]." The first wall portion extends from the "seaming panel to a first location" on the wall. The wall has a "second wall portion extending from said first wall portion at said first wall location to a second location on said wall, whereby said first and second locations form end points of said second wall portion, said second wall location being the lowermost point of said wall." During the seaming operation of claim 32, the "seaming panel of said cover hook and said first wall portion and said body flange" are deformed into a double seam. After the seaming operation, the first location on the wall forms the transition from the double seam to the second wall portion. 72

72 '875 patent, claim 32.

The claim language demonstrates that the first location is at the lowermost part of the first wall portion which portion is formed part of the double seam. Rexam's proposed construction is consistent with the claim language and is adopted by the court: "the point on the wall of the can end that becomes the lowermost extent of the double seam."
3. "first manipulation of a first operator input device"

Plaintiffs' construction: a first operation of an operator input device

Defendant's construction: first manipulating a first keyboard, trackball, pushbutton, knob, or other device, such as a "Print/Store" button, which a user manipulates to provide input to the imaging system

Neither parties' proposed construction of the term "first manipulation of a first operator input device" is helpful. Plaintiffs turn immediately to a general dictionary to define the term "manipulation" as "operation." Defendant cites the patent specification, which identifies "a keyboard, a trackball," "pushbuttons" and "knobs" as examples of "operator input devices" '327 pat., col. 6, lns. 64-68. Although I agree with defendant that these are examples of operator input devices, including this list of examples into the claim language is of little value, especially because the patent specification explains that "other input devices" are used as well. Id. at ln. 67. Therefore, I conclude that both parties' proposals are flawed and that the term "first manipulation of a first operator input device" would not benefit from either construction.

4. "First member." Consistent with the specification and the claims, "first member" shall mean the male member of the two member coupling assembly.

5. "Ridge." This term shall be construed with its ordinary meaning, no further construction is necessary.

6. "Ramp." This term shall be construed with its ordinary meaning, no further construction is necessary.

7. "Apex." Consistent with the specification and the claims, "apex" shall mean "the uppermost surface of the ramp and may be pointed, radiused, cylindrical or flat."

8. "Shoulder." This term shall be construed with its ordinary meaning, no further construction is necessary.

9. "Second member." Consistent with the specification and the claims, "second member" shall mean the female member of the two member coupling assembly.

6. first pivot point

The appropriate legal meaning of the term "first pivot point" is chronological. Cybex and Nautilus correctly argue that the first pivot point is construed as an expression of location, specifically the first pivot point is chronologically the first point that pivots on the end of the extension arm where the arm is supported by the frame. (See Cybex Brief at 5; Nautilus Brief at 17.) Free Motion asserts that the first pivot point is not the first chronological point, rather the first point that pivots in the same functional capacity as the one described in the '061 patent-where the pivot rotates on a parallel axis (See Pl. Brief I at 14, 19-20.) However, the Court finds that the ordinary and accustomed reading of this term simply describes the first chronological point 5 about which the arm turns.

5 Described in specification as "pivot hole 72 through which a pivot pin 74 passes," about which the arm turns. ('061 Patent, col. 4, lines 22-25.)
2. Claim 4, Element 2, "first portion and a second portion"

Claim 4 deals with "construction components," rather than "frames." BMS's proposed definition is:

"'First portion' referring to a construction component that has at least two discrete portions wherein the first portion has at least one surface in contact with a second portion."

"'Second portion' referring to a construction component that has at least two discrete portions wherein the second portion has at least one surface in contact with the first portion such that the second portion substitutes a material other than natural wood for what would otherwise be natural wood."

This definition tries to describe the entire claim in the definition of two terms. There is nothing in the claim language, nor in the rest of the specification that indicates that these are technical terms, or an intent to ascribe any special meaning to first portion or second portion.

"Portion" has been defined as: "a part of any whole, either separated from or integrated with it." Websters Encyclopedic Unabridged Dictionary of the English Language 1120 (1989). "First" and "Second" are not used in any sense of place or space, such as upper and lower, and merely denote that there are separate portions. Therefore the court construes these terms as follows:

"first portion" means: "a part of the whole, which is less than the whole, and is distinguishable from the 'second portion.'"

"second portion" means: "a part of the whole, which is less than the whole, and is distinguishable from the 'first portion.'"

B. "Annular Inner Surface Having At Least A First Portion Extending Inwardly and Upwardly"

Claim 1 recites an impact pad with an outer wall including an "annular inner surface having at least a first portion extending inwardly and upwardly" toward the opening at the top of the impact pad. D.I. 36 at Exh. A, col. 7, ll. 51-53. There are two subsidiary disagreements regarding this phrase. First, the parties differ over the meaning of an "annular inner surface," despite an explicit definition provided for "annular" in the specification. Second, API and CCPI diverge on whether the "first portion" of the impact pad must itself be annular.

1. "Annular Inner Surface"

Both sides agree on what an "inner surface" is for purposes of the '551 patent; their dispute centers on the meaning of "annular." Fortunately, the specification provides some guidance. Annular, as used in the '551 patent, is "not meant to denote any particular shape but is meant to indicate a fully enclosing, endless boundary structure." 4 D.I. 36 at Exh. A, col. 3, ll. 7-10 (emphasis added). API contends the word "endless," as used to define "annular," is ambiguous and this vagary, by implication, clouds the meaning of "annular." "Endless" should be defined, urges API, just as the inventor of the '551 patent, Karl J. Saylor, coined it; that is, "endless" means "without a definite beginning or ending." 5 D.I. 37 at Exh. 4, p. 375.

4 "Annular" is ordinarily defined as "of or relating to a ring: forming a ring: shaped like a ring." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 88 (1971). The Court is not bound by this definition, of course, as "a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special
definition of the term is clearly stated in the file history." Vitronics, 90 F.3d at 1582.5 The Court recognizes this is extrinsic evidence; given the disposition of this issue, however, the nature of this evidence is trivial.

Extrapolating from its definition of "endless," API suggests "annular" should be redefined to signify "a fully enclosing, endless boundary structure without a definite beginning or ending." D.I. 37 at 1. While this may seem mere semantic quibbling, API's true motivation is revealed in the inference it draws from its proposed definition. According to API, a structure without a definite beginning or ending is "without surface discontinuities." D.I. 48 at 2. In other words, API interprets "endless" to limit the meaning of an "annular inner surface" to an inner surface that is "continuous" and is "not interrupted by intermediate structures." Id. CCPI, on the other hand, does not cavil about "endless"; it simply argues an "annular inner surface" can be any shape, so long as, when viewed from above, it surrounds an inner space or cavity.

API's most powerful argument in support of its interpretation is that CCPI's reading elides the word "endless" from the definition of "annular." To reiterate, "annular" indicates "a fully enclosing, endless boundary structure." D.I. 36 at col. 3, ll. 7-10. Requiring an annular structure merely to surround an interior space when viewed from above, API contends, ascribes to "endless" the same meaning as the phrase that immediately precedes it--"fully enclosing." 6 API points to the specification statement "any geometric shape which fully encloses or defines an[ ] endless boundary" will suffice under the '551 patent. Id. at col. 7, ll. 34-39. According to API, this disparate use of "fully enclose" and "endless" illustrates "fully enclosing" and "endless" cannot have the same meaning. API's proposal, it submits, does not make "endless" surplusage; as API puts it, its interpretation "breathes life and meaning into the term 'endless.'" D.I. 48 at 2.

6 Of course, "fully enclosing" does not mean the impact pad has no ingress or egress for the stream of molten metal; otherwise, the impact pad would be useless. Rather, the specification and patent makes clear that a "fully enclosing" structure is one which, when viewed from above, surrounds an interior space or cavity. See, e.g., D.I. 36 at Exh. A, col. 5, ll. 1-6; col. 7, ll. 2-7.

The short answer to this is API wants to resuscitate a term that already has too much animation and too many uses; "endless," as strewn haphazardly throughout the '551 patent and its prosecution history, seems to mean many things, yet nothing, and certainly not the limiting effect API gives it. For example, in the summary of the invention, the specification describes an "endless annular side wall" of the impact pad. D.I. 36 at Exh. A, col. 2, ll. 53, 57. The use of "endless" there is tautological, of course, since an annular wall is, by the specification definition, "endless." The pad is later described as including "an endless annular . . . outer side wall having an annular . . . inner wall surface . . . ." Id. at col. 6, ll. 2-4. Again, for the same reason, "endless" becomes so much wasted typeface. Finally, in the file wrapper, CCPI stated, "While the impact pad of the present invention may be formed with different shapes when viewed from above, in each case there is an endless side wall, or, in other words, a sidewall which surrounds an interior space or volume of the pad." D.I. 36 at Exh. C., p. 36 (emphasis added). According to CCPI, this statement shows "endless" was employed as a synonym for "fully enclosing."

This indiscriminate use of "endless" 7 only serves to highlight the principal flaw in API's position: API attributes limitations to the claims from a word found nowhere in the claim itself, but only as subsumed in "annular." When the claims are examined in conjunction with the specification and prosecution history, the limitations API would impose--no discontinuities or intermediate structures on the inner surface--cannot be found; they cannot be discerned in "endless" as it hopscotches throughout the specification and they cannot be imputed to the broader definition of "annular inner surface." As noted earlier, the specification repeatedly disavows the notion "annular" is meant to denote a particular shape. See D.I. 36 at col. 3, ll. 7-10. Indeed:

While the impact pad of the present invention is preferably circularly shaped and while one alternative shape has also been shown and described [a rectangle], many shapes for the side walls of the impact pad are possible and fall within the scope of the present invention. Any geometric shape which fully encloses or defines an[ ] endless boundary for an interior space of the pad and redirects the incoming molten metal flow back into itself and creates a flow pattern away from the
ladle shroud will perform similarly to the illustrated embodiments.

D.I. 36 at col. 7, ll. 29-39 (emphasis added). API's definition would run contrary to these teachings; it would limit the shape of the walls of the impact pad. Accordingly, it is unnecessary to define "endless"; it does not disturb the meaning of "annular."

--- Footnotes ---

7 "Endless" appears nine times in the specification; five times in connection with the "annular side wall" (which can be the outer or inner wall of the impact pad), see D.I. 36 at Exh. A, col. 2, ll. 49, 53, 56-57, col. 3, l. 6, col. 5, l. 66; twice as a description of the outer side wall (once in connection with the "annular" outer side wall), id. at col. 5, ll. 1-2, col. 6, ll. 2-3; once, of course, in the definition of "annular" itself, id. at col. 3, l. 9; and once to describe a "boundary for an interior space of the pad[.]", id. at col. 7, ll. 35-36.

--- End Footnotes ---

Even if the Court defined "endless" in accordance with its usual meaning, i.e., without an end, 8 this definition would not engender API's proposed limitations on the shape of "annular inner surface." To elaborate, one can trace with a pencil an outline of a circle or rectangle--which are the preferred embodiments of the inner surfaces of the '551 impact pads when viewed from above, see D.I. 36 at Figures 3-5--and API concedes this outline is "endless," or "without a definite ending." API seems to argue the inner surface fails to qualify as "endless" as soon as an irregular portion of the inner surface protrudes into the interior cavity of the pad; for example, API presumably characterizes the inner surface of an impact pad, when viewed from above, that forms a square with a triangular protrusion in each corner as lacking an "endless" quality. But this assertion is misplaced. First, as rehearsed earlier, the specification allows for any shape. Second, a continuous outline can be traced along such an inner surface--the pencil never reaches an ending point--despite the surface irregularity.

--- Footnotes ---

8 This differs from API's proposed definition of "without a definite beginning or ending."

--- End Footnotes ---

Accordingly, the Court concludes CCPI's definition of "annular inner surface" is correct; that is, so long as an inner surface, when viewed from above, surrounds an interior space or cavity, that surface will be considered "annular."

2. "First Portion Extending Inwardly and Upwardly"

At oral argument, the parties added a new wrinkle to their dispute: regardless of the interpretation of "annular," the parties also disagree as to whether the first portion of the annular inner surface which extends inwardly and upwardly must itself be "annular." See D.I. 52 at 117, ll. 18-20. Or, put another way, the Court must decide whether "annular" modifies "first portion" as well as "inner surface" in the claims. 9 Id. API contends the first portion must be annular, while CCPI maintains the first portion need not be annular so long as it extends upwardly and inwardly toward the opening of the impact pad and achieves the other functional elements of the claim.

--- Footnotes ---

9 To reiterate, claim 1 recites:

A tundish impact pad formed from a refractory composition capable of withstanding continuous contact with molten metal, said pad comprising a base having an impact surface and an endless outer side wall extending upwardly therefrom and fully enclosing an interior space having an upper opening for receiving a stream of said molten metal, said outer wall including an annular inner surface having at least a first portion extending inwardly and upwardly toward said opening, whereby when a downwardly directed stream of molten metal from a ladle outlet disposed above said impact pad strikes said impact surface, said stream is directed outwardly toward said annular inner surface and then redirected upwardly and inwardly toward the incoming ladle stream.

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D.I. 36 at Exh. A, col. 7, ll. 45-60 (emphasis added).

(a) Claim language

Claim interpretation begins, of course, with the claim language itself. Eastman Kodak Co., 114 F.3d 1547 at ..., 1997 U.S. App. LEXIS 11831, 1997 WL 261364, at *3. The word "portion" has an ordinary and well-recognized meaning. 10 The most natural reading of the claim supports the view the first portion must itself be annular. In common parlance, a portion most often possesses the attributes of the whole. 11 Nevertheless, the Court recognizes there are instances this may not be true. Accordingly, resort to the specification is necessary to give context to the claim language.

10 Portion is defined as "a part of a whole." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1768 (1971). The Federal Circuit Court of Appeals has characterized dictionaries as a higher species of extrinsic evidence, with the caveat that judges "may . . . rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." Vitronics, 90 F.3d 1576 at 1584 n.6. See also Eastman Kodak, 114 F.3d 1547 at , 1997 WL 261364, at *3 (employing dictionary in claim construction).

11 For example, consider the following statement: There is a wooded park, having a portion extending into the lake. It is clear in this instance the portion which extends into the lake must itself be wooded.

(b) Specification

The specification states "one annular portion of the inner side wall surface curves outwardly and upwardly" from the base of the impact pad "and meets another annular portion which curves concavely inwardly and upwardly to a vertical inner wall surface." D.I. 36 at Exh. A, col. 5, ll. 6-11 (emphasis added; references to figures depicted in patent omitted). A little later, the specification describes "one or both of the annular surface portions" as potentially "flat and angled outwardly and inwardly, respectively, instead of curved[,]" and states, "Each of these alternative designs still includes an annular side wall inner surface portion extending inwardly and upwardly toward the opening [of the impact pad] to create the desired flow pattern described herein." Id. at col. 5, ll. 16-25 (emphasis added). Every one of the preferred embodiments displays a fully enclosing portion that extends upwardly and inwardly. 13 See id. at Figures ("Fig.") 1-6. Finally, as noted earlier, there is a declaration in the specification that "any geometric shape which fully encloses or defines and [sic] endless boundary [i.e., is annular] for an interior space of the pad and redirects the incoming molten metal flow back into itself . . . will perform similarly to the illustrated embodiments." Id. at col. 7, ll. 34-39. Each of these references, then, describes the portion of the inner surface which extends upwardly and inwardly as annular.

13 Both parties agree "annular" means, at minimum, fully enclosing.
CCPI tries to spin this seemingly damaging language to its own benefit. According to CCPI, these references show CCPI recognized its ability to use the word "annular" when it so desired; in the claims, it chose not to modify "first portion" with "annular." Therefore, CCPI asserts, the "annular" limitation of "first portion" in the specification should not be read into the claim.

There is a fine line between the use of the specification to clarify otherwise cloudy terms in the claim and the extraction of limitations from the specification to impose those limitations on the claims. The first is encouraged, the latter impermissible. CVI/Beta Ventures, Inc., 112 F.3d 1146 at 1997 WL 214809, at *11 ("As a general matter, the claims of a patent are not limited by preferred embodiments."); Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994) ("Claims are not to be interpreted by adding limitations appearing only in the specification."); In re Van Geuns, 988 F.2d 1181, 1184 (Fed. Cir. 1993) ("Limitations are not to be read into the claims from the specification."); Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989) ("Limitations appearing in the specification will not be read into claims, and . . . interpreting what is meant by a word in a claim is not to be confused with adding an extraneous limitation appearing in the specification[]. . . ."); Fonar Corp. v. Johnson & Johnson, 821 F.2d 627, 632 (Fed. Cir. 1987) (using specification to interpret ambiguous term in claim); Roll Sys., Inc. v. Wallace Computer Sys., Inc., 901 F. Supp. 389, 392 (D. Mass. 1995) (quoting above language from Intervet court).

This is an instance when a claim term--specifically, "portion"--is ambiguous, and the specification implies a meaning other than the one urged by CCPI. Each reference in the specification reinforces the most natural reading of the claim. Accordingly, the specification is not being used to import an extraneous limitation to the claims; instead, it is used to hone the meaning of murky language already in the claims.

The Court concludes, therefore, the "first portion extending inwardly and upwardly," as that term is used in the '551 patent, must itself be annular.

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c. first position / second position

With respect to the first and second orientations described in these terms, LGD argues that the first supporting portion or position must be located near an upper edge of the frame. LGD and AUO generally agree that the second position is determined by reference to the first position, but to the extent LGD's construction of the second position depends from its upper frame requirement of the first position, AUO contends that LGD's construction is incorrect. According to AUO, there is no upper edge location requirement and the first position is simply an initial position. D.I. 1383 at PP 513-516.

The Court agrees with AUO and concludes that no such upper edge limitation exists in the claim. In the Court's view, adopting LGD's proposal in this regard would improperly limit the claims to the preferred embodiments. Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004). Accordingly, the Court concludes that a first position means "an initial position of a liquid crystal display unit" and a "second position" means "the position determined by reference to the angle of rotation between the first and second position."

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8. "First Pressure," "First Ram Pressure," "Second Pressure" and "Third Pressure"

Claim 1(c) of the '207 patent recites these terms in the following manner:

(i) heating said core for a first period of time; (ii) applying a first pressure to said core for a second period of time such that said at least one electronic element is encapsulated by said core; (iii) cooling said core while applying a second pressure to said core.
'207 patent, col. 6:32-36.

Claim 16(c) recites:

(i) heating said core in said laminator, in the presence of a minimal first ram pressure, to a temperature which causes controlled flow of said plastic which makes up said first and second plastic core sheets; (ii) applying a second pressure uniformly across said core for encapsulating said at least one electronic element within said controlled flow plastic; (iii) subsequently cooling said core in conjunction with the concurrent application of a third pressure uniformly across said core.

'207 patent, col. 8:22-32.

The issue here is whether the terms "first," "second" and "third," as used in this and other claims, refer to the sequential order in which the steps are to be performed -- so that, in claim 1, step (c)(ii) must be performed before step (c)(iii), and in claim 16, step (c)(i) must be performed before step (c)(ii), which must be performed before step (c)(iii) -- or whether these words are used simply to differentiate between like elements (three different applications of pressure), without intending any sequential limitation, so that the steps can be performed in any sequential order.

It is of course well settled that "comprising" language renders a claim open-ended. Invitrogen Corp., v. Biocrest Mfg., 327 F.3d 1364, 1368 (Fed. Cir. 2003). And in many patents, the words "first pressure," "second pressure," and "third pressure" would indicate nothing more than that there are several different levels of pressure, which readers of the patent would have to distinguish among as they parsed the patent.

It is also true, however, that the terms "first," "second" and "third" can be read to denote the order of steps. See Applera Corp. v. Micromass UK Ltd., 186 F. Supp. 2d 487, 505 (D. Del. 2002), aff'd without published opinion, 60 Fed. Appx. 800 (Fed. Cir. 2003). While the terms "first," "second," and "third" are commonly used to identify separate claim elements, nothing precludes finding that the terms also specify temporal or positional relationships. Id. Where the language of the claim, the specification and the prosecution history logically indicate a sequential process, recited steps in a claim must be read to require a sequential order. See, e.g., Loral Fairchild Corp. v. Sony Electronics Corp., 181 F.3d 1313, 1322 (Fed. Cir. 1999); Mantech Envtl. Corp. v. Hudson Envtl. Services Inc., 152 F.3d 1368, 1376 (Fed. Cir. 1998).

The context of these terms in the patents in suit makes it abundantly clear that the terms are used to denote the relative order of the steps -- that is, their order vis-a-vis each other. Indeed, counsel for Plaintiff admitted as much at the Markman hearing. For example, in claim 1, step (c) of the '207 patent, the pressure that is applied during cooling must follow the pressure that is applied to "encapsulate" the element in plastic. In claim 16 of the same patent, the "minimal ram pressure" that is applied during the process of heating the core and melting the plastic necessarily precedes the application of the "second pressure" which encapsulates the element in liquefied or partially liquefied plastic, which in turn necessarily precedes application of the "third pressure" as the hot, molten plastic cools. 10 Thus, the words "first," "second" and "third" both distinguish among three distinct steps in the claimed process and denote the order in which the three steps outlined in the claims are to be performed relative to one another.

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10 Plaintiff conceded in its Markman presentation that in claim 16, step c(iii) must follow step c(ii), pointing to the use of the word "subsequently" in step c(iii).

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However, Defendant would have me go further. Oberthur argues that these terms should be construed so that "first pressure" and "first ram pressure" would be limited to "the very first pressure applied during the heat and pressure cycle." The term "second pressure" would be limited to "the next pressure applied after the first pressure during the heat and pressure cycle." And the term "third pressure" would be limited to "the next pressure applied after the second pressure during the heat and pressure cycle." (Def. Br. at 37.) Defendant's proposed construction precludes the application of any pressure prior to the application of whatever pressure is designated as "first" and the insertion of any pressure between the step involving the "first pressure" and the step involving the "second pressure." In other words, Defendant argues that the words "first," "second," and "third" indicate not only the relative order of the claimed steps vis-a-vis each other, but also the absolute order
Defendant has not presented any convincing reason why the words "first," "second" and "third" as used in the cited claims mean connote absolute order as opposed to relative order. Defendant's counter-arguments based on the purported "main objective" of the patent is not persuasive; neither does the patentee's use of the phrase "highly coordinated" process indicate that "first," "second" and "third" mean "very first" and "next one after the very first," etc.

Moreover, language taken from a dependent claim strongly suggests that the words ought not to bear the limiting meaning assigned to them by Defendant. Dependent claim 18 of the '367 patent recites, "The process according to [independent] claim 1 wherein the pressure on said core in step (c)(i) is less than 10 p.s.i." Step (c)(i) in claim 1 recited heating the core for "a first period of time." It is not until step (c)(ii) of claim 1 that "a first pressure" is applied. Indeed, in the '207 provisional application, claim 1 expressly indicated that no pressure was to be applied to the core at the beginning of the first heat cycle. (That restriction was removed from the final '207 application.) Thus, dependent claim 18 of the '367 patent narrows claim 1 by reciting an application of very light pressure (less than 10 p.s.i.) prior to the application of "a first pressure."

But Defendant argues that claim 18 does not help Leighton because the claim itself is indefinite under the "Lack of Antecedent Basis" doctrine as set forth in the Manual of Patent Examining Procedure (MPEP) § 2173.05(e).

Dependent claim 18 recites "the pressure" to be applied during a certain step (step (c)(ii)) as disclosed in claim 1. Step (c)(i) in claim 1 does not mention any application of pressure. Therefore, according to Defendant, "the pressure on said core in step (c)(i)" (emphasis added), as recited in claim 18, has no antecedent, and Leighton is trying to read something into that claim that is not there.

Plaintiff responds that claim 1 and claim 18 of the 367 patent disclose two different embodiments of a single invention, and that as long as the two or three pressures disclosed in the patent claims are part of an enclosure/lamination process, that process is covered by the patent.

On reflection, I reject defendant's argument as too narrow a reading of the "lack of antecedent basis" doctrine.

Section 2173.05(e) of the MPEP reads, in pertinent part,

A claim is indefinite when it contains words or phrases whose meaning is unclear. The lack of clarity could arise where a claim refers to "said lever" or "the lever," where the claim contains no earlier recitation or limitation of a lever and where it would be unclear as to what element the limitation was making reference...

However, the Manual goes on to read:

Obviously, however, the failure to provide explicit antecedent basis for terms does not always render a claim indefinite. If the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite. . . The totality of all the limitations of a claim and their interaction with each other must be considered to ascertain the inventor's contribution to the art.

Considering the "totality of all the limitations" of claims 1 and 18 of the '367 patent, Defendant's interpretation cannot be correct. Step (c)(ii) of claim 1 recites, "applying a first pressure to said core." As noted above, "a first pressure" does not necessarily mean that no pressure was applied during a prior step. While step (c)(i) does not specifically state that pressure must be applied, it does not preclude the application of pressure, either. Dependent claim 18 is most reasonably interpreted to limit claim 1 to the situation where pressure on the core in step (c)(i), if any, is less than 10 p.s.i. And I note that "less than 10 p.s.i." of pressure encompasses no pressure whatsoever.

Courts interpreting patents routinely avoid indefiniteness by interpreting language to provide for an antecedent basis. See, e.g., Astra Aktiebolag v. Andrx Pharms., Inc. (In re Omeprazole Patent Litig.), 222 F. Supp. 2d 423, 458 (S.D.N.Y. 2002) (interpreting an antecedent phrase, "alkaline reacting compound," to include by definition the phrase in question, "micro-environment," in order to (i) find antecedent basis for "the micro-environment" and (ii) avoid indefiniteness for lack of antecedent basis) (emphasis added). Most particularly, in Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1344 (Fed. Cir. 1998), the Federal Circuit noted that if a claim is "susceptible to a broader and narrower meaning, and the narrower one
is clearly supported by the intrinsic evidence while the broader one raises questions of enablement under [the MPEP], [the court must] adopt the narrower of the two." See also Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed. Cir. 1999) (if a claim is susceptible to two interpretations, one of which renders it valid and the other of which renders it invalid, the claim must be construed to sustain its validity).

Outside the patent context, there are cases concluding that use of the definite article "the" particularizes the subject and narrows the possible class of possible antecedents. For example, in Freytag v. Commissioner of Internal Revenue, 501 U.S. 868, 902, 111 S. Ct. 2631, 115 L. Ed. 2d 764 (1991), Justice Scalia, in a concurring opinion that did not command a majority on the Supreme Court, concluded that use of the definite article "the" in the phrase "the Courts of Law" (which appears in the Appointments Clause of the Constitution, Art. II, § 2, cl. 2) narrowed a class to specific "envisioned" members. Similarly, while engaging in statutory construction in the context of a patent case, the Federal Circuit concluded that Congress's decision to say "the use" rather than "a use" meant "a specific" use rather than a "previously undefined" use. Warner-Lambert Co. v. Apotex Corp., 316 F.3d 1348, 1356 (Fed. Cir. 2003) (citing Freytag, 501 U.S. at 902). Finally, in American Bus Association v. Slater, 343 U.S. App. D.C. 367, 231 F.3d 1, 4-5 (D.C. Cir. 2000), the D.C. Circuit called the notion that the article "the" particularizes its subject "a rule of law."

But none of these pronouncements involved patent claim construction, which has its own specialized rules, the first of which is that, wherever possible, a claim is to be construed to make sense of the claim. No case has been cited to the Court, and I have found none, that applies Justice Scalia's Freytag analysis to render a patent claim indefinite. I conclude that the cases cited in the preceding paragraph are inapposite here. 11

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11 I am bolstered in this conclusion by the fact that Oberthur did not cite these cases in its brief. My law clerk found them while we were exploring Oberthur's argument.

--- End Footnotes ---

Therefore, considering the "totality of the limitations," I find claim 18 has antecedent basis in claim 1, step (c) as a whole, and is not indefinite.
Similarly, the specifications discuss the "first," "second," and "third" regions with regard to the characteristics of cutters located in those regions. In particular, the '249 Patent states:

The cutters themselves, as disposed in first region 226, are backraked at 20 [degrees] to the bit profile at each respective cutter location, thus providing chamfers 124 with a 65 [degrees] backrake. . . . Cutters . . . disposed in second region 228 . . . are themselves backraked at 15 [degrees] on nose 232, providing a 60 [degrees] chamfer backrake, while cutter backrake is further reduced to 10 [degrees] at the flank 234, shoulder 236 and on the gage 207 of bit 200, resulting in a 55 [degrees] chamfer backrake.

'249 Patent col. 6:10-23.

Likewise, the '715 Patent specification describes the regions in the three-region embodiment in terms of the cutters located in those regions:

[A]t least one of the plurality of the cutters located in first region . . . exhibit respective effective cutting face backrake angles which may be characterized as being relatively nonaggressive . . . . In contrast to the generally less aggressive cutters positioned generally in first region . . . , at least one of the plurality of the cutters, and preferably at least a majority of the cutters located in second region . . . , exhibit respective effective cutting face backrake angles which may be characterized as being relatively aggressive . . . . [T]hird region 228' is provided with at least one cutter . . . exhibiting respective effective cutting face backrake angles which may be characterized as being relatively aggressively in comparison to the cutters positioned generally in first region 226 and second region 228.


The '249, '715, and '631 Patents only disclose drill bits with cutters located on the drill bit blades. While the "first," "second," and "third" regions could encompass other areas on drill bit, such a construction would make little sense, as the patents only use the first, second, and third regions to identify cutter attributes of cutters in each region, and such cutters are located on the drill bit blades.

Further, figures in the '249 and '715 Patents support limiting the "first," "second," and "third" regions to the area defined by the drill bit blades. Fig. 10 of the '249 and '715 Patents, which depicts the two-region embodiment, shows the "first" and "second" regions located along the profile of the drill bit. The bit profile, as discussed above, is defined by the drill bit blades. Thus, the "first" and "second" regions extend along the blades.

Similarly, Fig. 13 of the '715 Patent, which depicts the three-region embodiment, shows the "first," "second," and "third" regions along the bit profile, which is defined by the drill bit blades. Finally, Fig. 12 of the '715 Patent, an oblique face view of the three-region embodiment, shows the three regions along the blade of the bit. Thus, "first region," "second region," and "third region" extend along the blades and do not extend around the circumference of the bit face.

Whether Regions Are Limited to Certain Areas on Drill Bit Face

Baker Hughes contends the "first region" is located "generally on the center of the bit face or on leading end of the bit radially closest to the centerline or longitudinal axis of the drill bit body." It contends the "second region" is located "generally radially distant or remote from the centerline or longitudinal axis of the drill bit body between the first region and the outer region at the maximum or outermost diameter of the face or leading end of the bit." Lastly, Baker Hughes contends the "third region," if it is present, is located "generally radially in between the fist and second regions." ReedHycalog argues these terms do not need construction and the regions are not limited to specific areas on the bit face.

The '249 and '715 Patents disclose the "first region" closest to the center, a "second region" radially more distant than the first region, and a "third region," if present, located radially between the first and second regions. E.g. '249 Patent Fig. 10; '715 Patent Figs. 10, 12, 13.

The '631 Patent only mentions the regions in the claim language and uses the regions to distinguish the cutters located in each region. '631 Patent col. 26:3-13, col. 26:16-17. The '631 Patent only discloses cutters secured on the drill bit blades, one cutter per radial location. Id. at Figs. 1, 2, 2A, 14A, 15A, 15B. As a result, one region is radially closer to the centerline of the drill bit than the other region, and the label of each region only matters with regard to the characteristics of the cutters.

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located in each region. It is consistent with the dependant claims of the '631 Patent and the '249 and '715 Patents specifications to label the inner region as "first region" and the outer region as "second region." Id. at col. 36:13-50; '249 Patent Fig. 10; '715 Patent Figs. 10, 12, 13.

Therefore, "first region" means "area or region defined by the blades of the bit, located generally on the center of the bit face or on the leading end of the bit radially closest to the centerline or longitudinal axis of the drill bit body, labeled 226 in Fig. 10 of the '249 Patent and Figs. 10, 12, and 13 of the '715 Patent." 11 "Second region" means "area or region defined by the blades of the bit, located generally radially distant or remote from the centerline or longitudinal axis of the drill bit body between the first region and the outer region at the maximum or outermost diameter of the face or leading end of the bit, labeled 228 in Fig. 10 of the '249 Patent and Figs. 10, 12, and 13 of the '715 Patent." 12 "Third region" means "area or region, if any, defined by the blades of the bit, located generally radially in between the first and second regions, labeled 226' in Figs. 12 and 13 of the '715 Patent." 13

--- Footnotes ---

11 Ref. No. 10 of Appendix B contains the disputed term "first region" and its construction.

12 Ref. No. 11 of Appendix B contains the disputed term "second region" and its construction.

13 Ref. No. 12 of Appendix B contains the disputed term "third region" and its construction.

--- End Footnotes ---

However, these constructions do not connect "first region," "second region," or "third region" to the terms "cone," "nose," "flank," "shoulder," or "gage." Courts presume a difference in meaning and scope when a patentee uses different phrases in separate claims. Phillips, 415 F.3d at 1314-15. Where a party seeks to limit an independent claim with language that appears in a dependant claim, the presumption is especially strong. Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004). However, the doctrine of claim differentiation is not a "hard and fast rule," and courts cannot use the doctrine to broaden claims beyond their correct scope, determined in light of the intrinsic record and relevant extrinsic evidence. Seachange Int'l, Inc. v. C-COR, Inc., 413 F.3d 1361, 1369 (Fed. Cir. 2005); see also Phillips, 415 F.3d at 1312-15.

The independent claims in the '249 and '715 Patents do not limit any of the regions to a particular location on the bit face. Only the dependant claims define the first, second, and third regions of the bit face with the terms "cone," "nose," "flank," and "gage." '249 Patent col. 8:64-67 (claiming rotary drag bit "wherein the first region lies within a cone . . . and the second region extends at least over a nose and flank . . . ."); '715 Patent col. 20:29-33 (claiming a rotary drag bit "wherein the first region lies within a cone . . . , the second region extends over at least a flank . . . . , and the third region extends over at least a nose . . . ."); '249 Patent col. 9:1-2 (claiming a rotary drag bit "wherein the second region extends to a gage of the bit body"); '715 Patent col. 20:34-35 (claiming a rotary drag bit "wherein the second region extends to the gage of the bit body"); '631 Patent col. 36:25-29 (claiming a rotary drag bit "wherein the first region comprises a cone region and the second region comprises at least one of the group consisting of a nose region, a shoulder region, and a flank region"). Though these terms do not explicitly include the "shoulder region," the "second region" necessarily includes the "shoulder" if the "second region" extends to the "gage" of the drill bit face. E.g. '249 Patent Fig. 10; '715 Patent Figs. 10, 13.

Constructions of "first region," "second region," and "third region" that include the terms "cone," "nose," "flank," "shoulder," or "gage" would render dependant claims 2 and 3 of the '249 Patent redundant with independent claim 1 of the '249 Patent, would render dependent claims 2 and 3 of the '715 Patent redundant with independent claim 1 of the '249 Patent, and would render dependent claim 68 of the '631 Patent redundant with independent claim 64 of the '631 Patent. Therefore, it is presumed "first region," "second region," and "third region" do not include "cone," "nose," "flank," "shoulder," or "gage" limitations.

The '249 and '715 Patents specifications state "first region" "may be said to comprise the cone 230," "second region" "may be said to comprise nose 232, flank 234, and generally includes shoulder 236 of profile 224," and "third region" "generally corresponds to nose 232." '249 Patent col. 5:65--col. 6:2; '715 Patent col. 9:35-39, col. 13:2-5. This permissive language is not sufficient to rebut the presumption that "first region," "second region," and "third region" are not so limited. See Gillette Co. v. Energizer Holdings, Inc., 405 F.3d 1367, 1371 (Fed. Cir. 2005) (transition "comprising" is presumptively not limited.
to recited elements, and can include additional elements not recited).

In addition, any definitions of "first region," "second region," and "third region" that include the terms "cone," "nose," "flank," and "shoulder" either exclude an embodiment of the inventions or may confuse a jury. In the two-region embodiment, the "first region" contains the "cone" and the "second region" contains the "nose," "flank," and "shoulder" regions of the bit profile. '249 Patent col. 5:65--col. 6:2; '715 Patent col. 9:35-39. In the three-region embodiment, the "second region" contains the "flank" and "shoulder" regions, while the "third region" contains the "nose." '715 Patent Fig. 13, col. 12:55--col. 13:9. An accurate construction of "second region" that contains "nose," "shoulder," or "flank" would therefore take into account both embodiments, which would be unnecessarily wordy and confusing.

3. The next disputed phrases are "a first rigid frame positioned at one end of said container" and "a second rigid frame positioned at the other end of said container."

The court adopts the construction of the special master which is "A separate skeletal structure designed to shape or support that is made up of parts fitted or joined together. The front frame must help support the weight of the container body."

9. "First" and "Second" Stitch

The terms "first" and "second" are used to describe stitches in both the method and product claims of the patents-in-suit. For example, in Claim 1 of the 779 Patent, a method claim, step (c) of the seam manufacturing process requires "sewing the first and second garment components and the bonding element together by a first set stitch running along the seam" and step (f) requires "sewing the first and second garment components and the bonding element together by a second stitch running along said seam." 779 Patent at 6:37-39, 6:47-49 (emphasis added). In Claim 20 of the 779 Patent, a product claim, the seam is defined as comprising "a first set stitch running along a first side of the seam and traversing through the bonding element . . . the first garment component . . . and . . . the second garment component . . ." and "a second stitch running along a second side of the seam and traversing through the . . . first garment component . . . the bonding element . . . and the second garment component." 779 Patent at 8:25-30, 8:31-36 (emphasis added). The 615 Patent uses "first" and "second" to describe stitches in Claims 1 and 19, method and product claims, respectively. 615 Patent at 6:44-47, 6:56-60, 8:17-26. In contrast to step (f) in Claim 1 of the 779 Patent, step (f) in Claim 1 of the 615 Patent references both stitches and speaks of "sewing a second stitch running along a side of the seam opposite the first stitch. . . ." 615 Patent at 6:56-57 (emphasis added).

Both parties agree that the "first stitch" is a set stitch and that the "second stitch" is a top stitch. See, e.g., Taltech's Supplemental Brief, docket no. 137, at 15; Esquel's Supplemental Brief, docket no. 140, Ex. A at 2. 6 The parties' dispute is not over whether these stitches are different types of stitches but whether these stitches must come in a particular order. Taltech asks the Court to construe "first stitch" to mean "one stitch" and "second stitch" to mean "another stitch different from the first stitch." Taltech relies on the claims and on the specifications. Esquel asks the Court to construe "first stitch" to mean "the very first stitch made in the seam manufacturing process" and "second stitch" to mean "the next stitch made in the seam manufacturing process after the first set stitch." Esquel relies on the claims, on the specifications, on the prosecution history of the 779 Patent, on dictionary definitions of "first" and "second," on Taltech's "tutorial" (Taltech's Markman Ex. 7), on the Esquel animation (Esquel's Markman Ex. 3), and on admissions made by Taltech's counsel at the Markman hearing.

The patents use "first stitch" and "first set stitch" interchangeably. The prosecution history of the 779 Patent shows that the word "set" was added to Independent Claims 17 and 34, which became Independent Claims 1 and 20, to clarify that the "first stitch" is a "set stitch." 779 Prosecution History, March 11, 1996, Amendment Filed Under 37 C.F.R. § 1.115, docket no. 85, Ex. D (part 2) at 13. This change, however, was not consistently applied throughout the patents-in-suit. As a result, sometimes the patents refer to the "first stitch" and other times to the "first set stitch." The Court uses "first stitch" to mean "first set stitch."
While it is true that "[t]he use of the terms first' and second' is a common patent-law convention to distinguish between repeated instances of an element or limitation," see 3M Innovative Props. Co. v. Avery Dennison Corp., 350 F.3d 1365, 1371 (Fed. Cir. 2003), the patents-in-suit do not use the terms "first" and "second" to distinguish between repeated instances of the same thing. Rather, the patents-in-suit use the terms "first" and "second" to distinguish between different types of stitches. As a result, the 3M "common patent-law convention" does not apply in the present case.

The Court first looks to the claims to construe "first stitch" and "second stitch." Step (f) in Claim 1 of the 615 Patent speaks of "sewing a second stitch running along a side of the seam opposite the first stitch such that..." 615 Patent at 6:56-57 (emphasis added). This claim language shows that the first stitch must be sewn prior to the sewing of the second stitch. Taltech admits this by way of its proposed construction of "a method . . . comprising the steps." See Taltech's Supplemental Brief, docket no. 137, at 8 (arguing that the language and logic of Claim 1 of the 615 Patent requires step (f), the sewing of a second stitch, to occur after step (e), the folding of the first garment component, which in turn must occur after step (d), the sewing of a first set stitch).

In multiple instances, Taltech has admitted that the first set stitch is sewn prior to the second top stitch. Taltech's "tutorial" described how the armhole seam is created in "three steps":

First, the sleeve is attached, or set' to the shirt body with the set stitches [first and additional stitches]. The body panel is folded over the set stitches and a top stitch [second stitch] is applied. Next, the sides of the sleeve and shirt body are sewn together with the side seam.

Taltech's 'tutorial' (Taltech's Markman Ex. 7 at 11). During the Markman hearing, Taltech described how the second top stitch comes after the first set stitch in the preferred embodiments:

This set stitch 38 [first stitch] goes through the first and second garment components and fixes them together and has to do that before this is folded over and the top stitch 40 [second stitch] is applied. You just asked me about the top stitch 40 [second stitch], does it have to take place after the set stitch 38 [first stitch], and I said yes.

Markman Hearing Tr., docket no. 130, at 84.

The specifications indeed show that the first set stitch 38 is sewn prior to the second top stitch 40 in the preferred embodiments. See Figs. 3a-3b, 4a-4b. Although the preferred embodiments alone are insufficient to impose a limitation on the claims, their depiction of the first set stitch preceding the second top stitch is consistent with the language of step (f) in Claim 1 of the 615 Patent.

The Court must construe "first stitch" and "second stitch" in light of all of the claims, including Claims 17 and 18 of the 779 Patent and Claim 18 of the 615 Patent, which describe sewing an "additional stitch" "prior to the step of sewing the ... second stitch. ..." 779 Patent at 7:59-8:2; 615 Patent at 7:61-67; see Vitronics, 90 F.3d at 1582 (considering other claims of the patent in question). Esquel's proposed construction -- which requires "first stitch" to mean "the very first stitch made in the seam manufacturing process" and "second stitch" to mean "the next stitch made in the seam manufacturing process after the first set stitch" -- precludes the sewing of an additional stitch prior to the second stitch, which cannot be correct. Esquel argues that its proposed construction is consistent with the "additional stitch" claim language because the first set stitch and the additional stitch are sewn simultaneously. The Court rejects this argument because the first and additional stitches are not necessarily sewn simultaneously. Claim 18 of the 779 Patent requires the first and additional stitches to be sewn simultaneously, implying, under principles of claim differentiation, that this is not the case in Claim 17. 779 Patent at 7:57-8:2. Thus, the additional stitch may be sewn prior to, at the same time as, or after the first stitch. To the extent the additional stitch occurs after the first stitch, Esquel's proposed construction does not work because this construction would require the second stitch to be the "next" stitch after the first stitch.

The Court must construe the terms "first stitch" and "second stitch" consistently across all method and product claims. Taltech argues that any temporal limitation is meaningless with respect to its product claims because a product claim may not be limited by its disclosed method of manufacture. See Cordis Corp. v. Medtronic AVE, Inc., 339 F.3d 1352, 1357 (Fed. Cir. 2003) (declining to superimpose a process limitation on the product claims at issue). The imposition of a process limitation on Taltech's product claims is unavoidable here because the intrinsic evidence compels the imposition of a temporal limitation.

Taltech's proposed construction is too broad, and Esquel's proposed construction is too narrow. Accordingly, the Court
adopts a construction that combines concepts from both of the parties’ proposed constructions, and construes the term "first stitch" to mean "one stitch" and the term "second stitch" to mean "another stitch after the first stitch, but not necessarily the next stitch after the first stitch."

6. "With the first terminal of the battery"

Claim 9 includes "a contactor having a spring . . . and at least one contact for electrical connection with the first terminal of the battery." ‘900 Patent col.11 1.36-41 (emphasis added). Invisible Fence proposes that the "first terminal of the battery" is "one of the two terminals of the battery," while Perimeter argues that a proper reading should be that the "first terminal of the battery is "the anode terminal of the battery that is positioned adjacent to the base, i.e., opposite the open end of the cup-shaped battery holder through which the battery is inserted." 18 (Joint Statement 5.)

Perimeter provides no scientific or technical reason for why the first terminal must be the anode terminal, and instead relies on the Description. 19 See, e.g., ‘900 Patent col.7 1.14-18 ("The battery . . . is orientated inside the battery holder . . . so that the anode terminal faces the battery base . . . and the cathode terminal faces the opening of the battery holder . . . "). Because the language of claim 9 does not require that the first terminal be the anode terminal, the Court declines to read that limitation into claim 9. See Ekchian, 104 F.3d at 1303.

Perimeter’s inclusion of "opposite the open end of the cup-shaped battery holder through which the battery is inserted" was rejected supra, Part III.B.1, and therefore will not be considered here.

Although the first terminal is not limited to the anode terminal, the patent does limit the orientation of the first terminal, specifically positioning it at the closed base. Although claim 9 does not explicitly furnish this limitation, the Summary provides that "the retaining ring includes a central aperture through which the second terminal of the battery is exposed at the opening . . . ." ‘900 Patent col.2 1.22-24. With the second terminal exposed at the opening, the first terminal must necessarily be positioned at the closed base. Unlike purported limitations made in the Description, statements found in the Summary can be used to limit claim language. See C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 864 (Fed. Cir. 2004) ("Statements that describe the invention as a whole [such as the Summary], rather than statements that describe only preferred embodiments, are more likely to support a limiting definition of a claim term."); Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1348 (Fed. Cir. 2004) ("Those statements, some of which are found in the 'Summary of the Invention' portion of the specification, are not limited to describing a preferred embodiment, but more broadly describe the overall inventions. . . .").

The proposition that the cited language in the Summary limits the entire patent is supported by the numerous claims which describe the second terminal as exposed either at the opening or the central aperture. See ‘900 Patent col. 10 1.13-14 (claim 1), col. 10 1.24-25 (claim 2), col. 11 1.7-8 (claim 7), col.11 1.52-54 (claim 10), col.13 1.27-29 (claim 21). Moreover, the claims that specifically provide for the spring to make electrical connection at the base of the battery holder via a resilient center portion provide that this connection is made with the first terminal of the battery. See ‘900 Patent col.10 1.33-36 (claim 4), col.10 1.59-60 (claim 7), col.12 1.61-64 (claim 10), col.13 1.5-12 (claim 21). Accordingly, the patent read as a whole suggests that the "very character of the invention" requires the first terminal to be positioned at the base. 20 See Alloc, Inc., 342 F.3d at 1370.
20 Although one could argue that the doctrine of claim differentiation creates a presumption that the cited claims are narrower than claim 9, this presumption is easily overcome. Claim differentiation "can not broaden claims beyond their correct scope, determined in light of the specification and the prosecution history and any relevant extrinsic evidence . . . Claims that are written in different words may ultimately cover substantially the same subject matter." Seachange Int'l, 413 F.3d at 1369 (quoting Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1480 (Fed. Cir. 1998)). Given that the Summary and the cited claims above all describe the orientation of the second terminal of the battery as exposed at the opening, and since the specification states nothing to the contrary, it is apparent that the very nature of the invention requires this limitation.

For the foregoing reasons, the Court construes the "first terminal of the battery" as "the terminal positioned at the closed base of the battery holder."

1604

21. The '870 patent

80. The expression in claim 1 of the '870 patent that the socket section is dimensioned to "fit snugly over" the mount section, or in claim 14 that the connecting section is dimensioned to "interfit snugly with" the mount section, does not require actual contact between those sections. The claim language "fit snugly over" or "interfit snugly with" is simply to be given its ordinary meaning in the English language. Defendant did not present any evidence that these expressions have any special or unusual meaning.

81. The dictionary meaning of "snug" is "fitting closely and comfortably <a coat>." Webster's Ninth New Collegiate Dictionary (1990); "fitting closely: That coat is a little too snug." The World Book Dictionary L-Z Volume Two (1971) (Clarence L. Barnhart ed.). Using the ordinary dictionary meaning of "snug," the '870 claims are construed to mean that the inside surface of the socket section is located close to the outside surface of the mount section. There is no requirement that they touch, nor is there any requirement for a precision fit along the length of the mount section.

82. The '870 patent indicates that the fit can vary along the length of the two sections. Thus, the patent shows in Fig. 4 a preferred embodiment in which at least major portions of the mount and socket sections do not touch (the width of the screw head 148 that forms part of the mount section is smaller than the width of the socket 166 in the coping 160).

83. There is no need for the mount and socket sections to touch unless they are also serving to prevent relative rotation between the two members, and the patent makes it clear that the anti-rotation feature is optional. In col. 4, lines 1-6, the patent states:

When two or more abutments are available on which to construct a restoration, there is no need to provide anti-rotation between the restoration and the abutments, or between the restoration components. In such a situation, the post, coping and implant may be free to rotate around a common axis relative to each other.

Consequently, construing the claims to require "touching" would be contrary to the express teachings found in the patent itself.

84. The '870 patent also suggests that the term "fit snugly" should not be construed to require a precision fit between the mount and socket sections along the entire length of the mount section. For example, Fig. 4 of the patent shows a hexagonal socket section 166 which is shorter than the combined lengths of the hexagonal sections of the abutment post 130 and the screw 134 that combine to form the mount section. Thus, part of the hexagonal section of the post 130 will be within the socket 166, but another part will lie within the tapered conical cavity 162 of the coping 160, which is not a precision fit. The
85. The expression in claim 1 of the '870 patent that the mount section extends "supragingivally from said second end on a substantially uniform cross-section," or in claim 14 that the mount section is "of substantially uniform cross-section at said second end," does not require a cross-section having exactly the same cross-sectional shape and dimensions along the entire length of the mount section. The word "substantially" is commonly used in patent claims for the purpose of avoiding overly restrictive constructions. The Federal Circuit has expressly approved the use of the word "substantially" in patent claims, and has specifically addressed the ordinary meaning of this word, as follows:

Ordinarily, therefore, "substantially" means "considerable in … extent," American Heritage Dictionary Second College Edition 1213 (2d ed. 1982), or "largely but not wholly that which is specified," Webster's Ninth New Collegiate Dictionary 1176 (9th ed. 1983). Thus, the modifier "substantially" conveys that the ridge members extend over most of the "entire height" of the sidewall portions.

York, 99 F.3d at 1573.

86. Applying the above ordinary meaning of "substantially" to that word as used in the '870 claims, it is clear that the claims should not be construed as being restricted to a mount section that has the same cross-section along its entire length. The term "substantially" should be given its ordinary meaning so that the claim requires only that the similarity of cross-sections through the mount section be "considerable in … extent," or "largely but not wholly" uniform.

87. The claim language does not require that the "substantially uniform cross-section" be present continuously all the way along the entire length of the mount section from one end to the other. The claims simply say that the mount section extends "from said second [upper] end [of the supragingivally-extending section] on a substantially uniform cross-section." The claims do not say that the "substantially uniform cross-section" extends along the entire length, or from end to end.

88. Nor is there any evidence of any functional or technical reason for construing the claims to require that the "substantially uniform cross-section" extend along the entire length of the mount section. As can be seen in the drawings of the '870 patent, the mount section is an extension of the supragingivally-extending section. One of the functions of this mount section is to receive the screw that attaches the coping to the abutment post, and another function is to receive a tool such as a wrench for rotating, or preventing rotation of, the abutment post during installation. Neither of these functions requires that the "substantially uniform cross-sections" extend along the entire length of the mount section.

89. The expression in claims 1 and 14 of the '870 patent that the supragingivally extending section "tapers in cross-section from said trans-tissue section to a smaller cross-section at its second end," does not require that the taper be continuous and uninterrupted along the entire length of the section. The portion of the post above the gum line ("supragingivally extending") generally "tapers" so that the top end of the post has a smaller diameter than the bottom of the post. A taper as a matter of simple use of the English language does not require that the taper be continuous and smooth, but simply that the shape has a wide end and a narrow end. Looking at the matter as one skilled in the art, a variety of tapers, some continuous and some interrupted, would be recognized.

90. Webster's New Collegiate Dictionary defines "tapers" as meaning "to become progressively smaller toward one end" or "to diminish gradually." There is no requirement in the definition that the reduction in size proceed in any particular manner. A candle, for example, can be tapered and yet have steps or rings or spirals along the way. It still "diminishes gradually."

91. Nor is there any evidence that any technical justification exists for superimposing additional requirements on the ordinary dictionary definition of the word "tapers." The only reason for the taper in the supragingival section of the '870 abutment is to enable that portion of the abutment to fit within the flared portion of the coping. When the flare angle of the coping is smaller than the taper angle of the abutment, as in the embodiments of Figs. 1 and 2, there is actually a gap between the opposed surfaces of these two members. Thus, the shape of the taper is obviously not critical. The only technical requirement is that the size of the abutment diminish fast enough that it is always at least as small as the internal size of the coping, so that the abutment and the coping can telescope over each other with enough clearance to permit sealing contact between them at the wide end of the coping.

92. The expression in claims 1 and 14 of the '870 patent that the coping includes a 'socket ['connecting' in claim 14] section
at the smaller end of said flaring section" does not require separate socket and flaring sections. The "socket section" and the "hollow flaring section" in the '870 patent are merely different regions of the hollow coping or sleeve. In column 3, lines 1-5, the '870 patent explicitly states that "The coping 60 is a generally cone-shaped hollow body having a flaring section 62 . . . and at its narrower end 64 a socket section 66 . . . ."

1605

1. Fitment

The defendant argues that the term "fitment" in the '550 Patent should be construed to mean a fitment comprising a single piece. The defendant notes the plaintiff's admission that "the '550 fitment is a single piece." (Mattes Decl. P 5 & Ex. 213.)

In addition, although not raised by the parties, the Court notes that language in the '550 Patent supports this construction. Claims 1 and 15 describe the claimed product as comprising a "rigid fitment member" and a "rupturable membrane." (Mattes Decl. Ex. 2 at 52, 53.) This language, although suggesting that the fitment and membrane are separate elements, is ambiguous as to whether the elements are separate pieces. However, Claim 14 clearly describes a "fitment member . . . comprising aseptic rupturable membrane means." (Id. at 53.) The section "Objects of the Invention" also describes the claimed device as having "a fitment including a rigid neck and a frangible membrane." (Id. at 45.) Finally, Claims 7-10 clearly describe a membrane "joined," "sealed to" and "formed integrally with" the other portions of the fitment member. Accordingly, the defendant's construction of the term "fitment" is consistent with the patent claims.

In a separate motion to strike, although not in its opposition, the plaintiff notes that the '550 Patent specification describes an "alternate two piece type of membrane." (Mattes Decl. Ex. 2 at 47.) However, this phrase does not imply that the term "fitment" composes two pieces. As described in the specification, the alternate membrane is a separate polyethylene foil disk which, apparently during manufacturing of the fitment, is heat sealed to the fitment neck prior to joinder of the fitment to the plastic bag. (Id. (emphasis added).) The preferred and alternate membranes operate the same "in all other respects." (Id.) Thus, although the alternate membrane would be formed separately, the fitment would function as a single, inseparable piece.

1606

(3) Limitation (v): A Fixation Resistant Surface-Finish

(a) Claims Construction.

(i) Patent Language, Specification and Prosecution History

Limitation (v) of claim 1 provides in relevant part that the distal tip have a "fixation-resistant surface-finish on the external peripheral surface" for the purpose of maintaining the distal tip unaffixed to the cavity wall of the femur, whereby allowing axial movement relative to the wall of the femur. By remaining unaffixed to the femur, axial displacement of the distal tip and the distal end of the stem is permitted in response to forces applied to the prosthesis during its use.

The defendant contends that the term "fixation-resistant surface finish" means that the finish on the distal tip's external surface must be a "very smooth" surface finish, with surface characteristics at least as smooth as those which are achieved by buffing and polishing cobalt-chrome metal. In support of this contention, the defendant cites to the following language in the 023 patent's specification: "[T]he fixation-resistant finish on the external peripheral surface is a very smooth finish, such as that which is attained by polishing and buffing the cobalt-chrome steel alloy." Patent at 3:67-4:3.

According to the defendant, the APR II sleeve does not have such a finish. The defendant claims that when manufactured, the APR II sleeve contains "circumferential markings," and that the sleeve's outer surface was not polished or buffed until June 1992. Moreover, the defendant contends that the current buffing of the sleeve is unrelated to the flexation or axial movement of the stem, and that even after buffing there is a surface roughness that does not follow the patent's teachings.
Defendant's Post-Trial brief at 9-10.

The Court disagrees with the defendant's interpretation of this claim limitation, because it impermissibly seeks to add an external limitation from the specification to the broader claim language. See Electro Medical, 34 F.3d at 1054. Nothing in the claims language states that the surface must be "very" smooth. Rather, 023 patent claims 11 and 12, referring to the fixation-resistant surface finish identified in claim 1, provide that the finish "is a smooth finish on the external peripheral surface of the distal tip . . . wherein the distal tip is constructed of a metal alloy and the fixation resistant finish comprises a polished surface." Patent at 8:24-29 (emphasis supplied).

In describing the preferred embodiments, the patent specification states:

The external peripheral surface is provided with a fixation-resistant surface finish so that the distal tip will not be affixed to the wall of the femur and will remain unaffixed to the femur during use of the prosthesis. [The] distal tip is constructed from a bio-compatible material, one such material being a cobalt-chrome steel alloy, and the fixation-resistant surface on the external peripheral surface is a very smooth surface finish, such as that which is attained by polishing and buffing the cobalt-chrome steel alloy.

Patent at 3:61-4:3.

Thus, according to the language of the claims, and as elucidated by the patent's specification, the external peripheral surface finish must (i) be a smooth finish that comprises a polished finish, and (ii) be for the purpose of maintaining the distal tip unaffixed to the femur. The claim limitation language does not require that the surface actually be polished or "very" smooth; only that it constitutes ("comprises") a polished surface.

This construction of the term "fixation-resistant surface finish" is supported by the patent's prosecution history. In discussing the Freeman patent, the Patent Examiner noted that one of the types of tips used by the Freeman device had an outer surface that was smooth. According to the Patent Examiner, "[i]t is presumed that all non-fixating surfaces are smooth, typically polished surfaces." (Plaintiff's Exh. 568 at 36-37). The Patent Examiner also concluded that it would be obvious to anyone skilled in the art that such smooth surfaces prevent affixation to the bone: "It would have been obvious to one with ordinary skill in the art to make the non-affixing surfaces of the Freeman device polished and smooth to prohibit bone ingrowth (i.e. fixation to the bone)." (Plaintiff's Exh. 568 at 37).

Although it seems clear that the kind of surface finish described by the patent claim is a smooth finish comprising a polished surface, neither the 023 patent claims nor the patent description define what is meant by "smooth" and "polish." These definitions were, however, provided by extrinsic evidence offered to help the Court understand some of the fundamental metallurgy involved.

(ii) Extrinsic Evidence.

Dr. Burstein explained how the terms "smooth" and "polish" are used in the context of machining metals. He referred to Plaintiff's Exhibit 704, which is a publication by the American Society of Mechanical Engineers ("ASME") entitled: An American National Standard, Surface Texture (Surface Roughness, Waviness, and Lay), dated April 30, 1986. Appendix B of the publication includes the specification for producing various surface textures. (Plaintiff's Exh. 704 at 23).

According to the Appendix, "[s]moothness and roughness are relative, i.e., surfaces may be smooth or rough for the purpose intended; what is smooth for one purpose may be rough for another." (Plaintiff's Exh. 704 at 23). A chart is then provided in the Appendix, which indicates that a polished surface is defined as a surface having a relative roughness of 32 microinches or less. Thus, according to the ASME, a surface is smooth for the purpose of constituting a polished surface if its relative roughness is 32 microinches or less.

Dr. Burstein described the smoothness limitations of 023 patent's distal tip, and related it to the ASME standard:

Q What does the patent teach with respect to the surface characteristics of the sleeve or the tip?

A The patent teaches in order for this to work it must be free to move up and down in the bone in accordance with how
the prosthesis normally wants to move. That is, under load this prosthesis will move on the order of a thousandth of an inch or two, and it must be free to do so, and in order to do so, you cannot allow the distal end sleeve or tip to become fixed to the bone. If it becomes fixed to the bone it transects the bone. So, by having an affixation resisting surface, that will not allow the bone to grow into or into the surface, it becomes free to move up and down and also free to twist ... and you do that, the patent says, by providing smooth surfaces. And the patent gives an example. It says if, for example, you are using cobalt-chrome, you might want to have the surface polished. Well, if you are using titanium, which is another material you might or might not use the same processing, but you are going to finish it so that it has the same surface finish, that is, it has a smooth surface finish.

Q Would you explain what [the ASME standard] is?

A This is a standard which is practiced by the American National Standards Institute and the American Society of Mechanical Engineers in noting the types of surface finish that can be provided by different manufacturing processes.

In simple words, if an engineer wants to provide a certain surface finish and wants to know how to go about doing it, he can [look at the standard] and determine what type of manufacturing process will provide those surface finishes.

Q What microinches are referred to after polishing?

A Polishing starts at 32 microinches and then goes down to a half microinch.

Q So polishing ranges from 32 [microinches] down?

A 32 [microinches] down would fall under the specification of a polished surface.

Now, an affixation [resistant] surface is certainly achieved with a 32 microinch finish; that you can see machining marks or any other marks on [the surface], is simply indicative of the specification of 32 microinches.

If you look with a high enough power, you will see the hills and valleys and ups and downs that constitutes a 32 microinch finish. But it is the number itself that tells you how smooth it is and the specification calls for a smoothness which certainly would promote, which certainly would provide an affixation-resistant surface.

(Tr. at 132-33, 145, 147).

Significantly, Dr. Burstein's explanation of how "smooth" and "polish" are defined within the context of the claim limitation was not refuted by the defendant during Burstein's cross-examination or by the introduction of other evidence.

Accordingly, the Court interprets the claim limitation as requiring the distal tip's external peripheral surface finish to be (i) a smooth finish that comprises or is consistent with a polished surface, i.e. a surface finish of 32 microinches or less in accordance with the ASME standard, and (ii) for the purpose of maintaining the distal tip unaffixed to the femur.

C. "Fixation System"

Plaintiff argues two limitations in independent claim 50 are means-plus-function limitations. The first states, "a first fixation system for fastening the plate and a first portion of the spinal column in a fixed position." The second provides, "a second fixation system for fastening the plate and a second portion of the spinal column in a translatable position."

A claim without the word "means," such as claim 50, triggers a rebuttable presumption the claim is not a means-plus-function claim. CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1369 (Fed. Cir. 2002). The presumption may be rebutted if the claim does not recite sufficiently definite structure or if it recites a function without reciting sufficient structure for performing that function. Id.
Here, "fixation system" does not recite sufficiently definite structure. "System" is defined as (1) a set or arrangement of things related or connected to form a whole, or (2) a method of arrangement. Webster's New World Dictionary Third College Edition at 1359. This does not require any particular structure. The two claim limitations are means-plus-function limitations.

Infringement analysis of means-plus-function limitations has four steps. First, the Court must identify the claimed function. Cardiac Pacemakers, Inc. v. St. Jude Med., Inc., 296 F.3d 1106, 1113 (Fed. Cir. 2002). Second, "the court must . . . determine what structure, if any, disclosed in the specification corresponds to the claimed function." Id. Third, the Court determines "whether the accused device . . . performs an identical function to the one recited in the claim." IMS Tech., Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1430 (Fed. Cir. 2000). If so, the Court decides "whether the accused device uses the same structure, materials, or acts found in the specification, or their equivalents." Id. The question is whether the accused device "performs the function in substantially the same way to achieve substantially the same result." Id. at 1435.

Here, the claimed function is to fasten the plate to a portion of the spinal column in a fixed (for the first "fixation system") or translatable (for the second "fixation system") position. The structure disclosed in the specification corresponding to this function are bone engaging fasteners, embodied as bone screws. The C-Tek Slotted performs the identical function of fastening the plate to a portion of the spinal column in a fixed (for the first pair of screws) and translatable (for the second pair of screws) position.

Finally, the C-Tek Slotted uses an equivalent structure as the bone screws disclosed in the specification. Even assuming, as Plaintiff argues, the heads of the C-Tek Slotted bone screws are different than those disclosed in the specification, the screws extend through the holes and slots in the plate, are retained by the locking plate so they cannot back out, and screw into vertebrae to attach the plate to the bone. The C-Tek Slotted screws perform the function "in substantially the same way to achieve substantially the same result." IMS Tech., 206 F.3d at 1435. The C-Tek Slotted infringes these limitations of claims 50-56. 

GO BACK

1608

BACKGROUND

Gentry owns the '244 patent, which is directed to a unit of a sectional sofa in which two independent reclining seats ("recliners") face in the same direction. Sectional sofas are typically organized in an L-shape with "arms" at the exposed ends of the linear sections. According to the patent specification, because recliners usually have had adjustment controls on their arms, sectional sofas were able to contain two recliners only if they were located at the exposed ends of the linear sections. Due to the typical L-shaped configuration of sectional sofas, the recliners therefore faced in different directions. See '244 patent; col. 1, ll. 15-19. Such an arrangement was "not usually comfortable when the occupants are watching television because one or both occupants must turn their heads to watch the same [television] set. Furthermore, the separation of the two reclining seats at opposite ends of a sectional sofa is not comfortable or conducive to intimate conversation." Id. at col. 1, ll. 19-25.

The invention of the patent solved this supposed dilemma by, inter alia, placing a "console" between two recliners which face in the same direction. This console "accommodates the controls for both reclining seats," thus eliminating the need to position each recliner at an exposed end of a linear section. Id. at col. 1, ll. 36-37. Accordingly, both recliners can then be located on the same linear section allowing two people to recline while watching television and facing in the same direction. Claim 1, which is the broadest claim of the patent, reads in relevant part:

A sectional sofa comprising:

a pair of reclining seats disposed in parallel relationship with one another in a double reclining seat sectional sofa section being without an arm at one end . . .,

each of said reclining seats having a backrest and seat cushions and movable between upright and reclined positions . . .,

a fixed console disposed in the double reclining seat sofa section between the pair of reclining seats and with the console

- 2046 -
and reclining seats together comprising a unitary structure, 

said console including an armrest portion for each of the reclining seats; said arm rests remaining fixed when the reclining seats move from one to another of their positions, 

and a pair of control means, one for each reclining seat; mounted on the double reclining seat sofa section . . .

Id. at col. 4, line 68 to col. 5, ll. 1-27 (emphasis added to most relevant claim language). Claims 9, 10, 12-15, and 19-21 are directed to a sectional sofa in which the control means are specifically located on the console.

In 1991, Gentry filed suit in the District Court for the District of Massachusetts alleging that Berkline infringed the patent by manufacturing and selling sectional sofas having two recliners facing in the same direction. In the allegedly infringing sofas, the recliners were separated by a seat which has a back cushion that may be pivoted down onto the seat, so that the seat back may serve as a tabletop between the recliners. In response to Gentry's complaint, Berkline moved and was granted a transfer to the District of Massachusetts of its earlier-filed action in the United States District Court for the Middle District of North Carolina seeking a declaration that the patent was invalid and not infringed. After that declaratory judgment action was consolidated with Gentry's infringement suit, Berkline added a counterclaim asserting that the patent was unenforceable because of inequitable conduct. The district court granted Berkline's motion for summary judgment of non-infringement, but denied its motions for summary judgment of invalidity and unenforceability. In construing the language "fixed console," the court relied on, inter alia, a statement made by the inventor named in the patent, James Sproule, in a Petition to Make Special (PTMS). See 37 C.F.R. § 1.102 (1997). Sproule had attempted to distinguish his invention from a prior art reference by arguing that that reference, U.S. Patent 3,877,747 to Brennan et al. ("Brennan"), "shows a complete center seat with a tray in its back." Gentry I, 30 U.S.P.Q.2D (BNA) at 1137. Based on Sproule's argument, the court concluded that, as a matter of law, Berkline's sofas "contain[] a drop-down tray identical to the one employed by the Brennan product" and therefore did not have a "fixed console" and did not literally infringe the patent. Id. The court held that Gentry was also "precluded from recovery" under the doctrine of equivalents. Id. at 1138.

Gentry then requested that final judgment be entered so that it could immediately appeal the non-infringement decision. Berkline requested that its invalidity and unenforceability counterclaims proceed to trial on the authority of Cardinal Chemical Co. v. Morton International, Inc., 508 U.S. 83, 26 U.S.P.Q.2D (BNA) 1721, 124 L. Ed. 2d 1, 113 S. Ct. 1967 (1993). The court agreed with Berkline, stating "that further proceedings will be necessary on the issues of invalidity and inequitable conduct." After a bench trial, the court held that the patent was not invalid under 35 U.S.C. §§ 102 or 103 (1994), and that the claims in which the location of the controls is not limited to the console (claims 1-8, 11, and 16-18) are not invalid under 35 U.S.C. § 112, P 1 (1994). See Gentry II, 939 F. Supp. at 101-06, 41 U.S.P.Q.2D (BNA) at 1348-52. The court also held that Berkline had failed to prove that the patent was obtained by inequitable conduct and in so ruling noted that "the evidence at trial was not even close." Id. at 101, 41 U.S.P.Q.2D (BNA) at 1347. The court denied Gentry's motion for the attorney fees it had incurred in overcoming Berkline's allegation of inequitable conduct. The court expressed "sympathy for Gentry, especially in view of Berkline's insistence on pressing the case after prevailing on the infringement issue," but nonetheless concluded that "these circumstances do not permit consideration of an award of fees."

Gentry appeals from the decision of non-infringement and the court's refusal to award attorney fees. Berkline cross-appeals from the decision that the claims are not invalid under §§ 103 or 112. We have jurisdiction pursuant to 28 U.S.C. § 1295(a) (1) (1994).

DISCUSSION

A. Infringement

Gentry argues that the district court erred in construing the claim terms "fixed" and "console" in granting summary judgment of non-infringement. Gentry asserts that the term "fixed" merely requires that the sofa section be rigidly secured to the adjoining recliners and that the term "console" refers to any sofa section that separates two recliners and can function as a tabletop. Accordingly, Gentry argues that on the undisputed facts it, not Berkline, is entitled to summary judgment on the issue of infringement. Berkline argues that summary judgment was properly granted because the term "fixed" requires that no part of the console be movable, while Berkline's sofa has a center seat back that can pivot. Berkline also argues that Gentry effectively defined a center seat with a retractable seat back as not a "console" when it distinguished the Brennan
reference in the PTMS. On the basis of Berkline's second argument, we agree that it is entitled to judgment as a matter of law that it does not infringe the '244 patent.

We review a district court's grant of summary judgment de novo. See Conroy v. Reebok Int'l, Ltd., 14 F.3d 1570, 1575, 29 U.S.P.Q.2D (BNA) 1373, 1377 (Fed. Cir. 1994). Summary judgment is appropriate when there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law. See Fed. R. Civ. P. 56(c); Johnston v. IVAC Corp., 885 F.2d 1574, 1576-77, 12 U.S.P.Q.2D (BNA) 1382, 1383 (Fed. Cir. 1989). A determination of infringement requires a two-step analysis. "First, the claim must be properly construed to determine its scope and meaning. Second, the claim as properly construed must be compared to the accused device or process." Carroll Touch, Inc. v. Electro Mechanical Sys., Inc., 15 F.3d 1573, 1576, 27 U.S.P.Q.2D (BNA) 1836, 1839 (Fed. Cir. 1993).

Because there is no dispute concerning the structure of the accused device, our infringement analysis involves only claim construction, a question of law which we review de novo. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979-81, 34 U.S.P.Q.2D (BNA) 1321, 1329-31 (Fed. Cir. 1995) (in banc), aff'd, 517 U.S. 370, 116 S. Ct. 1384, 38 U.S.P.Q.2D (BNA) 1461, 134 L. Ed. 2d 577 (1996). The proper construction of claims is based upon the claim language, the written description portion of the specification, the prosecution history, and if necessary to aid the court's understanding of the patent, extrinsic evidence. See id. Our present analysis of infringement under the doctrine of equivalents involves prosecution history estoppel, also a question of law which we review de novo. See Southwall Techs. Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579, 34 U.S.P.Q.2D (BNA) 1673, 1679 (Fed. Cir. 1995).

We agree with Gentry that the term "fixed" requires only that the console be rigidly secured to its two adjacent recliners. The term "fixed" and the explanatory clause "with the console and reclining seats together comprising a unitary structure" were added during prosecution to overcome a rejection based on a sectional sofa in which the seats were not rigidly attached. Thus, because the term "console" clearly refers to the complete section between the recliners, the term "fixed" merely requires that the console be rigidly attached to the recliners. Moreover, Berkline's interpretation of the term "fixed" unnecessarily excludes from the claim Sproule's preferred embodiment, in which the console can be opened by pivoting its lid. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583, 39 U.S.P.Q.2D (BNA) 1573, 1578 (Fed. Cir. 1996) (noting that a claim interpretation that excludes the preferred embodiment "is rarely, if ever, correct"). Accordingly, as there is no dispute that Berkline's center seat and recliners form a unitary structure, we conclude that the "fixed" limitation is met by Berkline's sofas.

Plaintiffs propose a construction that the base "is fixed or 'fitted' into the neck of the flask." Plaintiffs note this interpretation is directly supported by the language of the specification and its use of the word "fitted." See '061 patent, 3:66-67.

Defendants seek a stricter construction that the base be "securely fastened" into the neck of the flask. Defendants note that the word "fixed" only appears in claims 12 and 14 and nowhere else in the patent. Thus, Defendants argue, the specification cannot provide any guidance as to any particular meaning intended for the term. Defendants then point to the ordinary meaning of the word "fix" or "fixed" to supply the necessary construction: "to make firm, stable or stationary" or "to give a permanent or final form to." Merriam-Webster Online, Doc. 58, Ex. 2, at 12-13. Thus, Defendants submit, based upon the ordinary meaning of the term "fixed," the term should be construed as requiring the base to be "securely fastened" to the neck.

The specification clearly recites that the base be "fitted" inside the neck of said flask. See '061 patent, 3:67. The specification suggests that the base "can" be crimped around an annular enlargement of the neck. Id., 4:2. While it may be possible that the invention may allow for a base element that is securely fastened into the neck of the flask, if it is crimped around the neck as described above, it is not a requirement of the invention, and is certainly not required in the recitation of claim 12.
The parties also dispute the term "said washing tub including a fixed bottom wall." LG proposes construing the term to mean "the washing tub including a fixed bottom wall [i.e., fixed wall at a bottom portion of the washing tub]." (Chart at 12.) Whirlpool proposes instead that the term be construed to mean "the washing tub includes a bottom wall that remains stationary." (Id.)

The background section of the patent states that the claimed invention relates to "an improved structure in [low frequency vibration type] washing machines for prevention of jamming of clothes in a gap between a low frequency vibrating disc and the inner bottom of a washing tub." ('886 Patent, col. 1, ll. 9-14.) According to that section, the typical washing machine "has a problem in that some of the clothes are often jammed in a gap between the vibrating disc 2 and the inner bottom of the washing tub 1." (Id., col. 1, ll. 49-52.) The summary section states that it is "an object of the present invention to provide a low frequency vibration type washing machine . . . whose shielding means totally or partially shields the gap between the low frequency vibrating disc and the tub bottom from the outside." (Id., col. 1, ll. 60-67.) Figures 2, 3, and 4 are embodiments of the claimed invention, and each one depicts the bottom wall as the inner surface of the bottom wall. This intrinsic evidence suggests that the term "bottom wall" refers to the bottom wall of the washing tub, as Whirlpool argues, rather than a wall at a bottom portion of the washing tub, as LG argues.

The parties also refer to the prosecution history. The examiner originally rejected Claim 1 because it was anticipated by a patent that the parties refer to as the German '789 patent. (Def.'s Ex. 8 at 2.) Figure 1 of the German '789 patent disclosed a washing machine that included a washing container having a bottom "which is designed as a membrane." (Def.'s Ex. 10 at 2-3.) "When power is applied to the shaker device, the bottom membrane M is set into a strong and rapid up and down movement . . . ." (Id. at 2.) LG acknowledges that "[b]y amending the claim to distinguish the prior art, the applicants narrowed the scope of the claim [sic] invention to exclude coverage for washing tub bottoms that were membrane-like (i.e., soft and flexible) and that moved up and down." (Pl.'s Br. at 25 (emphasis added).)

The Court therefore construes the term "said washing tub including a fixed bottom wall" to mean "said washing tub including a bottom wall that remains stationary."

2. "Fixed Handgrip"

Claim 16 recites that the shift actuators disclosed in the '291 patent are "mounted on and engaged over an outside of the handlebar inboard of a fixed handgrip on an end of the handlebar." '291 Reexamination Certificate, col. 5, ll. 2-4. AD-II asserts that the district court erred in limiting the term "fixed handgrip" to a separate handgrip situated over a handlebar, arguing that the term "fixed handgrip" should also include the normal grip space on the handlebar itself, as is disclosed by the embodiment depicted Figure 2. SRAM counters that, in reciting that the handgrip is "on an end of the handlebar," claim 16 distinguishes between the handgrip and the handlebar such that the handgrip cannot be construed to include the handlebar.

We conclude that the district court correctly construed the term "fixed handgrip on the end of the handlebar" to mean a separate handgrip situated over a handlebar, and not a part of the handgrip space on the handlebar itself. Claim 16 recites a handgrip situated "on" the handlebar, rather than a handgrip that is part "of" the handlebar. Moreover, claim 16 recites a "fixed" handgrip, which, as disclosed in the specification, refers to "conventional handgrips" that are separate features "located on the ends of [the] handlebar" and are depicted in Figure 45. '291 patent, col. 30, ll. 19-27, Fig. 45.

The prosecution history supports that the "fixed handgrip" limitation of claim 16, which was added during reexamination in light of the Foster reference, was meant to capture the embodiment depicted in Figure 45 rather than the embodiment depicted in Figure 2. The applicant explained that "[f]or the disclosure of these limitations in the patent [i.e., including the
"fixed handgrip" limitation], the Examiner is referred to the descriptions of the 'Inboard Handgrip Shift Actuators' starting in line 15 of column 30 of the '291 patent." That portion of the '291 patent specification is the portion addressing mountain bikes, and specifically refers to "conventional handgrips" or "fixed handgrips at the ends of the handlebar" as structures distinct from the handlebar itself. '291 patent, col. 30, ll. 19-22, Figure 45.

d. "Fixed Orientation"

The final disputed limitation of claim 1 reads:

[S]aid second intermediate portion [of a second bone engaging fastener] having a substantially cylindrical portion with a fourth diameter that is approximately equal to said second diameter [of an opening at the bottom surface of the plate], whereby said second head of said second bone engaging fastener cannot be pivoted within said recess portion of said at least one hole so that said second bone engaging fastener can assume a fixed orientation relative to said bottom surface of said plate.

(Kravetz Decl. Ex. 1 at col. 13, Ins. 44-52.)

Plaintiff argues Medtronic acted as its own lexicographer and defined "fixed orientation" in the specification as "no micro-motion or angular movement relative to the plate." (Kravetz Decl. Ex. 1 at col. 2, Ins. 30-31.) Medtronic contends the phrase "approximately equal," which describes the relative diameters of the intermediate portion of the fixed angle screw and the hole in the plate, necessarily contemplates some movement, but not movement rising to the level of pivoting.

The ordinary meaning of "approximately" is "to come near; be almost the same." Webster's New World Dictionary Third College Edition 68 (1988). The ordinary meaning of "equal" is "of the same size." Id. at 458. "Fixed" is defined as "firmly placed or attached; -- not movable." Id. at 512.

The specification shows the diameters of the fixed angle screw and the hole in the plate are different enough so the screw can fit inside the hole, but close enough so, once inside the hole, the screw cannot move. This, coupled with the ordinary meaning of the claim language, shows the limitation "approximately equal" should be construed as "almost the same," and "fixed orientation" should be construed as "not movable once inserted through the hole."

A. CLAIM CONSTRUCTION

The Court finds the testimony of Dr. Corbett and Mr. Witherspoon to be persuasive on the issue of claim construction. The dispute is over the following limitations which Combustion contends are not present in its RT Kiln, the terms at issue being underlined: (1) "for the continuous electric heating and/or fusion..."; (2) "a...conical extension fixed to one end thereof"; and (3) "a crane support mounted upon each said housing and removable conical extension for lifting and tilting the housing to remove the contents thereof." [PTX 533 and 534].

CONTINUOUS

Dr. Corbett testified that the term "continuous" modifies "heating", not "fusion" such that electric heating without interruption, as well as fusion, takes place in the patented furnace [Tr. II(2)(Corbett), 30-31, 33-34 and 38-40]. Based upon this testimony, the court finds that term "continuous" modifies "heating and not "fusion" for purposes of claim construction in regard to this limitation.

CONICAL EXTENSION FIXED TO ONE END THEREOF
The dispute with respect to this limitation revolves around the meaning of the word "fixed" in Claims 3 and 4. Dr. Corbett testified that "fastened" is a synonym for "fixed", and that "fixed" means "securely fastened" such that, when the main portion of the housing is lifted, the end follows [Tr. II(2), 40-41]. The court finds that terms "fixed", "fastened", and "securely fastened" are synonyms for purposes of claim construction in regard to this limitation. This interpretation is supported by the reading of the claim, the testimony of witnesses, as well as the prosecution history. DTX 180, PTX 460, p. 277.

1614

1. Snowplow blade fixed to the A-frame

I conclude that the term "snowplow blade fixed to the A-frame" as used in claims 1, 38 and 45 of the '700 patent does not need construction because its plain and ordinary meaning is easily discernible from the claim language. The term is clear and nothing in the claim language or the specification requires a special definition. Therefore, the plain and ordinary meaning controls. Northern Telecom Ltd., 215 F.3d at 1295. I note that defendant's proposed construction seeks to impose limitations from the specification, such as a requirement that the blade be attached directly to the A-frame without any intermediate structures. Such limitations do not appear in the claims themselves and nothing suggests that the patentee was attempting to give a narrower construction to "fixed to" than the plain and ordinary meaning of the term. Such a construction would be improper. Golight, 355 F.3d at 1331 ("[L]imitations from the specification are not to be read into the claims.").

1615

B. "Fixed upon a Solid Support According to an Array Comprising Discrete Regions"

Claim 1 also describes the capture molecule in the '829 Patent as being "fixed upon a solid support according to an array comprising discrete regions." '829 Patent, col. 1, II. 50-52. Each of the parties' proposed constructions is lengthy and composed of multiple parts, which must be addressed in turn.

First, insofar as the parties seek to explain the words "fixed upon," their constructions do not differ greatly. They agree that these words refer to the capture molecule's attachment to a solid support "surface," but Nanosphere also seeks to describe such attachment as being either "direct[] or indirect[]," whereas Eppendorf describes the capture molecule as being "attached or linked" to a solid support surface. However, the parties have neither provided intrinsic or extrinsic support for their word choices, nor expressly disagreed with one another's proposed language, and the patent itself does not use the words "direct," "indirect," "link," or "attach" to describe the relationship between the capture molecule and the solid support surface. After considering both parties' proposed language concerning "fixed upon," the Court has determined that "attached or linked" actively describes the relationship between the capture molecule and the solid support surface, whereas "direct[] or indirect[]" attachment is ambiguous, given that it is unclear what either of those types of attachment entails.

As for "solid support," the parties, after submitting their Markman briefs, agreed that the words should be construed to mean "any kind of solid support that allow [sic] the formation of arrays of capture molecules (specific pattern) upon one or more of its surfaces. Said solid support can be made of glasses, filters, electronic device, polymeric or metallic materials, etc." (Supp. Markman Letter, App'x at 1.) In light of this agreed-upon definition, "fixed upon a solid support according to an array comprising discrete regions" need not reiterate the lengthy "solid support" definition included in Nanosphere's proposed construction.

Turning next to "array," although the parties agree that the word is composed of "discrete regions," Eppendorf contends that it also has a "linear or two-dimensional spatial layout . . . according to a specific pattern," whereas Nanosphere avers that the array "may or may not be in specific locations or presented according to a specific pattern." The only part of the '829 Patent that uses the words "specific pattern" is the following excerpt from the "Summary of the Invention" section of the
specification:

The "hybridisation chips" according to the invention are any kind of solid support that allow the formation of arrays of capture molecules (specific pattern) upon one or more of its surfaces. ... Preferably said arrays contain specific locations (advantageously presented according to a specific pattern), each of them containing normally only one species of capture molecule.

'829 Patent, col. 2, II. 62-65, 67-col. 3, 1. 3 (emphases added). This quoted language at no point explains what a "specific pattern" entails, and only provides that the arrays are "[p]referably" "presented according to a specific pattern." Id. col. 3, 1. 1. Because the Federal Circuit in Phillips made clear that the construction of a claim term should not be restricted to the patent's preferred embodiments, thereby reading in unnecessary and unintended limitations, 415 F.3d at 1323, this Court is not persuaded that the capture molecule arrays described in the '829 Patent must be presented "according to a specific pattern." In any event, the Court does not find any language concerning "specific pattern" to be helpful in explaining how the arrays should be organized, and in particular, Nanosphere's proposed language of "may or may not be in specific locations or presented according to a specific pattern," adds unnecessary confusion.

As for whether the array encompasses three-dimensional layouts, as Nanosphere contends (Def.'s Resp. 15-21), or solely "linear or two-dimensional layouts," as Eppendorf avers (Pls.' Resp. 6-7), the Court is not persuaded that the arrays described in the '829 Patent are limited to "linear or two-dimensional layouts." Although Nanosphere has provided numerous references to three-dimensional "solid support[s]," for example disclosing the arrays of capture molecules can form "upon one or more of [a solid support's] surfaces," '829 Patent, col. 2, II. 64-65 (see also Def.'s Resp. 15 21), such language does not indicate that the arrays themselves, rather than solid supports, can be three-dimensional. Neither, however, does the '829 Patent indicate that an array must be limited to "a linear or two-dimensional array." The Court declines to include any language regarding the possible dimensions encompassed by the '829 Patent's arrays, because "a court, under the rubric of claim construction, may [not] give a claim whatever additional precision or specificity is necessary to facilitate a comparison between the claim and the accused product," PPG Indus. v. Guardian Indus. Corp., 156 F.3d 1351, 1355 (Fed. Cir. 1998).

Given the reasons detailed above, the Court has construed "fixed upon a solid support according to an array comprising discrete regions" to mean "attached or linked to a surface of a solid support." The parties did not oppose this construction either at the Markman hearing or in their subsequent letter to the Court.

Axon argues that the district court's interpretation of the "suspension means" limitation in claims 1 and 25 ignored the plain meaning of the phrase "fixed vertical position" and that the district court's instructions to the jury were therefore erroneous and prejudicial. In its instructions to the jury, the district court stated in relevant part: "The language "in a fixed vertical position above the containers" means that the suspension means holds the side portion of the band in a stationary location above the container." We disagree with Axon's assertion that the district court's claim construction was in error. Having reviewed the instructions to the jury regarding claim interpretation, we find no error in the district court's claim construction as presented to the jury. The interpretation given to the claim as embodied in the court's jury instructions clearly explains that the suspension means must hold the cut band in a vertically stationary position above the containers. While the claim does not restrict movement of the suspension means in the horizontal plane, it does require that the band not move in the vertical plane. Considering the plain meaning of the claim, the specification, and the prosecution history, we believe this to be the correct interpretation of the limitation "in a fixed vertical position." Consequently, we affirm the claim construction of the district court.

The second phrase requiring construction is "band fixedly attached to the strand." Pandora asserts that "fixedly" does not require permanence; its proffered construction is a "band creating a raised surface on the strand by either a permanent or reversible method of attachment so that when the band is attached to the strand, it does not move relative to the strand, it is
fixed." Chamilia construes this term in two parts, contending that a "band" means "an element separate and distinct from the strand and the keeper, that is 'fixedly attached' to the strand, and fully circumscribes the strand, thereby increasing the entire circumference of the strand," and that "fixedly attached" means that "bands are connected to the strand by the manufacturer, at predetermined points selected by the manufacturer, with an intended degree of permanence that precludes a necklace wearer from (a) adding bands to a strand, (b) removing bands from a strand, or (c) in any way adjusting the bands' location along the strand, which in turn restricts the location of keepers." In essence, the parties dispute whether the word "fixedly" implies permanence, at least in regard to the wearer, or reversibility: may the bands be detached and moved to different positions along the strand, like the keepers, or are their positions on the strand determined and fixed by the manufacturer. For the reasons that follow, I will construe the term "fixedly attached" to mean the degree of permanence suggested by Chamilia. 8

8 I cannot, however, find any reason why the requirement that the band "fully circumscribe the strand" must be part of the claim construction.

Beginning with Claim 1, it is worth noting that the connector assembly "reversibly" couples the ends of the strand, consistent with the wearer's need to securely fasten but also remove the bracelet or necklace (strand) from her person. While this is not part of the specific term under construction, the use and meaning of the term "reversibly" in this context supports the same understanding in the context of the disputed term "band." In claim 1, the band is "fixedly" attached, the ornament passes over the band, and the keeper is "configured for reversible attachment" over the band (emphasis added); thus the keeper is the element that must be added to the band by the wearer to restrict the movement of the ornament and that may be removed to permit a different arrangement of the ornaments on the strand. In Claim 13, the independent method claim, the process of "reversibly" restricting the movement of ornaments on a strand which has a band "fixed" on it comprises only two steps: (a) stringing an ornament on the strand, and (b) attaching a keeper to the band. Again, it is the keeper, not the band, that permits "reversible" restriction of the ornaments by the wearer. Claim 16, the independent apparatus claim, describes a strand "selectively configurable by the wearer for positional ornament retention," further claiming a keeper "configured and arranged by selective placement around the band," while the band "fixedly" circumscribes the strand (emphasis added). In summary, nothing in the claim language suggests that the wearer will be expected or be able to reverse, select, or otherwise move the bands from their predetermined positions along the strand. Bands, strands, ornaments and keepers are separate elements with separate, though related and complementary, functions.

The language of the remaining sections of the patent, including the "abstract" and "brief summary" as well as the "detailed description," is consistent with a construction of the disputed terms that includes permanently attached bands and reversibly attached keepers. 10 As the Federal Circuit has stated, it is "entirely appropriate for a court, when conducting claim construction, to rely heavily on the written description for guidance as to the meaning of the claims." Phillips, 415 F.3d at 1317; see also Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) ("Thus, the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.") The detailed description explains, e.g., that the movement of beads are restrained by threaded and hinged
keepers, "removably fixed on bands . . . which are fixedly attached to the strand." (Col. 3, ll. 41-43) (emphasis added). Further, it explains the role of the wearer as follows:

In use, the wearer strings beads and one or more threaded keepers on a strand having one or more threaded bands. The order of the beads and keepers is chosen in order to provide the desired distribution of beads on the necklace. The use of a hinged keeper provides additional flexibility for the wearer, as the hinged connector can be attached after the beads and the threaded keeper have been strung. The arrangement of beads and keepers may be altered by simply restringing the components on the strand.

(Col. 6, ll. 33-41). Again, nothing suggests that the wearer may alter the position of the bands.

Continuing with the analysis of the claims and specifications, both sides point to Claim 27, a means-plus function claim within the meaning of 35 U.S.C. § 112 P 6. Construction of Claim 27 would require (1) determining the claimed function and (2) identifying the corresponding structure in the written description of the patent that performs that function. Applied Medical Resources v. U.S. Surgical Corp., 448 F.3d 1324, 1332 (Fed. Cir. 2006). Claim 27 refers to a "means for adapting a circumference of the strand to permanently increase the circumference at a locus that permits passage of an ornament over the locus." As Chamilia contends, the only structure in the written description that could perform the function of permanently increasing the circumference of the strand is the "fixedly attached" band. This point is not dispositive; indeed Pandora argues that the use of the word "permanently" here and not in the other claims suggests a distinction between fixedly and permanently. Yet Pandora's argument applies equally well to the much more frequent contrast between "fixedly" and "reversibly" in the claims at issue. Again, nothing in the language of claims 1, 13, and 16 suggests that the wearer would be altering the position of the band on the strand.

Chamilia also argues that its construction of "fixedly attached" as requiring some degree of permanence is supported by the methods specified for fixing the band to the strand, which include "compression on the strand, interaction with the links of a chain, . . . adhesive or any other suitable means of fixation of a band on a strand." (Chamilia's Brief at 10.) Chamilia contends that "compressing a metal band onto a strand, interlocking a band with the links in a strand's chain, or attaching a band by adhesion - all methods that require the use of tools and skill - are properly performed by a manufacturer prior to sale." (Id.) In isolation, this language might not strongly support Chamilia's position, as the words "compression," "interaction" and "adhesive" could suggest methods performed by a wearer that could be undone, though perhaps with some difficulty. 11 In the context of the entire patent, however, as explained above, there is nothing to suggest that the wearer would be performing that attachment or in any way moving the band from its predetermined position on the strand. Indeed, there would be no need to define an ornament as having "a through opening of greater circumference than the outer circumference of the band," so that it could pass over the band, if the wearer were expected to freely move both the band and the keeper to different positions along the strand.

11 The parties' experts disagree about whether those processes could readily be performed by the user as compared to the manufacturer. (See Altobelli Dep. at 31-32; Brown Dep. at 138-41.) Were I to rely on the expert testimony, I would find Brown more persuasive in light of his experience and more thoughtful explanation of his reasoning.
examiner, amending its claims to overcome the rejections based on prior art, Pandora emphasized the distinction between the band, "fixedly attached," and the keeper "configured for reversible attachment over the band," with the ornament having an opening such that it is "free to pass over the band but is restrained by a selectively attached keeper." Pandora's amendment to claim 1 further included the deletion of a phrase recognizing a "reversible attachment of the band and keeper." These amendments were necessary to distinguish the teachings of patents issued to Kanno (4,907,322) and Kuhn (3,983,716), neither of which taught of a permanent band that would allow the free passage of an ornament. (See Hansen Dec., attachment). Thus, in differentiating the '507 patent from the prior art, Pandora highlighted the interaction of a permanent band with a reversible keeper mechanism.

In summary, a "band" is an element separate and distinct from the strand and the keeper, that is connected to the strand by the manufacturer at predetermined points with an intended degree of permanence that precludes a wearer from adding, removing, or adjusting the location of bands along the strand. A "keeper" is a device which can attach over a band to prevent further movement of ornaments, the device being configured for reversible attachment over the band. An "ornament" is a bead, bauble, bangle, pendant, or trinket that may be removably strung on the strand, with an opening in its center large enough to permit complete passage over a band but not so large as to permit passage over a keeper when the keeper is attached to a band. An "ornament" does not include a "keeper." 12

--- Footnotes ---

12 Although a keeper may have a decorative effect, the patent requires that an ornament have an inner opening (bore) of a circumference large enough to pass over a band, while a keeper does not.

--- End Footnotes ---

A separate Order follows.

1618

The phrase "fixedly connected to the drive assembly" means "fastened securely to the drive assembly."

1619

B. "Fixedly Mounted"

Ramsey contends that the term "fixedly mounted" should be defined as "firmly attached in a manner that prevents relative movement between components."

Warn contends that a stator "fixedly mounted" to the drum interior means that the stator is secured so as to prevent relative rotation between the stator and the drum. Warn argues that the lock screw prevents relative rotation between the stator and the drum but axial movement along slot 76 is permitted. Warn also points to the fact that the specification documents the expectation of radial expansion due to heat.

The specification states:

The modification [from the prior art] basically includes a cylindrical stator which is fixed within the drum. The stator is produced from heat conductive metal and is in tight surface-to-surface fixed contact with the inner surface of the drum.


A cylindrical stator 72 is fixedly secured to the inner wall of the drum 10. A lock screw 74 is projected into slot 76 in the stator 72. However, heat will cause expansion of the stator 72 and produce a tight fit of the stator to the inner wall of the drum.
The plain meaning of "fixed" would be no movement in any direction. The specification neither states that axial movement along slot 76 is expected nor gives the purpose of the slot. A lock screw inserted far enough into the slot would stop axial movement. The radial expansion from heat is clearly contemplated and will not be prevented by the lock screw.

I conclude that the term "fixedly mounted" is defined as "firmly attached in a manner that prevents relative rotation or axial movement between the stator and the drum."

6. "Flange"

The parties dispute the meaning of the term "flange" and the related phrases: "defines stepped-down flanges on opposite sides of a front face of said post that receive vertical sides of respective said adjacent liner panels" (claim 19 of '018 Patent); "stepped-down flanges" (claim 14 of '493 Patent); and "said flanges" (claim 14 of '493 Patent). Plaintiff argues that the term requires no construction because the phrase "stepped-down flange" is a visually descriptive phrase that requires no clarification. Defendants counter that the term "flange" is likely unfamiliar to jurors and that clarification of the term using a dictionary is therefore appropriate. The Court agrees. The term "flange" is not used in common parlance. The parties agreed at the Markman hearing that a "flange" is a projecting rib or rim for attachment to another object. Cf. Oxford American Dictionary 329 (1980) (defining "flange" as "a projecting rim or edge"); Merriam-Webster's Online Dictionary, http://www.merriam-webster.com/dictionary/flange (defining "flange" as "a rib or rim for . . . attachment to another object"). The Court therefore construes the term "flange" to mean "a projecting rib or rim for attachment to another object." The Court finds that it is unnecessary to construe the terms "stepped-down flanges" or "said flanges" in light of this construction.

The district court interpreted "flange" to mean "the portion of a structure to either stiffen or attach it to another structure, not requiring the five-degree angle as described in the preferred embodiment, and not necessarily requiring any angles." Waner v. Ford, No. 98-5061-KES, slip op. at 10 (D.S.D Aug. 30, 2000) (Claim Construction Order). The court further found "that nothing in [claim 1], the specification, or the prosecution history requires that the flange exist prior to installation of the liner." We disagree with the district court's claim construction.

Claim construction begins with determining the ordinary and customary meaning, if any, that would be attributed to the term by those skilled in the art. Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342, 60 USPQ2d 1851, 1854 (Fed. Cir. 2001). Dictionary definitions are useful in this process. See Boehringer Ingelheim Vetmedica, Inc. v. Schering Plough Corp., 320 F.3d 1339, 1346, 65 USPQ2d 1961, 1965 (Fed. Cir. 2003) (citing Tex. Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202-03, 64 USPQ2d 1812, 1818-19 (Fed. Cir. 2002)). As this court has explained,

by examining relevant dictionaries, encyclopedias and treatises to ascertain possible meanings that would have been attributed to the words of the claims by those skilled in the art, and by further utilizing the intrinsic record to select from those possible meanings the one or ones most consistent with the use of the words by the inventor, the full breadth of the limitations intended by the inventor will be more accurately determined and the improper importation of unintended limitations from the written description into the claims will be more easily avoided.

Tex. Digital, 308 F.3d at 1205, 64 USPQ2d 1820.

In this case, the term "flange" is not given a specific meaning in the intrinsic record. However, a dictionary definition is readily available: "flange, n. . . . 1. a raised or projecting edge, rib, or rim for strength, as in a T-rail; for guidance, as on a rail to keep wheels in place; for connection with some other object, as in some pipes; 2. a tool for making flanges." Webster's New Twentieth Century Dictionary, Unabridged 696 (2d ed. 1962). The specification and drawings of the '710
2. Flange

The patentee also uses the term "flange" throughout the claims of the reexamined 097 patent and specifically in asserted claims 11, 19-22, 24, 26-28, 31-40, 42. Again, the court begins with the ordinary meaning of "flange" as set forth in the dictionary. Webster's Universal defines "flange" in relevant part as, "a projecting rim, collar, or ring on a shaft, pipe, machine housing, etc., cast or formed to give additional strength, stiffness, or supporting area or to provide a place for attachment of other objects" or "a broad ridge or pair of ridges projecting from the edge of a rolled metal shape generally at right angles, in order to strengthen or stiffen it." Webster's Universal, Stant Ex. 103, p. 729. Similarly, the dictionary definition advanced by Gerdes states that a "flange" is "a rim or edge projecting at right angles, to provide strength or means of attachment to another part." Webster's Third New International Dictionary, Unabridged (1993) ("Webster's Third"), Gerdes Exhibits for Opening Markman Brief ("Gerdes Ex. ") 226.

To arrive at the definition of "flange" in this context, the court must refine these possible dictionary definitions in light of the patent's claims and specification. See Texas Digital Sys., Inc., 308 F.3d at 1205 (holding that by examining the dictionary definition of a term in combination with the "intrinsic record to select from those possible meanings the one or ones most consistent with the use of the words by the inventor, the full breadth of the limitations intended by the inventor will be more accurately determined and the improper importation of unintended limitations for the written description into the claims will be more easily avoided."). This is also precisely what the court in Warner v. Ford Motor Co., 331 F.3d 851 (Fed. Cir. 2003), did in arriving at the definition of "flange" as used in the context of the patent at issue in that case. In that case, the court determined that the proper definition of flange was a simple one -- "a raised or projecting edge." Because the patent at issue before this court is not the same as that in Warner, this court may not simply accept that court's definition, but must engage in a similar analysis to determine the meaning of "flange" as used in the context of the 097 patent and the reexamined 097 patent.

One of the refinements of the definition that Gerdes urges the court to adopt is to limit "flange" to only disc-shaped structures. Gerdes Br., p. 10. Nothing in the actual claim language clearly expresses an intention to so limit the definition. In support of its argument, Gerdes points to the specification and drawings of the 097 patent where the patentee uses only examples of disc-shaped flanges and describes the flange in the drawings using "disc portion" interchangeably with "flange." See 097 patent, Stant Ex. 1, figures 1, 3, 5; col. 2, 11. 41-43; col. 3, 11. 64-66. The drawings and references to the flange in the specification, however, are simply illustrations of the preferred embodiment of this invention. The fact that the patentee describes only disc-shaped flanges in the preferred embodiment does not prohibit the patent from covering other types of flanges. See e.g., Teleflex Inc. v. Ficosa North America Corp., 299 F.3d 1313, 1328 (Fed. Cir. 2002) ("To the extent that the district court construed the term clip' to be limited to the embodiment described in the specification, rather than relying on the language of the claims, we conclude that the district court construed the claim term clip (28)' too narrowly."). The court sees nothing in the actual claim language that indicates the clear intention of the patentee to have these limitations read into the definition of the flange claimed in the actual claims. Thus, the court may not import this limitation. See Liebel-Flarsheim Co., 358 F.3d at 906-07 (listing cases in which the court found specific reason in the patent's specification to restrict the claim to only what was described in the preferred embodiment); Texas Digital Sys., Inc., 308 F.3d at 1204-05.

Under its ordinary meaning, the word "flange" may consist simply of an edge that functions as a flange. Webster's Third, Gerdes Ex. 226. Throughout the specification and claims, the patentee refers to the first and second "flanges" generally without any indication that he or she intended the term include any particular design for the flange. The preferred embodiment, as described in the specification and depicted in the figures, includes only one type of flange -- the disc-shaped structure with an upper, lower, and outer edge -- as stated above, although the court cannot not simply import these
On the structure of the flange into the claims without finding that the patentee intended this outcome. See Liebel-Flarsheim Co., 358 F.3d at 906-07. Thus, although the court finds that it is important to include an edge as a possible flange structure along with rim, collar, or ring, the court finds that logically even an edge must still include boundaries -- that is, an upper, lower and outer surface. This finding does not, however, limit the structure of the flange in any way -- it is a projecting rim, ring, collar, or edge -- other than by requiring it to include its outer boundaries made up of an outer, lower, and upper edge.

One of the dictionary definitions for the word "flange" includes the requirement that the rim or edge projecting from the other structure be attached at a right angle. It is clear to the court that if the definition of "flange" included attachment at a right angle, that Claim 19's requirement that the two flanges be "substantially parallel" would be meaningless because two flanges attached to the same structure at right angles will always be parallel. Reexamined 097 patent, col. 2, 11. 20-22. Under the doctrine of claim differentiation, this outcome should be avoided. Comark Communications, 156 F.3d at 1187. Further, nothing in the specification dictates that any particular attachment angle be included in the definition of the word "flange." Thus, the court finds that the dictionary definition of "flange" which includes the requirement of attachment at a right angle is not consistent with the definition of the word that the patentee intended in the 097 patent and therefore the court will not use this definition either. See Waner, 331 F.3d at 854 (finding that because one dictionary definition "most adequately represents what the inventor intended to claim in his invention," the court began with that definition rather than another).

From this discussion, the court concludes that in the context of the 097 patent and the reexamined 097 patent, the term "flange" means: a projecting rim, ring, collar, or edge attached to a structure to provide additional strength, stiffness, or supporting area or to provide a place for attachment of other objects.

1623

a. "rim connecting flanges"

The parties agree that Claim 7 is an independent claim that requires outward facing connecting flanges as the means for connecting. The parties again dispute, however, whether Plaintiff's modifier "short" is appropriate. For the reasons stated above in section (III)(A)(1)(c), the court finds that Plaintiff fails to support its argument that the connecting means must constitute only short flanges.

1624

3. "the flanges are located behind the studs to further secure the auxiliary frame to the primary frame"

Defendant objects to the magistrate judge's proposed construction of this element. As set forth above, the magistrate judge recommended that "the flanges are located behind the studs to further secure the auxiliary frame to the primary frame" should be construed as "the flanges are located behind the studs to further secure the auxiliary frame to the primary frame, either through contact or magnetic attraction between the magnetic materials within the flanges and studs." Report and Recommendation at 20. The magistrate judge rejected Defendant's proposed claim construction, namely, that "the flanges are located behind the studs to secure the auxiliary frame to the primary frame in addition to the support provided by the stud and the securing provided by the magnetic force." Under Defendant's proposed construction, the flanges themselves would provide a mechanism for securing the auxiliary frame to the primary frame, which would operate independently of the studs and magnetic materials.

Defendant argues that the magistrate judge's proposed construction is incorrect because: (1) it eliminates the requirement of Claim 12 that flanges "further secure" the auxiliary frame to the primary frame; (2) the patent requires that the flanges contact the studs to "independently" secure the frames together; and (3) the flanges operate independently of the magnetic materials. See Def. Obj. at 11-14.

The court overrules Defendant's objection. According to Defendant, because Claim 12 already requires that the magnetic
materials of the flanges and studs engage to secure the auxiliary frame to the primary frame, "it makes no sense to 'further secure' the frames by 'magnetic attraction between the magnetic materials within the flanges and studs.'" Def. Obj. at 12. The court rejects Defendant's contention that the magistrate judge's recommended construction has the flanges "performing the same function twice." See id. The patent discloses that by locating the downwardly extending flanges behind the studs, the flanges provide a "hook means" to further secure the auxiliary frame to the primary frame. "747 Patent, col. 2 lines 61-65. As Plaintiffs correctly argue, "the element the magistrate construed requires the flanges be 'located behind the studs to further secure the auxiliary frame to the primary frame.'" Pl. Resp. at 12 (original emphasis). The requirement that the magnetic materials of the flanges and studs secure the frames together does not speak to the location of the flanges with respect to the studs; the magistrate judge's recommended construction concerns the claim element that does speak to where the flanges are located relative to the studs to facilitate the back-mounting connection. Id. Accordingly, the court rejects Defendant's argument that the magistrate judge's recommended claim construction somehow results in the flanges performing the same function twice.

The court further rejects Defendant's argument as another attempt to read out of the patent the inclusion of magnetic material. The magistrate judge's construction properly reflected her rejection of "Defendant's contention that the mechanism by which the flanges secure the auxiliary frame to the stud of the primary frame is necessarily by contact between the flanges and studs." Report and Recommendation at 19. In support, the magistrate judge noted that Claim 12 indicates that the flanges and studs include magnetic materials, and that it is these magnetic materials, rather than the flanges and studs themselves, that engage to secure the frames. Also, as set forth previously (see supra), the magnets in the flanges and studs may engage through magnetic attraction without actual contact. Once again, Defendant does not point to any language in the claim or specification requiring contact.

Cone, Nose, Flank, and Shoulder Region

Claims in the '249, '715, and '631 Patents contain the terms "cone" or "cone region," "nose" or "nose region," "flank" or "flank region," and "shoulder region." The parties dispute whether these regions extend around the circumference of the drill bit face or are limited to the blades of the drill bit face. The parties further dispute the construction of these regions with respect to each other. Whether the Regions Extend Around the Circumference of the Drill Bit Face

Baker Hughes contends "cone," or "cone region," means "the area or region extending around the entire circumference on the drill bit face and which is located radially closest to the centerline or longitudinal axis of the drill bit body (and which is shaped more or less like an inverted cone)." Baker Hughes proposes similar constructions for the other claim terms and contends these regions extend around the entire circumference of the bit face.

ReedHycalog contends "cone," or "cone region," means the "region, defined by the blades of the bit, radially between the nose and the center longitudinal axis of the bit." ReedHycalog proposes similar constructions for the other claim terms and claims these regions are defined by the drill bit blades and do not extend around the entire circumference of the bit face.

The specifications of the '249, '715, and '631 Patents support a construction that limits the "cone," "nose," "flank," and "shoulder" regions to the blades. The '249 and '715 Patents refer to the "cone," "nose," "flank," and "shoulder" regions as being regions within the bit profile. '249 Patent col. 5:66-col. 6:1; '715 Patent col. 9:34-39. As the blades define the bit profile, and each of these regions are located in the bit profile, the blades likewise define the "cone," "nose," "flank," and "shoulder" regions.

Second, figures in the '249, '715, and '631 Patents confirm that these regions are limited to the area defined by the drill bit blades. Fig. 10 of the '249 and '715 Patents, displayed in Appendix C and annotated, shows the "cone," "nose," "flank," and "shoulder" regions along the bit profile. Fig. 13 of the '715 Patent, a quarter-sectional side view of the three-region embodiment of the claimed drill bit, similarly shows the disputed regions along the bit profile. '715 Patent Fig. 13. Figs. 14A and 14B of the '631 Patent, reproduced in Appendix C and annotated, show the "cone," "nose," "flank," and "shoulder" regions on the blades of the drill bit. While Fig. 14C of the '631 Patent, annotated and shown in Appendix C, tends to support Baker Hughes's contention that the "cone region" extends circumferentially around the drill bit, the above intrinsic
evidence more clearly shows that this region, in addition to the "nose," "flank," and "shoulder" regions, is limited to the drill bit blades. Thus, the Court construes these terms to only extend on the blades of the drill bit.

Radial Location of Each Region With Regard to Other Regions

Baker Hughes and ReedHycalog additionally dispute the definition of each region on the drill bit in relation to the other regions. In short, Baker Hughes defines "cone" as "... located radially closest to the centerline or longitudinal axis of the drill bit body ..." and subsequently defines "nose" as the area or region radially between the cone and the "flank," which includes the leading most point on the drill bit body. Similarly, Baker Hughes defines "flank" as the area or region radially between the "nose" and the "shoulder" or "gage," and "shoulder region" as the area or region radially between the "flank" and the "gage," although in a given drill bit, the "flank" and "shoulder" regions may be the same part of the bit.

ReedHycalog's constructions are similar, except that ReedHycalog starts with the "nose," which it construes as "extending radially and proximately about the leading-most point." ReedHycalog defines "cone" as the region radially between the "nose" and the longitudinal axis of the drill bit body, "flank" as the area or region radially between the "nose" and the "shoulder region," and the "shoulder region," and the "shoulder region" as radially proximate the "gage."

* * *

Flank

The parties propose nearly identical constructions of "flank" and "flank region." Baker Hughes contends the "flank" is radially less distant than the shoulder or gage regions. ReedHycalog contends the "flank" is located radially between the "nose" and "shoulder region."

The '631 Patent specification states that, as understood in the art, the "shoulder region" will often incorporate the "flank region." '631 Patent col. 19:60-66. The '715 and '631 Patents, in their Summary of the Invention sections, also describe the present invention in terms of cutters located in the "nose," "shoulder," and "cone" regions without mention of the "flank" region. '715 Patent col. 5:65--col. 6:1-6; '631 Patent col. 5:37-43. However, the '249, '715, and '631 Patents only disclose embodiments of the invention that include a "shoulder" or "shoulder region" radially between a separate, disjoint "flank" region and the "gage." '249 Patent Fig. 10, col. 5:59--col. 6:2; '715 Patent, Figs. 10, 13, col. 9:35-39, col. 12:55-63; '631 Patent, Figs. 14A, 15A, 15C, 16, 17, col. 19:60-65.

Despite the more limited embodiments, the language in the '631 Patent shows that whether the "flank" is its own region or incorporated within the "shoulder region," the "flank" region is always radially between the "nose" and the "gage" of the drill bit. The '249, '715, and '631 Patent disclosures are consistent with this result, even if the embodiments only show the "flank" and "shoulder" regions as separate and adjacent.

Accordingly, "flank" and "flank region" mean "region defined by the blades of the bit, located radially between the nose and the gage regions, labeled 234 in Fig. 10 of the '249 and '715 Patents." 8

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8 Ref. No. 7 of Appendix B contains the disputed terms and their construction.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -
a central recessed portion, and a base portion,

said shoulder portion being located above said central recessed portion and including a top wall having an opening therein,

said base portion being located below said central recessed portion and including a bottom wall,

said shoulder portion including a sidewall portion of circular periphery having a first predetermined outside diameter measured perpendicularly from said central longitudinal axis,

said central recessed portion including a smooth continuous oval sidewall having a major outside diameter and a minor outside diameter, said major outside diameter being less than approximately 2 inches (50.8 mm) and the same dimension as said first predetermined outside diameter measured perpendicularly from said central longitudinal axis, said minor outside diameter being approximately 1 inch (25.4 mm) measured perpendicularly from said central longitudinal axis,

said opening having an ink applicator mounted thereon for receipt of ink from the interior of said bottle,

said central recessed portion of said body merging with said sidewall portion of said shoulder portion at an upper flared surface, said upper flared surface being shaped to comfortably receive the thumb and index finger of one hand of a person to enable the person to hold said bottle so that said minor axis of said recessed portion of said bottle is located within the crook formed between the person's thumb and index finger to enable said bottle to be readily inverted to orient said applicator downward.

--- Footnotes ---

1. Claim 1 has been separated into segments for purposes of clarity.

--- End Footnotes ---

4. The parties agree that all of the elements contained in Claim 1 of the ‘681 patent are found in the Stuart bottle, with the exception that Stuart contends that its bottle does not contain an "upper flared surface" that is shaped "to comfortably receive the thumb and index finger of one hand of a person," as Stuart construes those terms. ‘681 patent, Col. 5-6.

5. The parties have agreed that the only aspect of Claim 1 of the ‘681 patent that requires interpretation is the reference to the term "flared". No other part of Claim 1, and no other claims, require interpretation.

6. The term "flared" as used in Claim 1 of the ‘681 patent is interpreted to mean "a surface that spreads outward" without any further limitation on that meaning.
by the intrinsic evidence found in the embodiment figures in the patent itself. In figure 10 seen below, it shows a concave surface where the end cap (114) meets the valve component (144). Therefore, according to Plaintiffs, any construction that requires the end cap to be perfectly smooth or without planar alteration is contrary to the patent and would exclude embodiments disclosed in the specifications.

Defendants contend the term "flat" should mean without projections or indentations and cite dictionary definitions in support. In figure 8 as seen below, Defendants contend the embodiment shown clearly supports Defendants' construction as the outer surface of the outer end cap at 114, is a smooth surface free of protrusions. Also, in other claims contained in the 537 patent, Plaintiffs included language indicating when a projection extended from a flat surface. No such descriptor is found in claim 12. Therefore, the Court should not permit Plaintiffs' broad interpretation of the plain term "flat".

The Wix Court held that the term "flat" was easily understood per common usage and construed the term as "flat means flat". Relying on dictionary definitions and common parlance including the Oxford English Dictionary which defined flat as "Of a surface: Without curvature, indentation, or protuberance; plane, level," and Merriam-Websters definition of "flat" as:

"having a continuous horizontal surface b : being or characterized by a horizontal line or tracing without peaks or depressions; having a relatively smooth or even surface; arranged or laid out so as to be level or even; having the major surfaces essentially parallel and distinctly greater than the minor surfaces."

The Court's Construction

The Court sees no reason to depart from the Wix Court's interpretation. Flat as a descriptor carries no loaded meanings. The Court holds "flat" means "flat" as construed by the Wix Court.

1. Flat

Claim 5 describes the patented device as "a flat and rectangular shaped member." The parties dispute the construction of the term "flat." Plaintiff argues it should be construed to mean "providing an essentially horizontal surface when laid out for use." Pl. Brief on Claim Construction at 9. Plaintiff points to Webster's Third New International Dictionary for support, citing its definition as "horizontal or nearly so and without significant curvature or inclination [and capable of being] arranged or laid out so as to be level, smooth or even." Id. at 10. Defendants argue the construction of "flat" should be "characterized by a horizontal line or tracing without peaks or depressions," Def. Claim Construction Chart at 1, or "completely flat," Def. Mem. in Support of Proposed Claim Construction at 17. There was little debate about the term "flat" during the Markman hearing. Tr. at 9-10. This Court will construe the term "flat" as having a surface which is "horizontal or nearly so without significant curvature or inclination and without noteworthy elevations or depression," level, smooth, or even. Webster's Third New International Dictionary, Unabridged 865 (1969).

Plaintiff contends that there is a disputed issue of material fact over whether removal of the post left behind a flat surface for polish securing. Through the affidavit of his patent attorney (presumably testifying as an expert as to the ultimate issue in the case), plaintiff contends that the Birthstone Heart is not flat, but concave, and is secured to the fingernail only at either end of the bow connector--not all the way across--which renders it far less able to withstand a slight pull while breaking free if the adornment snagged in someone's clothing.

Plaintiff is incorrect. Exhibit 18 offered in support of the motion for summary judgment, and marked as Exhibit 4 to the Deposition of Marlene Sortino, the publisher of the Snails catalogue, is a Birthstone Heart, complete with gold-plated bow connector, with the post removed. It is attached to an artificial fingernail in the "Polish Secure" mode. The connector does not simply adhere to the nail at either end, but is glued firmly to the tip of the artificial nail from one side to the other, with absolutely no gaps. Furthermore, the connector is glued across the very tip, the end, of the nail -- not down the middle of the
nail from tip to cuticle, as plaintiff's expert suggests it would have to be worn. Thus, contrary to the suggestion (made without any evidentiary support) in plaintiff's opposition papers, the adornment does indeed "dangle" from the nail, ready to catch on anything passing by and snap it.

Moreover, having seen the evidence first-hand, I can only conclude that proposed statement of material fact 16 is correct, and that the removal of the post from the underside of the gold-plated bow connector does indeed leave behind "a flat surface for polish securing . . . ." The determination of what a word in a patent claim means presents a question of law. That question, as with any question of claim construction, can be determined only by resort to "intrinsic" evidence -- i.e., the language of the patent claim; the specification of the patent and the prosecution history of the patent. Expert testimony (as from plaintiff's patent attorney Mr. Amer) about the meaning of a particular word in a patent is not admissible. See, e.g., Endress + Hauser, Inc. v. Hawk Measurement Sys. Pty. Ltd., 122 F.3d 1040, 1042 (Fed. Cir. 1997).

The word "flat" is used in the patent claim as part of the description of the connector ("... said connector having a flat base adhesively connected to said fingernail . . . "). but the word "flat" does not appear in the patent specification (the text and drawings of the patent). (See Ex. A attached to Complaint). Therefore, the term is to be given its ordinary meaning. See York Products, Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572 (Fed. Cir. 1996). As defendant correctly notes, the word "flat" has two common meanings -- either "a continuous surface that is horizontal or nearly so, without significant curvature" or "having a smooth or even surface, whether horizontal or not." (See Defendant's Reply Brief, pp. 8-9.) The patent's file wrapper is apparently silent about which of those two definitions plaintiff had in mind (if either), but since fingernails have some curvature to them, and an item of sufficient size could not be made to adhere at all points unless it displayed some modest curvature as well, it would appear to this court that the "smooth or even" definition is the more logical of the two. Of course, plaintiff's connector (which can be seen in Exhibit 19 in support of the motion) is considerably smaller than the gold-plated bow connector, so even though it has a flat (in the horizontal sense) bottom, it can be made to adhere to a naturally curved fingernail: However, there is nothing in the claimed invention that limits the size of the connector attachment element. A larger connector (like the bow connector) falls just as surely within the scope of the claimed invention as does a tiny connector (like plaintiff's). Therefore, the word "flat" as used in the '989 patent claim necessarily encompasses the "smooth or even surface" definition.

I therefore conclude that there is no competent evidence in the record to support any conclusion that there remains a genuine issue of fact; that removal of the post from the Birthstone Hearts connector does indeed produce a flat surface in the sense of "a smooth or even surface, whether horizontal or not"), that adheres to a fingernail at all points, not just at the ends. If the surface were not flat (in the dictionary definition sense of "a smooth or even surface, whether horizontal or not" (see Webster's Third New International Dictionary (1969 ed.)), then it would not be possible for every square centimeter of it to adhere to a fingernail when attached thereto with an adhesive. But Exhibit 18 in support of the motion leaves no doubt that the underside of the gold-plated bow is quite capable of doing just that. Thus, proposed undisputed material fact No. 16 is accepted by this Court as an undisputed fact.

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III.

The district court found "the idea of flat, coplanar supporting surfaces was not only essential, but pivotal to the patent claim." Iscar, slip op. at 24. Further, the trial court concluded that Iscar's products did not meet the "flat and coplanar" claim limitation because the insert-supporting surfaces on those products were not ground. The district court relied particularly on Sandvik's efforts to differentiate its invention from the prior art during prosecution by labeling its insert-supporting surface portions as flat and coplanar. In the same submission to the Patent and Trademark Office (PTO), Sandvik also noted that, to ensure the invention supports the insert in a precise position relative to a workpiece, "the edge surface portion of the insert is typically ground to provide as flat a profile as possible." Echoing these statements, the district court concluded: "The full meaning and scope of the '679 claims . . . was to patent an insert which was flat and coplanar, made so typically by grinding." This recitation captures accurately the importance of the "flat and coplanar" element, and also describes a process by which flatness might "typically" be achieved, but does not offer a meaning for "flat and coplanar." Notwithstanding this ambiguity in its understanding of the "pivotal" element of the claim, the district court concluded that Sandvik did not show that Iscar's inserts are flat and coplanar. To determine whether Iscar's inserts satisfy the limitation, however, this court must address the central question: how flat is "flat"?
The meaning of "flat and coplanar" in the context of the insert-supporting surface portions of the '679 patent depends primarily on intrinsic evidence, i.e., the patent itself and its procedural history. See Markman v. Westview Instruments, 52 F.3d 967, 979, 34 U.S.P.Q.2d (BNA) 1321, 1329 (Fed. Cir. 1995) (en banc), aff'd 517 U.S. 370, 38 U.S.P.Q.2d (BNA) 1461, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). The '679 patent claims do not expand on "flat and coplanar" in the required context of the claim's "insert-supporting surface portions." A preferred embodiment of the invention has a surface portion "formed by grinding of the cutting insert" '679 patent, col. 3, ll. 38-39, but a preferred embodiment does not necessarily constrain the meaning of claims. See Application of Phelps, 422 F.2d 1360, 1363, 57 C.C.P.A. 971, 974 (1970) ("Appellants may not read into claims limitations not expressed therein although emphasized in the specification.").

The summary of the invention in the specification states:

In a process aspect of the invention, a powder is pressed to form an insert body having . . . at least one edge surface . . . . The press-formed body is then sintered. Finally, the edge surface is ground . . . .

'679 patent, col. 2, ll. 12-19. The import of this statement depends on a full understanding of the patent's procedural history. This statement is a remnant of the original patent application, which was, at the behest of the examiner, divided into separate process and apparatus patents. The process patent - issued as U.S. Patent No. 5,356,805 - included the process step of grinding the edge surface in its claims. The patent at issue here is an apparatus patent that includes no such claim limitation. Thus, this statement from the summary of the invention does not necessarily limit the meaning of the apparatus claims.

In addition, the prosecution history of the '679 patent notes that grinding is typically used in the fabrication of these inserts. "Typically" is an additional indication that the patent did not necessarily limit the apparatus claims to surfaces produced by grinding. The district court's definition of "flat and coplanar" as "flat and coplanar and produced by grinding" impermissibly reads, therefore, a limitation from the specification into the claim.

Further, the meaning of "flat" in the context of the '679 patent requires recourse to the prosecution history. The inventor introduced the "flat and coplanar" limitation into his claim in the amendment to his application which finally resulted in the issued '679 patent, in order to differentiate his invention from that of Erkfritz in U.S. Patent No. 4,294,565. In his remarks to the PTO, the inventor contrasted his invention with that of Erkfritz, asserting that "the surfaces 32, 32 disposed on respective sides of the flat 30 in Erkfritz are neither flat nor coplanar, nor do they support the insert in the tool holder." Indeed, the surfaces 32, 32 in the Erkfritz patent are curved, with a radius in the illustrated embodiment of about one-eighth of the side of the cutting insert. The inventor of the '679 patent also mentioned that the edge surface portion of the insert must abut a surface of the tool in such a way as to support the insert "in a precise position relative to the workpiece. For that reason, the edge surface portion of the interface is typically ground to provide as flat a profile as possible." This history provides an excellent context to understand the meaning of "flat." As used in these statements, "flat" in the amended phrase "flat and coplanar" meant, at the time of its addition to the patent, "not curved," and also "sufficiently flat to support the insert in a position relative to the workpiece that is sufficiently precise for the designer's purpose." Because in that context, "flat" must have the meaning it carried at the time of its addition to the patent, the district court erred by narrowing the meaning of this limitation to an overly restrictive meaning of "flat," and by adding the requirement of grinding to achieve flatness.

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10. "flat apex"

The phrase "flat apex" is found in claims 59-60, 62-63, 65-66, 68-69, 71-72, and 74-75 of the '037 Patent, and claims 17, and 19-25 of the '255 Patent. Plaintiffs contend that the phrase should be construed to mean "highest or uppermost surface that is horizontal or nearly so without significant curvature or inclination and without noteworthy elevations or depression," while defendants and the intervenor contend that the phrase should be construed to mean "an apex that is not curved or rounded."

Preliminarily, neither party disputes that the ordinary meaning of "flat apex" should control, even though they submit
differing dictionary definitions of "flat." Plaintiffs' definition construes "flat" as "horizontal or nearly so without significant curvature or inclination and without noteworthy elevations or depressions," while defendants' definitions construe "flat" as a "horizontal face without a slope, tilt, or curvature," or "without peaks or depressions." See Pls. Op. Br. at 30:9-16; Defs. Opp. Br. at 33:7-16. The parties' critical dispute, based on these definitions, is whether "flat" should be construed as allowing for any curvature. Plaintiffs contend that a "flat apex" should be construed to allow for insignificant curvatures, while defendants and the intervenor reject this contention. Given the differing definitions, the court will look to the intrinsic evidence for guidance as to which ordinary meaning should control.

Beginning first with the claim language, it clearly contrasts apexes that are "flat," from those that are "rounded." Claim 68 of the '037 Patent, for example, covers a stent design wherein "one of the first wall and the second wall has a flat apex and the other of the first wall and second wall has a rounded apex." See Joint Statement, '037 Patent at 18:34-36. It is obvious, therefore, that "flat" and "rounded," described in opposition to each other within the same claim, must have differing meanings. "Flat" cannot mean "rounded," and vice versa. And since neither party appears to dispute that "rounded" would be defined to include curves, this implies that "flat" should be construed as neither curved nor rounded.

The specification language also describes "flat" in opposition to either "curved" or "rounded," further implying that a "flat apex" should be construed as one that is neither curved nor rounded. See id. at 4:7-9 (noting that, in the "present invention," the flexure means comprises at least one lateral section, the "apex" of which "may be pointed, rounded, or substantially flat"). Moreover, the specification goes on to describe, with reference to the illustrated figures of the '037 Patent, what a "flat apex" looks like. In discussing Figure 1A, for example, the specification notes that "segment 54 is a flat apex and results in the provision of a pair of substantially square shoulders." Id. at 8:46-48. Turning to segment 54 on Figure 1A, it is depicted as a flat horizontal apex, with no curvature, significant or otherwise. Similarly, in discussing the illustration of an apex depicted in Figure 2, the specification states that "the flat apex in concave-shaped wall 150 has been modified such that it comprises a pair of substantially rounded shoulders." See id. at 9:35-38. Viewing Figure 2, segment 150 is still depicted as a flat horizontal apex, without curvature. The difference, however, is that the shoulders on either ends of the apex are now depicted as curved, or rounded. As illustrated, therefore, the presence of curved or rounded shoulders in no way changes the depiction of a "flat apex" as having no curvature, or rounding itself.

In sum, then, both the claim language and the specification support defendants' and the intervenor's proposed construction that a flat apex is an apex that is neither curved nor rounded, whether significantly or not. The court therefore adopts defendants' and the intervenor's proposed construction and construes "flat apex" as: "an apex that is not curved or rounded." The court declines to rely on the Declaration of Jeffrey Allen because the proper construction can be determined here with reference to the intrinsic evidence -- i.e., the claim language and the specification.

6 The '575 Patent uses the term "flat car" in a way that is consistent with the term's ordinary meaning. Claims 1 and 2, for example, claim a "flat car supported on end truck assemblies." The truck assemblies in the '575 Patent contain the parts of the rail car that support the flat car such as the center sill, side sill, and draft sills that are main structural pieces of the rail car's underframe. The wheels of the rail car are also in the truck assemblies, and the wheels also help support the rail car. The '575 Patent also does not include in the claims or in the specification any structures that could be construed as sides, ends, or a roof.

In describing the prior art in standard center beam flat cars, the '575 Patent discusses how standard center beam flat cars
carry lumber and other construction material and that the invention in the '575 Patent is designed to carry these same materials. Lumber and other construction materials are commodities not needing protection from the weather. See Findings of Fact, PP 111-112, 119, 122, 125-136, 139-142.

B Flat contact

Ameritex argues that flat contact, which is used in independent claims 31 and 35, requires unbroken contact between a flat surface of the mounting member and the flat boat deck. 6 Dependent claim 19 in patent 449 and dependent claim 2 in patent 410 describe the contact between the lower portion and the boat deck as continuous flat contact. Independent claims 31 and 35 describe this contact as substantially continuous flat contact. Independent claims 26 and 41 describe this contact as substantially continuous contact.

--- Footnotes ---

6 Ameritex's mounting member shifts on round pivots. The mounting member is not secured through the flat sections on the lower portion.

--- End Footnotes ---

Independent claims 26 and 41 leave out the term flat from the description of the type of contact made between the lower portion and the deck, but the context of the claims do not indicate a difference between flat contact and continuous contact.

The specification states that the lower portions of the prior art did not allow the mounting member to maintain "flush continuous contact" with the boat deck (449 patent, col. 1, ll. 33-35) and that the present invention allows the mounting member to maintain "continuous flush contact without gaps between the mounting member and boat deck throughout the length of the member." (449 patent, col. 2, ll. 15-17). In the next sentence, the specification rephrases flush contact as an "edge or line contact." 449 patent, col. 2, ll. 20-23.

In the description of figures 2 and 3, the specification refers to the contact made by the circular lower portion and boat deck as "line contact" and states that the arcuately spaced openings allow the mounting member to remain flush with the deck without any gaps. 449 patent, col. 4, ll. 39-40 and col. 5, ll. 39-47.

The extrusion illustrated in figure 4 has a lower portion consisting of a flat section and an arcuate outer section. When describing the contact between the flat section of the lower portion and the boat deck, the specification, uses the term "flush contact." 449 patent, col. 6, ll. 13-14. When describing the contact between the arcuate outer section and the boat deck, the specification uses the term "continuous line contact." 449 patent, col. 6., ll. 16-18. Finally, when summarizing the description and drawings, the specification states that the "present invention provides methods for mounting a curved windshield to a flat boat deck wherein flush contact between the mounting member and the deck is provided." 449 patent, col. 6., ll. 23-25.

In the prosecution history, the examiner rejected independent claim 48 as reading on Loxcreen 5923. Examiner action dated January 21, 1988, P 4. The revised claim 48 included the limitation, among others, that the lower portion maintained "continuous flat contact" throughout the length of the member. Amendment dated January 26, 1988, p. 2. However, this amendment does not indicate that flat contact provides a limitation in addition to the flush, edged, line, or continuous contact described in the other claims and in the specification.

"The claim construction that stays true to the claim language and most naturally aligns with the patents description of the invention will be, in the end, the correct construction." Nystrom, 424 F.3d at 1142. Flat contact is not distinguished by the claims, is not mentioned by the specification, and is not referenced in the prosecution history. Consequently, the best construction to give the phrase is the meaning given to the only contact described in the patent document, which is contact without gaps and no requirement that the contact is between two flat surfaces as is suggested by Ameritex.
We agree with the Special Master's conclusion that the term "flat leading edge" as used in the patent claims and the specification requires only a flat top surface of the leading edge of the skimming device.

First, the language of the claim itself suggests that cross-sectional flatness is not claimed because the term is "flat leading edge," the adjective "leading" indicating a structure that is particularly positioned in regard to its purpose. Thus, there is support in the claim language that a forward motion is relevant in determining which surface of the leading edge must be "flat." Claims 2 and 5 provide that the leading edge is placed "in substantial parallel relationship with the surface level of the water." This limitation must refer to placing the slurry flowing over the front of the edge so that a uniform amount of water and eggs can be skimmed. It therefore also supports the view that the top surface of the leading edge must be "flat" or "level" because the relevant point of view is where the edge is placed in relation to the incoming slurry. Similarly, claims 1, 5, and 8 require that the flat leading edge be positioned under water "to collect" the slurry, and claim 20 requires that the leading edge "divide off suspended brine shrimp eggs at the surface of the water for delivery into the channeling structure," again indicating that the forward motion of the water is the relevant perspective to evaluate "flatness."

Additionally, the specification refers to the "flat leading edge" as the "forward receiving end" of a "concentrating funnel" or a "skimming device." It states that a slurry mixture is received at the leading edge, which "divides and separates the layer of eggs from the rest of the salt water body," so that the slurry mixture is "collected at the leading edge and falls into the funnel cavity." Thus, at most the specification places a limitation on the meaning of "flat that is functional -- that the edge must be flat to skim the brine eggs off the surface of the water. Any straight edge in the plane parallel to the eggs -- a horizontal plane - - would produce a flat edge in this sense, meeting that limitation regardless of whether it was or was not also "flat" in its cross-section. Placing a limitation that the edge is flat in cross-section appears to go beyond what the claims required with the term "flat leading edge."

Additionally, we find nothing in the prosecution history that would require or even suggest that cross-sectional "flatness" is required. The CIP patent explicitly treats the phrase "flat leading edge" as comparable in scope to the "flat receiving lip" discussed in the parent application. Also, Figure 2 in the parent and CIP applications is an identical drawing of a rectangular, pan-like skimmer, as an example of a specific embodiment of the claims.

Finally, SLB argues that "flat" means having a smooth, flat surface and that its devices which stretch material over a cylindrical pipe to form the edge cannot therefore infringe. However, SLB does not adequately address the emphasis the claims and specification place on the orientation of the edge. Thus, as long as the edge is "flat" in terms of the flow of the shrimp eggs and water, the patent does not appear to describe what the cross-section of the "lip" or edge must look like.

**Sub-element 1.** A base plate with a flat, leading edge at forward end of the channeling structure

BAI argues that a "flat" leading edge must be horizontal, i.e., parallel to the water surface. 25 This court rejects this asserted limitation, and interprets a "flat" surface to mean "relatively smooth or even." Merriam Webster's Collegiate Dictionary, (Tenth Edition), 1993, at 443. BAI's interpretation, coming from an extrinsic source (the dictionary) cannot be used for the purpose of varying or contradicting the terms of the claims. Markman, 52 F.3d at 980-81, 34 U.S.P.Q.2D (BNA) at 1330. Interpreting flat to mean a relatively smooth or even surface, as opposed to requiring the surface to be horizontal, finds more support in the specification. The flat, leading edge, feature 45 of figure 2, discloses a relatively smooth or even surface. "The flat receiving edge 45 is attached a [sic] the forward receiving end of the funnel and is adapted for positioning and use immediately below the surface of the water and the entrained eggs which are to be withdrawn." Col. 6, lines 29-31 ('062
The disclosure emphasizes the importance of skimming the entrained eggs and an appropriate amount of water to create the slurry mixture. The flat, or relatively smooth or even leading edge serves this purpose. Therefore, this court interprets "flat" to only require a relatively smooth or even leading edge which enables the harvesting device to skim or extract brine shrimp eggs from the surface of the water.

25 BAI cites the Random House Unabridged Dictionary, defining "flat" as "horizontally level." Furthermore, BAI relies heavily on a position taken by Sanders in the Salt Lake Brine Shrimp litigation which appears to support their definition of flat. However, claim interpretation is a matter of law, and since judicial estoppel is not followed in the Tenth Circuit, this court declines to force Sanders to adhere to this definition. See, section II.A. of this opinion.

Furthermore, even if this court were to adopt interpretations of the word "flat" made by this District Court and the Federal Circuit, the Federal Circuit did not limit its definition of flat to requiring the leading edge to be horizontal: "the term 'flat leading edge' as used in the patent claims and the specification requires only a flat top surface of the leading edge of the skimming device." Salt Lake Brine Shrimp, 1995 U.S. App. LEXIS 14255, *3. Finally, the specific language cited by BAI which requires the "flat" leading edge to be horizontal to the water surface is in reference to support for the definition of "flat" in claims 2 and 5, which require that the leading edge be placed "in substantial parallel relationship with the surface level of the water." Id. Therefore, the judicial conclusions in the Salt Lake Brine Shrimp litigation would support Sanders' definition of "flat" in this litigation to only require a flat top surface of the leading edge of the skimming device.

Furthermore, BAI's working platform was designed to be horizontal, but is slightly slanted because it was bent during operation and remains unfixed. This court doubts whether a device which would infringe as designed could escape infringement based upon its damaged condition.

5. Flat-Panel Display Device/ LCD Device

a. The Parties' Constructions

LPL argues that the "flat panel display device" is simply an apparatus with at least a flat display panel and supporting frames. Defendants assert that in the context of the invention, a "flat panel display device" includes a sandwich of layers or stack of components, including the flat display panel, held together or assembled by the first and second frames. ViewSonic further asserts that the stack of components are assembled along the edges. Defendants argue that the intrinsic record mandates such a construction and specifically point to the description in the common specification of an LCD device for support. n19 ViewSonic also submits that under LPL's construction, a portable computer would be a flat-panel display device, thereby rendering superfluous the non-asserted claims' term "portable computer."

For example, Defendants cite to the '641 patent, 1:42-45: "The LCD device 130 has an LCD panel 132, a backlight device 134 fixed to the back of the LCD panel 132, and a supporting frame 136 for assembling the LCD panel 132 and the backlight device 134 along the edge."

b. The Special Master's Constructions

Based on the express language of the claims, the Special Master does not adopt that portion of Defendants' constructions requiring multiple layers assembled or held together, along the edge or otherwise. The Special Master does agree with the Defendants, however, that the flat-panel display device includes the first and second frames.
The language of claims 55 and 56 provides a definition of flat-panel display device. '641 patent, 12:1-18. Tellingly, both claims recite that the flat-panel display device includes only three main elements, namely a first frame, a second frame, and a flat display panel disposed there between. Thus, to limit the flat-panel display device to one that includes multiple layers would be contrary to the claim language and would, in the Special Master's view, improperly read in the preferred embodiment of an LCD device. Mindful that other claims recite multiple layers, such as the backlight unit of claim 35 of the '641 patent, the Special Master adopts a construction that includes at least a flat display panel.

Additionally, the claim language further specifies that the flat display panel of the device is located between, or sandwiched by, the first and second frames. Claim 35 of the '641 patent recites, for example, that the "flat display panel is between the first and second frames." The claim term "between" does not require, however, that the panel and frames be assembled as Defendants argue. Instead the claim merely defines the location of the flat-display panel relative to the frames. The Special Master therefore concludes that requiring the frames and panel to be assembled, whether along the edges or not, improperly reads in the preferred embodiment from the common specification.

The term "LCD device," on the other hand, is specifically called out in claim 40 of the '718 patent. Because the language of claim 40 itself does not expressly define an LCD device, the common specification provides the best definition for that term. Phillips v. AWH Corp., 415 F.3d at 1315 (“The specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'”) (internal citation omitted). Referring to Figures 4A-4C, the common specification defines the LCD device as an LCD panel, a backlight unit, and a supporting frame. '718 patent, 4:17-21. Also, Figure 4C shows that the backlight unit 14 and the panel 12 are disposed between the frames 14g and 16.

Accordingly, the Special Master's constructions are as follows:

<table>
<thead>
<tr>
<th>CLAIM TERM</th>
<th>SPECIAL MASTER CONSTRUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>flat panel display device</td>
<td>A display device having at least a flat display panel sandwiched by the first and second frames</td>
</tr>
<tr>
<td>liquid crystal display (LCD)</td>
<td>A display device including a LCD panel and a device backlight unit both of which are sandwiched by the first and second frames</td>
</tr>
</tbody>
</table>

THE PATENTED INVENTION

The invention of the '580 patent is described by Modine as a highly efficient and environmentally advanced condenser for use in automotive air conditioning. It is more compact, lighter, uses less refrigerant, outperforms prior condensers, and has the additional advantage of being usable with refrigerants other than chlorofluorocarbons. Modine states that it converted the entire industry to a new standard.

Claims 9 and 10 of the '580 patent, the only claims in suit, are shown with emphasis added to point out the two terms that are the focus of the infringement issues:

Claim 9. A condenser for a refrigerant in a cooling system comprising:

[1] a pair of spaced, generally parallel, elongated cylindrical tubes defining headers;

[2] a vapor inlet in one of said tubes;

[3] a condensate outlet from one of said tubes;

[4] said header tubes each having a series of elongated generally parallel slots with the slots in the series on one header tube aligned with and facing the slots in the series on the other header tube;
[5] a tube row defined by a plurality of straight, tubes of flat cross-section and with flat side walls and having opposed ends extending in parallel between said header tubes, the ends of said flat cross-section tubes being disposed in corresponding aligned ones of said slots and in fluid communication with the interior of said header tubes, at least some of said tubes being in hydraulic parallel with each other;

[6] web means within said flat cross-section tubes and extending between and joined to the flat side walls at spaced intervals to (a) define a plurality of discrete, hydraulically parallel flow paths within each flat cross-section tube that extend between said header tubes; to (b) absorb forces resulting from internal pressure within said condenser and tending to expand the flat cross-section tubes; and to (c) conduct heat between both said flat sides and fluid in said flow paths,

[7] said flow paths being of relatively small hydraulic diameter which is defined as the cross-sectional area of the corresponding flow path multiplied by four (4) and divided by the wetted perimeter of the corresponding flow path;

[8] serpentine fins incapable of supporting said flat cross-section tubes against substantial internal pressure extending between facing flat side walls of adjacent flat cross-section tubes;

[9] each of said flow paths including at least one elongated crevice extending generally along the length of the associated flow path.

Claim 10. The condenser of claim 9 wherein each flow path has a plurality of said crevices.

It is not disputed that all of the elements of the claimed invention have counterparts in the accused condensers, and that infringement turns on the meaning and scope of the terms "flat side walls" and "relatively small hydraulic diameter." Modine challenges the correctness of the Commission's claim interpretation and the ensuing finding of non-infringement.

II

INFRINGEMENT

As we have recently held, "because claim construction is a matter of law, the construction given the claims is reviewed de novo on appeal." Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2D (BNA) 1321, 1329 (Fed. Cir.) (en banc), cert. granted, 116 S. Ct. 40 (1995). Disputes as to the meaning and scope of terms as used in the claims are determined as a matter of law, based on the patent specification and the prosecution history if it is in evidence. Id. at 979-80, 34 U.S.P.Q.2D (BNA) at 1329-30. As stated in Markman, "when legal 'experts' offer their conflicting views of how the patent should be construed, or where the legal expert's view of how the patent should be construed conflicts with the patent document itself, such conflict does not create a question of fact nor can the expert opinion bind the court or relieve the court of its obligation to construe the claims according to the tenor of the patent. This opinion testimony also does not change or affect the de novo appellate review standard for ascertaining the meaning of the claim language." Id. at 983, 34 U.S.P.Q.2D at 1333.

A. THE FLAT SIDE WALLS

The Commission, adopting the ALJ's Initial Determination, held that the term "flat side walls" means the interior walls of the condenser tubes, and that although the Showa side walls are flat in that they are not rounded, they are not "flat" because most (but not all) of the Showa models have fin-like projections on their interior surfaces. On this term construction the Commission concluded that the Showa tubes do not have "flat side walls" and therefore that the claims are not infringed by any of the Showa models.

Modine states that "flat side walls" describes the shape of the tubes, and refers to the '580 specification which describes the condenser tubes as "noncircular in cross section" and as a "flattened tube." Modine states that the side walls are flat whether or not they have fins on their inner surfaces, pointing out that the specification as well as the claims show fins on the outer surfaces as well as webs on the inner surfaces. Claim 9 mentions "flat side walls" in several clauses:
[5] a plurality of straight tubes of flat cross-section and with flat side walls . . .

[6] web means within said flat cross-section tubes and extending between and joined to the flat side walls . . .

* * *

[8] serpentine fins incapable of supporting said flat cross-section tubes against substantial internal pressure extending between facing flat side walls of adjacent flat cross-section tubes;

Clause [5] uses the word "flat" to describe both the cross-section and the side walls, but neither usage of "flat" requires that the interior or exterior wall surfaces be clear, without web or fin. Clause [6] requires a web "joined to" the interior flat side walls, negating the ALJ's reading that the wall surfaces must be clear. Clause [8] describes serpentine fins on flat side walls that are necessarily the exterior surfaces of the walls, contravening the ALJ's ruling that "flat side walls" means the interior walls.

The entirety of the claim's usage of flat side walls is consistent with the specification's description of the condenser tubes as "flattened" and "not circular." This plain reading is not affected by webs or fins on either the interior or the exterior surfaces of the walls, or by the crevices of claim 10. Indeed, a claim interpretation that would exclude the inventor's device is rarely the correct interpretation; such an interpretation requires highly persuasive evidentiary support, whereas in this case it received none, whether from the specification, the prosecution history, or the prior art.

We conclude that the term "flat side walls" means that the tube structure is flat, as the specification states, and does not prohibit the presence of fins, webs, or other attachments to either the interior or exterior surfaces. Those Showa tubes that bear inner fins (the 3mm models), and those that do not (the 2mm models), all have flat side walls as the term is correctly construed. This claim limitation is not a ground for a finding of noninfringement.

GO BACK

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1. Claim Construction

This Court now turns to Defendant Sashco's '014 patent, which describes a transparent squeeze tube that has a region of reduced thickness which allows the substrate to be viewed prior to application of the compound. The specific portion of Claim 1, the only independent claim, implicated in this case is the statement that "the compound in the region of reduced thickness has a substantially uniform, flattened configuration." Plaintiff argues that this requirement does not encompass its product, which is best described as a toothpaste-type squeeze tube. Defendant argues that its patent does extend to toothpaste-type tubes, similar to the product marketed by the Plaintiff.

As before, this Court will use the dictionary as a starting point for its analysis, focusing on the requirement that the caulking compound in the specified region have a "substantially uniform, flattened configuration." The term "flat" is defined as "having or marked by a continuous surface that is horizontal or nearly so without significant curvature or inclination." Webster's Third New International Dictionary 865 (unabridged 1976). The term "flattened" means "reduced to an even or more nearly even surface." Id. at 867. Therefore, a straightforward interpretation of this claim requires the slope or inclination of the tube to be noticeably reduced in this particular region, so that the surface of the tube (and the compound within it) becomes more horizontal and even. Accordingly, a toothpaste tube which does not have an appreciably "flattened" region, but which merely has an unchanging, tapered slope from one end of the tube to the other, will not fall within this patent's definition.

This interpretation of "flattened" is supported by specific language in the patent's specification, which describes this region as "a packet of caulking compound [having] a uniform dimensional thickness to facilitate preview of the caulking compound… [which] may be generally a rectangular pillow of caulking material… [which] allows the transparent facing sidewall portions to be oriented substantially parallel to one another to reduce distortion when the substrate surface is viewed." See also Figure 2 (demonstrating that letters of words may be viewed through this region of the product without significant distortion). These descriptions, taken either separately or together, indicate that the region of reduced thickness described in the patent is indeed intended to be "flattened" by having less of a slope (and, ideally, no slope) than the
remainder of the tube. Simply put, these descriptions do not describe a toothpaste tube.

Bearing this construction in mind, this Court now turns to an examination of the Plaintiff’s tube to determine if there exists a genuine issue of material fact as to whether this product infringes the Defendant’s patent.

Finally, claim 24 concludes:

(g) Flattening and applying the tissue flap to a recipient area larger than the area of the separated layer.

The parties agree that the tissue is to be applied to a recipient area larger than the original area. Nowhere in the patent does it appear that claim 24 must apply only to planar recipient areas. In the written description, it is noted several times that this method would be appropriate for breast mound reconstruction, a non-planar recipient area. Col. 1, lines 48-50; col. 7, lines 39-40. Therefore, “flattening” must, by implication, require the tissue to be placed onto the surface of the recipient area and the folds and wrinkles smoothed or flattened out.

Accordingly, the court finds this limitation to mean “smoothing and applying the differentially expanded tissue flap to a recipient area larger than the area of separated tissue.”

C. Flexible

Plaintiff’s proposed construction of the word “flexible,” as used in the claim element “a flexible shoulder guard,” is “capable of being bent or flexed.” (Pl.’s Br., at 11.) Plaintiff contends that “flexible” is a commonly understood word that can simply be construed in light of its dictionary definition: “capable of being bent, usually without breaking; easily bent.” WEBSTER’S ENCYCLOPEDIC UNABRIDGED DICTIONARY 733. According to Plaintiff, nothing in the specification or prosecution history of the ’226 Patent is inconsistent with this definition. (Pl.’s Br., at 12.)

TAG’s proposed construction of “flexible” is “made of plastic or other material that is able to bend without breaking.” (Def.’s Br., at 18.) TAG relies on the description of the shoulder guards in the preferred embodiment, which, as noted, states that the “flexible” shoulder guards are “preferably made of plastic or any other material that [are] sufficiently rigid to maintain a ‘U’ or ‘J’ shape but that [are] flexible enough for comfort.” (’226 Patent, col. 2, ll. 31-38.) TAG also points to the fact that during prosecution, the patentees differentiated their invention from the rigid Siemens protector for hockey goalies. (Def.’s Br., at 17.)

The court agrees with Plaintiff that “flexible” is a “commonly understood word[]” with a ”widely accepted meaning” that is “readily apparent.” See Phillips, 415 F.3d at 1314. Indeed, the ordinary meaning of “flexible” is so apparent, “even to lay judges,” that this appears to be a case in which the court may simply apply the commonly understood meaning, perhaps with the aid only of a dictionary definition. Id; see also Ormco Corp., 463 F.3d at 1306-07 & nn.5 & 6. Notably, the latter part of TAG’s own proposed construction is entirely consistent with that definition, for “able to bend without breaking” is materially indistinguishable from “capable of being bent, usually without breaking.” But the remainder of TAG’s proposed construction--“made of plastic or other material” that can bend without breaking--indeed imposes a significant limitation that is far removed from the commonly understood meaning of the term. To be viable, this proposed limitation must find clear support in the specification. MBO Laboratories, 474 F.3d at 1334; Teleflex, 299 F.3d at 1327.

The only support for TAG’s proposed construction in the specification, however, appears in the patentees’ description of the preferred embodiment. As explained above, TAG has failed to persuade the court to depart from the general rule that claims are not to be limited in accordance with a preferred embodiment. Nor does the prosecution history provide any reason to impose the limitation TAG seeks. As noted, the patentees differentiated their invention from the Siemens invention because the hockey goalie body protector disclosed by that patent was “comprised of a rigid frame,” whereas the ’226 chest protector was “flexible enough for comfort” and could more easily be taken on and off during a game. (Amendment, Ex. 11 to Def.’s
Br.) The patentees never used the word "plastic" in this prosecution history; indeed, the patentees merely stated that the shoulder guards "may be made of a different material" from the main pad. (Id.) By adding the term "flexible" to their claim, the patentees surrendered coverage only of chest protectors that, like the Siemens, were made of a "rigid frame" and were not "flexible." The patentees thus provided no differentiation with the Siemens protector that could be construed as imposing any further limitation on the scope of the term "flexible."

The court thus construes "flexible" as "capable of being bent or flexed."

2. Flexible

The district court construed the term "flexible" to mean "flexible enough for use in the vascular system as a conduit for an introducing catheter and other devices." Summary Judgment Decision, 345 F. Supp. 2d 466. Grayzel argues that such a construction "reverses the relationship between the SDH sheath and the introducing catheter in the SDH apparatus." The sheath, he contends, does not act as a conduit for the introducing catheter. Rather, Grayzel asserts that the introducing catheter enters the puncture site carrying the sheath and that the sheath would "bend, fray, or buckle" if unsupported by an introducing catheter. Grayzel relies on the language of claim 13, which recites that the sheath "coacts with" and is "supported by" the introducing catheter, to support his contention. Hence, he advocates that the correct construction for the term "flexible" is "sufficiently flexible such that the sheath must be carried into the vessel wall puncture by the introducing catheter" and "would bend, fray, or buckle if it were introduced into the puncture site without the benefit of being carried in by the introducing catheter."

Grayzel's proposed construction is not consistent with the intrinsic record. The specification makes clear that the sheath may be supported by the catheter, but that it is not required to be. The specification states in the "Summary and Objects of the Invention" section: "After insertion of the catheter, the sheath can be inserted by sliding it over the catheter if the sheath is not already on the body of the catheter." '960 patent, col. 5, ll. 34-36 (emphasis added). Contrary to Grayzel's argument, this disclosure suggests that the introducing catheter may be inserted first followed by the sheath. Once inside the vessel, the sheath will be slid onto the introducing catheter so that the two are positioned in the vessel as a single unit. The specification does not caution that the sheath may "bend, fray, or buckle" if introduced without the support of the introducing catheter. Nor does it disclose that special care is necessary when handling an independent sheath. Alternatively, this disclosure suggests the way that St. Jude apparently contemplates for inserting the introducing catheter and sheath under the '960 patent, specifically, that the sheath may be placed over the introducing catheter at the outset and the two are inserted and positioned into the vessel as a single unit.

Significantly, either approach is consistent with the language of claim 13, which merely states that the bore of the sheath will "coact with" and "be supported by the said flexible catheter." This language does not preclude that such coaction and support exist before the sheath is inserted into the vessel. Grayzel plainly misapprehends this language in arguing otherwise. Hence, because the specification teaches two approaches for inserting the sheath into a vessel, one where the sheath is independent of an introducing catheter, we conclude that the district court correctly construed the "flexible" limitation simply as "flexible enough for use in the vascular system as a conduit for an introducing catheter and other devices."

C. "Flexible"

Finally, the parties ask this Court to construe the term "flexible," although oral argument revealed no real dispute between the parties. (Tr. at 64-65.) However, the parties proposed slightly different constructions, and to the extent there are differences, this Court will construe the term.

The '079 Patent teaches that "wherein said at least two end portions are each made of flexible material so as to be flexible at least under the effect of a lateral action due to the displacement of a fluid." (Col. 4, lines 1-4.) Defendants argue that
"flexible" in this instance should be construed as "capable of being bent or flexed at least under the effect of a lateral action due to the displacement of a fluid." (Def. Mem. at 23.) Plaintiffs argue for an almost identical construction, "capable of being flexed or bent due to the action of bodily fluid flow." (Pl. Mem. at 18.)

There is no material difference between the proposed constructions. Defendants, however, properly limit their proposal to the functional limitation stated in the claim itself, that it be "capable of being bent or flexed at least under the effect of a lateral action due to the displacement of a fluid." (Col. 4, lines 2-4.) In contrast, plaintiffs attempt to engraft a functional requirement that the fluid flow in question be "bodily fluid flow," a limitation found nowhere in the claim and presumably gleaned from the specification. Therefore, this Court construes "flexible" in the '079 Patent as "capable of being bent or flexed at least under the effect of a lateral action due to the displacement of a fluid."

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Claims 1 and 5 describe a fan employing external flexible fan blades. The specification states that "the fan blades are formed of a flexible foam material such that they are very light weight, and unobtrusive and non-harmful to a human even when in striking contact with the human body." The '495 patent, col. 5, lines 43-46. The lower-weight blades also extends battery life because a lower-power motor may be employed to drive the fan. Defendant argues that the term "flexible" is a relative term, since all materials have some degree of flexibility. As a result, this part of the claim is anticipated by the '106 patent. The court finds this distinction unavailing.

There is no indication in the '495 patent that the inventors intended to give the term "flexible" any special definition. Webster's Dictionary defines "flexible" as "pliant." "Pliant" is synonymous with "pliable," meaning "supple enough to bend freely or repeatedly without breaking." 8 This definition is consistent with the term's usage in the patent, especially in light of the description of the blades being unobtrusive and non-harmful to a human. This element and its benefits are not taught by the '106 patent, which has its rigid fan blades completely encased within the device's head. The external flexible fan blades as used in the '495 patent are therefore not disclosed in the '106 patent.

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8 Webster's Ninth New Collegiate Dictionary (1985). The full definitions are:

flexible adj 1: capable of being flexed: PLIANT 2: yielding to influence: TRACTABLE 3: characterized by a ready capability to adapt to new, different, or changing requirements….

pliant adj 1: PLIABLE 1a 2: easily influenced: YIELDING 3: suitable for various uses.…

pliable adj 1 a: supple enough to bend freely or repeatedly without breaking b: yielding readily to others: COMPLAISANT 2: adjustable to varying conditions: ADAPTABLE ….

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

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16. Flexible, Resilient, and Resiliently Urging

The next group of terms for construction are flexible, resilient, and resiliently urging. These terms are used in various combinations in '410 patent claims 1, 4, 5, 8, 9, 12, 13, 17, 18, 21, 22, 25, 26, 30, 31, 34, 35, and 38 (flexible and resilient locking strip); in '410 patent claims 39, 48, 50, 53, 54, 57, 58, and 61 (locking strip . . . is flexible and resilient); in '410 patent dependent claim 42 (flexible strip); in '410 patent claims 1, 13, and 26 (resiliently urging the flexible locking strip); in '410 patent claims 40 and 50 (resiliently urging the flexible strip at one of said short edges); in RE '439 patent claim 42 (flexible resilient material); and, in '907 patent claim 9 (resilient locking strip). These terms are used in claims providing for the snap joining of panels.
The Plaintiffs assert that "resilient" means "springing back or rebounding" and "flexible" means "capable of being bent, usually without breaking" relying on the common meaning of the words. (Pls.' Open. Br. 36.) Pergo proposes that "a flexible and resilient strip is one made out of a material that at the time of the invention was known to be capable of repeatedly bending and then returning to its original shape and position, such as aluminum or other metals, or plastics." (Unilin's Open. Br. 42-46.) Pergo maintains that the definition should not include "particle board" or other wood based material.

In arguing for its interpretation of the terms, Pergo relies upon the patent specification and the ordinary meaning of the terms flexible and resilient. In addition, Pergo proffers the declaration of Joseph R. Loferski, Ph.D. ("Loferski"), a professor of the Department of Wood Science and Forest Products at Virginia Polytechnic Institute, in Blacksburg, Virginia. (Unilin's Open Br. Ex. 17.) Loferski indicates that, based on what was known about high density fiberboard ("HDF") and medium density fiberboard ("MDF") at the time the first Pervan patent was filed in 1994, one skilled in the art would believe that making floor panels with snap-locking elements formed of HDF and MDF was not possible. (Ex. 17 P 22.)

Claim 39 of the '410 patent, previously quoted in full, includes the terms "flexible," "resilient," and "resiliently urging" as follows:

"the first and the second mechanical connections are so constructed as to allow mutual displacement of the panels in the direction of the long edges, the second mechanical connection along the long edges is so constructed as to allow the locking element to leave the locking groove if the panel associated with the locking groove is turned about its long edge angularly away from the strip, and each locking strip at the short edges is flexible and resilient such that two of the floor panels, having already been mechanically joined to a common long edge of a third of the floor panels, can be mechanically joined together at their adjacent short edges by displacing said two panels horizontally towards each other, while resiliently urging the flexible strip at one of said short edges downwards, until said adjacent short edges of the two panels have been brought into complete engagement with each other horizontally and the locking element at said one short edge thereby snaps into the locking groove at the adjacent short edge." ('410 patent, 14:39-46.) (Emphasis added). "Flexible" means "capable of being bent or flexed." Webster's II New Riverside University Dictionary 487. "Resilient" is a synonym for "flexible." See id. "Resilience" means "the property of a material that enables it to regain its original shape or position after being bent, stretched, or compressed." See id. at 1000. The definition of "urging" includes "to exert an impelling force." Id. at 1271.

The invention is described as being well suited for use in joining floor panels, especially thin laminated floors. (410 patent, 1:28-29.) The specification states that the invention provides a system for making a joint along the adjacent floor panels in which the "locking device further comprises a strip integrated with the other of said panels, termed strip panel, said strip extending throughout substantially the entire length of the joint edge of the strip panel and being provided with a locking element projecting from the strip, such that when the panels are joined together, the strip projects on the rear side of the groove panel with its locking element received in the locking groove of the groove panel." (410 patent, 4:10-20.)

In discussing the strip, the specification states: "Preferably, the strip may consist of a material which is flexible, resilient and strong, and can be sawn. A preferred strip material is sheet aluminium." (410 patent, 5:18-20.) Such discussion of the strip materials is not limited to a particular method of joining the panels -- e.g., angling the panels or by snapping the panels.

In discussing the preferred embodiments, the specification refers to Figures 1a and 1b and to Figures 4a and 4b showing the basic design of the panels and states:

"The strip 6, which is made of flexible, resilient sheet aluminium, can be fixed mechanically, by means of glue or in any other suitable way. In FIGS. 1a and 1b, the strip 6 is glued, while in FIGS. 4a and 4b it is mounted by means of a mechanical connection, which will be described in more detail herein below. Other strip materials can be used, such as sheets of other metals, as well as aluminium or plastics sections. Alternatively, the strip 6 may be integrally formed with the strip panel 1." (410 patent, 7:4-13.) (Emphasis added). An integrally formed strip could be formed of laminate, which the specification described as the material used in the panel itself. (See '410 patent, 6:53-55.)
Reading the claim terms in the context of the specification, the Court is not persuaded that the terms "flexible," "resilient," and "resiliently urging" should be construed as excluding "particle board" or other wood-based material. The terms should be given their ordinary meaning as one skilled in the art at the time of the invention would understand them. The noun "laminate" is defined as "a laminated product, as plywood." Webster's II New Riverside University Dictionary 674. "Plywood" is a wood based material. See id. at 906.

The qualities embodied by the terms "flexible," "resilient," and "resiliently urging," inherently limit the material types without the need further for specific limitations that are not provided for by the patent specification or claims. Loferski's declaration is extrinsic evidence, which may not be used to contradict the intrinsic evidence. See Phillips, 415 F.3d at 1318. Furthermore, Loferski's opinion relies, in part, upon Unilin's European patent for the MDF invention -- adding an additional layer of extrinsic evidence. Pergo's inclusion of the adjective "repeatedly" to modify bending is not supported by the ordinary meaning of "flexible." Thus, the Court construes "flexible and resilient strip" as "one made out of a material that at the time of the invention was known to be capable of bending and then returning to its original shape and position."

"Flexible" means "capable of being bent or flexed." "Resilient" means "able to regain its original shape or position after being bent, stretched, or compressed." "Resiliently urging" means to "exert an impelling force which allows it to regain its original shape or position."

4. "Rigid"

I construed the term "flexible cell" (relevant to the asserted claims of the '381 Patent) to mean "an arrangement of structural elements that defines an enclosed space. The cells must be substantially flexible prior to expansion of the stent and substantially rigid after expansion of the stent." 116 The term "rigid" can refer to two different attributes of a stent, and the parties disagree about which attribute is necessary under my claim construction. 117 Medinol contends that "rigid" refers to radial support -- that is, the capacity of the stent to support the vessel wall after deployment. Guidant contends, however, that both "rigid" and "flexible" refer to longitudinal flexibility, and so "rigid" in this context means the opposite of "flexible." As the accused products, unlike the patents-in-suit, are designed to maintain longitudinal flexibility even after expansion and deployment (so as to avoid straightening blood vessels), Guidant asserts that its interpretation of "rigid" compels the conclusion that the accused products do not have "flexible cells," and thus do not infringe the '381 Patent.


117 Among the dictionary definitions of "rigid" are: (1) deficient in or devoid of flexibility; and (2) appearing stiff and unyielding. See Merriam-Webster Dictionary.

The term "rigidity" is used twice in the text of the patents-in-suit. Most notably, the specification discloses that:

It will be appreciated that the two orthogonal meander patterns 11 and 12 and the compensation they provide to each other provides flexibility to the unexpanded stent of FIG. 1. However, when the stent is expanded, the changes in each of loops 14 and 16 provide rigidity to the resultant stent and thus, enable the stent to maintain a blood vessel at a desired inner diameter. 118

118 '381 Patent, col. 4, ll. 26-30 (emphasis added). The other two patents-in-suit contain the identical passage -- thus, all citations to the '381 Patent in this section apply equally to the '120 and '982 Patents.

Both parties point to this passage as support for their interpretation of my construction of rigid. 119 But the only sensible reading of this passage, given the usage of "thus," is that "rigidity" is intended to relate to the ability of the stent to hold open the vessel. In other words, the specification clearly connects the concept of "rigidity" to the stent's purpose of maintaining proper scaffolding of the artery once deployed.

119 See Pl. Mem. at 20 ("thus, the Patents-in-Suit teach that, on expansion, the first meanders [of which the loops 14 and 16 referenced in the patent are a part] become more resistant to radial compression (i.e., more radially rigid) as they open, enabling the stent to provide good support"); Def. Mem. at 19-20 ("the critical point Medinol misses -- as the transition [word however] used in the specification [makes] clear -- is that when the stent expands, there is a definite transformation
from a flexible state to an inflexible state).

To be sure, the patents-in-suit use "rigid" in a different sense when describing the prior art Palmaz and Schatz stent designs, which the patents-in-suit describe as follows: "since [their] tubular grafts are relatively rigid, the flexible connectors are needed so that the stents can bend when being fed through a curved blood vessel." 120 However, the limited point made by this quotation, which does not contradict the specification's description of the invention, is that some prior art designs tended to be inflexible prior to expansion. The Palmaz designs, in particular, were well-known in the stent art to be relatively inflexible before expansion, which was one of the concerns the patents-in-suit sought to address in the first place.

120 '381 Patent, col. 1, ll. 43-46 (emphasis added).

121 See Medinol III, 2005 U.S. Dist. LEXIS 35866, 2005 WL 3535062, at **3-4 (citation omitted).

The prosecution history relied upon by Guidant does not support its position. Guidant asserts that "Medinol overcame a rejection to the prior art Pinchasik '373 Patent arguing that the 'present invention' -- unlike the 'rigid' prior art articulated stent design -- was 'uniformly flexible' prior to expansion. . . . By contrasting flexible and rigid as essentially opposing qualities, Medinol made it quite clear its use of the term rigid meant the opposite of flexible." 122 However, the prosecution history cited by Guidant merely shows that Medinol distinguished the patents-in-suit from the '373 Patent's pre-deployment rigidity. 123 The '373 Patent, unlike the patents-in-suit, is an "articulated" stent design that can be bent pre-deployment only at certain intervals where connectors hold together "rigid" lengths of stent. 124 In fact, the statements from the prosecution history cited by Guidant all relate to pre-deployment flexibility. 125

122 Def. Mem. at 19.

123 During prosecution, Medinol asserted that:

The '373 patent is directed to an articulated stent which includes at least two substantially rigid segments and a flexible connector disposed between the substantially rigid segments for connecting adjacent rigid segments of the articulated stent. Thus, the '373 patent discloses an articulated stent that is comprised of at least three distinct portions and does not disclose the meander patterns of the claimed invention, their cooperative relationship, or the flexible structure disclosed and claimed by Applicants. Furthermore, the articulated stent disclosed in the '373 patent is flexible only at the articulation points where the connectors connect the substantially rigid segments. In contrast, the Applicant's invention and the pending claims are directed to a flexible expandable stent whose unique meander patterns and structure define a plurality of flexible expandable cells that are substantially flexible prior to expansion of the stent and substantially rigid after expansion of the stent that permit the stent to be substantially uniformly flexible along its entire length prior to expansion of the stent.

Excerpts from the Prosecution History of the '120 Patent at 8, Ex. 8 to Shaffer Decl. (emphasis added).

124 See, '373 Patent, Title Page (patent entitled "ARTICULATED STENT"); id. col. 2, ll. 16-22 ("The objective of the present invention is achieved by an articulated stent, comprising: (a) at least two substantially rigid segments; and (b) a flexible connector for connecting adjacent segments, wherein the connector assumes a substantially cylindrical configuration when relaxed and a differentially stretched and compressed curved configuration when flexed.").

125 See, e.g., Medinol PTO Statement at 5 ("The stent of the present invention is flexible in two directions, throughout its body, rather than having rigid areas and flexible areas as in the stents of the prior art. This flexibility enables it to bend anywhere along its length and to expand without significantly changing its length. In addition, because the structure of the stent is generally uniform, the flexibility is present generally throughout the structure, a fact which enables it to bend at all locations throughout the structure.").

Finally, Medinol's position is consistent with the stated goal of the patents-in-suit. As I have already noted, the chronic problem with early stent designs, which the patents-in-suit sought to address, is that there was an unfortunate trade-off between pre-deployment flexibility and post-deployment radial strength. 126 A stent could be flexible yet do a poor job of holding open a vessel once deployed, or it could be strong once deployed yet hard to maneuver through a blood vessel. The whole purpose of the patents-in-suit was to be flexible pre-deployment yet radially strong post-deployment. Thus, whether a
stent based on the patents-in-suit is flexible or inflexible after deployment is largely beside the point. 127 Accordingly, Guidant's interpretation of "substantially flexible prior to expansion of the stent and substantially rigid after expansion of the stent" would, in effect, construe the patents-in-suit as teaching an attribute (post-deployment inflexibility) unrelated to their stated purpose. 128


127 Although a court should not compare the accused products and a commercial embodiment of an asserted patent, see, e.g., Glaxo, Inc. v. Torpharm, Inc., 153 F.3d 1366, 1373 (Fed. Cir. 1998), I note that the chapter on the NIR and NIRFLEX Stents, co-authored by Richter and cited by Guidant, states that once the stent is deployed, "the stent loses its flexibility, but this lost feature is no longer important since the stent is not required to move anywhere." Jacob Richter et al., The NIR and NIRFLEX Coronary Stents, in Handbook of Coronary Stents 217 (4th ed., Patrick Serruys and Benno Rensing eds.) 2002, Ex. 10 to Shaffer Decl. See also BSC Trial Testimony at 73-76 ("Flexibility . . . is needed when you are trying to track it through the curviness of the artery. But once you get to the position, you don't need it. The strength or the rigid support of this stent is needed after you deployed it, but not when it is crimped on the balloon.").

128 Guidant asserts that Medinol missed the boat with its lack of concern with post-deployment flexibility. See Def. Mem. at 20 (citation omitted) ("In 1999 . . . Medinol finally realized what Guidant had known all along -- that a flexible, and not a rigid or inflexible stent after expansion led to better overall stent performance and thus, improved patient outcomes."); Def. Noninfringement 56.1 P71 (Richter discussing physician complaints regarding the post-deployment inflexibility of Medinol stents: "some could refer to it as straightening of vessel, some could refer to it as making it more rigid longitudinally") see also supra note 37. While Guidant may be correct, this point is not relevant to the literal infringement inquiry.

Because the intrinsic evidence establishes the proper definition of "rigid" in this context, there is no need to turn to extrinsic evidence to construe "rigid." 129 In any case, the extrinsic evidence presented by the parties is largely irrelevant. Both parties collect various statements made by Medinol and Guidant employees, retained experts and third-party patents purporting to establish that their opponent has conceded the proper construction of "rigid." 130 These collected statements prove nothing. As already demonstrated, "rigid" in the context of stent technology can be used in two senses -- pre-deployment, it means the opposite of "flexible," and post-deployment (at least as used by the patents-in-suit), rigid refers to the ability of the stent to hold open a blood vessel. 131 The various uses of "rigid," "rigidity," or "radial rigidity" cited by the parties cannot be divorced from the contexts in which those statements were made, and thus they shed no particular light on the proper meaning of "rigid" as used in the patents-in-suit. 132

129 See Vitronics Corp., 90 F.3d at 1583 ("Resort to extrinsic evidence is appropriate only when an ambiguity remains after consulting the intrinsic evidence of record.").

130 For example, Guidant collects various statements made by Richter, as well as Medinol's experts during depositions, purporting to be "highlights" of the many instances "where Medinol has used the term 'rigid' to mean inflexible or stiff." Def. Mem. at 21 (citation omitted). By contrast, Medinol catalogs an assortment of stent patents, belonging to Guidant as well as third parties, purporting to use "rigid" to mean radial support. See Pl. Infringement 56.1 PP73-76 (citation omitted).

131 This is well illustrated by Richter's testimony at the Markman hearing. When describing the Palmaz stent, he used "rigidity" in both senses within the span of three sentences, but at the same time he clearly distinguished the different usages: "the support, the rigidity of the vessel wall was very good. The problem with that . . . it is totally inflexible, totally rigid . . . if you have a very tortuous vessel you will not be able to push it through to the target. So [the Palmaz stent] had good support, good rigidity for support." Markman Tr. at 11 (Richter) (emphasis added).

132 For example, Guidant correctly notes that much of Medinol's evidence actually employs a different term, "radial rigidity," to refer to radial strength. See Def. Reply at 8-9 ("Guidant does not dispute that 'rigidity,' when modified by 'radial,' relates to 'radial strength.' But . . . when used alone, rigid simply means inflexible."). However, it does not follow that Medinol is precluded from using "rigidity" in its own patents, without the adjective, to convey the same concept. Moreover, many, if not all, of the statements made by Medinol officials or experts, purportedly establishing that rigidity refers to post-deployment inflexibility, show no such thing when read in context. See, e.g., BSC Trial Testimony at 73 (Richter testifying that, inter alia, "the strength or the rigid support of this stent is needed after you deployed it"); Sherman
Dep. Tr. at 127-29 (describing the Palmaz stent as longitudinally rigid before deployment); see also supra note 127 (quotation from Richter's chapter in the Coronary Stent Handbook, clearly indicating that "rigidity" in relation to the NIR stent was meant in terms of vessel wall support post-deployment).

In sum, based on the intrinsic evidence Medinol's interpretation of "flexible cell" is correct. Accordingly, "rigid" as used in my construction of "flexible cell" means "able to hold open the blood vessel at the desired inner diameter." Because it is based on a false premise as to the relevant meaning of "rigid," I do not reach Guidant's argument that infringement of the flexible cell claims is determined by comparing a stent's pre-expansion longitudinal flexibility with its post-expansion longitudinal flexibility. See Def. Mem. at 22-24.

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(8) "Flexible compensating member or flexible link." A structural element that is flexible with respect to the stent's longitudinal axis and must be aligned along the longitudinal axis of the stent. A "flexible compensating member or flexible link" must connect adjacent cells, but the physical connection need not be made at points directly opposite each other.

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J. "a single flexible connecting device secured to the free end of said elongate member;"

Defendants assert that the term "flexible connecting device" connotes a means-plus-function element, thereby falling within the purview of 35 U.S.C. § 112, P 6, and limiting the element to structures delineated in the specification.

Under 35 U.S.C. § 112, P 6, [a]n element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof." The statute states that these types of claims are not construed to cover all possible means for performing the stated function, but are "construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112, P 6; see O.I. Corp v. Tekmar Co., 115 F.3d 1576 (Fed. Cir. 1997).

In identifying which claims shall be read as means-plus-function, courts have construed those claims using the term "means" as creating a rebuttable presumption that § 112 P 6 applies, while not including the term "means" creates a rebuttable presumption that § 112 P 6 does not apply. Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004). Thus, "[t]he use of the term 'means' is central to the analysis, because the term 'means,' particularly as used in the phrase 'means for,' is part of the classic template for functional claim elements, and has come to be closely associated with means- plus-function claiming." Id. (citations omitted). This presumption stems largely from the idea that § 112 P 6 "provides that an element in a claim for a combination 'may be expressed' as a means for performing a function, which indicates that the patentee is afforded the option of using the means-plus-function format. The question then is whether, in the selection of claim language, the patentee must be taken to have exercised that option." Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584 (Fed. Cir. 1996) (quoting § 112 P 6).

The presumption against construing an element of a claim as invoking § 112 P 6, absent the term "means," may be rebutted "if it is demonstrated that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." Lighting World, 382 F.3d at 1358 (citations omitted). However, it must be understood that the presumption against § 112 P 6 treatment is "a strong one, that is not readily overcome." Id.

In Lighting World, the Federal Circuit explained the test for determining whether a claim element lacked sufficient structure, thereby overcoming the presumption. In that case, however, the court found that the term "connector assembly" did provide sufficient structure, and thus did not fall within § 112 P 6. Id. at 1360-63. The court stated:

In considering whether a claim term recites sufficient structure to avoid application of section 112 P 6, we have not required the claim term to denote a specific structure. Instead, we have held that it is sufficient if the claim term is used in
common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.

Id. at 1359-60. The court continued: [T]he fact that a particular mechanism . . . is defined in functional terms is not sufficient to convert a claim element containing that term into a 'means for performing a specified function' within the meaning of section 112(6)." Id. at 1360 (quoting Greenberg, 91 F.3d at 1583). In concluding that "connector assembly" did not fall within the purview of § 112 P 6, the court noted:

[W]hile it is true that the term "connector assembly" does not bring to mind a particular structure, that point is not dispositive. What is important is whether the term is one that is understood to describe structure, as opposed to a term that is simply a nonce word or a verbal construct that is not recognized as the name of structure and is simply a substitute for the term "means for."

382 F.3d at 1360.

The Lighting World court also distinguished "connector assembly" from the "lever moving element" which was found to be means-plus-function element in Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206 (Fed. Cir. 1998). In Mas-Hamilton, the court found that "lever moving element" did not define structure, in that it did not have a well understood structural meaning in the art. 156 F.3d at 1213-14. Lighting World distinguished Mas-Hamilton on the ground that "connector assembly" did in fact have an understood structural definition in the art, as defined by the patent specification, dictionaries, and expert testimony. 382 F.3d at 1363.

Conversely, in Mass. Inst. of Tech. ("MIT") v. Abacus Software, the Federal Circuit determined that the term "colorant selection mechanism" did not connote sufficient structure to a person of ordinary skill in the art to avoid § 112 P 6 treatment. 462 F.3d 1344, 1354 (Fed. Cir. 2006). In doing so, the court noted that generic structural terms such as "means," "element," or "device" do not recite sufficient structure to avoid § 112 P 6, but that "[c]laim language that further defines a generic term like 'mechanism' can sometimes add sufficient structure to avoid 57 Ore. 541, 112 P 6." Id. However, in that instance the Court found that the phrase "colorant selection" did not add sufficient structure to define the term "mechanism" so as to avoid § 112 P 6. Id.

In making its determination, the MIT court first looked to the prosecution history of the patent and noted that the patentee used "mechanism" and "means" as synonyms. Id. The court also looked disfavorably upon the fact that the term "colorant selection," which modified "mechanism," was not defined in the patent specification or in dictionaries, nor did it have a generally understood meaning in the art. Id. The court thus found that the phrase did not recite sufficient structure to one of ordinary skill in the art, and was therefore limited by § 112 P 6. Id.

In this instance, the phrase "flexible connecting device" does not fit neatly into the standard means-plus-function analysis. Obviously the phrase does not contain the term "means," thus the strong presumption against § 112 P 6 is applicable in this case. However, that presumption may be rebutted upon a showing of a lack of structural specificity or a recital of function without reciting sufficient structure for performing that function. Lighting World, 382 F.3d at 1358. Facially, it does not appear that the phrase "flexible connecting device" connotes any particular structure, and could be interpreted as describing a device according to the function that it performs. However, it is clear that neither the delineation of a specific structure, nor the identification of structure distinct from its function, is required to escape § 112 P 6. Id. at 1359-60. What is required to escape § 112 P 6 is that the phrase be used in common parlance or by persons of skill in the pertinent art to designate structure, even if the structure described is of a broad or amorphous class.

This Court believes that Lighting World controls and that "flexible connecting device" does in fact connote such a structure. This Court cannot distinguish between the "connector assembly" of Lighting World and the "flexible connecting device" of the present case. Just as that court found that "connector" had a reasonably understood meaning as a name for structure (noticeably, not a structure), despite the fact that this structure was defined in terms of the function that it performs, so does this Court find "connecting device" to connote structure. Admittedly, there is a distinction in the terms, in that the term "connector" is a noun whereas "connecting" is an adjective describing the function of the generic phrase "device," however the Court finds this to be a distinction without difference. Absent any evidence on the issue, this Court cannot see any substantial difference between a person of ordinary skill in the art of lighting fixtures describing something as a "connector assembly" and a person of ordinary skill in the art of small motorized devices describing something as a "connecting
device."

Additionally, the factors present in MIT, which the Federal Circuit relied upon to construe "colorant selection mechanism" as a means-plus-function element, are not present in this instance. The prosecution history of the '448 patent lacks any synonymous usage of the terms "device" and "means," and the term "connecting" (which modifies "device") is clearly defined in common knowledge and dictionaries. Thus, the term "connecting device," in the context of this patent, connotes a sufficient degree of structure to one of ordinary skill in the art so as to avoid § 112 P 6.

Furthermore, this Court gives consideration to the fact that the presumption against construing an element as means-plus-function stems from the premise that § 112 P 6 affords the patentee the option of using the means-plus-function format. Greenberg, 91 F.3d at 1584. In light of this fact, an important distinction within the patent becomes apparent. Claim 10 is dependent upon Claim 1, and further limits the "flexible connecting device" of Claim 1:

[W]herein said connecting device comprises an elongate flexible member, first flexible connecting means at one end of said flexible member for flexibly connecting it to the free end of said elongate member, and second connecting means at the opposite end of said flexible member for connecting it to the object to suspend it below the free end of said elongate member.

(′448 patent, column 4, line 50-57.) It is clear from Claim 10 that the patentee was indeed familiar with the means-plus-function terminology, and the method of exercising his option to invoke § 112 P 6, as he added the limitations of a "first flexible connecting means" and a "second connecting means." It seems to this Court that if the patentee wished to exercise this option in claim 1, he would have done so in the same manner. In light of this inconsistency, the Court does not believe that the patentee exercised his option to invoke § 112 P 6 in this element of Claim 1.

As the Court has determined that § 112 P 6 does not apply, and the words of the phrase are commonly understood, the Court does not believe that "flexible connecting device" requires any additional construction. 6

--------------------- Footnotes ---------------------
6 Defendants have requested that "single" be construed as "only one." However, the Court finds that the word "single" is readily understood and requires no further definition.

--------------------- End Footnotes ---------------------

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The next element in dispute in claim 17 is the phrase "by at least one flexible connector member disposed between adjacent grafts." "Flexible" means capable of being bent or flexed. Webster's at 427. A "connector member" is a structure disposed or particularly arranged between adjacent grafts in order to join them together. The word "flexible" clearly modifies the phrase "connector member." Although it is a purpose of the invention to describe an intraluminal graft "able to flexibly bend, or articulate, with respect to the longitudinal axis of [the] graft" (PX 1/API 1: '417 patent, col. 12, lns. 44-5), there is no requirement in the claim language that each individual graft be flexible, only that the connector member be flexible. This interpretation is consistent with the disputed language of claim 25, which more specifically requires that the connector member be particularly arranged "to flexibly connect" adjacent structures; again, it is the connector member and not the adjacent structures which must provide flexibility, as is the case with the Palmaz-Schatz stent.

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The next element in dispute in claim 17 is the phrase "by at least one flexible connector member disposed between adjacent grafts." A "member" is defined as a constituent part of a whole, a component serving to form, compose or make up a unit or whole. Webster's at 1408, 486. A "connector member," therefore, is a discrete structure disposed or particularly arranged between adjacent grafts in order to join them together. "Flexible" means capable of being flexed, turned, bowed, or twisted
without breaking. Id. at 869. The word "flexible" clearly modifies the phrase "connector member." Although it is a purpose of the invention to describe an intraluminal graft "able to flexibly bend, or articulate, with respect to the longitudinal axis of [the] graft" (’417 patent, col. 12, lns. 44-45), there is no requirement in the claim language that each individual graft be flexible, only that the connector member be flexible. This interpretation is consistent with the disputed language of claim 25, which more specifically requires that the connector member be particularly arranged "to flexibly connect" adjacent structures; again, it is the connector member and not the adjacent structures which must provide flexibility.

6 Connecting "by means of something intervening . . . ." Webster's at 480 (emphasis added).

The dictionary definition sets forth the common meaning of a word, and normally we ascribe to a claim term its common meaning unless the patentee has otherwise limited or defined the term. Cf. Vitronics Corp. v. Conceptronic Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1577 (Fed. Cir. 1996) ("The specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term."); Slimfold Mfg. Co. v. Kinkead Indus. Inc., 810 F.2d 1113, 1116, 1 U.S.P.Q.2D (BNA) 1563, 1566 (Fed. Cir. 1987) ("Claims are not interpreted in a vacuum, but are part of and are read in light of the specification."). In addition, "the record before the Patent and Trademark Office is often of critical significance in determining the meaning of the claims." Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2D (BNA) at 1577. In this case, the patentee, throughout the specification and prosecution history, used the term "flexible" to describe a physical quality of the diaphragm that allows the craft to traverse rugged terrain.

The specification has a number of references to the ability of the "flexible diaphragm" to pass over obstacles. It states that the craft's "curtain can extend upwardly from the lower edge of the columnar construction for a relatively great distance to permit such curtain to flex and pass over relatively large obstructions, such as large stones, etc., without harm to the relatively rigid upper supporting member." The "curtain" is also distinguished from the "rigid wall" of the craft, which "would not yield when encountering a stone or the like, so the vehicle would have to stop suddenly or the wall . . . would be broken." Summing up with respect to the "flexible diaphragm," the patentee posits, in the specification, that "the curtain is so constructed that it yieldingly glides over relatively high objects." It is clear from the specification that the inventor defined the term "flexible" to connote the ability of the curtain to be deflected by obstacles.

This interpretation of the term "flexible" is further cemented by the prosecution history. During prosecution, the patentee distinguished his invention over the prior art by noting the ability of the claimed craft to "ride over obstacles." In addition, the patentee further stated that the "flexible . . . curtain . . . allows the platform to . . . pass over obstructions in a surprising manner."
Therefore, reading the claim in light of the specification and prosecution history, we conclude that the patentee limited the term "flexible" to encompass a physical property of the diaphragm to flex or give when the hovercraft encounters obstacles.

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B. Flexible Element

ICU argues that the term "flexible element" should be defined as "portion that is capable of being bent or flexed" while Braun argues that it should mean an element that is "capable of being bent without breaking, easily bent" but "not using mechanical or moving parts such as springs or diaphragms." Revised Joint Claim Construction and Prehearing Statement for '673 Patent ("RJCCPS") at 3. Thus, Braun's definition is narrower than ICU's in two respects: 1) "flexible" means flexible without breaking; and 2) "flexible" means not using mechanical or moving parts.

1. Bent Without Breaking

The parties agree that the construction of the term "flexible" begins with its dictionary definition. ICU Opening Brief at 11; Braun Brief at 10. The parties further agree that the 1987 edition of the Random House Unabridged Dictionary is the proper general-usage dictionary for this claim construction. ICU Opening Brief at 11; Braun Brief at 10. Random House defines "flexible" as:

1. capable of being bent, usually without breaking; easily bent . . . 2. susceptible to modification or adaptation.; adaptable . . .; 3. willing or disposed to yield; pliable . . . 4. a flexible substance or material, as rubber or leather.

Random House Unabridged Dictionary 733 (2d ed. 1987). This Court thus may easily dispose of Braun's limitation that a "flexible" object must be able to be bent without breaking. The dictionary definition makes no such categorical statement. Both parties would have been more consistent with their dependence on the dictionary had they argued that "flexible" means "usually without breaking." Accordingly, this Court will construe the term as including structures that are capable of being bent, but usually without breaking.

This construction is consistent with the use of the term in the patent. The claim states that the flexible element must be "movable between an uncompressed position . . . and a compressed position," while also being able to "flex[] to accommodate axial compression." Col. 16:4-12. The specification refers to the "seal" 3 as being "reusable," and "resilient." Col. 2:43-44, 3:35. A construction of the term "flexible" as being easily broken upon compression would conflict with these statements and thus is excluded. However, a construction of the term as being so resilient as to stand up to very strong compression such that it could never be broken would define term in a way not supported by the patent.

3 The parties agreed at oral argument that the term "seal" in the specification is equivalent to the term "flexible element" in the claim. Thus in construing the term "flexible element," this Court will take into consideration the use of the term "seal" in the specification.

2. Mechanical Parts, Springs and Diaphragms
Braun is incorrect in asserting that the specification "disavows or distinguishes" the "flexible element" from "prior art valves and connectors that use springs or diaphragms" such that an interpretation of the "flexible element" including mechanical parts is foreclosed. Braun Brief at 14. The specification's description of the advantages of the invention over prior art devices cannot limit the definition of the claim unless it constitutes a clear disavowal. See Brookhill-Wilk 1, 334 F.3d at 1301 ("Advantages described in the body of the specification, if not included in the claims, are not per se limitations to the claimed invention.") (citations omitted); Astrazeneca AB, Aktiebolaget Hassle, KBI-E, Inc. v. Mutual Pharmaceutical Co., Inc., 384 F.3d 1333, 1340 (Fed. Cir. 2004) (criticism of prior art may be a disavowal if implication is clear from discussion of particular feature of the invention). Contrary to Braun's reading of the patent, it can not be said that the specification "repeatedly, consistently and exclusively" discusses seals as not having mechanical parts. Irdeto Access, 383 F.3d at 1303.

The specification describes the prior art mechanical connectors as inferior because they were more prone to malfunction upon repeated use. Col. 1:35-46. The specification does not say that the invention in the '673 Patent will never have mechanical parts. Nor does it say that all inferior designs have mechanical parts. Col. 1:35 (stating that prior art connectors "often have mechanical or moving parts" (emphasis added)). Instead, the specification describes the claimed invention as superior to prior art devices because "the fewer the mechanical parts the more these connectors can be relied on. . . ." Col. 1 44-45. Thus the specification merely states that it is preferable for medical valves of the type disclosed in the '673 Patent to have few, although not necessarily zero, mechanical parts. If Braun's interpretation of this portion of the specification as a clear disavowal of all flexible elements using mechanical parts were accepted, then the claimed invention could also never have "moving parts." See Col. 1:41-43 ("the more mechanical or moving parts such as springs and diaphragms, the more likely that they will function improperly." (emphasis added)). However, the claimed invention undisputedly does have at least one moving part -- the flexible element itself. Col. 9:37 (describing the seal in one preferred embodiment as a "movable part").

Accordingly, this Court construes the term "flexible element" to mean a portion of the valve that is capable of being bent, usually without breaking.

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2. Plate . . . Which is Flexible Enough to be Wound Around the Inner Tube (Claims 9 and 15)

Three words of this phrase, "plate," "flexible," and "wound," drew special attention from the parties. The court addresses each word separately and then places them in the context of this entire phrase.

Plaintiffs find it unnecessary to give the term "plate" any specific definition. 19 But, in response to Defendant's proffered definition, Plaintiffs argue that the patent itself provides the following definition: a three-dimensional structure that fits within the sealed annular space lying between the inner and outer tube, which forms a casing around the inner tube. 20 Defendant originally offered the following definition: "a smooth, flat thin piece of material." 21 At the hearing, Defendant dropped the adjective "smooth" from its definition. 22 Plaintiffs insist that a plate need not be flat either. 23

--- Footnotes ---

19 Plaintiffs' Brief in Opposition to Defendant's Opening Claim Construction Brief, Docket Entry No. 27, p. 5; Plaintiffs' Markman hearing arguments.

20 Plaintiffs' Markman hearing arguments (citing 547 patent at 2:2-5, 40-44; 3:63-64).

21 Defendant's Brief on Claim Construction, Docket Entry No. 23, pp. 2, 9.

22 Defendant's Markman hearing arguments.

23 Plaintiffs' Markman hearing arguments.

--- End Footnotes ---
The word "plate" is used at least seventeen times throughout the sixteen patent claims with no apparent variation in meaning. Cf. Nazomi Communs., Inc., 403 F.3d 1364, 2005 WL 820491, at *5 (generally referring to the rule that a claim term is construed consistently throughout the patent); Rexnord Corp., 274 F.3d at 1342 (same). As defined in the design engineering field, a "plate" is "[a] rolled, flat piece of metal of some arbitrary minimum thickness and width depending on the type of metal." McGraw-Hill Dictionary of Scientific and Technical Terms 1524 (5th ed. 1994). In more common parlance, a "plate" has several definitions, including "[a] flat, smooth, relatively thin, rigid body of uniform thickness." Webster's II New Riverside University Dictionary 900 (1984). Although some aspects of both of these definitions obviously are not accurate descriptions of a plate in the context of this patent, the court notes that both describe a plate as flat. "Flat can be defined as "[a] smooth, even surface" or as "an object with a broad, shallow or thin form." McGraw-Hill Dictionary of Scientific and Technical Terms 769 (5th ed. 1994). As the adjective "flat" is the most significant point of contention, the court looks to the intrinsic evidence for verification that the plates of this invention have either a smooth, even surface or a broad, shallow or thin form.

From the claims themselves, the court can determine little about the precise shape of the plates of insulation. The claims generally indicate that the plates are made of microporous insulating material, are flexible, and are self-sustaining. 24 Some of the claims that are not in issue in this suit specify the thickness of the plates of insulation, indicating that the plates are quite thin. 25 Nothing in the claims specifically requires that the plates be smooth or even. The specification does not offer much additional guidance, except to emphasize that the layer of microporous insulation is thin. 26

26 See, e.g., id. at 4:8-14 (suggesting a thickness of ten millimeters for use with oil pipelines and a thickness of up to thirty millimeters for other applications).

The portions relied on by Plaintiffs indicate that the structure is three dimensional and forms a casing around the inner pipe. 27 Plaintiffs convincingly argue that not all commonly recognized plates have smooth, even surfaces, e.g., a plate of armor, a gold plate on a piece of jewelry and that nothing in the patent requires smooth, even surfaces of the plates. 28

27 See id. at 2:2-6, 40-44; 3:63-64.
28 See Plaintiffs' Markman hearing arguments.

Even Defendant dropped the word "smooth" from its proposed definition as not being descriptive of the invention. However, Defendant cites the court to a reference in the specification to "planar plates." The specification reads, "The plates of microporous material which are commercially available as planar plates have enough flexibility to be intimately wound around the inner tube or plated thereon with no trouble." 29 The court agrees that "planar" can mean "flat" or "two dimensional," 30 but disagrees that "planar" should be read into the claims from this reference. Cf. Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998) (reaffirming that limitations from the specification cannot be read into the claims). Instead, this quoted portion seems to address the flexibility of certain commercially available planar plates of microporous material and their compatibility with the invention, rather than to require planar plates. In fact, the use of planar in that context, but not in the claim language leads the court to the conclusion that the plates of insulation need not be flat in the two-dimensional sense. Based on the above discussion, the court finds that a "plate," in the context of this patent, is a broad, thin, flexible piece of material.
This brings the court to the second of the three terms in this phrase to be interpreted: flexible. Plaintiffs state that flexible means capable of bending without cracking. As it appears that Defendant does not dispute Plaintiffs' definition, the court adopts it.

The third and final term in this phrase, wound, remains a sticking point for the parties. Plaintiffs argue that wound is part of the phrase that describes a characteristic of the plate. They also contend that the word "wound" could be replaced by words such as "placed," "located," or "fitted," referring to where the insulation is applied, rather than how it must be attached to the inner tube during the assembly process. Defendant contends that the term means that "the plate of insulation is bent from its initial flat shape into a different, final shape wrapped around the inner tube."

Every appearance of the term "wound" in the patent claims is within the same nonessential phrase: "which is flexible enough to be wound around the inner tube." Without a doubt, wound denotatively and connotatively carries a meaning that involves wrapping, encircling, spiraling, curving, twisting, coiling, or some similar motion around another object. Therefore, the court is unconvinced that the word could be replaced with a term indicating the location of the insulation plate, as argued by Plaintiffs. On the other hand, the phrase in which it is used describes the plate of open-pore microporous material, not the manner in which that plate is attached to the inner tube. The claims do not require that the insulation necessarily be fitted onto the inner tube by being wound around it, only that the plate of insulation be flexible enough for such action. The specification supports this understanding. The specification discusses an assembly method whereby the insulation is applied in parallel plane strips longitudinally along the inner pipe.

29 547 patent at 5:3-6.


31 Plaintiffs' Markman hearing arguments; see also Plaintiffs' Brief in Opposition to Defendant's Opening Claim Construction Brief, Docket Entry No. 27, pp. 5-6. Plaintiffs' definition is supported by Federal Circuit case law interpreting "capable of flexing" as "capable of bending." See Arlington Indus. v. Bridgeport Fittings, Inc., 345 F.3d 1318, 1326 (Fed. Cir. 2003).

32 Plaintiffs' Markman hearing arguments.

33 Id.

34 Defendant's Markman hearing arguments; see also Defendant's Brief on Claim Construction, Docket Entry No. 23, pp. 2, 9.


36 See id. at 4:60-63.
Under these circumstances, the court finds it inappropriate to infer from the use of the word "wound," as is suggested by Defendant, that the plate is initially flat. Rather, the court agrees with Plaintiffs that the phrase "which is flexible enough to be wound around the inner tube" refers to the degree of flexibility necessary within the plate of insulation.

Putting all of these terms together, the court recommends that "plate . . ., which is flexible enough to be wound around the inner tube" means a broad, thin piece of material that is sufficiently capable of bending that it can be wound around the inner tube without cracking or breaking.

Zeppelin challenges the district court's construction of the term "flexible joints between the units." The court construed the term to mean "a point or position in the interval or position separating the floatation units of the dock, which point or position is capable of bending or flexing." Zeppelin argues that the district court erred in its construction because the term "joint" in the claims must refer to a tangible object, not merely a "conceptual" "point." According to Zeppelin, a "point" cannot be characterized as "capable of bending or flexing." Zeppelin argues that the district court "mechanically combined" definitions of the claim terms, and should have excluded a point from the possible definitions of "joint." Zeppelin proposes that the term "flexible joints between the units" should be construed to mean "a configuration or component connecting the floatation units of the dock, which configuration or component is capable of bending or flexing."

Jet Dock defends the district court's claim construction, analogizing to the human body: "an elbow is a flexible joint between [the] forearm and upper arm, yet there is no component that can be considered apart from the bones [that] the joint connects." (Br. of Appellee, at 31.) Jet Dock further argues that the district court's construction is consistent with the specification, because the tabs that connect the floatation units help form the "flexible joint" but are not disclosed as components separate and apart from the floatation units themselves. See '833 patent, col. 1, l. 67-col. 2, l. 1.

We see no error in the district court's construction of "flexible joints between the units." We think that Zeppelin's proposed construction is incorrect because the "flexibility" referred to in the '833 patent is not that the material forming the joints itself is flexible, but rather that the joints permit the floatation units to flex and bend relative to each other. This is clearly recited in the claim language: to "permit adjacent units to flex downwardly with respect to each other upon the imposition of a downward load." Id. col. 7, ll. 43-45 (claim 1). Consistent with this notion, the specification teaches that "when joined together the floatation units 12 and 14 show some flexibility relative to one another." Id. col. 4, ll. 23-24.

Phoeni contend that flexible lip means "resilient portion." Silgan contends that it means "the end portion of the neck of a
container which is configured to resiliently flex under load about one or more hinged areas."

Both parties agree that a flexible lip must be resilient, meaning it can flex under pressure and then spring back into its original position once the pressure is released. The disagreement is whether the flexible lip must contain a hinged, or V-shaped, area. Silgan points out that the specification, at column 2, lines 19-21, says, "it is preferable if the neck initially doubles back creating a flexible lip . . .," and at column 2 lines 55-60 says, "it is preferable that materials and the geometry of the top, the first protrusion, and the neck render them sufficiently flexible to allow for some temporary deformation of shape. This is facilitated by the curvature of the top and the bends in the neck." Thus, as Silgan argues, the patent describes flexibility as something created by a bend or curve in the material.

Phoenix argues that the word "preferable" in the quoted language from the specification indicates that the curved or hinged lip is not a necessary part of the patent, but only a preferred embodiment, which the Federal Circuit has warned should not be imparted into the claims as a limitation. See Toro Co. v. Deere & Co., 355 F.3d 1313, 1319-1320 (Fed. Cir. 2004). The Court recognizes this principle of construction, but does not believe that defining flexible as curved or bent in this instance would run afoul of the general rule.

Rather, what is preferable according to the specification is a flexible lip. If the Court was construing the word "lip," it would arguably be wrong to require a flexible lip on the ground that the specification said a flexible lip was preferable. Here, however, we are construing "flexible lip," not just "lip," and the specification says -- in two different places -- that flexibility is created by a bend or curved shape. The Court, therefore, adopts the following construction: a resilient, curved or bent, portion of the neck near the mouth of a container. This construction is consistent with the specification and does not require a V-shaped or hinged-shaped bend or curve, as these appear to be preferred embodiments of the term "flexible lip."

1656

G. "Flexible Link"

The following claims incorporate the phrase "flexible link": 28 of the '303 Patent; 51 of the '018 Patent, 56-58, 61, 63, 65-66, 68-70 of the '381 Patent. 108 For Medinol, "flexible link" means "a structural element that is flexible with respect to the stent's longitudinal axis and must be aligned along the longitudinal axis of the stent." 109 Guidant views a "flexible link" as "[a] structural element connecting the apices of adjacent cells, that is flexible and aligned with respect to the stent's longitudinal axis." 110


109 Pl. Mem. at 19. Accord Cordis Order at 3 (defining "flexible compensating member or flexible link").

110 Def. Mem. at 24.

The parties' disagreement over this term arises from Guidant's proposed inclusion of a requirement that the flexible links connect the "apices of adjacent cells." 111 During prosecution, the patentee distinguished the Palmaz '417 Patent by explaining that:

Applicants have also amended Claim 1 to include the limitations of Claim 3 to adjacent cells of adjacent rigid segments. This is in contrast to Palmaz '417 and Cardon whose links are spiral-shaped and therefore, do not connect the apices of adjacent segments. Instead, they connect the apex of a first cell on one segment with the apex of a second cell (of the second segment) which is shifted from the one which is adjacent to the first cell. 112

This statement reveals that (1) the Palmaz '417 and the "Cardon" Patents connect the apices of non-adjacent cells and (2) the
key distinction between claim 1 of the Pinchasik '373, as amended, and the prior art, was the requirement that the flexible links connect the apices of adjacent cells. 113 The amendment related not to the "apices" of the cells, but to the relative location of the connected cells (adjacent versus non-adjacent). The use of flexible links to connect adjacent segments was intended to improve upon designs based on the prior art by avoiding twisting on expansion. It is therefore logical to impart the following definition to the term "flexible link": a structural element connecting adjacent cells that is flexible and aligned with respect to the stent's longitudinal axis.

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111 Id. See also Pl. Sl. at 93.

112 2/17/95 Amendment Under Rule 116 from U.S. Application No. 08/213,272 (Paper # 9), Ex. 20 to Lee Aff., at 2-3.

113 The Cordis court found that this language clearly indicated that although "neither the prosecution history nor the specification require that the physical connection be made at points directly opposite" to one another, "a flexible compensating member or flexible link must connect adjacent cells." Cordis Order at 3 n.2.

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1657

C. "Flexible Member."

The term "flexible member" appears in claims 1, 4, 5, and 7. Claim 4 recited (col. 17:35-39):

4. An improvement in a bundle breaker as defined in claim 1 wherein:

   a. said first and second flexible members have a width extending substantially the width of said logs and in close proximity to said weakened plane in said log.

Plaintiffs propose that this term should mean "a structure that is capable of deformation in response to a force exerted upon it." Defendant disagreed and originally proposed the definition "a pliable sheet of material."

Once more, defendant has changed its proposed construction midstream. It now contends that the term should mean "a material that deforms in response to changes in force exerted upon it and is capable of recovering its size and shape after distortion." As to the first part of the construction, plaintiffs and defendant disagree on whether the proper term is "material" or "structure."

This order holds, however, that the plain language of the term itself is sufficient. Defining this phrase further is not necessary. At the hearing on this motion, both plaintiffs and defendant agreed. Accordingly, the phrase "flexible member" needs no further construction or clarification -- it will have its commonly understood meaning.

1658

(1) flexible pad

Plaintiffs propose the construction "The object or base to which a plurality of actuators are attached or in which a plurality of actuators are embedded, where such object or base is capable of being flexed. As the term 'flexible pad' is used in the context of the '941 patent, it includes, among other things, handheld game pad controllers." (Joint CC Chart at 7; Doc. No. 31.) Defendants' construction is "A foam or cushion-like structure. The "flexible pad" is not the hand-held game pad described in the '941 patent." (Joint CC Chart at 7; Doc. No. 31.) The parties' constructions differ primarily with regard to two elements. First, the constructions differ because Plaintiffs propose that "flexible" means "capable of being flexed."
Second, the constructions differ on whether "flexible pad" includes the hand-held game pad described in the '941 patent; Plaintiffs argue the term includes the hand-held game pad, but Defendants argue that a "flexible pad" must be a foam or cushion-like structure and not a hand-held game pad.

Turning to the first issue, Plaintiffs' interpretation of "flexible" as "capable of being flexed" is inappropriate because that construction is far broader than the ordinary meaning of the term. Many objects that are capable of being flexed are not flexible. A steel I-beam is capable of being flexed, but no one would call it "flexible." An I-beam flexes somewhat when a person walks across it and transmits vibrations when someone hits it with a hammer, but it is not flexible because it cannot be noticeably flexed without substantial force. Thus, this example suggests that the ordinary meaning of the term "flexible" is closer to "capable of being noticeably flexed with ease." See In re Buszard, 504 F.3d 1364, 1367 (Fed. Cir. 2007) ("We agree with Buszard that it is not a reasonable claim interpretation to equate 'flexible' with 'rigid[.]'"). As such, Plaintiffs' construction violates the basic canon that claim terms must be construed based upon the ordinary meaning of the terms. NTP, Inc. v. Research In Motion, Ltd., 392 F.3d at 1346; Interactive Gift Express, 256 F.3d at 1331.

Further, there is no definition in the specification that suggests this Court depart from the ordinary meaning of the term. (See '941 patent.) Indeed, the patent never even uses the term "flexible pad" except in the claims. (See id.) Additionally, many embodiments of the invention are made out of structures that would be easily flexed. For example, several embodiments attach actuators to a "semi-rigid foam structure," a "semi-rigid flexible foam structure," or a "semi-rigid foam cushion," which can all be easily flexed. ('941 Patent, 2:29-36, 32:47-52, 37:6-12, 37:23-25, 37:48-50.) Thus, given the consistency of many of the patent's embodiments with the Court's construction of the term, there is no reason to ignore the ordinary meaning of the term "flexible" to include structures that generally would be considered rigid. In re Buszard, 504 F.3d at 1367.

The second issue concerns whether a hand-held game pad is included in the term "flexible pad." Because the ordinary meaning of "flexible pad" suggests a hand-held game pad would be included in the term if it was flexible and because the specification suggests that the hand-held pad could be flexible, this Court finds that the term includes a hand-held game pad.

First, a hand-held game pad and a flexible pad are both "pads." Second, the specification discloses attaching actuators to a hand-held game pad:

"One very common control input device used for 1st person perspective combat games, and for most console games, is a hand-held game pad. FIG. 38A depicts a front view of an illustrative hand-held control input device. . . . Vibratory motors and/or solenoids can be attached to the hand-held game pad as depicted in FIGS. 83 and 84. In FIG. 38C, a vibratory tactile sensation generator 590 is attached to the back of the hand-held control input device. The single tactile sensation generator is effective for both hands, due to the small size of the hand-held game controller. In FIG. 38D, tactile sensation generators for the left hand 590 and right hand 591 are contained within a single housing. A first vibratory motor 590 predominately services the left hand, and a second vibratory motor 590 services the right hand. Additionally, a solenoid 594 rattles the hand-held controller (see FIG. 29E). These tactile sensation generators may be embedded within the hand-held controller at its point of manufacture.

('941 patent, 43:15-35 (some emphasis added.) Thus, nothing in the term "flexible pad" would exclude a hand-held game pad if it were flexible. The remaining question, then, is whether the hand-held game pad disclosed could be sufficiently flexible to be included within the scope of the term "flexible pad."

The specification suggests that it would be. As used in the specification, the term "pad" implies some flexibility because it is repeatedly used as a more general stand-in for flexible materials. The best example of the word "pad" being used as a stand-in for flexible matter appears in the specification's discussion of Figures 27-30:

"In Figs. 27-30, the tactile feedback seating unit 510 is a semi-rigid flexible foam structure, sealed with a cloth or vinyl layer, with a leg portion and a back portion, substantially shaped to easily rest upon any given seat, with a plurality of actuators embedded within the foam structure, such that the actuators in the pad produce localized vibration.

('941 patent, 37:6-12 (emphasis added.) On this, and several other occasions, the specification uses "pad" to refer to structures that are flexible. ('941 patent, 32:47-52; see also '941 patent, 37:48-50, Figs. 27A, 27C.) As such, the hand-held game pad could be flexible, and is specifically disclosed in the patent.
Defendants' argument that "flexible pad" refers only to "a foam or cushion-like structure," (Defs.' Br. at 8-10; Doc. No. 148), is unavailing because it improperly reads a limitation of an embodiment into the claim term. See Phillips, 415 F.3d at 1323; SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337 (Fed. Cir. 2001) ("[O]ne of the cardinal sins of patent law [is] reading a limitation from the written description into the claims."). There is no doubt that specification discloses foam or cushion-like structures; however, the word "pad" does not require the use of these materials. Certainly, a rubber pad would be one example of a pad that would not be made of foam or be cushion-like. Therefore, the Court also rejects Defendants' construction for this term.

Thus, because portions of both Plaintiffs' and Defendants' constructions are improper, 1 the Court adopts its own construction that is in line with the ordinary meaning of the term "flexible pad" and does not import any limitations from the specification into the claim. The Court construes the term "flexible pad" to mean "an object or base, where such object or base is capable of being noticeably flexed with ease, including, among other things, hand-held game pad controllers that are capable of being noticeably flexed with ease."

--- Footnotes ---

1. Plaintiffs' construction also improperly attempts to import their construction for "attached" into this term. That construction is discussed below under the appropriate heading.

--- End Footnotes ---

2. "Flexible plate"

According to Akeva, the "flexible plate" in the '300 patent should be defined according to its plain and ordinary meaning of "a smooth, thin piece of material that is bendable but which does not deform permanently when bent." adidas argues that the plain and ordinary meaning is rebutted because the term is "coined" by the patentee. The specification uses the terms "flexible" and "plate" in a manner inconsistent with their ordinary meanings. The plain and ordinary meaning of "flexible," adidas argues, is "capable of being bowed [i.e., bent down] without breaking" and the plain and ordinary meaning of "plate" is a piece of material that is flat, relatively thin, smooth and of uniform thickness, (adidas' Markman Br. at 12-13.) However, in the specification, a "plate" is not flat, smooth, or of uniform thickness, and "flexible" requires a convex or arched shape. To stay true to the patent, adidas argues, the flexible plate should be defined as "a separate and removable piece of material that is capable of being repeatedly bent from a normal, unflexed state (in which its central portion is elevated relative to its periphery) into a flexed state (in which the central portion is bent downward), without deforming permanently." (Id. at 12-13.)

adidas cites the following statement in support of its argument that the flexible plate must be elevated in the interior: "In each of the embodiments the central portion of the flexible member is raised relative to its outer perimeter so that when placed in the shoe, the interior portion in its normal state does not touch the rear sole support and/or rear sole." '300 Patent, col. 12, 11. 34-41. This statement does not support any limitation on the term "flexible plate." The structure with an elevated center is carefully set out as one possible embodiment of the flexible plate. The first phrase of the sentence, "in each of the embodiments," appears to refer to the embodiments described in the preceding sentence. That sentence begins "in each of the above described embodiments, . . . " The "embodiments" in these sentences are not meant to encompass all possible embodiments of the invention, but only the ones the patentee has chosen to describe in the specification. In any case, to find any limitation in the structure of the flexible plate, the court would require a more direct and clear reference, along the lines of the "all embodiments" language used in SciMed, or a more explicit definition of the "flexible plate."

adidas argues, also, that the plate need not have a uniform thickness because the specification discloses an embodiment that is thicker at the center than at the periphery. See '300 Patent, col. 11, 11. 27-32. The description of one embodiment that does not fit within the technical definition of "plate" is not enough of an inconsistency to limit the claim. The word "plate" is not being used here in a highly technical or scientific way, but instead is a description of the shape of the component. Additionally, there is no indication that the plate must be thicker at the center than at the periphery, only that it may be so
constructed.

Finally, adidas argues that a "flexible plate" cannot be integral with the shoe and must be construed as a separate and removable component. adidas contends that the written description refers mostly to a flexible region, which can take several forms, but the flexible plate is an embodiment of the flexible region that cannot be integral with other parts of the shoe. For example, the written description provides that "flexible region 200 can be incorporated into other elements of the shoe or can be a separate flexible member or plate." '300 Patent, col. 7, 11. 63-64. In the court's view, however, the patent appears to use the terms interchangeably. For instance, in referring to components depicted in the figures, the written description refers to both "flexible region 200" and "flexible member 200," and also to "flexible member 500" and "flexible plate 500." Additionally, the specification states that "any of the above-described flexible members may be used as flexible region 700." Id., col. 12, 11. 58-59. The written description also contemplates that the flexible members may be integral with other components. For example: "flexible member 200 could be . . . incorporated as an integral part [] of either the rear sole support or the rear sole," and "similar configurations of an integral flexible region are within the spirit of the invention." Id., col. 9, 11. 41-45; see also id., col. 10, 11. 28-30 ("the following disclosed embodiments of flexible members can be integrally incorporated into a portion of the shoe"). Even if the flexible plate is an embodiment of the flexible member or flexible region, both the "member" and "region" are envisioned as being integral with other parts of the shoe in at least some embodiments. See, e.g., id., col. 12, 11. 46-47 ("each of the above-described flexible members may be made integral with the rear sole support"). Thus, the court cannot find that the flexible plate must be a separate and removable component.

Therefore, the term flexible plate should be defined according to its plain and ordinary meaning. The dictionary definition of "plate" as a noun defining a shape is "a smooth usu. nearly flat and relatively thin piece of metal or other material" or "a perfectly flat sheet of material of uniform thickness throughout." Webster's Third New Int'l Dictionary 1734 (1986). Because there is some difference between the two definitions, the court must look to the specification to discern the appropriate choice. Here, the specification discloses several embodiments that are neither perfectly flat nor of uniform thickness. This indicates that the first, more general, definition is the better choice. The dictionary definition of "flexible" is "capable of being flexed," or more specifically, "capable of being turned, bowed, or twisted without breaking." Webster's Third New Int'l Dictionary 869 (1986). Again, the specification indicates that the properties of flexibility, cushioning, and springiness are important to the flexible plate. However, there is no indication that the plate need be capable of being turned or twisted. Akeva's proposed definition uses "bendable," and is otherwise consistent with the dictionary definition.

Thus, the term "flexible plate" should be construed to mean "a smooth, usually nearly flat, and relatively thin piece of metal or other material that is bendable."

**1660**

Claim 31 continues:

flexible wall means defining a fluid impervious chamber.

The parties agree that even though this limitation uses the word "means," it recites sufficient structure to take it outside of the means--plus--functions limitation recognized by 35 U.S.C. § 112, P6. Both parties also agree that the wall means is pliable, demarcates an enclosed space and does not allow fluids to pass through. Therefore, the court finds this limitation to mean "a pliable barrier that demarcates an enclosed space and does not allow fluids to pass through."

**1661**

4. "Flexible web" (Claims 1, 17)

a. The Parties' Proposed Constructions

<table>
<thead>
<tr>
<th>Motorola's Proposal</th>
<th>VTech's Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plain and ordinary meaning.</td>
<td>Requires construction.</td>
</tr>
</tbody>
</table>
Should the Court require a construction, the "flexible web" is "an elastic sheet of material." In the alternative, Motorola would be amenable to a construction of "a flat layer of elastic material."

"A flat layer of material placed on the backside of the key caps which allows the key caps to move independently and preventing the key caps from being pulled up."

b. Discussion

Again, the Court is of the opinion the term "flexible web" should be construed. Column 2, lines 51-53 does provide that the "flexible web" is applied to a backside of the key cap layer as VTech proposes. ('349, 2:51-53). In one embodiment, a "flexible web" interconnects at least some of the plurality of user interface key caps. ('349, 3:48-51). As noted above, the specification indicates that the flexible web may also be located in spaces between key caps. ('349, 3:49-52). Figure 9 also provides another exemplary key pad assembly where a "flexible web" portion 906 is disposed between adjacent key caps. . . . A backing material 908 is disposed on a backside of key caps. . . . ('349, 7:7-11). In these examples, the "flexible web" is not only on the backside of the key caps as VTech proposes. Thus, in the context of the specification a flexible web has a broader meaning than VTech proposes. It is also noted that the claim itself elsewhere states that the flexible web in question "is disposed on a backside of at least some for the plurality of user interface key caps." ('349 8:18-20). The construction of "flexible web" therefore does not require the placement language sought by VTech.

Both parties agrees to a "flat layer." The remaining issue is the type of material. In one exemplary embodiment, the "flexible web" is a resilient material, for example, silicone. More generally, in other embodiments, the "flexible web" may be some other elastomer material. ('349, 3:59-63). The "flexible web" may also be a flexible web film. ('349, 4:18-19). The "flexible web" and the key caps may comprise a common material ('349, 4:20-22, claim 3).

The purposes of the web include the following: it "allows the key caps to move independently." This is not the only stated purpose however. For example, the web also "generally prevents debris from entering" the device. ('349, 3:53-56). Therefore, VTech's proposed phrase "allows caps to move independently" is too limiting. Motorola's construction is consistent with the specification.

c. The Court's Construction

Accordingly, the Court construes the term "flexible web" to mean: "a flat layer of elastic material."

1662

3. "Flexibly coupled to the carrier portion" (Claim 6)

a. The Parties' Proposed Constructions

Motorola's Proposal
Plain and ordinary meaning.
Should the Court require construction, "flexibly coupled to the carrier portion" means "attached in such a manner as to allow individual key caps to be pressed; not rigid."

VTech's Proposal
Requires construction.
"The key caps are coupled to the carrier portion so that the key caps flexes in relation to carrier portion when pressed."

b. Discussion
Contrary to Motorola's contention, the Court is of the opinion that the phrase "flexibly coupled to the carrier portion" requires construction. The Court is not convinced a person of ordinary skill in the art would have a clear understanding of what this phrase means. The Court also declines to adopt Motorola's alternative proposal for this term for the following reasons. Motorola contends that "key caps flexibly coupled to the carrier portion" does not mean that the key caps must flex in relation to the carrier portion, but instead means only that key caps be attached in a manner allowing them to be pressed. However, Motorola's proposed construction is overly broad in view of the specification. Motorola's construction tends to describe any and every phone, allowing the keys to be pressed individually, and Motorola's proposal does not adequately capture the flexing as described in the specification. What is more, the prior art cited by Motorola in the background section also allows individual keys to be pressed in order for the phone devices to work.

Rather, with some modifications, the Court utilizes VTech's proposed construction. As urged by VTech, the Court finds that the flexible coupling should allow the key caps to flex in relation to carrier portion when pressed. Motorola's citation from the specification tends to support VTech's contention rather than its own. Column 2, lines 7-11, of the '349 Patent provides as follows:

each key cap is flexibly coupled to the carrier along at least one side of the key cap, and other remaining sides of the key cap are separated from other key caps and/or carrier portions by a space, thereby allowing the key caps to flex in response to a tactile depressing action by a user.

('349, 2:7-11) (emphasis added). This description states that the key cap is allowed to flex for two reasons: (i) its flexible coupling to the carrier on one side, and (ii) its separation from other key caps along its other sides. VTech's construction is more consistent with the language of the claim itself and the specification.

c. The Court's Construction

Accordingly, the Court construes the term "flexibly coupled to the carrier portion" to mean: "the key caps are coupled to the carrier portion so that the key caps flex in relation to the carrier portion when pressed."

II. ANALYSIS

A. "Capable of Flexing"

In its instructions to the jury, the district court construed the claim limitation "capable of flexing" in Claims 1 and 15 to mean "a generalized combination of cantilever bending and bowing about the general area of the base or base end." Trial Tr., Vol. 5 at 120. Bridgeport takes issue with the district court's construction. It argues that the court erred in construing the "capable of flexing" limitation of Claims 1 and 15 to encompass anything more than "cantilever flexing." It is unclear precisely what "cantilever flexing" means as used by Bridgeport, but we infer from Bridgeport's arguments that it uses the phrase to mean a specific type of flexing: bending of a rigid wing or side solely about its base end connection, without other bending or bowing.

Claim terms are presumed to be given their ordinary and customary meaning. Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 989 (Fed. Cir. 1999). The context of the surrounding words in a claim also must be considered in determining the ordinary and customary meaning of a disputed claim limitation. Brookhill-Wilk 1, LLC, v. Intuitive Surgical, Inc., 334 F.3d 1294, 1300 (Fed. Cir. 2003). The intrinsic record, comprising the claims, the written description, and the prosecution history if in evidence, "must be examined in every case to determine whether the presumption of ordinary and customary meaning is rebutted." Tex. Digital Sys., 308 F.3d at 1204. A patentee may rebut this presumption by "defining claim terminology in a manner inconsistent with its ordinary meaning," Biovail Corp. Int'l v. Andrx Pharms., Inc., 239 F.3d 1297, 1301 (Fed. Cir. 2001), or by disclaiming a particular interpretation of a claim term during prosecution, Biodex, 946 F.2d at 863.

We begin with the ordinary and customary meaning of the terms used in the claim limitation at issue. Johnson Worldwide, 175 F.3d at 989. The verb "flex" is defined as "to bend." Random House Unabridged Dictionary 733 (2d ed. 1993). The
ordinary and customary meaning of "capable of flexing" is thus simply "capable of bending." Neither party disputes that the ordinary and customary meaning of the term "flexing" encompasses not only cantilever flexing but also bowing or bending. Bridgeport concedes that "the term 'flexing,' standing alone, would connote a wide range of movements." Accordingly, we begin with the broad meaning of the term, and look to the intrinsic record to determine whether anything in that record overcomes the presumption that "flexing" has this broad ordinary meaning. See Tex. Digital Sys., 308 F.3d at 1204.

1. Claim Language

Bridgeport first turns to the language of the claims themselves. The "capable of flexing" limitation describes the wings (in Claim 1) or sides (in Claim 15), which are said to be "capable of flexing about said base toward said axis through said face." '674 patent, col. 6, ll. 47-49; col. 8, ll. 26-27. In Claim 15, this limitation is followed by the following claim language:

"corners connecting said side edges of said sides . . . with said sides furthermore capable of having their corners removed to increase the degree of flexing about said base toward said axis through said face member." Id. at col. 8, ll. 31-35.

The district court based its construction of "flexing" in part on the fact that in Claim 15, the corners of the box extender "need not be removed," and that, if the corners are not removed, "it is fair to say that . . . cantilever flexing cannot exist." Arlington Indus., Inc. v. Bridgeport Fittings, Inc., No. 3:CV-99-1857, slip op. at 8-9 (M.D. Pa. Oct. 25, 2001) ("Memorandum"). The court noted that Claim 15 provides that the corners are capable of being "removed to increase the degree of flexing." '674 patent, col. 8, ll. 33-34. This indicated to the district court that "the corners can be removed . . . [to] provide cantilever flexing where there was none before." Memorandum, slip op. at 9.

Bridgeport argues that corners "removed to increase the degree of flexing" mandate a different construction of "flexing." According to Bridgeport, the reference to an "increase" in the degree of flexing means only a change in the amount of flexing, not in the type of flexing as the district court held. Bridgeport notes that "nothing in the claim language or the specification suggests bowing." It also speculates that the corners depicted in the embodiment to which Claim 15 pertains are "specially designed to fold in on themselves to permit cantilever flexing about said base." It is unclear what basis Bridgeport has for this speculation. There is no reference in the specification to corners that are specially designed to permit folding. The specification states that the corner walls "may be trimmed away to create an extender with wings," and Figure 7 depicts "cut lines" that may be employed for this purpose, but there is no indication that the corner walls are designed to facilitate folding in an uncut state, as Bridgeport suggests. We see no reason to read the words "increase [in] the degree of flexing" in the manner argued by Bridgeport, and decline to find error in the district court's construction of "flexing" on this basis.

2. Written Description

Bridgeport next contends that the meaning of "flexing" must be limited to cantilever flexing because the written description "teaches only cantilever flexing." Bridgeport draws our attention to the "Description of the Invention" section, where the "flexing of the wings" is described as a "cantilever bending." '674 patent, col. 4, ll. 1-2. Bridgeport equates this "cantilever bending" with "cantilever flexing," and essentially invites us to import a limitation from the preferred embodiments to restrict the meaning of a claim term. We have consistently warned against this approach to claim construction, which is seldom justified. See Amgen, Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1325 (Fed. Cir. 2003) ("Because the claims are best understood in light of the specification of which they are a part . . . courts must take extreme care when ascertaining the proper scope of the claims, lest they simultaneously import into the claims limitations that were unintended by the patentee."); CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002) (holding that the presumption of ordinary meaning cannot be rebutted "simply by pointing to the preferred embodiment or other structures or steps disclosed in the specification or prosecution history"). There is no indication in the written description of the '674 patent, for example, that Gretz "acted as his own lexicographer and clearly set forth a definition of the disputed claim term." CCS Fitness, 288 F.3d at 1366. Nor do we discern therein any express disclaimer of a particular meaning of "flexing." See id. at 1367; Biodex, 946 F.2d at 863. We accordingly decline Bridgeport's invitation to restrict the meaning of the claim term based on the description of the preferred embodiments.

3. Prosecution History
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a. Kleinatland

Turning to the prosecution history of the '674 patent, Bridgeport argues that Gretz disclaimed non-cantilever flexing in arguments he made to distinguish prior art references. Bridgeport principally relies on the argument distinguishing Kleinatland that Gretz submitted in the course of prosecuting the '674 patent. As depicted in the figure below, Kleinatland disclosed an electrical outlet box 12, together with an extension plate 14 having "a center tubular flange portion sized for telescopic engagement with [the] outlet box." Kleinatland, col. 2, ll. 49-50. In the tubular flange portion, the side walls were connected to one another through their entire length.

[SEE ILLUSTRATION IN ORIGINAL]

The Examiner rejected Gretz's application as obvious over a combination of references, including Kleinatland. In his response, Gretz distinguished the Kleinatland box extender in the following terms:

There is no teaching in Kleinatland et al providing an electrical box extender for extending electrical boxes so that the extender is flush with a newly installed surface. There are no plurality of inwardly extending flat wings which flex about a face to allow the extender to be received within an existing electrical box. In Kleinatland et al the box is a relatively rigid telescoping member.

Bridgeport sees in this a redefinition of "flexing" to exclude bowing or bending.

In the course of prosecuting a patent application, a patentee may redefine a claim term. Biovail, 239 F.3d at 1301 ("We review both the specification and applicable prosecution history to determine whether the patentee defined claim terminology in a manner inconsistent with its ordinary meaning."); Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc., 222 F.3d 951, 955 (Fed. Cir. 2000) ("The court . . . must examine a patent's specification and prosecution history to determine whether the patentee has given the term an unconventional meaning."). An amendment or argument made in the course of prosecution may also serve as a disclaimer of a particular interpretation of a claim term. Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1304 (Fed. Cir. 1997) ("Since, by distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover, he is by implication surrendering such protection."); Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995) ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution. . . . Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers."). We are not persuaded that Arlington's arguments distinguishing Kleinatland operate either as a redefinition of the claim term "flexing" or as a disclaimer of any particular interpretation of that term.

As shown above, Kleinatland discloses an electrical outlet box and extension plate. The extension plate "is a rigid molded plastic insulator member having a center flange portion sized for telescopic engagement with [the] outlet box." Kleinatland, col. 4, ll. 59-61. The extension plates described in the Kleinatland specification are shaped to be accommodated within the outlet boxes. There is no indication in Kleinatland that the "rigid" extension plates are intended to flex, bow, bend, or give in any manner to accommodate differently sized outlet boxes. Gretz's description of the Kleinatland device as "a relatively rigid telescoping member" was thus factually accurate and does not amount to a redefinition of "flexing" or a disclaimer of any part of the ordinary meaning of that term. Nor did Gretz's reference to the lack in Kleinatland of "inwardly extending flat wings which flex about a face to allow the extender to be received within an existing electrical box" operate as a redefinition or disclaimer. As noted above, there is no indication in Kleinatland that the extension plates flexed or yielded at all, and that is the gravamen of the argument. The reference to the "wings" set forth in one of the Arlington embodiments simply emphasizes the lack of any reference to flexing in Kleinatland, and cannot be taken as a disclaimer of everything other than cantilever flexing of separate wings, as Bridgeport would have it.

b. Reexamination Request

The arguments made by Arlington in its reexamination request relating to the McShane patents and the DADJ device described in the McShane brochure also fall short of a redefinition or disclaimer. As in the Kleinatland device, the box extenders described in the McShane documents include a tubular body "sized . . . to be received within an electrical box." '673 patent, col. 7, ll. 32-33; '996 patent, col. 6, l. 68 - col. 7, l. 1. There is no indication in any of the McShane references that the tubular body was designed to flex or yield in order to be accommodated within differently sized electrical boxes.
Indeed, McShane provided for different box extension sizes and shapes to fit different boxes: "the electrical box extension of the present invention can be manufactured for use with an electrical box of any shape or dimensions." '673 patent, col. 6, ll. 35-37. The specification shows examples of such specially manufactured box extensions for use with cylindrical or multi-outlet boxes. Id. at col. 6, ll. 37-48. The tubular body of the McShane patents is also designed specifically to avoid contact with the box. It has a taper to allow it to be "easily . . . inserted" into the electrical box in a manner that makes the body "less likely to be obstructed by rough edges, indentations, out-of-line-knockouts, broken-off or short screws, or the like." Id. at col. 4, ll. 29-34; '996 patent, col. 4, ll. 21-24. In the request for reexamination, Arlington asserted that "there is no flexing of the sides or walls involved in the McShane box extenders and they are not capable of flexing about the base." It also stated that "the four sides or walls are substantially rigid." Both McShane patents state that the tubular body can be made of plastic. '673 patent, col. 9, l. 2; '996 patent, col. 7, l. 37. However, Arlington's characterizations of the McShane references are accurate in light of any discussion of flexing of the tubular body in those references, and we see therein no disclaimer or redefinition affecting the scope of the claim term "flexing."

Gretz's testimony that the DADJ box extender "bellied out" or "flexed inwardly" to some degree when it was subjected to pressure may have prompted Arlington to request reexamination of the '674 patent in light of the written references relating to the DADJ device, namely the McShane patents and brochure. Although Gretz's testimony was before the district court during the Markman hearing, it is of little consequence in the claim construction analysis. That analysis must be based primarily on the record established at the time the patent was granted. See Tex. Digital Sys., 308 F.3d at 1202 ("When a patent is granted, prosecution is concluded, the intrinsic record is fixed, and the public is placed on notice of its allowed claims."); Vitrionics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996) ("The claims, specification, and file history, rather than extrinsic evidence, constitute the public record of the patentee's claim, a record on which the public is entitled to rely."). Moreover, Gretz's testimony does not appear to be inconsistent with Arlington's characterization of the box extender disclosed in the McShane references. Arlington characterized the sides or walls of the McShane devices as "substantially rigid." The fact that the sides of the device are caused to bow when sufficient pressure is applied does not mean that they are not "substantially rigid." Indeed, the fact that the DADJ device introduced into evidence at the trial broke when a witness tried to cause it to flex proves the very point that the sides of the DADJ device were "substantially rigid." Trial Tr., Vol. 4 at 95.

4. Invalidity

Finally, Bridgeport argues that the broad construction of the "capable of flexing" limitation must be erroneous, because it renders the claims invalid in light of prior art box extenders. Specifically, Bridgeport argues that the district court's construction renders the '674 claims obvious over a combination of the McShane patents and Kleinatland. Arlington counters that because Bridgeport has not challenged the jury's finding that the '674 patent is not invalid in view of those prior art references, Bridgeport has waived any argument that the content of the references limit the terms of the claims.

Arlington's waiver argument is unavailing. The McShane and Kleinatland prior art references are of record in the prosecution history and may be consulted in the process of claim construction for what they indicate about the state of the prior art. See Tate Access Floors, Inc. v. Interface Agric. Res., Inc., 279 F.3d 1357, 1371 n.4 (Fed. Cir. 2002) ("Prior art cited in the prosecution history falls within the category of intrinsic evidence."). However, Bridgeport does not establish that the district court's construction of "capable of flexing" renders any claim of the '674 patent invalid. Its invalidity argument is chiefly based on a repetition of the assertion we have not found persuasive, namely that the DADJ device "did in fact flex or 'bow' when pressure was applied to the sides." Bridgeport also asserts that the McShane '673 patent discloses an embodiment, allegedly depicted in Figure 7 of that patent, that "is used to function in the same way as the '674 patent--i.e., to flex to fit a variety of different shaped and sized electrical boxes without using multiple screws and brackets." However, that embodiment simply indicates that "such boxes can be provided alone, or together with or assembled with electrical box extensions of the present invention for use in new construction or the like." '673 patent, col. 7, ll. 10-13. There is no indication that this embodiment contemplates the use of a single box extender with electrical boxes of different shapes and sizes, as Bridgeport contends.

5. Conclusion

The district court's construction of "flexing" as "a generalized combination of cantilever bending and bowing about the general area of the base or base end" is consistent with the ordinary and customary meaning of "flexing," which is "bending." Because Bridgeport has not established that the district court's construction is in error based on the claim...
language, the written description, the prosecution history, or the prior art, we decline to disturb that construction on appeal.

I agree that the judgment should be affirmed. However, I respectfully dissent from the majority's construction of "capable of flexing" limitation in claim 1 of the '674 patent. The majority's claim construction allows the patentee to claim the very device disclaimed in the course of patent prosecution, a result plainly at odds with our precedent. However, I would affirm on the ground that the appellant did not preserve this error in its objection to the jury instruction.

The contested limitation of claim 1 of the '674 patent requires that the device have a plurality of wings "capable of flexing about said base." In its request for reexamination, Arlington distinguished claim 1 of the '674 patent from the McShane patents and the DADJ device described in the McShane brochure (which was also before the examiner) as follows:

There is no flexing of the wings involved in the McShane box extenders. The wings or sides are not capable of flexing about the base. The four wings of the electric box extender are substantially rigid. There is no adjustability by flexing of the wings designed into the McShane box extenders to allow the tubular body portions to be received in an existing electrical box. The McShane box extenders telescope into the electrical box without engaging the sides or walls.

(emphasis added). The examiner relied on this statement to deny the request for reexamination, finding that the newly cited McShane references did not "raise a substantial new question of patentability" as to the claims of the '674 patent.

The doctrine of prosecution disclaimer "limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1324 (Fed. Cir. 2003) (quoting Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985)). Arguments made in a reexamination proceeding will constitute a disclaimer of claim scope if they are "clear and unmistakable statements of disavowal." See Cordis Corp. v. Medtronic AVE, Inc., 339 F.3d 1352, 1358 (Fed. Cir. 2003).

Here, Arlington has unmistakably disclaimed box extenders like those disclosed in the McShane patents and the McShane brochure featuring the DADJ device because they are not capable of flexing about the base as claim 1 requires. The question then is--what is the extent of this disclaimer? In other words, "we must determine what one of ordinary skill in the art would believe to have been disclosed" by the disclaimed references. Pall Corp. v. PTI Techs. Inc., 259 F.3d 1383, 1393 (Fed. Cir. 2001), vacated on other grounds, 535 U.S. 1109 (2002).

At trial there was undisputed testimony from both the inventor and Arlington's expert that the DADJ product, a device embodying the McShane patents and disclosed in the McShane brochure, was capable of bowing. Gretz, the inventor of the '674 patent, testified that when the DADJ product was inserted, "the body portion bowed in." Likewise, despite the statements in Arlington's request for reexamination regarding the inflexibility of the McShane device, Arlington's expert testified that the DADJ product was capable of bowing:

Bridgeport's Counsel:

If you apply pressure to the end walls of the DADJ product it does flex, does it not?

Witness:

You can see . . . it flex to a modest degree, yes.

Bridgeport's Counsel:

When you pressed on the walls of the DADJ there was some cantilever bending, correct-isn't that correct?

Witness:

No, sir, there is not. There is a slight bowing that takes place.
Moreover, defendants' contrary arguments in support of its proposed construction are unconvincing. They correctly note issue, as disclosed by the relevant intrinsic and extrinsic evidence.

For example, the term "flexure member" as "part of a longitudinal portion that provides flexibility" is consistent with the ordinary meaning of the phrase at issue, as disclosed by the relevant intrinsic and extrinsic evidence. Accordingly, plaintiffs' proposed construction of "flexure member" as "part of a longitudinal portion that provides flexibility," as informed by its dictionary definition, is expressed by the claim language as part of a longitudinal portion.

The majority notes that there is no indication in the McShane references themselves that the disclosed extender boxes or the DADJ product were designed to flex. Ante at 17. But even if this is true, the uncontradicted testimony of Arlington's experts establishes that one of skill in the art would recognize that the DADJ device embodying the references that were before the examiner was capable of bowing. Under these circumstances, Arlington disclaimed a device that merely bowed, but did not flex about the base. See Pall, 259 F.3d at 1383 (holding that the relevant inquiry is what one of ordinary skill in the art would believe to have been disclosed by the prior art). Therefore, the claim term, "capable of flexing about said base" must be construed to require something more than bowing. Rather, it must be construed to require flexing about the base.

The district court instructed the jury that the "capable of flexing" limitation in claims 1 and 15 means "a generalized combination of cantilever bending and bowing about the general area of the base or base end." Trial Tr., Vol. 5 at 120. While confusing, the instruction appears to permit the jury to find that the "capable of flexing" limitation is satisfied by mere bowing. To that extent the instruction was erroneous.

Neither party disputes that the phrase "flexure member" is absent from the patents' specification. Plaintiffs contend, however, that the phrase should be construed with reference to its ordinary dictionary definition, while defendants contend that the phrase should be construed in the context of the specification's language describing "flexure means," since a flexure member should be viewed as part of the general flexure means described in the specification. Defendants' arguments are at first blush appealing; however, a close review of the claim language and the specification suggests that plaintiffs have proposed the better construction.

Beginning with the claim language, the '037 patent covers a stent design that is comprised in part of "longitudinal portion[s] having a flexure member...". See, e.g., Joint Statement, '037 Patent at 14:50. These flexure members, when viewed in two dimensions, can be "non-sinusoidal and arcuate," or "U-shaped." Id. at 14:5-52, 15:40-42. The '255 patent, for its part, covers a stent design that is similarly comprised in part of a "plurality of longitudinal portions having a single flexure member...". See, e.g., Joint Statement, '255 Patent at 15:29-34. The flexure members are described as "U-shape[d]." Id. From the claim language set forth in both patents, therefore, the court can discern that a "flexure member" is part of a "longitudinal portion" and can be "non-sinusoidal and arcuate," or "U-shaped." In other words, the term "member," in reference to the phrase "flexure member," is expressed by the claim language as part of a longitudinal portion.

Although it provides some guidance as to how the "member" portion of the phrase "flexure member" should be construed, however -- i.e., by noting that a flexure member forms a part of a "longitudinal portion[s]" -- the claim language provides no further insight as to how the "flexure" portion of the phrase should be construed. Nor does the specification. Indeed, the specification never even mentions the phrase "flexure member." Given this, and the fact that neither party urges the court to refer to or rely on the prosecution history for further elucidation, plaintiffs correctly urge the court to rely on the ordinary meaning of the phrase "flexure," as informed by its dictionary definition. See Vitronics, 90 F.3d at 1583 (reliance on extrinsic evidence, such as dictionaries, and learned treatises appropriate, where intrinsic evidence fails to resolve ambiguity in claim language). Turning to the dictionary definition, "flexure" is defined as the ability to flex, or to turn, bend, or fold. See Merriam-Webster's Collegiate Dictionary 479 (11th ed. 2003). Accordingly, plaintiffs' proposed construction of "flexure member" as "part of a longitudinal portion that provides flexibility" is consistent with the ordinary meaning of the phrase at issue, as disclosed by the relevant intrinsic and extrinsic evidence.

Moreover, defendants' contrary arguments in support of its proposed construction are unconvincing. They correctly note
that, while the specification does not expressly refer to a "flexure member," it does refer to "flexure means." Based on this, they contend that a "flexure member" is part of a "flexure means," not part of a "longitudinal portion." However, there are two fundamental errors in defendants' approach.

First, as plaintiffs point out, the term "flexure means" is not a part of the actual claim language, whereas "longitudinal portion" is. Therefore, to define "flexure member" with reference to "flexure means" instead of "longitudinal portion" would improperly import a limitation from the specification into the claim language. See, e.g., Teleflex, Inc. v. Ficosa North Am. Corp., 299 F.3d 1313, 1324-26 (Fed. Cir. 2002)("The claims must be read in view of the specification, but limitations from the specification are not to be read into the claims.").

Second, and more importantly, the specification's description of "flexure means" actually seems to support plaintiffs' proposed construction, rather than defendants'. The specification, for example, states that the claimed design is a tubular wall comprised in part of a "series of longitudinal struts disposed substantially parallel to the longitudinal axis of the stent, each of the longitudinal struts comprising flexure means for substantially complementary extension and compression of a diametrically opposed pair of the longitudinal struts...". See Joint Statement, '037 Patent at 3:21-29 (emphasis added). In other words, the specification describes "flexure means" as the longitudinal struts themselves, which struts achieve complementary extension and compression with respect to diametrically opposed struts. Id. The specification then goes on to state: the "specific shape of the flexure means disposed in the longitudinal strut is not particularly restricted provided that it confers lateral flexibility" by allowing "substantially complementary extension and compression." Id. at 3:57-62. In the court's view, the specification therefore indicates that it is the shape of the overall flexure means disposed in the longitudinal struts that must confer lateral flexibility by allowing for opposing struts in the same horizontal plane or in different horizontal planes, to extend and compress. See id. at 3:57-66. In other words, it is the longitudinal struts -- which in turn constitute flexure means -- that must confer flexibility through substantially complementary extension and compression. And since the actual claim language at issue indicates that a "flexure member" is part of a "longitudinal portion," it follows from this that "flexure members," as lesser parts of the longitudinal portions, are not themselves required to provide for such extension and compression.

In sum, the court finds that defendants' (and the intervenor's) proposed construction is at odds with the intrinsic evidence, while plaintiffs' proposed construction is consistent with it. Accordingly, the court adopts plaintiffs' proposed construction of "flexure member," and construes it as: "part of a longitudinal portion that provides flexibility."

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Because we vacate the judgment of invalidity, we turn to Jones' cross-appeal that the district court erred in its claim construction of the term "flight bars." In a pre-trial Markman ruling, the district court construed the term "flight bars" to mean:

A term of art describing a type of structure that is used to select and transport articles along a cartoner, and may be driven by one conveyor or may include multiple conveyors moving in synchronization. This structure includes at least one part having a wedge-shaped or pointed tip and at least one part having a wall. The term may include a plurality of pieces driven by one conveyor or by multiple conveyors moving in synchronization.

Jones argues that the district court improperly relied upon extrinsic evidence in reaching its claim construction. Jones submits that "flight bars" are "unitary structural members having wedge shaped tips at one end."

"In construing claims, the analytical focus must begin and remain centered on the language of the claims themselves, for it is that language that the patentee chose to use to 'particularly point[] out and distinctly claim[] the subject matter which the patentee regards as his invention.'" Interactive Gift Express, Inc. v. Compuseve, Inc., 256 F.3d 1323, 1331, 59 USPQ2d 1401, 1406 (Fed. Cir. 2001) (quoting 35 U.S.C. § 112, P 2); see generally Tex. Digital Sys., Inc. v. Telegenix Inc., 308 F.3d 1193, 1201-02, 64 USPQ2d 1812, 1817 (Fed. Cir. 2002). The terms used in the claims bear a "heavy presumption" that they mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art. See CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366, 62 USPQ2d 1658, 1662 (Fed. Cir. 2002). Moreover, unless compelled otherwise, a court will give a claim term the full range of its ordinary meaning as understood by persons skilled in the relevant art. See Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342, 60 USPQ2d 1851, 1854 (Fed. Cir. 2002).
2001).

Here, both parties agree that "flight bars" must be interpreted the same way for each patent-in-suit. The parties further agree that the term "flight bars" should be given its ordinary and accustomed meaning. However, none of the patents-in-suit explicitly defines the term, and the court has not found the term in any dictionary or treatise. See In re Paulsen, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994) ("an inventor is indeed free to define the specific terms used to describe his or her invention"); Tex. Digital Sys., 308 F.3d at 1202-03, 64 USPQ2d at 1818 ("Dictionaries, encyclopedias and treatises, publicly available at the time the patent is issued, are objective resources that serve as reliable sources of information on the established meanings that would have been attributed to the terms of the claims by those of skill in the art.").

The district court held, inter alia, that the "term [flight bars] may include a plurality of pieces driven by one conveyor or by multiple conveyors moving in synchronization." In other words, a flight bar is not limited to a unitary structure. Jones argues that the district court erred by not limiting the term "flight bars" to a unitary structure. After a de novo review of the entire record, we are in accord with the district court and find no reason to limit the term flight bars to a unitary structure. The term "flight bars" is used generally throughout the patents and consistently refers to structure that intersects articles on a conveyor, forms groups, and moves the articles. Nothing in the claim language, specification, or prosecution history suggests that flight bars must be of a unitary structure.

The district court, consistent with our guidance that a claim term is to be given "the full range of its ordinary meaning as understood by an artisan of ordinary skill," Rexnord, 274 F.3d at 1342, 60 USPQ2d at 1854, instructed the jury not to limit the term to the unitary structure found in the specification. We agree with that conclusion.

As noted above, the district court also construed flight bars to include, inter alia, a "structure that is used to select and transport articles along a cartoner, and may be driven by one conveyor or may include multiple conveyors moving in synchronization." In addition, the district court held that flight bars "include[] at least one part having a wedge-shaped or pointed tip and at least one part having a wall." While Jones does not challenge these holdings of the district court, we hold that the district court erred by holding that flight bars "may be driven by one conveyor or may include multiple conveyors moving in synchronization" and by holding that flight bars include "at least one part having a wall." Nothing in the intrinsic evidence requires us to construe the term "flight bars" to include these limitations. These errors, however, are of no consequence to the disposition of the case because Jones does not argue that its device does not meet these limitations.

Jones also complains that the district court improperly relied on extrinsic evidence, including the expert testimony from an engineer at a corporation defending infringement allegations in another case involving the same patents. While the district court did consider that extrinsic evidence, district judges are free to do so "to help the court come to the proper understanding of the claims." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584, 39 USPQ2d 1573, 1578 (Fed. Cir. 1996). Of course, extrinsic evidence "may not be used to vary or contradict the claim language" or "the import of other parts of the specification." Id., 39 USPQ2d at 1578. Here, the district judge did not impermissibly use extrinsic evidence.

4. "flight shape"

Defendants argue that "flight shape" in the '133 patent means "the shape the projectile must maintain for at least 20 yards and until impact." Def. Br. at 19. The plaintiff responds that nothing in the patent requires that the flight path be a minimum of twenty yards. Plaintiff notes that the claim should not be limited to a numerical limit disclosed in the specification, as discussed in Part 8, supra. "Flight shape" is properly construed as "the shape of the projectile after it is propelled out of the weapon shell and during the course of its flight."
Claim Term | Davis-Lynch's Proposal | Weatherford's Proposal
--- | --- | ---
"float equipment" Components or parts fitted together to comprise equipment at or near the bottom of a casing string that is operable for preventing the flow of wellbore fluid through the casing toward the surface or starting position of the wellbore. | Well tool having a one-way check valve(s).

"float equipment tubular" Components or parts fitted together to comprise equipment, shaped like a tube, at or near the bottom of a casing string that is operable for preventing the flow of wellbore fluid through the for a casing toward the surface or starting position of the wellbore. | Weatherford contends that the term "float equipment tubular" does not need to be defined in view of the construction of "float equipment." A tubular well tool having a one-way check valve(s).

Because the term "float equipment" does not appear separately in the claims at issue, the Court will not construe it. Weatherford's proposed construction of "float equipment tubular" is derived from two extrinsic sources. See A DICTIONARY OF PETROLEUM TERMS 33 (2nd ed., The University of Texas at Austin, Division of Continuing Education, Petroleum Extension Service 1979) (Drill-Pipe Float: "A valve installed in the drill stem that allows mud to be pumped down the drill stem but prevents flow back up the drill stem; a check valve"); D. LANGENKAMP, HANDBOOK OF OIL INDUSTRY TERMS & PHRASES 478 (5th ed., Penn Well Books 1994) (Valve, Check: "A valve with a free-swinging tongue or clapper that permits fluid in a pipeline to flow in one direction only; back-pressure valve"). Davis-Lynch's proposed construction is derived from the patent specification's definition of "float equipment":

As used herein, float equipment refers to equipment typically positioned near or adjacent the bottom of the tubular string such as casing or liner which contains valves that may be used to control back pressure that might permit cement to flow back into the casing/liner after cementing.

'336 patent at 1:64-2:2. Because the patentee has explicitly defined the term "float equipment," the Court will presume that this definition is an appropriate construction. See Phillips, 415 F.3d at 1316.

At the hearing, Davis-Lynch argued that Weatherford's proposal was overly broad because it did not explain that fluid is only blocked from flowing toward the surface. However, the patentee's definition of "float equipment" merely states that the valves "may be used to control back pressure that might permit cement to flow back into the casing/liner after cementing." '336 patent at 1:64-2:2 (emphasis added). Thus, Davis-Lynch's argument imposes a limitation not present in the patentee's explicit definition of the term float equipment. Weatherford argued, at the hearing, that Davis-Lynch's proposal impermissibly imports its proposed construction of tubular string and adds the limitation that the equipment must be located at the bottom of the tubular string. Weatherford's arguments are well taken. Having rejected Davis-Lynch's construction of the term "tubular string," the Court sees no reason to replace the phrase "tubular string" with the phrase "casing string." Similarly, the Court sees no reason to import the limitation that float equipment must be located at the bottom of a tubular string, when the patentee's definition states only that float equipment is "typically" located there. The use of the word "typically" implies that float equipment need not always be located at the bottom of a tubular string. See '336 patent at 1:65-66.

The Court finds the patentee's own definition of the term at issue to be understandable for a jury. However, the terms casing and liner could be confusing since the claims at issue only refer to tubular strings. In addition, the phrase "may be used to control back pressure . . ." must be removed because it merely describes a possible use for the flapper valves. Therefore, the Court will construe the term "float equipment tubular" as "tube-shaped equipment typically positioned near or adjacent to
Zeppelin also challenges the district court's construction of the term "floatation units." The court construed the term to mean "an individual structural constituent of a whole (i.e., the dry dock claimed in the '833 patent) which is buoyed on water." The court also determined that the "floatation units" must be "airtight" but not necessarily "hollow." Zeppelin argues that the claimed "floatation units" must be hollow as well as airtight.

Jet Dock agrees that the claimed "floatation units" are properly construed to be "airtight." It argues, however, that construing the claims as requiring the units to also be "hollow" imports a limitation into the claims. According to Jet Dock, "floatation units" should be construed broadly because the claims are not limited to the single embodiment that is disclosed in the '833 patent's specification.

In Phillips v. AWH Corp., 415 F.3d 1303, 2005 U.S. App. LEXIS 13954, Nos. 03-1269, -1286, F.3d (Fed. Cir. 2005) (en banc), we noted that "the line between construing terms and importing limitations can be discerned with reasonable certainty and predictability if the court's focus remains on understanding how a person of ordinary skill in the art would understand the claim terms." 2005 U.S. App. LEXIS 13954 at *55. We further noted that, "[i]n the end, there will still remain some cases in which it will be hard to determine whether a person of skill in the art would understand the embodiments to define the outer limits of the claim term or merely be exemplary in nature." 2005 U.S. App. LEXIS 13954 at *57. However, we stated that "we nonetheless believe that attempting to resolve [the] problem in the context of the particular patent is likely to capture the scope of the actual invention more accurately than either strictly limiting the scope of the claims to the embodiments disclosed in the specification or divorcing the claim language from the specification." 2005 U.S. App. LEXIS 13954 at *57 (emphasis added).

With those principles in mind, we turn to the term "floatation units" in the '833 patent. Doing so, we conclude that one skilled in the art would understand the term to be referring to units that are hollow as well as airtight. The very first sentence of the patent characterizes the overall invention of the '833 patent as a "floating, drive-on dry dock assembly for small craft [that] is assembled from two kinds of hollow floatation units." '833 patent, abstract (emphasis added). This communicates to one skilled in the art that a characteristic of a "floatation unit" in the invention of the '833 patent is that it is hollow.

Continuing, the '833 patent's specification describes the claimed floatation units with reference to prior art devices that also contain hollow units. The "Background of the Invention" section of the patent describes the prior art with reference to U.S. Pat. Nos. 3,824,644 and 4,603,962. According to the '833 patent's specification, "these patents describe hollow cubical units[.]" '833 patent, col. 1, ll. 21-24 (emphasis added). In particular, the prior art units were "provided with bungholes so that the units could be partially flooded to lower the water line of some or all of the units." Id. col. 1, ll. 28-32.

Most importantly, the "Summary of the Invention" section of the patent states: The dock is "assembled from a combination of tall and short, hollow, air-tight floatation units." Id. col 1, ll. 66-67 (emphasis added). Finally, in the preferred embodiment "all of the floatation units 12a-l and 14a-g are hollow and air tight." Id. col. 3, ll. 27-28 (emphasis added). In the preferred embodiment, the tall floatation units (12a-l) are described as being "substantially similar to that shown in U.S. Pat. Nos. 3,824,644 and 4,604,962[.]" '833 patent, col. 3, ll. 31-34. These are the same two patents previously described in the Background of the Invention section as containing "hollow" units that can be flooded with water. See id. col. 1, ll. 22-24.

We think that one skilled in the art reading the '833 patent claims, in light of the '833 patents' disclosure, would understand that the "floatation units" in the claimed invention are hollow. See C.R. Bard, Inc. v. United States Surgical Corp., 388 F.3d 858, 863-864 (Fed. Cir. 2004) (where a patentee had "globally" defined a "plug" for an implantable prosthesis as having a pleated surface, the term "plug" was so construed); Scimed Life Sys. v. Adv. Cardiovascular Sys., Inc., 242 F.3d 1337, 1343 (Fed. Cir. 2001) ("The characterization of the coaxial configuration as 'part of the present invention' is strong evidence that the claims should not be read to encompass the opposite structure."). Jet Dock's argument to the contrary presumes the conclusion that it seeks. To assert that "hollow" is improperly importing a limitation into "floatation units" is to presume that the "floatation units," as claimed in the '833 patent, are not characteristically hollow. That argument, however, presumes to know the meaning of "floatation units" to one skilled in the art—which is the very issue at hand. We do not think that to construe the "floatation units" as hollow is importing a limitation into the claims when the specification makes clear that
hollowness is an inherent characteristic of the "floatation units" in the claimed invention.

In sum, we construe claim 1 of the '833 patent as directed to floatation units that are airtight and hollow.

II. PROCEDURAL HISTORY

On July 31, 2000, this court held a Markman hearing on the proper construction of the terms "floatation unit" and "flexible joint between the units" in Claim 1. In an Order dated September 16, 2003, this court performed a claim construction analysis of the two terms. (See Markman Order, ECF No. 121.) This court found that a "floatation unit" is an airtight, individual structural constituent of a whole which is buoyed on water and that a "flexible joint between the units" is a point or position in the interval or position separating the floatation units of the dock, which point or position is capable of bending or flexing. This court also rejected Zeppelin's argument that Claim 1 of the '833 patent is drafted in step-plus-function format and subject to the strictures of 35 U.S.C. § 112, paragraph 6. (See id.)

As with other terms, three of US Foam's proposals use "allowing," suggesting that certain steps of the methods need only be permitted and not necessarily be performed. The Court rejects any construction that transforms a required method step into an optional one. The Court will not include "allowing" in its construction for these terms.

Defendants' proposal for the "flooding" term incorporates the remainder of the claim limitation into the disputed phrase. Claim 2 of the '965 patent reads, "The method of claim 1 further including the step of flooding said area of said mine shaft involved in the fire with water prior to directing said stream containing said expanded foam fire suppressant." '965 Patent, claim 2. The additional phrase, "prior to injecting or placing the foam mixture on the combustible material" in Defendants' proposal merely restates the remainder of the claim. The parties also appear to dispute whether flooding requires that the mine shaft be "fully" covered. US Foam relies on a dictionary definition, but chooses the one definition that requires the least amount of water. For example, other definitions recite "to become filled to excess with some fluid", "to cover or overwhelm", or "to fill more or less completely with water or other fluid." Based on both parties proposed terms, however, the parties apparently agree that the mine shaft must be covered with water and need not be filled with water. The Court construes "flooding said area of said mine shaft involved in the fire with water" to mean "covering the surfaces of the mine shaft that are on fire with water."

d. Floor

The ordinary meaning of the term "floor" is "the layer of material which is placed on top of the underframe of a car and provides the direct support for the car contents." See id. at 54. This is the way the term is used in the '575 Patent.

Claim 20 of the '575 Patent focuses on the floor of the rail car. Both the upper floor section and the intermediate floor section which is below the upper floor sections are carried on the body of the rail car. The body is comprised of the structures in the underframe of the car. This underframe is supporting the floor.

Additionally, the preferred embodiment of the '575 embodiment discusses how the contents of the rail car disclosed in the '575 Patent are to be placed directly on the floor. The floor provides direct support for the rail car's contents as the rail car in the '575 Patent is designed to carry approximately 200,000 pounds of lumber, and the preferred embodiment calls for the contents to be placed on the floor. See Findings of Fact, PP 111-120, 123-136, 139-142.
B. Claim 1 of the ’739 patent, which is the only claim at issue, reads as follows:

1. A personal mobility vehicle comprising:
   (a) a main frame unit including:
      (1) a floor pan having a back end;
      (2) a front wheel spindle pivotally connected to said pan;
      (3) a front ground engaging wheel rotatably mounted on said spindle; and
      (4) a steering tiller connected to said spindle;
   (b) a rear drive unit including:
      (1) a drive unit frame;
      (2) a rear axle means rotatably mounted on said drive unit frame;
      (3) a pair of spaced apart ground engaging rear wheels mounted on said rear axle means in spaced apart relation;
      (4) a motor mounted on said frame;
      (5) transmission means drivingly connecting said motor to said rear axle means; and
      (6) frame connection means removably connecting said drive unit frame to said floor pan of said main frame unit with
          said floor pan back end adjacent said rear wheels;
   (c) a seat unit including a seat member, said seat unit being connected to said floor pan of said main frame unit in
       proximity to said floor pan back end with said seat member in spaced relation to said pan;
   (d) a battery unit including a battery member; said battery unit being removably positioned on said floor pan of said main
       frame unit in proximity to said back end thereof; and
   (e) control means removably interconnecting said battery member with said motor to selectively operate said motor to
       propel said vehicle.

In its initial summary judgment decision in this case, the district court held that Bruno's vehicle did not infringe because
"Bruno's floor pan and battery pan structure function as separate components and there is a valid distinction between
Bruno's battery pan structure and the [’739 patent's] floor pan." The distinction the district court saw related primarily to the
location of the rider's feet. Relying on the California district court's claim interpretation on remand in In re Burke, Inc.,
MDL Docket No. 809-JSL, 11-12, the Wisconsin court noted that "the part of [Bruno's] vehicle where one places one's feet'
only reaches to the portion of the vehicle which Bruno refers to as 'the battery pan structure.'"

In its decision on the renewed summary judgment motion, the Wisconsin district court recognized, after this court's reversal
in Burke II of the California district court's judgment and claim interpretation, that "unobstructed access for feet is no longer
a valid basis upon which to define the contours of the 'floor pan.'" It quoted our language in Burke II that the floor pan of
the ’739 patent "is not limited to an unobstructed place where the rider's feet rest." The court then interpreted "floor pan" as
that term is used in claim 1 of the ’739 patent as composed of sheet metal which is contiguous and in a single plane.

The court compared this claim interpretation with Bruno's vehicle and found that none of these requirements of the floor pan
was satisfied. It determined that the horizontal frame of Bruno's vehicle comprises three pieces of sheet metal. Two of the pieces adjacent to the rear wheels are pans for the batteries. Because these are welded to the underside of the frame and not to the topside like the larger pan, the court held that they were not contiguous with the larger pan and were not in the same plane. Accordingly, the court found no infringement under its claim interpretation.

Burke challenges the district court's claim interpretation and urges that the court erred by reading unstated limitations into the claim to find noninfringement. It cites to this court's precedents and states that we have consistently and repeatedly cautioned against reading limitations into the claims of a patent. Moreover, according to Burke, nothing in the specification or prosecution history supports the district court's added requirements for the structure of the floor pan. Finally, Burke argues that the district court's added requirements and resulting interpretation of claim 1 of the '739 patent are inconsistent with our decision in Burke II.

In its appeal brief, Bruno has not directly responded to Burke's arguments and has not tried to support the added requirements of the floor pan imposed by the district court's claim interpretation. Instead, it urges that the district court's earlier interpretation of the floor pan limitation in its vacated Decision and Order should be sustained. That interpretation required that the entire floor pan be accessible to the rider's feet. Bruno argues that the two battery pans in its vehicle were not accessible to the rider's feet. In part, this argument is premised on Bruno's view that this court's claim construction in Burke II cannot be used for any purpose because it was in a nonprecedential opinion. As discussed above, we have concluded that the district court and Burke properly relied on our decision in Burke II and we are not persuaded that our claim construction in that case was incorrect.

The district court interpreted the term "floor pan" in the '739 patent to mean a contiguous assemblage of sheet metal when it stated:

The Court believes that a floor pan necessarily involves sheet metal and hence construes Claim 1's "floor pan" (qua entire horizontal frame, per [Burke II]) to mean a contiguous assemblage of sheet metal . . .

Burke, Inc. v. Bruno Independent Living Aids, Inc., Case No. 94-C-290, 9 (E.D. Wis. March 5, 1997). The court further explained this interpretation by saying that "by 'contiguous' the Court means either a single piece of sheet metal or several pieces of sheet metal welded directly to each other." Id. at 6 n.3. Using this interpretation, the court determined that Bruno's vehicle could not infringe because frame members were welded between portions of sheet metal. Moreover, the court interpreted "floor pan" as requiring that the sheet metal be in one plane. Bruno did not satisfy this requirement, according to the court, because the battery pans in the Bruno vehicle were lower than the larger sheet metal pan where the rider's feet are placed. Thus, the court based its finding of noninfringement of the floor pan limitation on the failure of Bruno's vehicle to have added characteristics not specifically set out in the claim - viz., a contiguous sheet metal floor pan entirely in the same plane.

The Supreme Court in Markman, 517 U.S. 370, 116 S. Ct. 1384 at 1387, 134 L. Ed. 2d 577, emphasized that the public is entitled to be apprised of what is and is not protected by a particular patent and that that is the purpose of claims. See also Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257, 9 U.S.P.Q.2D (BNA) 1962, 1966-67 (Fed. Cir. 1989) ("A claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention."). This court has held that the language of the claims, the specification and the prosecution history are principally involved in construing patent claims because these constitute the public record. See Markman, 52 F.3d at 976, 34 U.S.P.Q.2D (BNA) at 1326; Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83, 39 U.S.P.Q.2D (BNA) 1573, 1576-77 (Fed. Cir. 1996).

Consistent with the principle that the patented invention is defined by the claims, we have often held that limitations cannot be read into the claims from the specification or the prosecution history. See, e.g., Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053, 12 U.S.P.Q.2D (BNA) 1474, 1476 (Fed. Cir. 1989) ("This court has consistently adhered to the proposition that courts cannot alter what the patentee has chosen to claim as his invention, that limitations appearing in the specification will not be read into claims, and that interpreting what is meant by a word in a claim 'is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.'") (quoting E.I. duPont de Nemours & Co. v. Phillips Petroleum Co. 849 F.2d 1430, 1433, 7 U.S.P.Q.2D (BNA) 1129, 1131 (Fed. Cir. 1988)). We are satisfied that the district court in this case has improperly read additional limitations into claim 1 of the '739 patent.
Looking first at the language of claim 1 of the '739 patent, there is no mention of "sheet metal" or "one piece of sheet metal or several pieces of sheet metal welded directly to each other" in the claim and there is no language that would exclude parts of the floor pan from being in a "different plane." All that the claim requires is "a floor pan having a back end" which can be connected to the rear drive unit in a manner that will place the floor pan back end adjacent to the rear wheels. The claims further state that the steering spindle and the seat unit are connected to the floor pan and the battery unit is positioned on the floor pan near the back end. The literal language of the claim, therefore, does not warrant the added requirements imposed by the district court.

Beyond the language of the claim, we must also look to the specification and prosecution history to see whether the patentee defined any of the pertinent terms of the claim or whether such terms would have the meaning to one skilled in the art ascribed to them by the district court. We do not glean from the specification the district court's definitions. "Floor pan" is not specifically given any special meaning by the inventor. While the pan disclosed in the preferred embodiment is sheet aluminum, an attribute of the preferred embodiment cannot be read into the claim as a limitation. See Texas Instruments, Inc. v. United States Int'l Trade Comm'n, 805 F.2d 1558, 1563, 231 U.S.P.Q. (BNA) 833, 835 (1986) ("This court has cautioned against limiting the claimed invention to the preferred embodiments as specific examples in the specification."); Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865, 9 U.S.P.Q.2d (BNA) 1289, 1299 (Fed. Cir. 1989) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations.").

There is also nothing in the specification which sets out design details such as whether one piece of sheet metal or several pieces welded together form the pan or whether frame members must be present or absent from certain locations in relationship to the surface of the pan. The written description, however, states that "the preferred embodiment has a floor pan frame composed of a center beam, a front lateral member and a rear lateral member" and that these frame parts are a steel beam and angle stock welded together. Thus, frame members were contemplated by the patentee to be part of the "floor pan." Finally, the single plane requirement found by the district court is inconsistent with the specification and would operate to exclude the preferred embodiment. The written description shows that the preferred embodiment does not use an entirely flat piece of aluminum; rather, it has a "raised center ridge" that goes over the central frame member and "outer edges . . . . upturned to strengthen the side portions." The district court's claim interpretation requiring a single plane would exclude the preferred embodiment described in the specification and, thus, cannot be sustained. See Howes v. Medical Components, Inc., 814 F.2d 638, 643-44, 2 U.S.P.Q.2d (BNA) 1271, 1274 (Fed. Cir. 1987).

Finally, the prosecution history contains no limiting definitonal arguments or concessions that would require the term "floor pan" to be interpreted with the added requirements imposed by the district court.

As noted by Burke in its appeal, this court previously construed the term "floor pan" in Burke II. There we said that "when all of the limitations of claim 1 are considered . . . the floor pan of the '739 patent essentially constitutes the horizontal frame of the claimed scooter," Burke II, 82 F.3d at 435 (table), 1996 WL 137527, **3. We reached this claim construction by examining the specification which describes the term "floor pan" as used in the patent as including not only the surface on which the feet and battery are placed but also framing, such as the center beam, front lateral member and rear lateral member shown for the preferred embodiment. We concluded that claim 1 and the specification make clear that the floor pan of the '739 patent is not limited to an unobstructed place where the rider's feet rest. Rather, it is essentially the entire horizontal frame, including the place where the battery is placed. See id.

For the reasons stated, we must conclude that the added requirements of the floor pan that the district court relied on for its finding of non-infringement cannot be upheld. The summary judgment based on the court's interpretation of the claim term "floor pan" is therefore vacated.

1. The "Floral Holding Material" Limitation

The district court construed the claim language "floral holding material" to mean "a three-dimensional solid, semi-solid, or granular material capable of giving support to individual flowers when their stems are inserted into the material," and required that the flower stems be "inserted into and through" the floral holding material. For the reasons given below, we
conclude this construction was erroneous. Neither the phrase "inserted into" nor "inserted through" appears in any of the asserted claims. Instead, all of the claims at issue require that the "floral holding material" be constructed of "material capable of receiving a portion of the floral grouping and supporting the floral grouping without any pot means." '856 patent, col. 8, ll. 19-22. The claim language does not require that the stem end of the flower be inserted into and through the floral holding material. Moreover, we find the teaching of the written description is at most ambiguous whether "capability of receiving a portion of the floral grouping" requires insertion into and through the floral holding material because floral holding material, as we discuss below, is not limited, as the district court held, to floral foam or soil. Similarly, the claim language requiring flower stem ends to be "disposed in" the floral holding material does not require that floral stem ends be "inserted into and through" the material. We cannot conclude from the foregoing that the patentees unambiguously limited the scope of the claimed invention to require flowers to be "inserted into and through" the floral holding material. For us to do so here would be to impermissibly read a limitation into the claims from the written description. Comark, 156 F.3d at 1186, 48 USPQ2d at 1005 ("While . . . claims are to be interpreted in light of the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims." (quoting Sjolund v. Musland, 847 F.2d 1573, 1581, 6 USPQ2d 2020, 2027 (Fed. Cir. 1988))). Here, the claims only require that the "floral holding material" have an upper end, a lower end, and an outer peripheral surface, and be constructed of a substance capable of receiving and supporting a floral grouping without any pot means.

While Polypap recognizes that none of the claims at issue explicitly require that the flower stem ends be "inserted into and through" the floral holding material, it nonetheless suggests that a proper interpretation of the terms "floral holding material" and "material capable of receiving a portion of the floral grouping and supporting the floral grouping without any pot means" compels such a limited claim scope. In doing so, Polypap points out that Figure 2 of the '856 patent, and at least some of the language of the written description and prosecution history, suggests that the preferred embodiment of the invention narrows the scope of "floral holding material" to floral foam or soil. Figure 2 of the '856 patent, which refers to one preferred embodiment, is shown below:

[SEE FIG. 2 IN ORIGINAL]

Polypap bases its argument on the following language in the written description:

As shown in FIG. 2, the floral holding material 18 has an upper end 20, a lower end 22 and an outer peripheral surface 24. The floral holding material 18 shown in FIG. 2 is spherically shaped, although the floral holding material 18 may be any shape desired in any particular application. The floral holding material 18 is constructed of a material capable of receiving a portion of a floral grouping 26 and holding or supporting the floral grouping without any pot means such as a separate flower pot for example. The floral holding means [sic] 18 may be the type of material commonly referred to in the art as floral foam or Oasis TM or may be soil or artificial soil or other earth composition so long as the material is capable of holding its predetermined shape and capable of receiving and supporting the floral grouping 26 without any additional pot means. The floral holding material 18 may be capable of receiving and holding water for supplying water to the floral grouping 26.

'856 patent, col. 3, ll. 40-58.

We find this argument unpersuasive. First, the written description does not describe "with reasonable clarity, deliberateness, and precision" the definition of "floral holding material" proposed by Polypap. See In re Paulsen, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994). The written description only states that the floral holding material "may be" (not must be) the type of material commonly referred to in the art as floral foam or soil. Indeed, the many uses of the term throughout the '856 patent are consistent with a broader definition, one encompassing material of any shape or type. '856 patent, col. 3, ll. 44-45 ("The floral holding material 18 may be any shape desired in any particular application."); id. at col. 3, ll. 50-52 ("The floral holding means [sic] 18 may be the type of material commonly referred to in the art as floral foam or Oasis TM or may be soil . . . ."). The written description makes quite clear that the open-ended examples of "floral holding material" are merely illustrative; that is, they do not exhaustively delineate the "floral holding material" that is clearly defined in the claims. The general rule, of course, is that claims of a patent are not limited to the preferred embodiment, unless by their own language. See, e.g., Va. Panel Corp. v. Mac Panel Co., 133 F.3d 860, 866, 45 USPQ2d 1225, 1229 (Fed. Cir. 1997) ("It is well settled that device claims are not limited to devices which operate precisely as the embodiments described in detail in the patent."). Varied use of a disputed term in the written description demonstrates the breadth of the term rather than
providing a limited definition. See, e.g., Enercon GMbH v. Int'l Trade Comm'n, 151 F.3d 1376, 1385, 47 USPQ2d 1725, 1731-32 (Fed. Cir. 1998) (refusing to limit a term used "interchangeably" in the written description to only one of the uses of the term). There is nothing in this case that warrants departing from the general rule. That the term "floral holding material" is used at various points in the written description to refer to a material of any shape or type is simply not "a special and particular definition created by the patent applicant," Renishaw plc v. Marposs Societa' per Azioni, 158 F.3d 1243, 1249, 48 USPQ2d 1117, 1121 (Fed. Cir. 1998), and is thus an insufficient reason to limit the scope of the claim.

Polypap also argues that the patentee ascribed a special meaning to the term "floral holding material" in the prosecution history. See, e.g., Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1378, 49 USPQ2d 1065, 1068-69 (Fed. Cir. 1998) (stating that explicit meanings given to claim terms in order to overcome prior art will limit those terms accordingly). In particular, Polypap asserts that the examiner's statement in an October 1, 1993 office action citing U.S. Patent No. 3,316,675 to Cartwright as having "roots in the holding material" and citing U.S. Patent No. 2,774,187 to Smithers as having "a system in which flower stems are stuck into a block of holding material" is a clear definition of "floral holding material." It is undisputed that the examiner's statements were focused on the requirement that the Cartwright and Smithers patents used "holding material" in the form of soil or an earth composition as a means of holding the roots of a growing plant in place. However, the examiner never stated that "holding material" is equivalent to the "floral holding material" claimed in the patents. We note that drawing inferences of the meaning of claim terms from an examiner's silence is not a proper basis on which to construe a patent claim. See DeMarini Sports, Inc. v. Worth, Inc., 239 F.3d 1314, 1326, 57 USPQ2d 1889, 1896 (Fed. Cir. 2001).

We conclude that the prosecution history does not attribute a special meaning to the phrase "floral holding material," and there were no express representations made in obtaining the patent regarding the scope and meaning of the claim terms. Moreover, the scope of the asserted claims may be ascertained from the plain language of the claims. See Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.3d 855, 865, 9 USPQ2d 1289, 1299 (Fed. Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations."). We refer to portions of the specification which specifically define the terms of the claim, i.e., the terms of the phrase "floral holding material having an upper end, a lower end and an outer peripheral surface, the floral holding material being constructed of a material capable of receiving a portion of the floral grouping and supporting the floral grouping without any pot means" must be given their ordinary meaning.

1. "flowpath," "flowpath . . . between"

Four of the patents at issue claim, in various forms, a "flowpath" situated "between" the basin and tank. Generally speaking, there are two classes of these claims. In the first class the claims use language which presuppose a unidirectional flow -- i.e., they explicitly contemplate that fluid will flow "from the basin. . . to the tank." For example, claim 1 of the '110 patent recites:

1. A system for cleaning hydrocarbons from a part, comprising a biodegradable, non-toxic, non-caustic, nonflammable oil dispersant cleaner and degreaser fluid, a parts washer including a tank for containing the fluid and a basin for receiving the part, a pump and conduit assembly for pumping the fluid from the tank into contact with the part within the basin, a flowpath defined between the basin and the tank through which the fluid flows from the basin back to the tank, and microorganisms within the parts washer for biodegrading the hydrocarbons:

    the microorganisms substantially sustained within and flowing with the fluid; the parts washer further includes a heater for heating the fluid; and

    means for controlling said heater to maintain the fluid approximately at a desired temperature and for disabling said
heater as the fluid drops to below a desired level in the tank.

'110 patent, col. 8, ll. 24-40; see also '125 patent, col. 9, ll. 3-4 ("a flowpath defined between the basin and the tank through which the fluid flows from the basin into the tank"). The other claims, however, use "flowpath" language that does not presuppose a unidirectional flow. For example, claim 5 of the '835 patent recites:

5. A system for cleaning hydrocarbons from a part, the system comprising a biodegradable, non-toxic, non-caustic, nonflammable, oil dispersant cleaning and degreasings [sic] fluid, a parts washer including a tank for containing said fluid and a basin for receiving the part, a conduit assembly, a pump for pumping said fluid from said tank through said conduit assembly and into contact with the part within said basin, a flowpath defined between said basin and said tank through which said fluid flows between said basin and said tank, and microorganisms within said parts washer, said microorganisms at least partially flowing with and substantially sustained within said fluid, said fluid being non-toxic to said microorganisms, whereby the microorganisms biodegrade the hydrocarbons while retained within said tank.

'835 patent, col. 8, l. 66 - col. 9, l. 12; see also '491 patent, col. 8, ll. 36-37 ("providing a flowpath for the fluid between the basin and a tank"); '125 patent, col. 10, ll. 1-2 ("providing a flowpath for the fluid between the basin and a tank"); id., col. 10, ll. 40-41 ("providing a flowpath for the fluid between the basin and a tank");

1 Unless otherwise noted, all formatting in the claims is added by the Court to emphasize the disputed claim language.

In all of these claims, the parties dispute whether the term "flowpath," standing alone, requires structure. Plaintiff ChemFree argues that it does not and that the term should be construed simply as "the path taken by the fluid." In contrast, Defendant argues the term does require structure, and thus that "flowpath" should mean "structure establishing a course followed by the fluid from the basin, through the drain in the basin, and then directly into the tank." In the second set of claims -- those that do not explicitly recite a "from-to" directional limitation -- the parties dispute whether a "flowpath . . . between" the basin and tank encompasses bidirectional flow or only the flow of fluid from the basin to the tank. Plaintiff argues that the absence of directional language contemplates a bidirectional flow -- i.e., the flow of cleaning fluid either from the basin to the tank or from the tank to the basin. Defendant argues that "between" when associated with "flowpath" should encompass only the flow of fluid from the basin to the tank.

The Court addresses whether "flowpath" is bidirectional, the more difficult issue, first. 2 The claims, regardless of whether they explicitly contain language indicating a direction of flow, make clear that the Applicant regarded the flow of fluid from the tank to the basin to be distinct from the flow of fluid from the basin to the tank. In order to deliver cleaning fluid from the tank to the basin to wash a part, the Applicant contemplated and claimed a pump and conduit arrangement. In order to return the cleaning fluid and hydrocarbons removed from the part to the tank, the Applicant contemplated and claimed only a "flowpath," which allows the fluid to flow via gravity through one or more drain holes in the bottom of the basin. For example, claim 1 of the '110 patent recites "a pump and conduit assembly for pumping the fluid from the tank" and "a flowpath defined between the basin and the tank through which the fluid flows from the basin back to the tank." The Applicant's choice of language confirms that it intended the path for delivery of the fluid to be separate from the path for draining the fluid. In other words, it reveals the Applicant regarded "flowpath" as "the path taken by the fluid from the basin to the tank," not as a general purpose word to describe the path of the cleaning fluid wherever it may flow.

2 The parties first raised this issue at the Markman hearing. Thus, the Court construes it without the benefit of detailed briefing.

Notably, the same dichotomy is present in claims where there is no explicit recitation of a direction of flow. For example, claim 5 of the '835 patent recites "a pump for pumping said fluid from said tank through said conduit assembly" and "a
flowpath defined between said basin and said tank through which said fluid flows between said basin and said tank.
Although the "flowpath" language does not contain an explicit unidirectional limitation, it is clear from the recitation of both a "conduit assembly" and a "flowpath" that the Applicant intends the "flowpath" portion of the claim to accomplish only the returning of the fluid to the tank. Otherwise, reference to the conduit assembly would be redundant.

The same result obtains in claims that expressly recite a non-directional flowpath standing alone. Claims 12 and 22 of the '125 patent and claim 1 of the '491 patent recite "a flowpath for the fluid between the basin and [the] tank." These claims do not, however, impose a direction of flow limitation or contain a complementary "conduit assembly" limitation. Generally speaking, a "claim term should be construed consistently with its appearance in other places in the same claim or in other claims of the same patent." Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001). As discussed above, the "flowpath" recited in claim 1 of the '125 patent -- which contains both a unidirectional limitation and a complementary "conduit assembly" limitation -- clearly and unambiguously refers to the path taken by the cleaning fluid from the basin to the tank. Plaintiff has presented no persuasive reason why the "flowpath" limitation in claims 12 and 22 of the same patent (which are materially identical to claim 1 of the '491 patent) should be construed any differently.

3 Notably, each of these claims does contain an "exposing the part to a [cleaning] fluid" limitation that appears to take the place of the "conduit assembly" limitation.

It is evident that the Applicant consistently, among all patents, used the word "flowpath" to refer to the draining of the fluid from the basin. It is worth noting that Plaintiff initially argued as much in its claim construction briefing: "[A]fter a part is washed, the cleaning fluid flows back down to the tank. The path taken by the cleaning fluid as it returns to the tank is referred to consistently throughout the claims as the 'flowpath.'" (Pl.'s Opening Claim Construction Brief [hereinafter "Opening Brief"] at 21 (emphasis added).) In that briefing Plaintiff also attempted to dispel any notion that "flowpath" may carry a different meaning depending upon the claim in which it appeared: "All of the patents that contain flowpath and flowpath positioning terms share a common specification. Use of the term Towpath' is consistent between all four patents." 4 (Id. at 22 (emphasis added)).

4 Based upon comments made at the Markman hearing, Plaintiff's change of position is an obvious attempt to expand the scope of the claims to read upon a device it discovered after claim construction briefing was complete.

The specification common to these four patents also supports this construction of the "flowpath" terms. Although the specification does not explicitly use the term "flowpath," it does make several informative disclosures related to the general flow of cleaning fluid in the parts washers, both from the tank to the basin as well as from the basin to the tank. These teachings include:

The tank is partially filled with the cleaning fluid and a pump and conduit assembly direct a flow of the cleaning fluid to the basin. The cleaning fluid discharged into the basin flows through a drain hole in the false bottom, through the filter and support grid, and then through a drain hole defined through the bottom panel of the sink member and cleaning fluid is then returned to the tank for reuse.

'110 patent, col. 2, ll. 6-13. 5

When the pump 73 is operating, it draws the cleaning fluid 72 from the bottom region of the tank cavity 44 and discharges the cleaning fluid 72 into a conduit 74. The conduit 74 is connected to and discharges into a base (not shown) of the faucet 24, whereby the fluid discharges from the nozzle 26.

Id. col. 4, ll. 22-27.
In operation, the pump 73, conduit 74, and faucet 24 circulate cleaning fluid 72 from the depths of the tank cavity 44 to the basin cavity 18 where parts cleaning takes place. . . . In accordance with one method of the present invention, cleaning fluid 72 flows out of the nozzle 26 and the part being washed is oriented within the stream of cleaning fluid 72 exiting the nozzle 26. The cleaning fluid 72 removes organic waste from the part being washed, and then the cleaning fluid 72, along with the organic waste and any small particulate washed from the part, flows by gravity through the drain hole 64 and the strainer (not shown) associated therewith. The strainer will, of course, keep certain objects from passing through the drain hole 64. The cleaning fluid 72, organic waste, and remaining particulate matter then encounter the filter pad 60. Subsequently, the fluid 72 and organic contaminants pass through the support grid 58, and drain hole 52 to deposit into the tank cavity 44.

Id., col. 6, ll. 32-51.

--- Footnotes ---

5 Except when discussing terms found exclusively in the '226 patent, for ease of reference the Court will generally cite to the specification of the '110 patent.

--- End Footnotes ---

These disclosures reveal that the Applicant intended for distinct language to govern the two types of flow. As succinctly put by Plaintiff in its Opening Brief,

The specification uses different language to describe: (i) the movement of the cleaning fluid from the tank to the basin before the part is cleaned; and (ii) movement of the cleaning fluid from the basin back to the tank after the part is cleaned. . . . During the ascent, the fluid travels through a conduit. In contrast, during the descent, the fluid travels in accordance with a flowpath.

(Pl.'s Opening Brief at 24.)

The Court thus determines that "flowpath . . . between" the basin and tank does not encompass bidirectional flow, but only the flow of fluid from the basin to the tank.

The second, and easier, question relates to whether the "flowpath" terms must be construed by reference to structure. Defendant insists "[t]he ordinary meaning of the disputed phrases in these claims is 'structure establishing a course followed by the fluid from the basin, through the drain in the basin, and then directly into the tank.'" (E.g., Def.'s Opening Brief at 18.) Defendant's argument is not clear, but it appears to construe the claim by reference to the preferred embodiment discussed in the specification. As seen from the specification excerpts dealing with the flow of cleaning fluid, as well as from the Court's discussion of the nature of the "flowpath," it is clear that the "flowpath" is simply the path taken by the fluid as it returns to the tank after it is used to wash a part in the basin. Nowhere in the intrinsic or extrinsic evidence does is it indicate a structural limitation is required. Nor does the specification impose any artificial constraints requiring a construction where the "flowpath" begins at the drain in the basin and ends at some point immediately thereafter. Thus, the Court declines to impose these arbitrary limitations.

For the reasons discussed above, the Court construes the "flowpath" and "flowpath . . . between" terms to mean "the path taken by the cleaning fluid from the basin to the tank."

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F. Flow Channel

The term "flow channel" appears in steps (f) and (g) of claims 1 and 21. Claim 1 recites:

(f) adjusting the mold system to thereby eject the product, wherein the first mold cavity comprises a first-cavity-flow-
channel which is located adjacent the first-layer-defining-mold-cavity-section, with a flow channel being defined as a portion of a mold cavity which is significantly thicker and wider than the adjacent mold cavity thickness for the purpose of directing the flow of injected plastic, and wherein step (a) comprises the step of:

(g) directing the first plastic into the first-layer-defining-mold-cavity-section via the first-cavity-flow-channel, so that the first plastic flows in the first-cavity-flow-channel in a direction which is positively different from said first predetermined general direction.

'282 Patent, col. 8, lines 46-62 (emphases added). Claim 21 similarly recites:

(f) adjusting the mold system to thereby eject the product, wherein the second mold cavity comprises a second-cavity-flow-channel which is located adjacent said second-layer-defining-mold-cavity-section, with a flow channel being defined as a portion of a mold cavity which is significantly thicker and wider than the adjacent mold cavity thickness for the purpose of directing the flow of injected plastic, and wherein step (d) comprises the step of:

(g) directing second plastic into the second-layer-defining-mold-cavity-section via the second-cavity-flow-channel, so that the second plastic flows in the second-cavity-flow-channel in a direction which is positively different from said second predetermined general direction.

Id. at col. 11, lines 20-35 (emphases added).

As Turn-Key notes, the claims themselves explicitly define the term "flow channel" to be "a portion of a mold cavity which is significantly thicker and wider than the adjacent mold cavity thickness for the purpose of directing the flow of injected plastic." Such an explicit definition in the intrinsic evidence is, of course, controlling. See Jack Guttman, Inc. v. Kopykake Enterprises, 302 F.3d 1352, 1360 (Fed. Cir. 2002). This definition provides both a structural and a functional limitation to the term "flow channel." Structurally, it is a part of the mold cavity that is significantly thicker and wider than the adjacent cavity thickness. Functionally, the flow channel directs the flow of injected plastic, i.e., the flow channel is thicker and wider than the adjacent mold cavity "for the purpose of directing the flow of injected plastic." Furthermore, step (g) qualifies the functional "directing" limitation of step (f) by providing that the flow channel directs flow so that the plastic flows in the flow channel "in a direction which is positively different from said . . . predetermined general direction." Turn-Key concedes that a structural element, even if thicker and wider than the adjacent mold cavity, cannot be a "flow channel" as claimed in the '268 patent "if it does not direct plastic melt into a layer-defining-mold-cavity-section in an unquestionably different direction than it had in the 'flow channel' prior to being so directed."

Perhaps because the claim language itself so thoroughly defines a "flow channel," the written description shines little additional light on this term. However, Figure 1, supra, illustrates the relationship between a flow channel and the rest of the mold cavity. As described in the written description and illustrated in Figure 1, mold cavity 1 includes both flow channel 6 and layer-defining-mold-cavity-section 2. Thus, as provided in the claims, the flow channel is a portion of the mold cavity. In addition, as can be seen from the figure, flow channel 6 is much deeper and wider than the adjacent mold cavity section. This is consistent with the definition provided in the claim language, which requires the flow channel to be "significantly" thicker and wider than the adjacent cavity section.

The prosecution history provides further support for the definition of flow channel found in the claims. The patentee amended the claims to add steps (f) and (g) in response to an anticipation rejection over U.S. Patent No. 3,822,107 to Wogerer (the "Wogerer patent"). The examiner explained:

The sections of the cavity extending from the gate for nozzles 1 and 2, as shown in the figures of Wagerer [sic], are equivalent to first-cavity-flow-channel and second-cavity-flow-channel. The section of the cavity (where pin 5 extends) is equivalent to the first-layer-defining-mold-cavity (figure 1) and the second-layer-defining-mold-cavity (figure 2). Part 3 (fixed mold) is a shared gate means.

(Turn-Key Tech's Markman Exhibit 3 at 65). The limitations that became steps (f) and (g) were previously recited in a dependent claim, and were incorporated into independent claim 1 in response to the rejection. Relying on the both the structural and functional limitations recited in the amendment, the patentee distinguished Wogerer by noting that:
Wogerer does not describe an injection molding system in which injected plastic is directed by flow channels, as recited in amended claim 1 and new Claim 28 [which became independent claim 21 in the issued patent] . . . . The definition of "flow channel" added to these claims by this amendment precludes the Examiner's interpretation of Wogerer's cavity as including sections that are equivalent to flow channels. If the flow channels are not significantly thicker and wider than the adjacent mold cavity thickness, they do not significantly direct the flow of the injected plastic.

(Id. at 121). This explanation reinforces the structural and functional definition of "flow channel" provided in the claims. And, the patentee relied both upon the unique structural features of the claimed flow channel, as well as its ability to direct the flow of plastic into the mold, in order to distinguish the claimed invention from the prior art Wogerer patent. Furthermore, as Turn-Key notes, by specifically referring to "the definition of flow channel added to these claims by this amendment," the patentee's explanation also clearly refers the public to the claim language itself to find a definition of "flow channel."

In short, the patent claims themselves define "flow channel" to be "a portion of a mold cavity which is significantly thicker and wider than the adjacent mold cavity thickness for the purpose of directing the flow of injected plastic," and further require (in step (g)) that the flow channel directs flow so that the plastic flows in the flow channel "in a direction which is positively different from said . . . predetermined general direction."

Koito does not disagree with the general definition of "flow channel" provided above. However, it seeks either to add to or clarify that definition in several respects. First, Koito urges that the court construe "flow channel" to require a structure that directs the plastic to flow in a single direction through the flow channel. Koito argues that the use of the article "a" before "direction" in step (g) mandates this result. The Federal Circuit "has repeatedly emphasized that an indefinite article 'a' or 'an' in patent parlance carries the meaning of 'one or more' in open-ended claims containing the transitional phrase 'comprising.'" KJ Corporation v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed. Cir. 2000). Only if the intrinsic evidence indicates that the inventor intended "a" to carry its normal, singular meaning, will the court so limit the claim. See Atofex, Inc. v. Exitron Corp., 122 F.3d. 1019, 1023 (Fed. Cir. 1997). Koito contends that in context, these claims require a singular definition because they require comparison with the "predetermined general direction" of flow in the layer-defining-mold-cavity-section. Koito argues, in essence, that it is impossible to have the predetermined general direction be "positively different" from the direction through the flow channel unless there is only one direction through the flow channel. Koito is mistaken. That there may be more than one direction of flow through the flow channel does not necessarily prevent one of those flow directions from being "positively different" from the predetermined general direction. In short, the intrinsic evidence in this case does not indicate that the inventor intended "a" to carry a singular meaning, and therefore the court construes "a direction" to carry its normal meaning in patent parlance, i.e., one or more. Thus, the claims do not require that the plastic flow through the flow channel in a single direction.

Koito also argues that the claimed flow channel must possess a discrete shape. Specifically, it argues that "the flow channel is defined by two discrete side walls, a beginning wall, and an end wall, and is shaped so that plastic flows in only one direction along the length of the flow channel" as illustrated in Figures 3 and 6 of the patent. Koito cannot provide any reason, other than by reference to the preferred embodiments, why a flow channel must be limited to a specific shape that includes four discrete walls. The claim language does not so limit the term, and the court declines Koito's invitation to import additional structural limitations based on the preferred embodiment.

Finally, Koito asks the court to construe "significantly thicker and wider," which appears in the claims as part of the definition of "flow channel," to mean much thicker and wider. Turn-Key argues that "significantly thicker and wider" simply means thick and wide enough to direct flow in accordance with step(g). The parties apparently agree that the ordinary meaning of "significantly" is "of a noticeably or measurably large amount." Merriam-Webster's Collegiate Dictionary; (Joint Claim Construction and Prehearing Statement at 20). Nowhere in the written description or drawings does the patentee define exactly what is meant by "significantly thicker and wider," and in the absence of such a definition the term generally carries its ordinary meaning, which in this case would lead the court to adopt Koito's proposed construction, much thicker and wider.

Turn-Key supports its construction by referring both to the functional language in the claim itself ("for the purpose of directing the flow of injected plastic") and to the patentee's response to the examiner's rejection over Wogerer. As discussed above, in the response to the Wogerer rejection the patentee explained the "significantly thicker and wider" language in a functional manner: "If the flow channels are not significantly thicker and wider than the adjacent mold cavity thickness,
they do not significantly direct the flow of the injected plastic." Turn-Key argues that this functional language provides a complete definition of "significantly thicker and wider," i.e., that it simply means thick and wide enough relative to the adjacent cavity to perform the function of directing flow.

The court is persuaded by Turn-Key's argument, which relies on the explicit language of the claim itself. Moreover, as discussed above, the prosecution history specifically directs one of skill in the art to look to the amended claim language itself for the definition of "flow channel." This language directly links the required thickness and wideness of the flow channel to its purpose: directing the flow of injected plastic.

For the reasons given above, the court construes the term "flow channel" to be a portion of a mold cavity that is significantly thicker and wider than the adjacent mold cavity thickness for the purpose of directing the flow of injected plastic, and the claim further requires that the flow channel direct flow so that the plastic flows in the flow channel in at least one direction that is positively different from the predetermined general direction. Finally, "significantly thicker and wider" means thick and wide enough relative to the adjacent cavity thickness to direct the flow of injected plastic as required by the claim.

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"A Soil/Water Flow Channel" in Claim 4 32

32 This text discussion also covers identical language from the '100 Patent's claim 8 (see W. Mem. 25, M. Mem. 29).

33 [Footnote by this Court] Although "soil/water flow channel" is used in the claims of the '100 Patent, while "guide chamber" was used in the '433 Patent, the '100 Patent's specification also uses the term "guide chamber."

34 As Optical Disc Corp. v. Del Mar Avionics, 208 F.3d 1324, 2000 WL 354753, at *9 (Fed. Cir.) has recently reconfirmed:
Without evidence in the patent specification of an express intent to impart a novel meaning to a claim term, the term takes on its ordinary meaning.

"Soil/water flow channel" is not defined or even used in the specification. In an effort to support Whirlpool's contention that the phrase has a plain and ordinary meaning, W. Mem. 24 quotes a dictionary definition of "channel" as "a conduit, pipe, duct, gutter, groove or furrow." But that broad set of alternatives would not enlighten a person skilled in the relevant art. Rather such amorphous terms are not "plain" because they can mean whatever a patentee wants them to mean.

Because the claim language itself thus fails to give notice as to just what is claimed, the specification becomes relevant in the construction process. In that respect the primary referent for the term "soil/water flow channel" is "annular guide chamber 100" (col. 4, l. 42). And even though the word "means" is absent from this claim element, it is nonetheless in means-plus-function form (see discussion in Micro Chem., 194 F.3d at 1257): In this instance "soil/water flow channel" is
obviously the means, and its stated function is just as obviously framed as "receiving water with entrained soil from adjacent said surrounding wall." That being so, the exact (and only) structure adverted to in the specification limits the claim. In short, the "channel" in the '100 Patent, like the "guide chamber" in the '433 Patent, is annular. 35

35 That is hardly surprising, given the earlier-mentioned fact that the basic structure of the '433 Patent is incorporated into the '100 Patent.

The specification describes a U-bend at the ends of the supply and return conduits. Through this configuration, the liquid in neighboring tubes, one a supply tube and one a return tube, moves in opposite directions. If a person were to look at a pair of these conduits from the side, the liquid in one tube would be moving to the left while the liquid in the other tube would be moving to the right. This specification suggests a construction of the claim which requires liquid to move through neighboring tubes in different directions axially.

During the prosecution of the '078 patent, Calmac argued that claim 16 is different from Czechoslovakian patent no. 123,424 because liquid in the tubes of the Czech patent flows in the same direction. Calmac argued:

Furthermore, inviting attention to FIG. 1 of Reference L [Czech '424], it is seen that all of the tubes in any given spiral wall have the fluid therein travelling in the same direction which is entirely contrary in concept and operation from the present invention.

Amendment to the Application for the '078 Patent at 16. 6 Also, Calmac distinguished Roma patent no. 4,054,980 on the same basis. Id. at 18.

5 A copy of the '078 patent appears in the record as Exhibit A to DB's memorandum of law.

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Amendment to the Application for the '078 Patent at 16. 6 Also, Calmac distinguished Roma patent no. 4,054,980 on the same basis. Id. at 18.
From the language of the claim, the specification of the patent, and the prosecution history, it is clear that the proper construction of claim 16 is that it requires liquid in adjacent tubes to flow in opposite directions. Calmac argues that, properly construed, claim 16 covers devices wherein liquid flows in the same axial direction in neighboring tubes but flows in opposite directions radially. In other words, one tube flows inside to outside in a clockwise direction while the other tube flows outside to inside in a clockwise direction. This construction of claim 16 would implicate the ICE-CEL, which has the same axial flow but opposite radial flow in its coolant tubes.

The construction of claim 16 for which Calmac argues is contrary to the plain language of the claim and the specification of the patent. Axial flow, i.e., up and down, is the common understanding of the term "flow." If Calmac had intended its invention to cover both axial and radial counterflow, it could have stated as much in claim 16. The fact that it did not differentiate between axial and radial flow supports DB's contention that the concept of "radial counterflow" was invented by Calmac for purposes of this litigation. Furthermore, the specification of the '078 patent, describing pairs of conduits joined by a U-bend, clearly shows that Calmac had axial flow in mind when it stated that liquid in adjacent tubes must flow in opposite directions.

Having determined the proper construction of this portion of claim 16, the court must now consider whether the ICE-CEL infringes upon that claim. The parties are in agreement that liquid in neighboring tubes in the ICE-CEL flows in the same axial direction: if the liquid in one tube is flowing counterclockwise the liquid in its neighboring tube is also flowing counterclockwise. Therefore, no issues of material fact remain on this question, and the ICE-CEL does not literally infringe upon the "opposite direction" portion of claim 16.

Calmac contends, however, that the ICE-CEL infringes upon this portion of claim 16 under the doctrine of equivalents. It argues that the ICE-BANK and the ICE-CEL serve substantially the same function, in substantially the same way, to achieve substantially the same result. There may be genuine issues of fact on the question of whether the ICE-CEL is the equivalent to claim 16; however, Calmac is precluded by prosecution history estoppel from expanding its claim in this manner.

Patent '078 was initially rejected by the patent office due to the prior art contained in the Czech patent. Paragraph D of claim 16 was added to limit the invention to devices which employ counterflow in neighboring tubes. When reasserting its claim, Calmac informed the patent office that the Czech patent used a system wherein refrigerant flowed through grid tubes in the same direction. Calmac argued to the patent office that the Czech "same flow" system was "entirely contrary in concept and operation from" the ICE-BANK system of opposite flow. Amendment to the Application for the '078 Patent at 16. Calmac raised the same argument to differentiate the '078 patent from the prior art contained in the Roma patent. Id. at 18. Importantly, the Roma patent used straight tubes with liquid flow in the same direction. Thus, the Roma patent had no radial flow, only axial flow. Calmac argued that its invention was different from the Roma patent because the liquid in neighboring tubes in the ICE-BANK flows in opposite directions.

A review of this uncontested prosecution history clearly reveals that Calmac surrendered the technique of same flow during the patent application process. Calmac is now estopped from resurrecting this technique in order to implicate the ICE-CEL through the doctrine of equivalents. See, e.g., Hughes Aircraft Co., 717 F.2d at 1361. Because the ICE-CEL does not literally infringe upon claim 16 and Calmac is precluded from employing the doctrine of equivalents to expand its claim to include the ICE-CEL system of opposite radial flow, DB is entitled to summary judgment on the issue of infringement.

2. Flow Rate

This phrase is found in Claims 3 and 24 of the '802 Patent and Claims 9, 44, and 53 of the '193 Patent.

Phrase: Flow rate

Construction: The volume of breathing gas moving per unit of time.

Reasoning: The dispute between the parties centers on whether flow rate must account for a volume of gas, or merely the
movement of gas. Plaintiffs propose that the phrase flow rate means a signal indicative of the movement of gas (e.g., direction) over time. Defendant contends that flow rate means a quantified volume of gas moving per unit of time. Resolution of this dispute is easily reached by reviewing the specification. The '802 patent gives various examples of flow rates. These consistently are expressed in terms of "cc's per second" [i.e., volume per time]. '802 Patent, cl. 11-12, Ins. 68-1, 22-31. No other examples, measurement tools, or definitions of flow rate are given in the patent. It is clear, when viewed objectively, that plaintiffs used the term "flow rate" in a particular way in their patents.

While an individual with ordinary skill in the art may be able to modify the teachings of the patent to allow flow rate to account for weight of gas, or some other quantified value, plaintiffs' contention that the term flow rate simply means gas movement is contradicted by the patent itself, and plaintiffs' other claim construction arguments. Both parties agree that the term flow means a signal indicative of movement of breathing gas. Therefore, flow rate must mean something more than gas movement.

Furthermore, the volume per time definition used in the specification is in accordance with the common definition of flow rate which is a "weight or volume of flowable material flowing per unit of time." McGraw Hill Dictionary of Scientific and Technical Terms (4th ed.). A construction that accounts for volume also makes sense in the overall context of the patents because flow rates are relevant to these patents, which measure leakage. Leakage is an amount of gas that is being lost due to movement of the nasal mask during sleep. By measuring the various rates, accounting for leakage, and comparing them, the circuitry is able to distinguish between inhalation mode and exhalation mode, and apply the appropriate corresponding pressure.

The term "flow record" appears in steps (b) and (e) of claims 1 and 21:

(b) solidifying at least partly the flowed first plastic in the first-layer-defining-mold-cavity-section to thereby form said first plastic layer having a first-direction-flow-record, . . .

(e) solidifying the flowed second plastic in the second-layer-defining-mold-cavity-section to thereby form said second plastic layer, so that the second plastic layer has a second-direction-flow-record which is positively different from said first-direction-flow-record, to thereby form said plastic product with said cross-laminated section that includes both the first plastic layer and the second plastic layer . . .

'268 Patent, col. 8, lines 23-26, 37-45; col. 10, lines 65-68; col. 11, lines 11-19 (emphases added). Neither the claims themselves, the written description, nor the prosecution history provides an explicit definition of flow record. Turn-Key argues that a flow record is the flow direction of plastic when it is at least partially solidified. For its part, Koito notes that a "flow record" reflects the direction of flow of injected plastic, but is different from the "predetermined general direction" in that it is the preserved record of the flow.

The Oxford English Dictionary defines "record" as "the fact or condition of being preserved as knowledge, esp. by being put into writing; knowledge or information preserved or handed down in this way." See also Random House Dictionary of the English Language 1612-13 (2d Ed. 1987) (defining record as "the state of being recorded, as in writing"). Thus, the ordinary meaning of "flow record" refers to a preservation in the solidified plastic layer of the flow of liquid plastic used form the solidified layer. Furthermore, the court agrees with Koito that a "flow record" cannot be precisely the same as the predetermined general direction of flow. By the plain terms of the patent, the plastic must be at least partially solidified in order to form a flow record. By definition, solidified plastic no longer flows, and therefore it cannot have a flow direction (general or otherwise). Thus, contrary to Turn-Key's argument, the "flow record" is not synonymous with flow direction. Rather, the flow record in some way preserves a history of the flow direction in a permanent form.

Koito argues, and the court agrees, that the flow record is a preservation of the direction of the plastic's flow as it filled the mold. Because the claims require that the plastic flow in a first or second predetermined general direction to fill the first and
second layer-defining-mold-cavity-sections respectively, it follows that the flow record is a preserved record, or history, of
the predetermined general direction created when the plastic solidifies or partially solidifies in the mold.

This interpretation of flow record is consistent with the written description and drawings. Figure 3 of the patent, which
illustrates a partial view of a cross-laminated product, shows the first and second predetermined general directions as arrows
12 and 14 respectively. '268 Patent, col. 3 line 60 - col. 4, line 16. The patent uses the identical arrows 12 and 14 to refer to
the first and second flow records. Id. Thus, the patent teaches that the flow record in a layer runs in the same direction as the
predetermined general direction of flow of the plastic that formed the layer.

For the reasons discussed above, the court construes "flow record" as a preserved record, or history, of the predetermined
general direction of flow created when the plastic layer solidifies or partially solidifies in the mold.

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4. Fluid Characteristic Associated with the Flow of a Gas

This phrase is found in Claim 23 of the '532 Patent. It is also found in Claims 29 and 32 of the '517 Patent.

Phrase: Fluid characteristic associated with the flow of a gas

Construction: flow rate.

Reasoning: Both parties agree that this phrase refers to flow rate. The real dispute as to the meaning of the term "flow rate".
However, in construing the claims of the Early Patents, we have already arrived at the appropriate meaning of that term, i.e.,
the volume of breathing gas moving per unit of time.
continuous function of communicating intrauterine pressures from the first chamber means through the second chamber means to the pressure transducer. Thus, Utah Medical argues that this element of the claim reads upon the Koala. Claim 1 uses the term "fluid communication" twice. First, it requires that the first volume, which is in the first chamber, be in fluid communication with the amniotic liquid such that the amniotic liquid will enter the first chamber. Second, it requires that air-filled second volume be in fluid communication with the first chamber means. The Court finds that in order to be in fluid communication with the amniotic fluid, as in the first case or the air as in the second case, the amniotic fluid or air must be allowed to enter the first chamber and form, or come in contact with, the liquid column that has been created so that when the pressure changes the liquid column can move within the first chamber, as indicated by the possible surfaces of amniotic fluid depicted above in Figure 3. The term "fluid" is an adjective describing the ability for the liquid and air to move within the catheter, and, depending on the pressure exerted by the amniotic fluid, communicate that pressure to the transducer. Thus, all this element requires is that the amniotic pressure has the means to communicate with the air pressure so that pressures are able to be transmitted from one end of the catheter to the other end.

7. Fluid Flow Control Valve

The term "fluid flow control valve" only appears in one independent claim in the '130 application (claim 1) and the '674 patent (claim 13). The preamble of both those claims reads: "A fluid flow control valve comprising: [body of claim]." '130 application claim 1 at 35; '674 patent claim 13 at 27:30-35, 40-41. Because the phrase "fluid flow control valve" appears in the preamble, a preliminary question exists as to whether the preamble is, in fact, a separate limitation. See Symantec Corp. v. Computer Assocs. Int'l, Inc., 522 F.3d 1279, 1288 (Fed. Cir. 2008) (stating that when evaluating the significance of a preamble, the first step is to determine whether the disputed language is a claim limitation).

There is no bright-line rule that determines when preamble language should be deemed to constitute a limitation of the claim. This determination requires a review of the entire "patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim." Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257 (Fed. Cir. 1989); see Bell Commc'n's Research, Inc. v. Vitalink Commc'n's Corp., 55 F.3d 615, 620 (Fed. Cir. 1995) ("[W]hen the claim drafter chooses to use both the preamble and the body to define the subject matter of the claimed invention, the invention so defined, and not some other, is the one the patent protects.").

Language within a preamble generally does not limit the scope of the claim. See, e.g., Symantec, 522 F.3d at 1289. In certain circumstances, however, the language of a preamble may act as a limitation if it is "necessary to give life, meaning, and vitality" to the claim. Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999); see NTP, Inc. v. Research in Motion, Ltd., 418 F.3d 1282, 1305 (Fed. Cir. 2005) ("[I]f the preamble helps to determine the scope of the patent claim, then it is construed as part of the claimed invention."). Giving "life, meaning, and vitality" to the claim may occur where the preamble provides an antecedent basis for elements in the body of the claim. See Eaton Corp. v. Rockwell Int'l Corp., 323 F.3d 1332, 1339 (Fed. Cir. 2003) ("When limitations in the body of the claim rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention."); C.R. Bard, Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1350 (Fed. Cir. 1998) (determining that if a preamble provides antecedents for ensuing claim terms then the preamble limits the scope of the claim).

In NTP, for example, the phrases "to at least one of the plurality of destination processors" and "electronic mail system" occurred in the preamble as well as the body of the claim. 418 F.3d at 1305. The Federal Circuit held that because the antecedent use was necessary to provide context for the rest of the claim limitations, the terms in the preamble were limiting. Id. at 1305-06.

Under this framework, Aqua-Lung contends that "fluid flow control valve" appears in the preamble to provide antecedent
basis to claim language that functions as a limitation. Two Forty counters that the term is nothing more than introductory
and the Court should not attempt to read it as a limitation, but instead adopt a broad meaning. Beginning the analysis with
the words of the claim, Aqua-Lung points to claim thirteen of the '674 patent as evidence of the use of the term as an
antecedent. That claim reads in pertinent part:

a fluid flow control valve, comprising:

a housing defining an internal passageway, where the passageway has a gas inlet opening near an upstream end of said
housing and a gas outlet opening near a downstream end of said housing and spaced from the gas inlet opening; . . .

wherein the housing of the fluid flow control valve includes a portion threaded into the bore[.]

Claim 13 at 27:30-35, 40-41 (emphasis added). Aqua-Lung is correct that the term does not only appear in the preamble of
the claim, but also within the body. Consequently, at first glance this subsequent use of the introductory term in the body of
the claim appears to be exactly what occurred in NTP.

"Fluid flow control valve," however, does not rely upon and derive any antecedent basis from the preamble. In NTP, if
"electronic mail system" is removed from the body of the claim, then the entire claim falls apart as the antecedent
connection is severed. By contrast here, "fluid flow control valve" appears to provide nothing more than context for the
body of the claim and can be excised without any resulting collapse in the understanding of it. See Symantec, 522 F.3d at
1289 (stating that it is assumed that the preamble language merely provides context for the claims, absent any indication to
the contrary in the claims, the specification or the prosecution history). That is, the body of the claim is not dependent on
the preamble term to act as an antecedent to any language in the claim. 4

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4 To hold that the term is a preamble term that limits the claim additionally would lead to a superfluous definition. A review
of the entire patent provides understanding of what the inventor actually invented and intended to encompass by the claim.
The body of the claim sets out the complete invention, and thus, importing all the words to the right of the word
"comprising" would incorporate a definition into the preamble term followed by different limitations in the claim body
rendering the set meaningless.

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Having determined that "fluid flow control valve" is a preamble term and not a claim limitation, the remaining step is to
construe it. As noted above, "fluid flow control valve" is mentioned in one independent claim of the '130 application and
'674 patent and in two dependent claims of the '674 patent. See '130 application claim 1 at 35; '674 patent claim 13 at 27:30-
35, 40-41; claim 15 at 28:9-12, claim 20 at 28:32-34.

Aqua-Lung proposes that "fluid flow control valve" be construed as: "A valve including a housing which defines a central
passageway having gas inlet and outlet openings, a gas pressure-responsive closure element disposed within the passageway
for selectively opening and closing of the inlet opening to gas flow in response to gas pressure exerted thereon at the inlet
opening, a spring that urges the gas pressure responsive closure element toward its closed position, a filter disposed within
the passageway and a c-clip that holds the closure element, spring and filter within the passageway against the spring force."
Two Forty seeks to have the term defined as "a mechanism which controls the flow of fluid." Aqua-Lung's definition
attempts to track the summary of the invention. Two Forty argues that since the phrase is used in the preamble, with specific
elements of the valve claimed individually, any resulting definition should be defined broadly.

Two Forty is correct that the term should be interpreted broadly because a "fluid flow control valve" is what the inventor is
claiming was his invention. See '609, '958, '674 patent abstract ("A fluid flow control valve is disclosed."). Two Forty's
proposed broad construction is therefore preferable because the inventor specifically set forth that the purpose of the "fluid
flow control valve" was to control the flow of fluid flowing into a scuba regulator to stop dust and other particulars from
entering it. See '609 patent summary at 3:66-4:2 ("To achieve the foregoing and other objects and in accordance with the
purpose of the present invention, as embodied and broadly described herein, a fluid flow control valve is disclosed."). Based
on the foregoing, the Court construes a "fluid flow control valve" to mean "a mechanism which controls the flow of fluid."

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The phrases "fluid inlet end" and "fluid outlet end" are used in the patent to describe the ends of the tip through which fluid enters and exits. (Doc. 29, Ex. A). Dentsply argues that these phrases refer to the most proximal and distal "point[s]" on the tip. (Docs. 34, 55). Hu-Friedy contends that the phrases refer to two regions of the tip: the fluid inlet end is the region from the discharge orifice to the proximal point of the tip; the fluid outlet end is the region from the discharge orifice to the distal point. 3 (Docs. 44, 47, 55).

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3 The discharge orifice is the drilled opening, located near the bend in the tip, out of which fluid flows. (Doc. 29, Ex. A).
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The latter interpretation, that inlet and outlet ends refer to regions of the tip, is required by the claim language. The claims instruct that the tip body, with a "fluid inlet end and a fluid outlet end," should be bent so that "a centerline through said fluid outlet end intersects a centerline through said fluid inlet end at an angle greater than 5 degrees." (Doc. 29, Ex. A). These claims contemplate that lines be drawn through the inlet and outlet ends. Each line requires, at the least, two points. AMERICAN HERITAGE COLLEGE DICTIONARY 804 (4th ed. 2002). Thus, contrary to Dentsply's proposed construction, each "end" must consist of more than one point. The claim language requires that "end" be interpreted as a region of the tip.

The specifications confirm this construction. They identify the "fluid outlet end" as a region of the tip. The figures illustrate the "fluid inlet end" as the portion of the tip from the discharge orifice to the proximal point and the "fluid outlet end" as the portion from the discharge orifice to the distal point. To interpret "end" as a point of the tip--as proposed by Dentsply--would contradict these embodiments of the invention. See Anchor Wall Sys., Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1308 (Fed. Cir. 2003) ("[A] claim construction that excludes a preferred embodiment . . . is rarely, if ever correct and would require highly persuasive evidentiary support.") (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996)).

Reference materials also support interpreting "end" as a region, rather than as a point. They define "end" as the "last part lengthwise" of an object and the "extremity of something that has length." AMERICAN HERITAGE COLLEGE DICTIONARY 462 (4th ed. 2002); MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 380 (10th ed. 2002). These definitions are consistent with the use of the term in the claims and specifications of the patent. Accordingly, the court will construe "fluid inlet end" as the region extending from the discharge orifice to proximal point of the tip and "fluid outlet end" as the region extending from the discharge orifice to the distal point of the tip.

B. "Fluid Pressurized Structure."

The term "fluid pressurized structure" appears in claims 1, 3, 5, 6, and 12 though 15. Claim 3 recited (col. 17:28-34):

3. An improvement in a bundle breaker as defined in claim 2 wherein:

   a. said first and second compliance structures respectively having first and second fluid pressurized structures for engaging a plurality of logs in side by side relation with at least one log having a height greater than at least one other log.

For this term, plaintiffs contend that it should mean "a structure containing a liquid or a gas that applies force to the inside
of the structure," while defendant originally argued that the term should be construed as "a sealed structure inflated by liquid or gas, under pressure."

Again, defendant gave up on the construction it proposed in the prehearing statement. It now proposes the construction "a sealed structure containing liquid or gas under greater than normal atmospheric pressure." Given this new proposed construction, the parties have two points of disagreement -- whether the structure must be sealed and whether the pressure within the structure must be greater than atmospheric pressure. As an initial matter, both sides agree that the definition of a "fluid" encompasses both liquids and gases.

Defendant first argues that the proper construction of the claim requires that the structure necessarily be sealed. By defendant's reasoning, plaintiffs parse this phrase too finely -- any proper construction would demand that the structure is pressurized by the fluid, so the structure must necessarily be "sealed" in some way. Plaintiffs in their opening brief used the example of a car tire as a fluid pressurized structure. In that example, the air pumped into the tire creates the seal by sealing the tire to the rim. The increased pressure inside the tire creates any seal in that system; there is no independent attachment to the rim. In response, defendant argues that the mere fact that a tire includes a valve for adding air, or increasing the pressure, indicates that the pressurized structure is sealed. This does not necessarily follow. Moreover, the specification indicated that fluid be allowed to flow into and out of the pressurized structure to change the pressure. The specification taught that "fluid pressure is increased or decreased through fluid pressure lines 105 and 106 . . . connected to fluid port 87 . . . " (col. 12:60-63). This indicated that the fluid pressurized structure by itself need not be sealed because the pressure within it changes. It does, however, need to be capable of being sealed when pressure is applied, much like plaintiffs' tire example.

Plaintiffs and defendant also part company on the meaning of "pressurized." Plaintiffs contend that it means only that the fluid inside the structure applies pressure to the inside of the structure. Defendant argues that this proposed construction is far too broad. It could even include, it says, a glass of water -- the water being the fluid exerting pressure against the walls of the glass -- or even an empty glass where air puts pressure on the walls of the glass. The effect of adopting such a construction is not so dire as defendant argues. No one, skilled in the art or otherwise, would use a structure only at atmospheric pressure in a bundle breaker because it could not be used to apply pressure to another surface.

Defendant argues that the limitation should include the requirement that pressure in the pressurized structure should be greater than atmospheric pressure. The specification, as described above, indicated that fluid pressure can be increased or decreased. Given that the logs apply greater or lesser degrees of pressure to the pressurized structures to clamp the logs into place, this makes sense. In order to exert pressure on another surface, the pressure needs to be greater than atmospheric pressure.

This order holds that "fluid pressurized structure" means "a structure, capable of being sealed, containing a liquid or a gas that applies force greater than atmospheric pressure to the inside of the structure."

1. fluid reservoir

3M a container or receptacle for supporting the liner

ITW a receptacle with side walls and a base for supporting a liner

The parties agree a fluid reservoir involves a receptacle that supports a liner but disagree as to whether there is an additional requirement that the receptacle have a base and side walls. 3M asserts that no such requirement exists, pointing to the fact that the specification itself makes it immaterial "for the walls of the receptacle to be solid: the receptacle could, for example, have the form of a framework for containing the liner." ITW counters that the term fluid reservoir is always used in the specification to describe a receptacle with side walls and a base and that the common dictionary definition of reservoir is actually more restrictive than the definition it proposes because the dictionary definition requires a reservoir itself be capable of holding a liquid.
The definition proposed by 3M is broader than the ordinary and customary meaning of receptacle because its definition does not include the general requirements that a receptacle have side walls and a base. Courts can use broader definitions for disputed claim terms but not without "support in the intrinsic record indicating that such a broad meaning was intended." Nystrom v. Trex Co., 424 F.3d 1136, 1145-46 (Fed. Cir. 2005). 3M has cited no such support for its definition, and ITW is correct in that the specification consistently refers to the reservoir as having a base and side walls. As a result, the Court adopts ITW's proposed definition for this term.

c. Fluid Seal

The term "fluid seal" appears in independent Claims 1, 7, and 8 of the '644 Patent. '644 Patent at 6:67, 7:59, 8:50. Plaintiffs propose that "fluid seal" be construed as "a structure that operates to seal fluid." Pls.' Mem. in Opp'n to Summ. J. at 26. Defendants contend that claim construction of "fluid seal" is unnecessary. Defs.' Reply Mem. [Docket No. 60] at 6. Instead, Defendants advocate a limited construction of "fluid seal" as including a standard o-ring. Id. at 6.

The Court finds it is necessary to construe the term "fluid seal" in order to decide Defendants' Motion for Summary Judgment. Plaintiffs' proposed definition of "fluid seal" fails to define "seal." Plaintiffs have provided three dictionary definitions from 1996. Courts may "rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." Phillips, 415 F.3d at 1322-23. The 1996 Merriam-Webster's Collegiate Dictionary defines "seal" as a "tight and perfect closure (as against the passage of gas or water)." Merriam-Webster's Collegiate Dictionary 1052 (10th ed. 1996). The 1996 Webster's New World College Dictionary defines "seal" as "a tight closure, as against the passage of air or water." Webster's New World College Dictionary 1210 (3d ed. 1996). The 1996 Random House Compact Unabridged Dictionary defines "seal" as "anything that tightly or completely closes or secures a thing . . . ." Random House Compact Unabridged Dictionary 1726 (Special 2d ed. 1996). The Court construes the term "fluid seal" as "a structure that operates as a tight or complete closure against the passage of a fluid." This definition is consistent with the use of the term "fluid seal" in the claims, specification, and prosecution history of the '644 Patent.

Defendants' request for a limited claim construction that the term "fluid seal" includes a standard o-ring is rejected. Defendants argue that the term "fluid seal" in the '644 Patent is a structural claim element, rather than a functional claim element. Defendants rely on Schwing GmbH v. Putzmeister Aktiengesellschaft, 305 F.3d 1318, 1324 (Fed. Cir. 2002), for the proposition that "[w]here a claim uses clear structural language, it is generally improper to interpret it as having functional requirements." However, the term "fluid seal," by itself, does not amount to clear structural language. The use of the word "seal" carries with it the ordinary meaning and function of a "seal." Under Defendants' proposal, an o-ring is automatically a "fluid seal" regardless of whether it actually performs this function in the filter cartridge. The intrinsic evidence regarding the '644 Patent does not support such a construction.

The term "fluid seal" also appears in independent Claim 14 and dependent Claim 11 (which depends from Claim 10) of the '884 Patent. The definition of "fluid seal" is the same in the '884 Patent as in the '644 Patent.

A. "Fluid Treatment Module"

The following chart contains both parties' interpretations of the disputed term "fluid treatment module." Patent at Col. 19:50, 55, 59-60; Col. 20:7, 44-45, 50-51, 56-57, 62-63.

<table>
<thead>
<tr>
<th>Everpure's Interpretation</th>
<th>Selecto's Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any in a series of standardized units for use together, for treating or processing fluid or for moving or controlling the characteristics of a fluid passing through the cartridge in the same way</td>
<td>An assembly including a head that is fluidly coupled to a cartridge that alters the characteristics of a fluid passing through the cartridge in the same way</td>
</tr>
</tbody>
</table>
flow of fluid. regardless of the direction in which fluid flows through the cartridge.

The Court adopts Everpure's interpretation of the term "fluid treatment module." Everpure's interpretation rests soundly on intrinsic evidence, whereas Selecto relies on extrinsic evidence that impermissibly contradicts the specification.

The specification clearly states, "[A]ny device employed for treating or processing fluid of any type, or for moving or controlling the flow of fluid can be employed as a cartridge in each module." Patent at Col. 7:44-47. This contradicts Selecto's interpretation that the module must "alter[] the characteristics of a fluid passing through the cartridge," which is based upon extrinsic evidence, namely the testimony of Selecto's expert, John Tadlock, and a dictionary from the Water Quality Association. Tadlock Decl. P 11, Ex. 2. A Court may not rely on extrinsic evidence when it contradicts intrinsic evidence. See Vitronics, 90 F.3d at 1584 n.6; Phillips, 415 F.3d at 1318.

Furthermore, the specification, in combination with the testimony of Everpure's expert, Peter Cartwright, demonstrates the flaw in Selecto's construction that the cartridge must "alter the characteristics of a fluid passing through the cartridge in the same way regardless of the direction in which fluid flows through the cartridge." (emphasis added) The specification lists a number of various fluid treatment devices that can be used as cartridges in each module, including "filters." Patent at Col. 7:39. According to Mr.Cartwright, a filter does not always treat fluid in the same way regardless of the direction in which the fluid flows through it. Cartwright Reply Decl. PP 6-7. The efficiency of a filter is diminished when flow is reversed through it, so a module using a filter as its cartridge--as contemplated by the specification--would treat fluid to a lesser degree--not in the same way--when flow through the cartridge is reversed. Id. This is additional evidence that Selecto's interpretation of the term "fluid treatment module" is not grounded in the Patent.

In contrast, Everpure's interpretation is based upon language found in the specification. See Patent at Col. 7:44-47. Thus, the Court adopts Everpure's interpretation and finds that a "fluid treatment module" is "any in a series of standardized units for use together, for treating or processing fluid or for moving or controlling the flow of fluid."

CLAIM 1

Four issues remain with respect to claim 1, below, with the disputed language in italics:

1. A fuel delivery system for removing undesired components from fuel delivered from a fuel tank to an engine comprising, in combination: [issue # 1]

   an engine; 2

   initial fuel filter means for removing water from fuel received from the fuel tank; and [issue # 2]

   secondary fuel filter means including an outlet in fluidic communication with said engine and an inlet in fluidic communication with said initial fuel filter means and located downstream therefrom for receiving fuel containing an undesired gas from said initial fuel filter means and separating substantially all of said undesired gas from fuel received therein prior to passage of said fuel through the outlet, [issue # 3]

   said secondary fuel filter means including a vessel defining a hollow interior chamber in fluidic communication with a return line in fluidic communication with said fuel tank for returning fuel and undesired gas thereto, and a filter media positioned within said chamber for immersion in fuel received therein and a conduit located within said filter media for delivering fuel passing through said filter media to said outlet. [issue # 4]

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2 The parties initially disputed the construction of "an engine," but agreed at the Markman hearing that their differences were not material and to construe it as "an internal combustion engine."
Claim 1; Issues 3 & 4 -- The Secondary Fuel Filter Means and The Vessel

With regard to the secondary fuel filter means, the Court must first determine whether it is in fact a means-plus-function claim. Defendants assert that it is a means-plus-function claim governed by § 112, P6, with two separate functions: first, a means "for receiving fuel containing an undesired gas from said initial fuel filter means," and second, a means "for separating substantially all of said undesired gas from fuel received therein prior to passage of said fuel through the outlet." While Plaintiffs essentially agree that the element provides for these two functions, Plaintiffs assert that there is sufficient structure in the claim elements themselves to take the claim elements out of the scope of § 112, P6.

"The use of the word 'means,' which is part of the classic template for functional claim elements, gives rise to 'a presumption that the inventor used the term advisedly to invoke the statutory mandates for means-plus-function clauses.' Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1422-23 (Fed. Cir. 1997) (quoting York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1574 (Fed. Cir. 1996)). The case law recognizes two specific rules, however, which "overcome this presumption." The first is where a claim element uses the word "means," but does not recite any function. Such an element does not invoke § 112, P6. Rodime PLC v. Seagate Technology, Inc., 174 F.3d 1294, 1302 (Fed. Cir. 1999), cert. denied, 528 U.S. 1115, 120 S. Ct. 933, 145 L. Ed. 2d 812 (2000). "Second, even if the claim element specifies a function, if it also recites sufficient structure or material for performing that function, § 112, P6 does not apply." Id.; accord, Phillips, 415 F.3d at 1311 ("Means-plus function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function."); Sage Prods., 126 F.3d at 1427-28.

To determine whether the element specifies a function, the court relies primarily on the claim language itself. York Prods., 99 F.3d at 1574. Here, the Plaintiffs do not dispute that the claim element specifies the two functions recited by Defendants, and the plain language of the claim supports this conclusion. Plaintiffs assert, however, that there is sufficient structure recited in the claim element itself to take it outside the bounds of § 112, P6. To avoid P6, it is not necessary to recite "every last detail of the structure disclosed in the specification for performing the claimed . . . function. . . . Instead, the claim need only recite 'sufficient' structure to perform entirely the claimed function." Rodime, 174 F.3d at 1304.

The Court agrees that the element contains sufficient structure with respect to the first function of "receiving fuel containing an undesired gas from said initial fuel filter means." The claim element itself specifies a structure, namely, "an outlet in fluidic communication with the engine and an inlet in fluidic communication with the initial fuel filter means," and the location of the inlet is further specified as being "downstream" from the initial fuel filter means. 4 See Phillips, 415 F.3d at 1311 (no means-plus-function claim where claim language identifies "internal steel baffles" as the structure for performing the function of increasing the shell's load-bearing capacity); Envrco Corp. v. Clestra Cleanroom, Inc., 209 F.3d 1360, 1365 (Fed. Cir. 2000) (use of term "baffle," itself a structural term, together with the description in the claim, overcomes presumption of § 112, P6).

4 Assuming arguendo the Court were to construe the element as a means-plus-function claim, it would make little difference in interpretation. The corresponding structure appears at col 1., lines 65-67; col. 2, lines 45-49; col. 3, lines 45-47. It includes an inlet in fluidic communication with an inlet line and an outlet fluidically connected to an outlet line leading to the engine, and equivalents thereof.

Read in isolation, however, this element would not appear to specify any structure for the second function of "separating substantially all of said undesired gas from fuel received therein prior to passage of said fuel through the outlet." Plaintiffs assert that the necessary structure is found in the next element, which describes in detail the structure of the function of separating the gas from the fuel. The Court agrees. Read together, the two elements sufficiently describe the structure of this secondary fuel filter means, as understood by those skilled in the art, to rebut the presumption that it is a means-plus-
With regard to the second function, as set forth in the claim itself, the secondary fuel filter means includes (i) "a vessel defining a hollow interior chamber," (ii) which vessel is "in fluidic communication with a return line," (iii) which return line is "in fluidic communication with said fuel tank for returning fuel and undesired gas thereto," and there is also (iv) "a filter media positioned within said chamber," (v) which filter media is immersed in the fuel received in the chamber, and (vi) a "conduit" which is "located within said filter media for delivering fuel passing through said filter media to said outlet."

Again, these terms are sufficiently clear to one skilled in the art for the structure and location of the elements to be understood. As such, the Court construes the claims pursuant to "standard claim construction rules." Envirco, 209 F.3d at 1365. 5

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5 Again, even if the Court were to assume that § 112, P6 controlled, it would make little difference to this Court's interpretation. See col. 1, lines 62 - col. 2, line 2; col. 2, lines 22-35; col. 3, line 56 - col. 4, line 48; col. 5, lines 21-49.

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Looking to the disputed language related to the first function, Defendants assert that the term "communicate" means "to be connected," and that elements thus include "an inlet connected to the initial fuel filter means and "an outlet connected to the engine." The language proposed by Defendants implies a direct physical connection. There is no support for such a limitation, however, in either the claim language itself or the specification. The claim language states that the inlet and outlet will be in "fluidic communication." One with ordinary skill in the art would understand this to mean that fluid would flow from the initial fuel filter to the inlet and from the outlet to the engine, but no direct connection is necessarily required by this language. For example, in another embodiment of the invention, the fuel presumably could travel through yet another process before delivery to the engine. Consistent with such a possibility, the Court notes that claims 8 and 14, which describe the filter, speak of "direct fluidic communication," while other claims, including claims 1 and 15, which describe a more generalized fuel delivery system, do not.

In connection with the second function, Defendants assert that the elements of the secondary fuel filter include "a vessel with an uppermost housing portion and a lowermost canister portion defining a hollow chamber." While these limitations are part of the preferred embodiment, they are not suggested by the claim language itself, which describes only "a vessel defining a hollow interior." As such, there is no basis for importing this limitation into this term. See Arlington Indus., Inc. v. Bridgeport Fittings, Inc., 345 F.3d 1318, 1327 (Fed. Cir. 2003). Moreover, the limitations suggested by Defendants are found in dependent claim 3, and under the doctrine of claim differentiation, it is improper to incorporate these elements into claim 1. Liebel-Flarsheim, 358 F.3d at 910; Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998).

Next, again construing "fluidic communication," Defendants assert that the return line is "connected to the vessel and the fuel tank." The Court rejects this interpretation for the same reason stated above. The claim language requires only that the interior chamber be "in fluidic communication with" a return line "in fluidic communication with" the fuel tank. Use of the term "connected to" unnecessarily limits the element.

With regard to the filtering function itself, Defendants assert that the proper construction is "a filter media, which allows fuel to pass but not air, positioned with the chamber and immersed or submerged in the fuel." Plaintiffs propose for their construction, that "the second fuel filter separates substantially all of the undesired gas from the fuel prior to the passage of the fuel through the outlet. . . . Undesired gas is any undesired entrained air and other vapors and gasses entrained in the fuel."

While the Court rejects Defendants' contention that this should be construed as a means-plus-function claim, the Court finds that the words "undesired gas" and the function of "separating substantially all of said undesired gas," are ambiguous, thus requiring an examination of the intrinsic evidence. The Court cannot accept Defendants' construction, however, that the filter "allows fuel to pass but not air," as it is not supported by the specification. In referencing the secondary fuel filter, the specification repeatedly references the removal of "residual air bubbles, entrapped and entrained in the fuel." Col. 1, lines
52-54 (emphasis added). The specification and drawings state that the filter media separates these bubbles. See col. 2, lines 22-23, 29-31; col. 5, lines 26-39. Thus, the Court finds that "undesired gas" means any "undesired bubbles of entrained air or other vapors and gasses entrained or entrapped in the fuel."

Finally, Defendants assert that the word "immersion" should be construed to mean "submerge which in turn means immerse which means to cover completely with liquid; submerge," citing to the American Heritage Dictionary (1986). Asserting that the language is not ambiguous, Plaintiffs assert the following construction: "The second fuel filter also includes a filter media positioned within the interior chamber of the vessel so that the filter media can be immersed in the fuel received in the chamber." The Court believes that the term "immersion" as used herein would be understood by those skilled in the art, and that further definition is unnecessary. Multiform Desiccants, 133 F.3d at 1477. Moreover, the definition proposed by Defendants does not do anything to better clarify the language.

As such, the Court construes the secondary fuel filter means and vessel as follows:

"The secondary fuel filter, which is located downstream from the initial fuel filter, includes an outlet in fluidic communication with the engine and an inlet in fluidic communication with the initial fuel filter. The secondary fuel filter receives fuel containing an undesired gas from the initial fuel filter and separates substantially all of said undesired gas prior to passage of the fuel through the outlet. Fluidic communication means that fluid can transfer from one element to another. Undesired gas is any undesired bubbles of entrained air or other vapors and gasses entrained or entrapped in the fuel.

The secondary fuel filter also includes a vessel defining a hollow interior chamber, which chamber is in fluidic communication with a return line, which is in fluidic communication with the fuel tank, for returning fuel and undesired gas to the fuel tank. The secondary fuel filter also includes a filter media positioned within the chamber of the vessel so that the filter can be immersed in the fuel received in the chamber. The secondary fuel filter also has a conduit located within the filter media for delivering fuel passing through said filter media to the outlet."

This evidence is insufficient to raise a question of fact that the process for manufacturing the 23DS projectile infringes the 562 patent. First, to the extent any "folds 1" are ever formed by the female technician, they are created as part of the process of insertion and not prior to it. As construed in the April 19 Opinion, the "forming folds" element of the claim does not refer to folds "created through disorganized stuffing movements when the projectile is inserted into the empty shell."

As explained in the April 19 Opinion, the ordinary meaning of "fold" is "to bend over or double up so that one part lies on another part." Am. Heritage Dictionary 681 (4th ed. 2000). Given that the rear portion of the 23DS projectile is cut into four individual tails, it is not clear that the notion of "folding" or "folds" is even applicable to the accused process. Moreover, even when the female technician bends the tails over her finger during insertion, the tails do not lie on themselves. It is more accurate to describe the tails of the projectiles as bunched together, rather than folded, by the process of inserting them into the shotgun shell.

Claim 5 describes the patented device as having "horizontal creases allowing said member to be manually folded in half to reduce the vertical dimension of said shirt." Plaintiff suggests "folded in half should be interpreted to mean: 'bent at its approximate mid-point along a horizontal crease."

Pl. Brief on Claim Construction (DE # 40). Defendant argues that "half" should be defined as "one of two equal parts into which a thing is divisible . . . also: a part of a thing approximately equal to
the remainder." Def. Mem. in Support of Proposed Claim Construction (DE # 37) at 19, Def. Claim Construction Chart (DE # 38).

This Court holds that "folded in half" is a clear and unambiguous description, and therefore requires no construction.

1693

CLAIM CONSTRUCTION

The first step in the analysis is construction of the claims in suit, which is a question of law to be decided by the court. Markman v. Westview Instruments, Inc., 517 U.S. 370, 391, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). Claim construction is pertinent to both validity and infringement, as the relation of the invention to prior art and the relation of the patents in suit to the Maestro product hinge upon the scope of the claims. The same claim construction made here will be used in both validity and infringement analysis. Kimberly-Clark Corp. v. Johnson & Johnson, 745 F.2d 1437, 1449 (Fed. Cir. 1984).

The primary issue of claim construction is whether the claims in suit are subject to a process limitation. Springs contends that the following italicized language, found in both claims, limits the scope of those claims to devices made by a strip method:

"[A] strip of shade material folded lengthwise to form an upper cell wall and a lower cell wall extending from a fold, each upper and lower cell wall having a free edge and a folded edge …"

Plaintiffs characterize the italicized language as a structural definition rather than a process limitation and contend that the claims extend to any cell described in the claims, regardless of the method of manufacture.

This question derives from an ambiguity in the word "folded." Springs' interpretation would read "folded" as a past participle, requiring that at some stage of manufacture a strip of shade material be folded to create one free edge and one folded edge. Plaintiffs would read "folded" as an adjective, requiring merely that the final product contain a strip of material with a fold in it.

Claim interpretation must first be considered in light of intrinsic evidence such as the claim language, the other claims, the prior art, the prosecution history, and the specification. Extrinsic evidence will only be considered should the intrinsic evidence fail to resolve the issue. All other terms in the patents will be given their "ordinary and accustomed" meanings. Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1578 (Fed. Cir. 1996).

The intrinsic evidence overwhelmingly supports Plaintiffs' reading of the claims. Independent claim 1 of each patent discloses a plurality of interconnected cells, at least one of which "comprises" the cell structure described. The grammatical structure of the claim suggests that the claim be read as a product; putting aside the language cited by Springs, all of the remaining constituent parts which the cell "comprises" are termed unmistakably in structural terms. It would be incongruous to interpret that last constituent part to be a process limitation.

Indeed, the '981 and '593 applications originally contained both method and product claims before the examiner required a restriction to one or the other. Plaintiffs elected to restrict the applications to product claims, and the amended claims apparently satisfied the examiner that they had done so.

Springs' reading is most plausible when taken out of the context of the patent as a whole. Placed in context, Springs' reading would find an anomalous process limitation among unambiguous product claims. This reading of the italicized language strains the language of the claim well beyond its most natural meaning.

This construction does not result in surplusage. The italicized language establishes that the strip of shade material has a fold in it; the second reference to a "fold" in the same clause merely specifies the relation of the upper and lower cell walls to the fold. Moreover, the italicized language specifies the type of material from which the cell is made and specifies the orientation ("lengthwise") of the fold in question, limitations which are not otherwise contained in the claim.

Athletic Alternatives, relied upon by Springs, is not to the contrary. The court in Athletic Alternatives held that "where there is an equal choice between a broader and a narrower meaning of a claim, and there is an enabling disclosure that indicates
that the applicant is at least entitled to a claim having the narrower meaning, … the notice function of the claim [is] best served by adopting the narrower meaning," Athletic Alternatives, 73 F.3d at 1581. The court resorted to this rule only after exhausting the other claim construction tools available -- neither the ordinary and accustomed meaning, the specification, the prosecution history, nor the doctrine of claim differentiation resolved the issue. This court has not been forced to such a rule of last resort. Moreover, there is no harm to the public notice function of § 112 that drove the Athletic Alternatives decision where the proper claim construction is so easily discerned from review of the claim in context.

The court notes that the APJ in the Judkins v. Ford interference also concluded that these claims did not contain process limitations. Springs distinguishes the APJ's opinion on the ground that patents are given their broadest possible reading in interference proceedings, citing DeGeorge v. Bernier, 768 F.2d 1318, 1321-22 (Fed. Cir. 1985). Nothing in the APJ's opinion indicates such a basis for his opinion; to the contrary, the APJ dismissed the process limitation argument altogether as a "red herring." This court has arrived at the same conclusion and concurs in the APJ's judgment.

The court therefore concludes that neither claim 1 of the '550 patent nor claim 1 of the '940 patent contain a process limitation. The court construes the claims-in-suit to extend to any cellular structure exhibiting the physical characteristics claimed therein.

1694


c. "A distance sufficient to insure that the adhesive does not interfere with rollers." A distance sufficient so that the adhesive does not interfere with the rollers of the printer during processing. This distance must be, at minimum, greater than the impression area caused by the rollers of the particular printer used. See Id. ("There is nothing wrong with defining the dimensions of a device in terms of the environment in which it is to be used.")

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1 This proposed definition is not particularly helpful to the jury. The court only includes a definition in this order to inform both parties that, despite the proposals of both parties, this claim term means no more than the proposed definition.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

1695

The accepted meaning of the term "fold," when used as a verb, is: "to lay one part over another part," or "to reduce the length or bulk by doubling over." Webster's Ninth New Collegiate Dictionary at 478-79 (1990). When used as a noun, "fold" means: "a part doubled or laid over another part," or "a crease made by folding something." Id. at 479.

In this case, the district court erred by restricting the term "folding" to the "V" fold featured in the specification. Specifically, in construing the term "folding" in claim 1, the court turned to a portion of the specification that defines the "V-folded condition." 1 860 patent at col. 1 lines 28-33; 724 patent at col. 1 lines 26-31. The trial court then compared that portion of the specification to claim 1 and concluded that the term "folding" in claim 1 is synonymous with "V-folding" in the specification. 2 By this conclusion, the district court impermissibly imported the "V" limitation from the specification into the claim term "folding."

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1 According to the specification, the term V-folded condition refers to a length of material that has been folded over onto itself to form what may subsequently be identified as a front sheet and a rear sheet joined by the fold at the bottom, to approximate the letter "V" in cross section. 860 patent at col. 1 lines 28-33; 724 patent at col. 1 lines 26-31. 2 The court found that claim 1 speaks of only one fold, with the film on one side of the fold constituting a front sheet and the film on the
other side constituting a rear sheet - the same as the V-fold definition. 860 patent at col. 1, lines 28-33; 724 patent at col. 1 lines 26-31.

The district court also relied on the prosecution history to construe "folding." During prosecution of the 860 patent, Schreiber amended claim 1 by deleting the "V-" in "V-folding." The examiner entered the amendment. Later, during prosecution of the 724 patent, Schreiber attempted to make the same amendment to the specification. This time, however, the examiner rejected the amendment as new matter. Specifically, the examiner stated:

The original disclosure does not support the added material [deletions of "V" and insertion of a paragraph, etc.] because the added material sets forth folding a web in any manner known to one skilled in the art, with V-folding merely an example of such folding. The original disclosure supported only folding or V-folding. Further, the added material also sets forth other examples (cylindrical and oval) of folding a web. The original disclosure did not set forth any other examples of folding. . . . It is also not clear that a web which has been folded in a cylindrical or oval manner, had a fold (as claimed in the parent application 08/098,752, now U.S. Patent 5,440,860).

Examiner's Office Action in Application Serial No. 08/482,862, at 3 (Jan, 9, 1997) (emphasis added). The trial court found that Schreiber's acquiescence by canceling the amendment amounted to disclaiming a broader interpretation of "folding" advanced. Based on these conclusions, the trial court specified that the folding step of claim 1 requires that (1) the front and rear sheet be joined by a fold at the bottom, such that (2) the V-fold approximates the letter "V" in cross section.

The district court erred by applying this restrictive definition of "folding" in its JMOL decision. Although barring Schreiber from inserting into the specification examples of "cylindrical and oval" folding, the examiner also stated that the original disclosure supported "folding or V-folding." In other words, the examiner found that the original disclosure supported a broader concept of "folding" as well as the more specific example of "V-folding." Moreover, the specification does not exclude other types of "folding" from the broader generic concept of "folding."

This court's precedent forbids a construction of claim terms that restricts claims beyond the limits in the claim terms themselves, or beyond any unambiguous restriction in the specification or prosecution history. Laitram Corp. v. NEC Corp., 163 F.3d 1342, 1347, 49 U.S.P.Q.2D (BNA) 1199, 1203 (Fed. Cir. 1998) ("[A] court may not import limitations from the written description into the claims."); Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186, 48 U.S.P.Q.2D (BNA) 1001, 1005 (Fed. Cir. 1997) ("While . . . claims are to be interpreted in light of the specification, it does not follow that limitations from the specification may be read into the claims."); In re Donaldson Co., 16 F.3d 1189, 1195, 29 U.S.P.Q.2D (BNA) 1845, 1850 (Fed. Cir. 1994) ("General claim construction principle that limitations found only in the specification of a patent or patent application should not be imported or read into a claim."); SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1121, 227 U.S.P.Q. (BNA) 577, 585 (Fed. Cir. 1985) (en banc) ("It is the claims that measure the invention.") (emphasis in original). Accordingly, this court does not limit the meaning of the term "folding" to only a "V fold."

E. Foot and Leg Support at Each Side of the Front Wheel

Brike contends that the term "foot and leg support at each side of the front wheel" means a structure which supports both the foot and the leg, and which overlaps the front wheel, is near the front wheel, and which allows the feet and legs to extend forwardly at the sides of the front wheel. Invacare contends that the term "foot and leg support at each side of the front wheel" means a support that supports the leg by contacting the foot, ankle or leg, but does not necessarily require contact with the leg, with the supports on opposite sides of the plane defined by the front wheel.

Focusing on the first part of the term, "foot and leg support," Brike notes that the claims and specification refer to the foot and leg as distinct parts of the body and do not refer solely to the foot. Brike points to the secondary cross member which supports the leg and argues that if only the foot was supported, this structure would have no function. Thus, Brike contends that both the foot and leg must be directly supported by contact.
Invacare's basic position is that a foot support also supports the leg because the two are connected. Invacare argues that Claim 6 never requires direct contact with the leg, in contrast to the claim's express requirement of engagement, or contact, between the cross brace and the person's feet. In Figure 3, Invacare points to leg support strap 83, which is drawn at or below the smaller rider's ankle bone rather than his leg. Furthermore, Invacare notes that the claim does not expressly require a foot support and a leg support, stated separately.

The specification discusses the foot and leg supports in a few places. It states:

The invention provides a means for supporting and protecting the rider's legs and feet simultaneously while providing adjustment to accommodate different size riders.

'184 Patent, 1:40-43.

The present invention also recognizes the need for support of both the rider's legs and feet and not just the rider's legs in a cradle type device. The present invention provides a wrap around style of footrest and leg support that telescopes forward and rearward on the mainframe to accommodate different leg lengths. By wrapping around the rider's foot the footrest-leg [sic] support combination keeps the rider's foot from flopping to the side while at the same time supporting the leg. This type of support also provides protection to the rider's feet and legs from collision or side impact. Previous handcycles left the rider's feet to dangle in front of the front leg support.


Combined footrests and leg supports 82 telescope in a forward and rearward direction within tubing 48 and 49 respectively. Leg support straps 83 attach to footrests 82 and tubing 48 or 49 to form a sling for the purpose of supporting the rider's leg and foot. Straps are the preferred method of leg support in this case, however, any means of supporting the rider's legs at the rear of the "U" shape 82 would work as well or even closing the back of the "U" shape 82 to make a long rectangle that supports the rider's foot and calf.

'184 Patent, 4:41-49.

I am most persuaded by the fact that Claim 6 does not expressly require contact with the leg but does expressly require engagement, which I construe to mean contact, of the cross brace with the person's feet. The claim also does not require anything to be in contact with the secondary cross member. The specification states that by wrapping around the foot, the footrest support also supports the leg. This intrinsic evidence is highly persuasive that Invacare's position is the correct one.

I have reviewed Invacare's argument based on the prosecution history but I cannot glean much from it.

I construe the term the term "foot and leg support" to mean a support that supports the leg by contacting the foot, ankle or leg, but does not necessarily require contact with the leg.

Turning now to the term "at each side of the front wheel," it appears from the briefing that the parties agree that the term does not require the foot and leg supports to be bounded fore and aft by the front and rear edges of the front wheel. I also agree.

Brike contends that the use of the word "at" implies a close proximity. Brike contends that Invacare's use of a plane, which is an unbounded geometric figure, would allow the supports to be so far forward of the front wheel, or even behind the seat or back wheel, that they would not support the feet and legs.

I do not agree that the use of a plane in the definition of the term would allow the supports to be behind the back wheel because the claim requires them to be at the side of the front wheel. Thus, I construe "at each side of the front wheel" to mean overlapping at least a portion of the front wheel and on opposite sides of the plane defined by the front wheel.

Putting the two phrases together, I construe the term the term "foot and leg support at each side of the front wheel" to mean a support that supports the leg by contacting the foot, ankle or leg, but does not necessarily require contact with the leg and
overlapping at least a portion of the front wheel and on opposite sides of the plane defined by the front wheel.

1697

F. Foot Portion

'092 patent claim 102 states that the table comprises "an elongated portion and a foot portion of the first and second support pedestals" and that "the foot portion . . . [is] less than the width of the table top." (Id., Claim 102.) GSC claims that four of its tables (the Enduro four foot table, the Enduro Rochester table, the 2003 Enduro six foot table, and the Enduro eight foot table) do not have feet portions. The patent is silent about the proper meaning of this term, and neither party proposed a possible construction. We, therefore, construe this term consistent with its ordinary meaning. Portion means "an often limited part set off or abstracted from a whole." Foot, in this context, means "the lower end of the leg of a chair or table." We construe the term "foot portion" to mean "the lower part of a support pedestal."

1698

3. Footprint

* * *

The language of claim 1 requires "at least one ball projecting wheel . . . mounting a pneumatic tire having . . . a footprint ranging between about 4-13 cm." '325 patent, col. 4, lines 4-9 (emphasis added). Dependent claims 2 and 3 include the same "footprint" element as independent claim 1. See id. at col. 4, lines 4-15. The parties' dispute is whether "footprint" is the contact surface of the tire encountering a ball or the thickness of the tire from the edge of one sidewall to the edge of the opposite sidewall. Trend argues that "footprint" should be construed to be its plain and ordinary meaning which is a track left by a contacting surface. Furthermore, Trend argues that its proposed construction is proper because it covers tires with relatively flat surface treads as well as tires with rounded surfaces.

On the other hand, Jugs argues that Trend's speculated plain meaning of "footprint" is incorrect because the specification must be consulted to determine the meaning of a term with respect to the claims at issue. See Phillips, 415 F.3d at 1315-16. Jugs asserts that figure 2 of the '325 patent unequivocally represents "footprint" as the distance from the outermost edge of one sidewall of the tire to the outermost edge of the opposite sidewall. See '325 patent at fig.2. Furthermore, Jugs points out that Trend's proposed construction improperly requires that tires having different cross-sectional or tread shape, or having varying degrees of inflation, would have their footprints measured in different ways. See Liquid Dynamics Corp. v. Vaughan Co., Inc., 355 F.3d 1361, 1367 (Fed. Cir. 2004) (commanding courts to "assign a fixed, unambiguous, legally operative meaning to the claim.").

The court finds that the intrinsic evidence supports Jugs' proposed construction that "footprint" is the distance from the outermost edge of the one sidewall of the tire to the outermost edge of the opposite sidewall. The specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. Phillips, 415 F.3d at 1316. In such cases, the inventor's lexicography governs. See id. In the instant case, the claims and specification of the '325 patent reveal that "footprint" is the distance from the outermost edge of one sidewall of the tire to the outermost edge of the opposite sidewall, not a track left by a ball. Looking at the '325 patent, the claims do not describe the footprint in reference to a ball. See '325 patent at col. 4, lines 4-22 ("at least one ball projecting wheel . . . mounting a pneumatic tire having . . . a footprint ranging between about 4-13 cm). And, figure 2 of the '325 patent clearly defines "footprint" as the distance from the outermost edge of one sidewall of the tire to the outermost edge of the opposite sidewall. See id. at fig.2. There is nothing in the specification that suggests a different construction. 1 See Phillips, 415 F.3d at 1314-16. Thus, the court construes "footprint" to mean:

thickness as measured from the outermost edge of one sidewall of the pneumatic tire to the outermost edge of the opposite sidewall.

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At the Markman hearing, Trend asserted that the '325 patent was limited to throwing baseballs. Trend's assertion only fortifies the court's position that Trend's proposed construction of the term "footprint" is wrong because a baseball, having a diameter of only about 7.5 cm and a semicircular arc length of less than 12 cm, is incapable of producing the maximum footprint of 13 cm recited in claim 1.

Aspex argues that the limitation "said arms respectively containing second magnetic members for cooperation with said first magnetic members" means "the arms include second magnetic members which work together with the first magnetic members, such that the second magnetic members magnetically engage the first magnetic members either by contacting corresponding surfaces of the first magnetic members or by magnetically attracting corresponding surfaces of the first magnetic members without actual contact." Ps. Br. 12. E'Lite contends that it means "a second magnet horizontally contained in each of the arms for magnetic engagement with the first magnets." 14 D. Br. 14-15.

Aspex argues that its proposed construction is consistent with both the ordinary meaning of the words "contain" and "cooperate" and the disclosure of the specification. Aspex cites the description of FIG. 7 in the specification, which indicates that the corresponding magnetic members of the primary frame and the auxiliary frame can engage without touching, and that the description of the invention employing magnetic members that do not physically contact is only one embodiment of the invention. E'Lite responds that as similarly stated in its construction of the previous limitation, "contained" means "horizontally contained."

E'Lite maintains that the implied limitation of horizontal orientation discussed supra in § III(D)(4) applies to the matching second magnets as well. E'Lite also contends that the term "magnetic engagement" is a less confusing construction of "cooperation," as is the phrase "the first magnets" for "said first magnetic members." Aspex maintains that there is nothing in the intrinsic record to support limiting the disputed limitation to magnets or horizontally oriented magnetic members. Moreover, Aspex argues that E'Lite should not be permitted to rewrite the claims to suit its grammatical preferences, and that Aspex's construction should be adopted because it is supported by the intrinsic record and the ordinary meaning of the words.

Consistent with § III(D)(1), the court refrains from construing "magnetic members." Following the analysis of § III(D)(4), the court construes the "second magnetic members" as possessing horizontal orientation. The only disputed term that remains to be construed is "cooperation." Aspex argues for replacing "cooperation" with "work together," but nevertheless acknowledges that "cooperation" is not a confusing term in this context. Both parties advance a construction that elaborates on the meaning of "cooperation" to mean "magnetically engage" or "magnetic engagement." Thus the only real difference in the proposed constructions is that Aspex's proposal further clarifies that claim 18 is consistent with the first and second magnetic members' engaging in two distinct ways: by direct contact with each other and by attraction at a distance. Aspex
contends that the preferred embodiment of the '545 patent and the figures demonstrate that the magnetic members do not need to be in contact with each other to be engaged. The description of the preferred embodiment clearly indicates that having the magnetic members not actually touch is just "one" embodiment of the invention. The commonsense understanding of magnetic engagement also includes magnetic members actually touching one another. Nothing in claim 18 suggests otherwise. Therefore, the court construes "said arms respectively containing second magnetic members for cooperation with said first magnetic members" to mean "the arms include second magnetic members with horizontal orientation that cooperate together with the first magnetic members, such that the second magnetic members and first magnetic members magnetically engage either by direct contact of corresponding surfaces or by magnetically attracting corresponding surfaces without physical contact." 15

1701

4. "For connection to a floating vessel via an anchor line or chain"

APL contends that the limitation "directly" should be read into the claim phrase "for connection to a floating vessel via an anchor line or chain." Hence, according to APL, the phrase should read, a rigid mooring arm "connected directly to the vessel via an anchor line or chain with no intermediate floating buoy." SBM, on the other hand, construes the phrase as requiring the arm to "have the capability for connection, either directly or indirectly, to a floating vessel with an anchor line or chain." APL argues that permitting an indirect connection would prevent the vessel from weathervaning around the "completely submerged buoy," as set forth above. Moreover, APL contends that allowing the anchor lines or chains of the buoy to be connected indirectly, such as to an intermediate floating structure, defeats the purpose and function of the device as presented by SBM to the PTO, namely, so that "it can stay clear from the keel of the vessel" and to avoid the "drawbacks of the influence of wave motion." See Amendment, Document No. 55 ex. B, at SBM 00276-00277.

SBM argues, correctly, that Claim 1 imposes no "direct connection" requirement of the rigid mooring arm to the floating vessel via anchor lines or chains. Further, the extrinsic evidence submitted by APL suggests that the vessel weathervanes around the submerged buoy whether or not there is a surface buoy present. See Deposition of F. Tim Pease, Document No. 56 ex. E, at 152:25-153:5 ("Q. And thus, you'd still have rotational moment exerted on the turntable? A. Yes. Q. Regardless of whether there's a surface buoy there or not? A. That's correct."). Accordingly, the Court declines to impose the limitation of a "direct connection" on the claim phrase "for connection to a floating vessel via an anchor line or chain."

GO BACK

1702

4. "[F]or deflecting the striking force of said metal particles"

This phrase is contained in an independent claim in the 787 patent, 93 a dependent claim in the 781 patent, 94 an independent claim in the 386 patent, 95 and an independent claim in the 117 patent. 96

93 Col. 6, line 24-25.

94 Col. 6, line 32-35. The Court notes the language is slightly different: "each of said magnet protectors deflects a string [sic] force of said metal particles on said magnet members." The Court assumes "string" is a typographical error that should properly read "striking," as it does in the other patents.
As to this phrase, the Court construes the following meaning: the magnet protector prevents debris from hitting the surface of the magnet member when the tool is rotated. The Abstracts of the 787, 781, 386, and 539 patents all explain that a protector deflects particles from hitting a magnet during rotation of the tool. In patents 787, 781, 386, and 539, the Summary of the Invention explains that each protector has a triangular cross section and slanted surface angled in the direction of the rotation of the tool. 97 The specifications of the 787, 98 the 781, 99 the 386, 100 and the 539 101 patents all explain the process by which a protector prevents particles from hitting a magnet directly when the tool rotates, instead causing particles to hit the casing wall, get pushed upward, and then attach themselves to the magnets. The specification of the 117 patent contains slightly different language, explaining that the "protectors shield the magnets from a forceful impact with the metal objects attracted by the magnets when the tool is rotated in a well bore." 102 The drawings contained in all five patents support this interpretation as well. Construction of this phrase involves little more than the consistent application of the widely accepted meaning of commonly understood words used throughout the patents.

--- Footnotes ---

97 787 patent, Col. 2, line 1-3; 781 patent, Col. 2, 10-12; 386 patent, Col. 2, 10-12; 539 patent, Col. 2, 10-12.

98 Col. 3, line 38-42.

99 Col. 3, line 49-53.

100 Col. 3, line 49-53.

101 Col. 3, line 49-53.

102 Col. 4, line 42-44.

--- End Footnotes ---

2. For Each Finger, a Finaer-Associable Cluster of Input Keys

Microsoft argues that this phrase should be construed to mean that "for each of the four (non-thumb) fingers of the hand, the device includes a separate group of multiple input keys for use by the associated finger." Microsoft's Memorandum in Support of Non-Infringement of '477 patent, p. 14. Microsoft further maintains that the term "cluster" requires at least two keys for each finger, and the term "each finger" means each finger of each hand, i.e., a two-handed device.

Plaintiff contests Microsoft's construction that the device must be designed for two hands and argues that the claim language does not include such a limitation. I agree. While Microsoft relies on the preferred embodiment depicting a two-handed keyboard, the court "must use the written description for enlightenment and not to read a limitation from the specification." Playtex Prods., Inc. v. Procter & Gamble Co., 400 F.3d 901, 906 (Fed. Cir. 2005) I find that the claim language and the specification neither require nor exclude a one-handed embodiment.

Otherwise, plaintiff does not contest Microsoft's proposed construction, and I find it consistent with the plain language of the claim and the patent specification. See Col 1:4-18, Figures 1, 3. Thus, I construe the claim language to mean that for
each of the four fingers, the device must include a separate group of multiple input keys that correspond to the associated finger.

3. "[A] magnet protector for each of said magnet members"

This phrase, "providing a magnet protector for each of said magnet members," is contained in independent claims in the 787 patent, 85 the 781 patent, 86 and the 386 patent. 87 It is contained in the Abstracts of the other patents as detailed below.

As to this phrase, the Court construes the following meaning: each magnet has its own protector, that is, a one-to-one correspondence exists between magnets and their protectors. The Abstracts of all five patents explain that "magnet protectors are secured immediately adjacent to a corresponding magnet member." 88 The five patent specifications state explicitly that "[e]ach magnet… is provided with a 'heel,' or magnet protector…" 89 "Each protector member has a triangular cross-section with one side of the protector being longer than the side of the magnet positioned next to it." 90 "Each magnet member is provided with a protective member, or magnet protector." 91 The drawings accompanying each of the five patents illustrate that each magnet has its own protector. 92 The meaning of "a" for "each" is readily apparent.

5. "the orientation parameter for each of the two successive entities are the same" (claim 4)

Flow proposes this construction: "The orientation parameter is the same from one entity to the next. The value changes, not the type of parameter." Omax seemed to agree in the joint claim chart, but now argues that the claim should be construed simply as "the parameters are the same." Omax argues that the term "values" should not be inserted, as it adds limitations
not found in the claim. However, the parties already agreed that the claim term "orientation parameter" should be construed as "a value designating the alignment of the cutting head relative to the material being cut." '216 Patent Joint Claim Chart, Item 15. Because this term already is defined, the only remaining undefined claim terms are "for each of the two successive entities." The parties appear to largely agree that this phrase can be designated as "from one entity to the next." 5 Thus, the Court adopts Flow's construction, without the second sentence. The construction will read: "The orientation parameter is the same from one entity to the next."

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

5 Omax originally signaled its agreement with this formulation in the joint claims chart.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

5. "For electrical connection"

Claim 9 includes "a contactor having a spring . . . and at least one contact for electrical connection with the first terminal of the battery. . . ." '900 Patent col.11 1.36-44. Invisible fence says that the term "for electrical connections" means "allows for electrical connection," and Perimeter argues that it means "the spring and the elongated contact arms make electrical connection to only one terminal of the battery (i.e., the first terminal)." 16 (Joint Statement 5.)

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16 Both parties ostensibly agree that Claim 9 clearly reads that the electrical connection is made with the first terminal of the battery.

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The parties disagree as to what components of the contactor are required to make the electrical connection. Invisible Fence argues that any combination of contact arm(s) and/or the spring can make the electrical connection, while Perimeter argues that the pair of contact arms and the spring are all required to make the electrical connection. 17

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17 Perimeter's claim that there must be a pair of contact arms was rejected supra, Part III.B.3.

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As a threshold matter, the Court construes the term "for electrical connection" as modifying "a contactor" and not "at least one contact." If the term were read to modify "at least one contact," then claim 9 would curiously exclude the possibility that the spring might also make an electrical connection with the first terminal of the battery, a position neither party advocates and one clearly not supported by the Summary. See '900 Patent col.2 1.1-6 ("The flexion spring may be positioned within the battery holder so that . . . a resiliently bowed center portion is positioned for electrically contacting the first terminal of the battery . . . ").

While claim 9 provides that the contactor makes electrical connection with the first terminal of the battery, it does not specify which component makes the connection. The Summary, however, contemplates that any combination of contact arm(s) and/or the spring can make this connection:

The flexion spring may be positioned within the battery holder so that the respective ends of the spring are in contact with the base of the battery holder and a resiliently bowed center portion is positioned for electrically contacting the first terminal of the battery when the battery is inserted into the battery holder. The electrical contact may be connected with one end of the spring for electrical connection with the first terminal of the battery.
In addition, the doctrine of claim differentiation supports the proposition that the spring is not always required to make an electrical connection. Claim 20, which is ultimately dependent on claim 9, provides that the spring has a "resilient center portion for electrically contacting the first terminal of the battery." '900 Patent col.12 1.61-64. In sum, a presumption is created whereby claim 20 specifically recites that the spring must make the electrical connection, while broader claim 9 merely provides that the spring may make the electrical connection. See Seachange Int'l, Inc., 413 F.3d at 1368-69.

In light of the foregoing, the Court interprets the term "for electrical connection" to mean "any combination of contact arm(s) and/or the spring makes the electrical connection with the first terminal of the battery."

D. "having a lower surface for freely seating on a substantially flat surface"

Defendants suggest that this term should be construed to mean having a "flat lower surface that rests directly onto a flat ground surface, in contact with the surface." (Joint Claim Construction Chart ("Claims Chart"), p. 2, section 1.3.) In support of this definition, the Defendants propose that the remainder of the phrase implies that the lower surface must be flat in order that it may "freely [sit] on a substantially flat surface." However, the Court believes this definition overreaches, in that the lower surface need not necessarily be flat to enable it to rest on a flat surface. The surfaces of many objects are not flat - an upturned bowl for example - yet those objects are quite capable of resting on a substantially flat surface.

Plaintiff contends that the phrase should be construed to mean that the base member is not secured to the flat surface, and cites to the prosecution history as evidence. During prosecution, the Patentee was faced with a prior art rejection by the patent examiner, and was forced to argue around the Postings reference. To avoid Postings, the Patentee argued both the above-mentioned "amusement" angle, as well an argument that Postings disclosed a device whereby the animal was tethered to the device and the device was secured to a surface (generally, the ground) - thus ostensibly forcing the animal to run circles around a stationary object. In contrast, Patentee argued, his invention describes a device in which the animal is neither tethered to the device, nor is the device secured to the surface.

The Court finds Plaintiff's argument persuasive. The prosecution history provides for a definition of the phrase which is consistent with the language of the claims, specification, and the plain meaning. As such, the Court construes "having a lower surface for freely seating on a substantially flat surface" to mean: "having a lower surface that sits on, but is not secured to, a mostly flat surface."

Aspex argues that "downwardly extended end portions for hooking said auxiliary spectacle frame to said primary spectacle frame" should be construed to mean that "each arm includes an end portion that extends downwardly relative to the remainder of the arm, and which is bent in a manner to connect or catch with the primary spectacle frame as if with a hook." Ps. Br. 12. E'Lite maintains that the phrase "downwardly extended portions" should be construed to mean "end portions extending downwardly towards, but not behind, the primary spectacle frame," and that the phrase "for hooking said auxiliary spectacle frame to said primary spectacle frame," and that the phrase "for hooking said auxiliary spectacle frame to said primary spectacle frame," should be construed to mean "for interlocking the auxiliary spectacle frame to the primary spectacle frame." D. Br. 15, 18. E'Lite later accepted Aspex's construction with the exception.
of the limitation "but not behind." D. Resp. Br. 5. Because E'Lite concedes that Aspex's proposed construction is acceptable--except to the extent that it fails to include the limitation "but not behind"--the court need not recount the parties' construction arguments concerning the undisputed claim limitation.

Based on the prosecution history of the '545 patent, E'Lite argues that the limitation includes "but not behind." E'Lite points to the patentee's numerous failed attempts to add a FIG. 8 showing end portions that extend downwardly as well as rearwardly behind the primary frame's extensions. The patent examiner rejected the patentee's first rendition of FIG. 8 because it disclosed new matter not disclosed in the application. D. App. 157. The patent examiner rejected a later version of FIG. 8 because it introduced new matter. Id. at 124. In the second rejection, the examiner repeated that the basis for the rejection was that, in FIG. 8, the "end portion extends laterally past the rear edge of the projections." Id. Aspex later submitted a third version of FIG. 8, in which the end portions of the auxiliary frame's arms did not extend behind the rear edge of the projection. See id. at 168. Although the patent examiner ultimately approved this last version of FIG. 8, Aspex canceled its attempt to add a FIG. 8 to the '545 patent.

E'Lite interprets the cancellation of FIG. 8 as acquiescence to the patent examiner's determination that having the end portions extend laterally past the rear edge of the primary frame's projection was new matter. Aspex responds that E'Lite's attempt to limit the claims based on the patentee's cancellation of FIG. 8 should be rejected in view of the Federal Circuit's decision in Aspex Eyewear, Inc. v. Miracle Optics, Inc., 170 Fed. Appx. 710 (Fed. Cir. 2006) ("Miracle II"). Although Miracle II implicated the district court's construction of claims 12, 16, and 24 of the '545 patent, the claim language at issue is substantially the same as the limitation at issue in claim 18. Id. at 711. Moreover, the arguments in favor of limiting claims 12, 16, and 24 to require that the arms of the auxiliary frames do not extend past the rear edge of the primary frame's projections containing or securing the magnetic members are identical to E'Lite's contentions with respect to claim 18. Id. at 712-14. The Federal Circuit clearly rejected the interpretation of the prosecution history that E'Lite now advances. "In view of the applicant's statements, we cannot say that the canceling of Figure 8 was a clear and deliberate disclaimer of the claim coverage suggested by Figure 8." Id. at 714. Because Miracle II resolves this construction issue, the court refrain from discussing the reasons the Federal Circuit gave in dismissing E'Lite's interpretation of the prosecution history. Thus the disputed limitation does not contain the limitation of "but not behind." Because E'Lite does not challenge the balance of Aspex's proposed construction, the court adopts it. Therefore, "downwardly extended end portions for hooking said auxiliary spectacle frame to said primary spectacle frame" means "each arm includes an end portion that extends downwardly relative to the remainder of the arm, and which is bent in a manner to connect or catch with the primary spectacle frame as if with a hook."
'943 Patent, col. 5, 11. 3-4 (emphasis added). Formula I is a formula for an acrylic, which includes both acrylamides and acrylcarbamates. Bausch & Lomb contends that since Formula I is part of the definition of the "first portion," the claim term "a first portion for increasing wettability," as used in claims 1, 27, and 50, must be limited to acrylics. 2 As further support for its definition, Bausch & Lomb also points out that all of the specific monomers disclosed in the exemplary embodiments in the specification are acrylics. Thus, Bausch & Lomb contends, the invention of the '943 patent is limited to materials that include an acrylic, and the claims should be so construed. Since TRIS-VC, the component in Bausch & Lomb's Balafilcon A material and PureVision contact lenses which gives rise to the infringement allegations in this case, is a vinyl carbamate monomer - a "vinyl" rather than an "acrylic," Bausch & Lomb argues that the accused products are not covered by the claims of the '943 patent.

2 It should be noted that the acrylic structures of Formula I are expressly claimed in claim 19, which includes Formula I in the generalized monomer structure that is claimed.

In the alternative, Bausch & Lomb contends that the phrase "a first portion for increasing wettability" is a means-plus-function limitation, whose structure is limited to include acrylics, in that the structure of Formula I is the only corresponding structure.

b. Wesley Jessen

In response, Wesley Jessen contends that "a first portion for increasing wettability" is not limited to acrylics in independent claims 1, 27, and 50 of the '943 patent. Instead, that term is expressly defined by the words that follow it in the claims themselves, which require only that the "said first portion" be "hydrophilic" and include a "side-chain functionality" selected from one of two shown structural formulae, which are an amide and a carbamate. Thus, while Wesley Jessen concedes that each of the examples in the specification uses an acrylic as the first portion, it contends that Harvey claimed his invention more broadly in independent claims 1, 27, and 50 than the specific embodiments of the specification. Wesley Jessen argues that the language and structure of those claims provide a readily understandable definition of the meaning of this claim term.

In response to Bausch & Lomb's alternative argument that the claim term is a means-plus-function limitation, Wesley Jessen contends that it is not drafted in means-plus-function format and that there is no reason to construe it as such.

3. The Court's Construction

To determine the meaning of the claim term "a first portion for increasing wettability," the court begins by looking to the language of the claims themselves. Bell-Atlantic Network Servs., Inc., 262 F.3d at 1267. The claims recite a monomer having:

a first portion for increasing wettability, said first portion being hydrophilic and including a side-chain functionality selected from the group including the following structural formulae:

[SEE FORMULAE IN ORIGINAL]

Thus, the phrase "a first portion for increasing wettability" is given a specific definition by the words that follow in the claims themselves. The claims precisely define what "a first portion for increasing wettability" means, and this meaning does not include the acrylic formula referenced in the specification. Rather the claims state, more broadly, that the "first portion" must be "hydrophilic" and include a "side-chain functionality" selected from one of two shown structures, which are an amide and a carbamate. In other words, the "first portion" must be hydrophilic and include an amide functional group or a carbamate functional group as a side chain extending from the backbone of the polymer.

Bausch & Lomb argues that "a first portion" does not have a common meaning that is recognized and understood by those in the art, and that therefore the court must examine the specification to define the term. But where, as here, the claims specifically define the term at issue, it is unnecessary to import a more restrictive definition from the specification.
Consideration of the specification is instead restricted to determining if "a deviation from the clear language of the claims is specified." Interactive Gift Express, Inc., 256 F.3d at 1331. No such deviation is found in the specification.

Bausch & Lomb nonetheless argues that the claims of the '943 patent should be limited to the specific embodiments (acrylics) disclosed in the specification, on the theory that where the invention is described in limited terms in the specification, the claims are equally limited. See Toro Co., 199 F.3d at 1302; SciMed, 242 F.3d at 1339-40. In Toro Co., the court construed the claims for a hand-held convertible vacuum/blower for yard work to require that a "restriction ring" must be permanently attached to the device's cover, as described in the specification. The court noted that the specification "describes the advantages of the unitary structure as important to the invention" and that the specification "stressed" that the ring and cover are one part. 199 F.3d at 1301. Stating that this was not a case of limiting the claims to a preferred embodiment, id., the court found "the invention is described throughout the specification as it is claimed," id. at 1302, and therefore construed the claims as described in the specification. In SciMed, the Federal Circuit affirmed the district court's narrow claim construction, because the abstract explicitly limited the patents to particular lumen catheters, the patents distinguished the prior art on the basis of such catheters, and the 'Summary of Invention' portion of the specification characterized the invention as having that type of catheter. SciMed, 242 F.3d at 1347.

Here, unlike the Toro and SciMed cases, no explicit or express disclaimer of monomers other than acrylics exists in the '943 patent or its prosecution history. Given the absence of any disclaimer of broader coverage, Bausch & Lomb's proposed construction would impermissibly import a narrowing limitation from the specification to the claims. Renishaw, 158 F.3d at 1248.

This is a case where the patentee has claimed his invention more broadly in independent claims 1, 27, and 50 than in the specific exemplary embodiments of the specification. See Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1344 (Fed. Cir. 2001) (citing SRI Intl v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc) ("If structural claims were to be limited to devices operated precisely as a specification-described embodiment is operated, there would be no need for claims. Nor could an applicant, regardless of prior art, claim more broadly than the embodiment"). As the meaning of "a first portion for increasing wettability" can be determined by a person of ordinary skill in the art from the language of the claims themselves, there is no reason to limit that meaning to a narrower embodiment in the specification. Moreover, the '943 patent claims the specific acrylic embodiments of the specification in dependent claims; the independent claims are more broadly claimed. If the patentee intended to limit his invention to acrylics, he would not have claimed his invention in this manner.

Neither does the specification necessarily require that the "first portion" of the invention be limited to the acrylics of Formula I. While certain language, such as that in the Summary of Invention indicates that the claimed material has the "generalized structure" of Formula I, other language indicates a broader scope of invention. For example, the Abstract, like the claim language, defines the invention in broad terms, noting only that the first portion includes a side-chain functionality of an amide or carbamate and that it be hydrophilic; it does not limit the first portion to the Formula I structure. See Hill-Rom Co. v. Kinetic Concepts Inc., 209 F.3d 1337, 1341 (Fed. Cir. 2000) (noting that courts frequently looks to the abstract to determine the scope of the invention).

As for the references Bausch & Lomb cites from the "Detailed Description of the Preferred Embodiments," they are just that - preferred embodiments. They do not purport to define the entire invention. For example, the reference to the Formula I structure that Bausch & Lomb relies upon, states at the outset that it is describing "A monomer embodying the principles of the present invention . . ." '943 patent, col. 5, l. 42 (emphasis added). The fact that the specification provides a wealth of teaching about the preferred embodiments does not mean that the claims are limited to those preferred embodiments.

Again, the court comes back to claims such as claim 1, which do not mention a limitation involving Formula I. This clearly indicates that the scope of invention was intended to be broader than one that is limited to acrylics.

The prosecution history also confirms that both the Examiner and the applicant considered the claims to be broader than Formula I. During the prosecution of the patent application that led to the '943 patent, the Examiner imposed a rejection of claims 25-53 as being obvious over Fort in view of Friends alone or together with Gaylord. Fort teaches vinyl and allyl carbamates, neither of which are acrylics. Specifically, Fort relates to carbamate-containing polysiloxane copolymers useful as emulsifiers, dispersing agents, lubricants, surface active agents, and coagulants. See U.S. Patent No. 3,652,629, col. 1, ll. 16-18. Fort describes making these copolymers by reacting ethylenically unsaturated carbamates, such as vinyl and allyl
carbamates, with the polysiloxanes. See, e.g., id. at col. 3, ll. 4-30. Thus, Fort teaches vinyl and allyl carbamates, and does not teach or describe any "acrylic" amides or carbamates.

The Examiner reasoned that the primary references (including Fort) disclose monomers having "nitrogen and silicone groups," and the secondary references show the use of co-monomers. Thus, the Examiner concluded, the choice of the applicant's claimed co-monomers would have been obvious. This rejection makes clear that the Examiner considered the applicant's claims to cover vinyl and allyl carbamates, and thus that the claims were not limited to acrylics. The applicant argued against this rejection in his July 16, 1986 response. Therein the applicant distinguished Fort, not by disclaiming vinyl carbamates, but by arguing that Fort's compounds were emulsifiers and were unusable as contact lens materials. In distinguishing Friends and Gaylord, the applicant argued that his claims required the amide or carbamate structure, and that the secondary references failed to teach siloxane monomers having an amide or carbamate. He did not specify that the first portion was limited to acrylics or that acrylics were an important or necessary aspect of his claimed monomer structure.

In sum, at no time in the prosecution history did the applicant disclaim vinyl monomers or assert that his invention is limited to acrylics. If the applicant intended to disclaim vinyls or limit his claim to acrylics, such a disclaimer would have been an appropriate basis upon which to distinguish Fort. That no such disclaimer was made, supports the court's interpretation that the claims are not limited to acrylics.

Last, construing the phrase "a first portion for increasing wettability" as not being limited to acrylics is also supported by the doctrine of claim differentiation. The doctrine of claim differentiation provides that because each claim is presumed to have a different scope, it is presumptively unreasonable to construe one claim so as to render another claim superfluous. Beachcombers, Int'l v. Wildewood Creative Prod., Inc., 31 F.3d 1154, 1162 (Fed. Cir. 1994); Intel Corp. v. Broadcom Corp., 172 F. Supp. 2d 478, 496 (D. Del. 2000) ("In interpreting claims, it is improper for courts to read into an independent claim a limitation that is explicitly set forth in another [dependent] claim"); see also Intermatic Inc. v. Lamson & Sessions Co., 273 F.3d 1355, 1364 (Fed. Cir. 2001) (noting that this presumption is "strengthened" when there is a dispute over whether "a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims"); cf. Wenger Mfg. v. Coating Machinery Sys., 239 F.3d 1225, 1233 (Fed. Cir. 2001) (noting that the doctrine of claim differentiation is a guideline and not a hard and fast rule and that claim differentiation cannot be relied upon to broader claims beyond their correct scope). While the court realizes that claim differentiation is a guide and not a strict rule, the guidance provided by this doctrine strongly supports the court's construction.

Bausch & Lomb asserts that the term "a first portion for increasing wettability" is limited to those structures that have the chemical structure of an acrylic (as shown in Formula I of the specification). The structural limitations that Bausch & Lomb would have the court read into the "first portion" of independent claims 1, 27, and 50 are found in the dependent claims of the patent. For example, claim 5, which depends from claim 1, recites the specific structure found in Formula I for the first portion of the monomer. Similarly, claim 2, which also depends from claim 1, claims "the contact lens material of claim 1 wherein said first portion comprises an acrylamide or a methacrylamide." Under the doctrine of claim differentiation, however, reading the limitation of the specific acrylic structure into claim 1 would render dependent claim 5 superfluous, which is presumptively unreasonable. Beachcombers, 31 F.3d at 1162. This presumption is heightened here, since the acrylic structure limitation is the only meaningful difference between claim 1 and claim 5.

--- Footnotes ---

3 A similar analysis can be applied to independent claims 27 and 50, in light of dependent claims 41 and 54, respectively.

--- End Footnotes ---

Neither does the court agree with Bausch & Lomb's alternative contention that the claim term must be construed as a means-plus-function claim. First, no "means" language is present in the phrase. The failure to include the word "means" creates a presumption that § 112, P6 does not apply. Personalized Media Communications L.L.C. v. Int'l Trade Comm'n, 161 F.3d 696, 703-04 (Fed. Cir. 1998). This presumption may only be rebutted where the properly construed claim does not "recite[] sufficiently definite structure to avoid the ambit of § 112, P6." Id. at 704. In this case, the claims do recite a structure that corresponds to the specified function of increasing wettability, the amide or carbamate side-chain functionality. As Dr. Goodman testified, amides and carbamates are both hydrophilic and perform the function of increasing wettability. Because there is sufficient structure shown to perform the function of increasing wettability, the claim cannot be
In conclusion, for the reasons stated above, the phrase "first portion for increasing wettability" is not limited to the acrylic structure set out in Formula I or the '943 patent specification. It covers structures that are hydrophilic and include carbamate or amide sidechain functionality. This includes both vinyls and acrylics.

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A. CLAIM CONSTRUCTION

The Court finds the testimony of Dr. Corbett and Mr. Witherspoon to be persuasive on the issue of claim construction. The dispute is over the following limitations which Combustion contends are not present in its RT Kiln, the terms at issue being underlined: (1) "for the continuous electric heating and/or fusion..."; (2) "a ...conical extension fixed to one end thereof"; and (3) "a crane support mounted upon each said housing and removable conical extension for lifting and tilting the housing to remove the contents thereof." [PTX 533 and 534].

CONTINUOUS

Dr. Corbett testified that the term "continuous" modifies "heating", not "fusion" such that electric heating without interruption, as well as fusion, takes place in the patented furnace [Tr. II(2)(Corbett), 30-31, 33-34 and 38-40]. Based upon this testimony, the court finds that term "continuous" modifies "heating and not "fusion" for purposes of claim construction in regard to this limitation.

CONICAL EXTENSION FIXED TO ONE END THEREOF

The dispute with respect to this limitation revolves around the meaning of the word "fixed" in Claims 3 and 4. Dr. Corbett testified that "fastened" is a synonym for "fixed", and that "fixed" means "securely fastened" such that, when the main portion of the housing is lifted, the end follows [Tr. II(2), 40-41]. The court finds that terms "fixed", "fastened", and "securely fastened" are synonyms for purposes of claim construction in regard to this limitation. This interpretation is supported by the reading of the claim, the testimony of witnesses, as well as the prosecution history. DTX 180, PTX 460, p. 277.

CRANE SUPPORT FOR LIFTING AND TILTING THE HOUSING

The language of subparagraph D, properly interpreted, simply requires that there be a crane support mounted on the removable, detachably secured, conical extension ("dumping" end) and a crane support mounted on the remainder of the housing, with both such crane supports being involved in facilitating the lifting and tilting of the housing "so that" the contents of the furnace (e.g., a fused silica ingot) can be removed out the detachably secured end. In this regard, the reading of the claim language supports this interpretation [PTX 2, Col. 1, lines 40-43, 63-66], as does the prosecution history.

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With regard to the central issue of nearly every patent appeal, claim construction, the district court reached an interpretation fully supported by the record. See Markman v. Westview Instruments, Inc., 134 L. Ed. 2d 577, 116 S. Ct. 1384, 1395-96, 38 U.S.P.Q.2D (BNA) 1461, 1470-71 (1996). Claims 3 and 4 of the '462 patent call for two crane supports -- one on the main housing and another on the removable conical extension "for lifting and tilting the housing and removing the contents thereof." Construing this limitation, the trial court held that "both such crane supports [must be] involved in facilitating the lifting and tilting of the housing 'so that' the contents of the furnace . . . can be removed out the detachably secured end." The trial court did not construe this language to require that the crane supports actually lift and tilt the furnace housing.

The claim language and the patent specification support this interpretation. The claim language does not require each crane support to actually lift and tilt the furnace housing. The claims specify only use of the crane supports during lifting and
tilting. Indeed, as is evident to one of ordinary skill in rotary furnace operations, crane supports alone do not lift a furnace. Rather a crane lifts the weight of the furnace. The supports, by their nature, only facilitate this lifting process by connecting the furnace to the crane.

The specification further supports the trial court's construction. In relevant part, the specification provides: "Upon completion of the fusion process, the entire kiln is crane lifted from the driving cradle support 156 and the cone 120' removed, whereupon the kiln is tilted and the formed ingot dumped." This language in the specification discloses that removal of the detachable extension precedes the tilting process. Thus, the district court correctly determined that the patent does not require that the crane support on the detachable end receive force that directly tilts the housing. Rather, the specification suggests that this crane support plays a part in the lifting and tilting process.

In light of its correct claim construction, the district court found that the claims read on the accused RT kiln. This court detects no clear error in this finding of fact. Accordingly, this court affirms the trial court's finding of literal infringement. [GO BACK]

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II. Effect of Preamble Language Regarding "Reducing Vibrations and Slippage"

The magistrate judge rejected Mitsubishi's argument that the phrase "for reducing vibrations and slippage," as used in the preambles of the asserted claims of the '048 and '981 patents, was a claim limitation. Rather, the magistrate judge held that this phrase was merely a "statement of purpose and therefore [did] not act as a limitation of the claimed invention."

Mitsubishi claims that the magistrate judge erred by holding that this phrase was not a claim limitation. Mitsubishi emphasizes that, during the prosecution of the '048 patent, the applicants originally added this phrase as part of a means-plus-function limitation to overcome the examiner's obviousness rejections based on U.S. Patent No. 4,953,461 ("the Gaffney patent") in view of U.S. Patent No. 4,913,048 ("the Tittgemeyer patent"). Despite the applicants' addition of this limitation, the examiner continued his obviousness rejections, but relied upon a different combination of references. The applicants then replaced the term "means" with "mechanism." When the examiner persisted with his obviousness rejections, the applicants cancelled the claims and inserted entirely new claims with the language regarding "reducing vibrations and slippage" in the preamble.

Given the significance of the "reducing vibrations and slippage" language in the prosecution history, Mitsubishi contends that the magistrate judge should have construed this phrase as a claim limitation. Because Mitsubishi contends that its presses are intentionally designed to promote slippage, it asserts that it cannot infringe either the '048 or '981 patent claims.

The determination of the effect of preamble language is but a part of the broader task of claim construction, see Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 621, 34 U.S.P.Q.2D (BNA) 1816, 1820 (Fed. Cir. 1995), which we undertake without deference to the district court, see Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 U.S.P.Q.2D (BNA) 1169, 1174 (Fed. Cir. 1998) (en banc). While the phrase "for reducing vibrations and slippage" was originally added to the body of the '048 claims in the context of means-plus-function language, which indisputably would have acted to limit the claimed inventions, its movement to the preamble of the newly-added claims did not create a similar effect. The only relevance of the phrase "reducing vibrations and slippage" is to illustrate the intended purpose of the invention. See Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 U.S.P.Q.2D (BNA) 1161, 1165-66 (Fed. Cir. 1999). The phrase is plainly not "necessary to give life, meaning, and vitality to the claim." Kropa v. Robie, 38 C.C.P.A. 858, 187 F.2d 150, 152, 88 U.S.P.Q. (BNA) 478, 480-81 (C.C.P.A. 1951). It does not, for example, provide an antecedent basis for terms later used in the body of the claim. See Gerber Garment Tech., Inc. v. Lectra Sys., Inc., 916 F.2d 683, 688-89, 16 U.S.P.Q.2D (BNA) 1436, 1441 (Fed. Cir. 1990). Nor could such an expression of the intended use and function of the offset press have distinguished over the prior art. See In re Lechene, 47 C.C.P.A. 923, 277 F.2d 173, 176, 125 U.S.P.Q. (BNA) 396, 399 (C.C.P.A. 1960). Consequently, we hold that the phrase "reducing vibrations and slippage" is not a claim limitation.

Because Mitsubishi does not challenge the jury's finding that its accused presses satisfy every structural limitation recited by the asserted claims of the '981 patent, we affirm the jury's finding of literal infringement of the '981 patent. Mitsubishi challenges the magistrate judge's construction of another limitation of the '048 patent, however, and thus our construction of
the "reducing vibrations and slippage" language in the preambles of the asserted claims does not conclude our review of the jury's finding of literal infringement with respect to that patent.

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B. Element B of Claim 1

1. Construction

Element of claim 1 describes "spokes attached to the rings for supporting the rings." The parties agree about the meaning of the terms "rings" and "spokes," and Wilshire concedes that the Versailles frames have both. The parties dispute, however, the meaning of the clause "for supporting the rings." Wilshire argues that spokes support rings, within the meaning of this element, only if the spokes actually bear the weight of the rings. Wilshire concludes that its Versailles chandeliers do not infringe the 805 patent because only one inner ring is borne by the spokes, while the other inner ring (itself borne by the center plate hanging from the ceiling) bears the weight of the spokes. 2 Schonbek counters that when the rings and spokes of the accused chandelier frames are attached to each other, they "support" each other, like the stones in an arch, regardless of which is attached to the ceiling and bears the weight of the other.

2 The language of element B suggests that the spokes must support a plurality of rings.

Schonbek's definition of "support" in the context of element B has a somewhat more attenuated connection to dictionary definitions than does its definition of the same term in the context of element A. Those definitions do not expressly speak to the question of direct or indirect attachment, but they do fairly convey a sense of "keep from falling."

Again, analysis of the meaning of "support" in the context of this element must take into account the patent specification, and in particular, the embodiment depicted at Figures 17 and 18. That embodiment, after all, does not even feature a single ring whose weight is as clearly borne by the spokes as the lower ring in Wilshire's Versailles frames, insofar as both rings of the embodiment depicted at Figures 17 and 18 are attached to the center column hanging from the ceiling. Again, adopting Wilshire's more restrictive definition of "support" would necessitate ignoring the 805 patent specification in this regard.

It might be argued that doing just that is appropriate in order to avoid expanding element B's reference to "support" beyond a narrow meaning. In particular, a leading treatise states that "the specification may be referred to in order to explain any ambiguity in the claim and to limit the claim, . . . [but] the specification is never available to expand the claim." Ernest Lipscomb, Walker on Patents 3d, § 21:22, at 337. However, recent Federal Circuit decisions appear to refine this pronouncement, instead suggesting that what must be considered, in light of the specification, is whether the drafter of claim language "intended to use the claim language in a manner different than its ordinary meaning." Pall Corporation v. PTI Technologies, 259 F.3d 1383, 1391 (Fed.Cir.2001); see also DeMarini Sports, 239 F.3d at 1323 ("the specification is reviewed to determine whether the patentee used terms in a manner inconsistent with their ordinary meaning"). 3

3 By contrast, the Federal Circuit has clearly maintained that extrinsic evidence -- like expert testimony, articles, and inventor testimony -- "may not be used to vary, contradict, expand, or limit the claim language from how it is defined, even by implication, in the specification or [prosecution] history." Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1269 (Fed.Cir.2001).

No doubt, it would be helpful if the 805 patent's specification more precisely defined element B's use of "support." It does not do so. However, evidence of the claim drafter's intent to use "support" in a somewhat broader fashion than ordinary is not here limited to a random and unexplained figure. Rather, at two separate points, the patent specification clearly details
what Figures 17 and 18 depict, and describes that structure as one embodiment of the invention. '851 patent, column 5:33-38, column 11:12-37. See MSM Investments Company, LLC v. Carolwood Corporation, 259 F.3d 1335, 1339 (Fed. Cir. 2001) (specification suggests that inventor intended to use term more broadly than its ordinary meaning, even thought it "does not specifically define the term"). Furthermore, as noted above, I am not persuaded that the embodiment is meant to be -- or even can logically be read as -- independent from claim 1. Accordingly, I decline to construe element B's use of the term "support" to convey only the function of "bear the weight," such as would exclude the embodiment depicted at Figures 17 and 18.

It remains for me to specify what element B's language of "for supporting the rings" affirmatively means. I note in this regard that mere attachment does not seem to be an interpretive option: to read element B's use of "support" as broadly as that would render the claim language ("spokes attached to the rings for supporting the rings") entirely redundant. Rather, "for supporting the rings" must reference some degree of functionality, consistent both with spokes bearing the weight of rings and with rings bearing the weight of spokes, over and above attachment alone.

I conclude that a variation of the dictionary definitional language of "hold in position" can serve the necessary purpose. I read claim 1 of the 805 patent as contemplating different configurations of rings and spokes sharing the following common feature: in each configuration, whether the rings are bearing the weight of the spokes or the spokes are bearing the weight of the rings, the two sets of parts "support" each other insofar as they hold each other in a fixed position necessary for the structural integrity of the overall chandelier frame.

A. CLAIM CONSTRUCTION

The Court finds the testimony of Dr. Corbett and Mr. Witherspoon to be persuasive on the issue of claim construction. The dispute is over the following limitations which Combustion contends are not present in its RT Kiln, the terms at issue being underlined: (1) "for the continuous electric heating and/or fusion..."; (2) "a ...conical extension fixed to one end thereof"; and (3) "a crane support mounted upon each said housing and removable conical extension for lifting and tilting the housing to remove the contents thereof." [PTX 533 and 534].

Dr. Corbett testified that the term "continuous" modifies "heating", not "fusion" such that electric heating without interruption, as well as fusion, takes place in the patented furnace [Tr. II(2)(Corbett), 30-31, 33-34 and 38-40]. Based upon this testimony, the court finds that term "continuous" modifies "heating and not "fusion" for purposes of claim construction in regard to this limitation.
In introducing embodiments of the invention, the written description states:

Electrothrombosis is facilitate by placing the ground electrode on the distal end of the microcatheter and flowing current between the microcatheter electrode and the tip.

('962 Patent, Col. 6:64-67.) Thus, as previously discussed, the Court declines to impose as a limitation on the claim that thrombosis be achieved to any particular degree.

The Court construes "a catheter wire for use in electrothrombosis" as it is used in Claim 1 of the '962 Patent to mean:

a catheter wire used with an electrical current to form a thrombus in a vascular cavity.

The statement "for use in sports and casual activities" does not limit the invention. This is because "where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation." STX, LLC v. Brine, Inc., 211 F.3d 588, 591 (Fed. Cir. 2000). This is further buttressed by the fact that "preambles describing the use of an invention generally do not limit the claims because the patentability of apparatus or composition claims depends on the claimed structure, not on the use or purpose of the invention." Catalina, 289 F.3d at 809. Furthermore, the intended use of the sunglasses does nothing to distinguish the invention over the prior art.

"Foraminous Hydrophobic Water-Vapor-Permeable Pellicle"

Claim 16 of the '693 patent includes reference to a "foraminous hydrophobic water-vapor-permeable pellicle" (sometimes, "FHWVP"). As noted above, the inventors of the '693 patent stated that the identified problems in the prior art could be avoided through the use of a FHWVP in the 3-ply sandwich wrap: "The sandwich wrap of the present invention provides greatly improved moisture control while decreasing adhesive tendencies between sandwich components and the absorbent inner layer by interposing a foraminous hydrophobic water-vapor-permeable pellicle on fibers positioned between the sandwich and the moisture-vapor-impermeable polymeric layer." ('693 patent, col. 1, lines 60-66.)

The parties offer two different proposed interpretations of FHWVP, which overlap in many regards but also differ in important ways. Fort James proposes the following: "A thin film that may have gaps in it and that also contains small pores. The film repels water, but water vapor may pass through the gaps or the pores in the film." 39 Coating Excellence proposes the following construction: "a thin film on and between certain fibers in the fibrous absorbent layer that is porous and not necessarily continuous. The thin film repels liquid water, but permits water vapor to pass through. The film being the deposit or precipitate left behind after hydrophobic precursor is applied to the fibers and the carrier removed." 40

--- Footnotes ---

39 This proposed construction is set forth in Plaintiffs' Final Proposed Claim Constructions [Dkt. No. 175] at p. 3.

--- End Footnotes ---

As confirmed at the Hearing, the parties agree on a number of the aspects of the proper construction of FHWVP: The parties agree that foraminous means porous; and they agree that "hydrophobic water vapor permeable" means repelling water but
permitting water vapor to pass through. There are, however, three primary areas of disagreement between the parties: (1) whether the pellicle should be described as being "on" the fiber or "on or between" the fiber; (2) whether or not the pellicle must form a distinct sublayer; and (3) whether the construction should include language describing how the pellicle is formed.

a. Review of the intrinsic evidence

As was the case with the term "water vapor impermeable polymer layer," the undersigned finds that, read by itself, the meaning of the term "foraminous hydrophobic water-vapor-permeable pellicle" is not "immediately apparent" and consideration of additional "sources" is appropriate. Phillips, 415 F.3d at 1314.

With respect to the word pellicle, the inventors clearly and unambiguously intended to be their own lexicographers. Id., at 1316. They state as follows: "We use the word 'pellicle' to describe the 'deposit' or 'precipitate' left behind after hydrophobe precursor has been applied to fibers and the carrier removed. We chose the word 'pellicle' because it has the connotation of being very thin and not necessarily continuous." ('693 patent, col. 2, lines 7-11.) There are no statements in other portions of the specification or the file history that would suggest that a different meaning should be given to the word pellicle.

The pellicle need not necessarily be a film. The specification, for instance, provides that the "pellicle may be present on fibers in a distinct sublayer as indicated in FIG. 4 or it may be present as a film, coating or crust on at least some, and surprisingly even possibly all, of the fibers in layer 20." ('693 patent, col. 5, lines 9-13.) A number of claims not in dispute use the word "residue" to describe the form of the pellicle. (E.g., Claim 19.) See Dorel Juvenile Group, Inc. v. Graco Children's Prods., 429 F.3d 1043, 1045-46 (Fed. Cir. 2005) (citing Phillips, 415 F.3d at 1315-17) (noting that the claims are part of the specification).

The specification indicates that the pellicle bearing fibers may be in a distinct sublayer in certain embodiments. But, as can be observed in the quoted material in the previous paragraph, not all embodiments require a sublayer. ('693 patent, col. 5, lines 9-13.) For instance, the specification explains that all of the absorbent layer may be treated with the pellicle in certain circumstances. ('693 patent, col. 2, lines 1-4.) There would be no distinct sublayer under such scenario.

The pellicle properly is described as being "on" the fiber. The specification consistently describes the pellicle in this fashion. (E.g., '693 patent, col. 1, lines 64-65 ("pellicle on fibers"); col. 4, lines 64 ("pellicles on the fibers"); col. 5, line 52 ("pellicles present on the surface of individual fibers").) The specification no where refers to the pellicle being "on and between certain fibers."

Finally, the parties debate whether the construction of this term should include reference to the means by which the pellicle is formed. Coating Excellence, as noted above, suggests that the construction should conclude with a statement providing, "The film being the deposit or precipitate left behind after hydrophobe precursor is applied to the fibers and the carrier removed." Fort James suggests that such additional language is not needed because the last portion of claim 16 itself provides, "said pellicle having been formed by application of an aqueous mixture of a hydrophobe precursor to the surface of a sheet of absorbent material." The undersigned agrees with Coating Excellence that the inventors have defined pellicle to be the "deposit" or "precipitate" "left behind after hydrophobe precursor has been applied to fibers and the carrier removed." ('693 patent, col. 2, lines 7-9). But the undersigned also agrees with Fort James that this concept is provided as an express limitation of claim 16. Therefore, it should not also be incorporated as part of the construction of the term at issue. Such redundancy potentially could lead to juror confusion.

b. Review of extrinsic evidence

The undersigned finds that the proper construction of the disputed term can be ascertained without reference to extrinsic evidence. 41

--- Footnotes ---

41 In their final claim construction statements [Dkt. Nos. 175 and 176], Fort James offered two dictionary definitions relating to the undisputed meanings of hydrophobe and foramen. Coating Excellence offered no extrinsic evidence in support of their positions.
c. Recommended claim construction

For the above reasons, the undersigned recommends that the term "foraminous hydrophobic water-vapor-permeable pellicle" be construed to mean: "A very thin and not necessarily continuous residue on fibers. This residue may be in, but is not limited to, the following forms: a distinct sublayer, a film, a coating, a crust, a deposit and a precipitate. This residue has holes or pores, repels water and permits water vapor to pass through it."

D. Specific Disputes

Snap Edge makes three specific arguments regarding certain elements of Claims 115 and 144. First, Snap Edge argues that the force conversion referenced throughout the patent should be interpreted to require conversion of most, if not all, horizontal forces into vertical forces. Second, Snap Edge asserts that the term "substantial" as used in Claim 144 is indefinite. Finally, Snap Edge contends that term strip as used in Claim 115 and Claim 144 must be interpreted to mean continuous.

Force conversion is a ubiquitous concept in the '550 Reissue patent from the Abstract through the specifications through numerous claims. Essentially, Claim 115 purports to detail a means for converting the horizontal forces, which act upon the paving stones and can cause shifting, into vertical forces in order to use the ground to keep the pavers in place. This purported force conversion is accomplished using a connecting strip and a restraining means. Snap Edge argues that this term must be interpreted to require that most if not all horizontal forces received by the vertical restraint strip be converted into vertical forces. The Court does not agree. Nowhere in the specification is a set amount of horizontal force required to be converted into vertical force. The Court finds that there is no mandate that all horizontal force, or even most of it, be transferred via the force converting means into vertical forces. Whether any conversion actually occurs in these elements, and more importantly, whether any conversion occurs in the Snap Edge product, is a question of fact not properly before the Court at this time.

"force for centering"

Building upon its proposed construction of "centering," Xinyi asserts that the phrase "force for centering" also requires construction. This phrase appears in claims 14, 15, and 16 of the '395 patent, and in claims 9 and 16 of the '669 patent, all of which have been asserted against Xinyi.

Consistent with its construction of "centering," Xinyi argues that the "force for centering" must be "pressure sufficient to overcome friction and move the weight of the window to provide a constant gap of even width all around the glazing." However, once the Court's conclusion regarding the term "centering" in the '395 patent is taken into account, Xinyi's proposed construction of "force for centering" -- which presupposes adoption of its construction of "centering" -- necessarily fails. If, as the Court finds to be the case, centering occurs only where a spacer is present, there is no support for finding that the force for centering must have an effect even in areas where no spacer is present. To the contrary, the force for centering is (as the plain language of the claim indicates) provided by the spacer, and "sufficient to maintain centering of the glazing on the bracket and to provide a gap between" the edge of the glazing and the bracket, along the portion of the periphery where there is a spacer. This accords with the plain language of the claims. As a result, no construction is required.

- 2150 -
"force producing assembly"
Means plus function

Fitness Quest contends that this term is a means-plus-function element, arguing that, as such, it does not identify a particular structure, but instead looks to the specification for its structure. Monti acknowledges that the term requires construction, but contends that this term is a structural element, rather than a means-plus-function element. He offers a proposed construction of the term as a structure and an alternative construction if the term is found to be a means-plus-function element. The term is not a means-plus-function element, and Monti's proposed structural construction is adopted.

In general, in the absence of the word "means," the disputed term is presumed not to be a means-plus-function element.

It is well settled that "[a] claim limitation that actually uses the word 'means' invokes a rebuttable presumption that § 112, P 6 applies. By contrast, a claim term that does not use 'means' will trigger the rebuttable presumption that § 112, P 6 does not apply." "The term 'means' is central to the analysis."

If the party who must bring forth evidence fails to proffer sufficient evidence to meet its burden, the presumption, either for or against the application of § 112, P 6, prevails.


Fitness Quest does not even acknowledge the presumption against "force producing assembly" being read as a means-plus-function term. Fitness Quest instead argues that "force producing assembly" contains an insufficient delineation of structure to permit this Court to find that it is a structural term rather than a means plus function term. Presumably, Fitness Quest intends to argue that its proposed construction overcomes the presumption against means-plus-function treatment because "force producing assembly" "fails to 'recite sufficiently definite structure' or else recites a 'function without reciting sufficient structure for performing that function.' See CCS Fitness, Inc., v. Brunswick Corp., 288 F.3d 1359, 1369 (Fed. Cir. 2002), quoting Watts v. XL Sys., Inc., 232 F.3d 877, 880 (Fed. Cir. 2000).

"Our cases make clear, however, that the presumption flowing from the absence of the term 'means' is a strong one that is not readily overcome." Lighting World, Inc., v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004). Fitness Quest makes no meaningful effort to overcome this presumption.

In the context of a non-means-language term, the patentee is entitled to substantial latitude in the generality of the structure described therein before the presumption against means- plus-function analysis is overcome. In a case construing closely analogous claim language, the Federal Circuit considered the term "connector assembly," which the district court had held to constitute a means-plus-function term, and reversed, finding the district court's approach "unduly restrictive." See Lighting World, 382 F.3d at 1359.

In considering whether a claim term recites sufficient structure to avoid application of section 112 P 6, we have not required the claim term to denote a specific structure. Instead, we have held that it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.

Id. at 1359-60 (citations omitted). In construing the term "connector assembly," the court explained that the fact that the term did not call to mind a particular structure was not dispositive. "What is important is whether the term is one that is understood to describe structure, as opposed to a term that is simply a nonce word or a verbal construct that is not recognized as the name of structure and is simply a substitute for the term 'means for.'" Id. at 1360.

Here, Fitness Quest has not carried its burden of establishing that "force producing assembly" is not a structure. The term "assembly" sufficiently defines a structure - albeit a general structure -- so that the patent appropriately may cover more
Monti proposed the only construction for this element in the event it was found not to be a means-plus-function element, offering the construction, "The components that are used together to store and release energy to produce a force." Fitness Quest has objected that the construction is too general, but has proposed no substitute, preferring only to argue in favor of a means-plus-function construction.

This Court finds Monti's proposed structural construction proper. It provides additional information to help understand the language of the disputed term, without improperly limiting the patent language beyond that intended by the patentee and approved by the Patent and Trademark Office. Monti's proposed construction will be adopted.

C. "Force Sensor"

The second term to construe, "force sensor," is found in claims 1 and 3 of the '486 patent and claims 1, 7 and 8 of the '677 patent. Hysitron asserts that "force sensor" means "a device that indicates force by assessing force, weight, or position." Joint Claim Construction Statement at 16. MTS asserts that "force sensor" means a "stacked configuration of five substrates sandwiched together calibrated to measure force; the third substrate of the five includes a planar or flat control plate suspended between spring-like members which are imbedded in and integral to this substrate and which measures the force between the probe tip and the sample." Id. at 20.

Hysitron's construction is remarkably broad. It also ignores express limitations contained in the claim. Independent claim 1 states:

the improvement comprising: . . . a force sensor . . . wherein said force sensor includes,

i. a pair of capacitive transducers, each transducer including a separate drive plate, the first said drive plates having a hole centrally disposed therethrough, and a shared pick-up plate, said pick-up plate positioned between said drive plates and separated from each drive plate by an insulating spacer, said drive plates having spaced opposing conductive surfaces when said pick-up plate is mounted therebetween, said pick-up plate further including a conductive central plate suspended by spring means between said drive plates, wherein said central plate is capable of deflection between the conductive surfaces of said drive plates. . . .

'486 patent, col. 15:36-47. "Force sensor," as defined in these patents, is more complex than Hysitron's construction implies. Tellingly, Hysitron admits in its Markman Brief that the claims are more specific than its proposed construction requiring "a force sensor that includes a pair of capacitive transducers and that each have a separate drive plate and shared moveable pick-up plate." Hysitron's Markman Br. at 35. However, the limitations in the claim are not entirely clear, requiring the Court to consider the specification and prosecution history to determine the proper construction of this term.

Most of the specification describes the preferred embodiment of the force sensor. See, e.g., '486 patent, col. 4:6-31. However, the specification does describe the present invention more broadly in a number of places. For example, the patent teaches that the "sensor element of the present invention comprises first and second, serially connected variable capacitors . . . . More specifically, the sensor comprises a stacked configuration of five substrates." Id., 5:16-20 (emphasis added). A portion of the inner side of the first and fifth substrates "each comprise the first (drive plates) of a different variable capacitor." Id., col. 5:22-25. The second and fourth substrates abut the first and fifth substrates respectively and "comprise insulating substrates or frame members having an open central portion at least as large as a central plate of the third substrate." Id., col. 5:37-40. Finally, the third substrate is "sandwiched" between the second and fourth substrates and "includes a planar central plate which is suspended by spring-like members. In the preferred embodiments, the spring-like members include four relatively thin L-shaped springs." Id., col. 5:42-49. When the written description refers to "this invention" or "the present invention," a court may conclude that the following description covers the claim--not just the preferred embodiment. See Honeywell Int'l, Inc. v. ITT Indus., Inc., 452 F.3d 1312, 1318 (Fed. Cir. 2006). Additionally, the majority of this description of a force sensor does not describe a particular embodiment because the language "[i]n the
preferred embodiments," is directed specifically to the "four relatively thin L-shaped springs."

The prosecution history confirms that the construction of "force sensor" is more specific than Hysitron suggests. Under the '979 application, the PTO rejected claims 1-40 for various reasons. In explaining the rejection, the examiner stated that "[p]rior art was not relied upon to reject claims 1-40 because the prior art fails to teach and/or make obvious a force sensor having the claimed structure/details in combination with a probe and means for translating output signals from the force sensor into surface topography readings/images." Pearson Aff., Ex. 14 at 5. Thus, the PTO believed that the force sensor contained some level of "structure/detail" that is more specific than "a device that indicates force by assessing force, weight, or position." The language in claim 1 expresses that "structure/detail." Hysitron's proffered construction is rejected as overly broad.

MTS's construction, however, also is not appropriate as it is too narrow. Adhering more closely to the specification and prosecution history, the court construes "force sensor" to mean "a stacked configuration of five substrates consisting of a pair of drive plates found in the first and fifth substrate, a pair of insulating substrates found in the second and fourth substrate, and a third substrate sandwiched between the second and fourth substrate that includes a planar central plate which is suspended by spring-like members operatively located to measure the force between the sample and the probe tip."

2. "a spring operatively connected between the blade and the handle to force the blade to pivot toward an open position when the oversized tang portion of the blade is pushed into the handle until the blade reaches an equilibrium point"

Plaintiff proposes the construction of

the spring, handle, and blade are arranged such that the spring operates to assist in opening the blade. The spring operates to force the blade toward an open position when the oversized tang portion of the blade is pushed sufficiently far into the handle. Some of the oversized tang portion of the blade must enter the handle before the spring operates to provide an opening force. It is the blade, not the spring, which passes an equilibrium point to cause the spring to assist in opening the blade.

Defendant proposes the construction of

a spring connected between the blade and the handle which, in operation, imparts a rotational force onto the blade to rotate it to an open position when the oversized tang portion of the blade is pushed into the handle until the blade reaches a point at which the forces acting on the blade are balanced.

Defendant proposes the inclusion of "rotational force" into this claim construction, as it did in the construction of a similar term in claim one of the 476 patent. In this patent, there is no statement in the prosecution history containing the term "rotational force." Additionally, the term is not included anywhere in the patent. Accordingly, the court finds the inclusion of "rotational force" in this term to be improper.

Defendant proposes to construct "equilibrium point" as "a point at which the forces acting on the blade are balanced." The court finds "equilibrium point" to be clear on its face.

As discussed in the construction of the 476 patent, the term "operatively connected" means arranged such that it can perform its designated function. The court's construction of this term is: "The spring, handle, and blade are arranged such that the spring operates to force the blade to an open position. The spring is activated when the oversized tang portion of the blade is pushed until the blade reaches an equilibrium point."

6. What is the Proper Construction for the Phrase "forced point-bonds" in the '311 and the '722 Patents?
Claim 94 of the '311 patent and claim 77 of the '722 patent contain the phrase "forced point-bonds." KXI contends this phrase means that two or more primary particles are joined together by an adhesive. Culligan contends this term is indefinite, as the specification offers no meaningful description of the term. If the court determines the term is sufficiently definite, Culligan accepts KXI's definition. The court will not address Culligan's indefiniteness argument at this time, as this goes to the validity of the claim, and not to its meaning. Accordingly, the court finds "forced point-bonds" means two or more primary particles joined together by an adhesive.

E. "forces said metallic grounding clip into clamping engagement"

For the reasons stated below, the court construes the term "forces said metallic grounding clip into clamping engagement" in claim 37 to mean:

The bail in its closed position, contacts the grounding clip and retains or forces the clip into tight engagement with the exposed portion of the conductor.

The parties agree that this construction is identical to the construction of "forcing said grounding clip into clamping engagement" in subheading C. The court need not reiterate its reasoning for that construction here.

D. "forcing said electrical conductor of said transmission cable through said axial opening"

For the reasons stated below, the court construes the term "forcing said electrical conductor of said transmission cable through said axial opening" in claim 37 to mean: 6

The electrical conductor must be forced or pressed into the axial opening defined by the clip.

6 Andrew cites to claims 19-20, 22, 24, 25, 27, 47, 50, and 53-54, none of which contain the disputed phrase, and so the court assumes Andrew's citations to be a typographical error. (Pl. Mem. at 14.)

The dispute between the parties in essence is whether to give the term forcing its ordinary meaning, as Beverly seeks, or to construe forcing to mean passing or pressing, as Andrew contends. In support of Andrew's position, Andrew argues that the teaching and the prosecution history demonstrate that the term should be construed beyond its ordinary meaning. In support of its expanded construction, Andrew cites to a phrase in the specification referring to illustrated figure 5, which states that:

The clip 10, which has a C-shaped cross-sectional profile, is pressed over the outer conductor 44 as the rounded surfaces of the two folded portions 15a and 15b engaged the outer conductor 44. . . . With its C-shape the clip 10 acts like a spring by returning to its original position after the conductor 44 of the coaxial cable 40 has passed through the axial opening 17.

(Ex. 3, Col. 4, ln.57-59, 63-66.)

The court rejects Andrew's construction as too expansive based on Andrew's contention that the term forcing could mean pressing or passing. From the court's understanding of the context of the cited paragraph, the specification's use of the word "passed" was not meant as a teaching for the term "forced," but as a descriptive phrase, several sentences after the explanation of the action at issue. The court interprets the specification's use of the word "pressed" differently. The word "pressed" is a synonym in the context of the specification for the term forced, where "pressed" is used as a teaching for the
action at issue. Additionally, without relying on dictionary definitions, the court notes that the definition of the word "press means to use continuous force. 7 The court finds that the term "passed" within the context of the specification was not meant to expand the definition of "forced" beyond its ordinary meaning, while the word "pressed" in the specification is a synonym for "forced." Hence, the court construes "forcing" in this context to mean either forcing or pressing.

--- Footnotes ---

7 Press is defined as: "To act upon (a body) with a continuous force directed towards or against it (the body by or through which the force is exerted being in contact with that acted upon)." See Oxford English Dictionary (2d ed. 1989), available at http://dictionary.oed.com.

--- End Footnotes ---

The court additionally disagrees with Andrew's assertion that Beverly "implies that 'forcing' entails some degree of violent motion," (Pl. Reply at 14); the court did not find Beverly's memorandum to suggest the requirement of violent motion and Andrew does not provide a citation for its interpretation of Beverly's position. Regardless, the court does not construe the term forcing to entail some degree of violent motion.

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C. "forcing said grounding clip into clamping engagement"

For the reasons stated below, the court construes the term "forcing said grounding clip into clamping engagement" in claims 19, 22, 47, 50, and 54 to mean:

The bail, once in its closed position, forces or retains the clip in tight engagement with the exposed portion of the conductor.

At issue is whether the bail alone is responsible for providing the force necessary to achieve and maintain clamping engagement when in the closed position, as Beverly contends that the specification teaches. Both parties look to the specification to support their positions. Beverly interprets the phrase in the specification that "in the closed position, the bail contacts the clip so as to force the clip into tight engagement . . ." (Ex. 3, Col. 2, ln. 15-16), to mean that the bail alone must provide this force.

The court agrees with Andrew, however, that the specification, and the '056 patent, do not so limit the bail only to forcing the clip into tight engagement with the conductor. In the context of the specification and prosecution history, "a patent applicant may consistently and clearly use a term in a manner either more or less expansive than its general usage in the relevant community, and thus expand or limit the scope of the term in the context of the patent claims." CollegeNet, Inc. v. ApplyYourself, Inc., 418 F.3d 1225, 1231 (Fed. Cir. 2005). The court finds that the claim term's construction was used more expansively in the specification and thus broadened the claim construction. In the same paragraph of the specification from which Beverly cites to "the bail 30 forces the inner surface 14 of the clip 10 into tight, clamping engagement around the outer conductor 44" to support its own construction, there is language demonstrating that the applicant intended a broader meaning of the term, contrary to Beverly's construction. (Def. Mem. at 14 citing Ex. 3, Col. 5, ln. 12-13.) The last sentence of that same paragraph of the specification states that the "bail acts to further secure the clip on the outer conductor and maintain tight engagement over an extended period of time." (Ex. 3, Col. 5, ln. 18-20 (emphasis added.)) The use of the term "maintain" in same context and paragraph as "force" leads this court to conclude that the "as to" language cited by Beverly was intended to be descriptive rather than limiting. Because the '56 patent's interchanges "forces" and "maintains," the construction "forces or retains" best describes the context in which the phrase is used.

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Claim 24 continues with limitation (c):
(c) Forcing the cover against the separated tissue to expand the tissue layer substantially uniformly away from the underlying tissue;

The parties agree that this limitation requires moving or pushing the cover against the separated tissue away from the underlying tissue. They also agree that "substantially uniformly" requires all but minor variations. The court finds this limitation to mean "pushing the cover against the separated tissue to expand the tissue layer consistently, but with acceptable minor variations, from the underlying tissue."

Claim 1 requires that the pressure-sensing means is comprised of a "first chamber means for defining a first volume which is in fluid communication with said liquid such that said liquid will enter said first chamber means and form a liquid column therein having a liquid-air interface, and further comprising second chamber means for defining a second volume which is air-filled and is in fluid communication with said first chamber means." The first chamber must have a volume of amniotic fluid that comes in contact with the air coming from the second chamber. The second chamber must contain air that is pumped into the catheter from an external source to provide a means of measuring the amount of pressure asserted against it from the first chamber when the air therein is compressed. Clinical contends that Claim 1 requires a first and second chamber means that are distinctive from the Koala. Clinical argues that the first chamber means must be interpreted to require a cavity inside of rigid, physical walls or other such surrounding structure so as to surround the first volume. However, Utah Medical argues that all that is required is an area that holds amniotic fluid, such that when the amniotic fluid enters the Koala and surrounds the air-filled balloon, it comprises the first chamber and the air-filled balloon comprises the second chamber. While the Court finds Utah Medical's interpretation very broad, the specification appears to allow such a broad reading. However, the first chamber in Claim 1 must have the capacity to enclose within its surrounding structure a first volume of amniotic fluid, forming a liquid column that comes in contact with the air-filled second volume. In order to form a liquid column, the first chamber must be completely enclosed without any holes that would prevent a liquid column from functioning properly.

Claim 1 requires that the amniotic liquid will enter the first chamber and "form a liquid column therein." As established above, the first chamber must be enclosed by the walls of the catheter. This is because according to Claim 1 the liquid column forms below the section of the catheter where the holes allow the amniotic fluid to enter the catheter and is enclosed where it comes into contact with the air from the second chamber. The column must be formed on the inside of the plastic housing, as the claim requires it to be "therein." The column is an uninterrupted volume of liquid between the air from the second chamber and the free flowing amniotic fluid that enters the tip of the catheter through the holes in the tip. A column is defined as "a rigid, relatively slender, upright support, composed of relatively few pieces or a decorative pillar, most often composed of stone and typically having a cylindrical or polygonal shaft . . .; any column like object, mass, or formation: a column of smoke." THE RANDOM HOUSE DICTIONARY OF THE ENGLISH LANGUAGE 407 (2d ed. 1987). Taken from the plain meaning of the word column, the liquid column--cylindrical in shape--must fill the interior of the first chamber and be bound by the cylindrical side walls of the first chamber. While Clinical argues that the accused device does not have a liquid column as required by Claim 1, Utah Medical argues that the Koala does in fact have a liquid column. Applying the Court's interpretation of the required liquid column to the accused device, the Court finds that a liquid column does not exist in the Koala, either literally or under the doctrine of equivalents. The Koala could only be substantially equivalent by eliminating necessary structural and functional requirements from Claim 1, which would be improper. The "doctrine of equivalents cannot be used to erase 'meaningful structural and functional limitations of the claim on which the public is entitled to rely in avoiding infringement.'" Conopco, Inc. v. May Dep't Stores Co., 46 F.3d 1556, 1562 (Fed. Cir. 1994). Utah Medical argues that the Koala has a column that is in fact a hollow cylinder that surrounds the air balloon within what Utah Medical argues is a first chamber. However, the area that Utah Medical argues is the liquid column is in reality the same as the area in the tip of the 161 device where the holes allow the amniotic fluid to enter the
catheter. The housing around the Koala is for the purpose of inserting the catheter into the uterus. If the plastic housing were removed from the Koala once in the uterus, the device would still provide an accurate reading based on the amniotic pressure exerted on the balloon. Conversely, the 161 device is dependent upon the plastic housing wherein a liquid column is formed between the amniotic fluid and the air. Without such a housing, the 161 device would not operate.

A. Claims 1 & 18

Claims 1 and 18 are two of the three independent claims in the '161 patent. Both include the limitation of a first chamber into which bodily fluid enters and forms a "liquid column." The district court held that the liquid column limitation must be construed in the context of the structural limitation of the first chamber because the claims specify that the liquid column is formed therein. Utah Medical, 79 F. Supp. 2d at 1300. The court also held that the liquid column is "an uninterrupted volume of liquid between the air from the second chamber and the free flowing amniotic fluid that enters the tip of the catheter." Id. The court referred to a dictionary definition of "column," and held that the liquid column must be enclosed by the first chamber and cylindrical in shape, as disclosed in the '161 patent. Id. The court, therefore, construed the liquid column limitation as requiring an uninterrupted cylindrical mass of liquid that is constrained by the walls of the first chamber.

Utah Medical argues that "liquid column" is interpreted by those in the art to mean simply a height or continuum of liquid capable of transmitting pressure that does not have to be cylindrical in shape. Even accepting Utah Medical's definition of "liquid column," there can be no infringement because the Koala TM does not contain a liquid column, or an equivalent. A liquid column does not have to be of any particular shape, but it must have a varying pressure throughout its height. This pressure variation is the result of gravity, i.e., the weight of liquid at a lesser depth within the column upon that portion of the liquid at a greater depth within the column. The columns of liquid in a U-tube manometer are examples of liquid columns.

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Because the liquid column of the claimed device is constrained by chamber 1, the pressure at different locations along the liquid column will vary if chamber 1 is inclined so that its distal and proximal ends are at different heights. This would result in erroneous pressure measurements because the liquid at the liquid-air interface would not be at the same pressure as the fluid entering the tip of the catheter. The '161 patent teaches that the volume of bodily fluid entering chamber 1 should be minimized "so as to minimize hydrostatic pressure errors resulting from the liquid column." Col. 5, ll. 26-27. Thus, we agree with Judge Benson, who construed the "liquid column" limitation to require a continuum of liquid constrained by the first chamber.
4. Occlusive Volume

The final disputed term involves the interpretation of the nature of one of the invention's primary teachings, namely, the channels' forming of an occlusive volume. The term arises in both claims 1 and 4. Claim 1 teaches that the channels allow the napkin edges to fold upward "to form an occlusive volume between said napkin and the wearer's body." (6:14-16.) Claim 4 teaches the same, with the addition that the folding mechanism is activated by the thighs of the wearer's body. (6:39-42.) Tyco believes the phrase should mean, "sealing to the user so as to form a space, like a container, that prevents passage of fluid therefrom." K-C argues it should simply mean, "form a space for the accumulation of fluids."

Tyco's reading is based on several sources. First, it begins by noting that the dictionary definition of occlusive includes such synonymous concepts as obstructed, barred, or stopped up to prevent the passage of something. Thus, the occlusive volume should be viewed as a space that "prevents the passage of fluid therefrom." Its use of the word "container" comes from the specification and prosecution history. For example, the specification describes the invention as follows: "This sanitary napkin forms an occlusive container to help reduce the incidence of side leakage." (1:15-16.) And in the prosecution history, the inventors referred to a "fluid receptacle." Thus, the claim term "volume" should be read as meaning a container. Finally, Tyco believes the container must "seal to the user" because the purpose of the invention is to "eliminate leakage," and if the napkin does not seal to the user's body, the invention's occlusive properties are not achieved.

Once again, however, Tyco's proposed alterations seek to interpolate qualities into the claims without a reasonable basis in the evidence. First, Tyco's reliance on the dictionary is unhelpful in view of the relative clarity of the claim terms and the specification themselves. Although the goal of the invention is certainly to "prevent" (i.e., "occlude") the passage of fluids, this does not mean that the goal will universally be achieved. In fact, the specification reveals that the "primary object" of the invention is to "minimize[] the possibility of side staining or side leakage." (2:36-37.) Minimizing leakage is different than "preventing" leakage altogether, and Tyco's definition would fundamentally alter the meaning of the claim term as it is used in the patent. By the same token, there is no basis to read into the claim the limitation that the occlusive volume must "seal" to the user. Tyco's only support for the limitation is found in the general purpose of the invention, which is to occlude fluid; without a seal, Tyco asserts, occlusion will be impossible. But just as with its use of the word "prevent," Tyco's attempt to limit the claims to forming occlusive spaces that "seal" to the body takes the invention a step too far and would import a substantial functional narrowing into the claims without any basis in the evidence. In a perfect embodiment and use of the invention, a seal might conceivably be formed -- but nowhere in the patent or other evidence is there any indication that the edges are to fold up so as to produce a seal. As with "prevent," the word "seal" implies there would never be any leakage, yet the specification itself acknowledges that the invention's goal is merely to minimize leakage. Indeed, as a general principle, one expects that when a paper-based device like the present invention interacts with something so malleable and unpredictable as the human body, there will never be a claim to perfect operation: channels will not always "direct" edges to fold upward, the edges will not always completely "prevent" leakage, and the fluid-occluding volume will not always "seal" to the body. The patent itself teaches none of these properties, and I will accordingly reject Tyco's attempt to append such limitations onto the claims. "Where the function is not recited in the claim itself by the patentee, we do not import such a limitation." Ecolab, 264 F.3d at 1367.

Finally, Tyco believes "volume" should mean "container." For this proposition it has far more support: throughout the specification the inventors refer to a "container" instead of a "volume." For instance, it notes that the "sanitary napkin forms an occlusive container to help reduce the incidence of side leakage." (1:15-16.) The specification also notes that the "prior art has not attempted to develop an occlusive container out of the sanitary napkin to eliminate leakage." (2:29-30.) In describing the most advantageous implementation of the invention, the specification states that the channels allow the "formation of an occlusive container by the sanitary napkin." (2:67-68.) K-C does not appear to object specifically to the word "container" (although it prefers "space"). Whether the area in question is described as a container or a space (or simply a volume), the important point is that there is nothing in the patent that indicates the container or space must seal to the body or to completely prevent passage of fluid.

4. "Form an occlusive volume" means "form a space, or container, for the accumulation of fluids."
A. The first critical issue is the correct construction of the term "form set." According to the trial court's construction, "form set" includes "single-ply" form sets, Paymaster Techs., Inc. v. United States, 54 Fed. Cl. 579, 590 (2002) ("Paymaster I"). The government argues that "form set" must be interpreted to exclude "single-ply" form sets because, it says, the claim language itself recites and the specification discloses more than one "sheet" in every form set described. Paymaster responds that, while claims 1 and 5 recite a form set including three specific "sheets," the plain language of claim 10 allows a form set that includes only one such specific "sheet." Furthermore, it asserts, the written description discloses a form set having only one specific "sheet." We agree with the trial court.

We start with the claim language. Independent claim 10 recites in relevant part:

[a] form set . . . comprising . . . at least one negotiable instrument sheet.

'283 patent, col. 18, ll. 5-12. In contrast, claim 1 recites in relevant part:

[a] form set . . . comprising . . . an upper negotiable instrument sheet . . . , a lower customer receipt sheet, an intermediate voucher sheet . . . , a first transfer medium positioned between said upper negotiable instrument sheet and said intermediate voucher sheet, and a second transfer medium positioned between said lower customer receipt sheet and said intermediate voucher sheet. . .

Id. at col. 16, ll. 25-37. Claim 5 uses the exact same relevant language. Id. at col. 16, l. 60 - col. 17, l. 5.

According to its plain language, claim 10 reads on a form set that includes a negotiable instrument sheet. Under conventional construction of "comprising," a form set as recited in claim 10 may include only one negotiable instrument sheet, so long as it includes another form. See Vehicular Techs. Corp. v. Titan Wheel Int'l, Inc., 212 F.3d 1377, 1383 (Fed. Cir. 2000).

Claims 1 and 5 add the limitation that their form sets must include two specific additional sheets, a lower, customer receipt sheet and an intermediate, voucher sheet. But this limitation cannot mean that the form set of claim 10 must have these same two specific additional sheets. It merely recites that the form set of these two claims will also include these two other specified sheets.

The issue, then, is whether a form set with "at least one negotiable instrument sheet" may be "single-ply." We hold that a form set as recited by all three claims and disclosed in the specification may be single-ply. A "form set" is simply a set of forms, i.e., more than one form. For example, a negotiable instrument sheet may constitute one form, a customer receipt sheet may constitute another form, and a voucher sheet may constitute another form. Together, these forms constitute a form set. Yet each form in a form set does not have to occupy a separate layer, or ply. Rather, multiple forms in a form set may be in a single ply, as perforated, detachable forms. But there must be at least two different forms to constitute a form set.

Every relevant part of the specification accords with this meaning of the term "form set." Indeed, the key to understanding the correct construction of the term "form set" is to apprehend that the summary of the invention describes two different types of form sets: (1) a set of forms with at least one negotiable instrument sheet, and (2) a set of forms with specifically an upper negotiable instrument sheet, a lower customer receipt sheet, an intermediate voucher sheet, and transfer medium sheets positioned between.

The first two paragraphs of the Summary of the Invention describe a form set as recited in claims 1 and 5, a form set with five specific sheets - including the "upper" negotiable sheet, the "lower" customer receipt sheet, the "intermediate" voucher sheet, and the two transfer medium sheets "positioned between" these sheets. '283 patent, col. 2, ll. 10-44. Because the five specific sheets are disclosed as "upper," "lower," and "intermediate," and because the transfer medium sheets are "positioned between" the forms or sheets, id. at col. 16, ll. 40, 43, col. 17, ll. 8, 11, this type of form set has to be multi-ply. This type of form set is the type later disclosed as the preferred embodiment. Id. at col. 4, ll. 15-17.
The third paragraph of the summary of the invention, however, describes a form set as recited in claim 10 - a form set only specifying a negotiable instrument sheet. Id. at col. 2, ll. 52-53. This "negotiable instrument sheet" is not described as an "upper" negotiable instrument sheet. No transfer medium sheets are "positioned between" the negotiable instrument sheet and any other sheet. The additional form in this second type of form set may be part of a single ply. This reading of all three paragraphs of the summary of the invention - and the two different types of form sets that they describe, multi-ply and single-ply - is the key to understanding the meaning of "form set."

It is true that also disclosed in the summary of the invention are form sets with the specific three sheets as described above and their interlayered transfer medium sheets. Id. at col. 2, ll. 12-17. A "multicopy form set" comprised of a "plurality of sheets" is further disclosed in detail in the written description, id. at col. 7, ll. 17-18, but only under the heading "Description of a Preferred Embodiment." It is axiomatic that claims are only rarely, if ever, construed as limited to the preferred embodiment. See, e.g., Johnson Worldwide Assocs., Inc. v. Zebo Corp., 175 F.3d 985, 992 (Fed. Cir. 1999).

Our cases recognize that the specification is the single best guide in construing patent terms, and that language in the specification describing the "present invention" should limit the claims to the invention described. For example, in SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc. 242 F.3d 1337 (Fed. Cir. 2001), the court held that "[t]he characterization of [a particular arrangement] as part of the 'present invention' is strong evidence that the claims should not be read to encompass the opposite structure." Id. at 1343; see Liebel Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 908 (Fed. Cir. 2004). Similarly, in Watts v. XL Systems, Inc., 232 F.3d 877 (Fed. Cir. 2000), the court construed a patent claim limitation stating that two pipes had to be "sealingly connected." Id. at 879. The court determined that the claimed connection was limited to connections with "misaligned taper angles" because the specification stated that "[t]he present invention utilizes [the varying taper angle] feature." Id. at 883 (brackets in original). The court therefore found that the specification "limit[ed] the invention to embodiments with misaligned taper angles." Id. Significantly, these cases are cited with approval in Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

Here, the specification makes clear that a "form set" includes more than one sheet. The first paragraph of the Summary of the Invention states that "[t]he present invention provides a form set for use with an imprinting apparatus for imprinting indicia with dye-based ink on negotiable instruments. The form set includes an upper negotiable instrument sheet . . . a lower customer receipt sheet, and an intermediate voucher sheet . . . ." '283 Patent, col. 2, ll. 12-17 (emphasis added). Contrary to the majority, nothing in paragraph 3 of the Summary of the Invention supports a single sheet construction or undermines the significance of the first paragraph. I Paragraph 3 simply describes a ribbon-based mechanism for imprinting the form set described in the first paragraph. Thus in my view, the "present invention" language in the specification limits the term "form set" in claim 10 to a group of multi-ply sheets.

Paragraph 3 of the Summary of the Invention states:

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Further, in accordance with the present invention, there is provided a form set for use with an apparatus having an imprinting mechanism including a ribbon bearing dye-based ink for imprinting negotiable instruments with characters indicative of the dollar and cents amount for which the negotiable instrument is drawn. . . . The form set comprises at least one negotiable instrument sheet comprised of an absorbing type paper sheet material for absorbing the dye-based ink, whereby when the form set is impacted by the imprinting mechanism of the apparatus, the dye-based ink permeates through the sheet from the printed front surface to the back surface to provide the indicia in mirror image form on the back.


Young also challenges the court's interpretation of claims in the '679 patent, focusing on the following limitation common to all asserted claims:

an elongated hollow body comprising a tubular handle and a tubular extension extending from the handle at one end thereof, the extension having a bore therethrough from the end thereof at the handle to its other end constituting its forward end, the extension having at its forward end a recessed forward end formation defining a forwardly opening recess.

(disputed language emphasized). The district court ruled that the patent equates "forward end formation" with "head" and that the phrase emphasized above "describes a requirement that there must be an aperture at the front of the head." The court thus construed the claims of the '679 patent in the same way as those of the '547 patent, and accordingly granted summary judgment of no literal infringement.

We agree with the district court. Although limitations may not be read into the claims from the specification, claims are to be read in view of the specification of which they are a part. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2D (BNA) 1321, 1329 (Fed. Cir. 1995) (in banc), aff'd, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). The specification that is relevant to claim construction is the specification of the patent in which the claims reside. Here, the district court's construction of the disputed claim language is wholly consistent with the specification of the '679 patent. Furthermore, in Bailey's "Request for Declaration of an Interference" with Kraenzle's application, Bailey stated, in an effort to avoid a finding that he had added new matter to his disclosure by copying Kraenzle's claims, that the disputed claim terms were merely "alternative names" for the elements disclosed in his application (i.e., the application that is common to the '547 patent). See Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572, 1580-81, 40 U.S.P.Q.2D (BNA) 1019, 1024-26 (Fed. Cir. 1996) (relying on patentee's prosecution history to interpret claim where specification provided minimal guidance because claim had been drafted to provoke an interference with a patent owned by accused infringer). The district court correctly decided that the "forward end formation" of the '679 patent is the same as the "head" and that the accused device does not have an aperture in its head as required by the "forward opening recess" limitation. We therefore affirm the district court's grant of summary judgment that the accused device does not literally infringe.

Callicrate's proposed interpretation for this phrase is forming the loop during the process of placing a linear length of bulk ligation material into the tool and where the two ends of the looped linear length of ligation material are free after passage through a crimpable grommet for securing to a tightening structure.

Wadsworth proposes interpreting the language as "forming a loop in a length of ligation material forwardly of a grommet."
Callicrate argues formation of ligation material in a loop means the loop is formed while placing a linear length of ligation material into the tool and that the two ends of the looped linear length of ligation material must be free after passing through the grommet for securing to a tightening structure. Much of Callicrate's argument is based on requirements set forth in the specification.

Wadsworth counters that the language of the claim itself is clear and does not require analyzing the specification. Wadsworth argues the phrase requires only that material be formed in a loop ahead of a grommet that will fasten the ends together. According to Wadsworth, the language does not set forth when the loop needs to be formed or how the ends need to come out.

Wadsworth's argument on this point is strained. First, the language is not as clear as Wadsworth asserts. Without clear language, it is necessary to review the specification, which confirms Callicrate's proposed interpretation. Even if the language is clear, however, that the ends of the ligation material end up behind the grommet is implied. If the ligation material is passed through the grommet and the loop is in front of the grommet, it follows that the ends of the ligation material forming the loop will be behind the grommet.

6. Conclusion

According to the analysis above, the language of Claim 6 is interpreted as follows:

(1) "The formation of ligation material in a loop forwardly of a crimpable grommet" means forming a loop of ligation material during the process of placing a linear length of bulk ligation material into the tool forward of a grommet;

I. The Term "Protrusions Formed"

Claims 1 and 5 of the '969 patent both require "protrusions formed on the closed end of the holder and extending therefrom . . . ." ( '969 Patent Col 5, Ln. 54-55); ( '969 Patent Col 6, Ln. 27-28). U.S. Can argues that the term "protrusions formed" should be construed to include those either "formed to be one piece or to be secured to the holder bottom." (P Mem. 12). In support of this contention, U.S. Can argues that the specification does not expressly limit the protrusions to those that are formed from the same piece as the holder and that "the term 'formed' has the customary and ordinary meaning of 'bring together parts or combine to create (something) . . . .'" (P Mem. 11)(quoting Oxford Dictionary of English). Limited argues that "[a] person of ordinary skill in the art would understand that the candle tin is a stamp-formed can with protrusions or recesses formed in the one piece of sheet metal." (D Resp. 12). The '969 Patent does not discuss in any way the attachment of external protruding feet to the bottom of the candle holder. Therefore, we agree with Limited that the term "protrusions formed" in Claims 1 and 5 means protrusions actually formed from the same piece of sheet metal as the holder, and does not mean protrusions that are attached to the holder. See Wang Lab., Inc. v. America Online, Inc., 197 F.3d 1377, 1383 (Fed. Cir. 1999)(holding that because "the only embodiment described in the [patent at issue's] specification is the character-based protocol, and the claims were correctly interpreted as limited thereto").
requiring the first lumen to be a cavity within rigid, physical cylindrical walls of a tube that is physically attached to the interior catheter wall as depicted by the cross-section of the 161 device in Figure 4 (161 Patent Figure 7). See supra p.7. However, Utah Medical contends that all that Claim 33 requires is a cylindrical tube on the interior of the catheter capable of conveying air pressure from the chamber to the transducer. Utah Medical further argues that just because the tube is "formed along an interior wall" of the catheter does not require that the tube be attach to part of the catheter. The 161 specifications show that the actual design of the 161 device attached the first lumen to the wall of the catheter, stating: "As best illustrated in FIGS. 7 and 8, the first lumen [] is comprised of a cylindrical tube [] which is formed along the interior wall of the catheter . . . ." (161 Specification at Column 10). Figure 7 of the 161 specifications clearly shows that the first lumen is attached to the interior wall of the catheter. However, Utah Medical argues that according to the Federal Circuit, such additional limitations appearing in the specification should not be read into the claim. See Laitram Corp. v. NEC Corp., 163 F.3d 1342, 1347 (Fed. Cir. 1998) (noting the "well-established principle that a court may not import limitations from the written description into the claims"); Electro Med. Sys. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994) (stating that "claims are not to be interpreted by adding limitations appearing only in the specification"). Accordingly, the Court does not look to how the device was actually constructed according to the specification, but rather looks to the language of the claim. The relevant meaning of "form," when used as a verb, is defined as "to give a particular form or shape to; fashion in a particular manner." THE RANDOM HOUSE DICTIONARY OF THE ENGLISH LANGUAGE 752 (2d ed. 1987). "Along" is defined as "through, on, beside, over, or parallel to the length or direction of; from one end to the other of." Id. at 59. Based on the plain meaning of the claim language the Court finds that "formed along" only requires that a circular tube run within the catheter parallel to the interior walls of the catheter. The Koala has an interior tube that transmits air from the air pressure source into the balloon that is within the chamber of the catheter. Utah Medical argues that the Koala tube is in fact a first lumen and this portion of the claim reads literally on the Koala. There is no doubt that the Koala has a lumen that runs within the catheter walls. The Koala's air lumen is an independent tube. Although not attached to the interior wall of the catheter, it does run parallel to the interior walls of the catheter.

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B. DEFENDANT'S SECOND MOTION: THE TROUGH

1. Literal Infringement

a. Scope of the Vaida Patent

The Court looks first to the Vaida patent itself, including the claims, the specifications, and the prosecution history (if in evidence) to define the scope of the patented invention. Vitronics, 90 F.3d at 1582. Independent Claim One and dependent Claim Three of the Vaida patent describe the relevant element of the invention -- i.e., the trough. Claim One relates: "in said closed position, each of said actuated members form a trough which receives any fluid which penetrates said louver assembly." Vaida Patent, p. 6, lines 41-43, Plaintiff's Exhibit 1. Claim Three 16 describes:

A louver assembly in accordance with claim One wherein each of said actuated sections are constructed to form a trough when in said closed position which causes any fluid which penetrates said louver members to flow away from said louver assembly, said trough formed between the actuating section of one louver member and closing section of an adjacent louver member.

Vaida Patent, p. 6, lines 56-60, Plaintiff's Exhibit 1. As used in the Vaida patent, the word "trough" means "a large, long, and usually comparatively shallow open vessel that is often V-shaped in cross-section and used especially to hold water or feed for domestic animals," or "a conduit for water," or "a long and narrow or shallow channel or depression (as between waves or hills)." Webster's Third New International Dictionary (Unabridged) 2453 (1981). Neither party contests the meaning of the word trough, and as with the claims at issue in the first Motion for Summary Judgment, Claims One and Three are plainly understood. The Vaida patent clearly contemplates the formation of a trough, defined on one side by the closing section of one louver and on the other side by the actuating section of the adjacent lower louver member. See Figure # 1. 17 That conclusion is supported by the patent specifications. The Vaida patent's Detailed Discussion of Preferred Embodiment of the Invention contains:

actuating sections . . . constructed to form a trough when in their closed positions. That is, as shown in FIG. 3, each of the
actuating sections 32 cooperates with the closing section 30 of an adjacent louver member 14 to form a substantially V-shaped trough 50 when the louver members 14 are in their closed position.

Vaida Patent, p. 4, lines 31-34, Plaintiff's Exhibit 1. Nothing contained in the intrinsic evidence could support a different definition of the scope of Claim Three of the Vaida patent. 18

Footnotes
16 Henceforth, reference to Claim Three incorporates reference to the relevant section of independent Claim One.
17 In Figure # 1, the trough is labeled 50, the closing section 14, and the actuating section 32.
18 The Plaintiff contests what it considers the Defendant's assertion that the trough described by the Vaida patent is limited to the V-shape described in the preferred embodiment. Although the Court is not certain the Defendant actually makes that assertion, the shape of the trough is not relevant to the Court's holding, and it need not be addressed.

GO BACK

5. "[T]he lens body formed by a process including cast molding using a first polymeric mold section having a surface in a general shape of a negative of the posterior face and a concave outer peripheral surface." Used in '538 patent, claims 1 and 7; '706 patent, claim 13.

CooperVision argues that this term should be construed as "the lens body is formed by a process including cast molding using a polymeric mold section having a surface in a general shape of a negative of an insert tool that has a first surface portion and a convexly curved peripheral edge surface." CIBA proposes "the lens body is formed by a process including cast molding using a first polymeric mold section having a surface in a general shape of a negative of the posterior face of the lens and the entire outer peripheral surface of the first polymeric mold section is curved inward like the inside of a bowl so as to produce a contact lens with a rounded outer peripheral edge surface."

Claim 13 of the '706 patent and claims 1 and 7 of the '538 patent recite a lens that has a rounded edge formed by mold section. The mold section must have a first surface "in the general shape of a negative of the posterior face" of the lens and must have a second, outer peripheral surface that is "concave."

The specification defines a mold with a "concave outer peripheral surface" in terms of the "negative of the back surface tool with a convexly-curved peripheral surface that created the mold." '706 patent, col. 2, ll. 40-52; col. 6, ll. 48-57. For example, it states that "[t]he portion of the back surface tool that forms the lens periphery is convex in form . . . . Correspondingly, the first mold section formed by the tooling insert has a concave outer edge surface."'706 patent, col. 3, ll. 16-20.

As previously discussed, CIBA's definition improperly adds that the outer peripheral edge surface must be "rounded." A contact lens with a rounded edge surface is only a preferred embodiment. See '706 patent, col. 3, ll. 52-53. Additionally, CIBA inserts the word "entire" before "outer peripheral surface," which may seem as if the surface cannot be comprised of small flats closely simulating a continuous curve. There is no basis to import such a limitation from the specification to this claim term.

The court defines this term as follows:

"[T]he lens body formed by a process including cast molding using a first polymeric mold section having a surface in a general shape of a negative of the posterior face and a concave outer peripheral surface" means: the lens body formed by a process including cast molding using a polymeric mold section having a surface in a general shape of a negative of the posterior face of the lens and a concave curved peripheral surface. A concave curve is the negative image of a convex curve. GO BACK
F. "Formed by Cutting"

Claim 1 of the '418 patent describes "a plurality of continuous, parallel channels extending into the thickness dimension of the sheet, the channels being formed by cutting the second surface of the sheet . . . ." Plaintiffs claim that "formed by cutting" means "formed by the act of a person or thing that cuts," while Gore claims that "formed by cutting" means "created using a blade or through die cutting."

The parties agree that the terms "formed" and "created" are synonymous. The specifications of the '418 patent contemplate using a specific material that is "easily cut by a knife or by using die cutting technique." U.S. Patent No. 6,921,418, at 8:44-45. Plaintiffs contend that the phrase "formed by the act of a person or thing that cuts" is consistent with the ordinary meaning of "cutting" based upon the dictionary definition of the term. Although courts attempt to construct patent terms according to ordinary and customary definitions, when patent specifications expressly limit the meaning of general terms, the limitations contained within the patent control. See Wang Labs., Inc. v. Am. Online, Inc., 197 F.3d 1377, 1381-84 (Fed. Cir. 1999). Here, the patent expressly described "cutting" by use of a knife or a die cutter. Although there are other ways to cut material, such as through the use of lasers, the patent only disclosed cutting by a knife or a die cutter. Plaintiffs contend that the limitation on the term "cutting" exists only to differentiate cutting from tube extrusion. Nonetheless, in differentiating cutting from tube extrusion, the inventor specifically limited the term "cutting" to the use of a knife or die cutter. Because the patent specifically identifies two ways to cut the channels in the sheet, the intrinsic evidence shows that the term "cutting" as used in the '418 patent does not carry its ordinary meaning. Therefore, the Court determines that the term "formed by cutting" means "created using a blade or through die cutting."

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Here, the patent expressly describes "cutting" by use of a knife or a die cutter. Although the patent specifically mentions using a knife or die cutting technique, nothing in the language of the claims, the specification, or the prosecution history suggests that these are the only methods that may be used to form the channels. While claims are to be read in light of the specification, limitations are not to be imported into the claims by confining the claims to disclosed embodiments in the specification. See Phillips, 415 F.3d at 1323. Indeed, it is well established that a specification that describes only a single embodiment is insufficient, without more, to limit otherwise broad claim language. Howmedica Osteonics Corp. v. Wright Medical Tech., Inc., 540 F.3d 1337, 1345 (Fed. Cir. 2008). Gore points to nothing more than a single statement describing a particular embodiment in the '418 patent to suggest that the invention is limited to cutting done using a blade or a die. Because there is no disavowal or specific limitation anywhere in the intrinsic evidence, the Court cannot limit read such a limitation into the term "formed by cutting." Therefore, the Court adopts Plaintiffs' proposed construction of "formed by cutting" to mean "formed by the act of a person or thing that cuts."
The critical language of the '561 patent claims "[a] high pressure injection nozzle member formed by liquid phase sintering without imparting external pressure ...." For reasons explained in depth in his report, the magistrate judge recommends that this language be construed as limiting the claimed invention to "nozzles produced by a process known as liquid phase sintering without applying additional pressure during the sintering process." Report and Recommendation, p. 3. This recommendation is clearly correct.

The prosecution history shows that the patentee originally claimed "[a] high pressure injection nozzle member formed of a super hard alloy ..." The critical language "by liquid phase sintering without imparting external pressure" was added by the patentee specifically in order to overcome the patent examiner's objections that the claims as originally submitted were anticipated by two other patents (Timm and Becker). Notwithstanding plaintiff's objections to the magistrate judge's report and recommendation, the added language clearly describes the process by which the nozzles are made. That is, the patentee added this language specifically in order to satisfy the patent examiner's objection, and in order to distinguish the new invention from the prior art. Under these circumstances, the magistrate judge is correct in concluding that the language "by liquid phase sintering without imparting external pressure" serves as a limitation on the claims of the '561 patent.

2) Single Piece of Material

Claim 1 of the '219 patent also requires that the "elongated neck encircling band" be "formed entirely of stiff, flexible, plastic sheet material." Tecnol contends that this language requires that the band be formed out of a single piece of material. Tecnol's argument proceeds in two stages. First, Tecnol contends that the term "band" taken alone describes a single piece of material. Second, Tecnol contends that even if the term "band" includes several pieces joined together, the additional limitation requiring that the band "be formed entirely of stiff, flexible, plastic sheet material" requires the band to be formed out of a single piece of material.

a) "Band"

Tecnol contends that the term "band" defines a single continuous strip of material. [TAB at 20]. The Court finds that the ordinary meaning of "band" is not limited to a single unblemished and uninterrupted piece of material, but also encompasses two or more pieces of material which are joined together to encircle an object. Wristwatch bands, for example, are sometimes made from a single piece of metal, leather, or plastic, but they are also made from pieces of metal, leather, or plastic which are fastened together during manufacture. All are referred to as "bands."

Tecnol does not rely solely upon its understanding of the ordinary meaning of "band", but also argues that the specification of the '219 patent, specifically the portion entitled "Background of the Invention," provides a special definition of "band" that excludes two pieces that are joined together:

Cervical collars are commonly formed of relatively thick material, usually in two pieces which are assembled about a wearer's neck. These collars are too bulky and cumbersome for field use by paramedics. Some attempts have been made to provide cervical collars from stiff flexible sheet material which is cut into an elongated band that is encircled about the wearer's neck. Although rolled edges of leather or plastic foam have been provided on some of these collars as in U.S. Pat. No. 3,075,521 [Grassl], none of these cervical collars adequately provide support and restraint for the wearer's chin.

[PX 520, 1/12-23].

The Court finds that this portion of the specification does not support restricting "band" to exclude two pieces of material joined together. The specification contrasts collars which consist of two separate pieces which must be secured into position by the user (and are not described as "bands") with collars that do not have pieces (and are described as "bands"). A band consisting of two pieces that have been permanently attached during manufacture is not inconsistent with the description of a band contained in the specification, notwithstanding the fact that the specific example of a band disclosed in the specification, U.S. Pat. No. 3,075,521 [Grassl, DX 25], was formed from a single piece of material.

As discussed previously, the Court's construction of the term "band" is not dispositive of the single piece dispute because
the Court must also construe the more crucial "formed entirely" limitation.

b) "Formed Entirely"

Tecnol contends that the claim 1 language requiring that the band be "formed entirely of stiff flexible plastic sheet material" excludes any band which is formed of two pieces of stiff flexible plastic sheet material which are permanently attached, at least where the attachment means does not also consist of stiff flexible plastic sheet material. [TAB at 21]. Tecnol relies upon the '219 patent prosecution history to support its interpretation of "entirely."

In his initial reissue application, Garth attempted to remove many of the band limitations from Claim 1 by claiming only "an elongated neck encircling band." [PX 522 at 13]. The patent examiner initially rejected claim 1, inter alia, as anticipated by Grassl:

Grassl discloses a cervical collar having a neck encircling band (16), a chin support brace (15) with fastening means (24) and collar retention means (18, 17) located on each end of the brace. The limitation of (c) of the claim does not structurally define over the same as disclosed by Grassl. [PX 522 at 27].

In response, Garth submitted a new amendment putting some of the previously deleted band limitations back into claim 1:

(a) a collar formed of an elongated neck encircling band formed entirely of stiff, flexible plastic sheet material;

[PX 522 at 31]. This amended language does more, however, than simply restore some of the previous limitations. Garth added strict language requiring that the band be formed entirely of the requisite material. In his remarks, Garth specifically distinguished claim 1 over Grassl:

The Grassl collar bears no apparent relationship to applicant's collar, and the rejection under 35 USC 102 is thus made on the basis that the rejected claims do not exclude the Grassl collar. Claim 1, however, includes the following recitations which are not present in the Grassl collar:

(1) "formed entirely of" (lines 1, 5 and 7);
(2) "conically convex chin rest" (line 16); and
(3) "having a generally C-shape" (lines 8 and 9).

Perhaps the most apparently distinguishing of the aforementioned recitations are those which limit the band and the chin support brace of the collar to being formed entirely of stiff, flexible plastic sheet material. This clearly is not present in Grassl, as the tubular elements of formed of soft material which is padded with foam rubber. The foam rubber in Grassl tubular elements 13 and 14 is necessary not simply for comfort of the patient, but is necessary for structural shape and support of the soft material. in contrast, applicant's claims cover a collar in which the structural elements are formed entirely of the recited stiff, plastic sheet material, but in which nonstructural padding such as foam strip 21 can be optionally included.

[PX 522 at 34-35 (text uncorrected)]. Through these remarks, Garth emphasized the importance of the "entirely" limitation. Following this explanation, the examiner rejected claim 1 as indefinite, but found that providing some wording changes were made, which are not important to the present issue, "the claims appear to be allowable over the art of record," and further stated "Applicant's arguments regarding the claimed limitations of Claim 1 are persuasive." [Id. at 41].

In the portion of the prosecution history quoted above, Garth argued that the "claims cover a collar in which the structural elements are formed entirely of the recited stiff, plastic sheet material." Tecnol contends that whatever means are used to connect the pieces of a multiple-piece band constitute "structural elements," and therefore the claims require that any such fastening must also be formed entirely of stiff, flexible plastic sheet material.

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In response, CalMed makes two arguments.

First, CalMed contends that a band that is made entirely out of one piece of material does not cease being made "entirely" out of that material if the band is cut into two pieces and the two pieces are then reattached. At trial, CalMed demonstrated its point using the clear piece of stiff flexible sheet material found in the collar of a man's shirt when it is first removed from its packaging. [PX 565]. All parties agreed that this material, when formed into a band, was made "entirely" from flexible sheet material. All parties agreed that this band was still made "entirely" from flexible sheet material if a sticker was placed upon the band, or if a metal staple was put through the band. The parties disagreed on how to describe the band, however, once counsel for CalMed cut the band in half and then reattached the two pieces with a metal staple. Tecnol's expert, Preston, opined that the band was then no longer formed entirely out of stiff flexible sheet material because "now you are lending structure" with the metal staple. [Preston Tr. at 1870].

The Court finds that Tecnol's construction of the "entirely" limitation is correct. Taken in its ordinary meaning, "entirely" implies that all pieces of the band are to be formed out of stiff, flexible plastic sheet material. Garth's comments during the prosecution of the reissue application clarify and do not alter this basic understanding of "entirely." Garth stated that the band's "structural elements" must be formed entirely out of the requisite material, as opposed to "nonstructural" elements such as foam padding provided for comfort, which do not. [PX 522 at 35]. The claims require, therefore, that any element of an accused band which is properly described as a "structural element" must be formed entirely out of stiff, flexible plastic sheet material.

2. "An opening formed in the abutment portion of the projection is in communication with an aperture framed in a side wall of the offset power box adjacent the duct."

HellermannTyton breaks the above clause into disputed phrases two ["... abutment portion"], three ["aperture formed in a side wall"] and four ["opening... is in communication with an aperture"]). However, for purposes of judicial efficiency, the Court finds that it makes more sense to discuss phrases two and three together.

Panduit asks the Court to define the "opening formed in the abutment portion" as an "open area made within the cross-section of the projection at its end portion." Linguistically, this is nearly identical to HellermannTyton's preferred reading, in which the phrase means "the abutment portion must have a void space within its limits." However, although similar in wording, the two parties place different conditions and limitations on the phrase. The Court discusses these disagreements in claim construction below.

Panduit and HellermannTyton clash as to whether the "opening" is located in the "abutment portion" or the "projection at its end portion." Panduit argues that the phrase "opening formed in the abutment portion of the projection" really means "open area made within the cross-section of the projection at its end portion." Panduit states that this construction is "made clear in the specification," but does little else to support its construction. In contrast, HellermannTyton notes that earlier the patent described the "abutment portion" as "depending from a farthest extent of the top portion." HellermannTyton defines (and Panduit offers no counter-definition) "depends" as "hang down, be suspended from." From this HellermannTyton concludes that the abutment portion must hang down from the farthest extent of the top portion. In doing so, HellermannTyton argues that the '732 Patent distinguishes between the effective end portion of the projection, and the abutment portion of this projection. This Court agrees with HellermannTyton. The patent clearly requires an opening in the "abutment portion," which is an area that hangs down or descends from the farthest point of the top surface of the projection. Accordingly, the opening must be in the descended portion, and cannot be in the top portion's end portion.

The parties also spar over the definitions of "in" and "formed in." Technically, HellermannTyton contests these definitions only with respect to the "aperture" and not as to the "opening." However, given the general rule that a claim means the same thing each time in a given patent, the Court infers that HellermannTyton believes its definitions should apply to the entirety of Claim 1.

To begin, HellermannTyton's claim construction places several limits on "in" that Panduit mostly does not contest. Specifically, HellermannTyton argues that "In' does not mean 'on,' 'in' does not mean 'near,' 'in' does not mean 'over,' 'in' does
not mean 'above,' 'in does not mean 'behind.'" HellermannTyton thus asks the Court to define "in" as "within the limits." With respect to the definition of "in," Panduit specifically disputes only HellermannTyton's contention that "'in' does not mean 'on'
- correctly noting that the Shorter Oxford English Dictionary lists "on" as one possible definition (Panduit also disputes that "in' does not mean 'above'") but provides no support for its assertion). This leads Panduit to argue for the broader definition of "in" as "with reference to." However, although Panduit correctly notes that "on" is indeed a possible definition of "in," it is certainly not a common or typical one. For example, if Dick told Jane to look for a pen on the desk, he would be asking her to look on the top of the desk. Conversely, if Dick asked Jane to look inside a desk drawer. Here too, the specifications and diagrams clearly show an opening/aperture in the abutment portion/side wall, and not on the abutment portion/side wall. The Court therefore accepts HellermannTyton's above listed limitations on the definition of "in."

Although not generally objecting to HellermannTyton's limitations on "in," Panduit does argue for a specific definition of the term "formed in." Panduit argues that the term "formed in" requires merely that the opening and aperture consist of "open space." In Panduit's view, these terms do not demand that this open space take any particular shape or form. Conversely, in connection to the aperture, HellermannTyton contends that the term "formed in" requires a hole bounded by something on all sides, as that is the only type of void space that "completely resides within the limits or boundaries of the side wall." However, none of HellermannTyton's provided dictionary definitions state that "in" means "completely resides within the limits." Indeed, the preferred specification of the "opening" shows that the "opening formed in the abutment portion" does not "completely reside within" the abutment portion. Rather, the opening is bounded by the abutment portion on the right, left, and top -- but not on the bottom. The Court infers from this that although the aperture and opening both require open space, the open space does not need to take any particular shape or form. It could indeed be completely encircled -- such as the void space contained within a square, like so -- "
[...] Alternatively, it could be bounded on multiple sides, with one empty side -- as in the English letters "U" or "C" or the Hebrew letters "[SEE ILLUSTRATION IN ORIGINAL]" or "[SEE ILLUSTRATION IN ORIGINAL]." The Court uses these analogies because its limited word processing capabilities do not enable it to copy the elaborate graphs found in the parties' briefs. Therefore, the Court mostly agrees with HellermannTyton that "formed in" means "formed within," but disagrees that it requires something that "completely resides within."

However, just because the opening and aperture is not limited to a specific configuration, e.g., a square, does not mean that the "732 Patent grants Panduit unlimited breadth in defining its scope. In particular, the Court takes issue with one portion of Panduit's proposed construction of an "aperture formed in a side wall." Panduit contends that the aperture can "extend the full height and width of the offset power box" (emphasis in original). In doing so, Panduit states that the "open side wall area would occupy the entire side wall area . . . there would be no solid side wall area." Panduit reaches its construction by noting that in the description of the preferred embodiment, "the longitudinal extent of the aperture 82 may be as large as the distance between the two alignment bosses 76 depending on the application." However, Panduit fails to acknowledge, as HellermannTyton points out, that the description also states that "the box side wall 40 also has an aperture 82 formed therein." This is consistent with the actual claim language, in which the aperture is "formed in a side wall." If, as Panduit claims, the aperture can consist of the entire side wall area, then there would be no "side wall" in which the aperture could be "formed in." Therefore, while the Court agrees with Panduit that the aperture and opening need not take any specific shape, they clearly cannot be so expansive so that they cease to be "formed in" something else -- namely, something solid. The '732 Patent, by stating that the opening is "formed in the abutment portion" and that the aperture is "formed in a side wall," by the necessity of plain English requires both a solid abutment portion and a solid side wall to exist. Still, Panduit's argument that the patent grants flexibility as to the longitudinal extent of the aperture has merit. Therefore, the Court finds that while the aperture and opening cannot be so wide that the corresponding abutment portion or side wall ceases to exist, the '732 Patent nevertheless permits substantial leniency in how wide or narrow the opening or aperture must be.

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The system is recited in claim 1, which is representative of the claims on appeal. At issue are the structural limitations of the offset power box, which are highlighted below.

1. A modular raceway outlet station for use with a trunking duct which has a divider wall and a top access opening comprising:
an offset power box having, a projection extending laterally from a top wall of the offset power box having a top portion and an abutment portion depending from a furthest extent of the top portion adapted to be disposed substantially aligned with an adjacent edge of the top access opening; and

an opening formed in the abutment portion of the projection is in communication with an aperture formed in a side wall of the offset powerbox adjacent the duct; and

a communication extension adapted to be disposed over the duct top access opening having,

an abutment surface depending from a top surface of the extension adapted to be disposed flush against the abutment portion of the projection;

a routing notch formed in the abutment surface and

a guide wall depending from the extension interiorly adjacent the routing notch, adapted to be substantially vertically aligned with a divider wall,

wherein power conductors may be routed out of and over the duct, through the routing notch, and opening, and into the offset power box before installation of the extension, such that the power conductors are isolated from communication conductors when the extension is installed.

'732 patent, col. 7, ll. 14-41 (emphasis added).

*   *   *

With respect to the "opening" limitation, the district court stated in its summary judgment opinion that "the opening must be in the descended portion [of the abutment portion], and cannot be in the top portion's end portion." The court also concluded that the limitation requires a solid abutment portion and solid side wall; and that "while the '732 Patent permits substantial leniency in how wide or narrow the opening must be, the term 'formed in' means that 'the aperture and opening cannot be so wide such that the corresponding abutment portion or side wall ceases to exist.'" Although in its claim construction order the district court held that the opening need not be bounded on all sides (including the top), in analyzing the accused product, the district court held that "the open space identified by Plaintiff clearly does not descend or hang down from any structure, and is not 'formed in' the projection's abutment portion as construed."

Panduit argues that the claims do not require that the opening descend or hang down from any structure and that the district court improperly imported this limitation from the preferred embodiment, in which the opening is bounded at the top. Specifically, Panduit argues that we must construe "formed in" consistently throughout the specification, that "formed in" means "made within a cross-section of" or "created within an exterior surface or dimension of," and that nothing requires the opening to be bounded at its top. Panduit asserts that the opening in the accused device is bounded by the two "[SEE CHARACTER]"-shaped surfaces and the horizontal section, or between the inner legs of the two "[SEE CHARACTER]"-shaped surfaces.

Citing the preferred embodiment, HellermannTyton counters that the opening must hang off of the top portion of the projection because it must be in the abutment portion of the projection, which itself must hang. HellermannTyton asserts that what Panduit refers to as an opening is not in a hanging portion of the structure because there is nothing from which the abutment portion hangs. Moreover, HellermannTyton argues that because the horizontal structure and two "[SEE CHARACTER]"-shaped surfaces are not co-planar, there is no "opening formed in" the abutment.

In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence. See Phillips, 415 F.3d at 1312-17. Here, the "opening" limitation is defined by two recitations in the claim language. First, the opening must be formed in an abutment portion of the projection. To be "formed in" an abutment portion of the projection requires us to determine the location of an abutment portion. According to the claim, an abutment portion is located to "depend[] from the furthest extent of the top portion" of the projection. See '732 patent, col. 7, ll. 19-21. Although Panduit challenges what constitutes an abutment portion, it does not dispute that to depend from the top portion, an abutment portion must hang.
down or descend from such top portion. We agree. Therefore, to be "formed in" an abutment portion, the opening must be formed in an area that hangs down -- i.e., extends downward -- from a top portion of the projection. Second, the claim language requires that the opening be "in communication" with an aperture formed in the side wall. We agree with the district court -- and the parties do not dispute -- that "in communication" simply requires a passage through which wires may be routed.

This construction is consistent with the written description, which describes "an opening formed in the abutment portion of the projection which is in communication with an aperture formed in a side wall" and an abutment portion "which depends from the furthest extent of the top portion." '732 patent, col. 2, ll. 30-36. Although in the preferred embodiment depicted in Figure 4, the aperture 82 formed in the side wall 40 is not bounded at the top, this does not suggest that the opening 80 formed in the abutment portion 74 does not require a top portion. See '732 patent, col. 4, ll. 46-52. An "abutment portion," unlike a "side wall," is described consistently by both the claim language and the written description as depending -- i.e., extending downward -- from a top portion of the projection. '732 patent, col. 2, ll. 30-31, col. 7, ll. 19-21. To be "formed in" an area that extends downward from a top portion of the projection necessarily requires that the opening be bounded at top. The prosecution history is consistent with this interpretation and provides no further guidance.

For the foregoing reasons, we conclude that the "opening" must be formed in an area that extends downward from a top portion of the projection and must provide a passage through which wires may pass.

c. "said duct formed inside the caliper body"

The claim language states that the duct is "formed inside the caliper body." Brembo construes this phrase to mean that the duct is built at least partially within the caliper body. Alcon argues that the proper construction is that the duct is surrounded entirely along its length by the caliper body.

For the reasons stated in the previous section, the Court rejects Alcon's definition to the extent it requires the duct to have openings only at either end. Alcon's contention, however, is also that the duct must be entirely within the caliper body. This is consistent with the ordinary meaning of the phrase "formed inside." The ordinary meaning of "inside" is "within the boundaries of." Webster's Third New Int'l Dictionary at 1169. Another relevant source defines inside as "situated within the confines of (something): he fitted a light inside the cupboard," The New Oxford American Dictionary at 878 (1st ed. 2001), with "within" meaning "inside (something)," id. at 1938, and "confines" denoting "the borders or boundaries of a place." Id. at 360.

Brembo argues that the ordinary meaning of the term "inside" does not require the duct to be entirely within the caliper body. By way of example, Brembo says that ",[a] person can be 'inside' a pool even though their head protrudes above the top surface of the pool." Pl. Reply Mem. at 13. The Court does not find Brembo's example helpful, as a swimming pool is not an enclosed structure. A more pertinent example is the reference to a cupboard used in The New Oxford American Dictionary. An object ordinarily would not be considered to be "inside" a cupboard if it were partly sticking out of the cupboard. Similarly, an object is not "inside" a room if it is partly outside the room.

Brembo argues that Alcon's proposed definition excludes the preferred embodiment of the invention disclosed in the specification. Brembo contends that the duct referenced in the claim includes several ducts described in the preferred embodiment, some of which are outside the caliper body. The first is duct 19, which is in fact within the caliper body (the quoted passages include numeric references which correspond to one or more of the diagrams in the patent):

The duct 19 has a first portion 25 in the form of a hole extending in an end portion 27 of the central bridge 12 disposed adjacent the hub-side elongate element 8, as well as a second portion 26 extending along and inside a central portion of the central bridge …

'766 patent, col. 3, lines 1-5. The specification also refers to other ducts that are located within the "diffuser bodies" that, according the specification, distribute the cooling air onto the radiator elements:
The outlet openings 21 and 22 preferably comprise respective diffuser bodies 37 and 38 which are substantially fan-shaped and are fixed to the elongate elements 8 and 9 by means of respective pairs of screws 37a and 38a. These diffuser bodies 37 and 38, which are made of aluminum alloy, have respective inlet openings 39 and 40 for the supply of cooling air.

In particular, respective ducts 41 and 42 formed in the diffuser bodies 37 and 38 extend respectively, from the inlet openings 39 and 40 and branch, respectively, into three ducts 13c, 14c and 15c opening from the outlet openings 13b, 14b and 15b directly on the radiator elements 13a, 14a and 15a, and into three ducts 16c, 17c and 18c opening from the outlet openings, 16b, 17b and 18b directly onto the radiator elements 16a, 17a and 18a.

It should be noted that each diffuser body 38, 38 is in the form of a half-shell in which the ducts are formed as channels. When each diffuser body 37, 38 is fixed by the screws 37a, 38a to the respective elongate element 8,9 in a position against the internal surfaces 8a, 9a, the half-shell and hence also its channels, are covered by the elongate body.

Id., col. 3, lines 18-24, 29-43. The diffuser bodies are not, it appears, within the central bridge or the caliper body; the passage quoted above says they are "fixed to" the caliper body's elongate elements by means of screws. Accordingly, Brembo argues, if "inside the caliper body" is construed as meaning these ducts must be entirely inside the caliper body, the preferred embodiment would be excluded. A construction excluding the preferred embodiment is presumed to be improper.

Vitronics, 90 F.3d at 1583.

1 The central bridge is also relevant to the construction of "inside" because claims three, four, nine, ten, and thirteen make reference to a "duct formed inside the central bridge."

2 Brembo also asserts that "inside" cannot mean "entirely inside" because duct 19 has a connector which extends it outside the caliper body. The specification states that "the inlet opening 20 preferably has a connector 23 for the connection of the duct 19 to a cooling-air feed pipe 24, for example, for air coming from a suitable air-intake of the motor-vehicle." '766 patent, col. 2, lines 64-67. This statement from the specification, however, describes a connector outside of the caliper body, not the duct.

Alcon claims that the ducts within the diffuser bodies cited by Brembo are not the duct referenced in the disputed claim language. Alcon cites the following portions of the specification:

The outlet openings 21 and 22 preferably comprise respective diffuser bodies 37 and 38 which are substantially fan-shaped and are fixed to the elongate elements 8 and 9 by means of respective pairs of screws 37a and 38a. These diffuser bodies 37 and 38, which are made of aluminum alloy, have respective inlet openings 39 and 40 for the supply of cooling air. The diffuser bodies 37 and 38 have, respectively, three outlet openings 13b, 14b and 15b, spread out like a fan and three outlet openings 16b, 17b and 18b also spread out like a fan, all directly facing and close to the respective radiator elements.

... In operation, the cooling air coming from an air intake of the motor vehicle passes through the pipe 24, reaches and passes through the duct 19 until it reaches the diffuser bodies 37, 38 and the outlet openings. The cooling air emerges from these and passes directly over the radiator elements.

'766 patent, col. 3, lines 18-28, 44-49 (emphasis added). Alcon argues that the outlet openings, of which the diffuser bodies (and thus the ducts within those bodies) are a part, are not part of the duct referenced in the disputed claim language.

The claim language and its context and the other intrinsic evidence indicates that Alcon's interpretation of "inside" is the correct one. First, the claim states that the disk brake contains a duct for the passage of cooling air, not multiple ducts. Second, the specification makes it clear that duct 19 is the duct referenced in the claim as being used for the passage of cooling air.
The disk brake 1 according to the present invention comprises a duct 19 provided for the passage of cooling air for cooling the radiator elements 13a-18a, the duct 19 being formed inside the caliper body.

Id., col. 2, lines 53-57 (emphasis added). Finally, the specification consistently refers to duct 19 as "the duct." For example, it states, as cited above, that "the cooling air coming from an air intake of the motor vehicle passes through the pipe 24, reaches and passes through the duct 19 until it reaches the diffuser bodies 37, 38 and the outlet openings." Id., col. 3, lines 44-47 (emphasis added).

Thus, the claim language, the specification, and the drawings support Alcon's position that the duct is entirely within the caliper body. The Court construes "inside" as meaning "entirely within."

The parties also disagree over the meaning of "formed" in the phrase "formed inside." Brembo urges that the definition of formed is "built." Alcon construes "to form" as "to give form or shape to" or "to give a particular shape to." Alcon's definition is consistent with the dictionary definition of the term, see Webster's Third New Int'l Dictionary at 893, and Brembo's is not. Specifically, there is no support in the dictionary or the intrinsic evidence for reading "formed" to mean "built." The only support Brembo provides for its proposed construction is expert testimony. Brembo's expert states that a person of ordinary skill in the art would understand form to mean "build through known manufacturing techniques." Pl. Ex. G, Declaration of Albert V. Karvelis P 31. The expert does not explain to the Court why this is so. We cannot rely on expert testimony for the proper construction of a claim term when its meaning is discernable from the intrinsic record, Vitronics, 90 F.3d at 1585, which is the case here. The Court therefore adopts Alcon's proposed definition; "formed" means "given form or shape by."

The parties also dispute the meaning of "formed inside" in the context of claims three, four, nine, ten, and seventeen, which state that the duct is "formed inside the central bridge." Neither side contends, however, that the phrase has a different meaning when referring to the central bridge than it does when referring to the caliper body. Thus, "formed inside" in claims one, three, four, nine, ten, and seventeen is construed to mean that the duct is entirely within, and given form or shape by, the central bridge.

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4. Claim 6

Both parties seek construction of the following highlighted term of Claim 6: "Apparatus as claimed in claim 1 wherein the nozzle is formed integrally with the housing." ('886 patent, col. 4, ll. 26-27.) Rose Art construes this term as describing "a nozzle that is molded such that 'the housing' and 'the nozzle' are one piece." (Def.'s Pre-Markman Br. at 32.) P&M agrees that this is the correct construction of the term, as long as the construction is not limited to a nozzle and housing which are "formed in a 'mold' or 'molded together.'" (Pls. Supp. Mem. at 17.) Accordingly, the Court construes the term "is formed integrally with" in claim 6 to describe "a nozzle that is constructed such that the housing and the nozzle are one piece." Since the entirety of the intrinsic evidence with regard to this term is not ambiguous, the Court did not consider the extrinsic evidence submitted by Rose Art with respect to this term.

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The Court held a Markman hearing and subsequently issued a Memorandum opinion (Docket No. 138) in which the Court construed the disputed claim terms of the '981 Patent and the '306 Patent. At issued were the following claim terms of the '981 Patent and the '306 Patent: 1) "Frame"; 2) "Formed Integrally Within"; 3) "Integrally Formed Within"; 4) "Integrally Formed With"; 5) "Including"; 6) "Attached"; and 7) "Manifold". The Court construed the terms as follows:

"Frame": "the underlying structure of the cone crusher to which other constituent parts may be fitted, attached or integrated."
Claim 1 of the '516 patent reads, in relevant part:

A forming roller for use with a heated thermoplastic film as brought to this forming roll and when in contact with an outer diameter surface portion of said roller is vacuum-shaped and cooled to bring this heated film to a condition whereat said film is weldable to another film, this roller including:

* * *

(b) a central axial bore formed in this metal roller and having a precise size and with a counterbore formed in each end of the roller and substantially concentric with the axial bore;

* * *

(d) a multiplicity of fluid-conducting passageways formed longitudinally and substantially parallel to the axis of said roll, each of these passageways open at each end to a counterbore; . . .

'516 patent at col. 5, l. 20 - col. 6, l. 15 (emphases added). Independent claim 10 was also at issue. Limitation (b) of claim 10 reads: "a central axial bore formed in this metal roller and having a precise size." '516 patent at col. 6, ll. 65-66 (emphasis added). Other than this limitation, the district court found claims 1 and 10 similar in all respects.

On May 3, 2001, the district court granted Caputo personal access to review the March 30, 2001 opinion, even though the opinion contained restricted confidential information. Based upon this review, Caputo filed a motion for reconsideration on March 6, 2002, approximately eleven months after the March 30, 2001 opinion. The court issued a second opinion on August 8, 2002 addressing various motions from both parties. The court dismissed Caputo's motion for reconsideration as untimely and denied both parties' motions for sanctions and attorney's fees. The court also reprimanded Caputo for retaining an unredacted copy of a page from Sealed Air's brief in support of its motion for summary judgment (in violation of the protective order), but nevertheless, declined to impose sanctions. Final judgment was entered on September 3, 2002. Caputo appealed to this court and we have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

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1 From approximately this time until the present, Caputo has been arguing this case pro se.

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DISCUSSION

Our review of a grant of summary judgment of patent infringement or noninfringement is plenary. Cole v. Kimberly-Clark Corp., 102 F.3d 524, 528, 41 USPQ2d 1001, 1004 (Fed. Cir. 1996). We first determine whether "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Unidynamics Corp. v. Automatic Prods. Int'l, Ltd., 157 F.3d 1311, 1316, 48 USPQ2d 1099, 1102 (Fed. Cir. 1998) (quoting Fed. R. Civ. P. 56(c)). "In
determining whether there is a genuine issue of material fact, the evidence must be viewed in the light most favorable to the party opposing the motion, with doubts resolved in favor of the opponent.” Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1307, 46 USPQ2d 1752, 1755 (Fed. Cir. 1998). "Claim construction, as a purely legal issue, is subject to de novo review on appeal.” Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1451, 46 USPQ2d 1169, 1171 (Fed. Cir. 1998) (en banc).

On appeal, Caputo alleges a host of errors by the district court. They can be reduced to the following: (1) Sealed Air continues to infringe the '516 patent, as evidenced by the district court's April 4, 2001 opinion; (2) the district court improperly granted trade secret status to Sealed Air's roller; (3) Sealed Air offered misleading evidence, testimony, and argument; and (4) the burden to prove that the bubble wrap produced by Sealed Air does not use Caputo's patented process shifts to Sealed Air under 35 U.S.C. § 295.


The district court properly construed limitation (b) to mean that the forming roller requires "a counterbore formed in each end of the roller and substantially concentric with the axial bore." The court noted that these counterbores provided a reservoir for fluid that passes through limitation (d). The district court construed limitation (d) to mean that "within the roller is another set of longitudinally formed water-conducting passageways that run substantially parallel to [the] axis of the roller." The district court noted that at least one purpose of these passageways was to control temperature along the roller during operation. We find both these constructions to be correct.

1. Claim Construction

The Federal Circuit has set forth a two-step analysis for determining whether there is infringement under either theory:

First, the claims must be correctly construed to determine the scope of the claims. Second, the claims must be compared to the accused device.

Kahn, 135 F.3d at 1476. Claim interpretation is a question of law. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). Courts are directed to consider three sources to ascertain the meaning of a claim: (1) the literal language of the claim; (2) the patent specification; and (3) the prosecution history. Claim construction always begins with the claim language, which defines the scope of the claim. See York Prods., Inc. v. Central Tractor Farm & Family Ctr, 99 F.3d 1568, 1572 (Fed. Cir. 1996). In analyzing claim language, the court must employ "normal rules of syntax," Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1553 (Fed. Cir. 1997), for "[a] claim must be read in accordance with the precepts of English grammar." In re Hyatt, 708 F.2d 712, 714 (Fed. Cir. 1983). When interpreting the words of the claim, the court should "ascribe [to the words] their ordinary meaning unless it appears the inventor used them otherwise." Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed. Cir. 1995). In addition, the words must be construed in the light of the specification, whose "description may act as a sort of dictionary, which explains the invention and may define terms used in the claims." Markman, 52 F.3d at 979; see also Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996).

The last source of intrinsic evidence relevant to claim interpretation is the prosecution history of the patent, as it constitutes an "undisputed public" expression of what the patentee understood in terms of claim construction. Markman, 52 F.3d at 980.
The court, in its discretion, may consider extrinsic evidence "to assist in its construction of the written document." Id. at 981. However, neither the prosecution history nor any extrinsic evidence can "enlarge, diminish, or vary" the limitation in the claims. Id. at 980.

Plaintiffs assert that defendant's modified device infringes claim 1 of the '297 patent. This independent claim is an apparatus claim and describes an obturator body consisting of

an elongated slender body having a proximal end and a distal end, the body having a handle portion at said proximal end, the body having a shaft portion from the handle portion to said distal end, such shaft portion being dimensioned so that the portion thereof adjacent said distal end may be received in an endodontically prepared root canal and such portion has a surface adapted to receive filler material thereon;

a plurality of integral spaced apart length indicators formed on the exterior surface of said body shaft portion between said handle portion and said portion adjacent said distal end to be received in an endodontically prepared root canal, the indicators serving to indicate the length of said shaft portion to said distal end; and canal filler material formed on said body shaft portion adjacent said distal end leaving at least a substantial portion of said length indicators visually exposed.


The emphasized language denotes the only disputed claim element, that of "a plurality of integral spaced apart length indicators formed on the exterior surface of said body shaft portion . . . ." According to the '297 patent, the length indicators allow the practitioner to

insert the obturator with the filler material thereon in the prepared canal to the proper depth as indicated by markers on the obturator body shaft portion, assuring complete filling of the root canal.

(D.I. 20, Ex. B col. 2, lns. 35-39; see also D.I. 20, Ex. B col. 4, lns. 9-14, 17-20) 8 Complete filling and, thus, entombment of any remaining pupal material and contaminants, is essential to the success of endodontic therapy. (D.I. 20, Ex. B col. 1, lns. 23-26)

7 The parties apparently agree that defendant's obturator is "an elongated slender body," despite the fact that it is comprised of two separate pieces.

8 Prior to obturation, the length of the root canal is determined by insertion of a "verifier." If an x-ray of the tooth reveals that the verifier has been inserted all the way to the apex, the verifier is removed and the length of the canal determined from the length of the inserted portion of the verifier. (D.I. 20, Ex. B col. 2, lns. 20-30)

Claim 1 of the '297 patent requires "a plurality of integral spaced apart length indicators formed on the exterior surface of said body shaft portion." (D.I. 20, Ex. B col. 5, lns. 26-28) (emphasis added). The specification further provides that the length indicators be "integral formed on [the] shaft portion." (D.I. 20, Ex. B col. 3, ln. 33) (emphasis added). Likewise, the prosecution history speaks of "a plurality of length indicators formed on the exterior surface of the shaft between the handle portion and the portion adjacent the distal end to be received in a root canal." 9 (D.I. 24 Ex. A5 at 4) (emphasis added). "Formed" is defined as "to give form or shape to" or "to give a particular shape to: shape, mold, or fashion into a certain shape or condition or after a particular model." Webster's Third New Int'l Dictionary 893 (1971). Thus, the exterior surface of the body shaft must be "given a particular shape" for a particular purpose, i.e., to indicate length. By this construction, therefore, the mere presence of a physical feature on the exterior surface of the body shaft does not necessarily mean that the feature was "formed" or "given a particular shape" in order to indicate length.

9 Initially, claim 1 of the '297 patent was rejected in light of United States Patent No. 3,919,774 ("the '774 patent") because
the prior art patent "shows an obturator body 18 having a plurality of indicators." (D.I. 24, Ex. A4 at 3) The '774 patent stated in pertinent part:

Additionally, the indentations or projections could be located to form a graduation of the post for its utilization as a depth gauge. Also, numerical values could be applied for calibration in accordance with depth for facilitating proper placement of the sealer element.

(D.I. 23, Ex. A col. 4, lns. 11-16)

In the present case, the limitation of claim 1, and the dependent claim 3, require that "the opposite face of the [toothbrush's] head have at least one groove formed therein." (U.S. Patent # 5,651,158 Abstract at col. 1 ln. 63-64). In simpler terms, the limitation is that the side of the toothbrush head opposite the bristle-bearing face must have a groove. Smithkline contends that because the Colgate NAVIGATOR TM "retains two semicircular cut-outs at the edges of [its bristle-side] groove that allows that groove to be filled [with an] elastomer," the NAVIGATOR TM groove is "'formed' at least in part in the non-bristle side of the brush" and, therefore, literally infringes the '158 patent. (Smithkline Opp'n Br. to Colgate Mot. for Summ. J. of Non-Infringement, at 38.)

There are two reasons why Smithkline's argument fails. First, the '158 patent specifically and unambiguously gives Smithkline the patent right over toothbrushes whose "opposite face" has "at least one groove formed therein." (U.S. Patent # 5,651,158 Abstract at col. 1 ln. 63-64). The plain meaning of the term "groove" is a "long narrow channel or depression." Webster's Ninth New Collegiate Dictionary 538 (1988). Moreover, the deposition testimony of the Smithkline patent attorney, Dr. Walker, who drafted the '158 patent confirms that the nomenclature "groove" refers to a "space or a gap" with a bottom that does not penetrate both faces of the brush's head. (Walker Dep. at 176-77.) Such a channel or depression is not present on the "opposite face" of the NA VIGATOR TM product. The Colgate toothbrush has two furrows which could qualify as "grooves." However, these channels are conspicuously on the same side of the head as the bristles.

Second, a plain reading of the '158 patent limitation of an "opposite face" groove "formed therein," necessarily requires that such a groove must be "in" the specified face. So, a "groove" that is, as Smithkline argues, "formed" during the manufacturing process but that is distinctly absent in the final product is not a "groove formed therein" under the unambiguous language of the '158 patent. The proposed Smithkline construction is completely inconsistent with the plainly expressed limitation of the patent. Such a reading would emphasize the "formed" language of the patent and wrongly imply that Smithkline had patented a toothbrush groove production process. Instead, the limitation of the '158 properly focuses on the finished product's groove location -- "opposite face" -- and groove characteristics -- "formed therein." Because the "opposite face" claim limitation is not present in the NAVIGATOR TM product, there is no literal infringement of the '158 patent. Accordingly, summary judgment is granted in favor of Colgate on Smithkline's literal infringement claim.
"notably long in comparison to its width." Id. at 737. 7 Claim 25 of the '417 patent requires that each tubular member have a wall surface with a "plurality of slots formed therein . . . " The word "wall" is defined as "the external layer of structural material surrounding an object." Id. at 2572. The word "surface" is defined as "the exterior or outside of an object or body . . . ." Id. at 2300. A "slot" is "a long and narrow opening or groove." Id. at 2146; accord '762 patent, col. 7, lns. 17-20. 8 To "form" is "to give a particular shape to." Webster's at 893. "Therein" means "in or into that thing." Id. at 2372.


8 "Use of the term 'slot' encompasses an opening whose length is substantially greater than its width, such as an elongated oval opening."

Cordis maintains that a "tubular member" is a "basic 'building block' of the slotted tube invention," that is, "a tubular member the length of a half-slot with alternating opened and closed slots at each end of the tubular member." (C.A. No. 97-550, D.I. 327, P 20) Cordis relies for its argument on the following language:

Accordingly, slots 82 are preferably uniformly and circumferentially spaced from adjacent slots, and slots 82 adjacent to one another along the longitudinal axis of tubular member 71 are in a staggered relationship with one another. Alternating slots disposed about the circumference of tubular member 71 at both the first and second ends 72, 73 of tubular member 71 will only have a length equal to approximately one-half of the length of a complete slot 82, such half-slot 82 being bounded by members 78, 79 at 70 both at the first and second ends 72, 73 of tubular member 71.

( '762 patent, col. 7, lns. 3-13; see also '417 patent, col. 7, lns. 49-68 and col. 8, lns. 1-3; '984 patent, col. 6, lns. 26-36) As further explained in the specification, the use of alternating "half-slots" at either end of the tubular member permits the graft or prosthesis "to be expanded uniformly, and outwardly, in a controlled manner . . . ." (417 patent, col. 7, lns. 65-67; '984 patent, col. 6, lns. 42-44)

Cordis' interpretation finds some support in the language of the specification and claim 25 of the '417 patent. Although the specification describes both "complete slot 82" and "half-slot 82," it refers to both generally as "slots." Given that the presence of "half-slots" apparently is essential to the functioning of the graft as contemplated in the patent, the failure of the claim to differentiate between complete and half-slots is a further indication that the term "slots" refers to both complete and half-slots. Therefore, the court concludes that the term "slots" referred to in claim 25 is not limited to "complete" slots. 9

9 The court found nothing in the patent or the dictionary definition to limit "slots" to those which are bound on all sides, i.e., "complete" slots. The court notes, however, that in Figures 1A, 1B, 7, and 10, only the "complete slots" are labeled "slots 82"; the half-slots are not similarly labeled.

This conclusion is consistent with the description given in the specification of the length of each "graft, or prosthesis, 70." The specification indicates that each "graft, or prosthesis, 70" has a length of at least "one slot 82." 10 If each "graft, or prosthesis, 70" is comprised of at least two tubular members and each tubular member may be the length of only a "half-slot 82," one could argue that the length of such a graft is "one slot." 11 Consistent with the court's holding that a graft or prosthesis must be functional, however, a graft or prosthesis comprised of only two "tubular members" must be capable of "retaining its expanded and deformed configuration with the enlarged diameter . . . and resist radial collapse." ('417 patent, col. 7, lns. 6-14; '984 patent, col. 5, lns. 51-54)

10 Compare '417 patent, col. 7, lns. 59-63 with col. 11, lns. 51-55.
It is always difficult for a court to differentiate between what the claim language arguably describes and the preferred embodiment actually describes in the specification. This difficulty is particularly acute in a case such as this, where a preferred embodiment has been described in a series of patents. For instance, building on the invention of the '762 patent (i.e., "utilizing a thin-walled, tubular member as the prosthesis," col. 4, lns. 7-8), the specification of the '417 patent contemplates that the graft or prosthesis disclosed "generally includes a plurality of prostheses, or grafts 70 as defined previously in connection with FIGS 1A, 1B and 2," which figures are taken from the '762 patent. ('417 patent, col. 11, lns. 48-51) In Figures 1A, 1B and 7 of the '417 and '984 patents, the graft or prosthesis "70" and tubular member "71" are identified as the same structure. Likewise, the various written descriptions given of "thin-walled tubular members" are substantially the same as those given of "prostheses." (Compare, e.g., '417 patent, col. 3, lns. 57-63 with col. 5, lns. 4-10) The "connector members" are described as flexibly connecting both "adjacent tubular members" and "adjacent prostheses." (Compare, e.g., '417 patent, col. 3, lns. 63-65; col. 4, lns. 23-25, 59-61; col. 5, lns. 10-13; col. 12, lns. 7-21, 41-51, 59-63) Given the apparent "interchangeability" of the phrases "tubular members," "grafts," and "prostheses," it is with some reluctance that the court distinguishes between these structures for purposes of claim construction.

In sum, although a "thin-walled tubular member" may be comprised of only "half slots," each tubular member must be elongated (i.e., its length is greater than its width) and, in combination with only an additional tubular member, must be capable of functioning as an expandable intraluminal graft.

Also in dispute is whether the language "wall surface having a substantially uniform thickness and a plurality of slots formed therein" implicates a manufacturing requirement. Initially, the court agrees that the claim language does not specifically incorporate the manufacturing description given in the specification. ( '762 patent, col. 6, lns. 41-44) The court further acknowledges the general principle that "[a] product patent gives the patentee the right to restrict the use and sale of the product regardless of how . . . it was manufactured." United States v. Studiengesellschaft Kohle, 216 U.S. App. D.C. 303, 670 F.2d 1122, 1127 (D.C. Cir. 1981). Because the claim language is somewhat confusing, 12 the court finds it helpful to review the history of the language.

The '665 patent includes in the specification two embodiments of a graft generally described as a "wire mesh tube." Both embodiments are comprised of intersecting elongate members, the elongate members being either "small diameter stainless steel wires having a cylindrical cross-section" 13 or "small bars" formed by etching openings in a thin-walled stainless steel tube. ('665 patent, col. 6, lns. 12-44 and col. 7, lns. 3-20) Despite the differences between the two embodiments, presumably they both fall within the scope of the following claim language:

[A] tubular shaped member having first and second ends and a wall surface disposed between the first and second ends, the wall surface being formed by a plurality of intersecting elongate members . . . .

( '665 patent, claim 13 at col. 10, lns. 48-54; see also claim 18 at col. 11, lns. 21-27; claim 23 at col. 12, lns. 6-10; claim 26 at col. 12, lns. 33-37) (emphasis added). Only the second embodiment found its way into the '762 patent, the specification describing it as such:

Preferably, tubular member 71 is initially a thin-walled stainless steel tube having a uniform wall thickness, and a plurality of slots 82 are formed in the wall surface 74 of tubular member 71.

('417 patent, col. 7, lns. 19-22)
13 The court notes that the intersecting elongate members of this embodiment preferably were "fixedly secured to one another" at the point of intersection by any conventional manner, "such as by welding, soldering, or gluing . . . ." ('665 patent, col. 6, lns. 36-52)

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For whatever reason, the emphasis from the '665 to the '767, '417, and '984 patents changed from describing what formed the wall surface (intersecting elongate members which implicitly form "openings," '665 patent, col. 7, lns. 15-16) to what was formed in the wall surface (a plurality of slots forming "intersecting elongate members"). 14 Nevertheless, the structure (and the method of manufacturing the structure) remained the same. Therefore, although the phrase "a plurality of slots formed therein" modifies the phrase "wall surface" (arguably implying a manufacturing limitation), 15 the court concludes that, whether the presence of material (elongate members) or the absence of material (slots) is emphasized, the structure of the product claimed is adequately described and does not implicate a manufacturing requirement.

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14 "Thus, the formation of slots 82 results in at least one elongate member being formed between adjacent slots 82 . . . ." ('417 patent, col. 7, lns. 33-35)

15 Cordis' argument that the phrase modifies "thin-walled tubular members" neglects the normal rules of syntax.

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II. "A Plurality of Slots Formed Therein"

With regard to the grant of summary judgment of no literal infringement, the district court ruled that the phrase "slots formed therein" requires that the slots be manufactured by removing material from a pre-existing wall surface. We disagree. Slots can be "formed" in a wall surface by means other than removing material, such as by constructing the wall with openings built into it.

Nothing about the phrase "slots formed therein" suggests that the slots must be formed by a particular process; the phrase certainly does not indicate that the wall must be formed first and the slots formed later. A piece of wire mesh can fairly be described as a metal surface with holes formed in it, but that description does not mean that the screen was made by starting with a solid piece of metal and drilling holes in it. The phrase "slots formed therein" describes the physical characteristics of the product, not the method of its manufacture.

We also reject AVE's contention that the '762 patent's definition of a slot as an "opening" indicates that the stent must be made by forming an opening in previously solid material. An opening can arise by leaving a gap during the construction of a wall surface as well as by removing material from the surface. Because the language "formed therein" does not require the removal of material as the method of formation, we decline to superimpose a process limitation on the product claims at issue. See Vanguard Prods. Corp. v. Parker Hannifin Corp., 234 F.3d 1370, 1372 (Fed. Cir. 2000) (holding that the limitation of a thin layer "integral therewith" described the product and did not designate a specific manufacturing process, and that a "method of manufacture, even when cited as advantageous, does not of itself convert product claims into claims limited to a particular process").

The specifications of the '762 and '984 patents do not define the "slots formed therein" as openings created by the removal of material from a pre-existing wall surface. AVE relies on the statement "preferably, tubular member 71 is initially a thin-walled stainless steel tube having a uniform thickness and a plurality of slots are formed in the wall surface 74 or tubular member 71." '762 patent, col. 6, ll. 41-44; '984 patent, col. 5, ll. 64-67. But the use of the term "preferably" makes clear that the language describes a preferred embodiment, not the invention as a whole.

The district court based its holding that the "slots must be formed in the wall surface of a tubular member, as by the removal
of material" in part on the progression of the written description of the '762 patent from its parent, U.S. Patent No. 4,733,665 ("the '665 patent"). Specifically, the district court relied on the fact that one of the embodiments disclosed in the '665 patent was not carried over into the specification of the '762 patent application, which was filed as a continuation in part ("CIP"). The '665 patent discloses two differing embodiments, which are shown in Figures 1A and 2A:

[SEE FIGURES 1A AND 2A IN ORIGINAL]

The written description of the '665 patent states, "Preferably, tubular shaped member 71 [of Figure 1A] is made of continuous, stainless steel wire woven in a criss-crossed tubular pattern to form what can be generally described as a wire mesh tube." '665 patent, col. 6, ll. 49-52. Because the wire is criss-crossed, the tube is twice as thick at the cross points as at other points on the structure. That embodiment is not present in the specification of the '762 patent or the '984 patent.

Like the district court, AVE relies on the absence of the Figure 1A embodiment from the '762 and '984 patents as indicating that Cordis disclaimed bent-wire stents lacking a pre-existing wall surface from which material is removed to create the slots. We reject this basis for narrowing the claims. In neither patent is there any language surrendering bent-wire stents, and the fact that the patentee chose not to include Figure 1A from the '665 patent as an embodiment in the '762 specification does not indicate that the patentee was no longer claiming any stent composed of bent wire. Rather, it is likely that the patentee chose not to include that embodiment because its overlapping members caused it not to be of substantially uniform thickness, smooth, or thin-walled (all features claimed in the '762 patent, but not in the '665 patent).

A patentee may choose not to carry forward a particular embodiment from a parent patent to a CIP because that embodiment does not satisfy a limitation that was added in the CIP. That choice, however, does not mean that the scope of the CIP is limited to the preferred embodiment that was carried forward. Thus, we reject AVE's contention that the failure to include a wire mesh embodiment in which wires have been bent and overlapped to form the stent should limit the construction of the claims to exclude all embodiments created by bending wire in any form.

The district court compared the methods of making the preferred embodiments of the '665 patent and concluded that the difference between the Figure 1A and Figure 2A embodiments is that "the elongate bars of the 'thin bar' [Figure 2A] embodiment 'may be formed integral with one another,'” a method of manufacture that the district court found to be "singularly descriptive of the slotted tube preferred embodiment." However, expert testimony established that one of skill in the art would understand "formed integral with one another," in the context of the patents at issue, to refer to formation from a single piece of material, which does not require construction by removal of material from a pre-existing piece of metal.

We also disagree with the district court's conclusion that it is significant that the '665 patent claims a "plurality of intersecting elongate members" while the '762 patent claims a "wall surface having . . . a plurality of slots." Claiming a wall having slots is essentially the same as defining a hole in terms of the structure that forms the hole.

We next consider statements made in the prosecution history of the '984 patent regarding the prior art Wiktor patent to determine whether the patentee effected a disclaimer of claim scope. Such a disclaimer requires clear and unmistakable statements of disavowal. See Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 2003 U.S. App. LEXIS 13570, Nos. 01-1546, 02-1478, slip. op. at 17 (Fed. Cir. July 7, 2003).

Dr. Schatz, the inventor of the '984 patent, characterized Wiktor as disclosing "a coiled wire stent which is a 'tubular shape of coiled wire wound in a special manner comprising a number of groups of turns 2.'" The coiled wire stent in Wiktor has openings spiraling around its circumference as shown herein:

[SEE ILLUSTRATION IN ORIGINAL]

In response to the examiner's rejection of the application for the '984 patent in view of the Wiktor patent, Dr. Schatz stated:

\"Wiktor does not disclose a plurality of "thin-walled tubular members, each having first and second ends and a wall surface disposed between the first and second ends, the wall surface having a substantially uniform thickness and a plurality of slots formed therein, the slots being disposed substantially parallel to the longitudinal axis of each tubular member". Wiktor discloses a single stent, or graft made up of coiled wire. There is no wall surface having a plurality of slots, nor slots disposed parallel to the longitudinal axis of each tubular member. Applicant's claimed invention is not "coiled wire wound
in a special manner comprised of a number of groups of turns” as illustrated in Wiktor.

The first sentence of Dr. Schatz's statement about Wiktor is a general allegation that Wiktor does not disclose the precise combination of elements claimed in the '984 patent. That statement cannot be read to disclaim any device not containing a pre-existing wall from which material is removed. Dr. Schatz more specifically distinguishes the Wiktor patent in his statement that "there is no wall surface having a plurality of slots, nor slots disposed parallel to the longitudinal axis of each tubular member." Clearly, he is correct that Wiktor does not have slots disposed parallel to the longitudinal axis of the member; even if the openings in Wiktor do constitute slots, they are perpendicular to the longitudinal axis of the member. It is not clear, however, what Dr. Schatz meant by "no wall surface having a plurality of slots." He could have meant either that coiled wire is not a wall surface or that the openings in the coil do not constitute slots. The statement is amenable to multiple reasonable interpretations and it therefore does not constitute a clear and unmistakable surrender of all stents that lack a pre-existing wall surface from which material is removed to form the slots. In addition, the statement does not clearly disclaim any stents made of bent wire on the ground that a stent made of wire lacks any "wall surface," as A VE contends.

Rather than supporting a narrow construction of the "slots formed therein" limitation, the prosecution history of the '762 patent—and particularly the reexamination—indicates that the patentee did not intend for the phrase "slots formed therein" to require the removal of material. For example, the examiner, in discussing the Kornberg patent, stated that "Webster's Ninth New Collegiate Dictionary defines 'slot' as 'a narrow opening or groove.' The spaces between the Kornberg struts certainly meet this definition. The slots are formed in the tubular member since the struts are part of the wall of the tubular member." The examiner's remarks indicate that he understood that "slots formed therein" describes the location of the slots, not how they are made. The patentee did not dispute that statement by the examiner. The examiner also described the Ersek patent's device as having "a plurality of slots 23 formed therein" even though Ersek's slots are not made by removing material. The patentee distinguished the Ersek patent, but did not dispute that Ersek's device has a plurality of slots formed therein. Accordingly, the patentee did not rely on the method of manufacturing as a means of distinguishing the invention from the prior art. Because the prosecution histories of the '762 and '984 patents do not support the narrow reading of the "slots formed therein" limitation, we conclude that the district court erred in construing the "slots formed therein" limitation in the two patents to require that the slots be formed by removing material from a pre-existing wall surface.

Because we disagree with the district court's construction of the "plurality of slots formed therein" limitation, we reverse the district court's grant of summary judgment of no literal infringement based on that limitation. For the same reason, we also reverse the district court's ruling on the doctrine of equivalents, which was based on the court's construction of that limitation.

The '760 patent relates to a "slotted track" or "slotted header" wall assembly used to alleviate stress on a wall's infrastructure caused by environmental forces, such as earthquakes. Slip Track alleges that Metal Lite's product, a particular slotted track wall assembly, infringes the claims of the '760 patent. The patent contains two independent claims and eight dependent claims. Claim 1 of the '760 patent is representative of the claims at issue and reads:

A building construction assembly that includes a header and a stud wherein the header is capable of vertical movement relative to said assembly comprising:

a header having a web and flanges with said flanges connected to said web;

at least one of said flanges having at least one vertical slot therein;

a stud having a width less than the distance between said flanges of said header and having a top end;

said stud having at least one hole formed therein proximal to said top end;

said top end fitting between said flanges perpendicular to said header positioned so that said hole is aligned with said vertical slot; and
an attachment means passing through said slot and through said hole to slideably unite said header to said stud whereby said slot permits said header to move vertically with respect to said stud while restricting horizontal movement of said header.

The sole claim construction issue relates to the limitation "said stud having at least one hole formed therein proximal to said top end." Metal Lite argues that the prosecution history requires the stud to have a "pre-existing hole," meaning a stud with a hole in existence prior to inserting the stud between the flanges of the header. Slip Track argues that the limitation in no way requires a pre-existing hole and that the claim encompasses assemblies wherein the hole is formed before or after inserting the stud between the flanges. Requiring a pre-existing hole, Slip Track argues, would impermissibly limit the apparatus claim to a product-by-process claim and also would exclude the preferred embodiment.

We agree with Metal Lite that claim 1 is limited to a stud having a hole in existence prior to inserting the stud between the flanges of the header. Claim construction starts with the language of the claims as understood by one of ordinary skill in the art. See ResQNet.com, Inc. v. Lansa, Inc., 346 F.3d 1374, 1378 (Fed. Cir. 2003); CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002); Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 989 (Fed. Cir. 1999). Intrinsic evidence - namely, the specification and, if in evidence, the prosecution history - are also highly relevant to claim construction. See Vitronics, Corp. v. Conectronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). One reason "this court … considers the prosecution history … [is] to determine whether the applicant clearly and unambiguously 'disclaimed or disavowed [any interpretation] during prosecution in order to obtain claim allowance." " Middleton, Inc. v. Minn. Mining & Mfg. Co., 311 F.3d 1384, 1388 (Fed. Cir. 2002) (quoting Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985)); see also Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1324 (Fed. Cir. 2003) (explaining that prosecution disclaimer does not apply "where the alleged disavowal of claim scope is ambiguous").

In this case, the prosecution history of the '760 patent reveals that the patentee limited its invention to studs having pre-existing holes. Claim 1, as originally drafted, read, in pertinent part, "said stud being aligned with said vertical slot." On March 29, 1991, the Examiner issued a first rejection finding the claim obvious and "indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention." The Examiner specifically asked: "Re: claim 1 …line 10, how is the stud 'aligned' with the vertical slot …?" The patentee responded by amending claim 1 to read: "said stud having at least one hole formed therein proximal to said top end; said top end fitting between said flanges perpendicular to said header positioned so that said hole is aligned with said vertical slot." The patentee also made the following remark accompanying the amendment:

First, the Examiner's question of how the stud is aligned with the vertical slot has been answered by adding hole 22 proximal to top end 40 of the stud as an element of the claims. The hole 22 serves as a reference point on the stud which is used to align the stud and the slot. This amendment should overcome the Examiner's §112 rejection based upon indefiniteness with respect to claim 1 and the claims dependent therefrom.

In short, we hold that the limitation "said stud having at least one hole formed therein proximal to said top end," means that a hole must be formed in the stud prior to insertion of the stud between the flanges so that the hole can be used to align the stud with the vertical slot before passing the attachment means through the vertical slot and into the stud. In the infringement proceedings that are to follow on remand, the district court is to apply this claim construction.
Floe asserts that this phrase should be construed as "brought together or connected in a functional relationship." Newmans, however, contends that it should be construed as "flowing directly from." Floe alleges that its proposed construction is consistent with how "formed with" is used in the claim. Floe also asserts that it is improper to add modifiers, such as "directly," when the modifiers are not recited in the claim. Newmans supports its proposed construction by arguing that, in the prosecution history, the patentee specifically disclaimed any structure that does not flow directly from the protected deck edge. In particular, Newmans cites the patentee's characterization of the relationship between the "ramp means" and the "edge protection means" in an attempt to overcome a rejection based on Remde:

[The claimed invention has] a structure that is substantially different from that of Remde. The different structure has an advantageous resulting functionality in that the rear edge of the supported deck is protected, and the ramp flows directly from the deck surface and protected deck edge, rather than the separated structure shown by Remde.

(Frederick Decl., P 3, Ex. Bat FL000183.)

Here, Claim 11 states that the "ramp means" is "formed with said edge protection means for assisting in loading the vehicles when the frame structure is positioned for loading[.]") (379 Patent, c. 8, ll: 26-28.) Thus, the Court finds that the meaning of "formed with" in the claim means "brought together or connected in a functional relationship." Furthermore, the Court rejects Newmans' contention that the patentee disclaimed embodiments wherein the ramp does not "flow[] directly from" the deck surface. After reviewing the relevant prosecution history, the Court finds that in distinguishing the structure of the claimed invention from that of Remde, the patentee was making the argument that the structures are not equivalents under a means-plus-function analysis. The Court does not find that the patentee was indicating what "formed with" means. Thus, the patentee did not disclaim any structure that does not flow directly from the protected deck edge.

The Court therefore construes this phrase as "brought together or connected in a functional relationship."

Defendants' proposal for "forming" impermissibly relies upon other, unrelated patents. The definition of "form" is "to give form or shape to : FRAME, CONSTRUCT, MAKE, FASHION." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE UNABRIDGED 893 (1993). The Court construes "forming" to mean "making or constructing."

CooperVision argues that these phrases do not require construction. CIBA construes "forming a contact lens member in the lens shaped cavity of the assembled mold sections" to mean "forming a contact lens member with a rounded edge in the lens shaped cavity of the assembled mold sections" and "a tool useful in making a mold section for cast molding a contact lens" to mean "a tool useful in making a mold section for cast molding a contact lens with a rounded edge." (emphasis added). CIBA adds only the words, "with a rounded edge" to each of the terms.

CIBA contends that the term "contact lens member," as used in the Edge Design Patents, requires the presence of a "rounded edge" and that both the specification and prosecution history suggest that the term "contact lens member" requires such an
edge. For that reason, CIBA argues, claim 1 and claim 15 produce a contact lens with a rounded edge.

Claim terms generally are given the meaning those terms would have to a person of ordinary skill in the art. Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005). The ordinary meaning of the term "contact lens member" does not require the presence of a rounded edge. The asserted claims can be assigned a narrower scope only if there is some indication in the patent or prosecution history that the term contact lens member was meant to have a more restrictive meaning as used in the patent, or a broader meaning was disclaimed during prosecution. See Phillips, 415 F.3d at 1316; Honeywell Int'l, Inc. v. ITT Indus., Inc., 452 F.3d 1312, 1319-20 (Fed. Cir. 2006). CooperVision's counsel granted in oral argument that when the back surface mold insert tool is used correctly, the resulting mold will produce a rounded edge lens. Tr. at p. 18. Moreover, the preferred embodiment, i.e., the method that creates the most comfortable contact lenses, will have a substantially smooth, rounded edge. See '706 patent, col. 7, ll. 40-42. But that is not required by the claim language.

The strongest indication that the term "contact lens member," as used in claim 1 and claim 15, was not meant to include a "rounded edge" limitation can be found by comparing independent claim 1 and dependent claim 2. Claim 1 recites the formation of a "contact lens member" but does not expressly require a "rounded edge." Claim 2 recites: "The method of claim 1 wherein the contact lens member formed has a rounded edge." It does not add any additional limitation other than the limitation of a "rounded edge."

Given that claim 2 adds the "rounded edge" limitation to claim 1, the doctrine of claim differentiation supports the inference that claim 1 encompasses a contact lens without the rounded edge. Otherwise, claim 2 would add nothing to claim 1, and the two would cover identical subject matter. See Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374,1380 (Fed. Cir. 2006) (holding that the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim).

CIBA points to various features of the patent and the prosecution history in support of its argument that one of skill in the art would necessarily conclude that only contact lenses with a rounded edge are within the scope of claim 1 and claim 15 of the '706 patent. CIBA first contends that such a limitation is evident from the claim language requiring that the back surface tool be capable of forming "a contact lens having the desired rounded edge without the need for post formation processing steps." '706 patent, col. 2, ll. 50 - 55. Because the specification describes a contact lens with a rounded edge, and because the specification does not disclose any other way to avoid a pointed or chiseled edge profile, CIBA argues that a person of skill in the art would understand that a contact lens created by the back surface tool must have a rounded edge.

A patent that describes only a single embodiment is not necessarily limited to that embodiment. Liebel-Flarsheim v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004). "Even where a patent describes only a single embodiment, claims will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope . . . ." Innova/Pure Water, Inc. v. Safari Water Filtration Sys., 381 F.3d 1111, 1117 (Fed. Cir. 2004). While an assertion by the patentee that a contact lens with a rounded edge is the only invention that can be created by a back surface tool would evidence an intention to narrow the scope of the independent claims, the '706 patent contains no such assertion.

In fact, the specification of the '706 patent contains passages expressly differentiating a contact lens from a contact lens with a rounded edge. In "Summary of the Invention," the specification states: "The demolded contact lens member may be the final contact lens. However, the demolded contact lens member may be hydrated to form the final contact lens with a rounded edge surface." '706 patent, col. 3, ll. 4-7. When the first and second mold sections are assembled together, either a "rounded edge contact lens or contact lens member in accordance with the present invention" may be formed. '706 patent, col. 3, ll. 64-65 (emphasis added). See also '706 patent, col. 3, ll. 52-53 ("preferably, a contact lens with a rounded edge surface, is provided"); '706 patent, col. 1, l. 7. Finally, the specification states:

Although there has been hereinabove described specific methods of manufacturing a rounded edge contact lens having a rounded peripheral edge surface or form, in accordance with the present invention, . . . it should be appreciated that the invention is not limited thereto. '706 patent, col. 7, l. 64 - col. 8, l. 2.

CIBA relies on dependent claim 4 in support of its argument that the method steps of claim 1 create a contact lens with a rounded edge. CIBA argues that the rounded edge in claim 4 does not come from demolding or hydration, and so dependent claim 4 makes clear that the method steps of claim 1 are what produce a contact lens with a rounded edge.
Claim 4 specifically calls for a "contact lens having a rounded edge" after the lens is demolded and hydrated. It is true that in a preferred embodiment, "[p]ost-formation processing such as demolding, hydration . . . does not alter [the] rounded edge surface configuration." '706 patent, col. 3, ll. 12-15. However, hydration "may to some extent change the finished lens manufactured" to become much more rounded or less clearly defined. See '706 patent, col. 7, ll. 51-55. A "much more rounded or less clearly defined edge surface" may also be achieved by varying the angle of intersection of the two mold halves to 140 degrees. '706 patent, col. 8, ll. 40-42; see also Figure 8. Accordingly, neither the claim language nor the specification supports the narrowing construction that CIBA proposes.

The court, therefore, adopts CooperVision's position, and will not construe these phrases.

1758

The "placing step"

Claim 11 states, in relevant part:

11. A method of making a pizza comprising the steps of:

(a) forming a generally flat dough base;

(b) forming a plurality of closed pockets each pocket enclosing a portion of food;

(c) placing the closed pockets on portions of the dough base . . .

Defendant says this step must be construed to require that the closed pockets are formed separately from the dough base and then placed upon the base. Plaintiff argues that the word "on" in 11(c) can encompass "pushing" or "moving" the folded dough pocket around, where the dough is not made of material separate from the base.

The plain meaning of the terms do not permit plaintiff's interpretation. "Placing on" does not mean "pushing" or "moving around." See Senmed, Inc. v. Richard-Allan Medical Indus., Inc., 888 F.2d 815, 819-20 n.8 (Fed. Cir. 1989) ("there is nothing ambiguous or linguistically obscure about "on" as used in the present claim") (construing "on" in its ordinary sense of "upon" or "on the surface," "on it"). In addition, pushing pockets of dough already attached to the dough base around is not disclosed anywhere in the specification, whereas creating closed pockets separately from the based "and then placed thereon" is disclosed.

The court concludes that claim 11(c) requires that the dough pockets be formed separately from the dough base, and then placed upon that base.

1759

11. a second portion of said wall extending from said first point to a second point forming a lowermost end of said wall ('826 patent, claim 13)

a second location on said wall, whereby said first and second locations form end points of said second wall portion, said second wall location being the lowermost point of said wall ('875 patent, claim 32)

Crown's proposed construction is "[a] second point that marks the lowest end of the can end wall." 47 Rexam's proposed construction is "[t]he specific place on the wall nearest the central panel (toward the bottom of the can)." 48

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47 Id. at 3, 6.
The court adopts Rexam's proposed construction.

The parties' proposed constructions are very similar. Crown criticizes the reference to the central panel in Rexam's proposed construction by arguing that nothing in the claim language refers to the central panel. As a result, Crown insists that Rexam's definition is flawed by reference thereto. When read in its entirety, however, claim 13 of the '826 patent references various parts of the claimed can end including: a peripheral cover hook, a central panel, and a wall extending inwardly and downwardly from the peripheral cover hook. Likewise, the common specification describes the invention of Crown's patents in suit as comprising various features, including a central panel. Therefore, Rexam's definition is not flawed by its reference to the central panel of the can end.

As noted, three major parts of the can end recited in claim 13 of the '826 patent are: (1) a peripheral cover hook, (2) a central panel, and (3) a wall extending inwardly and downwardly from the cover hook. The parties agreed that the proper construction of "a wall extending inwardly and downwardly for said cover hook" refers to "a can end wall extending inwardly [toward the center of the can relative to the outside of the can] and downwardly [toward the bottom of the can relative to the top of the can]." The can end illustrated in figure 4 shows the can end wall (designated "chuck wall 24") extending inwardly and downwardly from the "peripheral cover hook 23". That figure illustrates chuck wall 24 terminating, or having its lowermost end, or point, at the outer wall of anti-peaking bead 25, which head extends radially inward from the chuck wall. Because the end wall, or chuck wall, extends inwardly and downwardly from the peripheral cover hook toward the central panel, the lowermost point on the end wall will necessarily be the location "nearest the central panel (toward the bottom of the can)." This would be true whether the can end has an annular reinforcing bead, as in the embodiment illustrated in figure 4, or a can end that does not have an annular reinforcing bead as Crown contends is the case with the invention described in claim 13 of the '826 patent.

Consequently, the court adopts Rexam's proposed construction: "the specific place on the wall nearest the central panel (toward the bottom of the can)."

The Court of Federal Claims also considered the following limitation:

forming a rigid connection between the lever and the knob with at least one substantially rigid member while maintaining...
the lever in a position where the protrusion cannot contact the surface of the cam wheel, in response to a receipt of an unlock signal.

'711 patent, col. 8, ll. 29-33. The court construed this limitation to require "a rigid connection between all parts in the chain of parts between the lever and the knob during the unlocking procedure." Claim construction ruling Masco, 47 Fed. Cl. at 459. Masco argues that this limitation should be construed to require that after the lever and knob are operably connected, any knob rotation yields predetermined lever movement. Masco's proposed construction departs significantly from the words of the claim, on which we must focus in construing the claim limitations. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996) ("First, we look to the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention."). The court's construction, in contrast, focuses correctly on the words of the claim. We discern no error in that construction.

23. said wall and said reinforcing bead forming a transition therebetween ('875 patent, claim 50)

Crown's proposed construction is "[f]orming a place between two things at which one changes to the other." 93 Rexam's proposed construction is "[a] radiused portion of the can end, when looking at a cross section of the end, between the vertical wall of the annular reinforcing bead (countersink) and the second portion of the wall (chuck wall)." 94

93 Id.

94 Id.

The court adopts Crown's proposed construction.

As with 19, above, the court determines that the plain meaning of "transition" set forth by Crown is appropriate. Rexam's proposed construction is not supported by the language of the claim. For instance, the limitation in Rexam's definition describing "the vertical wall of the annular reinforcing bead" is not found in that claim. "Vertical" implies that the wall of the annular reinforcing bead must be at a right angle, or perpendicular, to the central panel of the can end. 95 Claim 50 makes no reference to annular bead wall angles. The common specification also is at odds with Rexam's proposed construction. Although common specification states that "preferably the anti-peaking bead 25 is parallel sided," which would be consistent with Rexam's "vertical" limitation, it also states that "the outer wall may be inclined to a line perpendicular to the central panel at an angle between -15 [degree] to +15 [degree]." 96 which would be inconsistent with that limitation.

95 That "vertical," with reference to the wall of the annular reinforcing bead would mean that that wall would be understood to be at a right angle, or perpendicular, to the central panel is supported by the common specification's use of "vertical" and "perpendicular" with respect to orientation of the chuck wall to the central panel. In describing figure 4, the chuck wall 24 is described as "inclined to an axis perpendicular to the exterior of the central panel at an angle C, between 20 [degree] and 60 [degree]; preferably between 40 [degree] and 45 [degree]." '875 patent, 3:47-49 (emphasis added). In a table of "[t]ypical dimensions of the example of the invention," the "chuck wall angle to vertical" for angle C is listed as 43 [degree]. '875 patent, 3:60-4:10 (emphasis added).

96 875 patent, 3:51-53.

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Also, Rexam's inclusion of "the second portion of the wall (chuck wall)" adds confusion. While claim 32 of the '875 patent specifies "a circumferentially extending wall comprising first and second portion[s]," 97 claim 50, of which the disputed phrase is part, does not specify different can end wall portions. Therefore, Rexam's proposed language introduces a "second portion of the wall" not required by claim 50. 98 Rexam also provides no support for its inclusion of "a radiused portion of the can end" and the claim has no such limitation. Nor does it explain why "radiused portion" is a necessary limitation to the "transition" between the can end wall and reinforcing bead here, when no such limitation was proposed for the "transition" between the double seam to the second wall portion of claim 32.

--- Footnotes ---

97 '875 patent, claim 32, 13:8-9 (emphasis added).

98 Claim 50 recites "a rotatable chuck comprising first and second circumferentially extending walls," '875 patent, claim 50, 15:23-24, but the "circumferentially extending wall" pertinent to the disputed claim term is the wall of the can end, not the walls of the rotatable chuck.

--- End Footnotes ---

The court, therefore, adopts Crown's proposed construction: “forming a place between two things at which one changes to the other.”

1762

7. Claim 1 - "forming an opening"

Bradford proposes that "forming an opening" means "to give form to an open space". Defendants propose that "forming an opening" means "constituting or composing a basic element or part of an upwardly facing aperture serving as a passage." This term is a further limitation on "upper edge" in that the upper edge must form an opening "for receiving product placed in the container for shipment." This term also concerns the orientation of the dunnage structure.

The Court notes that "forming an opening" seems self-defining. In any event, however, "form" as a verb means "to give form or shape to: frame, construct, make, fashion." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 893 (1971). "Opening", in the context of the container, is appropriately defined as an "aperture". WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1580 (1971). In turn, an "aperture" is defined as "an opening or open space." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 99 (1971). If the upper edge of the dunnage structure is defined so that it must face upwardly, then logic dictates that the opening formed by the upper edges must face upwardly as well. Therefore, it seems redundant to repeat that this term includes "an upwardly facing aperture" as Defendants propose. In other words, the orientation of the upper edges controls the orientation of the opening. Neither party suggests that "forming an opening" has any specialized meaning. Therefore, it is appropriate to give this term its ordinary meaning.

Accordingly, the Court holds that "forming an opening" means "making an open space".

1763

B. "Forming Appendages Extending From Either Side of Said Auxiliary Eyeglasses"

Plaintiff argues that the phrase "forming appendages extending from either side of said auxiliary eyeglasses" refers to "an appendage to each side of the auxiliary eyeglasses." (Opening Brief at 8:5-6.) Defendants argue that the phrase means that "two or more appendages are found on at least one side of the auxiliary eyeglasses." (Responsive Brief at 11:5-6; Joint Statement at p.15.) The dispute centers on the interaction between the plural form of "appendages" and the term "either."

The ordinary meaning of the word either is "being the one and the other of two" or "being the one or the other of two."
Webster's Ninth New Collegiate Dictionary (1986); Oxford English Dictionary (2d Ed.) (defining "either" as "each of the two" or "one or the other of two"). Defendants provided only the second definition -- being the one or the other of two; however, the Court finds that the first definition -- being the one and the other of two -- is appropriate here. Under that first definition, the Oxford English Dictionary provides that when "either" is used with a plural noun, it has the same meaning as "both," e.g., appendages extending from both sides of the auxiliary eyeglasses.

Defendants argue that the claim language unambiguously sets forth limitations that exclude a preferred embodiment, i.e., one appendage on each side of the auxiliary eyeglasses, and the Court cannot alter the ordinary meaning of the words to cover that embodiment. Further, Defendants argue that if Plaintiff wished to claim the preferred embodiment of one appendage on each side in the '913 patent, then Plaintiff had the duty to draft specific and clear claims to that embodiment. In response, Plaintiff argues that Defendants are seeking to create a limitation in requiring two or more appendages on at least one side of the auxiliary eyeglasses; but, the limitation is not identified in the claims, specification, or prosecution history. Plaintiff argues that the language of the claim does not limit it to two or more appendages on one side of the auxiliary eyeglasses.

The Court finds that in order to properly construe this phrase, it must consider the claim specification and the illustrations contained therein, which support the claim and show the embodiment of the claim. The written description and drawings, which indicate what the patent holder is protecting, aid the Court in construing the meaning of disputed claim terms. See Prima Tek II, 318 F.3d at 1148. Although the illustrations depict a particular embodiment of the claims, the claims are not limited to that particular configuration. See Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc., 222 F.3d 951, 956 (Fed. Cir. 2000).

Here, the illustrations indicate one appendage on each side, which the Court finds is a reasonable construction of the claim language and is consistent with the ordinary meaning of the word "either," when used in conjunction with a plural noun. (Trojan Decl. at Ex.A, FIGS. 1-9.) The Court declines to limit the definition of the phrase "forming appendages extending from either side of said auxiliary eyeglasses" to mean at least two appendages extending from each side of the auxiliary eyeglasses.

Based on the specification and the illustrations, the Court construes the phrase "forming appendages extending from either side of said auxiliary eyeglasses" to mean forming at least one appendage extending from each side of the auxiliary eyeglasses.

II.

Claim 1 recites a "method of shaping a projectile so as to have a specified low lethality consequence upon impact against an individual," including the step of "filling through [the] rear opening of [a] tubular sock-like projectile body a selected amount of lead shot to assume a position therein against [its] closed end . . . ." '562 patent, col. 4, ll. 21-24. It further recites the steps of "forming folds in said tubular sock-like projectile body immediately forward of said rear opening thereof," and "inserting said formed folds of said tubular sock-like projectile body into [the front opening of the] projectile compartment" of "an empty 12 gauge shotgun shell . . . ." '562 patent, col. 4, ll. 13-14, 24-28 (emphasis added).

The district court relied in part on the American Heritage Dictionary definition of "fold," namely "to bend over or double up so that one part lies on another part," which, according to the court, "when combined with the gerund 'forming,' requires the deliberate and systematic creation of folds." Apr. 19 Op. This "ordinary meaning[,]" the court stated, "is reinforced by the claim's introductory phrase: 'method of shaping.'" Id. The court then looked to the specification "to determine whether the patentee has given the phrase 'forming folds' an unaccustomed meaning." Id. The court noted that the specification uses "variations of the term 'fold'" in connection with both the prior art and the "patented invention" and stated that such uses, as well as the figures in the patent, are "consistent with" the "deliberate and systematic" construction. Id.

CSI argues that the district court erred in construing the "forming folds" limitation to require the "deliberate and systematic creation of folds." It contends that the "forming folds" limitation should be construed to mean "the step of forming folds (crease) by closing the opening of the body compartment of the sock-like projectile body, and may, if desired, include
forming additional folds (creases) in the tail before, during or after insertion of the projectile into the projectile compartment." CSI further argues that the district court incorrectly construed claim 1 to require that the "referenced folds" be "formed prior to, not during, the insertion [of the projectile] in the empty shotgun shell."

Specifically, CSI contends that the district court's resort, at least in the first instance, to the dictionary definition of "fold" was improper. It also argues that the district court erred in relying on the dictionary definition for the verb form of "fold" when "folds" is used in the claim as a noun, that the written description's uses of the term "fold" are "unrelated" to the claim language and that the district court improperly relied on (1) "the figures in the preferred embodiment" (2) "in view of extrinsic evidence to support a previously flawed conclusion that any folds must be formed deliberately and systematically." 2 We conclude, based on our examination of the relevant evidence, that the claim construction and hence the grant of summary judgment was correct.

--- Footnotes ---

2 CSI contends that DTCA performs the "forming folds" step when it (1) ties off its projectile after filling the closed end with lead shot, dividing the projectile into a closed (filled) compartment and a tail end, and/or (2) inserts the shot-containing projectile, tail end first, into the shotgun shell. Under the first alternative, the "folds" are creases, gathers, or bends formed when the fabric of the projectile is cinched together by the tie. Under the second, the "folds" are formed in the tail section of the DTCA projectile when the projectile is urged, tail end first, against the inside of the closed end of the shotgun shell.

--- End Footnotes ---

Claim Language

The claim recites a "shaping method comprising . . . using an empty 12 gauge shotgun shell having a cylindrical wall bounding a projectile compartment[,]" placing "a selected amount of lead shot" into a "tubular sock-like projectile body" through its rear opening, "forming folds in said tubular sock-like projectile body immediately forward of said rear opening thereof," and "inserting said formed folds of said tubular sock-like projectile body into said projectile compartment front opening . . . ." The claim language thus indicates that the "folds" are formed in the "tail" end -- as opposed to the lead shot-filled end -- of the projectile. Also, the affirmative recitation of "forming folds . . ." as a step in the claimed process is consistent with the district court's construction -- at least its determination that the claim requires the "deliberate" forming of "folds."

Furthermore, plainly as a matter of grammar, the recitation of "inserting said formed folds . . . into said projectile compartment" forecloses -- at least in the absence of compelling evidence to the contrary in the written description or prosecution history -- a construction permitting the "folds" to be formed after or during insertion of the projectile into the projectile compartment in the shotgun shell. Cf. Interactive Gift Express, Inc. v. Compuserve Inc., 256 F.3d 1323, 1343 (Fed. Cir. 2001) (holding that a method claim not reciting an order of steps is not construed to require one, unless the "method steps implicitly require that they be performed in the order written"). For example, a method claim reciting introducing acetic acid into groundwater and "introducing a turbulent flow of an aqueous solution of ferrous ion into said groundwater region, for mixing with said acidified groundwater" requires the acetic acid introduction step to occur before the "turbulent flow" introduction step. Mantech Envtl. Corp. v. Hudson Envtl. Servs., Inc., 152 F.3d 1368, 1376 (Fed. Cir. 1998) (emphasis added) ("In order for the aqueous solution to mix with the acidified groundwater, the acid must have already mixed with the groundwater to form acidified groundwater."). Similarly, for the "formed folds" to be inserted into projectile compartment, they must already have been formed.

Written Description and Drawings

The written description describes the placement of the lead shot in the "tubular sock-like body" and, referring to FIG. 2:

[SEE FIG. 2 IN ORIGINAL]

[SEE FIG. 3B IN ORIGINAL]

describes the "completion" of "the construction of the projectile 10" "by a tie or the like, as at 44, which delineates the lead
shot-filled body 46 from a length portion or tail 48 of the fabric construction material 32." '562 patent, col. 2, ll. 54-60. After describing the construction of the "projectile compartment" (in the shotgun shell) and the preferred dimensions of the projectile, the written description, referring to FIG. 3A and FIG. 3B:

[SEE FIG. 3A IN ORIGINAL]

describes the insertion of the "FIG. 2 constructed projectile 10" into the projectile compartment, as follows:

The bulk of the FIG. 2 constructed projectile 10 is then manually stuffed through the front opening 58 into the compartment 54 which, not only of course properly positions the projectile 10 for firing, but also reshapes the projectile 10 so it can qualify for low lethality end use . . . .

In the loading of the projectile 10 into the cartridge compartment 54, the tail 48 is folded into a resulting bulk, as at 84, and in this folded configuration is urged in movement 86 into the compartment 54, as illustrated in FIG. 3A. Continuing to apply the force 86, the lead-filled projectile front 34 is worked fully into the compartment 54, as illustrated in FIG. 3B, aided by rotational twists of the projectile front end 34 in addition to the longitudinally directed force 86.

'562 patent, col. 3, ll. 18-35 (emphasis added). The rest of the written description does not otherwise use the term "fold" or any variation thereof in connection with the claimed invention, nor does it include any other description corresponding to the "forming folds" limitation in the claim. It does, however, use variations of the word "fold" in discussing the prior art:

A known projectile which currently is a low lethality munition of choice consists of a flat bag which is folded in half to fit within a 12 gauge shotgun shell, and after exiting from the muzzle is supposed to unfold into a flat bag shape and impact in this flat bag shape upon a target. As such the kinetic energy is distributed over the area of the bag instead of at a point as in regular ammunition. As a consequence there is less of a possibility of an undesirable penetration while permitting the delivery of a desirable incapacitating impact.

The shape of the above described projectile at impact is not always predictable based solely on its construction as a bag, because the bag can be flat at impact only if it unfolds after exiting from the muzzle. However, on numerous occasions in practice it does not unfold and contacts a target with its folded together side edges and thus, with a shape that can, and often does, inflict serious injury.

'562 patent, col. 1, ll.16-31 (emphasis added). As noted above, the district court concluded, without much explication, that "all of these uses of fold are consistent with the ordinary meaning of the phrase 'forming folds' as the systematic bending over or doubling up of fabric." Apr. 19 Op. Whether so, and even if the written description's uses of "fold" are, as CSI contends, "unrelated" to the "forming folds" limitation in the claim, it does, however, use variations of the word "fold" in discussing the prior art:

As discussed above, the language of the claim itself compels the conclusion that the claim requires the "folds" to be formed before the projectile is inserted into the projectile compartment of the shotgun shell. 3 CSI does not contend that DTCA forms "folds" before inserting its projectile into its shell other than when DTCA ties off the projectile to close the lead shot-containing portion. Thus, the only remaining issue is whether the "forming folds" limitation was properly construed to exclude the "gathers in the material that incidentally occur when a string is pulled to close the compartment." See Apr. 19 Op. We conclude that it was.

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3 To the extent that CSI contends that this conclusion is undermined by the language in the written description that states: "In the loading of the projectile 10 into the cartridge compartment 54, the tail is folded into a resulting bulk, as at 84" ('562 patent, col. 3, ll. 27-28 (emphasis added)), it is incorrect. First, the language CSI relies upon is itself immediately followed by language ("and in this folded configuration is urged in movement into the compartment 54, as illustrated in FIG. 3A" (emphasis added)) inconsistent with CSI's position and consistent with the district court's construction. Second, the claim language clearly requires that "said formed folds" be "formed" before they are "inserted . . . into said projectile compartment . . . ." Thus, "even if . . . a disclosure" of forming folds during insertion into the compartment "existed, [this] embodiment[] would not be covered by the language selected by the claim drafter." Oak Tech., Inc. v. ITC, 248 F.3d 1316,
As noted above, the claim affirmatively recites "forming folds . . ." as a distinct step in the claimed method. Thus, the language of the claim is consistent with the district court's "deliberate and systematic" construction. Further, according to the claim, the "folds" are formed "immediately forward of [the] rear opening" of the "tubular sock-like projectile body . . . ." When these claim limitations are read in the context of the entire specification, it becomes apparent that the district court's construction -- at least to the extent it required the deliberate forming of folds in the tail of the projectile -- is correct. 4

4 Contrary to CSI's contention, the prosecution history of the '562 patent does not undercut the district court's construction. The U.S. Patent and Trademark Office ("PTO") allowed claim 1 on first action, and issued the following examiner's statement of reasons for allowance: "Although the prior art it [sic] pertinent, it does not disclose a method of preparing a low lethality projectile wherein an empty 12 gauge cartridge is loaded with a shot filled tubular sock-like projectile where the open end is closed by forming folds in the material" (emphasis added). According to CSI, the examiner's statement "unmistakably supports [its] contention that at least one embodiment of the claimed invention could include the 'folds' as the securing means for the lead shot[,]" and because the district court's construction does not cover this embodiment, it is incorrect. We disagree. Nothing in the specification can be fairly read as disclosing an embodiment that includes closing the open end of the projectile "by forming folds in the material." Accordingly, the examiner's statement is, as the district court recognized, ambiguous.

Specifically, the written description, in the only language that, at least on its face, corresponds with the claimed "forming folds . . ." step states: "the tail . . . is folded into a resulting bulk . . . and in this folded configuration is urged in movement . . . into the compartment . . . ." '562 patent, col. 3, ll. 28-30. Further, neither in its discussion of "completing" the "construction of the projectile . . . by a tie or the like[,]" nor in the associated figure (FIG. 2) of the patent, does the description make any reference to any folds, bends, creases or the like formed as a result of or in association with the closing of the compartment, 5 and CSI produced no expert testimony or other extrinsic evidence that fold-forming would inherently result therefrom. To summarize, all of the intrinsic evidence is consistent with a construction requiring the deliberate forming of folds in the tail section of the projectile. Because CSI does not contest the district court's conclusion, as a matter of law, that DTCA's process does not include this step, we affirm the grant of summary judgment.

5 To the extent the drawings show "folds," they are shown formed in the tail section of the projectile ('562 patent, FIGS. 3A, 3B, and 4), i.e., behind, and not resulting from, the tie.

III.

As noted above, CSI also assigns error to the methodology by which the district court used the dictionary in its claim construction analysis, including its "place[ment of] primary importance on the extrinsic evidence before consideration of the intrinsic evidence." Had the district court relied exclusively on the dictionary definition or allowed it to overcome clear language in the patent itself, its methodology (although not necessarily its conclusion) would have been clearly wrong. As we have previously noted:

[A] common meaning, such as one expressed in a relevant dictionary, that flies in the face of the patent disclosure is undeserving of fealty. As one of our predecessor courts stated . . .: Indiscriminate reliance on definitions found in dictionaries can often produce absurd results . . . . One need not arbitrarily pick and choose from the various accepted definitions of a word to decide which meaning was intended as the word is used in a given claim. The subject matter, the context, etc., will more often than not lead to the correct conclusion.
Renishaw PLC, 158 F.3d at 1250 (citation omitted) (emphasis added). The district court, however, did not rely solely on the dictionary definition; rather, it reviewed and considered the written description and the figures of the patent. In addition, it did not allow a dictionary meaning to overcome clear language in the patent. Its opinion on claim construction, though, suggests it may have read some isolated statements in certain recent opinions too rigidly and in isolation from the entire body of our claim construction jurisprudence.

Specifically, after discussing the dictionary definition of "fold," and before reviewing pertinent portions of the written description, the district court stated: "Even when the ordinary meaning of a term appears to be clear from the claim language, however, it is necessary to read the claim in the context of the specification to determine whether the patentee has given the phrase 'forming folds in said . . . body' an unaccustomed meaning." Apr. 19 Op. If, which we doubt, this language indicates that the district court believed that our cases permit consulting the specification solely for the limited purpose of determining whether it contradicts the dictionary meaning of a claim term, 6 such a view is not supported by our case law, read as a whole. As we have recently stated, "the written description must be examined in every case, because it is relevant not only to aid in the claim construction analysis, but also to determine if the presumption of ordinary and customary meaning is rebutted." Brookhill-Wilk, 334 F.3d at 1298. Thus use of the specification to "determine if the presumption of ordinary and customary meaning is rebutted" is no more important than examining it "to aid in the claim construction analysis . . . ."

6 We note also here that when we, the district courts, and parties refer to the "ordinary meaning" of a claim term, such references are "short-hand" for the appropriate connotation under the law: the meaning, to a person of ordinary skill in the art. E.g., Teleflex, 299 F.3d at 1325 ("The ordinary meaning must be determined from the standpoint of a person of ordinary skill in the relevant art.").

CONCLUSION

Regardless of how it described its approach, we conclude that the district court conducted the proper analysis using correct methodology and sources and reached the correct construction. Accordingly, we

AFFIRM.

C. "Having four periphery surfaces"

As discussed above, plaintiff argues that the enclosure's faces can be slightly curved, and the enclosure's sides can be substantially quadrilaterally shaped. The periphery surfaces define the substantially quadrilaterally shaped sides of the enclosure, and, plaintiff argues, it follows that the periphery surfaces can have some curvature. Plaintiff argues that the periphery surfaces need not meet at straight-edged corners or corners with any particular angle. Defendant argues that the phrase "four periphery surfaces" requires four distinct surfaces intersecting at angled corners. Defendant explains that there must be four distinct periphery surfaces, because the periphery surfaces define the substantially quadrilaterally shaped sides of the pad.

As explained above, the construction of claim terms relating to the pad's enclosure is with reference to the enclosure in a substantially filled state. The claim language, specification, and prosecution history do not reveal the ordinary and customary meaning of "periphery" and "surface," and the Court will consult a dictionary. Periphery is defined as: "the external boundary of any surface or area." Random House College Dictionary (1973). Surface is defined as "1. the outer face, outside, or exterior boundary of a thing. . . . 5. Geom.: any figure having only two dimensions; part or all of the boundary of a solid." Id.

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The claim reads, "having four periphery surfaces." Absent from the phrase are any words of approximation or generality. The claim's language does not refer to any corners. A solid having four periphery surfaces necessarily must have four areas where the surfaces meet and their planes intersect, but the claim does not require these areas to be angled corners. The drawings of the pad structure in the specification depict the four periphery surfaces intersecting at sharp, angled corners. However, "the mere fact that the patent drawings depict a particular embodiment of the patent does not operate to limit the claims to that specific configuration." Anchor Wall, 340 F.3d at 1306-7. The Court finds that the claim term "having four periphery surfaces" means that the pad structure has four periphery surfaces which meet, but not necessarily at corners; if the surfaces do meet at corners, the corners need not have any particular angle.

Defendant alleges that the plaintiff disclaimed a pad structure having less than four periphery surfaces. During prosecution, plaintiff amended the claim by changing the language "at least three" periphery surfaces to "four periphery surfaces." As defendant notes, "where the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim congruent with the scope of the surrender." Liquid Dynamics Corp. v. Vaughan Co., Inc., 355 F.3d 1361, 1368 (Fed. Cir. 2004) (citation omitted). The Court finds that the plaintiff disclaimed a pad structure with at least three periphery surfaces.

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a. Construction of the terms "four-side-seal type bag body" and "side seal portion" as used in the '121 patent

The parties do not dispute that the sides of the bags described in the Kirin patents are formed by folds instead of seals. 7 Instead, Shield Pack argues that the '121 patent claims must be construed to encompass a bag that can have sides formed by either seals or folds. If so, the Kirin patents disclose the "four-side-seal type bag body" and "side seal portion" limitations of the '121 patent. CDF, conversely, insists that a proper construction of the '121 patent claims requires the sides of the bags to be formed by seals, not folds. Shield Pack argues that the terms "four-side-seal type bag body" and "side seal portion" in the '121 patent claim are not limited to bags formed by side seals because they include the broadening words "type" and "portion" following "seal."

Shield Pack argues that inclusion of the term "portion" after "side seal" leaves the term "side seal portion" open to definition by reference to the specification. [Doc. No. 42, p. 12]. CDF argues that the terms "four-side-seal type bag body" and "side seal portion" in the '121 patent claims are limited to bags made with side seals only. CDF asserts that "seal portion" is properly construed as "an area of the bag in which a fluid tight bond is used to join two different parts of the bag together," not an area of the bag joining two parts by seals, bends, or folds. CDF argues that the language in the specification discussing ways that parts of "side seal portions" can be omitted describes methods of forming a bag that would not be covered by the '121 patent because the '121 patent requires that the bag have "side seal portions."

The language in the specification is awkward, but the Court agrees with CDF's claim construction. Claim 1 of the '121 patent requires that the bags it describes have "side seal portions." However, according to the specification, the "seal
portions," including "side seal portions," are "omitted" when the bag body is formed by bending or folding. This implies that when bending or folding is used to form the bag body, the connecting portions of the bag body must be something other than "seal portions." 8 If the drafter of this language intended it to allow the '121 patent to encompass different methods of forming the bag's connecting portions, he thwarted himself when he included the term "seal portions" in the claim.

8 Perhaps they would be "bend portions" or "fold portions." The use of the full term "seal portions" instead of simply "seals" in this sentence of the specification supports CDF's argument that it means an area of the bag with a seal, not an area of the bag with a seal, a bend, or a fold.

Shield Pack also argues that the term "four-side-seal type bag body" refers to a bag "similar to" one that has four side seals connecting its front, back, and side portions, which includes bags that have bends or folds connecting those portions. [Doc. No. 42, p. 16]. Shield Pack supports this argument by pointing out that the claim could have omitted the word "type" and simply stated "four-side-seal bag body," which would have been narrower. However, the claim could also have stated "four-side type bag body," which would have been broader. In this light, the claim's limitation to a "four-side-seal type bag body" supports CDF's argument that the claim requires the bag to have four side seals.

The Court construes "type" as used here to limit the claim to a category of bag bodies having the characteristic of four side seals.

Under the Court's construction of the '121 patent, no reasonable fact finder could find that the Kirin patents, which do not disclose side seals, disclose every limitation of the '121 patent claims. 10 Therefore, the Court DENIES Shield Pack's Motion for Summary Judgment of Non-Infringement and Invalidity and GRANTS CDF's Cross Motion for Summary Judgment of No Invalidity.

9 Specifically, under this construction, the claim limitations requiring "a four-side-seal type bag body"; "oblique seal portion[s]. . . formed such that . . . opposing inner surfaces of the bag body are bonded . . . between a first arbitrary point on top seal portion or bottom seal portion to a second arbitrary point on a side seal portion"; and "triangular fin portion[s] being defined by the side seal portion" [Doc. No. 1-3, p. 27] could not be disclosed in the Kirin patents.

10 Because the Court finds no reasonable fact finder could find that the Kirin patents anticipate claim 1 of the '121 patent because it does not disclose "side seal portions" or a "four-side-seal type bag body," it is unnecessary for the Court to reach CDF's second argument that the '121 patent is not anticipated by the Kirin patents because it does not disclose flat and side portions of the bag composed of "at least two sheets of synthetic resin films that are superposed to each other in a non-bonded state." Also, because no reasonable fact finder could find that the Kirin patents anticipate claim 1 of the '121 patent, no reasonable fact finder could find that they anticipate claims 2 through 10 of the '121 patent, which are dependent on claim 1.
reference to "clad" or "cladding" apply to both clad and unclad products.

d. "Minimum" and "maximum." A level referring to guaranteeable property values established by repeated testing of many pieces of metal to establish consistent, uniform values.

e. "Long transverse yield strength." As understood by one of ordinary skill in the art, the stress, applied across the width of a product, that a product can sustain before yielding or breaking.

f. "Fracture toughness." Consistent with the understanding of one of ordinary skill in the art, resistance to extension of a crack, often measured in terms of the stress-intensity factor (K) at which applying progressively greater stress to a structure that contains a pre-existing crack causes the onset of rapid catastrophic propagation of that crack.

"FRAGILE GEL DRILLING FLUID" and "FRAGILE GEL"

The asserted claims of the '832 Patent are directed to methods and products involving fragile gel drilling fluids or drilling fluids exhibiting fragile gel behavior. Claims 1 through 3 cover methods for drilling in a subterranean formation using a fragile gel drilling fluid and Claim 5 is a composition of matter claim that covers a fragile gel drilling fluid. According to these independent claims, the claimed fragile gel drilling fluid comprises four elements: an invert emulsion base, one or more thinners, one or more emulsifiers, and one or more weighting agents. '832 Patent, cols. 14:20-25, 29-33, 37-41, 15:30-34. With respect to the "fragile gel drilling fluid limitation," Claim 1 is representative of each of the asserted independent claims:

1. A method for conducting a drilling operation in a subterranean formation using a fragile gel drilling fluid comprising:

   (a) an invert emulsion base;

   (b) one or more thinners;

   (c) one or more emulsifiers; and

   (d) one or more weighting agents, wherein said operation includes running casing in a borehole.

During prosecution, the PTO initially ruled that certain prior art references "would inherently possess the properties of the present invention, since the same composition is being claimed." June 4, 2004, Non-Final Office Action Application No. 10/175,272 at 3, 4. To distinguish the invention from the prior art and rebut the PTO's findings that the prior art disclosed the claimed composition, the patentees stated that the claims are directed to and limited by "a fragile gel drilling fluid or a method of using a fragile gel drilling fluid. The patentees further asserted that the invention's "fragile gel characteristics . . . are not inherent [in prior art] fluids." Id. at 32. Therefore, the patentees relied on the fragile gel characteristics to distinguish the prior art. Accordingly, the parties do not dispute that the term "fragile gel drilling fluid," which is found in the preambles of each of the asserted independent claims (Claims 1-3 and 5), is a limitation on all asserted claims of the '832 Patent.

Halliburton argues "fragile gel drilling fluid" and "fragile gel" should be construed as:

a gel that easily transitions to a liquid state upon the introduction of force (e.g., when drilling starts) and returns to a gel when the force is removed (e.g., when drilling stops); the fragile gel drilling fluid, at rest, is capable of suspending drill cuttings and weighting materials. A fragile gel drilling fluid contains no organophilic clay or lignite or can contain low amounts of organophilic clay or lignite individually or in combination so that the fragile gel drilling fluid can still easily transition between a gel and liquid state and suspend drill cuttings and weighting materials.

For the reasons set forth below, the Court finds that the term "fragile gel drilling fluid" cannot be construed and therefore the
asserted claims are indefinite.

1 "Fragile gel" appears to be used in the claims as an adjective to modify "drilling fluid." However, both Halliburton and M-I refer to "fragile gel" and "fragile gel drilling fluid" interchangeably. See Halliburton Opening Brief at 8-14; M-I's Responsive Brief at 7-21. Indeed, Halliburton proffers one definition for both "fragile gel" and "fragile gel drilling fluid." Halliburton Opening Brief at 8-9. The '832 Patent also uses "fragile gel" as a noun. See, e.g., '832 Patent, col. 2:5-57. Thus, there is no reason for the Court to treat those terms as different in its analysis. The meaning of "fragile gel" is integral to both terms.

2 M-I did not offer a definition of "fragile gel" and "fragile gel drilling fluid" because M-I contends those terms are indefinite.

3 Halliburton's Opening Claim Construction Brief, pp. 8-9 (Docket No. 98).

Any Possible Construction Of "Fragile Gel" Would Include Subjective Terms That Render the Claims Indefinite

The Court starts with the claim language in defining "fragile gel drilling fluid." The independent claims do not define a fragile gel drilling fluid other than in terms of the four basic components described above. The dependent claims add additional limitations to what the fragile gel drilling fluid is. For example, the claims dependent upon Claim 1 specify that the fragile gel drilling fluid (i) is a structure capable of suspending drill cuttings at rest and that may be immediately disrupted by movement of said fluid (Claim 9), (ii) reverts to a flowable or liquid state immediately upon resumption of drilling after a period of rest (Claim 10), and (iii) forms a structure that is capable of suspending drill cuttings at rest and that is instantaneously disruptible by movement (Claim 42). Under the doctrine of claim differentiation, there is a presumption that those limitations are not part of the independent claim. Nazomi Commc'ns, Inc. v. Arm Holdings, PLC, 403 F.3d 1364, 1370 (Fed. Cir. 2005); Comark Commc'ns, 156 F.3d at 1187.

Turning to the specification, Halliburton points to the specification's description of a "fragile gel" as a "starting point" in the construction of that term:

a "gel" that is easily disrupted or thinned, and that liquefies or becomes less gel-like and more liquid-like under stress, such as caused by moving the fluid, but which quickly returns to a gel when the movement or other stress is alleviated or removed, such as when circulation of the fluid is stopped, as for example when drilling is stopped... [Fragile gels] seem to break instantaneously when disturbed, reversing from a gel back into a liquid form with minimum pressure, force and time and with less pressure, force and time than known to be required to convert prior art fluids from a gel-like state into a flowable state.

'832 Patent, col. 2:26-41. Halliburton's proposed construction of fragile gel states that "it is a gel that easily transitions to a liquid state upon the introduction of force (e.g., when drilling starts) and returns to a gel when the force is removed (e.g., when drilling stops); the fragile gel drilling fluid, at rest, is capable of suspending drill cuttings and weighting materials." However, both the specification's and Halliburton's descriptions fail to define "fragile gel" and distinguish the claimed "fragile gel" from the prior art.

There must be some objective standard for the terms "easily transitions," "easily disrupted or thinned," "less gel-like," "more liquid-like," "quickly returns to a gel," "break instantaneously," and "minimum pressure, force and time" in order for the above descriptions to be a definition for the claimed term. See Datamize, 417 F.3d at 1350-51. Neither the specification nor any other evidence provides an objective standard for determining the scope of these amorphous terms. For instance, there is no evidence of whether skilled artisans would agree on whether "ease of disruption or thinning" is a function of force, time, or some other factor, or combination of factors. And even if skilled artisans could agree on the determining factors, there is still no evidence they would agree on a particular amount or range of force, time, etc., that would make disruption or thinning "easy" or what it means to be "easy." Similarly, although "quickly" is clearly a reference to a temporal factor, skilled artisans may differ greatly in their opinions of what constitutes the fluid's "quick" return to gel form or
"instantaneous" breaking. There is no evidence of what type or amount of force is needed to create the fluid stress that makes the fragile gel "less gel-like" or "more liquid-like." These terms' meanings—and thus the meaning of fragile gel—depend on an individual's subjective view of the drilling fluid's performance. 4 See Expert Report of Martin Chenevert, Exh. 4 to M-I's Responsive Brief on Claim Construction (Docket No. 116). Accordingly, while the quoted passage is descriptive of fragile gels, the subjective nature of its description causes it to fail as a definition for the term. Defining "fragile gel" according to this description would be meaningless and not apprise the public of its bounds.

--- Footnotes ---


--- End Footnotes ---

"Brookfield tests" and the Brookfield figures"

Halliburton argues that the "Brookfield tests" mentioned in the specification and depicted in Figures 3 and 4—involving use of a device called a "Brookfield viscometer"—distinguish the claimed invention from the prior art. A Brookfield viscometer is a commercially-available instrument for measuring fluid properties, such as gel-strength and resistance to shear. The Brookfield viscometer's vanes are inserted into a sample of liquid and spun at various rates and for various durations. Torque readings at various times are plotted on a graph. Figure 3 compares gel-formation and breakage characteristics of the present invention's fluids and prior art fluids and Figure 4 compares those fluids' relative relaxation rates after exposure to stress. '832 Patent, col. 4:11-16; 5:53-6:28.

According to Halliburton's experts, "upon resumption of shear stress [at approximately the 70-minute mark in the Figure 3 Brookfield test], the graph [corresponding to a fragile gel] extends vertically to the point at which the gel breaks and transitions to a fluid." Docket No. 94-5 at 3 (citing Clark Rep. at 79; Report of Roger Bonnecaze ("Bonnecaze Rep.") at 12). "The graph then falls directly back upon itself to a point where it levels off to its liquid state . . . indicat[ing] that the transition from a gel to a liquid occurs quickly, immediately, and instantaneously." Id. The specification states that the preferred-embodiment samples build up more gel than the prior-art samples when at rest, yet break quicker when exposed to...
stress, indicating less resistance to shear. '832 Patent, col. 6:5-15. Halliburton contends that skilled artisans would recognize the supposedly distinctive L-shaped curves of the preferred-embodiment samples as depictions of fragile gels. Docket No. 94-5 at 20 (citing Clark Rep. at 30, 38-42, 78-80; Bonnecaze Rep. at 21); see also Apr. 13, 2006 Dep. of Ronald Clark ("Clark Dep.") at 324:8-14. Such curves would presumably appear in data graphs from Brookfield tests performed on all embodiments of the invention's drilling fluid.

Halliburton produces no evidence, and the Court is aware of none, to indicate precisely how high the vertical leg of a fluid's L-shaped curve must reach i.e., how "strong" a gel must be for that fluid to exhibit "fragile gel behavior." For instance, there is no specific numeric cutoff point for percentage torque applied, below which a fluid falls under the category of "non-fragile gel." See Burrows Dep. at 180:25-181:6; Siems Dep. 30:16-23, 31:14-18, 186:22-187:7. In the absence of such objective baselines, Halliburton's assertion that skilled artisans merely need to "look at the shape of the curve" to identify fragile gel characteristics is dubious. Although "a patentee need not define his invention with mathematical precision to satisfy the definiteness requirement," there must be some "objective anchor" by which skilled artisans can identify whether they are practicing the patented invention. See Datamize, 417 F.3d at 1350; see also Oakley, Inc. v. Sunglass Hut Int'l, 316 F.3d 1331, 1341 (Fed. Cir. 2003).

Halliburton's inventors indicate that skilled artisans can do this by visually comparing the graphed results of Brookfield tests on different fluid samples. See Burrows Dep. at 180:1-6. As a preliminary matter, however, it is unclear from the specification's description of Figure 3 precisely what distinguishes the curves of the two preferred-embodiment samples (Accolade) from the curves of the two prior-art samples (Petrofree SF). The vertices connecting the legs of the curves are not significantly sharper for the Accolade-sample curves than for the curve of at least one of the Petrofree SF-samples. The Petrofree SF sample's curve assumes the same distinctive L-shape as the Accolade-sample's curves. All three curves "fall back on themselves." Thus, despite the specification's and Halliburton's experts' assertions, Figure 3 reveals no difference in the amount of time necessary to change the Accolade and Petrofree SF from gel to liquid form.

The only apparent aspect that distinguishes Figure 3's Accolade curves is that those curves' vertical legs—which apparently indicate gel strength at the time force is reapplied--peak higher than do the Petrofree SF curves' vertical legs. Clark Dep. at 141:21-142:18. But there is no definitive evidence that this aspect of the preferred-embodiment fluid's curves is attributable to that fluid's inherent characteristics. Halliburton's scientists conducting the Brookfield tests on which the Figure 3 results are based used a proprietary modified viscometer not available to the general public. Siems Dep. 28:4-23; 160:7-161:1. The device has a proprietary test programming sequence that includes specific changes in temperatures, rotation periods, and rotation speeds, and uses a uniquely-shaped six-finned vane. Burrows Dep. at 32:20-33:20; Siems Dep. at 160:7-164:2; Carbajal Dep. at 40:4, 41:7. But the '832 Patent does not disclose that these results come from usage of the modified viscometer, nor is there any other intrinsic evidence indicating the type of machine used or whether speeds, temperatures, and periods were applied consistently to different fluids.

Halliburton contends that the differences between the preferred embodiment fluids and prior art fluids would be apparent regardless of vane geometry. However, Halliburton's expert admits that differences in vane geometry affect curve peak height in Brookfield tests. See Clark Dep. at 113:21-114:3. A recent Halliburton Brookfield test—in which both the modified six-finned vane and an unmodified vane were applied to the same Accolade sample at the same speeds—revealed curve peaks that varied as much as about 53%. Report of Jeff Miller ("Miller Rep."), Exhibit B. Meanwhile, the difference between the lowest Accolade peak and the highest Petrofree SF peak in Figure 3 is about 57%. Halliburton's own evidence shows that simple modifications to the vane's shape can make the Brookfield test curves of a preferred-embodiment fluid vary in peak height the same way (and to nearly the same extent) in which that fluid's curves and prior-art fluid's curves supposedly differ in peak height.

Additionally, Halliburton's expert, Dr. Roger Bonnecaze, confirms that by adjusting the vane rotation speed, one can manipulate the torque readings and thus the curve peak height. Bonnecaze Rep. at 14. One of the named inventors, Donald Siems, likewise admitted that adjustments in temperature could also alter the fluids' properties. Siems Dep. at 163:16-164:10.

By adjusting vane geometry, rotation speed, and temperature, one can substantially affect the peak heights of Brookfield test curves independently of the type of fluid being tested. Because the '832 Patent did not adequately disclose the geometry, speed, and temperature parameters surrounding the Figure 3 Brookfield tests, skilled artisans cannot duplicate those parameters. See Honeywell Int'l, Inc. v. Int'l Trade Comm'n, 341 F.3d 1332, 1339-41 (Fed. Cir. 2003) (finding a patent's
failure to disclose test parameters and method rendered claims indefinite because it was impossible to duplicate test results on which claims were based). There is no evidence to verify that the one apparent consistent difference between the preferred-embodiment samples and the prior art samples depicted in Figure 3 is attributable to inherent differences in the fluids' characteristics.

Halliburton also contends that M-I ignores the differences between the Accolade and Petrofree SF fluids depicted in Figure 4. Figure 4 is illustrated below:

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The specification describes the Figure 4 test results:

The time required for the fluids to relax or to return to their pre-stressed state is recorded. The curves for the fluids of the invention seem to level out over time whereas the prior art fluids continue to decline. The leveling out of the curves are believed to indicate that the fluids are returning to a true gel or gel-like structure.

'832 Patent, col. 6:23-29. Halliburton again insists that "the 'L' shaped curve is, in reality, all that is necessary to determine whether a drilling fluid is a 'fragile gel drilling fluid.'" 6 However, this cannot be so. Even cursory examination of Figure 4 shows that the L-shaped curve corresponding to one of the Accolade samples (10.6 Accolade) levels off in precisely the same shape as a curve corresponding to one of the Petrofree SF samples (12.1 SF) and at precisely the same torque level. Two other L-shaped Accolade sample curves (15.6 Accolade and 12.4 Accolade) level off at what appears to be the same rate as another L-shaped Petrofree SF (15.6 SF) sample curve. Finally, the curve of 12.65 Accolade does not even appear to level off.

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6 Halliburton's Sur-Rreply at 17 (Docket No. 129).
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There is no genuine issue of material fact that the "shape of the curves" depicted in Brookfield graphs provide a purely subjective means of identifying whether a fluid exhibits fragile gel behavior. Halliburton argues that, under Datamize, such pure subjectivity does not necessarily render the "shape of the curve" criteria inappropriate and result in indefiniteness. See Datamize, 417 F.3d at 1351 ("[W]hen faced with a purely subjective phrase like 'aesthetically pleasing,' a court must determine whether the patent's specification supplies some standard for measuring the scope of the phrase."). Datamize makes clear that adequate support in the specification can make a purely subjective claim term definite. However, when, as here, the specification provides only a subjective definition for a subjective claim term, there is no "objective anchor" by which skilled artisans can identify the bounds of the claims. Id. at 1350; see Vitronics, 90 F.3d at 1584 (finding inventor's subjective intent as to claim scope, unexpressed in the patent documents, is ineffective).

A skilled artisan cannot verify merely from the "shape of the curve" the bounds of the fragile gel claimed in the '832 Patent. Neither the specification, nor any other intrinsic or extrinsic source identify an alternative way to discern from the Brookfield tests whether a fluid exhibits fragile gel behavior. Therefore, the Brookfield tests do not provide the asserted claims sufficient definiteness.

Other figures in the specification

In addition to Figures 3 and 4, Figures 1A, 1B, 1C, 2, 5, and 10 and Tables 1 and 3 all compare properties of preferred-embodiment fluids and prior art fluids, but none of these figures or tables permit skilled artisans to discern inherent characteristics of the asserted fragile gel drilling fluid. The figures merely compare the effects that preferred-embodiment fluids and prior-art fluids have on certain drilling operations. Figures 1A, 1B, 1C, and 2 compare mud losses incurred during drilling and indicate that use of Accolade samples resulted in loss of less drilling mud than use of prior art samples. See '832 Patent, cols. 3:66-4:5, 4:63-5:51. The figures illustrate a benefit of using the invention over the prior art, but do not shed light on the characteristics that supposedly make Accolade a fragile gel drilling fluid.
Moreover, Halliburton's arguments fail to overcome the presumption of the doctrine of claim differentiation, under which a limitation found in a dependent claim is presumed to not belong to the independent claim because each claim is presumed to require by the specification, and the Court cannot rewrite a claim to make it more definite. See Nova Indus., L.P. v. Micro Molds Corp., 350 F.3d 1348, 1354-57 (Fed. Cir. 2003).

7 The Court notes that the patentees pointed to these figures and tables, in addition to figures 3 and 4, during the prosecution of the '832 Patent. Sept. 2004 Amendment at 31. However, there was no specific discussion of how those figures and tables distinguished the claimed invention from the prior art.

Figure 5 compares the differences in fluid density at certain points in comparable wells ("ECDs") when either Accolade or Petrofree SF is used. See id. at cols. 4:16-21, 6:48-67. Again, though the fluid-density differences are less for both samples of Accolade than for the Petrofree SF sample, there is no evidence that the differences are attributable to fragile gel behavior or other factors such as greater viscoelasticity. See id. at col. 4:30-36.

Figure 10 compares the viscosity of preferred-embodiment samples and prior art samples. See id. at cols. 4:45-48, 9:10-14. The specification asserts that "[t]he base fluid for the drilling fluid of the present invention is one of the thickest or most viscous." Id. at col. 9:13-14. However, this fact does not distinguish the prior-art fluids because Figure 10 shows that one Petrofree sample was even more viscous than the Accolade sample and does not correlate them to the alleged differences in ECDs.

Like Figure 5, Table 1 merely compares ECDs that occur among preferred-embodiment and prior-art fluids. Id. at cols. 7:1-25, 6:48-67. Finally, Table 3 illustrates how a preferred-embodiment fluid is capable of functioning without addition of organophilic clays or lignites. Id. at cols. 11:16-66, 10:62-11:15. But, as noted earlier, the invention's fragile gel properties supposedly exist independent of whether it contains such additives.

Neither the figures or tables shed any light on what makes the present invention a "fragile gel drilling fluid."

Organophilic clay or lignite

The Court next turns to the portion of Halliburton's proposed definition that adds the requirement that a fragile gel drilling fluid contain no or low amounts of organophilic clay or lignite. The Court finds no basis to import that limitation into the definition of a fragile gel drilling fluid. That limitation is imported from a preferred embodiment and is not properly part of the claim construction. The specification describes "the drilling fluid of the present invention[']s" ability to "suspend drill cuttings and weighting materials for delivery to the well surface . . . . through its gel or gel-like characteristics, without need for organophilic clays to add viscosity to the fluid." See '832 Patent, col. 2:43-51. The specification also describes a method for preparing an invert emulsion drilling fluid "that forms fragile gels or that has fragile gel behavior, preferably without the addition of organophilic clays or organophilic lignites." The specification states that "[t]he invert emulsion drilling fluid of the present invention preferably does not have added to it any organophilic clays . . . [and] does not need organophilic clay or organophilic lignites to provide it needed viscosity, suspension characteristics, or filtration control to carry drill cuttings to the well surface." Id. at 3:19-25; 13:66-14:4.

This asserted limitation of no organophilic clay belongs to a group of preferred-embodiment descriptions that the Court cannot read into the claims, absent clear disclaimer or disavowal of the broader scope encompassed by the claim language. See Phillips, 415 F.3d at 1316; Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004); Comark Comm'ns, 156 F.3d at 1187; see also '832 Patent, col. 14:11-15 (stating that descriptions of the invention are intended as descriptions of preferred embodiments). There is no evidence of a clear disclaimer or disavowal, nor is there evidence that skilled artisans would import the additional limitation of the specification's preferred embodiments into the asserted claims. The limitation of no added organophilic clays or lignites is not required by the specification. Instead, the specification states that the "drilling fluid is obtained or prepared . . . preferably without the addition of organophilic clays or organophilic lignites" and "the present invention preferably does not have added to it any organophilic clays." See '832 Patent, cols. 3:19-25, 13:66-67 (emphasis added). Thus, such a limitation may be characteristic of a preferred embodiment, but it is clearly not required by the specification, and the Court cannot rewrite a claim to make it more definite. See Nova Indus., L.P. v. Micro Molds Corp., 350 F.3d 1348, 1354-57 (Fed. Cir. 2003).

Moreover, Halliburton's arguments fail to overcome the presumption of the doctrine of claim differentiation, under which a limitation found in a dependent claim is presumed to not belong to the independent claim because each claim is presumed to
have a different scope. Nazomi Commc'ns, 403 F.3d at 1370; Comark Commc'ns, 156 F.3d at 1187. Numerous dependent claims in the '832 Patent add the limitation of a drilling fluid that forms a structure capable of suspending drill cuttings at rest and that is instantaneously disruptible by movement. '832 Patent, cols. 16:27-29 (Claim 9), 18:31-33 (Claim 42), 19:28-30 (Claim 47), 21:32-34 (Claim 80), 22:28-30 (Claim 85); 24:31-33 (Claim 117), 26:8-11 (Claim 121). Each of the asserted independent claims has dependent claims that add the limitation "wherein said drilling fluid is substantially free of organophilic clay," or "does not require organophilic clays to provide filtration control." Id. at cols. 16:57-58 (Claim 20, dependent on Claim 1), 16:61-62 (Claim 22, indirectly dependent on Claim 1), 19:58-59 (Claim 58, dependent on Claim 2), 19:62-64 (Claim 60, indirectly dependent on Claim 2), 22:57-58 (Claim 95, dependent on Claim 3), 22:61-62 (Claim 97, dependent on Claim 3), 26:20-24 (Claims 125 and 126, dependent on Claim 5). Halliburton's own expert witness, Dr. Ronald Clark, relied on dependent claim 20 for the "substantially free of organic clay" limitation in opining that those of ordinary skill in the art would adopt Halliburton's definition. See Expert Report of Ronald Clark ("Clark Rep.") at 40. 8 The dependent claims are meaningless if, as Halliburton suggests, a fragile gel drilling fluid must contain no or low amounts of organophilic clays. The doctrine of claim differentiation prohibits such an interpretation absent strong evidence that the patentees intended to narrow the independent claims' scope. See Liebel-Flarsheim, 358 F.3d at 910.

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8 Halliburton argues that Dr. Clark merely stated his opinion that the dependent claims describe fragile-gel-drilling-fluid characteristics and did not take the position that Halliburton's definition requires importing the dependent claims' limitations. See Docket No. 125 at 13. However, Dr. Clark's report states that "[s]everal of the dependent claims expressly teach the fragile gel properties," that "Claim 9 teaches that the claimed fragile gel drilling fluid is 'capable of suspending drill cuttings at rest and . . . may be immediately disrupted by movement,'" that "[C]laim 20 teaches that the fragile gel drilling fluid is 'substantially free of organophilic clay,'" and that skilled artisans would "therefore understand that . . . 'fragile gel drilling fluid' would have [Halliburton's proposed construction]." Clark Rep. at 40 (emphasis added). Dr. Clark clearly relied on these dependent claims for adopting Halliburton's definition.

--- End Footnotes ---

Further, nothing in the prosecution history of the '832 Patent that was brought to the Court's attention indicates that the lack of organophilic clay should be a part of the definition. As discussed above, to distinguish the invention from the prior art and rebut the PTO's findings that the prior art disclosed the claimed composition, the patentees stated that the claims are directed to and limited by "a fragile gel drilling fluid or a method of using a fragile gel drilling fluid or a drilling fluid having fragile gel characteristics." Sept. 2004 Amendment at 31. The patentees pointed to several figures and tables in the specification to show those allegedly distinguishing characteristics. At no time did the patentees refer to the organophilic clay limitation as distinguishing the claimed invention from the prior art. The Court will not now add that limitation to the definition of fragile gel drilling fluid without some clear basis to do so.

CONCLUSION

For the foregoing reasons, the asserted claims, i.e. independent Claims 1, 2, 3 and 5 and related dependent claims, are invalid as a matter of law because they are indefinite. The Court is unable to construe "fragile gel drilling fluid" or "fragile gel" such that those terms would have a meaning that is not purely subjective. Accordingly, the Court GRANTS M-I's Motion for Summary Judgment of Invalidity based on indefiniteness. Because the Court has found that the asserted claims of the '832 Patent are indefinite, it is unnecessary to address M-I's allegations of invalidity based on non-enablement or inadequate written description. All other pending motions are DENIED as moot.

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1. Claim 1 - "frame"

Bradford proposes that "frame" means "a structure that gives shape or support." Defendants propose that "frame" means "a basic structure, but excluding a substantially continuous surface (i.e., walls), that gives shape or support to the rack container." The difference between the parties' definitions is Defendants' additional limitation that a "frame" cannot have substantially continuous surfaces. In other words, according to Defendants, a "frame" cannot include a "wall".

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The dispute over "frame" is essentially the flip side of the discussion concerning the term "side walls" in the '119 Patent. As will be recalled, as to the '119 Patent, the issue was whether "side walls" requires substantially, continuous surfaces. The Court held that it does because the specification of '119 Patent consistently uses "side walls" in reference to embodiments with substantially continuous surfaces and "sides" in reference to embodiments without substantially continuous surfaces (i.e., embodiments with a frame-like structure).

"There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant." The Toro Co. v. White Consol. Ind., Inc., 199 F.3d 1295, 1302 (Fed. Cir. 1999). Moreover, the same claim term in related patents is presumed to carry the same construction. Omega Eng., Inc. v. Raytek Corp., 334 F.3d 1314, 1334 (Fed. Cir. 2003). The corollary to both of these propositions would be that different terms in related patents are presumed to have different meanings.

As indicated above, the '916 Patent is a divisional application of '119 Patent. Therefore, it is presumed that "side walls" in the '119 Patent carries a different meaning from "frame" in the '096 Patent. If "frame" were construed to include substantially continuous surfaces, then "side walls" would be rendered superfluous. Additionally, if "frame" encompassed containers with substantially continuous surfaces, there would presumably be a problem with double-patenting vis-a-vis the '119 Patent. Finally, the Court again points out that in prosecuting the '119 Patent office, Bradford argued that containers with frame-like structures, such as that claimed by Janus, do not teach "side walls". Therefore, for all of those reasons, the Court agrees with Defendants that "frame" must exclude substantially continuous surfaces.

Accordingly, the Court holds that "frame" means "a basic structure, but excluding a substantially continuous surface (i.e., walls), that gives shape or support to the rack container."

**ii. Frame**

The Plaintiffs contend that the term "frame" should be construed as: the entirety of the frame with the exception of the lenses and including the lens rims (if provided), the frame magnetic members, the nose bridge, and the arms. Crucially, Plaintiffs insist that the term "frame" should be read to encompass both rimmed and rimless eyeglasses, such that a frame made up only of pins or screws is as much a "frame" as one taking the form of a rim around the lenses. The Defendant, on the other hand, argues that a "frame" is an eyeglass device that includes, at least, a bridge and rims. Defendants insist that the rims have to at least partially surround the lenses and, if the rims do not completely encircle the lenses, the frame must include some sort of rim wire to hold the lenses in place.

Defendant's argument, which focuses on the language of the claim itself, is more faithful to the principles of claim construction outlined in Phillips, and is more persuasive to this court. As Defendant points out, the relevant claim describes the frame as supporting lenses "therein" and "including" a middle bridge portion. Because the claim discloses a frame that supports lenses "therein," the frame must be capable of supporting the lenses in the frame, and only a frame with rims is capable of supporting lenses in the frame. In addition, the claim language requires that the frame "include" a middle bridge portion, which indicates that the frame must also have other components, i.e. rims. Therefore, considering the term "frame" in the context in which the term is used in the asserted claims, which the Federal Circuit instructed district courts to do at the outset of their claim construction analysis, see Phillips, supra, strongly compels the finding that the term "frame" includes some kind of rim surrounding the lenses.

This conclusion is supported by an analysis of the specification. Specifically, the Patents-in-Suit are devoid of any language disclosing any kind of "frames" other than those containing rims. On the contrary, the specification of the '054 Patent discloses "an eyeglass device in accordance with the present invention comprises a primary spectacle frame 10 for supporting primary lenses therein," col. 1, l. 66 -- col. 2, l. 2, and explains that "an auxiliary spectacle frame 20 is provided for supporting the auxiliary lenses therein," col. 2, ll. 7-9; crucially, the primary spectacle frame 10 in Figures 1 and 2 and the auxiliary spectacle frame 20 in Figures 1-3 of the '054 Patent all include rims. In fact, each of the over thirty diagrams and figures in the Patents-in-Suit disclose eyeglass devices that clearly include rims.
Plaintiffs respond by pointing to a series of generalized disclaimers explaining that the specifications provided in the Patents-in-Suit are not intended to foreclose other variations that are within the scope of the claims. See, e.g., '054 Patent, col. 2, ll. 56-62 ("Although this invention has been described with a certain degree of particularity, it is to be understood that the present disclosure has been made by way of example only and that numerous changes in the detailed construction and the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention hereinafter claimed."). Although this court is mindful of the Federal Circuit's repeated admonition to avoid "reading limitations from the specification into the claim," Phillips, 415 F.3d at 1323, 2 Plaintiffs' generalized statements are nevertheless unpersuasive, for several reasons.

2 That said, this court agrees with the Federal Circuit that the distinction between using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim can be a difficult one to apply in practice. See Phillips, 415 F.3d at 1323 (citing Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186-87 (Fed. Cir. 1998) ("there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification").

First, Plaintiffs have pointed to various places in the Patents-in-Suit in which the patentee described specific ways in which the disclosed inventions could be changed. See '811 Patent, col. 6, ll. 33-35 (acknowledging that an illustration shows a magnetic member with only one or two parts, but explaining "that a magnetic member can have more than two parts"); '896 Patent, col. 6, ll. 50-53 (same); '811 Patent, col. 8, 1. 65 -- col. 9, 1. 1 ("Different embodiments in the present invention can be combined in different ways. For example, the vertical flange can be combined with the lateral flanges. The hinge can be combined with the lateral flanges."); '896 Patent, col., 9, ll. 22-25 (same). 3 The absence of any specific statement about the possibility of frames with or without rims argues against construing the term "frames" to include rimless frames. Generalized disclaimers provide no guidance in defining which variations are within the scope of claim language and which are not. See Les Traitements Des Eaux Poseidon v. Kwi, Inc., 135 F. Supp. 2d 126, 135 (D. Mass 2001) (boilerplate language in the specification asserting that the general description is non-restrictive carries "little weight"). Therefore, the court finds that the specifications in the '054 Patent and the other Patents-in-Suit clearly suggest that "frames" include rims.

3 Admittedly, two of the Patents-in-Suit also contain language explaining that, "different types of auxiliary frames and different forms of primary frames, individually, is also a different embodiment of the present invention." '811 Patent, col. 9, ll. 7-9; '896 Patent, col. 9, ll. 31-33. But this language simply begs the question of whether "frames" can be rimless. It says nothing about the ways in which frames can differ from each other, and can easily be read as allowing for frames with rims made up of different materials.

In addition, Plaintiffs argue that this court should be persuaded by other district courts that have rejected many, if not all, of Defendant's arguments and adopted Plaintiffs' interpretation of the term "frame" in the '054 Patent and in related patents. See Aspex Eye-wear, Inc. and Contour Optik, Inc. v. E'Lite Optik, Inc. (Dist. Ct. Nev. CV-S-00-1116-PMP (PAL)) (finding that the term "frame" in both the '054 and '811 Patents refers to both rimmed and rimless spectacles because it is commonly understood to refer to some structures that surround an object and other structures that connect parts but do not surround anything); Aspex Eyewear, Inc. v. Miracle Optics, Inc., 2003 U.S. Dist. LEXIS 26355, (C. Dist. Cal. CV 01-10396 (Order Construing Claims, p. 37-38, February 14, 2003) (refusing to construe the term "primary frame" (in a different patent) as requiring a pair of lens rims of a continuous eye-loop type because the claim language is broader and the specification does not require a particular type of lens rim construction). Although this court has reviewed these decisions, the court is not persuaded by them.

First, these decisions were made before the Federal Circuit clarified the principles of claim construction in Phillips. Second, the unwillingness of the Federal Circuit to itself give any deference to the claim construction findings of District Courts further dissuades this court from giving significant precedential value to judgments of its colleagues. See Cybor Corp. v.
FAS Techs., 138 F.3d 1448, 1455 (Fed. Cir. 1998) (the Supreme Court endorsed this court's role in providing national uniformity to the construction of a patent claim, a role that would be impeded if we were bound to give deference to a trial judge's asserted factual determinations incident to claim construction). Evidently, the Federal Circuit believes that it is its responsibility--not the collective responsibility of federal courts--to ensure uniformity of claim construction, and the Federal Circuit will likely have the opportunity to bring uniformity to the construction of the claim language at issue in this case.

4 Plaintiffs and Defendant support their arguments with testimony from outside experts and other sources. For example, Plaintiffs point to the Defendant's marketing materials, which allegedly refer to frames as "frames" even when they are rimless, and to testimony by Richard Chao, one of the inventors. The Defendant supports its argument with expert testimony from Allen Leck, who claims that the ordinary meaning of the term "frame" to a person having skill in the eyeglasses industry is that it should include at least a bridge and rims. Plaintiffs have filed a motion to exclude Mr. Leck's testimony. The court finds none of this evidence to be particularly helpful, particularly in light of the intrinsic evidence, which provides the basis for this court's interpretations. As such, the court declines to reach Plaintiffs' motion to exclude Mr. Leck's testimony at this time.

Therefore, the court finds that a "frame" is an eyeglass device that includes, at least, a bridge and rims.
The specification defines frame broadly. First, it states that the frame may comprise side rails, may comprise end rails, and that "the end rails and the side rails need not interrelate at all, but could simply be attached to the respective interior opposing side walls of the mounting surface of the table top." 3 (Id. at 5:42, 6:22, 6:67.) The specification also states that "the frame may be configured in a variety of shapes and configurations, including, but not limited to, a circle, polygon, square, rectangle, triangle, or any other suitable geometric configuration." (Id. at 7:13.) In these ways, the specification indicates that the term "frame" should be broadly construed to include structures that consist only of side rails.

This construction is also supported by the ordinary meaning of the term "frame." See Texas Digital Sys., 308 F.3d at 1202. The dictionary lists two possible definitions: (1) "something composed of parts fitted together and united" and (2) "the constructional system that gives shape and strength." 4 The first definition would require that the frame components be "fitted together and united," so this definition would exclude frames consisting of side rails because side rails are neither fitted together nor united. The second definition is much broader and would include many different types of frames. The second definition is consistent with the patent's claims and specification, which indicate that a frame can consist solely of side rails. **We therefore construe the term "frame" broadly to include structures consisting only of side rails.**

--- Footnotes --

3 Throughout this claim construction, all bolded numbers in the specification, which refer to the specification's figures, have been omitted.

4 Throughout this claim construction, the ordinary meaning of all terms were obtained from the Merriam-Webster Online Dictionary. This dictionary is located at <<UNDERLINE>www.m-w.com> and was last accessed by this Court on May 18, 2004.

--- End Footnotes ---
U.S. Dist. LEXIS 26355, No. CV 01-10396 (C.D.Cal. February 14, 2003); See Contour's Mot., Ex. E. In Miracle, the court considered whether the accused device avoided infringement by including "rim locks," "a structure built in the lens rim … which allows the spectacle frame to be opened so that lenses can be easily inserted," in the frame. Id. at 11-13. Although the specification did not contain pictures of the design with rim locks, the court held the term "primary spectacle frame" included: "the lens rims (if provided), nose bridge, extensions, projections (if provided), the first magnetic member and conceivably rim locks." Id. at 13. The claims construed by the Miracle court were as follows: "a primary spectacle frame having two side portion extensions, each of said extensions having a front side, a rear side and a first magnetic member secured to said rear side" or "a primary frame adapted to support an auxiliary frame, which includes a first bridge and two sides …" Id. at 6-8.

The Court is persuaded by Contour's argument that nothing in the wording of patents '054 or '811 limits the term "frame" to the narrow interpretation proposed by E'Lite. Because "frame" is commonly understood to refer to some structures that surround an object and other structures that connect parts but do not surround anything, the Court construes the patent to refer to both kinds of structures. Consequently, the Court interprets the words "second or auxiliary frame" in Claims 1 and 31 of the '811 patent to include both rimmed and rimless spectacles and concludes that a lens may be supported "therein" if they are secured to the frame.

The C-Clip, which connects the secondary lenses with a foldable metal bridge, contains an element that corresponds to a "frame" as used in the '054 and '811 patent claims. Thus, this defense proffered by E'Lite against Contour's charge of infringement fails.

1774

A. Frame

PMG's proposed interpretation of the term "frame" is that a frame is "generally a multi-element structure and … that the frame actually claimed in Claim 15 is a frame with rocker arms and base supports." Mem. in Supp. of PMG's Renewed Mot. for Summ. J. at 15.

Federal's proposed interpretation of the term "frame" is that a frame is a "structure (which may consist of one or more elements) that supports two or more spikes and that includes holes into which the spikes are inserted." Defs.' Opp'n to Pl.'s Renewed Mot. for Summ. J. at 3.

PMG asserts that the plain meaning of the word "frame” excludes Federal's proposed interpretation and that an examination of the patent specification shows that the term "frame" refers to a rocker arm and base support arrangement as disclosed in the patent specification. PMG further asserts that the prosecution history precludes the interpretation advanced by Federal because the patent applicants expressly limited themselves to the frame as set forth in the patent specification.

This Court disagrees with plaintiff PMG and finds that, following a review of the patent's claim, specification, and prosecution history, the ordinary meaning of the word "frame” does not require the frame to have base supports and rocker arms. Further, this Court believes that the patent specification does not require this Court to adopt the narrow or limiting interpretation of the term "frame,” as being only a type of frame with rocker arms and base supports. Finally, this Court agrees with Federal that the prosecution history broadens rather than narrows the scope of Claim 15.

Consequently, this Court, following a review of the claim, specification, and prosecution history, interprets the '373 frame element as being a structure, which may consist of one or more elements, that supports two or more spikes and that includes holes into which the spikes are inserted.

1775

1. Claim 1, Element 1, "frame"
To define frame, BMS proposes: "A pre-assembled unit with a top jamb, and two side jambs that is ready for insertion into a
doors opening in a wall." Endura proposes that the definition be merely: "Spaced vertical side jambs connected at the top by
a horizontal top jamb, and excluding a sill."

Both sides agree that a frame has a top jamb and two side jambs, which is in the language of the claim itself. The points
of contention are whether one skilled in the art would understand from the definition that the frame is pre-assembled, whether
it is ready for insertion into a door opening, and whether it would exclude a sill.

The patentee did not demonstrate a clear intent to deviate from the ordinary and accustomed meaning of the term "frame" by
redefining the term in the specifications. See Johnson Worldwide, 175 F.3d at 990. Such a claim should be read in
accordance with precepts of English grammar, and with the presumption that the ordinary and accustomed meaning
attributed to the term, by those skilled in the art, is correct. Of course the claim should be read in view of the specification,
which cannot expand the scope of the claim, but can provide guidance as to its meaning.

Endura's proposed definition incorporates language from Col. 2, l. 25-27: "The door frame F is comprised of spaced vertical
side jambs 1 and 2 connected together at the top by a horizontal top jamb." BMS uses the same language at page 13 of its
initial brief on claim construction. While a description of a preferred embodiment is instructive, it is not, per se, a definition
of a claim term.

The first point of contention is whether, in the context of this claim, a "frame" is pre-assembled. Neither claim 1, the
independent claim, nor claim 2, the dependent claim, refer to a kit with parts for a frame, or to a group of separate parts
which may be put together into a frame. The claim starts with "A frame comprising . . . ." Endura's own proposed definition
states: "side jambs connected together at the top by a horizontal top jamb . . . ." Even Endura does not propose a set or group
of parts, or a kit containing parts, which may be assembled into a frame. It seems evident that until the parts are connected
or assembled, there is no frame, so a "frame" must be already assembled or pre-assembled.

The abstract, drawings, and specification comport with this interpretation. The abstract states that the members are
connected to provide "a single, low cost structure." Figure 1 shows a complete door frame. The "Background of the
Invention" describes providing builders with completed frames, built from scrap lumber, which can be installed more easily,
and cheaply installed than a custom frame. There is no indication anywhere that the claim was intended to cover, or could
cover, a kit or group of parts which could be sold to a builder and assembled into a frame.

Finally, a definition that states that a "frame" is an assembled unit, or is something composed of parts connected together,
tacks the definitions found in standard dictionaries relied upon by Endura. See Meriam-Websters Collegiate Dictionary 462
(10th ed. 2002) ("something composed of parts and fitted together and united") (emphasis added); Websters Encyclopedic
Unabridged Dictionary of the English Language 563 (1989) ("a rigid structure formed of relatively slender pieces joined so
as to surround . . . .") (emphasis added).

BMS's proposed definition also adds the phrase "ready for insertion into a door opening in a wall." Nothing in the claim
language indicates, or even hints, that the frame is ready to be inserted into a wall opening. There is no telling what type of
additional hardware, spacers, fasteners, and lumber might be needed to prepare a hole in the wall, or the frame itself, for
installation. Col. 3, l. 14-17, indicates that in the preferred embodiment a door frame would be ready for placement into a
doors opening, but the claim language is not so limited, and this language will not be added to the definition.

On the other hand, Endura's proposed definition includes the words "and excluding a sill." The claim language sets out
clearly what comprises the frame, namely a top jamb and two side jambs. It would be possible to list dozens of other items
which are not part of the frame, such as the door, the door knob, the hinges, the insulation around the frame, etc., but that
would not add much clarity to the definition. Endura's attorney indicated that inclusion of the language might be helpful in
an anticipated patent dispute, but that matter can be resolved when it arises. Therefore, the court interprets this term as
follows:

"frame" means: "an assembled structure composed of two spaced side jambs connected together at the top by a horizontal
top jamb."
1776
i. "Ear Warmer Frame"

As both 180s and Gordini propose, I construe "ear warmer frame" as "a structure that supports a device worn on or over the ears whose primary function is to keep ears warm." (See id. at 9; Def. Gordini's Response to 180s [sic] Initial Markman Claim Constr. Brief ("Def.'s Response") at 3.)

1777

"Frame Including a Pair of Generally Disposed Side Rails"

The parties' competing definitions of this term are set forth in Table 3.

Table 3 - Parties' Claim Constructions for Claim 92 of the '092 Patent

<table>
<thead>
<tr>
<th>Term, Patent, and Ind. Claim</th>
<th>Pl.'s Interp.</th>
<th>Def.'s Interp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>frame including a pair of generally disposed side rails</td>
<td>Lifetime's interpretation: &quot;A frame may consist only of side rails alone.&quot; (Lifetime's Rep. in Supp. (30) at 12-13.)</td>
<td>Correll's interpretation: &quot;Structure that is composed of parts fitted together and united that may include side rails, but is not composed only of side rails.&quot; (Correll's Mem. in Opp. (22) at 23.)</td>
</tr>
</tbody>
</table>

Much like the term "retaining assembly including a cross brace member," the construction of this term turns on the word including. The parties' arguments are similar to those made in connection with the previous term. Correll contends that use of the word including means that the frame requires both generally parallel side rails and other parts. Lifetime takes the position that although side rails are required, other parts are not.

"Frame" means "a rigid structure formed of relatively slender pieces, joined so as to surround sizable empty spaces or nonstructural panels, and generally used as a major support in buildings or engineering works, machinery, furniture, etc." Webster's at 760.

The specification expressly teaches that the frame may be made of two side rails alone, or it may be made of two end rails alone. The specification reads:

The frame 40 may comprise a first side rail 42 and an opposing second side rail 44. Preferably, the first side rail 42 is disposed substantially parallel the opposing second side rail 44. … The frame 40 may also comprise a first end rail 54 and an opposing second end rail 56. Preferably, the first end rail 54 is disposed substantially parallel to the opposing end rail 56. (Sears Decl., Ex. A, '092 Patent at col. 5, ins. 43-46; id. at col. 6, ins. 22-25.)

The same analysis under Amgen that applied to the retaining assembly element applies here, leading to the conclusion that while the frame must contain either generally parallel side or end rails, other components may be added to the frame, but are not required. 7

--- Footnotes ---

7 Based on the definition of the word frame, Correll argues that the side rails must be "united" by some structure to form a frame. As noted above, the ordinary meaning of the word frame does require that the parts of the frame be joined, but does
not require that the parts be joined by another part of the frame. In the present case, the parts of the frame of the Correll table are joined; they are joined by the table top. Under the ordinary meaning of frame and the teachings of the specification, that is enough.

The specification also demonstrates that the frame does not necessarily have to provide support to the table:

In one presently preferred embodiment of the present invention, the frame 40 is formed of a substantially sturdy, rigid material sufficient to provide structural integrity to the table top 12. For example, the frame 40 may be formed of metal. However, it will be readily appreciated that the frame may be formed of a wide variety of other suitable materials which are consistent with the spirit and scope of the present invention. It will further be appreciated that the size and configuration of the frame 40 will depend, in part, on the size and configuration of the table top 12.

(Id. at col. 7, lines 4-13.)

Based on the above, the court's construction of frame including a pair of generally disposed side rails is: A structure formed of relatively slender pieces or parts, fitted or joined to the table, that may be side rails alone or end rails alone, and other components may also be added, but are not required.

8 In the context of claim 34 of the '331 Patent, the parties again dispute the interpretation of the term "frame," but this time do so as a singular term and without any modifying limitations, as were present above. Because the interpretation of "frame including a pair of generally disposed side rails" of claim 92 of the '092 Patent necessarily provides a construction of the word frame, there is no need to define that word again, or to look again to the intrinsic record for guidance as to its meaning with respect to the '331 Patent.

3 Material fact disputes regarding both accused products would preclude summary judgment on the issue of infringement as to this element. There is a fact question whether both the Icebreaker and Universal have a frame: the Icebreaker's mesh cage and cape lid arguably comprise a frame, and the Universal's cage and support bar arguably serve a frame. Also, the superior portions of both products' frames extend above the flue opening when mounted on the flue. In addition, even if these products do not literally infringe element (a), the evidence suggests that the differences between them and the claimed product are insubstantial.
3. Frangible Portion

The term "frangible portion" appears throughout the '097 patent and the reexamined '097 patent and specifically in asserted claims 11, 24, 25, 27, 32, 34, 35, 39, and 40-42. While used as a single term, this phrase is better defined by its parts. First, Webster's Universal defines "frangible" as, "easily broken; breakable" or, as in Webster's Third, "capable of being broken." Webster's Universal, Stant Ex. 103, p. 761; Webster's Third, Gerdes Ex. 228. Portion is defined, in relevant part, as "a part of a whole." Webster's Universal, Stant Ex. 103, p. 1768.

In claims of the reexamined '097 patent, the patentee describes a fuel cap in which "an impact will fracture said frangible portion of said first flange leaving said housing and said second flange intact to seal said neck." Reexamined '097 patent, col. 1, 11. 58-61. In the dependent claims, the patentee further describes this frangible portion as "positioned to lie between the first and second housing" and formed by a "groove in the axially upper portion of the housing to weaken the axially upper portion of the housing to form the frangible portion of the housing." Id. at col. 2, 11. 43-49. Similarly, in Claims 34, 35, and 42, and their dependent claims, the frangible portion is carefully described as "formed in the housing to lie between the first and second flanges," id. at col. 3, 11. 51-52, or "between the outer cover and the second flange," id. at col. 3, 11. 62-63. These claims, in combination with the specification which describes a "frangible portion" of the first flange designed "to allow the cover to break away due to an impact without breaking the housing itself," evidence a clear intention to use "frangible portion" in its ordinary manner -- that is, to describe a part of the structure that is able to be broken.

Nothing in the claims or specification suggests that the patentee gave the term an extraordinary meaning such as that advanced by Gerdes. The court disagrees with Gerdes' suggestion that the definition should reflect the patentee's intent in including a "frangible portion" in the invention. When it is necessary to do so, the patentee adequately describes the term such that its purpose, that is, the reason it was included and its function in the invention, is clear to the reader of the claims and the specification. Thus, the court does not believe that it was the patentee's intent to have any limitation on the purpose of the "frangible portion" read specifically into the definition of the term itself. Thus, the court finds no reason to do so either. See Int'l Rectifier Corp., 361 F.3d at 1370.

The court also disagrees with Stant's argument that the ordinary meaning of "frangible" requires qualification as "easily breakable." The term "easily" is imprecise and indefinite. If the court adopted Stant's position, people with ordinary skill in the art may read this term very differently depending on how "easily" one determines that the structure must break. For example, nothing in the claims or the specification makes clear the amount of force required to break the structure. Under this definition, a potential competitor would have to determine whether his or her invention breaks too easily, not easily enough, or with just the right amount of ease to constitute an infringement of the claimed fuel cap. This certainly does not provide the potential competitor with the required precise definition that would allow the competitor to know whether he is infringing. See Morton Int'l, Inc. v. Cardinal Chem. Co., 5 F.3d 1464, 1470 (Fed. Cir. 1993).

For these reasons, the court finds that the definition of "frangible portion" is a part of a whole that is capable of being broken.

2. Claim Term Two - "Free"

The term "free" is found in Claims 1-5, 7, 11-13, and 16-18 of the '057 patent, and in Claims 1-5, 7 and 11 of the '704 patent. Plaintiff asks this Court to construe the term as the portion of the rod extending from the base to the extremity of the rod, which is not restrained from moving, and encompassing a rod with either one or two "free" ends. Plaintiff bases its argument on the specific claims contained in the '057 and '704 patents. In addition, plaintiff introduces extrinsic evidence in
the form of the Federal Circuit's November 18, 2003, decision and expert testimony from R. Lee Rawls.

Defendant asks this Court to construe the term "free" as an end of the rod that is unsupported except through the rod itself and therefore is able to move such that when it moves, the rod bends in a bow like fashion. Defendant bases its argument on a dictionary definition from Merriam Webster's Ninth New Collegiate Dictionary, as well as the specific claims and figures in the '704 and '057 patents. Defendant also offers extrinsic evidence in the form of expert testimony from Evan R. Flavell.

In the context of this patent, the term "free" is used to refer to an end of one of the rods. For example, "one end of each of the rods being free," "the free ends of the rods," and "the other end being free." '057 Patent at 7:52, 7:63-64 and 7:66-67 and '704 Patent at 7:33. The specifications of the patents describe a "free end" as the portion of the rod that "extends upward from retainer 36 and base 10." '057 Patent at 3:44-45 and '704 Patent at 4:3-5. The specification further details "[t]he rods are thus free to bend in bow-like fashion, as illustrated in FIGS. 12-22, and produce a force in opposition to the force which bends them." '057 Patent at 3:51-54.

The common definition of "free" is "not hampered or restricted," "not fastened" or "not confined to a particular place." Webster's Ninth New Collegiate Dictionary, at 490 (1990). It does not appear that, in the context of the patent, this definition applies exactly. For example, while the ends of the rods are described as being "free," they are in fact, somewhat restricted by the bolts holding each rod in place, and by the cable attached to the rod. Thus, the common definition must be somewhat altered to define the term "free" as it applies to the rods. The Court finds that a combination of the parties' definitions -- the unsupported portion of the rod that is free to move about relative to the fixed mounting point so that the rod is able to bend in a bow-like fashion -- embodies the meaning of free in this context.

This definition is supported by plaintiff's expert testimony. Mr. Rawls testified that the term "free" means "a portion of the rod extending from the base to the opposite tip of the rods, which is free to move about relative to the fixed mounting point." (Dkt. # 316 at 7). Mr. Rawls emphasizes that this definition recognizes that a rod may have two free ends, and does not require a rod to have one free end and one fixed end. (Dkt. # 316 at 7). This follows the Court's determination, infra, that a rod mounted in cantilevered fashion may also encompass two free ends. Furthermore, the Federal Circuit Court of Appeals has also noted that the language of the claims does not require a fixed end limitation. (See Dkt. # 243, Ex. 1 at 6-7). Accordingly, the Court finds that the proper construction of the term "free" is the unsupported portion of the rod that is free to move about relative to the fixed mounting point so that the rod is able to bend in a bow-like fashion.

1781

c. "free along substantially their entire length"

This term was not defined in the '364 patent specification, but the term was defined by Orr in her argument in support of Amendment A distinguishing prior art, namely, the Santoni patent, the Graham patent, and the Lawson patent. Specifically, Orr stated that the "connection only in the waist area at the side of the garment is vital to the function of the invention." Amendment A at 4, Defendants' Appendix at 53 (emphasis added). This language allowed Orr to successfully distinguish the Graham and the Lawson patents.

The Graham patent included stitching that connected the crotch opening in the crotch area between the legs. Likewise, the Lawson patent had a button that connected the crotch opening in the crotch area between the legs. As a result, the Graham and Lawson patents feature garments that have free edges in the front and in the rear but are connected by stitching or a button in the crotch area between the legs. Orr successfully distinguished the '364 patent by explaining that edges in the '364 patent were different because they are free along substantially their entire length. Amendment A at 11-12, Defendants' Appendix at 60-61.

In addition, when distinguishing the '364 patent from the Graham and Lawson patents, Orr specifically narrowed the '364 patent's scope to exclude all garments that include crotch structures with mechanical closure devices. Orr stated, "[r]ather than simply an openable crotch structure, the Applicant claims a specific garment crotch structure that is adapted to remain closed in normal use and even during strenuous exercise, but still allows manual opening without having to remove the garment and without having to use mechanical enclosure devices such as zippers or . . . buttons." Amendment A at 13, Defendants' Appendix at 62 (emphasis added).
The court construes the term "free along substantially their entire length" to mean that the edges are not connected to the garment along their length except in the waist area of the garment in the front and in the rear at or near the sides of the garment.

1782

The first term in dispute is "a free distal end forming a handle spaced outwardly therefrom." One World asks me to construe the term as meaning "a handle formed at the other end of the arm assembly." Rexon does not dispute this choice of words, but argues that it is an incomplete definition, which ignores language about the spacing of the handle. Rexon's proposed construction defines the distal end in relation to the fixed end of the machine, i.e., as its opposite. This limitation is supported by language in the specification that is cited by both parties. (976 Patent, Col. 4, ll. 3-4) ("a handle 66 at the opposite end of the arm assembly 62"). For this reason, I construe the disputed term as "a handle at the end of the arm assembly opposite the fixed end, and spaced away from the distal end."

1783

6) the term "free edge" means "an edge which is not connected to the hanger body or hook;"

1784

c. "free edge of material"

The court construes the term "free edge of material" to mean that the material that has a free edge is not connected to anything -- i.e., there is no closure mechanism similar to the stitching used in Graham or the button used in Lawson. Accordingly, any of the defendants' garments that has a closure mechanism will be outside the '364 patent's limitations because such a garment will not have a first or second "free edge of material extending from the first [or second] crotch portion front and rear substantially to the waist area at the left [or right] side of the garment." Claim seven, Defendants' Appendix at 10. To interpret this term in any other manner would read on prior art -- Graham and Lawson -- and therefore invalidate the '364 patent. See Harris Corporation, 114 F.3d at 1153.

1785

Aspex contends that "a rearwardly directed free end for securing a magnetic member" means "an unattached end of the auxiliary spectacle frame arm for connecting directly or indirectly to a magnetic member, in a manner such that the connection is not likely to fail or give way." Ps. Br. 16. Aspex also argues--as it did concerning claim 18--that "magnetic member" means "either a permanent magnet or ferromagnetic member, but at least either the first or second magnetic members must be a permanent magnet." Ps. Br. 16. E'Lite posits that the limitation should be construed to mean "a rearwardly directed end portion for securing a magnet." D. Br. 23. As with claim 18, E'Lite maintains that the phrase "magnetic member" need not be construed. For the reasons set out supra at § III(D)(1), the court concludes that it is unnecessary to construe the term "magnetic member."

E'Lite accepts Aspex's construction of "secure" with the exception of "or indirectly." As with claim 18, Aspex provides no support for adding "or indirectly" to its construction of "secure." Even if the addition of "or indirectly" does not alter the meaning of this limitation, it inserts more ambiguity into claim 23 than without it. The court therefore rejects the use of this phrase. Thus the only remaining term at issue in this disputed limitation is "free end."

Aspex argues that its construction is consistent with the ordinary meaning of the word "free" and the disclosure of the specification. Aspex relies on FIG. 7 and the description of the preferred embodiment to support its position that each
auxiliary frame arm 21 has an unattached end that secures a magnetic member 22. E'Lite responds that Aspex's construction of "free end" as "unattached end" makes no sense, because the "free end" is attached to the arm of the auxiliary frame.

E'Lite argues that the '545 patent's description of this limitation is indefinite, and that, other than its appearance in claim 23, there is no mention, description, indication, figure reference, or any other support for the use of "free end" in the specification. In describing the area of the invention where the "free ends" should be, the specification simply refers to the "end portions" of the auxiliary frame's arms. D. App. 8. E'Lite maintains that the best construction of "free end" is "end portion."

The court holds that the best construction of "free end" is "end portion." First, construing "free end" to mean "unattached end," without qualification, is inconsistent with the undeniable requirement that the "free end" be attached to the auxiliary arm. Even with this qualification, however, Aspex's proposed construction is misleading. "Unattached" is the negative of the adjective "attached," which means "(t)acked on, fastened by material union to . . . [or] (j)oined functionally[.]" Oxford English Dictionary (Oxford Univ. Press, 2d ed. 1989); see Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002) ("The ordinary meaning of a claim term may be determined by reviewing a variety of sources, including . . . dictionaries and treatises[.]"). Construing "free end" as "unattached end" could limit the "free end" to the small part of the auxiliary frame arm 21 that is depicted to the left of the magnetic member 22 in FIG. 7. But limiting "free end" in this way is inconsistent with the claim language of claim 23: "and a pair of magnetic members respectively secured in the free ends of said arms." D. App. 9-10. Considering FIG. 7, on which Aspex heavily relies, the magnetic member 22 is secured to the auxiliary frame arms on both the left and the right sides of the magnetic member 22, as depicted in FIG. 7. The right side of the auxiliary frame arm 21 that helps to secure magnetic member 22 is also in contact (i.e., material union) with the primary frame spectacle (part 11). Thus a piece of the auxiliary frame arm that secures the magnetic members (what claim 23 calls the "free ends") can also be materially united or functionally joined to the primary spectacle frame. Construing "free end" as "unattached end" is not necessarily in conflict with claim 23's language, if unattached means "not permanently fixed" (or some form of physical union that is more than mere contact). But "unattached end" also lends support to a reading of the term that is inconsistent with the plain language of claim 23, if unattached means "not materially united" or "not functionally joined." The court rejects construing "free end" as "unattached end" because this term could convey an inaccurate understanding of the invention.

The court holds that "end portion" is the best construction of "free end," because the '545 patent does not use "free ends" at all in the specification, but it does use the phrase "end portion" when describing the part of the invention where the "free ends" would be. See D. App. 8.

Accordingly, the court construes "a rearwardly directed free end for securing a magnetic member" to mean "a rearwardly directed end portion for connecting a magnetic member in a manner such that the connection is not likely to fail or give way."

The parties also disagree on the meaning of "free from play" in claims 15 and 65 of the '486 patent. Initially, Unilin argued that the phrase means those panel separation directions are "free from visible spaces (as viewed by a user from a normal height) so as to prevent free movement in the joint" in the vertical and horizontal disassembly directions. (Unilin Open. Br. 19-20.) In its initial and response briefs, Alloc maintained that "free from play" means that "the joint must have no space in all separation directions in a plane extending in a perpendicular direction from the side edges of the panels." (Alloc Initial Mem. 18.)

At the Markman hearing, Alloc proposed a new five point definition of "free from play":

1. "free from" means "without" Glaxo Group Ltd. v. Ranbaxy Pharm., Inc., 262 F.3d 1333, 1336 (Fed. Cir. 2001);

2. "play" is a dimensional relationship between contact surfaces whereby there is a separation or space, or an ability for the surfaces to move relative to each other;
"free from play means an absence of play at the time panels are installed, and also subsequent to installation following the expansion and shrinkage in accordance with normal use;

ease of displacement along a joined edge is indicative of play; and

the absence of visible gaps.

Given Alloc's advocacy of a new definition of "free from play," the Court allowed the parties to submit post-hearing briefs addressing that definition and to allow Unilin an opportunity to propose a new definition.

In its post-hearing brief, Unilin modified its original proposed definition of "free from play" suggesting that the term be defined as: "no space between the upper contact surfaces and the lower contact surfaces of the coupling parts, as to lock the coupled panels together in the horizontal positions." (Unilin Post Markman Open. Br. 3.) In its response brief, Unilin states "free from play" means "there are no spaces between the contact surfaces so that the panels are locked in the horizontal and vertical directions." (Unilin's Post Markman Resp. Br. 1.)

Unilin states that to a degree, Alloc's proposed construction is consistent with its revised definition. But, Unilin asserts that Alloc is improperly attempting to read in the following limitations:

- an ability for the surfaces to move relative to each other;
- "an absence of play . . . subsequent to installation following the expansion and shrinkage in accordance with normal use;
- ease of displacement along a joined edge is indicative of play; and,
- the absence of visible gaps at the upper surface does not rule out the presence of play.

Unilin maintains that neither the intrinsic nor the extrinsic evidence justify these additional limitations. (Id.)

Unilin states that "an ability for the surfaces to move relative to each other" encompasses movement which is not play, because the definition would include the "sliding" of the panels relative to one another which is contrary to the ordinary meaning of "play" and the teachings of the specification. (Id. at 1-2.) Unilin also asserts that "an absence of play . . . subsequent to installation following the expansion and shrinkage in accordance with normal use" and the "ease of displacement along a joined edge is indicative of play" are tests for play that should not be included in the construction. (Id.) Additionally, Unilin maintains that "an absence of play . . . subsequent to installation following the expansion and shrinkage in accordance with normal use" is an attempt to read in a limitation from a preferred embodiment. (Id. at 3.)

"Free from play" appears in claim 15 as follows: "A floor covering panel according to claim 1, wherein the coupling parts are dimensioned to provide a coupling free from play in all panel separation directions in a plane extending perpendicular to the said side edges when two identical ones of said panel are coupled together." ('486 patent, 15:22-26)(emphasis added.)

Claim 65 includes the term as follows: "said coupling parts being dimensioned to provide a coupling free from play in all panel separation directions in a plane extending perpendicular to the side edges when two identical ones of said panel are coupled together." ('486 patent, 20:23-27)(emphasis added.)

In considering the appropriate definition of "free from play," the Court notes that the '486 patent specification comments that one disadvantage of related inventions is that couplings which allow coupling parts to snap fit into each other does not allow for a 100 percent optimum counteraction against the development of gaps between floor panels because "well-defined plays" have to be provided in order to be sure that the snapping-together is possible. ('486 patent, 1:47-55.) The "brief summary of the invention," provides that "these coupling parts are optimalized in such a manner that they allow that any form of play is counteracted and preferably is excluded." ('486 patent, 2:21-24.)

The description of the second preferred embodiment states that describes "coupling parts which are interlocked free from play in all directions in a plane extending perpendicular to aforementioned edges." ('486 patent, 2:49-51)(emphasis added.) Such description further states: "[d]ue to the fact that the coupling parts provide for an interlocking free from play, as well
as due to the fact that these coupling parts are manufactured in one piece, from the basic material of the floor panels, a perfect connection between adjacent floor panels can always be guaranteed, even with repeated expansion and shrinkage of the floor surface." (‘486 patent, 2:63-66; 3:1-3.) The specification discusses "free from play" in context of the snapping-together, joining, and interlocking of panels. Alloc suggests that "free from play" extends to the panels once they are joined. But, the patent specification does not support Alloc's construction, and therefore, it is not acceptable.

Furthermore, the specification refers to post joinder movement as "expansion and shrinkage," and "floor panels drifting apart, as a result of which undesirable gaps can be formed." (‘486 patent, 1:33-35.) The claims must be read in light of the specification, the "single best guide to the meaning of a disputed term." Aero Prods. Int'l, Inc. v. Intex Recreation Corp., 466 F.3d 1000, 1010 (Fed. Cir. 2006) Alloc's construction of "free from play" as including "an absence of play ... subsequent to installation following the expansion and shrinkage in accordance with normal use" is not supported by the specification and therefore, is rejected. See Phillips, 415 F.3d at 1316 (quoting Merek & Co. v. Teva Pharms. USA, Inc., 347 F.3d 1367, 1371 (Fed. Cir. 2003)). Similarly, Alloc's suggestion that the term "free from play" means "an ability for the surfaces to move relative to each other" is inconsistent with the specification and is rejected. See id.

Alloc contends that Unilin cannot dispute that the absence of visible gaps at the upper surface does not rule out the presence of play, noting that Unilin made that statement in a brief to the European Patent Office. Specifically, in response to opposition proceedings to the European version of its main claim in the ‘486 patent, Unilin stated that "[a]lthough the video does not show visible gaps on the upper surface of the floor covering, play can still be present between the locking surface and the locking groove in the joint." (Alloc Markman Hrg. Ex. Tab U, 22 P 39.) 12 In that same response to the European opposition proceedings, Unilin also stated that the videotape showed that the Alloc panels could be easily displaced with respect to one another as demonstrated by the person straddling the joint between two panels and moving the panels relative to each other by applying a "kicking" force through the sole of his shoe. (Id.) Unilin then stated that "[s]uch ease of displacement is indicative of play." (Id.) Unilin's two comments in its response to the European patent opposition proceedings are extrinsic, not intrinsic, evidence. 13

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12 At the Markman hearing before this Court, counsel for Alloc explained that the videotape was made at the 1996 Domotex trade show, where Alloc's new product was displayed and videotaped. (Decl. of Patrick M. Kuhlman ("Kuhlman") P 4, Tab 17, 67-70.)

13 The Court of Appeals for the Federal Circuit has, on occasion, used statements made in front of foreign patent offices regarding related patents to determine what a person of ordinary skill in the art understands terms to mean, but it has never made them a part of the intrinsic record for claim construction purposes. See Phillips, 415 F.3d at 1317 (defining intrinsic prosecution history to include "the complete record of the proceedings before the PTO and ... the prior art cited during the examination of the patent" and extrinsic evidence to include "all evidence external to the patent and prosecution history" (quotations and citations omitted)); Gillette Co., 405 F.3d at 1374 (referencing statements made regarding a related patent in front of foreign patent offices but not characterizing them as intrinsic prosecution history of the patent at issue); C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 870 n.6 (Fed. Cir. 2004)(Leaving unresolved the question of whether statements the applicants had made during the prosecution of foreign patent applications may limit claims -- the intrinsic record had sufficed to support the claim construction); Tanabe Seiyaku Co., Ltd. v. U.S. Int'l Trade Comm'n, 109 F.3d 726, 733 (Fed. Cir. 1997)"In evaluating infringement under the doctrine of equivalents, 'representation[s] to foreign patent offices should be considered ... when [they] comprise relevant evidence."' (citation omitted)).

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Chimie v. PPG Indus. Inc., 402 F.3d 1371, 1374 (Fed. Cir. 2005), is cited by Alloc as authority indicating that a test may be included in a construction of a term. Chimie involved the construction of the term "dust-free and non-dusting" in a patent for "essentially spheroidal precipitated silica particulates." Id. PPG, the alleged infringer, contended that the term should be interpreted literally to mean "no dust cloud whatsoever." Id. at 1375. The patent assignee contended that the term should mean "very low-dust." Id.

The appeals court upheld the district court's construction of the disputed term as "a level of dust formation associated with the silica particulates of the '234 patent, as measured in percentage weight according to DIN 53 583, that has a fines content...
value less than or equal to 13 and weight loss by abrasion value less than or equal to 0.5." Id. The appellate court noted that the district court had explained that "DIN 53 583 is an industrial standard provided by the Deutsches Institut fur Normung e.V., a self-governing institution of trade and industry responsible for the preparation of National Standards in Germany, for measuring the fines content and weight loss by abrasion of palletized carbon black used as fillers in the rubber processing industry." Id. In the patent specification, the inventors of the patented device had made specific reference to that standard as a means of measuring the dust qualities of their silica. Id.

Chimie supports the proposition that a test may be included in the definition of a claim term. However, Chimie was based on specific accepted industry test which was discussed in the patent specification.

Chimie is distinguishable. The "test" was an industry standard for dust and was included within the specification. Neither is true of the "tests" suggested by Alloc. Thus, at this juncture, the Court declines to construe "free from play" as including the fourth and fifth prongs proposed by Alloc; that is, "ease of displacement along a joined edge is indicative of play; and, the absence of visible gaps at the upper surface does not rule out the presence of play." The Court construes "free from play" as "there are no spaces between the contact surfaces so that the panels are locked in the horizontal and vertical directions."

Claims 7, 10, 13, 16-21, and 23 call for the ornamental components of the earring to be "free of dependent arms." The phrase was added by amendment during reexamination to distinguish the claimed invention from the Zur patent. The Zur patent teaches a structure extending down from the ends of the ornamental components and which supports the fastening means. During reexamination, Zettl refers to the extending structure disclosed in the Zur patent as "arms" that "depend" from the ends of the ornamental components. (Request for Reexamination, Nov. 13, 1997, at 2). The phrase, "free of dependent arms," therefore, was added to the claims to clarify that the '664 patent calls for fastening means to be located at the ends of the ornamental components themselves and not on any extending structure as that of the Zur patent. (Amendment, Sept. 9, 1998, at 20-21). In light of the '664 patent's reexamination history, the phrase "free of dependent arms," is to be understood as the complete absence of any distinct structures that extend away from the ends of the earring's ornamental components and which serve to support fastening device. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 980 (Fed. Cir. 1995) ("The construction of the patent is confirmed by the avowed understanding of the patentee, expressed by him . . . When his application for the original patent was pending. . .") (internal quotes omitted, citation omitted).

Plaintiffs do not offer a definition for "free passageway," separate from that for "longitudinal gas flow." Defendant's first proffered definition was "an open passageway that extends unblocked along the entire length of the pipe, outside of the microporous material, inside of the outer tube." 51 In connection with Defendant's changed position regarding the need for air flow throughout the entire length of the pipe, Defendant changed the words "the pipe" to "a pipe section." 52 In response to the whole definition, Plaintiffs voiced their concern that the definition may not allow for the placement of spacers that could partially block the free passageway.
The specification explains that a free passageway, of potentially very narrow proportions, exists between the microporous material and the outer tube in order to facilitate the flow of air when reducing pressure. Air is drawn radially across the microporous material into the free passageway, where it travels longitudinally along the outer pipe in the direction of the suction. The patent also teaches the use of spacers to aid in centering the inner tube inside the outer tube, to lock the microporous material in place, and to provide reinforcement. These spacers may partially block the free passageway.

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54 See id. at 3:54-57.
55 Id. at 6:55-61.
56 See Plaintiffs' Markman hearing arguments and expert testimony; Defendant's Markman hearing arguments.

--- End Footnotes ---

As the court understands the patent and the Markman hearing explanations of both parties, if an air molecule encounters a spacer (or, for that matter, some other element of the pipe) that blocks its path when the pressure is being reduced, it will be drawn around that element toward the source of the suction. Accordingly, the passageway may be partially, but not totally, blocked. Defendant's inclusion of the word "unblocked," therefore, is an overstatement.

The court recommends that "free passageway" be construed as the open space that extends along the entire pipe section outside the microporous material and inside the outer tube.

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2. "A free passageway to allow longitudinal gas flow, whereby low pressure is maintained throughout said annular space."
Plaintiff contends that this term means "an open space that extends along the entire pipe section outside the microporous material and inside the outer tube to allow the movement of air in the annular space lengthwise along an entire pipe section, preserving a low pressure within the annular space." For its part, Technip contends that this term means "that the longitudinal gas flow along an entire pipe section in the free passageway maintains a low pressure throughout the annular space, which includes both the free passageway and the insulating material." In truth, this Court cannot discern a tremendous amount of difference in the two definitions; the real difference is semantics and the fact that Technip wants to put the cart before the horse in the definition and then give no real explanation of the "horse," that is, the free passageway. In light of the specification language (see Doc. 33, Exhibit A, at Columns 1-2 ("In order to cut expenses and improve the standard and durability of heat insulation, there is provided according to the invention a pipe with a heat insulating double casing, which is characterized in that, within a sealed annular space lying between an inner tube and an outer tube being coaxially arranged inside each other, it comprises a self-sustaining plate of an open pore-microporous material, which is flexible enough to be circumferentially wound along the inner tube, and in that there is provided outside said material in said annular space, a free passageway for longitudinal gas flow enabling low pressure to be maintained throughout said annular space."); id. at Column 5 ("According to still another feature of the invention, there is provided with advantage spacers aimed at centering the inner tube inside the outer tube by maintaining an adequate minimal gap between the inner and the outer tube sequentially from one portion to another through the entire length of the pipe. Such spacers typically consist of half-shells held together in position on the inner tube of the pipe."))) as well as the abstract of the invention (see Doc. 33, Exhibit A, ABSTRACT ("A line pipe with a double casing is especially used in transporting oil products. In a preferred embodiment, such a pipe is characterized in that, in a sealed annular space, located between an inner tube and an outer tube both coaxially arranged inside each other, there is included a self-sustaining plate made of open pore-microporous material, which is flexible enough to be externally wound around the inner tube. This plate is preferably less in thickness than said annular space such that a passageway is left free between the former and the outer tube whereby low pressure is maintained.")), this Court finds that the definition favored by the plaintiff, derived as it is from the opinion of the Southern District of Texas in ITP, Inc., supra, is the correct definition of this disputed term. The ITP court's definition...
of "free passageway" as "the open space that extends along the entire pipe section outside the microporous material and inside the outer tube" is simply indisputable in light of the specification language, as well as the abstract, as is its definition of "longitudinal gas flow" as "the movement of air in the annular space lengthwise along an entire pipe section." 2005 U.S. Dist. LEXIS 39078, 2005 WL 3542577, at *8. Accordingly, this Court gives the disputed term that definition suggested by the plaintiff, derived as it is from the ITP, Inc. decision: "The open space that extends along the entire pipe section outside the microporous material and inside the outer tube to allow the movement of air in the annular space lengthwise along an entire pipe section, preserving a low pressure within the annular space." 10

9 According to plaintiff, this is the definition given this term by the district court in the Southern District of Texas. See ITP, Inc., supra, 2005 U.S. Dist. LEXIS 39078, 2005 WL 3542577, at *8 (defining longitudinal gas flow as "the movement of air in the annular space lengthwise along an entire pipe section[]" and free passageway as "the open space that extends along the entire pipe section outside the microporous material and inside the outer tube.").

10 In its brief, Technip identifies as a term in dispute "both coaxially arranged" which it contends means that "both tubes share a single central axis." (Doc. 33, at 4) At the Markman hearing, the plaintiff indicated that this term was not really in dispute since the defendant's proposed definition is very similar to the definition given that term by the ITP, Inc. court. Compare id. with ITP, Inc., 2005 U.S. Dist. LEXIS 39078, 2005 WL 3542577, at *4 ("The 1994 edition of a scientific dictionary defines 'coaxial' as '[s]haring the same axes.' McGraw-Hill Dictionary of Scientific and Technical Terms 394 (5[th] ed. 1994). Similarly, a Webster's desk-reference dictionary defines 'coaxial' as '[h]aving or mounted on a common axis.' Webster's II New Riverside University Dictionary 275 (1984). The term 'arrange' is not defined in the scientific dictionary, but is given the following meaning by the Webster's dictionary: '[t]o put in a specific order or relation.' Id. at 126. Combining the two, 'coaxially arranged' can be defined as associated in such a way as to share a common axis. The common axis in a pipe-in-pipe design is an imaginary line down the center of the inner pipe. Accordingly, the shared axis is 'central.'"). Given the plaintiff's position in this regard and the fact that it appears Technip has simply synthesized into a more cohesive definition the analysis of this term by the ITP, Inc. court, this Court finds that Technip's proposed interpretation of "both coaxially arranged" is the proper interpretation. Accordingly, "both coaxially arranged" means that "both tubes share a single central axis."

10. Free-standing strands

FieldTurf's Proposed Construction: "Portions of the ribbons protruding above the infill"

SCG's Proposed Construction: "A strip of sheet that is divided from an adjoining strip of sheet not attached to or supported by something else"

SCG's Proposed Construction of "free standing": "Protruding without lateral support"

The Court's Claim Construction: "Strands capable of protruding without lateral support"

Looking first to the context of the claim, there is "an upper portion of the ribbons extending above the infill layer and longitudinally split into individual free-standing strands of a selected width to represent grass blades . . . ." The specification explains that "[o]nce all the infill is installed, the upper portion of the ribbons extending above the infill layer are brushed aggressively" such that "[t]he ribbons are longitudinally split by the brushing action along the slits into several individual free-standing strands of a thinner width resembling grass blades." 689 patent, 5:26-31. Both the context of the claim language and the almost identical language from the specification demonstrate that FieldTurf's proposed construction is lacking. Both the claims and specification already state that a portion of the ribbon protrudes above the infill. To give the full phrase "free-standing strands" that same meaning would render the earlier language superfluous. However, FieldTurf makes a better point in its alternative argument that free-standing strand need not be further defined. Particularly with
respect to the "strand," it is simply a shorthand for a particular portion of the ribbon--the "upper portion of the ribs extending above the infill layer and longitudinally split [and] of a selected width to represent grass blades"--and further definition seems unnecessary. Although it is at least arguable that "free-standing" is similarly without need of further explanation, based on the parties' arguments it may be helpful to a jury to state that free-standing means "capable of protruding without lateral support." The claim already provides that the strands are "individual" so "free standing" should provide something more. However, and particularly in light of the specification and invention as a whole, the Court believes that "protruding without lateral support" improperly imports a concept that the strands are wholly isolated from one another. The Court disagrees that the strands must be isolated and thus believes that that the "capable of" language is necessary. Accordingly, the Court construes "free standing strands" as "strands capable of protruding without lateral support."

C. Freeze

Several of the '518 Patent claims describe how the cold UV curing assembly is placed "sufficiently close to where the ink is being jetted onto the surface to freeze dots of the jetted ink on the [substrate] surface." The parties offer slightly different construction of what the term "freeze" should mean in these claims. According to L&P, "freeze dots of the jetted ink" means "exposing ink to a sufficient amount of UV energy to create a film over the wet ink to prevent it from spreading." Vutek's proposed construction reads "exposing ink to a sufficient amount of UV energy to at least partially cure the ink immediately after printing, thereby preventing ink dots from spreading on or wicking into or otherwise moving on the substrate." After reviewing the intrinsic and extrinsic evidence, I conclude that a person of ordinary skill in the art would interpret "freeze" to mean exposing ink to a sufficient amount of UV energy to sufficiently cure the ink such that it will not spread, wick, or otherwise move on the substrate.

The Summary of the Invention section of the specification reads, in pertinent part, "[b]y so mounting the UV curing lights on the printhead carriage, the jetted ink can 'spot cure' the ink, or to cure the ink immediately upon its contacting the substrate. Such spot curing 'freezes the dots' in position and prevents their spreading on or wicking into or otherwise moving on the substrate." Thus, "freezing" refers to a physical state of the dots of ink in which they do not spread, wick, or otherwise move.

Additionally, after reviewing the extrinsic evidence, I find that "freezing" does not necessarily involve creating a film over the wet ink, as L&P suggests. As Whittle explained during the Markman hearing, within a drop of ink, there are many monomers. Once exposed to UV energy, these monomers enter a free radical state in which they begin to stick to one another and create spaghetti-like polymer chains. These polymer chains extend throughout the drop of ink, not just at the surface. Thus, as a drop of cures, the entire drop becomes more viscous, or pasty, rather than just hardening on the exterior. In sum, I conclude that a person of ordinary skill in the art would interpret the phrase "freeze the dots" to mean sufficiently cure the dots of ink such that they will not spread, wick, or otherwise move on the substrate.

f. "Frictionally Held"

The last term in Claim 1 requiring construction is the phrase "frictionally held," which was added by the certificate of correction. 21 This phrase also appears in claim 9, which refers to an "end plug frictionally held." (760 Patent col. 6, ll. 12-13.) The World Wide Plaintiffs assert that this term should be given its ordinary and customary meaning, that is "restrained from motion by frictional force; namely, a force that opposes the relative motion of one body moving with respect to another body with which it is in contact." Relying on the dictionary definition of "frictional force," the World Wide Plaintiffs assert that when a plug is held, it is restrained from motion. This interpretation is supported by the specification, they argue, which discusses the various ways the end plug may be positioned as a friction fit pressed into the distal end, like a cork in a bottle, or alternatively, it may be treated with a solvent so it adheres to the inside wall of the cannula, or it can be put in position and the cannula heated so that it swells and is held into position, or the cannula may be distorted externally to cause it to shrink in the area of the plug and thereby to hold the plug in place. Id. at col. 4, ll. 8-16. They also cite to Figure 2221.
7c, which shows the cannula distortion and is described as "[a] bridge in the cannula wall . . . is deflected inward . . . to frictionally engage the plug and hold the plug yieldably in place until it is pressed outward by the first seed." Id. at col. 5, ll. 22-27 (emphasis added). The World Wide Plaintiffs assert that these are alternatives that one of ordinary skill in the art would recognize as methods for achieving a frictionally held end plug. Regardless of how a tight fit is achieved between the plug and the cannula wall—whether by heat, a distortion of the cannula wall, or treatment of the plug with a solvent—once the tight fit is achieved, the plug is then frictionally held in place.

AnazaoHealth 22 relies on the same paragraph in the specification and argues that the patentees acted as their own lexicographers and expressly narrowed the scope of the phrase "frictionally held" by eliminating from the definition everything except "a friction fit pressed into the distal end of the cannula as a cork in a bottle." Id. at col. 4, ll. 8-9. The alternatives, it contends, are what the patentees expressly disavowed as means of frictionally holding the plug in the cannula (e.g., adhesion, heat, minute distortions in the cannula, surface tension or capillary action). Thus, AnazaoHealth argues that the phrase "frictionally held" should be construed to mean "held in place by a tight fit, as a cork in a bottle, and does not include something being held by adhesion, heat, minute distortion of the cannula, surface tension or capillary action." AnazaoHealth also relies on the prosecution history, in which the patentees distinguish their invention from Mercereau. 23

The patentees described the overflow plug of the Mercereau invention as "not held in place by friction, but rather because it is integral with the coating 480 on the outside of the cannula." (W0481)(emphasis added). They further distinguished Claim 9 from the cited prior art by stating that Mercereau "does not show 'a generally cylindrical end plug frictionally held in the distal end . . .," and Claim 12 because Mercereau "does not show an irregularity to enhance the frictional holding of the plug." (W 0482)(emphasis in original). Finally, they distinguish Claim 16 because the method of Mercereau consisted of filling the distal end of the cannula by dipping the end into a vat to allow lubricious material to enter, rather than forcing the plug into the sharpened distal end of the cannula to frictionally reside there. Id. (emphasis added). Contrary to AnazaoHealth's suggestion, nothing in the prosecution history constitutes a disclaimer by the patentees as to how the plug would be frictionally held in the distal end of the cannula. Rather, if anything, the prosecution history supports Plaintiffs' position that "frictionally held" means more than just held in place like a cork in a bottle, but also includes being held by adhesion, heat, minute distortions to the cannula, or other means. Accordingly, the Court rejects AnazaoHealth's narrow construction. At the same time, the Court does not believe that it is necessary to define "frictional force," as the World Wide Plaintiffs have done, as this term should be well-known to those of ordinary skill in the art and nothing in the Patent or the intrinsic evidence suggests a definition other than the customary and ordinary meaning. Thus, the Court construes "frictionally held" as meaning "restrained from motion by frictional force.

**1793**

A Releasable Needle Holder and Needle Frictionally Held by the Wall of the Syringe Body

The Parties also ask the Court to construe the term "a releasable needle holder and needle frictionally held by the wall of the syringe body" in Claim 22 of the 011 Patent. Both parties agree that the Court's construction should begin with "a releasable needle holder and needle kept in the nose portion of the syringe body." However, the parties disagree on the definition of
"frictionally held by the wall of the syringe body." RTI's proposed construction states "by forces present between the needle holder and wall of the syringe body," and NMT's states "by a force generated along a sliding interface between two cooperating surfaces."

The Court's greatest difficulty in construing this term comes from the parties' failure to explain to the Court how their proposed constructions differ. Friction is defined as "the rubbing of one body against another," or "the force that resists relative motion between two bodies in contact." MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 466 (10th ed. 2001). Thus, "frictionally held by the wall of the syringe body" must mean that the body creates a holding force by rubbing against something else. RTI's definition reflects this notion by requiring force between the needle holder and syringe body. The Court's problem is that the specification language from which NMT finds the "sliding interface" makes clear that the "sliding interface" is simply the "needle holder" and "body." For example, Claim 1 language NMT relies on declares "the needle holder having an elongated body … having a cooperating outwardly facing surface configured to cooperate with said inwardly facing surface to produce said … frictional holding force," and "the inwardly facing surface in the wall [of the body] and the cooperating outwardly facing surface on the needle holder are friction surfaces which cooperate to produce said … frictional holding force." Thus, according to NMT's own intrinsic evidence, the "cooperating surfaces" are simply the needle holder and body. Unfortunately neither party deigned to explain exactly how the proposed definitions differ.

The Court finds that the term "a releasable needle holder and needle frictionally held by the wall of the syringe body" means "a releasable needle holder and needle kept in the nose portion by friction with the syringe body." This construction appears to be consistent with both parties arguments, and more importantly with the plain and ordinary meaning of the claim terms. NMT's language requiring a "sliding interface between two cooperating surfaces" appears to simply refer back to the needle holder and body. As such, NMT's language appears to cloud the issue rather than clarify the claim. Indeed, if this claim is truly worth expending the Court's and the parties' time and resources, the parties should have provided the Court with clearer briefing. Moreover, if the parties are truly in agreement, as they appear to be, then they should have resolved this issue themselves without further burdening the Court's time and resources.

1794

b. "from different directions"

The parties agree that the court's construction of the term "from different directions" should begin with the phrase "the 'first light beam' and the 'second light beam' illuminate the 'pattern' at different angles of incidence." The parties do not agree, however, regarding where the definition of the claim should end: ASML believes that "at different angles of incidence" itself offers a sufficient construction of the claim term; Nikon, by contrast, asks the court to detail the kind of different angles of incidence at issue, appending the apparently non-exhaustive example, "which include angles having the same magnitude but different directions." Cf. In the Matter of Certain Microlithographic Machines and Components Thereof, Investigation No. 337-TA-468 at 285 (rejecting a similar, though notably different, Nikon-proffered construction).

As the court reads them, the parties' constructions are not mutually exclusive, whether linguistically or logically. The term "different angles of incidence," if understood as an incorporative category, undoubtedly includes some angles "having the same magnitude but different directions," so what Nikon seeks to add plainly falls within the technological capacity of the invention, if only as an example. But the limitation Nikon seeks to import is unsupported by the claim text and the relevant specification language. See '041 Patent at 3:31-3:50 & 12:13-45. Where claim language concedes to ready explication, the Federal Circuit has long reminded, courts should construe claim terms to mean precisely what they say. See Vitronics, 90 F.3d at 1582. However innocuous (and technologically valid) Nikon's proposed illustration, there is no reason to venture from the plain meaning of the claim terminology here. The claim expressly discusses beams emerging "from different directions"--i.e., from distinct and unshared angles of incidence. Cf. Teleflex, Inc. v. Ficosa North America Corp., 299 F.3d 1313, 1328 (Fed. Cir. 2002) ("We have 'cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.'") (citation omitted). Nothing in the intrinsic evidence controverts this claim language, and Nikon posits no compelling reason to read into the claim an example (viz., "which include angles having the same magnitude") of something the claim's language already--if implicitly--embraces. Consistent with the intrinsic evidence, the court construes "from different directions" to mean "at distinct and unshared angles of incidence."
The parties next dispute the meaning of the term "front panel." National contends that the term "front panel" has an ordinary and accepted meaning in the instrumentation and test measurement fields. According to National, the term "front panel" means "a graphical user interface that is accessible during execution and comprised of at least one interface element to interactively assign and display values of an input variable and at least one interface element to display values of a resulting output variable." Mathworks urges a more narrow construction. According to Mathworks, the term "front panel" means "a graphical representation of the faceplate of an instrument that is displayed in a window that is separate and distinct from the window containing the associated data flow diagram, and that can only display input and output controls, where there is at least one input control and at least one output control in the front panel, each of which has a corresponding representation in the data flow diagram."

The court adopts neither party's construction. The problem with National's construction is that the definition derives largely from the instrumentation and test measurement fields, and that is not the relevant art. Furthermore, National's construction ignores certain statements made by during prosecution by the prosecuting attorney to the examiner. The problem with Mathworks' definition is that it is divorced from certain claim terms and aspects of the preferred embodiment. In addition, Mathworks makes too much out of the statements made to the examiner.

The claim language refers to the front panel and the data flow diagram as different concepts. The language of the claims implies, but does not necessarily require, the front panel to be separate from the data flow diagram. For instance, dependent claim 2 in the 221 patent claims the method of claim 1 and, in addition, the step of "assembling on the screen a first front panel including the at least one first input variable-icon and the at least one first output variable-icon." If the front panel and the data flow diagram were the same, then dependent claim 2 would be redundant.

To the extent there was any doubt, the inventors confirmed a separateness requirement in the prosecution history of two of the patents. During the prosecution of the 587 patent, the examiner confronted the inventors with various prior art which, according to the examiner, compelled rejection of the then-pending claims.

During prosecution, the inventors were confronted with the Kossiakoff patent as prior art. The examiner rejected all of the pending claims of the 587 patent in part because of Kossiakoff. In doing so, the examiner found that one of ordinary skill in the art would have recognized that the procedure display in the Kossiakoff patent (i.e. the counterpart to the data flow diagram contained in the patents-in-suit) could be used as a display means "responsive to user inputs for displaying at least one input variable . . . and . . . at least one output variable."

In response to the examiner's determination, the inventors' prosecuting attorney distinguished the claims of the 587 patent by asserting, inter alia:

The display the Examiner refers to is the procedure display of the Kossiakoff reference. As mentioned above, it has no input and output variable icon which are displayed on a panel apart from the procedure display. Kossiakoff would have no need for such panel as he was not concerned with emulating an instrument or doing other real time data processing.

(emphasis added).

By this passage, the attorney argued that the claims of the 587 patent were patentable over Kossiakoff on the grounds that the invention set forth in the 587 patent contained a panel that displayed input and output variable icons and that such panel was something apart from the procedure display. This distinction is important. The inventors touted this invention, including its front panel, on the grounds that the system and method of the invention permitted the computer-aided modeling of a process using graphical techniques. This led to easier comprehension by the target group--persons who did not possess specialized skills in computer programming techniques. The inventors noted that "the use of a computer-generated image of a front panel display permits a user to easily understand how data is provided to a system being modeled and how data is provided by the system." The front panel concept was important because it allowed unskilled persons to interface with the virtual instrument through familiar means -- the front panel.
In addition, during prosecution of the 336 application, the examiner rejected all of the pending claims on the grounds that a second piece of prior art, the Dunn patent, showed the step of assembling a panel on the display. National's attorney urged reconsideration of the examiner's rejection and asserted that the chart area noted by the examiner was "used for assembling flow diagrams" and that "it is unrelated to the panel recited in all independent claims in the present application." The court requires that the front panel be separate and apart from the associated data flow diagram. National concedes as much in its reply brief, by urging that the front panel must be "an entity apart from (i.e. other than or besides') the data flow diagram and that it comprises an input variable-icon and an output variable-icon." (National's Reply Brief, p. 34).

Mathworks further urges that the attorney's statements and the specifications compel the conclusion that the front panel and the data flow diagram must be contained in separate windows. The court disagrees. The attorney's remarks made no mention of the term "window." National cannot re-capture what it has disclaimed; however, the court will not hold that National disclaimed more than what its attorneys actually represented to the examiner.

Neither do the specifications require a more restricted construction of the term "front panel." It is true the two do not coexist in the same window in the preferred embodiment set forth in the application. The specifications plainly indicate that, in the embodiment disclosed, the front panel and the data flow diagram reside in separate windows. But the inventors knew how to use the term "window," and used it repeatedly throughout the specifications. The claim language, though, makes no use of the term. Unlike in the case of the inventors' repeated use of very specific data flow semantics, the court is not convinced that the inventors explicitly or implicitly required the front panel to reside in a separate window from the data flow diagram.

Finally, for the same reasons, the claim language does not support, and the court rejects, the additional limitations to the term proposed by Mathworks, namely, that the front panel can only display input and output controls and that it must be a graphical representation of the faceplate of an instrument. The court defines "front panel" as a graphical user interface that is separate and apart from the associated data flow diagram and that displays inputs and output controls, where there is at least one input control and at least one output control in the front panel.

1. front plate

Claim 1 identifies an ice storage receptacle "including a front plate having a discharge opening." Exh. A to Maytag's Pre-Hearing Brief on Markman Claim Construction ('688 patent") col. 9, l.3 (emphasis added). The term "front plate" also appears in claims 5 and 11. 2

2 The relevant portion of claim 5 states:

An ice dispenser, comprising:

a receptacle for storing ice pieces said receptacle having a front plate with a discharge opening;

'688 patent, col. 10, ll. 15-17.

Claim 11 states in relevant part:

An ice dispenser, comprising:

a receptacle for storing ice pieces, said receptacle including a front plate having a discharge opening and a bottom sloped downwardly toward the front;

Id., col. 10, ll. 63-66.
Maytag does not dispute that the '688 patent discloses a horizontally-oriented unit as the preferred embodiment. Maytag argues, however, that the claim is not limited to such an orientation, and that the term "front plate" is relative to the direction of the ice as it moves. In support of this theory, Maytag submits that the plain and ordinary meaning of "front" is "the forward part of a surface," with "forwardly" defined in turn as "a. near, being at, or belonging to the front b. situated in advance." Webster's II New Riverside University Dictionary at 508, 500 (1988). Following this definition, the "front plate" under Maytag's proposed construction is the plate or wall situated in advance of the point at which ice is dispensed.

Whirlpool argues that the plain and ordinary meaning of "front plate" is a plate at the front of the ice receptacle, with "front" defined as "the part or side of anything that faces forward." See Random House Dictionary, 2nd Ed. at 770 (1987) (emphasis added). Whirlpool contends there is no basis for a definition based on the direction of movement in the claims or specification.

The Federal Circuit repeatedly has rejected the argument that the claims of a patent that itself describes only a single embodiment must be interpreted as being limited to that embodiment. Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004). As clarified by the court: "Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using 'words or expressions of manifest exclusion or restriction.'" Id. (quoting Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1327 (Fed. Cir. 2002)); see also Anchor Wall Sys. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1306-07 (Fed. Cir. 2003) ("the mere fact that the patent drawings depict a particular embodiment of the patent does not operate to limit the claims to that specific configuration") (internal citation omitted). No such "words or expressions of manifest exclusion or restriction" are present in claims 1, 5 or 11. Rather, each of claims 1, 5 and 11 appears carefully drafted to avoid a horizontal limitation.

Whirlpool argues in its construction brief that if Maytag's proposed construction were to be adopted, the front plate could theoretically double as the "bottom wall." Such a result, according to Whirlpool, would conflict with claim 11, which requires both a "front plate" and a "bottom sloped downwardly toward the front." See '688 patent, col. 10, ll. 65-66. This Court disagrees. Although the preferred embodiment obviously is a box-type structure, the front plate need not be linear. Other structures, such as a modified sphere, could match the description contained in claims 1, 5, and 11, with a "bottom" in the same "side" as the "front plate." When asked during the hearing how he could reconcile Maytag's proposed construction with the language in claim 11, counsel for Maytag responded: "You can still have a front plate in the bottom wall." The key, according to Maytag, is that the front plate remains "in advance" of the flow of ice. The Court finds this argument persuasive.

After considering the parties' arguments and the relevant caselaw, the Court construes "front plate" as the plate situated in advance of the flow of ice from the receptacle. This construction for "front plate" shall carry over to claims 5, 11, which both refer to an ice storage receptacle with a "front plate." See, e.g., Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001) ("a claim term should be construed consistently with its appearance in other places in the same claim or in other claims of the same patent").

The parties agree that terms used in Claim 1 of the '717 Patent have the same meaning in the other claims of the '717 Patent. They dispute the meaning of "front side" and "at said front side" in Claim 6 that reads in full as follows:

A lighting unit comprising: a lamp; a reflector that surrounds said lamp, said reflector having a front side that defines an emission window for exit of light emitted from said lamp, wherein said reflector has lugs at said front side; and a transparent plate located at said front side wherein said the lugs extend above the transparent plate.

Philips argues that "at said front side" means the lugs are positioned at the front or top end of the reflector body closest to the light emission window. Iwasaki asserts that "front side" means "a side at the front end of the reflector body opposite the
back end of the reflector body. "The use of the phrase "at said front side" is most naturally read to mean that there is a single front side; the language would not be understood by a person of ordinary skill in the art to mean "a side at the front end."

The front side is the horizontal plane on the portion of the circumference of the reflector body that faces in the direction that the emitted light is traveling. Put another way, it is the surface of the edge of the rim of the reflector which faces in the same direction the light is traveling. 8

--- Footnotes ---
8 The embodiments reflected in Figures 1, 2, 3 show the lugs (22) positioned on what I have construed to be the front side.
--- End Footnotes ---

1798

B. Claim Construction

This court need only ascertain that the district court's jury instruction containing its claim construction does not amount to a "miscarriage of justice." The trial court concluded that "front side" means "a location on a front side surface of a dumpster." Serio-US complains that the trial court erred in limiting the claim term "front side" to only the front side surface. Serio-US argues that the phrase "front side" means the portion of the container "toward the front." According to Serio-US, the '358 patent does not use the word "side" to refer to a surface, but to refer to a portion of an object.

A review of the intrinsic evidence in the patent shows the district court properly construed the "front side" limitation claim language to mean "a location on a front side surface of a dumpster." Transcript of Record at 910-912, Serio-US Indus., Inc. v. Plastic Recovery Tech., Corp., Nos. 05-1106, 05-1143, 05-1306 (Fed. Cir. argued Jan. 10, 2006) (emphasis added). In claim 8, the patent claims "a pivot shaft circumscribing the locking bar and extending along said front of said container." '358 patent, col. 4, ll. 47-49 (emphasis added). In claim 10, the locking mechanism "according to claim 8, further comprise[s] a hole through said locking bar and said pivot shaft, wherein a lock can be positioned through said hole." '358 patent, col. 4, ll. 53-56 (emphasis added). This claim language does not suggest that the district court's construction would amount to a "miscarriage of justice."

The specification also does not suggest any such miscarriage. According to the specification, the invention positioned "a lock, to lock the pivot bar in place with respect to the lockover arm, allowing the L-shaped lockover arm to be secured atop a lid of the dumpster container." '358 patent, col. 2, ll. 43-46 (emphasis added). Therefore, because the L-shaped lockover arm is secured atop the lid of a dumpster, and because the L-shaped lockover arm is fixed to the pivot shaft that extends along the front of the dumpster, then the claimed front side is the front side surface.

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(b) Claim One, Clause Three

Claim 1, clause 3 reads as follows: "a display panel being located on a front surface of said housing proximate said array of actuator buttons[,]" The parties dispute the construction of the term "front surface."

CCL proposes that we construe this term to mean "a forward surface of the housing." In addition to claiming that the term is too ambiguous and indefinite, SCM asserts that it means the "surface on which the actuator buttons appear."

Webster's Third International Dictionary defines "front" as "2: something that confronts or faces forward," or "2b(1): The part or surface of something that seems to look out or be directed forward." Nothing in the specifications is inconsistent with this ordinary meaning. Nor is there any need to narrow the definition to the surface on which the actuator buttons appear, as SCM proposes.
We construe the term "front surface" to mean a forward surface of the housing.

Front Tip

"the plunger head further comprises a tip" ('224 patent, claim 4)

"front tip" ('584 patent, claims 1, 5, 6, 18, 21-24)

The claims of the '584 and '224 patents contain the terms "the plunger head further comprises a tip" and "front tip" (collectively "front tip"). The parties treat these terms as having the same meaning. Thus, the Court addresses these terms collectively. RTI contends that "front tip" means "portion of the plunger closest to the needle." OMI contends that "front tip" means "the smaller diameter portion of the plunger that is forward of the plunger seal." The parties dispute whether "front tip" must be the "smaller diameter portion" of the plunger and whether the "front tip" must be "forward of the plunger seal."

The specification shows that "front tip" is the "portion of the plunger closest to the needle." The specification consistently refers to the tip of the plunger as the part of the plunger that is closest to the needle. The specification states "Head 34 [of the plunger] has a tip portion 40 forming an opening 41 into retraction cavity 38." '224 patent, Col. 7:28-29; see also '224 patent, Col. 11:55-56 (making the same statement); see also '584 patent, Col.8:36-37 (making the same statement); see also '584 patent, Col. 12:62-63 (making the same statement). Also, OMI does not contest that the tip is the portion of the plunger closest to the needle. Accordingly, the Court construes "front tip" as "portion of the plunger closest to the needle."

OMI contends that the "front tip" must be smaller in diameter than the rest of the plunger and be located forward of the plunger seal. OMI argues that various embodiments described in the specification show a tip smaller in diameter than the rest of the plunger and positioned forward of the plunger seal. See '584 patent, figures 1-3, 8, 17-24. OMI also points to the Background of the Art that states "A head end which acts like a piston when installed in a syringe barrel has a reduced diameter front end having an opening and a dislodgeable stopper slidingly mounted in the opening projecting forwardly from the tip" and the Summary of the Invention that states "The nose has a reduced diameter relative to the barrel." '584 patent, Col. 2:32-37; Col. 3:6-7. Finally, OMI argues that because the plunger tip comes in contact with the retainer and the retainer is mounted in the most constricted portion of the barrel where the nose begins to provide high blowout pressure resistance, the tip of the plunger must necessarily have a smaller diameter than the rest of the plunger.

However, none of OMI's references to the patent warrant limiting the "front tip" to being smaller in diameter than the rest of the plunger and positioned forward of the plunger seal. Figures 1-3, 8, and 17-24 of the '584 patent only show possible embodiments of the "front tip," and the specification does not otherwise state that the figures show limiting features of the "front tip." Also, OMI's citations to the Background of the Art and the Summary of the Invention are not persuasive. These excerpts only refer to the barrel having "a reduced diameter" and do not refer to the front tip. Finally, OMI's argument regarding contact with the retainer and high blowout resistance does not mandate that the front tip be smaller in diameter than the rest of the plunger. The tip can be in the narrowed section of the barrel for blowout protection, and at the same time, not be smaller in diameter than the rest of the plunger. Given that OMI is unable to point to any language clearly limiting that the "front tip" must be smaller in diameter than the rest of the plunger and positioned forward of the plunger seal, the Court does not import these limitations into the claims and omits them from the Court's construction.
b. "frozen uniformly"

Even if the ICE-CEL included the identical "opposite direction" flow as that described in the '078 patent, it would not infringe upon claim 16 because the phase change material in the ICE-CEL does not completely freeze as required by the claim.

Paragraph D of claim 16 states that the opposite flow system used in the ICE-BANK provides "generally uniform transfer of heat energy between the liquid in the respective pairs of conduits and the phase change material throughout said tank." The final clause of claim 16 states:

whereby said phase change material may be alternately melted and frozen uniformly throughout the mass of said phase change material as heat is added to and withdrawn from the recirculating liquid in said system.

To accomplish this uniform freezing, the specification of the '078 patent provides for mat tubing to fill the entire volume of the tank "so that no region within the entire tank is more than a short distance away from the mat tubing." The specification further states:

Therefore, ice advantageously builds uniformly on all tubes entirely throughout the whole tank of water. The water level rises in the tank because of the increased specific volume of the ice formed but there is no sideward expansion forces as the ice joins from one spiral layer to the other because the extra water volume has been squeezed upwards previously. The rise in water level provides a measure of the extent of the fusion process. The extra water on top is the last to freeze.

Focussing on these portions of claim 16 and the specification of the '078 patent, it is clear that claim 16 only encompasses systems wherein tubing is placed throughout the entire tank and the phase change material ("PCM") is entirely frozen. The prosecution history of claim 16 likewise mandates this interpretation. When pursuing the '078 patent, Calmac argued to the patent examiner that it "is able to freeze a plastic tank of water to solid ice without rupturing the tank." Amendment to Application for the '078 Patent at 17. Calmac went on to explain that "this is an astonishing result and is entirely unexpected." Id. Calmac emphasized that this system allows ice to build "on all of the tubes throughout the whole tank of water." Id. From this prosecution history, it is clear that claim 16 requires that the PCM freeze completely.

Calmac disputes this interpretation of claim 16. It argues that the patent language only states that the ICE-BANK is able to freeze a plastic tank of water to solid ice. This, it argues, does not mean that the patent excludes partially frozen tank systems from the invention. Calmac's proposed construction of claim 16 alters the true meaning of the claim as indicated through a review of its plain language, the specification, and the prosecution history. Claim 16 is limited to devices which freeze the PCM uniformly and completely. Any other construction of the claim distorts the undisputed patent record.

The ICE-CEL does not infringe upon this limitation of claim 16. First, the ICE-CEL is designed such that portions of the tank contain no coolant tubes. Second, the ICE-CEL is designed so that certain areas of the tank, specifically the sides, the center, and the top, do not freeze. These characteristics of the ICE-CEL are not in dispute. When these characteristics are compared with claim 16, it is evident that the ICE-CEL does not literally infringe upon the '078 patent.

Calmac concedes that the ICE-CEL does not have coolant tubes throughout the tank and that the PCM in the ICE-CEL does not normally freeze entirely. It insists, however, that the ICE-CEL nonetheless literally infringes upon the '078 patent. Although the ICE-CEL is designed to leave portions of the tank unfrozen, if the device is run improperly, all of the PCM in the tank will, in fact, freeze. For this reason, Calmac argues that the ICE-CEL literally infringes its patent. Calmac's argument on this point is frivolous. The PCM in the ICE-CEL may freeze entirely when it is improperly operated; however, it is undisputed that the ICE-CEL is not designed to operate in this manner. In fact, the warranty on the ICE-CEL does not apply if the consumer operates the device in such a way as to achieve 100% freezing. Misuse of a product by a consumer does not by itself transform an essential characteristic of that product. The PCM in the ICE-CEL does not freeze 100% under normal operation; it, therefore, does not literally infringe upon claim 16, which describes a device which "is able to freeze a plastic tank of water to solid ice without rupturing the tank." Amendment to the Application of the '078 Patent at 17.
In the alternative, Calmac argues that the ICE-CEL infringes on the 100% freeze portion of claim 16 under the doctrine of equivalents. Calmac, however, is precluded by prosecution history estoppel from asserting this argument. Initially, the '078 patent was rejected due to the state of the prior art. To overcome this rejection, Calmac argued to the examiner that the thermal storage system described in that claim is unique because it is able to freeze an entire tank of water. Calmac described this ability as an "astonishing result" which was "entirely unexpected." Amendment to the Application of the '078 Patent at 17. Calmac convinced the patent examiner to approve claim 16 by arguing the unique ability of the ICE-BANK to achieve 100% freezing. For this reason, Calmac is now estopped from asserting that claim 16 also includes thermal storage devices wherein the PCM does not freeze entirely. See, e.g., Hughes Aircraft Co., 717 F.2d at 1361.

As discussed above, the ICE-CEL does not literally infringe upon the 100% freezing element of claim 16. Also, Calmac is prevented by prosecution history estoppel from asserting the doctrine of equivalents regarding this element. DB is entitled to summary judgment on the question of infringement. If there is no infringement, then no legal action can proceed against defendant Lake Taylor City Hospital Authority of Norfolk, DB's client.

3. FRUSTO-CONICAL

ConAgra defines "frusto-conical" as "the shape of a cone with its tip cut off" (Filing No. 64). Green did not initially construe "frusto-conical" but defined "substantially frusto-conical" as "the side wall is not parallel, it tapers in a manner that is shaped like the wall of a cone" (Id.).

The Court finds the intrinsic record supports ConAgra's construction of the term. Claim 1 of the '083 patent states the first vessel has a "substantially frusto-conical side wall," and the second vessel has "a frusto-conical side wall."

According to the specification, "frusto-conical" refers to the shape of the vessel's side wall (See the '083 patent, col. 2, l. 54; col. 4, l. 23; col. 4, ll. 50-51). The specification describes the side wall of the first and second vessels as angled (see id., col. 4, ll. 60-63), and states that in the preferred embodiment, the first vessel's side wall is "frusto-conical shaped expanding upwardly such that the upper edge is slightly wider than the base" (Id. at col. 2, ll. 53-55). Figure 3 depicts the side walls of the first and second vessels as the shape of a cone with the tip cut off.

Green's construction of the term is slightly too broad because it defines conical rather than frusto-conical. In contrast, ConAgra's construction appropriately construes both portions of the term, and ConAgra's construction is supported by the specification. Green agrees that frusto-conical means a truncated cone, but Green contends a different construction is appropriate because the patent uses frusto-conical to describe the shape of a wall rather than the shape of a vessel. The Court is not persuaded that this fact requires an alternate construction of the term.

4. Frustoconically Tapered Portion

The parties' proposed constructions are as follows:

Plaintiffs
A portion of an implant whose exterior is conically shaped over a region, but does not come all the way to a point in that region.

Defendant
A portion of the implant body with smoothly tapered sides.

The parties agree that frustoconical means "a truncated cone with its pointed end removed." (Plf's Opening Brief 12 n.3; Def.'s Opening Brief 4.) The parties, however, disagree as to the portion of the implant to which this term refers. Plaintiffs contend it applies to the entire implant, including the threads. Defendant, however, contends that it applies only to the...
internal body of the implant, not the threads.

The language of the claim describes "a frustoconically tapered portion tapering from the major diameter D at the proximal end of the implant to a minor diameter d proximate [to] the distal end of the implant." (Swaroop Decl. Ex. 1, col. 6, ll. 35-38.) Nothing in the language of the claim describes this portion of the implant as having smooth sides. Nor does the claim language specify that this portion refers only to the internal shape of the implant body, excluding the threads.

The specification likewise describes the general shape of the implant, but lacks any reference to the frustoconically tapered portion of the implant as having smooth sides. (Swaroop Decl. Ex. 1, col. 3-4.) Defendant nonetheless relies on Figure 1 to support its contention that the "frustoconically tapered portion" has smooth sides. Specifically, Defendant contends that Figure 1 refers to the "frustoconically tapered portion" as the smooth sides between the threads of the implant. The Court, however, declines to construe this term so narrowly based on the imprecise drawing in Figure 1. As explained above, courts generally do not rely on schematic drawings to limit the scope of a patent to the embodiment depicted in a drawing. See Anchor Wall, 340 F.3d at 1306-7. In addition, Defendant has not given a reasonable explanation for its insistence that a frustocone has "smooth" sides (7/24/09 Transcript 91) nor has Defendant presented compelling expert testimony construing this term in the relevant field as requiring smooth sides.

Moreover, it does not appear that adopting Defendant's proposed construction is consistent with the nature and purpose of the '160 patent. Rather, Defendant's proposed construction seems to be a haphazard attempt to narrow the patent's scope. The '160 patent requires that the implant inserted into the stepped endosseous orifice contain a frustoconically tapered portion, but does not explicitly state nor imply that the precise shape of the internal body of the implant is important, as long as the overall implant contains a frustoconically tapered portion. Indeed, whether the implant is tapered due to its tapered body or its tapered threads the result is the same, the taper fits the proportions of the orifice to accomplish the goal of creating a snug fit with the bone.

Defendant's proposed construction is also inaccurate because it fails to describe the truncated cone that is characteristic of a frustum and thus is overly broad in that it could include a tapered implant that comes to a complete point.

Plaintiffs, on the other hand, have proposed a logical construction for this term that refers to the overall shape of the implant. As described above, the claim language and specification do not contain any language that would limit the term "frustoconically tapered portion" to refer to only the internal body of the implant.

In light of the foregoing, the Court adopts the following construction: A portion of an implant whose exterior is conically shaped over a region, but does not come all the way to a point in that region.

1804

Claim 1; Issue 2 -- Initial Fuel Filter Means

The parties disagree as to the construction of the term "initial fuel filter means for removing water from fuel received from the fuel tank." Plaintiffs assert that one of ordinary skill in the art would understand this term to mean "a water filter comprising a filter head and removable cartridge and equivalents thereof." Mirroring their position with regard to the preamble, Defendants assert that the "initial fuel filter means" consists of a water separation filter, a particulate filter, a fuel pump, and a regulator valve.

The parties essentially are in agreement that this is a means-plus-function limitation, under § 112, P6. As such, the Court must first determine the function identified in this language, and then identify the structure that provides the means for accomplishing this function. Kemeco Sales, Inc. v. Control Papers Co., Inc., 208 F.3d 1352, 1360 (Fed. Cir.2000); IMS Tech., Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1429-30 (Fed. Cir. 2000). In terms of defining the function, the language of the claim is not ambiguous; the function is to remove water from fuel that is received from the fuel tank. The parties disagree as to the structure in the specification that provides the means for accomplishing this function.

The Court finds that the structure which corresponds to the function of removing water from the fuel is disclosed in the specification and discussed at col. 3, lines 5-12. It includes a filterhead and a removable cartridge with a drain valve, such
cartridges "being well know in the art." Col. 3, line 14; see also, col. 1, lines 21-23.

While Defendants agree that the initial fuel filter means includes a filterhead and removable cartridge, Defendants assert, as they did regarding issue 1, that the water filter means includes a water separation filter, particle filter, fuel pump, and regulator valve, citing to col. 2, lines 65-68. Once again, however, the language quoted by Defendants is repeatedly and expressly qualified in the specification, which states that the initial fuel filter means "may" include such elements.

Moreover, as Plaintiffs note, it is improper to restrict a means-plus-function limitation by requiring a structure that performs functions different from the function expressly recited in the claim. Creo Prods., Inc. v. Presstek, Inc., 305 F.3d 1337, 1345 (Fed. Cir. 2002). The structure disclosed in the written description is "corresponding" to the claimed means under § 112 only if the structure is clearly linked by the written description or the prosecution history to the function recited in the claim. Unidynamics Corp. v. Automatic Products Int'l, Ltd., 157 F.3d 1311, 1319 (Fed. Cir. 1998); B. Braun Medical, Inc. v. Abbott Laboratories, 124 F.3d 1419, 1424 (Fed. Cir. 1997). None of the additional items listed by Defendants perform the function of removing water from the fuel. The specification states that the fuel pump pressurizes the fuel (col. 3, lines 26-27), while the particulate filter removes unwanted solids from the fuel (col. 3, lines 33-36), and the regulator valve controls the flow rate of the fuel. Col. 3, lines 36-38. In addition, these functions are performed after the water filter removes water from the fuel. Col. 3, lines 20-35. It would be improper to require these additional limitations as part of the initial fuel filter means. See Unidynamics, 157 F.3d at 1319.

As such, the Court finds that the initial fuel filter means is "a water separation filter comprising a filterhead and removable cartridge with a drain valve, or equivalents thereof." Col. 1, lines 21-23; col 3, lines 5-14.

On appeal, Honeywell argues that the district court erred by limiting the "fuel injection system component" limitation to a fuel filter and including no other component of a fuel injection system. In doing so, Honeywell contends that the court imported a limitation from the specification into the claims and thereby improperly limited the scope of the claims to the specification's preferred embodiment. According to Honeywell, nothing in the specification explicitly limits the claim term to a "fuel filter." Honeywell relies on a statement contained in the specification referring to "the metallic components used in prior art systems," '879 Patent, col.1 ll.32-33, to argue that the term "component" was meant to be broad. It also cites the patent's abstract, which summarized the invention using the term "component," and the title of the patent as amended, to further argue that the specification did not limit the "fuel injection system component" to a fuel filter.

In addition, Honeywell points to the prosecution history in assigning error to the district court's construction of the "fuel injection system component" limitation. According to Honeywell, the patentee stated during prosecution that the intended scope of the claims was to include "all fuel components manufactured of the moldable material disclosed and claimed in the specification." Honeywell also notes that the patent examiner issued a restriction requirement during prosecution of the '084 application (which also included claims to "fuel filters") because "the fuel system component [claims] do[] not specifically require that the component be a fuel filter."

Mainly reiterating the points made by the district court in its claim construction decision, ITT/TG responds that the claim term "fuel injection system component" was correctly limited to a fuel filter. ITT/TG also argues, however, that the court erred in its construction of the "electrically conductive fibers" limitation. ITT/TG contends that the court should have construed that term to include only metal fibers with a high aspect ratio, not carbon fibers. According to ITT/TG, the written description compared the properties of metal and carbon fibers, and "disparaged" the use of the latter as an electrically conductive fiber. ITT/TG contends that there was a clear disavowal of carbon fibers from the scope of the claims. Moreover, because the accused quick connects are indisputably made with carbon fibers, ITT/TG asserts that there can be no infringement either literally or under the doctrine of equivalents.

We agree with the district court that the claim term "fuel injection system component" is limited to a fuel filter. In Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc), this court recognized that "claims 'must be read in view of the specification, of which they are a part.'" We further stated that "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." Id. (internal citations omitted). Here, the written description uses language that leads us to the conclusion that a fuel filter is the only
"fuel injection system component" that the claims cover, and that a fuel filter was not merely discussed as a preferred embodiment. On at least four occasions, the written description refers to the fuel filter as "this invention" or "the present invention":

This invention relates to a fuel filter for use in the fuel line that delivers fuel to a motor vehicle engine. '879 Patent, col.1 ll.8-9.

According to the present invention, a fuel filter for a motor vehicle is made from a moldable material which may be safely used in vehicles equipped with electronic fuel injection system. Id., col.1 ll.40-43.

This and other advantages of the present invention will become apparent from the following descriptions, with reference to the accompanying drawing, the sole Figure of which is a cross-sectional view of a fuel filter made pursuant to the teachings of the present invention. . . . Id., col.1 ll.43-49.

According to the present invention, an electrically conductive path is provided between the fuel within the inlet cavity 42 [of the fuel filter] and the [vehicle] body 38. Id., col.3 ll.41-43.

The public is entitled to take the patentee at his word and the word was that the invention is a fuel filter.

Moreover, the written description does not indicate that a fuel filter is merely a preferred embodiment of the claimed invention. The fuel filter was the only component of an EFI system that the written description disclosed as having a polymer housing with electrically conductive fibers interlaced therein. The only other fuel component specifically mentioned in the written description, the fuel line, was not required by the patentee to be made of an electrically conductive polymer material, as the claims require. See id., col.1 ll.59-60 (stating that the "fuel line may also be made of a non-conductive material"). The written description's detailed discussion of the prior art problem addressed by the patented invention, viz., leakage of non-metal fuel filters in EFI systems, further supports the conclusion that the fuel filter is not a preferred embodiment, but an only embodiment. Id., col.1 ll.10-25. Given the written description's disclosure, we conclude that the patentee has limited the scope of the '879 patent claims to a fuel filter.

Nor are we persuaded by Honeywell's argument that the patentee confirmed a broader scope of his claims during prosecution. Honeywell relies mainly on the patentee's response to the examiner's indefiniteness rejection in which he stated that the claims cover "all fuel components manufactured of the moldable material disclosed and claimed in the specification." Honeywell places too much weight on that statement, as we find it to be ambiguous and possibly inconsistent with the written description. After all, the only fuel component disclosed and claimed in the patent was a fuel filter. In any event, such a broad and vague statement cannot contradict the clear statements in the specification describing the invention more narrowly.

We also do not assign much weight to the patent examiner's restriction requirement with respect to claims for a "fuel filter" and a "fuel system component" during prosecution of the '084 application. In making the restriction requirement, the examiner did not construe the claim term "fuel system component" or determine its meaning in light of the written description. He merely required that the applicant elect one aspect of his invention for prosecution without applying it to the specification.

Nevertheless, even if we were to agree with Honeywell that the patentee clearly expressed his intention during prosecution to have the "fuel injection system component" limitation include components in addition to a fuel filter, it would not change the result in this case. As we determined above, the written description provides only a fuel filter that is made with polymer housing and electrically conductive fibers interlaced therein. No other fuel injection system component with the claimed limitations is disclosed or suggested. Where, as here, the written description clearly identifies what his invention is, an expression by a patentee during prosecution that he intends his claims to cover more than what his specification discloses is entitled to little weight. See Biogen, Inc. v. Berlex Labs., 318 F.3d 1132, 1140 (Fed. Cir. 2003) (stating that "[r]epresentations during prosecution cannot enlarge the content of the specification").
1. Claim 2: "fuel reservoir"

Claim 2 is construed to mean "the portion of the apparatus for pumping fuel in which fuel is collected and retained apart from the fuel in the fuel tank."

1807

1. Fuel Reservoir

TI Group first argues that the district court's construction of the term "fuel reservoir" is too narrow and is not consistent with the written description of the patent. In particular, the district court construed the term to mean "the portion of the apparatus for pumping fuel in which fuel is collected and retained apart from fuel in the fuel tank." Markman Order at 1. TI Group argues that this definition unnecessarily imports the limitation of retaining fuel apart from the fuel in the fuel tank and is inconsistent with both the term's ordinary and customary meaning and the term's usage in the written description. Instead, TI Group urges that we adopt the broadest dictionary definition as the ordinary and customary meaning of the term "reservoir"--"any receptacle for fluids." 13 The Oxford English Dictionary 703-04 (2d ed. 1989). VDO argues, in response, that the correct construction of "reservoir" is one of the more narrow definitions provided in the dictionary: "a part of some apparatus in which fluid or liquid is contained," id., or "a part of an apparatus in which a liquid is held," Webster's Third New International Dictionary 1931 (1986) ("Webster's").

The dictionary entries for "reservoir" in both The Oxford English Dictionary and Webster's have several definitions that are facially relevant to the claimed invention. Each of the definitions implicates some sort of containment of liquid. Even the definition urged by TI Group, i.e., "any receptacle for fluids," requires that the fluid be retained apart or contained. See 13 The Oxford English Dictionary 320 (2d ed. 1989) (defining "receptacle" as "that which receives and holds a thing; . . . a containing vessel, place, or space" (emphases added)). Thus, TI Group's argument that the district court's construction is unduly narrow is not persuasive. The notion of retaining or containing liquid in the receptacle is a common theme in each of the dictionary definitions. As the district court correctly observed, in the context of this invention, the fuel in the reservoir is contained, or held apart, from the fuel in the fuel tank.

The written description fully supports the ordinary meaning of the term "reservoir" identified by the district court, and there is no indication that TI Group disclaimed or disavowed meaning or acted as its own lexicographer in giving the term another meaning. We therefore affirm the district court's definition of the term "reservoir" as meaning "the portion of the apparatus for pumping fuel in which fuel is collected and retained apart from fuel in the fuel tank."

1808

ii. "full flow"

The term "full flow" also appears in the preamble of each of the asserted independent claims. CFMT argues that the term refers to the inventors' short hand name for a process that includes the characteristics of flowing process fluids past wafers in a process vessel that is hydraulically full. YieldUP counters that the term "full flow" is a CFMT trademark that is not explicitly defined in any part of the patent documents. If the court construes the term, YieldUP contends that it means requiring turbulent plug flow with a high volume turnover rate.

The court does not find that the term "full flow" is an undefined trademark used by CFMT strictly for its marketing purposes. YieldUP markets its own products as "full flow processors" and YieldUP's co-founder and Chief Technology Officer, Suraj Puri, has filed a patent application covering a "Full Flow Method and Apparatus for Cleaning Objects Using Dilute Ammonium Solutions." Therefore, the court finds that the term "full flow" would be understood by one of ordinary skill in the art.

The specification of the '532 patent does not suggest that "full flow" means "plug flow" as YieldUP argues. On the contrary, the two references to "plug flow" in the specification of the '532 patent suggest that if the inventors had meant to refer to
"plug flow" in the patent claims, they knew how to do so, and they would not have used the term "full flow" instead. As advocated by CFMT, the court finds that the term "full flow" is a short-hand name for the method of flowing process fluids past wafers in a vessel that is hydraulically full.

The claim and specification of the 940 patent make clear that the base of the device is a "typical funnel arrangement." 940 pat., col. 2, lines 23-24. While the embodiment in the patent shows a funnel of conical shape, the specification notes that the base "may be of any other shape providing a large open top and small open bottom to facilitate the pouring of fluid into a vessel having a small mouth." Id., col. 2, lines 25-28.

In spite of the variety of shapes a funnel may take, the term "funnel" cannot be re-configured here to cover defendant's devices. The ordinary meaning of the word 5 appears to have been intended by the claim and the definition set forth in the specification. More particularly, the base [10] is required to have a large open top [18] tapering to a narrow pipe-like open bottom [20] for the purpose of directing fluids into a relatively small opening, such as a gas tank orifice. 940 pat., col. 1, lines 19-24. See, e.g., Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1553 (using dictionary to define the claim terms "at" and "to"); American Permahedge, Inc. v. Barcana, Inc., 105 F.3d 1441, 1444 (Fed. Cir. 1997) (relying on dictionary definition to construe the claim term "lateral"). The commonly accepted meaning of the word funnel is intrinsic in claim one - "a large open top tapering downwardly toward a reduced open bottom." 940 pat., col. 4, lines 7-9.

5 Although dictionaries technically are extrinsic evidence, the Court of Appeals for the Federal Circuit has noted that:

judges are free to consult such resources at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents.

Vitronics, 90 F.3d at 1584 n. 6.

The Random House Dictionary 575 (Unabridged 1983) defines a funnel as a "cone-shaped utensil with a tube at the apex, for conducting liquid or other substance through a small opening, as into a bottle, jug, or the like." Other than noting that the shape of the cone need not be conical, the claim and specification follow this standard definition.

A. "A FURRY PET"

Plaintiff argues that the claim term "a furry pet" in claim 1 2 of the '540 Patent means "a pet having fur," while Defendants argue that the claim term means "a pet having fur, examples of which include a cat, a dog, and a horse." The Court believes that Plaintiff's proposed definition is proper, therefore, the Court construes the term "a furry pet" as "a pet having fur."
This disputed phrase appears in Claims 1 and 16 of the '015 Patent. Plaintiff has offered two alternate constructions. Plaintiff's first proposed construction for this phrase is as follows: "a method of making a mechanical surface adhesion bond between electrically conductive elements by applying heat to soften the elements without melting them and pressure to force the softened elements together." Alternatively, Plaintiff proposes this more concise construction: "method of bonding electrically conductive elements together by applying heat and pressure to force the elements together." Defendants, on the other hand, argue that "fusing method of forming a fused joint" means: "method of making a connection between two or more parts resulting from uniting or blending in a whole by melting together."

The first obvious difference in the two proposed constructions centers on the question of whether the joining of the two parts to be connected, in this case the terminal and armature wire, requires heating the parts to the point of melting. Under Defendants' proposed construction, the terminal and armature wire would be heated to the point of melting, which in turn could cause them to become joined. Under Plaintiff's construction, melting is expressly avoided and the parts are merely softened by the application of heat. Also, the parties differ on the issue of whether the application of pressure to the parts being joined is included within the meaning of the disputed phrase.

In support of its proposed construction, Plaintiff points first to the language of the claims themselves. According to Plaintiff, nothing in Claim 1 or Claim 16 indicates that the fusing method claimed requires heating the terminal and the armature wire to the point of melting them together. In response, Defendants point to the language in the claims that describes the application of "heat sufficient to . . . fuse" the armature wire to the terminal. This language, according to Defendants, specifically describes melting because, they argue, "to fuse" means "to bond" and the fusing described in the claims entails the application of only heat to achieve the resulting bond, i.e., to "mak[e] a fused joint." Said another way, under Defendant's interpretation, the "fusing" described in the disputed phrase is a heat-only process that involves bonding parts through the process of melting them together.

However, Defendants' argument appears to be somewhat circular, as it is dependent upon the construction of the term "fuse," and how this term, as well as the concept of "fusing," is understood by a person of ordinary skill in the art of commutator fusing. See On Demand Machine Corp. v. Ingram Industries, Inc., 442 F.3d 1331, 1337 (Fed. Cir. 2006) ("[T]he proper judicial construction of a claim and its terms is from the viewpoint of a person of ordinary skill in the field of the invention; the court must determine how such a person would understand the claim in the context of the particular technology and the description in the specification, with due reference to the prosecution history."). Persons of skill in the art are deemed to read the claim term "not only in the context of the particular claim in which the patent appears, but in the context of the entire patent, including the specification." Phillips, 415 F.3d at 1313. Indeed, the Phillips court noted that the specification may be the "single best guide to the meaning of a disputed term." Id. at 1315.

The specification of the '015 Patent describes the procedure known as "fusing":

- 2236 -
Fusing is a known technique for joining electrically-conductive elements in which a fusing electrode is contacted with one element adjacent the joint so that the fusing electrode forces the elements together. A ground electrode is also contacted with one of the elements, typically at a location remote from the joint, such that an electrical current is passed through the electrodes and at least one of the elements. Heat generated by the electrical current, and the high pressure applied by the fusing electrode, causes a bond to form between the elements.

Nothing in the patent specification indicates that "fusing" requires "melting" of any part to be joined. Nor, according to the specification, does "fusing" appear to be a heat-only process. Rather, the specification describes "fusing" as the joining of electrical conductors through the application of both heat and pressure. This supports Plaintiff's proposed construction of the disputed term.

Similarly, the prosecution history of the '015 Patent and the prior art of a patent discussed during prosecution further support Plaintiff's proposed construction. It appears that the Patent Examiner had considered the term "fusing" to be synonymous with "welding," which, like Defendants' interpretation of the term, would require melting. However, counsel for Joyal explained to the examiner that "fusing" and "welding" were "entirely different joining techniques." Buckingham Decl. 2, Ex. B at J00198. Counsel explained that "fusing" involved joining elements to one another "under the combined influence of heat transferred from the fusing electrode and pressure applied by the fusing electrode." Id. at J00198. Additionally, counsel referred to the prior art Warner '152 patent, 3 which had been cited by the Patent Examiner, and which explained that in "fusing," "the electrode dissipates heat into the assembly to soften the parts without causing them to reach their plastic state. . . . [P]ressure is applied to thereupon force the softened parts together to form the compression joint." Buckingham Decl., Ex. D at col. 1:60-64.


3 United States Patent No. 4,034,152, "Termination System For Fusing Aluminum-Type Lead Wires."

Notwithstanding the above evidence that supports the conclusion that "fusing" or "to fuse" is understood by persons skilled in the art to include the application of both heat and pressure, Defendants argue that the inclusion of "pressure" into the construction of Claim 1 is not permitted under the doctrine of claim differentiation. That doctrine is based on "the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope." Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1369 (Fed. Cir. 2007) (quoting Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir.1999)). Defendants point to Claim 4, which states as follows: "The method of claim 1, further included applying a compressive force against said terminal by said electrodes." According to Defendants, if the application of pressure was included in the construction of Claim 1, then Claim 4 would be rendered redundant and superfluous. 4

4 Defendants also argue that such a construction would render Claim 4 invalid under 35 U.S.C. § 112, paragraph 4, which requires a dependent claim to "specify a further limitation of the subject matter claimed" in the independent claim. However, the validity of Claim 4 is not at issue here.

Plaintiff responds that the specification makes clear that the application of pressure that is described in Claim 1 is different from the application of pressure set forth in Claim 4, and, therefore, the claims are consistent with the doctrine of claim differentiation. Plaintiff asks the Court, consistent with the doctrine of claim differentiation, to "presume[] a difference in the meaning and scope when different words or phrases are used in separate claims." Comark Comm., Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998). According to Plaintiff, Claim 4 refers to an optional subsequent step of pressure being applied, which is in addition to the application of pressure during the fusing described in Claim 1. Indeed, Claim 4 expressly uses the term "further," which in ordinary usage means "additional." Furthermore, the specification of the '015 Patent
explains that under the fusing process pressure is "once again" applied after the insulation on the armature wire is burned off:

Once the electrical insulation has been removed, the mounting arm or pistons of the fusing apparatus, under control of the welding unit, is once again operated to cause the fusing and ground electrodes to apply a compressive force to the tang to fuse the armature wire (under heat and pressure) to the tang. . .


Additionally, Plaintiff points out that if the inventor had intended to exclude the use of pressure in Claim 1, the claim would not have been written to require that electrodes be moved against the terminal "to form a current path," which, according to Plaintiff, necessitates the use of pressure. See discussion in section II.7, infra, regarding construction of a phrase that includes the language "to form a current path." Last, Plaintiff references several different patents that describe fusing and which explain that a second application of physical force may occur as part of the fusing process. See, e.g., Buckingham Decl. at Ex. G, Col. 1:24-26. The Court finds that, particularly in light of the teaching of the specification as well the language of Claim 4 itself, the doctrine of claim differentiation does not preclude a construction of Claim 1 that would include the application of pressure.

Considering the plain language of Claims 1 and 16 as well as the specification of the '015 Patent, the patent prosecution history, and relevant extrinsic evidence, the Court shall construe "fusing method of forming a fused joint" consistent with Plaintiff's proposed construction as follows: "a method of making a mechanical surface adhesion bond between electrically conductive elements by applying heat to soften the elements without melting them and pressure to force the softened elements together."

BACKGROUND

Trilogy owns the '846 and '250 patents, which relate to coaxial cables. A coaxial cable typically has a solid metal inner conductor surrounded by a cylindrical insulating material. The insulating material is covered by a tubular metal outer conductor, known as a "sheath." The asserted claims of the '846 patent relate to a coaxial cable in which the insulating material, specifically a foam dielectric, is "fusion bonded" to the sheath.

Claim 1 of the '846 patent reads (with emphasis added) as follows:

An electrical cable including . . . [a] foamed dielectric insulation . . . the insulation being bonded to the core and being under some radial pressure between the core and the sheath, said insulation filling irregularities in the inside surface of the sheath and being fusion-bonded to the sheath.

Claim 6, the only other asserted claim of the '846 patent, depends from claim 1, and reads:

The electrical cable described in claim 1 characterized by the bond of the foam to the sheath including an outer layer of adhesion-promoting material that bonds the foam insulation to the inside surface of the sheath at a temperature lower than the fusion temperature of the foam.

The '250 patent relates to a method for manufacturing coaxial cables that involves "fusion-bonding" the foam insulation to the sheath. Trilogy asserted only independent claim 1 and dependent claim 8 of the '250 patent. Claim 1 reads (with emphasis added):

The method of making an electrical cable including . . . fusion-bonding the insulation to the inside surface of the cable sheath by heating the sheath.

Times Fiber manufactures coaxial cables that contain a foam dielectric insulation bonded to the sheath with an adhesive. Trilogy sued Times Fiber, asserting that the '846 and '250 patents were infringed by Times Fiber's manufacture and sale of
requires the foam to melt, renders claim 6 meaningless. Trilogy concludes that the district court's claim construction, which

requires a fusion bond to be formed at a temperature lower than the fusion temperature of the foam. Trilogy argues, claim 6 indicates that the fusion bond of claim 1 includes a bond that can be formed at a temperature below the fusion temperature of the foam. Trilogy contends that this interpretation of the claim terms "fusion-bonded" and "fusion-bonding" do not read on its products. The district court construed these claim terms as requiring the foam dielectric insulation to melt onto the sheath. Because Trilogy conceded that the bond in the accused products is not formed by melting the foam, the court held as a matter of law that the accused products did not infringe the patents.

Resolving the infringement claim, the court certified the summary judgment of non-infringement as an appealable final judgment pursuant to Fed. R. Civ. P. 54(b). The court stayed further proceedings on Times Fiber's counterclaims, including its claim for a declaratory judgment of patent invalidity and unenforceability.

Trilogy appeals to this court, challenging the district court's claim construction and arguing that the district court abused its discretion by excluding extrinsic evidence submitted by Trilogy in support of its proffered claim construction. Times Fiber cross-appeals, arguing that the district court erred by failing to give the prior decision of invalidity and unenforceability collateral estoppel effect.

DISCUSSION

We review a district court's grant of summary judgment de novo. Conroy v. Reebok Int'l, Ltd., 14 F.3d 1570, 1575, 29 U.S.P.Q.2d (BNA) 1373, 1377 (Fed. Cir. 1994). Summary judgment is appropriate when no genuine issue as to any material fact exists and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c). Thus, summary judgment may be granted when no "reasonable jury could return a verdict for the nonmoving party." See Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986); Conroy, 14 F.3d at 1575, 29 U.S.P.Q.2d (BNA) at 1377 ("The moving party . . . may discharge its burden by showing the district court that there is an absence of evidence to support the nonmoving party's case."). In determining whether there is a genuine issue of material fact, we view the evidence in the light most favorable to the party opposing the motion, with doubts resolved in favor of the opponent. Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1274, 35 U.S.P.Q.2d (BNA) 1035, 1038 (Fed. Cir. 1995).

A. Infringement

Determining whether a patent claim has been infringed requires a two-step analysis: "First, the claim must be properly construed to determine its scope and meaning. Second, the claim as properly construed must be compared to the accused device or process." Carroll Touch, Inc. v. Electro Mechanical Sys., Inc., 15 F.3d 1573, 1576, 27 U.S.P.Q.2d (BNA) 1836, 1839 (Fed. Cir. 1993). Claim construction is a question of law. Markman v. Westview Instruments, Inc., 52 F.3d 967, 983-84, 34 U.S.P.Q.2d (BNA) 1321, 1333 (Fed. Cir. 1996) (in banc), aff'd, 134 L. Ed. 2d 577, 116 S. Ct. 1384, 38 U.S.P.Q.2d (BNA) 1461 (1996). In construing the claims, the court looks to the claim language, the specification, the prosecution history, and, if necessary, extrinsic evidence. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2d (BNA) 1573, 1576 (Fed. Cir. 1996). Application of a properly construed claim to the accused device is a question of fact.

Trilogy argues that the district court erred in its interpretation of the claim terms "fusion-bonded" and "fusion-bonding." Relying on The American Heritage Dictionary of the English Language (1969), the district court stated that the term "fusion" ordinarily means "the act or procedure of liquefying or melting together by heat." Trilogy accepts this definition. However, Trilogy disputes the district court's further conclusion that the terms "fusion-bonded" and "fusion-bonding" as used in the claims necessarily require the foam insulation to melt. Trilogy argues that a fusion bond can also be formed by liquefying or melting a heat-activated adhesive placed between the foam and the sheath and that this fusion bond is also within the meaning of the claims as properly construed.

Trilogy contends that claim 6 of the '846 patent supports its interpretation. Claim 1 recites a cable with a foam insulation that is "fusion-bonded to the sheath." Claim 6, which incorporates all the limitations of claim 1, requires that the bond in claim 1 include an adhesion-promoting material "that bonds . . . at a temperature lower than the fusion temperature of the foam." Thus, Trilogy argues, claim 6 indicates that the fusion bond of claim 1 includes a bond that can be formed at a temperature below the fusion temperature of the foam. Trilogy concludes that the district court's claim construction, which requires the foam to melt, renders claim 6 meaningless.
Contrary to Trilogy's assertion, the district court's interpretation of "fusion-bonded" in claim 1 as requiring the melting of the foam is not inconsistent with use of an adhesion-promoting material in claim 6. Claim 6 depends from claim 1, which requires that the foam be fusion-bonded to the sheath. Claim 6 limits the bond of claim 1 to one that includes an adhesion-promoting material and also requires the adhesion-promoting material to bond at a temperature below the fusion temperature of the foam. However, claim 6 does not require the fusion bond of claim 1 to form below the fusion temperature of the foam. Rather, claim 6 merely requires that the adhesive form a bond below such a temperature. In other words, under the district court's claim construction, claim 6 requires the use of an adhesion-promoting material (that bonds below the fusion temperature of the foam) and further requires the formation of a fusion bond between the foam and the sheath as required by claim 1 (which necessarily occurs at or above the fusion temperature of the foam). Thus, claim 6 of the '846 patent does not compel Trilogy's interpretation of the meaning of claim 1.

Turning to the specification, Trilogy argues that the district court ignored relevant portions of the '846 and '250 specifications that support its proffered claim construction. Specifically, Trilogy argues that the following description demonstrates that a fusion bond can be formed by melting an adhesive below the fusion temperature of the foam:

The foamed insulation can be bonded to the inside of the sheath at [a] lower temperature if an adhesion-promoting material is used. . . .

The advantage of using adhesion-promoting material is that it melts at a lower temperature than that of the foamed insulation.

'846, col. 3, lines 61-74 and '250, col. 4, lines 37-52. Trilogy argues that because the adhesion-promoting material melts, it produces a fusion bond between the foam and the sheath. We disagree. Trilogy does not point to any text in the specification that would lead us to conclude that the use of an adhesion-promoting material results in the foam insulation "being fusion-bonded to the sheath." The specification describes two types of bonds: one formed by melting the foam so that it flows onto and bonds with the sheath and the other in which an adhesion-promoting material is used. The former bond is indisputably one in which the foam is fusion-bonded to the sheath. The latter bond, which uses an adhesion-promoting material, arguably may form a fusion bond between the adhesion-promoting material and the sheath and between the adhesion-promoting material and the foam. For example, other claims which were originally in the patent, but have since been disclaimed, claimed the use of an adhesion-promoting material that is "bonded to both the foam and the metal sheath." Claim 1, on the other hand, does not merely claim the use of a fusion bond, but requires that the foam be fusion-bonded to the sheath.

Any remaining doubt as to whether the use of an adhesion-promoting material alone can form the bond in claim 1 of the '846 patent is dispelled by examination of other limitations in that claim. Claim 1 requires that the "insulation [fill] irregularities in the inside surface of the sheath." Times Fiber argues that this limitation is irreconcilable with Trilogy's proposed claim construction. As explained in the specification of the '846 patent:

The outer layer of the foam-insulated core, when melted by the application of heat to the metallic sheath, flows on to the inner side of the sheath and fills any irregularities in the sheath . . . .

'846, col. 2, lines 3-6, and

The permissible amount of melting depends upon how much the foam is compressed by the sheath. [Compression] causes the foam, when heated to a softening temperature and flowable condition, to flow as necessary to touch all portions of the inside surface of the sheath.

If the sheath is not completely round, then the softened foam will accommodate itself to any lack of circularity. Where the inside surface of the sheath is not completely smooth, the softened foam, when under some compression, flows into the irregularities so as to have contact with the entire inside surface of the sheath.


Trilogy responds that the specification discloses that irregularities are filled by either melting or softening the foam. Trilogy thus asserts that the district court erred by interpreting claim 1 of the '846 patent as requiring melting, as opposed to mere
softening in conjunction with an adhesive. We do not agree. As described in the patent specification and prosecution history, the terms "melting" and "softening" are synonymous. The patent uses the two terms interchangeably. No distinction is drawn between the temperature at which "softening" occurs and the temperature at which "melting" occurs. As the portion of the specification quoted above indicates, the key property of both melting and softening is that the foam enters a flowable condition, i.e., that it melts.

The prosecution history further supports the district court's claim construction. In response to the first office action received during prosecution of the '846 patent, the applicants stated that "the outer part of the foam can be melted and three results can be obtained. . . . Another result is that the softened foam enters into any irregularities caused by roughness of the inside of the sheath." It is clear from this passage that the "softened" foam is melted.

Similarly, claim 1 of the '250 patent claims a method of making a coaxial cable that includes "relieving pressure in the foam and fusion-bonding the insulation to the inside surface of the cable sheath." Again, Trilogy's proposed claim construction, in which the fusion bonding can occur below the melting temperature of the foam, is inconsistent with the step of "relieving pressure in the foam." The specification of the '250 patent states, "by melting the outer layer of foam [insulation] which is compressed against the metallic sheath, the radial compression which extends inward to the center conductor is reduced." Furthermore, the applicant stated during prosecution, "the pressure [on the foam] is then partially relieved by heating the sheath so as to melt the surface of the foam . . . . This bonds the foam to the sheath." After examining the claims, specifications, and prosecution histories of the '846 and '250 patents, we conclude that the district court did not err in its claim construction. Properly construed, the terms "fusion-bonded" and "fusion-bonding" in the asserted claims require the foam to melt and thereby form a bond with the sheath. Thus, since it is uncontested that Times Fiber's products are not made by fusion-bonding the foam to the sheath as we have construed those terms, the district court's finding of a lack of infringement was correct as a matter of law.

Gage

Similar to the above dispute, the parties disagree on whether the "gage" or "gage region" of the drill bit extends around the entire circumference of the drill bit or only encompasses the outermost radius of the bit. Baker Hughes contends "gage," or "gage region," means "area or region extending around the entire circumference on the drill bit and which is located at the maximum or outermost diameter of the drill bit body." ReedHycalog contends "gage" means "the outermost radius of the bit" and "gage region" means "region at the outermost radius of the bit."

Figures in the '249, '715, and '631 Patents distinguish between the "gage," or "gage region," and the junk slots. In particular, Fig. 7 of the '249 and '715 Patents, reproduced in Appendix C and annotated, shows the "gage" is disjoint from the junk slots and fluid courses on drill bit. In addition, Fig. 14A of the '631 Patent, shown in Appendix C and annotated, shows the "gage region" distinct from the junk slots and fluid courses and depicts the "gage region" as the region at the outermost radius of the bit. Thus, "gage" means "the outermost radius of the bit, labeled 207 in Fig. 7 of the '249 and '715 Patents" and "gage region" means "region at the outermost radius of the bit, labeled 322 in Fig. 14A of the '631 Patent."
A structure having a surface that can support one or more game pieces is a structure that includes a playing surface bounded by a rectangular frame or raised periphery, and which is divided into spaces that are arranged in rows and columns that are parallel to the four sides of the frame.

a. Innovention's Proposed Construction

Innovention insists that there is no reason why its intentional use of the broad generic term "game board" as used in the claims should have the highly restricted meaning the defendants propose. It further suggests that the defendants improperly propose to read in features of "four sides" and "rectangular frame" from the '242 patent's preferred embodiments, contrary to principles of claim construction, as well as contrary to the '242 patent's explicit assertion that features of the preferred embodiments are not claim limitations; the specification provides that:

The foregoing embodiments are presented by way of example only; the scope of the present invention is to be limited only by the following claims.

8 Innovention asserts that the construction of "game board" cannot include "the frame or raised periphery" and "divided into spaces that are arranged in rows and columns" features, because these are distinct limitations added by claims that further define "game board", citing (by way of example) claims 14, 23, 25, 30, 39, and 40.

b. Defendants' Proposed Construction

The defendants insist that the very function of the '242 patent depends on the game board having both a playing surface, a bounding frame, and a grid of rows and columns. The defendants point to various claims, including Claim 39, to support its proposed construction that specifies that "spaces" on the "game board" must be laid out in parallel rows and columns, like a chess board or a checker board.

As to the plaintiff's argument that the defendants impermissibly attempt to add features that are added by claims that further define "game board", the defendants urge the Court to reject the plaintiff's attempt to invoke the doctrine of claim differentiation, 9 contending that the doctrine of claim differentiation is overcome when there is powerful evidence to the contrary. See Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1370 (Fed. Cir. 2007). The Federal Circuit, the defendants insist, has determined that "the written description and prosecution history overcome any presumption arising from the doctrine of claim differentiation." See Kraft Foods, 203 F.3d 1362 at 1368.

9 "[C]laim differentiation...creates a presumption that each claim in a patent has a different scope." Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000) (noting that doctrine of claim differentiation creates a rebuttable presumption that each claim in a patent has a different scope).

c. The Court's Construction

The term "game board" appears in many of the '242 patent's claims. Claim 15, which is representative of many of the asserted claims with respect to the term "game board", discloses "A game comprising: a game board having a playing surface and one or more receptacles for holding electronic components...." The parties agree that the claim language itself commands that a "game board" has a "playing surface." Their dispute lies in to what extent the Court should read in other
claim language and features present in a preferred embodiment into the otherwise simple phrase "game board." Indeed, the defendants insist that the 242's "game board" be rectangular, divided into rows and columns, and contain a raised periphery framing the "game board." None of these features, however, are commanded by the generic phrase "game board" or the contextual claim language; the defendants have not convinced the Court that it must go beyond the ordinary meaning of "game board" as disclosed in the claims. If the features the defendants seek to import into "game board" were intrinsically part of the term itself, further claim language would be redundant. 10 The Court agrees with the reasoning supported by the plaintiffs' posited construction: Like in Phillips, the Federal Circuit determined that the use of "steel baffles" means baffles are not inherently made of steel. 415 F.3d 1303, 1312 (Fed. Cir. 2005)(en banc).

10 The defendants' posited definition, which calls for a "frame" and "raised periphery" as well as being "divided into spaces arranged in rows in columns", contains limitations not inherent in the ordinary meaning of "game board" and would also render redundant other claim language.

The language of the claims and the principle of claim differentiation (which has not been rebutted) favors the plaintiffs' construction of the term "game board", albeit slightly modified, based on the claim language that calls for "a game board having a playing surface and a cavity [or one or more receptacles] for holding electronic components." See, e.g., Claims 1 and 15 (emphasis added). The Court determines that "game board" as taught by the '242 patent simply means: "A structure having a playing surface that can support game pieces and electronic components." While the figures of a preferred embodiment of the patent show a rectangular game board, there is nothing in the claim language restricting the game board to that particular shape, even separate language in other claims disclosing "a checkerboard-style game board"; again, the Court relies on the "steel baffles" example of Phillips. Finally, the Court also declines the defendants' invitation to read the preferred embodiment into the claim language.

3. "game piece"

<table>
<thead>
<tr>
<th>Plaintiff's Construction</th>
<th>Defendants' Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>A structure that can be placed on a game board.</td>
<td>At least a mirrored and non-mirrored piece that the player moves from space to space on the surface of the board game during the course of game playing, that is capable of being hit by one of two laser beams emanating from two laser sources permanently mounted to the game board; all game pieces are movable during play.</td>
</tr>
</tbody>
</table>

a. Innoventions' Proposed Construction

Innovention contends that "game piece" is part of the apparatus claims (claims directed to a "board game") and, therefore, the temporal limitations that the defendants would have the Court impose (that is, "moves from space to space" "during the course of game playing", and "movable during play") are inapplicable to a structural item such as "game piece", which is employed in all of the 52 apparatus claims, as well as the two method claims (claims 39 and 40). Innovention asserts that it is illogical to define "game piece" to require "laser sources permanently mounted to the game board." (Indeed, Innovention notes that the defendants are attempting to create a noninfringement argument through their construction of "game piece" because the accused Laser Battle game houses its laser sources in "LaserGun" game pieces.) Innovention again asserts a patentee's mantra: that the defendants improperly try to read limitations from the specification into the claims.
b. Defendants' Proposed Construction

The defendants counter that Innovention uses neither intrinsic nor extrinsic evidence to support its asserted construction of "game piece." The defendants rely on the '242 patent's specification and prosecution history to support their proposed construction: the claims, say defendants, recite game pieces as having a base with a periphery and under surface and, during the prosecution of the '242 patent, Innovention specifically stated that its game pieces differed from prior art cited by the Examiner because some game pieces are mirrored, while others are not mirrored.

c. The Court's Construction

Based on the language of the claims, the specification, and the prosecution history, the Court adopts a slightly modified construction, and defines "game piece" as "A mirrored or non-mirored structure that can be placed on the game board and moved by the players during the course of game playing." The mirrored/non-mirrored feature of "game pieces" was relevant in the prosecution history of the patent and is clearly supported in the claim language. 11

11 The defendants' attempt to incorporate features extrinsic to the "game pieces" themselves is rejected: a person of ordinary skill in the art would not understand "game piece" to be "capable of being hit by one of two lasers emanating from two laser sources permanently mounted to the game board." These limitations are outside the ordinary meaning of the term "game piece" and unlike the mirrored/non-mirrored feature, are not called for by the prosecution history. Moreover, the defendants' proposal that a "game piece" is something the "player moves from space to space" is contradicted by the claim language or the language of the specification both of which permit (in describing the method for playing the game) "game pieces" to be moved either from space to space or rotated in place (so that the player may position the mirror to deflect the laser). See Claim 3 9 ("...alternating turns, each turn comprising moving, either a translation or a rotation, a piece followed by activation of a laser...").

Despite the impediments to a full review, i.e., the sparse record, this court perceives some flaws in the trial court's claim construction that led to the entry of the stipulated judgment of non-infringement. Accordingly, rather than merely remand for development of a complete record, this court offers some analysis to guide the trial court upon remand.

In analyzing the term "gap," the trial court noted that, according to the claim language, the insert is "separated from the tubular frame by a gap" except at its ends, where the insert and the frame were adjoined. The court found no indication that the inventor had given the word "separate" other than its ordinary meaning. In that connection, the trial court consulted Webster's II New Riverside University Dictionary to determine that "separate" meant "set apart from others" and "existing by it self." The dictionary reference also included "void," which means an "open space or a break in continuity." The trial court considered this definition synonymous with "gap." The court further noted that the frame must be "elastically deflectable across the gap to operably engage the insert," which would not be possible if the frame and insert were initially engaged.

The various claims in this patent, however, contain distinctions that cast doubt on the trial court's interpretation of "gap" and its conclusion that all of the disputed claims require a "single continuous space or void." For example, claim 1 features the gap in at least part of an annular shape; claim 15 makes the gap itself annular; claim 18 has no annular requirement. Under this court's case law, the same terms appearing in different claims in the same patent—e.g. "gap" in claims 1 and 15—should have the same meaning "unless it is clear from the specification and prosecution history that the terms have different meanings at different portions of the claims." Fin Control Sys. Pty. Ltd. v. OAM, Inc., 265 F.3d 1311, 1318 (Fed. Cir. 2001); Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc) ("Claim terms are normally used consistently throughout the patent."). In this case, the claims use the term "gap," but then modify it differently to suggest differences in the geometry of the "gap" in the various claims.
Taking into account the term "annular," "gap" takes on a meaning different from the trial court's construction. Specifically, the modifiers to "gap," such as "annular," produce significant differences in the geometries in each defining claim. These modifiers inform the nature of the gap in each claim and define differently the cross-section of the claimed insert. ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1088 (Fed. Cir. 2003) ("The context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms.").

This court notes that the adjective "annular" appears only within the claims, not in the patent specification. Nothing in the specification, including the claims, indicates explicitly or implicitly, that the inventor intended to impart a novel meaning to "annular." The record also contains no evidence that "annular" has a peculiar meaning in the field of art encompassed by the '398 patent. This court concludes, therefore, that the ordinary and customary meaning attributed to this term by those of ordinary skill in this art at the time of invention "involves little more than the application of [its] widely accepted meaning." Phillips, 415 F.3d at 1314.

This court has previously recognized that the ordinary and customary meaning of "annular" is "of or relating to an area formed by two concentric circular or curved regions." Int'l Rectifier Corp. v. IXYS Corp., 361 F.3d 1363, 1372-73 (Fed. Cir. 2004) (citing Webster's Third New International Dictionary 88 (1966)). Giving "annular" its proper place in the construction of the claims informs the interpretation of "gap." In claim 1, both the frame and the insert unequivocally have "a circular cross-section," but the gap between them need only form "at least part of an annular shape along a central portion between" the ends. The claim language thus permits non-annularity somewhere along the central portion. Annularity also requires "roughly parallel sides." An embodiment without the annular requirement, therefore, need not have even "roughly" parallel sides. Thus, a claim without the "annular" requirement or with only a partial "annular" requirement could have a gap characterized by intersection of part of the cross-section between insert and frame. In other words, claims 1 and 18 do not require concentricity of the circular insert and frame. Moreover, those claims do not foreclose some contact between the insert and frame.

In claim 18, neither "gap" nor "annular" appear. Instead, the insert has "a substantially circular cross-section" "within the impact portion" of the frame. This impact portion is "inwardly elastically deflectable" to allow contact ("a tight interference fit") between the insert and the impact portion. The term "substantial" implies "approximate," rather than "perfect." Liquid Dynamics Corp. v. Vaughn Co., Inc., 355 F.3d 1361, 1368 (Fed. Cir. 2004). Therefore, in contrast to the insert of claim 1, the insert in this claim need not be perfectly circular. Rather the claim requires only space between the frame and the insert to allow for contact when the impact portion is elastically deflected. Because the bat hits the ball at only a small point of impact, not extending over the entire circumference of the frame, claim 18 also does not foreclose the possibility that contact between the frame and insert occurs, before impact, at some point other than at which it impact occurs. As a result of these considerations, this court defines "gap" for the purposes of claims 1 and 18 of the '398 patent as "a separation." The separation may be localized, so that a cross-section of the bat in the impact region need not possess circular symmetry.

1818

Construction of "gap" and "line segment" at this time is consistent with the Court's "broad powers of case management." The parties dispute whether the defendants' products contain a "gap," and therefore construction of the term may prove dispositive. The "salutary goals of speed and economy" are furthered by construing the term now. Id. at 804.

Other cases support the Court's decision to construe "gap" and "line segment" without further delay. In Exigent Technology, Inc. v. Atrana Solutions, Inc., 442 F.3d 1301 (Fed. Cir. 2006), the plaintiff argued that construction was inappropriate before the close of expert discovery. The Court, rejecting this argument, expressed doubt that the need for additional discovery on claim construction issues can serve as a valid basis for a Rule 56(f) motion. Id. at 1311.

The case for postponing construction is even weaker here than it was in Exigent Technology because the plaintiff has failed to pinpoint a single topic on which it needs discovery. See also The Mass. Inst. of Tech. and Elec. for Imaging, Inc. v. Abacus Software, 462 F.3d 1344 (Fed. Cir. 2006) (affirming in part a district court's claim construction where court stayed discovery until the issuance of its Markman ruling); Network Commerce, Inc. v. Microsoft Corp., 422 F.3d 1353, 1363-64 (Fed. Cir. 2005) ("There is no requirement that the district court construe the claims at any particular time").

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - - -
2 The plaintiff's contention that full-scale discovery is needed prior to claim construction is undercut by its case
management schedule, which proposed that the parties exchange disputed claim terms more than six months before the
close of fact discovery.

The plaintiff next argues against the Court's "piecemeal" construction of claim terms, pointing to the rule that a court must
interpret terms as they are used in the claims. See, e.g., Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005). This
rule speaks to the proper method of interpreting claim terms, instructing a court to consider modifying words and phrases
when construing a particular term. It does not, however, mandate the construction of all disputed terms at once. (In Vivid
Technologies, for example, the parties did not identify all disputed claim terms before the district court's construction.) If the
plaintiff believed that other terms in its patent shed light on the meaning of "gap," it was free to make such arguments, and
indeed, in response to the Court's proposed construction, it has.

The plaintiff also relies on Bayer AG v. Biovail Corp., 279 F.3d 1340 (Fed. Cir. 2002), but that case is inapposite. In Bayer,
the district court held that it had implicitly construed a disputed term in a prior opinion. The Federal Circuit disagreed,
holding that there was no implicit construction of the disputed term and stating that it would be "premature" for it to engage
in claim construction without a lower court construction to review. Id. at 1349. Bayer therefore speaks to the proper timing
for appellate review, not the district court's construction.

The plaintiff's final argument is that it would be inefficient to construe "gap" now because of the possibility that
construction of additional claim terms will be needed at a later stage. The Court believes that it would be more inefficient
for the parties to conduct discovery that the Court's construction might render irrelevant. The Court will revise its
construction if it becomes necessary, but the plaintiff has not explained how such a revision would cause the Court or the
parties undue hardship. Further, the Court believes that such a possibility is unlikely, given the unambiguous usage of the
terms in the patent.

III. Claim Construction

Claim construction begins with the intrinsic evidence of record: the patent's claims, specification, and prosecution history.
Goldenberg v. Cytogen, Inc., 373 F.3d 1158, 1164 (Fed. Cir. 2004); Bell Atlantic Network Servs. v. Covad Commc'ns
Group, Inc., 262 F.3d 1258, 1267 (Fed. Cir. 2001). In construing patent terms, there is a heavy presumption that they carry
their ordinary and customary meanings as would be understood by one of ordinary skill in the art. Goldenberg, 373 F.3d at
1164. Where a claim term has no ordinary and customary meaning, a court must resort to the remaining intrinsic evidence to
obtain the meaning of that term. Id. If ambiguity persists, a court may look to extrinsic evidence, such as expert or inventor
F.3d 701, 706 & n.5 (Fed. Cir. 1997). Where the intrinsic evidence is unambiguous, it is improper for a court to rely on
extrinsic evidence. Id. at 706.

The Court therefore begins with the language of the claims of the '961 patent, which contains one product claim and one
process claim.

The product claim states that the invention comprises three layers that are bonded together along plural concentric lines,
which form a barrier resistant to the egress of fluid out of the periphery of the pad. Col. 9, ll. 16-28. Each concentric line includes at least one line segment and at least one gap, which serves to enhance the flexibility of the pad at the location of the gap. Id. ll. 28-30, 35-36.

The patent also claims the process of producing the invention described in the product claim. Col. 10, ll. 23-59. Dependent claims 26 and 27 describe two methods of forming the line segments: pressure and thermal bonding. Col. 11, ll. 5-12.

The plain language of the claims reveals that the layers of the pad are bonded together along concentric lines, but not at every point along the line. Instead, there are "gaps" in the bonding that enhance the flexibility of the pad. "Line segment," therefore, refers to a space along a concentric line where the pad's layers are bonded together, and "gap" refers to a space along a concentric line where there is no bonding.

Dependent claims 26 and 27, then, teach that the bonding that forms the line segments can be accomplished by pressure and thermal bonding, for example. This reading is consistent with the specification's discussion of several embodiments of the invention, containing line segments formed by various methods of bonding. See, e.g., col. 5, ll. 24-45; col. 7, ll. 45-50; col. 8, ll. 45-48. 4

4 The remaining piece of intrinsic evidence, the patent's prosecution history, has not been submitted nor referenced by either party to support its proposed definitions.

The defendants agree with the Court's proposed construction. 5 The plaintiff objects to the Court's definition, proposing that the Court define "line segment" as "a portion of a plural concentric line at which the top-sheet, fluid absorbent core, and cover sheet are bonded together to form a barrier resistant to the egress of fluid" and "gap" as a "portion of a plural concentric line at which the top-sheet, fluid absorbent core, and cover sheet are not bonded together to form a barrier resistant to the egress of fluid, regardless of how or when such portion is formed."

5 In their summary judgment brief, the defendants argued that "line segment" referred to "compressed portions" and "gap" to "uncompressed portions." When the specification summarizes the invention, however, "pressure" or "compress" are mentioned only once—in a description of "one aspect of the method" of the invention. Col. 2, ll. 44-48. And no form of the words "compress," "pressure," or "density" is mentioned in either independent claim. The Court therefore believes that the defendants' original construction would improperly confine the meaning of claim terms to their usage in a specific embodiment of the invention. See, e.g., Phillips, 415 F.3d at 1323.

The Court rejects the plaintiff's definitions for several reasons. First, the phrase "regardless of how or when such portion is formed" is unnecessary. The Court's definition does not, contrary to the plaintiff's fear, mandate how or when the gap must be formed, but instead only requires that a "gap" lack bonding.

Second, the plaintiff's definitions stem in part from a misreading of the patent. In the plaintiff's view, "line segments" are barriers preventing the egress of fluid, while "gaps" are segments of the pad that are not barriers. The barriers referenced in the claims, however, are the plural concentric lines, which include both line segments and gaps and prevent fluid from exiting the pad. Col. 9, ll. 26-30; col. 10, ll. 45-51. See also col. 2, ll. 40-43 ("The plural concentric lines form a barrier resistant to the egress of fluid out of the periphery of the pad and include at least one gap therein. . ."); Pl.'s Resp. to the Court's May 9, 2007 Letter at 10 (referring to "concentric lines[,] of which the line segments and gaps are part."). In other words, the gaps and the line segments collectively form a "barrier" that prevents fluid from leaking out of the pad. This runs counter to the plaintiff's definition of "gap" as a place where a "barrier" is lacking. 6

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -
A line segment may, of course, be a "barrier" in the sense that it "serve[s] as a wall across which fluid cannot flow." Col. 6, l. 28. But the patent's claims refer unambiguously to the barrier formed by the concentric lines--the combination of gaps and line segments--that prevents fluid from exiting the pad. The specification is in accord, referring, for example, to the "unbroken portions of the concentric barrier lines," indicating that the concentric barrier lines contain both broken and unbroken portions--gaps and line segments. Id. ll. 26-27.

The plaintiff's remaining objection is that the Court should not define "gap" as a place where there is no bonding because the specification teaches that the layers of the pad may be secured to one another by adhesion. See col. 3, ll. 28-30, 46-50. But the fact that layers of the pad are "secured" by adhesion does not suggest that they are "bonded" within the meaning of the claims. The specification itself illustrates this point when it states that the three layers may be bonded together through pressure and adhesion, implying that adhesion alone would not qualify as "bonding." Col. 5, ll. 39-41.

In fact, the patent mentions "bonding" only once: in reference to the formation of bonded line segments. "Gap" is differentiated from, and juxtaposed with, these bonded line segments. A "gap" is therefore a space defined by the absence of bonding. Interpreting the gaps as containing bonding would contradict the claims, which state that the absence of bonding at the gaps increases the flexibility of the pad. If the gaps do, in fact, contain bonding, then this feature of the invention would be eliminated.

Because "line segment" and "gap" are used unambiguously in the patent, the Court declines to refer to extrinsic evidence. 7

The only piece of extrinsic evidence cited by the parties is the plaintiff's quotation from dictionary definitions of "gap." The Court rejects these definitions to the extent that they are inconsistent with the usage of "gap" in the claims. The Federal Circuit has warned against resorting to non-scientific dictionaries to ascertain the meaning of claim terms, stating that claim construction should focus not on a term's abstract meaning but rather its use in the patent. Bell Atlantic, 262 F.3d at 1267; Phillips, 415 F.3d at 1321.

An appropriate order follows.

ORDER

AND NOW, this 24th day of July, 2007, upon consideration of the parties' submissions on claim construction, and after oral argument on the defendants' motion for summary judgment heard on March 2, 2007, IT IS HEREBY ORDERED that the terms "gap" and "line segment" in the '961 patent are construed as follows:

1. Line Segment: a space along a concentric line where the pad's layers are bonded together;

2. Gap: a space along a concentric line where there is no bonding.

E. Gap

Pall asserts that the term "gap" should be construed by the Court to mean spaces between opposing surfaces of the pleat legs. Cuno argues that limitations on the size and geometric shape of the gap should be included in the asserted patents. This Court disagrees. As already stated, despite the fact that there may appear to be support for this construction in the preferred embodiment, it would be wrong to limit the term gap in such a manner.

The term gap appears in dependent claims 10-13 of the '047 patent. 6 The claim language reads as follows:
10. A filter as claimed in claim 1 wherein gaps between opposing surfaces of the pleats adjoining a radially inner periphery of the filter element have a height of at most approximately a thickness t of each leg of the pleats.

11. A filter as claimed in claim 10 wherein the gaps have a height of at most approximately 1/2 t.

12. A filter as claimed in claim 1 wherein gaps between opposing surfaces of the pleats adjoining a radially outer periphery of the filter element have a height of at most approximately four times a thickness t of each leg of the pleat.

13. A filter as claimed in claim 12 wherein the gaps have a height of at most approximately 2 t.

'047 patent, cols. 26-27, lines 62-67 and 1-7. The Summary of the Invention instructs that the pleating surfaces are "spaced by a gap." '047 patent, col. 2, line 42. The description of preferred embodiments further states that

[a]t the radially inner and outer ends of the pleats 11, small triangular gaps 11f are formed between the opposing internal surfaces 11d of adjoining legs 11a, and at the radially outer ends of the pleats 11, small triangular gaps 11g are formed between the opposing external surfaces 11e of adjoining legs 11a. However, in the present invention, the height of these gaps 11f and 11g as measured along the height of the pleats is preferably extremely small. The height of the gaps 11f adjoining the inner diameter of the filter element 10 is preferably no more than approximately t and more preferably no more than approximately 1/2 t, wherein t is the thickness of the material forming the filter element 10, as shown in FIG. 3. The height of the gaps 11g adjoining the outer diameter of the filter element 10 is preferably no more than approximately 4 t and more preferably no more than approximately 2 t.

'047 patent, col. 4, lines 31-49.

6 The Court notes the term "gap" only appears in dependent claims, which have no material effect on whether there is infringement on the independent claims. Said differently, the independent claims can be infringed regardless of the term gap.
a. Parties' Positions

The parties propose the following constructions for this term which is present in claim 3 of the '631 Patent. The language of claim 3 states that the gap is configured for (1) "receiving air," (2) "dividing said air into two portions," and (3) "directing each [divided] portion through a separate fin structure." Again, Defendants assert there is an exclusive entry requirement by urging the gap is designed to be "the" air intake. Defendants also assert there is an exclusive exit. Plaintiff asserts Defendants argue in terms of individual air molecules, not collective air flows. According to Plaintiff, there is no requirement that the air must be "directed" at the gap.

<table>
<thead>
<tr>
<th>Plaintiff</th>
<th>Defendants</th>
</tr>
</thead>
<tbody>
<tr>
<td>A gap designed to receive air flowing to the second surface, to split the air flow, and to direct portions thereof through separate fin structures</td>
<td>A gap designed to be the air intake and arranged to receive forced air directed at and flowing perpendicular to the second surface, to split the forced air, and to direct all of the forced air through the passages of the fin structures, along paths parallel to the second surface</td>
</tr>
</tbody>
</table>

b. Court's Construction

With respect to the "exclusive entry" and "exclusive exit" requirements, this term does not require the all-or-nothing exclusivity that Defendants propose. Nor is there any requirement that air must flow into the gap at a strictly "perpendicular" angle. As noted above, there is no reason why, for instance, an air source cannot direct a "cone" of air towards the top plate, the vast bulk of which would follow an "angled" path. (Rippel Dec. P 7). Thus, the Court declines to adopt Defendants' proposed construction for this term.

Plaintiff's proposed construction merely restates what is clear from the language of the term itself. Therefore, the Court finds no construction is necessary, and the term shall be given its plain and ordinary meaning.
requirement in question concerns elastics, not absorbents. Therefore, we find the restriction requirement uninformative. We also are unpersuaded by First Quality's argument that since a finished disposable garment has an absorbent it follows that the garment blank subassembly must not have an absorbent component. This reasoning seeks to add a negative limitation that we conclude is not supported by the evidence. However, we disagree with KC's proposed construction that a "garment blank subassembly" is a "precursor element of an unfinished article." The specification states that "a garment blank subassembly...is a type of precursor of the garment." U.S. Patent No. 5,745,922, col. 1, ll. 64-65; U.S. Patent No. 6,098,203, col. 2, ll. 1-2. This definition of the disputed term is unambiguous and is supported by the intrinsic evidence. Thus, we will construe "garment blank subassembly" to mean "a precursor of the garment."

4. "Garment Component"

The term "garment component" is found in both the method and product claims of the patents-in-suit. For example, in Claim 1 of the 779 Patent, a method claim, step (a) of the seam manufacturing process requires "placing the first garment component in an adjacent relationship to the second garment component so as to define a seam." 779 Patent at 6:30-32 (emphasis added). In Claim 20 of the 779 Patent, a product claim, the seam is defined as comprising "a first garment component having an upper and lower surface" and "a second garment component having an upper and lower surface." 779 Patent at 8:10-11, 8:18-19 (emphasis added). The 615 Patent similarly uses the term in Claims 1 and 19, method and product claims, respectively. 615 Patent at 6:31-36, 8:4-5, 8:12-13.

Taltech asks the Court to construe "garment component" to mean "a structural part of a garment, such as a front panel, yoke, rear panel, and sleeve. An interlining is not a garment component." Taltech relies on the specifications and on the opinion of Taltech's expert, Mr. Nienke. Esquel asks the Court to construe "garment component" to mean "any element of an article of clothing," including an interlining, a bonding element or thread. Esquel relies on the patent specifications, on a dictionary definition of "component," and on a technical treatise.

The Court finds Taltech's proposed construction more persuasive. Claim 6 of the 779 Patent and Claim 13 of the 615 Patent state that "... said first garment component comprises a front panel, yoke, and rear panel of a dress shirt and said second garment component comprises a shirt sleeve..." 779 Patent at 7:10-13; 615 Patent at 7:40-42 (emphasis added). The specifications state that "a pucker free garment seam 12" consists of "a first garment component 20, such as a component consisting of a dress shirt front panel 16, yoke 14, and rear panel; a second garment component 22 such as a dress shirt sleeve 12 [sic]; 4 and a bonding element 32." 779 Patent at 5:60-65; 615 Patent at 5:62-67 (emphasis added); see also Fig. 2; 779 Patent at 3:44-47; 615 Patent at 3:45-48 (defining first garment component as comprising a front panel, shirt yoke and rear panel and the second garment component as comprising a shirt sleeve). The examples of a "garment component" identified in the claims and specifications are those that Taltech includes in its proposed construction of the term. Although this is not an exhaustive list of possible garment components, nothing in the intrinsic evidence supports Esquel's broad construction of the term.

4. The patent appears to contain an error in that it should say "13" rather than "12" to refer to the shirt sleeve in the 779 Patent at 5:64 and in the 615 Patent at 5:66. See 779 Patent at 3:46-47 and 615 Patent at 3:48 ("the second garment component comprises a shirt sleeve 13.").

First, a bonding element is not a garment component. The specifications, as outlined above, separately list the bonding element as its own thing, and not as an example of a garment component. 779 Patent at 5:58-65; 615 Patent at 5:60-67; see also 779 Patent at 6:26-56 (Claim 1 separately refers to garment components and bonding elements as distinct objects); 615 Patent at 6:28-67 (same). Nothing in the intrinsic evidence indicates that the terms should be used interchangeably.

Second, an interlining is not a garment component. The specifications of the patents-in-suit state: "Interlinings are known in the art to provide stiffness to garment components." 779 Patent at 5:1-2; 615 Patent at 5:2-3 (emphasis added). This sentence only makes sense if the Court interprets interlinings and garment components to be distinct categories. Esquel's genus and species analogy, see Esquel's Responsive Brief, docket no. 111, at 12 n.6, is not persuasive because there is no evidence in the patent for the proposition that interlinings are a subset of the broader category of garment components. Esquel argues that garment components should specifically include "fusible and non-fusible interlinings...and fusible webs or nets;" however, Esquel's interpretation is unsupported by the intrinsic evidence. Esquel relies on parts of the
specification of the 779 Patent that have no bearing on the construction of the term "garment component." See Esquel's Opening Brief, docket no. 97, at 21 (citing 779 Patent at 3:51-4:3, 4:66-5:1).

Third, thread is not a garment component. Esquel argues to the contrary and relies on the characterization of "components of garments" in a technical treatise that includes interlinings and thread as examples of "components of garments." See Peyton B. Hudson, Guide to Apparel Manufacturing 51-63 (Rev. 2d ed. MEDIA Apparel, Inc. 1989) (docket no. 97, Ex. E). The Court does not rely on extrinsic evidence that is inconsistent with the intrinsic evidence. In this case, the specifications state that "the sewing thread contracts upon being laundered and pulls on opposing garment components at the garment seam which in turn causes the garment components to buckle. . . ." 779 Patent at 1:22-26; 615 Patent at 1:26-29 (emphasis added). Thread acts on the garment components, indicating that it must be a distinct object. The specifications' reference to garment components as coming together at a seam and as buckling are further evidence that a garment component is a fabric panel, not thread.

To interpret the term "garment component," the Court does not rely on the expert testimony provided by Taltech. See Nienke Decl., docket no. 96, P 28. Mr. Nienke's opinion regarding the term "garment component" is merely conclusory. See Phillips, 415 F.3d at 1318 ("[C]onclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court."). The intrinsic evidence is sufficient to support Taltech's proposed construction.

Accordingly, the Court adopts Taltech's proposed construction, with modification, and construes the term "garment component" to mean "a structural part of a garment, such as a front panel, yoke, rear panel, and sleeve. A bonding element, an interlining, and thread are not garment components."

5. "gas flow orifice member"

This claim term appears in claim 1 of the '726 patent as follows:

the interior gas distribution chamber having a gas flow orifice member positioned between a first chamber portion and a second chamber portion to selectively control the flow of the fuel gas from the first chamber portion to the second chamber portion.

(The '726 patent, 11:33-38 (emphasis added)). The term does not appear in the '068 patent.

Travis proposes construing this term to mean "structure to control distribution of fuel gas." Hearth proposes construing this term to mean "a device or obstruction placed in a gas-flow orifice that is positioned between two chamber portions, that effects the volume and rate of gas flow through the orifice." The parties seem to agree that "member" means a device or structure that controls the distribution of fuel gas. The heart of this dispute is that Hearth wants the construction to specify where this device or structure is located and Travis does not want to include such a limitation. Based on the intrinsic evidence, the Court agrees with Hearth and construes the term to mean "a device or obstruction placed in a gas-flow orifice that is positioned between two chamber portions, that effects the volume and rate of gas flow through the orifice."

The claim language specifies the location of the gas flow orifice member; it explicitly refers to the orifice member being between two chambers. To ignore the claim language surrounding this term, and construe the term without any reference to its location, would impermissibly broaden the scope of this term. This clear language belies Travis' argument that including the location in the construction would incorrectly import a limitation from the specification into the claim.

Language in the specification referring to the orifice member also includes its location and describes that location as being between two chambers. In addition, it teaches that the member controls the distribution of the fuel gas by effecting the volume and rate of gas flow. The specification states:

The burner body 78 also includes an orifice member 94 in the intermediate chamber portion 93 so as to control distribution of the fuel gas from the front chamber portion 89 to the rear chamber portion 91. Accordingly, the orifice member 94 effects the volume and rate of gas flow through the selected burner apertures . . . .
A second chamber portion is connected to the first chamber portion by a narrowed gas flow orifice portion positioned between the first and second chamber portions. The orifice portion is selectively sized to control the flow of fuel gas from the first chamber portion to the second chamber portion.

At the claim construction hearing, Travis argued that the orifice need not be positioned between two chambers, but could be an opening in a single chamber. According to Travis, the ordinary and plan meaning of the word "orifice," which means an opening, does not incorporate a location of the orifice. However, as shown above, the surrounding claim language specifies that the member, which is in the orifice, is between two chambers. Every reference to the orifice member in the specification further bolsters this conclusion.

HEN contends that "gas impermeable enclosure" should be construed to mean "a receptacle made of a material which gas cannot pass through." (HEN CC Br. at 16.) HEN contends that the claim itself and the specification support its proposed construction, and that the claim language does not contain any language requiring the enclosure to be completely closed on all sides and gas tight. Minco, on the other hand, argues that "gas impermeable enclosure" should be construed to mean "a gas tight enclosure, into which or out of which gas cannot move or flow, such as a body of silicone surrounded by a small plastic casing." (Minco CC Br. at 16.) Minco argues that according to the specification, the purpose of the gas impermeable enclosure is to provide protection for the cold welds located inside the enclosure from heat or temperature differences. Furthermore, Minco argues that the patent specification describes the gas impermeable enclosure as follows: "The cold joints of the thermocouple 5 are embedded in a gas tight enclosure such as a body of silicone 8 surrounded by a small plastic casing 9. The conductors at the cold joints 7 are V-shaped with the apexes adjacent one another but electrically insulated from one another by the silicone 8." (Minco Ex. A, col. 2, ll. 39-44.) Minco argues that use of the word "embedded" supports the conclusion that the cold welds are encapsulated inside a body of silicone, which is known to be gas tight.

HEN's argument regarding the construction of "gas impermeable enclosure" is predicated on the fact that the enclosure is represented in the specification only by the small plastic casing, (see HEN Ex. A at Figure 1, number 9) which HEN construes as a receptacle that can be open on top. However, we understand the enclosure, based on the specification, as being an enclosure "such as a body of silicone 8 surrounded by a small plastic casing 9," (see HEN Ex. A at col. 2, ll. 40-41), and that this entire enclosure, not just the small plastic casing, must be gas impermeable. Consequently, we reject HEN's use of the word "receptacle" in its proposed construction and its related argument that the enclosure need not be closed on all sides as this is inconsistent with how the applicants understood the term "gas impermeable enclosure" as indicated in the specification. Additionally, HEN's construction of "impermeable" would make more sense if it were used to modify something that was typically two-dimensional, such as a barrier. In such a context, an impermeable barrier means that gas cannot pass through it. However, in the context of this invention, "impermeable" modifies "enclosure," which is something that connotes a three-dimensional element, and an impermeable enclosure means that gas cannot pass into or out of the enclosure. We believe, therefore, that HEN's proposed construction of an impermeable enclosure as a receptacle that is open on the top is not consistent with the understanding of these terms held by an ordinary person skilled in the art. An impermeable enclosure means that gas cannot enter the enclosure from any attitude -- from the bottom, the sides, or the top. Consequently, we construe "gas impermeable enclosure" to mean "an enclosure, into which and out of which gas cannot move or pass." 4

4 The parties have relied in their arguments on extrinsic evidence such as the mechanics of the flow of gases in the area of the enclosure during the immersion of the probe in molten metal and dictionary definitions. However, we need not address this extrinsic evidence as we are able to construe the claim term based on the intrinsic evidence alone. See Phillips, 415 F.3d
at 1319 (stating that courts in their discretion may use extrinsic evidence to determine claim meaning). Moreover, even if we rely on the dictionary definition of impermeable supplied by HEN, this would not support its position because "impermeable" is defined, in part, as "(of substances) not permitting the passage of a fluid through the pores, interstices, etc." See Webster's Encyclopedic Unabridged Dictionary of the English Language (1989). Allowing a substance, such as gas, to enter through the top of the enclosure would not be consistent with this definition.

2) "Gas Mixing Device"

The term "gas mixing device" appears in the '226 patent. MKS contends that this term means "a device that alters the flow pattern of a feed gas as it enters the plasma chamber, so that the feed gas mixes and reacts with the plasma." (D.I. 39 at 24.) Advanced contends that, as used in the claims of the '226 patent, a "gas mixing device" is a "device that creates a gas flow pattern in the plasma channel which enhances the interaction between the feed gas and the plasma." Advanced contends that this definition is mandated by sections of the patent specification which state that "the purpose of the gas mixing device is to create a gas flow pattern in the plasma channel which enhances the interaction between the feed gas and the plasma," and that "[a] gas mixing device enhances the interaction between the feed gases and the plasma thereby improving the dissociation and abatement efficiencies of the plasma source." (D.I. 41 at 37-28 (quoting exhibit J).) Advanced contends that this description is not limited to a specific embodiment of the device.

The Court concludes that an interpretation based more closely on the specification is preferred. Thus, the Court concludes that "gas mixing device" means a "device that creates a gas flow pattern in the plasma channel which enhances the interaction between the feed gas and the plasma."

Background

The '321 patent, entitled "Venting System," describes and claims a system that filters leukocytes from blood, as is done to improve the storage life of donated blood and minimize disease transmission. The claimed system moves and collects the blood, using porous membranes. Claim 39, the only claim now at issue, reads:

39. A method for processing blood or a blood product, comprising:

[1] passing the blood or blood product through a leukocyte depletion medium;

[2] passing gas displaced by the blood or blood product through a gas outlet comprising a porous medium until the blood or blood product contacts the porous medium; and,

[3] passing gas through a gas inlet comprising a porous medium to drive additional blood or blood product through the leukocyte depletion medium.

(Paragraph numbers added.)

The '321 patent describes the system wherein the blood to be treated flows by gravity from a supply container through a leukocyte filter and then to a receiving container. Two membrane filters, the "porous medium" in claim clauses [2] and [3], control the inlet and outlet of gas, which is usually sterile air. The gas aids in moving the blood through the system and in driving all of the blood through the leukocyte filter and into the receptacle. The membranes also serve to exclude bacteria and other contaminants.
The gas inlet, claim clause [3], contains a hydrophobic membrane located upstream of the leukocyte filter. A hydrophobic (or liquophobic) membrane allows passage of gas irrespective of whether liquid also contacts the membrane. Conversely, a hydrophilic membrane allows the gas to pass only until the membrane is contacted and wetted by liquid, upon which the membrane holds the liquid and ceases to allow passage of the gas.

The gas outlet porous medium, claim clause [2], is described in the specification as comprising a hydrophilic membrane located between the receiving container and the outside environment (or connected to a gas recycle system). It allows the gas in the system to escape as it is displaced by the moving blood, preventing the formation of back pressure against the flow of blood through the system. The membrane functions like a valve, whereby the displaced air escapes when the membrane is dry, then seals itself when it is wetted by the blood, preventing both loss of blood and reintroduction of air. The system of the '321 patent is illustrated in Figure 1 of the '321 patent:

In Fig. 1, a typical embodiment, conduits (12) and (15) connect the leukocyte filter (14) to the supply container (11) and the receiving container (17) respectively. The gas inlet (13) is upstream of the leukocyte filter and the gas outlet (16) downstream.

Hemasure stipulated to the validity and enforceability of claim 39, and Pall has not appealed the district court's ruling that claim 45 is not infringed. The only issue on appeal is infringement of claim 39.

--- Footnotes ---

2 In Cardinal Chemical Co. v. Morton Int'l, Inc., 508 U.S. 83, 26 U.S.P.Q.2d (BNA) 1721, 124 L. Ed. 2d 1, 113 S. Ct. 1967 (1993), the Supreme Court mandated that the Federal Circuit review the trial court's decision on the issue of validity, even when ruling on appeal that the patent is not infringed. However, the Court did not require the lower courts to decide validity when the parties did not place validity at issue. Thus the issue of patent validity is not before us.

--- End Footnotes ---

DISCUSSION

Analysis of patent infringement starts with "construction" of the claim, whereby the court establishes the scope and limits of the claim, interprets any technical or other terms whose meaning is at issue, and thereby defines the claim with greater precision than had the patentee. Although the construction of the claim is independent of the device charged with infringement, it is convenient for the court to concentrate on those aspects of the claim whose relation to the accused device is in dispute. On appeal the Federal Circuit is required to construe the claim de novo; thus we do so without deference to the rulings of the trial court. See generally Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 46 U.S.P.Q.2d (BNA) 1169 (Fed. Cir. 1998) (en banc).

A patent claim is construed by examining the claim in the context of the specification, drawing on the specification for an understanding of what is covered by the claim, and looking to the rejections, explanations, and revisions that comprise the record of the patent examination. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2d (BNA) 1321, 1329 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 38 U.S.P.Q.2d (BNA) 1461, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996); Mannesmann Demag Corp. v. Engineered Metal Products Co., Inc., 793 F.2d 1279, 1282, 230 U.S.P.Q. (BNA) 45, 46 (Fed. Cir. 1986). The subject matter of the invention and its delineation in the claims is construed to be understood by persons knowledgeable in the field of the invention. Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1478, 45 U.S.P.Q.2d (BNA) 1429, 1433 (Fed. Cir. 1998); Hoechst Celanese Corp. v. BP Chemicals Ltd., 78 F.3d 1575, 1578, 38 U.S.P.Q.2d (BNA) 1126, 1129 (Fed. Cir. 1996). Thus a technical term is taken to have the meaning that it would ordinarily have in the field of the invention, unless it is shown that the inventor used the term with a special meaning and that persons of skill in the field would so understand the usage. Id.

When the district court has held that the "construction" of the claim has also decided the question of infringement, and has granted summary judgment to that effect, we give plenary review to the summary judgment. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 255, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986); EMI Group North America, Inc. v. Intel Corp., 157 F.3d 887, 891, 48 U.S.P.Q.2d (BNA) 1181, 1184 (Fed. Cir. 1998).
The district court construed the '321 patent claims with an eye to the accused Hemasure system, concentrating on those claim terms whose scope was disputed as applied to the accused system. The Hemasure system, as shown in Hemasure's 510(k) submission to the FDA for the accused product, is pictured as follows:

[SEE PHOTOGRAPH IN ORIGINAL]

In the Hemasure system, blood flows from the "red blood cell bag" through a chamber containing a leukocyte filter and into the "red blood cell storage bag." Air is removed from the red blood cell storage bag by releasing the "air removal clamp" and manually compressing the red blood cell storage bag. Hemasure concedes that its system performs the step of claim clause [1], and that it has a gas inlet porous medium (the "in-line vent filter" in the illustration) as set forth in claim clause [3]. The issue of infringement, and thus the disputed aspect of the claim, relates to the claim clause [2] step of passing displaced gas through a gas outlet porous medium.

The Hemasure system contains a hydrophilic membrane in the filtration chamber immediately downstream of the leukocyte filter (near the upper right corner of the "Leukonet Filter" in the above diagram). This membrane first passes the displaced air out of the chamber as the chamber fills with blood. Then, when the chamber has filled with blood the now-wet membrane prevents the passage of air so that blood in the filtration chamber can be removed by siphoning action at the end of the process. Additional upstream air pressure combined with siphoning action of the downstream blood empty the filtration chamber through the U-shaped chamber, as shown in the illustration. Thus, air and siphoning action clear the filter chamber, permitted by the hydrophilic membrane that closes the outlet to air while the blood is flowing past it.

Pall states that clause [2], properly construed, is met by this part of the Hemasure system. Hemasure states that the "gas outlet" in claim clause [2] refers to the Pall system's external vent of air after the filtered blood is collected. Hemasure states that it is not in accordance with the description of the invention in the '321 specification to construe as the "gas outlet comprising a porous medium" any porous medium located downstream of the leukocyte filter. Pall states that the Hemasure hydrophilic membrane separates air from the blood as it moves into the line leading to the receiving bag, and that this usage is literally within the scope of clause [2], as the district court held, or in any event constitutes infringement under the doctrine of equivalents. Hemasure responds that its membrane serves an entirely different purpose in its system, at a different location, and that the district court clearly erred in its construction of clause [2] so as to find infringement.

The district court construed the clause [2] "gas outlet comprising a porous medium" to mean any "particularized 'hole' covered by a porous membrane" which is located downstream of the leukocyte filter and permits gas to pass through the membrane when dry, but prevents such passage when the membrane is wet by blood. Applying this claim construction, the court held that the Hemasure system contains a gas outlet porous medium as in clause [2], and granted summary judgment of infringement of claim 39.

We deem the district court's claim construction to be unduly broad. The '321 patent explains that the invention is directed to facilitating the air-driven gravity flow of blood through the leukocyte filter, reducing back pressure and minimizing air contact with the blood after the filtration is complete. The specification describes or suggests no role or location of the "gas outlet comprising a porous medium" other than to remove gas at the outlet of the system while retaining the blood and barring reentry of air. We conclude that the correct interpretation of claim clause [2] requires that the gas outlet porous medium be placed so as to serve that purpose.

4 Erbe contends that the term "gas stream" and "inert gas atmosphere" should be construed in reference to one another. While the terms are distinct, I recognize that words are not to be read in a vacuum, but must be read in connection with the

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4 Erbe contends that the term "gas stream" and "inert gas atmosphere" should be construed in reference to one another.
The third disputed claim term "gas stream" is found in Claim 1 as set forth above.

Erbe's Proposed Definition: A stream of gas that exits from the opening at the distal end of the flexible tube and has flow properties (e.g., non laminar and not directed) that allow formation of an inert gas atmosphere between the distal end of the flexible tube and the tissue to be coagulation.

Canady's Proposed Definition: A flow of gas.

(Docket No. 42, p. 3). Canady argues that Erbe tries to read multiple limitations into the term "gas stream" which should not be permitted because the limiting terms appear expressly in other parts of the claim, such that they need not be read into the claim term. Furthermore, Canady argues that reading those limiting terms into the term "gas stream" would render the limiting terms meaningless and superfluous when they appear in the other parts of the claim. (Docket No. 66, p. 23). I agree with Canady. In fact, in its Reply Brief, Erbe agrees that its interpretation of the term "gas stream" may incorporate limitations that appear elsewhere in the claims. (Docket No. 68, p. 12, n.3). A person of ordinary skill in the art would understand that a gas stream to be a flow of gas. Consequently, the claim term "gas stream" is construed to mean a flow of gas.

C. Claim Construction and Infringement Analysis of the Gate Element.

Again, the gate element reads as follows: "a gate in said fence including a frame having a pair of spaced upright support members, a first horizontal brace for spacing the upright support members and length of mesh screen tensioned between said upright support members." See supra at 9. The Court finds that the term "gate" as used in the '769 Patent must be construed to be limited to a gate with additional horizontal members, if any, well below the top of the mesh screen tensioned on the upright members of the gate structure. As noted supra at 13, "a claim term will not carry its ordinary meaning if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention." CCS Fitness at 1366-67 (citing, inter alia, Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1378 (Fed. Cir. 1998)). The Court finds that the specification and prosecution history of the '769 Patent require that the meaning of the term "gate" as used in the patent be limited in the fashion stated.

First, regarding the relationship between the claims and the specification, the Federal Circuit has made clear that, "the claims are always construed in light of the specification, of which they are a part." Netword, LLC v. Centraal Corp., 242 F.3d 1347, 1352 (Fed. Cir. 2001) (citation omitted). "The role of the specification includes presenting a written description of the . . . subject matter of the invention, while the role of the claims is to point out with particularity the subject matter that is patented." Id. (citing 35 U.S.C. § 112, PP1,2). "The claims are directed to the invention that is described in the specification; they do not have meaning removed from the context from which they arose." Id. Therefore, "although the specification need not present every embodiment or permutation of the invention, and the claims are not limited to the preferred embodiment of the invention, neither do the claims enlarge what is patented beyond what the inventor has described as the invention." Id. (internal citation omitted).

The specification of the '769 Patent makes clear that the patented gate must be one whose additional horizontal braces, if any, are well below the top of the mesh screen tensioned on the upright members of the gate structure. The patentees state in their brief description of the invention that, "faced with [the] state of the art, we determined that it should be possible to produce a tension protective fence with a gate presenting the same overall appearance and degree of safety with far superior accessibility for adults but presenting extreme difficulty for a child to defeat the gate and fence." '769 Patent, col. 1, lines 56-60 (emphasis added). After describing the support means for the gate, the patentees then state, "this is all accomplished in cooperation with a gate in the preferred form of frame of a 'U' shape with a bottom bar, side rails and angle bracing rods or gusset plates for reinforcement and a fabric fence material matching the fence extending between the legs of the gate."
'769 Patent, col. 2, lines 7-13. Referring to figure 3 in the detailed description of the invention, the patentees continue, stating that, "the gates G1 and G2 [are] made up, preferably of three frame members including a hinged upright 31, base member 32 and a latched upright 33. . . . The cross brace CB shown in dashed lines might be used for bending strength provided it is on the pool side of the gate and well below the top of the gate fabric." '769 Patent, col. 3, line 58 to col. 4, line 2 (emphasis added). The patentees continue:

To provide uniformity of appearance and freedom from any rigid top cross bar structure on the gate, the U shaped gate is employed as shown in FIG. 3. It is important that the gate have sufficient strength and rigidity to operate properly for years. It also resists any failure if a child attempts to climb it. We have designed such a gate which will not fail if weights equivalent to a 70 pound youngster are applied to the gate.

'769 Patent, col. 4, lines 5-12 (emphasis added). And, concluding the written description, the patentees identify the following three (out of a total of six) features of their invention: (1) "Provides a gate which has a degree of protection of a child climbing it comparable to the fence itself"; (2) "Provides a design of a gate which provides few if any hand holds or foot grips for any child attempting to climb the fence"; and (3) "Provides a pool security gate with no top gate bar." '769 Patent, col. 4., lines 55-67 (emphasis added).

The language in the specification identified above does not require a construction of the gate element as restrictive as that proposed by Baby Guard -- i.e., that the claimed gate must be limited to the preferred embodiment of a U-shaped gate. But, in light of the patentees' written and graphic description of the invention, the gate element cannot be construed to cover gates with a top horizontal bar.

In addition, the prosecution history of the '769 Patent further supports this construction of the gate element. On February 10, 1997, the PTO examiner rejected, on various bases, all twenty-one claims originally included in the patentees' application of November 13, 1996. See Defendant's Mot., Ex. 9. The examiner rejected claims 1 and 17 (the predecessor to claim 15 in suit), among others, on the basis that they were anticipated by the prior art under 35 U.S.C. § 102(b). See id. at 2-3. The examiner stated that the gate shown in the figures of an identified prior art fence "is supported by a U-shaped frame and attached to the fence by support means." See id. (emphasis added). The necessary implication of the examiner's statement here is that he understood both the prior art gate and the gate claimed in the patentees' application to be limited to a U-shaped gate.

On April 2, 1997, the patentees filed an amendment to their application in response to the examiner's February 10 rejection. Addressing the examiner's rejection of claims 1 and 17, among others, as anticipated by the prior art, the patentees stated, inter alia, that the prior art gate referenced by the examiner in the February 10 rejection "is not a gate and not U-shaped, but rectangular." See Defendant's Mot., Ex. 10 at 4 (emphasis added). The necessary implication of the patentees' statement is that, while the prior art gate was not U-shaped in their view, the gate they were claiming in their application was, and hence the examiner wrongly determined that their invention was unpatentable as anticipated by the prior art the examiner had referenced.

On April 16, 1997, after the patentees filed the April 2 amendment, the patentees attended an interview with the examiner. See Defendant's Mot., Ex. 5. The examiner's interview summary record states that the claims discussed were claims 1, 4, 6, 17 (the predecessor to claim 15), 18 and 21. See id. The record further states that, "the examiner stated that the poles being inserted into the ground at an angle to the vertical and the use of U-shaped support for the gate with the U opening upwardly would not be shown by the art of record." See id. (emphasis added). In response to this interview, the patentees submitted a second amendment to their application on April 18, 1997. See Defendant's Mot., Ex. 11.

In the April 18 amendment, the patentees stated that the examiner's interview summary record "appears as correct and the applicant's agree with the examiner's conclusion." See id. at 5. In response to the interview, the patentees also made two additional amendments to the claims that are relevant to the instant analysis. First, the patentees amended the gate element of claim 1 by inserting the word "first" before the phrase "horizontal brace". See id. at 1. This amendment plainly recognizes that the claimed invention gate is not limited to gates with only three members: two upright members and one horizontal brace. The necessary inference is that second or even more additional horizontal braces are contemplated by claim 1, and claim 1 is therefore not properly construed as limited only to the preferred, three-member, U-shaped embodiment, as Baby Guard argues.

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Second, the patentees amended dependent claim 6, which depends from dependent claim 4, which in turn depends from claim 1. In the April 18 amendment, the patentees added the phrase "opening upwardly", emphasized in the quotation below, to the then existing language of claim 6, so that claim 6 as allowed by the examiner reads as follows:

A lightweight fence and gate as claimed in Claim 4 wherein said gate includes a generally U-shaped frame opening upwardly with said first horizontal brace secured to the lower ends of said upright support members and a second horizontal brace secured to said upright support members on the pool side of said mesh at a height well below the top of said gate.

See id. (emphasis original). This exchange between the examiner and the patentees, particularly in light of the specification, makes clear that the examiner suggested, and the patentees added, this amendment to claim 6 acknowledging that claim 1, from which claim 6 ultimately depends, would not countenance a U-shaped frame "opening downwardly", because such a gate would in fact be arch-like, i.e., it would have a top horizontal bar.

In light of the specification and the prosecution history of the '769 Patent, the gate element of claim 1 cannot be construed to cover gates with top horizontal members. The term "gate" in the gate element must be construed to be limited to gates whose additional horizontal members, if any, are positioned well below the upper edge of the mesh screen tensioned on the gate frame. Therefore, the gate element, properly construed, covers not only U-shaped gates, but also gates with additional horizontal members, so long as such members are well below the upper edge of the tensioned screen. The invention gate, however, does not and cannot cover rectangular gates, gates in the shape of an inverted U, or any other gate with a top horizontal bar.

B. Claim 11 and Claim 17: "Gathering Chamber"

The parties next dispute the meaning of the phrase "gathering chamber" in claims eleven and seventeen of the '843 patent.

14 In claim seventeen of the '843 patent, the parties actually dispute the meaning of the phrase "defining a gathering chamber". In proposing definitions for the phrase "defining a gathering chamber", each party has combined its proposed construction of "gathering chamber" with a dictionary definition of "defining." Johnson, however, also argues that the "'defining' needs no construction" because the parties' "proposed definitions" of defining "are not any plainer than the word 'defining' itself." The court agrees with Johnson. The Federal Circuit Court of Appeals has noted that courts "regularly forgo detailed dictionary analysis if the term is . . . commonplace." C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 863 (Fed.Cir. 2004). The court concludes that the term "defining" is commonplace and therefore the court can forgo a detailed analysis of "defining." The court will focus on interpreting the phrase "gathering chamber" as used in claims eleven and seventeen of the '843 patent. For claim seventeen, the court will add the word "defining" to the definition of "gathering chamber".

Johnson argues that "gathering chamber" means "the space or cavity formed between the trailing ends of the vanes and the shroud wherein the trailing ends of the vanes are not positioned directly against the surface of the shroud." Johnson supports this construction with two arguments. First, Johnson argues that the prosecution history reveals that Ametek "acted as his own lexicographer and provided [this] explicit definition for the term 'gathering chamber'". Second, Johnson argues that Ametek disclaimed claim scope during the prosecution of the '843 patent "by amending the claim to state that the gathering chamber is formed specifically between the ends of the vanes and the shroud . . . and by distinguishing the Japanese . . . patent with respect to the configuration of the vanes and the shroud".

Ametek responds that Johnson's definition "adds extraneous limitations on the claims." Specifically, Ametek argues that Johnson's construction of gathering chamber "(1) totally ignore[s] the word 'gathering', and (2) defines "the term 'chamber' as to its location and position, which are otherwise treated in the claim itself and not identified as requiring construction."
Ametek instead argues that "gathering chamber" means "an enclosed space for accumulation of working air" and that this
definition is "in accordance with common dictionary definitions, [and] consistent with the meaning adduced from the patent
specification and drawings."

The court concludes that although Ametek did not act as its own lexicographer, Ametek did disavow claim scope in its
negotiations with the USPTO examiner. Accordingly, the meaning of the disputed phrase is "the space or cavity formed
between the trailing ends of the vanes and the shroud wherein the trailing ends of the vanes are not positioned directly
against the surface of the shroud."

1. Prosecution History

a. Acting As One's Own Lexicographer

Johnson first argues that the prosecution history reveals that Ametek acted as its own lexicographer and defined "gathering
chamber" to mean "the space or cavity formed between the trailing ends of the vanes and the shroud wherein the trailing
ends of the vanes are not positioned directly against the surface of the shroud."

As noted earlier, a patent applicant can act as its own lexicographer during the prosecution of a patent by giving a claim
term "a meaning 'inconsistent with its ordinary meaning'". Merck & Co. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1378
(Fed.Cir. 2005). The applicant seeking to give a claim term a meaning other than its ordinary meaning must do so "with
reasonable clarity, deliberateness, and precision . . . . so as to give one of ordinary skill in the art notice of the change." In re
Paulsen, 30 F.3d 1475, 1480 (Fed.Cir. 1994) (concluding the "patent does not clearly redefine the term 'computer' such that
one of ordinary skill in the art would deem it to be different from its common meaning").

The court concludes that the '843 patent does not clearly redefine the term "gathering chamber" such that one of ordinary
skill in the art would deem it to have other than its ordinary meaning. Johnson points to Ametek's efforts to distinguish the
'843 patent from the Japanese prior art as evidence that Ametek acted its own lexicographer by giving "gathering chamber"
a definition different from its ordinary definition. However, a party seeking to redefine a claim term must do so with
"reasonable clarity, deliberateness, and precision". In re Paulsen, 30 F.3d 1475, 1480 (Fed.Cir. 1994). The court's review of
the prosecution history reveals no clear, deliberate or precise attempt to give "gathering chamber" a specific definition other
than its ordinary meaning.

b. Disavowal of Claim Scope

Johnson next argues that the prosecution history of the '843 patent reveals that Ametek narrowed the definition of "gathering
chamber" by specifically disavowing claim scope. Specifically, Johnson argues that Ametek narrowed the scope of
"gathering chamber" when it emphasized the differences between the '843 patent and the Japanese patent.

As explained earlier, a patent's prosecution history may, in some instances, reveal that the patent holder "disclaimed or
disavowed subject matter" thereby "narrowing the scope of claim terms." Superguide Corp. v. DirectTV Enters., 358 F.3d
870 (Fed.Cir. 2004) (quoting ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1091 (Fed.Cir. 2003)). A patent applicant
cannot construe a claim term "one way in order to obtain [its] allowance" before the USPTO and "in a different way against
accused infringers." Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed.Cir. 1995).

After the USPTO examiner rejected the '843 patent as anticipated by the Japanese patent, Ametek requested permission to
amend proposed claim eighteen (issued claim seventeen). Ametek requested "entry of an amendment . . . which sets forth
that the outer rim of the bracket conjunction with the shroud forms a gathering chamber between the ends of the vanes and
the shroud" (emphasis added). Ametek explained that the Japanese patent did not have a gathering chamber with these
characteristics. Specifically, Ametek wrote to the USPTO,

Such feature is clearly not present in the [Japanese patent] inasmuch as the trailing ends of the vanes are positioned
directly against the surface of the shroud and therefore a gathering chamber as defined in the present [proposed] claim
[eighteen (issued claim seventeen)] of the '843 application] is simply not present [in the Japanese patent].
(emphasis added). In other words, according to Ametek's statements to the USPTO, the gathering chamber in the '843 patent was a specific type of gathering chamber which did not exist in the Japanese patent and could only exist where the "vanes are [not] positioned directly against the surface of the shroud".

The court concludes that in distinguishing the '843 patent from the Japanese patent on the basis of this specific type of gathering chamber, Ametek disavowed the ordinary scope that the term "gathering chamber" might otherwise have. Accordingly, the court adopts a definition of the "gathering chamber" that is in keeping with Ametek's statements to the USPTO: "space or cavity formed between the trailing ends of the vanes and the shroud wherein the trailing ends of the vanes are not positioned directly against the surface of the shroud."

Accordingly, (1) in claim eleven of the '843 patent "gathering chamber" means "space or cavity formed between the trailing ends of the vanes and the shroud wherein the trailing ends of the vanes are not positioned directly against the surface of the shroud", and (2) in claim seventeen of the '843 patent "defining a gathering chamber" means "defining a space or cavity formed between the trailing ends of the vanes and the shroud wherein the trailing ends of the vanes are not positioned directly against the surface of the shroud."

2. Claim Language

Defining "gathering chamber" as "a space or cavity formed between the trailing ends of the vanes and the shroud wherein the trailing ends of the vanes are not positioned directly against the surface of the shroud" is consistent with the way that the claims use the claim term.

Paragraph six of claim eleven states that the "bypass motor assembly" comprises, inter alia, an "end bracket" with a downwardly sloping shoulder and each said vane [blade] has a trailing end extending radially along said sloping shoulder, said trailing ends and said shroud forming a gathering chamber therebetween where the working air collects prior to exiting from said at least one exhaust aperture.

'843 patent, Col.8, Ll. 29-34 (emphasis added). Paragraph one of claim seventeen similarly states that the end bracket is comprised of, an outer rim surrounding said shoulder and adapted to support the shroud, said plurality of vanes extending almost to said outer rim, each one of said plurality of vanes having a trailing end, said plurality of trailing ends and the supported shroud defining a gathering chamber therebetween.

'843 patent, Col. 10, Ll. 15-20 (emphasis added). The court's construction of the phrase fits is consistent with the way in which the claims describe the '843 patent.

3. Drawings 15

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15 Because the court has concluded that it can determine the meaning of the disputed terms through examination of the intrinsic evidence, the court need not turn to extrinsic evidence. See Phillips Petroleum Co. v. Huntsman Polymers Corp., 157 F.3d 866, 870 (Fed.Cir. 1998) (noting if "intrinsic evidence unambiguously delineates the scope of the patent, resort to extrinsic evidence . . . is unnecessary").

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - -

Furthermore, the '843 patent drawings are consistent with this construction of the disputed claim term. Exhibit 3 illustrates that the gathering chamber (68) is the space between the sidewall of the shroud (96) and the trailing end (58) of the vanes (52). Furthermore, the trailing ends (58) of the vanes (52) "are not positioned directly against the surface of the shroud" (28). Accordingly, Ametek's "use of the disputed term[]" in the drawings "is consistent with the meaning given to [the term] by the court." Rexnord Corp. v. The Laitram Corp., 274 F.3d 1336, 1342 (Fed.Cir. 2001).
2. Disputed constructions

a. "Gauge"

The first claim term of the '196 patent for which the parties dispute the proper construction is "gauge," as used in claims 1 and 8 of the '196 patent. Ideal does not propose an alternative construction for this claim term, because Ideal believes it to be unambiguous and well known to one of ordinary skill in the art. The claim term and Rivard's proposed construction are shown below in the following chart.

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Rivard's Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gauge</td>
<td>A size measurement of needles determined by the outer diameter of the needle. The smaller the gauge number the larger the needle outer diameter.</td>
</tr>
</tbody>
</table>

i. Arguments of the parties. In support of its construction, Rivard argues that "gauge" refers to the outer diameter of the needle, despite Ideal's contention that it refers to the diameter of the inside or lumen of the needle. Rivard points out that the patent specification explicitly states that the outer diameter dictates the gauge of the needle. Rivard asserts, further, that this definition was recited by the examiner in rejecting the pertinent claims and that the patentee acquiesced in this definition. Rivard argues, further, that extrinsic evidence from the American Society of Testing Materials (ASTM), defining gauge by outer diameter and minimum wall thickness, confirms the correctness of its construction.

Ideal argues that Rivard's construction ignores claim language, which claims "a gauge of needle cannula having an outer diameter and a lumen with a lumen diameter." In light of this language, Ideal argues that Rivard is improperly "reading out" the lumen diameter as a determinant of the gauge of a needle, based solely on language of the specification disclosing an embodiment whereby "the outer diameter of the needle determines gauge." Ideal also asserts that, in prosecuting the '196 patent, the patentee provided illustrations of lumen diameter and outer diameter of various gauges of needles. Ideal contends that Rivard's extrinsic evidence is simply irrelevant under applicable law.

ii. Analysis. Starting, as always, with the words of the claim term presently at issue, see Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"), the court notes that claim 1 of the '196 patent does claim, inter alia, a needle assembly "which includes a gauge of needle cannula having an outer diameter and a lumen with a lumen diameter," and further, that "the outer diameter is greater than an outer diameter of a standard needle cannula and the lumen diameter is identical to a lumen diameter of the standard needle cannula between 14 and 27 gauge." The '196 patent, claim 1 (emphasis added). Similarly, claim 8 of the '196 patent claims, in pertinent part, a needle assembly "wherein the needle cannula is of a gauge, has an outer diameter, and a lumen with a lumen diameter and wherein the outer diameter is greater than the outer diameter of a standard needle cannula and the lumen diameter is identical to the lumen diameter of the standard needle cannula between 14 and 27 gauge." The '196 patent, claim 8. Thus, the words of the patent claims at issue make clear that comparisons are made between the claimed needle and a prior art needle in terms of both the outer diameter and the lumen diameter of a needle of a particular gauge. These words, therefore, strongly suggest that "gauge" should be construed to include both outside diameter and lumen diameter.

Other intrinsic evidence from the specification of the '196 patent supports such a construction. See Aquatex, 419 F.3d at 1380 ("Where . . . the disputed claim term is technical or a term of art, [t]he best source for understanding [it] is the specification from which it arose, informed, as needed, by the prosecution history.") (quoting Phillips, 415 F.3d at 1315); Phillips, 415 F.3d at 1314 (the specification is not only "highly relevant" to claim construction, "[u]sually, it is dispositive," and "is the single best guide to the meaning of a disputed term"). Specifically, the Detailed Description states, in part, the following:
In the case of the 16 gauge embodiment of the needle of the present invention, the sidewalls 17 flanking (opposite each other) the lumen 18 have a combined thickness which is greater than 0.46 mm (0.018 inch), preferably a combined thickness of 0.64 mm (0.025 inch) and the diameter of the lumen 18 is about 1.19 mm (0.047 inch). Thus, the outer diameter of needle 12 is about 1.8 mm (0.072 inch). Preferably, the needle cannula of the present invention has a circular cross-section. In contrast, a 16 gauge prior art needle has an outside diameter of about 1.65 mm (0.065 inch) and a lumen diameter of about 1.19 mm (0.047 inch). Therefore, the combined thickness of the sidewalls flanking (opposite each other) the lumen of the prior art needle is about 0.46 mm (0.018 inch), which is somewhat more likely to break.

The '196 patent, Col. 4, l. 55, to Col. 5, l. 2. This portion of the Detailed Description, again, makes comparisons between a prior art needle and the claimed needle ostensibly of the same "gauge" on the basis of outer diameter, lumen diameter, and indeed, thickness of the sidewall, further supporting Ideal's contention that "gauge" should be defined in terms of both inner and outer diameter.

The fly in the ointment, as Rivard contends, is another portion of the Detailed Description, which states the following:

[T]he needle cannula of the present invention includes, but is not limited to, gauges between 14 and 27. It should be understood that because the sidewall of the needle cannula of the present invention is thicker than the sidewall of prior art needle cannulas and the outer diameter of the needle cannula determines the gauge, a 16 gauge needle cannula of the present invention has an outer diameter similar to the outer diameter of a 15 gauge needle cannula.

The '196 patent, Detailed Description, Col. 5, ll. 18-26 (emphasis added). This portion of the specification, thus, appears to define "gauge" solely in terms of the outer diameter of a needle. Ideal contends that this language merely discloses an embodiment, i.e., an embodiment of a 16 gauge needle that has an outer diameter similar to the outer diameter of a 15 gauge prior art needle cannula, but an inside diameter similar to the inside diameter of a 16 gauge prior art needle cannula. While Ideal's description of this language as merely part of the disclosure of an embodiment is not entirely satisfactory, it is clear that this language comes on the heels of the extensive comparison, quoted above, of the claimed needle in a 16 gauge embodiment with a prior art 16 gauge needle in which the comparisons are made on the basis of both inside and outer diameters, so that the reference solely to outer diameter determining gauge quoted just above simply illustrates one factor in the comparison of the claimed needle and the prior art, for the specific purpose of showing that the outer diameter of a 16 gauge embodiment of the claimed needle is similar to the outer diameter of a 15 gauge prior art needle. The court does not find the language on which Rivard relies to be dispositive of the question of whether the gauge of a needle is determined solely from its outer diameter or on the basis of its inside diameter and outer diameter, because it does not amount to the patentee acting as its own lexicographer, see Phillips, 415 F.3d at 1316 (where the specification reveals a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess, then the patentee's definition must govern), nor does it amount to a statement of the understanding of one of ordinary skill in the art concerning determination of the gauge of a needle.

Turning to the prosecution history to see whether it reveals that the inventor limited the meaning of "gauge" to outside diameter in the course of prosecuting the patent, see Research Plastics, 421 F.3d at 1296 (citing Phillips, 415 F.3d at 1317-18), the court finds that the examiner did reject application claims 16 and 23, which recited "the outer diameter is greater than an outer diameter of a standard needle cannula of identical gauge" on the ground that "[i]t is unclear how a cannula of a particular gauge can have a larger outer diameter than a cannula of identical gauge, given Applicant's disclosure on Page 9, lines 25 and 26, which recites that 'the outer diameter of the needle cannula determines the gauge.'" Joint Appendix at 745, Exhibit 1004 (Office Action of July 14, 2003). The examiner noted that "[t]hese statements appear to be contradictory and therefore make the claim language indefinite." Id. The patentee responded by deleting the "of identical gauge" language from application claims 16 and 23. Id. at 735 & 739. The court also finds, however, that the patentee subsequently asserted, in its October 28, 2004, appeal, that a needle gauge has an outer diameter and a lumen with a lumen diameter, see id. at 594, and also submitted the exhibit of technical notes for fabrication of syringe needles discussed above defining the dimensions of needles of various gauges in terms of outer diameter, inner diameter, and wall thickness. See id. at 787.

Taken together, the intrinsic evidence of the patent claims, specification, and prosecution history convince the court that needle gauge is determined from the inner or lumen diameter as well as the outer diameter. In the alternative, the court reads the claims and specifications to show that the patentee acted as its own lexicographer in defining "gauge" in terms of inner or lumen diameter as well as outer diameter. See Phillips, 415 F.3d at 1316 (where the specification reveals a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess, then the patentee's
axis of rotation parallel to each cylinder's axis of rotation. The wheel drives rotation of each cylinder about its respective axes. Figure 3 also depicts a wheel at the end of a motor shaft located outside the circle of cylinders, having an arrangement of vertically-oriented cylinders (for holding reagent containers) capable of independent rotation about their respective axes. Such extrinsic evidence is far from sufficient to impose such a definition over the patentee's definition of "gauge" in terms of both inside diameter and outer diameter in the intrinsic evidence of the '196 patent.

iii. The court's construction. In light of the foregoing, the court construes "gauge" as used in claims 1 and 8 of the '196 patent to mean "a size measurement of needles determined by the outer diameter and the inner or lumen diameter."

1831

The parties' primary dispute regarding the '349 patent is the meaning of the term "gear" in claim 9, which is the only claim in that patent asserted against the redesigned Architect. As a general matter, the parties agree that a gear is "a toothed machine part, such as a wheel or cylinder, that meshes with another toothed part, to transmit motion or to change speed or direction." (D.I. 296.) However, Abbott contends that the court should construe the term to "exclude [] a sprocket and/or a chain." (Id.) Abbott argues that during prosecution, Bayer limited the invention of the '349 patent to the specific gear structure recited in order to secure an allowable claim. Bayer disagrees, and argues that it disclaimed nothing with regard to claim 9. Unfortunately, neither the claim language itself nor the specification is particularly instructive as to the proper construction of "gear." Therefore, the court must look to the prosecution history for guidance. Phillips, 415 F.3d at 1314-17.

As mentioned above, the prosecution history of a patent serves an important public-notice function because it is a written record of both the inventor's understanding of the invention, and the limitations the inventor may have placed on the invention in order to distinguish it from prior art. See id. at 1317. In other words, courts "refer to the prosecution history, when it is of record, to discern the applicant's express acquiescence with or distinction of the prior art as further indication of the scope of the claims." Chimie, 402 F.3d at 1377. "As a basic principle of claim interpretation, prosecution disclaimer promotes the public notice function of the intrinsic evidence and protects the public's reliance on definitive statements made during prosecution." Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1324 (Fed. Cir. 2003). Nevertheless, there is "a 'heavy presumption' that claim terms carry their full ordinary and customary meaning." Id. at 1323. Thus, the doctrine of prosecution disclaimer may not be invoked "where the alleged disavowal of claim scope is ambiguous." Id. at 1324. Rather, the "heavy presumption" can be overcome only if "the patentee unequivocally imparted a novel meaning to those terms or expressly relinquished claim scope during prosecution." Id. at 1323. "Consequently, for prosecution disclaimer to attach, [Federal Circuit] precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable." Id. at 1325-26.

In the case of the '349 patent, the original application was submitted with twelve claims of two types. Application claims 1, 3-5, 8-9, and 11 more-or-less described the physical arrangement of the reagent containers and the various axes of rotation, but did not describe the gear structure for driving the rotation of the containers. Application claims 2, 6-7, 10, and 12, on the other hand, included the gear structure not present in the other claims. (D.I. 301 at A281-86.) Among the latter set, application claims 6, 7, and 10 described a "ring gear" for driving the satellite gears, whereas application claims 2 and 12 described a "circular gear" for driving the satellite gears.

2 Application claim 12 was issued as claim 9 in the '349 patent.
axis, however it is oriented such that it is in tangential contact with only one cylinder at a time. Thus, as the circle of cylinders rotates about a central axis, only the cylinder in contact with the wheel is rotated. The other cylinders remain stationary. (See id. at A 1712.) In response to the examiner's rejection, Bayer argued:

Claims 1, 6, 8, and 12 recite the capability of simultaneously rotating the agitating assemblies and their respective reagent containers. In addition, these claims recite the structure for accomplishing this. For example, Claim 6 recites a ring gear, concentric with the primary vertical axis of rotation for the reagent tray and coupled to an agitating motor, in driving engagement with each of the satellite gears. In contrast, Forrest provides a motor 103 having a rubber wheel 101 or gear on a motor shaft 102. The rubber wheel is provided at a tangential location proximate a ring of reagent containers. Each container is spun, one at a time, as it passes the rubber wheel or gear.

(Id. at A307-08 (emphasis in original).)

In spite of Bayer's arguments, the examiner remained unconvinced and again rejected all twelve claims in a June 2001 office action. The examiner explained that Forrest incorporates by reference a European patent, which discloses additional motors for use with each cylinder, thereby enabling simultaneous rotation of the cylinders. (Id. at A327.) Subsequently, counsel for Bayer conducted an interview with the examiner and her supervisor. Bayer summarized that interview as follows:

Examiner Bex also indicated during this telephone call that the rejection of Claim 6 under 35 U.S.C. § 103(a) [obviousness] was being withdrawn on the basis that the cited prior art failed to disclose, teach or suggest, alone or in combination, a reagent transport apparatus in which each of plural agitating assemblies comprise a satellite gear in communication with a first reagent container holder and concentric with the vertical axis of rotation of the respective agitating assembly, and a ring gear, concentric with the vertical axis of rotation of a reagent tray, in driving engagement with each of the satellite gears, whereby rotation of the ring gear results in the rotation of each of the satellite gears about their respective axes of rotation. Thus, Claim 6 was indicated by Examiner Bex as being allowable. Claim 7 is also considered allowable as being dependent from Claim 6.

In general, Examiner Bex indicated that the remaining independent claims would also be allowable if similar limitations with respect to the satellite and ring gears were incorporated therein. For instance, the Examiner indicated that claim 12 would be allowable if the physical relationship between the satellite gear and inner reagent container were more specifically defined.

(D.I. 301 at A340-41.)

With respect to application claim 12, Bayer amended it in the manner directed by the examiner during the interview. Importantly, that amendment did not change any of the pre-existing claim language describing the relationship between the circular gear and the satellite gears. (Id. at A347-48.) Thus, it is apparent that Bayer believed the gear structure of application claim 12 (i.e., the circular gear/satellite gear combination) to be equally as distinguishable from the prior art as the gear structure of application claim 6 (i.e. the ring gear/satellite gear combination). Moreover, after the interview, the application claims without gear structures were still rejected by the examiner as anticipated by Forrest. Therefore, it must have been Bayer's understanding that the gear structure, and not the simultaneous rotation of the containers about their respective axes, distinguished Forrest. In fact, Bayer went on to argue that the application claims without gear structures were distinguishable because simultaneous rotation in Forrest requires multiple motors, whereas the application claims only required one motor for that task. However, the examiner never accepted that argument. Instead, Bayer cancelled the claims not reciting the allowable gear structure, or amended them to include such a structure, in order to avoid the examiner's rejections:

Examiner Bex indicated that she had reviewed the claims in light of the previously applied references and the newly cited references… and had come to the conclusion that at least the subject matter of independent claim 6 was allowable. In particular, Examiner Bex indicated that the references failed to anticipate the specific gear structure of claim 6.

…

In light of this conclusion, and without prejudice to pursuing claims of differing scope in one or more continuing
applications, claims 1-2, 10, and 13 are canceled herewith, and limitations similar to the gear structure recited in claims 6, 10 or 12 are incorporated into each of independent claims 8 and 14. The dependency of claims 3-5 has been amended to refer to claim 6.

(Id. at 372-73 (emphasis added).) 3 Once again, Bayer demonstrated its understanding that the recited gear structure of application claims 6, 10, or 12 was crucial to patentability. Also noteworthy is the fact that Bayer believed, as is demonstrated by the emphasized language above, that the circular gear/satellite gear structure of application claim 12 distinguished the prior art to the same extent as the ring gear/satellite gear structure of application claims 6 and 10.

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3 Application claims 2 and 10 recited gear structure, but they were canceled nonetheless. However, the important point to note is that no claims without the gear structure remained.

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Finally, after the examiner allowed the claims reciting gear structures, both the examiner and Bayer wrote informative explanations of the reasons for allowance. The examiner commented as follows:

While the configuration of two sets of containers, both concentric about a primary axis of rotation and positioned on a rotatable tray is well-known in the art, none of the prior art specifically recite the use of a plurality of satellite gears in mechanical communication with each of the agitating assemblies holding one set of the containers. The satellite gears being concentric with the secondary axis of rotation. Additionally, the prior art fails to disclose a ring gear, concentric with the primary vertical axis of rotation, which is in mechanical communication with each of the respective satellite gears, such that rotation between the reagent tray and ring gear results in the simultaneous rotation of each of the satellite gears about their secondary vertical axis.

(Id. at A383.) Bayer then responded:

Thus, it is [Bayer's] interpretation of the reasons for allowance that the point of novelty with respect to the cited and applied art lies in the claimed arrangement of satellite gears and a ring gear for simultaneous rotation of each of the satellite gears about a respective secondary axis of rotation.

...

The purpose of the Interview, from the perspective of [Bayer], was to discuss the possible allowability of the present claims if specific structural elements (e.g., the ring gear and the satellite gears) were added to the independent claim not already reciting such elements. Given the urgency in prosecuting the present application…., a decision was made to preserve for another day the question of whether claims without such structural elements were distinguishable from the cited art.

...

In sum, it was asserted by [Bayer] that, with the selective inclusion of specific structural elements relating to a ring gear and satellite gears, the application would be allowable over the cited art.

(Id. at A386-88 (emphasis in original).) Thus, both the examiner and Bayer agreed that the specific gear structure recited in the issued claims was the reason for allowance. Once again, no distinction was drawn between the ring gear/satellite gear structure and the circular gear/satellite gear structure.

Bayer also filed patent application 10/156,849 ("the '849 application"), which is a continuation of the '349 patent. The recited gear structure in the '849 application claims and the recited gear structure in the '349 patent claims are nearly identical. And, similar to the '349 patent, the '849 application describes a circular gear/satellite gear structure in independent claim 1, and a ring gear/satellite gear structure in independent claim 7. Significantly, all of the claims in the '849 application were rejected in an October 2002 office action as being anticipated by U.S. Patent No. 3,151,073 ("the '073 patent") to Anthon, without regard to which gear structure (i.e., circular or ring) was employed.
Anthon describes a "centrifuging apparatus" having a chain disposed around the periphery of a ring of sprockets with which the chain is engaged. The chain is driven by another sprocket tangentially engaged with the outer side of the chain. Thus, when the drive sprocket rotates, it causes the chain to drive the rotation of each sprocket in the ring about its respective axis. (D.I. 301 at A509.) In rejecting the claims of the '849 application, the examiner explained the operation of Anthon in her own words:

Anthon teaches a circular ring gear 78 concentric with the primary vertical axis of rotation and coupled with the agitating motor, wherein the circular gear is rotatable by the motor and in communication with each of the satellite gears such that rotation of the circular gear about the primary axis of rotation causes each of the satellite gears to rotate about their [sic] respective secondary vertical axis simultaneously.

(D.I. 298 at A2182.) Bayer responded with the following argument:

As for both claims 1 and 7, a gear concentric with the primary vertical axis of rotation and coupled to an agitating motor is recited. The American Heritage Dictionary of the English Language, Fourth Edition, Copyright 2000, defines "gear" as "a toothed machine part, such as a wheel or cylinder, that meshes with another toothed part, such as a wheel or cylinder, that meshes with another toothed part to transmit motion or to change speed or direction." The same dictionary defines "chain" as "a connected, flexible series of links, typically of metal, used especially for holding objects together or restraining or for transmitting mechanical power." The roller chain 78 of Anthon can in no way be regarded as the same element as the recited gear.

(D.I. 301 at A448.) Thus, Bayer clearly and unmistakably distinguished chains from gears, at least insofar as the claims of the '849 application are concerned. However, "the prosecution history of a related patent can be relevant if, for example, it addresses a limitation in common with the patent in suit." Advanced Cardiovascular Sys., Inc. v. Medtronic, Inc., 265 F.3d 1294, 1305 (Fed. Cir. 2001). Thus, courts "presume, unless otherwise compelled, that the same claim term in the same patent or related patents carries the same construed meaning." Omega, 334 F.3d at 1334. Since the '849 application is a continuation of the '349 patent, and since there is no indication that Bayer intended "gear" to have a different meaning in the later application, the term must be construed identically in both. Consequently, the court's construction of "gear" in the '349 patent must exclude chains.

The more difficult question is whether the court's construction must also exclude sprockets. Although neither the prosecution history of the '349 patent, nor the prosecution history of the '849 application contain an explicit disclaimer of sprockets, Abbott contends that Bayer's citation to the dictionary definition of "gear" was sufficient to act as a disclaimer. More specifically, Abbott argues that since a sprocket meshes with a chain, and not with another toothed part, sprockets do not fit within Bayer's dictionary definition of "gear." Bayer responds by pointing to several sources that refer to sprockets as gears. Bayer also directs the court's attention to the last sentence of its response to the rejection in light of Anthon, in which Bayer merely distinguished chains, not sprockets. This last point is dispositive. Excluding sprockets from the definition of "gear" requires the court to infer that Bayer explicitly relinquished sprockets because it defined "gear" as "a toothed machine part… that meshes with another toothed part," whereas sprockets mesh with chains (which allegedly have no teeth). In the court's view, that inference is too tenuous to amount to a clear and unmistakable surrender of subject matter. Thus, the term "gear" will be construed as "a toothed machine part, such as a wheel or cylinder, that meshes with another toothed part, to transmit motion or to change speed or direction, and which excludes a chain."
1. Intrinsic Evidence

a. Claim Language

The Court first considers the intrinsic evidence to determine the proper meaning and scope of the disputed terms "liquid," "gel," and "liquid containing pack" as used in the Sereboff patent. In analyzing the intrinsic evidence, the Court first considers the language of all the claims, both asserted and nonasserted. See Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed. Cir. 1995). Although the words in a claim are usually given their ordinary and customary meaning, a patentee may act as a lexicographer, giving the claim language a meaning different from the ordinary and customary usage of the words. See Vitronics, 90 F.3d at 1582. In this case, Fellowes essentially argues that all "gels" are subsumed within the term "liquid," and that "liquid" is specially defined by the written description of the Sereboff patent to include 3M's elastomeric gel. (See Def.'s Mem. in Opp'n at 6-7, 10.) 3M offers an interpretation in which the term "liquid" includes only "liquid gels," while "solid gels" are not included within the term "liquid." (See Pl.'s Mem. in Supp. at 5-7, 15.)

The Court first examines the relationship between independent claim 1, which includes the term "liquid," and dependent claims 3 and 20, which include the term "gel." A dependent claim can only further define (i.e., add narrowing limitations to) an independent claim; it cannot substitute one element for another specified in the independent claim. See Manual of Patent Examining Practice § 608.01(n) (7th ed. 1998). This convention of patent practice means only that "liquid" and "gel" cannot be mutually exclusive, for that would improperly substitute "gel" in dependent claims 3 and 20 for "liquid" in independent claim 1. Moreover, under the doctrine of claim differentiation, different claims are presumed to have different scopes. See Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998). This suggests that the term "liquid" in claim 1 is broader than the term "gel" in claims 3 and 20. For example, "liquid" in claim 1 includes water, which is not a "gel" within the scope of claims 3 and 20. These observations, however, while helpful in construing the claim language, do not resolve the dispute over whether all "gels" are completely subsumed under the term "liquid."

b. Written Description

Accordingly, the Court turns to the Sereboff patent's written description, which is also sometimes referred to as the patent specification. For the patentee to use terms in a claim differently from their ordinary meaning, the special definition of the claim term must be clearly enunciated in the written description or prosecution history of the patent. See Vitronics, 90 F.3d at 1582. Fellowes argues that the written description clearly indicates that the term "liquid" includes elastomeric gels because the written description of the Sereboff patent includes a reference to U.S. Patent Number 5,173,963 ("the Greenberg patent"), which discloses an elastomeric nonflowing gel. (See Def.'s Mem. in Opp'n at 6-7.) This argument is without merit.

The Sereboff patent's mere reference to the Greenberg patent fails to satisfy the Vitronics requirement of providing a clear and explicit special definition of any special usage of a claim term. First, the Greenberg patent is discussed only in the "Background of the Invention" section of the Sereboff patent, and is mentioned only in the context of identifying possibly relevant prior art, not to identify the actual subject matter of Sereboff's claimed invention. (See Sereboff patent at column 1, lines 35-41.) Moreover, the Sereboff patent fails to identify nonflowing elastomeric gels as being the important feature of the Greenberg patent for which reference to the Greenberg patent is made. (See id.) Furthermore, the Sereboff patent fails to incorporate the subject matter of the Greenberg patent by reference, such that the disclosure in the Greenberg patent is not considered to be part of the disclosure of the Sereboff patent. See In re Howarth, 654 F.2d 103, 107 (C.C.P.A. 1981) (requiring a patent applicant to either "set forth the information in his specification or incorporate it by reference to a reasonably accessible source"); In re De Seversky, 474 F.2d 671, 673 (C.C.P.A. 1973) (refusing incorporation where no "incorporation-by-reference" language existed in the application); Manual of Patent Application Practice and Procedure § 608.01(p) (7th ed. 1998) ("Mere reference to another application, patent, or publication is not an incorporation of anything therein into the application containing such reference for the purpose of the disclosure required by 35 U.S.C. 112, first paragraph."). For these reasons, the Court finds that the Sereboff patent's mere reference to the Greenberg patent does not provide a special definition of the term "liquid" that includes elastomeric gels.

Other portions of the Sereboff patent's written description must also be considered in interpreting the term "liquid." Fellowes argues for attaching a special meaning to "liquid" based on the following portion of the Sereboff patent's written description:
As is seen in FIG. 3, pack 30 includes a substantially liquid type composition 34 which may be in the form of a liquid having a viscosity approximating the viscosity of water, or may include a gel composition contained therein having a viscosity substantially above that of water.

(Sereboff patent at column 3, lines 53-68, emphasis in original.) The Court finds that this explicit language is sufficiently clear to constitute a special definition of the claim term "liquid." Under this special definition, the "liquid" of claim 1 of the Sereboff patent includes both a substance at about the viscosity of water and also gels having a viscosity substantially above that of water. (See id.) The written description of the Sereboff patent does not impose an upper bound on the viscosity of gels considered to be within the special definition of the claim term "liquid." (See id.) Thus, the written description of the Sereboff patent indicates that the term "liquid" appears to include all "gels" that can be regarded as having a viscosity.

c. Prosecution History

Having decided, based on its written description, that the Sereboff patent created special definitions of the terms "liquid" and "gel" at the time the patent application was filed, the Court next turns to the prosecution history to determine if this understanding of the meaning of "liquid" and "gel" was later modified during prosecution of the Sereboff patent application before the U.S. Patent & Trademark Office. Both claim amendments and mere arguments for patentability, along with other aspects of the prosecution history, must be examined to determine the meaning of terms in the claims. See Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995). The patentee cannot treat the claim as a "nose of wax," having one meaning during prosecution, and yet another altogether during litigation. See Semmed, Inc. v. Richard-Allan Med. Indus., 888 F.2d 815, 819 n.8 (Fed. Cir. 1989) (citing White v. Dunbar, 119 U.S. 47, 51-52, 30 L. Ed. 303, 7 S. Ct. 72 (1886)).

During prosecution of the Sereboff patent application, the claims were rejected as being obvious based on U.S. Patent Number 5,228,665 ("the Garcia patent," disclosing a foam slab wrist rest) in view of U.S. Patent Number 4,896,388 ("the Bard patent," disclosing a pillow using both a compressible filling and a water filling). In arguing for patentability, Sereboff stated:

Unlike the Garcia system, the inventive concept of the [Sereboff] Application is not directed to a support system which provides firmness sufficient to restrict the movement of a user's wrists, nor to one which urges the user's wrists to maintain a fixed desirable position. Rather, it is directed to accommodating the free movement of the user's wrists and palms by the use of a fluid support mechanism which resiliently conforms to the contours of the user's wrists and palms, even while they are moving.

(Witt Decl. Ex. 7 at 47 ("Sereboff prosecution history").) (emphasis added) The Court finds that these explicit arguments during prosecution of the Sereboff patent created two additional constraints on the claims. First, the support mechanism must be fluid. (See id.) Second, the support mechanism must dynamically conform to the user's wrists while they are moving. (See id.) The first constraint provides additional insight into the proper interpretation of the claim terms "liquid" and "gel," i.e., the support mechanism must be "fluid." The second constraint does not affect the Court's literal infringement analysis.

4 A patent cannot be obtained for subject matter sought to be patented that is deemed "obvious" by the patent examiner. See 35 U.S.C. § 103.

The term "fluid" limits the "gels" included within the claim term "liquid" to only those gels that flow. Gels that do not flow are not "liquid," as that term was defined by the Sereboff patent application and further limited by Sereboff during prosecution. Stated differently, use of the term "fluid" during prosecution of the Sereboff patent allows the Court to conclude that the term "gel" is not subsumed within the term "liquid." The intrinsic evidence indicates that the term "liquid" in independent claim 1 limits the "gels" in claims 3 and 20 to only those gels that flow; nonflowing gels are not within the scope of the Sereboff patent claims.
2. Extrinsic Evidence

When the intrinsic evidence does not resolve a disputed claim term, the Court may also receive extrinsic evidence to aid in claim interpretation. See Markman, 52 F.3d at 980; Vitronics, 90 F.3d at 1583. In this case, the intrinsic evidence clearly limits the claimed "liquid" to include only those gels that flow. However, an examination of the extrinsic evidence provided by Fellowes' own expert, Dr. Larson, confirms the above claim construction based on the intrinsic evidence.

Dr. Larson submitted an expert report in which he stated that "both the ordinary and scientific meanings [of 'liquid'] describe it as a substance that flows. . . . The term 'liquid' can refer to substances that flow or deform reversibly only when modestly large forces are imposed." (Larson Decl. P 3.) "If a gel is flowable, then the network structure must be capable of being broken down under a load or force, and to reform itself once that load is removed. Block copolymer formulations possess this property. . . ." (Id. P 10.) "The [3M] block copolymer formulation . . . fits within the range of gel possibilities envisioned by Sereboff." (Id. P 12.) "The [term] . . . liquid . . . as used in claim 1 of the Sereboff patent [is] intended to exclude substances like foam rubber that cannot deform irreversibly or 'flow,' but instead spring back into a predetermined shape after the deforming force is removed." (Id. P 17.) This terminology is also "intended to exclude nonflowable elastic substances. . . ." (Id. P 19.)

These statements by Dr. Larson clearly limit the claimed "liquid" to only those substances that flow. Dr. Larson admits that "nonflowable elastic substances" are not included within the scope of the Sereboff patent claims. (Id. P 19.) Thus, if the 3M gel is either nonflowable or elastic, it does not infringe the Sereboff patent. Dr. Larson also sheds further light on the meaning of "flow" and "flowable." If the 3M gel "springs back into a predetermined shape after [a] deforming force is removed," it does not flow and does not infringe the Sereboff patent. (See id. P 17.) Moreover, if the 3M gel is incapable of reforming itself after being broken down, then it does not infringe. (See id. P 10.) (emphasis added). The Court interprets the words "reforming itself," based on their plain meaning, to mean "reforming on its own accord" rather than "capable of being reformed." Thus, if reforming the 3M gel back to its predetermined shape (after the gel is broken down) requires an externally applied force, then the 3M gel does not infringe. 5 In summary, the Court finds that the extrinsic evidence offered by Fellowes also indicates that the claimed "liquid" must flow. The Court further finds that the claimed "liquid" must be inelastic, and it must be capable of reforming itself back into a predetermined shape after being broken down.

5 Although Dr. Larson states that block copolymer formulations are able to reform themselves, he does not state that all block copolymer formulations act this way, or that the accused 3M elastomeric gel acts this way. (See id. P 10.)

--- Footnotes ---

1. The parties agree that resort to dictionaries is useful to determine the meaning of the term "geometry." As the district court correctly stated, "[t]he ordinary meaning of 'geometry' in the context of the claims is a figure characterized by points, lines, or planes." Ormco Corp. v. Align Tech., Inc., No. SA-CV-03-16-GLT, slip op. at 3, 2005 U.S. Dist. LEXIS 43398 (C.D. Cal. Feb. 24, 2005) (citing Webster's New World Dictionary Third College Edition 564 (1988)). In other words, geometry means "configuration" or "shape." 6 Unlike the district court, we think that objects of different thicknesses plainly have different "configurations" or "shapes." Furthermore, the specification indicates that "[i]n a broadest sense, the methods of the present invention can employ any of the known positioners, retainers, or other removable appliances which are known for finishing and maintaining teeth positions in connection with conventional orthodontic treatment." '611 patent, col. 9, ll. 25-29. Thus, we conclude that the Truax devices satisfy the "geometries" limitation of claim 1.
"Generally Adjacent"

In claims 48, 50, 54, and 56 of the '404 Patent, the parties dispute the terms "cross brace member" (which the court has previously constructed), "generally adjacent," "connected to the table top," and "lip." The parties' proposed constructions of generally adjacent are set forth in Table 5.

<table>
<thead>
<tr>
<th>Term, Patent, and Ind. Claim</th>
<th>Pl.'s Interp.</th>
<th>Def.'s Interp.</th>
</tr>
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<tbody>
<tr>
<td>generally … adjacent</td>
<td>Lifetime's Interpretation: &quot;adjacent&quot; means in contact with. (Lifetime's Mem. in Opp. (originally document 26 in 1:03CV0013TC) at 7-8.)</td>
<td>FDL's Interpretation: &quot;adjacent&quot; means lying near, not distant, close, but not necessarily touching.&quot; (FDL's Rep. Mem. in Supp. (48) at 4-5.)</td>
</tr>
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</table>

The ordinary meaning of the claim term "generally" is "usually, commonly; ordinarily; and "for the most part." Webster's at 795. "Adjacent" means "lying near, close, or contiguous; adjoining; neighboring." Id. at 25. "Adjoin" means "to be close to or in contact with." "Adjoining" means "being in contact at some point or line; located next to another; bordering," and "neighboring" means "situated or living near." Id. at 1286. In the context of the '404 Patent, the support pedestal (table leg) in the collapsed position would be close to, near, bordering, or in contact with the mounting surface (underside) of the table.

The specification is not helpful in refining this construction because it simply repeats the term adjacent, without clarification:

Preferably, a pair of securing members 152 are disposed in relation to the mounting surface 14 for releasably securing a respective support pedestal 18, 20 in the collapsed position adjacent the mounting surface 14.

(FDL's Motion for Invalidity (originally document 24 in 1:03CV0013TC) Ex. 1, '404 Patent at col. 11, Ins. 23-26.)

Lifetime argues that United States Patent No. 5,921,623 to Nye (the "'623 Patent"), which has been assigned to Lifetime, makes clear that the table legs of the '404 Patent, when in the collapsed position, are in contact with the underside of the table. (Sears Decl. (originally document 27 in 1:03CV0013TC), Ex. A, '623 Patent.) Lifetime is correct that in the '623 Patent, when the table legs are collapsed, they are near, but not in contact with, the underside of the table. According to Lifetime, then, because the Examiner considered the '623 Patent during the prosecution of the '404 Patent, the reason for allowance of the '404 Patent was that the table legs of the '404 Patent were in contact with the underside of the table.
10 One embodiment of the '404 Patent also appears to have a similar arrangement that allows the pedestals to lie flat when in the collapsed position. (FDL's Motion for Invalidity (originally document 24 in 1:03CV0013TC) Ex. 1, '404 Patent at col. 14, Ins. 50-54; id. at Fig. 4.) This embodiment, however, does nothing to advance Lifetime's interpretation of the term generally adjacent, and in fact, if anything, it lends support for a definition of "adjacent" that means "close to" or "near."

But Lifetime's argument does not take into account that the '404 Patent disclosed an element not shown in any of the claims of the '623 Patent--depressions in the table top. This means that the Examiner had at least one additional element in the '404 Patent, not present in the '623 Patent, that could explain why she allowed the '404 Patent.

In short, there is nothing in the claim language nor in the specification that requires the pedestals actually touch or come in contact with the mounting surface of the table. In fact, the claim language mandates a directly opposite conclusion: The pedestals may be "close to" or "near" and still be "adjacent" within the meaning of claims 48, 50, 54 and 56. Moreover, the modifier "generally" suggests even more leeway when interpreting "adjacent." Specifically, the pedestals may be "close to" or "near" the mounting surface of the table "for the most part," meaning that they can be farther away in some instances.

Accordingly, "generally adjacent" means that the pedestals are located or situated close to, near, bordering, or in contact with the underside of the table.

--- Footnotes ---

11 The Honorable Gary L. Taylor of the United States District court for the Central District of California arrived at the same interpretation of "generally adjacent" in another case involving the '404 Patent. Lifetime Products, Inc. v. Alton Indus., Inc., No. SA CV-02-350-GLT(ANx) slip op. at 7-8 (C.D. Cal. Apr. 21, 2004). This provides additional support for the court's interpretation of generally adjacent.

--- End Footnotes ---

D. Generally Arcuate Segments

ICU's Construction
Naturally separated divisions, portions or sections of the walls that are bent, curved like a bow or arc-sharped

RyMed's Construction
Segments wherein the inner and outer surfaces of the wall are curved in the same direction.

The term "generally arcuate segments" appears in independent claim 1 of the '204 Patent. ICU contends that the Court should adopt the construction used in the Braun case because it reflects the plain meanings of "arcuate" and "segment." (D.I. 118, at 21.) ICU also contends that RyMed's proposed construction ignores or excludes dependent claim language which further defines the disputed term, (D.I. 172, at 18), and that RyMed's proposed construction contains limitations not warranted by the claim language or Common Specification. (Id. at 21.)

RyMed contends that ICU's construction is "confusing, redundant, and inconsistent with the intrinsic evidence." (D.I. 116, at 28.) RyMed further contends that Figure 9 is the only support in the Common Specification for the term "generally arcuate segments," and that a prosecution history disclaimer should apply to prevent ICU from arguing that additional support exists in the Common Specification. (See D.I. 116, at 29 ("ICU is... estopped by its statements in the prosecution history from arguing that a seal such as the O-ring based seal of Figure 13 has 'arcuate segments.'").)

As an initial matter, the Court finds that prosecution history disclaimer is inapplicable. In order for the Court to find a prosecution history disclaimer, the patentee must have limited the meaning of a claim term by making a "clear and unmistakable disavowal" of claim scope during prosecution. Purdue Pharma, L.P. v. Endo Pharm., Inc., 438 F.3d 1123, 1136
(Fed. Cir. 2006). During the prosecution of the '204 Patent, the Examiner rejected the term "arcuate segments" for lack of support in the specification. (D.I. 117, Ex. 23, at 49.) The patentee replied, "Figure 9 clearly discloses a seal element 36a having the arcuate segments." (Id.) Because it is not apparent whether the patentee meant Figure 9 as one of multiple examples of "arcuate segments," or as the only example of them, no "clear and unmistakable disavowal" was made. See Sandisk Corp. v. Memorex Prods., Inc., 415 F.3d 1278, 1287 (Fed. Cir. 2005)("[t]here is no 'clear and unmistakable' disclaimer if a prosecution argument is subject to more than one reasonable interpretation"). The fact that the patentee had the opportunity to cite Figure 13 in support of "generally arcuate segments," but chose not to, does not change the foregoing analysis.

As ICU points out in their Opening Brief, both parties are in relative agreement as to the meaning of "arcuate." (Compare D.I. 118, at 21 (ICU construing "arcuate" as "bent, curved like a bow, or arc-shaped") with D.I. 232, at 72:20-21 (RyMed stating "arcuate means curved like a bow. Bow means something bent into a simple curve.").) However, the parties dispute whether or not RyMed's proposed limitation concerning "the inner and outer surfaces of the wall" is appropriate. In the Court's view, this limitation is unwarranted. Even if RyMed were correct that the Figure 9 embodiment is the only support for "generally arcuate segments" in the Common Specification- which is a contested point- they provide no justification for reading a limitation about the inner surface walls into Figure 9.

ICU relies in large part on the Braun construction of "generally arcuate segments." In Braun, the parties stipulated to the construction, and it was based on dictionary definitions, a now-disfavored practice. Accordingly, it is unclear how persuasive an authority Braun is on the construction of this term. However, if prosecution history disclaimer does not apply and the proposed RyMed limitation is not accepted, ICU's proposed construction is more persuasive. Thus, the Court concludes that "generally arcuate segments" means "naturally separated divisions, portions or sections of the walls that are bent, curved like a bow or arc-shaped."

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The issue here is: how circular is "generally circular"? ASM argues that no construction is necessary, because no construction could improve upon the claim language "a generally circular configuration."

Genus correctly points out that "when a word of degree is used the district court must determine whether the patent's specification provides some standard for measuring that degree." Exxon Research and Engineering Co. v. United States, 265 F.3d 1371, 1381 (Fed. Cir. 2001) (quoting Seattle Box Co. v. Indus. Crating & Packaging, Inc., 731 F.2d 818, 826 (Fed. Cir. 1984)). In Exxon, an issue was whether the term "substantial absence of slug flow" was indefinite because the specification did not provide any empirical standard for determining when the process could be said to be substantially lacking in slug flow. Id. The Federal Circuit found that one of ordinary skill in the art would understand from the specification that the reason slug flow should be avoided is that it may interfere with reactor efficiency. Id.

Whether there is a "substantial absence of slug flow" therefore can be determined with reference to whether reactor efficiency is materially affected. If there is no slug flow or such minimal slug flow that the slug flow has no appreciable impact on reactor efficiency, then there is a "substantial absence of slug flow" within the meaning of the claims. In this setting, as in other, mathematical precision is not required - only a reasonable degree of particularity and definiteness. (Id.) See also Modine Manufacturing Co. v. United States International Trade Commission, 75 F.3d 1545, 1550-54 (Fed. Cir. 1996) (construing "relatively small" in light of the specification, the other claims, and the prosecution history); Andrew Corp. v. Gabriel Electronics, Inc., 847 F.2d 819, 821 (Fed. Cir. 1988) (claim language such as "approach each other," "close to," "substantially equal," and "closely approximate" are "ubiquitous in patent claims" and "when serving reasonably to describe the claimed subject matter to those of skill in the field of the invention, and to distinguish the claimed subject matter from the prior art, have been accepted in patent examination and upheld by the courts.")

The claim language at issue requires that the gas flow apertures are placed "in a generally circular configuration having a radius substantially equivalent to a radius of" the substrate. ('165 patent 5:47-6:1, 6:22-25.) The substrate itself is either circular (claim 1) or substantially circular (claim 6). (Id. 5:36, 6:19.) The reason for using a generally circular configuration of apertures that substantially matches the size of the substrate is not specifically set forth in the specification. Genus points to the following language from the prosecution history, however:
As described by the present application, creation and maintenance of the stagnation point gas flow can only be achieved by having and maintaining a uniform gas flow velocity vector perpendicular to the entire surface of the susceptor. This is accomplished by the present invention by providing the gas injector with apertures having a circular configuration corresponding to the circular configuration of the substrate. The pending claims have been amended to further clarify and point out this important distinction.

('165 Prosecution History at 98.) Thus, the prosecution history identifies a purpose of the generally circular configuration of the gas flow apertures as enabling the creation and maintenance of the stagnation point gas flow by having and maintaining a uniform gas flow velocity vector perpendicular to the entire surface of the susceptor.

Genus argues, however, that this language defines "generally circular" as "circular." This argument is not persuasive. The inventors were simply using a shorthand version of the claim language to describe the creation and maintenance of the stagnation point flow. Importantly, the actual claim language at the time the inventors used that language called for a "generally circular configuration," just as it does now. (Id. at 96.)

Genus also points to ASM's position in prior litigation, in which it argued that the "generally circular" language means that "the gas injection apertures are distributed in a configuration which appears generally like a circle with apertures distributed within the circle," and that "any variance from circular cannot be such as to prevent commercially acceptable thickness uniformity in the deposition." (Reines Decl., Ex. A, March 10, 1997 Joint Claims Chart from ASM v. Applied Materials at 2.) Uniform deposition of material on the substrate is, of course, a major goal of the invention, as noted in the summary of the invention section of the '165 patent. ('165 patent 2:3-11.) Thus, ASM's statement in the Applied Materials case is consistent with the language Genus cites from the prosecution history. Accordingly, it appears that the "generally circular configuration" of the gas flow apertures is one of the features of the invention that leads to uniform deposition of material on the substrate.

Thus, where there is a question as to whether a configuration is "generally circular" or not, the person of ordinary skill in the art can look to see whether the gas flow is initially directed perpendicularly across the entire surface of the substrate, and whether there is commercially acceptable uniformity of deposition of material on the substrate. Where all the other features of the invention exist, but these features do not exist, then one would know that the configuration of the gas flow apertures is too far from circular to be thought of as "generally circular." Thus, the term is not too indefinite to be construed.

Whether or not an apparatus has a generally circular configuration of gas flow apertures, however, is really a matter of infringement, not of claim construction. The Court agrees with ASM that there is no better way to define "generally circular" than to simply say "generally circular." Accordingly, the Court declines to construe the term.

E. "being generally concentric to"

The parties dispute the meaning of the term "being generally concentric to" as it appears in claims 37, 41, and 45 of the '748 Patent. Synovis contends that no construction is necessary, but if the Court decides to construe the term, it should be construed as "generally sharing a common axis or center." (Joint Statement at 19.) Gore, on the other hand, asserts that the Court should construe "being generally concentric to" as "having a common center (as circles one within another)." (Id.) The Court concludes that the term "being generally concentric to" is properly construed as a "having a common center (as circles one within another)."

3. "Longitudinally disposed bands, wherein each band defines a generally continuous wave having a spatial frequency along a line segment parallel to the longitudinal axis."
Consistent with the claim language and its ordinary meaning, the specification 4 and the prosecution history, 5 the court construes this limitation to mean that "the stent has multiple elongated surfaces that run parallel to the stent's long axis, each of these surfaces having the undulating appearance of a continuous wave."

4 Claim 1 requires that there be a plurality of links between bands. (406 patent, col. 5, l. 32) The specification requires that the bands undulate through approximately two cycles before there is a circumferential link and that there be a plurality of periodic links. (406 patent, col. 4, ll. 7-10, 15-17) Nowhere in the patent does it direct one of ordinary skill in the art how to construct a stent that meets these criteria without the bands running the length of the stent. Figures 3(a) and (b), showing a "portion of a stent with two bands between two circumferential links," cannot mean that a band is only what is shown, as what is depicted does not have a plurality of links. (See also '406 patent, col. 2, ll. 52-59 (describing Fig. 1(c) and (d) as an "axially flexible stent in accordance with present invention").) This construction does not read into the independent claim the limitations for its dependent claims, as none of the dependent claims cited by Cordis requires that the bands run the length of the stent. (See '406 patent, claim 10 and claim 17 (requiring that the bands be capped at the ends of the stent); Id., claim 3 (requiring that the band change in spatial frequency along its length)).

5 D.I. 230, Ex. 37 at 11637; Id., Ex. 34.

NAC assigns error to the district court's construction of the claim limitation "generally convex," which precludes any concavity in the inner walls of the base portion. NAC argues that, contrary to the court's finding, the applicant did not disclaim inner walls with any concavity during prosecution. According to NAC, the statement in the prosecution history relied upon by the court to support a disclaimer merely reflected the applicant's distinction of the generally convex inner walls of the claimed invention from the inner walls of the prior art, which were "concave in [their] entirety."

NAC also contends that the district court's construction, which defines the "generally convex" limitation differently for the outer and inner walls of the base portion, is prohibited. CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1159 (Fed. Cir. 1997) (instructing that terms should be construed consistently throughout the claims). Moreover, NAC asserts that under the court's construction, the claims do not read on the patent's preferred embodiments, shown in figures 14 and 15, which show base portions with concave inner walls. See Nat'l Steel Car, Ltd. v. Canadian Pac. Ry., Ltd., 357 F.3d 1319, 1337 (Fed. Cir. 2004) (stating that claim interpretations "that do not read on the preferred embodiments are rarely, if ever, correct and would require highly persuasive evidentiary support.").

Finally, NAC finds error in the district court's construction which requires a majority of points on the inner wall to be convex. According to NAC, the term "generally" is a word of approximation that should not be limited to a strict numerical boundary such as a majority of points. Instead, NAC contends that, applying "ordinary English," the court should have construed the term "generally" as "on the whole," or "in a general manner."

Plastipak responds to NAC's points by arguing that the district court's construction of the "generally convex" limitation, excluding any concavity in the inner walls of the base portion, was required by the applicant's disclaimer during
prosecution. Like the district court, appellees read the applicant's prosecution statement as distinguishing the inner walls of the claimed invention from the corresponding structure in the Dechenne patent on the basis of not even being "slightly concave," instead of being entirely concave.

Regarding NAC's argument that the "generally convex" limitation should not be construed inconsistently, Plastipak again contends that the applicant's argument during prosecution required that result. Plastipak also disputes NAC's assertion that the district court's construction reads out preferred embodiments. According to Plastipak, the specification only discloses one "particularly preferred embodiment," shown in figure 12, and the inner walls of that embodiment are within the court's construction of "generally convex." Nonetheless, Plastipak cites case law supporting the proposition that claim construction does not always include all of the embodiments disclosed in a specification. See Elekta Instrument S.A. v. O.U.R. Scientific Int'l, Inc., 214 F.3d 1302, 1308 (Fed. Cir. 2000).

Finally, Plastipak defends the district court's construction of the term "generally" to require a majority of points. Plastipak argues that that construction was supported by the Oxford English Dictionary Online. Moreover, Plastipak asserts that construing "generally" to require a majority of points is not inconsistent with NAC's proposed construction of the term, "on the whole."

We agree with the district court's conclusion that the applicant, through argument during the prosecution, disclaimed inner walls of the base portion having any concavity. Cognizant of the high standard required in order to show a prosecution disclaimer, e.g., Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1325-26 (Fed. Cir. 2003), we conclude that that standard has been met here. To overcome an obviousness rejection, the applicant distinguished his invention from the Dechenne patent on the basis of the latter disclosing inner walls that are "slightly concave." The inescapable consequence of such an argument is that the scope of applicant's claims cannot cover inner walls that are "slightly concave." Moreover, it logically follows, as the district court also concluded, that the scope of applicant's claims is also limited to inner walls of the base portion with no concavity.

We are not persuaded by NAC's argument that the applicant intended only to distinguish his invention from the prior art on the basis that the inner walls in the prior art bottles are entirely concave. Although the inner walls disclosed in the Dechenne and Jakobsen patents may be viewed as entirely concave, 3 that is not what the applicant argued during prosecution to gain allowance for his claims. The applicant stressed the difference in the extent of the concavity between the Dechenne and Jakobsen patents, noting that Dechenne is "slightly concave," whereas Jakobsen is "clearly concave in its entirety." Such a distinction would have been unnecessary if the only point that the applicant intended to make was that both prior art patents disclosed inner walls that are entirely concave.

We also reject NAC's argument that the district court erred in its construction of the "generally convex" limitation because the limitation is construed differently as it relates to the inner and outer walls of the base portion. Although the same limitation, i.e., "generally convex," appearing in different parts of the same claim is typically given the same construction, the applicant's argument during prosecution has warranted a departure from that general rule. As explained above, the "generally convex" limitation normally allows for some concave points on the walls of the base portion as long as the majority of points are convex, and, indeed that is how the court construed the limitation for the outer walls of the base portion. As we have also explained above, however, the "generally convex" limitation for the inner walls of the base portion cannot be given the same construction as the outer walls because the applicant disclaimed any concavity for the inner walls, but not the outer walls.

We find even less persuasive NAC's argument that the district court's construction would read out of the claims the preferred embodiments shown in figures 14 and 15. First, figures 14 and 15 show bottles with inner walls in the base portion that appear to have no convex points. Regardless how the term "generally" is construed, it requires that there be at least some convex points in the inner wall. Thus, even if some concavity in the inner walls is permitted, figures 14 and 15 would still
not fall within the scope of the claims. Secondly, as appellees note, we have previously explained that limitations may be construed to exclude a preferred embodiment if the prosecution history compels such a result. Elekta Instruments S. A., 214 F.3d at 1308. For the reasons explained above, in this case, it does. As the district court recognized, the fact that claims do not cover certain embodiments disclosed in the patent is compelled when narrowing amendments are made in order to gain allowance over prior art.

Finally, the district court did not err in construing the term "generally" to mean a majority of points. As NAC properly recognizes, terms of approximation such as "generally" need not be construed with mathematical precision. See, e.g., Anchor Wall Sys. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1311 (Fed. Cir. 2003). We do not believe, however, that the district court's construction imposes any "mathematical precision," as NAC asserts. In merely requiring a majority of points to be convex, the court articulated a common-sense understanding of the term confirmed by a dictionary. Moreover, we find the court's construction more fitting to the technology at issue here than NAC's proposed construction of "on the whole."

D Generally convex

Taylor contends that generally convex claims a lower portion that bulges outward. Divisional patent 410 describes the mounting member from a perspective below the mounting member. Independent claim 1 of patent 410 describes the lower portion as "having a generally convex outer surface . . . and facing in a direction away from said upper portion." The specification in patent 410 is identical to the specification in patent 449.


The specification does not use the term generally convex to describe the lower portion. However, the specification uses the term concave to describe the lower portion. 449 patent, col. 4, ll. 19-30. Based on the meaning of convex and on the absence of concave in the specification, the Court holds that one of ordinary skill in the art would believe that concave and convex describe the same structure but from a different perspective and that the same limitations apply to each term.

Independent claims 15, 26, 33, 37 and 38 of patent 449 state that the arcuate lower portion is "generally concave in cross section," the arcuate lower portion "forms a generally concave section," and that the "arcuate cross section is generally concave in cross section." These claims reveal that the meaning of generally concave and thus generally convex must lie within the meaning of arcuate. The ordinary meaning of arcuate is curved like a bow or arched. Taylor's proposed construction of convex as bulging outward is broader than curved like a bow or arched.

The correct construction of generally convex is consistent with the dictionary meaning of convex, which is curved outward like the exterior of a sphere. This construction of convex is within the meaning of arcuate. Consequently, the Court holds that the correct construction of generally convex is a shape that curves outward similar to the exterior of a sphere. 7

7 The modifier "generally" allows for slight deviations from mathematical boundaries. Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1310-1311 (Fed. Cir. 2003). Consequently, the Court construes generally convex to claim a lower portion that is similar to the exterior of a sphere.

Ameritex argues that, like arcuate, generally convex must not be construed to include a structure with flat sections. However, as explained above, neither the claims nor the specification reveal a requirement that the claimed lower portion is
void of flat sections, and the prosecution history does not reveal a disclaimer of lower portions with flat sections to avoid reading on prior art.

1842
gen generally corresponding to

Plaintiff again argues that this term is unambiguous and requires no definition. Defendants propose the following definition: "exactly equal to or less than."

Defendants' definition is too narrow and places an improper emphasis on "exactly." The patent specifications teach that the "end of the ring metal and sheet of paper coincide" and that "sheets of paper whose length exceed that of the ring metal could also be stored in the binder." (729 patent at col. 4, ll. 16, 18-20.) Figure 3 demonstrates that the end of the paper coincides with the end of the device. "Generally corresponding to" covers each of these possibilities.

The Court agrees with Plaintiff. The term is unambiguous and is readily comprehensible to the finder of fact.

1843
e. "Generally Cylindrical End Plug"

All three parties have proposed constructions for this phrase. AnazaoHealth asks the Court to construe this as a separate ejectable member of predetermined dimensions comprised of material other than bone wax that is in the shape of a cylinder (i.e. the surface traced by a straight line moving parallel to a fixed straight line and intersecting a fixed planar closed curve), including end surfaces at a ninety (90) degree angle to the side of the plug, and placed into the distal end of the needle.

The World Wide Plaintiffs have broken the phrase into two constituent parts: "generally cylindrical" - "an object or material having the general form or properties of a cylinder" and "end plug" - "an object or material used to fill or seal an opening and positioned toward an extreme portion of the object it is filling." The Terwilliger Plaintiffs propose a construction of "a piece of material having the general form of a cylinder used to fill an opening and positioned at the distal end of the object it is filling."

Initially, the Court has construed "plug" in Claim 1 as "an object or material used to fill or seal an opening," 28 and will incorporate that construction into "generally cylindrical end plug."

- - - - - - - - - - - - Footnotes - - - - - - - - - - - -

28 See Discussion at 35-46, supra.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - -

As for the phrase "generally cylindrical," the Court rejects Defendant's proposed construction for several reasons. It gives no effect to "generally" and improperly reads this term out of the Claim. See Innova/Pure Water, 381 F.3d at 1119 (holding that "[w]hile not an absolute rule, all claim terms are presumed to have meaning in a claim"). In the context of claim construction, use of the adverb "generally" is to account for "some amount of deviation from exact." See Anchor Wall Sys., Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1311 (Fed. Cir. 2003); see also Playtex Prods., Inc. v. Procter & Gamble Co., 400 F.3d 901, 908 (Fed. Cir. 2005) (holding that "generally" is a term of approximation).

Additionally, Defendant's proposal would exclude several of the embodiments of the invention disclosed in the specification and depicted in the drawings. For example, Figures 1 and 2 show end plugs and spacers that are described as of "cylindrical
shape," although they possess rounded ends and are clearly not perfectly cylindrical. This provides an indication of how the patentees used the term "cylindrical" in the Patent. Because the end plug resides inside the cannula, its shape is necessarily constrained by the internal bore of the needle cannula, which is circular when viewed as a cross-section. Thus, the end plug should be "generally cylindrical" to fit within the cannula, but there is nothing in the claim or specification that would require the degree of precision set forth in Defendant's proposed construction. The Court finds that "cylindrical" was intended by the Patentees to have its ordinary meaning, that is, "having the form or properties of a cylinder." Webster's at 565. As used in this Claim, it is the shape that is critical and, thus, the Court construes "cylindrical" to mean "having the form or shape of a cylinder."

Claim 9 also refers to an "end plug," as opposed to simply "a plug" as in Claim 1. The World Wide Plaintiffs maintain that in the context of Claim 9 "end plug" can be construed in the same manner as "plug" since the Claim provides that it is to be held in the distal end, which has been construed as "the tip or point of the needle cannula." The Terwilliger Plaintiffs ask the Court to add a limitation to the construction of "end plug" as "a piece of material used to fill an opening and positioned at the distal end of the object it is filling." The Court finds that in the context of Claim 9, this additional language is redundant of what is already in the claim.

Accordingly, the Court construes the phrase "a generally cylindrical end plug" to mean "an object or material generally having the form or shape of a cylinder used to fill or seal an opening."

C. "Generally Cylindrical Shape"

The parties also offer competing definitions of the term "cylindrical," and of the resultant meaning of the phrase "generally cylindrical." The Court "may… rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." Vitronics, 90 F.3d at 1584, n.6. Defendant argues that "cylinder" means "a solid body described by the rotation of a parallelogram round one of its sides [such that] the ends of [the body] are equal and parallel circles." (Defendants' Markman Brief at 14) That definition is derived from a non-authoritative dictionary, however, published by Dorset & Baber. At oral argument, defendant did not contest plaintiff's assertion that a respected authority on dictionaries, Kenneth Kister, has dismissed defendant's chosen dictionary as a mediocre, inferior work which is especially shallow on technical terms. (See Appendix to Plaintiff McNeil's Pre-Markman Hearing Responsive Brief at A855 - A857)

Plaintiff cites a definition derived from Webster's Third New International Dictionary (1961), published by Merriam-Webster. Kister states that it is "a great dictionary," and that its "coverage of the vocabulary of modern science is one of the dictionary's most impressive strengths." (App. Pl. Brief at A861) The definition given by Webster's Third New International is "the surface traced by any straight line moving parallel to a fixed line and intersecting a fixed curve." Webster's at 565. Unlike defendant's proffered definition, plaintiff's definition would not limit the term to objects with curving sides and perfectly circular cross-sections; rather, objects under this definition could have rectangular cross-sections, and curved or straight sides that were conjoined at angles. See Markman Hearing on Patent Claim Construction, testimony of Dr. Larry Augsburger, transcript at 85- 86. The Court recognizes the authoritative status of this dictionary, and accepts this definition as the plain, ordinary meaning of the term "cylinder."

Unlike the term "seam," "cylinder" is not given a particular definition or limitation in the specification or the prosecution history. Defendant argues that the specification does not disclose any shape other than an oblong tube with a circular cross-section as being appropriate for the medicament or the retaining mechanism for preparing the medicament. Defendant also draws the Court's attention to the patent drawings depicting an uncoated caplet which is used for the medicaments, and which is described as having a "cylindrical" center portion. See '524 patent, Figures 9 and 10.

The drawings in the patent reveal that a circular cross-section is one possible form for a cylinder, as that term is used in the patent, but neither the drawings nor the specification actually define "cylindrical" in a particular manner, or limit the term to the particular form that is used as an example in the drawings. "Where a specification does not require a limitation, that limitation should not be read from the specification into the claims." Specialty Composites v. Cabot Corp., 845 F.2d 981, 987 (Fed.Cir. 1988) (citing Lemelson v. United States, 752 F.2d 1538, 1551-52 (Fed.Cir. 1985)).
At the Markman hearing in this case, defendant also offered, as extrinsic evidence, the testimony of Dr. Banker in support of its definition of "cylindrical." Banker testified that someone of ordinary skill in the pharmaceutical arts would understand the term "cylindrical" to refer to an object that is shaped like a right cylinder, i.e. a tube with a perfectly circular cross-section. Banker testified that such persons would analogize the right cylinders found in a typical pharmaceutical laboratory to the medicament claimed in the '524 patent, and, conforming to their understanding of the "capsule" shape that is being simulated, would therefore believe that the medicament claimed in the '524 patent must have a perfectly or nearly circular cross-section.

The Court may rely on expert testimony in order to come to a proper understanding of the meaning of technical or specialized terms in the claims. See Vitronics, 90 F.3d at 1584. In this case, the word "cylindrical" is not an unambiguous word in everyday speech, but rather a technical term from geometry, and Dr. Banker's testimony is helpful to the Court in understanding what a person of ordinary skill in the art of pharmaceutics would understand the term "cylindrical" to mean. Claim 1 does not disclose a strictly cylindrical shape, however - it discloses a caplet with a "generally cylindrical shape." Unlike "cylindrical," "generally" is not a technical term of art for which the Court must seek the guidance of extrinsic evidence. Defendant argues that, in its ordinary meaning, "generally" means "reproducing the details of the model almost, but not quite, perfectly", so that a medicament with a "generally cylindrical shape" must have a "cylindrical, although perhaps not perfectly circular, cross-section." Defendant argues that any shape which does not have an almost perfectly cross-section cannot be "generally cylindrical" because it is, by definition, "distinctly non-cylindrical."

Defendant's argument places too limited a gloss on the word "generally," which, according to Webster's Third New International Dictionary, means "in a general manner; in a reasonably inclusive manner: in disregard of specific instances and with regard to an overall picture; on the whole." Webster's at 945. "Generally" cannot be limited to mean "almost perfectly," as defendant would have the Court read it.

Dr. Banker suggested in his testimony that, in the context of the '524 patent, the phrase "generally cylindrical" follows defendant's proposed definition and means, in essence, "having a circular cross-section". Markman Hearing, transcript at 153, 165-166. The Court notes that Banker premised this definition on his understanding that a person skilled in the art would read that phrase together with the phrase "simulated capsule-like medicament" and would, therefore, understand that the thing being imitated was a capsule, which Banker took to mean a medicament with a perfectly circular cross-section. Banker appears not to have offered a definition of the phrase "generally cylindrical" in isolation, but rather to have limited it to the implication drawn from another phrase in the claims. 3 The phrase "simulated capsule-like medicament" has its own definition, however, and the word "generally" does not take on a different meaning merely by virtue of appearing in the same claim as a separate phrase describing the same medicament. "Generally" is not defined in the specification or the prosecution history to mean anything other than "generally", and so it does not mean "almost perfectly" - it means "generally," as defined by Webster's.

--- Footnotes ---

3 In other words, Banker seems not to have actually been addressing the specific meaning of the phrase "generally cylindrical" when he was asked about that particular phrase - his answer reflected his view that the phrase was, as he put it, "defined" by, and interchangeable with, the phrase "simulated capsule-like medicament." Markman Hearing, transcript at 153.

--- End Footnotes ---

The Court notes that Banker testified that something which was "generally cylindrical" would have to be "something that, if not 100 percent cylindrical, be very close to a cylinder." Markman hearing, transcript at 153. To the extent that Dr. Banker's testimony would conflict with the broader understanding of the phrase "generally cylindrical", the Court notes that when patent documents are unambiguous, expert testimony regarding the construction of claim terms is entitled to no weight at all, see Vitronics, 90 F.3d at 1584, and that expert testimony "on the proper construction of a disputed claim term... may only be relied upon if the patent documents, taken as a whole, are insufficient to enable the court to construe disputed claim terms. Such instances will rarely, if ever, occur." Id. at 1585. In this case, the term "generally" is unambiguous, and the Court will not give any weight to Banker's contradictory testimony. 4
Moreover, plaintiff presented the testimony of Dr. Augsburger, who stated that in his view, based upon nearly forty years of experience, the phrase "generally cylindrical shape" would be understood by an ordinary person in the field of pharmaceutics to have the broader meaning ascribed by plaintiff. See Markman Hearing, transcript at 82 - 83. Given that the expert testimony is inconsistent, the Court will accept the view that accords with its understanding of the meaning of the modifier "generally."

The Court agrees with defendant that "generally cylindrical" cannot be defined so broadly as to include shapes that are distinctly non-cylindrical, but at the least, shapes which are generally cylindrical must include shapes which are within the plain, ordinary, dictionary definition of the term "cylinder." Even accepting Dr. Banker's definition of the term "cylindrical" to mean a right cylinder for the purposes of the '524 patent, the addition of the modifier "generally" cannot limit the phrase to objects which have almost perfectly circular cross-sections. A generally cylindrical object resembles a cylinder "in a general manner; in disregard of specific[s]… and with regard to the whole picture; on the whole." Plaintiff's proffered definition of "cylinder" would encompass defendant's definition, but would also include objects with elliptical or parabolic cross-sections. These latter shapes would resemble a right cylinder on the whole, in disregard of the specific nature of the curve of the exterior surface of the medicament, and without almost perfectly imitating that curve. In light of Banker's testimony about the proper understanding of the term "cylindrical," therefore, the Court will accept plaintiff's proffered definition of the term "cylinder" as the correct construction of the phrase "generally cylindrical shape" for purpose of Claim 1.

IV. CONCLUSION

The Court concludes that the disputed terms have the following meanings:

1. "Simulated capsule-like medicament" shall mean "a medicinal form that imitates, resembles, or suggests in form or appearance a gelatin shell enclosing medicine."

2. "Partially overlapping said first gelatinous coating and forming a seam" shall mean "extending over and covering part of, but not all of, the first gelatinous coating in a manner such that there is a transition of color and a transition of thickness."

3. "Generally cylindrical shape" shall mean "shape formed by a straight line moving parallel to a fixed line and intersecting a fixed curve."

3. "A Thickness Generally Equal to Circumferentially Adjacent Areas"

a. Construction

Hallmark contends that this limitation should be interpreted to mean that "the thickness of the pleat and the thickness of the adjacent areas of the rim are such that a smooth and unbroken surface is provided. All evidence of the folds or pleats particularly on surfaces without an overcoat should have disappeared." Hallmark argues this construction is required by the need to turn to the specification to define the term "generally."

The proper test in construing a potentially vague limitation is that "if the claims, read in the light of the specification, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the courts can demand no more." Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 624 (Fed. Cir.) (cites omitted), cert. dismissed, 474 U.S. 976, 106 S. Ct. 340, 88 L. Ed. 2d 326 (1985). As James River argues, the specifications provide both quantitative and qualitative measures to define the phrase "generally equal." These comparisons use physical measurements and photomicrographs of plate cross sections.
The quantitative comparisons examine the thickness of the rim pleats and the thickness of the bottom wall. The '140 patent's Figure 8 shows a cross section of a non-integrated fold, and the specification states the thickness is 0.028 inches. Figure 9 shows a cross section of an integrated fold, and the thickness is 0.017 inches. As the paperboard blank is 0.016 inches, the specification reveals that the invention's fold is 6.25% thicker than the bottom wall, while the prior art fold is 62.5% thicker than the bottom wall. Thus, the specification teaches a quantitative comparison of the thickness of the folds compared to either the blank or the center of the plate. 4

4 There is an assumption that the thickness of the bottom wall is equal to that of the blank. As the bottom wall is not subjected to pressure, and as both measure 0.016", this assumption appears to be valid. Moreover, any error likely to be introduced by this assumption will only work against James River. If the bottom wall is compressed in an accused plate, there all likely be greater variation between the thicknesses of the rim pleats and the bottom wall, thus potentially allowing the accused plate to escape infringement.

The problem with the quantitative comparison taught by the specification is that it does not match the claim limitation. The specification contains no clear measurements of rim areas circumferentially adjacent to the pleats. The only measurements given are the pleat thickness, the blank thickness, and the bottom wall thickness. Moreover, the non-pleat rim areas are subjected to pressure and compressed, so one cannot assume they are equal to the blank areas in thickness.

There is no reason why the rim pleats and the adjacent areas cannot be quantitatively compared. They simply were not in the specification. As the claim language is clear, there is no need to import an additional comparison from the specification. E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir.), cert. denied, 488 U.S. 986, 102 L. Ed. 2d 572, 109 S. Ct. 542 (1988). However, the specification does indicate the usefulness of being able to quantitatively compare the rim pleats. The only question is: how much variation is allowable between the pleats and circumferentially adjacent areas? In the '140 specification, the preferred embodiment had a 6.25% variation between the pleat and the bottom wall, while the prior art had a 82.5% variation. PX-001 at 11-12; James River Response Brief in Opposition at 17. Thus, making allowance for the compression of the circumferentially adjacent areas, a 25% variation between the pleats and the adjacent areas will be considered generally equal. This will still represent a substantial improvement over the prior art.

In addition, the specification teaches a qualitative comparison of rim smoothness, which will ensure James River's invention is limited to its claim. The '140 specification teaches a comparison between the paperboard surfaces of the prior art and the invention's preferred embodiment. As the specification states, the invention plate shown in Fig. 9 has an "essentially smooth and continuous" surface at both the top and bottom of the pleat, while the prior art plate in Fig. 6 has "discontinuity of surfaces. PX-1. Co. 12, lines 57-85. Admittedly, once again, the claim language refers to the equality between rim pleats and adjacent areas, while the specification compares the rim pleats to the prior art plates, instead of the invention's adjacent areas. Here, however, the smoothness of the rim pleats extends into the beginning of the adjacent areas, so that the entire rim area is smooth.

These comparisons allow a claim interpretation in accord with the limitation's natural language. The physical measurements verify that thicknesses along the rim are similar, and the qualitative comparisons verify that the pleat surfaces are smooth and that there is a smooth transition to the adjacent areas. Both of these comparisons must indicate that the claim limitation reads on the accused plates to show infringement.

(a) Claim One, Clause Two

Claim 1, clause 2 reads as follows: "A generally flat rectangular housing containing operating electronics and an array of calculator actuating buttons[]." The phrase "generally flat" is in dispute.

(1) Indefiniteness
SCM claims that the term "generally" is too ambiguous, and therefore the patent fails for indefiniteness. A patent is presumed valid. 35 U.S.C. § 282. A party attempting to invalidate a patent for indefiniteness must do so by clear and convincing evidence. Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 1323 (Fed. Cir. 1999).

The Patent Act requires that the "specification shall conclude with one or more claims particularly pointing out and distinctly claiming subject matter which the applicant regards as his invention." 35 U.S.C. § 112, P 2. This requirement places future inventors on notice concerning the scope of the patent. Rengo Co. v. Molins Mach. Co., 657 F.2d 535, 551 (3d Cir. 1981). Whether a patent is invalid because it is indefinite is an issue of law. Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1376 (Fed. Cir. 2001) ("We adhere to the principle that determination of claim indefiniteness is a legal conclusion that is drawn from the court's performance of its duty as the construer of patent claims.")

A patent is sufficiently definite "[i]f one skilled in the art would understand the bounds of the claim when read in light of the specification...." Exxon Research & Engineering Co., 265 F.3d at 1375 (citation omitted). A patent is not indefinite "merely because it poses a difficult issue of claim construction." Id. The amount of necessary detail depends upon the invention and the prior art. Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 624 (Fed. Cir. 1985).

While the Federal Circuit has not specifically addressed whether the term "generally" is too indefinite to maintain the validity of a patent, courts have discussed the viability of words connoting approximations and have often found them sufficiently definite. For example, the use of the term "substantially" does not necessarily render a claim indefinite because the term and others like it are "ubiquitous" in patent claims. Andrew Corp. v. Gabriel Elec., Inc., 847 F.2d 819, 821 (Fed. Cir. 1988); see also Ecolab, Inc. v. Envirochem, Inc., 264 F.3d 1358, 1367 (Fed. Cir. 2001) ("We note that like the term 'about,' the term 'substantially' is a descriptive term commonly used in patent claims to avoid a strict numerical boundary to the specified parameter.") (quotation omitted). But see Amgen Inc. v. Chugai Pharm. Co., 927 F.2d 1200, 1218 (Fed. Cir. 1991) (finding the use of the word "about" in the claim was too indefinite, but noting it was not a per se rule).

SCM has not shown by clear and convincing evidence that the term "generally" as used in Claim 1 is too indefinite for "one skilled in' the art." We conclude that SCM has not met its burden to invalidate the '085 patent on indefiniteness grounds.

(2) Construction of Disputed Term

CCL contends that the ordinary and customary meaning of "generally flat" is something that need not be perfectly flat. SCM proposes that we construe this term to mean "at least as flat as a Prod Art Co. calculator model No. SC-82." This proposed construction is derived from a statement the inventor of the '085 patent made when he was questioned about this disputed term with reference to another calculator.

We conclude that the term "generally" is sufficiently clear given its ordinary meaning. Webster's Third International Dictionary defines generally to mean "on the whole." It is also defined as "in a general manner." In turn, "general" is defined as "marked by broad overall character without being limited, modified or checked by narrow precise considerations." Id. Thus, in the context of this claim, generally flat means "housing that is flat on the whole."

Additionally, while the claims and specifications do not explicitly provide a definition of "generally flat," in light of the function of the invention, certain limitations are at least implied and would be known to one skilled in the art. The invention has a "generally flat" housing, but it also contains a lid structure that has a "flat cover." Claim 1(b). That "flat cover" must pivot rearwardly to form a stand, which supports the calculator in a tilted position. Claim 1(e). If the housing is not flat as a whole, it would inhibit the functioning of the invention because the flat cover could not properly cover the display and subsequently pivot to form a stand. Thus, the claims and the function of the invention help to define this disputed term.

The specifications also support this construction of the disputed term. They provide that the lid structure is supposed to protectively cover the display panel. Col. 2: 28-29; Col 2: 61-65. As explained above, if the front housing is too curved, the flat cover would not properly protect the display panel. The specifications also indicate that after the lid rotates backwards, it is in essentially a perpendicular orientation and forms a stand to support the calculator on a horizontal surface. Col. 2:34-38. If the housing is not "generally flat," (flat as a whole), but is more rounded, the calculator, even with the stand, may be unsteady when used on a horizontal surface.
Accordingly, we construe the term "generally flat" to mean a housing that is flat on the whole, but not necessarily exactly or perfectly flat.

Applying the above standards, the Court observes that the plain language of the claim calls for a "generally flat aft keel." The term "flat" is generally understood to mean horizontal. See Spaulding v. Guardian Light Company, 170 F. Supp. 679 (N.D. Ill. 1958); Illinois Tool Works, Inc. v. The Rawlplug Co., Inc., 1991 U.S. Dist. LEXIS 11035, 21 U.S.P.Q.2D (BNA) 2036 (N.D. Ill. 1991) (rejecting infringement claim—finding accused drill tip cannot be considered "generally flat" in that it had eight separate surfaces). While the term "generally flat" is imprecise, the term "generally," modifies the term "flat" context, means "mostly." 1 Thus, the Court construes the plain language of the claim to call for an aft keel that is mostly horizontal.

This interpretation is consistent with the drawings and specifications of the '202 Patent. The Summary of the Invention section of the Patent states, inter alia: "A further object [of the present invention] is to provide a broad flat keel having a width of about ten percent of the boat's beam" (Doc. No. 1, Ex. A., column 2, lines 33-34). The drawings depict a flat keel (See Figure 2a of the Patent, as described in Column 2, lines 60-64). And, although the specifications do mention a "substantially flat or concaved keel portion" (Column 4, Line 24) [emphasis added], this is not inconsistent with a keel that is mostly horizontal. "Concave," as defined in The American Heritage Dictionary, means "curved, like the inner surface of a sphere." Thus, a "slightly concave" aft keel (claim 10) to be generally flat, that is, mostly horizontal, but slightly curved.

Defendants argue that the Court should also consider the prosecution history of the patent, and Plaintiff makes certain representations based on a purported reissue application. Neither side, however, has properly presented these documents to the Court. Defendants attach as an exhibit to their brief unauthenticated copies of documents which they argue represent the prosecution history of the Patent. Such fugitive documents are not identified or supported by any affidavit, attesting to their authenticity. Worse yet, Plaintiff quotes extensively from a Notice of Allowance purportedly issued by the Patent Office, a copy of which is apparently not even in the record. (The Court was unable to locate the document referred to and no record citation was provided.) (See Doc. No. 48, p. 12, fn 6). Assuming, however, that both Plaintiff and Defendants representations of the prosecution history are true, it does not alter the result reached by the Court.

The principal question in this case is whether the term "generally flat aft keel," properly construed, encompasses a twelve degree V-shaped aft keel such as the one found in Regal's FasTrac hull design. The district court construed "generally flat" to mean "mostly horizontal." Schoell argued that, although deeper V-shapes may not be flat, a twelve degree V-shape was sufficiently shallow to be "generally flat." Rejecting Schoell's position, the court noted that Schoell's written description distinguished between flat-bottomed hulls and V-shaped hulls. The court concluded that, although "generally flat" need not mean "dead flat," a V-shaped keel could not be considered "generally flat" in light of the distinctions made by Schoell.
On appeal to this court, Schoell argues that the trial court erred by interpreting the term "generally flat" too narrowly. Schoell contends that the trial court did not recognize that the claim language, written description, and prosecution history show that "generally flat" embraces configurations that are not perfectly flat. Schoell further argues that Regal has admitted, in a sales training videotape referring to the aft keel as "flatter" than the adjacent planing portions, that "flat" is a relative, not absolute, term.

Contrary to Schoell's contentions on appeal, the trial court's interpretation of "generally flat" was not limited to completely flat surfaces. As the trial court recognized, the word "generally" modifies "flat" and, in this context, means "mostly." This definition is supported by the written description, which in one instance describes the aft keel as "substantially flat or concaved." The trial court acknowledged that a "slightly concave" aft keel, as claimed in dependent claim 10, is not completely flat and is within the scope of the independent claims requiring a "generally flat" aft keel.

The trial court also interpreted "flat" to mean "horizontal." Although that interpretation might not apply in some cases, since, for example, a vertical surface may be flat but not horizontal, we think it is understood that flat and horizontal are synonymous as applied to the keel of a boat in an upright, stationary position. Also, the court's reference to other reported decisions construing the term "flat" in other contexts is at most harmless error since the court relied on the ordinary meaning and not on any special meaning given to the term in the patents at issue in those cases. In any event, we find the phrase "mostly horizontal" to provide little more guidance than "generally flat" in determining whether a twelve degree V-shaped keel is within the scope of the claims. Thus, we must look further into the record to resolve that question.

Throughout the claims, written description, and prosecution history of the '202 patent, Schoell distinguished between V-shaped keels and generally or substantially flat keels. In describing his boat hull in the written description portion of the patent, Schoell carefully differentiated between the V-shape of the forward keel and the substantially flat surface area of the aft keel. In the claims of the '202 patent, Schoell required a V-shaped forward keel and a generally flat aft keel. Furthermore, during prosecution of his application, Schoell responded to the examiner's rejection of his initially filed claims as obvious over an earlier Schoell patent, U.S. Patent No. 4,193,370 (the "'370 patent"), asserting that "Schoell shows no stepped offset and shows no generally flat aft keel." Joint App. at 339. The '370 patent, however, describes a V-shaped aft keel with a dead rise angle between twelve and eighteen degrees. Thus, not only did Schoell differentiate between a V-shaped keel and a generally flat keel, he essentially conceded that a twelve degree V-shaped keel cannot be a generally flat keel as claimed in the '202 patent.

For our purposes, we need not decide whether a shallow V-shaped keel can meet the "generally flat" claim limitation, or, if so, how shallow it must be. Regal's aft keel has a twelve degree dead rise V-shape, but a portion of its forward keel also has a twelve degree V-shape. Because Schoell so clearly distinguished between the two keel shapes, a twelve degree V-shape cannot be both V-shaped and generally flat. If Regal's forward keel satisfies the "V-shaped forward keel" limitation, Regal's aft keel cannot satisfy the "generally flat aft keel" limitation. Conversely, if Regal's aft keel satisfies Schoell's aft keel limitation, Regal's forward keel cannot satisfy Schoell's forward keel limitation. Thus, it is impossible for Regal's FasTrac hull to literally infringe the claims of the '202 patent.

Schoell's response to this conclusion is that the claims do not require the forward keel to be V-shaped the entire length from the bow to the stepped offset. According to Schoell, Regal's twelve degree V-shaped aft keel can satisfy the "generally flat" limitation, and the portion of the forward keel with a deeper V-shape, the portion closest to the bow, can satisfy the "V-shaped" limitation. The claim language itself belies this theory. Claim 1 unequivocally requires a "forward hull including . . . a V-shaped keel extending from the bow to the stepped offset." The language of claim 17--"the forward hull including an arcuate bow . . . and a V-shaped forward keel trailing therefrom"--is not as explicit, but the application of the adjective "V-shaped" to the forward keel rather than to a portion of the forward keel suggests that the entire forward keel must be V-shaped.

Schoell finally argues in his reply brief that, because Figure 2a of the '202 patent depicts a forward hull similar to Regal's with a V-shape that is deeper at the bow and flattens as it approaches the step, Regal's forward hull must meet the V-shaped claim limitation. This argument, however, ignores the clear distinction between the V-shape of the forward keel and the flat surface of the aft keel in the '202 patent. Regal does not dispute that its forward keel is V-shaped, but Schoell overlooks the other half of Regal's position--if Regal's forward keel is V-shaped, its aft keel cannot be generally flat.
Lastly, we find no merit in Schoell's argument that "flat" is a relative term and that an aft keel that is flatter than the adjacent hull sections qualifies as "generally flat." The genesis of Schoell's argument is a sales training videotape produced by Regal that describes the allegedly infringing Regal hull:

As you can notice, we [have] got the 24 degree dead rise here at the bottom of the hull and more notably right at the keel we've a little flatter sectional surface. That is the step-pad. It's approximately again 12 degrees [and] it provides for lift as the boat wants to come out of the water and at the same time giving stability at high end speeds.

Joint App. at 670 (emphasis added). Nothing in the '202 patent or its prosecution history, however, indicates that "generally flat" is to be measured relative to adjoining areas. It is undisputed that Regal's aft keel is flatter than the adjacent planing portions of the hull, but by no means does this lead to the conclusion that Regal's aft keel is "generally flat" within the meaning of the claims.

For the above reasons, we affirm the district court's grant of Regal's motion for summary judgment with respect to literal infringement.

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4. Claim 1, 22, 24, 26--"generally flush with the exterior"

Claim 1 is representative of this term in context and states:

carrier means for supporting a light, a control, an instrument or the like within said interior space, said carrier means including a rigid support and mounting means for mounting said support within said opening such that said support is generally flush with the exterior of said bottom wall portion.

The Special Master recommends construing the term "generally flush with the exterior" to mean that the parts are flush, when assembled, within the normal tolerances accorded such parts in the field of the invention, and are flush, as a rule, in ordinary practice. Thus, two parts are not "generally flush" if the parts, as a rule, in ordinary practice, are not flush within normal tolerances accorded such parts in the field of the invention, when assembled. Plaintiff contends that the Special Master defined "generally" improperly by focusing on frequency or occurrence, rather than mechanical structure. Rather, Plaintiff argues use of the word generally limits the term "flush" by describing the degree of flushness and concluding otherwise ignores inclusion of the word "generally."

It is apparent that inclusion of the word "generally" indicates something other than perfectly or precisely flush. The specification states that the "overall styling and appearance of the rearview mirror case assembly is significantly improved by the integration of the carrier modules such that they are mounted generally flush with the bottom wall of the case and are essentially hidden from view when the mirror is viewed from the normal driving position." '336 patent, col. 3, lines 26-31. Plaintiff suggests that "generally flush" references the part of the specification which states that the carrier module is "essentially hidden from view when the mirror is viewed from the normal driving position." This construction, however, does not explain what generally flush means if not precisely flush, and conflates two separate criteria for the carrier module. The carrier module could be generally flush and not essentially hidden or vice versa; therefore, these two elements need to be read as separate limitations and not one as a further explanation of the other.

One possible definition for 'generally' is mostly, but that does not make sense in this case. Schoell v. Regal Marine Ind., Inc., 247 F.2d 1202, 1207 (Fed. Cir. 2001). Something cannot be mostly flush, as in substantially, largely, but not wholly flush. That would require at least part of the mechanism to be precisely flush which contradicts the language of the claim.

Since generally is not a scientific term and has not been given any meaning in the claim or specification, the Court may rely on a standard dictionary for guidance as to its meaning. Wenger Mfg., Inc. v. Coating Machinery Sys., Inc., 239 F.3d 1225, 1233 (Fed. Cir. 2001) (using Webster's New World Dictionary to define term "circulate"). "A dictionary is not prohibited extrinsic evidence, and is an available resource of claim construction. Although a dictionary definition may not enlarge the scope of a term when the specification and the prosecution history show that the inventor, or recognized usage in the field of the invention, have given the term a limited or specialized meaning, a dictionary is often useful to aid the court in
determining the correct meaning to be ascribed to a term as it was used." Vanguard Products Corp., 234 F.3d at 1372 (internal citations omitted) (finding no error in district court's reliance on dictionary to define "integral"). The Court, therefore, finds "generally" means, "1. popularly; widely; 2.a. as a rule; usually; b. for the most part; 3. without reference to particular instances or details; not specifically." AMERICAN HERITAGE DICTIONARY 755 (3rd ed. 1996). The definition for "usual" is, "1. commonly encountered, experienced, or observed; 2. regularly or customarily used; 3. in conformity with regular practice or procedure; habitually happens." Id. at 1967. Synonyms for usual include habitual and customary. Id.

Use of the term flush alone would allow for normally recognized tolerances since nothing in the specification requires a precise fit for the mirror assembly. However, the word "generally" cannot be ignored. Use of the word "generally" does not refer to degree of flushness beyond what is within regular practice in the field. "Generally" indicates that the support is flush as judged by regular practice. Therefore, the carrier module is "generally flush" if when assembled it is flush within normal tolerances in the field and is flush as a rule, in conformity with regular practice.

II. "Generally Frustoconically Shaped Pylon"

The key disagreement between the parties is whether a "generally frustoconically shaped pylon" can have a shape other than that of a right circular cone that has had the top part cut off. 4 The Defendants contend that it cannot. The Plaintiff asserts that the pylon can have a base in the shape of any closed plane, such as a circle, rectangle, hexagon, cruciform, oval, or an irregularly shaped closed plane.

Beginning with the claims themselves, the Court notes that the phrase at issue consists of two adverbs ("generally" and "frustoconically") and one adjective ("shaped"), all of which modify the noun "pylon." The language of the claims, quoted above, does not define these terms either individually or collectively. As determined above, the Court must construe this term through the eyes of an individual having a high school education.

The main difficulty presented by the phrase "a generally frustoconically shaped pylon" is that the ordinary meanings of the noun "pylon" do not fit neatly into the claimed invention, a floating dock. EZ Dock argued that "looking up a word in a dictionary should be straightforward," (EZ Dock Reply Brief at 3), and provided definitions from Webster's Third New International Dictionary of the English Language for several words or word roots used in the phrase in question. Significantly, however, EZ Dock did not include that dictionary's definition for "pylon," and in fact provided no definition for "pylon." Webster's Third New International Dictionary defines it as follows:

1 a: a usually massive gateway often with flanking towers--compare PROPYLN b: an ancient Egyptian gateway building having a truncated pyramidal form; broadly: two such truncated pyramids with a gateway between c: a monumental mass placed so as to flank an entranceway (as an approach to a bridge 2: a tower (as of steelwork) for supporting either end of a wire (as for a telegraph line) over a long span 3 a: a post, tower, or other projection marking a prescribed course of flight for an airplane b: a structure for supporting the propeller on the side of a rigid airship or for attaching an auxiliary fuel tank, a bomb, or other external stores carried by an airplane.

From the foregoing, it is evident that the ordinary meanings of the term "pylon" do not make sense in the context of a floating dock. 5 The Court therefore turns to the specification and prosecution history for assistance in determining what the patentee meant by the term "pylon."
5 Inserting one of the several alternate definitions of "pylon" into Independent Claim 8 of the '055 patent produces the following results:

A floating dock, comprising:

   a docking member with top, bottom and side surfaces defining a hollow cavity and a generally frustoconically shaped
   massive gateway, often with flanking towers within the cavity extending from the top surface to the bottom surface.

A floating dock, comprising:

   a docking member with top, bottom and side surfaces defining a hollow cavity and a generally frustoconically shaped
   ancient Egyptian gateway building having a truncated pyramidal form within the cavity extending from the top surface to
   the bottom surface.

A floating dock, comprising:

   a docking member with top, bottom and side surfaces defining a hollow cavity and a generally frustoconically shaped
   monumental mass placed so as to flank an entranceway within the cavity extending from the top surface to the bottom
   surface.

A floating dock, comprising:

   a docking member with top, bottom and side surfaces defining a hollow cavity and a generally frustoconically shaped
   tower (as of steelwork) for supporting either end of a wire (as for a telegraph line) over a long span within the cavity
   extending from the top surface to the bottom surface.

A floating dock, comprising:

   a docking member with top, bottom and side surfaces defining a hollow cavity and a generally frustoconically shaped
   post, tower, or other projection marking a prescribed course of flight for an airplane within the cavity extending from the top
   surface to the bottom surface.

"Claims must be read in view of the specification, of which they are a part." Markman, 52 F.3d at 979. The specification
may show that the patent "uses the words in a manner clearly inconsistent with the ordinary meaning reflected, for example,
in a dictionary definition. In such a case, the inconsistent dictionary definition must be rejected." Texas Digital Sys., Inc. v.
Telegenix, Inc., 308 F.3d 1193, 1204 (Fed. Cir. 2002). An inventor may act as his own lexicographer and use the
specification to supply new meanings for terms, either explicitly or implicitly. Electro Scientific Indus., Inc. v. Dynamic
Details, Inc., 307 F.3d 1343, 1347 (Fed. Cir. 2002). When construing claims, however, a court must not add limitations that

Here, the inventors did not explicitly act as lexicographers in their specification by defining the phrase "generally
frustoconically shaped pylon" or any of its component parts. The specification's discussion of "pylons" is the following:

Each docking member 12 is desirably generally hollow. The thickness of the wall of the docking member 12 can vary
with need but should desirably be in the range of 0.19 to 0.63 inches, with a wall thickness of approximately 0.25 inches
being preferred. Within the hollow cavity of the docking member 12, elongate struts stretch from the bottom surface to the
top surface. These struts provide additional structural support for the docking member 12 as well as prevent sagging of the
deck when pressure is applied (as when a person walks upon the deck).

The struts can be of any suitable formation. In the preferred embodiment, portions of the bottom surface extent upwardly
into the interior of the docking member 12 towards the top surface to form a series of tapered generally frustoconically
shaped pylons 30. The struts desirably include pylons with an arcuate top connected by slightly taller and wider pylons. In the preferred embodiment, two generally parallel strips of pylons run along the length of the bottom surface of the docking member 12. When the docking member 12 is positioned on the water, air is trapped within the pylons 30, thereby allowing the docking member 12 to remain afloat in the event that it becomes damaged and water begins to enter the cavity. (Mitchell Aff. Ex. 1 (‘055 patent) at col. 3 ll. 3-27 (emphasis added).)

Thus, implicitly, a "generally frustoconically shaped pylon" is a form of strut, a structure intended to provide support within the hollow cavity of the docking member. 7

6 Nothing in the PTO's August 2001 Re-examination Certificate modifies these paragraphs.

7 The patent also includes two figures - Figures 2 and 3 - that pertain to the "pylons" labeled in the specification as element 30.

The prosecution history of the '055 patent is the next category of relevant intrinsic evidence. A patent's prosecution history also provides relevant information about the scope and meaning of claim terms. Markman, 52 F.3d at 980. Arguments and amendments made during the prosecution of the patent application, and other aspects of the prosecution history, are relevant in determining the meaning of terms in the claims. See Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995). The definition for a disputed claim term might appear in the prosecution history. See Honeywell, Inc. v. Victor Co. of Japan, Ltd., 298 F.3d 1317, 1323 (Fed. Cir. 2002) (observing that it is well settled that an inventor may define a claim term in the prosecution history).

EZ Dock cites to a May 11, 1993 Amendment submitted to the PTO in support of its argument that the applicants defined "pylon" to mean "conical." The Amendment indicated that the applicants had "amended page 6 of the specification to state that the pylons formed by the docking members are generally frustoconically shaped." (Mitchell Aff. Ex. 10 at 3.) The Amendment also stated, "Webster's New Collegiate Dictionary, Copyright 1979 by G. & C. Merriam Co., defines a pylon as a structure that is 'conical.'" 8 (Id.) The Amendment concluded with the assertion that, therefore, the words "generally frustoconically shaped," added to page 6 of the specification "are equivalent to the word they are describing in the specification [i.e., pylon] . . . and do not represent new matter." The PTO allowed this amendment.

8 In point of fact, no such definition appears in that edition of Webster's New Collegiate Dictionary. The only definition for "pylon" in that edition which contains the word "conical" states that a "pylon" can mean "a conical marker used on a road (as for directing traffic)."

From the foregoing, the Court determines that the inventors defined the term "pylon" to mean "a structure that is 'conical.'" To construe the phrase at issue, therefore, it must determine what an individual who has completed high school would understand "a structure that is 'conical'" to be. The Defendants argue that a conical structure must be shaped like a right circular cone and must have a circular base. Placing it in the parlance of teenagers, the Defendants contend that the pylon in question must look like an icecream cone. 9

9 The Defendants argue, with no supporting evidence, that a "typical high school educated person would not think of a shape with a noncircular base as a cone." Noting that a pyramid has a noncircular base, the Defendants go on to argue, again without a supporting factual basis, that "[a] typical high school educated person would not think of a pyramid as a cone." The Court rejects this line of argument as speculative.
When one compares that argument to the '055 patent, however, problems arise. The specification refers to a preferred embodiment having strips of pylons, and Figure 2 of the patent shows two parallel strips of openings on the bottom surface of a docking member. Each strip consists of a pattern of alternating rectangular openings and oblong openings. The drawings of a patent are relevant intrinsic evidence that the Court may consider in construing claims. See Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1324 (Fed. Cir. 2002). The Defendants offer no compelling explanation as to what those strips shown in Figure 2 represent if not the strips of pylons discussed in the specification, as seen from the bottom. Viewing the patent as a whole, it is evident that the '055 patent contemplates "pylons" which have something other than perfectly round bases.

"A claim construction that excludes from its scope a preferred embodiment 'is rarely, if ever, correct and would require highly persuasive evidentiary support." Bowers v. Baystate Techs., Inc., 302 F.3d 1334, 1345 (Fed. Cir. 2002) (quoting Vitronics, 90 F.3d at 1583). The Defendants contend that EZ Dock's proposed construction of a "pylon" as a "conical" structure having a base in the shape of any closed plane (not just a circle) would encompass Heinrich's flange, found in the prior art in United States Patent No. 4,365,577. The Court has carefully reviewed the Heinrich patent and finds the Defendants' arguments to be unpersuasive. The Defendants have not presented the "highly persuasive evidentiary support" necessary to warrant their narrow proposed interpretation of the phrase at issue.

The Court concludes that, in the context of the '055 patent, a "pylon" is a conical structure; that is, it is a structure having a closed plane base and a surface formed by line segments joining every point of the boundary of the base to a common vertex. Having determined what a pylon is, the Court turns to the modifying adjective and adverbs, "generally frustoconically shaped."

EZ Dock argues that the presence of the term "generally" in the phrase "generally frustoconically shaped pylon" means that "the shape of the pylon of the floating dock is not specifically, totally, or only frustoconical in shape." (EZ Dock Initial Markman Brief at 13 (emphasis in original).) According to EZ Dock, the pylon may have some characteristics of a frustoconical shape, but also have other characteristics which are not frustoconical. "Frustoconical" means "of the shape of a frustrum of a cone." In the context of a cone, a "frustrum" is ordinarily "the part of a solid . . . between two parallel planes cutting the solid, especially the section between the base and a plane parallel to the base," American Heritage Dictionary of the English Language (4th ed. 2000), or "the basal part of a solid cone . . . formed by cutting off the top by a plane parallel to the base," Merriam Webster's Collegiate Dictionary (10th ed. 2002). The top of a frustrum, therefore, is ordinarily parallel to its base and is flat.

The specification and Figure 3 from the '055 patent provide some insight into what a "generally frustoconically shaped pylon" includes. The specification indicates that it is desirable for the pylons to have an arcuate top; i.e., a top that is "curved like a bow," Merriam Webster's Collegiate Dictionary (10th ed. 2002), or "having the form of a bow; curved," American Heritage Dictionary of the English Language (4th ed. 2000). The arcuate top is illustrated in Figure 3. Upon consideration of the intrinsic evidence and Federal Circuit cases construing the term "generally," the Court concludes that a "generally frustoconically shaped pylon" is a structure that, for the most part, is in the shape of the frustrum of a solid having (1) a closed plane base and (2) a surface formed by line segments joining every point of the boundary of the base to a common vertex.

3. "Said end portion is formed into a generally hemispherical shape." Consistent with the claim language and its ordinary meaning, 14 and the specification, 15 the Court construes "said end portion is formed into a generally hemispherical shape" to mean that "the tubular body ends are formed, for the most part, by spherical segments."
Ethicon contends that the phrase "generally hexagonal" means a staple pocket with "six major faces," similar to those shown in Figures 1, 2 or 3 of the patent. U.S. Surgical contends that the inventor's lexicography establishes that "generally hexagonal" means "octagonal." U.S. Surgical also contends that the claim term includes a limitation on both the shape (octagon) and the length of the parallel sides (conforming to the staple size).

Ethicon argues that "generally hexagonal" as used in the claim does not mean a mathematically precise hexagon. Ethicon notes that the patent labels the prior art staple pockets as "generally rectangular" (Col. 1, lines 32-33), even though they are illustrated as having more than four sides (see Figures 2-a and 3-a). The patent improvement of adding the four tapered sides resulted in a pocket shape described as "generally hexagonal" because there are six major sides easily seen. The two smaller parallel sides are very tiny (as wide as a human hair, as long as .011 inches). The viewer thus perceives a "generally hexagonal" shape. (The Patent Examiner's reasons for allowance of the claims concludes that "the prior art does not disclose a pocket having a hexagonal shape as claimed" which also lends some support to Ethicon's argument. See Doc. 52, Exhibit 2, File Wrapper for the '823 Patent, at p. 20.)

U.S. Surgical responds that the specification and all figures clearly describe an octagon. The patent's claimed improvement avoids the close tolerances of the prior art end pockets, as illustrated in Figures 2-a and 3-a. Those prior art pockets actually had 12 sides, and so were not "rectangular" as described in the patent. U.S. Surgical posits that to accept Ethicon's definition would result in an unbounded claim: a pocket could have many more than six sides and still be "generally" hexagonal, and infringe the patent.
reconcile this contradiction is to construe the drafter's use of "hexagon" to mean "octagon."

U.S. Surgical's argument contravenes two basic claim construction principles. First, as noted above, the Court may not limit construction of a claim term to the preferred embodiment or the specification, absent express language so limiting the claim. There is nothing in the specification expressly limiting the invention to an eight-sided pocket. Second, U.S. Surgical's proposal fails to explain the drafter's use of "rectangular" and "generally rectangular" to describe prior art staple pockets that are clearly not four-sided rectangles. This phrasing supports Ethicon's proposed construction, that it is the "major" faces of the pocket that are being described in the phrases "generally rectangular" and "generally hexagonal."

As to the question of the length of the parallel sides: Ethicon rejects U.S. Surgical's construction requiring the parallel sides to approximate the length and width of the unformed staple. The prior art descriptions in both the specification (Col. 1, lines 26-31) and the preamble of Claim 1 (Col. 4, lines 3-8) describe the two sets of parallel sides as conforming to the size of the staple. Ethicon argues that adding the tapered sides necessarily modifies the relationship between the size of the staple and the size of the parallel sides. Ethicon also notes that U.S. Surgical's construction would exclude the preferred embodiment, which explicitly states: "Of course, the length of the first parallel sides and tapered sides may have any dimension required to fit the surgical staple." (Col. 3, lines 18-20.)

U.S. Surgical responds that a Jepson claim preamble acts as a claim limitation unless expressly modified by terms describing the improvement. Claim 1's preamble limits the length of the first parallel sides ("generally corresponding to the length of said unformed staples"). There is nothing in the improvement language stating that the length of those parallel sides would change, only that the tapered sides are added.

U.S. Surgical's proposed construction is unduly restrictive. It is true that the body of Claim 1 describing the improvement of tapered sides does not expressly modify the length of the first parallel sides after the tapered sides are added to the pocket. But the specification and the Figures clearly show that the staple is generally longer than the first parallel side. Indeed, that appears to be the essence of the "self-guiding feature" of the invention. Moreover, U.S. Surgical's construction would directly contradict the explicit description of the preferred embodiment, which is rarely if ever a proper construction of a claim.

The Court therefore construes the term "a generally hexagonal shape" to mean that the staple pocket is perceived by a viewer to have six major sides that can have varying lengths. This construction does not imply that "major" has any functional meaning, but is limited to a visual perception of the pocket's general shape.

1. "Spatially aligned so as to be generally in phase with one another."

Consistent with the claim language and its ordinary meaning 11 and the specification, 12 the court construes this limitation to mean "the bands generally undulate at the same rate, so as to run parallel to each other."

End Footnotes

11 D.I. 230, Ex. 41 (defining "align" as "to arrange in a line or so as to be parallel"); D.I. 280, Ex. 10 (defining "in phase" as "in a synchronized or correlated manner").

12 '406 patent, col. 4, ll. 10-15.
The parties submit two varying constructions of this claim language. Alltrade asserts that this claim language teaches an elliptical shank. Alltrade contends that "oblong" means "something deviating from a square or circular form through elongation." Such a shape includes an ellipse, but also includes other elongated shapes deviating from a square, such as a rectangle. Alltrade further asserts that the ordinary meaning given to "major axis" according to Webster's Dictionary is "the axis passing through the foci of an ellipse." Opposition, Ex. F. Webster's similarly defines "minor axis" as "the chord of an ellipse passing through the center perpendicular to the major axis." Id. Therefore, Alltrade's construction would interpret this claim limitation as requiring an elliptical cross-section.

Olympia's proposed construction is broader. Olympia asserts that a "major axis" may exist in several shapes that are not elliptical. Reply, at 6. As an example, Olympia argues that an "egg-shape" might have a major and minor axis, but is not elliptical. Olympia's construction requires that the cross-section define orthogonal major and minor axes and that "at least one convex arcuate surface is provided on edge(s) of the shank along the major axis to enable comfortable gripping of the shank while enabling application of significant pulling forces on the shank without resulting pain, discomfort or injury to the hand of the user." Motion, at 10. Therefore, Olympia's construction includes an elliptical cross-section, as well as many other possible rounded-corner cross-sections. Reply, at 7. At oral argument Olympia also asserted that "oblong" required the cross-section to have a "stretchable" appearance. Olympia also asserted that any "stretchable" cross-section having a major and minor axis would be oblong for the purposes of this claim. The Court notes that under this construction, the word "oblong" is without meaning. A cross-section with a major and minor axis encompasses all non-symmetrical cross shapes such as a circle or hexagonal cross-section. If that construction is given to major and minor axis, the word oblong does not have meaning. In this Claim language, major and minor axis modify the term "generally oblong" and that term must be given meaning under claim construction principles.

In construing this Claim, the Court finds the Claim language at issue unambiguous. The Court finds that Alltrade's construction is consistent with the intrinsic evidence as well as the ordinary meaning of the terms "generally oblong," as well as the mathematical terms major and minor axis. The Court therefore holds that the cross-section taught by Claim 19 is elliptical.

2 The Court notes that the parties submitted the declarations of J. Michael McCarthy and Ralph Engdahl in support of their respective claim constructions. The Court did not rely on expert testimony to interpret the patent claims as the Court finds that the claims are unambiguous in the light of the intrinsic evidence. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 (Fed. Cir. 1996). At oral argument, Olympia asserted that the Court may have improperly relied on the proposed claim construction of its expert and therefore improperly relied on extrinsic evidence. The claim construction principle guiding courts to rely on intrinsic evidence certainly does not prohibit reading the parties’ proposed constructions and argument directing the Court to intrinsic evidence supporting that construction.

The disputed phrase "generally oblong cross section" must be read in the context of the entire claim as part of "an elongate shank having a generally oblong cross section … said shank having a major axis within said common plane greater than a minor axis along a direction transverse to said common plane." Id. at col. 8, ll. 37-38, 48-50. Simplified, this means that the cross section of the shank is "generally oblong" with a major axis in the plane of the hook, shank, and chisel, and a minor axis transverse or perpendicular to that plane. "Generally" is understood to mean "in a general manner" or "in disregard of specific instances and with regard to an overall picture" or "on the whole." Webster's Third New International Dictionary 945 (3d. ed 1993). "Oblong" is understood to mean "deviating from a square or circular form through elongation." Id. at 1557. "Generally oblong" is therefore a shape that is longer in one direction than the other, but not necessarily true to a specific geometrical shape, i.e., not a perfect oval or rectangle.
The district court interpreted the phrase in conjunction with the terms "major axis" and "minor axis," as used in the particular geometrical shape of an ellipse. When defined in reference to an ellipse, a "major axis" is "the axis passing through the foci of an ellipse," id. at 1363, and a "minor axis" is "the chord of an ellipse passing through the center perpendicular to the major axis," id. at 1440. We do not think this strict geometrical meaning should be assigned to the claims. The terms "major axis" and "minor axis" in the claim serve to orient the "generally oblong" shape with respect to the common plane of the hook, shank, and chisel. In the claim, "major axis" and "minor axis" are simply used to refer to the dimensions of the shape where a "major axis" is the longer dimensional cross section and the "minor axis" is the shorter dimensional cross section. The terms are used this way in the specification, which for example, refers to the minor axis as the "smaller of the dimensional cross sections." ‘553 patent, col. 4, ll. 43-44. The terms are used to denote the relative dimensions of the orthogonal cross sections.

Interestingly, the terms "ellipse" and "elliptical" do not appear in the patent claims or specification. "Oblong" appears in the specification only once when the patentee states that "by providing an oblong or oval cross sectional dimension for the shank, as opposed to a sheet of flat metal or hex cross section shank, the user can apply significantly greater forces to the shank without incurring discomfort or pain, or possible injury." '553 patent, col. 6, ll. 27-32. Because the patentee requires an arcuate surface on the edge of the shank along the major axis to provide the comfortable grip described in the patent, a rectangular shaped cross section, like that of a flat bar, is not included in claim 19. The cross sectional shapes covered by the claim could be similar to ovals or rounded rectangles, or other geometrical shapes that have been elongated or stretched.

The use of the terms "major axis" and "minor axis" does not limit the shank to only elliptical cross sections. However, the use of the terms does limit the orientation of the shank with respect to the common plane of the tool and limits the shank cross section to a shape that has a longer dimension in the direction of the common plane and a shorter dimension transverse or perpendicular to the common plane of the tool. The district court therefore erred when it defined the shank cross section to be elliptical. This error, however, is harmless to the denial of the preliminary injunction motion.

a. "Generally Parallel"

Claims 38 and 50 of the '015 patent as well as claims 30 and 43 of the '713 patent require "a bottom face which is generally parallel to the top face." '015 patent, col. 18, ll. 22-23; id. at col. 16, ll. 42-43; '713 patent, col. 14, ll. 20-21; id. at col. 15, ll. 53-54 (emphasis added). Because "[parallelism] is a mathematical concept that is either true or false," Anchor, 252 F. Supp. 2d at 853, the district court interpreted "generally parallel" to be limited to the ordinary meaning of "parallel." Id. at 852. This was error.

While the term "generally parallel," as the district court noted, is mathematically imprecise, we note that words of approximation, such as "generally" and "substantially," are descriptive terms "commonly used in patent claims to avoid a strict numerical boundary to the specified parameter." Ecolab, Inc. v. Envirochem, Inc., 264 F.3d 1358, 1367 (Fed. Cir. 2001) (quoting Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1217 (Fed. Cir. 1995)); see, e.g., Andrew Corp v. Gabriel Elecs. Inc., 847 F.2d 819, 821-22 (Fed. Cir. 1988) (noting that terms such as "approach each other," "close to," "substantially equal," and "closely approximate" are ubiquitously used in patent claims and that such usages, when serving reasonably to describe the claimed subject matter to those of skill in the field of the invention and to distinguish the claimed subject matter from the prior art, have been accepted in patent examination and upheld by the courts). And, while ideally, all terms in a disputed claim would be definitively bounded and clear, such is rarely the case in the art of claim drafting. In this case, exact parallelism is sufficient, but not necessary, to meet the limitation of the claim term "generally parallel."

It is undisputed in this case that ordinarily, "parallel" means "everywhere equal distant." Anchor, 252 F. Supp. 2d at 852 (citing Merriam-Webster Collegiate Dictionary 842 (10th ed. 1998)). Additionally, the relevant definition of "generally" is "in disregard of specific instances and with regard to an overall picture; on the whole, as a rule." Webster's Third New International Dictionary 945. Because the claim language itself expressly ties the adverb "generally" to the adjective "parallel," the ordinary meaning of the phrase "generally parallel" envisions some amount of deviation from exactly parallel. It is the claim limitation, as a whole, that must be considered in claim construction. Apex, 325 F.3d at 1374.
The written description does not specify any special definition for the terms "generally," "parallel," or the phrase "generally parallel." See, e.g., '015 patent, col. 5, ll. 5-6 ("The top surface 26 generally lies parallel to the bottom surface 28."); '713 patent, col. 5, ll. 10-11 (same). Moreover, nothing in the prosecution history of the '015 patent family clearly limits the scope of "generally parallel" such that the adverb "generally" does not broaden the meaning of parallel. Accordingly, we hold that the phrase "generally parallel" envisions some amount of deviation from exactly parallel.

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B. "Generally Parallel"

The claims also require that the top sizer have "a generally parallel pair of opposed sides and a generally parallel pair of opposed ends" Exh. 510, col. 7, lines 7-9. A&E argues that the term parallel is an absolute term that describes two lines or surfaces which are always equidistant and never meet, and that the modifier "generally," therefore, cannot be reconciled with the term parallel. Additionally, A&E argues that its sides and ends are not "parallel" because they are tapered, meaning that each side is angled at one half of one degree. Finally, A&E argues that because the ends of its hanger are semi-circular, its ends are not parallel.

The task of determining the construction of the term "generally parallel" has been eased by a recent Federal Circuit decision involving that exact term. See Anchor Wall Sys., Inc., v. Rockwood Retaining Walls, Inc., 340 F.3d 1298 (Fed. Cir. 2003). In Anchor Wall Systems, the district court had held "that modifiers, no matter how strong, cannot alter the meaning of a claim term describing a mathematical concept so that the concept would be false if read to describe the accused device." Id. at 1310 (quoting Anchor Wall Sys., Inc., v. Rockwood Retaining Walls, Inc., 252 F. Supp. 2d 838, 852 (D. Minn. 2002)). Accordingly, the district court effectively ignored the adverb "generally" and held that "[parallelism] is a mathematical concept that is either true or false." Id. (quoting Anchor Wall Sys., 252 F. Supp. 2d at 853). The Federal Circuit, however, reversed that holding, finding that although, in the purest sense, "generally parallel" is a mathematical misnomer, the use of "words of approximation, such as 'generally' and 'substantially' are descriptive terms 'commonly used in patent claims to avoid strict numerical boundaries to the specified parameter.'" Id. at 1310-11 (quoting Ecolab, Inc. v. Envirochem, Inc., 264 F.3d 1358, 1367 (Fed. Cir. 2001) (internal quotations omitted)). Accordingly, the court found that "the phrase 'generally parallel' envisions some amount of deviation from exactly parallel." Id. at 1311.

The holding in Anchor Wall Systems is particularly applicable in this case where the term "generally parallel" has a meaning to those skilled in the relevant art of injection molding (the method of manufacturing for the plastic hangers). As was made abundantly clear at trial, drafting or tapering (molding the plastics with a slight angle) is a commonly utilized technique to make it easier to remove the plastic from the mold within which it is made, and it is readily understood as such by those skilled in the relevant art. Indeed, except when absolute parallelism is required, a slight draft is common and properly expressed as "generally parallel."

A&E argues, nonetheless, that the term "generally parallel" does not provide sufficient guidance as to the scope of the claims, thus rendering the claims indefinite. However, the term "generally parallel" does not exist in a vacuum. As explained by the former Production Manager of Spotless, the term "generally parallel" would arise in the field of injection molding:

if you wanted to specify something that was precisely parallel, you would go to some pain, some length to say this has to be exactly parallel. Otherwise the term generally parallel or substantially parallel would allow for there to be draft angles so that the features were not exactly parallel.

Tr. at 595-596.

The term "generally parallel" is, therefore, construed to encompass a deviation from exactly parallel that is commonly provided in order to assist in removing the plastic from the mold. Here, the draft angle of one half of one degree 16 in the A&E top sizer existed to facilitate its removal from the mold. See Tr. at 773-73. Accordingly, A&E's hanger, the sides of which contain a draft angle of one half of one degree literally infringes the "generally parallel" limitation. 17
16 For context, if the height of the top sizer is one inch, an angle of one half of one degree would cause each side of the top sizer to be out of parallel by approximately 8 thousandths of an inch. See Tr. at 369. Accordingly to the expert testimony, the width of a human hair is approximately 4 thousandths of an inch. See id. at 973.

17 A&E argues that the ends of its top sizer are not generally parallel because the ends of its top sizer are semi-circular. This argument confuses the parallel limitation with the planar limitation discussed below. As Spotless correctly points out, in ordinary usage, two non-flat surfaces can be parallel so long as they are equidistant - or in this case approximately equidistant. See Tr. at 369.

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Additionally, the parties dispute several terms in relation to the '322 patent's mention of "rows of gathers," "fold lines," and "generally parallel," in various claims. 6 Perfect Fit's contentions, to which Louisville Bedding objects, center around Claim 29's description of one step as "attaching to said piece of material elastic material for pulling said piece of material into a plurality of rows of gathers extending in a longitudinal direction of the skirt means and having fold lines running generally parallel to each other in said downward direction, perpendicular to said longitudinal direction." Perfect Fit again argues that the elastic material must extend substantially over the height of the sidewall, asserting that it would not otherwise accomplish its function of pulling the material into rows of gathers. Moreover, the defendant contends that (1) the rows of gathers must themselves be spaced substantially over the width of the skirt and (2) the rows of gathers must be straight and discrete (this latter contention focused on the term "generally," which precedes "parallel" but not "perpendicular" in the claim).

6 During Louisville Bedding's presentation, which preceded that of Perfect Fit, the plaintiff called attention to and took issue with various proposed interpretations of claim terms offered by the defendant in answers to interrogatories; rather than attempting to compose a glossary for every disputed word in the patent, the court will focus on the thrust of Perfect Fit's contentions in its actual presentation. This is in accordance with Judge Simpson's view of claim construction as ascertaining each element of a claim, as it exists in dynamic operation with all the other elements of the claim.

The court finds the language of Claim 29 to be unambiguous; therefore we decline to adopt the defendant's additions. There is no need to read into the claim language the requirement that the elastic material be spaced substantially over the height of the sidewall. 7 Additionally, the court accords "generally parallel" its plain meaning; in the context of gathers, there is no requirement that they be "mathematically" parallel, nor does the omission of "generally" from the notation that they are oriented perpendicularly to the longitudinal direction require the fold lines of the gathers to be precisely straight or mathematical. 8

7 The specification, as noted by the plaintiff, states that virtually any number of rows of elastic cords may be used; if the defendant is concerned that this language will be construed to include a product which has only one such row, the concern is alleviated by requirement of rows (plural) of gathers which are perpendicular to the longitudinal direction of the skirt.

8 The defendant made much of the fact that the drawings of the patent show mathematically parallel fold lines. The court notes that this may be more a consequence of the medium utilized for the illustration (presumably, a computer-generated graphic).
In contrast to the asserted claims just discussed that only recite "connecting elements," independent claim 12 and dependent claims 13-15, 17, 18, and 20 of the '154 patent specifically claim "a plurality of generally parallel connecting elements." '154 patent, col. 9, l. 25 - col. 10, l. 17. The court construed the phrase "generally parallel connecting elements" to require the described connecting elements to run generally parallel both to each other and to the stent's longitudinal axis. Adv. Cardiovascular I, slip op. at 25-27. Based on this construction, the court granted summary judgment of no literal infringement of claims 12-15, 17, 18, and 20 of the '154 patent because it found that the connecting elements on the opposite sides of the NIR stent are not generally parallel to each other because they curve in opposite directions. Adv. Cardiovascular III, slip op. at 8. The court also noted that the connecting elements of the NIR stent are not parallel to the stent's longitudinal axis because, while the longitudinal axis is straight, the connecting elements are curved. Id. at 9. The court also granted summary judgment of no infringement under the doctrine of equivalents, finding that ACS had failed to present any evidence to support its contention that non-parallel connecting elements are insubstantially different from the claimed generally parallel connecting elements. Id. 10-12.

ACS argues that claims 12-15, 17, 18, and 20 of the '154 patent only require the connecting elements to be generally parallel to each other, not to the stent's longitudinal axis. ACS asserts that, under this construction, the NIR stent's connecting elements meet the "generally parallel" limitation because, while curved, they are still parallel to each other. Scimed responds by arguing that the district court properly construed "generally parallel connecting elements" to require the connecting elements be parallel both to each other and to the stent's longitudinal axis. Relying upon this construction, Scimed asserts that the NIR stent cannot infringe because its connecting elements are curved, making them non-parallel to each other and to the stent's longitudinal axis.

We conclude that the district court erred in construing claims 12-15, 17, 18, and 20 of the '154 patent as requiring connecting elements that run parallel to the longitudinal axis of the stent. These claims simply recite "generally parallel connecting elements." See, e.g., id. at col. 9, l. 25. The claims contain no language explicitly requiring the connecting elements to be parallel to the longitudinal axis of the stent. In addition, as noted above in Part II, there is no support for such a construction in the '154 patent's specification or drawings.

Scimed, however, points to the prosecution history. It argues that the inventors distinguished their invention over the disclosure of the Palmaz '417 patent on the ground that the Palmaz '417 patent disclosed connecting members that were not parallel to the longitudinal axis of the stent. The prosecution history does not support this argument.

It is important to recognize exactly what the inventors stated with respect to the Palmaz '417 patent and their invention, as disclosed in the '986 application:

The '417 Palmaz patent discloses connector members 100 which are preferably disposed in a "non-parallel" relationship with respect to the longitudinal axis of adjacent grafts or prosthesis 70. . . . As seen in Figures 7-10 of Palmaz, each of the connector members 100 and 102 are disposed in a non-parallel relationship with respect to the longitudinal axis of the adjacent prosthesis 70.

* * *

The independent claims of the present invention recite "a plurality of generally parallel connecting elements" which clearly distinguish over the preferred "non-parallel" connecting members 100 of the '417 Palmaz patent.

Figures 7, 9, and 10 from the Palmaz '417 patent are as follows:

GET DRAWING SHEET 3 OF 3.
axis of what would be the "stent" in Palmaz, which is designated by the number 70'. See Palmaz '417 patent col. 12, ll. 15-17 (stating that "graft or prosthesis, 70' is illustrated as including three grafts, or prostheses, 70, flexibly connected to one another by connecting members 100"). Rather, they argued that connecting members 100 and 102 were in a non-parallel relationship with "graft" or "prosthesis" elements 70. In other words, the inventors were not saying that their invention was distinguished from the Palmaz '417 patent because Palmaz had connecting members that were not parallel to the longitudinal axis of the stent, which, by inference, their invention did. Rather, they were saying that their invention, unlike the Palmaz '417 patent, see connecting members 100 and 102 in Figures 7, 9, and 10 above, had connecting members that were in parallel alignment with the longitudinal axis of prosthesis 70. Thus, the inventors neither stated nor suggested during prosecution that their invention was limited to a stent in which the connecting members were in parallel alignment with the longitudinal axis of the stent. 7

7 After the statements cited above were made, the examiner responded that "there is no limitation of the claim which requires the connector members to be parallel to the longitudinal axis of the stent; only that the connector members are 'generally parallel'." This response by the examiner further supports our conclusion that the inventors were not defining "generally parallel connecting elements" to mean connecting elements that are parallel to the stent's longitudinal axis.

1. Generally parallel to the longitudinal axis

I conclude that the term "generally parallel to the longitudinal axis" as used in claims 28, 53 and 57-59 of the '978 patent does not need construction because its plain and ordinary meaning is easily discernible from the claim language. Nothing in the claim language or the specification requires a special definition. Therefore, the plain and ordinary meaning controls. Northern Telecom Ltd., 215 F.3d at 1295. Nonetheless, I note that defendant's proposed construction would not fit into the ordinary meaning of the term.

Defendant contends that a proper construction of the term should include the limitation "without rotation in a direction perpendicular to that axis." It is helpful to read the term in context, which includes the following language:

one of said mount frame and said snowplow frame having first and second arms and the other of said mount frame and snowplow frame having first and second receivers, said first and second receivers receiving said first and second arms, respectively upon relative movement therebetween in a direction generally parallel to the longitudinal axis of the vehicle.

E.g., '978 pat., col. 10, ins. 15-21; col. 14, ins. 8-14. "Generally parallel to the longitudinal axis" describes the direction of movement between the first and second arms and first and second receivers of two different frames that are being connected. The specification provides an example of this purpose of this movement:
For both attaching the snowplow assembly 12 to and detaching the snowplow assembly 12 from the mount assembly 14 a force should be applied to the lift frame 22, such as on traverse element 44, in the direction of the mount assembly 14 as latch lever 160 is rotated. Such movement facilitates alignment of the latch pins 102, 104 with the holes 94 in the arms 92. Id., col. 7, Ins. 21-27. Thus, the movement in a direction "generally parallel to the longitudinal axis" of the vehicle is to facilitate alignment of the latch pins with the holes in the arms so that the mount frame and snowplow frame can be connected.

Neither the claim language nor the specification permits the inference that "generally parallel to the longitudinal axis" means "without rotation in a direction perpendicular to that axis." First, the claim language uses the word "generally" which leaves open the possibility that the movement will occur in a direction other than perfectly parallel to the longitudinal axis. Second, it would defeat the purpose of the invention to construe the term as excluding any movement in a direction perpendicular to the longitudinal axis of the vehicle. In aligning the latch pins with the arm holes, it is possible that if the arm holes were slightly below the latch pin alignment, force on the snowplow assembly could tilt the arms upward, that is, perpendicular to the longitudinal axis of the vehicle, while moving the arms into the receivers to align the holes with the pins. Finally, defendant fails to point to any language that prohibits perpendicular movement. Thus, the claim language is broad enough to include some movement in a direction perpendicular to the longitudinal axis of the vehicle. Defendant's proposed meaning would prevent such movement, making it improper.

A. Claim Construction

When a claim is construed, claim terms should generally be given their "ordinary and customary meaning." Phillips v. AWH Corp., 415 F.3d 1303, 1312-14 (Fed. Cir. 2005). The meaning of a claim is determined by using intrinsic evidence, which includes the claims, the specification, and the prosecution history and by using extrinsic evidence, which includes dictionaries. Id. at 1319. However, extrinsic evidence in determining the meaning of a claim may be less reliable than intrinsic evidence: "extrinsic evidence may be useful to the court, but it is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of intrinsic evidence." Id. This court has cautioned that "heavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification." Id. at 1321.

In the present case, the proper claim construction based on the teachings in Phillips begins with the claim language. First, the claim language itself limits and describes "surface" by including the language "generally planar." Mr. Byrne argues that a "generally planar surface" exists on the accused device because "a plurality of points on the surface of the wire edge guide lie in a plane." However, as Black & Decker points out, the claims do not cover a "surface that has two or more points in a plane," but recite only a "generally planar surface." Further, the '815 patent teaches that the purpose of the "generally planar surface" is as a flail stabilizer, and this flail stabilizing purpose is achieved when the surface itself is "generally planar." Thus, based on the language of the claims, the "surface" claimed in the '815 patent must be "generally planar" itself and not merely have points lying in a plane.

Second, the specification of the '815 patent further supports the claim language that the surface itself is "generally planar." In Figure 2, the "circumferential lip" (21) is depicted as a solid, two-dimensional surface. The exact lip width is uncertain, since it is determined relative to an undefined feed increment. Specifically, the written description describes the ideal lip width as being "less than the feed increment of the trimmer head so that the flail tip would wear away before that portion of the flail traveling adjacent the lip would wear through." However, the solid, two-dimensional surface of Figure 2 is sufficient to support the conclusion that the surface must be "generally planar" itself and not merely lie in a plane. In other words, the surface must be flat and continuous and not de minimis.

Finally, the prosecution history described the circumferential lip as "two-dimensional in nature" and disclaimed a "narrow" circumferential lip in an affidavit to overcome the Bartholomew patent. Thus, the claim language "generally planar surface" of the "circumferential lip" should be construed as referring to a two-dimensional surface that is not narrow but has a width less than the feed increment of the trimmer head and is itself generally planar.
The district court erred in construing "surface" because it gave too much preliminary weight to dictionary definitions without relying on intrinsic evidence, as cautioned against in Phillips. The court should have applied the teachings of Phillips and should have considered the claims, the specification, the prosecution history, and if necessary the dictionary when it construed the claims.

Mr. Byrne complains that the district court erred by considering the accused device when construing the claims. However, there is a distinction between performing claim construction and deciding what should be construed. A court may consider the accused device to determine what part of the claim must be construed. Exigent Tech. v. Atrana Solutions, Inc., 442 F.3d 1301, 1309 n.10 (Fed. Cir. 2006). But, the court cannot construe claims based on the accused device. Id. The district court in this case did not err when it considered the accused device to determine that it should construe the claim term "generally planar surface."

A. "Generally polyhedron shaped"

Plaintiff argues that the claim term "generally polyhedron shaped" requires only that the enclosure be substantially or approximately polyhedron shaped. Plaintiff asserts that the phrase should be interpreted with reference to the enclosure in an empty state, rather than in a filled state. The enclosure is meant to be filled with flexible material, plaintiff argues, and the use of the term "generally" contemplates that the enclosure's shape is malleable and will change as it is used. Thus, the polyhedron's faces need not be straight, but can be curved.

Plaintiff refers the Court to the '986 patent specification, which describes the flexible enclosure as having "a general polyhedron shape formed by the substantially planar surfaces 47-52." Patent, col. 3, lines 56-57. The specification also explains that the material utilized within the enclosure must be able to "withstand repeated cycles of compression . . . and expansion of the pad structure." Patent, col. 4, lines 6-16. Finally, plaintiff notes that the prosecution history refers to a device patented by Mengshoel that the patent examiner described as "of a generally polyhedron shape [although it] is not an exact polyhedron due to it's [sic] curved shape." Pros. History, page 2, para. 3. Plaintiff claims that the Mengshoel reference shows that the patent examiner recognized that a polyhedron could encompass curved regions, as long as the overall shape is still a polyhedron.

Defendant argues that the shape of the enclosure must be determined when the enclosure is filled, not empty. Defendant argues that a polyhedron by definition has straight sides and flat faces and claims that the word "generally" was intended only to provide for slight deviation from a mathematically perfect polyhedron and cannot be used to "entirely vitiate" the meaning of "polyhedron shaped." Joint Memorandum regarding Claim Construction at 6-7. Defendant asserts that the Mengshoel reference indicates how the patent examiner viewed a polyhedron, but not what the patentee understood the term to mean.

The claim language refers to "a generally polyhedron shaped enclosure," and describes the properties of that enclosure, including the following: "the flexible enclosure being substantially filled with a flexible, resilient material." Patent, claim 12, col. 8, lines 9, 29-30.

Claims "must be read in view of the specification, of which they are a part." Vitrionics, 90 F.3d at 1582 (citations omitted). The specification, like claim 12, refers to a "flexible enclosure" which is "substantially filled, and preferably completely filled, with a flexible, resilient material." Patent, col. 3, lines 59-60. The specification also states that the pad material "exerts a force which separates upper and lower legs . . . and thus relieves stress upon knee." Patent, col. 3, lines 62-64. An empty enclosure could not perform this function. It is "entirely proper to consider the functions of an invention in seeking to determine the meaning of particular claim language." Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1318 (Fed. Cir. 2005), citing Renishaw PLC v. Marposs Societa per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998).

The Court finds that the claim's references to the enclosure contemplate the enclosure in a substantially filled state, not in an empty state. The intended function described in the specification supports this conclusion. Accordingly, the Court will interpret the language of claim 12 with reference to the enclosure in a filled state, rather than an empty one.
The claim's language, specification, and prosecution history do not make clear the definition of polyhedron. Accordingly, the Court will consult a dictionary to determine the ordinary and customary meaning of "polyhedron." A polyhedron is "a solid formed by plane faces." Webster's Ninth New Collegiate Dictionary (1983). A plane is defined as "a: a surface of such nature that a straight line joining two of its points lies wholly in the surface; b: a flat or level surface." Id. A polyhedron thus by definition must contain plane faces— that is, flat or level faces. "Generally" and "substantially" are words of approximation, "descriptive terms" used to "avoid a strict numerical boundary to the specified parameter." Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1310-11 (Fed. Cir. 2003), quoting Ecolab, Inc. v. Envirochem, Inc., 264 F.3d 1358, 1367 (Fed. Cir. 2001).

The Court finds that a "generally polyhedron shaped enclosure" means that the overall shape of the enclosure, when in a substantially filled state, must be that of a polyhedron, and the faces of the polyhedron need not be strictly or perfectly flat or planar, but must be generally flat or planar.

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Generally predetermined acceptable limit

This term is used in Claim 30 of the '977 patent, which is dependent on Claim 29. Claim 29 provides, in essence, a means for restricting angular distortion of the housing (caused by wet compression) to a "generally predetermined acceptable limit that prevents damage to the compressor." Claim 30 relates to the apparatus described in Claim 29 and contains the following:

\[ \text{wherein said means for controlling angular distortion of the housing comprises means for insuring a sufficiently uniform distribution of liquid water in the working fluid to limit angular deformation of the housing to a generally predetermined acceptable limit that prevents damage to the axial-flow multistage compressor.} \]

This apparatus is described in the specifications at column 18 of the '977 patent. Here, it is explained that the amount of deformation can be measured in relation to the particular mass flow increment, thus allowing the operator to control deformation within a generally predetermined acceptable limit. The "generally predetermined acceptable limit" therefore refers to a limit of angular deformation which has been generally recognized by the manufacturer or operator in advance of operating the turbine, against which the actual deformation caused by wet compression is measured in order to prevent damage to the compressor.

Defendants' contention that the amount of acceptable distortion must have been specifically determined by calculation or measurement is not supported by the evidence.

The Court therefore construes this term to mean:

A boundary, generally recognized or appreciated by the manufacturer or operator in advance of operating the gas turbine.

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DISCUSSION

Norgren filed a complaint with the ITC in which it alleged violations of section 337 in the importation into the United States, the sale for importation, and the sale within the United States after importation of certain SMC connecting structures that allegedly infringe claims 1-5, 7, and 9 of the '392 patent. The ALJ held an administrative trial, received post-hearing briefing from the parties, and then issued an initial determination in which he concluded that there was no violation of section 337. More specifically, the ALJ found that the accused SMC connecting structures do not infringe the asserted claims because they do not meet the claim limitation of "a four-sided generally rectangular clamp adapted, in its operative clamping position, to engage, in parallel relationship with one another, the pair of ported flanges." The ALJ also determined that the asserted claims of the '392 patent are nonobvious. The ITC decided not to review the initial determination and
terminated the investigation with a finding of no violation.

Norgren appeals, challenging the ALJ's claim construction. Both the ITC (as appellee) and SMC (as intervenors) respond that the ALJ's finding of noninfringement was correct because the underlying claim construction was correct. SMC also argues that the ALJ erred in concluding that the asserted claims are not invalid for obviousness. We have jurisdiction under 28 U.S.C. § 1295(a)(6).

We review claim construction de novo. Gemstar-TV Guide Int'l, Inc. v. Int'l Trade Comm'n, 383 F.3d 1352, 1360 (Fed. Cir. 2004); see also Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1455-56 (Fed. Cir. 1998) (en banc). Independent claim 1 of the '392 patent recites as follows:

1. Connecting structure for contiguously connecting together a pair of fluid-flow elements, each fluid flow element including a generally rectangular ported flange so as to define a pair of ported flanges associated with the fluid-flow elements, said connecting structure comprising:

   a four-sided, generally rectangular clamp adapted, in its operative clamping position, to engage, in parallel relationship with one another, the pair of ported flanges, one of said sides of the clamp being pivotally mounted so that said one side can be pivoted out of said operative clamping position in order to permit reception of said flanges into the clamp and then pivoted back into said operative clamping position,

   sealing means for establishing fluid-tight communication between the respective ports formed in said flanges, and

   locking means for releasably locking said one side in said operative clamping position, in which position the clamp urges the flanges towards one another thereby establishing together with said sealing means, said fluid-tight communication between said ports.

Because this claim recites a "clamp adapted . . . to engage . . . the pair of ported flanges," the parties agree that we must construe "generally rectangular ported flange," which appears in the preamble of claim 1, insofar as the flange is configured to permit engagement by the clamp. The ALJ explained, "whether or not the flange on an FRL must have two or four . . . rims is the salient issue to be determined." The ALJ stated:

the word "flange," as used in the claims of the '392 patent, is the structure that is received into the claimed clamp, and further that "a generally rectangular ported flange" is a flange of rectangular shape with projections on all four sides and a hole in the middle that is used as a port.

The ALJ further explained:

In view of the fact that the clamp must be four-sided, and the clamp is specially adapted to engage the generally rectangular ported flanges of the FRLs, it is reasonable to conclude that each rectangular flange is engaged on all four of its sides by the four-sided clamp. Thus, the clamp is adapted to engage flanges with four projecting rims.

Norgren argues that the ALJ's claim construction is erroneous for requiring that each flange has projections (or projecting rims) on all four sides. 1 We agree.

1 In its briefs, Norgren also maintained that the ALJ's claim construction incorrectly requires that the entire flange be received into the clamp. At oral argument, however, counsel for Norgren and counsel for SMC conceded that for the SMC accused structures, flanges do not extend beyond the clamp. Oral Argument Tr. 9:07-11:46 (Norgren), 35:08-36:47 (SMC). In other words, the accused SMC connecting structures permit reception of two flanges entirely into the clamp. Accordingly, we do not address this issue.

Nothing in the claims, written description or prosecution history requires four projecting rims. The claims of the '392 patent...
do not recite the terms "rim" or "projection." Indeed the term "rim" does not appear anywhere in the '392 patent. The specification refers to two items as projections--the hook attached to the rectangular spacer and a ridge in another embodiment of the u-shaped member--neither of which are present on the flanges or relate to the flanges in any way. See '392 patent col.2 l.62, col.3 l.1, col.4 l.19. It is true that the figures of the '392 patent depict a preferred embodiment that includes two flanges, each with four projecting rims. See id. figs.3 & 4. But these figures are the full extent to which the patent refers to flanges with four projecting rims. Thus under the well-established prohibition on importing limitations from the specification into the claims, see Phillips v. AWH Corp., 415 F.3d 1303, 1320, 1323, the "generally rectangular ported flange" of the asserted claims of the '392 patent is not limited to a flange having four projecting rims.

1866

17. "Generally sinusoidally-shaped." Consistent with its ordinary meaning and the prosecution history, 38 the court construes this phrase to mean "a repeating pattern, formed by substantially straight segments connected by bends or curves, that generally resembles a sine wave because it does not double back on itself."

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38 D.I. 241 at 993.
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1867

The dispute at the Markman hearing in this case centered on the meaning of the phrase "generally smooth and planar" in relation to the exterior surfaces opposite the projections. Since plaintiff did not define the terms in its specification, the court will rely on their ordinary meanings. Plaintiff urges the court to rely on its hypothetical claim construction, "to make the case more comprehensible for the Court and Jury." The court finds that reliance on the hypothetical is unnecessary and inappropriate, as the court and jury may rely on the ordinary meaning of the terms.

Webster's Dictionary defines the word "generally" as, "1. For the most part: WIDELY. 2. As a rule: USUALLY; 3. In disregard of particular instances and details."

"Smooth" is defined as "1. Having a surface free from roughness, irregularities, or projections: EVEN."

"Planar" is defined as "1. Of, pertaining to, or located on a plane. 2. Flat."

Having heard the arguments and reviewed the briefs of the parties in addition to studying the specification and prosecution history, 1 the undersigned construes the disputed portions of the claims as follows:

. "Generally smooth" is construed to mean having a surface which is for the most part free from roughness, irregularities, or projections.

. The word "generally" is construed to modify "planar," since one of the exterior surfaces on plaintiff's clip (identified in DX-1 as ref. 38) has a curve on one side. The court notes, however, that plaintiff's arguments regarding the examiner's comments (at prosecution history, pp. 76, 78-79) about curvature and concave surfaces do not bear on the claims because those comments were made in regard to the projections/protrusions (i.e. ref. 50) and not the exterior surfaces opposite the projections.

. "Generally planar" is construed to include irregular deviations from a mostly flat surface, such as the curve on the end of ref. 38 where it meets ref. 50. See Arvin v. Industries, Inc. v. Berns Air King Corp., 525 F.2d 182 (7th Cir. 1975) (ruling that use of the word "generally" to modify "planar" does not negate the meaning of planar, but allows for some deviation from a perfectly flat surface).
6. Generally Tear Drop Shape

Claim 7 of the '456 patent provides: "said positioning ring has a generally tear drop shape." Defendants propose the following construction, "having a globular form at the bottom, tapering to a point at the top" and present little if any argument in support of this proposal. (Defs.' Br. at 47-48.) Plaintiff counters with substituting "point at top" with "narrower portion at the top." (Pl.'s Reply Br. at 39.) Plaintiff points out that Figure 5-A, (App. at i), which illustrates an embodiment of the positioning ring, indicates that the positioning ring does not have a point at the top. Thus, defendants' construction would impermissibly exclude the preferred embodiment. See Vitronics, 90 F.3d at 1583-84. Neither party presents, nor could this Court find, a dictionary definition of "tear drop" which indicates whether the ordinary meaning of the word must include a pointed top. The claim itself also indicates that the shape is "generally tear drop." I therefore conclude that plaintiff has presented the construction which is consistent with the claim language and specification. Thus, the claim is not limited by a pointed top as described by defendants. Thus the proper construction for "generally tear drop shape" is: having a globular form at the bottom, tapering to a narrower portion at the top.

B. Whether the "Fluted" Devices Have a Uniform Stem Wall Thickness

Claim 1(b) of the '663 patent discloses an intramedullary rod with a sidewall "having a first, generally uniform smaller wall thickness defining the stem, and a second, larger wall thickness defining the head." The court has defined the phrase "first, generally uniform smaller wall thickness defining the stem" to mean "the wall thickness of the stem is thinner than the wall thickness of the head and that thickness does not vary significantly; the thinner wall and the uniformity define the stem as distinct from the head." Several of Synthes's devices have a "fluted" stem portion, meaning that the outer circumference of the stem resembles that of the bit of a Phillips head screwdriver, rather than being perfectly cylindrical. 13 The fluted devices are as follows 1) all 240 mm length versions of the "standard" PFN rod, 2) all 235 mm length versions of the "short" TFN rod, and 3) the 11 and 12 mm versions of the "long" TFN rod. (TX 17; TX 13; TX 3, respectively).
This analogy is not perfect. The fluted devices have six outer "points" along the circumference of the stem, where a Phillips screwdriver has only four.

Synthes claims that the fluted versions of the TFN and PFN do not practice claim 1(b) of the '663 patent. The court agrees. The fluted rods perform three functions not achieved by more traditional cylindrical rods: 1) reduced stiffness, 2) improved endosteal blood supply, and 3) decreased rotation of the rod within the bone canal. (Tr. 634:25-635:15, 1642:14-1643:8).

More importantly, the fluted stem walls do not have a generally uniform thickness; rather, their thickness varies significantly. The 235 mm length TFN rods have variances in stem wall thickness ranging from 50% (between 2.7 mm and 1.8 mm) to 140% (3.25 mm to 1.35 mm). (TX 2, 45; Tr. 446:4-16; Pretrial Stip. 6.63). The 11 mm and 12 mm versions of the long TFN rod have variances in stem wall thickness ranging from 25% (3.2 mm to 2.55 mm) to 55% (3.25 mm to 2.1 mm). (TX 3, 45; Pretrial Stip. 6.68). An examination of the 240 mm version of the PFN shows that its circumferential variance in stem wall thickness is similar to that of the 11 mm and 12 mm versions of the long TFN. The foregoing variances demonstrate that the stem wall thickness of the fluted versions of the TFN and PFN are not uniformly thick along their circumference so as to practice claim 1(b) of the '663 patent. (Tr. 1642:3-13, TX 45). Further, the fluted versions of the PFN and TFN vary in stem wall thickness along their length. Each of the devices has a fluted and non-fluted portion of the stem. In particular, the variation in wall thickness between the unfluted and fluted portions along the length of the stem of the fluted TFN and PFN rods is between 25% and 140%. This variation is significant and inconsistent with claim 1(b) of the '663 patent. (Tr. 445:19-447:18). Thus, the fluted TFN and PFN rods do not infringe that patent.

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a. Magistrate Judge's Ruling

The magistrate judge determined that "generally V-shaped" ribs means two diagonal lines that extend at an angle but in opposite directions like the "over-all" features of the letter "V," but does not require that the lines come to a point like the letter "V." R&R at 17. The magistrate judge construed the term by looking at the language of the claim and the common meaning of the word "generally." Id. at 16-17. When comparing the language of Claim 1, which describes the ribs on the lid to be "disposed diagonally to form side-by-side V-shaped ribs," and Claim 6, which describes the ribs on the bottom to be "in diagonal orientations forming side-by-side generally V-shaped ribs," the magistrate judge gave the word "generally" significance. Id. at 17. Since "generally" is expressly tied to the adjective "V-shaped," the magistrate judge stated that there can be some deviation from a precise "V" so the diagonal lines need not come to a point. Id.

b. The Defendants' Objections

The defendants argue that the magistrate judge's construction of "generally V-shaped ribs" cannot be accepted because it is so broad as to leave no indication as to the limit of what constitutes a "V" shape. Defs. Objections at 12. Instead, the defendants request the court to adopt the interpretation that "generally V-shaped ribs" must meet at a point on the bucket with a modification to the apex where the bottom tip is chopped off. Id. The defendants argue that Figure 9 shows a modified apex at the top and the bottom of the bucket. Id. Thus, they assert that "generally V-shaped ribs" should be construed as requiring the ribs to touch in a modified apex. Id. at 13.

c. This Court's Construction

As an initial matter, the court notes that "[w]ords of approximation, such as 'generally' and 'substantially,' are descriptive terms commonly used in patent claims to avoid a strict numerical boundary to the specified parameter." Anchor Wall Sys., Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1310-11 (Fed. Cir. 2003)(internal quotations omitted)(discussing that "the claim language itself expressly ties the adverb 'generally' to the adjective 'parallel,' the ordinary meaning of the phrase 'generally parallel' envisages some amount of deviation from exactly parallel. It is the claim limitation, as a whole that must be considered in claim construction."). Thus, the addition of the word "generally" to Claim 6 thus must be given significance. Because the adverb "generally" is expressly tied to the adjective "V-shaped," the use of the term "generally" in Claim 6 indicates a deviation from a precise "V."
In addition, the intrinsic evidence does not support the defendants' construction that "generally V-shaped ribs" are required to touch in a modified apex. Instead, contrary to the defendants' position, the intrinsic evidence strongly suggests a difference between the ribs on the bottom of the bucket and the ribs on the curved flange section at the top of the bucket.

Specifically, the ribs on the bottom of the bucket, introduced in Claim 5 and described in Claim 6, are stated to be "diagonal orientations forming side-by-side generally V-shaped ribs." '493 patent at Col. 7:16-17 (emphasis added). In contrast, the ribs on the curved flange on the top of the bucket were not described in the claims, but were described in the specification as "a plurality of diagonal ribs" being "disposed in a V-shaped arrangement having a modified apex at the ends of each rib." '493 patent at Col. 4:53-54. The phrase "generally V-shaped ribs," as used in Claim 6 to describe the ribs on the bottom of the bucket, is, to state the obvious, different from the term "a modified apex," which is used to describe the ribs on the curved flange on the top of the bucket. Indeed, the language in the specification expressly states that the diagonally oriented ribs on the bottom of the bucket are merely "similar" to the ribs on the top of the bucket, not identical. '493 patent at Col. 5:1-2.

As noted by the plaintiffs, if the inventor had intended to describe the ribs at the top of the bucket in the same way as those on the bottom of the bucket, he would have done so. Moreover, as evidenced from the prosecution history, the description of the ribs on the bottom of the bucket does not include the term "modified apex," which is used for the top of the bucket. Instead, the ribs on the bottom of the bucket are described as being "separated" at the apex. Def. Appx. Exh. 11, P 001804:7-9.

The court also is not persuaded by the defendants' assertion that Figure 9, which shows the ribs on the bottom of the bucket and the ribs on the curved flange of the top of the bucket, requires that a "modified apex" definition controls because the claim language cannot be confined to one particular embodiment when the specification indicates that multiple embodiments are possible. KCJ, 223 F.3d at 1356; '493 patent at Fig. 9.

Further, while the defendants assert that the magistrate judge's construction of "generally V-shaped ribs" is too broad, the court should consider adopting a narrower meaning only "where there is an equal choice between a broader and narrower meaning of a claim, and there is an enabling disclosure that indicates that the applicant is at least entitled to a claim having the narrower meaning." Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1581 (Fed. Cir. 1996). This principle is not implicated with respect to the construction of the term "generally V-shaped ribs" because the use of the word "generally" coupled with the language in the specification does not indicate a narrower meaning should be adopted.

Finally, the court finds that, contrary to the defendants' assertion, the issue as to how far apart the diagonal lines will need to be on a bucket to be "generally V-shaped" is a question of infringement, not of claim construction, because it would need to be determined in reference to an accused device. Miken Composites, 515 F.3d at 1336.

The court concludes that "generally V-shaped ribs" means two diagonal lines that extend at an angle but in opposite directions like the "over-all" features of the letter "V," and does not require that the lines come to a point like the letter "V."
Plaintiff contends that the specification, prior art and expert testimony from the defendants' expert support its view that the extension is from the plane of the eye and not the top surface of the cutting head assembly. The language of the claim itself, however, indicates that the extension comes from the top surface of the cutting head assembly. A description denoting the plane of the eye is not included in the claim.

Nor is the plane of the eye included in that portion of the written description highlighted by plaintiff. Rather, the specification of the '456 patent reads: "the drive means 80 are thereby permitted to enter the cutting head assembly 50 through the top surface 56' and are thus, generally vertically disposed. It is believed that this feature results in less interference with the surgical field and facilitates finer handling by the surgeon than is offered by conventionally known microkeratomes. Specifically, known microkeratomes have typically provided for horizontally disposed drive means." Col. 13, ln. 64-Col. 14, ln. 4. Thus, the written description supports the construction that the extension comes from the top surface of the cutting head assembly, not the plane of the eye. The prior art citation merely indicates that the inventor changed the horizontal direction to a vertical direction.

Plaintiff points to the following deposition testimony of Dr. Steinert, the defense expert:

Q. Do you understand what's meant by "generally vertical orientation"?
A. Yes.

Q. What does that mean to you?
A. Going up and down.

Q. With respect to the eye or with -
A. Well, the way it's used, yes, it ends up being that way, but what it really would refer to is orientation relative to the head and how it passes across the ring.

(Dep. at 117-18, Pl.'s Ex. 14.) Thus, Dr. Steinert testified that the extension from the plane of the eye is mere happenstance, but that the term refers to the extension from the cutting head assembly. I therefore conclude that neither the intrinsic nor extrinsic evidence demonstrates that the ordinary meaning of the claim language is varied. Thus, the defendants' construction of the term is correct, and "generally vertical orientation" shall be construed as: over and perpendicular to the top surface of the cutting head assembly.
C. Generated Shapes

"Generated shapes" is used in Claim 1 and Claim 3. In Claim 1 it is used in claiming a method of producing "the appearance of smoothed edges are given to the generated shapes." 272 patent, col. 6 ll. 29-30. In Claim 3 it is used in claiming an "apparatus for producing on the photoreceptor an image of generated shapes made up of spots." Id., col. 6 ll. 33-34. The dispute about the construction of "generated shapes "centers on whether "generated shapes" are limited to characters. Hewlett argues that "generated shapes" should not be limited to characters but should include all shapes brought into being on the photoreceptor. Pitney argues that the term has already been defined and limited to characters by the Federal Circuit.

In its opinion in this case, the Federal Circuit stated "generated shapes' are, of course, the letters, numbers or other characters formed with fewer jaggies than under the prior art methods." Pitney III, 182 F.3d at 1305. Pitney argues that this definition is now the law of the case. The law of the case doctrine was judicially created to ensure judicial efficiency and to prevent the possibility of endless litigation. Central Soya Co. v. Geo. A. Hormel & Co., 723 F.2d 1573, 1580 (Fed. Cir. 1983). The doctrine applies not only to issues discussed and decided but also those decided by necessary implication. W.L. Gore & Assoc., Inc. v. Garlock, Inc., 842 F.2d 1275, 1278-79 (Fed. Cir. 1988) (citing Smith Int'l, Inc. v. Hughes Tool Co., 759 F.2d 1572, 1577 (Fed. Cir. 1985)). Thus, although the Federal Circuit did not specifically address the question of whether the "generated shapes" could be shapes other than characters, it did define it in construing what "spots of different sizes" meant. In order to construe "spots of different sizes," the court had to consider what "generated shapes" the spots of different sizes were producing. In so doing, it limited the claim to " . . . letters, numbers or other characters. . ." Pitney III, 182 F.3d at 1305. The definition is thus the law of the case. 3

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3 Under its newly-cited precedent, Hewlett admitted at oral argument on April 24, 2001 that generated shapes should be limited to letters, numbers or other characters because it was so limited in the patent specification. See Netword, 242 F.3d at 1351.

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In allowing the 272 claims, the PTO specifically stated that several patents disclosing half-tone reproducing devices disclosed "patently different technology" than the 272 patent. 4 PB Ex. 19, at 1 ("a half-tone reproducing device, as compared to that of a character generator which actually produces an image of generated shapes (or characters) made up of spots, is a patently different technology and is not quite concerned with generating shapes using spots of different sizes.")

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4 Half-toning uses spots of different sizes to allow the eye to see the pattern of dots as a continuous tone image. PB Mem. on Claim Construction at 17. The focus of half-toning is on reproducing images by varying tone or shade. Id. at 18.

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The PTO's conclusion supports the Federal Circuit's construction and indicates that the construction remains the same after reexamination.

Based on the Federal Circuit's construction of the term and the PTO's support of that construction, "generated shapes" are letters, numbers, or other characters formed with fewer jaggies than under the prior art methods. 5

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5 Hewlett indicated that there was a dispute between the parties regarding the necessity of a character generator in creating "generated shapes." Pitney did not address this dispute and seems to have conceded that "generated shapes" need not come from a character generator. The court thus finds that "generated shapes" are not limited to characters that originate from a character generator.

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1. "geographically dispersed"

The suggested construction for this phrase submitted by the parties changed from the initial written submissions and during the course of the Markman hearing. In its written submissions, plaintiff asserted that the term be construed to mean "in different geographic locations." During the Markman hearing, plaintiff suggested they would agree to a construction which states: "in different geographic locations, either within a building or in different buildings." Plaintiff claimed that the phrase "either within a building or in different buildings" was taken directly from the prosecution history. (Pl.'s Resp. Br., fn. 5, p. 6; Hr'g., pp. 81, 85.) Defendants initially requested that the disputed term be assigned its ordinary meaning.

After considering plaintiff's second proposal, defendants took issue only with the use of the word "different" being used to give meaning to "dispersed." Defendants continued to argue that the word "dispersed" would be more informative to a jury and more readily understandable. (Defs.' Br., p. 15; Hr'g., p. 84.) Defendants further argued that while plaintiff cited to the prosecution history to supply meaning for its suggested construction, it failed to cite the prosecution history accurately. On this point, we agree with defendants, and indeed, in its brief, plaintiff cited to instances in the prosecution history where the inventors explained "geographically dispersed" using the terms "disparate," in one instance, and "separate" in another. (Pl.'s Br., p. 14.) Conversely, plaintiff has not cited to any reference in the prosecution history that uses the word "different."

After discussion on this point, plaintiff indicated that it would agree to a claim construction that uses the word "separate" in place of "different." (Hr'g., p. 88.) Defendants similarly conceded they would accept "disparate" in place of "dispersed." (Id., p. 89.) Neither side would accept the alternate definition offered by the other. Consequently, the Court adopts the following construction: "in separate geographic locations, either within a building or in different buildings." This construction is closest to the prosecution history (which both sides have asked the Court to rely upon) and provides a simple and clear meaning for the disputed claim term.

48[e]. said contributions management device being optionally geographically remote from a plurality of said electronic contributions accepting devices

Each contributions accepting device may be, but need not be, located in a geographically remote location from the contributions management device. In this context, "geographically remote" means in a different area, separated significantly in space.

1. "Gesture Action" (’053 patent, claims 1, 6, 20, 22) The patented inventions may be briefly described as methods for creating realistic computer animations of characters. The first term in dispute is "gesture action." Plaintiff's proposed construction is "a defined movement of joints over time which symbolizes or emphasizes an idea, sentiment or attitude." Defendant's proposed construction is "body part undulation executed under the control of a set of coupled frequency and range signals."

Plaintiff principally objects to the word "undulation" in defendant's construction on the ground that the '053 patent describes at least one gesture action, the "casual pose," that does not entail any undulation. See transcript, 12/18/06 ("Tr."), at 9; '053 patent, 6:54-7:14. Plaintiff argues that the casual pose is "driven primarily by noise," see '053 patent at 7:11-14; '132 patent at 7:14-17, so that an observer viewing a figure in the "casual pose" would perceive movement that was random, rather than undulatory, see Tr. at 50-51. However, plaintiff's expert, Dr. Norman I. Badler, admitted that it would be "very unlikely" for the casual pose not to entail at least some undulation, see Tr. at 104-05; moreover, as defendant's expert Dr. Kellogg S. Booth noted, "the noise function[] constitute[s] undulation," see Tr. at 119; see also Tr. at 122, 147. More broadly, the Court
agrees with Dr. Booth's testimony that neither the fact that certain gesture actions such as the casual pose entail less undulation than others, nor the fact that any gesture action can be "stopped" before undulation takes place, changes the fact that the essential nature of gesture actions is to provide for undulation. See Tr. at 109-10, 117-19, 146-49.

Plaintiff also objects to the phrase "executed under the control of a set of coupled frequency and range signals" in defendant's construction. Defendant's use of this phrase is supported, however, by the specification of the '053 patent (and the corresponding specification of the '132 patent) that introduces the phrase "gesture action" in the following terms:

The programmer/user can specify a sequence and/or combination of different gesture actions. Each action is implemented as a set of coupled frequency and range of pseudorandom time-varying signals set to each limb. The transition from one action to the next is smooth and life-like.

'053 patent at 2:47-52 (emphasis added); see also '132 patent at 2:51-56. Defendant's construction largely tracks this language. Although plaintiff's expert, Dr. Badler, testified that the phrase "[e]ach action" in the above-quoted passage does not necessarily refer to a "gesture action," see Tr. at 36, and that the word "of," following the word "range," is an error and should be the word "or," see Tr. at 37, 40, the Court does not credit this testimony, finding it much more likely that the language means what it says.

Further, defendant's entire construction is supported by the deposition testimony of Dr. Kenneth Perlin, the inventor of the '053 and '132 patents, who testified that the '799 application (which underlies both patents) does not anywhere describe how to create a "gesture action" that is not a "body part undulation executed under the control of a set of coupled frequency and range signals." Declaration of Dr. Kellogg S. Booth dated November 12, 2006 ("Booth Decl."), Ex. 6 ("Perlin Dep.") at 101. Plaintiff argues that Dr. Perlin recanted this testimony by testifying later in his deposition that he thought he "could create a . . . gesture which is effectively a pose" with "[n]o time varying behavior," and that "this [would] describe how to create a gesture action that is not a set of coupled frequency and range values." Declaration of Paul D. Ackerman dated November 30, 2006 ("Ackerman Decl."), Ex. A at 281 (emphasis added). But this later testimony does not amount to a recantation because it says only what Dr. Perlin could create or describe now, and not what he did create or describe in the patents.

Accordingly, the Court adopts defendant's proposed construction of "gesture action."

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H. Element 8: "The Annular Surface Having An Axial Length Extending For A Given Distance Along The Length Of The Hub"

Element 8 requires "the annular surface having an axial length extending for a given distance along the length of the hub." Papst argues that the Court should not limit the "given distance" to any particular distance. Sunon asserts that the Court should limit the "given distance" to a distance of "at least one-third of the axial length of the hub." The Court agrees with Sunon.

Because the term "a given distance" is ambiguous, the Court may turn to the specification for guidance as to how to construe the term. An examination of the written description and drawings is necessary to determine whether the patentee has disclaimed subject matter or has otherwise limited the scope of the claims. Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1343 (Fed. Cir. 2001). The specification of the '015 patent unequivocally requires the distance to be "at least one-third of the hub length" in order for the invention to work as intended. In the Summary of the Invention, the patentee stated:

According to the present invention, this problem [of increasing air flow efficiency] is solved in that the axial length of the conical annular surface amounts to at least 1/3 of the hub length and in that with respect to the axial median plane, the scroll plate is asymmetrical in the corner areas and is constructed cylindrically over a longer distance from the axial median plane to the inlet side than to the outlet side.

It has been discovered that these measures lead to a considerable improvement in the performance, without having to modify the external dimensions of the axial-flow fans. It has also been found that the improved action does not occur to any noticeable extent, i.e., occurs only barely, unless the axial length of the conical ring surface corresponds to at least one third
of the total hub length. Only the combination of the two features mentioned above leads to the surprising improvement.

The requirement that the distance be "at least one-third of the hub length" is not, as Papst argues, simply a best mode. Rather, it is an essential feature of the invention, the purpose of which is to maximize the efficiency of air flow. '015 patent, col. 1, l. 47-49 ("The task of the present invention is therefore to provide an axial-flow fan, which has a higher efficiency than the known fans of this type."). The invention will not fulfill this purpose if the "given length" is less than one-third the length of the hub. "When the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question." Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1347 (Fed. Cir. 2004), quoting SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1341 (Fed. Cir. 2001). This is particularly true where, as here, the patentee made the broad, unequivocal statement in the "Summary of the Invention." Microsoft, 357 F.3d at 1348 ("Those statements, some of which are found in the 'Summary of the Invention' portion of the specification, are not limited to describing a preferred embodiment, but more broadly describe the overall invention of the [patent]."). In this case, the patentee limited the scope of his invention to a particular length of the "given distance" by unequivocally stating that the invention will not work as intended with a distance less than one-third the distance of the length of the hub.

The prosecution history is not to the contrary. After the '015 patent issued, the patentee filed for a continuation and a broadening amendment. As originally issued, Claim 29 required the distance to be "one-third the length of the hub." In the broadening amendment, Papst sought to replace the "one-third" requirement with the phrase "a given distance." The examiner allowed the broadening amendment, and Claim 29 reissued with the broader claim language. The fact that the PTO allowed the broadening amendment, however, is not dispositive. It simply means that prosecution history estoppel does not bar a broad construction of "any given distance." But prosecution history is not the only means by which the patentee may limit the scope of his claims--limiting the claim scope via disclaimers in the specification is another. As the Court discussed, that is what happened here.

Accordingly, the Court construes Element 8 to mean that the axial length (in a direction parallel to the axis of rotation) of the "annular surface" of the impeller hub defined by the reduced diameter portion corresponds to at least one-third of the total hub length.
Furthermore, there are no dimensional limitations in the specification or the drawings.

Plaintiff argues that a trocar of a "given" diameter in combination with an "endoscopic" clip applier means a 10/11 millimeter trocar and a clip applier capable of applying medium/large clips. The words of a claim must be given their ordinary meaning unless it appears that the inventor used the terms differently. "Although a patentee can be his own lexicographer, as we have repeatedly said, the words of a claim 'will be given their ordinary meaning, unless it appears that the inventor used them differently.'" Hoganas AB v. Dresser Industries, Inc., 9 F.3d 948, 951 (Fed. Cir. 1993); see also Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387 (Fed. Cir. 1992).

The '249 patent contains no special definitions of the words "given" or "endoscopic." Therefore in construing Claim 36, the words "given" and "endoscopic" should be given their ordinary meaning. Thus, "a tubular cannula having a given internal diameter" would mean a tubular cannula having an assumed or hypothetical internal diameter, i.e. one of no fixed or specific diameter. See Webster's Third New International Dictionary. Likewise, "endoscopic" would mean any device capable of being used with an endoscope, an instrument for visualizing the interior of a hollow organ or body cavity. "Endoscopic" would not connote any size limitation, except perhaps the general limitation of a size sufficiently small to be able to be inserted into an orifice or incision in the human body.

Plaintiff argues that notwithstanding the absence of any special definitions of these words in the patent, one skilled in the art would understand that "given internal diameter" and "endoscopic," as used in Claim 36 signify that the cannula referred to in the claim is a 10/11 millimeter cannula and that the surgical clips referred to in the claim are medium/large surgical clips, since these are the standard in the field of endoscopic surgery. This argument is unavailing because it is undisputed that medium sized surgical clips are used in endoscopic surgery and are thus, "endoscopic." In fact plaintiff itself markets an endoscopic clip applier designed for use with medium sized surgical clips. 4 Plaintiff's contention that one skilled in the art would understand that Claim 36 includes the limitations of a 10/11 millimeter trocar and a medium/large surgical clip does not present a genuine issue of material fact. The Court likewise finds no merit in plaintiff's argument that testimony regarding the intent of the inventors or spatial relationships depicted in the unscaled patent drawings raise genuine issues of fact regarding size limitations in Claim 36.

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4 It is also undisputed that there are minor variations in the sizes of trocar cannulas and surgical clips within categories made by various manufacturers and that there is no precise or uniform standard dimension for a medium or medium/large surgical clip.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

Plaintiff further argues that part of the prosecution history of the '249 patent includes representations regarding the dimensions of the trocar cannula and surgical clips which supply the limitations it wishes to read into Claim 36. Plaintiff refers to the remarks section of its Response to Office Action, Dated April 30, 1992 in which its patent counsel summarized an interview with the patent examiners. The remarks include, inter alia, the following description of a demonstration of plaintiff's device at the interview:

As was demonstrated at the interview, applicant's commercial embodiment of applicant's device is not only automatic, but can apply medium/large clips having about a 5.33 millimeter width between the outer surfaces of their legs. This permits the instrument to be used with a trocar having a cannula with an internal diameter of about 10 millimeters.

"It is elementary that resort must be had in the first instance to the words of the claim which define the metes and bounds of the invention." Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759 (Fed. Cir. 1984). Limitations not found in the language of a claim cannot be read into the claim. E.I. Du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430 (Fed. Cir. 1988), cert. denied, 488 U.S. 986, 102 L. Ed. 2d 572, 109 S. Ct. 542 (1988). Limitations appearing in the patent specification cannot be read into the claims. Id. Nor is it permissible to inject into claims limitations referred to in the prosecution history. Intervet America, Inc. v. Kee-Vet Labs, Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989).

While limitations contained in the specification or prosecution history may be used where necessary to interpret what the patentee meant by a word or phrase in a claim, see e.g., Minnesota Mining & Mfg. v. Johnson & Johnson, 976 F.2d 1559
(Fed. Cir. 1992), there is no warrant for resorting to the prosecution history for such a purpose in this case. The words of
Claim 36 are plain, they do not include any dimensional limitations on the size of the trocar or the surgical clip. The absence
of limitations and the use of the word "given" when referring to the internal diameter of the cannula reflect a conscious
intent by the drafter of this claim to make it as broad as possible so as to include a trocar of any size in combination with a
clip applier having jaws of any size. In oral argument on this motion, counsel for plaintiff admitted that Claim 36 was so
intended:

There could be, the reason the claim is not written with specific numerical dimensions, art does change. Things may be
available later on with the advent of better suturing, when you are coming out of the abdomen, you can use larger trocars,
and then we could use larger jaws, larger clips, etc.


Likewise, in opposing defendant's motion for summary judgment of non-infringement, plaintiff said with respect to Claim
36:

In construing a patent claim, the focus must be on the language of the claim itself. That is crucial because it is the claim --
rather than statements in the prosecution history or the patent specification -- that defines the metes and bounds of the
invention…

If, as is the case here, the claim was drafted so as to obtain the broadest coverage with the fewest "limitations" on the
scope of coverage, it is entitled to be so construed.

offered in support of this proposition the declaration of John P. Milnamow, its outside patent counsel who prosecuted the
application for the '249 Patent. Mr. Milnamow stated:

Thus, not only is this prosecution history consistent with my intent and the objective construction which a facial reading
of Claim 36 compels, but it reinforces my intention to have this particular claim contain as broad coverage as possible. The
only objective limitations in the claim are the jaws, which extend outwardly from the shaft and must be wide enough to
receive the clip but narrow enough to be entered into a trocar without compressing, and the single trigger… It was my intent
and it remains my professional opinion that any endoscopic multiple clip applier having these characteristics infringes this
claim. (Emphasis in the original).

Milnamow Declaration, Appendix to Ethicon's Memorandum in Opposition to Richard-Allan's Motion For Summary
Judgment, Doc. 48.

The prosecution history plaintiff relies on to import limitations into Claim 36 consists only of a description of a
demonstration of a device. There is no suggestion in the description that plaintiff's patent lawyers represented to the patent
examiners that plaintiff intended that the claims of the patent would be limited to the dimensions of the device
demonstrated. Even if the Court were persuaded that it was proper to consider this part of the prosecution history to interpret
Claim 36, it would add nothing of value to the interpretation and would raise no genuine issue of fact relating to the
existence of dimensional limitations in that claim.

Plaintiff solved the problem of designing an endoscopic automatic multiple clip applier for medium/large clips with jaws
narrow enough to fit through a 10/11 millimeter trocar cannula with the jaws in the open position. It did so by incorporating
a design feature in the jaws which plaintiff refers to as a "primary heel." The claims of the '249 patent relating to the jaw and
other specific aspects of the Ethicon device may well be valid and enforceable. In this case, however, Ethicon has elected to
assert only the broadest claim in its patent, Claim 36 which, by its own admission fails for obviousness in the absence of
size limitations which do not appear in the claim and which the Court concludes cannot properly be read into the claim.
Accordingly, defendant's motion for summary judgment on the issue of obviousness is well taken.
Claim terms are given their ordinary meaning to one skilled in the art unless it appears from the patent and prosecution history that the terms were used differently by the inventors. Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387, 21 U.S.P.Q.2d (BNA) 1383, 1386 (Fed. Cir. 1992). In this case, the claims specified that the trocar used to practice the invention was of a "given internal diameter." The patentee now argues that one skilled in the art would understand the phrase "given internal diameter" to be limited to 10/11 millimeters; he asks us to accept that construction in order to avoid undisclosed prior art. We cannot do that. Neither can we accept the patentee's equally unsupported position that the phrase "endoscopic multiple applier" is limited to a clip applier that applies medium/large size clips. This meaning is unsupported by the claims, specification and prosecution history. Nowhere in the claims, specifications or the prosecution history was there any elaboration of size encompassed within those phrases. Furthermore, Ethicon submits no substantial extrinsic evidence to support its position.

We understand the tension between, on the one hand, drafting a claim as broadly as possible and, on the other hand, limiting the claim's breadth so that the claim is valid. In this case, Claim 36 of the '249 patent is drafted so broadly as to cover the prior art, making the claim invalid. The fact that the Patent and Trademark Office ("PTO") granted the patent does not undercut the claim's obviousness. The PTO was not informed of U.S. Surgical's "Long Surgiclip" and, had they been aware, they might well have reached the same conclusion.

Under a proper construction of the claim language in this case, Claim 36 of the '249 patent is invalid as obvious. Therefore, the district court's grant of summary judgment is affirmed.

a. GLASS FIBERS: Intrinsic Evidence

The competing asserted meanings for "glass fibers" are "glass threads or filaments or pieces thereof" (Plastpro) and "bundles of filaments" (Therma-Tru). Because it is "the most significant source of the legally operative meaning of disputed claim language," Vitronics, 90 F.3d at 1582, the Court turns first to the intrinsic evidence of record. All the independent claims of the '540 patent require that the outside of the door skins be "essentially devoid of glass fibers for a predetermined depth of at least 0.005 inch." The specification uses the terms "fibrous glass reinforcement" and "glass fibers." (McQuillen Dec., Exh. A, col. 2, ll. 43, 68.). "Fibrous glass reinforcement" describes one of the components of the sheet molding compound, or resin, compressed to form the door skins. (Id., ll. 41-44.). In another portion of the specification, the disputed term is used in the following manner:

The elimination of glass fibers from the surface of the exterior side provides the present structure with several advantages. First, it allows the fine grain texture to be placed in the surface to a defined depth without exposing glass fibers. The [sic] prevent wicking and other inherent fibrous glass problems from occurring. At the same time, it allows the fibrous glass reinforcement to be distributed closer to the centroid of the skin. This results in a door structure which reduces deflection.

(Id., col. 3, ll. 16-24.) (emphasis added).

The specification does not expressly or impliedly define "glass fibers." Furthermore, there is no indication in the specification that the patentee ascribed a special meaning to the term. Nor does the prosecution history reveal any special meaning of the term. In fact, the fiber-free claim limitation does not appear in the '400 application in any form. The rejected '549 CIP application included the fiber-free claim limitation, but with no special meaning attached to the term. As recently as 2002, the Patent Office challenged the fiber-free limitation for obviousness. Therma-Tru's response echoed the language of the fiber-free claim limitation and does not assist the Court in its construction of the term. The Court therefore cannot agree with Therma-Tru that the plain language of the specification alone resolves the claim construction question.

As the intrinsic evidence of record -- the claim language, the specification, and the prosecution history -- does not indicate that Therma-Tru ascribed a particular meaning to the claim term, "glass fibers" must take on the ordinary meaning to one skilled in the art. Digital Biometrics, 149 F.3d at 1344. For this inquiry, the Court consults dictionaries, encyclopedias, and treatises.
b. GLASS FIBERS: Ordinary Meaning in the Relevant Art

In support of its construction of "glass fibers" as "glass threads or filaments or pieces thereof," Plastpro directs the Court to both general and technical dictionaries, as well as trade encyclopedias and engineering manuals available at the time the '540 patent issued. A general dictionary defines "fiber" as "a filament; any threadlike part of a substance." See Exh. N, WEBSTER'S NEW UNIVERSAL UNABRIDGED DICTIONARY 680. "Filament" is in turn defined as "a thread; a fiber." See id. at 684. A scientific/technical dictionary defines "glass fiber" as "[a] glass thread less than a thousandth of an inch thick, used loosely or in woven form as a . . . reinforcing material in laminated plastics." See Exh. O, MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS 685. Finally, one scientific dictionary essentially defines "fiber" and "filament" as synonyms of one another. See Exh. P, THE CONDENSED CHEMICAL DICTIONARY 388 (defining "filament" as "a continuous fiber"). An engineering manual on materials states that standard glass fiber is spun as "single glass filaments . . . collected into strands that are manufactured into many forms of reinforcement." See Exh. Q, MATERIALS HANDBOOK 385.

In support of its construction of "glass fibers" to include "pieces of filaments," Plastpro cites to a handbook on reinforced plastics in which it is noted that "chopped fiber lengths" are used as reinforcement in sheet molding compounds such as are at issue in this case. See Exh. T, HANDBOOK OF TECHNOLOGY AND ENGINEERING OF REINFORCED PLASTICS/COMPOSITES 216.

The above objective sources clearly support construction of "glass fibers" as threads, filaments, or pieces of filaments. However, as discussed below, Therma-Tru urges that the plain meaning of the term is "bundles of filaments" or, if not, then the Court should look beyond the demonstrated plain meaning of the term to find a definition more suited to the practical functioning of glass fibers in the invention.

In support of its "ordinary meaning" position, Therma-Tru argues that, because the '540 patent specification implicitly defines "glass fibers" as "bundles of filaments," Plastpro erroneously relies on extrinsic evidence to support its construction. 7 Therma-Tru contends that an implicit definition is discernible from the '540 patent's fiber-free limitation as "glass threads or filaments or pieces thereof." Although the claim construction in Pease does not bind this Court, the Court has considered the underlying reasoning for the Michigan district court's construction of the same claim limitation disputed in this case. In Pease the court adopted the recommendations of a Special Master who reviewed the intrinsic and extrinsic evidence in the case. The court found that the Master's recommended construction comported with the form in which such fibers are used in the industry. See Exh. W at 3; Exh. X at 20.

The above objective sources clearly support construction of "glass fibers" as threads, filaments, or pieces of filaments. However, as discussed below, Therma-Tru urges that the plain meaning of the term is "bundles of filaments" or, if not, then the Court should look beyond the demonstrated plain meaning of the term to find a definition more suited to the practical functioning of glass fibers in the invention.

In support of its "ordinary meaning" position, Therma-Tru argues that, because the '540 patent specification implicitly defines "glass fibers" as "bundles of filaments," Plastpro erroneously relies on extrinsic evidence to support its construction. 7 Therma-Tru contends that an implicit definition is discernible from the '540 patent's repeated use of the term "glass fibers." It also argues that the prosecution history reinforces its proposed construction. Therefore, it is Therma-Tru's position that the Court need go no further than the intrinsic evidence in the record to construe the fiber-free claim limitation.

7 However, Therma-Tru itself offers extrinsic evidence almost exclusively to support its construction of "glass fibers." See Def.'s Opp. Br., at 13-17.
Therma-Tru further argues that general and technical dictionaries do not consistently define a "fiber" as a "filament." Therma-Tru is correct that differing dictionary definitions must be reconciled with reference to the patent itself, but it does not offer a contemporaneous objective source to support its construction. Rather, Therma-Tru relies on the testimony of several experts.

For example, Kenneth West, a Therma-Tru employee involved in the production of fiberglass doors, concluded in his Technical Expert Report that "if individual filaments are used in the SMC manufacturing process, the resulting door skins would be unacceptable in appearance and strength." (Dec. of Sangeeta Shah, Exh. D, at 16.). Mr. West further noted:

The functional characteristics of the '540 'glass fibers' clarify the patentee's intent in defining 'glass fibers' to constitute a bundle of filaments and not a single filament. The use of fine grain texturing at the surface to a defined depth does prevent surface exposure of bundles of filaments, i.e., glass fibers. However, surface texturing cannot eliminate single break away filaments from being exposed at the surface. Moreover, the existence of these single glass filaments at the exterior surface does not affect any of the functional reasons identified in the '540 patent for suppression of glass fibers, i.e., to avoid wicking, provide reinforcement, a high quality surface appearance, and ease in handling.

(Id. at 17.)(emphasis in original).

Robert R. Jackson, Director of Research and Development at Therma-Tru, testified that a fiber is a "bundle of filaments." (Id., Exh. F, at 28.). John M. Maxel, an expert for Therma-Tru in this litigation, also testified that a "fiber" is a "bundle of filaments," and acknowledged that while a bundle consists of approximately 200 filaments, as few as 100 filaments would also constitute a bundle. (Id., Exh. G, at 18 11. 20-23; at 21-22.). Therma-Tru also offers the testimony of John E. Thorn, the inventor, who testified that the intent of the patent was to suppress the majority of the fibers (which he referred to as "clusters of filaments") from the top .005 inch of the door skin. (Id., Exh. H, at 27, ll. 7-16.)

As a threshold issue of the correct legal standard to apply to Therma-Tru's evidence, the Court notes that the Federal Circuit clearly favors "objective resources" such as dictionaries, encyclopedias, and treatises over expert testimony on claim construction:

Dictionaries, encyclopedias, and treatises, publicly available at the time the patent is issued, are objective resources that serve as reliable sources of information on the established meanings that would have been attributed to the terms of the claims by those of skill in the art. Such references are unbiased reflections of common understanding not influenced by expert testimony or events subsequent to the fixing of the intrinsic record by the grant of the patent, not colored by the motives of the parties, and not inspired by litigation.

Texas Digital Sys., 308 F.3d at 1202-03.

These objective sources are preferred over the expert testimony of attorneys, technical experts, and even the inventors themselves. Vitronics, 90 F.3d at 1585. Given that "opinion testimony on claim construction should be treated with the utmost caution, for it is no better than opinion testimony on the meaning of statutory terms," id., the Court places emphasis on contemporaneous objective resources over opinion testimony to discern the ordinary meaning to one skilled in the art.

As to its "practical functioning" position, Therma-Tru does not convincingly show that the ordinary meaning of glass fibers is inconsistent with the practical function of glass fibers in the invention. The Court addresses each of Therma-Tru's "functional" arguments that Plastpro's proposed construction contradicts the "implicit definition" of the term.

1. Individual Filaments Are Not Available to Purchase

Therma-Tru contends that "glass fibers" must mean "bundles of filaments" because one cannot purchase single glass threads. However, this is irrelevant to the Court's inquiry into the proper meaning of "glass fibers" as used in the invention. Indeed, the form in which a raw material is marketed and sold may have little resemblance to the form it assumes once incorporated in a patented product or process. Furthermore, there is evidence in the record that bundles or rovings of glass fibers may "filamentize," or break down into individual threads, during the compression molding process, which further suggests that the relevant inquiry is not the form the fiberglass takes at the time of purchase, but the form it assumes when
used in the molding process. See McQuillen Dec., Exh. M P 41 (distinguishing "hard" glass from "soft" glass and noting that, when combined with the SMC resin, the latter "tend[s] to separate into individual filaments."); see also id., Exh. Q, MATERIALS HANDBOOK 385 (noting that "fibers spun as single glass filaments . . . are collected into strands that are manufactured into many forms of reinforcement," thus implying that the manufactured form may vary widely from the ultimate reinforcing form.).

2. Individual Filaments Do Not Perform the Required Reinforcement

Therma-Tru next contends that individual filaments cannot adequately reinforce the door skins. Its essential argument is that single filaments "would cause the SMC compound to fall apart during molding." (Def.'s Opp. Br., at 16.). However, construing "glass fibers" to mean filaments does not contravene the reinforcing function attributed to "glass fibers" in the specification. The description of the glass fibers' function in the specification is as follows: "The elimination of glass fibers from the surface of the exterior side . . . allows the fibrous glass reinforcement to be distributed closer to the centroid of the skin. This results in a door structure which reduces deflection." (McQuillen Dec., Exh. A, col. 3, ll. 16-24.). The McGraw-Hill Dictionary of Scientific and Technical Terms, a source available at the time the '540 patent issued, notes that a glass fiber may be "used loosely or in woven form . . . as a reinforcing material." (Id., Exh. O, at 685.). Therefore, to one skilled in the art, the ordinary meaning of "glass fiber" in the reinforcement context must include individual filaments.

3. Individual Filaments Do Not Solve the "Wicking" Problem

Therma-Tru argues that the wicking problem only arises if bundles of filaments occur at the surface of the skins; because single filaments are incapable of wicking stain, the '540 patent thus implicitly defines fibers to mean bundles. In support, Therma-Tru points only to the patent itself and a general definition of wicking in support of its position. However, the statements of Therma-Tru's experts make clear that the precise quantity of filaments required to make a wicking-resistant bundle is not clear.

On the one hand, Therma-Tru's Kenneth West testified that "[a] bundle of filaments includes approximately 200 glass filaments." (Shah Dec., Exh. D at 16.). Burr L. Leach, a Therma-Tru expert in prior litigation, stated that a fiber consists of approximately 264 filaments. (Id., Exh. E, at 95, ll. 11-15.). John M. Maxel, Therma-Tru's expert in this litigation, testified that a fiber consists of approximately 200 filaments, but that even 100 filaments could also constitute a fiber. (Id., Exh. G, at 21-22.). Maxel emphasized that defining a fiber in terms of filaments is "not black and white." (Id. at 22.).

Significantly, West testified that as few as three filaments could cause a wicking problem. (McQuillen Reply Dec., Exh. D, at 59, ll. 23-25.). If as few as three filaments can cause wicking (and none of the cited experts suggests that three filaments would constitute a "bundle"), it cannot be that "the wicking problem only arises if bundles of filaments occur at the surface of the skins." Therefore, it would be consistent with the specification to construe "glass fibers" as "threads" or "filaments" or "pieces thereof" because, if not suppressed to a certain depth below the surface, even a few filaments can cause a wicking problem.

Because the ordinary meaning of the term to one skilled in the art is not inconsistent with the intrinsic evidence, Vitronics, 90 F.3d at 1584 n.6, the Court finds that "glass fibers" should be interpreted as "glass threads or filaments or pieces thereof.

B. The "glass mat-faced" claims

USG argues that the district court misconstrued the meaning of the limitation "glass mat-faced" and that when properly construed the "faced" claims 8 could not be infringed by USG's fiberglass gypsum board.

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8 Claims 1, 2, and 5 of the '496 patent and claims 1 and 2 of the '900 patent can be classified as "faced" claims.

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Claim 1 of the '496 patent is representative of these claims:

An exterior insulation system for a building comprising a glass mat-faced gypsum support surface, insulating material having an inner surface and an outer surface, the inner surface of which is adhered to said support surface by an adhesive material, the insulating material being substantially free of channels penetrating therethrough and between said inner and outer surface, and an exterior finishing material overlying the outer surface of said insulating material. (Emphasis added.)

USG asserts that "glass mat faced" means that the surface of the board facing out from the studs to which insulation is applied is an exposed, non-gypsum covered glass mat. The district court, however, adopted Georgia-Pacific's construction that the term "glass mat-faced" means "glass mat surface reinforcing material." Because USG's board is reinforced with fiberglass mats the court upheld the jury's finding that the "faced" claims were infringed.

USG argues that during prosecution of a different patent application in which claims were rejected in light of the Pilgrim patent, U.S. Patent No. 4,378,405, Georgia-Pacific surrendered any interpretation of the term "faced" that would include a completely embedded or coated fiberglass mat. The prosecution history statement relied on by USG was made by Georgia-Pacific nine months after the glass mat-faced claims of the '496 patent issued. There Georgia-Pacific stated:

The Pilgrim patent does not disclose glass mat-faced gypsum board. To the contrary, this patent discloses a gypsum board in which the glass mat is covered by a thin layer of gypsum (emphasis original).

USG argues that Georgia-Pacific used the term "faced" to distinguish its board from prior art fiberglass mat-reinforced boards based upon the difference between leaving the fiberglass mat on the working surface exposed versus completely embedding it.

Georgia-Pacific argues that this post-issuance statement is extrinsic evidence and should be rejected because the intrinsic evidence alone resolves any ambiguity of this disputed claim term.

The specification of the patent in suit is the best guide to the meaning of a disputed term. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83, 39 U.S.P.Q.2d (BNA) 1573, 1576-77 (Fed. Cir. 1996); see also Bell & Howell Document Management Prod. Co. v. Altek Sys., 132 F.3d 701, 705, 45 U.S.P.Q.2d (BNA) 1033, 1037 (Fed. Cir. 1997) ("When construing a claim, a court should look first to the intrinsic evidence, i.e., the claims themselves, the written description portion of the specification, and the prosecution history.) Additionally, when intrinsic evidence is unambiguous, it is improper for the court to rely on extrinsic evidence to contradict the meaning of the claims. See Pitney Bowes, Inc., v. Hewlett-Packard Co., 182 F.3d 1298, 1308-9, 51 U.S.P.Q.2d (BNA) 1161, 1167-68 (Fed. Cir. 1999).

The '496 patent states at col. 9, lines 39-43:

Although improvements in an EISystem can be realized by the use of a gypsum core which has but one of its surfaces faced with fibrous mat as described herein, it is preferred that both surfaces of the core be faced with substantially the same fibrous material . . . .

Because the '496 patent refers explicitly to both surfaces of the board being faced, "faced" cannot mean only the surface facing out from the studs as is necessary for USG to prevail. Furthermore, in the prosecution of the '496 patent Georgia-Pacific's patentee declared to the PTO: "One of the glass fiber mat-reinforced surfaces was substantially gypsum-free and the opposite surface was substantially gypsum covered." Thus, the glass mat-faced term was represented to mean both surfaces of the board one of which was described as covered with gypsum. For these reasons we are convinced that the district court properly construed the "faced" claims.

We also note that for Georgia-Pacific to be bound by the statement made to the PTO in connection with a later prosecution of a different patent, the statement would have to be one that the examiner relied upon in allowing the claims in the patent at issue. See Mannesmann Demag Corp. v. Engineered Metal Prods. Co., 793 F.2d 1279, 1284-85, 230 U.S.P.Q. (BNA) 45, 48 (Fed. Cir. 1986) ("In cases where a patentee's amendments were not required in response to an examiner's rejection or critical to the allowance of the claims, no estoppel has been found.")
Vanderlande challenges the ITC's construction of the claim limitation "glide surface surrounding said [slat] wall." Vanderlande contends that this claim limitation refers to an inner surface of a diverter shoe that contacts the outer surface of the slat on all sides. So construed, Vanderlande does not infringe claims 1 and 4, as it is undisputed that the inner surface of the Mark 2 Posisorter's diverter shoe only contacts the outer surface of the slat on three sides, and does not contact the top of the slat. The ITC rejected Vanderlande's argument as to contact, determining that the limitation at issue actually did not require any contact at all:

The term "glide surface" in claim 1 [and incorporated by reference in claim 4] is merely a two-dimensional surface and does not imply any points of contact or non-contact between the inner surface of the diverter shoe and the outer surface of the slat wall. Points of contact or non-contact between the glide surface and the slat wall are not claimed features of this element of claim 1. . . . All that matters to being a "glide surface," really, is whether the inner surface of the Mark 2 Posisorter shoe (i) moves over or along the surface of the slat in a smooth, effortless manner without pivoting or rolling; and (ii) is two-dimensional. There is no factual dispute that the Mark 2 Posisorter shoe's inner surface possesses these characteristics. Ergo, the inner surface of the Mark 2 Posisorter constitutes a "glide surface" as that term is used in claim 1.


We review the ITC's claim construction de novo. Honeywell, 341 F.3d at 1338. We seek to determine what a person of ordinary skill in the art would understand the claims to mean "in light of the intrinsic evidence of record, including the written description, the drawings, and the prosecution history, if in evidence." Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1324 (Fed. Cir. 2002). While extrinsic evidence can shed useful light on the relevant art -- and thus better allow a court to place itself in the shoes of a person of ordinary skill in the art -- the "intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Indeed, a "court should look first to the intrinsic evidence of record," id., to determine if the patentee "expressly defined terms used in the claims or . . . defined terms by implication," Dow Chem. Co. v. Sumitomo Chem. Co., Ltd., 257 F.3d 1364, 1373 (Fed. Cir. 2001).

The critical term in the limitation "glide surface surrounding said [slat] wall" is "glide surface," as the parties agree that the ITC correctly construed "surrounding" to mean "to extend on all sides; to encircle; to enclose on all sides to cut off communication or retreat." ALJ Op. at 69. The written description's most detailed discussion of the term "glide surface" is in the context of the explanation of the preferred embodiment:

Each diverting shoe 28 includes a support member 44 and a diverting member 46 mounted to the support member (FIG. 2). Support member 44 includes a glide portion 48 having a continuous glide surface 50 having substantially the same configuration as the outer surface of slat 22 for gliding movement along the slat. . . . Continuous surface 50 includes a channel 58 surrounding projection 42 of the slat such that the projection rides within the channel (FIGS. 8, 9, and 11). Continuous surface 50 additionally includes a support rib 60 which engages top wall 30 of the slat to support an upper wall 62 of the support member. Continuous surface 50 additionally includes an enlarged radius forward upper corner 64 and an enlarged radius lower rear corner 66, in which enlarged radius corners 38 and 40 of the slat, respectively, ride. This arrangement provides bearing engagement between the enlarged radius corners of the slat and the corresponding corners of surface 50 to resist reaction forces tending to rotate the shoes about the axis of elongation of the slat. . . .

'510 patent, col. 3, ll. 26-51. As this passage and the accompanying drawings make plain, "contiguous glide surface 50" is the inner surface of the diverter shoe.

In the preferred embodiment, the glide surface contacts the outer surface of the slat at various points; these points of contact resist the reaction forces that are generated when the diverter shoe pushes an item across the slat. At the upper-left corner and the bottom-right corner of the slat, the slat engages the glide surface's "enlarged radius forward upper corner 64 and . . . enlarged radius lower rear corner 66." Id. at col. 3, ll. 44-45. In the drawings of the preferred embodiment, both the upper-right and bottom-left corners of the slat also appear to make contact with the glide surface. On the top of the slat, the slat
engages the glide surface's "support rib 60." Id. at col. 3, l. 41. On the bottom of the slat, a projection off the slat rides within the glide surface's "channel 58." Id. at col. 3, l. 38. The above-referenced parts of the glide surface are depicted (without the slat) in figure 8:3

GET DRAWING SHEET 4 OF 6.

Footnotes

3 Support rib 60 is visible but not numbered in this figure; the support rib is numbered in figure 9, set out supra.

End Footnotes

But in the preferred embodiment, the glide surface also has regions that do not contact the slat. Indeed, regions of noncontact are found on every side of the slat, as can be discerned on close inspection of figure 2:

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Vanderlande acknowledges that the glide surface in the preferred embodiment has regions that do not contact the slat, but emphasizes that the glide surface includes at least some contact with every side of the slat. Vanderlande's argument is accurate with respect to the preferred embodiment, which includes not only midsection contact points on the top and bottom of the slat, but also contact points at the corners of the slat.

But the "Summary of the Invention" (quoted at length supra) expressly contemplates other embodiments, stating that the invention includes embodiments with contact "between at least one edge [i.e., corner] of each slat and an engaging portion of the glide surface of the diverter shoe." Id. at col. 1, ll. 65-66 (emphasis added). Moreover, while the "Summary of the Invention" describes a midsection contact point on the bottom of the slat, it does not describe a midsection contact point on the top of the slat. In short, the "Summary of the Invention" teaches that the invention embraces glide surfaces that do not contact the slat on all sides, e.g., a glide surface with contact points only on the bottom of the slat and one corner of the slat. While such glide surfaces may not be optimal -- indeed, the "Summary of the Invention" emphasizes that it is preferable to have bearing means at "diagonally opposite slat edges in order to better resist reaction forces about the axis of the slat," id. at col. 2, ll. 1-2 -- they do fall within the disclosure of the invention, indicating that the patent requires a broader meaning of "glide surface" than the one pressed by Vanderlande.

Vanderlande argues that statements of Siemens/Rapistan to the European Patent Office ("EPO") during the prosecution of a European counterpart to the '510 patent support Vanderlande's contention that a glide surface must contact the slat on all sides. In the prosecution to which Vanderlande refers, the EPO initially rejected the patent application in view of a prior-art reference, a shoe sorter that used "skids" to stabilize the shoe on the slat. Siemens/Rapistan argued to the EPO examiner that if the skids themselves were considered to be the "glide surface," the glide surface would not "surround" the slat as required by the Siemens/Rapistan application:

In Claim 1 of the present [European] application, the slat is defined by a wall which has an upper portion defining the conveying surface, and the wall is surrounded by a glide surface of the diverter shoe. This does not appear to be the case in [the prior art reference]. In annex 1 of the official communication, the Examiner indicated that the planar upper portion [i.e., the top wall of the slat] . . . is surrounded by the skids, but this does not appear to be the case, because the planar upper portion is above the skids.

ALJ Op. at 65 (citations omitted). As the ALJ properly determined, the "distinctions in [Siemens/Rapistan's] counterargument to the EPO have nothing to do with whether or where the 'glide surface' contacts the slat." Id. at 68.

The extrinsic evidence likewise fails to show that those skilled in the relevant art would understand a "glide surface" as having contact on all sides. At the evidentiary hearing before the ALJ, the expert witness for Siemens/Rapistan and the inventors named on the '510 patent testified that the term "glide surface" had no independent meaning in the art of sortation systems. Vanderlande did not present any evidence to the ITC that the term "glide surface" had any meaning in this art. Instead, Vanderlande argued to the ITC, and contends on appeal, that the term has an "ordinary meaning" that requires contact. The linchpin of Vanderlande's argument is a definition of the noun form of "glide" found in a general-usage
dictionary: "a device for facilitating the movement of something; esp: a circular usu. metal button attached to the bottom of furniture legs to provide a smooth surface." Merriam Webster's Collegiate Dictionary (10th ed. 1998). Vanderlande places particular weight on the illustrative example of the button on the bottom of a furniture leg, emphasizing that the furniture-leg button completely contacts both the furniture leg and the floor.

4 On appeal, Vanderlande asserts that it has found "over 200 patents using the term ['glide surface'] to describe a low friction contact surface" and discovered similar results using an Internet search engine. Vanderlande does not state, however, whether these patents and Internet findings are specific to the art of sortation systems. In any event, Vanderlande did not present this evidence to the ITC, and we thus hold any argument based on this evidence to be waived.

Vanderlande's reliance on this illustrative example from a general-usage-dictionary definition is unpersuasive, for several reasons. First, Vanderlande misapprehends the proper role of general-usage (as opposed to technical, art-specific) dictionaries in claim construction. Claims are to be construed from the vantage point of a person skilled in the relevant art. To the extent that this artisan would understand a claim term to have the same meaning in the art as that term has in common, lay usage, a general-usage dictionary can be a helpful aid to claim construction. But where evidence -- such as expert testimony credited by the factfinder, or technical dictionaries -- demonstrates that artisans would attach a special meaning to a claim term, or, as here, would attach no meaning at all to that claim term (independent of the specification), general-usage dictionaries are rendered irrelevant with respect to that term; a general-usage dictionary cannot overcome credible art-specific evidence of the meaning or lack of meaning of a claim term. Cf. Dow Chem., 257 F.3d at 1373 ("We have previously cautioned against the use of non-scientific dictionaries, 'lest dictionary definitions . . . be converted into technical terms of art having legal, not linguistic significance.'" (quoting Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1478 (Fed. Cir. 1998))). As the ITC properly determined in this case: Vanderlande's effort to attribute to the term "glide surface" the ordinary dictionary definition of the word "glide" alone is misplaced. Vanderlande did not present any evidence outside of the dictionary definition of the word "glide" to show that "glide surface" has an ordinary meaning in the material handling industry or in the sortation industry. By contrast, [Siemens/Rapistan] demonstrated, through its expert witnesses having personal experience in the material handling and diverter sortation field, that "glide surface" does not have an ordinary meaning, and the [ITC] Staff agreed with this view.

ALJ Op. at 61 (citations omitted).

Second, even if general-usage dictionaries could be useful in circumstances like these, the definition of the noun "glide" cited by Vanderlande -- "a device for facilitating the movement of something" -- concerns only one word in a two-word claim term and is vague, abstract, and fails to connote a particular structure. Indeed, Vanderlande does not even rely on the definition itself, but rather on an extrapolation from the illustrative example of the furniture-leg button. Vanderlande's argument rests on a long series of tenuous assumptions: the word "glide" in the claim term "glide surface" is based on the noun form, not the verb form; the characteristics of the illustrative example of the furniture-leg button necessarily obtain with respect to all glides; therefore every "glide surface" must have the characteristics of the furniture-leg button; therefore a glide surface surrounding a three-dimensional structure -- like a conveyor-belt slat -- must contact this structure on all sides just as the button contacts the floor. Vanderlande's shaky syllogism cannot overcome the uncontroverted testimony regarding the lack of ordinary meaning of "glide surface" in the art of sortation systems.

Third, in any event Vanderlande's dictionary argument is entirely eclipsed by the '510 patent's written description, which provides detailed, art-specific examples of glide surfaces, not only in the preferred embodiment but also in the express contemplation of other embodiments, including embodiments in which the glide surface does not contact every side of the slat. See Dow Chem., 257 F.3d at 1373 (stating that "any definition found in or ascertained by a reading of the intrinsic evidence may not be contradicted by any meaning found in dictionaries"). As noted above, the "intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." Vitronics, 90 F.3d at 1582, and this is particularly true where, as here, the written description provides definite and readily discernible guidance as to the intended meaning of a structural claim term. Indeed, it is doubtful whether any extrinsic evidence could contradict or overpower the meaning evident from the written description here, and certainly Vanderlande's furniture-leg button cannot do so.
Vanderlande argues that its construction of "glide surface" is buttressed by the content of a mediation statement prepared by Siemens/Rapistan in connection with the mediation of a prior litigation. The content of this mediation statement, which would be inadmissible in a patent suit in federal district court, see Federal Rule of Evidence 408 ("Evidence of conduct or statements made in compromise negotiations is . . . not admissible."), was at most a theory advanced in a proceeding to mediate a separate litigation, upon which we place little--if any--weight in claim construction, cf. Beckson Marine, Inc. v. NFM, Inc., 292 F.3d 718, 726 (Fed. Cir. 2002) ("Litigation theories -- to the extent not expressed in claim language, the patent specification, or the prosecution history -- do not affect claim scope."). In any event, we have considered the mediation statement (which the parties marked as confidential) and believe it is ambiguous with regard to the claim-construction issue at hand. We conclude that a "glide surface" is a diverter shoe's inner surface that has some contact, but not necessarily complete contact, with the outer surface of the slat, and that need not contact all sides of the slat. We note that our construction of "glide surface" is different from the ITC's construction, which did not require any contact at all. We believe the ITC's definition was overly broad. Indeed, the ITC's definition could conceivably embrace "no-contact" technologies far beyond the patent's disclosure, such as a glide surface that rides above the slat on air currents, or a glide surface that is magnetized to repel the outer surface of the slat.

Returning to the claim limitation as a whole, we conclude that "glide surface surrounding said [slat] wall" refers to a glide surface (as just defined) that completely encircles the slat. This construction embraces Vanderlande's Mark 2 Posisorter, whose diverter shoe's inner surface has some contact, but not complete contact, with the outer surface of the slat, and which completely encircles the slat.

The district court's misconstruction of the "glide" limitation flows from its misunderstanding of the claim language, "gliding along a support," which according to the district court requires that the glide "moves the user in a certain course," see Mattox, 2004 WL 1638202, at *7. As the decision on infringement makes clear, the district court understood "in a certain course" to mean along a path directed by a guide. Put differently, the district court believed that claim 1 defines the "glide" using language that requires the glide to travel along a directional support that limits nonlinear movement, e. g., a "guide track." See, e. g., the '961 patent, Figure 8. This is incorrect.

The claim language, "gliding along a support," plainly includes traveling over a floor. Consequently, the district court erred when it read out of claim 1 embodiments of the glide structure that "glide[] on the floor." See Mattox, 2004 WL 1638202, at *11. Absent statements in the intrinsic record to the contrary, where claim language is plainly susceptible to an interpretation that includes the described embodiments, that interpretation is the better interpretation. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996) (reasoning that an interpretation that excludes a preferred embodiment is unlikely to be correct).

Such is the case here. A glide that travels along a support surface which can be a floor is depicted in the '961 patent. See, e. g., the '961 patent, Figures 1, 4, 5, 6, & 7. Clearly, as the depicted glide moves along the support surface, it is not subject to the constraints of a "guide track." See id. Moreover, in one embodiment, item 114, which is described as elastic tubing, see the '961 patent, col. 5, l. 38, is not present, see id., col. 9, ll. 50-52. In such an embodiment the only feature controlling the course of the gliding motion is the ability and decisionmaking of the user.

Based on its misapprehension of the claim meaning, the district court erroneously held that the "glide" limitation could not be met. Because the accused device contains "a glide for supporting arms of a user in a forward kneeling position and gliding along a support," the accused device meets the "glide" limitation of the '961 patent. As the district court understood, a glide is a device for facilitating the movement of something. As set forth in the record, the glide of the accused device is clearly capable of supporting the arms of a user in the operation of the device. The user can keep both arms parallel or otherwise. Furthermore, the glide in the accused device facilitates "gliding along a support" because it permits the user to travel over a floor.
Variations of the term "global alignment" appear in three '832 patent claims. In their claim construction memoranda, the parties have not brought the terms of their "global alignment"-related dispute into firm relief, leaving it to the court to divine both the meaning of the claim terms and the contours of the parties' dispute. As the term is used repeatedly in the '832 patent, "global alignment" offers a kind of technological counterpoint to "field-by-field" alignment. Where "field-by-field" alignment denotes the process through which individual substrate sub-areas are aligned for exposure, "global" alignment denotes the alignment (i.e., positioning relative to the mask pattern) of the entire substrate form. In this vein, reading "global" to connote "entire" comports with both the plain meaning of the term and the intrinsic evidence.

By reference to the use of prior art, the specifications teach that "with this system an alignment mark provided in the substrate and an alignment mark provided in the mask outside the mask pattern are imaged on each other and the mutual positions of the marks are determined." See '832 Patent at 2:9-12. "Initially," the specifications add, "two and possibly several further substrate alignment marks outside the substrate area which must be repetitively illuminated with the mask pattern are aligned . . . . This alignment is known as the global alignment." Id. at 2:20-25; see also Exh. 2 at 264 (April 5, 1993, prelim. am.) ("Global alignment means that two or more alignment marks at the edge of the substrate are aligned relative to corresponding marks on the reticle."); '832 File History, Am., March 20, 1998, p. 4. Against this intrinsic evidence, Nikon's contention that this tardily-added claim requires the court to confine the relevant type of alignment to that of sub-area components is unconvincing. "Global alignment," the claim notes, is "realized" through

imaging mask alignment marks and substrate alignment marks onto each other by the projection system; observing the extent of overlap between an alignment mark image and the alignment mark on which the image must be formed; displacing along a first, X axis and a second, Y axis of a three-axes system of coordinates and rotation about the third, Z axis of the system of coordinates of the mask pattern and the substrate relative to each other until a sufficient degree of overlap is obtained; positioning each individual sub-area with respect to the mask pattern by displacing the substrate and the mask pattern relative to each other from the global-aligned position while measuring the displacement along at least one of said X and Y axis, the rotation about the Z axis and tilts about the X and Y axis of the substrate; and using all measuring results to realize the ultimate positioning of the relevant sub-area in an X-Y plane with respect to the mask pattern.

See '832 Patent at Claim 1. This claim is as cumbrous as it is long, and it is at least slightly misleading to imply, as the claim does, that "global alignment" involves all five of the steps listed. Global alignment, in fact, is "realized" in the first three steps--a fact suggested, albeit inexactly, in the articulation of step four: ". . . positioning each individual sub-area with respect to the mask pattern by displacing the substrate and the mask pattern relative to each other from the global-aligned position . . . ." Id. The position could not be already "global-aligned," of course, if the process of global alignment were not complete. Nothing in this claim language necessarily posits sub-area-specific alignment as the definitive aspect of "global" alignment; rather, the claim sloppily adds two field-by-field steps to a recitation of a distinct realization process. It is poor claim drafting, but it does not change the meaning of the predicate "global alignment" term.

Throughout the patent, the term "global alignment" refers to the positioning of the entire substrate, not to "each individual sub-area" on that substrate. See Vitronics, 90 F.3d at 1583. This is what global alignment has long meant to those of ordinary skill in the art, regardless of the cognomen affixed to the step-by-step process articulated in the claim. Consistent
with conventional usage and the intrinsic record, the court construes "global alignment" to mean "the initial positioning of the entire substrate according to substrate alignment marks," "globally aligning" to mean "the process or act of positioning of the entire substrate according to substrate alignment marks," and "globally positioned" to mean "situated or located by reference to the entire substrate."

I. Claim Construction

Eisenberg contends that the district court failed to construe the claims pursuant to Markman prior to consideration of the JMOL motion. Alimed responds that Eisenberg has not identified any disputed claim interpretation issue that could affect the invalidity verdict. Claim construction is a question of law which we review de novo. See Cybor, 138 F.3d at 1456, 46 U.S.P.Q.2D (BNA) at 1174.

The '507 patent is representative and provides:

1. A glove for preventing injury to the thumb's ulnar collateral ligament comprising:

   a hand covering having a thumb portion,

   said thumb portion having a retainer means disposed at least in part on the radial side of said thumb portion, said retainer means being inflexible in the radial direction, and when the wearer's thumb is in place in said thumb portion of said glove, said retainer means is disposed to extend over the thumb's metacarpal phalangeal joint and is of sufficient length to also extend over substantial portions of the adjacent bones which form the joint so as to generally immobilize the bones with respect to the joint in the radial direction whereby radial movement of the thumb which might injure the ulnar collateral ligament of the thumb is prevented.

2. The glove of claim 1 wherein said retainer means comprises a trough, said trough disposed on the radial side of said thumb portion and extending from the approximate tip of said thumb portion to the wrist area.

3. The glove of claim 2 wherein said trough has a hollow section, which said section fits around said radial side of said thumb portion.

   * * *

6. The glove of claim 1 wherein said retainer means fits around the entire thumb portion.

col. 4, ll. 26-47, 54-55.

A. Glove

In considering Eisenberg's post-trial motions the district court noted that it had previously construed the term "glove" as a matter of law, adopting Eisenberg's definition of "glove" as encompassing splint-like devices. See Eisenberg III, slip op. at 11. This claim construction was set forth in the district court's Memorandum and Order denying Alimed's summary judgment motion. See Eisenberg v. Alimed, Inc., Civil Action No. 91-12413-NG, slip op. at 8 (D. Mass. Sept. 29, 1994) (Eisenberg I). Thereafter, the court instructed the jury that the term "glove," as used in the patent claims "may encompass splint-like devices." Eisenberg alleges no error by the district court in construing the term "glove."

1. "Glue"
Atmel's sole argument in support of its contention that the glue layer must, in addition, adhere well to the exposed material to the tungsten. "335 Patent at col. 2:30-33. Thus, the specification supports Atmel's construction with respect to adherence.

As to how the term "glue layer" should be construed with respect to its adherence to other materials, Agere argues that the term "glue layer" should be construed as "a layer, composed of one or more materials, that promotes adhesion between an underlying dielectric region and a subsequently-deposited tungsten layer." Atmel argues that the term "glue layer" should be construed as "a layer of material of a single composition that adheres well to the dielectric layer, to the tungsten layer that is subsequently deposited, and to the exposed material at the bottom of the contact hole." There are two essential differences between the parties' constructions: (1) Agere contends the glue layer may contain more than one material, while Atmel contends the glue layer must be composed of only a single material; and (2) Atmel contends that the glue layer must adhere well to the exposed material at the bottom of the contact hole, in addition to adhering well to the dielectric and the tungsten, while Agere contends the glue layer need only promote adhesion between the dielectric and the tungsten.

As to the composition of the glue layer, Claim 1 itself expressly states that "said glue layer comprises at least one member selected from the group consisting of conducting nitrides." '335 Patent at col. 6:4-6 (emphasis added). Similarly, the specification states that "the glue layer comprises at least one material selected from the group consisting of A1 and conducting nitrides such as TiN." Id. at col. 3:67 through col. 4:1 (emphasis added). This language clearly implies that the glue layer may consist of multiple materials. Moreover, there is nothing in the claim language itself or the other intrinsic evidence stating, or even implying, that the glue layer must be comprised of only a single material. The Court also notes that Atmel has failed to set forth any argument in support of its contention that the term glue layer should be construed as "a layer of material of a single composition." See Defendant Atmel Corporation's Post-Hearing Submission Regarding Claim Construction ("Def.'s Post-Hearing Brief") at 7-9. In addition, claim 1 states that "said glue layer comprises at least one member selected from the group consisting of conducting nitrides." '335 Patent at col. 6:4-6 (emphasis added), and both parties have jointly stipulated that the term "comprises" as it appears in the '335 patent means "includes at least the following but does not exclude others," Joint Statement of Claim Terms at 1.

As to how the term glue layer should be construed with respect to its adherence to other materials, Agere argues that the specification reveals that the patentee intended the term to have a particular meaning. The specification states: "A glue layer is a layer of material deposited prior to the tungsten and which has good adhesion both to the underlying dielectric layer and to the tungsten." '335 Patent at col. 2:30-33. Thus, the specification supports Atmel's construction with respect to adherence.

Atmel's sole argument in support of its contention that the glue layer must, in addition, adhere well to the exposed material
at the bottom of the contact hole is based upon a statement made by the patent applicants during the prosecution history. After an initial rejection of claim 1 on July 20, 1987, a second rejection on February 20, 1988, and a third rejection on August 11, 1988, the patent applicants (in an Amendment After Final Rejection dated February 15, 1989) sought to amend claim 1 to add the following (after the words "CHARACTERIZED IN THAT"): "a portion of said glue layer overlies said exposed underlying material and said tungsten contacts said portion of said glue layer that overlies said underlying material and ...." Exhibit AG 006890 from 12/05/02 Hearing. Referring to this proposed amended language, the patent applicants attempted to overcome the previous rejections and distinguish their purported invention from a prior art reference by contending that the prior art reference "does not state that the [glue layer] is deposited through a hole onto an underlying material (e.g. substrate) and, consequently, shows no appreciation for the requirement that the [glue layer] must adhere well to the substrate, as well as the dielectric." Exhibit AG 006891 from 12/05/02 Hearing. However, this effort to amend claim 1 in order to avoid the prior art was unsuccessful because the Patent and Trademark Office considered the Amendment After Final Rejection, determined that the proposed amendment was insufficient to overcome the previous rejections, concluded that the proposed amendment would raise new issues not related to the reasons for the previous rejections, and did not enter the amendment. See Exhibit AG 006899 from 12/05/02 Hearing. Thus, the proposed amendment was never added to claim 1 and the applicants' explanation for how this amended language would distinguish their invention from the prior art does not bear on our task, which is to construe the language of claim 1 as it appears in the final issued patent.

Accordingly, the Court construes "glue layer" to mean "a layer, composed of one or more materials, which is deposited prior to the tungsten and which has good adhesion both to the underlying dielectric layer and to the tungsten."  

On October 16, 2006 the court filed a Markman decision in this case, construing claim terms of U.S. Patent No. 5,758,328 ("the '328 patent). Plaintiff, Source Search Technologies, LLC ("SST"), now moves pursuant to Local Rule 7.1(i) for reconsideration of that portion of the Markman Opinion that holds that "Goods and Services" is construed to mean "standardized articles of trade and performances of work for another." The court reached this conclusion by citing Defendants' contended definition and noting that "SST has not objected to Defendants' contention, and therefore, it will be accepted." (Opinion, at 28-29).

A motion for reconsideration shall be accompanied by a brief "setting forth concisely the matter or controlling decisions which the party believes the Judge or Magistrate Judge has overlooked." Local Rule 7.1(i) Ciba-Geigy Corp. v. Alza Corp., No. 91-5286, 1993 U.S. Dist. LEXIS 3971 1993 WL 90412, at 2-3 (D.N.J. Mar. 25, 1993). Such a motion is not to be used to simply reargue the same issues already rejected, or to voice disagreement with the court's decision on the merits.

It is readily apparent that SST has established the basis for reconsideration. The court, adopting Defendants' definition of goods and services, overlooked that SST strenuously disputed that definition. Defendants contended, based on their construction of the language of the patent, for a narrow definition of that term, namely, that goods or services must be standardized. SST, on the other hand, contended that goods and services needed no construction and that "the '328 patent merely stated that in order to ensure that there was no confusion about what is being requested by a buyer, either the descriptions of the products had to be standardized, or the products had to be described with text to be clear."

This difference of opinion was expressed in the parties' submissions and at the Markman hearing. Yet the court overlooked it in its Markman Opinion. Therefore, SST's motion for reconsideration will be granted.

The parties submitted everything they had to say on this issue prior to the Markman hearing; they argued the question at the hearing (a transcript of which the court has); they had the opportunity to give added emphasis to their views in connection with the motion for reconsideration. Therefore the court will conduct its reconsideration on the record before it without a further hearing.

The term "goods and services" is used constantly throughout the claims of the '328 patent. For example, claim 1 begins:

A computerized system for forming a computer based network of network members inclusive of network buyers and or network vendors for processing requests for quotation for goods and services through at least one central processing unit. . .
It is Defendants' position that the specification explicitly disclaims a broad reading of goods and services, i.e., that goods and services means any goods and services. They point to the following language:

"The present invention is a computerized quotation system forming a computer based communications network for processing requests for quotations for goods and services from respective buyers or vendors who broadcast such requests to network members of the computerized system. There is no central pricing database to limit the number of buyers and vendors of goods and services or to limit the number of goods and services which can be processed. However, the goods and services must be standadized items to ensure that there is no confusion as to what buyers are requesting and what sellers are offering to buyers. Fig. 1 shows the system of this invention as configured using the Internet as the communications network."

('328 patent, col. 3, ll. 55-67) (emphasis added).

This is pretty unambiguous language: "... the goods and services must be standardized items to ensure that there is no confusion as to what buyers are requesting and what sellers are offering to buyers." The cases have distinguished between the terms "must" and "may" or "can" as used in patents. The word "must" is mandatory language; whereas "may" and "can" are permissive terms. See BBA Nonwovens Simpsonville, Inc. v. Superior Nonwovens, LLC, 303 F. 3d 1332, 1340 (Fed. Cir. 2002).

SST asserts that the paragraph of the specification that follows the paragraph upon which Defendants rely completes the teaching on the subject. It includes the statement:

"Standardization of product or service descriptions is essential to avoid confusion unless a more text oriented specification is appropriate for the product or service type."

('328 patent, col. 4, ll. 9-16) (emphasis added).

It is SST’s contention that the specification provides two options for identifying the goods and services for which a quotation is sought: i) requesting a quote for a standardized product or service, or ii) requesting a quote for a product or service for which a text oriented specification is appropriate. This would open up the request for goods and services to any product or service, standardized or not.

If one follows the pertinent language of the specification which incorporates all the language upon which the parties rely ('328 patent, col. 3, l. 55 to col. 4, l. 12), it becomes clear that Defendants' interpretation is the correct one.

It starts with the paragraph containing the language, "However, the goods and services must be standard items to ensure that there is no confusion as to what buyers are requesting and what sellers are offering buyers." ('328 patent col. 3, ll. 63-65). The next paragraph describes how network members can use the computerized system. Once again there is a reference to standardized goods or services: "The programming … which enables network members to interact with the network would include information sufficient for network members to identify standard goods or services that they wish to identify in a request for quotation." ('328 patent col. 4, ll. 4-9) (emphasis added).

The next sentence, the sentence upon which SST relies, simply suggests how the network member can identify the standard goods or services that are the subject of his request: "Standardization of product or service descriptions is essential to avoid confusion unless a more text oriented specification is appropriate to the product or service type." ('328 patent col. 4, ll. 9-12). This sentence in no way suggests that the particular product for which a "text oriented specification is appropriate" is not to be standardized.

This conclusion is illustrated by Figure 8 of the '328 patent to which SST refers. The quote given in Figure 8 is for 5000 "TYPE J RESSISTOR[S] 5%." Thus a text oriented specification is provided, namely 5000 and 5%. Nevertheless, the underlying product - the Type J resistor - is a standardized item.

Having corrected the deficiency of the October 16, 2006 opinion by considering the matter it previously overlooked, the
court arrives at the same conclusion it arrived at in that opinion. It reaffirms its holding that "Goods and Services" is construed to mean "standardized articles of trade and performances of work for another." The court will file an order implementing this opinion.

3. "Gradually tapering"

For "gradually tapering," Plaintiff argues that no construction is necessary, but suggests that should the Court find otherwise, the construction should be "becoming smaller by steps or degrees." For their proposed construction, Defendants suggest "gradually tapering" means "steadily diminishing by fine degrees as the entire external boundary is approached from the center." 11

The parties essentially agree on the "tapering" portion of the term, namely that the nipple cover will proceed in some manner from thicker to thinner material. Instead, the primary dispute in the parties' constructions boils down to each side's view on the proper construction of the term "gradually." Defendants argue that "the specification, the figures, and the prosecution history all indicate that the outer surface of the nipple cover must form a continuous curvature." Defs.' Claim Constr. Br. 21. In the specification, Defendants point to the following phrase discussing the gradual tapering of the nipple cover: "[t]he edges of the device will gradually taper to be thinner near the edges . . . [which] will allow the nipple cover to blend with the breast surface . . . for a continuous smoothness." '606 patent col. 2 ll. 36-39. In the prosecution history, Defendants also point to the inclusion of the 'continuous curvature' language discussed in connection with the gradual tapering of the nipple cover in noting that "Plaintiff emphasized a 'curvature of outer surface [that] is [a] substantially continuous curvature from [the] centre to [the] periphery.'" Defs.' Claim Constr. Br. 22. Based on the dictionary definition of the term 'continuous,' Defendants argue that the patent's references to the 'continuous' nature of the curve means the claims mandate the nipple cover's curvature need be "without a break or irregularity." Defs.' Claim Constr. Br. 22. Defendants chose the "steadily diminishing" language in their proposed construction to reflect the idea that the continuous curvature should be without breaks or irregularities.

In response, Plaintiff objects to the "steadily diminishing" language (and Defendant's continuous curvature argument) as impermissibly trying to read a limitation into the claims that does not exist. Plaintiff notes that despite the reference to the continuous curvature language in prior applications of the patent, the 'continuous curvature' language ultimately was not included in the issued patent's claims, thereby indicating the curvature need not necessarily taper without breaks or irregularities. The Court agrees.

All claim construction begins with the words of the claims. See Teleflex, 299 F.3d at 1324. The only reference to the term "gradually tapering" comes in Claim 1: "the nipple cover having a first thickness . . . and a second thickness [,. . . and the thickness of the nipple cover gradually tapering from the first thickness to the second thickness." 606 patent col. 4 ll. 20-24. As noted by Plaintiff, there is no reference in the claims to a continuous curvature, or a tapering such that it be free from irregularities.

Similarly, there is also no support in the specification mandating a continuous curvature free from irregularities. As quoted above, Defendant is correct that the specification does reference a "continuous smoothness." However, the 'continuous smoothness' is meant to reference the transition from the edge of the nipple cover to the surface of the breast, not the gradual tapering of the thickness at the center of the nipple cover to the second thickness at the periphery. All the specification discusses in relation to the "gradually tapering" term is that the nipple cover should taper off to be thinner at the edges. There is no discussion in the specification indicating the gradual tapering must be of a continuous smoothness, or that the
tapering must steadily diminish to this thinness at the edge of the cover.

The dictionary defines 'gradually' as "taking place, changing, moving, etc., by small degrees or little by little." DICTIONARY.COM, http://dictionary.reference.com/browse/gradually. This definition stands in stark contrast to the dictionary meanings of "continuous" or "steadily," both of which indicate an unfaultering, constant, regular progression. Had the patent wished to claim a steady progression free from irregularities, the drafter could have used either of these terms, yet chose "gradually." Giving the terms their ordinary meaning, as the Court must, "gradually" means only that the change takes place "little by little," not necessarily that it is unwavering, constant, or free from irregularity. Defendants' arguments and proposed construction including "steadily diminishing" suggests a progression to the thinness at the outer edge of the nipple cover that is unwavering, and such a construction finds no support in the patent's specification and claims. Accordingly, the Court must reject Defendants' proposed language of "steadily diminishing" as attempting to impermissibly import a limitation into the claims.

Footnotes:
12 The definitions of the root term "steady" include "free from change, variation, or interruption; uniform; continuous," and "constant, regular, or habitual." DICTIONARY.COM, http://dictionary.reference.com/browse/steadily. As noted above, the term "continuous," at least as it pertains to curvature, means "of or relating to a line or curve that extends without a break or irregularity."

Instead, the Court adopts Plaintiff's proposed construction as the construction of the Court: "becoming smaller by steps or degrees." Such a construction reflects the definitions of the terms "gradually" and "tapering," and also incorporates the specification's discussion of the nipple cover's progression from one thickness near the center to a thinner thickness near the edge of the cover without mandating that the progression be entirely free from irregularity.

1891

1. "Prosthesis" and "Graft" 1

Footnotes:
1 The term "prosthesis" is found in the preamble of independent claim 1 of the '458 Patent and in each of the dependent claims of that patent. The term "prosthesis" also is found in the preamble to independent claims 1, 15, 17 and 23 of the '158 Patent and in each of the dependent claims of that patent. The term "prosthesis" also is found in the bodies of dependent claim 22 and independent claim 23 of the '158 Patent.

The term "graft" is found in the preamble of independent claim 1 of the '073 Patent and is found in the preamble of independent claims 1, 20, 21 and 23 of the '736 Patent. It also is found in each of the dependent claims of those patents.

Footnotes:
The Court also considers the claim language in light of the specification of which it is a part. See Markman, 52 F.3d at 979.

In general, these terms are used only in the preambles to independent claims. (See ‘458 Patent, claim 1; ‘073 Patent, claim 1; ‘736 Patent, claims 1, 20, 22; and ‘158 Patent, claims 1, 15, and 17.) These terms also are used in dependent claims, prior to the introduction of additional limitations. (See, e.g., ‘458 Patent, claim 2 (“The prosthesis as defined in claim 1, wherein said bifurcated base structure is circumferentially reinforced at locations along its length by a plurality of separate spaced apart wires.”) The bodies of the independent claims, which use the terms solely in their preamble, set out a complete invention that is not dependent upon the preamble term for life, meaning or vitality. Further, because the bodies of these independent claims do not use the terms "prosthesis" or "graft," they do not "derive antecedent basis from the preamble." See Eaton, 323 F.3d at 1339.

Cook argues that because the terms "prosthesis" and "graft" are used in dependent claims, the terms in those claims must derive their antecedent basis from the independent claims. The Court does not find this argument persuasive, as it effectively negates the principle that a preamble term may serve merely as a label for the invention as a whole. Thus, the Court concludes that with respect to claim 1 of the ‘458 Patent, claim 1 of the ‘073 Patent, claims 1, 20 and 22 of the ‘736 Patent, and claims 1 and 15 of the ‘158 Patent, the terms "prosthesis" and "graft," are labels for the invention as a whole and need not be construed.

However, independent claim 21 of the ‘736 patent, and independent claim 23 and dependent claim 22 of the ‘158 Patent, which depends from independent claim 17 of that patent, use the terms "prosthesis" or "graft" in both the preamble and the body of the claims. In the Catalina Mktg. case, supra, the district court determined that a term used solely in a preamble of one claim and in the preamble and body of another claim should be construed as a limitation in both claims. The Federal Circuit reversed. With respect to the claim that used the term only in the preamble, the court held that the term was not a limitation because: "the applicant did not rely on this phrase to define its invention nor is the phrase essential to understand limitations or terms in the claim body[;]" the specification did show that the term provided additional structure for the invention described in the body of the claim; the inventors had not relied on the term to distinguish over prior art; and because if the disputed phrase was deleted from the preamble, it would not affect the fact that the claim body defined a structurally complete invention. Catalina Mktg., 289 F.3d at 810. As to the claim where the term was used both in the preamble and the body, the Federal Circuit affirmed the district court's construction of the term as a limitation, because the term as used in the body derived antecedent basis from the preamble. Id. at 810-11. In this case, in those claims where the inventors chose to use the terms "prosthesis" and "graft," in the preamble and the bodies of claims, the Court concludes that the preamble does provide an antecedent basis for the terms as used in the body and, therefore, acts as a limitation for those terms.

Defendants assert that the Court should construe the terms "prosthesis" and "graft" to mean an intraluminal device. Plaintiffs argue that the terms should be construed more broadly and can encompass a device comprised in part of a traditional vascular graft. Gore also argues the Court should construe these terms as "multi-component" devices "used as a unit." 2

The claim language demonstrates that the claimed "prosthesis" or "graft" is comprised of several components, i.e. a bifurcated base graft structure and a second graft structure, or a first graft body and a second graft body. The Court, therefore, concludes it is not necessary to include "multi-component" in its construction of these terms.

The Court first looks to the language of the claims. Claim 21 of the '736 Patent refers to overlapping or attaching one portion of the "graft" to the second portion of the "graft," while it is inside of a vessel. ('736 Patent, col. 7, ll. 36-38.) As is discussed in more detail below, Claims 22 and 23 of the '158 Patent refer to the "prosthesis" being placed in a vessel. Thus, the language of these claims support Defendants' position that the terms should be construed to be limited to intraluminal devices.

The Court also considers the claim language in light of the specification of which it is a part. See Markman, 52 F.3d at 979.
The specification shows that the inventors use the term "graft" as shorthand for "intraluminal graft." For example, in the "Field of the Invention" section, the inventors state that "[t]he present invention relates to an intraluminal graft for use in treatment of aneurysms or occlusive disease." ('458 Patent, col. 1, ll. 10-11.) In the section entitled "Background Art," the inventors state that "[i]t is known to use "stents and intraluminal grafts of various designs for the treatment of aneurysms … ." (Id., col. 1, ll. 15-16.) The inventors discuss the prior art intraluminal grafts and then state that "[s]uch intraluminal grafts are inserted through the femoral artery into the aorta in a catheter. Upon release of the graft from the catheter it expands to the size of the aorta[.] … There are a number of problems associated with such known grafts." (Id., col. 1, ll. 27-33 (emphasis added).) The inventors conclude by stating that "[t]he present invention is directed to an alternative form of intraluminal graft which provides an alternative to known grafts." (Id., col. 1, ll. 40-42 (emphasis added).) See Honeywell Int'l, Inc. v. ITT Indus., 452 F.3d 1312, 1318 (Fed. Cir. 2006) ("On at least four occasions the written description refers to the fuel filter as 'this invention' or 'the present invention.'").

--- Footnotes ---

3 Because the patents-in-suit share a common specification, for ease of reference, the Court's citations to the specification in this Order are to the '458 Patent. The only time the term "prosthesis" appears in the specification is in the title of an article cited in the section of the specification describing the Background Art. (See, e.g., '458 Patent, col. 1, ll. 22-24.) Defendants urge the Court to adopt their construction of the term "prosthesis," primarily based upon the language in the specification that refers to "the invention" as an "intraluminal graft." That is, Defendants essentially equate the term "prosthesis," as used in the preamble to claims of the '458 and '158 Patents, to the term "graft," as used in the preambles to claims of the '736 Patent and '073 Patent. Plaintiffs do not seem to seriously dispute this proposition and do not articulate a clear difference between the two terms, other than to argue that the term "graft" should include a requirement that it be formed in part of plastic or polymer.

--- End Footnotes ---

Similarly, in the section entitled "Disclosure of the Invention," the inventors state that "[i]ii another aspect the invention relates to a method for positioning an intraluminal graft as defined above … causing an intraluminal graft as defined above to be carried through the catheter on an inflatable balloon until the graft extends into the vessel from the proximal end of the catheter … ." (Id., col. 1, ll. 54-59 (emphasis added).) In addition, in the section entitled "Best Mode of Carrying Out the Invention," the inventors use the terms "intraluminal graft 10" and "graft 10" interchangeably. (See, e.g., id. at col. 5, ll. 11, 17, 21, 26-27, 58-67, col. 6, ll. 1-10.) Finally, the specification is rife with references to the "intraluminal graft" or, the shorthand "graft", as "the invention" or "this invention." (See, e.g., id., col. 1, ll. 11-12, 40-41, 45-46, col. 3, ll. 33, 39-40, 45, col. 4, ll. 5-6, 20, 32, 55-56.)

Finally, each of the alternative embodiments described in the specification refer to devices that contain wires, which all parties agree are a feature of intraluminal grafts. None of the alternative embodiments, however, describe a traditional vascular graft. Nor do any of the figures disclose a traditional vascular graft. These facts further support Defendants' argument that the terms "prosthesis" and "graft" should be limited to intraluminal devices. (See, e.g., '458 Patent, col. 3, ll. 26-32 & Figs. 1-7.)

Plaintiffs rely on declarations submitted during the prosecution history to support their position that the terms "prosthesis" and "graft" should not be so limited. (See Schneider Decl., Exs. 4-8.) These declarations describe a surgery that Dr. White performed, on October 6, 1993, in which he overlapped an intraluminal graft with a traditional vascular graft, using what Plaintiffs describe as the "Sydney Trombone Technique." With respect to the term "prosthesis," Plaintiffs also rely on the fact that a dictionary definition of the term "prosthesis," which comports with their proposed construction, is attached to the Declaration of Dr. Ian Gordon. (See Schneider Decl., Ex. 7.) However, a fair read of Dr. Gordon's declaration supports Defendants' position. In that declaration, Dr. Gordon did not refer back to the traditional vascular graft when he explained the meaning of the term "prosthesis." He referred back to the endovascular grafts. (Schneider Decl., Ex. 7 at 2 ("[E]ach endovascular graft is a prosthesis... ") (emphasis added).) Thus, although the language of the claims, read without reference to the specification, might be broad enough to encompass a non-intraluminal prosthesis or graft, when the Court reads the claims in light of the specification, it concludes that a person of ordinary skill in the art would understand that the inventors used the terms "prosthesis" and "graft" in these claims to claim intraluminal devices. See SciMed Life Sys., Inc., 242 F.3d at 1341.
The language of claim 21 of the '736 Patent, and the language of claims 22 and 23 of the '158 Patent also support Gore's position that the "prosthesis" or "graft" should be construed to require that the device is used in a unitary fashion. For example, dependent claim 22 of the '158 Patent teaches that "the prosthesis is adapted to be placed in a lumen of a first vessel that intersects with a second vessel...." ('158 Patent, col. 8, II. 1-2.) Similarly, independent claim 23 reads as follows:

A prosthesis comprising:

a bifurcated base graft structure which defines a common flow lumen and a pair of connector legs which define divergent flow lumens from the common flow lumen; and

a second graft structure which is adapted to overlap and be attached to one of the flow lumens of said bifurcated base structure [sic] to form a continuous extension of that lumen;

wherein at least one of the bifurcated base graft structure and the second graft structure comprises a first end and a second end, and wherein at least one of the first and second ends is provided with a wire structure which has a plurality of apices extending beyond at least a portion of the corresponding end such that the wire structure apices extend across a lumen of a first vessel that opens into a second vessel in which the prosthesis is being placed without occluding the lumen of said first vessel.

(Id., col. 8, II. 17-36 (emphasis added.)) Independent claim 21 of the '736 Patent contains language that is similar to the "wherein clause" of claim 23 of the '158 Patent. (See '736 Patent, col. 8, II. 3-13 ("wherein the graft is adapted to be placed in a lumen of a first vessel that intersects with a second vessel; and wherein at least one of the said inlet end of said first graft body and said outlet end of said second graft body that is adjacent to a junction between the first vessel and the second vessel is reinforced with a wire member which has a plurality of apices extending beyond at least a portion of said respective end adjacent to said junction, and said plurality of apices extend across said junction so that the graft does not occlude the lumen of the second vessel") (emphasis added.).)

The inventors specifically define the term vessel in the specification as "blood vessels or like ducts such as the bile duct and the ureter." (See '458 Patent, col. 1, II. 18-20.) Thus, the claim language emphasized above, when combined with the inventors' explicit definition of vessel, supports a conclusion that the inventors intended that both portions of the "prosthesis" or "graft" described in these claims would be used in a unitary fashion. This claim language therefore undercuts Plaintiffs' argument that the "prosthesis" or "graft" claimed could be comprised, in part, of a device that already had been implanted in a patient.

Accordingly, the Court construes the terms "graft," as used in claim 21 of the '736 Patent, and the term "prosthesis," as used in claims 17, 22 and 23 of the '158 Patent, to mean: "An intraluminal device that is used in unitary fashion to substitute, repair or replace a missing or defective part of a vessel."
A lengthy discussion of the graft body that distinguishes the graft body from the wires and suggests that the wires may be integrated with the graft body or attached to it by some other means. Again, this discussion supports a view that the graft body is separate and distinct from the wires. (See id., col. 2, ll. 62-67, col. 3, ll. 1-25.) Finally, when they discuss the prior art, the inventors note that intraluminal grafts previously had been formed of a "sleeve, in which is disposed a plurality of self-expanding wire stents." (Id., col. 1, ll. 20-22.) These references further reinforce the view that the "graft body," or sleeve, is separate from the wires or wire-stents.

Accordingly, the Court construes the term "graft body" to mean: "an artificial device formed of plastic or fabric for use inside of a vessel."

A. "the granules comprising a thermoplastic and a thermoset plastic"

1. The Parties' Proposed Constructions

At the outset, the parties agree that "the granules include both a thermoplastic component and thermoset plastic component" and that "the claim does not disclose a limitation on the relative amounts of the two components." 2 (D.I. 59 at 1-2; D.I. 78 at 5.) However, Safas proposes that I construe this claim term to mean that the granules may comprise either a combination of discrete thermoplastic particulates and discrete thermosetting particulates mixed together into a matrix, or that each granule may have both a thermoplastic and thermoset plastic component. (D.I. 78 at 5.) Safas argues that because the claim language employs the plural term "granules," and not other language such as "each granule comprising," those skilled in the art would "readily understand that claim 1 includes both a combination of discrete thermoplastic particulates and discrete thermosetting particulates which are mixed to form the granules,' and each granule having a thermoplastic and thermoset plastic component." (Id. at 6.) Safas also supports its proposed construction by referring to language in the specification of the '895 patent and the prosecution history. (Id.)

2. The Court's Construction

I construe "the granules comprising a thermoplastic component and a thermoset plastic component" to mean that each individual granule must contain both a thermoplastic component and a thermoset plastic component. (D.I. 80 at 10.) Etura argues that Safas' proposed construction is inconsistent with the plain language of the claims, the specification of the '895 patent, and the prosecution history. (Id. at 8-9.)
3 Etura argues that I should construe the thermoplastic/thermoset plastic limitation as requiring a granule possessing the performance benefits described in the '895 patent and that is predominantly thermoset in nature. (D.I. 80 at 13.) Specifically, Etura asks me to construe the limitation as requiring "more thermoplastic material than what Safas argues occurs naturally in all thermoset plastic." (Id.) I decline to do so, as I am confident that the claim construction provided herein addresses Etura's concerns without imposing a quantitative limitation on the amount of thermoplastic material that must be present in each granule. Indeed, the parties have agreed that the claim does not disclose a limitation on the relative amounts of the thermoplastic and thermoset plastic components. (D.I. 59 at 1-2; D.I. 78 at 5.)

--- End Footnotes ---
GO BACK

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(b) "Granules Of A Coarse, Permeable Material"

The phrase "granules of a coarse, permeable material" appears in claims 1 and 6; "granules" are further limited in claims 2, 3, 4, and 10. The claims do not say what size the granules may be, just that they be small enough to fit in the tumbling chamber. Likewise, the coarseness and permeability are not specifically defined. Each of these qualities will be addressed.

Golden Trade cites to its experts and argues that a "granule" is "a small particle," that the specification calls for "granules of pumice or similar material," ( '213 patent, col. 1, l. 63-64), and that pumice stones are typically 1/2" to 1 1/2" in size. Lee counters that the expert statements are conclusory, that no statement in the patent actually defines the size of the granules, and that Golden Trade's use of the size of pumice stones is irrelevant. In addition, Lee cites testimony by the inventor Ricci (albeit regarding permeability) that tennis balls could be used in the '213 process, and testimony by Golden Trade's expert, a chemist for the other plaintiff, Greater Texas, that granules can be a "particle of any size" and "there's no limitation on the large size or on the small size." (Desai Dep. at 101.)

During prosecution, the Examiner rejected the claims under 35 U.S.C. § 112 because the use of "granules of coarse permeable material" was "unduly broad, insufficiently defined and beyond the scope of enablement." (Office Action of Oct. 6, 1987 at 2, in Pros. Hist., Tab G.) In attempting to narrow the phrase, Ricci admitted that it read on "foam crumbs" and asserted that determining the ratio of granules to fabric or granules to bleach "to achieve a desired effect on a given fabric chamber. Likewise, the coarseness and permeability are not specifically defined. Each of these qualities will be addressed.

Normally, words in a patent are given their ordinary usage unless defined differently by the patentee. Carroll Touch, Inc. v. Electro Mechanical Sys., 15 F.3d 1573, 1577 (Fed. Cir. 1993). "Granule" comes from the Latin word for "grain" and means "[a] small grain or pellet." Webster's II New Riverside University Dictionary 544 (1984). We can not tell from the prosecution history if the admission that the phrase at issue reads on "foam crumbs" was directed to the granules' size, coarseness, or permeability, and, if it was directed to size, whether the crumbs might be too large or too small. The prior art disclosed "small sized abrasive particles," pumice stones, an artificial pumice rolling member, and zeolites (very small crystalline structures). (Amendment of Nov. 16, 1987 at 8, in Pros. Hist., Tab I.) There seems to be no doubt that small sized particles are included. The conclusion as to the upper boundary is harder. Pumice stones may be 0.8" to 2", (see Ricci Decl. of Oct. 16, 1987, in Pros. Hist., Tab K ("2 to 5 cm")), a size which seems to be larger than a "small grain or pellet." Because the amendment only discusses ratios of granules to fabrics and bleach, it would seem that even a large "granule" would be suitable so long as there would be enough fabric or bleach to create the random faded effect on the fabric. The size of a granule would be limited by practicalities such as the size of the tumbling machine and the machine's opening, as well as by the size of the fabric being processed. (If the granules were larger than the fabric being processed, the granules would not randomly contact the fabric to create the random faded effect, and uniform fading would occur.) This upper boundary may be limited in claims 2 and 10 to the normal size of pumice stones, but given the broad statement during prosecution as to the knowledge of those skilled in the art, it would seem that the boundary is variable in the broader claims 1 and 6. This interpretation, coupled with Greater Texas' witness's admission that granules can be of any size, leads to the conclusion that a granule can be as small as a grain and as large as the practicalities of the tumbling machine and the fabric being processed allow. The nature of the granules would be limited to material which was coarse and permeable and would include pumice, paper, foam and sponge as well as PVC pipe, diamonds, synthetics and selica gel, clay, salt and crushed powder pellets.
As for permeability and coarseness, Ricci says that "everything is permeable" to some extent. (Ricci Dep. at 923.) Defining coarseness is harder because it depends on what one of ordinary skill in the art would deem sufficient in relation to permeability. (See '213 patent, col. 2, l. 7-9 ("sufficient roughness with a texture such as will permit high absorption of a powerful bleaching agent").) Obviously, coarseness of pumice, (claim 2), pumice stones, ( '213 patent, col. 3, l. 43), coarse, paper-based material, (claim 3), and "foam," (Amendment of Nov. 16, 1987 at 7, in Pros. Hist., Tab 1), are included. Claim 4 limits claim 1's recitation of granules to those that "produce a dual fading action that is a mechanical action" due to the "coarse surface" and a "chemical action" due to the bleach within the granules. If claim 1 is read at its broadest, it would seem that the granules do not have to produce a mechanical or chemical action, just that they have to be coarse and be able to produce a random faded effect (although it is hard to say how such an effect is produced without mechanical and chemical action). Another factor contributing to the dual fading action is the "mechanical properties of the cloth." ( '213 patent, col. 3, l. 13-14 (emphasis added.) Thus the coarseness, in the sense of roughness, requirement is minimal, resting on what one of ordinary skill in the art would look for in relation to permeability and the mechanical properties of the fabric being processed. As the permeability goes up, the required coarseness decreases.

1895

C. "graphic print"

a. Parties' Positions

The parties propose similar constructions for "graphic print" as they do for the term "photographic print." "Graphic print" is present in claim 21 of the '632 Patent. Again, the primary dispute is whether the claim term should include images generated through ink printing.

Plaintiff

Plain meaning

Alternatively, "a reproduction relating to a written or pictorial representation, or other display generated by a computer or an imaging device"

Defendants

An enlarged positive image on light-sensitive material of a graphic made from a film negative or plate and that is not made using ink printing.

Plaintiff's construction is based on the dictionary definitions of both "graphic" and "print." Dkt. No. 104 at 30-31. Both parties offer the same arguments for their respective proposed constructions for "graphic print" as they offered for "photographic print." See, e.g., Dkt. No. 104 at 30; Dkt. No. 110 at 15 (the "constructions [of photographic print' and 'graphic print'] depend equally upon the same portions of the intrinsic record.").

b. Court's Construction

Claim 21 of the '632 Patent states:

21. A floor tile for use as a flooring surface in a commercial merchandising display comprising:

an enlarged graphic print of photographic quality having oppositely disposed first and second major faces; and

a transparent protective coating on said first major face defining a barrier to prevent injury to said photographic print from foot traffic and other objects passing over said floor tile.

There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987); see also, Nystrom v. Trex Company, Inc., 424 F.3d 1136, 1143 (Fed. Cir. 2005) (citing Tandon). However, different terms in separate claims may be construed to cover the same subject matter where the written description and prosecution history indicate that such a reading
is proper. Tandon, 831 F.2d at 1023-1024. This is one of those cases. The parties do not articulate a substantive difference between "graphic print" and "photographic print," and the Court cannot discern any distinction after consideration of the claim language. Furthermore, the remaining intrinsic evidence indicates that a parallel construction is appropriate. Finally, as previously discussed, the evidence demonstrates that patentee has surrendered ink printing. See supra Part (B)(b).

Therefore, the Court construes the term "graphic print" to mean "a print of a graphic created by conventional photographic processes rather than by ink printing."

1896

2. graspable object(s)

The term "graspable object(s)" appears in claims 1 - 24 of the '874 patent, claims 1 - 20 of the '786 patent, and claims 1 - 8 of the '754 patent. The parties have discussed the term "graspable object" in tandem with the term "object," and have not placed much emphasis on the term "graspable." The plaintiff proposes a construction of "an object that is capable of being grasped by a human hand." The defendant proposes "a block," with the further caveat that a "graspable object' does not include keyboards, mice, pens, wands, instruments for writing or hand signing on graphic tablets or touch screens, or other devices not specifically adapted for a child's use." For the above reasons, the court concludes that the term "graspable object" means "a physical thing (or item) that is capable of being grasped in a human hand."

1897

B. Grate

The term "grate" is recited three times in Claim 1 and describes either tables or a shelf, i.e., side grate tables/lower grate shelf. Plaintiff proposes the following construction of the term "grate": "framework of parallel or crossed bars used as a partition, guard or the like, such as to allow for spillage to fall therethrough." Defendant proposes: "a framework of parallel support members (not necessarily steel and not necessarily rigid)."

Again, the Court must begin with the language of Claim 1 of the patent. The term "grate" is used three separate times and precedes the terms "tables" and "shelf." The illustrations in the patent clearly show the three items, Items 214, 216, and 166 in Figures 1 and 2, as grates and not solid flat surfaces. Defendant argues that his proposed claim construction of "grate" "allows spillage to fall therethrough." (Def. Response at 6.) The spillage issue is addressed and described in various portions in the specification. (Col. 2, ll. 59-60; Col. 2, ll. 40-45; Col. 9, ll. 34-35.)

Additionally, Defendant objects to the description of the material necessary to create the grate, i.e., steel. (See Claim 9, "pair of side grate tables and said lower grate shelf are comprised of steel.") As noted above, Plaintiff does not specify in its preferred claim construction the material of which the grate is composed. The issue, therefore, is the description of the grate. Plaintiff proposes a "framework of parallel or crossed bars used as a partition"; Defendant proposes a "framework of parallel support members." Column 6, lines 5 through 8, of the specification provide that the lower grate shelf is comprised "of a framework of parallel bars or wires fashioned from steel." Column 7, lines 32 through 37, describe the side grate tables as frameworks of parallel bars or wires fashioned from steel. These consistent descriptions in the specification are the basis of the Court's construction of the term "grate":

A framework of parallel or crossed bars or wires such as to allow for spillage to fall therethrough.

1898

1. The Term "Gravel"

The meaning of the term "gravel" as it is used throughout the '784 patent claims is critical to determining whether LAPP's
product infringes Python's '784 patent. The term gravel is used a total of 204 times throughout the patent. As discussed above, when construing patent claims, the court must consider the claims themselves, the specification, and the prosecution history of the patent. If an analysis of this intrinsic evidence resolves the ambiguity in the disputed claim term, the court should not rely on extrinsic evidence. However, if the term cannot be defined by referring to this intrinsic evidence, the court can refer to extrinsic evidence to aid in its determination of the meaning of the claim terms. The Federal Circuit has noted that prior art documents and dictionaries are more objective types of extrinsic evidence than opinion testimony, "whether by an attorney or artisan in the field of technology to which the patent is directed." Vitronics Corp. v. Conceptronic Inc., 90 F.3d 1576, 1585 (Fed. Cir. 1996).

a. The Claims

LAPP contends that although the word gravel is used continuously throughout the patent claims and specification, it is never defined. Case law instructs that although an inventor is free to use terms in a manner other than their ordinary meaning, if the special definition of the term is not clearly stated in the patent specification or patent history, the term will be interpreted as having its ordinary and customary meaning. See Markman, 52 F.3d at 979; Hoechst Celanese Corp. v. BP Chemicals Ltd., 78 F.3d 1575, 1578 (Fed. Cir.)("A technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent and the prosecution history that the inventor used the term with a different meaning.")(citations omitted), cert. denied, 136 L. Ed. 2d 198, 117 S. Ct. 275 (1996).

Looking to the words of the claims themselves, no express definition of the word gravel is provided. Python contends that when the claims are read in view of the specification of which they are apart, as required by case law, a definition of gravel is found. Column 6, lines 19-22 of the specification reads: "The gravel is sufficiently heavy that it will fall back to the floor of the aquarium while sediment is carried away with the water discharged through the elongated hose." Python contends that this sentence defines the term gravel by reference to its weight. This sentence, however, is a small part of the entire specification that describes in detail the basic function of a preferred embodiment of the claims. In other words, this sentence is merely one part of the complete description of how the claims, read together, function to clean the aquarium tank; it does not define the word gravel. This statement does not say what gravel "is," it says what it "does." A definition, on the other hand, is a "statement of what a thing is." See Webster's New World Dictionary of the American Language, Second College Edition, 1984 Simon and Schuster, p. 370. Therefore, Python's attempt to transform the sentence in its specification into a definition of the term gravel fails.

b. The Specification

The specification may act as a sort of dictionary when it expressly defines terms used in the claims or when it defines terms by implication. Vitronics, 90 F.3d at 1582. Additionally, the fact that a patent specification emphasizes a limitation from its beginning to its end supports a finding that such limitation is part of the claimed invention. Gentex Corp. v. Donnelly Corp., 69 F.3d 527, 529-30 (Fed. Cir. 1995).

As discussed above, the specification does not define the disputed term gravel. Rather the specification repeatedly uses the term to explain the function of the claims and limits the scope of the patent to an invention or device that lifts gravel into the gravel tube, churns it, and then allows the gravel to fall back into the tank. Once the court defines the term gravel, the scope of the patent will be clear and a device that falls outside the patent's scope will not be considered an infringing device.

c. Prosecution History

In interpreting the disputed terms, the court may also consider the prosecution history of the patent, which may include representations made by the applicant regarding the scope of the claims. In the instant case, the applicant (Reyneirs) did not, at any time during the prosecution of the patent, assign any special meaning to the term gravel. The term, although it was used throughout the claims and specification, was neither expressly nor impliedly defined in the patent. Since gravel is not otherwise defined by the patent, the assumption would be that the term gravel is to be given the "meaning that it would be given by persons experienced in the field of the invention." Hoechst, 78 F.3d at 1578.

d. Extrinsic Evidence
The intrinsic evidence analyzed above does not aid the court in defining the disputed term in the instant patent. What is clear from the above analysis is that the term gravel should be assigned its ordinary and customary meaning in construing the patent at issue. To presumably aid the court in determining the ordinary and customary meaning of the term, the parties submitted numerous dictionary definitions as well as declarations that purport to define the term gravel. Python argues that the definition includes sand. To support its contention, Python submitted the Declaration of Lance Reyneirs, the original holder of the '784 patent. Reyneirs states in his declaration that:

as one skilled in the art of constructing aquariums, I understand the term "gravel" as used in this patent to teach the use of natural aggregate material typically and historically, used in lining the bottom of aquariums. . . . "Gravel" as used in the '784 patent is understood by the great majority of aquarium hobbyists to include aggregate materials ranging in size from coarse sand to pebbles to small chunks of rock. A typical natural aquarium gravel setup will include aggregate material of varying sized, almost always including coarse sand.

Reyneirs' 2nd Decl., P37.

Additionally, Python attached the Declaration of Ralph Speice, who has been an active tropical and marine fish aquarium hobbyist for over 50 years, and has served as monthly contributing editor for "Fresh Water and Marine Aquarium" magazine since 1978. Mr. Speice essentially restates the same definition given by Mr. Reyneirs to describe the term gravel. Python also submitted the definition of gravel obtained from the 1991 version of Random House Webster's College Dictionary, which defines gravel as "small stones and pebbles or a mixture of these with sand."

LAPP submitted its own declarations and dictionary definitions 3 that support their position that sand is not included in the definition of gravel. LAPP also cited to the 1996 Annual Book of ASTM (American Society of Testing Materials) Standards, which defines gravel as particles of rock that will pass a 3 inch (75 mm) sieve and be retained on a No. 4 (4.75 mm) U.S. Standard sieve. Sand is defined as particles of rock that will pass a No. 4 (4.75 mm) sieve and be retained on a No. 200 (75 [mu] m) U.S. Standard sieve. Under these Standards, most sand would be able to pass through the 1.33 mm slots in the claw of the accused device and be churned in the gravel tube. In the 1996 Annual Book of ASTM Standards, the scope of the standards are set out as follows:

[These ASTM Standards are part of a] system for classifying mineral and organo-mineral soils for engineering purposes based on laboratory determination of particle size characteristics, liquid limit, and plasticity index and is used throughout the United States and in many other countries when precise classification is required.

Pradel Decl., P 15, Ex. F.4

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - - 

3 The dictionary definitions include Webster's New World Dictionary, Third College Edition, which defines gravel as a "loose mixture of pebbles and rock fragments coarser than sand;" The American Heritage College Dictionary, Third Edition, which defines gravel as "an unconsolidated mixture of rock fragments or pebbles;" and Webster's New World Dictionary of American Language, which defines gravel as "a loose mixture of pebbles and rock fragments coarser than sand."

4 Daniel E. Pradel holds a Doctorate Degree in Civil Engineering from the University of Tokyo and a Certificate of Postdoctoral Studies in Geotechnical Engineering from UCLA. Attached to his declaration is a copy of the 1996 Annual Book of ASTM Standards, Volume 4.08. The definitions of gravel and sand are found in section 3.1.1 and 3.1.2, respectively.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - - 

The Federal Circuit has noted that if a court relies on extrinsic evidence:

dictionaries . . . are more objective and reliable guides. Unlike expert testimony, these sources are accessible to the public in advance of litigation. They are to be preferred over opinion testimony, whether by an attorney or artisan in the field of technology to which the patent is directed. Indeed, opinion testimony on claim construction should be treated with the utmost caution, for it is no better than opinion testimony on the meaning of statutory terms.
Given the intrinsic and extrinsic evidence in the instant case, this Court adopts the ASTM definitions and construes the term "gravel" as having a minimum particle size of 4.75 mm.

Python objects to the district court's construction of the following claim language from claims 1 and 10, respectively:

- means for causing sufficient flow of water through the gravel tube . . . [so] that gravel adjacent the bottom of the aquarium tank will be churned in the gravel tube . . . [but] being insufficient to cause gravel churned in the gravel tube to [be] pulled into the elongated flexible hose;

- the step[] of . . . causing a flow of water from the bottom of the aquarium upwardly through the gravel tube . . . sufficient to lift gravel into the gravel tube and to churn [it] . . . and . . . insufficient to cause the gravel to be pulled from the gravel tube into the hose

(collectively, the "churn limitation").

The court determined that it could construe the churn limitation based on only the intrinsic evidence, and held that this functional limitation requires that an infringing device "draw[] gravel into a gravel tube where it is churned, cleaned and released back into the tank." Python defines the recited function more narrowly and argues that the churning limitation is only a "test of flow sufficiency," which does not require that the gravel actually be drawn into the tube and churned during the device's operation. During prosecution, however, Python defined the function more broadly when it deliberately added the churn limitation in response to the examiner's initial rejection of the claims as obvious over a reference that disclosed churning gravel at the bottom of the tank. Python stated:

> In the operation of the apparatus shown in [the cited reference], as water is forced into the aquarium tank through hose 24, the water flow into the tank will churn up the bottom of the aquarium, and solid material that had previously settled to the bottom of the tank will be dispersed throughout the tank . . . An additional advantage of applicant's apparatus is that the gravel at the bottom of the tank is thoroughly churned in the gravel tube until it is completely cleaned . . . [The reference] does not illustrate the use of a gravel tube structure so as to provide for a churning of the gravel in a gravel tube. . . . There is no suggestion in the prior art of churning gravel in the gravel tube and pulling sediment from the churned gravel and discharging that sediment along with waste water into a drain.

September 27, 1985, Amendment (emphasis added). This limitation requires, therefore, that the accused device perform the function of churning the gravel in the gravel tube.

Because the parties disputed the meaning of the ordinary word "gravel," the court supplied the definition. See Fromson v. Anitec Printing Plates, Inc., 132 F.3d 1437, 1441-42, 45 U.S.P.Q.2D (BNA) 1269, 1271 (Fed. Cir. 1997) ("When technical or scientific terms in the claims require definition or explanation or understanding in the course of deciding whether the claims are infringed, it is the judicial duty to do so."). Based on its review of the written description and prosecution history, the court determined that "the term gravel should be assigned its ordinary and customary meaning in construing the patent at issue." See Wright Med. Tech., Inc. v. Osteonics Corp., 122 F.3d 1440, 1443, 43 U.S.P.Q.2D (BNA) 1837, 1840 (Fed. Cir. 1997) ("Claim terms are given their ordinary and customary meaning in the field of the invention, unless a special definition is clearly stated in the specification."); Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578, 38 U.S.P.Q.2D (BNA) 1126, 1129 (Fed. Cir. 1996) ("A technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent and the prosecution history that the inventor used the term with a different meaning.").

Python argues that the inventor supplanted the ordinary and customary definition with a definition in the written description. See Intellicall, Inc., v. Phonometrics, Inc., 952 F.2d 1384, 1388, 21 U.S.P.Q.2D (BNA) 1383, 1386 (Fed. Cir. 1992). (An inventor may "be his own lexicographer and . . . give terms uncommon meanings."). The written description of the '784
The gravel is sufficiently heavy that it will fall back to the floor of the aquarium while sediment is carried away with the water discharged through the elongated hose 14." Col. 6, ll. 19-22. Python maintains that this language defines the word "gravel" as any material small enough to enter and heavy enough to fall from the gravel tube during operation. This definition is broader than the ordinary and customary one.

For a word to take on a new definition, however, the inventor's intent to redefine the word must be readily apparent from the written description. See Multiform Desicants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477, 45 U.S.P.Q.2D (BNA) 1429, 1432 (Fed. Cir. 1998) ("When the meaning of a term is sufficiently clear in the patent specification, that meaning shall apply."); York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572, 40 U.S.P.Q.2D (BNA) 1619, 1622 (Fed. Cir. 1996) ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning."). The '784 patent's written description is not sufficiently explicit to endow the term "gravel" with the broader definition suggested by Python. Therefore, the court correctly construed the term "gravel" based on its ordinary and customary meaning to one skilled in the art.

On this record, there is no genuine issue of material fact about the ordinary and customary meaning of the word "gravel" to one skilled in the art. See Johnston v. IV AC Corp., 885 F.2d 1574, 1579, 12 U.S.P.Q.2D (BNA) 1382, 1385 (Fed. Cir. 1989) ("[A] mere dispute over the meaning of a term does not itself create an issue of fact. This is true even where the meaning cannot be determined without resort to the specification, the prosecution history or other extrinsic evidence provided upon consideration of the entirety of such evidence the court concludes that there is no genuine underlying issue of material fact."). The ASTM Standards provides the only meaningful distinction between the words "gravel" and "sand." It would be unreasonable to disregard this distinction, as well as to disregard the other dictionary definitions and common sense, to adopt Python's litigation-induced definition of "gravel" which is supported by only one dictionary. Therefore, the court's claim construction stands.

1. "grazing angle" of the '710 Patent and "an angle" of the '551 Patent

The first element of claim 1 and claim 24 of the '710 patent use the phrase "grazing angle" to depict the angle at which the invention focuses a beam of light at the surface being inspected. '710 at 13:9, 14:63. In claim 1 and 3 of the '551 patent (a continuation of the '710 patent application) the phrase "an angle" is used to describe a similar function. '551 at 13:12, 13:28. The parties contest the meaning of these phrases. KLA asserts that "grazing angle" as used in the '710 patent and "an angle" as used in the '551 patent refers to any angle other than an angle normal to the surface being inspected. D.I. 340 at 11; D.I. 409 at 27. ADE argues that "grazing angle" is commonly understood to one of ordinary skill in the art to refer to an angle close to the surface being inspected and would limit the meaning of "grazing angle" to an angle between 0 and 10 degrees of the surface. D.I. 314 at 10-12. As to the phrase "an angle" ADE argues in their Opening Brief (D.I. 314) that this phrase must be interpreted in the same manner with regard to the '551 patent as explained above regarding the '710 patent and, then, argues in its Responsive Brief (D.I. 398) that the phrase "an angle" encompasses 90 degrees or normal incidence. D.I. 314 at 15; D.I. 398 at 15.
This court construes the phrase "grazing angle" as used in the '710 patent and the phrase "an angle" as used in the '551 patent to mean any angle other than an angle normal to the surface being inspected. This meaning is consistent with that taught in the written description and depicted in the drawings of the '710 and '551 patents. Figures 2, 3, 6, 7A, and 7B of the '710 and '510 patents depict either explicitly or implicitly an angle or angles for the focused beam of light other than an angle normal to the surface being inspected. For example, Figure 6, reproduced below to the left of Figure 3, uses the mathematical expression \( w / \cos \theta \) to describe the magnitude of the long axis of the ellipse (or the spot of light used to scan the surface being inspected) with \( \theta \) representing the angle shown in Figure 3, reproduced below, and \( w \) representing the minimum width (or length of the short axis of the spot). '710 at 9:53-60; '551 at 9:53-60.

The angle \( \theta \) depicted in Figure 3 and used in the above equation is the angle between 150, or a line normal to the surface being inspected, and the directed beam of light used to scan the surface. Thus, as angle \( \theta \) approaches 90 degrees, or normal, the magnitude of the long axis of the ellipse gets smaller. If this angle approaches 0, or the surface, this axis gets bigger, but if angle \( \theta \) is 90 degrees, normal to the surface, this equation becomes meaningless. A person of ordinary skill in the art would readily understand this mathematical equation and its significance in relation to the patented invention.

The written description of the '710 and '551 patents do not limit "grazing angle" or "an angle" (angle \( \theta \) in Figure 3) to any particular angle or angular range other than a normal angle. ADE, however, argues that the "grazing angle" has a commonly understood meaning in the art referring to an angle of incidence close to the surface being inspected. Furthermore, ADE asserts the inventors understood this meaning and used the phrase accordingly. ADE may or may not be correct in their argument that the inventors had a general understanding of the common art meaning of the phrases "grazing angle" and "an angle" at the time of filing the '710 and '551 patents. The inventors' supposed understanding is unimportant in the present case given that the inventors specifically provided a description for "grazing angle" and "an angle" in the '710 and '551 patents so that a person of ordinary skill in the art could read the patent and determine what angle was necessary to generate varying magnitudes for the "spot's" or ellipse's long axis and, thus, use that angle to change the dimensions of the ellipse as needed to effectuate a scan.

The parties heavily contest the meaning of "said chemically embossed portion has an emboss depth greater than the emboss depth of any portion of said mechanically embossed portion" as found in claims 1 and 9 of the '008 patent and the slight variation of this phrase as found in claim 11 of the '008 patent ("the relative depth language of the '008 patent").

Mannington argues that as used in claims 1, 9, and 11 the relative depth phrase "means that the maximum chemical emboss depth is greater than the maximum mechanical emboss depth." D.I. 326 at 27. In support, Mannington asserts that those skilled in the art understand that emboss depth:

\[ \text{... refers to the difference between the unembossed surface and the deepest part of the embossed surface. Accordingly, the emboss depth of a chemical embossment is the difference, caused solely by the chemical embossing, between the unembossed surface and the deepest part of the embossed surface in the given area. Likewise, the emboss depth of a mechanical embossment is the difference, caused solely by the mechanical embossing, between the unembossed surface and the deepest part of the embossed surface in the given area.} \]

Id. at 28 (emphasis in original).

Moreover, argues Mannington, citing Tate Access Floors, Inc. v. Interface Architectural Resources, Inc., 279 F.3d 1357, 1370, (Fed. Cir. 2002), "a" and "an" as used in patent law and the contested phrases mean one or more of a specified item. Id. at 29. Thus, when the claim language "chemically embossed portion has an emboss depth greater than the emboss depth
of any portion of said mechanically embossed portion" is read with these definitions in mind, it is clear that the inventors intended that only one "portion" of the chemically embossed area be deeper than the deepest mechanically embossed area when measured from the surface to the bottom of the respective embossed areas. Id.

Armstrong argues, on the other hand, that the language "must be interpreted to exclude any product which includes any mechanical embossment deeper than a chemically embossed portion, as measured from the top unembossed surface of the product, whether that chemically embossed portion comprises the joint or grout lines or whether a second chemically embossed portion exists on the 'raised areas.'" D.I. 324 at 26. This construction Armstrong asserts is mandated by the prosecution history.

In particular, Armstrong argues, that Mannington, to distinguish prior art, "included the 'key' limitation: '… wherein said chemically embossed portion of said foam layer has an embossed depth greater than the embossed depth of any portion of said mechanically embossed portion." D.I. 324 at 26 (emphasis in original). In support of this newly added phrase, Armstrong alleges that Mannington pointed to the specification "which states '… in any event, the portion of the foam layer which has been overlaid with the design layer having the (chemical) retarder composition is not mechanically embossed. And, the portions or areas of the foam layer beneath the areas or portions of the wear layer that are embossed are generally slightly embossed.'" Id. at 27 (emphasis in original). Moreover asserts Armstrong, Mannington continued with this line of reasoning in an interview conducted with the examiner to distinguish other prior art references. Id. Consistently with Armstrong, Domco asserts, in a nutshell, that the phrase should be interpreted such that no mechanically embossing is found in the chemically embossed areas. D.I. 142 at 20-27.

Having construed, supra, the phrases "a chemically embossed portion" and "a mechanically embossed portion" as used in the '008 patent much of the mental labor involved in construing the relative depth language of the '008 patent is complete. To reiterate summarily, "a mechanically embossed portion" was construed such that mechanical embossing does not occur in the chemically embossed areas and "a chemically embossed portion" was construed to correspond to those areas where a "regulator," "inhibitor," "retarder," or similar chemical compound was applied to create a recessed textural appearance. This being the case, therefore, the phrase "said chemically embossed portion has an emboss depth greater than the emboss depth of any portion of said mechanically embossed portion" as found in claims 1 and 9 of the '008 patent and the slight variation of this phrase as found in claim 11 of the '008 patent must be construed consistent with the internal logic of the patent and its prosecution history to mean that mechanical embossing does not occur in the chemically embossed areas and that the mechanically emboss depth of those areas mechanically embossed does not exceed the depth of those areas that are chemically embossed when this depth is measured from the unembossed surface plane.

1902

Excess Weight on Bit

Claims in the '930 and '631 Patents include the following "excess weight on bit" limitations: "a weight on bit greater than the selected weight"; "a weight on bit in excess of that required"; "a weight on bit greater than the selected weight"; and a "greater weight on bit" than that required to cause the cutter to cut the formation at the selected depth of cut. Baker Hughes contends these similar terms require the "amount of weight applied along the centerline of the drill bit body" to be "greater" or "larger than the weight required" for the cutter to cut into the formation at a selected depth of cut, but not more weight than one may normally expect or encounter. ReedHycalog contends the excess weight on bit terms do not have an upper bound and mean "regardless of the weight that is applied to the bit." Baker Hughes argues the claim language does not contain words of infinite scope and a claim construction that allows an infinite amount of weight on the drill bit is nonsensical.

ReedHycalog cites two portions of the '631 Patent specification, the Abstract and Summary of the Invention sections, to support its constructions. These state the claimed invention acts to control the torque on bit, depth of cut, and volume of formation cut per bit rotation, "regardless" of the amount of weight on bit. '631 Patent Abstract, col. 4:8-13.

A person of ordinary skill in the art would not conclude the '930 and '631 Patents disclose a drill bit capable of operation when an infinite amount of weight is applied to the bit. Moreover, a person of ordinary skill in the art would not interpret "regardless of the amount of weight on bit" and similar phrases to mean the drill bit can control the depth of cut, volume of
formation material cut per but rotation, and torque on bit for all excess weights. Further, the claims and specifications do not support a construction that allows for an infinite amount of weight on bit. Thus, the Court construes the excess weight on bit terms to require the weight to be neither abnormal nor unusual. 23

23 Ref. No. 25 of Appendix B contains the disputed terms and their constructions.

1903

a. Greatest Elevation

The parties dispute the construction of the term "greatest elevation" in Plaintiff's patent. Defendant argues that the term "greatest elevation" applies to the entire sole or insole and, therefore, a device with a greater elevation at some point other than under the big toe joint would not be covered by Plaintiff's patent. Plaintiff replies that the limitation of the "greatest elevation" is in comparison to other portions of the forefoot, and not in relation to the midfoot. Plaintiff urges that the claim language "greatest elevation" be construed to refer comparatively to only the forefront portion of the insole, not to refer to the entire insole or any other part of the sole. In other words, theoretically, a portion of the sole not covered by the elements of Claim 1 (i.e., not the forefoot, the rearfoot, or the angulation) could be of greater elevation than the forefoot portion, and the device would still remain within the terms of the 882 patent. This is the logical, commonsense interpretation of the claim language. Dr. Talarico's patent describes a forefoot portion of the sole, designated in Figure 7 on Sheet 4 of the 882 patent, and a rearfoot portion. Claim 1 states, "...said inclined surface compensates the forefoot... giving the... big toe joint... the greatest elevation..." Comp., Ex. 1, 882 patent, col. 10, ln. 26-30. The Court finds that "greatest elevation" is a comparative term referring only to the forefoot portion of the sole as designated by Figure 7 on Sheet 4 of the 882 patent, which cuts diagonally into and does not include, for example, the portion of the sole designated in the 663 patent as the midfoot portion, where there is an "additional lift to the metatarsal by use of a supportive arch." Black Aff., Ex. 1, 663 patent, Abstract.

1904

d. Grip Means

With respect to the grip means, claim 2 provides in pertinent part:

A system according to claim 1, wherein said spring means includes grip means for gripping the wall of said element within said coupling.

The '243 patent, claim 2.

The use of the word "means" creates the presumption that § 112, P 6 applies. The language in claim 2 fails to recite sufficient structure to overcome the presumption that § 112, P 6 applies. The proper construction of the grip means is as a means-plus-function element. The grip means are "cutout tabs" in the body of the leaf springs, angled away from the surface of the spring to cut into the wall of the trough element. See id. at col. 4: 4-15.

1905

a. The disputed term in Claim 23: "Grooves"

i. Claim language. The first term that the court must construe is found in Claim 23 of the "product" patent, the '909 patent. The only disputed term in this claim is "grooves." Claim 23, with the disputed term italicized, states the following:
23. A plastic washing machine basket comprising: a substantially circular base wall having a peripheral portion; and an
annular plastic sidewall extending upward from the peripheral portion of said base wall to a terminal edge, said sidewall
having inner and outer surfaces, grooves formed in said inner surface of said sidewall, a plurality of spaced apertures
extending through said sidewall, said apertures located within said grooves.

The '909 patent, Claim 23 (emphasis added).

ii. The parties' definitions and arguments. The parties' proffered definitions of this term are shown below, with bold font
indicating differences between their definitions. Also, the authority on which each party relies for its definition is shown just
below that party's definition.

"GROOVE"

<table>
<thead>
<tr>
<th>Maytag's Definition</th>
<th>Electrolux's Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;a narrow depression, channel or trough in a surface&quot;</td>
<td>&quot;a depression, channel or trough in the sidewall surface of the basket formed by a corresponding projection on the mold core&quot;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maytag's Authority</th>
<th>Electrolux's Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>'909 patent, col. 2, 11. 3-10; col. 3, 11. 17-23; col. 3, 11. 61-64; col. 4, 11. 36-53; col. 5, 11. 43-56; col. 6, lines 60-64; 6, 11. 60-67; claims 1, 28 and 29; dictionary definition of &quot;groove&quot;</td>
<td>'909 Patent, col. 3, lines 17-19 and lines 59-64; col. 5, lines 43-48; col.</td>
</tr>
</tbody>
</table>

Maytag contends that its construction is correct, because it reflects the "plain and ordinary meaning" of "grooves" in the
context of Claim 23 and the '909 patent generally. Maytag points out that the claim language contains no limitations on the
shape of the "grooves," so that nothing departs from the ordinary meaning of "groove" as "a narrow depression, channel, or
trough in a surface." This construction is reinforced, Maytag contends, by looking to other claims--which, among other
things, refer to "teardrop-shaped grooves," making clear that the patentee knew the difference between a simple groove and
a groove with a specified shape. Maytag contends that this definition is also reinforced by the specification--which likewise
makes clear that a particular shape of the groove is specified when one is intended. Finally, Maytag contends that its
definition is reinforced by extrinsic sources, such as dictionary definitions. In contrast, Maytag contends that Electrolux's
construction is in error, because the term "grooves" does not refer to any projection on a corresponding surface, and Claim
23 of the "product" patent says nothing about how the grooves are made.

In response, Electrolux contends that the '909 patent refers throughout to teardrop-shaped recessed portions formed in the
interior sidewall. Electrolux also contends that the '909 patent nowhere limits the "groove" to a particular width or
narrowness and always refers to the "groove" as recessed into the surface of the sidewall, not merely made as part of the
sidewall. Electrolux also points out that the patent language upon occasion refers to the "groove" as "teardrop-shaped" and
as having both a broader portion and a narrower portion, not simply as "narrow." Thus, Electrolux argues that claim
differentiation bars Maytag from expressly including a "narrow" limitation as part of the general definition of "groove." To
do so, Electrolux argues, would render some of the language of other claims mere surplusage.

In rebuttal, Maytag contends that Electrolux is redefining "groove" to mean "any depression," which is far too broad.
Instead, Maytag argues that the specification and figures all show the "grooves" to be narrow, whether or not they are
"teardrop-shaped." The connotation of all of the dictionary definitions, Maytag contends, is that a "groove" is an
"elgongated" and "narrow" depression. Maytag reiterates its contention that Electrolux is also improperly importing from the
specification the location and method of creating the grooves into the construction of "grooves." In rebuttal, Electrolux
contends that Maytag is improperly importing a "narrow" limitation into "grooves" in Claim 23, while ignoring the express
teachings of the specification with regard to how the "grooves" are formed.
In its surrebuttal, Maytag asserts that it is not defining "grooves" as "narrow," but defining "grooves" as "narrow depressions," because the ordinary meaning of "groove" connotes a "narrow depression," such as a "channel" or "trough." Maytag also reiterates that Electrolux is improperly importing the method of producing the washing machine basket into the "product" patent, when the Examiner required separation of the "product" and "process" claims into separate patents. In its surrebuttal, Electrolux asserts that how the structure of the "groove" is formed is important to understanding the patentee's use of the term in the claims.

At the oral arguments, Electrolux identified the construction of "grooves" as a matter deserving further argument. Electrolux contended that it is improper to import a "narrow" limitation into the definition of "grooves" when there is no such limitation in any claim or portion of the specification. Electrolux points out that the patentee used "narrow" in reference to other parts of the "groove," for example, in Claims 10 and 16, and inclusion of such a limitation would exclude other embodiments. Moreover, Electrolux asserted that reading a "narrow" limitation into "grooves" was expressly rejected by the Federal Circuit Court of Appeals in Beckson Marine, Inc. v. NFM, Inc., 292 F.3d 718, 724 (Fed. Cir. 2002). In response, Maytag asserted that Electrolux's construction would turn a "groove" into any depression, while "narrow depression" is the ordinary meaning of "groove" and is the meaning supported by the claim terms and specification in this case. Indeed, Maytag asserts that Beckson is not controlling, precisely because it involved use of the term "groove" in an entirely different context.

iii. Analysis. Beginning with the words of the claim, Nystrom, 424 F.3d at 1142; Biagro, 423 F.3d at 1302, it is readily apparent that Claim 23 states that the "sidewall [has] grooves formed in said inner surface of said sidewall," see the '909 patent, Claim 23 (emphasis added), but it does not state or incorporate the process whereby the grooves are "formed" into the meaning of "grooves." Also, although the claim language does specify the location of the "grooves," that is, "in said inner surface of said sidewall," id., that language does not define "grooves," because "grooves" must necessarily be in something. Thus, while Claim 23, taken as a whole, requires a plastic washing machine basket with "grooves" in the sidewall, the claim does not in any way narrow the meaning of "grooves" to mean only "grooves" that are "formed by a corresponding projection on the mold core," as Electrolux suggests, nor is the location of the "grooves" part of the definition of "grooves," although for purposes of the claim limitation in Claim 23, the "grooves" are claimed to be "in said inner surface of said sidewall."

Neither Claim 23, nor any other claim, nor the specification of the '909 patent suggests that "groove" is a "technical [term] or term of art," so it does not appear that the specification is necessarily the only source for understanding the meaning of "grooves." See Aquatex, 419 F.3d at 1380 (quoting Phillips, 415 F.3d at 1315, for the proposition that the specification is "the best source" for understanding a claim term, where the term is "technical or a term of art"). Clearly, no part of the specification to which the parties have pointed the court suggests that the patentee was its own "lexicographer" as to the meaning of "grooves," so that there is no "governing" definition for "grooves" to be found in the specification. Compare Phillips, 415 F.3d at 1316 (the patentee may act as lexicographer, and when the patentee does so, its definition must govern). Also, although the specification remains of "central importance" to determining the proper construction of the term, id., and may even be "dispositive" in some cases, Phillips, 415 F.3d at 1314, the court finds that this specification is helpful primarily to show that the patentee used "grooves" in the "ordinary" sense.

Specifically, most of the references to "grooves" in the specification that are cited by the parties show that, when a specific shape for the "groove" is intended, e.g., "teardrop-shaped," the patentee specified that shape. See the '909 patent, col. 2, 11. 3-10 (Summary Of The Invention referring to "teardrop-shaped grooves"); col. 3, 11, 17-23 (Detailed Description Of The Invention also referring to "teardrop-shaped grooves"); col. 3, 11. 61-64 (same). In other circumstances, the patentee left the shape of the "groove" unspecified. See id., col. 4, 11. 36-53 (referring simply to "grooves"). Undeniably, the specification refers to "teardrop-shaped projections 132" that extend from the "mold core 90" in order to form beveled apertures 44 and the teardrop-shaped grooves 50 in basket 2," id., col. 5, 11. 43-56; see also id. col. 6, 11. 60-67, but this part of the specification does not define "grooves" or make the process whereby the "grooves" are created part of the definition of "grooves." Thus, specifications of particular shapes for the "grooves" in the patent specification and the claims, such as those cited above and in unasserted Claim 29 which expressly claims "grooves [that] are teardrop-shaped," see the '909 patent, Claim 29 suggest that "groove," when standing alone, must have its "ordinary" meaning. See Nystrom, 424 F.3d at 1143 (different words in separate claims suggest differences in meaning). Otherwise, the express definitions of shape in other parts of the specification or other claims would be "superfluous." Merck, 395 F.3d at 1372 (terms must not be interpreted in such a way as to make any other terms superfluous).
Similarly, the claimed limitation on certain "grooves" as having "narrowed end portions," versus "enlarged end portions," as in Claims 10 and 16, does not exclude a definition of "grooves" as "narrow depressions," as Electrolux contended at oral arguments. Specification of the relative widths of the "end portions" of the "grooves" again suggests only that, when a specific (or relative) shape was intended for "end portions" of a "groove," such specific shape was claimed, but that, for any other portion of the "groove," the term was intended to have its ordinary meaning.

Finding nothing dispositive in the claim language itself or the specification of the '909 patent concerning the meaning of "groove" in Claim 23, the court turns to extrinsic evidence, such as standard dictionaries, for guidance on "the widely accepted meaning of [this] commonly understood word[]." Phillips, 415 F.3d at 1314. At this point, the parties' dispute is between "a narrow depression, channel, or trough," as Maytag defines the term, and "a depression, channel, or trough," as Electrolux would have it. Plainly, a "groove" may be a kind of "depression," but not every "depression" is a "groove." For example, MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY (10th ed. 1995) defines "depression" as "a depressed place or part: HOLLOW," id. (definition 3 of "depression n"), while it defines "groove" as "a long narrow channel or depression." Id. (definition 1 of "groove n") (emphasis added); see also Plaintiff's Markman Appendix, Exhibit C (definition 2 a of "groove n" from WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY (no date shown), stating "a long narrow hollow or channel made artificially in a surface") (emphasis added). By relying on such a dictionary limitation on the shape of the pertinent "depression" Maytag is not improperly redefining "groove" in the patent as a "narrow groove," as Electrolux contends, but properly defining the kind of "depression" referred to by "groove" as a "narrow depression." Nor is it appropriate to conclude, as Electrolux contends, from a single part of the specification stating that the "teardrop-shaped grooves 50 generally taper along their length, in both width and depth," see id. col. 3, lines 17-19, that the patentee intended to eschew a definition of a "groove," standing alone, as a "narrow depression." Rather, "tapering" suggests a specific kind of "narrow depression" in the particular circumstance referred to in this part of the specification, i.e., "a narrow depression" that "become[s] progressively smaller toward one end." MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY (10th ed. 1995) (definition 1 of "taper vb"). Similarly, the references to "narrowed end portions" and "enlarged end portions," for example, in Claims 10 and 16, suggest only that the "narrow depression" has "end portions" that are relatively "enlarged" or "narrowed."

Nor is the court persuaded by Electrolux's contention that the Federal Circuit Court of Appeals rejected the ordinary meaning of "grooves" as "narrow depressions" in Beckson Marine, Inc. v. NFM, Inc., 292 F.3d 718, 724 (Fed. Cir. 2002). Rather, in Beckson, the court held that, in the context of the patent at issue, "the ordinary meaning of 'groove' is not limited to long and narrow U-shaped entities, but encompasses as well other structures that drain water." Beckson, 292 F.3d at 724. This conclusion was based, in part, on use of "the broad term 'draining structures,'" which the court concluded "suggests that the applicant did not limit the claim term 'groove' to a specific width or length." Id. "In fact," the court held, "the written description does not require long and narrow grooves at any point." Id. This court doubts that the construction of "grooves" in Beckson, concerning a completely different patent, could, in any way, be dispositive of the meaning of "grooves" in the '909 patent, which relates to a completely different device. Moreover, in the '909 patent, there is no broader generic term, such as "draining structures," associated with "groove" that would suggest that the patentee did not intend any limitation on width or length. Instead, in the context of all of the evidence bearing on the question here, the court concludes that, while the applicant may not have intended to limit the claim term "groove" to a specific width or length, the patentee did intend to use the term in the sense of a depression that was narrow in width relative to its length, i.e., a "narrow depression." For example, a fair inference from the more specific specifications of the "grooves" as "teardrop-shaped" or as "narrowed and "enlarged" end portions is that the "grooves" are relatively narrower in width than length, that is, that they are "elongated" or "narrow" depressions.

In short, the court concludes that the proper construction of "groove" for purposes of the '909 patent is Maytag's definition, "a narrow depression, channel or trough in a surface."

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7. Groove

The term "groove" appears specifically in asserted Claims 25, 32, 41, and 42. With this term, the parties agree that nothing in the specification or prosecution history suggests that the patentee intended to use the term other than according to its
ordinary definition. The dispute is instead, what is included in this definition. A "groove" may be defined as a "long narrow cut or indentation in a surface," Webster's Universal, Stant Ex. 103, p. 842, or as "a long narrow hollow or channel in a surface," Webster's Third, Gerdes Ex. 229, or even as "[a] channel or hollow, cut by artificial means, in metal, wood etc." as the court noted in Beckson Marine Inc. v. NFM, Inc., 292 F.3d 718, 723-24 (Fed. Cir. 2002).

While the court agrees with the parties that nothing in the claims, specification, or prosecution history suggests deviating from one of these ordinary meanings, the court also does not see any evidence that the definition should be limited as to width, length, or means of cutting. Like the court in Beckson Marine, this court has reviewed the evidence bearing on the meaning of the term as it is used in the patent. Nothing in that evidence limits the groove to only those indentations or cuts that are long and narrow and created by artificial means. Therefore, the court finds that the definition asserted by Gerdes, although technically a dictionary definition of the term, is too restrictive based on the use of the term in this particular patent. See Waner, 331 F.3d at 854. For this reason, the court finds that the definition of "groove" is more properly any channel, hollow, cut, or indentation in a surface.

5. "Groove." Consistent with the specification and claims, "groove" shall be given its ordinary dictionary meaning. Therefore, "groove" shall mean "a narrow furrow or channel." 5

--------- Footnotes ---------

5 The American Heritage Dictionary 578, (2d ed. 1982).

--------- End Footnotes ---------

7. "{G}roove-like constrictions:" 7 "A longitudinal groove wherein the lateral defining surface opposite the lower band surface of the spring strips is circular." This construction is consistent with the only embodiments disclosed by the '512 patent. (col. 6:58-62; col. 7:24-25; col. 7:56-59) A construction requiring a circular lateral defining surface is supported by the prosecution history. During prosecution, the examiner rejected original claim 12 (now claim 9) under 35 U.S.C. § 112 as indefinite.(Id. at JA01077) In response, the applicant cited the description of the groove-like constrictions in Figure 6. (Id. at JA01106) With respect to Figure 6, the specification explains that "the two lateral defining surfaces of the constrictions are embodied spherically . . . ." (col. 6:16-19) Finally, spherical must be understood to mean circular, as the lateral surface cannot be spherical in cross section. (See D.I. 165 at JA01216)

--------- Footnotes ---------

7 '512 patent, claims 9 and 13.

--------- End Footnotes ---------

3. "{G}rooves" 4 and "{C}hannels:" 5 "Regions within the cable that are substantially physically separated from other regions within the cable by a pair separator, i.e., they are formed by, but need not be part of, the separator." This construction is consistent with the claims as well as the specification. (col. 5:4-5; col. 7:26-29) The parties agree that the '095 and '999 patents use these two limitations interchangeably. Despite an ordinary meaning describing these limitations as "narrow" regions, the court declines to incorporate this limiting term into its construction in view of the relatively broad grooves displayed by figure 5. Moreover, although formed by the pair separator, the "grooves" and "channels" are discrete from, and not physical attributes of, the pair separator. (See figure 5 (depicting a preferred embodiment which has
"grooves" formed by arranging the pair separator, yet grooves do not appear to be components of the pair separator)

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Element [c]-a ground mechanism is also disputed. Thomas and Betts interprets this element to be "an elongated ground rod sunk into the ground" while Senior Industries suggests the proper interpretation to be "a structure (such as a rod or pipe-possibly including several elements) which makes an electrical connection with the earth (i.e., the "ground"), such that dangerous voltages cannot build up in the electrical power system." The proposed constructions are really not in conflict. Senior Industries interpretation is more descriptive and clearly tracks the language in the specification. For example, the specification states the following:

Whether the utility box has an overhead feed or an underground feed, the metal box itself must be electrically connected to ground G through a suitable grounding system. For example, a conduit 16 holds a large size grounding wire 18 which is connected through a clamp 20 to an elongated grounding rod 22 sunk into the ground G.

(the '960 patent, col. 3, lines 51-57 (Ex. A.)).

This passage from the patent specification confirms that the inventor intended the terms to be accorded their ordinary meaning. Furthermore, an examination of the prosecution history supports the notion that the ground mechanism is not limited to a ground rod, as the amendments that were made to Claim 1 include the change in the original words "ground rod" to "ground mechanism". This substitution of the broader term "mechanism" for the narrower term "rod" confirms that the inventors intent was to cover grounding mechanisms, and not just grounding rods. (See Exhibit H; 7/12/90 Amendment C, pp. 1 and 4). As such, the proper construction of element [c] is "a ground mechanism which makes an electrical connection with earth" and is not limited to a sunken ground rod.

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Forward Movement of the Needle

"needle holding portion is grounded inside the nose adjacent to the first open end by a barrier limiting forward motion of the elongated needle holder inside a front portion of the nose prior to or during retraction" 10 ('224 patent, claim 1)
11 RTI contends "a barrier disposed in the front end portion of the body that limits forward motion of the needle holding portion and the retractive needle relative to the body as the plunger is depressed inside the barrel during injection and retraction" means "a structure located near the front end of the body that serves to limit forward movement of the needle holder prior to or during retraction." OMI contends the term means "a structure located near the front end of the body that serves to prevent any forward movement of the needle holder prior to or during retraction."

"the needle holding portion is grounded on the annular shoulder" 12 ('224 patent, claim 52)

12 RTI contends "the needle holding portion is grounded on the annular shoulder" means "the needle holder abuts a structure of reduced diameter within the syringe body." OMI contends the term means "the needle holder is prevented from moving forward by a structure of reduced diameter within the syringe body prior to or during retraction."

The claims of the '224 patent contain the above "forward movement of the needle" terms. The parties dispute whether "limiting," "limits," and "grounded" mean the needle holder's forward movement is merely limited or if the needle holder is entirely prevented by an obstruction.

The prosecution history shows that the needle holder does not move forward once grounded. "'[A] clear and unmistakable disavowal of scope during prosecution' may affect the construction of a claim term." Lucent Techs., Inc. v. Gateway, Inc., 525 F.3d 1200, 1211 (Fed. Cir. 2008) (citations omitted). The applicant stated "If needle (3) can still move forwardly during retraction, it does not appear to be 'grounded inside the nose' and a patient could be expected to experience pain as the needle moves forward in relation to the needle assembly (9) as the plunger is fully depressed during retraction." Def.'s Br. (Docket No. 89) Ex. 11, Amendment and Resp., 36. The applicant later stated "Pressly et al. '629 does not disclose a syringe having a needle retraction mechanism grounded inside the nose adjacent to the first open end as recited in claim 58." Def.'s Br. (Docket No. 89) Ex. 11, Amendment and Resp., 38. Thus, the applicant established that when the needle is grounded, it cannot move forward, and the applicant expressed clear disavowal when he distinguishing from the prior art that the needle assembly, which includes the needle holder, cannot move forward during retraction if it is grounded inside the nose.

The specification supports construing "limit" and "grounded" as "prevent any forward movement." The Summary of the Invention states "The front of the needle holder is grounded in the nose portion against forward movement." '224 patent, Col. 4:6-7 (emphasis added). The Detailed Description of the Preferred Embodiment is consistent with the Summary of the Invention. The Detailed Description of the Preferred Embodiment states "Since the front portion 26 of the needle holder is grounded or bottomed inside front 76 of nose 16 at annular shoulder 77, no amount of pressure will allow needle holder 22 or needle 28 to move forward." '224 patent, Col. 8:27-30. Thus, the specification supports that the needle holder does not advance forward at all when grounded.

RTI contends that because dependent claim 52 (dependent on claim 50, which depends on claim 43) already contains the limitation "grounded on the annular shoulder," OMI's construction, which equates "limiting" (found in claim 43) with "grounded" would render claim 52 meaningless. '224 patent, Col. 24:9-10. However, OMI's construction is consistent with claim 52. The presumption created by claim differentiation requires "only that at least one limitation must differ." Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000) (citation omitted). Claim 52 specifies that contact between the needle holder and the annular ring prevents forward movement of the needle holder. Contact between the needle holder and the annular ring is the required difference between claim 43 and claim 52 under the doctrine of claim differentiation. Thus, claim 43 and claim 52 may both prevent forward movement of the needle holder. Furthermore, any presumption created by claim differentiation is rebutted by the specification and prosecution history discussed supra. Thus, OMI's construction properly equates "limit" to "grounded."
RTI also contends that the original claim 30, which was cancelled prior to issuance, used the language "prevents forward motion of the retractable needle during retraction." Pl.'s Br. (Docket No. 79) Ex. 6, Amendment in Resp. to Non-Final Office Action, 38. RTI concludes from this that the applicant actually used the word "prevent" when he wanted to convey the meaning of "prevent"; thus, the applicant did not intend for other words, like "limit" and "grounded," to carry the meaning of "prevent." However, original claim 30 was cancelled, and RTI does not present evidence on the reason for cancellation. Thus, the intentions of the applicant and the examiner regarding the cancellation are unknown. This drastically reduces the persuasive value of original claim 30 because RTI only hypothesizes why the applicant used "prevent" in claim 30 and such a hypothesis alone does not establish clear disavowal. Accordingly, the "prevent" language in original claim 30 does not contradict RTI's proposed language "prevent any forward movement of the needle holder."

Accordingly, the Court construes "needle holding portion is grounded inside the nose adjacent to the first open end by a barrier limiting forward motion of the elongated needle holder inside a front portion of the nose prior to or during retraction" as "the needle holder abuts an obstruction in the nose of the syringe which prevents any forward movement by the needle holder prior to or during retraction," "a barrier disposed in the front end portion of the body that limits forward motion of the needle holding portion and the retractable needle relative to the body as the plunger is depressed inside the barrel during injection and retraction" as "a structure located near the front end of the body that serves to prevent any forward movement of the needle holder prior to or during retraction," and "the needle holding portion is grounded on the annular shoulder" as "the needle holder is prevented from moving forward by a structure of reduced diameter within the syringe body prior to or during retraction." 13

13 RTI did not include "prior to or during retraction" in its claim construction for "the needle holding portion is grounded on the annular shoulder." However, RTI did not state an objection to OMI's use of this language. Thus, the Court includes "prior to or during retraction" in the Court's construction as language that is not in dispute.

2. Arguments

Energizer argues that the plain meaning of Claim 1 indicates that it does not cover razors having more than three blades. Gillette argues that the Quattro contains a group of three blades meeting the terms of the claims in the 777 patent, and that the addition of the fourth blade does not avoid infringement.

Claim 1 requires a "safety razor blade unit comprising . . . a group of first, second, and third blades." The term "first" used as an adjective in this context indicates an item that is "before all others with respect to time, order, rank, importance, etc., used as the ordinal number of one." Random House Webster's College Dictionary 501 (1992). The term "second," when used as an adjective in this context, indicates an item that is "next after the first; being the ordinal number for two." Id. at 1210. Similarly, the term "third" in this context indicates an item that is "next after the second; being the ordinal number for three." Id. at 1387.

Claim 1 governs the spatial and sequential placement of the three blades. Claim 1 states that the first blade in the group of three is a "first blade defining a blade edge nearest the guard having a negative exposure not less than -.02 mm." The third blade is a "third blade defining a blade edge nearest the cap having a positive exposure not greater than +.02 mm." Thus, the "first blade" in the group of three is defined as the one "nearest the guard" with a certain negative exposure. The "third blade" is defined as the one "nearest the cap" with a certain positive exposure. The "second" blade has "a blade edge not less than the exposure of the first blade and not greater than the exposure of the third blade." Thus, the three blades with "progressive geometry" must be in the proper sequence of exposures within the blade unit. The addition of fourth blade in the middle between the first and second blade or the second and third blade is inconsistent with the plain language of "first," "second," and "third" because the blade "nearest the cap" would really be the "fourth" blade in the sequence.
Gillette insists that the use of the word "comprising" in Claim 1 indicates that it covers a razor with a group of three blades arrayed in the specific geometry of the 777 Patent, even if that razor unit includes additional intervening blades. Cf. Cybor Corp. v. FAS Techs., 138 F.3d 1448, 1459 (Fed. Cir. 1998) (construing the limitation "to" in the term "by first pumping means to second pumping means" not to preclude the fluid passing through intervening components). It is true that "comprising" is "generally understood to signify that the claims do not exclude the presence in the accused apparatus or method of factors in addition to those explicitly recited." Smith & Nephew, Inc. v. Ethicon, Inc., 276 F.3d 1304, 1311 (Fed. Cir. 2001) (citing Vivid Techs., Inc. v. American Science & Eng'g, Inc., 200 F.3d 795, 811 (Fed. Cir. 1999)). See also Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501 (Fed. Cir. 1997) ("'Comprising' is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.") (citation omitted).

But "comprising" is not a "weasel word with which to abrogate claim limitations." See Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1379-80 (Fed. Cir. 1998). While the term "comprising" does not exclude additional unrecited elements, the term could not be used to "affect the scope of the particular structure recited within the method claim's step." Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1271 (Fed. Cir. 1986) (holding that a step which recites engaging "eight cube pieces as a composite cube" does not read on a step which engages more than eight cube pieces despite the use of the transitional term "comprising").

Here, Claim 1 provides for a safety razor blade comprising: (1) a cap; (2) a guard; and (3) "a group of first, second, and third blades." While the use of the word "comprising" indicates that certain elements may be added (e.g., the wires in the Quattro blade unit) without vitiating a claim of infringement, any placement of another blade in the middle would contradict the plainly defined configuration of the "group of first, second and third blades in the blade unit" mandated by Claim 1. No amount of creative numbering (like Gillette's designating the middle blades as 2a and 2b) can avoid the plain language regarding blade configuration in Claim 1 that excludes from its literal scope the possibility that the accused razor unit contain four blades. See N. Telecom Ltd. v. Samsung Elecs. Co. Ltd., 215 F.3d 1281, 1296-97 (Fed. Cir. 2000) ("If a patent requires A, and the accused device uses A and B, infringement will be avoided only if the patent's definition of A excludes the possibility of B . . . ."). This interpretation of the plain language in the claim is consistent with the specification, which Defendant asserts uses the words "three," "third" or "tertiary" in 30 different places. Nothing cited in the prosecution history speaks to the contrary. Therefore, Gillette is unlikely to prevail on its argument that Schick's accused Quattro razor meets all the limitations in Claim 1 or 10. 2

--- Footnotes ---

2 As Gillette has not demonstrated a likelihood of success on literal infringement, the Court need not turn to the other factors in the test for a preliminary injunction in a patent case.

--- End Footnotes ---

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Applying this case law, this court must determine, on this preliminary record, whether the language "comprising . . . a group of first, second, and third blades" in the '777 patent can encompass four-bladed safety razors (such as the QUATTRO(R)) or is limited to solely three-bladed safety razors. As explained below, this court discerns that claim 1 uses the "open" claim terms "comprising" and "group of," in addition to other language, to encompass subject matter beyond a razor with only three blades. Moreover, the specification's focus on blade exposures and express reference to "blade units with a plurality of blades," '777 patent, col. 1, II. 3-6, shows as well that this invention covers razors with more than three blades.

The objective of the invention of the '777 patent is to reduce drag forces in safety razors with more than two blades. See id. at col. 1, II. 24-37. The '777 patent accomplishes this objective by progressively increasing the blade exposure and the blade span. Id. at col. 1, II. 37-59. Indeed, the specification specifically acknowledges that it is not the three blades themselves which solve the prior art problem of detrimental drag forces, but instead the arrangement of three blades in a particular spatial configuration, stating "the novel aspects of the present invention residing in the provision of three blades set in the blade unit set in particular dispositions with respect to each other and the guard and the cap." Id. at col. 3, II. 16-19 (emphasis added). The written description likewise discusses these parameters with respect to the relative positioning of
each of the three blades at length at column 1, line 60 through column 2, line 40. These principles of progressive blade exposure and progressive blade span could apply equally to four or five blades. Such a geometric arrangement of three, four, or even more blades will achieve a closer shave and, at the same time, minimize excess drag. It may be that a four-bladed safety razor is a less preferred embodiment. A four-bladed razor costs more to build, requires more parts, and adds more frictional drag compared to the three-bladed version. Nevertheless, a patentee typically claims broadly enough to cover less preferred embodiments as well as more preferred embodiments, precisely to block competitors from marketing less than optimal versions of the claimed invention.

Indeed, the language of claim 1 of the '777 patent encompasses more than only three-bladed razors. At the outset, the open language of claim 1 embraces technology that may add features to devices otherwise within the claim definition. Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1271 (Fed. Cir. 1986). The claim uses two terms to show this open-ended meaning. The word "comprising" transitioning from the preamble to the body signals that the entire claim is presumptively open-ended. Crystal Semiconductor Corp. v. TriTech Microelectronics Int'l, Inc., 246 F.3d 1336, 1347 (Fed. Cir. 2001); Innovad Inc. v. Microsoft Corp., 260 F.3d 1326, 1333 (Fed. Cir. 2001). Because the patentee invoked this open-ended treatment in claim 1 of the '777 patent, the scope of claim 1 encompasses all safety razors satisfying the elements set forth in the claim. The addition of elements not recited in the claim cannot defeat infringement. See Crystal Semiconductor, 246 F.3d at 1348 ("The transition 'comprising' creates a presumption that the recited elements are only a part of the device, that the claim does not exclude additional, unrecited elements. KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed. Cir. 2002).")

The claim element identifying the blades likewise uses another presumptively "open" claim term -"group of." '777 patent, col. 4, l. 6. At the outset, the language "group of" does not place any limits or closed implications on the elements following this broad designation. Claim drafters often use the term "group of" to signal a Markush group. A Markush group lists specified alternatives in a patent claim, typically in the form: a member selected from the group consisting of A, B, and C. See Manual of Patent Examining Procedure § 803.2 (2004). A Markush group by its nature is closed. If an applicant tries to claim a Markush group without the word "consisting," the PTO will insist upon the addition of this word to ensure a closed meaning. Thus, in order to "close" a Markush group, the PTO insists on the transition phrase "group consisting of." See Abbott Labs. v. Baxter Pharm. Prods., Inc., 334 F.3d 1274, 1280 (Fed. Cir. 2003). Without the word "consisting" the simple phrase "group of" is presumptively open. If intending to limit the claimed invention to a three-bladed razor, the patent drafter would not have used the words "group of." Rather, the drafter would have used the words "group consisting of," or the simple formulation "and first, second, and third blades." Because the drafter chose to use the open term "group of," additional members in the element "group of … blades" will not defeat infringement. In other words, a razor with two "second blades," as in the QUATTRO(R), will still fall within the literal language of the claim.

The element at issue requires:

a group of first, second, and third blades with parallel sharpened edges located between the guard and cap, the first blade defining a blade edge nearest the guard having a negative exposure not less than -0.2 mm, and the third blade defining a blade edge nearest the cap having a positive exposure of not greater than +0.2 mm, said second blade defining a blade edge having an exposure not less than the exposure of the first blade and not greater than the exposure of the third blade.

'777 patent, col. 4, II. 5-14 (emphases added). This element clearly defines a "group of blades" as a subset of the total number of blades in the razor, and specifically identifies which blades of the razor are the "first, second, and third" blades of the subset. The first blade in the group is the blade "nearest the guard," or leading blade. The third blade in the group is the blade "nearest the cap," or trailing blade. The second blade is defined by its exposure, and must "have an exposure not less than the exposure of the first blade and not greater than the exposure of the third blade." Given that the first and third blades must define the leading and trailing blades, respectively, and in light of the specification's discussion ion of a progressive blade exposure, the second blade must also be located between the first and third blades. See id. col. 1, I. 60 - col. 2, I. 40 (discussing a progressive blade exposure from a first blade to a second and third blades). Thus, any blade in between the first and third blades and with an exposure greater than that of the first blade and less than that of the third blade is a "second" blade in the claimed subset of blades. The accused QUATTRO(R) device, in fact, has two "second blades" because both of the middle blades in the accused device meet the definition of the "second blade" set forth in the claim. Any subset of three blades in a blade unit meeting these definitions is a "group of blades "as defined by the clear language of the claim. This claim is not ambiguous. In fact, the patentee underscored this open-ended claim meaning by using both the open-ended transition phrase "comprising" for all elements of claim 1 as discussed above, and the open-ended claim term "group of" for
The district court adopted Energizer's argument that the numerous (approximately thirty) references to "three," "third," and "in the art would construe the claims of the '777 patent to encompass razors with more than three blades. This blatant admission by this same defendant before the EPO clearly supports this court's holding that those skilled in the art would construe the claims of the '777 patent to encompass razors with more than three blades.

The prosecution of patents related to the '777 patent also supports reading claim 1 as an open claim. The defendant itself endorsed an open interpretation of "comprising" when it argued to the European Patent Office (EPO) that a virtually identical claim in Gillette's European counterpart to the '777 patent would not exclude an arrangement with four or more blades. This blatant admission by this same defendant before the EPO clearly supports this court's holding that those skilled in the art would construe the claims of the '777 patent to encompass razors with more than three blades.

The district court adopted Energizer's argument that the numerous (approximately thirty) references to "three," "third" and
"tertiary" in the specification limit the scope of the claims. Gillette, 2004 U.S. Dist. LEXIS 28656, slip op. at 14. However, "words or expressions of manifest exclusion" or "explicit "disclaimers in the specification are necessary to disavow claim scope. Housey Pharm., Inc. v. Astrazeneca UK Ltd., 366 F.3d 1348, 1352 (Fed. Cir. 2004); Liebel-Flarsheim v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004). Despite the numerous cites to three-bladed razors plucked from the written description, no statement in the patent surrenders or excludes a four-bladed razor. Neither the district court nor Energizer refers to the "manifest" or "explicit" exclusion test. This patent and its prosecution record fall far short of any kind of disclaimer or disavowal. Not only did the patentee claim the invention with two open-ended terms ("comprising" and "group of"), but the specification expressly teaches that the invention encompasses a "plurality of blades." This court declines to import limitations to the claims from the specification absent a "manifest" or "explicit" exclusion. Id. The patentee did not disclaim razors with more than three blades at all, let alone "manifestly," or "explicitly." Rather the patentee opened its teachings of the invention in the specification with an express statement that the "invention" covers "blade units with a plurality of blades." '777 patent, col. 1, ll. 3-6. The applicant did not "manifestly" or "explicitly" disclaim blade units with a plurality of blades by expressly defining the invention in those exact terms. More important, the language of the claim itself, with its open transition phrases and use of ordinals to distinguish but not limit claim elements, shows that the invention embraces "a plurality of blades."

III

Based on the preliminary record before this court, the district court erred in limiting the claims of the '777 patent to encompass safety razors with solely three blades. Accordingly, this court vacates the district court's denial of a preliminary injunction on the grounds of Gillette's failure to show a likelihood of success on the merits of its claim. However, because the claim construction set forth in this opinion is preliminary and based upon an incomplete record, the district court will have every opportunity to review and revisit this claim construction during development of a full record. Indeed, this court recognizes the difficulty imposed on a trial court to construe claim terms based upon a preliminary "likelihood" record. See, e.g., CVI/Beta Ventures, Inc. v. Tura, LP, 112 F.3d 1146, 1160 n.7 (Fed. Cir. 1997) (reversing its own earlier "likelihood" claim construction of terms that were appealed after a complete record); Bayer AG v. Biovail Corp., 279 F.3d 1340, 1349 (Fed. Cir. 2002) (holding that it was premature for this court to engage in its own claim construction where the district court had not performed a comprehensive claim construction based on a complete record); Metallics Sys. Co. v. Cooper, 100 F.3d 938 (Fed. Cir. 1996) (declining to construe patent claims on appeal from a denial of a preliminary injunction).

ARCHER, Senior Circuit Judge, dissenting.

Because the majority exalts form over substance in reaching its conclusion, specifically elevating claiming conventions over the clear teachings of the specification of U.S. Patent No. 6,212,777 ("the '777 patent"), I dissent.

In construing a claim, we first look to the words of the claims, and these words are generally given their ordinary and customary meaning. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Our search for the proper meaning of claim terms does not stop there, however, because a patentee may choose to "use terms in a manner other than their ordinary meaning." Id. Such a redefinition or limitation of a claim term need not be explicit. "In other words, the specification may define claim terms 'by implication' such that the meaning may be 'found in or ascertained by a reading of the patent documents.'" Bell Atl. Network Servs., Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001) (quoting Vitronics, 90 F.3d at 1582); see Astrazeneca v. Mutual Pharm. Co., Inc., 384 F.3d 1333, 1340 (Fed. Cir. 2004) (explaining that a patent applicant need not expressly state "my invention does not include X" to indicate his exclusion of X from the scope of his patent). Thus, "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." Vitronics, 90 F.3d at 1582 (emphasis added). The majority eschews this teaching in our case law, instead focusing primarily on the ordinary and customary meaning of the claim terms.
The construction of claim 1 of the '777 patent hinges on how the terms "comprising" and "group of" are construed. The majority follows claiming conventions and ascribes an open meaning to these terms. In doing this, the majority ignores the overwhelming teaching of the specification that the invention of the '777 patent is a razor limited to three blades arranged in the described claim configuration. 1

1 The blade configuration refers to the described progressive and variable blade spans and blade exposures and the three blades' location relative to each other.

Claim 1 reads "comprising a guard, a cap, and a group of first, second, and third blades"; it does not read "a group of blades comprising first, second, and third blades." In this claim, the transition term "comprising" refers only to the total number of elements in the complete razor, allowing for a razor with additional elements besides the guard, the cap, and the three blade unit. See Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1379 (Fed. Cir. 1998); Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1271 (Fed. Cir. 1986) (holding that a step which recites engaging "eight cube pieces as a composite cube" does not read on a step which engages more than eight cube pieces, despite the use of the transitional term "comprising"). For example, claim 1 could include a safety razor with an additional guard or cap or some other element altogether. Because the transition term "comprising" is not a weasel word with which to abrogate claim limitations," Spectrum Int'l, 164 F.3d at 1379-80, or to impermissibly expand a claim's scope, claim 1 should not be construed as permitting a group with more than three blades simply because claim 1 contains the open transition term "comprising" in its preamble when the entire specification points to the invention as being only a three-bladed razor with progressive blade exposure and span.

The dependent claims themselves demonstrate that the blade unit of the invention contains only three blades-including a single second blade. Specifically, whenever the second blade is referred to individually, it is referred to singularly ("the edge of the second blade," claim 6, II. 2-3, claim 7, line 2; "the exposure of the second blade," claim 10, line 2). Similarly, the dependent claims' use of the term "span" (singular) whenever the distance between the first and second blades and second and third blades is mentioned evidences that there can only be a single second blade: "a span between the edges of the first and second blades," claim 5, line 2 (emphasis added); "a span between the edge of the third blade and the edge of the second blade," claim 6, II. 2-3 (emphasis added); "a span between the edge of the second blade and the edge of the first blade," claim 7, II. 2-3 (emphasis added); "a span between the edges of the first and second blades and between the edges of the second and third blades," claim 8, II. 2-3 (emphasis added); and "the span between edges of the second and third blades," claim 9, line 2 (emphasis added). A blade unit including more than one second blade would contain "spans" (plural) between "the second blade" and the first or third blade - one between the first or third blade and the first second blade and one between that same first or third blade and the second second blade. There simply could not be a single span between a first or third blade and two second blades. The majority states that the use of "a span" for describing the distance between the edges of the first and second blades and that between the edges of the second and third blades suggests that there can be more than one span for each. In other words, there can be a first span between the edge of the first blade and the edge of the first second blade and a second span between the edge of the first blade and the edge of the second second blade. Such an interpretation of "a span" is not consistent with the remainder of the claim language, however. Claims 5 and 8 state that this span is "substantially equal to 1.5 mm." In a razor having two second blades as proposed by the majority, the first and second blades would have to be virtually in the same spot to satisfy this claim language (a configuration the majority does not even claim the specification supports), as the edge of each second blade would have to be substantially 1.5 mm from the edge of the first blade. 2 Thus, there can only be a single span between the edge of the first blade and the edge of the second blade and a single span between the edge of the third blade and the edge of the second blade. The majority's claim construction effectively replaces "span" with "spans"; this is not what is claimed.

2 The same analysis applies to the distance between the edges of the third and second blades as described in claim 8.
The specification similarly limits the invention to a blade unit having only three blades. The written description begins with an explanation of how two-bladed safety razors have dominated the wet shaving industry. "Safety razors having blade units with two blades have in recent years been sold in very large numbers and are generally acknowledged to give a better quality shave, especially in terms of closeness, than single bladed razors." '777 patent, col. 1, II. 34-37. The specification then explains that a blade unit with more than two blades can provide a closer shave but notes that such a multi-bladed razor is not desirable for other reasons:

Closeness of a shave obtained is only one parameter by which razor users judge the performance of a razor. Adding extra blades can have a serious detrimental influence on other blade unit characteristics, most notably the drag forces experienced when the blade unit is moved over the skin, with the consequence that the overall performance of the blade unit can be markedly inferior despite a closer shave being obtainable.

Id. at col. 1, II. 24-29. The specification then discloses that the inventors have discovered a particular blade geometry for a three-bladed razor so as to overcome the traditional shortcomings of razors having more than two blades. Specifically, the inventors found that adding a third blade positioned between the other two blades in a particular configuration improved closeness while adding only minimal drag:

It has been found that with a blade unit comprising three blades, the frictional drag forces can be kept at an acceptable level while allowing an improved shaving efficiency, by setting the blades relative to each other and to guard and cap surfaces positioned in front of and behind the blade edges, according to a particular geometrical disposition.

Id. at col. 1, II. 32-37. As such, with the exception of the three-bladed razor having the claimed geometry, the specification actually discourages, or teaches away from, razors that have more than two blades. In this regard, the specification expressly cautions that "adding extra blades [more than two] can have a serious detrimental influence on … blade unit characteristics." Id. at col. 1, II. 25-27. The general summary or description of the invention thus describes a three-bladed razor with a certain blade configuration and criticizes other blade units having more than two blades.

We have construed claims to be limited to one type of device where the written description has emphasized features of that device and criticized other similar devices. See Astrazeneca, 384 F.3d at 1340 (citing SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1340-45 (Fed. Cir. 2001) (construing claims to be limited to catheters with coaxial lumens where written description emphasized coaxial lumens as a feature of the invention and criticized catheters using other types of lumens)). Here, the inventors expressly state that using more than two blades in a safety razor is problematic. '777 patent, col. 1, II. 24-31. They then explain that these problems are overcome by a three-bladed razor having blades arranged with progressive blade spans and blade exposures. Id. at col. 1, II. 32-37. This discussion, which expressly emphasizes certain features of the invention (a three-blade unit with the blades arranged in the described geometry) and implicitly criticizes other similar devices (blade units having more than two blades not having the same features), suggests the claims should be narrowly construed.

In my view, therefore, the term "comprising" should not be read as encompassing a blade unit having more than three blades. This is made clear by the claims themselves and by the written description as described below. The traditional open claiming term "comprising" thus applies to the limitations of the razor as a whole, that is, the cap, the guard, and the blade unit and permits other elements included in the razor. However, it does not permit the expansion of the number of blades in the blade unit itself.

Turning to the term "group of," the written description makes clear that this term is not used as an open claiming term as Gillette argues. The term "group of" occurs only once in the written description when the patentee is describing the invention as a whole in the background section of the patent. The group is specifically described as three blades:

Thus, in accordance with the present invention there is provided a safety razor blade unit comprising a guard, a cap and a group of three blades with parallel sharpened edges located between the guard and cap, the first blade defining the edge nearest the guard having an exposure not greater than zero, and the third blade defining the blade nearest the cap having an exposure not less than zero.

'777 patent, col. 1, II. 37-44 (emphasis added).
While not referring again to the "group of "blades, the patentee consistently and frequently refers to his invention as a three-bladed safety 3 razor. For example, when the written description speaks of the "blade unit" of the invention, 4 the only type of blade unit identified is one having three blades: "blade unit comprising … a group of three blades," '777 patent, col. 1, II. 39-40; "three-bladed blade unit," id. at col. 1, line 54; "three-bladed safety razor blade unit," id. at col. 2, line 50; and "three blades set in the blade unit," id. at col. 3, II. 17-18. When explaining the basic structure of the invention, the specification discloses "the novel aspects of the present invention reside in the provision of three blades set in the blade unit set in particular dispositions with respect to each other and the guard and cap." (Id. at col. 3, II. 16-19) (emphasis added). By stating that the unit (group) of three blades (disposed in the described manner) confers novelty to the invention disclosed in the '777 patent, the patentee clearly shows that he regards the invention to be a safety razor with a blade unit having exactly three blades with progressive exposure and span.

3 It was represented to the district court, and noted in its opinion, that the word "three," "third," or "tertiary" is used in thirty different places in the mere three-column-long specification of the '777 patent. Gillette, 2004 U.S. Dist. LEXIS 28656, No. 03-11514-PBS, slip op. at 14. Additionally, nowhere in the specification is the possibility of a four-bladed razor even suggested. This supports a finding that the claims should be interpreted as limited to razors having only three blades. See Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1348 (Fed. Cir. 2004) (noting that the specification referred to transmitting data over a phone line roughly two dozen times and never suggested transmitting data through the use of a packet switched network).

4 The patentee uses the term "blade unit" to describe the carrier of the blades of the invention. See '777 patent, col. 2, II. 63-64 and representation thereof in Figs. 1 and 2.

The majority contends that a three-bladed razor is merely a preferred embodiment of the invention of the '777 patent, as opposed to the invention. However, the specification is replete with instances where the patentee described the invention as a razor having three blades with the described blade geometry. To this end, the specification states "with a three-bladed safety razor blade unit having the blades disposed as specified herein we have found an enhanced overall shaving performance in comparison to a two-bladed razor," (id. at col. 2, II. 50-53) (emphasis added) (located immediately prior to the patentee's statement that "some specific embodiments of the invention are described below"); "it is ensured that an enhanced shaving efficiency is secured due to there being three sharpened blades," (id. at col. 4, II. 2-3 (emphasis added) (the final sentence of the written description which explains that "with the embodiments of the invention" this result is reached); "in accordance with the present invention there is provided a safety razor blade unit comprising a guard, a cap and a group of three blades," id. at col. 1, II. 37-40 (emphasis added) (located in the background section of the patent). These statements are directed to the invention as a whole and suggest that three blades is a part of the invention, not merely a preferred embodiment. We have held that a claim term was properly construed in accordance with a limitation that was "repeatedly and consistently" described in the specification where "those statements, some of which [were] found in the 'Summary of the Invention' portion of the specification, [were] not limited to describing a preferred embodiment, but more broadly describe the overall inventions of [the] patent[]." Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d at 1346-48 (stating "the claims must be interpreted in light of the specification … which repeatedly and consistently describes the local and remote systems of the claimed inventions as communicating directly over a telephone line" and holding that communications were restricted to being over a telephone line and excluded the use of a packet-switched network). Such is the case here.

That a three-bladed razor is not merely a preferred embodiment of the invention of the '777 patent is further evidenced by the fact that the specification addresses only changes in the blade exposure and blade span, not the number of blades. Specifically, the '777 patent states:

A steadily increasing blade exposure has been found most effective. Therefore, the value of the exposure of the secondary blade is ideally approximately half way between the exposure values for the primary and tertiary blades, and very satisfactory test results have been obtained with all three blade edges lying in a common plane. In most embodiments a secondary blade exposure substantially equal to zero will be very satisfactory. We recommend that the tertiary blade exposure be a positive value equal in magnitude to the negative exposure of the primary blade.
The span $S_1$ of the primary blade 11 is from 0.5 to 1.5 mm and is preferably substantially equal to 0.70 mm. The span $S_2$ of the secondary blade 12 and the span $S_3$ of the tertiary blade 13 have the values in the range of 1.0 to 2.0 mm. They are shown [in FIG. 1] equal with a value substantially equal to 1.50 mm. The edge of the tertiary blade is at a distance $S_4$ substantially equal to 1.80 mm in front of the cap.

A more favourable blade arrangement is shown in FIG. 2. The span $S_1$, $S_2$, $S_3$ and $S_4$ are the same as those mentioned above for FIG. 1. The primary blade in this embodiment has an exposure of -0.04 mm, the exposure of the secondary blade 12 zero, the edges of all three blades lying in a common plane $P$ as in FIG. 1, and the exposure of the tertiary blade 13 is +0.06 mm. Thus, there is a progressive increase in blade exposure from the leading blade 11 to the trailing blade 13.

The consistent factor throughout these passages and the patent's drawings is the presence of three blades arranged with progressive blade exposures and blade spans. It is the value of the blade exposure and span that the inventors could vary, not number of blades in the configuration. Thus, a three-bladed razor is not merely a preferred embodiment of the invention; rather, it is the invention. Indeed, nowhere in the specification is the blade unit of the invention expressly described as having multiple blades in excess of three.

5 In this embodiment the blade spans may also vary -- i.e., within the same range as that describing the embodiment shown in FIG. 1 ("The spans $S_1$, $S_2$, $S_3$, and $S_4$ are the same as those mentioned above for FIG. 1"). Id. at col. 3, II, 43-44.
7 Indeed, given the majority's claim construction, which would allow for a second second blade, the district court on remand will now have to determine validity issues including that under 35 U.S.C. § 112 P1.

8 See also supra at 6 (quoting the '777 patent at col. 2, PP. 50-53 and col. 4, II. 2-3).

9 The majority is correct that the use of the terms "first," "second," and "third" in a claim does not necessarily impart a sequential meaning to the items being claimed. However, here the balance of the language in claim 1 clearly demonstrates that the inventor intended a sequential relationship by saying that the second blade is located between the first and third blades. '777 patent, col. 4, II. 7-11 ("The first blade defining a blade edge nearest the guard … and the third blade defining a blade edge nearest the cap.").

In sum, the patent specification 1) repeatedly and consistently teaches that the safety razor of the invention is one having three blades; 2) teaches preferred embodiments which vary the configuration of the blades but in no way changes the number of blades of the invention; and 3) discourages the use of more than two blades in a blade unit except for the three-bladed blade unit having the claimed geometry. I believe these teachings together clearly demonstrate that the inventors did not regard a blade unit with four blades arranged in the described geometry as their invention. Therefore, "comprising" and "group of" should not be construed to include a safety razor having more than three blades.

The only support in the specification for the majority's position that "comprising" and "group of" should be given their conventional meaning is the following sentence: "This invention is concerned with safety razors, and relates in particular to safety razors having blade units with a plurality of blades defining parallel sharpened edges arranged to pass in turn over a skin surface being shaved." Id. at col. 1, II. 3-6 (emphasis added). This single, broad statement, not repeated or endorsed elsewhere in the patent's written description, cannot be read to expand the invention beyond what is explicitly described throughout the specification. In particular, it cannot rewrite the statements that the novelty of the invention "resides in the provision of three blades set in the blade unit," id. at col. 3, II. 16-18, and that the goal of "an enhanced shaving efficiency is secured due to there being three sharpened blades," id. at col. 4, II. 2-3. The majority relies on this one instance of the use of the word "plurality" and conveniently ignores the repeated statements in the specification that the blade unit is composed of three blades.

Finally, the majority's claim construction ignores the notice function of the specification. As the Supreme Court stated almost two hundred years ago, an object of the specification is, to put the public in possession of what the party claims as his own invention, so as to ascertain if he claims any thing that is in common use, or is already known, and to guard against prejudice or injury from the use of an invention which the party may otherwise innocently suppose not to be patented. It is, therefore, for the purpose of warning an innocent purchaser or other person using a machine, of his infringement of the patent; and at the same time of taking from the inventor the means of practising upon the credulity or the fears of other persons, by pretending that his invention is more than what it really is, or different from its ostensible objects, that the patentee is required to distinguish his invention in his specification.

Evans v. Eaton, 20 U.S. 356, 434, 5 L. Ed. 472 (1822) (emphases added). Anyone reading the '777 patent would be left with the indelible impression that the patentee had invented a three-bladed, and only three-bladed, safety razor with blades having the described variable blade span and blade exposure. Only with a crystal ball could a competitor in the safety-razor
industry have concluded that the '777 patent could cover a four-bladed razor.

II.

Certainly, claiming conventions demonstrate that claim terms such as "comprising" and "group of" are traditionally viewed as open claim terms. However, here, the specification makes abundantly clear that the invention of the '777 patent was a razor having three blades, no more, arranged in the described geometry. For this reason, I would affirm the district court's claim construction and its denial of Gillette's motion for a preliminary injunction.

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a. "Guard" and "cap"

Claim 1 requires a "safety razor blade unit comprising a guard, a cap, and a group of first, second, and third blades." 777 Patent col.4 11.5-6 (emphasis added).

Schick asserts that the term "guard" as used in the 777 Patent means "a blade unit element positioned in front of the blade edges." (Defs.' Opp'n to Pl.'s Markman Br. 9.) Gillette agrees with this construction. (Pl.'s Reply to Pl.'s Markman Br. 6.)

Schick asserts that the term "cap" as used in the 777 Patent means "a blade unit element positioned behind the blade edges" and includes "any lubricating strip incorporated in such element." (Defs.' Markman Br. 12.) While initially disagreeing, Gillette now concedes this construction. (See Pl.'s Reply to Pl.'s Markman Br. 6; Markman & Summ. J. Hr'g Tr. 19:11-18, Oct. 20, 2005.)

The Court adopts these constructions of the terms "guard" and "cap" as well. While the "ordinary and customary meaning" is not readily apparent from the terms or the claims, the specification as noted by Schick:

refers to "guard and cap surfaces positioned in front of and behind the blade edges." 777 Patent at 1:35-36. Both Figures in the patent show the blade unit element denominated "cap" positioned behind the blade unit elements denominated "blades having parallel sharpened edges." 777 Patent at 3:4; 3:7-8; and Figs. 1 & 2. . . . Both Figures in the patent show the blade unit element denominated "guard" positioned in front of the blade unit elements denominated "blades having parallel sharpened edges." 777 Patent at 3:4; 3:7-8; and Figs. 1 & 2.

(Defs.' Opp'n to Pl.'s Markman Br. 9.) Also noted by Schick, "the specification states that as shown the cap comprises lubricating strip 4 mounted on a frame.' (Id. (quoting 777 Patent col.3 11.4-5).) Therefore, as used in the 777 Patent, the term "cap" means "a blade unit element positioned behind the blade edges" and includes "any lubricating strip incorporated in such element," and the term "guard" means "a blade unit element positioned in front of the blade edges."

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K. "guide ions through"

Claim 1(e), which describes the working of the invention's ion guide, states: "means for applying essentially an AC-only voltage between the rod means of said first rod set so that said first rod set may guide ions through said first space." Claim 14(c) similarly states: "placing an essentially AC-only RF voltage between the rod means of said first set so that said first rod set acts to guide ions therethrough." RF stands for "radio frequency and is another way of describing an alternating current. The parties dispute the proper construction of "guide ions through." 2

2 The parties treat "guide ions through" and "guide ions therethrough," for purposes of this construction, interchangeably.
Micromass contends that the ordinary meaning of "through" is "a function word that indicate[s] movement into at one side or point and out at another and especially the opposite side of" or "to indicate passage from one end or boundary to another." Thus, it concludes that "guide ions through" requires that the first rod set (1) guide ions all the way from the beginning to the end of the first space, (2) without ever trapping or storing them for a period of time. Micromass argues that this construction is supported by an argument MDS made to distinguish its claimed invention from one of the ion trap references it presented on reexamination.

AB/Sciex contends that "guide ions through" means only what it says -- ions must be guided through the first space by the ion guide. It argues that Micromass's construction creates two claim limitations unsupported by the claims themselves. Those two limitations are (1) the requirement that all ions enter and exit the ion guide, and (2) that the ions must be guided without ever trapping or storing them for any period of time. AB/Sciex argues that the first of these requirements is rebutted by the specification, which notes that the maximum percentage of ions transmitted through the ion guide using various orifice sizes and pressures was 90%. See 736 Patent at Col. 7, ln. 10-66. The second of these requirements, AB/Sciex argues, has no basis in the plain meaning of the claims and is not required by statements MDS made during the prosecution history.

Reading the claims alone, it is apparent that the term "guide ions through" does not require the successful transmission of all ions or limit the amount of time permitted to do so. It is uncontested that "through" is defined as "indicate[s] movement into at one side or point and out at another and especially the opposite side of." Webster's Ninth New Collegiate Dictionary 1230 (1991). No part of this definition, however, requires the transmission of all ions or sets any restriction on how long the movement of ions can take. Indeed, the only limitation on ions guided through the ion guide is the fact that "ions" is plural and therefore there must be two or more.

Lacking textual support for its two limitations in the claims themselves, Micromass points to statements made by MDS in distinguishing the ion trap references during reexamination. While discussing the Schaaf article, MDS described the working of an ion trap by stating, "with an ion trap, ions of a selected range of mass to charge ratios are trapped or stored for a period of time (which can be quite lengthy) due to electric fields generated with electrodes." Request for Reexamination at 6. In contrast, MDS argued that the claimed invention had an entirely different structure than an ion trap and stated that the "first rod set receives essentially only an AC voltage so that ions are guided through the first vacuum chamber without being trapped there." Id. at 7. Micromass argues that this statement is an admission that the ion guide does not trap ions for any length of time and that this admission must narrow the court's construction of "guide ions through." Understood in context, the distinction drawn by MDS was not that ion guides do not trap ions for any length of time and ion traps do. Rather, MDS argued that ion traps are designed to trap the ions of interest for further analysis, while the ion guide is designed to transmit the ions of interest for further analysis. Moreover, MDS did not state that all ions are guided through the first vacuum chamber without being trapped there, it only said that ions are guided without being trapped in the first vacuum chamber. Thus, it is inappropriate to find in this statement an admission that the claim's limitation that the invention "guide[s] ions through" requires that all ions be guided through. The court finds that MDS did not disclaim a broad interpretation of "guide ions through" by distinguishing the ion trap reference in the Schaaf article.

The court will therefore adopt AB/Sciex's proposed construction that the term "guide ions through" means simply that ions must be guided through the first space by the AC-only voltage between the rod means. The court will not adopt a more narrow construction of the phrase to require either that all ions be transmitted through the ion guide or that the ion guide not trap or hold any ions for any length of time.

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A. Guide Means, Guide Assembly and Guide Element

Defendants argue that the terms "guide means," "guide assembly" and "guide element" are subject to a means-plus-function analysis under § 112, P 6. Plaintiff disputes the application of such an analysis. As highlighted by the joint submission at oral argument, the disputed claim limitations in which "guide means" appear read: 3 "said positioning ring including guide means formed on an upper surface thereof in a generally arcuate path," (Claim 1(b) of the '456 patent), "said retaining and
positioning means including guide means formed thereon which are structured and disposed to guide said cutting head assembly along a generally arcuate path during movement of said cutting head assembly over said retaining and positioning means," (Claim 48(c) of the '456 patent), and "said positioning ring including guide means formed thereon in a generally arcuate path." (Claim 30(b) of the '009 patent).

3 The phrase also appears in Claims 2, 3, 6, 8, 12, 29, 46, 47, and 50-52 of the '456 patent, and Claim 14 of the '009 patent.

As highlighted by the joint submission at oral argument, the disputed claim limitations in which "guide assembly" appears read: 4 "said positioning ring including a guide assembly defining a generally arcuate path," (Claims 3(b), 9(b), 10(b), and 15(b) of the '649 patent), and "said positioning ring including a guide assembly defining a generally arcuate path, said guide assembly including a channel member and a post member." (Claim 14(b) of the '649 patent). The disputed claim limitation in which "guide element" appears reads: "a positioning ring including a cavity adapted to receive a cornea, an aperture for exposing a portion of the cornea of the eye, and a guide element; . . . said guide element guiding said head across said aperture making the lamellar incision in the cornea." (Claim 14 of the '553 patent).

4 The phrase also appears in Claim 43 of the '009 patent, and Claims 1, and 11-13 of the '649 patent.

Defendants propose that the guiding function in all three terms should be construed as: "directing and facilitating the movement of the cutting head assembly in an arcuate path." (Court Reference Sheet at 1.) They propose that the corresponding function should be comprised of: "a channel, including a toothed track formed thereon, extending in an arcuate path on the upper surface of the positioning ring, and a rigid upstanding member generally opposite the toothed track." (Id.) Plaintiff proposes that: "The term 'guide means' and 'guide assembly' as used in the asserted claims mean a structure on or operably connected to a positioning ring that defines the arcuate path of the microkeratome cutting head during movement across the positioning ring. The 'guide element' of the '553 patent is not limited to an arcuate path but otherwise has the same definition." (Id. at 2.)

I begin with examining the term "guide means." Defendants start with the premise that because the word "means" is included in the term, there is a presumption that § 112, P 6 is invoked. Defendants argue that guide means is the same as "means for guiding" and as such is a means-plus-function clause. Defendants stress that plaintiff's proposed construction consists of only the most generic identification of structure and not the mandatory definite structure. They contend that plaintiff's definition would not only encompass any structure, or a limitless range of structures, but is defined purely by what it does: directing a path. Defendants turn to Valmont Industries, Inc. v. Reinke Manufacturing Company, Inc., 983 F.2d 1039, 1042 (Fed. Cir. 1993), and argue that plaintiff's proposed construction would allow the claim limitation to encompass all conceivable means for performing the function, which as discussed by the court in Valmont, is the harm that Congress sought to avoid when enacting § 112, P 6.

Plaintiff acknowledges that the term includes the word "means" and therefore there is a presumption that § 112, P 6 is invoked; however, it contends that the presumption is rebutted because sufficient structure is recited to perform the function, and there is no function linked to the word means. Plaintiff compares "guide means" to the "detent mechanism" which was in dispute in Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580 (Fed. Cir. 1996) and the "second baffle means" term at issue in Envirco Corporation v. Clestra Cleanroom, Inc., 209 F.3d 1360 (Fed. Cir. 200). In Greenberg, the Court determined that "the fact that a particular mechanism - here "detent mechanism" - is defined in functional terms" is not sufficient to bring the claim within the ambit of § 112, P 6. Greenberg, 91 F.3d at 1583. The Court acknowledged that many devices are named for the function they perform, e.g., "filter," "brake," "clamp," "screwdriver," or "lock." See id. The Court, relying purely on dictionary definitions, concluded that detent fell into this category of terms and noted the following:

It is true that the term "detent" does not call to mind a single well-defined structure, but the same could be said of other
that directs the motion of something. 5 Plaintiff proposes that the term be defined as "a structure . . . that defines the arcuate
to guide the cutting head assembly. Three of the four dictionaries offered essentially define the term "guide" as some object
each identified claim (or subsection thereof) indicates by the language itself that the function served by the "guide means" is
of the same patent.)” (citing Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed. Cir. 1995)). Specifically,
the term guide means as used in the identified claims recite the function of guiding. See Georgia-Pacific Corp. v. U.S.
Gypsum Co., 195 F.3d 1322, 1331 (Fed. Cir. 2000) (“a claim term cannot be given a different meaning in the various claims
of the same patent.”) (citing Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed. Cir. 1995)). Specifically,
each identified claim (or subsection thereof) indicates by the language itself that the function served by the "guide means" is
to guide the cutting head assembly. Three of the four dictionaries offered essentially define the term "guide" as some object
that directs the motion of something. 5 Plaintiff proposes that the term be defined as "a structure . . . that defines the arcuate

See id. (recognizing the following technical and non-technical dictionary definitions: "a mechanism that temporarily keeps one
part in a certain position relative to that of another, and can be released by applying force to one of the parts"; "a part of
a mechanism (as a catch, pawl, dog, or click) that locks or unlocks a movement”, "[a] catch or checking device, the removal
of which allows machinery to work such as the detent which regulates the striking of a clock”) (citations omitted). The
Court held that "detent mechanism" was not subject to a mean-plus-function analysis. See id. at 1584. In Environco, the court
began with the presumption that "second baffle means" was governed by § 112, P 6. The court noted that "baffle" is defined in
the dictionary as "a device (as a plate, wall or screen) to deflect, check, or regulate flow." Environco, 209 F.3d at 1365. The
court concluded that this definition conveyed a structure that rebutted the presumption that the means-plus-function analysis
was invoked. See id. Defendants distinguish a baffle from a guide on the ground that a baffle is defined by a definitive range
of structures, namely, a plate, wall or screen.

Plaintiff provides the following dictionary definitions for "guide: "a device by which another object is led in its proper
course," Dorland's Illustrated Medical Dictionary (25th ed. 1974), "a contrivance for directing motion of something; esp:
such a contrivance (as in a tool) having a directing edge, surface, or channel," and a "grooved director for a surgical probe
or knife," Webster's Third New International Dictionary at 1009 (1993), "a device for steadying or directing the motion of
something," Webster's Ninth New Collegiate Dictionary at 341 (1987), and "a device that acts to regulate or direct a motion
or operation," The American Heritage Dictionary at 581 (2d College ed. 1985). Plaintiff contends that these definitions
support its view that the term "guide means" connotes sufficient structure. Plaintiff further argues that the guide means
include the further structural limit of a guide in an arcuate path. Defendants counter that the direction the guide moves
cannot be considered a "structure."

Defendants counter that plaintiff's own experts support defendants' conclusion that plaintiff's proposed definition
encompasses only a generic structure. Dr. Akin provides in his report that: "Despite the appearance of the word "means," the
term "guide means" as used in the '456 and '009 patents would be considered structure to a person of ordinary skill in the
art. The structure being a device by [sic] which directs an object in its proper path." (J.E. Akin, Ph.D., PE, Markman Report
at 17 (September 26, 2001),Defs.' Ex. I ("Akin Report")) (emphasis added). Defendants characterize this statement as a
functional description of the structure in that the generic structural term "device" is followed by the function of directing an
object in its proper path. Dr. Slade provides in his report that: "The term "guide" was a well recognized structural term to
persons of ordinary skill in the art and was widely used to refer to the range of structures that provide for retention and
direction of a cutting head assembly as it moves across the opening in the positioning ring." (Rebuttal Report of Stephen G.
Slade, M.D. at 5, Defs.' Ex. J ("Slade Report").) Defendants contend that Dr. Slade describes guide means in terms of what
it does and offers a limitless structure instead of providing "sufficiently definite" structure.

As noted by plaintiff the Court of Appeals for the Federal Circuit has specifically rejected the argument that a term must fall
within § 112, P 6 if it is defined in functional terms. See Personalized Media, 161 F.3d at 705 (“neither the fact that a
'detector' is defined in terms of its function, nor the fact that the term 'detector' does not connote a precise physical structure
in the minds of those of skill in the art detracts from the definiteness of structure”) (citing Greenberg, 91 F.3d at 1583). At
the same time, the Court of Appeals has also determined that a device that is described in terms of what it does and not in
terms of its structure can at times include any conceivable device, and in those circumstances § 112, P 6 must apply. See
Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1214 (Fed. Cir. 1998) ("the claimed 'lever moving element' is
described in terms of its function not its mechanical structure. If we accepted [the] argument that we should not apply
section 112, P 6, a 'moving element' could be any device that can cause the lever to move. [The] claim, however, cannot be
construed so broadly to cover every conceivable way or means to perform the function of moving a lever, and there is no
structure recited in the limitation that would save it from application of section 112, P 6.").

The term guide means as used in the identified claims recite the function of guiding. See Georgia-Pacific Corp. v. U.S.
Gypsum Co., 195 F.3d 1322, 1331 (Fed. Cir. 2000) ("a claim term cannot be given a different meaning in the various claims
of the same patent."") (citing Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed. Cir. 1995)). Specifically,
each identified claim (or subsection thereof) indicates by the language itself that the function served by the "guide means" is
to guide the cutting head assembly. Three of the four dictionaries offered essentially define the term "guide" as some object
that directs the motion of something. 5 Plaintiff proposes that the term be defined as "a structure . . . that defines the arcuate
path of the . . . cutting head. . . ." While use of the word "define" in this context is quite creative, it is clear that plaintiff is really admitting that the guide means performs the function of directing that arcuate path. I therefore conclude that plaintiff's argument that the presumption is overcome because no function is recited in the specified claims fails.

5 The fourth definition uses the language of leading an object as opposed to directing an object.

The inquiry, of course, does not end there, since plaintiff can still avoid application of § 112, P 6 as long as the term includes sufficient structure. As plaintiff relies heavily on dictionaries, I begin by analyzing those definitions. In so doing, I conclude that not a single definition includes any definitive structure. For instance, the Court in Enviroco was presented with a definition of "second baffle means" which provided the structure of a "plate, wall or screen." Enviroco, 209 F.3d at 1365. Likewise, the Court in Greenberg was offered a definition of "detent mechanism" which provided examples in the shape of a "catch, pawl, dog, or click." Greenberg, 91 F.3d at 1583. The definitions advanced here offer the generic shapes of a "contrivance," a "tool" with a "directed edge, surface or channel," a "grooved director," or simply a "device." Such examples fail to conjure a non-generic form. The definitions offered by plaintiff's experts fail to indicate otherwise. Plaintiff's own construction fails to include sufficient structure. Rather, plaintiff suggests that the term should be defined as "a structure that accomplishes defining (which as previously discussed is the equivalent of directing) a particular path. Plaintiff's insistence that defining an arcuate path provides structure is not convincing to this Court. As suggested by defendants, the direction in which a device moves does not provide structure. Rather, the indicated path is more properly a function of such device. I therefore conclude that the term does not connote sufficient structure to escape the application of a means-plus-function analysis.

Before continuing with an analysis of the function and corresponding structure of "guide means," I will address whether the means-plus-function analysis shall apply for the terms "guide assembly" and "guide element." I start by highlighting that plaintiff makes no distinction between the term "guide means" and "guide assembly" in its proposed construction. The claim language and context for these two terms are nearly identical. Essentially, the patentee replaced the term "guide means" with the term "guide assembly" in the '649 patent which was filed after this lawsuit was initiated. The only real difference is that certain claims in the latter patent include the addition of the structure of a channel member and a post member. It is true that because the word "means" is not used in the claims, there is a presumption that § 112, P 6 does not apply. That presumption is, however, rebuttable. I have already concluded that the use of the term "defining the arcuate path" as used in plaintiff's proposed construction while innovative, is akin to "directing an arcuate path." The same logic applies to the claim language in the '649 patent. While I cannot dispute that this language offers structure not included in the other claims, it is equally significant that this claim was written after this lawsuit was filed, and plaintiff was well aware of the drafting weaknesses of the earlier and related patents. The fact that additional structure was added to the term and the word "means" was replaced with the word "assembly" does not dissuade me from concluding that the term "guide assembly" is subject to a means-plus-function analysis for the same reasons that the term "guide means" is subject to that analysis.

As to the term "guide element," again, while the term "means" is not used, and therefore a presumption exists that a means-plus-function analysis does not apply, the term clearly denotes a function of guiding the head. Moreover, no structure is offered in the claim. For these reasons, and for the same reasons that the terms "guide means" and "guide assembly" are subject to § 112, P 6, I conclude that the term "guide element" is also subject to § 112, P 6.

Having so concluded, I must now determine the functions linked to those related terms. Defendants propose the following function for each term: "directing and facilitating the movement of the cutting head assembly in an arcuate path." The only flaw I find in this proposal is the word "facilitating." The Court of Appeals for the Federal Circuit has been clear that the function must come from the claim language itself. See Generation II, 263 F.3d at 1363; Micro Chem., 194 F.3d at 1258. Defendants, it appears, have imported the word "facilitating" from the following language in the written description of the '456 patent: "In any event however, the guide means 40 will be disposed on the positioning ring 32 so as to guide and facilitate movement of the cutting head assembly 50 . . . ." Col. 7, Ins. 32-34. I conclude that the plain language of the actual claims provide for the function of directing the movement of the cutting head assembly in an arcuate path. See, e.g. Claim 48(c) of the '456 patent. The function for the term "guide element" varies in that its function is not to guide the cutting head in an arcuate path, but to guide the head across the aperture making a lamellar incision. See Claim 14 of the '553 patent.
Thus, the guide element does not have a function of guiding in an arcuate path.

The next step is to determine the corresponding structures. As previously provided, defendants propose the following structure: "a channel, including a toothed track formed thereon, extending in an arcuate path on the upper surface of the positioning ring, and a rigid upstanding member generally opposite the toothed track." (Court Reference Sheet at 1.) In the event that this Court employs a means-plus-function analysis, plaintiff proposes the following structure: "a channel member, with or without a toothed track, or a rigid upstanding member such as a post, or both, or other equivalent structures." (Pl's Reply Br. at 15.) Thus, the two key questions are whether the structure includes a toothed track and whether the structure includes a rigid upstanding member. Plaintiff argues that the toothed track is part of the most preferred embodiment and the rigid upstanding member is part of the preferred embodiment; accordingly, under Micro Chem., 194 F.3d at 1258-59, neither structure should be included in the corresponding structure. Plaintiff takes the position that the function is accomplished by either the channel member (which need not have a toothed track) or the rigid upstanding member. The Court of Appeals in Micro Chem. noted that in determining the structure linked to the identified function, no structure should be incorporated from the written description beyond what is necessary to perform the function as stated in the claim. See id. The Court did not hold that structure which is part of a preferred embodiment can never be part of the "corresponding structure" of a means-plus-function claim. Defendants direct the Court to Kahn, 135 F.3d at 1476, in which the Court of Appeals noted that the corresponding structure includes that which is clearly linked or associated in the specification. In B. Braun Medical v. Abbott Lab., 124 F.3d 1419, 1425 (Fed. Cir. 1997), the Court explained that once § 112, ¶ 6 is invoked, the patentee must detail in the specification an adequate disclosure showing what is meant by that language; "if an applicant fails to set forth an adequate disclosure, the applicant has in effect failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112." Accordingly, this Court concludes that if the only structure identified in the specification to perform the determined function is part of the preferred embodiment, such structure must be part of the "corresponding structure," or else the patentee has failed to claim any structure. See Mitek Surgical Prod., Inc. v. Arthrex, Inc., 230 F.3d 1383, 2000 U.S. App. LEXIS 30336, 2000 WL 217637, at *2-3 (Fed. Cir. 2000) (per curiam) (unpublished) (affirming decision of district court that limited claim to preferred embodiment because it was the only embodiment; determining that disclosures in prior art were irrelevant because structure in prior art may only be used to limit and not broaden the scope of means-plus-function structures).

As stated above, plaintiff takes the position that the function of the guide means is accomplished by either the rigid upstanding member or the channel member (which may or may not include a toothed track); both structures, according to plaintiff, are not needed. I begin with the possible inclusion of a rigid upstanding member and note that the "guide assembly" as defined in Claim 14(b) of the '649 patent specifically includes a "post member." 6 The specification of the '456 patent reads:

The guide means 40 further comprise a rigid upstanding member 44 disposed on the retaining and positioning means 30, and generally opposite the toothed track 43. . . . From the explanation which follows, it will become clear that channel member 42 and rigid upstanding member 44 permit the cutting head assembly 50 of this invention to become effectively guided. . . . It will also be appreciated that in assembled form, upstanding member 44 acts as additional guide means for enabling the cutting head assembly 50 to be driven along an arcuate path.

Col. 8, Ins. 11-13, 18-22; Col 9, Ins. 40-44. These highlighted passages do not even describe a preferred embodiment of the rigid upstanding member. Rather, the specification indicates that the rigid upstanding member is a necessary element of guiding the cutting head and is positioned generally opposite the toothed track. Plaintiff's argument that the rigid upstanding member is merely additional guide means and therefore not necessary to perform the function is unavailing. As pointed out by defendants, the word "additional" does not mean "alternative." I therefore conclude that the rigid upstanding member is part of the corresponding structure.

6 In determining whether the corresponding structure includes a rigid upstanding member, this Court found Figures 5A, 5B and 5C of the '456 patent useful. (App. at i.)

The following language from the specification of the '456 patent directs this Court's determination of whether the toothed
track is part of the corresponding structure. 7

Referring to FIGS. 5-A and 5-C, in the preferred embodiment, guide means 40 are seen to comprise a channel member 41, 42 . . . As depicted in FIG. 5-A, channel member 41 may comprise an elongated "C" shaped structure or even an inverted "L" shaped structure. . . . As illustrated in FIGS. 5-B and 5-C however, in the most preferred embodiment channel member 42 is formed by interconnection of two separate elements, namely, an upwardly and arcuately extending sidewall 36 formed on positioning ring 32, and a toothed track 43 which is interconnected with sidewall 36. . . . Thus, guide means 40 in the form of a generally "C" shaped channel member 42 is comprised by the combined structure of sidewall 36 and toothed track 43. . . . With respect to the embodiment shown in FIG. 5-A, it is contemplated that a toothed track may also be mounted to an upper surface of positioning ring 32 or to an upper surface of channel member 41. It will be appreciated that toothed track 43 cooperated with drive means 80 (see FIGS. 7 and 11) so as to drive the cutting head assembly 50 across positioning ring 32.

Col. 7, Ins. 36-38, 42-45, 47-52; Col. 8, Ins. 1-10 (emphasis added).

7 In determining whether the corresponding structure includes a toothed track, this Court found Figures 5A, 5B, 5C, 7 and 11 of the '456 patent useful. (App. at i, ii and v.)

Thus, the specification does appear to disclose a channel member without a toothed track as depicted in Figure 5A. The problem, however, is that the specification does not in any way explain how that embodiment could actually direct the cutting head assembly. The specification only details how a channel member with a toothed track can perform the guide means function. The patentee describes only a toothed track which mates with the propulsion shaft 125 to guide the cutting head assembly in an arcuate path. The teeth of the channel (with the power transmitted thereto) are the core of the guiding process. Without it, there is no structure that can effectively guide the cutting head assembly. This Court is well aware of the mandate not to import excess limitations from the specification. See, e.g., Wenger Mfg., Inc. v. Coating Machinery Sys., Inc., 239 F.3d 1225, 1233 (Fed. Cir. 2001). I am equally mindful, however, that in construing a means-plus-function claim, the inventor is limited to the structure disclosed in the patent, see Kahn v. Gen. Motors Corp., 135 F.3d 1472, 1476 (Fed. Cir. 1998), and must sufficiently disclose such structure or the invention fails to comport with § 112, P 2, see B. Braun Med., Inc. v. Abbott Lab., 124 F.3d 1419, 1425 (Fed. Cir. 1997).

Plaintiff also attempts to invoke the doctrine of claim differentiation to support its position that the toothed track is not part of the corresponding structure. Under this judicially created doctrine, it is presumed that each claim in the patent is different in scope. See Intermatic Inc. v. Lamson & Sessions Co., 273 F.3d 1355, 1364 (Fed. Cir. 2001); Wegner, 239 F.3d at 1233. At the same time, "claim differentiation is not a 'hard and fast rule of construction,' and cannot be relied upon to 'broaden claims beyond their correct scope.'" Wegner, 239 F.3d at 1233 (quoting Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000)). See also Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir. 1991) (rejecting argument that "means for joining" limitation could not include a "cross member" because that limitation was recited in a dependent claim; "[a] means-plus-function limitation is not made open-ended by the presence of another claim specifically claiming the disclosed structure which underlies the means clause or an equivalent of that structure.") (alteration in original). Thus, the stringencies of a means-plus-function limitation cannot be escaped merely by adding a dependent claim that recites the corresponding structure disclosed in the specification. See Wegner, 239 F.3d at 1234. Plaintiff contends that because the toothed track is claimed in dependent Claims 44 and 45 of the '456 patent, the toothed track may not be imported into the corresponding structure of the independent claims. I conclude that this argument runs counter to the case law from the Court of Appeals for the Federal Circuit which clearly indicates that a dependent claim cannot be relied upon to avoid the strictness of a means-plus-function limitation.

I therefore conclude that the corresponding structure is also comprised of a channel member with a toothed track mounted or formed thereon. Defendants propose that the construction further require that the channel extend in an arcuate path on the upper surface of the positioning ring. The specification of the '456 patent provides: "guide means 40 are seen to comprise a channel member 41, 42, which extends along a length of at least one side of positioning ring 32 and preferably, on an upper surface of positioning ring 32." Col. 7, Ins. 37-40. Thus, the description requires only that the channel member extend along
at least one side of positioning ring; it need not be on the upper surface thereof. The specification further provides: "It will also be appreciated . . . that channel member 41, 42 extends across ring 32 in an arcuate or semi-circular path." Col. 7, lns. 40-42.

Lastly, I turn to the corresponding structure for guide element. While the claim language of the term "guide element" indicates a varied function from that of guide means and guide assembly, the specification does not mention this means-plus-function claim term. I must therefore conclude that plaintiff has failed to set forth an adequate disclosure, and has, in effect failed to particularly point out and distinctly claim the invention as required by the second paragraph of section 112. See B. Braun Medical, 124 F.3d at 1425.

In summary, this Court has made the following conclusions with respect to the guide terms. Each term, guide means, guide assembly and guide element, are subject to § 112, P 6. The functions for guide means and guide assembly are the same: directing the movement of the cutting head assembly in an arcuate path. The corresponding structure includes a channel member with a toothed track that is formed or mounted thereon and extends in an arcuate or semi-circular path along at least one side of positioning ring and a rigid upstanding member, such as a post, that is positioned generally opposite the toothed track. As depicted in Figures 5A, 5B and 5C the guide means includes both a channel member and a rigid upstanding member; these embodiments clearly demonstrate that both structural elements perform the function of directing the cutting head assembly. This Court therefore rejects plaintiff's argument that either element can alone perform the function of directing the movement of the cutting head assembly in an arcuate path. As to the term guide element, because the inventor did not disclose any corresponding structure in the specification, the patentee failed to claim this portion of the invention.

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"Guide Means for Conducting…Wash Liquid" in Claim 16

One of claim 16's many elements is this:

- guide means for conducting a portion of wash liquid containing said concentrated soil particles from said pump chamber to said soil container.

Despite Whirlpool's protestations at W. Mem. 22, the term "guide" cannot be viewed as sufficient structure (if it is indeed structure at all) to remove that language from the ambit of Paragraph 6. 29 As Laitram Corp. v. Rexnord Inc., 939 F.2d 1533, 1536 (Fed. Cir. 1991)(emphasis in original) said of a similarly deficient description, "the recited alleged structure tells only what the [claim element] does, not what it is structurally."

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29 Nor does the phrase "from said pump chamber to said soil container" add enough to that de minimis description, by indicating the location of the means, to alter the analysis.

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When the claim is read in terms of the specification as Paragraph 6 directs, it is clear that the corresponding structure comprises annular guide chamber 52, first and second upstanding annular walls 46 and 50, upper edge 47 of first wall 46 and aperture 51 (col. 6, ll. 45-51). 30 That being so, only one other refinement needs to be looked at next: W. Mem. 23 (emphasis in original) asks that this Court "expressly find that the claimed functions does not require 'conducting a portion of wash liquid…from the entire perimeter of the pump chamber."

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30 W. Mem. 22 admits that "guide chamber 52" is "the structure which performs this function" but suggests that it does not have to be annular because, though labeled as such, "there is nothing in the specification which requires such a geometry as necessary to perform the conducting function…." But Paragraph 6 does not ask a court to evaluate the structure in the specification and to determine, as an engineer might, the effectiveness of any particular configuration. It rather commands
that the claim element be limited to the structure as described in the specification.

On that score the specification says (col. 6, ll. 45-50):

As the wash liquid swirls upwardly in a clockwise direction, the concentrated soil particles accumulated on the interior of first upstanding annular wall 46 flow over the upper edge 47 with a portion of the wash liquid. Wash liquid accumulates in annular guide chamber 52....

In light of that language and the depictions of the structure in the patent's Exhibits, Whirlpool has essentially invited this Court to repeal the laws of physics--principally but not solely the principle that water seeks its own level. Because upper edge 47 (like the first wall) is both annular by definition and in the same horizontal plane throughout, the flow over that edge is also 360 [degrees] in scope.

The parties agreed that this element required construction; they continue to disagree on the proper construction to give it. In its post-hearing brief, Fitness Quest has limited its proposed construction somewhat; its construction remains, however, substantially more detailed than that offered by Monti. See Appendix B.

The parties devoted substantial time at the hearing to the question of whether this element -- whether in its original form or in either of the proposed constructions offered by the parties -- was a functional or a structural element. Fitness Quest contended that "guide member" was structural language without an accompanying structural description; Monti contended that Fitness Quest was attempting to read the element as a means-plus-function element, even though "guide member" in itself does not appear to be a means-plus-function element.

"Means-plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function." Phillips, 415 F.3d at 1311 (citation omitted). As in Phillips, "guide member" is not a "purely functional placeholder in which structure is filled in by the specification." Id. "Guide member," while perhaps not ideally specific, plainly is intended to identify a structure, not a means for achieving a particular goal.

Monti further complains that Fitness Quest's proposed construction of the term reads into Claim 15 -- an independent claim -- the adjustability limitations from the dependent claim, Claim 16. Transcript 118. Fitness Quest contends that its construction does not go so far as Claim 16's limitation as to how the guide member and force producing assembly are attached -- that is, in an adjustable fashion. Doc. 43 at 6-7.
Plainly, if Fitness Quest were understood to be importing elements of Claim 16 into Claim 15, that would be improper. "[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." Phillips, 415 F.3d at 1315 (citation omitted). By the same token, the constructions offered by both parties include functional language, which both parties apparently deemed necessary to an intelligible construction of the element.

The construction offered by Monti comes closer to a proper construction of "guide member" than the construction offered by Fitness Quest, as it is more limited and more reflective of both the meaning of "guide member," as used throughout the patent and its use in the specific context of Claim 15. Problematic in Monti's construction, among other language, however, is the word "part." As Fitness Quest noted, "part" is a generic -- usually singular -- word that provides little information concerning the referenced term beyond that it is a single (non-multi-part) piece within the referenced device. Transcript 112-13. This Court agrees that more specificity -- without unduly constricting the claim language -- is desirable in construing this term.

For these reasons, the Court has determined that the following language, taken with modification from the construction proposed by Monti, will most appropriately construe the meaning intended to be conveyed by the term "guide member:" "a structure that guides the directional movement of the user as the user performs the exercise."

B. The '056 Patent

Landers assigns error to the district court for giving the limitation "guide tracks," as it appears in claim 1, the same construction as it did in claim 2. According to Landers, the guide tracks in claim 1 guide a nozzle blaster down the well casing, whereas the guide tracks in claim 2 guide a ball cutter. Landers contends that because the claims cover different inventions, the limitation "guide tracks" should also be construed differently. Landers also argues that the court erred in finding no infringement of claim 1 under the doctrine of equivalents. Landers asserts that the court, in making that finding, improperly assumed that claim 1 would be invalid for obviousness if the scope of the term "guide tracks" was broad enough to cover the accused device's pin and groove structure.

We do not agree with Landers that the district court erred by not construing the "guide tracks" limitation differently for claims 1 and 2. In fact, our case law explicitly states that "the meaning of a term in a claim must be defined in a manner that is consistent with its appearance in other claims in the same patent." CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1159 (Fed. Cir. 1997). Indeed, Landers provides no persuasive reasoning, nor can we discern from the patent ourselves, why the guide tracks used to guide a nozzle blaster, as required by claim 1, cannot also guide a motor for movement of the ball cutter, as required by claim 2.

We do, however, conclude that the district court clearly erred in finding that a pin and groove structure would not meet the "guide tracks" limitation under the doctrine of equivalents. The court's error stems from its not construing the "guide tracks" term before concluding that the accused device's pin and groove structure does not meet that limitation, either literally or equivalently. The court's rationale for proceeding in such a manner appears to be that claim construction was unnecessary because any construction in favor of Landers on "guide tracks" would invalidate the claim. As we explained in Nazomi Communications, Inc. v. ARM Holdings, PLC, 403 F.3d 1364 (Fed. Cir. 2005), however, this rationale is critically flawed.

4 Although Nazomi issued after the district court rendered its decision on appeal, the case law expounded upon in Nazomi was established prior to its issuance.

In Nazomi, the district court adopted a narrower claim interpretation in order to preserve the claim's validity. Id. at 1367-68. We criticized this approach of focusing on validity, and, in the process, glossing over the intrinsic evidence that must inform the court's claim construction. Id. at 1368. Pertinent to this appeal, we advised that "it is essential to understand the claims
before their breath is limited for purposes of preserving validity. "Otherwise the construing court has put the validity cart before the claim construction horse." Id., at 1368-69. Here, the court clearly did not construe the term. Thus, it should not have proceeded to narrow the limitation's construction for purposes of preserving validity. To borrow the Nazomi court's adage, there is a validity cart, but no claim construction horse.

Indeed, the flaw in the district court's analysis is further exposed by the possibility that there is only one sustainable construction for claim 1. Under such a circumstance it would be inappropriate for the district court to construe the claim to preserve its validity. See Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed. Cir. 1999) (claims should not be interpreted to preserve their validity if such an interpretation is contrary to the claim's language and the written description). Only after the court completes its claim construction analysis, which it has not done here, can it determine whether competing interpretations of "guide tracks" even exist, and only then is it permissible for the court to choose an interpretation that may preserve the claim's validity.

Accordingly, we vacate the district court's finding of noninfringement, both literally and under the doctrine of equivalents, of claim 1 of the '056 patent and remand for the court to give the "guide tracks" limitation its ordinary and customary meaning consistent with the intrinsic evidence. Moreover, the limitation "guide tracks" is not indefinable merely because the patent specification and the prosecution history do not provide a "clear description" of the term, as the district court appears to conclude. Final Decision, slip op. at 35.

b. "a guide tube having a distal end"

i. "guide tube"

It is not clear whether the parties dispute the construction of the term "guide tube." Perouse, in its opening brief, construed "guide tube" to mean "a hollow cylinder through which a guide can pass." (Perouse Opening Br. 23-24.) Gore did not construe "guide tube" in its opening brief but stated that the term "may not be in dispute." (Gore Opening Br. 26 n. 12.) In its reply brief, Gore alleged that the parties were in agreement that "guide tube" was to be construed as "a tubular structure with a central lumen." (Gore Reply Br. 27.) Similarly, Perouse asserted in its reply brief that Gore agreed with Perouse's proposed construction. (Perouse Reply Br. 13-14.) At the Markman hearing, Gore again stated that the parties did not dispute the construction of "guide tube." (See Oct. 23, 2007 Tr. 78:10-24.) Perouse, however, asserted that there was a disagreement concerning whether the claim language required a lumen positioned exactly in the center of the tube or whether it permitted a guide tube with an off-center lumen.

The Court finds that the lumen need not be positioned exactly in the geometric center of the guide tube. There is no indication in the specification that the precise positioning of the lumen is important, and neither expert contends that a person of ordinary skill would interpret "guide tube" to include this limitation. Gore did not brief this issue. At the Markman hearing, Gore's only argument in support of the limitation was that the specification and drawings consistently depict a tube with a lumen that is centered within the tube. This argument merely proposes importing a limitation from the specification into the claims, which is improper. See Phillips, 415 F.3d at 1323-24. The Court rejects this limitation.

The Court does not believe there is any other difference between the constructions proposed by the parties, and construes "guide tube" to mean "a hollow cylinder or tubular structure through which a guide can pass." This is the ordinary meaning of the term as understood by a person of ordinary skill in the art at the relevant time, and is supported by the intrinsic evidence. For example, the specification discloses that "the tool is threaded onto a guide, inserted through the skin, and conveyed endoluminally as far as the desired location." (787 patent col.3 11.32-35.) This construction is further confirmed by extrinsic evidence, including dictionary definitions and patents for similar devices. (Golds Opening Decl. PP 63-67.)

The Court construes "a guide tube" to mean "a hollow cylinder or tubular structure through which a guide can pass."

ii. "distal end"

The parties provide identical constructions of "distal end," as it appears in the phrase, "guide tube having a distal end."
The parties construe this phrase as "the extremity of the guide tube away from the operator." (Perouse Opening Br. 22; Gore Proposed Order 2.) The Court agrees and adopts this construction.

Accordingly, the Court construes "a guide tube having a distal end" to mean "a hollow cylinder or tubular structure through which a guide can pass, having an extremity away from the operator."

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1. "guide wire tube" or "guide wire tube" 2

2 The claims in the '358 patent uses the term "guide wire", while the claims in the '057 patent uses the term "guidewire." The parties agree that "guide wire" and "guidewire" are identical. For claim construction purposes, "guide wire" will be used as reference to both terms.

3. "guide wire tube" or "guide wire tube" 2

2 The claims in the '358 patent uses the term "guide wire", while the claims in the '057 patent uses the term "guidewire." The parties agree that "guide wire" and "guidewire" are identical. For claim construction purposes, "guide wire" refers to both terms.
The plaintiffs raise two arguments in support of their construction: (1) under SciMed, the sole embodiment is the crux of the invention and the claims should be construed accordingly, and (2) claim 2 of the '358 patent adds the limitation that the outer diameter reduces or tapers, and therefore the doctrine of claim differentiation creates a presumption that this limitation is not in claim 1.

The court is not persuaded by the plaintiffs' argument that the claims should be construed according to the sole disclosed embodiment. See Cordis Order at 8-10. The plaintiffs' claim differentiation argument, however, has more merit. Claim 2, which depends from claim 1, adds the sole limitation that "the outer diameter of the distal portion of the guide wire tube is smaller than the outer diameter of the proximal portion of the guide wire tube." '358 Patent at 38-41. A construction of the term "guide wire tube" that requires the outer diameter to taper would render claim 2 meaningless.

The language in claim 2 that is directed to the outer surface of the guide wire tube is very similar to the language in claim 1 that refers to the guide wire lumen (which is created by the inner surface of the guide wire tube). Claim 1 states that "the lumen having a first diameter for the distal portion of the guide wire tube and a second diameter larger than the first diameter for the proximal portion of the guide wire tube." '358 Patent at 7:16-21. Both the plaintiffs' and defendants' proposed constructions, which require the inner diameter to taper, would render this express language of claim 1 superfluous. The patentee expressed the concept of "reduced or tapered" guide wire tube walls, both inner and outer, by using the language directed to the diameters of the distal and proximal portions. See '358 Patent at 2:60-61. Accordingly, "guide wire tube" means "a tube for passage of a guide wire."

7. Element (f)

Element (f) of Claim 1 requires "Guiding and transporting the ejected product from between the mold parts through the guide conduit." '998 patent at Col. 6 ll. 14-16. Turn-Key argues that this element must be construed according to its plain language and defines "guiding" as directing the product's path of travel through the conduit and "transporting" as causing the product to move through the conduit. Joint Statement at 14; Pl's Opening Brief 16-18. Defendants conversely argue that Element (f) requires that each ejected plastic product has its path determined by and is conveyed by the guide conduit until the plastic product has exited the mold completely. In addition, Defendants argue that the ejected plastic product does not interact with any other structure for guiding or conveying it from between the primary mold parts, besides the guide conduit. Joint Statement at 41; Crest's Responsive Brief 17-19; KM, MC & Concord's Brief at 10-11.

The Court construes the term "guiding" according to its ordinary and customary meaning, thus signifying the act of directing, Random House Webster's College Dictionary at 577, and "transporting" in its ordinary and customary meaning, thus signifying the act of carrying. Id. at 1368. The dictionary defines "through" as "in at one end, side, or surface and out at the other." Id. at 1341. The Court therefore construes Element (f) to require the directing and carrying of the ejected plastic product from the space separating the mold parts to the end or to an exit of the guide conduit. The Court finds Defendants' construction requiring that the carrying and directing of the product be accomplished by the conduit itself to be unsupported by the plain language of the claim. The Court's construction does not render "guide" in Element (d) meaningless because, as previously noted, Element (d) merely introduces the conduit and incorporates into its definition the role that it plays in directing the travel of the ejected molded plastic product-none of the parties contest the fact that the conduit plays some kind of role in directing the movement of the product.

The Court's construction also does not render "guiding" in Element (f) meaningless because the construction still requires that the product be directed in its travel from the space between the mold parts to the end or to an exit of the conduit. The claim language does not disclose the method by which the carrying and directing of the product is to be accomplished and as such, the Court declines to require that the product not interact with anything other than the guide conduit during the process described in this claim.
B. Manner in Which Eggs Are Transferred

Plaintiffs request the Court to construe the guiding steps in claim 24 to require "(1) transfer by lifting of eggs to holding stations; (2) transfer by lifting of eggs from the holding station to the spaced-apart locations; and (3) transfer by lifting of more eggs to the holding stations." 50 In addition, they "request the Court to find specifically that travel of eggs between the 'holding stations' and the 'spaced-apart locations' is not via conveyor belt or other physically connected pathway but rather by 'picking and placing.'" 51 The Court declines to impose a "lifting" or "picking and placing" requirement on claim 24.

Although the specification discloses a preferred embodiment in which eggs are advanced by a "pick and place" mechanism, the specification provides no basis for reading the particular limitations of the preferred embodiment into claim 24. On the contrary, the specification expressly states that "other variations and modifications will be apparent to those skilled in the art." 505 Pat., col. 8, ln. 67-68. As discussed above, 52 unless the specification provides some basis for reading the particular limitations of the preferred embodiment into the claim, references to the embodiment are not claim limitations. See Laitram, 863 F.2d at 865, 9 U.S.P.Q.2D (BNA) at 1299.

Plaintiffs also argue that "use of the term 'holding station' requires that the eggs be held or temporarily stored at the holding station" after each guiding step. 53 Again, Plaintiffs' argument finds no support in the claim language, the specification, or the prosecution history. The Court therefore construes the guiding steps in claim 24 in accordance with the plain meaning of their language:

"guiding said eggs from said weighing stations first to a plurality of egg holding stations located downstream of said guide means" means carrying eggs to holding stations,

"and then to a plurality of locations longitudinally spaced-apart from and substantially horizontally co-planar with said holding stations," means carrying eggs from the holding stations to the spaced-apart locations.

"guiding further eggs to said plurality of holding stations," means carrying more eggs to the holding stations.
"guiding steps"

Based upon its claim construction, the district court instructed the jury, in relevant part, that the guiding steps of claim 24 "are defined as follows: (1) Carrying eggs to holding stations; (2) Carrying eggs from the holding stations to the spaced apart location; and (3) Carrying more eggs to the holding stations." At trial, Diamond did not object to either the district court's construction of "guiding steps" or to the jury instructions about that term. Following the jury verdict of non-infringement, the district court denied Diamond's JMOL motion. In its denial, the district court acknowledged that its interpretation of guiding steps left undetermined whether the claim requires sequential performance of the steps. Then the trial court reasoned that the jury reasonably could have determined from the testimony presented that sequential performance is a necessary characteristic of the "guiding steps." The district court's instructions to the jury did not require sequential performance. In essence, the district court allowed the jury to add an additional limitation to the district court's construction of "guiding steps." In this, the district court erred. Claim construction is a question of law and is not the province of the jury. Markman, 52 F.3d at 979.

This error takes on significance in this appeal because the jury found that the Moba Omnia does not infringe. The record before us discloses no alternative basis upon which a reasonable jury could find that the Moba Omnia does not infringe, other than that the Moba Omnia does not satisfy the guiding steps limitation. Thus, by allowing the jury to import an additional limitation into the claims, the district court fundamentally altered the verdict.

Because Diamond did not object to the district court's claim construction or instructions to the jury, FPS contends that Diamond has waived its right to argue the interpretation of "guiding steps" on appeal. The doctrine of waiver as applied to claim construction prevents a party from offering a new claim construction on appeal. Interactive Gift Express v. CompuServe Inc., 256 F.3d 1323, 1346, 59 USPQ2d 1401, 1418 (Fed. Cir. 2001). Moreover, a party's objection to a jury instruction is waived unless that party objects to the instruction before the jury retires to consider the verdict. Fed. R. Civ. P. 51. In this case, however, waiver does not bar Diamond's argument. Diamond does not now contest the district court's instruction to the jury on the meaning of "guiding steps." Essentially Diamond does not wish to alter the district court's claim construction on appeal, but seeks enforcement of the trial court's claim construction.

Diamond has argued consistently, in its JMOL motions and in its argument on appeal here, that "neither the language of the claim itself nor the Court's order defining this language requires that the 'guiding steps' occur separately." Thus, Diamond has consistently protested the error that this court currently reviews on appeal. Thus, this court will not apply waiver to prevent Diamond from protecting the original breadth of the binding claim construction presented by the district court to the jury from post facto imposition of an additional limitation. Interactive Gift Express, 256 F.3d at 1346. Application of waiver in this case would essentially render unreviewable the district court's error. In sum, Diamond has not waived its argument that the guiding steps may be performed simultaneously.

Nowhere does the plain language of claim 24 require separate and consecutive performance of the various guiding steps. Rather, such a construction is contrary to the teachings of the '505 patent. For example, the specification explicitly describes simultaneous performance of guiding steps two and three. '505 patent, col. 5, l. 54 to col. 6, l. 3. Moreover, simultaneous performance of the guiding steps is consistent with operating at a significant rate of speed, a stated object of the invention. '505 patent, col. 2, ll. 3-7. The prosecution history is also consistent with this claim construction. Hence, this court, like the district court as well, construes the guiding steps to include simultaneous performance.

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c. "With a gun barrel cleaning device having a first end and a second end which comprises the steps of"

Michaels argues that the phrase "gun barrel cleaning device" has its ordinary meaning and refers to a flexible tool that has an end that is dropped into and pulled through a barrel to accomplish multiple cleaning functions in one pass. Michaels also argues that it does not require a fabric sheath that may be sectioned and capable of assembly and disassembly. Col 3, lines 64-67; Col 5, lines 17-52; Col 7, lines 45-57; Col 8, lines 33-36; Col 9, lines 10-14; Col 9, line 53 to Col 10, line 11; Fig. 4.

Clean Gun counters that this phrase requires a single, elongated, non-sectioned member, at least part of which is a tubular sheath. The device does not require assembly or disassembly and has no exposed fittings, connections, clamps, wires, push
rod tips or other metal parts. See Figs. 10 and 10A; Col 1, line 36 to Col 2, line 41; Col 2, line 62 to Col 13, line 63; Col 4, lines 9-25, 30-44, 43-60; Col 5, lines 38-52; Col 5, line 56 to Col 6, line 2; Col 6, lines 58-63; Col 7, lines 46-57; Col 9, lines 14-40.

First, to support its proposed construction that the patents must eliminate assembly and disassembly, Clean Gun points to a criticism in the patent specification of gun cleaning devices that are sectional:

All cleaning devices in use today require assembly, changing of fittings, and/or changing of cloths or patches prior to and during their use. This is always an inconvenience and it can prove to be a detrimental disadvantage under tense circumstances, tight time constraints, bad visibility or severe environmental conditions.

Col 3, lines 55-58; see also Col 1, lines 60-62 (criticizing sectional devices that require assembly and disassembly as "time-consuming and complex to use.").

Clean Gun's reliance on the patent's criticism of assembly and disassembly alone is not an express disclaimer and warrants no limitation. However, the patent also expresses that an "object of the invention is to provide a gun barrel cleaning device which eliminates assembly, disassembly, changing of parts, changing of patches, etc." Col 4, lines 22-25. In light of this objective, particularly when read with the criticism, this court concludes that the gun barrel cleaning device must be capable of cleaning the gun barrel as a single unit. It does not require any additional steps of taking sections apart and replacing various cleaning sections during the cleaning process.

This claim construction does not foreclose connecting sections. Rather, there is an advantage to having connections for assembly and disassembly prior to or after cleaning a gun barrel. For example, a user may want to eliminate certain cleaning steps or replace or clean certain cleaning segments. Thus, when in use, the gun barrel cleaning device must be connected as one unit to allow the user to clean a gun barrel in one pass, without any other cleaning steps which require assembly and disassembly. When the user is not cleaning a gun barrel, sections may freely be assembled or disassembled by using connectors.

This conclusion is supported by the patent's example of Figure 4. Figure 4 is the only figure in the patent showing a device with exterior metal couplings capable of assembly and disassembly. As discussed above, the restriction requirements on the '589 Patent do not limit the method claim to a particular device. The specification describes Figure 4 as a "second preferred embodiment." Col 9, lines 10-11. Figure 4 plainly has threaded connections which permit assembly and disassembly. Col 9, lines 10-13.

This conclusion is further supported by inconsistent specifications on exposed metal parts. At one place, the specification recites that an "object of the invention" is to provide a utensil that "is light weight, easily carried under field conditions, and which reduces or eliminates the metal parts typically used in a cleaning device." Col 4, lines 17-20 (emphasis added). To "reduce" is not the same as to "eliminate." Yet, at another place, the specification also states that an "object of the invention" is to "eliminate[] the possibility of metal to metal contact with the gun barrel itself." Col 4, lines 9-11. The specification also states that the method claims can be accomplished by all the various devices depicted in Figures 1, 4, 10, and 13. Col 9, line 52. Figure 4 shows a device with connectors and exposed metal parts. The function of protecting the gun barrel may be accomplished by aligning the brush "with the length of the gun barrel cleaning device" as required by the asserted claims. This prevents misalignment of metal parts which cause damage to the inside of the gun barrel.

As Clean Gun has demonstrated, it may be possible for metal connectors to nick the edge of the gun barrel when first being dropped into the gun barrel. However, the specification speaks to reducing or eliminating damage to the inside of the gun barrel during the cleaning process, not while inserting the device into the gun barrel. Accordingly, the phrase "gun barrel cleaning device" consists of a device that is designed such that there may be connecting metal parts (Fig. 4), but the connectors cannot be readily exposed during the gun cleaning process.

Second, Clean Gun relies on language describing the brush enclosed in a tubular sheath as a way to eliminate metal-to-metal contact. Clean Gun believes that all of the device claims in the two asserted patents require the brush to be inside the sheath. The patent does detail a "preferred embodiment" of a brush inserted into a sheath so that only the soft bristles extend through the sheath. Col 9, lines 15-37. Additionally, the patent summarizes the beneficial results of this aspect of the invention: "The gun cleaning device can also be made such that no metal components (other than the intended industry
standard, soft, phosphor-bronze bristles) can touch the inside surface of the gun barrel, which eliminates scratching, scarring, or uneven abrasion of the crown of the gun barrel, the riflings or other barrel metals.” Col 6, lines 58-63.

As discussed above, this court is unwilling to read into its claim construction any nonlimiting language such as "preferred" or "can also." Additionally, Figure 4 does not have a tubular sheath. Accordingly, the gun barrel cleaning device is not limited to a tubular sheath.

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III.

Bigio's challenge to the Board's determination that the toothbrush references are analogous art requires this court to review the Board's construction of the disputed claim term "hair brush." Cf. In re Paulsen, 30 F.3d 1475, 1479 (Fed. Cir. 1997) ("To properly compare the [prior art] reference with the claims at issue, [this court] must construe the [disputed] term . . . to ascertain its scope and meaning.").

As discussed above, the PTO gives a disputed claim term its broadest reasonable interpretation during patent prosecution. Hyatt, 211 F.3d at 1372. The "broadest reasonable interpretation" rule recognizes that "before a patent is granted the claims are readily amended as part of the examination process." Burlington Indus. v. Quigg, 822 F.2d 1581, 1583 (Fed. Cir. 1987). Thus, a patent applicant has the opportunity and responsibility to remove any ambiguity in claim term meaning by amending the application. In re Prater, 56 C.C.P.A. 1381, 415 F.2d 1393, 1404-05 (CCPA 1969). Additionally, the broadest reasonable interpretation rule "serves the public interest by reducing the possibility that claims, finally allowed, will be given broader scope than is justified." In re Am. Acad. of Sci. Tech. Ctr., 367 F.3d 1359, 1364 (Fed. Cir. 2004) (quoting In re Yamamoto, 740 F.2d 1569, 1571-72 (Fed. Cir. 1984)).

In this case, the Board construed the term "hair brush" to include "not only brushes that may be used for human hair on [a] scalp, but also brushes that may be used for hairs on other parts of animal bodies (e.g. human facial hair, human eyebrow hair, or pet hair)." Bigio, 2004 Pat. App. LEXIS 70 at *4. At the outset, the word "hair" preceding "brush" throughout the body of the claim does not alone limit the claim to brushes for scalp hair. At best, the word "hair" carries the meaning that the claimed invention involves brushing some kind of hair. The claim, however, does not specify or limit the claim to any particular kind of hair.

In examining the term "hair brush," the Board correctly declined to import from the specification a limitation that would apply the term only to hairbrushes for the scalp. The application in this case, specifically the "Objects of the Invention," discusses an "anatomically correct hairbrush" for brushing scalp hair. ’747 application at p. 1, ll. 14-15, ll. 16-18; p. 2, ll. 4-6, ll. 7-8. Nevertheless, this court counsels the PTO to avoid the temptation to limit broad claim terms solely on the basis of specification passages. In re Zletz, 893 F.2d 319, 321 (Fed. Cir. 1989). Absent claim language carrying a narrow meaning, the PTO should only limit the claim based on the specification or prosecution history when those sources expressly disclaim the broader definition. See, e.g., Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906-09 (Fed. Cir. 2004) (explaining requirement for an express disclaimer in either the specification or prosecution history).

In this case, the term "hair brush" alone does not specify the kind of hair to be groomed by the claimed invention. Thus, the term may reasonably encompass not only scalp hair brushes but also facial hair brushes. The Board correctly declined to accept Bigio's invitation to narrow the interpretation only to scalp hair by importing a limitation from the specification. Moreover, the Board's interpretation does not strain the bounds of the "broadest reasonable interpretation" of the term "hair brush." Indeed that term may reasonably encompass more than a grooming device for scalp hair. This court therefore affirms the Board's interpretation of "hair brush."

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b. "Half Maximum Fan Speed"
The limitation "half maximum fan speed" is found in Claim 1 of the '290 patent. ’290 patent, col.6, l.18. Relying on the ordinary meaning of the words, Delta contended that "half maximum" refers to fifty percent of the highest speed of the fan. Defs.’ Mem. at 15. Control countered that one skilled in the art would not so limit the phrase and directed the Court to the written description for a more functional definition. Pl.’s Mem. at 7.

It is well-established that a patentee is free to use terms in a manner inconsistent with their ordinary meaning as long as the special definition is apparent from the specification or prosecution history. Vitronics, 90 F.3d at 1582-83; Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578 (Fed. Cir. 1996). During the Markman hearing, counsel for Control argued that "it would be clear to those skilled in the art reading the patent that this is not a precise value . . . a half maximum is not a number, it is not a speed, it is a range of speeds." Markman Hr'g Tr. at 13:8-13. Control directed the Court to column 4, line 33 of the ’290 patent to support its argument that "the thrust of the entire specification supporting that claim and the half max is that the minimum represents . . . a value which is not on some arbitrary scale from the fan stopping to the fan going full blast, but is at a point that meets those balancing functions." Id. at 15:22 to 16:2. The "balancing functions" refers to the invention's goal of providing optimum cooling with low acoustical noise.

The patent teaches that "it is highly desirable to maintain a predetermined fan speed, e.g. approximately half maximum speed, when air temperature is below the preselected threshold." ’290 patent, col.4, ll.33-36. The preselected threshold refers to the temperature above which the fan speed increases. The summary of the invention states that the predetermined fan speed is the minimum speed needed to provide "adequate cooling of the electronic equipment under typical or nominal conditions." Id. col.2, ll.1-3. Thus, according to Control, "half maximum" does not refer to a number, but rather identifies the minimum speed necessary to achieve adequate cooling under normal conditions. Markman Hr'g Tr. at 15:12-18; Pl.’s Mem. at 8 (asserting that half maximum must be defined functionally to reflect a balance between acoustical noise and cooling).

Control's construction, however, provides no limit to the "half maximum fan speed" limitation. If "half maximum" were defined as the minimum speed necessary to achieve adequate cooling, then "fan speed" could vary widely depending on the environment, the electrical components, and any number of other factors not incorporated into the patent. Such a broad construction is not only contrary to the plain meaning of the limitation but also contradicts the prosecution history. During prosecution of the patent, Control was forced to amend its original limitation of "preselected minimum" to avoid prior art. Katz Decl. Ex. B at C00059. "To further aid in distinguishing from [the prior art], each of the independent claims has been amended to recite that the fixed level corresponds to 'one-half maximum fan speed' . . ." Id. at C00047. Control cannot now reclaim what it willingly abandoned to obtain the patent.

During claim construction, the Court acknowledged that "half maximum" is not a precise figure. Specifically, the Court accepted Control's argument that the highest rated speed of a fan varies. In addition, the Court recognized that the written description teaches "approximately," not exactly, half maximum. ’290 patent, col.4, l.34. Ultimately, the Court ruled that "half maximum speed means roughly fifty percent of the highest rated speed of the fan having in mind that fans supplied by different manufacturers may differ as to their highest rated fan speed." Markman Hr'g Tr. at 26:10-13.

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I. Half-Shells

Claims 1 and 11 of the '875 patent describe the housing of the fluorescent lamp as "including two separable, identical half shells." (App. To Def's Markman Br. Ex. A at Col. 4, L. 26 and Col. 5, L.L. 24-25)(emphasis added). Claim 10 of the '227 patent describes "a self-supporting elongated housing having two separable half-shells, both half-shells being identically shaped." (App. To Def's Markman Br. Ex. B at Col. 5, L.L. 6-7)(emphasis added). Additionally, Claim 11 of the '227 patent discloses "a self-supporting elongated housing having two separable half-shells, said half-shells being joined along a junction plane and said plug being arranged in said junction plane of said half-shells." (Id. at Col. 6, L.L. 5-8)(emphasis added).

APP contends that "half-shells" are equal halves of a hard outside cover. Lampi has not proffered its own definition of "half-shells." Rather, counsel for plaintiff generally asserted that "half" does not mean equal. With respect to "shell," Lampi also asserted that there is no basis to interpret it as a hard outside cover.
Neither of these objections to APP's interpretation is well-founded, particularly since Lampi failed to provide an alternative definition. First, and most obviously, the ordinary and customary meaning of "half" is one of two equal or corresponding parts into which a thing is divided. Nothing in the patent suggests otherwise. Indeed, Claims 4 and 15 of the '875 patent use the term "corresponding" to describe the two shells which meet along a junction plane to form the housing. (See App. To Def.'s Markman Br. Ex. A at Col. 4, L. 39 and Col. 6, L. 9). Moreover, counsel for Lampi conceded that, at least mathematically, halves are more often than not equal to one another. We will not quibble with his analysis. Contrary to APP's assertions, however, "equal" or "corresponding" does not necessarily mean exactly alike or the same. If that were the case, there would be no reason to modify "half-shells" with the term "identical" discussed in part II of this Opinion.

As to "shell," we find no basis for Lampi's objection to interpreting it as a hard outside covering. The ordinary, and indeed only, meaning of "shell" in this context is a hard outer cover or structure that forms a firm framework or covering. For confirmation of this definition, we need look no further than the claims themselves which are riddled with references to the housing. Specifically, Claims 3 and 14 of the '875 patent and Claim 5 of the '227 patent describe the half-shells as "injection molded parts made of plastic." (See App. To Def.'s Markman Br. Ex. A at Col. 4, L.L. 32-33 and Col. 6, L.L. 2-3; Ex. B at Col. 4, L. 53). These half-shells form a self-supporting elongated housing which supports the fluorescent tube and electrical components. (See App. To Def.'s Markman Br. Ex. B at Col. 5, L.L. 5-19 and Col. 6, L.L. 5-20). The electrical plug then extends outward to support the housing and fluorescent tube in a "self-supporting manner when inserted into an electrical outlet." (Id.). Because the shells are made of plastic, and because they form a housing which supports the inner components of the lamp, it is reasonable to interpret "shell" as a hard or firm outside covering.

Accordingly, we adopt APP's interpretation and define "half-shells" as two equal or corresponding parts forming a hard or firm outer covering into which the housing of the fluorescent lamp is divided.
the fluorescent lamp installed during fabrication, and . . . repaired if necessary[]." '227 patent, col. 2, ll. 14-18. Thus, the specification indicates that the housing must have at least two half-shells, but that it may have other parts as well.

Our interpretation is also supported by comparison to claim 1. Like claim 11, claim 1 claims, in part, a "housing . . . having" various listed structures. Claim 8, which depends from claim 1, reads: "The lamp according to claim 1 wherein said housing comprises two separable half-shells." Because claim 8, a dependent claim, must be narrower than claim 1, from which it depends, the term "having" in claim 1 must be open. That interpretation of the term "having" in claim 1 supports the conclusion that the patentee intended to use the same language in claim 11 in the same manner.

Therefore, we conclude that the district court erred in ruling that half-shells must be the only two elements that form the housing in claim 11. The proper interpretation of the "housing having two half-shells" limitation is a "housing having at least two equal or corresponding parts forming a hard or firm outer covering into which the housing of the fluorescent lamp is divided." Because the district court erred in construing that limitation, we vacate that portion of the judgment and remand for the court to consider whether the 5544 model infringes under the claim construction set forth above.

Kapusta asserts that the district court erred in construing the claim term "hand-grip size case" to require the limitations that the case be "no smaller than the width of an adult palm, no smaller than 1 inch in width, and of a rectangular shape." Kapusta contends that the court should have given the term its ordinary and customary meaning of "a case that is suited to a grip by the hand," and the court should not have added limitations for which there is no support in the intrinsic record. With respect to the "of a rectangular shape" limitation, Kapusta argues that the district court imported a limitation from the preferred embodiment of the specification into the claims. Furthermore, Kapusta argues that the district court erred by finding the term at issue to be ambiguous and then importing unnecessary limitations in order to preserve the patent's validity.

Gale counters that the added definitions of the term "hand-grip size case" are in the specification. Specifically, the figures portray the case to be of hand-grip size and of a rectangular shape. Furthermore, the specification notes that the case has a "top wall," which suggests a rectangular-shaped case. Gale also argues that the extrinsic evidence, including two prior art references introduced during litigation and expert testimony, disclose that a hand-grip size case does not encompass all portable devices smaller than Kapusta's device. According to Gale, the term at issue is ambiguous because it has an expansive meaning subject to different interpretations and thus, in light of the prior art introduced during litigation, it must be construed narrowly to preserve its validity.

We agree with Kapusta that the district court erred in its claim construction by including extraneous limitations. The court should have given the term "hand-grip size case" its ordinary and customary meaning. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) (explaining that unless the intrinsic evidence compels a contrary result, a claim term should be given its ordinary and customary meaning). The ordinary and customary meaning of "hand-grip size case" is a case of a size that can be gripped in a normal hand. We see no reason to depart from that ordinary and customary meaning or to add dimensions to the term, as there is no support for the district court's limitations in the intrinsic record.

Starting with the claim language itself, we see no evidence from this source to support the court's size limitations. The claim states that the test circuit is mounted in "a hand-grip size case," implying that the case is capable of being gripped in the hand of a normal person, and not of a size with specific dimensions. The straightforward mechanical technology of the invention and the understandable claim language give that meaning to this term. See Phillips, 415 F.3d at 1314 ("In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words."). "Hand-grip" means what it says, i.e., capable of being gripped by the normal hand. The claim language does not imply a departure from that meaning.

The specification also does not suggest any reason to deviate from the ordinary and customary meaning by imparting dimensions to the term. The specification consistently refers to the instrument as serving "in the hands of an operator." '663 patent, col. 1, ll. 63-65, col. 2, ll. 34-36. However, nowhere does the specification explicitly or implicitly ascribe numerical limitations to the case embodying the instrument. In fact, when mentioning the hand-grip size case, the specification states
only that the case is "of preferred hand-grip size," suggesting that the dimensions of the case being of hand-grip size, while preferred, are not inflexible. The specification further mentions that the operator will "grasp the primary instrument," yet that description does not suggest any specific numerical dimensions of the case. '663 patent, col. 6, II. 22-25. In the few instances where the specification alludes to either the "hand-grip size case" or to grasping the instrument, it does not reference any dimensions. Because numerical dimensions are absent in the specification, it was improper for the district court to construe the claim term with the lower limit dimensions.

The district court stated that it established the size dimensions of the "hand-grip size case" from "a preferred embodiment described in the specifications and shown in the drawings. . . ." Claim Construction Order, at 5. It further appears to have determined the meaning of the "of a rectangular" shape limitation solely from figures 4-7 because that is the only place in the patent that suggests such a shape. However, we cannot accept the district court's analysis because case law is well established that, while a specification should be used to interpret the meaning of a claim, it should not be used to import unnecessary limitations into the claims. See Phillips, 415 F.3d at 1323. In particular, we have acknowledged that claims must not necessarily be restricted to those embodiments disclosed in the specification, even if a patent describes only a single embodiment. As we stated in Phillips, "although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments . . . In particular, we have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." Id.

Here, the district court expressly ascertained the size limitations from a preferred embodiment and improperly construed the term to incorporate those limitations. The specification states that the figures are shown "for illustrative purposes" and thus the figures do not restrict the scope of the claims to that which is shown in the drawings. See '663 patent, col. 3, II. 66-67. The specification also states that figures 4, 5, and 6 depict "one of the featured companion test instruments," further suggesting that the scope of the claims should not be restricted exclusively to those figures. Id. at col. 5, II. 3-5. Because the specification does not indicate that the embodiment depicted in the figures is meant to be the only embodiment, and in fact implies otherwise, the claim term should not be limited to specific dimensions established from the figures.

The prosecution history also does not provide support for the addition of dimensions to the "hand-grip size case." On appeal from a rejection by the examiner, the Board of Patent Appeals and Interferences ("BPAI") rejected applicant's broad argument that the invention is distinguished over the prior art because it is "portable," but added that "there is no teaching or suggestion in [the references cited upon which the rejection was made] of a hand grip size case and therefore we will not sustain this rejection . . ." Applicant thereafter amended claims from being only portable to incorporate the language specifying "a hand-grip size case in which said test circuit is mounted" to put the claims in condition for allowance. The BPAI implied that the invention was distinguishable over the cited prior art by the inclusion of a "hand-grip size case," but the BPAI did not ascribe any lower size dimensions to the case.

Moreover, with regard to the "of a rectangular" shape limitation, although figures 4-7 show the instrument as housed in a rectangular-shaped case, the specification never suggests that this shape is critical to the operation of the invention. An important object of the invention is to have the portable test instrument serve "in the hands of an operator." '663 patent, col. 1, II. 61-64. There is no reason why this objective could not be accomplished equally as well with a non-rectangular shaped case. As long as the instrument can serve "in the hands of an operator," it fulfills the objective of the patent, irrespective of the specific shape of the case. The specification does not assign any significance to the shape of the case, and there is otherwise no indication in the intrinsic evidence that the invention must be limited to the rectangular shape depicted in some of the figures.

Gale further contends that in addition to the figures, the reference in the specification to securing a connector to the "top wall" of the case implies that the case is rectangular. See '663 patent, col. 5, II. 32-34. We find this argument unpersuasive. Securing the connector on the "top wall" does not compel the use of only a rectangular shape because other shapes could include a top wall.

Finally, the court's finding that the term is ambiguous and should be construed to sustain its validity is without basis. The term "hand-grip size case" is not ambiguous. Although the term may be of a nonspecific size and shape, that does not render the claim term ambiguous. Because the term is not ambiguous, the district court should not have applied the doctrine of construing claims to preserve their validity. Construing claims to sustain their validity has been limited to those cases in which "the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous."
Phillips, 415 F.3d at 1327 (quoting Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 911 (Fed. Cir. 2004)). We have not applied the doctrine broadly and have "certainly not endorsed a regime in which validity analysis is a regular component of claim construction." Phillips, 415 F.3d at 1327. This is not one of those limited cases where the term cannot be construed using other available tools. Had the district court limited its construction to the ordinary and customary meaning, it would not have had to resort to construing the claim term more narrowly to preserve its validity.

In sum, we do not accept the limitations that the district court added to the term "hand-grip size case." We see no basis for incorporating specific dimensions and a specific shape into the claim construction. Because we disagree with the court's claim construction, we vacate the district court's finding of noninfringement of the '663 patent to the extent that it was based on an erroneous claim construction of the term "hand-grip size case." That term, as indicated above, simply means a case of a size that can be gripped in a normal hand. While we might, on the basis of that meaning, make our own judgment on the question of infringement, based on the record, the better practice is to have the district court make that factual determination on remand. We therefore remand for the court to redetermine whether Gale's Products meet the limitation as we have construed it.

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O. "wireless handheld computing device"

Term wireless handheld computing device

Ameranth's Definition a mobile computing device which is suitable for in-hand use and is capable of wirelessly communicating with other computing devices

Term wireless handheld computing device

Defendants' Definition
Defendants do not believe that a construction is required for this term.

If the Court concludes that a construction is required, the term should be construed as "a palm sized wireless computing device"

The disputed term is located in each of the asserted independent claims: "transmitting said second menu to a wireless handheld computing device." Based on the limited briefing, the parties appear to dispute whether the handheld computing device must be palm-sized. Although a hand-held device does not necessarily need to be palm-sized, it must be sized to be held in one's hand. The court therefore construes the term to mean "a wireless computing device that is sized to be held in one's hand."

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1. "handheld module including a display, manual controls, and system circuitry for processing signals for display"

Plaintiffs' construction: a module that by design is operated while its components (i.e. a display, manual controls and system circuitry for processing signals for display) are held in one hand

Defendant's construction: a compact assembly designed to be carried in one hand that includes a display, manual controls, and system circuitry for processing signals for display
The parties' dispute regarding the meaning of this phrase boils down to a dispute about the meaning of "handheld." Defendant contends that "handheld" means a device that can be carried in one hand, while plaintiffs argue that "handheld" devices must be operable when held in one hand. In support of its position, defendant contends that the patent specification make clear that the term "handheld" denotes a machine that is easily portable. Plaintiffs rely on dictionary definitions and materials relating to the prosecution of an allegedly related patent in support of their argument that the common understanding of the term "handheld" relates to a user's ability to operate the device while it is held in one hand, not the portability of the device.

The meaning of "handheld" is not readily apparent from the claims themselves, which shed little light on how a user would interact with the device. Therefore, I turn to the patent specification to determine the meaning of the term as it is used in the '101 and '566 patents. The "Background Art" portion of the '566 patent offers persuasive evidence that "handheld" in the context of the '101 and '566 patents refers to a class of devices that are relatively portable in contrast to traditional, cart-mounted devices. This portion of the patent specification explains that "modern ultrasound devices generally fall into two classes of devices." '566 pat., col. 1, lns. 24-25. The first class of devices is described as "large, immobile," id. at lns. 26-27, "high-end," id. at ln. 40, devices that "are arguably portable" but "are limited by their ability to be transported easily." id. at lns. 29-30. The second class of devices is described as "systems designed for handheld use," id. at ln. 47, with displays in "specialized modules" or "laptop computers," id. at ln. 55. The specification goes on to discuss in detail the advantages of the invention's light weight and easy portability. Id. at col. 6, lns. 3-4, 9-10.

Next, the specification of the '566 patent cites U.S. Patent No. 5,839,422 (the "Chiang patent") as representative of the "handheld" devices that use a laptop computer display. Id. at 56. The Chiang patent discloses a ultrasound system in which a laptop is connected to a hand-held scanner. It is clear from the Chiang patent that the full device it discloses is not intended to be operated while held in one hand, although it includes a handheld scanhead. Therefore, the reference in the '566 specification to the device disclosed in the Chiang patent also suggests that, in the context of the '566 and '101 patents, "handheld" is the nomenclature given to devices that can be carried in one hand.

In contrast, all of plaintiffs' arguments rely on extrinsic evidence. Plaintiffs' primary argument is that dictionary definitions provide the proper definition of the term "handheld." Although dictionary definitions may be helpful to understanding claim terms in some cases, the Court of Appeals for the Federal Circuit has cautioned explicitly against over-reliance on them. Phillips, 415 F.3d at 1319. In this case, the patent specification provides insight into the meaning of the term "handheld" as it is used in the '101 and '566 patents and it is not appropriate to replace these specific definitions with those gleaned from a non-technical dictionary. Id. Plaintiffs' other arguments regarding statements included in defendant's internal marketing materials and a narrow reading of the Chiang patent are similarly unpersuasive. Therefore, I will adopt defendant's construction of the term "handheld."

**Court's construction:** a compact assembly designed to be carried in one hand that includes a display, manual controls, and system circuitry for processing signals for display.

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**B. "Handheld unit dimensioned for handheld grasping"**

The plain meaning of this term is that the unit is designed to be of a size permitting it to be easily grasped and held in the hand of a human operator.

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1. Claim 1 ("handle")

Claim 1 (and all dependent claims) of the '050 Patent uses the term "handle" as follows: "a housing including a first handle and a second handle movable with respect to the first handle," and "a clamp member extending distally of the distal portion of the outer tube and pivotable between an open position and a clamped position by movement of the second handle.
between first and second positions..." See '050 Patent, Claim 1 (emphasis added). Plaintiff proposes the following construction: "The part of the instrument designed to be grasped by the hand," while defendant proposes: "A part of the housing that can be grasped by the hand by inserting one or more fingers through an opening therein." The plaintiff's proposed instruction that "handle" be construed as "the part of the instrument designed to be grasped by the hand," comports with the agreed ordinary and customary meaning of "handle" as "a part that is designed esp. to be grasped by the hand or that may be grasped by the hand," see Def. Claim Construction Br. [Doc. # 40] at 10, and there is a heavy presumption in claim construction that claim terms carry their "ordinary and customary meanings." Phillips, 415 F.3d at 1312-13 (internal quotation and citation omitted).

While defendant's argument that this ordinary meaning cannot be adopted given various distinctions drawn by the patentee between "handle" and various other terms n2 may correctly reflect that the patentee did not intend that these other terms be given the identical construction as "handle," in the Court's view, adopting defendant's proposed construction to avoid this result is neither necessary nor appropriate. Claim terms will "take on their ordinary and accustomed meanings unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1327. No such indication of intent to deviate from the ordinary meaning of "handle" appears either in the Claim 1 itself or in the specifications. See '050 Patent, Claim 1, 10:47-50, 11:63-66, 14:9-12.

n2 See Def. Claim Construction Br. at 10-12 (comparing "handle" with, inter alia, "stationary gripping member" described at '050 Patent, 4:35-41, 6:20-26).

Moreover, it is improper for a court to "import" limitations into a claim from the specifications. See e.g., N. Am. Container, Inc. v. Plastipak Packaging, Inc., 415 F.3d 1335, 1348 (Fed. Cir. 2005) ("Unless required by the specification, limitations that do not otherwise appear in the claims should not be imported into the claims."); Seachange Int'l, Inc. v. C-COR Inc., 413 F.3d 1361, 1376 (Fed. Cir. 2005) ("It is improper to import a limitation into a claim where the limitation has no basis in the intrinsic record."); Playtex Prods., Inc. v. Procter & Gamble Co., 400 F.3d 901, 906 (Fed. Cir. 2005) ("The court must take care in its analysis, when locating in the written description the context for a disputed term, not to import a limitation from that written description."). Defendant's proposed limitation that the construction require that the "handle" contain an opening into which fingers can be inserted appears in neither the claim itself, nor the specifications, and thus there is no basis for "importing" that limitation into the claim construction.

A. Canady's '675 Patent

On July 15, 1991, Dr. Jerome Canady filed a patent application entitled "Surgical Coagulation Device." After several amendments to the initial application, the PTO approved the application and issued the '675 patent to Jerome Canady on May 4, 1993. The '675 patent is related to a coagulation device that controls or prevents blood flow in tissue for various types of incisional surgical procedures using an endoscope. Specifically, the '675 patent discloses a coagulation device using ionizable gas, such as argon, and radiofrequency current ("RF current") to cause blood coagulation (stoppage of bleeding) in the tissue. Using this device allows the ionizable gas to conduct the RF current in a gas stream to the tissue where the RF current causes blood in blood vessels of the tissue to "blow away." As a result, the blood vessels coagulate thus ceasing blood flow in the tissue. In addition, the coagulation device causes blood coagulation without physical contact between the device and tissue.

To perform this type of procedure, the '675 patent discloses a flexible tube passing through an endoscope which includes a flexible wire for conducting RF current. The flexible tube allows the ionizable gas to flow through the tube and endoscope. At the tip of the flexible tube and wire, the ionizable gas is discharged creating a gas stream that conducts the RF current from the flexible wire to the tissue which causes blood coagulation. In the '675 patent, claim 1 states the patented invention as follows:

1. A surgical tissue coagulator comprising an elongate, biocompatible, flexible tube having an open distal end and a proximal end, the tube having an external diameter of less than about 5 mm and being insertable into and maneuverable within a surgical endoscope;
means for connecting the proximal end of said tube with a source of an inert, ionizable gas so that a stream of said gas can flow through said tube and exit the distal end of said tube;

a flexible wire within said tube for conducting radio frequency current, the wire having a distal end for position adjacent the distal end of said tube, and means at the distal end of said wire for discharging an arc of radiofrequency energy away from the distal end of said wire within said stream of inert gas exiting the distal end of said tube so as to form an ionized gas stream which is capable of coagulating tissue during endoscopic surgery within a patient, the wire having a proximal end opposite the distal end of the wire, and means for connecting the proximal end of the wire with a source of radiofrequency energy; and

a handle attached to said tube adjacent the proximal end of the tube for maneuvering said tube within said endoscope while said handle is outside said endoscope. (Col. 4, Line 67 to Col. 5, Line 25) (emphasis added).

Figure 2 of the '675 patent, as shown below, illustrates a preferred embodiment of the claimed invention. The preferred embodiment is used for endoscopic surgical procedures where a tube is inserted and passed through an endoscope to conduct the RF current and carry the ionizable gas.

IV. CLAIM INTERPRETATION

In construing patent claims, the court must consider (1) the claim itself, (2) the specification, and (3) the prosecution history of the patent application (if introduced). Vitronics Corp. v. ConceptorInc., Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Words in a claim must be given their plain meaning unless another definition is specified. In re Zletz, 893 F.2d 319, 321-22 (Fed. Cir. 1989). The court, however, can neither narrow nor broaden the scope of the claim to give the patent owner something different than what he intended. E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir. 1988). The appropriate starting point is with the specific language of the claims, Phonometrics, Inc. v. Northern Telecom Inc., 133 F.3d 1459, 1464 (Fed. Cir. 1998), and all words in a claim must be considered. In re Wilson, 57 C.C.P.A. 1029, 424 F.2d 1382, 1385 (C.C.P.A. 1970).

In claim 1 of the '675 patent, the "handle" element is recited as "a handle attached to said tube adjacent the proximal end of the tube for maneuvering said tube within said endoscope while said handle is outside said endoscope." (Col. 5, Lines 21-24) According to claim 1, the recited "handle" has the purpose of "maneuvering" a tube within an endoscope. This purpose of "maneuvering" is clearly supported in the specification. More particularly, in the detailed description of the specification of the '675 patent, a preferred embodiment of the claimed invention discloses the "handle" as "a handle (18) [which] is provided for maneuvering tube (10) within an endoscope (16) (shown in Fig. 2) while handle (18) is outside the endoscope." (Col. 3, Lines 2-5).

Canady contends that the prosecution history of the '675 patent application shows the novelty of the '675 patent is related to the use of an "ionizable gas" and in particular, argon gas, for endoscopic electrosurgery. Canady further asserts that the claimed "handle" element should be interpreted to cover any "handle" element which is positioned outside of an endoscope.
This contention is unavailing because the court cannot interpret the claimed "handle" element to cover all "handle" elements positioned outside of an endoscope, but must interpret the explicit language of the claims which clearly recites a "handle" being further limited by its function of "maneuvering" a tube within an endoscope. See In re Wilson, 424 F.2d at 1385 (noting that the court cannot ignore the specific language in a claim). Furthermore, the court must construe patent claims consistently with the specification and the preferred embodiment. See Vitronics, 90 F.3d at 1583; See also In re Barr, 58 C.C.P.A. 1388, 444 F.2d 588, 592-93 (C.C.P.A. 1971) (noting that the court should give the claims the broadest reasonable interpretation consistent with the specification). Here, both the claim language and the specification describe a "handle" as having the purpose of "maneuvering" a tube within an endoscope. Moreover, adopting the ordinary meaning of the term "handle" dictates the court's conclusion that the claimed "handle" is "a part to be held or operated with the hand." In re Zletz, 893 F.2d at 321-22. The clear language of the claim further compels the court's conclusion that the claimed "handle" is further limited by its function "for maneuvering" a tube within an endoscope. Accordingly, the court concludes that the claimed "handle" of the '675 patent is limited by its recited function of "maneuvering" a tube within an endoscope. Armed with this claim construction, the court proceeds to determine the validity of the '675 patent and ascertain whether ERBE's APC Probes infringe claims 1 and 11-16 of the '675 patent.

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1 See Webster's New Riverside University Dictionary 562 (1988).
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C. "Handle Component"

Pedicraft argues that the claim limitation "a handle component mounted to . . . at least one side rail," as used in Claims 10 and 18, should be construed to mean "a portion of the side rail positioning mechanism to be actuated by hand." Dkt. 65, pp. 17-18. This construction, according to Pedicraft, is supported by Claim 10, which purportedly "recites that the handle component is provided to actuate other components of the side rail positioning mechanism." Id. at 18. Moreover, the specification, file history, detailed description and Figure 4 of the '855 Patent all allegedly support Pedicraft's position that the handle component is actually that portion of the side rail that is actuated by hand. Id. at 18.

Stryker, on the other hand, proposes a simple definition of "handle component" as merely a "grip." Pedicraft argues that this definition is too restrictive and would improperly limit the handle to a "stationary grip structure" without consideration for the claimed actuating role played by the handle component, which is both evidenced in Claim 10 as well as the patent specification and prosecution history. Pedicraft points out that Mr. Lockwood testified that a handle component, in the context of the '855 Patent, would be understood to provide for handle actuation as opposed to a stationary grip, and Dr. Dyro purportedly also stated that a stationary grip would not perform the claimed hand actuation. Dkt. 62, pp. 51-52; Dkt. 63, pp. 43-44. In essence, Pedicraft interprets the "grip" to be a "subcomponent of the overall handle component," or in other words, the "handle component" is actually an assemblage of parts used to actuate the side rail positioning mechanism between a lock and release position. Id.

Stryker, on the other hand, supports its "grip mounted to the side rail" construction of "handle component" by arguing that the specification of the '855 Patent actually refers to the handle component as a "handle grip." '855 Patent, Cols. 5-6. Additionally, Stryker claims Dr. Dyro did in fact refer to the handle component as a "grip" during his Markman testimony. Dkt. 63, pp. 40-41. It argues that Pedicraft's proffered "actuation" definition is vague and unclear, and in fact the actuation function appears separately in the '855 Patent after the term "handle component" is used. Stryker therefore urges the Court to adopt a clearer definition of "handle component" as simply a "grip."

The Court again agrees that Stryker's proposed construction comports with both logic and the '855 Patent itself. The patent refers to the "handle component" as comprising a "handle grip," and then only later explains that this component operates to "rotate the lock spindle from a lock position to a release position." '855 Patent, Cols. 5-6; Claim 10, Col. 9; Dkt. 66, pg. 34. The handle component itself, however, is simply a handle grip used to rotate the spindle, as opposed to some vague assemblage of parts comprising some unstructured actuation function. Stryker's construction of "handle component" is
therefore the most logical and will be adopted by this Court.

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D. "HANDLE PORTION"

The next term to construe is "handle portion," which appears in claim 1 of the '540 Patent. Plaintiff argues that the meaning of the term is "portion of the grooming tool having a hand-grip portion and a head portion." Plaintiff asserts that this proposed definition is based on the specification of the '540 Patent, which states that the "handle portion 22 includes a hand-grip portion 26 and a head portion 28." ('540 Patent, doc. # 1-3, p.7 col.2 ll.58-60). Defendants argue that the meaning of "handle portion" is "the portion of the tool that does not include the pet engageable portion." Defendants assert that this construction is also based on the language of the '540 Patent, which states, "the only essential components of the pet grooming tool 20 are the handle portion 22 and the pet engageable portion 24." ('540 Patent, doc. # 1-3, p.8 col.3 ll.56-58).

Plaintiff argues that "Defendants' definition does not indicate what a handle portion is. Rather, it merely indicates what it is not." (Pl.'s Opening Brief, doc. # 101, p.8). Plaintiff also argues that Defendants cannot claim that the only two components of the patented tool are the handle portion and the pet engageable portion. This is because the cited claim terms are listed under the term "comprising," which is an open-ended term that does not exclude unlisted elements. See Mars, Inc. v. H.J. Heinz Co., L.P., 377 F.3d 1369, 1376-77 (Fed. Cir. 2004). The Court agrees with Plaintiff's arguments and rejects Defendants' proposed definition, "the portion of the tool that does not include the pet engageable portion."

Defendants, challenging Plaintiff's definition, argue that the definition is "ambiguous" and "does not account for all the components found in the claimed invention." (Defs.' Opening Brief, doc. # 100, p.12). The Court agrees with Defendants that Plaintiff's definition is somewhat ambiguous, specifically because Plaintiff's proposed definition includes the term "head portion," which would require further definition.

The Court will reject both of the definitions initially proposed by the Parties, and instead adopt a definition that gives the words of the claim their "ordinary and customary meaning." Phillips, 415 F.3d at 1312 (internal quotations omitted). "Handle portion" is a term that is sufficiently common and identifiable, and the claim term is apparently not afforded a special meaning of any type in the pet grooming industry. The Court has determined that the "ordinary and customary meaning" of "handle portion" is "portion of the grooming tool that the user holds and that secures the pet engageable portion," and the Court will construe the term as such. This "ordinary and customary" meaning was readily apparent, so the Court need not consider other intrinsic or extrinsic evidence.

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5 This definition was informally proposed by Defendants in the September 18, 2009 Markman hearing, and is similar to the everyday description of "handle portion" given by Plaintiff at the same hearing.

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(b) "a hanger extending downward from each side of said primary frame members;"

Boler interprets element (b) as "a structure or a thing, attached to the frame members, that extends toward a lower place." Watson, on the other hand, defines this term as "a structure or a thing extending toward a lower place." Boler contends that its interpretation is more appropriate because it advises one ordinarily skilled in the art what the "structure or thing" is attached to, i.e. the frame members. The court agrees with Boler and therefore defines element (b) as "a structure or a thing, attached to the frame members, that extends toward a lower place."
Hard Facing

Claims in the '631 Patent contain the terms "an exterior hard facing," "a hard facing," and "a hard facing material." ReedHycalog contends "hard facing" is limited to nickel carbide or tungsten carbide. Baker contends "hard facing" means "a material that resists being worn away by abrasion during drilling" and lists 10 materials as examples of hard facing.

The '631 Patent does not define "hard facing" and offers little guidance. Claim 7 of the '631 Patent claims a drill bit "wherein the bit body comprises steel and the at least one bearing surface of at least one of the plurality of blade structures includes an exterior hard facing." Id. at col. 30:11-14. Claim 8, a dependent claim, claims the same drill bit "wherein the exterior hard facing comprises tungsten carbide particles." Id. at col. 30:15-16. Therefore, as delineated above, it is presumed under the doctrine of claim differentiation that "hard facing" is not limited to tungsten carbide particles.

Claim 11 claims a drill bit "wherein the wear-resistant exterior comprises at least one of the group consisting of carbide, tungsten carbide, synthetic diamond, natural diamond, polycrystalline diamond, thermally stable polycrystalline diamond, cubic boron nitride, and hard facing material." Id. at col. 30:25-30. While this claim appears to list separate materials, claim 8 indicates "hard facing" can contain tungsten carbide, one of the materials listed in claim 11. Id. at col. 30:15-16. Therefore, the claim 11 list does not exclude the other listed materials from the construction of "hard facing."

The specification also does not define the term. It lists "hard facing" as a type wear-resistant feature apart from embedded-diamonds, thermally stable PDCs, PDCs, weldings, and weldments. Id. at col. 20:40-44. However, the specification does not limit "hard facing" to any type of material or state that "hard facing" cannot comprise the other listed wear-resistant materials.

Logic dictates that "hard facing" is a material harder than the material it is applied to. As such, "hard facing" includes those materials listed in the specification, in addition to other materials, when those materials are harder than the surface they are applied to. Thus, "hard facing" and "hard facing material" mean "wear-resistant material that is harder than the material onto which it is applied." 27

27 Ref. No. 32 of Appendix B contains the disputed terms and their constructions.
Court that Genus' device contains, in addition to the gas showerhead, a separate outer ring containing gas flow holes that point outward at a 45-degree angle.

The language of the claims, however, does not require that the gas flow apertures be parallel to the substrate. In claim 1, the apparatus must be capable of directing the gas flow perpendicular to the substrate. ('165 patent 5:37-39.) Claim 1 describes the apparatus as "comprising a member having a plurality of gas flow apertures passing therethrough for maintaining said flow of gas perpendicular to said substrate . . . said member being disposed parallel to said circular substrate[.]") (Id. 5:39-42.) Thus, the member containing the apertures must be disposed parallel to the substrate, but there is no requirement that the apertures themselves be parallel to the substrate. An aperture through a solid substance is a three-dimensional hole, containing an input, a tunnel through the solid substance, and an output. The apparatus must be capable of directing the gas flow perpendicular to the substrate, which would seem to require that the output of the gas flow apertures be disposed parallel to the substrate, but there is no requirement that the input of the gas flow apertures also be parallel to the substrate. As Genus points out in another part of their argument, apertures that are in a "Y" formation may start out at an angle, but nonetheless direct the gas downwards perpendicular to the substrate.

Claim 6 contains similar language requiring that there be an apparatus comprising "gas flow means having a plurality of apertures passing therethrough and disposed parallel to said substantially circular substrate, said plurality of apertures forming a generally circular configuration[.]") (Id. 6:17-23.) This language at first appears to be ambiguous, as it is not immediately clear whether the gas flow means must be disposed parallel to the substrate, or whether the gas flow apertures are disposed parallel to the substrate. When this language was added to the claim, however, the inventors stated that the language was added "to positively recite and claim the features of the gas flow means or apparatus as being disposed parallel to the surface of the substrate," which clarifies that it is the gas flow means that must be parallel to the substrate. ('165 Prosecution History at 0053.)

In claim 6, as in claim 1, the gas flow must be directed perpendicular to the substrate ('165 patent 6:26-29), which suggests that perhaps the outputs of the gas flow apertures also must be parallel to the substrate. Again, however, there is no requirement that the input of the gas flow apertures be parallel to the substrate.

Thus, Genus' argument that "all of the apertures are disposed parallel to said substantially circular substrate" is not well taken. Even if one assumes that by using the phrase "all of the apertures," Genus intended to refer only to the gas flow apertures, Genus' argument does not distinguish between the input and output of the gas flow apertures.

ASM appears to be arguing for the possibilities that: (1) gas may also flow into the chamber from some source other than the gas flow apertures in the showerhead; and (2) that some of the gas flow apertures need not be parallel to the substrate. Claims 1 and 6 both require an apparatus "comprising" a substrate and either "an apparatus for directing a flow of gas" (claim 1) or a "gas flow means" with certain characteristics. ('165 patent 5:34-37; 6:17-20.) The parties agree that the term "comprising" is an open term which creates a presumption "that the recited elements are only a part of the device, that the claim does not exclude additional, unrecited elements." Crystal Semiconductor Corp. v. TriTech Microelectronics Int'l Inc., 246 F.3d 1336, 1348 (Fed. Cir. 2001). There is no argument here to rebut that presumption. Thus, the use of the term "comprising" does not preclude an apparatus that also uses an additional gas flow apparatus or means that is not parallel to the substrate or in which the outputs of the gas flow apertures in that additional gas flow apparatus are not parallel to the substrate.

Determining whether the claims permit any of the gas flow apertures to be non-parallel to the substrate requires that the Court determine what the inventors meant by the term "having." The Federal Circuit has stated that the term "having" can make a claim open, but does not convey the open-ended meaning as strongly as the term "comprising." Crystal Semiconductor, 246 F.3d at 1348. Use of the term "having" does not create a presumption that the body of the claim is open. Id. The Court must examine the claim in its full context in order to determine whether the use of the term "having" limits the claim to its recited elements. Id.

The claims do not expressly require that the either the input side or the output side of the apertures be parallel to the substrate. What is required is that the apparatus containing the apertures be parallel to the substrate, and that the gas flow be perpendicular to the substrate. Whether this can be accomplished with some additional number of gas flow apertures that are not parallel to the substrate and/or are not contained in the showerhead seems to be to a question of fact that is better reserved for briefing on infringement. At this juncture, as a matter of claim construction, the Court finds that the term
"having" does not preclude the possibility that the apparatus may have gas flow apertures other than those described in the
claims. As the gas flow apertures described in the claims are associated with the performance of particular processes,
however, any additional gas flow apertures must not be necessary to perform the processes described in the claims, and also
must not interfere with those processes.

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1. The '041 Patent

It is undisputed that the plaintiff's latch mechanism is comprised of the following basic parts: a container body, a lid with a
latch bar, an elongated "tongue" structure, a "tooth" located on the distal, or top, end of the tongue, and a lower ridge which
extends outwardly opposite the tongue. The tooth and lower ridge together form the upper and lower boundaries of a recess
or indentation into which the latch bar structure of the lid fits to lock the container in a closed configuration. To open, or
disengage, the latch mechanism, the user must manually flex or bias the distal end of the elongated tongue in a backward
direction so that the tooth of the tongue structure can clear the latch bar of the lid.

According to the parties, the relevant portion of claim 4 of the '041 patent involves the following language:

said latch comprises an elongate tongue . . . having a ridge extending outwardly opposite said rear surface across said
tongue generally parallel to and in a spaced relation to said tooth . . . .

'041 patent (emphasis added).

In its papers, Rubbermaid asserts that the key word set forth in claim 4 is the word "having," and thus requests the court to
interpret that term. "Having" is not specifically defined in the claim, the patent, or the prosecution history. Consequently,
and because "common words, unless the context suggests otherwise, should be interpreted according to their ordinary
meaning," Desper Products, Inc. v. QSound Labs, Inc., 157 F.3d 1325, 1335 (Fed. Cir. 1998), defendant urges the court to
consult, and ultimately adopt, the dictionary definition of the term.

"Having" is the present participle of the verb "have." As defined by Webster's Collegiate Dictionary, "have" is defined as "to
hold, include, or contain as a part or whole." Webster's Collegiate Dictionary 533 (10th ed. 1999); accord Webster's Third
New Int'l Dictionary 1039 (1986)(defining "have" as "contain, include"). Plaintiff does not dispute this definition of the
word "having," and does not offer an alternate definition of the word. Therefore, because there is no indication that plaintiff
intended to assign to the term "having" any meaning other than its plain and ordinary meaning, and further because plaintiff
has raised no objection to the court's construction of the term in that manner, the court adopts the dictionary definition of the
term. Thus, the court concludes that the term "having," as it is used in claim 4 of the '041 patent, means "to hold, include, or
contain as a part or whole."

According the term "having" its plain and ordinary meaning, defendant argues, requires the court to construe claim 4 as
limited to latch mechanisms with tongues which contain or include a lower ridge. More specifically, defendant contends
that, because claim 4 specifically claims a latch mechanism with a "tongue . . . having a ridge," that ridge must necessarily
be a part of the tongue structure. The court agrees, and therefore construes claim 4 of the '041 patent as claiming latch
mechanisms with ridges that are a part of the tongue structure.

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II. "Having [a]"

Plaintiff's proposed construction: "having only"

Defendant's proposed construction: "having at least"
The transitional phrase "having" appears in all independent claims of the patents-in-suit and is used to define the panels of the invention. The parties agree that "having" must be interpreted in light of the specification to determine whether open or closed language is intended, see Lampi Corp. V. American Power Products, Inc., 228 F.3d 1365, 1376 (Fed. Cir. 2000), but they disagree on where this will lead us. Plaintiff advances a closed construction, contending that the term "having" is meant not only to exclude additional elements, but also to restrict the number of named elements. In other words, the panels must have only one main plateau, one spliced plateau, one jogged portion and cannot have any additional plateaus, jogged portions or anything else. Defendant contends that the term is meant to be open, meaning that the recited elements of a main plateau, spliced plateau and jogged portion are only part of the invention and that the claim does not exclude additional, unrecited elements. See, e.g., Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501 (Fed. Cir. 1997) (use of an open term like "comprising" means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim).

The transitional phrase "having" can make a claim open but it is not presumed to do so (in contrast to "comprising," which is presumptively open). Crystal Semiconductor Corp. v. TriTech Microelectronics Intern., Inc., 246 F.3d 1336, 1348 (Fed. Cir. 2001). To determine whether the term is meant to be open or closed, the court must look for clues in the claims or in the specification. Lampi Corp. v. American Power Products, Inc., 228 F.3d 1365, 1376 (Fed. Cir. 2000). For example, in Enzo Biochem, Inc. v. Appliera Corp., 2006 U.S. Dist. LEXIS 74570, 2006 WL 2927500, *9 (D. Conn. 2006), the court noted that the patentee had used the term "having" differently from the term "comprising." Specifically, in the claims using the word "comprising," the patentee had used language such as "at least one of," which signaled that it intended "comprising" to have an open meaning. In contrast, the patentee did not modify the term "having," which was always stated in the form "a compound having the structure." From this observable dichotomy, the court determined that the two terms had different constructions, with "comprising" being an open term and "having" being a closed term. Id.

Citing Enzo, plaintiff argues that the patentee's use of the open term "comprising" in the same claim containing the word "having" is evidence that the terms should be construed differently. In contrast to the patent in Enzo, however, here the patent does not use the phrase "comprising at least one of" or any other modifier signifying that the term has a meaning different from "having." Contrary to plaintiff's argument, the mere fact that the term "comprising" is used to describe the wall joint and the term "having" is used to describe the elements of the panels is not strong proof that the patentee intended the terms to have different constructions. To the contrary, the patentee's word choice in the specification suggests that it intended the word "having" to have an open construction. Lines 17-20 at Col. 4 of the '564 patent read:

"The word 'includes' is a patent law term of art meaning 'comprising'; it is an 'open ended' term allowing other elements to be included in the meaning of a term. The First Years, Inc. v. Munchkin, Inc., 575 F. Supp.2d 984, 998 (W.D. Wis. 2008); see also SanDisk Corp. v. Memorex Products, Inc., 415 F.3d 1278, 1284 (Fed. Cir. 2005) ("includes" means "comprising"); Medicem S.A. v. Rolabo, S.L., 353 F.3d 928, 933 (Fed. Cir. 2003) ("comprising" is "open ended" term). The use of "includes" in the specification suggests that the patentee contemplated an invention that did not exclude a panel having elements other than a main plateau, spliced plateau and jogged portion, or a panel having multiple spliced plateaus and jogged portions. Absent evidence to the contrary, I presume that the patentee had this same intent when drafting the claims.

In addition, in the disputed portions of Claim 1, the word "having" is followed by "a." The word "a" can have "its normal singular meaning" or can mean "one or more," depending on how the patentee uses the term. See, e.g., North American Vaccine Inc. v. American Cyanamid Co., 7 F.3d 1571, 1575-76 (Fed. Cir. 1993). Here, it appears that when the patentee wanted to limit the elements to no more than one of each, he used the phrase "a single," as he did in claims 5 and 19, which refer to a splicer comprised of "a single plate" of rigid material. The use of the simple article "a" after the word "having" in Claim 1 as opposed to "a single" suggests that the patentee did not intend to similarly limit Claim 1.

Finally, as defendant points out, it would seem that in order to join a plurality of first and second panels to form the cargo body described in Claim 15 and achieve the goal of a smooth-walled interior, each panel except the first and last in a multipanel cargo body would have to have a main plateau, two spliced plateaus, and two jogged portions. (At first blush, Claim 15 might seem to account for this by defining a "cargo body" comprised of pairs of first and second panels with a joint between each adjacent pair of first and second panels, but a closer reading suggests that Claim 15 merely is explaining how to join a plurality of first and second panels to form a cargo body.) Because of the timing of the briefing schedule,
plaintiff did not have an opportunity to respond to this argument, so I am not relying on it to find that the term "having" is an open term. Nonetheless, it does support the notion that as used in this patent, the term "having" means "having at least."

Court's construction: "having a" means "having at least one."

C. "the first and second legs having a compliant area, thus allowing the hanger to accommodate various size of transmission lines"

For the following reasons, this court construes the claim term "the first and second legs having a compliant area" in claims 1, 15, 31, 32, and 37-38 of the '543 patent to be clear on its face.

Beverly advocates limiting the construction of the term "compliant area" to a structure equivalent to flexible spring fingers based on the absence in the specification of any teaching of the claim's reference to the "first and second legs having a compliant area." (Def. Mem. at 3.) Beverly relies on the specification's teaching of the compliant area [110] as existing between the mounting [100] and retaining section [102] at the opposite end of the hanger from the legs [14, 12] and the extended section [104], (see fig. 1, supra), as compared to the relevant claims' suggesting that the first and second legs having their own compliant area. According to Beverly, the disputed claims are broader than suggested in the teachings of the specification and so the claims would be invalid unless given Beverly's proposed construction.

Andrew first characterizes this argument as another attempt by Beverly improperly to limit the claims to the patent's preferred embodiments. Andrew also asserts that Beverly has misconstrued the preferred embodiments themselves by failing to understand that the hanger legs' compliant area is the area between the mounting and retention section and that the claims do "not require that the legs themselves have a compliant area, but rather that structure (e.g. a compliant area) be present in the overall device to enable the legs to be compressed toward each other and expand away from each other by spring force" and thus accommodate various sizes of lines. (Pl. Reply at 9-10.)

While the grammar in the claims is not the epitome of clarity, the prosecution history of the '543 patent leads the court to conclude that the disputed term is clear on its face; the "first and second legs having a compliant area" refers to compliant area 110 between the retention section and the mounting section. As relevant here, the Patent and Trademark Office ("PTO") rejected the claims 1-3, 6, 11-13, 15-18, 31, and 32 as being unpatentable over the "Thoen" invention. Thoen teaches:

stackable transmission hangers comprising a transmission line retention section (12) having a first and second legs (24). The first and second legs include a locking fastener (28) configured to lock against an attachment surface (not numbered). A mounting section (34, 134) extends from the transmission line retention section including a lip (34) to be received in a square mounting hole (134) disposed on a second hanger. The retention section includes the first and second areas of resistance (the interior area of legs 24).

(Pros. Hist., Paske 84.) The Thoen invention did not make reference to any compliant area at all. During the prosecution of the '543 patent, Andrew on May 14, 2001 amended the claims in which the disputed terms appear to add in the language "having a compliant area" to overcome the patent examiner's rejection. (Pros. Hist., Paske 92-100.) In its application explaining the amendments, Andrew stated that "Claims 1, 15, 31 and 32 have been amended to clarify that each of the first and second legs includes a compliant area, which enables the hanger to accommodate various sizes of transmission lines [Claims 37 and 38 were added as new]." (Id. at 102.) The amended language of "having a compliant area" could only refer to compliant area 110. The patent examiner rejected the claims because they were obvious given the prior art, which mentioned no compliant area, and so Andrew added the language of "having a compliant area" to explain that the legs worked in conjunction with the compliant area 110 to accommodate various sizes of transmission wire in order to overcome the patent examiner's rejection. The court also notes that the initial application included compliant area 110; that the later amended language reuses the term "compliant area" suggests that the applicant was referring to the original compliant area 110. Additionally, the specification describes only one compliant area--compliant area 110--and makes no reference at all to separate compliant area in the legs.

Furthermore, Beverly's proposed construction improperly imports a preferred embodiment of spring fingers into the
invention, see Phillips, 415 F.3d at 1323, and the proposed construction undermines the principles of claim differentiation by rendering meaningless the dependent claims' requiring of spring fingers, such as claim 9. See Curtiss-Wright Flow Control Corp., 438 F.3d at 1380. The court finds that the disputed claim phrase requires no construction and can be given its ordinary meaning.

2. "Recessed Protrusion"

The parties dispute the proper construction of the words "recessed protrusion," in claim 1. In particular, claim 1 recites a "fastening means having a recessed protrusion protruding from the base . . . ." '693 Patent, col. 4, ll. 45-47. PLC asserts that the words "recessed protrusion" should be construed as an "annular projection downwardly extending from the base." PLC Brief at 7. Bidco asserts that PLC is reading additional limitations into the claim and that the words "recessed protrusion" should be construed according to their plain meaning. See Joint Claim Construction and Prehearing Statement at 4. The Court concludes that the words "recessed protrusion" carry their plain meaning, with the caveat that the recessed protrusion must protrude toward the support surface.

In support of the assertion that the recessed protrusion must be "annular" and extend "downwardly," PLC points to the specification and the prosecution history. First, PLC points out that the specification states that "[t]he single aperture 8e may be countersunk 8f in order to allow the head of the screw 8b to rest flush and level with the upper surface of the base 8a." PLC Brief at 8 (quoting '693 patent, col. 3, ll. 59-61). PLC notes that the definition of "countersink" is a "hole with the top part elongated so a screw or bolt head will lie flush with or below the surface." Id. (quoting Webster's II New Riverside University Dictionary, 1994 at 319). PLC goes on to quote the specification as explaining that the countersink "allows the elongated flooring planks, 2, 3 and 4 [in figures 2, 4 and 5] to lie flat on the supporting members." Id. (quoting '693 patent, col. 4, ll. 3-8). According to PLC, the recessed protrusion could only achieve this function if it were both annular and downwardly extending.

PLC points further to the prosecution history, in which the patentee amended claim 1 to add the "recessed protrusion" in response to the patent examiner's rejection of claim 1 on the ground of anticipation. See PLC Brief, Ex. B, August 24, 2001 Response Under 37 C.F.R. § 1.111 at 3-4. In discussing the recessed protrusion, the patentee stated as follows:

The recessed protrusion has a recess so that when a screw or nail is placed in the recessed protrusion, the head of the screw or nail will lay flush on the base of the clip. This will enable another tongue and groove board to be slid over the clip easily without damaging the board. If there were no recess the screw or nail will scratch and damage the board and will also make it harder for installation.

Another advantage of the recessed protrusion is that when a screw or nail is placed in the recessed protrusion to engage a support surface, the protruding part of the recessed protrusion extending from the bottom of the clip (see FIG. 7 of the present application), the protruding part can also engage the support surface to prevent the clip from moving around.

Id.

The Court is not persuaded that the use of the word "countersink" in the specification requires that the "recessed protrusion" must be either "annular" or "extend downwardly from the base." First, nothing in the dictionary definition of "countersink" requires a downward orientation. Moreover, even if it did, the word "countersink" is not used in claim 1 and the words that are used -- "recessed protrusion" -- do not indicate a downward direction or orientation. It is improper for the Court to import limitations from the specification that are not found in the claims themselves. See Comark Communications v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998) (holding that "[i]t is axiomatic that limitations from the specification should not be read into the claims"). Second, the reference to countersinking in the specification also does not provide a basis for concluding that the protrusion must be annular. As PLC conceded at oral argument, a protrusion of any shape can accomplish the function of allowing the flooring planks to lie flat, so long as the protrusion is sufficiently large.

The Court also does not find anything in the prosecution history that supports the conclusion that the "recessed protrusion" must be annular or extend downwardly. First, PLC has not pointed to any specific reference to the shape of the protrusion in
the prosecution history or anything else in the prosecution history that would require an "annular" protrusion.

Nor does the amendment cited by Defendant persuade the Court that the recessed protrusion must be "downwardly extending from the base." Such a construction would impose a limitation with respect to the orientation of the entire assemblage that the Court does not find in the prosecution history.

It is true that the inventor described the recessed protrusion as being in the "bottom" of the clip such that a board can slide easily "over a clip." See PLC Brief, Ex. B, August 24, 2001 Response Under 37 C.F.R. § 1.111 at 3-4. This language indicates that the recessed protrusion extends toward the support surface. Otherwise, a board could not slide "over" the clip as described in the patent prosecution. Therefore, the Court concludes that the words "recessed protrusion" carry their ordinary meaning, with the additional requirement that the recessed protrusion must protrude toward the support surface.

3. "Having a Recessed Protrusion"

The parties dispute the meaning of the words, "having a recessed protrusion," in claim 1. See '693 patent, col. 4, ll. 45-46. PLC asserts that this term must be construed to mean that "the recessed protrusion is preexistent to application of the fastening means." PLC Claim Construction Brief at 9. Bidco, on the other hand, argues that PLC's construction adds an improper temporal limitation and should be rejected. The Court concludes that PLC is correct.

PLC argues that the language in this term must be construed to limit the claim to a device with a preexisting recessed protrusion because otherwise, the claim will be invalid as anticipated by prior art, namely, United States Patent No. 2,317,428 ("the '428 patent" or "the Anderson clip"). In particular, PLC points to an embodiment of the Anderson clip which it argues has all of the elements of claim 1 of the '693 patent. Id. (citing '428 patent, col. 1, ll. 1-5 and Figures 1 and 2). PLC asserts that the only differences between the clip shown in Figures 1 and 2 of the '428 patent and the accused device are: 1) the Anderson clip contains additional parts 16 and 19; and 2) the aperture of the Anderson clip is round instead of oblong. According to PLC, these differences do not, however, place the accused device outside the scope of claim 1 of the '693 patent because an "aperture" can be either round or oblong, and because claim 1 of the '693 patent uses the open-ended term "comprising" -- thus signifying that the claim will read on devices with additional elements.

Bidco counters that the Anderson clip does not anticipate the device claimed in the '693 patent because the design of the Anderson clip is "so fundamentally different that it accomplishes the exact opposite of the purpose of the '693 patent." Bidco Reply Brief at 10. In particular, Bidco argues that an important feature of the claimed device is the "open-ended extension of the free-end of the clip into the tongue and groove of the planking," id., which allows planks to "expand and contract longitudinally according to weather and atmospheric condition." Id. (quoting '693 patent, col. 1, ll. 65-67). In contrast, Bidco asserts, the additional planes 16 and 19, shown in Figures 1 and 2 of the '428 patent, "restrict[] movement of the tongue and groove planking." Id. at 11. Moreover, Bidco argues, because of these additional elements, the Anderson clip does not meet the limitation in claim 1 requiring a free end "extending in a single plane and sized to engage a groove." Id. (quoting '693 patent, col. 4, ll. 48-51).

"A prior art reference anticipates a patent claim if the reference discloses . . . all of the limitations of the claim." EMI Group N. Am., Inc. v. Cypress Semiconductor Corp., 268 F.3d 1342, 1350 (Fed. Cir. 2001). A device which would "literally infringe if later anticipates if earlier." Bristol-Myers Squibb Co. v. Ben Venue Labs., 246 F.3d 1368, 1378 (Fed. Cir. 2001). Here, the Court must determine whether the Anderson clip would anticipate the device claimed in claim 1 of the '693 patent if claim 1 were construed to read on devices in which the recessed protrusion is creating during assembly rather than when the clip is manufactured. If so, the Court must address whether this conclusion justifies adopting PLC's proposed construction to preserve the validity of the claim.

The critical issue in determining the significance of the Anderson clip is whether the additional elements 16 and 19 take the device outside of the scope of claim 1 of the '693 patent. If they do, the Anderson clip does not anticipate the '693 patent regardless of how the Court construes the claim term "having a recessed protrusion." In addressing this issue, the Court finds instructive cases in which the Federal Circuit has held that statements made in the specification may disclaim embodiments found in the prior art and limit the scope of a claim. See Scimed Life Sys., Inc. v. Advanced Cardio. Sys., 242 F.3d 1337, 1340-1342 (Fed. Cir. 2001). In these cases, the Federal Circuit has explained that "[w]here the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be
considered broad enough to encompass the feature in question." Id.

The specification of the '693 patent emphasizes the ability of the claimed device to keep the planks secure "while permitting the planks to expand and contract at rates different than the joists themselves." '693 patent, Abstract. This is described as one of the objects of the invention and is recognized as an important feature of prior art by Erwin. See '693 patent, col. 4, ll. 40-44, 62-67. The Court concludes that these statements in the specification effect a disclaimer of embodiments that do not allow the planks to expand and contract longitudinally, such as the Anderson clip, even though the open-ended term "comprising" in claim 1 might otherwise encompass the Anderson clip. See Cultor Corp. v. A.E. Staley Mfg. Co., 224 F.3d 1328 (Fed. Cir. 2000) (holding that written description implicitly limited subject matter of patent and therefore, that asserted claims did not read on accused device even though claim by itself might otherwise have been read to encompass accused device).

This conclusion finds further support in the use of the term "free end portion" in claim 1 to describe the part of the clip labeled 8d in Figure 1 of the '693 patent. '693 patent, col. 4, ll. 48-49. Based on the plain meaning of the word "free," the Court construes this term as limiting the claim to include only a device that does not have additional surfaces attached to element 8d, such as elements 16 and 19 in the Anderson clip, that prevent expansion and contraction of the planks that are secured by the clip. Although the word "comprising" does not exclude additional, unrecited elements, it is not "a weasel word with which to abrogate claim limitations." Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1379 (Fed. Cir. 1998). As a result, the Court finds that the Anderson clip does not anticipate the claimed device.

The Court, however, concludes nonetheless that the words "having a recessed protrusion" mean that the recessed protrusion exists prior to installation. First, the word "having" is a static term. It does not encompass a clip that does not "have" a recessed protrusion in its unassembled state. Nor is there any suggestion in the specification that the inventor intended to claim a device in which the "recessed protrusion" was not present in the unassembled device but rather, was created only at installation. Had the inventor wished to claim such a device, he could have used method claims to do so. However, as Bidco correctly points out, there are no method claims in the '693 patent. Further, statements made by the inventor in the prosecution make clear that the recessed protrusion exists before installation rather than being created by installation. In particular, in the amendment quoted above, the inventor stated, that "[t]he recessed protrusion has a recess so that when a screw or nail is placed in the recessed protrusion, the head of the screw or nail will lay flush on the base of the clip . . . . See PLC Brief, Ex. B, August 24, 2001 Response Under 37 C.F.R. § 1.111 at 3-4 (emphasis added). Thus, both the words of the claim and the prosecution history support the conclusion that the recessed protrusion is preexistent to application of the fastening means.

Said outlet duct being configured to radially expand said airflow to a low velocity and said return duct being configured for low radial flow return velocity to said high pressure compressor

Key to both phrases above is the term "low velocity." While a person or ordinary skill in the art arguably would understand that the air flow exiting the low pressure compressor is at a very high velocity, the parties disagree as to how the outlet and return ducts in the '499 Patent are designed to slow the velocity. Thus, the Court will construe the term "low velocity" first.

Low velocity

Claim 1 specifies that the outlet duct of the low pressure compressor is configured to radially expand air flow "to a low velocity" and the return duct is configured for "low radial flow return velocity," Rice contends that the term "low velocity" should be construed to mean "a decreased air flow velocity." Rolls-Royce, on the other hand, wants a specific numerical value and contends that the low velocity term means air flow velocity "less than approximately 200 ft./sec."

Notably, the claim language is not "to a lower velocity" or "to a reduced velocity." Rice, however, points out that dependant claim 9 includes the specific numerical limitation of less than approximately 200 ft./sec. Rolls-Royce counters that claim 9 specifies "said low velocity of less than approximately 200 ft./sec." which indicates that the prior use of low velocity was meant as "less than approximately 200 ft./sec." Rolls-Royce further identifies in the specification where Rice described the preferred embodiment as having air flow velocity of about 200 ft./sec. See Def's Br. 33-35.
However, there is no indication in the descriptive passages cited by Rolls-Royce that a velocity less than approximately 200 ft./sec. is critical to the invention. While the reduction in velocity is identified as being advantageous to "reduce inlet pressure loss" (col. 8, line 27), nowhere does the specification indicate that the velocity of 200 ft./sec. is in and of itself a necessary parameter to be met in order to realize the gas generator of the invention. Rather, the specification indicates that the low pressure loss benefit resulting from a lower air flow velocity between the low and high pressure compressors is made possible by the additional radial space made available by the increased pitch-line radius, r, as a consequence of the intercooler. See col. 8, lines 28-38. The description in the '499 patent specification of the air flow velocity is unlike the situation identified in Toro Co. v. White Consolidated Industries, Inc., 199 F.3d 1295 (Fed. Cir. 1999), wherein the specification described the advantages of a unitary structure of a ring permanently attached to a cover as being important to the invention.

Rolls-Royce also relies upon the prosecution history for support of its proposed construction of "low velocity." Specifically, Rolls-Royce identifies that the July 7, 1989 Amendment added the "low velocity" recitation to the claims and argues that Rice's remarks indicate that a low velocity of less than 200 ft/sec. was needed. Examination of Rice's remarks indicate that Hull was being distinguished on the basis of an absence of an external counterflow intercooler. Rice first points out that the compressed air being cooled in Hull's heat exchanger 16 and the coolant flow in the same direction. Rice then offered that Hull did not have a low pressure drop heat exchanger and ducting, which are realized by the claimed counterflow externally mounted intercooler. Amendment 8.

When Rice turned to the DuPont prior art, Rice again argued that a counterflow externally mounted intercooler was absent just as in Hull. Rice also pointed out that the discharge of the axial flow fan 18 of DuPont was directly to heat exchanger 26 and would be high. Similarly, the velocity to downstream heat exchanger 28 would be high "because there is very little change in the cross-sectional flow area shown." Amendment 9. Rice's remarks indicate nothing more than the prior art did not include the ducting that would radially expand the air flow to a lower velocity. His remarks do not indicate that either Hull or DuPont were being distinguished on the basis of the specific air flow velocity through the heat exchanger and ducting of each. The import of Rice's remarks do not extend beyond the requirement that the ducting radially expand the air flow to slow it to a lesser velocity. The remarks clearly do not amount to a clear disclaimer of air flow velocities through the intercooler and associated ducting above 200 ft./sec. Thus, the Court adopts Rice's construction for "low velocity" as being "a decreased air flow velocity."

Having adopted Rice's construction of low velocity, the Court turns to the disputed term "to radially expand." Rice proposes the construction "to cause air flowing away from the axis of the shafting to increase in volume." Rice argues that a person of ordinary skill in the art would understand that "radially expand" means something expands as it moves away from the axis, in contrast to "axial" which indicates a direction along the axis. Rolls-Royce, on the other hand, proposes the construction "to increase the cross-sectional flow area in a direction generally perpendicular to the axis of the gas generator."

However, the embodiment disclosed in figure 7a of the '499 patent depicts a duct that "radially expands" the air flow from the low pressure compressor. The air flowing radially through the duct in figure 7a is not perpendicular to the axis of the gas generator. Further, the specification describes how the direction of the flow with respect to the radial position can be "curved backwards" and vary in angle to accommodate different structures. Col. 14, lines 44-50. Nothing requires that the expansion occur only when the air is flowing perpendicular to the axis. Thus, the Court adopts Rice's plain meaning "to cause air flowing away from the axis of the shafting to increase in volume."

The parties previously requested no construction for the term "outlet duct;" therefore, the Court will not construe that term. The Court previously construed "return duct" to mean "conduit for conveying air back from the externally mounted intercooler."

In sum, the Court construes the disputed term, "said outlet duct being configured to radially expand said air flow to a low velocity" to mean "said outlet duct shaped and positioned to cause air flowing away from the axis of the shafting to increase in volume resulting in a decreased air flow velocity."

The Court construes the disputed term, "said return duct being configured for low radial flow return velocity to said high pressure compressor" to mean "the conduit conveying air back from the externally mounted intercooler being shaped and positioned to result in a velocity of air flowing toward the axis of the shafting that is lower than the velocity of that air when
The parties dispute whether satisfaction of the relationship of \( \text{AHPC} \propto \frac{\text{ALPC}}{(\text{TLPC}/\text{THPC})} \) is to be of \( \text{AHPC} \propto \frac{\text{ALPC}}{(\text{TLPC}/\text{THPC})} \) and the specified operating conditions of the intercooler. If the low pressure compressor is sized (i.e., matched to the inlet of the high pressure compressor) based on the relationship illustrated embodiment, the pitch line radius \( r_3 \) of the high pressure compressor remains constant and the pitch line radius \( r \) constant RPM, there is the necessity to size the pitch line radii of the compressors according to the change in density. In the high pressure compressor, the density of the cooled air is increased accordingly to Boyle's Law. Because of the disclosure explains that, because the air from the low pressure compressor is cooled before being admitted to the inlet of the high pressure compressor, and inversely proportional to the absolute temperature ratio between the high temperature air flow discharged from the low pressure compressor compared to the low temperature air flow from the intercooler passing to the inlet area of the high pressure compressor

To the extent the parties seek construction term-by-term, the Court finds that approach to be confusing and unnecessary and declines to do so. Rather, the claim language in dispute clearly expresses a relationship between two specified structures: the inlet flow area of the high pressure compressor (AHPc) and the outlet flow area of the low pressure compressor (ALPO). As depicted in the specification in Fig. 2, the pitch line radius \( r \) establishes the flow area of the low pressure compressor 24 outlet (ALPc). The pitch line radius \( r_3 \) establishes, as shown in Fig. 4, the flow area of the high pressure compressor 44 inlet (Alin). See col. 8, lines 51-53. The specified relationship is expressed in terms of a direct proportioning of the flow areas. Thus, a direct proportioning exists of the pitch line radii, \( r \) and \( r_3 \), [i.e., as the outlet flow area of the low pressure compressor gets larger (\( r \) gets bigger), the inlet flow area of the high pressure compressor gets correspondingly larger (\( r_3 \) gets bigger) in accordance with some constant ratio].

However, because of the intercooler, the proportioning constant between (AHPc) and (ALPc) also includes an additional proportioning factor established by the ratio of the absolute temperature of the high temperature air flow discharged from the low pressure compressor (TLPC) and the low temperature air flow from the intercooler passing to the inlet area of the high pressure compressor (THPc). This temperature ratio is expressed as (TLPC/THPc). However, the relationship of the inlet flow area of the high pressure compressor (AHPc) and the outlet flow area of the low pressure compressor (ALPO) changes in inverse proportion to the temperature ratio (TLPC/THPc). That is, as the ratio of (TLPC/THPc) gets larger, the inlet flow area of the high pressure compressor (AHPc) gets smaller.

The claim limitation can be expressed mathematically as:

\[
\text{AHPc} \propto \frac{\text{ALPC}}{(\text{TLPC}/\text{THPC})} \propto \frac{\text{ALPO}}{\text{AHPc}} \propto (\text{TLPC}/\text{THPC})
\]

Thus, as the intercooler provides more cooling of the air flow from the outlet of the low pressure compressor, which is at a temperature TLPC, the temperature of the air flow from the intercooler passing to the inlet area of the high pressure compressor (THPc) is further reduced relative to temperature air flow discharged from the low pressure compressor (TLPC). Accordingly, the denominator of the ratio gets smaller and the ratio gets correspondingly larger. The consequence is that, because the inlet flow area of the high pressure compressor (AHPc) changes in inverse proportion to this ratio, the inlet flow area of the high pressure compressor (AHPc) gets smaller.

This claim language was added during the reexamination prosecution of the '499 patent. In his statement to the examiner, Rice identified support in the specification to be found at column 9, beginning with line 1. As to the patentability of the amended claim, Rice characterized the limitation as expressing a power producing system wherein "the inlet flow area to the high pressure compressor is matched to the conditions of the air flow exiting the low pressure compressor," which was said to be "governed by Boyle's Law." Statement 4. Rice also notes that other factors could be changed to satisfy Boyle's Law, such as changing the speed of the compressor could be used, although "a change in speed is not used to obtain the desired substantial matching to satisfy Boyle's Law." Statement 5. Rice was specific that "matching of the low and high pressure compressors is uniquely obtained by satisfying the area and temperature relationships recited in the amended claims." Id. Indeed, the disclosure in column 9 cited in support of the claim amendment describes the matching of the flow areas according to Boyle's Law based upon the low and high pressure compressors running at a constant RPM.

The disclosure explains that, because the air from the low pressure compressor is cooled before being admitted to the inlet of the high pressure compressor, the density of the cooled air is increased accordingly to Boyle's Law. Because of the constant RPM, there is the necessity to size the pitch line radii of the compressors according to the change in density. In the illustrated embodiment, the pitch line radius \( r_3 \) of the high pressure compressor remains constant and the pitch line radius \( r \) of the low pressure compressor is sized (i.e., matched to the inlet of the high pressure compressor) based on the relationship of \( \text{AHPc} \propto \frac{\text{ALPC}}{(\text{TLPC}/\text{THPC})} \) and the specified operating conditions of the intercooler.

The parties dispute whether satisfaction of the relationship of \( \text{AHPc} \propto \frac{\text{ALPC}}{(\text{TLPC}/\text{THPC})} \) is to be
evaluated while the system is producing power (Rice) or whether it is evaluated as a design rule (RR). Claim 1 is clearly directed to apparatus and not a method. Thus, the focus is on the structure of the power producing system and not on any sequence of steps conducted by a system in producing power or attaining a particular operating condition. More specifically, the claim limitation concerns defining the relationship of the structures of the low and high pressure compressors as to the size of the outlet and inlet flow areas, respectively. The structure is thereby established and does not change during operation of the system while producing power.

Rice argues that the subject claim limitation embraces a dynamic operating environment because the specification presents a thermodynamic analysis of the invention. See Pl.'s Br. 39. However, the thermodynamic analysis "of this invention" and for "optimum efficiency" presented in column 16, line 1, through column 23, line 3, is premised on the intercooler being sized to effect a specified exit temperature under specified environmental conditions for a particular approach temperature. See col. 16, lines 54-57. This supports Rolls-Royce's argument that the relationship of AHPC cc ALPC / (UP c/TuPc) is a design rule applied to obtain low and high pressure compressor structures optimized for a predetermined operating condition of the intercooler.

The Court construes the claim limitation to mean "a design rule applied to optimize the cross-sectional area of the air flow inlet of the high pressure compressor in relation to the cross-sectional area of the air flow outlet of the low pressure compressor for a predetermined operating condition of the intercooler (1) by having the areas increase or decrease together on a constant ratio basis between them and (2) by having the cross-sectional area of the air flow inlet of the high pressure compressor also increase or decrease in opposite to the ratio of the absolute temperature of the air flow at the cross-sectional area of the air flow outlet of the low pressure divided by the absolute temperature of the air flow at the cross-sectional area of the air flow inlet of the high pressure compressor (i.e., the area increases as the ratio gets smaller and decreases as the ratio gets larger), which can be expressed mathematically as: AHPC \[\text{proportional}\] ALPC / (TLPC/THPC)."

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3) Said portion having been subject to work-hardening.

The third element of Claim 1 is that "said portion (has) been subjected to work-hardening." Defendants contend that the teaching of the specification is that work-hardening of at least about 30% must be applied to material in the pseudoelastic state to attain the claimed work-hardened pseudoelastic state and the claimed elasticity, whereas the only evidence presented at the hearing established that the degree of work-hardening in Defendants' process was no more than 10%.

The language of the claim, however, clearly contains no reference to work-hardening of at least 30% to attain the claimed work-hardened pseudoelastic state or claimed elasticity. Literally, even minimal work-hardening is covered. Claim 1 of the '112 patent, in marked contrast, which is not in issue at this stage of the proceedings, does contain a 30% work-hardening limitation and certain examples within the '955 specification do refer to 30% work-hardening. In no respect, however, does the evidence suggest that the patentees ever argued that 30% work-hardening was necessary to avoid prior art or that any prior art disclosed material in a work-hardened pseudoelastic metallurgical state in which work-hardening was less than 30%. Indeed, Plaintiffs have shown that, in a Second Preliminary Amendment in the '955 file history, they deleted all reference in Claim 1 to 30% work-hardening, stating that the claim as amended claimed a portion "subjected generally to work-hardening." Plaintiffs further declared in the amendment that their "examples of work-hardening, including preferred percentages whenever added, are illustrative only and should not be a limitation of the claim." It is an accepted rule of claim construction that the presence of a limitation in some claims, which is absent from other claims, will support the interpretation that the latter claims did not have a limitation. Specialty Composites, 845 F.2d at 987. The Court interprets this limitation to require only that frames have been subjected to minimal work-hardening. Accordingly, the Court finds that Plaintiffs are likely to succeed at trial in showing Defendants' frames contravene the third element of Claim 1.

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5) Said portion having greater than 3% elasticity over a temperature range from -20 [degrees] C. to +40 [degrees] C.
The fifth element of Claim 1 requires that the NiTi SMA portion of the frame "have greater than 3% elasticity over a temperature range from -20 [degrees] C. to +40 [degrees] C." Plaintiffs contend that this element means that at every temperature within the indicated range, the frame portion will recover at least 3% of its original shape after being subjected to stress and then released. Thus, if a frame portion were stretched 4% beyond its original shape and upon release recovered more than 3% of its original shape, the "3% elasticity" element would be met despite the 1% residual strain. Defendants assert that this particular element requires that the frame portion show complete recovery, i.e. a return to origin, after a strain greater than 3%.

The Court considers first the language of the claim itself. North American Vaccine, 7 F.3d at 1575. It is true that Random House Dictionary, cited by Defendants, defines "elasticity" as "the capacity of a material to recover its original form upon the removal of a force," a definition that in general was affirmed by Defendants NiTi SMA expert Dr. Schety, their engineering expert Mr. Bjorge, and indeed to some extent by Plaintiffs' NiTi SMA expert Professor Beshers. Nonetheless interpretation of a claim term by reference to dictionary definitions without first acknowledging its use in the specification or prosecution history is inappropriate. See Hormone Research, 904 F.2d at 1563. Indeed, in selecting language for a patent claim, the patentee is not confined to dictionary definitions of the terms used. "Patent law," as previously observed, "allows the inventor to be his own lexicographer." Fromson v. Advance Offset Plate, Inc., 720 F.2d 1565, 1569 (Fed. Cir. 1983). Terms, however, must be construed "in connection with the other parts of the patent instrument and with circumstances surrounding the inception of the patent application." Id. At the same time, if a patent applicant wishes to give claimed terms an uncommon meaning, "he must set out his uncommon definition in some manner within the patent disclosure." Hoganas, 9 F.3d at 951; Intellicall, 952 F.2d at 1385.

To begin, it should be noted that Professor Beshers agreed only as to the definition of elasticity in its elementary concept. He specifically clarified that the elementary definition of elasticity put forth by Defendants was not applicable in the context of the NiTi-based SMA eyeglass frames defined in the patent. In that regard, he was careful to define elasticity as recovery of at least 3% of the original shape of the framed portion when subjected to an appropriate load and released. Moreover, language in the specification favorable to Plaintiffs' interpretation appears at the very first sentence in the section entitled "Summary of the Invention" which reads: "It is the purpose of the instant invention to provide eyeglass frames which (1) are highly resistant to permanent deformation, or "kinking," over the full range of ambient temperatures . . . ."

The stated purpose, it may be noted, is not to provide frames that are "totally" resistant to permanent deformation, which is the clear implication of the definition that Defendants contend for, i.e. that any material with a strain over 3% must spring back to origin. The purpose of the patent is to provide frames "highly," which is to say "largely," "greatly," or "to a considerable degree" resistant. Plaintiffs' interpretation would thus seem more sensible than Defendants, i.e. over the ambient temperature range, Plaintiffs' frame components will more likely than conventional frames resist permanent deformation when subjected to a reasonable range of stresses. The components, in other words, will recover at least 3% of their original shape, possibly more depending on the temperature.

Defendants point out, however, that in disclosing how to achieve "the desired very high elasticity property," the patent equates "optimized elasticity" properties with Figure 2H of the patent which shows full recovery of the frame upon release of the stress. In addition, Defendants cite the following sentence which appears at Column 6, lines 1 through 4, of the patent: "Thus, throughout the temperature region of interest for eyeglass frames, the component acts completely elastically up to strains of 6% or more. This is many times the range achieved with traditional metal frame materials." Defendants argue that this establishes that elasticity must mean complete recovery of the stretched materials to their original size or length at all indicated temperatures.

As used within the patent, however, the term "elasticity" and its variants suggest otherwise. Thus the first example given in the patent "show(s) complete elastic springback at room temperature," which certainly implies that at other temperatures elasticity may be less than complete. See Read Corp. v. Portec, Inc., 970 F.2d 816, 823 (Fed. Cir. 1992) At the same time, the temple described in the first example is said to have "greater than 6% elasticity over a temperature range of -20 [degrees] C. to +40 [degrees] C." Presumably "complete elastic springback" and "6% elasticity" have different meanings, otherwise the term "complete" elastic springback could have been used to refer to elasticity over the entire temperature range.

The second example given in the patent describes a temple that exhibits "3.7% elastic springback and imparts 3.8% shape-memory recovery when heated." The third example lies between the first two and is said to yield "5.0% elastic springback.
and imparts 2.25% shaped memory recovery." These two examples obviously do not exhibit "complete elastic springback," since they have respectively 3.8% and 2.25% shape-memory recovery, residual deformations to be recovered by applying heat. Again, however, the initial recovery in these two examples is described as "elastic." Figure 2G of the patent is in accord. It shows an 8% elongation springing back to a 3% elongation (i.e. 5% elasticity), with the residual 3% returning to origin by means of "heat recovery."

Finally, as noted in Specialty Composite, "a review of other claims in the same patent can aid in deciding the scope of a particular claim." 845 F.2d at 986. The fact that Claim 5 of the '955 patent describes a component that combines "a minimum of 3% heat recoverable memory . . . and at least 3% elasticity," further indicates that "elasticity" means something other than "full elastic recovery."

Defendants nonetheless suggest that when Plaintiffs were trying to distinguish their claimed frames from prior art in order to persuade the PTO to allow their application, they defined "greater than 3% elasticity" to mean that, at strains greater than 3%, the material would return to zero. They cite in particular Plaintiffs' discussion of the so-called Mercier article. 5 That article, however, reported test results of a shape-memory alloy material that exhibited a substantial permanent deformation when tested at a single temperature (100 [degrees] C.), which is outside the temperature range required in Claim 1 (-20 [degrees] C. to +40 [degrees] C.). In addition, the Mercier article does not disclose the level of elasticity, nor indeed any other appropriate features of its material, at any temperature other than 100 [degrees] C., a fact that the PTO examiner apparently found significant, since he was unwilling to infer that similar properties would obtain at different temperatures, especially those within the range of Claim 1 of the '955 patent. In other words, the residual strain vel non of the Mercier material was ultimately irrelevant to the PTO reexamination of the '955 patent. Even so, the Court concludes that Plaintiffs' statements regarding the Mercier material amounted to no more than a suggestion that, even at the presumably optimal temperature at which it was tested, the material exhibited permanent deformation and that a frame component made of the material would become permanently deformed or kinked. "Every statement made by the patentee during prosecution to distinguish a prior art reference does not create a separate estoppel. Arguments must be reviewed in context." Read Corp., 970 F.2d at 824. Defendants' estoppel argument finds little favor in this Court. Reviewed in context, nothing Plaintiffs said in the reexamination process suggests a limitation of Claim 1 or disavowal of any subject matter of Patent '955.

Having construed the 3% elasticity element of the claim consistently with Plaintiffs' view, the Court has no difficulty in concluding that each of Defendant's frame components exhibits at least 3% elasticity over the required temperature range. Professor Beshers, on behalf of Plaintiffs, performed tensile tests on Defendants' frames at -20 [degrees] C., 0 [degrees] C., room temperature, and +40 [degrees] C. to determine whether they satisfied this element of Claim 1, and concluded that they did. Defendants, on the other hand, presented no tests or evidence by way of rebuttal.

--- Footnotes ---

5 The "Mercier article" was cited as prior art in the Request for Reexamination for the '955 patent. Its full citation is Mercier, O. & Torok, E., Mechanical Properties of the Cold-Worked Martensitic NiTi Type Alloys, Journal de Physique, Dec. 1982, at C4-267.

--- End Footnotes ---

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a. "said faceplate having a longitudinal axis and having returns extending from the sides of each face plate that are angled to allow the faceplate to expand under extreme heat."

Universal contends that the phrase should be interpreted to require (1) opposing faceplate returns that extend from the central faceplate; and (2) that the opposing faceplate returns extend from the faceplate at an approximately 90[degree] angle from the faceplate, where the angle is formed between the faceplate and each return. JVI contends that the phrase should be interpreted as two face plate returns extending from opposing ends of the face plate at an angle that allows the faceplate to expand when exposed to extreme heat (such as welding) without causing significant distress to the concrete in which the flange connector is embedded.
As both parties recognize, unlike Claim 1, Claim 6 does not state that the faceplate returns extend at approximately a 90[degree] degree angle from the faceplate, but defines the angle in terms of a function, specifically an angle that allows the faceplate to expand under extreme heat. JVI argues that the language allows for a broader construction of the angle, any angle that is sufficient to allow such expansion. Universal contends that the specification, including the summary of the invention and the description of the preferred embodiment, does not support such an interpretation because the only angle disclosed to perform the function is a 90[degree] degree angle. Because only a single description of the invention is discussed, Universal contends that the description amounts to a limitation to the scope of the claim. Honeywell, 452 F.3d at 1318.

JVI contends that the phrase should be given its plain and ordinary meaning. Heat generated by welding causes the faceplates of flange connectors to expand. When conventional flange connectors are embedded in concrete, the faceplates cannot expand without causing significant distress to the concrete. Thus, JVI contends that its definition clarifies that the returns are angled to allow the faceplate to expand without causing distress. JVI contends any other limitation proposed by Universal is not supported by the claim language. The preferred embodiment described should not be imported as a limitation to the claim.

The Court agrees with JVI's interpretation. Claim 6, unlike Claim 1, does not name a specific angle but defines the angle in terms of function. Universal's proposed language would result in a narrower interpretation of the claim than its language requires. See Pilant Corp. v. MSC Marketing & Technology, Inc., 416 F.Supp.2d 632, 639-40 (N.D. Ill. 2006).

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3. Head Opening

The head opening is defined consistently and clearly throughout the '828 patent specification and claims as an opening which allows the user to enter and exit the inner cavity. ( '828 Patent, col. 1, lines 11-13; col. 2, lines 39-42; figs. 1, 2, 5, and 6; claims 7, 11, and 12.) In its brief on claim construction, Mont-Bell further defines the head opening as "the opening which receives the head of the user." (Plaintiff's Brief on Claim Construction ("Pl.'s Br. Cl. Const.") at 4.) Mountain Hardwear responds that this aspect of the definition is not set forth in the '828 patent. (Def.'s Opp'n at 3.) That the head opening receives the head of the user rather than the user's feet is self-evident. Given that, it is unnecessary to expand the existing definition of head opening.

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C. A Head Portion (6i)

The head portion describes a feature of the female fastener. It is referred to in col. 3, ll 19-21 as follows:

head portion adapted to span the seat shell aperture thereby preventing the fastener from passing through the seat shell aperture

and col. 7, l 41

. . .such that head spans aperture.

This phrase is to be construed as follows:

The upper part of the female fastener fashioned in a manner to prevent it from passing through the seat shell.
As we alluded to above, the crux of Zebo's argument is that the '835 patent covers only those trolling motor-autopilot systems that include a compass or other directional indicator physically attached to the trolling motor. Zebo arrives at this conclusion by following the route: (1) Zebo considers the "heading lock" invention of the '835 patent to be concerned only with the direction and orientation of the trolling motor rather than the boat; and (2) therefore, the heading lock--which, according to claim 1, includes a heading detector "disposed to transmit . . . heading signals"--must be physically attached to the trolling motor. Because the accused AutoGuide systems undisputedly contain a directional indicator (a "heading detector") in a foot pedal--attached to the trolling motor via wires rather than mechanically--Zebo argues that Johnson's infringement claim must fail.

While Zebo recognizes that claim 1, the broadest claim at issue, does not explicitly require that the "heading detector" be mechanically coupled to the trolling motor, it nonetheless suggests that a proper interpretation of the terms "heading signal" and "coupled" in the language of claim 1 compels such a limited claim scope. In doing so, Zebo points out that Figure 1 of the '835 patent, and at least some of the language in the written description, suggest that the preferred embodiment of the invention includes a compass mechanically attached to the trolling motor. This case, then, presents the question of when it is permissible to narrow the scope of broad claim language by reference to embodiments described and depicted in the balance of the specification.

We begin, as with all claim interpretation analyses, with the language of the claims. See Renishaw, 158 F.3d at 1248, 48 U.S.P.Q.2D (BNA) at 1120; Abtco, Inc. v. Exitron Corp., 122 F.3d 1019, 1023, 43 U.S.P.Q.2D (BNA) 1545, 1548 (Fed. Cir. 1997); Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 619-20, 34 U.S.P.Q.2D (BNA) 1816, 1819 (Fed. Cir. 1995). The general rule is, of course, that terms in the claim are to be given their ordinary and accustomed meaning. See Renishaw, 158 F.3d at 1249, 48 U.S.P.Q.2D (BNA) at 1121; York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572, 40 U.S.P.Q.2D (BNA) 1619, 1622 (Fed. Cir. 1996). General descriptive terms will ordinarily be given their full meaning; modifiers will not be added to broad terms standing alone. See, e.g., Virginia Panel Corp. v. MAC Panel Co., 133 F.3d 860, 865-66, 45 U.S.P.Q.2D (BNA) 1225, 1229 (Fed. Cir. 1997) (unmodified term "reciprocating" not limited to linear reciprocation); Bell Communications, 55 F.3d at 621-22, 34 U.S.P.Q.2D (BNA) at 1821 (unmodified term "associating" not limited to explicit association); Specialty Composites v. Cabot Corp., 845 F.2d 981, 987, 6 U.S.P.Q.2D (BNA) 1601, 1606 (Fed. Cir. 1988) (unmodified term "plasticizer" given full range of ordinary and accustomed meaning). In short, a court must presume that the terms in the claim mean what they say, and, unless otherwise compelled, give full effect to the ordinary and accustomed meaning of claim terms. See, e.g., Nike Inc. v. Wolverine World Wide, Inc., 43 F.3d 644, 646, 33 U.S.P.Q.2D (BNA) 1038, 1039 (Fed. Cir. 1994); E.I. Du Pont De Nemours & Co. v. Phillips Petroleum, 849 F.2d 1430, 1433, 7 U.S.P.Q.2D (BNA) 1129, 1131 (Fed. Cir. 1988); Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759, 221 U.S.P.Q. (BNA) 473, 477 (Fed. Cir. 1984).

In order to overcome this heavy presumption in favor of the ordinary meaning of claim language, it is clear that "a party wishing to use statements in the written description to confine or otherwise affect a patent's scope must, at the very least, point to a term or terms in the claim with which to draw in those statements." Renishaw, 158 F.3d at 1248, 48 U.S.P.Q.2D (BNA) at 1121. That is, claim terms cannot be narrowed by reference to the written description or prosecution history unless the language of the claims invites reference to those sources. See, e.g., McCarty v. Lehigh Valley R.R., 160 U.S. 110, 116, 40 L. Ed. 358, 16 S. Ct. 240 (1895) ("If we once begin to include elements not mentioned in the claim in order to limit such claim . . ., we should never know where to stop."); Renishaw, 158 F.3d at 1249, 48 U.S.P.Q.2D (BNA) at 1121. In other words, there must be a textual reference in the actual language of the claim with which to associate a proffered claim construction.

Our case law demonstrates two situations where a sufficient reason exists to require the entry of a definition of a claim term other than its ordinary and accustomed meaning. The first arises if the patentee has chosen to be his or her own lexicographer by clearly setting forth an explicit definition for a claim term. See In re Paulsen, 30 F.3d 1475, 1480, 31 U.S.P.Q.2D (BNA) 1671, 1674 (Fed. Cir. 1994); Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387-88, 21 U.S.P.Q.2D (BNA) 1383, 1386 (Fed. Cir. 1992); Lear Siegler, Inc. v. Aeroquip Corp., 733 F.2d 881, 888-89, 221 U.S.P.Q. (BNA) 1025, 1031 (Fed. Cir. 1984). The second is where the term or terms chosen by the patentee so deprive the claim of clarity that there is no means by which the scope of the claim may be ascertained from the language used. See Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1554, 42 U.S.P.Q.2D (BNA) 1737, 1741 (Fed. Cir. 1997) (looking past claim language because of lack of clarity), overruled on other grounds by Cybor Corp. v. FAS Techs., Inc., 138
F.3d 1448, 46 U.S.P.Q.2D (BNA) 1169 (Fed. Cir. 1998) (en banc); J.T. Eaton & Co. v. Atlantic Paste & Glue Co., 106 F.3d 1563, 1568, 41 U.S.P.Q.2D (BNA) 1641, 1646 (Fed. Cir. 1997) (Because "[the disputed claim term] is a term with no previous meaning to those of ordinary skill in the prior art[,] its meaning, then, must be found [elsewhere] in the patent."); North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1576, 28 U.S.P.Q.2D (BNA) 1333, 1336 (Fed. Cir. 1993) (using the specification for guidance "when the meaning of a claim term is in doubt"); E.l. Du Pont De Nemours, 849 F.2d at 1433, 7 U.S.P.Q.2D (BNA) at 1131 (Fed. Cir. 1988) (the written description can supply understanding of unclear claim terms, but should never trump the clear meaning of claim terms). Cf. Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187, 48 U.S.P.Q.2D (BNA) 1001, 1005 (Fed. Cir. 1998) ("In this case, the [disputed] term has a clear and well-defined meaning. This term is not so amorphous that one of skill in the art can only reconcile the claim language with the inventor's disclosure by recourse to the specification."). In these two circumstances, a term or terms used in the claim invites--or indeed, requires--reference to intrinsic, or in some cases, extrinsic, evidence, see Vitronics Corp. v. Conceptron, Inc., 90 F.3d 1576, 1583, 39 U.S.P.Q.2D (BNA) 1573, 1577 (Fed. Cir. 1996) (reference to extrinsic evidence is proper when intrinsic evidence cannot resolve ambiguity in claim language), to determine the scope of the claim language.

B

Here, Zebco's primary claim interpretation argument is that the term "heading" in the phrase "heading signal" refers only to the direction of the trolling motor, thus requiring that the heading detector, "being disposed to transmit said heading signals," must be affixed to the trolling motor. Zebco, of course, recognizes that the ordinary and accustomed meaning of "heading" connotes only direction, rather than being limited to the direction of the trolling motor. Thus Zebco argues, as it must, for a more limited scope of "heading," to overcome the presumption in favor of the ordinary--and, in this case, broader--meaning.

Because Zebco does not suggest that the phrase "heading signal" lacks clarity as it is used in the claim, in order to establish a reason to import a narrow definition of the term, it must instead argue that the term "heading" has been given a particular meaning by the patentee. To this end, Zebco argues that language throughout the written description and prosecution history of the '835 patent demonstrates that "heading" in the context of the '835 patent is limited to the direction of the trolling motor. We find this unpersuasive, as did the district court. First, the written description does not describe "with reasonable clarity, deliberateness, and precision" the definition of "heading" proposed by Zebco. See In re Paulsen, 30 F.3d at 1480, 31 U.S.P.Q.2D (BNA) at 1674. Indeed, the many uses of the term throughout the '835 patent are consistent with a broader definition, one encompassing the directions of both the boat and the trolling motor unit. Compare, e.g., '835 patent, col. 3, lines 58-62 ("The electronic steering system of the present invention continues to monitor the current heading of the thrust motor" (emphasis added)) with '835 patent, col. 7, lines 37-39 ("Heading detector 204 continuously monitors the current heading of the boat" (emphasis added)). Varied use of a disputed term in the written description demonstrates the breadth of the term rather than providing a limited definition. See, e.g., Enercon GMBH v. International Trade Comm'n, 151 F.3d 1376, 1385, 47 U.S.P.Q.2D (BNA) 1725, 1731-32 (Fed. Cir. 1998) (refusing to limit a term used "interchangeably" in the written description to only one of the uses of the term). That the term "heading" is used at various points in the written description to refer to both the direction of the trolling motor and the boat is simply not "a special and particular definition created by the patent applicant," Renishaw, 158 F.3d at 1249, 48 U.S.P.Q.2D (BNA) at 1121, and is thus an insufficient reason to limit the scope of the term.

Contrary to Zebco's arguments, Laitram Corp. v. Morehouse Industries, Inc., 143 F.3d 1456, 46 U.S.P.Q.2D (BNA) 1609 (Fed. Cir. 1998), is inapposite. The court there held that a narrow interpretation of a disputed term was compelled because of statements in the written description that made clear that "the asserted claims will bear only one interpretation: that the 'driving surface' limitation is limited to flat driving surfaces," and that the "'driving surface' limitation . . . requires flat driving surfaces." Id. at 1463, 46 U.S.P.Q.2D (BNA) at 1614-15 (emphasis added). Here, of course, there is no such unambiguous language in the written description; nothing suggests that "heading" is required to be the heading of the trolling motor. Cf. id.

Zebco also argues that the patentee ascribed a special meaning to the term "heading" in the prosecution history. See, e.g., Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1378, 49 U.S.P.Q.2D (BNA) 1065, 1068-69 (Fed. Cir. 1998) (explicit meanings given to claim terms in order to overcome prior art will limit those terms accordingly); Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2D (BNA) 1673, 1676 (Fed. Cir. 1995); Standard Oil Co. v. American Cyanamid Co. 774 F.2d 448, 452, 227 U.S.P.Q. (BNA) 293, 296 (Fed. Cir. 1985). In particular, Zebco argues that the applicant's statement, in a June 17, 1992 amendment to the '586 application, that "the heading signal . . . is dependent solely
on the heading of the motor, and totally independent of the orientation of the vessel" is a clear definition of "heading signal" as being limited to the direction of the thrust motor. However, Zebco overlooks the fact that the claims referred to in that passage, claims 4 and 14 of the '586 application, expressly included an additional limitation: that the compass be "in a substantially fixed relationship to said propulsion device," (claim 4) or likewise "in a predetermined relationship with said propulsion device" (claim 14). The argument referenced by Zebco was unquestionably focused on the requirement, in those claims, that the compass be attached to the trolling motor. The patentee's suggestion that, where the "substantially fixed relationship" or "in a predetermined relationship" claim limitation was present, the feedback signal (i.e., the heading signal) was dependent on the heading of the motor sheds no light on the meaning of "heading signal" in claims where that very limitation is not present. Rather, this exchange is an example of how carefully-crafted arguments in support of patentability can avoid creating ambiguous or adverse prosecution history. By stating clearly and particularly that the context of his remarks was in regards to claims 4 and 14, the applicant ensured that those of ordinary skill in the art--as well as courts, if need be--could evaluate the import and scope of his statements. Thus, because this argument was plainly limited to claims including a "fixed" or "predetermined" relationship between the compass and the trolling motor, it cannot be said to be a clear statement limiting the scope of "heading signal" in general. Zebco thus has not shown that sufficient reasons exist to import a limited definition of this term into the clear language of the claim.

We therefore agree with the district court that the ordinary and accustomed meaning of "heading signal" controls.

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1. Heat-Activatable Adhesive Layer

Avery's proposed definition of heat-activatable adhesive layer is: "An adhesive or thermoplastic film generally having a lower melting point than the other layers of the laminate." Whitlam proposed: "A layer of heat-activatable adhesive or thermoplastic film material with a thickness between 0.1 and 10.0 mils inclusive that may have a lower melting point than any other film layers in the thermal transfer laminate." The only real difference between the two definitions is the inclusion of the thickness limitations in Whitlam's definition. These limitations come directly from the specifications of the '486 and '722 patents. In column 3, line 14 of both patents, the general dimensions of the heat-activatable layer are given: "The thickness of heat activatable adhesive layers 118 and 230 range from about 0.1 to 10 mils." In this case the proposed definition includes a limitation from the specification, which the Federal Circuit has consistently held to be unacceptable. See e.g. Intervet America, Inc. v. Kee-Vet Laboratories, Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989)("limitations appearing in the specification will not be read into claims, and . . . interpreting what is meant by a word in a claim 'is not to be confused with adding an extraneous limitation appearing in the specification, which is improper'"). Therefore the Court adopts the following definition of heat-activatable adhesive layer: "An adhesive or thermoplastic film generally having a lower melting point than the other layers of the laminate."

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D. "Heat Conductive Cylinder"

Ramsey contends that "heat conductive cylinder" should be defined as "a solid cylindrical object formed of heat conductive material." Ramsey argues that any fragmentation of the cylinder would compromise the efficiency of the heat transfer. It also notes that the claims must be read to require a single cylinder and not an assembly of parts: "a heat conductive cylinder" in Claim 1 and "braking pads, one on each side of the cylinder" in dependent Claim 2. '255 Patent, 5:13 and 5:25 (emphasis added).

Warn contends that a "heat conductive cylinder" should be construed as "any cylindrical part or assembly of parts whether solid or hollow made from a heat conducting material." In particular, Warn argues that Ramsey's limitation that the cylinder must be solid, namely made from one piece, is not addressed anywhere in the patent or the prosecution history. Warn agrees that an objective of the invention is to better dissipate the generated heat but argues that there is no limitation that only the most efficient design to do so is claimed.
As quoted above from the specification, the stator is an extension of the drum so that the head is conducted from the end faces through the stator material to the drum's outer surface and out to the atmosphere. Patent, 2:18-21, 4:42-45.

In differentiating the '255 invention from the '646 invention, the '255 specification states:

The brake pads [of the '646] are heat insulators and thus the heat created between the shoes and pads is retained within the mechanism. Under severe loads this can be a problem and an objective herein is to facilitate heat dissipation with an improved design over that of the '646 disclosed embodiment.


Ramsey contends that the prosecution history is additional evidence that the heat conductive cylinder is a solid metallic object functioning to transfer heat efficiently. Heuser Decl., Ex. B at 4:18-24, 7:2-7.

Again, it is clear from the '255 patent itself, as well as the cited prosecution history, that efficient heat dissipation is a primary objective of the invention. If the inventors intended to cover a cylinder assembled from multiple sections, they could have so claimed. Further, using Warn's definition, there is no limitation on any gap between the assembly of parts forming the cylinder. The gap could be so large that the heat conducting properties are lost. I also note the claim language of "a heat conductive cylinder," rather than language allowing an assembly of parts. Patent, 5:13-14.

At first I was concerned with Ramsey's proposed definition of a "solid" cylindrical object because in the claim, "said cylinder further having a center opening and a brake shaft extended through said center opening." Patent, 5:21-22. The core must be hollow. But I now realize that the center opening is already provided for later in the claim.

I conclude that the cylinder must be a single piece from end to end and not an assembly of parts with gaps in the interior. Thus, I define "heat conductive cylinder" as "a solid cylindrical object formed of heat conductive material."
This court finds that a similar analysis applies in construing the third limitation -- "a heater mounted in the [radial center of the] base to heat liquid contained in the reservoir." Black & Decker focuses on the first half of the limitation and argues that this limitation merely requires that the accused device have a heater mounted in the base. Under such a proposed interpretation, it is irrelevant whether the heater is actually "in" the reservoir or underneath it -- either way, the heater is in the base. This court does not disagree with Black & Decker's proposed interpretation of the first half of the limitation, standing alone. However, this court believes that Black & Decker ignores the second half of this third limitation; namely, the requirement that the heater mounted in the base must "heat liquid contained in the boiling liquid reservoir." For the same reasons stated above, this court finds that the third limitation should be construed to require a heater that heats the liquid while it sits in the reservoir. Once again, Black & Decker chose to insert the phrase "boiling liquid" when referring to the reservoir. In sum, when taken together, the two limitations reinforce the same basic point. The Black & Decker patent is limited to a heating system that heats the liquid while in the reservoir.

--- Footnotes ---

7 After the parties filed their summary judgment briefs in this case, the Federal Circuit issued a ruling in a similar case -- The Rival Co. v. Sunbeam Corp., 1999 U.S. App. LEXIS 2768, 1998 WL 96416, *6-7 (Fed. Cir. Feb. 23, 1999) -- in which it affirmed the district court's finding of no infringement based on, among other things, a finding that Sunbeam's food steamers lacked a "boiling water reservoir." The parties here filed supplemental briefs concerning the effect of this opinion. Because Rival involved a different (albeit similar) patent and because the Federal Circuit's opinion is not citable as precedent, this court did not consider the Rival opinion in this ruling.

--- End Footnotes ---
by heating the cylinders with the natural gas burner to an operable temperature range of 400 to 950 degrees Fahrenheit (204 to 510 degrees centigrade)." (Kowalski Patent, Col. 16, at 39-41.)

Here, then, just as in Gentry, the "entirety of the specification clearly indicates that the invention is of a much narrower scope," Cooper Cameron Corp., 291 F.3d at 1323, than what is claimed in Claims 1 and 67. The specifications do not support the broad claim language of "heating"; accordingly these claims are deemed invalid on this ground. See Gentry Gallery, 134 F.3d at 1479.

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ORDER GRANTING MOTION FOR CLARIFICATION AND RECONSIDERATION OF CLAIMS CONSTRUCTION ORDER

Before the Court is the motion of William R. Kowalski ("Kowalski") and Hawaii International Seafood ("HISI") to clarify and reconsider the Court's claims construction order filed on October 17, 2007, in the above-captioned cases. Specifically, Kowalski and HISI request the Court to (1) clarify that the word "heating," as used in Claims 1 and 67 of the Kowalski Patent, is not limited to a specific numerical temperature range, and (2) to vacate the finding of invalidity of those claims. After careful consideration of the motion, the supporting and opposing memoranda, and the relevant case law, the motion for clarification and reconsideration is hereby GRANTED.

DISCUSSION

On August 31, 2007, the Court held a Markman hearing to construe certain claims of U.S. Patent 5,972,401, titled "Process for Manufacturing Tasteless Super-Purified Smoke for Treating Seafood to be Frozen and Thawed," originally awarded to Kowalski on October 26, 1999 (hereinafter "Kowalski Patent"). During claims construction, HISI and Kowalski urged that the word "heating" in Claims 1 and 67 of the Kowalski Patent not be given the specific numerical temperature limitation requested by Plaintiff and Counterclaim Defendant Tuna Processors, Inc., and by Defendants Mommy Gina Tuna Resources, King Tuna, Inc., Joaquin Lu, Seafriend, Richard Friend, Citra Mina Corporation, and Integral Seafood LLC (collectively, "TPI"). The Court ruled that the specifications, which "disclose[d] an operable temperature range of 204[degree] to 510[degree] C," did not support the broad language of the claim of "heating." (Claims Construction Order 19.) On this basis, the Court invalidated Claims 1 and 67 for violating the written description requirement of 35 U.S.C. § 112. It is this portion of the Claims Construction Order for which HISI and Kowalski request clarification and reconsideration.

Motions for reconsideration may only be brought if there has been (1) "[d]iscovery of new material facts not previously available," "[i]ntervening changes in law," or (3) a "[m]anifest error of law or fact." Local Rule 60.1. Here, Kowalski and HISI assert that the Court made a manifest error of law by invalidating the claims during the claims construction process. Kowalski and HISI agree with the Court's implied finding that "heating" is broadly defined in Claims 1 and 67, but contend that the Court overstepped its bounds in taking the next step of invalidating those claims based on the specifications' failure to describe such a broad claim. The Court agrees.

Each claim of a patent is presumed to be valid. 35 U.S.C. § 282; Abbott Labs. v. Syntron Bioresearch, Inc., 334 F.3d 1343, 1357 (Fed. Cir. 2003). Patents may be held invalid for failure to meet the written description requirement of 35 U.S.C. § 112 when narrow specifications fail to support a broad claim. Gentry Gallery, Inc. v. Berkline Corporation, 134 F.3d 1473, 1479 (Fed. Cir. 1998). However, invalidity under § 112 is a question of fact. Cordis Corp. v. Medtronic Ave., Inc., 339 F.3d 1352, 1364. To obtain a finding of invalidity under § 112 prior to trial, a party "must submit such clear and convincing evidence of invalidity such that no reasonable jury could find otherwise." Eli Lilly & Co. v. Barr Labs., 251 F.3d 955, 962 (Fed. Cir. 2001).

Here, in addressing the validity issue in the context of claims construction, the Court did not allow the parties the same opportunity to present facts that would have been afforded them in a summary judgment proceeding. In addition, the Court did not take into consideration whether invalidity had been demonstrated by clear and convincing evidence.

TPI argues that the Court's finding of invalidity was nonetheless appropriate because sua sponte summary judgment can be proper where no material dispute of facts exists, and there has been adequate time to develop necessary facts. (TPI Mem.
Opp. (citing Fuller v. City of Oakland, 47 F.3d 1522, 1533 (9th Cir. 1995).) Here, however, the Court does not believe that the parties were given adequate time to develop necessary facts, or to make the sorts of arguments that would have been raised in a summary judgment proceeding. In addition, TPI was never forced to prove invalidity with clear and convincing evidence. C.F. Fin Control Sys. Pty., Ltd. v. OAM Inc., 265 F.3d 1311, 1312 (Fed. Cir. 2001) (stating that "the district court's sua sponte grant of summary judgment of invalidity and unenforceability was procedurally improper because it did not provide the parties with adequate notice or an opportunity for FCS to present evidence and argument in opposition to the motion"). Accordingly, the Court hereby VACATES that portion of its Claims Construction Order that found Claims 1 and 67 of the Kowalski Patent to be invalid under § 112.

Kowalski and HISI have also requested that the Court clarify that it has construed the word "heating," as used in Claims 1 and 67 of the Kowalski Patent, as not limited to any specific numerical range. This is correct. While the Court continues to believe that the specifications of the Kowalski Patent describe a process significantly more limited than the "heating" claimed in Claims 1 and 67, these limitations may not be read into the broad claim. See Conoco, Inc. v Energy & Envtl., 460 F.3d 1349, 1358 (Fed. Cir. 2006) (affirming that "when a claim term is expressed in general descriptive words, we will not ordinarily limit the term to a numerical range that may appear in the written description or in other claims") (quoting Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1249 (Fed. Cir. 1998)). If TPI wishes to challenge the validity of this claim based on the failure to adequately describe "heating" in the specifications, TPI may do so at the proper time. For the moment, however, the Court CLARIFIES that the word "heating," as used in Claims 1 and 67 of the Kowalski Patent, is not limited to any specific temperature range.

CONCLUSION

The Court's Claims Construction Order for the Yamaoka and Kowalski Patents, filed on September 17, 2007, is hereby reconsidered and amended such that (1) the portion of the order invalidating the Kowalski Patent's Claims 1 and 67 is VACATED; and, (2) the Court clarifies that "heating," as used in Claims 1 and 67 is not limited to any specific numerical temperature range.

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4. Temperature Range of the Heating Step of Processing

Defendants argue that the claims at issue require that the heating stage of the process must occur at a temperature between 25 [degree] C and a specified upper limit. Howmedica asserts that the claims do not specify an upper temperature limit for the heating stage.

'934 Patent, claims 23, 50; '814 Patent, claim 7; '308 Patent, claim 24: "said material . . . heated . . . at a temperature . . . greater than 25 [degree] C" 

'814 Patent, claim 19: "annealing said material . . . at a temperature greater than 25 [degree] C"

'308 Patent, claims 1, 12: "heating the [polyethylene material/polymer]"

'308 Patent, claims 5, 16: "method as set forth in claim [1/12], wherein the temperature is greater than 25 [degree] C"

'020 Patent, claims 10, 11, 12: "medical implant comprising an ultra-high molecular weight polyethylene . . . annealed at a temperature greater than 25 [degree] C"

Howmedica proposes that the phrase "at a temperature [. . .] greater than 25 [degree] C" requires no interpretation. Defendants argue that the Court should interpret this phrase as "at a temperature of greater than 25 [degree] C but less than 140 [degree] C." Defendants refer to the summary of the invention and the preferred embodiment in the specification to narrow the scope of the claim. They observe that the process described in the specification does not include situations wherein the material is heated at a temperature greater than its melting point. The Court rejects defendants' argument.

a. "heating" / "heating at a . . . temperature greater than 25 [degree] C"
Related dependent claims do not support defendants' proposed limitation of the ordinary meaning of the terms "heating" and heating "at a temperature [. . .] greater than 25 [degree] C" in independent claims 23 and 50 of the '934 Patent. Dependant claims 30 and 53 of the '934 Patent are for "[t]he medical implant . . . wherein said heating has an upper temperature limit of the melting point of the . . . material." '934 Patent, claims 30, 53. 10 Dependent claims 32 and 54 are for "[t]he medical implant . . . wherein said heating has an upper limit not exceeding the distortion temperature of the . . . material." '934 Patent, claims 32, 54. In contrast, independent claims 23 and 50 of the '934 Patent do not specify any upper temperature limit on the heating process. The express upper temperature limits in the four dependent claims imply that heating "at a temperature . . . greater than 25 [degree] C," without any express upper limits, includes processes whereby the material is heated above its melting or distortion point, approximately 140 [degree] C. See Phillips, 415 F.3d at 1314-15 (express limitations in dependent claims should not be read into independent claims). The Court finds that the heating processes described by claims 23 and 50 of the '934 Patent are not limited to an upper temperature of 140 [degree] C.

10 The description of the preferred embodiments indicates that the melting point or distortion temperature of ultra-high molecular weight polyethylene is "about 140 [degree] C." See, e.g., '934 Patent, 5:55-58; 6:66-7:02.

ii. '814 Patent, claim 7

Limitations on a related dependant claim also imply that "heated . . . at a temperature . . . greater than 25 C" in claim 7 of the 814 Patent does not disclose an upper limit on the heating of the polymer. Dependent claim 10 of the '814 Patent is for "[t]he device . . . wherein the polyethylene material is heated to a temperature between 25 [degree] C and the melting point of said polymer," which implies that independent claim 7 of the '814 Patent is not so limited because it specifies no upper temperature limitation. See Phillips, 415 F.3d at 1314-15. The Court finds that claim 7 of the '814 Patent does not place an upper temperature limit of 140 [degree] C on the heating process.

iii. '308 Patent, claims 1, 5, 12, 16, 24

Likewise, limitations on a related dependant claim imply that the disputed claims of the 308 Patent do not disclose an upper limit on the heating of the polymer. Dependent claims 9 and 20 of the '308 Patent are for "the method . . . wherein the polyethylene material is heated to a temperature . . . between 25 [degree] C and the melting point of said polymer." '308 Patent, claims 9 and 20. The limitations established in all of these dependent claims lead the Court to find that independent claims 1 and 12 of the '308 Patent, which only specify "heating the polyethylene material," may include processes whereby the material is heated above 140 [degree] C. See Phillips, 415 F.3d at 1314-15. Claims 5 and 16 of the '308 Patent limit the invention described in claims 1 and 12 to processes "wherein the temperature is greater than 25 [degree] C," but do not specify any upper limit. '308 Patent, claims 5, 16. Applying the doctrine of claim differentiation, the Court finds that claims 5 and 16 include processes that involve heating the polymer to a temperature greater than 140 [degree] C.

Claim 24 of the '308 Patent specifies that the material is heated at a "temperature of greater than 25 [degree] C." '308 Patent, claim 24. Reading the language of claim 24 consistently with claims 5 and 16, the Court finds that claim 24 of the '308 Patent is not limited to heating at a temperature of less than 140 [degree] C.

b. "annealed at a temperature of greater than 25 [degree] C"

i. '020 Patent, claims 10, 11, 12

The language of the '020 Patent claims is less clear because the context does not clarify the definition of the claims at issue. Also, the '020 Patent claims differ from those of the other patents because they use the word "anneal" rather than "heat." The Court will not base its interpretation of these claims on its construction of the '934, '814, and '308 Patents, and will look to the specification to define the term "anneal" in the '020 Patent claims. The '020 Patent specification only describes an annealing process which takes place at a temperature between 25 [degree] C and 140 [degree] C. This confirms the Court's
understanding of the plain language definition of the term "anneal," which is method of changing a material's physical properties by heating a material to a point below its melting point and then cooling that material. The Court will interpret "annealed at a temperature of greater than 25 [degree] C" in claims 10, 11, and 12 of the '020 Patent to mean exactly that: "annealed at a temperature of greater than 25 [degree] C" and less than the melting point of that material -- approximately 140 [degree] C.

ii. '814 Patent, claim 19

Claim 19 of the '814 Patent similarly states that the method of treatment consists of "annealing said material . . . at a temperature greater than 25 [degree] C," unlike the other disputed claims of that patent, which disclose the "heating" of the material. Looking towards the ordinary meaning and the specification, the Court finds that claim 19 of the '814 Patent describes a process of heating the material to a temperature between 25 [degree] C and 140 [degree] C.

c. Prosecution History

The Court rejects Defendants' resort to the prosecution histories of the '934, '471, and '485 Patents because the prosecution history does not demonstrate that Howmedica limited the upper temperature of the heating stage in response to the examiner's objections. In amending its '934 Patent, Howmedica did not add an upper temperature limit; Howmedica lowered the lower temperature limit. In his objection to the '471 and '934 Patent claims, the examiner was objecting to the claims' highly imprecise temperature and duration language, not to the lack of an upper temperature limit of 140 [degree] C.

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5. What is the proper Construction of the Phrase "heating said substantially uniform mixture within said die" in the '092 Patent?

Claim 1 of the '092 patent contains the phrase: "heating said substantially uniform mixture within said die to a temperature substantially above the softening temperature of said binder material but to a temperature less than the softening temperature of said primary material[]." KXI contends this phrase means that at least a portion of the mixture is heated above the softening temperature of the binder while the mixture is in the die. Culligan contends this phrase means that the heating must be applied to the mixture while it is in the die. Culligan contends the claim limitation cannot be met by an extruder that heats the mixture solely by applying heat to the extruder barrel.

In support of its construction, Culligan cites several passages from the best mode section of the '092 patent's specification. Culligan cites column 8, lines 58-65 of the '092 patent, which reads in relevant part:

The barrel of the extruder is modified to operate at ambient room temperature or to provide mild preheating . . . and the powder is transported through the barrel at a temperature below the softening point of the binder resin. Heat resulting from friction within the barrel can, if desired, be removed by the circulation of coolant through both the screw and barrel.

Culligan cites column 4, lines 44-48 of the '092 patent, which reads in relevant part:

It is important that the feed material 38 entering the die 26 remain flowable. For that reason, the preheating which occurs within the extruder barrel 12 should not closely approach the softening point of the binder material. However, preheating is useful because it reduces the amount of additional heat that must be supplied within the die 26.

Culligan argues these passages define the phrase "heating . . . within the die" to require the entire mixture be heated above the softening temperature of the binder in the die, and not in the barrel.

Culligan also argues that plaintiffs are estopped by the prosecution history of the '948 patent from arguing that "heating . . . within the die" does not require that all of the mixture be heated to a temperature substantially above the softening point of the binder in the die. KXI responds that it is improper to consider the '948 patent's prosecution history in this context. KXI argues that furthermore it has not treated the phrase "heating . . . within said die" in claim 1 of the '092 patent the same as the phrase "means in said die for heating . . . ." KXI also points out that the '092 patent claim containing this phrase is not in
means-plus-function language, and is therefore not limited to the specification, as is the related phrase in the '948 patent.

The '948 patent was filed as a continuation-in-part of the co-pending '092 patent. Claim 1 of the '948 patent contains the phrase: "means in said die adjacent to the inlet end thereof for heating said particulate mixture within said die cavity to a temperature substantially above the softening temperature of said binder material but less than the softening temperature of said primary material." Claim 1 of the '092 patent contains the phrase: "heating said substantially uniform mixture within said die to a temperature substantially above the softening temperature of said binder material but to a temperature less than the softening temperature of said primary material[.]" Both of these limitations concern the heating phase of the extrusion process described in the patents.

During the prosecution of the '948 patent, the patentee made statements distinguishing the extruder disclosed by the Zavasnik patent based upon where heating occurs. The patentee argued the "heating of the material" occurs in the extrusion die, and not in the "non-heated extruder barrel." The court finds these statements are relevant to interpreting the meaning of the '092 patent claim limitation at issue.

The court finds the plain meaning of the words of the claim limitation at issue disclose heating the mixture to a temperature above the softening temperature of the binder in the die, and not in the barrel. Furthermore, the court finds the words of the claim and the best mode descriptions relied upon by Culligan are consistent with the statements made during the prosecution of the '948 patent.

The court finds that the '092 patent teaches heating the mixture to a temperature above the softening temperature of the binder material in the die, and not in the barrel. In reaching this conclusion, the court relies upon (1) the plain meaning of the words of the claim; (2) passages from the best mode section of the patent specification cited by Culligan; and (3) the '948 patent's prosecution history. Accordingly, the court construes the phrase "heating said substantially uniform mixture within said die to a temperature substantially above the softening temperature of said binder material" in the '092 patent to mean that the substantially uniform mixture is heated to a temperature substantially above the softening temperature of the binder while the mixture is in the die. This claim limitation precludes heating the mixture to a temperature substantially above the softening temperature of the binder material while the mixture is in the barrel, but it does not preclude preheating the mixture in the barrel.

Claims 1-3, 5-7, and 15 of the '061 patent include a "heating station" limitation. The district court adopted Ventana's construction of the term "heating station" as to the number-of-slides limitation and provided a "glossary" to the jury that defined "heating station" as "a slide support and heating element capable of directly heating at least one microscope slide, but designed to hold and heat a number of slides by conductive heating, e.g., direct contact of a heated surface to a portion of the microscope slide to be heated." (J.A. at 30 (emphasis added).)

Ventana urges on appeal that the district court's construction of "heating station" correctly requires each heating station to "hold and heat a number of slides." Under this construction, Ventana argues that the jury's verdict of infringement of claim 1 of the '061 patent is not supported by substantial evidence because each heating station of the accused devices holds and heats only a single slide. CytoLogix contends that the district court's construction of "heating station" is inconsistent with the plain language of the claims; that the correct construction covers devices in which only a single slide can be accommodated by each heating station; and that the evidence requires a verdict of infringement under this construction.

n6 CytoLogix also argues that substantial evidence supports the jury's verdict even under the district court's claim construction.

CytoLogix is correct that the district court's claim construction conflicts with the plain language of the claims. Claim 1 of the '061 patent recites a "heating station adapted to support at least one microscope slide," meaning that a heating station
that supports only one slide falls within the scope of the claim. '061 patent, col. 11, ll. 2-3. Furthermore, claim 2 recites "[a] microscope slide stainer as claimed in claim 1 wherein each of the heating stations supports a single microscope slide." Id. at col. 11, ll. 6-8. Claim 2 would be rendered meaningless if each heating station had to support multiple slides. An interpretation of one claim that renders another claim meaningless is disfavored. In re Cruciferous Sprout Litig., 301 F.3d 1343, 1349 (Fed. Cir. 2002). There is nothing in the specification that suggests a different construction. See Phillips, 415 F.3d at 1314.

Ventana points to the prosecution history of the '061 patent as support for the district court's claim construction. It argues that CytoLogix disclaimed individual slide heating. Ventana misreads the prosecution history. A precursor claim to issued claim 1 had claimed "electronic control for heating the individual heating surfaces" of the heating stations. (J.A. at 2748.) The examiner rejected the claim under 35 U.S.C. § 112 because the specification did not enable one skilled in the art to make or use the claimed "electric [sic] control for heating the individual heating surface." (J.A. at 2756.) CytoLogix amended the claim such that it recited "electronic control for the heating stations" rather than the "individual heating surfaces." (J.A. at 2839.) CytoLogix also explained in its response that "claims 1-9 were rejected under 35 U.S.C. § 112, second paragraph, with respect to the recitation of individual heating surfaces heated or controlled individually. That feature is no longer recited in the claims." (J.A. at 2841.) The exchange during prosecution had nothing to do with the number of slides a heating station may accommodate; it only established that if a heating station accommodates more than one slide, all of the slides on that heating station must be heated as a group and not individually.

Thus, the claim term "heating station" is not limited to a device that holds and heats a number of slides. The term "heating station" is properly construed to mean "a slide support and heating element capable of directly heating at least one microscope slide by conductive heating, e.g., direct contact of a heating surface to a portion of the microscope slide to be heated."

Although the district court erroneously construed "heating station," a new trial is not required because the district court's instruction to the jury did not constitute prejudicial error. "To warrant a new trial . . . the erroneous jury instruction [must have been] in fact prejudicial. When the error in a jury instruction could not have changed the result, the erroneous instruction is harmless." Ecolab Inc. v. Paraclice, Inc., 285 F.3d 1362, 1374 (Fed. Cir. 2002) (internal quotation marks omitted); see also Seachange Intl, Inc. v. C-COR Inc., 413 F.3d 1361, 1381 (Fed. Cir. 2005); Weinar v. Rollform Inc., 744 F.2d 797, 808 (Fed. Cir. 1984). Prejudicial error only exists if "there was sufficient evidence at trial to support a finding of [non-]infringement under a correct instruction." Ecolab, 285 F.3d at 1374. Although infringement under the district court's erroneous claim construction was debatable, infringement under the proper construction was not. n7 This was so because there was no dispute that the heating stations of the accused devices supported and heated at least one slide. We sustain the jury's verdict of infringement concluding that the "heating station" limitation of claims 1-3, 5-7, and 15 of the '061 patent is satisfied.

n7 See also Exxon Chem. Patents, Inc. v. Lubrizol Corp., 64 F.3d 1553, 1560 (Fed. Cir. 1995) (jury verdict reversed where insufficient evidence to support verdict under correct construction).
customary meaning of the word and in such a manner that it can apply generally to any vertical dimension.

For the foregoing reasons, I conclude that the term "height" should be construed to mean "the distance between the bottom and top surfaces of an object or between the lowest and highest points of a cognizable portion of an object."

1964

**d. "Held in Spaced Relation" or "Spaced Relation"**

The last term in Claim 3 that the parties have identified as requiring construction is "held in spaced relation" or just "spaced relation." Claim 3 states "the seeds being held in spaced relation by the biodegradable material." ('760 Patent col. 5, ll. 56-57.) The World Wide Plaintiffs propose a construction of "set apart a particular distance from one another." AnazaoHealth has proposed "fixed in place with respect to other radioactive sources by the biodegradable material." The Court adopts the construction proposed by Plaintiffs.

The most critical aspect of the invention is its ability to improve the positioning of the radioactive seeds in the body upon implantation. Thus, the "spaced relation" of the seeds vis-a-vis one another - that is, the distance between the seeds - is extremely important. Had the patentees intended "spaced relation" to have no spatial relationship, they could have simply used the word separated. The dictionary defines "spacer" as "one that spaces," "a device or piece for holding two members at a given distance from each other." The Court finds that one of ordinary skill in the art would construe "held in spaced relation," as meaning that the seeds were "set apart a particular distance from one another."

1965

**II. Literal Infringement**

A literal infringement analysis requires two separate steps. First, the asserted claims must be interpreted by the court as a matter of law to determine their meaning and scope. In the second step, the trier of fact determines whether the claims as thus construed read on the accused product. To establish literal infringement, every limitation set forth in a claim must be found in an accused product, exactly. Infringement, both literal and under the doctrine of equivalents, is an issue of fact.


--- Footnotes ---

1 In Markman v. Westview Instruments, Inc., the Supreme Court confirmed that "the construction of a patent, including terms of art within its claim, is exclusively with the province of the court." 134 L. Ed. 2d 577, 116 S. Ct. 1384, 1387 (1996).

--- End Footnotes ---

Defendant's argument that there is no literal infringement is simple:

Defendant's product does not literally infringe the single independent claim of the '076 patent because the plastic glove member of the accused structure is not "hemispherical" nor is the fabric stretched across the front of the plastic member in "spaced relationship" with the inner surface. Since the product of defendant does not meet these limitations of the claim, there is no literal infringement.

(Def. Mem. at 15.)

**Defendant's product (Pl. Ex. MC) is plainly not "hemispherical."** 2 Plaintiff argues, however, that examination of the specification and prosecution history, see Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (in
banc), aff'd, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996), shows that defendant's "conclusion that 'hemispherical' means one-half of a full sphere...is patently incorrect." (Pl. Mem. at 19.)

2 In a geometrical sense, a "sphere" is defined as "a body or space bounded by one surface all points of which are equally distant from a point within that constitutes its center." Webster's Third New International Dictionary of the English Language Unabridged at 2193 (1986). A "hemisphere," in the geometrical sense, is "either of two half spheres formed by a plane through a sphere's center." Id. at 1055.

It is true, of course, that:

Although words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history.

Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Here, the only definition "by implication," id., that can be found in the specification of the '076 patent must be derived from the drawings, most particularly Figure 2, which shows a rigid glove that is less than a hemisphere, but is, nevertheless, a part of a sphere. 3 The rigid glove component of defendant's product, on the other hand, is not part of a sphere, having a perceptibly flattened surface. Therefore, this Court holds that there has been no literal infringement of Claim 1 of Bai's '076 patent as the rigid plastic member of defendant's product cannot be considered to be hemispherical in shape.

3 "It is beyond question that each of Figures 1-4 in the '076 patent show a glove that is concave and substantially symmetrical about its center." (Plaintiff's Reply Mem. at 6.)(emphasis in original).

The plaintiff proposes "the contact lens has functional wettability, dehydration resistance, deposition resistance, and comfort, rendering the lens suitable for extended wear." The defendants propose "clinical performance, resulting from the lens having a sufficiently high proportion of HAM units to silicon units on the lens surface, that is a significant improvement over the clinical performance of the untreated lens body."

The plaintiff's construction comes from the specification describing examples of clinical performance. See '327 Patent, 1:63-2:6. The plaintiff contends that the defendants' construction improperly incorporates structural limitations into a functional limitation. The defendants argue that the "high degree of clinical performance" is based on the structural invention, and, therefore, the structure must be included in the definition.

The defendants also dispute the inclusion of "extended wear" in the plaintiff's proposed construction. According to the defendants, the specification does not require clinical performance to have extended wear capabilities and if the patentee wanted to limit the claim term to "extended wear," he could have explicitly done so.

The defendants attempt to import limitations from the preferred embodiment. A "high degree of clinical performance" is the benefit achieved by the structure disclosed in the '327 patent. This does not mean that the Court's construction must include the structure as suggested by the defendants. Furthermore, throughout the specification, "clinical performance" is associated with the ability to wear the lenses for a long period of time. See '327 Patent, 2:1-6, 6:6:35-39, 6:45-50. Accordingly, the
Court construes the term to mean "a contact lens that has functional wettability, dehydration resistance, deposition resistance, and comfort, rendering the lens suitable for extended wear."

1967

8. "material having a high electrical resistance"

This phrase is found in Claims 1 and 16. Plaintiff argues that this phrase should be construed as "a metal, alloy or other material, such as tungsten, molybdenum or Elkonite (copper-tungsten alloy) having a higher electrical resistance than copper." Defendants assert that the phrase need not be construed, and the Court agrees. Because the Court sees no ambiguity as to the meaning of the phrase "material having a high electrical resistance" and because its ordinary and customary meaning is clear to one skilled in the art, the Court declines to construe the phrase as it is used in the '015 Patent.

1968

"high intensity mixing"

The parties do not dispute the construction of the limitation "high intensity mixing". Mikron contends that the term should be construed to mean "the process employed to distribute solid and liquid components with the express purpose of dispensing them in a polymer (or plastic resin). Marley contends that the limitation should be construed to mean "the process employed to distribute solid and liquid components with the express purpose of dispensing them in a polymer resin." This construction is supported by the ordinary and accustomed meaning of the term and the patent specification. Accordingly, high intensity mixing is construed to mean "the process employed to distribute solid and liquid components with the express purpose of dispensing them in a polymer resin".

1969

A. Construction of "high strength adhesive" and "bond strength sufficient to resist peeling of the fabric from the substrate"

This Court views the terms "high-strength adhesive" and "bond strength sufficient to resist peeling of the fabric from the substrate" as inextricably linked. The summary judgment record demonstrates that one ordinarily skilled in the art would not attribute an independent definition to "high-strength adhesive," but rather would understand the term in the context of the adhesive's performance. Indeed, the record contains no basis on which to construe "high-strength adhesive" independently. On the contrary, American Seating's adhesives expert, Dr. Hartshorn, reports that "there is no accepted definition of the term high-strength adhesive." (Def.'s Ex. 136.) Instead, he says, a functional definition applies: "[t]he adhesive must be sufficiently strong for the application and may be referred to as 'high strength' simply because it has the level of performance required." (Id.) The Court agrees that a functional definition is proper here. This is also consistent with the Federal Circuit Court's 2004 decision addressing the construction of "high strength adhesive." See American Seating Co. v. USSC Group, Inc., 91 Fed. Appx. 669, 676-77 (2004) (acknowledging, at least implicitly, that "high strength adhesive" in the '931 Patent had to be understood in terms of the bond strength the adhesive created). In the '931 Patent, the required performance of the "high strength adhesive" is to create "a bond strength sufficient to resist peeling of the fabric from the substrate." (Def.'s Ex. 1.)

The question then becomes how to construe "bond strength sufficient to resist peeling of the fabric from the substrate." American Seating proposed construction states, "The bond strength of the high strength adhesive must deter or discourage peeling by a vandal during a trip normally undertaken on intra-city public transportation." American Seating's proposed construction lacks objectivity. It hinges on the necessarily subjective experience of a hypothetical vandal on a "normal" trip taken on public transportation within an undefined city. American Seating's proposed construction is too vague to serve the public notice function a patent provides. See Markman, 517 U.S. at 373 (quoting McClain v. Ortmayer, 141 U.S. 419, 424, 12 S. Ct. 76, 35 L. Ed. 800, 1891 Dec. Comm'r Pat. 532 (1891) ("[A] patent must describe the exact scope of an invention . . . to secure to [the patentee] all to which he is entitled, [and] to apprise the public of what is still open to
With regard to the first issue, the district court erred as to both patents. Because the patents contain slightly different adhesive is sufficient to prevent a person from being able to manually peel the fabric from the substrate."

As to all claims at issue, the Court adopts Kustom's proposed construction for "bond strength sufficient to resist peeling of the fabric from the substrate." Kustom's proposed construction comports with the patent language, prosecution history and other record evidence. The American Seating's adhesives expert, Dr. Hartshorn, concedes that he has no expertise in vandal psychology and no experience in determining what might deter or discourage a vandal from performing an act of vandalism. (Hartshorn dep., Pl.'s Ex. 13, 181-84.) The tests Dr. Hartshorn applied to formulate his report could not reliably measure the nebulous likelihood that a vandal would be deterred or discouraged by the strength of the adhesive bond. (See Def.'s Ex. 136.)

Nor does Plaintiff's proposed construction comport with the intrinsic evidence. Nothing in the language of the claims or specifications suggests that the subjective perseverance of an urban vandal dictates the scope of the claims. The patent itself contains not a word about the psychology of vandalism or the sociology of public transportation use. On the contrary, the patent speaks throughout in terms of bond strength and peel strength, terms relevant to engineering, not social science. Indeed, Claims 2 and 11 of the '931 Patent refer to a specific peel strength. (Def.'s Ex. 1, Col. 6, 35-38; Col. 8, 37-40.) Though the language of the disputed claims does not make reference to specific peel strengths, the language does focus on bond or peel strength, not the perseverance of a reasonably aggressive vandal. Indeed, if the subjective thinking of a vandal underpinned the construction of the claim terms, it is difficult to see how the claims could survive the obviousness and indefiniteness challenges Kustom raises in its motion for summary judgment of invalidity. (docket # 52.)

Kustom proposes to construe "bond strength sufficient to resist peeling of the fabric from the substrate" to mean: "The bond strength of the high strength adhesive is sufficient to prevent a person from being able to manually peel the fabric from the substrate." Kustom's proposed construction offers a more objective framework consistent with the language of the '931 Patent itself. The patent makes numerous references to bond and peel strength. Claims 1, 2, 3, 6, 7, 8, 10 and 12 all speak of bond strength, peel strength, or both. (Def.'s Ex. 1.) The Summary of the Invention explicitly refers to bond strength and peel strength. (Id.) The Detailed Description of Preferred Embodiment describes a minimum bond strength to be illustrated by a minimum peel strength: "As a minimum standard, it is desired that the fabric to substrate bond exhibit a peel (stripping) strength after being fully cured . . . exceeding the tensile strength of the fabric or a minimum bond strength of at least twenty-five (25) pounds per inch width of fabric." (Id.) Both parties have acknowledged that bond strength and peel strength are familiar terms in the art of engineering. Indeed, there is a standard test used in the industry to determine bond and peel strength, the American Society of Testing and Materials ("ASTM") Standard D 903 protocol, known as the "Standard Test Method for Peel or Stripping Strength for Adhesive Bonds" (the "ASTM peel test"). The record shows that one of ordinary skill in the relevant art here -- would have no basis to address these questions using recognized tools in the discipline. American Seating's adhesives expert, Dr. Hartshorn, concedes that he has no expertise in vandal psychology and no experience in determining what might deter or discourage a vandal from performing an act of vandalism. In application, the proposed construction would first require one to determine how persevering a typical vandal would be -- to posit, in effect, a "reasonably aggressive vandal." Next, one would need to decide what a normal intra-city trip might be. In any given city, and among different cities, "normal" travel could mean a multitude of different things. The range of putative vandals and potential intra-city trips defies quantifying. Certainly, one skilled in the art of engineering -- the relevant art here -- would have no basis to address these questions using recognized tools in the discipline. American Seating's adhesives expert, Dr. Hartshorn, concedes that he has no expertise in vandal psychology and no experience in determining what might deter or discourage a vandal from performing an act of vandalism. (Hartshorn dep., Pl.'s Ex. 13, 181-84.)

The prosecution history of the patent also weighs in favor of Kustom's proposed construction. In responding to an earlier Patent Office challenge of Claims 1, 3, 4 and 6 in the '931 Patent, American Seating described a seat insert with fabric attached to the substrate "by means of a high strength adhesive that bonds the fabric directly to the substrate with such strength that the upholstery cannot be peeled from the substrate." (Def.'s Ex. 71) (emphasis added.) American Seating's own description in its response to the Patent Office closely aligns with Kustom's proposed construction.

Kustom's proposed construction comports with the patent language, prosecution history and other record evidence. The Court adopts Kustom's proposed construction for "bond strength sufficient to resist peeling of the fabric from the substrate." As to all claims at issue, the Court construes "high strength adhesive" to mean "An adhesive providing a bond strength sufficient to prevent a person from being able to manually peel the fabric from the substrate," and construes "a bond strength sufficient to resist peeling of the fabric from the substrate" to mean "The bond strength of the high strength adhesive is sufficient to prevent a person from being able to manually peel the fabric from the substrate."
language we will treat them separately.

Claim 1 of the '539 patent requires:

a layer of high strength adhesive interposed between the pile fabric and the substrate, the adhesive at least partially permeating the backing of the fabric without materially impairing the visual appearance of the fabric from the other side, the adhesive bonding the fabric to the substrate with a bond strength sufficient to resist peeling of the fabric from the substrate, the bond strength being such that if upright fibers are grasped in an effort to peel the fabric from the substrate, the fibers will break before the backing will peel from the substrate.

The district court concluded that the claim term "high strength adhesive" was explained in the specification to mean an adhesive with "a stripping strength exceeding 25 pounds per square inch." Contrary to the district judge's holding, however, the language of the claim itself is sufficient to set forth the bonding requirement of the adhesive. The claim states that the adhesive bonds the "fabric to the substrate with a bond strength sufficient to resist peeling of the fabric from the substrate, the bond strength being such that if upright fibers are grasped in an effort to peel the fabric from the substrate, the fibers will break before the backing will peel from the substrate."

The district court stated that using the breaking of fibers as a measure of bond strength "is not a reasonable definition when the carpet is weak, because one cannot legitimately describe an adhesive used in that context as a "high strength adhesive." Claim 1, however, sets forth the bonding requirements of the adhesive by requiring that it be greater than the tensile strength of the fibers. There is nothing improper about defining the requisite strength of the adhesive by reference to the material that is being bonded, and in light of that definition in the claim, it would be improper to import another, narrower definition based on the notion that the definition in the claim would include some adhesives that would not normally be considered "high strength."

The district court also remarked that the functional definition of "high strength adhesive" lacked utility because "the invention would not be useful if the carpeting readily disintegrated, even though the pulling of the substrate would be avoided." We reject that conclusion because the specification makes clear that the benefit of the invention is that when individual fibers break before the fabric backing separates from the substrate it is more difficult to vandalize the seat. '539 patent, col. 2, ll. 57-63; col. 3, ll. 3-6.

The district court's adoption of the 25-pound per inch requirement was unwarranted for three additional reasons. First, the specification described the 25-pound per inch peeling strength as preferred and desired, not as a necessary feature of the claimed invention. See '539 patent, col. 2, ll. 31-34 ("Preferably, the fabric to substrate bond either exceeds the tensile strength of the fabric itself or has a peeling strength of at least twenty-five pounds per inch width of fabric."); '539 patent, col. 4, l. 66 to col. 5, l. 4 ("As a minimum standard, it is desired that the fabric to substrate bond exhibit a peel (stripping) strength after being fully cured ... exceeding the tensile strength of the fabric or a minimum bond strength of at least twenty-five (25) pounds per inch width of the fabric."). While the specification taught that that level of strength was desirable in the preferred embodiment, there is nothing in the specification to indicate that it was meant to be incorporated into the claims as an absolute limitation.

Second, and more importantly, the references in the specification to the strength of the adhesive bond were both couched in alternative form; that is, both described the desired bond strength as being either 25 pounds per inch of fabric width, or greater than the tensile strength of the pile fibers. Thus, even if the language of the specification is imported into the claim, and even if the language of preference is treated as language of absolute requirement, the language on which the district court relied does not support the court's conclusion that a "high strength adhesive" must have a peel strength of at least 25 pounds per inch of fabric width.

Finally, claim 3 of the '539 patent, which was dependent on claims 1 and 2, added the requirement that the "bond strength of the fabric to the substrate is at least twenty-five (25) pounds per inch width of fabric" as an alternative means of satisfying the "high strength adhesive" limitation. The absence of that alternative means from the definition of bond strength in claim 1 is a strong indication that claim 1 should not be construed to incorporate that limitation by implication and thereby exclude any adhesive with a bond strength of less than 25 pounds per inch of fabric width. See Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 972 (Fed. Cir. 1999) ("normally . . . limitations stated in dependent claims are not to be read into the independent claim from which they depend"). For all these reasons, we conclude that it was error for the district court...
court to interpret the term "high strength adhesive" in claim 1 of the '539 patent to mean an adhesive having a bond strength of at least 25 pounds per inch.

Interpreting claim 1 of the '931 patent presents more of a challenge because the claim language simply states that the bond should be sufficient to "resist peeling." The relevant claim language reads:

a layer of high strength adhesive interposed between the vertical pile fabric and the substrate and affixing the vertical pile fabric to the substrate, the adhesive bonding the fabric to the substrate with a bond strength that is sufficient to resist peeling of the fabric from the substrate.

As in the case of the '539 patent, the district court held that the claim language was ambiguous and that in light of the specification, the claim had to be limited to adhesives with a bond strength greater than 25 pounds per inch of fabric width.

Although the language of the '931 patent is broader than that of the '539 patent, there is still no justification for importing the 25-pound bond strength limitation from the specification into the claims. The specification of the two patents is identical, and the 25-pound strength requirement is expressed in the '931 patent, as in the '539 patent, as a preferred or desired feature, and as only an alternative measure of bond strength. In addition, as in the case of the '539 patent, a separate claim of the '931 patent (claim 2) recites the requirement that the bond strength be at least 25 pound per inch of fabric width. As a matter of claim construction, it was therefore improper for the district court to interpret the term "high strength adhesive" in the '931 patent to be limited to an adhesive with a bond strength greater than 25 pounds per inch.

The USSG Group is correct that the requirement that the bond strength only be "sufficient to resist peeling of the fabric from the substrate" is a minimal requirement that renders the claim broad. But we conclude that the claim was intended to be broad. While the breadth of the claim might create an issue as to validity, it does not create an issue as to its construction. It was thus error for the district court to construe the claim to incorporate 25-pound bond strength as a limitation.

Next, the Court must interpret the term "high pressure" as it is used in Claim 10 of the 669 patent, which claims "[a] method of loading a tubular replacement syringe into a high pressure power injector for injecting fluid into an animal." (Doc. No. 30, Exh. 1; 669 patent, col. 10, lines 17-18)(emphasis added). As the following analysis demonstrates, the term "high pressure" must be construed in its context as an adjective of the term "power injector." Therefore, the Court will construe the entire term "high pressure power injector" as an adjective.

The language of Claim 10 does not define the term "high pressure." However, when describing the syringe to be loaded into the injector, the claim does state that the syringe must be "capable of withstanding, . . . an operating pressure of at least 100 psi [pounds per square inch]." (Doc. No. 30, Exh. 1; 669 patent, col. 10, lines 32-34). Based on this language, L-F argues that the term "high pressure" means operating at pressures of at least 100 psi. (Doc. No. 164, p. 20).

While the claim language relied on by L-F may be relevant to the Court's overall analysis of the term "high pressure", it cannot, standing alone, define the term "high pressure." The claim language does not clearly delineate the pressure range to be attributed to the term "high pressure". As a result, the Court must interpret the claim language in light of the specification and prosecution history to ascertain the meaning of "high pressure."

When discussing injection pressures, the specification for the 669 patent states that:

For applications such as the injection of contrasting fluid for CT scanning, pressure may typically be in the range of from 25 to 300 psi, while in some angiographic injection applications the pressure may range to 1200 psi or higher.

669 patent, col. 12, line 24-27

(Doc. No. 30, Exh. 1). In other words, an injector operates at a pressure range of 25-300 psi for CT applications and
operates at a pressure range up to 1200 psi or higher for angiographic applications. Thus, by determining which applications the injector in Claim 10 is capable of performing, the Court can infer the meaning of "high pressure power injector" as it is used in Claim 10.

The claim language does not indicate whether the injector disclosed in Claim 10 is capable of CT applications, angiographic applications, or both CT and angiographic applications. Thus, the Court must look to the specification and prosecution history for guidance on this issue. The specification for the 669 patent indicates that the injector described in the specification can be used for angiographic and/or CT applications:

FIG. 1 is a perspective view of an angiographic CT injector embodying principles of the present invention.

669 patent, col. 5, lines 21-22

* * *

Referring to FIG. 1, an angiographic injector 10 according to another preferred embodiment of the present invention is illustrated, configured for CT applications.

669 patent, col. 6, lines 12-14

(Doc. No. 30, Exh. 1). The question then becomes whether the injector described in Claim 10, like the injector described in the specification, is capable of both CT and angiographic application, only CT applications, or only angiographic applications.

The specification goes on to state that the fluid used in the injector "may be of relatively high pressure in the range, usually over 200 psi." (Doc. No. 30, Exh. 1; 669 patent, col. 12, lines 22-23). The implication of this statement is that pressures over 200 psi are considered high, therefore a "high pressure power injector", as in Claim 10, would be an injector that operates at pressures of 200 psi or higher, which would include both CT applications and angiographic applications.

The conclusion that "high pressure power injector" refers to an injector that is capable of performing both CT and angiographic applications is also supported by the prosecution history of the 669 patent. L-F offered the following statements to the PTO Examiner during prosecution of the 669 patent:

Claim 95 relates specifically to high pressure power injectors, as for example the injectors used in angiography, with CAT equipment and the like. For such uses, applicants' front loading injector is totally new. The front loading feature is embodied in the simple operator motion of inserting the syringe into the injector by a rearward axial motion and twisting the syringe a fraction of a turn (as for example the quarter turn of the embodiment described in the specification).

(Doc. No. 84, Exh. 3(B) at MED 002326). (emphasis added). At first glance, it is unclear whether "with CAT equipment and the like" is a phrase modifying the term angiography or whether it is part of a series of injector applications with "angiography" being the first in the series, with "with CAT equipment" being the second in the series, and with "the like" being the third in the series. However, a reading of the full prosecution history reveals that this statement, although grammatically incorrect, involves a series of injector applications. Therefore, Claim 95 related to "high pressure power injectors" such as those used in angiography and those used with CT equipment.

14 Claim 95 issued as claim 10 of the 669 patent.

15 The terms CT and CAT are synonymous.

16 When discussing Claim 91 (issued as claim 1 of the 669 patent), L-F states that "claim 91 relates to the advantage of the present invention by which the efficiency of the use of a power injector, such as used in angiography and with CAT scanning equipment, is enhanced." When distinguishing this "present invention" from prior art devices, L-F states that "the prior art devices provided for angiography and CAT scan uses do not have this capability." From these statements, the Court
infers that "used. . . with CAT scanning equipment" is the equivalent of "CAT scan uses". (Doc. No. 84, Exhibit 3(B) at MED 002324-002325)(emphasis added).

It should be noted that the individual independent claims of the 669 patent refer to an injector as a "high pressure power injector", a "power injector", or simply an "injector." 17 Nothing in the language of the various claims indicates whether the use of these different terms is intended to describe injectors capable of different applications. Medrad would argue that the use of these different terms indicates that the injector is intended to perform different applications. However, there is nothing in the specifications or prosecution history to support this conclusion. In fact, the prosecution history supports the opposite conclusion, that there is no difference in the terms. During patent prosecution, L-F stated the following to the PTO Examiner:

Applicants' invention relates to relatively high pressure power injectors . . . In order to focus more clearly on the particular features of the present invention and the advantages it provides, applicants have replaced the claims with seven independent claims, each relating to a particular unique problem and unique advantageous solution provided by the invention.

(Doc. No. 84, Exhibit 3(B) at MED 002324)(emphasis added). L-F then went on to discuss the seven independent claims referred to in this excerpt, which were apparently related to "high pressure power injectors." Those claims, 91, 93, 95, 100, 101, 103, and 105, issued as independent claims 1, 6, 10, 19, 20, 22, and 24 respectively. The issued claims refer to an injector as a "power injector" (claims 1, 19, 22 ), a "high power pressure injector" (claims 10, 20, 24), and an "injector" (claim 6). The inference to be drawn is that the terms "power injector", "high power pressure injector", and "injector" all refer to the same type of injector, i.e., a "high pressure power injector." This conclusion is consistent with the principle that "claims that are written in different words may ultimately cover substantially the same subject matter." Multiform Desiccants, 133 F.3d at 1480

17 The independent claims of the 669 patent are 1, 6, 10, 19, 20, 22, 24, 31, and 36.

Accordingly, based on all the intrinsic evidence, the Court concludes that the "high [sic] power pressure injector" described in Claim 10 of the 669 patent is capable of performing angiographic as well as CT applications. As such, it operates at pressures ranging from 25 psi to in excess of 1200 psi.

Crown's proposed construction is "[t]he hinge segment referred to in claim 1 of the '728 patent: The region of metal that undergoes bending as a result of angular displacement of the frangible panel during normal use by a user." 109 Rexam's proposed construction is "[a] line between the first end and the second end of the primary score." 110

109 D.I. 325 at 12.

110 Id.

The court adopts Rexam's proposed construction.
Claim 7 of the '728 patent recites "[t]he end member of claim 1, wherein, at least a portion of the second score groove passes through the hinge line generally transverse to a hinge line passing between the first end and the second end of the primary score groove." 111

The parties agree that this claim contains a drafting error as there is no antecedent basis for "the hinge line" first recited therein. Rexam argues that the drafting error was using "a" and "the" in the wrong order with respect to "hinge line," i.e., that claim 7 was meant to read "[t]he end member of claim 1, wherein, at least a portion of the second score groove passes through [a] hinge line generally transverse to [the] hinge line passing between the first end and the second end of the primary score groove." Crown argues that the drafting error was the recitation of "the hinge line" and that that language in claim 7 was referring back to the "hinge segment" of claim 1 from which claim 7 depends.

Reading other claims of the '728 patent demonstrates that Crown is incorrect and that the "hinge line" recited in claim 7 does not refer back to the "hinge segment" of claim 1 and, therefore, should not be given the same construction as "hinge segment."

Like claim 1, unasserted independent claim 10 recites a can end having a "hinge segment." Like claim 7, unasserted claim 15 (which depends from claim 10) recites "[t]he end member of claim 10, wherein, at least a portion of the second score groove passes through a hinge line generally transverse to a hinge line passing between the first end and the second end of the primary score."

The repetition of "hinge line" in claim 15 lends support to Rexam's argument that the "hinge line" recited in claim 7 was not a mistake other than the error in drafting "the hinge line" in that claim rather than "a hinge line" as in claim 15. Additional evidence that the inventors intended that "hinge segment" is not the same as "hinge line" is found in unasserted independent claim 18 of the '728 patent where both terms are used: "a second end separated from said first end by a hinge segment, the hinge segment with a hinge line area." This likewise indicates that Crown is incorrect in its assertion that "the hinge line" of claim 7 is referring to, and means the same thing as, the "hinge segment" recited in claim 1.

Given that Crown offers no alternative proposed construction should the court disagree with its contention that the "hinge line" refers to the "hinge segment," its construction must necessarily be rejected. The court also determines that the claim language and specification supports Rexam's proposed construction.

Claim 7 of the '728 patent states that the hinge line "pass[es] between the first end and the second end of the primary score
groove.” 114 Describing the embodiment illustrated by figure 6, the specification states that “the tail portion 25 terminates in the end wall 12 beyond the score 22, and at least slightly transecting the line defining the hinge segment 26.” 115 Figure 6 illustrates the tail portion 25 of the anti-fracture score 24 ending at a dashed line which, although not given a separately-numbered designation, could be understood to illustrate the hinge line. The embodiment illustrated in figure 7 also has the same dashed line and that figure is described wherein “a tail portion 25 . . . not only transects the line defining the hinge segment 26, but also extends and encircles the second end 30.” 116

Therefore, the court adopts Rexam's proposed construction: "a line between the first end and the second end of the primary score." 101

Crown's proposed construction is "[t]he region of metal that undergoes bending as a result of angular displacement of the frangible panel during normal use.” 100 Rexam's proposed construction is "[t]he segment of metal between the first end and the second end of the primary score that stays attached to the central panel of the can end under normal opening conditions.” 101

The court adopts Rexam's proposed construction.

Crown argues that Rexam's proposed construction "seeks to redefine the 'hinge segment' to ignore what it is, and instead to define it by where it might be (or might not) be located: 'the segment of metal between the first end and the second end of the primary score.'" 102 Crown maintains that "Rexam's proposal to define the hinge segment without regard to what it does and without regard to where it is actually located should be rejected." 103 The court disagrees. In making this argument, Crown truncates Rexam's definition which reads in full, "the segment of metal between the first end and the second end of the primary score that stays attached to the central panel of the can end under normal opening conditions.” The non-italicized portion of Rexam's proposed construction indicates where the hinge section is located. The italicized portion of that construction describes what the hinge segment does, i.e., it is the segment of metal that remains attached to the central panel when the can is opened. Furthermore, Rexam's definition of "hinge segment" is supported by language of the score line patents' claims and common specification.
Claim 1 of the '230 patent recites:

a primary score groove in the central panel wall defining an outer perimeter of the frangible panel segment, the score groove having a first end adjacent the vent region, and a second end joined to the first end by a curvilinear segment of the score groove, the first end and the second end being separated by a generally linear hinge segment of the central panel wall, said hinge segment being non-frangible to integrally connect the frangible panel segment to an adjacent area of the panel.

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Claim 13 of the '230 patent recites:

a frangible panel formed in the panel wall and being defined by a curvilinear score groove and a hinge segment, the score groove having a thickness residual and having a first end and a second end, said hinge segment having a length defined by a generally straight line between said first end and said second end.

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Claim 1 of the '728 patent recites:

a primary score groove in the central panel wall defining an outer perimeter of the frangible panel segment, the score groove having a first end adjacent to the vent region and a second end, the first end and the second end being separated by a generally linear hinge segment of the central panel wall, said hinge segment integrally connecting to the frangible panel segment to an adjacent area of the panel.

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Taken together, a plain reading of the claim language supports Rexam's proposed construction. The hinge segment is a generally linear part of the central panel between the first and second ends of a score groove and which remains attached to the central panel.

The score line patents' common specification supports that reading of the claim language. The "Summary of the Invention" section recites:

The score groove has a first end adjacent to the vent region and a second end joined to the first by a curvilinear segment of the score groove, whereby the first and the second end is separated by a generally linear hinge segment of the central panel wall. The hinge segment is non-frangible to integrally connect the frangible panel segment to an adjacent area of the panel.

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The score line patents' common specification also describes an embodiment in which:

The central panel wall 12 has a displaceable tear panel 20 defined by a curvilinear frangible score 22 with an adjacent anti-fracture score 24 on the tear panel 20, and a non-frangible hinge segment 26. The hinge segment 26 is defined by a generally straight line between a first end 28 and a second end 30 of the frangible score 22.

Because Rexam's proposed construction is supported by the intrinsic evidence, the court adopts its construction: "the segment of metal between the first end and the second end of the primary score that stays attached to the central panel of the can end under normal opening conditions."

a. Claim Construction: "Hinged Joint"

Defendant argues that the "hinged joint" refers to the "hinge" shown in Figure 8C. Figure 8C depicts a "coupler embodiment[] for coupling the curtain to the head" where "the head is formed in two sections which interface at a hinge" and "the sections join at jaws to clamp the curtain, thereby securing it to the head." This is the only reference in the patent, other than in claim 1, to a "hinge."

Plaintiff counters that the "hinged joint" refers to "joint 56" of Figures 3A and 5A. Figure 3A depicts a curtain mount embodiment with a "body, a spring, a plunger, [and] a head," where "[t]he plunger and head preferably interface at a universal joint such that the curtain mount can be installed at a variety of angles relative to the ceiling." The patent also describes "joint 56" as "a swivel joint."
In the context of this patent, Plaintiff's construction of "hinged joint" makes more sense. Although the only reference in the patent outside of claim 1 to a "hinge" is in the context of the jaws/curtain clamping mechanism of Figure 8C, the hinge in that figure clearly does not permit the curtain coupling mechanism to "interface[e] with the elongated portion" of the curtain mount. Instead, that hinge allows one jaw of the coupling mechanism itself to interface with the other jaw. "Joint 56" is the only depiction in the patent of a joint that allows the coupling mechanism to interface with the elongated portion of the curtain mount, as described in the claim. Claim 1 also describes the "hinged joint" as "pivotable," a characteristic of the depicted "universal" or "swivel" "joint 56." Although Plaintiff likely picked the wrong word in "hinged," the claim's meaning is clear after consulting the remainder of the patent. 69 The patentee is his own lexicographer, and may define and use terms as necessary. 70 In this case, the word "hinge" can only refer to the pivotable socket that accomplishes the task of linking the head and pole, as depicted in Figure 56. The "hinged joint" of claim 1 may encompass the "universal" or "swivel" "joint 56," depicted in Figures 3A and 5A.

3. "Holding A Helical Array of Regularly Disposed Bristles"

Plaintiffs urge a tripartite construction of "holding a helical array of regularly disposed bristles." First, they argue that the phrase requires that the portions of the bristles at the surface of the brush must display a visible helical pattern along the main portion of the brush. Second, the distribution of the bristles must be substantially constant, within manufacturing tolerances, along the main portion of the brush and, third, the bristles must be sufficiently spaced between turns and within each turn to allow for interpenetration of the bristles of one turn of the helix into the following turn as the brush is pulled through the wiper. (D.I. 272 at 23) Defendants argue that "holding a helical array" refers only to bristles gripped by a twisted wire that are in a helical or spiral arrangement. With respect to the term "regularly disposed bristles," defendants argue that it means "bristles that appear to be distributed substantially uniformly along the length of the brush."

a. "Holding a helical array"

The '622 patent does not support a construction of "holding a helical array" that requires the bristles at the surface of the brush to display a visible helical pattern. The phrase merely requires that the bristles be held in a helical array by the twisted metal core of the brush. A review of the claim language confirms this.

In claim 1, the phrase "holding a helical array" modifies "from a twisted wire." Thus, it is the twisted wire that holds the helical array of bristles. There is no indication that this array must be visible to the naked eye from the surface of the brush. 3 Although plaintiffs argue that "the combination of [the] words 'helical' and 'array,' by definition, require a visible pattern," nothing about the combination of the two words dictates such a conclusion. (D.I. 272 at 23) The claim language requires only that the twisted wire core hold a helical array, regardless of whether or not the tips of the bristles form separate spiral rows on the brush surface.

3 The specification refers to the invention as "comprising a central core formed from a twisted wire holding a helical array"
of regularly disposed bristles . . . " ('622 patent, col. 2, ins. 22-24) (emphasis added). (See also '622 patent, col. 3, ins. 26-28) There simply is no language intimating that the helical array be visibly apparent.

Plaintiffs also equate "helical" with "twisted" and contend that the term "helical array" would be superfluous and repetitive if construed to mean the manner in which the twisted core holds the bristles. "To twist," however, means "to unite by winding" whereas "helix" refers more specifically to "something spiral in form as: . . . b. a coil formed by winding wire around a uniform tube" or "a space curve with turns of constant slope from the base and constant distance from the axis." Webster's Third New Int'l Dictionary 1051, 2473 (Unabridged ed. 1993) (emphasis added). "Twisted" thus refers to the manner by which the two wire strands of the core are united while "helical" refers to the specific manner in which the core bristles must be arrayed around (and held by) the core. Although plaintiffs cite both the specification and the prosecution history for support of their construction of "holding a helical array," nothing in either source indicates that this array must be visible on the surface of the brush. Accordingly, the court shall construe "holding a helical array" to mean that the bristles held by the core must be disposed in the form of a helix.

b. "Regularly disposed bristles"

As an initial matter, claim 1 does not equate "regularly disposed" with "manufacturing tolerances." There is nothing in the claim, the specification, or the prosecution history to suggest that the court should not accord "regularly disposed" its ordinary meaning of "harmonious in form, structure or arrangement." Webster's at 1913. There is a "heavy presumption in favor of the ordinary meaning of claim language," Johnson Worldwide Assocs., 175 F.3d 985 at 989, and it is well established that a claim term should be given its ordinary meaning unless the specification or prosecution history provide a special meaning or definition. See Kegel Co. v. AMF Bowling, Inc., 127 F.3d 1420, 1427 (Fed. Cir. 1997). Neither the specification nor the prosecution history provide a special definition for "regularly disposed." Indeed, the specification supports construing "regularly disposed" according to its ordinary meaning. For instance, it describes the bristles as "disposed in regular bundles" within the rake-shaped device prior to their insertion in the metal core. ( '622 patent, col. 5, ins. 1-4) There is no mention of manufacturing tolerances or any other specific criteria for the "regular disposition" of the bundles prior to their insertion in the core.

Specifically, plaintiffs cite portions of the specification addressing the "flattening" problem associated with conventional mascara brushes. In these brushes, the densely packed and "substantially juxtaposed" bristles flatten each other in the direction of the core as the brush is drawn through the wiper. The density of the bristles (i.e., their large number) and the "substantially juxtaposed" manner of their arrangement produces the clumping problem that the present invention attempts to remedy. The '622 patent proposes to remedy this clumping problem by interspacing the bristles "at a far greater distance from each other by using a number of bristles which is approximately 35% to 80% less than that of a conventional mascara brush." ( '622 patent, col. 2, ins. 17-20) As the specification explains, "because of being relatively sparse, the bristles of one turn cannot, by bending over as they pass through the wiper lip, also produce the bending over of the bristles of the following turn; on the contrary, they interpenetrate between the bristles of this following turn . . . ." ( '622 patent, col. 2, ins. 43-48) (emphasis added). In other words, the specification attributes interpenetration to the "sparsity" of the bristles, not to their "regular disposition" around the core. "Sparse" is defined as "of few and scattered elements; having spaces between the component units; not thickly grown or settled; thinly scattered." Webster's 2184. "Sparse" denotes elements that are scattered and not disposed closely to one another. It is thus distinct from a "harmonious or even" arrangement or distribution of elements.

Accordingly, the court shall not construe "regularly disposed" to require interpenetration. The court shall construe the term "regularly disposed" to mean evenly or harmoniously distributed along the length of the brush.
4 Plaintiffs also urge that the term "regularly disposed" applies only to the main portion of the brush and not to the end of the brush. Nothing in claim 1 so limits the term. Although the specification envisions "a greater bristle population density for the bristles" at the free end of the brush ('622 patent, col. 3, Ins. 8-9), it does not contemplate that these bristles be disposed in an irregular or uneven manner.

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A. Holding Station and Spaced-Apart Locations

Plaintiffs argue that "holding stations and spaced-apart locations must be interpreted as structures located at two separate and distinct positions from which eggs are lifted." 46 Neither the claim, the specification, nor the prosecution history supports a construction that requires the "holding station" or the "spaced-apart locations" to be physical structures. The claim does not use the terms "holding station" and "spaced-apart locations" in an uncommon way; 47 the specification indicates that the inventor intended the terms to be spatial references; 48 and the prosecution history confirms that the examiner understood that the phrase "holding station" refers to a first location from which eggs are lifted simultaneously with eggs at a second downstream location. 49 The Court therefore declines to adopt Plaintiffs' proposed construction of the terms "holding station" and "spaced apart locations."

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46 Pls.' Resp. to Def.'s Mem. Defining Disputed Claim Terms at 39.

47 The ordinary meaning of the term "station" is "the place or position in which something or someone stands or is assigned to stand or remain." Webster's at 1861 (defining "station," def. 2). The most relevant definition of the term "holding" as applied to dynamic systems such as a system for continuously transferring eggs is "maintaining position." Id. at 1078 (defining "hold," def. vii. a). The ordinary meaning of the term "location" is "a position or site occupied or available for occupancy." Id. at 1128 (defining "location," def. 2.a).

48 The specification describes the advancement of the eggs with language such as: the eggs are fed "into the holding stations"; advancing bars engage the eggs "in the holding stations"; and the eggs are moved "into pick-up positions." '505 Patent, col. 5, ln. 58-68.

49 In rejecting dependent claim 28, later incorporated, inter alia, in amended and allowed claim 24, the examiner commented "the claim requires eggs to be advanced from the egg holding stations to a second location spaced from the egg holding stations. . . . It appears that Applicant intended to claim the transfer of eggs from the eggs holding station to a subsequent downstream second location and, upon a subsequent egg arriving at the egg holding station, the lifting means simultaneously engages both eggs in the egg holding means and the second location." Application No. 06/452, 451, Examiner's Communication, Paper No. 3, mailed May 31, 1984 at 2-3.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - - -
"holding station"

The district court correctly construed the "holding station" of claim 24 of the '505 patent as "a first location in space to which an egg is moved and at which the egg may maintain position until the egg is lifted simultaneously with an egg at a 'spaced-apart location.'" Nonetheless, FPS argues that the district court's construction requires that an egg cease motion before the lift to the overhead conveyor. The claims simply do not require a specific temporal limitation associated with the term "holding." Indeed the specification states that the holding station positions an egg relative to the overhead conveyor for pick-up to the overhead conveyor. See, e.g., '505 patent, col. 2, ll. 44-58, col. 6, ll. 4-8. The specification actually speaks of eggs that are "held" as they move. Id. at col. 5, ll. 2-6 ("The disks each include a plurality of peripheral recesses which are disposed in horizontal alignment so as to receive and hold eggs advanced along the guide bars as they are transferred to the holding stations."). Moreover, the ordinary meaning of "to hold" is "to keep in position, guide, control, or manage." The Oxford English Dictionary (2d ed. 1989). This meaning also imposes no requirement that an object remain stationary.

Moreover, as this court has repeatedly counseled, the best indicator of claim meaning is its usage in context as understood by one of skill in the art at the time of invention. Markman, 52 F.3d at 986. In this instance, the context is the swift and safe movement of eggs. As indicated by the specification, the process holds the egg at the same time it moves the egg, thus achieving the dual goals of precision and speed. The process may hold and move an egg at the same time. In sum, the district court correctly construed the term "holding." The term "holding station" also does not require lack of motion.

5. Construction of "holding the sample in a non-flowing manner within the sample chamber"

The parties next dispute the construction of the phrase "holding the sample in a non-flowing manner within the sample chamber", found in Claim 16. Plaintiffs assert that the term means "the sample remains within the sample chamber during measurement rather than flowing through the sensor during measurement as it would in a flow cell" and Defendant contends that it means "the sample is at rest in the sample chamber during the test." Defendant notes that the patent examiner required the inclusion of the term "non-flowing" before the PTO would allow the patent, and that the inclusion of this term was significant. The plain and ordinary meaning of "non-flowing" manner indicates that the sample must be stopped, rather than moving. In the preferred embodiment portion of the specification, the patent states, "The sensor can also be used in conjunction with a flowing sample stream. In this configuration, the sample stream is made to flow through a sample chamber. The flow is stopped periodically and the concentration of the analyte is determined by electrochemical method, such as coulometry. After the measurement, the flow is resumed, thereby removing the sample from the sensor." ('164 Patent, 11:40-43). 14 In another section, the patent states, "As the fluid flow was stopped and current was allowed to flow between the electrodes…" ('164 Patent, 23:9-14). As the specification indicates, it is important to the proper functioning of the sensor that the sample be at least temporarily immobilized during measurement. Accordingly, the Court construes the term to mean "the sample is not moving in the sample chamber during the measurement."

14 The preferred embodiment continues, "[a]lternatively, sample may flow through the chamber at a very slow rate, such that all of the analyte is electrolyzed in transit, yielding a current dependent only upon analyte concentration and flow rate." ('164 Patent, 11:44-46). However, since this description of the sample as flowing at a very slow rate is directly at odds with the plain and ordinary meaning of non-flowing", the Court finds that this language does not describe those claims which contain a "non-flowing" limitation, such as Claim 16.
Plaintiffs interpret the phrase "holding the two retaining mechanisms together" to mean "supporting, or keeping from falling, the two parts that hold the lenses together, whether rims or other mechanisms such as screws or pins." Defendant, of course, offers its now familiar objections.

Consistent with its means-plus function finding, the court finds that the phrase "holding the two retaining mechanisms together" means "supporting, or keeping from falling, the rims together.

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5. Holding Unit for Receiving and Holding the Wafer in a Measuring Position During Measurements (Claims 1 and 21)

Plaintiff argues "holding unit for receiving and holding the wafer in a measuring position during measurements" is not subject to means-plus-function construction, and should be construed as "an assembly that receives and holds wafers in position while they are being measured." In the alternative, plaintiff argues the structures corresponding to the above-quoted function, specifically, "receiving and holding wafers in position while they are being measured," are "gripper 42" and "protruding surfaces 84" or, alternatively, "piston 160" and "measurement support 168." 7

--- Footnotes ---
7 Plaintiff stated its alternative position at the claim construction hearing.
--- End Footnotes ---

Defendant argues the term is subject to means-plus-function construction, the function is "receiving the wafer and holding the wafer in a fixed position during multiple measurements," and the corresponding structure is "gripping system 34" or, alternatively, "gripping unit 132." 8

--- Footnotes ---
8 Defendant first identified "gripping unit 132" as a corresponding structure in its claim construction brief. (See Def.'s Claim Construction Brief, filed June 29, 2006, at 24:8-9.)
--- End Footnotes ---

The Court, for the reasons stated by defendant, finds the term is subject to means-plus-function construction. The Court, for the reasons stated by plaintiff, finds the function performed by the means is "receiving and holding the wafer in position while it is being measured." The Court further finds the corresponding structures are "gripper 42," "vacuum pad 44," and "protruding surfaces 84," and equivalents thereof, or alternatively, "piston 160," "vacuum pad 152," and "measurement support 168," and equivalents thereof. 9

--- Footnotes ---
9 Although the Court adopts the corresponding structures proposed by plaintiff, the Court has added "vacuum pad 44" and "vacuum pad 152." See '689 Patent, col. 3, II. 39-41 ("Once the wafer 25 is in the wafer collecting position, as shown in Fig. 4, gripper 42 lowers vacuum pad 44 to grab the wafer 25."); id., col. 5, II. 26-29 ("Once the wafer support 150 has the wafer in a predefined position, the vacuum pad 152, which is controlled by piston 160, moves toward the wafer and grabs it by applying a vacuum.").
--- End Footnotes ---

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The parties' motions require the Court to construe the term "hole" in claim 1 of the '678 patent. The '678 patent, which relates to implant devices used to align and support the spine, has one independent claim and six dependent claims. The invention of the '678 patent is polyaxial: it has a ball-and-socket joint that allows for flexibility in connecting the screw to the rod. Claim 1 of the '678 patent requires that the invention have "two holes for receiving a [metal] rod." The defendant argues that Alphatec's pedicle screws do not have two holes for receiving the rod but instead have U-shaped slits; its position is there can be no infringement of an invention which expressly requires holes because the terms are not synonymous. Here, the question at issue is whether "holes" is a general term that includes "slits."

The plaintiffs' position is that the term "holes for receiving a rod" should be construed to mean "openings in the sides of the receiver for receiving a rod." Those openings need not be circumscribed (closed) according to the preferred embodiment in the specification of the patent-in-suit. The preferred embodiment, as seen in Figure 3 of the patent, shows holes open to the top of the receiver. (U.S. Patent No. 5,207,678 fig.3 (filed May 4, 1993)). To accept the defendant's proposition that the claim term "holes" requires a circumscribed opening would mean that the preferred embodiment shown in the patent lies outside the patent's claim language, which the Federal Circuit warns is "rarely, if ever, correct." Vitronics Corp. v. Conceptronic, Inc. 90 F.3d 1576, 1583 (Fed. Cir. 1996). 1 No disclosed embodiment of the '678 patent features a receiver member with a closed hole. Rather, the example of the hole that receives the rod is a non-circumscribed opening - it is open to the top of the receiver, making "it easier to place the rod into the receiver." (Biedermann's Feb. 9, 2007 Opposition to Defendant's Motion for Summary Judgment of Non-Infringement, at 3) (hereinafter, "Biedermann Feb. 9 Memorandum").

1 The defendant cites Vitronics to oppose an argument plaintiffs made in their brief that "common usage" of the term "holes" supports its proposed construction. Its argument is that according to Vitronics, extrinsic evidence may not be used to alter the meaning of the claims. See, 90 F.3d at 1583. However, in view of the clear intrinsic evidence in the present case - the claim language and specification - the Court does not rely on extrinsic evidence to construe the term.

The fact that broader independent claim 1 uses "holes" and narrower dependent claim 2 uses "slits" further resolves the question in favor of the plaintiffs. Indeed, if claim 1 prohibited slits, as the defendant argues, then claim 2 could not be dependent from it. See, e.g., In re Abele, 684 F.2d 902, 907 (C.C.P.A. 1982) (dependent claim includes all the limitations of the independent claim). Dependent claim 2 more narrowly specifies the features that receive the rod - they are "slits (12, 13)." This indicates that the term "holes" in broader claim 1 encompasses slits. Therefore, the Court defines the term "hole" to mean "an opening," and that term includes a U-shaped "slit."

The defendant also contends that the prosecution history of the '678 patent demonstrates that any meaning for "holes" that encompasses a slit (or slot) was expressly disclaimed. (Alphatec's Jan. 12, 2007 Memorandum in Support of Summary Judgment of Non-Infringement, at 6-7). For example, original claim 3 included the phrase "two mutually opposite slits" for receiving the rod but that claim was rejected. 2 The defendant's argument is that during the prosecution of the patent the plaintiffs substituted original claims 1-8, which used the language of "slits," with claim 9 (issued claim 1), which for the first time uses the term "holes," and that such alleged substitution constitutes plaintiffs' subject matter disclaimer of the prior use of the term slits.

2 The '678 patent application as originally filed on January 7, 1992 contained original claims 1-8. The applicants added claims 9-15 in a Preliminary Amendment filed in March 1992. In an Office Action dated April 13, 1992, the Examiner rejected original claims 1-8 but overlooked claims 9-15. In response to the Examiner's rejection, in October 1992, the applicants canceled original application claims 1-8 and resubmitted original claims 9-15, which ultimately became claims 1-7 of the issued patent. These claims were allowed without comment by the Examiner on October 30, 1992. (Biedermann Feb. 9 Memorandum, at 4).
The Federal Circuit has cautioned against excessive reliance on prosecution history for claim construction purposes because the prosecution history "often lacks the clarity of the specification and this is less useful for claim construction purposes." Phillips v. AWH Corp., 415 F.3d 1303, 1317 (Fed. Cir. 2005). The Federal Circuit requires that a prosecution history disclaimer of claim scope "must be both clear and unmistakable." Sorensen v. ITC, 427 F.3d 1375, 1379 (Fed. Cir. 2005) (citation omitted). "This may occur, for example, when the patentee explicitly characterizes an aspect of his invention in a specific manner to overcome prior art." Purdue Pharma L.P. v. Endo Pharm. Inc., 438 F.3d 1123, 1136 (Fed. Cir. 2006).

Here, the prosecution history shows that plaintiff made no such waiver. The application leading to the '678 patent was originally filed in January 1992, with 8 claims. A few months later, in March 1992, a preliminary amendment was filed adding application claims 9-15 (Biedermann Feb. 9 Memorandum, at 4). This amendment was filed before the Examiner had issued any Office Action, and before the Examiner had rejected any claims. Application claims 9 - 15 had numerous wording differences compared to application claims 1 - 8, but were directed to the same subject matter. Application claims 9 - 15 were an additional claim set, not amendments to existing claims, and ultimately became claims 1- 7 of the issued patent.

On May 1, 1992, the Examiner issued an Office Action, rejecting or objecting to application claims 1 - 8 based on certain references, and for other reasons; however, the Examiner overlooked application claims 9 - 15 at that time. In a later telephone interview, the Examiner indicated that he had found the preliminary amendment and would re-issue the Office Action to address application claims 9 - 15. (Alphatec Ex. F, at 4). When the Examiner did not re-issue the Office Action, the plaintiff resubmitted application claims 9 - 15 in an amendment, and they were allowed without comment by the Examiner. (Alphatec Exs. F and G). At no point were application claims 9 - 15 ever narrowed or revised. There was never any argument or discussion concerning "holes" during this exchange, nor at any time in the prosecution history, nor is there any definition of the term set forth in the prosecution history.

The defendants assert that "[t]he prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Southwell Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir.), cert denied, 516 U.S. 987, 116 S. Ct. 515, 133 L. Ed. 2d 424 (1995). In Southwell, the patentee distinguished over prior art by amending the claims and arguing that a particular feature in the claims distinguished over a two-step process disclosed in the prior art. See id. at 1576. The argument was made in response to the Examiner's inquiry into the scope of that particular claim feature. Id. Because of that argument, the Federal Circuit concluded that the patentee had "necessarily disclaimed coverage of a two-step process." Id.

In contrast, here, the term "holes" was at no time mentioned or discussed during prosecution of the '678 patent, was never argued as a point of distinction over any prior art, and it was not contended that any prior art lacked holes for receiving a rod. Indeed, application claim 9 containing the term "holes" -- which issued without change as claim 1 -- was first submitted before any rejections were made. This conclusively establishes that the term was not intended to address any rejection. Moreover, the Examiner never indicated that "holes" was the basis for allowing any claims. "[T]he alleged disavowing statements [must] be both so clear as to show reasonable clarity and deliberateness, . . . and so unmistakable as to be unambiguous evidence of disclaimer." Harvest Tech. Corp. v. Cytomedix, Inc., 2004 U.S. Dist. LEXIS 18003 at *15 (D. Mass. Sept. 9, 2004) (quoting Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1325 (Fed. Cir. 2003). Here, no disavowing statements were made, so there is no way the prosecution history can be construed to rise to the "clear and unmistakable" level required for disclaimer. In short, the plaintiffs never disclaimed any subject matter with respect to "holes.

Thus, in addition to construing holes as openings which include U-shaped slits, the Court rules as a matter of law that the prosecution history of the '678 patent reflects that the plaintiff made no disclaimer of claim scope with respect to the term "holes."
The dispositive issue of claim construction here is whether claims one and seven of the '760 patent are limited to a stud with a hole drilled prior to inserting the stud into the header or whether the claims encompass products without such a pre-drilled hole.

Defendant Steeler asserts that the claim term "having at least one hole formed therein" in claims one and seven unambiguously requires that a hole be pre-drilled into the stud and, thus, excludes any devices where the hole is made by a self-tapping screw after the stud is inserted into the header. Steeler contends that, even though the preferred embodiment discloses a preferred method of assembly where the hole is formed after the stud and header are assembled, the claims should be limited to a device with a pre-drilled hole, because the scope of Sliptrack's right to exclude is governed by the language of the claims, as interpreted by the prosecution history, and not by the written description.

For its argument, in addition to the claim language, Steeler relies heavily on the patent's prosecution history. Specifically, Steeler points to the amendment to the patent application, wherein, to address the examiner's indefiniteness rejection, applicant revised the claim from providing that the stud was aligned with the vertical slot to providing that the hole "is aligned with said vertical slot." See Amendment to '760 Patent Application, Barnard Decl., Exh. D. In addition, Steeler points to the applicant's remarks in the amendment where he stated that "the hole serves as a reference point on the stud which is used to align the stud and the slot." See Amendment to '760 Patent Application, Barnard Decl., Exh. D. The thrust of Steeler's argument is that in order for the "hole formed therein" to serve as a reference point when aligning the stud with the vertical slot, the hole must be formed in the stud prior to inserting it into the header and, thus, it must therefore be pre-drilled.

In response, Sliptrack contends the claim language makes clear that, as ultimately assembled, the stud must have a "hole formed therein," but does not mandate any particular process for when such a hole shall be formed. Sliptrack does not see any inconsistency with this position and the text requiring that the "hole is aligned with said vertical slot" and argues that in either case, pre or post-drilled, the hole formed in the stud will be aligned with the slots when the device is assembled. Finally, Sliptrack contends that it would be improper to construe the claim to require a pre-drilled hole, because such a construction would read out the preferred method of assembly, which describes a self-tapping screw to form the hole after the stud is inserted into the header. Sliptrack does not address Steeler's argument regarding the remarks made during the prosecution history that the hole will serve as a "reference point" when aligning the stud with the vertical slot.

The court begins claim construction analysis with the words of the claim. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). The claim language defines the bound of claims scope. Bell Communications Research, Inc. v. Vitalink Communications, Corp., 55 F.3d 615, 619-20 (Fed. Cir. 1995). The words used in the claims are interpreted in light of the intrinsic evidence of record, including the written description, the drawings and the prosecution history, if in evidence. Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323 (Fed. Cir. 2001). The intrinsic evidence may provide context and clarification about the meaning of the claim terms. York Products, Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1572 (Fed. Cir. 1996). "Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." Vitronics, 90 F.3d at 1582.

This case presents an interesting question and a somewhat difficult resolution. The court agrees with Plaintiff Sliptrack that the claims and the written description, read alone, do not appear to require a pre-drilled hole. The claims at issue, one and seven, provide that the stud will have at least "one hole formed therein proximal to said top end" and that the header shall be "positioned so that said hole is aligned with said vertical slot." See '760 patent, Barnard Decl., Exh. C. A fair reading of this language supports Sliptrack's argument that, as ultimately assembled, the stud will have a hole aligned with the vertical slot. The court agrees that this text, on its face, does not mandate that the hole be pre-drilled. If the claims and the written description were the only evidence the court was relying upon to interpret the claims, Sliptrack likely would prevail. That is not the case, however. In addition to the claims and the written description, the court must also consider the prosecution history, which, here, is dispositive.

As the Federal Circuit has made clear, "arguments and amendments made during prosecution of a patent application must be examined to determine the meaning of the claims." Rheox, 276 F.3d at 1325 (citing Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 15765 (Fed. Cir. 1995)) (emphasis added). "The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Id.; see also Teleflex, Inc. v. Ficosa North America Corp., 299 F.3d 1313, 1326 (Fed. Cir. 2002).
When initially submitted, all nine claims in the application for the '760 patent were rejected for indefiniteness and, specifically, the examiner questioned "how is the stud aligned with the vertical slot." See Action by PTO, Barnard Decl. Exh. C. To overcome this rejection, applicant revised his claims to include specific language that there would be a hole formed and positioned so that the hole is aligned with the vertical slot. See Amendment to '760 Patent Application, Barnard Decl., Exh. D (emphasis added). Counsel for applicant then explicitly remarked that this change answered the examiner's question "by adding hole 22 proximal to top end 40 of the stud as an element of the claims. The hole serves as a reference point on the stud which is used to align the stud and the slot." See Amendment to '760 Patent Application, Barnard Decl., Exh. D (emphasis added).

From this amendment and the remarks therewith, the court cannot escape the conclusion that the claim was narrowed to require that a hole be pre-drilled in the stud prior to inserting the stud into the header. As originally drafted, claim one provided that the stud was aligned with the vertical slot, but then was amended to require that the hole be aligned with the vertical slot. In order for the hole to be aligned with the vertical slot and to serve as a "reference point" on the stud when used to align the stud and the slot, the hole, by definition, would have to be formed prior to inserting the stud into the header. Quite simply, the hole cannot serve as a reference point if it does not exist.

While the court is aware that such a construction will read out the preferred method of assembly, which discloses a method where the hole is formed by a self-tapping screw after the stud is inserted into the header, this result, while perhaps unusual, is nevertheless permissible. See Rheox, 276 F.3d at 1327; see also Elekta Instrument S.A. v. O.U.R. Scientific In'l, Inc., 214 F.3d 1302, 1308 (Fed. Cir. 2000). Because it is rare that a construction reading out the preferred embodiment will be the correct construction, the Federal Circuit has noted that such a construction requires "highly persuasive evidentiary support." Id. Sliptrack asserts that prosecution history is not the type of "highly persuasive evidence" sufficient to support such a construction. Sliptrack is incorrect, however, and the Federal Circuit has stated just the opposite. Id. ("Where the prosecution history requires a claim construction that excludes some but not all of the preferred embodiments, such a construction is permissible and meets the standard of highly persuasive evidentiary support"). Indeed, it is difficult to imagine evidence more "highly persuasive" than Sliptrack's remarks in its Amendment stating that the hole will be used as a reference point to align the stud with the vertical slot. Sliptrack relinquished its right to exclude products without a pre-drilled hole when it amended its claim and provided this explanation to the PTO to overcome the indefiniteness rejection.

Sliptrack vigorously defended its position at the summary judgment hearing by asking the court to distinguish "product" patents and "process" (or method) patents, arguing that the '760 patent is for a product, not a process and, thus, the order or method of assembly is not at issue, and it is not relevant when the hole in the stud is formed. Instead, Sliptrack asserted, in construing the claim, the court must look at the final product, which, by necessity, must include a "hole formed therein" and that such hole always will be aligned with the slots as long as the product is properly assembled.

Sliptrack's argument is persuasive and is supported by the written description, which provides two possible methods of assembly, one using a self-tapping screw after the stud is inserted into the header and one where the hole is pre-drilled. Presumably, the applicant would not have provided two "possible" methods of assembly if the patent itself was for a particular process or method. Despite what may have been intended by the inventor in theory, however, the court must rely on the objective, intrinsic evidence in the record. See Rheox, 276 F.3d at 1327 ("Reading the written description alone, this argument might be effective, but in light of the prosecution history, which was generated after the written description was drafted, it is apparent that Rheox relinquished any coverage of TSP."). Sliptrack simply cannot escape the prosecution history of the '760 patent, where, though perhaps unintentionally, counsel added an element of method or process by amending the claim in the manner he did and by noting that the hole would serve as a "reference point."

The PTO examiner initially rejected patentee's claims for indefiniteness. To address the examiner's concern, overcome the rejection, and get the application approved, counsel amended the claims as set forth above and filed the relevant remarks therewith. While there may have existed an alternative approach to address the examiner's concerns, this was the way prosecution counsel chose to confront the rejection. The court must construe the claims accordingly and cannot undo, by ignoring the prosecution history, what may have been an unintentional result by counsel. In addition to a patent's definitional function, the Supreme Court and the Federal Circuit have consistently recognized the paramount importance of a patent's public notice function, and "the public has a right to rely on such definitive statements made during prosecution." Rheox, 276 F.3d at 1325 (quoting Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1347 (Fed. Cir. 1998)); see also Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co., 520 U.S. 17, 137 L. Ed. 2d 146, 117 S. Ct. 1040, (1997); Vectra Fitness v. TNWK Corp., 162 F.3d 1379, 1384 (Fed. Cir. 1998) ("The public is entitled to rely upon the public record of a
Agere argues that the term "holes" should be construed as "hollow places in a solid body or mass." Atmel argues that the term "holes" should be construed as "contact holes, that is, openings in the first dielectric layer that expose the silicon surface (i.e., the silicon substrate) or the conducting material at the silicon surface." The essential difference between the parties' constructions is that Atmel contends the term "holes" only applies to openings in the first dielectric layer, which openings would necessarily expose the silicon surface of the wafer, or the conducting material at the silicon surface of the wafer. Thus, Atmel apparently contends that the term "holes" would not apply to openings in dielectric layers that are positioned above the first dielectric layer (which would expose some previously-created metal contact rather than exposing the silicon surface of the wafer or the conducting material at the silicon surface of the wafer). The Court concludes that Agere's proposed construction is the proper construction for the following reasons.

Agere's proposed construction comports with the ordinary meaning of the term "hole." According to the "Random House Dictionary of the English Language," one of the definitions of the word "hole" (and the definition most appropriate to this context) is "a hollow place in a solid body or mass; a cavity." See Random House Dictionary of the English Language 911 (2d ed. 1987). Moreover, Atmel's construction would incorporate into claim 1 a restriction that is set forth in the subsequent dependent claims. Dependent claim 2 is directed toward "[a] method as recited in claim 1" in which the underlying material exposed by the "holes" in the dielectric layer is specified as being the silicon surface of the wafer, and dependent claim 3 is directed toward "[a] method as recited in claim 1" in which the underlying material exposed by the "holes" in the dielectric layer is specified as being a metallic silicide. See '335 Patent at col. 6:7-10. Thus, dependent claims 2 and 3 illustrate that where the patentee intended to specify or limit the type of material exposed by the "holes," the patentee did so explicitly. Therefore, since claim 1 does not on its face specify or limit the type of material exposed by the "holes," it would be inappropriate to limit the term "holes" as applying only to openings in the first dielectric layer which expose the silicon surface of the wafer or the conducting material at the silicon surface of the wafer. Indeed, "it is settled law that when a patent claim does not contain a certain limitation and another claim does, that limitation cannot be read into the former claim in determining either validity or infringement." SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1122 (Fed. Cir. 1985).

There is a heavy presumption that a claim term carries its ordinary and customary meaning. CCS Fitness, 288 F.3d at 1366. In order to deviate from the ordinary and customary meaning, Atmel must show that the intrinsic evidence establishes that the patentee demonstrated an intent to do so either by setting forth some other specific definition of the disputed claim term, or by distinguishing the term from prior art. See Interactive Gift, 256 F.3d at 1331. However, an examination of the specification only provides further support for Agere's proposed construction. In addition to contemplating that "the glue layer film may be deposited, through openings in the dielectric, directly on the silicon or on a conducting material, such as a silicide, overlying the silicon," '335 Patent at col. 3:7-10, the specification notes that the deposition process may be used for other purposes, such as "to form interconnects," 1 '335 Patent at col. 5:3-6, and that "the use of A1 [tungsten] is particularly suited for upper levels in multilevel metallization schemes where junction spiking is not a consideration," '335 Patent at col. 5:14-16 (emphasis added). Thus, it appears that the patentee specifically contemplated using the deposition process to fill not only openings in the first dielectric layer, but also openings in layers other than the first dielectric layer.

--- Footnotes ---

1 Atmel argues that the term "interconnect" does not refer to openings in upper-level dielectric layers, but rather refers to a structure that connects two points on the same level to one another. However, the specification makes clear that, at least according to the patentee, the term "interconnect" means "the lines and windows used to connect devices," and, according to the patentee, the term "window," in turn, can be used to mean either (1) only "the openings to the source, gate, or drain electrodes" (i.e., openings in the first dielectric layer), in which case "opening[s] between levels in multilevel metal structures" are distinguished as "vias," or (2) both "the openings to the source, gate, or drain electrodes" and "the opening[s] between levels in multilevel metal structures," in which case the terms "windows" and "vias" are interchangeable. See '335 Patent at col. 5:3-6.
In summary, Agere's proposed construction of the term "holes" comports with the ordinary meaning of the word, the claim language, and the remaining intrinsic evidence. Accordingly, the Court construes the term "holes" as "hollow places in a solid body or mass."

1984
C. Hollow

"Hollow" appears in several asserted claims of the '324 Patent. Claims 9 and 13, quoted above, provide examples. After describing the process to obtain whole [beta] - glucan--extracting non-glucan components without disrupting a cell wall--the '324 Patent's specification states: "These hollow, three-dimensional particles are conducive to a high water holding capacity, in that they become filled with water upon hydration." '324 Patent, col. 4, ll. 11-13. The '324 Patent's use of "hollow" is consistent with the term's common meaning of having an empty space within. See Webster's Third New International Dictionary 1080 (2002). The Court construes the term accordingly. See Phillips, 415 F.3d at 1314.

1985

1986

1. hollow tubular housing

P&M argues that one of ordinary skill in the art of airbrushes would understand this term to mean "an unfilled, or non-solid, approximately tube-shaped body." (Pls. Opening Mem. at 12.) Rose Art argues that someone of ordinary skill in the art would understand "tubular housing" to "describe a hollow cylindrical body that encases the reservoir pen." (Def. Pre-Markman Hr'g Br. at 16-17.) Nothing in the plain language of claim 1 limits the meaning of this term to "a hollow cylindrical body that encases the reservoir pen." Moreover, this construction of the term is at odds with the patent specification. The words hollow and tubular cannot be construed as cylindrical because figs. 1 and 4 of the '886 patent show that the housing is tapered on both ends and is, therefore, not cylindrical. There is also nothing in the language of the claim or the specifications which requires the housing to completely encase the reservoir pen. In fact, adoption of Rose Art's proposed construction would exclude the fig. 8 preferred embodiment from the patent claims. Although figs. 1 and 4 of the '886 patent illustrate an embodiment in which the reservoir pen appears to be completely encased within the housing, fig. 8 of the '886 patent illustrates an embodiment in which the housing does not encase the pen in its entirety. In fig. 8, approximately one-half of the reservoir pen protrudes from the open end of the housing opposite the nozzle.

Rose Art contends that fig. 8 is not within the scope of claims of the '886 patent because several of the dependent claims of the patent, namely claims 2 through 5, 7 and 8 clearly claim a different embodiment of the patent. However, dependent claims 6 and 9 speak only to the fig. 8 embodiment of the patent and the specification of the patent specifically describes the fig. 8 embodiment. ('886 patent, col. 3, ll. 12 - 26.) The Court will not construe the '886 patent to exclude the fig. 8 embodiment since it is specifically claimed by the language of the patent and specifically described by the patent specification. Claim construction that would exclude a preferred embodiment "is rarely, if ever, correct and would require highly persuasive evidentiary support." Vitronics Corp., 90 F.3d at 1583-84. Accordingly, the Court construes the term "hollow tubular housing" as "an unfilled, or non-solid, approximately tube-shaped body." Since the entirety of the intrinsic evidence with regard to this term is not ambiguous, the Court did not consider the extrinsic evidence submitted by the
The parties dispute the meaning of the term "homogenization" as it appears in claims 1, 25, 32 and 34. The parties agree that the inventor, John Lawton, acted as his own lexicographer and defined the meaning of the term within the patent. They disagree on the scope of Lawton's definition. Imagecube finds the complete definition of homogenization in the opening sentence of the '875 patent's "Description of Preferred Embodiments," which reads:

The term "homogenized" or "homogenization", for the purposes of this disclosure, will refer to the formation of an alloy between the substances which are homogenized.

('875 Patent, Col. 2, ll. 59-61.) Imagecube therefore asks me to construe the term homogenized to mean "forming an alloy."

Defendants argue that Lawton narrowed the definition of homogenization later in the specification. Discussing one embodiment of the invention, in which the components to be alloyed consist of polymers, Lawton stated:

The components may consist of polymers, which can be dispersed together and alloyed by the application of radiation . . . The homogenization to form an alloy between polymers is a non-polymerization interaction, and polymerization techniques (free radical, condensation, and like mechanisms between monomers and/or oligomers and optionally initiators) are excluded from the definition of "homogenization" as used herein.

('875 Patent, Col. 3, ll. 38-45) (emphasis added). Shortly thereafter, discussing another embodiment of the invention in which the components to be alloyed consist of metals or ceramics, Lawton stated:

The components may consist of metal or ceramics which, when contacted with appropriate imaging radiation of appropriate intensity, form a metal or ceramic alloy having properties distinguishable from the properties of the components . . . It will thus be understood that homogenization, in the case of metals and ceramics, is different from conventional sintering techniques, wherein powders are heated to essentially fuse or bond the particulates at their outermost points of contact into a solid mass. This also distinguishes the homogenization process of the invention from selective laser sintering (SLS) techniques. Thus, it will be understood that "homogenization "for purposes of the invention requires intimate mixing of at least two components with resultant formation of an alloy between the components, which cannot be achieved using conventional sintering techniques.

(1d., Col. 3, ll. 51-55; Col. 4, ll.3-13) (emphasis added). Defendants therefore ask me to construe homogenization as a process that requires intimate mixing of at least two components with the resultant formation of an alloy between the components, but excluding polymerization techniques.

To a certain degree, the process of construing the meaning of a claim, particularly when the inventor has acted as his own lexicographer, is not unlike the process of interpreting a work of fiction such as a novel. Much has been written about the proper methodology for each. The difference between the two is that for the patents, there is no doctrine of deconstruction, so that, for some, the interpretation turns in large part on each reader. Yet the only permissible perspective is that of the person of ordinary skill in the art. Nonetheless, the process of determining what a person of ordinary skill in the art would understand the words to mean is not unlike the process of reaching accepted reading of works of poetry or novels: one marshals the evidence, including the language, context, rules of the genre and historical circumstances, to determine the meaning and scope of the text's language.

Just as in literature, where a novel may contain significant evidence to support more than one interpretation of the language, so too in certain patents the process of claim construction will yield evidence (not necessarily of equal weight) supporting more than one possible meaning to the person of ordinary skill in the art. This is just such a case. The inventor, acting as his own lexicographer, offered a general definition of homogenization, which he subsequently limited in the specification. This leans in favor of a narrow construction of the term. Yet he limited his definition within a very specific context: discussions
of some, but not all, embodiments of the invention. This suggests that the broader interpretation of the claim might be appropriate.

When competing interpretations of a claim exist there is often a best case for one construction over another. That is true here. Those of ordinary skill in the art reading the patent were, and are, entitled to rely on the definition set forth by the inventor, who—as all parties agree—acted as his own lexicographer. In using the words "polymerization techniques . . . are excluded from the definition of 'homogenization'" and "'homogenization' for the purposes of the invention requires intimate mixing of at least two components" the inventor provided an explicit signal as to the scope of his definition of homogenization. Plaintiff argues that to import these embodiment-specific limitations into the general definition of homogenization violates the general rule against limiting claims to particular embodiments: yet that argument rings hollow in light of the inventor's choice of words. Plaintiff also argues that the proposed limitations do not make sense out of context. This argument carries more weight, but is resolved by taking account of that context within the definition. For this reason, I construe homogenization as "the formation of an alloy between substances, and in the case of the homogenization of metals and ceramics requiring the intimate mixing of at least two components to form an alloy between the components, but excluding polymerization techniques when the substances to be homogenized consist of polymers."

"hook"

Claims 4, 12, 18, and 31 of the '767 Patent contain the term "hook." SHURflo contends that "hook" means "a curved or bent device meant to catch or fasten something (e.g., a pump)," while Defendants contends that "hook" means "a piece of rigid material formed into a curve or an angle for holding something (e.g., a pump)." The parties' dispute centers around whether a "hook" must be rigid.

Other than a hook's function of holding something, there is nothing inherent about the term "hook" that would imply a necessary level of rigidity. Hooks may be flexible or otherwise non-rigid as long as their structural integrity allows them to serve their function (e.g., a hook made of plastic or rubber may be noticeably non-rigid). Furthermore, other than implication of the function of a hook, nothing in the intrinsic or extrinsic evidence suggests that "hook" should be confined to "a piece of rigid material." Thus, rigidity is not a requirement, and Defendants' proposed construction is improper. However, a hook must be of structural ability to function as a hook in some meaningful context. The claims do not use the term "hook" to simply refer to a piece of curved or bent material. The claims use the term "hook" to refer to the common device that every juror will understand.

Defendants argue that the words "meant" and "catch" in SHURflo's proposed construction are ambiguous, vague, and subjective, and that SHURflo's definition can easily be confused with the several other mechanisms disclosed in the patent. The Court agrees that SHURflo's proposed construction will be unhelpful to the jury. The claim language is clear and understandable to the fact finder and does not require construction. See Orion IP, LLC v. Staples, Inc., 406 F. Supp. 2d 717, 738 (E.D. Tex. 2005) (Davis, J.) (stating that "although every word used in a claim has meaning, not every word requires construction" in declining to construe claim terms). However, the Court has resolved the parties' disputes in accordance with O2 Micro, 521 F.3d 1351, and to the extent that this claim term arises at trial, the Court instructs the parties to tailor their trial arguments to conform with this Order.

"each of said ends further including a downwardly extended end portion for hooking onto a primary spectacle" (claim 24)

Plaintiffs contend that the phrase "downwardly extending end portion" in claim 24 means "that the ends of the arms further include a portion that extends downwardly relative to the remainder of the arm." JS, Exb. B at 54. Plaintiffs further contend that the phrase "hooking onto" means that the downwardly extending end portions of the arms are bent in a manner so as to connect or catch with portions of the primary spectacle frame as if with a hook." Id. at 57.
Conversely, Defendant argues that the instant phrase means "the ends of the arms each include an end portion extending downward i.e. the magnet, to hook over a primary frame." JS, Exh. D at 6.

The Court disagrees with Defendant's construction of the phrase in question to the extent such construction limits the "downwardly extending end portion" to be the magnetic member itself. Although Figure 7 shows such configuration, it is only a preferred embodiment. See Laitram Corp. 863 F.2d at 865.

Based on the above, the court construes the phrase "each of said ends further including a downwardly extended end portion for hooking onto a primary spectacle" in claim 24 to mean each of said ends further including a portion that extends downward relative to the remainder of the arm and where that downward extending portion is bent in a manner to connect or catch with the primary spectacle frame as if with a hook. See Webster's, Nicodema Decl., Exh. 5 at 126, defining "hooked" and "hooking" as "to connect or catch with or as if with a hook" and "hook" as a "curved or a sharply bent, usu. metal device used to catch, drag, suspend, attach, or close something."

1990

1. Horizontal Axis

The construction of the term "horizontal axis" is in dispute. The term appears in the following context: "a wash chamber rotatable about a horizontal axis" and "rotating said wash chamber about its horizontal axis… such that said fabric will tumble in said wash chamber." ('370 patent, claims 1, 8, 15; '718 patent, claims 1, 6.)

Whirlpool argues that this terminology should be construed as follows: "These claim elements mean that the washer has a wash chamber that is rotated about an axis that is oriented primarily or predominantly parallel to the horizon such that the fabric will tumble when the wash chamber is rotated at a speed effecting less than one gravity of centrifugal force on the fabric. This limitation encompasses a wash chamber whose axis may be angled slightly (e.g., at 10 degrees), provided that the fabric will tumble when the wash chamber is rotated at a speed effecting less than one gravity of centrifugal force on the fabric."

LG argues for the following construction of this terminology: "A wash chamber rotatable about a horizontal (i.e., not angled or tilted) axis of the wash chamber…to cause fabric to tumble in the wash chamber."

The dispute here is over whether the term horizontal axis in the claims means that the washer's axis of rotation be predominantly or substantially horizontal, as Whirlpool contends, or strictly and absolutely horizontal, as LG would require. The Federal Circuit has held that the ordinary and accustomed meaning of a disputed claim term is presumed to be the correct one unless a different meaning is clearly set forth in the intrinsic materials, that is, the patent specification or prosecution history. K-2 Corp. v. Salomon S.A., 191 F.3d 1356, 1362-63 (Fed. Cir. 1999). Dictionary definitions provide evidence of a claim term's ordinary meaning. Abbott Labs. v. Syntron Bioresearch, Inc., 334 F.3d 1343, 1350 (Fed. Cir. 2003).

Whirlpool submits a dictionary definition that it says makes clear that the term horizontal axis requires only a direction that is predominantly horizontal and includes an axis that is angled or tilted slightly, such as at a 10 degree angle. See WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY (horizontal can mean "of, relating to, or situated near the horizon," or "placed or operating chiefly along a plane parallel to the horizon"). The Court also notes a definition of horizontal in the OXFORD ENGLISH DICTIONARY: "applied to various mechanical contrivances, or artificial structures, of which the whole or the main part lies in a horizontal direction."

LG offers various dictionary definitions supporting its strict construction of the term horizontal axis as not encompassing a wash chamber rotating about any axis that is not at a right angle to the vertical line, such as one rotating on a tilted axis. See THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (horizontal means "in the plane of the horizon" or "at right angles to a vertical line"); id. (axis means a "straight line about which a body or geometric object rotates or may be conceived to rotate"); WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY (horizontal means "parallel to the horizon: being on a level" or "measured or contained in a plane of the horizon"). Referring to one of
Whirlpool's preferred definitions, LG argues that even an object operating "chiefly" along a plane parallel to the horizon must be on that plane a majority of the time, whereas a tilted axis is never operating along a plane parallel to the horizon.

The Court concludes that the dictionary definitions do not conclusively favor either side's view of the plain and ordinary meaning of the term horizontal. Some definitions favor LG's strict interpretation, while others tend to comport with Whirlpool's looser construction. In accordance with the Federal Circuit's direction, this Court concludes that the ordinary meaning of horizontal based on dictionary definitions encompasses both alternatives. See Inverness Med. Switzerland GmbH v. Warner Lambert Co., 309 F.3d 1373, 1378-79 (Fed. Cir. 2002) ("Here there are two possibly pertinent definitions….In such situations, a word that has an ordinary meaning encompassing two relevant alternatives may be construed to encompass both alternatives."); Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1203 (Fed. Cir. 2002) ("If more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all such consistent meanings.").

In the face of multiple dictionary definitions, intrinsic evidence "is the most reliable guide to help the court determine which of the possible meanings of the terms in question was intended by the inventor to particularly point out and distinctly claim the invention." Texas Digital, 308 F.3d at 1203. The intrinsic evidence in this case confirms that the term horizontal axis should be construed as Whirlpool suggests. Prior art cited in the patent specification or the prosecution history constitutes intrinsic evidence. Kumar, 351 F.3d at 1368. During prosecution of the patents in suit, the applicants cited and described U.S. Patent Nos. 4,489,455, (Whirlpool Br. Ex. 4), and 4,489,574, (Whirlpool Br. Ex. 5), (collectively, "the Spendel patents"), as prior art disclosing horizontal axis washing machines. (370 patent, col. 1, lines 29-34.) The Spendel patents describe two types of washing machines, top loading and front loading: "The conventional method of washing textiles in an automatic home-type washing machine in the United States is carried out in either a top loading or front loading machine. The difference between the two machines is that in a top loader the wash basket is rotatable around a substantially vertical axis and in a front loader the wash basket is rotatable around a substantially horizontal axis." (Whirlpool Br. Ex. 4., col. 1., lines 27-34; Ex. 5, col. 1, lines 26-33.) (emphasis added) The applicants also cited Australian Patent No. 209,436 to Johnston ("the Johnston patent"), (Whirlpool Br. Ex. 7), as prior art disclosing a "horizontal axis washing machine." The Johnston patent discloses a "tumbler type washer" in which a basket rotates "about a generally horizontal axis" or, in other words, "an axis inclined substantially from the vertical." (Whirlpool Ex. 7, at 12.) These examples of prior art discussed in the prosecution history show that the term horizontal axis, when used to describe front loading washing machines, includes wash baskets with a generally or substantially horizontal orientation. LG argues that Whirlpool could have used qualifiers such as "generally" or "substantially" in its claims, but the Court finds that these terms were unnecessary when they were already subsumed within the ordinary meaning of the word horizontal.

LG points out that during the prosecution, Whirlpool stated that "many attempts, as demonstrated in the patent art, have been made to obtain the advantages of both horizontal and vertical axis machines through the use of a tilted axis." (Response to Second Office Action at 8889, LG Br. Ex. 7.) But Whirlpool also stated that "these references are directed to two different types of processes, a horizontal wash process and a vertical wash process, which one of ordinary skill in the art would not find obvious to combine." (Id. at 8888.) More importantly, Whirlpool never distinguished the prior art tilted-axis machine on the basis of an exactly horizontal axis, nor did Whirlpool limit the term horizontal axis to mean absolutely perpendicular to vertical. See Schwing GmbH v. Putzmeister Aktiengesellschaft, 305 F.3d 1318, 1324 (Fed. Cir. 2002) ("Although prosecution history can be a useful tool for interpreting claim terms, it cannot be used to limit the scope of a claim unless the applicant took a position before the PTO that would lead a competitor to believe that the applicant had disavowed coverage of the relevant subject matter."); ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1091 (Fed. Cir. 2003) (explaining that claim terms should not be limited unless the "patentee intended to deviate from a term's ordinary and customary meaning or…the patentee disclaimed or disavowed subject matter, narrowing the scope of the claim's terms," which requires that the patentee either "has clearly set forth a definition of the term different from its ordinary and customary meaning," or has used "words or expressions of manifest exclusion or restriction."). The Court finds nothing in the intrinsic evidence that would put the public on notice that Whirlpool sought to limit the meaning of horizontal from its broader ordinary and customary meaning.

Perhaps most importantly, ascertaining the meaning of horizontal axis requires reading the claim terms in context: "rotating said wash chamber about its horizontal axis with fabric therein at a spin speed to effect less than a one gravity centrifugal force on said fabric such that said fabric will tumble in said wash chamber." (emphasis added) This sentence as a whole, along with the prosecution history’s discussion of the differences between horizontal and vertical machines, reveals that the distinguishing characteristic of a horizontal machine is that the fabric tumbles when it rotates at less than one gravity.

- 2438 -
Tumbling will occur regardless of whether the axis of rotation is perfectly horizontal or somewhat inclined, in contrast to a vertical or generally vertical machine, where the clothes stay on the bottom.

Accordingly, the Court adopts Whirlpool's proposed construction of the term horizontal axis.

1991

A. Claim Construction

Hearth's motion seeks an interpretation of the following limitations in Claim 1:

(1) "…and one of said remaining walls having a horizontal exhaust pipe connected thereto for insertion through said outside wall of the space to be heated."

(2) "the wall having said horizontal exhaust pipe connected thereto comprising an inner plenum, a middle plenum and an outer plenum."

(3) "Said horizontal exhaust pipe being connected to said inner plenum of said wall having said horizontal exhaust pipe connected thereto…"

The primary disagreement between the parties involves the proper meaning of the phrase "horizontal exhaust pipe." Although both parties concur that the pipe must be horizontal at the point at which it traverses the exterior wall, only FMI asserts that it must also be horizontal at the point at which it is connected to the fireplace.

As stated previously, the Court may look to the claim language, specification, and prosecution history in an effort to divine the proper meaning of a claim. Several observations about the claim language itself suggest that FMI is correct in its interpretation of Claim 1. The phrase "horizontal exhaust pipe" must be given its ordinary meaning. Nothing in the claims, specification, or prosecution history suggests otherwise. In short, "horizontal" means "horizontal;" it does not mean "horizontal and vertical," "angled," or even "substantially horizontal."

In addition, Hearth contends that "connected to" does not mean "directly connected to." Hearth makes this assertion in an effort to circumvent the Court's construction of "horizontal." In other words, if a horizontal pipe may be "connected" to the fireplace through a secondary piece of vertical pipe, then the Court's construction of "horizontal" is irrelevant from Hearth's perspective. Hearth's construction of "connected to" is untenable. A wall with a pipe "connected thereto" implies that there is no intermediate link between the wall and the pipe. This construction of "connected to" applies equally to the phrase "said horizontal exhaust pipe being connected to said inner plenum of said wall…."

The contentious language of Claim 1 is therefore construed as follows: 5 "horizontal exhaust pipe" means the exhaust pipe which is horizontal both at the point at which it exits the building and the point at which it is connected to the fireplace; "connected to" means directly connected to without the presence of an intermediate link. This construction of Claim 1 largely comports with the specification. The descriptions and diagrams emphasize a horizontal exhaust pipe connected to an inner plenum. 6

--- Footnotes ---

5 FMI also urges the Court to interpret the limitation in Claim 1 as a requirement that the wall connected to the horizontal exhaust pipe be vertical or substantially vertical. In support of its contention, FMI relies on a theory involving the antecedent basis for "said remaining walls." FMI contends that "one of said remaining walls" can only refer back to the "said … vertical walls" phrase which immediately preceded it. Although the Court finds FMI's antecedent basis theory marginally persuasive, the patent examiner did not consider the imperfect antecedent basis to be problematic. Consequently, this Court will not adopt FMI's restrictive construction of "said remaining walls."

6 All descriptions and diagrams with the exception of Figure 5 depict a horizontal exhaust pipe connected to the inner plenum of a vertical wall. Although Hearth urges the Court to determine whether Figure 5 is within the purview of the '322
The claim term "horizontal groove" appears in claim 1 of the ‘862 Patent within the phrase "wherein said seal has at least one horizontal groove to facilitate the movement of the seal." ‘862 Patent, col. 1:49-51. Both parties acknowledge that neither "horizontal" nor "horizontal groove" appear anywhere in the Common Specification. (D.I. 116, at 26; D.I. 118, at 29.) ICU contends that the word "horizontal" merely "explains the overall orientation of the groove in facilitating the function," which is to facilitate movement of the seal. (D.I. 118, at 28.) Further, ICU contends that "horizontal" need not be given a precise geometric meaning because it should be construed as broadly as its functional requirements allow (id. at 29), and because other directional terms in the Common Specification are not limited to precise geometric meanings. (D.I. 172, at 16.) RyMed contends that ICU's construction improperly reads out the word "horizontal," substituting it with "non-vertical." (D.I. 116, at 27.) Additionally, RyMed contends that ICU has selectively chosen the dictionary definition most helpful to them, ignoring other definitions defining "horizontal" as "at right angles to the vertical." (D.I. 165, at 24-25.)

As ICU points out, the surrounding context of the claim language demonstrates that the function of the "horizontal groove" is to facilitate the movement of the seal. (D.I. 118, at 28.) Although ICU has supplied the Declaration of Mr. Claude Vidal (D.I. 173) to support its contention that a person of ordinary skill in the art would understand "horizontal" as meaning "from one side of the seal to another" in this context, nothing in the intrinsic record counsels such a broad understanding. "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." Phillips, 415 F.3d at 1314. The plain meaning of "horizontal" is perpendicular to, or at right angles from, a vertical axis, and there is no support for broadening that term to include anything "non-vertical." See Nystrom v. TREX Co., Inc., 424 F.3d 1136, 1145 (Fed. Cir. 2005) ("in the absence of something in the written description . . . to provide explicit or implicit notice to . . . the public- i.e., those of ordinary skill in the art- that the inventor intended a disputed term to cover more that the ordinary and customary meaning revealed by the context of the intrinsic record, it is improper to read the term to encompass a broader definition simply because it may be found in a dictionary, treatise, or other extrinsic source"). Thus, the Court concludes that "horizontal groove" means "at least one groove which is perpendicular to an axis defined by the proximal and distal ends."

The meaning of "horizontal stopping surface" is not greatly disputed based on the parties' submissions. Phoenix says that it means "a surface with a horizontal portion for preventing movement." Silgan says that it means:

a horizontal surface on one member (the bottle) against which horizontal stopping surface or another member (the cap) abuts or engages to preclude further movement of the another [sic] member (the cap) in one direction (downwardly on the
bottle); a horizontal surface on the other member (the cap) which engages with a horizontal surface on the (one member bottle). A surface is an area having length and width.

To the extent Phoenix argues that a horizontal stopping surface is a surface that is only partly horizontal, the Court rejects its definition. Common sense, as well as the patent specification, dictates that a horizontal surface is entirely, not partly, horizontal. The remainder of the parties' definitions are substantially the same. Both agree that the word "stopping" means "to preclude or prevent movement," and Phoenix does not contest that a surface requires "length and width." Thus the Court adopts the following construction of the term: a horizontal area having length and width, which purpose is to preclude movement.

1994

a) Meaning of the Terms "Hot Air Flow Channels" and "Modified 'S' Configuration"

The "modified 'S" configuration of the "hot air flow channels" within the "heating means" described in claims 1 and 4 is a crucial aspect of the Satisfryer. The patent specification explains: "The angulated configuration [i.e. the modified 'S' configuration] of the double hot air flow channels would achieve a greater time within the hot oil that the heat is radiated outwardly into the oil and therefore less heat would escape and be lost to the back through the exiting point of the flow channels." (R. 36. Exhibit 1, column 2, ll. 2-6). Thus the particular "hot air flow channels" described in claims 1 and 4 of the '317 patent increase the efficiency of the Satisfryer. Far West and AFC argue that the "hot air flow channels" limitation, as used within claims 1 and 4, means the actual structures, or tubing, within which the hot air flows thereby heating the cooking oil within the frying chamber. CP counters that the term "structure" never appears in the patent itself and that the limitation "hot air flow channels" must be construed more broadly to include both the physical tubing within which the air flows and the passageway created by the physical tubing.

CP is correct that each flow channel described by claims 1 and 4 of the '317 patent includes a physical tubing within which a passageway is contained. However, the language of the claims, especially when read in conjunction with the entire claim specification, reveals that the term "hot air flow channels," as used within the '317 patent, refers to two very specific physical structures. 5 The "Detailed Description" section of the claim specification describes the structure of the hot air flow channels as follows: "the heating means 40 … would include a pair of parallel flow channels 60 and 62 which would be in parallel spaced apart relation and directed within chamber 15 in a modified 'S' fashion … so that there are a plurality, namely eight alternating left and right angle turns that the heating chambers would go through in order to reach an exit point 64 at the front end 12 of the chamber 15." (R. 36. Exhibit 1, column 4, ll. 9-19) (emphasis added). The flow channels are further defined as being comprised of "a pair of vertical side walls 61 and 63; a floor portion 65; and a pair of top walls 67 and 69 meeting at a central point 71. The walls … would define a continuous heated air passageway 73." (Id. at ll. 57-61) (emphasis added). Thus the "hot air flow channels" described in claims 1 and 4 are clearly defined in structural terms. Specifically, the '317 patent includes two distinct and separate "hot air flow channels," comprised of five-walled tubing, that extend through the frying chamber of the apparatus in a series of alternating left and right angled turns to create a modified "S" pattern. 6 CP is correct that a "passageway" lies within each five-walled channel, but the passageways's existence are completely dependent upon the flow channels's physical structure, and this structure is specifically defined by the claim specification. For the purposes of claim construction, this Court finds the term "hot air flow channel" embodies a specific structural element, as herein described, and the '317 patent is limited by that structural element.

Footnotes:

5 While claims within a patent are not necessarily limited by the claim specification, the written description of the claim is relevant to the claim construction process. Laitram Corp. v. Morehouse Industries, Inc., 143 F.3d 1456, 1463 (Fed Cir. 1998) (relying upon the "Summary of the Invention" portion of the claim specification to interpret the meaning of terms within a claims); see also American Permahedge, Inc. v. Barcana, Inc., 105 F.3d 1441, 1445 (Fed Cir. 1997) (relying upon the figures and written descriptions within the claim specification to interpret a claim).

6 Other language of the specification confirms that the "hot air flow channels" described in claims 1 and 4 of '317 patent have a specific structural element. Throughout the claim specification, the term "flow channels" is interchange with several other terms with structural connotation. The terms "chambers," "tubes," and "elements" are substituted for the term...
"channel" at various junctures within the description of the patented apparatus. (R. 36, Exhibit 1, column 4, ll. 16, 44; column 5, ll. 5, 12). In addition, the flow channels are described as having an "interior" to which the hot air passing through the channels is confined. (Id. at l. 51).

7 CP relies on the opinions of two experts in forwarding this definition of the term "channels." Plaintiff's patent expert, William D. Keisel, esq., opines: "The term 'channels' ... was used to identify both what I would call the passage way as well as the tubes themselves ... really the term 'flow channels' I think in the context of this invention the way they describe it, it could cover both." (R. 38, Exhibit 17, p. 216). Dr. Dupree Maples, plaintiff's technical expert, echoes Kiesel's conclusion. (R. 38, Exhibit 4). A court may rely upon expert testimony in interpreting language within a claim. Markman, 52 F.3d at 979. However, the Federal Circuit has held that a court should not rely upon "extrinsic evidence," such as expert testimony, to interpret patent claims where, as "in most situations, intrinsic evidence alone will resolve any ambiguity in a disputed claim." Vitronics, 90 F.3d at 1583. In this case, the Court is able to resolve all disputed terms within claims 1 and 4 by relying upon the intrinsic evidence in the record--claims 1 and 4 themselves, the patent specification, and the prosecution history. As such, it would be "improper" for this Court to rely upon the expert opinions of Mr. Kiesel and Dr. Maples to assist in claim construction. Id.

The "hot air flow channels" limitation within claims 1 and 4 is further defined by the requirement that each channel structure extend "from the first wall of the chamber to the second wall of the chamber." (R. 36, Exhibit 1, column 6, ll. 14-15, ll. 38-39). This language is illustrated by Figure 2 of the claim specification. It demonstrates how each flow channel begins at the first wall of the cooking chamber (16), extends through the chamber in a series of left and right angle turns, and terminates at the second wall of the chamber (12), which is opposite the first wall (16). (R. 16, Exhibit 1, Figure 2). This limitation further defines the structure of the two "hot air flow channels" described within the '317 patent. As a result, each "hot air flow channel" structure must extend continuously from one end of the cooking chamber to the opposite end in the "modified 'S'" configuration defined above. See supra p. 10.

1995

A. "housing"

All of the independent claims have a housing limitation, such as "a housing of palm-held size." ('783 Patent, Claim 1). Although Minerva and the Palm defendants believe "housing" simply means "a case or enclosure," the Alltel defendants argue that Minerva disclaimed hinges and slides during reexamination. As such, the Alltel defendants recommend that "housing" be construed as "a single rigid casing without hinges or slides."

During reexamination, Minerva distinguished its invention from Mack reference, which described a portable telephone that could be unfolded to form a headset that fits over a user's head. Minerva's alleged disclaimer is based on the following statement to the USPTO: "Mack's device has at least more than three housings connected to each other through hinges, while the claims of the Present Patent require that the camera and the cellphone be provided in the same housing." According to the Alltel defendants, by distinguishing the Mack reference, which had hinges, Minerva has disclaimed multi-segment housings connected through hinges or sliders.

"The purpose of consulting the prosecution history in construing a claim is to exclude any interpretation that was disclaimed during prosecution." Chimie v. PPG Indus., Inc., 402 F.3d 1371, 1384 (Fed. Cir. 2005). The alleged disclaimer "must be 'clear and unmistakable,'" however, "and unclear prosecution history cannot be used to limit claims." Cordis Corp. v. Boston Scientific Corp., 561 F.3d 1319, 1329 (Fed. Cir. 2009).

The first portion of Minerva's statement, "Mack's device has at least more than three housings connected to each other through hinges," clarifies the meaning of housing and also acts as a limited disclaimer. The patentee indicates that segments connected via hinges are separate housings; thus, a single housing may not contain a hinge. Through this definition of a "hingeless" housing, the patentee disclaims prior art devices comprised of four or more housings. Minerva does not disclaim hinges altogether, but instead distinguishes devices having at least three hinges. In contrast to hinges, the prosecution history does not show that Minerva has disclaimed sliders or housings having slides. The Mack device contains two segments.
connected by slides. Yet in its statement to the USPTO, Minerva called these two segments "the housing of the cellphone." As such, a housing may contain multiple segments connected by slides.

The second portion of Minerva's statement, "while the claims of the Present Patent require that the camera and the cellphone be provided in the same housing," also acts as a limited disclaimer. Some of the dependent claims add a limitation that the device must have a camera. (E.g., '783 Patent, Claim 5 ("The device of claim 1 or 2, further including a camera provided in said housing . . . ").) Minerva's statement to the USPTO effectively disclaims devices having a camera in one housing and the cellphone in a different housing.

Based upon the prosecution history discussed above, the court construes the term "housing" as "a single case or enclosure, or several cases or enclosures connected through slides."

1996

1. Housing

The term "housing" appears in the claims of the '130 application and in all three of the patents-in-suit. See '130 application claim 1 at 35 ("a housing defining a central passageway having fluid inlet and fluid outlet openings"); '609 patent claim 5 at 20:8-15 ("a housing defining an internal passageway having a gas inlet opening near an upstream end of said housing, and a gas outlet opening spaced from said gas inlet opening, said housing having a first attachment portion configured for connection of an upstream end of said filter assembly to a pressurized source of breathable gas and a second attachment portion configured for connection of a downstream end of said filter assembly to said regulator device") (emphasis added); '958 patent claim 8 at 18:49-54 ("a housing defining a duct with gas inlet and gas outlet openings defined at opposite ends of said duct, said housing having a valve sealing face disposed near said gas inlet opening and adapted for engagement with said high-pressure gas source") (emphasis added); '674 patent claim 1 at 26:45 ("a housing including a bore"); see also '130 application claim 13 at 37, claim 21 at 40, claim 29 at 43, claim 38 at 45, claim 51 at 49; '609 patent claim 1 at 17:55-59; '958 patent claim 1 at 17:62-67; '674 patent claim 13 at 27:24-35.

Aqua-Lung proposes that "housing" be construed as "a structure with internal space that defines the internal passageway" while Two Forty counters with "the body or skeletal portion of the device." Based on a reading of the claim language above, Aqua-Lung's proposed construction is too narrow as not every claim includes an "internal passageway." That portion of its proposed definition, therefore, should not be included in the final construction.

That said, Two Forty's proposed construction is too broad as it fails to take into account the internal space associated with the "housing" claims above. A review of the specifications in the '609 and '958 patents further clarifies that a "housing" surrounds an internal space. The specifications in the '609 and '958 patents contain identical references to the term: (1) "the housing 34 includes a gas inlet opening 38 which is surrounded by a raised collar or flange 40"; (2) "a housing 62 having a top or inlet end 64, a central shaft 65 and a bottom or outlet end 66"; (3) "[t]he housing 62 of this embodiment includes the upper or inlet end portion 64, an bottom or outlet end portion 66, a central bore 78, an annular inner lip 82 forming a narrowed end opening 80, and an exit opening 116"; and (4) "[t]he housing 230 includes an inlet end portion 232 and an outlet end portion 234." '609 patent at 7:37-39, 8:49-50, 10:51:54, 14:44-45; '958 patent at 7:45-47, 8:57-58, 10:59-62, 14:52-53.

Any remaining doubt that a definition of "housing" should refer to an internal space is debunked by the abstract and the summary of the '130 application which provides that "a fluid flow control valve is disclosed. This valve includes a housing which defines a central passageway having fluid inlet and fluid outlet openings." '130 application at 7, 53 (emphasis added); see also '609 patent summary at 4:2-4; '958 patent summary at 4:9-12. These additional examples make clear that the "housing" as used in the claims noted above, defines an internal space. Based on the foregoing, the Court construes "housing" as "a structure surrounding an internal space."
"Housing" terms

Housing

The Court adopts Plaintiffs' construction and construes "housing" to mean "a cover or enclosure." Defendants propose that "housing" be construed to mean "the protective outer cover of the motion detector camera, which excludes any inserts or partitions contained within such protective outer cover." Defendants' construction contains unnecessary limitations. Defendants partially rely on Figure 7 to support their construction. Defendants seem to argue that because Figure 7 shows an outer housing and inside the housing a motion detector and a camera, the enclosures containing the motion detector and camera are not part of the housing and, therefore, "housing" must exclude any partitions or inserts contained within such "housing." Figure 7 is only one embodiment of the invention, and there is no explicit support in the specification for applying Defendants' limitation to the claim term. Defendants also cite prior art in which, according to Defendants, the housing is not considered to include anything within itself. However, Defendants fail to cite anything within the specification or prosecution history that would indicate the examiner or applicant defined or used "housing" in that manner.

The specification broadly describes the housing as "an enclosure for holding the various components of the camera." Col. 2:54-55. Accordingly, the Court construes "housing" as "a cover or enclosure."

1998

Housing

In its briefing, Lantronix argued that "housing" is used according to its plain meaning and therefore does not require construction. Alternatively, if the Court does construe the term, Lantronix argued it should be construed according to its plain meaning: "a case or enclosure."

Digi argued "housing" should be construed as "cover that provides structural and protective support for the enclosed components." Digi contended the housing serves as both a cover and a structure for the enclosed components such as the electrical pins and socket connections. If this were not the case, Digi argued, "the claim language requirement that the connector contain at least two physical interface connection elements and electronic circuitry would contradict the 320 patent, which claimed the insertion of components inside the connector itself."

Further, Digi argued, the components must be attached to the connector's structural supporting unit (the housing) in order for them to be electrically connected and functional. Digi also relied on the 320 patent's prosecution history, which acknowledged that "a housing is required to provide a structure for the connector." See 320 patent prosecution history, Amendment and Response to Official Action, 4/30/1985, p. 5. Finally, Digi contended that Figure 1 and the 470 patent's prosecution history "show that the connector has its own separate housing to distinguish it from prior art where the functional circuitry was part of, and contained within, the computer housing."

During the hearing, the parties agreed to a compromise construction: "case or enclosure to cover and protect the connector's internal components." The Court agrees with the parties' agreed construction. As before, the Court rejects Digi's argument that the 320 patent was incorporated in any way into the 470 patent.

1999

H. Term 10: Housing (as used in claims 1 and 23).

Lutron contends that Term 10 means a "Structure that covers or protects components." Control4 contends it means "A structure, attached to the back of the support yoke, which houses components." Lutron opposes Control4's proposed construction because it requires the housing to be behind the support yoke. According to Lutron, this imposes a limitation that is not present in the patent.
The patent does not define what constitutes a "housing." Claims 1 and 23 state the control device must contain an antenna, transmitter-receiver, and a housing, among other things. The transceiver must be contained in the housing, but the patent does not require the antenna to be in the housing. Control4 contends that the control device, and consequently, the housing are coextensive with the wallbox.

The '103 Patent indicates the control device is located in the wallbox. Yet, in other language, the patent states the control device is only "substantially within an electrical wall box." The patent further states that the antenna is located in the wallbox. This fact is significant because Lutron's antenna is located in front of the yoke, and consequently is not literally within the wallbox. Thus, references to a component being located in the wallbox do not necessarily require that the component be literally and completely within the wallbox.

Control4 further cites to a paragraph in the "Summary of the Invention" to support its contention. The paragraph states:

> It is a further object of the present invention to provide an antenna as part of a lighting control device wherein the antenna is sufficiently small to fit within the area defined by the faceplate of the wallbox outside the opening of the wallbox with the remainder of the control device disposed in the wallbox. In this way, the antenna, although outside the wallbox, is concealed behind the faceplate.

Because the paragraph states the antenna is outside the wallbox "with the remainder of the control device disposed in the wallbox," Control4 argues this supports the requirement that the housing must be completely contained in the wallbox and necessarily be behind the yoke. The Court disagrees.

Control4 argues, however, this does not defeat its interpretation because "remainder" refers to the controlling elements of the control device, not such things as the outer bezel and faceplate. This argument is not supported by the quoted language. Additionally, Claim 23 includes an actuator. The actuator is "coupled to said control circuit to provide a signal thereto to control the status of the controlled electrical device." One could argue, therefore, that the actuator is a "controlling element." Yet, it also must be outside of the wallbox due to its function. The Court therefore concludes the quoted language...
The preambles to claims 1 and 23 state the control device is "adapted to be mounted at least partly within an electrical wall box." Both parties have agreed that the preamble is limiting. Consequently, the claim itself shows that the control device is not co-extensive with the wallbox. Moreover, nothing in the relevant claims states the housing must be fully within the wallbox. This means the housing may be partly outside of the electrical wallbox. The Court therefore concludes the term means "A structure that protects or holds components."

3. Housing; Display Case/Case

a. The Parties' Constructions

LPL argues that "housing" should be given its ordinary and customary meaning. Defendants assert that "housing" should be limited to a case and body of a portable computer. Defendants argue that the inventors became their own lexicographers, when in response to an objection by the examiner, they stated a definition of housing as a display case or case and body. See '641 and '718 patents, 4:54-56 and 6:12-15.

b. The Special Master's Constructions

Unless a patentee becomes his own lexicographer by using terms in a manner other than their ordinary meaning by clearly stating the special definition in the specification or prosecution history, words in a claim are given their ordinary meaning. Vitronics, 90 F.3d at 1582. The Special Master is of the view that no such clear statement of a special definition exists. In fact, the intrinsic evidence contains no explicit definition connecting "housing" to a portable computer.

Addressing the Defendants' argument that housing was defined in response to the examiner's objection, the Special Master is mindful that a patent examiner's objection is distinct from a rejection. In this regard, an objection does not relate to the patentability of the claims. According to M.P.E.P. § 706.01: "[t]he refusal to grant claims because the subject matter as claimed is considered unpatentable is called a 'rejection.' The term 'rejection' must be applied to such claims in the examiner's action. If the form of the claim (as distinguished from its substance) is improper, an 'objection' is made." The amendments made by the inventors addressed a formality raised by the examiner's rejection, i.e., antecedent basis, and were therefore non-substantive and, to coin a phrase, "merely cosmetic." Cf. AK Steel Corp. v. Sollac & Ugine, 344 F.3d 1234, 1242 (Fed. Cir. 2003) ("There was no indication that the amendment was made to relinquish claim scope; rather it was made in response to the examiner's request to replace language that he found vague with language that he felt 'more specifically defined' the same material. Under those circumstances, the amendment clarified the claims without changing their scope."). Moreover, "an inventor may choose to be his own lexicographer if he defines the specific terms used to describe the invention 'with reasonable clarity, deliberateness, and precision.'" Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002) (quoting In re Paulsen, 30 F.3d 1475, 1480 (Fed. Cir. 1994)) (emphasis supplied). Further, the Special Master finds it noteworthy that the amendment resulted in housing being expressed two different ways, one somewhat more
specific than the other, but in no event in the Special Master's view, in a way clearly stated. 17 Because "housing" was not defined with reasonable clarity, deliberateness, and precision, the Special Master concludes that "housing" should be accorded its ordinary meaning.

--- Footnotes ---

17 "Together, the case and body may be referred to as a housing ..." '641 patent, 4:48-49. "... the body (first portion) and the display case (second portion) (collectively referred to as a housing) ..." '641 patent, 6:6-8.

--- End Footnotes ---

The term "display case" is recited only in claim 40 of the '718 patent. Based on the plain language of the claim, i.e., "arranging the LCD device on ... a display case" and "attaching the LCD device to the display case," the flat-panel display device is both arranged on and attached to the display case. Also, the common specification associates the term "display case" with "housing." There is no special definition attributed to the term.

Accordingly, the Special Master's constructions are as follows:

<table>
<thead>
<tr>
<th>CLAIM TERM</th>
<th>SPECIAL MASTER CONSTRUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>An outer casing or enclosure</td>
</tr>
<tr>
<td>display case/case</td>
<td>The portion of the housing onto which the flat-panel display device is arranged and attached</td>
</tr>
</tbody>
</table>

---

2001

1. Housing

The first element of Claim 1 is a "housing." The ordinary meaning of "housing" is a case or enclosure that covers or protects another structure. The language of the element itself, "the top wall, bottom wall, and side wall enclosing an interior therebetween," and the specification figures are consistent with this meaning, and the prosecution history does not reveal a definition contrary to it. Accordingly, the Court construes "housing" to mean a case or enclosure that covers or protects another structure.

---

2002

1. Housing

The patentee uses the term "housing" throughout the reexamined 097 patent including specifically in asserted Claims 11, 21, 24, 25, 27, 32, 34, 35, 36, 39, 40, 41, and 42. The parties agree that the proper construction of this term begins with the dictionary definition. Webster's New Universal Unabridged Dictionary defines "housing," in relevant part as "anything that covers or protects" and "a fully enclosed case and support for a mechanism." Webster's New Universal Unabridged Dictionary (1996) ("Webster's Universal"), Stant Ex. 103, p. 928. Stant argues that nothing in the specification or prosecution history adds anything to this definition and thus, the court should give the term this simple definition. Stant's Opening Brief on Claim Construction ("Stant Br.",) p. 11. Gerdes argues, on the other hand, that the claims and specification dictate that external protrusions, including flanges, threads, and vent strips, are not part of the housing and that the definition of housing should reflect this exclusion. Brief in Support of Gerdes GMHB's Claim Construction ("Gerdes Br."), P. 6.

The ordinary definition of the term "housing" does not itself exclude any other structures from being a part of the structure that 'covers or protects.' Thus, the court must look to the manner in which the patentee used the term in claims and specification of the reexamined 097 patent. The parties each point to independent claim 11 for support of their positions. In that claim, the patentee refers to the "housing having a radially outwardly extending first flange on an axially upper portion of said housing." Reexamined 097 patent, Stant Ex. 2, col. 1, 11. 49-51. This usage, however, even with its use of the word
"having," does not clearly indicate a specialized meaning for "housing" that either includes or excludes the flange as a part of the housing. In other claims, for example, the patentee refers to the "first flange attached to the housing." Id. at col. 3, 11. 19, 39. Thus, in the claims the patentee uses the term in a variety of manners, none expressing the clear intent of the patentee to deviate from the ordinary meaning of the term by either excluding any structures from being a part of the "housing" or by requiring any particular structures to make up the "housing."

Further, in the specification the patentee also uses "housing" as a general term to describe the outer covering of the fuel cap. See 097 patent, Stant Ex. 1, col. 1, 11. 34-47. In order to overcome the presumption that the intention of the patentee was to use "housing" in its ordinary and customary manner or in order for the patentee to disavow or disclaim scope of coverage, he or she must use "words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Int'l Rectifier Corp. v. IXYS Corp., 361 F.3d 1363, 1370 (Fed. Cir. 2004). The court finds that in the claims and specification of the 097 patent and the reexamined 097 patent, the patentee has not expressly indicated that the term "housing" has a specialized meaning. For this reason, there is nothing that suggests to a person of ordinary skill in the art that he or she is to read "housing" to mean anything other than its ordinary definition. Thus, the term "housing," as used in the reexamined 097 patent, means a case covering, protecting, or enclosing other parts of the fuel cap.

2003

a. "Housing", "Within Said Housing"

Plaintiffs argue that the LEDs in the AMP Device are not "secured within the connector housing" defined by top, bottom, front, and rear walls. Plaintiffs argue that the LEDs sit exposed and unprotected on the projection above the housing formed by the walls. Defendant maintains that the LEDs are within the housing, on the front wall, as the claim does not limit the invention to a box-like structure with light emitting devices placed within the internal volume of the four specified walls.

i. The claim language

The claim requires that the LED lie "within" the "housing" as opposed to outside of the housing.

The claim reads that the housing is

formed by front, rear, top and bottom walls and having a plug receiving opening formed within the front wall thereof.

'317 patent at 4:58-60. The light emitting devices must-be "within said housing":

at least one light emitting diode integrally secured within said housing adjacent the plug receiving opening formed within the front wall thereof.

'317 patent at 4:61-63.

The housing, as described in the claims, is formed by four walls: front, rear, top and bottom walls. (The Claim does not require that the device have side walls.) The Code of Federal Regulations sets a standard for internal RJ plugs, but sets no standards or limitations describing the external configurations of RJ modular jacks. The issue disputed by the parties is whether a wall of the housing as defined in the claim can include a protrusion or flange, such as that found in the AMP Device. The claim language itself does not specify that the four walls of the housing must be "box-like" in structure or that the edges of the four walls must meet at the four corners at right angles. The claim does not require that the walls be of any particular shape or dimension, or that they be uniform in size.

With respect to devices (as opposed to residences), housing is generally defined as "something that covers or protects," "a casing (as an enclosed bearing) in which a shaft revolves," "a frame or other support for mechanical parts." See Webster's New Collegiate Dictionary 403 (7th ed. 1967).

ii. Specification
The specification states that the configuration of the RJ connector "is not a limitation to the present invention." The specification reads as follows:

It will be appreciated that an RJ connector is available in a variety of sizes, and internal configurations and may be molded in a number of ways commonly known in the art and is not a limitation to the present invention. The only requirement being that the RJ connector has a visible surface accessible for the placement of at least one LED indicator.

'317 patent at 4:23-29 (emphasis added). From this language it appears that the inventor intentionally left the definition of "housing" vague in order to capture within the claims the whole variety of RJ connector configurations known in the art.

iii. Prosecution history

The prosecution history does not provide assistance in defining "housing."

iv. Extrinsic evidence

Mr. Lazar presented credible testimony that housing is understood to be that which supports and insulates various other parts of the connector. He also testified that usually housing is a single molded unit.

v. Construction

Given the general and vague description of "housing" in the claim language, and the explicit statement in the specification that the specific molding of the RJ connector is not a limitation to the invention, the Court finds that the "housing" could include a front wall with a protrusion or extension above the point where the wall meets the top or bottom walls. The broadly written claim does not require that the LED lie wholly within the volume created by four walls of housing. The housing must be a supporting structure made of a single molded unit, with a front, top, bottom, and rear wall.

2004

E. "Housing"

Itron contends that the term "housing" as used in each of the asserted claims means "an enclosure that protects the circuitry for recording time of energy use or the circuitry for recording energy use, mountable beneath the rotatable disc in the meter." In CellNet's proposed claim construction order, which was presented to the Court for the first time during the July 24, 1998 hearing, it takes the position that the term means simply a support.

In the patent specification, the patenpees disclose that the housing depicted in the various drawings have both a front face and a rear face. '623 patent, 5:13-15. Thus, it is at least partially enclosed on two sides. Then, during patent prosecution, CellNet's patent counsel argued to the examiner that the disclosed device is distinguishable from the Keller patent, which disclosed a two-sided flexible circuit board with no housing or enclosure, because "the circuit elements [of Keller] are not contained within a housing that fits beneath the meter disk [sic]." Response to Office Action, p. 6. Based on the above intrinsic evidence, the Court construes "housing" to mean a case or enclosure.

2005

(a) The Housing Requirement

(i) A housing configured to receive the anterior surface of the hand

The '165 Patent itself does not define "housing." The summary of the invention contained in the '165 Patent, indicates that the housing must contain something, but the vague description is not definitive:
Although the critical features of the invention reside in the shape of the housing, being a hand controller apparatus which is usable in conjunction with a computer or computer controlled game, the hand controller of the present invention also provides an underlying, generally planar support member for enclosing the housing and the electrical contents thereof and at least one relative movement sensor of the type previously described and which is well known in the art.

'165 Patent, col. 3, ll. 37-45. Thus, the Court must look to extrinsic evidence to construe the meaning of the word "housing."

In support of its Reply, Defendant offers excerpts from American Heritage Dictionary 625 (2d college ed. 1982) and Webster's II New College Dictionary 536 (1999) for the proposition that the term "housing" means "something that covers, protects or supports." 2 Defendant notes that in Claims 1, 4, and 5 of the '165 Patent, Plaintiff referred to a "hollow housing," but in Claim 7 Plaintiff merely referred to a "housing." Defendant argues, the word "hollow" cannot be read into Claim 7 -- as this would make the inclusion of the word "hollow" in the other claims meaningless. Therefore, Defendant contends the Housing Requirement should be construed to mean a solid structure that supports the palm-side of a user's hand.

2 Defendant's Memorandum in Support of Its Motion for Summary Judgment of Invalidity contains no discussion of the "housing" requirement whatsoever.

Plaintiff offers Webster's New World Dictionary 655 (3rd ed. 1988) for the proposition that in the context of mechanical devices the term "housing" means "a frame, box, etc. for containing some part, mechanism, etc." Plaintiff argues that, by definition, a "housing" must "house" something.

The Court finds that the summary of the invention in the '165 patent and Plaintiff's dictionary definition of "housing," comport with the plain meaning of the word "housing." Therefore, the Court construe the phrase "a housing configured to receive the anterior surface of the hand" to mean a hand controller (which may be hollow or solid) that contains a part or mechanism while receiving the palm-side of the user's hand.

n8 The corresponding phrase is "housing which can be comfortably held in a user's palm."

The defendants contend that the phrase is indefinite because it has no discernible meaning in light of the prosecution history. The court disagrees and finds that the phrase, as written and in the context of the whole patent, can be understood by one of ordinary skill in the art. See In re Marosi, 710 F.2d 799 (Fed. Cir. 1983); Bancorp Services, L.L.C. v. Hartford Life Ins. Co., 359 F.3d 1367 (Fed. Cir. 2004). The phrase requires no construction and the court rejects the defendants' indefiniteness argument.

"a housing part for housing a self-expanding stent, said housing part provided at said distal end of said guide tube"
Perouse's proposed construction of "a housing part for housing a self-expanding stent" is "a piece that covers a self-expanding stent." (Perouse Opening Br. 20.) Gore's proposed construction is "a case or enclosure that is capable of temporarily holding a self-expanding stent in a compressed state until placement in the desired location, regardless of whether the housing part actually covers the entirety of the stent or is even capable of doing so." (Gore Proposed Order 2.)

With respect to the ordinary meaning of "housing," the Court does not detect any meaningful difference between the parties' proposed language. "A piece that covers" and "a case or enclosure" are both acceptable constructions that accurately reflect the meaning of "housing" as understood by a person of skill in the art in light of the intrinsic evidence. As explained in the specification, the "housing part" provides housing for the self-expanding stent during endoluminal delivery to the treatment site, until the housing part is "opened" and the stent expands. (See '787 patent col.3 11.1-4, 11.33-43, col.3 1.57-col.4 1.4). The specification makes clear that the "housing part" fits around and covers the outside of the stent. For example, a stent is described as being "inserted" into the housing part of one embodiment. (’787 patent col.3 11.1-4.)

Gore has not objected to Perouse's proposed language, "a piece that covers." In fact, Gore has indicated that it believes the parties are in agreement with respect to this aspect of the construction. (Gore Reply Br. 6.) Perouse's objection to Gore's definition is apparently that "case or enclosure" is too narrow. (Perouse Reply Br. 11.) "Enclosure" is arguably narrower in scope than "a piece that covers." For example, the dictionary definition of "housing" provided by Perouse's expert is "something that covers or protects, as a case or enclosure." (Gold Opening Decl. Ex. 5 at 585.)

There is no indication in the intrinsic evidence that "housing part" requires or excludes any particular type of housing or covering. Therefore, though the parties' constructions may not be substantively different, the Court will incorporate both parties' proposed language into its construction in order to ensure that it captures the full scope of the ordinary meaning of "housing." The Court construes "a housing part" to mean "an enclosure or covering." 9

9 As discussed infra, the Court has used the word "covering" instead of "piece that covers" to avoid any implication that the piece only infringes when it is "actually" covering a self-expanding stent. See infra note 10.

The parties also dispute Gore's proposed limitation that the "housing part" must be "capable of temporarily holding a self-expanding stent until placement in the desired location" (emphasis added). Gore's proposed construction is rejected because the ordinary meaning of "housing" does not include the requirement that the "housing" must constrain the housed object from expansion. While the specification of the '787 patent describes a delivery device that constrains a self-expanding stent, this description does not demonstrate the patentee's intent to implicitly or explicitly redefine "housing," and therefore the ordinary meaning applies.

Finally, Gore has raised an issue regarding whether the "housing part" is required to "cover the entire stent or even [be] capable of doing so." (Gore Reply Br. 9.) Gore apparently interprets Perouse's proposed construction as requiring a housing part that "completely cover[s] the self-expanding stent." (Gore Reply Br. 7.) It is not at all clear, however, that Perouse even advances this "complete coverage" limitation, which is not apparent from Perouse's proposed claim language, "a piece that covers a self-expanding stent." Perouse did not argue for this limitation in its briefs, and addressed the issue only perfunctorily at the Markman hearing. (See Oct. 23, 2007 Tr. 70:12-18.)

Assuming this issue requires resolution, the Court finds that the "housing part" element does not require complete coverage of the self-expanding stent nor does it require that the "housing part" be capable of complete coverage. While the drawings of the '787 patent depict a housing part that completely covers a self-expanding stent, there is no indication that this is a significant or necessary detail. The Court finds that a person of ordinary skill in the art would not interpret the "housing part" element as necessarily capable of completely covering a self-expanding stent. Nothing in the intrinsic evidence indicates that partial coverage is excluded from the scope of this element or that the degree of coverage provided by the "housing part" is an important aspect of the invention.

ii. "for housing a self-expanding stent"
The "housing part" of claim 1 is not a housing part for any object, but a housing part "for housing a self-expanding stent." In the context of the '787 patent, this means a "housing part" that fits a self-expanding stent. A person of ordinary skill would understand that a "housing" is designed to house a particular object or structure. In the context of the '787 patent, the "housing part" element houses a self-expanding stent. That is, the housing part provides a covering, case, or enclosure for a self-expanding stent. Therefore the housing part must be of a size and shape that fit a self-expanding stent.

--- Footnotes ---

10 Gore interprets Perouse's construction, "a piece that covers" as requiring a structure that "actually covers a self-expanding stent." (Gore Reply Br. 7 (emphasis added)) and asserts that this construction is improper because it "implicitly requires a stent to be part of the claimed tool" (Gore Reply Br. 9). Gore seems to be suggesting that Perouse's proposed construction would only cover "housing parts" while they are being used to cover stents. If this is Perouse's contention, this would be an improper functional limitation on a claim addressed to structure, because the scope of an apparatus claim does not depend upon whether it is actually used for its intended purpose or not. See e.g., Catalina Mktg. Int'l, Inc. v. Coolavings.com, Inc., 289 F.3d 801, 809 (Fed. Cir. 2002) ("[T]he patentability of apparatus or composition claims depends on the claimed structure, not on the use or purpose of that structure."); In re Gardiner, 171 F.2d 313, 315-16, 36 C.C.P.A. 748, 1949 Dec. Comm'r Pat. 34 (C.C.P.A. 1948) ("It is trite to state that the patentability of apparatus claims must be shown in the structure claimed and not merely upon a use, function, or result thereof."). However, it is not clear that Perouse makes this argument. To clear up any potential confusion, the Court emphasizes that its construction of "housing part" means that the housing part must "fit" a stent if and when the stent is inserted, not that the tool only infringes when the stent is actually fit inside the tool.

--- End Footnotes ---

Accordingly, the Court construes "a housing part for housing a self-expanding stent" to mean "an enclosure or covering that fits a self-expanding stent."

iii. "said housing part provided at said distal end of said guide tube"

The final dispute between the parties regarding the "housing part" element concerns the location of the housing part along the guide tube. The "housing part" of claim 1 is "provided at said distal end of said guide tube." ('787 patent col.4 11.9-10.) Gore construes this phrase to mean "provided at or in contact with the tip end of a guide tube," while Perouse contends that it means "located at the extremity of a guide tube away from the operator." (Gore Proposed Order 2; Perouse Opening Br. 22.) The primary point of dispute between the parties is whether, as Gore asserts, the housing part must be in contact with the distal tip of the guide tube, 11 or whether, as Perouse asserts, the housing part must simply be located in the area near the distal extremity of the guide tube. (See Gore Opening Br. 26-27; Gore Reply Br. 9-11; Perouse Opening Br. 22-23 & n.16; Perouse Reply Br. 12-13.)

--- Footnotes ---

11 While the language of Gore's construction is ambiguous, Gore's reply brief makes clear the Gore contends that the "housing part" must be "in contact with" the distal tip of the guide tube. (Gore Reply Br. 9, 11 (characterizing propose construction as requiring that "the housing part of the tool is provided at, i.e., in contact with, the tip end of the guide tube") (emphasis added).)

--- End Footnotes ---

Gore construes "distal end" to mean "distal tip." Gore's construction is not consistent with the ordinary meaning of "distal end" as informed by the intrinsic evidence. "End" is used ambiguously in the '787 specification. For example, "end" and "end parts" are used interchangeably in the specification (alternately describing the "flared" portions of the endoprostheses as "ends" and "end parts"), indicating that "end" is not used as a synonym for "tip." ('787 patent col. 1 11.40-42, col.3 11.44-45.) However, "end" is arguably used to mean "tip" when describing the open "distal end" of the housing part or the "cord . . . connected, at its proximal end, to the actuation handle." ('787 patent col.3 11.5-7, col.3 1.67-col.4 1.2.) However, other intrinsic evidence indicates that "distal end" is not used as a synonym for "tip end." Specifically, patents cited during
prosecution of the '787 patent use "end" or "distal end" to refer to the area near the extremity of a device. (See Golds Reply Decl. Ex. 16, col.8 11.26-27; Ex. 17, col.4 11.24-30.); see also V-Formation, Inc. v. Benetton Group SpA, 401 F.3d 1307, 1311 (Fed. Cir. 2005) (stating that prior art references cited in patent or prosecution history are considered intrinsic evidence).

Finally, extrinsic evidence also refutes Gore's proposed construction of "distal end" to mean "distal tip." U.S. Patent No. 4,950,228, a patent issued in 1990 that was not cited during prosecution but nevertheless sheds light on the meaning of the disputed language to a person of ordinary skill in the art at the relevant time, clearly distinguishes between the "distal end" and "distal tip" of a ureteral stent. (Golds Reply Decl. Ex. 18, col.3 1.41-col.4 1.15.) Because both the intrinsic and extrinsic evidence indicate that "distal end" was used by persons of skill in the relevant art to mean either the distal tip or the area near the distal tip, the Court adopts Perouse's construction of this claim term. 12

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

12 Gore's construction of "distal end" as it appears in this claim element is also inconsistent with Gore's construction of the same claim language in the previous element, "a guide tube having a distal end." "[S]aid distal end," in the "housing part" element of claim I, refers to the same "distal end" that is recited in the "guide tube element." See, e.g., Intamin, Ltd. v. Magnatar Techs., Corp., 483 F.3d 1328, 1333 (Fed. Cir. 2007) ("The use of the word 'said' in a claim refers to an earlier use of the term in the claim."). Yet Gore did not construe "distal end" in the "guide tube" element to mean "distal tip," but instead proposed "the extremity of the guide tube away from the operator of the tool." See supra Discussion B.1.b.2. A claim term in a patent should be construed consistently wherever it appears. See, e.g., Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001).

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - -

Accordingly, the Court construes the phrase "a housing part for housing a self-expanding stent, said housing part provided at said distal end of said guide lube," to mean "an enclosure or covering that fits a self-expanding stent, regardless of whether the housing part actually covers the entirety of the stent or is even capable of doing so, said housing part located at the extremity of a guide tube away from the operator."
It is possible to rebut the presumption triggered by the absence of the word "means" by showing that the claim element recite[s] a function without reciting sufficient structure for performing that function." Watts v. XL Sys., Inc., 232 F.3d 877, 880 (Fed. Cir. 2000). However, "sufficient structure" does not mean "specific structure." Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1359 (Fed. Cir. 2004) "Instead . . . it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their functions." Id. at 1359-60. As a result, "the presumption flowing from the absence of the term 'means' is a strong one that is not readily overcome." Id. at 1358. The Federal Circuit has "seldom held" that claim language not drafted using the word "means" is to be construed under § 112 P 6, as a means-plus-function claim. Id. at 1363 (identifying only one opinion in which § 112 P 6 was invoked without the word "means"); but see Mass. Inst. of Tech. v. Abacus Software, 462 F.3d 1344, 1353-55 (construing "colorant selection mechanism" as "means-plus-function" element).

Gore contends that the "housing part opener" element is drafted as a "means-plus-function" limitation and should be limited to the specific embodiments disclosed in the specification. (Gore Opening Br. 27-3 1; Gore Reply Br. 12-13.) Perouse contends that because this element does not include the word "means" and because "housing part opener" is "inherently structural" language, it is not a "means-plus-function" element and should be construed according to its ordinary meaning, "a device that opens the housing part." (Perouse Reply Br. 14-15.) Gore's expert concedes that "opener" does not have a specialized meaning in the relevant art and that the dictionary definition of "opener" is "one that opens." (Matsumura Decl. P 41-43).

Applying the analysis outlined above, the Court first notes that this element was not drafted using the word "means." As a result, there is a presumption that the element is not drafted in "means-plus-function" format. See, e.g., Depuy Spine Inc. v. Medtronic Sofamor Danek, Inc., 469 F.3d 1005, 1023 (Fed. Cir. 2006). To determine whether this presumption is rebutted, the Court must determine whether the "housing part opener" element merely "recites a function without reciting sufficient structure for performing that function." Watts, 232 F.3d at 880.

Neither "housing part opener" nor "opener" appears in the '787 specification. Therefore, the specification does not help to determine whether "opener" constitutes structural language. 13

Footnotes

13 Gore argues that the use of "means" in the specification indicates that "housing part opener" should be construed as a "means-plus-function" element. (Gore Opening Br. 28.) However, "means" must be used in the claim to trigger the presumption that § 112 P 6 applies. See, e.g., 911EP v. Whelen Eng'g Co., 512 F. Supp. 2d 713, 726-27 (E.D. Tex. 2007) (not applying presumption though specification used the word "means").
on a dictionary definition of "connector" that used similarly functional terms.

Expert testimony may be relevant to the determination of whether a claim element is drafted in "means-plus-function" format as long as the testimony is consistent with the intrinsic evidence. Lighting World, 382 F.3d at 1359. Perouse's expert states that the term "opener" indicates structure both in common parlance and to a person of skill in the art. (Golds Reply Decl. PP 6-7.) In support of this claim, she notes phrases like "can opener" and "bottle opener," and cites several pre-1992 patents in which "opener" was used "to indicate structures which opened something." (Golds Reply Decl. PP 6-7.) While these "openers" identified by Perouse's expert obviously are not suitable "housing part openers" for purposes of the '787 patent, these examples confirm that "opener" denotes structure and that the drafter of the patent intended "housing part opener" to refer by analogy to structures that open a housing part. Though "housing part opener," like "connector assembly," may not "bring to mind a particular structure," it is not a generic structural term like "mechanism," "means," "element," or "device." See Lighting World, 382 F.3d at 1360; Mass. Inst. of Tech., 462 F.3d at 1354 ("The generic terms 'mechanism,' 'means,' 'element,' and 'device' typically do not conote sufficiently definite structure."). Instead, "housing part opener" would be understood by a person of skill in the art to be a structural term defined by its function, like "connector." "Housing part opener" is therefore structural for the purposes of the § 112 P 6 analysis. See, e.g., Lighting World, 382 F.3d at 1361 (finding "connector" to be a name for structure "defined in terms of the function it performs"); see also Personalized Media, 161 F.3d at 705 ("[T]he fact that a 'detector' is defined in terms of its function . . . does not detract[] from the definiteness of structure. Even though the term 'detector' does not specifically evoke a particular structure, it does convey to one knowledgeable in the art a variety of structures known as 'detectors'.").

Evidence from the prosecution history of the applicant's intent in drafting the "housing part opener" element also supports the Court's finding that this element should not be construed according to § 112 P 6. See, e.g., Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584 (Fed. Cir. 1996) (finding § 112 P 6 not applicable in part because "nothing cited to us from the prosecution history or elsewhere suggests that the patentee intended to claim in that fashion"); Markman, 52 F.3d at 985 ("[T]he subjective intent of the inventor when he used a particular term is of little or no probative weight in determining the scope of a claim (except as documented in the prosecution history)"). (emphasis added). The goal of the analysis used to determine whether § 112 P 6 applies appears to be ascertaining whether or not the drafter intended to take advantage of this provision. For example, the use of the word "means" is a significant factor in the analysis because it is considered a reliable indicator that a drafter intended to draft a "means-plus-function" limitation. See, e.g., Masco Corp. v. U.S., 303 F.3d 1316, 1326 (Fed. Cir. 2002) ("The use of the word 'means' to describe a claim limitation gives rise to a presumption that the patentee intended the term advisedly to invoke the statutory mandates for means-plus-function clauses."); Unidynamics Corp. v. Automatic Prods. Int'l. Ltd., 157 F.3d 1311 (Fed. Cir. 1998) ("The use of the term 'means' generally (but not always) shows that the patent applicant has chosen the option of means-plus-function format. . . .") (emphasis added); DESA IP, LLC v. EML Techs., LLC, 211 Fed. Appx. 932, 936 (Fed. Cir. 2007) ("[T]he claims use both means-plus-function language . . . and structural language . . . , which suggests that the patentee intentionally used 'means' language to invoke § 112, P 6.") (emphasis added).

The '657 application was filed with three claims, numbered 6 through 8. (Gallagher Decl. Ex. B at 5-11, 19, 139.) Claim 6 was the only independent claim. (Gallagher Decl. Ex. B at 10-11.) During prosecution of the '657 application, the examiner rejected claim 6 as "clearly anticipated" by U.S. Patent No. 4,447,222, issued to Santinoranont ("Santinoranont"). 14 In response to the rejection, the applicants canceled claims 6-8 and substituted claims 9-20, which are identical to claims 1-12 of the '787 patent. (Gallagher Decl. Ex. B at 150-53; '787 patent col. 4 11.5--col.6 1.3.) Claim 9, the only independent claim among the new claims, was similar to claim 6. 15 (Gallagher Decl. Ex. B at 150-53.) While the last element of claim 6 recited "means [] for opening the tulip-shaped part longitudinally," this language was replaced in claim 9 by "a housing part opener for opening said housing part independent of the self-expanding stent." (Gallagher Decl. Ex. B at 10, 150.)

14 Santinoranont is a patent for a "tampon inserter" device. The Santinoranont device includes an outer tube with a closed forward end and a tampon that is releasably attached to the forward end of an inner insertion tube. (See Gallagher Decl. Ex. B at 106-11.) The forward end of the insertion tube (with the tampon attached) is inserted into the outer tube and the tampon is pushed into through the closed forward end of the outer tube, rupturing it and permitting the tampon to be inserted into the vagina. (See Gallagher Decl. Ex. Bat 106-11.)

15 Claim 6 of the '657 application claimed:
[A] tool for fitting an auto-expansible endoprosthesis, characterized in that it comprises:

- a guide tube [ ] provided at its distal end with a tulip-shaped part [ ] for housing the endoprosthesis [ ] in the contracted state; and

- means [ ] for opening the tulip-shaped part longitudinally.

(Gallagher Decl. Ex. B at 10.) Claim 9 of the '657 application claimed:

A tool for fitting a self-expanding stent comprising:

a guide tube having a distal end;

a housing part for housing a self-expanding stent, said housing part provided at said distal end of said guide tube; and

a housing part opener for opening said housing part independent of the self-expanding stent.

(Gallagher Decl. Ex. B at 150.)

16 To distinguish claim 9 from Santinorant and overcome the examiner's rejection, the applicants argued:

The objects to be fitted by the present invention (e.g., a self expanding stent) have very little, if any, strength in the longitudinal direction. Therefore, these objects can not be pushed or otherwise used in order to open the housing part because, even if successful (which is doubtful), the objects would probably be damaged. Consequently, the tool of the present invention provides a housing part opener for opening the housing part independent of the objects housed therein.

The Santinorant reference discloses a tampon inserter including an outer tube housing a tampon. The forward end of the outer tube ruptures when the tampon contained therein is pushed against the forward end. This reference does not disclose a housing part with a housing part opener for opening the housing part independent of the object to be fitted (i.e., a tampon).

As discussed above, a tool with a housing part opener for opening the housing part independent of the object to be fitted is critical in order to prevent damage to the object.

(Gallagher Decl. Ex. Bat 153-54.)

The applicants' response to the rejection of claim 6 clearly indicates that the "housing part opener" element in claim 9 of the '657 application (which issued as claim 1 of the '787 patent) was not intended as a "means-plus-function" claim. The corresponding element in claim 6 ("means . . . for opening the tulip-shaped part longitudinally") is clearly drafted as in "means-plus-function" format--it includes the word "means" without any additional structure capable of performing the "opening" function. Biomedino, LLC v. Waters Techs. Corp., 490 F.3d 946, 950 (Fed. Cir. 2007) (noting that presumption arising from use of the word "means" can be rebutted if "the claim, in addition to the functional language, recites structure sufficient to perform the claimed function in its entirety" (quoting Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1375 (Fed. Cir. 2003))). In drafting claim 9, the applicants did not simply add "independent of the self-expanding stent" to the existing language of claim 6. Instead, they replaced "means" in claim 6 with "housing part opener" in claim 9. (Gallagher Decl. Ex. B at 10, 150.) The "means for opening" language of claim 6 demonstrates that the applicants knew how to draft a "means-plus-function" element and could have done so if they had intended. But the applicants reworded the claim without "means" language, signaling their intent to avoid construction of the "housing part opener" element under § 112 P 6.

The Court concludes based on the intrinsic and extrinsic evidence that "housing part opener" was not drafted as a means-plus-function element, and construes this language according to its ordinary meaning, "a device that opens."
ii. "for opening said housing part independent of the self-expanding stent"

Gore addresses the "independent of the self-expanding stent" limitation by asserting that, during prosecution of their patent, the applicants disclaimed all "tools that move the housing part by the action of the stent." (Gore Reply Br. 14.) Gore's argument is based on the fact that, after the examiner rejected claim 6 of the '657 application as anticipated by Santinoranont, the applicants amended their claims to add the limitation "for opening said housing part independent of the self-expanding stent" to the "housing part opener" element of new independent claim 9. (Gore Opening Br. 14-16; Gallagher Decl. Ex. B 139-55.) The applicants argued that this limitation rendered the amended claims patentable over the prior art, including Santinoranont:

As discussed above, a tool with a housing part opener for opening the housing part independent of the object to be fitted is critical in order to prevent damage to the object. The Santinoranont reference does not disclose a tool with such a feature. Therefore, it is respectfully submitted that the rejection raised by the Examiner is not applicable to new independent claim 9, and the claims that depend therefrom, with the additional limitation discussed above.

(Gallagher Decl. Ex. B at 153.); see also supra note 14-16.

Gore is correct that the scope of a claim "may be limited by a disclaimer in the specification or prosecution history." Atofina v. Great Lakes Chem. Corp., 441 F.3d 991, 997 (Fed. Cir. 2006) (citing Phillips, 415 F.3d at 1316-17); see also Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995) ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution."); Omega Eng'g, Inc., v. Raytek Corp., 334 F.3d 1314, 1326 (Fed. Cir. 2003) (stating that disclaimer requires a "clear and unmistakable" disavowal during prosecution). However, the applicants did not disclaim housing parts that "spread out" or "unfold" by operation of the self-expanding stent, as Gore contends. (Gore Opening Br. 31-32; Gore Reply Br. 13-17.) As the amended claim language indicates, the applicants at most disclaimed all tools in which the housing part opener is not "independent of the object to be fitted."

Gore's argument is based on an incorrect construction of "open" to mean "spread out" or "unfold." Indeed, Gore clarified during the Markman hearing that its construction required that the self-expanding stent may not "push" the housing part apart when it expands. Instead, the housing part must expand "all by itself, automatically. . . . In other words, if the stent were constrained in some way . . . the housing part would still open up." (Oct 23, 2007 Tr. at 88:22-96:25.) Under Gore's interpretation, the housing part is "opened" when it expands radially outward, as it must in order to release the self-expanding stent.

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17 Though neither party construed "open" or "opener" in its claim construction briefs, it is apparent From the parties' arguments in support of their proposed constructions of the "housing part opener" element that Gore interprets "open" to mean "spread out" or "unfold" (Gore Reply Br. 13-I 7), while Perouse interprets this term to mean "create[] a separation" (Perouse Reply Br. 18-19).

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

While "spreading out" is undoubtedly one of many permissible definitions of "opening" in common parlance, a person of ordinary skill would understand that a different meaning is used in the context of the '787 patent. The ordinary meaning of a claim term for purposes of claim construction is the meaning that is used by the applicant in the patent and prosecution history. See Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1319 (Fed. Cir. 2005) ("We cannot look at the ordinary meaning of the term . . . in a vacuum. Rather, we must look at the ordinary meaning in the context of the written description and the prosecution history."); Unitherm Food Sys., Inc. v. Swift-Eckrich, Inc., 375 F.3d 1341, 1351 (Fed. Cir. 2004), rev'd on other grounds, 546 U.S. 394, 126 S. Ct. 980, 163 L. Ed. 2d 974 (2006) (proper definition is the "definition that one of ordinary skill in the art could ascertain from the intrinsic evidence in the record").

The specification makes clear that "opening" of the housing part does not refer to the outward expansion of the housing part. For example, the abstract of the '787 patent describes "[c]utting threads [that] cause the housing to open longitudinally." ('787 patent Abstract.) The phrase "to open longitudinally" makes no sense if, as Gore maintains, "open" means "spread out"
or "unfold," because these actions require motion that is directed radially outward, not longitudinally.

Furthermore, the '787 patent describes two embodiments, which differ only in the "means for opening" employed by each. In one embodiment, the housing part is "opened" using "wires for separating, such as by cutting, the . . . housing part, into several petal-like parts, or sections." ('787 patent col.11.54-57.) In another embodiment, "longitudinal opening" of the housing part occurs when a cord is withdrawn from the series of gussets through which it passes. ('787 patent col.11.58-63, col.31.57-col.41.4.) In neither embodiment does "opening" refer to the expansion, "spreading out," or "unfolding" of the housing part. Instead, a person of ordinary skill in the art would understand that, in the context of the '787 patent, "opening" refers to the creation of an opening or separation in the housing part, a step which necessarily precedes and is distinct from the expansion of the housing part and stent.

Furthermore, the construction of "opening" relied upon by Gore to support its disclaimer argument is entirely inconsistent with its argument that the "cutting wires" and "interpenetrating gussets and longitudinal cord" are the structures that correspond to the "housing part opener" element that Gore contends is drafted as a means-plus-function element. In support of this argument, Gore argued that "cutting" and "longitudinal opening" (as performed by the cord and gussets) satisfy the "opening" function. Both "cutting" and "longitudinal opening" create an opening or separation in the housing part, but do not spread it out or unfold it.

Gore's proposed construction is also undermined by the fact that the '787 patent describes no mechanism by which the housing part might undergo radial expansion without the assistance of the self-expanding stent. For the tool of the '787 patent to operate according to Gore's proposed construction, something other than the self-expanding stent must provide the force that expands the housing part. Yet Gore does not dispute the fact that the '787 patent discloses no such mechanism, nor does Gore provide any explanation of its own. A person of ordinary skill in the art would be unlikely to interpret the patent so as to leave such an important aspect of the invention's operation mysterious and unexplained. This is especially true in this case, where an alternative explanation, that the self-expanding stent is the element that expands the housing part, is disclosed in the patent and is entirely consistent with the intrinsic evidence.

The prosecution history also confirms that "opening" does not mean "spreading out." The applicants argued that claim 9 in the '657 application was patentable over Santinoranont because the opener of claim 9 was independent of the object to be fitted, while the opener of Santinoranont was the object to be fitted, i.e., a tampon, which "opened" the device when it was pushed through the end of an outer tube, creating a separation or opening in the device. (See Gallagher Decl. Ex. B at 154.; see also supra notes 14, 16. The applicants noted that self-expanding stents had very little longitudinal strength and therefore could be damaged if "pushed or otherwise used in order to open the housing part." (Gallagher Decl. Ex. B at 106-111, 154.) It is clear that "opening," as used by the applicants in the prosecution history, does not refer to the radial expansion or "spreading out" of the stent and/or housing part because these actions do not implicate the longitudinal strength of the stent. Instead, the use of "opening" in the prosecution history is entirely consistent with the use of this term in the specification of the '787 patent. In the prosecution history, as in the specification, an "opener" is something that creates a separation or opening. As described in the prosecution history, the "opening" of the outer tube in Santinoranont does not involve "spreading out." In fact, the outer tube of the Santinoranont invention does not expand or "spread out" at all—it is "opened" when its forward end is ruptured, permitting the release of the object to be fitted.

Therefore, even if Gore is correct that the applicants expressly disclaimed any tool in which the self-expanding stent is used to open the housing part, Gore's proposed limitation is not consistent with this disclaimer. 18 If the applicants disclaimed any claim scope during prosecution, such disclaimer was incorporated explicitly into the amended claim language, which requires an opener that is "independent of the self-expanding stent." (See Gallagher Decl. Ex. B at 154 ("[T]he tool of the present invention provides a housing part opener for opening the housing part independent of the objects housed therein.").) That is, the effect of any disclaimer on the resulting claim scope is coextensive with the effect of the "independent of the self-expanding stent" limitation that is now part of claim 1 of the '787 patent. Indeed, the applicants indicated that this limitation was added to claim 9 of the '657 application for the purpose of distinguishing the amended claims from Santinoranont. The applicants distinguished their claims by pointing out that the object to be fitted in the applicants' invention "can not be pushed or otherwise used in order to open the housing part," in contrast to the tampon of the Santinoranont device, which "opens" the device when it is pushed through the outer tube, rupturing it. (See Gallagher Decl. Ex. B at 154.) Therefore, when the correct construction of "open" is applied, the language of the amended claim limits the scope of the element to "housing part openers" that do not use the self-expanding stent to create an opening or separation in the housing part.
18 Perouse correctly points out that "independent." as used in the claims and the prosecution history, is an adjective modifying the noun "opener" (Perouse Opening Br. 26; Perouse Reply Br. 14 n.6), not an adverb modifying the verb "opening" ("independently" is the adverb form), as Gore maintains (Gore Reply Br. 13-14 & n.11). However, neither interpretation supports Gore's position. Even if the limitation requires that the "opening" of the housing part must be performed independently, without using the self-expanding stent, the stent may still be involved in the housing part's expansion, because this is distinct from the "opening" of the housing part.

During the Markman hearing, Gore argued that Figures 6 and 8 of the '787 patent disclose a housing part that expands without the assistance of the self-expanding stent. These figures depict the stent and housing part of the tool in mid-expansion, after partial cutting of the housing part (in the case of the first embodiment) or partial withdrawal of the cord from the gussets (in the case of the second embodiment). Gore's argument is based on the fact that these figures show a gap between the stent and the housing part, indicating that the stent is not in contact with the housing part during expansion. (Oct. 23, 2007 Tr. 90:17-95:9.) The Court rejects Gore's argument. It would be obvious to a person of ordinary skill in the art that these figures were merely schematic in nature and were not intended to faithfully reflect every detail of the expansion process. Indeed, the patent explicitly states that Figure 8 is a "diagrammatic[]" representation of the second embodiment. ('787 patent col.3 11.57-58.) Furthermore, as discussed above, Gore's interpretation of these figures is inconsistent with the interpretation that emerges from the remainder of the specification and prosecution history. In light of the intrinsic evidence, it is far more likely that the separation between the stent and the housing part shown in these figures is not significant--it simply contributes to a cleaner diagram in which the reader can easily distinguish the elements.

However, even if Figures 6 and 8 were interpreted as literal representations of the operation of the invention, they would not support Gore's argument, which is based on an incorrect and unsupported construction of "opener." The drawings do not purport to represent "opening." In fact, the patent refers to Figure 6 as illustrating "release" or "expansion." ('787 patent col.3 11.39-40.) Even if the drawings did show release or expansion of the housing part occurring independently of the self-expanding stent (and they do not), this would be irrelevant to this discussion. No such limitation was made part of claim 1 and limitations found only in patent drawings do not alter the scope of otherwise unambiguous claim language.

Regardless what the drawings show, the claim term "housing part opener" is used consistently throughout the intrinsic evidence to refer to something that creates a separation or opening in the housing part, not something that spreads out, unfolds, or expands the housing part. The Court therefore rejects Gore's argument that the applicants' characterization of their invention as "a tool with a housing part opener for opening the housing part independent of the object to be fitted" disclaimed all tools in which the stent is used to spread out, unfold, or expand the housing part.

The Court therefore construes "independent of the self-expanding stent" to exclude from the scope of the "housing part opener" element any housing part opener that uses the self-expanding stent to create an opening or separation in the housing part.

Accordingly, the Court construes the phrase, "a housing part opener for opening said housing part independent of the self-expanding stent," to mean "a device that creates an opening or separation in the housing part, the device not using the self-expanding stent to create an opening or separation in the housing part."

"Hull":

The bottom portion of a sit-on-top kayak, with a bow and stern, generally V-shaped to create a deeper draft than a surfboard to obtain better tracking.
2010

A.

The trial court correctly discerned that the preamble "sit-on-top kayak" should be understood to limit all of the claims to a category of watercrafts and "in general, a preamble limits the invention if it recites essential structure or steps, or if it is 'necessary to give life, meaning, and vitality' to the claim." Catalina Marketing Int'l, Inc. v. CoolSavings.com, Inc., 289 F.3d 801, 808, 62 USPQ2d 1781, 1784 (Fed. Cir. 2002) (quoting Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999)). However, the trial court's explanation of what this limitation is, namely that a sit-on-top kayak has "a generally V-shaped hull portion and a deeper draft than a surfboard to allow better tracking," is not consistent with the plain meaning of the term as used in the patents. Old Town, 2001 U.S. Dist. LEXIS 19680, slip op. at 9. To ascribe a hull shape to "sit-on-top kayak" would be redundant in view of the first element of the independent claims that refers specifically to the sit-on-top kayak as comprising "a hull defining a hull outer surface." If "sit-on-top kayak" meant a craft with a particular hull, then it would be unnecessary to also claim a hull.

Similarly, the meaning of "hull" in the claims was improperly limited by the trial court. The written description is used to define but not limit terms in the claims. See LocTite Corp. v. Ultrasel Ltd., 781 F.2d 861, 867, 228 USPQ 90, 93 (Fed. Cir. 1985) ("That the specific examples set forth in the patents occur at room temperature does not mean that the claims are imbued with a room temperature limitation. Generally, particular limitations or embodiments appearing in the specification will not be read into the claims."). The trial court relied on the written description's statement: "the sit-on-top kayak is somewhat similar to a surfboard in overall shape, but normally has a generally V-shaped hull portion and a deeper draft to allow better tracking." Old Town, 2001 U.S. Dist. LEXIS 19680, slip op. at 8 (quoting the '177 patent, col. 1, ll. 25-28). There are two flaws in the trial court's reliance on this statement. First, the plain meaning of "hull" does not include a particular shape (V) because otherwise the phrase "V-shaped hull portion" would be redundant. Second, the contextual meaning of "hull" also cannot include a limitation on its shape because the qualifier "normally" precludes the term from always requiring a V-shape. In the claims, "hull" appears to be a generally descriptive term and as such the appellant is correct that it should be given its full meaning and no modifiers should be added. See York Prods., Inc. v. Central Tractor Farm & Family Cent., 99 F.3d 1568, 1572, 40 USPQ2d 1619, 1622 (Fed. Cir. 1996) ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning.").

Moreover, the interpretation of "sit-on-top kayak" in the preamble as having a particular hull shape and of "hull" in the claims to be "generally V-shaped to create a deeper draft than a surfboard to obtain better tracking" is directly contradicted by statements in the written description of the '912 patent describing particular embodiments. One such example is for the description of the fourth embodiment:

The bottom portion 418 of the kayak hull 412 may be any size, shape, and/or configuration as appropriate to provide a stable and efficient platform for movement of the kayak 410 through the water.

'912 patent, at col. 9, ll. 17-20 (emphasis added). As the appellant asserts, this is incompatible with the idea that the terms "sit-on-top kayak" and "hull" in the '912 patent require a particular shape. Our broader interpretation of "sit-on-top kayak" and "hull" is not solely for the '912 patent. The terms should be construed similarly in the '177 patent and the '063 patent because they use the same claim terms and, in fact, the preamble and the first line of the claims (referring to a "hull") are identical in all three patents. Also, all three arise from the same original patent application. The terms must be construed in the same way in all three patents. See Jonsson v. Stanley Works, 903 F.2d 812, 818, 14 USPQ2d 1863, 1869 (Fed. Cir. 1990) (holding that when two patents use the same claim terms the prosecution histories of both are relevant).

We, therefore, adopt the district court's construction of "sit-on-top kayak" and its function as a limitation of the claims with the exception of the clause "with a generally V-shaped hull portion and a deeper draft than a surfboard to allow better tracking." That we reject. Old Town, 2001 U.S. Dist. LEXIS 19680, slip op. at 9. The proper definition includes crafts with both displacement and planing hulls.

We agree with the plaintiff that "hull" refers to a structure that forms "the bottom of the kayak" because it is consistent with the usage of the term in the patent itself. We also note that none of the extrinsic evidence refutes this definition.

GO BACK
The devices at issue in this case -- pillows to place between the thighs to relieve musculoskeletal stress and pain while a person is sleeping -- are technologically unsophisticated. There are, however, two principal problems with the wording of the claims. These relate to: 1) the patent's description of the longitudinal axis of the patented pillow as being "a length no less than that of a human thigh," and 2) referring in claim 6 of the patent to "a cushioned device as defined in claim 7," when there is no claim 7 in the patent.

In my original order, I concluded that, notwithstanding potentially inconsistent claim constructions, a person skilled in the art can comprehend precisely what has been patented. On consideration of the patent in its entirety, including the written description, preferred embodiment, and diagrams, along with the claims, I concluded it is apparent that the longitudinal axis of the patented pillow is defined by reference to the thickness, rather than the length, of the human thigh. In light of this understanding, which I deemed to derive readily from the patent as a whole, I concluded that the patent was valid.

The defendant's motion for relief from judgment asks me to consider handwritten notations on a preliminary draft of the patent as evidence of the meaning that the draftsman intended to give to the longitudinal axis. Those notations make clear, the defendant asserts, that the lawyer overseeing the drafting of the patent instructed his associate to define the longitudinal axis of the device by reference to the thickness, rather than the length, of the human thigh. The associate failed to follow that instruction, and his error (using thigh length, rather than thickness as the benchmark) was caught by neither the lawyer submitting the patent, the inventor, nor the patent examiner.

To the extent that the defendant desires that I accept this evidence as proof of the patentee's intent, it is not admissible. The Federal Circuit expressly prohibits reference to extrinsic evidence of this sort in construing the meaning of a patent's terms. Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed. Cir. 1995) (en banc). The court noted that such extrinsic evidence would be admissible to clarify an ambiguity in a contract, will, or deed, and thereby to ascertain the intent of the parties to such instruments. But it also made clear that a "patent, however, is not a contract. . . and patent infringement actions have never been viewed as breach of contract actions." Id. at 985.

I do not, accordingly, consider this extrinsic evidence in construing the meaning of claims or determining the validity of the patent. At most, such evidence explains why the patent contains the language that it does; that evidence cannot, however, be used to construe the patent, or to support a finding of either validity or invalidity.

The Federal Circuit has made clear that it does not "permit courts to rewrite claims." Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1357 (Fed. Cir. 1999). Accord, Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 1584 (Fed. Cir. 1995) ("Although we construe claims, if possible, so as to sustain their validity,. . .it is well settled that no matter how great the temptations of fairness or policy making, courts do not redraft claims."); Becton Dickinson & Co. v. C.R. Bard Inc., 922 F.2d 792, 799 n. 6 (Fed. Cir.1990) ("Nothing in any precedent permits judicial redrafting of claims. At most there are admonitions to construe words in claims narrowly, if possible, so as to sustain their validity.").

Despite the rigor of this stricture, I remain convinced that the equally fundamental obligation to "construe claims, if possible, so as to sustain their validity," Quantum, supra, justifies my original decision upholding validity in this case. No reader of the claims--much less, a reader skilled in the art--could read them, despite their poor draftsmanship, without understanding precisely what was patented.

The Supreme Court has instructed that courts "should proceed in a liberal spirit, so as to sustain the patent and the construction claimed by the patentee himself, if this can be done consistently with the language which he has employed." Klein v. Russell, 86 U.S. 433, 466, 22 L. Ed. 116 (1873). I confirm my earlier decision that the language employed in the patent here, even if poorly drafted, can be read to sustain the validity of the patent.

When the questionable language describing the longitudinal axis of the pillow is placed in context, it is apparent that the length of the pillow is described in relation to the thickness of a human thigh. The description of the pillow provides that the pillow is to be sandwiched between the legs of the user, and further describes two "leg engagement areas" wherein the thighs would be. If the legs are to be "engaged" in the pillow, then clearly the pillow would be as long as the thigh is wide. If the pillow were several inches longer, the legs would not be engaged by it. While a more careful description of the length
of the pillow should have been provided, it is apparent from the patent precisely what is being described: the pillow fits between the user's legs, and the concave "leg engagement areas" cradle and conform to the user's thighs.

As detailed in my earlier decision, the numerous diagrams included with the patent demonstrate that the longitudinal axis of the pillow corresponds to the thickness of the thigh rather than the length of the femur. Additionally, the suggested measurement for a "proper fit for most individuals" includes a longitudinal axis of ten inches. As discussed in my earlier decision, this measurement would relate to the length of the femur of two percent of adults. Thus, especially when construed in light of the pillow's orientation between the legs of the user, and the description that the pillow "engages" the leg, the length of the longitudinal axis must relate to the thickness of a typical human thigh.

Once the pillow has been placed between the legs in the manner described by the text and shown in the diagrams, the longitudinal axis runs parallel to a line from the user's navel to his back, not along his leg from his hip to his knee. Specifically, the length of the pillow corresponds to the thickness of the thigh, not the length of the femur. The text of the patent, the diagrams illustrating the product, and the specific measurements given as the proper fit for most individuals are all consistent with this interpretation.

The patent can reasonably be read as stating that the length of the pillow is not less than the length of the thickness of a typical human thigh. Such reading does not require me to create new terms in the text of the patent, but rather is the result of reading the terms of the patent in their proper context. 1

1 Even if a reading of the disputed language would ordinarily indicate that reference was made to the length of a typical femur, the patent as a whole makes clear the drafter's intended meaning. "The words of a claim will be given their ordinary meaning unless it appears that the inventor used them differently." ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1579 (Fed. Cir. 1988) (internal citation omitted).

The main issue presented by OrthoSupport on appeal is one of claim construction, specifically, whether the district court properly construed the claim limitation, "said longitudinal axis defines a length of no less than that of a human thigh." In construing claims, the analytical focus must begin and remain centered on the language of the claims themselves, for it is that language that the patentee chose to use to "particularly point [] out and distinctly claim [] the subject matter which the patentee regards as his invention." 35 U.S.C. § 112, paragraph 2. See generally Interactive Gift Express, Inc. v. Compuserve Inc., 256 F.3d 1323, 1331, 59 U.S.P.Q.2D (BNA) 1401, 1406-07 (Fed. Cir. 2000).

"It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history. Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996) (citation omitted). All intrinsic evidence is not equal however. See id. at 1582, 39 U.S.P.Q.2D (BNA) at 1576-77 (delineating a hierarchy among the intrinsic evidence).

First, we look to the claim language. See id.; Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 U.S.P.Q.2D (BNA) 1161, 1165 (Fed. Cir. 1999) ("The starting point for any claim construction must be the claims themselves."); Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620, 34 U.S.P.Q.2D (BNA) 1816, 1819 (Fed. Cir. 1995) (noting first the mandate to consult the claims). Then we look to the rest of the intrinsic evidence, beginning with the specification and concluding with the prosecution history, if in evidence. See Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2D (BNA) at 1576-77 (delineating this order); Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2D (BNA) 1321, 1329 (Fed. Cir. 1995) ("Claims must be read in view of the specification, of which they are a part."); aff'd, 517 U.S. 370, 370-71, 116 S. Ct. 1384 (1996); Bell Communications, 55 F.3d at 620, 34 U.S.P.Q.2D (BNA) at 1819 (noting first the mandate to consult the claims, followed by inspection of the rest of the specification).
If the claim language is clear on its face, then our consideration of the rest of the intrinsic evidence is restricted to
determining if a deviation from the clear language of the claims is specified. A deviation may be necessary if "a patentee
[has chosen] to be his own lexicographer and use terms in a manner other than their ordinary meaning." Vitronics, 90 F.3d at
1582, 39 U.S.P.Q.2D (BNA) at 1576. A deviation may also be necessary if a patentee has "relinquished [a] potential claim
construction in an amendment to the claim or in an argument to overcome or distinguish a reference." Elkay Mfg. Co. v.
Ebco Mfg. Co., 192 F.3d 973, 979, 52 U.S.P.Q.2D (BNA) 1109, 1113 (Fed. Cir. 1999). If, however, the claim language is
not clear on its face, then our consideration of the rest of the intrinsic evidence is directed to resolving, if possible, the lack
of clarity.

II.
The district court held that the length of the longitudinal axis of the patented pillow corresponds to the length of a human
thigh as measured from the front of a human (belly button side) to the back. The district court called this dimension the
"thickness" of the thigh. We conclude that this definition is consistent with the intrinsic record.

Looking first at the claim language, OrthoSupport contends that the plain meaning of the "length" of a human thigh refers to
the distance from one's hip to knee. However, a "length" does not necessarily refer to an object's longest dimension. The
Oxford English Dictionary provides the following three definitions for "length:"

1. The linear magnitude of any thing as measured from end to end; 2. the greatest of the three dimensions of a body or
figure; 3. longitudinal extent.

Oxford English Dictionary 893 (2d ed. 1989). Thus, the length as used in the claim can be the "distance from end to end" of
a person's thigh as measured along the longitudinal axis of the pillow when the pillow is placed between the person's thighs.
Alternatively, the length can be the greatest dimension of the thigh. Looking at the claim in isolation, the term is somewhat
ambiguous.

We next look to the specification, which provides only one reference to the disputed claim language.

Pillow 10 has a major longitudinal axis 100 extending through the medial section 12 and the end sections 14, 16 that
defines a length no less than a typical human thigh in the preferred embodiment.

771 patent, col. 3, ll. 53-56. Figures 1 and 5 show that the longitudinal axis 100 is oriented in the fore to aft direction of the
body when the pillow is placed between a person's thighs. When reading the claim in light of the specification, it is clear
that the claim term "length" refers to the "magnitude of [the thigh] as measured from end to end" along the longitudinal axis
of the pillow when in use. The dimension of the thigh along that axis is the dimension of a front to back diameter of the
thigh not the dimension from hip to knee, which is a dimension normal to the "longitudinal axis." While the definition of
"length" in the claim may be ambiguous on its face, our review of the specification, drawings, and prosecution history
indicates that the term "length" is only susceptible to the meaning recognized by the district court. Thus, the district court
correctly construed the claim consistent with the intrinsic record.

OrthoSupport cites Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1357-59, 52 U.S.P.Q.2D (BNA) 1029,
1034-35 (Fed. Cir. 1999), for the proposition that if a claim term is susceptible to only one reasonable interpretation, and
that interpretation makes the claim "non-sensical," then the claim is invalid. While that statement of the law is accurate, it is
inapplicable to the facts of this case. In Process Control, this court rejected a patentee's argument that the exact phrase that
appeared in two different claim limitations had two different meanings within the same method claim. Id. at 1356-57, 52
U.S.P.Q.2D (BNA) at 1033-34. The court held that the phrase used in the same way in the same claim had to be interpreted
in the same way, and under that construction the claim "makes no sense." Id. at 1358, 52 U.S.P.Q.2D (BNA) at 1034. Thus,
the court held the claim invalid under 35 U.S.C. § 101 for lack of utility and under 35 U.S.C. § 112, paragraph 1, for lack of
enablement. Id. at 1359, 52 U.S.P.Q.2D (BNA) at 1035.

Here, the claim term "length" is only susceptible to one reasonable interpretation. Moreover, unlike Process Control, the one
interpretation does not make the claim "non-sensical." In fact, the district court's claim construction is the only construction
that makes sense. This is not a case where the same claim term requires two different meanings within the same claim to
make sense. The district court defined the claim term consistent with the intrinsic record and in a way that preserves the claim's validity.

OrthoSupport also contends that the district court should have considered handwritten notes in the prosecuting attorney's file regarding the disputed claim terms. We disagree. Because the claim language here is susceptible to a reasonable interpretation consistent with the intrinsic record, the district court properly did not consider the extrinsic evidence. See Key Pharms. v. Hercon Labs. Corp., 161 F.3d 709, 716, 48 U.S.P.Q.2D (BNA) 1911, 1917 (Fed. Cir. 1998). Furthermore, notes of a patent attorney which do not appear in the prosecution history are of little or no probative value. Cf. Markman, 52 F.3d at 985, 34 U.S.P.Q.2D (BNA) at 1334 (Fed. Cir. 1995) ("The subjective intent of the inventor when he used a particular term is of little or no probative weight in determining the scope of a claim (except as documented in the prosecution history.").

2. A hydraulic power unit

I conclude that the term "a hydraulic power unit" as used in claim 1 of the '935 patent means a group of hydraulic components, including a hydraulic fluid reservoir, a pump and lift hydraulic cylinder. The parties dispute whether the claim term should be construed to be a "unitary" hydraulic power system. I agree with plaintiff that adding the word "unitary" to describe the hydraulic components adds nothing but confusion to the construction of the term and would be an improper reading of a limitation from the specification into the claim.

Defendant contends that referring to the hydraulic components as "a unitary hydraulic power system formed on a base" merely defines "unit" as the term is used in claim 1. (It maintains that its plows lack a "unitary hydraulic power unit." Def.'s Br., dkt. # 72, at 20.) However, defendant's reference to a "unitary hydraulic power unit" makes it clear that "unitary" is intended to express something in addition to "unit." The additional something expressed by the use of the word "unitary" is the concept of locating the hydraulic components on the same base or confining them to a single structure.

Defendant cites the Summary of the Invention in the specification to support its contention. Therein lies the problem. "[L]imitations from the specification are not to be read into the claims." Golight, 355 F.3d at 1331. The specification provides a preferred embodiment, but the scope of the claim term depends on the claim and not a preferred embodiment. Kara Technology Inc. v. Stamps.com Inc., 582 F.3d 1341, 1347 (Fed. Cir. 2009) ("The claims, not specification embodiments, define the scope of patent protection."). Nothing in the patent suggests that the patentee was acting as his own lexicographer or disavowing claim scope when he used the term "unit." Patentees are not required to provide an example of every embodiment of a claimed structure in a patent's specification. By itself, the disclosure of only one embodiment does not justify limiting a claim's scope to that single disclosed embodiment. Abbott Laboratories v. Sandoz, Inc., 566 F.3d 1282, 1290 (Fed. Cir. 2009). Thus, although the hydraulic power unit as claimed in the patent requires certain hydraulic components, the claim does not require locating those components on the same base. In other words, nothing in the patent limits the hydraulic power unit to a unitary system as defendant has proposed.

In addition to its unitary argument, defendant contends that a proper construction of a hydraulic power unit should state that it does not include the manifold. Such an addition is unnecessary. Claim 1 recites "said manifold connected to and mounted on said hydraulic power unit." 935 pat., col. 6, Ins. 62-63. This portion of the claim makes it clear that although the manifold is separate from the hydraulic power unit, it must be connected to and mounted on it. Therefore, it would be superfluous to say that the manifold is not included in the construction of "a hydraulic power unit."

2014

d. "hydraulically full"

The term "hydraulically full" appears in Claims 1, 55, 57 and 58 of the '532 patent. CFMT asserts that the term means that the process vessel becomes completely filled with one or more process fluids. YieldUP, on the other hand, asserts that the term "hydraulically full" requires that the vessel lack voids, dead ends, blind spots, or other surface irregularities within the
vessel.

The specification of the '532 patent states that "hydraulically full" means that the wafer vessel becomes completely filled with process fluids. The specification goes on to say that "the vessel should not have blind spots, dead-ends, interior surface irregularities or the like where a process fluid or ambient atmosphere could be trapped." In the prosecution of the '123 patent, which also contains the term "hydraulically full," McConnell and Walter clarified the ambiguity.

As pointed out in the specification . . . it is important that the design of the wafer vessel permits it to become hydraulically full of fluid during the processes of the present invention. Thus the vessel should not have blind spots, dead ends, interior surface irregularities or the like, where a process fluid or ambient atmosphere could be trapped.

The inventors relied on this definition of hydraulically full to distinguish their invention from the prior art. Therefore, the court finds, as advocated by YieldUP, that "hydraulically full" means completely filled with process fluid such that there are no blind spots, dead-ends, interior surface irregularities or the like, where a process fluid or ambient atmosphere could be trapped.

2015

1. "Hydrophilic lens body"

The plaintiff proposes "a lens body, which is the interior core portion of a contact lens, that is capable of attracting and absorbing water." The plaintiff claims that "hydrophilic" in this context means "capable of attracting and absorbing water." The defendants propose "the hydrophilic core lens which, in a hydrated state, prior to surface treatment has an already highly hydrophilic surface as measured by the advancing contact angle measurement." The defendants claim that "hydrophilic" means "having a surface having an affinity for water as measured by the advancing contact angle measurement." The main disputes are 1) whether "lens body" includes the surface and 2) whether the hydrophilic nature of the lens body needs to be determined by the contact angle measurement.

The defendants argue that the "lens body" includes the surface because the invention is directed to contact lenses already having hydrophilic surfaces. See '327 patent, 2:59-65. The defendants also contend that the '327 patent only describes contact angle as a means for determining the hydrophilicity of the contact lens surface. '327 patent, 3:11-13. The defendants point to extrinsic evidence to show that contact lens practitioners measure wettability through the contact angle.

Although the invention is directed to contact lenses with hydrophilic surfaces, the claim refers to a contact lens having two structures, a "hydrophilic lens body" and a "tear-wettable surface layer." '327 patent, 8:8-9. In addition, the intrinsic evidence does not support placing a contact angle limitation for measuring wettability. The patent specifically states that an example of acceptable wettability is determined based on contact angle. '327 patent, 3:11-13.

The Court construes "hydrophilic lens body" to mean "a lens body, which is the interior core portion of a contact lens, having an affinity for and capable of absorbing water."

2016

5. "Hydrophobe Precursor"

Claim 16 of the '693 patent also refers to a "hydrophobe precursor." That claim states in part, "said pellicle having been formed by application of an aqueous mixture of a hydrophobe precursor to the surface of a sheet of absorbent material." (Emphasis added.) Fort James suggests that this term has plain meaning to a POSITA and requires no interpretation. 54 Coating Excellence suggests that the term should be construed to mean "any organic material combining a site reactive toward starch or cellulose with a long hydrophobic tail and having a surface energy of less than 35 dynes/cm when applied to fibers on the surface of the inner absorbent layer." 55
The specification for the '693 patent, in a number of locations, describes the use of a hydrophobe precursor to form the foraminous hydrophobic water-vapor-permeable pellicle. (E.g., '693 patent, col. 2, lines 7-9; col. 4, lines 60-65.) The specification describes "the most convenient method of forming" the pellicle. (Id., col. 7, lines 28-47.) The specification explains that "typically" there will be a surface energy of less than 35 dynes/cm. (Id., col. 7, lines 47-50.) The specification then goes on to describe broadly what a hydrophobe precursor "may be": "Broadly speaking, a hydrophobe precursor may be any organic material combining a site reactive toward starch or cellulose with a long hydrophobic tail such as, for example, a C14-C18 carbon chain length." ('693 patent, col. 8, lines 1-4.) The inventors further identify specific types of chemicals that should be considered "a hydrophobe precursor" and set forth a typical structure for a "hydrophobe precursor." ('693 patent, col. 8, lines 4-52.)

The relationship between the hydrophobe precursor and the resulting pellicle is plain from the language of claim 16. It is, therefore, a close call whether any construction is necessary. However, to avoid any confusion by a juror regarding what a precursor is, the undersigned recommends the following construction: "A precursor is a material from which another material can be formed. A hydrophobe precursor may be, but is not limited to, any organic material combining a site reactive toward starch or cellulose with a long hydrophobic tail, as well as the specific hydrophobic precursors identified in the specification of the '693 patent and materials having the structure of the hydrophobe precursors disclosed in the specification of the '693 patent."

In short, while certain aspects of Coating Excellence's construction are mentioned as embodiments of the invention, the undersigned finds that the specification does not limit the term "hydrophobe precursor" to such embodiments.

The meaning of the term "hypotenuse" is not disputed. Accordingly, the court concludes that "hypotenuse" means "the edge of a triangular cutting surface tooth opposite the interior angle of the triangle that is closest to ninety degrees."
10. Identical

The parties do not agree on the proper interpretation of "identical" in claims 1, 15 through 17, 15 through 20, 23, 29, 31, 37 through 38, 41 through 42, 50, 59, and 65 of the '486 patent and claims 1 through 3, 10 through 12, 23, 27 through 28, and 30.

Unilin takes the position that "identical" means "essentially the same or having the same origin." (Unilin Open. Br. 22-24.) Alloc states that "identical" means "the same." (Alloc Initial Mem. 16-17.) (citing Merriam Webster's On Line Dictionary and Lampi v. Am. Power Prods., No. 93-C-1255, 1997 U.S. Dist. LEXIS 9942, 1997 WL 392239 *7-*8 (N.D. Ill. July 8, 1997).) Unilin maintains that Alloc's proposed construction of "identical" for the claims in which "identical" modifies "one of said panels" is insufficient. At the Markman hearing, Alloc stipulated that "identical" did not rule out minor machining variations.

The term "identical" appears in claim 1 of the '486 patent as follows:

said coupling parts configured to cooperate by coupling with cooperative coupling parts of an identical one of said panel;
said coupling parts comprising a tongue and a groove configured to lock together coupled identical ones of said panel in a direction perpendicular to the plane of the coupled panels when cooperative coupling parts of the panels are engaged, . . . said locking elements including cooperative contact surfaces arranged to be engaged when adjacent identical ones of said panel are coupled together with their coupling parts cooperatively engaged to prevent substantial separation of two coupled identical ones of said floor panels at said upper side edges in a direction perpendicular to the edges of the panel sides and parallel to the undersides of the coupled floor panels; . . . said cooperative contact surfaces defined respectively by said protrusion and said recess, and configured, when engaged in a cooperative relationship upon coupling in a common plane of two identical ones of said panel,

('486 patent, 13:58-64; 14:3-21)(emphasis added.)

It is well established that if more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all consistent meanings. See Brookhill-Wilk 1, LLC. v. Intuitive Surgical, Inc., 334 F.3d 1294, 1300 (Fed. Cir. 2003). In support of its contention that more than one meaning of "identical" is consistent with the specification, Unilin cites four excerpts of language found in the "Brief Summary of the Invention" portion of the '486 patent specification, (1:66-2:22; 2:38-40; 3:19-22; 4:9-10.) Unilin also cites claim 61 of the '486 patent -- a "method" claim. Unilin has not articulated why it believes the cited portions of the specification and claim 61 support its contention. Unilin has not persuaded the Court that more than one meaning of "identical" is supported by the specification.

Both proposed definitions of "identical" are consistent with dictionary definitions of identical. However, the definition of "identical" as meaning "the same" comports best with the use of "identical" in the patent claims and specification. Unilin's definition would add ambiguity. Therefore, the Court construes "identical" as meaning "the same," noting that such definition does not rule out minor machining variations.

II. Identical

As previously noted, Claims 1 and 11 of the '875 patent describe "two separable, identical half shells" while Claim 10 of the '227 patent provides for "two separable half-shells, both half-shells being identically shaped." (App. To Def.'s Markman Br. Ex. A at Col. 4, L. 26 and Col. 5, L.L. 24-25; Ex. B at Col. 5, L.L. 6-7)(emphasis added). There is no dispute that "identical" modifies "half-shells." The only question is the extent of that limitation.

Lampi asserts that "identical" should be interpreted to allow for small differences between the half-shells. Thus, Lampi contends, we should define "identical" as similar or having such close resemblance as to be essentially the same. APP responds that the customary and ordinary meaning of "identical" is the same or exactly alike so that the half-shells are interchangeable.
Once again, we begin with the ordinary and customary meaning of "identical." We believe that meaning is the same or exactly alike. To depart from this meaning, there must be some indication in the claims or specification that the patentee intended a different one. Based on our review of the patents, that is not the case here. Claims 3 and 14 of the '875 patent and Claim 5 of the '227 patent describe half-shells that "are injection molded parts made of plastic." (App. To Def.'s Markman Br. Ex. A at Col. 4, L.L. 32-33 and Col. 6, L.L. 2-3; Ex. B at Col. 4, L. 53). The specifications explicitly provide that the product can be cost-effectively produced using injection molded half-shells and that "both half shells are identically shaped so that they are interchangeable." (App. To Def.'s Markman Br. Ex. A at Col. 2, L.L. 16-21; Ex. B at Col. 2, L.L. 19-24).

Reading the claims in light of the specifications of which they are a part, as we must, it is clear that "identical" means half-shells which are exactly alike or the same so as to be interchangeable.

Moreover, Lampi's interpretation that the half-shells should only be similar and allow for small differences renders the term "identical" meaningless or mere surplusage. Indeed, the term "half" already implies some degree of similarity between the two shells--though not exact similarity as two halves are not necessarily exact in every detail. Thus, if the patentee intended to claim similar half-shells having small differences, he could easily have omitted the term "identical" from the '875 patent and inserted "similar" or "essentially the same." Even more telling is the patentee's use of "identical" in the '227 patent--the continuation of the '875 patent. The patentee explicitly claimed "two separable half-shells, both half-shells being identically shaped." (App. To Def.'s Markman Br. Ex. B at Col. 5, L.L. 6-7)(emphasis added). We will not simply read that term out of the claims by interpreting it as merely similar or allowing for small differences. Rather, we find that the patentee claimed half-shells which are the same or exactly alike both functionally and structurally.

Accordingly, we conclude that the term "identical," when used in the context of "identical half shells" or "half-shells identically shaped," means the same or exactly alike.

2020

The primary claims terms at issue are "positional coordinates," "identification of a position" and "relative to" in independent claims 1, 17 and 26. The patent's specification (together with the plain language of the claims and the prosecution history) mandates the court's construction of "positional coordinates" as "a set of coordinates defining a single reference point within a corresponding geographic vicinity which operates to determine the corresponding geographic vicinity." CIVIX slip op. at 35. CIVIX argues that the term should be construed to refer to any "collection of values sufficient to identify a vicinity . . .". This argument reads out the word "coordinates" in the claim, and is contrary to the repeated language and examples in the specification and the claims stating that the positional coordinates represent a single location, within a vicinity. (See '525 patent, col. 5, II. 16,17 ("The positional coordinates locate one location within the geographic vicinity . . ."); col. 8, II. 36-38 (stating that figure 4A "illustratively shows the positional coordinates . . . for each vicinity . . ." and depicting geographic vicinities each centered around positional coordinates). Figures 3A and 3B are limited to the user display and do not correspond to the "positional coordinates" limitation of the claims. The Semple letter in the file history, which the inventor with counsel chose to include in the '525 patent's public record, further confirms this construction.

Similarly, the district court also properly construed the term "relative to" ("identification of a position . . . relative to the positional coordinates and other items of interest . . .") to denote that the "information transmitted to a user of the system displays the items of interest only relative to the positional coordinates" in an internal grid system, as opposed to absolutely, such as by reference to that item of interest's latitude and longitude. CIVIX slip op. at 40. The prosecution history, together with the claims language, require this construction. CIVIX amended independent claims 1, 17 and 26 by adding the limitation "relative to" in order to overcome an examiner's rejection for indefiniteness, which stated that "the position of an . . . item . . . can be absolute or relative. If the position is meant to be relative it is necessary to distinctly point out the relativity."

CIVIX argues this construction renders the GPS embodiment unworkable, because the system would have to store nearly an infinite number of positional coordinates for each item of interest to allow for continuous redefinition, and because, by referring to a GPS system, the specification implicitly references the use of a system such as latitude and longitude to define a position. However, as the district court's opinion thoroughly discussed, the prosecution history, the overall structure of the specification and the appended source code (which only provides for the user to select a pre-defined area of interest, and not define the positional coordinates himself), as well as the extrinsic evidence, all lead to the conclusion that the claims identify the position of the item of interest in relation to an arbitrary reference point, not by its "absolute" location in a
generally accepted coordinate system. There is no indication in the record that the GPS embodiment stores or transmits location using latitude and longitude. Even if there were, the GPS embodiment was described prior to the claim amendment, and remained in the specification without modification. If the GPS embodiment uses absolute positioning, it falls outside the amended claims and is dedicated to the public. Moreover, as further discussed below, even if CIVIX' claims encompassed the use of latitude and longitude as positional coordinates, defendants' systems still would not infringe because they do not locate each item of interest through "positional coordinates" of a reference point other than that of the item of interest searched by the user, and they do not locate their geographic vicinities by reference to such positional coordinates.

Finally, the considerations requiring the construction of the above two terms together mandate the construction of the term "identification of a position" as "coordinates defining a location using the positional coordinates of the vicinity as a reference." CIVIX slip op. at 41.

2. "IDENTIFICATION STRUCTURE"

The term "identification structure" appears in independent claims 1,9,14, and 18 of the 537 patent and independent claims 1 and 10 of the 728 patent. Claim 1 of the 537 patent states that:

the special lock [would have an] identification structure associated therewith that matches an identification structure previously provided to the luggage screening entity, which special lock the luggage screening entity has agreed to process in accordance with a special procedure…the identification structure signaling to a luggage screener of the luggage screening entity who is screening luggage that the luggage screening entity has agreed to subject the special lock associated with the identification structure to the special procedure…the luggage screening entity acting pursuant to a prior agreement to look for the identification structure while screening luggage and, upon finding said identification structure on an individual piece of luggage, to use the master key previously provided [to open the luggage].

537 patent, col. 6, 11. 14-19, 23-29 & 31-37. Claims 4 and 6, dependent to claim 1, contemplate the identification structure being located directly or formed integrally with the special lock. Claim 9 is nearly identical to claim 1 but the special lock would have a first lock as opposed to a combination lock (covered by claim 1). Claim 14 and dependent claim 15 contemplate a special lock with a combination lock portion and a master key lock portion, where the identification structure is integrally formed with the special lock, while claim 18 covers the same scope as claim 14 but contemplates a special lock with a first lock portion and a master lock portion. Claim 1 of the 728 patent, with respect to the term "identification structure" in sum and substance resembles claim 1 of the 537 patent, but replaces references to "airline baggage," "airline luggage inspection," "luggage screener," and "luggage screening entity" with "carrier baggage inspection," "baggage screening entity," and "baggage screener". Similarly, as with the 537 patent, claims 4 and 5, dependent to claim 1, contemplate the identification structure described in claim 1 as being integrally formed with the special lock where the signaling from the identification structure is visual. Claim 10 of the 728 patent resembles claim 1 in sum and substance but contemplates a first lock portion as opposed to a combination lock portion.

Tropp's proposed construction for identification structure is "indicia associated with a lock that signals to a luggage or baggage screener that the lock is subject to a special screening procedure." Travel Sentry's proposed claim construction for "identification structure" is "an indicia such as a marking, stamping, etching, casting, molding, labeling, inscribing of an alphanumeric symbol, logo, or other distinctive marking." Tropp contends that Travel Sentry's proposed construction only provides examples of indicia but does nothing to further construction of the term "identification structure". (Def.'s Br. 9). Travel Sentry acknowledges that the term "indicia" is a broad term and argues that the specifications use the term "indicia" in referring to the identification structure but does not otherwise distinguish its definition from Tropp's beyond asserting that Tropp's proposed construction is "imprecise, circular, and inappropriately vague." (Pl.'s Br. 8).

The claim language in both the 728 and 537 patents contemplate that "identification structure" is broader than the examples offered by Travel Sentry. The patents-in-suit provide for embodiments where the identification structure may be "located directly" on the special lock, or "integrally formed" with it. The claims do not support limiting identification structure to "an indicia such as a marking, stamping, etching, casting, molding, labeling, inscribing of an alphanumeric symbol, logo, or other distinctive marking." The specification to the 728 patent states that "indicia" is a "broad term and can also include the
special lock itself... a distinctive physical characteristic such as shape, texture, weight and/or other characteristic such as color, that makes it instantly recognizable by individuals... [a]lternatively, a distinctive chemical or electronic characteristic can be used - in short, any distinctive characteristic that can be instantly recognized by persons looking for it." 728 patent, col.4, 11. 44-55. The 537 patent also supports a broad reading of the identification structure. 537 patent, col. 4, 11. 1-16, col. 5, 24-31.

The specifications, therefore, do not support reading Travel Sentry's proposed limitations into the claim terms. See Specialty Composites v. Cabot Corp., 845 F.2d 981, 987 (Fed. Cir. 1988). Read in light of the specifications, the claims clearly contemplate that the identification structure may be associated with a lock (e.g., on a tag near the lock), on the lock, or the identification structure can even be the lock itself. The examples enumerated by Travel Sentry in its definition do not appear in the claims nor are they even acknowledged in the patents' specifications. Accordingly, the Court finds that grafting these examples onto the definition serves no purpose and would, in any event, be misleading. To that end, the Court adopts Tropp's construction and construes "identification structure" as indicia associated with a lock that signals to a luggage or baggage screener that the lock is subject to a special screening procedure.

I. Claim 1: "an identifying feature"

Claim 1 of the '423 Patent provides:

A saw chain comprising:

. . . . at least one link in the sequence of links provided with an identifying feature that causes that link to visually stand out from other links performing a similar function in the saw chain, said feature provided such as to enable that link to be identified by a user regardless of wear to the saw chain . . . .

(disputed term emphasized).

Defendants contend the disputed term means "[p]ermanent coloration or shape of the identifying link causes the link to visibly stand out regardless of dirt or wear on the chain." Defendants note the '423 Patent's specification describes a link for a saw chain that can be readily discerned by a feature that does not wear off after use. '423 Patent col.1 ll.31-39 (filed Aug. 26, 1997). "In a preferred embodiment, the link is a tie strap that is coated with zinc finish that is noticeably different in appearance than the other links of the chain." '423 Patent col.1 ll.51-53. These portions of the specification, however, do not support Defendants' construction. The disputed term merely requires an identifying feature that causes the link to visually stand out from other links that will enable that link to be identified by a user regardless of wear to the saw chain. This Claim 1 term does not make any reference to permanent shape or coloration. Moreover, the specification demonstrates neither permanent shape nor color is required by this portion of Claim 1. In addition to a preferred embodiment zinc-coated link, the specification provides "[o]ther finishes or even a modified link configuration will enable the user to identify the link." '423 Patent col.1 ll.54-58.

 Plaintiffs contend the disputed term is clear on its face and, therefore, can be understood by its ordinary meaning. The Court agrees.

The Federal Circuit has held the task of construing claims is not always difficult:

In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.

Acumed, 483 F.3d at 805 (quoting Phillips, 415 F.3d at 1312). Here the ordinary meaning of the disputed term is apparent from reading Claim 1. Contrary to Defendants' assertions, there is not any reason to conclude that the required "identifying feature" referred to in Claim 1 must necessarily be either a permanent color or a permanent shape.
Moreover, the dependent Claim 2 sets out that "one link is provided with a wear resistant coating that provides that link with a different appearance." '423 Patent col.4 ll.21-23. Even if the meaning of Claim 1 were not readily apparent, Claim 2 clarifies a particular, permanent coloration of coating is not required. See Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1369 (Fed. Cir. 2007)(under the doctrine of claim differentiation, different words or phrases in different claims presume different meanings or scope).

Claim 1 is clear on its face and relatively straightforward. It merely requires

an identifying feature that causes that link to visually stand out from other links performing a similar function in the saw chain, said feature provided such as to enable that link to be identified by a user regardless of wear to the saw chain

Accordingly, Court finds this term is understood by its ordinary meaning alone.

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11. If Said Operation of Said Vacuum Pump is Interrupted

Claim 14 of the '553 patent provides: "a reserve vacuum assembly coupled to said positioning ring to sustain the vacuum within said cavity if operation of said vacuum pump is interrupted as the head moves across the aperture." 28 Defendants request that this court construe the term to mean: "the trigger for using the reserve vacuum assembly is interruption of the operation of the vacuum pump." (Defs.' Br. at 59.) Plaintiff objects to the use of the word "trigger," and contends that: "To the contrary, in the preferred embodiment, the reserve vacuum assembly is a vacuum tank that "maintains" the vacuum upon pump failure-it need not be "triggered" by interruption of the operation of the vacuum pump." (Pl.'s Reply Br. at 48) (emphasis added). This argument, however, supports the insertion of the word trigger. In other words, even according to plaintiff's own contention, the tank of the preferred embodiment only maintains the vacuum in the event that the pump fails and thus the operation of the vacuum pump is interrupted as recited in the claim language. The inverse of that conclusion is that unless and until the pump fails, the vacuum is not maintained by the reserve tank. Thus the trigger for the maintenance of the vacuum by the reserve tank is in fact the failure of the pump to operate. The specification of the '553 patent does not indicate otherwise: "In the event that the operation of the vacuum pump is interrupted, such as due to a power loss, the reserve tank 215 is preferably structured to maintain a sufficient vacuum to continue the positioning ring's hold on the eye until the movement of the cutting head assembly 50 over the eye is completed." Col. 19, Ins. 10-15. Therefore, I therefore conclude that defendants have proposed an accurate construction of the term: the trigger for using the reserve vacuum assembly is interruption of the operation of the vacuum pump.

28 This Court above construed the term "reserve vacuum assembly" to mean: "the structure, including but not limited to a tank, to one of ordinary skill in the art that is a reserve source of vacuum."

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ii. Step a: "Illuminating a subject's pupil and focusing an image of the subject's pupil on an image plane."

<table>
<thead>
<tr>
<th>Step a B of Claim 9</th>
<th>Plaintiff's Proposed Construction</th>
<th>Defendant's Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>illuminating a subject's pupil and focusing an image of the subject's pupil on an image plane</td>
<td>causing light to reach the pupil portion of the eye of a person being</td>
<td>passing light through the pupil and receiving a backscatter of light exiting back through the pupil for</td>
</tr>
</tbody>
</table>
tested and using equipment such as a lens to provide an image of the pupil to an image plane such as the image plane of a camera, for use in later steps of Claim 9

creating an illumination or brightness inside the pupil which forms an image of the pupil and determining whether the person's pupil is centered and located at the correct distance from a testing instrument such that the illuminated image of the person's pupil formed on an image plane has sufficient intensity and distribution of light falling on a video camera to perform the impairment test

aa. "Illuminating a subject's pupil"

Although Defendant proposed two alternative constructions in its pre-hearing brief, counsel chose to focus exclusively on the second at the hearing. 3 Plaintiff's proposed construction relies primarily on ordinary meaning, supplemented with dictionary definitions. Defendant contends that the literal meaning of this phrase is inoperable because the pupil of the eye is in fact a hole, which is not a structure that can, by itself, reflect light back to the image plane. (Paper 76, at 11). Defendant's expert Mr. Kielar stated that "simply casting light specifically at the pupil of the eye will not yield any image on the image plane and would serve no purpose to the instrument." (Id.).

bb. Preferred Construction

**Plaintiff's construction is the better choice.** Defendant's position appears to be that the claims must be limited to the preferred embodiment in part because a broader claim would not work. First of all, the preferred embodiment never limits or confines the claims unless the claim language so states:

In particular, the Federal Circuit has "repeatedly warned against confining the claims" to the specific embodiments, or examples, of the invention that the inventor has provided in the specification. Phillips, 415 F.3d at 1323; see Anchor Wall Sys., Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1308 (Fed. Cir. 2003) ("The general rule, of course, is that claims of a patent are not limited to a preferred embodiment, unless by their own language."). As the court pointed out in Acumed, the "preferred embodiment cannot be the only product covered by the claims; if it were, the claims themselves would be unnecessary." 483 F.3d at 809. Importantly, this principle generally holds true even where the specification discloses only a single preferred embodiment: the Federal Circuit "ha[s] expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." Phillips, 415 F.3d at 1323 (citing Gemstar-TV Guide Intern., Inc. v. Int'l Trade Com'n, 383 F.3d 1352, 1366 (Fed. Cir. 2002)).

3 The first was: "illuminating with a light the pupil of the person being tested and determining whether the person's pupil is centered and located at the correct distance from a testing instrument such that an image of the person's pupil formed on an image plane has sufficient intensity and distribution of light falling on a video camera to perform the impairment test."
Second, Defendant's assertion that the only way to implement the method is that in the preferred embodiment does not necessarily make it so. While "an assertion by the patentee that [the embodiment] is the only way to maintain the needed traction force would evidence an intention to narrow the scope of independent claims, see The Saunders Group, Inc. v. Comfortrac, Inc., 492 F.3d 1326, 1332 (Fed. Cir. 2007), there is no such assertion in this patent.

Mr. Kielar states:

The pupil of the eye, however, is a hole, it is not a structure which can possibly, by itself, reflect light back to the image plane. Simply casting light specifically at the pupil of the eye will not yield any image on the image plane and would serve no purpose to the instrument. It is only through the generation of the backscattered light exiting the pupil, that the pupil can be said to be "illuminated" or lit up for the purposes of imaging. Therefore, the step of "illuminating a subject's pupil" must embody the backscattering technique described in the '690 patent or some equivalent.

(Paper 76, Ex. A., Kielar Expert Report, at 3). Defendant and Mr. Kielar simply rely too much on the technique included in the preferred embodiment, and are distracted by their position as to why the PassPoint.net scanner differs from Plaintiff's. The claim terms are much simpler than Defendant would wish: illuminating means causing light to shine on something, here the pupil of the eye. 4

4 Plaintiff points out that other patents use similar language of "illuminating a pupil." It is unclear that the claims in those patents are describing similar methods, but at a minimum they demonstrate that there may well be more than one way to "illuminate a pupil."

cc. "Focusing an image of the subject's pupil on an image plane"

Defendant contends that in order for the illumination or brightness inside the pupil to be "focused," a two part determination must be made: (1) whether the person's pupil is centered from a testing instrument and (2) whether the person's pupil is located at the correct distance from the testing instruments. (Paper 76, at 14). If both of these conditions are met, Defendant argues that the illumination or brightness inside the pupil has sufficient intensity and distribution of light to be "focused" and captured on a video camera to perform the impairment test. (Id.). If these conditions are not met, Defendant asserts that the pupil image will become defocused. (Id. at 15).

Plaintiff disputes Defendant's construction and argues that the specification of the '690 Patent uses the term focus in its ordinary sense. (Paper 80, at 9). Thus, Plaintiff argues that the court should adopt the plain meaning of the term. (Id.). Plaintiff points out that in Webster's Dictionary, the term focusing means "to bring into focus" or "to adjust the focal distance of (the eye, a lens, etc.)" in order to produce a clear image." (Paper 68, at 13). In addition, Plaintiff asserts that Defendant's proposed construction requires the use of an eye imaging apparatus that is present in the preferred embodiment of the specification but that is not called for by the language of Claim 9. (Paper 80, at 8). Plaintiff argues that even if Defendant were correct to characterize eye imaging acquisition as part of focusing, Defendant's construction is still incorrect because it imports a limitation, the use of described eye image acquisition apparatus, from the preferred embodiment into the claim. (Id. at 9). See Glaxo Wellcome Inc. v. Andrx Pharms., Inc., 344 F.3d 1226, 1233 (Fed. Cir. 2003) ("as a general rule claims of a patent are not limited to the preferred embodiment . . . or to the examples listed within the patent specification.")(internal citation omitted).

The parties agree on the meaning of an image plane.

dd. Preferred Construction
Plaintiff's proposed construction is adopted because it is concise, closely resembles the original language of the claim, and comports with the ordinary meaning of the claim language. See Phillips, 415 F.3d at 1313.

2. "illumination optical system" 18

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18 Claim 3 notes:

A method according to claim 2, wherein: said at least first and second light beams are inclined at a substantially same angle determined in accordance with fineness of said pattern with respect to an optical axis of an illumination optical system through which said at least first and second light beams pass.

Id. at 18:32-37. Claim 4 reads:

A method according to claim 3, wherein: said angle is determined so that non-0-order diffracted beams produced from said pattern by the irradiation of said first light beam pass apart from the optical axis of said projection optical system on said Fourier transform plane.

Id. at 18:38-43. Claim 7 continues:

According to claim 5, wherein: said at least first and second light beams are generated from portions apart from an optical axis of said illumination optical system on the Fourier transform plane in said illumination optical system with respect to said pattern.

Id. at 18:54-59. Claim 8, in turn, reads:

A method according to claim 7, wherein: said portions include 2n portions of which distance from the optical axis of said illumination optical system is substantially same (where n is a natural number).

Id. at 18:60-63.

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - -

ASML and Nikon agree that the definition of the term "illumination optical system" should denote, in some way, a system constituting a component, or group of components, that directs or otherwise acts on an illumination beam. The parties' disagree, however, about the generality with which this definition should be posited. ASML favors a broad construction of the term; Nikon advocates a narrow one.

Specification language refers to--and details--collections of tangible optical components, many of which work on light from an illumination source such that they produce a region of illumination light having a particular distribution at the mask-pattern surface. See Patent '041 at 10:51-11:12; see id. at 1:26-3:37. To the extent Nikon says as much in its description of the operation of an "illumination optical system," the court agrees. But to the extent Nikon seeks to fold this language into a construction of the relevant term, the court cannot agree; that the system should function properly is inherent to the invention itself--whether in the form of an "illumination optical system" or any other--and the court need not include as much in its construction of the "illumination optical system" term. All the court need determine is what an "illumination optical system" is.

The "best mode" description for the '041 patent makes clear that an "illumination optical system" includes a host of component parts--e.g., an ellipsoidal mirror, a relay lens, and a condenser lens--all organized such that light is directed toward a mask. See id. at 10:64-11:12. When construing the "illumination optical system" phrase, the court need not venture
beyond what the claim says and what the specification language teaches. As the claim language says and the specifications teach, an "illumination optical system" is "an optical component, or combination of optical components, that directs light from a light source onto and through a mask pattern." The court construes "illumination optical system" to mean precisely that.

**2026**

B. "Illuminator"

Insight defines "illuminator," as used in claims 2, 4, 16, 31, 34, and 35, in the way it is defined in the specification: "a device generally used to cast light upon a target area or a portion thereof." 6:9-10. SureFire and Glock contend that no construction is necessary, meaning that the term "illuminator" as used in the claims would have its ordinary meaning as understood by those who are skilled in field of the invention. The court adopts the definition provided in the specification.

**2027**

F. "image obtained from a design"

The parties agree that the two components of this phrase in need of construction are "image" and "design." Furthermore, the parties seem to agree generally on the proper construction of "image." The Plaintiff proposes that "image" means "the printed area that recreates the look of" the design. Similarly, the Defendant contends that the term means "a representation of" a design. Neither party argues that the specification nor prosecution history limits the meaning of the term. Thus, the Court construes "image" to mean "a printed representation of" a design.

However, the parties disagree as to the proper construction of "design." The Defendant contends that "design" means "continuous tone photographs, paintings, drawings, or graphic artwork." The Plaintiff argues that this construction improperly imports specific types of designs and a continuous tone limitation that are not required by the claim language. Instead, the Plaintiff proposes that the term be construed broadly to include any type of original graphic. Generally, as the Plaintiff argues, a court may not add a narrowing modifier to an otherwise general term that is unmodified in the claim. Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1249-50 (Fed. Cir. 1998); see also Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001) "[U]nless compelled to do otherwise, a court will give a claim term the full range of its ordinary meaning."). However, the Court must read claims in view of the specification. Phillips, 415 F.3d at 1315. For example, if the specification makes clear that a particular feature is not intended to be included in the invention, that feature will be excluded from the scope of the invention, even if the claim language in the abstract might be considered broad enough to include the feature. SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1341 (Fed. Cir. 2001).

Although preferred embodiments cannot be used to import a limitation, statements that describe the invention as a whole may be used to support a limiting definition of a claim term. C.R. Bard, Inc., 388 F.3d at 864; Alloc, Inc. v. ITC, 342 F.3d 1361, 1370 (Fed. Cir. 2003). Here, the specification states that "[i]n accordance with the present invention the overprint layer is comprised of the combination of colors so as to produce a complex image (e.g., a reproduction of a painting such as the "Mona Lisa") that is extremely difficult to reproduce. . . ." (647 patent, col. 3, 11. 3-7; 504 patent, col. 3, 11. 27-31) (emphasis added). Accordingly, the specification makes clear that the designs reproduced as the overprint layer are complex and difficult to reproduce.

Furthermore, the specification distinguishes prior art on the basis of printing processes and the resulting simple images and points out the advantages of using the more sophisticated printing process of the present invention to create complex images. See SciMed Life Sys., Inc., 242 F.3d at 1343 (specification distinguished prior art as inferior and cited advantages of coaxial lumen used in catheters that were subject of patent). The specification identifies prior art overprinting techniques, typically printing processes that consist of the "application of up to four flat colors in various graphic line designs and/or text," that printed simple designs over the scratch-off area. (647 patent, col. 1, 11. 59-60, 63-65; 504 patent, col. 1, 11. 65-66 -- col. 2, 11. 2-4.) Flat color printing is "a form of color printing in which color dots are not printed on top of each other." GATF Encyclopedia at 313. The specification characterizes these prior art overprinting techniques as inferior because the
processes "create only basic color patterns which are easily duplicated." ('647 patent, col. 1, 11. 66-67-col. 2, 11. 1-7; 504 patent, col. 2, 11. 8-16.) In contrast, the Summary of the Invention describes a process in which individual colors are separated into half tone images which are then printed one over the other. 6 ('647 patent, col. 2, 11. 37-41; 504 patent, col. 2, 11.46-50.) Accordingly, the specification excludes flat color printing and implicitly limits the invention to a printing technique known as process color printing in which "[half tone] dots of one color are overprinted on dots of one or more other colors to produce blends." Id.; see also id. at 167 ("Process color printing involves overprinting halftone dots. . . "). The specification expressly states that when the overprint layer is printed using this process color system, "a full-color design, a photograph, a painting or other complex image is reproduced and applied to the lottery ticket." ('647 patent, col. 4, 11. 55-58; 504 patent, col. 5, 11. 28-31.) Therefore, read as a whole, the specification suggests that the very character of the invention requires that the design reproduced as the overprinting layer be a full-color design, a photograph, a painting, or other complex image. See Alloc, Inc., 342 F.3d at 1370 ("[W]here the specification makes clear at various points that the claimed invention is narrower than the claim language might imply, it is entirely permissible and proper to limit the claims."). The "continuous tone" limitation, however, does not appear in the specification, and the limitation will not be read into the claim. Accordingly, the Court construes "image obtained from a design" to mean "a printed representation of a full-color design or other complex graphic."

6 "Statements that describe the invention as a whole are more likely to be found in certain sections of the specification, such as the Summary of the Invention." C.R. Bard, Inc., 388 F.3d at 864 (citing Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1348 (Fed. Cir. 2004)).

GO BACK

3. "Image Sensing Module"

Plustek asks the Court to construe this term as "a module that is controlled by electronic components located outside of the scanner, and that includes a one-dimensional image sensor, an optical system, and a first illumination source."

Syscan argues it should be "a module including a one-dimensional image sensor, an optical system, and a first illumination source."

The specifications provide, inter alia, that "[T]he scanner itself comprises only an image sensing module and a motion mechanism." See Dang Decl., P 2, Ex. A ('124 Patent), 2:42-44, emphasis added.

"It should be pointed out that, fundamentally different from the scanners in the market, there is no microcontroller and other electronic components in main module 402 to control the operation of the image sensor and the illumination source. Dang Decl., P 2, Ex. A '124 Patent), 7:3-7, emphasis added.

It is clear from the specification that the patentee intended only to claim scanners which contain only the components necessary to operate (an image sensing module and a motion mechanism) to distinguish the patented scanner from the prior art. The Federal Circuit has consistently held that "where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question." SciMed Life Systems, Inc., 242 F.3d at 1341; see also CCS Fitness, 288 F.3d at 1366-67 ("a claim term will not receive its ordinary meaning if the intrinsic evidence shows that the patentee distinguished the term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention.").

The Court construes this claim as "a module that is controlled by electronic components located outside of the scanner, and that includes a one-dimensional image sensor, an optical system, and a first illumination source."
E. Claims 19 and 20

Claim 19 of the 885 patent provides:

A method of immediately and positively precluding needlestick injury from a contaminated needle comprising the steps of:

providing an elongated needle having a pointed end, providing a body slidably receiving the needle and having a forward surface through which the needle extends from the body for use and is retracted toward and into the body after use, providing a spring having an imperforate blocking flange, and, affixing said spring to the body so as to preclude axial movement of said spring with respect to the body and to dispose the flange in adjacent relation to the body forward surface and in spring-urged relation to bear against the needle extending from the body when the needle is in use, whereby when the needle is retracted after use to bring its pointed end into immediate proximity to the body forward surface, the imperforate blocking flange is spring urged over the body forward surface past the needle pointed end thereby to block any reemergence of the needle from the body and past the flange to present a needlestick hazard.

885 patent, col.12, ll. 34-57 (emphasis added). The claim terms in dispute have been emphasized in the passage quoted above.

"Unless the patent otherwise provides, a claim term cannot be given a different meaning in the various claims of the same patent." Georgia-Pacific Corp. v. United States Gypsum Co., 195 F.3d 1322, 1331 (Fed. Cir. 1999); see CAE Screenplates, Inc. v. Heinrich Fiedler GmbH & Co. KG, 224 F.3d 1308 at 1317 (citing Phonometrics, Inc. v. Northern Telecom, Inc., 133 F.3d 1459, 1465 (Fed. Cir. 1998), where the court explained that "[a] word or phrase used consistently throughout a patent claim should be interpreted consistently"). Therefore, having interpreted the disputed terms "immediately," "slidably receiving," and "adjacent" as they are found in claim 13, I need not discuss these same terms again when they appear in other claims. The meaning of the term is the same in all of the claims in issue.

(A) the pointed end of the needle being in the "immediate proximity" to the body forward surface

Citing several dictionaries, MBO contends that the term "immediate proximity" (and the term "proximity" found in claim 27) should be construed to mean "near." MBO points out that the phrase "flush with," used in the original claim 13, has not been made part of claims 19 and 27. To support its position, MBO relies on Tandon Corp. v. U.S. Intl Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987) (explaining that "there is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims").

Becton proposes that the disputed terms be construed to mean that the pointed end of the needle is "flush with" the forward surface of the body. According to Becton, during the prosecution of the 347 patent, MBO sought to distinguish its invention from the prior art by amending its claims (1) to require immediate blocking of the needle tip by movement of the "flange over the front surface of the body," and (2) to emphasize that the safety flange slipped over the needle tip when the needle tip was "flush with [the] front surface" of the body. Becton Exh. 10 p. 9; Exh. 12, p. 4. Citing SciMed Life Sys., Inc., 242 F.3d at 1342, and Ekchian, 104 F.3d at 1304, Becton maintains that the court's construction of the disputed terms cannot include the subject matter that MBO had previously disclaimed.

The language of the claim strongly supports Becton's proposed interpretation of the disputed claim term. It provides that, as soon as the pointed end of the needle comes "into immediate proximity to the body forward surface," the flange is "spring urged over the body forward surface past the needle pointed end." The flange simply cannot go "over the body forward surface" and "past the needle pointed end" unless the needle tip is at least flush with the forward surface of the body.

The specification also supports Becton's proposed construction. In particular, the specification explains that, "with the blocking flange face 98 immediately adjacent the forward surface of the body at 84, as soon as the needle passes behind the flange 98, the spring snaps the flange forward surface over the 84 of the body into needle-blocking position and positively precludes reemergence of the contaminated needle point from the body 82 and thus needlestick injury is absolutely avoided.
While the needle may be withdrawn further into the body 82, such extra movement is unnecessary as the safety spring acts on and over the end face 84 of the body at the immediate point of potential emergence of the contaminated needle" (emphases added). 885 patent, col. 7, ll. 2-12. Several points supporting Becton's construction arise from the quoted language. First, if the blocking flange face is immediately adjacent to the forward surface of the body, the needle tip must be at least flush (or level) with the forward surface of the body before the flange can snap over the body and block the needle from reemerging. Second, the phrase explaining that the flange covers the needle tip "at the immediate point of potential reemergence," also supports Becton's proposed construction of the disputed term. Third, the specification contrasts the invention with the prior art that required that "the needle . . . be withdrawn at least a minimum predetermined distance beyond the exit from the tubular body." 885 patent, col. 7, ll. 16-18. Fourth, the abstract of the invention explains that "a used needle is captured immediately within its carrier upon retraction of the needle flush with the carrier" (emphasis added).

Finally, I note that during the prosecution of the related 347 patent, MBO sought to distinguish its invention from Smith by arguing, inter alia, that the safety means in its invention "immediately blocks reemergence of needle 40 as soon as the needle is flush with front surface 84." Becton Exh. 10, p. 9. See Omega Eng'g, Inc. v. Raytek Corp, 334 F.3d 1314, 1333 (Fed. Cir. 2003) (explaining that "as long as the same claim limitation is at issue, prosecution disclaimer made on the same limitation in an ancestor application will attach"); emphasizing that this rule applies to continuation applications, and continuation-in-part applications); Advanced Cardiovascular Sys., Inc. v. Medtronic, Inc., 265 F.3d 1294, 1305 (Fed. Cir. 2001) (noting that "the prosecution history of a related patent can be relevant if . . . it addresses a limitation in common with the patent in suit"); Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 980 (Fed. Cir. 1999) (clarifying that "when multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation"); see also Loral Fairchild Corp. v. Sony Corp., 181 F.3d 1313, 1327 (Fed. Cir. 1999).

In light of the foregoing considerations, I conclude that the term "immediate proximity" requires that the needle tip be flush with the forward surface of the body. The same limitation applies with regard to the term "proximity" found in reissue claims 27 and 28.
only to state a purpose or intended use for the invention." Schumer v. Lab. Computer Sys., Inc., 308 F.3d 1304, 1310 (Fed. Cir. 2002) (emphasizing that, "if the body of the claim sets out the complete invention, and the preamble is not necessary to give life, meaning and vitality' to the claim, then the preamble is of no significance to claim construction because it cannot be said to constitute or explain a claim limitation" [citation omitted]).

MBO also insists that the specification uses the term "immediately" to refer solely to the action of the spring when the needle passes it and does not describe the amount of time between the withdrawal of the needle from the patient and the blocking flange's sealing of the needle tip. 885 patent, col. 6, ll. 56-58. Tr. 1:30:10 -- 1:30:15. MBO contends that the claims of the 885 patent make clear that the body and the spring are "closely adjacent" to the patient's flesh at the injection site, but are not touching it. MBO reasons that, because there is space between the patient and the body, there necessarily would be some delay between the withdrawal of the needle tip from the patient and its recapture by the body.

Becton's position is that, in the context of the asserted claims, the term "immediately" should be interpreted to mean "simultaneously with" the needle's withdrawal from the donor. Becton explains that the use in the specification of the following phrases establishes that the needle tip is never exposed after it is inserted into the patient: (1) "upon withdrawal of the needle from the blood donor, the needle is immediately retracted within the guard and a shield positively blocks the contaminated needle point and access thereto"; (2) the needle "is shielded simultaneously with its withdrawal from the donor whereby no inadvertent puncture can occur"; and (3) "the healthcare worker at no time has to manipulate an unshielded blood-contaminated needle." 885 patent, col. 3, ll. 3-5; col. 5, ll. 3-4; col. 8, ll. 16-17. Becton points out that, in the "Summary of the Invention" section of the specification of the 885 patent, MBO characterizes its invention as a "new and improved system which [...] shields the blood-contaminated needle simultaneously with its withdrawal from the donor." 885 patent, col. 2, ll. 57-58. Tr. 1:55:6-1:55:8. Citing 37 C.F.R. § 1.73 (requiring that the summary of the invention be "commensurate with the invention as claimed"), Becton argues that MBO's attempt to make its invention more comprehensive than the summary of the invention is improper as a matter of law. Becton also insists that MBO's assertions throughout the prosecution history limit all the claims, including the reissue apparatus claims 32 and 33 (in which the word "immediately" does not appear) to a method whereby the body traps the needle tip simultaneously with the needle's removal from the donor. 10

10 The term "simultaneous" is defined as "existing or occurring at the same time." MERRIAM WEBSTER'S COLLEGIATE DICTIONARY 1094 (10 ed. 1993).

In this instance, the preamble aids in the construction of the disputed claim term. As noted above, the preamble to claim 13 describes "[a] method of immediately and positively precluding needlestick injury from a contaminated needle. . . ." 885 patent, col. 10, ll. 24-26 (emphasis added). This language appears unambiguously to indicate that the term "immediately" should be interpreted to mean that the needle is shielded as it is withdrawn from the donor. It limits MBO's claims because, in this case, it is "necessary to give life, meaning, and vitality" to these claims. Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999).

I further note that the 885 patent is replete with MBO's assertions that its system substantially reduces or eliminates the risk presented by the "open manipulation of the contaminated needle between withdrawal and sample securement" by "shielding the blood-contaminated needle simultaneously with its withdrawal from the donor." 11 See Toro Co. v. White Consol. Indus., Inc., 199 F.3d 1295, 1301 (Fed. Cir. 1999) (looking to the specification in interpreting the claims of the invention). In addition, under the established principles of claim construction, the words of the 885 patent must be interpreted in light of MBO's assertions throughout the prosecution history of the original 699 patent and related patents. Alloc, Inc. v. ITC, 342 F.3d 1361, 1368 (Fed. Cir. 2003) (taking into account the patentee's assertions throughout the prosecution of several related patents). During the prosecution of the 699 patent, MBO sought to distinguish its invention from the prior art by emphasizing that its needle safety system provided immediate protection to healthcare workers by retracting the needle into the body at the same time as the needle is withdrawn from the donor. For example, to distinguish its invention (set forth in the 699 patent) from DuPont, MBO contended that, in contrast to DuPont, its invention provided "automatic and immediate safety means." Becton Exh. 7, p.7.
11 MBO contends that in at least one embodiment, the needle is described as withdrawn from the patient and then retracted into the body. The text MBO relies on reads as follows: "Thereby, upon withdrawal of the needle from the blood donor, the needle is immediately retracted within the guard and a shield positively blocks the contaminated needle point and access thereto." 885 patent, col. 3, ll. 3-6. This language does not change my conclusion with respect to the proper construction of the term "immediately."

I conclude that, in light of the above, MBO has acted as its own lexicographer, defining the term "immediately" 12 to mean "simultaneously" with the needle's withdrawal from the donor. Phillips, 415 F.3d 1303, 2005 WL 1620331, at * 8 (explaining that, where the patentee has defined a claim term in a way that differs from the term's usual meaning, the patentee's lexicography controls); see Bell Atlantic Network Servs., Inc., 262 F.3d at 1268 (noting that the patentee need not have explicitly defined the term). 13 I further conclude that the term "immediately," as I have construed it, limits reissue claims 32 and 33. My construction of this term applies with equal force to the time between the retraction of the needle within the guard and the action of the blocking flange.

12 The term "immediately" is defined as "without interval of time" or "as soon as." MERRIAM WEBSTER'S COLLEGIATE DICTIONARY 579 (10 ed. 1993). THE OXFORD ENGLISH DICTIONARY defines the term "immediately" as follows: "without any delay or lapse of time; instantly, directly, straightway; at once."

13 Although I have construed the term "immediately" to mean "simultaneously," it is worth noting that I do not perceive a significant difference between the dictionary definition of "immediately" as meaning "without interval of time" and the dictionary definition of "simultaneous" as meaning "existing or occurring at the same time."

A. Claim language to be construed from Claims 3 and 6 -- "an elongated hollow electrically conductive tube, said tube having an immersion end and a connector end;" -- col. 4, ll. 24-26; col. 6, ll. 29-31

HEN contends that the terms "immersion end" and "connector end" refer to regions of the electrically conductive tube and are used for orientation purposes. Thus, HEN proposes that these terms be construed to mean "the region of the tube which is first immersed in molten metal," and "the region of the tube which is opposite the immersion end of the tube." (HEN CC Br. at 10.) Minco, on the other hand, contends that a person of ordinary skill in the art would understand "connector end" to
mean "the actual final physical endpoint of the conductive tube." 3 (Minco CC Br. at 10.)

HEN points to the language of the claim that describes the sheathing surrounding the electrically conductive tube. The sheathing is claimed as having a minimum thickness adjacent to the immersion end and a shoulder that is adjacent to the connector end. (HEN Ex. A. col. 4, ll. 54-56, 58-60.) HEN argues that the shoulder identified in the claim extends approximately 15-22% up the length of the tube from the connector, (see HEN Ex. A. at Figure 1), and that, therefore, if the shoulder is adjacent to the connector end, then the connector end cannot only refer to the final physical endpoint of the tube. Additionally, HEN argues that the connector, for which the connector end is named, has a connector sleeve that extends up into the connector end of the probe reaching approximately 10% into the tube. Therefore, according to HEN the connector end must refer to the end region and not the physical endpoint, and HEN contends that adopting Minco's proposed construction would effectively exclude the preferred embodiment. HEN also argues that the other language in the specification supports its proposed construction. HEN points to the following "Summary of the Invention":

The present invention is directed to an immersion probe which comprises a unit including a support tube which defines the outer periphery of the unit. One end of the tube is an immersion end. At least one measuring element is supported on a measuring head which closes said tube adjacent its immersion end. A connector closes the other end of said tube. Electrical conductors in said tube extend from said connector to said measuring element. Heat insulating material is provided in said tube for protecting said conductors.

(HEN Ex. A., col. 1, line 61 -- col. 2, line 2.) According to HEN, this language demonstrates that the patent applicants refer to the immersion end and other end (i.e., connector end) for orientation purposes, or to provide a frame of reference to the tube. Additionally, HEN contends that in figure 1 of the patent specification the applicants used an arrow to refer to the immersion end of the probe, as opposed to a lead line. (HEN Ex. A. at Figure 1 and col. 2, ll. 31-32.) HEN contends that if the applicants meant to limit the "immersion end" to mean only the very tip of the immersion tube, the applicants would have used a lead line and not an arrow because arrows may be used at the end of lines, provided their meaning is clear, to indicate an entire section towards which it points. See 37 C.F.R. § 1.84(r).

Minco, however, points to the patent specification and contends that the only drawing presented in the specification shows that the electrical connector is in direct contact with the final physical endpoint of the conductive tube, and that this makes clear that the electrical connector is located at the final physical endpoint of the conductive tube. Minco concludes, therefore, that the "connector end" must be the actual final physical endpoint of the conductive tube. Relatedly, Minco argues that other language in the claim supports its proposed construction. Minco points to the portion of the claim that states that there are "electrical conductors extending from said enclosure to said connector end of said tube." (Minco Ex. A. col. 4, ll. 40-41.) Minco contends that the only representation in the specification shows that the electrical conductors extend from the gas impermeable enclosure all the way down to the actual final physical endpoint of the tube. Therefore, according to Minco, the claim language and the only figure contained in the specification show that the connector end is at the final physical endpoint of the tube, because that is the point to which the electrical conductors travel and end.

Minco also relies on the prosecution history and argues that HEN's proposed construction contradicts limiting arguments it made to the patent examiner to overcome prior art. According to Minco, the prosecution history shows that the patent examiner at one point rejected claims 3 and 6 based on the prior art disclosed in Jackson (U.S. Patent No. 3,784,459) ("Jackson"), in part because Jackson disclosed a molten metal sensing probe comprising "an electrical connector (46/58/60/62/70) closing the connector end of the tube and providing electrical connections for the cell and the tube. . . ." (Minco App. 5E at HEN000313.) According to Minco, in order to overcome this rejection, HEN distinguished Jackson by arguing that the electrical connector in Jackson was not at the final physical endpoint of the tube, but rather removed at a distance away from the end of the tube, and therefore, Jackson did not disclose an electrical connector closing the end of the tube as required by the claims of the '736 patent. According to Minco, through this prosecution history HEN assigned a particular meaning to the claim words "connector end," namely, that the "connector end" means the physical endpoint of the
Inverness agrees that the term "immobilized" means "fixed or incapable of moving." However, it argues that claims 7 and 2482
19 require merely the presence of second binders that are immobilized at the test site in sufficient quantity to "produce a color visible to the unaided eye indicative of the presence of the ligand in the liquid," not that all of the molecules at the test site capable of binding with the conjugate be immobilized.

Turning first to the question of claim interpretation, the Court agrees that "immobilized" as used in the claim means "fixed or incapable of moving" with the passing liquid. With this definition, claim 5 only requires a second binder for capturing the ligand, which is immobilized at the test site, not that all of the binding agent at the test site be immobilized. The presence of other molecules that may bind with the ligand but be washed away does not defeat infringement, as long as there are second binders that are immobilized at the test site, and the "accumulation of colored particles at the test site produces a color visible to the unaided eye indicative of the presence of the ligand in the liquid."

B. Impact Head

One element of claim 6 of the '003 Patent is "a terminal including an impact head." Claims 3 and 14 of the '820 Patent also include an "impact head." The parties agree that this court should give the term "impact head" the same construction in the '003 and '820 Patents. KEI proposes the following construction of the term "impact head":

An "impact head" is a device designed to spread the load of an impact over an impacting vehicle to prevent penetration of the vehicle's body and to provide a mechanical interlock between the energy-absorption safety device and the impacting vehicle to prevent the impacting vehicle from sliding up, down, or sideways along the impact head.

(Pl's Markman Hearing Slide 18). 6 Trinity proposes the following construction of "impact head":

An "impact head is a unitary component that has a wide end facing the flow of traffic that is large enough to receive an impact from a vehicle without penetrating the vehicle's body, and that has a narrower end facing away from the flow of traffic.

(Docket Entry No. 76, p. 8). KEI contends that Trinity's proposed construction is overly narrow because the invention does not require the impact head to be a "unitary component" and does not require the end facing away from traffic to be narrower than the end facing traffic.

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6 KEI's proposed construction of the term "impact head" presented at the Markman hearing was a condensed version of the construction KEI proposed in its Markman brief. That construction stated:

An "impact head" is a device designed to take an impact from a randomly oriented surface and control loading application between the impacting surface and the energy absorber. An impact head spreads the load over a portion of the impacting vehicle and provides a mechanical interlock between the energy-absorption safety device and the impacting vehicle. The impact head is designed to prevent the safety hardware from punching through the impacting vehicle and prevent the impacting vehicle from sliding up, down, or sideways along the impact head.

(Docket Entry No. 75, p. 13).

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Trinity contends that the ordinary meaning of the word "head" supports its proposed limitation that the wide end of the impact head face traffic and the narrow end of the impact head face away from traffic. To support its argument, Trinity points to the dictionary definition of the word "head" as "the uppermost extremity or projecting part of an object." (WEBSTER'S THIRD NEW INT'L DICTIONARY, 3d ed. (1993)). Trinity also emphasizes the statement in the specification that "the impact head 30 is a strong wide-mouthed section having its wide portion facing outwardly from the guardrail 16 to receive a vehicle such as 12 and its narrower end connected to one end of the cutting section 36."
Patent, col. 4, ln.22-27). KEI responds that the claim language does not require the end of the impact head facing away from traffic be narrower than the end facing traffic and that nothing in the claims or specification require the impact head to be a "unitary component."

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7 The numbers refer to Figure 1 of the '003 Patent.

Claims must be read in view of the specification, but limitations from the specification may not be read into the claims. Teleflex, 299 F.3d at 1326. Although the specification describes an embodiment in which the end of the impact head facing traffic is wider than the end facing away from traffic, the claims do not require such a construction. The specification teaches that the impact head is sized "(1) to engage a sufficient area of the vehicle that hits the impact head to avoid penetrating the vehicle body; and (2) to avoid any dimension that would permit the impact head to project sufficiently to block the roadway." ('003 Patent, col. 5, ln.47-55). The specification does not provide any design requirements for the end of the impact head facing away from traffic. The end of the impact head facing away from traffic could be as wide as the end facing traffic, or possibly wider, depending, for example, on the type of hazard to which the device is attached. This court cannot construe the term "impact head" as requiring the end of the impact head facing away from the traffic to be narrower than the end facing traffic; to do so would impermissibly read limitations from a preferred embodiment into the claim.

The dictionary definition of the term "head" does not support Trinity's proposed requirement that the end of the impact head facing away from traffic must be narrower than the end facing traffic. The "projecting" part of the definition does not suggest that the head must necessarily be the wider end of the impact head, or that the impact head must have a narrow and wide end. The dictionary definition Trinity provided includes a "ram" as having a head. A ram does not necessarily have a wide and narrow end; a blunt metal cylinder could serve as a ram. The "head" of the ram that impacts, for example, a door, can be a blunt end with the same width or diameter as the other end.

The initial portion of the definition Trinity provided, defining "head" as "the uppermost extremity," is more appropriately applied to the position of the impact head in the overall invention, meaning positioned on the end of the terminal that receives vehicle impacts. ('003 Patent, Figs. 1-2). "Head" does not imply structural features of the impact head itself.

Trinity states that the term "unitary component" means that the impact head is a separately identifiable component in the invention, not that the impact head is made of one solid piece of metal or other material. Construing the impact head as a "unitary component" is unnecessary and potentially confusing. It is clear from the claims that an "impact head" is an separate component of the overall invention. Claim 6 states that the terminal includes the impact head. There is no requirement in the specification that the impact head consist of a single piece; it could, for example, consist of two or more joined pieces. "Unitary component" is a vague term that could be interpreted to mean that the impact head is made of a single, solid piece.

KEI's proposed construction of "impact head" states that an impact head "provides a mechanical interlock between the energy-absorption safety device and the impacting vehicle to prevent the vehicle from sliding up, down, or sideways along the impact head." Nothing in the specification teaches this limitation. Nor does the specification describe an embodiment of "impact head" that contains mechanical interlocking properties. The specification only states that the head should be made of heavy steel or other materials capable of moving the entire terminal during an impact, and that the head should be designed so that it does not penetrate the vehicle body on impact and so that it is not so wide as to block the roadway. ('003 Patent, col. 5, ln.47-55). This court declines to include a "mechanical interlock" in the construction of the term "impact head." 8

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8 KEI cites a different patent that describes an impact head that forms a mechanical interlock with a colliding vehicle. (Pl.'s Markman Ex. 138, United States Patent 5,775,675 (the "675 Patent"), col. 5, ln.38-41. The '675 Patent application was not a parent or child of the '003 Patent application. The '675 Patent is extrinsic evidence upon which it is improper to rely if an
analysis of the intrinsic evidence alone resolves ambiguity in construing a claim term. Vitronics, 90 F.3d at 1583. None of the preferred embodiments of the '003 Patent are excluded by a claim construction that does not include a mechanical interlock in the "impact head." Cf. Dow. Chem., 257 F.3d at 1377 (rejecting district court's claim construction in part because many preferred embodiment experiments were excluded by district court's claim construction).

The claims and written specification support the following construction of the term "impact head":

A component of the terminal designed to receive the impact of an errant vehicle and spread the load of the impact over an impacting vehicle such that the safety device does not penetrate the vehicle.

a. Preamble.

The parties agree that Claim 1 includes a preamble and three elements. The parties further agree that the preamble should be included in the claim because it contains four terms essential to the Patent. The preamble states:

Building modules adapted to fit together for construction of fire, sound and impact resistant security barriers and rooms for use in securing records and prisons, comprising in combination.

(Exhibit 1, Column 6, Lines 22-25.)

The parties disagree, however, as to whether the foregoing terms "fire resistant", "impact resistant" and "sound resistant" are terms of art. The Plaintiff contends that as terms of art, these terms should be defined in accordance with the Model Building Code adopted by the organization of Building Officials and Code Administrators International, Inc., referred to as BOCA. (Plaintiff's Exhibit 4). According to BOCA definitions, "fire resistant" describes the ability to resist the spread of fire, particularly the ability to pass appropriate fire testing procedures. For most security applications, this requires passage of a two-hour loaded fire test. (BOCA definitions, sections 401.0 and 1403.1.1.) Sound resistance is defined as "ability to pass code test for the transmission of airborne and structural noise." (BOCA definitions 715.2 and 715.3.) Impact resistance is defined as "ability to resist any reasonably anticipated forces or kinetic loads in a jail or a prison environment." (Plaintiff's Exhibit 4.)

The Defendant argues that nothing in the Patent suggests that these be regarded as terms of art. Instead, the Defendant contends that they are unique terms that should be defined consistent with their use in the Specification.

With regard to terms "fire resistant" and "sound resistant", the opposing arguments create a distinction without a difference. Although the BOCA Code definitions are extrinsic evidence and the Specification is intrinsic evidence, the meanings and contextual reference of these terms in both sources is essentially the same.

The same cannot be said, however, for the term "impact resistant". With regard to impact resistance, the Defendant's argument is more persuasive. Although the general rule prohibits resort to the Specification in order to ascertain the meaning of a claim, an exception to the rule is applicable here. The term "impact resistant" is not defined in the claim. Therefore reference to some other source is required. The preferred reference is to intrinsic evidence such as the Specification, before resort to extrinsic evidence such as the BOCA definitions. Vitronics, 90 F.3d at 1582. In addition, the BOCA definition of the term "impact resistant" is imprecise because it is contextually dependent. BOCA's definition of impact resistant as the "ability to resist any reasonably anticipated forces or kinetic loads in a jail or prison environment" is meaningless without further explanation or identification of the anticipated kinetic or impact forces to be resisted.

It is the Specification which describes the anticipated forces or kinetic loads reasonably anticipated. It identifies these forces as coming from bullets or bomb fragments.

In secured facilities, and protected barriers, it is feasible that projectiles may be encountered, such as bullets from high
powered guns or bomb fragments. There have not been effective ways of dealing with these powerful impact weapons with inexpensive housing in the prior art.

(Exhibit 1, Column 3, Lines 27-32.)

Thus the modular building construction afforded by this invention provides significant advantage wherever security provision need be provided. Typical wall characteristics include bullet and explosion resistance, fire and heat resistance, acoustic insulation, ease of manual assembly on site, and high structural strength.

Uniquely the advantages of the steel shell modules are combined with thermal and acoustical isolation of two spaced walls in protection against bullet penetration of the walls. Accordingly, those novel features believed descriptive of the nature and spirit of the invention are defined with particularity in the claims.

(Exhibit 1, Column 6, Lines 14-20.)

Although the inventor and expert witnesses testified that the bullet penetration may not be the impact ordinarily associated with prisons, their testimony is disregarded in deference to the clear statement in the Specification that the invention's impact resistance feature pertains to bullets and exploding projectiles. Thus, the Court agrees with the Defendant that term "impact resistant" is defined by the Specification as resisting the impact of bullets, exploding projectiles or bomb fragments.

Have substantially the same impact strength, the body with a substantially uniform impact strength

Claim 1 of the '662 patent contains an example of the terms at issue:

A PCD element comprising a body of bonded diamonds integrally formed with a metallic substrate, the body having a working surface and at least an 85% by volume diamond density, wherein a first volume of the body adjacent to the working surface contains a catalyzing material, a second volume of the body adjacent to the working surface is substantially free of the catalyzing material, and wherein the first volume and the second volume have substantially the same impact strength.

The impact strength limitation is one of the subjects of Defendants' motion for summary judgment discussed in detail above. Baker Hughes contends the entire phrase is indefinite and offers no construction. The Court holds the phrase is not indefinite. ReedHycalog contends "impact strength" should be construed to mean "resistance to impact," but the entire phrase needs no construction. The Court agrees and construes "impact strength" to mean "resistance to impact." The remainder of the phrase needs no construction.

1. Claims 20 and 24

Toro argues that the district court erred in holding that claim 20 was not infringed as a matter of law based on its determination that the accused device does not contain an "impeller means . . . wherein the throwing means comprises a paddle portion which extends over at least approximately one-half of the impeller means' total length." Toro contends that the court misinterpreted the written description in calculating the length of the "throwing means" of the accused impeller, and that the court impermissibly decided disputed issues of fact on summary judgment. Toro argues in essence that the transition sections must be counted as part of the throwing means. Toro also asserts that the court performed an inadequate analysis under the doctrine of equivalents.

Ariens responds that the district court properly granted its motion for summary judgment of noninfringement as to claim 20
because the accused impeller does not meet the disputed limitation in that claim. Ariens points out that the "throwing means" of the accused impeller is only three to four inches long, much less than "approximately one-half of the impeller means' total length" of eighteen inches. Ariens continues that the district court properly interpreted the written description in its infringement analysis and correctly concluded that the transition sections of the accused impeller are not counted as part of the "throwing means." As such, Ariens argues that the district court correctly held that it does not infringe as a matter of law, either literally or under the doctrine of equivalents. For these reasons Ariens also contends that the district court correctly held that claim 24 is not infringed, as that claim contains a limitation similar to the disputed one in claim 20. Toro does not reply to Ariens' contention with respect to claim 24, or challenge the district court's ruling of noninfringement based on that limitation.

As an initial matter, we agree with Ariens that the district court properly interpreted the written description and correctly concluded that there is no genuine issue of material fact that Ariens' device does not infringe claim 20. The disputed portion of claim 20 reads as follows, with the key limitation underscored:

(b) rotatable impeller means carried on the housing for throwing snow upwardly relative to the housing, wherein the impeller means includes means for throwing a snow stream which tapers inwardly as it rises away therefrom, wherein the throwing means comprises a paddle portion which extends generally radially relative to the impeller means and extends over at least approximately one-half of the impeller means' total length. . . .

'726 patent, col. 16, ll. 10-18 (emphasis added). The district court observed, and Toro did not dispute, that the flat, central section of the accused impeller is approximately three to four inches long, and that the total length of the impeller is approximately 18 inches. See Toro I, slip op. at 17. As for the remainder of the impeller, the court agreed with Toro's own expert, John Berner, that the curved portions between the central section and the end sections of the impeller were "transition sections." See id. at 16-17 & n.3; Berner Dep. at 160-161. The court then turned to the following portion of the written description for guidance as to whether it should attribute the "transition sections" to the central snowthrowing section or the end sections:

While each end section 36 has been described as being relatively distinct from central section 34, the axially inwardmost portion of each end section 36 might be considered a transition section in which the shape of the end section is blended to match the shape of the central section 34 at the side thereof. However, if such a transition section does in fact exist, it will be considered as part of the end section for the purposes of definition herein.

Id. at col. 5, l. 67 to col. 6, l. 7; see also Toro I, slip op. at 14-15. The court correctly interpreted the plain language of this passage to mean that any transition portions are considered a transition section in which the shape of the end section is blended to match the shape of the central section 34 at the side thereof. However, if such a transition section does in fact exist, it will be considered as part of the end section for the purposes of definition herein.

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8 Neither party disputes that the structure corresponding to the "throwing means" limitation is the "central snowthrowing section" disclosed in the specification. We also note that while the term "means" is used in the "impeller means" limitation, adequate structure is revealed by the term "impeller," such that section 112, paragraph 6 is not invoked. See Personalized Media Communications, LLC v. ITC, 161 F.3d 696, 703-04 & n.10, 48 U.S.P.Q.2D (BNA) 1880, 1886-87 & n.10.

9 Berner's characterization of what constituted "transition sections" was drawn directly onto the figure of the accused impeller, as shown above, and initialed with "J.B."

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Sunon argues that the use of the word "means" creates a presumption that section 112, P6 applies, and that the function of the "impeller means" is "the impelling of air through the fan." (R. 96-1, Defs.' Claim Constr. Br. at 13.) The function of "impelling . . . air through the fan," however, does not appear in Claim 29, and the term "impeller means" recites structure, i.e., the "impeller" (the fan blades). Cole, 102 F.3d at 531; Pirelli Cable, 988 F. Supp. at 434. As the Court has already noted, where a claim uses the word "means" but specifies no corresponding function for the "means," it does not implicate section 112, P6. Rodime, 174 F.3d at 1302; Sage Prods., 126 F.3d at 1427; York Prods., 99 F.3d at 1574. Accordingly, section 112, P6 does not apply to the "impeller means" term.

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2. "Steam and/or Gas Impermeable"

Plaintiff seeks to construe this term as "not permeable to steam and/or gas," while defendants propose the construction, "having a low enough permeability or transmission rate to steam and/or gas so as to be considered a high barrier to steam and/or gas, respectively, that prevents a measurable loss of weight, flavor, and/or taste during customary production, cooking, and storage." Neither of these proposals is wholly satisfactory.

As the parties acknowledge, the real dispute is whether "impermeable" should be construed in an absolute sense, or, instead, in a functional sense, with reference to the invention's purpose. Plaintiff's proposed construction, which merely replaces the inherent negative in the word "impermeable" with a two-word negative phrase, does nothing to clarify the definition or scope of the disputed term. On the other hand, defendants' proposal is replete with relative terms, some of which ("so as to be considered a high barrier") appear to add nothing to the definition and are presumably geared toward invalidity arguments.

Plaintiff's argument for an absolute construction of "impermeable" finds some support in the intrinsic evidence. First, plaintiff rightly notes that the claim language uses the term "impermeable" without a modifier such as "substantially," or "virtually," which would have made clear that a casing with some minimal degree of permeability falls within the scope of the claim. Also, the specification underscores that "there is no loss in weight at all during the manufacturing process, storage and transport." '613 patent at 2:65-66. (Emphasis added) This language echoes the superlative used in the abandoned parent application of the '613 patent, which disclosed that "[n]o losses whatsoever occur in the weight, taste, and flavoring" of the enclosed food. (Emphasis added) The emphatic use of the phrases "at all" and "whatsoever" is indeed suggestive of an absolute quality.

On the other hand, these terms must be understood in context. The discussion of the prior art in the '613 patent's specification first describes the use of cellulose fiber casings, and explains that "due to the steam and gas permeability of the casing, the production of food in a cellulose fiber casing is always associated with a loss in weight, taste and flavor." '613 patent at 1:27-29. The specification goes on to discuss pure plastic casings that were developed in the prior art "[t]o avoid the disadvantage of steam and gas permeability," and it describes such casings as having "a steam and gas impermeability." Id. at 1:39-42. The patent then explains that "[w]hen using plastic casting (sic) of this type, there is no loss in weight, flavor and taste during the production process nor during storage and shipping." Id. at 1:44-45.

Indeed, the patent repeatedly identifies permeability (or impermeability) as the feature that determines whether losses in weight, taste and flavor occur, and the concepts are linked throughout the patent. For example, in the detailed description of the invention, the specification states, "[s]ince the outer layers of the casing are impermeable, the substances cannot be rinsed out during the boiling process. No losses in weight, taste and flavor result during the production and boiling process or during transport and storage." '613 patent at 4:30-34. No other definition of "impermeable" is offered, nor is the term linked with any object other than that of preventing losses in weight, taste, and flavor. Therefore, it is reasonable to conclude that the patentee defined "impermeable" with reference to that object.

Moreover, plaintiff does not appear to dispute that the pure plastic casings in the prior art, which the '613 patent characterizes as "impermeable," are not, in fact, impermeable in the strict sense, since some transmission of air, gas, or both would be observed if such casings were submitted to certain types of testing. 2 The '613 patent nevertheless described the plastic casings as "impermeable" by contrast to the cellulose casings known in the art (the permeability of which "always" resulted in losses in weight, taste and flavor) because the plastic casings effectively prevented such losses. Because "claim
terms are normally used consistently throughout the patent," Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005), it is reasonable to presume that the word "impermeable" as used in the claims has the same meaning as "impermeable" as applied to the less-than-absolutely impermeable pure plastic casings discussed in the specification.

2 At oral argument, defendants argued that "over time everything [polymeric] is permeable to steam and/or oxygen." Plaintiff does not dispute this proposition.

Plaintiff cites Chef America, Inc. v. Lamb-Weston, Inc., 358 F.3d 1371 (Fed. Cir. 2004), in support of the argument that because claim terms "should be taken as they appear," an absolute construction of impermeable is appropriate. In Chef America, the court considered a patent relating to a process for baking dough so as to achieve a "light, flaky, crispy texture." As written, the claims required "heating the…dough to a temperature in the range of about 400 [degrees] F to 850 [degrees] F." The patentee sought a construction in which this temperature range referred to the temperature of the oven, not to the temperature of the dough itself, on the ground that if applied to the dough, the process would result in a burnt crisp, rather than achieve the stated object of a "light, flaky" product. But the court concluded that the claim language unambiguously required heating the dough, not the oven, to the specified temperature range, and held that courts may not redraft claim terms simply to avoid a "nonsensical result."

Plaintiff argues that under Chef America, I should construe "impermeable" in its absolute sense, regardless of whether such a construction would be, in defendants' words, "impractical" because no food casing in the world achieves 100% impermeability. But whether an absolutely impermeable food casing exists or could exist is beside the point. The point is that the manner in which "impermeable" and related words are used throughout the patent reveal that the patentee defined those words by reference to the quality of preventing losses in weight, taste and flavor. Because this consideration--not merely the desire to avoid a "nonsensical result"--supports a non-absolute construction, Chef-America is not dispositive here.

Plaintiff's citation to Aqua-Aerobic Sys., Inc. v. Aerators, Inc., 211 F.3d 1241 (Fed. Cir. 2000), has superficial appeal because the terms construed in that case are similar to those at issue here. In Aqua-Aerobic, the Federal Circuit affirmed the district court's construction of the phrase "preventing passage of atmospheric air" as requiring that all air be excluded from the system, even though the experts in the case agreed that the system was not absolutely air-tight. The court explained that "the undisputed testimony that experts would understand that the described sealing system would not produce an air-tight device" did not warrant broadening the claims in a manner "directly contrary to the limitations in the claims and the description in the specification." As explained above, however, a less-than-absolute construction of "impermeable" is consistent with, rather than "directly contrary to," the manner in which that word is used in the patent in this case.

Finally, plaintiff objects that the phrase "no measurable losses" begs questions such as, "measurable in what units?", "measurable under what conditions?", and "measurable by whose taste?" and that these open questions render defendants' proposed construction indefinite. It is true that the patent does not establish numeric values for ascertaining losses in weight, nor does it define the conditions under which such losses are measured. But "a patentee need not define his invention with mathematical precision in order to comply with the definiteness requirement." Oakley, Inc., v. Sunglass Hut Intern., 316 F.3d 1331, 1342 (Fed. Cir. 2003) (citing In re Marosi, 710 F.2d 799, 802-03 (Fed. Cir. 1983). At oral argument, plaintiff insisted that the indefiniteness of defendants' proposed construction is illustrated by the fact that while the inventor said losses in weight should be measured in tenths of grams, defendants' experts proposed measuring in grams, as well as by defendants' expert's testimony that "customary" production conditions can vary widely. It is in light of these variations that the patent's absolute language takes on meaning, however: no measurable losses means no losses as measured in any units commonly used as a practical matter in the industry, under any of the range of conditions commonly observed there. As for the elements of "taste" and "flavor," while these undoubtedly have subjective components in the abstract, identifying "losses" in these elements when comparing products before and after processing does not seem to me to be so impossibly subjective that it could not be established by any objective criteria.

In sum, although it is true that the patent could have been more precise on this point, I am satisfied, at this stage, 3 that one skilled in the art would be able to draw the line between a loss and no loss in weight, taste and flavor.
3 As the court noted in Oakley, in which claim definiteness was raised, as it is here, at the preliminary injunction stage, declining to hold the term indefinite at this stage simply recognizes "the presumption of validity" and does not mean that plaintiff cannot ultimately succeed on the merits of an indefiniteness argument later in the litigation. 316 F.3d at 1342.

For the foregoing reasons, I conclude that "steam and/or gas impermeable" means "having a low enough permeability or transmission rate to steam and/or gas to prevent a measurable loss of weight, flavor, and taste during customary production, cooking, and storage."

b. The Court's Construction

The focus of the parties dispute is the term "a support" because both parties propose identical constructions regarding the "impermeable surface." (D.I. 173 at 1.) I find little or no basis for OGT's proposed construction that the support is "a side of a single, mostly flat solid." While a "surface" may be considered "a side" of an object, the clear and plain meaning of "surface" is "the exterior or outside of an object or body." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE 2300 (1986). Even OGT uses the term "surface" in the latter part of its proposed construction, indicating that it does not believe "surface" requires further construction. (D.I. 174 at 15-16; D.I. 173 at 1.) Therefore, I construe "to an impermeable surface of a support" to mean "to a solid having a non-porous surface that does not permit diffusion through its substance."
It is undisputed that Dr. Jerre M. Freeman invented the "Punctum Plug and Method for Treating Keratoconjunctivitis" (the '750 patent'), 25 years ago, and that when properly positioned; Dr. Freeman's prior art plug occludes the punctal opening and "protrudes into the vertical portion of the canaliculus." It is undisputed that this patent was in existence when Herrick applied for the '270 patent and the '959 patent, and that Freeman's plug, as well as plugs in general, were discussed in connection with Herrick's patent application. Moreover, there can be no dispute that Claims 1-27 of the '270 patent were rejected initially in the application process on the grounds of indefiniteness and obviousness and that Herrick amended Claim 1 to "sharply and clearly define that the dimension is critical." (Barsky Decl., Tab 5, at 12.) The intrinsic evidence presented to the court establishes an intention to disclaim prior art plugs to obtain the '270 patent. Furthermore, it is undisputed that the Examiner of the '959 patent specifically amended Claim 31, which issued as Claim 4, to further clarify that the implant of Herrick's patent was to be inserted "into the canaliculus of an eye."

1. Herrick Distinguished Its Implant From Prior Art Plugs

In its amended submission of the '270 patent, Herrick went to great pains to distinguish the "canalicular implant" from the prior art "punctum plug:

Neither the Freeman reference nor [the Freeman patent] suggest, disclose, or teach an implant which is disclosed and claimed in the present Application. Specifically, the punctum plug of Freeman is not intended to be passed into the canaliculus and the smooth head portion thereof is designed to be dome shaped and functions to prevent the punctum plug from passing into the horizontal portion of the canaliculus.

(Id., at 15; emphasis in original amended application.) This language alone clearly indicates that Herrick was seeking a patent on a device that passed entirely into the canaliculus in distinction to prior devices whose design prevented them from passing wholly into the canaliculus. Herrick clearly conveyed to the patent examiner that the former is an "implant" while the latter is a "plug."

This is further supported in Herrick's discussion in both the '270 and '959 patents of the prior art where the following discussion of the Freeman device occurs:

"It is also known in the art to utilize other plugs and or techniques for occluding the punctum. One plug device which is known in the art is referred to as a punctum plug . . . .

The punctum plug of Freeman is a rod-like plug formed with an oversized tip or barb portion that dilates and blockingly projects into the vertical canaliculus. The punctum plug has a smaller neck or waist portion around which the punctum sphincter ring tightens. The punctum plug has relatively large, smooth head portion which rests on top of the punctal opening and prevents the punctum plug from passing down onto the canaliculus. . . The head portion functions to prevent the punctum plug from passing into the horizontal portion of the canaliculus. The punctum plug of Freeman is subject to being inadvertently removed from the eye by the patient. "

(Barsky Decl., Tab B, at 144, Col.2:27-58.) (Emphasis added.)

This identical language in both Herrick's patent demonstrates a clear understanding that plugs are inserted into the canaliculus, which undercuts those portions of the argument suggesting that this fact is material to proving infringement. 2 For example, Herrick offers the declaration of a patent attorney to the effect that the Freeman plug, unlike the Herrick device, occludes at the punctum and not at the canaliculus. (Manbeck Decl., P 19, at 8:7-9.) But the Freeman patent itself describes, "A removable rod-like plug for blocking lacrimal fluid flow through the punctum and associated canaliculus of the human eye comprising a projecting tip . . . which is sufficient to occlude the canaliculus when inserted therein . . . ." (Barsky, Tab D, Col.6:12-15.) (Emphasis added.) And Herrick's own declaration states that the "punctum opening is just that, an opening" of virtually no depth. (Herrick Decl., P 14.) Moreover, Herrick acknowledges that "anything of any visible length that penetrates the punctum also penetrates the canaliculus." (Id.) Thus, despite the argument presented in opposition to the present motion, the fact that a device projects into the canaliculus cannot be dispositive since prior art devices projected into the canaliculus. There must be more to it than that or the canalicular implant would have infringed on the prior art punctum plugs.
2 One aspect of this argument is set forth in the Manbeck Declaration, which is, in large part, a legal brief without citations. Manbeck, a patent attorney, argues that the court should construe the patent in a manner favorable to Herrick. The court agrees entirely with Odyssey's observations, set forth in its Reply Memorandum, that the Manbeck Declaration adds nothing to the arguments set forth in the brief. (Reply Memo., at 11.)

2. Herrick Distinguished Its Implant From The Prior Art Implants

Under the heading "Summary of the Present Invention," Herrick separately discusses the "known prior art implants." ('270 patent, at 145, Col. 4.) (959 patent, at 120, Col. 4)(Emphasis added.) In that discussion, Herrick addresses devices (dissolvable and non-dissolvable) that are inserted in their entirety into the canaliculus and discusses their advantages and disadvantages. With respect to "permanent implants" that have "a central body and a tapered end," Herrick states that "such a permanent implant can still migrate within the horizontal portion of the canaliculus. Any migration of a permanent implant is undesirable." (270 Patent., Col.4:28-35.) (959 patent, Col. 4:55-63.) In comparison to these prior art implants, Herrick claims that its design has the advantage of preventing migration of the implant because, among other things, when, positioned in the canaliculus, it "will be held in place by a clamping force which is developed between the interior walls of the canaliculi against the collapsible flared section of the implant." (270 patent, Col. 4:45-50.) (959 patent, Col. 5:12-17.) This discussion has absolutely no application to any device (such as a plug) that does not reside in its entirety in the canaliculus because, as the Freeman patent made clear, the plug, device had

"a head portion of larger cross-section than said neck portion and adapted to rest on the surface of the punctal aperature and prevent said plug from passing down into the canaliculus."

(Barsky Decl., Exh. D, Col.6:24-27.) Migration within the canaliculus is not a relevant concern with plugs, as opposed to implants, because the plug is not meant to pass fully "into" the canaliculus in the first place. Here again, the record establishes that Herrick understood that there is a clear distinction between "plugs" and "implants."

3. Herrick's Drawings Reflect A Device Fully Inserted into the Canaliculus

The words are consistent also with the drawings in the patent. (See Barsky Decl., Tab B, at 140-43.) The drawings of the '270 patent and the '959 patent are identical. Nowhere does the patent contain any depiction of the invention other than as a device that it inserted in its entirety into the canaliculus. The drawings depict exactly what the words describe -- not a plug with an external cap, but a device inserted wholly into and lodged within the canaliculus. (Id., at 143.) Indeed, as Odyssey points out, the patent is even more specific at many points where it speaks in terms of a device that is placed in the horizontal canaliculus. For example, the '959 patent states, "In practicing the present invention, the canalicular implant is placed in the horizontal portion of the canaliculus." ('270 patent, Col. 9:38-40.) (959 patent, Col. 10:4-6.) It is this use of the device that is specifically disclosed in the drawings included in the patent. Thus, it is difficult to imagine that anyone reading the patent would conclude that the word "implant" refers to anything other than a device that resides entirely within the canaliculus.

4. Herrick's Use of the Word "Implant" Excludes Plug-Type Devices

Nevertheless, Herrick argues that the word "implant" is not defined in the '270 or the '959 patents, that no distinction is drawn between a plug and an implant (the foregoing language notwithstanding) and that Odyssey itself uses the word implant in its patent. 3 (270 Oppos. Mem., at 10.) (959 Oppos. Mem., at 14.)

3 In arguing the '270 patent, Herrick claimed that Odyssey never used the term "plug" in its own patent. The court pointed out in its September 27, 1999 order that this was incorrect. Now, in the '959 patent, Herrick has retreated from his earlier position, but still points out that Odyssey uses the term "implant" in its patent.
The definitional argument misses the point. While it may be literally true that the patent does not contain an express definition of "implant," the way that the words are used in the patent and the discussion contained in the prosecution history establishes an understanding that effectively defines the term. The entirety of the intrinsic evidence reveals a consistent usage of the terms "implant" and "plug" and treats them as separate and distinct devices. Whatever meaning the terms may have in common usage, within the '270 and '959 patents, an "implant" is a device that can pass through the punctum and into the canaliculus, and can be moved about within the canaliculus; a "plug" is a device a portion of which is inserted through the punctum and into the canaliculus, but which cannot pass through the canaliculus. 4 It is quite clear to the court, from the evidence presented regarding Herrick's prosecution of it '959 patent that it was tailored to exclude punctum plugs.

4 Odyssey devotes some discussion to the argument that its device does not infringe because it is not formed of a dimension to pass through a canaliculus of the eye. (Odyssey Memo. Of Points and Authorities, at 17, et seq.) In the court's view, this is subsumed in the discussion of whether the device is an "implant" or a "plug."

Given all of this, Herrick cannot now assert that Claim 4 of the '959 patent, which uses the "comprising of" rather than "consisting of" language, can be interpreted to cover plug devices. ('959 Oppos. Mem., at 3:18-22.)

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B. Claims Construction in the '415 Patent

On September 19, 2003, the Court held a hearing in accordance with Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996), to construe the disputed terms and phrases of the asserted claims. The Court's October 7, 2003 Order Following Claims Construction Hearing construed the following disputed terms in the '415 patent which are relevant to the present findings on validity and invalidity:

"implant delivery assembly"  "an apparatus for delivery of occlusive devices, such as embolic coils that comprises three distinct components: a pusher, a coupling, and an implant"

"pusher"  "any device or structure intended to push another device or structure"

"selectively operable coupling"  "a connecting device that connects the implant to the pusher and that can be selectively operated by the user"

"coupling"  "a connecting device that connects the implant to the pusher and that can be selectively operated by the user"

"said coupling operable by fluid pressure so that when a sufficient amount of fluid pressure is applied to the coupling, the fluid pressure a user causes the occlusive implant to separate from the pusher"  "the coupling is a connecting device that can be operated by selectively applying fluid pressure to the coupling to separate the implant from the pusher, and the application of the fluid pressure by the user to the coupling causes the detachment of the implant at the
"delivering fluid pressure through the pusher such that the implant detaches from the pusher by the fluid pressure"

Plain and ordinary meaning applies, no specific construction by the Court

(The Markman Order at 22-29, Docket Item No. 177.)

2. "stent impregnated [with rapamycin]"

This disputed term is found in claims 1 and 2 of the '781 patent, claim 1 of the '146 patent and claim 2 of the '728 patent. The parties have agreed that the term "stent" should mean "a device for placement in a vessel, such as a coronary artery, to provide support." Transcript of July 15, 2010 hearing at 88. This leaves the term "impregnated" for the Court to construe.

Plaintiff argue that the term "impregnated" should mean "filled, imbued, mixed, furnished, saturated, diffused, or permeated with another substance." Defendants proposed construction is very similar: "diffused, saturated, or permeated with another substance." Defendants, however, take issue in particular with Plaintiff's use of the term "furnished," which they argue is far too broad given the context of the term as it is used in the claim. The Court agrees. As Abbott points out, "furnished" can connote any conceivable pairing of two items, which is not contemplated by the plain language of the claim. Considering the various dictionary definitions provided by the parties and the plain language of the claim, the Court finds that a person of ordinary skill in the art would understand the term "impregnated" as it is used in claims 1 and 2 of the '781 patent, claim 1 of the '146 patent and claim 2 of the '728 patent to mean "filled, imbued, saturated, diffused or permeated with another substance," and the Court shall construe it as such.

E. Claims 2 & 10: "an impressed textured surface to trap air so as to facilitate unwinding of said roll of stretched film"

Dependent Claims 2 and 10 explain that the roll of stretched film has an "impressed, textured surface" that traps air between the layers of film and facilitates unwinding of the roll. Pliant asks me to construe these claims as "the plastic film has an embossed pattern that helps trap air and ease unwinding." Defendants argue that while this definition reflects the ordinary meaning of the claim terms, it fails to reflect explicit disclaimers made during the patent prosecution as well as limiting language found in the specification. To that end, Defendants propose that I construe the dependent claim as:

the plastic film has an embossed pattern--i.e., pockets or raised portions--that helps trap air and ease unwinding. The embossed pattern is created by the deliberate application of force to create pockets or raised portions utilizing an embossing roller, and thus would not include incidental impressions, scratches, or markings caused by passing the film over grooved rollers or by stretching of the film.

I begin with the ordinary meaning of the claim language. The parties agree that "impressed, textured surface" is not a term of art. Pliant argues that the term "impress" must be given its ordinary meaning, as defined by a dictionary, which is to produce a mark by pressure, or to imprint. The most recent Federal Circuit opinion to address the role of dictionaries in construing the ordinary meaning of terms, relative to intrinsic evidence, explains: "properly viewed, the 'ordinary meaning' of a claim term is its meaning to the ordinary artisan after reading the entire patent." Phillips, 415 F.3d at 1321. "Heavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification." Id. While Defendants do not disagree per se with Pliant's dictionary-based construction of the ordinary meaning of impress, they would add several additional limitations to the definition based on the specification. Defendants' primary argument is that the specification requires that the impressed textured surface originates through "the deliberate application of force," so as to exclude any markings that result from incidental impressions or scratches, for example, those produced by grooved
Magistrate Judge Smith proposed the following construction for "an impression preform": "a thermoplastic resin which serves as an impression material." 6 (R&R 19.) Neither Party objects to the first part of the construction, and the Court finds no clear error in Magistrate Judge Smith's construction insofar as it defines "an impression preform" as "a thermoplastic resin which serves as an impression material." 7 However, Medtech objects to the second part of the proposed definition, arguing that the Court should omit the phrase "consistent with the remainder of the requirements in Claim 17." (Medtech Obj. 22.) As Medtech observes, this construction would appear "to incorporate all other definitions of all other terms (and their limitations) of Claim 17 into 'an impression preform,'" which would be redundant and contrary to "the well-established principle that terms within a claim must have certain meanings." (Id.) Accordingly, the Court construes "an impression preform" as follows: "a thermoplastic resin which serves as an impression material."
Medtech that such a limitation would be improper. (Id. at 19-20.) Dentek asserts that Medtech's acceptance of the limiting word "thermoplastic" as part of this construction is "inconsistent with its attempt to include 'thermosetting' as part of the definition of resin." (Dentek Resp. 5 n.2.) To the contrary, this construction is consistent with Medtech's and the Court's broad construction of "a resin," which reflects that thermosetting materials may be used for the appliance's base resin but that only thermoplastic materials are appropriate for the appliance's preform resin.

[End Footnotes]

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3. Court's Construction of Nisus' Patent Claims

The parties requested that the Court construe the claims at issue pursuant to Markman v. Westview Instruments, Inc. ("Markman II"), 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). The Honorable Curtis L. Collier, the United States District Judge originally assigned to this case, held a Markman hearing on October 2, 2001 and issued a memorandum opinion construing the claims on January 14, 2002. The Court construed the term "improved depth of penetration," the only remaining claim at issue, to mean "improved cross-grain penetration in comparison to the Japanese prior art" [see Doc. 215 at p. 12].

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2. Improved Eschar

The next disputed claim term "improved eschar" is found in Claims 1 and 10 as set forth above.

ConMed's Proposed Definition: A shallower, more uniform and pliable surface layer of treated tissue that stops bleeding by more effectively sealing the affected tissue.

Canady's Proposed Definition: Indefinite.

(Docket No. 58, Ex. B, p. 5). After a review of the claim term itself, I find the term to be unclear. As a result, I turn to the specification for aid. After a review of the same, I disagree with Canady, however, that the claim term is indefinite.

An improved eschar, as indicated by the specification, is described as follows:

The fulguration eschar created by the present invention is characterized by an outer generally uniform depth reticulum of arc-created holes penetrating the tissue from a surface of the eschar; arc holes which are smaller in size, greater in number, more comparable or uniform in a cross-sectional size, and substantially more uniformly spacially distributed over the surface of the eschar; and a greater wall thickness of tissue between adjacent arc hold which provides pliability without cracking. Below the arc hole reticulum there exists a generally uniform-depth thermally desiccated layer which separates the arc hole reticulum from the unaffected tissue. The thermal desiccation layer of the fulguration eschar available from the present invention is also shallower in depth compared to the thermal desiccation layer of an eschar created by prior fulguration techniques....[It] is further characterized by a substantial absence of charring and carbonization in arc hole reticulum.

Docket No. 58, Ex. A, col. 5, ll. 18-40; see also, id. at col. 34, ll. 48-65. Based on the same, I construe the term "improved eschar" to mean an eschar (as defined above) that, when compared to electrosurgical fulguration made prior to this invention, is characterized by a shallower arc hole reticulum layer that has more uniform and smaller diameter holes evenly distributed over the surface of the tissue that is substantially free of charring and carbonization with thicker walls of tissue between adjacent arc holes and is shallower, and with a thermal desiccation layer that is relatively thin and more uniform in depth.

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2. Construction of the disputed terms in claim 1.

a. "An improvement in a vehicle."

Claim 1 of the 948 patent is what is known as a Jepson claim, which includes (1) a preamble that sets forth all of the conventional elements of an invention and (2) a subsequent phrase describing the new or improved portion of the claimed invention. See Jepson v. Coleman, 314 F.2d 533, 50 C.C.P.A. 1051, 1963 Dec. Comm'r Pat. 304 (C.C.P.A. 1963); see also 37 C.F.R. § 1.75(e):

Where the nature of the case admits, as in the case of an improvement, any independent claim should contain in the following order: (1) a preamble comprising a general description of all the elements or steps of the claimed combination which are conventional or known, (2) a phrase such as "wherein the improvement comprises," and (3) those elements, steps and/or relationships which constitute that portion of the claimed combination which the applicant considers as the new or improved portion.

The United States Court of Appeals for the Federal Circuit has held that "Jepson claiming generally indicates intent to use the preamble to define the claimed invention, thereby limiting claim scope." Catalina Marketing Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 808 (Fed. Cir. 2002). The phrase "an improvement in a vehicle" is the preamble to the 948 claim.

Plaintiff argues that the phrase should be read to mean "a module combined with a vehicle to create an improvement to the vehicle." Defendants contend that "an improvement in a vehicle" means "a device that is incorporated in, and becomes a part of, a vehicle." The crux of the parties' dispute concerns whether or not the invention is intended to become a permanent fixture inside of the vehicle. Mr. Lundell has answered this question in the affirmative, recommending that the Court adopt the following construction: "a module that becomes part of a vehicle and is intended to remain part of the vehicle during use."

As Mr. Lundell notes, during the prosecution of a previous patent, which described an earlier version of the invention at issue here, Plaintiff distinguished that device from the prior art by noting that the prior art was "not an improvement in a vehicle, but a stationary piece of shop equipment." See Amendment After Final dated December 30, 1991, at 7 (Bates No. JBA 008689) (cited in Superchips' Claim Constr. Br. at 10). That statement had -- and has -- the effect of narrowing the range of claimed devices. Cf. Covad, 262 F.3d at 1273-74. The Court finds, therefore, that although the patented invention may, like any other automobile part, be removed after installation, the patent and prosecution history, when read together, contemplate that the invention will remain part of the vehicle once attached. Accordingly, the Court adopts Mr. Lundell's recommended construction and holds that "an improvement in a vehicle" means "a module that becomes part of a vehicle and is intended to remain part of the vehicle during use."

Next, the district court construed the claim language "in," "within," and "between." Each of these claim construction issues is similar to the interpretation of "between" discussed above in relation to claims 5 and 33-36. The district court construed these words more narrowly than required by the claim language and context. The word "in" does not require that something be completely and continuously inside of something else. The word "within" does not require that something be completely and continuously within something else. Further, as discussed above in more detail, the word "between" does not require that something be completely and continuously between two things.

Nothing in the specification or the prosecution history supports such narrow readings, and no testimony was offered to suggest that these narrow interpretations are the correct meaning to one skilled in the art. Consulting the claim language again, the "between" requirement may be satisfied even if a component extends beyond the specified boundaries. In the same way, the "in" requirement may be met by a component which is located, at least in relevant part, in the defined space, as the "within" requirement may be met by a component which located, at least in relevant part, within the defined area. Accordingly, this court vacates the district court's grant of summary judgment of non-infringement, both literal and under
the doctrine of equivalents, as to claim 11 and remand for a trial on the merits.

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Evergreen alleges that Biomed's sputum collector infringes claim 1 of Evergreen's '346 patent. The disputed portion of claim 1 reads:

A specimen collecting device comprising: . . . graspable means releasably coupled to said supporting means, releasably holding said cap means in said supporting means when said supporting means is secured thereto, said graspable means being adapted to be grasped while holding said cap means as said closing means is coupled to and/or released from said container, whereby said graspable means aids in the coupling and/or releasing of said cap means.

'346 patent, col. 6, lines 36, 47-55 (emphasis added to disputed language).

Biomed argues that its device does not literally infringe claim 1 for two reasons which are dealt with seriatim.

1. Biomed contends that its device does not have "graspable means releasably coupled to said supporting means," i.e., a base stand cover. Evergreen responds that this limitation is met by the funnel lid which is "releasably coupled to the base unit via the collection tube." The Court concludes that the word "coupled" does not support Evergreen's interpretation. See ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1579 (Fed. Cir. 1988) (patents must be interpreted in accordance with the plain meaning of the claims). "Coupled" signifies direct contact between two objects. The specification uses the word "coupled" a multiple of times when referring to the direct contact of two objects. '346 patent, col. 3, lines 52-56; col. 4, lines 3-5, 7-10, 23-24. The other claims use the word "coupled" in the same way. See, e.g., '346 patent, col. 6, lines 66-69; col. 7, lines 22-29, 40-44. The part of Biomed's device which holds the vial cap is not, therefore, "coupled" to the base.

2. Biomed argues that its device does not store "said cap means in said supporting means . . . " Evergreen responds that the vial cap is held in the base unit because it is on the funnel which is on a vial located in the base unit. The word "in," however, is not synonymous with the word "on." The two words denote different spacial relationships. The vial cap of Biomed's device is not at any time encompassed by the base unit. Biomed's device does not, therefore, embody every element of Evergreen's patent claim. Given proper construction of the patent, the Court concludes that a finding of literal infringement is impossible.

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I. "In a chain saw"

Claim 1 begins with the term "[i]n a chain saw." Plaintiffs contend this preamble is not a claim limitation or an element of Claim 1, but merely describes a possible use for the invention. Defendants, however, maintain this term is a Jepson-type limitation and, therefore, is itself an element of Claim 1.

A. Jepson-type Preambles Generally.

"Generally, the preamble does not limit the claims." Allen Eng'g Corp. v. Bartell Indus., Inc., 299 F.3d 1336, 1346 (Fed. Cir. 2002). In a Jepson-type claim, however, the preamble to the claim is a limitation on the scope of the claim. See Pentec, Inc. v. Graphic Controls Corp., 776 F.2d 309, 315 (Fed. Cir. 1985). Jepson form allows an inventor to recite in a preamble "elements or steps of the claimed invention which are conventional or known." Kegel Co. v. AMF Bowling, Inc., 127 F.3d 1420, 1426 (Fed. Cir. 1997). When this form is used, a "claim preamble defines not only the context of the claimed invention, but also its scope." Rowe v. Dror, 112 F.3d 473, 479 (Fed. Cir. 1997).

There is no definitive "litmus test" to determine when a claim preamble is written in Jepson-type format. See Catalina Mktg. Int'l, Inc. v. Cool savings.com, Inc., 289 F.3d 801, 808 (Fed. Cir. 2002). A preamble, however, "does not limit the scope of the claim when it merely states a purpose or intended use of the invention." In re Paulsen, 30 F.3d 1475, 1479 (Fed. Cir. 1994). See also Rowe, 112 F.3d at 478 (when a "patentee defines a structurally complete invention in the claim body and
uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation.

Conversely, a preamble is limiting if it "breathes life and meaning into the claim". Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1118 (Fed. Cir. 2004).

In General Electric Co. v. Nintendo Co. Ltd., the claim preamble referred to: "A system for displaying a pattern on a raster scanned display device by mapping bits from a display location in a memory associated with a computer onto the raster." 179 F.3d 1350, 1361 (Fed. Cir. 1999). The Federal Circuit held this preamble was a limitation that gave "life and meaning" to the claim because the preamble made clear that the inventors were attempting to solve a narrow problem pertaining to a particular raster scan display rather than attempting to improve all display systems generally. Id. at 1361-62.

By contrast, the Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc. preamble described "A filter assembly for use with a bottle . . . to simultaneously cap the neck or open end and filter liquid poured out of the bottle. . . ." 381 F.3d at 1118 (emphasis in original). The Federal Circuit found this preamble was not a claim limitation because it merely "recites a purpose or intended use of the claimed filter assembly." Id.

Defendants assert the preamble to Claim 1 is a Jepson-type limitation because the specification of the '783 Patent provides the "invention relates generally to power equipment, and particularly to chain saws used for cutting material." '783 Patent col. 1 ll.6-8 (filed May 23, 1991). See also 35 U.S.C. § 112 (the specification in general is a written description of the invention and the manner or process of making and using it). Although Defendants maintain the specification clarifies that the '783 Patent requires a chain saw as an element of Claim 1, the text cited from the specification does not support Defendants' construction of the preamble.

If, as the specification states, the '783 Patent's invention relates specifically to a chain saw but also generally to power equipment, it is more likely that the preamble merely describes a purpose or intended use rather than laying out a claim limitation. See In re Paulsen, 30 F.3d at 1479. Thus, the specific case of a chain saw is only a subset of the general case of power equipment, and, therefore, the preamble is not a limitation.

As in Innova/Pure Water, and in contrast to General Electric Co., the preamble term "[i]n a chainsaw" does not indicate the '783 patentee was working on a narrow, specific problem. Moreover, the term does not appear to give "life and meaning" to the terms of Claim 1. Instead the preamble informs the reader of an intended use for the invention, and the language from the specification that Defendants highlight bolsters this interpretation.

The prosecution history of the '783 Patent also is instructive. At least two prior versions of the Claim 1 preamble were drafted and submitted to the Patent and Trademark Office. One version provided: "In a chain saw, a sprocket and saw chain combination comprising." Pitchford Decl., Ex. 1 at 40. Another version of the Claim 1 preamble provided: "In a chain saw including an elongated guide bar having a nose sprocket, a nose sprocket and saw chain combination comprising". Pitchford Decl., Ex. 1 at 55 (emphasis in original). Both of these prior versions of the Claim 1 preamble contain limiting and/or descriptive text that does not appear in the operative Claim 1 preamble, "[i]n a chain saw." Thus, the prosecution history demonstrates the '783 patentee ultimately chose a simplified preamble that merely describes a use for the patented invention. In other words, the patentee demonstrated the ability to write a limiting preamble that might have included elements of the claim, but ultimately the patentee chose not to do so.

Accordingly, in the context of the intrinsic evidence, the Court concludes the preamble to Claim 1 is not a Jepson-type limitation, but only describes an intended use for the invention.

On its face, claim 1 requires "a flexible dielectric substrate having a [susceptor] thereon residing in a close proximal relation to a substantial surface portion of said food item." To construe the terms "close proximal relation" and "substantial surface portion," we look to the intrinsic evidence.

The specification discloses food items, i.e., a fish stick, potatoes, and onion rings, wrapped in a manner such that the susceptor, which coats dielectric wrapping material, remains adjacent to the surface of the food item throughout the cooking process. Consequently, "residing in a close proximal relation to . . . said food item," as utilized in claim 1, refers to a
 positional relationship between the susceptor and food item in which the susceptor remains closely adjacent to the food item throughout the cooking process.

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B. "In a plane including the axis" as used in Claims 416:1, 5, 6, and 7 and Claim 730:6

Alden offers the following construction of this language: "The phrase 'in a plane including the axis' must be construed liberally rather than with geometric precision to allow for design integrity and manufacturing tolerances which in the real world offset the surfaces or edges slightly from a plane intersecting the bit axis." Alden Br. at 8. Eazypower argues that the plain language of the claims is sufficient.

1. Claim Language

a. Claim 416:1

The full text of this claim is set forth above in the section construing the term "point." The relevant language is: "the scraping edges of the recesses each being in a plane including the axis." DX B, col 3, lns 57-58. The construction offered by Alden contradicts the plain language of the claim. Further, the Court notes that Alden failed to use words of approximation, such as "in a plane approximately including the axis," despite using such terms elsewhere in the patent. See, e.g., DX B, col 4, lns 66-67 ("at a scraping edge acute angle to the axis less than about 70 [degrees]") (emphasis added).

b. Claim 416:5

The full text of this claim is set forth above in the section construing the term "point." The relevant language is: "longitudinal surface facing in a counter-clockwise direction and being in a plane including the axis" and "each rearward edge also lying in a plane including the axis." DX B, col 4, lns 18-20, 26-27. Claim 416:5 will be construed in the same way as claim 416:1.

c. Claim 416:6

The full text of this claim is set forth above in the section construing the term "point." The relevant language is: "the scraping edges of the recesses each lying in a plane including the axis of the bit." DX B, col 3, lns 44-45. Again, use of the phrase in this claim will be construed in the same way as in claim 416:1.

d. Claim 416:7

This claim states:

The combination as claimed in claim 6 including a support portion behind each scraping edge, the support portions each defined by a relief surface curving away from the scraping edge down to a rearward edge bordering one of the longitudinal recesses, the rearward edges both lying in a plane including the axis and being disposed at a third angle to the axis, the third angle being sharper than the second angle.

DX B, col 4, lns 50-57. Nothing about this language compels a treatment different from the other claims just discussed.

e. Claim 730:6

This claim reads exactly the same as claim 416:6, except that claim 730:6 refers to "a pair of longitudinal recesses," as opposed to "a plurality of longitudinal recesses." DX A, col 4, lns 37-54. The relevant language is: "the scraping edges lying in a first plane including the axis of the bit." DX A, col 4, lns 49-51. Once again, use of the phrase in claim 416:5 will be construed in the same way as in claim 416:1.

2. Specification

Both the "Summary of the Invention" and "Detailed Description of Embodiments" sections of the '416 patent essentially
repeat the language used in the claims. DX B, col 1, lns 40-41; col 2, lns 38-39; col 3, lns 10-13. There is no mention of design integrity or manufacturing tolerances in the specifications of either patent. 3. Prosecution History

Alden again refers to the Richards patent in the prosecution history, arguing here that Richards shows a "chisel point" design, in which the edges are slightly offset. For the reasons stated above under the Court's construction of the term "point," the Richards patent is given no weight.

4. Extrinsic Evidence

Alden again relies on the Desaulniers affidavit, here to establish that a person of ordinary skill in the art would understand that phrase is subject to manufacturing tolerances and design integrity limitations. Because the Desaulniers affidavit does not establish that Desaulniers is a person of ordinary skill in the art, the Court rejects the affidavit.

5. Construction

The additional language sought by Alden conflicts with the plain meaning of the phrase "in a plane including the axis." The Richards patent and Desaulniers affidavit are unconvincing. Further, the Federal Circuit has held that reading manufacturing tolerances into a claim is improper. Senmed, Inc. v. Richard-Allan Medical Industries, Inc., 888 F.2d 815, 820 n.10 (Fed. Cir. 1989). Therefore, the Court accepts Eazypower's proposed construction of "in a plane including the axis," and construes the phrase to mean simply what it says: "in a plane including the axis."

--- Footnotes ---

7 Alden cites Danacorp v. American Axle & Mfg., Inc., 110 Fed. Appx. 871 (Fed. Cir. 2004) as support for its proposition that a claim should be construed to account for manufacturing tolerances. The case was unreported and states: "Pursuant to Fed.Cir.R. 47.6, this order is not citable as precedent." Id. at 871. Therefore, the Court ignores Danacorp. Alden also cites Middletown, Inc. v. Minnesota Mining & Manufacturing Co., 217 F.3d 860 (Table), 1999 WL 1072246 (Fed. Cir. Nov. 16, 1999) (Middletown II). In Middletown II, the Federal Circuit noted in dicta that the district court's construction allowed for "normal manufacturing tolerances." Id. at *6. On a second appeal following remand, the Federal Circuit noted (cont'd) that it had not actually construed the term in Middletown II, and then construed the relevant term without allowing for manufacturing tolerances. Middletown, Inc. v. Minnesota Mining & Manufacturing Co., 311 F.3d 1384, 1389 (Fed. Cir. 2002) (Middletown IV). Middletown IV did not discuss whether manufacturing tolerances could ever be read into a claim; rather, the Court found that the evidence allegedly supporting a construction that included manufacturing tolerances was insufficient. Id. In any event, Middletown IV destroyed any basis for reading Middletown II as approving the practice of reading manufacturing tolerances into claim terms, and further, Middletown II was an unreported opinion. Therefore, the Court rejects Alden's reliance on Middletown II and follows Senmed, noting for the record that the Middletown decisions make no mention of Senmed.

--- End Footnotes ---

Judge Simpson construed two phrases of the '322 patent claims in Pillowtex. The first is the phrase "elastic material attached to inelastic material in a plurality of spaced apart parallel lines of attachment," which appears in Claims 1, 11, and 28. Judge Simpson construed this phrase to require that the fitted mattress cover must have embodied in its skirt a configuration of spaced-apart, parallel lines of attached elastic material; that is, that the elastic material itself must be configured in spaced-apart, parallel lines of attachment. The second phrase Judge Simpson construed appears in Claim 34, in the language "rows of elongated elastic cords extending in a longitudinal direction of the skirt...." Judge Simpson construed this phrase to mean that the fitted mattress cover must have embodied in it a plurality of elastic cords incorporated into the skirt material in rows. He rejected Louisville Bedding's contentions that the rows could extend in "more or less a straight line" (finding instead that "extending in a longitudinal direction of the skirt" limited the rows to straight lines), and that "rows" could mean "rows of stitches" (finding that the claim specifically described the configuration of the elongated elastic cords which are incorporated into a material).
Perfect Fit draws a number of conclusions from these rulings to which Louisville Bedding objects: specifically, that the "elastic material" must (1) take the form of strips, cords, yarns, threads, strings and like-shaped materials (i.e., must be elongated); (2) be the attaching mechanism itself, that is, must be stitched into (not onto) the inelastic fabric; and (3) be spaced apart substantially over the width of the sidewall. Perfect Fit correctly infers the first two of these conclusions from Judge Simpson's construction of the phrase "elastic material attached to inelastic material in a plurality of spaced apart parallel lines of attachment," as describing the configuration of the elastic material itself, rather than the points at which the elastic material is attached. Judge Simpson's use of the doctrine of claim differentiation to note that the "elastic material" contained in claims 1, 11 and 28 is not limited to the form of "elongated elastic cords" specified in Claim 34 is not inconsistent with Perfect Fit's assertion; the elastic material may take forms other than cords. But Judge Simpson's central construction, that the elastic material must take the described configuration -- to be attached in spaced-apart, parallel lines of attachment -- forecloses Louisville Bedding's assertion that the patent encompasses a continuous sheet of elastic material, at least to the extent that continuous sheet is not comprised of elastic strips, yarns, etc. which attach themselves in spaced-apart, parallel lines of attachment. 4 This preclusion is further supported by Judge Simpson's infringement analysis, in which he applied his construction to the product at issue in Pillowtex. He reasoned that "the Lycra(R) yarns which represent the only possible material to constitute 'elastic cords' in the # 4059 skirt material are woven into the fibrous base material in an interconnecting pattern of loops which travel in all directions throughout the material. There are simply no rows of elastic cords in Pillowtex's product." Further, Perfect Fit correctly notes that the use of the term "in" rather than "by" or "with" in the phrase "elastic material attached to inelastic material in a plurality of spaced apart parallel lines of attachment" requires an elastic sewn into, not onto, an inelastic material; thus, it is clear that the elastic material must itself be the attaching mechanism.

4 Though Judge Simpson did not explicitly reject the idea of a continuous sheet of elastic material, his construction of Claim 34 over the plaintiff's objections is telling: he states that this claim, which "contains the phrase 'rows of elongated elastic cords' . . . . specifically describes the configuration of the elongated elastic cords which are incorporated into a material. To suggest that the claim states otherwise solely on the basis that it arguably contemplates a woven fabric is unconvincing."

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4. "in accordance with" (claim 1)

Flow contends that this phrase does not require construction, but that if it did, the construction should be "in conformity with." Omax seems to agree that this phrase is properly construed as "in conformity with," but proposes also to add language to indicate that this phrase is more general than, and includes, the phrase "as a function of," which appears in claims 14-17. Omax does not argue that there is any dispute about these definitions, nor that there might be any confusion. Therefore, there is no reason to include the additional information proposed by Omax. The Court adopts Flow's construction: "in conformity with."

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1. "[I]n alignment" of Claim 5

wherein said transitional area curves upward longitudinally to said sidewall, an annular sidewall continuously extending around said bottom in alignment with said sidewall, said annular wall having a bottom edge forming a lower support surface projecting beyond the bottom surface of said bucket

a. Magistrate Judge's Ruling
The magistrate judge interpreted the phrase "in alignment" in Claim 5 to mean "in a straight line with" after considering both the defendants' and plaintiffs' dictionary interpretations of the phrase. R&R at 14. The magistrate judge relied on Phillips to emphasize that the use of dictionaries to assist in determining the ordinary and customary meaning of claim terms has its limitations. Id. at 12. Further, the magistrate judge noted that 'ordinary meaning' is the meaning to the ordinary artisan after reading the entire patent. Id. at 13. However, the magistrate judge was not persuaded that a person of ordinary skill in the art of molding plastic buckets would interpret "in alignment" to include "parallel." Id. at 13-14. The magistrate judge noted that neither the claims nor the specification provide any description of the placement of any parallel foot extending from the bucket side wall. Instead, Figure 5 of the '493 patent shows the annular sidewall (134) extending underneath the sidewall of the bucket (112) in a straight line. Id. at 13.

b. The Defendants' Objections

The defendants argue that the magistrate judge ignored the ordinary meaning of the term "in alignment" when she rejected citation to dictionary definitions and instead imposed a limitation on the meaning of the term from the preferred embodiment in Figure 5.Defs. Objections at 10. They also contend that the magistrate judge incorrectly relied on Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005), in rejecting dictionary definitions proposed by the parties because the '493 patent does not define or explain the term "in alignment." Id. at 10. Specifically, the defendants submit that the appropriate consideration of dictionary definitions combined with the context of the specification requires a finding that "in alignment" means "generally or substantially in a straight line or parallel lines." Id. at 9-11. In support, the defendants argue that the embodiment in Figure 5 illustrates something other than a straight line because the internal surface of the sidewall may be cored out to support another bucket, and the wall thickness of the lower end of the bucket may be increased up to 20%. Id. at 11.

c. This Court's Construction

In Phillips, the Federal Circuit stated:

Properly viewed, the 'ordinary meaning' of a claim term is its meaning to the ordinary artisan after reading the entire patent. Yet heavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context.

Phillips, 415 F.3d at 1321.

Here, nothing in the intrinsic evidence indicates that one skilled in the art would view the ordinary meaning of "in alignment" to mean "parallel." When referring to the annular bottom portion and the sidewall, the specification does not mention the word "parallel," nor does it indicate that these two elements should be parallel. Instead, Figure 5 of the '493 patent shows that the annular sidewall (134) extends directly beneath the sidewall (112) in a straight line. '493 patent at Fig. 5. Further, the specification notes that "[t]he bottom of the bucket merges with sloped sidewall through an interface." Since the sidewall merges with the bottom through the interface, to have the annular sidewall parallel with the sidewall requires an offset configuration, which does not support the patent's intent to prevent corner stress points. See '493 Patent at Cols. 4:65 -- 5:1 (where specification states that "[t]he plastic is allowed to flow freely around the corner in the molding process of bucket and also into the annular bottom portion or foot in order to prevent corner stress at areas upon which the bucket rests").

In addition, even though the '493 patent indicates that the internal surface of the sidewall may be cored out to support another bucket ('493 patent at Col. 5:9-12, Fig. 5) and the wall thickness of the bucket at its lower end may be thickened up to 20% ('493 patent at Col. 5:6-9), one skilled in the art would not interpret these modifications to suggest the annular bottom portion is parallel to the sidewall when it must be positioned straight under the sidewall to prevent corner stress. Finally, the defendant's assertion that the term "in alignment" should be construed to mean parallel would improperly impose a restriction narrower that the term's ordinary meaning. See, e.g., Phillips, 415 F.3d at 1323 (noting that "in Acumed, the Federal Circuit refused to impose a restriction from the specification narrower than the term's ordinary meaning" and declined to interpret "transverse" as meaning "perpendicular" where the intrinsic evidence suggested that the patentees knew how to restrict their claim coverage, but chose a different claim term that implied a broader scope) (citing Acumed LLC v. Stryker Corp., 483 F.3d 800, 809 (Fed. Cir. 2007)).
Based on the language of the specification, the claims, and the figures of the '493 patent, the court concludes that one skilled in the art would not construe "in alignment" to mean "parallel." As a result, the defendants' reliance on the extrinsic dictionary definition does not override the intrinsic evidence supporting this court's construction. Thus, the court construes "in alignment" to mean "in a straight line with."

The parties propose the following constructions for these disputed terms:

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Dyson Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>'181/1 an airstream outlet opening in an upper central portion of the dirt separation housing and in communication with the inlet opening;</td>
<td>An opening in the dirt separation housing that is located in or near the top of the dirt separation housing and lies on the longitudinal axis of the dirt separation housing. (Jt. State.)</td>
</tr>
<tr>
<td>'181/1 a support element mounted in an upper portion of said dirt separator housing;</td>
<td>Attached to the dirt separator housing at or near the top of that housing. (Jt. State.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Bissell Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>'181/1 an airstream outlet opening in an upper central portion of the dirt separation housing and in communication with the inlet opening;</td>
<td>The airstream outlet opening is centrally located in the top half of the dirt separation housing. (Jt. State.)</td>
</tr>
<tr>
<td>'181/1 a support element mounted in an upper portion of said dirt separator housing;</td>
<td>Attached in the upper half of the dirt separator housing. (Jt. State.)</td>
</tr>
</tbody>
</table>

The parties' proposed constructions diverge primarily regarding the meaning of "upper" and "central." The court addresses each word in turn. Bissell proposes construing "upper" to mean "top half." Dyson construes "upper" more narrowly, limiting it to "at or near the top." The word "upper" itself is consistent with "top half." Nothing in the patent language suggests or compels a more limited construction. It is true that the figures in the patent generally disclose an opening at or near the top of the separation housing, as Dyson notes. However, it would be legally improper to limit the claim based on features of illustrative figures alone, particularly where additional intrinsic evidence supports a different conclusion. See MBO Labs., Inc. v. Becton, Dickinson & Co., 474 F.3d 1323, 1333-34 (Fed. Cir. 2007); Playtex Prods., Inc. v. Procter & Gamble Co., 400 F.3d 901, 907 (Fed. Cir. 2005). In this case, the additional intrinsic evidence includes the prosecution history, which reveals that the Patent Office allowed Claim 1 to issue only after considering a prior patent, the "Wright et al. Patent," that disclosed an airstream outlet "in a lower portion of the housing." (Bissell Ex. C-1, Prosecution History of the '181 Patent, at 82.) In its decision to allow Claim 1, the Patent Office emphasized that Claim 1 of the '181 Patent differed from the Wright et al. Patent in placing the airstream outlet in an upper, rather than a lower, portion of the housing. (Id.) The Patent Office required no more limited description of the height at which the airflow outlet was placed. The Patent Office's decision framed the notion of "upper," against its opposite, "lower," not in terms of the top or bottom edge of the structure. This is more consistent with an understanding of "upper" as "the top half."

Neither party has proposed a convincing construction for the term "central." Bissell's proposed construction simply
transforms the adjective "central" into the adverb "centrally" and leaves the term undefined. At oral argument, Bissell further suggested that "central" be construed as "away from the periphery." Dyson's proposed construction weaves something entirely new (a "longitudinal axis") that lacks any textual basis in the patent, the prosecution history or even the extrinsic evidence. The Court rejects the parties' proposed constructions of this word and chooses its own.

The problem with Bissell's original proposed construction is that it does nothing to define or otherwise give limiting content to the disputed claim term. The problem with Bissell's second proposed construction is that it focuses on the wrong point: the claim term "central" suggests an area defined by its relationship to the center of something, in this case the housing; Bissell focuses, instead, on the edge or the periphery of the housing, which has the effect of claiming too broad a region. The central area of a city, by analogy, is not the area "away from the suburbs;" rather, it is the area near the center of town.

This discussion also highlights the problem with Dyson's proposal: Dyson tries to limit "central" to a single set of points on a line in space (the "longitudinal axis"), but the claim term "central" suggests a region, not a point or set of points on a line. Using the same city analogy, the "central city" is not simply the geometric center point of town, but rather an area near the center. Based on these considerations, the Court construes "central" to mean "closer to the center than to the edge of the housing."

Accordingly, the Court construes "an airstream outlet opening in an upper portion" as "the airstream outlet opening is located in the top half of the dirt separation housing and closer to the center than to the edge of the housing;" and the Court construes "mounted in an upper portion" as "attached in the upper half of the dirt separator housing."

D. In Combination

Webster's defines combination to mean: "(1) a result or product of combining; … (2) an ordered sequence … (5) (a) the act or process of combining … (b) the quality or state of being combined." WEBSTER'S at 262. Blank proposes that "in combination" should be construed to mean "two separate items joined together." (Def.'s Markman Brief at 12. Fiala would interpret "in combination" to mean "the aggregate of the first card and the package." (Pl.'s Markman Brief at 23.)

Blank presents a unique argument. "In combination" is a standard introductory phrase in patent claims. The court, however, could find no Federal Circuit opinion which interprets that phrase. Given the ubiquitousness of the phrase in patent claims, the claim language, the specification, and the prosecution history offer no help in interpreting its meaning. All seem to assume that the reader already knows the meaning. Given this situation, the court has surveyed the relevant case law. There is no indication that the presence of the phrase "in combination" indicates that two separate items will be "joined together" as Blank uses that phrase. Cf. Berg Tech., Inc. v. Foxconn Int'l, Inc., 1999 U.S. App. LEXIS 2796, 1999 WL 96414, at *3 (Fed. Cir. Feb. 23, 1999) (stating that terms commonly used in patent claims which have a generally understood meaning should not be given a meaning inconsistent with the generally understood meaning absent some indication in the claims, specification, or prosecution history that such a departure was intended). "In combination" simply indicates that all of the combined elements must be present. See, e.g., General Mills, Inc. v. Hunt-Wesson, Inc., 103 F.3d 978, 979 (Fed. Cir. 1997) (discussing in combination a food item and a wrapping material).

The court, therefore, interprets the phrase "in combination" to mean: "the aggregate of." The evidence before the court indicates that a person of ordinary skill in the art, as well as the patent bar, would have so defined "in combination" at the time the patent was prosecuted.
"the aggregate of [the first card and package]." (Pl. Brief at 23.) SVS contends that the phrase "in combination" speaks for itself, but goes on to argue that the plain meaning of the term "in combination" in the context of claim 12 requires that two formerly separate items (the card and package) be joined together. (Def. Slide 75.)

"In combination" is a standard introductory phrase in patent claims. Given the ubiquity of the phrase in patent claims, the claim language, specification, and prosecution history offer little help in interpreting its meaning. All patent applicants seem to assume that the reader already knows what "in combination" means. Nevertheless, the defendant points out that all the embodiments and drawings show a separate card and package joined together, rather than a unitary package/card combination, and cites several cases for the proposition that the claim language incorporates this assumption. See Toro Co. v. White Consol. Indus., Inc., 199 F.3d 1295, 1301 (Fed. Cir. 1999); Wang Lab., Inc. v. America Online, Inc., 197 F.3d 1377, 1382 (Fed. Cir. 1999); Netword, LLC v. Centraal Corp., 242 F.3d 1347, 1352 (Fed. Cir. 2001). These cases, however, establish no rule that if "only one embodiment is disclosed in the specification, claim terms are limited to the embodiment disclosed." Teleflex, Inc. v. Ficosa North America Corp., 299 F.3d 1313, 1326 (Fed. Cir. 2002). Resort to the specification to give a patent term other than its ordinary meaning was allowed most recently only after "the applicant admitted that certain claim terms lacked any agreed upon meaning in the art … and unequivocally directed the patent examiner, as well as the public, to the specification as the complete source of meaning for the disputed terms…" Irdeto Access, Inc. v. Echostar Satellite Corporation, 383 F.3d 1295, 1302-03 (Fed. Cir. 2004).

Given the frequent use of the term "in combination" in patent claims, the defendant cannot argue that the term has no agreed upon meaning. There is no indication from the text of claim 12 that the two items claimed "in combination" with one another must have existed separately at any previous time. "In combination" simply means that the two combined elements are present. See, e.g., General Mills, Inc. v. Hunt-Wesson, Inc., 103 F.3d 978, 979 (Fed. Cir. 1997) (discussing "in combination" a food item and a wrapping material). Resolving a dispute similar to this one, this court recently interpreted the phrase "in combination" to mean "the aggregate of." See Barry Fiala, Inc. v. Arthur Blank & Co., No. 02-2282 Ma, 2004 U.S. Dist. LEXIS 28624 (August 24, 2004). The court sees no reason to abandon that construction in the instant case. The court, therefore, interprets the phrase "in combination" to mean: "the aggregate of."

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B. Term 2: "in communication with"

The Court construes the term "in communication with" in claims 1 and 2 of the '281 patent as follows:

A portion of a first member is "in communication with" a portion of a second member if those two portions are cavities or tubes whose interior spaces are connected to each other by means of an opening or passageway.

Claim 1 of the '281 patent covers a device with two "members" and requires that "at least a substantial portion of the central portion[s]" of the two members be "in communication with" each other. Claim 2 of the '281 patent depends from claim 1 and covers a device with "disks in communication with one another [that] are attached to one another to define a conjoint disk."

The University contends that "in communication with" means "interconnected with." Am. JCCS Sched. B at 5; Univ. Opening Br. at 22-23. But at oral argument, the University conceded that, as far as this case is concerned, "interconnected" is no different from "connected." Hr'g Tr. at 57. Thus, the University contends that "in communication" as used in the '281 patent is synonymous with the terms "joined," "affixed," and "connected" discussed above. Id.

AGA likewise treats "in communication with" as basically synonymous with "joined," "affixed," and "connected." As it does with respect to the latter three terms, AGA asks the Court to substitute a complete sentence for a word or phrase that functions as an adjective. According to AGA, "in communication with" means: "The first and second members must be physically discrete and separate components; these physically discrete and separate components must be attached to and in contact with each other over a substantial portion of the respective central portion of each member." Am. JCCS Sched. B. at 5; AGA Opening Br. at 19.

AGA's proposed construction wrongly transforms a simple prepositional phrase into a series of statements larded with
factual assertions that relate tangentially (at best) to the claim language to be construed. The University's proposed construction is also unhelpful, although it is at least more sensible than AGA's in form. The University's construction also prompts the question: If "in communication with" just means "connected to," why doesn't the patent just say "connected to"?

The likely answer is that the lawyer who drafted this claim thought (or hoped) that "in communication with" was broader than "connected to." The '281 patent is the last patent to descend from patent application number 07/822,951 filed in 1992. Earlier patents in the same family generally cover "disks" whose central portions are "affixed" to each other. See, e.g., '291 patent claim 1; U.S. Pat. No. 5,334,217 claim 1. But in claim 1 of the '281 patent, the drafter substituted the vague term "member" for the clearer term "disk," in an obvious attempt to claim the patented invention more broadly than earlier patents did. 9

But the word "communication," when used to denote a physical relationship, has a very particular meaning. The relevant definition of "communicate" in AHD Third is "[t]o be connected: apartments that communicate." AHD Third 383. The relevant definition of "communicate" in Webster's Third is "to be connected: open into each other: afford unbroken passage: join <<the two rooms [communicate]> <<the pantry [communicates] with the hall>." Webster's Third 460. These definitions, and the examples they provide, establish two things about the physical relationship of "communication." First, things that communicate physically must have an interior space, as do cavities (such as rooms) or tubes (such as hallways). Second, physical communication involves connecting those interior spaces to one another.

The University relies on the definition of "communicate" in Webster's Third to support its contention that "in communication with" means "interconnected with." Am. JCCS Sched. B. at 7; Univ. Opening Br. at 23. But the University has not explained why the Court should look only at the first portion of the definition ("to be connected") and ignore the remainder ("open into each other: afford unbroken passage").

A patentee can, of course, be his own lexicographer. Phillips, 415 F.3d at 1316 ("[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs."). But the '281 patent contains nothing to suggest that the word "communication" in claim 1 means something out of the ordinary. To the contrary, the specification of the '281 patent uses a form of the word "communication" twice, and both times the word seems to carry its ordinary meaning.

First, in describing the purpose of the claimed invention, the '281 patent says that "the instant closure device can be used to treat ventricular septal defects, patent ductus arteriosus[,] or any other congenital or acquired orificial or tubular communications between vascular chambers or vessels." '281 patent col. 18:1-4 (emphasis added). An "orificial . . . communication[]" between chambers or vessels is obviously a hole; a "tubular communication[]" is obviously a tube or passageway. Thus, "communications" has its ordinary meaning here. In particular, the "communications" described in the quoted portion of the '281 patent are connections between cavities ("vascular chambers") or tubes ("vessels"), and those cavities or tubes are in communication with each other because an opening or passageway connects their interiors.

Second, in describing a delivery system for the claimed closure device, the '281 patent says that a "chamber 216 must extend through the distal end 211 of the housing to define a distal port 219 therein . . . to permit communication of the control means 230 with the catheter C." '281 patent col. 13:63-66 (emphasis added). From Figures 13 and 14 of the '281 patent, it is apparent that a catheter -- a hollow tube -- is connected by means of an intermediate tubular part to a hollow chamber that contains the "control means" referred to in this sentence. Thus, the catheter and the chamber that houses the control means "communicate" with one another in a conventional sense. The control means itself does not, strictly speaking, "communicate" with the catheter; rather, the control means is connected to a part (a "tubular urging member," '281 patent

9 Notably, in claim 2 of the '281 patent, the drafter forgot to carry out his project of broadening the claim language. Claim 2 covers "[t]he device of claim 1, wherein the portions of the disks in communication with one another are attached to one another to define a conjoint disk." '281 patent claim 2 (emphasis added). But claim 1 does not (as it did in earlier patents in this family) refer to "disks"; it refers to "members."
col. 15:16) that rides within the catheter. But because the control means is connected to a part within the catheter's interior, the control means does, in a loose sense, "communicate" with the catheter.

In light of this intrinsic evidence about how the words "communication" and "communications" are used in the '281 patent, the Court construes the term "in communication with" in claims 1 and 2 according to its ordinary meaning. Whether this construction covers the disclosed embodiments is beside the point, because no other construction is reasonable in light of the evidence. See Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1357 (Fed. Cir. 1999) ("[A] nonsensical result does not require the court to redraft the claims of the . . . patent. Rather, where . . . claims are susceptible to only one reasonable interpretation and that interpretation results in a nonsensical construction of the claim as a whole, the claim must be invalidated . . .").

2. "A Hollow Valve Liner . . . Defining a First Bore In Communication with a Source of Relatively Hotter Liquid"

At the preliminary injunction hearing, Bradley argued the "in communication" language of claim 6 requires that the first bore and the source of relatively hotter liquid be adjacent. Defs.' Prelim. Inj. Opp'n Br. at 42-43; Prelim. Inj. Hr'g Tr. at 565, Ballanco-Cross. In addition, the language requiring that the liner define a "first bore" and define a "shuttle bore" means that the first bore and the shuttle bore must be two separate bores rather than different sections of the same bore, or just a single annular interior cavity that functions as both a first bore and a shuttle bore. Defs.' Prelim. Inj. Opp'n Br. at 42; Prelim. Inj. Hr'g Tr. at 430, 433, Kline-Direct; id. at 447-48, Kline-Cross.

Lawler disagreed with Bradley's interpretation of "in communication" and with the specific requirements of a liner that defines a first bore and a shuttle bore. At the preliminary injunction hearing, Lawler argued that the phrase in communication meant the same thing as the phrase in fluid communication. Pl.'s Prelim. Inj. Reply Br. at 20-21; Prelim. Inj. Hr'g Tr. at 194, Ovens-Direct. Thus, claim 6 does not require that the first bore be adjacent to the hotter liquid source, only that the part be open to fluid flowing from the hotter liquid source. See Prelim. Inj. Hr'g Tr. at 194, Ovens-Direct. In addition, Lawler argued that the '531 Patent contains no restriction on the overlap of the first bore and the shuttle bore. Prelim. Inj. Prelim. Inj. Hr'g Tr. at 193, Ovens-Direct. Without such a restriction in the '531 Patent, Lawler argued, the first bore and the shuttle bore can overlap until they are both the same physical part, so long as that part has the relationships required by the remainder of the claim.

The Court finds that Bradley's definition of in communication that limits the connection of the parts such that they must be adjacent to or directly connected to one another is not supported by the plain meaning of the claim language or the specification. In common usage, communication can occur directly or indirectly, for example, by face-to-face conversation or by tape-recorded-voice-to-person. In the context of the '531 Patent, the purpose of which is to allow fluid of different temperatures to mix and be controlled to a set degree, there is no reason to limit the communication between various parts of the assembly to direct communication or connection. The important theme is allowing the fluid to flow from one area to another.

Further, the dictionary defines communication as the act of transmitting, connected to or open to. See, e.g., WEBSTER'S THIRD NEW INT'L DICTIONARY 460 (Merriam-Webster Inc. 1981). There is nothing in claim 6 or the other claims that limits this definition of communication to a more narrow one requiring that the parts be "directly open to" or "directly connected to" any other part.

The patent specification further supports this finding. The '531 Patent states: "The hot liquid bore opens into the hot liquid chamber so that liquid can be communicated through the bore and up through the shuttle bore of the valve liner." '531 Patent, col. 7, ll. 63-67. In the specific embodiment pictured, it appears that the inventor intended that the first bore be directly open into the hot liquid chamber. However, the description of the hot liquid bore suggests that the bore need only be open to the hot liquid chamber such that liquid can move, or be communicated, from the hot liquid chamber into the first bore and from there to the shuttle bore and the mixing chamber. There is no language that limits the shape of the opening from the hot liquid chamber to the area called the first bore, only that the first bore be open to the receipt of hot liquid from the hot liquid chamber.
The Court finds that in communication within the context of the '531 Patent means open to or connected to without limitation on proximity or limitation on the mode of connection.

Furthermore, the Court finds that claim 6 is not limited to valve assemblies that have two distinct bores, a first bore and a shuttle bore; claim 6 is broad enough to encompass a liner that defines a single bore that both communicates with the hot liquid source and is the bore in which the shuttle valve moves. The language of claim 6 that describes the liner also describes the first bore, the shuttle bore and the relationship of those bores to each other and to other parts of the liner. Specifically, claim 6 states: "a hollow valve liner defining a number of apertures . . . and defining a first bore . . . said liner further defining a shuttle bore . . . ." '531 Patent, col. 14, ll. 7-13. Whether claim 6 calls for the first bore and the shuttle bore to be two distinct bores appears to turn on the meaning of the word "further" in the context of the patent. Neither party discussed the meaning of this term. However, the common meaning is in addition or also. "In addition" could connote multiple parts, such as "one after the other." But, claim 6 does not distinctly require multiple parts. The claim only requires a liner that defines a number of apertures and two bores that have specific relationships to each other. The specification does not provide otherwise.

However, there is a difficulty in saying definitively that further means in addition or also and not "one after the other" because the language earlier in the claim used the connector "and" rather than "further." Arguably, the difference is relevant because there was no need to use "further" when "and" would have conveyed "also" as it did earlier in the same claim. Faced with this uncertainty, the Court will look to the extrinsic evidence to help clarify this aspect of claim 6.

The extrinsic evidence supports an interpretation of claim 6 that allows for the first bore and the shuttle bore to overlap. Lawler's expert, Dr. William Ovens ("Dr. Ovens"), specifically stated that the two sections of the liner could overlap because there was no restriction or limitation in the patent that would prohibit such an arrangement. Prelim. Inj. Hr'g Tr. at 193, Ovens-Direct. In addition, Bradley's expert apparently agreed that the patent did not preclude a liner in which a single bore defined both the first bore and the shuttle bore. Id. at 574-76, Ballanco-Cross. In fact, Ballanco testified that faced with the ambiguity in the claim, he issued his opinion on infringement based on either interpretation of claim 6: one that allowed for a single bore and one that required two distinct bores. Id. at 576.

In the context of the '531 Patent and in light of the testimony by both experts, the Court finds that there is no limitation that the first bore and the shuttle bore be distinct bores; the bores may overlap or be a single bore so long as the bores have the relationships required by the remainder of claim 6.

The phrase is construed to mean, "Cooling said core while at the same time applying a third pressure."

As above, Defendant urges that the phrase "in conjunction with" fairly implies that the cooling "starts and ends at the same time a third pressure is applied." (Def. Br. at 44.) For the reasons recited above, I reject the Defendant's argument that these words suggest absolute synchronicity (though I question why the patentee could not have used the same terminology in both claims).

Airflow to and from said intercooler in counterflow with coolant

The parties do not dispute that "counterflow" means flowing in an opposite direction. The essence of the dispute is whether the frame of reference for determining the counterflow is outside the intercooler (Rice) or within the intercooler where there
is heat transfer between the air flow and the coolant (i.e., thermal contact) (Rolls-Royce). Rice relies upon the recitation in the claim of air flow "to and from" the intercooler as indicating that it is the overall direction of the air flow between the compressors as established by the outlet and return ducts that is in counterflow with the coolant. That is, Rice focuses on the entry and exit points of each fluid. Rice Br. 22.

Rolls-Royce correctly points out that the plain meaning of the "to and from" recitation merely specifies that the intercooler positioning is such that air flow is to the intercooler from the low pressure compressor and from the intercooler to the high pressure compressor. Further, there is no dispute that one skilled in the art would consider heat exchange with a coolant to only take place inside an intercooler where there is thermal contact. To one skilled in the art, reference to "in counterflow with coolant" would only have meaning in regard to the flow of air through the intercooler and not air flow that is to and from it.

The specification supports a construction that the counterflow with coolant exists for air flow that is through the intercooler. In Fig. 1, the '499 patent provides a schematic diagram of the intercoolers 38, 40 as well as the outlet duct 36 from the low pressure compressor 24 and the return duct 42 to the high pressure compressor 44. As shown, the flow to the intercooler through duct 36 is in the same direction as the flow of the coolant out of the intercooler through line 70. Similarly, the flow out of the intercooler through duct 42 is in the same direction as the flow of the coolant into the intercooler through line 68. Only the flow within the intercooler is consistent throughout the schematic diagram with the plain meaning of "counterflow" as being in an opposite direction.

The prosecution history provides further guidance as to the manner in which the term "counterflow" is to be construed. In the response Rice filed on July 7, 1989, a further amendment to claim 69 was inclusion of the recitation "in counterflow with coolant." See Resp. 2. Rice then remarked that in the Hull patent disclosure "the heat exchanger 16 does not and cannot readily apply counterflow of the compressed air to the coolant." Rice further remarked that, "Therefore, a close approach temperature to the coolant at its entrance temperature is not possible because the partially compressed air and heated coolant flows in the same direction as the compressed air being cooled." Resp. 8.

In the disclosure of the Hull patent, air is divided into an outer stream and an inner stream. The outer stream of cooler air is applied to the input of a heat exchanger 16 as the coolant. The inner stream is compressed, which causes a temperature increase, and is input to the heat exchanger in parallel with the cooler outer stream. The airflow of both streams through the heat exchanger is shown to be in the same direction, as stated by Rice. The disclosure in Hull and Rice's remarks support a construction that counterflow with coolant means air flow through the intercooler is in an opposite direction to the flow of coolant through the intercooler.

Rice contends that the prosecution history is consistent with its proposed definition in that it was the flows to and from the heat exchanger 16 in Hull, which are in the same direction, that were being distinguished. However, Rice's remarks when read closely identify reference is being made to the direction of "the compressed air being cooled." The compressed air is being cooled only inside the heat exchanger. Rice's comment, therefore, only has meaning in regard to flow inside the heat exchanger 16. Rice also contends that Rice's remarks should be taken in the context of other disclosures in Hull concerning alternative flow arrangements. However, the examiner's rejection specified heat exchanger 16 and Rice's remarks specified heat exchanger 16. Moreover, there is no specific description given in Hull of an alternative flow arrangement beyond a generalized statement that the streams could be passed through the heat exchanger twice wherein the bypass fluid flows in one set of passages and the compressed fluid flows through the other set of passages "in radial counterflow passes." This by no means clearly identifies the structure of such a heat exchanger. Moreover, the description is that "each" stream is directed through the heat exchanger twice in radial counterflow passes. This does not suggest that the compressed fluid is moving in the opposite direction to the bypass fluid.

Accordingly, the Court adopts the construction proposed by Rolls-Royce.

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In dependence on an expected trajectory of said tooth through formation material

The Court finds that it can give Claim 1's term "in dependence on an expected trajectory of said tooth through formation
material" its "ordinary and accustomed meaning as understood by one of ordinary skill in the art" by virtue of the claim language itself. No one disputes that a person of ordinary skill in bit engineering would interpret "expected trajectory" as an "expected path." Moreover, the claim clearly refers to the path that the drill tooth being adjusted ("said tooth") takes through the well bottom ("through formation material"). Thus, there is a heavy presumption that claim one means "based on the expected path the drill tooth being adjusted takes through the formation." Bell Atlantic Network Services, Inc., 262 F.3d at 1268. Because the claim term is capable of a clear construction and is unambiguous, the Court will only depart from this construction if the patentee has chosen to be its own lexicographer. See id.

9 See Alloc, Inc. v. International Trade Commission, 342 F.3d 1361, 1368 (Fed. Cir. 2003); Bell Atlantic Network Services, Inc., 262 F.3d at 1267.

Smith contends that the patentee has defined the simple term "expected trajectory of said tooth" as "a calculated directed straight line segment extending from a calculated point of engagement of the tooth with the formation to a calculated point of disengagement of the tooth with the formation, wherein the points of engagement and disengagement are calculated from the centerline of the tooth." Thus, Smith argues that the intrinsic evidence "clearly set[s] forth or clearly redefine[s] [the] claim term so as to put one reasonably skilled in the art on notice that the patentee intended to so redefine the claim term." Id. (internal quotations omitted). Smith argues that a paragraph in column 9, at lines 50-67, and figures 3A-3D of the 262 Patent require its construction.

The paragraph in column 9 discusses a calculation that may be performed using the expected tooth trajectory. The first sentence of the paragraph recognizes that "tooth trajectories" are the positions at which the teeth will actually encounter the formation by stating: "the tooth trajectories described above are projected on the hole bottom which is fixed in space." The paragraph then declares that the bit designer must determine the tooth orientation angle from the trajectory in order to properly align the teeth. The specification uses the actual projected points where individual teeth intersect the formation to determine the point at which a tooth will enter and subsequently leave the formation. 10 From these entry and exit points, the patent "approximates" the tooth trajectory as a straight line.

10 The entry point \( P[1] \) is calculated by the formula: \( P[1] = [x[1], y[1], z[1]][c] \). The exit point \( P[2] \) is calculated by the formula: \( P[2] = [x[2], y[2], z[2]][c] \).

The column 9 paragraph does not redefine "expected tooth trajectory." The paragraph describes optimizing tooth orientation by using the actual expected tooth trajectories to calculate an "approximate" tooth trajectory. It is only by first calculating the actual tooth trajectory that the specification allows for calculating an approximate tooth trajectory. Nonetheless, Smith would read the "approximate tooth trajectory" to redefine "tooth trajectory." The patentee chose to use "expected tooth trajectory" in Claim 1, not "approximate tooth trajectory." The paragraph in column 9, far from clearly redefining "expected tooth trajectory," distinguishes between the actual and approximate tooth trajectories. Although the "approximate tooth trajectory" may be necessary to optimize tooth orientation, it is not a part of the claim and the Court will not read it into Claim 1.

Likewise, figures 3A-3D (illustrated infra) do not indicate that the patentee clearly redefined or limited the term "expected tooth trajectory" to a straight line. The figures illustrate a curved anticipated tooth trajectory. Indeed, Smith concedes the point by its statement: "the actual trajectory of each tooth is curved, as shown by the staggered squares." Nonetheless, Smith argues that the straight line on Figures 3A-3D illustrate the "calculated trajectory" Smith gleaned from the column 9 paragraph (discussed supra). Even if the straight line does illustrate the approximate trajectory discussed in column 9, nothing in the illustration indicates any intention to redefine or limit Claim 1's "expected trajectory" to this "calculated trajectory." Without a clear expression of intent, the Court will not read such limitation into Claim 1. Id.
II. "at least two electrodes in direct contact with the cell"

Lifescan contends that the Court need not construe this term, 1 while Roche proposes "the electrodes contact the cavity directly, without any interposed layers or barriers (such as a semi-permeable membrane layer)." The Court construes this term as "at least two electrodes in direct physical contact with the cell." During the hearing, both parties agreed that "in direct contact" means direct physical contact.

--- Footnotes ---

1 Lifescan initially proposed that the Court construe this phrase as "at least two electrodes in direct contact with the sample receiving cell." Lifescan's reply acknowledges that this construction does not define the language at issue, and argues that there is no need to define this term.

--- End Footnotes ---

Roche argues that the Reexamination supports its proposed construction because Lifescan added the "in direct contact" limitation in order to overcome the Examiner's rejections based upon the Lilja reference, which included a semi-permeable membrane. However, the Court finds Roche's construction confusing because it does not define "layers," "barriers," and "semi-permeable membrane." Further, the Court finds it unnecessary to provide certain examples of indirect contact because "direct physical contact" provides sufficient guidance.

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2) "In fixed relation adjacent a surface of said vehicle window"

This phrase means that relative to one another, the sunshade and the window do not move when the sunshade is placed in use. The sunshade is placed "adjacent" the window, meaning that it is placed in close proximity, or next to the window. It does not mean that the sunshade necessarily touches the window, but that it comes close to doing so. The sunshade may touch or be next to only a portion of the window and still be "adjacent."

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3. "In Fluid Communication"

After the preliminary injunction hearing, the Court undertook a claim construction analysis of the phrase in fluid communication. Prelim. Inj. Order at 48-49. In addition, the Court clarified its definition for the phrase in its Memorandum Opinion and Order on Motion to Reconsider ("Reconsideration Order"). Mem. Op. & Order on Mot. to Recons. at 5 ("Recons. Order"). The Court found that the phrase in fluid communication means "that the parts so delineated communicate through fluid flow; the fluid flowing past one part also flows past the other." Id. at 5.

Lawler asserted in its brief supporting the instant motion that the Court interpreted correctly the phrase in fluid communication. Id. at 5. However, at the Markman hearing Lawler reasserted the view that it asserted at the preliminary injunction hearing: in fluid communication means that there is free movement of fluid from one place to another or an open pathway for fluid. In other words, Lawler argues that in fluid communication means an open unimpeded pathway through which fluid may flow, absent external influences. Pls.' Br. in Supp. of Mot. for Claim Constr. at 5-6. In addition, in arguing the claim construction motion, Lawler called the Court's attention to the Federal Circuit's holding in A.B. Dick Co. v. Burroughs Corp.: It is fundamental that one cannot avoid infringement merely by adding elements if each element recited in the claims is
found in the accused device. For example, a pencil structurally infringing a patent claim would not become noninfringing when incorporated into a complex machine that limits or controls what the pencil can write. Neither would infringement be negated simply because the patentee failed to contemplate use of the pencil in that environment.

713 F.2d 700, 703 (Fed. Cir. 1983), cert. denied, 464 U.S. 1042 (1984) (citations omitted). Furthermore, during the Markman hearing Lawler admonished that when it construes the claims the Court must keep its focus on the structure of the device as described by claim 6 rather than on the manner in which it works in the environment. See Pls.’ Br. in Supp. of Mot. on Claim Constr. at 8. Apparently Lawler was under the impression that the Court had construed the phrase in fluid communication with reference to the way the valve works with the addition of a check valve.

In contrast, at the Markman hearing, Bradley asserted that it agreed with the Court's interpretation of the phrase in fluid communication from the preliminary injunction proceedings and objected to Lawler's renewed argument as an attempt to seek reconsideration of the Court's preliminary injunction ruling on infringement. The Court agrees with Bradley and finds Lawler's argument directed mainly toward an infringement analysis, which is not the purpose of the present motion. However, given that Lawler has presented additional evidence that the definition of in fluid communication is an open unimpeded pathway through which fluid may flow, absent external influences, the Court will briefly reexamine the intrinsic evidence of the meaning of that phrase.

The Court has already determined that the phrase in communication means open to or connected to without limitation on proximity or limitation on mode of connection. The phrase in fluid communication is used once in the claim language itself and approximately five times, with some modifications, in the remainder of the patent. Specifically, the claim language states: "said liner further defining a shuttle bore in fluid communication between said liquid chamber and said number of apertures and said first bore . . . ." '531 Patent, col. 14, ll. 10-13. Because the word fluid modifies communication in the claim, it is logical to conclude that in fluid communication and in communication mean different things. In other words, the word fluid is a limitation on the proximity of the named parts or the mode of connection between the named parts.

In the context of the '531 Patent invention, which is a device that will control the flow and temperature output from hot and cold fluid sources such that it can be used for emergency shower and eyewash systems, in fluid communication apparently means that fluid makes a connection between the named parts or areas of the valve assembly. In other words, fluid is the mode of connection between areas of the valve. This definition is in concert with the use of the phrase in fluid communication in the specification as well.

The specification states that "the thermostatic vanes [sic] each include a valve liner component that is in fluid communication with the cold liquid chamber of the valve body." '531 Patent, col. 2, ll. 51-53. Thus, fluid makes a connection between the valve liner component and the cold liquid chamber of the valve body. It is important to the invention that this be the case because the object of the invention is for the valve assembly to control the temperature and flow of the liquid at the outlet by initially mixing cold and hot liquids within the hollow valve liner. The patent specifically states that the hot and cold liquids are at least initially mixed within the part of the hollow valve liner designated as the shuttle bore. Id. col. 2, ll. 59-61.

In addition, the specification states that "the cold liquid inlet 33 communicates with a cold liquid chamber 46 that extends between and in fluid communication with the two valve bores 42, 43." Id. col. 6, ll. 7-10. In the specific embodiment described by this sentence, there are two separate thermostatic valves enclosed in a single valve housing. The patent teaches that it is important "that the hot liquid chamber 45 and cold liquid chamber 46 [of the valve assembly] surround all of the thermostatic valves 50 disposed within corresponding valve bores, such as bores 42, 43, so that the hot and cold liquid, such as water, can be provided evenly and equally to all of the thermostatic valves." Id. col. 6, ll. 15-20. Thus, the cold fluid must make a connection with the valve bores so that the invention can provide tempered water at the outlets, or in the case of failure of the thermostat or the hot water source, provide cold water at the specified flow rate. Likewise, the specification states that an important safety feature of the invention "is embodied in the multiple thermostatic valves housed within a common valve body in mutual fluid communication with the hot and cold liquid inlets and the mixed liquid outlets." Id. col. 3, ll. 43-48. It is clear that fluid provides the connection between the thermostatic valves, the hot and cold inlets, and the mixed liquid outlets in the valve assembly and is the basis upon which the invention ensures continuous delivery of tempered water. See id. col. 3, ll. 48-50.

Based on this analysis, the Court finds that it must modify slightly its prior definition of in fluid communication. In the
context of the '531 Patent, in fluid communication means that fluid makes the connection between the parts and areas specified, or that the parts so delineated are connected by fluid.

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V. "wherein the notch is in fluid communication with the cell"

Lifescan proposes "the notch is connected to the sample receiving cell in a way that the liquid sample flows through the notch and into the cell," while Roche proposes "a notch through which fluid can flow to or from the sample-receiving cell" or as a compromise, "the notch is connected to the sample receiving cell in a way that the fluid flows through the notch and to or from the cell." The disputes here are whether "fluid" is limited to liquid or also includes gases, and whether the term "communication" is broad enough to embrace bidirectional flow (i.e., flow to or from the cell).

The Court agrees with Roche's compromise construction, "the notch is connected to the sample receiving cell in a way that the fluid flows through the notch and to or from the cell."

The Court finds it unnecessary to further define "fluid," and notes that Lifescan's proposal defining "fluid" as "liquid sample" is inconsistent with the claim language, which uses both "fluid" and "liquid sample." The Court also finds that "communication" allows for bidirectional flow because "communication" suggests an exchange between the notch and the cell. Lifescan argues that the "communication" must be unidirectional because claim 1 requires that the notch "allows entry of the liquid sample into the cell," and refers to the cell as the "sample receiving cell." However, this claim language regarding entry of the liquid sample into the cell does not preclude bidirectional "communication" through the notch.

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Limitation 6(f) requires "a weathertight gasket mounted on said flange and engaging said lid in its closed position." Plaintiff argues that limitation 6(f) must be construed as though the lid is closed and will remain closed, contending that (1) the lid in claim 6 is only in the closed position or (2) the phrase "in its closed position" modifies both the phrase "mounted on said flange" and the phrase "engaging said lid." The court disagrees. First, claim 6 clearly contemplates (1) a compartment accessible through an opening and (2) a lid that can cover the opening. (See claim 6(a), (c), and (d)). If the court interpreted limitation 6(f) to require that the lid remain closed, never opening, it would be rewriting the claim. Second, the structure of the sentence suggests that the gasket is mounted on the flange before the lid is closed and that the gasket engages the lid when the lid is closed. While not an absolute, courts often rely on the grammatical "rule of the last antecedent," under which a limiting clause or phrase "should ordinarily be read as modifying only the noun or phrase that it immediately follows." Barnhart v. Thomas, 540 U.S. 20, 26, 124 S. Ct. 376, 157 L. Ed. 2d 333 (2003). Under this rule, "in its closed position" modifies the phrase "engaging said lid." This interpretation is consistent with the plain meaning of claim 6. Accordingly, the court finds that limitation 6(f) does not require that it be construed as though the lid is closed and will remain closed.

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b. "Performs several functions in one pass"

Both parties agree that the phrase "in one pass" should be afforded its ordinary meaning but disagree as to what is its ordinary meaning. Michaels interprets the phrase to refer to the fact that several cleaning functions are performed in one pass, but are not limited to only a single pass. See Col 3, lines 64-67; Col 6, lines 47-57. In support of this proposed construction, Michaels turns to the specification which states:

in gun barrels which are exceptionally dirty or which have a large accumulation of metal due to heavy use without cleaning, the user may need to perform a "see-saw" action with the gun cleaner. This is accomplished by pulling the cleaning device back and forth in short aggressive strokes while moving the device in an overall direction through the barrel. In effect, the use is performing a multitude of mid-bore directional changes while moving the device in a general direction through the barrel.

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Col 10, lines 12-19.

Clean Gun interprets the phrase "in one pass" to require completion of all of the steps in one pass as the device is pulled once through the gun barrel from one end to another. For support, Clean Gun relies on the specification which criticizes prior art in devices that only include one type of cleaning implement (for example, a brush or a cloth), explaining that these prior devices require "time-consuming and complex" changes of attachments and multiple passes through the barrel with each implement. Col 1, lines 59-62; Col 3, lines 55-63. To remedy this perceived problem, the patent explains that "it is an object of the invention to provide a gun barrel cleaning device which performs several cleaning functions with one pass through the barrel of a gun, thus saving the user a great deal of time and trouble." Col 3, lines 64-67. The patent continues by stating that these different cleaning functions are "accomplished" with one pass through the gun barrel. Col 3, line 67 to Col 4, line 8; see also Col 4, lines 30-33; Col 6, lines 48-63; Col 9, line 52 to Col 10, line 11.

This court disagrees with Clean Gun. The specification clearly requires that the cleaning of the inside surface of a gun barrel be completed in one pull through the gun barrel at a time. However, it also states that, if necessary, any "see-saw" action is acceptable because an "object of the invention is to provide a gun barrel cleaning device which eliminates the possibility of broken cleaning rod tips, broken cleaning rods, jammed cleaning utensils, or stuck patches, cloths or brushes by providing for foolproof mid-bore direction changes." Col 4, lines 12-16; see also Col 2, lines 30-32, 34-39; Col 3, lines 64-67; Col 5, lines 20-22, 53-58. An object of the invention is in the nature of a disclaimer and should be given greater weight than criticism of prior art upon which Clean Gun relies. The fact that the device may need to be pulled through more than once or used in a "see-saw" action to clean a particularly dirty gun barrel does not detract from its usefulness as one continuous pull-through device that both scrubs with a brush and cleans with a cleaning section. Accordingly, the phrase "in one pass" means performing several cleaning functions completed in one pull through the gun barrel with mid-bore directional changes permitted. Nothing in the specification requires the use of only a single pass.

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BACKGROUND

Princeton is the owner of U.S. Patent No. 5,045,172 ("the '172 patent") entitled Capillary Electrophoresis Apparatus. The '172 patent is directed to an apparatus for use in the process of capillary electrophoresis whereby molecules and proteins are separated from fluid samples as a result of application of an electrical charge. Capillary electrophoresis technology itself is not at issue on appeal. Rather, part of the apparatus used in that process is, namely, the "holder" limitation of claim 32 (emphasized below in element [6]):

32. Capillary electrophoresis apparatus comprising

[1] a capillary tube of the type which can be electrically charged,

[2] said capillary tube having first and second ends,

[3] first means at said first end of said capillary tube providing a source of buffer solution and a source of a sample substance to be analyzed,

[4] second means coupled to said apparatus for applying electrical potential across said capillary tube whereby a sample flows through said capillary tube and past said detector,

[5] said first means includes a rotatable table carrying a plurality of sample cups and

[6] a holder for holding an end of said capillary tube in operative relation with one of the said cups, said cups containing either buffer solution or a sample to be analyzed,

[7] said capillary tube is in the form of a coil of glass tubing...
[8] wherein said coil of glass tubing is secured to a support member. (paragraphing added for clarity). In the claimed apparatus, fluid samples to be tested (or buffer solutions) are contained in sample cups, which in turn are placed on a rotating table to facilitate ease of multiple sample testing. Each individual sample flows through a coiled, glass capillary tube secured to a support member, the capillary tube being held by the holder of element [6] "in operative relation" with the sample cup. As the sample flows through the capillary tube, an electrical potential is applied across the tube and a signal is sent to a detector to facilitate separation of the various components of the fluid sample.

The prosecution history resulting in the issuance of claim 32 will be discussed in the context of claim construction below. Nevertheless, to briefly summarize, claim 32, the only claim at issue on appeal, issued after continuation-in-part (CIP) application 1 claims 1, 39, and 40 were combined. Elements [1] through [6] of claim 32 stemmed from CIP application claim 1, element [7] stemmed from CIP application claim 39, and element [8] stemmed from CIP application claim 40.

1 That a CIP application and not a straight continuation application was filed is not relevant to the disposition of this case, as the new material added to the specification when the CIP was filed was not directed to the holder limitation at issue.

Princeton sued Beckman for patent infringement, asserting that Beckman's P/ACE electrophoresis devices infringed claim 32 of the '172 patent. The P/ACE devices consist of an apparatus in which a vertically moving table and sample cup is "in operative relation" with a stationary capillary. The parties disputed whether the claim covers only the embodiment where the holder and the capillary tube move vertically toward a stationary sample cup and table, or also the alternative embodiment in which the sample cup and table move vertically toward a stationary holder and capillary tube as in the accused devices.

On cross-motions for summary judgment, the district court held a Markman hearing and construed the claim. The district court interpreted the holder limitation of element [6] as "requiring an apparatus equipped with a holder that lowers the capillary into [the] sample cup before testing and raises the capillary out of the cup after testing." Slip op. at 11. In other words, the district court construed the language "in operative relation" in element [6] to require "vertical movement of the arm which holds the capillary" toward stationary sample cups, Slip op. at 14, rather than vertical movement of the sample cups or the tray holding the sample cups toward a stationary arm holding the capillary.

The district court based its claim construction on the specification which it found "consistently describes the arm as a vertically moveable component which would lower the capillary so as to permit it to come into contact with the sample cups." Slip op. at 13-14. The district court also relied on the prosecution history. In particular, the district court cited the following as support for its claim construction: (1) the June 2, 1988 office action rejection over Stevenson, U.S. Patent No. 3,918,913, which "contains all of the critical elements recited in the plaintiff's claims: a rotating turntable, a vertically moving sample probe, etc."); (2) the addition of two new claims (29 and 30) in response to that rejection that were limited to a vertically moveable arm and accompanying comments in the remarks section; (3) a response to the advisory action of January 31, 1989 stating "the application has claims which are very detailed as to the apparatus for raising and lowering a capillary into the sample cups"; and (4) the cancellation of application claims 22 to 24 that claimed the alternate embodiment of a stationary capillary and a vertically moving table and sample cups.

Based on this claim construction, the district court granted Beckman's motion for summary judgment of noninfringement. The district court determined that the accused P/ACE devices did not contain the "exact same holder limitation" and in fact "did not contain any such element." Slip op. at 17. The district court further stated that "the capillary in the alleged infringing device is stationary; it does not move vertically. Moreover, the alleged infringing device has no holder for the capillary at all." Slip op. at 18. As a result of these determinations, the district court granted summary judgment of noninfringement. 2 Princeton appeals.

2 The district court also granted summary judgment of noninfringement under the Doctrine of Equivalents, noting that the
accused devices did not contain an equivalent element to the holder described in element [6] of claim 32, in particular an
element that would move the capillaries in and out of the sample cups. Slip op. at 20-21. Princeton has not appealed the
district court's grant of summary judgment of no equivalent infringement, and this issue may not be raised on remand. See

DISCUSSION

Summary judgment is proper when "the pleadings, depositions, answers to interrogatories, and admissions on file, together
with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to
a judgment as a matter of law." Fed. R. Civ. P. 56(c); see also Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248, 91 L. Ed.
2d 202, 106 S. Ct. 2505 (1986) (summary judgment is proper when no "reasonable jury could return a verdict for the non-
moving party"). In deciding whether a genuine issue of material fact exists, the evidence must be viewed in the light most

Princeton argues that the district court erred in construing element [6], i.e., the "holder limitation," of claim 32. In particular,
Princeton asserts that the district court erred by requiring a "vertically moving" holder as no such limitation is present in the
asserted claim. Nor, argues Princeton, were any arguments made during the prosecution of the application that resulted in
the '172 patent and directed at claim 32 that would support reading a vertical movement limitation into that claim. We agree.

Claim construction is a matter of law, see Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2D (BNA)
de novo, see Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 U.S.P.Q.2D (BNA) 1169, 1174 (Fed. Cir. 1998) (en
banc).

On its face, element [6] of claim 32 would encompass embodiments in which both the holder/capillary and the sample
cups/table are vertically movable. In order to narrow the claim as the district court did to require only that the
holder/capillary be vertically movable, the phrase "in operative relation" must be viewed as sufficiently in need of
clarification to resort to the written description as urged by Beckman. See Renishaw PLC v. Marposs Societa' Per Azioni,
158 F.3d 1243, 1248, 48 U.S.P.Q.2D (BNA) 1117, 1121 (Fed. Cir. 1998) ("[A] party wishing to use statements in the written
description to confine or otherwise affect a patent's scope must, at the very least, point to a term or terms in the claim with
which to draw in those statements. Without any claim term that is susceptible of clarification by the written description,
there is no legitimate way to narrow the property right."). To clarify what "in operative relation" means, we conclude that
resort to the written description is permissible in this case.

Beckman urges us to adopt the requirement that the district court did, namely, that the holder is limited to vertical movement
in relation to stationary sample cups on a stationary table. The portions of the written description relied on by Beckman do
indeed indicate such vertical movement. 3 However, Beckman fails to appreciate the import of the clear disclosure in the
written description of the alternate embodiment in which the sample cup and table move vertically in relation to a stationary
capillary and holder:

As a modification of the invention, the apparatus 10 can be adapted to include means by which rather than raising and
lowering the posts 250 and 250' and their associated apparatus, it raises and lowers either just specific sample cups or the
entire tables 170 and 170'. In this embodiment of the invention, the motors 210 and 210' would be constructed to both rotate
the posts 200 and 200' and to raise them and lower them vertically as required to raise and lower the tables 170 and 170'.

'172 Patent, col. 9, ll. 50-58 (emphasis added). Beckman's attempt to minimize the existence of this disclosure as a "lone
sentence" in the written description is meritless.
Patent, col. 4, ll. 42-43; "The capillary can be inserted into a sample cup in table 170." '172 Patent, col. 6, ll. 41-42; "Motor 260 is energized to lower the arm 240 and the apparatus including tube 248 into the cup containing sample material." '172 Patent, col. 8, ll. 61-63; "Motor 260 is energized to lower the post 240 until the motor is stopped by its sensor 263 at just the point where the tip of the tube 248 is at about the bottom of the cup 190." '172 Patent, col. 9, ll. 15-18.

Moreover, in the originally-filed application which eventually resulted in the '172 patent as originally filed, this alternate embodiment was claimed in original application claims 22 to 24:

22. Capillary electrophoresis apparatus comprising

... first means at said first end of said capillary tube providing a source of a sample substance to be analyzed,

... said first means including a rotatable table carrying a plurality of sample cups and a holder for holding an end of said capillary tube in operative relation with one of said cups, and

means for moving said table and said holder with respect to each other so that said end of said capillary tube can be moved into and out of operative relation with a sample cup

23. The apparatus defined in claim 22 wherein said table is movable vertically up and down with respect to said holder and is rotatable with respect to said holder.

24. The apparatus defined in claim 22 and including a vertical post secured to said table and extending downwardly therefrom, and motor means coupled to said vertical post for rotating said table and for driving said table vertically up and down.

(Emphasis added.) The originally-filed claims are deemed part of the original specification. Thus, to the extent that originally-filed claims 22 to 24 and the written description at column 9, lines 50-58 describe an embodiment with a stationary holder and a vertically moving table and sample cups, Beckman errs in relying solely on those portions of the written description describing the vertically moving holder while ignoring those portions describing a vertically moving table. Absent language in the claim specifically limiting the phrase "in operative relation" to vertical holder movement, Beckman cannot find support for the district court's claim interpretation from the specification alone.

4 That claims 22 to 24 were eventually canceled during prosecution does not affect our analysis, and the district court erred in attaching significance to that action in support of its claim construction.

Beckman, reiterating the arguments used by the district court in coming to its claim construction, next asserts the prosecution history to support the district court's claim interpretation. Beckman argues that the patentee limited the scope of the claims to vertically moving holders and stationary tables by amending the claims in response to prior art disclosing vertically moving tables and stationary holders, and by arguing in remarks accompanying those amendments that the invention was limited to that embodiment. Princeton responds that the amendments made in response to prior art were directed to claims that did not result in the issuance of claim 32, and that the prior art cited and interpreted by Beckman would not only preclude claiming vertically moving sample cups and tables but also vertically moving holders and capillaries.

A careful review of the prosecution history reveals that Princeton is correct. Claim 32 resulted from the combination of
claims 1, 39 and 40 as filed in a CIP application. The original patent application contained 28 claims, to which new claims 29 and 30 were added during prosecution. Claim 1 contained the holder limitation found in issued claim 32. Claim 1 was amended in response to prior art to include the vertical movement limitation urged by Beckman, although the holder limitation itself was never amended.

Eventually, a CIP application was filed in which claim 1 was returned to its original, unamended form. Thereafter, claim 1 was rejected as obvious over prior art. However, claim 1 was not subsequently amended to include any requirement of vertical movement and in fact was not amended to distinguish over the cited prior art. 5

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5 Claim 1 was amended to include the limitations of CIP application claim 49 directed to a T-shaped section of capillary tube inserted into the capillary tube to supply a source of cleaning fluid to clean the capillary tube.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - - -

New claims 31 through 49 were also added when the CIP application was filed. Of relevance to issued claim 32, claim 39, which depended on claim 1, was directed to a glass coiled capillary, and claim 40, which depended on claim 39, was directed to that capillary attached to a support member. Claim 39 was rejected as obvious over the prior art (the Stevenson patent and an article written by Rose and Jorgenson). Claim 40 was objected to -- but not rejected -- and was deemed allowable if the limitations of claims 1 and 39 were incorporated. The applicant adopted the examiner's suggestion sequentially, first combining claims 1 and 39 and then later, after final rejection, including the limitations of claim 40. The examiner thus allowed the combined claim to issue as claim 32 without any amendment being made or any argument being espoused that would limit the holder limitation to the embodiment where the holder/capillary is vertically moving in relation to a stationary sample cup/table.

We hold that the prosecution history does not limit the holder limitation of claim 32 to only vertically movable holders. Although the applicant amended claim 1 to include a vertical movement requirement of the holder in the original application, the subsequent filing of the CIP application and the return of claim 1 to its original, unamended form, counsels against applying the usual rule that the entire prosecution history, including parent and grandparent applications, be analyzed in interpreting a claim. See Mark I Marketing Corp. v. Donnelley & Sons Co., 66 F.3d 285, 291, 36 U.S.P.Q.2D (BNA) 1095, 1100 (Fed. Cir. 1995).

We also hold that the applicant did not limit claim 32 to a vertically moving holder during prosecution as the amendments and arguments cited by the district court were directed to claims other than those that were combined as issued claim 32. See Johnson Worldwide Assocs., Inc. v. Zebco Corp., 175 F.3d 985, 992, 50 U.S.P.Q.2D (BNA) 1607, 1612 (Fed. Cir. 1999) ("carefully-crafted arguments" clearly directed to certain claims and not others will "avoid creating ambiguous or adverse prosecution history"). Beckman's reliance on certain amendments and remarks made by the applicant during prosecution concerning holder limitations specifically limited to a vertically movable holder is misplaced. Those amendments and remarks were directed primarily at application claim 8, a picture claim containing numerous other limitations and directed to the specific embodiment of a vertically moving holder, and not to the broader holder limitation in claim 1 that eventually resulted in issued claim 32.

Beckman's reliance on the prior art, in particular the article by Rose and Jorgenson and the Stevenson patent, also does not lead to the conclusion that the claims must be limited to a vertically moving holder. That prior art discloses embodiments in which capillary tubes, individual sample cups, and rotatable sample tables are raised and lowered. If those combined teachings preclude claiming vertically moveable sample cups and tables as Beckman urges, then those teachings should also preclude claiming a vertically movable holder. Thus, Beckman's interpretation of the prior art would preclude claiming any apparatus having any vertical movement whatsoever.

In summary, neither the written description nor the prosecution history provides any support for Beckman's assertion that the phrase "in operative relation" in the holder limitation must be limited to vertical movement of the holder. Thus, the district court erred in its claim construction. The proper interpretation of the holder limitation is that "in operative relation" encompasses both vertical movement of the holder as well as vertical movement of the sample cups and the table.

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"in parts (volume)"

The parties dispute the "in parts (volume)" limitation of Claim 1. Marley contends that the limitation should be construed to mean the measured proportions of the parts of the formulation for a specified container. Mikron contends that the limitations should be construed to mean the proportional volumetric quantity of one material component to all other components within a given formulation.

"Part" is defined as "one of equal or unequal portions into which something is or is regarded as divided; something less than whole". Webster's Third New International Dictionary 1645 (3rd ed. 1986). "Volume" is defined as "space occupied or enclosed by cubic units (as inches, feet, quarts, pecks, bushels, gallons)", Webster's Third New International Dictionary 2563 (3rd ed. 1986), "the amount of space, measured in cubic units, that an object or substance occupies; the measured amount that a container or other object can hold", Random House Webster's College Dictionary 1461 (2nd ed. 1999).

Marley interprets "volume" to mean a specified container or, as stated by Marley in their opening Markman brief, "the 'parts' of the specified volume are percentages of a whole where the reference amount of the whole is 100 parts." This construction fails to give meaning to the term as used in the claim. For example, under Marley's interpretation, a batch could be made in a 1-liter container; such batch could include wood flour in a percentage (part) of 15 - 140. Using the lowest "part" of wood flour, the batch would be made with 15 percent (parts) of wood flour -- 15 percent of the 1-liter container would consist of wood flour (i.e., 150 milliliters). If the largest "part" of wood flour was used to make the batch, the batch would be made with 140 percent (parts) of wood flour -- 140 percent of the 1-liter container would consist of wood (i.e., 1.4 liters or 1400 milliliters). However, the 1 -- liter container can only hold 100 percent -- 1 liter or 1000 milliliters. Accordingly, Marley's construction is not correct.

On the other hand, Mikron's proposed construction does provide meaning to the term "volume". For example, if a 1-liter container was used to make a batch and milliliters was used as the unit volume, the batch could be made with 40 to 140 milliliters of wood flour. This construction gives meaning to the term "volume", enclosed in parenthesis, as used in the claim, i.e., to designate the unit of measurement of the ratio -- volumetric or spatial -- as opposed to other types of ratios which the patent does not include, e.g., weight.

Based on the above, the term in part (volume) is construed to mean the proportional volumetric quantity of one material component to all other components.

b. Claim 30 of the '990 patent

Claim 30 is the only claim of the '990 patent that Dow alleges the Defendants have infringed. The parties dispute two limitations from Claim 30: (1) "nebulizing water in said compressor inlet," and (2) "adding water to modify said nebulized water in a plurality of nebulized water mass flow increments such that operationally-induced thermal stresses within said gas turbine due to the ingestion and evaporation in whole or in part of said nebulized water are sufficiently minimized to preserve structural integrity in said gas turbine."

As to the first limitation in dispute, "nebulizing water in said compressor inlet," the Defendants argue that this limitation means that the spray racks and nozzles that nebulize the water are located in the compressor inlet. Dow, on the other hand, argues that the patent specifications disclose that the spray racks may be located anywhere between the inlet air filter and the compressor inlet, but preferably in the inlet air duct constricted portion, citing Column 11, line 67 to Column 12, line 5.

The patent specifications do not define "compressor inlet," but show a drawing of the compressor inlet in Figure 2A. As further described, the patent specifications indicate that "after entering the compressor inlet 102, the air is compressed in the axial compressor section 103 . . . ." (P1, col. 9, ll. 4-5). Based on these references, the "compressor inlet" is understood as
the entrance or opening to the compressor. This understanding is consistent with the ordinary meaning of inlet as "a way of entering; esp: an opening for intake." Merriam Webster's Collegiate Dictionary (10th ed. 1996).

Dow's arguments concerning where the process of nebulizing occurs is supported by the patent specifications. The inventors described the object of their invention as providing a wet compression apparatus and method where the device for adding water would be located a sufficient distance from the inlet of the compressor section so that broken parts would not enter the compressor. In the inventors' summary of the invention that addresses the language of Claim 30 most directly, the specifications provide:

In another aspect, a method is provided for nebulizing water near the inlet of the compressor as suggested in the known literature but adding the nebulized water to the inlet air in a plurality of water mass flow increments with respect to either position and/or time, so that operationally-induced thermal stresses within the gas turbine due to the use of the nebulized water are sufficiently minimized to preserve the structural integrity of the gas turbine.

(P1, col. 6, ll. 8-14) (emphasis added). Further, the specifications provide that:

The modification of the mass flow of nebulized water to the compressor inlet 102 via a plurality of nebulized water mass flow increments is then done in operation so that operationally-induced thermal stresses within the gas turbine engine 101, due to the use of the modified mass flow of nebulized water, are sufficiently minimized to preserve the overall structural integrity of the gas turbine engine 101.

(Id. at col. 17, ll. 26-33) (emphasis added).

The Court recognizes that there is support for the Defendants' argument that Claim 30 indicates that the spray racks and nozzles must be located within the compressor inlet. 25 However, when the Court defines a term, the Court looks first to the language of the claim itself. Mycogen Plant Science, Inc. v. Monsanto Co., 243 F.3d 1316, 1327 (Fed. Cir. 2001) (citing Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)). "In" is understood to "indicate inclusion, location, or position within limits," as well as "into." Merriam Webster's Collegiate Dictionary (10th ed. 1996). The patent specifications describe the method of nebulizing water, where the nozzles are located on spray rack group assemblies positioned anywhere between the inlet air duct and the compressor inlet, and preferably in the constricted portion of the inlet air duct. In only one instance do the patent specifications indicate that the nozzles are located in the compressor inlet, but this refers to "individual tuning" nozzles included in "some embodiments of the present invention" which are installed either in the spray rack assembly or "at some other location in the inlet air duct 133 or compressor inlet 102 to provide additional degrees of freedom in achieving stable and responsive control of the wet compression process." (P1, col. 18, ll. 16-22). It seems unlikely that the inventors would "define the invention in a way that excluded the preferred embodiment." See Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1581 (Fed. Cir. 1996) (citation omitted). The more reasonable interpretation is that "in" includes into as well as located within.

25 Had the inventors meant to indicate that the claimed method should be performed near the compressor inlet, they could have used this language in the claim limitation. The language in Claim 30 can be contrasted with other claims of the '990 patent: (1) Claims 1, 39, 54, 72, 74, 76, and 78 (an apparatus comprising "means for nebulizing water positioned essentially in said compressor inlet") (emphasis added); (2) Claim 74 (viewport to monitor icing should be "positioned near said compressor inlet") (emphasis added); (3) Claims 87 and 88 (independent method claims "providing an amount of nebulized water to said compressor inlet") (emphasis added); (4) Claim 55 (means for nebulizing water is "positioned in said inlet air duct") (emphasis added); (5) Claim 16 ("essentially in said inlet air duct constricted portion"). Claim 30 alone specifies "in said compressor inlet" with regard to nebulizing water.
Having examined and considered the claim language, the specification, and the context of the '960 invention, the Court is satisfied that Lawler has demonstrated more than a reasonable likelihood of success on the merits. Of the sixteen claims contained in the '960 Patent, the parties have focused on the language in claim 1 that describes a multiple response thermostat element. Pl.'s Ex. 1, '960 Patent. The relevant language in claim 1 reads:

1. A thermostatic control valve assembly for mixing a hot fluid and a cold fluid for discharge at a controlled temperature, the valve assembly comprising:

   * * *

   a multiple response thermostat disposed within said mixing chamber between said outlet and said flow control valve means, said multiple response thermostat including a first thermostat portion having a first response rate and a second thermostat portion having a second faster response rate, said first thermostat portion being connected in series with said second thermostat portion and said second thermostat portion being operably connected to said flow control means.

Pl.'s Ex. 1, '960 Patent, Col. 9, ll.22-44.

--- Footnotes ---

7 The other elements included in claim 1 are not in dispute.

--- End Footnotes ---

Bradley argues that its valves have a single, non-segmented thermostat without segmented coils, therefore, its thermostats are not multiply responsive and do not meet the definition for multiple response thermostat as it is described in the patent. Def.'s Br. in Opp'n at 31; Hrg. Tr. at 32, Defs.' Opening Statement. Moreover, Bradley asserts that if claim 1 is interpreted to include its thermostat, the patent is invalid because several prior art references disclose such a thermostat. Id. None of the prior art references asserted by Bradley were disclosed to the patent office with Lawler's patent application.

In contrast, Lawler argues that the plain language of claim 1 requires only that a multiple response thermostat have a first portion and a second portion, in series, having a first and a second response rate respectively; it is not limited to having thermal coils. Pl.'s Br. at 47; Hrg. Tr. at 650-51 (citing Pl.'s Ex. 1, '960 Patent, col. 6, l. 63). Lawler also argues that the portions must run the length of the thermostat. Hrg. Tr. at 240, Ovens-Redirect. In addition, claim 2 adds thermal coils to the multiple response thermostat described in claim 1, therefore, Bradley's more narrow interpretation of claim 1 must fail for claim 2 to add anything to the invention. Hrg. Tr. at 651, Pl.'s Closing Arg. Lawler asserts that the thermostats used in Bradley's high/low HL200 (3200), HL130 (3130), and HL80 (3080) valves and its EFX60 (2200) emergency valves have a first portion and a second portion, each having a different response rate, and those portions are in series. Pl.'s Br. at 46-47. Therefore, the Bradley valves using such a thermostat in combination with the other elements of claim 1 infringe Lawler's '960 Patent.

Generally, the Court agrees with Lawler. The Court starts with the plain language of claim 1. K-2 Corp., 191 F.3d at 1362. The claim itself does not mention or describe a thermostat that uses thermal coils. Instead, the claim describes a multiple response thermostat that has "a first thermostat portion having a first response rate and a second thermostat portion having a second faster response rate." Pl.'s Ex. 1, col. 9, ll. 38-40. In addition, claim 1 requires that the two portions be connected in series, the "second thermostat portion being operably connected to [the] flow control valve means." Id. col. 9, ll. 43-44. The first mention of a multiple response thermostat in the specification describes it as "segmented to provide multiple response rates tailored to the desired operational characteristics of the thermostatic control valve." Id. col. 6, ll. 41-44. The specification goes on to describe the thermostat depicted in Figure 6, which shows a thermostat "variation of the thermal coil variety . . . . Also contemplated, however, are other segmented thermostats." Id. col. 6, ll. 56-63. Therefore, a multiple response thermostat as described in claim 1 must have 1) two segments or portions, 2) with different response rates, 3) connected in series, and 4) the portion with the faster response rate operably connected to the flow control valve means. There is no requirement that the thermostat have thermal coils and the specification clearly indicates that multiple response thermostats other than those described in the patent itself are contemplated. Dr. Ovens confirmed that one skilled in the art would similarly read claim 1. Hrg. Tr. at 167-68, Ovens-Direct; id. at 220, Ovens-Cross.
Reading claim 1 in light of claim 2 confirms this conclusion. Under the doctrine of claim differentiation, different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope. See Comark Comm. Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998). Generally then, limitations in dependent claims are not read into the independent claims upon which they depend, even to avoid invalidity or infringement. See Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999). Here, claim 2 depends on claim 1: "2. The thermostatic control valve assembly of claim 1, wherein said multiple response thermostat includes a thermal coil containing first and second volumes of temperature sensitive fluid corresponding to said first and second response rates, respectively." Pl.'s Ex. 1, col. 9, ll. 45-49. Claim 2 clearly adds thermal coils containing temperature sensitive fluid that correspond to the portioned thermostat described in claim 1. Claim 2 adds nothing else to the invention described in the patent. Although the doctrine of claim differentiation is not a hard and fast rule, see Comark Comm., 156 F.3d at 1187, in this case it supports a construction of claim 1 that allows for a multiple response thermostat without coils.

The parties also presented testimony by its experts about the meaning of "in series." Bradley's expert, Julius Ballanco ("Ballanco"), testified that two thermostat portions would be in series if they were connected with the end of one to the beginning of the other, regardless of their orientation relative to the length of the thermostat or the length of the mixing chamber. Hrg. Tr. at 603-04, Ballanco-Cross. Thus, if a cylindrical thermostat portion was connected to the end of a thermal coil thermostat portion, with the coils wrapped around the cylindrical portion, those portions would be in series. On the other hand, Lawler asserts that "in series" means segmented along its length. Hrg. Tr. at 240, Owens-Redirect.

Starting with the plain language of the '960 Patent, the Court finds Lawler's definition closer to the mark. The '960 Patent's specification provides that the thermostat pictured in Figure 6 "is designed to expand or contract along the axis defined by the push rod in response to a change in the temperature surrounding the thermostat." Pl.'s Ex. 1, '960 Patent, col.6, ll. 57-58. In addition, the thermostat portions must have an orientation that allows the incoming fluid to reach one thermostat portion more quickly than the other to accomplish the stated purpose of the invention: Quick temperature control over a wide range of flow rates, particularly low flow conditions. See id. col.1, ll. 51-60; col. 2, ll. 45-46; col. 6, ll. 47-55. The specification reads:

Generally, [the] thermostat [pictured in Figure 6] includes a first thermostat portion connected in series with a second thermostat portion. [The second thermostat portion has a faster response but smaller travel than the first portion to provide immediate, accurate control nearest the discharge of [the] flow control valve, where at low flows the hot and cold fluids may not be fully mixed. Conversely, [the first thermostat portion has a slower response but greater travel than the second portion to provide subsequent control way [sic] from the discharge of [the] flow control valve, where the hot and cold fluids are more fully mixed.

Id. col. 6, ll. 45-55 (number references omitted). This description of thermostat portions in series corresponds to a definition of "in series" that requires an orientation of thermostat portions such that one comes in contact with mixed fluid at a different time than the other.

Moreover, the specification also specifically distinguishes a thermostat that is comprised of a cylinder portion with a thermal coil portion wrapped around the cylinder and has fluid chambers open to each other. Id. col. 6, ll. 40-44 ("Unlike the linear thermostat of valve assembly 10 [pictured in Figure 1], thermostat 140 is segmented to provide multiple response rates tailored to the desired operational characteristics of the thermostatic control valve."). The thermostat pictured in Figure 1 of the '960 Patent is a thermostat with thermal coils wrapped around a cylinder. The invention in the '960 Patent is different because the thermostat portions are stacked one on top of the other rather than one surrounding the other, regardless of whether there are coils or not. Thus, a definition of "in series" that simply requires one end connected to another, without reference to placement linearly or sequentially along a length does not completely describe the invention in claim 1 of the '960 Patent.

The extrinsic evidence confirms this conclusion. First, the American Heritage Dictionary defines "series" as "[a] number of objects or events arranged or coming one after the other in succession," or "[a] group of objects related by linearly varying successive differences in form or configuration." AMERICAN HERITAGE DICTIONARY (3d Ed. SoftKey Int'l Inc. 1994). Either definition implies an arrangement that has different objects strung along a length rather than different objects overlapping one another.
Second, Kline testified that the '960 Patent distinguished a simple thermostat of the design suggested by Ballanco by extending one of the ends far enough so that one portion would operate after the other rather than simultaneously. Hrg. Tr. at 458-59, Kline-Cross. In addition, Kline testified that this could also be phrased that a multiple response thermostat as described by the '960 Patent is "segmented along its length as it comes down and pushes on the push rod." Id. at 459. Ovens similarly described this requirement stating that "in series"

means the two [thermostat portions] are lined up one after the other, that the head end of one is connected to the tail end of the next, and whatever comes out of the first portion directly acts as part of the input to the second portion, or passes directly through the second portion to wherever the second portion's output is. This is like putting links in a chain one right after another.

Hrg. Tr. at 164, Ovens-Direct. Although this testimony does not specifically address the question of how one skilled in the art at the time the '960 Patent issued would perceive "in series," Kline's testimony as inventor talking about the differences between the thermostat used in the Lawler 66 valve, which existed at the time Kline patented the valve combination described in the '960 Patent, is revealing. This is particularly true in light of its direct contradiction of Ballanco's definition and Bradley's argument stemming therefrom. Thus, the Court is persuaded that "in series" requires an orientation of thermostat portions that are connected in a chain such that one portion comes in contact with fluid in the mixing chamber at a different time than the other.

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WMA contends that its Glide-Trak systems do not infringe on the '201 patent because three elements found in Claims 1 through 8 of the '201 patent are not found in the Glide-Trak systems. Because Claims 2 through 8 reincorporate Claim 1's description of a "shelf divider system," we will focus our analysis on the language of Claim 1, which is reprinted as follows:

A shelf divider system comprising:

- An elongated channel mounting member operationally securable to a front portion of a shelf;
- A shelf divider member slidably receivable in said mounting member so that the divider member extend rearwardly over the shelf; track means on said divider comprising a pair of elongated rails, spring-urged pusher means comprising a pusher member having a front pusher face and a pair of flanges engaging said rails whereby said pusher member is operationally slidable on the rails and the pusher means is rearwardly retractable to accommodate a display of merchandise and will bear against the merchandise to automatically urge the same forwardly on the shelf.

WMA first argues that the Glide-Trak systems do not infringe on Claim I of the '201 patent because they do not contain a "divider member slidably receivable in said mounting member." (Emphasis added). This clause of Claim 1 describes how the spring-containing dividers on the '201 system (aligned perpendicular to the shelf's edge) are attached to the system's mounting unit, which is affixed to and runs along the front edge of the store shelf. The front of the '201 divider contains a "depending tongue" which extends downward in the direction of the shelf's surface. This depending tongue is then inserted into and constrained in a channel (shaped like a "U" or a rectangle missing its top side) in the mounting member in which the tongue is tightly held (in the words of the '201 patent, the tongue is "frictionally received and retained in the channel . . . of the mounting member"). Once the tongue is placed into the mounting member's channel, the snug fit keeps the divider attached to the mounting member.

On the other hand, instead of having downward extending tongues at the front of their spring-containing dividers, WMA's Glide-Trak systems' dividers (both Models 1 and 2) have downward facing C-shaped hooks ("C-hooks") attached to their front ends. These hooks fit tightly around tubes (in the shape of a narrow cylinder running parallel to the front of the shelf) that sit atop the Glide-Trak's mounting members. These tubes are physically part of the mounting member, but a raised bar connects the bottom of the tube to the surface of the mounting member. When the C-hook of the divider is locked around the tube of the mounting member, the divider becomes attached to the mounting member.

WMA contends that because the Glide-Trak dividers attach to their mounting members by securing the C-hooks around the mounting member's raised tubes, the Glide-Trak dividers are never "in" the systems' mounting members. Both parties are
satisfied with the definition of the word "in" as stated in the Random House College Dictionary Revised Edition (1988): "(used to indicate inclusion within space, a place, or limits): walking in the park." We therefore will rely on this definition in determining whether the Glide-Trak divider members are slidably receivable "in" their mounting members. WMA's central argument is that the Glide-Traks' divider members attach to the mounting members via C-hooks that connect on or around a raised tube resting atop the mounting member rather than "in" the mounting member. However, preliminarily focusing on the differences between the features of the Glide-Traks and the features of the '201 patent (as written in the patent's description) before determining the plain meaning of the disputed claim term would violate the two-step construction process outlined in Texas Digital. See Intellectual Property Development, Inc. v. UA-Columbia Cablevision of Westchester, Inc., 336 F.3d 1308, 1315 (Fed. Cir. 2003).

Because the parties agree the Random House definition of "in" is appropriate, we can next look to whether the '201's description rebuts or is inconsistent with the meaning of "in" in the 201's Claim 1, "for example whether [RTC] has specifically defined the term or otherwise limited the scope of the claim." Resonate Inc. v. Alteon Websystems, Inc., 338 F.3d 1360, 1364 (Fed. Cir. 2003). The '201's specifications speak of a depending tongue that is to be "frictionally received and retained in the channel of the mounting member." (emphasis added). This description certainly is encompassed by the Random House definition, as it indicates the '201's divider member's tongue being within the space or limits of the mounting member. Under the Texas Digital framework, we see no reason to depart from the plain meaning of "in" that both parties agree is appropriately defined by Random House.

Because of the breadth and expansiveness of the definition of "in," we may not import the more specific limitations of the 201's written descriptions concerning a tongue being frictionally received and retained in the mounting member. Resonate Inc., 338 F.3d at 1365. Contrary to WMA's assertions, the question is not whether the Glide-Traks are different from the '201 patent because the Glide-Traks' divider members attach to their mounts via hooks clamped around tubes rather than tongues inserted into channels. Instead, we must decide whether the Glide-Traks' divider members are slidably receivable within the space or limits of their mounting members. In other words, do the Glide-Trak's dividing members enter the space of their mounting members via a sliding motion? Since the physical characteristics of the Glide-Trak Models 1 and 2 differ slightly, we will analyze each model separately.

--- Footnotes ---

1. The ordinary meaning of "slidably receivable" does not appear to be in dispute. Random House (1988) defines "slide" as: "to move along in continuous contact with a smooth or slippery surface." Webster's Third New International Dictionary (1981) defines "receivable" as: "capable of being received." "Receive" is defined as "to take in or act -- act as a receptacle or container for."

--- End Footnotes ---

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1. "A Multiple Response Thermostat" and "In Series"

During the preliminary injunction proceedings Bradley argued that a multiple response thermostat must have more than one segmented coil. Defs.' Prelim. Inj. Opp'n Br. at 31; Prelim. Inj. Hr'g Tr. at 32, Defs.' Opening Statement. Further, thermostat portions would be connected in series if they were connected with the end of one to the beginning of the other, regardless of their orientation relative to the length of the thermostat or the length of the mixing chamber. Prelim. Inj. Hr'g Tr. at 603-04, Ballanco-Cross. In contrast, Lawler argued that a multiple response thermostat is not limited to one with segmented coils; it must have a first portion and a second portion, having a first and second response rate respectively, such that the portions run the length of the thermostat. Pl.'s Prelim Inj. Br. at 47; Prelim. Inj. Tr. at 240, Oven-Redirect; id. at 650-51, Pl.'s Closing Statement. Neither party offered evidence that the inventor limited the definition for the terms during prosecution of the patent, and the Court found none in its review of the prosecution history pursuant to the instant motion.

After reviewing the patent claims, the specification and the prosecution history, the Court finds no reason to deviate from the definitions for these terms that it determined at the preliminary injunction phase of these proceedings. First, the plain language of claim 1 does not specifically describe a thermostat that uses thermal coils. It merely describes two portions,
with two response rates, arranged in series. '960 Patent, col. 9, ll. 37-42. The specification describes the multiple response thermostat as one that would have a tailored response rate. Id. col. 6, ll. 41-44. Moreover, the specification states that the pictured thermostat is a "variation of the thermal coil variety . . . . Also contemplated, however, are other segmented thermostats." Id. col. 6, ll. 56-63. The Court cannot find any reason in the purpose of the multiple response thermostat to limit the portions to thermostats of the thermal coil variety. As discussed in the specification, the thermostat described should be tailored to meet the desired operational characteristics of the thermostatic control valve. Therefore, it appears that the valve designer may choose any type of thermostats, arranged as described in claim 1, to create the result he or she desires.

Finally, pursuant to the doctrine of claim differentiation, dependant claim 2 seems to suggest that claim 1 does not require that the multiple response thermostat have thermal coils. Claim 2 states: "The thermostatic control valve assembly of claim 1, wherein said multiple response thermostat includes a thermal coil containing first and second volumes of temperature sensitive fluid corresponding to said first and second response rates, respectively." Id. col. 9, ll. 45-49. Under the doctrine of claim differentiation, different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope. See Comark Comm. Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998). Therefore, limitations in dependant claims generally are not read into the independent claims upon which they depend. See KarlTech Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999). In the '960 Patent, claim 2 clearly adds thermal coils to the thermostat of the invention described in claim 1. This finding, taken together with the plain meaning of the claim language itself and the context given by the specification, leads to a conclusion that a multiple response thermostat need not have thermal coils.

The Court finds that a multiple response thermostat as described in claim 1 must have two segments or portions, with different response rates. The two portions must be connected in series and the portion with the faster response rate must be operably connected to the flow control valve means. The thermostat portions need not have thermal coils.

Turning now to the meaning of the phrase "in series," the Court is convinced that the '960 Patent requires that the thermostat portions be oriented in a chain such that one portion comes in contact with the fluid in the mixing chamber at a different time than the other. The plain meaning of "in series" is a chain of objects, one after the other. Accord AMERICAN HERITAGE DICTIONARY (3d Ed. SoftKey Int'l Inc. 1994). Such a definition is consistent with the context of the '960 Patent. The '960 Patent invention is designed to provide quick temperature control over a wide range of flow rates. Id. col. 1, ll. 51-60; id. col 2, ll. 45-46. In large part, it is the thermostat design that allows the valve to achieve that objective. The specification reads:

Generally, thermostat 140 includes a first thermostat portion 142 connected in series with a second thermostat portion 143. Thermostat portion 143 has a faster response but smaller travel than portion 142 to provide immediate, accurate control nearest the discharge of flow control valve 114, where at low flows the hot and cold fluids may not be fully mixed. Conversely, thermostat portion 142 has a slower response but greater travel than portion 143 to provide subsequent control way [sic] from the discharge of flow control valve 114, where the hot and cold fluids are more fully mixed.

Id. col. 6, ll. 45-55. The design described here requires that the mixed fluid contact the different portions of the multiple response thermostat at different times to achieve the purpose of the invention. In addition, the specification provides that the thermostat depicted in the preferred embodiment "is designed to expand or contract along the axis defined by the push rod in response to a change in the temperature surrounding the thermostat." Id. col. 6, ll. 57-60. Again, this description highlights that the important orientation for the thermostat portions is along the axis defined by the push rod, or along the length of the thermostat itself.

The Court finds that the phrase "in series" requires that the thermostat portions be arranged in a chain or sequentially such that one portion comes in contact with fluid in the mixing chamber at a different time than the other.

b. "Channels Extending Radially in the Base"

In describing the components of a centrifugal unit, Claim 16 uses the phrase "channels extending radially in the base". The
parties agree that it refers to a particular part of the centrifugal vessel which contains 1) a bottom in the shape of a disk and 2) channels that extend radially out from the base's center. The parties disagree, however, with respect to whether "in the base" means that the channels are physically located in the base or simply come into contact with or rest on the base.

The defendants contend that the proper construction of "channels extending radially in the base" is that the channels must be physically located within the base structure. Considering the specific language of the claim, the defendants maintain that "extending radially in" requires a construction in which the channels are physically located in the base. That interpretation depends on what the meaning of the word "in" is. The Shorter Oxford Dictionary defines "in" as "within the limits or bounds, within". The defendants thus argue that "extending radially in the base" requires more than contact between the bottom of the vessel and the channels.

Haemonetics asserts that the phrase has a broader definition than the defendants' proposed construction. It submits that the proper construction is that the channels are in the base of the entire centrifugal unit not that they are specifically in the base of the disk at the bottom of the vessel. In support, Haemonetics directs the Court's attention to the drawings and specifications which allegedly demonstrate that the channels are formed between the bottom and top portions of the centrifugal vessel. The Court agrees.

Having reviewed the claims, specifications and drawings, the Court construes the patent as teaching that the channels are to rest on the base, and not necessarily exist within the base itself. The defendants' reference to extrinsic dictionary sources to interpret the meaning of the contested phrase does not overcome the plaintiff's argument based on the terms and diagrams of the patent itself.

Accordingly, the disputed phrase, "channels extending radially in the base" will be construed as "channels extending radially in or on the base".

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B. "In The Body"

This claim term appears in Claim 1: "a deformable diaphragm disposed in the body" and "valve means mounted in the body." The parties dispute the meaning of the word "body" and the terms "disposed in the body" and "mounted in the body."

1. "Body"

Cannon argues that the term "body" should be construed as "the main, central, or principal part of the breast pump. It may consist of a single component or multiple assembled components."

TFY contends that the "body" is limited to a single, unitary structure. (R. 61-1 at 6.) TFY points out that throughout the patent, the term "body" is used to refer to a single piece of molded plastic. TFY attempts to improperly import a limitation from the specification into the claim by narrowing the claim to a particular embodiment. There is no indication in the specification or the prosecution history that Cannon narrowed the ordinary meaning of "body" to require a single piece of plastic.

There is no reason to depart from the ordinary meaning of "body." The ordinary meaning of "body" is "the main or central mass of a thing, such as the hull of a ship, the fuselage of a plane, or the nave of a church." Random House Webster's College Dict. at 147. Accordingly, the Court construes the word "body" to mean "the main, central, or principal part of the breast pump."

2. "In The Body"

This claim term limits the location of the diaphragm ("disposed in the body") and the valve means ("mounted in the body").

TFY argues that it requires that both the diaphragm and valve means be disposed or mounted entirely within the body of the pump. TFY argues that the language of the specification compels this construction. In the first embodiment, the diaphragm...
is located within the cup-shaped upper portion of the body. The specification describes this design as "the diaphragm 20 is mounted directly in the body." '850 patent, col. 4, Ins. 51-52. In the second embodiment, the diaphragm is not actually within the body, but instead merely covers an opening of the body at one end, and sits on the annular surface. The specification describes the diaphragm in this embodiment as "mounted thereon" the body, and teaches to assemble the pump of the second embodiment by lowering the diaphragm "onto the body." 9 '850 patent, col. 6, ln. 15; col. 7, ln. 67 - col. 8, ln. 1.

9 The specification describes "a moulded plastic body 50 with a diaphragm 51 mounted thereon at its upper end." '850 patent, col. 6, Ins. 14-16. When this design is assembled, "the diaphragm 51 with the connector 54 fitted thereto is lowered onto the body 50 until the lip 62 of the diaphragm 61 engages with the annular shoulder 61 of body 50." Id., col. 7, ln. 67 - col. 8, ln. 3.

Cannon argues that the Court should construe the term "in the body" to mean "at least partially contained within" the body. Cannon contends that the word "in" has a range of meaning, and nothing in the specification or prosecution history disclaims the broad meaning of "in." 10

10 "In" is defined as: "on the interior or inner side: within; so as to confine or surround; that is located inside or within." Webster's Third New Int'l Dict. at 1139. It is also defined as "on the inside, within." Random House Webster's College Dict. at 657.

The Court agrees with TFY. The specification selectively uses the phrase "in the body" to describe the location of a diaphragm that is completely contained within the body, but uses different language to describe a diaphragm that is merely mounted on top of it, even though part of that diaphragm extends into the main body of the pump. Accordingly, the diaphragm and valve means must be actually located within the main, central, or principal part of the breast pump, rather than being on top of it or attached to it through some external structural element. The Court construes the term "in the body" to mean "disposed or mounted entirely within the body of the pump."
a. Scope of the '468 Patent Claims

The parties dispute whether the '468 patent claims only the testing strips, and thus is a "product" patent, or whether it is a "method" patent or "combination" patent of the strip and meter. This is an issue of law to be determined by interpreting the claims of the patent.

The claims of the '486 patent are quoted below, as they appear in the patent itself.

What is claimed is:

1. A reagent test strip for use in an apparatus for determining the blood glucose concentration of a sample of whole blood, said apparatus comprising optical means for detecting intensity of light at wavelengths of about 635 nm and about 700 nm reflected from at least a portion of said strip by reading the reflectance of at least a portion of said strip;

   said strip having a porous portion disposed near a distal end of said strip such that the porous portion generally registers with the optical means of the apparatus when the strip is retained by the apparatus during determination of said blood glucose concentration, said porous portion having a sample receiving surface for receiving a sample of whole blood and a testing surface, said porous portion further comprising reagent means for indicating the concentration of blood glucose in said whole blood sample in the presence of optically visible hemoglobin by creating a change in reflectance at said testing surface indicative of the concentration of glucose present in said sample, said reagent means comprising chemical reagents selected to produce said change dependent upon the glucose concentration wherein said chemical reagents comprise a dye precursor forming a chromophore indicative of the concentration of glucose present in said sample, said chromophore absorbing light at about 635 nm but not to any significant extent at about 700 nm.

2. The strip of claim 1 wherein said dye precursor comprises 3-methyl-2-benzothiazoline hydrazone hydrochloride and 3-dimethylaminobenzoic acid.

3. The strip of claim 2 wherein the chemical reagents are at a pH of 3.8 to 5.

Claims 1-3, '468 Patent.

Most persuasive to the court on the issue of claim interpretation is the language of the three claims themselves. Claim 1 begins with the words "[a] reagent test strip" while Claims 2 and 3 refer to "the strip of claim 1." It is clear that each claim constitutes a description of the claimed strip, not a claimed method. Each claim provides a detailed description of the makeup and qualities of the claimed strip, not of the method employed in testing blood glucose levels. Claim 1 repeatedly refers to the strip and its characteristics. Mention of the meter in which the strip is used serves to describe certain strip features, not to describe a combination of strip and meter. The mention of the meter apparatus in the first sentence of claim 1 serves to identify the environment in which the strip will be used, not to create a claim to the method of determining glucose levels in blood or to the combination of strip and meter. See e.g., Smith Corona Corp. v. Pelikan, Inc., 784 F. Supp. 452, 463 (M.D. Tenn. 1992), aff'd, 1 F.3d 1252 (Fed. Cir. 1993); see also In re Stencel, 828 F.2d 751, 754-55 (Fed. Cir. 1987).

In addition to the language of the claims, i.e. the repeated references to the strips described in claims 1 through 3, the court finds that the prosecution history favors a finding that the '468 patent is directed solely to the strips themselves. The '468 patent arose out of a continuation application which was amended to contain new claims directed to a "reagent strip." In June, 1993, these amended claims were amended again, but still directed to a "reagent test strip." Although this amendment, given the number Claim 55, described the apparatus in which it was to be used, the dependent claims added along with Claim 55 each begins with the phrase "the reagent test strip of claim 55 . . ." After considering the amendments of claims 55 through 59, the patent examiner stated that it was "the examiner's position that the claims are directed to a test strip." Additionally, the examiner referred twice more in that communication to "the claimed test strip." Thereafter, LifeScan submitted an amendment canceling prior claims and adding Claim 60 incorporating the limitations of Claim 55. During and after the submission of Claim 60, LifeScan did not dispute the examiner's interpretation of Claim 55 as referring to the strip itself. In addition, Claim 60 added a feature relating to the nature of the chemicals in the strip.
After an initial rejection by the patent examiner, LifeScan conducted an interview with the examiner, during which drafts of new claims 61 and 62 were discussed. The first of the new claims, which later became claim 1 of the '468 patent, was directed to "a reagent test strip for use in an apparatus for determining the blood glucose concentration in a sample of whole blood." The second new claim, which became claim 2 of the '468 patent, was directed to "the strip of" the first claim. Following the interview, LifeScan also submitted a new claim 63, later claim 3 of the '468 patent, which also was directed to "the strip" of the preceding claim. Claim 61, which was later allowed, contains fewer references to the nature of the apparatus in which the strip is to be used. The references to the apparatus, i.e. the meter, which do exist are merely descriptive of the environment of the intended use of the strip. See e.g. In re Stencel, 828 F.2d at 754-55; see also Smith Corona, 784 F. Supp. at 463-65. Based on the court's review of the language of the claims and the patent history, the court has determined that, as a matter of law, the '468 patent claims the testing strip and therefore a product, not a method or combination of method and product.

In addition, this court is not persuaded by Polymer's argument that the '468 patent claims are limited to the reagent strip when in place in the meter with a whole blood sample present thereon. This interpretation is simply not supported by the claim language or the claim prosecution.

The court also finds unpersuasive Polymer's arguments concerning the interpretation of claim 3 of the '468 patent, which reads as follows: "The strip of claim 2 wherein the chemical reagents are at a pH of 3.8 to 5." Based on the claim language and the prosecution history, the court finds that the claim language refers to the pH of the chemical reactants in the dry strip, rather than the "pH of all of the chemicals in the strip when it is placed in the meter and a sample of whole blood is applied thereto" as is argued by Polymer.

Finally, based upon the language of the claims and the claim prosecution, the court finds that the language in claim 1 requiring that the porous portion of the strip

comprise reagent means for indicating the concentration of blood glucose in said whole blood sample in the presence of optically visible hemoglobin by creating a change in reflectance at said testing surface indicative of the concentration of glucose present in said sample, . . .

does not limit the claim to a strip in which the only hemoglobin that can be optically sensed by the apparatus is that which is "in the red blood cells filtered out and held at the surface of the test strip."

Polymer argues that its strip does not meet the elements of claim 1 because hemoglobin not "in the red blood cells filtered out and held at the surface of the test strip" is optically visible. However, the court disagrees with Polymer's interpretation of the claim language. First, the court finds that there is no indication that the '468 patent claim 1 is limited to a strip in which the only optically visible hemoglobin is that which is in the red blood cells. On this point, the court notes that the patent expressly refers to "blood being analyzed [flowing] through the pores of the matrix" and to "blood . . . wetting the polyamide matrix without having an excess liquid penetrate the porous matrix to interfere with the reflectance reading on the opposite side of the matrix." This language indicates that the claim is not limited to hemoglobin inside red blood cells, but rather also encompasses "free" hemoglobin released into the remainder of the sample. Second, even if the claim were limited in the manner alleged by Polymer, Polymer has not asserted that the hemoglobin presence in red blood cells applied to First Choice strips is not "optically visible" to at least some extent by the LifeScan home-use blood glucose meter.

Therefore, after reviewing the claim language, the patent specification, the prosecution history, the expert deposition testimony submitted, and the prior art, the court has determined that the proper meaning or interpretation of the '468 patent is that it is directed to the test strips per se, rather than to a method or combination of strip and meter. Additionally, the '468 patent claims refer to the strips themselves and are not limited to the strips when in the apparatus, with whole blood upon them. Finally, the phrase "in the present of optically visible hemoglobin" does not limit claim 1 to a strip in which the only hemoglobin optically visible is that which is in red blood cells filtered out and held at the surface of the test strip.

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d. "In the web"
As noted by BOC, the references to a "web-like" support structure do not appear in the prosecution history of claim 1 until claim 41 was submitted in the Preliminary Amendment dated July 7, 1987. (PX 8 at ND 009958-009959) Although the specification is the primary source for interpretation of words appearing in the claims, a review of the '014 specification indicates that the phrases "web-like support structure" and "in the web" do not appear. Nevertheless, it is to the specification that the court turns in its § 112 P 2 inquiry.

The structure of the invention is described generally in the "summary" of the '014 patent as such: "When the sensor is adhesively fastened, the effect of the light source and photo-sensor being integrated into the adhesive fastener is that they become, in effect, a part of the skin." (PX 7, col. 4, lines 59-62) (emphasis added). The "summary" also describes

a process for making the apparatus. In the assembly of this invention, the light source and the photosensor are mounted to substrates and are constructed of such small dimensions that both independently conform with a low aspect ratio to the flexible adhesive strip. This process also uses sequential layers of surgical tape, opaque vinyl, and light filters. Thereafter, apertured, opaque vinyl and finally a transparent adhesive layer are placed over the entire photo-sensor. The result is a simple flexible adhesive strip apparatus which is in conformance to the blood perfused flesh, i.e., digit, being interrogated for blood flow.

(PX 7, col. 6, lines 9-21) (emphasis added)

The "summary of the invention" similarly describes a nasal sensor, the "photoelectrical components [of which] are embedded into a flexible adhesive substrate ...." (PX 7, col. 5, lines 9-11) (emphasis added). A method for manufacturing a nasal sensor is described as follows:

In the assembly of this invention, the light source and the photo-sensor are embedded in a flexible plastic substrate all of which are constructed of such small dimension that the sensor conforms cutaneously to the patient's external cutaneous layer. The assembly process entails sequestial layers of mounting. There results an apparatus easily affixed on the patient's nose.

(PX 7, col. 7, lines 12-20) (emphasis added).

In the "detailed description of the preferred embodiment," the sequential construction of the preferred embodiment of this invention is described as follows:

Referring to FIG. 2C, it can be seen that the photo-active elements of the sensor substrate 14, 24 are fastened with the inactive side down to an opaque vinyl strip 30 having an adhesive surface 32. Likewise, a porous, flexible adhesive tape overlies the opaque vinyl strip 30 and a porous flexible tape layer 34 having an adhesive side 35.

Once the photo-active elements 14, 24 are attached, a second opaque vinyl tape is placed over the photo-active elements at 37. This tape has a downwardly exposed adhesive layer 38 and effects capture of the light source substrate and the photosensor substrate between strip 30 and strip 37.

Strip 37 is apertured at respective apertures 40, 41. These apertures allow light to pass. At the same time, they conform the thickness of the photo-active substrates to the overall thickness of the flexible adhesive strip to which attachment occurs. The photoactive substrates as thus captured are ideally indistinguishable in the tactile sense from the flexible adhesive strip itself.

Finally, a layer of clear polyester 45 having double adhesive coatings 46, 47 is placed over the central narrow length of the flexible adhesive strip. This enables the passage of light and yet ensures intimate bonding of the photo-sensor to the skin and the flexible adhesive strip.

A protective layer of release tape 50 protects the entire article during manufacture and before use.

(PX 7, col. 9, lines 19-53) (emphasis added).
Claim 1 discloses a probe comprising:

- a flexible, initially substantially planar, web-like support structure having substantially parallel, spaced, oppositely facing upper and lower surfaces;
- a light source mounted in the web of said support structure …;
- a photo-sensor mounted in the web of said support structure …;
- an adhesive layer on said lower surface for removably securing said lower surface to said convex portion of said skin so that said lower surface is held in conformance with said skin, said support structure being flexible also to conform to said skin without stressing ….

(PX 7, col. 11, lines 16-20, 24-25) (emphasis added).

The only structure described in the specification which correlates to the "web-like support structure" disclosed in claim 1 is a "flexible adhesive strip apparatus" made up of "sequential layers of surgical tape, opaque vinyl, and light filters" and "a transparent adhesive layer." (PX 7, col. 6, lines 15-17, 19) The specification does not refer to this "flexible adhesive strip apparatus" in terms of "support" but, rather, in terms of "conformance to the blood perfused flesh." (PX 7, col. 6, lines 19-20) Likewise, the other limitations of the claim discussed above focus on the conformance characteristic of the invention. Given the language of the specification and the problem primarily addressed by the invention (conformance to the convex nature of a patient's skin, not placement of optical components), the court construes claim 1 to disclose a "flexible adhesive strip apparatus" which properly positions or holds in place the optical components on the blood perfused tissue for transillumination.

The court finds that the phrase "in the web" is capable of definition and, therefore, that it does not render invalid claim 1 of the '014 patent.

4. The term "incidental heat loss" in claim 1 is construed as: "atmospheric or other ambient heat loss." Plaintiff argues that this term did not require construction or, in the alternative, that it be construed as "[a]ny heat which is surrendered to the atmosphere air in the processing facility or which is otherwise removed from the product during ambient temperature processing." Dkt. # 49, at 5. Defendant argues that this term should be construed as "heat incidentally lost to the atmosphere as the product is conveyed directly between step (a) and step (b), and directly between step (b) and step (c)." Dkt. # 51, at 19. From the language of the claim and the specifications in the patent, it is clear that the term is intended to describe heat incidentally radiated to the product's surroundings after it is heated in step (a) or step (c). The prosecution history shows that plaintiff intended this term to describe the product's natural loss of heat, rather than a procedure by which the product is cooled. See Dkt. # 51, at 20-21. For example, if a product were permitted to sit idle after passing through a heating oven, the heat it would lose would be incidental heat loss. Defendant's requested insertion of the word "directly" would introduce an unintended limitation into claim 1, as the claim does not require that the product travel directly between steps of the process, only that there be no intervening cooling procedure between steps.

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 Claims 3, 4, 13, and 21 of the '951 patent refer to "an inclination mechanism secured to said frame structure effective to permit selective inclination of said deck member by the user." Precor urges the Court to adopt a means-plus-function construction of "inclination mechanism," while Life Fitness argues that the disputed element should be given its ordinary meaning.
The Court concludes that this claim element is written in means-plus-function format. The Court recognizes that this disputed claim element does not include the word "means," which is most often used to trigger a means-plus-function construction. However, words other than "means" can invoke the limitations of 35 U.S.C. § 112, ¶ 6. See Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584 (Fed. Cir. 1996). In light of the fact that the disputed claim element sets forth no definite structure, the Court concludes that in this context the word "mechanism" is the linguistic equivalent of the word "means."

The specification refers to several embodiments of the "inclination mechanism." These embodiments can be found at figures 2A, 3A, 3D, and 4, as well as column 13, line 46-column 15, line 7. The Court adopts these varying embodiments in order to define the scope of the disputed claim element.

The '900 Patent concludes with the following claims:

The embodiment of the invention in which an exclusive property are claimed are as follows:

1. A bin for containing material to be spread by a spreader vehicle having a floor-mounted conveyor positioned within the bin to extract such material, wherein the bin walls are curved inwardly towards the conveyor, commencing from a first height that is above the level of the conveyor, and terminating at the edge of the conveyor, the bin walls having an inclination that is sufficient to cause material which is to be spread when positioned thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion.

2. A bin as in claim 1, wherein the bin walls each have an upper bin wall portion which is virtually vertical. '900 Patent, col.4, ll.35-48 (emphasis added). The following figures are instructive:

GET DRAWING SHEET 3 OF 3

'900 Patent, figs.3-5 (handwritten circle and number 18 in original patent).

HECO urges the court to construe the underlined clause in claim 1 as follows:

The inclination of the bin walls above the horizontal must be sufficient to meet this requirement. Thus, the bin wall cannot have a flat horizontal portion adjacent the conveyor, or any curve that is not downwardly inclined toward the conveyor (i.e., as one travels inward along the bin wall, each point along the bin wall toward the conveyor must be lower than the points farther from the conveyor).

JCCC at 23. Cives and Monroe construe the clause as follows:

The bin walls each have an inclination that is sufficient to cause material on the bin walls to slide spontaneously to the conveyor by reason of irregular, rapid or violent action resulting from the movement of the vehicle.

Id.

The court shall adopt HECO's construction. The specification makes clear that the bin wall cannot have a flat horizontal portion adjacent the conveyor or any curve that is not downwardly inclined toward the conveyor. The specification states:

According to one feature of the invention, a spreader vehicle with a bin for containing material to be spread and having a floor-mounted conveyor positioned within the bin to extract such material, has bin walls of a specially shaped configuration. Each of the sidewalls is provided with a curved configuration that bends inwardly towards the conveyor, commencing from a height that is above the height of the conveyor. The curvature of this surface terminates at a second, lower height that is, as well, above the height of the conveyor. The bin surface then continues with a relatively flat, terminal region to the edge of the conveyor. This preferably flat terminal region is upwardly angled, proceeding outwardly from the conveyor, at an
inclination that is sufficient to cause the material to be spread contained thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion.

The advantage of this configuration is that a greater amount of sand may be carried than with flat-tapered bottom bins, while both maintaining the center of gravity of the vehicle below a predefined limit, and ensuring that all of the load in the bin will slide spontaneously towards the central conveyor.

A typical bin width for a vehicle is 88 to 96 inches, with a bin depth of approximately 51 inches to the top of the conveyor. It has been found that in such a vehicle, an incline angle of between 15 to 18 degrees, preferably 16 degrees, is suitable for the inclined terminal regions leading up to a 25 inch conveyor width. The width of this region, measured in the transverse plane of the bin may be in the range 4-6 inches, preferable 4 inches. The curved portion of the bin may then have a circular radius of 35 to 40 inches preferably 37 inches, positioned to terminate virtually tangentially with an optional, vertical, upper bin wall portion (typically 14 inches in height), and virtually tangentially with the inclined, terminal flat region.

By combining a curved portion to the bin bottom with an inclined terminal region that ends at the conveyor boundary, the capacity of the bin is maximized while ensuring substantially complete discharge of the load into the conveyor.

'900 Patent, col. 1, ll.64-66, col.2, ll. 1-42 (emphasis added). In other words, as one travels inward along the bin wall, each point along the bin wall toward the conveyor must be lower than the points farther from the conveyor.

Colgate asserts Claim 27 of the '591 patent, which claims:

An oral care implement comprising: a base with a gripping region and an oral engaging region, the gripping region including a rear segment and a front segment inclined relative to the rear segment wherein the front segment is inclined relative to the rear segment at about 20 to 40 degrees thereby defining the inclined portion; a resilient grip surface being disposed on the rear segment; and a grip body extending through an aperture in the base and spaced from the grip surface, the grip body forming opposite finger gripping surfaces on the inclined portion of the base.

The parties dispute the meaning of the phrase "a rear segment and a front segment inclined relative to the rear segment wherein the front segment is inclined relative to the rear segment at about 20 to 40 degrees thereby defining the inclined portion." This phrase shall be construed to mean "the front segment of the gripping region is inclined at an angle of about 20 to about 40 degrees relative to the rear segment of the gripping region." 2

Footnotes:

2 "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (citing Brown v. 3M, 265 F.3d 1349, 1352 (Fed. Cir. 2001)). Ranir proffers a claim construction which derives no support from the specification or prosecution history. The court is disinclined to narrowly construe the disputed phrase without support in the intrinsic record. See Merck & Co. v. Teva Pharms. USA, Inc., 347 F.3d 1367, 1371 (Fed. Cir. 2003) ("A fundamental rule of claim construction is that terms in a patent document are construed with the meaning with which they are presented in the patent document. Thus claims must be construed so as to be consistent with the specification, of which they are a part.") (citations omitted). The court further notes that, during the prosecution of the '591 patent, the patent examiner stated in an Office Action, "[t]he angling of segments of a handle (claim 12) is very well known in the art of toothbrushes . . . ." (D.I. 42, Tab 12 at JA00240.)
9. "includes a plurality of sub-members"

McHugh asserts that this term does not require construction, while H&B asserts that it does. Nevertheless, as there is a controversy regarding this term, this Court will construe the term "includes a plurality of sub-members." See Markman, 517 U.S. at 374.

Claim 12 of the patent claims a grip as in Claim 1, wherein "the elongated member includes a plurality of sub-members each configure to fit adjacent to the base of the user's fingers." (6:1-3.) McHugh argues that no construction is required, but to the extent that a construction is required, it should mean "includes two or more sub-members." H&B argues that "includes a plurality of sub-members" should mean "includes two or more small grips incorporated into the long and narrow grip."

The Court has already found that "member" does not mean "grip." However, even substituting "member" for "grip" in H&B's construction, does not make it more correct. Claim 12 refers to an embodiment of the invention wherein the grip is actually segmented into multiple separate grips, each designed to fit at the base of the user's fingers. In the patent specification, Figure 5B shows a "glove 54 here grip 20 is broken up into four small grips 56a-d that provide support to one finger each. This is accomplished by incorporating four grips … into each of the four fingers of a glove near the base of the fingers, as shown." (4:39-44.) Therefore, in this embodiment of the invention, the member is actually composed of two or more sub-members. Both McHugh and H&B offer constructions which state that the member "includes" sub-members, but this is confusing because it is unclear under both proposed constructions whether the member has sub-members attached to it, or whether the member is composed of sub-members. The patent specification clearly indicates that in this embodiment, the member is composed of sub-members. (Id.)

Accordingly, the Court the term "includes a plurality of sub-members" to mean: "is composed of two or more sub-members.”

J. Term 14: Includes the intensity level setting of the control device controlling the intensity level of the lamp (as used in claims 27, 58, and 80).

Lutron contends either no construction is necessary for Term 14, or alternatively, that it means "The status includes, but is not necessarily limited to, the intensity level setting of the control device controlling the intensity level of the lamp." Control4 contends the term means "Includes information about the intensity level setting of the controllably conductive device."

The parties dispute whether the "intensity level setting of the control device" means "the intensity level setting of the controllably conductive device." Control4 contends that it is the controllably conductive device that controls a lamp's intensity level. Consequently, that phrase should be included in the construction rather than the broader "control device" phrase.

The language in the relevant claims refers to the control device, not the controllably conductive device. The specification states the objective of "controlling at least one electrical device" is achieved through a control device that is connected to an electrical device. 34 It then states the control device includes both a controllably conductive device, and "a radio frequency transmitter/receiver and antenna coupled thereto for adjusting the status of the electrical device in response to control information." 35 This indicates that it is the control device, not just the controllably conductive device, that controls the lamp's intensity level. Referring only to the controllably conductive device would impermissibly limit the meaning and scope of the relevant claims.
Toro charged White with infringement of claims 16 and 17 of the '528 patent (bracketed numerals added):

16. A convertible vacuum-blower comprising:
   [1] a housing having an air inlet and an air outlet;
   [2] a motor supported in said housing
   [3] an impeller having a plurality of impeller blades supported for rotary motion in said housing, in fluid communication with said air inlet and said air outlet, and rotatably driven by said motor;
   [4] a removable air inlet cover for covering said air inlet, said air inlet cover having apertures for passage of air through the cover;
   [5] attachment means for removably securing said air inlet cover to said housing; and
   [6] said cover including means for increasing the pressure developed by said vacuum-blower during operation as a blower when air is being supplied to said impeller through said apertured cover.

17. A convertible vacuum-blower in accordance with claim 16 wherein
   [7] said pressure differential increasing means includes a ring carried by said cover and disposed sufficiently close to said impeller to prevent air spill over between the high pressure side and low pressure side of said impeller blades during rotation of said impeller.

The district court construed the claims, as mandated by Markman v. Westview Instruments, Inc., 517 U.S. 370, 38 U.S.P.Q.2D (BNA) 1461, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). The court then granted Toro's motion for summary judgment that claim 16 of the '528 patent was literally infringed by the accused devices. Toro conceded that claim 17 was not literally infringed. The charge of infringement under the doctrine of equivalents was not reached during the summary proceedings.

CLAIM CONSTRUCTION

White argues that the district court incorrectly construed the terms "air inlet cover" and "attachment means for removably securing" in claim clause [5], and "cover including means for increasing the pressure" in clause [6]. White states that on this incorrect construction, summary judgment of infringement was improperly granted.

The district court applied the general rule that words in patent claims are given their ordinary meaning in the usage of the field of the invention, unless the text of the patent makes clear that a word was used with a special meaning. See Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477, 45 U.S.P.Q.2D (BNA) 1429, 1432 (Fed. Cir. 1998) (“It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed. Such person is deemed to read the words used in the patent documents with an understanding of their meaning in the field, and to have knowledge of any
special meaning and usage in the field.")]; Hoechst Celanse Corp. v. B.P. Chems. Ltd., 78 F.3d 1575, 1578, 38 U.S.P.Q.2d (BNA) 1126, 1129 (Fed. Cir. 1996) ("A technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent and the prosecution history that the inventor used the term with a different meaning."); Carroll Touch, Inc. v. Electro Mechanical Sys., Inc., 15 F.3d 1573, 1577, 27 U.S.P.Q.2d (BNA) 1836, 1840 (Fed. Cir. 1993). In the '528 specification no special meaning in the field of the invention is attributed to the words "cover," "included," "attachment," and "removable." However, words of ordinary usage must nonetheless be construed in the context of the patent documents. Thus the court must determine how a person of experience in the field of this invention would, upon reading the patent documents, understand the words used to define the invention.

Toro and White had each relied on dictionary definitions of the common words "cover," "attachment," "removable," and "included," each choosing definitions that favored its position. As this case well illustrates, the dictionary definitions of common words are often less useful than the patent documents themselves in establishing the usage of ordinary words in connection with the claimed subject matter. This is not an issue of the richness of language, or variety or imprecision in the usage of words. Determining the limits of a patent claim requires understanding its terms in the context in which they were used by the inventor, considered by the examiner, and understood in the field of the invention.

In judicial "claim construction" the court must achieve the same understanding of the patent, as a document whose meaning and scope have legal consequences, as would a person experienced in the technology of the invention. Such a person would not rely solely on a dictionary of general linguistic usage, but would understand the claims in light of the specification and the prior art, guided by the prosecution history and experience in the technologic field.

A

The district court relied on the dictionary definition of "cover" as "something that protects, shelters or guards; . . . something that is placed over or about another thing," and construed "cover" as it relates to the claimed vacuum/blower as "that which functions to overlay and conceal the air inlet and serves to guard the impeller." White does not challenge this definition, but argues that its device does not have an "attachment means" whereby its cover is "removably secured" to the housing, as required by clause [5]. White states that its cover is hinged and latched and thus is different from and not equivalent to the "attachment means for removably securing" the cover, shown in the specification as a twist-lock tab and detent system. White states that its hinged cover is shown in a prior art patent to Mattson, and suggests that the tab and detent system was adopted by Toro in order to differentiate its device from that of Mattson. Toro agrees that a hinged cover is shown in Mattson, which is mentioned in column 1 of the '528 patent. However, Toro argues that this reference provides support for viewing the hinge as an equivalent attachment means in terms of '112 &6.

The district court construed the "attachment means for removably securing said air inlet cover to said housing" of clause [5] as including the hinge of the White device whereby the cover, when lifted from the air inlet, remains attached to the housing. White points out that the cover in its device is not removable from but remains attached to the impeller housing, and argues that the specification of the '528 patent shows that the Toro inventor did not intend to include such structures, which were in the prior art Mattson patent. The district court held that "White fails to distinguish between the cover and the attachment means. With the use of a hinge and latch, the cover is removable from the housing covering the air inlet, even though the attachment means, the hinge and latch, are still attached to the housing." The court held that the term "removably securing" does not require that the cover be entirely separated from the housing, but simply refers to removal of the cover from the air inlet.

This question can not be decided by a dictionary. Dictionaries are useful additional sources, as is the guidance of technical/scientific experts and other relevant evidence, in addition to the patent documents themselves, that may aid the judge in achieving the understanding and viewpoint of a person having experience in the field of the invention. However, dictionaries provide general definitions, rarely in sufficient detail to resolve close questions in particular contexts.

White argues that the attachment means of clause [5], illustrated in the specification as a tab-and-detent structure, does not reach the latch and hinge whereby the cover is attached to the housing and secured to the air inlet opening in the White device. The district court correctly held that it is irrelevant whether the cover in the accused device is attached to the housing, for clause [5] relates only to the attachment means for removably securing the cover to the air inlet opening.
Applying '112 &6, the district court did not clearly err in ruling that the hinge and latch of the accused device is equivalent to the tab-and-detent illustrated in the '528 patent. The use of a latch with a hinged cover is shown in the prior art, performing the identical function of securing the cover to the air inlet during use as a blower, using known interchangeable structures. Cf. Rite-Hite Corp. v. Kelley Co., 819 F.2d 1120, 1124, 2 U.S.P.Q.2d (BNA) 1915, 1918 (Fed. Cir. 1987) (equivalence of rack-and-pinion with ratchet-and-pawl). Although White argues that section 112 &6 requires that the asserted equivalent is described in the specification, that is an incorrect statutory interpretation, for such a requirement would render the statutory provision meaningless.

The district court's interpretation of the attachment means of clause [5] is affirmed.

B

White also argues that its pressure increasing means, the restriction ring, is not "included" in the cover as required by claim clause [6] because the ring is not attached to the cover but is an entirely separate component. The district court held that the term "including," correctly construed, "suggests the containment of something as a component or subordinate part of a larger whole," and comprehends a separate restriction ring that is not part of the cover but is separately inserted and removed. The court construed "cover" to "include" both the flap that closes over the air inlet and the restriction ring, explaining that each "overlays" and "guards" the impeller. Thus the court construed clause [6] to mean that the cover includes the restriction ring whether or not the ring is attached to the cover.

The dictionary definitions of "cover" and of "including" do not shed dispositive light on whether the phrase "cover including means for increasing the pressure" is correctly construed as requiring a mechanical attachment between the cover and the restriction ring. Whether clause [6] requires that the ring be attached to the cover is not a question of '112 &6. It is a matter of interpretation of the words "including" and "cover" to determine whether, as a matter of law, the claim requires that the cover and the ring are attached to each other. The specification and drawings show the restriction ring as "part of" and permanently attached to the cover. No other structure is illustrated or described. The specification describes the restriction ring as "built . . . as part of the air inlet cover," and does not suggest that the cover and the ring may be two distinct components to be inserted and removed separately. To the contrary, the specification describes the advantages of the unitary structure as important to the invention.

The specification shows only a structure whereby the restriction ring is "part of" the cover, in permanent attachment. This is not simply the preferred embodiment; it is the only embodiment. Thus although Toro argues that it is irrelevant whether the ring and the cover are one part or two, in the specification Toro stressed that they are one:

"Accordingly, building the flow restriction ring as part of the air inlet cover, on which it is needed, but leaving a similarly shaped ring off the vacuum nozzle is also advantageous in that it automatically restricts the size of air inlet depending upon which operation is being conducted without having the operator manually insert or remove a replaceable ring."

'528 patent col. 7 lines 6-12 (citations to drawings omitted). The description of the invention states that the ring is inserted and removed "automatically" when the cover is inserted or removed. Thus when the cover is closed for operation in the blower mode, the ring that is "attached to the inside of the air inlet cover by a plurality of screws" is thereby put into place. It is inserted simply by closing the cover; it is removed by opening the cover.

The specification does not describe an invention broader than this description of the cover and the restriction ring "automatically" inserted and removed together. Nowhere in the specification, including its twenty-one drawings, is the cover shown without the restriction ring attached to it. Nor is the restriction ring shown other than attached to the cover. The specification states that the restricting ring is automatically inserted and removed by the cover to which it is attached, and illustrates only this structure in the drawings. See 37 C.F.R. § 1.83(a) ("The drawing in a nonprovisional application must show every feature of the invention specified in the claims."); M.P.E.P. 608.02(d) (Complete Illustration in Drawings). No other, broader concept was described as embodying the applicant's invention, or shown in any of the drawings, or presented for examination.

The claim word "including" is not construed in a lexicographic vacuum, but in the context of the specification and drawings. E.g., Adams v. United States, 383 U.S. 39, 49, 15 L. Ed. 2d 572, 86 S. Ct. 708 (1966) ("it is fundamental that claims are to be construed in light of the specifications and both are to be read with a view to ascertaining the invention"); Smith v. Snow,
294 U.S. 1, 14, 79 L. Ed. 721, 55 S. Ct. 279 (1935) ("if the claim were fairly susceptible to two constructions, that should be adopted which will secure to the patentee his actual invention"); Abtox, Inc. v. Exitron Corp., 122 F.3d 1019, 1027, 43 U.S.P.Q.2d (BNA) 1545, 1551 (Fed. Cir. 1997) ("because the claim language, as interpreted in light of the specification, limits the microwave devices to a single gas-confining chamber, this court affirms the district court's grant of summary judgment").

This is not a case of limiting the claims to a "preferred embodiment" of an invention that has been more broadly disclosed. It is well established that the preferred embodiment does not limit broader claims that are supported by the written description. E.g., Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865, 9 U.S.P.Q.2d (BNA) 1289, 1299 (Fed. Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations."). Nor is this a case of limiting claims to immaterial details of a broader invention as set forth in the specification. See, e.g., SRI International v. Matsushita Electric Corp., 775 F.2d 1107, 1118, 227 U.S.P.Q. (BNA) 577, 583 (Fed. Cir. 1985) (method of operation described in specification improperly read into structural claims). No such broader invention is here described. Instead, the invention is described throughout the specification as it is claimed, whereby the cover "includes" the ring, so that the ring is inserted by closing the cover and removed by opening the cover, "automatically." There is no basis for construing "including" the ring to mean not including the ring.

Toro invokes the doctrine of claim differentiation, pointing to claim 17 which is specific to the restriction ring as "carried by the cover," as supporting a broader scope for the word "including" in claim 16. White responds that there is no support in the body of the specification for such broader meaning of "including," and points out that claim 17 not only replaces "including" with "carried by," but also specifies that the restriction ring is "disposed sufficiently close to said impeller to prevent air spillover between the high pressure side and low pressure side of said impeller blades."

The doctrine of claim differentiation can shed light on the proper scope to be afforded a claim limitation, for "there is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant." Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023, 4 U.S.P.Q.2d (BNA) 1283, 1288 (Fed. Cir. 1987). However, the doctrine of claim differentiation does not serve to broaden claims beyond their meaning in light of the specification, see Multiform Desiccants Inc. v. Medzam Ltd., 133 F.3d 1473, 1480, 45 U.S.P.Q.2d (BNA) 1429, 1434 (Fed. Cir. 1998), and does not override clear statements of scope in the specification and the prosecution history. These documents require that clause [6] be construed to mean that the restriction ring is permanently affixed to and included as part of the cover. On this construction, the claims can not be literally infringed by a device having a separate restriction ring that is inserted and removed as a separate part.

The summary judgment of literal infringement is reversed.

RADER, Circuit Judge, dissenting.

The court today determines that the verb "include" in the '528 patent requires an "attachment relationship." However, the court's interpretation of "including" cannot be justified by examination of the ordinary meaning of that word or of its accepted use in patent claims, or, especially, by a careful reading of the '528 patent.

It is axiomatic that terms in a claim must be given their ordinary meaning unless it is apparent that the inventor used them differently in the patent. Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387 (Fed. Cir. 1992). While the court acknowledges that "dictionaries are useful additional sources," it did not consult one to establish the ordinary meaning of "include," a procedure suggested by Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 951 (Fed. Cir. 1993). When the parties themselves consulted dictionaries, both emerged with similar definitions of "include," incorporating the concept of "take in or comprise as a whole." Combining this modern definition with the origin of "include" in the Latin Includere, to shut in, confine within, or hold as in an enclosure, BLACK'S LAW DICTIONARY, 6th ed. (1990), leaves no doubt that the ordinary meaning of "include" does not require physical attachment.
* In its rejection of the use of common definitions of, e.g., "included," the court notes also that technical terms must be given the meaning that would be understood by persons "experienced in the field of the invention." However, the court admits that "no special meaning in the field . . . is attributed to the words . . . 'included,' [and] 'attachment.'" Nor does the court rely on any testimony by either party on the question of whether any meaning, other than the ordinary meaning, is appropriate for these words in the context of the patent.

In patent claims, "including" is normally a comprehensive term, used in a way similar to "having" or "comprising." JOHN LANDIS, MECHANICS OF PATENT CLAIM DRAFTING, section 7. In a claim element, use of the forms "comprising," "having," or "including," commonly means that whatever element is comprised, had, or included, is not necessarily the only element encompassed by the subject of the clause that contains that verb. See Robert C. Faber, The Winning Mechanical Claim, 426 PLI/P 231, 353 (1995). "Including," in a claim, thus signifies a relationship broader than "attachment." In the invention of the '528 patent the concept of the flow restrict or, which allows the user to adjust the air flow during the blower mode of operation, is original. '528 patent, col. 2, ll. 29-32. Thus, the choice of the word "including" was appropriate to give the applicant the broad coverage sought and deserved for his original concept.

Finally, a careful reading of the '528 patent also demonstrates that "including" does not here require attachment. The court mistakenly takes the described embodiment to be unique, inferring that the specification teaches that embodiment alone. The court notes that "the specification shows only a structure whereby cover and ring are permanently attached to each other. This was not simply the preferred embodiment; it was the only embodiment." On the contrary, the specification does not claim such uniqueness and describes another embodiment, specifically one in which the flow restriction ring is not permanently attached to the cover. Everywhere the word "embodiment" is used to denote what is described in the specification of the '528 patent, it is used in the phrase "a preferred embodiment." More important, the inventor contrasts the preferred embodiment not, as the court thinks, with disadvantageous prior art, but rather with a less-preferred embodiment of the invention at hand: a blower with a replaceable, i.e., non-attached, ring. As the inventor states, the method of construction of the preferred embodiment, in which the flow restriction ring is indeed built into, and thus "part of," the air inlet cover, is advantageous in that "it automatically restricts the size of air inlet . . . without having the operator manually insert or remove a replaceable ring." '528 patent, col. 7, ll. 6-12. But as noted above, there is no prior art for the flow restriction ring, so that such a ring in any form was part of the invention. In particular, an owner-replaceable ring, i.e., one not attached, was clearly part of the invention, and is described by element [6] of claim 16 of the '528 patent. In short, an "included" but definitely not "attached" flow restriction ring is a feature of an embodiment of the invention, but not the preferred embodiment.

The term "including," in the context of the '528 patent, does not imply "attachment," and the claims of this patent should not be limited to the preferred embodiment with its attached restricting ring.

The Court held a Markman hearing and subsequently issued a Memorandum opinion (Docket No. 138) in which the Court construed the disputed claim terms of the '981 Patent and the '306 Patent. At issued were the following claim terms of the '981 Patent and the '306 Patent: 1) "Frame"; 2) "Formed Integrally Within"; 3) "Integrally Formed Within"; 4) "Integrally Formed With"; 5) "Including"; 6) "Attached"; and 7) "Manifold". The Court construed the terms as follows:

"Frame": "the underlying structure of the cone crusher to which other constituent parts may be fitted, attached or integrated."

"Formed integrally within" and "Integrally formed within": "created or constructed within or as a part of the frame."

"Integrally formed with": "created or constructed within or in combination with the frame."
"Attached": "fastened or affixed."

"Including": "to take in or comprise as a part of a whole."

"Manifold": "a fitting or a passage that has a plurality of openings for making connections."

2. The '260 Patent

The '260 patent describes a latch closure mechanism very similar to that disclosed in the '041 patent. The only apparent dispute between the parties regarding the language of that patent involves the following language from claim 1:

(a) a resilient and elongate latch tongue including pawl means 2 forming a recess thereacross;

(b) a bar sized and shaped to be received substantially entirely and flushly within said recess;

'260 patent (emphasis added).

As with the "having" term used in claim 4 of the '041 patent, defendant asserts that the term "including" in claim 1 of the '260 patent requires both the upper and lower portions of the pawl means 3 to be a part of the tongue structure of the latch mechanism. Because nothing in the claims, the patent specification, or the prosecution history suggests otherwise, and further because plaintiff neither contests defendant's proposed interpretation nor offers an alternate definition of the term "including," the court construes that term in light of its plain and ordinary meaning.

According to Webster's, "including," the present participle of the verb "include," is defined as "to take in, enfold or comprise as a discrete or subordinate part or item of a larger aggregate, group, or principle." Webster's Third New Int'l Dictionary 1143 (1986); accord Webster's Collegiate Dictionary 588 (10th ed. 1999) (defining "include" as "to take in or comprise as a part of a whole" or "to contain between or within"). In the absence of any objection from plaintiff, the court construes the term "including" as requiring both the upper and lower portions of the pawl means to be contained by, and therefore to comprise, as a part of the whole, the tongue structure in this case.
The court notes that this construction of the word "including" is entirely consistent with, and therefore reinforced by, the patent illustrations and the language set forth in the patent specification. Indeed, all of the drawings included in the patent description depict tongue structures from which two projections extend. Moreover, the specification expressly states that "the principal objects of the present invention are: . . . to provide such a container including a latch tongue having pawl projections defining a latch recess. . . ." '260 patent at 3:16-18 (emphasis added). Additionally, in describing three of the patent's illustrations, the specification explains that "the tongue 28 includes an upper pawl 30 and a somewhat similar lower wedge like formation or lower pawl 31 separated by a latch bar receiving recess or notch 32 extending across the tongue 28." Id. at 5:68-6:4 (emphasis added).

Moreover, a construction of the phrase "pawl means forming a recess thereacross" further supports the conclusion that the upper and lower portions of the pawl means must project or extend from the tongue structure. Citing that language, defendant argues that, unless the pawl means consists of two projections from the tongue structure, no recess can be formed across the tongue. The court agrees.

Although neither party specifically offers a construction of the term "recess," according the word its plain and ordinary meaning, a recess is "an indentation in a straight line or in a surface bounded by a line conceived of as straight: cleft." Webster's Third New Int'l Dictionary 1894 (1986); accord Webster's Collegiate Dictionary 975 (10th ed. 1999) (defining "recess" as "indentation, cleft."). Thus, for a recess to be formed by the pawl means across the tongue, there must be an indentation across the tongue's surface, and no such recess can be formed across the tongue structure by the pawl means unless both portions of the pawl means are themselves a part of the tongue.

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B. Interpretation and Infringement Analysis of the Term "Incompressible" Contained in the '048 Patent.

In the context of the '048 patent, the term "incompressible" is used to refer to the material used to form the outer layer of the print blanket. The term appears throughout the body of the description, as well as in claims 1 and 3. Independent claim 1 states in relevant part:

. . . the blanket comprising an outer layer of material, an inner layer of material, and an intermediate layer of material, the outer layer of material being a continuous tubular layer of incompressible material indented by the printing plate at the nip. . . .

Dependent claim 3 states: "The offset printing press as recited in claim 1 wherein the outer layer comprises an incompressible polymeric material."

Mitsubishi contends that the term "incompressible", properly interpreted, refers to a material that retains its original thickness when subjected to vertical pressure, or, in this case, as it moves through the nip. In support of this interpretation, Mitsubishi points to the file history of the '048 patent; specifically, to a portion of a patent application that eventually evolved into the '048 patent and which states "the printing layer is incompressible, and thus retains its original thickness as it moves through the nip." ('668 patent application, p. 16, Ins. 21-22). Mitsubishi contends that the above definition is consistent with that attributed to the term "incompressible" by those skilled in the art. Thus, Mitsubishi concludes that "incompressible" must refer to a material which does not change thickness as it passes through the nip.

This Court has already been called upon once before to interpret the term "incompressible" as it relates to the outermost layer of the printing blanket described in the '048 patent. After considering evidence similar to that now before the Court, we adopted the definition presented in WEBSTER'S NEW RIVERSIDE UNIVERSITY DICTIONARY, and concluded that a material is "incompressible" if it is not made smaller when subjected to squeezing. Heidelberg Harris, 1996 WL 189398 at *11. We now refine that definition.

It is axiomatic that, in construing terms contained in a claim, the court looks primarily to the intrinsic evidence before it, including the patent's claims, specifications and prosecution history. Vitronics Corp. v. Conceptor, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). The court is directed to look first to the words of the claims themselves, keeping in mind that, "although words are generally given their ordinary and customary meaning, a patentee may choose to be his own
lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification." Vitronics, 90 F.3d at 1582. Thus, "the specification acts as a dictionary when it expressly defines terms used in the claims or defines terms by implication." Id. Consequently, the specification is, at a minimum, always extremely relevant to the construction analysis and, more often than not, actually dispositive. Id.

Guided by the above principles, we turn to the '048 patent in refining our earlier definition. Throughout the specification, the term "incompressible" is used to refer to a material whose volume does not change when deflected. Specifically, the patent specification states "since the outer layer is formed of an incompressible material, the volume of the outer layer itself does not change when the outer layer is resiliently deflected by the plate cylinder. . . ." 2 ('048 patent, col. 11, lns. 8-12). By contrast, the patent defines a "compressible" material to be one whose volume decreases when force is applied. (’048 patent, col. 8, lns 9-12). 3 Nowhere in the specification of the '048 patent is "incompressible" used to refer to material which does not change thickness when subjected to force. In light of the clear definition set forth in the patent's specification, we will not look to extrinsic evidence, such as expert testimony, to modify the meaning of the term as defined, nor will we use one line excerpted from a patent application several generations removed to replace the definition explicitly provided in the instant patent. Thus, in keeping with the definition presented in the '048 patent, we hold that the term "incompressible" refers to a material that does not change volume when subjected to pressure or force.

--- Footnotes ---

2 Additionally, the patent states:

Deflection of the tubular outer layer results in the printing blanket occupying a volume which is less than its original or undeflected volume. However, the total volume of the outer layer remains constant. . .

(’048 patent, col. 11, lns. 66-68; col. 12, lns. 1-2).

3 Specifically, the patent states: "When a force is applied to the compressible material of the printing blanket the volume of the compressible material decreases."

--- End Footnotes ---

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G. Claim 6: "said stretch film has increased strength characteristics due to stretching"
Defendant Sigma asks me to limit the term "increased strength characteristics" to "ultimate strength." It bases this argument on language found in the specification. (’393 Patent, Col. 4., ll. 15-16) ("It is well known that most plastic films when stretched above their yield point gain significantly in ultimate strength"). Pliant now asks me to turn to extrinsic evidence, namely the declaration of its expert, to construe the proper meaning of "strength characteristics." However, I find that the inventor defined the strength characteristic relevant to the invention within the specification. Because this intrinsic evidence provides clear guidance as to the meaning of the term "strength characteristics," I need not look to extrinsic evidence in order to construe the term. "Increased strength characteristic" means "an increase in the ultimate strength of the film."

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"the thickness of the generally annular region increases as the region approaches the pumping member"

Claim 12 of the '882 Patent contains the term "the thickness of the generally annular region increases as the region approaches the pumping member." Defendants contend that the term is indefinite. After a review of the arguments and relevant evidence, the Court concludes that the term "the thickness of the generally annular region increases as the region approaches the pumping member" meets the definiteness requirement of 35 U.S.C. § 112, P 2.

Defendants contend that although the specification describes the generally annular region as an increasingly thickened
convolute where "the portion of the convolute which is radially remote from the pumping member is more thin or less thick than is the portion of the convolute which is radially close to or adjacent the pumping member," the specification lacks any guidance as to the location and size of these "portions." '882 Patent, col. 3:39-43. Thus, Defendants argue that without any indication of where these "portions" are located in the generally annular region, a person skilled in the art would be unable to determine how to avoid infringing the patent.

The claim words of the disputed term are sufficiently definite to inform the public of the bounds of the invention. Defendants' argument essentially alleges that the "portions" discussed in the "Summary of the Invention" are not adequately defined elsewhere in the specification. However, Defendants' allegation does not bear on the question of Claim 12's definiteness because the allegedly objectionable "portions" language is from the specification, not from Claim 12. The definiteness requirement requires the scope of claims to be sufficiently definite, and the claim words of the disputed term at issue are readily understood with reference to the specification.

Indeed, the generally annular region is expressly identified in at least three different drawings of the '882 Patent. SHURflo points to Figure 7 in arguing that the term is adequately described in the specification. In Figure 7, produced below, the generally annular region 86 is shown in a cross-sectional view of the pumping member. The words "annular region" indicate a ring-shaped area. This is supported by the specification, which describes the generally annular region as something that "circumscribes central piston surface 64 and which flexes when the pumping member 37 moves between inlet and discharge strokes." '882 Patent, col. 6:11-12, see also '882 Patent, col. 3:30-34 ("In yet another aspect of the present invention, the gasket or diaphragm includes a generally annular zone or region, preferably substantially circumscribing a pumping member which flexes when the pumping member is driven by a drive."). After examining Figure 7 in view of the specification, any further ambiguity regarding the generally annular region is clarified in Figure 5, produced below, which shows three pumping members--indicated by the labeled central piston surface 64--and the generally annular region 86 that circumscribes each member. In operation, the generally annular regions flex to accommodate the motion of the pumping member moving back and forth perpendicular to the plane of the diaphragm 33. See '882 Patent, col. 6:10-13.

[SEE [Figures 5 and 7 of the '882 Patent] IN ORIGINAL]

In addition, relative to the overall pumping mechanism, one of ordinary skill in the art may envision operation with reference to Figure 2, produced below, which shows both the generally annular region 86 and the pumping member--indicated by labeling of central piston surface 64 and head portion 62. Finally, in view of the specification, one of ordinary skill in the art would find the relative location of the generally annular region(s) and the pumping member(s) in both Figures 3 and 6, which reveal these items with less precise labeling.

[SEE [Figure 2 of the '882 Patent] IN ORIGINAL]

Once the identity and nature of the generally annular region are understood, the assessment of the "thickness" increase is relatively straightforward. The disputed claim term states that "the thickness of the generally annular region increases as the region approaches the pumping member." This term may be assessed with reference to the cross-sectional view of Figure 7 where the generally annular region 86 visibly thickens as it gets closer to the pumping member 37. In addition, the written specification clearly describes the thickening, which may be understood at least with reference to Figures 5 and 7. For example, in describing the preferred embodiment, the specification states that, "[t]he thickness of diaphragm 33 progressively increases in annular zones 86 from a point remote from the pumping member 37 to a point adjacent the pumping member." '882 Patent, col. 6:22-26. Thus, at least from Figures 5 and 7, and the written specification, it is clear that the meaning of the claim is discernible and the term is not insolubly ambiguous.

While the term is not insolubly ambiguous, a dispute remains as to the term's construction. SHURflo contends that the term means "at least some portion of the annular region which is radially close to or adjacent the pumping member is thicker than at least some portion of the annular region which is radially remote from the pumping member." Defendants assert that SHURflo's proposed construction amplifies the ambiguity that exists in the specification, rather than clarifying the claim language. Defendants further argue that SHURflo's proposed construction would allow "an untold number of portions giving rise to a wide variety of thickness profiles, not just those that are increasing or progressively increasing in the direction of the pumping member." Defendants' Definiteness Brief, at 10. Moreover, Defendants contend that SHURflo's proposed construction is inconsistent with the plain language of the claim because "the increasing thickness limitation is unambiguously made with respect to the entire generally annular region . . . not just portions of it." Defendants' Responsive
In yet another aspect of the present invention, the gasket or diaphragm includes a generally annular zone or region, preferably substantially circumscribing a pumping member which flexes when the pumping member is driven by the drive. In one embodiment, this region can be considered to be a convolute which facilitates the movement of the pumping member in the intake and discharge strokes, while reducing the amount of stress on the diaphragm caused by this motion. This facilitates maintaining a long effective life of the gasket or diaphragm. In a particularly useful embodiment, the thickness of the convolute increases, more preferably progressively increases, as the convolute approaches the pumping member. In other words, the portion of the convolute which is radially remote from the pumping member is more thin or less thick than is the portion of the convolute which is radially close to or adjacent the pumping member. Having a convolute which is thicker and more durable close to the pumping member is effective in offsetting the increased stress that exists close to the pumping member.

'882 Patent, col. 3:30-50 (emphasis added).

Since the claim calls for the "thickness of the generally annular region" to increase and the generally annular region must be annular (i.e. ring-shaped), then the Court must conclude that it is the ring-shaped area that must increase in thickness with radial proximity to the pump head. To be clear, the Court concludes that the claim requires exactly as it states--that the thickness of the whole circumscribing ("annular") region increases as the region approaches the pumping member.

Defendants propose that, should the term require construction, it means "the thickness of the generally annular region progressively increases in the direction of the pumping member." SHURflo counters that Defendants' proposed construction is unduly narrow in that "progressively increases" is used to describe a preferred, not a limiting, embodiment in the specification. '882 Patent, col. 3:39-43. "[P]articular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments." Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994); see also Phillips, 415 F.3d at 1323. The Court agrees with SHURflo that Defendants' provisional construction is too narrow because the increase in thickness need not be uniform or progressive. As the claim states, the thickness must simply increase as the pumping member is approached.

In order to avoid further disputes between the parties, the Court will explain further. To show infringement, SHURflo must prove that Defendants' product comprises a ring-shaped region with a pumping member generally within the ringed-area. The ring-shaped area need not be a perfect circle but one should be able to define radial lines emanating from the pumping member and extending like radii through the annular region. For any such radius, when moving along the radius in the generally annular region, the thickness of the generally annular region must increase from a point in the annular region most remote from the pump member, to a point in the annular region most proximate to the pump member. Furthermore, since the claim states "the thickness of the generally annular region increases as the region approaches the pumping member," the thickness of the region may not decrease along any such radius. The Court provides this explanation so that the claim term may neither be interpreted so narrowly as to require a "progressive" thickness increase, nor so broadly as to allow thickness to decrease with radial proximity to the pumping member.

Because Defendants have not shown by clear and convincing evidence that the term “the thickness of the generally annular region increases as the region approaches the pumping member” is indefinite, Defendants' Motion for Summary Judgment of Indefiniteness of the '882 Patent (Docket No. 74) is DENIED. In addition, the claim language is clear and understandable to the fact finder, and any substitute for the claim language is likely to cause confusion rather than aid. Thus, the Court declines to define this term. However, the Court has resolved the parties' disputes in accordance with O2 Micro International Ltd. v. Beyond Innovation Technology Co., 521 F.3d 1351 (Fed. Cir. 2008), and to the extent that this claim term arises at trial, the Court instructs the parties to tailor their trial arguments to conform with this Order.
"Increases in Rigidity After Expansion of Said Balloon"

The meaning of the term "increases" appears to be undisputed. Therefore, the following ordinary meaning of "increases" is adopted as consistent with the intrinsic record: becomes progressively greater in size, amount, number or intensity. (Webster's Ninth).

Cordis contends that "rigid" means "[d]eficient in or devoid of flexibility" (Webster's Ninth); or "stiff or unyielding; not pliant or flexible," or "firmly fixed or set" (Random House). Cordis' selected definition for "expansion" is "the act or process of expanding" (Webster's Ninth), and "after" means "following in time" (Webster's Third). Cordis' position is that under the ordinary meaning of the claim language, the material that is provided in the sleeve must increase in rigidity, i.e., become more stiff and less flexible, and this increase in rigidity must take place following the act or process of expanding the balloon. Cordis argues that these definitions are consistent with the surrounding text, because the next step in the claim 2 method involves the act of "maintaining said balloon in an expanded condition in the vessel while said sleeve increases in rigidity." According to Cordis, the language used in that step confirms that an increase in rigidity must take place following expansion of the balloon.

AGR has asked the Court to consider the following definitions of "rigidity": (1) "deficient in or devoid of flexibility;" or "appearing stiff and unyielding" (Webster's Ninth); (2) stiff or unyielding; not pliant or flexible; hard;" or "firmly fixed or set" (Random House); (3) "not easily bent; inflexible" ("as, rigid in death"); or "not moving; firmly fixed; set;" or "not deviating or relaxing; rigorous" ("as, rigid regulations") (Webster's Twentieth); (4) "lacking flexibility; stiff; hard; inflexibility set; unyielding" (Webster's Intermediate); (5) "resisting change of form; stiff; severe; fixed" (Funk & Wagnalls); (6) "the quality or state of being rigid" (Webster's Ninth) (defining "rigidity").

AGR maintains that by arguing that this limitation requires an increase in rigidity after the full or complete expansion of the balloon, Cordis seeks to limit the claim terms. There are multiple dictionary definitions for the phrase "after," all of which are consistent with the use of the word in claim 2. For example, AGR offers that Webster's Twentieth defines "after" as "later in time" and "according to the direction and influence of." AGR argues that this limitation is satisfied as long as there is some increase in rigidity after any expansion of the balloon, even if the doctor is still in the process of expanding the balloon. Cordis responds that this interpretation confuses "after" with "during."

The Patent, specification and file history have been examined to determine the meanings of the words "rigidity," "after" and "expansion" in context. There is no language or other evidence that requires that the balloon be fully expanded before the material in the sleeve starts to increase in rigidity. Dr. Rockey describes, with respect to the preferred embodiment depicted in Figure 9, that "[t]he sleeve space 63 contains a fluid plastic material 66 which is caused to become solidified, preferably to a semirigid state after the balloon has been expanded." (Description of the Preferred Embodiment, 6:22-24) (emphasis added). He also wrote that "[t]he inflation pressure is maintained for a period sufficient for setting of the liquid 66 in the sleeve space 63 to become solidified into its semirigid state." (Id. at 6:52-54). And, he disclosed that "[a]fter the sleeve material has solidified into a semirigid structure, the balloon is deflated through the catheter." (Id. at 6:57-59). Finally, he wrote:

It is contemplated that the catalyst for setting of the material 66 can be encapsulated and mixed with the base and caused to release from such encapsulation upon the pressure applied thereto by expansion of the balloon 50. Another alternative is to introduce the settable material 66, including mixed catalyst, into the space through the tube 64 after the sleeve has been manipulated into position.

(Id. at 7:3-10) (emphasis added).

At no point during this discussion does Dr. Rockey require that the balloon be fully expanded before any increase in rigidity takes place in the sleeve, especially considering that the trigger that causes the catalyst to begin the process of making the sleeve rigid is the first expansion of the balloon. Dr. Rockey specifically discusses how the sleeve material does not achieve a semirigid state until after the balloon has expanded (past tense), but this does not mean that there was no increase in rigidity while the balloon was expanding. Full expansion is not required for there to be an increase in rigidity. The
progressive change in rigidity begins to occur as soon as the balloon begins to expand, which is what sets off the catalyst.

Dr. Rockey's use of the word "expansion" rather than "expanded" is telling. In describing the increase in rigidity, he refers to the process of "expansion" of the balloon, which is followed by the increase in rigidity of the sleeve material. In other parts of the specification, however, Dr. Rockey refers to a "fully expanded" sleeve (Brief Description of the Drawings, 3:9-11; 4:52). This suggests that had he meant "fully expanded," he would have said so.

The next step in the claim 2 method involves the act of "maintaining said balloon in an expanded condition in the vessel while said sleeve increases in rigidity." Contrary to Cordis' assertions, this step does not confirm that an increase in rigidity must take place following complete expansion of the balloon. The increase in rigidity takes place after the balloon begins to expand, and once the balloon has been fully expanded, the balloon is maintained in the inflated condition while the sleeve achieves the semirigid state required before the balloon may be removed. That is how Dr. Rockey described the process involved in his invention, and therefore, that is how the claims are to be interpreted.

The ordinary meanings of "rigidity" and "after" that are most consistent with the intrinsic record are as follows:

1. "Rigidity" means the quality or state of being deficient in or devoid of flexibility, stiff and unyielding, hard, or firmly fixed or set. (Webster's Ninth; Random House).
2. "After" means "following in time." (Webster's Third).

Accordingly, the phrase "increases in rigidity after expansion of the balloon" requires that the material contained in the sleeve or added to the sleeve during the procedure increase in rigidity after the balloon begins to expand.

CLAIM 1:

Plaintiff's fastener is comprised of two halves, a female half and a male half. A donut shaped magnet, referred to as the magnetic member, is mounted on the female half. A rivet is positioned at the periphery of the hole in the magnet, leaving the hole in the magnet at least partially unobstructed. The male half is made of magnetically attractive material. It contains a rivet protruding outward that fits within the hole of the magnet to fasten the two halves together. At least one of the two rivets contain a small hole. The purpose of the hole is the central focus of the parties' dispute as to claim one, the only independent claim at issue.

The last element of claim one provides:

said magnetic member creates a magnetic circuit which passes at least through a periphery of said first rivet of said female member, which said small hole in said one of said first and second rivets increasing the magnetic attraction of said magnetic member by modifying a resistance to said magnetic circuit at said first and second rivets. (emphasis added).

Plaintiff maintains that the underlined portion of claim one should be interpreted to mean that the purpose of the rivet hole, in the context of the closure, is to provide an increase in magnetic attraction. Defendants contend that this language must be construed to mean that the small hole in at least one of the rivets, and no other element, causes the increase in magnetic attraction of the magnet itself, i.e., that the power of the magnet is intensified.

The claim language does not speak in terms of increasing the power of the magnet. Rather, it states that the magnetic attraction is increased. The dictionary defines "attraction" as "the act or capability of attracting" and defines "attract" as "to cause to draw near or adhere; direct to or toward itself or oneself . . . " The American Heritage Dictionary of the English Language at 120 (Houghton Mifflin Co. 3d ed. 1996). Although it is possible to increase magnetic attraction, it is impossible to increase a magnet's power to attract. The inherent strength of a magnet is fixed. The magnetic attraction, as opposed to the magnet's power, can be enhanced as a result of the physical surroundings in which the magnet is placed. For example, it
is common knowledge that the further away a magnet is placed from a metal object, the less attraction they will have to each other. That is, the ability of the magnet to draw the metal object toward it is decreased as a result of the distance. If a piece of wood, or other non-magnetic barrier, is placed between the magnet and the metal, the magnetic attraction is similarly decreased.

Defendants are correct in noting that the claim language does indicate that the magnetic attraction of the magnet is amplified. It does not state that the magnetic attraction between the magnet and the male half is increased. The flaw with defendants' argument, however, is that they focus on the word increase as it relates to the phrase magnetic member, instead of the claim limitation as a whole, in context. See e.g., Quantum Corp., 65 F.3d at 1581 (citing United States v. Teleelectronics, Inc., 857 F.2d 778, 781 (Fed.Cir. 1988)). The claim language continues with the explanation as to how the magnetic attraction is able to be enhanced. It states, "by modifying a resistance to said circuit at said first and second rivets." The specific language of the claim does not purport that the rivet hole alone acts to strengthen the magnetic attraction by increasing the inherent strength of the magnet. Rather, the small hole affects the circuitry when the male and female halves are brought together. Defendants' contention that the small hole, and no other element or feature of the fastener, causes the increase in the magnetic attraction is untenable. Absent the surrounding environment in which the rivet hole is situated, no magnetic circuit could be obtained. It is the location of the rivet hole, within the overall physical structure formed when the two halves are brought together, that creates a change within the magnetic circuitry, not a change to the magnet itself. Such a modification enables the inherent power of the magnet to be harnessed in such a manner as to allow the magnet to operate more efficiently, thereby increasing the attraction of the male half toward the magnet.

Nothing within the specification or prosecution history indicates that the claim should be interpreted to mean that the small hole in at least one of the rivets causes the magnet's inherent power to grow stronger. The specification states:

"The utilization of the small hole through the center of the rivet modifies an interference or resistance to magnetic lines of flux (magnetic circuit) which pass through at least a periphery of the rivet and are caused by a permanent magnet of the female member. By modifying the resistance to the magnetic circuit, the magnetic attraction of the magnetic member is increased.

Similarly, in the abstract portion of the patent, it states: "at least one of the rivets can include a small hole which serves to modify a resistance to a magnetic circuit created by the magnetic member and thereby increase a magnetic attraction of the magnetic member."

Defendants argue that these passages support their contention that the claim must be read as to require that the magnetic attraction of the magnet itself is increased. The claim, as well as these portions of the patent relied on by defendants, would have been clearer had it been drafted to state that the magnetic attraction between the magnet (located on the female half) and the male half is increased. Other passages in the specification do indicate that the magnetic attraction refers to the two halves of the fastener, not to the magnet itself. The specification also states, "the small holes extending substantially through at least one of the rivets modifies resistance to the magnetic circuit and thereby enhances the magnetic attractions between the male and female members . . ." The specification additionally provides:

"The magnetic circuit flows through at least a periphery of the rivets . . . By utilizing small through holes . . . substantially through at least one of the rivets . . ., an interference to the magnetic circuit at the center of the rivet . . . can be modified. The modification in interference at the center will cause a modification in the resistance to the magnetic circuit and thereby increase the magnetic attraction. Accordingly, the provision of having a small hole drilled at least substantially through at least one of the rivets . . . will modify a resistance to the magnetic circuit and thereby increase the magnetic attraction and holding power of the magnetic snap lock.

These excerpts indicate that the increase in the magnetic attraction is between the two halves of the fasteners when in a closed position. The male half contains no magnet and therefore has no ability to attract. The magnet is the instrumentality by which the ability to attract is derived. Therefore, the specification merely indicates that the magnetic attraction, emanating from the magnet itself, is increased. That increase occurs within the context of the magnetic circuit created as the male and female halves come together at the rivets when the fastener is in the closed position.

The prosecution history does reveal that the purpose of the rivet hole was a central issue in obtaining the patent. When the patent was initially submitted to the PTO for consideration, claim 1 did not contain the disputed language. The examiner
rejected Claim 1 as unpatentable given the existence of a prior similar patent, i.e., U.S. patent No. 5,042,116 ("the '116 patent"). The '116 patent fastener has a male projection pin with a recess that houses the female pin when the device is closed. The PTO found that the hole in the pin, in the '116 patent, is equivalent to the small hole in one of the rivets in the '773 patent fastener. Therefore, since the applicant had "not claimed or defined that the 'small hole' in one of the rivets solves any stated problem or is, for any particular purpose," claim 1 was rejected.

Defendants argue that the patentee added the language that the rivet hole increases the magnetic attraction in an effort to overcome the examiner's rejection and to distinguish this fastener from the '116 patent. The prosecution history demonstrates that the disputed language was not an afterthought added by the patentee as a direct result of the examiner's comments in initially rejecting claim 1. In the original draft of the patent application, claim 7 dealt with the increase of magnetic attraction by a change within the magnetic circuit at the site of the rivets. It read as follows:

A magnetic snap lock according to Claim 1, wherein said magnetic member creates a magnetic circuit which passes at least through a periphery of said first rivet of said female member, said first and second rivets increasing a magnetic attraction of said magnetic member by reducing a resistance to said magnetic circuit at said first and second rivets.

Although proposed claim 7 did not specifically address the existence of the rivet hole and its purpose, the original specification did. It stated:

The magnetic circuit flows through at least a periphery of the rivets . . . by utilizing small through-holes . . . substantially through at least one of the rivets . . ., an interference to the magnetic circuit at the center of the rivet . . . can be reduced. The reduction in interference at the center will cause a reduction in the resistance to the magnetic circuit and thereby increase the magnetic attraction. Accordingly, the provision of having a small hole drilled at least substantially through at least one of the rivets . . . will reduce a resistance to the magnetic circuit and thereby increase the magnetic attraction and holding power of the magnetic snap lock.

In seeking reconsideration by the PTO, the applicant's amending papers noted:

Claim 1 has been amended to include further minor clarifying amendments with respect to features of the small hole set forth in Claim 7. During the interview, the Examiner indicated that these clarifying amendments were acceptable and would place Claim 1 in condition for allowance. As noted in the Official Action, and agreed upon by the Examiner at the personal interview, the applied references are not believed to show or suggest the specific combination of elements set forth in amended Claim 1 including the features of the small holes which modifies a resistance to the magnetic circuit at the first and second rivets. In the present invention, the presence of the small hole in the center of the rivet modifies the flux density of the magnetism through the rivet to a desired value consistent with the material of which the rivet is constructed and the desired properties of the device.

Based on this amendment, as well as others, the invention was granted a patent. Notwithstanding defendants' contention to the contrary, the prosecution history fails to reveal that the amendment to claim 1 was intended to limit the claim only to magnetic fasteners that have at least one rivet hole which solely operate, separate and apart from anything else, to increase the magnetic attraction by increasing the power of the magnet.

Accordingly, the Court finds that the last element of claim 1 is interpreted to mean as follows:

and in which the magnet causes lines of magnetic flux to pass through at least the outer sides of the rivet in the female half, and the small hole(s) in one or both rivets modifies their resistance to the flux and thereby increases the magnetic attraction.
4 Defendants had no objection to the introduction in evidence of the dictionary excerpts, X-14 through 16.

This term is used in claim 16 of the '990 patent, which asserts in pertinent part:

'A wet compression power augmentation apparatus … comprising: means for nebulizing water… adapted to modify the mass flow of nebulized water in a plurality of nebulized water mass flow increments

(emphasis added).

Defendants assert that, in the context of this claim, the term increment includes a time-and-function element, i.e., "a period of time of sufficient length to allow each component of the turbine to reach thermal equilibrium." (Defendants' Markman Brief at p. 8). In support of this contention, Defendants rely on the purpose of the water increments stated in the specifications. See '990 Patent, column 4 at line 3 and column 6 at line 8.

Again, "increment" is a commonly used term. According to Webster's Collegiate Dictionary (X-15), increment means the action or process of increasing, especially in quantity or value; something gained or added; or the amount by which something changes. The time between increments may relate to the intended result or function, but time is a separate concept.

The file history also supports this conclusion. Dow defined "increment" in the context of an apparatus that operates to add nebulized water to a compressor, in more than a single, definable "increment"… (See X-3B at 62). The examiner similarly found that "as is clear from the specification, and the general meaning of the term 'increment,' an increment is a step or quantity of mass flow." (X-3C at page 50).

Thus, the Court construes the term increment to mean:

A unit or a discrete amount.

2098

1. "Incrementally"

In the present case, the court must first construe the term "incrementally." The term "incrementally" is found in claims 1, 8, 13, 14, and 20 of the '281 patent. In the context of these claims, FECO urges the court to construe "incrementally" as follows:

The proper construction of the term 'incrementally' as used in the '281 patent is that the spinner assembly be moveable fore and aft through a series of minute additions or imperceptible augmentations, ie. that it be infinitely adjustable (adjustable to any position between full extension and full retracted positions).

HECO essentially agrees with FECO's proposed construction of "incrementally" to the extent that it requires "a screw that adjusts the spinner apparatus through an essentially infinite series of minute adjustments," as compared with "a spinner that translates or moves only to a very small number of discrete locations where it is fixed for use." HECO disagrees, however, with FECO's construction of "incrementally" to the extent that FECO urges the court to include a limitation that "the screw must adjust the spinner to any position between full extension or full retraction." In support of its position that such a limitation should be included in the court's construction of "incrementally," the defendant points out that "[t]he specification does indicate . . . that the spinners can be adjusted to any position between full extension and full retracted positions." After considering the parties respective recommendations as to the term "incrementally," the court construes the term to require that the spinner assembly be moveable fore and aft through an essentially infinite series of minute adjustments.

FECO, however, states that the infinite series of minute adjustments must cause the device to be adjustable to any position between "full extension and full retracted positions." FECO Brief at 11. However, absolutely nothing in the claim language
supports this additional limitation on the claim construction. The claim language simply identifies a rotatable screw between
the main supporting frame and subframe whereby manual rotation of the screw incrementally adjusts the position of
the moveable subframe and spinner. It is obvious that in plaintiff's preferred embodiment, the screw jack performs this function
as the primary method by which the device moves fore and aft. It is equally obvious that the relatively small screw in the
accused device is not the primary mechanism for moving the device fore and aft (the lever does not) but, rather, the rotatable
screw in the accused device performs relatively minor or "fine-tune" adjustments. Nothing in the claim language for claim 1
limits the protection for the use of a rotatable screw based on whether the screw is primarily or secondarily responsible for
the fore and aft movement.

2099

1. "Incrementally Engaging and Disengaging"

Claims 1, 23, 33, 62, 64, and 66 of patent '024 recite that the modulating clutch is incrementally engaged when a measured
speed difference between the primary and secondary drivelines is greater than a predetermined amount and is incrementally
disengaged when the speed difference between these drivelines is below that amount. The parties' dispute is over the
meaning of the phrase "incrementally engaging and disengaging."

BorgWarner:

"Incrementally engaging and disengaging" is a closed loop control strategy that incrementally increases the clutch
engagement when the slip is above a predetermined amount and incrementally decreases the clutch engagement when the
slip is below that amount. This incrementally engaging and disengaging is done in discrete steps, which may be the same or
different sizes. (Plaintiff's Markman Brief, at 14).

NVG:

"Incrementally engaging and disengaging" means discrete steps that are fixed (pre-set prior to using the system). The size
of the step is not dependent on the magnitude of the wheel slip and therefore not continuously variable. (Markman Reply
Brief of NVG, at 8).

The issue regarding this claim distills down to the definition of "incrementally": whether it can describe steps of varying
sizes or must mean step of fixed sizes. As noted above, we begin with the "heavy presumption" that a claim term carries its
ordinary and customary meaning. Teleflex, 299 F.3d at 1325. To discern the ordinary and customary meaning of a term we
may look to dictionary definitions of the word. Kopykake Enterprises, Inc. v. Lucks Co., 264 F.3d 1377, 1382 (Fed. Cir.
2001). Dictionaries, as noted earlier, may always be relied on by the court to determine the meaning of the claim terms "so
long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent
documents." Id., quoting Vitronics, 90 F.3d at 1584 n. 6.

In this case, the parties offer a buffet of dictionary definitions. BorgWarner's sampling is geared toward a definition of
"increment" as "the finite increase of a variable quantity." Webster's New Twentieth Century Dictionary, at 926 (2nd ed.
1978). 3 Accordingly, BorgWarner argues that the "ordinary and customary meaning of the word 'incrementally' refers to
stepwise changes and that these changes may be variable (or different) sizes." (Plaintiff's Markman Brief, at 15). Not
surprisingly, NVG's selections refer to changes in steps of fixed or constant sizes. For example, NVG points to the Oxford
Modern English Dictionary's definition of increment as "an increase or addition, esp. one of a series on a fixed scale."
(Markman Brief of NVG, at 10, citing Oxford Modern English Dictionary, at 539 (1992)). From the court's perspective, the
difference is merely one of context.

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3 Plaintiff cites additional dictionary definitions to support its interpretation as follows:

Other dictionaries provide similar meanings. The American Heritage Dictionary of the English Language defines
"increment" as "1. An increase in number, size, or extent; growth; enlargement. 2. Something added or gained. 3. A small
increase in quantity. 4. Mathematics. A small positive or negative change in a variable." (Ex. 14.) The Compact Edition of
the Oxford English Dictionary defines "increment" as an "amount of increase; an amount or portion added to a thing so as to
increase it, an addition… ." (Ex. 15.) Webster's Third New International Dictionary defines "increment" as "1: an increasing
or growth in bulk, quantity, number, or value: enlargement, increase 2 a: something that is gained or added: an added
quantity or character b: one of a series of regular consecutive additions of like or proportional size or value. (Ex. 16.).

(Plaintiff's Markman Brief, at 15).

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BorgWarner argues that words in a claim are entitled to their broadest dictionary definition, citing Rexnord Corp. v. Laitram
Corp., 274 F.3d 1336, 1342 (Fed.Cir. 2001). (Plaintiff's Post Markman Brief, at 2). We cannot disagree that, generally, an
increment could be of "variable quantity, as BorgWarner argues, of different sizes. There is a specific context here, however,
which a definition such as that of the Oxford Modern English Dictionary addresses. Beyond that, we are not really resolving
the issue of what "increment" means, but what "incrementally" means as used to describe "engaging and disengaging."

We are dealing with "increment" as the root of the adverb "incrementally," which is used to modify "engaging" and
"disengaging." While the noun "increment" may refer to a single, step, addition, or unit of increase which may be of any
size, the adverb "incrementally" must be applied to the process of engaging and disengaging. Then, we are not speaking of
an "increment," but a potential series of increments. Once the size of an increment is determined, "incrementally" would
refer to a series of steps or additions of that determined size: one increment following another. Ordinarily and customarily,
one might refer to such a process as occurring "in increments of. . ." followed by a single amount, as in "increments of 5." It
is doubtful, or would at least be rare, that the phrase would ever be followed varied amounts, as in "increments of 5, 7, and
10."

As BorgWarner describes that process, once the microcontroller determines the amount of slip, it compares it to a
predetermined amount of allowed slip. If the actual slip is greater than the predetermined amount, the microcontroller
causes the modulating clutch to be engaged a "discrete" amount, and the analysis is repeated. If the slip is still above the
predetermined amount, the amount of engagement of the modulating clutch is increased again; if the slip is below the
predetermined threshold amount, the modulating clutch is disengaged, again by a "discrete" amount. Certainly, these
"discrete amounts" would be "increments," but to suggest they would be of a random or variable size would be
counterintuitive. If they could be, the analysis spoken of could simply be performed a single time and the slip corrected for
in whatever "increment" was called for. According to BorgWarner, such a single step correction is "very apparent to the
driver and undesirable." (Plaintiff's Markman Brief, at 8-9 n.5). It would seem that at least one supposed innovation of the
patents-in-suit, the unnoticed correction of slippage, would be defeated by the interpretation BorgWarner advances here. 4

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4 At the risk of oversimplification, if the slippage is at a value of ten, BorgWarner suggests that it need not be corrected in
five increments of two, but perhaps by one increment of two and an increment of eight. This, one would think, would be
nearly as noticeable as a single correction in one increment of ten.

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This dispute, then, is resolved by the ordinary and customary meaning of "incrementally engaging." Clearly, the
"increments" by which the clutch engages or disengages must be of the same size: "Incrementally engaging and
disengaging" means discrete, fixed steps.

GO BACK

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C. Openings, Indentations and Bore

As an initial matter, to the extent any of the below phrases include the phrase "spaced apart", we direct the reader to our
discussion immediately above. Here, we construe this group of claim phrases by focusing on the difference between
openings and indentations. Specifically, the parties dispute whether openings and indentations can be used interchangeably. We find that they cannot be. Rather we find that in the '932 Patent, an opening is a hole through which something can pass, while an indentation is a recess or concave area into which something can be inserted, but not pass. It follows that a bore is an opening that has depth by virtue of either being cut through a thicker solid surface or several pieces of material with holes in them being aligned and stacked on top of one another. We reach our conclusion by reviewing the language of the '932 Patent itself.

Two specific openings are described in the patent: first, the two openings in the side plates which receive two different drive pins, col. 1, lns. 40-41, col. 2, lns. 57-60, cl. 1 at col. 4, lns. 6-7, and cl. 2 at col. 4, lns. 55-56; and second, the two openings in the female lug's lips and the one opening in the male lug's tongue that, when aligned, form a bore which receives the swivel pin, col. 1, lns. 53-57, col. 3, lns. 5-9, cl. 1 at col. 4, lns. 20-24, and cl. 2 at col. 5, lns. 2-6. In both contexts, the openings allow a pin to pass all the way through them in order to connect or anchor various structures to each other.

Only one indentation is described in the patent: the indentation in the flight heads that receives either the first ends or the second ends of the drive pins. Col. 1, lns. 60-62, Col. 1, ln. 67 to col. 2, ln. 2, col. 3, lns. 14-17 and 29-32, cl. 1 at col. 4, lns. 28-31 and 36-39, cl. 2 at col. 5, lns. 10-13 and col. 6, lns. 4-7. In this context, the indentations allow the ends of a pin to sit inside the flight head in order to connect the flight to the link assembly. If the drive pin were to pass all the way through the flight head, then the "ends" of the drive pin would no longer reside in the flight head, but outside of it.

As explained above, the term openings and the term indentation are used consistently throughout the '932 Patent. Based on these consistent usages, it is clear that an opening allows something to pass through it, while an indentation does not.

There is, however, the aberrant usage of the term "hole" twice in the patent. The term "hole" does not appear in either claim of the patent. However, it does appear twice in the specification; both times in conjunction with the term "indentation". And both times the phrase describes how the drive pins connect to the flights: "...the [drive] pins are extended still further, to fit into the indentations or holes in the flights." Abstract, 4th sent., and col. 3, ln. 53.

When questioned at the claim construction hearing about this anomaly, Joy argued that the appearance of the phrase "indentations or holes" reflected that the terms "indentation" and "opening" were used interchangeably in the '932 Patent. Accordingly, Joy contended that the phrase "indentations or holes" further supported its proposed construction that would define indentation to include areas through which something could pass. Not surprisingly, CMM argued that the phrase "indentations or holes" indicated that indentations and holes were two different things; one indicating recessed areas and the other indicating areas through which something could pass.

Based on our review of the entire patent, including especially the claims, we agree with CMM. The term "indentation" is not interchangeable with the term "hole" in the '932 Patent. As summarized above, the term "indentation" is consistently used to indicate a recess, while the term "opening" is consistently used to refer to an area through which something can, and does, pass. As such, it is a more consistent reading of the patent that in the phrase "indentations or holes" the term "holes" was used as a substitute, perhaps inadvertently, for the term opening, not as a synonym for the word indentation.

In summary, we find that "opening" indicates a hole through which something can pass, while "indentation" indicates a recessed or concaved area. We apply those definitions in the below claim constructions.
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Jumpsport proposes that the term "plural independent pole" be construed as: "more than one structurally supportive member that is elongated and often cylindrical (or pieces of the same that connect together to form one pole) wherein each pole is not connected to another pole above the surface of the mat in a substantively inflexible manner."

Defendants propose: "a plurality of vertically extending posts each with a free upper end." 1

Footnotes
1 The parties agree that the term "post" in the '207 patent is to be construed identically to the term "pole" in the '845 patent.

The main issue in the construction of this claim is whether U-shaped, or arched poles can be considered "independent poles," or if Jumpsport gave up that construction during the prosecution of the patent.

PROSECUTION HISTORY

In the prosecution history, Jumpsport originally sought to claim the following:

80. A trampoline having a safety enclosure therearound, comprising:

   a frame;
   a rebounding mat coupled to the frame by plural spring members;
   plural U-shaped support members supporting the frame above the ground, each of said support members having first and second legs extending upwardly from the ground and coupling to the frame;
   plural independent poles, each coupled to one of said legs of the U-shaped support members;
   the safety enclosure comprising a flexible material coupled to said independent poles; . . .

   and

81. A trampoline having a safety enclosure therearound, comprising:

   a frame;
   a rebounding mat coupled to the frame by plural spring members;
   plural independent poles, each extending above the rebounding mat;
   the safety enclosure comprising a flexible material coupled to said independent poles and to the rebounding mat . . .

Amatruda Decl. Exh. E at 12; JSPORT 114453 (emphasis added).

The patent examiner rejected claim 80 as fully anticipated on all claims by the Bailey '132 patent, stating that Bailey disclosed a trampoline with a safety enclosure around it that featured a frame, a rebounding mat coupled to the frame by springs, a plurality of components which created a U-shaped support member, a plurality of independent poles, coupled to the legs of the U-shaped support members, and a flexible safety net tied to the poles. Amatruda Decl. Exh. F at 5, JSPORT 114477. Thus, the patent examiner agreed that Bailey's U-shaped support members could properly be considered "plural independent poles," as the term was used by Jumpsport. 2

Footnotes
2 While defendants present a strong argument that a U-shaped support member is inconsistent with the plain meaning of

- 2554 -
"pole," the court finds the patent examiner's determination to the contrary more persuasive evidence of the plain meaning of the term "pole" as it is understood by those skilled in the relevant art.

The examiner allowed claim 81 because it required that the enclosure be attached to the mat, which Bailey did not. Amatruda Decl. Exh. F at 5, JSPORT 114477. Claim 81 was renamed claim 82, and ultimately became claim 1 of the '845 patent. Id. at Exh. G at 1, JSPORT 114491; id. at Exh. H at 2, JSPORT 114566.

After the issuance of the '845 patent, Jumpsport then filed a continuation application based on the same specification, Amatruda Decl. Exh. I, and asserted the following new claims by preliminary amendment:

65. A trampoline system comprising: . . . plural vertically extending independent poles, each pole being coupled to a leg, each pole having an upper end portion at an elevation above the frame, . . .

66. A trampoline system according to claim 65 further comprising a flexible loop that links the upper end portions of the poles;

67. A trampoline system according to claim 66 wherein the loop comprises a line that is made of a flexible material, that extends pole-to-pole and that connects the upper end portions of the poles such that the line permits constrained movement of upper end portions of two adjacent poles relative to one another;

68. A trampoline system according to claim 67 wherein the line is made of a substantially inelastic material.

Amatruda Decl. Exh. J at 1-2, JSPORT 114059-60 (emphasis added)

The examiner rejected claims 65 and 68, again finding that the Bailey patent anticipated all elements. The examiner stated, "As broadly claimed the examiner considers each inverted U-shaped member as an independent pole being coupled to a leg and loops as flexible line portions of the flexible wall portion." 3 Amatruda Decl. Exh. K at 2, JSPORT 114081.

3 Claims 66 and 67 were initially rejected on other grounds, which are not at issue here.

Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Jumpsport argued in response that the Bailey "inverted U-shaped member" was not a "pole," as that term was used in claims 65-68, and claimed that the Bailey inverted U-shaped members were more properly considered "panel assemblies." "Poles' look and behave differently than 'panel assemblies." Amatruda Decl. Exh. L at 9, JSPORT 114094. Nonetheless, Jumpsport agreed to distinguish its invention from Bailey by amending the third paragraph of claim 65 to cover " . . . plural vertically extending independent poles, each pole being coupled to one of the legs, each pole having an upper end portion at an elevation above the frame, and each pole being spaced apart from the other poles without interconnecting members that inhibit bowing of the poles . . ." Id. at 7, JSPORT 114092 (emphasis added).

With this amendment, claims 65-68 were allowed. Id. at Exh. M, JSPORT 114099. The examiner specifically stated that the prior art did not show vertically extending independent poles coupled to only one trampoline leg. Id. at 2, JSPORT 114102.

ANALYSIS

Upon reconsideration, the court agrees that the Bailey patent does not anticipate the '845 patent and that the basis for the initial construction of the term was incorrect. Defendants argue that the court's ruling remains correct, though, because
Jumpsport conceded that a U-shaped support member could not constitute a "plural independent pole" when Jumpsport affirmatively stated in the prosecution of the '207 patent that "[the Bailey U-shaped support] panel assemblies are not poles." See Amatruda Decl. Exh. L, JSPORT 114094.

The court must limit the ordinary meaning of a claim "if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention." CCS Fitness, 288 F.3d at 1367; see also Rheox, Inc. v. Entact, Inc., 276 F.3d 1319, 1325-27 (Fed. Cir. 2002) (broader ordinary meaning of term nonetheless limited based on statements made during prosecution to overcome prior art); Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985) ("the prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance"). Thus, Jumpsport is bound by its statements in the prosecution history for all the claims in the patent, unless the prosecution history clearly indicates an intent to limit the scope of the disclaiming statements made. Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed. Cir. 1995) ("Arguments made during prosecution regarding the meaning of a claim term are relevant to the interpretation of that term in every claim of the patent absent a clear indication to the contrary.").

In reading the file wrapper as a whole, it is clear that Jumpsport expressly limited its statements concerning Bailey to the vertically extending independent poles at issue in claims 65-68 only. Therefore, this claim is not limited by prosecution history estoppel. The court thus adopts Jumpsport's position, and construes the term "plural independent poles" as more than one structurally supportive member that is elongated and often cylindrical (or pieces of the same that connect together to form one pole) wherein each pole is not connected to another pole above the surface of the mat in a substantively inflexible manner.

4 Furthermore, even if defendants' position were correct, the defendants do not adequately explain how a subsequent statement in the prosecution of the junior patent, the '207, would retroactively bind any interpretation of the term "pole" in the '845 patent.

--- Footnotes ---

7 See, e.g., '154 patent, col. 1, ll. 60-62; col. 4, ll. 52-55.

--- End Footnotes ---

1. Claims 1 and 11 of the '548 Patent

The relevant portion of Claims 1 and 11 of the '548 Patent reads, "at least some of the appliances are marked to indicate their order of use." Align argues the Red, White & Blue system meets this limitation because the initial appliance is marked with a red dot, the intermediate appliance is marked with a white dot, and the final appliance is marked with a blue dot.

The parties disagree about the construction of this claim. Ormco argues it means the order must be apparent, i.e., pointed out
with more or less exactness, from the markings themselves. Ormco further contends the markings themselves must reveal the order of use, rather than the markings plus some other source of information. Ormco supports this construction with the fact the specification fails to cite any example of markings other than sequential numbers.

Ormco's definition impermissibly limits this claim. First, the word "indicate" in the claim language conveys there may be an inferential step between the markings and the order of use. Second, Ormco does not offer a convincing argument why, based on dictionary definitions, the specification, or the prosecution history, the claim should be interpreted otherwise. Third, the specification expressly describes the option that "written instructions may accompany the system which set forth that the patient is to wear the individual appliances in the order marked on the appliances. . . ."

The Red, White & Blue system consists of an initial appliance marked with a red dot, an intermediate appliance marked with a white dot, and a final appliance marked with a blue dot. The sequence the appliances are to be used is apparent from the product's name and from the written instructions provided to the patient. These appliances are "marked to indicate their order of use," and Align's motion for summary judgment of infringement on Claim 1 and 11 of the '548 Patent is GRANTED.

d. "indication device"

i. The Parties' Proposed Construction

Smiths argues that the meaning of "indication device" is "a device located in a remote commander, providing at least one of a visual indication, an audible indication or a tactile indication." (D.I. 165 at 28.) Smiths argues that the claim language, specification, and prosecution history support this construction. (D.I. 190 at 33-36.) It argues that the term "indication device" has "no stated physical relationship to any other elements in the claim." (Id. at 33.) Smiths also argues that the purpose of this invention is to conceal the pump, specifically noting that the specification states that "one of the objectives of this invention is to provide an external pump 'capable of being concealed from view when being remotely commanded.'" (Id. (citing '798 patent, Abstract).) Further, Smiths argues that the specification lists multiple uses of an RF (radio frequency) programmer or indicator. (Id. at 34 (citing '798 patent, col. 5:38-40, 6:54-58, 8:18-21).) Smiths also argues that, during the prosecution of the patent, the patentee "disclaimed coverage of embodiments in which the indication device is located in or on the infusion pump." (Id.)

MiniMed argues in response that nothing in the claims requires a remote "indication device." (D.I. 214 at 34.) In addition, it argues that the specification lists many preferred embodiments that do not use a remote "indication device." (Id. at 35.) Lastly, MiniMed argues that the portions of the prosecution history cited by Smiths were either cited out of context or do not apply to the claims at issue. (Id. at 35-38.)

ii. The Court's Construction

The plain meaning of "indication device" in this case is "a device providing at least one of a visual indication, an audible indication or a tactile indication." 19 Looking to the rest of Claim 1, I see nothing that warrants the inclusion of Smiths' proposed additional limitation. Other elements of the claim are required to be located on the housing, such as a processor coupled to the housing." ('798 patent, col. 30:38.) There is nothing in the claim, however, that prevents the indicator from being connected to the housing. (Id., col. 30:38-47.) Contrary to what Smiths argues, all this proves is that the processor must be attached to the housing and the indicator may or may not be attached to the housing.

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19 Smiths' proposed meaning strays from the plain meaning of "indication device." This is supported by their repeated attempts to show how the patentee redefined the term in the specification or disclaimed certain subject matter during the prosecution of the patent. (See D.I. 190 at 33-36.)

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With respect to the specification, it is important to remember that although "examples disclosed in the preferred embodiment may aid in the proper interpretation of a claim term, the scope of a claim is not necessarily limited by such examples." Ekchian v. Home Depot, 104 F.3d 1299, 1303 (Fed. Cir. 1997) (internal citation omitted). In the "798 patent specification, in addition to numerous examples of the invention using a remote indication device, there are also numerous instances of the indication device being attached to the housing of the pump. ("798 patent, col. 4:6-18, 6:25-58, 11:52-12:4, 13:1-34, 15:1-3, 15:53-58, 28:11-12.) Smiths itself states that it is only "one of the objectives" of the invention to use a remote "indication device," it is not the sole objective. (D.I. 190 at 33.)

Additionally, the prosecution history does not show "both [a] clear and unmistakable" disavowal of claim scope. Omega, 334 F.3d at 1325-26. Two of the sections cited by Smiths discuss how the invention uses a remote programmer, while the prior art does not. (D.I. 190 at 34-35 (citing D.I. 193, Ex. 41 at 4-)5.) These two cited sections point to the invention as a whole, however, and not the specific claims at issue. (See D.I. 193 at 5 (beginning the discussion of specific claims at the bottom of page 5).) It is true that, the cited document, the patentee discusses a claim that is not at issue in this case that explicitly requires "remotely generated commands." 20 But it is reasonable to understand that the mention of a remote programmer related to the specific claim in connection with which it was discussed, and not a later claim that made no reference to such a capability.

20 Both parties agree that during prosecution Claims 1, 10, and 12 were labeled as 35, 52, and 54, respectively. (D.I. 190 at 34; D.I. 214 at 35.)

Lastly, Smiths cites an office action where the patentee stated that the pump can be concealed from view "when being remotely commanded." (D.I. 190 at 35-36 (citing D.I. 193, Ex. 37 at 26-27).) This passage, however, is aimed directly at overcoming the rejection of claims not at issue in this case. (See D.I. 193, Ex. 37 at 26-27.) 21 These cites provided by Smiths do not show both a "clear and unmistakable" action on the part of the patentee to limit the definition of the term "indication device." See Omega, 334 F.3d at 1325-26. Consequently, I hold that "indication device" means "a device connected to the infusion device or in a remote, providing at least one of a visual indication, an audible indication or a tactile indication." 22

21 That passage refers to Claim 1. Smiths, however, made it clear that Claims 1, 10, and 12 were labeled as 35, 52, and 54 during prosecution. (D.I. 190 at 34.) Consequently, Claim 1 in that document refers to a claim not at issue in this litigation.

22 The term "externally supplied values" is listed in the Joint Claim Construction Chart as disputed. (D.I. 165 at 27.) In the parties' briefing, however, there is no discussion of this term. Therefore, I presume that the parties no longer have a dispute as to the meaning of this term.

H. Term 10: Status indicator (as used in claims 1, 4, 32, 62, 66, and 84).

Lutron contends that Term 10 means "A display element, such as an LED or screen, for indicating the status of the electrical device." Control4 contends the term means "A display element for indicating the true status of the electrical device." Control4 wants the word "true" included before the word "status," while Lutron opposes this addition due to limitations it might unintentionally introduce, such as a timing element. In turn, Control4 opposes inclusion of the word "screen" for the same reason stated in sections I.B and I.G above.
The status indicator is located on the master control unit in each of the relevant claims. In the Vantage Controls, Inc. case, Lutron stipulated that the status indicator reflects the "true status" of the electrical device. 24 Based on this stipulation, Control4 contends Lutron should be estopped from arguing against inclusion of this phrase.

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After the parties stipulated to the construction of certain terms in the Vantage Controls, Inc. case, Vantage Controls, Inc. then argued that "true status" reflected a timing element because "there is no way to verify that the status has actually changed until after the change has actually occurred." 25 Lutron opposed this statement on the ground "that the term only requires that the master control unit be correctly updated, whether the electrical device is being controlled from the control device or the master control unit." 26 In its Markman order in the Vantage Controls, Inc. case, the court concurred with Lutron, and rejected Vantage Controls, Inc.'s attempt to include a timing element. 27 Lutron therefore opposes including "true status" in this case to avoid the same problem.

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26 Id. This is the same argument offered by Lutron in this case.

27 Id.

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The United States Court of Appeals for the Federal Circuit has concluded that the rulings in a prior case on claim construction do not necessarily "preclude a patentee from arguing for a different claim construction in an action brought" later. 28 Three factors the Federal Circuit has considered to determine whether a prior claim construction has preclusive effect include: (1) whether a party was fully heard during an evidentiary hearing in the prior action regarding the claim construction; (2) whether the court "put the parties on notice that the orders could have preclusive effect;" and (3) whether the court entered a final order that approved settlement if the case ended before trial. 29

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In Vantage Control, Inc., Lutron stipulated to use of the phrase "true status," and had the opportunity to oppose Vantage Control, Inc.'s construction during the Markman hearing. The first element therefore has been met. Notably, however, the court concurred with Lutron that "true status" does not incorporate a timing element. Thus, while the first element is met, it weighs in favor of excluding the word "true" to avoid the same problem in this case.

The latter two elements are not met because the court did not indicate its order would have a preclusive effect, nor did the court approve the final agreement between the parties when the Vantage Control, Inc. case settled. As a result, Lutron may argue for a different claim construction than the one to which it previously stipulated. Furthermore, the Court concurs with the prior ruling in Vantage Controls, Inc. that a timing element was not included by Lutron when it referred to status as "true status." 30 To avoid the potential for adding in this limitation, the Court declines to insert the word "true" in its construction.
30 See discussion in section I.F above.

With respect to including an LED or screen as examples, the patent diagrams and specification specifically refer to an LED when discussing a status indicator. 31 The type of status indicator is not limited just to an LED, however, and a screen falls within the scope of the term. The Court therefore construes the term to mean "A display element, such as an LED or screen, for indicating the condition of the electrical device."

31 See e.g., '442 Patent, col. 23:17-37.
specifications, which taken together lead to the inescapable conclusion that what was invented, and what is being described, are devices and methods that use pressure sensitive variable conductance material. That is not to say that valid arguments of infringement under the doctrine of equivalents can, or can not be made. Those are matters for a later time.

The complete phrases presented to the court do not need to be construed because the plain and ordinary meaning is clear. However the court will instruct the jury as follows:

"Individual buttons" as used in '802 patent, claims 12-13, and "individual button" as used in '802 patent, claims 14-15, refer to: "One or more buttons on a pressure-sensitive variable conductance analog sensor."

H. Term 14: "individual hydraulic drive motors . . ."

The Court construes the term "individual hydraulic drive motors operatively engaged to each of the ground engaging wheels" in claims 1, 9, 15, and 24 of the '325 patent, and claims 1, 9, 11, and 14 of the '664 patent, to mean:

A single hydraulic drive motor operatively engaged to each of the ground engaging wheels.

This is essentially the construction proposed by Toro (though Toro advocates "one and only one" rather than the word "single"). Toro Opening Br. at 42. This construction reflects the most natural reading of the word "individual" given that it is paired with the adjective "each" in the relevant claim language.

Textron, however, contends that the word "individual" in this disputed term means "one or more." Textron Opening Br. at 50. Textron points out that claim 24 of the '325 patent claims a device that includes not only "individual hydraulic drive motors operatively engaged to each of the ground engaging wheels on the first end of the frame" -- the disputed term -- but also "at least one individual hydraulic drive motor operatively engaged to the ground engaging wheel(s) on the second end of the frame." Textron Opening Br. at 51-54. According to Textron, the phrase "at least one" makes no sense if "individual" is construed to mean "one and only one" -- or, necessarily, the synonymous word "single." Id. at 52.

The Court disagrees with Textron that, in light of claim 24, an "individual" motor cannot be a "single" motor. One could substitute the phrase "at least a single motor" for the phrase "at least one individual motor" without doing any violence to the latter phrase's meaning. Further, claim 24's reference to "at least one individual" motor differs significantly from the disputed term "individual hydraulic drive motors" because claim 24 pairs the phrase "at least one individual hydraulic drive motor" with "the ground engaging wheel(s)." '325 patent claim 24 (emphasis added). The disputed claim language, however, pairs the phrase "individual hydraulic drive motors" with "each of the ground engaging wheels." The word "individual" in the disputed term, in light of the corresponding adjective "each" modifying "wheels," is best understood as denoting a single motor engaged to each wheel.

1. Individual Light Control

Genlyte argues that "individual light control" should be construed separately, with one construction for "individual" and a second construction for "light control." Lutron argues that this proposed construction "parses what is clearly a unified term for a specific device into two parts."

Genlyte argues that "individual" should be construed to mean "functionally separate from one or more other light controls," and that "light control" should be construed to mean "apparatus comprising one or more raise/lower switches, where each of the raise/lower switches controls one or more dimmers." However, the words of the specification foil Genlyte's attempts to construct "individual" separately from "light control," as the specification uses the terms "individual light controls 10," "light controls 10," and "individual controls 10" interchangeably.
Based on this intrinsic evidence, the Court agrees with Lutron that "individual light control," should not be construed separately, but must be construed together. Additionally, there is no evidence that the applicants intended to use the term "individual" in any manner not consistent with its ordinary meaning. Therefore, no construction is needed of the term "individual."

Regarding the construction of the term "individual light control 10," Lutron argues that no construction is needed, as the term claims "a device for controlling the light intensity setting in a single room, no more, no less." Lutron points to the language of the specification which states that "the light controls 10 each act separately to control the lighting in their respective rooms when the individual rooms are defined by the partitions." Genlyte, on the other hand, asks the Court to construe "individual light control 10" to mean "apparatus comprising one or more raise/lower switches, where each of the raise/lower switches controls one or more dimmers," and where 'raise/lower switch' is actually 'a master raise/lower switch or an individual raise/lower switch."

Genlyte relies on the specification in arguing to include the raise/lower switches in the definition of "light control." For example, at column 5, lines 17 through 19 of the specification (the form of which below will be col. 5, ll. 17-19), the specification states that "[a] light control 10 typically has several raise/lower switches that each control a dimmer for a light within the room." Additionally, at col. 4, ll. 34-35, the specification states that "individual controls 10 often have a number of raise/lower switches to control different types of lighting." Lutron, however, argues that construing "light control" to mean "apparatus comprising one or more raise/lower switches, where each of the raise/lower switches controls one or more dimmers," would improperly import language into the claim.

While Lutron argues that the word "typically" shows only that the light controls sometimes include a raise/lower switch, necessarily meaning that at other times, no raise/lower switch is included, the specification states that a light control 10 typically has "several raise/lower switches" (emphasis added). Additionally, the language in the specification states that the light controls 10 "often have a number of raise/lower switches" (emphasis added). This language indicates that while the light controls normally have more than one raise/lower switch, they always have at least one raise/lower switch. Also, col. 5, ll. 15-17 of the specification state that the "Lytemode Systems line" of lights is an example of the individual light controls 10. The evidence shows that at the time of the patent application, Lytemode light controls had several raise/lower switches for determining light control. Therefore, this intrinsic evidence shows that the individual light controls 10 of the '731 patent each had one or more raise/lower switches for controlling light intensity.

However, Genlyte's attempt to further define "light control" as "controlling one or more dimmers" is not supported by the intrinsic evidence. Genlyte relies on the specification's statement that "[a] light control 10 typically has several raise lower switches that each control a dimmer for light within the room" as the basis for its argument (emphasis added). Genlyte cites case law from the Federal Circuit which states that while the article "a" may in fact mean "one," "a" can mean "more than one" depending on the context in which the word is used. See Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 977 (Fed. Cir. 1999). However, Genlyte has presented nothing in the intrinsic evidence which indicates that "a dimmer" should refer to "one or more dimmers." Without this evidence, the term "a" will carry its ordinary meaning, which does not refer to more than one dimmer. Genlyte also wishes to have "raise/lower switch" defined as "master raise/lower switch or an individual raise/lower switch." This definition is not supported by the intrinsic evidence, and likewise fails.

Therefore, the term "individual light control" is defined by the intrinsic evidence to mean "an apparatus comprising one or more raise/lower switches."

The last phrase in Claim 1, which is also in dispute, reads as follows: "said plate members each being constructed as individual structural parts releasably connectable to said opposing surfaces of said side members." Id. at col.6 l.28-30. CPT argues this phrase imposes two limitations on the plate members: (1) each must be an individual structural part and (2) releasably connectable to the opposing surfaces. IKN's primary objection to CPT's proposed construction focuses on the meaning of the term "releasably connectable"; it does not believe the phrase "said plate members each being constructed as individual structural parts" needs further elaboration. Without belaboring the construction of the limitation requiring the plate members be constructed as individual structural parts, a fair reading of the entire specification shows the purpose of
the invention is to allow individual parts to be replaced as they become worn. Thus, I will construe the phrase "said plate members each being constructed as individual structural parts" to mean: "Every one of the plate members is an independent structural part, constructed separate and apart from every other plate member."

C. "Individual Visual Indicator"

Universal contends that the claim teen "individual visual indicator" in claim 24, which is dependent on claim 13, is in means-plus-function format. Universal argues that the term is a functional description of the claimed element and fails to recite sufficient structure for performing its function. Plaintiffs propose the following construction of the term "individual location indicator":

An "individual visual indicator" is a device that provides a visual indication corresponding to each location.

(Docket Entry No. 40, p. 27). This court has found that the term "indicator" recites sufficient structure to avoid section 112, P 6. The parties do not challenge the ordinary meaning of the terms "individual" and "visual." Both are adjectival qualifications placed on the structure connoted by the term "indicator," that narrow the scope of that structure. These functional limitations do not make the structure connoted by the term "indicator" any less definite, such that section 112, P 6 applies. Rather, the limitations make the structure more definite by restricting the "indicator" to visual embodiments such as a light, dial, or flag. See Personalized Media, 161 F.3d at 705; Apex, 325 F.3d 1364, 2003 WL at *7.

Universal seeks to limit the term "individual visual indicator" to "a light at each location on the assembly machine for a compartment." This definition impermissibly limits the term "individual visual indicator" to one possible embodiment, ignoring the various types of visual indicators suggested by the technical dictionary definitions of "indicator." This court adopts plaintiffs' construction of the term "individual visual indicator."

B. "An Induction Heatable Element"

The parties next dispute the proper construction of the term "an induction heatable element" from the claims of the '585 Patent. TSI seeks to construe the term to mean a structure or portion of a structure that is made of a material capable of being magnetically heated. Defendants argue for the following construction: an inductively heatable metallic alloy: (i) having a Curie point temperature below the pre-selected regulation temperature causing the alloy's load impedance to change significantly over the temperature range it experiences; and (ii) being a distinct structure enclosed within the food delivery container such that the alloy does not contact the food in said container.

Based on its proposed construction, TSI defines "induction heatable" as being "capable of being magnetically heated." At the hearing before the Court, defendants stated that they agreed with that definition of "induction heatable." Therefore, the Court will include that definition in its construction of "an induction heatable element."

TSI appears to define "element" as "a structure or portion of a structure," while defendants substitute "structure" for "element" in their construction. Neither side has supported that part of their construction with any citation to intrinsic or extrinsic evidence of the meaning of "element" here. Nor have the parties explained why the word "element" needs further definition or would not be understood by a person schooled in the relevant art. Accordingly, the Court declines to define the word "element" as used in the claim terms.

Defendants also seek to add the following four limitations in their construction of "element": (1) the element is a metallic alloy, (2) with a Curie point temperature below a pre-selected regulation temperature, (3) that is a distinct structure (4) enclosed within food delivery container so as not to contact the food. Again, defendants cannot identify any disclaimer or disavowal of claim scope to support these limitations, and thus they rely solely on application of the Microsoft standard.
The parties' primary dispute is whether the element must be separate and distinct from the "object" or whether the element can be a non-separable part of the object to be heated. (TSI apparently claims that a layer within defendants' cookware infringes the patent on this basis.) Defendants argue that the specification shows that the invention's "element" is distinct and separable from the container (the "object"). Defendants cite to various portions of the specification in which the thermal device is described as being "within" or "in" the container or the container is described as being "equipped with" the thermal device. See '585 Patent at 1:11-16, 2:4-26, 2:18-22, 2:65-67, 5:24-26. Those descriptions, using "within" or "equipped with", do not necessarily require a separate element or exclude a container containing the thermal device "within" it as a part of the container, however. Nor does the reference to a "lightweight" container, see id. at 2:10-11, clearly require a separate, non-included element. The specification's figures that show containers with recesses or velcro for holding the element in place, cited by defendants, represent mere embodiments and do not describe the invention as a whole as requiring a separate and distinct element. See id. at 7:11-21, 12:2-6, 12:59-61. Thus, the specification does not repeatedly and consistently describe the invention as having this limitation urged by defendants. 4

4 Defendants also cite to the provisional application for the '585 Patent, which states that the energy source is not in contact with the pizza box or pizza, but those descriptions refer to mere embodiments and not necessarily the invention as a whole. The Court also rejects defendants' argument based on inventor Clothier's description of the '585 Patent in another patent, for a number of reasons: in citing the '585 Patent, Mr. Clothier stated that one method was to insert or incorporate the heat-retentive body into the container, and thus he did not limit his '585 Patent invention to a system with an element separate from the container; Mr. Clothier was not really defining the scope of the '585 Patent's claim in the other patent; and defendants have not shown that the other patent is related to the '585 Patent. See Ormco Corp. v. Align Technology, Inc., 498 F.3d 1307, 1314 (Fed. Cir. 2007) (statements in familial patent applications may be relevant), cert. denied, 128 S. Ct. 2430, 171 L. Ed. 2d 230 (2008).

Accordingly, the Court concludes that defendants have not shown that this term should be construed with the limitation of an element distinct and separate from the food container under the Microsoft standard. Nor have defendants adequately supported their other urged limitations with citations to intrinsic or extrinsic evidence. The fact, noted by defendants, that the specification never discusses any contact between the element and the food certainly does not constitute a clear disclaimer of scope or a consistent and repeated description of the invention with that limitation. Defendants do not offer any argument or citation to the record to support the other two limitations urged in their construction. Therefore, the Court rejects all of the limitations included in defendants' proposed construction.

The Court construes the term "an induction heatable element" from the '585 Patent to mean an element made of a material capable of being magnetically heated.

1. "Infinitely Adjustable" (claims 5 and 7).

Claim 5 states that the "connection means has adjustment means thereon for infinitely adjusting the tracking of the mower by adjusting the output" of one of the hydraulic pumps, all without stopping the mower. Filing No. 61, Defendants' Index of Evid., Ex. D, '961 Patent, col. 7, lines 1-5 (hereafter, '961 Patent). Claim 7 states that the "connection means include[s] adjustment means for infinitely adjusting the tracking of the mower by adjusting the output" of one of the hydraulic pumps. Id., col. 8, lines 27-30.
Toro argues that this "infinitely adjustable" language creates a means-plus-function element under 35 U.S.C. § 112, P 6. When an element in a claim is "expressed as a means or step for performing a specified function" without reciting supporting structure, material, or acts, then the element "cover[s] the corresponding structure, material, or acts described in the specification and the equivalents thereof." 35 U.S.C. § 112, P 6. Use of the term "means" in a claim creates a presumption that the means-plus-function limitation applies. Al-Site Corp. v. VSI Intern., Inc., 174 F.3d 1308, 1318 (Fed. Cir. 1999). The presumption is overcome, however, "if the claim itself recites sufficient structure or material for performing the claimed function." Id.

Toro maintains that the corresponding structure that performs the function of "infinitely adjusting" the mower's tracking is detailed in the patent's specification, which states:

Adjustment knob 120 is threadably mounted on the upper end of control rod 94. . . . Although it is preferable that an adjustment knob 120 be utilized, adjustment knob 120 could be replaced by other suitable means which would permit the length adjustment of the control rod 92, with respect to arm 56, without the use of tools.

'961 Patent, col. 3, lines 56-58, 60-64. Toro says that the adjustment means is therefore defined as a knob or other device that can be manually adjusted without tools during mowing. The term "infinitely adjusting" relates to the movement of the adjustment mechanism between two limits. . . . The adjustment knob can be stopped at any position between the stop limits set in the specific example of the preferred embodiment by swivel 114, nut 104 and compression spring 108." Plaintiffs' Markman Brief at 14-15. Accordingly, Toro states, "infinitely adjustable" should be defined as "full movement in clockwise and counterclockwise directions of an adjustment member that can be readily adjusted manually." Id. at 15.

Scag contends, however, that for a means-plus-function limitation to apply, a claim element must contain a definite, specific structure that will perform the function -- not merely state that the patent will cover any structure that might perform the function. The statement in the specification that the adjustment knob could be replaced by "other suitable means," none of which are defined or even described in the specification, would, according to Scag, preclude application of the means-plus-function limitation. 4

4 Scag contends, moreover, that the "other suitable means" language of the claim would encompass the adjustment means on Exmark's prior art. According to Scag, the only difference between the adjustment means on the two mowers is the replacement of a jamb nut on the earlier mower with patent '961's "adjustment knob threadably mounted on the upper end of the control rod." Given the interchangeability of the adjustment means mechanism, Scag believes the proper interpretation of the claim term "infinitely adjustable" would allow adjustments "at any location along the threaded portion of the control rods of the invention," Defendants' Markman Brief at 11, whether by the jamb nuts, the adjustment knob, or some "other suitable means." Thus, Scag maintains, the prior art adjustment means must also have been infinitely adjustable.

Toro disputes that the jamb nuts of the prior art fall within the adjustment means elements of claims 5 and 7. Since jamb nuts are not described in the specification, Toro contends the jamb nuts cannot be corresponding structures covered under section 112, P 6. Moreover, since jamb nuts cannot be adjusted without tools, they cannot be equivalents of the adjustment means described in claims 5 and 7.

I find that this dispute is outside the confines of a Markman hearing and need not be resolved at this time. Determining whether the claim term "infinitely adjustable" includes prior art would require the court to reach the ultimate issues of the patent's validity or infringement. Like other issues discussed below, this dispute can be better resolved in motions for summary judgment or at trial.

The court concludes that Scag's position is correct. The specification does not limit the adjustment mechanism on the mower to an "adjustment knob," but instead concedes that the function of the adjustment knob could be accomplished "by other suitable means." Since those other suitable means could conceivably take a number of forms, the means-plus-function limitation of § 112, P 6 cannot apply. Accordingly, the court finds that the term "infinitely adjustable" means that the

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tracking adjustment can be made at any location along the threaded portion of the control rods of the invention with full
movement in clockwise and counterclockwise directions of an adjustment member. 5

5 This definition pointedly does not address whether the adjustment is to be made manually, without the aid of tools, or
while the mower is in motion.

4. Inert Gas Atmosphere

The fourth disputed claim term "inert gas atmosphere" is found in Claims 1 and 35 as set forth above.

Erbe's Proposed Definition: A cloud of inert gas formed by a not directed, nonlaminar flow of inert gas.

Canady's Proposed Definition: A gas cloud, i.e., the rather small space between the electrode and the tissue to be
coagulated is completely filled by an inert gas cloud in order to remove air, but not in order to perform a substantial
mechanical action to fluid at the tissue.

(Docket No. 42, p. 3). Interestingly, the parties both generally define the term "inert gas atmosphere" as a cloud of gas. Id. I
agree with Erbe that the term should also include the qualifying term "inert." Beyond that, however, I find that Erbe is
attempting to read limitations into the term from the specifications, which is not permitted. Phillips, 415 F.3d at 1323.
Canady, on the other hand, defines the term and then attempts to define it more specifically, which I find to be duplicative
and unnecessary. Consequently, I construe the claim term "inert gas atmosphere" to mean a cloud of inert gas.

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A.

As noted above, the district court interpreted the claim term "inflation input" to mean the point at which air enters the
passageway. On appeal, as they did in the district court, defendants argue that, in addition to being the point at which air
enters the passageway, the inflation input must be the end of the coupling that is most distal from the end of the inflatable
body. They base this construction on the argument that claim 9 and claim 12 of the '726 patent specify that the valve for
controlling the transfer of air must be "disposed between the interior [of the inflatable body] and the inflation input." As a
result, defendants reason, the inflation input must be above or below, and not within, the valve. Hence, according to
defendants, this means that the inflation input must be the end of the coupling that is most distal from the end of the
inflatable body. 4 Aero responds that the district court's construction of "inflation input" in claim 9 is correct because the
plain language of claim 9, as well as the supporting specification and drawings, teach that the "inflation input" is "the place
where air enters the passageway."

4 Defendants appear to assert that there would be no infringement under their proposed construction of "inflation input"
because the top of the short inner cylinder in the accused Intex device, see the above drawing of the accused device, where
air enters, is within the valve, rather than at the top of it, as the claims require. Thus, so the argument goes, there is no
infringement because, in the valve of the accused Intex mattress, the "inflation input" is not at the coupling that is most
distal (furthest away) from the end of the air mattress.
Claim 9 of the '726 patent claims "an inflatable support system" that comprises an inflatable body having an interior, an exterior, and an inflation input for transfer of air between the interior and exterior. '726 patent, col. 10, ll. 48-50. Claim 9 states that the inflatable support system has "a one-way valve, disposed between the interior and the inflation input, for controlling the transfer of air" and that the valve includes "a passageway having a general circular cross section and a first end in communication with the interior and a second end in communication with the inflation input." Id., col. 10, ll. 51-58. The claim further states that the inflatable support system has "a generally circular coupling defining the passageway, the coupling having an open end defining the inflation input and a flared end, contiguous therewith, providing the circular lip, so that (i) the coupling at the open end has a smaller internal diameter than at the flared end and (ii) the diaphragm can be pushed axially to open the valve by reaching into the open end of the coupling." Id., col. 11, ll. 4-11. This is most clearly illustrated in Figure 15 of the '726 patent. Claim 12 of the '726 patent claims "an inflatable body" that comprises "an inflatable bladder having an interior and an inflation input." Id., col. 11, ll. 27-29. Claim 12 further states that the "inflatable body" comprises "a one-way valve disposed between the interior and the inflation input," as well as "a passageway having a generally circular cross section and a first end in communication with the interior and a second end in communication with the inflation input." Id., col. 11, ll. 30-31, 34-37. We see nothing in the language of claims 9 and 12 that limits the term "inflation input" to anything other than "where air enters the passageway." Moreover there is certainly nothing in the claim language that limits the location of the inflation input to the end of the coupling that is most distal from the end of the inflatable body, as urged by defendants. 5

5 We see no error in the district court's construction of the term passageway ("a way that allows a passage of air to and from the interior of the bed"), which defendants do not challenge on appeal. See Markman Order, 2004 U.S. Dist. LEXIS 1202, at *12.

The specification further supports this conclusion. Figures 3, 15, and 17 demonstrate possible embodiments with inflation inputs. Id., figs. 3, 15, & 17. These embodiments do not require a definition of "inflation input" that limits the location other than to "where air enters the passageway." Indeed, all three of the figures show the inflation input as a place where air enters the passageway. The rest of the specification also supports this interpretation, as it explains that "[i]nflation is provided to the mattress [] by means of the inflation input . . . ." Id., col. 3, l. 68, to col. 4, l. 2. Finally, there is nothing in the prosecution history that would alter this meaning.

In sum, the claim language, the specification, and the prosecution history support the district court's construction of the term "inflation input." Accordingly, we will not disturb that construction. 6

6 We reject defendants' claim that the district court erred by construing the term "inflation input" in light of the accused device. There is no basis for the argument that the district court improperly relied on the accused device. Although the court revealed an awareness of the accused device, the court's awareness of the accused device is permissible. See Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1322, 1326-27 (Fed. Cir. 2006) ("While a trial court should certainly not prejudge the ultimate infringement analysis by construing claims with an aim to include or exclude an accused product or process, knowledge of that product or process provides meaningful context for the first step of the infringement analysis, claim construction."); Scripps Clinic & Research Found. v. Genentech, Inc., 927 F.2d 1565, 1580 (Fed. Cir. 1991) ("Of course the particular accused product (or process) is kept in mind, for it is essential to focus on the construction of only the disputed elements or limitations of the claims.").

Defendants also argue that the district court amended its claim construction because the court refused to allow defendants to argue to the jury that, in the accused device, the top of the tall outer cylinder was the "inflation input" and "open end" of the coupling. We do not agree. During trial, Intex was prohibited from rearguing the claim construction or attempting to use the naked language of the claims--instead of the district court's claim construction. Thus, when counsel for Intex addressed infringement by referring to the claim language, instead of the court's claim construction, the district court warned him that "I've now construed the claim and asking questions which would suggest that my construction is somehow at variance with
the claim is unfair." The court did not stop defendants from discussing infringement or referring to the court's construction. In short, we do not read the colloquy between counsel and the district court as evidence of a revised claim construction of "inflation input" at trial.

--- End Footnotes ---

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D. "inhibiting compression"; "such that compression of said fork is inhibited"

I have already determined that "compression" requires no further construction. The disagreement with respect to these phrases centers on the words "inhibiting" and "inhibited." Both parties argue a plain meaning interpretation; Fox for "prohibit" and SRAM for "restrain." "Inhibit" is used to describe the state of the suspension system when fluid is not permitted to freely flow from one part of the system to another, thus not permitting compression. Fluid flow can take place under certain circumstances, however; it is not completely prohibited, merely limited or restrained. To the extent "inhibit" requires construction, these phrases should be read as "restraining compression" and "such that compression of said fork is restrained."

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Claim 31 continues:

and an injection port communicating with the interior of the chamber for admitting fluid into the chamber to expand the chamber.

The parties agree that the injection port has an opening connected to the interior of the chamber that allows fluid to enter the chamber. The court finds that this limitation means "a sealable opening, located either remote from or in the flexible wall means, connecting to the interior of the chamber allowing the entrance of fluid into the chamber to expand the chamber."

2118

(a) "An injector"

Claim 1 includes the following element "an injector for transporting protons from the source to the accelerator." (Rosenberg Decl. Ex. 1, '287 Patent at 14:7-8.) Plaintiff Optivus sites general dictionaries and technical treatises in support of its construction. (Optivus P.&A. at 9:14-10:9.) Plaintiff defines the term "injector" quite broadly as "an apparatus that introduces or feeds protons from the source to the accelerator." (Id. at 10:11-14.) Defendant Ion Beam, on the other hand, insists on a much narrower definition - limiting the term "injector" to a certain type of injector. (See, e.g., Lennox Decl. P 15.) Ion Beam proposes this element be construed to mean "a device for transporting protons from the source to the accelerator, such as a radio frequency quadrupole linear accelerator ("RFQ Linac"), that increases the energy of the protons emerging from the source to the initial energy required by the accelerator before the protons are introduced into the accelerator." (Ion Beam P.&A. at 4:5-9.)

In support of its construction of the term "injector," Plaintiff provides the following definitions from general, non-technical dictionaries: (1) "a person or thing that injects," (2) "to force (a fluid) into a passage, cavity or tissue"; and (3) "to place into orbit, trajectory, or stream." (Optivus P.&A. at p. 9; Airhart Decl. Ex. H, Random House Dictionary; and Ex. I, Webster's II New Riverside University Dictionary.) Because these definitions are quite broad, the court turns to the technical treatises supplied by the parties. Optivus offers the following passage from the definition of the term "cyclotron": "Particles are injected near the centre of an evacuated space between two D-shaped boxes placed between the poles of a stronger permanent magnet." (Airhart Decl. Ex. J, Dictionary of Physics at 163.) The quoted passage is taken from a more lengthy definition of the term "cyclotron." (Id.) While the passage states "[p]articles are injected," it does not describe the term
"injector," or the device that does the injecting. (See id.) The passage provides context but does not precisely define the term "injector." (See id.)

Both parties also rely on a passage taken from a learned treatise, authored by Dr. John J. Livingood, describing an "Alvarez type (1946)" accelerator ("Livingood Treatise"). (Id. at Ex. K, John J. Livingood, Principles of Cyclic Particle Accelerators (D. Van Nostrand Co., Inc. 1961) at p. 167; and Rosenberg Decl. Ex. 14.) The Livingood Treatise describes early forms of particle accelerators, including the "Alvarez type (1946)" accelerator and concludes that "Alvarez type" accelerators are "also employed as an injector, that is, as an auxiliary device to give the necessary initial energy to projectiles before they are introduced into the main accelerator known as a synchotron." Id. Defendant's expert, Dr. Lennox, relies on that passage, among others, to support her proffered construction of the term "injector." (Lennox Decl. at P 19:24-28.)

Dr. Lennox initially defines the term "injector" as "a device designed to increase the kinetic energy of the protons after emerging from the proton source to the initial kinetic energy required by the accelerator before the protons are introduced into the accelerator." (Lennox Decl. at P 14.) However, Dr. Lennox and Ion Beam suggest the term "injector" should be further limited to the following definition: "a device for transporting protons from the source to the accelerator, such as a radio frequency quadrupole linear accelerator ("RFQ Linac"), that increases the energy of the protons emerging from the source to the initial energy required by the accelerator before the protons are introduced into the accelerator." (See Ion Beam P.&A. at 4:5-9; Lennox Decl. at P 15.) Dr. Lennox cites a series of articles, including an article authored by Plaintiff Loma Linda, to support this construction. (Rosenberg Decl. Ex. 17, Loma Linda University Medical Center, Proton Therapy Facility Engineering Design Report (Feb. 1987)). Dr. Lennox takes special note of the following passage taken from the article authored by Loma Linda: "The source of protons is a 40-KeV duoplasmatron. The 40 Kev beam passes through a solenoidal focusing system and is injected into a 1.7-MeV radiofrequency quadrupole linear accelerator (RFQ) operating at 425 MHz." (Rosenberg Decl. Ex. 17 at p. 422.) 5 Similarly, in a paper cited by Dr. Lennox and entitled Proceedings of the 1987 IEEE Particle Accelerator Conference (Id. at Ex. 18), the patent applicants stated ["a]s injector we chose an RFQ linac." (Id. at p. 1985.) 6

5 Academic articles do not necessarily qualify as "treatises" as that term is used by the Federal Circuit. A simple internet search will return thousands of articles, published and unpublished, on the claim term at issue here. This sort of material is best classified as "extrinsic" information, unless it could be elevated to some sort of canonical text or treatise that might have been used by the relevant person in the art.

6 Dr. Lennox points out that Dr. James Slater of Loma Linda authored an article in 1988 wherein he described the technology: "The source of protons is a 40 KeV duoplasmatron. The 40 KeV beam passes through a solenoid focusing system and is injected into a 2 MeV radiofrequency quadrupole linear accelerator (RFQ) operating at 425 MHz. At 2 MeV the beam is transported to the synchotron by a transport system that includes a debuncher to reduce momentum speed. (Lennox Decl. P 23; quoting Rosenberg Decl. Ex. 20 at p. 765.) Dr. Lennox cites the article to support her opinion that the term "injector" should be defined as the type of injector that increases the kinetic energy of a proton beam. (Lennox Decl. P 23.) As noted, similar information is supplied by the patentee on the face of the '287 patent itself. The '287 patent states "the source 10 comprises a duoplasmatron ion source providing a 40 KeV proton beam. The beam is focused by solenoidal lenses at 48 to match the beam into a radiofrequency quadrupole linear accelerator (RFQ) 50. The RFQ accelerates protons to 1.7 MeV for transmission to a debuncher 52 through a quadrupole 54. The debuncher functions to reduce the momentum spread of the beam . . . to approximate the design momentum spread of the beam for injection into the accelerator." (Rosenberg Decl. Ex. 1, the '287 patent at 3:27-35.)

While Dr. Lennox' efforts are appreciated, most of this information is referenced in the '287 patent summary itself. (See, e.g., id. at Ex. 1, the '287 Patent at 3:19-25.) In the description section of the '287 patent, the patentees plainly state their preference for an RFQ accelerator. (Id.) In other words, Dr. Lennox and Ion Beam invite the court to consult the written description or in the alternative, purely extrinsic information, as a threshold step in the claim construction process in order to narrow the claims, and thereby invite a violation of Federal Circuit precedent. See, e.g., Texas Digital Sys., 308 F.3d at 1204. The court declines their invitation.
The term "injector" is not limited or qualified by any language in the claims section of the '287 patent. (Rosenberg Decl. Ex. 1, '287 Patent at 14:7-8.) The court does not find it appropriate to import a limitation from the written description of the patent, or otherwise limit the scope of the patent based on expert testimony of Dr. Lennox. The court notes that the claim terms "source of protons" and "protons from the source" are equally broad as the claim term "injector." (See id. at 14: 5 & 14:7-8.) However, neither party is suggesting the claim term "source" be limited to mean "a duoplasmatron ion source providing a 40 KeV proton beam" as described in the specification. There is nothing in the plain meaning of the claim terms to suggest the term "injector" should be limited as Defendant suggests. Indeed, literature cited by Dr. Lennox indicates there are many different types of injectors. (See, e.g., Rosenberg Decl. Ex. 16, Proceedings of a Medical Workshop on Accelerators for Charged Particle Beam Therapy at p. 414.) 7 But there is nothing in the claim terms indicating that the general term "injector" should be limited to the specific type of injector suggested by Dr. Lennox and Ion Beam.

7 Plaintiff's rebuttal expert, Dr. Lundy, confirms this point: "Injectors come in many different sizes and types. Injectors can be large facilities or they can be small devices." (Lundy Decl. at P 22.) Moreover, the court notes the Livingood treatise stated an Alvarez type accelerator could be used as an injector, but presumably not for a proton therapy system. (See Rosenberg Decl. Ex. 14, at p. 167.) This confirms there is more than one kind of injector.

In the court's view, it would probably be error to restrict the claim term in the manner suggested by Defendant. As the Federal Circuit stated in Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1249: "[W]hen a claim term is expressed in general descriptive words, we will not ordinarily limit the term to a numerical range that may appear in the written description or in other claims. . . . Nor may we, in the broader situation, add a narrowing modifier before an otherwise general term that stands unmodified in a claim." The Renishaw court included a very instructive explanation important to the construction of the claim term "injector" in the '287 patent:

For example, if an apparatus claim recites a general structure (e.g., a noun) without limiting that structure to a specific subset of structures (e.g., with an adjective), we will generally construe the claim to cover all known types of that structure that are supported by the patent disclosure. See, e.g., Va. Panel Corp. v. MAC Panel Co., 133 F.3d 860, 865-66, 45 U.S.P.Q.2d (BNA) 1225, 1229 (Fed. Cir. 1997) (claim term "reciprocating" is given its ordinary meaning and not limited to mere linear reciprocation); Sjolund v. Musland, 847 F.2d 1573, 1581-82, 6 U.S.P.Q.2d (BNA) 2020, 2027 (Fed. Cir. 1988) (refusing to limit claim term "baffle" to only rigid baffles and term "panel" to only panels of lattice construction).

Renishaw, supra, 158 F.3d at 1249 (emphasis added). The Federal Circuit in Renishaw, stated two important canons of claim construction: (a) the court "may not read a limitation into a claim from the written description, but (b) one may look to the written description to define a term already in a claim limitation, for a claim must be read in view of the specification." Id. at 1249. A patent applicant may also elect to be a lexicographer by providing an explicit definition in the specification for a claim term. Id. However, if a patentee "has chosen to be his or her own lexicographer," she must clearly set forth an explicit definition for the claim term. See, e.g., Johnson Worldwide Associates, Inc. v. Zebeco Corp., 175 F.3d 985, 990 (Fed. Cir. 1990.)

Comparing Figures 1 and 2, as well as the patent specification, it appears the patentees preferred using a "radiofrequency quadrupole linear accelerator" as an injector. (Compare id. at 2:38-40; 3:25-41; Figures 1 & 2.) The patentee also included a more general description of the technology at issue. (Id. at 2:35-60, and Figs. 1 & 2.) The patentees did not clearly express in the specification their intent to define or limit the term injector to the parameters suggested by Ion Beam. (See id. at 3:27-33.) Accordingly, as in Renishaw, 158 F.3d at 1249 the court adopts a broader definition of the term "injector" and hereby defines the term as "an apparatus that introduces protons from the proton source to the accelerator." (See Rosenberg Decl. Ex. 14 at p. 167; Ex. 17 at 422-23; Ex. 1, the '287 Patent at 15:7-9; and Airhart Decl. Ex. H, Random House Dictionary; and Ex. I, Webster's II New Riverside University Dictionary.)

As Dr. Lundy points out, there are many different kinds of accelerators, including accelerators that feed a non-accelerated beam into an accelerator. (Lundy Decl. at PP 22, 24 & 25, and Ex. 4.) 8 The court declines to introduce any limitation, based on extrinsic information or the '287 patent description, on the type of injector claimed by the patentees. There is nothing in the text of the claim terms to suggest the claim term "injector" should be limited to a type of injector that provides an
increase in kinetic energy.

8 Furthermore, it is possible to describe a "A 15 mA, 15 keV, proton Duoplasmatron source" as an injector. See, e.g., http://www.barc.ernet.in/btdg/appd/ion.html; see also Robinson and Hamm, Flourine 18 Production, (1997) at 3. This would seem to indicate that an injector, by definition, does not necessarily add kinetic energy to particles emitted from a duoplasmatron ion source. See also http://www.barc.ernet.in/webpages/organization/appd/microwave_ion_source.htm (stating "A 15 mA, 15 keV, proton Duoplasmatron source was developed as an injector to the Radio Frequency Quadrupole (RFQ) Linac.") By comparison, the '287 patent states "the source 10 comprises a duoplasmatron ion source providing a 40 keV proton beam." (Rosenberg Decl. Ex. 1, the '287 Patent at 3:27-35.)

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I.

The '957 patent discloses an ink jet printer with an improved ink sprayhead design. The improved sprayhead prints an image and its mirror image on opposite sides of a substrate. This dual-sided mirror image technique facilitates the printing of backlit signs and billboards. With ink applied to both sides of a substrate, backlit signs do not appear washed out when illuminated.

The claimed ink sprayhead design features one pressurized air source to control ink delivery onto the substrate and a second low-volume, high pressure air source to continuously clean the ink nozzle during printing. The prior art ink sprayheads, including those of the '522 patent, contain only a single, pulse-width modulated air source for delivery of the ink to the substrate and lack a second, high pressure air source for cleaning the nozzles.

According to the '957 patent, the second air source facilitates continuous printing of large signs without color variations or clogging of the nozzles. The '957 patent states that the prior art (specifically the '522 patent) "is incapable of producing an enlarged image having the desired color scheme" because it lacks this second, high pressure air source. Col. 2, ll. 33-36. See also, col. 2, ll. 10-22. Both the dual-sided mirror image printing technique and the dual air source ink sprayhead are novel features of the '957 patent. Claim 1, the only independent claim in the '957 patent, claims:

1. An apparatus for reproducing an image on a first side of a substrate and a mirror image on a second side of said substrate, comprising:

   a frame;

   means for generating control signals representative of said image;

   ink delivery means positioned on opposite sides of said substrate, said ink delivery means fluidly communicating with an ink source;

   means mounted on said frame for supporting said ink delivery means;

   means mounted on said frame for driving said ink delivery means relative to said substrate; and

   means, responsive to said control signals, for controlling said ink delivery means to produce said image on said first side of said substrate and said mirror image on said second side of said substrate.

(emphasis added)

As required by statute, the magistrate interpreted these means-plus-function elements by referring to the structure described in the patent.
in the patent specification for performing the recited functions. See 35 U.S.C. § 112, P 6 (1994). Specifically, the magistrate limited "ink delivery means" to an ink sprayhead containing a "second, high pressure air source." The magistrate primarily based this limitation on the background and summary of the invention sections of the '957 patent which distinguished the invention from the prior art, including the '522 patent. The '957 patent describes its improvement over the prior art by emphasizing its use of two air sources - one for applying the ink and one for removing excess ink from the nozzles. In particular, the '957 patent states explicitly that the ink delivery system of the '522 patent is "incapable of producing an enlarged image having the desired color scheme" because of its lack of a second air source for cleaning the nozzles. Col. 2, ll. 33-36. The magistrate therefore concluded:

By consistently describing its invention - in the Abstract, Background of Invention, Summary of Invention, and Detailed Description sections of the specifications - as one that solves the ink accumulation problem inherent in the prior art, the ink delivery means cannot be interpreted apart from the essential, cleaning, high-pressure air source.

Vutek's allegedly infringing printers use ink sprayheads identical to those embodied in the '522 patent and therefore contain only a single, pulse-width modulated air source. Consequently, based on the foregoing interpretation, the magistrate determined that Vutek's device did not literally infringe the '957 patent because it lacked the second, high-pressure air source required by the "ink delivery means" of claim 1.

Having found one element of the claim missing from the accused device, the magistrate could have concluded the literal infringement analysis. However, the magistrate proceeded to address the "means for generating control signals" and "means for controlling the ink delivery means." Because, as set forth below, this court agrees with the magistrate's finding concerning the lack of "ink delivery means" in the accused device, as required by claim 1 of the '957 patent, this court need not address the other means-plus-function claim limitations.

On Vutek's counterclaim against Signtech for infringement of its '522 patent, Signtech stipulated to infringement of the '522 patent, if valid. Signtech also stipulated to basic damages of $ 140,000 as part of the Pretrial Order. The magistrate determined that the '522 patent was valid and also found that Signtech had willfully infringed. The magistrate therefore trebled the damage award to $ 420,000 and added pre-judgment interest as well as costs and attorney fees. Those findings are not before this court on appeal. In its judgment, however, the magistrate's wording apparently awarded $ 420,000 enhanced damages in addition to the basic $ 140,000 damage award, stating that Vutek "is entitled to a basic damage award of $ 140,000 for infringement of the '522 patent, prejudgment interest . . . plus enhanced damages of $ 420,000 for [Signtech's] willful infringement." The parties have resolved this issue by agreeing that the $ 420,000 enhanced damages should include the $ 140,000 basic damage award, in accordance with the statutory requirements of 35 U.S.C. § 284 as interpreted by this court's case law.

The magistrate also entered a permanent injunction against Signtech "for any further infringement of the '522 patent." Signtech complains that the terms of this injunction violate Fed. R. Civ. P. 65(d) which provides specificity requirements for injunctions.

II.


The magistrate correctly interpreted the "ink delivery means" limitation of claim 1 of the '957 patent. Title 35 of the United States Code, section 112, P 6, states that

an element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding
structure, material, or acts described in the specification and equivalents thereof.

Typically, if the word "means" appears in a claim element in combination with a function, it is presumed to be a means-plus-function element to which § 112, P 6 applies. See Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427, 44 U.S.P.Q.2D (BNA) 1103, 1109 (Fed. Cir. 1997); Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583, 39 U.S.P.Q.2D (BNA) 1783, 1785 (Fed. Cir. 1996). However, according to the language of the statute, § 112, P 6 governs only claim elements that do not recite sufficient "structure, material, or acts in support [of the means- or step-plus-function element]." 35 U.S.C. § 112, P 6. See Sage, 126 F.3d at 1427.

In this case, the claim element "ink delivery means" uses the term "means" in association with a function, namely "ink delivery." Although the phrase "means for" is not used, the phrase "ink delivery means" is equivalent to the phrase "means for ink delivery," because "ink delivery" is purely functional language. Furthermore, the claim does not recite disqualifying structure which would prevent application of § 112, P 6. The magistrate therefore correctly applied § 112, P 6 to the interpretation of this claim element.

The "ink delivery means" of the preferred embodiment described in the specification expressly includes a second, high pressure air source. Although patentees are not necessarily limited to their preferred embodiment, see Serrano v. Telular Corp., 111 F.3d 1578, 1583, 42 U.S.P.Q.2D (BNA) 1538, 1542 (Fed. Cir. 1997), interpretation of a means-plus-function element requires this court to consult the structure disclosed in the specification, which often, as in this case, describes little more than the preferred embodiment. Furthermore, although the magistrate looked to the structure of the preferred embodiment to help determine the scope of the "ink delivery means" element, the magistrate's interpretation did not rely solely on that part of the specification. In particular, the magistrate also looked to the background and summary of the invention sections of the specification which describe the improvements of the ink delivery means of this invention over the prior art (including the accused ink delivery structure of Vutek's '522 patent). These sections of the specification, in addition to the disclosure of the preferred embodiment, led the magistrate to conclude that the "ink delivery means" of claim 1 was limited to an ink sprayhead having a second, high pressure air source.

Specifically, the summary of the invention section of the '957 patent states that the invention "is capable of producing a sectioned image on the substrate in one continuous print because its sprayhead design prevents ink jet clogging." Col. 3, ll. 26-28. The specification attributes this unique capability to the invention's use of two separate air sources - one pulse-width modulated air source for controlling delivery of the ink to the substrate and a second low-volume, high pressure air source for continuous cleaning of the ink jets. See Col. 3, ll. 29-48. Additionally, in the background section, the specification of the '957 patent explains that "the design of the '522 patent is such that the ink accumulation is not prevented. The '522 patent does not solve the ink accumulation problem because it uses a single constant air pressure source." Col. 2, ll. 12-15. The '957 patent specification goes on to declare that "the system disclosed in the '522 patent is incapable of producing an enlarged image having the desired color scheme." Col. 2, ll. 34-36. The accused ink delivery structure in Vutek's printers is identical to the structure described in the '522 patent - a structure explicitly distinguished by the '957 patent.

By choosing means-plus-function language to recite the "ink delivery means" claim element, the patentee necessarily restricted the scope of this element to the structure disclosed in the specification and its equivalents. Furthermore, by stating that the accused structure was "incapable" of achieving the desired results of the invention, the patentee expressly excluded it as an equivalent of the disclosed structure. Because § 112, P 6 requires a court to interpret a means-plus-function claim according to the structure disclosed in the specification and its equivalents, the magistrate's limitations on claim scope, with reference to the preferred embodiment and the explicit disavowal of prior art structure, correctly construed the invention.

Hoping to rescue itself from this unfortunate predicament, Signtech points to a portion of the '957 patent specification describing an alternative "ink delivery means" (shown in Fig. 8) which does not include the second, high pressure air source. See col. 10, ll. 30-47. This alternative embodiment is significantly different than Vutek's accused device, however. Specifically, the ink sprayhead embodiment of Fig. 8 uses a single constant air flow and a pulse-width modulated ink flow to control delivery of the ink to the substrate. Vutek's accused device, on the other hand, uses pulse-width modulated constant pressure air flow to control ink delivery. Signtech's alternative structure is therefore so different from Vutek's accused device that no reasonable jury could find it an equivalent structure. Thus, even if this court interpreted the "ink delivery means" element of claim 1 to include this alternative embodiment, it would not cover the accused structure.

Signtech also points to the prosecution history in an effort to redeem its choice of claim language. Specifically, Signtech
identifies a species restriction requirement in the parent application of the '957 patent. During the prosecution of the application which became U.S. Patent No. 5,294,946 (the '946 patent) (parent application to the '957 patent), the patent examiner directed Signtech to select one set of claims from the following three possible inventions described in the application:

A. A single side ink jet printer with two pressure flows to propel the ink and maintain cleanliness of the nozzles, claims 1-6, 27-32.

B. A two side ink jet printer, claims 18-20.

C. A two side ink jet printer with two pressure flows to propel the ink and maintain cleanliness of the nozzles, claims 7-17, 21-26.

Signtech argues that the '946 patent embodied the election of species C, while the '957 patent was the result of a continuation application directed toward species B. Specifically, Signtech contends that it expressly included claim elements for the dual air sources in the '946 patent application but intentionally removed them from the claims of the '957 patent application. Therefore, Signtech argues, it is unfair to limit the claims of the '957 patent to an invention elected for prosecution in an earlier application when the examiner explicitly required separation into separate applications.

Although the prosecution history serves as a tool for claim interpretation, see In re Hayes Microcomputer Products, Inc. Patent Litigation, 982 F.2d 1527, 25 U.S.P.Q.2D (BNA) 1241 (Fed. Cir. 1992), the statutory requirements of 35 U.S.C. § 112, P 6 nonetheless apply to means-plus-function claims. The specification limits the meaning of means-plus-function claim elements; and in this case, the specification expressly limits the invention in the manner described previously.

Thus, this decision, like many others emanating from this court, see Sage, 126 F.3d at 1425, emphasizes the importance of careful language choices in the specification and, particularly, in the claims. To avoid having its claims limited to exclude the embodiments disclaimed in the specification, the claim drafter for this patent might have chosen language to avoid application of 35 U.S.C. § 112, P 6. Otherwise, assuming that no intervening statutory bars had arisen, Signtech could have filed a new application directed toward the species B invention without limitation in the specification or claims to the dual air sources. It did neither. Therefore, because of the statutory limitations governing the meaning of means-plus-function elements, courts must limit the scope of these claim elements to the corresponding structure disclosed in the specification and its equivalents. Signtech's arguments are therefore unavailing and this court affirms the magistrate's interpretation of the "ink delivery means."

The government also challenges the trial court's construction of the claim limitation "ink permeates through the sheet from said printed front surface to said back surface to provide the indicia in mirror image form on said back surface" that requires ink "on or at the back surface," appearing in all three asserted claims. The government asserts that the limitation requires permeation of the ink through the back surface of the top sheet. Paymaster replies that the limitation requires only penetration of the ink to the back surface such that the ink resides on the back surface of the sheet - not through the back sheet. We agree with the trial court's construction that ink must reside on or at the back surface of the sheet - but does not have to permeate through the back surface of the sheet.

In so construing this claim limitation during a hearing on summary judgment (of invalidity under the on-sale bar and of co-ownership), the trial court noted that, prior to claim construction, it had "met with the parties and received a list of those phrases and aspects of claims that were in dispute, and this was not one of them." During the summary judgment hearing, then, the court construed the limitation. "There is no question[ ] in my mind . . . that that claim . . . requires the ink to be on or at the back surface," While an argument could have been made that the government waived any disagreement with the court's construction, it was not made. Moreover, liability turns on the correctness of the construction. Hence, we will review
The claim language itself of the limitation "ink permeates through the sheet from said printed front surface to said back surface to provide the indicia in mirror image form on said back surface" supports the trial court's interpretation. While it is true that the claim limitation contains the term "through," this word cannot carry the government's argument. For example, claim 10 states that the ink permeates "through the sheet" - not "through the back of the sheet." Claim 10 further explains how far the permeation goes - "from said . . . front surface to said back surface." Thus, the ink travels to the back surface of the sheet - not through the back surface of the sheet. Thus, the claim language provides no support for the government's argument. Indeed, it refutes the argument.

The specification further bolsters the correctness of the trial court's construction. In the Description of a Preferred Embodiment, the written description discloses that the ink "permeate[s] from the upper to lower surface of the top sheet." '283 patent, col. 5, ll. 19-20. Later, the written description explains what "through the sheet" means and how far the ink must travel - "the ink permeates through the top sheet from its front surface to its back surface." Id. at col. 7, ll. 49-51 (emphasis added). In yet another instance, it teaches that the ink "permeate[s] through the paper sheet . . . from the front to the back." Id. at col. 7, ll. 56-57 (emphasis added). Thus, in each instance, the specification explains how far the ink permeate[s] - through the sheet, but only to the back of the sheet - not through the back of the sheet. Nor does the prosecution history require a different construction.

The extrinsic evidence of dictionary definitions supplied by Paymaster strengthens this distinction between "to" and "through" as well. "To" means: "in a direction toward," "reaching as far as," "to the degree or extent of," "towards a specific state," "in contact with," and "in front of." Webster's II New College Dictionary (2d ed. 1999) (emphasis added). These definitions indicate that "to" means something that has not penetrated through another thing, but rather something that travels "toward something" and "contacts" it to be "in front of" it. The government does not supply contrary definitions of "to" and does not offer any definitions of "through."

Moreover, the government's argument is impractical, for if the ink came out the back side of the sheet, it would smear the surface below. Therefore, it is difficult to understand how the government can expect us to accept its argument which lacks support in the claims, the written description, dictionaries, and practicality.

D. "inlet orifice"

Claim 1(a) of the 736 patent requires "first and second vacuum chambers separated by a wall, said first vacuum chamber having an inlet orifice therein." Claim 14(b) requires the "directing said ions through an inlet orifice in an inlet wall into said first space." Micromass contends that because the claims require that the inlet orifice must be in the first vacuum chamber, the inlet orifice must be the beginning of that part of the mass spectrometer held below atmospheric pressure. Put differently, Micromass is relying on its interpretation of "first vacuum chamber" as "the vacuum chamber proceeding all other vacuum chambers," and arguing that because the inlet orifice must be the inlet to the first vacuum chamber and because the first vacuum chamber must be the first chamber held below atmospheric pressure, the inlet orifice must be the inlet to the first chamber held below atmospheric pressure.

AB/Sciex contends that the term "inlet orifice" refers to "an orifice that provides an inlet into the claimed first vacuum chamber for the passage of ions and neutral gas molecules."

Micromass's proposed construction is unconvincing because it is premised upon its construction of "first vacuum chamber," which has been rejected by the court. Essentially, Micromass seeks a definition of "inlet orifice" such that if an empty vacuum chamber were to precede the ion guide (as in the Quattro Ultima), the "first vacuum chamber" could not possess both an inlet orifice and a rod set, as required by the claims of the patent. But the court has construed "first vacuum chamber" to mean "a vacuum chamber." Therefore, the ion guide vacuum chamber can be the "first vacuum chamber" and any preceding vacuum chamber does not alter this result. Thus, the "inlet orifice" to the "first vacuum chamber" need not be
the entrance to the first chamber held at less than atmospheric pressure. Instead, the court will adopt AB/Sciex's proposed construction, which is consistent with the court's earlier construction of "first" and "second."

Maxcess argues that the district court erred in its claim construction by failing to construe claim 1 as requiring a three-part sandwich structure, with an "inner body portion" between the top decorative layer and the layers of brown kraft paper. Maxcess contends that the "inner body portion" cannot consist of brown kraft paper and must have a single uniform appearance that contrasts with the decorative surface layer. Maxcess further contends that the claimed "integral contrasting border" must be formed solely by removing the edge of the decorative surface layer to expose the "inner body portion" to view.

Tate Access responds that the claimed "inner body portion" should not be limited to the three-part structure disclosed in the preferred embodiment and that the district court misconstrued "inner body portion" as requiring a "uniform appearance," which is a limitation found in dependent claim 2, not claim 1. Tate Access further contends that the district court's construction of the term "integral contrasting border" is essentially consistent with Maxcess's proposed construction, except that the district court's construction does not require that the inner body portion be exposed to view. Tate Access also argues that Maxcess is estopped from challenging the district court's claim construction because Maxcess is asserting a new claim construction that was not presented to that court, and because the court adopted the definitions of "inner body portion" and "integral contrasting border" that were proposed by Maxcess.

In interpreting claims, a court "should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1577 (Fed. Cir. 1996). Absent an express intent to impart a novel meaning, "terms in a claim are to be given their ordinary and accustomed meaning." Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1249, 48 U.S.P.Q.2D (BNA) 1117, 1121 (Fed. Cir. 1998); Carroll Touch, 15 F.3d at 1577, 27 U.S.P.Q.2D (BNA) at 1840 ("The words of a claim are generally given their ordinary and accustomed meaning, unless it appears from the specification or the file history that they were used differently by the inventor.").

a) Inner Body Portion

As an initial matter, we do not agree with Maxcess's assertion that the term "inner body portion" must be construed as requiring a three-part sandwich structure. The ordinary meaning of the term "inner" does not require the "inner body portion" to be located in the middle of a three-part structure. Rather, given its ordinary meaning, the term "inner" merely denotes that the "inner body portion" is located inside or within the decorative surface layer. See, e.g., Webster's New World Dictionary 947 (3d ed. 1988) (defining "inner" as "located farther within; interior; internal [inner organs]").

This interpretation is supported by the specification. The abstract of the disclosure, for example, states that "the laminate is provided with a decorative exposed surface and an inner body portion rearwardly therefrom having a color contrasting with the decorative exposed surface," '491 patent, Abstract (emphasis added). 2 Similarly, the written description states that "rearwardly of the decorative paper, the floor covering material is provided with layers of material having a contrasting color with respect to the decorative paper." Id. at col. 1, ll. 63-65. Thus, in light of the specification, we conclude that the term "inner body portion" simply means the layers of laminated material that are located "rearward," i.e., below, the decorative surface layer, and that contrast in color with the decorative surface layer.

2 Aside from its appearance in the claims, the only other reference to an "inner body portion" is found in the abstract. However, as we have previously stated, in determining the scope of a claim, the abstract of a patent is a potentially useful source of intrinsic evidence as to the meaning of a disputed claim term. See Hill-Rom Co. v. Kinetic Concepts, Inc., 209 F.3d 1337, 1341 n.*, 54 U.S.P.Q.2D (BNA) 1437, 1440 n.1 (Fed. Cir. 2000).
We also do not agree with Maxcess that the "inner body portion" must have a single uniform appearance, and cannot consist of brown kraft paper. Claim 1 requires that the floor covering provide "an inner body portion having an appearance contrasting with the appearance of said decorative surface layer." Id. at col. 5, ll. 4-7 (emphasis added). Noticeably absent from the claim language is any requirement that the inner body portion have a single "uniform appearance," 3 or that it not consist of brown kraft paper. Rather, the claim merely requires that the inner body portion have an appearance that contrasts with that of the decorative surface layer.

3 The absence of a "uniform appearance" limitation in claim 1 is further emphasized by the presence of a "uniform color" limitation in dependent claims 2 and 5.

Our conclusion is further supported by the written description, which states that although the four backing layers immediately beneath the decorative layer may be black in color (as in the preferred embodiment), they "may also be formed of other colors, which should preferably contrast with the color of the decorative surface layer." Id. at col. 4, ll. 52-57. The written description also states that "it is desirable that these backing layers, even if formed of other colors, be uniform in their color." Id. at col. 4, ll. 57-59 (emphasis added). It, however, does not state that the entire "inner body portion" must be uniform in appearance, or that the "inner body portion" cannot consist of brown kraft paper. Moreover, we note that even in the preferred embodiment, "immediately below the lowermost layer of black paper 29 are several layers of brown paper 31 and 32." Id. at col. 3, ll. 28-30. We thus conclude that an "inner body portion" is not limited to a single uniform appearance, 4 and may consist of brown kraft paper.

4 While Maxcess argues that the use of the indefinite articles "a" and "an" in the specification requires that the "inner body portion" have a single color or appearance, this contention goes too far. As we have previously explained, it is generally accepted in patent parlance that "a" or "an" can mean "one or more." See, e.g., Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 977, 52 U.S.P.Q.2D (BNA) 1109, 1112 (Fed. Cir. 1999). In view of the embodiment disclosed in the specification, it is clear that this was the meaning intended by the inventors.

Maxcess alternatively argues that the claimed "inner body portion" cannot consist of only brown kraft paper because, in the preferred embodiment, the "integral contrasting border" is formed by exposing black paper layers while avoiding exposure of brown layers. See id. at col. 3, ll. 54-58. Although claims must be read in light of the specification of which they are a part, see Renishaw, 158 F.3d at 1248, 48 U.S.P.Q.2D (BNA) at 1120, it is improper to read limitations from the written description into a claim, see Kemco Sales, Inc. v. Control Papers Co., 208 F.3d 1352, 1362, 54 U.S.P.Q.2D (BNA) 1308, 1314 (Fed. Cir. 2000). Moreover, "although the specification may well indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than such embodiments." Id. Absent from claim 1 is any claim language precluding the inner body portion from consisting solely of brown kraft paper, or paper of any other color for that matter. See '491 patent, col. 5, ll. 4-11. We therefore agree with Tate Access that the claimed "inner body portion" is not limited to the specific structure disclosed in the preferred embodiment and thus may consist solely of brown paper. See id. at col. 3, ll. 21-30, Fig. 4.
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

in turn, forms the body of the sleeping bag. ('828 Patent, col. 1, lines 20-22; col. 2, lines 5-8.) Thus, the warmth-retaining means surrounds the inner cavity. Id. col. 1, lines 8-11; figs. 1, 4, and 5.

Relying on the figures included in the patent specification, Mountain Hardwear argues that the inner cavity is not clearly defined. (Def.'s Opp'n at 2; Motion for Partial Summary Adjudication by Mountain Hardwear, Inc. ("Def.'s MSJ") at 5-6, 8-9.) Mountain Hardwear's argument is premised on its argument that the drawings attached to the '828 patent do not show the elongated inner chamber prior to its being compressed by the elastic means. (Def.'s MSJ at 8.) Mountain Hardwear contends that the inner chamber must be defined as that having a "normal cross-sectional area;" only then, it argues, can the elastic means compress the inner chamber to reduce the cross-sectional area of that chamber. Id. at 9.

In order to conceptualize the function of the elastic means, one must consider the inner chamber as resting in an existing or relaxed state prior to a user entering the cavity. The cross-sectional area of the inner cavity in that existing state is that which is reduced to a compressed state through the functioning of the elastic means. The patent specification and claims make clear that the inner chamber is defined by the inner lining of the warmth-retaining means and that such inner chamber is compressed while the user is in the sleeping bag. The specification also makes clear, however, that the elastic members allow the inner chamber to expand or "deform" in order to follow the changes in the sleeper's position and without restricting the sleeper's movement within the bag. ('828 Patent, col. 3, lines 21-27 and lines 40-44.) The Court finds that the inner cavity is that which is formed by the inner lining of the warmth-retaining means, whether in a relaxed, compressed, or expanded state. The Court declines to read the words "normal cross-sectional area" into the patent claims.

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4. Inner Portion

Finally, K-C seeks to define "inner portion" as "a portion inward and toward the center of the product, discrete from any channel or channel portion." In other words, it wants to clarify that the channel(s) do not comprise any part of the inner portion. The purpose for this reading is that Tyco may seek to assert an invalidity argument based on the inner portion of the Megison patent found in the prior art.

Tyco appears to concede that the channel(s) are distinct from the portions themselves, noting that such a reading would actually strengthen its claim that the channel must be a single, completely encircling channel. (It also notes that this question might best be left for the infringement stage.) In any event, there is ample support for K-C's interpretation. The channel is what defines the boundary between the inner and outer portion; as such, the inner portion does not also include the channel within its boundary. The plain text of the patent indicates that the channels are distinct from the inner portion, and I will accordingly adopt K-C's preferred construction.

* * *

2. "Inner portion" means "a portion inward and toward the center of the product, discrete from any channel or channel portion."

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2. "inner sleeve"

<table>
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<tr>
<th>Disputed Term</th>
<th>FSI Proposed Construction</th>
<th>AOSI Proposed Construction</th>
</tr>
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<tbody>
<tr>
<td>inner sleeve</td>
<td>a rigid structure disposed between the front end and the back end of the inner assembly having multiple optical fibers protected by the rigid structure</td>
<td>construed in accordance with its plain and ordinary meaning</td>
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The dispute over the construction of "inner sleeve" pertains to whether the inner sleeve must be a tube-like and rigid structure. FSI proposes that this phrase be construed as "a rigid structure disposed between the front end and the back end of
the inner assembly having multiple optical fibers protected by the rigid structure.” AOSI argues that this phrase should be construed in accordance with its plain and ordinary meaning (e.g., a tube or tube-like part fitting over or around another part, and fitting at least partially within another part).

FSI’s proposed construction of “inner sleeve” is inconsistent with the plain meaning of “sleeve” and is both too narrow and too broad in certain respects. For instance, the court finds nothing in the claims, specification, or prosecution history indicating that the “inner sleeve” must be a rigid structure. Consequently, the court refuses to read a rigidity requirement into the term as FSI suggests. At the same time, the plain meaning of “sleeve” suggests a tube or tube-like structure, and FSI’s construction does not require this. The drawings show the inner sleeve as a tube-like structure, and the court similarly finds that the “inner sleeve” is a tube or tube-like structure. See, Fig 15-16, 23. Accordingly, the court defines “inner sleeve” as “a tube-like structure disposed between the front end and the back end of the inner assembly having multiple optical fibers protected by the structure.”

3. Inner Spatial Volume

As set forth above, Claim 1 of the ’813 patent claims “an inner spatial volume disposed proximate the distal end of the catheter body member.” Claim 1 of the 204 patent also requires “an inner spatial volume disposed proximate to the distal end of the catheter body member.” The parties propose the following constructions:

* * *

The parties disagree about (1) whether the polymeric film wall must be distensible; and (2) whether the solid radionuclide must be spherical. In Xoft, the Court looked to the specifications of the ’813 and ’204 patents for a definition and concluded that “[i]n all embodiments … the boundary of the inner volume is either a polymeric film wall or the edge of a solid sphere.” Accordingly, the Court construed “inner spatial volume” as an inner volume that is “either enclosed by a polymeric film wall or defined by the outside surface of a solid radionuclide sphere.” SenoRx contends that the “inner spatial volume,” when defined by a polymeric film wall, must be further limited to a “distensible” polymeric film. With respect to the definition of an “inner spatial volume” that is defined by outside wall of a solid radionuclide, Hologic argues that the outside surface need not be spherical.

SenoRx supports its proposed “distensible” requirement by pointing to the specification of the ’204 patent for support. For example, the summary of the invention states: “In different embodiments, the inner spatial volume can be defined by a distensible polymeric wall containing radioactive source material . . . .” ’204 patent, col. 2:56-60. Different embodiments also describe distensible polymeric film walls. See id., col. 3:66-col.4:3. The ’813 patent also contains a distensible chamber. ’813 patent, Abstract; col. 3:39-41. Finally, SenoRx contends that non-distensible polymeric walls are not described in the patents and the inventors did not conceive of such an invention.

Hologic asserts that adding “distensible” improperly narrows the claim to a preferred embodiment. Additionally, the ’813 and ’204 patents both suggest use of non-distensible walls. For example, in describing the preferred embodiment, the patents recite that “[a]ffixed to the tubular body proximate to the distal end thereof is an inner spatial volume which may be defined by a generally spherical polymeric film wall.” ’813 patent, col. 2:33-36; ’204 patent, col. 3:57-59 (emphasis added). The specification does not say that the polymeric wall must be "distensible." Additionally, Hologic contends that the claims were broadened during prosecution to eliminate the "distensible" requirement. Ex. I at 1.2. The claims as originally filed recited that the "inner spatial volume is an inner closed, distensible chamber." The "distensible" requirement was subsequently removed so that the claim called for an "inner spatial volume" that "is an inner closed chamber." Finally, Hologic notes that the "distensible" requirement is a limitation only used in certain claims. For example, Claim 9 of the ’204 patent states “wherein the inner spatial volume is an inner closed distensible chamber defined by a further radiation transparent wall.” The intrinsic record does not support importing the limitation of the term "distensible" into the definition of "inner spatial volume." Accordingly, the Court does not construe the term to require "distensible" polymeric film walls.

SenoRx also contends that the radionuclide must be a sphere. SenoRx argues first that the only solid radionuclide described
in the '813 and '204 patents is a spherical one. For example, the '204 patent describes using a solid spherical radiation emitting material as the inner spatial volume. It specifically refers to radioactive micro spheres of the type available from the 3M Company of St. Paul, Minnesota as ones that could be used. '204 patent, col. 4:44-50. Similarly, the '813 patent states that "a solid spherical radiation emitting material" can be the "inner spatial volume." '813 patent, col. 2:56-63. SenoRx argues that because the inventions generally use a spherical outer balloon, the radionuclide must be spherical to preserve the constant spacing between the inner volume and outer and yield a uniform radiation profile. If a non-spherical radionuclide were enclosed in an outer volume of the same shape, SenoRx asserts that the dose distribution would still be non-uniform because of the greater self-absorption of a solid non-spherical radionuclide in a longitudinal direction than in other directions. Orton Decl. P 24.

Hologic contends that the radionuclide does not need to be spherical. Hologic asserts that the intrinsic evidence supports its position. For example, the patents state that "[i]t is not essential to the invention that the chambers 30 and 34 [the inner and outer volumes] have spherical walls . . . ." '813 patent, col. 3:9-10; '204 patent, col. 5:13-16. Additionally, the patents describe radioactive particles as solids. See '813 patent, col. 3:3; col. 4:6-7. Hologic also points to Claim 13 of the '813 patent as evidence that the patentee could impose a spherical limitation but chose not to.

Each expert asserts that one of ordinary skill in the art would support his understanding of the shape of the solid radionuclide. Dr. Orton suggests that a person of ordinary skill in the art would know that a non-spherical source would yield a non-uniform dose distribution. Orton Decl. P 24. Dr. Verhey, on the other hand, states that a person of ordinary skill in the art would know that "in a typical brachytherapy procedure using a solid radionuclide, the radionuclide is not necessarily spherical in shape and does not need to be." Verhey Decl. 3:27-4:1

The intrinsic evidence shows that spherical radionuclide solids were contemplated, not required. Furthermore, Dr. Orton's testimony concerning the ordinary skill in the art is hard to square with the pill-shaped inner volume in Figure 3 of the '813 patent, which would seemingly be subject to the same longitudinal self-absorption -- and resulting non-uniform dose profile -- as a non-spherical radionuclide solid.

The Court adopts Hologic's proposed definition of "inner spatial volume": "a region of space surrounded by an outer spatial volume and either enclosed by a polymeric film wall or defined by the outside surface of a solid radionuclide."

"Inner spatial volume"
Cytyc's proposed construction A region of space surrounded by an outer spatial volume that is defined by a closed inflatable chamber
Xoft's proposed construction Inner balloon in two-balloon device or spherical solid radionuclide in one-balloon device

The summary of the invention provides that

it is possible to deliver a desired radiation dose at a predetermined radial distance from a source of radioactivity by providing a first spacial 3 volume at the distal end of a catheter and a second spacial volume defined by a surrounding of the first spatial volume by a polymeric film wall where the distance from the spatial volume 4 and the wall is maintained substantially constant over their entire surfaces. One of the inner and outer volumes is filled with either a fluid or a solid containing a radionuclide(s) while the other of the two volumes is made to contain either a low radiation absorbing material, e.g., air or even a more absorptive material, such as an x-ray contrast fluid. Where the radioactive material comprises the core, the surrounding radiation absorbing material serves to control the radial profile of the radioactive emissions from the particular one of the inner and outer volumes containing the radionuclide(s) so as to provide a more radially uniform radiation dosage in a predetermined volume surrounding the outer chamber. Where the core contains the absorbent material, the radial depth of penetration of the radiation can be tailored by controlling the core size.

'813 patent, col. 1, l. 50-col. 2, l. 3. The first two claims of the '813 patent read:

1. Apparatus for delivering radioactive emissions to a body location with a uniform radiation profile, comprising:
(a) a catheter body member having a proximal end and distal end;

(b) an inner spatial volume disposed proximate the distal end of the catheter body member;

(c) an outer, closed, inflatable, chamber defined by a radiation transparent wall affixed to the body member proximate the distal end thereof in surrounding relation to the inner spatial volume with a predetermined constant spacing between said inner spatial volume and the radiation transparent wall;

(d) a material containing a radionuclide(s) disposed in one of the inner spatial volume and outer chamber; and

(e) means disposed in the other of the inner spatial volume and outer chamber for rendering uniform the radial absorbed dose profile of the emissions from the one of the inner spatial volume and outer chamber containing the radionuclides.

2. The apparatus as in claim 1 wherein said inner spatial volume is an inner closed, chamber defined by a further radiation transparent wall.

'813 patent, col. 4, ll. 32-54. Since all claims of this patent other than claim 1 depend from claim 1, construction of "inner spatial volume" is critical.

3 Presumably all occurrences of "spacial" in the '813 patent should be read as "spatial."

4 Presumably this "spatial volume" should be taken to be the first spatial volume, which would mean that the polymeric film wall forms the outer boundary of the second spatial volume and that the second spatial volume is of a uniform thickness on all sides of the first spatial volume. Such a reading would comport with claim 1(c).

In most embodiments of the invention disclosed in the patent specification, the inner spatial volume is a region of space surrounded by an outer spatial volume that is defined by a closed inflatable, chamber. See '813 patent, col. 2, ll. 44-63; col. 3, ll. 9-16, 42-48; col. 4, ll. 16-20; figs. 1, 3-5. However, the patentee drafted the claims in such a way as to make clear that the inner spatial volume was not necessarily so limited:

Those skilled in the art will appreciate that instead of having the inner spatial volume 30 defined by a generally spherical polymeric film wall as at 32, the catheter body member 12 may have a solid spherical radiation emitting material in which event that solid sphere would be surrounded with the outer spherical wall 36 with the spatial volume therebetween occupied by a radioactive ray absorbent material, such as air, water or a contrast material.

'813 patent, col. 2, ll. 55-63.

Although somewhat awkwardly worded, the language of the patent allows for the inner volume to be defined by something other than a region enclosed by a polymeric wall. As Cytyc points out, Xoft's construction conflates the boundary of the volume with the volume itself. Cytyc's proposed construction, however, is a paraphrasing of the language of claim 1 that only clarifies a little the language of the patent. Furthermore, Cytyc's proposed construction would exclude an inner volume defined by a solid sphere, and thus cannot be correct.

Xoft objects that an abstract concept like a region of space cannot be part of an apparatus. Xoft is correct. However, the language of the patent does not imply that the inner volume is ever defined by something other than a physical object. In all embodiments of the invention disclosed in the '813 patent, the boundary of the inner volume is either a polymeric film wall or the edge of a solid sphere. Furthermore, it would seem difficult to fill one volume with radioactive liquid and the other with another fluid if the two volumes were not separated by some structure (which would necessarily be the outer boundary of the inner spatial volume.) See '813 patent, col. 1, ll. 57-62. The patent is even entitled "Double-Wall Balloon Catheter for Treatment of Proliferative Tissue." Xoft's expert, Dr. Lovoi, acknowledged that an "inner spatial volume" is a volume that is
The court defines "inner spatial volume" as "a region of space surrounded by an outer spatial volume and either enclosed by a polymeric film wall or defined by the edge of a solid radionuclide sphere."

### Claim Language vs. Court's Construction

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<tr>
<th>Claim Language</th>
<th>Court's Construction</th>
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<tr>
<td>&quot;inner spatial volume&quot;</td>
<td>a region of space surrounded by an outer spatial volume and either enclosed by a polymeric film wall or defined by the outside surface of a solid radionuclide sphere</td>
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This phrase is found in Claim 16. Plaintiff proposes the following construction: "inner surface of the curved section of the U-shaped terminal." Defendants assert that the phrase need not be construed, and the Court agrees. Because the Court see no ambiguity as to the meaning of the phrase "inner surface of said base" and because its ordinary and customary meaning is clear to one skilled in the art, the Court declines to construe the phrase as it is used in the '015 Patent.

Claim 1, which is representative of the claims at issue, is set forth below (emphasis added):

1. A writing instrument comprising: a front tubular member having a writing tip at the front end thereof; advancing means axially displaceable in forward and rearward directions for incrementally advancing a writing medium lengthwise in the forward direction through the writing tip in response to forward axial displacement of the advancing means; an inner tubular member having a front portion disposed within and encircled by the front tubular member and having a rear portion; a rear tubular member disposed over and encircling the rear portion of the inner tubular member; means mounting the rear and inner tubular members for axial displacement together as a unit in forward and rearward directions relative to the front tubular member to effect forward axial displacement of the advancing means to thereby incrementally advance the writing medium; means mounting the rear tubular member for angular displacement in opposite directions relative to the front and inner tubular members; holding means disposed within the inner tubular member for releasably holding an elongate eraser; and means mounting the holding means to undergo axial displacement in forward and rearward directions within the inner tubular member in response to angular displacement of the rear tubular members in opposite directions to thereby axially retract and extend the eraser relative to the rear end of the rear tubular member.

Claim 36 depends from claim 1, adding the limitation "wherein the inner tubular member is one piece." As noted above, claim 36 was determined to be allowable in reexamination. Accordingly, Pentel and the PTO agree that if "inner tubular member" in the rejected claims is interpreted to be a "one piece inner tubular member," then all of the rejected claims are allowable.

**DISCUSSION**

Claim construction is a matter of law over which we exercise complete and independent review. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2d (BNA) 1321, 1329 (Fed. Cir. 1995), aff'd, 116 S. Ct. 1384 (1996). To determine the meaning of claims, we consider the claim language, the specification, and the prosecution history. Id. In a reexamination proceeding, claims must "be given their broadest reasonable interpretation consistent with the specification." In re Yamamoto, 740 F.2d 1569, 1571, 222 U.S.P.Q. (BNA) 934, 936 (Fed. Cir. 1984). Pentel addresses only claims 1 and 18, and does not separately argue the patentability of claims 2-10, 19-35, 37-38, and 40. Consequently, all claims stand or fall together with independent claims 1 and 18, from which the others depend. See, e.g., In re King, 801 F.2d 1324, 1325, 231 U.S.P.Q. (BNA) 136, 137 (Fed. Cir. 1986).
The '111 patent specification states that the tubular members "are commonly referred to in the art as barrels." It does not, however, state whether the inner tubular member may comprise more than one piece. The patent drawings show only a one-piece member. The claims and specification state that the inner tubular member has a front portion disposed in the front tubular member and a rear portion disposed in the rear tubular member. The PTO agrees that the preferred embodiment illustrated in the specification shows a one-piece inner tubular member, but argues that this embodiment does not restrict the claims. Accordingly, the PTO's position is that that broadest reasonable interpretation of "inner tubular member" is an inner tubular member that may include more than one piece.

The specification also states that the invention described should not be limited to the specific embodiment described. It continues: "For example, if it is desired to construct the eraser dispenser as a separate device which is not incorporated in a writing instrument, . . . the inner barrel 3 would be severed . . . ." (emphasis added). The statement that the inner barrel 3 would have to be severed to form a separate eraser device suggests that this inner tubular member is one piece when incorporated in a writing device. Because each of the claims recites a writing instrument or pencil, this suggests that the claimed "inner tubular member" is one piece.

The fact that the specification only discloses a one-piece inner tubular member and nowhere indicates that multiple members are contemplated is strong evidence of what the claim language means. Moreover, the asserted advantage of the invention requires a long inner tubular member. The claim differentiation argument of the PTO is also not persuasive because there is no indication that claim 36, which expressly recites a one-piece member, was intended to be narrower than claim 1. There was in fact indication that it was added for tactical reasons related to the reexamination.

CONCLUSION

For all of the foregoing reasons, we conclude that the term "inner tubular member" in the rejected claims is properly interpreted as "one piece inner tubular member." The decision of the Board is reversed, and the case is remanded for further proceedings consistent with this opinion.

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22. The term "inner wall," properly construed, applies to any of the inner surfaces of an ink tank. This includes the inner surface of the cover or lid. This interpretation is consistent with the use of the term in the patent specification including its claims. For example, claims 78 and 79 of the '377 patent at issue here clearly set forth that the term "inner wall" includes the inner surface of the cover.

23. Claims 19-21 of the '148 patent, also, use the term "inner wall surface" to include the inside surface of the cover. The claims of the '658 patent do not use the term "inner wall," but refer to the term "wall" in a similar manner.

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C. Inner Wall of the Annulus Fibrosus

Smith & Nephew proposes that "inner wall of the annulus fibrosus" should be construed to mean "the portion of the annulus fibrosus which is comprised primarily of fibrous material and includes the transition zone between the nucleus and the annulus, where the catheter encounters more resistance to penetration than in the nucleus." ArthroCare would interpret "inner wall of the annulus fibrosus" to mean "the location in the disc where the catheter encounters more resistance to penetration and bends into a radius less than that of the external wall of the annulus fibrosus." The parties agree that the patentees acted as their own lexicographer and defined "inner wall of the annulus fibrosus" in the specification. They dispute, however, which words in the specification are actually the definition.

The disputed portion of the specification contains two sentences. The first sentence states:

"For purposes of this specification, the inner wall of the annulus fibrosus can include the young wall comprised primarily
of fibrosus material as well as the transition zone which includes both fibrous material and amorphous colloidal gels. . . ."

U.S. Patent No. 5,980,504, Column 7:10-15. The second sentence states:

"Functionally, that location where the catheter of the present invention encounters more resistance to penetration and bends into a radius less than that of the external wall of the annulus fibrosus is considered to be the 'inner wall of the annulus fibrosus.'"

U.S. Patent No. 5,980,504, Column 7:15-20. Smith & Nephew argues that the definition of "inner wall of the annulus fibrosus" is the first sentence of the quoted material plus the first clause of the second sentence. ArthroCare argues that the second sentence is the correct definition.

The first sentence begins with the words "[f]or purposes of this specification." Clearly the patentees intended this sentence to be the definition of the "inner wall of the annulus" and the court will use it as the term's definition.

The court interprets the second sentence as a functional definition, describing how the "inner wall of the annulus" can be found using one disclosed embodiment. As discussed in part III B., the claims must be read to envision the invention's being practiced in a manner that does not necessarily involve bending the catheter around the inner wall of the annulus. If there are ways of practicing the invention without bending the catheter around the inner wall of the annulus, the radius of the catheter cannot be central to a general definition of the inner wall of the annulus.

If the second sentence is merely a functional definition that applies to a particular disclosed embodiment, Smith & Nephew's proposed definition is flawed because it incorporates part of the functional definition. The court adopts the definition in sentence one to define the "inner wall of the annulus" as "the young wall comprised primarily of fibrosus material as well as the transition zone which includes both fibrous material and amorphous colloidal gels."

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2. "[A]n inner zone on the anterior face circumscribed by the peripheral zone and surrounding the optic zone." Used in '740 patent, claim 1.

"[A]n inner zone circumscribed by the peripheral zone." Used in '903 patent, claims 29, 34 and 38.

"[T]he anterior face including an inner zone circumscribed by the peripheral zone, and an optic zone in the inner zone. Used in '746 patent, claim 1.

"[A] second zone circumscribing the optical [optic] zone." Used in '753 patent, claim 15; '174 patent, claim 16.

The parties agree that "second zone" is interchangeable with "inner zone." The parties also agree that certain zones must be defined on the anterior face of the lens and may include the optic zone, the inner zone and the peripheral zone.

CooperVision argues that these terms should be defined as "a portion of the lens circumscribed by the peripheral zone and that surrounds the optic zone and [a Transition Area] between the inner zone and the peripheral zone." CIBA contends that these terms mean "a zone or region on the anterior face of the lens that is circumscribed by the peripheral zone and surrounds the optic zone (or has a portion that surrounds the remainder of the inner zone that makes up the optic zone). The inner or second zone is separated from the optic zone (or the portion of the inner zone that makes up the optic zone) by a boundary. The outer edge of the inner or second zone (where the inner or second zone meets the peripheral zone) is also separated from the peripheral zone by a boundary, which is the only identifiable boundary between the peripheral edge of the lens and the boundary of the optic zone."

CooperVision defines a Transition Area as "a rounded or curved transition or a discrete boundary, discontinuity, or corner (a 'Transition Area') between zones on the lens." In the interest of the jurors, the court will adopt but reword CooperVision's proposal for readability purposes.
Moreover, for the reasons discussed above, the court will not import CIBA's proposed limitation that there be only one identifiable boundary between the peripheral edge of the lens and the boundary of the optic zone, when the claim language discusses only the inner zone.

The court defines these terms as follows:

"[A]n inner zone on the anterior face circumscribed by the peripheral zone and surrounding the optic zone" and "an inner zone circumscribed by the peripheral zone." and "[T]he anterior face including an inner zone circumscribed by the peripheral zone, and an optic zone in the inner zone" and "a second zone circumscribing the optical [optic] zone" means: A zone or region on the anterior face of the lens located adjacent to the peripheral zone, and that circumscribes and is separated from the optic zone by either a curved or rounded transition or by a discrete boundary, discontinuity or corner.

The trial court also interpreted the insert as hollow. Only claim 15, however, requires a hollow insert, and then, only implicitly. Claim 15 calls for "a hollow bat." Because the insert is part of the internal structure of the bat, the insert must be hollow for the bat itself to be hollow. The preferred embodiment shown in the specification has a hollow insert to minimize "the machining and cold working problems associated with titanium." '398 patent, col 4, I. 68 - col. 5, I. 2. This court, however, declines to read a limitation from the written description into the claims. SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1340 (Fed. Cir. 2001). Here, the context in which "bat" is used in claim 15 is instructive as to the nature of the insert required for that claim. However, "insert" can be defined broadly enough to encompass both a hollow and a solid insert, and yet have the same meaning in all claims.

The term "rigid" appears in connection with "insert" only once. The term appears that single time in uncontested claim 3, "wherein the insert is rigid." This single use of the term "rigid" does not, however, import a "rigid" limitation into all other claims. Rather it implies that the term "insert," when used elsewhere in the patent, does not inherently carry a "rigid" limitation. See Phillips, 415 F.3d at 1314 ("The claim in this case refers to 'steel' baffles, which strongly implies that the term 'baffles' does not inherently mean objects made of steel.")

Rigidity, as employed in this patent, is a measure of resistance to shearing. '398 patent, col. 3, II. 33-35 ("the insert undergoes substantial tensile, as well as bending stress"). The specification of the '398 patent lists a wide range of materials as appropriate for the insert: aluminum, titanium, "other metals, composite materials," and "plastics." '398 patent, col. 5, II. 7-10. In oral argument on appeal, it became apparent that even a pressurized rubber balloon could in some cases be "rigid." "Rigid" is a very relative term. In fact, the specification states only that the insert must be rigid enough for the invention to work. '398 patent, col. 3, II. 29-35; col. 4, I. 61 - col. 5, I. 10. And again, that description would seem to apply only to claim 3.

However, the trial court noted that the inventor distinguished his invention from a prior art reference, U.S. Patent No. 5,180,163 (the '163 patent), during prosecution of the patent, in a way that would suggest that use of the word "rigid" requires that characteristic in all claims. The inventor characterized the prior art as having a "spine" which was "collapsible and positioned in a bat handle to deaden shock at the bat handle." In contrast, the inventor noted, the insert of the '398 patent "is rigid and positioned in a bat impact portion to heighten the response of the impact portion to a batted ball." Because of the timing and context of this statement, however, this statement suggests only that "rigid" implies "not collapsible upon impact." Indeed, the specification states that the insert snaps back "which increases the force and velocity of the rebound." '398 patent, col. 3, II. 42-43. Understanding "rigid" to mean only a measure of resistance to shearing is consistent with an insert that snaps back. Furthermore, in amending both claims 3 and 15 to distinguish the '163 patent, the inventor included "rigid" only in claim 3, but specifically did not include "rigid" in claim 15. Instead, the inventor amended claim 15 to point out that the structural insert "defines an annular gap with the inside wall of the impact portion of the bat," again suggesting merely that the insert would not collapse upon impact, but could respond by resisting shearing without being completely unyielding.

Based on this prosecution history, however, the trial court inferred that "rigid" carried great significance for the invention. The trial court opined that "[a] non-rigid structure would not snap back to increase the slugging capacity of the bat," and that the materials listed in the specification as being appropriate for the insert would "have to be rigid in order to avoid..."
deadening the impact of the ball." This commentary restates the function of the insert without clarifying the "rigid" limitation. Because it is superfluous and undefined, "rigid" adds nothing to the meaning of the claim, and does not belong in this claim interpretation. See, e. g., United Carbon Co. v. Binney & Smith Co., 317 U.S. 228, 233, 63 S. Ct. 165, 87 L. Ed. 232, 1943 Dec. Comm'r Pat. 758 (1942) ("To sustain claims so indefinite as not to give the notice required by the statute would be in direct contravention of the public interest which Congress therein recognized and sought to protect.").

Nothing in the claims or specification indicates, explicitly or implicitly, that the inventor intended to impart a novel meaning to "insert." The record also contains no evidence that "insert" has a particular meaning in the field of art encompassed by the '398 patent. As with "annular," an ordinary and customary meaning for this term in this art field and within the context of this patent is: "something inserted or intended for insertion." Webster's II New College Dictionary (3d ed. 2005).

**k. "said pivot structure is insert-molded on said post"

The term "said pivot structure is insert-molded on said post" means the pivot structure, where it extends transversely at the lower end of the insert-molded body, is molded in place about the post.

**c. Insert-Receiving Area.

The term "insert-receiving area" appears in asserted claims 1, 3, 6, 11, and 16 and in unasserted claims 4, 15, 21, 22, 24, and 27, and is used consistently throughout these claims. The term's use in claim 1 is representative:

A vibratory assembly for imparting a vibratory force to a pile, comprising:

- a housing having at least one counterweight receiving means;
- a counterweight rotatably carried in said receiving means for rotation about a rotational axis, said counterweight having a cylindrical gear portion and an eccentric weight portion integral with said cylindrical gear portion, said eccentric weight portion having at least one insert-receiving area formed therein, said counterweight being made of a first metal;
- a solid insert member securely positioned in one of said at least one insert-receiving areas said solid insert member being made of a second metal having a specific gravity greater than the specific gravity of said first metal, and a melting point temperature of 328 degrees C. or greater; and
- at least one driving means operatively connected to said counterweight and adapted to rotate said counterweight about its rotational axis.

Doc. 26, Exhibit A, '964 Patent, col. 9, ll 33-53. (emphasis added)

The insert receiving area in the '964 patent allows a heavier high-melting point metal such as tungsten to be inserted into the counterweight in order to increase the eccentric moment, and, hence, vibratory force, without bulking up the device impractically. The claims (1, 6, 11, 16) describe the eccentric weight portion as having at least one "insert-receiving area," but do not describe the cylindrical gear portion as having an insert-receiving area. J&G's position is that the invention only claims that the inserts run through the structure extending forward from the gear structure, which it has argued is the "eccentric weight portion." J&G concludes that "the plain language of the claim limits the insert-receiving area to the eccentric weight portion of the counterweight and excludes an insert receiving area from the cylindrical gear portion." Doc. 27 at 18. APE's position is that because the eccentric weight portion can share volume with the cylindrical gear portion, claiming the insert-receiving area for only the eccentric weight portion does not prevent the insert from running through the entire counterweight. APE argues that there is no such limitation of the insert receiving area to the eccentric weight portion.
of the counterweight nor exclusion of an insert receiving area from the cylindrical gear portion of the counterweight. APE cites the use in the patent of the "open-ended term 'comprising' in transitioning from the preamble to the body of the claim." Doc 31, at 6. Because, APE argues, "the term 'comprising' has been construed to mean 'including the following elements but not excluding others,' Faber, Landis on Mechanics of Patent Claim Drafting, Sec. 2:5 (5th ed. July 2008) (Emphasis added); M.P.E.P. Sec. 2111.03 (Rev. 6, Sept. 2007)," additional unrecited elements are not excluded from the scope of the claim. Doc 31, at 6. The claims do not explicitly limit the insert receiving area to the eccentric weight portion, nor do the claims explicitly exclude insert-receiving areas from the cylindrical gear portion. Relying on the plain language and ordinary meaning of the claim terms, the Court finds that "insert-receiving area" means "a region of the eccentric weight portion that is capable of receiving an insert, as opposed to receiving material being poured into the region." GO BACK

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(3) Insert-Receiving Area

The phrase "insert-receiving area" appears in asserted claims 1, 3, 6, 11, and 16, as well as unasserted claims 4, 15, 20, 21, 22, 24, and 27. APE seeks to define the phrase as "a region of the eccentric weight portion that is capable of receiving an insert." (Joint Disputed Claim Terms Chart.) Geoquip seeks to define the phrase as "a bore extending into the eccentric weight portion and shaped to receive the solid insert." Id. 9

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8 The phrase appears in claims 4 and 15 in its plural form.9 The dispute over the meaning of "insert-receiving area," i.e., whether or not it may be wholly contained within the cylindrical gear portion, is closely tied to the construction of "eccentric weight portion," and whether that too may be so contained. This court has found that the "eccentric weight portion" must be physically distinct from the "cylindrical gear portion," see supra Part II.B. (3), and the court is mindful of that construction in its analysis of "insert-receiving area."

- - - - - - - - - End Footnotes - - - - - - - - - - - - - - -

In construing "insert-receiving area," the court looks first to the claims themselves. Claim 1, which is representative of the asserted claims, describes a "counterweight having a cylindrical gear portion and an eccentric weight portion integral with said cylindrical gear portion, said eccentric weight portion having at least one insert-receiving area formed therein." 964 Patent, col. 9, ll. 39-43. In other words, at the very least, the "insert-receiving area" is located, at least in part, within the "eccentric weight portion." Moreover, claim 3, which is dependent on claim 1, recites the "vibratory assembly of claim 1 wherein said at least one [sic] insert-receiving area is a bore in said eccentric weight portion and said solid insert member is a tungsten rod." Id. at ll. 56-59. Although the court believes the phrase "insert-receiving area" to be used consistently in the remainder of the claims, the claims do not define the phrase explicitly. Thus, the court turns next to the specification.

The specification provides the following description:

The bottom portion 104 of the counterweight 40 is cast having insert receiving areas or bores 112 substantially parallel to the center bore 106 and extending fully through the gear portion 41 and fully through the eccentric weight portion 43. In the preferred embodiment, two insert receiving bores 112 are formed in the eccentric weight portion of the counterweight 40, although the number of bores can be varied.

Id. at col. 5, ll. 61-68. Although this passage describes the "insert-receiving area" as fully extending through both the gear portion and the eccentric weight portion, the court finds no other evidence within the specification to suggest that the insert-receiving area must extend completely through both portions. After considering the claims and specification as a whole, the court finds that the essential attributes of the "insert-receiving area" are, first, that it is shaped to receive an insert; second, that it is located, at least partially, within the eccentric weight portion; and third, that it may extend into the cylindrical gear portion, as is the case in the preferred embodiment. Neither party's proposed construction, however, succeeds in capturing these three attributes. 10 As such, the court construes the phrase "insert-receiving area" to mean "a bore located, at least in part, within the eccentric weight portion that is shaped to hold securely a solid insert member."
5. "Insert-Receiving Area"

This phrase appears in asserted claims 1, 3, 6, 11 and 16, as well as in unasserted claims 4, 15, 21, 22, 24 and 27. 12 APE argues that the proper construction of this phrase is "... a region of the eccentric weight portion that is capable of receiving an insert, as opposed to receiving material being poured into the region." Doc. No. 37 at 6. ECA counters that "insert-receiving area" should be construed as "a bore extending into the eccentric weight portion and shaped to receive a solid insert." Doc. No. 41 at 2. The Northern District of California construed the phrase to mean "a bore formed in the eccentric weight portion of the counterweight, which extends fully through the gear portion and fully through the eccentric weight portion of the counterweight, capable of receiving a solid tungsten rod." Bay, 632 F. Supp. 2d 956, 2009 WL 1684611, at *10. In order to construe the phrase properly, this Court first turns to the language of the claims themselves.

A reading of all the claims shows that the phrase "insert-receiving area" is used consistently throughout the claims of the patent, and that its definition is meant to be the same in all of the claims. Furthermore, it is notable that whenever the location of the insert-receiving area is mentioned in the claims, it is consistently described as being formed in the eccentric weight portion. The claims also repeatedly describe the insert-receiving area in connection with securely holding a solid insert member. However, there is no part of the claims that gives an explicit definition of the insert-receiving area, so this Court, in accordance with case law, turns to the specification of the '964 Patent for guidance.

The specification states:

The bottom portion 104 of the counterweight 40 is cast having insert receiving areas or bores 112 substantially parallel to the center bore 106 and extending fully through the gear portion 41 and fully through the eccentric weight portion 43. In the preferred embodiment, two insert receiving bores 112 are formed in the counterweight 40, although the number of bores can be varied. The insert receiving bores are shaped 112 to receive the solid insert 45, wherein the solid insert is manufactured from a metal that has a density or specific gravity that is greater than the density or specific gravity of the metal used to form the remainder of the counterweight 40. The preferred solid insert 45 is a tungsten rod machined to close tolerances such that the solid insert fits snugly within the insert receiving bore 112.
In light of the language of the specification, and given this Court's above construction of "eccentric weight portion" as being able to share structure with the "cylindrical gear portion," this Court recommends that the phrase "insert-receiving area" be construed to mean: "a bore, formed in the eccentric weight portion of the counterweight, which is designed to receive and securely hold one solid insert member made of a second metal having a specific gravity higher than that of the first metal and a melting point temperature of 328[degree] C or greater."

13 Like this Court, Judge Hamilton of the Northern District of California also found this passage, up to column 6, line 5, to be instructive in making her construction of this term. See Bay, 632 F. Supp. 2d 956, 2009 WL 1684611, at *9. Curiously, however, the quotation of this paragraph of the specification, as transcribed into that opinion, lacks the phrase "and fully through the eccentric weight portion 43" from column 5, lines 64-65 of the '964 Patent. Bay, 632 F. Supp. 2d 956, 2009 WL 1684611, at *9.

This phrase appears in asserted claims 1, 6, 11. The phrase also appears in unasserted claims 21, 22, 24 and 27. APE contends that the phrase should be construed to mean "a region of the eccentric weight portion that is capable of receiving an insert, as opposed to receiving material being poured into the region." Bay contends that the phrase should be construed to mean "an area shaped to receive the solid insert and extending fully through either the gear portion or the eccentric weight portion. Both the gear portion and the eccentric weight portion have an insert receiving area. This limitation defines insert receiving area as the insert receiving area of the eccentric weight portion as opposed the insert-receiving area of the gear portion."

The court begins its analysis by first turning to the claims themselves. The phrase "insert-receiving area" is first introduced in claim 1, which states: "A vibratory assembly for imparting a vibratory force to a pile, comprising: . . . counterweight having a cylindrical gear portion and an eccentric weight portion integral with said cylindrical gear portion, said eccentric weight portion having at least one insert-receiving area formed therein, said counterweight being made of a first metal; a solid insert member securely positioned in one of said at least one insert-receiving areas said solid insert member being made of a second metal . . ." Claim 2 provides that the first metal is steel and the second metal is tungsten. The phrase "insert-receiving area" also appears in claims 6, 11, 16, 21, 22, 24 and 27.

Reviewing all the claims in which the phrase "insert-receiving area" appears, the court finds that, while the precise language of each claim differs, the language of claim 1 is representative of the other claims, and that the phrase is meant to have the same meaning in each claim, since there is no indication that the phrase is to be given a specific definition in any one claim versus another, and no indication that the phrase has been particularly defined, or referred to in a materially different way, in any specific claim. Accordingly, because none of the claims specifically define the phrase, the court turns to the specification for added insight.

The specification states that:

The bottom portion 104 of the counterweight 40 is cast having insert receiving areas or bores 112 substantially parallel to the center bore 106 and extending fully through the gear portion. In the preferred embodiment, two insert receiving bores 112 are formed in the counterweight 40, although the number of bores can be varied. The insert receiving bores are shaped 112 to receive the solid insert 45, wherein the solid insert is manufactured from a metal that has a density or specific gravity that is greater than the density or specific gravity of the metal used to form the remainder of the counterweight 40. The preferred solid insert 45 is a tungsten rod . . .
The essence of the dispute is whether the insert-receiving area extends through both the gear portion and eccentric weight portion of the counterweight. After reviewing the claim language and the specification, the court declines to adopt either party's proposed construction of the phrase "insert-receiving area." Instead, the court construes the phrase "insert-receiving area" to mean: "a bore formed in the eccentric weight portion of the counterweight, which extends fully through the gear portion and fully through the eccentric weight portion of the counterweight, capable of receiving a solid tungsten rod."

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2. The "insert within the aperture" limitation

Although Lamson's products were found to have satisfied the "insert within the aperture" limitation under the doctrine of equivalents, Intermatic argues that that limitation is literally met under the proper interpretation of its claims. Intermatic contends that the district court erred in its construction of the "insert within the aperture" limitation by excluding a preferred embodiment of the invention, and that the proper interpretation of that limitation is that the claimed "insert" is comprised of not only what it styles as the "insert plate," which is what the district court found to be the actual "insert," but also includes the flange and the raised ledge connected to it. Lamson responds that the court properly construed the "insert within the aperture" limitation to exclude the flange and the raised ledge because the specification teaches that those structures are separate from the claimed "insert."

We conclude that the district court properly construed the "insert within the aperture" limitation to exclude the flange and the raised ledge. When the meaning of a term used in a claim is sufficiently clear from its definition in the patent specification, that meaning shall apply. Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477, 45 U.S.P.Q.2d (BNA) 1429, 1432 (Fed. Cir. 1998); Intelicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1388, 21 U.S.P.Q.2d (BNA) 1383, 1387 (Fed. Cir. 1992). The specification states that

the insert 14 has a top edge 42, a bottom edge 44 and two side walls 46 and 48. A flange 50 extends around the periphery of the insert. The flange 50 is sized and adapted to fit securely within the recess 40 of the base plate 12 in order to form a connection with the base plate 12. A raised ledge 51 is located on the face of the insert 14 around the periphery of the aperture 26 and flange 50.

135 patent, col. 4, II. 5-12 (emphasis added). The specification therefore makes clear that the claimed "insert" is something separate from, but connected to, the flange and the raised ledge. Accordingly, the district court did not err in interpreting the "within the aperture" limitation to require the plate-like structure comprising the "insert." which does not include the flange and raised ledge, to fit within the aperture of the base plate.

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Biomet urges a construction of "insertable into and through the tissue" to mean the anchor member steers itself into the tissue, and is not steered into and through the tissue while contained in a needle. Indeed, according to Biomet, the claim language calls for two devices that are insertable into and through tissue, pointing to the preamble, which describes an apparatus for insertion into and through tissue, and the remainder of the claim, which calls for an elongated anchor member that, it argues, must be independently insertable into and through the tissue.

In addition, during oral argument Biomet pointed to a few references of the disputed claim language in the specification as support for its argument that the claim describes an anchor member that is separately insertable into and through the tissue. Those references are: "The anchor member is inserted through the tissue with the suture extending therefrom to provide a mechanism for manipulating the tissue within the joint," Ex. A, col. 2, 1. 5-8 (emphasis added); "The limiting mechanism is manipulated so that the tube may be pushed forward to the tip of the needle, thereby expelling the anchor member from the tip of the needle into or behind the piece of tissue to be anchored," id., col. 2, 1. 31-34 (emphasis added); and "A rigid anchor member may be lodged within cartilage or other tissue (i.e., as opposed to being inserted between cartilage and bone) by expelling the anchor member substantially straight into the tissue and pulling on the suture," id., col. 7, 1. 51-55
Smith & Nephew responds that neither the specification nor the prosecution history supports Biomet's argument that for an anchor to be "insertable into and through the tissue" it must be capable of "steering" itself or "being projected." Instead, according to Smith & Nephew, the specification explains how the needle can be used to "deposit" the anchor. Ex. A, col. 8, 1. 49-54. In addition, while "tissue" was given an explicit meaning, no definition for "into and through the tissue" appears in the specification or in the prosecution history, and the phrase does not involve any terms of art. Smith & Nephew also contends that plaintiff Dr. Hayhurst wanted to avoid damaging nerves or blood vessels by controlling the position of the anchor member, and this goal would be undermined if the anchor member were to steer itself or be projected into tissue. Id., col. 8, 1. 59-63; see CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1160 (Fed. Cir. 1997) (in construing claims, the problem the inventor was attempting to solve is relevant).

Finally, at oral argument, Smith & Nephew explained that the specification citations do not indicate whether the anchor member is inserted into and through the tissue while in the needle or while outside the needle. Insertion while in the needle is still insertion. The claim is silent as to whether the needle carries the anchor or not.

According to Smith & Nephew, the phrase "anchor member insertable into and through the tissue" should be construed to mean,

An anchor member that goes both into and all the way through cartilage, tendons, ligaments and similar tissue. Further, the construction should permit the anchor members to be carried into and through the tissue by the needle-to be consistent with the disclosed embodiments -- but should not read the disclosed embodiments into the claim to require that a needle be used.

Smith & Nephew's Corrected Reply Brief at 7.

I do not find support for Biomet's claim construction in the language of the claim or in the specification, and Biomet does not point me to any relevant prosecution history. The specification supports a construction of the claim that permits the needle to carry the anchor member into and through the tissue. E.g. "The anchor member is inserted through the tissue with the suture extending therefrom to provide a mechanism for manipulating the tissue within the joint," Ex. A, col. 2, 1. 5-8; "The preferred means of inserting the anchor member includes a hollow needle having a sharp tip and an open butt," id., col. 2, 1. 11-13; "The needle tip pierces the tissue to be anchored and passes substantially through the tissue," id., col. 2, 1. 29-30.

Furthermore, the language of the claim does not contemplate two devices that must be separately insertable into and through tissue. Instead, the preamble's description of the claimed invention as an "apparatus for insertion into and through tissue" merely states the purpose or intended use of the invention. Indeed, the words "characterized by" in the preamble are intended to be "open-ended and [do] not exclude additional, unrecited elements or method steps" such as an insertion means for inserting the anchor member into and through the tissue. See Mars, Inc. v. H.J. Heinz Co., L.P., 377 F.3d 1369, 1376 (Fed. Cir. 2004), citing Manual of Patent Examining Procedure, 8th ed., rev. 1 § 2111.03 (2003).

Accordingly, I find the claim simply requires that the elongated anchor member go into and through tissue, and that the language of the claim is silent as to the means with which the anchor member does so.
Nephew asserts that when read in context with the entire patent, it unambiguously requires the claimed nail be a "multi-use" nail, such that the same nail can be used to treat various fractures of a left and right femur. (Id.)

Plaintiff points to language in the title, abstract, background, summary, and detailed description to demonstrate that the Marcus Patent "consistently and without exception" emphasizes that the invented nail is for treating fractures of both the left and right femurs, not just specific fractures of one or the other. (Id.; Pl.'s Resp. to Def.'s Opening Markman Br. 6-7; D.E. 58.) In particular, Plaintiff states that "[t]he specification...demonstrates that the ability of a single nail to repair a variety of types of fractures of a left or a right femur is not an optional feature or non-limiting embodiment, but is the essence of the claimed invention." (Pl.'s Opening Markman Br. 10; D.E. # 57.) Plaintiff contends the written description plainly demonstrates that the disclosed embodiment is the invention, not just a preferred embodiment. (Pl.'s Resp. to Def.'s Opening Markman Br. 8; D.E. 58.) Specifically, Plaintiff states that when the specification refers to examples or preferred embodiments of the invention, these items are couched in conditional language, such as "preferred," "preferably," and "as an alternative." (Id. at 8-9.) Plaintiff also asserts that in looking at the prior art, the Patent Office found Zimmer's multi-use nail distinguishable due to its capability of treating various fractures of both the left and right femurs. (Pl.'s Opening Markman Br. 11; D.E. # 57.)

On the other hand, Defendant Zimmer's proposed construction is: "The nail is insertable into the canal of the femur called the medullary canal." (Def.'s Opening Markman Br. 13; D.E. # 56.) Specifically, Zimmer asserts that these terms should be assigned their ordinary and plain language meaning, as the claim does not contain any language limiting the nail to use in both the left and right femur and reading such a requirement into this language would violate the rule that limitations found within the specification should not be read into the claims. (Id. at 13-14.) Defendant states that claim 1 merely recites a nail, with a plain and specific structure, and does not require it to be compatible with both left and right femurs. (Def.'s Resp. to Pl.'s Opening Claim Construction Br. 2; D.E. # 59.)

Although the specifications of the patent describe a nail capable of being inserted in the left and right femur, Defendant asserts that the specifications merely present the best mode by which to recreate the invention, but not every mode the invention is capable of embodying. (Id.) In so doing, the specifications of the Marcus lay out an invention (1) capable of treating multiple types of fractures located in different parts of the femur, (2) possessing an alignment mechanism so that tools can be accurately aligned with the various screw holes, and (3) capable of use in both a left and right femur. (Id.) Defendant asserts that while aspects one and two are spelled out in claim one, aspect three is not mentioned until claim 9, which depends from claim 1. (Id. at 3.) Defendant contends that the patent merely encompasses a nail that can be used to repair fractures from the femoral neck to the supracondylar region, which has a securing arrangement for driving and guiding tools, so as to easily maintain the angular position during the insertion of the nail. (Id. at 3-4) Zimmer states that the nail's capability of use in fractures of the left or right femoral neck is just one example/aspect of the invention. (Id. at 4.) According to Zimmer, claim 1 speaks for itself, as it indicates nothing requiring the nail be used in both the left and right femurs. (Id. at 5.)

b. Claim Construction Analysis

Based on the principles of claim construction and the intrinsic evidence currently before the Court, the Court finds this claim language should be construed to mean: The nail is insertable into the canal of the femur called the medullary canal. When looking to the claim in context with the written description, the Court finds that the limiting language found in the patent's written description should not be imported into the broader language found within the claim. 50 In conducting a claim construction analysis, it has been repeatedly emphasized that restrictive interpretations typically occur when there are repeated and definitive remarks throughout the specification that demonstrate a limitation on a broader claim's scope. 51 This principle remains true when a patent's specification discloses only a single embodiment, as narrow descriptions should not necessarily limit broader claim language. 52 Although there is language within the written description that discloses a nail capable of being used in both the left and right femur, the Court finds these instances do not demonstrate the patentee's intent to limit the invention to such a nail through the use of repeated and definitive remarks to that end. 53 Also noteworthy is that the majority of the patent refers to a nail capable of use in the left or right femur, which connotes choice. Instead, the use of the more inclusive conjunction and is frequently found in the arguments contained within Plaintiff's brief as opposed to the actual patent. Moreover, the patentee may choose to disclose a limited preferred embodiment although the patent's claim language reveals a broader invention. 54
50 See Phillips, 415 F.3d at 1315 (stating that although the specifications are the single best guide to the meaning of disputed terms, it remains a bedrock principle of patent law that the claims of the patent define the invention to which the patentee is entitled the right to exclude).

51 See Computer Docking Station Corp., 519 F.3d at 1374; Liebel-Flarsheim Co., 358 F.3d at 907.

52 See Saunders Group, Inc., 429 F.3d at 1331; Intamin Ltd., 483 F.3d at 1335 (citing Phillips, 415 F.3d at 1323).

53 See Computer Docking Station Corp., 519 F.3d at 1373-74; Liebel-Flarsheim Co., 358 F.3d at 909.

54 See Saunders Group, Inc., 492 F.3d at 1331; Intamin Ltd., 483 F.3d at 1335 (citing Phillips, 415 F.3d at 1323).

In looking to the patent's prosecution history, it does not appear that the patentee distinguished his invention from the prior art on the basis of its capability of use in both the left and right femur. Instead, the Court finds the patent history repeatedly emphasized that his invention was distinguishable, because it was capable of treating a variety of different fractures in a variety of different regions within a single femur. "In the past, different nails and nailing arrangements have been used to repair fractures in different portions of the femur...." (Letter/Memorandum from the United States Patent and Trademark Office on Multi-Use Femoral Intramedullary Nail, Docket No. 10-33, to Randal E. Marcus (Mar. 5, 1985) 3; D.E. # 57-9.) In fact, the patent application describes prior art that utilizes this same "left or right" capability language, only the prior art nail's sole purpose was treatment of fractures in the intertrochanteric region of the femur as opposed to multiple regions of the femur. (Id. at 4.) For example, in comparing the Marcus patent with the previous Ender patent, the patent office stated:

[The Marcus nail] can be used to repair substantially any femoral fracture of either the right or left femur with provisions for inserting transverse locking screws into the femoral neck, the introchanteric region and the distal femur region….The Ender patent discloses a femoral nail including a head, a slotted intermediate body portion and a distal end. A pair of transverse screw receiving openings 14, 15 are provided at angles such that transverse screws may be inserted in the intertrochanteric region of either the left or right femur. No suggestion is made that a transverse screw be inserted into the femoral neck.

From the portions of the prosecution history before the Court, it cannot be said that the patentee made a clear and unmistakable disavowal of the scope of the patent during prosecution. 55

55 Computer Docking Station Corp., 519 F.3d at 1371 (quoting Purdue Pharma L.P., 438 F.3d at 1136).

Furthermore, as patentees may draft different claims to cover different embodiments, a court is not required to construe a single claim to be limited to a structure that is capable of achieving all of the patent's objectives. 56 This becomes especially apparent and applicable when applying the doctrine of claim differentiation to the claim at issue. As previously stated, a patent containing both independent and dependent claims carries with it the presumption that each claim is different in scope. 57 This presumption is rebutted in circumstances where evidence favoring a different interpretation is strong. 58 Additionally, differentiation is strongest when a comparison of the independent and dependent claims reveals the limitation from the dependent claim that is sought to be read into the independent claim is the very same limitation that makes the claims different. 59 Claim 9 sets forth the physical limitations of a nail capable of insertion into both the left and right femur. "An intramedullary nail according to claim 1 wherein said nail curves anteriorly, said openings in said head have their axes in a common plane, and said openings in said head are symmetrical about a plane normal to said common plane." (U.S. Patent No. 4,622,959 (filed Nov. 18, 1986).) Nothing in claim 1 requires the nail to (1) curve anteriorly, (2) have the axes of the openings in the head in a common plane, or (3) have the openings placed symmetrically about a plane normal to said common plane. Differentiation in this instance is at its strongest, since the elements set out in claim 9 are the very same elements that make it different from claim 1, and any other reading of claims 1 and 9 would make claim 9 redundant and...
b. "insertable storage medium having information stored therein"

"Insertable storage medium" is not a means-plus-function element. It would therefore be improper to define this term solely with reference to "corresponding structures" found in the specification.

Plaintiff believes that the correct interpretation of this phrase is simply "any insertable storage medium." Pl.'s Opp. Memo. on Claim Construction, at 6. The Court rejects plaintiff's interpretation because it does not contribute to the task of claim construction. The parties have filed numerous briefs arguing about the definition of "insertable storage medium." Its meaning is not self-evident. Plaintiff's tautological suggestion is not helpful in resolving the difficult issues presented in this case.

Plaintiff also suggests in his motion papers that the medium in which the information is stored is irrelevant to the patent: that the "software" "can come from any type of medium." Id. at 16 (emphasis in original). Similar statements were made elsewhere, for instance that "it makes absolutely no difference to the result which medium is used. The medium is as insignificant to the invention as the choice between UPS and the Postal Service is to the delivery of a package." Plaintiff's Memo. in Opposition to Defendants Motion of Non-Infringement ("Pl.'s Opp. Memo. on Infringement") at 5; see also id. at 10 ("The medium could be anything"); id. at 5 ("The medium can be a floppy disk, a hard disk, a tape, a broadcast from a cable company, or next year's favorite medium"). Plaintiff appears to be suggesting that the term "insertable storage medium" should actually be defined as "any storage medium" (or perhaps "any medium"). This is confirmed by a brief submitted by plaintiff during the prosecution of his patent, see Pl.'s Opp. Memo. on Claim Construction, Ex. 1, at 3. (arguing that some of the claims, including the one in issue here, "are broad enough to cover any storage medium"). To the extent plaintiff believes that "insertable storage medium" should be construed to mean "any storage medium," the Court rejects that view because it seeks to read the term "insertable" out of the claim. See Becton Dickinson & Co. v. C.R. Bard, Inc., 922 F.2d 792, 798 (Fed. Cir. 1990) (all limitations in a claim are material). Defining "insertable storage medium" as "any storage medium" would erase the distinction drawn in the claim between internal and insertable storage media. See, e.g., Patent '857, Figures 1 and 2 (showing insertable ROM cartridge 12 and internal RAM 24, auxiliary RAM 24a and ROM 24b). Words in a patent are to be given their ordinary meaning, unless it is clear that the patentee intended a special definition. See Vitronics Corp. v. Conceptoric Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1997). There is no indication in the patent that plaintiff used "insertable" in a special or unusual manner. To the contrary, the term is used in an ordinary manner elsewhere in the patent. For instance, the patent uses the following terminology to mean the same thing: compare "when a cartridge is first placed in the machine . . . .), Patent '857, col. 2, line 10-11; with "when a new cartridge is inserted into the machine . . . ." col. 4, line 9; and "the cartridge is insertable into an appropriate slot in the machine . . . .", col. 3, lines 38-39. Because "insertable" is used in the ordinary sense of the word, the Court will not construe the claim language to entirely disregard a meaningful term. In addition, construing the phrase to mean "any storage medium" does not advance the cause of claim construction, because that phrase is broad to the point of ambiguity. To the extent that a broad reading of a claim renders it ambiguous, the claim should be construed against the patentee and given a
narrower construction. See Chisum on Patents § 18.03[2][f][iii], at 18-149 (citing cases).

As discussed above, defendant asks to the Court to construe this claim limitation to mean "a physical device which stores information and is inserted into a machine by the user." Def.'s Reply Memo. on Claim Construction, at 1. The first place the Court will look to understand the meaning of the claim phrase is the words of the claim itself. It is clear that the phrase "insertable storage medium having information stored therein" envisions that the storage medium or storage device itself must store information. This seems indisputable -- after all, the medium is a "storage" medium, and it has "information stored therein."

It is also evident from the plain language of the claim that this information-storing medium or device is itself insertable into the machine. 3 It is not an external cable or connector that is "insertable," but rather the storage medium itself is "insertable." In the Court's view, the ordinary meaning of the words "insertable storage medium having information stored therein" dictates this construction: the device having the information stored on it is itself insertable. This conclusion is bolstered by the examples of insertable storage media that the specification and claims disclose: a video game cartridge and a disc. 4 See Patent '857, col. 1., lines 52-58. The way that the patent uses the term "inserted" and "insertable" also supports this reading of the claim language. Both parties agree that a video game cartridge is an example of an insertable storage medium. Such a cartridge is clearly conceived of as a physical, memory-storing device that is itself placed into the machine by the user. See id., col. 1, lines 13-15 ("a cartridge, containing a ROM, is inserted in a slot provided for this purpose"); col. 2, line 10-11 ("When a cartridge is first placed in the machine . . ."); col. 4, line 9 ("When a new cartridge is inserted into the machine . . ."). The specification then states that not only cartridges, but "other types of insertable storage media" may be used to implement the invention. Col. 1, line 55. The other type of "insertable storage medium" disclosed is a "program[] furnished on discs designed for use with a microcomputer." Col. 1, lines 57-58. The clear implication of this is that insertable storage media are information-holding physical devices that are themselves "inserted into" or "placed in" the machine. Defendant's expert, Dr. Thomas A. Berson, also agrees with this interpretation. See Berson Declaration P 9.

3 The word "machine" is used extensively throughout the patent. The patent uses "machine" to mean the entire system shown by Figures 1 and 2, excluding the cartridge (12) and its contacts (15).

4 For reasons discussed below, the Court believes that the patent's reference to a "disc[]" can only be construed to mean a floppy diskette.

The conclusion that the storage medium itself is insertable, rather than merely connected to the machine by means of a cable, is further supported by the language of the specification the specification draws a distinction between a television display monitor which is "connectable" to the machine, and a memory-containing cartridge that is "insertable" into the machine. Compare Patent '857, col. 3, line 26 with col. 3, line 38; see also col. 1, lines 13-14 (a video game unit is "connected to a television receiver, and a cartridge, containing a ROM, is inserted in a slot"). Plaintiff has not pointed to any aspect of the claim, specification or prosecution history which contradicts this common-sense reading of the claim language.

The Court also finds that the claim envisions that the storage medium is a physical device that is inserted into the machine in order to operate the machine. See col. 8, lines 35-36 (machines operate "responsive to insertion of the same storage medium"); col. 8, lines 19-21 (data processing means accesses information from "inserted storage medium"). This construction of the plain language of Claim 5 is confirmed by the examples of insertable storage media given by the patentee: a video game cartridge and a "disc[]," a term which, as indicated earlier, can only be interpreted to mean floppy diskette.

Plaintiff has argued that the reference in the specification to an alternate embodiment employing a different storage medium, see col. 1., lines 56-58 ("the principles of the invention may be applied to programs furnished on discs designed for use with a microcomputer"), would call to mind, to one skilled in the art at the time of the patent application, disk drives.

The Court finds that the reference in the patent to "programs furnished on discs" must be construed to mean floppy diskettes, not disk drives. The claim language requires that the "insertable storage medium" have "information stored therein."

\[endfootnotes\]
therein" and that the system operated "responsive to insertion" of the storage medium. However, a disk drive does not have information stored on it (only the disk itself does), see Declaration of Berson P 19, and computers do not operate in response to disk drives, but rather in response to information on disks. See id.; see also id. P 21. In construing the language of the patent claims, the court "interprets words in a claim as one of skill in the art at the time of the invention would understand them." Eastman Kodak, 114 F.3d at 1555 (citing Intellicall, 952 F.2d at 1387); accord Markman, 52 F.3d at 986. Defendant's expert argues persuasively that in the context of a claim referring to "a plurality of mass-produced identical systems" each working "responsive to insertion of the same storage medium," the phrase "insertable storage medium" would call to mind, to one skilled in the art in 1981, a storage device such as a floppy diskette, a cartridge or a cassette, not a disk drive. See Declaration of Berson PP 10-11, 19, 22-23. Based on the foregoing and his understanding of the usage of computer terminology in the early 1980's, defendant's expert testified that one skilled in the art would not believe that the term "discs" referred to a disk drive. See id. PP 19, 24, 25.

The testimony of plaintiff's expert does not undermine this conclusion. Mr. Dubner admits in his declaration that the word disk only refers to a hard disk drive if the word is used "loosely." Dubner Declaration P 8. In the Court's view, this admission and Mr. Dubner's deposition testimony reveal that even he believes it is a bit of a stretch to contend, as plaintiff does, that "disk" equals hard disk drive. See Def.'s Reply Memo. on Infringement, Ex. S at 49-50, 52-53, 58-59. Faced with a choice between an ordinary definition of a word and a strained or "loose" definition offered only during litigation (rather than in the patent itself), the Court must -- according to well-established principles of claim construction -- adopt the ordinary definition of the word. See Digital Biometrics, 149 F.3d at 1344 ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning."); see also Quantum Corp. v. Rodime PLC, 851 F. Supp. 1382, 1385 (D. Minn. 1994) ("the meaning which the investor gives to his words can not be made to depend upon subsequent events, but should appear when the application is filed") (citations omitted), aff'd, 65 F.3d 1577 (Fed. Cir. 1995) 5

5 Although plaintiff has provided the Court with computer product catalogue and articles that use the word "disk" to refer (apparently) to a disk drive, these do not alter the proper construction of the term. The occasional use of synecdoche in popular speech does not transform the fundamental meaning of a word, especially a technical term. In addition, as defendant points out, several of the publications that plaintiff has provided the Court actually draw a distinction between a disk and a disk drive. See Def.'s Memo. in Support of Non-Infringement at 10.

Although not relying upon these decisions in its claim construction, the Court notes that its interpretation of these terms comports with the terminology employed by other courts. See Rodime, 174 F.3d at 1297 (drawing a distinction between a hard disk and a hard disk drive); Conner Peripherals, Inc. v. Western Digital Corp., 1993 U.S. Dist. LEXIS 20418, No. 93 Civ. 20117, 1993 WL 645932, at *2 (N.D. Cal. Aug. 16, 1993) (drawing a distinction between a hard disk and a hard disk drive); cf. Tandon Corp. v. U.S. Intern. Trade Com'n, 831 F.2d 1017, 1019 (Fed. Cir. 1987) (drawing a distinction between a floppy diskette and a hard disk drive); Conner Peripherals, Inc. v. Western Digital Corp., 1993 U.S. Dist. LEXIS 20148, No. 93

Therefore, the Court finds that the phrase "insertable storage medium having information stored therein" must be construed to require that the storage medium is a physical device which itself stores information; and that the storage medium is itself inserted into the machine (rather than being connected in some other manner) in order to operate it.

The Court recognizes that during the forthcoming infringement analysis under the doctrine of equivalents, distinctions that may be found or implied in this claim construction may not be dispositive in conducting that analysis.

2. "Inserting the preassembly into a tubular body of metal so as to be in centered, spaced, relation to the interior wall of said body." Consistent with the claim language and its ordinary meaning, 3 the specification, 4 and the prosecution history, 5 the court construes "inserting the preassembly into a tubular body of metal so as to be in centered, spaced, relation to the interior wall of said body" to mean "introducing or placing the preassembly into the tubular body so that the preassembly is
not in contact with the interior wall of the body."

3 D.I. 148, ex. 6 at 592 (defining "insert" as "to put or thrust in" and "to put or introduce into the body of something"); D.I. 151, ex. E at 625 (same), 1129 (defining "spaced" as "to place at intervals or arrange with space between").

4 The specification presents differing descriptions of preassembly compression, or the lack thereof, during insertion. Compare '264 patent, col. 1, ll. 52-54; col. 2, l. 67 - col. 3, l. 1; col. 4, ll. 66-68; col. 5, ll. 24-27; fig. 5 with '264 patent, col. 2, ll. 31-34; col. 3, ll. 25-27; col. 4, ll. 63-66. The specification describes "spaced" components as separated and not in contact. '264 patent, col. 2, ll. 52-55; col. 4, ll. 14-18. The specification describes the preassembly as being longitudinally and radially "centered". '264 patent, col. 2, l. 67 - col. 3, l. 1; col. 3, ll. 27-29.


8. "insulated lead wire having first and second ends"

Claims 1, 12, and 17 of the '919 Patent disclose an "insulated lead wire having first and second ends." Philips asserts that this term should be defined as "a round wire covered by an electrically insulating material, such as polyvinyl chloride, and having two ends used to connect two points in a circuit." Cardiac Science maintains that a "lead wire" is a "conductive wire, trace, or strip."

The Court finds no support for Philips' assertions that the term should be construed to include a "round" wire covered by a specific insulating material. These descriptors merely impart limitations from the preferred embodiment into the claim construction. In the specification, the "wire lead" deals with the electrical contact that is made between the gel layer and the AED. However, this need not be a lead wire with "two ends used to connect two points in a circuit." The Court finds that the term is properly described as an "insulated conductive wire."

2. "insulated lid"

a. The Parties' Proposed Construction

The dispute over the proper construction of the term "insulated lid" concerns how to read the specification. Capresso asks the Court to construe the term as "lid with an external cavity that may be filled with foam or other insulative material to further enhance the thermal properties of the lid." DeLonghi interprets the term as an insulated lid that has "either an airtight seal or has its internal cavity filled with foam." In contrast, Sunbeam proposes that the term be construed as "heat retaining top."

The specification states: "the internal cavity of the lid may be filled with foam or other insulative material to further enhance the insulative properties of the lid." FIG 5 & col. 3, lines 50-52. According to Defendants, Sunbeam's construction (heat retaining top) is incomplete because it ignores the part of the patent that specifically discusses what provides the required insulation. Capresso maintains that one skilled in the art reading the claim and patent specification together would understand claim 1 to require the lid to include some additional material to enhance its thermal properties.

In contrast, Sunbeam maintains that while an insulative material such as foam is the preferred embodiment of the invention,
it is impermissible to read this limitation into the patent. Sunbeams notes that the language of the specification -- "may" and "further" -- is permissive, not mandatory. According to Sunbeam, the insulative properties are already present before the addition of any material such as foam. Furthermore, Sunbeam maintains that the insulated lid does not require an air-tight seal. Although the preferred embodiment would prevent air transfer to the greatest extent possible, it is not a requirement of the claim that an absolutely air tight seal satisfies the invention. Instead, Sunbeam claims, it is sufficient that the top helps retain heat inside the carafe when it is properly sealed.

b. The Court's Construction

The Court is mindful that the specification is highly relevant to claim construction and can be the best guide to the meaning of a disputed term. Vitronics, 90 F.3d at 1582. At the same time, the Federal Circuit has cautioned about the danger of importing limitations from the specification into the claim. The emphasis in term interpretation is on how a person of ordinary skill in the art would understand the claim terms. Phillips, 415 F.3d at 1323. That a specification describes a specific embodiment does not confine the claim to that embodiment. Id. Frequently, the purpose of an embodiment is to provide an example of how to practice the invention in a particular case. Id. Courts read the specification to determine whether the embodiment described is meant to be an illustrative example or whether the specification is to be strictly co-extensive.

In the present case, the term "insulated lid" is not specifically defined in the patent but the specification suggests that the lid may be filled with foam or other insulative material. However, the use of the permissive "may" and "further" indicates that the specification is illustrative of a possible specific, enhancing or augmenting embodiment, not limiting. The specification indicates that the lid itself already has insulating properties, with or without the additional insulative material. To read the specification to require the lid to have foam would import a limitation into the claim. The Court construes the term "insulated lid" to mean a heat retaining top.

3. "Insulating housing"

The term "insulating housing appears in claim 1 of the '641 patent as follows:

1. A modular jack to be mounted on a circuit board, said modular jack comprising:

   a printed board containing an electronic element for suppressing noise;

   a contactor for contacting with a plug, said contactor being electrically connected with the electronic element by a wire on the printed board;

   a terminal for contacting with the circuit board, said terminal being electrically connected with the electronic element by a wire on the printed board; and

   an insulating housing for encasing the printed board.

Murata argues that "insulating housing" means "a covering which has a high electrical resistance and which can serve to prevent a short circuit between components." Murata's Opening Brief, at 22. Bel Fuse argues that "insulating housing" means "an enclosure for separating a part or mechanism from an electrical conductor by means of an electrical non-conductor to prevent transfer of electricity between the part or mechanism and the conductor." Bel Fuse's Responsive Brief, at 29. The primary difference between the proposed constructions is that Murata's would require the housing to be made of non-conductive material while Bel Fuse's would not require non-conductive material as long as the housing still performed the function of insulating.

Again, the court begins with a review of the specification of the '641 Patent. When describing the first preferred embodiment, the specification states: "[A] modular jack has an insulating housing 12 which comprises a base 14 and a lid 16 which are engaged by interlocked coupling. Both the base 14 and the lid 16 are made of an insulating material such as plastic." '641 Patent, col. 3, 11 3-7. The specification is otherwise silent on the insulating properties of the housing.
Murata argues that the housing must be made of insulating material because if it were made of conductive material, the preferred embodiment would be inoperable. See, e.g., Pfizer, Inc. v. Teva Pharmaceuticals, USA, Inc., 429 F.3d 1364, 1374 (Fed. Cir. 2005) ("A claim construction that excludes a preferred embodiment is rarely, if ever, correct.") (internal quotations and punctuation omitted). As shown in Figure 1 of the '641 patent, the contactor 35 and terminals 36 are both in direct contact with the housing. Thus, if the housing were made of conductive material, the contactor and terminals would short circuit with the housing, rendering this embodiment inoperable. However, the court disagrees that Bel Fuse's proposed construction would exclude the preferred embodiment because Bel Fuse's construction permits, but does not require, the housing to be made of conductive material. Because under Bel Fuse's proposed construction the housing could be made of non-conductive material, the preferred embodiment would still fall within the scope of the claim 1.

That being said, the court nevertheless finds that a person of ordinary skill in the art would find that an "insulating housing" as that term is used in claim 1 of the '641 Patent must be made of insulating material. Bel Fuse spends much of its brief on this term arguing the merits of its inequitable conduct defense n7 and gives short shrift to explaining how a person of ordinary skill in the art would have interpreted this term.

n7 In briefing the construction of several of the disputed terms, Murata has suggested what it believes are Bel Fuse's motives for offering its proposed constructions, and Bel Fuse has argued (at least in part) the merits of some of its defenses. The court notes that it has not considered the merits of those defenses or the impact of the court's claim construction on those defenses in reaching its decision.

Bel Fuse's only argument of substance is a grammatical one. Citing The English Language Center of the University of Victoria's ("the Center's") website, Bel Fuse argues that "insulating" is a so-called "purpose adjective." The Center's website states that "a purpose adjective describes what something is used for" and that such adjectives end in "-ing," such as "sleeping" in sleeping bag or "roasting" in roasting tin. Ex. 32 to Bel Fuse's Responsive Brief. The Center states that a "material adjective describes what something is made from," such as wooden, metal, cotton, or paper. Id. According to Bel Fuse, "insulating" as used in the claim term "insulating housing" is a purpose adjective and not a material adjective because it is a modified form of the verb "to insulate" with an "-ing" ending. Thus, Bel Fuse argues that as a purpose adjective, an "insulating housing" refers to "a housing for the purpose of insulating." Bel Fuse's Responsive Brief, at 29.

Even if the court accepts Bel Fuse's grammatical argument, however, the court must still reject Bel Fuse's proposed construction. The court fails to see how a housing made of conductive material could be used for the purpose of insulating. Bel Fuse posits that the housing can still be insulating if separated from the components by a non-conductive insert or by air. However, in those cases, it seems that the insert or the air has the purpose of insulating, not the housing. For the housing to have the purpose of insulating, it must perform that function itself, and the only way it can do so is to be made from insulating material. n8 Thus, the court finds that the "insulating housing" as used in claim 1 of the '641 Patent must be made of insulating material. This limitation is supported both by the language of the claim which requires an insulating housing and by the specification, which states that the housing of the preferred embodiment is made of an insulating material such as plastic. Accordingly, "insulating housing" means "a covering which has a high electrical resistance and which can serve to prevent a short circuit between components."

n8 The court recognizes that a housing could serve the purpose of insulating by physically separating the conductive components, such that the space between them (i.e., air) insulates them. However, it is difficult to see how such a configuration would be operable in a modular jack. Bel Fuse has not provided the court with any examples of modular jacks which show a housing made from conductive material. Instead, as relevant to its inequitable conduct defense, it cites U.S. Patent No. 4,789,847 which discloses a filter connector. Claim 1 of that patent includes the elements of a "conductive shell" and an "insulating insert."

Bel Fuse has not provided any suggestion that a person of ordinary skill in the art would interpret "insulating housing" in the modular jack of the '641 Patent as being made of conductive material, and has not shown that a modular jack with a
conductive housing would even be operable. Under claim 1 of the '641 Patent, the modular jack includes a contactor for contacting with a plug, and the contactor is electrically connected with electronic element for suppressing noise by a wire on the printed board. The printed board is encased in the insulated housing. It is difficult to imagine how the housing for the jack could be made of conductive material and still be insulated from the contactor; the same holds true for the terminals. Thus, the court finds that a person of ordinary skill in the art would find that "insulating housing" refers to a housing made of non-conductive material.

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Integral

Claim 24 of the 851 patent and claim 12 of the 537 patent reads:

"said central opening of said first end cap bounded by an annular flange integral with said first end cap."

"Said central opening of said end cap assembly having a smaller diameter than said central opening of said second end cap, and being defined by an annular flange integral with an inner surface of said end cap assembly…"

Parker construes "integral" as "composed of integrated parts." Baldwin construes "integral" as "formed in a single piece."

Parker argues "integral" is not the same as unitary which is what Baldwin contends. Parker argues the patent language differentiates between integral and unitary, citing '851 claim 19 which states, "… an annular flange integral with said first end cap…wherein said at least one protrusion is unitary with the first end cap." This demonstrates, according to Plaintiff, that the terms express different meanings in the patent claims. In Applied Med. Res. Corp. v. U.S. Surgical Corp. 448 F.3d 1324, 1333 n. 3 (Fed. Cir. 2006) the Federal Circuit stated, "the use of two terms in a claims requires that they connote different meanings." However, the Court stated that such connotation applies when there is no evidence to the contrary.

In Wix, the Court construed the term "integral" as "formed in a single piece." The Wix Court acknowledged that the prosecution history shows Parker challenged the idea that "integral" and "unitary" are synonymous during the patent process. The Wix Court determined that the prosecution history was not helpful because it was ambiguous, in that the PTO originally disallowed the claim terms "unitary" and "integral" as they were synonymous. According to the Wix Court, the prosecution history shows Parker withdrew the term "integral" yet the patent issued with the term "integral" in the claim. Furthermore, the embodiments all show the flange as formed as a single piece with the top end cap.

The Court departs from the holding of the Wix Court here. First, the patent claims use separate terms and the prosecution history demonstrates that Parker consistently argued for their separate meanings. In patent cases, patent writers are permitted to act as their own lexicographers (giving a claim term the writer's own definition), and the prosecution history demonstrates Parker intended "integral" to mean something different than "unitary." Furthermore, an example by Baldwin gives support to Parker. Citing the '851 specification at Col 4, lines 12-14, it states, "the flange and protrusions can be easily formed with the end cap such as by molding the end cap as a unitary component." This specification's use of the term "such as by molding the end cap as a unitary component" clearly contemplates some form that is not formed as a unitary component. Finally, Merriam Webster's defines integral as "formed as a unit with another part." Merriam-Webster Online Dictionary, 2010. http://www.merriam-webster.com/dictionary/integral. Therefore, the Court adopts Parker's definition that "integral" means "composed of integrated parts."

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b. Integral

Claim 1 states "said counterweight having a cylindrical gear portion and an eccentric weight portion integral with said
APE contends that "integral" means "composed of portions, parts, or pieces that together constitute the whole." J&G contends that the term "integral" should be understood as meaning "cast of one-piece." J&G's construction is based less upon the ordinary and customary meaning of the word, whose dictionary definition lists a number of alternatives, than upon its arguments 1) that claim differentiation illustrates its construction of the disputed term is the correct one (Doc. 27, at 21); 2) "integral" and "connected to" are used in the same independent claims to indicate different relationships between the cylindrical gear portion and the eccentric weight portion (Doc 27, at 21-22); 3) APE disavows a multi-part counterweight in the specification (Doc 27, at 22-23); and 4) the file history, previously discussed with reference to "eccentric weight portion," defines a one-piece counterweight (Doc 27, at 23-24).

In examining the claim language, APE also invokes "claim differentiation," which holds that "each claim of a patent constitutes a separate invention and gives rise to separate rights." Kustom Signals, Inc. v. Applied Concepts, Inc., 995 F. Supp. 1229, 1234 (D. Kan 1998), aff'd, 264 F.3d 1326 (Fed. Cir. 2001). Thus, although reference may be made to other claims in the same patent to determine the intended meaning of a disputed term in a claim, limitations from other claims may not be read into an independent claim. Id. APE points out that independent claim 16 recites "an eccentric weight portion connected to said cylindrical gear portion," and argues that this phrase "may suggest a two-piece counterweight where two pieces are 'connected to' each other. Doc 26, at 12. On the other hand, claim 19, which depends from claim 16, recites the "eccentric weight portion is integral with said cylindrical gear portion." Id. APE's point is that under the differentiation of claim concept claims 16 and 19 differ in "scope and are directed to a two-piece counterweight that can also be integral," thus negating "the notion that 'integral' necessarily connotes a 'one-piece' counterweight." Id.

J&G counters APE's claim differentiation arguments with its own. It argues that APE, although correctly stating the rule of claim differentiation, does not follow it because, pursuant to 35 U.S.C. 112(4), the dependent claim, 19, must narrow the scope of the independent claim 16.

Therefore, by statute, "integral" must further narrow or limit the "connected to" language for claim differentiation to properly apply. Thus it naturally follows that "connected to" means a "two-piece" counterweight. Thus, despite Plaintiff's contention, claim differentiation actually illustrates that 'integral' means formed or cast of one piece.

Doc 27, at 21

APE refutes J&G's argument of claim differentiation in footnote 10 of its claim construction reply brief in which APE points out that claim 19 is narrower than claim 16, not because "integral" must further narrow or limit the 'connected to' language," but "because the claim recites the first metal as cast steel and the second metal as tungsten." Doc 31, at 16, footnote 10.

APE begins its argument for its construction of the term "integral" by pointing out that "if the cylindrical gear portion and the eccentric weight portion share common structure," as APE described in its construction of "eccentric weight portion," then it goes without saying that "the eccentric weight portion is integral with the cylindrical gear portion. That is true whether the counterweight is a one-piece unit or comprised of several parts secured together." Doc 27, at 11.

J&G argues, however, that "[i]ndependent claims 1, 6, and 11 recite both the terms "integral" and "connected to" in the claim language. As an example 9, J&G references claim 1's use of "integral" in the description of "the relationship between
the eccentric weight portion and the cylindrical gear portion." Doc 27, at 21. Claim 1 uses "connected to" in the description of "the relationship of the driving means to the counterweight." Doc 27, at 21-22. APE maintains that the term "connected to" in claim 1 "refers specifically to separate items . . . that are joined together," (Doc 26 at 16), but J&G argues, never addresses why, if it intended to cover a two-piece counterweight, it used "integral" and not "connected to" in claims 1, 6, 11 when describing the relationship between the cylindrical gear portion and eccentric weight portion. J&G maintains, the claim language itself indicates "that the term 'connected to' in claims 1, 6, and 11, was selected to refer to two distinct components, and the term 'integral' was selected to refer to a one-piece counterweight." Doc. 27 at 22. Essentially, J&G's position is that if the cylindrical gear portion and the eccentric weight portion are formed or cast of one piece into a counterweight, the patentee used the term "integral" to describe their working relationship, but if the cylindrical gear portion and the eccentric weight portion are two or more pieces put together into a counterweight, then, the term "connected to" is used to describe their working relationship. This construction does not, however, follow from the language of the claims themselves, and this court finds that J&G's construction of the disputed claim term "integral" is an effort to convince the Court to redraft the claims to include unjustified limitations. Cf. Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1357 (Fed. Cir. 1999).

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

9 Claims 6 and 11 also use "connected to" to describe the relationship between the driving means and the counterweight.

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - -

J&G does not dispute that APE's statement in its opening claim construction brief (Doc. 26, at 12) that "In the industry and as described in the specification, counterweights were/are known where the gear portion and the eccentric portion are either two-piece or unitarily formed," citing '964 patent, col. 1, line 39 to col. 2, line 9. Cf. Doc. 27, at 22. APE states, without apparent contradiction by J&E, that the language of the claims does not require that the counterweight be cast integral or as a single unit, but J&G argues, that because APE is critical of two-piece assemblies in the specification, it has disavowed a multi-part counterweight. Cf. Astrazeneca v. Mut. Pharm. Co., 384 F.3d 1333, 1340 (Fed. Cir. 2004).

APE counters with its argument that J&G is relying upon a statement made in the Background of the Invention part of the '964 Patent, but has taken the statement out of context. Column 1, lines 39-51 of the '964 Patent discusses the disadvantages of both two-piece and one-piece vibratory devices. In order "to establish a specification disclaimer that surrenders subject matter from the scope of the claims" (Doc 31 at 10) it must be shown that the patentee intended "to deviate from the ordinary and accustomed meaning of a claim by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Teleflex, Inc. v. Ficosa North America Corp, 299 F.3d 1313,1325 (Fed Cir. 2002). Discussion in the background section of the patent of the disadvantages of a two piece device does not disavow the coverage by the patent claims of a two-piece device certainly when the background section also discusses the disadvantages of a one piece device.

Finally we return to the prosecution history of the patent, specifically to Reexamination Control No. 90/007,337, for U.S. Patent No. 5,355,964 File History, Reply to Office Action, June 6, 2006. Doc. 27, Exhibit A. F&G argues that the file history demonstrates that "integral" should be construed to mean "formed or cast of one-piece. Doc. 27, at 23. In the reexamination APE argued that the '964 patent was distinguishable from the prior art Hornstein patent "because the independent claims recited a further limitation of an eccentric weight portion that is integral with said cylindrical gear portion." APE argued:

In other words, the claims recite that the counterweight has "a cylindrical gear portion and an eccentric weight portion" and that these two components are "integral"--i.e., they are simply components of a 'one-piece' counterweight. . . . This requirement of the integral--i.e., one-piece--nature of the eccentric weight portion is not disclosed by Hornstein.

[Doc 27] Exhibit A at 6 (emphasis added)

Doc 27 at 23

J&G argues further that APE's position in the reexamination was "that this 'integral' limitation was distinguishable to the eccentric weights taught by the prior art because in the prior art reference those weights were added (or removed) to create
an eccentric moment." Id. J&G interprets this to mean that "the eccentric weight portion of the '964 patent was not added or removed from the counterweight because it was 'integrially formed' with the cylindrical gear portion." Id. J&E posits that "if the eccentric weight portion could be added to the gear portion (i.e., a separate piece) then it would not be the 'one-piece' counterweight that the patentee argued for in the file history." Id. J&E concludes that this language found in the prosecution history binds APE to the construction that "integral" means formed or cast of one-piece. Hockerson-Halberstadt, 222 F3d at 956.

APE responds with the argument that J&G has once again pulled an isolated statement in the prosecution history out of context, and that "an examination of the prosecution history as a whole will demonstrate that this argument is misplaced." Doc 31, at 13. The reader is now referred to pages 15-17 of this opinion that discuss the second and third arguments made by APE to the Patent Office, distinguishing the '964 patent from Hornstein.

In the Office Action mailed August 18, 2006 (Doc. 26, Exhibit C. [Reexamination Control No. 90/007,337 For U.S. Patent No. 5,355,964 File History Office Action Dated August 18, 2006]) the examiner responded to the Reply to Office Action in Reexamination submitted by APE June 6, 2006. In that Office Action the examiner rejected APE's characterization in the June Reply to Office Action of the term "integral":

Nothing in the specification of the subject patent states that "integral" means "one-piece." Thus, this term must be given its broadest reasonable interpretation.

In In re Larson, 340 F.2d 965, 52 C.C.P.A. 930, 1965 Dec. Comm'r Pat. 177, 144 U.S.P.Q. 347 (CCPA 1965), the court agreed with the construction of the term "integral" such that it read on several parts rigidly secured together as a single unit. Id. At 349.

...Thus, whether "integral" is defined as "one-piece" or several parts rigidly secured together as a single unit, it does not read on the structure of Hornstein... .

Exhibit C to Plaintiff's Opening Claim Construction Brief, Doc. 26-4 at p. 11.

APE maintains that "[a]lthough the examiner agreed that Hornstein '514 '[did] not teach an eccentric weight portion integral with a cylindrical gear portion,' the examiner disagreed with the 'one-piece' characterization of the term 'integral' and applied a definition for integral as one-piece or several parts rigidly secured together as a single unit." Doc.31, at 16, citing Doc. 26, Exhibit C at 9-11. Because APE acquiesced in the definition set out by the examiner for the remainder of the prosecution, that is the definition that should prevail for the disputed claim term "integral." APE asks the Court to view the prosecution as a whole and agree that "one skilled in the art or a competitor could not reasonably believe that the patentee had surrendered the relevant subject matter. Pharmacia, 170 F.3d at 1377. The claims were not amended; the examiner rejected a definition set forth in an argument, and the patentee acquiesced in the rejection and embraced the definition. The Court does not find J&G's counter arguments found on pages 23 and 24 of its Reply Brief (Doc. 27) persuasive and agrees with APE that there was no clear and unmistakable surrender of the subject matter; the patentee has not limited the term "integral" to mean "formed or cast of one-piece." The Court adopts the plaintiff's construction of the term "integral."

"Integral" is construed to mean "composed of portions, parts, or pieces that together constitute the whole. The portions act together to function as the counterweight."

**2149**

1. "An integral assembly of a multiplicity of spaced reagent tubes arranged in an elongated ... series ... and a corresponding multiplicity of correspondingly spaced independent seal caps" (Claims 1, 15, and 17)

SSI's Proposed Construction
a contiguous component comprising a
d series of reagent tubes spaced
apart ... a series of [aligned] 1
components where the length of the 
series is greater than the

TFS's Proposed Construction
a one-piece article of manufacture of a
number of spaced reagent tubes arranged
in an elongated series and a
corresponding number of spaced
independent seal caps and excludes an
dimensions of the individual article of manufacture where the reagent components . . . individually manipulable seal caps that correspond in number to the reagent tubes, the spacing of the seal caps corresponding to a spacing of the reagent tubes, the number of seal caps and reagent tubes each being more than one

1 SSI omits the word "aligned" in its proposed construction for this language as it appears in claim 15.

The '553 patent repeatedly refers to the claimed invention as an "integral assembly," and the terms "integral" and "integraally" appear frequently in the specification and claims. At the core of many of the disputed terms is a disagreement between the parties about the meaning of the word "integral." SSI contends that "integral" means (circularly) "forming a unit such as to be complete and composed of integral parts" and that "integral assembly" refers to a series of individual elements coming together (i.e. assembled) to function as a contiguous component (i.e. operating in an integral manner). TFS contends that "integral assembly" refers to a one-piece article of manufacture.

2 Indeed, the words appear so frequently in some places that it is difficult to see how they are not redundant or circular. See, e.g., '553 Patent at 1:67 to 2:4 ("an integral 'live' hinge integrally interposed in the tether . . . enabling flexible manipulation of each . . . cap . . . from an angularly related integral extended condition to an integral superimposed tube-sealing condition"); id. at 4:56-57 ("the thin hinge portion is integral with the remainder of the strap with which it is integrally formed").

Despite the terms' frequent usage, neither "integral" nor "integraally" is defined in the patent. In discussing the background of the invention, the inventor states:

"It is particularly advantageous in the handling of reagent-containing vials or tubes, such as microcentrifuge tubes, that the tubes and the independently tethered caps for sealing the tubes constitute a unitary assembly. Accordingly, it is one of the objects of the present invention to provide a unitary assembly of multiple hollow tubes integrally connected to one another and to a corresponding number of seal caps independently tethered to an associated tube so that the integral assembly of tubes and caps may be handled as a unit while enabling each of the seal caps to be independently sealed or unsealed from the tube to which it is independently integrally tethered."

'553 Patent at 1:36-47 (emphasis added). Thus, it appears that the goal of providing for an "integral assembly" is to allow the apparatus to be handled as a unit. This is similar to SSI's definition of "integral," but the proposed construction "contiguous component" is seemingly too broad. The terms "integral" and "integraally" frequently modify words that already imply that two pieces are contiguous, such as in the phrases "integrally connected," "integrally tethered," "integral connection," and "merges integrally." E.g., id. at 1:41-42, 2:27, 2:55-56, 3:60, 3:65, 4:26. Thus, "integral" and "integraally" must mean something more than "contiguous."

Depending on the context, courts have construed the term "integral" to broadly mean forming a unit or to narrowly refer to being formed in one piece. See, e.g., Vanguard Prods. Corp. v. Parker Hannifin Corp., 234 F.3d 1370, 1371, 1373 (Fed. Cir. 2000) ("formed as a unit with another part"); In re Hotte, 475 F.2d 644, 647 (C.C.P.A. 1973) ("sufficiently broad to embrace constructions united by such means as fastening and welding"); Am. Piledriving Equip., Inc. v. Bay Mach. Corp., 632 F. Supp. 2d 956, 965 (N.D. Cal. 2009) ("formed or cast of one piece"); Parker-Hannifin Corp. v. Wix Filtration Corp., 2008
U.S. Dist. LEXIS 24540 at *27 (E.D. Cal. Mar. 14, 2008) ("formed in a single piece"). TFS urges the court to follow Parker-Hannifin, which construed "integral" to mean "formed in a single piece." The patent at issue in Parker-Hannifin used language such as "integral end cap assembly" and "an annular flange integral with said first end cap," 2008 U.S. Dist. LEXIS 24540 at *19-20. The specification stated that the flange should be molded as a single unit with the top end cap. Id. at *22. The court held that such single-unit construction was consistent with the term "integral," and "[t]here is nothing in the claims or specifications that indicate that 'integral' requires more than one part." Id. at *22-23. Thus, like other cases that limit "integral" to a one-piece article, Parker-Hannifin involved a patent that clearly indicated the elements should be formed in one piece. While the only embodiment discussed in the '553 patent involves a one-piece article of manufacture, the specification does not explicitly limit the invention to that structure, nor is it clear that "integral" refers only to a single injection-molded piece as described in the preferred embodiment.

TFS argues that the specification uses "integral assembly" synonymously with "unitary assembly" and uses "unitary" in the sense of a single structure. The only language regarding a single structure is the statement, describing the preferred embodiment, that "the flexible hinge straps, the integrally connected tubes, and the seal caps are all preferably formed as a single unitary structure by injection molding from a suitable synthetic resinous material." '553 Patent at 4:30-33 (emphasis added). Far from limiting either "integral" or "unitary" to a single structure, this language suggests that the apparatus is preferably a single unitary structure but need not be. TFS's argument that "preferably" modifies "injection molding" rather than "single unitary structure" is unpersuasive. Although the inventor was often liberal with his use and positioning of adverbs, TFS's interpretation greatly strains the rules of grammar. Moreover, the inventor earlier states that the preferred embodiment "comprises a multiplicity . . . of tubes, injection molded from a suitable plastic," id. at 3:25-37, suggesting that the new preference being expressed is that of forming the entire article, from tubes through seal caps, as a single structure.

TFS also relies on the prosecution history to argue that the invention must be a single structure. During prosecution, the examiner rejected certain claims under 35 U.S.C. § 103 as being unpatentable over Irwin, et al. (United States Patent No. 3,139,208) in vew of Berg (United States Patent No. 2,949,203). Springer Decl., Ex. F P 4. Specifically, the examiner found "[i]t would have been obvious to one of ordinary skill in the art to have employed the cap open position taught by Berg, Fig. 2, in the construction of the device of Irwin, et. al., motivated by the ease of molding such." Id. In response, the inventor argued:

> the flat plate 8 of Irwin et al is integral with the tubes 6, the flat plate configuration being chosen specifically to retain the associated receptacles 6 for paint materials associated with one another to permit "paint by the numbers" facility to the user of the assembly. Additionally, the Berg structure illustrated in FIG. 2 is a separate manufacture from the container 10, and is disposed removably on the neck of the container 10 for purposes of convenience. Thus, attempting to mold the injection molded part of Berg as illustrated in FIG. 2 into the structure of Irwin et al, which presumably is also injection molded, would serve no useful purpose revealed by Irwin et al, would not be simpler or more easy, but much more complex, and certainly therefore a logical inference cannot be deduced that the molding process and structure resulting therefrom would be facilitated by the proposed re-design and reconstruction. If anything it would be made more complex and difficult, therefore teaching away from the proposed reconstruction.

Springer Decl., Ex. G at 14. TFS argues that this excerpt (1) uses "integral" to refer to the one-piece unit in Irwin and (2) states that converting the inventor's one-piece unit of manufacture into a structure with parts of separate manufacture would be teaching away from the invention. It is true that Irwin describes a one-piece unit and in fact touts his invention as "lend[ing] itself to inexpensive production as a unitary molding . . . by reason of the fact that the [pieces] are all formed integrally with one another," Irwin at 1:21-25. However, using the word "integral" to refer to a one-piece unit of manufacture does not imply that "integral" cannot also describe something else. In addition, the inventor never argues that a structure with parts of separate manufacture were not contemplated by his invention. He argued that there was no motivation to combine Irwin with Berg, i.e. that the invention was non-obvious. This is fully consistent with an argument that the invention included multi-part units. Thus, the prosecution history does not support TFS's narrow definition of "integral."

In conclusion, the '553 patent uses "integral" to mean more than a one-piece article but less than anything that is contiguous. The court finds that "integral" and "integrally" refer to pieces joined in such a way as to form a single unit. Thus, the court construes the language at issue as "a number of spaced reagent tubes arranged in an elongated series with a corresponding number of individually manipulable seal caps, the spacing of the seal caps corresponding to the spacing of the reagent tubes, all joined so as to form a unit."
The term "integral" appears in asserted claims 1, 6, and 11, as well as unasserted claims 19, 21, and 27. APE proposes the following construction:

Integral -- means composed of portions, parts, or pieces that together constitute the whole.

The eccentric weight portion and the cylindrical gear portion act together to function as the counterweight.

(Joint Disputed Claim Terms Chart.) Geoquip proposes that "integral" means "formed or cast of one-piece." Id.

The court begins its analysis by looking to the claims themselves. Claim 1, which is representative of the asserted claims, describes a "counterweight having a cylindrical gear portion and an eccentric weight portion integral with said cylindrical gear portion." '964 Patent, col. 9, ll. 39-41. The term is used consistently throughout the claims, and there is no reason to believe that the term is used differently in one claim vis-a-vis another. See Innova, 381 F.3d at 1119 ("Unless otherwise compelled, when different claims of a patent use the same language, we give that language the same effect in each claim."). Thus, the court looks to the claims as a whole to determine the meaning of the term "integral."

The relationship between claims 16 and 19 provides strong evidence as to the meaning of "integral." Claim 16, which does not contain the term "integral," describes a counterweight having "an eccentric weight portion connected to said cylindrical gear portion." '964 Patent, col. 11, ll. 13-14 (emphasis added). Claim 19, which is dependent on claim 16, describes: "The counterweight assembly of claim 16 wherein said eccentric weight portion is integral with said cylindrical gear portion, said first metal is cast steel, and said second metal is a [sic] tungsten." Id. at ll. 30-33 (emphasis added). Because dependent claim 19 uses the term "integral" rather than the phrase "connected to" to describe the relationship between the eccentric weight portion and the cylindrical gear portion, the term "integral" presumably limits claim 19 in a manner that claim 16 is not so limited. See Phillips, 415 F.3d at 1315 ("[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.").

Although the phrase "connected to" will be discussed further below, the court construes that phrase to mean "joined together, united or linked." Thus, claim 16 contemplates a two-piece counterweight in which the cylindrical gear portion and the eccentric weight portion are joined together. Under APE's proposed construction, the term "integral" in claim 19 would then limit the phrase "connected to" by requiring that the eccentric weight portion and the cylindrical gear portion function together to constitute the whole counterweight. The court fails to see, however, how this definition of "integral" in any way meaningfully limits the definition of "connected to" as found in claim 16. Claim 16 describes the two portions of the counterweight as being joined together; presumably, the two portions also must function together or the invention would be ineffectual. Nevertheless, as the claims themselves do not define the term explicitly, the court turns to the prosecution history for further guidance.

During the 2006 reexamination of the '964 Patent, the examiner initially rejected claims 1-3, 5, 6, 8-14, and 16-19 on the grounds that the invention was unpatentable for obviousness in light of United States Patent No. 3,224,514 (the "Hornstein patent"). (Pl.'s Opening Claim Construction Br. Ex. L, "Office Action in Ex Parte Reexamination," at 2.) 6 The Hornstein patent discloses a vibratory pile driver in which the counterweights contain a number of counterbalancing cylinders so that the counterweights themselves possess no eccentric weight absent the insertion of metal rods. (Pl.'s Opening Claim Construction Br. Ex. M, "Reply to Office Action in Reexamination," at 5.) In order to distinguish the Hornstein patent from the present invention, the patentee argued that Hornstein did not disclose an eccentric weight portion "integral" with the gear portion: "This requirement of the integral-i.e., one-piece-nature of the eccentric weight portion is unquestionably not disclosed by Hornstein. As explained above, Hornstein teaches a system in which weights may be added (or removed) in order to balance or unbalance the rotating rotor. . . . Hence Hornstein's eccentric is not integrally formed." Id. at 6 (emphasis added). Therefore, in order to distinguish prior art, the patentee argued that the term "integral," within the context of the '964 Patent, meant that the cylindrical gear portion and the eccentric weight portion were formed or cast of one piece. See id. The court finds this to be a clear and unmistakable disavowal by the patentee limiting the term "integral" to one-piece
counterweights. See, e.g., Computer Docking, 519 F.3d at 1374 (noting a patentee may limit a claim term by clearly characterizing the invention in a certain way to overcome rejections based on prior art). Therefore, after taking into account both the language of the '964 Patent and its prosecution history, this court construes the term "integral" to mean "formed or cast of one piece," as Geoquip proposes.

6 Pagination is that of the original document rather than of the exhibit. As the patentee never recanted in any way from the position that "integral" meant "formed or cast of one piece," the court finds the examiner's response to the patentee to be irrelevant. See, e.g., Springs Window Fashions LP v. Novo Indus., L.P., 323 F.3d 989, 995 (Fed. Cir. 2003) ("In any event, the examiner's remarks do not negate the effect of the applicant's disclaimer.").

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(2) integral

As demonstrated in the claims set forth above, the term "integral" appears throughout the claims as describing the relation between the cylindrical gear portion and the eccentric weight portion of the counterweight: the eccentric weight portion in each instance is described as "integral with the cylindrical gear portion." Claims 1, 6, 11, 19, 21, 27. Plaintiff proposes that the term be construed to mean "composed of portions, parts, or pieces that together constitute the whole" Joint Disputed Claim Terms Chart, Dkt. # 29-2, p. 3. Defendants proposed that it be construed to mean "formed or cast of one piece." Id. Neither party suggests that the term have a different meaning in any claim; the usage is consistent throughout the claims.

In support of its proposed construction, plaintiff refers the Court to an examiner's comment in the reexamination action, wherein the examiner stated that "[n]othing in the specification of the subject patent states that 'integral' means 'one-piece'." Id., p. 4. However, this examiner's comment is not determinative of the question. More significance is placed on the patentee's response during the reexamination, in which it was represented that claims 1, 6, and 11 recite that the eccentric gear portion and cylindrical gear portion are "integral," meaning they are components of a one-piece counterweight. Patentee's Remarks, Dkt. # 31, Exhibit A, p. 6. The patentee cited this one-piece or "integral" nature of the eccentric weight portion as "unquestionably" distinguishing the invention from the prior art of Hornstein. Id. Further, as defendants contend, the patent itself criticized two-piece counterweights with the eccentric weight and cylindrical gear portion bolted together. This criticism may be deemed a disavowal of that aspect of the prior art. '964 patent, col 1, lines 39-45.

The term is not defined in the claims, but the word integral has an ordinary meaning which may be found in the dictionary. For example, the adjective is defined in the Merriam-Webster New Collegiate Dictionary 3 as follows:

integral:

1 a: essential to completeness: constituent

b (1): being, containing, or relating to one or more mathematical integers (2): relating to or concerned with mathematical integrals or integration

c: formed as a unit with another part

2: composed of integral parts

3: lacking nothing essential: entire


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3 The Court has consulted both the Tenth Edition (1998) and the on-line edition and found that they do not differ.

Nothing in the claims suggests that a different meaning was intended. Indeed, the use of the term throughout the claims is consistent with the meaning "formed as a unit with another part." Certain claims themselves describe "forming" the counterweight with a first metal (i.e., one metal) (claim 21), and "casting" the counterweight with a first metal (claim 27), in each instance creating a counterweight with the eccentric gear portion integral with the cylindrical gear portion.

The specification, in describing the preferred embodiment of the invention, defines the counterweight as a "one-piece component that is cast with a predetermined metal." '964 patent, col. 5, lines 49-52. Nowhere in the specification is any embodiment other than a one-piece unit suggested. The only variation or modification mentioned is the use of a metal other than tungsten for the rods inserted into the counterweight. '964 patent, col 9, lines 22-30.

The Court finds that "the specification read as a whole suggests that the very character of the invention requires the limitation [to a one-piece unit] to be a part of every embodiment." Alloc, 342 F.3d at 1370. This finding recognizes both the disavowal of two-part counterweights found in the prior art discussion, and the entire discussion of the preferred embodiment. It is proper in this instance to limit the claims to the scope of the invention as it is described in the specification, because "the claims cannot be of broader scope than the invention that is set forth in the specification. On Demand Machine, 442 F.3d at 1340.

The Federal Circuit court in Phillips clarified the law regarding claim construction and resolved prior conflicts within the Federal Circuit regarding the importance of specifications in claim construction. On Demand Machine, 442 F.3d at 1337, citing Phillips v. AWH Corp., 415 F.3d at 1310. The court in Phillips, resolving the conflict, "stressed the dominance of the specification in understanding the scope and defining the limits of the terms used in the claims." Id. at 1338, citing Phillips, 415 F.3d at 1313. In recognizing the dominant role of the specification in defining the limits of the claimed invention, the Court in this analysis of the term integral is not improperly importing limitations from the specification into the claims, but relying on the law of claims construction as it has been clarified in Phillips. Id. As noted there, the patent statute requires that the specification "describe the claimed invention in 'full, clear, concise, and exact terms.'" Id. at 1316; citing 35 U.S.C. 112 P 1. The counterweight described throughout the specification is a one-piece unit, formed or cast of a single metal.

The Court concludes that defendants' proposed construction of the term integral is consistent with the usage in the claims and the specification. The Court therefore construes the term to mean "formed or cast of one piece."

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3. "Integral"

The term "integral" appears in asserted claims 1, 6 and 11. It also appears in unasserted claims 19, 21 and 27. APE proposes the construction: "... composed of portions, parts, or pieces that together constitute the whole. The portions act together to function as the counterweight." Doc. No. 37 at 5. ECA responds that the term should instead be construed "formed or cast of one-piece." Doc. No. 41 at 2. The Northern District of California construed the term as "formed or cast of one-piece." Bay, 632 F. Supp. 2d 956, 2009 WL 1684611, at *9.

In order to construe this term, this Court first turns to the language of the claims. "Integral" first appears in claim 1, which recites, inter alia, "[a] vibratory assembly for imparting a vibratory force to a pile, comprising ... [a] counterweight having a cylindrical gear portion and an eccentric weight portion integral with said cylindrical gear portion ..." '964 Patent, col. 9, ll. 33-42. The language of claim 1 is representative of the use of the word "integral" as a descriptor of the structural relationship between the cylindrical gear portion and the eccentric weight portion throughout the claims.

ECA points to claim 16, and claim 19, which depends from 16, as evidence supporting their definition of "integral." Claim 16 recites ". . . an eccentric weight portion connected to said cylindrical gear portion . . ." while claim 19 recites "[(]he counterweight assembly in claim 16 wherein said eccentric weight portion is integral with said cylindrical gear portion . . ."
Judge Hamilton of the Northern District of California found the context created by unasserted claims 21, 23 and 27 to be helpful to that court's construction of the term "integral." See Bay, 632 F. Supp. 2d 956, 2009 WL 1684611, at *7. These claims describe a method for producing the counterweight involving casting, which the Northern District of California determined was supportive of the Defendant's argument that "integral" was properly construed to mean "one piece." See id.; see also '964 Patent, col. 11, ll. 38-55, col. 12, ll. 1-7, 13-15, 27-54. This Court is not convinced that these claims, which recite one method of production for the counterweight, necessarily limit the patentee's right to exclude to counterweights produced through only that method. As such, given that the term "integral" is not explicitly defined in the claims, this Court must turn to the specification for guidance.

"Integral" is mentioned in several places within the specification. Like its use in the claims, the term is used in the specification to describe the structural relationship between the cylindrical gear portion of the counterweight and the eccentric weight portion of the counterweight. See e.g., '964 Patent, col. 5, ll. 27-33 (stating "[i]n the preferred embodiment . . . the counterweight 40 has a large mass integral to and projecting from the bottom portion 104 of the gear portion 41 . . ."); see also '964 Patent, col. 3, ll. 44-46 (stating "[e]ach counterweight 40 has a gear portion 41 and an eccentric weight portion 43 that is integral to the gear portion").

Judge Hamilton cites to several passages from the specification in the course of construing the term as meaning "formed or cast of one-piece." First, her opinion cites that "'[t]he present invention … provides a method of making a counterweight assembly adapted to rotatably fit in a vibratory assembly. The counterweight assembly having a cylindrical gear portion and an integral eccentric weight portion is cast with a first metal such as steel.'" Bay, 632 F. Supp. 2d 956, 2009 WL 1684611 at *8 (quoting '964 Patent, col. 2, ll. 52-57). The above quotation, however, appears to be a summation of claims 21, 23 and 27, which provide a method for producing the invention through casting, but does not conclusively limit the right to exclude to embodiments of the invention that are produced in such a manner. As such, this passage of the specification provides little useful guidance.

Judge Hamilton's opinion next references the following passages in the specification: "'[t]he eccentric weight portion 43 of the counterweight 40 . . . is formed integral with the gear portion 41 . . ." '964 Patent, col. 5, ll. 20-22, and:

"[i]n the preferred embodiment, the counterweight 40 is a one-piece component that is cast with a predetermined metal, such as steel . . . '[t]he bottom portion 104 of the counterweight 40 is cast having insert receiving areas or bores 112 substantially parallel to the center bore 106 and extending fully through the gear portion 41 and fully through the eccentric weight portion 43.

'964 Patent, col. 5, ll. 51-53, 61-65. 8 Both of these passages refer to the preferred embodiment of the invention. 9 As such, this court does not believe that these passages would necessarily lead a person having ordinary skill in the art to believe that any embodiments of the counterweight would need to be cast of one piece in order to fall within the scope of the patent

8 The phrase "41 and fully through the eccentric weight portion 43," '964 Patent, col. 5, ll. 64-65, was not in Judge Hamilton's claims construction opinion, and was included by this Court in order to preserve the complete language of the cited passage of the specification. See Bay, 632 F. Supp. 2d 956, 2009 WL 1684611, at *8.

9 Indeed, just a few lines before the passage "'[t]he eccentric weight portion 43 of the counterweight 40 . . . is formed integral with the gear portion 41 . . ." from '964 Patent, col. 5, ll. 20-22, the language of the specification refers the reader to Figures 3A and 3B. See '964 Patent, col. 5, l. 17. Prior to this passage in the specification, those Figures are clearly identified as relating to the preferred embodiment of the invention. See '964 Patent, col. 3, ll. 9-23.
Finally, Judge Hamilton's claim construction opinion points to the fact that the specification references cast, one-piece counterweights having integral eccentric weight portions in the prior art as evidence that the inventor contemplated only that embodiment of the invention. See Bay, 632 F. Supp. 2d 956, 2009 WL 1684611, at *8 (citing '964 Patent, col. 1, ll. 45-48). However, a reading of the full paragraph surrounding that section of the specification reveals that the inventor cited to prior art that involved bolting as well, implying that the inventor contemplated bolted embodiments of his invention. See '964 Patent, col. 1, ll. 39-48. Furthermore, the fact that the inventor mentioned all of the descriptive terms "cast," "one-piece," and "integral," in the same passage in order to describe the prior art could very well mean that a person having skill in the art would not view those terms to be synonymous. Given the ambiguity of the specification, this Court, seeking more evidence, turns to the prosecution history.

In 2006, the PTO reexamined the validity of the claims of the '964 Patent. In an attempt not to have the claims invalidated, the patent owner argued that claims 1, 6, and 11 were distinguished from prior art (specifically U.S. Patent No. 3,224,514, issued to Hornstein) because they recited an invention in which "the counterweight has a cylindrical gear portion and an eccentric weight portion and that these two components are integral - i.e., they are simply components of the one-piece counterweight." See APE's Claim Construction Reply Br., Ex. A (Doc. No 35-2), at 7. Seemingly, this would serve as a clear limitation of the scope of the term "integral" by the patent owner in the prosecution history. However, in the PTO's following office action, this proposed limitation of "integral" was explicitly rejected by the examiner. Finding no explicit definition in the specification of "integral" meaning one piece, the examiner gave the term its broadest possible meaning, concluding "[t]hus, whether 'integral' is defined as 'one-piece' or several parts rigidly secured together as a single unit, it does not read on the structure of [the Hornstein Patent]." See APE's Opening Claim Construction Br., Ex. C (Doc. No. 30-4), at 14. There is no evidence in the record of the patent owner contesting this interpretation of the term "integral" at any subsequent point in time.

As stated above, the Federal Circuit has held that, in order for a statement made by a patent owner in the prosecution history to limit the scope of his or her patent protection, that statement must be a "clear and unmistakable disavowal" of a broader scope of protection. See Purdue Pharma, 438 F.3d at 1136. It is well established that the prosecution history is evidence of the process of negotiations between an inventor and the PTO and, as such, it can be less clear than the specification in determining the proper construction of disputed terms and phrases. See Phillips, 415 F.3d at 1317.

In reading the prosecution history of the patent-in-suit, as a whole, this Court has determined that the statement made by the patent owner implying that "integral" means "one-piece" does not constitute a clear and unmistakable disavowal of a broader definition for two reasons. First the patent examiner explicitly rejected the narrow "one-piece" definition. Second the patent owner never contested that rejection.

Having reviewed the above intrinsic evidence, this Court is convinced that any construction of the term "integral" must include embodiments of the mentioned counterweight that are formed or cast of one piece. It is also clear that "integral" must, in some way, limit the previously-construed phrase of "connected to." See supra Part II.C.2. However, this Court remains unconvincing the persons having ordinary skill in the applicable art would necessarily believe that the '964 Patent's scope would cover solely embodiments of the counterweight that are formed or cast of one piece. As such, this Court will not limit the construction of this disputed term in such a manner, which, based on the available evidence, would be an improper reading of limitations from the specifications upon the language of the claims. See Sjoland, 847 F.2d at 1581-82. Given the language of the claims and the specification, and paying specific attention to the nature of the cylindrical gear portion and the eccentric weight portion as parts of the whole counterweight, this Court recommends that the term "integral" be construed in the following manner: "forming a complete structural whole."

3. "integral"

This term appears in asserted claims 1, 6 and 11. The term also appears in unasserted claims 19, 21 and 27. APE contends that the term should be construed to mean "composed of portions, parts, or pieces that together constitute the whole. The portions act together to function as the counterweight." Bay contends that the term should be construed to mean "formed or cast of one-piece."
To begin its analysis, the court first turns to the claims themselves. The term "integral" is first introduced in claim 1, which provides: "A vibratory assembly for imparting a vibratory force to a pile, comprising: . . . a counterweight having a cylindrical gear portion and an eccentric weight portion integral with said cylindrical gear portion . . ." Substantially similar language appears in claims 6, 11, 19, 21 and 27.

Reviewing all the claims in which the term "integral" is used, it is apparent that the term is meant to have the same meaning in each claim, since there is no indication that the term is to be given a specific definition in any one claim versus another, and no indication that the term has been particularly defined in any specific claim. The court, however, finds that the usage of the term in claims 21, 23 and 27 provides illumination as to the meaning of the term when read together with claims 16 and 19.

Claim 21 provides: "A method of making a counterweight assembly of a vibratory device for imparting a vibratory force to a pile, comprising the steps of: forming with a first metal a counterweight having a cylindrical gear portion and an eccentric weight portion integral with the cylindrical gear portion . . ." Claim 23 provides: "The method of claim 21 wherein said step of forming the counterweight comprises casting the counterweight." Claim 27 provides: "A method of making a counterweight assembly of a vibratory device for imparting a vibratory force to a pile, comprising the steps of: casting with a first metal a counterweight having a cylindrical gear portion and an eccentric weight portion integral with the cylindrical gear portion . . ."

The court construes the language in unasserted claims 21, 23 and 27 as supporting Bay's proposed construction insofar as these claims indicate that the counterweight is made by forming or casting the "cylindrical gear portion" and "eccentric weight portion" with one metal, i.e., the "cylindrical gear portion" and "eccentric weight portion" are "formed or cast as one-piece." This conclusion is also supported by the language of claims 16 and 19.

However, claim 16 provides: "A counterweight assembly for use in a vibratory pile . . . comprising: a cylindrical gear portion having a plurality of gear teeth around its circumference, . . . an eccentric weight portion connected to said cylindrical gear portion at a position radially outward of the axis of said cylindrical gear portion . . ." Claim 19, which depends from claim 16, provides: "The counterweight assembly of claim 16 wherein said eccentric weight portion is integral with said cylindrical gear portion, said first metal is cast steel, and said second metal is a tungsten."

This language suggests that the term "integral" is not interchangeable with the phrase "connected to" inasmuch as claim 19 would be superfluous if "integral" and "connected to" meant the same thing. The doctrine of claim differentiation supports this construction. That doctrine creates a presumption against constructions that would render a claim meaningless in its entirety by making it identical in scope to another claim. Sinorghem Co., Shandong v. Int'l Trade Comm'n, 511 F.3d 1132, 1139 (Fed. Cir. 2007). In other words, claim differentiation creates a presumption that each claim in a patent has a different scope. Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000). Thus, the presence of the limitation "integral" in claim 19 gives rise to the presumption that this limitation is not present in claim 16, which supports the determination that the meaning of "integral" is not the same as "connected to." As discussed more fully below, because the court construes the term "connected to" to mean "joined together, united or linked" conveying the joining, uniting or linking together of two separate pieces or parts, the court construes the claim language to support the conclusion that the term "integral" means "formed or cast as one-piece." Nevertheless, because the claim language does not specifically define the term "integral," the court examines the specification for added insight.

The specification states that "[t]he present invention . . . provides a method of making a counterweight assembly adapted to rotatably fit in a vibratory assembly. The counterweight assembly having a cylindrical gear portion and an integral eccentric weight portion is cast with a first metal such as steel." '964 Patent, col. 2, lines 52-57. The specification further states that "[t]he eccentric weight portion 43 of the counterweight 40 . . . is formed integral with the gear portion 41." '964 Patent, col. 5, lines 20-22. In addition, the specification states: "In the preferred embodiment, the counterweight 40 is a one-piece component that is cast with a predetermined metal, such as steel. . . . The bottom portion 104 of the counterweight 40 is cast having insert receiving areas or bores 112 substantially parallel to the center bore 106 and extending fully through the gear portion."

Based on the foregoing, the court finds that the specification also supports the conclusion that the term "integral" means "formed or cast as one-piece."
Moreover, as Bay points out, the prosecution history also supports this conclusion. During reexamination of the '964 Patent, the patentee represented to the PTO that claims 1, 6 and 11 "recite that the counterweight has 'a cylindrical gear portion and an eccentric weight portion' and that these two components are 'integral' - i.e., they are simply components of a 'one-piece' counterweight." Bay's Claim Construction Brief, Exh., C at 6. Specifically, the patentee distinguished the claims of the '964 Patent from U.S. Patent No. 3,224,514 issued to Hornstein, with the statement that Hornstein did not disclose the "requirement of the integral - i.e., one-piece - nature of the eccentric weight portion. Id. The patentee further stated that "there is no 'integral' or 'one-piece' relationship when Hornstein provides eccentric force" because "Hornstein teaches a system in which weights may be added or removed in order to unbalance the rotating rotor." According to the patentee, because a second metal [which may be made of a different material] must be inserted into the rotor to render Hornstein's device capable of providing eccentric forces, his "eccentric is not integrally formed." Id. With these statements, the patentee expressly acknowledged, in order to distinguish his invention from prior art, that the "cylindrical gear portion" and an "eccentric weight portion" are components of a one-piece counterweight.

In sum, for all the reasons stated above, the court concludes that Bay's proposed construction of the term "integral" is most consistent with both the '964 Patent's language and the prosecution history. The court therefore construes the term "integral" to mean: "formed or cast of one-piece."

B. "Integral."

The term "integral" appeared in claim 17. Claim 17 depended from claim 1 and read as follows (col. 6:15-16):

17. The apparatus according to claim 1 wherein said body portion and said closure are of integral construction.

Paczonay contends that integral should mean "of or pertaining to, or belonging as a part of the whole; constituent or component." He argues that this term is defined in the specification in the following passage: "[a]pparatus is of integral construction and is formed of resilient, flexible material such as rubber or plastic" (col. 3:13-15). Paczonay also refers to figures depicting the invention. Defendants propose that integral should mean "functioning as a solitary article." From the specification, defendants cite the same passage as Paczonay, and in addition, cite the passage that stated "[i]ntegrally connected to the body portion at the fluid outlet end thereof and extending across the fluid outlet end is a deformable closure 24 . . . " (col. 3:23-26). The term is also used in the specification describing the bite-valve closure (col. 3:39-48):

"[p]ortion 34 is in the form of a strip of resilient flexible material integrally connected to the remainder of the closure at opposed strip ends . . . application of the opposed forces will deform the closure . . . and cause portion or strip 34 to form an outwardly projecting arch between the ends of the portion or strip."

As mentioned above, claim 17 depended from claim 1. Claim 1 read "a hollow body portion . . . and a deformable closure connected to said body portion and extending across the fluid outlet . . . " (col. 4:64-5:4). Claim 17 indicated that the deformable closure and the body portions are "integrally connected." Also, parties agree that the term "unitary construction" as used in claim 20 is defined as "construction of a single object" (Joint Stmt. at 2). Looking at the claims and specification as a whole, it is clear that "integral" must mean something more than merely connected, but something less than made from a single object. Defendants' proposed definition captures such a relationship. "Integral" means that the objects must function as a single unit. They need not be formed of a single piece.

This interpretation is consistent with the term's commonly-understood, plain meaning. As to dictionary definitions, both parties cite the definition that reads "of, pertaining to, belonging as a part of the whole; constituent or component." Joint Stmt. at 5-6. Similarly, integral is defined as "formed as a unit with another part." Merriam-Webster, Ninth New Collegiate Dictionary, 1984. All of these definitions comport with the concept that the parts must function together as a single unit, but need not be comprised of a single part. Accordingly, "integral" is held to mean "functioning as a single article."
A. "Integral"

Plaintiff argues that the term "integral" must be given the meaning found in the specification, that is, that the blocks 14 are "formed with or joined to" the insulation member 12. In other words, the blocks are either formed as part of the insulation member or formed separately and then joined to the insulation member. Defendant argues that the term "integral" must be held to mean "being a part of and made of the same material."

The dictionary definition of the adjective "integral" is: "necessary to make a whole complete; essential or fundamental" and as "included as part of a whole rather than supplied separately." The Oxford Dictionary of English (revised edition). Ed. Catherine Soanes and Angus Stevenson. Oxford University Press, 2005. The first definition suggests that plaintiff's interpretation of "integral" is correct; the second leans more toward defendant's.

It is important, however, to construe the claims in light of the specification. In particular, the specification provides, as already noted above, that the board member "may be formed by cutting away portions thereof . . . to form the desired configuration of blocks and channels" or the blocks "may be formed separately and adhered to a rectangular solid block of the insulating material[.]") Whether the blocks forming the venting channels are carved out of the insulation material or formed separately and attached, they are an integral part of the patented invention, without which the invention would be meaningless and ineffective. In other words, the blocks are "necessary," "essential," "fundamental," and "part of [the] whole" invention. Without the blocks, the invention isn't the invention.

Defendant's interpretation that the blocks must be made from the same material as the insulation member improperly imports a limitation from the embodiment depicted in Figure 3. See PrimaTek II, supra, 318 F.3d at 1148.

Accordingly, the Court construes the term "integral" as meaning "formed with or joined to."

Claim 1 is the only independent claim in the patent; claims 2, 4, 6 and 11 depend from it. The only dispute before us involves the meaning and scope of Claim 1. The claim reads in full as follows:

1. In combination with a settling tank for a wastewater treatment, said tank including an inlet line for feeding wastewater therein, means to remove sludge from the tank and an outlet zone defined by an effluent trough, at least one side of which has a weir to permit clarified water to spill into the trough; and an outlet to remove clarified water from said trough; an arrangement for preventing noxious gases generated in the wastewater from being discharged into and fouling the atmosphere, said arrangement comprising:

   A. a hood which is supported over the trough to define a confined region to capture said gases, said hood having a side wall which protrudes into the water in said settling tank at a position spaced from the weir side of the trough, said side wall protruding into the water to a depth below the upper edge of the weir to form a scum baffle integral with the hood; and

   B. means to treat the captured gases to render them inactive, and to prevent the discharge of said noxious gases into the atmosphere.

This case was originally tried in the district court in June, 1991. The court held that the '704 patent was not invalid, and found that Delta's odor control system did not infringe the asserted claims of the patent, either literally or under the doctrine of equivalents. The court noted that the accused system, unlike the patented system, contained an air gap between the scum baffle and hood. The court held that the air gap prevented the hood from defining a "confined region" and that it prevented the hood from being "integral with" the baffle.

The case was appealed to this court. In our March 17, 1994 decision, we vacated the trial court's finding of noninfringement.
under the doctrine of equivalents and its finding that the patent was not proven invalid. We rejected the district court's restrictive interpretation of the terms "confined region" and "integral" in Claim 1, holding that the court unduly limited the term "confined region" to regions that are "completely sealed" and the term "integral" to "one-piece" constructions. We held that the district court did not clearly err in its finding of no literal infringement, but we remanded for a determination of whether, under our claim interpretation, there was infringement under the doctrine of equivalents. On remand, the district court found that Delta's odor control system did not infringe under the doctrine of equivalents. The court also found no contributory infringement, noting that the Delta device was capable of substantial noninfringing use.

At the same time, the court concluded that Delta's good-faith belief that its design did not infringe the '704 patent precluded a finding that Delta knowingly induced infringement. Lastly, the court held that the '704 patent was not invalid.

Warminster urges us to reverse the district court's doctrine of equivalents determination, arguing that the court misapplied our earlier interpretation of the terms "integral" and "confined region." Warminster also challenges the district court's findings of no contributory infringement and no inducement of infringement. For its part, Delta cross-appeals on the validity issue.

II.

We review the district court's claim construction de novo, see Markman v. Westview Instr., Inc., 52 F.3d 967, 979 (Fed. Cir. 1995), aff'd, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996), and its findings relating to alleged infringement under the doctrine of equivalents for clear error, see Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1521 (Fed. Cir. 1995), cert. granted, 116 S. Ct. 1014 (1996). After careful consideration, we hold that the district court's claim construction is in accord with our earlier decision. We further find that the district court's finding of no infringement under the doctrine of equivalents is not clearly erroneous. Because we affirm the district court's finding of no infringement, we need not address the issues of inducement of infringement or contributory infringement.

First, we disagree with Warminster's interpretation of the term "integral." Warminster would like us to interpret the term "integral" as meaning functionally as opposed to physically integral. Such a reading would be directly contrary to our earlier interpretation of the term "integral" as defining a "structural relationship."

Tecnol contends that the limitation of Claim 4 which requires the back portion to be "integral" with the side portion excludes multi-piece collars in which the pieces are permanently attached together. To support this construction, Tecnol relies upon the following dictionary definition:

Formed as a unit with another part (as the main part) -- often used with: used esp. of a part of a tool or mechanism < the pin is [integral] with the pump body -- H.F. Blanchard & Ralph Ritchen> <<heat transfer through tubes with [integral] spiral> fins -- Transactions of Amer. Society of Mech Engineers> <<the steam chest may be an [integral] part of the turbine casing or may be bolted to it -- B.G.A. Skrotzki & W.A. Vopat>.

[TX 59].

Tecnol submits that a person of ordinary skill in the art would draw a distinction between "integral" and "permanently attached." Eyrick opined that items that were casted or molded together would be two examples of items that were "integral." [Eyrick Tr. at 1918]. Tecnol also relies upon the language of dependent claim 10 to support its desired distinction:
10. The cervical collar of claim 1 including an integral tab centrally dependent from the upper edge of said front portion of said band and permanently attached to the central undersurface of said chin support brace.

[PX 520 at 6/17-21]. Tecnol contends that this claim language demonstrates that Garth was aware of the difference between "integral" and "permanently attached" and thus claim 4 does not cover permanently attached multi-piece bands.

The Court finds that the ordinary meaning of "integral" may encompass items which are permanently attached. Prior art in the same field as the '219 patent uses the term "integral" in such a fashion. [U.S. Patent No. 3,530,853, DX 0031 at 3/56-57 ("A downwardly extending apron is integrally connected or situated with the neck encircling portion. . .")). Moreover, Courts have ruled that the term "integral" may encompass permanent attachment. Advanced Cardiovascular Systems Inc. v. Scimed Life Systems, Inc., 887 F.2d 1070, 1072 (Fed. Cir. 1989); 14 In re Hotte, 475 F.2d 644, 647 (CCPA 1973) ("'Integral' is sufficiently broad to embrace constructions united by such means as fastening and welding.").

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14 In Scimed the Federal Circuit reversed the district court, which had granted summary judgment in favor of the alleged infringer upon construing the term "integral" to mean one piece. The Federal Circuit found that a genuine dispute of fact did exist with respect to the meaning of the term integral. Claim construction is a matter of law and the Federal Circuit reviews claim construction determinations de novo. The Court does not rely upon Scimed for the proposition that the meaning of "integral" as it is used in the '219 patent involves factual disputes, nor does it understand Scimed to hold that "integral" always includes "permanently fastened" as a matter of law regardless of the claims, specification, and prosecution history of the specific patent-in-suit. Rather, the Court relies upon Scimed for the proposition that the ordinary meaning of "integral" may include "permanently fastened."

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The Court does not find that "integral" cannot mean "permanently attached," but does find that as used in the '219 patent "integral" does not mean "permanently attached." In the initial '619 patent application, claim 4 depended from claim 1. Subparagraph (a) of claim 1 claimed "an elongated neck encircling band formed of stiff, flexible sheet material having a front side and back portions." [PX 521 at 14]. Claim 4 further claimed "the cervical collar of claim 1 wherein said back portion is integral with one of said side portions." [Id.]. The sole difference between claims 1 and 4 was the addition of the "integral" limitation. Garth explained this difference in the specification:

In its preferred embodiment, the elongated band is asymmetric about its lateral axis 23 with the back portion 18 of band being integral with one side portion 14 . . . .

[PX 521 at 9 (emphasis added)]. The portions of the patent drawings referred to by number in the specification indicate that "being integral" meant "one piece."

By looking to the specification to explain the meaning of "integral" as used in Claim 4, the Court is not impermissibly reading limitations from the specification into the claim 4, but rather, is using the specification to confirm that Garth used "integral" to mean "one piece," which is the only logical definition possible for this patent. "One piece" is the only logical definition because it is the only definition which would make Garth's original dependent claim 4 narrower than Garth's original claim 1. Garth's original claim 1 did not specify how the front side and back portions were connected. The subsequently added "entirely" limitation was not present. Garth's original claim 1, therefore, would have covered a multi-piece band. Claim 4 was intended to be narrower than Claim 1 in that it excluded the possibility of attachment of multiple pieces and focused on one-piece design, which was the subject of Garth's preferred embodiment.

Claim 4 would later be amended and rewritten as an independent claim, and at that time the "asymmetrical" limitation would be added, but the meaning of "integral" would receive no further explanation. The only further usage of "integral" would occur with the addition of Claim 10, in which Garth would once again draw a distinction between "integral" and "permanently attached." 15
The cervical collar of claim 1 including an integral tab centrally dependent from the upper edge of said front portion of said band and permanently attached to the central undersurface of said chin support brace.

[PX 520 at 6:17-21].

As discussed previously, Garth would later put a similar one-piece limitation in claim 1 by adding the "formed entirely" limitation during the '219 reissue patent prosecution. The "formed entirely" limitation of claim 1 and the "integral" limitation of claim 4 have the similar effect of limiting both claims to collars with one-piece bands. Claims 1 and claim 4 are not identical in scope, however, because the presence of the "asymmetrical" or side closure limitation in claim 4 differentiates it from claim 1.

Accordingly, the Court finds that the permanently attached front and back band sections of the 911 collar do not form "an elongated neck encircling band having a front, side and back portions . . . with said back portion integral with said side portion," and for this reason finds that the 911 collar does not literally infringe Claim 4.

16 Likewise, the hypothetical Tecnolband formed solely out of the front band section and a Velcro strap would not literally infringe claim 1 because the Velcro strap back portion would not be formed of "stiff, flexible sheet material" and would not be "integral" with the front band section.

The dispute here is over the meaning of the term "integral." PolyVision's proposed construction is based upon a dictionary definition of the term "integral," and a similar definition from Vanguard Products Corp. v. Parker Hannifin Corp., 234 F.3d 1370 (Fed. Cir. 2000). Smart contends that the specification, drawings, and prosecution history inform the proper meaning, which is a single piece. Smart notes that the specification distinguishes "integral" from "separate": "Base 14 may be . . . separate or integrally formed with peripheral flexible wall 22." (Col. 3, ll. 27-28.) Smart also points out that the drawings differentiate between the base and flexible sections formed as a single piece (integral) and formed as separate pieces joined together. Fig. 3B depicts a digitizer in which the base and flexible sections are formed as a single piece, while Fig. 7 shows the base and flexible sections formed of separate pieces joined together. The specification recognizes this distinction when it states that "digitizer 10b, FIG. 7, is constructed similarly to digitizer 10a with the exception that peripheral wall 22b is not integral with base 14b." (Col. 4, ll. 40-44.)

The Court finds that Smart's proposed construction, which is based upon the specification, is consistent with Phillips and accurately reflects the inventors' intent to limit the term "integral" to a one-piece construction of the base and flexible member. The Court will thus adopt that construction.
C. "Integral Construction."

The phrase "integral construction" was used in claim 17. As stated in previous section construing the term "integral," it must mean "functioning as a single unit." Here, parties seem to have little dispute over the actual meaning of the term "construction," agreeing that it refers to the way the article is made. Thus, this order holds that "integral construction" means "made such that components function as a single article."

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b) Integral Contrasting Border

We next turn to Maxcess's contention that the claimed "integral contrasting border" must be formed solely by removing the edges of the decorative surface layer "to expose" the inner body portion. Tate Access responds that Maxcess's proposed construction is largely consistent with that of the district court, except for its requirement that the inner body portion be exposed to view.

We conclude that the district court did not err in construing the term "integral." Claim 1 recites that an "integral contrasting border" is provided by removing the edges of the decorative surface layer "to expose" the inner body portion. See id. at col. 5, ll. 7-11. The district court also correctly construed the term "to expose" to mean "to uncover or to reveal," and the term "integral" to mean that "the edges are formed by the laminated floor covering without a separate border of trim." J.A. at 28. The court's construction of those terms is consistent with their ordinary meaning. See, e.g., Webster's New World Dictionary 479 (3d ed. 1988) (defining "expose" as "to allow to be seen; disclose; reveal"); id. at 701 (defining "integral" as "made up of parts forming the whole").

The district court's interpretation is also consistent with the written description, which states that "the surface layer of protective material and the layer of decorative paper are cut away along the edge of the floor covering to expose the inner layers." See '491 patent, col. 1, l. 67 to col. 2, l. 4. Moreover, it is clear from the written description that the edges of the decorative surface layer are removed to expose the inner body portion in order to make the backing layers visible and to provide a trim that is aesthetically pleasing. See id. at col. 1, ll. 39-40; col. 1, ll. 52-56; col. 2, ll. 16-17. We therefore conclude that the term "integral contrasting border" should be construed as an edge or trim formed by removing the edges of the decorative surface layer to uncover or reveal the inner body portion.

As for Tate Access's argument that Maxcess is estopped from challenging the district court's construction of the terms "inner body portion" and "integral," we need not deal with that argument because we agree with Tate Access's arguments regarding claim construction.

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Construction of Claim 7

The limitations upon which both Vardon and Golfsmith focus with respect to Claim 7 read as follows:

[a] means to reinforce the face wall and enlarge the effective hitting area of the golf club

Col. 10, lines 54-56. As noted above, the use of the word "means" presumptively invokes Paragraph Six and the means-plus-function interpretive analysis. In this claim, as in Claim 3, the language of the claim ties a function ("to reinforce the face wall and enlarge the effective hitting area of the golf club") to the word means. Consequently, the presumption of applying Paragraph Six is not overcome on this basis. The claim phrase also recites a structure, which unlike Claim 3 is very specific. The structure is described as:

[1] an integral perimeter wall extending rearwardly from and surrounding the face wall defining a cavity in the rear of the head, and
[2] a progressive face wall reinforcing element in the cavity extending from the approximate center of the rear of the face wall outwardly in the cavity to the perimeter wall, said element being integral with both the face wall and the perimeter wall, said reinforcing element incrementally increasing in height from the approximate center of the rear of the face wall to the perimeter wall,

[3] whereby the club face is supported by at least one structural arch. 2

Col. 10, lines 56-68 (emphasis added). This structure is sufficiently detailed to take interpretation outside of the language of Paragraph Six. See, e.g., Cole v. Kimberly Clark Corp., 102 F.3d 524, 527 (Fed. Cir. 1997). Since the structure described is sufficiently detailed, it is not necessary to also link the means to also link the means to a structure described in the patent specification or its equivalents. Id. Claim construction here focuses on the language itself.

Footnotes

2 As described below, the second and third elements are actually the same. This memorandum opinion refers to them separately to parallel the arguments as presented by the parties.

Properly construed, Claim 7 requires a wall extending back from and surrounding the perimeter of the club face. Two dictionary definitions are instructive. The word "surround" has been defined as follows: "1. To inclose on all sides; to encompass; to environ. 2. To lie or be on all sides of; to encircle; as, a wall surrounds the city." Webster's Revised Unabridged Dictionary (cited from: www.dictionary.com/cgi-bin/dict.pl?term=surround) (visited May 31, 2000). Similarly, another dictionary defines the verb surround as follows: "1. To extend on all sides of simultaneously; encircle. 2. To enclose or confine on all sides so as to bar escape or outside communication." American Heritage Dictionary of the English Language (3d Ed. 1996). Both of these definitions suggest that surround is an all-or-nothing proposition. While the phrase "completely surround" has been used without being self-consciously redundant, see, e.g., In re Ogiue, 517 F.2d 1382, 1389 (C.C.P.A. 1975) and the term "partially surround" has been used without being self-consciously oxymoronic, see, e.g., In re Erickson, 53 C.C.P.A. 706, 351 F.2d 661, 663 (C.C.P.A. 1965), the unmodified word "surround" or "surrounding" suggests that the wall must completely encircle the perimeter of the club face. This construction is also buttressed by language elsewhere in the '021 Patent. See Col, 7, lines 19-21 (describing a perimeter wall that extends "completely there-around [the club face]").) Properly construed, Claim 7 requires a wall that goes completely around the rear cavity of the club head.

Footnotes

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CLAIM CONSTRUCTION

The '854 patent is directed to an electromagnetic interference shielding gasket. Claim 1, the broadest claim, describes the gasket as having two elastomeric layers: a thick inner layer and a thin metal-filled outer layer "integral therewith":

1. In a gasket shield for countering electromagnetic interference comprising a flexible gasket element, the improvement wherein said gasket element comprises a relatively thick elastomeric layer of good elasticity and high tear resistance, and a relatively thin elastomeric outer layer integral therewith, said outer layer being metal filled and providing a high degree of attenuation of electrical energy.

The dispositive issue of claim construction is whether the term "integral therewith" requires that the product be made by co-extrusion, 2 the method of manufacture described in the specification. The accused shielding gasket is conceded by Parker Hannifin to contain inner and outer elastomeric layers of the same properties as described and claimed in the '854 patent, but the method of manufacture differs in that for the Parker Hannifin gasket the outer layer is applied to the inner layer by dip-coating.

Footnotes

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2 Co-extrusion is a known method of forming a composition of two materials by forcing them through a set of appropriately positioned forming dies.

The district court ruled, on review of the '854 specification, the prosecution history, and a dictionary definition of "integral," that the claimed gasket shield is not limited to manufacture by co-extrusion. The court instructed the jury as follows:

"Integral" is used here in its ordinary sense to mean formed as a unit with another part, and therefore, "integral therewith" means that the outer layer of the gasket is formed as a unit and in direct contact with the inner layer of the gasket.

Parker Hannifin argues that "integral therewith" requires the use of co-extrusion to manufacture the gasket, the only process shown in the specification, and that a claim not so limited would read on the prior art and would violate the written description requirement of 35 U.S.C. § 112 &1. Parker Hannifin states that the district court improperly resorted to a dictionary definition of "integral" to broaden the meaning of this term from the context in which it was used. Parker Hannifin also states that the dictionary was improper extrinsic evidence.

A dictionary is not prohibited extrinsic evidence, and is an available resource of claim construction. Although a dictionary definition may not enlarge the scope of a term when the specification and the prosecution history show that the inventor, or recognized usage in the field of the invention, have given the term a limited or specialized meaning, a dictionary is often useful to aid the court in determining the correct meaning to be ascribed to a term as it was used. See Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc., 222 F.3d 951, 955, 55 U.S.P.Q.2D (BNA) 1487, 1490 (Fed. Cir. 2000); Multiform Dressicants Inc. v. Medzam, Ltd., 133 F.3d 1473, 1478, 45 U.S.P.Q.2D (BNA) 1429, 1432 (Fed. Cir. 1998).

We discern no error in the district court's determination that "integral" was used in the '854 patent in its ordinary dictionary meaning. See Optical Disc Corp. v. Del Mar Avionics, 208 F.3d 1324, 1335, 54 U.S.P.Q.2D (BNA) 1289, 1295 (Fed. Cir. 2000) (a dictionary provides objective definition when words are used in their ordinary meaning). The '854 specification shows that the term was used to describe the product, and not as a designation of a specific manufacturing process.

Parker Hannifin argues that the prosecution history shows that the Vanguard inventors viewed co-extrusion as "fundamental" to manufacture of the claimed gasket, thereby imposing this process of manufacture upon the product claims. Parker Hannifin states that the inventors argued the benefits of co-extruded layers in order to overcome the prior art of Zulaf, Severinsen, and Bogan, and thus must be deemed to have disclaimed other methods of producing the gasket.

However, review of the prosecution history shows that during examination the examiner as well as the applicant treated the product claims as directed to the product itself, and examined the application accordingly. For example, in responding to the Zulaf reference the inventors pointed out that the Zulaf product was porous while theirs was solid, and pointed to other differences between the claimed and reference products. In addition, the inventors distinguished the Severinsen and other references in the Information Disclosure Statement based on the structure and composition of the products. Severinsen, for example, describes a metal-filled elastomer embedded with knitted wire mesh, and was criticized by the inventors for its poorer performance and higher cost. The examiner did not cite any reference directed to co-extrusion or the method of manufacture.

The prosecution history shows that the inventors extolled the economy of manufacture and superior product made by co-extrusion, and told the examiner that "our system requires only a one-step process as a result of the co-extrusion and tri-extrusion process." However, the prosecution history does not support Parker Hannifin's argument that the Vanguard inventors "expressly disclaimed" claim scope beyond products made by co-extrusion. Patent claim 10 specifically describes the gasket layers as "co-extruded." The district court correctly declined to read this limitation into claim 1. See Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023, 4 U.S.P.Q.2D (BNA) 1283, 1288 (Fed. Cir. 1987) (claims containing different limitations are presumed to be of different scope).

The method of manufacture, even when cited as advantageous, does not of itself convert product claims into claims limited to a particular process. We agree with the district court that the word "integral" describes the relationship between the elastomeric layers, not the means of joining them. This word did not limit the claim to the manufacturing process set forth in the specification. A novel product that meets the criteria of patentability is not limited to the process by which it was made. See 3 Donald S. Chisum, Chisum on Patents § 8.05, at 8-79 (2000) and cases cited therein.
Parker Hannifin states that the district court inappropriately relied on Serrano v. Telular Corp., 111 F.3d 1578, 42 U.S.P.Q.2D (BNA) 1538 (Fed. Cir. 1997), and failed to correctly apply Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 34 U.S.P.Q.2D (BNA) 1673 (Fed. Cir. 1995), in its claim construction. These criticisms are not well founded.

The Serrano litigation concerned both a product (system) and a process, and also involved "means-for" terms under 35 U.S.C. § 112 6. The district court herein correctly recognized these differences and correctly applied the reasoning of Serrano to distinguish product and method limitations. In Southwall the claims required a "sputter-deposited dielectric," thereby including the sputter-deposit method as an explicit limitation in the invention as it was claimed. This is analogous to claim 10 of the '854 patent. However, the co-extrusion limitation is not included in claim 1.

We discern no error in the district court's reading of the patent and its prosecution history, and application of law and precedent. We conclude that the district court correctly construed claim 1 in the instruction to the jury. On this claim construction the jury verdict is not appealed. The judgment entered thereon is affirmed.

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MAYER, Chief Judge, dissenting.

I would reverse. The district court relied on the plain meaning of the term "integral therewith" and properly refused to read the limitations of the preferred embodiment, i.e., co-extruded inner and outer layers, into the claims. However, "the prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Southwall Techs. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2D (BNA) 1673, 1676 (Fed. Cir. 1995) (citations omitted). Vanguard submitted its supplemental amendment before the notice of allowance issued, and argued that the amended claims were patentable over Zulauf because, inter alia, "the Zulauf system is at least a two-step manufacturing process . . . . Our system requires only a one-step process as a result of the co- and tri-extrusion process, and will therefore be more cost effective with regard to labor input." Through this response, Vanguard effectively disclaimed all but one-step processes, thereby precluding a claim construction of "integral therewith" that embraces any configuration which is "formed as a unit." Vanguard argues that the amendment was not required to secure allowance of the original claims because the notice of allowance did not refer to the supplemental amendment. This is irrelevant because Vanguard chose to amend its claims rather than wait for a response to its request for reconsideration, and the amendment was filed prior to the issuance of the notice of allowance. The arguments distinguishing the amended claims over the prior art are part of the prosecution history that the public has a right to rely on in determining the scope of the claims. See Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1303, 41 U.S.P.Q.2D (BNA) 1364, 1368 (Fed. Cir. 1997).

When the term "integral therewith" is properly construed to mean an inner and outer layer "formed as a unit through a single step process," the CHO-SEAL 3000 gaskets, which were produced by a multi-step dipping process to add the outer layer to the premade silicone core, lack the "integral therewith" limitation and thus do not literally infringe Claims 1, 3-6, and 9 of the '854 patent. We have held that "by distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover, he is by implication surrendering such protection." Ekchian, 104 F.3d at 1304, 41 U.S.P.Q.2D (BNA) at 1368 (citations omitted). The same statements in the supplemental amendment that limited the claim construction of "integral therewith" to mean "formed as a unit through a single step process" act as an estoppel barring the application of the doctrine of equivalents to the material that was surrendered during prosecution, namely inner and outer layers of gaskets formed as a unit through a multi-step process. Infringement by the doctrine of equivalents should not have been submitted to the jury because prosecution history estoppel bars expanding the claims to include the gaskets with an outer layer formed by dipping as in the CHO-SEAL 3000.

2164

8. "Integral therewith"

The plaintiff proposes "the tear-wettable surface layer is bound to, or otherwise connected to, the lens body so as to not easily separate from it." The defendants propose "the tear-wettable surface layer and the hydrophylic lens body directly
contact each other and are affixed to each other to form the contact lens."

The Court construes the term to mean "the tear-wettable surface layer is bound or affixed to the lens body." The Court incorporates by reference its construction of "tear-wettable" and "surface layer."

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2. Interpretation of "Integral with said Interior Lower Wall Portion"

The relevant language of Claims 1 and 12 of the '843 patent and Claim 1 of the '277 patent state that "the interior surfaces of said pylons are integral with said interior lower wall portion ...." The Court construes this element to mean that the interior portion of the pylons must form a unit with, or physically connect to, the lower wall portion.

2166

(2) Limitation (ii): "Distal Tip Integral With The Distal End of the Stem"

(a) Claims Construction

(i) Patent Language and Specification

Limitation (ii) of claim 1 states that the 023 patent improvement consists of "a distal tip integral with the distal end of the stem." Patent at 6:65. In order to construe the limitation, the terms "distal tip," "integral" and "distal end of the stem" have to be interpreted.

Referring to the drawings included in the specification, the patent describes the stem, reference number "22", as that portion of the femoral prosthesis that is inserted into the resected femur. At the proximal end of the stem are the prosthetic neck and the wedge-shaped affixation area, both of which are "unitary with the stem." Patent at 3:23-26. The stem is inserted into the passage reamed by the surgeon (called the "cavity"), and is advanced downwards until the stem is fully within the passage. Patent at 3:35-38. By definition, the "distal" end of the stem is that portion of the stem furthest from the point of attachment at the hip joint.

Located at the distal end of the stem is a tip, which the patent calls the "distal tip," referred to as number "40" in the specification references. The specification describes the location of the distal tip in the following manner:

A distal tip is located at the distal end of the stem, spaced axially downwardly from the affixation surface, so as to extend downwardly into [the] passage and be positioned so that [the] distal tip is seated within harder portions of the bone of the wall of [the] femur, namely, within either dense cancellous bone or cortical bone, when the affixation surface is seated properly within the cavity.

Patent at 3:45-52.

The 023 patent's claims limitations and specification further describe the distal tip as comprising of the following characteristics:

First, the distal tip is "integral" with the distal end of the stem. The term "integral" will be explained below.

Second, the distal tip is constructed of a bio-compatible material, such as a cobalt-chrome steel alloy.

Third, the distal tip has a generally cylindrical external peripheral surface extending along the length of the distal tip. The axial length of the external peripheral surface of the tip must be long enough to provide an area of contact between the distal tip and the wall of the cavity large enough to maintain a relatively low level of stress on the wall of the femur at the location.
of the distal tip in response to transverse forces at the distal tip. As explained above, the axial length of the distal tip's external surface must also be short enough to expose a segment of the stem shaft above the distal tip and below the affixation surface in order to enable flexing of the shaft by means of a shaft diameter that is smaller than the diameter of the external surface of the tip.

Fourth, the external peripheral surface has a diameter complementary to the cavity in which it sits, so that the external peripheral surface of the distal tip engages, or presses against, the harder bone of the cavity wall and is confined against transverse movements within the cavity.

Fifth, the external peripheral surface has a fixation-resistant surface finish which prevents the distal tip from affixing to the wall of the cavity, thus allowing (i) the distal tip and distal end of the stem to rotate around the tip's central axis relative to the wall of the femur, and (ii) axial movement of the distal tip and distal stem relative to the wall of the femur, in response to forces applied to the prosthesis. The fixation-resistant finish is described as "a very smooth surface finish, such as that which is attained by polishing and buffing the cobalt-chrome steel alloy." Patent at 4:1-3.

Sixth, the distal tip's central bore has a taper which is complementary to the taper on the distal end of the stem, thus allowing securing of the tip onto the stem by slipping the central bore of the distal tip over the distal end of the stem. This method of securing prevents movement of the distal tip relative to the distal end of the stem.

In addition to the above, the patent provides for the distal tip to be modular. As used in the industry, "modularity" means that the distal tip can be removed and replaced by another tip on the same stem. In this way, distal tips having bigger external peripheral surface diameters but the same central bore diameter can be fitted onto one stem, thus providing the surgeon with a variety of tip sizes to accommodate the patient's inner femur cavity without having to use a different sized stem for each different sized proximal portion of the prosthesis.

Modularity in the 023 patent is created through use of the complementary tapers between the distal end of the stem and the central bore of the distal tip, which is also the method that secures the tip onto the distal end of the stem. Claim 4 of the 023 patent provides that the distal tip described by claim 1 must include "securing means for securing the distal tip to the stem for selective removal and replacement of the distal tip." Patent at 7:30-32. The specification states that "it is preferable that [the] distal tip be removable selectively from [the] stem." Patent at 4:47-49. Towards this end, through the use of the complementary tapers for securing the tip onto the stem, the distal tip can be "selected from a series of distal tips offered in a range of outside diameters so that a surgeon may choose the diameter for [the] external peripheral surface appropriate for the size of the passage into which the distal tip will be fitted." Patent at 4:64-68. The specification also describes the advantages and benefits of modularity:

The ability to remove and replace the distal tip with another distal tip selected from distal tips offered in a range of sizes enables greater versatility in fitting in that a wide variety of size combinations is made available in the joined stem and distal tip so as to enable independent sizing at the proximal portion of the stem without multiplying the number of stems needed to achieve such versatility. In providing such modularity between the stem and the distal tip, a greater choice is made available in the materials selected for the stem, as well as for the distal tip, so that the stem can be made even more flexible for better accommodation of loads during use.

Patent at 6:31-43.

Dr. Burstein explained the concept of "distal modularity" as described in the 023 patent for the Court in the following manner:

THE COURT: I heard a lot mentioned about modularity. What does that mean in lay language?

THE WITNESS: It means, Your Honor, that for every component that fits the proximal end of the femur, there are more than one component that can be put on the distal end, more than one diameter. So if we have a patient that has this size canal up on top and a big canal on the bottom, we can select a big tip, put it on the prosthesis, and put the prosthesis in the patient.

What that means is that this one part, the proximal portion, will fit people with different size canals and fit each one with a complete fit which will prevent toggling and allow it to move up and down, and these tips fit not only this size end, not
only this size proximal end, but bigger proximal ends and smaller proximal ends. So with about five sizes on the proximal
end and about five sizes on the distal end, you can fit 25 different sized patients. So you go into the operating room, instead
of 25 different prostheses, you have five prostheses and five tips, but you can still fit 25 different size patients.

(Tr. at 363-364).

With these characteristics of the distal tip in mind, the term "integral" can be better understood. As used in the claim
limitation, integral means that when the distal tip is secured to the stem, the tip and stem act in a unified manner. The patent
specification explains that the "distal tip is integral with the distal end of the stem, so that all movements of the distal end of
the stem result in corresponding movements of the distal tip." Patent at 4:44-46 (emphasis supplied).

In order to provide such unitary movement of the tip and stem in response to forces acting on the prosthesis, or to put it
another way, in order to prevent any movement of the stem relative to the distal tip, claim 5 provides that the means for
securing the distal tip to the stem include "a securing mechanism responsive to relative axial movement between the stem
and the distal tip for securing and releasing the distal tip and the stem." Patent at 7:33-36.

Thus, in the Court's view the phrase "distal tip integral with the distal end of the stem" means that there is a tip secured to
the distal end of the stem, such that the tip and stem act as one unitary piece.


This interpretation of "a distal tip integral with the distal end of the stem" is also supported by the patent's prosecution
history. In response to the Patent Examiner's rejections of initial 023 patent claims 1-6 on the ground that the claims were
unpatentable over the Witzel patent, the 023 patent applicants distinguished the Witzel device by, among other things,
pointing to the fact that the sleeve of the Witzel device was uncoupled to the stem and did not act in a unitary fashion with
the stem:

In Witzel, a small sleeve of synthetic resin material is first secured in the medullary canal, and then the shaft of a femoral
stem is inserted into the sleeve. The shaft can move relative to the sleeve, but there is no displacement of the sleeve relative
to the bone of the femur during service. In the construction of the present claims, the distal tip is affixed to the distal end of
the stem prior to insertion into the medullary canal, and flexing of the shaft of the femoral stem during service is
accommodated by displacement of the distal tip relative to the surrounding bone of the femur. Among those advantages is
the distribution of stresses during service and the ability to use a material other than the synthetic resin material disclosed by
Witzel to accommodate those stresses. Thus, in the Witzel construction, the articulating surfaces between the stem and the
sleeve are of limited area, resulting in relatively higher stresses and the possibility for the formation of resin debris as the
sleeve wears during use.

(Plaintiff's Exh. 568 at 50-51).

Dr. Burstein also corroborated this interpretation of "integral" by explaining that the patent uses the term integral to describe
the attachment of the distal tip to the stem, and to describe the motion of the tip and stem relative to the bone:

Q Now, would you explain in lay terms what the patent teaches in column 4, lines 44 to 46?

A The patent is teaching the function and meaning of the attachment between the tip and the stem. The patent is saying
that the tip and stem must be integral, and integral is defined two ways in the patent. It is what would happen if the tip and
the stem were made of one piece. That's one example of integral given in the patent. So that would be if you just made it
without any junction at all and didn't assemble them together but made it as a simple piece. That's what the patent means by
integral.

Also, integral should be thought of as having each motion of the stem correspond to a motion of the tip itself. That is,
there should be no relative, no meaningful relative motion between the tip component and the stem. So we can think of it in
either way as a unitary or integral.

(Tr. at 152-53).
3. "an attachment structure integral with the knife body"

Plaintiff proposes the attachment structure lies in the implement plane and comprises a gate attachment, an attachment arm, and a gate. The gate attachment and attachment arm are part of the attachment plate. The attachment structure is integral with the knife body in the sense that it is fixed and immovable relative to the knife body. The attachment plate cannot be integral with either of the sides of the knife, in the sense that they cannot be part of the same piece of material.

Defendant proposes "a structure integral with the knife body, the structure's shape being well suited for attaching the knife body to objects."

The court finds this language to be clear on its face and that no claim construction is needed.

The '401 and '666 patents each contain only one independent claim. For purposes of this appeal, the key limitation in each claim is that the in situ ribs are required to be "integrally bonded . . . free of adhesive" to the panels.

--- Footnotes ---
1 The '401 and '666 patents are continuations of the same application and have the same written descriptions.
2 Claim 1 of the '401 patent (with the disputed claim language emphasized) reauds as follows:

1. A multi-channel transparent jacket for accommodating microfilm strips having a predetermined thickness and a predetermined width and whose length is no greater than the length of the jacket, said jacket comprising:

   (A) top and bottom rectangular panels in superposed relation formed of flexible, polyester film having predetermined polymeric properties; and

   (B) a plurality of in situ ribs formed of moldable plastic material compatible with the material of said panels and integrally bonded thereto to form a unitary structure free of adhesive or other bonding agents and in which the properties of said panels are unimpaired, said ribs maintaining said panels in parallel planes to define open-end channels whose width is substantially equal to the width of said strips, said ribs having a thickness substantially equal to the thickness of said strips, each channel having an entry slot cut into said bottom panel adjacent the front end of the jacket.

Claim 1 of the '666 patent (with the disputed claim language emphasized) reads as follows:

1. A method of producing individual multi-channel transparent jackets for accommodating microfilm strips having a predetermined thickness and a predetermined width and each jacket being composed of front and rear rectangular panels in superposed relation formed of flexible transparent polyethylene terephthalate film having predetermined polymeric properties, the method comprising the steps of:

   (A) directing a plurality of spaced extruded molten streams of moldable polyester material . . . onto the surface of a first web . . . ;

   (B) advancing said first web carrying said streams concurrently with a second web of panel material into combining rolls having an adjustable nip . . . ;
Bell & Howell sued Keystone, its president George Wrabel, and Altek Systems 3 alleging, inter alia, infringement of the '401 and '666 patents, and moved for a preliminary injunction. The court held a preliminary injunction hearing in which it received evidence relevant to the construction of the claims and to infringement. Keystone conceded the patents' validity for purposes of the preliminary injunction motion.

The hearing focused on the meaning of the expression "integrally bonded . . . free of adhesive." In construing the claims, the court considered the patents' specifications and prosecution histories, and the testimony of expert witnesses. Keystone offered the testimony of Dr. Robin McCarley, a professor of chemistry, and Bell & Howell offered the testimony of Dr. John Muzzy, a professor of chemical engineering. McCarley testified that there are several types of bonding in the field of chemistry, including "mechanical bonding" and "integral bonding." He explained that "mechanical bonding" occurs between two substances when one flows into and fills the "nooks and crannies" on the surface of the other and then hardens, such that the hardened substance is anchored to the other. In contrast, "integral bonding" results when the molecules of the two substances cross the interface between them and "intermingle" such that the interface is obliterated. Thus, Keystone argued that because its jackets have a clearly discernible interface between the ribs and panels with no intermingling of the rib and panel materials, their jackets involve "mechanical," not "integral," bonding and do not infringe either of the claims.

Muzzy testified for Bell & Howell that Keystone's jackets were "integrally bonded" as that term is defined in the patents. He later clarified his position in an affidavit, in which he explained that the patents disclose a bonding in which the rib material itself serves as the adhesive without the use of separate layers of adhesives or bonding agents. Muzzy's affidavit explained further that the term "integrally bonded" was used by the patentee to distinguish over the paper-ribbed prior art in which adhesives were used to secure pre-formed paper ribs to the panels. In effect, Muzzy, while not arguing with McCarley's definitions of "integrally bonded" and "mechanically bonded" generally, argued that the term "integrally bonded" as used by the patentee in the '401 and '666 patents should be construed in the mechanical sense.

The court essentially adopted Keystone's construction. In support, the court noted that it is clear "that chemists have a clear definition of 'integral bonding.' It means exactly what both Dr. Muzzy and Dr. McCarley agreed that it means: that the two surfaces unite by an exchange of molecules so as to obliterate the interface between them." The court further noted that the term "integrally bonded" could not be construed to mean bonded without adhesive, because this would render the claim language "free of adhesive" superfluous. The court thus "interpreted the claims of the '401 and '666 patents for purposes of [the preliminary injunction] hearing to require actual integral bonding into a single unitary piece of material." Because the court found it clear that the rib of Keystone's accused product was mechanically rather than integrally bonded to the panels, it determined that Bell & Howell "failed to establish a clear likelihood of success in showing infringement of either the '401
or '666 patents."

The court also determined that the balance of hardships favored Keystone, a "fledgling" company that would be put out of business if a preliminary injunction issued, and that the much smaller Keystone could only cause limited harm to the much larger Bell & Howell. The court further determined that the impending erosion of the microfiche market in light of optical disk technologies would naturally eliminate competition between the litigants and minimize long term damage to Bell & Howell. Accordingly, the court denied Bell & Howell's motion for a preliminary injunction.

Bell & Howell appeals to this court, arguing that the district court erred in denying its motion for a preliminary injunction. We have jurisdiction pursuant to 28 U.S.C. § 1292(c)(1) (1994).

DISCUSSION

The grant or denial of a preliminary injunction pursuant to 35 U.S.C. § 283 (1994) is within the discretion of a district court. Novo Nordisk of N. Am., Inc. v. Genentech, Inc., 77 F.3d 1364, 1367, 37 U.S.P.Q.2D (BNA) 1773, 1775 (Fed. Cir. 1996), cert. denied, 139 L. Ed. 2d 310, 1997 U.S. LEXIS 6493, 66 U.S.L.W. 3324, 118 S. Ct. 397 (U.S. 1997). A court's decision to deny a preliminary injunction will be overturned on appeal only upon a showing that the court "abused its discretion, committed an error of law, or seriously misjudged the evidence." Smith Intl', Inc. v. Hughes Tool Co., 718 F.2d 1573, 1579, 219 U.S.P.Q. (BNA) 686, 691 (Fed. Cir. 1983). An abuse of discretion may be established by showing that the court made a clear error of judgment in weighing the relevant factors or exercised its discretion based upon an error of law or clearly erroneous factual findings. Novo Nordisk, 77 F.3d at 1367, 37 U.S.P.Q.2D (BNA) at 1775; see also Polymer Techs., Inc. v. Bridwell, 103 F.3d 970, 973, 41 U.S.P.Q.2D (BNA) 1185, 1188 (Fed. Cir. 1996).

As the moving party, Bell & Howell had to establish its right to a preliminary injunction based on four factors: (1) a reasonable likelihood of success on the merits; (2) irreparable harm if the injunction were not granted; (3) the balance of relative hardships tips in its favor; and (4) whether and how an injunction would impact the public interest. Nutrition 21 v. United States, 930 F.2d 867, 869, 18 U.S.P.Q.2D (BNA) 1347, 1348-49 (Fed. Cir. 1991); Hybritech, Inc. v. Abbott Lab., 849 F.2d 1446, 1451, 7 U.S.P.Q.2D (BNA) 1191, 1195 (Fed. Cir. 1988).

A. Likelihood of Success:

In order to demonstrate likelihood of success, Bell & Howell must show that, in light of the presumptions and burdens that will inhere at trial, it will likely prove that Keystone infringes its patents. 4 See New England Braiding Co. v. A.W. Chesterton Co., 970 F.2d 878, 882-83, 23 U.S.P.Q.2D (BNA) 1622, 1625-26 (Fed. Cir. 1992). If Bell & Howell clearly established a likelihood of success, it was entitled to a rebuttable presumption that it would be irreparably harmed if a preliminary injunction were not to issue. Polymer Techs., 103 F.3d at 973, 41 U.S.P.Q.2D (BNA) at 1188.

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4 Usually, a patentee would also have to show that it would likely withstand any alleged infringer's challenge to the validity and enforceability of the patent. See New England Braiding Co. v. A.W. Chesterton Co., 970 F.2d 878, 882-83, 23 U.S.P.Q.2D (BNA) 1622, 1625-26 (Fed. Cir. 1992). However, Keystone contested only infringement in opposing the preliminary injunction motion.

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Bell & Howell argues that the district court erred in construing the expression "integrially bonded . . . free of adhesive." Specifically, Bell & Howell argues that this expression means that the ribs adhere to the panels by themselves without the use of a separate layer of adhesive. Bell & Howell asserts that this construction is supported by the intrinsic evidence, viz.,
the patents' specifications and file histories, see Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1581-82, 39 U.S.P.Q.2D (BNA) 1573, 1576-77 (Fed. Cir. 1996), and that the district court, despite this evidence, improperly relied on the expert testimony of McCarley and Muzzy to construe the expression otherwise.

Keystone responds that the court's construction was reasonable. In support, Keystone notes that both experts agreed that the term "integrimly bonded" means that the rib and panel material must be "integrated," i.e., mixed at the molecular level, and that nothing appears in the intrinsic evidence to suggest that the inventor intended to impart an extraordinary meaning to this phrase. Keystone also argues that the district court does not have to make a final interpretation of the claims to deny a preliminary injunction, and that, at this stage of the litigation, we should determine only if the court's claim construction provided an "adequate basis" for denying the preliminary injunction.

We agree with Bell & Howell that the court erred in relying on expert testimony to construe the expression "integrimly bonded . . . free of adhesive" because the intrinsic evidence is clear and unambiguous. The intrinsic evidence supports Bell & Howell's claim construction, and the district court therefore erred as a matter of law in construing this expression to require an "exchange of molecules" between the rib material and the panel material.

When construing a claim, a court should look first to the intrinsic evidence, i.e., the claims themselves, the written description portion of the specification, and the prosecution history. See Vitronics, 90 F.3d at 1582-83, 39 U.S.P.Q.2D (BNA) at 1576-77. The intrinsic evidence should usually be sufficient to enable one to determine the meaning of a claim term. See Markman, 52 F.3d at 986, 34 U.S.P.Q.2D (BNA) at 1335 (noting that "ideally there should be no ambiguity in the claim language to one of ordinary skill in the art that would require resort to evidence outside the specification and prosecution history" and citing the disclosure requirements of 35 U.S.C. § 112 (1994) in support). When the intrinsic evidence is unambiguous, it is improper for the court to rely on extrinsic evidence 5 such as expert testimony for purposes of claim construction. Vitronics, 90 F.3d at 1583, 39 U.S.P.Q.2D (BNA) at 1577. The rationale for this rule is that:

the claims, specification, and file history, rather than extrinsic evidence, constitute the public record of the patentee's claim, a record on which the public is entitled to rely. In other words, competitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention. Allowing the public record to be altered or changed by extrinsic evidence . . . , such as expert testimony, would make this right meaningless. The same holds true whether it is the patentee or the alleged infringer who seeks to alter the scope of the claims.

Id. at 1583, 39 U.S.P.Q.2D (BNA) at 1577 (quotations and citations omitted). The testimony of an inventor and his attorney concerning claim construction is thus entitled to little or no consideration. The testimony of an inventor often is a self-serving, after-the-fact attempt to state what should have been part of his or her patent application; the testimony of an attorney "amounts to no more than legal opinion--it is precisely the process of construction that the court must undertake." Markman, 52 F.3d at 983, 34 U.S.P.Q.2D (BNA) at 1332-33.

5 "Extrinsic evidence is evidence which is external to the patent and file history, such as expert testimony, inventor testimony, dictionaries, and technical treatises and articles." Vitronics, 90 F.3d at 1584, 39 U.S.P.Q.2D (BNA) at 1578. Prior art may also constitute extrinsic evidence. See id. at 1584-85, 39 U.S.P.Q.2D (BNA) at 1578-79.

Once a dispute over claim construction arises, "experts" should also not be heard to inject a new meaning into terms that is inconsistent with what the inventor set forth in his or her patent and communicated, first to the patent examiner and ultimately to the public. Patents should be interpreted on the basis of their intrinsic record, not on the testimony of such after-the-fact "experts" that played no part in the creation and prosecution of the patent. See Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1578, 34 U.S.P.Q.2D (BNA) 1673, 1680 (Fed. Cir. 1995) ("Evidence extrinsic to the patent and prosecution history, such as expert testimony, cannot be relied on to change the meaning of the claims when that meaning is made clear by those documents."). Use of expert testimony to explain an invention may be useful. But reliance on extrinsic evidence to interpret claims is proper only when the claim language remains genuinely ambiguous after consideration of the intrinsic evidence, Vitronics, 90 F.3d at 1584, 39 U.S.P.Q.2D (BNA) at 1578, i.e., when the intrinsic
evidence is "insufficient to enable the court to construe disputed claim terms." Id. at 1585, 39 U.S.P.Q.2D (BNA) at 1579. Accordingly, any expert testimony that is inconsistent with unambiguous intrinsic evidence should be accorded no weight. Id. at 1584, 39 U.S.P.Q.2D (BNA) at 1578 (citing Southwall, 54 F.3d at 1578, 34 U.S.P.Q.2D (BNA) at 1678); Markman, 52 F.3d at 983, 34 U.S.P.Q.2D (BNA) at 1333.

These patents do not suffer from the malady of ambiguous intrinsic evidence. The specifications set forth that the invention is an improvement over, inter alia, the paper-ribbed prior art because it does not use a separate adhesive layer between the ribs and the panels:

In the jacket [of the prior art], preformed plastic or paper ribs are adhesively secured to the top and bottom panels. Hence, the . . . ribs act as carriers for an adhesive agent to effect lamination.

. . . .

In view of the foregoing, it is the main object of this invention to provide a . . . jacket for microfilm wherein the channels are defined by in situ ribs which are integral with the panels of the jacket . . .

'401 patent, col. 1, l. 51 to col. 2, l. 13; '666 patent, col. 1, l. 49 to col. 2, l. 13. The bond between the ribs and the panels in the invention disclosed in the specifications clearly does not involve a separate adhesive or other bonding agent, but rather fusion of the molten rib to a solid panel:

These problems are overcome in the present invention by creating ribs . . . in situ, streams of rib material in molten form being extruded and being sandwiched between the top and back [panels] in combining rolls, whereby the ribs are formed in place and fused to the panel, the resulting ribs being integrally bonded to the panels to form a unitary jacket structure free of adhesive or any other bonding agent.

'401 patent, col. 7, ll. 6-15; '666 patent, col. 7, ll. 8-16.

The prosecution history 6 also aids in construing the meaning of the disputed claim language. Several references in the prosecution history show that by using the term "integrally bonded," the patentee was attempting to distinguish its claims over the paper-ribbed prior art that used a separate adhesive layer between the ribs and the panels. See, e.g., prosecution history, Serial No. 463,814 (Feb. 5, 1977) ("Clearly, a preformed rib which is joined by an adhesive substance to a panel is not 'integrally bonded' thereto, as called for in the claims . . . ."). In response to the examiner's contention that the term "integrally bonded" could include the use of an adhesive, the patentee added the "free of adhesive" language: "The expression 'adhesive-free' is intended to define more clearly and to point up the fact that the claimed product (wherein 'in situ ribs' are integrally bonded to the top and bottom panels) is characterized by the absence of undesirable adhesive." Id. (May 15, 1977); see also id. (Feb. 28, 1977) ("As pointed out in the remarks accompanying this amendment, the expression 'adhesive-free' is not a new limitation in the claim, but only serves to define more clearly the existing limitation 'integrally bonded.'"). This last statement (and others of similar effect) from the prosecution history makes it clear that the expression "integrally bonded . . . free of adhesive" operates as a single limitation. Therefore, the district court's conclusion that Bell & Howell's proffered claim construction would render the word "integrally" superfluous because being "free of adhesive" is already recited in the claims is not sustainable. Moreover, defining a state of affairs with multiple terms should help, rather than hinder, understanding. Being "integrally bonded" and "free of adhesive" are mutually reinforcing definitions rather than being superfluous.

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6 We refer to the prosecution history without reference to the patent to which it pertains, i.e., the '401 or the '666. The parties have not drawn a distinction between these two patents and neither will we.

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The specifications and the prosecution history therefore provide clear indication of the meaning of the disputed claim language. Thus, the theoretical testimony of experts concerning the nature of chemical bonding, and referring to testing methods not even known when the patents' specifications were drafted, was totally unnecessary, merely creating confusion
where none truly existed. Because the intrinsic evidence unambiguously defines the disputed claim limitation, the district court's reliance on the expert testimony of McCarley and Muzzy to contradict the intrinsic evidence when interpreting the claims was error. See Vitronics, 90 F.3d at 1583, 39 U.S.P.Q.2d (BNA) at 1577. We thus conclude that the intrinsic evidence unambiguously defines the expression "integrally bonded . . . free of adhesive" to mean that the ribs bond to the panels without the use of a separate adhesive layer between the ribs and the panels. The court's contrary construction was legal error, leading to an abuse of discretion in denying the motion for a preliminary injunction.

2169

(3) Integrally Cast

Various claims involving the ’274, ’698, and ’917 Patents state that the rollers are integrally cast with the channel. Innovative argues that in accordance with its customary and ordinary meaning, integrally cast means "formed by cast molding as part of the same piece." In support of this reading, Innovative cites to the dictionary definition of cast ("something that is formed by casting in a mold or form") and the definition of integral ("formed as a unit with another part").

Defendants assert "integrally cast" means "formed using a one-step process." Defendants derive this extraneous and limiting definition from an amendment to the ’917 Patent. Innovative contends that this definition is taken out of context because the statement in the amendment was intended to emphasize the difference between the two-step process of the prior art and the single step process required by integral casting. The purpose of consulting the prosecution history is to exclude any interpretation that was previously disclaimed during the prosecution. ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580 (Fed. Cir. 1988). Since there was no disclaimer, it would be improper to limit integrally cast as meaning formed using a one-step process.

The court will refuse to improperly limit the term and will adopt Innovative's construction to find that "integrally cast" means "formed by cast molding as part of the same piece" in accordance with its customary and ordinary meaning.

2170

D. "Integrally Connected."

The phrase "integrally connected" appeared in claim 2 which depended from claim I. It recited (col. 5:20-23):

2. The apparatus according to claim I wherein said at least one portion comprises a strip of resilient flexible material integrally connected to the remainder of said closure at opposed strip ends.

Again, the term "integrally connected" relies on the construction of "integral," as described above. Plaintiff proposes that the term be defined as "made as one continuous piece," while defendants propose that it should mean "connected such that the component parts function as a solitary article." Plaintiff's proposed definition conflicts with this order's definition of "integral." The parts must function as a single piece; they must not be made of a single piece (as a molded unit, for example). Thus, importing the prior definition of "integral" into this claim, this order holds that "integrally connected" is construed to mean "joined to function as a single article."

2171

A. "Integrally Connected."

The phrase "integrally connected" appeared in claim 21 which recited (col. 8:28-45):

21. Apparatus for controlling the flow of fluid through a fluid passageway, said apparatus comprising a pressure-activated valve for receiving fluid from a fluid flow passageway and including a tubular housing member formed a resilient molded
material and a deformable diaphragm formed of resilient molded material integrally connected to said tubular housing member and movable between a first position wherein said diaphragm is closed and forms a substantially fluid-tight seal preventing fluid flow through said tubular housing member and a second position wherein said diaphragm defines an opening responsive to fluid pressure within said tubular housing member, said pressure-activated valve additionally including a wall providing a hinged interconnection between said tubular housing member and said diaphragm, said wall inverting when said diaphragm moves between said first and second position.

The term appeared in the same context in claim 24. In contrast, claim 26 recited "a tubular housing member and a deformable diaphragm of resilient material connected to said tubular housing member and moveable responsive to a change in fluid pressure" (col. 9:28-10:3). The term also appeared in claim 14, which recited "[t]he apparatus according to claim 13 wherein said diaphragm is integral with said outer tubular housing member" (col. 7:63-65). Claim 13 recited an apparatus where the outer housing member was formed of a hard, inflexible material, and the inner tubular was formed of a flexible, resilient material.

Plaintiff contends that this term should mean "joined to the tubular housing to form a single part or piece; the tubular housing, diaphragm, and the wall surrounding the diaphragm are all molded into a single integral part or component called the pressure activated apparatus." In support, Paczonay points out that the specification stated "[t]ypically, closures of this type employed on containers utilize multiple piece [sic] housings or bodies in which the valve is mounted. While closures used for such applications may function generally satisfactorily, in some applications it is desirable not to employ multiple piece [sic] constructions" (col. 1:16-20). This statement shows that constructing the valve from a single piece of material was desirable, but this limitation never appeared in the claims.

In response, defendants argue that "integrally connected" means "connected such that the component parts function as a solitary article," the same construction that defendants proposed for the term "integral" as used in the '207 patent. Defendants cite to the specification, which states "[A] wall 54 is positioned within the tubular housing and provides a hinged interconnection between the diaphragm and the tubular housing, the wall being integrally formed with the diaphragm and the tubular housing and of course constructed of the same material" (col. 4:31-35).

Both parties cite the following passage from the specification describing a preferred embodiment in support of their respective definitions: "[d]iaphragm 84 and outer tubular housing member along with wall 91 interconnecting same are integrally molded. The housing members 88,90 are secured together during a molding process wherein the housing member 88 is molded in situ on housing member 90" (col. 5:66-6:3, Fig. 5). From the figure, it appears that the housing members are secured inside one another to form a single unit.

Defendants interpret this language to indicate that Paczonay necessarily intended that the two pieces be molded separately, then joined together such that they function as a unit. Paczonay argues in response that this indicates that the pieces were molded together to form a single unit. Paczonay also contends, without presenting supporting evidence, that one skilled in the art would know that the pieces are intended to be molded as one piece. It seems that here, Paczonay is attempting to read a limitation from the specification into the claims. The specification mentions the desirability of molding the two pieces together, but doing so is never mentioned in the claims. Simply put, both parties are trying to find definitions for the term in the specification that are not there. Accordingly, the specification of the '128 patent does not indicate that "integral" should be given anything other than its plain-language meaning.

The term "integrally connected" does not require that an article be formed of a single, continuous piece, as plaintiff argues. Defendants' proposed definition, that the parts must be joined to function as a single article, adequately captures the plain meaning of the term. Here, "integrally connected" is held to mean that the pieces are joined to function as a single article, including, but not limited to, a molded unit.
In the '230 patent, the flange portions are attached to the receiving portion by intermediate portions "integrially connecting" the separate sections. (230 patent, col. 4, l. 56.) Plaintiff proposes that the term "integrially connecting" means "the joining together of parts to form a whole." (Pl.'s Br. at 17.) Defendant proposes that the term "requires a rigid, one-piece connection between the intermediate portion, a corresponding flange and the receiving portion. The integral connection between the intermediate portion, the flange and the receiving portion performs the function of securely and stably holding the bore of the receiving portion immovable relative to its flange with a single integrated piece construction." (Def.'s Br. at 21-22.) The central point of disagreement between the parties as to the construction of the term "integrially connecting" is whether the connecting of two originally distinct pieces (as by welding, for example) is, as Plaintiff argues, sufficient for those pieces to become "integrially" connected, or whether, as Defendant argues, 17 an integral connection requires that the connected elements be formed as one piece (as by casting, for example). 18

17 Defendant's proposed construction, which unhelpfully attempts to define "integrially" by requiring an "integral connection" and "a single integrated piece construction," (Def.'s Br. at 21-22), does not on its face state that welding fails to satisfy the integral connection criterion. Defendant's written submissions make clear, however, that it believes the construction of "integrially connected" requires a unitary construction, as by casting.

18 The common definition of "integral" supports either construction. See Webster's New Int'l Dictionary 1173 (3d ed. 1993) (defining "integral" as, inter alia, "of, relating to, or serving to form a whole," "formed as a unit with another part," or "essential to completeness").

As an initial matter, Plaintiff's proposed definition, which simply requires that parts be joined to form a whole, is insufficiently specific to capture the meaning of "integrially connecting" in the context of the '230 patent. As one court recently explained when rejecting a similar proposed construction 19 as insufficient to construe the significance of the term "integrially":

The definition offered by BMS just does not go far enough. It would include any type of connection, including exterior screws attaching a connecting plate, a loose dowel with removable discs, a C-clamp, or one of the wide black clips used to bind papers . . . . [I]f "attached" or "connected" is all that is meant, then what purpose is served by "integrially?" . . . "Integrially" implies something that is part of the whole or is needed for completeness. See Merriam-Websters Collegiate Dictionary 606 (10th ed. 2002). However, . . . integrally is not being used in this patent merely in the sense of a cog inside a machine, which is "integral" to the mechanism, but is a separate moving part.

Burns, Morris & Stewart Ltd. Partnership v. Masonite Intern. Corp., 401 F. Supp. 2d 692, 699-700 (E.D. Tex. 2005). As in Burns, the construction of "integrially connecting" in the '230 patent must amount to more than the mere attachment to form a whole, if the word "integrially" is to have any significance. The term "integrially connecting" requires that the connected pieces be joined "so as to make up a single complete piece or unit, in such a way that the connection becomes part of [the single complete unit]." Id. at 701 (emphasis added).

19 The proposed construction was "[c]onnected together so as make up a single complete piece or unit, or so as to work together as a single complete piece or unit." Burns, Morris & Stewart Ltd. Partnership v. Masonite Intern. Corp., 401 F. Supp. 2d 692, 699 (E.D. Tex. 2005).

On the other hand, the insufficiency of Plaintiff's proposed construction does not, as Defendant argues, indicate that the patent's "integrially connecting" criterion can be satisfied only through single-piece construction, as by casting out of molten metal. 20 First, in light of the fact that claim 2 of the '230 patent, which is dependent upon claim 1, provides the additional limitation of "[a]n interconnection device according to claim 1, wherein the flange and receiving portions are each formed from one of cast iron, steel or aluminium," (230 patent, col. 4, l. 65-67), the doctrine of claim differentiation forecloses a
construction of "integrally connecting" that requires construction by casting. See Phillips, 415 F.3d at 1314-15 ("the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim"). 21

20 Once again, Defendant relies upon the testimony of the inventors regarding their intent behind the use of the term "integrally connecting" in its claim construction analysis. As the Court noted, supra, such testimony is "irrelevant" to the claim construction questions before the Court. Howmedica, 540 F.3d at 1346-47.

21 Contrary to Defendant's argument, the prosecution history of the '230 patent does little to clarify the meaning of the term "integrally connecting." It is true that the term was added in response to a prior rejection by the Patent Office, but the emphasis in the patent applicant's representations to the patent examiner was on the '230 patent's dual, parallel intermediate portions, not on the concept of integral connection:

An advantage of two flange portions each having a respective intermediate portion integrally connecting a location surface of the flange portion with the receiving portion as recited in claim 5, is that the receiving portion is more securely and stably supported than if connected to the flange portion at only a single position. . .

(Def.'s Br. Ex. G at 9-10) (emphasis added). The stage at which the "integrally formed" language was added to the '230 patent does not, in this case, clarify what the language encompasses; it merely begs the question of what "integrally connecting" means. The Court of Appeals for the Federal Circuit has cautioned against relying upon the prosecution history to narrow the scope of a claim "where the alleged disavowal of claim scope is ambiguous," or where remarks made by an inventor to overcome a rejection may be viewed "as amenable to multiple reasonable interpretations." Omega, 334 F.3d at 1324. Given that the emphasis in the above-quoted prosecution history focuses on the fact that the '230 patent provides for flange portions connected at two points to the receiving portion, the Court finds that it illuminates little as to the proper construction of the term "integrally connecting."

More generally, the Court of Appeals for the Federal Circuit has made clear that the term "integrally" is not inherently so limited:

[O]ur predecessor court had on several prior occasions interpreted the term "integral" to cover more than a unitary construction. See, e.g., In re Kohno, 55 C.C.P.A. 998, 391 F.2d 959, 157 USPQ 275 (CCPA 1968), In re Dike, 55 C.C.P.A. 1172, 394 F.2d 584, 157 USPQ 581 (CCPA 1968), In re Larson, 52 C.C.P.A. 930, 340 F.2d 965, 144 USPQ 347 (CCPA 1965), and In re Clark, 41 C.C.P.A. 974, 214 F.2d 148, 102 USPQ 241 (CCPA 1954). This court has also endorsed that interpretation. See, e.g., Advanced Cardiovascular Sys. v. Scimed Life Sys., 887 F.2d 1070, 1074 (Fed. Cir. 1989) (nothing of record limited "integral" to mean "of one-piece" construction).


The Court is thus unpersuaded by Defendant's argument that the term "integrally connecting" is limited to "unitary construction," as by casting from molten metal, In re Morris, 127 F.3d at 1055, but it agrees with Defendant that the term requires more than the mere attachment of two objects to form a whole. As Plaintiff recognized at the Markman hearing, a person of ordinary skill in the art would recognize that being "integrally connecting" connotes something more than simply being connected - it requires, as Plaintiff conceded, a more permanent type of fastening. This is consistent with the commonly understood meaning of "integral," which is "essential to completeness," Webster's New Int'l Dictionary 1173 (3d ed. 1993); if a constituent part of an integrated whole is essential to the unit's completeness, the term "integral" signifies a state of permanence or, at minimum, an inability to sever the connected portion without destroying the unit. This aspect of the construction of "integral" was recognized in Burns, Morris & Stewart Ltd. Partnership v. Endura Products, Inc., wherein the court construed the term "integrally formed" to mean "connected together so as to make up a single complete piece or
unit, or so as to work together as a single complete piece or unit, and so as to be incapable of being easily dismantled without destroying the integrity of the piece or unit." No. 04-23, 2005 U.S. Dist. LEXIS 46839, 2005 WL 6217425, at *8 (E.D. Tex. May 11, 2005) (emphasis added).

Based on the foregoing considerations, the Court will construe the term "integrally connecting" as follows: "joined together so as to make up a single, complete, and substantially permanent piece or unit, such that the connected components become an essential part of the complete unit, and such that the complete unit is incapable of being easily dismantled without destroying the unit."

1. Integrially Formed

Plaintiffs provide an ordinary and customary construction of the term "integrally formed": "formed as a unit." As plaintiffs pointed out during the Markman hearing, "that is the plain meaning of this language." (Markman Tr. at 45.)

Defendants assert that plaintiffs' plain meaning of the term is too simplistic and not reflective of the "claim language, specification and drawings, the prosecution history and the plaintiffs' own brief." Id. at 62. In contrast to the plain meaning definition, defendants' proposed construction of "integrally formed" is "the strands of the netting arrangement are knit into the physically divisible stockinette member to form a unit." Defendants first point to Figure 1 of the patent which shows a netting arrangement standing alone. With their proposed construction, defendants further contend they are relying on the claim itself which indicates that the strands of the netting arrangement are to be knit into the threads of the stockinette member to create an integrally formed structure. Id. at 62-63. But defendants' proposed construction does not take into account the patent's second preferred embodiment which demonstrates that two separate structures are unnecessary.

Here, plaintiffs have not demonstrated an intent to deviate from the ordinary and customary meaning of "integrally formed" by redefining the term. Based on claim language, the Court construes "integrally formed" as "formed as a unit."

5. Claim 1, Element 5, "integrally formed"

Earlier patents had been issued for wooden building components and substitutes for whole pieces of lumber, which were constructed, or engineered from smaller pieces. These involved joining pieces of wood together, to form larger, usable pieces, which were not intended to be disassembled, although they could be cut and shaped like solid pieces of lumber. See e.g. United States Patent No. 5,074,092 ("092" or "Norlander"). The patent in dispute describes a similar process, but includes the addition of a "second portion" made of a moisture and insect resistant material. However, it is clear from the claim language, the rest of the specification, and the drawings, that what is described and intended is a frame with side jambs which are constructed as single complete pieces - for all intents and purposes as though they were made from single pieces of lumber.

BMS proposed the following definition for "integrally formed":

"Referring to the attachment of the upper and lower portions of a side jamb such that the upper and lower portions are attached to one another so as to achieve a completed side jamb."

Endura's proposed definition is:

"Shaped or formed into a single, indivisible, whole unit, as opposed to an assembly of components attached with removable fasteners, such as screws or staples."

At the Markman hearing counsel for Endura agreed that its use of "formed" in the definition of integrally formed could be
considered circular, although counsel later noted that some dictionaries use a word to define itself. The court does not find this approach particularly helpful, especially since definitions are intended to help a jury, not keep it on a revolving train of thought.

Claim 1 states that the upper and lower portions are "integrally formed." While this indicates a joinder of the portions, it is not clear from this language alone how the joinder is accomplished, and what, if any limitations are implied. It is therefore necessary to construe the term in light of other intrinsic evidence.

The specification uses "integrally" to describe: "connected" (in the abstract and Col. 1, l. 14); "formed" (Claim 1, Col. 3, l. 46); and "joined" (Claim 4, Col. 4, l. 4-5). The patentee chose not to define these terms as equivalent or identical in the specification.

The "Background of the Invention," describes fingerjointing small pieces of wood and joining them "end to end to produce a single long piece . . . ." Col. 1, l. 47-48. The specification also stated that the wood and durable portions are "connected end to end with a glued finger joint or other mechanical connection to assemble the component." Col. 2, l. 6-7. The specification also states that the assembly of the wood portion with the durable portion "forms a complete side jamb 1 or 2." Col. 3, l. 13. These references support a definition which implies that the wooden portion and the durable portion are put together to form a single piece or unit, which is intended to be used like the single piece of lumber formerly used for door jambs.

The '209 patent is a continuation of the '943 patent and the language of claim 1 in each patent is the same except for describing the lower durable piece in the '209 patent as made of "a second material" instead of "A wood particulate that is mixed with resins" as in the '943 patent.

The prosecution history indicates that the application for what would become the '943 patent, initially merely indicated that the side jambs would have an upper and lower portions, with no reference to how they were attached. The Patent Examiner rejected the claim "under 35 U.S.C. § 102(e) as being anticipated by RAYNAK in view of HSU." RAYNAK (United States Patent No. 5,437,130) discloses a jamb made from pieces of lumber. HSU (United States Patent No. 5,553,438) discloses a wooden pole with the bottom section being pressure treated and then covered with thermoplastic.

BMS argued that the invention in this case was different, in that the durable portion was not merely pressure treated wood, or wood wrapped in plastic, but rather was "formed from" a wooden portion and a durable portion. BMS also submitted photos of the jambs showing them finger jointed to form a single piece. The Examiner issued an amendment which inserted "that are integrally formed" after "jambs having upper and lower portions . . . ." The court concludes that the claim cannot be interpreted as a wooden jamb with a piece of durable material wrapped around the wood, or as a durable piece which may be added to a wooden jamb at the discretion of the house builder or carpenter. The durable portion must be attached in a relatively permanent fashion, so that the jamb may be shortened by cutting (just like a solid wood jamb) or otherwise shaped with a tool (just like a solid wood jamb) but not merely disassembled as though the wood portion and the durable portion were interchangeable parts.

Endura argues that the definition should contain the following limitation: "as opposed to an assembly of components attached with removable fasteners, such as screws or staples." The preferred embodiment does describe finger jointing and gluing. Col. 3, l. 2-3. However, the Specification also states that "other wood joints are contemplated, such as edge gluing or their equivalents." The summary uses the phrase "connected end to end with a glued finger joint or other mechanical connection to assemble the component." Col 2, l. 6-7. 1

Endura raised in their Reply brief and at the Markman hearing an argument that the court should not consider any new language in the '209 patent specification, which was not present in the '943 parent application because it constitutes new subject matter. Endura asserts BMS did not follow the MPEP guidelines when they submitted the continuation application. At the Markman hearing, BMS responded that the issue is not whether the court should consider the language, but might be whether the application was actually a continuation or continuation in part. Endura decided to wait until the Reply Brief and Markman hearing to raise this issue, so it has not been fully presented. Therefore, the court reserves any ruling as to new subject matter, inequitable conduct, or whether the continuation is a continuation in part.
These references indicate that connections other than finger joints may be used. The fact that the preferred embodiment happens to use finger joints does not import that limitation into the claim language. While these references would not broaden the claim language to allow an easily disassembled jamb, or a structure composed of interchangeable parts, they also do not limit the claim to joints without metal fasteners. For example metal dowel rods or screws might be inserted in the end of a durable portion, running parallel to the portion into the end of the wooden portion to strengthen the glued joint. Other possibilities could be contemplated to form a joint that was relatively permanent.

Therefore the court construes this claim term as follows:

"integrally formed" means: "connected together so as to make up a single complete piece or unit, or so as to work together as a single complete piece or unit, and so as to be incapable of being easily dismantled without destroying the integrity of the piece or unit."

B. Claim 1

The only claim term in dispute are the words "integrally formed" in claim 1. This claim is set out below with the disputed term highlighted in BOLD

Claim 1 reads: A frame, comprising: a top jamb; two side jambs having upper and lower portions that are integrally formed, said upper portion being made of wood, said lower portion being a durable moisture, decay, and insect resistant material made from a second material.

1. Claim 1, "integrally formed"

Earlier patents had been issued for wooden building components and substitutes for whole pieces of lumber, which were constructed, or engineered from smaller pieces. These involved joining pieces of wood together, to form larger, usable pieces, which were not intended to be disassembled, although they could be cut and shaped like solid pieces of lumber. See United States Patent No. 5,074,092 ("092" or "Norlander"). The patent in dispute describes a similar process, but includes the addition of a "second portion" made of a moisture and insect resistant material. However, it is clear from the claim language, the rest of the specification, and the drawings, that what is described and intended is a frame with side jambs which are constructed as single complete pieces -- for all intents and purposes as though they were made from single pieces of lumber. 1

1 The parties agreed, and the court concludes that a person of "ordinary skill in the art in the subject matter of the 209 patent would have three to five years' experience in the woodworking arts, including various manufacturing techniques such as setting up and operating the necessary machinery to produce frames and wood joining techniques." See Claim Construction Hearing Transcript, p. 29-30.
The Hon. Robert Bryan, in the case of Trinity Glass International Inc. v. Burns, Morris & Stewart Limited Partnership, Civil Action No. C04-5330 (W.D. Was.), construed "integrally formed" as follows:

Permanently connected together so as to make up a single completed piece or unit, so as to be incapable of being dismantled without destroying the integrity of the piece or unit and/or on or both of the constituent portions.

The prior construction of this court, and of Judge Bryan, are instructive, and provide a basis for analysis by this court, but they are not binding on this court. See Texas Instruments, Inc. v. Linear Technologies Corp., 182 F. Supp. 2d 580, 586 (E.D. Tex. 2002). Additionally, the court must consider the impact of Phillips, which has since been decided. Finally, the parties have presented new arguments. Accordingly, the claim term will be analyzed de novo.

a. Masonite's Position

Masonite's proposed definition is:

Permanently connected together so as to make up a single complete piece or unit having a uniform peripheral contour, or so as to work together as a single complete piece or unit, and so as to be incapable of being easily dismantled without destroying the integrity of the piece or unit or one or both of the constituent portions making up the piece or unit.

Masonite argues that the definition should contain the limitation of being "permanently connected together." As noted above, the definition adopted by Judge Bryan included "permanently." This court, in its earlier opinion construing this same term of this patent, noted during the hearing that "integrally formed" denoted something that was "relatively permanent."

The preferred embodiment, and the photos submitted to the examiner, do show finger jointing and gluing. 209 patent, Col. 3, 1. 2-3. This is a permanent type of joinder according to the testimony. However, the specification also states that "other wood joints are contemplated, such as edge gluing or their equivalents." The summary uses the phrase "connected end to end with a glued finger joint or other mechanical connection to assemble the component." 209 patent, Col 2, 1. 6-7.

These references indicate that connections other than finger joints may be used. The fact that the preferred embodiment happens to use finger joints does not import that limitation into the claim language. While these references would not broaden the claim language to allow an easily disassembled jamb, or a structure composed of interchangeable parts, they also do not limit the claim to joints that could never be disassembled or joints without metal fasteners. For example a double pointed screw might be inserted in the end of a durable portion, running parallel to the portion into the end of the wooden portion to make a joint, or to strengthen a glued end to end joint. Other possibilities could be contemplated to form a joint that was not easily dismantled but was not "permanent."

Upon further reflection, and careful examination of the prior rulings of Judge Bryan and this court, it seems that the term in dispute is more correctly defined without a temporal element such as "permanently." As noted at the hearing, nothing is truly "permanent" and anything can be dismantled if one just gets a "bigger hammer." The court needs to be careful about confusing the jury by using a word such as "permanently" that could easily be understood by jurors as placing more of a limitation than the claim actually has.

Masonite argues that statements made by BMS in the prosecution of its patent before the European Patent Office ("EPO") should estop BMS from claiming anything but a "permanent joinder." Representations to a foreign patent office may be considered, when they comprise relevant evidence in the context of considering the doctrine of equivalents. See Caterpillar Tractor Co. v. Burko, S.P.A., 714 F.2d 1110, 1116 (Fed. Cir. 1983). However, in the context of claim construction, differences in international requirements for patent prosecution could make reliance on representations before foreign patent offices inappropriate. See Ti Group Automotive Sys. (N. Am.), Inc., v. VDO N. Am., L.L.C., 375 F.3d 1126, 1136 (Fed. Cir. 2004). Additionally, adopting Masonite's argument in this regard would require the court to rely upon extrinsic evidence of what happened before a foreign patent office, without a complete presentation of such evidence, nor a complete understanding of what happened before the foreign body and why that was important under foreign law. Therefore, while Masonite may raise this argument, should the doctrine of equivalents become important, the court will not use the incomplete evidence in the record on this issue as a basis for defining a claim term at the Markman hearing.

Masonite also makes a claim of improper conduct or inequitable conduct because BMS stated that the 209 patent was a
"continuation" rather than a "continuation in part." (Masonite Claim Construction Brief, p. 24). Again, this is a Markman hearing, for the purpose of claim construction. Whether BMS could be found to have committed inequitable conduct, or a "fraud on the PTO" is a matter dealing with the issue of infringement. See Warner-Jenkinson Co., Inc. v. Hilton Davis Chemical Co., 520 U.S. 17, 117 S. Ct. 1040, 137 L. Ed. 2d 146 (1997). Whether the patent is properly classified as a "continuation" or "continuation in part" and whether such classification was a mislabeling which somehow violated the statute, and is in the nature of a "fraud in the PTO," or inequitable conduct, may have to be decided, at least in part, under the clear and convincing evidence standard of proof. See, Burlington Indus, Inc. v. Dayco Corp., 849 F.2d 1418, 1422 (Fed. Cir. 1988). The court will reserve any such determination until later.

Finally, Masonite argues that the definition should also include a limitation of "having a uniform peripheral contour." On close questioning by the court, counsel for Masonite admitted that such words could not be found in the claim itself, the specification, nor in the prosecution history. Masonite argued that such limitation should be implied from the use of the word jamb, because most door jambs are uniform. In the first place, just because most door jambs are uniform rectangles does not mean that all door jambs are necessarily so. For example, it would not be surprising to find a door jamb and other building elements which did not have uniform contours in a building designed by Gaudi or a student of his modernist style. Regardless of this, the court cannot import or imply limitations on the claim language which are neither found in the claim itself, nor even hinted at in the specification and prosecution history.

b. BMS's Proposal

BMS proposed the following definition for "integrally formed:

Connected together so as make up a single complete piece or unit, or so as to work together as a single complete piece or unit.

The definition offered by BMS just does not go far enough. It would include any type of connection, including exterior screws attaching a connecting plate, a loose dowel with removable discs, a C-clamp, or one of the wide black clips used to bind papers. 2 Claims should not be read to ensnare prior art. Harris Corp. v. IXY Corporation, 114 F.3d 1149, 1153 (Fed. Cir. 1997). Claims should, "if practicable . . . be so interpreted as to uphold and not destroy the rights of the inventor." Nazomi Communications, Inc. v. Arm Holdings, PLC, 403 F.3d 1364, 1368 (citing Turril v. Mich. S & N. Ind. R.R., 1 Wall 491, 68 U.S. 491, 510, 17 L. Ed. 668 (1863)) (emphasis in original). The court may not rewrite a claim to preserve validity. See Nazomi, 403 F.3d at 1368. However, a patent is presumed to be valid, and the court may consider the actions of the Patent Examiner and amendments required by the Examiner in defining a disputed term during the prosecution history. See Phillips, 415 F.3d at 1317-18.

2 BMS, at the Markman hearing, offered an alternate definition: "generally constructed to remain connected together so as to make up a single complete piece or unit." The court rejects this formulation for the same reasons it rejects the original proposal.

In this regard the court takes into account the rejection of the initial application by the Patent Examiner, and the addition of the words "integrally formed" to the claim language. The 209 patent is a continuation of the 943 patent and the language of claim 1 in each patent is the same, except for describing the lower durable piece in the 209 patent as made of "a second material" instead of "a wood particulate that is mixed with resins" as in the 943 patent. The prosecution history indicates that the application for what would become the 943 patent, initially merely indicated that the side jambs would have upper and lower portions, with no reference to how they were attached. The Patent Examiner rejected the claim "under 35 U.S.C. § 102(e) as being anticipated by RAYNAK in view of HSU." RAYNAK, United States Patent No. 5,437,130, discloses a jamb made from pieces of lumber. HSU, United States Patent No. 5,553,438, discloses a wooden pole with the bottom section being pressure treated and then covered with thermoplastic.

BMS argued to the Examiner that the invention in this case was different, in that the durable portion was not merely pressure treated wood, or wood wrapped in plastic, but rather was "formed from" a wooden portion and a durable wooden
portion. BMS Appendix, p. 154-155. BMS also submitted photos of the jambs showing them finger jointed to form a single piece. BMS Appendix p. 158-160.

The Examiner required an amendment which inserted "that are integrally formed" so that the claim language now is: "Two side jambs having upper and lower portions that are integrally formed. . . ." The court does not see how, and nobody has argued that, "formed," in the context of fastening pieces of wood and a durable material, can mean anything other than "attached" or "connected." While the durable portion may be a plastic or some other extruded substance, there is no hint in the intrinsic or extrinsic evidence that the wood portion could be extruded together with the durable portion, like putty or clay, or melted together like plastic or metal, to be shaped by pressure or a mold.

On the other hand, if "attached" or "connected" is all that is meant, then what purpose is served by "integrally?" "Integrally" modifies "formed," and therefore puts some limit on the type of joinder involved.

BMS argues that integral was defined in In re Morris, 127 F.3d 1048 (Fed. Cir. 1997) and cases cited therein. These mostly describe definitions used by the Patent Office in deciding whether to issue a patent, and all involve different technologies. The court is not going to rely on these definitions. See Medrad Inc. v. MRI Devices Corp., 401 F.3d 1313, 1320 (Fed. Cir. 2005).

The parties agreed at the hearing that the term "integrally formed" was not a term of art which would have a meaning to carpenters, wood workers, or those skilled in the art in question, which is different from the meaning ascribed in ordinary usage by lay persons. Recognizing that the claim must be defined as understood by one skilled in the art, in light of the language used in the patent documents, this is a case in which reference to a general purpose dictionary may be helpful. See Phillips, 415 F.3d at 1314.

"Integrally" implies something that is part of the whole or is needed for completeness. See Meriam-Websters Collegiate Dictionary 606 (10th ed. 2002). However, as noted by Judge Bryan, integrally is not being used in this patent merely in the sense of a cog inside a machine, which is "integral" to the mechanism, but is a separate moving part. The durable part and the wooden part of the side jambs, as described in the claim and specifications, are joined, and do not move in relation to each other.

The claim cannot be interpreted as a wooden jamb soaked in preservative or with a piece of durable material wrapped around the wood. The claim does not contemplate a kit of interchangeable parts, some of which are durable, to be assembled at the job site to fit variously sized openings. Any of these interpretations would contradict the statements made by BMS to the examiner to distinguish prior art, and would render "integrally formed" nugatory.

The "Background of the Invention," describes fingerjointing small pieces of wood and joining them "end to end to produce a single long piece. . . ." 209 patent, Col. 1, 1. 47-48. The specification states that the wood and durable portions are "connected end to end with a glued finger joint or other mechanical connection to assemble the component." 209 patent, Col. 2, 1. 6-7. The specification also states that the assembly of the wood portion with the durable portion "forms a complete side jamb 1 or 2." 209 patent, Col. 3, 1. 13. These references support a definition which implies that the wooden portion and the durable portion are put together to form a single piece or unit, which is intended to be used like the single piece of lumber formerly used for door jambs.

The durable portion must be attached to the wooden portion, in such a way that the jamb may be shaped with a tool (just like a solid wood jamb), or perhaps even shortened by cutting, although, with a pre-hung door, this would be unusual. Unless "integrally formed" is useless surplusage, the attachment cannot just be something like an exterior clip or a wrap of tape. The attachment or connection must become a part of the whole, like glue, or be interconnected with the whole, like a finger joint or a lap and groove type joint. The use of glue and interconnected joints in combination is clearly contemplated. One or more screws running between the wooden piece and the durable piece, parallel to the length of the jamb, might take the place of, or be used with, glue.

Therefore, the court construes the claim term in dispute as follows:

"Integrally formed" means: "connected together so as to make up a single complete piece or unit, in such a way that the connection becomes part of, or is interconnected with, the piece or unit, as by gluing, an interconnecting joint, or internal
screws. The connector is not merely attached to, or wrapped around, the outside surface of the piece or unit.

Since this definition modifies the prior one issued by this court, and the one given by Judge Bryan, a very experienced judge, it is worth discussing the reasons for the differences. As stated earlier, there seems to be no basis in the patent documents for including a temporal limitation which requires, or implies, some type of permanence. Nothing is truly permanent, and the court does not want to confuse a jury with a term which may have to be defined as not implying "to the end of time" or "indestructible."

This court previously included in its definition "incapable of being easily dismantled without destroying the integrity of the piece or unit." Judge Bryan adopted this formulation without the word "easily." On further reflection, neither formulation adds much to the definition. Anything can be dismantled. Glue can be dissolved, fasteners can be undone, joints can be taken apart, and pieces can even be broken. But whether "easily" or not, once the jamb (the "piece or unit") is dismantled, its integrity is, by definition, destroyed.

DISCUSSION

As a preliminary matter the parties disagree about the proper claim construction methodology to be employed by the PTO. Appellants argue that this court's in banc decisions in Markman v. Westview Instruments, 52 F.3d 967, 34 U.S.P.Q.2D (BNA) 1321 (Fed. Cir. 1995) (in banc), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384, 38 U.S.P.Q.2D (BNA) 1461 (1996), and In re Donaldson, 16 F.3d 1189, 29 U.S.P.Q.2D (BNA) 1845 (Fed. Cir 1994) (in banc), require the PTO in the course of prosecution to interpret claims in the same manner as courts are required to during infringement proceedings. The Solicitor responds by arguing that our past decisions permit the PTO to give claim language its "broadest reasonable interpretation" during prosecution, citing In re Zletz, 893 F.2d 319, 13 U.S.P.Q.2D (BNA) 1320 (Fed. Cir. 1989), In re Yamamoto, 740 F.2d 1569, 222 U.S.P.Q. (BNA) 934 (Fed. Cir. 1984), and Burlington Indus. v. Quigg, 822 F.2d 1581, 3 U.S.P.Q.2D (BNA) 1436 (Fed. Cir. 1987).

The Solicitor is correct, and we reject appellants' invitation to construe either of the cases cited by appellants so as to overrule, sub silentio, decades old case law. Some cases state the standard as "the broadest reasonable interpretation," see, e.g., In re Van Geuns, 988 F.2d 1181, 1184, 26 U.S.P.Q.2D (BNA) 1057, 1059 (Fed. Cir. 1993), others include the qualifier "consistent with the specification" or similar language, see, e.g., In re Bond, 910 F.2d 831, 833, 15 U.S.P.Q.2D (BNA) 1566, 1567 (Fed. Cir. 1990). Since it would be unreasonable for the PTO to ignore any interpretive guidance afforded by the applicant's written description, either phrasing connotes the same notion: as an initial matter, the PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification.
Donaldson itself pointed out that the court's holding is readily harmonized with that principle. Requiring the PTO to what is described in the specification and equivalents thereof, according to the PTO, would conflict with this practice. See, e.g., In re Prater, 56 C.C.P.A. 1381, 415 F.2d 1547, 1552, 42 U.S.P.Q. (BNA) 541, 550-51 (CCPA 1969). Limiting claims written in accordance with § 112 P6 to what is described in the specification and equivalents thereof, according to the PTO, would conflict with this practice. Donaldson itself pointed out that the court's holding is readily harmonized with that principle. Requiring the PTO to

It would be inconsistent with the role assigned to the PTO in issuing a patent to require it to interpret claims in the same manner as judges who, post-issuance, operate under the assumption the patent is valid. The process of patent prosecution is an interactive one. Once the PTO has made an initial determination that specified claims are not patentable (the prima facie case concept, see In re Oetiker, 977 F.2d 1443, 1448, 24 U.S.P.Q.2D (BNA) 1443, 1447 (Fed. Cir. 1992) (Plager, J. concurring)), the burden of production falls upon the applicant to establish entitlement to a patent. See In re Spada, 911 F.2d 705, 708, 15 U.S.P.Q.2D (BNA) 1655, 1658 (Fed. Cir. 1990); In re King, 801 F.2d 1324, 1327, 231 U.S.P.Q. (BNA) 136, 138 (Fed. Cir. 1986) (burden shifts to appellant after the PTO establishes a prima facie case of anticipation). This promotes the development of the written record before the PTO that provides the requisite written notice to the public as to what the applicant claims as the invention. As the Supreme Court recently affirmed, public notice is an important objective of patent prosecution before the PTO. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 137 L. Ed. 2d 146, 117 S. Ct. 1040, 1051 (1997) (establishing a rebuttable presumption of prosecution history estoppel when the public record is unclear as to whether the prior art precipitated an amendment to the claims in order to give "proper deference to the role of claims in defining an invention and providing public notice.").

Although In re Donaldson comes closer to the present case, it still fails to prove appellants' point. In Donaldson, this court considered the question of how the PTO is required to interpret claims drafted pursuant to 35 U.S.C. § 112 P6, claims in so-called "means-plus-function" language. See 35 U.S.C. § 112 P6 (1994) ("An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of the structure, material, or acts in support thereof."). The PTO argued that they were permitted to interpret the claims as broadly as the claim language permitted without the constraint of the written description contained in the specification. The Donaldson court, in banc, noted that the statute requires that claims so written "shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." Donaldson, 16 F.3d at 1193, 29 U.S.P.Q.2D (BNA) at 1848-49. The court found no basis in the statute or legislative history for exempting the PTO from this statutory mandate. Therefore the PTO is required to consult the specification during examination in order to determine the permissible scope of the claim.

It is enough to point out that this case does not involve claims written in means-plus-function language to distinguish Donaldson from the present case. There is no comparable mandate in the patent statute that relates the claim scope of non-§ 112 P6 claims to particular matter found in the specification. See Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1552, 42 U.S.P.Q.2D (BNA) 1737, 1740 (Fed. Cir. 1997) ("The claim language itself defines the scope of the claim.").

We need not simply rely on this distinction, however, for the Donaldson court went on to dispose of the precise argument that appellants now make. The PTO had argued that our prior case law, as discussed above, permitted examiners to give claims their "broadest reasonable interpretation" during prosecution. See, e.g., In re Prater, 56 C.C.P.A. 1381, 415 F.2d 1393, 1404-05, 162 U.S.P.Q. (BNA) 541, 550-51 (CCPA 1969). Limiting claims written in accordance with § 112 P6 to
interpret claims in light of the specification "merely sets a limit on how broadly the PTO may construe means-plus-function language under the rubric of 'reasonable interpretation.'" Donaldson, 16 F.3d at 1194, 29 U.S.P.Q.2D (BNA) at 1850. Therefore, it cannot reasonably be argued that Donaldson overruled our long line of case law that permits the PTO to give claims their "broadest reasonable interpretation."

The question then is whether the PTO's interpretation of the disputed claim language is "reasonable." Appellants contend that the Board's interpretation is unreasonable when the claim language is properly construed in light of the specification and other extrinsic evidence. In particular, appellants argue that the phrase "integrated as a portion of" requires the compliance area to be "fused together" with the housing "to form a single part--such as by casting them as a molded article, machining a single piece of material to form them, welding them together, or otherwise joining them in a firm and substantially permanent manner." Brief for Appellants at 18. Because the elastomeric pad of Brown is "removably coupled," according to appellants, Brown does not anticipate claim 1 when properly construed. Id.

We conclude that the PTO's interpretation is reasonable in light of all the evidence before the Board. As the cases cited above demonstrate, our predecessor court had on several prior occasions interpreted the term "integral" to cover more that a unitary construction. See, e.g., In re Kohno, 55 C.C.P.A. 998, 391 F.2d 959, 157 U.S.P.Q. (BNA) 275 (CCPA 1968), In re Dike, 55 C.C.P.A. 1172, 394 F.2d 584, 157 U.S.P.Q. (BNA) 581 (CCPA 1968), In re Larson, 52 C.C.P.A. 930, 340 F.2d 965, 144 U.S.P.Q. (BNA) 347 (CCPA 1965), and In re Clark, 41 C.C.P.A. 974, 214 F.2d 148, 102 U.S.P.Q. (BNA) 241 (CCPA 1954). This court has also endorsed that interpretation. See, e.g., Advanced Cardiovascular Sys. v. Scimed Life Sys., 887 F.2d 1070, 1074, 12 U.S.P.Q.2D (BNA) 1539, 1542 (Fed. Cir. 1989) (nothing of record limited "integral" to mean "of one-piece construction"). Appellants' attempt to distinguish these cases misses the point. Absent an express definition in their specification, the fact that appellants can point to definitions or usages that conform to their interpretation does not make the PTO's definition unreasonable when the claim language is properly construed in light of the specification.

Appellants argue that their claim does not just require that the acoustic compliance area be integrally formed from the support member. Instead, claim 1 requires that the area be "integrated as a portion of" the support member. This does not change our conclusion. Portion is defined as a "part or share of something." Webster's Third New International Dictionary 1768 (1986). Thus this term tells us nothing about whether the acoustic compliance area is removable or separable from the support member. A slice of pie can be considered a 'portion of' the pie while also being removable. We conclude that the added limitation does not overcome the rejection.

The appellants urge us to consult the specification and some of the cited prior art, including Brown, and interpret the disputed language more narrowly in view thereof. When read in light of this material, according to applicants, the "true" meaning of the phrase emerges. We decline to attempt to harmonize the applicants' interpretation with the application and prior art. Such an approach puts the burden in the wrong place. It is the applicants' burden to precisely define the invention, not the PTO's. See 35 U.S.C. § 112 P2 ("The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."). While it is true that the claims were not rejected on the ground of indefiniteness, this section puts the burden of precise claim drafting squarely on the applicant.

The problem in this case is that the appellants failed to make their intended meaning explicitly clear. Even though the appellants implore us to interpret the claims in light of the specification, the specification fails to set forth the definition sought by the appellants. Nowhere in the technical description of the invention does the application use or define the phrase "integrated as a portion of." The phrase briefly appears in the "Summary of the Invention" and again in a description of the "advantages of the present invention." In neither case is a drawing referenced or a precise definition given.

The prosecution history is equally unhelpful in divining the interpretation sought by appellants. In all cases the appellants
first describe their invention followed by a general description of the prior art reference. They then conclude with a conclusory statement such as "It is clear that Applicants' inventive concept, as recited in claim 1 (amended), is not anticipated by the prior art," or, even more vaguely, "it is clear that the base plate and housing arrangement disclosed in Brown '888 is completely different in structure than the acoustic isolator apparatus recited in Applicants' claims." Never do the appellants particularly distinguish their claimed invention (as compared with their "inventive concept," whatever that means) from the prior art. We interpret this as a veiled attempt to avoid the potential future effects of prosecution history estoppel. Such evasiveness we cannot condone, particularly when the public must rely on the written record to define the resulting property right. See Warner-Jenkinson, 117 S. Ct. at 1040.

We understand the difficulties that can arise in prosecution. This appeal is a case in point. The PTO initially rejected claim 1 in light of Brown. Appellants amended their claim to add the limitation that the compliance area was "integrally formed on" the support member. This amendment seemed to overcome the examiner's rejection because in response the examiner produced a new ground for the rejection (i.e., Biermeier). That reference showed a thinned-down region of a supporting top member. The examiner's own actions suggested that the applicants had properly distinguished Brown on the ground that the Brown pad was not "integrally formed" from the support member, which necessitated the new ground of rejection.

Appellants were apparently able to overcome this new rejection by adding the further limitation that the acoustic isolator eliminated "selected frequencies of acoustic noise" and arguing that Biermeier did not accomplish this claimed function. At this point the applicants had no reason to believe that Brown could properly be the basis for a 102 rejection, having previously distinguished it as well as Biermeier. When the examiner renewed his previous ground of rejection based on Brown, the appellants were no doubt of the view that Brown was distinguishable. Nonetheless, they made their third and final amendment, adding the limitation that the acoustic compliance area be integrally formed "as a portion of" the support member, in an attempt to assuage the examiner. Surely they must have thought this amendment would distinguish Brown, and reasonably so given what had previously transpired. Unfortunately they were mistaken.

Nonetheless, when the examiner renewed the rejection the applicants had an obligation to either demonstrate that the examiner's interpretation of the claim language was unreasonable or amend their claim to distinguish the prior art. This they did not do. It is apparent that the appellants knew how to claim their invention so as to avoid the prior art since several claims were allowed, some very similar to claim 1. The PTO was not only permitted but obligated to reject claim 1 when appellants failed precisely to define in the written description the disputed language, and there was a reasonable alternative definition.

The decision of the Board is

AFFIRMED.

The Court held a Markman hearing and subsequently issued a Memorandum opinion (Docket No. 138) in which the Court construed the disputed claim terms of the '981 Patent and the '306 Patent. At issued were the following claim terms of the '981 Patent and the '306 Patent: 1) "Frame"; 2) "Formed Integrally Within"; 3) "Integrally Formed Within"; 4) "Integrally Formed With"; 5) "Including"; 6) "Attached"; and 7) "Manifold". The Court construed the terms as follows:

"Frame": "the underlying structure of the cone crushe to which other constituent parts may be fitted, attached or integrated."

"Formed integrally within" and "Integrally formed within": "created or constructed within or as a part of the frame."

"Integrally formed with": "created or constructed within or in combination with the frame."

"Attached": "fastened or affixed."

"Including": "to take in or comprise as a part of a whole."
"Manifold": "a fitting or a passage that has a plurality of openings for making connections."

The phrase "not integrally formed with the unit" here most plainly means that the reservoir is not required to be of a specific size or shape to be used with the unit. Defendant attempts to limit the meaning of this term to "removable." However, this interpretation ignores the plain meaning of the words in the phrase. The verb "to form" means to give form or shape to, or to give a particular shape to. If a reservoir is "not integrally formed with the unit" then its shape is not dictated by the unit. Defendant's interpretation ignores entirely the use of the term "any typical" to modify "bottle" in the phrase "designed to attach to any typical bottle." Reading the cited passage as a whole, defining "not integrally formed" as referring to shape rather than removeability is the logical interpretation, especially since the quoted passage in two places stresses that the invention is usable with any bottle with compatible threads, and the claim itself uses the term "alternate fluid reservoir." Because the '106 patent requires use of an internal reservoir of specific size and shape, the '495 patent's elimination of this requirement is not taught by the prior art and claim 2 is not anticipated.

--- Footnotes ---

7 Webster's Ninth New Collegiate Dictionary (1985). The complete definition is:

form vt 1: to give form or shape to: FASHION 2 a: to give a particular shape to: shape or mold into a certain state or after a particular model: ARRANGE b: to arrange themselves in c: to model by instruction or discipline 3: DEVELOP, ACQUIRE 4: to serve to make up or constitute: be a usu. essential or basic element of 5 a: to assume an inflection so as to produce (as a tense) b: to combine to make (a compound word) 6: to arrange in order: DRAW UP vi 1: to become formed or shaped 2: to take form: come into existence: ARISE 3: to take on a definite form, shape, or arrangement syn see MAKE

--- End Footnotes ---

3. Claim 4, Element 3, "integrally joined"

While the word joined differs from the word "formed" as used in "integrally formed" defined above, nothing in the claim language, the rest of the specification, nor in the prosecution history indicates that they have different meanings. The door jamb of claim 1, which is "integrally formed," is not molded or extruded, but rather is shaped by cutting, like a piece of wood. The "formed" refers not to shaping but to the relatively permanent connection of the wood portion to the durable portion. The same applies to the construction components of claim 4. The wood and durable portions are connected in a relatively permanent fashion. Accordingly, for the reasons set out above in discussing the definition of "integrally formed" the court construes this claim term as follows:

"integrally joined" means: "connected together so as to make up a single complete piece or unit, or so as to work together as a single complete piece or unit, and so as to be incapable of being easily dismantled without destroying the integrity of the piece or unit."

b. "integrally molded on"

Honda argues that this term should be construed to mean "formed together," and Coast argues that the term should be construed to mean "the engine block includes the cylinder barrel and a portion completely encircling the entire periphery of one end of a crankshaft, cast as a single piece."
The Court begins with the claim language, which suggests that the first bearing portion is molded on to the first case half as a unit, which lends support for Honda's proposed construction. See, e.g., Webster's at 628 (defining integral as "formed as a unit with another part"). However, in the specification, the inventors also clearly distinguish between the terms "integrated molded" and "formed integrally." (Compare '273 Patent at 1:64-66, 3:5-9 with id. at 4:13, 4:24-25, 5:23-25, 5:41-43.) Thus, the specification demonstrates that the inventors gave the term "integrated molded" a meaning different from the term "formed integrally." Although the parties do not cite to the prosecution history, the record also demonstrates that the inventors initially used the term "formed by molding" in the claim, but amended the claim language to "integrated molded." (See Shariati Decl., Ex. M at 2.) Again, this prosecution history demonstrates that the term "molded" means something different from the word "formed."

Accordingly, the Court construes the term "integrated molded on" to mean: "formed together by molding."

2. "Integrally secured"

Claim 1 states that the invention includes "at least one light emitting source integrally secured within said housing adjacent the plug receiving opening thereof to provide visual verification of the status of the electrical connection." The parties dispute the meaning of this part of the claim. Maxconn asserts that the term "integrally secured" means "permanently secured" such that the LED cannot be removed from the connector unit. "Secured," it argues, connotes a sense of permanence while "integrally" signals that the LED is not secured in a removable or insubstantial way, but forms an inseparable single unit.

a. Claim language

To interpret the disputed language, the court first looks to the words of the claims to define the scope of the patented invention. See Vitronics, 90 F.3d at 1582. As stated above, words will be given their ordinary and accustomed meaning unless it appears that the inventor used them differently. Envirotech Corp., 730 F.2d at 759.

Plaintiffs argue that Maxconn is seeking to have the Court adopt a claim interpretation that includes additional, unclaimed limitations which are not required by the ordinary meaning of the claim language, the patent specification, or the prosecution history. They argue the term "integrally secured" should be given its ordinary meaning as denoting that the LED cannot be removed from the connector unit. "Secured," it argues, connotes a sense of permanence while "integrally" signals that the LED is not secured in a removable or insubstantial way, but forms an inseparable single unit.

The Court agrees with Plaintiffs. Nothing in the ordinary meaning of the term "integral" indicates that the parts must be permanently fused together. The ordinary meaning of the term "integrally secured" suggests that the RJ connector housing and the LEDs move together as one unit, and not that the LEDs cannot, with some degree of effort, be extracted from the housing. 2 Nothing in the claim language itself denotes a "permanency" limitation.

2 Plaintiffs argue that the Court of Appeals for the Federal Circuit has in at least one instance interpreted the ordinary meaning of the term "integral" and held that it does not denote one piece. In re Morris, 127 F.3d 1048, 1055-56 (Fed. Cir. 1997). Following oral argument, Defendant submitted with leave of Court a brief arguing that the Morris analysis is irrelevant to the present matter. The Court agrees that the Morris analysis is certainly less relevant to the present claims construction than is the intrinsic evidence now before it. Because the Court relies entirely on intrinsic evidence to interpret this phrase, it does not reach the question whether Morris should be considered persuasive authority on the interpretation of the word "integral."

b. Specification
The second step in the analysis is to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning. See Vitronics, 90 F.3d at 1582. The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication. See id. (citing Markman, 52 F.3d at 979). It is the single best guide to the meaning of a disputed term. Id.

Extraneous limitations appearing in the specifications should not be read into a claim. See E.I. DuPont De Nemours & Co. v. Phillips Petro., 849 F.2d 1430, 1433 (Fed. Cir. 1988); see also Loctite Corp. v. Ultraceal Ltd., 781 F.2d 861, 867 (Fed. Cir. 1985) (“Generally, particular limitations or embodiments appearing in the specifications will not be read into the claims.”). "Extraneous" refers to a limitation read into a claim from the specification wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim. DuPont, 849 F.2d at 1433.

The specification of the Pocrass '317 patent is consistent with the interpretation that "integrally secured" does not require that the LED be permanently secured within the connector housing so as to form an inseparable unit. The specification states that "an opening may be molded in the modular style connector and then the LED indicator placed therein and adhesively cemented in place, if needed." Pocrass '317 patent, col. 4, ll. 7-10 (emphasis added). The specification thus teaches that fixing the LED with adhesive is optional. The specification also indicates that the LED indicator is "placed" inside the connector housing, and nowhere indicates that the LED is inextricably fixed inside the housing.

Because the specification does not include a "permanency" limitation, that limitation should not be read into the claim.

c. Prosecution history

Next, the court considers the prosecution history of the patent. The history contains the complete record of all proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claim. See Vitronics, 90 F.3d at 1582. The prosecution history limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance. See Specialty Composites, 845 F.2d 981, 988 (Fed. Cir. 1988). Patent claims may not be interpreted one way in order to obtain their allowance and a different way against accused infringers. Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995).

During the prosecution of the patent, the examiner noted the similarity of certain aspects of the invention to a device disclosed in the prior art. The prior art was a patent issued to Clark for a cartridge holder and connector system. In responding to the patent examiner, one of the ways Pocrass distinguished the claims of the '317 patent over the system disclosed by the Clark patent was that the LEDs in his invention are "integrally secured" within the connector housing in the claims. Pocrass based his distinctions on the fact that in the Clark device, the LEDs are not secured in any way to the housing of the device to form an integral unit, but instead are secured to the PC board. In that device, the connector housing slides over the tops of the LEDs.

Defendant argues that the examiner required the addition of the phrase "integrally secured" to distinguish the feature of the Clark patent where the LEDs slide into indentations in the connector housing. However, a close reading of the history reveals that the phrase "integrally secured" was meant to distinguish the fact that the LEDs in the Clark patent were secured to a location remote from the RJ connectors. The history further reveals that the patentee intended the LEDs to be "integrally secured" "by injection molding or by other adhesive or mechanical means within the housing." Amendment mailed December 28, 1989 at 7. Pocrass explained that Clark's LEDs were "merely are slid into open indents" and that those indents "[do not] integrally secure the . . . LEDs within the housing. . . . [The] LEDs [] are positioned on the PC board [], and the housing member [] is slidably placed over the tops thereof." Amendment mailed December 28, 1989 at 7. In other words, if the housing of the Clark device is removed from the PC board, the LEDs will stay in place on the board because they are not an integral part of the housing.

The prosecution history demonstrates that "integrally secured" means that the LEDs move as one unit with the housing of the connector as opposed to being fixed on the PC board as in Clark. Therefore, the Court finds that the prosecution history does not limit the interpretation of claim 1 so as to require that the LEDs be permanently fixed within the housing so as to form an inseparable unit. Rather, the term "integrally secured" means that the connector body and LEDs move together as one unit.

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d. Extrinsic evidence

There is no need for the Court to consider any extrinsic evidence as to this phrase.

e. Interpretation

The Court adopts Plaintiffs' interpretation as follows: "The light emitting source is held in place in the housing of the connector near the opening in the front wall which receives the plug so that the light emitting source is a part of the connector unit."

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2. "intelligent safe"

Tidel proposes this term means "a safe that can supervise and account for user transactions at another safe." FKI proposes that intelligent safe means "safe having a mounted PC board with a CPU." The specification provides:

In addition, the illustrated PC board 114, CPU 116 and associated software have the capacity to serve and process from a plurality of bill receiving and validating units 16. Consequently, economy models of the safe (i.e., comprised of just a safe and a unit 16, without a PC board and printer) can be placed at various locations throughout a retail establishment and coupled to the above-described "intelligent" safe for processing of data by bill receiving unit and by totals.

[4:23-34].

FKI argues that "intelligent safe" is depicted by Figure 3 and described in the specification from Col. 2, 1. 8 to Col. 4, 1. 25. Further, the specification distinguishes "economy safes" from "intelligent safes" by the absence of a PC board and printer. Further, FKI argues that a PC board is necessary to process the data.

Tidel argues that the specification is clear that an intelligent safe only needs the ability to couple to an "economy safe" to process data; there is no requirement of a PC board. The "above described" safe in the specification is the preferred embodiment. While the preferred embodiment does include a PC board, FKI's argument that one is necessary to process the data is unpersuasive. Neither side addresses what, if anything, could be used for processing the data other than the PC board. The patent, however, does not restrict "intelligent safe" in such a way. The specification describes "intelligent safe" relative to an "economy safe," and by what it does; that is for "processing of data by bill receiving unit and by totals." [4:28-30] The court, therefore, construes "intelligent safe" to mean "a safe that can supervise and account for user transactions at another safe."

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I. Pair of interconnected receptacle support straps

Claim 36 of the '552 patent recites as one of its limitations a "pair of receptacle support strap straps [that] are interconnected." Id. col. 14, ll. 44-46. In its Markman Order, the district court construed the phrase to mean that "the straps may be connected at any position on the receptacle as long as when the straps are connected, the first end of the support surface is at an angle with respect to the second end of the support surface. The first end of the support surface is not required to rest against the straps at an angle with respect to the second end of the support surface."

Markman Order, 2002 U.S. Dist. LEXIS 5734 at *6-7. On this construction, the jury found that the Bouncenette and Magic Motion products use the same mechanism to adjust the angle of the infant-supporting receptacle, and therefore infringe.

Safety 1st's argument with respect to the interconnected support straps limitation rests entirely on its contention that Fisher-Price disclaimed the two strap configuration used in the accused product when it amended claim 36 during prosecution in view of the prior art Bigo patent, United Kingdom Patent Application GB2163045A ("Bigo"). Safety 1st thus rests its
argument on the doctrine of prosecution history estoppel, asserting that "the district court failed to acknowledge that the
construction of that limitation is controlled by the prosecution history."

In support of its prosecution history estoppel argument, Safety 1st contends that "the text of Bigo . . . disclosed other
embodiments, including the one used by Safety 1st, where there is a pair of buckled straps on either side." Therefore, argues
Safety 1st, the amendment to claim 36, which was made in light of Bigo, "must thus be construed to exclude an infant-
supporting device with two pairs of 'buckled straps' where, as was described in Bigo, one pair suspends the left side of the
angled support surface and the other pair suspends the right side."

The problem with this argument, as Fisher-Price notes, is that Bigo makes only a passing reference to "self gripping or
buckled or knotted straps." Bigo, p.1, ll. 92-98. The Bigo reference does not, in its text or drawings, describe how such
"buckled or knotted" straps would be configured. While a reference is useful as prior art for all that it discloses, it cannot be
read to disclose what is not apparent to one skilled in the art. Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d
1048, 1052 (Fed. Cir. 1994) ("[A] challenger must prove that [a characteristic] is necessarily present in the [prior art]
disclosure, and that it would be so recognized by persons of ordinary skill."). After reviewing the Bigo reference, we believe
that Safety 1st reads far too much into Bigo when it asserts Bigo "discloses [an embodiment where] one pair suspends the
left side of the angled support surface and the other pair suspends the right side." In short, we do not find compelling
Safety's 1st's prosecution history estoppel argument. As a final matter, Fisher-Price notes that Safety 1st presented no
testimony from any witness that Bigo disclosed interconnected straps, either expressly or inherently; it offered only attorney
argument. Fisher-Price, 279 F. Supp. 2d at 539.

The district court did not err in its construction of the "pair of receptable [sic] support strap straps [that] are interconnected"
limitation. In addition, substantial evidence supports the jury's factual finding that the Bouncenette 1 and 2 products meet
this claim limitation.

13. Said regions of high and low vision correction powers being interconnected in an optical sense by transition regions

The final phrase Vistakon seeks construction of is "said regions of high and low vision correction powers being
interconnected in an optical sense by transition regions" from claim 14 of the '461 patent. Vision Advancement once again
contends that "vision correction power" has already been construed, and the parties have agreed on the proper construction
for "transition regions." Therefore, according to Vision Advancement, this phrase does not require any further construction.
Vistakon, on the other hand, posits that the term should be construed as, "the regions of high and low vision correction
powers are connected by a transition region in a fashion to provide usable vision correction." In essence, Vistakon seeks
construction of the portion of the phrase that states "interconnected in an optical sense." Vision Advancement does not
contend that phrase has already been construed.

The Court agrees with Vistakon that the phrase "interconnected in an optical sense" requires construction. While the Court
agrees that Vistakon's proposed construction, for the most part, is appropriate for "interconnected in an optical sense," and
supported by the portions of the '461 patent cited by Vistakon, the Court finds the word "useable" to be vague. Therefore,
the Court construes the term "said regions of high and low vision correction powers being interconnected in an optical sense
by transition regions" to mean "the regions of high and low vision correction powers are connected by a transition region in
a fashion to provide vision correction."

- 2647 -
1. Connection between liquid and granular systems

Claim 1 describes, among other things, "a liquid delivery system interconnected to [the] granular delivery system for supplying liquid material." '125 Patent col. 10 ll. 55-57. Bristol contends that the term "interconnected" includes a liquid delivery system that is connected "electronically, hydraulically, or mechanically" to the granular system. Bosch claims the connection must be hydraulic.

In support of Bristol's argued construction, it notes that the summary section of the patent expressly uses this "electronic, hydraulic, or mechanical" language. Bristol Br. at 16-17; see also '125 Patent col. 2 ll. 60-62 ("The liquid delivery system is mechanically, electronically or hydraulically connected to the granular delivery system."). Bristol also points out that the preferred embodiments include both mechanical and hydraulic connections, making clear that the connection is not limited to hydraulics. Bristol Br. at 17; see also '125 Patent col. 4 ll. 58-65 ("The liquid pump 40 of the liquid delivery system 25 is mechanically connected through a gear box 46 to a shaft of the conveyor 20 in a mechanical embodiment. (FIG. 3). In the hydraulic embodiments of FIGS. 5 through 10, the pump 40 is mechanically connected to the liquid system motor 38, which is in fluid communication with the hydraulic system 28 of the granular delivery system 23."). Thus, Bristol contends, "interconnected" should be read to include all three connection types.

Bosch, on the other hand, dismisses what it calls a "passing statement" to electronic, hydraulic, and mechanical connection and argues that the embodiments and descriptions in the patent for performing the functions of reducing the feed rate of the granular system or selecting a ratio of liquid to granular material are all hydraulic. Bosch Br. at 11-12. Bosch relies on the following language in the patent specification:

In all of the embodiments discussed, reduction of the feed rate of the granular delivery system 23 resulted from diversion of hydraulic fluid to the liquid delivery system 25. It is also contemplated in the embodiment shown in FIG. 10 of the present invention to reduce the feed rate of the granular delivery system 23 by diverting hydraulic fluid from the conveyor motor 26 in a proportional amount and returning the hydraulic fluid to the reservoir 34 rather than to the liquid delivery system 25.

'125 Patent col. 9 ll. 42-50.

I adopt Bristol's construction. In determining the meaning of a claim term, I read the term "in the context of the entire patent, including the specification." Phillips, 415 F.3d at 1313. The specification is "the single best guide to the meaning of a disputed term." Id. at 1315 (quotations and citation omitted); see also Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) ("The specification contains a written description of the invention that must enable one of ordinary skill in the art to make and use the invention. For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims."). Here, the specification could not be clearer: "The liquid delivery system is mechanically, electronically or hydraulically connected to the granular delivery system." '125 Patent col. 2 ll. 60-62.

Bosch's attempt to look to the specific embodiments to override this clear language is improper. As an initial matter, it is not clear that the portion of the specification relied on by Bosch deals with the general connection between the systems. Rather, it appears to bear on the manner in which the specific reduction in feed rate is accomplished. But even assuming the language deals with the connection issue, restricting the meaning of a claim term to that described in an embodiment constitutes what the Federal Circuit has called "one of the cardinal sins of patent law -- reading a limitation from the written description into the claims." SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337, 1340 (Fed. Cir. 2001); see also SuperGuide Corp. v. DirecTV Enterprises, Inc., 358 F.3d 870, 875 (Fed. Cir. 2004) ("Though understanding the claim language may be aided by the explanations contained in the written description, it is important not to import into a claim limitations that are not a part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment."). This claim element is not written in means-plus-function format, requiring some link between the claim term and a specific structure. Rather, the question is simply what the word "interconnected" means in the context of the entire patent. As the specification provides a clear definition, that is the definition I must apply.
Plaintiff proposes that "interconnected with" be construed to mean "two parts or components that are connected without regard to the form or realization of the connection (e.g., integral, jointed, rigid or pivotal)." Defendant proposes the definition "integral with or the equivalent" and contends that the term should be construed to "exclude relative movement between two components that are interconnected." I construe the phrase "interconnected with" to mean a connection between two components, without regard to the form of the connection.

The ordinary meaning of the word "interconnect" is to "connect with each other." New Oxford American Dictionary 884 (2001). Although a patentee may choose to be his own lexicographer, he need not assign a claim term a narrower meaning than the ordinary one. Defendant argues that "interconnected with" should require an integral connection between rails and the crankcase housing and between slots and the counterbalance weight because the figures shown in the 166 patent all display integral connections between these elements. However, because the ordinary meaning of the claim language is broader than the embodiments shown in the specification, the embodiments alone cannot be used to read limitations into the claim. Tate Access Floors, Inc., 222 F.3d at 966.

Furthermore, the written description militates against defendant's proposed construction of the term. The description states that a "rail could alternately be formed on weight (26) and the slot or recess formed integral or otherwise interconnected with the crankcase housing." '166 patent, col. 3, Ins. 11-13 (emphasis added). The language of the specification indicates that an integral connection is just one example of how interconnecting a rail with the crankcase housing. Contrary to defendant's assertion, it is not the only means by which such an interconnection can be achieved. Therefore, I will construe the phrase "interconnected with" to mean a connection between two components, without regard to the form of the connection.

The parties also dispute the meaning of "cross-member interconnected with said clamp means," as stated in Claim 1 of the '248 patent, and "securing a member" as stated in Claims 9 and 32 of the '588 patent. I address these terms together because the parties' dispute concerning these terms and their opposing constructions of them are the same.

The parties agree that both of these terms address the means by which a cross-member (snowguard) is attached to the clamps mounted on the standing seam of a metal roof. Their dispute is whether these terms require the cross-member to be directly attached to the clamps using a set screw or whether it may be attached to the clamps by any suitable means, including through use of an intermediate structure such as the brackets employed in Contek's accused products.

Webster's Third New International Dictionary defines "interconnect" to mean "to connect mutually or with one another" and "secure," as relevant here, to mean "to make fast." Webster's Third New Int'l Dictionary at 1177, 2053; see also Random House College Dictionary 1190 (rev. ed. 1980) (defining "secure" to mean "to make firm or fast, as by attaching"). CFE argues that these broad definitions preclude the narrow interpretation of these terms urged by Contek and supports its broader interpretation. As further support for its position, CFE points to statements in the specifications for the '248 and '588 patents that "any suitable means may be utilized for interconnecting" the clamp and cross-member, '248 patent, col. 7, ll. 62-63; '588 patent, col. 9, ll. 23-24, and the disclosure in each specification of different ways that the cross-member can be interconnected or secured to the clamp, including through use of an intermediate device that extends from the clamp to the cross-member. See '248 patent, col. 3, l. 52 - col. 4, l. 33 & Figures 2b, 6a; '588 patent, col. 4, ll. 40-58 & Figures 2b, 6a. CFE also invokes the doctrine of claim differentiation to support its interpretation, based on a comparison between independent Claim 1 and dependent Claim 14 of the '248 patent. n8
n8 Claim 14 recites:

The apparatus of claim 1, further comprising first and second extension means detachably connected to said first and second clamp means, respectively, for directly engaging said first cross-member, wherein said first and second extension means allows for increasing distance between at least a portion of said first cross-member and at least one base portion.

'C48 patent, col. 12, ll. 50-56.

CFE argues "interconnected with," as used in independent Claim 1 must be broad enough to encompass the use of extensions for attaching a cross-member to the mounting clamp, as Claim 14 provides, because otherwise this dependent claim could not exist.

Contek responds that both "interconnected with" and "securing" are not subject to standard claim construction but rather must be construed under the special rules applying to means-plus-function claim elements. Under these rules, Contek asserts, both terms must be narrowly construed to encompass only a connecting or securing of the cross-member and the clamp that involves the use of a set screw threaded through the mounting body.

A claim is written in a means-plus-function format if it portrays a function to be executed but provides no instructions as to the structure or materials for executing this function. See Phillips, 415 F.3d at 1311. 35 U.S.C. § 112, P 6 restricts claim limitations written in this format to those structures, materials, or acts disclosed in the specification that perform the claimed function, and their equivalents. Personalized Media Commun., LLC v. ITC, 161 F.3d 696, 703 (Fed. Cir. 1998). In other words, a claim using the means-plus-function format "will cover only the corresponding step or structure disclosed in the written description, as well as the step or structure's equivalents. CCS Fitness, 288 F.3d at 1369.

The use of the word "means" triggers a rebuttable presumption that § 112, P 6 applies, and the absence of that term creates a rebuttable presumption that it does not apply. CCS Fitness, 288 F.3d at 1369; Personalized Media, 161 F.3d at 703-04. Here, the disputed claim terms do not employ the word "means," thereby triggering the rebuttable presumption that the terms are not in the means-plus-function format and that § 112, P 6 does not govern.

Contek may rebut the presumption by demonstrating that the disputed terms fail "to recite sufficiently definite structure or else recite[] a function without reciting sufficient structure for performing that function." CCS Fitness, 288 F.3d at 1369 (internal quotations omitted). The presumption against finding a means-plus-function form when the word "means" is absent, however, "is a strong one that is not readily overcome." LG Elecs., Inc. v. Bizcom Elecs., Inc., 453 F.3d 1364, 1372 (Fed. Cir. 2006). As a result, the Federal Circuit has observed that it has "seldom held that a limitation not using the term 'means' must be considered to be in means-plus-function form." Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1362 (Fed. Cir. 2004).

Contek asserts "interconnectable," "interconnected with" and "securing" are all means-plus-function limitations because they describe the function of securing the cross-member and the clamp without disclosing any "actual structure" to perform this function. Contek's Br. re: Interpretation of Pls.' Patents (Doc. 35) at 30. The Federal Circuit, however, has held that this approach is too restrictive, and that a claim recites sufficient structure to avoid application of § 112, P 6 "if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function." Lighting World, 382 F.3d at 1359-60. "What is important is whether the term is one that is understood to describe structure, as opposed to a term that is simply a nonce word or a verbal construct that is not recognized as the name of structure and is simply a substitute for the term 'means for'.” Id. at 1360.

The Federal Circuit applied these principles in Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354 (Fed. Cir. 2004), to find that the term "connector assembly for connecting each pair of adjacent support members" denoted sufficient structure to avoid construction as a means-plus-function limitation. Id. at 1358-63. To reach this conclusion, the court looked to the dictionary definitions of "connector," defined as "something that connects," and "connect," defined as "to join, fasten, or link together usu. by means of something intervening." Id. at 1361. The court found that these definitions
demonstrated that the word "connector" as used in the disputed claim had a generally understood meaning as a unit that joins, fastens, or links each pair of adjacent support members. Id. This meaning, the court held, denoted sufficient structure to avoid application of § 112, P 6, notwithstanding "[t]he fact that more than one structure may be described by that term, or even that the term may encompass a multitude of structures." Id. The court found the term "connector" was a description of structure generally understood by persons in the art, even though it might encompass "any structure that performs the role of connecting." Id.

As described above, the terms "interconnected with" and "securing" have essentially the same meaning as "connector" as examined by the Federal Circuit in its Lighting World decision. As a result, I also find that they describe sufficient structure to avoid being considered means-plus-functions terms subject to construction under the special principles of § 112, P 6.

Considering the dictionary definitions of these terms, the claims in which they are used, the specifications and prosecution histories, I further find no support for Contek's narrow interpretation of these terms under the ordinary rules of claim construction. Accordingly, I find that these terms, as used in Claim 1 of the '248 patent and Claims 9 and 32 of the '588 patent, mean attaching a member to a roof clamp, either directly or through another device or assembly.

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c. Interengagable notches

The parties dispute the meaning of interengagable notches as recited in the claim. The lock-up means element describes "the first end of the locking member and the open end of the tubular member having interengagable notches thereon that are adapted to be engaged when the first end of the locking member is in its first position, with engagement between the notches permitting the diaphragm to move from its infold position to its outfold position but preventing the diaphragm from returning to its infold position." Col. 7, 43-51. Then, when so desired, e.g., when the air filter is replaced, the resetting mechanism is activated so that the interengagable notches disengage and the diaphragm returns to its infold position. See col. 7, lines 52-55.

The Court sees nothing in the claim language itself or specification to suggest that the patentee used the words "interengagable" and "notches" in anything other than their ordinary meanings. Nowhere in the patent is either term specifically defined. Rather, the Description explains the placement of and engagement between the notches on the locking member and those on the inner adjacent wall portion of the guiding member. To that effect, the Description describes a locking member "having notches formed on its side" and "corresponding complementary protruding ridges or notches" on an "inner adjacent wall portion of the guiding member." Col. 5, lines 8-12. The Description goes on to explain that the notches need be "so formed that relative upward movement of [the locking] member is permitted but it is locked against downward movement by interengagement of said notches [on the member and the guiding wall]." Col. 5, lines 12-16. Thus, the Description is wholly consistent with the claim language and the Court need only determine the ordinary meaning of "interengagable notches" to one skilled in the art of air filter manufacturing.

"Notch" is defined by Webster's as a "concave or V-shaped cut or indentation in an edge or across a surface." Webster's New World Dictionary, 2d ed. (1970); accord, The American Heritage Dictionary, New College Ed. (1976). "Engage" is defined as "to interlock with or mesh together." Id. Thus, interengagable notches would be complementary concave or V-shaped cuts or indentations on the locking member and tubular member which are capable of engaging or interlocking with one another. This Court adopts those definitions here, adding only that the notches must be so formed as to comply with the claim's requirement that interengagement of the notches permits progressive movement in one direction while preventing movement in the opposite direction (absent selective force through the resetting means).

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B. Area and Band[s] of Interference Fit

Phrase: area of interference fit and band[s] of interference fit
Construction: An area of interference fit is the place where the outer surface of the sleeve and the inner surface of the bit holder meet. A band of interference fit is a specific type of structure used to create an area of interference fit. A band of interference fit must be shorter than the entire length of the sleeve. One band creates one area of interference fit. Two discrete bands create two different areas of interference fit.

Reasoning: The real dispute between the parties regarding these claim terms is whether, when more than one band of interference fit is being used, there is a limit on the sum total length of the bands in relation to the sleeve. According to plaintiffs, the patents require only that the area of interference fit created by any particular band be less than the entire length of the sleeve. Plaintiffs argue that numerous bands of interference fit could be used, and they could, combined, be essentially equal to the total length of the sleeve provided no one band itself equaled the entire length of the sleeve. In contrast, defendant contends that where multiple bands of interference fit are used, the sum total of all areas of interference fit created by the bands must be 'substantially less than' the entire length of the sleeve.

Defendant's position has some support in the specification and prosecution history, both of which speak to "limiting the length over which interference exists." In addition, the figures illustrate only structures that have both areas of interference fit and areas of non-interference fit, which results in the sum total of all areas of interference fit being noticeably less than the entire length of the sleeve. However the specification can also be read in a way that supports plaintiffs' position. When the patentee speaks to limiting the length of interference, he could be referring to limiting the length of a single area of interference fit ("By providing [multiple] bands of interference instead of an [one] interference fit along the entire length of the sleeve." Col. 3, Ins. 6-7, emphasis added).

Regardless, the claims appear to resolve this dispute, and in plaintiffs' favor. Phillips, 415 F.3d at 1312 (specifically endorsing referring to the claims in determining claim construction); Fisher-Price, Inc. v. Graco Children's Prods., 154 Fed. Appx. 903, 2005 WL 2899289, *5 (Fed. Cir. 2005) ("Even if it could be said that a conflict exists within the specification, it is resolved by the unambiguous claim language").

Claim 1 does not address the length of the interference fit, at all. Instead, it defines the interference fit by what it will do, and how. According to Claim 1, the interference fit must, alone, prevent movement of the sleeve, while at the same time, allow for manual removal. Claims 2 and 3 both depend from Claim 1. Claim 2, which calls for "at least one band of interference fit," explicitly requires that the band be "shorter than [the sleeve]." When claim 3 introduces the concept of using "at least two discrete bands of interference fit" no limitation is placed on the total length of the bands or areas of interference fit in relation to the sleeve. See also Claims 8, 9 and 10.

This claim drafting structure indicates several things. First, that the independent and dependent claims follow the doctrine of claim differentiation. Dependent Claim 2 adds a length limit to independent Claim 1, Nazomi Communications, Inc. v. Arm Holdings, PLC, 403 F.3d 1364, 1370 (Fed. Cir. 2005) ("claim differentiation 'normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend.'"). Second, that the inventor was aware that the length of interference fit was a relevant consideration to his invention. Third, that when the inventor wanted to place limits on the length of the area of interference fit created by the bands in relation to the sleeve, he knew how to, and did. To illustrate, when a single band was claimed, its length was limited; when multiple bands were claimed, no limit on the total length of the bands was imposed. Therefore, we cannot import a so-called "sum of the bands" limitation from defendant's reading of the specification, and the preferred embodiments therein, including the figures, into the claims. MBO Labs, 474 F.3d at 1333; Logitech, 254 F.3d at 1342; Phillips, 415 F.3d at 1323.

1. "interior compartment"

Tidel proposes this term means "compartment interior to the housing having an inner door and lock mechanism." FKI proposes the term means "a compartment inside a safe." FKI argues that Tidel is trying to limit the claim to the preferred embodiment.

The specification describes the "inner compartment 58 is denoted in dashed outline [in Fig. 3] to indicate an approximate
location. This compartment is used to hold manual drops, and is protected by its own inner door and lock mechanism."

[4:41-44] Further, the specification provides:

An outer door provides the first line of physical security. An inner door is any door that cannot physically be opened unless an outer door is first opened. The use of one or more inner doors allows general access to the safe for getting tills, change, and so forth while allowing larger deposit funds or valuables to remain secured behind an inner door.

[3:54-59]

Tidel's construction is an attempt to limit the inner compartment to the preferred embodiment; that is one having a lock. The claim language is "a housing having an interior compartment for securing money, and an outer door . . ." [10:62-63] While a lock is one way to secure contents of the compartment, there may be other ways. For example, the compartment may provide security by being hidden. The court, therefore, construes "interior compartment" to mean "a compartment inside a safe."

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3. "Construction of "interior surface"

Medtronic contends that "interior surface" should be construed as being inwardly tapered at the bottom. Defendants begin by examining other claim language relating to the interior surface. First, they note that the claim includes "a second intervening member positioned in the bore between said curvate head and said interior surface." ('089 Patent, col. 13, ll. 46-47.) Then, without intervening analysis, Medtronic jumps to its conclusion: "Thus, the critical part of the interior surface is the part at the bottom of the axial bore where the screw head resides." (Defs.' Br. 27.) Medtronic provides no support for this conclusion, nor explanation of how this implies the proposed "inwardly tapered" limitation.

Medtronic next points to this claim language: "a force applied to said first intervening member urges said curvate head to translate axially. . ." ('089 Patent, col. 13, ll. 48-49.) Defendants argue that this must imply an inward taper because, if there is no inward taper, the screw and second intervening member will be pushed out the bottom. This is unpersuasive, as it rests on the unargued and unsupported assumption that the only kind of interior surface that would result in a functional device is one with an inward taper at the bottom. Medtronic demonstrates, however, why this cannot be presumed: their depiction of their M8 bottom loading screw appears to show a device in which there is a first intervening member above the screw head (the "crown"), a second intervening member (the "c-ring") between the screw head and an interior surface (the recessed groove in which the "c-ring" sits), such that a force applied to the first intervening member causes the screw head to translate axially and, assuming that Medtronic is defending its right to sell a functional device, the screw and second intervening member are not pushed out the bottom. (Defs.' Br. 8.) Medtronic's illustration of its own M8 screw, thus, appears to show an interior surface that does not have an inward taper, but the screw and second intervening member are not pushed out the bottom. This Court cannot conclude that the cited claim language implies a requirement of an inward taper to the interior surface.

Medtronic next offers the "only one way" specification argument for the inward taper. In the absence of language in the specification which constitutes a clear redefinition by implication, this Court has rejected this argument.

Medtronic has provided no basis for this Court to conclude that "interior surface" should be construed as being inwardly tapered at the bottom.

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3. "wherein the insert body is interlocked to the inner sleeve to form a single fixed structure"

Disputed Term F SI Proposed Construction
wherein the insert body is a portion of the insert body is
interlocked to the inner sleeve to form a single fixed structure

locked to a portion of the inner sleeve to provide a structure formed when a portion of the insert body is locked with a portion of the inner sleeve

Disputed Term

wherein the insert body is interlocked to the inner sleeve to form a single fixed structure

AOSI Proposed Construction

a portion of the insert body is physically connected to a portion of the inner sleeve such that the insert body is incapable of any movement relative to the inner sleeve

The disputed phrase "interlocked" is used throughout the claims and specification. The dispute pertains to whether a lack of movement is required when objects are "interlocked." FSI suggests that a lack of movement or immobility is not required. AOSI contends that "interlocked" requires a complete lack of movement.

The court rejects both parties' proposed constructions. FSI's proposed construction does not find support in the specification and ignores the "single fixed structure" limitation in allowing for significant movement. If a construction of "interlocked" permitted significant movement, the interlocked bodies would not form a "single fixed structure." Likewise, AOSI's proposed construction, precluding any movement, is inconsistent with the specification. The specification supports a definition of "interlocked" precluding substantial movement between elements. 4 AOSI's own brief acknowledges this, stating that "[o]nce interlocked, no substantial movement occurs between the insert body and inner sleeve, or between the retainer body and inner sleeve, thereby resulting in a single fixed structure." 5 The court rejects AOSI's contention that there is a distinction between "interlocked with" and "interlocked to." The specification supports the court's construction that "interlocked with" and "interlocked to" have the same meaning, and requires that the insert body and inner sleeve directly interlock to one another. 6

------------------ Footnotes ------------------

4 See, '849 patent, Fig. 23; tabs 136, 138 function to interlock the inner sleeve with the insert or retainer body which are in the shape of hooks. These tabs engage within a retaining lip portion or groove to interlock the inner sleeve to the insert body and retainer body. Id.

5 AOSI's responsive claim construction brief at 21 (emphasis added).


------------------ End Footnotes ------------------

Accordingly, the court defines "interlocked" in the context of the phrase "wherein the insert body is interlocked to the inner sleeve to form a single fixed structure" to mean "a portion of the insert body is physically connected to a portion of the inner sleeve such that the insert body is incapable of any substantial movement relative to the inner sleeve."

C. "Interlocking Features"

The parties propose:

. Plaintiff: One or more portions of the lid and the rim of the main body that cooperate to create[,] as the lid and the main body are engaged[,] a constraint that helps maintain the engagement of the lid and the main body.
1. The parties' disputes

Many of the parties' disputes seem to have been resolved in the course of briefing. Defendant expressed concern that plaintiff’s construction removed a requirement that the “interlocking features” be on the inboard side and improperly broadened the meaning of interlocking features to include features held together by friction. In response, plaintiff has stated that it agrees that "interlocking features" must be on the inboard side and it does not challenge defendant's contention that interlocking features do not include features held together by friction. Dkt. # 31, at 9, 12. (Plaintiff states that it agrees with defendant that a friction fit is different from a snap fit and it does not challenge defendant's contention that "interlocking features" requires more than a friction fit.)

What is left is minor. Plaintiff takes issue with defendant's use of the word "secure" because that word is not clear enough to be helpful. (In the previous lawsuit, I rejected defendant's proposed construction incorporating the word "secure" on the same ground, First Years, 07-cv-558-bbc, dkt. # 27, at 37.) Although defendant contends that the word "secure" is "defined" by the surrounding language it proposes ("positively constrain"), this just shows that the word "secure" is redundant in defendant's construction. If "secure" means simply "positively constrained," there is no need to use both terms.

The only other question is whether the phrase "positively constrain" is more accurate than the word "constrain" in describing the role of the "interlocking features." I agree with plaintiff that the word "positively" does not add anything except confusion. For one thing, it is not clear what it means to "positively" constrain something. To the extent it suggests that the interlocking features must remain in constant contact during assembly, I have already rejected that construction. Id. at 27-28. As for the suggestion that the word "positively" makes it clear that the constraint required must involve more than friction, I am not persuaded. To use defendant's example, a cork in a bottle (a friction fit) is "positively constrained."

Defendant's concern about allowing mere friction fits to count as "interlocking" is better addressed by describing the constraint with more specific terms. Defendant describes a few such alternatives, such as constraints that "hoo[k], interlac[e] or interweav[e]." I find, however, a description that plaintiff suggests describes the needed limitation more clearly: the constraint must be "created by an obstruction between structures of the interlocking features" as opposed to mere friction of the structures. Dkt. # 31, at 12.

2. The court's construction

Having addressed the parties' disputes, I conclude that plaintiff's proposed construction of the term "interlocking features", properly describes the limitations of the term, once it is modified to address defendant's concern regarding friction fits. The court's construction is: "One or more portions of the lid and the rim of the main body that create an obstruction between each other as the lid and main body are engaged, resulting in a constraint that helps maintain the engagement of the lid and the main body."

1. "Interlocking . . . Members"

The term "interlocking . . . members" is used in all of the independent claims at issue. Rhino contends that this term means "distinct parts of a whole which intersect and are closely joined." (Doc. 81 at 8.) Berg argues that this term should be construed as "separate individual pieces or parts, distinct from the structure as a whole, that interlock to each other to form an interior structure." (Doc. 75 at 8.) The language of the claims and specification supports a definition that excludes Berg's proposed limitation requiring separate individual pieces.

--- Footnotes ---

8 Berg seeks construction of the specific phrase "interlocking vertical cross members." (Doc. 75 at 8.) However, this specific phrase is used only in claim 1, subpart (b). (Doc. 1, Ex. A at col. 4, line 46.) Claims 1, 6, and 8 also use the phrases
"interlocking cross members," "interlocking longitudinal and transversal cross members," and "interlocking members." (Doc. 1, Ex. A at cols. 4-6.) In its brief in opposition to Rhino's proposed claim construction, Berg refers to claims 1, 6, and 8 with respect to its proposed construction of this specific phrase. Therefore, the court will construe the general term "interlocking . . . members" to cover all variations of the term in claims 1, 6, and 8.

The parties agree that the term "interlocking" means "to engage or interlace, one with another." (Doc. 32 P 51; Doc. 74 P 51.)

Berg argues that interlocking "only makes sense . . . if the term refers to separate individual pieces." (Doc. 75 at 9.) In support of this argument, Berg quotes language from claim 1, which reads "cross members . . . being fashioned in such a manner as to accommodate interlocking transversal members." (Doc. 1, Ex. A at col. 58-64.) Berg also refers to figures 4 and 5 of the '889 patent, which illustrate separate, individual cross members. This argument, however, disregards the language of the entire '889 patent. See Phillips, 415 F.3d at 1313 ("[T]he person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." (emphasis added)).

Berg also states that the claims use both "interlocking" and "interconnected" to describe the relation of the cross members. (See Doc. 75 at 8-9.) However, the term "interconnected" is used only to describe the connection between the cross members and the sides, inclined, rear, and top surfaces of the ramp. (See Doc. 1, Ex. A.)

The '889 patent clearly discloses, and claims, a plastic molded ramp. Language from claim 1, as Berg cites, certainly cannot be used to impose a limitation on the phrase "interlocking . . . members" in claims 6 and 8. See Callicrate v. Wadsworth Mfg., Inc., 427 F.3d 1361, 1371 (Fed. Cir. 2005) ("[T]his court interprets claim terms consistently throughout various claims of the same patent."). The same can be said for a limitation appearing in drawings of a particular embodiment of the invention. A person of ordinary skill in the art reading the phrase "interlocking . . . members" in the context of the entire '889 patent would not impose the "separate individual parts" limitation, as such a limitation is inconsistent with a plastic molded ramp.

Accordingly, the court will construe "interlocking . . . members" as "distinct parts of a whole, not necessarily separate individual parts, which engage or interlace, one with another."
carrying rail of said at least one pair of carrying rails." '350 patent col.8 l.49-55. Thus, according to claim 1, the magnets surrounding the intermediary have at least "alternating" polarities.

Intamin argues that adjacent pairs of magnets with alternating polarities must mean two magnets on the same rail with opposite polarity, as shown in Figure 6 of the '350 patent. Thus, according to Intamin, anything between the magnets of opposite polarity is an intermediary, whether magnetic or not. Magnetar argues that "adjacent pairs of magnets" means any two magnets next to each other or abutting each other on the rail, as shown in Figure 6. Further, according to Magnetar, the term "alternating" does not require that such magnets have opposite polarity as shown in Figure 6. Thus, because adjacent magnets are any two magnets abutting each other on a single rail, Magnetar argues that another magnet cannot be an intermediary. Under its interpretation, Magnetar's Soft Stop brakes would not infringe claim 1 because they lack an intermediary.

The district court construed the term "intermediary" without determining the meaning of "adjacent magnets with alternating polarities." The parties disagree therefore about the meaning the district court actually gave to the term "intermediary." Intamin argues that the district court determined that the intermediary could not be magnetic, thus precluding infringement. Magnetar disagrees that the district court made such a determination.

In any event, the parties agree that this court cannot interpret "intermediary" without addressing the polarities of the adjacent magnets. Specifically, an intermediary cannot be another magnet if this court construes "adjacent pairs of magnets" as two magnets abutting each other with polarities that alternate at some degree such as found in a Halbach array. In other words, an intermediary can only be a magnet if the limitation "alternating polarities" means "opposite polarities." Under that interpretation, some magnets become "adjacent pairs" and other magnets in between become "intermediaries." In addition, "adjacent pairs of magnets" with opposite polarities, as in Figure 6, would need some separation. Intamin argues that another magnet can provide this separation.

--- Footnotes ---

1 At oral argument, Intamin's counsel, in response to a question regarding the meaning of and the necessity for an "intermediary," stated that "the intermediary serves the purpose to provide spacing and support for the magnets of the magnet elements which are the magnets of alternating polarity [because] for physics reasons there has to be spacing between those two magnets of alternating polarities and also the magnets are so strong that if there in not something in between they tend to spin into a new location." Thus, whether another magnet can be an intermediary may depend on whether it can serve as a spacing and support element. Arguably, none of Magnetar's magnets are used as spacing and support elements; rather, all are necessary to create the one-sided flux of the Halbach array.

--- End Footnotes ---

The district court adopted Magnetar's proposed claim construction: "In short, ordinary meaning supports Defendant's construction, and neither the specification nor the prosecution history changes the ordinary meaning." Initial Decision, slip op. at 4. On its face, the district court construed the term "intermediary" to mean "a member between others." Id. at 3-4. In reaching that conclusion, the district court dismissed Intamin's proposed claim construction that the intermediary can be a magnet between two other magnets. Id. In fact, the trial court specifically points to language in the patent that the intermediary is non-magnetic. Id. Thus, the district court apparently construed the term "intermediary" to mean something non-magnetic between the adjacent magnets.

The first step in an infringement analysis is the determination of the scope of the claims. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995), aff'd, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996). This court construes claims according to the principles set forth by this court in Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) (en banc). As such, the court consults primarily the claims themselves in context, with much of that context supplied by the specification and the prosecution history. Id. at 1312.

In this case, the claim language itself does not require a non-magnetic "intermediary." Just as in the Phillips case itself, the claim uses a broad term with an understandable meaning. As the district court noted, the term "intermediary" standing alone means a "member between others." Initial Decision, slip op. 4. This term takes on additional meaning, however, in the context of magnetized members. The context of the rest of the patent helps show that additional meaning, namely whether
the intermediary may be magnetic.

In Phillips, this court noted that dependent claims can supply additional context for construing the scope of the independent claims associated with those dependent claims. 415 F.3d at 1314. An independent claim impliedly embraces more subject matter than its narrower dependent claim. In this case, dependent claim 2 modifies the term "intermediary." Claim 2 of the '350 patent discloses "[t]he braking device of claim 1 wherein said intermediary is magnetic." This dependent claim shows both that the claim drafter perceived a distinction between magnetic and non-magnetic intermediaries and that independent claim 1 impliedly embraced non-magnetic intermediaries. See Innova/Pure Water, Inc. v. Safari Water Filtration Sys. Inc., 381 F.3d 1111, 1123 (Fed. Cir. 2004).

The district court initially did not consider the context supplied by claim differentiation because Intamin did not raise this argument until reconsideration. Reconsideration Decision, slip op. at 2. Even without the enlightenment supplied by claim differentiation, however, the overall context of claim 1 does not limit the broad language to non-magnetic intermediaries. At one point, the '350 patent describes an embodiment of the invention with a "non-magnetic" intermediary. '350 patent col.4 ll.16-18. The district court seized on this disclosure to limit the term "intermediary" to non-magnetic substances only. Initial Decision, slip op. at 4. As this court has repeatedly noted, see SRI Int'l v. Matsushita Electric Corp., 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc) (plurality opinion), a narrow disclosure in the specification does not necessarily limit broader claim language. Phillips, 415 F.3d at 1323. The overall context of the patent, in this case, does not specifically disavow magnetic intermediaries. See e.g., SciMed Life Sys. Inc. v. Advanced Cardiovascular Systems Inc., 242 F.3d 1337, 1341 (Fed. Cir. 2001). The single reference does not expressly limit the entire invention but only describes a single embodiment. Moreover, the term "intermediary," like the term "baffle" in Phillips, embraces more than the limited specification disclosure.

Thus, this court finds that the term "intermediary" can embrace magnetic substances, albeit only if the additional term requirement of "alternating polarity" allows for it. Accordingly, this court vacates the district court's construction of this term. However, this court has not reached an additional question on which the trial court has yet to provide a decision for review. Specifically this court renews its right to determine whether the patent limits the term "adjacent magnets of alternating polarity" to magnets of opposite polarity. With the understanding that an "intermediary" may be magnetic, the trial court may revisit its finding of non-infringement.

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c. "Intermediate"

The parties dispute whether the sprocket recesses as defined by the '158 and '518 patents must be located midway between the pivot axes, or whether they need only be located somewhere between the pivot axes. Essentially, the parties dispute whether the claim term "intermediate" means "midway" or "somewhere between." Only claims 1 and 10 of the '158 patent state that the sprocket recesses are "intermediate the pivot axes." The asserted claims of the '518 patent do not similarly indicate the location of the sprocket recesses.

Although the specifications to both the '158 and '518 patents state that the sprocket recesses are "located midway between the pivot axes," such a statement does not operate to limit the scope of the asserted claims. The specification can be used to define terms in a claim, Vitronics, 90 F.3d at 1582, but cannot operate to enlarge, diminish or vary the limitations in the asserted claims. Markman, 52 F.3d at 980; Loctite Corp. v. Ultraseal Ltd., 781 F.2d 861, 867 (Fed. Cir. 1985). Here, nothing in the record indicates that Laitram used the word "midway" to define the claim term "intermediate," which in any case is only used in claims 1 and 10 of the '158 patent. Instead, the specifications' statement that the sprocket recesses are located midway between the pivot axes merely represents the preferred embodiment of the invention.

Accordingly, the court will not read the limitation of sprocket recesses located midway between the pivot axes into the asserted claims of the '158 or '518 patents.

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B. Claim 2

Claim 2 includes a "means for pivoting the shaft in a direction away from the torso as the person presses on the handle, said means for pivoting being positioned on the device and intermediate the first end and second end of the shaft." The parties dispute the construction of (1) "intermediate the first end and second end of the shaft" and (2) "means for pivoting the shaft."

1. Construction of "intermediate"

Kor-CT argues that if any part of the pivoting means falls in between the two ends of the shaft, the pivoting means are "intermediate" and covered by the claim. In other words, according to Kor-CT, if even the smallest portion of the pivoting means falls anywhere within the two extremities of the shaft, the entire pivoting means is then "intermediate" the shaft. It is difficult to imagine how, under this construction, a manufacturer could ever securely attach his pivoting means to the shaft of the device, without making the means "intermediate." As a practical matter, therefore, it looks as though Kor-CT's construction would mean any three-dimensional pivoting means, if attached to the shaft, would automatically be "intermediate" the shaft ends.

The intrinsic evidence, including the prosecution history of the '425 patent, indicates a more limited, and more straightforward, construction of the term "intermediate." Specifically, a pivoting means is intermediate the ends of the device's shaft, if, at least at some point during the operation of the device, a length of shaft protrudes on either side of the pivoting means.

To start with, this construction is the one indicated by the ordinary meaning of the phrase "said means for pivoting being positioned on the device and intermediate the first end and second end of the shaft." The phrase indicates that the entire "means" is to be positioned "intermediate" the shaft ends; it does not say, as one would expect if Kor-CT's interpretation were correct, that some part of the means is to be positioned "intermediate" the shaft ends.

Moreover, this construction is indicated by the prosecution history, which makes clear that claim 2 was refined to capture the concept that the shaft would pass through both ends of the pivoting means. The original claim language described the shaft as moving through the housing. This was then refined to state that the pivot means would be intermediate the shaft. In both cases, the intent was to narrow the claim to avoid the Van Straaten patent - which disclosed a device where the shaft could not protrude below the pivoting means - by clarifying that the ends of the shaft of the '425 device would protrude from either side of the pivoting means or "housing" at some point during the operation of the device.

--- Footnotes ---

1 Kor-CT submitted, less than a day before oral argument, the expert report of Kazem Kazerounian, who states that he believes the term "intermediate" refers to the position relative to the ends of the shaft of the "bore," i.e., the hole into which the shaft goes. As a threshold matter, I am not permitted to consider this extrinsic evidence, because the intrinsic evidence is perfectly clear. Vitrionics, 90 F.3d at 1583. Furthermore, though undeniably the bore of the 6 Second Abs is intermediate the ends of the shaft, equally undeniably the "bore" of the Van Straaten invention is intermediate the ends of the shaft of that invention. As noted above, during the course of prosecution the inventor explained that his invention differed from Van Straaten's because, in the '425 invention, the shaft passes through both bores of the housing. In light of this prosecution history, it is not possible that Mr. Kazerounian's construction is correct.

Kor-CT submitted, also on the eve of oral argument, a declaration by Ned Gvoich, the inventor of the '425 patent, to the effect that the addition of the "intermediate" language was prompted by some other concern of the patent examiner, not obvious from the prosecution history. As just explained, I am not permitted to consider this evidence because the intrinsic evidence is perfectly clear. Moreover, even when courts consider external evidence, they are generally skeptical of considering the self-serving testimony of inventors about what "really happened" at the patent office. Bell & Howell DMP Co. v. Altek Sys., 132 F.3d 701, 706 (Fed. Cir. 1997) ("The testimony of an inventor often is a self-serving, after-the-fact attempt to state what should have been part of his or her patent application"); see also Vitrionics, 90 F.3d at 1583 (intrinsic
evidence "constitutes the public record of the patentee's claim, a record on which the public is entitled to rely . . . allowing
the public record to be altered or changed by extrinsic evidence . . . would make this right meaningless").

12. Intermediate vision correction power; High vision correction power; Low vision correction power; Near vision
correction power; Far vision correction power; and Predetermined vision correction power

Vistakon seeks a construction of the above terms, found in Claims 1, 14 and 19 of the '461 patent, and Claim 1 of the '711
patent. However, the Court has already construed the terms "vision correction power" and "progressive" and finds that these
terms sufficiently convey to the jury all that is necessary to understand these additional terms. The Court sees no need to
construe the terms further to add terms of relativity or specific distance. Thus, the Court concludes no further construction is
necessary.

1. Intermediate width

Habasit contends that the term "intermediate width" means "the width of the intermediate section at either the web portion
or the corrugated portion." (D.I. 55 at 16; D.I. 62 at 4.) Habasit contends that, since the intermediate section consists of a
web portion and a corrugated portion, and the intermediate width extends from one wall to the other, its proposed
construction is more complete.

In contrast, Rexnord contends that "intermediate width" means "the width of the intermediate portion of the belt module." (D.I. 57 at 19.) Rexnord argues that Habasit's construction attempts to establish two, separate intermediate widths, a concept
not found in the '941 patent. Rexnord argues that the '941 patent has only one intermediate width--i.e., the middle portion of
the intermediate section, absent the link ends.

After reviewing the claim language, specification, and prosecution history of the '941 patent and the parties' respective
positions, the Court agrees with Habasit's interpretation of the language. The claim language clearly indicates that
intermediate width may be measured at the web or corrugated portion: "the intermediate section comprises a web portion
extending across the intermediate width" and "a corrugated portion extending across the intermediate width." (‘941 patent,
col. 6.) Furthermore, Rexnord admits in its Opening Brief that all the independent claims describe the intermediate section
as having two portions, a web portion and a corrugated portion, and that each portion "extend[s] across the 'intermediate
width'." (D.I. 57 at 19.) The intermediate width; is "defined by the first and second walls" (‘941 patent, col. 6) and,
therefore, its measurement must include the widths at both the web and corrugated portions. Rexnord is correct that there is
only one method for measuring intermediate width; however, the value of that width changes depending on the cross section
measured. Thus, the Court concludes that "intermediate width" means "the width of the intermediate section at either the
web portion or the corrugated portion."

1

NFA is the owner of the ‘586 patent for a method of manufacturing elastic waistbands with an intermeshed pull cord. The
only claim in dispute is claim 5, which reads as follows:

A method of constructing a band comprising:
(A) forming an elongated web of material elastic in as [sic] longitudinal direction by interconnecting elastic threads having an orientation in said longitudinal direction;

(B) intermeshing with a portion of said web in said longitudinal direction a pull cord having a length greater than the length of said portion of said web in said longitudinal direction in its unstretched condition; and

(C) bunching said pull cord at spaced intervals.

'586 patent, col. 4, ll. 23-34 (emphasis added).

Asheboro Elastics Corp. (Asheboro) markets its own version of a pull cord elastic band combination, which it manufactures by two different processes. In both Asheboro processes, the pull cord is sewn, by means of cover threads, onto the outside of an elastic web that is formed in a prior step. The parties dispute whether this technique reads on the "intermeshing" step of claim 5.

The district court construed "intermeshing" to mean that "the pull cord can be embedded within the web or can be entrenched, emplanted [sic], or engrafted on the web by means of cover threads either sewn or knitted to the web." Tr. of Jury Instructions at 88, NFA Corp. v. Asheboro Corp., No. 96-225 (W. D. Va. June 4, 1997) (hereinafter "Jury Instructions").

The jury returned a special verdict form, in which it found that Ashboro's processes do not infringe claim 5 of the '586 patent, either literally or under the doctrine of equivalents. Following this verdict, NFA renewed its motion for judgment as a matter of law (JMOL) and moved for a new trial on the ground that the court's jury instructions were erroneous and prejudicial. The district court denied both motions, and NFA appealed to this court. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1) (1994).

II

This court will upset a jury verdict if the record lacks substantial evidence to support the verdict. See Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1315, 50 U.S.P.Q.2D (BNA) 1161, 1164 (Fed. Cir. 1999). We review a district court's decision on a motion for JMOL de novo, reapplying the JMOL standard. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 975, 34 U.S.P.Q.2D (BNA) 1321, 1326 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 38 U.S.P.Q.2D (BNA) 1461, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). JMOL is appropriate when "a party has been fully heard on an issue and there is no legally sufficient evidentiary basis for a reasonable jury to find for that party on that issue." Fed. R. Civ. P. 50(a)(1).

NFA argues that the district court interpreted the "intermeshing" limitation incorrectly and that, under the interpretation NFA proffers, Asheboro's processes infringe claim 5. Because a correct infringement analysis requires a correct claim interpretation, we begin our review of the jury's verdict with a de novo review of the district court's claim interpretation. See Augustine Med., Inc. v. Gaymar Indus., Inc., 181 F.3d 1291, 1297, 50 U.S.P.Q.2D (BNA) 1900, 1904 (Fed. Cir. 1999). Terms in a claim are to be given their ordinary and accustomed meaning, within the context of the claim, unless (1) a different meaning is clearly set forth in the written description or the prosecution history; or (2) the meaning of the term is unclear from the context of the claim. See Johnson Worldwide Assoc., Inc. v. Zebco Corp., 175 F.3d 985, 989-90, 50 U.S.P.Q.2D (BNA) 1607, 1610 (Fed. Cir. 1999).

Step B of claim 5 states that the pull cord must be intermeshed "with a portion of said web." It is clear that "said web" refers to the web described in step A, namely "an elongated web of material elastic" which is formed by "interconnecting elastic threads having [a longitudinal] orientation." We conclude from this language that step B requires the pull cord to be intermeshed with at least some of the threads that form the elastic web in step A. We reach this conclusion in part because the meaning of "intermeshing" involves a degree of intertwining or entangling that is distinct from more generic terms such as "attaching" or "affixing." The prefix "inter" indicates "between or among." The American Heritage Dictionary (1st Ed., 1981). The word "mesh" (when used as an intransitive verb) means, "to be or become entangled . . . engaged or interlocked" with. Id. These dictionary definitions strongly suggest that the pull cord must be intertwined, interwoven or otherwise disposed between the threads that form the elastic web in part A.

NFA argues that the meaning of "intermeshing" is broad enough to cover Asheboro's technique of sewing a pull cord onto an elastic web with additional cover threads. According to NFA, the additional cover threads used to attach the pull cord to the
web actually become part of the elastic web itself, such that the draw cord is then intermeshed with "a portion of said web" as required by claim 5. Because NFA asserts a meaning of "intermeshed" that is different from what we construe to be the ordinary meaning, we turn to the specification for clarification. See Johnson, 175 F.3d at 990, 50 U.S.P.Q.2D (BNA) at 1610-11.

There are several examples of "intermeshing" in the specification in which the pull cord is disposed between the elastic threads of the web. In contrast, there are no examples in the specification showing that intermeshing could include sewing a pull cord onto the outside of the web. In fact, the specification refers to sewing as "affixing," see '586 patent, col. 2, ll. 10-20, which lends further weight to the conclusion that the '586 specification does not teach a meaning of "intermeshing" that is broad enough to include sewing.

Finally, the prosecution history indicates that the applicant, in order to overcome prior art cited by the examiner, distinguished his invention on the ground that the pull cord is disposed between the elastic threads of the web. Specifically, in overcoming the "Turner" reference, the applicant amended step A of claim 5 to include the phrase "by interconnecting elastic threads having an orientation in said longitudinal direction." The applicant argued to the examiner that this amendment "recites that the cord is disposed between two adjoining elastic threads [and] distinguishes over Turner, in which the braid C is not disposed between adjoining elastic threads, but is spaced above the elastic threads."

Based on the forgoing analysis, we construe "intermeshing" to mean that the pull cord must be disposed between the longitudinal elastic threads of the web created in step A. Because Asheboro's processes do not result in a pull cord that is disposed between the longitudinal elastic threads of an elastic web, as required by claim 5, they cannot literally infringe the '586 patent. See Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1535, 19 U.S.P.Q.2D (BNA) 1367, 1369 (Fed. Cir. 1991) ("The failure to meet a single limitation is sufficient to negate infringement of the claim.").

4. "components requiring intermittent physical access"

This term appears in the '366 patent claims 15, 16, and 39.

Rackable asserts that "components requiring intermittent physical access" means "features that would normally be accessed in use from the rear of the main board in a standard computer chassis, such as I/O connectors, and accessible data drives if present." Supermicro contends that "components requiring intermittent physical access" is indefinite under 35 U.S.C. § 112 due to the word "intermittent," or alternatively, means "parts of the computer requiring occasional physical access by a user or operator."

Supermicro again argues that this phrase is indefinite, based on the term "intermittent." It argues that the term does not adequately describe the degree of access required, and is therefore ambiguous. Supermicro further asserts that Rackable's definition itself makes the phrase increasingly vague and ambiguous. It argues that the terms "normally" and "standard" are themselves subjective and ambiguous. Alternatively, Supermicro argues that the term "intermittent" should be replaced with "occasional," based on the dictionary definition of "intermittent."

Rackable responds that Supermicro's "reason for pretending there is ambiguity is [to] move the claims away from main board features to instead require non-main board features, such as the socket for the power plug, to be on front, even though the socket is not a main board feature, the plug and power source is not a peripheral device, and the front panel power and reset buttons confirm the lack of need for intermittent access to a socket."

The '366 patent abstract, suggests that "intermittent" is synonymous with "periodic." It provides in part:

By placement of access space to all elements which require periodic attention at the front of each computer, the need for significant space at the rear of the computer is eliminated.

'366 patent. Additionally, in the summary of the invention, the specification provides, regarding the elements that should be located at the front of the computer, that: "Desirably, those [attachments] which require physical access periodically or
would significantly hinder forward removal of the machine from a rack in which it may be placed are provided for at the front of the chassis." '366 patent, 4: 9-12.

However, the patent's reference to "periodic" does not save the term from indefiniteness. That is because both terms -- "periodic" and "intermittent" -- suggest time frames, and a certain regularity that depends on a user's purpose. However, as discussed above regarding the term "front," because a user's purpose is highly subjective and variable, the terms "periodic" and "intermittent" do not provide the type of "objective anchor" required by 35 U.S.C. § 112. n1

n1 The court also rejects Supermicro's alternative construction of "intermittent" as "occasional." Both "intermittent" and "periodic" suggest some regularity, which is not reflected in the term "occasional."

For these reasons, the court declines to adopt either parties' construction, and concludes that "components requiring intermittent physical access" is indefinite under 35 U.S.C. § 112.

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B. The Meaning of "Intermittent Wind" in the 416 Patent

Homedics argues that the term "said power source to generate intermittent wind" in claim one of the 416 Patent" should be construed as "said power source to generate wind at random intervals." Excellent Inventions contends that it is error to construe "intermittent" in the 416 Patent as limited to "random intervals" and argues that the proper definition of "intermittent wind" is "wind stopping and starting at irregular intervals."

The term "random" is not found within claim one, which refers to "a control circuit for controlling said power source to generate intermittent wind" that cause chimes to emit sound. The term "random" is found within claim two, which refers to "chimes that move in response to wind from programmed power generated by said power source to simulate random wind." The summary of the invention and the detailed description of the preferred embodiments use the word "intermittent" to describe power generated in some of the different embodiments and to describe wind; the word "random" is used to describe a type of generator and to describe the nature of actual wind. The preferred embodiments include magnetically-powered wind chime that can operate "at predetermined times or randomly"; water-generated movement of the chimes that occurs when water "intermittently" passes the chimes; wind-generated movement of the chimes in which the wind is created by a "random generator" driving a motor that in turn drives a fan that causes the chimes to move, in a fashion that can be "more recurrent or continuously" or "at irregular intervals that may also rotate at different speeds or in different directions to create the effect of random wind moving the chimes." A fourth preferred embodiment uses a wind generator powered by water moving across wheels at "intermittent times" to drive the fan "intermittently." A fifth embodiment uses an ionic wind generator to move the chimes, using a "random generator" to create the sensation of "intermittent wind." (Docket Entry No. 24, Ex. B, col. 4, 11. 16-18).

During the prosecution of the 416 Patent, Petruzzi argued to the examiner that it was not invalidated by the Japanese Patent, which claimed a chime that operated at regular intervals to mark time. Petruzzi stated:

Japanese patent JP 11084037 published March 26, 1999 showing an alarm clock that signals an alarm with a chime moved by generated wind and a regular half hour or hourly chiming function. It fails to show or teach the use of an intermittent or random generator or programmable circuit for simulating the random nature of actual wind.

(Docket Entry No. 24, Ex. E, p. 3). Petruzzi contrasted a chime moved by wind generated at predictable, regular, preset intervals from a chime moved by wind created by an "intermittent or random generator or programmable circuit." Wind generated by an "intermittent or random generator or programmable circuit" is contrasted to the kind of regular, predetermined chiming noise necessary to function as an alarm clock. Wind that is generated at regular, predetermined

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intervals can be used to operate chimes that serve as an alarm clock, but this is in contrast to "intermittent wind" that simulates the "random nature of actual wind." "Random wind" can be created by either an "intermittent or random generator or programmable circuit." Petruzzi made it clear that "intermittent wind" meant wind that was not continuous nor regular. The prosecution history does not, however, require the conclusion that "random" only means at intervals, whether regular or irregular, as opposed to occurring in a manner that is so irregular as to be lacking in pattern or predictability.

The specifications support a construction that "intermittent wind" means wind that blows at irregular intervals, while "random" appears to mean irregular or unpredictable occurrences that can be continuous or at intervals. Several of the specifications show that "random wind" includes wind that may blow continuously, but at varying and unpredictable speeds and directions. (See Docket Entry No. 24, Ex. B, Fig 4 and col. 3, 11. 26-44). By contrast, "intermittent wind" means wind that blows at intervals, that are defined in the 416 Patent to mean only intervals that are irregular. (See Id. col. 2, 36-67, col. 3, 1-6, col.3, 26-45, col. 4, 1-17). n6

n6 Webster's Ninth New Collegiate Dictionary defines "random" as ". . . lacking a definite plan, purpose or pattern." On Dictionary.com, "random" is similarly defined as "having no specific pattern, purpose or objective." McGraw Hill's Scientific and Technical Dictionary defines random paired with several other words, including:

random forecast [METEOROLOGY] A forecast in which one of a set of meteorological contingencies is selected on the basis of chance; it is often used as a standard of comparison in determining the degree of skill of another forecast method.

random mating [GENETICS] A mating system in which there is an equal opportunity for all male and female gametes to join in fertilization.

By attempting to find a reliable dictionary definition of "random," this court runs into two of the problems the Federal Circuit warned of in Phillips: that the extrinsic evidence is less useful than intrinsic evidence because it is not created "for the purpose of explaining the patent's scope and meaning" and "there is a virtually unbounded universe of potential extrinsic evidence of some marginal relevance that could be brought to bear on any claim construction question." Phillips, 415 F.3d 1303, 2005 WL 1620331 at *11.

This court concludes that "intermittent wind" in claim one of the 416 Patent means wind that blows at irregular intervals.
the brushing action along the slits into several free-standing strands of a thinner width resembling grass blades.” ’689 patent, 5:26-31. In other words, SCG wants to import a manufacturing operation performed on the slits to create the free-standing strands of thinner width into the definition of the slits. This is not proper. Accordingly, the Court adopts FieldTurf’s proposed construction of “openings or cuts in the ribbons in an intermittent pattern.”

FieldTurf’s Proposed Construction: "Mixed"

SCG’s Proposed Construction: "Thoroughly mixed together"

The Court’s Claim Construction: "Intermixed"

The Court believes that it is unnecessary to provide further definition to "intermixed." It properly conveys the concept, described in the specification and claims, of a bottom course with both hard and resilient particles mixed together. ’689 patent, 7:7-8; 9:58-59; 10:33. SCG relies entirely on its characterization of Figure 1 as depicting a bottom course 5 that is "completely homogeneous, with no variations, gaps, or other breaks." First, this description of Figure 1 is not accurate. Rather, the bottom course 5 appears to have significant variations and randomness throughout. Moreover, SCG fails to point to anything in the specification that requires a completely homogeneous bottom course with no variations, gaps, or other breaks. 15

--- Footnotes ---

15 Although it is not entirely clear how “thoroughly mixed together” differs from "mixed” or "intermixed,” it is apparent that SCG interprets it to be something approaching "completely homogeneous, with no variations, gaps, or other breaks."

--- End Footnotes ---

D. Internal Bore

I did not construe this term, or any of the remaining terms at issue in this case, in the July 25 opinion and order. The dispute regarding the term "internal bore" is whether it encompasses an "internally threaded bore." Plaintiff argues that it does not because the ordinary meaning of "bore" connotes something that is hollow and smooth. Defendant disagrees, pointing out that one of the examples of a bore that plaintiff discusses in its brief, the bore of a firearm barrel, is not smooth. Regardless of the ordinary meaning of bore, however, the patent uses the term "threaded bore" to describe the inside of a nut. This suggests that, in the patentee’s lexicon, a "bore" can be threaded or smooth. If the patentee did not want "bore" to encompass threaded objects, he should have used a word other than "bore" to describe the inside of a nut. Alternatively, if he wanted to limit the compression ring to smooth objects, he should have used the term "internally smooth bore."

As defendant points out, it is a basic principle of logic that a genus necessarily includes one of its species. Thus, the genus "bore" must encompass the species "threaded bore." Plaintiff cannot escape the effect of this basic principle by arguing that all of the preferred embodiments have a compression ring with a smooth internal bore. It is well-settled that a court may not read limitations from the specification into the claims. Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1308 (Fed. Cir. 2003); Specialty Composites v. Cabot Corp., 845 F.2d 981, 986-87 (Fed. Cir. 1988) (patent that used term “plasticizer” covered both “internal plasticizers” and "external plasticizers" even though the patent provided examples of "external plasticizers" only). An "internally threaded bore" is an "internal bore."

E. Constant Diameter Internal Bore/Non-tapered Internal Bore
These terms appear to be the most hotly contested in this case. The parties agree on their literal meaning: a "non-tapered" bore is one that does not gradually diminish in one direction and a "constant diameter" bore is one that has a diameter that does not vary from one end of the bore to the other. However, the parties disagree on how an ordinary person of skill in the art would understand the terms in the patent. Defendant argues that the words "non-tapered" and "constant diameter" are non-technical terms that should be given their ordinary, literal meaning. Plaintiff argues that one of ordinary skill in the art would not give the terms their literal meaning, but would understand that the terms were subject to the inherent limitations of the materials and processes used in manufacturing.

Defendant is correct that there is a heavy presumption that terms in a claim should be given their ordinary meaning, particularly when the terms are non-technical. See Middleton, Inc. v. Minnesota Mining and Manufacturing Co., 311 F.3d 1384, 1387-88 (Fed. Cir. 2002). However, at the claim construction hearing, experts for both sides admitted that it would be impossible to create a compression ring with a perfectly constant diameter. In addition, both experts addressed the necessity of using draft angles when making compression rings out of plastic, one of the materials used in the preferred embodiments of the '194 patent. See Pat. '194, col. 3, lines 31-35 (stating that parts of cable connectors in preferred embodiments may be made of plastic). Although the experts disagreed on the degree of the appropriate draft angle for plastic parts in a cable connector, they did agree that it would be almost impossible to make a perfectly non-tapered plastic compression ring. Thus, if the terms "constant diameter" and "non-tapered" were limited to mean perfectly constant and perfectly non-tapered, the '194 patent would not cover its own preferred embodiments. Moreover, claim 2 would not apply to any products in the real world because no cable connectors have parts with perfectly constant diameters.

The principles of claim construction do not require such an absurd result. Courts may reject a literal definition if doing so is necessary to remain consistent with the object of the invention as expressed in the specification. See Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 796 F.2d 443, 450 (Fed. Cir. 1986) (rejecting definition of "smooth" as "absolutely ridge-free" because one of ordinary skill in art would understand that "smooth means smooth enough to serve the inventor's purposes"); see also Quantum Corp. v. Rodime, 65 F.3d 1577, 1581 (Fed. Cir. 1995) (assuming that one of ordinary skill in relevant art would understand "600 tpi" to mean "approximately 600 tpi").

It is true, as the Court of Appeals for the Federal Circuit has recognized, that the appropriate manufacturing tolerances for a particular product should be determined by contract and not through claim construction. Middleton, 311 F.3d at 1389; Senmed, Inc. v. Richard-Allan Medical Industries, Inc., 888 F.2d 815 (Fed. Cir. 1989). In accordance with these cases, I agree with defendant that plaintiff is not entitled to read into the claims its chosen manufacturing tolerances. However, the question before the court is not what the appropriate manufacturing tolerances are but whether one of ordinary skill in the art would take into account real world constraints when defining terms. When it is impossible to create a completely flat or unvarying surface, it is not difficult to surmise, even without expert testimony, that one of ordinary skill in the art would understand the terms "non-tapered" and "constant diameter" to include not only the perfect manifestations of these terms, but also objects that are as close to perfection as available technology can reasonably achieve.

Further, I disagree with defendant's suggestion that, under this approach, competitors would not have fair notice whether they are infringing. By necessity, companies that employ a particular material in manufacturing will know that material's inherent limitations. So long as the scope of the term extends only as far as necessary to accommodate the inherent limitations of the materials (rather than what is cost effective, see Senmed, 888 F.2d at 820 n.10), potential competitors will not be left to guess what infringes and what does not.

In sum, I am persuaded that one of ordinary skill in the art would know that cable connectors are manufactured in the real world and not in the mind of God. Accordingly, I construe "non-tapered internal bore" to mean a "a bore that does not gradually diminish in one direction, subject to the inherent limitations of the materials and processes used in the manufacture of the compression ring." I construe "constant diameter internal bore" to mean "a bore with a diameter that does not vary, subject to the inherent limitations of the materials and processes used in the manufacture of the compression ring."
Next for interpretation by the Court is the term "internal surface" that appears in claims 1, 10, 21, 22, and 28 of the '579 patent. The Plaintiffs state that the term means "an interior face." (Pls.' Open Br. PX-1 3.) Pergo states that "internal surface" means "an inner surface of the locking groove closest to the joint edge making a right angle with the underside of the groove panel, and configured so that a play exists between the internal surface and a locking surface of the locking element." (Unilin's Open. Br. 25-26.)

Claim 1 of the '579 patent states:

A mechanical locking system for locking a first edge of a first panel to a second edge of an identical second panel that are arranged on a subfloor, the mechanical locking system comprising: means on the first edge and the second edge for forming a first mechanical connection locking the first and second edges to each other in a first direction at right angles to a principal plane of the panels; a locking device arranged on an underside of the first and the second edges, the locking device forming a second mechanical connection locking the first and the second edges to each other in a second direction parallel to the principal plane and at right angles to the edges; the locking device including a locking groove which extends parallel to and spaced from the second edge, the locking groove being open at the underside of the second edge and including an internal surface; the locking device further including a strip extending from the first edge, the strip extending throughout substantially an entire length of the first edge and being provided with a locking element projecting from the strip; the strip, the locking element, and the locking groove being configured such that when the second edge is pressed against an upper part of the first edge and is then angled down against the subfloor, the locking element can enter the locking groove; the locking element has a locking surface which faces the first edge and is configured so that it can contact the internal surface of the locking groove when the first and second edges are joined together to prevent substantial separation of the joined first and second edges; and the locking element further including an outer portion which is most distant to the joined edges and is not in contact with the locking groove when the first and second edges are joined together.

('579 patent, 10: 35-67.) (Emphasis added). The key portions of the proposed definitions of the Plaintiffs and Pergo are similar -- "interior face" and "inner surface." However, the Plaintiffs' proposed definition is preferable since it does not include the word "surface" that is part of the phrase which it defines. The remaining portions of Pergo's definition are drawn from the specification's discussion of the figures or preferred embodiments and are not central to the claimed invention. Therefore, the Court defines "internal surface" as "interior face."

2. "Internal Threads"

a. Claim Term:

"... a female end of said PVC pipe; a first enlarged interior diameter of said PVC pipe at said female end, said first enlarged interior diameter ... having internal threads to mate with said external threads of said male end for said similar adjacent PVC pipe ..."

b. Parties' Contentions

CertainTeed's proposed construction of "internal threads" is "helical or spiral ribs or grooves disposed on the interior surface of the female end of the PVC pipe to mate with helical or spiral ribs or grooves on the outer surface of the male end of a similar adjacent PVC pipe." In support, CertainTeed points out that the claim plainly states that the first enlarged diameter section has "internal threads to mate with said external threads of said male end for [sic] said similar adjacent PVC pipe." (emphasis added). CertainTeed's proposed construction incorporates this language. However, CertainTeed argues that Modern Products is seeking to rewrite this claim element by substituting the word "which" for the word "to" in the claim. CertainTeed contends that the language of this claim in unambiguous, and there is no basis in the intrinsic record for deviating from that language or altering the ordinary meaning.

Modern Products' proposed construction of "internal threads" is "helical or spiral ribs or grooves disposed on the interior surface of the female end of the PVC pipe which mate with corresponding helical or spiral ribs or grooves on the outer
surface of the male end of a similar adjacent PVC pipe." Modern Products asserts the same argument as made for the construction of the term "external threads." See supra.

c. Court's Construction

This Court concludes that the term "internal threads" means "helical or spiral ribs or grooves disposed on the interior surface of the female end of the PVC pipe which mate with corresponding helical or spiral ribs or grooves on the outer surface of the male end of a similar adjacent PVC pipe." This term is construed in accordance with the claim and specification, and dictated by its ordinary and customary meaning. For many of the same reasons stated in the discussion of the claim term "external threads," the Court agrees with Modern Products' proposed construction because it is supported by the claim language and construed in accordance with the specification. Additionally, this construction is not inconsistent with the term's ordinary and customary meaning. See supra pg. 7.

The independent claim in Mid-America's '060 patent, Claim 1, includes five elements: [a] a mounting bracket, which is placed behind the siding of the subject building; [b] a flange member, which is inserted from outside the building, through a hole in the siding, onto the mounting bracket; [c] "a cover piece received within the wall of said flange member"; [d] "said cover piece being interposed between said flange wall of said flange member and said back wall of said bracket;" and [e] interengaging means on the inner surface of the mounting bracket's peripheral wall and the outer surface of the flange wall of the flange member, such that the bracket can be set at different openings.

The '060 patent also includes three dependent claims. Claim 2 consists of the wall mount assembly described in Claim 1 with a cover piece that has an opening so that the assembly can fit over a pipe or faucet. Claim 3 calls for a cover piece consisting of a plastic socket cover for an electrical box. And Claim 4 specifies an electric socket cover with hinged covers over the socket openings, for safety and cleaning.

As described in the background and summary section of the '060 patent, the patented design has several advantages over its predecessors. First, only the flange member is visible, allowing the bracket member to be made of a less expensive material and permitting the bracket member to be a different color from the siding. This makes color coordination easier and less costly. Second, the '060 mounting bracket can be used with existing short wires and electric boxes, eliminating the prior need to extend them. Finally, the '060 can be used with faucets. In such use, a cover piece is used to hide the hole in the siding through which the pipe extends. This cover piece can be color-coordinated with the flange member to be the same color as the siding.

Elements [c] and [d] of Claim 1, relating to the design and placement of a cover piece, are the center of controversy. The parties do not dispute that Richwood's product contains the first two elements of Claim 1. However, Richwood maintains that while its product may receive a standard-sized cover piece, it cannot receive a cover piece "interposed" between the flange member wall and the back wall of the base of the bracket, in the manner that the patented device does. According to Richwood, the accused flange member would not connect to the bracket if a cover piece were interposed.

Mid-America counters that Richwood's assembly can be used with a cover piece in the same way as the '060 patent. Mid-America says that "interposed" does not require the cover piece to be trapped or held in place by the flange member, but merely to be placed between the flange member and bracket.

As Markman established, claim interpretation is a matter of law which I must decide. Markman at 1393. I am thus called upon to determine the meaning of the word "interposed" as used in Claim 1 of the patent (element [c]) above. A court must give a word its ordinary meaning, in the absence of any specialized definition in the patent. Vitronics Corp. v. Conceptronic, 90 F.3d 1576, 1582 (Fed. Cir. 1996). Merriam Webster's Collegiate Dictionary defines "interpose" as, "to place in an intervening position." Merriam Webster's Collegiate Dictionary (10th ed. 1995).

As far as the use of the assembly to mount a faucet, Mid-America's argument holds little water. Mid-America clearly requires a cover piece of the same color as the house's siding, having a central opening with a slit that fits over the faucet. Richwood's device needs no such cover since it in effect incorporates a hinged cover piece which fits directly over the
faucet. Mid-America argues that since the built-in cover of Richwood's device can be knocked out and a cover made of the house's siding adapted for use, it can be used identically to Mid-America's device. But as discussed below, Mid-America has not shown any evidence that Richwood's device is so used or that Richwood encourages such use.

When used to mount electrical socket covers, the devices are employed in a more similar fashion. In both, the socket cover is not "trapped." As shown in the patent drawings, the "interengaging means" specified in Claim 1 [e] above) of the '060 patent permit the flange member and bracket to be spaced far enough apart to accommodate an electrical socket cover in a way similar to Richwood's device.

However, Richwood persuasively argues that the background language in the patent limits construction of the claim. The background section indicates that the patent sought to create an assembly where the back wall of the bracket was not visible, so that it could be made of less expensive material and not need to be color-coordinated with the house. The cover piece is "interposed" in the '060 assembly in the sense of being "trapped by" the flange so that it is held against the bracket and completely obscures the back wall. This distinguishes it from the accused device, where the back wall is made of the same material as the flange member and is visible.

Richwood's interpretation is supported by language in the patent. See United States Patent 5,326,060, "Background and Summary of the Invention," column one, line 54 and "Description," column two line 61-62. Plaintiff cites numerous cases to the effect that the scope of a claim may not be limited by patent drawings and specifications. However, I do not here impose a narrower scope on the claim. Plaintiff's device must hold a cover piece fully eclipsing the back wall of the bracket. No "broader" use overlapping with the accused device is possible.

The difference between the devices may be one of form rather than substance, but as Southwall teaches, "To establish literal infringement, every limitation set forth in a claim must be found in an accused product, exactly." Southwall at 1575.

Because the accused device does not in any application use a cover piece in the same manner as called for by the '060 patent, I cannot find literal infringement.

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The crux of the parties' dispute as to the construction of these related terms is the meaning of the terms "interrupting" and "disconnecting," and whether these terms require a physical disconnection. Plaintiff's position is that "interrupting" and "disconnecting" do not require a physical disconnection but instead require only that the functions of the device stop operating, whereas Defendants' construction requires a physical disconnection of the relevant components.

First, Plaintiff argues that "interrupting" of the existing floor call transmitter line from the elevator control does not mean a physical disconnection, but is merely a switch from the elevator control being controlled by the traditional floor call transmitter to the new computing unit and modernizing device. Therefore, Plaintiff contends that the concept of "interrupting" relates to a means of stopping the elevator control from operating in order to upgrade to the computing unit and modernizing device.

Plaintiff cites to the following language from the specification in support of its interpretation:

[T]he existing electrical floor call transmitter line 16, 16' to the floor call transmitter . . . or the existing car call transmitter line 18, 18' to the car call transmitter 13, 13' is interrupted at the input of the elevator control 14, 14'

('465 Patent, col. 10:28-33.) (emphasis added). Plaintiff argues that this "interruption" merely requires that the elevator control stop operating based on output from the traditional floor call transmitter.

Second, Plaintiff argues that although the term "disconnected" is not defined in the specification, it is analogous to the term "interrupting." Plaintiff reiterates its argument that this disconnection limitation is intended to stop the elevator control from operating based on output from the traditional transmitters in order to effectuate a changeover so that it is controlled by the computing unit via the modernizing device. Thus, Plaintiff contends that only a "functional" or "operational" disconnection is contemplated, rather than a physical disconnection.
Defendants respond that the Patents-in-Suit contemplate that the floor call transmitters are physically disconnected from the elevator control in order for a new connection by way of an electrical line with an output device. Defendants argue that a physical disconnection is directed because the floor call transmitters and car call transmitters are completely removed upon installation of the new connection. Defendants cite to the following language contained in the specification in support of its construction:

[T]he existing electrical car call transmitter line 18, 18' to the car call transmitter 13, 13' is interrupted at the input of the elevator control 14, 14' and this input of the elevator control is instead, connected by way of an electrical line with an output of the [modernizing] device 36, 36' ('465 Patent, col. 10:31-35.) (emphasis added). Defendants contend that this language indicates that a physical disconnection occurs with respect to the elevator control and that this interpretation is supported by the fact that the floor call transmitters are removed subsequent to the "interruption."

Similarly, Defendants argue that the ordinary meaning of the term "disconnected" directs that it be interpreted as meaning physically disconnected. Defendants note that the specification explains that after the car call transmitter line is "interrupted," the "input of the elevator control is, instead, connected by way of an electrical line with an output of the [modernizing] device." (Id. col. 10:28-35.) Defendants argue that this description contemplates a physical severance of the lines.

Plaintiff's interpretation attempts to limit the meaning of the terms "interruption" and "disconnected" in a way that does not comport with the natural reading of the words in light of the specification. The fact that the Patents-in-Suit, through the specifications, clearly contemplate connecting the input of the elevator control with a separate electrical line connected to the modernizing device indicates that the previous connection with the floor call transmitter line would be physically severed, rather than merely disabled. Therefore, the Court will adopt Defendants' proposed construction that the terms "interrupting" and "disconnected" require a physical disconnection as this meaning is more consistent with the context of the specification.

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c. "movement interruption"

Durr argues that "movement interruption" means "any occurrence which causes the spraying device and the conveying device to halt in non-specific terminal positions, i.e., the relative positions of the spraying device and conveying device may no longer be synchronized." (Am. Joint Claim Construction Chart at 1, FANUC's Ex. 1.) FANUC, drawing from its argument related to the preamble, argues that the term should be construed to mean "movement being interrupted in the event of a power supply failure." (Id.) As discussed above, the court has rejected FANUC's argument that movement interruption must be caused only by a power supply failure, and thus will not accept its proposed construction here.

FANUC also objects to Durr's use of the phrase "any occurrence," because it contradicts Durr's proposed construction of "power supply failure." (FANUC Resp. Br. at 20.) Specifically, Durr proposed that "power supply failure" should mean "any unscheduled automatic, manual, or inadvertent termination of power." (Am. Joint Claim Construction Chart at 2, FANUC's Ex 1.) FANUC therefore argues that, at a minimum, the word "unscheduled" should be imported into Durr's proposed construction. (FANUC Resp. Br. at 20.) Notwithstanding the fact that the court has declined to read the Preamble as a limitation, and therefore has declined to construe the phrase "power supply failure," FANUC's argument is well-founded that "movement interruption" includes a qualifier that the interruption is unscheduled. As discussed above, the specification includes multiple references to the fact that the Patent is intended to relate to unscheduled interruptions. (See '538 Patent, at abstract, 2:5-10, 2:33-3, 3:6-7.) Accordingly, the court will add the word "unscheduled" to Durr's proposed construction.

After accepting the argument that the movement can be caused by "any unscheduled occurrence," and rejecting the argument that the interruption must be caused by a power supply failure, the court perceives no substantive disagreement by FANUC to the rest of Dorr's proposed construction, which requires that the occurrence must cause "the spraying device and conveying device to halt in non-specific terminal positions, i.e., the relative positions of the spraying device and conveying
device may no longer be synchronized." This construction is consistent with the claim language and the purpose of the Patent as expressed in the specification. Absent any substantive objection from FANUC, the court will adopt it.

Thus, the court will essentially adopt Durr's proposed construction of "movement interruption," with only the minor modification of adding the word "unscheduled." The final construction, therefore, reads: "any unscheduled occurrence which causes the spraying device and the conveying device to halt in non-specific terminal positions, i.e., the relative positions of the spraying device and conveying device may no longer be synchronized."

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4. Rajala Patent No. 5,940,887 — "intersect"

Rajala Patent '887 relates to disposable absorbent garments where the leg and crotch elastics are configured in manner that minimizes leakage and improves fit. For the disputed claim term found in Claims 1, 14, 19 and 20, KC and First Quality both agree that "intersect" means "cross over or overlapping." The dispute centers on First Quality's addition of the phrase "within a common layer." First Quality contends that its proposal is consistent with the ordinary meaning of the word "intersect." (doc. 168 at pg. 77.) KC counters insisting that First Quality is attempting to insert a limitation that is not supported by the intrinsic evidence. (See doc. 197 at pg. 18.) After review, we agree with KC.

First Quality's bases its construction not on the intrinsic evidence, but rather on the usage of the word "intersect." Defendants argue that in ordinary usage, "one would not describe a corridor on the second floor as intersecting with a corridor on the third floor, even if the third floor corridor 'crosses over' the second floor." (doc. 168 at pg. 77.) This is true. However, by agreeing that "intersect" means to "cross over or overlap," First Quality is implicitly refuting the common usage of "intersect", which is typically defined as "to pierce or divide by passing through or across." Webster's Third New International Dictionary (unabridged) 1182 (1981). More importantly, neither the claim nor specification language provide that the elastics must be within a common layer. By adding this language, First Quality seeks to add a limitation into a claim that is not supported by the evidence. Since the parties agree that "intersect" means "cross over or overlapping", we will construe the term as such.

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2. "intersect"

Braun construes "intersect" to mean "to have one or more points in common from at least one perspective." (D.I. 74 at 16) Terumo construes the term to mean "to pierce or divide by passing through or across, but not merely touching or overlapping." (D.I. 71 at 14) I recommend adopting Braun's proposed construction.

Both parties agree that the issue is whether "intersect" as used in the patent claims requires that items "pierce or divide" one another. 6 Braun's proposal would allow for items to "intersect" without piercing or dividing one another, provided that the items appear to have at least one point in common when looking at them from some perspective. (See, e.g., D.I. 99 at 10 (Braun explaining its construction "capture[s] the requirement that two arms appear to have at least a common point, shown in the embodiments as crossing") (emphasis added).) Terumo, by contrast, insists that items which "intersect" must pierce or divide one another.

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6 It had previously appeared that the parties also disputed whether "intersect" as used in the patent claims requires that items touch one another. After the hearing, however, this issue no longer seems to be in dispute. (See Tr. at 64 (Braun stating it is prepared to accept a construction requiring touching, such as "to have one or more points in common from at least one perspective, but not merely touching"); Tr. at 62 (Terumo's counsel not insisting on touching, stating "[t]hey don't have to be touching").
The claim language refers to a "proximal wall" having "two arms that intersect one another and extend distally of the proximal wall in the ready to use position." ('613 patent, col. 16 lines 12-13) This claim language itself does not preclude either party's proposed construction.

Turning to the specification, most relevant are Figures 10A and 10B, which depict a preferred embodiment. ('613 patent at BBM-TER0000014) In this preferred embodiment, the arms (122 and 124 in Figure 10A) do not touch, pierce, or divide one another. ('613 patent, col. 9 lines 28-34 & col. 10 lines 12-14) From the perspective depicted in Figures 10A and 10B, however, the two arms do appear to share a point in common (that is, the spot where the two arms appear to "cross" over one another). Thus, the embodiment disclosed at Figures 10A and 10B would be excluded from the claims if Terumo's construction were adopted. As a general matter, a claim interpretation that excludes a preferred embodiment is not a correct interpretation. See generally Osram GmbH, 505 F.3d at 1358 ("[A] claim interpretation that would exclude the inventor's device is rarely the correct interpretation."). Such a result would be all the more anomalous here because, according to Terumo, this Figure 10 design "is the only version of the clip that worked." (Tr. at 22-23; see also D.I. 97 at 12 n.8.)

Much attention has been devoted by the parties to the prosecution history of a patent related to the '613 patent-in-suit. The parties are in agreement that the prosecution history of a continuation-in-part patent is irrelevant. See Tr. at 49, 55; D.I. 71 at 19-20; D.I. 97 at 13; see also Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1350 (Fed. Cir. 2004) ("Any statement of the patentee in the prosecution of a related application as to the scope of the invention would be relevant to claim construction, and the relevance of the statement made in this instance is enhanced by the fact that it was made in an official proceeding in which the patentee had every incentive to exercise care in characterizing the scope of its invention.").

Terumo finds within the file history of U.S. Patent Application No. 10/734,931 (the "'931 application"), which is a continuation-in-part of the '613 patent, a prosecution disclaimer. 7 "Under the doctrine of prosecution disclaimer, a patentee may limit the meaning of a claim term by making a clear and unmistakable disavowal of scope during prosecution." Purdue Pharma L.P. v. Endo Pharms. Inc., 438 F.3d 1123, 1136 (Fed. Cir. 2006).

--- Footnotes ---

7 The specifications of the '613 patent and the '931 patent application are essentially identical. (Tr. at 49, 55)

--- Footnotes ---
Braun responds that Terumo's purported prosecution "disclaimer" is "no disclaimer at all, but rather an attempt to distinguish the prior art in a manner consistent with Braun's proposed construction." (D.I. 99 at 10) Braun adds that the statements made during prosecution "were made to explain that the two cited prior art references did not teach or disclose 'intersecting arms' using the ordinary meaning of that term." (D.I. 99 at 12) My review of the file history leads me to conclude that Braun is correct. I find no clear and unmistakable disavowal of the otherwise broad scope of the claim term "intersect."

With respect to extrinsic evidence, both parties cite to dictionary definitions of "intersect." Unsurprisingly, both parties have found dictionaries that support their own proposed constructions. 9 These are not particularly helpful and do not alter the conclusion I have reached above, on the basis of the intrinsic evidence.

9 Braun's dictionary definitions are: "intersect" means "to have one or more points in common" and "intersection" means "point or line of contact between two lines." (D.I. 74 at 16) (citing Webster's Universal College Dictionary (2003) and Webster's New International Concise Dictionary of the English Language (1997)) Terumo relies on Webster's Ninth New Collegiate Dictionary (1991) (defining "intersect" as "to pierce or divide by passing through or across"); Webster's Third New International Dictionary of the English Language Unabridged (1993) (defining "intersect" as "to pierce or divide by passing through or across"); Random House Webster's College Dictionary (1995) (defining "intersect" as "to cut or divide by passing through or across"); and The American Heritage Dictionary (3d ed. 1993) (defining "intersect" as "to cut across or through"). (D.I. 71 at 15)
contends that "meet or touch" is the common understanding of "intersect." (Id.) Further, ICU criticizes RyMed's proposed construction, contending that the limitation of "successive" is both unwarranted by the claim language, as well as redundant. (Id.) RyMed contends that ICU's use of the word "meet" to construe the word "intersect" is ambiguous, and that "intersect" means only that the arcuate segments "touch." (D.I. 116, at 30-31.) Further, RyMed contends that its use of the word "successive" is supported by, and required by, Figure 9. (D.I. 165, at 28.)

In the Court's view, ICU's construction is more persuasive because RyMed offers no support to read in the "successive" limitation. This limitation is not grounded in the claim language or in the Common Specification, since the words "intersect" or "intersecting" do not appear anywhere in the Common Specification. Accordingly, the limitation seems to be based on nothing more than RyMed's interpretation of what Figure 9 illustrates. Thus, the Court concludes that "arcuate segments intersecting one another" means "arcuate segments that meet or touch."

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Cytyc's proposed construction | Xoft's proposed construction
---|---
"Interstitial" (no construction required) | Site in natural or surgically created cavity in body.

"Brachytherapy"
Cytyc's proposed construction | Xoft's proposed construction
Radiation therapy delivered by a spatially confined radiation source at or near the site of the diseased tissue. | Radiation therapy delivered by a spatially confined radionuclide at or near a tumor or other proliferative tissue disease site.

"Interstitial brachytherapy"
Cytyc's proposed construction | Xoft's proposed construction
Brachytherapy applied directly to the interspaces of a body tissue, where the interspaces are not naturally occurring. | Radiation therapy delivered by a spatially confined radionuclide at or near a tumor site in a natural or surgically created cavity in a body.

Cytyc argues that "interstitial" and "brachytherapy" should be constructed together; Xoft seeks a separate construction for each word. Cytyc also complains that Xoft seeks to limit "brachytherapy" to radionuclides, arguing that the definition should encompass any radiation source. However, the patent provides a clear definition of "brachytherapy": "The term 'brachytherapy,' as used herein, refers to radiation therapy delivered by a spatially confined radioactive material inserted into the body at or near a tumor or other proliferative tissue disease site." '204 patent, col. 1, ll. 30-33. Here, the patentee clearly acted as his own lexicographer, and Cytyc's arguments for a broader definition do not acknowledge this clear definition. The court construes "brachytherapy" to mean "radiation therapy delivered by a spatially-confined radioactive material inserted into the body at or near a tumor or other proliferative tissue disease site." 9

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9 This definition does not resolve the parties' dispute over whether "radioactive material" should be read to encompass only "radionuclides" (as Xoft wishes) or any "radiation source" (as Cytyc urges). As the parties have separately sought construction of "radioactive material," the court will address construction of that phrase below.

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Xoft argues that "interstitial" means any body cavity, while Cytyc argues that "interstitial" should be limited to only non-naturally-occurring cavities. As Xoft points out, one medical dictionary defines "interstitial" as "1. Placed or lying between. 2. Pert. to interstices or spaces within an organ or tissue." TABER'S CYCLOPEDIC MEDICAL DICTIONARY, 1007 (Clayton M. Thomas, ed., 17th ed. 1993). Although not cited by the parties, a British oncology text indicates that
"interstitial" has a particular meaning in the field of the invention:

Two main techniques are used for the delivery of radiation which is given either as an external beam or as short range radiation from an implanted radioactive source. External beam radiation usually involves megavoltage produced by linear accelerator as photons or electrons or from cobalt sources in the form of relative low energy X-rays or gamma rays. The latter are often used to treat relatively superficial lesions such as basal cell carcinoma or recurrences within the skin. High energy radiation can be used to treat deeply located lesions such as prostatic carcinomas without delivering an excessive dose to adjacent normal tissue. . . .

Interstitial implant irradiation gives a high local dose to the tumour and usually employs sources such as radium, iridium, or caesium used in the form of needles or wires implanted in the tumour. This technique is widely used in the treatment of head and neck cancers to deliver a high tumour dose without irradiation to sensitive organs such as the lens of the eye or the spinal cord.


However, Cytyc points out that regardless of any generally-accepted meaning of "interstitial" in the field of the invention, the patentee limited "interstitial" during prosecution to refer to only surgically-created cavities (and similarly defined "intercavital" to refer to natural body cavities):

Turning to the cited prior art, the Ishiwara device comprises a thermotherapeutic apparatus having a catheter body member, an inner lumen surrounded by an outer lumen, and a radiation source contained within the inner lumen. . . . Ishiwara's apparatus is inserted into a body cavity. Hence, the apparatus does not provide interstitial radiation treatment, as Applicant's invention requires, but rather intercavital radiation treatment.

Su Decl. (dkt. # 49), Ex. C (Amendment & Resp.) at 11 (citations omitted). This is consistent with the background section of the patent, which mentions surgical cavities several times but not natural ones. '204 patent, col. 1, ll. 19, 23, 25, 63, col. 2, 1. 1. Also, although the summary section does not specify what type of cavities the apparatus claims are directed to, the summary makes clear that the method claims are directed to a method that "includes surgically creating access to the proliferating tissue within a patient and surgically resecting at least a portion of the proliferating tissue to create a resection cavity within body tissue." Id., col. 3, ll. 3-6.

The parties did not brief the issue of how much weight the court should afford the prosecution history in this instance. The Federal Circuit has instructed that "[a]lthough prosecution history can be a useful tool for interpreting claim terms, it cannot be used to limit the scope of a claim unless the applicant took a position before the PTO that would lead a competitor to believe that the applicant had disavowed coverage of the relevant subject matter." Schwing GmbH v. Putzmeister Aktiengesellschaft, 305 F.3d 1318, 1324 (Fed. Cir. 2002). Here, the patentee clearly disavowed coverage of intercavitary radiation treatment when arguing to the PTO. Given the intrinsic evidence is of primary importance and all supports Cytyc's position, the court construes "interstitial" to mean "involving a surgically-created cavity in a body."

10 In its recent en banc explanation of the evidence to be used in construing claims, the Federal Circuit devoted a paragraph to prosecution history:

In addition to consulting the specification, we have held that a court "should also consider the patent's prosecution history, if it is in evidence." Markman, 52 F.3d at 980; see also Graham v. John Deere Co., 383 U.S. 1, 33, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966) ("[A]n invention is construed not only in the light of the claims, but also with reference to the file wrapper or prosecution history in the Patent Office."). The prosecution history, which we have designated as part of the "intrinsic evidence," consists of the complete record of the proceedings before the PTO and includes the prior art cited during the examination of the patent. Autogiro, 384 F.2d at 399. Like the specification, the prosecution history provides evidence of how the PTO and the inventor understood the patent. See Lemelson v. Gen. Mills, Inc., 968 F.2d 1202, 1206 (Fed. Cir. 1992). Furthermore, like the specification, the prosecution history was created by the patentee in attempting to explain and
obtain the patent. Yet because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes. See Inverness Med. Switz. GmbH v. Warner Lambert Co., 309 F.3d 1373, 1380-82 (Fed. Cir. 2002) (the ambiguity of the prosecution history made it less relevant to claim construction); Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1580 (Fed. Cir. 1996) (the ambiguity of the prosecution history made it "unhelpful as an interpretive resource" for claim construction). Nonetheless, the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be. Vitronics, 90 F.3d at 1582-83; see also Chimie v. PPG Indus., Inc., 402 F.3d 1371, 1384 (Fed. Cir. 2005) ("The purpose of consulting the prosecution history in construing a claim is to 'exclude any interpretation that was disclaimed during prosecution.'"), quoting ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580 (Fed. Cir. 1988); Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995).

Phillips v. AWH Corp., 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc).

11 The extrinsic evidence that Cytyc used "intercavitary" in literature and advertising in a manner that encompasses the definitions of "interstitial" and "intercavitary" it advances now, see Tr. at 93, is of little weight in this situation. Similarly, evidence presented by Cytyc that Xoft represented to the FDA that the term "interstitial" "is a more appropriate word for a cavity that is surgically created as compared to a natural body cavity," (see Decl. of Henry Su Supp. Cytyc's Supplemental Claim Construction Br., Ex. A, is not entitled to significant weight although it does suggest that one skilled in the art construes the term as Cytyc proposes.

--- End Footnotes ---

In light of the constructions of "interstitial" and "brachytherapy" above, no further construction of "interstitial brachytherapy" is necessary.

<table>
<thead>
<tr>
<th>Claim Language</th>
<th>Court's Construction</th>
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<tbody>
<tr>
<td>&quot;interstitial&quot;</td>
<td>involving a surgically-created cavity in a body</td>
</tr>
<tr>
<td>&quot;brachytherapy&quot;</td>
<td>radiation therapy delivered by a spatially-confined radioactive material inserted into the body at or near a tumor or other proliferative tissue disease site</td>
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"interstitial brachytherapy" (no construction necessary)

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5. The term "intervening cooling procedure" in claim 1 is construed as: "cooling of the product between step (a) and step (b) or between step (b) and step (c) that is not 'incidental heat loss.'" This is defendant's proposed construction. Dkt. # 51, at 19. Plaintiff's proposed construction is "[a]n interventional step, different from ambient temperature processing of the product, wherein a product cooling system is used for the purpose of bona fide heat removal." Dkt. # 49, at 5. The Court finds that its construction of the term has the same meaning as plaintiff's, but would be less confusing for a jury.

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4. **Construction of "first intervening member"**

Medtronic contends that "first intervening member" should be construed as "the cap portion of the two-piece interlocking coupling element." In support, Medtronic relies first on the "only one way" specification argument. In the absence of
language in the specification which constitutes a clear redefinition by implication, this Court has rejected this argument.

Medtronic next points to the applicant's phrasing in two sets of proposed amendments with this single, cryptic statement: "In the file history, Fastenex alternately claimed the two-piece interlocking coupling element as an 'upper socket portion and lower socket portion', or 'a first intervening member and second intervening member.'" (Defs.' Br. 28-29.) This is too unclear to respond to.

Medtronic next argues that the examiner understood "first intervening member" to have the proposed limitation, pointing to the office action of April 29, 2003, in which the examiner used this phrase in a list: "a threaded 'upper socket portion' 45 (alternatively the 'first intervening member')." (Gleason Dec. Ex. 10 at 8.) Medtronic does not explain, nor does this Court perceive, how this phrase supports its proposed construction.

Medtronic has provided no basis for this Court to conclude that "first intervening member" should be construed as "the cap portion of the two-piece interlocking coupling element."

5. Construction of "second intervening member"

Medtronic contends that "second intervening member" should be construed as "the tapered and slotted socket portion of the two-piece interlocking coupling element, which completely encircles the curvate head." Again, in support, Medtronic relies first on the "only one way" specification argument. In the absence of language in the specification which constitutes a clear redefinition by implication, this Court has rejected this argument.

Medtronic next attempts to bring its "slot" argument into play. Medtronic refers vaguely to "the Examiner's finding that, whatever one calls the structure between the head of the screw and the interior surface of cylindrical body [sic], it cannot be an incomplete circle." (Defs.' Br. 29.) This appears to be a reference to the examiner's statement in the April 29, 2003 office action, already discussed: "The specification contains no disclosure or illustration of a locking collar with a slot extending the entire length of the collar and thus forming an incomplete circle as recited. Therefore, such an embodiment is not enabled by the disclosure." (Gleason Dec. Ex. 10 at 4.) As already stated, even if there was some legal basis for this Court to consider the examiner's interpretation here, the examiner's comments about a locking collar and slot in a rejected claim have too remote a connection to shed light on the meaning of "second intervening member" in claim 21.

Medtronic has provided no basis for this Court to conclude that "second intervening member" should be construed as "the tapered and slotted socket portion of the two-piece interlocking coupling element, which completely encircles the curvate head."

A. The 047 Patent

1. The Claims and Specifications

The claims of the patent provide the starting point for the Court's analysis. See Comark Commun., Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998); Fromson v. Advance Offset Plate Inc., 720 F.2d 1565, 1571 (Fed. Cir. 1983). "The claim language should be construed in context, however, and the other claims, the patent specification and the prosecution history must be considered in determining what the claim means." Dow Chem. Co. v. Astro-Valcour, Inc., 47 F. Supp. 2d 294, 297 (N.D.N.Y. 1999) (citing cases).

Courts must look to the wording of the claims and "neither broaden nor narrow the claims to give the patentee something different than what he has set forth." Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 395-96 (Ct. Cl. 1967). Accordingly, the Court first considers the wording of the claims and their use within the context of the specifications as a whole.

Patent 5,543,047 (the "047 patent") is entitled "Filter with Over-Laid Pleats in Intimate Contact." The disputed term is contained in independent claims 1, 54 and 92.
Claim 1 of the 047 patent states:

1. A filter comprising:

   a cylindrical filter element having a longitudinal axis, first and second end surfaces, and a plurality of longitudinal pleats, each of the pleats having a pair of legs, each of the legs having a first and a second surface, the pleats being in a laid-over state in which the first surface of one leg of one pleat is in intimate contact with the first surface of an adjoining leg of said one pleat and the second surface of said one leg is in intimate contact with the second surface of an adjoining leg of an adjacent pleat over substantially the entire height of each leg and over a continuous region extending for at least approximately 50% of the axial length of the filter element; and

   a first impervious end cap connected to the first end surface of the filter element.


Claim 54 states:

54. A filter for separating one or more substances from a fluid flowing therethrough, the filter comprising: a pleated filter element having an interior, a longitudinal axis, first and second end surfaces, and a plurality of longitudinal pleats, wherein each of the pleats has a curved configuration and includes a crown, a root, and a pair of legs and each of the legs has a first surface and a second surface, the legs of each pleat being joined to one another at the crown and joined to a leg of an adjacent pleat at the root and the pleats being in a laid-over state in which the first surface of one leg of one pleat is in intimate contact with the first surface of an adjoining leg of said one pleat and the second surface of said one leg is in intimate contact with the second surface of an adjoining leg of an adjacent pleat over substantially the entire height of each leg and over a continuous region extending for at least approximately 50 percent of the longitudinal length of the pleated filter element and wherein the pleated filter element comprises at least first and second layers, wherein the second layer comprises a filter medium, and first and second end elements sealingly arranged with the first and second ends, respectively, of the pleated filter element, at least one of the end elements comprising an open end element.

047 patent, col. 30, lines 1-22.

Claim 92 reads as follows:

92. A filter for separating one or more substances from a fluid flowing therethrough, the filter comprising:

   a pleated filter element, including an outer diameter (D), an inner diameter (d), a longitudinal axis, first and second end surfaces, and a plurality of longitudinal pleats, wherein the pleated filter element comprises a pleated composite having a thickness (t) and including an upstream drainage layer, a downstream drainage layer, and a filter medium disposed between the upstream and downstream drainage layers, the upstream drainage layer having an edgewise flow resistance which provides a lower pressure drop in the upstream drainage layer than the pressure drop across the filter medium, thereby providing an even distribution of fluid along an upstream surface of the filter, wherein each of the pleats has a curved configuration and includes a crown, a root, and a pair of legs and each of the legs has a first surface and a second surface, the legs of each pleat being joined to one another at the crown and joined to a leg of an adjacent pleat at the root and the pleats being in a laid-over state in which the first surface of one leg of one pleat is in intimate contact with the first surface of an adjoining leg of said one pleat and the second surface of said one leg is in intimate contact with the second surface of an adjoining leg of an adjacent pleat over substantially the entire height of each leg and over a continuous region extending for at least approximately 95% of the longitudinal length of the pleated filter element, and wherein the height of each pleat is greater than (D-D)/2 and is no greater than (D<2>-d<2>)/4(d+2 t), and

   first and second end elements sealingly arranged with the first and second ends, respectively, of the pleated filter element, at least one of the end elements comprising an open end element.

047 patent, col. 32, lines 19-54.

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Turning to the patent specification, the term "intimate contact" is repeatedly used to describe the manner in which the filter material is packed. For example, the specification provides as follows:

The opposing surfaces of adjoining legs [11a] of the pleats need not be in intimate contact over the entire axial length of the filter element [10], but the greater is the length in the axial direction of the region of intimate contact, the more effectively used is the space between the inner and outer periphery of the filter element [10]. Therefore, adjoining legs [11a] are in intimate contact over a continuous region which preferably extends for at least approximately 50%, more preferably at least approximately 75%, and most preferably approximately 95-100% of the axial length of the filter element.

According to Cuno, the term "intimate contact" has no particular meaning to one skilled in the art and thus it contends that the term should be construed such that there shall be no gaps between the laid-over pleats other than the triangular gaps defined between adjacent crowns or roots of the pleats. At the Markman hearing, the Court heard expert testimony addressing the components of the filter element, the use and arrangement of various types of drainage materials used, the degrading effects of "nesting" of drainage materials, the formation of radial flow channels or flow paths in directing the medium through the filter and the relative impact of such factors on the Court's construction of the term "intimate contact" as set forth in the patents.

Pall presented testimony by numerous experts regarding explicit references made in the 047 claims and the accompanying specifications regarding the filter's components and the laid-over pleating of the components to direct the flow of the medium through the filter. Referring to column 4, line 67 of the patent, expert Ken Williamson noted that the 047 patent describes a filter element comprised of a filter medium and a drainage means. Tr. at 64-65, lines 23-25; 1-3. (Williamson testimony). Drainage means or materials could consist of woven meshes - "where filaments are woven like a cloth" - or extruded mesh, all of which must be folded over to form radial flow channels in order for them to work. Tr. at 72, line 12; 73, lines 1-25. (Williamson testimony). He testified that the laid-over pleating as described at length in the patent is essential to avoid "nesting" which would otherwise occur as a result of drainage material containing directional strands being folded against themselves in such a way that the space between the strands is filled with the material thus impeding the flow and causing a degradation of performance. Tr. at 82 (Williamson testimony). Reading from the patent at column 6, line 28, Mr. Williamson testified that nesting was to be avoided because it "degrades the drainage properties of the mesh and decreases [its] ability to provide drainage [for] the filter medium." Tr. at 74, lines 14-15 (Williamson testimony).

Pall's expert Dr. Craig Bartels testified that the "pleat" in Palls 047 patent is expressly comprised of a "filter element consisting of a medium and at least one drainage layer, longitudinal axis being the long axis of the filter pleats as an individual portion of the filter element when it's folded over, and the first and second surfaces of the pleats." Tr. at 173, lines 3-8 (Bartels testimony). He further testified that "intimate contact in the patent in suit...is describing when two pleats are in contact with one another such that the drainage means on their surfaces are touching together and you have strand to strand contact and you still have ability to have flow into those pleats such that the flow can access all of the filter medium that is in the pleat." Tr. at 172, lines 16-22 (Bartels testimony). He further testified that

The radial flow channels in the laid-over pleat is formed with the drainage layer material. The drainage layer material prevents the filter media from coming in contact with itself and thereby provides a passageway for the fluid to flow through that drainage material and contact - to get down into the pleat, contact the entire surface area of that - of the filter media in the pleat.

Tr. at 222, lines 10-16 (Bartels testimony).

It is clear from the above-referenced excerpts that there is nothing in the claims or the specifications requiring that there be no gaps other than the triangular gaps between adjacent crowns or roots of the pleats, as Cuno suggests. Rather than provide for "no discontinuities" as asserted by Cuno's expert (see Tr. at 284, lines 23-24) (Shoemaker testimony), the claims plainly state that the provision for the inner surfaces of the pleats extend "over a continuous region extending for at least approximately 50% of the axial length of the filter element." The accompanying specifications assert that the "intimate
contact" would encompass "a continuous region which preferably extends for at least approximately 50%, more preferably at least approximately 75%, and most preferably approximately 95-100% of the axial length of the filter element." The claims do not state the limitation proposed by Cuno and the Court shall not read such a limitation into the patent for to do so would be in error. See E.I. du Pont de Memours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir. 1988) ("Courts can neither broaden nor narrow the claims to give the patentee something different than what he has set forth… courts do not rework claims. They only interpret them."); cert. denied, 488 U.S. 986, 109 S. Ct. 542, 102 L. Ed. 2d 572 (1988); Dow Chem. Co., 47 F. Supp. 2d at 297-98 (refusing to read in a requirement of "dimensional stability" into the claim); see also Am. Standard Inc. v. Pfizer Inc., 722 F. Supp. 86, 93 (D. Del. 1989) (refusing to read additional requirement of bone tissue growth into prosthesis patent).

The Court adopts Pall's reading of the claims. The meaning of the term "intimate contact" and the examples set forth in the specifications require a layering of drainage and filter materials and laid-over pleating such that contact between the adjacent pleat legs would be substantially continuous; that is, over at least 50 percent of the axial length of the filter element. There is no extraneous limitation regarding radial flow channels set forth in either the claim or the specifications; rather, the patent specifies that all of the drainage layers have radial flow channels which permit the flow of fluid to the filter surfaces. See, e.g., 047 patent, col. 18-20.

2. The Prosecution History

As noted by the Federal Circuit Court of Appeals in Markman, courts have "broad power to look as a matter of law to the prosecution history of the patent in order to ascertain the true meaning of language used in the patent claims." Markman, 52 F.3d at 980. Following the same principle applied above, prosecution history, although relevant to the instant inquiry, "cannot be used to rewrite claims to impose a requirement not found in the claim language." Dow Chem. Co., 47 F. Supp. 2d at 299 (citing Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989). Moreover, there is a presumption of validity that "the examiner did his duty and knew what claims he was allowing…. [and] it is not for the courts to say that they contain limitations which are not in them." Intervet, 887 F.2d at 1054.

At the Markman hearing, Cuno relied heavily on the prosecution history to support its proposed construction. The Court finds, however, that Cuno's expert, who testified about his review of the prosecution history and speculated about the examiner's conduct during the patent approval process, lacks credibility. Cuno's sole witness, Wells Shoemaker, testified that in his view the patent's use of the term "intimate contact" is unclear. Based on his review of the prosecution history, he concluded that intimate contact had a "very specialized meaning, it meant absence of radial flow channels along the actual [sic] and no discontinuations, no interruptions along the length of the axial length of the cartridge." Tr. at 284, lines 10-14. He further testified that he believed that the contact "must be completely continuous along the length of the axis…" Tr. at 285, lines 1-2 (Shoemaker testimony). When questioned regarding the basis of his conclusion, Shoemaker testified that he had not relied on anything in the patent specification to reach his conclusion.

Q. It's my understanding that it is your position that the Pall patent claims are limited to only materials that do not have radial flow channels, right?

A. I believe that's correct.

Q. And that that position is based solely on statements made in the prosecution history?

A. Yes, sir.

Q. Is that correct?

A. Yes, sir.

Q. You are not relying in support of that position on anything that appears in the patent specification; is that correct?

A. That is correct.

Q. You agree in fact, do you not, that the patent specification contains information which is not consistent with your
position?

A. If - I think that you may be referring to the nesting rings; is that correct?

Q. I'm referring, for example, to the disclosure of drainage materials which do indeed form radial flow channels.

A. I gather you're asking me if I feel that the materials disclosed in the patent form radial flow channels and I disagree with it.

Q. You don't believe that any of the materials that Pall disclosed in column 17 and 18 form radial flow channels?

A. I would agree they form flow paths, but they do not form direct radial flow channel.

Q. So that, okay. So would you agree that the Pall patent claims include whatever is formed by the use of the materials disclosed in column 17 or 18 through 20 of the Pall patent?

A. Would you ask that question, would you ask a specific rather than a general question.

Q. Okay. Turn to column 18 of the 047 patent.

A. Yes, sir.

Q. There are a number of drainage materials disclosed there, right - starting on the bottom of column 18, and then going over to column 19?

A. Yes. All right. I have it, sir.

* * *

Q. And now, considering these examples, when these materials or some of these materials are used in an aid-over or pleat cartridge, don't they form flow channels?

A. In my definition they form flow paths but not channels.

Tr. at 297-99 (Shoemaker testimony).

The Court declines to adopt the expert's proffered distinction between flow channels and flow paths and disagrees with his assertion that the prosecution history shows that the examiner intended that a limitation be imposed that there be no radial flow channels along the axial length of the cartridge. Cuno asserts that in applying for the 047 patent, Pall distinguished its invention from the prior art, primarily the "Briggs" patent, which provided for radial flow channels. Mr. Shoemaker testified that the Briggs patent expressly provided for radial flow channels that would direct the flow through the filter medium but which would result in "discontinuities" i.e., gaps at the outer periphery of the filter element. Tr. at 291 (Shoemaker testimony). This argument is essential to Cuno's defense, as it asserts that the Delnet material employed in its filters, oriented at 90 degrees with respect to the central axis of its filter element -- as distinguishable from the 047 patent -- form radial flow channels between the opposed pleat surfaces. Upon examination of the prosecution history, the Court finds that no limitation excluding inventions providing for radial flow channels was expressed into the patent and no such limitation shall be imposed by the Court.

Moreover, on cross examination, Pall elicited testimony from Cuno's expert which clearly undermines Cuno's position. First, Mr. Shoemaker testified that the prior art, the Briggs patent, involved a patent for a filter which consisted of an embossed filter pleated to form radial flow channels which made no reference to a drainage material of any sort. Tr. at 292-93 (Shoemaker testimony) (referring to Plaintiff's Exs. 7, 8 and 9). Second, Cuno has failed to rebut the presumption that the Examiner knew what claims she was allowing. The Examiner clearly set forth her reasons for allowing the 047 patent -- without limitation regarding radial flow channels - and in view of the Briggs patent, the prior art. "The closest art of reference, Briggs or Harms III, fails to disclose or teach in any proper combination a cylindrical filter element having
longitudinal laid-over pleats in intimate contact with one another over the height of the legs of the pleats and a continuous region existing for 50 percent of the axial length of the filter element." See Pltf.'s Ex. 2, p. 366.

In an attempt to explain the absence of any reference to the exclusion of radial flow channels from the 047 patent, Cuno's expert offered no more than speculative testimony. Mr. Shoemaker testified that, upon examination of the three separate file histories, he concluded that Pall's attorney had submitted two amendments which showed that a "deal" had been struck between the Examiner and Pall such that the patent would be allowed if Pall excluded reference to radial channels. Tr. at 284-85 (Shoemaker testimony). Upon cross examination, however, Mr. Shoemaker acknowledged that, although required to do so, the patent Examiner had not required that Pall include such an amendment or limitation into the patent, even after reviewing the Briggs patent and its reference to radial flow channels. Tr. at 301-02 (Shoemaker testimony). Consequently, the Court discredits Shoemaker's testimony and finds nothing in the prosecution history to support Cuno's contentions.

The prosecution history indicates that the Examiner allowed independent claims 1, 54 and 92 of the 047 patent without imposing a reference to the absence of gaps within the pleats, as Cuno argues. See Pltf.'s Ex. 2, p. 366. In fact, Pall had specifically pointed out that the claims required intimate contact only over "substantially the entire height" and a "continuous region" of the pleat length (id., p. 388) (and noting that "there may be small regions over the height of the legs of the pleats, for example...where the legs are not in intimate contact") before they were finally issued.

2. The 765 Patent

Patent 5,690,765 (the " 765 patent") expressly relates to the 047 patent and sets forth the specifications for the manufacture of Pall's filter. The 765 patent is entitled "Methods of Assembling a Filter." The disputed term is contained in independent claims 1, 8 and 39-41.

Claim 1 of the 765 patent states:

1. A method of assembling a filter comprising: repairing a corrugated filter composite comprising a filter medium having upstream and downstream sides and at least one of an upstream drainage layer on the upstream side of the filter medium and a downstream drainage layer on the downstream side of the filter medium;

forming the composite into a cylindrical filter element having a center and pleats extending along a longitudinal axis, each pleat having first and second legs, each leg having first and second surfaces;

forming the pleats of the cylindrical filter element into a laid-over state in which the first surface of one leg of one pleat is in intimate contact with the first surface of an adjoining leg of said one pleat and the second surface of said one leg is in intimate contact with the second surface of an adjoining leg of an adjacent pleat over substantially the entire height of said one leg and over a continuous region extending for at least approximately 50% of the length of the filter element….

765 patent, col. 26, lines 29-49.

Claim 8 describes

8. A method of making a filter comprising laying over and arranging a plurality of pleats including a filter medium into a cylindrical configuration to form a filter element having axially extending pleats, including intimately contacting a first surface of a first leg of one pleat with the first surface of an adjoining leg of said one pleat and a second surface of said first leg with the second surface of an adjoining leg of an adjacent pleat over substantially the entire height of said one leg and over a continuous region extending for at least approximately 50% of the axial length of the filter element, and sealing at least a first end of the filter element to prevent axial flow along the pleats at the first end.

765 patent, col. 27, lines 24-35.

Claims 39 through 41 similarly make use of the phrase "intimate contact" and describe the arrangement of pleats with "intimately contacting" surfaces. See, e.g., 765 patent, col. 31, lines 12-20 (describing the arrangement of pleats "into a cylindrical configuration, laying the pleats over, intimately contacting a first surface of a first leg of each of the plurality of pleats with the first surface of an adjoining leg of said pleat and a second surface of said first leg with the second surface of
an adjoining leg of an adjacent pleat over as substantial portion of the height of the first leg and over a continuous region extending for at least approximately 95% of the axial length of the pleats to form a filter element…

The Court finds that this language is consistent with that employed in the 047 patent, and, as such construes the term "intimate contact" in favor of the plaintiff.

CONCLUSION

For the reasons stated herein, the Court finds that Pall's proposed construction of the term "intimate contact" as used in the 047 and 765 patents is supported by the claim language, the patent specification and the prosecution history. The term is construed as requiring that there be intimate contact over "substantially" the entire pleat height rather than imposing a limitation that there be no gaps within the pleats, in which case the claimed filter would not work and would be rendered useless. All of the drainage layers in Pall's patent provide for radial flow channels which permit the flow of fluid to the filter surfaces. This constitutes the decision and Order of the Court.

5. "In intimate contact with said second surface"

a. Parties' Positions

The term is found in claim 3 of the '631 Patent. Plaintiff proposes the same construction for "bonded to said second surface" and "in intimate contact with said second surface," asserting both terms mean "thermally connected to the second surface." Defendants assert "in intimate contact with said second surface" means "in contact with, but not integral with, the second surface." Defendants assert an alternate construction is "in contact with but distinct from the second surface."

<table>
<thead>
<tr>
<th>Plaintiff</th>
<th>Defendants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermally connected to the</td>
<td>In contact with, but not integral</td>
</tr>
<tr>
<td>second surface</td>
<td>with the second surface.</td>
</tr>
</tbody>
</table>

b. Court's Construction

The parties dispute what the word integral means. The parties agree that an epoxy or glue is non-integral. Plaintiff asserts extrusion and dip brazing are integral bonding techniques. Defendants assert dip brazing, if one wants to call it integral, still has glue or some alloy between it allowing a person to attach two separate pieces together. Defendants argue extrusion is completely different; rather than starting with two separate pieces and putting them together, extrusion starts with one piece of metal.

The claim language and the specification describe using a bondant and bonding techniques such as dip brazing, soldering, and metal-filled epoxy. Plaintiff's proposed construction proposes a thermal connection, or a connection that transfers thermal heat. Defendants maintain this proposal is too broad because it would cover situations where there are two plates that are not touching or bonded but that are thermally connected. According to Defendants, two plates could be thermally connected if one put between them a gas which could transfer heat.

The Court agrees that Plaintiff's construction is too broad. It reads out the limitation of intimate contact. In claim 3, at least two fin structures are in intimate contact with the second surface. Contact requires the touching of two or more distinct parts, and contact between the planar member and the fin supports requires touching of these distinct parts. The Abstract also supports Defendants' alternate proposed construction, each such embodiment uses a thermally conductive plate having exposed exterior surfaces, one for receiving the component to be cooled and one for receiving the fin structures. A solid object, such as an extruded heat sink, cannot be in contact with itself.

In light of the foregoing, the Court construes "in intimate contact with said second surface" to mean "in contact with, but distinct from the second surface."

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Once again, Plaintiff argues that the term is unambiguous and requires no definition. Again, Defendants propose a definition, i.e., "physically attached to and retained by." 4

4 The Court notes that Defendants propose this same definition for the term "a lever arm contacting said leaves" from Claim 7, Issue 1.

Neither party cites to the patent specification or claim language to support a definition of this term. Defendants direct the Court to that portion of the prosecution history which provides that the lever arm "attaches to the leaves of the binder." (Plf. Ex. A at 58.) The Court notes that Defendants define "into engagement with" and "a lever arm contacting said leaves" from Claim 7, Issue 1 with exactly the same definition -- "physically attached to and retained by." As Plaintiff notes, however, the term "engage" is broader than the term "attach." For example, as noted by Plaintiff, two gears of a machine can be engaged with each other without being attached to each other.

"Engagement" is defined, inter alia, as "the state of being in gear or in such contact that motion may be transmitted[.]" Webster's Third New International Dictionary, 751 (2002). Plaintiff's analogy and argument are sound. Defining the term engagement as physically attached and/or retained by is too narrow. The Claim 1 language at issue provides "a lever arm extending from said finger plate into engagement with said leaves to allow for movement of said leaves when said finger plate is actuated by user . . . ." ('729 patent at col. 5, ll. 3-6.) The Court finds the term "into engagement with" as used in this Claim to be unambiguous. It is a term that does not require claim construction.

B. "intra-oral radiological site(s)"

This term is used in Claims 1, 2, and 4 as follows:

1. A method of displaying stored intra-oral radiographs, comprising:
   - displaying a representation of an intra-oral radiograph holder including target intra-oral radiological sites arranged according to anatomical location of said sites;
   - selecting one of said target intra-oral radiological sites; and
   - displaying a stored intra-oral radiograph corresponding to said selected target intra-oral radiological site.

2. A method for storing and displaying intra-oral radiographs, comprising:
   - generating and displaying intra-oral radiographs of dentition;
   - generating and displaying a representation of an intra-oral radiograph holder including selectable intra-oral radiological sites arranged according to anatomical location of said sites;
   - storing said intra-oral radiograph images responsive to selection of intra-oral radiological sites in said representation.
along with indicia of respective selected intra-oral radiological sites; and

subsequently retrieving and displaying said intra-oral radiographs responsive to selection of respective intra-oral radiological sites in said representation.

4. A device for storing and displaying intra-oral radiographs, comprising:

a display;

means for generating and displaying on said display a representation of an intra-oral radiograph holder including selectable intra-oral radiological sites arranged according to anatomical location of said sites;

means, responsive to selection of said selectable sites, for displaying corresponding stored x-ray images.

Plaintiffs argue that "intra-oral radiological sites" are "icons or sites included in a representation of an intra-oral radiograph holder designating respective anatomical regions of the dental arch." Defendants contend that it means "intra-oral anatomical sites or regions which may correspond to positions within a radiograph holder."

Defendants argue that the patent requires intra-anatomical sites to be arranged "according to anatomical location of said sites," but locations on a display monitor do not have an anatomical relationship to one another, only locations within a patient's anatomy do. Defendants concede that Plaintiffs' construction "appears to be the plain meaning of this claim phrase," but argue that "the specification clearly sets forth a meaning different from the apparent meaning of the claim language." Defendants' Claim Construction Brief at 18. Defendants assert that the specification defines "sites" as "anatomical sites or regions," not positions on the film holder representation. In support of its position, Defendants note that the specification states that "each mounting position in a dental film holder corresponds to a particular anatomical site or anatomical region" and that the abstract "confirms this definition" by stating that "the positions of the film holder correspond[] to anatomical sites readily recognized by dentists." Id. at 19. Further, Defendants argue, the specification discusses how the user can use the film holder representation to select an anatomical site associated with a recently taken x-ray ("The system user uses [the film holder representation] to select the anatomical site . . . to be associated with [an x-ray taken by the dentist] . . . ") and explains how the user can select positions within the film holder representation to display an x-ray of an anatomical location, such as a tooth or teeth ("The system user selects an image to be displayed by selecting the appropriate anatomical site . . . "). Thus, Defendants assert, the patentee has acted "as his own lexicographer" and has provided a definition of "intra-oral radiological sites" that means "intra-oral anatomical sites or regions." Last, Defendants argue that Plaintiffs' proposed construction is so broad that, if accepted in conjunction with Plaintiffs' proposed broad construction of radiograph holder, it would include a depiction of a dental arch, a limitation surrendered by Plaintiffs during the patent's prosecution.

Looking to the claim language, in Claims 1, 2, and 4, the "intra-oral radiological sites" must be "arranged according to anatomical location of said sites." Since sites within the mouth have anatomical locations but icons do not, this language lends some support to Defendant's construction. However, the patent's background section explains that "interpretation of . . . mounted radiographs is facilitated by mounting each film in normal anatomic relation to each other." This language indicates that the patentee regarded the films as being arrangeable by anatomical relation, and this functionality in the representation of the film holder was a key feature of the patent. Moreover, the balance of the claim language supports Plaintiffs' construction. The clearest support for Plaintiffs' construction lies in Claim 2. Claim 2 encompasses a method for storing and displaying intra-oral radiographs, comprising "generating and displaying a representation of an intra-oral radiograph holder including selectable intra-oral radiological sites arranged according to anatomical location of said sites," "storing said intra-oral radiograph images responsive to selection of intra-oral radiological sites in said representation along with indicia of respective selected intra-oral radiological sites n5" and "subsequently retrieving and displaying said intra-oral radiographs responsive to selection of respective intra-oral radiological sites in said representation." Thus, Claim 2 teaches that the intra-oral radiological sites are in the representation of an intra-oral radiograph holder, not within the mouth as Defendants urge. Further, Claims 2 and 4 make clear that the "intra-oral radiological sites are "selectable" and that images are stored, retrieved, and displayed "responsive to" selection of "intra-oral radiological sites." Because icons on the computer screen are selectable (by keyboard, mouse click, etc.), and images are stored, retrieved, and displayed in response to selection of the icon, whereas the same cannot be said regarding anatomical sites or regions, this claim language further supports Plaintiffs' construction.

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n5 The Court recognizes that there is some ambiguity and inconsistency within the specification regarding use of this term. For example, in column 5, line 27, the specification states that the captured image is stored along with indicia of the associated location in the icon, suggesting that "selected intra-oral radiological sites" is a location in the icon. However, in the abstract, it states that the radiograph is stored "along with indicia of the selected anatomical site," suggesting that an intra-oral radiological site is an anatomical site. However, the balance of the claim and specification support the construction that an intra-oral radiological site is a site within the film holder representation, not a site within the mouth. This construction is consistent with the claim language, while Defendants' construction is not, and thus Plaintiffs' construction is the preferred construction. Vitronics, 90 F.3d at 1582. Moreover, part of the confusion may be due to the fact that the specification describes the original patent application, which included an image of dentition/anatomy as the representation, whereas the final patent does not include these, and thus some of the language was broad enough to cover the patentee's original intention that intra-oral radiological sites would include positions within a film holder that correspond to anatomical sites and positions within a representation of anatomy/dentition.

The Court agrees with Plaintiffs that other language in the specification also generally supports Plaintiffs' construction. The specification states "The display of the stored images is facilitated by use of a representation or icon of anatomical sites, or of the portion of the anatomy, from which the images were taken. The system user selects the image to be displayed by selecting the appropriate anatomical site from the representation of anatomical sites or portion of anatomy . . . ." Column 2, lines 20-26 (emphasis added). Thus, when the specification refers to anatomical site, it means the anatomical site within the representation or icon, not within the mouth.

Thus, when the claim uses the term "intra-oral radiological sites" it refers to the icons in the representation of an intra-oral radiograph holder, and those icons correspond to anatomical sites within the mouth and are arranged according to their anatomical relation to each other. Accordingly, the Court construes "intra-oral radiological sites" as "icons or sites, included in the representation of an intra-oral radiograph holder, that designate respective anatomical regions of the dental arch."

B. Applying this analysis of claim construction, we conclude that (1) the trial court did not abuse its discretion when it
admitted the extrinsic evidence offered by Markman -- Markman's testimony and the testimony of Markman's "patent expert" -- on the issue of claim construction, and that (2) the trial court properly rejected this extrinsic evidence to the extent it contradicted the court's construction of the claims based on the specification and prosecution history. Although in this case the trial court might have granted Westview's motion for directed verdict and should have instructed the jury as to the meaning of the claims (including the disputed term "inventory"), its failure to do so was rendered harmless by the court's subsequent response to Westview's post-trial motion.

We agree with the trial court that the term "inventory" refers, at least in part, to articles of clothing, contrary to Markman's contention that "inventory" may be limited to just cash or inventory receipts. As the district court noted, the claim phrase "detect and localize spurious additions to inventory as well as spurious deletions therefrom" does not make sense using Markman's definition of "inventory." Dollars or invoice totals are not "localized" since dollars do not travel through the cleaning process and the location of invoices is irrelevant. Location is relevant to clothing, since it moves through and sometimes without the establishment, where it can be lost, stolen, or damaged. Also, "spurious" additions and deletions logically relate to clothing because "dollars" would not be spuriously added to a dry-cleaner's inventory. Thus, the language of the claim itself suggests the conclusion that the dry-cleaner's "inventory" includes clothing.

The patent specification confirms this. The specification is pervasive in using the term "inventory" to consist of "articles of clothing." Rather than set forth each instance, we refer the reader to a few examples:

This invention relates to inventory control devices capable of monitoring and reporting upon the status, location and throughput of inventory in an establishment. [Col. 1, lines 12-17.]

The best inventory control and management reporting information systems has [sic] the ability to determine and report the current location of any given article[12 ] in inventory. [Col. 5, lines 14-17.]

12 It is undisputed that "article" means "article of clothing."

Every transaction is recorded, including identification of the articles placed in inventory. [Col. 5, lines 8-10.]

Incoming articles to be placed in inventory are accumulated over a counter . . . . [Col. 6, lines 7-8.]

Articles to be cleaned are associated with a unique bar code indicia for later automatic or semiautomatic optical scanning and data input, whereby the progress of articles through the laundry and drycleaning systems can be completely monitored. [Col. 2, lines 53-57.]

The prosecution history is also in accord. During prosecution of the original patent application in this case, Markman amended claim 1 in order to overcome an obviousness rejection by adding limitations reciting among other things “whereby said system can detect and localize spurious additions to inventory as well as spurious deletions therefrom.” Markman argued in his remarks to the examiner that

unlike the usual system in which apparatus generates non-unique indicia (e.g., Stewart's price indicia) and/or indicia that is [sic] not produced concurrently with the commencement of a transaction (e.g., pre-printed tags), applicant's system is operable to keep a running reconcilable inventory total by adding input articles and subtracting output articles, and also protects against the possibility of undocumented or spuriously- documented articles entering the system. [Emphasis in original.]

Markman also referred the examiner to "features present" in claim 1, explaining:

Means are also provided for reconciling the very same unique and concurrently-generated indicia at later points during processing whereby the entry or exit of inventory articles in irregular ways can be localized.
Also, the prosecution history of the patent on reissue conflicts with Markman's argument now that claim 1 does not require "tracking" of articles of clothing. In order to obtain other claims in the reissue patent broader than claim 1, which was carried through to the reissue patent, Markman explained the scope of the original claims thusly:

1. Tracking of Individual Articles

   It may be argued that the claims are limited to a system that tracks individual articles such as individual pieces of clothing brought by a single consumer to a drycleaning establishment or the like. I believe that tracking of a transaction whether it involves one article or several is properly disclosed and allowable. The claim language recites entry of "descriptions of each of said articles associated with the transactions". This passage is more limited than I had a right to claim because, although individual articles, e.g. a pair of pants, could be accounted for by individual marking, scanning and reconciliation in reports, the grouping of such articles into sets for tracking (e.g., a suit comprising pants under jacket and/or a suit and a Dress or other spearable [sic] articles grouped together) is reasonably disclosed as forming part of the invention and is allowable over the prior art.

   It is evident from Markman's explanation of the claims to the examiner that he used "inventory" in the patent and the examiner understood "inventory" to consist of "articles of clothing." The prosecution history thus confirms the meaning of "inventory" as including "articles of clothing."

Markman argues that the extrinsic evidence of record provides substantial evidence in support of the jury's and his claim construction. Markman testified as an inventor of the patent in suit and as one of ordinary skill in the art (or, perhaps more accurately, one of "extraordinary" skill in the art) that "inventory" did not need to include articles of clothing. Markman's "patent expert" testified likewise, when giving his opinion on the proper construction of the claims. Finally, Markman argues that the testimony of Westview's president and some of its sales literature also support such claim construction. We do not find Markman's arguments persuasive.

First, the testimony of Markman and his patent attorney on the proper construction of the claims is entitled to no deference. For example, they both testified as to how the patent should be construed based on the text of the patent. This testimony about construction, however, amounts to no more than legal opinion -- it is precisely the process of construction that the court must undertake. Thus, as to these types of opinions, the court has complete discretion to adopt the expert legal opinion as its own, to find guidance from it, or to ignore it entirely, or even to exclude it. See Becton Dickinson & Co. v. C.R. Bard, Inc., 922 F.2d 792, 797, 17 U.S.P.Q.2D (BNA) 1097, 1100 (Fed. Cir. 1990). When legal "experts" offer their conflicting views of how the patent should be construed, or where the legal expert's view of how the patent should be construed conflicts with the patent document itself, such conflict does not create a question of fact nor can the expert opinion bind the court or relieve the court of its obligation to construe the claims according to the tenor of the patent. This opinion testimony also does not change or affect the de novo appellate review standard for ascertaining the meaning of the claim language. Thus, to the extent they were testifying about construction itself, we reject Markman's and Markman's patent expert's testimony as having any controlling effect on what the court below and we perceive to be the meaning of "inventory" as used in the patent and prosecution history.

Second, the extrinsic evidence of record cannot be relied on to change the meaning of the claims. In this case, as fully discussed above, the patent and prosecution history make clear that "inventory" in claim 1 includes in its meaning "articles of clothing." The district court exercised its discretion in finding unhelpful Markman's testimony that he meant "inventory," or that one of ordinary skill in the art would understand "inventory," to mean something to the contrary, and furthermore the district court rejected the testimony as conflicting with the meaning derived from the patent and prosecution history. In our construction of the claim term "inventory," we too find unhelpful and reject Markman's testimony. Similarly, even if they in fact used "inventory" to mean other than articles of clothing, Westview's sales literature and the testimony of its president do not dissuade us from our legal construction of the claim, based on the patent and prosecution history, that the claim term "inventory" means articles of clothing.

2. Inverted
The parties also dispute the meaning of the term "inverted." The Plaintiff contends that "inverted" should be construed to mean, "to turn inwardly, fully or partially, during operation of the machine." Defendants seek to construe "inverted" to mean, "to turn inside out." Plaintiff Minuteman argues that its construction of "invert" is consistent with the specification's disclosure that the degree of inversion is dependent on the extent of the use of the machine (therefore, whether the molded pocket inverts fully or partially is dependent on the extent of the use of the machine). Additionally, Plaintiff contends its construction of "invert" is consistent with the definition provided by Webster's New Collegiate Dictionary, wherein "invert" is defined as, "to turn inward." Defendants, however, contend that while the Webster's Third International Dictionary has a range of meanings for invert, including, "to turn inside out or upside down", "to turn inward", and "reverse in position, order, or relationship", the specification identifies "turn inside out" as the meaning of invert. Furthermore, Defendants contend that the use of the phrase "to turn inside out" does not indicate the process of inversion must all occur in one instantaneous motion.

The specification of the '094 patent describes the inversion procedure in the following manner:

As spent solution is accumulated in the recovery tank it builds along the concave exterior surface of the vertical end wall; and as the clean solution is removed from the solution tank, the level of recovered solution will eventually rise above the clean solution and act on the molded pocket, causing it to invert—that is, turn itself inside out so that the pocket is translated into the clean tank as it does so. See Def. Ex. A, Col. 2, lines 20-27 (emphasis added). Therefore, based on the language of the specification, the Court will define "invert" to mean "to turn inside out." Contrary to Plaintiff's argument in its briefs and at the October 30, 2003 Markman Hearing, the use of the phrase "to turn inside out" does not indicate that the process of inversion of the molded pocket must occur is one instantaneous action or that the molded pocket must turn itself completely inside out.

3. Transporting multiple containers in an inverted stack to said collection site and lifting said first container from said inverted stack with said rotating fork lift truck

Regarding this phrase, the parties agree that "transporting" is construed to mean moving from one location to another. (Markman Hr'g Tr. 38.) In addition, as discussed above, the parties agree that "multiple" is construed to mean more than one. (Id.) Finally, the parties agree that "collection site" is construed as a location where several collection surfaces may be located. (Id. 10.)

The parties disagree as to the meaning of "inverted stack" as used in the phrase "transporting multiple containers in an inverted stack" and "lifting said first container from said inverted stack." After review of the parties' arguments, the court adopts substantially the construction put forth by ADA Enterprises.

Caponey's proposed construction of "stack" is "an orderly arrangement." (Id. 5.) ADA Enterprises' construction of stack is "an orderly arrangement of more than one container." (Id.). The court agrees with the parties' definition of "stack" as "an arrangement" and agrees with Caponey's addition of "more than one container." However, the court also finds that "stack" implies verticality in this context and pursuant to the ordinary and customary meaning of the word. Thus, the court construes "stack" to be a vertical arrangement of more than one container.

In addition, the court agrees with ADA Enterprises' construction of "inverted." ADA Enterprises' proposed construction of inverted is "open end down, the reverse position from that in which a container functions as a container." (Def.'s Claim Construction Br. 7.) Caponey's proposed construction of "inverted" is "rotated from a first position to a reverse position." (Pl.'s Response Def.'s Claim Construction Br. 9.)

Caponey's construction of "inverted" is so broad as to render the word meaningless in the context of the language of the claim. Caponey urges the court to construe "inverted" to mean that a stack is inverted if it has ever been rotated from one position to another. Thus, under Caponey's construction, an inverted stack "is not limited to a particular position" and could refer to a stack of containers with the open side facing up or a stack of containers with the open side facing down. (Pl.'s Claim Construction Br. 9.)
The court finds that in the context of claim one of the '400 patent, "inverted" is construed to mean open end down, the reverse position from that in which a container functions as a container. This construction is consistent with the ordinary and customary meaning of the word as "to turn inside out or upside down." (Id. Ex. F (AMERICAN HERITAGE DICTIONARY Excerpts 9).)

In addition, this meaning is dictated by the logic and the language of the claim. The rotating step of the claim indicates that the containers in the inverted stack are stacked open end down and subsequently rotated into an open-side up position in order to collect refuse. Further, the use of the word "inverted" to describe the stack indicates a fixed rather than a relative meaning that indicates containers which are upside down from their normal, upright position. If the word is construed to mean containers that have been rotated from one position to another at some point in time, the word is an unnecessary and meaningless addition to the claim language.

Finally, this meaning is supported by the prosecution history and prior art of the '400 Patent. The examiner initially rejected claim one of Caponey's patent application, noting that

[i]t would have been obvious to one of ordinary skill in the art, at the time of invention that the stacking containers . . . can be inverted on the delivery vehicle and be retrieved from the vehicle as a stack by a set of fork receiving members in the open top of the container or one at a time by means of the fork receivers at the closed bottom of the container.

(Def.'s Claim Construction Br. Ex. C, Part 1 (Prosecution History 43).) In response, Caponey argued that "only from the present disclosure does one find a motivation for inverting a stackable container for transport and storage. Only in light of the present teachings are the advantages of rotating a stackable container to an inverted position appreciated." (Id. Ex. C, Part 2 (Prosecution History 3).) In this exchange, both the examiner and Caponey use "inverted" to refer to containers oriented with the open end down, and Caponey's arguments based on this meaning weigh in favor of a finding that "inverted" should be construed to mean open end down. See Seachange Int'l, Inc. v. C-Cor, Inc., 413 F.3d 1361, 1372-73 (Fed. Cir. 2005) ("Where an applicant argues that a claim possesses a feature that prior art does not possess in order to overcome a prior art rejection, the argument may serve to narrow the scope of otherwise broad claim language."). Based on the foregoing, the court construes "inverted" as open end down, the reverse position from that in which a container functions as a container.

Inverted Trunnion

Molon Motor and Merkle-Korff propose the following constructions of the term "inverted trunnion":

. Molon's proposed construction of "inverted trunnion" -- inward directed pins or pivots on which something can be rotated or mounted.

. Merkle-Korff's proposed construction of "inverted trunnion" -- two independent inward directed integral supports on which something can be rotated or mounted.

Molon asserts that Merkle-Korff wrongly inserts the words "independent" and "integral" into the definition. Merkle-Korff counters that Molon's definition is overly broad because the language of Claim 2 itself calls for "inverted trunnions, connected at one end to the first cover and connected at an opposite end to the gearbox, for stabilizing the pinion transfer gear." ('785 patent).

Merkle-Korff argues that the specification supports its construction of the term. The specification reads:

Instead of extroverted trunnions supports used in the prior art, the transfer gear of the present invention has internal space provided at its end for supports that extend inside the transfer gear, thus shortening the supported length of the transfer gear, when compared to the prior art which uses transfer gears that are virtually unsupported except at the very tips of their ends. Consequently, the invention provides a more stable mesh operation.
Merkle-Korff continues, stating that the 785 patent "makes plain" that Claim 2 requires two trunnions, by quoting the 785 patent specification in further detail:

A pair of internal trunnions 40 and 42 makes the transfer gear 34 stable by extending therein and engaging longitudinally the inside thereof from opposite ends. The one trunnion 40 is molded at one end to the first cover 16 while the other trunnion 42 is molded at its opposite end to the gearbox 14.

Merkle-Korff again attempts to add a claim limitation from the specification. Molon's proposed definition properly describes the claim.

Finally, the parties dispute the proper construction of "inverting said first container such that said refuse enters a collection bin of a collection truck." Caponey proposes to construe the step as "reversing the position of first container to such a degree that refuse enters a collection bin." (Pl.'s Resp. Def.'s Claim Construction Br. 14.) ADA Enterprises proposes to construe "inverting" to mean "invert the position of the first container, now containing refuse, from the position in which it is used to collect refuse (open side up) to the reverse position (open side down)." (Def.'s Claim Construction Br. 14.) Pursuant to the plain language of this step of claim one, the court construes the step as reversing the position of first container from an open side up position to an open side down position to such a degree that refuse enters a collection bin. This construction maintains the consistency of the word "invert" throughout the claim, with the addition of the modifying clause that indicates the container is inverted "such that said refuse enters a collection bin of a collection truck." Further, this construction is mandated by logic. In order to empty collected refuse from the container, the container is necessarily inverted from an open side up to an open side down position.

Every claim of the '664 patent calls for engageable fastening means that are "invisible" when the earring is worn. Zettl argues that the claim merely requires the fastening means to be hidden from view only to the casual onlooker. Defendants, on the other hand, read the claims to require that the fastening means be completely hidden from view. In support, the Defendants cite to the prosecution history where Zettl distinguished the claimed invention from prior art by insisting that the fastening means of the '664 patent are "completely invisible." (Amendment After Final Rejection, Sept. 17, 1986, at 7; Appellant's Brief on Appeal, Nov. 29, 1986, at 8).

"Invisible" is ordinarily understood to mean "inaccessible to view" or "of such small size or unobtrusive quality as to be hardly noticeable." Webster's at 1190. Therefore, the proffered interpretations of both Zettl and the Defendants are within the ordinary meaning of the term. However, Zettl's stance before the Examiner that the fastening means are to be "completely invisible" indicates that the term is to be used in the more restrictive sense - i.e. inaccessible to view - rather than merely unobtrusive or hardly noticeable. Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995) ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution.") Therefore, "invisible," as used in the '664 patent, is to be understood as meaning completely inaccessible to view.
a. Parties' Positions

The parties propose the following constructions for "inwardly facing surface," which is present in each asserted claim. Dkt. No. 114.

<table>
<thead>
<tr>
<th>RTI</th>
<th>BD</th>
</tr>
</thead>
<tbody>
<tr>
<td>A surface that faces the inside of the syringe</td>
<td>A surface in the wall that faces toward the center of the syringe and is parallel to the direction of the plunger motion</td>
</tr>
</tbody>
</table>

RTI contends this term should not be restricted to a surface that is parallel to the motion of the plunger, as such would improperly restrict the term to a preferred embodiment. Dkt. No. 111 at 29. RTI contends that the '733 specification attaches no significance to the fact that the preferred embodiment's surfaces happen to be parallel to the plunger's motion. Id. Additionally, RTI contends that claim differentiation precludes such a limitation, as the patentee chose to specifically align these surfaces in certain claims of the '011 Patent. Id. (citing '011, 13:40-43 (claim 3)).

In response, BD contends that every embodiment described or depicted in the '733 Patent demonstrates surfaces that are parallel to the vertical direction of the plunger motion. Dkt. No. 112 at 23-24. In addition, the Summary of the Invention within the '733 Patent also aligns these surfaces with the plunger motion. Id. (citing '733, 2:64-65 (inwardly and outwardly facing surfaces meet "along an interface oriented in the direction of retraction"). Alternatively, BD argues that during prosecution RTI took a narrower view of the scope of this term to overcome prior art. Id. As such, BD argues that RTI has surrendered broader, non-parallel coverage. Id.

b. Court's Construction

As discussed above, limitations from the preferred embodiment generally should not be imported into the claim language, unless the claims and the embodiments in the specification were meant to be strictly coextensive. Phillips, 415 F.3d at 1323. While the descriptions and depictions of the invention in the '733 Patent generally show an inwardly facing surface that is parallel to the plunger motion, this Court finds no evidence that such embodiments are strictly coextensive with the claimed invention. Indeed, the '011 Patent, from which the '733 Patent is a continuation-in-part, expressly claims such an orientation. '011, 13:40-43 (claim 3: "The tamperproof retractable syringe of claim 2 wherein said frictional holding [inwardly and outwardly facing] surfaces comprise a linear interface aligned in the direction of retraction"). Thus, when the patentee wished to limit the alignment of surfaces, he expressly claimed such. Accordingly, this Court finds that it would be improper to import an alignment limitation into claims where such is not expressly present.

Accordingly, this Court finds that the term "inwardly facing surface" means "a surface that faces toward the center of the syringe."

2. Construction of "Irradiate"

Defendants argue that the irradiation step described in the patent claims at issue requires irradiation for the purposes of sterilization. Howmedica argues that the irradiation step may also include irradiation which is not for the purposes of sterilization.

'934 Patent, claims 23, 50; '814 Patent, claim 7: "said material irradiated to create free radicals"

'814 Patent, claim 19: "irradiating said material . . . to create free radicals"

'308 Patent, claim 1: "irradiating the polyethylene material forming said implant to create free radicals"
'308 Patent, claim 12: "creating free radicals in the polymer chain by irradiating the ultra-high molecular weight polyethylene material"

'308 Patent, claim 24: "said material . . . which has been irradiated to create free radicals"

'020 Patent, claims 1, 6: "irradiated ultra-high molecular weight polyethylene"

'020 Patent, claims 7, 10, 11, 12: "ultra-high molecular weight polyethylene . . . irradiated"

Howmedica proposes that "irradiated" means "is exposed to radiation, including but not limited to gamma ray, x-ray or electron beam radiation." Defendants propose that the term "irradiated" means "sterilization irradiated, i.e. exposed to radiation for purposes of sterilization." Defendants seek to narrow the term's meaning by referring to the predominant (but not exclusive) usage of the term irradiation in the specifications: irradiation "for purposes of sterilization." The Court rejects defendants' argument.

a. '934 Patent, claims 23, 50; '814 Patent, claims 7, 19; '308 Patent, claims 1, 12, 24

The ordinary meaning of the term "irradiate," without modification, does not inherently connote "irradiate for the purpose of sterilization." Irradiate means to expose to radiation, plain and simple.

Express limitations in related dependent claims also do not support defendants' narrow definition of the term "irradiated" in claims 23 and 50 of the '934 Patent. Dependent claim 28 of the '934 expressly limits independent claim 23 to radiation treatment of sufficient strength and type to sterilize the polymer: it is for "[t]he medical implant as set forth in claim 23 wherein the irradiation is a high energy beam of a dose capable of killing bacteria, viruses, or other microbial species." '934 Patent, claim 28. The limitation in the dependent claim strongly implies that "irradiated" in claim 23 includes exposure to radiation insufficient or inappropriate to sterilize the material. See Phillips, 415 F.3d at 1314-15 ("the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation is not present in the independent claim"). Accordingly, the Court interprets the term "irradiated" in claims 50 of the '934 Patent consistently with claim 23, that is, to mean "exposed to radiation." Such meaning includes, but is not limited to, "sterilization irradiation."

In addition, claims 23 and 50 of the '934 Patent, claims 7 and 19 of the '814 Patent, and claims 1, 12 and 24 of the '308 Patent all state that the claim requires the material to be irradiated "to create free radicals" or that the claim is for a method for "creating free radicals . . . by irradiating" the material. Since the express purpose of the irradiation process described by the claims is the production of free radicals, not sterilization, the claims themselves do not support defendants effort to limit the process to "sterilization irradiation." The Court finds that the meaning of the term "irradiation" is consistent throughout the '934, '814, and '308 Patents: "irradiate" is not limited to "sterilization irradiation."

b. '020 Patent, claims 1, 6, 7, 10, 11, 12

The term "irradiated" in claims 1, 6, 7, 10, 11, and 12 of the '020 Patent is not clearly defined by the context of the other claims of that Patent. Though, as defendants point out, the '020 Patent's specification contemplates the process of irradiating the polymer material solely in the context of sterilization, '020 Patent, 3:40-7:37, the Court does not conclude that the specification is intended by the inventor to define "irradiation" only as "sterilization irradiation." Because the other, related patents used the term "irradiated" more broadly than "sterilization irradiation," the Court will give the term its ordinary, broader meaning in the '020 Patent as well. See Inline Connection Corp. v. AOL Time Warner Inc., 302 F. Supp. 2d 307, 324 (D. Del. 2004) (construing term "tranceiver" uniformly, as having broad ordinary meaning, through entire patent family). In all of the claims at issue, the Court interprets "irradiated" to carry its ordinary meaning: "exposed to radiation." 7

7 The Court rejects Defendants attempt to use the prosecution histories of the '049 and '748 Patents to limit the disputed claims to sterilization radiation for the reasons recited above. The '049 Patent contains distinct claim terms, and the '748 Patent communication does not amount to a clear limitation of "radiation" to "sterilization irradiation."

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

7 The Court rejects Defendants attempt to use the prosecution histories of the '049 and '748 Patents to limit the disputed claims to sterilization radiation for the reasons recited above. The '049 Patent contains distinct claim terms, and the '748 Patent communication does not amount to a clear limitation of "radiation" to "sterilization irradiation."

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - -
1. Irradiation and Heating of Polymer / Implant

Defendants contend that the disputed patent claims require that only finished orthopedic components be heated and irradiated. Howmedica argues that the claims also allow for heating and irradiation of pre-formed polymer materials. The Court discerns that this issue potentially arises in all twelve of the independent claims at issue:

'934 Patent, claim 23: "medical implant comprising an ultra-high molecular weight polyethylene material . . . , said material irradiated . . . and then heated"

'934 Patent, claim 50: "medical implant comprising a formed olefinic material . . . , said material irradiated . . . and then heated"

'814 Patent, claim 7: "device comprising an ultra-high molecular weight polyethylene material . . . , said material irradiated . . . and then heated"

'308 Patent, claim 1: "method of treatment for the ultra-high molecular weight polyethylene material forming a medical implant . . . comprising . . . irradiating . . . and heating the polyethylene material forming the implant"

'308 Patent, claim 12: "method for processing ultra-high molecular weight polyethylene . . . comprising . . . irradiating . . . and heating the polymer"

'308 Patent, claim 24: "medical implant comprising . . . an ultra-high molecular weight polyethylene material . . . , said material . . . which has been irradiated . . . and then heated"

'020 Patent claim 1, 6: "medical implant comprising an irradiated ultra-high molecular weight polyethylene"

'020 Patent, claims 7, 10, 11, 12: "medical implant comprising an ultra-high molecular weight polyethylene . . . irradiated and annealed"

Defendants argue that the scope of the above claims should be limited to medical implants or devices, which are irradiated and heated after they have been formed and/or machined. Howmedica argues that these claims also encompass processes whereby a polyethylene material is irradiated and heated before it is formed and/or machined into a medical implant.

Howmedica relies upon the language of the patent claims for its interpretation. Defendants support their construction by arguing that the four patents' specifications limit the patent claims. Because the specifications only expressly set forth a process whereby fully finished orthopedic components are irradiated and heated, defendants maintain that the claims should be limited to that process.

a. '934 Patent, claims 23, 50; '814 Patent, claim 7; '308 Patent, claims 12, 24; '020 Patent, claims 1, 6

Claims 23 and 50 of the '934 Patent, claim 7 of the '814 Patent, claims 12 and 24 of the '308 Patent, and claims 1 and 6 of the '020 Patent clearly and unambiguously contemplate irradiation and heating before final forming and machining of the implant. The Courts interprets each of these claims by looking towards its ordinary meaning, grammar, syntax, and context. To narrowly construe these claims, whose language unequivocally establishes their meaning, would be to commit the "cardinal sin" of claim construction: to import limitations from the specification into the claim. SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1340 (Fed. Cir. 2001). In contrast, the express language of claim 1 of the '308 Patent clearly limits that claim to irradiation and heating of finally formed medical implants.

Claims 23 and 50 of the '934 Patent, claim 7 of the '814 Patent, and claim 24 of the '308 Patent all distinguish between (1) the "implant" or "device" and (2) the "material." These four claims unambiguously refer to the irradiation and heating of "said material"; they do not refer to the treatment of the "implant" or "device." Had the inventor intended to limit the scope
of these claims to the heat and radiation treatment of "finished orthopedic implants," he would have stated that the implant, not the "material," was to be irradiated and heated. The Court reads these claims to include the treatment of the constituent polyethylene material before it has been formed and machined into its final form as an implant.

Claim 12 of the '308 Patent expressly states that it is for a "method of processing . . . polyethylene." Never does claim 12 refer to processing a medical implant, finished or unfinished. It clearly describes a method of heating and irradiating a "polymer," and is not limited to the treatment of finished implants. 4

4 This is especially clear when the language of claim 12 of the '308 Patent is juxtaposed with claim 1 of that Patent, which is so limited. See infra.

Claims 1 and 6 of the '020 Patent refer to a medical implant comprised of "an irradiated ultra-high molecular weight polyethylene." The Court finds that this claim clearly expresses that the polyethylene is irradiated, and imposes no requirement that the irradiation step occur after the medical implant has been finished.

b. '308 Patent, claim 1

In contrast, the Court finds that claim 1 of the '308 Patent is limited to irradiation and heating of a finished implant, because it is for "irradiating . . . and heating the polyethylene material forming the implant." Claim 1 clearly contemplates that the polyethylene material has already been formed into an implant before it is irradiated and heated. The Court's interpretation is bolstered by comparing claim 1 to claim 12 of the '308 Patent, which describes a process identical to that described by claim 1 -- except that it refers to the irradiation of the "polymer" and not the finished implant. 5

5 Unless otherwise stated, the dependent claims at issue are construed in accord with this opinion's reading of the respective independent claims. As example, claims 27, 29, and 52 of the '934 Patent, claim 12 of the '814 Patent, claims 21 and 23 of the '308 Patent, and claims 2, 3, and 5 of the '020 Patent are not limited to the processing of finished implants. Dependent claim 10 of the '308 Patent is limited to the irradiation and heating of the finished implant.

c. '020 Patent, claims 7, 10, 11, 12

Unlike the '934, '814, '308, and '020 Patent claims discussed above, claims 7, 10, 11, and 12 of the '020 Patent are ambiguously phrased. These latter claims describe a "medical implant comprising an ultra-high molecular weight polyethylene . . . irradiated and annealed." It is not grammatically clear if these claims could involve irradiating and heating the polyethylene material, or if they are limited to treating finished implants made of the material. From the claims alone, the Court cannot discern whether the "medical implant" or the "polyethylene" are modified by the term "irradiated and annealed."

Faced by ambiguous claim language, the Court looks to the context of these claims. The Court has already determined that claims 1 and 6 of the '020 Patent do not require that only the finished implant may be irradiated. See supra. Claims 7, 10, 11, and 12 are clearly intended to parallel claims 1 and 6, which the Court has construed to disclose heat and radiation treatment of both the polymer and finished implants. Notably, claims 7, 10, 11, and 12 include an annealing (heating) step that makes their grammar and syntax more ambiguous. As example, claim 1 describes a "medical implant comprising an irradiated ultra-high molecular weight polyethylene," while claim 7 describes a "medical implant comprising an ultra-high molecular weight polyethylene . . . irradiated and annealed." Since the only material difference between the two sets of claims is the annealing step, the Court interprets claims 7, 10, 11, and 12 of the '020 Patent consistently with claims 1 and 6. Claims 7, 10, 11, and 12 of the '020 Patent are not limited to the irradiation and annealing of finished implants.
d. Prosecution History

The Court finds unconvincing the Defendants' reference to the prosecution of the '049, '748 and '020 Patents. Defendants seek to limit terms of the patents-in-suit by pointing to limitations made during the course of the prosecution of the '049 Patent, an ancestor patent of the patents-in-suit. Unlike the '934, '814, '308, and '020 Patents, all of the '049 Patent's claims clearly describe a process whereby a finished implant is irradiated and heated. The '049 Patent does not share the relevant claim terms with the patents-in-suit. See Advanced Cardiovascular, 265 F.3d at 1305-06. As example, a typical claim of the '049 Patent states:

A method for producing a medical implant . . . comprising the steps of:

- sealing the implant in an oxygen impermeable package . . . ; and

- radiation sterilizing the said packaged implant; and

- heating said packaged implant . . . at a temperature of between about 37 C and the melting point of [the] olefinic material . . . . 6

'049 Patent, claim 1. Unlike the patents disputed here, all the '049 Patent claims clearly and unambiguously refer to a process where the finished, packaged implant is irradiated and heated. The Court will not limit the scope of the descendant patents on the basis of representations made during the prosecution of the ancestor patents, when the ancestor patent's claims differ so materially from those of the descendant patent.

--- Footnotes ---

6 All of the independent claim in the '049 Patent are similar in that they expressly describe irradiating and heating a finished, packaged implant. '049 Patent, claims 1, 12, 19, 25, 31, 36.

--- End Footnotes ---

Defendants also cite Howmedica's communications to the examiner during its prosecution of the '020 and '748 Patents. Neither of these statements is particularly relevant here. At the examiner's request, Howmedica cancelled certain patent claims "directed to an ultra-high molecular weight polyethylene." (See Defs.' Exs. J, K.) Contrary to defendants' assertions, Howmedica's did not restrict the invention to irradiation and heat treatment of formed medical implants. The '748 Patent prosecution statements to which defendants point, which sought to distinguish that patent from prior art, are not properly characterized as disclaimers. (See Defs.' Ex. N.) By no means do they clearly disclaim the treatment of the polymer before it is formed.

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C. "Said Stream is Directed Outwardly Toward Said Annular Inner Surface and then Redirected Upwardly and Inwardly Toward the Incoming Ladle Stream."

Claim 1, in part, describes the structure of CCPI's impact pad with regard to its function; that is the '551 patent claims an impact pad with a structure whereby the falling stream of molten metal from the ladle shroud is "directed outwardly toward [the] annular inner surface [of the impact pad] and then redirected upwardly and inwardly toward the incoming ladle stream." D.I. 36 at Exh. A, col. 7, ll. 56-59. CCPI maintains this language is unambiguous--it means what it says. API concedes none of the words at issue here are vague or nebulous, as they are used in common parlance. But API argues when the impact pad is observed while in use, the language is hopelessly indefinite. API has thus proposed its own interpretation: the "downwardly directed stream of molten metal" must be "redirected back into itself in an upward direction to create two opposed vertical streams or counter current flows in and above the pad which interact with each other to such a degree that they significantly slow each other down." D.I. 37 at 5.

1. Claim language
As noted earlier, the first consideration is the claim language itself and, specifically, whether it is ambiguous. See Eastman Kodak Co., 114 F.3d 1547 at …, 1997 U.S. App. LEXIS 11831, 1997 WL 261364, at *3. In its briefing, API urged the entire phrase "directed outwardly toward [the] annular inner surface [of the impact pad] and then redirected upwardly and inwardly toward the incoming ladle stream" was ambiguous. When pressed at oral argument, counsel for API narrowed its position somewhat; API now contends use of the word "toward" is unclear. API does not argue the language itself is ambiguous. Rather, API submits the way the impact pad affects the flow of molten metal makes it impossible to determine if the molten metal is redirected toward the incoming ladle stream; thus, according to API, "toward" is ambiguous.

API has introduced a videotaped demonstration of the '551 impact pad at work 14 and the testimony of the inventor, Karl J. Saylor in an effort to show the flow pattern of the metal after it enters the impact pad makes it is impossible for anyone--Saylor included--to determine when the stream of molten metal is "directed outwardly toward [the] annular inner surface and then redirected upwardly and inwardly toward the incoming ladle stream." In fact, API argues, the stream has no discernable "direction" at all; it resembles a cloud which disperses throughout the impact pad.

14 Water was used in the demonstration instead of molten metal.

As CCPI points out, API is trying to create ambiguity in the claim language with the use of extrinsic evidence. This is a formidable obstacle in itself, but API's more pressing barrier is that its argument is more appropriately characterized as an indirect attack on the validity of the '551 patent. As the Federal Circuit Court of Appeals has cautioned, "ambiguity, undue breadth, vagueness, and triviality are matters which go to claim validity for failure to comply with 35 U.S.C. § 112- P 2, not to interpretation or construction." 15 Intervet Am., Inc., 887 F.2d at 1053; see also Markman v. Westview Instr., Inc., 52 F.3d 967, 986 (Fed. Cir. 1995), aff'd, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996).

15 35 U.S.C. § 112, P 2 states: "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."

"Toward," although not defined in the '551 patent, has an ordinary and well-recognized meaning. "Toward" is commonly defined as "in the direction of: to a point approaching." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 2417 (1971). While it may be difficult--and API suggests it is well-nigh impossible--to determine the direction taken by the stream of molten metal after it strikes the impact pad of the '551 patent, this consideration goes to validity, and is best left for another day. For now, it is sufficient to describe the claim language as clear and unambiguous; it means precisely what it says.

16 See supra note 10.

2. Specification

As rehearsed above, the language in the claim is lucid; nevertheless, the Court examines the specification to see if CCPI, acting as its own lexicographer, defined the terms at issue in any manner inconsistent with their common usage. API points to various passages in the specification to support its proposed interpretation. For example, in the invention summary, the patent states "the incoming stream is redirected back into itself and a flow pattern is created which directs the reversed flow of metal away from the ladle shroud." D.I. 36 at Exh. A, col. 2, ll. 56-61. Similar statements are scattered throughout the
specification. 17

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17 For example, column three, lines 21-26 of the patent state: 
"[A] pad constructed in accordance with the present invention redirects the pouring stream back into itself causing the counter current flows to slow each other down thereby minimizing turbulence and inhibiting high velocity flow within the tundish." Further: 
"The vertical upward movement of the stream caused by the tundish pad significantly slows down the stream of molten metal as the two opposed vertical streams have a partially cancelling effect on one another." D.I. 36 at Exh. A, col. 5, ll. 44-48. Still further: 
"It will thus be appreciated that the tundish impact pads of the present invention cause the incoming ladle stream to be completely reversed in an upward direction thus significantly slowing the stream and preventing undesirable high velocity flows and turbulence within the tundish." Id. at col. 6, ll. 29-34. Finally: 
"Any geometric shape which fully encloses or defines and [sic] endless boundary for an interior space of the pad and redirects the incoming molten metal flow back into itself and creates a flow pattern away from the ladle shroud will perform similarly to the illustrated embodiments." Id. at col. 7, ll. 34-39.

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This again presents the tightrope the Court traversed in section III(B)(2) of this opinion. On one hand, courts are encouraged to use the specification to provide appropriate context for the claims. On the other hand, courts are dissuaded from adding to claims those limitations that appear only in the specification. API cloaks its appeal in the raiments of using the specification to interpret; when laid bare, however, it is a plea for a limitation not found in the claims. As noted earlier, there is nothing murky in the language and the Court cannot consider issues such as ambiguity or vagueness which relate to claim validity during claim construction. See Markman, 52 F.3d at 986; Intervet Am., Inc., 887 F.2d at 1053.

3. Prosecution history (or file wrapper)

Although the claim language is clear, API exhorts the Court to scrutinize the prosecution history. A patent owner cannot take a position about a claim term during litigation that is inconsistent with the position it took during prosecution; statements made during prosecution may commit the patent owner to a particular meaning for a patent term. CVI/Beta Ventures, Inc., 112 F.3d 1146 at , 1997 WL 214809, at *11. Extrapolating from this tenet of claim construction, API argues CCPI limited its claims--to an impact pad that reversed a falling stream of molten metal back into itself--in an effort to gain approval from the Patent Examiner ("the Examiner").

CCPI originally submitted claim 1 without a functional description. 18 Again, as stated earlier, the idea of an impact pad was nothing new, and the Examiner disallowed each of the product claims 19 under 35 U.S.C. § 103 as being unpatentable over a prior art patent, U.S. Patent No. 3,887,171 (referred to as "the Neuhaus patent," after its inventor) in view of another patent, U.S. Patent No. 5,169,591 (called "the Schmidt patent" after one of its inventors). 20 D.I. 36 at Exh. C, p. 44.

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18 In other words, claim 1, as originally submitted, disclosed:

A tundish impact pad formed from a refractory composition capable of withstanding continuous contact with molten metal, said pad comprising a base having an impact surface and an endless outer side wall extending upwardly therefrom and fully enclosing an interior space having an upper opening for receiving a stream of said molten metal, said outer wall including an annular inner surface having at least a first portion extending inwardly and upwardly toward said opening.

D.I. 36 at Exh. C, p. 32. The next phrase, "whereby when a downwardly directed stream of molten metal from a ladle outlet disposed above said impact pad strikes said impact surface, said stream is directed outwardly toward said annular inner surface and then redirected upwardly and inwardly toward the incoming ladle stream[,]" was not added to the claim until after it had been rejected.

19 Claims 1 through 20 are directed to the impact pad itself, while claim 21 is directed to the method of preventing turbulence. Claim 21 was the only claim not rejected by the Examiner under 35 U.S.C. § 103 as unpatentable over the Neuhaus patent in light of the Schmidt patent.
20 35 U.S.C. § 103(a) states:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title [governing conditions for patentability], if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

The Examiner also rejected each of the claims as anticipated by the Schmidt patent. The prosecution history does not reveal anything damning to CCPI's position here in comparison to the arguments it presented to the Examiner to distinguish the '551 patent from the Schmidt patent. D.I. 36 at Exh. C, pp. 60-62. Therefore, the Court limits its consideration to the arguments made by CCPI to distinguish the Neuhaus patent in view of the Schmidt patent.

The Schmidt patent, which issued in 1992, disclosed a horseshoe-shaped impact pad with an aperture aimed directly toward the outlet at the bottom of the tundish. 21 See D.I. 49 at Exh. A. This design differs from the design of the impact pad of the '551 patent; the impact pad of the '551 pad is fully enclosed, 22 as opposed to shaped like a horseshoe, and the only means of egress from the impact pad for the molten metal is through an opening located at the top of the impact pad. Similar to the '551 patent, the Schmidt impact pad had an upward and inward slope along its inner surface for "receiving and reversing the direction of the radiating fluid flow generated by an incoming ladle stream." Id. at col. 2, ll. 18-20.

The Neuhaus patent, which issued in 1975, also disclosed a horseshoe-shaped impact pad. D.I. 37 at Exh. 7. Similar to the '551 patent (but unlike the Schmidt patent), the flow from the Neuhaus impact pad was aimed toward the ladle shroud above it so the flow of molten metal would not drain directly into the tundish outlets. From the sketches in the Neuhaus patent, it appears the ladle shroud extended into the horseshoe-shaped impact pad; the ladle shroud in the '551 patent, on the other hand, does not descend into the area fully enclosed by the impact pad. Finally, unlike in Schmidt or the '551 patent, the inner surface of the impact pad in Neuhaus did not possess an upward and inward slope.

CCPI tried to remedy the flaws in its spurned claims by adding the following functional description of the impact pad:
"whereby when a downwardly directed stream of molten metal from a ladle outlet disposed above said impact pad strikes said impact surface, said stream is directed outwardly toward said annular inner surface and then redirected upwardly and inwardly toward the incoming ladle stream." D.I. 36 at Exh. C, p. 54. It is in this amendment, and in the statements CCPI made to accompany this amendment, that API finds the limitations it proposes for the impact pad--that is, it must redirect the stream of molten metal "back into itself . . . to create two opposed vertical streams of counter current flows in and above the pad which interact with each other to such a degree that they are significantly slowed down." D.I. 37 at 5.

First, as API points out, in a summary of the invention included in the amendments, CCPI stated the "end result" of the structure of the impact pad was that "flow velocities of molten metal exiting the interior volume of the pad are significantly slowed down by the cancelling effect of the incoming ladle stream." Id. at 57. Contrary to API's arguments, however, this statement does not reveal a disavowal by CCPI of a broader claim interpretation, nor does it limit the claim. It simply describes, in a general fashion, a function of the impact pad.

API's best argument is rooted in the statements made by CCPI to distinguish the impact pad of the Neuhaus patent. CCPI stated that an "upward and inward" portion on the inner surface of the Neuhaus impact pad, like the one on the impact pad of the '551 patent, would escalate turbulence. Turbulence would increase, CCPI argued, because the flow of molten metal

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would collide with the ladle shroud, which descended into the enclosed interior area of the impact pad itself. API derives from this a statement never explicitly made by CCPI: the Neuhaus patent is distinguishable from the '551 patent because, unlike the '551 patent, the ladle shroud in the Neuhaus patent blocks the ability of the outgoing and incoming streams to interact and slow each other down. Only after this supposed advantage was pressed to the Examiner, argues API, was approval of the '551 patent given.

While this contention has its appeal, it is unavailing. The above statement, when read in context with the other arguments made by CCPI in support of its amended claims, reveals CCPI simply reiterated many of the distinguishing features of the '551 patent that failed to sway the Examiner at the initial hearing. 23 CCPI did not limit itself to an impact pad that functions in the manner API suggests. CCPI has not taken a position in this litigation that is inconsistent with the position it took during prosecution of the '551 patent. Put bluntly, the key phrases API wants to use to limit the claims--"back into itself" and "significantly slow each other down"--are nowhere to be found in the arguments CCPI made to win approval from the Examiner. At bottom, then, API's arguments about the prosecution history are simply another attempt to interpolate limits onto claim language that API may feel is hopelessly obscure in practice, but is plain on its face.

--- Footnotes ---

23 The full argument presented by CCPI to the Examiner that the amended application should not be rejected as anticipated by the Neuhaus patent in view of the Schmidt patent is as follows:

As further pointed out and agreed to by the Examiner at the interview, there is no suggestion in either the Neuhaus or Schmidt et al. patents for combining them in such a way as to lead to the present invention. In the Office Action the Examiner apparently suggests that the Schmidt et al. disclosure would lead one of ordinary skill in the art to place an undercut portion on the trough of Neuhaus to avoid "excessive turbulence." However, there is absolutely no suggestion in the prior art that an undercut portion on the trough [now, the impact pad] of Neuhaus would lessen turbulence. In fact, an undercut portion on the trough of Neuhaus is more likely to increase turbulence by causing flow to impact against the outlet tube [now, the ladle shroud]. In any event, the use of an undercut portion on the trough of Neuhaus would be in direct contradiction to the teachings of Neuhaus himself since the slow outward flow would be inhibited by an undercut portion on the trough. In short, there is no teaching or suggestion for combining the Neuhaus and Schmidt et al. patents under any rationale to come up with the pad of the present invention. Applicant therefore respectfully requests that this rejection be withdrawn by the Examiner.

D.I. 36 at Exh. C, pp. 63-64.

--- End Footnotes ---

Accordingly, the Court declines the invitation to tinker with the phrase "said stream is directed outwardly toward said annular inner surface and then redirected upwardly and inwardly toward the incoming ladle stream." The language is plain, and it means what it says. 24

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24 Because the intrinsic evidence unambiguously describes the scope of the patented invention, the Court need not address the extrinsic evidence submitted by API, namely Saylor's deposition testimony. See Vitronics, 90 F.3d 1576 at 1583.

--- End Footnotes ---

A. "Isolated From Any Exposure to Said Atmosphere"

Defendants seek construction of the claim limitation "isolated from any exposure to said atmosphere." Defendants contend the court may use dictionary definitions to give claim terms their customary and ordinary meaning. Accordingly, defendants rely on The American College Dictionary (1964) to define the words "isolate," "any," and "atmosphere." 1 The dictionary
defines "isolate" as "to set or place apart; detach or separate so as to be alone." The word "any" is defined as "(with a negative) none at all" or "in any degree; to any extent; at all." The term "atmosphere" is defined as "the gaseous fluid surrounding the earth; the air." Defendants assert the context of the claim language applies the term "atmosphere" to mean the atmosphere being monitored. Based on the dictionary definitions, defendants argue the proper construction of the claim limitation "isolated from any exposure to said atmosphere" is "separated so that there is no exposure at all to the air being monitored to any degree or extent." Defendants contend this construction is consistent with the '166 patent specification, which shows the second counter electrode is separated from exposure to the atmosphere by use of a plug that seals the chamber, or by total encasement of the electrode in the frame. In both cases, defendants assert there is no way for the outside air to reach the counter electrode. Finally, defendants contend there is no disclosure in the 166 patent that teaches the counter electrode can be exposed to the outside air in any manner, and there is nothing in the prosecution history to contradict defendants' proposed construction.

--- Footnotes ---

1 Defendants also purport to provide a dictionary definition for "exposure." This definition is not in fact provided.

--- End Footnotes ---

Dicon argues defendants' use of extrinsic evidence, dictionary definitions, to interpret the '166 patent claims is inappropriate. Dicon contends the specification makes clear the second counter electrode, while isolated from direct outside air, is exposed to an enclosed volume of scrubbed or otherwise uncontaminated air. Dicon asserts, without citation to the record, the specification teaches that the outside air may pass to the counter electrode after being scrubbed by an electrolyte. Therefore, Dicon argues defendants inappropriately ignore the broad context of the intrinsic evidence and seek a construction that inappropriately limits the patent's scope.

The appropriate role of dictionary definitions in claim construction is somewhat unclear. The Federal Circuit has held dictionaries may be relied upon to construe patent claims:

When a patent is granted, prosecution is concluded, the intrinsic record is fixed, and the public is placed on notice of its allowed claims. Dictionaries, encyclopedias and treatises, publicly available at the time the patent is issued, are objective resources that serve as reliable sources of information on the established meanings that would have been attributed to the terms of the claims by those of skill in the art. Such references are unbiased reflections of common understanding not influenced by expert testimony or events subsequent to the fixing of the intrinsic record by the grant of the patent, not colored by the motives of the parties, and not inspired by litigation. Indeed, these materials may be the most meaningful sources of information to aid judges in better understanding both the technology and the terminology used by those skilled in the art to describe the technology.

Tex. Digital Sys. v. Telegenix, Inc., 308 F.3d 1193, 1203 (Fed. Cir. 2002) (emphasis added). Texas Digital explains that, because dictionaries may have multiple definitions for a term that do not apply to the claim, the interpreting court must refer to the intrinsic record to determine which definition is most consistent with the words used by the inventor. Id. Indeed, the dictionary definition must be rejected if it is inconsistent with the intrinsic record. Id. at 1204. "In short, the presumption in favor of a dictionary definition will be overcome where the patentee . . . has clearly set forth a clear definition of the term different from its ordinary meaning." Id. Therefore:

By examining relevant dictionaries, encyclopedias and treatises to ascertain possible meanings that would have been attributed to the words of the claims by those skilled in the art, and by further utilizing the intrinsic record to select from those possible meanings the one or ones most consistent with the use of the words by the inventor, the full breadth of the limitations intended by the inventor will be more accurately determined and the improper importation of unintended limitations from the written description into the claims will be more easily avoided.

Id. at 1205. Accordingly, defendants have provided their limitation interpretations based on dictionary definitions that were in existence as of April 16, 1990, when the '166 patent was filed.

In contrast, C.R. Bard, Inc. v. U.S. Surgical Corp., No. 04-1135, 388 F.3d 858, 2004 U.S. App. LEXIS 22738 (Fed. Cir. Oct. 29, 2004), emphasizes that the intrinsic record alone remains the primary source for determining claim meaning. 2004
U.S. App. LEXIS 22738 at *8. C.R. Bard notes that other cases, including Texas Digital, suggest the intrinsic record should be consulted only after determining the ordinary and customary meaning of claim terms with dictionary assistance. 2004 U.S. App. LEXIS 22738 at *9-12. Instead, C.R. Bard contends that the intrinsic evidence is the single most reliable guide to construe disputed claims. 2004 U.S. App. LEXIS 22738 at *9-12.

The Federal Circuit has granted an en banc rehearing to broadly address the law of claim construction. Phillips v. AWH Corp., 376 F.3d 1382 (Fed. Cir. July 21, 2004). Specifically, the court intends to clarify seven issues, including the following three:

1. Is the public notice function of patent claims better served by referencing primarily to technical and general purpose dictionaries and similar sources to interpret a claim term or by looking to the patentee's use of the term in the specification? If both sources are to be consulted, in what order?

2. If dictionaries should serve as the primary source for claim interpretation, should the specification limit the full scope of claim language (as defined by the dictionaries) only when the patentee has acted as his own lexiographer or when the specification reflects a clear disclaimer of the claim scope? If so, what language in the specification will satisfy those conditions? What use should be made of general as opposed to technical dictionaries? How does the concept of ordinary meaning apply if there are multiple dictionary definitions of the same term? If the dictionary provides multiple potentially applicable definitions for a term, is it appropriate to look to the specification to determine what definition or definitions should apply?

3. If the primary source for claim construction should be the specification, what use should be made of dictionaries? Should the range of the ordinary meaning of claim language be limited to the scope of the invention disclosed in the specification, for example, when only a single embodiment is disclosed and no other indications of breadth are disclosed?

Id. at 1383. There is no need to await the forthcoming en banc decision before construing the '166 patent claims. While the extent to which dictionaries may be used is unclear, dictionaries may still be used, to some degree, to determine the ordinary and customary meaning of claim terms. See e.g., Texas Digital, 308 F.3d at 1203-05. C.R. Bard teaches dictionaries should not be relied upon before, or to the exclusion of, intrinsic evidence. However, the use of dictionaries does not mean intrinsic evidence has been ignored; dictionaries and intrinsic evidence together may assist the court in construing claims. Indeed, the specification remains "highly relevant to the claim construction analysis" and "is usually dispositive; it is the single best guide to the meaning of a disputed term." Vitronics, 90 F.3d at 1582. The court will not construe the disputed claims with dictionary definitions alone; review of the intrinsic evidence remains a fundamental part of the court's analysis.

Review of the intrinsic evidence shows defendants' claim construction is sound. The claims and specification are clear that the first electrode is exposed to the atmosphere being monitored, while the counter electrode is not exposed to the monitored atmosphere. See Def. Mot. at Ex. A, Col. 4, Ins. 17-25; Col. 6, Ins. 64-67-Col. 7, Ins. 1-5; Col. 13, Ins. 43-48. Dicon fails to offer a claim construction of its own. Its criticism of defendants' construction essentially asks the court to read "isolated from any exposure to said atmosphere" to mean "isolated from any exposure to air that has not been stripped of a contaminate gas." While the specification indicates that in one embodiment of the invention the second counter electrode may be exposed to a contained volume of cleaned or scrubbed air, Id. at Col. 5, Ins. 1-7; Col. 8, Ins. 23-32, the court does not limit, broaden or re-write claims. Netword, LLC v. Centraal Corp., 242 F.3d 1347, 1352 (Fed. Cir. 2001); K-2 Corp. v. Salomon S.A., 191 F.3d 1356, 1364 (Fed. Cir. 1999). The inventors' use of the word "atmosphere" throughout the specification and in the claims was deliberate and the court must give effect to the terms chosen by the patentee. K-2 Corp., 191 F.3d at 1364. Indeed, the inventors used terms such as "cleaned or scrubbed air," and "uncontaminated air," throughout the specification, but chose the words "isolated from any exposure to said atmosphere" for the claim limitation. Def. Mot. at Ex. A, Col. 13, Ins. 43-48 (emphasis added). The court construes the limitation "isolated from any exposure to said atmosphere" to mean "separated so that there is no exposure at all to the air being monitored to any degree or extent."
In construing these terms, it is difficult for the Court to ignore the language in the prosecution history of this patent reading that "when issued, the tangible medium is removed or decoupled from the means that stores information therein, and so each tangible medium provides an independent and audible record of one voting session." (Defs. Ex. 4b at 21; Amendment under 37 C.F.R. §1.111 (Oct. 28, 2003)). The medium referred to is the smart card and the printed paper. (Col. 17, ll. 59-61; Col. 20, ll. 31-37.)

The Court construes the terms "issue," "issued" and "issuing" in Ref. No. 14 as:

Remove or decouple the tangible medium from the means that stores the information therein, so the tangible medium provides an independent record of a voting session.

(1). "Item" and "Movie" Require No Definition.

Turning now to a closer consideration of "item rental queue" and "movie rental queue," Blockbuster urges the court to define the terms "movie" and "item." A district court need not construe every single disputed word. "Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement." U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997). As these are commonly-understood English words, they need no clarification.

The term "item" is defined explicitly in the specification of the '450 patent, which stated "'[a]s used herein, the term 'items' refers to any commercial goods that can be rented to customers" (col. 4:1-3). Absent that, a juror would still understand through everyday experience that "item" used in this context would not include, for example "cups of coffee" which cannot be rented, but could include "bowling shoes" which can be rented to customers. Jurors would also understand that the term "movie," as used in the patents, was intended to include media such as documentaries, television series, cartoons, music videos, concert performance films, and instructional and educational programs. This list was recited in claim 13 of the '381 patent (col. 13:59-64).

7. "items containing information"

The parties dispute the proper construction of the phrase "items containing information" as that phrase is used in Claim 19 of the '992 Patent.

In addition to the phrase "items containing information," the specification of the '992 Patent uses the following related phrases: "items," "information from items," "items in the source material library," "information in the items," "items having information," and "items of information."

In the July 12 Order, the Court construed the phrase "items containing information" as follows:

"The Court construes the term "items containing information" to mean "items containing information in analog or digital format." The limitation requiring the information be stored in analog or digital format is necessary as the conversion means element 113 only converts analog and digital inputs into a "formatted data" output. n4

(July 12 Order at 11, citing '992 Patent, figure 2a.)

n4 The Court inserted this footnote following the definition: "Neither the claims nor the specification of the '992 patent
disclose any structure for converting information in the 'items' to analog or digital form as required by the 'conversation means,' before the items are stored in the library means. The claims and the specification disclose structure (figure 2a (113)), which converts only analog or digital information. Before the items are stored, the information in the 'items' stored in the library means must out of necessity already be in analog or digital format." (July 12 Order at 11, n. 6.)

The current dispute is whether the word "items" as used in the '992 Patent refers to physical items. The specification refers to "items" as follows:

The source material library 111 may include different types of materials including television programs, movies, audio recordings, still pictures, books, computer tapes, computer disks, documents of various sorts, musical instruments, and other physical objects. These materials are converted to or recorded on a media format compatible to the digital and analog inputs of the system prior to being compressed and stored in a compressed data library 118.

('992 Patent, Col. 6:10-19.) The Court finds that a proper reading of the specification renders that the word "items" means physical objects and not the "information" which might be contained in the physical objects. n5 For example, a computer file, would be information. The media used to store the computer file, such as a computer disk or a computer tape, in the source material library would be a physical item containing the information.

n5 A literal reading of Claim 19 is that the user requests "items containing information" (e.g., a video tapes) and that the items are "to be sent" from the transmission system to receiving systems. Thus, under this literal reading, the video tapes themselves would be sent. However, the specification makes it clear that the invention is not one in which the video tape is sent, but one in which movies are extracted from the video tapes, processed, and only the movies (information) are sent to the receiving systems.

The Court defines "items containing information" as follows:

In a distribution method as disclosed in Claim 19 of the '992 Patent, in which, responsive to requests from a user identifying "items" in a transmission system "containing information," information is sent from the transmission system to receiving systems at remote locations. The phrase "items containing information" means "physical items, such as video tapes, film, or computer disks, which contain audio information, video information or both."
Defendant also contends, without apparent dispute, that the border must be an "uninterrupted" line or zone. (Joint Statement, Def.'s P&A at 24). In other words, there may not be a break in the border; rather, at some point throughout the iris, the jagged border must delineate a noticeable change in shade between the outer and inner portions of the iris. This interpretation appears to be consistent with the location of the border described in claims one and thirteen. Each requires that the jagged border be located at a distance of between 5% and 95% of the radial width of the iris from the outer perimeter of the iris. (Shull Decl., Ex. B at 59, col. 10, ln. 8-14, ln. 54-59). As such, the specification appears to provide great flexibility as to the exact location of the jagged border within the iris, but does not allow for a break in such border. For that reason, the Court finds Defendant is correct that the 477 patent requires that the jagged border be uninterrupted. However, as stated supra, the patent merely requires that there take place a "noticeable change of shade" at the border. It does not limit the 477 patent to one where elements of the first shade cannot appear throughout the iris.

Turning to "jarring," the specification discloses a vending process that is "achieved in a smooth continuous manner without . . . imputing any jarring blows or forces to the container." See e.g. '930 Patent, col. 43, ll. 63-67. As with previous terms, the context provided by the claims and the specification adequately define the term. See '930 Patent, col. 24, ll. 46-56; col. 43, ll. 63-67.

The court defines "jarring" as "striking the beverage container with sufficient force to cause immediate effervescence and overflowing of carbonated beverages upon opening, or damage to a container/product such that the container or product is no longer suitable for consumption or sale."

1. The '694 Patent

In relevant part, the '694 patent claims a "vehicle for moving at least one wheeled cart, the vehicle comprising: . . . two jaws protruding from the front plate, wherein said jaws operate to engage corresponding vertical frame members of the at least one wheeled cart." (Robbennolt Aff. Ex. A at 8 ('694 Patent).) 1 In simpler terms, this limitation claims a set of two jaw-like structures that emerge from the front of the retrieval vehicle to attach to the legs of a shopping cart and hold the cart in place.

1 Ameritech also contends that its vehicle does not infringe on a second claim in the '694 patent. The success of that contention, however, depends entirely on whether Ameritech infringes the claim discussed below.

In the embodiment of the '694 patent, this element is depicted as a single metal bar with J-shaped hooks on either end. (See Defs.' Opp'n Mem. at 4 (reproducing '694 patent figure 6).) The hooks face the same direction and, according to the illustration, the legs of the shopping cart fit into the hooks. The legs are secured in the hooks with a moveable pin that is situated across the open portion of one of the hooks. The wheels of the shopping cart rest on the ground.

In Ameritech's vehicle, the shopping cart is attached to the vehicle by the use of cups. (See id. at 11 (reproducing photographs of Ameritech's vehicle).) The rear wheels of the shopping cart rest in the cups, and the front wheels of the cart are on the ground. The cups are hinged, allowing the wheels to move in response to the terrain over which the cart is moving. A moveable pin holds the wheel in place. Bumpers above the cups on the front of the vehicle rest against the frame of the shopping cart, further holding the cart in place.
Dane argues that the cups on Ameritek's vehicle, together with the bumpers, constitute "jaws" that "engage" the shopping cart and therefore that Ameritek's vehicle infringes this limitation of Dane's '694 patent. Dane contends that the Court should give "jaw" its ordinary meaning, namely "something resembling the jaw of an animal for holding or engaging something else." (Pl.'s Supp. Mem. at 13 (citing Merriam-Webster's Collegiate Dictionary).) The Court has no doubt that the word "jaw" in the claim limitation was intended to have its ordinary meaning. However, that ordinary meaning simply does not encompass the cups used by Ameritek. A cup is defined as "a small open container." Random House College Dictionary at 326 (rev. ed. 1982). A "small open container" does not "resemble the jaw of an animal" and thus does not constitute a "jaw." Dane has failed to show that it is likely to succeed on its claim that Ameritek's Golden Retriever infringes Dane's '694 patent.

b. Claim Construction

In Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005), the Federal Circuit clarified the proper approach to claim construction and set forth principles for determining the hierarchy and weight of the definitional sources that give the patent its meaning. These sources include "the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." Id. at 1314 (quoting Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1116 (Fed. Cir. 2004)). The words of a claim are to be given their "ordinary and customary meaning" as a person of ordinary skill in the art in question would understand them. Phillips, 415 F.3d at 1312-13 (citing Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

Determining the meaning of the terms at issue here is a relatively straightforward task, as the parties do not dispute the appropriate definitions. First, the term "jaw" is expressly defined in the file history of the '691 patent. In an argument filed on July 22, 2002, the applicant stated that

the most appropriate definition for this term is "either of two mechanical parts that open and close to grip or crush something, as in a monkey wrench or vise."

(Stecher Aff., Ex. E). Second, the parties agree that the term "between" should be given its ordinary meaning of "in or through the space that separates."

Thus, the language at issue in this case--"a jaw mechanically interengaged with and carried by said bracket for movement between said first and second flanges"--is properly construed as follows: (1) "either of two mechanical parts that open and close to grip or crush something, as in a monkey wrench or vise, (2) mechanically interengaged with and carried by said bracket (3) for movement in or through the space that separates the first and second flanges." 5

5 It was plaintiff who initially proposed the "movement in or through the space that separates" construction in its motion for summary judgment. Nonetheless, in its opposition to defendant's motion for summary judgment, plaintiff contends that [the language at issue in this case] describes how the jaw is mounted, but not how it moves during a clamping operation. Movement during clamping is described later in the claim as being "towards said first flange to thereby clamp said side wall therebetween." In short, a distinction is drawn in claim 1 between how the jaw is mounted, and how it moves to effect clamping.

(Pl.'s Opp. Summ. J. at 1) (emphasis in original) (internal citation omitted). It thus appears that plaintiff is attempting to read the "movement between" limitation out of the disputed claim. This argument, however, is foreclosed by the claim language itself, which explicitly requires that the jaw be carried for "movement between" the flanges. Moreover, it is unclear how the jaw could be "mounted" for "movement between" the flanges unless it, in fact, so moved.
I. Disputed Patent Claim Term "Jig"

McDavid's proposed construction for the claim term "jig" is "the structure for holding the elements in place and standing proud while the substrate layer is applied thereto." (Dkt. No. 97, Pl. Rebuttal Mem. Claim Construction 8.) Nike argues that a "jig" should be defined as "a tool used to hold and locate a material upon which work is performed, specifically the spaced separate elements, during production operations -- it is not part of the work piece, including excess work piece material." (Dkt. No. 94, Def. Resp. Claim Construction Br. 11.) The primary dispute of the parties as to the claim term "jig" centers on whether the excess material between the spaced separate elements may serve as the jig or whether a separate tool -- different from the material upon which work is performed -- must be used during the patented manufacturing process. The court agrees with Nike that the claim term "jig" as used in the '325 patent is a different device from the material upon which work is performed during the patented manufacturing process.

The plain language of the '325 patent teaches that a "jig" is a device or tool that is introduced to the patented manufacturing process to perform the function of holding the elements in place. It is not a by-product of the process such as the excess material that remains after the cutting step forms the elements. Indeed, in the '325 patent a jig is never referred to as excess material, nor is the excess material ever referred to as a jig. Instead, in claim 1, a "jig" is referred to as something that is "provided" after a sheet of resilient material is provided to create the spaced separate elements. (325 patent, col. 6:42-43.) The term "provided" ordinarily means "to supply or make available." Merriam-Webster's Collegiate Dictionary 673 (11th ed. 2005). The court agrees with Nike that the term "provided" in the claims of the '325 patent suggests that the "jig" will be supplied in a separate step during manufacture. Proper claim construction mandates that every word have a meaning. See Foremost in Packaging Sys. v. Cold Chain Techs., 485 F.3d 1153, 1156 (Fed. Cir. 2007). A court should not disregard a word as if it was not included in a patent's claim language at the risk that that disregarded word may change what the patentee originally described. Courts cannot broaden or narrow the claims of a patent or give the patentee something different than the patentee originally described.

The relevant extrinsic evidence also weighs in favor of excluding the excess material in the construction of the claim term "jig." Although the Federal Circuit emphasizes that intrinsic evidence is the most significant source for claim construction, district courts are authorized when necessary to consider extrinsic evidence, which includes expert and inventor testimony. Phillips, 415 F.3d at 1317. As a result, the court has considered the extrinsic evidence for more guidance as to how a person of ordinary skill in the art would define the term "jig." Mr. Beall, McDavid's expert, testified that he was unaware of any definitions of "jig" which include the material upon which work is performed. (Beall Dep. 30:1-4, June 9, 2009, attached as
Ex. M to Hill Decl.) In addition, Dr. Brookstein, Nike's expert, stated that a person of ordinary skill in the art would not understand a "jig" as part of the work material. (Brookstein Decl. P 20.) Consequently, the extrinsic evidence indicates that a "jig" is traditionally considered a tool that is different than the material on which the manufacturing process is performed.

As support for its proposed construction, McDavid argues that because the term "jig" is limited in other claims, under the doctrine of claim differentiation "jig" should be given a broad meaning in claim 1. See SunRace Roots Enter. Co., Ltd. V. SRAM Corp., 336 F.3d 1298, 1303 (Fed. Cir. 2003). For example, claim 2, which is dependent on claim 1, describes "using a cutter, which acts as the jig" ('325 patent, col. 6:50-51), whereas claim 1 simply discloses "a jig provided to hold the elements in place," (id. at col. 6:42-43). While the court agrees that the term "jig" is not limited to a cutter under the doctrine of claim differentiation, this doctrine does not allow an expansion of the definition of "jig" beyond what a person of ordinary skill in the art would understand. Thus, the doctrine of claim differentiation does not support McDavid's broad interpretation of the claim term "jig."

The court similarly finds that certain prior art on which McDavid relies does not demonstrate that a jig may include the material upon which work is performed. In its brief, McDavid identifies several patents, including U.S. Patent Nos. 4,127,692 ("692 patent") and 3,492,808 ("808 patent"), which refer to certain items acting as jigs. (See Dkt. No. 97, Pls.' Rebuttal Mem. Claim Construction 11.) For example, the '692 patent references a "coating" which acts as a jig, and the '808 patent discusses a "hole wall" which acts as a jig. (692 patent, col. 3:7-9; 808 patent, col. 4:50-52.) According to McDavid, these references demonstrate that the term "jig" can mean any structure that holds the elements in place, including a part of the material upon which work is performed. Neither of these patents, however, indicates that these items are jigs, but simply that they perform a jig-like function. Moreover, the fact that the '692 and '808 patents specifically identify a part of the material upon which work is performed as acting as a jig suggests that a person of ordinary skill in the art would not understand that the term "jig." under its plain and ordinary meaning, would normally encompass the material upon which work is performed. Notably, unlike the '692 and '808 patents, the '325 patent does not indicate that the material upon which work is performed could act as a jig. Thus, the prior art does not support McDavid's argument that an item that performs the function of a jig necessarily is a jig.

Lastly, McDavid's proposed construction includes an additional limitation that a "jig" is a "structure for holding the elements in place and standing proud while the substrate layer is applied thereto." This additional language is unnecessary in construing the term "jig" because subsequent claim language states that the "jig" facilitates standing proud and bonding. ('325 patent, col. 6:42-45); see Linear Tech. Corp. v. U.S. Int'l Trade Comm'n, 566 F.3d 1049, 1056 (Fed. Cir. 2009) (excluding proposed additional language from the court's final construction because the proposed language was clear from the remaining claim language). This limitation, therefore, is superfluous and not included in the court's construction.

Therefore, for the reasons stated above, the court construes the '325 patent claim term "jig" to mean "a device or tool that is different from the material on which the manufacturing work is performed that holds the elements created by the patented manufacturing process in the correct position during the manufacturing process."

2. "joined [in a cooperative relation]"

Floe contends that this term should be construed as "brought together or connected in a functional relationship." Newmans, on the other hand, asserts that this term should be construed as "directly connected." Floe contends that its construction is consistent with the way that "joined" is used in Claim 1. Additionally, Floe asserts that its construction is consistent with standard dictionary definitions, in which "join" means "to put or bring together so as to form a unit" or "to put or bring together into close association or relationship." See Merriam-Webster’s Collegiate Dictionary 630 (10th ed. 2001); American Heritage Dictionary 460 (4th ed. 2001). Floe also asserts that Newmans' proposed construction imports an unclaimed limitation--""directly""--into the term. Newmans, on the other hand, asserts that its construction of the term is consistent with the way "joined" is used in Claim 7 and in the specification. Additionally, Newmans contends that Floe disclaimed any type of non-directly connected structure in the prosecution history.

Here, the ordinary meaning of "joined" is apparent from the language in Claim 1. Claim 1 requires "a ramp member joined to said deck support member in a cooperative relation to said longitudinal deck support surface." The Court finds that the
ordinary meaning of "joined" in Claim 1 is "brought together or connected in a functional relationship."

The Court rejects Newmans' contention that Claim 7 is instructive regarding this term. In discussing the "longitudinal lower member" and the "lip member," Claim 7 states: "a longitudinal lower member . . . joined along said elongated web member . . . and a lip member . . . joined to said longitudinal lower member . . . " (379 Patent, c. 7, ll: 58-63.) Based on this language, Newmans contends that "joined" does not allow for intervening items. Rather, according to Newmans, "joined" means "directly connected." Claim 7, however, does not describe "joined" in the same way as Claim 1. Specifically, Claim 7 does not use the phrase "in a cooperative relation," and thus is not instructive. Thus, to add "directly" would add an unstated limitation to the term.

The Court also rejects Newmans' assertions that the specification and drawings support construing "joined" as "directly connected." The Court finds that Newmans' request to include "directly" would import an unclaimed limitation into the term and limit the claim to the preferred embodiment. Finally, the Court rejects Newman's assertion that Floe disclaimed any type of non-directly connected structure in the prosecution history. In particular, Newmans mischaracterizes the patentee's intent by altering the prosecution history quoted in its brief. Additionally, Newmans refers to a statement in the prosecution history that addressed Claim 11, not Claim 1. Thus, the Court finds that this evidence does not constitute a disclaimer.

A. Term 1: "affixed," "joined," and "connected"

The parties have agreed to treat the terms "affixed," "joined," and "connected" as essentially synonymous and have identified these terms, taken together, as the first disputed term to be construed. Am. JCCS Sched. B at 1. For the reasons given below, the Court does not believe that these terms need to be construed; instead, the Court construes the claims of the '291 patent as follows:

The phrase "first and second occluding disks" means "physically distinct and separate first and second occluding disks."

The phrase "first and second disks" means "physically distinct and separate first and second disks."

All of the claims of the '291 patent relate to a device with "first and second occluding disks" or "first and second disks." Independent claims 1, 24, and 30 are device claims drawn to a device with "first and second occluding disks." Independent claim 17 is a method claim that includes the step of "selecting a closure device comprising first and second occluding disks." And independent claim 28 is a method claim that includes the step of "providing a closure device comprising first and second disks." The remaining claims depend from one of these five independent claims and thus include the limitations found in the independent claims.

3 Claim 28, as originally proposed, referred to "a closure device comprising first and second occluding disks," as does claim 17. JA 376. Claim 28 was later amended and the word "occluding" was stricken. JA 418. Neither the patentee nor the examiner specifically discussed this amendment.

Different claims use different terms to describe the relationship between the first and second disks. Some claims use forms of the word "affix"; others use forms of the word "join"; others use forms of the word "connect"; and some use more than one of these words. 4 Specifically (relevant words italicized):

According to claim 1, "each disk compris[es] a . . . membrane," and "a central portion of the membrane of the first disk [is] affixed to a central portion of the membrane of the second disk to define a conjoint disk . . . ."

Claim 4 refers to "the affixed central portions of the membranes," which "define a generally circular conjoint disk."

Claim 17 says that "a portion of the structure of the first disk [is] joined to a portion of the structure of the second disk by
Claim 23 says that "a central portion of the flexible structure of the first disk [is] affixed directly to a central portion of the flexible structure of the second disk to define said conjoint disk . . . ."

Claim 24 says that "a portion of the membrane of the first disk [is] joined to a central portion of the membrane of the second disk," and then refers to "the affixed central portions of the first and second disks."

Claim 25 refers to "the joined central portions of the first and second disks," which "comprises [sic] a conjoint disk."

Claim 28 says that "a portion of the first disk [is] connected to a portion of the second disk by a tubular segment . . . ."

Claim 30 says that "a central portion of the membrane of the first disk [is] affixed to a central portion of the membrane of the second disk by a tubular segment . . . ."

4 Some claims more precisely describe the relationship between the two disks. Claim 2 provides that "the central portions of the membranes are bonded directly to one another to define the conjoint disk." Claim 5 provides that "the central portions of the first and second membranes are sewn together to define the conjoint disk." Claim 6 provides that "the central portions of the first and second membranes are fixed to one another by a biologically compatible adhesive."

These particular terms -- "bonded," "sewn," "fixed" by adhesive -- are not in dispute. But they support the Court's claim construction because they all suggest that the two disks are physically distinct things that must somehow be joined to one another.

The Court agrees with the University that these words are ordinary English words, used in their ordinary sense, and therefore do not need to be construed. See Univ. Opening Br. at 15-16 [Docket No. 68]. The essence of AGA's argument, however, is not that the words themselves are unclear and need to be construed. Rather, AGA argues that these words carry a clear implication that should be made explicit.

AGA proposes making this implication clear by construing "being affixed to," "being joined to," and "being connected to" to mean: "Two physically discrete and separate disks are physically connected to one another." Am. JCCS Sched. B at 1; AGA Opening Br. at 18 [Docket No. 65]. Such a construction is, of course, impossible: "being affixed" and the like are present-participial phrases functioning as adjectives, and an adjective cannot be construed as a sentence any more than it can be construed as a noun. 5 Further, AGA has failed to explain why the ordinary English words "affixed," "joined," and "connected" as used in the '291 patent are so unclear that the Court should construe them.

5 For instance, "happy" (adjective) cannot be construed to mean "joy" (a noun) or "a person is smiling" (a sentence).

But AGA's central point -- that the '291 patent covers a device with physically separate disks, and that this property of physical separateness is entailed by the patent's use of the words "affix," "join," and "connect" -- is well taken. To begin with, this fact of separateness follows from the ordinary meaning of these words -- the very meaning that the University ascribes to them. Univ. Opening Br. at 15-16. Specifically, the third edition of the American Heritage Dictionary ("AHD Third") defines "join" to mean "[t]o put or bring together so as to make continuous or form a unit: join two boards with
SYNONYMS: join, combine, unite, link, connect, relate, associate. These verbs mean to fasten or affix or become fastened or affixed. Join applies to the physical contact, connection, or union of at least two separate things and to the coming together of persons, as into a group . . . . Combine suggests the mixing or merging of components . . . . Unite stresses the coherence or oneness of the persons or things joined . . . . Link and connect imply a firm attachment in which individual components nevertheless retain their identities . . . .

Id. Similarly, the note on synonyms following the entry for "join" in Webster's Third New International Dictionary ("Webster's Third") says:

Although they are used to signify a more specific union, link, connect, join, and conjoin in their nonphysical application may suggest a bringing or coming together as general and unspecified as that implied by relate or associate but tend more, esp[ecially] in physical application, to signify a junction of some kind, often an inseparable junction as by a chain or by bonding. Connect is the most general of these four and suggests a loose attachment, esp[ecially] one that preserves the identity of the elements and the evidence of the connection . . . . Link suggests a slightly closer coupling esp[ecially] in the physical application of the word in which is implied inseparability but of still clearly identifiable separate elements . . . . Join usu[ally] suggests strongly the idea of physical or moral contact or junction or the making of a continuity of two or more things . . . .
The Court's claim construction is also supported by the use of the term "conjoint disk" throughout the '291 patent. The specification uniformly describes the "conjoint disk" as something that results from bringing together the first and second disks. See, e.g., '291 patent col. 3:17-20 ("The affixed central portions of the two membranes define a central 'conjoint disk' of the device . . . .").

Finally, both the domestic and foreign prosecution history of patents related to the '291 patent indicate that the terms "joined," "affixed," and "connected" have their ordinary meaning, a meaning which entails that the things being "joined," "affixed," or "connected" are physically distinct and separate things. In pursuing the first patent application in this family -- application 07/822,951 -- the University said: "A septal defect closure device of the invention utilizes two disks which are each formed of a membrane and a frame. . . . [A]pplicant attaches the membranes of the two disks essentially directly to one another . . . ." JA 976. In referring to "two disks" that "each" had the same components and that were attached "to one another," the University was plainly describing a device made by bringing together two similar, separate, physically distinct disks.

Further, in connection with an application to the European Patent Office for a patent on a device like the one covered by the patents-in-suit, the University distinguished its claimed invention from a Russian device by saying:

[The Russian device] has flanges . . . made in one piece with a tubular part . . . . Each flange is equipped with a resilient element . . . . This arrangement certainly does not comprise two disks with a central portion of a first disk being affixed to a central portion of the second disk as required in the main Claim [of the University's application].

Vandenburgh Decl. [Docket No. 66] Ex. 8 at AGA_PROD084893-94 (emphasis in original). This particular piece of extrinsic evidence, standing alone, would not be dispositive, because the Russian device being distinguished in the quoted passage differs in two ways from the patentee's device: The Russian device is both tubular and made in one piece. But the University emphasized -- as it did in prosecuting the patents in suit -- the "two disks" that make up the University's patented device.

In short, a person of ordinary skill in the art (or, for that matter, anyone of ordinary skill in the English language) would read the '291 patent as covering only a device made up of two physically separate disks that are attached to one another. The University admits that the words "joined," "affixed," and "attached" should be given their ordinary meaning. The University must therefore also accept that those words carry their ordinary implications, particularly since nothing in the '291 patent or its prosecution history suggests otherwise. It follows that the "first and second" disks referred to in the '291 patent's claims must be physically distinct and separate disks.

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a. the first and second flexible printed circuit boards are joined by hot bar soldering

LGD contends that this term describes a process by which the circuit boards are joined, and is thus, a process limitation. LGD contends that the term "the first and second flexible printed circuit boards are joined by hot bar soldering" means
both flexible printed circuit boards are connected to each other by a soldering process where the circuit boards are heated with a bar to melt the solder at multiple points simultaneously along each circuit board while pressure is applied to the connection.

D.I. 1388 at P 541.

In response, AUO contends that this term is not a process limitation, but a structural limitation. In this regard, AUO contends that claim 1 does not include any of the typical product-by-process language and is a pure product claim defined solely by structural limitations. Thus, AUO contends that "joined by hot bar soldering" means "joined by solder material." D.I. 1384 at 45. Alternatively, AUO contends that if this term is construed as a process limitation, it should be construed as the first and second printed circuits made on flexible film are joined by a soldering process where the solder and flux are applied to the contact area and the contact area is heated with a bar to melt the solder.

D.I. 376 at Exh. 0-4. AUO contends that LGD's construction is overly narrow, because hot bar soldering does not require "pressure" beyond that which is necessary to hold the two items being soldered together and does not require melting solder at "multiple" contact points.

"Courts must generally take care to avoid reading process limitations into an apparatus claim . . . ." Baldwin Graphic Systems, Inc. v. Siebert, Inc., 512 F.3d 1338, 1344 (Fed. Cir. 2008). "Even where terms are amenable to interpretation as a procedure of manufacture, apparent 'process' terms should be interpreted as structural limitations when used in an adjective non-process sense and define a physical characteristic of the apparatus." R2 Medical Sys., Inc. v. Katecho, Inc., 931 F. Supp. 1397, 1425 n.5 (N.D. Ill. 1996) (citing 2 Donald S. Chisum, Patents § 8.05 [5], at 8-96 (1994)); Biacore v. Thermo Bioanalysis Corp., 79 F. Supp. 2d 422, 456 (D. Del. 1999) ("The mere use in a claim of structural or characterizing terms derived from processes or methods, however, does not prevent a claim from being considered a true product claim.")

Considering the claim language in light of the specification and prosecution history, the Court concludes that the limitation "joined by hot bar soldering" does not amount to a process limitation, but instead describes the structural relationship between the first and second flexible printed circuit boards. Claim 1 of the '506 patent was distinguished over the prior art based on the limitation requiring that solder material join the two flexible printed circuit boards rather than a foldable flat cable. AUO-12 at AUO-LGD 1948. Thus, the Court views the soldering described in this claim as a structural limitation. Accordingly, the Court construes the phrase "first and second printed circuit boards are joined by hot bar soldering" to mean that the "first and second printed circuit boards are joined by solder material." 3

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3 Even if the Court concludes that this phrase is a process limitation, the Court concludes LGD's proposed construction is too narrow. In reaching this conclusion, the Court credits the testimony of Dr. Silzars regarding the hot bar soldering process. Specifically, Dr. Silzars explained that hot bar soldering requires applying a hot bar to a solder joint. However, this does not require that multiple joints be soldered simultaneously, and the Court finds no support for this additional limitation in the patent specification or prosecution history. Tr. 320:19-322:11, 336:11-18 (Silzars).

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1. first and second circumferentially extending walls, said first and second chuck walls forming a juncture therebetween, said can end comprising: ('826 patent, claim 13);

providing a rotatable chuck comprising first and second circumferentially extending walls, said second chuck wall depending from said first chuck wall so as to form a juncture therebetween; ('875 patent, claim 50)

Crown's proposed construction is "[f]irst and second walls encircling the chuck forming a place between them at which they meet." 11 Rexam's proposed construction is "[w]hen looking at a cross section of a seaming chuck, an upper wall and a
lower wall of a seaming chuck (also referred to as the first and second walls) meet at a point (juncture) to form a distinct angle." 12

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11 D.I. 325 at 1-2.

12 Id. In the parties' stipulation regarding claim terms which were, and were not, still in dispute, submitted after the Markman hearing, the parties each had slightly different verbiage for their proposed constructions regarding the juncture of the seaming chuck walls recited in claim 13 of the '826 patent and claim 50 of the '875 patent. See Id. at 9. Despite those slight variations, the parties' proposed construction for each of these claims maintained the primary differences described above and the court will construe the seaming chuck wall "juncture" limitations consistently for both claims.

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Crown's proposed construction is adopted by the court. The primary difference between the parties' proposed constructions of these terms with whether the juncture at which the first and second chuck walls meets is a point or a place, with Rexam's proposed construction requiring the juncture forming "a distinct angle."

Neither the claim language nor the specification indicates that the "juncture" between the first and second chuck walls is defined by a "point to form a distinct angle" as Rexam proposes. 13 Indeed, the common specification contradicts Rexam's proposed construction. In table 4, the chuck walls are described as meeting at a "sharp transition" or a "blend [radius]," R, of 0.5 millimeters. 14 The common specification also recites:

Typically:--As shown in FIG. 8 the chuck comprises a cylindrical land of length 'l' typically 1.9 mm (0.075") and frustoconical drive surface 32 inclined at an angle Y [degree], typically 43 [degree], to the cylindrical [land] to which it is joined by a radius R typically 0.5 mm (0.020"). Angle "X" is typically 90 [degree]. 15

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13 The only time "juncture" is mentioned in common specification is the description of figure 5 that "[f]urther drive is obtained at the juncture of chuck wall 32 and cylindrical wall 33 . . . ." '826 patent, 4:63-64.
14 '826 patent, 7:35-38.
15 '826 patent, 8:9-14. The court disagrees with Rexam's assertion that the blend radius is neither a chuck wall nor a juncture. The blend radius is a juncture, or place, where one chuck wall (the "cylindrical land") meets a second chuck wall (the "frustoconical drive surface 32").

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The word "juncture" is not defined in the common specification and the court declines to narrowly construe the disputed term as proposed by Rexam. Crown's proposed construction encompasses both a point at which a distinct angle is formed where the first and second chuck walls meet (a "sharp transition") and a place where the first and second chuck walls meet (a "blend radius"). The court, therefore, agrees that the proper construction of these disputed claim terms are: "first and second walls encircling the chuck forming a place between them at which they meet."

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9. Terminating...Just After...Full Saturation

The meaning of the word "terminating" is in dispute. It appears in the following context: "terminating the introduction of concentrated detergent solution into said wash chamber just after said fabric has reached a full saturation level at said spin speed." ('370 patent, claims 8, 15.)
Whirlpool seeks the following construction: "This claim step means that the introduction of concentrated detergent solution into the wash chamber is stopped shortly after the fabric reaches a full saturation level at the spin speed. Full saturation at the spin speed means that the fabric has absorbed an amount of detergent solution to come to equilibrium with respect to detergent solution retention at the particular spin speed. There is no requirement that the introduction is terminated for any particular reason."

LG argues for the following construction: "Terminating the introduction of concentrated detergent solution (i.e., not fresh water) into the wash chamber just after sensing that the fabric in the wash chamber has reached a full saturation level at the recited spin speed (i.e., not as a result of maintaining a predetermined liquid level in the wash chamber).

LG does not dispute Whirlpool's interpretation of the phrase "just after full saturation" as meaning "shortly after" the fabric has reached a full saturation level at the recited spin speed. The issue is whether the claim contains the limitation that the termination not be the result of maintaining a predetermined liquid level in the wash chamber.

The Court agrees with Whirlpool that the claim does not include LG's proposed limitation of the word "terminating." The plain language of the claim requires only that the direction of concentrated detergent solution terminate just after the machine senses that the fabric has reached a "full saturation level at said spin speed." Nothing in the claim language limits the word "terminating" to any particular reason or cause, so long as the machine senses that the fabric is fully saturated, and LG has pointed to nothing in the intrinsic evidence suggesting differently. Also, LG does not contest Whirlpool's construction of "full saturation at said spin speed" as meaning that the fabric has absorbed sufficient detergent solution so as to come to equilibrium saturation at that particular spin speed. LG points out that its machine's system of pooling clothes in solution makes it impossible to "sense" whether the clothes are "fully saturated," but that is an argument (perhaps a strong one, given this Court's ruling on the meaning of "sensing") for the infringement case, not for claim construction.

Accordingly, the Court adopts Whirlpool's construction of these claim terms.

D. Juxtaposed

Tessera's proposed construction of "juxtaposed" is "placed close together or side by side." Samsung's proposal is "placed side by side." Joint Claim Construction Statement at B6:1. Samsung contends that each time the term "juxtaposed" is used in the specification, it refers to elements that are "side by side." This is incorrect. Samsung's proposed construction is unnecessarily restrictive and would exclude configurations in which some other layer is placed between the two chips or between the backing element and the first chip. Tessera's construction is consistent with the preferred embodiment of the multi-chip package, shown on Fig. 29 of the '893 patent. There are various lawyers interposed between the chips. '893 patent at 33:16-37. Samsung's construction would exclude this package from the claims. The Court construes "juxtaposed" to mean "placed close together or side by side."

C. Disputed Claim Term - "First and second juxtaposed drain ports"

Oatey asserts that the phrase "first and second juxtaposed drain ports" is clearly and explicitly defined in the specification of the Oatey Patent to mean "an opening or portion of an opening into a passageway for the flow of fluid." Parties' Jt. Cl. Constr. IPS argues that the phrase "first and second juxtaposed drain ports" means that the "ports" are "separate and distinct" openings that are adjacent or near each other - "not two portions of a single opening." Parties' Jt. Cl. Constr. IPS contends that the reference to an alternative embodiment in the specification cannot alter the meaning of what is actually claimed in the patent.

1. The Claim Language - Ordinary Meaning
As noted above, claim construction analysis begins with the claims themselves. See CCS Fitness Inc. v. Brunswick Corp.,
288 F.3d 1359, 1366 (Fed. Cir. 2002). The Court must give those terms the common and ordinary meaning one of ordinary
skill in the art would afford them. Id. There is no suggestion that the phrase "first and second juxtaposed drain ports," or any
of the individual terms used therein have any specialized meaning in the relevant art. Accordingly, and because the briefing
in this matter occurred pre-Phillips, the parties first looked to dictionaries for definitions of the various words used in this
disputed claim. In so doing, the parties agreed that common-use dictionaries, as opposed to technical dictionaries or
treatises, were a fair starting point to determine the common meaning of the words employed in the patent. Especially in
cases such as this, where the terms at issue are readily within the ken of a layman, Phillips neither prohibits the use of
dictionaries, nor counsels against reference to them as a first resort, which the Court now does.

The Merriam-Webster Online Dictionary defines "port" as: "2a: an opening (as in a valve seat or valve face) for intake or
exhaust of a fluid; b: the area of an opening in a cylinder face of a passageway for the working fluid in an engine; also such
as a passageway." www.merriamwebster.com. Most notably, this definition does not state that a port can be a "portion" of a
larger opening. While Oatey concedes that this definition is consistent with the common and ordinary meaning of the term
"port" and that it does not expressly contemplate a "port" being a portion of some larger opening, it asserts that this
definition also does not impose the "separate and distinct" limitations suggested by ISP. 5

5 Oatey also asserts that, although the dictionary definitions do not state explicitly that a port can be a "partial opening," the
definition does not exclude it either. Oatey's Const. Br. At 14. This argument is not particularly meaningful, however. Most
definitions fail to exclude multiple alternatives; the definition of a horse does not expressly exclude other animals, and the
definition of a bed does not expressly exclude a chair, etc. The important question is what a definition includes -- by express
inclusion or express exclusion.

While Oatey may be correct in its reading of the dictionary, the "separate and distinct" limitations arise from other sources,
most particularly from the immediate context in which the term "port" is used. As Phillips instructs, "the claims themselves
provide substantial guidance as to the meaning of claim terms." Phillips, 415 F.3d at 1314. Thus, when construing claim
terms, it is appropriate to look to the context in which the claim term is used and the surrounding text. Arlington Indust. v.
Bridgeport Fillings, 345 F.3d 1318, 1325 (Fed. Cir. 2003) (context of surrounding words must be considered in determining
plain and ordinary meaning); Hockerson-Halberstadt, Inc. v. Converse, Inc., 183 F.3d 1369, 1374 (Fed. Cir. 1999) (stating
that claim construction requires "interpretation of entire claim in context, not a single element in isolation"). Thus it is
appropriate to also look at the ordinary meanings of the other words used in conjunction with the term port -- i.e., "first,"
"second," and "juxtaposed" -- and to examine the manner in which "port" is used in relation to the text surrounding that
term.

The Federal Circuit has explained that use of "the terms 'first' and 'second' is a common patent-law convention to distinguish
between repeated instances of an element or limitation." Free Motion Fitness v. Cybex International Inc., 423 F.3d at 1348
(quoting 3M Innovative Props. Co. v. Avery Dennison, 350 F.3d 1365, 1371 (Fed. Cir. 2003)). The dictionary definitions of
the terms "first" and "second" also support the conclusion that use of those terms is intended to convey a multiplicity of the
element modified by those words -- in this case, the drain ports. The Merriam-Webster Online Dictionary defines "first" as
"preceding all others in time, order or importance" and "second" as "next to the first in place or time, one that is next after
the first in rank." In the patent, the term "ports" is always preceded by the words "first," "second" or "both," again indicating
distinct elements which are either discussed separately, or discussed collectively as two passageways, not as a portion of a
whole. 6

6 The Merriam-Webster Online Dictionary defines "both" as "being the two: affecting or involving the one and the other
"<<both feet>> "<<both his eyes>>." www.merriam-webster.com.
The fact that these first and second drain ports are described as "juxtaposed" to one another further supports the notion that they are separate elements, moreover. "Juxtapose" means "to place side by side." www.merriam-webster.com. There would be no need to define the ports as "side by side" if they were one and the same. If the Court were to accept Oatey's proposition that the meaning of the term "ports" includes a "partial opening," the passageways could overlap at any point in the "oblong opening" referenced in the claims, rendering use of the term "juxtaposed" meaningless. The Court finds that the phrase "first and second juxtaposed drain ports," when read as a whole conveys to the reader -- regardless of their level of skill in the art -- that the patent claims two openings that are identifiable from one another. 7

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7 This conclusion is supported by reference to Oatey's own drawings. Each pictorial referring to "ports" and every reference to "ports" is depicted by identifiable ports 54 and 56. ('850 Patent, col. 3, lines 61-63; col. 4, lines 2-5, 10-14, 26-30, 58-61; col. 5, lines 20-23, 30-34, 35-37, 45-47, 53-56.)

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Other basic principles of claim construction support this conclusion, moreover. Claim 1 provides for "first and second juxtaposed drain ports" as well as a "tailpiece extending completely around both of said drain ports." Claim 5, which depends from claim 1, further provides for "an elongated opening communicating with both of said drain ports" and a "tailpiece" surrounding that "elongated opening." Because the drain ports and the "elongated opening" are defined as acting in communication with one another, a person of ordinary skill in the art necessarily would view the terms "drain ports" and "elongated opening" as distinct elements; it would be nonsensical to describe the drain ports (or the "elongated opening") as "communicating" with themselves (or itself). Because Oatey used different language, moreover, to describe the structure of the tailpiece surrounded, i.e., claim 1 states that the "tailpiece" extends around "both of said drain ports," while claim 5 states that the "tailpiece" surrounds the "elongated opening," there is a presumption that there is a difference in meaning between the two terms or phrases and, thus, that the tailpiece is surrounding different things in the two claims. See Tandon Corp. v. United States Int'l Trade Comm'n., 831 F.2d 1017, 1023 (Fed. Cir. 1987) (noting that claim differentiation presumes a difference in meaning and scope when different words or phrases are used in separate claims). If the Court were to accept Oatey's position that "drain ports," as used in claim 1, are actually just portions of the "elongated opening" of claim 5, the limitations in the two claims would be the same -- i.e., both claiming one oblong opening surrounded by a tailpiece through which fluid flows. That construction would mandate the conclusion that claim 5 is no narrower than claim 1, from which it depends. That result would impermissibly read one or the other of those claims out of existence. See Innova/Pure Water, Inc. v. Safari Water Filtration, 381 F.3d 1111 (Fed. Cir. 2004) (noting that dependent claims narrow independent claims). 8

Put simply, Oatey's invitation to read "first and second juxtaposed drain ports" and "elongated opening" as one and the same would require the Court to ignore significant aspects of Oatey's claim drafting.

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8 Oatey also resorts to the principle of claim differentiation in support of the proposed reading of the claims. Oatey asserts that IPS' proposed reading of claim 1 is too narrow, and limits claim 1 to the embodiment of the invention contemplated in dependant claim 6, where the drain ports are used in conjunction with a test cap. IPS's proposed reading of "first and second juxtaposed drain ports" in claim 1 as two separate passageways does not demand that those passageways be defined only by the test caps disclosed in claim 6, however. The passageways of claim 1 can be "separate" whether or not a test cap is used to define that separation.

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2. Oatey as its own lexicographer.

Oatey asserts that, even if IPS's reading of the claim language were otherwise correct, the Court should ignore that reading and adopt Oatey's alternative construction for that language. This is so, Oatey claims, because Oatey asserts that it acted as its own lexicographer by defining the claim term "drain port" to be an "opening or a partial opening." Essentially, Oatey asserts that it used the specification to define away any "separate and distinct" character to the drain ports which use of the phrase "first and second juxtaposed drain ports" might otherwise convey. 9

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The specification in the '850 patent does state more than once that "it should be understood that the test cap 52 may be omitted and the oblong opening 50, in combination with the tailpiece 22, may instead define the drain ports 54 and 56." '850 Patent, col. 4, lines 23-26. While Oatey concedes that this language does not explicitly redefine the claim term "port" to mean a "partial opening," Oatey asserts that it did so by implication and the Court is bound by Oatey's description of its own invention. Presumably, Oatey would contend that Phillips' emphasis on the importance of the specification to a proper reading of claim language lends further support to this argument.

Oatey's lexicographer argument has two prongs. First, Oatey asserts that a patentee can be its own lexicographer by defining a claim term by implication, and second, that by defining an alternative embodiment of its invention, Oatey did just that - impliedly redefined the term "drain ports" as used in claim 1 to include a "partial opening" of a larger single structure.

It is true that a claim term may be redefined in a specification "by implication." In Bell Atlantic Network Services, Inc. v. COVAD Comm. Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001), the Federal Circuit held that "when a patentee uses a claim term throughout the entire patent specification, in a manner consistent with only a single meaning, he has defined that term "by implication."" Id. at 1271. In other words, the written description of the preferred embodiments "can provide guidance as to the meaning of the claims, thereby dictating the manner in which the claims are to be construed, even if the guidance is not provided in explicit definitional format." Scimed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1344 (Fed. Cir. 2001). Following this principle, the Federal Circuit repeatedly has found that a claim term which appears otherwise broad on its face may be narrowed by implication where the specification makes clear that the patentee intended to give that term the narrower meaning. See, e.g., Nystrom v. Trex Co., 424 F.3d 1136, 1145 (concluding that the term board could not be afforded a broad meaning, despite support in dictionary for same, because specification consistently limited use of the term board to mean a wood board).

Accepting Oatey's initial legal proposition as true, however, does not require acceptance of Oatey's conclusion that the '850 fits within the bounds of that proposition. Oatey neither used a definitional format within its specification (as it concedes) nor impliedly redefined the term drain ports through consistent and clear use of that term in the specification. Notably, all of the cases upon which Oatey relies are cases where the Federal Circuit concluded that a careful reading of the specification mandated the conclusion that a claim term should be afforded a meaning which is narrower than the broadest dictionary definition or "ordinary meaning" which might otherwise attach to that term. See Nystrom, 424 F.3d at 1145 (intrinsic record may narrow the range of "ordinary meanings" which may be afforded a particular claim term where it is clear no alternative meaning was contemplated); see also Aquatex Industries, Inc. v. Technical Solutions, 419 F.3d 1374, 1380 (Fed. Cir. 2005) (context of specification can make clear that patentee did not intend term to have broader meaning even where such broader meaning is not expressly disavowed).

Oatey has not cited this Court to a single case (and this Court has not found one) where the Federal Circuit relied on the specification to find an implied broadening of a claim term whose ordinary meaning is otherwise clear. The absence of supportive case law is particularly telling, moreover, when one considers that Oatey not only seeks to broaden its chosen claim terms by reference to its specification, but seeks actually to rewrite them so as to exclude those chosen terms.

At the Markman hearing, Oatey conceded (as it did repeatedly in its brief) that, rather than redefine the term "ports," the specification disclosed alternative embodiments to the invention -- one using "ports" and one not using "ports": "The patent discloses specifically the drain ports to be one of two embodiments or two different embodiments." (Tr. at p.6). Thus Oatey concedes that it is not asking this Court to use the specification to help it define the term "port," it is asking the Court to read the term "first and second juxtaposed drain ports" out of the claims. Essentially, Oatey argues that the Court should not import limitations from the chosen claim terms into the specification. While Phillips may have done much to raise the stature of the specification in the claim construction process, it did not go that far. Indeed, as noted above, the exercise in which Oatey asks this Court to engage in is inconsistent with very basic principles of patent law, none of which have been changed by Phillips. See McClain v. Ortmayer, 141 U.S. at 424 (specification may be referred to in order to limit a claim, but can never be relied upon to expand it.); see also SRI International v. Matsushita Elec. Corp., 775 F. 2d 1107, 1121 n. 14 (Fed. Cir. 1985) ("Specifications teach. Claims claim.").

Oatey's position is similar to that of the patent holder in Johnson v. Johnston, supra, where the specifications recognized certain alternative forms of the invention, but the claims did not embody them. The Federal Circuit concluded that patent holders must bear the cost of their own failure to seek protection for foreseeable alterations of their claimed structure. Id. at
1059. Quite simply, acknowledgment of a possible alternative structure in the specification is not the same as claiming that alternative structure. Oatey chose its claim language; it may not use its specification to now "imply" it out of existence.

Ultimately, the Court concludes that when Oatey claimed "first and second juxtaposed drain ports," it claimed two separate identifiable physical elements that are adjacent or near each other. The Court construes the claim language accordingly.

9 While the parties' briefs debate the meaning of the terms "in said bottom wall" and "integrally formed", the parties did not address these terms at the Markman hearing and, as noted, conceded at the hearing that the Court's construction of the single term addressed in this opinion would resolve the parties' dispute. Consistent with the principle that the Court is only to construe those terms whose meanings are in dispute, the Court does not address those additional two terms here. See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc., 200 F.3d 795, 803 (Fed. Cir. 1999) (explaining that "only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy." (citation omitted). Should the parties deem it necessary to do so, the Court is prepared to issue a supplement to this Order addressing those terms.

B. Separable From and In Juxtaposition

The '078 Patent provides that the "rigid plate" should be "separable from" the second frame member to allow the bag to move from its contracted to its expanded position. (Col. 7, lines 64-67.) Paragon argues that in order to be "separable from" the frame, the plate must be adjacent to the frame. (Def. Reply at 4.) The Court disagrees. Separation is relative, and given its plain meaning, "separable" does not imply attachment nor adjacency. Even if two components are not near each other, they can still be separated further and could be described as "separable." However, "separable from" must be read in context of the entire claim, which states that the plate must be "separable from" the frame between positions in which the plate is "in juxtaposition" with the frame. The real issue is not what "separable from" means but rather what "in juxtaposition" means.

Paragon points to language in the specification that describes the plate as "slidably overlying" the frame members (col. 2, line 11), to figure 7 in the patent that shows plate 82 in relation to the frame members, and to the "side by side" language in dictionary definitions of juxtaposition, and argues that "in juxtaposition" should be read to mean "adjacent and parallel." (Def. Mem. at 6.) Briggs & Riley argues that "in juxtaposition" simply means near or close to, rather than adjacent. (Pl. Mem. at 12.) Paragon would have the Court narrow the ordinary meaning of juxtaposition, while Briggs & Riley generally supports the ordinary meaning.

The primary definition of "juxtaposition" is "the action of placing two or more things close together or side by side, or one thing with or beside another: the condition of being so placed." OED available at http://www.oed.com. Briggs & Riley is correct that generally stated "juxtaposition" simply means near. Paragon's narrower "adjacent and parallel" definition is not supported by the plain language, the claim, the specification, nor the prosecution history. Adjacent simply means "lying near or close to; adjoining; continuous bordering." OED available at http://www.oed.com. Briggs & Riley objects to "adjacent" to the extent that it implies contact. (See, e.g., Pl. Mem. at 12 (objecting to a requirement of "immediately adjacent to or attached to").) However, the plain meaning of adjacent, while it does not preclude contact, does not require it. To the extent that "adjacent" is consistent with juxtaposition," it is not objectionable.

The specification makes clear, however, that the plate need not be "parallel" to the frame (and indeed, ordinarily cannot be precisely parallel). The invention requires fastening means such as fastex buckles or velcro and describes how the plate "slidably overlies" these fasteners. (Col. 4, lines 11-40.) The presence of these fastening means between the plate and frame in the bag's contracted position would necessarily raise the plate at a slight angle. By the Patent's terms, the plate need only generally "extend in a plane perpendicular to the frame members." (Col. 3, lines 62-63.) Moreover, contrary to Paragon's suggestion, nothing in the prosecution history requires that the plate be parallel. The amendments made during the patent process to include "slidably overlies" and "in juxtaposition" were designed to distinguish the covered invention from an existing bag whose stiffening members pivoted into the bag's interior to lay flat in the bottom of the case. (Tr. at 28.) These
amendments do not require that the plate be exactly parallel to accomplish the intended improvement over prior art by allowing a user to expand the bag while packed with minimal disturbance to the bag's contents, but need only be secured so as not to pivot except slightly as described in the specification (col. 5, lines 4-10).

Accordingly, the intrinsic evidence dictates that "in juxtaposition" should be given its ordinary meaning of two or more things placed close together or near.

Claim Construction

In this case, the question of infringement turns primarily on the interpretation of the phrase "Kaufman-type ion beam source" in claim 1 of the '849 reissue. Litton contends that the appropriate interpretation of "Kaufman-type ion beam source" encompasses any broad-beam, multi-apertured, gridded ion beam source. Litton's proposed construction, however, is inconsistent with the prosecution history of the '849 reissue. See York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1575, 40 U.S.P.Q.2d (BNA) 1619, 1624 (Fed. Cir. 1996) ("In a literal infringement analysis, prosecution history is relevant to claim coverage."); see also Howes v. Medical Components, Inc., 814 F.2d 638, 645-46, 2 U.S.P.Q.2d (BNA) 1271, 1275-76 (Fed. Cir. 1987).

In the course of prosecuting the '849 reissue, Litton argued that the term "ion beam source" in its original claims could not "properly be construed to refer to any other ion beam gun but the Kaufman gun." Paper No. 15 at 8. Moreover, a declaration accompanying Litton's remarks plainly stated: "Those skilled in the coating arts . . . would reasonably construe these claims to refer . . . only to the Kaufman-type ion-beam guns referred to in the specification of this application." Paper No. 16 at 7. Thus, Litton defined "ion beam source" to mean only the Kaufman-type gun. This definition acquires even more credibility when Litton later amended its claims to cover a "Kaufman-type ion beam source." If, as Litton insisted, one of skill could only construe the broad term to mean a Kaufman-type gun, certainly the specific term encompasses nothing more.

At column 4, lines 44-57, the reissue's specification describes a Kaufman-type ion beam source:

The ion beam gun 4 is a commercially available ion emitting apparatus generally known in the art as a Kaufman [sic] type ion beam gun. The gun's cathode 6 is a thermionic emitter, i.e., it emits electrons by passing an electric current through it which heats the wire. The cathode 6 emits electrons which are accelerated towards the anode 8. The electrons being accelerated from the cathode to the anode strike argon atoms and in so doing dislodge electrons from the argon. The results are positively charged argon ions which are accelerated away from the anode and towards the grids 12 and 14. Permanent bar magnets 10 attached to the anode introduce a magnetic field into the area between the cathode and the anode . . . (Emphasis added.) Thus, this court interprets the phrase "Kaufman-type ion beam source" to include a thermionic (hot-wire) cathode, an anode, grids, and magnets.

This court detects no legally significant distinction between the phrases, "Kaufman-type ion beam source" and "Kaufman-type ion beam gun." During the prosecution of the reissue, Litton used the terms "gun" and "source" interchangeably. For example, in response to one of the examiner's rejections, Litton stated: "Applicants need not add the words 'Kaufman gun' or 'Kaufman source' to claim 1 because claim 1 cannot properly be construed to refer to any other ion beam gun but the Kaufman gun." Paper No. 15 at 8.

In sum, after consideration of the primary sources for construing patent claim meaning, this court interprets the phrase "Kaufman-type ion beam source" to encompass any ion beam gun with the four stated components: a hot-wire cathode, an anode, grids, and magnets.
Plaintiffs propose for the above terms the following construction: "an element that protrudes or projects from the surface of another element and that can engage or actuate another mechanism or element." "Keys is the plural of key." Defendants propose the following construction: "projection attached to the second end cap at the cylindrical portion or the annular base or both." Defendants construe "Keys" as "projections attached to the second end cap at the cylindrical portion or the annular base or both." Plaintiffs argue the specifications do not limit the keys to any particular size or shape. Baldwin wants limiting language requiring the keys be connected to the cylindrical portion, annular base or both. The claims do not place this requirement on the keys according to Plaintiffs. Plaintiffs cite to claims 1 & 7 of the 692 patent, wherein the keys are fixed to and supported by the second end cap and not the annular base or cylindrical portion or both. Defendants contend every figure in the patent shows the keys attached to the cylindrical portion or annular base.

The Wix Court

The Wix Court construed keys as "protrusions that unlock or release a latch device and also engage or actuate valve device."

The Court's Construction

The parties main dispute in the construction question before the Court is not predominately what the keys do, rather, it regards whether they are required to be attached to the cylindrical portion, annular base or both. The Wix Court did not construe, nor does it appear, the parties sought a limitation regarding the placement of the keys.

In the Abstract, the keys are described as part of the valve-actuating portion, and "spaced around the annular base and projecting radially inward from the cylindrical portion and axially outward from the base." '623 patent, Abstract. The specifications describe the position of the keys in the Detailed Description as

[a] plurality of keys, as at 116, are provided internally of the valve-actuating portion 102 extending axially outwardly from the second central opening 110 and flat annular base 108 toward the first central opening 101. . . . Each key has one radially outer edge attached directly to the cylindrical portion 104 and another axially inner edge attached directly to the annular base 108, although the keys could be attached to just one of these elements." Id. at col. 8, ins. 43-55.

The Summary of the Present Invention and Detailed Description sections of the specification place the keys:

internally of the cylindrical portion of the lower end cap . . . . [which] includes an annular base dimensioned to fit within the cylindrical portion, and a plurality of thin, flat keys projecting axially away from the annular base." Id. at col. 3, ln. 66-col. 4, ln. 3; see also id. at col. 8, ins. 43-44 (keys are "provided internally of the valve-actuating portion (102)).

According to Defendants, "Every figure of the '692 and '623 patents that shows the valve-actuating portion and keys illustrates the keys as being attached within the interior of the valve-actuating portion, to either the cylindrical portion, the annular base, or both. Id. at Figures 1, 2, 4, 5, 6, 7, 17, and 18.

However, federal case law holds that while the specification may make clear that a claimed invention is narrower than the claim language, see Alloc, Inc. v. Int'l Trade Comm'n, 342 F.3d 1361, 1370 (Fed. Cir. 2003), ultimately, because it is the claims of the patent that define the scope of the patent invention, a construing court must be careful not to read into the claims limitations that may appear in the specification. See Interactive Gift, 256 F.3d at 1331-32. Keeping these principles in mind, the Court finds that Baldwin's proposed construction of key and keys limiting their placement on the cylindrical portion or annular base is a limitation imported from a specific embodiment that is not so limited in the claims themselves. Therefore, the Court adopts the Wix description without the additional limitation of attachment to the annular base or cylindrical portion sought by Defendant.

I. "Kit"

The first step in claim construction is to look at the language of the claim itself. Bell Atlantic, 262 F.3d at 1267. Claim terms are given their ordinary and accustomed meaning as understood by one of ordinary skill in the art.Id. Dictionary definitions
may be examined to determine a claim term's ordinary meaning. CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002). Here, dictionary definitions support both parties' interpretations of the term "kit." For example, "kit" can be defined as "a set of parts to be assembled," which does not imply a container requirement, but it can also be defined as "a packaged collection of related material." Webster's Ninth New Collegiate Dictionary 663 (1991). Zimmer points to a dictionary defining "kit" as "a collection of equipment and often supplies typically carried in a box or bag." Webster's Third New International Dictionary 1246 (1986). While DePuy correctly notes that the term "typically" in that definition means that a box or bag is not required to turn a collection into a kit, it also implies that the ordinary and accustomed meaning--the way the term is typically used--includes a common container. Thus, reference to dictionary definitions here is inconclusive as to the ordinary meaning of the term "kit."

When there is more than one ordinary meaning for a claim term, the patent specification serves to point away from improper meanings and toward the proper meaning. Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998). Here, the specification points to the basic definition of "kit" as "a set of parts to be assembled." For example, the specification describes the kit as consisting of stem members, body members, and head members that are "separate components … adapted to be assembled together to form a custom prosthesis." (3:8-13.) The specification repeatedly refers to the assembly of a prosthesis from the parts in the kit, but fails to mention a common container for the parts. Even when specifically describing the "kit concept" and the "kit form," the patent explains only that the benefits of such a concept or form include a reduction in the inventory required to be maintained by a hospital and increased flexibility by providing for assembly of a prosthesis that may otherwise be unavailable. (3:50-55.) There is no indication that the kit concept or kit form includes a common container. Because the term "kit" in the claim has more than one ordinary meaning, but the specification points only to the ordinary meaning of "a set of parts to be assembled," that is how I construe the claim. The parts are not required to be collected in a common container.

c. The disputed term in Claim 26: "Knit lines"

i. Claim language. The next claim term in the '909 patent that is "in dispute" at this time is in Claim 26. That disputed claim term is "knit lines." Claim 26, with the disputed term highlighted, states the following:

26. The plastic washing machine basket of claim 25, wherein the basket lacks knit lines on the inner surface.

The '909 patent, Claim 26 (emphasis added).

Although Maytag identified "knit lines" as a term "in dispute" in the Corrected Joint Claim Construction Statement (docket no. 67), at 8, Maytag offered no argument in support of its construction of this term in its initial Markman brief. Instead, Maytag argued in its rebuttal brief that "knit lines" is not a term in dispute for infringement purposes, because Maytag is not even asserting infringement of Claim 26. In its surrebuttal, Electrolux contended that this claim term is "in dispute" for purposes of its invalidity challenge, even if it is not in dispute for purposes of Maytag's infringement claims. In its tentative draft ruling, provided to the parties prior to the Markman hearing, the court concluded that this term was not "ripe" for construction, because Electrolux had not shown that the term was "in dispute" for infringement or for any other purpose. However, following the hearing, the court revised that conclusion, and found above, in Section II.A. 1.b., beginning on page 36, that this term is also "in dispute" at this time for purposes of Electrolux's "enablement" challenge to the validity of the '909 patent. Therefore, the court must now construe this term, as well.

ii. The parties' definitions and arguments. Pursuant to the court's September 6, 2005, Order (docket no. 61), the parties both offered constructions of this term. The parties' proffered definitions of this term are the following, with bold font indicating differences between their definitions. Again, the authority on which each party relies for its construction is shown just below that party's definition.

"KNIT LINES"

| Maytag's Definition | Electrolux's Definition |
| "a line that visually indicates a defect on a molded plastic article caused by the meeting" | "lines that may or may not be visible to the human eye that form when the molten plastic" |
of two flow fronts during the molding operation"

Maytag's Authority

'909 patent, col. 1, 11, 24-25;
col. 1, 11, 22-25; col. 5, lines 48-56; col. 6, lines 55-59; ProtoMold website

At Markman hearing, Maytag focused on the specification, pointing out that the purposes of the invention are, inter alia, to produce a washing machine basket with a smooth inner surface and to eliminate "knit lines" that "visually indicate defects." Thus, Maytag contends that the appropriate construction of "knit lines" requires a limitation to "visible knit lines" or "knit lines that visually indicate a defect," not "invisible" lines. In response, Electrolux argued that there is no "visible" or "visual" limitation on "knit lines" anywhere in the claims or specifications of either patent. Thus, Electrolux contends that it would plainly be inappropriate to import a "visibility" limitation into the construction of "knit lines." While Electrolux concedes that "knit lines" may be visible, Electrolux argues that nothing in the patent requires that they be so construed.

iii. Analysis. The court, once again, begins its construction of this term with the points of agreement between the parties. The parties agree that "knit lines" are formed when two flow fronts of molten plastic meet during the molding operation, for example, when the molten plastic flows around the core pins. Compare Maytag's definition ("a line that [is] caused by the meeting of two flow fronts during the molding operation"), with Electrolux's definition ("lines that form when the molten plastic flows around the core pins and then solidifies"). Maytag's definition is insufficiently specific in this regard, because it does not explain that the "flow fronts" are the flow fronts of molten plastic, where plastic is the material from which the patented washing machine baskets are made. On the other hand, Electrolux's definition is too specific in this regard, in that it suggests that "knit lines" are only formed by the flow of the molten plastic around the core pins, where there is no such limitation to be found anywhere in the patent. Thus, in it is conceivable that "knit lines" could be formed elsewhere in the plastic washing machine basket, as the mold fills, even if there is only a single nozzle 116 to inject molten plastic into the mold. Thus far, therefore, the court construes "knit lines" to be "lines formed when two flow fronts of molten plastic meet during the molding operation."

The crux of the parties' dispute over the construction of this term, however, is whether or not the "knit lines" must be "visible." While the parties appear to agree that it is impossible, with present technology, to eliminate "knit lines" entirely, Maytag contends that only the "visible" knit lines matter to the claimed invention. It is true that the "Background To The Invention" states, "Knit lines cause reduced structural integrity and visually indicate defects." The '909 patent, col. 1, ll. 24-25 (emphasis added). However, this statement refers to what "knit lines" visually indicate, not to whether "knit lines" are themselves only significant if they are "visible." Indeed, the statement also recognizes that "knit lines cause reduced structural integrity," without any limitation on whether or not the "knit lines" are visible. Furthermore, nowhere else in the patent specification or claims is there any limitation of the "knit lines" in question to "visible knit lines," even where the patent specification or claims refer to "undesirable knit lines," see, e.g., id. at col. 1, ll. 36, 44-45, or to the claimed invention of a plastic washing machine basket that is "without knit lines" or "lacks knit lines." Id. at col. 1, l. 48 & Claim 26. While it is possible, even probable, that the patentee's focus was on "visible" knit lines, because it is or may be impossible, with present technology, to eliminate "invisible" knit lines, that is not what the patentee actually claimed. If the court were to construe "knit lines" everywhere the term appears in the patent to mean only "visible knit lines," the court would be grossly modifying what was claimed.

Finally, while it may be undisputed--and even true--that "knit lines cause reduced structural integrity and visually indicate defects," see id. at col. 1, ll. 24-25, the court finds it unnecessary and inappropriate to import such a limitation into the construction of "knit lines." Even without the possible inappropriate and incorrect suggestion that this statement means that only "visible" knit lines matter in the '909 patent, importation of such a limitation would improperly import or read a limitation from the specification into construction of the claim term. See Playtex Prods., Inc., 400 F.3d at 906 ("The court must take care in its analysis, when locating in the written description the context for a disputed term, not to import a limitation from that written description. It must use the written description for enlightenment and not to read a limitation from the specification [into the construction of the term].") (citing Comark Comms., 156 F.3d at 1186-87). Finally, the consequences of refusing to read a "visible" limitation into the construction of "knit lines"--for example, for purposes of
Electrolux's "enablement" defense--are irrelevant to claim interpretation. See, e.g., PPG Indus., 156 F.3d at 1355 (the inevitable imprecision of patent claims "does not mean that a court, under the rubric of claim construction, may give a claim whatever additional precision or specificity is necessary to facilitate a comparison between the claim and the accused product"); see generally Markman, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (patent claim construction is a question of law for the court that is separate from determination of whether infringement has occurred). Thus, "visibility" of the "knit lines" is simply not part of the proper construction of the term.

Therefore, the court construes the term "knit lines" to mean "lines formed when two flow fronts of molten plastic meet during the molding operation."

D. "L-shaped"

The Court does not find the claim language, specification or prosecution history limit the connector element or member to a part having only two legs, and therefore rejects Defendants' proposed construction requiring that the connector element or member have only two legs. The Court finds the term "L-shaped" is in its simplest form and that Plaintiff's proposed construction does not add any clarity to the term.

The Defendants further request that the Court develop a construction for "engagement member including an L-shaped member." The proposed construction, however, primarily involves Defendants' assertion that "L-shaped" is limited to two legs connected as substantially a right angle. As explained above, the Court does not find that "L-shaped" is limited solely to a part having two legs.

C. "L-shaped"

The Court does not find the claim language, specification or prosecution history limit the connector element or member to a part having only two members joined at a 90 degree angle, and therefore, rejects Defendants' proposed construction, which is: shaped like an L without regard to any particular type font style - i.e., with two linear members that are joined at one end at a 90 degree angle. The Court finds the term "L-shaped" is in its simplest form and that Plaintiff's proposed construction does not add any clarity to the term.

2. "L-Shaped" as used in claims 5 and 6

Plaintiff's proposed construction: "bent from the vertical"

Defendant's proposed construction: "bent at a 90 [degrees] angle"

 Courts's construction: No construction necessary at this time.

Defendant contends that the term "L-shaped" must be construed to have only a 90 [degrees] angle because an "L" is always bent at a 90 [degrees] and because figure 11 in the specification illustrates the "L-shaped" tabs as bent at 90 [degrees] angles. I disagree. As an initial matter, a description or depiction of a preferred embodiment in the specification does not require importing a limitation unless the patent expressly discloses this limitation. Moreover, defendant cites no language in the claim language or specification that identifies an "L-shape" as having to be 90 [degrees]. The closest example defendant identifies is a passage in the specification in which the L-shaped tabs are "bent over to secure the base portion of the bearing members 42 against the lower face fo the platform . . ." '420 Pat., col. 4, lns 32-34. Defendant reasons that because the tab
must be bent over to secure the bearing it can only be at 90 [degrees]. However, defendant offers no evidence that corroborates its reasoning and it is not readily apparent that a tab must be at 90 [degrees] to secure the bearing member to the platform.

At the same time, plaintiff's proposed construction is far too broad and contradicts both the claim language and the dictionary definition of "L-shaped." An "L" is defined as "a shape like that of a capital L." New Oxford American Dictionary, 943 (2d ed. 2005)(emphasis added). Although this definition borders on syllogistic (i.e., an "L" is something like an "L"), it is helpful in that it shows that the common usage of the term does not require an L-shaped tab to be exactly 90 [degrees]. However, if "L-shape" simply meant "bent from the vertical" it could encompass any angle from 0 [degree] to 90 [degrees]. As with defendant's proposed construction, no language in the claim or the specification suggests this interpretation either. In describing the claimed element the patentee choose the term "L-shape" as a means of limiting the possible angles at which the tab could be bent. Because neither party has offered a construction that clarifies the disputed term, I will not construe the term "L-shaped" at this time.

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Claims 6-9 of the '661 Patent

Claims 6, 7, 8, and 9 of the '661 patent further describe the corner piece apparatus. Claim 6 includes a limitation describing "a flange portion . . . with an L-shaped edge portion being offset at an angle less than 90 degrees from the corner section front surface so that said L-shaped edge extends rearwardly in a direction from said corner section front surface to said corner section rear surface." (Emphasis added). The Court construes this language to require the L-shaped portion to extend rearwardly at an angle less than 90 degrees. Further, the L-shaped portion is to extend from the front surface of the corner section to the rear surface of the corner section.

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3. The Proper Construction of the Term of an "L-Shaped Guide Rod" as Used in the Claims of Both the '203 and '885 Patent.

The Parties' Proposed Claim Construction of an L-Shaped Rod. 2

2 Neither party argues that a substantial difference exists between the term an "L-shaped guide rod" used in the '885 patent and the terms an "L-shaped femur guide rod" and an "L-shaped tibia guide rod" used in the '203 patent. In addition, the specification states that the L-shaped tibia guide rod and the L-shaped femur guide rod are identical. ('203 patent, Col. 2, Lines 17-19). Thus, the discussions and arguments concerning the L-shaped rod applies to all three structures.

Defendants assert that a proper construction of the term an "L-shaped guide rod" would be "a slender, integral, round bar with two straight portions joined at 90 degrees to each other in the shape of an 'L'." Defendants emphasize that the rod is made entirely out of one piece.

Plaintiff argues that the term "an L-shaped rod" should be construed to mean the following. "A two portion structure. The first portion is generally the longer portion of the guide rod and is adapted to be inserted into the medullary canal. The second portion is generally the shorter portion of the guide rod and is at approximately right angles to the first portion." Thus, plaintiff emphasizes that one leg of the "L" could be formed by attaching a separate part to the straight rod. Plaintiff argues that defining the "L-shaped rod" by using the term a "bar" contradicts the patent's claims and specification because a "rod" defines one type of structure found in plaintiff's claims and a "bar" describes another type of structure found in plaintiff's claims. Furthermore, plaintiff argues that limitations not expressly appearing in a claim should not be read into
plaintiff's claims.

In support of defendants' construction of an L-shaped rod, defendants submit that the ordinary meaning of the term "rod" is "a slender, straight, round stick or metal bar." Oxford American Dictionary, 786 (1980). Extrinsic evidence such as a dictionary may not contradict the meaning of a term used in a claim. Multiform Desiccants, Inc. v Medzam, Ltd., 133 F.3d 1473, 1478 (Fed. Cir. 1998). In the '885 patent claims, an L-shaped rod, a tibia bar, and a femur bar are three distinct structures found within the claims. (See claims 1, 2, and 4). Moreover, the court finds that the term "rod" is common word possessing a customary meaning. "Words in a claim are generally given their ordinary and customary meaning." Vitronics, 90 F.3d at 1582. Therefore, the court finds that defining the L-shaped rod by using the term "bar" would be inappropriate.

Next, plaintiff argues that limitations not appearing in a claim should not be read into a claim. See, Comark Communications, Inc. v Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998). (Claims are to be interpreted in light of the specification and with a view to ascertaining the invention; however, it does not follow that limitations from the specification may be read into the claims). Plaintiff submits that the limitation of "one integral piece" modifying the term of "an L-shaped rod" does not expressly appear in the prosecution history, the written disclosure, or in the claim language. Thus, plaintiff asserts that the intrinsic evidence imposes no limit on the number of pieces that can be fastened or joined together to make up the claim element of "an L-shaped guide rod." Similarly, plaintiff asserts that the express words of "straight, slender, or round" do not appear anywhere in the claims or in the written disclosure.

Defendants counter by submitting that figures 1a, 2a, 2e, 3, 6, and 7b of the patents do illustrate an L-shaped guide rod bearing all four of those characteristics. The drawings along with the written disclosure and original claims constitute the specification. Vitronics, 90 F.3d at 1584. Therefore, the structures described in the specification including the drawings guides a court in construing the literal scope of the terms used in the claims, but do not restrict the scope to solely those structures. "In construing a claim, a court does not impart additional limitations into a claim from reviewing the specification; rather, the court looks to the specification to aid the court in interpreting the meaning of a term already in a claim." Ethicon Endo Surgery Inc. v U.S. Surgical Corp., 93 F.3d 1572, 1578 (Fed. Cir. 1996). Thus, this Court must examine the claim language in light of the specification to determine the literal scope of the disputed term.

The Language of the Patents' Claims Concerning an L-shaped Guide Rod.

The term, an L-shaped guide rod, appears in claims 1 through 5 of the '885 patent and claims 1, 2, 3, 7, and 8 of the '203 patent. Claim 1 of the '203 patent typifies the term's use in the claims. Claim 1 recites: "Inserting an L-shaped femur guide rod into the medullary canal of the femur, the femur guide rod having a first portion and second portion disposed at right angles with respect to the first portion." (Emphasis added.). Claim 1 of the '885 patent uses the term, an L-shaped guide rod, in a similar manner. Claim 1 recites: "An L-shaped guide rod having a first elongated portion adapted to be inserted into the medullary canal of the femur and a second portion disposed at a right angle to the first portion." (Emphasis added.) Literally, claim 1 recites "An L-shaped *** rod *** to be inserted," which implies that the rod is a single piece with two portions when inserted rather than a multiple piece rod that forms the 'L' shape when the guide member attaches. When two equally plausible interpretations exist of disputed term in a claim, then the court should adopt the narrower interpretation. Athletic Alternatives, 73 F.3d at 1579.

Claim 2 of the '885 patent uses the term an "L-shaped guide rod" in this context. "A femur bar *** being adapted to being mounted on the second portion of the guide rod. Claim 2 supports plaintiff's argument that the patent considers a "bar" a distinct structure from a "rod."

The Specification's Use of an L-shaped Guide Rod.

The specification discloses that "the guide rod has a 90 degree angle bend and is adapted to be inserted into the femur for use in aligning the guide member." ('203 patent, Col. 2, Lines 5-11.) A second identical guide rod is provided along with a tibia adapter and a tibia bar for use with a guide member." ('203 patent, Col. 2, Lines 17-19.) As noted above, the Figures 1a, 2a, 2e, 3, 6, and 7b in the '203 and '885 patents illustrate an integral, straight, slender, and mostly round L-shaped guide rod. The term, "L-shaped guide rod," is pervasively used throughout the specification; yet, the specification neither expressly nor implicitly indicates that the L-shaped guide rod may be formed from two distinct parts fastened together. Similarly, the specification does not expressly or implicitly indicate that the portions of the rod that form the "L" shape may be anything but straight.
The Prosecution History Concerning an L-shaped Guide Rod.

In the prosecution history of the '203 patent, plaintiff did not disclaim any interpretation of the term of "an L-shaped guide rod." Plaintiff told the examiner in his Amendment that "the guide rod includes two portions, a first portion which inserts into the femur and a second portion at a right angle to the first portion. A guide member is affixed to the second portion of the guide rod." Thus, plaintiff merely restated to the examiner the claimed elements that make up the term an "L-shaped guide rod."

Defendants' proposed construction of a "round" L-shaped guide rod is not entirely accurate. The specification describes the L-shaped guide rod as having a threaded portion possessing a flat portion along one side thereof. "The flat portion of the L-shaped rod having sets of measurement marks to indicate the thickness of tibia components." ( '885 patent Col. 5, Lines 37-40.) The described embodiment in plaintiff's patent depicts a rod that is substantially round but also possesses a flat segment on the second portion of the guide rod. (See also Figure 3.) Therefore, defendants' proposed claim interpretation of "a round bar" would not include the specification's described embodiment within the literal scope of the claim. A claim interpretation that would exclude the patentee's device is rarely the correct interpretation. Modine Manufacturing Co. v. U.S. Intern. Trade. Com'n., 518 U.S. 1005, 75 F.3d 1545, 1550 (Fed. Cir. 1996).

Conclusion of the Meaning of an L-shaped Guide Rod.

The court finds that the specification does not use the term "L-shaped guide rod" in a special or unique way. The court finds that plaintiff did not disavow any interpretation of the L-shaped guide rod in his effort to obtain the patent. Therefore, the ordinary meaning of the L-shaped guide rod term to one skilled in the art controls as long as the described embodiment in the patent specification falls within the literal scope of the claim language. The court finds that no express evidence exists in the claims or specification to sustain plaintiff's assertion that the rod may be formed from multiple pieces. Similarly, the court finds that the use of the term "L-shaped guide rod" in the claims does not dictate reading the non-express limitations of "slender" or "round" into the construction of the term. Thus, the court construes the term, "L-shaped guide rod" to possess the following meaning: "an integral rod having two straight portions joined at approximately 90 degrees with respect to each other. One portion of the rod is elongated and used for insertion into the femur or the tibia and the other portion is used for receipt of a guide member."

13. "L-shaped magnet liner"

This term is contained in an independent claim in the 117 patent. 137

As to this term, the Court construes the following meaning: the liner itself is in the actual shape of the letter "L." The specification supports this interpretation: "Fig. 10 illustrates a side view of an L-shaped magnet liner," 138 as does the drawing in Figure 11. Construction of this phrase involves little more than the application of the widely accepted meaning of commonly understood words used in the patent.
D. Laid-Over State

The term Laid-Over State is construed to mean a condition in which the pleats have leg surfaces in intimate contact and pleat heights that are greater than the distance between the outer and inner peripheries of the filter element. This construction, proposed by Cuno, is directly supported by the intrinsic evidence.

The claims do not define the term "laid-over state." The parties agree, however, that, in this instance, the inventors of the patents have acted as their own lexicographers and provided a definition of the term "laid-over state," and that definition is controlling. See Novo Nordisk, 2000 U.S. Dist. LEXIS 3384, at *4. The parties disagree, however, as to that definition. Cuno, citing to the description of the preferred embodiments in the specification, argues that "laid-over state" means "a condition in which the surfaces of the legs of the pleats are in intimate contact and the height of each pleat is greater than the distance between the inner and outer peripheries of the filter element." Pall, citing to the Summary of the Invention, seeks to add the following to Cuno's proposed construction: "(i.e., \([D-d]/2\)) so that the resulting pleat has a height and surface area usable for filtration much greater than that of a conventional filter of the same dimensions."

The Summary of the Invention provides that "[b]ecause the pleats are in a laid-over state or because the height of each pleat is greater than the difference between the outer and inner radii, the height of the pleats is much larger than that of a conventional filter of the same dimensions." '047 patent, col. 2, lines 23-27. In this section, the patent teaches that the term "laid-over state" means a condition in which the height of each pleat is greater than the difference between the outer and inner radii. This condition - laid-over state - involves pleats whose heights are much larger than that of a conventional filter. Further, in the description of preferred embodiments, the inventor explicitly defines laid-over state.

The condition illustrated in FIGS. 2 and 3 in which the surfaces of the legs 11a of the pleats 11 are in intimate contact and in which the height \( h \) of each pleat 11 is greater than the distance between the inner and outer peripheries of the filter element (i.e., \([D-d]/2\) in FIG. 2) will be referred to as a laid-over state.

'047 patent, col. 4, lines 18-23. The inventor expressly and unambiguously defined "laid-over state" as a condition in which the surfaces of the legs of the pleats are in intimate contact and in which the height of each pleat is greater than the distance between the inner and outer peripheries of the filter element. The language that Pall proposes to add to this definition applies to one preferred embodiment - (i.e., \([D-d]/2\)) - and compares its filter to other filters. Since the patentee chose to expressly define this term, such definition controls and the Court declines to include the proposed limitations in the definition. See Aqua Prods., 2007 U.S. Dist. LEXIS 41496, at *6 ("the patentee's definition of the term controls the claim construction over any general meaning for a term") (citing Vitrionics, 90 F.3d at 1582); see also Phillips, 415 F.3d at 1323.

13. "Laminator Apparatus"

The phrase "laminator apparatus" is construed to mean, "Equipment that is used to unite two or more layers of material, such as the core, by the application of heat and pressure."

The specification of the '207 patent notes that the laminator apparatus is used for "the manufacture of plastic cards including at least one electronic element therein." '207 patent, col. 2:16-20, and that it is used to unite the plastic core sheets and the electronic element, col. 4:22-5:5.

Plaintiff proposes that the specifications and the prosecution histories of the Patents indicate that a "laminator apparatus" is "equipment that is used to unite two or more layers of material, such as the core, by the application of heat and pressure." (Pl. Br. at 23-24.) Defendant does not object, so I adopt Plaintiff's definition. (Pl. Br. at 23-24.)

4.1 The Claim Language of Claim 1(b.1)

(b.1) lamp support means located within said reflector means at the base end thereof for supporting a plurality of compact fluorescent lamps substantially equally angularly displaced about said center line within said reflector means between the base end and the light-emitting end thereof,

4.2 Claim Interpretation Analysis: Applicability of §112, P6

A claim limitation may be expressed in means-plus-function format in accordance with 35 U.S.C. § 112, paragraph 6, which reads as follows:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The use of the word "means" "triggers a presumption that the inventor used this term advisedly to invoke the statutory mandate for means-plus-function clauses." York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1574, 40 USPQ2d 1619, 1623 (Fed. Cir. 1996). This presumption may be overcome in two ways. First, "a claim element that uses the word 'means' but recites no function corresponding to the means does not invoke § 112, P 6." Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1302, 50 USPQ2d 1429, 1434 (Fed. Cir. 1999). Second, "even if the claim element specifies a function, if it also recites sufficient structure or material for, performing that function, § 112, P 6 does not apply." Id.; see Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531, 41 USPQ2d 1001, 1006 (Fed. Cir. 1996) ("To invoke § 112, paragraph 6, the alleged means-plus-function claim element must not recite a definite structure which performs the described function."). A claim term recites sufficient structure if "the 'term, as the name for structure, has a reasonably well understood meaning in the art.'" Watts v. XL Sys., Inc., 232 F.3d 877, 880-81, 56 USPQ2d 1836, 1838 (Fed. Cir. 2000) (quoting Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583, 39 USPQ2d 1783, 1786 (Fed. Cir. 1996)). The mere use of the word "means" after a limitation, without more, does not suffice to make that limitation a means-plus-function limitation. Cole, 102 F.3d at 531, 41 USPQ2d at 1006.

In the present case, the "lamp support means" of Claim 1(b) uses the word "means" and thereby presumptively implicates § 112, P6. In addition, the "lamp support means" claim limitation recites a function (for supporting ...), an additional requirement to support the application of § 112, P6. The question then becomes whether this claim element also recites sufficient structure or material for performing that function such that § 112, P6 does not apply. Rodime v. Seagate, supra, 174 F. 3d 1294, 1302. These presumptions can be rebutted if the evidence intrinsic to the patent and any relevant extrinsic evidence so warrant. See, e.g., Cole v. Kimberly-Clark Corp., 102 F.3d at 524, 531, 41 USPQ2d 1001, 1006 (Fed. Cir. 1996) (noting that whether § 112, P 6 is invoked involves an analysis of the "patent and the prosecution history," and consulting a dictionary definition of "perforation" to understand if one of skill in the art would understand this term to connote structure). Personalized Media Communications v. International Trade Commission, 161 F.3d 696, 703 (Fed. Cir. 1998).

When evaluating whether sufficiently definite structure has been recited in this "lamp support means" claim limitation, the Special Master must determine whether the structure recited in that claim limitation is capable of performing entirely the recited function. Sage Products Inc. v. Devon Industries Inc., 126 F.3d 1420, 1427-1428; 126 F.3d 1420, 44 USPQ2d 1103 (Fed. Cir. 1997). The Special Master will initially evaluate the "lamp support means" claim language to identify the function being performed by the "lamp support means" itself.

As indicated in Claim 1(b) quoted above, the "lamp support means" support limitations includes two elements: The first element (b.1) recites the "means" while the second element (b.2) specifies the structural characteristics of the "lamp support surfaces" which is defined as "being includ[ed] within the scope of said lamp support means." The functions performed by the non means-plus-function structural element identified as the "lamp support surfaces" are not relevant to an interpretation of the separately defined element b.1 "lamp support means."
As to the element b.1 "lamp support means" claim limitation, two separately identifiable functions are recited as: 1) supporting a plurality of compact fluorescent lamps substantially equally angularly displaced about said center line [i.e., the centerline of the reflector means defined in the reflector means claim limitation]; and 2) supporting a lamp within said reflector means between the base end and the light-emitting end thereof.

Element 1) of the b.1 "lamp support means" claim limitation states that it supports "a plurality of compact fluorescent lamps." The term "plurality" is a term frequently used and well understood by patent attorneys to mean "two or more" of something. In claim element (b.2), "at least two" lamp support surfaces are specified. Since the two element b.2 lamp support surfaces perform only the function of supporting two lamps, the non-means "lamp support surfaces" perform only the second function of supporting those lamps within the reflector. The fact that the two lamp support surfaces are defined as supporting lamps "on opposite sides" of the "lamp support means" defines a 180 [degrees] angle between the two "opposite" 1 lamps. The lamp support surfaces therefore also perform the first function of supporting at least two lamps. So the non-means "lamp support surfaces" define structure performing both functions required to be formed by the "lamp support means." That result rebuts the presumption that § 112, P6 applies to this "means" claim limitation.

--- Footnotes ---


--- End Footnotes ---

The placement of the two words "lamp support" to the left of the word "means" virtually by itself specifies readily understood physical structure capable of supporting a lamp, i.e., a compact fluorescent lamp. This conclusion is demonstrated by the written description of the '414 patent itself. At Column 4, In. 65, the written description defines the relevant structure itself as a "lamp support." That intrinsic evidence demonstrates that the words "lamp support" define specific structure. See also, Col. 5, In. 13. At Column 10, line 3, where the written description alternatively refers to the same structure depicted in the patent drawings as "lamp support means."

In Allen Engineering Corp. v. Bartell Indus., Inc., 299 F.3d 1336, 1343 (Fed. Cir. 2002), the Federal Circuit was presented with virtually the same category of claims where clearly structural and readily understood words such as "seat," "rigid frame," "motor," "blade," and "gear box" were juxtaposed with the term "means," virtually exactly as done by the patent owner in the present case by juxtaposing the well understood structural term "lamp support" with the term "means." In Allen Engineering, the Federal Circuit observed that Allen Engineering's patent attorney was clearly enamored of the word "means." The same is true with the '414 Tickner patent as was demonstrated above in connection with use of the term "reflector means" which merely specifies a reflector.

In Allen Engineering, the Court ruled that because "[m]ost of these putative means-plus-function limitations contain far too much structure to claim the benefit of § 112, § 6," the original presumption that § 112, P6 applied raised by the use of the word "means" was overcome by the recitation of sufficient structure to preclude § 112, P6 treatment.

As was the case in the Allen Engineering and Cole v. Kimberly Clark cases, Tickner's detailed recitations in claim element b.2 of the structure which performs both of the two recited functions rebuts the that presumption and precludes the application § 112, P 6 to the interpretation the "lamp support means." The dictionary meaning of the term "support" as meaning "to bear the weight of or "to hold in position so as to keep from falling, sinking or slipping" 2 is fully consistent with the conclusion that § 112, P6 does not apply here.

--- Footnotes ---

The "lamp support means" shall therefore be interpreted as a structural support for a lamp located inside the reflector near the base end which performs the function of supporting two or more compact fluorescent lamps at an elevation between the base end of the reflector and the light emitting end of the reflector. The "lamp support means" also supports the two or more compact fluorescent lamps to maintain substantially equal angular spacing between adjacent lamps within a horizontal plane passing through the centerline of the reflector the term "substantially equal" means "approximately equal" or "more or less equal."

The phrase "about said centerline" further characterizes the "lamp support means" as extending around the reflector center line and supporting the compact fluorescent lamps laterally spaced away from the centerline.

(4) "Lamp Support Means"

Defendants object to the Special Master's construction of "lamp support means" as it appears in Claim One of the ‘414 Patent. The relevant language at issue reads in pertinent part:

lamp support means located within said reflector means at the base end thereof for supporting a plurality of compact fluorescent lamps substantially equally angularly displaced about said center line within said reflector means between the base end and the light-emitting end thereof, said lamp support means included at least two lamp support surfaces on said lamp support means on opposite sides thereof and angled toward the base end of said reflector means for causing compact fluorescent lamps supported thereby to extend outwardly at an angle from said center line toward the light-emitting end of said reflector means to substantially parallel said reflector means.

Specifically, Defendants object to the Special Master's recommendation that the presumption created by 35 U.S.C. § 112, P6 (“112/6”) due to the use of the word "means" in combination with "lamp support" is rebutted due to a finding that the claim (Claim One) recites sufficient structure or material for performing the function. However, in reviewing the Special Master's determination, the Court finds that the Special Master's finding is without error.

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

As noted by the Special Master, the presumption of the application of 112/6 created by the use of the word "means" in conjunction with a claim term may be rebutted if: (1) the claim element that uses the word "means" recites no function corresponding to the means, or (2) the claim element also recites sufficient structure or material for performing the function. Rodime PLC v. Seagate Tech, Inc., 174 F.3d 1294, 1302 (Fed.Cir. 1999) (citation omitted). In the instant case, the Special Master determined that the latter basis applied to rebut the 112/6 presumption because the claim recites sufficient structure as the described structure is capable of performing entirely the recited function. The Special Master made this determination because the following functions recited in the above language are provided with the sufficient structure to perform their function: (1) to support a plurality of compact fluorescent lamps substantially equally angularly displaced about the center line, or the vertical axis of the fixture and (2) to support the lamps within the reflector between the base and light-emitting end so that they are substantially parallel to the reflector.
As noted by Defendants, the Special Master did not note the function of supporting the lamps so that they are substantially parallel to the reflector, but the Court finds this omission to be insignificant as this function falls within the scope of the Special Master's construction and rebuttal of the 112/6 presumption.

In opposition to the Special Master's finding, the Defendants argue that it was error because "there is no evidence to demonstrate (and rebut the presumption) that the 'lamp support surfaces' are 'sufficiently definite' structure for performing entirely the above-mentioned functions." (Defendants' Objections, p.11) (Emphasis original). In support of this argument, Defendants cite that the recited function completely omits any reference as to how the "lamp support means" "support" the lamps. In addition, Defendants contend that the Special Master fails to consider how the "lamp support surfaces" support the lamps "about said centerline." In other words, and as articulated at oral argument, Defendants contend that the most basic issue of how the lamps are actually supported, i.e., fastened, is an open question and is wholly absent from the claim language, thus bringing "lamp support means" within the scope of 112/6.

The Defendants' argument ignores the relevant evidence that this Court may consider in determining and construing the language of a claim. In determining whether the 112/6 presumption is properly rebutted this Court considers "evidence intrinsic to the patent and any relevant extrinsic evidence so warrant." Personalized Media Communications, LLC v. International Trade Com'n, 161 F.3d 696, 704 (Fed.Cir. 1998), see also, Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed.Cir. 1996) (noting that whether [112/6] is invoked involves an analysis of the "patent and the prosecution history," and consulting a dictionary definition of "perforation" to understand if one of skill in the art would understand this term to connote structure). The intrinsic evidence clearly answers the Defendants' questions regarding the support to the lamps identified in Claim One. For instance, and as conceded at oral argument by the Defendants, the specification of the '414 Patent defines what would constitute sufficient "lamp support." The Special Master noted such in the Report and Recommendation by stating that "the written description defines the relevant structure itself as a "lamp support."" (Report and Recommendation, p.9 (citing '414 Patent, Col. 4, 1. 65)). In addition, as noted by Plaintiff, the specification identifies that the "compact fluorescent lamps" include both the lamps and the sockets to support and secure them. ('414 Patent, Column 8, Lines 49-52 - "[t]he base end of the fixture is divided into eight equal segments 125/126 to provide a mounting surface or lamp support surface for mounting compact fluorescent lamps 40/45 on each of the surfaces..."). As such, the Defendants' argument is not well taken on this point as it fails to consider the relevant intrinsic evidence in determining the application of the 112/6 presumption raised by "lamp support means." Moreover, this intrinsic record also rebuts Defendants' argument regarding any alleged inconsistency between the prosecution history of the '414 Patent and the inapplicability of the 112/6 presumption. In fact, it is relevant to note that Mr. Tickner, in support of his reissued application, provided a declaration to the USPTO that "it was never [his] intention to define this element using functional language under [112/6]." (Defendants' Markman Hearing Exhibits, Exhibit 12, GT 003701).

As such, because the Special Master properly applied and rejected the presumption of 112/6 raised by "lamp support means," the Court will overrule Defendants' objections to the Report and Recommendation in this respect.

2. "Lanced"

Second, Bridgeport argues that, because the production of the spring locking members on its adaptor involves the removal of metal, rather than only the cutting thereof, the process does not constitute "lanc[ing]," as required by claims 2, 3, and 4 of Patent '050 and claims 4 and 5 of Patent '164.
The quick connect fitting of claim 1 wherein said spring locking members are integral with and lanced out of said circular spring metal adaptor.

(Doc. 83, Exs. A, B (emphasis added)). Turning again to reference materials to ascertain plain meaning, Webster's Third New International Dictionary defines "lance" as "to make an incision," see WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1268, and technical manuals define "lancing" as "cutting a slit of any shape part way across [a] strip or blank … [in order] to free a section of the piece so that it can be bent," see ARTHUR D. ROBERTS & SAMUEL C. LAPIDGE, MANUFACTURING PROCESSES (1977). These materials do not state that "lancing" cannot also include the removal of metal. To the contrary, according to these definitions, a "lanced out" member of an adaptor is a portion formed by one or more cuts in the metal of the adaptor, with or without the removal of additional material.

The context in which the term is used supports this interpretation. The claim language mandates that the spring locking members be not only "lanced out" of but also "integral with" the adaptor. This additional limitation requires that the members be a part of the same piece of metal as the adaptor, see WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1173 (defining "integral" as "formed as a unit with another part" and giving as an example "the steam chest may be an integral part of the turbine casing or may be bolted to it"), but it does not suggest, as Bridgeport contends, that metal cannot be removed during or after the lancing process. 11 Neither the general and technical reference materials nor the claims and specifications support Bridgeport's interpretation that no metal may be removed during the production process. Accordingly, the court will not read such a limitation into the claim language. See Specialty Composites v. Cabot Corp., 845 F.2d 981, 987 (Fed. Cir. 1988). Hence, the court will construe "lanced" to mean a process in which one or more cuts are made in the metal of the adaptor to form a spring locking member, with or without the removal of additional material.

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11 For example, cutting additional metal from the end of a spring locking member would not detach it from the adaptor, rendering it no longer "integral with" it, but would only lessen the size of the piece.

雅汶华建议将术语"land"定义为"载体带之间的区域"。3M提出较窄的定义，"较平坦的、较低的区域在载体带的表面之间。"雅汶华声称3M的图可以证明"lands"是实际存在的，3M不反驳，但认为这些区域不只是空的，而是有目的的结构，在注明是需要更具体地描述。雅汶华指出，专利中强调了冲压设计的灵活性，包括凹痕的深度。此外，专利考虑到冲压过程中产生的凹痕，包括冲压后在相片的冲压部分。因此，这过程中涉及的金属不会被去除并称为"lancing." 这一运动并举，将"lanced"定义为"在金属中制作一个过程，其中形成一个弹簧锁定成员，带有或没有去除额外的材料。

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Applying this construction, and considering the evidence in the light most favorable to Arlington, a reasonable jury could conclude that Bridgeport's product literally infringes on Arlington's patents. Bridgeport's design requires the making of several cuts into the metal of the adaptor to allow certain sections, the spring locking members, to be bent away from the plane of the adaptor. That this process involves the removal of metal does not disqualify it as "lancing." The motion for summary judgment on these claims will be denied.

III. Lands

Avery proposes defining the term "land" as "the area of the carrier web between ridges." 3M proposes a narrower definition of "relatively planar, lower regions on the surface of the carrier web between the ridges." Avery asserts that the diagrams of 3M's product demonstrate that the lands are, literally, the areas between the ridges. 3M does not disagree, but contends that the lands are not just empty space, but are intentionally created structures that should be more specifically described in light of the specification.

The Court finds that lands need not be "relatively planar." On one occasion, the specification describes the lands in figure 3 as "relatively planar lands 27, i.e. large squares that have been depressed from the initial surface of liner." (Col. 4 line 67.) However, the descriptor "relatively planar" is not used at any other point in the patent, including in connection with the nine other references to lands 27. This leads the Court to conclude that the one reference to relatively planar amounts to no more than an adjectival phrase describing the particular lands in figure 3. Further supporting the Court's view that the lands need not be "relatively planar" is the patent's emphasis on the flexible design of the embossing creating the lands, including the depth of the embossed pattern. (Col. 6 11. 5-62.) Finally, the Court notes that the patent contemplates depressions created by
the first embossing of varying depths. (Col. 3 11. 16-18.) A very deep depression may, given the total thickness of the carrier web, render the land not relatively planar. In light of the above, the Court defines lands as "areas of the surface of the carrier web between the ridges."

C. Patent '795

Patent '795 describes a "Z-Fold Mailer with Reusable Reply Envelope." Central States has asked the Court to construe the terms contained in independent Claim 1: "said first line of weakness spaced from said first fold line a distance large enough to contain postal address bar coding between said first line of weakness and said first fold line on said first face." The claim describes an area on the lower right-hand corner of the completed mailer in which a postal barcode is placed by the sender. Central States argues that the "distance large enough" language should read to mean "at least 5/8." Central States arrives at a 5/8" distance using the United States Postal Service ("USPS") guide, Designing Letter Mail ("the Guide"), Publication No. 25, Aug. 1995, which outlines the design criteria for bar-coded mail pieces. Central States asserts that a person reasonably skilled in the art would interpret the claim terms to mean that the mailer must comply with USPS regulations. Moore disagrees, arguing that the distance is large enough as long as the a barcode can be placed within the space.

Before a court can rely upon extrinsic evidence, it must first decide whether the intrinsic evidence gives meaning to the terms. See Vitronics, 90 F.3d at 1582. The only indication of the claim's meaning is found in the patent's description of the drawings. The description states that the distance is "about one half inch." Patent '795, col. 6, line 7. No other claims, specifications, or prosecution history evidence shed light on the meaning of the term "distance large enough." Therefore, it is appropriate to read the limitation of "about one half inch" into the claim as the "distance large enough."

Since the intrinsic evidence does not fully answer what is a "distance large enough," but merely indicates an approximate distance, it is appropriate to rely on extrinsic evidence. "Distance large enough" is an example of a common, but imprecise, term that will be given its meaning as one ordinarily skilled in the art would interpret it. See Conopco, 46 F.3d at 1561. This Court believes that a person ordinarily skilled in the art would rely upon the USPS's postal regulations to define the term since the regulations outline the requirements for postal bar codes. Therefore, the USPS design Guide can properly be considered.

The USPS Guide states that the "Conventional Lower Right Barcode Clear Zone" is 4 3/4" wide and 5/8" tall and is located in the far lower right corner of the mailing. A conventional, lower right barcode containing recipient zip-code information must be printed within this area. The USPS's Guide states that the first bar of the barcode must appear between 3 1/2" and 4 1/4" from the right edge of the mail piece. Id. at 54. An additional limitation is applied to five-digit barcodes, which must begin between 4 1/8" and 4 1/4" from the right edge of the mail piece. Id. The Guide further graphically illustrates that the barcode must be within an area from 3/16" to 7/16" from the bottom of the mail piece. Id. at 55, ex. 5-8. The Guide states that the barcodes "must be positioned to meet the specifications." The top of the barcode must then be under 7/16" from the bottom of the mail piece.

A primary purpose of disclosure in patents is "to guard against unreasonable advantages to the patentee and disadvantages to others arising from uncertainty as to their rights." General Electric Co. v. Wabash Corp., 304 U.S. 364, 369, 82 L. Ed. 1402, 58 S. Ct. 899 (1938). To allow vague and uncertain claims would "be in direct contravention of the public interest which Congress therein recognized and sought to protect." United Carbon Co. v. Binney & Smith Co., 317 U.S. 228, 232, 87 L. Ed. 232, 63 S. Ct. 165 (1942). Notice requires that the "reasonable competitor" have notice of a patent's limitations. See generally, Hoganas AB v. Dresser Indus., 9 F.3d 948, 952 n.15 (Fed. Cir. 1993).

A reasonable competitor could conclude that "a distance large enough to contain postal address bar coding" would include at least the area designated by the USPS Guide as the proper location for barcoding. Any alternative interpretation would fail to provide adequate notice to reasonable competitors. Therefore, the language "a distance large enough to contain postal address bar coding" means at least 7/16". Moreover, this complies with the patent description of "about one half inch."
D. "a large plurality"

"A large plurality" is the term used to describe the quantity of glitter the coating contains. The parties offer differing constructions. Nichols asserts that the term is not ambiguous and proposes the dictionary definition: "a large number or quantity." Defendants on the other hand contend that the term "a large plurality" is inherently ambiguous and propose the following construction which they argue flows from the language of the claim and the specification: "there must be sufficient glitter to cover essentially the entire light receiving surface of the lure body so that substantially all light incident on the lure body is reflected."

The Court agrees that the term "a large plurality" is ambiguous. Nichols' proposed construction, essentially a synonym, is equally vague. Defendants' proposed construction is more reasonable in view of the specification.

The specification identifies a perceived problem with the prior art; namely, that the lures did not reflect enough light because the number and spacing of glitter particles was insufficient. ( '160 Patent, col. 1, lines 64-67, col. 2, lines 1-3.) The patentee's solution to this problem is to include enough glitter in the coating so that the coating reflects "substantially all of the light incident on the body." ( '160 Patent, col. 2, lines 10-12.) Thus, the amount of light reflected is a function of the number of glitter particles in the coating. Nichols' assertion that light is also reflected by the resin, and therefore reflection is not a function of the number of glitter particles, is contradicted by the language of the claim. The claim clearly states that the resin coating itself is transparent. ( '160 Patent, col. 5, lines 24-25.) Therefore, all light that is reflected must be reflected by glitter particles embedded in the coating.

Accordingly, the term "a large plurality" is properly construed to mean that the coating must contain a sufficient number of glitter particles to reflect substantially all light incident on the portions of the body that are covered by the coating.

3 The Court has modified Defendants' proposed construction to remove extraneous limitations on elements which are not the subject of dispute in this litigation.

2. Larger Than Said Simple Geometric Figure (Claims 22 and 23)

Matsushita argues "larger than said simple geometric figure" should be construed as "having a greater area than said simple geometric figure." Mediatek argues "larger than said simple geometric figure" should be construed as "having a greater area than the area of the simple geometric figure of the first planarizing pattern so that the number of figures and the amount of data in the planarizing patterns is reduced."
The Court finds, for the reasons stated by Matsushita, "larger than said simple geometric figure" is properly construed as "having a greater area than the area of the simple geometric figure of the first planarizing pattern."

The court will construe "latched position" as "a position of mechanical engagement with the supporting structure."

Claim 1 describes a mounting shaft that is "linearly displaceable along said central axis between a latched position and a released position." In other words, the mounting shaft slides back and forth along the barrel of the firearm. When the mounting shaft is in the latched position, the accessory clamp ceases to pivot.

Defendant argues that when the device is in the latched position, the accessory must be in use. For "latched position," Defendant therefore proposes, "position in which the accessory receiver is engaged such that a sighting device held by the accessory receiver would be in use." This construction would prevent the device from being locked into an inactive position. Such a device would be quite inconvenient.

In defense of its interpretation, Defendant notes that (1) the '152 Patent's summary uses the term "locked" or "engaged" as synonyms to describe the action that latches the mounting base, and (2) the "engaged" / "disengaged" dichotomy is used elsewhere in the Patent to distinguish the active from the inactive position of the accessory clamp. Defendant therefore argues that a "latched" mounting base implies an "engaged" accessory clamp. But a number of different elements (including the mounting base) may be capable of being "engaged" or "disengaged" during the use of a device. This does not mean that all those features are always simultaneously engaged or simultaneously disengaged. Defendant's proposed construction will therefore be rejected.

Plaintiff does not propose any alternative language. However, it is clear from the description of the invention that the mounting shaft is in the latched position when a locking shaft or ratchet assembly makes contact with the support member. Such contact is what prevents the accessory receiver from moving linearly. See the '152 Patent, col. 6, lines 11-17. When construing patent claims, "the court should look first to the intrinsic evidence of record, i.e., the patent itself[.]") Vitronics, 90 F.3d at 1582. The court therefore adopts its own construction consistent with such description of the latching mechanism, as set forth above.

For the same reasons, the court will construe "released position" as "a position free from mechanical engagement with the supporting structure."

The court will construe "released position" as "a position of mechanical engagement with the supporting structure."

The seventh disputed claim language states:

said latching apparatus comprising pin engaging bores formed on an abutting surface of said cover member;

Joint Statement, Table X, at 74. The language is clear and does not need construction. The language describes a latching apparatus that includes the bores that engage the pins to secure the cover member. Sukup argues that the phrase must be interpreted under the means plus function method. The Court disagrees. The word "means" is not used so there is no presumption. The language also describes a specific structure, the holes or bores on the cover member. The means plus function analysis therefore does not apply.
16. Claim 4 - "latching structure"

Bradford proposes that "latching structure" means "a number of parts put together in a particular way for fastening, the combination of parts linked, connected, or joined to the body for fastening at least one of the side structures in an erected position." Defendants contend that "latching structure" is limited to "a bar that fits into a notch or slot." The Court rejects Defendants' construction of "latching structure".

The first problem with Defendants' proposed construction of "latching structure" is that dependent claims 5 and 6 impose further limitations on this term. Specifically, claim 6 states:

The container of claim 5 wherein said aperture is in the form of a slot, the member comprising a latching bar movably coupled to the side structure, a portion of the latching bar being configured to slide into the slot.

'096 Patent, col. 14, ll. 1-4. 2 Because dependent claim 6 claims a bar and slot latching mechanism, there is a presumption that this limitation should not be attributed to claim 4. See Nazomi Commc'n's, Inc. v. Arm Holdings, PLC., 403 F.3d 1364, 1370 (Fed. Cir. 2005) ("[C]laim differentiation 'normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend.'" (quoting Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir.1999)); Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380 (Fed. Cir. 2006) ("Beyond the independent/dependent claim scenario, this court has characterized claim differentiation more generally, i.e., as the presumption that each claim in a patent has a different scope.").(internal quotation marks omitted). Moreover, the specification specifically recognizes that the invention might utilize latching mechanisms other than a bar and slot configuration. '096 Patent, col. 12, ll. 20-22. Accordingly, contrary to Defendants' arguments, the Court finds that the specification does not limit "latching structure" to a bar and slot configuration.

--- Footnotes ---

2 Claim 5 is an dependent claim of claim 4.

--- End Footnotes ---

Defendants then argue that if the Court accepts Bradford's construction of "latching structure", then claim 4 should be construed as a means-plus-function limitation because it does not define any structure. The Court must begin with the presumption, however, that claim 4 is not a means-plus-function claim because it does not contain the word "means". Apex, Inc. v. Raritan Computer, Inc., 325 F.3d 1364, 1371 (Fed. Cir. 2003). 3 Because of this presumption, the burden is on Defendants to show that one of ordinary skill in the art would understand that claim 4 fails to recite sufficiently definite structure or else recites a function without reciting sufficient structure for performing that function. Id. at 1373. However, the presumption flowing from the absence of the term "means" is a strong one that is not readily overcome. Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004)(citing Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1318-19 (Fed. Cir. 1999)). The trial court may resort to a dictionary to ascertain what a person of ordinary skill in the art would understand. Lighting World, 382 F.3d at 1360-61.

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3 To repeat, Claim 4 states:

The container of claim 1 further comprising a latching structure coupled to the body for securing at least one of said side structures in the erected position.

'096 Patent, col. 13, ll. 60-62.
The Court notes that at least one dictionary supports Defendants' construction of latching structure. Webster's Third New International Dictionary states that a latch is "a device that holds something into place by entering a notch or cavity." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1275 (1971). On the other hand, Webster's Ninth New Collegiate Dictionary, while essentially repeating the above definition, also states that a latch is "any of various devices in which mating mechanical parts engage to fasten but usu. not to lock something." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 675 (1987). This definition is broad enough to encompass both Defendants' definition of "latching structure" and yet recites sufficient structure to Bradford's use of "latching structure" in claim 4 because it is descriptive of a range of latching mechanisms. See Lighting World, 382 F.3d at 1359-60 ("In considering whether a claim term recites sufficient structure to avoid application of section 112 P 6, we have not required the claim term to denote a specific structure. Instead, we have held that it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function."). The Court, therefore, finds that a person of ordinary skill in the art would understand that "latching structure" is not limited to "a bar that fits into a notch or slot." Indeed, Bradford's proposed construction of "latching structure" is nearly identical to the definition of "latch" given by Webster's Ninth. Accordingly, Defendants have failed to rebut the presumption that claim 4 is not a means-plus-function limitation.

The Court holds that "latching structure" means "a number of parts put together in a particular way for fastening, the combination of parts linked, connected, or joined to the body for fastening at least one of the side structures in an erected position."
court confused the term "lateral" as it relates to fins with "lateral" as it relates to the fixing formations. FCS also relies on the testimony of its expert on claim construction and infringement, Mr. Michael Neft, who testified at the claim construction hearing that with respect to the claimed "fixing formation," the word "lateral" refers to "any side of a shape except for the top and bottom."

Although we agree with FCS that the terms "lateral" and "side" may not necessarily have the same meaning in the context of a fixing formation that they indisputably have in the context of a surfboard fin, our review of the intrinsic record in this case leads us to the conclusion that FCS's argument ultimately fails.

First, we begin with the presumption that the same terms appearing in different portions of the claims should be given the same meaning unless it is clear from the specification and prosecution history that the terms have different meanings at different portions of the claims. See Phonometrics, Inc. v. N. Telecom, Inc., 133 F.3d 1459, 1465, 45 U.S.P.Q.2d (BNA) 1421, 1426 (Fed. Cir. 1998). In this case, the use of the term "lateral" in the claims when referring to the surfboard fins is entirely consistent with the district court's interpretation of "lateral" in the context of the fixing formations. The claim recites a "fin having a pair of lateral surfaces and an end surface," 359 patent, col. 4, ll. 44-45, and there can be no question that the "lateral surfaces" of the fin are those "on the side of the median vertical plane, passing through the longitudinal axis of the surfboard between the front and the rear," in perfect harmony with the district court's interpretation.

The district court's interpretation is also consistent with the usage of the terms "laterally engaging" and "lateral forces" in the prosecution history of the '359 patent and in the prior art of record during prosecution. Specifically, in an Office Action dated November 28, 1994, the Examiner rejected some of the originally-filed claims as obvious under 35 U.S.C. § 103 in view of U.S. Patent No. 4,493,665 ("Liddle") partly on the basis that Liddle taught "a releasable means 20 laterally engaging the fixing formation within the cavity." Our review of the record reveals that the "releasable means 20" in Liddle engages Liddle's "fixing formation" from the side, in a manner perfectly consistent with the district court's interpretation.

Finally, U.S. Patent No. 4,379,703 ("Mizell"), a prior art reference cited during the prosecution of the parent patent to the '359 patent-in-suit, confirms that the meaning of "lateral forces" to people of ordinary skill in the art of surfboard manufacturing is consistent with the district court's interpretation:

It will be understood that the flange 28, which in the embodiment illustrated in the accompanying figures completely surrounds the entrance to slot 30, provides added resistance to the lateral forces normally applied to the fins during surfing and transmitted to the fin boxes into which the fins are inserted.

Mizell '703 patent, col. 3, ll. 9-14 (emphasis added). This passage is consistent with the district court's interpretation, and it actually confirms the notion that the term "lateral forces" has the same meaning in the context of "fixing formations" and "fin boxes" that it has in the context of "fins." The relevant figures from Mizell are reproduced below:

GET DRAWING SHEET 1 OF 1.

There can be no doubt that the "lateral forces" discussed in Mizell refer to forces coming from the side of the surfboard, consistent with the district court's interpretation of "lateral."

In response to the foregoing, FCS argues that the plain language of the claim conclusively establishes that "lateral" refers to any side of a fixing formation except for the top or bottom. This argument proceeds from the undisputed fact that the term "lateral" is also used in the claim to refer to sides of surfboard fins, which allegedly have no front or rear surfaces. According to FCS, it makes sense to construe "lateral" narrowly to refer to the left and right sides of a surfboard fin because there are no other sides to be described. In contrast, according to FCS, "lateral" should be construed more broadly when the shape being described has sides other than simply a left side and a right side (e.g., when the shape is a star or a cross). Thus, according to FCS's logic, assuming arguendo that surfboard fins had front surfaces and rear surfaces, those surfaces would have also been referred to as "lateral surfaces." This argument is undercut by the written description of the '359 patent, which specifically addresses the "front" and "rear" directional components of the surfboard fins without any mention of the words "lateral" or "side." For example, at column 1, lines 36-44 of the '359 patent, a prior art fin is described as having a "front" (line 41) and a "rear" (line 42), and a prior art fin box mounting structure is also described as having a "rear" end (line 44).
For the above reasons, we discern no error with the district court's interpretation of the terms "releasable means laterally engaging said formation," "applying lateral force," and "to a side wall of said cavity" in claim 13 of the '359 patent.

3. Lateral Constraining Device Limitation

Based on the claim language, the specification of the '514 patent, and relevant testimony of expert witnesses, the "lateral constraining device," which includes a "support element and inclined surface . . . distinct from said skirt and second annular surface" of claim 55 of the '514 patent, and as the language would be understood by those skilled in the pertinent art, must be construed to mean that the lateral constraint is distinct and independent from the axial constraint provided by the confronting annular surfaces of the patented probes. See PP 84-85, 88, 90-91 supra.

IV. "in at least one of the lateral edges thereof"

Lifescan proposes "in at least one of the two edges on a side of the strip," while Roche proposes "in at least one of the side (perimeter) edges of a strip." The dispute here centers around whether the notches can be on any side of the strip -- including the ends -- or whether the notches can only be located on the long sides of the strip.

The Court defines this term as "in at least one of the edges on a side of the strip." The Court disagrees with Lifescan's limitation of "the two edges . . ." because the claim expressly states that the strip has "at least two lateral edges." '420 patent at 2:4-5 (Reexamination certificate). Both parties agree that "lateral" means "side," and have included "side" in their proposals. The Court finds Roche's proposal of "(perimeter)" unnecessary and confusing because "perimeter" -- which means "the boundary of a closed plane figure" -- has a broader meaning than "lateral edge." See Merriam-Webster's Online Dictionary, http://www.m-w.com/dictionary/perimeter.

3. Lateral opening

Plaintiffs contend that the phrase "lateral opening", if determined to need further definition, should be defined as an "opening, situated on, directed towards, or coming from the side." Defendants contend that a lateral opening should be construed as a "side opening." Webster's Third New International Dictionary defines the term "lateral" as, "of or relating to the side: situated on, directed toward, or coming from the side." Therefore, the Court will construe "lateral opening" to mean, "an opening situated on, directed towards, or coming from the side."

A. "Lateral Sharp Edges"

Claim 1 of the '534 Patent claims: "[a] strap having a coating means for covering lateral sharp edges of the strap to prevent abrasion of objects that come into contact with the edges of the tie . . ." ('534 Patent Col. 2, Lines 31-34.) Band-It characterizes the reference in claim 1 to "lateral sharp edges" as a claim limitation. Band-It looks to the "Background of the Invention" section of the specifications to define this claim limitation. That section explains that "coated metal ties do not require the relatively expensive manufacturing step of forming a smooth radius on the sharp edges of each tie after it is slit from the stock, thus decreasing the manufacturing cost of the coated ties." ('534 Patent Col. 1, Lines 11-15.) Band-It therefore concludes that the "lateral sharp edges" language limits the Patent's claims and requires that the strap not have
undergone the "manufacturing step of forming a smooth radius on the sharp edges."

Panduit disputes Band-It's assertion that the reference to "lateral sharp edges" is a claim limitation. The court finds it unnecessary to decide the issue, however, because whether the words "lateral sharp edges" are claim limitations or not, those words are neither defined nor limited by whether or not the product has been through a manufacturing step to smooth its edges.

Even if Band-It were right that "lateral sharp edges" is a claim limitation, the method by which Band-It seeks to define the term violates the clear principle that, although a claim is to be read "in view of the specification[s]," Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995), the limitations of a specification should not be read into the claims. Thomson Consumer Electronics, Inc. v. Innovatron, S.A., 43 F. Supp. 2d 26 (D.D.C. 1999). There is but one reference in all of the '534 Patent to the manufacturing step that forms smooth edges on the otherwise sharp edges of the straps. This reference is in the specifications, not in the claims, and it is not written as a definition of the term "lateral sharp edges." ('534 Patent Col. 1, Lines 11-15.) Furthermore, to construe it as such requires a leap that ignores the remainder of the language in the specifications, as well as the language in the claims.

Again, to the extent that "lateral sharp edges" is a claim limitation, it has to be interpreted according to the settled principle that claim construction begins with the wording of the claims, and the words and phrases of the claim are to be given their customary, ordinary meanings, unless it appears that the inventor intended otherwise. See, e.g., Thomson, 43 F. Supp. 2d at 30; Bell Communications Research, Inc., v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed. Cir. 1995). Band-It has not suggested, nor does the court find any reason to believe, that "sharp edges" means anything other than "sharp edges" as those words are regularly understood. This is certainly not a term "so amorphous that one of skill in the art can only reconcile the claim language with the inventor's disclosure by recourse to the specification." Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998), noting E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir. 1988) (stating that the specification can supply understanding of unclear terms, but should never trump the clear meaning of the claim terms). Band-It has presented no reasoning to suggest that the term "lateral sharp edges" requires further interpretation, and to the extent it does, the court finds that the most plausible definition of "lateral sharp edges" in the context of the entire '534 Patent is: edges capable of cutting or causing abrasion.

The term "lateral sharp edges" simply does not require reference to the specifications to enlighten the reader as to its meaning. Putting that fact aside, however, the meaning proffered by Band-It strains logic. Every reference in the '534 Patent to "lateral edges," "sharp edges" or "lateral sharp edges" is paired with the claim limitation "coating means" and its identified function of preventing abrasion with objects that come into contact with the tie. This is consistent with the object of the invention, defined in the patent summary as: "the provision of a cable tie having coated lateral edges to protect objects that come into contact with the lateral edges of the tie where the coating does not interfere with the effectiveness of the locking mechanism of the tie." ('534 Patent Col. 1, Lines 26-30.) Throughout the '534 Patent, the clear goal and function of the coating means is to prevent abrasion, not to avoid the extra mechanized step of smoothing the edges. Absent specific language to suggest it, it makes little sense to presume that Panduit only intended to prevent abrasion that results from the fact that the edges have not undergone a mechanical process to create smooth edges. If the ties have been through a mechanized smoothing process, but for whatever reason still have edges capable of causing abrasion, as with the accused Band-It ties, nothing in the '534 Patent suggests that these ties are outside of its scope. Band-It's suggestion otherwise, contrary to settled principle in this area of law, ignores a clear, plain reading of a phrase in favor of a strained interpretation.

Rather than defining or limiting the term "lateral sharp edges," the single reference in the specifications to avoiding the mechanized smoothing process is properly characterized as citing an advantage of the "coating means." In this court's view, it would be "improper to read this advantage from the specifications into the claims as a requirement of the inventions themselves." Dow Chemical Company v. Astro-Valcour, Inc., 47 F. Supp. 2d 294, 299 (N.D.N.Y. 1999). The court concludes that whether or not a cable tie's edges have been through a mechanized smoothing process does not affect whether or not such ties fall into the '534 Patent's claim regarding a "strap having a coating means for covering lateral sharp edges of the strap." Thus, Band-It is unable to distinguish its accused product from the '534 Patent claims merely by reference to the phrase "lateral sharp edges."

Notably, a different conclusion on this issue would not require summary judgment in favor of Band-It. In this court's view, the accused Band-It products do have "lateral sharp edges" as that term is used in the '534 Patent. Although Band-It utilizes a mechanized process to smooth the edges of the ties, this fact alone is not determinative of whether or not there are "lateral
sharp edges." Band-It itself acknowledged in its reply in support of its motion for summary judgment that it does not "fully radius," or fully round the edges. (Band-It's Reply in Support of Its Motion for Summary Judgment of Non-Infringement ("Band-It's Reply") at 3.) This acknowledgment is consistent with the deposition testimony of Band-It's Rule 30(b)(6) witness, Hans Hinnen, that the lateral edges of the accused straps are sharp. (Hinnen Deposition, at 74:22-75:2.) Band-It argues that "there is no indication that Mr. Hinnen defined 'sharp' consistent with the proper construction of that term in the '534 Patent," and that "Panduit's counsel never instructed Mr. Hinnen regarding the correct meaning of the term." (Band-It's Reply at 3.) In light of this court's determination that the phrase "lateral sharp edges" in the '534 Patent should be read to have its ordinary meaning, however, the witness did not require any special instruction. Further evidence that the edges of Band-It's cable ties are sharp within the meaning of the '534 Patent is that Band-It coats them: Band-It's Rule 30(b)(6) witness testified that the coating prevents "chaffing or damaging." (Hinnen Deposition, at 74:22-75:2.) Significantly, Band-It offers no explanation as to why it would coat its cable ties at all if not to prevent abrasion caused by the lateral sharp edges.

7. Lateral Strand

The proper construction of "lateral strand" according to plaintiffs is "strand or strands which run perpendicularly to longitudinal strand(s) around the circumference of the tube of the netting structure." In contrast, defendants construe the term as "strands forming the netting arrangement extending in the lateral direction which does not form rows of regular loops and are not immediately next to another parallel lateral strand."

Like their definition of "longitudinal strand," plaintiffs rely on a plain and ordinary meaning for the term "lateral strand", which defendants assert is unsupported. (Defendants' Responsive Claim Construction at 15-16.) But as previously noted, "claim terms take on their ordinary and accustomed meanings unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Teleflex, 299 F.3d at 1327.

Defendants point to the prosecution history where plaintiffs distinguished their invention from the Lombardi prior art to support their definition of "lateral strand" as not formed with rows of regular loops. (Markman Tr. at 71-72.) As defendants explain, because the stockinette member is formed of rows of regular loops, the lateral strand, being a component of the netting structure, cannot form rows of regular loops. Id. "If the lateral strands did form rows of regular loops, we don't see how a checkerboard pattern could result in a meat product." Id. at 71-72. The Court disagrees. When "strand" is construed without regard to the weight of the yarn, and the stockinette member is not required to be comprised of rows of regular loops, a lateral strand would function in a manner that would create the netting arrangement's intended pattern and would not become part of the stockinette member shield.

Defendants' proposed inclusion of language that the netting arrangement strands are "not immediately next to another parallel lateral strand" is based upon the claim language which provides that the netting arrangement is comprised of a "second plurality of spaced strands" in the lateral direction. But as with defendants' argument concerning their proposed construction of longitudinal strands, i.e., they are "not immediately next to another parallel longitudinal loop," defendants are using the term "strand" as a component rather than as a structure. As set forth in the claim language, the structure of lateral strands is spaced. Defendants have not offered any intrinsic or extrinsic evidence that shows plaintiffs intended to deviate from the plain and ordinary meaning of the term. Accordingly, no additional defining terms are needed.

The Court construes "lateral strand" as "strand or strands which run perpendicularly to longitudinal strand(s) around the circumference of the tubular casing."
a. Claim Term:

"A single piece polyvinyl chlorine (PVC) pipe of a predetermined interior diameter that has lateral strength when connected to a similar adjacent PVC pipe . . ."

b. Parties' Contentions

CertainTeed's proposed construction of "lateral strength" is "when connected to a similar adjacent pipe, a pipe 2 inches in diameter has sufficient lateral strength so that a lateral force of 1,000 pounds must be exerted before the pipe will start leaking." CertainTeed argues that Modern Products' proposed construction would render this claim term meaningless because any two lengths of pipe connected to each other have some degree of lateral strength. Thus, if the term "lateral strength" simply means some strength to resist lateral forces, then it is essentially meaningless because all connected lengths of pipe have some "lateral strength."

The specification of the '480 patent states that this invention is noteworthy because it has a high degree of lateral strength, as opposed to other pipes. Specification of '480 patent, col.1, lines 45-47. The "lateral strength" limitation was added to overcome prior art rejections. PI's Markman Brief at 8. It is CertainTeed's assertion that the answer to how much "lateral strength" is necessary is found in the specification, which states "it was found that laterally pushing on the pipe, a force of 1,000 pounds has to be exerted before the pipe will start leaking." Specification of '480 patent, col.1, lines 48-50. Further, the only embodiment described in the specification is a pipe 2 inches in diameter, so CertainTeed claims that it is fair to assume that this level of strength applies to a pipe 2 inches in diameter. This is how CertainTeed arrived at its proposed construction. CertainTeed avers that in this case, Modern Products clearly disclaimed an interpretation of the phrase "lateral strength" to mean just any or some lateral strength, and the only guidance as to how much strength is sufficient is found in the specification. Consequently, CertainTeed's proposed construction is consistent with the specification.

Modern Products' proposed construction of "lateral strength" is "the strength of connected PVC pipe which will resist forces exerted on the pipe in a direction perpendicular to the length of the pipe." Modern Products argues that the term "lateral strength" does not lend itself to quantitative measurement. The plain and ordinary meaning of the phrase "lateral strength" refers to a material's solidity or toughness in resisting forces from the side. Also, the dictionary does not define "strength" in quantitative terms. It is a qualitative characteristic. Thus, when Claim 1 recited that a PVC pipe has "lateral strength," it refers to a quality of toughness that resists forces exerted on the pipe from the side.

The term "lateral strength" must be construed in the context of the surrounding words of the claim. In the context of Claim 1, lateral strength results from connecting the pipes together and the length of the second enlarged interior diameter. Modern Products acknowledges that the average pipe has some degree of lateral strength, however, what distinguishes the '480 patent is the lead-in section of the pipe, what is referred to as the "second enlarged interior diameter" section of the pipe. In connection with this, the "long enough" limitation increases the surface area of the joint resisting lateral forces by half because it is long enough to cover most of the external threads that mate before they are threaded together. Modern Products alleges that this construction is reinforced by the prosecution history, and because the prosecution history consistently intertwined the "lateral strength" and "long enough" limitations, they must be construed together and not in isolation.

The only quantitative construction that can justifiably be given to "lateral strength" is already described in the claim; that construction being the requirement that the pipe have a lead-in section long enough to receive most of the threadable external threads from the similar adjacent PVC pipe before they are threaded. Modern Products states that this quantitative limitation increases by half the surface area able to resist lateral forces. Modern Products urges that CertainTeed's proposed construction is clearly erroneous, is not the plain meaning of the phrase, violates the long-standing claim construction rule against importing extraneous limitations from the specification into the claim, and imports limitations from dependent Claim 4, rendering it superfluous.

c. Court's Construction

The Court concludes that "lateral strength" means "the strength of connected PVC pipe which will resist forces exerted on the pipe in a direction perpendicular to the length of the pipe." The Court agrees with Modern Products that this construction is supported by the plain and ordinary meaning of the words and is supported by the specification and prosecution history.
Further, CertainTeed seeks to add quantitative limitations to the claim, which violates the rules of construction. See Liquid Dynamics Corp. v. Vaughan Co., 355 F.3d 1361, 1368 (Fed. Cir. 2004) (citing Comark Communications v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998)). The passages cited by CertainTeed do not expressly or by clear implication restrict the scope of the invention as suggested in CertainTeed's proposed construction. See Liebel-Flarsheim Co. v. Medrad, Inc. 358 F.3d 898, 908 (Fed. Cir. 2004). Therefore, the Court will define "lateral strength" without a quantitative limitation.

12. Laterally linked strands

FieldTurf's Proposed Construction: "The slit portions of the ribbons are attached to each other by relatively laterally oriented sections"

SCG's Proposed Construction: "Distinct flat brushed split sheet having slits placed across the width of the sheet, the slits being located along a longitudinal axis of the sheet and being connected at the sides of each other"

The Court's Claim Construction: "Strands that are connected at the sides"

The first part of SCG's proposed definition is based on its claim that "strand" is synonymous with "ribbon" and thus strand should have the same claim construction as "ribbon." The claim language in which this instance of "strand" occurs states as follows: "a lower portion of the ribbons having slits extended open forming laterally linked strands disposed in a lattice structure enmeshing the surrounding particulate material." The specification describes "brushing . . . to open a lower portion of the ribbons and extend the slits open forming laterally linked strands disposed in a lattice structure enmeshing the surrounding particulate infill." '689 patent, 5:23-26. Clearly the strand is a part of the ribbon but it is not synonymous with ribbon. Rather it is adequately defined within the claim and needs no further explanation. 17 With respect to "laterally linked," the Court does not perceive a significant difference in this portion of the parties' definitions. Because "connected at the sides" conveys the concept without repeating the word "laterally," the Court finds that overall construction of "laterally linked strands" is "strands that are connected at the sides."

17 Similarly, the Court finds FieldTurf's "slit portions of the ribbons" to be redundant of the rest of the claim.

A. Claim Construction

As explained by the Federal Circuit, both intrinsic and extrinsic evidence may be properly used for guidance in claim construction. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (1996). Intrinsic evidence consists of the patent itself: the claims, the specification, and the prosecution history, if in evidence. Extrinsic evidence includes expert testimony, inventor testimony, dictionaries, treatises, and prior art not cited in the prosecution history. See Zodiac Pool Care, Inc. v. Hoffinger Indus., Inc., 206 F.3d 1408, 1414 (Fed. Cir. 2000). It is well-settled that the court should look first to the intrinsic evidence of record. See Vitronics, 90 F.3d at 1582.

In their papers the parties focus on the term "laterally offset relative to the axis of said bore." Saeilo's proposed statement of the claim interpretation reads:

The term "laterally offset relative to the axis of said bore" means "having a cross-section in the region where the trigger will pass by the lug the central axis of which is off-set laterally from the central axis of the bore."
From this definition I am supposed to understand that the claim is met so long as the lug is offset in the area where it passes by the trigger. This definition, however, is not evident from an examination of the intrinsic evidence.

An examination of the claim itself requires a review of the precise words chosen by the patentee. Although the patentee may choose to be his own lexicographer, words in a claim are usually given their ordinary meaning. See Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578 (Fed. Cir. 1996). In this case, the patentee has not provided special definitions for any of the words in question. Where a technical term is used, such term "is interpreted as having the meaning that it would be given by persons experienced in the field of the invention." Id.

"Laterally offset" refers to the gun's "lug," and is defined in relation to the central axis of the barrel's bore. These words do not indicate the meaning sought by Saeilo, to wit: merely a portion of the lug may be offset. Rather, their plain meaning indicates that the lug is laterally offset for the entire length of the bore. As the axis of the barrel's bore naturally runs the entire length of the bore, and the lateral offset is defined in relation to this axis, without further specificity, it follows that the lateral offset is intended to run the full length of the lug. As correctly pointed out by Colt, if the inventor intended this language to describe an offset in a portion of the lug rather than extending the entire lug length, the claims should have been written more broadly. See Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1425 (Fed. Cir. 1997) ("As between the patentee who had a clear opportunity to negotiate broader claims but did not do so, and the public at large, it is the patentee who must bear the cost of its failure to seek protection for this foreseeable alteration of its claimed structure.").

Although my review of the claim alone would be determinative in this instance, the specification "is the single best guide to the meaning of a dispatched term." Vitronics, 90 F.3d at 1583. Moreover, the Federal Circuit has held that questions of claim construction require an examination of the specification. See id. at 1582 (holding that "it is always necessary to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning"). The specification functions so well as a guide because it is meant to describe the invention in less technical terms. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 ("The specification contains a written description of the invention that must enable one of ordinary skill in the art to make and use the invention.").

In this instance, the specification includes detailed drawings of a handgun employing the '075 Patent. The specification further describes the preferred embodiment of the '075 Patent by way of reference to these drawings. For instance, the specification reads, "the barrel cam lug 28 is staggered or laterally offset relative to the axis of the barrel bore 18 as shown in FIG. 2." This drawing clearly depicts a recess running the full length of the lug. 2 Saeilo has requested that I consider the words of the specification rather than solely the referenced drawings. In particular, Saeilo points to the description of the lateral offset:

The lateral offset of the barrel cam lug 28 provides a space or notch 37 between an associated one of the inner surfaces 29 and an opposing face 39 on the barrel cam lug 28.

Despite inclusion of the word "notch," the specification does not convey that Claim 1 of the '075 Patent provides for the barrel cam lug to be laterally offset for any length less than the full length of the lug. For Saeilo to succeed in this patent infringement action, Claim 1 must be construed to include any offset which provides sufficient space for the trigger and cam lug to pass unobstructed. I do not read the plain language of the claim in this manner, however, even in view of the specification.

--- Footnotes ---

2 Figure 2:

[SEE FIG. 2 IN ORIGINAL]

--- End Footnotes ---
in the claim in a manner inconsistent with their ordinary meaning. In fact, my review of the specification confirms my determination under the exact words of the claim.

3 Although Saeilo is technically correct, the manner in which it addressed this issue was disingenuous. On page five of Saeilo's reply brief, in an attempt to convince me that Claim 1 should not be limited to the specific embodiment shown in the drawings, Saeilo inaccurately quoted the Federal Circuit's decision in Markman: "The specification does not limit the right to exclude." The actual language of Markman reads: "The written description part of the specification does not delimit the right to exclude." 52 F.3d at 980 (emphasis added). Such omissions ought to be indicated.

The prosecution history of the patent, to the degree that it has been entered into evidence, reveals that the claims filed with the original patent application did not include "laterally offset" language. 4 The original claim was rejected by the Patent Examiner under 35 U.S.C. § 102(b) as structurally readable on prior art. 5 The revised claim, as it now appears in the patent, was accepted without further comment. Saeilo asserts that Claim 1 was not amended so as to avoid confusion over prior art. Rather, it alleges that the inventor successfully argued this point with the Examiner. According to Saeilo, the fact that the Examiner refrained from further comment on the subject of prior art indicates the success of Saeilo's argument. I do not find this persuasive. What is clear to me is that the revised Claim 1 does not include any of the language that the Examiner found objectionable. In his original application, the inventor used the term "notch." That term does not appear in the revised Claim 1, and instead is replaced by the troublesome term "laterally offset." As there is no evidence of the Examiner's acceptance of the term "laterally offset" to mean "notch," I am unwilling to import that meaning at this time.

4 The original Claim 1 of the application reads:

In a semi-automatic handgun, with a breech locking barrel, a trigger and a trigger bar, a structure which eliminates potential interference between the trigger bar and the barrel and provides a compact handgun, comprising camming lugs for providing rotation of said barrel, said lugs defining a notch, said trigger bar being attached to one side of said trigger, trigger bar and barrel to be positioned in close proximity to each other.

5 In particular, this prior art is (1) Patent No. 3,756,120 and the limited-circulation Colt pistol based on that design ("Roy Patent"), and (2) Patent No. 1,618,510 and the Browning pistol based on that design ("Browning Patent").
To construe the meaning of the disputed limitation, the court looks first to the words of the claims themselves. Vitronics Corp. v. Concteptron, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996). The district court correctly began with the plain words of the claim and recognized that the dispute centers around how "laterally offset" should be applied to "lug." The claim language requires that the lateral offset of the cam lug be gauged relative to the axis of the bore. The district court reasoned that since the lateral offset is defined relative to the bore axis, and since the bore axis runs the entire length of the bore, the lateral offset must extend for the entire length of the lug.

While one might find fault with the district court's syllogism, we agree with its conclusion. As the district court appreciated, this dispute boils down to whether "laterally offset" must refer to the entire lug, or only to a portion of the lug. The claim language requires only that the "lug" be laterally offset from the bore axis. Between "the entire lug" and "a portion of the lug," we think the former is the more natural reading of the plain term "lug." When language is used precisely and naturally, a piece or portion of a lug is not a "lug." Moreover, we note that the drafter of Saeilo's claims knew how to couch elements in the appropriate language when he or she contemplated that the claim language should be so interpreted. When describing how the trigger assembly passes by the offset lug in the unlocked position, claims 1, 3, and 9 refer to "a portion" or "portions" of the trigger and trigger bar. The fact that no such proviso appears with respect to the cam lug suggests that "lug" should be given its most natural meaning--a lug in its entirety.

Having considered the plain meaning of the claim language itself, the district court next looked to the specification to determine whether the inventor had used any terms in a manner inconsistent with their ordinary meaning. The specification refers the reader to Figure 2 of the drawings for a demonstration of the lateral offset. As conceded by Saeilo at oral argument, Figure 2--like all other figures in the patent--shows only a lug of uniform cross-section that is laterally offset from the bore axis along its entire length. Although Saeilo objects that construing "laterally offset" by reference to the preferred embodiment would import a limitation from the specification into the claims, the specification provides no support at all for Saeilo's proposed definition. Neither the specification nor the prosecution history makes any reference to the cross-section of the lug, to any means of calculating the central axis of the lug, or to a region of the lug where the trigger will pass by the lug. Moreover, Saeilo's proposed definition requires that the cam lug have more than one central axis, and neither the specification nor the prosecution history makes reference to more than one central axis. Since the specification provides no support for Saeilo's proposed definition, we think the district court did not err by referring to the embodiments disclosed in the specification to reinforce its construction of the disputed claim language.

Saeilo, seizing on the district court's use of "notch" to describe Colt's design, relies heavily on a single passage in the specification reading:

The lateral offset of the barrel cam lug 28 provides a space or notch 37 between an associated one of the inner surfaces 29 and an opposing face 39 on the barrel cam lug 28.

075 patent, col. 3 ll. 5-9. Like the district court, we find little support for Saeilo's proposed definition in this language. At the outset, we are not inclined to accord much weight to the use of the term "notch," since we have no indication what "notch" means. Simply because the parties and the court have used the nondescript term "notch" to describe Colt's design does not mean that "notch" as used in the 075 specification bears any relation to the accused device.

In any event, this language does not literally describe a notch in the lug itself or equate the lateral offset to a notch; rather, this passage says only that the face of the lug and the inner surface of the receiver define a space or notch. The simplest interpretation of this language is simply that "notch" refers to the space bounded by the offset lug and the receiver housing, as shown in Figure 2 of 075. Such a "notch" may be formed simply by the apposition of the cam lug and the receiver housing, without removing any material from the lug itself. In other words, this language suggests only that a space or notch may be created by the spatial relationship of the lug and receiver elements, but not by any peculiarity or variation in their cross-section. Thus, one need not interpret the use of "notch" in the patent text as corresponding to the "notch" in Colt's design, which could be defined as a "notch" without reference to the receiver housing.
Moreover, the language pointed to by Saeilo was absent from 075 as originally filed. As originally written, the specification did not include the language quoted above. Instead, the specification described the novel feature of the invention in the following terms:

the cam 28 as shown in FIGS. 2 and 3 particularly, is staggered, with notch 30 defined in the location shown in the drawings as a cut in the camming lugs of the barrel.

But the "notch" in this passage is not the space that allows for the trigger assembly to pass, and is not a "notch" in the sense used by Judge Duffy to describe Colt's lug design. As clearly shown in the original Figure 3, "notch" in the application as filed referred to the space between the cam lugs into which the camming pin fits when the barrel recoils--that is, the operative cam surface. In the application as originally filed, the term "notch" did not relate to the lateral offset of the cam lug. As recognized by Saeilo's patent attorney during prosecution, the amendments to the specification could not have introduced new matter beyond that already found in the specification and claims as filed. Thus, we cannot view the new language "space or notch" as suggesting any structure not already inherent in the application as originally filed. We conclude that the 075 specification does not support Saeilo's proposed claim construction.

Also like the district court, we find the amendments in response to the initial rejection by the PTO are of little relevance to determining the literal scope of the "laterally offset" limitation. Colt argues at some length that Saeilo disclaimed coverage of Colt's "notch" design when Saeilo substituted a new claim lacking the term "notch" for its original claim, and when Saeilo traversed a section 102(b) rejection over the Roy reference (U.S. Patent No. 3,756,120). As we explain above, the fact that Saeilo replaced an original claim containing the word "notch" with an amended claim lacking the word "notch" is not relevant, since the term "notch" in the original application had no relation to the lateral offset at issue here.

Neither did Saeilo's traversal of the Roy reference explicitly surrender any subject matter. In the Roy design, the cam lug is positioned well forward of the trigger assembly, even when the barrel is fully recoiled. Roy provides a cut-out in the barrel itself--not a cut-out in the cam lug--to provide space for the trigger and trigger bar when the barrel recoils backwards. Since, in Roy's design, the trigger and trigger bar are always positioned behind the lug, overlap between the trigger assembly and the cam lug is not an issue. This much was recognized by Saeilo's patent attorney, who argued that "the problem solved by applicant's claimed structure does not exist in the Roy structure." Consequently, Saeilo's traversal of the rejection over Roy cannot be said to have disclaimed any elements of Colt's design. Since the prosecution history provides no insight to how the term "laterally offset" ought to be construed, the district court properly limited its analysis to the claim language and the specification.

Thus, considering first the plain language of the claim, and second, the 075 specification, we arrive at the same conclusion reached by the district court. Namely, that "laterally offset" as used in claims 1 and 9 imposes a limitation on the entire cam lug, and not on merely a portion of the lug. We are not persuaded by Saeilo's argument that such a construction is improper because it allows Colt to escape infringement by adding "extra metal" to a lug that is otherwise infringing. The "extra metal" of Colt's lug is an integral part of the lug design, not an extraneous addition. Moreover, even under Saeilo's proposed definition, one could avoid infringement by adding or removing metal from other regions of the lug such that the central axis of a cross-section, however that might be defined, would not be laterally offset from the bore axis.

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15. Laterally Sliding and Snapping the Cooperative Coupling Parts Together

The parties also requested that the Court interpret the term "laterally sliding and snapping the cooperative coupling parts together" which appears in claims 23, 29 and 65 of the '486 patent. Unilin states that "laterally sliding and snapping the cooperative coupling parts together" means "the panels are joined by moving them towards each other in substantially a common plane and coupled via a snap action." (Unilin Open. Br. 28-29.) Unilin states that this is similar to the phrase "shifting them laterally towards each other." (Id. at 28.)

Alloc initially proposed a different construction. However, in its response brief Alloc states that it has no substantial disagreement with Unilin's proposed construction. (Alloc Resp. Mem. 13-14.)
A representative use of the phrase appears in claim 23 of the '486 patent as follows: "A floor covering panel according to claim 1, wherein the coupling parts are configured such that two identical ones of said floor panel can be selectively coupled either by laterally sliding and snapping the cooperative coupling parts together or by turning one panel relative to the other with their cooperative coupling parts partially engaged, whereby additional ones of said floor panel can be sequentially coupled to previously coupled ones of said floor panel by laterally sliding each additional panel into a previously coupled panel, or by relative turning motions of an additional panel relative to a coupled panel." ('486 patent, 15:63-67; 16:1-7) (emphasis added.)

Unilin's proposed definition is consistent with the patent claims and specification and, therefore, the Court adopts that definition. Thus, in claims 23, 29 and 65 of the '486 patent "laterally sliding and snapping the cooperative coupling parts together" means "the panels are joined by moving them towards each other in substantially a common plane and coupled via a snap action."

BACKGROUND

The '532 patent is entitled "Transparent Laminated Product" and issued on August 22, 1989. It contains only one claim which is reproduced below:

1. A transparent laminated product comprising a transparent substrate and a 5-layered transparent coating composed of a first ZnO layer formed on the substrate, a second Ag layer formed on the first layer, a third ZnO layer formed on the second layer, a fourth Ag layer formed on the third layer and a fifth ZnO layer formed on the fourth layer, and having a visible ray transmission of at least 60%, wherein the thickness of each Ag layer is from 60 to 250 [angstrom].

'532 pat., col. 10, ll. 58-67.

The alleged infringing Cardinal product is called "LoE2." Both the Cardinal and AFG products include thin, optical coatings that are deposited in successive layers on glass for the purpose of reflecting infrared energy and thereby reducing heat transfer through the glass. Cardinal's product contains depositions of zinc oxide ("ZnO"), silver ("Ag"), and titanium oxide ("TiO"), while AFG's patent claims a five-layer filter composed of alternating layers of zinc oxide and silver.

AFG sued Cardinal, alleging that Cardinal's LoE2 product infringed the '532 patent. The district court, however, granted Cardinal summary judgment, holding that, as a matter of law, Cardinal's LoE2 product does not infringe the '532 patent, either literally or under the doctrine of equivalents. AFG appeals that judgment. We have jurisdiction under 28 U.S.C. § 1295(a)(1) (1994).

DISCUSSION

The district court granted summary judgment to Cardinal, holding that under Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 34 U.S.P.Q.2D (BNA) 1673 (Fed. Cir. 1995), Cardinal's LoE2 product must be viewed as containing seven layers of zinc oxide, silver and titanium oxide, and therefore does not infringe the '532 patent which calls for five layers, consisting of alternating layers of zinc oxide and of silver. We hold that the district court's apparent construction of "layer" is incorrect. In addition, other disputed terms were not defined at all. We therefore vacate the district court judgment and remand the case for further claim construction and such further proceedings as may be necessary.

As is well known, "the determination of infringement is a two-step process. First, the language of the claim must be interpreted. Second, the accused device must be compared to the claim language as interpreted." Read Corp. v. Portec, Inc., 970 F.2d 816, 821, 23 U.S.P.Q.2D (BNA) 1426, 1431 (Fed. Cir. 1992). The first step, claim construction, is a matter of law exclusively for the court, see Markman v. Westview Instruments, Inc., 52 F.3d 967, 970-71, 34 U.S.P.Q.2D (BNA) 1321, 1329 (Fed. Cir. 1995) (in banc); the second step involves a question of ultimate fact, see Fromson v. Advance Offset Plate, Inc., 720 F.2d 1565, 1569, 219 U.S.P.Q. (BNA) 1137, 1140 (Fed. Cir. 1983). Thus, before the district court could properly have analyzed AFG's allegation that Cardinal's LoE2 product infringed, the court would have had to interpret correctly the disputed terms in the claim.
The only discussion of claim construction in the district court's summary judgment opinion focuses on the meaning of the term "layer." Yet, no clear and correct definition is given in the district court's decision. The court merely quotes Southwall's discussion of the "layers" in the Cardinal product, as viewed in the context of the Southwall patent. No definition of the term "layer" is actually given in the Southwall case, the source exclusively relied upon by the court to discuss "layer." Moreover, even if Southwall clearly defined the term "layer," that definition would not be dispositive of the correct definition of "layer" in the '532 patent. The Southwall and AFG patents use "layer" in different contexts. For example, the '532 patent appears to distinguish between "layer," a claim term, and "interlayer," which appears only in the written description. That distinction could be critical in this case. Therefore a precise and correct definition of "layer" is needed.

1 Moreover, the court may need to define other disputed terms, such as "composed of," "formed on," and "5-layered."

--- Footnotes ---
1 Moreover, the court may need to define other disputed terms, such as "composed of," "formed on," and "5-layered."

--- End Footnotes ---

1. "Layer" (all asserted claims) (Claim Elements 1, 7, 8)

a. The Parties' Positions

ATI proposes that the ordinary meaning of the term "layer" be adopted. Dkt. No. 81 at 7-8. Defendants, however, propose that the term "layer" should construed as "a separate and distinct layer." Dkt. Nos. 83 at 6-9; 84 at 10-14, 19-20. Specifically, Sharp argues that the terms "upon" and "atop" support this proposed construction for "layer." Dkt. No. 83 at 6-9. Sharp argues that a "layer" disposed "upon" or "atop" some other material must be "separate and distinct" from what it is disposed "upon" or "atop." Id. Sharp relies upon the patent drawings and specification to support its claim that a "layer" should be considered "separate and distinct." Id. at 7. Sharp also argues that if its proposed construction for "layer" is not adopted, then a "layer" could be arbitrarily drawn "so that it is indistinct from other layers and can be intermixed with or made from the same materials as other layers." Id.

DNP argues that the plain meaning of the term "layer" supports a construction that a "layer" must be "separate and distinct" from other layers. Dkt. No. 84 at 10-14, 19-20. DNP also argues that the specification, claims, prosecution history, and patent drawings support such a construction. Id. at 10-11. By way of example, DNP argues that because the layer of substantially opaque material is, by definition, not transparent, it must be "separate and distinct" from the transparent first substrate. Id. at 19-20.

In response to Defendants' arguments, ATI argues that importing the limitation that a layer be "separate and distinct" is improper and contradicts the ordinary meaning of the term "layer." Dkt. Nos. 81 at 7-8, 88 at 7-8. ATI argues that the words "separate and distinct" are not included anywhere in the claims, the specification, or the prosecution history and that the terms "separate and distinct" are never defined for the jury. Dkt. No. 88 at 7-8. ATI also argues that with the construction of "layer" being a "separate and distinct" layer, Defendants leave no room for a situation where the first layer may incidentally or partially "blend" into a second layer that the first layer is placed "upon" or "atop." Id.

In its Sur-Reply Brief, Sharp reiterates its argument that the limitation of "separate and distinct" is consistent with the plain meaning of the term "layer." Dkt. No. 91 at 1. DNP argues that if a "layer" is not considered "separate and distinct," then the '682 and '711 Patents cannot be distinguished from the prior art. Dkt. No. 90 at 2.

b. Construction

There are two concerns that must be addressed in determining whether the claim term "layer" should be construed as "separate and distinct." First, there is the concern that adopting such the construction of "separate and distinct" would unjustifiably and unnecessarily restrict the scope of the claims. Such unjustified and needless restrictions are specifically prohibited by Phillips and the Federal Circuit's caselaw. Phillips, 415 F.3d at 1312 ("if we once begin to include elements
not mentioned in the claims, in order to limit such claim . . . we should never know where to stop”) (quoting McCarty v. Lehigh Valley R.R. Co., 160 U.S. 110, 116, 16 S. Ct. 240, 40 L. Ed. 358, 1895 Dec. Comm'r Pat. 721(1895)). This is especially a concern in this case where Defendants have offered no definition or proposed construction for the terms "separate" or "distinct," and the '682 and '711 Patents do not include the terms "separate and distinct" anywhere in the claims or in the specification. Counsel for Sharp even admitted at the claim construction hearing that the words "separate and distinct" appear nowhere in the '682 or '711 Patents:

The Court: Mr. Adams, does the term "separate and distinct" appear anywhere in either 682 or '711 Patents?

Mr. Adams: Those exact words do not, Your Honor. However, everything in the patent is consistent with that meaning . . .

Claim Construction Hearing Transcript ("Hearing Transcript") at 45-46.

Second, as raised by Defendants, there is the concern that, unless this Court adopts their proposed construction that a "layer" is "separate and distinct," the term "layer" may be rendered meaningless. For example, if a "layer" were not considered "separate and distinct," then the Parties could argue at trial that the term "layer" be interpreted as several layers which are co-mingled and which are not considered either separate or distinct. Such a construction would contradict the ordinary meaning of the term "layer." Vitronics, 90 F.3d at 1582; Phillips, 415 F.3d at 1313. This is especially true where, as here, the intrinsic evidence supports a construction that the layers are "separate." For example, in both the '682 and '711 Patents, the inventor chose to use the words "upon" and "atop" to describe where the layers are placed. See, e.g., Col. 11, Line 29. Such terminology indicates that one layer is separate from another layer. Additionally, the inventor detailed the process for forming this liquid crystal display which involves placing several different types of layers upon other layers. See, e.g., '682 Patent, Col. 11, Lines 17-45 (Claim 22 of the '682 Patent). This terminology also indicates that the layers should be considered "separate."

Accordingly, this Court finds that the proper construction for the term "layer" is a "separate layer." Claim Element 1 is construed to read as follows: "Placing a separate layer of material, that substantially prevents transmission (or passage) of light, upon one side of the first substrate." Claim Elements 7 and 8 are also construed to include the word "separate" before the term "layer." 4 In adopting this construction, this Court does not find that the layers must be entirely separate such that there could never be microscopic or incidental overlap between the layers. Such a minuscule overlap would be consistent with this Court's construction that these layers are still considered "separate" layers. 5

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4 Claim Elements 7 and 8 will be more thoroughly addressed later in this construction.

5 In its sur-reply brief, even Sharp recognized that with such a small overlap, the layers would still remain "different elements and layers." Dkt. No. 91 at 1. At the claim construction hearing, DNP also recognized that these layers would have some amount of overlap: "Sure, there's going to be some type of adhesion between the two different surfaces." Hearing Transcript at 100.

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Finally, it is also important to note that, at the claim construction hearing, ATI suggested that the term "separate" is not appropriate because the layers in these patents are defined in terms of functions, not in terms of chemical composition. Hearing Transcript at 102. Because of this distinction, ATI suggested that instead of the term "separate," a more appropriate term is "distinguishable." Id. Specifically, ATI stated that the term "distinguishable" is more appropriate due to the following: "It's not terms of exact separateness and no one that is skilled in the art would understand when these layers are put down there is some sort of, you know, precise line of demarcation between these layers." Id.

This Court notes three problems with ATI's proposal to adopt the term "distinguishable." First, while these layers are defined in terms of their functions (e.g., "conductive layer"), the inventor used the terms "atop" and "upon" to define the placement of the layers. The plain meaning of the terms "atop" and "upon" indicate that this process involves placing one layer on another layer and that although there may not be a "precise line of demarcation," the layers are considered separate layers. Second, ATI's suggested term "distinguishable" is too vague to provide any guidance to the jury in construing these claims.
Markman, 52 F.3d at 979 (holding that claim construction is decided as a matter of law by the courts). Specifically, ATI provided no proposed construction for the term "distinguishable," and there is no indication if the layers are to be considered chemically, functionally, spatially, or otherwise "distinguishable."

Third, the specification and the patent drawings in the '682 and '711 Patents support Defendants' argument that these layers are not only "distinguishable" but are "separate." As noted in Phillips, intrinsic evidence (including the specification) is "highly relevant" to the claim construction analysis. Phillips, 415 F.3d at 1315. In the present case, the specification separately describes and separately explains the different layers in the '682 and '711 Patents. See, e.g., Col. 4, Lines 50-67. For example, the inventor detailed the placement of separate layers in the specification: "Disposed upon said substrate 12 is a layer of substantially opaque material 14" (Col. 4, Lines 50-51) and "Thereafter, a layer of a transparent, conductive material, such as a transparent conductive oxide material 30 of FIG. 3B, is disposed upon the passivation layer 26" (Col. 7, Lines 39-41). The inventor also explained forming openings in a separate layer: "Formed in said layer of substantially opaque material 14 is at least one opening 16 which extends through said layer 14 to the substrate." (Col. 5, Lines 1-2). Accordingly, these descriptions in the specification provide support for this Court's construction that these layers should be considered separate.

The patent drawings, another type of intrinsic evidence, also provide further support for a construction that these are separate layers. While these drawings may not be used to define the "precise proportions of the elements," "may not be relied on to show particular sizes," and may not be used to import limitations from the specification to the claims, the drawings are a part of the intrinsic evidence that may be used to inform this Court's construction of the terms in this patent. Hockerson-Halberstadt, Inc. v. Avia Group Int'l, 222 F.3d 951, 956 (Fed. Cir. 2000) (holding that the patent drawings should not be relied upon as being "drawn to scale"); MBO Laboratories, Inc. v. Becton, Dickinson & Co, 474 F.3d 1323, 1333 (Fed. Cir. 2007) (relying upon the intrinsic record, including the figures in the patent, to support its reversal of the district court's claim construction). This is especially true where, as here, the drawings include solid lines indicating separate layers, and the language in the claims and the specification use terms such as "upon" and "atop" which define a separateness between the layers.

Plaintiff asserts that all of Defendants' EDLC ultracapacitors infringe on the '074 Patent. Doc. No. 13 at 2. Plaintiff relies on its expert report and numerous declarations by John Miller, which contains scanning electron micrograph (SEM)/Auger experiments allegedly supporting that the accused infringing products have a primary coating of a conductive carbon, and a secondary coating of activated carbon, as recited by claim 1 of the '074 Patent. Id.

In response, Defendants dispute that its EDLC ultracapacitors meet the limitations claimed in the '074 Patent, arguing that "layers and coatings" are not synonymous. Doc. No. 47 at 8. Defendants also contend that Plaintiff's experiments are deficient because the particular technique used by Miller "is not well-suited for an examination of the structure of the ultracapacitor electrodes, as viewed in cross section." Id. at 8-9.

Determining the likelihood of patent infringement on a preliminary injunction motion requires two steps: 1) construction of the relevant claims; and 2) comparison of the construed claims to the accused product(s). Pfizer, 429 F.3d at 1372. Because of the nature of a preliminary injunction proceeding, claim construction at this stage is itself preliminary because of the incomplete record provided to a reviewing court. 1 The Federal Circuit recognizes the difficulty of claim construction at the preliminary injunction stage because of the incomplete record. See Gillette Co. v. Energizer Holdings, Inc., 405 F.3d 1367, 1374-75 (Fed. Cir. 2005), citing to CVI/Beta Ventures, Inc. v. Tura, LP, 112 F.3d 1146, 1160 n.7 (Fed. Cir. 1997); Bayer AG v. Biovail Corp., 279 F.3d 1340, 1349 (Fed. Cir. 2002); Metaullics Sys. Co. v. Cooper, 100 F.3d 938 (Fed. Cir. 1996). Because of this, a district court may issue a "tentative" or "rolling" claim construction when faced with the task of claim construction on an expedited basis. Oakley, Inc. v. Sunglass Hut Intern., 316 F.3d 1331, 1344 n.3 (Fed. Cir. 2003), citing to Jack Guttmann, Inc. v. Kopykake Enters., Inc., 302 F.3d 1352, 1361 (Fed. Cir. 2002). As in any patent infringement suit, the burden lies with the patentee in establishing infringement by the accused product in a preliminary injunction motion by a preponderance of the evidence. Id. at 1340. However, if Defendants "raise[] a substantial question concerning … infringement … i.e. asserts an infringement … defense that the patentee cannot prove "lacks substantial merit," the

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1 On July 21, 2007, Defendants filed the prosecution file history for the '074 Patent as an exhibit to Michael Cima's declaration. See Doc. No. 119-3, Exh. C. The prosecution file wrapper for the '074 Patent was not submitted in conjunction with Defendants' opposition to the motion for preliminary injunction. See Doc. No. 47, filed February 1, 2007. At the evidentiary hearing, this Court permitted the parties to submit supplemental declaration regarding new evidence presented by Defendants, and for Plaintiff to submit additional evidence on this limited scope. See Rough Transcript at 95-96. The Court did not permit the parties to submit additional evidence or declarations on claim construction, especially in light of this filing occurring almost six months after Defendants' initial opposition was filed. Defendants provide no excuse for the late filing of this evidence, nor do they explain how this evidence relates to the limited scope of the evidentiary hearing regarding scanning electron micrograph technology. Accordingly, this Court will not take into consideration the prosecution file history of the '074 patent to tentatively construe the claims of the '074 Patent.

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i. Claim Construction - First and Second Coatings

Defendants argue that the accused products do not infringe Claim 1 of the '074 Patent because coating and layers are not synonymous. Doc. No. 47 at 7. Defendants conclude that because it uses only one coating of a mixture of activated and conducting carbon, it does not meet the limitations of the '074 Patent. Id. In response, Plaintiff states that claim 1 of the '074 Patent is not a process claim, but a device claim. Accordingly, even if Defendants only apply its carbon slurry in one mixture, it will infringe the '074 Patent if the mixture nonetheless forms two layers, or coatings, on the aluminum current conductor. Doc. No. 66 at 3.

A review of the patent specification supports Plaintiff's construction of "coating" as including both layers and coatings. First, Plaintiff is correct that Claim 1 is a device or product claim, and not a process or method claim. The claim, for example, describes physical properties and characteristics of the device, and not a method or process of making the device. As such, Defendants' method of applying a mixture of activated and conductive carbons, instead of as layers as taught in the '074 Patent, is irrelevant if it possesses the structural limitations of Claim 1. See AFG Industries, Inc. v. Cardinal IG Co., Inc., 375 F.3d 1367, 1370 (Fed. Cir. 2004) (A product claim covers any infringing structure "however it is made or however it is used.").

In addition, Defendants' contention that layers are not synonymous with coatings lacks merit in light of the patent specification. Claim construction requires that a reviewing court read the claims "in view of the specification, of which they are a part." Nystrom, 424 F.3d at 1142 (Fed. Cir. 2005). "The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." Phillips, 415 F.3d at 1316. Here, the specification repeatedly uses the terms "layers" and "coatings" interchangeably:

The first layer … is of a "conducting carbon …" '074 Patent at 7:19-20

The second layer is of an "activated carbon …" Id. at 7:32

The first layer is formed onto the surface of the current collector. Id. at 7:48

The second layer is formed onto the first layer … Id. at 7:60

The first step involves applying a first layer (or primary coating) … Id. at 9:8-9

The primary coating reduces the interfacial resistance and serves as a seed coat for a secondary coating. Id. at 9:25-26

The second layer (or secondary coating) is applied over the primary coating. Id. at 9:58-59.
As can be seen, the first layer and the second layer are coated onto the foil, with the three lanes having been cleared of the first layer and the second layer by the set of wipers. Id. at 11:37-40.

Thus, Defendants' argument that "layers" and "coatings" are not synonymous lack merit in light of the specification's interchangeable use of the terms. Accordingly, this Court construes Claim 1 as a product claim, and the disputed term "coating" to include "coatings or layers." However, as discussed, because the record is not complete, this Court is mindful that any claim construction at this stage is preliminary and tentative.

Guardian's Position

Guardian argues that there are seven relevant claim terms in dispute. Guardian's interpretations are listed below.

Heated Treated Coated Article: a coated article that has been heated to a temperature for a sufficient period of time to enable thermal tempering, bending or heat strengthening of the articles.

Layer: a region of material having a thickness and the composition of which is chosen to provide desired properties.

Oxidation Graded: having a change in the relative oxygen content in a region such that one portion contain more oxygen than another portion.

Progressively More Oxidized: having a trend of increased relative oxygen content.

More Oxidized at a Location Further From the Layer Comprising Ag Than at a Location Closer to the Layer Comprising Ag: these precise words do not appear in the asserted claims of the patents-in-suit, and therefore, they do not require interpretation.

Metal or Metal Nitride Contact Layer: metal or metal alloy, contact lawyer means a layer contacting another layer, metal nitride is a material including both metal and nitrogen.

More Metallic: having more relative metal content in a region compared to reactive non-metals such as oxygen or nitrogen.

AFG's Claim Interpretations

AFG groups the terms in dispute into four categories: (1) coated article claim elements; 2) layer claim elements; (3) oxidation graded claim elements; and (4) nitride claim elements.

Coated Article: all of the coated article definitions ("heat treated coated article," "coated article," and "after being heat treated (HT) said coated article") should be interpreted as: "an article which has been coated" with either: a) "and has been heated to a temperature sufficient to enable thermal tempering, bending, or heat strengthening"; or b) "with a heat treatable coating."

Layer: "a thickness of material having a function and chemical composition bounded on each side by an interface with another thickness of material having a different function and/or chemical composition."

Oxidation Graded: all of the oxidation graded claims ("oxidation graded," "is more oxidized at a location further from the [first] layer comprising Ag than at a location closer to the [first] layer comprising Ag," "is more metallic at a location closer to the silver inclusive layer than at another location further from the silver inclusive layer," and "is more metallic at a location closer to the metal or metal nitride contact layer than at another location further from the metal or metal nitride contact layer") should be interpreted as, "a layer that is progressively more or less oxidized through its thickness" with the appropriate variations in language used in the different claims.

Nitride layer: all of the nitride layer ("nitride layer," "comprises silicon nitride," "layers which comprises a nitride," and "layer comprises Si-rich Si[x]N[y] where x/y is from .76 to 1.5") is "a layer containing a silicon nitride compound, and not containing oxygen."

The two parties proposed interpretations of the term "layer" contain a number of differences. The first difference lies in whether the court should adopt Guardian's "the region of material having a thickness" interpretation or AFG's proposed "thickness of material" interpretation. Both sides agree that a layer has a "thickness" and is made with a certain "material," the difference lies in whether the word "region" should be incorporated into the interpretation.

This court was unable to find any mention of the term "region" in the patents' claims or specifications. Instead, when describing "layers" the patents' claims, tables, and specifications all refer to the type of material used in the specific "layer"
and its "thickness." For example, the '349 specifications discuss "exemplary preferred thickness and example materials for the respective layers on the glass substrate." '349, Col. 7, lines 65-66. The patent also provides a chart that outlines the "preferred range," the "more preferred range" and "example" of thickness for each material. '349, Col. 8, lines 1-18.

In a case involving patents related to the same type of glass, the Federal District Court defined "layer" as a "thickness of material of substantially uniform chemical composition…." AFG v. Cardinal, 239 F.3d 1239, 1250 (Fed Cir. 2001). Although these are different patents at issues, this court believes that the Federal Appeals Court's decision is instructive on how a person skilled in the art of these types of inventions would interpret the term "layer."

As a result of the claims' terms, the specifications, and the guidance of the Federal Court's decision in the 2001 AFG case, this court refuses to adopt the "region of material" interpretation proposed by Guardian. Instead, the court will adopt the "thickness of material" interpretation.

Another point of contention, is whether the "layer" interpretation should include AFG's proposed "bounded on each side by an interface with another thickness of material having a different function and/or chemical composition." Guardian's proposed interpretation says nothing about a layer's spatial relationship to other layers.

Guardian argues that AFG's interpretation is faulty for a numerous reasons, including that AFG's interpretation would cause an absurd situation. In a Southern District of New York case, the patent interpretation principle of construing claim language in a manner that causes the claim to make sense in the context of the patent. Leighton Techs. LLC v. Oberthur Card Sys, S.A., 358 F.Supp.2d 361, 366. Guardian argues that the "bounded on each side" language would cause just such an absurd situation, i.e. the coating would continue ad infinitum since each layer is bounded by another layer on the other side.

Guardian also points out that AFG's position on the interpretation of the term "layer" has changed since the Federal Circuit opinion in 2001. AFG v. Cardinal, 239 F.3d 1239 (Fed Cir. 2001). In that particular case, AFG argued against defendant Cardinal's proposed definition of "a thickness of material of uniform chemical composition bounded by a material of different chemical composition" and instead advocated for the proposed definition of "a thickness of material of uniform composition." Id. at 1250. The Federal Circuit noted that the patent in question did not limit the term "layer" to a deposit bounded by a material of a different chemical composition, thus declining to include such a limitation in the construction of the term "layer." Id.

Similarly, the specification of the patents in this case do not limit the term "layer" to a deposit bounded on each side by an interface with another thickness of material having a different function and/or chemical composition. At times in the patents' claims and specifications, the term layer is mentioned in connection with its physical relationship to other layers. For example, the silver and NiCrOx layers are said to contact each other in certain patent specifications. In patent '349 claims, the infrared reflecting layer is said to be "contacting and sandwiched between first and second layers, said second layer comprising an oxide of NiCr." '349, Col. 23, lines 52-54. However, the vast majority of both the claims and specifications do not place physical limitations on the term "layer." Thus, the Court refuses to adopt this aspect of AFG's proposed interpretation.

Another difference between the parties proposed "layer" interpretation is Guardian's "the composition of which" versus AFG's "chemical composition." The Federal Circuit in the 2001 AFG case included within its "layer" interpretation "of material of substantially uniform chemical composition." Id. at 1250. The court came to this conclusion discussing whether the term "layer" should include in its interpretation the word "uniform":

[F]ocusing on the chemical uniformity of a deposit, rather than its optical properties, constitutes a departure from the disclosures and teachings of the patent. Nowhere does the patent refer to chemical "uniformity" as a characteristic of a layer… we do not think that the incorporation of trace amounts of silver or zinc oxide into titanium deposit would disqualify that deposit from constituting a layer. Accordingly, we hold that the chemical composition of a layer must only be "substantially uniform," rather than uniform.

Id. The court concluded that consistent with the specification that the term layer should be interpreted as: "a thickness of material of substantially uniform chemical composition, but excluding interlayers having a thickness not to substantially affect the optical properties of the coating." Id.
Even though the 2001 opinion left open the question of whether sequential applications of a single material produce a layer or multiple layers, that question was later answered in the same case in a 2004 decision by the Federal Circuit. AFG, Industries, Inc. v. Cardinal IG Company, Inc., 375 F.3d 1367 (Fed. Cir. 2004). The court determined that the term "layer" was not affected by the method of creation, i.e. whether it was deposited in a single sputtering operation or in multiple operations. Id. at 1373. The court stated that the only way the multiple depositions would only be relevant was if the multiple depositions affected the structure and optical properties. Id. Thus, the court concluded that the "unitary structure of the same material that constitutes a 'layer' does not become multiple layers because the manufacturer decided to deposit it in multiple passes rather than in a single pass." Id.

Guardian's interpretation of "the composition of which is chosen to provide desired properties" comes closer to what this court believes is the proper interpretation. AFG's interpretation separates "function" and "chemical composition," whereas Guardian's interpretation meaningfully connects the two in the spirit of the patents' intent. The patent makes clear that each chemical composition is chosen for certain functions that it gives the glass and coating. AFG's interpretation simply acknowledges that each layer is comprised of a certain chemical composition and each layer also has a function without saying that one is the reason for the other.

Similar to the AFG (2004) case, this court also believes the when determining what constitutes a layer the focus should be on the layer's function as opposed to its method of production. Thus, the sputtering of multiple depositions would not be cause to categorize something as more than a layer unless the sputterings affected a different function. This court is not using the prior cases definitions to define the term "layer" in these patents, but the court does believe that the opinions do give this court a better idea of how a person skilled in the art may interpret the patents' claims.

A. Layer

1. Claim Construction

Creo's argument that the Clarus WL lacks a third "layer" of amorphous PET hinges on its proposed construction of this disputed term. Relying primarily on dictionary definitions, Creo argues that "layer" means "a uniform thickness of a material applied to a surface." Presstek denies that a layer must be either uniform or applied. Thus, it asserts that a layer is nothing more than "a thickness of a material." I adopt Presstek's proposed construction.

Creo cites definitions from two general purpose dictionaries and one technical dictionary to support its proposed construction. The American Heritage Dictionary of the English Language defines "layer" as "a single thickness of a material covering a surface or forming an overlying part or segment," 4th ed. 2000, while the Oxford English Dictionary defines it as "a thickness of matter spread over a surface." 2d ed. 1989. In the technical realm, Grant & Hack's Chemical Dictionary defines "layer" as "a mass of uniform thickness covering an area." 5th ed. 1987.

These dictionary definitions do not resolve the interpretive problem. Instead, at most, they suggest the possibility that Creo's proposed interpretation could be correct. First, the cited definitions are themselves subject to various interpretations. For example, it is unclear whether "single," as used in the first definition, means "uniform," as Creo contends, or whether it means "one," as opposed to several. The definitions also fail to clarify whether the terms "covering a surface" or "spread over a surface" refer to the layer's method of construction or its relative position. Second, the idea that a layer must be either uniform in thickness or applied is not supported by other definitions, which suggest that a layer is "one thickness course, or fold laid or laying over or under another," Webster's Third New International Dictionary (1993), or "a sheet or thickness of a material, typically one of several, covering a surface. Compact Oxford Dictionary (3d ed). More fundamentally, dictionary definitions alone can never resolve a claim construction dispute because claim terms must be construed in the context in which they are used in the claims and specification. Accordingly, I turn to the language of the patent itself to discern the contextual meaning of the disputed term.

Although "layer" is used numerous times both in the claims and the specification, nowhere do the inventors use it in a way that suggests that a layer must be uniform. While the specification identifies application techniques that can be used to create layers of uniform thickness (see, e.g., '705 Patent col.9 ll.37-39, col.10 1.4-5, col.11 ll.55-64), these references merely
indicate that layers can be created in ways that produce layers of uniform thickness. They do not suggest that uniformity is a definitional characteristic of a layer. For similar reasons, the inventors' use of figures that are not drawn to scale to illustrate preferred embodiments does not suggest that a layer must be of uniform thickness simply because the figures depict layers that appear to be uniform.

Creo's argument that a "layer" must be applied suffers from similar deficiencies. While it is clear from numerous references in the claims and the specification that the layers specified in the invention can be created through application (see, e.g., '705 Patent col.5 ll.55-68, col.11 ll.52-55, col.14 ll.3-4), these references do not imply that this is the only way that layers can be created. Layers obviously can be formed in other ways and the specification does not suggest that a thickness of a material that underlies another material cannot be a layer unless it is formed by application. The '705 Patent claims a device with layers having specified locations and properties. It does not claim any particular method of layer formation.

In summary, neither the intrinsic evidence nor the extrinsic evidence supports Creo's argument that a layer must be either uniform or applied. In each of its construction arguments, Creo attempts to use the characteristics of preferred embodiments to give the disputed claim term a meaning that it does not ordinarily have. This approach violates the core principle of claim construction that patent claims should not be arbitrarily limited by preferred embodiments. See Phillips, 415 F.3d at 1323. Accordingly, Creo's arguments are unavailing and I construe the term "layer" to mean "a thickness of a material."

--- Footnotes ---

5 Not surprisingly, the parties cite conflicting experts to support their respective positions. Although I have read their opinions, these self-serving reports effectively counter one another. As such, they do not influence my decision.

--- End Footnotes ---
makes no attempt to tie the patents to the patents-in-suit and does not cite to any portion of the specification as supporting its construction. As with SCG's argument regarding the "course" below, there appears to be no actual language in the specifications of the cited references to support SCG's construction but the Court is supposed to perceive that two-dimensional pictures require the proffered language.

With respect to the portions of the parties' claim constructions that are in substantial agreement, the Court will adopt a "Distinct, substantially continuous covering of particulate material." Because a layer can be defined as two layers or courses, '689 patent, 8:10-21, it makes sense that layers would be "distinct." As it is the particulate matter that serves as the infill for an artificial surface, '689 patent, 9:33-56, it also is a reasonable construction to include the term of a "covering" and for the covering to be "substantially continuous." The Court also agrees with FieldTurf that the modifier "substantially" continuous is appropriate, since the layer is constructed of particles, which, by their nature, are unlikely to form an entirely continuous surface. '689 patent, 7:63-8:9; 11:45-12:5; 12:13-19.

Summary of the Parties' Contentions

The parties have narrowed this dispute to what is the correct interpretation of "inner layer", "outer layer" and "air pockets" as used in the patent document.

Plaintiff argues that the '533 patent is for a composite, double knit fabric having two distinct layers, referred to as the "inner layer" and the "outer layer". "Inner" and "outer" are used simply as terms of reference to distinguish the two layers of fabric. Plaintiff urges that the layers of fabric must be distinguishable by mutually exclusive terms. It urges close scrutiny of the claims which do not recite any use of the fabric. To define the claim terms by reference to orientation of the fabric on the body would render the claims nonsensical, it contends.

Plaintiff asserts that because the term "outer layer" is used interchangeably in the specification with other terms, including "outer knitted web", and "inner layer" with "inner knitted web", it should be determined that the patent is describing a fabric and not a knit good. Plaintiff asserts that the prosecution history proves that the terms are simply terms of reference, as they were not the focus of any patentability issues during prosecution.

The parties also dispute the proper construction of the claim term "air pockets". Plaintiff argues that the term "air pockets" is synonymous with and means the voids formed on one layer of the fabric. The claims do not limit or restrict how the air pockets, formed by tuck stitches, are to be used, nor how they are to be oriented in any finished product of the garment, plaintiff contends, contrary to defendant's position.

Defendant argues that plaintiff is trying to change the nature of its invention. The words "inner" and "outer" have specific meanings and are not interchangeable. Defendant's claim interpretation places the air pockets of the inner layer of the fabric next to the body, to trap body heat and provide insulation. Defendant asserts that in all of its shirt product accused of infringement, the air pockets are on the outside, for aesthetics, and thereby serve no insulating purpose. Turning to the dependent claims for support, defendant also asserts that Claims 2, 5, and 7, require the inner layer to be hydrophobic and the outer layer to be hydrophilic, so that moisture migrates in a certain way, in this instance to draw moisture away from the skin.

It is illogical, defendant urges, for the "inner layer" of the '533 fabric to be the outer layer of the fabric in a shirt facing outwardly when the shirt is worn, etc. The '533 patent is concerned with a knit good constructed with the fabric, and it only makes sense, it contends, that the terms "inner" and "outer" refer to the fabric in the context of the knit good. The invention results in a thermal layer, and the specification, it argues, is not just the embodiment of the invention, but the invention itself. Defendant points to one use of the word "garment" in the patent specification as a candid expression of the true meaning of "fabric" as recited in the claims.

Extrinsic Evidence
Testimony of Mr. Hunneke, co-inventor, and Mr. Marker, co-inventor and expert witness, was received at hearing. Mr. Hunneke's testimony was fairly limited on direct and on cross-examination to a description of plaintiff's business, his involvement in fabric development including on behalf of plaintiff, his association with the co-inventor, Ulrich Marker, and his exuberant enthusiasm for the fabric and method claimed in the '533 patent.

Particular aspects of the art implicated by the disputed terms were addressed by the witness. Mr. Hunneke testified on direct examination to his understanding that the disputed terms "inner layer" and "outer layer" are terms of reference. He testified that thermal fabric is but one of four different types of fabric construction and that there are a multitude of uses for thermal fabric, including dishcloths and children's leotards.

He testified that he did not believe at time of application that the fabric of the '533 patent had uses limited to warmth purposes nor was it his intention to so limit it. When approached to develop and/or make a prescribed fabric, the prospective purchaser oftentimes is reticent to disclose the final end product for confidentiality reasons and, therefore, approximately one-half the time, he does not know how plaintiff's fabric will be used by its purchaser.

On cross-examination Mr. Hunneke testified that the disputed patent terms "inner layer" and "outer layer" are used as reference terms and that, in the art of textile knitting, the knitter has the option of referring to the fabric sides in any way.

Ulrich Marker, the co-inventor and expert witness testifying on behalf of plaintiff, testified to his extensive experience in the fabric trade. Through oral testimony and reference to his videotaped demonstration of a circular knitting machine, Mr. Marker's testimony was used to develop the court's understanding of the art. Mr. Marker testified to his expertise in circular knitting and designation "knitting technologist," carrying with it the ability to analyze knitted fabrics. He explained that expertise in warp knitting does not necessarily also mean expertise in the different art of circular knitting, where this witness's particular expertise lies, as amply demonstrated by his qualifications.

The enthusiasm of Mr. Marker also for the fabric at issue paralleled that of Mr. Hunneke on the witness stand. This witness, involved in the drafting of the patent application, also considers the fabric to be a unique creation, with aesthetic and functional qualities and cost-effective attributes.

The process of knitting fabric on a circular knitting machine was described to the court, resulting in a tube of fabric. The witness testified that when the fabric is cut, as it must be so that the fabric may be laid flat, a skilled knitter would be able to identify the inner layer if he or she was in possession of the '533 patent because the inner layer is described as the side with the air pockets.

If the fabric is positioned so that the inner layer faces against whatever the fabric rests upon at the time and then picked up and flipped so that the side with the air pockets faces outwards, Mr. Marker testified there is no difference in the fabric construction. Orientation of the fabric does not matter. Regardless of its orientation against a cutting table, a floor, a body, whatever, the fabric is the same construction, he testified.

Mr. Marker testified that defendant's proposed definitions of "inner layer" and "outer layer" render the patent nonsensical. By inserting defendant's proposed definitions, which presume a final fabric product, such that "inner layer" and "outer layer" mean in orientation to the wearer's body, claim 6, for example, is a technical impossibility as a circular knitting machine can make only fabric, not a fabric product like a garment worn on the body. The claims of the patent refer to a fabric and its construction and not, Mr. Marker repeatedly testified, to a knit good or garment.

On continued direct examination the witness parsed other claims to reiterate that the terminology refers to fabric and a method for making fabric. Mr. Marker testified that the terms "inner layer" and "outer layer" are not terms of the art which
refer to a particular type of knit construction. "Inner layer," the witness testified, is simply the chosen designation for the layer of fabric with the air pockets and "outer layer" for the smooth side, not what is finally done with the fabric. Mr. Marker testified that in his opinion an expert ordinarily skilled in the art of circular knitting would not understand the '533 patent to describe a knit good or garment.

The air pockets, he testified, are formed through the making of tuck stitches which function to tie the two layers together, forming the open spaces. The witness testified that air pockets are not usually formed when a garment is made from fabric.

--- Footnotes ---

6 As to the meaning of "tuck, stitches", the parties' previously noted joint stipulation filed with the court July 20, 2001, recites agreement that "neither the definition of 'tuck stitches', nor the presence of 'tuck stitches' in Sears' accused garments are in contention." However, "the parties may still argue how the tuck stitches relate to how the Court is to interpret the disputed claim terms 'inner layer', 'outer layer', and 'air pockets.'"

--- End Footnotes ---

Mr. Marker testified with reference to the type of fabric at issue that there are many uses of thermal fabric. He testified to its aesthetic qualities and appearance and texture features.

This witness was requested to focus further upon the patent document on both direct and cross-examination. Mr. Marker provided lengthy testimony in this respect, taking up much of the remainder of the full day set aside December 5, 2001 for this hearing.

Plaintiff used Mr. Marker's testimony to parse repeatedly the language of the claims and, also, to refer to the specification's instructions, including as to some uses of the thermal fabric. Mr. Marker alluded to references in the specification to fabric performance, including its thermal properties. The specification, he testified, does not understand the fabric to have purpose only in its insulating effect. The witness was directed to the patent figures, including Figure 3, which shows the checkerboard pattern on the inner layer of the fabric created by the arrangement of air pockets or voids and, the witness later testified, this also is a part of the fabric's aesthetics and performance.

The '533 patent claims initially were rejected by the USPTO as being a violation of U.S. PATENT NO. 5,119,644 ("the Strauss patent"). Mr. Marker testified as to the inventors' dialogue with the USPTO concerning this patent versus the Strauss patent, and that the terms "inner layer" and "outer layer" were not ever at issue; rather, the tuck stitches were the primary focus of this exchange.

Mr. Marker on cross-examination testified that fabric has uses other than in a knit good (for example, a shirt) and reiterated that the patent does not disclose a garment, only fabric. The witness testified that several statements in the specification, including in column 3 at lines 43-45 and lines 54-56, which make reference to a fabric construction, are merely examples of the fabric's utility. The witness described reference to "garment" in column 3 beginning at line 14, where the term "inner surface" is linked to "garment", as nothing more than poor choice of word. He testified that the word "fabric" should have been placed there instead of "garment" and reiterated direct testimony that, in his opinion, one schooled in the art would understand reference to a fabric by the sentence's inclusion of the terms "courses" and "wales", which are not used in their ordinary meaning to describe a garment construction but rather, a fabric construction.

--- Footnotes ---

7 As previously noted, the parties' joint stipulation defines "courses" as "rows of loops in a knit fabric" and "wales" as "columns of loops in a knit fabric."

--- End Footnotes ---

Mr. Marker testified that fabric possesses qualities or properties inherent to it when it lies on the cutting table. Fabric may possess thermal properties, and this is explained at column 3, lines 47-51 where the specification recites "because the composite fabric has inherent thermal properties not found in conventional jersey knit fabrics, it can be used as a substitute.
for separate jersey knit and jersey layers which are bonded together in conventional fabrics." How the fabric is used is not determined until it is made into a garment or good, the witness testified.

The witness testified that statements in the prosecution history, including at page 59 which recites the claims as having been amended to distinguish the Strauss patent so as "to more particularly point out and distinctly claim the pattern of tuck stitches which gives the fabric its insulating qualities and which is not disclosed in the Strauss patent," and preceding lines in this part of the history which recite that "it is this alternating pattern of tuck stitches which gives the fabric of the present invention its inherent insulating qualities," do not support defendant's construction of the claim terms "inner layer" and "outer layer" as being oriented with respect to the use and position of the fabric on the body.

Mr. Marker testified that the air pockets are not limited to serving only to provide an insulating effect. The specification, including at column 3, beginning at line 22, where it is stated "the voids or pockets 28 provided on the inner layer enable the entrapment of air to form an insulating or thermal layer", does not teach this as the only use.

Construction of the '533 Patent

The undisputed starting point for analysis of the disputed terms of the patent is with the language of the claims. See, e.g., Pitney Bowes, 182 F.3d 1298, 1305. Claim 1 is directed to the composite fabric, and claims 4 and 6 to method for making the fabric. Nowhere in the claims are the terms "inner layer" and "outer layer", at the core of this dispute and terms without defined meaning to the ordinarily skilled artisan, used to refer to anything different from or more than the respective sides of the composite fabric. There is no mention of any knit good, no statement of any particular fabric function, nor is there recitation of any fabric use in any of the claims. The claims only define a composite fabric and its method of construction.

The fabric has two layers, distinguished by mutually exclusive terms "inner" and "outer", which repeat themselves as terms of reference in the claims, distinguishing one fabric layer from the other. Each layer is made of a different knit construction with the invention revealing itself as the two layers of fabric and how they are joined together. The claims support the construction advanced by plaintiff of the disputed terms as terms of reference, not limited to a knit good.

Two rules laying out the general relationship between patent claims and the written description are as follows: (1) one may not read a limitation into a claim from the written description; but (2) one may look to the description to define a term already in a claim limitation, for a claim must be read in view of the specification of which it is a part. Renishaw PLC v. Marposs Societa per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998). Examination of the written description and drawings is necessary to confirm that the patentee's use of the disputed terms is consistent with the meaning given by the court and also to determine whether the patentee has disclaimed subject matter or otherwise limited the scope of the claims. Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1343-44 (Fed. Cir. 2001). Confirmatory measures must be taken also with reference to the prosecution history. Id. at 1343.

There are many uses of the disputed terms throughout the patent, including in the specification, which refer consistently to a layer of fabric and not an end use. There are a few references which mention a fabric use orienting the inner layer of the fabric against the skin. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction. Renishaw, 158 F.3d 1243, 1250.

Of necessity, the two sides of the composite fabric, the side with the air pockets and the smooth fabric side, must be distinguished in the patent document. The words chosen, "inner" and "outer", in their ordinary usage, undisputably may derive meaning from orientation with respect to something or someone but these words must be construed here in the context of the patent documents. See Toro Co. v. White Consolidated Industries, Inc., 199 F.3d 1295, 1299 (Fed. Cir. 1999). The task for the court is to determine how a person of experience in the field of this invention would, upon reading the patent documents, understand the words used to define the invention. Id. The court in Toro, where the terms "cover", "included", "attachment", and "removable" were at issue discounted the utility of a dictionary of general linguistic usage with comment that "dictionaries provide general definitions, rarely in sufficient detail to resolve close questions in particular contexts." Id. at 1300.

The written description describes the fabric construction, terming the two layers "outer layer 12" and "inner layer 14". The written description uses "outer layer" and "inner layer" interchangeably with other terms, including "web". "Outer layer" is referred to as "outer knitted web" or "outer web" and "inner layer" as "inner knitted web" or "inner web".
The written description describes how the fabric can be made on a circular knitting machine having cylinder and dial needles. The fabric is produced in the form of a tube. The "outer layer" appears here as the layer of the tube of fabric knitted by the cylinder needles, and the "inner layer" as the layer knitted by the dial needles.

There is nothing in the written description advancing "inner knitted web" or "outer knitted web" in reference to garment construction. The word "fabric" appears four times in the first two sentences under "Description of the Preferred Embodiment", where the terms "inner knitted web" and "outer knitted web" are introduced as interchangeable reference terms. There appears no linkage in this part to a "knit good". There is nothing that informs a "knit good" can be made on a circular knitting machine, either.

Limitation derived from end use, as urged by defendant, restricting the terms "inner layer" and "outer layer" to meaning in the context of a knit good or garment, seemingly would reduce the terms "inner layer" and "outer layer" as used in describing the manufacturing process to nonsense. So, too, would this construction ignore repeated references in the specification to a particular side of the fabric clearly not contemplated as being a part of any knit good.

The patent drawings demonstrate fabrication of the layers, the checkerboard pattern created by the inner layer, and how the yarns of the layers may be fed into the cylinder and dial needles in fabric construction. "Inner layer" and "outer layer" as demonstrated in the drawings refer to the two layers of the composite fabric. No drawing appears related to any end use. 8

8 With reference to the checkerboard pattern shown in Figure 3, described as "a schematic illustration of the inner layer of the composite fabric", the specification at column 3, beginning at line 1, makes pointed references to a depiction of fabric, including that the air pockets are present "on the inner surface of the composite fabric, that the distinct rows and columns in the pattern are revealed on the "inner surface of the composite fabric," and that the wales of the inner layer forming short checks "are laterally spaced across the width of the fabric". There is one mention of garment here, "looking at the inner surface of the garment, the alternating checks 26 and air pockets 28 are arranged in rows which are seven courses in length and columns approximately 2 wales wide." The meaning of "row" and "column" follow, with the term "row" described as meaning "a horizontal band of checks 26 and pockets 28" and the term "column" described as meaning "a vertical band of checks 26 and air pockets 28." Mr. Marker testified that the isolated reference to garment in one sentence here, where the word "fabric" was intended, is insignificant as those schooled in the art understand that fabric is being referred to by the sentence's inclusion of the terms "courses" and "wales", which are not used in their ordinary meaning to describe a garment construction but rather, a fabric construction. As previously noted by the court, the parties have stipulated that "courses" should be interpreted as "rows of loops in a knit fabric" and "wales" as "columns of loops in a knit fabric". As to the terms "rows" and "columns", also appearing in this sentence and defined in the ones that follow with reference to a particular configuration of checks and air pockets, there was no showing that either of these terms ordinarily is used to describe a garment construction, either.

The concluding sentence in the first paragraph appearing at column 3, beginning at line 25, referring to Figure 3, reading "when worn on the body, the air pockets 28 on the inner layer 14 of the fabric 10 provide an insulating effect which is greater than conventional jersey knit fabrics of similar weight," which could at first glance be read to support defendant's position, upon a more considered examination endorses holding that the disputed term "inner layer" refers to a side of a fabric not limited to a fabric used in a knit good. By beginning "when worn on the body, the air pockets 28 on the inner layer 14 of the fabric 10...", the insulating quality enabled by the voids or pockets is promoted as but one example of fabric use, effective conditioned upon the inner layer of the fabric being positioned so that it is worn on, or against the body. Where the term "inner layer" appears in description of fabric use, there is other broad promotion with references like "one useful embodiment", preceding discussion in this instance where hydrophobic yarns are used for the inner layer lying against the skin in this example.

Too, there is instruction that the fabric is "especially useful for making polo sweatshirts and the like", and summary comment that the invention should reduce "costs associated with the production of thermal-lined knit goods," which make reference to thermal properties. The argument defendant seeks to advance, that the '533 patent requires the "inner layer" of
the fabric to be situated in the knit good, oriented against the wearer's skin, and functioning to trap the wearer's body heat through the air pockets on the inside of the fabric, appears built largely around these few references. However, defendant's construction seemingly ignores the language of the claims, imports unnecessary functional limitations into the claims not supported by the specification, and promotes an analysis that is contrary to law.

While the preferred embodiment disclosed in the patent may have a particular configuration, a patent claim is not necessarily limited to a preferred embodiment disclosed in the patent. Transmatic, Inc. v. Gulton Industries, Inc., 53 F.3d 1270, 1277 (Fed. Cir. 1995), citing Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations.").

In recent decisions the Federal Circuit affirmed these cautionary pronouncements concerning the care which must be taken to avoid reading limitations from the specification into the patent claims. See, e.g., Interactive Gift Express, Inc. v. Compuserve Inc., 256 F.3d 1323, 1331-32 (Fed. Cir. 2001); Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182 (Fed. Cir. 1998). In Comark, before commenting as to the fine line between interpreting claim language in light of the specification and reading a limitation from the specification into the claim, the court reiterated determination that "while … claims are to be interpreted in light of the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims." 156 F.3d 1182, 1186, quoting Sjolund v. Musland, 847 F.2d 1573, 1581 (Fed. Cir. 1988).

While reversing the trial court's determination of infringement upon adoption of a more narrow interpretation, this aspect of the analysis undertaken by the court in Toro highlights an important distinction and not, as defendant seems to suggest, some recent development in law:

This is not a case of limiting the claims to a "preferred embodiment" of an invention that has been more broadly disclosed. It is well established that the preferred embodiment does not limit broader claims that are supported by the written description E.g., Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865, 9 USPQ2d 1289, 1299 (Fed Cir. 1988)("References to a preferred embodiment, such as those often present in a specification, are not limitations."). Nor is this a case of limiting claims to immaterial details of a broader invention as set forth in the specification. See, e.g., Sri International v. Matsushita Electric Corp., 775 F.2d 1107, 1118, 227 USPQ 577, 583 (Fed. Cir. 1985)(method of operation described in specification improperly read into structural claims). No such broader invention is here described. Instead, the invention is described throughout the specification as it is claimed, whereby the cover "includes" the ring, so that the ring is inserted by closing the cover and removed by opening the cover, "automatically." There is no basis for construing "including" the ring to mean not including the ring.

199 F.3d 1295, 1301-2. Here, the invention claimed, a composite fabric, is more broadly disclosed than defendant argues, and there is basis in the patent document for construing the terms "inner layer" and "outer layer" as terms of reference applicable to the composite fabric invention, not limited to what is done with the fabric as the preferred embodiment in the written description.

In recent decision, while affirming that the claims do not enlarge what is patented beyond what the inventor has described as the invention, the Federal Circuit also reiterated pronouncements that the specification need not present every embodiment or permutation of the invention and that the claims are not limited to the preferred embodiment. Netword, LLC v. Centraal Corp., 242 F.3d 1347, 1352 (Fed. Cir. 2001).

In Netword, a patent for a system of locating and retrieving information on a distributed computer system through use of "aliases" to denote resources was at issue. A claim was construed at the trial level to require the local server computer to maintain a cache of aliases in light of the specification which states that the local server computer functions to cache or store frequently accessed alias records, to obtain updates from the central registry computer, and to transmit records from the cache, Id. at 1352-53. There are repeated references in the specification to the local server's storage performance. The patentee sought to discount the intermediary functions of the local server premised upon a part of the specification which described a smaller-scale implementation utilizing a single machine. Id. at 1353. The Federal Circuit determined that the claim at issue was correctly construed to require a local server computer performing the described storage and transmittal
functions, in view of the repeated references to these intermediary functions in the specification and where they were the focus of attention during prosecution. Id.

Netword emphasizes the import of what the inventors actually invented and intended to claim and in that case it was a prescribed computer network in which the local server played a vital role as an intermediary computer. Id. at 1352. The intrinsic evidence in this case evidences the inventors of the '533 fabric intended to claim a composite fabric, not a "knit good". Regardless of orientation of the fabric in a knit good, it is of the same construction and properties as that fabric possesses when the tube of fabric is removed from the circular knitting machine and sliced lengthwise. Fabric was invented, with a smooth side, termed the "outer layer" and a side opposite with air pockets or voids arranged in a distinct checkerboard pattern, termed the "inner layer", joined together, and that composite fabric is what the inventors intended to claim, also as revealed in the specification.

Defendant cites to a number of cases where the Federal Circuit determined language in a specification describing an invention in a certain manner compelled the more narrow claim construction, in support of its position. However, cases like Scimed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337 (Fed. Cir. 2001); Watts v. XL Systems, Inc., 232 F.3d 877 (2000); Cutilor Corp. v. A.E. Stalev Manufacturing Co., 224 F.3d 1328 (Fed. Cir. 2000); Wang Laboratories, Inc. v. America Online, Inc., 197 F.3d 1377 (Fed. Cir. 1999); and Phonometrics, Inc. v. Northern Telecom, Inc., 133 F.3d 1459 (Fed. Cir. 1998), do not support directly the argument attempted to be made. Some of these cases establish that whether limitations in a specification should be read into a patent's claims depends upon the facts and circumstances surrounding the particular patent and its prosecution and where the inventor has specifically limited the definition, as in Scimed, 242 F.3d 1337, Watt, 232 F.3d 877, Cutilor 224 F.3d 1328, and Phonometrics, 133 F.3d 1459, where the court determined the more narrow construction appropriate. This result largely rested upon finding the written descriptions carefully explained explicitly claimed limitations. This is not true here. In other cases, that conclusion is reached in situations where the prevailing party tenders expert testimony on claims construction consistent with how the disputed terms are used in the specification, as in Wang, 197 F.3d 1377, and in Netword, 242 F.3d 1347, a case discussed previously. No expert testimony was received here consistent with the narrow construction advanced by defendant. The expert testimony instead supported construction of the disputed terms not limited to a knit good.

In Renishaw, 158 F.3d 1243, cited earlier for pronunciation of certain claim construction canons, the court found both parties offered claims construction for the word "when" not inconsistent with its use in the claims and specification. Id. at 1251. However, descriptions in the specification of an instantaneous process, supported defendant's narrower construction that the word meant simultaneously or nearly simultaneously in the patent. Id. at 1250-53. That is made explicit in the written description which" shows "that the patentee's invention directed at a machine that produces very accurate, very precise probe readings by maintaining tight control over the position of the stylus and in the context of the invention, such readings can only be obtained if the probe triggers very, very soon after contact", Id. at 1251-52, and "the patentee's extremely detailed account of his invention in that written description shows that his aim was to generate a signal as soon as possible after contact...". Id. at 1252-53. The inventor confirmed in his testimony that the patented probes signal as soon as possible when the stylus tips contacts the workpiece, too. Id. at 1253.

Here, there is no explicitly claimed limitation as urged by defendant. Use of the disputed terms "inner layer" and "outer layer" are not limited to a knit good. There is consistency with the patent's use of these terms defined as ones of reference, to distinguish the two fabric sides, and there is inconsistency in the patent document in defendant's claim construction is adopted. No support for a narrow interpretation limited to a knit good is found in the extrinsic evidence, including the co-inventors' testimony. Defendant's proposed construction also places inappropriate reliance upon a perception that logic and common sense are defied by construing the terms "inner layer" and "outer layer" as terms of reference only, distinguishing the two sides of the composite fabric.

One must accept that the entire '533 patent is concerned with a knit good made with a fabric having a thermal/insulating lining, which does not find support in the patent document, prosecution history, or in the extrinsic evidence, to advance the perception. If one correctly understands the '533 patent to claim only a composite fabric, comprised of two layers which of necessity must be distinguished by terms of reference, and its method of manufacture, logic and common sense are not challenged by having the "inner layer" of the '533 fabric appear as the outwardly visible layer of fabric comprising a shirt, or the "outer layer" of the '533 fabric appear as that inner layer of fabric comprising a shirt which faces against the wearer's body. 9
worn on the body, the air pockets on the inner layer of the fabric provide an insulating effect which is greater than voids. On this defendant places much emphasis. It is noted in the specification that "the voids or pockets..." instead of "odd/even", "one/another", or "first/second", as it suggests, to describe the two layers of a composite fabric, toppers in this respect more on word play than on meaningful claim analysis.

The final category of intrinsic evidence, the prosecution history, evidences that the terms are ones of reference. The terms "inner layer" and "outer layer" were not the focus of any patentability issues during prosecution. The record reveals that these terms were part of the original claim language and were not added to any of the claims to define over the prior art. The original application was rejected with explanation by the USPTO that the Strauss patent "discloses a knit fabric where there are two layers of fabric connected by alternating courses and wales of interlock stitches..." In the ensuing dialogue, leading to issuance of the patent upon amendment informing as to use of the tuck stitches to join the two layers of the '533 fabric, the inventors of the '533 patent consistently referred to the two layers of the Strauss fabric as being inner and outer layers and not with any reference to its end use.

Consulting the extrinsic evidence, catalogued in the foregoing, to assist the undersigned in understanding the technical aspects, and mindful that "it is important that the viewing glass through which the claims are construed is that of a person skilled in the art," Interactive Gift Express, 256 F.3d, 1323, 1332, the court finds nothing that disputes or contradicts the basis for construing "inner" and "outer" as used in the '533 patent as terms of reference to distinguish between the two respective layers or sides of the '533 fabric or that the term "air pockets" means voids.

The inventors' testimony, including that of Mr. Marker, an expert in the field, is undisputed that in the art the knitter has the option of referring to the fabric sides in any way. Testimony that the terms "inner layer" and "outer layer" are not terms of the art which refer to any particular type of knit construction, also is not controverted. Uncontroverted testimony as to multiple uses for thermal fabric, one of four different types of fabric construction, also was received. There is no difference in the fabric construction attributable to orientation, both witnesses also testified. Mr. Marker also testified that a circular knitting machine can make only fabric and not a garment. Reference to a fabric is understood by one skilled in the art, where the terms "courses" and "wales" are used. Thermal fabric has aesthetic qualities and appearance and texture features, and, Mr. Marker also testified, fabric can possess thermal properties inherent to it. Testimony also was received that air pockets are not usually formed when a garment is made, rather, they are formed in the making of the fabric.

Turning now to that final term in dispute, plaintiff's proffered construction for "air pockets" is that the term means voids formed in the fabric. As set forth in the patent claims, air pockets are formed by the tuck stitches. Claim 1 describes the air pockets as being formed in the inner layer of the fabric. It describes laterally spaced rows being staggered with respect to the air pockets in the adjacent rows. Claim 1 contains no restriction as to use or orientation in a garment. Claim 6, claiming a method for making the composite fabric, describes the arrangement of air pockets in the fabric as "checkerboard fashion."

Figure 3, discussed in detail in the foregoing, also describes this pattern on the inner layer of the fabric. Further mining the written description, of which the drawings are a part, it appears that the term "air pockets" or "pockets" is used interchangeably with "voids". The distinctness of the pattern is referred to in the description: "This produces a checkerboard pattern having distinct rows and columns on the inner surface of the composite fabric 10 which is shown schematically in FIG. 3."

The resulting pattern, forming a part of the structure of the fabric, is a function of the air pocket or void arrangement. Another function described in the specification reveals itself in the description of the insulating effect of the air pockets or voids. On this defendant places much emphasis. It is noted in the specification that "the voids or pockets 28 provided in the inner layer enable the entrapment of air to form an insulating or thermal layer." The written description continues, "when worn on the body, the air pockets 28 on the inner layer 14 of the fabric 10 provide an insulating effect which is greater than
conventional jersey knit fabrics of similar weight."

Defendant's argument takes this part of the description and reads it into the claims to support contention that "inner layer" as used in the patent means that layer of necessity resting against the body. For those reasons discussed above, which will not be repeated here, there is insufficient support in the patent document for this position, and it is contrary to law.

The prosecution history discloses, too, that the term "air pockets" was not the focus of any patentability issues during prosecution. That term also is a part of the original claims. After making application, in dialogue with the USPTO, the inventors referred to the inherent insulating qualities of the air pockets, but, as discussed in the foregoing, there is no mention in the prosecution history of "air pockets" in a context other than a general description of the invention. So, too, is there no mention of the terms "inner layer" or "outer layer" in a context other than a general description of the invention.

Plaintiff also constructs an argument that where the USPTO examining staff classified the '533 patent into three subclasses all within class 66, "Textiles: Knitting", where all of the subclasses fall under the general subclass 169, "Fabrics or Articles," and where examination procedures included a search of two other fabric subclasses for potential prior art, it is manifest that the USPTO considered the '533 patent to cover a fabric and not a garment. With the classification and fields of search appearing on the front page of the '533 patent document, this is intrinsic evidence which should be considered by this court, it urges.

Defendant refers to the classifications listed on the face of the patent as procedural tools of the USPTO which are not part of the claims, the specification, or the prosecution history, and as such cannot be considered as intrinsic evidence. Defendant makes reference to the classifications in the context of the subjective intent of the USPTO and urges such is not relevant or even appropriate in patent construction, with deference to Markman and its pronouncement that "no inquiry as to the subjective intent of the applicant or PTO is appropriate or even possible in the context of a patent infringement suit." 52 F.3d at 985, aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996).

Scrutiny of this part of the court's decision in Markman, however, reveals this sentence to come within a discussion of extrinsic evidence along lines of whether it would be appropriate to consider the subjective intent of the inventor when he used a particular term and, similarly, whether it would be appropriate to obtain the views of the government not reflected in the prosecution history. The court answers both questions in the negative, as quoted above, concluding discussion with cite to MPEP § 1701.01 ("Office personnel not to testify"). Id. at 985-86. It does not appear, then, that the court was addressing the question presented here by plaintiff's argument predicated upon matters disclosed on the face of the patent document.

However, as neither party can cite to any authority or case law which speaks to the propriety of this court considering the classification codes printed on the front page of the patent as probative of the meaning of the claims, conceded to present an issue of first impression, this novel argument is accorded no significance in the face of the compelling intrinsic evidence not in dispute.

IV. CONCLUSION

The court RECOMMENDS finding that the '533 patent is for a composite, double knit fabric having two layers, referred to as the "inner layer" and the "outer layer", which are terms of reference to distinguish the two layers of fabric. The term "inner layer" refers to the layer of the fabric with the air pockets. The term "outer layer" refers, to the layer opposite the inner layer. The term "air pockets" as used in the '533 patent means voids.

Remaining at issue with respect to infringement in this case is whether the four products tested by Emslander meet the following elements of claim 1 of the '041 patent:

An art reproduction comprising a substrate, a textured colored sheet comprising a color layer and a flexible thermoplastic
layer, and a flexible adhesive disposed between the substrate and the sheet, wherein the color layer of the sheet is exposed, and the thermoplastic layer of the sheet is laminated to the substrate, and wherein said reproduction has sufficient elongation so that when it is stretched, the adhesive and thermoplastic sheet elongate with the substrate to the breaking point of the substrate, and the reproduction does not crack.

Brushstrokes argues that the four reproductions at issue 1) do not have the claimed thermoplastic color layer, 2) are not "exposed" because a coating was applied to each image and 3) do not stretch to the breaking point of the canvas substrate. Because Baratto has failed to adduce admissible evidence showing that the thermoplastic color layer element is present in the accused products, he cannot prevail on his infringement claims. Gabapentin, 503 F.3d at 1259 (to prove infringement, patent plaintiff must prove that each claim element is present in accused product). Therefore, it is unnecessary to address Brushstrokes's arguments with respect to the other 2 elements ("exposed" and elongation) of the claim.

The claim language requires that the art reproduction have a "colored sheet comprising a color layer and a flexible thermoplastic layer." The parties disagree about the meaning of this term, leaving it to the court to decide. When construing disputed terms in a claim, a court generally should give the terms their ordinary and customary meaning. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). The ordinary and customary meaning of terms "is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Phillips v. AWH Corporation, 415 F. 3d 1303, 1313 (Fed. Cir. 2005). The Court of Appeals for the Federal Circuit has held that the person of ordinary skill in the art would read a term both in the context of the claim in which it appears and "in the context of the entire patent, including the specification." Id. (citing Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477 (Fed. Cir. 1998)). Additionally, a patent's prosecution history can be relevant to construing disputed terms of a patent because it "provides evidence of how the PTO and the inventor understood the patent." Phillips, 415 F.3d at 1317.

Brushstrokes believes that the colored sheet described in claim 1 must be comprised of two plastic layers fused together as opposed to a single plastic layer that is printed with non-thermoplastic ink. Baratto contends that the "color layer" is not necessarily a second thermoplastic layer but rather can be the printed ink itself, which has thermoplastic properties. I agree with Baratto's construction.

The patent specification instructs that the "colored sheet of the invention comprises a thermoplastic layer and a printed color layer that is also thermoplastic." Col. 5, Ins. 28-30. It further states that thermoplastic means "the material exhibits plastic deformation or flow when heated." Id. at Ins. 30-33. The specification later clarifies that "the thermoplastic layer or film is printed to provide a colored sheet, i.e., a printed sheet, having a thermoplastic layer and a printed or colored image layer." Col. 6, 47-51. Nothing in the claim language or the specification states that the colored sheet has to include 2 plastic layers. One layer may be comprised of the ink and the other of polystyrene or another similar plastic product. I agree with Brushstrokes that the color layer must be thermoplastic, but the specification makes clear that thermoplastic means that the material--in this case, the ink--exhibits plastic deformation or flow when heated. Thus, the material does not have to be plastic in order to be thermoplastic; it only needs to act like plastic when heated.

The parties' dispute centers on the term "fabric." According to plaintiff, "fabric" means "a cloth made by weaving, knitting, or felting fibers." Plaintiff additionally proposes that "[t]he following materials are excluded from the 'group consisting of:' individual fibers, tissue, and non-woven fabric." For their part, defendants construe "fabric" as "a sheet-like material produced from woven fibers, knitted fibers, or non-woven matted fibers."

Understanding the rationale for plaintiff's proposal requires a certain amount of mental gymnastics. Plaintiff begins straightforwardly enough, identifying as a Markush group the limitation introduced by the phrase "group consisting of." See Abbott Laboratories v. Baxter Pharmaceutical, 334 F.3d 1274, 1280 (Fed. Cir. 2003) ("A Markush group is a listing of specified alternatives of a group in a patent claim, typically expressed in the form: a member selected from the group consisting of A, B, and C.") Plaintiff then argues that everything not included in the Markush group "woven fibers, fabric, knits, and fleece" is excluded from the group. See Gillette Co. v. Energizer Holdings, Inc., 405 F.3d 1367, 1372 (Fed. Cir. 2005)(phrase "group consisting of" signals Markush group, which "by its nature is closed"). This portion of plaintiff's
argument is unobjectionable. Thereafter, however, the argument becomes more tenuous.

Plaintiff's next proposition is that "as a matter of grammar, 'woven' modifies each of the types of fibers in the claimed Markush group, including fabric." Plaintiff's reply brief, at 12. In other words, plaintiff parses the limitation "woven fibers, fabrics, knits and fleece" as claiming "woven fibers, [woven] fabric, [woven] knits, and [woven] fleece." If plaintiff applied its proposed rule of grammar to an earlier iteration of the Markush group, however (the '285 application claimed "the group consisting of individual fibers, woven fibers, fabric, knits, and fleece"), the limitation would be read to claim "individual fibers, [individual] woven fibers, [individual] fabric, [individual] knits, and [individual] fleece." Plaintiff does not suggest that the claim as it appeared in the '285 application should be given such an implausible construction; yet that is the only interpretation available under plaintiff's proposed rule of grammar.

Plaintiff also cites the description in the specification of an absorbent layer "comprising individual fibers or a weave, fabric, knit, preferably a fleece," and argues that the "or" in this phrase reveals an intent to contrast individual fibers (including non-woven materials) with various types of woven materials (including fabric). This taxonomy, the argument goes, demonstrates that the patentee implicitly excluded "non-woven fabric" from the group of materials--weave, fabric, knit, and fleece--named on the far side of the "or." However, this exceedingly strained interpretation imbues the structure of the phrase with far too much substantive meaning.

Finally, plaintiff argues that the chart reproduced below, which purports to show the "progression" of certain claims over the course of the prosecution history reveals that the patentee intended to surrender non-woven materials:

<table>
<thead>
<tr>
<th>'184 Application Claim 3 (Abandoned)</th>
<th>'285 Application Claim 1 (Cancelled)</th>
<th>'613 Patent Claim 1 (Issued)</th>
</tr>
</thead>
<tbody>
<tr>
<td>the group consisting of fleece, non-woven fabric, woven fabric, and fleece,</td>
<td>the group consisting of individual fibers, woven fibers, fabric, and fleece,</td>
<td>the group consisting of knits, and fleece,</td>
</tr>
<tr>
<td>knit fabric and film</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7 I reproduce plaintiff's chart as it was presented at oral argument. A similar chart that misquoted the issued claim in a way that does not appear to be material to plaintiff's argument was presented in plaintiff's brief.

According to plaintiff, this chart demonstrates that the patentee replaced the term "non-woven fabric" with the term "individual fibers," so that the later surrender of "individual fibers" effectively disclaimed non-woven fabric.

Defendants, of course, tell a different story. According to them, the "individual fibers" claimed in the '285 application were not a substitute for the term "non-woven fabric" in the '184 application. Instead, the word "fabric" in the '285 application was used in place of "non-woven fabric, woven fabric, [and] knit fabric," while "individual fabric" was claimed (and later abandoned) as a separate matter in the '285 application.

While both interpretations are perhaps plausible, defendants' explanation is the more obvious. In any event, disavowal of claim scope requires a far clearer statement of intention than the ambiguous inferences that might be drawn under plaintiff's analysis. See Omega Engineering, Inc. v. Raytek Corp., 334 F.3d 1314, 1326 (Fed. Cir. 2003) (disavowal of claim scope based on prosecution history must be unmistakable and unambiguous). Abbott Laboratories, v. Sandoz, Inc., 566 F.3d 1282 (Fed. Cir. 2009), on which plaintiff relies to support its theory that the patentee disclaimed non-woven fabric when it disclaimed individual fibers, is not to the contrary.

In Abbott, the patentee first filed an application that described and claimed Crystal A and Crystal B, then filed a later application (which issued as the patent-in-suit in that case) with broader claims that arguably encompassed both Crystal A and Crystal B, but whose specification referred only to Crystal A. The Abbott court upheld a construction confining the scope of the claims-in-suit to Crystal A, reasoning that because "Abbott knew exactly how to describe and claim Crystal B compounds," but did not do so, the claims were properly limited to Crystal A. Id. at 1289.
Plaintiff's reliance on Abbott here oversimplifies the Abbott court's holding, which was based on language in the specification that identified the invention as Crystal A. Because the written description revealed that "Crystal A was synonymous with the invention," the court applied the exception, rather than the rule against importing limitations from the specification into the claims. In this case, the specification provides no such clear basis for excluding non-woven fibers from the scope of the invention.

For all of these reasons, I reject plaintiff's proposed construction. Plaintiff does not appear to contest defendants' proposal, other than to the extent it covers non-woven fabric. Because I find that non-woven fabric appropriately falls within the scope of the term "fabric" as used in the '613 patent, however, I adopt defendants' construction of the term as "a sheet-like material produced from woven fibers, knitted fibers, or non-woven matted fibers."

G. Layer-Defining-Mold-Cavity-Section

The parties dispute the meaning of "layer-defining-mold-cavity-section." The claims recite this term repeatedly, and refer to both a first and a second layer-defining-mold-cavity-section. Steps (a)-(b) of claim 1 are illustrative:

(a) injecting a quantity of first plastic into the first mold cavity so that the first plastic flows in the first-layer-defining-mold-cavity-section in a first predetermined general direction,

(b) solidifying at least partly the flowed first plastic in the first-layer-defining-mold-cavity-section to thereby form said first plastic layer having a first-direction-flow-record.

'268 Patent, col. 8, lines 19-26. Koito asserts that the "layer-defining-mold-cavity-section" is the area of the mold cavity that forms a layer of the product. As a corollary, Koito also asserts that the layer-defining-mold-cavity-section is the entire section in which plastic flows in the mold cavity adjacent the flow channel. In other words, Koito proposes that the layer-defining-mold-cavity-section occupies the remainder of the mold cavity not used as a flow channel. In contrast, Turn-Key argues that a layer-defining-mold-cavity-section is simply a section of the mold cavity that defines and forms a layer of a cross-laminated section of the product. Under Turn-Key's construction, the layer-defining-mold-cavity-section need not be coextensive with the portion of the mold cavity not used as a flow channel.

The plain meaning of "layer-defining-mold-cavity-section" favors Turn-Key's proposed definition. This is so because the ordinary meaning of "section" refers to a part or portion of a whole. Oxford English Dictionary (2d Ed. 1989) (defining section as "[a] part separated or divided off from the remainder; one of the portions into which a thing is cut or divided" (emphasis added)); Webster's Third New International Dictionary 2053 (defining section in pertinent part as "a part that is, may be, or is held to be separated" (emphasis added)). It follows that a layer-defining-mold-cavity-section is a part of the mold cavity-not necessarily the whole mold cavity (as would be required were the layer-defining-mold-cavity-section to be interpreted as forming a layer of the product as a whole, rather than simply a layer of the cross-laminated section of the product).

The choice between the two parties' positions also depends upon the meaning attached to the word "layer," specifically, whether it refers to a layer of the product as a whole, or whether it refers only to a layer of the cross-laminated section of the product. As discussed above, the layers referred to in the claims are first mentioned in the preamble (and are later defined in the body of the claims) as being part of the cross-laminated section of the product: "a plastic product, with a cross-laminated section that includes a first plastic layer and a second plastic layer . . . ." Id., lines 11-13. Thus, as used in the claims, "layer" refers to one of the two or more layers that form the cross-laminated section. The court has construed "cross-laminated section" to refer to a section of the product that contains both a first and a second plastic layer, where the first and second plastic layers have positively different flow records. Under the court's construction, the cross-laminated section can, but need not be co-extensive with the layer of plastic forming the entire product, i.e., the claims do not require the entire product to be cross-laminated, but instead require cross-lamination in only a "section" of the product. It follows that the layers forming the cross-laminated section need not encompass an entire layer of the product, but rather need only be large enough to form the cross-laminated section of the product. Hence, the "layer-defining-mold-cavity-section" is not, as Koito argues,
a portion of the mold cavity that defines a layer of the product, but rather is a portion of the mold cavity that forms a layer of the cross-laminated section of the product. There is, of course, no reason why one or both of the layers could not also be an entire layer of the product itself. The court merely holds that the claims themselves are not so limited, and by their plain terms can include one or more layers that extend only to the boundaries of the cross-laminated section, and not beyond.

For the reasons discussed above, the court construes the term "layer-defining-mold-cavity-section" to mean a section of the mold cavity that defines and forms a layer of a cross-laminated section of the product.

2. "a layer of flexible material that is minimally porous to macromolecules"

The Court construes the term "layer" as "a single layer." For the phrase "that is minimally porous to macromolecules," the Court agrees with Defendants and construes the phrase as "that is substantially impermeable to macromolecules." However, the Court disagrees with Defendants that the phrase "minimally porous to macromolecules" modifies the term "layer"; instead, the Court concludes that the phrase "minimally porous to macromolecules" modifies the term "material."

A. Parties' Construction Arguments

For the term "layer," Plaintiff argues the term has a plain meaning and is readily understandable so it requires no construction. In the alternative, Plaintiff argues the Court should construe the term to mean "any thickness of material" (with no other physical or structural limitations than those otherwise in the claims). In support, Plaintiff's argument is the extrinsic evidence supports such a construction. Plaintiff relies on a dictionary definition that defines "layer" as a "thickness of material covering a surface or forming an overlaying part or segment." See The American Heritage Dictionary of the English Language 1022 (3rd ed. 1992). Plaintiff argues the Court should not adopt Defendants' construction that reads "a single layer (one and only one layer)." Plaintiff's reasoning is that the claim uses the open-ended "comprising" language, so the Court should not construe the claim to prohibit the addition of features or structures beyond those recited in the claim.

Regarding the phrase "that is minimally porous to macromolecules," Plaintiff argues the specification provides clear guidance for the meaning of the phrase. The specification states that the material of the layer is "minimally porous as described above such that it is capable of substantially containing macromolecules on one side of the device." 15:56-58. Plaintiff argues this supports a construction of "capable of substantially containing macromolecules on one side of the material." Plaintiff also argues the language "minimally porous to macromolecules" modifies the term "material" in the phrase "a layer of flexible material that is minimally porous to macromolecules." 22:33-34.

Defendants seek a construction of "layer" that reads "a single layer (one and only one layer)." Defendants primarily rely on multiple representations in the specification and prosecution history where the term "layer" is stated to be a single layer and is distinguished from other two layer devices. For the phrase "minimally porous to macromolecules," Defendants seek a construction of "substantially impermeable to macromolecules." 1 Defendants cite the specification where it states "[t]he device itself must be substantially impermeable to macromolecules." 13:42-43. However, the major disagreement regarding the phrase "minimally porous to macromolecules" is whether it modifies the term "layer" or "material." Defendants argue the phrase modifies the term "layer."

- Footnotes -

1 Note that in Defendants' brief they incorporate the agreed upon construction of "macromolecules" in their construction of the present phrase by stating "substantially impermeable to molecules with a molecular weight of at least approximately 500 Daltons" instead of "substantially impermeable to macromolecules." The Court has removed the incorporation of the construction for "macromolecules" for the reason of brevity here.

- End Footnotes-
The Court construes the term "layer" as "a single layer." The intrinsic record supports a conclusion that the inventor has limited the layer to a single layer. As the Federal Circuit stated in Phillips, 415 F.3d at 1316, “[i]n [some] cases, the specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor. In that instance . . . , the inventor has dictated the correct claim scope, and the inventor's intention, as expressed in the specification, is regarded as dispositive." Further, "[t]he patentee is held to what he declares during the prosecution of his patent." Gillespie v. Dywidag Sys. Int'l, 501 F.3d 1285, 1291 (Fed. Cir. 2007). In the specification of the patent-in-suit, the inventor clearly limited the scope of the term layer to a single layer. The specification states multiple times that the "present invention" is "single-layered." See, e.g., 6:26-27 ("The present invention is provided as a single-layered malleable fixation device . . . ."). Additionally, the inventor had a previous invention, and consequently prior art for the patent-in-suit, that consisted of two layers. See U.S. Patent No. 5,466,262 (filed Aug. 30, 1993). In the specification of the patent-in-suit, Plaintiff stated the invention of the patent-in-suit "is a single, thin layer of material as opposed to the structure of the Malleable Fracture Stabilization Device with Micropores for Directed Drug Delivery [the '262 patent] shown in FIG. 1b [which clearly shows two layers]." 13:58-63. Indeed, the inventor notes that eliminating one of the layers on the older two-layer device, and thus making it a single layer, is advantageous:

Because a fundamental tenant of surgical practice to [sic] keep the amount of foreign material placed within the body to an absolute minimum, any decrease in the amount of implant used is of benefit to the patient. Therefore, the elimination of an entire layer while maintaining function is a highly significant improvement in design. 7:47-52. Thus, the inventor limited the scope of the term layer to a single layer in the specification by expressly limiting the invention to a single layer and distinguishing prior art on the basis of the single layer. In addition, the inventor limited the layer to a single layer during the prosecution of the patent. The inventor distinguished the invention in the patent-in-suit from the prior art because it was "a single layer rather than two layers." See, e.g., Applicant's 9/13/96 Response to Examiner's 6/12/96 Office Action, at 5, attached as Ex. 13 to Defendants' Amended Answering Brief, Dkt. No. 102. Based on its review of the intrinsic record, the Court concludes that the inventor disclaimed the scope of "layer" to a single layer, and so the Court construes the term "layer" as "a single layer."

The Court rejects Plaintiff's argument that the Court should not construe "layer" as "a single layer" because the claims, such as claim 1, use the open-ended "comprising" language. As discussed above with the claim term "device," the term "comprising" is a transitional term in patent law that is inclusive or open-ended and does not exclude additional elements or steps. CollegeNet, 418 F.3d at 1235. As with "device," the Court need not construe "layer" in a way to reflect the open-ended nature of the "comprising" language. Of course, Plaintiff will be able to take advantage of the "comprising" language when proving infringement of those claims including that transitional phrase. However, the Federal Circuit has warned that while "a transitional term such as 'comprising' . . . does not exclude additional unrecited elements . . . , [c]omprising' is not a weasel word with which to abrogate claim limitations." Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1379-80 (Fed. Cir. 1998) (internal quotes omitted); see also Dippin' Dots, Inc. v. Mosey, 476 F.3d 1337, 1343 (Fed. Cir. 2007). Hence, Plaintiff may not use the "comprising" language for the purpose of getting around the disclaimer that the "layer" is "a single layer," and thus disregarding the Court's construction of "layer."

For the phrase "that is minimally porous to macromolecules," the Court agrees with Defendants' proposed construction reading "that is substantially impermeable to macromolecules." The intrinsic record supports this construction. The specification specifically states that the device must be "substantially impermeable to macromolecules:" 2 The Court disagrees with Plaintiff's proposed construction that reads "capable of substantially containing macromolecules on one side of the material." Plaintiff's citation to the specification is misleading because the specification reads "one side of the device" and not "one side of the material" as Plaintiff proposes. See 15:56-58. Also, Plaintiff's construction adds ambiguity to the phrase by inserting the words "on one side" of the material. By stating "on one side" it implies that the macromolecules may be contained on either side of the material; however, the specification teaches that the macromolecules are to be preferentially contained on the specific side that is adjacent to the interfragmentary space. See 13:22-25 ("This invention is designed to keep . . . the macromolecules . . . in the space between the fracture fragments, i.e., the interfragmentary space . . . ."). Therefore, the Court construes the phrase "that is minimally porous to macromolecules" as "that is substantially impermeable to macromolecules."
Since the word "porous" means the opposite of "impermeable," if something is "minimally porous" it can be said to be "substantially impermeable." Compare Merriam-Webster's Collegiate Dictionary 966 (11th ed., Merriam-Webster, Inc. 2006) (defining "porous" as "permeable to fluids" or "capable of being penetrated"); id. at 624 (defining "impermeable" as "not permitting passage (as of a fluid) though its substance").

The Court agrees with Plaintiff that the language "that is minimally porous to macromolecules" modifies the term "material" and not "layer" in the claim phrase "a layer of flexible material that is minimally porous to macromolecules." 22:33-34. As Plaintiff points out, the specification states "[t]he only requirements are that the material be . . . 3) minimally porous as described above . . . ." 15:50-58 (emphasis added). A plain reading of the claim language in claim 1 also supports an interpretation where the phrase modifies the word "material" and not "layer." The specific phrase in claim 1 reads "a layer of flexible material that is minimally porous to macromolecules, said layer having a first and second major surface, the layer being capable of being shaped in three dimensions by manipulation by human hands . . . ." 22:33-35 (emphasis added). Under a plain reading of the phrase, when the language is referring to the layer, it says "said layer" or "the layer." But there is no qualifying language such as "the layer" before the phrase "that is minimally porous to macromolecules." If the patentee wanted the phrase to modify the layer, then the patentee could have written "a layer of flexible material, the layer being minimally porous to macromolecules" as the patentee did in the latter part of the phrase, yet the patentee did not include such language. See 22:33-34. So the Court concludes that the phrase modifies the word "material" and not "layer."

Finally, Defendants also seek the Court to clarify that "a layer of flexible material that is minimally porous to macromolecules" does not encompass a layer on a stent that leaves uncovered mesh holes which allow macromolecules to freely move through them. The Court refuses to do so. Defendants' issue regarding a stent that leaves uncovered mesh holes is discussed at length in the Court's discussion below of the disputed phrase "the device being capable of substantially restricting the through passage of at least one type of macromolecule therethrough."

1. "A first layer of foam"

The '810 patent suggests broad parameters for "a first layer of foam." It must be "breathable," and can be of variable thickness. It may include (but is not limited to) "open-cell, hydrophilic" foam, or "reticulated" foam. (See '810 patent, col. 2, lines 65-67; col. 3, lines 1-3.) Specific examples of open-cell hydrophilic foam are those that go by the trade names "Aquazone" and "Comfortemp." (See id. at col. 4, lines 29-30.)

Is not entirely clear what dispute the parties have about this claim element. At the May 13 Markman hearing, neither party highlighted the definition of "a first layer of foam" as one that was in dispute. In pre- and post-hearing filings, however, Plaintiffs allude to a dispute over whether the specification limits the types of foam to the named embodiments. To the extent this is an issue, the Court finds that the foams that may compose the "first layer of foam" are not limited to those specifically identified. See Toro Co. v. White Consol. Indus., 199 F.3d 1295, 1301 (Fed. Cir. 1999) ("it is well established that the preferred embodiment does not limit broader claims that are supported by the written description"). The specification offers only one explicit criterion for the composition of the first layer of foam, and that is that it be "breathable."

Plaintiffs urge that the foam must also possess "moisture transfer qualities." To support this proposition, they refer to language in the specification that describes moisture "traveling" through "the first foam material." However, unlike material that "causes" moisture to pass through it, material that merely allows moisture "to travel" through it does not fall within the Court's definition of material having active "moisture transfer qualities." Although some of the foams named as preferred embodiments explicitly possess such qualities, such as "hydrophilic" foam, there is no intrinsic or extrinsic evidence supporting Plaintiffs' claim that all such foams must possess them.

The Court therefore construes "a first layer of foam" to indicate a layer of foam that is breathable as defined in this claim construction, and that includes, but is not limited to, reticulated foam and open-cell hydrophilic foam. Foams known by the trade names "Aquazone" and "Comfortemp" are specifically included.
b. "surrounded by a layer of material"

As the Court has noted, five of the claims at issue state that the polymer material is processed while surrounded by a layer of material that prevents contact with oxygen:

'934 Patent, claims 29, 52: "material is surrounded by a layer of material whose function is to prevent said . . . material from contact with oxygen and said layer is heated"

'814 Patent, claim 12: "device as set forth in claim 7 wherein a layer of material is provided to prevent said polyethylene material from coming into contact with oxygen"

'308 Patent, claim 10: "polyethylene implant material is surrounded by a layer of material whose function is to prevent said polyethylene material from coming into contact with oxygen, said layer of material is heated"

'308 Patent, claim 21: "polyethylene is surrounded by a layer of material whose function is to prevent said polyethylene material from said contact with oxygen, said layer of material is heated"

The ordinary meaning of these claim terms is narrower than the seven claims the Court examined earlier, which merely involved an unspecified method of isolation from oxygen. However, the Court's analysis of these claims is similar to the analysis it employed earlier.

i. '934 Patent, claims 29, 52

The Court finds that claims 29 and 52 of the '934 Patent, which specify that the polymer is segregated from oxygen by a layer of material, are not limited to processes that segregate the polymer from oxygen by a packaging material. This is because the doctrine of claim differentiation suggests that when two distinct claims depend from one independent claim, they should not be read to place the same limitations on that independent claim. Otherwise the dependent claims would render one another superfluous.

Claims 29 and 33 both depend from independent claim 23 of the '934 Patent, but limit claim 23 differently. Dependent claim 29 limits claim 23 of the '934 Patent to processes whereby the polymer "is surrounded by a layer of material" to segregate from oxygen. In contrast, dependent claim 33 of the '934 Patent limits dependent claim 23 to processes whereby an "oxygen impermeable packaging material is the layer used to prevent the polyethylene material from contacting oxygen." The doctrine of claim differentiation strongly suggests that claim 29 is distinct from, and broader than, claim 33.

Similarly, claims 55 and 52 both depend from independent claim 50 of the '934 Patent. Dependent claim 55 of the '934 Patent limits independent claim 50 to processes wherein an "oxygen impermeable packaging material is used to prevent the olefinic material from contacting oxygen," while dependent claim 52 of the '934 Patent only limits claim 50 to processes whereby the polymer is segregated from oxygen by "a layer of material." This implies that claim 52 is broader in scope than claim 55.

The Court therefore finds that claims 29 and 52 of the '934 Patent, unlike claims 33 and 55, are not limited to processes whereby the polymer is isolated from oxygen by an airtight package.

ii. '308 Patent, claims 10, 21

Applying identical reasoning, the Court finds claims 10 and 21 of the '308 Patent, which specify that the polymer is segregated from oxygen by a "layer of material," are not limited to using an airtight package to prevent the polymer from contacting oxygen.

Claims 3 and 10 both depend from independent claim 1 of the 308 Patent. Dependent claim 3 of the '308 Patent expressly
limits independent claims 1 of that patent to processes wherein the method for preventing the polyethylene material's contact with oxygen is "a packaging material." In contrast, dependent claim 10 limits claim 1 of that patent to processes whereby "a layer of material" prevents the polyethylene material's contact with oxygen. The doctrine of claim differentiation suggests that the language of claim 10 is intended to convey a broader scope for that claim than the precise and narrow language of claim 3 of the '308 Patent.

Dependent claims 21 and 14 both depend from independent claim 12 of the '308 Patent. Dependent claim 14 of the '308 patent expressly limits independent claim 12 of the '308 Patent to processes whereby the method for preventing the polyethylene material's contact with oxygen is "a packaging material." This implies that claim 21, which specifies that a "layer of material" segregates the polymer from oxygen, is intended to be broader in scope than the narrowly defined claim 14 of the '308 Patent.

Neither claim 10 nor claim 21 of the '308 Patent require the polymer be heated "in an airtight package." In other words, the material used to segregate the polymer from oxygen does not have to be a packaging material.

iii. '814 Patent, claim 12

The meaning of "layer of material" in claim 12 of the '814 Patent is not so easily construed in the context of that patent's other, related claims. Even so, the Court will not interpret the term to require the polyethylene material be isolated from oxygen by an airtight package. First, the language of claim 20, referring to an "oxygen impermeable barrier around said material," suggests that "layer of material" is distinct from and broader than "in an airtight package." Second, because the related '934 and '308 Patents used the term "layer of material" more broadly than "an airtight package," the Court will not narrow the term merely on the basis of a specification that does not clearly limit the invention to the embodiment. See Inline Connection Corp. v. AOL Time Warner Inc., 302 F. Supp. 2d 307, 324 (D. Del. 2004). The Court interprets "layer of material" to mean exactly what it says and no more. The phrase does not restrict claim 12 to sterilization and heating "an airtight package."

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B. "Leaf Spring Portion"

ADC and Switchcraft debate the meaning of the claim term "leaf spring portion." Claim 1 teaches that a switch includes "at least one conductive movable portion defining a leaf spring portion." '378 patent at 10:20-31.

ADC argues the phrase should be construed to mean "a spring formed by a thin strip or leaf." ADC notes that Merriam Webster's Collegiate Dictionary defines leaf spring as "a spring made of superimposed strips or leaves." Supra at 707 (11th ed.).

Switchcraft argues a leaf spring should be interpreted as a portion "that is firmly anchored at one end with a large deflection at another end." Switchcraft's Proposed Claim Constructions (Switchcraft Markman Brief [Docket No. 46], Ex. G). This proposed interpretation is based on the definition for leaf spring in the McGraw-Hill Dictionary of Scientific and Technical Terms: "[a] beam of cantilever design, firmly anchored at one end with a large deflection under a load. Also known as a flat spring." Supra at 1123 (5th ed. 1994). Switchcraft argues leaf spring is a narrower term than "movable portion" because, after the claim was originally filed, it was specifically added to denote a specific type of movable portion. Switchcraft also supports this argument by noting that claim 1 teaches "said switch including at least one conductive movable portion defining a leaf spring portion" while claim 16 subsequently recites, "said switch including a plurality of conductive movable portions." '378 patent at 10:30-31, 14:9-10. Switchcraft argues that an interpretation of leaf spring as a configuration suitable for conducting electrical signals which is also movable renders superfluous the recitation of a conductive movable switch portion. Finally, Switchcraft argues all of the leaf springs shown in the preferred embodiment are shown and described as having free ends and subject to "deflecting forces." See 4:38, 57-58, 64-65.

ADC proposes "leaf springs" should be interpreted as "a spring formed by a thin strip or leaf." ADC argues claim one describes a spring as a leaf to convey its general shape: a thin or flat piece of material. ADC stresses Merriam-Webster's Collegiate Dictionary defines "leaf spring" as "a spring made of superimposed strips or leaves." Supra at 707. In addition,
the definition cited by Switchcraft in the McGraw-Hill Dictionary of Scientific and Technical Terms states that a "leaf spring" is "also known as flat spring." Supra at 1123.

The '378 specification refers to switch elements 42a and 44a as "flexible leaf springs" but later refers to the same elements as including "spring contacts." See '378 patent 4:32-34, 52. ADC argues the use of "spring contacts" supports its construction of "leaf springs" because spring contacts are defined as "a contact made from flat, metal spring stock; it is usually bent or curved" or as "a relay or switch contact mounted on a flat spring, usually of phosphor bronze." The Illustrated Dictionary of Electronics, TAB Books, Inc., 477, 215 (3rd ed. 1985); McGraw Hill Dictionary of Scientific and Technical Terms, supra at 1896. ADC argues the common emphasis in all of these definitions is the thin or flat shape of the spring. In the specification, six elements, 42a, 44a, 50a, 52a, 70a, and 70b, are identified as leaf spring portions and are shaped as thin strips or leaves. '378 patent 4:31-33, 50-51, FIGS. 5, 6.

Switchcraft and ADC debate whether the definition of "leaf spring" must reflect its functional use. Switchcraft argues "leaf spring" is a term of art that describes both the structural and functional elements of the spring. Switchcraft contends ADC's definition only reflects the structure and not the function of a "leaf spring." ADC counters that if the definition of "leaf spring" encompasses the functional language included in Switchcraft's definition, the phrase "at least one conductive movable portion defining a leaf spring portion" would be redundant. ADC claims the functional limitation is included by the term "moveable."

The Court finds "leaf spring" should be interpreted as "a spring formed by a thin strip or leaf." This interpretation is consistent with the use of "leaf spring" in the specification. Although the preferred embodiment does show leaf springs that are anchored at one end, nothing in the claim recites that leaf springs must be anchored at one end or have a large deflection at the other end. Limitations shown in the preferred embodiment are not to be read into claims. Burke Inc. v. Bruno Indep. Living Aids, Inc., 183 F.3d 1334, 1340 (Fed. Cir. 1999). The claims emphasize only that leaf springs are movable. Furthermore, the Court's construction reflects the common feature of the definitions for "leaf spring" - a thin or flat shape. In addition to the quoted dictionary definitions, other jurisdictions have also defined leaf springs as "flat pieces of tensed metal" and "flat (or leaf) springs." Cool-Fin Electronics Corp. v. Intl Electronic Research Corp., 491 F.2d 660, 661 (9th Cir. 1974); Turbocare Div. of Demag Delaval TurboMachinery Corp. v. General Electric Co., 264 F.3d 1111, 1121-22 (Fed. Cir. 2001). The claim uses "leaf spring" to describe the element's structural aspect while "movable" describes its functional element.

Switchcraft argues adapting this interpretation ignores the stated preference for scientific dictionaries when defining technical terms. See AFG Indus. v. Cardinal, 239 F.3d 1239, 1248 (Fed. Cir. 2001). However, it is critical the interpretation reflect the use of the term in the patent specification. Teleflex, Inc., 299 F.3d at 1325. The construction proposed by Switchcraft is itself a variance from the definition found in the technical dictionary. Switchcraft's construction includes a large deflection at one end while the technical dictionary does not specify the location of said deflection. Additionally, ADC presented several examples of leaf springs that would not be covered by Switchcraft's definition, and in at least one case, the technical dictionary's definition. These examples include leaf springs that are anchored on both sides with a deflection in the middle, such as those commonly used in van and truck suspension or described as leaf spring 130 in JP Patent No. 4-24642. See Pl.'s Markman Brief at 10; Pl.'s Oral Argument Slide Nos. 40-41. It also includes the leaf springs that are not anchored at either end, such as the leaf spring 15 of GB 1224234 discussed by the Federal Circuit in Turbocare. 264 F.3d at 1121-23; Pl.'s Oral Argument Slide No. 42. Switchcraft argues for a construction it claims is commonly understood by those skilled in the art. However, without greater intrinsic evidence that the patentee intended to limit the use of "leaf spring," it is inappropriate to impose such a definition given the many common examples of leaf springs that fall outside the ambit of its proposed definition.

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7. Lead Screw

The ordinary meaning of "lead screw" is a threaded shaft used to convert rotation to longitudinal motion. The patent figures are consistent with this meaning, displaying the lead screw as a threaded shaft. Relying on the prosecution history, Volovik claims that the inventor, Giter, defined "lead screw" as a finely threaded rod with a nut other than a ball nut.
It is well established that the prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution. Springs Window Fashions LP v. Novo Indus., L.P., 323 F.3d 989, 994 (Fed. Cir. 2003). An inventor's statements distinguishing the claimed invention from prior art acts as a disclaimer by revealing what the claimed invention does not cover. Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1304 (Fed. Cir. 1997). A disclaimer must reasonably clear and deliberate. Springs Window Fashions, 323 F.3d at 994; N. Telecom Ltd. v. Samsung Elecs. Co., 215 F.3d 1281, 1294-95 (Fed. Cir. 2000).

In this case, the examiner rejected Giter's application for the '562 Patent because United States Patent 4,566,868 (Menzies) "teaches driving a piston with a rotary stepper motor, threaded piston rod 20, and ball screw 17." Giter responded:

Menzies does not disclose a lead screw. There is no disclosure in Menzies that the ball screw 17 is capable of the fine gradations in linear movement which [Giter's] lead screw provides. It is well known in the art that lead screws may be made with extremely fine pitch, which would provide [Giter's] invention with very precise control of the longitudinal position of the piston 38, which is required for accurate dispensing of very tiny volumes.

The examiner rejected Giter's argument, stating that the "threaded rod 20 [in Menzies] is read as the lead screw." Giter appealed the examiner's rejection of his application. On appeal, he raised several arguments relating to Menzies, including:

Menzies [does not] disclose[] a lead screw. . . . There is no indication that the ball screw 17 of Menzies is equivalent to a lead screw. There is no disclosure in Menzies that the ball screw 17 is capable of the fine gradations in linear movement which [Giter's] lead screw provides.

Giter also argued that Menzies was non-analogous prior art, and that there was no suggestion to combine Menzies with another prior art reference relied on by the examiner. The examiner allowed the claims in light of the arguments Giter presented on appeal.

The prosecution history does not support Volovik's proposed construction of lead screw. Giter distinguished Menzies based on the ability to perform fine gradations of linear movement. Giter's assertion that there is "no indication" that Menzies' ball screw is equivalent to a lead screw falls far short of a reasonably clear and deliberate disclaimer of the use of a ball nut in the '562 Patent. The Court therefore rejects Volovik's contention that Giter defined "lead screw" to exclude use of a ball nut, and construes the term as a threaded shaft used to convert rotation to longitudinal motion.

The term "lead shot-filled closed front end" first appears in the phrase: "urging in movement said lead shot-filled closed front end of said tubular projectile body fully into said projectile compartment to an extent causing said tail thereof to contact against said closed 12 gauge shotgun shell end and said lead shot-filled closed front end to expand radially into contact with said 12 gauge shotgun shell cylindrical wall so as to assume said cylindrical shape thereof characterized by a blunt front end." '086 patent, 5:13-20.

Defendants' proposed construction of "lead shot-filled closed front end" is "the closed front end portion of the projectile body forward of the constriction/delineation that is filled with lead shot and has a diameter that is less than the interior diameter of the 12 gauge shotgun shell." Def. Op. Br. at 15. Defendants note that, in order for the projectile body to "expand radially" when it is shoved inside the shell casing as stated in the claim, the "front end" must be narrower than the shell casing.

Plaintiff responds that it is not necessary for the entire "lead shot-filled closed front end" to be narrower than the casing in order for some portion of the front end to "expand radially" inside the shell casing. Plaintiff notes that "claims must be construed so as to be consistent with the specification, of which they are a part." Merck & Co. v. Teva Pharms. USA, Inc., 347 F.3d 1367, 1371 (Fed. Cir. 2003); see also Modine Mfg. Co. v. U.S. Int'l Trade Comm'n, 75 F.3d 1545, 1550 (Fed. Cir. 1996) ("[A] claim interpretation that would exclude the inventor's device is rarely the correct interpretation; such an interpretation requires highly persuasive evidentiary support.…"), cert. denied, 518 U.S. 1005, 116 S. Ct. 2523, 135 L. Ed. 2776.
2d 1048, overruled on other grounds, Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558, 574 (Fed. Cir. 2000). Plaintiff argues that defendants' construction is incorrect because it would exclude from the claim the preferred embodiment of the invention described in the patent specification, in which the preferred maximum projectile width is 1" and preferred shelling case width is 3/8". '086 patent, 3:55-60.

First, as a matter of physics, the projectile body, including the front end, must be very slightly narrower than the shell casing at the point that the projectile enters the shell casing in order for one to fit inside the other. This does not require, however, that the entire front end be narrower than the casing prior to insertion. Nothing in the claim requires that the entire section of the projectile body forward of the constriction (i.e., the "lead shot-filled closed front end") have a diameter that is less than that of the 12 gauge shotgun shell prior to its insertion into the shell casing. The front end could initially be wider than the casing and could be narrowed at the point where it enters the casing.

Plaintiff is correct that the claim only requires that some portion of the "lead shot-filled closed front end" "expand radially" inside the shell casing. Only the very tip of the closed front end must be narrower than the shotgun shell in order for the closed front end portion to "expand radially" once inside the shell casing. The construction of "lead shot-filled closed front end" that is consistent with the ordinary meaning of the claim language is therefore "the closed front end portion of the projectile body forward of the constriction/delineation that is filled with lead shot, some portion of which has a diameter that is less than the interior diameter of the 12 gauge shotgun shell at the time that the portion is inserted into the shotgun shell.

7. "lead wire extending from the package"

Claim 1 of the '919 Patent describes a "first lead wire extending from the package to enable the second end to be interconnected to a defibrillator prior to the opening of the package and use of the first electrode." Claims 12 and 17 contain similar language. Philips asserts that the "lead wire extending from" language means that the insulated wire starts inside the package, and continues through and beyond the package periphery. Cardiac Science contends that "lead wire extending from" language should be construed as "the wire is configured to enable electrical connection to a defibrillator through an unopened electrode package."

Consistent with the Court's construction of the "electrode connection means" of the '884 Patent, supra, the Court finds that the term "lead wire extending from the package" is properly construed as "the insulated wires or leads start inside the envelope and extend from the inside to the outside of the envelope."

11. "lead wires with connectors extending from the package"

Claims 1, 3, 4, and 10 of the '571 Patent describe "lead wires with connectors extending from the package." Philips asserts that this term should be construed as "a round wire covered by an electrically insulating material, such as polyvinyl chloride, and having two ends used to connect two points in a circuit, the lead wires having connectors on the end that are outside the package." Cardiac Science contends that this term should be construed as "lead wires and connectors extend from electrode package."

The electrodes are sealed in packages that must remain sealed so that the gel on the electrodes (which ultimately forms the contact with the rescue patient) does not dry out. Yet, the self-test requires electrical contact between the AED and the packaged electrodes, so that the self-test can reach the electrodes inside and determine whether electrical conductivity still exists. The lead wires and the connectors extending from the package provide this contact.

The patent specification describes the preferred embodiment as follows:
Insulated lead wires 56 extend from each electrode 50, and have a first end connected to the conductive sheet and a second end connected to connector 58. Connector 58 is configured to releasably mate with the electrode connector 32 in electrode compartment 26. Electrodes 50 are sealed within a polymer or polymer-metal laminate package 60 such as that shown in FIG. 2. Lead wires 56 and connector 58 extend from package 60.

(Id. at c. 2, ll: 50-58.) Based on this language, Philips argues that the wires extend from the package, with the connectors completely outside the package. Cardiac Science, on the other hand, asserts that the connectors may merely reach outside the package with the lead wires contained completely within the package.

The Court finds that the claim language contemplates that the connectors extend outside the package. However, the connectors do not have to "completely" extend outside the package, as Philips contends. The Court need not limit the claim construction to the preferred embodiment. Consistent with the plain language of the claim, the Court construes this term as "the lead wires and the connectors extend, at least partially, from the electrode package."

4. "Leading Seal Edge"

Formula proposes a construction of this term to mean the edge of the seal that leads the travel of the piston from the first end of the cylinder toward the second end of the cylinder and that passes the timing port during that travel. Relying upon inferences drawn from a claim where the term does not appear, Formula's construction rests on its assertion that the piston can move only in an axial direction within the cylinder and that the seal can only move in lockstep with the piston. Formula's construction also assumes a seal for which all points of the circumference are equidistant from the second end of the cylinder, so the entirety of the seal would lead the piston assembly during travel from the first end of the cylinder to the second end.

SRAM contends that the term refers to the forward edge of the seal that interacts with the timing port such that the movement of hydraulic fluid into the reservoir is cut off, causing pressurization within the chamber and actuating the brake system. This construction focuses not on whether the edge of the seal leads the piston's movement but instead on the movement of the seal edge with regard to the timing port, independent of whether the position of the piston vis-a-vis the timing port also changes. The term appears in the context of three claims involving adjustment of the dead band, a system that is dependent on the relationship of the seal and the timing port. The claim on which Formula relies (claim 13) 2, by contrast, addresses actuation of the brake, a process that is dependent upon the movement of the entire piston through pressure on the brake lever, taking the piston assembly through a much larger portion of the cylinder to create differing amounts of force within the braking system and therefore a greater degree of slowing of the bicycle overall. SRAM's construction is more closely rooted in the context that a person skilled in the art would use to determine the meaning of this term, making it the more suitable of the parties' advanced positions. Accordingly, we construe the term "leading seal edge" to mean the forward edge of the radial seal that interacts with the timing port.

Footnotes

[2] In pertinent part, claim 13 reads as follows: "A master cylinder for a hydraulic disc brake, the master cylinder comprising: a housing defining a cylinder, the cylinder having a first and second end;...a piston received in the cylinder having a radial seal, the piston being movable between a select starting position with the seal between the first end and the port opening with the seal a select distance from the port opening and a pressurized position with the seal between the port opening and the second end, the radial seal preventing fluid flow between the cylinder and the reservoir when positioned between the port opening and the second end to pressurize the second end;...[and a] dead band adjustment means operatively associated with the piston for moving the radial seal to adjust the select distance between the port opening and the seal...."

This term appears in asserted Claim 11. The definition of this phrase depends greatly on the definition of the term "housing" as it is used in the patent and as the court set forth in Section A(1). In that discussion, the court found that the term "housing" in the context of this patent means "a case covering, protecting, or enclosing other parts of the fuel cap." The court declined to read into this basic definition any of the limitations proposed by Gerdes, instead finding that nothing in the patent's claims or specification dictated the structures that were, or were not, a part of the housing.

This definition of the term "housing" in turn affects the meaning of the phrase "leaving said housing and said second flange intact to seal said neck." Taking into consideration this definition, in its simplest form, Claim 11 claims a fuel cap on which an impact to the outer cover fractures the breakable portion of the first flange and leaves the "case covering, protecting or enclosing other parts of the fuel cap" as well as the second flange intact to seal the fuel fill neck. Reexamined 097 patent, col. 1, 11. 58-61. Next, the court must also take into account other important terms in this phrase including: "leaving" and "intact." The most pertinent dictionary definition of the term "leave" is "to cause to be or remain in some specified condition," in this case "intact to seal said neck." See Webster's Third, Gerdes Ex. 233. "Intact" is defined, in part, as "untouched" or "left complete or entire." Webster's Third, Gerdes Ex. 232.

Both the claims and the written description of the invention in the patent make clear that in order for this invention to accomplish its purpose, a portion of the cap must break at the time of impact. See reexamined 097 patent, col. 1, 11. 58-60; 097 patent, col. 1, 11. 38-47. It is equally clear that when this break occurs the second flange, and at least a portion of the housing, must remain in place to seal the filler neck and prevent fuel spillage. See reexamined 097 patent, col. 1, 11. 60-61; 097 patent, col. 1, 11. 43-47. In order to accomplish these functions, the cap consists of a breakable first flange or a breakable portion of the housing itself. Reexamined 097 patent, col. 1, 11. 58-60; col. 2, 11. 43-49.

Dependent Claims 24 and 25 specifically discuss the frangible portion of the housing itself. The court agrees with Gerdes in that nothing in these two claims dictates that the frangible portion of the housing break in every impact. That is, "an impact on the outer cover of the fuel cap may fracture the frangible portion of the first flange (as recited in claims 11 and 24) without fracturing the frangible portion included in the housing and leave the housing with its frangible portion intact to seal the neck." Gerdes Reply Brief on Claim Construction, p. 22. Contrary to Gerdes' argument, however, Claims 24 and 25 aid the court in interpreting the phrase at issue here. Specifically, if the patentee claimed the cap of Claim 11, and incorporated by reference into Claim 24, "wherein the housing includes a frangible portion," then it simply does not make sense to hold that the housing of the cap in Claim 11 must always remain unbroken. This does not mean that the breakable portion of the housing -- formed as is claimed in Claim 24 -- must break in every impact, but rather that it may break in certain instances. Thus, regardless of whether the first flange is a part of the housing, the housing must at least in certain situations be capable of breaking at a designated point; something a housing that must remain unbroken clearly cannot do.

For this reason, in order to give meaning to Claims 24 and 25, the court finds that "leaving said housing and said second flange intact to seal said neck" cannot require that the housing must remain untouched or complete as the ordinary meaning of the term "intact" suggests. Instead, the housing must remain only as complete as necessary to, in combination with the second flange, seal the neck. Under this definition, the cap may fracture at either the breakable portion of the first flange or the breakable portion of the housing in response to the impact and, as a result, the housing may or may not break so long as the housing and second flange continue to seal the filler neck. This finding is consistent with both the claims of the reexamined 097 patent as well as the specification of the 097 patent and the reexamined 097 patent.

Therefore, the court finds that the definition of "leaving said housing and said second flange intact to seal said neck" means that after the impact the "case covering, protecting, or enclosing other parts of the fuel cap" and the second flange must remain complete enough to perform their function of sealing the filler neck to prevent fuel spillage.
B. Claim 37 -- Literal Infringement

Both parties contend that they are entitled to summary judgment on the issue of infringement of claim 37 based on their respective interpretations of the term "ledges." (See Ariens Co.'s Mem. of Law in Supp. of its Mot. for Summ. J. of Non-Infringement at 20-21 ("Def.'s Supp. Infringement Mem."); Toro's Mem. in Opp'n to Ariens's Mot. for Summ. J. of Non-Infringement at 1-7 ("Pl.'s Opp'n Infringement Mem.").) Ariens argues that because its accused product has surfaces that extend outward but without any discontinuity in the surface of the rear wall, they are part of a continuous curve and cannot be characterized as "ledges." (See Def.'s Supp. Infringement Mem. at 20-21; Def.'s Reply Infringement Mem. at 11-13.) Toro responds that Ariens is not entitled to summary judgment with regard to claim 37 because: (1) Ariens's proposed construction of the term "ledges" is improper because it would add limitations to claim 37; (2) the accused product literally infringes claim 37 even under the proposed construction of the term "ledges" advanced by Ariens; and (3) the accused product infringes claim 37 under the doctrine of equivalents. (See Pl.'s Opp'n Infringement Mem. at 1-7.)

Element (d) of claim 37 describes: "two downwardly facing ledges located on the rear wall of the housing beneath the upper edge of the housing, wherein the ledges are positioned on each side of the snow collecting chamber to lie above the end sections of the impeller." ( '726 Patent column 18, lines 54-58.) Although claim 37 contains three other elements (see id. column 18, lines 37-58), the only one in dispute is element (d).

A claim of literal patent infringement requires a two-step analysis: claim construction, which is a question of law, and a determination of whether the accused product infringes the asserted claim, as properly construed, which is a question of fact for the jury. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1581-82 (Fed. Cir. 1996); see also Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996). In interpreting a claim, a court first looks to the intrinsic evidence, such as the claims themselves, the specification, and the prosecution history. Vitronics, 90 F.3d at 1582 (citing Markman, 52 F.3d at 979). In construing the language in a claim, a court is guided by the principle that:

Although words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history.

Id. (citing Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578 (Fed. Cir. 1996)). If the meaning of the claims to be construed is clear from an examination of the language of the claims at issue, the patent specification, and the prosecution history, it is inappropriate for a court to consider extrinsic evidence, such as expert testimony. Id. at 1584 ("In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a claim term. In such circumstances, it is improper to rely on extrinsic evidence."); see also Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1216 (Fed. Cir. 1995), cert. denied, 520 U.S. 1115, 1117 S. Ct. 1243, 137 L. Ed. 2d 326 (1997); Hormone Research Found., Inc. v. Genentech, Inc., 904 F.2d 1558, 1562 (Fed. Cir. 1990).

--- Footnotes ---

1 Toro's Amended Complaint does not specify whether it is alleging literal infringement of the '726 Patent or infringement under the doctrine of equivalents. In its Memorandum in Opposition to Ariens's Motion for Summary Judgment of Non-Infringement ("Pl.'s Opp'n Infringement Mem."), however, it argues that Ariens's accused product infringes both literally and under the doctrine of equivalents. (See Pl.'s Opp'n Infringement Mem. at 5-7, 15-16, 30-31.) The Court will address both arguments in turn.

2 Claims 38-42 are dependent on claim 37, the only remaining independent claim at issue. (See '726 Patent.) Accordingly, if the Court finds that Ariens is entitled to summary judgment with regard to whether the accused product infringes claim 37, it must also grant summary judgment with regard to claims 38-42. See Wolverine World Wide, Inc. v. Nike, Inc., 38 F.3d 1192, 1199 (Fed. Cir. 1994) (if non-infringement is found with regard to independent claim, it must also be found with regard to all claims dependent thereon); see also Wahpeton Canvas Co. v. Frontier, Inc., 870 F.2d 1546, 1553 (Fed. Cir. 1989) ("It is axiomatic that dependent claims cannot be found infringed unless the claims from which they depend have been found to have been infringed . . .").

--- End Footnotes ---
To interpret the term "ledges," the Court must first look to the plain meaning of the term in question, and apply that construction of the term unless intrinsic evidence indicates that it is to be construed differently. See In re Paulsen, 30 F.3d 1475, 1480 (Fed. Cir. 1994). The definition of the term "ledge" is: "A horizontal projection forming a narrow shelf on a wall." American Heritage Dictionary 721 (2d ed. 1985). 3 Ariens argues that a "ledge" connotes a discontinuity in a surface, and because the protrusions in the accused product are part of the same unbroken surface, they cannot be considered "ledges." (Def.'s Supp. Infringement Mem. at 21.) Toro argues that the accused product literally infringes claim 37 because, even under Ariens' proposed construction of the term "ledges," the protrusions in the accused product constitute discontinuities in the surface of the rear wall. (See Pl.'s Opp'n Infringement Mem. at 3-4; see also Pl.'s Mem. in Supp. of its Mot. for Summ. J. that its Patent is Not Invalid Under 35 U.S.C. §§ 102 or 112, P 1 and that Ariens Infringes Claim 37 at 15-18 ("Pl.'s Supp. Infringement Mem.").)

Because the Court finds no substantive difference between the two definitions (and because Toro concedes that its proffered definition "varies only slightly" from Ariens' definition), the Court will consider both definitions in its construction of the term "ledges."

Ariens urges the Court to examine the drawings contained in the '726 Patent and, from them, to construe the term "ledge" to require a discontinuity in an otherwise smooth surface. To the extent that the requirement of a discontinuity differs from the requirement that a device "project" in order to constitute a ledge, the Court rejects Ariens' contention. Ariens cites to no authority that a Court may use the drawings contained in a patent to add limitations to that patent's claims. See In re Paulsen, 30 F.3d 1475, 1480 (Fed. Cir. 1994) ("Although it is entirely proper to use the specification to interpret what the patentee meant by a word or phrase in the claim, this is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.") (citations and ellipses omitted). This question, however, is not crucial to the resolution of the instant Motions, because the term "discontinuity," as used in the parties' briefs, has substantially the same meaning as the term "projects" or "projection," which Toro agrees comprises a part of the meaning of the term "ledge." Because, as discussed below, the accused product does not use a projection or projecting device to prevent snow spit or dribble, the Court finds that claim 37 is not infringed.

The Court construes the term "ledge" to require some sort of projection or protrusion, and finds that the common meaning of the term (and the constructions offered by the parties) necessarily contains such a concept. Without a projection into a space or protrusion from a surface, an item does not fit within any reasonable construction of the term "ledge." Ariens' accused product contains a means of combating forward snow spit that does not project into the stream of snow spit but fits relatively tightly around the impeller, thereby preventing the snow from "spitting" or "dribbling" off of the impeller. Because there is no "projection," the means used by Ariens for this purpose cannot be considered "ledges." 4

4 The Court finds, therefore, that even if it were to accept verbatim Toro's proposed construction of the term "ledge," (see
Toro's Proposed Definition of "Ledge"), no reasonable finder of fact could come to the conclusion that the accused product has "ledges," as that term is used in claim 37, because it does not project in any way.

Toro argues that the accused product does have a discontinuity -- where the arcuate surface of the rear wall of the housing begins. (See Berner Decl. Ex. C.) The edge of the housing, according to Toro, constitutes the discontinuity or projection that renders the device a ledge. According to this interpretation, however, virtually any physical object would constitute a ledge, because it necessarily has an outer edge. As counsel for Ariens aptly put it, however, "[a] ledge is not an edge." (See Ariens Co.’s Reply to Toro’s Mem. of Law for Markman Hearing at 5-6 & n.5.)

The accused product addresses the problem of snow spit or dribble not by using ledges that project outward to knock down snow and prevent it from escaping but by including a arcuate surface that fits relatively tightly around the impeller, thereby confining more of the snow to the impeller and eliminating the need for ledges to knock escaping snow down. Simply put, there is no part of the accused product that "projects forward and protects (or checks) against snow being thrown upward and out of the front of the snowthrower." (See Toro's Proposed Construction of Claims 37-41 for Presentation to Jury; see also Toro's Proposed Definition of "Ledge;" Pl.'s Opp'n Mem. at 3 ("The parties generally agree on the ordinary meaning of a ledge as a horizontal projection.").) Not only does the accused product use a tightly-fitting arcuate surface around the impeller instead of a horizontal projection, it also does not knock down escaped snow, but instead prevents the snow from escaping from the impeller. Because the accused product includes no such horizontal projection, the Court finds that no reasonable jury could conclude that the accused product infringes.

Claim Construction

Central to the flexure patents is the term "leg." Before the § 256 hearing was conducted both parties believed that no claim construction was necessary. However, given the significance of the term and inasmuch as the parties now dispute the meaning of the term, it has become necessary for the Court to construe this term.

Plaintiff contends that the term "leg," as used in these patents, means "a branch or extended part of the flexure." Plaintiff does not cite to any support for this construction.

Defendants argue that the term "leg" should be construed to mean "an appendage that extends downward from the body of the flexure and supports the flexure in an elevated state." Defendants argue that this construction is supported by the ordinary use of the term "leg," as shown in particular by the dictionary definition of "a limb of an animal used especially for supporting the body and for walking." Merriam-Webster Online Dictionary.

Defendants argue that the "leg" and the "flexure" must be non-planar in relation to one another. Plaintiffs argue that nothing in the patent prevents a planar relationship.

43. Words used in a claim are given their ordinary meaning unless the context, specifications, or file history indicate that a different meaning should apply. Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615 (Fed. Cir. 1995).

44. The construction must stay true to the claim language and naturally align with the patent's description of the invention and with what the inventor intended to envelop with the claim. Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998).

45. Given its ordinary meaning as referred to by several dictionaries, the word "leg" refers to a structure that supports another structure, as in a piece of furniture, a human or animal body, or a geometric figure. For example, one dictionary alternately defines "leg" as "one of the appendages of an animal that are used chiefly in supporting the body and in moving from point to point esp. by walking" and "something resembling an animal leg in form or use: as a pole or bar serving as a support (as in a tripod) . . ." Webster's Third New International Dictionary (1986). Both of these definitions encompass the
concept of "support," which is consistent with Defendant's proposed construction of a non-planar appendage. An appendage that is planar with the structure it is supposed to support can not offer any support. There is no dictionary language that supports the proposed construction by Plaintiff.

46. The language of the claims does not suggest any meaning for "leg," other than its ordinary meaning. The claim language requires the legs to spread farther apart when pressure is applied to the body of the device. ('724 patent, cl. 7). If the legs were aligned in the same plane as the body of the flexure, rather than located below it, they could not spread apart when pressure was applied to the body. In order to spread apart when pressure is applied to the body, the legs must be in a different plane than, and below, the body of the flexure. In claim 1 of the '950 patent the "legs" are "coupl[ed]" to the "bridge" by "spring regions." A "spring region" would have no function if the overall structure is planar. This element of the claim is consistent, rather, with an overall structure which is intended to be non-planar.

47. The specifications show that the inventor intended that the legs of the flexure would be non-planar, relative to the body of the flexure. Figure 1 of the '724 patent shows an embodiment of an optoelectronic package assembly with a two-legged flexure which is not planar. In the patent specifications referring to Figure 2, the specifications describe Figure 2 as "a side sectional view of the frame assembly of Fig. 1 before planarization." ('724 patent, col. 2, line 7 (emphasis added).) Figure 5A of the '724 patent shows a four-legged flexure, also with non-planar legs attached to the body of the flexure.

48. The Court construes the term "leg" to mean an appendage to the body of the flexure which extends downward, supporting the structure above it.

A. "Length"
Insight states that It now agrees with Glock that "length" means "the measurement or extent of something along its greatest dimension." Glock states in the appendix to its response brief that it did not offer that construction. Instead, Glock asserts that no construction is required but does not indicate whether the construction proposed by Insight is appropriate. SureFire also states that the meaning is clear and does not require construction.
"Length" is used only in claims 1 and 32. There, "length" is part of the description of the housing of the auxiliary device which has two "structural members" that extend upward and extend "along at least a portion of a length" of the side of the housing. In addition, the structural members "are substantially parallel to a central, longitudinal axis extending along a length of the housing." As used in the claims, "length" refers to a longitudinal dimension, meaning in the direction of the long axis of the body.

length of a sheet of paper stored in the binder

Plaintiff argues that this term is unambiguous and readily comprehensible to a finder of fact; it requires no definition.
Defendants propose that the term be defined as: "longitudinal length of the paper selected by the user of the binder and placed within the binder by the user."

The Court agrees with Plaintiff -- no definition is required for this term.

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1. '589 Patent Claims 1 and 9; and '703 Patent Claim 15: "(a) a length of multi-strand [pre-stressed steel] cable defining a bolt shank"

Gillespie asks the court to construe Claims 1(a), 9(a) and 15(a) "to mean a length of cable that includes multiple strands and that serves as a bolt shank." (See Pl.'s Brief, at 8-9.) DSI argues that Gillespie's proposed construction is "overly broad in that it would encompass a mine roof bolt that includes a cable with a single-stranded portion that defines a bolt shank." (See Def.'s Brief, at 13.) In his response, Plaintiff asserts that this is "certainly not what Gillespie seeks[""] rather, he "simply wants the jury to understand that a multi-strand cable is one made up of multiple strands." (Pl.'s Resp. Brief, at 2.)

The '589 and '703 Patent specifications explain that the "improved mine roof bolt of the present invention is constructed of a length of pre-stressed steel strands spirally wrapped around a seventh steep strand." (See '589 Patent, col. 2, In. 65 - col. 3, In.1; '703 Patent, col. 3, In. 36-41.)

Moreover, the '589 and '703 Patent specifications further explain, in regard to FIG. 1 of the patent drawings, that "the improved mine roof bolt . . . comprises a shank 12 made up of a length of pre-stressed steel stranded cable, which in the embodiment shown, is made up of six peripheral steel strands 14 spirally wrapped around a central steel strand 16 (as depicted in FIG. 2)." (See '589 Patent, col. 3, In. 39-46; '703 Patent, col. 4, In. 63-68 - col. 5, In. 1-2.)

The parties are therefore in agreement that the strand is a multi-strand cable and not a single cable. Based on this agreement, the ordinary meaning, and the written specification of the claimed embodiment, the court construes claims 1(a), 9(a) and 15(a) to mean a length of multi-strand cable that defines the bolt shank.

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5. lengthwise-extending locating surfaces

P&M construes the term "lengthwise-extending locating surfaces" as "longitudinal projections protruding inwardly from the interior of the casing." (Pls. Opening Mem. at 26.) P&M explains that these lengthwise-extending locating surfaces are the structure which corresponds to the locating means in the '886 patent. Rose Art construes the term as "three fins projecting from the inner wall of the casing used to position the marker" because that configuration is mentioned in the specification. (Def. Pre-Markman Hr'g Br. at 39, citing '300 patent, col. 3, ll. 10-12.) However, the specification provides several examples of the lengthwise-extending locating surfaces which can be used as the locating means claimed by the '300 patent: fins extending inwardly from the inner surface of the casing, an interior casing with three flat sides, an oval interior casing, or an inner tube. ('300 patent, col. 2, ll. 42-53 and col. 3, ll. 10-12.) The Court cannot adopt a construction of this term which would restrict the claim to one of the preferred embodiments. Rodime PLC, 174 F.3d at 1303. Accordingly, "lengthwise-extending locating surfaces" is construed as "longitudinal projections protruding inwardly from the interior of the casing.

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K. "Lens" (Claims 3 - 4)

Plaintiff's Proposed Construction: A device for altering the path of electromagnetic radiation. For the apparatus of claim 3, it includes a device that has the capacity for internal reflection so that when a certain type of material (for example a
fingerprint) touches the outside of the lens, at the point of touch the internal reflection is destroyed and an image of where the internal reflection is destroyed is transmitted.

Defendants' Proposed Construction: A body that has two opposite regular surfaces, at least one of which is curved, that is structured and positioned to form an image by focusing a beam of electromagnetic radiation.

The issue here is whether a lens has at least one curved surface. As with all other construction disputes, Plaintiff argues broadly that a lens includes any device used for altering the path of electromagnetic radiation. Plaintiff finds support for this construction in the specification. When referring to a lens, the specification states that a fingerprint reader "has a lens . . . which must have the capability to cause a proper refraction of the fingerprint . . . . While there are several lens that will cause such an effect, such as, magnifying lens placed in the proper location and angles, it is believed the best device for the refraction lens is a half circle." '474 Patent at 9:25-32. Plaintiff argues, therefore, that the specification contemplates the use of several suitable lenses and should not be limited to a lens with a curved surface.

As has been repeatedly stated, a claim term should be given the ordinary and customary meaning "that the term would have to a person of ordinary skill in the art in question at the time of the invention." Phillips, 415 F.3d at 1313 (emphasis added). In 1995, when the '474 Patent was filed, one skilled in the art would have understood that a lens would have at least one curved surface. Furthermore, although the specification states that "several lens" may be used, '474 Patent at 9:29-30, the preferred lens disclosed in the specification of the Patent is described as being a "half circle." Id. at 9:34-40; Fig. 1. The only other type of lens disclosed in the specification is a "magnifying lens," id. at 9:30, which would also include at least one curved surface. Therefore, one skilled in the art at the time of the invention would interpret the plain language of the claim and specification to determine that "lens," as used in Claims Three and Four, refers to "a body that has two opposite regular surfaces, at least one of which is curved, that is structured and positioned to form an image by focusing a beam of electromagnetic radiation."

4. "A lens body comprising a hydrogel material and having an anterior face, a posterior face, and a rounded outer peripheral edge surface." Used in '706 patent, claim 13.

"A lens body comprising a hydrophilic silicone-containing material having an anterior face, a posterior face having a rounded outer peripheral edge surface . . . " '538 patent, claim 1 and 7.

CooperVision defines these terms to mean "a contact lens with an anterior face and a posterior face having a surface in a general shape of an insert tool that includes a first surface portion and a convexly curved peripheral edge surface." CIBA's proposed construction is the same as its definition for "contact lens having a rounded edge," namely "an edge that is shaped like a portion of a circle in which every part of the surface or the circumference is equidistant from a center point." These definitions substantially reproduce the dispute regarding the meaning of "contact lens having a rounded edge," discussed above, in claim 4 of the '706 patent.

Claim 13 of the '706 patent contains different language from claims 1 and 7 of the '538 patent. It describes a lens with an "anterior face, a posterior face, and a rounded peripheral edge surface extending from the anterior face to the posterior face." Claims 1 and 7 of the '538 patent recite only a "posterior face having a rounded outer peripheral edge extending from the anterior face to the posterior face." CooperVision argues that the difference in language between claim 13 of the '706 patent and claim 1 and 7 of the '538 patent does not alter the scope of the claim. CooperVision concludes that a "rounded outer peripheral edge surface" in claim 13 describes the shape of the posterior surface of the lens formed by a back surface tool with a convexly-curved peripheral edge surface.

The patentee in this case had unbridled discretion in his choice of words, and he chose not to modify "a rounded outer peripheral edge" with the word "posterior face" in Claims 1 and 7 of the '538 patent. Therefore, CooperVision cannot successfully argue that the outer peripheral edge must be created by a back surface tool and that it must be part of the posterior lens simply because another claim in another patent uses a similar term. Rather, the patents indicate that a rounded outer peripheral edge extends from the anterior face of the lens to the posterior face of the lens. See '538 patent, col.8, ll. 13-15; '706 patent, col. 9, ll. 9-12.
As stated above when construing the "rounded edge" element of Claim 4 of the '706 patent, even if CooperVision is correct that the anterior face may contain a point after being made in the conventional manner and that the claim term refers to the posterior surface edge of a contact lens, this does not mean the court should define the edge in terms of a specific tool.

For the reasons also discussed above, CIBA's definition may mislead a reader into thinking that the edge is restricted to a circle, or an approximately circular shape. For that reason, it also is not adopted.

Having considered all relevant factors, the court finds that:

"A lens body comprising a hydrogel material and having an anterior face, a posterior face, and a rounded outer peripheral edge surface . . ." means: a lens body comprising a hydrogel material and having an anterior face, a posterior face, and a substantially smooth, curved outer peripheral edge . . ."

"A lens body comprising a hydrophilic silicone-containing material having an anterior face, a posterior face having a rounded outer peripheral edge surface . . ." means: a lens body comprising a hydrophilic silicone-containing material having an anterior face and a posterior face having a substantially smooth, curved outer peripheral edge . . ."

2. "Lens Window Means" Limitation

Ultrak and REI argue over whether a "lens window means" includes a covering of glass, plastic, or other translucent or transparent material. The written description discloses (col. 3, ll. 15-21) housing for a video camera, which "includes a cover with a window therein such that a video camera can be functionally contained within the housing with the cover closed . . . . Cover also includes a microphone and housing includes a heating coil for keeping condensation from forming on the lenses of the video camera and window in the cover."

Condensation obviously cannot form on an opening, but requires some type of cover. Requiring such a covering for a "window" comports with its ordinary meaning. A window is defined as "an opening constructed in a wall or roof and functioning to admit light or air to an enclosure, usually framed and spanned with glass mounted to permit opening and closing." The American Heritage Dictionary of the English Language 1467 (1969). We agree with the district court that "lens window means" is properly defined as "an opening which is covered with glass or plastic or other translucent or transparent material." Because none of REI's models have such a covering for the opening, substantial evidence supported the jury's verdict that no Bus-Watch (R) model literally infringes any asserted claim.

6. "Less Than a Complete Circle"

Finally, Bridgeport argues that summary judgment is warranted because its adaptor includes a circumferential gap in a "tongue and groove" configuration, not a gap with straight, parallel lines, as purportedly mandated by the "less than a complete circle" limitation of claims 1, 2, 4, and 5 of Patent '050 and claims 1, 2, 3, 4, 5, 8, and 9 of Patent '164:

Said circular spring metal adaptor being less than a complete circle 17 that is of a relaxed diameter less than the diameter of the hole into which it is to be inserted with said spring locking members extending radially outward beyond the diameter of the hole into which they are to be inserted . . .

(Doc. 83, Exs. A, B (emphasis added)). According to Webster's Third New International Dictionary, "less" means "of reduced … extent[or] degree" or "inferior." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1296. It further defines "complete" as "entire," "perfect," or "fully realized," and a "circle" as a figure bounded by a single "closed curve," called the "circumference." See id. at 408, 465. Thus, the phrase "less than a complete circle" refers to a rounded figure that
is not entirely bounded by a single circumferential line. Nothing in the claim language contradicts this meaning, and, in fact, claim 14 of Patent '164 expressly equates "divided circumference" with being "of less than a complete circle." (Doc. 83, Ex. A).

Footnotes

17 In claim 1 of Patent '164, the phrase "less than a complete circle" is immediately proceeded by the clause "when on the electrical connector." (Doc. 83, Ex. A).

Against this plain meaning, Bridgeport argues that the patentee provided an express definition of the phrase in the illustrations included in the specifications section, several of which show circular adaptors with their circumference "broken by a gap with straight, parallel sides." However, while this illustration certainly shows a possible embodiment of the invention, it does not purport to limit the methods by which a "less than complete circle" may be produced. See E-Pass Techs., 313 F.3d at 1369 (cautioning against "importing limitations from the specifications into the claims"). A curved cut, no less than a straight cut, produces a complete division in the circumference of the adaptor, rendering the adaptor "less than a complete circle" as required by the claims. The court will construe the phrase "less than a complete circle" to mean a rounded figure in which the circumferential line is divided or broken by any means.

Bridgeport's adaptor includes a circumferential divide (Doc. 83, Ex. G), facially meeting the limitations described in the claims of the Arlington's patents. Even if the gap is formed in a tongue and groove configuration, the Bridgeport design involves an adaptor that is "less than a complete circle," permitting a finding of infringement by a reasonable jury. Thus, the court will deny the motion for judgment as a matter of law on these claims.

The plaintiff proposes "an anticoagulant composition, having less resistance to flow than blood, in the proximal portion of the guide wire tube is allowed to coat the surface of the guide wire in the distal portion of the guide wire tube." The defendant contends that "is allowed to coat" is a method step requiring that a less viscous anticoagulant coat the guide wire. As to the remainder of the terms, the defendant contends that no construction is required.

The plaintiff argues that construing the term as a method claim would invalidate the claim because a single patent claim cannot mix apparatus and method elements. See IPXL Holdings, L.L.C. v. Amazon.com, Inc., 430 F.3d 1377, 1384 (Fed. Cir. 2005). According to the plaintiff, claims are to be interpreted to preserve their validity when reasonably possible, Whittaker Corp. by Technibilt Div. v. UNR Indus., Inc., 911 F.2d 709, 711 (Fed. Cir. 1990), and, therefore, the term cannot be a method claim. The plaintiff also argues that the claim language confirms that the structure of the catheter determines whether the anticoagulant in the distal portion of the guide wire lumen is able to coat the guide wire.

The defendant argues that the specification supports its construction. Specifically, it states that the "anticoagulant 'wipes' the guide wire clean." '358 patent, 6:41-42. According to the defendant, this describes a method step that occurs when the catheter is fed onto the guide wire. The defendant also points to the prosecution history where the claim originally read "can coat" and was changed to "allowed to coat." The defendant interprets this to mean that the claim is limited to more than just the capability of being coated and must mean an actual method step of coating the surface of the guide wire with the anticoagulant. The defendant also argues that, even though it may invalidate the claim, its construction should be adopted because it is the only construction that is consistent with the intrinsic evidence.

In reply, the plaintiff argues that the discussion in the prosecution history refers to structural limitations, not to methods or actions.

The Court concludes that this phrase is not a method step. Nowhere in the claims, specification, or prosecution history is
this phrase referred to as a method. The defendant does not dispute the plaintiff's definition of viscous. Accordingly, the Court adopts the plaintiff's proposed construction.

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6. "a less viscous anticoagulant is allowed to coat the surface of the guide wire within the distal portion of the guide wire lumen"

The plaintiffs propose "an anticoagulant composition, having less resistance to flow than blood, in the proximal portion of the guide wire tube is allowed to coat the surface of the guide wire in the distal portion of the guide wire lumen." The defendants propose "a less viscous anticoagulant is allowed to fill and remain in the reservoir during the procedure so as to coat the surface of the guide wire within the distal portion of the guide wire lumen."

As with the "the lumen having a first diameter..." term discussed above (disputed term # 4), the defendants argue that the court should read in a reservoir limitation. See Defendants' Response Brief at 7-11. In support of its construction, the defendants argue that statements in the patent and the prosecution history show that the function of the wherein clause is to create a reservoir. The defendants also asserts that judicial estoppel applies.

For the same reasons discussed with respect to disputed term # 4 above, the defendants' arguments are unpersuasive. After carefully considering the arguments raised by the parties in this case, the court will not alter its construction from the Cordis case. See Cordis Order at 8-10. Accordingly, this term means "an anticoagulant composition, having less resistance to flow than blood, in the proximal portion of the guide wire tube is allowed to coat the surface of the guide wire in the distal portion of the guide wire lumen."

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2. "A Lever"

Plaintiff argues that the claim language "a lever" in claim 1 of the '685 patent means "[a] rigid member that pivots about one point and that is used to move an object at a second point by force applied at a third." (Doc. # 51, at 22). Plaintiff refers the Court to the specification to show that the patentee did not intend to depart from the common and ordinary meaning of the term. As such, plaintiff relies on dictionary definitions to support its proposed construction. In opposition, defendant argues that the term "a lever" means "a lever having a head." (Doc. # 51, at 22). Defendant asserts that the '685 patent specification states that "[t]he actuating lever . . . includes an enlarged head . . . ." (Doc. # 51-2, '685 patent, col. 5, lines 27-28). Defendant also notes that every figure in the '685 patent specification, which includes a lever, depicts the lever as having a head. (Doc. # 51, at 23).

The claim language provides no definition of the term "a lever." The first embodiment includes the specification statement that defendant highlights. Additionally, as defendant noted, nearly every figure that includes a lever illustrates a lever as having a head. (Doc. # 51-2, at 6-8, 10-13, 15-23, 32, 34-37). "Occasionally specification explanations may lead one of ordinary skill to interpret a claim term more narrowly than its plain meaning suggests. Nonetheless, [the Federal Circuit] will not countenance the importation of claim limitations from a few specification statements or figures into the claims." Computer Docking Station Corp. v. Dell, Inc., 519 F.3d 1366 (Fed. Cir. 2008), citing Phillips, 415 F.3d 1303, 1323. In the instant case, the patentee explicitly states that "[t]he embodiments described [were] given by way of example and in no way limit the scope of the invention." (Doc. # 51-2, '685 patent, col. 15, lines 54-55). The patentee also explains that "[t]he term[] . . . 'including' [was] intended to be inclusive and mean that there may be additional elements other than the listed elements." (Doc. # 51-2, '685 patent, col. 16, lines 2-4). Therefore, the specification demonstrates that the preferred embodiments and figures do not narrow the scope of the term "a lever" to include a lever having a head.

Because the claim language, specification, and prosecution history do not make clear the meaning of "a lever," the Court will consult a dictionary to determine the term's ordinary and customary meaning. "Lever" is defined as "a bar or rigid body used to lift weight and operating on the principle that force or power applied at one point to lift a resistive weight or force at
a second point tends to rotate the bar in opposite directions about a fixed axis or fulcrum." RANDOM HOUSE COLLEGE DICTIONARY (1980). The dictionary definition supports plaintiff's proposed construction. Accordingly, the Court adopts plaintiff's construction, and construes "a lever" in the '685 patent to mean "a rigid member that pivots about one point and that is used to move an object at a second point by a force applied at a third."

n. "Lever Movement Blocking Element" (Claim 1)

101. This claim terminology, which is only used in this claim, has the same meaning as "blocking element" defined above. Thus, as used in the claims, "lever movement blocking element" means the cantilever arm which is formed as an integral part of the lever which blocks movement of the lever.

q. "Lever Moving Element" (Claim 31)

110. This claim limitation defines a lever moving element "for positively driving said lever toward said cam in response to continued dial rotation after said combination has been entered, whereby said lock is unlocked by rotation of said dial after entry of said combination and said lever is positively manipulated by dial rotation . . . ". Thus, the lever moving element is defined in terms of an element for performing the described functions. Although this claim element does not use the term "means" it is still in means-plus-function format. Merely because an element does not include the word "means" does not automatically prevent that element from being construed as a means-plus-function element under § 112 P6. Cole v. Kimberly-Clark Corporation, 102 F.3d 524, 1996 U.S. App. LEXIS 31360, *17-18 (Fed. Cir. 1996). Whether § 112 P6 applies is to be decided upon an element-by-element basis, based upon the patent and its prosecution history. Id.

111. This term is neither used nor defined in the description of the '656 patent. The terminology appears for the first time in the claims where the element is defined in purely functional terms. There is no evidence that a "lever moving element" or "moving element" has a well-understood meaning in the art. Cf., Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996) ("detent mechanism" had well-understood meaning in the field).

112. Statements made during the prosecution relating to structures disclosed in the specification are also relevant to determining the meaning of the means-plus-function limitations of claims. Alpex Computer Corp. v. Nintendo Co., Ltd., 102 F.3d 1214, 40 U.S.P.Q.2D (BNA) 1667, 1672 (Fed. Cir. 1996). Whether the inventor used terminology interchangeably is a factor to be considered in claim construction. Amhil Enterprises Ltd. v. Wawa Inc., 81 F.3d 1554, 1559 (Fed. Cir. 1996). The prosecution history of the '656 patent shows that the patent applicants intended to use the terms "means" and "element" interchangeably since many of the claims were amended to change from one term to the other. See PX 45, p. 23, (claim 11, "moving means" to "moving element"); p. 129 (claim 1, "means" to "a substantially non-resilient lever moving element"); p. 130 (claim 4, "lever moving means" to "moving element"); p. 130 (claim 5, "lever moving means" to "moving element"); p. 132 (claim 10, "lever moving means" to "lever moving element"); p. 132 (claim 11, "means" to "element"); p. 132 (claim 14, "means" to "a lever controlling element"); p. 133 (claim 16, "maintaining and moving means" to "lever controlling element"); p. 133 (claim 17, "maintaining and moving means" to "lever controlling element"); p. 133 (claim 18, "maintaining and moving means" to "lever controlling element"). According to the applicants, these changes were made to either define over the prior art (PX 45, p. 141), or characterized as only "minor changes" (PX 45, p. 142).

113. The claims of the '656 patent also use the terms "means" and "element" interchangeably. See, e.g., Claims 1, 17, 19, 20 ("lever operating means"); Claim 5 ("lever moving means"); Claims 2, 8, 20, 24, 31 ("lever moving element"); Claims 12, 25 ("lever controlling element"). These terms are all used to described the same mechanical structure, and should therefore be construed in the same way under § 112 P6.

114. The legislative history demonstrates Congress' intent that the word "means" need not be used to invoke the means-plus-function interpretation of § 112 P6. See, In re Fuetterer, 50 C.C.P.A. 1453, 319 F.2d 259, 264, n. 11 (C.C.P.A. 1963) ("all the
elements of a combination now will be able to be claimed in terms of what they do as well as in terms of what they are”).

115. This demonstrates that in the ’656 patent, the term "element" is synonymous with "means". Consequently, "lever moving element" should be treated as the equivalent of "lever operating means" and subject to § 112 P6.

116. This claim element is further described primarily in terms of what it does, i.e., its function, rather than what it is -- its structure. All of the terms modifying "element" are phrased in functional language, principally in terms of three functions: (1) positively driving the lever toward the cam in response to continued dial rotation after the combination has been entered; (2) unlocking the lock by rotation of the dial after entry of the combination; and (3) positively manipulating the lever by dial rotation to engage the dial-operated cam only after entry of the combination. Thus, the use of the "element for" format also shows an intent to use the § 112 P6 "means for" style of claiming.

117. In the ’656 specification, the lever moving element or means is described in terms of when the solenoid is actuated. The solenoid housing (also called a rigid body or element) slides in a channel to positively drive the lever from its disengaged position to a position for engaging the nose part of the lever with the slot on the cam wheel in response to the dial rotation after the combination has been entered. When the solenoid is activated, after entry of the proper combination, the solenoid housing is driven through a detent ball by rotation of the dial cam to push against the lower end of the cantilever arm, causing the lock lever to rotate about its pivot point. The solenoid immediately returns to its unactuated position when the protrusion on the dial cam passes the detent ball.

GO BACK

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Claim 3 requires, inter alia:

a substantially non-resilient lever moving element for moving the lever from its disengaged position for engaging the protrusion of the lever with the cam surface on the cam wheel so that the rotation of the cam wheel thereafter in the given direction changes the locking mechanism from the locked condition to the unlocked condition; . . . .

'656 pat., col. 9, l. 64 - col. 10, l. 2 (emphasis added). The district court determined that this claim limitation, although not reciting the term "means for," is in means-plus-function format and therefore must be interpreted using section 112, P 6. See Mas-Hamilton, slip op. at 53. La Gard contests this determination.

La Gard asserts that the "lever moving element" should not be construed as claimed in means-plus-function format because it does not employ the catch phrase "means for." La Gard relies on Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 39 U.S.P.Q.2D (BNA) 1783 (Fed. Cir. 1996), and Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 93 F.3d 1572, 40 U.S.P.Q.2D (BNA) 1019 (Fed. Cir. 1997), for the proposition that if the claim does not use "means for" followed by a statement of function, one should presume that the claim does not invoke section 112, P 6. See e.g. Greenberg, 91 F.3d at 1583, 39 U.S.P.Q.2D (BNA) at 1785.

Although such a presumption is helpful in beginning the claim construction analysis, it is not the end of the inquiry. In the instant case, even though the catch phrase is not used, the limitation's language does not provide any structure. The limitation is drafted as a function to be performed rather than definite structure or materials. See 35 U.S.C. § 112, P 6; Chiuminatta, 145 F.3d at 1307, 46 U.S.P.Q.2D (BNA) at 1755.

La Gard asserts that a "lever moving element" is a known structure in the lock art, but the district court determined otherwise. While true that "many devices take their names from the functions they perform," Greenberg, 91 F.3d at 1580, 39 U.S.P.Q.2D (BNA) at 1786, the "substantially non-resilient lever moving element" of claim 3 is not one of them. The district court determined that a "lever moving element" had not been shown to have a generally understood structural meaning in the art. See Mas-Hamilton, slip op. at 54. We agree. See Greenberg at 1583, 39 U.S.P.Q.2D (BNA) at 1786, (holding that "what is important is not simply that [the element at issue] is defined in terms of what it does, but that the term, as the name for a structure, has a reasonably well understood meaning in the art."). La Gard has not directed this court to any evidence demonstrating that the district court erred in determining that the term "lever moving element" lacks a reasonably well understood meaning in the relevant lock art.
In addition, in Greenberg, we emphasized that:

section 112(6) is triggered [not] only if the claim uses the word "means." The Patent and Trademark Office has rejected the argument that only the term "means" will invoke section 112(6), see 1162 O.G. 59 N. 2 (May 17, 1994), and we agree, see Raytheon Co. v. Roper Corp., 724 F.2d 951, 957, 220 U.S.P.Q. (BNA) 592, 597 (Fed. Cir. 1983) . . . (construing functional language introduced by "so that" to be equivalent to "means for" claim language).

91 F.3d at 1584, 39 U.S.P.Q.2D (BNA) at 1786-87. We also have noted that while traditional "means" language does not automatically make an element a means-plus-function element, conversely, lack of such language does not prevent a limitation from being construed as a means-plus-function limitation. See Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531, 41 U.S.P.Q.2D (BNA) 1001, 1006 (Fed. Cir. 1996).

In the instant case, the claimed "lever moving element" is described in terms of its function not its mechanical structure. If we accepted La Gard's argument that we should not apply section 112, P 6, a "moving element" could be any device that can cause the lever to move. La Gard's claim, however, cannot be construed so broadly to cover every conceivable way or means to perform the function of moving a lever, and there is no structure recited in the limitation that would save it from application of section 112, P 6. See Cole, 102 F.3d at 530-31, 41 U.S.P.Q.2D (BNA) at 1006 (reaffirming that an element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof).

Thus, we hold that the district court was correct in applying section 112, P 6 to limit the "lever moving element" to structures disclosed in the specification and equivalents thereof that perform the identical function.

Referring to the specification to identify the corresponding structure that performs the specified function, we construe the "lever moving element" to include at least the solenoid that provides the power to move the lever. '656 pat., col. 7, l. 24 - col. 8, l. 7. As already discussed with respect to claim 1, the X-O7 lock uses a stepper motor instead of a solenoid. The stepper motor is not the structural equivalent of the solenoid and hence the "substantially non-resilient lever moving element" limitation is not met. We therefore hold that the accused X-O7 lock does not literally infringe claim 3 of the '656 patent. Similarly, we conclude that the accused X-O7 lock does not equivalently infringe claim 3 of the '656 patent because, under the analysis applied with respect to claim 1, it was not clear error for the district court to determine that the solenoid of claim 3 operates in a substantially different way than the stepper motor of the X-O7 lock.

Claim 31 also requires "a lever moving element." '656 pat., col. 16, l. 65. Hence, under the above analysis, the district court did not clearly err in determining that claim 31 is neither infringed literally nor under the doctrine of equivalents. We therefore affirm the district court's finding of no literal or equivalent infringement of claim 31 by the X-O7 lock.

Lever For Deforming A Grommet

The district court construed this term as "a lever pivotally mounted to a ligation tool body such that the lever pivots about a fulcrum pin which is substantially perpendicular to the direction in which the preformed endless loop is pulled during the tightening operation." Claim Construction Order, 217 F. Supp. 2d at 1110. The district court reached this definition because the preferred embodiment in the specification speaks "of a 'lever pivotally mounted on the body of the tool.'" Id. The claim itself, however, does not include the specific language limiting the pivotally mounted "lever" to a particular embodiment.

The claim language itself suggests that a "lever pivotally mounted on said tool body for deforming a grommet" refers to a bar like structure (i.e., a lever) mounted on the tool body so that, when pivoted during operation, it is capable of deforming a grommet. The straightforward mechanical technology and understandable claim language give that meaning to this term. See Phillips, 415 F.3d at 1314 ("In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.") (citing Brown v. 3M, 265 F.3d 1349, 1352 (Fed. Cir. 2001)).
The specification also indicates that the patent applicant did not limit "lever" to the one configuration identified by the district court. Rather, the '553 patent states:

In a preferred embodiment, the tool includes a lever which is biased against the grommet located in a receptacle in the receiving end of the tool. The pressure exerted by the lever prevents the grommet from inadvertently being mispositioned prior to and during the operation of the tool. Furthermore, when sufficient tension is put on the endless loop and consequent pressure is applied to the body part to be severed, the lever is used to deform the grommet upon and/or around the endless loop to secure the loop around the animal's body part.

'553 patent, col. 4, ll. 32-41. This language does not require a fulcrum pin. Nor does this language require a fulcrum pin substantially perpendicular to the pulling direction of the endless loop. In sum, the claim language and the specification description are both broader than the district court's definition for "lever." While claims are indeed to be construed in light of the specification, as in the Phillips case itself, the district court in this case improperly imported limitations from the specification into the claims, thereby restricting the claims to coverage of a single embodiment. See Phillips, 415 F.3d at 1312 ("If we once begin to include elements not mentioned in the claim, in order to limit such claim . . . we should never know whereto stop.") (quoting McCarty v. Lehigh Valley R.R.Co., 160 U.S. 110, 116, 16 S. Ct. 240, 40 L. Ed. 358, 1895 Dec. Comm'r Pat. 721 (1895)); see also Eolas Techs. Inc. v. Microsoft Corp., 399 F.3d 1325, 1337 (Fed. Cir. 2005) (commenting that it is improper to limit claims to the preferred embodiment).

In sum, when properly construed in the context of the specification, this term means a bar like structure (i.e. a lever) that is mounted on the tool body so that, when pivoted during operation, it is capable of deforming a grommet.

The technology in this case relates to robotic tape storage systems. These systems consist of a pivoting mechanism, such as a robotic arm, located in the center of a roughly cylindrical housing. Shelves on the inside of the housing surround the pivoting mechanism and hold videotapes or computer data tapes. A gripper on the robotic arm can selectively remove a tape from a shelf and place it on another shelf or in a tape player/recorder. The tape storage systems are highly automated and are used in commercial settings, e.g., for playing television commercials automatically or for computer tape archiving.

The '151 patent discloses a tape handling system that uses a rotating carriage to load tapes into--and unload tapes from--a tape storage system. The rotating carriage is mounted in an opening in the wall of a tape storage library. The carriage provides access to the tapes from one side of the opening (exterior of the library) and then rotates to provide access to the tapes from the other side of the opening (interior of the library). Odetics asserts claims 8, 9, and 14 in this litigation. Claim 9 recites (emphasis added to disputed elements):

A tape cassette handling system comprising:

a plurality of tape transports;

a housing including a cassette storage library having a plurality of storage bins and at least one cassette access opening for receiving cassettes to be moved to the storage bins or to the tape transports, or for receiving cassettes to be removed from the library or from the tape transports;

a rotary means rotatably mounted within the library adjacent the access opening for providing access to the storage library, the rotary means having one or more holding bins each having an opening for receiving a cassette, wherein the rotary means is rotatable from a first position in which the opening of at least one holding bin is accessible from outside of the housing to a second position in which the opening of at least one holding bin is accessible from inside the housing; and cassette manipulator means located within the housing for selectively moving cassettes between the rotary means, said storage bins and said tape transports.
Claims 8 and 14 are similar in all relevant respects. In particular, claim 14 recites "a housing including a storage library," and claim 8 recites "a library housing containing a storage library." In addition, claim 14, like claim 9, recites a "rotary means rotatably mounted within the library," while claim 8 recites a "loading housing rotatably carried within the library housing."

STK manufactures large tape storage systems that consist of multiple "library storage modules" linked together in a matrix-like formation. Each module is generally cylindrical and contains a pivoting robot arm, several columns of tape shelves, and tape players/recorders. Where two modules touch, they are interconnected by a Pass-Thru Port. A Pass-Thru Port is a device that has several shelves on which tapes may be placed by a central rotating gripper. A Pass-Thru Port moves from a position in which its contents can be reached by the gripper of one module to a position in which its contents can be reached by a gripper in the adjoining module. This movement is accomplished through rotation and linear translation through the wall separating the two modules. Through computerized coordination of the Pass-Thru Ports, STK's systems can track tape locations and optimize system performance, for instance, by passing a requested tape from a busy module to a module that has an available player. The infringement issue in this case concerns whether STK's Pass-Thru Ports are the same as, or equivalent structures of, the "rotary means" recited in the asserted claims.

In 1995, Odetics sued STK for direct and contributory infringement and for inducing infringement of claims 8, 9, and 14 of the '151 patent. On cross-motions for summary judgment of infringement, the district court ruled that the claims were not literally infringed, based on the court's interpretation of the term "library," which is common to all the asserted claims. The issues of validity and of infringement under the doctrine of equivalents were tried to a jury. When instructing the jury, the court defined the claim terms "library" and "rotary means rotatably mounted." The jury found the claims not invalid, but also not infringed under the doctrine of equivalents.

Before trial, STK also moved for summary judgment of laches based on the delay between Odetics's discovery of STK's allegedly infringing products in 1987 and Odetics's filing suit in 1995. The court concluded that laches applied, but limited the defense to cover only sales and use by STK and its customers before Odetics gave STK notice of its alleged infringement, and not to post-notice use by STK's customers of machines purchased before the notice. Odetics appeals the infringement rulings and STK cross-appeals the laches ruling.

II


Determining whether a patent claim has been infringed involves a two-step examination: "First, the claim must be properly construed to determine its scope and meaning. Second, the claim as properly construed must be compared to the accused device or process." Carroll Touch, Inc. v. Electro Mechanical Sys., Inc., 15 F.3d 1573, 1576, 27 U.S.P.Q.2D (BNA) 1836, 1839 (Fed. Cir. 1993). Odetics argues that the district court misconstrued the "library" and "rotary means rotatably mounted" claim limitations, thus affecting the findings of noninfringement. We consider each limitation in turn.

A

The district court defined "library" as a "collection . . . of places that store information, and you can have a single control or common handling system." The court apparently accepted STK's argument that the meaning of "library" is informed by U.S. Patent No. 4,654,727 (the '727 patent), a parent of the '151 patent that was incorporated by reference into the '151 patent as a description of the operation of the sequencing system and manipulator. STK had argued, in support of its motion for summary judgment of noninfringement, that the '727 patent describes a library which includes all the cassettes under common computer and robotic control in the automated system. From that description, STK concluded that the library and the control system had to be equal in their reach.
The court ruled that the library consists of whatever is covered by a common control system. The court's construction of "library" is significant because, under that construction, STK's many library storage modules would make up a single library and the Pass-Thru Ports, which merely pass tapes back and forth between individual modules, would not provide "access to the storage library," which is an express requirement of the "rotary means" in the claims. After carefully analyzing the claims, specification, and prosecution history of the patent, we conclude that the district court erred.

We begin our analysis, as we must, with the words of the claims. See Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620, 34 U.S.P.Q.2D (BNA) 1816, 1819 (Fed. Cir. 1995). Although the library and control system are coextensive in the embodiment disclosed in the '151 patent, the claims do not require such a relationship. Indeed, the claims do not mention the control system at all. Instead, the claims describe the tape handling system in terms of the structural relationships among its component parts. Claim 9 recites a housing that includes a library, which in turn has tape transports, storage bins, a cassette access opening, and a rotary means adjacent the access opening. Each of these objects must be arranged in the library so as to be accessible by a cassette manipulator means located within the housing. The access opening and rotary means provide access to the library from areas outside the library, and must therefore be mounted in the periphery of the library. The claims place no other limitations on the structure of the library. The claims thus indicate that a library is a distinct, enclosed space containing at least one cassette manipulator means and a plurality of storage bins accessible by the manipulator means.

We next consider the effect of the specification on the claim construction. See Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559, 1566, 24 U.S.P.Q.2D (BNA) 1321, 1327 (Fed. Cir. 1992) ("In defining the meaning of key terms in a claim, reference may be had to the specification, the prosecution history, prior art, and other claims."). Here, the issue is not open-and-shut because, in the specification, the library is coextensive with the control system, and the access opening in which the rotary means is mounted connects the library with an operator outside the system. Thus, the drawings show only one module connected via the rotary means to the outside world, not multiple modules connected to each other. Nevertheless, the specification, like the claims, defines the library according to the structural relation of its parts, and is fully consistent with the definition suggested by the claims. The specification does not equate the library and the control system even though it shows them as being coextensive in the disclosed embodiment. The specification, like the claims, thus permits a construction in which the library is a distinct enclosed space and in which the control system may expand to cover several libraries.

Likewise, the prosecution history supports the same construction. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996). In distinguishing their invention from the prior art, the applicants during prosecution further defined their invention in terms of the functional cooperation of the parts within the library. The applicants did not, however, limit their broad claim coverage in any way that would alter the construction of the term "library" as construed above.

We are not aided by STK's analogy to real-world libraries. STK argues that its library storage modules are analogous to the separate floors in a library building and its Pass-Thru Ports are like elevators in the building, allowing motion only within the library. However, STK's "real-world" definition can also support the claim construction above. First, library buildings can have multiple libraries inside. For example, a law school "library" with a single circulation desk, or control system, may consist of different "libraries" that contain special collections and are named after prominent instructors or donors. Viewed in this light, the analogy would define each of STK's modules as a single library, and STK's Pass-Thru Ports would grant access to the libraries, as required by the claims. Second, separate library buildings, such as those on a large university campus, are often connected by a common computerized tracking and control system. Under this view, a book transferred on inter-library loan would travel by courier from one library to another while remaining at all times within the electronic control system. Neither library (analogous to a library storage module) would be coextensive with the control system, and the courier (analogous to a Pass-Thru Port) would provide access to each library. In the end, STK's analogy does not advance our inquiry.

STK correctly points out that the '151 patent does not disclose, teach, or even suggest a modular library system. Nevertheless, the claims are not limited in any way to a single module system. Nor do the claims require that a human operator handle the tapes on the other side of the access opening. STK may not escape infringement simply by adding another library on the other side of the opening when the claims are worded as broadly as Odetics's are here. See Atlanta Motoring Accessories, Inc. v. Saratoga Techs., Inc., 33 F.3d 1362, 1366, 31 U.S.P.Q.2D (BNA) 1929, 1932 (Fed. Cir. 1994). The Pass-Thru Ports in STK's accused systems therefore provide access to the library through a cassette access opening, as
"Lid"

As to the term "lid," the Court adopts the definition purportedly agreed upon by the parties, with some clarification. To a degree, the parties agree that the definition of a "lid" is "something that covers the opening of a hollow container (as a vessel or box); a movable cover." (Defs.' Br. at 14; Pls.' Opp'n at 7.) However, while defendants assert that this definition is self-explanatory, Ricoh argues that the definition is only correct "so long as [it] is understood to be consistent with the teachings of the '963 patent." (Pls.' Opp'n at 7.) Lurking behind this apparent consensus are two very different views of what it means for the lid to be a "movable cover."

Claim construction is distinct from, and a prerequisite to, an anticipation analysis. Nonetheless, the parties' arguments with respect to the Pritchitt patent reveal fundamental differences in their interpretations of "movable cover." Defendants believe that something is a "movable cover" so long as it is capable of being moved at some point, possibly in relation to a toner cartridge bottle. As example, the valve disclosed in Pritchitt is movable because it is screwed onto the toner bottle before the bottle is mounted into a photocopier. (Defs.' Reply at 13.) Defendants do not believe that the lid as a whole needs to be "movable" while mounted to the copying apparatus. See id.

In contrast, plaintiff interprets "movable cover" to mean that the lid as a whole is movable when mounted to the image-forming apparatus. (Pls.' Opp'n at 9.) More specifically, plaintiff appears to require that the "movable cover" move, while mounted, so as to selectively open and close a toner bottle. See id. at 9-10.

In light of this disagreement, the Court finds that the definition provided by defendant must be amended to further define "movable cover." Both the intrinsic evidence and common sense support a definition of "lid" requiring that the lid, as a whole, be movable when the lid is mounted onto the image-forming apparatus, in a position to selectively plug and unplug the discharge mouth of a developer container.

The Court finds that one of ordinary skill in the art would understand "lid" to have this meaning for two reasons. First, the intrinsic evidence repeatedly and invariably describes the invention as a lid capable of being removed and replaced after it is placed within a photocopier. See Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998) ("[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction."). Second, if the term "lid," were given the broad definition suggested by defendants, any object that is at some time placed over an opening in a hollow container would constitute a "lid." This definition would include objects that are attached so as to permanently close an opening. That meaning is both inconsistent with ordinary usage of the term "lid" and is also illogical in the context of a patent that concerns the flow of toner out of a toner bottle.

The patent consistently describes a lid that may be removed from and replaced onto the mouth of the toner bottle once the bottle is mounted in the image-forming apparatus. (See e.g., '963 Patent, figs. 4A, 4B, 4C, 4G, 6A, 9B, 10B, 11B, 13A, 17B, 18B, 27, 28, 30; '963 Patent, col. 7, ll. 12-47; col. 8, ll. 31-39; col. 11, ll. 56 to col. 12, ll. 17; col. 12, ll. 39-52; col. 24, ll. 28-42.) In the "summary" section of the written description, the patent outlines the "present invention[s]

unprecedented advantages," which include:

(1) Holding means for holding a developer container is rotatable in a substantially horizontal plane for the replacement of a developer container [sic]. . . .
(2) A lid is automatically attached to and detached from a mouth portion included in the developer container. Therefore, only if a person mounts the developer container to the holding means, a developer can be replenished. [sic] This not only facilitates the replacement of the developer container, but also prevents the developer from falling from the mouth portion of the developer container. In addition, the developer deposited on, for example, the inner surface of the mouth portion is prevented from falling to the outside.

(3) While the holding means is held in a position for mounting the developer container, the container can be removed from the mouth portion thereof sealed by a lid. This also prevents the developer deposited on the inner surface of the mouth portion from falling to the outside.

Every written and visual depiction of the invention describes a lid that is constructed to be moved once it has been placed inside the copier. Moreover, as the "summary" reflects, this invention improves on the existing art by providing for a lid that can be removed and replaced after the toner bottle is placed horizontally in the copier. This improvement avoids toner leakage when the developer container is mounted horizontally. This evidence describes more than a preferred embodiment of the invention. See Toro Co. v. White Consol. Indus., Inc., 199 F.3d 1295, 1301-02 (Fed. Cir. 1999); SciMed, 242 F.3d at 1343. Rather, the ability of the lid to be removed and replaced once mounted is essential to the invention described by the patent.

Moreover, even in the absence of evidence from the specification, this definition is dictated by common sense, particularly given the general subject matter of the patent. If by "movable cover" all that is conveyed is a cover that is movable at some point in space and time, the definition would apply to objects that do not satisfy any basic notion of a lid. As example, a solid metal top that is soldered onto an open metal box during assembly of the box may be movable when first placed on the box, but it is no longer movable once soldered. It would be misleading, if not downright inaccurate, to call the thing that is now soldered to the box a "lid" because it was, at some point moved onto the top of the box. Otherwise, at some point during assembly or installation, any cover would be "movable."

In other words, to say that the cover need be "movable" without any further clarification is to render meaningless the adjective "movable," because virtually any cover is moved at some point. The resulting definition is too broad to be meaningful. See Nikken USA v. Robinsons-May, Inc., 51 Fed. Appx. 874, 883-84 (Fed. Cir. 2002) (rejecting construction that merely required that an object be "attachable," because anything could be "attachable"). It follows that to be a "lid," a cover must be movable during a specific period of time or when performing a certain activity. Upon reading the '963 patent, one of ordinary skill in the art would understand that the context of the invention described by the patent is the selective delivery of photocopier toner from a toner bottle. He or she would, against this background, understand that a "lid" is an object which is movable so as to selectively open and close the toner cartridge. As clearly set forth in the patent, that activity is only performed once the lid (along with the bottle) is mounted into the copier.

Next, Zyliss argues that OXO mischaracterizes the brake disc of the Zyliss spinner as constituting part of the lid because the accused product does not have a brake assembly that is "engageable with the lid to apply a frictional force to the lid," as required by claim one. Zyliss contends, based upon the definition provided by its expert Dr. Karvelis, that the ordinary meaning of the term "lid" is "something that covers the opening of a hollow container" and something that "does not contemplate any interconnected or non-connected additional structure." This is significant because the claim states that the brake assembly is engageable with the lid to apply a frictional force to the lid. This language along with analysis of Figure 22 of the '883 patent indicates some form of direct contact between the brake assembly and the lid. Conversely, the Zyliss spinner does not use direct contact between the brake assembly and the lid in order to stop rotation of the basket assembly. Instead, the Zyliss spinner uses indirect contact via the brake disc, which is a separate and distinct apparatus from the lid itself.

The ordinary meaning of the word "lid" is "something that covers the opening of a hollow container." See, e.g., WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1305 (1993). OXO states that the "lid" of the Zyliss
spinner includes both the brake disc and the clear portion that spins the basket. OXO's assertion fails as OXO does not explain how its description of the "lid" of the accused product takes into account the ordinary meaning of the term or how the intrinsic evidence justifies straying from the ordinary meaning to include other objects that do not fall within the common definition of "lid." When viewing the accused product, it is evident that the lid is the clear plastic object that makes contact with the basket. The lid is secondarily attached to the disc, that in turn makes contact with the brake assembly. To assert that the disc is actually part of the lid itself, constitutes a leap in logic that we are not convinced we should take.

D. Claim 18

The thermal carafe of claim 10 further comprising a lid seal contactable with a throat flange.

a. The Parties' Proposed Construction

Capresso constructs the phrase to mean "resilient seal in the lid which forms a seal when it interacts with a protruding rim or edge of the container." In contrast, Sunbeam reads the phrase to mean "top or lid that forms a roughly air tight closure when it interacts with a protruding rim or edge of the container." DeLonghi offers no construction.

Capresso maintains that one of ordinary skill in the art understands that something forms a "seal" when it forms a closure that prevents liquid and/or air from escaping. Capresso asserts that there is no support in the patent for anything less than a true seal. In fact, Capresso argues that the patent's purpose of providing a lid that prevents steam vapors from escaping is thwarted if only a "rough" seal is created.

Sunbeam counters that Defendants confuse the preferred embodiment of the invention with a limitation of the claim. According to Sunbeam, the goal of the patent is to reduce or minimize heat loss. To accomplish its goal, it is not necessary that a perfect seal be formed. In fact, to suggest that only a perfect seal fulfills this goal would make it nearly impossible for any device to infringe.

b. The Court's Construction

The patent does not specifically define "seal." The Court is skeptical that it should construe the lid to be a perfect, air tight seat. Nothing in the intrinsic evidence available to the Court requires such a construction. As Sunbeam notes, a seal in which a small amount of vapor seeps out would still fulfill the patent's goal. As a practical matter, taking the extreme position that the seal must be perfect would in effect make it impossible for other coffee makers to infringe the patent. The Court construes the term as "top or lid that forms a roughly air tight closure when it interacts with a protruding rim or edge of the container."

2. "static state data"/ "life of the business office device"

The next two disputed terms appear together in various claims of the '289, '618 and '120 Patents. For example, Claim 22 of the '289 Patent claims a business office device that includes "a memory which stores static state data including data which does not change over a life of the business office device." '289 Patent, Claim 22. The parties primarily dispute the meaning of the "life of the business office device."

Relying on the expert opinion of Adams, Ricoh asserts that the claim term refers to "the period of time the manufacturer intends the device to be deployed." (Chart at 25). Ricoh argues that from the perspective of an engineer, and based on the context of the patent, "the design objective of the static state data is met so long as other modules of a device or other devices can rely on the fact that the data will not change during a particular deployment of the device." (Ricoh Reply at 21). In contrast, Pitney argues that in the context of a consumer product, "life of the device" typically refers to the "time the
business office device is created to the time it is scrapped." (Chart at 25; Tr. of Markman Hr'g at 57:6-20). Pitney further argues that there is no nothing in the intrinsic evidence that would support importing a temporal limitation in the definition.

The Court is again being asked to construe a claim term which the patentee fails to reference in the specification. Thus, the Court is left to make its determination based on the information provided by the parties -- namely, a general dictionary definition of "life," i.e. "the period from birth to death," (Pitney Br. at 37) (citing MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 672), or the expert declaration of Adams. Both sources fall into the less reliable category of claim construction tools -- i.e., extrinsic evidence. Mindful that the Court must construe the term in the manner a person of ordinary skill in the art would understand the term after reading the patent, in this case the Court will attribute greater weight to the expert declaration, rather than the general dictionary definition of "life" since the dictionary definition is one that is detached from the context of the specification.

Adams explains that a person of ordinary skill in the art would understand the "life of the device" to mean "the time the manufacturer intends the device to be deployed" since the design objectives are met every time a device is "remanufactured and given a new identification or model number, and [] then redeployed as a new device." (Declaration of Adams PP54-55). The Court finds nothing in the intrinsic evidence to contradict this proposition. Thus, the Court is persuaded by Adams' opinion and therefore adopts Ricoh's proposed construction. Accordingly, "life of the device" means "the period of time the manufacturer intends the device to be deployed."

The next limitation at issue is the lift frame means limitation which claims:

. . . lift frame means including a lift frame and plurality of work units spaced along said lift frame, said lift frame including at least an integral center frame section extending to either side of the centerline of the implement in the use position; . . .

Col. 18, lines 53-57.

The parties dispute whether this claim is written in means-plus-function format. Kinze contends this is not a means-plus-function clause because it describes the structure of the lift frame means and does not refer to any function that is to be performed by the structure. Conversely, Case urges the use of the term "means" in this clause gives rise to a presumption this is a means-plus-function clause and contends Kinze has fallen short of rebutting this presumption. Case proposes an interpretation of the lift frame means clause which includes the following functions: (1) to support in a manner permitting lifting and rotation of a plurality of work units spaced along the lift frame of the lift frame means, and (2) to centrally support the center frame section on the center line of the implement in the use position. In support of its position, Case directs the court to the specification and to the prosecution history, which Case asserts emphasize the necessity for having the center frame section centrally supported to ensure equal weight distribution. Case contends one skilled in the art, having read the specification and the prosecution history, would have understood the function of centrally supporting the center frame section to be critical to the claimed subject matter and a required limitation of the "lift frame means" clause.

The court recognizes that while Kinze's use of the term "means" in this clause gives rise to a presumption "the inventor used the term advisedly to invoke the statutory mandates for means-plus-function clauses," York Prods., 99 F.3d at 1574, this presumption is not conclusive. Sage Prods., 126 F.3d at 1427. When a claim uses the word "means" but recites no corresponding function for the "means," the claim does not implicate § 112, P6. Id. (citing York Prods., 99 F.3d at 1574) (construing "means" in claim without reference to § 112, P6). Moreover, when a claim recites a function but then proceeds to articulate "sufficient structure, material or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format." Id. (citation omitted).

Looking to the language of the claim, this limitation begins with the words "lift frame means," but what follows is a detailed recitation of structure. The language of the claim provides that the "lift frame means" includes a "lift frame and plurality of work units spaced along the lift frame" with "at least an integral center frame section extending to either side of the center.
line of the implement in the use position." Thus, while this limitation does in fact use the term "means," the claim language does not link the term "means" to any function. Instead, the claim language describes the structures that make up the lift frame means. The court therefore concludes the use of the term "means" in this limitation does not invoke § 112, P6. See York Prods., 99 F.3d at 1574 (holding that § 112, P6 does not apply when claim uses term "means" without including in claim a function identified with the term "means").

In light of its conclusion the "lift frame means" limitation is not subject to § 112, P6, the court must apply the standard rules of claim construction to interpret the claim language. Thus, the court begins with the presumption that the terms used in the claim take on their ordinary meaning. Accordingly, the term "frame" refers to a structure that is composed of parts fitted together and united, see Webster's Ninth New Collegiate Dictionary 489 (3rd ed. 1983), and "lift" refers to raising from a lower to a higher position. See id. at 690. A "means" is a "method or course of action or instrument through which some act can be accomplished or some end achieved." The American Heritage Dictionary, Second College Ed. 775 (2d ed. 1982). The term "plurality" means "a large number or quantity," while the term "integral" means "essential or necessary for completeness." Id. at 878, 657. "Center" refers to "the middle part," id. at 178 , while "section" means "one of several component parts that may be assembled or reassembled," id. at 1036, and "extend" means "to stretch out in distance, space or time." Id. at 402. Giving the terms used in the "lift frame means" limitation their ordinary meaning, this limitation claims a structure or instrument that moves from a lower to a higher position that includes a number of work units spaced along the structure and includes, as an essential part, a center structure that reaches to either side of the centerline of the implement in the use position. The court's review of the specification and the prosecution history does not suggest a different interpretation of this claim language. The court therefore declines to impose the additional limitations urged by Case.

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B. Claim Construction of "Light"2

1. Claim Language

The first place to start the claim construction is with the language of the claim itself. The term "light" is used throughout the '454 Patent but the primary claim language can be found in Claim 1. Specifically, limitation (c1) of Claim 1 states "a stationary light source capable of generating a light beam directed towards the wafer from a side of the wafer contacting the polishing pad." ('454 Patent, Col. 16, lines 32-34).

Plaintiff argues that there is no ambiguity as to the meaning of the terms "light," "light source," and "light beam" and that the term "light" encompasses both laser light and broadband light. Defendants argue that the term "light" in the patent refers only to light from a laser. Defendants do not address the issues of claim language but instead rely heavily on imputing the restriction from the specification into the claim language.

In analyzing the language of the claim, the Court must determine what a person of ordinary skill in the art would understand the term "light" to mean. The ordinary and plain meaning of the term "light" is broader than, and not limited to, a laser.3 A lay person would also understand that a light source is not restricted to only a laser. Defendants have completely ignored that "light" has a "widely accepted meaning" that is readily apparent even to lay judges which would not require the court to look at the written description in the specification. Phillips, 415 F.3d at 1314. ("In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood terms.").
While the Court determined that there was not a need for expert testimony, it is telling that Defendants' expert witness, Dr. Gutmann, conceded that no ordinary person of skill in the art would ever have understood the ordinary meaning of "light" to be limited to "laser." (Gutmann Tr. 36:2-7).

In addition to the plain language of the claims themselves, it is also important to note key differences between related claims. Claim differentiation can be a "useful guide in understanding the meaning of particular claim terms." Id. at 1314-15. The terms "light" and "laser" are used in the '454 Patent in different claims to mean two different things. Independent Claim 1 defines the apparatus to be used with a light source. Dependent Claim 8 specifically delineates the type of light to be used for Claim 1 as a laser source: ":[t]he apparatus of claim 1, wherein the light source comprises a laser and the light beam is a laser beam." ('454 Patent, Col. 16, lines 62-63). This particular limitation "gives rise to the presumption that the limitation in question is not present in the independent claim." Id. Additionally, independent Claim 9 describes "generating a light beam." ('454 Patent, Col. 17, line 4). However, dependent Claim 11 describes "the method of claim 9, wherein the step of generating a light beam comprises generating a laser beam." ('454 Patent, Col. 17, lines 17-18).

By construing the term "light" in Claims 1 and 9 to constitute a "laser," the Court would render Claims 8 and 11 superfluous and redundant. Comark Communs. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting Tandon Corp. v. U.S. International Trade Com., 831 F.2d 1017, 1023 (Fed.Cir.1987)) ("There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant.")

2. Specification

The Court must also look at the specification to determine the proper construction of the claim language. The '454 Patent specification clearly expresses that the embodiments shown and described in the figures were "preferred embodiments":

. "Preferred embodiments of the invention will now be described with reference to the drawings" ('454 Patent, Col. 6, lines 25-29).

. "Figure 2 depicts a portion of a CMP apparatus modified in accordance with one embodiment of the present invention." ('454 Patent, Col. 6, lines 29-30).

. Summary section states that "the present invention is directed to a novel apparatus and method for endpoint detection which can provide this improved accuracy. The apparatus and method of the present invention employ interferometric techniques for the in-situ determination of the thickness of material removed or planarity of a wafer surface, during the CMP process." ('454 Patent, Col. 2, lines 46-51).

(emphasis added).

In Liebel-Flarsheim, the court stressed the inherent tension between determining whether a statement is a clear lexicographic definition or a description of a preferred embodiment. 358 F.3d at 905. "The problem is to interpret claims 'in view of the specification' without unnecessarily importing limitations from the specification into the claims." Id. The court in Liebel-Flarsheim found that even though the written description of the invention was narrow, the claim language was sufficient to maintain a general interpretation. "Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction." Id. at 906 (internal quotations and citations omitted).

Defendants are seeking to do expressly what Phillips cautioned against: using the specification to import limitations into the claims. The Phillips court recognized that sometimes there is a "fine line between reading a claim in light of the specification and reading a limitation into the claim from the specification." Id. at 1323 (citing Comark Communs. v. Harris Corp., 156 F.3d 1182, 1186-87 (Fed.Cir. 1998). However, the court focused on several examples that go directly to the matters in this case:
For instance, although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments. In particular, we have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment. That is not just because section 112 of the Patent Act requires that the claims themselves set forth the limits of the patent grant, but also because persons of ordinary skill in the art rarely would confine their definitions of terms to the exact representations depicted in the embodiments.

Id. at 1323 (internal citations omitted).

The specification only deals with the "preferred embodiment" and nothing in the written description uses the term "light" in a manner inconsistent with its ordinary meaning.

3. Prosecution History

Next, the Court must look to the prosecution history "to determine whether it contains statements that narrow the scope of the claims." Phillips, 415 F.3d at 1317. During the prosecution of the patent, parties may make statements that clearly restrict the scope of the patent. "This may occur, for example, when the patentee explicitly characterizes an aspect of his invention in a specific manner to overcome prior art." Id. (internal citations omitted). During the prosecution of the '454 Patent, there is no evidence that Plaintiff made any explicit disavowal of scope during prosecution. The prosecution history actually shows that Plaintiff sought to increase the scope of the '454 Patent by changing several instances of the term "laser" to "light." These changes are clearly delineated. For example:

- On March 26, 1997, in an Amendment, the term "laser beam" was replaced with "light beam" in Claim 1. Remarks section points out that the patentees have "amended the claims to more particularly point out and distinctly claim the invention." Patent Office reviewed the Amendment and allowed the relevant new claims.

- The original Claim 1 was cancelled and added a new proposed Claim 45 that dropped requirement of laser and instead used an "interferometer which generates a light beam..."

- Dependent Claim 47 further required that it be a "laser interferometer" and that the light beam "is a laser light beam"

- In a Preliminary Amendment - in 22 different claims, "laser" terms were crossed out and replaced with the word "light."

Plaintiff argues that these changes show that the Patent Office examiners and inventors understood that the terms "light," "light source" and "light beam" were not being restricted to lasers. Defendants argue that the examiners did not understand the nature of the changes in the claim language because there is no affirmative showing by the Patent Office to suggest a broader claim scope for the word "light." Essentially, Defendants argue that the examiner "simply reiterated the claim language without commenting on its meaning" and that the examiner was, in essence, silent as to the broader meaning of the word "light." (Def. Claim Construction Mem. at 16). While the Court does not find that the prosecution history clearly explains that the examiners were in agreement with the inventors as to the effect of the changes, the Court must presume that the Patent Office examiners have done their job. There is no basis to conclude that examiner failed to understand and agree to proposed changes. Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1327 (Fed. Cir. 2003) ("We must presume the examiner did his job, and if he truly thought that the specification taught or enabled only the use of exogenous DNA, the asserted claims would not have issued.") Therefore, the changes that were accepted by the office must have been considered and found to be sufficient.

4. Extrinsic Evidence

Because the Court finds that the claim language is clear and supported by the specification and prosecution history, there is no need to consider extrinsic evidence. However, in keeping with Vitrionics and Phillips, the Court finds it appropriate to use the dictionary to define the term "light." Phillips, 415 F.3d at 1324 ("Nor is the court barred from considering any particular sources or required to analyze sources in any specific sequences, as long as those sources are not used to contradict claim meaning that is unambiguous in light of the intrinsic evidence."). Merriam-Webster dictionary defines light as "electromagnetic radiation of any wavelength and traveling in a vacuum with a speed of about 186,281 miles (300,000 kilometers) per second; specifically: such radiation that is visible to the human eye." (emphasis in original). Defendants
argue that it is inappropriate to use dictionaries. However, the Court is not attempting to use a dictionary definition in place of analysis of the intrinsic evidence. The dictionary definition is to be used to provide a working definition of a commonly understood word. This definition does not "contradict any definition found in or ascertained by a reading of the patent documents." Vitronics, 90 F.3d at 1584.

The Court finds it problematic that Defendants wish to restrict the term "light" to "laser" based only on the specification. Defendants interpret Phillips too narrowly and ignores the plain meaning of the claim language. The court in Phillips emphasized the importance of the specification but not at the expense of the ordinary and plain meaning of the claim language. The plain and ordinary meaning of the word "light" is clear to a lay person and is not restricted to only light from a laser source. The specification and prosecution history also provide support that Plaintiff had no intention of restricting the term to only include laser light. "The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." Id. at 1316. Accordingly, the Court FINDS that the term "light" as defined in the '454 Patent is the spectrum of electromagnetic radiation which can be seen by the human eye and is not limited to lasers.

G. "light bar"

The plaintiff proposes "an elongated device attached to a motorized vehicle for producing warning light signals that identify the vehicle as an emergency or utility vehicle." Defendants propose "an elongated base, two or more warning signal lights, a cover protecting the warning lights and associated structure for mounting to a vehicle." The parties agree that the construction should include "elongated" to distinguish from hemispherical warning signal lights.

The plaintiff argues that the specification discusses light bars as emergency lights seen on police cars, fire trucks, and ambulances. '269 patent, 1:11-14; '865 patent, 1:13-16. In addition, the plaintiff argues that Defendants' construction narrows the phrase to a specific embodiment by requiring a cover.

Defendants argue that every depiction of a light bar includes a cover and that a light bar is clearly an assembly of components with a cover to protect the warning signal lights and other internal components. See '269 patent, Fig.1 and Fig. 2, 7:12; '865 patent, Fig. 1 and Fig. 2, 13:2. Defendants also argue that there is no reason to limit "light bar" to a particular function. Finally, Defendants point to the prior art referred to in the Background of the Invention section of the patents-in-suit, specifically the Jincks patent, which discloses light bars with a cover. n2

n2 In reply, the plaintiff contends that the claims in the Jincks patent disclose light bars with and without a cover or casing.

The Court agrees with the plaintiff that nothing in the claims or specification requires the limitation of a cover. The Court will not import limitations from a preferred embodiment into the construction of claims. Accordingly, "light bar" means "an elongated device attached to a motorized vehicle for producing warning light signals." The Court incorporates by reference its definition of "warning light signals."

A. "Light device"

Yanova contends, pursuant to the prosecution history, the ordinary meaning of the term, and text of the Claim itself, "Light Device" should be defined narrowly:
[A] fully operative and self-contained equipment for generating light (e.g. as a flashlight or pen light) and not just a light source such as a bulb or LED.

Yanova's Memorandum in Support of Motion for Proposed Claim Construction ("Yanova Memo") at 15. Defendants argue that Yanova places multiple impermissible limitations on the ordinary meaning of the term when a broad construction of the term is necessary. According to Defendants, the term should be construed as:

[A] piece of equipment or mechanism that is a source of light perceptible to the human eye.

Defendants Memorandum In Opposition to Plaintiff and Counterclaim Defendants' Motion for Proposed Claim Construction ("Def's Memo") at 9-10.

The term "light device" is not limited to certain, specifically enumerated, devices such as flashlights or light bulbs or a switch and battery. The term consists of two parts, (i) light and (ii) device. First, Merriam Webster's Dictionary defines "light" as "something that makes vision possible; the sensation aroused by stimulation of the visual receptors; an electromagnetic radiation in the wavelength range including infrared, visible, ultraviolet, and X rays and traveling in a vacuum with a speed of about 186,281 miles (300,000 kilometers)." Merriam Webster's Dictionary at http://www.m-w.com/cgi-bin/dictionary (last visited at 12/02/2004). Similarly, the American Heritage Dictionary, Fourth Edition (2000), defines "light" as "electromagnetic radiation that has a wavelength in the range from about 3,900 to about 700 angstroms and that may be perceived by the unaided, normal human eye."

Second, the term, "device," as defined by Webster's II New Riverside University Dictionary (1994), means "something constructed or devised for a particular purpose, esp. a machine used to perform one or more relatively simple tasks." The America Heritage Dictionary (2000) similarly defines "device" as "a contrivance or an invention serving a particular purpose, especially a machine used to perform one or more relatively simple tasks." In addition, the McGraw-Hill Dictionary of Scientific and Technical Terms, Sixth Edition (2003), defines "device" as "[a] mechanism, tool or other piece of equipment designed for specific uses.

With the plain meaning of the terms "light" and "device" as guides, the term "light device" in the asserted claims of the patents-at-issue is construed to mean:

"A piece of equipment or mechanism that is a source of light perceptible to the human eye."

(Taffert, Tr. 14:17 -- 15:2). The definition is consistent with the claim language, which never disavows the nature or type of equipment or mechanism employed, or the means by which the device acts as a source of light.
The court finds this limitation means "the cover including a portion that is capable of increasing in size by the initial fluid
completely excluded from the scope of this patent.
understand the "conventional manner" before the possibility of a non-completely emptied "collapsed position" could be
however, is referred to twice in the written description. (Col. 2, lines 22-24;col. 6, lines 53-54). It may be important to
it implies that all of the saline solution in the device is removed. The "conventional manner" for the method of implantation,
33-34)(emphasis added). Since this phrase does not say that "some saline" is removed, or even simply "saline" is removed,
written description notes that the surgeon is to "withdraw the saline solution" from the chamber to collapse it. (Col. 5, lines
col. 4, lines 54-55) and where it is not folded (col. 7, lines 44-46). The second mention of "collapsed" comes when the
Cir. 1998). The written description notes both embodiments where the cover is folded when collapsed (col. 3, lines 63-64;
Second, the district court erred by importing unnecessary functional limitations into the claim. The court limited claim 1 to a
lighting fixture configured to be attached to a vehicle by horizontal and vertical walls; however, the claim contains no
limitations concerning how the device may be attached to a vehicle. The court also considered significant the apparently
different air flow characteristics of the patented and accused devices. Again, this consideration was irrelevant because the
claim contains no limitations regarding air flow. While differences in the way the patented invention and accused device
function certainly are relevant to a doctrine of equivalents analysis, these considerations are not legally relevant to whether
Gulton's device falls within the literal language of the asserted claim.
Without these extraneous structural and functional limitations, claim 1 reads directly on Gulton's device. We are persuaded
that the flange in Gulton's device is simply an extension of the light housing and thus part of it. Gulton's own design
drawings labeled the flange as part of the light housing. Gulton's recharacterization of its light housing as being comprised
of two separate components, light housing and flange, appears to be a litigation-induced interpretation to avoid
infringement. Further, the light housing (with flange) clearly defines a longitudinal margin of the lighting fixture. Gulton's
device therefore includes "a light housing that defines one longitudinal margin of the fixture." As this is the only claim
limitation in dispute, we conclude that no reasonable fact-finder could conclude that Gulton's product does not meet each
and every limitation of claim 1 of the '415 patent.
Clearly, there was no genuine issue of material fact when the parties cross-moved for summary judgment. The structure of
the accused device was undisputed; the parties' disagreement over the meaning of the claim did not preclude a grant of
Cir. 1992) ("Disagreement over the meaning of a term within a claim does not necessarily create a genuine issue of material
fact."). Resolution of the literal infringement question turned solely on the court's interpretation of claim 1. Had the court
properly construed claim 1, summary judgment in favor of Transmatic would have been required. We therefore reverse the
court's finding of no literal infringement.

The next limitation in claim 31 requires:

the cover including a first limited expansion portion expandable by initial fluid injected through the port and into the
chamber from a collapsed implantation position to a taut position above the collapsed position
The parties agree that the limited expansion portion is a part of the cover that is expandable by the initial fluid injected
through the port and into the chamber from a collapsed implantation position to a taut or tight position above the collapsed
position. Defendants, however, would like to construe "collapsed" as meaning "compactly folded" while the plaintiff would
like to construe "collapsed" as meaning "folded down to a more compact shape or closed together."
The parties disagree as to the interpretation of "collapsed" as used in both claim 31 and claim 24. Generally, the same word
in a patent has the same meaning each time it is used. Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1345 (Fed.
Cir. 1998). The written description notes both embodiments where the cover is folded when collapsed (col. 3, lines 63-64;
col. 4, lines 54-55) and where it is not folded (col. 7, lines 44-46). The second mention of "collapsed" comes when the
written description notes that the surgeon is to "withdraw the saline solution" from the chamber to collapse it. (Col. 5, lines
33-34)(emphasis added). Since this phrase does not say that "some saline" is removed, or even simply "saline" is removed,
it implies that all of the saline solution in the device is removed. The "conventional manner" for the method of implantation,
however, is referred to twice in the written description. (Col. 2, lines 22-24;col. 6, lines 53-54). It may be important to
understand the "conventional manner" before the possibility of a non-completely emptied "collapsed position" could be
completely excluded from the scope of this patent.
The court finds this limitation means "the cover including a portion that is capable of increasing in size by the initial fluid
injected through the port and into the chamber from collapsed implantation position to a taut position over the collapsed position "where "collapsed," at this time and without the knowledge of the "conventional manner," means the device is empty of fluid.

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2. Term 2: "limiting structure"

The second term the parties dispute is "limiting structure," which is found in claim 2 3 of the '252 patent and is a claim dependent on claim 1. Lightspeed argues that "limiting structure" is a means-plus-function term subject to Title 35 of the United States Code section 112, paragraph 6, and therefore must be "construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." Lightspeed's Opening Claim Construction Br. at 11 (quoting 35 U.S.C. § 112 P 6). Specifically, Lightspeed proposes that the Court construe the term "limiting structure" to include the two embodiments referenced in the specifications - plastic fingers and wire mesh, while Bose does not support the inclusion of the two embodiments.

--- Footnotes ---

3 Claim 2 of the '252 patent is as follows:

A headset in accordance with claim 1 and further comprising limiting structure limiting the maximum excursion of the diaphragm so that the voice coil remains at least partially in said gap.

--- End Footnotes ---

There is a rebuttable presumption that Title 35 of the United States Code section 112, paragraph 6 does not apply unless the claim uses "means" or "means for" language. Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 703-04 (Fed. Cir. 1998) (stating "cases have clarified that use of the word 'means' creates a presumption that § 112, P 6 applies . . . and that the failure to use the word 'means' creates a presumption that § 112, P 6 does not apply"). "These presumptions can be rebutted if the evidence intrinsic to the patent and any relevant extrinsic evidence so warrant." Id. at 704. Unfortunately here, as elsewhere in the law of patents, the Federal Circuit is imprecise in the use of the term "presumption." The court is not speaking of presumptions as that term is used in Federal Rule of Evidence 301. Rather, it is allocating the burden of actual proof to the party seeking to rebut the so-called "presumption." Personalized Media Commc'ns, LLC, 161 F.3d at 703-04. The court's focus in determining whether a party has rebutted either presumption "remains on whether the claim as properly construed recites [a] sufficiently definite structure to avoid the ambit of § 112, P 6." Id. at 704.

The term "means" is not used in claim 2; therefore, Lightspeed bears the burden of proving that section 112, paragraph 6 applies. To demonstrate that the term "limiting structure" does not recite a "sufficiently definite structure," Lightspeed offers an expert affidavit to show that the term does not have meaning to a person of ordinary skill in the acoustic arts. Lightspeed's Opening Claim Construction Br. at 12; Lightspeed's Opening Claim Construction Br. Ex. E, Decl. of Dr. Marshall Buck PP 9-10; see CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1369 (Fed. Cir. 2002) (stating "[t]o help determine whether a claim term recites sufficient structure, we examine whether it has an understood meaning in the art").

Bose counters Lightspeed's expert affidavit by providing testimony given by Lightspeed's expert witness in prior litigation involving the same '252 patent and claim 2 in which the expert discussed the term "limiting structure" in a manner demonstrating he understood what the term meant. Bose's Claim Construction Reply Br. at 11-12. Bose also provides its own expert affidavit in the acoustic arts to declare that a person of ordinary skill in this field would understand the meaning of the term as recited in claim 2 to connote a particular structure for diaphragm excursion. Id. at 13-14; Bose's Claim Construction Reply Br. Ex. 10, Decl. of Gary H. Koopmann PP 11-12.

As is virtually invariably the case, the expert witnesses for each party reach opposite conclusions in this case as to whether "limiting structure" is a term understood by "a person of ordinary skill in the art in question at the time of the invention . . . ." Phillips, 415 F.3d at 1312-13. Affidavits, of course, bear about as much relation to reality as does a

These conflicting affidavits on the claim term cancel each other out and require this Court to examine further intrinsic evidence to determine whether section 112, paragraph 6 applies. The '252 patent specifications provide guidance as to how the Court ought construe this term. The specifications repeatedly refer to the term "structure" in explaining how the diaphragm excursion is limited.

For example, the patent specifications state that "[t]he invention avoids the suction or under-pressure problem by locating a structure in the earcup over the diaphragm to limit voice coil excursion." The '252 patent at 3:28-30 (emphasis added). The specifications further state that "[t]his structure is positioned such that, during the normal range of excursion of the driver diaphragm, the diaphragm does not touch structure and motion is unimpeaded." Id. at 3:30-33 (emphasis added). Additionally, "[s]tructure is located close enough to the driver such that it contacts the diaphragm before it is pulled so far that the voice coil is pulled fully from the gap." Id. at 3:33-36 (emphasis added). Also, "[t]he structure is preferably small enough so that it does not cause diffraction or otherwise affect the sound pressure detected by the active noise reduction system's microphone except at high frequencies (over 10 KHz)." Id. at 3:39-43 (emphasis added).

The specifications then state that "[t]he present invention accomplishes [limiting diaphragm excursion] by using small fingers of plastic positioned to symmetrically contact the diaphragm along the circle where the voice coil is glued to it." Id. at 3:43-47. The specifications further state that "[a]n alternative embodiment for the structure to stop diaphragm movement is a fine wire mesh screen shaped so as to contact as much of the surface of the diaphragm as possible at its position of maximum allowed outward excursion." Id. at 3:50-54. Thus, the specifications indicate that the plastic fingers and wire mesh are types of elements that could make up the structure required to limit diaphragm excursion, but there does not seem to be a restriction excluding other ways to accomplish this same purpose.

Finally, dictionary definitions offer extrinsic evidence to assist the Court in determining whether "limiting structure" is a "sufficiently definite structure to avoid the ambit of § 112, P 6." Personalized Media Commc'ns, LLC, 161 F.3d at 704. "Limiting" is defined as restrictive. Merriam-Webster Online Dictionary, http://www.merriam-webster.com/dictionary/limiting. "Structure" is defined as "the aggregate of elements of an entity in their relationships to each other." Merriam-Webster Online Dictionary, http://www.merriam-webster.com/dictionary/structure. Thus, a "limiting structure" is in essence a restrictive aggregate of elements of an entity. This suffices as a sufficiently definite structure "since a term need not connote a precise physical structure in order to avoid the ambit of [§ 112 P 6]." CCS Fitness, Inc., 288 F.3d at 1370.

After weighing all the intrinsic and relevant extrinsic evidence, this Court rules that section 112, paragraph 6 does not apply here.

Bose proposes that the Court construe "limiting structure" as "[a] structure or component that limits diaphragm excursion, but does not otherwise interfere with diaphragm movement." Bose's Opening Claim Construction Br. at 19. Thus, in addition to the word "structure," Bose includes the word "component" in its proposed claim 2 construction. A "component" is defined as "a constituent part." Merriam-Webster Online Dictionary, http://www.merriam-webster.com/dictionary/component. Constructing the term "limiting structure" as a "component" does not comport with the definition of structure, which is an aggregate of parts, or components.

Furthermore, Bose includes language in its construction that the limiting structure "does not otherwise interfere with diaphragm movement." In claim construction, if a claim term is not readily apparent (e.g., "limiting structure" is not readily apparent in this case based on the above analysis), the court must look to the words of the claims themselves before looking to the remainder of the specifications. See Phillips, 415 F.3d at 1314. Claim 2 does not include language concerning this additional functional limitation. Following from the analysis above that the claim term "limiting structure" is not readily apparent, the Court looks to the specifications to construe the term.

The '252 patent specifications state that certain limiting elements "are positioned along the driver axial direction of motion
so as to limit displacement of the diaphragm" and that the diaphragm is "free to translate axially without obstruction." The '252 patent at 1:59-60. The specifications also state that the "limitation elements do not interfere with the normal range of motion of diaphragm." The '252 patent at 4:18-20. The patent specifications state this when describing how the apparatus functions. Id. at 4:13-20.

Thus, the specifications include the functional limitation that the limiting structure does not interfere with the diaphragm movement. Based on the above reasoning, 
the Court's construction of "limiting structure" is "a structure that limits diaphragm excursion to allow the voice coil to reside at least partially in a gap mounted on the baffle without interfering with the normal range of motion of the diaphragm."

b. "limits"

The term "limits" appears in claim 1. Boston Scientific proposes that "limits" be construed as "restricts within bounds." ev3 does not propose an alternative construction. The Court construes "limits" as "restricts within bounds."
The other cases cited by the plaintiff do not undermine the Court's authority to engage in construction at this stage in the litigation. In Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1322 (Fed. Cir. 2006), there was no evidence in the summary judgment record about the accused products. Without such evidence, the Federal Circuit could not tell whether the district court had limited itself to construing appropriate claim terms. The lower court opinion therefore resembled an advisory opinion because there was nothing to suggest that the matters on which it expounded were necessary to resolve the suit. Id. at 1327. Such concerns are not present here, where both parties have submitted evidence about the accused product and agree on the relevance of the two terms that the Court construes.

The plaintiff also relies on Bayer AG v. Biovail Corp., 279 F.3d 1340 (Fed. Cir. 2002), but that case is inapposite. In Bayer, the district court held that it had implicitly construed a disputed term in a prior opinion. The Federal Circuit disagreed, holding that there was no implicit construction of the disputed term and stating that it would be "premature" for it to engage in claim construction without a lower court construction to review. Id. at 1349. Bayer therefore speaks to the proper timing for appellate review, not the district court's construction.

The plaintiff's final argument is that it would be inefficient to construe "gap" now because of the possibility that construction of additional claim terms will be needed at a later stage. The Court believes that it would be more inefficient for the parties to conduct discovery that the Court's construction might render irrelevant. The Court will revise its construction if it becomes necessary, but the plaintiff has not explained how such a revision would cause the Court or the parties undue hardship. Further, the Court believes that such a possibility is unlikely, given the unambiguous usage of the terms in the patent.

III. Claim Construction

Claim construction begins with the intrinsic evidence of record: the patent's claims, specification, and prosecution history. Goldenberg v. Cytogen, Inc., 373 F.3d 1158, 1164 (Fed. Cir. 2004); Bell Atlantic Network Servs. v. Covad Commc'n's Group, Inc., 262 F.3d 1258, 1267 (Fed. Cir. 2001). In construing patent terms, there is a heavy presumption that they carry their ordinary and customary meanings as would be understood by one of ordinary skill in the art. Goldenberg, 373 F.3d at 1164. Where a claim term has no ordinary and customary meaning, a court must resort to the remaining intrinsic evidence to obtain the meaning of that term. Id. If ambiguity persists, a court may look to extrinsic evidence, such as expert or inventor testimony, dictionaries, and technical treatises and articles. Bell and Howell Document Mgmt. Prods. Co. v. Altek Sys., 132 F.3d 701, 706 & n.5 (Fed. Cir. 1997). Where the intrinsic evidence is unambiguous, it is improper for a court to rely on extrinsic evidence. Id. at 706.

The Court therefore begins with the language of the claims of the '961 patent, which contains one product claim and one process claim.

The product claim states that the invention comprises three layers that are bonded together along plural concentric lines, which form a barrier resistant to the egress of fluid out of the periphery of the pad. Col. 9, ll. 16-28. Each concentric line includes at least one line segment and at least one gap, which serves to enhance the flexibility of the pad. Col. 9, ll. 28-30, 35-36.

The patent also claims the process of producing the invention described in the product claim. Col. 10, ll. 23-59. Dependent claims 26 and 27 describe two methods of forming the line segments: pressure and thermal bonding. Col. 11, ll. 5-12.

The plain language of the claims reveals that the layers of the pad are bonded together along concentric lines, but not at every point along the line. Instead, there are "gaps" in the bonding that enhance the flexibility of the pad. "Line segment," therefore, refers to a space along a concentric line where the pad's layers are bonded together, and "gap" refers to a space along a concentric line where there is no bonding.

Dependent claims 26 and 27, then, teach that the bonding that forms the line segments can be accomplished by pressure and thermal bonding, for example. This reading is consistent with the specification's discussion of several embodiments of the invention, containing line segments formed by various methods of bonding. See, e.g., col. 5, ll. 24-45; col. 7, ll. 45-50; col. 8, ll. 45-48. 4

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The defendants agree with the Court's proposed construction. 5 The plaintiff objects to the Court's definition, proposing that the Court define "line segment" as "a portion of a plural concentric line at which the top-sheet, fluid absorbent core, and cover sheet are bonded together to form a barrier resistant to the egress of fluid" and "gap" as a "portion of a plural concentric line at which the top-sheet, fluid absorbent core, and cover sheet are not bonded together to form a barrier resistant to the egress of fluid, regardless of how or when such portion is formed."

5 In their summary judgment brief, the defendants argued that "line segment" referred to "compressed portions" and "gap" to "uncompressed portions." When the specification summarizes the invention, however, "pressure" or "compress" are mentioned only once—in a description of "one aspect of the method" of the invention. Col. 2, ll. 44-48. And no form of the words "compress," "pressure," or "density" is mentioned in either independent claim. The Court therefore believes that the defendants' original construction would improperly confine the meaning of claim terms to their usage in a specific embodiment of the invention. See, e.g., Phillips, 415 F.3d at 1323.

The Court rejects the plaintiff's definitions for several reasons. First, the phrase "regardless of how or when such portion is formed" is unnecessary. The Court's definition does not, contrary to the plaintiff's fear, mandate how or when the gap must be formed, but instead only requires that a "gap" lack bonding.

Second, the plaintiff's definitions stem in part from a misreading of the patent. In the plaintiff's view, "line segments" are barriers preventing the egress of fluid, while "gaps" are segments of the pad that are not barriers. The barriers referenced in the claims, however, are the plural concentric lines, which include both line segments and gaps and prevent fluid from exiting the pad. Col. 9, ll. 26-30; col. 10, ll. 45-51. See also col. 2, ll. 40-43 ("The plural concentric lines form a barrier resistant to the egress of fluid out of the periphery of the pad and include at least one gap therein. . ."); Pl.'s Resp. to the Court's May 9, 2007 Letter at 10 (referring to "concentric lines[,] of which the line segments and gaps are part."). In other words, the gaps and the line segments collectively form a "barrier" that prevents fluid from leaking out of the pad. This runs counter to the plaintiff's definition of "gap" as a place where a "barrier" is lacking. 6

6 A line segment may, of course, be a "barrier" in the sense that it "serve[s] as a wall across which fluid cannot flow." Col. 6, l. 28. But the patent's claims refer unambiguously to the barrier formed by the concentric lines—the combination of gaps and line segments—that prevents fluid from exiting the pad. The specification is in accord, referring, for example, to the "unbroken portions of the concentric barrier lines," indicating that the concentric barrier lines contain both broken and unbroken portions—gaps and line segments. Id. ll. 26-27.
differentiated from, and juxtaposed with, these bonded line segments. A "gap" is therefore a space defined by the absence of bonding. Interpreting the gaps as containing bonding would contradict the claims, which state that the absence of bonding at the gaps increases the flexibility of the pad. If the gaps do, in fact, contain bonding, then this feature of the invention would be eliminated.

Because "line segment" and "gap" are used unambiguously in the patent, the Court declines to refer to extrinsic evidence. 7

7 The only piece of extrinsic evidence cited by the parties is the plaintiff's quotation from dictionary definitions of "gap." The Court rejects these definitions to the extent that they are inconsistent with the usage of "gap" in the claims. The Federal Circuit has warned against resorting to non-scientific dictionaries to ascertain the meaning of claim terms, stating that claim construction should focus not on a term's abstract meaning but rather its use in the patent. Bell Atlantic, 262 F.3d at 1267; Phillips, 415 F.3d at 1321.

An appropriate order follows.

ORDER

AND NOW, this 24th day of July, 2007, upon consideration of the parties' submissions on claim construction, and after oral argument on the defendants' motion for summary judgment heard on March 2, 2007, IT IS HEREBY ORDERED that the terms "gap" and "line segment" in the '961 patent are construed as follows:

1. Line Segment: a space along a concentric line where the pad's layers are bonded together;
2. Gap: a space along a concentric line where there is no bonding.

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B. Claim 24

In their Joint Statement the parties identified seven disputed terms within Claim 24. Again, the parties contentiousness was considerably larger than their actual disagreement. Most of the terms they imagined were in dispute were not differences that related to claim construction at all but to the capabilities of the ARx10, which is not relevant to the present inquiry. At the hearing on this motion the parties isolated two disputed terms which require construction by this court: 1) "linear" in the context of "linear magnetron-enhanced sputter device" and "linear magnetron-enhanced ion source" and 2) "reciprocating" in the context of "means adapted for reciprocating the substrate carrier past the work stations a plurality of times." Each will be addressed in turn.

1. A linear magnetron-enhanced sputter device and a linear magnetron-enhanced ion source device

AVL maintains that linear should be understood in its ordinary sense, which it defines as resembling a straight line, long and narrow. Joint Statement at 9. Thus, in order to infringe, an accused device must employ long and narrow, even rectangular, magnetron-enhanced sputter devices and ion source devices. AVL makes much of the patent language which depicts deposition and reaction within "long narrow axial zones" as supporting its position that the devices at issue be linear. In response to OCLI's contention that the devices can be either linear or planar, AVL asserts that the words are not coterminous and that planar is broader, so that to the extent the magnetrons are planar they must also be linear.

OCLI asserts that the patentees exercised their right to be their own lexicographers in this instance and clearly defined "linear" to encompass the term "planar." They point to the repeated use of planar to modify magnetron and the seeming interchangeability of the terms linear and planar throughout the patent specification. They also cite their putative expert Bryant P. Hichwa as one with ordinary skill in the art who understands a circular planar magnetron to meet the definition of a linear magnetron. Deposition of Bryant P. Hichwa at .6 At oral argument OCLI sought to demonstrate its interpretation
of linear by rotating a piece of paper to reveal how it can be at once linear and planar depending on the position from which one views it. It also distinguished the magnetron from the zone of treatment; the latter, it agreed, must be long and narrow.

--- Footnotes ---

6 OCLI quotes Dr. Hichwa to this effect in its opposition memorandum and cites page 108 of his deposition which it attaches to the Declaration of Mr. Laycock as Exhibit J. However, nothing on page 108 of Dr. Hichwa's excerpted deposition discusses the meaning of linear.

--- End Footnotes ---

AVL is correct that the '095 patent distinguishes itself from the prior art by effecting the deposition and reaction in long narrow axial zones adjacent the periphery of the carrier. '095 Patent at col. 2, lines 45-48. However, the language of the patent specification does; not seem to require linear magnetrons to accomplish this effect. To the contrary, the specification allows for any ion source, for example, configured to produce such an effect, "such as the linear magnetron, or a suitably configured ion gun." '095 Patent at col. 2, lines 56-58. Moreover, elsewhere the specification calls for at least one "preferably linear" cathode plasma generating device. '095 Patent at col. 3, lines 22-23. Clearly the embodiments disclosed all use a linear magnetron sputter device and linear magnetron ion source device to achieve the required long narrow reaction zones, 7 but contrary to AVL's contention, AVL reply at 11-12, nothing in the specification language requires this combination.

--- Footnotes ---

7 In fact, all the disclosed embodiments use rectangular devices.

--- End Footnotes ---

Despite the fact that the specification language does not require linear magnetrons, the claim language certainly does. The question for the court is the construction of linear in that context, and specifically whether linear and planar are interchangeable terms within the '095 patent. Both parties point to the fact that the specification describes the magnetron sputtering stations as "linear/planar." AVL reads the slash to mean "and" while OCLI reads it to mean "or." Both are plausible interpretations. And OCLI is correct that the terms appear to be used interchangeably elsewhere in the specification. Unlike the subtle distinctions evident between "selected" and "selectively" noted above, the patent does not seem to similarly distinguish linear and planar. The most telling use of both terms together suggests that planar should be understood as a subset of linear rather than the other way around: "The substrates are moved past a set of processing stations comprising (1) at least one preferably linear cathode plasma generating device (e.g., a planar magnetron or a Shatterproof rotating magnetron) . . . ." '095 Patent at col. 3, lines 20-25.

While it is true that patentees can be their own lexicographers, Markman, 52 F.3d at 980 (citing Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 397 (Ct. Cl. 1967)), the catch is that special definitions must be clearly defined in the specification. Id. Given that linear and planar normally have quite distinct meanings that are not interchangeable, this court does not find that the specification is explicit enough to support the interpretation of linear offered by OCLI. It would indeed be relevant if one of ordinary skill in the art understood the term linear to encompass the planar, however, the portion of Dr. Hichwa's deposition that plaintiff cites for this purpose is evidently miscited and nothing of the sort appears on the page provided. Furthermore, reference to the meaning of linear by OCLI's other putative experts are framed as legal opinion or go to literal infringement and are therefore not helpful to this court. 8 Accordingly, the court does not construe linear as interchangeable with the term planar. To the extent a device is planar, it must also be linear to infringe the '095 patent.

--- Footnotes ---

8 Dr. Carniglia does not say that linear also means planar to one of ordinary skill in the art. Instead, he asserts that the term linear is "defined in the '095 patent" to mean planar. Decl. of Charles K. Carniglia at P 49. This is precisely the legal determination the court is to make and constitutes legal opinion of no use to the court. See Markman, 52 F.3d at 983. OCLI's final expert, patentee James W. Sesser, does not make any claims about the meaning of linear; rather, he opines that the
ARx10 incorporates a linear magnetron. Decl. of James W. Sesser at PP 20-22. This evidence goes to the second step of the infringement analysis and is therefore irrelevant to the present inquiry.

(3) In order to satisfy claim 1, the fogging mist must have a "linear velocity of between 110 and 140 m/s" at the point where it is released or discharged from the fogging device. Plaintiffs maintain that "linear velocity" need not be construed or, in the alternative, should be construed as "velocity." Defendants object to the proposed deletion of the word "linear" and seek to have the phrase construed as "velocity along a straight line."

One can measure the rate of change in a particle's position from a number of vantage points, including along the particle's path (linear velocity) or as a ratio of the angle traversed (angular velocity). The inventors clearly specified the perspective from which the speed of the droplets should be measured: removing the "linear" limitation from the phrase "linear velocity" is unjustified and could cause confusion. The Court therefore rejects plaintiffs' proposed construction. On the other hand, a particle can have linear velocity even if it is not moving in a straight line. A person standing on the surface of the Earth, for example, is moving in a giant arc around the Earth's core (i.e., not in a straight line) and has both angular and linear velocities. To the extent defendants' proposed construction would require the droplets to be moving in a straight line, it is rejected.

"Linear velocity" is not defined by the inventors, and neither party has identified any intrinsic evidence that is relevant to the construction of this phrase. Luckily "linear velocity" is a common term that has meaning to lay judges as well as to those skilled in the art. The phrase will be construed as "the rate of change of a body's position in a particular direction over time." No further construction is necessary other than to clarify that, although linear velocity has a directional component, a body can have linear velocity even if it does not continue moving in the same direction over time. The direction in which the body is traveling may change moment to moment, as with the person standing on the surface of the Earth. Nevertheless, the person possesses an instantaneous linear velocity in the direction of the tangent to the curve, even as his or her direction changes with the Earth's rotation.

"Linearly Driving the Actuator"

The "actuator" mentioned in claim 29 is an arm connected to a sensor head which is used to position the sensor head across the surface of a disk inside of a computer's hard drive. Plaintiffs argue that the term "linearly driving the actuator" does not require construction, whereas defendants propose that it means "moving the actuator along a straight line." Because the claims do not define the term "linearly driving the actuator," we look to the specification for guidance.

Figure 9A diagrams a preferred embodiment of the patent and includes a drawing of a stepping motor linearly driving an actuator. The actuator depicted in Fig. 9A is clearly being driven in a straight line, as the drawing depicts a guide rod connected to the actuator to ensure that it is restricted in its path of travel. We are not assuming that this one embodiment places a limitation on the claims. See Liebel-Flarsheim, 358 F.3d at 906. Rather, the embodiment merely provides insight into whether or not the patentee was acting as his own lexicographer by using the term "linear" in a manner other than its ordinary usage. See Phillips, 415 F.3d at 1316. The example provided in Fig. 9A suggests that he was not.

The argument for construing the term "linearly driving" to mean "driving in a straight line" is further supported by the specification's description of the "sensor head" that is connected to the actuator. Although the actuator in Fig. 9A is described only as moving "linearly," the sensor head is described as moving both "linearly" and "angularly." 922 patent at 8:25-28. Therefore, we can assume that, in the context of the patent, "linear" movement is different than "angular" movement. This also comports with the plain meaning of the word "linear," which Webster's Dictionary defines as "following a straight course: being or going in a straight direction." Webster's Third New International Dictionary, 1315
Accordingly, we find that a person of ordinary skill in the art at the time of invention would understand "linearly driving the actuator" to mean driving the actuator in a straight line.

CDF asserts a patent infringement claim with regard to Shield Pack's multi-layer, gusseted, plastic bags, which Shield Pack refers to as its "Quad bags." 2 Shield Pack argues that its Quad bags do not infringe CDF's '121 patent because their oblique seals curve at the end, instead of "being linear," as required by the '121 patent. The picture of the Quad bags' oblique seals shows that they are straight for approximately twenty-seven (27) of their thirty-one (31) inch length, and curve gently for approximately the last four (4) inches.

2 There is some disagreement between the parties as to whether Shield Pack also makes Quad bags with oblique seals that are straight along their entire length. Regardless, Shield Pack seeks a judgment of non-infringement for its Quad bags with curved-end oblique seals only [Doc. No. 42, p. 10], and the Court refers only to those bags throughout this Ruling.

claim 1 of the '121 patent describes how the oblique seal portions are formed, and it includes the clause, "the oblique seal portion being linear." [Doc. No. 1-3, p. 27]. The specification does not define "linear," but describes the oblique seal portions as "having a straight band-shape." [Doc. No. 1-3, p. 16].

Shield Pack argues that the plain meaning of "linear" is "straight," and that this interpretation of the claim is supported by the patent specification which actually uses the word "straight." CDF argues that the term "linear" as used in the '121 patent means "relating to a line that is substantially straight over the majority of its length," and, thus, has a broader meaning than "straight." CDF also argues that, during prosecution, the phrase "having a straight band-shape" was changed to "linear" to make the claim less restrictive. 3

3 CDF further argues that Figure 2 of the '121 patent shows that the seals actually bend and curve at the corners when the bag is filled, and, therefore, construing "linear" to mean "perfectly straight over the entire length" would effectively exclude the preferred embodiment of the patent. Although Figure 2 does show somewhat rounded corners when the bag is filled, Figure 1 shows that the oblique seals portions are straight at the corners when lying flat. The Court finds that the figures are not clear enough to assist the Court in construing "linear" as used in the patent claim.

The language of claim 1 explaining the oblique seal portions describes them as being formed between two arbitrary points, implying that the "linear" oblique seal is a straight line between those points. Additionally, the "triangular" fin portions of the claimed product are formed on one of their three sides by the oblique seal portions. Triangles are three-sided figures bounded by straight lines. See Triangle Definition, merriam-webster.com, http://www.merriam-webster.com/dictionary/triangle (last visited Aug. 27, 2010).

The Court's construction of "linear" is also supported by extrinsic sources. Merriam-Webster's dictionary defines "linear" as "of, relating to, resembling, or having a graph that is a line and especially a straight line: STRAIGHT." Linear Definition, merriam-webster.com, http://www.merriam-webster.com/dictionary/linear (last visited Aug. 27, 2010). The first definition of "linear" in the New Shorter Oxford English Dictionary is "of or pertaining to a line or lines"; however, the third definition is "arranged or measured along a (straight) line; extended in a line or in length; spec. in Math & Physics, involving
The Court finds that a person of ordinary skill in the art would interpret the term "linear" to mean "straight." Therefore, the Court construes "linear" in the '121 patent claim to mean that the oblique seal portion forms a straight line between the two arbitrary points indicated. Because the oblique seals on Shield Pack's Quad bags do not form a straight line, no reasonable trier of fact could find that they literally infringe the '121 patent.

6. Liner

Defendants' Proposed Construction: A "liner" is a paper or plastic web which has a "release layer" that is in contact with a pressure sensitive adhesive.  
Plaintiff's Proposed Construction: Leave undefined.  
The Court's Claim Construction: A "liner" is a material which has a layer that allows for the release of the liner from the adhesive on the back of the placard and is in contact with a pressure sensitive adhesive.

Defendants point first to the patent. Claim 1 refers to a liner that covers the adhesive coating of the placard and is removed from an adhesive coated face. The specification describes a liner preferably made of paper with a release layer. (’790 patent, col. 2, ln. 13-15). The liner is removed to expose the adhesive coated face which is then used to apply the placard to a container. (’790 patent, col. 1, ln. 55-58; col. 2, ln. 46-49). 
Defendants' definition incorporates its earlier definition for "release layer." Because the Court did not adopt a definition for "release layer," it is necessary to consider Defendants' definition here:

A "release layer" is a layer on the 'liner' that allows for the release of the liner from the adhesive on the back of the placard so that the placard may be adhered to the container. The release layer may be either a 'release coating' as defined above or it may be a film that has inherent release properties such as Teflon(R) film.

As was discussed in detail above, the Court does not accept Defendants' attempt to distinguish a coating from a film. However, the first half of Defendants' definition of release layer is not inconsistent with the claims and the specification. Combining the two definitions results in the following:

A "liner" is a paper or plastic web which has a layer that allows for the release of the liner from the adhesive on the back of the placard and is in contact with a pressure sensitive adhesive.

MPT simply wants the Court to leave "liner" undefined. MPT's only argument is that liner has no special meaning in the art and should therefore be left for the jury to ascertain its plain English meaning. Defendants counter with a number of definitions from technical references:

"RELEASE LINER The component of the pressure sensitive label stock which functions as a carrier for the pressure sensitive label. Prior to application, it protects the adhesive, and readily separates from the label immediately before the label is applied." (TLM p. 50).

"Release Liner (backing, backing paper, carrier, liner) The component of the [pressure sensitive] laminate which functions as the carrier for the label. It protects the adhesive prior to application, and it readily separates from the label immediately before the label is applied to the substrate." (Fasson p. 35).

Industry sources and an MPT representative agree that these definitions accurately represent the industry definition of a release liner. (T. Kennedy Dep. p. 63-64; Macuga Dep. p. 16-17). In light of MPT's refusal to provide any evidence or argument from any source to the contrary, the Court agrees. A person of ordinary skill in the art would recognize that a liner has a layer that is in contact with an adhesive and allows for the release of the liner from the adhesive. However, none of these definitions require the "paper or plastic web" of Defendants' definition. Therefore, the Court construes a "liner" as "a material which has a layer that allows for the release of the liner from the adhesive on the back of the placard and is in contact with a pressure sensitive adhesive."
3. Liner

(a) no definition necessary

(b) a structure that covers or lines a surface of another structure

ITW a structure that covers or lines a surface of another structure and is formed without any pleats, corrugations, seams, joints or gussets, or any grooves at the internal junction of the side walls

ITW maintains on the basis of patent disclaimer that the term liner as used in this patent only encompasses a structure "without any pleats, corrugations, seams, joints or gussets, or any grooves at the internal junction of the side walls." 3M responds that ITW's efforts at limiting the definition of liner are misplaced and that ITW misrepresents the prosecution history of the patent.

The doctrine of patent disclaimer prevents a patentee, in this case 3M, from recapturing a specific meaning that it disclaimed during the prosecution. See Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1323 (Fed. Cir. 2003). For 3M to have disclaimed a meaning, however, it must have "unequivocally disavowed" a broader definition of the term in its efforts to obtain the patent. Id. at 1324.

During its prosecution of this patent, 3M needed to distinguish a patent that already existed for a different disposable liner system, the Kaltenbach system. That system worked in a similar manner as 3M's PPS system, but the liner in the Kaltenbach mechanism is not cup-shaped like the 3M liner. The Kaltenbach liner is instead pouch shaped: the sides of the liner gradually come closer together until closing in a straight seam. 3M distinguished its system from the Kaltenbach system by specifying in the patent that the PPS liner has "a shape that is a close fit within the interior of the reservoir prior to adding a fluid to the liner," which it argued was an improvement over the Kaltenbach liner because there are no grooves or seams to trap paint in the PPS liner.

ITW, nevertheless, argues that the definition of liner should be limited to an object without pleats, corrugations, seams, joints, gussets, or grooves because that is how it is described in the preferred embodiment. It also argues that this is the basis on which 3M distinguished the Kaltenbach liner from its product. Those arguments, however, ignore the fact that the liner is already limited in the claims as, among other things, having a shape that is a close fit within the interior of the reservoir and that remains solid when outside of the reservoir. This is the basis on which 3M distinguished the PPS system from the Kaltenbach system and there are no grounds on which to narrow the definition any further, especially considering that any evidence resulting in a narrowed definition must be "unmistakable" and "unambiguous." Omega, 334 F.3d at 1325. The Court disagrees with 3M's position that a definition is unnecessary but adopts its proposed definition.

The parties agree that a "liner" under Claim 8 possesses so-called "moisture transfer qualities," and that the '810 patent also teaches a liner that is "breathable." They disagree, however, whether there is a distinction between these two terms. Plaintiffs contend they are different, and that the specification requires that the liner possess the distinct qualities of moisture transfer and breathability. Defendants believe that the Claim describes only a liner that is permeable to moisture vapor, and that breathability means the same thing.

The '810 patent does not define "breathable" or "moisture transfer." However, the specification employs the term "breathable" in the context of permeability to moisture vapor. "An object of the present invention," the specification reads, "is to provide … a more breathable liner … This object … is realized by providing a lining system having lining materials which act as a moisture transfer system. Moisture vapors are transferred through the liner from one side to the other side."
(‘810 Patent, col. 1, lines 37-47.) “Breathable” is also used in contradistinction to "waterproof." For instance, the patent refers to "a waterproof/breathable membrane,” which it defines as a membrane permeable to moisture vapor in one direction, but impervious to moisture or moisture vapor in the other. (Id. at col. 5, lines 52-62; see also col. 4, lines 59-61; col. 8, lines 43-49.) Thus, the Court defines "breathable" as "permeable to water vapor."

Plaintiffs distinguish permeability to water vapor from "moisture transfer," however. One skilled in the art, they argue, would know that "moisture transfer" is an active function encompassing "wicking," "absorbing," "adsorbing," "siphoning," and other actions involving the conduction of moisture. "Breathability," by contrast, is merely a passive function, according to Plaintiffs, such that fabric that merely allows moisture vapor to pass cannot be said to have "moisture transfer qualities" if it does nothing actively to conduct the moisture through the material.

Intrinsic evidence supports Plaintiffs' construction. The specification discusses a number of fabrics that "have good moisture transfer characteristics" that prevent "excessive moisture built-up [sic]." (See ‘810 Patent, col. 3, lines 55-57.) The "moisture transfer characteristics" of these fabrics "causes [sic] moisture vapors to be passed from a rider's body through" the first liner layer. (Id. at col. 3, lines 58-60.) (emphasis added) "To cause" is an active verb, suggesting that the materials having "moisture transfer qualities" conduct moisture vapor away from the rider, and not simply that they passively allow moisture vapor to travel through them.

Plaintiffs also point to extrinsic evidence to support their reading. Technical descriptions of these moisture transferring fabrics, produced by their manufacturers and placed in the record by Plaintiffs, describe the materials' ability to conduct moisture via wicking, absorption, adsorption, capillary action, siphoning and so forth.

The Court finds Plaintiffs' arguments persuasive, and Defendants offer no counterargument. The Court therefore concludes that the liner taught by Claim 8 must possess moisture transfer qualities that are distinct from its permeability to water vapor. Accordingly, the Court construes "liner" in Claim 8 as a composite material that is permeable to water vapor and that conducts moisture via any one of number of water-transferring processes, including but not limited to wicking, absorbing, adsorbing, siphoning, capillary action and the like. 1

1 Plaintiffs insist that "each and every layer" of the Claim 8 liner must possess these qualities. The Court does not agree. While "breathability" must necessarily be a quality of every layer of a breathable liner, it is not obvious why "moisture transfer" must be. Plaintiffs fail to point to a portion of the specification supporting such a requirement, and the Court rejects it.

--- Footnotes ---

1 Plaintiffs insist that "each and every layer" of the Claim 8 liner must possess these qualities. The Court does not agree. While "breathability" must necessarily be a quality of every layer of a breathable liner, it is not obvious why "moisture transfer" must be. Plaintiffs fail to point to a portion of the specification supporting such a requirement, and the Court rejects it.

--- End Footnotes ---

2343

e. "a second end cap sealing portion lining the outer annular surface of said second end cap"

The phrase "a second end cap sealing portion lining the outer annular surface of said second end cap" appears in claim 1 of the '366 Patent. Donaldson asserts this phrase has a meaning readily understood by one of skill in the art and construction of the language is not necessary. Baldwin asserts that the phrase should be construed as "the outside annular portion of the second end cap that forms a radial compression seal with the housing." Baldwin argues that a compression type radial seal is required given use of the term "annual" and the following specification language:

In certain preferred arrangements, . . . the second end cap includes an outer annular compressible portion and the housing includes an annular sealing surface against which the second end cap outer annular compressible portion is sealed, when the air filter arrangement is operatively assembled for use. Such a seal is referred to herein as a peripheral or annular radial seal, around the second end cap. That is, in this context the term "annular" refers to a sealing portion around the outside of the end cap, which seals under radial compression.

The Court declines to adopt Baldwin's proposed construction. The plain language of the claim requires that the sealing portion line the outer annual surface and that it form a radial seal against a sealing surface of a housing, when the filter element is mounted in a housing. The claim language does not require a particular type of radial seal. Further, the specification does not support the addition of the limitation that the annular portion form a "radial compression seal." The specification language cited by Baldwin is in a paragraph that begins "in certain preferred arrangements." Thus, the type of sealing discussed is an example. Because the language of the claim is clear and is not limited to a particular form of contact, the Court declines to import any such limitations appearing in the specification. See Phillips, 415 F.3d at 1323. Accordingly, the Court declines to adopt Baldwin's proposed construction and does not construe the phrase "a second end cap sealing portion lining the outer annular surface of said second end cap."

2344

(5) "link arms"

Claims 2, 4 and 6 do not define the term "link arms," which is not a term with an ordinary meaning. The parties have not suggested that the term has any "particular meaning in [the] field of art." Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005). Therefore, I turn to the specification itself, which "necessarily informs the proper construction of the claims." Network Commerce, Inc. v. Microsoft Corp., 422 F.3d 1353, 1359 (Fed. Cir. 2005).

The '166 patent's abstract claims "two spaced link arms that engage two respective eccentrics of the crankshaft." The written description states that the invention comprises "at least one link arm that couples the counterbalance weight to the crankshaft. In the preferred embodiment, two spaced link arms are used." '166 patent, col. 1, Ins. 52-54. Although the embodiments shown in the patent specification show link arms that are separate mechanical components from the counterbalance weight, the specification does not require the link arms to be separate pieces of machinery, but it identifies their purpose as coupling the counterbalance weight to the crankshaft. Relying on the description of the link arms' purpose provided by the written description, as well as the non-limiting language of the claim itself, I construe "link arms" to be components that couple the counterbalance weight to the crankshaft.

2345

. "A linking means, the linking means operably connecting the wheel braking device with the actuating mechanism to facilitate setting and releasing the wheel braking device"

a chain or shaft that connects the wheel braking device with the actuating mechanism

2346

5. "Links."

Consistent with the claim language and its ordinary meaning, 6 the specification 7 and the prosecution history, 8 the court construes "links" to mean "short separate structures that run transverse to the long axis of the stent in order to connect adjacent longitudinal bands."

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

6 D.I. 230, Ex. 39 (defining "link" as "a piece or part . . . that holds two or more important elements together . . .").

7 '406 patent, col. 4, ll. 15-17.

8 D.I. 230, Ex. 40 at 5, 6; D.I. 280. Ex. 42 at BSC11646.
D. "Lip"

The parties' disputes regarding "lip" relate to three terms: "lip," "a first lip projecting radially outward from the lid" and "a second lip projecting radially inward from the outer surface of the rim of the main body." Their proposed constructions for the three terms are as follows:

"lip"

. Plaintiff: (Plaintiff does not propose a specific construction, but does state that "the only requirement regarding the lips is that they protrude such that they form a nominal radial interference.")

. Defendant: A protrusion that projects away from a surface by a sufficient amount so that it is clearly and noticeably away from the surface.

"a first lip projecting radially outward from the lid into the groove"

. Plaintiff: The first lip is a protrusion on the inboard side of the inner surface of the groove defined about the edge of the lid where each point of the protrusion extends from the inner surface of the groove in a direction along a radius away from the center of the lid into the groove.

. Defendant: A first lip that projects outwardly in the radial direction from the lid into the groove.

"a second lip projecting radially inward from the outer surface of the rim of the main body"

. Plaintiff: The second lip is a protrusion on the inboard side of the outer surface of the rim of the main body where each point of the protrusion extends from the outer surface of the rim in a direction along a radius toward the center of the main body.

. Defendant: A second lip that projects inwardly in the radial direction from the outer surface of the rim of the main body.

1. The parties' disputes

a. "lip"

The parties' principal dispute relates to the meaning of "lip." Plaintiff contends that it is enough to require that the lips "protrude" in a way that allows them to form a "nominal radial interference" as the claim requires." Plaintiff's construction suggests that "lip" has little meaning on its own. The claim language requires explicitly that the lips "produce a nominal radial interference," so it would be superfluous to define them as being capable of producing nominal radial interference. The only other thing plaintiff's construction accomplishes is to describe the lips as "protrusions."

The parties agree that a lip must be a "protrusion." What defendant's construction adds is that the protrusion must project away from the surface "clearly and noticeably." However, as plaintiff points out, the phrase "clearly and noticeably" is vague and appears to be a subjective standard. Neither vague nor subjective standards help explain the scope of the claim term.

Defendant seeks to hold plaintiff to earlier statements. First, in the previous lawsuit, a Rule 30(b)(6) witness of plaintiff's stated that a lip had to be "totally away from the surface" and drew the following diagram in explanation:

[SEE DRAWING IN ORIGINAL]
Dkt. # 23, Exh. 2D, at 142, exh. 3. The problem is that the Rule 30(b)(6) witness was not providing expert testimony. Plaintiff should not be held to that witness's position on technical matters. I explained this to defendant in the previous suit. First Years, 07-cv-558-bbc, dkt. # 241, at 52.

Next, plaintiff made certain arguments about the meaning of "lip" in the previous lawsuit; in particular, plaintiff argued that a diagram from the prior art, United States Patent 2,833,324, does not show a lip:

Plaintiff acknowledges that the '324 patent does not disclose a "lip," but explains that its definition would not include surfaces such as those disclosed in the '324 patent as "lips" because such surfaces are "projections of a surface" whereas plaintiff's definition requires a "lip" to be a "protrusion from a surface." Dkt. # 31, at 15 (emphasis in original). I agree with plaintiff that it is enough to describe "lips" as "protrusions" from a surface to distinguish them from mere angled surfaces.

Although defendant would add the requirement that the "lip" be "clearly and noticeably away" from the surface, the claim requires only that the "lips" produce a nominal radial interference; it includes no special size requirements on the lips. Indeed, defendant cannot point to any intrinsic or extrinsic evidenceto support placing an arbitrary minimum on the amount of protrusion necessary to qualify as a "lip."

b. "projecting radially"

The other dispute between the parties involves the direction of the "lip." The claim language requires that the lips "projec[t] radially." (The lip on the lid projects "radially outward" and the lip on the cup projects "radially inward.") Neither parties' construction is satisfactory. Defendant's construction simply rearranges the words already in the patent: "projects . . . in the radial direction." Plaintiff's construction is confusing: "each point of the protrusion extends . . . in a direction along a radius." As defendant notes, a point cannot extend. Plaintiff clarifies its position in its response brief, explaining that "the construction only means that if you pick a representative point on the surface of the lips, the lip points or extends either toward or away from the center, that is, along a radi[us]." Dkt. # 31, at 18. This explanation is not very helpful.

What does help somewhat is plaintiff's explanation that the term "radially" refers to the radius from the center of the cup (or lid), so "projecting radially" means "along a line to (or from) the center." Defendant does not disagree, but points out that plaintiff's definition of "projecting radially" point-by-point allows for the possibility of an infinite number of different projecting points from different radii. Plaintiff's attempt to describe the projection on a point-by-point basis must come from the fact that not all the points of the lip can be in a single line pointing toward the center of the cup (or away from the center of the lid).

Plaintiff's general idea seems correct. The confusion lies in describing how these "points" extend away from or toward the center. Perhaps that confusion could be cleared away by explaining where each of these points must be with respect to the center and the surface from which the lip protrudes. However, it is not clear whether such a point-by-point analysis is necessary or required by the patent. Defendant does not suggest that it is and plaintiff does not explain why it would be. To the extent plaintiff is concerned that not all the points on the lip will be along the same "radius," defendant has not raised that argument and a "single radius" requirement would not be a practical reading of the term "radially." At this point, rather than repair the constructions proposed, it makes more sense to simply decline to construe the term. If the parties continue to dispute the meaning of the term at summary judgment, they can describe their concerns more clearly and provide more precise definitions at that time.

2. The court's construction

As I explained above, I will not construe those terms related to "projecting radially" at this stage. As for "lip," it is enough to describe it as a "protrusion." Defendant's additional limitations are not supported by the extrinsic or intrinsic evidence and plaintiff's additional language is unnecessary in light of the surrounding claim language imposing the restrictions plaintiff describes.
"Lip"

The proposed constructions are in Table 7.

<table>
<thead>
<tr>
<th>Term, Patent, and Ind. Claim</th>
<th>Term, Patent, and Ind. Claim</th>
</tr>
</thead>
<tbody>
<tr>
<td>lip</td>
<td>Correll's Interpretation: &quot;[lip must be located] at the outer edge of the table top.&quot;</td>
</tr>
<tr>
<td>(Lifetime's Rep. in Supp. (110 at 4.)</td>
<td>(Correll's Mem. in Opp. (93) at 9.)</td>
</tr>
</tbody>
</table>

The ordinary meaning of the claim term "lip" is "a projecting edge on a container or other hollow object," and "any edge or rim." Webster's at 1120. Therefore, looking at the ordinary meaning alone, without consulting the specification, the meaning of lip would be a projection at the edge or rim of the table. But the specification shows that another construction might be correct. The specification reads:

As shown in the accompanying figures, the table top 12 may also include an outer lip 159 that is generally disposed about the outer periphery 144 of the table top 12. Preferably, the lip 159 forms at least part of an outer edge or boundary of the table top 12. One skilled in the art will appreciate that the lip 159 does not have to create the outer edge of the table top 12 and the lip can extend around all or only a portion of the table top 12. … The lip 159 is preferably disposed about the outer periphery 144 of the table top 12 and at least a portion of the lip extends in an opposite direction from the upper or working surface 16 of the table top.

(Keller Decl. (Nov. 25, 2003), Ex. B, '404 Patent at col. 12, lns. 10-18, 41-44 (emphasis added).)

The word "generally" in the phrase "generally disposed about the outer periphery" indicates that the lip will be located near the outer periphery of the table top, but need not be exactly at the periphery. This construction is supported by the specification statement that "one skilled in the art will appreciate that the lip 159 does not have to create the outer edge." (Id. at col. 12, lns. 15-16.)

The proper construction, would be that the lip must be near the periphery, but is not required to be exactly at the periphery, nor is it required to form the table edge.

b. Lip

Wedgewood suggests that dictionary definitions are of principal importance in defining the patent term "lip." In support of its position, Wedgewood notes the following definitions for "lip": "1. either of the two fleshy folds ... forming the edges of the mouth ... 2. anything like a lip, as in structure ..." (D.E. 26 at 10 (quoting Merriam-Webster's New World Dictionary at 824 (2d college ed. 1984)).) From this starting point, Wedgewood asserts that "the plain and ordinary meaning of lip is: either (i.e. meaning one or the other) of two fleshy folds that surround or form the edges of the human mouth." (D.E. 26 at 10.) Wedgewood then asserts (in response to Nike's commonsense objection that defining "lip" as "anything like a lip" would appear to suffer from substantial circularity problems) that its argument is not unfirm, because the "'as in structure' language only serves to state the obvious: the structure identified in the patents is not made of flesh and it does not form the edge of a mouth." (Id.) Wedgewood thereafter immediately proceeds--in what, in all respect, appears to be somewhat of a non-sequitur--to assert that, while its "lip" is not made of flesh and does not relate to a mouth, "it is a fold." (Id.)

This assertion is meaningful because Wedgewood then pivots to a definition of "fold," which states that "[a] fold is: 'a part
doubled or laid over another part: pleat."' (Id. (quoting Merriam-Webster's New Collegiate Dictionary at 479 (9th ed. 1989).) From this, Wedgewood asserts that a "lip" is simply a two-sided structure (D.E. 26 at 10), although Wedgewood also contends (with no recognition of the convoluted path its has wended simply to arrive at the "fold" definition, nor recognition that the "fold" definition does not appear even in Wedgewood's own view to answer the interpretative question presented) to make clear that a "lip" is certainly not "limited to a structure containing only two sides." (Id. at 10, n. 10.)

Nike also references certain dictionary definitions, but it principally bases its interpretive argument on evidence in the specification and other intrinsic evidence. In this regard, Nike highlights that both parties acknowledge that the term lip is not commonly used in the golf club industry and does not have a common meaning within that industry's lexicon. (D.E. 23 at 20 (citing D.E. 20, Ex. E (Stites Decl.) P 24 & Ex. O (Long Decl.) P 20); D.E. 30 at 13 (citing D.E. 27, Pl. Ex. A (Aldrich Decl.) P 20 (Plaintiff's expert acknowledging that "the term lip is not commonly used to describe structures within a golf club and does not have a common meaning within the lexicon."))). Nike suggests that the proper course is to look to the portions of the specification it highlights to ascertain how Wedgewood has defined the term "lip."

The Court begins by respectfully rejecting much of Wedgewood's proposed approach to the interpretive question, as it appears to suffer from multiple flaws. First, where, as here, it is clear that there is no settled understanding of the meaning of the term at issue in the relevant economic market or art, the Federal Circuit has cast grave doubt on the propriety of using generic dictionary definitions, at least where the intrinsic record appears to offer valuable guidance about the meaning of the disputed term. Specifically, in Venderlande Industries Nederland BV v. International Trade Commission, 366 F.3d 1311 (Fed. Cir. 2004), the Federal Circuit recently instructed:

"where evidence . . . demonstrates that artisans would attach a special meaning to a claim term, or, as here, would attach no meaning at all to that claim term (independent of the specification), general-usage dictionaries are rendered irrelevant with respect to that term; a general-usage dictionary cannot overcome credible art-specific evidence of the meaning or lack of meaning of a claim term."

Id. Given that there is no question that the term "lip" has no ordinary meaning within the golf club industry (see, e.g., D.E. 27, Pl. Ex. A (Aldrich Decl.) P 20 (recognition of Plaintiff's expert)), it would appear to be improper under applicable precedent to turn to generic dictionary definitions when, as explained further below, the intrinsic record provides more context-specific guidance. 13

13 Plaintiff's cited authority (D.E. 26 at 11) does not undermine the force of the Federal Circuit's recent teaching in Venderlande. In one of its cited cases, Optical Disc Corp. v. Del Mar Avionics, 208 F.3d 1324 (Fed. Cir. 2000), there was no argument even made (much less established, as is the case here) that those skilled in the relevant art would not ascribe any meaning to the term at issue. Optical Disk also acknowledged the significance of examining the intrinsic record to see if interpretive guidance were available there. Id., 208 F.3d at 1334-35 ("A technical term used in a patent is interpreted as having the meaning that it would be given by person experienced in the field of invention, unless it is apparent from the patent and the prosecution history that the inventor used the term with a different meaning.") (quoting Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578 (Fed. Cir. 1996)). Plaintiff's second case, CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359 (Fed. Cir. 2002), also did not involve any argument or showing that those versed in the relevant art or industry would not ascribe any meaning to the term at issue, necessitating a look at the intrinsic record. It also recognized that it may be appropriate and necessary to draw from the intrinsic record where the patentee has acted as his own lexicographer in relation to a particular term. Id., 288 F.3d at 1366-67.

Second, even if it were appropriate to look to general-purpose dictionary definitions, Wedgewood's argument on such a basis is flawed. To begin, Wedgewood's dictionary-based, plain meaning argument is rooted in awkward and unpersuasive jumps between the definition of "lip" (which at the end of the day, does very little in the analysis), the definition of "fold," and the notion that a fold has two sides. Even this does not provide any definitive guidance, even on Wedgewood's own terms, as it believes a "lip" can have more than two sides as well. The idea that a "lip" is simply a multi-sided structure would appear to include numerous disparate structures (e.g., octahedrons and pyramids) that could notreasonably be considered a "lip" and that cannot be reconciled with the intrinsic record.
In addition, the predicate for Wedgewood's argument is its use of a 1984 Merriam-Webster's New World Dictionary (2nd college ed.) for its definition of "lip," as being "anything like a lip, as in structure . . . ." As Nike points out, by the time the patents in dispute were issued, this aspect of the definition appears to have been removed from Plaintiff's own cited dictionary series. See D.E. 31, Ex. CC (Merriam-Webster's Collegiate Dictionary at 679 (10th ed. 1996)). Given that Plaintiff's proposed dictionary-based interpretation is predicated, at least in part, on a definition for the disputed term that was removed from Plaintiff's own cited dictionary series during the time period when the patents were applied for and issued (i.e., 1998-2001), Plaintiff's proposed interpretive approach rests on an infirm foundation that is likewise inconsistent with precedent. See Kopykake Enters. v. Lucks Co., 264 F.3d 1377, 1383 (Fed. Cir 2001) (objective interpretation calls for look at what those skilled in the relevant art would have understood disputed term to mean "as of the date the invention was constructively reduced to practice--the date the patent application was filed.") (emphasis added) (collecting cases); accord Plant Genetic Sys., N. V. v. DeKalb Genetics Corp., 315 F.3d 1335, 1345 (Fed. Cir. 2003). 14

As explained above, the Court finds Wedgewood's interpretive approach to the analysis of "lip" to be flawed. That stated, the Court notes that the parties' proposed definitions for "lip" are not wholly dissimilar. Nike suggests that "lip" should be construed to mean "an extension to the striking surface that is adjacent and approximately parallel to the striking surface and that extends above the top side of the mass region." (D.E. 23 at 18.) Wedgewood's proposed definition is that the lip is "a structure having a top side extending back from the striking surface and another side extending down toward the top side of a mass region," although it made clear that this definition would be capable of expanding to embrace multi-sided structures. (D.E. 26 at 10; id. at 10, n. 10.)

This competing definitions present two principal sub-issues--namely, whether the lip is an extension "to" the striking surface or whether it extends "from" the striking surface, and whether the lip is "approximately parallel" to the striking surface.

i. Words of the Claims

As Nike points out, the words of the claims are instructive in resolving the first sub-issue in its favor. The claims state that the "striking surface extends above a top side of [the] mass region to form a lip." (D.E. 20, Ex. A, Col. 6:55-56; accord Ex. C, Col. 6:57-58.) Claim 2 of the '446 patent and claim 5 of the '026 patent explain that the height of the lip is "the vertical distance between the top edge of said striking surface and the top side of said mass region, [and] is between about 1/8 inch and about 1/2 inch." (Id., Ex. A, Col. 7:3-6; accord Ex. C, Col. 7:10-13.) This language strongly suggests that the "lip" (or at least one side of it) is an extension "to" the striking surface. Such an understanding is confirmed by other parts of the intrinsic record, as discussed further below.

ii. Specifications

The specification makes several references to the "lip" in the claimed invention. The first states that a "lip is formed by providing that the striking surface extends above the top side of the mass region." (D.E. 20, Ex. A, Col. 3:2-4; accord id., Ex. C, Col. 3:6-7.) The bulk of the references to the "lip" in the specification come in one paragraph:

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The lip between the top edge of the striking surface and the mass region is formed by extending the striking surface above the top side of the mass region. The height of the lip, being the vertical distance between the top edge of the striking surface and the top side of the mass region, is preferably about 1/8 inch to about 1/2 inch. The lip increases the surface area of the face, thereby increasing the sweet spot of the face.

The lip also provides more weight to the striking surface near the heel region and the toe region than without the presence of lip, which increases the force behind those shots hit from those areas and thus increasing the margin for error for shots hit from those areas.

(Id., Ex. A, Col. 3:48-65; accord id., Ex. C, Col. 3:51-4:2. The further specification notes that the "mass region is connected to the striking surface at a lip extending between the two adjacent to the top edge of the striking surface." (Id., Ex. A, Col. 4:67-5:2; accord id., Ex. C, Col. 5:2-4.) These passages from the specification can be broken into two portions. Some of the references concern descriptive elements of the lip, including its location on the club and its size. Others discuss the purpose of the lip, namely, to increase the surface area of the face and to give more weight to the striking surface.

This language serves to confirm that the "lip" is an extension "to" the striking surface. The specification's guidance that "the lip . . . is formed by extending the striking surface above the top side of the mass region," (D.E. 20, Ex. A, Col. 3:48-50), dovetails with claim language that states that "said striking surface extends above a top side of said mass region to form a lip." (Id., Col. 6:55-56; accord id., Ex. C, Col. 3:52-54; Col. 6:57-58). Plaintiff seems to protest Nike's definition by arguing that the specification "does not define the lip--it simply describes the spatial relationship between the striking surface, top side of the mass region, and the lip." (D.E. 26 at 12.) But much of the language Nike refers to in the specification is also present in the claims themselves. Furthermore, it is unclear to the Court why Wedgewood contends that Defendant's proposed construction is an issue of spatial relationship, not definition. "Spatial relationship" and "definition" need not be mutually exclusive. One commonsense way to describe something is to state its location and relation to the surrounding areas; thus "Chicago" becomes "a large city on the Southeast tip of Lake Michigan." Plaintiff's argument is even less persuasive because its own proposed interpretation of "mass region" was largely a recitation of the mass region's spatial relationship to other parts of the club. Simply, the specification is consistent with the claim and the plain meaning of the debated term.

As explained immediately below, the Court is inclined to accept Nike's assertion that at least one side of a "lip" must be generally parallel with the striking surface--although this issue may lack little practical consequence because it is difficult to see how anyone could market a golf club whose lip was not at least generally parallel to the rest of the striking surface, as it would not provide a good potential for hitting a true shot. As also explained below, however, the Court will reserve judgment on this issue as it has been briefed in only passing fashion and can be addressed, as appropriate, as the case progresses.

First, with respect to the issue of the Court's inclination to credit Nike's "generally parallel" contention, the specification makes clear that the reason for a "lip" is to increase the sweet spot on the club so as to make it easier to hit a successful shot. Unless the lip is at least generally parallel to the remainder of the sweet spot, it is difficult to see how a "lip" becomes anything other than an impediment to hitting a true shot. See, e.g., Laitram Corp. v. Morehouse Indus., 143 F.3d 1456, 1463 (Fed. Cir. 1998) (holding that a "driving surface" is limited to a flat surface; this interpretations was supported by the specification's discussion of the invention's benefits, the benefits requiring a flat surface); see also Hockerson-Halberstadt, Inc. v. Avia Group Int'l. Inc., 222 F.3d 951, 956 (Fed. Cir. 2000) (commending district court's initial claim interpretation, which was "consonant with the purpose of the invention").

The Court will not definitively rule on the "generally parallel" issue, however, because the parties have not thoroughly briefed the issue. In particular, the parties have not briefed the question of the propriety vel non of interpreting a claim term so that it is consistent with (and perhaps even not antithetical to) the purpose of the invention as stated in the specification. Accordingly, the Court will reserve final judgment at this time.

iii. Prosecution History

As to the issue of whether the "lip" is an extension "to" the striking surface, neither party points to anything persuasive in the prosecution history that would lead the Court to disregard the interpretive guidance identified above. Plaintiff notes in passing in a footnote that one snippet in the '446 claim language--which states that the lip "extends between the striking
surface and the top side of the mass region"—was omitted from the '026 patent. (D.E. 26 at 8 n.7 (citing D.E. 20, Ex. C, Col. 6:56-58; compare id., Ex. A, Col. 6:56-58). The Court does not regard this difference as material. The two patents contain extensive, duplicative claim language that direct the claim interpretations set forth herein. See D.E. 20, Ex. A, Col. 6:55-56 (stating that the "striking surface [of the club] extends above a top side of said mass region to form a lip . . . ."); accord id., Ex. C, Col. 6:57-58; see also id., Ex. A, Col. 7:3-6 ("the height of said lip . . . is the vertical distance between the top edge of said striking surface and the top side of said mass region, [and] is between about 1/8 inch and about 1/2 inch."); accord id., Ex. C, Col. 7:11-13. There is also substantial evidence in the specification that provides guidance and a lexicography concerning the proper interpretation of the disputed terms. See, e.g., D.E. 20, Ex. A, Col. 3:48-54 (stating that the "lip between the top edge of the striking surface and the mass region is formed by extending the striking surface above the top side of the mass region"); accord id., Ex. C, Col. 3:52-58; see also Ex. A, Col. 4:66-5:4 (stating that the "mass region is provided behind the club head striking surface. The mass region is connected to the striking surface at a lip . . . "); accord id., Ex. C, Col. 5:1-6.

As for the "generally parallel" issue, the parties also do not identify anything in the prosecution history that is particularly material. The Court has conducted an independent review and has not identified anything either. Because the Court is not resolving this sub-issue at this time, however, the parties will have an opportunity to discuss the prosecution history and any alleged relevance in this regard at an appropriate juncture.

Based on the evidence and arguments presented, the Court recognizes the following construction for the term "lip" in Plaintiff's patent: "An extension to the striking surface adjacent to the striking surface, reaching or spanning between the striking surface and mass region, with a vertical distance between the top edge of the striking surface and the top side of the mass region of about 1/8 inch and about 1/2 inch."

Clinical next argues that Claim 1's requirement for a "liquid-air interface," cannot read upon the accused device because the Koala has an air-filled balloon that acts as a barrier between the air and liquid. According to Claim 1, the liquid column must have a "liquid-air interface" with the second air-filled volume. An interface is defined as "a surface regarded as the common boundary of two bodies, spaces, or phases." Id. at 993. There is no dispute that this liquid-air interface occurs in the first chamber of the 161 device between the amniotic liquid and the air from the second chamber. Clinical argues that such an interface requires molecule-to-molecule contact between the amniotic liquid and the air for such an interface to exist. Utah Medical asserts that such an interface is simply an exchange between two different surfaces, arguing that nothing in Claim 1 requires a direct molecule-to-molecule interface, and that the interface can exist even if a membrane (such as the balloon in the Koala) acts as a barrier between the air and the liquid. The description of the liquid-air interface in the claim specifications describe an interface between the partially filled liquid and air chamber (161 patent at column 5, line 68 to column 6, line 2), as well as a maintenance of pressure ratios between the air and the amniotic liquid to prevent the liquid from entering the air-filled second chamber (161 patent at column 13, lines 20-28). Because Claim 1 describes this interface in conjunction with the requisite liquid column, the Court finds that Claim 1 contemplates direct contact between the air and the amniotic liquid. Accordingly, the Court interprets Claim 1 to require an actual interface--molecule-to-molecule--between the amniotic liquid and the air. Applying this claim interpretation to the accused device, the Court finds that the accused device does not involve such an air-liquid interface and therefore does not literally infringe on this aspect of the 161 patent. Whether the accused device infringes under the doctrine of equivalents is a question of fact.

Relying on the Lawson specification, P&G asserts that the term "liquid impermeable" means that the BLC will contain liquid and solid waste during wearing by retarding the movement of liquids through the BLC. Paragon counters that this term must be defined according to its ordinary or dictionary definition because the patent does not evidence that this claim limitation has a special meaning to one of ordinary skill in the art. Citing the dictionary definition of "impermeable," Paragon asserts that "liquid impermeable" means impossible for liquid to flow through.
The Court agrees with P&G that the inventor's definition of "liquid impermeable" is clear from reading the specification. The purpose of the Lawson BLC is to contain body exudates that are not immediately absorbed by the absorbent core in the central portion of the diaper. [PTX 1, at 2:17-31]. Regarding the use of a "liquid impermeable" material for the BLC, the Lawson specification provides:

the barrier cuff may be rendered liquid impermeable so as to prevent the strikethrough of body exudates. A liquid impermeable barrier cuff retards the movement of liquid through the barrier cuff thereby making it more leakage resistant. The barrier cuff may be rendered liquid impermeable in any manner well known in the art such as selectively treating the barrier cuff, untreated the barrier cuff, or by securing a separate material to the barrier cuff.

Id. at 10:47-55 (emphasis added). 10

10 The specification further provides that a particularly preferred material is manufactured by the Crown Zellerbach Company and known as Celestra. Id. at 9:10-12. Celestra is a hydrophobic, spunbonded, untreated polypropylene material. [Tr. 218, 221-222, 459-60].

It is a well-settled tenet of patent law that a patentee may act as his own lexicographer. Vitrionics, 90 F.3d at 1582. Although the words used in a patent are generally interpreted according to their ordinary meaning, a court will construe terms used in a patent in accordance with a special meaning, provided that the special definition of this term is clearly stated in the specification. Id. It is clear from reading the Lawson specification that a BLC is "liquid impermeable" if it "retards the movement of liquid" from the central portion of the diaper above the absorbent core through the BLC to the edges of the diaper. There is nothing in the patent specification or the file history which contradicts this definition. Because this term is clearly defined in the patent specification, the Court may not resort to extrinsic evidence, such as the dictionary definition of "impermeable," to vary the definition provided in the specification. Accordingly, the Court construes the term "liquid impermeable," as it describes the BLC feature, to mean a material which is designed to prevent the strikethrough of body exudates by retarding the movement of liquid body exudates through the BLC to the outer portion of the diaper.

The Court construes the preamble to describe an apparatus used in surgery to locate an object within a definite area. The apparatus may also locate a surgical microscope within the same area.

The Court concludes that "localize" means to locate within a definite area, or to fix in a particular place. This definition is consistent with both the ordinary meaning suggested by Midco 21 and with the specialized medical dictionary definition suggested by Elekta. 22 In the particular field at issue, "stereotaxic localization" means "localization of intercerebral nuclei by coordinates with reference to anatomical landmarks in the brain." See Stedman's Medical Dictionary (26th ed.), Ct. Rec. 306, ex. E. In other words, the present device locates an object within a definite area; for example, it can "localize" a tumor within stereotactic space.
21 Citing the New Shorter Oxford English Dictionary at 1614 (1993), Midco argues that "localize" means "3. Fix in a particular place or district or in a particular part of a whole; esp. restrict or confine to a particular place, make local in range or currency. b. Concentrate (attention) on a particular spot. c. Identify with a particular locality. 4. Attribute (in thought or statement) to a particular place; find or invent a locality for, ascertain the locality of."


Although the object to be localized is typically a tumor, the microscope can also be localized within stereotactic space. The specification provides that when the second and third embodiments of the invention are practiced using infrared or ultrasonic sensing and emitting devices, then these devices are "employed to spatially locate and assist positioning of the microscope or beam localization embodiment in stereotactic space." '314 patent, col. 14, ll. 34-37.

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4. "localizing deformation"

Agere argues that the phrase "localizing deformation" should be construed as "capable of collecting or accumulating in a specific area an alteration in form or shape." Atmel argues that the phrase "localizing deformation" should be construed as "accumulating or restricting the deformation which occurs during the mounting step to the vicinity of the deformation absorbing member."

Agere offers no justification for including the term "capable" in the construction of this term, and the Court finds that it is unwarranted by the intrinsic evidence. As to the difference between Agere's use of the words "collecting or accumulating," and Atmel's use of the words "accumulating or restricting," the dispute appears to be disingenuous and unnecessary as both parties have relied upon a dictionary definition of the term "localize" as meaning "to collect or accumulate in or be restricted to a specific or limited area." See Webster's Third New Int'l Dictionary 1327 (1986). Furthermore, Agere's proposed construction refers to such localization occurring generally in a specific area, in accordance with the dictionary definition of the term "localize," while Atmel proposes that reference should be made to the specific area where such localization occurs, namely the vicinity of the deformation absorbing member.

It also appears that Agere has included within its proposed construction a definition of the term "deformation" ("an alteration in form or shape"), while Atmel has simply used the term "deformation" in its proposed construction without defining it. Finally, Atmel wishes to include a reference to the fact that such deformation occurs "during the mounting step," while Agere does not contend such a reference is necessary. The Court notes that the claim language itself does include a reference to the fact that the deformation in question occurs at a particular point in the process, but uses the language "during paddle downsetting," whereas the language proposed by Atmel, "during the mounting step," appears only in the specification. As it does not appear to the Court that the patentees intended this specification language to supercede the express language in the claim, there is no reason to substitute the specification language "during the mounting step" for the claim language "during paddle downsetting." 10

10 In fact, Atmel's own proposed construction of the term "deformation absorbing member" implicitly acknowledges that the deformation in question occurs, according to the claim language itself, "during paddle downsetting."
Thus, relying upon the significant degree of overlap between the parties' constructions, and based upon the reasoning set forth above, the Court will construe the term "localizing deformation" as follows: "collecting, accumulating, or restricting to a limited area, namely the vicinity of the deformation absorbing member, the deformation (or alternation in form or shape) that occurs during paddle downsetting."

The parties also dispute the meaning of the word "located" in claim 1 of the '731 patent, as it is used in the following clause:

   another elongate section having an axis of symmetry extending in a direction generally transverse of the first elongate section … and located between the center of the spherical mass and the first elongate section.

Pl. 12(M) P 7. Again, in construing a claim the court first looks to the intrinsic evidence of record. Vitronics, 90 F.3d at 1582. Neither the claims nor the specification define the term "located," so it should be given its ordinary and accustomed meaning. Lantech, 32 F.3d at 547. Brunswick argues "located" means wholly or entirely located; that is, for a second elongate section to be located between the center of the spherical mass and the first elongate section, the second elongate section must be located only between the center of the spherical mass and the first elongate section. Plaintiffs respond that Brunswick's interpretation of "located" is too narrow; plaintiffs suggest that a second elongate section is also located between the center of the spherical mass and the first elongate section when only a segment of the second elongate section is located between the center of the spherical mass and the first elongate section.

In support of their broader claim construction, plaintiffs offer the following analogy:

   In the city of Chicago, there is a subway line between Jackson and Monroe streets (the Blue Line). This line is located between Jackson and Monroe streets. However, the Blue Line is not entirely located between Jackson and Monroe streets. The Blue Line extends out northwest to O'Hare airport and west to Oak Park. The Defendant's argument of "located" meaning "entirely located" implies that to be located between Jackson and Monroe streets means that the subway cannot extend beyond those streets, and is "entirely located" between them. Such a conclusion is absurd.

Pl. Reply at p. 5. Were that defining words could be so easy. Alas, although the court must give "located" its ordinary and accustomed meaning, the ordinary and accustomed meaning of "located" -- like that of many words -- differs with the context and manner in which it used. "Located" can be used differently depending on the precision that is required by the audience or desired by the speaker. To be sure, plaintiffs' subway line analogy highlights one way in which we use "located." If a person asks another person in downtown Chicago where the Blue Line is located, the second person would likely respond, "between Jackson and Monroe." Indeed, the first person might be surprised if the second person hastened to add, "but it extends out northwest to O'Hare." That additional response would likely provide more precision and information than the first person sought in asking the question.

However, we also use "located" to convey the more narrow meaning suggested by Brunswick. If the first person asked "in what state is the Empire State Building located?", the second person might respond, "in New York," and the first person would understand that the Empire State Building was located entirely within New York. If the first person asked where the Sears Tower is located, the second person might respond, "between Jackson and Adams," and the first person would not expect to find the Sears Tower elsewhere. The point of the different analogies should be plain: in interpreting "located," context matters; both Brunswick's and plaintiffs' efforts to impart a universally broad or narrow meaning to the word "located" are thus futile.

The parties do not address the effect of the present context on the meaning of "located" at all. Instead, they present various dictionary definitions of "locate." According to the dictionaries, to locate means:

   to determine or indicate the place, site, or limits of;

   to set or establish in a particular spot;

   to station, situate, or place;
to fix or establish in a particular spot or position;

to show the position of.

Brunswick can point to elements of these definitions that favor its interpretation, particularly the references to "limits" and "particular" spots or positions. Plaintiffs respond that one can "situate" or "show the position of" an object without necessarily communicating that the object is entirely located in a particular spot or position. Of course, both parties can find support in the dictionary, because the dictionary definitions present multiple meanings; dictionaries cannot cure ambiguities.

Plaintiffs suggest that because "located" in claim 1 is not preceded by "entirely" (or one of its synonyms), the broader meaning of "located" is the required interpretation. This argument would have more force if elsewhere in the claims or specification for the '731 patent, words like "entirely" were used to qualify or modify the meaning of "located." However, the '731 patent provides no evidence of any pattern of usage with respect to the word "located." Under these circumstances, plaintiffs' argument -- that the broader interpretation of "located" is required because the word "entirely" does not precede it -- begs the question. The problem is defining the meaning of "located"; as the preceding discussion makes plain, that meaning depends on context.

Here, "located" is used to define the relative spatial position and orientation of sections of a weight block situated inside a bowling ball. Claim 1 of the '731 patent describes a weight block with

[a second] elongate section having an axis of symmetry extending in a direction generally transverse of the first elongate section and extending from the intermediate portion [of the first elongate section] and located between the center of the spherical mass and the first elongate section.

Pl. 12(M) P 7. Reading the highly precise language of this description, it seems unlikely that the claim is meant to communicate that only some of the second elongate section is located between the center of the spherical mass and the first elongate section. Rather, it seems probable that "located" is used in its more narrow sense, in order to establish a defined boundary, particular spot or position for the second elongate section.

If "located" is used in its more precise or narrow sense -- that is, entirely located -- then the meaning of the "located between" clause is direct and clear: the second elongate section is entirely located between the center of the spherical mass and the first elongate section.

However, if "located" is used in its more imprecise or broader sense -- that is, not entirely located -- then it becomes difficult to explain the purpose and the choice of the language "located between the center of the spherical mass and the first elongate section." The claim already states (1) the second elongate section has an axis of symmetry extending in a direction generally transverse of (i.e., perpendicular to) the first elongate section and (2) the second elongate section extends from the intermediate portion of the first elongate section.

If "located" does not communicate the boundaries of the second elongate section, then there is only one other possible purpose of the "located between" clause. That purpose would be to indicate, from a starting position on or near the intermediate portion of the first elongate section, which direction(s) the second elongate section extends along its (generally) transverse axis of symmetry. That is, under plaintiffs' construction of the claim, the only information provided by the "located between" clause is that the second elongate section extends toward the center of the spherical mass, not toward the surface of the bowling ball. The "located between" clause would be an exceedingly awkward, indirect, and risky way to communicate that the second elongate section extends toward the center of the spherical mass and possibly beyond the center, especially given the previously discussed ambiguity of the words "located between." Because Brunswick's interpretation gives the "located between" clause a more direct and clear meaning in this context, the clause should be read to define the limits of the location of the second elongate section.

Even assuming the meaning of the "located between" clause is still ambiguous, a narrow reading which excludes ambiguously covered subject matter must be adopted. Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572, 1581 (Fed. Cir. 1996) (citing Athletic Alternatives, 73 F.3d at 1581). Plaintiffs urge that Ethicon is distinguishable because in that case ambiguity was introduced by different usage of a term in the claim, the specification, and the prosecution history of a patent. True, the facts creating ambiguity in Ethicon are not present in this case. The specification and prosecution history of the '731 patent do not offer inconsistent clues about the meaning of "located" as it is used in claim 1 (indeed, they offer no clues).
However, Ethicon does not indicate that its instruction to read ambiguous claims narrowly is applicable only where the identical (or similar) causes of ambiguity are present. Ambiguity can exist without inconsistent usage in the claim, specification, or prosecution history of a patent; a word can simply be ambiguous. In Athletic Alternatives, after all efforts at removing the ambiguity of a disputed term had failed, the Federal Circuit stated:

Were we to allow AAI successfully to assert the broader of the two senses of "between" against Prince, we would undermine the fair notice function of the requirement that the patentee distinctly claim the subject matter disclosed in the patent from which he can exclude others temporarily. Where there is an equal choice between a broader and a narrower meaning of a claim, and there is an enabling disclosure that indicates that the applicant is at least entitled to a claim having the narrower meaning, we consider the notice function of the claim to be best served by adopting the narrower reading.

Athletic Alternatives, 73 F.3d at 1581; see generally 35 U.S.C. § 112 (placing the drafting burden of distinctly claiming the subject matter on the patentee). Claim 1 of the '731 patent does not unambiguously cover bowling balls where the second elongate section is only partially located between the center of the spherical mass and the first elongate section. Accordingly, the court construes claim 1 of the '731 patent such that it requires the second elongate section to be entirely located between the center of the spherical mass and the first elongate section.

The current appeal centers around the meaning of "located between" in claim 1 of the '731 patent. The patent specification does not contain a definition of the term "located." The district court reasoned that in the context of defining the relative spatial position and orientation of sections of the disclosed weight block within a bowling ball, a narrow interpretation of "located" was required to give direct and clear meaning to the phrase "located between." See Zelinski, 996 F. Supp. at 761. Thus, the district court construed claim 1 to require that the second elongate section be located entirely between the center of the spherical mass and the first elongate section. See id. at 762.

Under this claim construction, the court concluded that Brunswick's annular ring could not be "a second elongate section located between the center of the spherical mass and the first elongate section" because most of the annular ring is not located between the center of the spherical mass and the first elongate section. Id. Consequently, the district court held that Brunswick was entitled to summary judgment on the issue of literal infringement of claim 1 since Zelinski could not demonstrate that each and every limitation of claim 1 was met by a corresponding element in Brunswick's StealthCore I and II bowling balls. See id.

The district court completed its analysis by addressing the issue of infringement under the doctrine of equivalents. The court read claim 1 to contain three limitations; it concluded that the only limitation in claim 1 without a literal counterpart in Brunswick's bowling balls was the "second elongate section." See id. at 763. Thus, the district court analyzed whether the annular ring in Brunswick's bowling balls is equivalent to the second elongate section described in the '731 patent. The court concluded that Zelinski failed to offer any factual evidence from which a jury could reasonably infer equivalence. See id. at 764. Furthermore, the district court concluded that Zelinski's purported lack of opportunity for discovery on equivalence was unsupported in the record. See id. For these reasons, the district court granted summary judgment to Brunswick of non-infringement under the doctrine of equivalents.

Zelinski appeals the grant of summary judgment of non-infringement to Brunswick. We have jurisdiction to hear this appeal under 28 U.S.C. § 1295 (1994).

DISCUSSION

Summary judgment is appropriate if there are no genuine issues of material fact and the moving party is entitled to judgment as a matter of law. See Fed. R. Civ. P. 56(c). We review without deference a trial court's grant of summary judgment, with all justifiable factual inferences drawn in favor of the party opposing the motion. See Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 255, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986).

The determination of infringement requires a two-step analysis: (1) claim construction to determine the scope and meaning of the claims asserted to be infringed, and then (2) a determination of whether the properly construed claims encompass the

A.

It is standard practice that in determining the proper construction of an asserted claim, the court looks first to the intrinsic evidence -- the patent specification, including of course the written description, and, if in evidence, the prosecution history. Absent an express definition in the specification of a particular claim term, the words are given their ordinary and accustomed meaning; if a term of art, it is given the ordinary and accustomed meaning as understood by those of ordinary skill in the art.

As noted, this case turns upon the meaning of the phrase "located between." The district court concluded that neither the claims nor the written description define the term "located;" thus the court was called upon to chose between Brunswick's and Zelinski's "ordinary and accustomed" meanings of that term. The district court adopted Brunswick's interpretation of "located between" to mean wholly or entirely located between. Thus, in the context of claim 1, the second elongate section "must be located only between the center of the spherical mass and the first elongate section." See Zelinski, 996 F. Supp. at 760.

On appeal, Zelinski alleges that the district court erred by reading "located between" too narrowly. Zelinski argues that its interpretation of "located between," which includes any weight that is in whole or in part between the center of the spherical mass and the first elongate section, is the construction one of ordinary skill in the art would ascribe to the phrase at issue.

In ascertaining the scope and meaning of claim 1, including the phrase "located between," we are guided by the written description. See Markman, 52 F.3d at 979, 34 U.S.P.Q.2D (BNA) at 1329. We agree that neither the claims nor the written description specifically define the phrase "located between." Similarly, the prosecution history of the '731 patent contains no relevant amendments or explanations. Thus, we must construe the phrase by its ordinary and accustomed meaning to one of ordinary skill in the art. See, e.g., Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387, 21 U.S.P.Q.2D (BNA) 1383, 1386 (Fed. Cir. 1992).

Zelinski's argument is not without merit. Although the written description does not explicitly define "located between," there is language suggesting that the district court may have interpreted the phrase too narrowly. From our reading of the written description, it appears that the second elongate section need not be entirely located between the first elongate section and the center of the spherical mass. For example, the written description states that no portion of the weight block is disposed in the bottom portion of the ball. See '731 patent, col. 3, ll. 49-51. This statement is followed by a restatement of the concept in the positive; that is, the entire weight block is "relatively localized" in the top half of the ball. Id. at ll. 57-59. Thus, it seems that claim 1 is satisfied if the bulk of the second elongate section is between the first elongate section and the center of the spherical mass, and the entire weight block is in the top half of the ball. Nevertheless, we conclude that at most the district court's narrower interpretation is harmless error because, as we explain below, even with a somewhat broader interpretation of "located between," Brunswick's StealthCore I and II balls do not literally infringe claim 1 of the '731 patent. But cf. Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1581, 37 U.S.P.Q.2D (BNA) 1365, 1372 (Fed. Cir. 1996) (favoring narrow interpretation when a choice is presented).

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5. "Located Between Two Adjacent Disks"

The next issue is the meaning of "located between two adjacent disks," element 1(j), as that term refers to the "spacer." Fellowes reads this language to mean that "the spacer is positioned between two adjacent cutting disks." Michelin and Intek contend that "the spacer is positioned between each set of adjacent cutting disks," not just two of them. To resolve this dispute, the Court need look no further than the claims themselves. Unlike dependent Claim 9, which twice uses the phrase
"each adjacent disk," Claim 1 uses the phrase "two adjacent disks," and does not use the word "each." '780 Patent, cols. 3-4, lines 47-49, 1-4, 30-33 (emphasis added). Also in contrast to Claim 1, Claim 12 refers to "the distance between each adjacent disk," id. at col. 4, 44-47 (emphasis added). Accordingly, the Court FINDS that "located between two adjacent disks," element 1(n), means "the spacer is positioned between two adjacent cutting disks."

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(9) "the flanges are located behind the studs to further secure the auxiliary frame to the primary frame"

Plaintiffs construe the phrase "further secure" to mean "that the location of the flanges behind the studs further maintain the auxiliary frame in position on the primary frame so as to keep it from falling, sinking or slipping." JS, Exh. A at 30.

Defendant construes the instant phrase to mean that "the flanges on the arms or extensions hook over the studs on the primary frame contacting the rear surface of the extensions [sic]." Defendant's construction seeks to limit the instant phrase by requiring the flanges to hook over and contact the rear surface of the studs on the primary frame.

24 Presumably, Defendant meant to say "studs."

In this case, the Court has already held that there need not be physical contact between the downwardly extending flange of the auxiliary frame and the back side of the stud of the primary frame. See supra section "III B 2 b (4)". Therefore, the Court construes the instant phrase to mean that the flanges are located behind, but not necessarily in contact with, the rear surfaces of the studs to further fasten the auxiliary frame to the primary frame.

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B. "Said first portion is located generally on the outside of said iris section and said second portion is located generally on the inside of said iris section" (Disputed Terms 3 and 4)

4 The terms "first portion" and "second portion" refer to the portions of the elements of the pattern.

The interpretation of the second pair of related terms in dispute again involves the question of to what extent the elements of the first shade must be separated from the elements of the second shade. The Court has already found that the express terms of the specification provides for some overlap between the elements of the first and second shades (supra). Here, Defendant argues that the elements of the first shade cannot span the entire iris section, but rather are confined to the outer circumference of the iris.

As stated supra, there is substantial support in the specification that elements of the first shade may comprise a substantial area of the iris, thus providing for overlap between elements of the first and second shades. Apparently aware that its position is not supported by the specification, 5 Defendant asks the Court to disregard the specification because it is not supported by the plain language of the claims. (Def.'s Memorandum of Points and Authorities ("Def.'s P&A") at 18). Specifically, Defendant relies on the following terms in the claims themselves as supporting its proposed limitation:

1. "located generally" - Defendant argues that "because the respective portions are specifically claimed to be 'generally located' on either the 'outside' or the 'inside' of the iris section, the portions cannot be located over the entire iris section."
2. The required location of the "jagged border," where a "noticeable change of shade" occurs between elements of the first and second shades. The claim indicates this border must appear at a distance from the outer perimeter of the iris of between 5% and 95% of the radial width of the iris.

5 Although not in the Joint Statement, Defendant's memorandum does cite one statement in the specification in support of its position -- "the second portion of the elements…is surrounded by the first portion." (Def.'s P&A at 20; Shull Decl., Ex. B at 56, col. 4, ln. 54-58). That term states only that the elements of the second shade must be surrounded by the elements of the first shade. It says nothing as to whether the elements of the first shade may occupy the entire iris. It is completely consistent to say that the elements of the second shade both overlap and are surrounded by elements of the first shade. Furthermore, this construction is consistent with the specification, which states that the "outer portion" will be comprised solely of elements of the first shade. (Shull Decl., Ex. B at 57, col. 6, ln. 61-62).

6 In support of its argument that this Court should disregard the specification, the defendant cites Rheox Inc. v. Entact Inc., 276 F.3d 1319, 61 U.S.P.Q.2D (BNA) 1368 (Fed. Cir. 2002). Defendant's reliance is misplaced. In Rheox, the Federal Circuit held only that a claim construction eliminating coverage for one of the preferred embodiments may be correct where such a construction is required by the prosecution history. Id. 61 U.S.P.Q.2D (BNA) at 1374. Here, the prosecution history of the 477 patent does not demonstrate that Plaintiff clearly relinquished a claim that included the first preferred embodiment. Thus, that embodiment, as expressed in the specification, remains strong evidence of the scope of the patent.

The Court rejects Defendant's position. As to the term "located generally," the term merely requires that the elements of the first shade are generally positioned on the outside of the iris. The term does not limit the elements of the first shade from appearing anywhere in the iris, so long as those elements are more prevalent near the outside. As to the location of the jagged border, Defendant failed to point out that the jagged border represents only that area where there takes place a "noticeable change of shade" between the elements of the first and second shade. (Shull Decl., Ex. B at 56, col. 4, ln. 64-65). This change of shade may occur even should elements of the first shade appear throughout the iris, so long as those elements are more prevalent on the outside of the iris and elements of the second shade are more prevalent on the inside. The existence of an apparent jagged border between the two shades does not mean that elements of the first shade cannot appear throughout the iris.

For the reasons discussed, the Court finds Defendant's position is not supported by either the specification or the language of the claims. Rather, as stated supra in its discussion of claim one, the specification expressly supports Plaintiff's position that elements of shade one may appear throughout the iris, thus providing for substantial overlap between elements of the two shades. Moreover, as the intrinsic evidence is conclusive on this point, the Court does not consider extrinsic evidence.

7 Defendant also relies on the prosecution history of the 477 patent for the proposition that because prior patents contemplated overlapping patterns, the 477 patent cannot, or else it would be invalid. (Def.'s P&A, Ex. 5 at 83). The Court rejects this argument. It surely is possible that the 477 patent could have developed a specific pattern of overlapping shades that made it distinct from prior contact lens patents that also provided for overlapping colors.

Claim 9 includes "a contactor having a spring located inside the battery holder between the base of the battery holder and
the battery for biasing the battery toward the opening of the battery holder. . . " 900 Patent col.11 1.36-39 (emphasis added). Invisible Fence's proposed claim construction for the term "located inside" is that it means "partially or completely located inside or within," while Perimeter's proposed construction is that "the spring must be positioned completely within the battery holder and is not exposed outside of the battery holder." (Joint Statement 4.)

The language of claim 9 supports Perimeter's proposed construction, as the spring is "located inside the battery holder between the base of the battery holder and the battery." 900 Patent col.11 1.36-38. For the spring to be located between the base of the battery holder and the battery, it must necessarily be completely within the battery holder. Indeed, the language of the claim contains no indication that the qualifier "partially" should be read into claim 9. 15

15 The written specification does little to elucidate the definition of "inside," as the Summary merely provides that "the battery pack also includes a contactor having a spring located within the battery holder. . . " 900 Patent col.1 1.62-63.

Dictionary definitions also support Perimeter's proposed construction. For example, the Oxford English Dictionary defines "inside" as "the inner part, or the space within something; the interior," Oxford English Dictionary, available at http://dictionary.oed.com/ (2006), suggesting that an object is "inside" if it is located completely within the interior.

Therefore, the Court construes the term "located inside" to mean "the spring must be positioned completely within the battery holder and is not exposed outside of the battery holder."

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Claim 38 describes "[a] vending machine as claimed in claim 1, wherein said control unit is located remote from said vending machine." (400 Patent 18:17-19). In disputing the proper interpretation of the phrase "located remote from said vending machine," the parties raise essentially the same points made with respect to claim construction of the term "vending machine" and whether it must be construed as a single unit. The reasoning set forth in the construction of "vending machine" as well as the construction of "customer interface" dictate a similar finding in this case, namely, that the control unit is not simply remote from other components but -- as plainly stated in the claim -- from the vending machine itself.

Thus, the following construction:

<table>
<thead>
<tr>
<th>Term</th>
<th>Court's construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Located remote from said vending</td>
<td>Having a different physical location than the vending</td>
</tr>
<tr>
<td>machine location</td>
<td>machine</td>
</tr>
</tbody>
</table>

2361

A. Claim 1 of the '592 patent

Claim 1 of the '592 patent states:

1. A device for feeding animals from a feed material containing reservoir, said device comprising:

an open top trough structure providing a pooling space in which feed material can pool; and

means for mounting the reservoir on said trough so that it can be mountably moved, while remaining attached to the trough, from a first mounted position thereof wherein it is at least partially nested in said trough pooling space, to at least another mounted position wherein the reservoir is located sufficiently clear of said trough pooling space, so that if a transfer of feed material from the reservoir to the pooling space be effected to pool feed material in the trough, an animal has
feeding access to pooled feed material in the trough.

'592 patent, col. 12, ll. 35-50 (emphases added). The district court construed the emphasized language in claim 1 to require a "feed transfer-effecting mechanism." Second Claim Construction Order at 3. In other words, the court found a valve structure limitation in the claim. The court stated that "a feed transfer-effecting mechanism is an essential component of the feeding device . . . ." Id. It further stated that the feed transfer-effecting mechanism "must be limited by the configurations disclosed in the specification[]." Id. Based on this claim construction, the district court determined that the HD device did not literally infringe claim 1 because the HD device did not have the feed transfer-effecting mechanism required by the claim. Summary Judgment Order at 10. In addition, the court determined that Mr. Wechsler had failed to raise a triable issue of fact as to whether the HD device infringed the '592 patent under the doctrine of equivalents. Id. at 14. Accordingly, the court granted summary judgment of non-infringement with respect to claim 1 of the '592 patent. Id.

On appeal, Mr. Wechsler argues that the district court erred in construing claim 1 as requiring a feed transfer-effecting mechanism. He contends that reading this additional limitation into claim 1 is inconsistent with the intrinsic evidence, which he asserts teaches that a feed transfer-effecting mechanism is optional. In response, Macke 2 argues that the district court correctly construed claim 1 as requiring a feed transfer-effecting mechanism.

2 Macke and Mr. O'Rourke are the only defendants who collectively filed a response to Mr. Wechsler's appeal. Petsmart is not a party to this appeal. In the balance of this opinion, we refer to Macke and Mr. O'Rourke collectively as "Macke."

We agree with Mr. Wechsler and hold that claim 1 does not require a feed transfer-effecting mechanism. First, nothing in the language of claim 1 requires such a limitation. As we have stated, "the claims define the scope of the right to exclude; the claim construction inquiry, therefore, begins and ends in all cases with the actual words of the claim." Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1248, 48 USPQ2d 1117, 1120 (Fed. Cir. 1998). Put another way, "the language of the claim frames and ultimately resolves all issues of claim interpretation." Abtox, Inc. v. Exitron Corp., 122 F.3d 1019, 1023, 43 USPQ2d 1545, 1548 (Fed. Cir. 1997). The relevant language in claim 1 states:

means for mounting the reservoir on said trough so that it can be mountably moved, while remaining attached to the trough, from a first mounted position thereof wherein it is at least partially nested in said trough pooling space, to at least another mounted position wherein the reservoir is located sufficiently clear of said trough pooling space, so that if a transfer of feed material from the reservoir to the pooling space be effected to pool feed material in the trough, an animal has feeding access to pooled feed material in the trough.

'592 patent, col. 12, ll. 40-50. Nothing in the quoted language requires us to construe claim 1 to require a "feed transfer-effecting mechanism." The district court relied on the following part of the quoted language to conclude that claim 1 requires such a limitation: "so that if a transfer of feed material from the reservoir to the pooling space be effected to pool feed material in the trough." Second Claim Construction Order at 3. Proper claim construction, however, demands interpretation of the entire claim in context, not just part of the claim language. See Hockerson- Halberstadt, Inc. v. Converse Inc., 183 F.3d 1369, 1374, 51 USPQ2d 1518, 1522 (Fed. Cir. 1999). When one considers all of the quoted language, it is clear that the language simply states that the claimed device requires a sufficient amount of clearance between the reservoir and trough to permit animal access to pooled feed material in the trough when the feed material is transferred to the trough from the reservoir during active use. In short, the quoted language does not require us to construe claim 1 as containing a feed transfer-effecting mechanism.

The specification also supports our conclusion. The specification states: "Coupling assembly 1 optionally includes a valve portion 4 to selectively prevent discharge of the contents within reservoir 2 by permitting positive closure of reservoir 2 from the outside." '592 patent, col. 5, ll. 24-27 (emphasis added). Thus, the specification does not suggest that a valve structure is required or is an "essential component" of the feeding device.

Finally, under the doctrine of claim differentiation, each claim in a patent is presumptively different in scope. Ecolab Inc. v. Paraclipse, Inc., 285 F.3d 1362, 1375, 62 USPQ2d 1349, 1358 (Fed. Cir. 2002) (citation omitted). This presumption is
especially strong where there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims. Id. (citation omitted). In this case, claim 5 depends from claim 1 and states:

5. The device according to claim 1, further comprising:

valve means for selectively permitting and terminating a flow of said contents from said reservoir to respectively effect and prevent said transfer.

'592 patent, col. 12, ll. 64-67. Because the only meaningful difference between claim 1 and claim 5, a dependent claim, is the limitation of a valve means, claim 1 should not be read as requiring a valve structure limitation.

In sum, we hold that the district court erred when it construed claim 1 to contain a valve structure limitation. For the reasons just stated, the claim does not contain such a limitation. At oral argument, Macke conceded that the HD device would infringe claim 1 if we were to conclude that claim 1 does not have a valve structure limitation. Accordingly, we hold that the HD device infringes claim 1 of the '592 patent, reverse the district court's grant of summary judgment of non-infringement with respect to the HD device, and remand for further proceedings consistent with this opinion. 3

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -
3 Because we have determined that the HD device infringes claim 1 of the '592 patent, we do not reach the issue of whether the HD device infringes any of the other asserted claims of the '592 patent.

- - - - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - -

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Claim 1(a) of the 827 patent describes the housing as "having a barrel, a nozzle, a handle and a trigger located thereon." All four of these parts are located on what Ohio Art calls the pistol subassembly. Accordingly, Ohio Art argues that the housing is comprised of only the pistol subassembly. The use of the term "having" indicates that additional elements may have meant to be included, although it cannot be presumed that the definition is open-ended, as use of the term "comprising" would have clearly indicated. Crystal Semiconductor Corp. v. Tritech Microelectronics Intl, Inc., 246 F.3d 1336, 1348 (Fed. Cir. 2001). Interpreting similar language in another patent dispute, the Federal Circuit has held that the use of the term "having," when combined with "housing," can be interpreted to be either closed or open, depending on the other language in the patent. Lampi Corp. v. American Power Products, Inc., 228 F.3d 1365, 1376 (Fed. Cir. 2000).

The language used in the limitation is that the barrel, nozzle, handle, and trigger are "located thereon." This implies that these components are not part of the housing, but are in some way attached to the housing. Later in the 827 patent, in claim 6, it is specified that the pump be "attached" to the main housing. Looking at this language, the 827 patent indicates that the pump is also located on the main housing. In addition, in the preferred embodiment of the 827 patent, the bladder and the slider, as well as other pieces, are also located on the main housing. Taking into account the language of the 827 patent and its preferred embodiment, this Court finds that the definition of main housing in claim 1(a) was meant to be open.

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b. "Storage area location"

I recommend that the term "storage area location" as used in claim 1 of the '110 patent be construed as McKesson proposes, to mean "a place in the storage area accessible to the picking means where packages are held." This conclusion follows from my recommendation that the Court adopt McKesson's proposed construction of the x, y terms.

The parties acknowledge the relationship between the x, y terms and "storage area location." (D.I. 361 at 10) 7 In fact, the
heart of the parties' dispute with respect to "storage area locations" is the same as the dispute over the x, y terms: whether "storage area locations" are only those areas where packages are stored and accessible to the picking means (McKesson's position) or whether they also include areas where packages are stored but are not accessible to the picking means (Swisslog's position). (D.I. 391 at 8) For the same reasons I agreed with McKesson in connection with the x, y terms, I also agree with McKesson on the "storage area location" term.

7 Indeed, the parties did not identify "storage area location" as a disputed term requiring judicial construction until after they exchanged opening claim construction briefs and saw each others' analyses of the x, y terms. (See generally D.I. 391; D.I. 421; D.I. 536.)

Swisslog proposes that "storage area location" be construed as "a location within the storage area where packages are held for storage." (D.I. 421) Swisslog's construction would result in portions of the "storage area location" being inaccessible to the picking means. Such a result is inconsistent with the claim language and is not in any way supported by either the specification or the prosecution history.

As McKesson observes, all five parts of claim 1 of the '110 patent refer to the "storage area location," and all of these parts provide guidance as to what the storage area location is and where it exists within the claimed system. (D.I. 391 at 2) Specifically, claim 1 provides:

a) a storage area comprised of a plurality of storage area locations each location having package holding means sized and configured to hold a plurality of individual packages each individual package . . . , the packages being held in a manner so that each package can be placed into and removed from the storage area locations . . . , each location having a distinct x, y coordinate;

b) automated picking means . . . to select packages from the storage area locations and place packages in the storage area locations in accordance with computer controlled instructions . . . ;

c) means for moving the automated picking means to selected storage locations;

d) a computer . . . for directing the picking means to chosen storage area locations and a database containing at least one x, y coordinate location in the storage area for each package held within the storage area . . . ; and
e) . . . wherein only one type of package is stored in each x, y coordinate location.

'110 patent, col. 13 lines 1-38 (emphasis added).

It is evident from this claim language that the term "storage area location" refers to the part of the storage area where the picking means travels to select or place packages -- not the entire storage area. Element a) provides that the packages in the storage area locations are "held in a manner so that each package can be placed into and removed from the storage area locations." (D.I. 391 at 3; '110 patent, col. 13 lines 6-8) Element b) requires that the picking means select packages from the storage area locations and place packages in the storage area locations. (D.I. 391 at 3; '110 patent, col. 13 lines 13-15) Elements c) and d) likewise demonstrate that the picking means must be able to move to and be directed to the selected storage area locations. (D.I. 391 at 3; '110 patent, col. 13 lines 24-28) As McKesson asserts, "[t]he linkage between the storage area locations and the picking means is thus undeniable. As a result, one of ordinary skill would understand that a 'storage area location,' in the context of the claimed invention, must be a place accessible to the picking means." (D.I. 391 at 3)

Although McKesson purports to find support for its construction in the specification and prosecution history, it does not identify any discussion in either place which is helpful to construing the term "storage area location." On the other hand, neither have I found anything in the specification or prosecution history that conflicts with the strong support found for McKesson's construction in the claim language itself. I agree, therefore, with McKesson's conclusion that "the specification
does not provide any suggestion that a storage area location can be a place holding packages but that the picking means cannot access." (D.I. 391 at 5) Given the weight of the claim language, this is a sufficient basis for me to recommend that the Court adopt McKesson's proposed construction of the term "storage area location."

Swisslog argues against McKesson's construction primarily by reviving the same arguments it makes in connection with the x, y terms. I am no more persuaded by these arguments in connection with "storage area location" than I was in connection with the x, y terms. Swisslog's primary additional contention is that McKesson confuses the definition of the term "storage area location" with a description of relationships among structures. (D.I. 421 at 2-7) In Swisslog's view, "[r]elationships between elements do not define the elements themselves." (Id. at 6 n.3) That is, Swisslog agrees with McKesson that claim 1 of the '110 patent "requires the picking means to access 'storage area locations,'" but Swisslog insists "this requirement does not come from the definition of 'storage area location.' It comes from other limitations in the claim that define relationships between the picking means and storage area locations." (Id. at 1) To Swisslog, then, it would be improper to include these relationships in the construction of "storage area location," because to do so "would render these [relational] limitations superfluous." (Id.)

I am not persuaded that Swisslog has identified a flaw in McKesson's proposed construction. The claim requires that the storage area location be accessible to the picking means. Whether this is viewed as a "relational" or "definitional" fact, adopting McKesson's construction does not eliminate this requirement -- to the contrary, it retains the requirement. There is no principle of claim construction of which I am aware that prohibits a term from being construed in a manner incorporating some relational content.

The parties have no objection to Judge Stark's construction of "storage area location" as used in claim 1 of the '110 patent to mean "a place in the storage area accessible to the picking means where packages are held." However, the explicit detail provided by claim 1 defines the precise nature of a "storage area location," and belies any need for further construction. Accordingly, the court concludes that no construction is required and overrules this recommendation.

The "first location" as used in the patent is a point on the first conveyor just past the shingling nip where the sheets actually first shingle. Shingling occurs when a faster conveyor conveys sheets to a slower conveyor. The process is complete only when the sheets reach the slower conveyor. Accordingly, shingling does not occur at the shingling nip and the nip cannot be the first location. Neither, however, is it reasonable to designate the entire first conveyor as the first location as suggested by the plaintiff. The patent language provides that the sheets are shingled "as they pass said location" clearly implying that the location is a point along the first conveyor beyond the shingling nip but not the entire first conveyor.

III. "Location Detector" as Used in the '689 Patent
Kensey appears to submit that "location detector" as used in the claims is a general term that refers to any device capable of percutaneously locating an arterial opening through blood visualization. See Pls.' Resp. at 18. Perclose submits that "location detector" as used in the claims refers to "means [which] detect[ ] the approximate location of the wall of a vessel, duct, or lumen [and] which comprise[] (1) an unattached 'sheath' having an open or free distal end, (2) an unattached removable elongated member that fits within the sheath, and (3) a passageway that extends from a fluid (e.g., blood) entry opening or window located at or close to the distal end of [the] sheath toward the proximal portion of the location detector." Def.'s Mem. at 46. Neither party offers expert testimony to indicate that "location detector" is a technical term. Hence, the term's meaning must be found in the patent.

Asserted Claims 1 and 25, the only independent claims in the patent, both use the term "location detector." The pertinent portions of Claim 1 read as follows:

"A system for sealing a percutaneous puncture in the wall of a [fluid-filled] vessel, duct or lumen of a living being…

the puncture comprising an opening in the wall of the vessel, duct or lumen and a tract contiguous with the opening and extending through tissue overlying the vessel, duct or lumen,

[a] said system comprising a closure device and a location detector,

[b] said location detector being arranged for introduction into the puncture to provide a perceptible signal indicative of the location of the wall of the vessel, duct or lumen, whereupon a desired position for said closure with respect to the vessel, duct or lumen may be determined,

[c] said location detector comprising means for insertion in the puncture tract to a position at which fluid within the vessel, duct or lumen is enabled to flow from the interior thereof into said location detector to provide a perceptible signal…"

'689 patent at 14:56-15:4 (emphasis and sentence division added). The pertinent portions of Claims 25 read as follows:

"A method for sealing a percutaneous puncture in the wall of a [fluid-filled] vessel, duct or lumen of a living being,…

the puncture comprising an opening in the wall of the vessel, duct or lumen and a tract contiguous with the opening and extending through tissue overlying the vessel, duct or lumen, said method comprising:

(a) providing a closure device and location detector;

(b) introducing the location detector into the puncture to a position whereupon the fluid within the vessel, duct or lumen is enabled to flow from the interior of the vessel, duct or lumen into the location detector to provide a perceptible signal indicative of the location of the wall of the vessel, duct or lumen, whereupon a desired position for the closure with respect to the vessel, duct or lumen may be determined….

Id. at 16:48-61.

Again, parsing the claims' language makes more apparent the limitations imposed on the definition of "location detector." First, sections (b) of Claims 1 and 25 specify that the location detector through introduction into the puncture provides a "perceptible signal of the location of the wall of the vessel, duct or lumen." As noted earlier "puncture" comprises the opening as well as tract leading to the opening. Second, sections (c) of both claims specify that the location detector referred to has some "means that enable insertion into the puncture" such that "fluid from the vessel, duct or lumen" can flow from the interior of the vessel, duct or lumen into the location detector. Third, sections (c) also specify that it is the flow of fluids from the vessel, duct or lumen into the location detector that allows for the perceptible signal. Thus, "location detector," as used in these claims refers to the class of devices

(1) that are introduced into the puncture, and that thereby provide a perceptible signal of the location of the vessel, duct, or lumen wall;
(2) through which fluid can flow from the interior of the vessel, duct, or lumen upon insertion into the puncture;

(3) that uses the aforementioned flow of fluid to provide the aforementioned perceptible signal.

Already the ordinary language of the claims establishes a definition narrower than that submitted by Kensey. However, as yet, the definition is broader than that submitted by Perclose.

Perclose points out that the claims Claim 1 uses the word "means" and argues that therefore "location detector" must be interpreted as a means-plus-function term under 35 U.S.C. § 112, P 6. Def.'s Mem. at 46-47. § 112, P 6 states that "an element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." The Federal Circuit specifies that "if the word 'means' appears in a claim element in association with a function, this court presumes that [35 U.S.C.] § 112, P 6 applies. This presumption collapses, however, if the claim itself recites sufficient structure, material, or acts to perform the claimed function." Micro Chemical, Inc. v. Great Plains Chemical Co., Inc., 194 F.3d 1250, 1257 (Fed. Cir. 1999). Here the elements of the claims, which posit means for the location detector's positioning, explicitly use the term "means" to express a function and do not recite any structure, material, or acts to perform the claimed function. The other elements of the claims, those that state that fluid flow is to create a perceptible indication of the target position, do not use the term "means" to express a function but nonetheless rely on a functional term. Namely, the other elements of the claims explain the location of the target position by reciting that the location detector is "introduced" into the puncture. Neither claim explains how fluid flow works to create a perceptible signal of the target position. Consequently, the claims use "location detector" as a means-plus-function term.

Where a means-plus-function term recites a function to be performed rather than definite structure or material [or acts] for performing the function, the term must be construed to "cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112; accord WMS Gaming Inc. v. International Game Tech., 184 F.3d 1339, 1347 (Fed. Cir. 1999); see Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1307-08 (Fed. Cir. 1998). The specification describes the location detector in great detail. I will outline the specification's description in brief.

The location detector has four essential elements: an introducer sheath, a conventional hemostasis valve, a sideport connected to a conventional stopcock, and a semi-tubular member. The location detector positions the closure device by positioning the introducer sheath. '689 patent at 9:13-15. The proximal end of the sheath terminates in a "conventional hemostasis valve." Id. at 9:11-16. The distal end of the sheath terminates in a free tubular end. Id. at 9: 16- 17. The sideport is affixed to the valve and connected to the stopcock. Id. at 9:17-20. Fluid flowing into the sheath will flow through the valve and sideport to the stopcock. Fluid will flow through the stopcock, when it is in an open position. The semi-tubular member is a "conventional dilator whose outer periphery has been modified to include a longitudinally extending flat" surface. Id. at 9:29-31. The distal end of the member is tubular.

The member is inserted into the sheath so that the distal end of the member protrudes outside the distal end of the sheath and leaves an opening between the sheath and the longitudinally extending flat surface of the device. Id. at 9:36-47. A slight gap between the distal end of the member and the distal end of the sheath creates an entry into the passageway between the extending flat and the sheath wall. Id. When the sheath, with member inside, is inserted into the puncture, blood (or fluid) will enter the passageway when the gap between the sheath and member enters a vessel (or duct or lumen). Id. at 48-10:9. The blood travels up the passageway, through the valve and sideport, and onto the stopcock. Id. The flow of blood through the stopcock signals the sheath's position inside the artery. Id. The user then removes the sheath and member until blood stops flowing through the stopcock. Id. This signals that the sheath is just outside the vessel. Id. The user closes the stopcock, withdraws the member from the sheath, and reinserts the sheath 10 mm so as to ensure that the distal end is within the artery. Id. The sheath can now accept insertion of the closure device. Id.

"Location detector" covers the embodiment described briefly above as well as two other similar embodiments of the member inserted inside the introducer sheath. See id. at 10:10-60. One member is similar to the one described above but has a different shape. Id. at 10:10-39. The second is a tubular, hollow member with an entrance port near the distal end and an outlet port that allows fluid communication with the sideport and stopcock. Id. at 10:40-60. The patent also contains an alternate embodiment of the introducer sheath which can be used with the above described members. See '689 patent 10:61-
11:34. Hence, in all there are six separate embodiments of the location detector specified as preferred embodiments.

For the purposes of this claim construction, the six embodiments and their equivalents define "location detector." See, e.g., Chiuminatta Concrete Concepts, 145 F.3d at 1307-08. The following definition generally sums up the meaning of "location detector" as used in the '689 claims: A device comprising

(1) an introducer sheath, a conventional hemostasis valve, a sideport connected to a conventional stopcock, and a semi-tubular member arranged within the sheath so as to allow fluid communication between distal end of the sheath and stopcock;

(2) which is used by inserting the sheath until fluid from the target vessel, duct, or lumen appears at the detector's stopcock and thereby indicates the sheath's entry into the artery and allows for an appropriate positioning of the sheath and thereby an appropriate positioning of the closure device.

This definition is in accord with the definition submitted by Perclose, but importantly, this definition is intended as nothing more than a general review of the specification's embodiments. In the event that litigation proceeds to an infringement analysis, the specification language describing the various embodiments of "location detector" and the equivalents of these embodiments shall serve to define the term.

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A. "Location Indicator"

1. Whether Section 112, P 6 Applies to the Term "Location Indicator"

Universal argues that section 112, P 6 covers the term "location indicator" in claims 1 and 13, because the term is nothing more than a functional description of structure purporting to cover any device that indicates location. Universal contends that "location indicator" fails to recite sufficiently definite structure, rebutting the presumption that "location indicator" is not in means-plus-function format raised by the absence of the word "means." Plaintiffs respond that the presumption remains because the term "location indicator" is not in means-plus-function format and the term "indicator" has a reasonably well-understood meaning in the art and recites sufficiently definite structure.

--- Footnotes ---

1 The '943 Patent alternately uses the terms "location indicator" and "position indicator." It is clear from the written description that these terms refer to the same element of plaintiffs' invention and are used interchangeably.

--- End Footnotes ---

The word "means" is not used in claiming the location indicator. The presumption that the claim of the "location indicator" is not in means-plus-function form applies. To rebut this presumption, Universal must show that the term "location indicator" fails to recite sufficiently definite structure or recites a function without reciting sufficient structure for performing that function. Apex, 325 F.3d 1364, 2003 WL at *5.

The term "indicator" is defined in several technical dictionaries. The NEW IEEE STANDARD DICTIONARY OF ELECTRICAL AND ELECTRONICS TERMS (5th ed. 1993) defines an "indicator" as a "device or variable that can be set to a prescribed state based on the results of a process or the occurrence of a specified condition. For example, a flag or semaphore." (Docket Entry No. 49, Ex. A, Ex. 2). The ILLUSTRATED ENCYCLOPEDIC DICTIONARY OF ELECTRONICS (2d ed. 1987) defines "indicator" as "any device, such as a gauge, dial, register, or pointer, that measures or records, and visibly indicates a value, condition, etc." (Id. at Ex. A, Ex. 4). The IBM DICTIONARY OF COMPUTING (10th ed. 1993) defines "indicator" as "a device that gives a visual or other indication of a defined state." (Id. at Ex. A, Ex. 1). The ILLUSTRATED DICTIONARY OF ELECTRONICS (6th ed. 1994) defines "indicator" as a "(1) Meter. (2) Monitor. (3) Annunciator. (4) In a computer, a device that can be set by a specific condition, e.g., by a negative result or error indicator." (Id. at Ex. A, Ex. 3).
These definitions lead to the conclusion that the term "indicator" has a well-known meaning to those skilled in the electrical arts. Personalized Media Communications, LLC, 161 F.3d at 704-05. "Indicator" is not a generic structural term, such as "means," "element," or "device." Nor is "indicator" a coined term lacking readily apparent meaning, such as "widget." Rather, the term "indicator" connotes structure, such as a gauge, dial, register, flag, meter, monitor, or annunciator. The fact that "indicator" does not define a particular structure does not invoke section 112, P 6. The dictionary definitions of the term "indicator" convey a variety of structures known to those knowledgeable in the art.

2 Universal cites the testimony of Thomas Rhyne, an expert in electrical engineering who testified for plaintiffs, as showing that the term "location indicator" does not define a type of structure. In light of the technical dictionaries' definitions of the term "indicator," reliance on such extrinsic evidence as Rhyne's testimony is unnecessary and inappropriate.

The finding that "location indicator" is not subject to means-plus-function analysis is consistent with the Federal Circuit's ruling in Personalized Media, LLC. The court in that case construed the term "digital detector." On appeal, plaintiffs sought to overturn the district court's finding that the term "digital detector" invoked section 112, P 6. The Federal Circuit affirmed, finding that the term "digital detector" connoted sufficiently definite structure to avoid the application of section 112, P 6. The Federal Circuit noted that the term "detector" had a well-known meaning, connotative of structure, based on the definitions of the term found in technical dictionaries. Those definitions included examples of "detectors," such as rectifiers and demodulators. Like the term "detector," the term "indicator" is defined in several technical dictionaries that use examples in the definitions. Like the term "detector," the term "indicator" connotes structure to one knowledgeable in the art.

The Federal Circuit similarly and recently held in Apex that the claim term "circuit" was not a means-plus-function claim. Section 112, P 6 presumptively did not apply because the claim using the term "circuit" did not include the word "means." The court found that the term "circuit" connoted structure based on a technical dictionary definition of the term. The definition did not give a specific or particular structure of a "circuit," but broadly defined a family of possible structures that could be formed by combining different numbers and types of electrical components to perform different functions. The term "indicator" similarly defines a variety of possible structures. That does not defeat the presumption against the application of section 112, P 6.

In Greenberg, 91 F.3d 1580, 1583, the issue was whether the section 112, P 6 applied to the claim term "detent mechanism." The court acknowledged that the claim defined the words "detent mechanism" in functional terms. The court relied on dictionary definitions which "make clear that the noun 'detent' denotes a type of device with a generally understood meaning in the mechanical arts." 91 F.3d at 1583. Although the term "detent mechanism" did not define a single well-defined structure, the term connoted structure so as to avoid the application of section 112, P 6.

The term "location" in claims 1 and 13 modifies the term "indicator." "An adjectival qualification placed on a term that otherwise sufficiently connotes structure does not reduce the sufficiency of the structure connotation for the purpose of section 112, P 6." Personalized Media, 161 F.3d 696, 705 (stating that the use of the term "digital" with the term "detector" placed a functional constraint on an adequately defined structure). The term "location" in claims 1 and 13 is an adjectival modifier of the term "indicator," placing a functional constraint on the various structures the term "indicator" suggests. Structures such as dials, gauges, meters, and others, called to mind by the term "indicator," indicate location.

Universal relies on Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1213-14 (Fed. Cir. 1998), for the proposition that a
claim "cannot be construed so broadly as to cover every conceivable way or means to perform [a] function . . . ." The disputed claim term in Mas-Hamilton Group was "lever moving element." The court stated that if section 112, P 6 did not apply, the term "lever moving element" would cover any conceivable way to move the lever contained in the invention. Id. at 1214. The court concluded that the patent holder had not presented evidence that the term "lever moving element" had a well-known meaning in the art. Id. As the Personalized Media court noted, the term "element" is a generic term. "Lever moving element" did not have a particularized definition in the mechanical arts. In the present case, by contrast, the term "indicator" does have a particular meaning connoting structure to those of skill in the electrical arts, defined in several electronics dictionaries, and is not merely "generic."

Universal also relies on Pennwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931, 934 (Fed. Cir. 1987), for the proposition that section 112, P 6 "rules out the possibility that any and every means which performs the function specified in the claim literally satisfies that limitation." The Pennwalt court construed the claim term "position indicating means," which Universal contends is nearly identical to the term "location indicator." This court disagrees. The term "position indicating means" used the word "means"; it was undisputed that section 112, P 6 applied to the claim. By contrast, the disputed claim term "location indicator" is not in means-plus-function format.

Universal alternatively contends that the term "location indicator" is in means-plus-function format because the structures connoted by the term cannot fully perform the functions recited in claim 1, being "responsive to the component identifier" and "producing an indication signal of the corresponding location of each compartment or component after the type of component has been identified." Universal argues that a "location indicator" cannot produce the signal to indicate location without some information processing structure, such as a computer.

Plaintiffs have claimed two versions of their invention, a three-element version and a four-element version. The three-element version consists of an automated assembly machine, a component identifier, and a location identifier. The four-element version consists of these three elements and an information processor. The written specification for the four-element version states that the component identifier identifies the type of component loaded into the automated assembly machine and transfers this identification to the information processor. The information processor then determines the proper location for the identified components, based on preprogrammed information and the information the component identifier provides. The information processor relays the location information to the location indicator, which indicates the position to place the identified components. ('943 Patent, col. 5, 1.48-1.63). In the three-element version, without the information processor, "the functions of the information processor [are] distribute[d] among the other elements." (Id. at col. 6, 1.8-1.10). The written specification suggests that some of the information processor functions could be included in the location indicator in the three-element version. The specification does not require the location indicator to include information processor functions. The specification states that "[f]or the purposes of a three-element system, th[e] comparison and determination [of the components involved and the location to place them] may take place either in the component identifier or in the position indicator." (Id. at col. 4, 1.58-1.61). The claims and the specification do not require the location indicator to contain a computer or other electronic logic to perform the recited function, as Universal claims. Universal has failed to rebut the presumption that section 112, P 6 is inapplicable. The '943 Patent recites sufficient structure for the location indicator to avoid application of section 112, P 6.

2. Claim Construction of "Location Indicator"

Because section 112, P 6 does not apply to the claim term "location indicator," conventional claim construction is required. This court refers first to the intrinsic evidence: the claims, specification, and prosecution history. Plaintiffs argue for the following construction:

A device that indicates a proper or corresponding location of an identified compartment or component.

(Docket Entry No. 40, p. 20). Universal responds that a "location indicator" is:

A device that indicates a proper or corresponding location of an identified compartment before placement of the compartment in a location.

(Docket Entry No. 59, p. 3). Universal seeks to add the words "before placement of the compartment in a location" to plaintiffs' proposed claim construction.
A court may not read limitations from a specification into claims, but must read claims in light of the specification. Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998). The written description of the preferred embodiments guides a court's interpretation of claim language as the court seeks to ascertain the invention. Bell Atl. Network Servs., Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1270 (Fed. Cir. 2001); Comark, 156 F.3d at 1186. Even if claim terms are clear on their face, a court must consult the specification to determine if the patentee redefined any of those terms. Watts, 232 F.3d at 883. The patentee may act as his own lexicographer, using the specification to define claim terms. The definition may be express or "by implication" arising from consistent use of the claim term in a particular way throughout the specification. Bell Atl. Network Servs., 262 F.3d at 1270. There is a fine line between reading a claim in light of a specification and reading a limitation into the claim from the specification.

Plaintiffs do not expressly define the term "location indicator" in the specification, but consistently describe "location indicator" throughout the specification as indicating to the machine operator where to place identified components or component compartments. See, e.g., '943 Patent, col. 4, 1.30-1.32 (location indicator "inform[s] the machine operator of the correct location of identified components."); col. 5, 1.1-1.5 ("After the proper location has been determined, it is conveyed to the machine operator. The operator will then load the first component type . . . "). col. 5, 1.64-1.68 (same). The error indicator described in claim 3, which depends on claim 1, "indicates if a compartment has not been placed in a corresponding location indicated by the location indicator." (Id. at col. 18, 1.58-1.61). This claim language implies that the components or compartment compartments are placed after the location indicator provides the location placement information to the machine operator. Reading the claims with a view to ascertaining the invention, it is clear that the location indicator is intended to indicate to the machine operator where to place the components. By adding "before placement of the compartment or component in a location" to the plaintiffs' proposed construction of the claim term "location indicator," this court is not reading particular limitations or particular embodiments of "location indicators" from the specification to construe the disputed claim term. Rather, this court is construing the claim term based on the consistent use of the term in the specification and the overall invention covered by the '943 Patent. See Bell Atl. Network Servs., 262 F.3d at 1270-73 (finding that the term "mode" was defined "by implication" based on its consistent use throughout the specification to mean only the three operational "modes" in the specification).

Universal also seeks to construe the term "responsive to the component identifier" in claim 1, as follows:

"Responsive to the component identifier" requires that the location indicator determine the corresponding location at which to place the component or compartment identified by the component identifier.

(Docket Entry No. 59, p. 5). No such limitation is found in claim 1 or in the written description. This interpretation of the term "responsive to the component identifier" would be inconsistent with the written specification. The section of claim 1 describing the location indicator does not require that the location indicator itself determine where components or component compartments are placed. The written description states that the software or logic circuitry determining the proper location for a component or compartment in the three-element system of claim 1 can be located entirely in the component identifier, entirely in the location indicator, or distributed between those two parts of the invention.

Based on this analysis, this court adopts the following construction of the claim term "location indicator":

A "location indicator" is a device that indicates a proper or corresponding location of an identified compartment or component before placement of the compartment or component in that location.

Universal also argues that the terms "proper location" and "corresponding location" are synonymous. The specification uses the terms "proper location," "correct location," and "corresponding location" alternately. The location indicator is alternately described as indicating the "proper," "correct," or "corresponding" location for components or component compartments. ('943 Patent, col. 2, 1.68-col. 3, 1.5 ("corresponding"); col. 4, 1.30-1.32 ("correct"); col. 5, 1.1-1.5("proper"); col. 5.1.55-1.58 ("proper"). A "corresponding location" is the correct location in which to place the identified components or component compartments.

The term "location indicator" is described somewhat differently in claim 1 from the way that same term is described in claim 13. In claim 1, the location indicator is described as "responsive to the component identifier." In claim 13, the location indicator is described as "connected to and controlled by the information processor." Unless a patent otherwise provides, a
3. Whether a Location Indicator Containing Structure to Determine the Proper Location to Load Components or Component Compartments Must Use the Algorithm Recited in the Specification

Universal alternatively contends that even if the term "location indicator" is not in means-plus-function format, the statement in the '943 Patent that "[r]eferring to FIGS. 8A, 8B, and 8C, presented is a flow chart displaying the method of operation of the present operation" limits the patent to the algorithm recited in the written description. (Docket Entry No. 59, p. 33 n.5; '943 Patent, col. 12, 1.25-col. 18, 1.31). Universal cites several cases for the proposition that an unequivocal statement in the patent specification concerning the method of operation of the invention as a whole limits the claims.

In Scimed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337 (Fed. Cir. 2001), the court had to decide whether the common description of three patents on balloon catheters limited the claims to catheters with coaxial lumens, or whether the patents covered both coaxial and dual lumen configurations. The district court limited the asserted claims to catheters with coaxial lumens. The Federal Circuit rejected the patentee's argument that the district court had impermissibly read limitations from the written description into the claims and upheld the district court's construction. The court emphasized the "most compelling portion" of the written description, which stated that "[t]he intermediate sleeve structure defined above [involving a coaxial lumen] is the basic sleeve structure for all embodiments of the present invention contemplated and disclosed herein . . . ." 242 F.3d at 1343. The patent distinguished the prior art on the basis of its use of dual lumen catheters, in contrast to the coaxial lumens used in the patents. Id. The court found a "clear case of disclaimer of subject matter that, absent the disclaimer, could have been considered to fall within the scope of the claim language." Id. at 1344.

The written description of the '943 Patent, in contrast to the patent in Scimed, does not have broad, unequivocal language of manifest exclusion or restriction, representing a clear disavowal of claim scope. See Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1327 (Fed. Cir. 2002)("claim terms take on their ordinary and accustomed meanings unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope"). The written description of the '943 Patent does not disclaim other algorithms for the patented assembly apparatus. The written description of the '943 Patent does not contain language distinguishing the algorithm described from other possible algorithms. Rather, the description states that "although the present invention has been described with reference to particular preferred embodiments, it will be understood by those of skill in the art that additions, deletions or changes could be made to the disclosed embodiment without departing from the scope of the present invention." ('943 Patent, col. 18, 1.32-1.37).

Universal also cites Watts, 232 F.3d 877, to support its argument. Watts does not require this court to limit the '943 Patent to the algorithm disclosed in the written description. In Watts, the court construed the term "sealingly connected," a limitation in a claim addressing joints between pipes. The court held that the "sealingly connected" limitation applied only to structures with misaligned taper angles because the specification stated that "the present invention utilizes [the varying taper angle] feature." This language in Watts resembles the language in the '943 Patent stating that Figures 8A, 8B, and 8C presented a "flow chart displaying the method of operation of the present invention." ('943 Patent, col. 12, 1.25-1.27). However, in Watts, the court found that the "sealingly connected" limitation was not clear on its face. In this case, by contrast, the term "location indicator" is clear on its face, based on both its use in the written description and the dictionary definitions of the term "indicator." The specification makes it clear that the location indicator need not perform the
processing to determine the proper location of an identified component, let alone follow a particular algorithm.

The prosecution history in Watts revealed that the patentee had distinguished prior art based on the invention's application to misaligned taper angles. In this case, by contrast, the prosecution history shows that plaintiffs originally sought to patent both the automated assembly apparatus and the method for its use. The patent examiner restricted the invention under 35 U.S.C. § 121 and required plaintiffs to elect between the apparatus and method claims. 4 (Docket Entry No. 41, Ex. B, Prosecution History of the '943 Patent, at AGU 00201). The examiner stated that the plaintiffs' apparatus and method claims were distinct because "the apparatus as claimed can be used in a materially different process of using that apparatus such as simply identifying components." Id. 5 The prosecution history reveals that the apparatus claimed by plaintiffs can be operated using different algorithms and can perform different tasks.

4 35 U.S.C. § 121 provides: "If two or more independent and distinct inventions are claimed in one application, the Director may require the application to be restricted to one of the inventions."

5 The examiner required plaintiffs to elect whether to pursue their apparatus or method claims in 1993, before the Federal Circuit's decision in In re Donaldson, 16 F.3d 1189 (Fed. Cir. 1994). Before In re Donaldson, the Patent and Trademark Office did not apply section 112, ¶ 6 during examinations of patents. 16 F.3d at 1194. In Donaldson, the Federal Circuit held that PTO examiners must look to the specification and interpret the claims in light of the structure, material, or acts described therein, or equivalents thereof. The claim in Donaldson was undisputedly a means-plus-function claim, in contrast to the location indicator claim. This court has found that section 112, ¶ 6 does not apply to the location indicator claim. The fact that the PTO did not apply section 112, ¶ 6 in interpreting the claims in the '943 Patent and requiring plaintiffs to elect between the apparatus and method claims in the original version of the patent is not relevant here. The fact that the PTO did not apply section 112, ¶ 6 in interpreting the '943 Patent does not diminish the significance of the examiner's decision to require plaintiffs to elect between their apparatus and method claims.

The written description of the '943 Patent does state that the algorithm flow chart presented is "the method of operation of the present invention." The written description, however, lacks words or expressions of manifest exclusion or restriction representing a clear disavowal of claim scope. The prosecution history shows that the apparatus of the '943 Patent can be used in ways that do not follow the algorithm of the written description. This court concludes that the '943 Patent is not limited to the operating algorithm presented in the written description.

The first term appears in Claim 1 of the '114 patent as follows:

A pre-paid calling card system to enable customers to purchase calling cards at predetermined locations and to use such calling cards to access . . . .

The second term appears in Claims 1 and 2 of the '768 Reexamination Certificate as follows:

Claim 1: A method to enable customers to obtain pre-paid calling card accounts from a plurality of point-of-sale locations and to . . . .

Claim 1 & 2: maintaining in the database information sufficient to identify: . . . a particular point-of-sale location at which the particular pre-paid calling card account is activated ("recharged" in Claim 2).
Defendants propose for both terms, "a retail or other establishment where a customer obtains a calling card." TGIP argues that neither of these terms need to be construed. If "predetermined location" is construed, TGIP proposes "a location determined beforehand." If "point-of-sale location" is construed, TGIP suggests "location at which the sale takes place."

At the hearing Defendants agreed with the court's proposal of "a business establishment or kiosk, which may be automated or staffed by one or more persons." TGIP objected, asking why a "point-of-sale location" could not include on line purchasing. Tr. p. 96. TGIP's counsel envisions customers activating cards from their personal computers by visiting a website. Tr. p. 97. But the court must construe the terms as understood by one skilled in the art, reading those terms in the context of the specification and file history.

Web sites were known when the first application was filed on June 6, 1994, and were well known by the time the reexamination certificate was issued in 2005. See http://www.matterform.com/macintosh software_company/old_sites.html (showing a Matterform Media website online in 1994). Nothing in the claims, nor in the prosecution history, nor even in the extrinsic evidence, including articles written by the inventor and announcements concerning his calling card systems hints at sales from a website. To the contrary the specification describes physical locations. See '114 Patent, col. 5, 11. 42-44.

In normal usage a "predetermined location" and a "point of sale location" refer to a place, such as the establishment of the retailer. If it was a disembodied electronic construct, such as a website, there would be no reason for Claims 1 and 2 to put such emphasis on the database maintaining "a particular point-of-sale location at which the particular pre-paid calling card account is activated [or recharged]." '114 patent, col. 1, 11. 41-43; '114 patent, col. 2, 11. 12-14. There would actually be no "point of sale" or "predetermined location. Rather the sale would be made wherever the user had a laptop.

The patentee had the opportunity to pick his language. He did not attempt to include incorporeal constructs like websites as possible locations. The court is not going to broaden the scope of the patents in such a way at this time. These terms will be defined as follows:

"Predetermined locations" and "Point-of-sale locations mean "a business establishment or kiosk which may be automated or staffed by one or more persons."

A. "Locking Barb"

For the following reasons, this court construes the claim term "locking barb" in claims 1, 15, 31-33, and 37-38 of the '543 patent, and in claims 1 and 14 of the '305 patent to mean:

A locking device or detent that contacts an attachment surface at at least one point.

The parties agree that a locking barb is a locking device on the transmission hanger that contacts an attachment surface of either another stackable hanger or an attachment surface, such as a telecommunications tower. The dispute is whether a locking barb contemplated to be located on the legs of the stackable transmission hanger is the same as a detent, as Andrew claims, or a non-detent type locking device, as Beverly claims. Andrew contends that there is nothing in the claims, specification, or prosecution history to limit the ordinary meaning of the term "locking barb" to a non-detent type device. In contrast, Beverly argues that the locking barb is an attempt to "overcome the limitations associated with the prior art detent locking devices," and that the specifications in the '543 and '305 patents "clearly teaches the advantages of the claimed locked barbs over the prior art devices. (Def. Mem. at 7, 8.)
Contrary to Beverly's interpretation of the specification of both the '543 and the '305 patents, the court does not find that the locking barb was meant to be a locking device that was superior to the prior detent. Instead, the patent distinguishes the prior art only with regard to the superiority of the two-locking-barb design as compared to the prior four-locking-barb design for reducing resistance. (Ex. 1 at Col. 7; Ex. 2 at Col. 8.) Cf. Tronzo v. Biomet, Inc., 156 F.3d 1154, 1159 (Fed. Cir. 1998) (construing limitation in term where "the specification clearly suggests the contrary [that shapes other than conical are necessarily part of the disclosure,] by asserting the advantages of the conical shape over prior art shapes." (brackets added)). The novelty of the patents does not relate to the locking bars as opposed to detents. The novelty of the patents is the easy installation of one-piece, stackable transmission line hangers capable of accommodating a large number of transmission lines. (Exs. 1 & 2, Col. 3.) Additionally, there is no language in the claims or specifications of either the '543 or '305 patents to suggest that a locking barb is different from a detent, nor does the prosecution history restrict the locking barb's definition. Hence, the intrinsic evidence does not import limitations into the ordinary meaning of the term.

Nor does the court accept Beverly's contention the term locking barb in the '543 patent should be construed differently than the same term in the '305 patent based on the teachings of the specifications. As identified by Beverly, the '543 patent specification states that "Each locking barb includes a barb contact point for contacting the attachment surface," while the '305 patent adds that "Each locking barb includes a barb contact point or line for contacting the attachment surface." (emphasis added) (Ex. 1 at Col. 5; Ex. 2 at Col. 6.) In oral arguments, Beverly clarified that it considered the difference between the '543 and the '305 patents to be that "the '305 patent is focused on multiple contacts. The '543 is focused on a single contact." (Tr. 40, ln. 15-6.) But the additional phrase of "or line" and any references to multiple points in the '305 patent specification are not enough to suggest that locking barb should be construed as different from the '543 patent. Phillips and other Federal Circuit cases instruct that the district courts should not generally rely on preferred embodiments in the specifications to confine claims unless the embodiment defines the outer limit of the claim. Phillips, 415 F.3d at 1323. There is nothing to support interpreting the specification in the '543 patent to define the outer limit of the claim term locking barb as limited to contact at a point as opposed to a line or multiple points. Moreover, the court's construction of locking barb to mean "a locking device or detent that contacts an attachment surface at at least one point" may include a preferred embodiment of either a point, a line, or multiple points.

Beverly additionally argues that the court should limit the locking barb to a structure equivalent to a notch that locks two transmission hangers together, as described in the specifications, asserting that there is no other reasonable structure for locking together two transmission hangers. Again, Beverly errs in seeking to limit the claims to a particular embodiment in the specifications despite the Federal Circuit's warning against this limitation when there is no evidence in the specification, claims, or prosecution history to suggest that the embodiments in the specifications define the outer limits of the claim term.

See, e.g., Phillips, 415 F.3d at 1323. Furthermore, the doctrine of claim differentiation, which holds that claims must be interpreted so that their differences are meaningful, requires the court to reject Beverly's construction of a locking barb as having a structure equivalent to a notch when two transmission hangers are attached. See Inpro II Licensing, S.A.R.L. v. T-Mobile USA, Inc., 450 F.3d 1350, 1354 (Fed. Cir. 2006). Only by rejecting Beverly's construction can dependent claims, such as claim 5 in the '543 patent referring to a lip and a notch, be given separate meaning in comparison to those claims that do not refer to the lip and notch structure, such as claim 1 in the '543 patent. See Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380 (Fed. Cir. 2006) (explaining the presumption that independent claims do not include the limitations added by their dependent claims). The court also notes that nothing in the language of the '543 or the '305 patents suggests that the transmission hanger has a different structure when attached to another hanger instead of a tower structure.}

6. Construction of "locking contact"

Although, in the briefs, the parties asked for claim construction of the entire phrase "translate axially within said bore and into locking contact with said second intervening member," the focus of the dispute is on the meaning of "locking contact." Again, as discussed in regard to "compression locked," the dispute concerns the question of whether such locking is limited to application of an inward radial force to squeeze and crush the retaining portion around the screw head.

Medtronic repeats the arguments offered in relation to "compression locked." Again, in support, Medtronic relies first on the "only one way" specification argument. In the absence of language in the specification which constitutes a clear redefinition by implication, this Court has rejected this argument. This Court also rejects the argument based on the examiner's comment.
about "expansion," for the reasons stated above.

Medtronic concedes that the claim language specifies that "the first intervening member . . . makes the head move farther down toward the bottom of the axial bore to lock the screw." (Defs.' Br. 31.) As discussed above, it is inconsistent then to maintain that the only locking process contemplated in the patent involves the application of inwardly directed radial force that crushes the second intervening member. Medtronic has conceded that locking involves the application of axial force and cannot unring that bell.

As above, this Court finds that Medtronic's construction of "locking contact" is inconsistent with the plain language of claim 21 and finds no basis to limit construction of this phrase as Medtronic proposes.

G. "Locking component slidably receiving said vertical lock spindle"

The parties also offer disparate definitions of the "locking component" element contained in Claims 10 and 18, with Pedicraft again offering breadth as opposed to Stryker's specificity. Pedicraft's definition would limit this claim to "a lock portion of the side rail positioning mechanism mounted to the frame through which the lock spindle slides as the side rail moves between the uppermost position or the lowermost position for precluding unwanted side rail travel." Dkt. 65, pp. 26-27. Stryker, in contrast, asserts that this claim limitation should be defined as "a lock fixed to the frame and having a mounting arm and a pair of grooves which slidably receives the vertical lock spindle." Dkt. 66, pg. 38.

The parties do not dispute that Claim 10 requires that the vertical lock spindle is slidably received by the locking component, which is fixed to the frame. However, Pedicraft argues that the broader language of Claim 10 should control over later, more specific claims requiring that the lock be fixed to the frame and have a mounting arm or pair of grooves that slidably receive the vertical lock spindle. Dkt. 65, pp. 26-27. Instead, Pedicraft argues that the specification and specific embodiment do not provide a specific and limited structure for the "locking component," but instead there is "no definitional form . . . and no statements . . . that can be regarded as clear and ambiguous [sic] surrender of alternatives other than the specific embodiment." Id. Under its broader definition of "locking component," which it claims is supported by Mr. Lockwood's testimony, such a component can include any number of "locking and latching systems known in the art for providing a locking point for a side rail." Id.; Dkt. 62, pg. 66 ("it's a pretty generic, general kind of concept, that can be configured in a number of ways . . . I look at Stryker's construction and it's focused again on the particular embodiment that's described in the spec."). The "locking component" in Claims 10 and 18 is not limited to the specification or specific embodiment in the '855 Patent, nor is it limited to the "catch and pass through groove limitations" expressly contained in Claims 16 and 17. See, e.g., '855 Patent, Col. 9, Claim 16 ("wherein said locking component includes a catch to allow upward vertical movement of one said of plurality of lock pins through said locking component while preventing downward vertical movement of said one of said plurality of lock pins through said locking component").

Stryker of course disputes Pedicraft's characterization of its attempts to define the "locking component" through a "catch and pass through" function. Instead, it argues that the '855 Patent specifically emphasizes the important safety features of the "locking component," defining the specially designed structure as including a pair of grooves and a mounting arm. '855 Patent, Cols. 2-3; 5-6. Figure 5 of the '855 Patent also displays the top view of the "locking component of the present invention," which includes a mounting arm and a pair of grooves. This important safety feature was further discussed by Dr. Dyro during his Markman testimony as including a mounting arm and a pair of grooves. Dkt. 63, pp. 23-24. In short, Pedicraft's own characterization of this safety feature as being important to the invention, and then describing it to include a mounting arm and grooves, gives the Court clear indication as to the proper construction of the "locking component" limitation. See The Toro Co. v. White Consolidated Industries, Inc., 199 F.3d 1295, 1301 (Fed. Cir. 1999); Vitronics, 90 F.3d at 1582.

The Court again agrees with Stryker's construction. Pedicraft's broad construction again provides the Court with little structure of the "locking component," instead attempting to define it as part of the vague term "side rail positioning mechanism," discussed supra, and stating vaguely that it precludes "unwanted side rail travel [while] permitting desired side rail travel." Such concepts do not assist the Court in giving definite structure to the claim terms, especially when a "locking
component" of the present invention is specifically presented throughout the '855 Patent -- i.e., in the description, specification, figures, and claims of the patent itself. Accordingly, Stryker's definition is supported by the intrinsic and extrinsic records, meaning that a "locking component" should be specifically construed to include a lock fixed to the frame, a mounting arm, and a pair of grooves which slidably receives the vertical lock spindle discussed above.

4. Locking Device

The term "locking device" appears in '579 patent claims 1, 2, 4, 8 through 11, 13, 17, 21, 22, and 28, and in RE '439 patent claims 1, 21, 22, and 33. The Plaintiffs assert that the proper construction is a locking element alone (as recited in the claim) or a locking element and a locking groove that together hold together two panels against separation. (Pls.' Open. Br. 25.)

Pergo proposes that "locking device" should be defined as "the parts that form the second mechanical connection comprising a strip, integrated with one panel, that has a locking element and a locking groove, on the underside of the mating floor panel, whereby the locking groove is inserted into the locking groove (i) the two panels are locked in the horizontal direction parallel to the principal plane of the panels and at right angles to the joint edges and (ii) a play exists allowing the joined panels to slide movably (i.e., be displaced) along the joined edges and disassembled by being rotated about the joint edge." (Unilin's Open. Br. 21-22.) In so contending, Pergo relies upon the Pervan specification as describing the locking device, as follows:

"a locking device arranged on the rear side of the panels forms a second mechanical connection locking the panels to each other in a second direction parallel to the principal plane and at right angles to the joint edges, said locking device comprising a locking groove which extends parallel to and spaced from the joint edge of one of said panels, termed groove panel, and which is open at the rear side of the groove panel,"

* * *

"the locking device further comprises a strip integrated with the other of said panels, . . . , such that when the panels are joined together, the strip projects on the rear side of the groove panel with its locking element received in the locking groove of the groove panel.

(RE '439 patent 4:1-18) (Emphasis added.)

Pergo states that in short, the "locking device" comprises "a strip" with a locking element," located on one panel, and a "locking groove," located on a mating panel, arranged so as to form the "second mechanical connection." The "second mechanical connection" requires that "a play exists between the locking groove and the locking surface on the locking element" that "is operative." (RE '439 patent 4:19-23.)

Having considered Pergo's proposed two-part definition, the Court concludes that the first part is overly detailed and imports the specification as demonstrated by claim 1 of the RE '439 patent. However, the second part of Pergo's proposed definition that includes the concept of play is consistent with Alloc and this Court's interpretation of the import of that decision. The Plaintiffs' suggested definition is also consistent with the claim terms and specification.

"Device" is defined as "[a] mechanism designed for specific uses." McGraw-Hill Dictionary of Scientific and Technical Terms, 553. Therefore, the Court interprets "locking device" as meaning "a mechanism consisting of a locking element alone (as recited in the claim) or a locking element and a locking groove that together hold together two panels against separation such that play exists."
The third term to be interpreted is "locking element," in the '486 patent, claims 1 and 2, 16, 19, 31, 51, 60, and 65 and in the '836 patent, claims 1 through 3, 6, 10, 13, 18, 20, 23, 26 through 28, and 30.

Unilin states that the term "locking element" should be defined as "a portion of a coupling part having the structure as recited in the claim that allows for engagement and locking." (Unilin's Open. Br. 15-16.) Alloc states the Court should apply the ordinary meaning of the terms to describe the various aspects of the locking elements, (Jt. Claim Constr. Charts, '486 chart 2), but does not suggest any definition.

Also, Alloc maintains that based on prosecution history, claims 1 and 65 of the '486 patent must be construed to require a connection such that when panels are joined together, "the contact surfaces tend to urge the panels together at their upper edges." (Alloc's Initial Claim Construction Mem. (Corrected)("Alloc Initial Mem.") 9-12.) Additionally, Alloc asserts that the claimed panels must be construed as panels that are able "to be readily assembled and disassembled by alternate procedures involving lateral sliding [of] the panels together or rotating the panels relative to each other with the coupling parts partially engaged." (Id. at 12.)

The Court's analysis begins with the claims of the patent. Phillips, 415 F.3d at 1312. Claim 1 of the '486 patent states:

said coupling parts including locking elements formed integrally in one piece with said core, said locking elements including cooperative contact surfaces arranged to be engaged when adjacent identical ones of said panel are coupled together with their coupling parts cooperatively engaged to prevent substantial separation of two coupled identical ones of said floor panels at said upper side edges in a direction perpendicular to the edges of the panel sides and parallel to the undersides of the coupled floor panels; said locking means comprising a locking element in the form of a downwardly extending protrusion located on the lower side of the tongue and an upwardly facing cooperating locking recess in the lower lip, said locking recess being located at a position that is at least partially distally beyond a distal edge at which the upper lip terminates.

('486 patent, 14:3-19)(emphasis added.)

Claim 1 of the '836 patent uses "locking element" as follows:

said coupling parts comprising substantially a tongue and a groove extending along panel side edges generally parallel to the panel underside and including integrated mechanical locking elements, said tongue, groove and locking elements formed in one piece with the panel, said tongue, groove and locking elements arranged to prevent drifting apart of the floor panel.

('836 patent, 13:64-67; 14:1-4)(emphasis added.)

The '486 patent specification discusses "locking elements" in the brief summary of the invention indicating that "the coupling parts are provided with integrated mechanical locking elements which prevent the drifting apart of two coupled floor panels into a direction perpendicular to the related edges and parallel to the underside of the coupled floor panels." ('486 patent, 2:18:22.) The specification further explains that: "[b]y integrated mechanical locking elements [it] is understood that these form a fixed part of the floor panels, either by being connected in a fixed manner to the floor panels, or by being formed in one piece therewith." ('486 patent, 2:26-29.)

The range of the "locking element" is revealed in the specification which indicates that "a first important preferred form of embodiment, the coupling parts are provided with locking elements which, in the engaged position of two or more of such floor panels, exert a tension force upon each other which force the floor panels towards each other." ('486 patent, 2:30-34.) Alternatively, according to a second important preferred embodiment, the coupling parts and locking elements are formed in one piece with the core of the floor panels. ('486 patent, 2:41-45.) In yet a third preferred embodiment (the characteristics of which may or may not be combined with the characteristics of the first and second preferred embodiments), "the floor covering is characterized in that the lower lip which limits or defines the lower side of the groove, extends beyond the upper lip in the plane of the panel; the locking elements are formed at least of a contact portion which inwardly slopes downward; and that this portion, at least partially, is located in the portion of the lower lip which extends beyond the upper lip." ('486 patent, 3:8-17.)
The locking elements appear in the specification drawings and are further described in the detailed description. For example, figures 2 though 4 depict "the integrated mechanical locking parts or elements 6 which prevent the drifting or sliding apart of two coupled floor panels 1 in a direction D perpendicular to the respective sides 2-3 and parallel to the underside 7 of the coupled floor panels 1." ('486 patent, 5:29-33.) The detailed description further states that "in the represented example, the locking elements 9 consist of a first locking element 11, formed by a protrusion with a bent round shape at the lower side 12 of the tongue 9, and a second locking element 13, formed by a recess with a bent hollow or downwardly concave shape in the lower wall 14 of the groove 10." ('486 patent, 5:56-61.)

In discussing figures 4 through 7, the detailed description explains that "the locking elements 30 do not have to be of the same nature as the locking elements 6." ('486 patent, 6:41-43.) Rather, "the locking means 30 consist of a snap-together connection with locking elements 33 and 34 which grip behind each other." ('486 patent, 6:47-49.)

Again, a different form of "locking means" is depicted in figures 8 and 9 which show, contrary to the locking elements 33-34 which consist of rather local protrusions, in the forms of embodiment of figures 8 and 9 "use is made of locking elements 46-47 which, in comparison to the total width B of the coupling, extend over a rather larger distance." ('486 patent, 7:17-21.)

An additional variant is represented in figure 11 which shows "the locking element 6 is formed by an upward directed portion 53 at the tongue 9, which as a result of a turning movement of the panel, is brought behind a downward-directed portion 54 on the upper wall 18." ('486 patent, 7:61-64.)

The claims and the specification support the definition of "locking element" as being "a portion of a coupling part having the structure as recited in the claim that allows for engagement and locking." However, a definition which does not use part of the term to be defined; namely, the word "locking," is more helpful. Lock is defined as "fasten." (See Jt. App. Ex. 4 (Webster's Ninth New Collegiate Dictionary (9th ed. 1983) 701). "Element" is defined as "constituent part" or "component." (Id. at 402.) "A portion" is similar to a "constituent part" or "component." The Court construes "locking elements" meaning "a portion of a coupling part having the structure as recited in the claim that allows for engagement and fastening."

In considering the additional limitations suggested by Alloc, the Court notes that "unless compelled otherwise, a court will give a claim term the full range of its ordinary meaning as understood by persons skilled in the relevant art." Gemstar-TV Guide Int'l, Inc. v. Int'l Trade Comm'n, 383 F.3d 1352, 1364 (Fed. Cir. 2004). The ordinary and customary meaning of a claim term may be determined by reviewing a variety of sources, which may include the claims themselves; dictionaries and treatises; and the written description, the drawings, and the prosecution history. Id. The presumption of ordinary meaning will be "rebuted if the inventor has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Id. (citation omitted).

Alloc relies upon a portion of the patent prosecution history for the application which matured into the '486 patent and continued as the '836 patent, 5 as a basis for asserting that "locking elements" in claims 1 and 65 of the '486 patent must be construed to require a connection such that when panels are joined together, the contact surfaces tend to urge the panels together at their upper edges; and, 2) the claimed panels must be construed as panels that are able "to be readily assembled and disassembled by alternate procedures involving lateral sliding [of] the panels together or rotating the panels relative to each other with the coupling parts partially engaged." (Alloc Initial Mem. 12.)

5 "When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation." Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 980 (Fed. Cir. 1999).
Unilin maintains that it did not state that it was necessary to urge the panels together to avoid visible gaps. (Unilin Opp'n 4.) Rather, Unilin stated that it was a necessary characteristic of floor panels to have the upper side edges of the panels meet without any visible gaps. (Id.) Unilin notes that the absence of visible gaps may be achieved without urging the panels together, comparing figure 7 of the '486 patent which shows no gap without any urging to figure 22 of the patent which shows urging. 6 (Id.) Additionally, Unilin states that claims 19 through 21, which depend on claim 1, add the limitation of urging the panels together, and claim 23 adds the limitation of the assembly and disassembly by alternate procedures involving lateral sliding of the panels together or rotating the panels relative to each other with the coupling parts partially engaged. (Id. at 5.)

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6 Figures 7 and 22 of the '486 patent are included at pages 65 and 67 of this decision.

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Unilin also states that its reference to a highly desirable characteristic of the floor panels is not a clear and unmistakable statement of disavowal. (Id. at 4.) Furthermore, Unilin states that its explanation of a possible advantage of the composite wood product core which "may" yield is not a clear disavowal of claim scope. (Id. at 5.)

Tracing the relevant prosecution history discloses that the patent examiner initially disallowed application claims 1 through 6, 9 through 11, 12, 14, 16 through 19, 23 and 24 as being anticipated by British Patent # 1 430 423 ("British patent"), which disclosed a floor covering panel consisting of adjacent rectangular/square panels each having opposite longitudinal sides that are provided with coupling parts that consist of a tongue and a groove and integrated locking parts. (Jt. App. Ex. C 210.) Application claims 7, 8, 15, and 22 were rejected for obviousness based on the British patent. (Id. at 211.)

In response, the applicants cancelled application claims 1 through 28 and submitted new application claims 29 through 94. (Id. at 216.) In the "remarks" section of the document, the applicant responded to the examiner's inquiries regarding the meaning of HDF (high density fiberboard) and MDF (medium density fiberboard), indicating that both were made up of the same materials -- a composite of finely ground up wood particles and resin that have been compressed and cured to result in a rigid, structural panel material described in the application. (Id. at 216.) The HDF had been compressed to a higher density than the MDF, to produce a harder and more rigid panel. (Id. at 217.)

The applicants argued that all of the new application claims were fully distinguishable from the British patent. (Id.) The applicants noted that the British patent disclosed a panel joint wherein the panel elements were made of plastic material and wherein the mutual line of intersection of the channel end groove extended vertically or perpendicularly with respect to the common plane including the panels. (Id.) The applicants stated, citing claim 29 as an example, 7 "that a perpendicular relationship was not desirable because it require[d] the panels and the coupling parts to be manufactured with extreme precision to ensure that the surfaces of the laminated panels will meet each other at contiguous upper side edges without any visible gap, a necessary characteristic of flooring panels." (Id. at 217-18.)

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7 Application claim 29 is claim 1 of the '486 patent. (Alloc Resp. Mem. 5.)

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The applicants explained that because the panels of the claimed invention were made of a wood product with a composite core "it is highly desirable to remove the effects of minor variations or tolerances in machining the panels from adversely affecting the appearance of the panels when joined together." (Id. at 218) (emphasis added.) Accordingly, explained the applicants, "the contact surfaces meet each other along a line or plane shown at L in the drawings which is inclined relative to the underside of the panels so that the contact surfaces tend to urge the panels together at their upper edges despite minor dimensional differences between the coupling parts of that panels that may arise during manufacturing process or that may result from atmospheric conditions that exist at the time the panels are assembled." (Id.)
The applicants further stated that the remaining claims were fully patentable, explaining that, while the composite wood product core was relatively rigid when inspected by the causal observer, during coupling of floor panels, "the tongue or the lip may yield slightly when they are coupled together." (Id.) The applicant stated that "this slight yielding, typically of the lower lip, enables the panels to be readily assembled and disassembled by alternate procedures involving lateral sliding of the panels together or rotating the panels relative to each other with the coupling parts partially engaged." (Id.)

Having carefully considered the portions of the prosecution history upon which Alloc relies, this Court concludes that such history does not limit Unilin's invention as Alloc asserts. In the first instance, Unilin was indicating that its invention was distinguishable from the British prior art because unlike the British invention, perpendicular joinder was not desirable, because the panels meet at an inclined underside which tended to urge the panels together to achieve the contiguous upper surface. Unilin's statement is not tantamount to a "manifest exclusion or restriction" that the panels must tend to urge the panels together at their upper edges. Similarly, Unilin's statement that its panels "may" yield during assembly allowing for assembly and disassembly by alternate procedures involving lateral sliding of the panels together or rotating the panels relative to each other with the coupling parts partially engaged is insufficient to constitute a clear restriction on the claim scope. Unilin did not limit claims 1 and 65 in the manner suggest by Alloc. See NTP, Inc., v. Research in Motion, Ltd., 418 F.3d 1282, 1308-09 (Fed. Cir. 2005).

The Court's conclusion is supported by the doctrine of claim differentiation which "creates a presumption that each claim in a patent has a different scope." Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 423 F.3d 1343, 1352 (Fed. Cir. 2005)(internal quotation marks omitted). The doctrine provides a limited tool for claim construction, giving force to the presumption only as long as the resulting construction does not conflict with a clear meaning provided by the specification. See Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380-81 (Fed. Cir. 2006). The claim differentiation "tool" works best in the relationship between independent and dependent claims. Id. at 1380.

Under the claim differentiation doctrine, when dependent claims are limited to a particular meaning or scope, the independent claim is presumed to have a broader meaning and scope. Free Motion, 423 F.3d at 1351. Stated somewhat differently, under such doctrine, where a limitation sought to be read into an independent claim already appears in a dependent claim, there is a presumption that the limitation in question is not in the independent claim. Liebel-Flarsheim Co. v. Medrad, 358 F.3d 898, 910 (Fed. Cir. 2004).

Claims 19 through 21 (which depend on claim 1) add the limitation of urging the panels together. Furthermore, claim 23 states: "A floor covering panel according to claim 1, wherein the coupling parts are configured such that two identical ones of said floor panel can be selectively coupled either by laterally sliding and snapping the cooperative coupling parts together or by turning one panel relative to the other with their cooperative coupling parts partially engaged, whereby additional ones of said floor panel can be sequentially coupled to previously coupled ones of said floor panel by laterally sliding each additional panel into a previously coupled panel, or by relative turning motions of an additional panel relative to a coupled panel." Alloc has not offered an explanation for why the limitations found in the dependent claims, but not in the corresponding independent claim, should be read into the independent claim.

In summary, the Court determines that "locking element" means "a portion of a coupling part having the structure as recited in the claim that allows for engagement and fastening."
The term "locking element" appears in Claim 1 of the RE '439 patent, which is representative of the claims with that term, as follows:

A system for providing a joint between adjacent building panels, comprising: each of said building panels including a first edge and a second edge such that the first edge of each of said building panels forms a first mechanical connection with the second end of an adjacent one of the building panels locking the first and second edges of the building panels to each other in a first direction at right angles to a principal plane of the panels, and a locking device arranged on a rear side of the building panels forming a second mechanical connection locking the building panels to each other in a second direction parallel to the principal plane and at right angles to the first and second edges, said locking device fitting within a locking groove extending parallel to and spaced apart from the first edge of said building panels, and which locking groove is open at the rear side of the building panels, the locking device comprising a strip integrated with the second edge of each of said building panels, said strip extending throughout substantially an entire length of the second edge and being provided with a locking element projecting from the strip, such that when two adjacent building panels are joined together, the strip projects from the rear side of the second edge of the panels with its locking element received in the locking groove of an adjacent building panel, the building panels, when joined together, can occupy a relative position in said second direction where a play exists between the locking groove and a locking surface on the locking element that is facing the first and second edges and is operative in said second mechanical connection, the first and the second mechanical connections both allow mutual displacement of the building panels in a direction of the first and second edges, and the second mechanical connection enables the locking element to leave the locking groove if the respective building panel is turned about its first edge angularly away from the strip.

('439 patent, 10:35-67;11:1-7.) (Emphasis added).

Pergo's proposed construction includes a requirement that the projection be "up at right angles." (Unilin's Open. Br. 23-24.) That proposed requirement is drawn from the snippets of the specification, and its discussion of the figures and the preferred embodiments. The requirement is not central to the claimed invention and is, therefore, rejected. Furthermore, as demonstrated by the representative claim, the projection is well-described in the claim itself.

The Plaintiffs' proposed construction allows for the projection to be defined in the claim, but it is missing "play." Therefore, the Court construes the term "locking element" as "a projection at the edge of the panel as recited in the claim that engages a locking groove on another panel such that a play exists between the locking element and the locking groove."
following longitudinal strand of the netting arrangement wherein the longitudinal strands of the netting arrangement are not separated from one another by a row of regular loops."

"Intersection" or "intersecting" is not a term that is subject to construction here: "Both Plaintiffs and Defendants have agreed that the term 'intersecting' should be defined as having, as two geometrical loci, one or more points in common: intersecting strands." (Defendants' Opening Claim Construction at 21.) As noted above, plaintiffs' proposed construction of "locking engagement" is the mere intersection of the lateral and longitudinal strands - the strands of the netting arrangement having one or more points in common. This definition does not suggest that the intersection of strands is fixed in making the netting arrangement. Claim 1 speaks of the longitudinal and lateral strands of the netting arrangement "each intersecting in locking engagement"; therefore, "locking engagement" is the "how" the strands are meant to intersect, and not the intersection itself. As plaintiffs assert: "All we say is locking engagement means the intersection of longitudinal and lateral structures to form a netting arrangement. They have to be locked at the corners in order to be a net by definition." (Markman Trans. at 43. (emphasis added)) Plaintiffs' proposed construction does not define or even reference that the intersection of the netting arrangement strands is fixed or locked in any manner. Consequently, plaintiffs' construction is rejected.

Nevertheless, "locking engagement" has a plain and ordinary meaning within this patent, i.e., at the intersection of the lateral and longitudinal strands, the strands are fixed so as to prevent the strands from shifting. Relying on a "plain and ordinary meaning" may be inadequate when a term has more than one "ordinary" meaning but in the present case the term is not ambiguous nor have plaintiffs restricted the term in the specifications. See Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1327 (Fed. Cir. 2002) (requiring "words or expressions of manifest exclusion or restriction" before broad terms in a claim will be read narrowly in light of a narrow specification").

The term "locking engagement" was defined for the first time in the prosecution history and according to defendants, "[i]n order to more clearly distinguish Applicant's claimed invention over Henricus and Lombardi." (Defendants' Exh. B 148.) Plaintiffs amended what was then claim 15 "to specify that the longitudinal and lateral strands of the netting arrangement each intersect in locking engagement with one another to form a grid-like pattern comprising a plurality of four-sided shapes." Id.

Plaintiff further stated in the prosecution history:

As it is apparent from Figs. 1 and 2 of the present application, the longitudinal strands of 5 and the lateral strands of 7 each intersect with one another to form a grid-like pattern comprising a plurality of four-sided shapes. Each loop 9 of the lateral strands 7 is interlaced with an adjacent preceding loop and an adjacent following loop to thereby provide a locking engagement between the longitudinal and lateral strands at their point of intersection, the longitudinal stands 5 being formed by the interlaced aligned loops 9 . . .

(Defendants' Exh. B 148-149. (emphasis added))

Citing this amendment, defendants contend that their proposed construction of the term "locking engagement" is what plaintiffs explicitly defined in their amendment to claim 15, which became independent Claim 1: an interlacing of an adjacent preceding loop and an adjacent following loop of the longitudinal and lateral strands at their intersection. But the term "interlacing" is a means of creating a locking engagement but not necessarily the only means of creating a locking engagement and the first and second preferred embodiments do not demonstrate an interlacing of an adjacent preceding loop and an adjacent following loop

Defendants also contend that plaintiffs affirmatively stated what the term "locking engagement" did not include - rows of regular loops separating the "locking engagements" of the longitudinal strands. Defendants point to the prosecution history where plaintiffs distinguished their invention over Lombardi.

In Lombardi, each loop of special yarn [the netting arrangement] extending in the longitudinal direction does not intersect in locking engagement with each special yarn extending in the lateral direction to form a grid-like pattern. This is also apparent from Fig. 6 of Lombardi, where the aligned long loops of special yarn are each separated from one another by a row of regular loops [the stockinett member]. Accordingly, there is no teaching or suggestion whatsoever in Lombardi in respect of providing a knitted netting arrangement comprising a first plurality of spaced strands extending in the longitudinal direction and a second plurality of spaced strands extending in the lateral direction, wherein the longitudinal and lateral
strands each intersect in locking engagement with one another to form a grid-like pattern, as in Applicant's claimed invention.

(Defendants' Exh. at B 151. (underlining in original; italic added))

Once again, defendants are attempting to read a feature of the third preferred embodiment into the claim as a limitation while ignoring the first and second preferred embodiments.

Based on the unambiguous meaning of the term, the Court construes "locking engagement" as "fixed at each intersection."

6. Locking Groove

The next term for interpretation is "locking groove." The term appears in claims 1 through 3, 5, 10, 11, 12, 14, 19, 20, 23, 24, 27, 28, 31, 32, 35, 36, 39, and 40 of the '267 patent; in claims 2, 4, 6, and 8 of the '907 patent; in claims 1, 13, 14, 26, 27, 39, 40, 41, 49, and 50 of the '410 patent; in claims 1, 3, 4, 7 through 10, 12, 13, 16, 17, 21 through 23, and in claim 28 of the '579 patent; and, in claims 1, 16, 21, 22, 33, and 34 of the RE '439 patent.

The Plaintiffs maintain that "locking groove" means a channel or depression for fastening, contending that the Court should not read a "vertical" or a "90 degree" limitation into the claims. They state that the Court should rely on the meaning of "lock," which means fasten or hold fast, and the generally understood meaning of "groove." (Pls.' Open. Br. 34-35.) Pergo maintains that "locking groove" should be construed as "an open or recessed portion on the underside of a panel spaced away from the joint edge and configured to receive the locking element, including a surface closest to the joint edge making a right angle with the underside of the groove panel, and configured so that a play exists between the locking groove and the locking element." (Unilin's Open. Br. 25-26.)

Pergo's proposed definition of "locking groove" reads limitations into the claim term that are not supported by the specification. There is no particular panel position inherent in the term. An ordinary meaning of groove is "channel." Webster's II New Riverside University Dictionary 550. "Groove" is also defined as "a long, narrow channel on a surface." McGraw-Hill Dictionary of Scientific and Technical Terms, 879. The Court construes "locking groove" as "a channel for fastening" which is consistent with the ordinary meaning of the terms and the specification.

The final component of Claim 1 disputed by the parties is the claim language:

said rotatable joint comprising a locking mechanism cooperating with the central region for permitting selective rotation about said pivot axis and for maintaining a selected orientation of said handle portion relative to said central region during a cutting operation of the miter saw.

('976 Patent, Col. 4, ll. 64-67; Col. 5, ll. 1-2.) 7 The core of this dispute is the meaning of "permitting selective rotation" and "maintaining a selected orientation." One World proposes the simple constructions of "allowing the handle to be rotated to a position around the pivot axis" and "keeping the handle in a position relative to the central region," respectively. Rexon would construe the claim as requiring "a lock that, when unlocked, permits the user to selectively vary the rotational position of a portion of the handle, and, when locked, maintains or fixes, the handle portion at a selected position."

7 Rexon argues that the claim's reference to "said handle portion" is indefinite because it is not clear if that term refers to the entire handle, the D-shaped portion of the handle or the grip portion of the handle. One World asks me to construe "said handle portion" as referring to the handle in its entirety. That construction is consistent with the rest of the language of the
claim, and particularly, the language of the preceding phrase, which claims selective "handle" rotation. I do not find the term "said handle portion" to be indefinite, though I may reconsider this issue at a later stage.

The plain language of the claim calls not only for rotation of the handle but the ability of the handle to be maintained at a selected position once rotated. The sole disclosure of the locking mechanism in the specification states that "to facilitate rotation of [the] handle 66, a detente button 76 is provided which when depressed by the user to enable the handle to be rotated. When the detente button 76 is released, a conventional spring mechanism locks the handle in position." ('976 Patent, Col. 4, ll. 24-28.) During patent prosecution, the inventor stressed that this limitation allows the orientation of the handle to be fixed at any position selected by the user. The inventor also relied on the limitation to distinguish prior art.

I agree with Rexon that the claim requires a locking mechanism that permits the user to rotate the handle and fix it at a particular ("selected") position. One Word's proposed construction of the phrase "for maintaining a selected orientation" appears to loosen this requirement. Nonetheless, the specificity of Rexon's proposed construction arguably restricts the patent to only the preferred embodiment found in the specification. Therefore, I adopt a construction incorporating language from both parties' proposed definitions: "a lock that allows the handle to be rotated to a position around the pivot axis and maintains, or fixes, the handle portion at a selected position relative to the central region during cutting operation of the miter saw."

Rexon also insists that the lock be defined as part of the structure of the rotatable joint. This limitation is supported by the plain language of the claim. (See '976 Patent, Col. 4, ll. 64) ("said rotatable joint comprising a locking mechanism"). However, the fact that the lock is part of the rotatable joint does require that the rotatable joint constitute a separate component. A rotatable joint that is a place where two elements of the saw meet is as capable of comprising a locking mechanism as a rotatable joint that is a separate structure.

2. Claim 1, Element [b][iii]: a locking mechanism for maintaining rotation of said shaft of said spindle fixed in said cavity relative to said housing.

The dispute concerning this claim term is whether the claim language is drafted in means-plus-function form. The court has considered the claim language and notes that the failure to use the word "means" results in a presumption that the claim element is not drafted according to § 112 P 6. The court has also determined, given the claim language, that the element recites sufficient structure and that the defendant has failed to overcome the presumption that results from the failure to use the word "means." Therefore, the patentee is entitled to the full breadth of the definition of the term "locking mechanism."

The court is also not persuaded that the patentee's statements to the examiner regarding the Kerry prior art reference create an estoppel. The defendants argue that the patentee disclaimed the use of a squared off side as a locking mechanism for maintaining the rotation of the shaft fixed in the cavity relative to the housing. In response to a rejection, the patentee stated that Kerry provides a squared passage that prevents the rotational movement of the stem when a squared portion of the stem is received by the squared passage, and, as a consequence Kerry did not disclose or suggest "a locking mechanism for maintaining rotation of said shaft of said spindle fixed in said cavity relative to said housing." The patentee's principal argument against Kerry, however, was that Kerry did not include an electronic device. The prior art was distinguishable on this ground; therefore, the court cannot say that the patentee disclaimed the use of a squared off side in exchange for patentability, as the defendants contend. The parties have not urged the court to construe this term other as relates to the issues whether it is drafted in means plus function format and whether the statements regarding Kerry create an estoppel.
SRAM contends that I should construe "lockout mechanism" according to its ordinary meaning; that is, meaning "a mechanical device that locks and unlocks." Fox argues that Claim 16 itself defines the phrase, and that I should construe the phrase as including all the limitations listed in Claim 16. Fox's argument is circular: the term is used to define the limitation that defines the invention; see Allen Engineering Corp. v. Bartell Indus., 299 F.3d 1336, 1344 (Fed. Cir. 2002). Fox would have the limitation define the term. The plain meaning of the phrase makes sense in the context of the overall patent and is consistent with both the specification for the '049 Patent and the prosecution history. Fox provides no reason to deviate from that meaning. Additionally, the term "lockout mechanism" is used repeatedly in other claims of the '049 Patent, including claims that precede Claim 16. Terms used in different claims should be construed consistently unless there is a clear intention otherwise. Fin Control Sys. Pty., Ltd. v. OAM, Inc., 265 F.3d 1311, 1318 (Fed. Cir. 2001). Construing the term as Fox would have it would render earlier claims dependent on Claim 16, which is not permitted, 35 U.S.C. § 112, P 4. There is no indication that SRAM intended "lockout mechanism" to have one meaning for Claim 16 and another for the other claims of the patent. "Lockout mechanism" is defined as "a mechanical device that locks and unlocks."

"Lockout mechanism" is defined as "a mechanical device that locks and unlocks."
"Member" is defined as "a distinct part of a whole." Webster's II New Riverside University Dictionary, 740 (1984). Another definition of "member" is an element that belongs to a set. McGraw-Hill Dictionary of Scientific and Technical Terms, 1236 (5th ed. 1994). "Element" is defined as component. Id. at 668. "Member" is also defined as "any of the individual entities belonging to a set." Oxford English Dictionary, http://dictionary.oed.com/(last visited July 1, 2009). Furthermore, "locking" means "fastening." Webster's II New Riverside University Dictionary, 701. Having considered the specification and the ordinary definitions of the terms "locking" and "member," as well as the inclusion of play, this Court defines "locking member" as a "component of the fastening set that allows play." The Court also notes that the ordinary definitions of "first" and "second," respectively, are corresponding in order to the number one, id. at 481, and coming next after the first in order. Id. at 1054. And, the Court adopts those general definitions of the terms as modifying the term "locking element."

With respect to the means-plus-function contention Pergo raises, the Court notes that Claim 1 of the '907 patent claims:

A method of laying and mechanically joining floor panels in parallel rows, wherein relative positions of the panels during the method can be defined as including first and second mutual positions, a first mutual position in which (i) the two panels are held in an angled position relative to each other and (ii) upper portions of adjacent edges of the two panels are in mutual contact, and a second mutual position in which the two panels are (i) located in a common plane, (ii) mechanically locked to each other in a first direction that is at right angles to the common plane, (iii) mechanically locked to each other in a second direction, that is at right angles to said first direction and to the adjacent joint edges, as a result of a first locking member disposed at one of the adjacent edges being connected to a second locking member disposed at the other one of the adjacent edges, and (iv) being displaceable in relation to each other in the direction of the adjacent joint edges, wherein said method comprises the steps of:

(a) bringing a new one of the panels into an intermediary position where (i) a previously laid first one of the panels is located in a first row, (ii) a second one of the panels is located in a second row and is in said first mutual position in relation to the first panel, and (iii) the new panel is located in the second row and is in said second mutual position in relation to the second panel and is in a position relative to the first panel such that a mutual distance is present between the upper portions of the adjacent joint edges of the new panel and the first panel;

(b) while maintaining said second mutual position between the new panel and the second panel, displacing the new panel relative to the second panel into said first mutual position in relation to the first panel; and

(c) angling the new panel and the second panel together into said second mutual position in relation to the first panel.

('907 patent, 10:35-67; 11:1-3.) (Emphasis added).

The issue of whether claim 1 of the '907 patent and claim 39 of the '267 patent are means-plus-function claim elements was discussed in Alloc, 342 F.3d at 1372-73. Citing O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1583 (Fed. Cir. 1997), the court noted that, although typically considered in light of apparatus claims, § 112 P 6 is also applicable to the steps in a process claim. 342 F.3d at 1373. 16 The court declined to resolve the issue because the outcome of the appeal did not depend on whether or not the claims were interpreted under 35 U.S.C. § 112 P 6, because of the court's holding that the critical factor of play applied to claims of "either flavor." Id. at 1373.

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16 Alloc suggests that because the '907 and '267 patents are method patents, analysis would be more properly conducted under a "step-plus-function" framework of O.I. Corp., and its progeny. See Donald S. Chisum, 5A Chisum on Patents, § 18.03[5][e] n.1657 (2007). The concepts of "step-plus-function" and "means-plus-function" are closely related. Seal-Flex Inc. v. Athletic Track and Court Const., 172 F.3d 836, 848 (Fed. Cir. 1999) (Radar, J., concurring) (noting that although they require distinct analyses, the concepts are similar and that 35 U.S.C. § 112 P 6 suggests a strong correlation between the two). See also, O.I. Corp., 115 F.3d at 1583. Judge Radar's extensive Seal-Flex concurrence suggests using means-plus-function case law to "give guidance for determining whether a claim element is in step-plus-function form so as to invoke the statute's claim interpretation requirements." Seal-Flex, 172 F.3d at 848 (Radar, J., concurring).
Notwithstanding the Alloc court's position, the parties did not undertake a step-plus-function analysis. Moreover, at the April 3, 2009, Markman hearing, the parties were unified in their position that step-plus-function analysis has no relevance to the method patents at issue. Given the Alloc court's statements, the parties' position is somewhat puzzling. However, based on their position, the Court has not engaged in a "step-plus-function" analysis of the '907 or the '267 patent claims. Nonetheless, the Court notes that, with the exception of claim 13 of the '907 patent, the subject claims use the phrase "comprises of the steps of." See Masco Corp. v. United States, 303 F.3d 1316, 1326-28 (Fed. Cir. 2002).

However, in this instance, the parties also request construction of the terms "locking member," "first locking member," and "second locking member." Therefore, the Court will address the issue.

A means-plus-function limitation requires a court "first to identify the claimed function and then to determine the structure in the specification that corresponds to that function." Frank's Casing Crew & Rental Tools, Inc. v. Weatherford Intl, Inc., 389 F.3d 1370, 1376-77 (Fed. Cir. 2004); accord Gemstar-TV Guide Intl, Inc. v. ITC, 383 F.3d 1352, 1362 (Fed. Cir. 2004) ("We consult the claim language to determine the function of the limitation. . . . We then consult the written description to determine the corresponding structure necessary to accomplish the stated function."). The use of the word "means" creates a presumption that § 112, P 6 applies, while the absence of the word "means" creates a presumption that it does not apply. Personalized Media Commc'n's, LLC v. ITC, 161 F.3d 696, 703-04 (Fed. Cir. 1998); accord Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004).

DePuy Spine, Inc., 469 F.3d at 1023, notes that "the presumption flowing from the absence of the term 'means' is a strong one that is not readily overcome." (quoting Lighting World, 382 F.3d at 1358). "The use of the term 'means' is 'central to the analysis,' . . . and has come to be closely associated with means-plus-function claiming." Lighting World, 382 F.3d at 1358 (citations omitted). The presumptions can be overcome "if the evidence intrinsic to the patent and any relevant extrinsic evidence so warrant." Personalized Media, 161 F.3d at 704.

In the Pervan specification, the phrases "first locking member" and "second locking member," are presumptively not subject to 57 Ore. 541, 112 P 6 because they do not contain the term "means." See MIT, 462 F.3d at 1353; CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1369 (Fed. Cir. 2002). The word "means" also does not appear in claims 1 through 3 of the '907 patent or in claim 39 of the '267 patent. Thus, there is a presumption that § 112 P 6 does not apply. However, a limitation lacking the term "means" may overcome the presumption against means-plus-function treatment if it is shown that 'the claim term fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'" Id. (quoting Watts v. XL Sys., Inc., 232 F.3d 877, 880 (Fed. Cir. 2000)).

Pergo argues that the function of the first and second locking members is to mechanically lock two panels in the second "horizontal direction," but there is no structure to carry out this function. (Unilin's Open. Br. 39.) It asserts that because the only structures described in the Pervan patents to lock the panels in the horizontal direction are the "locking element" and "locking groove," a person of ordinary skill in the art would understand the "first locking member" and "second locking member" to correspond with the structures of the locking groove and locking member disclosed in the specification. (Id.)

Although Pergo cites MIT, 462 F.3d at 1353, it neither analyzes nor explains how the decision supports its contention. The "generic terms 'mechanism,' 'means,' 'element' and 'device,' typically do not connote sufficiently definite structure." Id. at 1354.

In MIT, the appellate court upheld the district court's conclusion that the presumption had been overcome and that the phrase "colorant selection mechanism" in a patent for a color processing system for producing color originals should be
construed as a means-plus-function limitation. Id. The court noted that the patentee had used "mechanism" and "means" as synonyms, at least one dictionary equated "means" with "mechanism," and that the term "colorant selection" which modified "mechanism" was not defined in the specification and had no dictionary definition and there was no suggestion that it has a generally understood meaning in the art. Id. Therefore, the appeals court determined that "colorant selection mechanism" did not connote sufficient structure to a person of ordinary skill in the art to avoid 57 Ore. 541, 112 P 6. Id.

In this case, Pergo has not demonstrated that the specification uses "member" as a synonym of "means." Furthermore, no functional language follows the claim term "locking member." Pergo has not overcome the presumption that "locking member" is not a means-plus-function claim term and, therefore, the Court will construe the terms as independent structural terms.

Claim terms are normally used consistently throughout a patent. Phillips, 415 F.3d at 1315. Therefore, the Court will define "locking member," "first locking member," and "second locking member" respectively as "a component of the fastening set that allows play," and as "the component, corresponding in order to the number one, of the fastening set that allows play," and "the components, coming next after the first in order, of the fastening set that allows play."

3) Locking Step

Utica asserts that the claim language does not limit the locking force to any particular device or to a single device, as long as the lateral and downward locking force components impose a locking force on at least a portion of the third planar surface of the cutting tool. Utica argues that this construction is consistent with the statement in the specification that the invention may be practiced other than as specifically described. '857 Patent, Col 7, ll. 21-24. Contrarily, Federal Broach asserts that the locking force is generated by a single locking member that must act alone to secure the tool in the tool holder. The relevant language of Claim 1 reads:

 said method comprising the steps of positioning said two planar abutment surfaces … whereby a predetermined accurate work position is established; and

 locking said broach cutting tool member in said predetermined accurate work position, by imposing a locking force on said at least a portion of said third planar abutment surface of said broach cutting tool member, said locking force having a force component directed towards said two planar abutment surfaces of said broach cutting tool member and a force component directed downward from said top surface towards said intermediate surface of said broach tool holder to securely hold said broach cutting tool member in said broach tool holder; '857 Patent, Col. 7, ll. 57-58, 65-67; Col. 8, ll. 1-11.

The parties do not dispute that Claim 1 is an independent method claim. Although the parties neither briefed nor argued its applicability, § 112, P6 is instructive. 2 By associating the word "steps" with two functions-establishing a predetermined accurate work position and locking the tool in the tool holder-Claim 1 contains express step-plus-function language to describe the locking element. This language creates the presumption that § 112, P6 governs the Court's construction of the locking force element. Relume Corp. v. Dialight Corp., 63 F. Supp. 2d 788, 798 (E.D. Mich. 1999) (citing Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1318 (Fed. Cir. 1999)(holding that the use of "means for" or "step for" terminology typically invokes § 112, P6). The presumption that § 112, P6 applies is rebutted if the claim itself recites sufficient structures or materials to perform the stated function. Al-Site, 174 F.3d at 1318 (citing Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427-28 (Fed. Cir. 1997)). A claim recites sufficient structure when it elaborates the structure, material, or acts necessary to perform entirely the recited function. See Sage, 126 F.3d at 1427-28.

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2 35 U.S.C. § 112,P6 reads:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding
structure, material, or acts described in the specification and equivalents thereof.

When construing a step-plus-function limitation pursuant to § 112, P6, the Court first must identify the function explicitly recited in the claim. Asyst Tech., Inc. v. Empak, Inc., 268 F.3d 1364, 1369 (Fed. Cir. 2001)(citations omitted). Next, the Court must identify the "corresponding structure set forth in the written description that performs the particular function set forth in the claim." Id. The proper application of § 112, P6, mandates reading the claim element to embrace distinct and alternative structures described in the specifications that perform the claimed element. Ishida Co. v. Taylor, 221 F.3d 1310, 1316 (Fed. Cir. 2000)(citing Serrano v. Tellular Corp., 111 F.3d 1578, 1583 (Fed. Cir. 1997)). § 112, P6, does not, however, "permit incorporation of structure from the written description beyond that necessary to perform the claimed function." Asyst Tech., 268 F.3d at 1370 (quoting Micro Chem., Inc. v. Great Plains Chem. Co., 194 F.3d 1250, 1257-58 (Fed. Cir. 1999)). Structural features that do not actually perform the recited function do not constitute corresponding structure and thus do not serve as claim limitations. Id. (citing B. Braun Med., Inc. v. Abbot Labs., 124 F.3d 1419, 1424 (Fed. Cir. 1997). Additionally, once the corresponding structures is identified, its scope cannot be extended solely by the inventor's statement that unspecified structures may perform the same function. See Fonar Corp. v. General Electric Co., 107 F.3d 1543, 1551-52 (Fed. Cir. 1997).

Since Claim 1 does not recite definite structures that will generate the locking force, the presumption that § 112, P6, applies is unrebutted. Al-Site, 174 F.3d at 1318. Therefore, the Court will construe the claim to cover the corresponding structures described in the specifications and their equivalents. Id. As an initial matter, the Court finds that the function of the locking step in Claim 1, is to provide adequate force to securely or firmly retain the cutting tool in the tool holder in the predetermined accurate work position, as that term was defined earlier in this Opinion. '857 Patent, Col. 8, ll. 1-2, 10-12; Asyst Tech., 268 F.3d at 1369.

The Court next must identify the corresponding structures that retain the cutting tool in the tool holder in the predetermined accurate work position. Id. The specifications indicate that a "wedge lock arrangement" generates the locking force. See, e.g., '857 Patent, Col. 4, ll. 8-9; Col. 5, ll. 54-61. The wedge lock arrangement "includes a wedge member having a first tapered edge, a second tapered edge, a threaded collar having a cross pin, and a retaining screw." '857 Patent, Col. 5, ll. 54-58. The specifications also reference "an optional configuration of the wedge lock arrangement" which would have only one tapered edge instead of two, however this configuration, the inventor notes, while functional, would not be optimal. '857 Patent, Col. 6, ll. 25-29. "Only one retaining device is required to hold the cutting tool in place …. By reducing the number of parts necessary to secure the cutting tool to a single wedge lock arrangement, the time and effort required to change the tools is greatly reduced." '857 Patent, Col. 6, ll. 59-60, 63-66. The specifications go on to state that "one skilled in the art may appreciate the use of other wedge locking configurations to mount the cutting tool to the tool holder." '857 Patent, Col. 6, ll. 32-34. Finally, the specifications state that "many modifications and variations of the present invention are possible … Therefore, within the scope of the appended claims, the present invention may be practiced other than as specifically described." '857 Patent, Col. 7, ll. 21-24.

Although the specifications state that other wedge-like configurations may be used, no such configurations are specified. Per § 112, P6, the method described in Claim 1 is, thus, limited to a wedge-like device and its equivalents. Accordingly, the Court finds that the locking step described in Claim 1 is limited to a single wedge-like device, with two tapered edges, or with one tapered edge as is described in the specification's optional configuration, and its equivalents. '857 Patent, Col 6, ll.25-27. Moreover, the Court finds that the scope of the corresponding structure to perform Claim 1's stated functions cannot be extended solely by the inventor's statement that "many modifications and variations are possible," or that unspecified structures may perform the same function. '857 Patent, Col. 7, ll. 21-24; see Fonar, 107 F.3d at 1551-52.

C. The "Locking" Limitations

Utica lastly argues that the district court erred in construing the "locking" limitations in claims 1 and 3 as step-plus-function limitations and, consequently, in requiring the use of a single wedge-like device or its equivalent to secure the cutting tool in the tool holder. Federal Broach agrees that the "locking" limitations should not have been construed as step-plus-function
limitations but argues that the district court's construction of those limitations is correct nonetheless because the specification requires the use of a single retaining device to secure the cutting tool in the tool holder.

We first address the applicability of 35 U.S.C. § 112, P 6 to the "locking" limitations of claims 1 and 3. That statute governs the construction of combination claims drafted in means- or step-plus-function format and provides as follows:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, materials, or acts, described in the specification and equivalents thereof.

35 U.S.C. § 112, P 6 (2000). In the context of method claims, use of the term "step for" signals the patentee's intent to invoke § 112, P 6 and thus gives rise to the presumption that the "step for" limitations are in step-plus-function format. Masco Corp. v. United States, 303 F.3d 1316, 1326 (Fed. Cir. 2002). Without "step for" language, however, a method claim is subject to the strictures of § 112, P 6 only if it recites steps for performing a specified function but does not recite any act in support of that function. See O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1583 (Fed. Cir. 1997).

In the present case, we agree with both parties that the district court erred in interpreting the "locking" limitations under § 112, P 6. To begin with, those limitations use the phrase "step of"- rather than the phrase "step for"-and therefore do not invoke the presumption that they are in step-plus-function format. See Masco Corp., 303 F.3d at 1327. Furthermore, the "locking" limitations are not step-plus-function limitations because they do not contain steps plus functions without acts. Although claim 1 specifies that the "locking" step performs the function of securing the cutting tool in the tool holder, it also explains how the tool is secured in the holder-by imposing a locking force on the tool's third planar abutment surface. The "locking" limitation of claim 1 thus contains an act in support of its specified function and, consequently, does not implicate § 112, P 6. The "locking" limitation of claim 3 is even farther removed from being in step-plus-function format: it does not expressly specify the function that the "locking" step is to perform, and it recites the act of imposing a locking force on a portion of the tool's third planar surface. We therefore conclude that the "locking" limitations of claims 1 and 3 are not step-plus-function limitations and that, as such, they should not be construed to cover only corresponding acts described in the specification and equivalents thereof.

Having determined that the "locking" limitations are not subject to the constraints imposed by § 112, P 6, we next consider whether they nonetheless require, as Federal Broach urges, the use of a single retaining device to secure the cutting tool in the tool holder. Although the claim language does not identify any particular structure for imposing the locking force, the specification expresses the patentee's clear intent to limit the claims to the use of a single retaining device for securing the cutting tool in the tool holder. The "Summary of the Invention" portion of the specification refers to "a securing device" in the singular, '857 patent, col. 2, l. 26, and further provides that one object of the invention is to provide a cutting tool retention device "that requires only a single retaining device in an effort to reduce the time and effort required to change tools," id., col. 3, ll. 4-7. More importantly, the specification distinguishes over the prior art-which required a plurality of socket head screws in addition to a radial positioning device-on the basis that the invention claimed in the '857 patent requires only one retaining device to hold the cutting tool in place. Id., col. 6, ll. 59-62. It goes on to explain that, by reducing the number of parts necessary to secure the cutting tool to a single device, the claimed invention greatly reduces the time and effort required to change tools. Id., col. 6, ll. 62-65. The specification makes clear, however, that the "single retaining device" need not consist of only a single component. On the contrary, it describes the preferred embodiment's "wedge lock arrangement"-which includes a wedge member, a threaded collar, a cross pin, and a retaining screw-as "one retaining device." Id., col. 5, l. 54 to col. 6, l. 24; id., col. 6, ll. 59-65. We therefore conclude that, consistent with the specification, the "locking" steps of claims 1 and 3 require the use of a single retaining arrangement to secure the cutting tool in the tool holder.

We do not agree with the district court, however, that the single retaining arrangement must include a wedge-like device. As noted above, claims 1 and 3 do not identify any particular structure for securing the cutting tool in the tool holder. And although the specification repeatedly discloses the use of a wedge for performing that function, e.g., id., col. 4, l. 59; id., col. 5, l. 54 to col. 6, l. 35; id., col. 6, l. 64, it does so in the context of describing two embodiments and even acknowledges that a wedge is only one example of a securing device, see id., col. 2, ll. 26-27 (referring to "a securing device, such as a wedge"). Moreover, the dependent claims contemplate the use of a structure other than a wedge-like device. Claim 5, which depends from claim 3, recites the use of a threaded member to impose a locking force between the cutting tool and the tool holder. Claim 7, which also depends from claim 3, separately recites the use of a wedging member to perform that function.
At the very least then, claim 3 should be construed to encompass the structures recited in the claims that depend from it, and we see no reason not to interpret claim 1 in a similar manner. We therefore conclude that the "locking" steps of claims 1 and 3 do not require the use of a wedge-like device.

5. Locking Surface

The next term for interpretation is "locking surface." The term appears in claim 49 of the '410 patent; in claims 1, 10, 21, 22, 27, and 28 of the '579 patent; and in claim 1 of the RE '439 patent. Initially, the Plaintiffs asserted that locking surface means "a surface for fastening." (Pls.' Open. Br. 34-35), stating that the Pervan specification is silent on whether the locking surfaces or the locking elements are at any particular angle, and that Pergo's argument is premised solely on figures in the patent. They asserted that it is improper to rely on the figures when any corroborating characterization is absent from the written specification.

Page nine of the joint comparison chart filed on February 17, 2009, provides the Plaintiffs' revised construction of "locking surface" as meaning "a surface that: 1) is directed or looking toward the first edge of the panel (i.e., the one that carries the strip), 2) that comes into contact with an internal surface of the locking groove[,] and 3) prevents substantial separation of the joined edges." While that construction was not argued in the Plaintiffs' briefs, the Defendants have not objected to it. Therefore, the Court has considered the Plaintiffs' revised construction.

Pergo maintains the term means "a vertical surface of the locking element that is closest to the joint surface and that can contact the opposing surface of the locking groove when the panels are pulled away from one another horizontally." (Unilin's Open. Br. 23-25.)

Pergo's definition is overly restrictive and reads restrictions into the term. The specification is silent on whether the locking surfaces or locking elements are at any particular angle. The specification section entitled "Technical Field," states that the invention is well-suited for use in the joining floor panels, but emphasizes that the invention is useful for joining other types of building panels, such as wall panels and roof slabs. If the panels were used in building a wall or a roof (depending on the slope of the roof), the directions of the panel would be different than when used to build a floor. The Plaintiffs' revised construction also reads restrictions into the term.

A dictionary definition of "surface" is "the exterior face of an object." Webster's II New Riverside University Dictionary 1165. Another definition of "surface" is "outer part." McGraw-Hill Dictionary of Scientific and Technical Terms, 1960. Considering these definitions in the context of the claims and specification, the Court construes "locking surface" as "an outer part for fastening."

S&N states that the district court's claim construction is incorrect, in that it departed from the magistrate judge's correct construction that the claim "does not preclude movement or manipulation after lodging." S&N points out that the magistrate judge rejected Ethicon's requested construction that no further movement or manipulation of the anchor is permitted by the claim. S&N also states that it is irrelevant whether further movement or manipulation of the anchor occurs within the bone, for that limitation is not included in the claim. Thus S&N argues that the district court erred in construing the claim as barring any movement or manipulation of the anchor by the surgeon after the anchor has been inserted in the bone.

We conclude that the magistrate judge correctly ruled that the term in claim 1 of "lodging the member within the hole by pressing the member with attached suture into the hole" does not bar the surgeon's tug and any ensuing small movement of the anchor after insertion. The claim construction was correct that "lodging" means that the anchor can not be withdrawn after it is pressed into the hole, and that "further movement . . . is permitted, but not required." This construction does not preclude the action whereby the surgeon tugs on the suture after insertion. Both sides agreed that any prudent surgeon would assure that an anchor is seated within the bone structure. In the S&N method the pull on the anchor tests whether it is
lodged, because the legs automatically spread into the cancellous layer of bone; the pull confirms that the legs have spread. There was evidence before the district court that both sides issue instructions that surgeons should perform such a pulling step.

The Ethicon anchor, according to Ethicon, is not lodged until after the surgeon pulls on the suture, Ethicon stating that it is the ensuing movement through the bone that spreads the legs, and that without this manipulation the Ethicon anchor is not "lodged within the hole" as set forth in claim 1. S&N disputes this view of the Ethicon method, and also argues that even if a pulling step were necessary to lodge the Ethicon anchor, the claims are infringed because all of the claim steps are performed, whether or not this additional pulling step is also performed.

Ethicon also argues that S&N is estopped from a claim construction covering a method that requires or employs manipulation or movement of the anchor after it is pressed into the hole, pointing to arguments made during prosecution of the 557 patent to overcome a reference to Freedland. Ethicon is partly correct, for estoppel arises, but not to the extent proposed by Ethicon. The Freedland reference shows a fastener inserted into a hole drilled into a broken bone at the fracture; the fastener serves not as a suture anchor, but as a device for holding the fracture together during healing. The Freedland fastener has arms that project into the cancellous bone tissue in the area of the fracture, but the arms of the fastener must be extended by manipulation. In the Freedland method the surgeon uses forceps to pull on a cord that extends through a tube, opening the Freedland fastener like an umbrella, thereby pinning itself inside the hole in the bone and stabilizing the bone against movement while the fracture heals.

During prosecution of the 557 patent the inventor, Dr. Hayhurst, argued that a difference between his invention and that of Freedland is that the 557 anchor is securely embedded simply upon pressing it into the hole where it resiles into the cancellous bone, and that no further manipulation of the anchor is necessary. At his deposition Dr. Hayhurst repeated this description of how his invention works. Ethicon states that the inventor thus disclaimed coverage of its anchor that requires manipulation to move it into place and open its legs. S&N responds that the Ethicon anchor does not require such manipulation, and that the surgeon's "pull" on both the 557 anchor and the Ethicon anchor after they are pushed into the hole is not a Freedland-type manipulation to open a closed device in a fracture, but a routine cautionary safeguard to assure that the anchor is in place in the bone. S&N states that the 557 inventor did not disclaim his own procedure which included this safeguard of pulling on the anchor, and that Dr. Hayhurst merely distinguished Freedland's elaborate manipulation that opens an umbrella-like fastener inside a fractured bone.

We agree with the magistrate judge that the 557 claims, correctly construed, neither exclude nor require a surgeon's tug to assure that the anchor is set within the cancellous bone, and do not preclude a small movement as a result of that tug. A claim interpretation that would exclude the reasonable practice of the method taught in the patent "is rarely the correct interpretation; such an interpretation requires highly persuasive evidentiary support." Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1550, 37 U.S.P.Q.2D (BNA) 1609, 1612 (Fed. Cir. 1996).

Ethicon is incorrect in its assertion that since a pulling step (sometimes called a "tensioning" step) is "necessary" to set the Ethicon anchor, the step of pulling on the anchor must be included in the 557 claims in order for the claims to be infringed. Our colleague in dissent has adopted Ethicon's argument, and would hold that since the step of tugging on the anchor is not stated in the 557 claims, the claims can not be infringed. However, claims are infringed when all of the steps thereof are performed, unless the invention itself is the elimination of additional steps. The 557 patent, its specification, prosecution history, and testimony in the summary judgment proceeding, make clear that the instruction to surgeons to tug on the anchor before using it is a matter of prudent surgical practice, not a limitation of claim 1.

Both parties point to claim 6 of the 557 patent, which includes the limitation that the anchor is not "manipulated":

6. A method of anchoring in bone a member and attached suture, comprising the steps of:

   providing a deformable member having a width dimension "D";

   attaching a suture to the member;

   forming a hole in a bone in a manner such that the hole has a diameter that is not greater than the width dimension "D";

   and
inserting the member into the hole with the member oriented such that the member lodges within the hole in the absence of any manipulation of the member other than inserting the member into the hole.

Ethicon states that claim 6 shows that S&N's invention excludes manipulation of any sort after insertion of the anchor, while S&N states that this claim describes a preferred embodiment, in accordance with the doctrine of claim differentiation. This doctrine reflects the presumption that separate claims are of different scope. See Irving Kayton, 1 Patent Practice (6th ed.) 3.1, 3.3 (1995):

Patent practitioners typically draft a series of claims approximating a spectrum of patent protection . . . . The first way in which a claim may be made narrower is by adding a limitation to it in the form of an additional element.

We discern no basis for reading claim 6 as countermanding the claim construction of the magistrate judge that claim 1 "[does not] preclude movement or manipulation after lodging."

We confirm the district court's claim construction, with the modification or clarification that claim 1 neither excludes nor requires the step of pulling on the suture after it is inserted. However, we also confirm the claim construction that the 557 claims do not cover a device whereby the suture must necessarily be manipulated and moved through the bone in order to open the anchor and spread the legs, for S&N is estopped by the prosecution history from covering a device that must be manipulated and opened in order to fix it in the bone. However, a device that resiles after insertion into the bone may be manipulated provided that "manipulation beyond pressing [is not] necessary in order to secure the member in the hole."

II

The signal that additional steps may be performed in carrying out a claimed method is the word "comprising." See Vivid Technologies, Inc. v. American Science & Engineering, Inc., 200 F.3d 795, 811, 53 U.S.P.Q.2D (BNA) 1289, 1301 (Fed. Cir. 1999) (the signal "comprising" is "generally understood to signify that the claims do not exclude the presence in the accused apparatus or method of factors in addition to those explicitly recited"); Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1271, 229 U.S.P.Q. (BNA) 805, 812 (Fed. Cir. 1986) (stating "the general proposition that an accused method does not avoid literally infringing a method claim having the transitional phrase 'which comprises' (or 'comprising') simply because it employs additional steps"). Our esteemed colleague in dissent criticizes use of the signal "comprising," calling it a "weasel word" to somehow avoid precision in claiming. This signal nonetheless appears in the vast majority of patent claims, for it implements the principle that claims are intended to provide a concise statement of the claimed invention as distinguished from what has gone before; a claim is not a handbook for practice of the invention. Dr. Hayhurst's testimony and instructions that any prudent surgeon would test the anchor to assure that it is lodged beneath the cortical layer was not included in any claim. Nor was it required to be claimed. It is neither a "shortcoming" nor a "weaseling" to use "comprising" to recognize that inventions may be practiced with steps in addition to those listed in the claims.

A claim is not defective when it states fewer than all of the steps that may be performed in practice of an invention. See, e.g., Moleculon Research Corp., 793 F.2d at 1271, 229 U.S.P.Q. (BNA) at 812 (method as practiced can include steps in addition to those stated in the claim). Infringement arises when all of the steps of a claimed method are performed, whether or not the infringer also performs additional steps. See, e.g., Vivid Technologies, 200 F.3d at 811, 53 U.S.P.Q.2D (BNA) at 1301 (inclusion of steps in addition to those stated in the claim does not avoid infringement); Stiftung v. Renishaw PLC, 945 F.2d 1173, 1178, 20 U.S.P.Q.2D (BNA) 1094, 1098 (Fed. Cir. 1991) (claim using "comprising" reads on devices which add additional elements). This court did not hold in Maxwell v. J. Baker, Inc., 86 F.3d 1098, 39 U.S.P.Q.2D (BNA) 1001 (Fed. Cir. 1996) that unless all disclosed procedures are included in the claim, the patentee has "dedicated to the public" not only the unclaimed procedures but the entire claimed process. Our colleague in dissent, finding the disputed fact that Ethicon's method "indisputably requires the 'tensioning' step," proposes that Maxwell requires that by not including the tensioning step in the claims, S&N dedicated to the public the public any procedure in which that step is included. However, Maxwell does not treat such a situation. The issue in Maxwell was whether equivalent subject matter that was disclosed in the specification but not claimed can be reached under the doctrine of equivalents. 2 There was no issue in Maxwell of literal infringement when every step of the claimed method is in fact practiced by the accused infringer. In Maxwell the accused equivalent subject matter was disclosed in the patent but was plainly outside the scope of the claims. Such a situation is not here presented.
2 This question is being considered by this court en banc, in Johnson & Johnston Associates Inc. v. R.E. Service Co., 238 F.3d 1347 (Fed. Cir. 2001) (Order directing supplemental briefing on questions of "Whether and under what circumstances a patentee can rely upon the doctrine of equivalents with respect to unclaimed subject matter disclosed in the specification.")

III

The 557 invention is directed to an anchor with resilient legs that open and resile after the anchor is pushed into the cancellous bone, lodging the anchor against the cortical layer. Although Ethicon states that the legs of its anchor do not work in this way, there was evidence before the district court supporting S&N's statement that the Ethicon legs "are made of a highly resilient alloy called 'Nitinol,' which will spring back to its relaxed position automatically after being compressed," and that "No action of the surgeon is required to open the arcs." Brief at 32-33.

S&N points out that Ethicon's own product literature and patent do not require a "tensioning" step to move the anchor after insertion, instead stating that the anchor has no tendency to move when inserted. Indeed, the district court agreed with S&N, and ruled: "In sum, it is undisputed that the arcs of the accused suture anchors substantially return to their relaxed state upon being pressed into cancellous bone and can not be removed." We can not reconcile this ruling with the district court's apparent conclusion that the surgeon's pull on the Ethicon anchor is necessary to spread the legs and lodge the anchor. Ethicon's position that its anchor is not "lodged" until after it has been moved and manipulated within the bone was disputed, and was material to the summary judgment. On the record before the district court this disputed material fact could not be resolved adversely to S&N.

MICHEL, Circuit Judge, dissenting.

I have a much different view of this case. Because none of the seven claims here even remotely suggests that one need apply "tension" to the suture in order to make the legs of the claimed anchor member dig into the cancellous bone tissue and because our precedents counsel against using the term "comprising" to include disclosed but unclaimed subject matter, the district court correctly concluded that, as a matter of law, the 557 patent does not cover Ethicon's accused method, which indisputably requires this "tensioning" step. Indeed, one of the asserted claims in this case expressly disclaims the need for "any manipulation of the [anchor] member other than inserting the member into the bone."

And indeed, the inventor himself agreed (whether he realized it or not) with this construction, testifying that his claimed method for making the anchor member ready for tissue attachment does not require any post-insertion step -- like applying tension to the suture -- after the surgeon had inserted the anchor member into the bone hole. The majority cannot reasonably minimize this "tensioning" step as extraneous; as indicated, by disclosing the step in the specification but by failing to include it in the claims, Smith & Nephew simply dedicated that step to the public. A member of the public (Ethicon) so used it. S&N cannot now recover what it had previously dedicated. I must dissent.

I.

In Maxwell v. J. Baker, Inc., we reiterated the well-established rule that subject matter disclosed but not claimed in a patent application is dedicated to the public.' 86 F.3d 1098, 1106-07 (Fed. Cir. 1996) (quoting Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1562-63 (Fed. Cir. 1991) and citing Miller v. Bridgeport Brass Co., 104 U.S. 350, 352, 26 L. Ed. 783 (1881)). This rule, we held, prohibited both a finding of literal infringement and of infringement under the doctrine of equivalents because, otherwise, an applicant could "present a broad disclosure in the specification of the application and file narrow claims," thereby "avoiding examination of broader claims that the applicant could have filed consistent with the specification." 86 F.3d at 1107 (citing Genentech, Inc. v. Wellcome Found. Ltd., 29 F.3d 1555, 1564 (Fed. Cir. 1994); International Visual Corp. v. Crown Metal Mfg. Co., 991 F.2d 768, 775 (Fed. Cir. 1993)). In addition, the rule comports with (among other principles) the statutory requirement of distinctly claiming the "subject matter which the applicant regards as
his invention." Id. (quoting 35 U.S.C. § 112).

Applying the dedication-to-the-public rule, we determined that because the patentee there had merely disclosed, but not claimed, an "alternative" for having a shoe's "fastening tabs . . . stitched into the lining seam of the shoes," the patentee had thereby deprived the Patent and Trademark Office from considering the patentability of that alternative. 86 F.3d at 1108. Further, we reasoned that a person of ordinary skill in the "shoe industry" would conclude that the failure to claim the disclosed "alternate shoe attachment systems" meant the patentee there had simply "dedicated the use of such systems to the public." Id. Accordingly, we held that no complaint for literal infringement or for infringement by equivalents could lie. Id.

So too does the rule apply here. Like Ethicon's accused method and device, the 557 patent's "Summary of the Invention" and its "Description of Preferred Embodiments" both disclose embodiments that need to have "tension applied to the [anchor member's] suture" in order to have the "ends of the [anchor member's] legs dig into the bone and resist removal of the anchor member from the hole" drilled into the bone. (See, e.g., J.A. 150, Col. 3, Lines 1-6; see also Col. 9, Lines 45-49 ("With the outer edges of the legs bearing upon the bone, any tension applied to the suture causes the sharp edges to dig into the bone to secure the anchor member within the hole.").) But nowhere do any of the claims themselves recite a step about "applying tension to the suture" in order to have the claimed anchor member's legs dig into the bone. (See generally J.A. 154, Col. 11 and Col. 12.)

To the contrary, one of the asserted claims expressly disclaims any step of applying tension to expand the anchor's legs. Claim 6 -- a claim directed at applying the claimed method when, as here, one needs to set the member inside the bone -- claims the step of "inserting the [anchor] member into the [bone] hole . . . such that the member lodges within the hole in the absence of any manipulation of the member other than inserting the member into the hole." (See J.A. 154, Col. 12, Lines 17-20) (emphasis added). In other words, one practicing the invention need only insert the anchor into the hole to have the anchor legs automatically "resile" and dig into the bone. (See id.)

The other three independent claims require more or less, stating (among other things) the steps for "attaching tissue to the suture so that the tissue is secured against the bone" (claim 1), "deforming the [anchor] member in a manner such that the member resiles [expands] against the portion of the bone" (claim 2) and "lodging the [anchor] member within the hole by pressing the member with attached suture into the hole" (claim 3). But "more" in this case cannot mean (under the claim differentiation doctrine) that the claims engulf an entirely new and different step, the step of applying "tension" to the suture, see Kraft Foods v. International Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000) ("Claim differentiation cannot broaden claims beyond their correct scope") (citations omitted); to find otherwise would mean we could read any disclosed but unclaimed alternative into a claim, in derogation of our "well-established rule" about public dedications. Worse, it would mean that (as more fully discussed below) a court could return to the applicant what the applicant had also expressly disclaimed, both during prosecution and even later in litigation. Courts should merely give effect to the words used in a claim, not re-write or even resurrect them.

The majority states that the 557 patent instructs "surgeons . . . to tug on the suture after the anchor is pressed into the bone, to assure that it is securely seated." But its opinion does not identify whether that instruction appears in the claims, the written description or any other portion of the specification. In any event, that instruction certainly does not appear in the language of the claims, the most critical portion of the patent. And when the language about tugging on or applying pressure to the suture expressly appears in the written description, it does so for the purpose of asserting that a "tug" will cause or help cause the anchor to lodge itself within the bone, i.e., that tug does more than simply "assure" that the anchor is lodged within the bone. (See, e.g., J.A. 150, Col. 3, Lines 4-6 ("Whenever tension is applied to the suture, the ends of the legs dig into the bone . . . .") (emphasis added); J.A. 153, Col. 9, Lines 54-60 ("As a result, tension in the suture (in conjunction with the intrinsic resilient force of the anchor member 80 that forces the leg edges 87 apart) tends to lodge the edges 87 of the anchor-member legs beneath the cortical layer 97, rendering the anchor member substantially irremovable from this hole 100.") (emphasis added).

As even the disclosed-but-unclaimed language would have it, then, S&N's device and process would indeed "require a surgeon's tug to assure that the anchor is set within the cancellous bone," contrary to my esteemed colleagues' interpretation. Simply put, nothing in the claims or specification suggests that a surgeon should tug on or apply tension to the suture solely to "assure" or "confirm" that the anchor has become lodged in the bone. But again, the claims say nothing of "tensioning" for any reason, leaving it to the resiliency of the legs alone to complete the necessary "lodging" step.
II.

The majority also indicates that I have misapplied the public-dedication analysis and misread Maxwell, though a review of that decision shows (contrary to my colleagues' assertion) that Maxwell, its predecessors and its progeny apply with equal force to situations involving infringement by equivalents and literal infringement. E.g., 86 F.3d at 1107 ("We have frequently applied this [public-dedication] rule to prohibit a finding of literal infringement when an accused infringer practices disclosed but unclaimed subject matter.") (citing Env'tl. Instruments, Inc. v. Sutron Corp., 877 F.2d 1561, 1564 (Fed. Cir. 1989)). Further, the majority uses the term "comprising" to mean that the 557 patent requires not only the steps of lodging the member anchor and attaching tissue to the suture, but also the unclaimed step of applying "tension" to the suture.

True, we have recognized that "comprising" generally signifies that the "claims do not exclude the presence in the accused apparatus or method of factors in addition to those explicitly recited." See Vivid Tech., Inc. v. Am. Sci. & Eng'g, Inc., 200 F.3d 795, 811 (Fed. Cir. 1999). But as Ethicon correctly asserts, we have also held that an applicant cannot use this open-ended term to recapture what he had otherwise given away. See, e.g., Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1380 (Fed. Cir. 1998) ("Neither may the term 'comprising' alter the scope of the merger element in the claim at issue here. 'Comprising' is not a weasel word with which to abrogate claim limitations."). Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1271 (Fed. Cir. 1986) (rejecting as "far too broad" the argument that "comprising" opened the claims to additional steps and additional limitations not contained in the accused method).

And in this case, the majority is using this "weasel word," see Spectrum International, 164 F.3d at 1380, to obliturate our "well-established rule," see Maxwell, supra, against giving effect to disclosed but unclaimed subject matter. Thus, the majority implies that applicants may now avoid the Maxwell bar by simply including in every claim the term "comprising," as if that term alone can magically shore up whatever shortcoming (intentional or not) the claim had before it became the subject of litigation. I believe that our jurisprudence and indeed the statutory requirement for "distinctly claiming" one's invention require more than this simple flick of the "comprising" switch.

III.

The majority, in my view, also cannot reasonably equate the 557 patent's "lodge" or "lodging" claim limitation with the "tensioning" needed to have Ethicon's accused device kick-out its legs into the bone. The specification indicates that these are separate steps, ones that follow each other. But again, only the "Summary of the Invention" and the "Description of Preferred Embodiments" reference an embodiment that recites the need to have "tension applied to the suture [to] cause[] the sharp edges [of the anchor member] to dig into the bone to secure the anchor member within the hole." (E.g., J.A. 153, Col. 9, Lines 46-49.)

As discussed above, the claims omit this step. Claims 1-3 state only that one must "lodge the [anchor] member in the hole by pressing the member with attached suture into the hole . . . ." (See J.A. 154, Col. 11, Lines 7-8, 15-16 and Col. 12, Lines 1-2.) Claim 2, moreover, recites the method by which the anchor member does dig into the bone: By "deforming the member in a manner such that the member resiles against the portion of the bone that defines the hole." (See J.A. 154, Col. 11, Lines 18-20) (emphasis added). Read in context, this claim can only mean what the specification repeatedly indicates will occur when the anchor member's "resilient material" (J.A. 152, Col. 8, Line 58) or "intrinsic resilience of the anchor member" (J.A. 153, Col. 9, Lines 21-22; J.A. 153, Col. 10, Lines 51-52) is allowed to "relax" and assume its natural shape: the "resilient" anchor automatically kicks out its legs or "resiles," causing the legs to dig into the bone and thereby allowing for the next step of the claimed method (the attaching of tissue to the suture so as to secure the tissue against the bone) to go forward. (See, e.g., J.A. 153, Col. 10, Lines 50-54.)

Claim 6, as noted earlier, does not help Plaintiff-Appellant S&N, not only because S&N cannot rely on a narrower claim to incorporate an entirely new "tensioning" step; but also because that claim, too, merely confirms that the patent failed to claim this step. The claim makes clear that the anchor member will become "lodged within the hole in the absence of any manipulation of the member other than inserting the member into the hole." (See J.A. 154, Col. 12, Lines 18-20.) And again, this can only mean that the anchor member will automatically lodge into the bone and become ready for the subsequent attatching of the tissue, without any intermediate step of applying tension to the suture. This is not an insignificant element of the claimed invention. As the specification itself states, this claimed albeit "simple mechanism for [automatically] anchoring the anchor member in bone . . . [provides] a means for reattaching tissue to the bone to promote healing." (See
The extrinsic evidence confirms this reading of the 557 patent. The inventor, Dr. Hayhurst, admitted at his deposition that one would not be practicing claims 1, 2, 3 or 6 of the 557 patent if one had to perform any "further manipulation of the anchor member other than merely pressing it into the hole in order to lodge it within the hole." (See J.A. 6443-44.) And at the Markman hearing, Dr. Hayhurst conceded that his "device" was "ready to have tissue attached to it," i.e., ready to have the last stage of the claimed method performed, "without first pulling back on the suture." (See J.A. 7438) (emphasis added).

Stated differently, the 557 patent avoids the need to have tension applied to the suture or anchor member in order to have the anchor's legs resile, dig into and thereby lodge themselves within the bone; the resilient nature of the legs themselves causes them to automatically kick-out and thereby lodge themselves within the bone once the surgeon has "pressed [them] into the hole." (See J.A. 6443-55; J.A. 7438.) By relying on a novel standard of "reasonable practice of the method taught in the patent" and by therefore assigning the claims a contrary construction, the majority has (among other things) added a step that Dr. Hayhurst himself eschewed.

IV.

Finally, no genuine issue of material fact exists about whether Ethicon's accused method infringes the correctly construed 557 patent. Courts should grant summary judgment, of course, when no genuine issue of material fact remains and the movant warrants judgment as a matter of law. Vehicular Tech. Corp. v. Titan Wheel Int'l Inc., 212 F.3d 1377, 1381 (Fed. Cir. 2000). The non-moving party, moreover, cannot defeat summary judgment simply by insisting that a genuine dispute exists or even by proffering some evidence; in any case, the non-moving party (provided that this party bears the ultimate burden of proof, as with S&N here) must produce evidence that a reasonable jury could find sufficient to prove, e.g., that the accused device contains all the limitations set forth in the patent claims. See Zodiac Pool Care, Inc. v. Hoffinger Indus., Inc., 206 F.3d 1408, 1414-15 (Fed. Cir. 2000) (affirming summary judgment on claim alleging literal infringement when no reasonable juror could find, based on the evidence presented, that the accused devices contained all the limitations set forth in the claimed invention); see also Vehicular Tech. Corp., 212 F.3d at 1382.

The record here establishes beyond reason that, unlike the claimed invention, the accused method does require the additional step of tensioning the suture in order to fix the anchor within the bone hole and to thereby make it "ready" for the attachment of tissue. S&N has not identified any evidence that could reasonably rebut the packaging instructions that Ethicon included with every anchor, instructions that direct surgeons to pull back on (i.e., apply "tension" to) the anchor in order to ready it for tissue attachment. (S&N's product instructions, mentioned by the majority, do not factor into either the claims construction or infringement analysis. We examine the former using primarily the intrinsic evidence -- the claims, the specification and, if in evidence, the prosecution history; and in the rare case we will resort to extrinsic evidence. We examine the latter by analyzing whether the accused device contains all the limitations claimed by the patent at issue.) Nor did S&N offer any evidence that could rebut the expert testing results showing that Ethicon's anchor would move outwardly from the bone hole absent a tensioning step.

Equally significant, S&N offered no evidence that could reasonably rebut the evidence showing that movement of an unsecured anchor would result in failed surgeries. The advertising materials that S&N did offer still do nothing to change this conclusion. For one thing, Ethicon itself did not draft these materials, so they do not even necessarily constitute a party-opponent admission, let alone a damaging admission. And these advertisements say nothing, one way or the other, about having to apply tension to Ethicon's suture. No reasonable juror would take those advertisements and somehow convert their silence into an admission that contradicts the express instructions that Ethicon itself drafted. Nor should we.

And last, I find inapplicable our rule that an accused device will infringe the claimed invention so long as that device contains all the limitations claimed in the patent, even if the device merely adds more steps or features. As discussed, the 557 patent emphasizes the importance of having resilient legs, since that resiliency enables the claimed invention to lodge itself within the bone as soon as the anchor enters the soft, cancellous layer. But as the evidence shows, the accused device does not have legs that automatically kick-out or resile and thereby lodge the anchor within the bone; so rather than merely adding a step or feature to the invention claimed by the 557 patent, the accused device simply does not contain that step or feature at all, i.e., it does not contain all the elements claimed by the patent. See, e.g., Vehicular Tech. Corp. v. Titan Wheel Int'l, Inc., 141 F.3d 1084, 1089 (Fed. Cir. 1998) (infringement exists only if all limitations of the claim appear, either
literally or by equivalents, in the accused product or process).

The majority, however, brushes aside any detailed examination of the evidence actually offered by the parties. Merely disputing a material fact, or even pointing to Ethicon's advertising materials, should not defeat summary judgment when no reasonable juror could examine that evidence and find in S&N's favor. Because of today's decision, I fear that we have inadvertently and improperly raised the bar for summary judgment in actions alleging patent infringement.

V.

To summarize, the specification (other than the claims themselves) does disclose the need to have "tension" applied to the claimed suture in order to make the claimed anchor member ready for the attachment of tissue to the bone. But nowhere do any of these claims actually recite this step, meaning the patentee has dedicated it to the public. Ethicon, therefore, could reasonably conclude as such and could lawfully use that step in its accused method.

The use of the term "comprising" should not change this reading of the patent. Our precedents have cautioned that while "comprising" is an open-ended term, it is not a tool for recapturing what the applicant had otherwise surrendered. In this case, as noted, S&N did just that, dedicating to the public the step of applying tension to the anchor member's suture. Nor should we allow a "weasel word" like "comprising" to nullify the public-dedication rule, well settled in our precedent.

Further, the limitation "lodged" or "lodging" as used in the various claims excludes the disclosed-but-unclaimed tensioning step. The specification repeatedly refers to the "resilient" nature of the claimed anchor's legs and the claims themselves indicate that these legs will "resile" or expand automatically simply because of their resiliency, i.e., no additional tensioning step is needed after all. The testimony by the inventor Dr. Hayhurst himself confirms that, indeed, a surgeon or other person practicing the 557 patent does not need to apply tension to the suture in order to make the anchor's legs dig into the bone.

Last, S&N has failed to identify any evidence that would lead a reasonable juror to conclude that Ethicon's accused method similarly or literally requires that its accused anchor also automatically kick-out the legs after entering the hole in the bone. Again, Ethicon produced the instructions it included with every package of anchors and these instructions directed surgeons to apply tension to the anchor's suture. In addition, Ethicon produced expert testing results showing that a surgeon needed to apply this tension in order to set the anchor before attaching the tissue; otherwise, the unrebutted evidence shows, unsuccessful surgeries could result and patients would not heal.

The only evidence that S&N did offer in rebuttal -- advertisements drafted by a third party -- could not lead a reasonable juror to reach a different outcome. Ethicon itself did not draft these advertisements and nothing in the advertisements even contradicts what Ethicon's instructions and expert testing results established beyond genuine dispute.

I respectfully dissent.

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5. "Long Enough to Provide Said Lateral Strength"

a. Claim Term:

"... a second enlarged interior diameter being larger than said first enlarged interior diameter and terminating said PVC pipe at said female end, said second enlarged interior diameter being ... (b) long enough to provide said lateral strength when connected to said similar adjacent PVC pipe ..."

b. Parties' Contentions

CertainTeed's proposed construction of "long enough to provide said lateral strength" is "the second enlarged interior diameter section must be long enough so that, when connected to a similar adjacent pipe, a pipe 2 inches in diameter has sufficient lateral strength so that a lateral force of 1,000 pounds must be exerted before the pipe will start leaking." Modern Products' proposed construction of "long enough to provide said lateral strength" is "the second enlarged interior diameter
section must be long enough so that, when connected to a similar adjacent pipe, the strength of the connected PVC pipe will resist forces exerted on the pipe in a direction perpendicular to the length of the pipe." In support of their proposed construction, CertainTeed and Modern Products rely on the arguments made in support of their construction of the term "lateral strength."

c. Court's Construction

The Court concludes that "long enough to provide said lateral strength" means "the second enlarged interior diameter section must be long enough so that, when connected to a similar adjacent pipe, the strength of the connected PVC pipe will resist forces exerted on the pipe in a direction perpendicular to the length of the pipe." The reasons for this construction are described in detail in the Court's discussion of the term "lateral strength." See supra pgs. 12-14.

3. On December 22, 2000, the court issued its construction of disputed claim terms as follows:

a. "Aluminum alloy sheet product." As understood by one of ordinary skill in the art, an aluminum product with a maximum thickness of 1/4 inches.


c. "Clad" and "cladding." Structures containing an outer layer that provides protection against corrosion. Claims without reference to "clad" or "cladding" apply to both clad and unclad products.

d. "Minimum" and "maximum." A level referring to guaranteeable property values established by repeated testing of many pieces of metal to establish consistent, uniform values.

e. "Long transverse yield strength." As understood by one of ordinary skill in the art, the stress, applied across the width of a product, that a product can sustain before yielding or breaking.

C. Longitudinal Axis

The Court construed "longitudinal axis" to mean "[a] fixed axis extending in the longitudinal direction of the retainer."

At the Markman hearing, plaintiff proposed construing "longitudinal axis" to mean "a center line that extends in the longitudinal direction of the retainer." (Def. Exhibit 537, at 3.) Defendant proposed construing "longitudinal axis" to mean "a fixed axis in a longitudinal direction across a top surface of an anchor pad." (Id.)

Because the Court construed the longitudinal axis to be fixed relative to the retainer (rather than the anchor pad), the Court declines to grant summary judgment to defendant on the "longitudinal axis" limitation. A reasonable jury could find that defendant's device has a "longitudinal axis" fixed relative to the retainer, even though the axis rotates freely with respect to the anchor pad.

B

Olympia also asserts the district court was incorrect when it construed the claim limitation "an elongate shank … defining a
longitudinal axis" to require a linear shank. Olympia argues against defining the claim element to require a straight tool shank and argues that "longitudinal axis" just means the line-curved, straight, or both- that is defined by the shank itself. We agree with the district court that the scope of the claims should be limited to cover pry bar shanks that are straight.

"Longitudinal" means "running lengthwise," Webster's, supra, at 1333, and "axis" is "a straight line about which a body or a 3-dimensional figure rotates or may be supposed to rotate," id. at 153. Other definitions of axis used in various technical fields also explicitly include a straight line. See id. In general math parlance, a coordinate system in three dimensions has an x, y, and z axis, which are straight lines that are perpendicular to each other and used as a reference system to define points in geometric space. See id.

Requiring "longitudinal axis" to mean the strict geometrical definition of an axis of rotation or axis of symmetry would read the embodiment disclosed in Figure 1 of the patent out of the claims. See '553, Figure 1 (disclosing a shank that does not have an axis of rotational symmetry). The "axis" in claim 19 does not include a requirement of rotational symmetry. An axis can simply be "a line actually drawn and used as the basis of measurements in an architectural or other working drawing" or "a main line of direction, motion, growth, or extension." Webster's, supra, at 153. These definitions incorporate the use of the word "line" and state that the line must be such that it can be used as a measurement reference or a direction. A line of reference is necessarily straight. In the specification, the axis is used to define various angles and distances, for example angle a and distances d and c in figure 1. The angle of the hook is measured in reference to the axis of the tool. Therefore, the ordinary meaning of the term "axis" as linear is supported by the specification.

Olympia argues that this meaning is contradicted by usage in the prior art, which it suggests teach axes that are not straight. The references relied on by Olympia actually teach the contrary, and show axes drawn as straight reference lines in the patent figures. See U.S. Patent No. 5,577,711, Fig. 1 ("the '711 patent" or "Shine"); U.S. Patent No. 4,844,416, Figs. 1-2 ("the '416 patent" or "Hand"). In fact, the Shine reference uses the "longitudinal axis" in measuring the length of the body of the tool, a linear dimension. '711, col. 3, ll. 5-7. The other reference that Olympia claims discloses a curved axis also shows a straight line. See '416, Fig. 1. The Hand reference actually discloses that "crowbar 10 includes a reference vertical plumb line or axis 12 and a reference horizontal line or axis 14, which is disposed normal to line 12." Id. at col. 2, l. 24. This description suggests an "axis" is a line that can be vertical, horizontal, plumb, or used as a reference. These terms are used in the context of a straight line. Olympia's own references to prior art do not support its assertion that an axis, as used in the prior art, can be curved or nonlinear; rather the art uses the term for straight lines.

Finding that the axis must be linear or straight does not improperly import limitations from the specification. It only incorporates the ordinary meaning of axis found not only in the dictionary but as used in the art. Therefore, the "longitudinal axis" in claim 19 is a straight line that follows the center of the shank lengthwise. Although Olympia argues that the shank curvature of the Alltrade tool is de minimus, they never put in evidence of the deviation. Because the court correctly found that the claim required a linear axis and that this axis is not present in the Cobra Bar, the court did not err in finding that Olympia had not demonstrated a likelihood of success on infringement.

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I.

Johnstown sued Trinity for infringement of United States Patent No. 4,361,097 (the '097 patent). The '097 patent is directed to a gondola car suitable for rotary unloading. The floor of the car that is the subject of the invention contains a pair of concave troughs running the length of the car and separated by a center sill.

Claims 1 and 6 are the only independent claims of the patent. Claim 1 reads as follows:

A railway car for carrying bulk materials having a pair of side walls and a pair of end walls supported by spaced trucks, the improvement comprising a floor structure having

(b) a center sill extending longitudinally over said trucks,

(c) a pair of concave floor panels between said trucks, each panel forming a longitudinal curvilinear trough having closed
ends, the longitudinal axis of each of said troughs extending parallel to the longitudinal axis of said center sill.

Claim 6 recites:

A floor for a railway car comprising a center sill and a pair of longitudinal curvilinear troughs having closed ends secured to opposite sides of said center sill with the longitudinal axes of said troughs extending parallel to the longitudinal axis of the center sill.

On September 13, 1993, Trinity moved for summary judgment, arguing that the accused gondola car, the Trinity Aluminator II, did not literally infringe the '097 patent and that Johnstown's doctrine of equivalents claim was barred by prosecution history estoppel. Johnstown, 865 F. Supp. at 1160.

On September 2, 1994, the district court granted summary judgment in favor of Trinity on the issue of literal infringement. Id. In so doing, the court focused on the question of whether the accused gondola met the limitation of claims 1 and 6 that the longitudinal axes of the troughs be parallel to the longitudinal axis of the center sill. 2 The court construed the claim term "axis" as defining "a line about which a geometrical figure is symmetrical." Id. at 1163 (quoting American Heritage Dictionary of Science 55 (1986)). The court determined that because the Aluminator II troughs slope up from either end of the car to the middle, a single axis about which each trough is symmetrical cannot be drawn. Id. The court thus adopted Dr. Glenn Sinclair's 3 interpretation that each trough of the Aluminator II has two axes, each of which slopes up at the angle of inclination of the troughs. Id. Accordingly, the court found that the Trinity Aluminator II does not literally infringe because the longitudinal axes of its troughs do not extend parallel to the longitudinal axis of its center sill. Id. at 1163-64.

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2 It was undisputed that the other limitations of claims 1 and 6 were met in the Aluminator II.

3 At the time he executed his affidavit, Dr. Sinclair was a professor of mechanical engineering at Carnegie Mellon University. Id. at 1163.

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Addressing the issue of infringement under the doctrine of equivalents, the district court concluded that prosecution history estoppel did not bar the application of the doctrine. Id. at 1165-66. The court reasoned that although the term "longitudinal axis" was added during prosecution, the parallelism requirement existed before the claims were amended. Id. The court opined that the amendment was not made to overcome prior art, as Trinity contended, 4 but rather to "simplify and clarify the parallelism requirement." Id. at 1165.

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4 Trinity argued that the limitation that the longitudinal axes of the troughs extend parallel to the longitudinal axis of the center sill was added to overcome a 35 U.S.C. § 102 rejection based on United States Patent No. 1,412,660 (the Kuehner patent). Id. at 1164-65.

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Because the court did not resolve the doctrine of equivalents issue on motion for summary judgment, a trial on the merits ensued. During the trial there were a number of objections to the admissibility of evidence. Requests by both parties for JMOL were denied. The court instructed the jury, with objections by both parties, on the issue of infringement under the doctrine of equivalents. On August 15, 1996, the jury returned a verdict of noninfringement under the doctrine of equivalents. Johnstown filed a JNOV motion and in the alternative a motion for a new trial. On September 13, 1996, the court denied the motions. This appeal followed.

II.

Determining whether a patent is infringed entails a two-step analysis. "First, the claim must be properly construed to

In this case, the district court decided the issue of literal infringement on motion for summary judgment. Summary judgment is appropriate when "there is no genuine issue as to any material fact and . . . the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c). We review the district court's grant of summary judgment de novo. Lantech Inc. v. Keip Mach. Co., 32 F.3d 542, 545, 31 U.S.P.Q.2D (BNA) 1666, 1669 (Fed. Cir. 1994). Because there are no material facts in dispute, the issue before us is one of law: the correct construction of the "longitudinal axis" limitation of claims 1 and 6.

As already seen, claims 1 and 6 recite the limitation that the longitudinal axes of the troughs extend parallel to the longitudinal axis of the center sill. Neither the specification nor the prosecution history sheds light on the term "longitudinal axis." Recognizing this, the district court adopted what it perceived to be the common definition of the term "axis." We agree that if a patentee does not define a term in the specification or prosecution history, it is proper for the trial court to ascribe to the term its common meaning. See Envirotech Corp. v. AI George, Inc., 730 F.2d 753, 759, 221 USPQ 473, 477 (Fed. Cir. 1984) ("Words in a claim will be given their ordinary and accustomed meaning, unless it appears that the inventor used them differently." (citation omitted)). We conclude, however, that the district court erred in adopting a definition for "axis" that corresponds to the definition of "axis of symmetry" as opposed to the definition of "longitudinal axis." Whereas the district court's definition implicitly requires that the body through which the axis penetrates be symmetrical, the dictionary definition of "longitudinal axis" conveys no such requirement. Instead, the definition, which defines "longitudinal axis" as "an axis along the lengthwise direction of the figure or body, usually passing through its center of gravity," only requires an ascertainable lengthwise direction in which the longitudinal axis can be drawn. Cyril M. Harris, Dictionary of Architecture & Construction 500 (2d ed. 1993).

Therefore, reading the claim in light of the common meaning for the term "longitudinal axis," we conclude that if a lengthwise direction can be ascertained for a given trough, then a single longitudinal axis can be drawn. If a longitudinal axis can be drawn for each trough, such that the longitudinal axis of each trough is parallel to the longitudinal axis of the center sill, then the parallelism limitation of claims 1 and 6 is satisfied.

E. "longitudinal axis of said mounting base"

The court will construe "longitudinal axis of said mounting base" as "a line extending between the front and rear edges of the base member and perpendicular to both edges."

Claim 1 provides that the "longitudinal axis of said mounting base is in substantial alignment with a barrel of said firearm." Defendant would construe "longitudinal axis of said mounting base" as "the line extending the length of the mounting base along which the mounting base is symmetrical." Plaintiff objects that the proposed definition would limit the device by imposing a symmetry requirement on the mounting base. The claim does not require strict longitudinal symmetry, and Defendant's proposed construction is therefore too limiting.

Plaintiff does not propose any alternative language. However, Claim 1 elsewhere describes the longitudinal axis of the base member as a line "extending between said front edge and said rear edge" of the base member. When construing patent claims, "the court should look first to the intrinsic evidence of record, i.e., the patent itself[ ]" Vitronics, 90 F.3d at 1582. The court will therefore adopt its own construction of the term "longitudinal axis" consistent with that description, as set forth above.

[GO BACK]
5. "longitudinal edge"

Here, the parties agree that "longitudinal" means "lengthwise." As discussed above, however, the parties disagree over the construction of "edge." Floe's proposed construction of edge, as stated above, is "border." Thus, according to Floe, "longitudinal edge" means "an edge (i.e., border) extending along the length of an object or structure." Newmans, as discussed above, asserts that an "edge" is a "boundary or point where a surface begins or ends." Thus, according to Newmans, "longitudinal edge" should be construed as "longitudinal boundary or point where a surface begins or ends."

Consistent with the Court's construction of "edge," as discussed above, the Court construes the phrase "longitudinal edge" as "longitudinal boundary or point where a surface begins or ends."

The language of Claim 1 that is in question states:

"... [the] said housing has a cover and a pair of side walls depending from said cover, each of said side walls forming a longitudinal groove adapted to cooperatively receive a respective pair of said header rails. ... (Pl's Ex. 1, emphasis added).

No where in Claim 1 is there language of "continuous groove" or "continuous sidewalls." Granted, the diagrams included within the preferred embodiment show a continuous edge on the body of the tilt-latch, implying that the sidewall, or groove, must be continuous. However, Ashland is correct that patent claims should not be limited to the preferred embodiment. See Transmatic, Inc. v. Gulton Industries, Inc., 53 F.3d 1270, 1277 (Fed.Cir. 1995) ("a patent claim is not necessarily limited to a preferred embodiment disclosed in the patent."); Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed.Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations."); cert. denied, 490 U.S. 1068, 104 L. Ed. 2d 634, 109 S. Ct. 2069 (1989); Texas Instruments, Inc. v. United States International Trade Commission, 805 F.2d 1558, 1563 (Fed.Cir. 1986) ("This court has cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.").

Since Claim 1 does not contain any limiting words, such as "continuous," it is broader than the preferred embodiment and the other claims. The narrower limitations of other claims cannot be read into Claim 1. Teletronics, 857 F.2d at 783 (Fed.Cir. 1988); SRI Int'l, 775 F.2d at 1122 (Fed.Cir. 1985); Deere & Co. v. International Harvester, Co., 658 F.2d 1137, 1141 (7th Cir. 1981), cert. denied, 454 U.S. 969, 70 L. Ed. 2d 386, 102 S. Ct. 514 (1981). Therefore, the plain language of the claim does not require a continuous groove.

B. The Specification
While the specification describes the design with the continuous sidewalls diagramed in the preferred embodiment, Ashland argues that the specification does not require such a continuous wall. (Pl's Mem. in Support, p.13). Claim 1 is broader than both the preferred embodiment and the specification; however, that does not mean that Claim 1 must be limited, for it is improper to read limitations from specifications into the claims. The law does not require every conceivable embodiment to be included in the specification. (Pl's Mem. in Support, p. 15).

Ashland's argument is correct. The courts have found that "where a specification does not require a limitation, that limitation should not be read from the specification into the claims." Specialty Composites v. Cabot Corp., 845 F.2d 981, 987 (Fed.Cir. 1988). If everything in a specification were required to be read into the claims, or the patent was limited only to the design in the specification, then there would be no need for claims. SRI Int'l, 775 F.2d at 1121 (Fed.Cir. 1985). While the specification for '291 describes a model with a continuous groove, the benefits of the patented design can be gained from a non-continuous wall, as long as the walls are significantly longer than the flare tabs of the prior art Ro-Mai design. MEC even admitted at oral argument that the specification could be read to include this noncontinuous design. (Hearing Transcript, pp. 45-46).

Finally, the specification does not have to include every possible design under the patent: "The law does not require the impossible. Hence, it does not require that an applicant describe in [her] specification every conceivable and possible future embodiment of [her] invention. The law recognizes that patent specifications are written for those skilled in the art, and requires only that the inventor describe the 'best mode' known at the time to [her] of making and using the invention." SRI Int'l, 775 F.2d at 1121 (Fed.Cir. 1985) (citing 35 U.S.C. § 112). In the present case, the "best mode" seems to be continuous grooves or sidewalls in order to provide the maximum strength against bending and disengagement. However, the "best mode" does not preclude a slightly weaker design of noncontinuous grooves that are longer than the flare tabs of the prior art Ro-Mai tilt-latch.

C. Prosecution History

The prosecution history does not shed light on this issue of the continuous groove. Ashland states that the United States Patent and Trademark Office allowed Claim 1 to be filed as is, and MEC points out that there is nothing in the history that contradicts the claim or the specification. In other words, the prosecution history is silent on this issue.

D. Extrinsic Evidence

Both parties conceded that it is not necessary for the court to review extrinsic evidence, for any ambiguity in the terms of Claim 1 is eliminated by reviewing the intrinsic evidence. (Pl's Mem. in Support, pp.17-18; Dft's Mem. in Support, p.8). However, both sides still offered several pieces of extrinsic evidence to the court.

Ashland presented window end pieces from other manufacturers with window tracks that had noncontinuous grooves in order to demonstrate that within the window hardware industry, grooves can have either continuous or noncontinuous sidewalls. (Pl's Mem. in Support, p.18). MEC presented definitions from Webster's dictionary of "groove," "longitudinal," "cooperate," and "receive," as well as pieces of Ashland's sales literature. (Dft's Mem. in Support, p. 8-10).

Since the court finds that a review of the claim, the specification, and the prosecution history clarify any ambiguity in Claim 1, it is not necessary to examine the extrinsic evidence of either side. 3

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3 At the hearing, both parties became involved in a discussion of the definition of "groove." After an examination of the definition presented by MEC, ". . .a long narrow hollow or channel made artificially in a surface," the court finds that the definition does not require the groove to be continuous for any specified length.

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Conclusion

After an examination of the claim, the specification, and the prosecution history of the '291 patent, it seems clear to the
court that the '291 patent does not require that a groove be continuous for the patent to apply. Therefore, the court construes the meaning of "a longitudinal groove adapted to cooperatively receive a respective pair of said header rails" in Claim 1 to be defined as:

"a recess formed along the exterior side of each of the side walls which receives a respective one of the opposed header rails along the length of the housing, wherein each of the recesses is defined by two spaced recess walls which cooperate to receive one of the header rails, and each of the recess walls is defined by one or more projections which extend substantially along the length of the side wall." (Pl's Mem. in Support, p. 3).

B. The "Groove".

The parties dispute the meaning of the phrase in Claim 1 that states "each of said side walls forming a longitudinal groove adapted to cooperatively receive a respective pair of said header rails" (Pl.'s Mem. at 2; Def.'s Mem. at 6-7) (emphasis added). The parties agree that the "groove" referred to in this phrase is the recess (Patent Fig. 2, element 64) created between the overhang of the cover (Patent Fig. 2, element 50) and one or more projections on the side wall (also known as the side wall rail) (Patent Fig. 2, element 62). Both parties also agree that the groove does not have to be "continuous" to fall within the scope of the patent: that is, they agree that it need not extend for the full length of the side wall (Pl.'s Mem. at 9-10; Def.'s Mem. at 8-9). The parties disagree, however, on two specific points: they dispute what portions of the recess can properly be called a "groove," and how far the projections must extend along the side wall.

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5 Judge Coar used the term "projections" to describe the side wall rail, which is the structure forming the bottom side of the groove. This structure has also been defined as a "surface" in some of the briefs. For the purposes of this opinion, the word "projections" will be used.

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Ashland contends that the length of the groove is to be measured from the beginning of the first projection to the end of the last projection, regardless of the number or size of the gaps in between. As to the length of the groove, Ashland advocates adoption of Judge Coar's construction, which Ashland reads as saying that the groove must extend "substantially" the length of the side wall. Ashland further argues that what is "substantially" is a question of fact for the jury and not of law for the Court.

Ro-Mai, on the other hand, contends that the length of the groove must be measured by adding the aggregate length of each of the projections, and that gaps between the projections on the side walls must be disregarded in making that calculation. As to what is "substantial," Ro-Mai urges a construction that would require the groove (and thus the projections) to extend three-fourths of the length of the side wall.

In resolving these disputes over construction, the Court follows the teaching of Markman and considers in turn the claim language, the specifications, the prosecution history, and any extrinsic evidence.

1. The Claim Language.

Claim 1 of the '291 patent describes an invention containing a "longitudinal groove adapted to cooperatively receive a respective pair of said header rails." The phrase "adapted to cooperatively receive a respective pair of said header rails" is not disputed, and simply means that the groove (the subject of the sentence) is positioned and formed in a manner that it can accept the header rail. Nor do the parties contest the meaning of the term "longitudinal." The plain and ordinary meaning of the term "longitudinal" is "placed or running lengthwise." Merriam Webster's Collegiate Dictionary 687 (10th ed). Both parties agree that the groove runs lengthwise along the latch. Thus, the sole term being disputed is the term "groove." The plain and ordinary meaning of "groove" is "a long, narrow channel or depression." Webster's, at 514 (emphasis added).
The claim language, however, is silent as to how to measure the length of the groove in the event that there is one projection on the side wall that does not run the full length. Likewise, the claim language provides no guidance on how to measure the length of the groove if it is formed by two or more discontinuous projections. Nor does the claim language state how far the groove must extend along the length of the side wall to fall within the patented invention. Thus, we turn to the specification to attempt to glean further understanding on these points.

2. The Specification.

The specification sheds little light on the intended meaning of the word "groove." Nothing in the patent specification indicates that the term "groove" is being used in a manner inconsistent with its ordinary meaning. The preferred embodiment of the latch disclosed in the patent specification has a groove created by a continuous projection on each side wall (Patent Fig. 2, element 62). It is clear from the specification that the purpose of the groove is to better engage the header rail; the implicit assumption is that the longer the groove, the more securely the latch will be retained. Moreover, the specification notes that by the use of a groove (that is, a "long, narrow channel"), Ashland sought to differentiate its invention from the Ro-Mai prior-art latch, which used a small, single tab as the sole means of engaging the header rail at the side wall of the latch.

However, as Ashland correctly points out, the preferred embodiment should not be read to limit the claims. SRI Int'l, 775 F.2d at 1121. An inventor is not required to disclose every possible embodiment of his invention. Id. The preferred embodiment -- a continuous groove extending the full length of the side wall -- is one way of achieving the differentiation from the Ro-Mai prior art, and the attendant benefits of the invention claimed by the '291 patent. But, as Ro-Mai admits, it is not the only way.

In the situation where the projections creating the groove are non-continuous (or there is a single projection that is shorter than the full length of the side wall), the Court agrees with Ro-Mai that no "groove" is created where there is an absence of projections to create a recess with the cover. Put another way, literally speaking, a groove is not created where there is no projection to create the groove. The Court believes that this construction is consistent with the specification, which indicates that the intent of the '291 patent was to provide a means of engagement that improved upon the tab used by Ro-Mai. As Ashland admitted in oral argument, its proposed construction -- which would include the space (or "gaps") between the projections in calculating the length of the groove -- would bring within the patent a latch with two tabs positioned at the far ends of the side wall (Def.'s Mem., Ex. C, Fig. H, reproduced to the right), even if those projections were collectively only slightly longer than the Ro-Mai prior-art tab.

Ashland's definition is in direct conflict with the plain and ordinary meaning of the word "groove" -- Figure H simply does not literally present a "long, narrow channel or depression." The Court finds that this aspect of Ashland's proposed construction would extend the patent beyond its literal scope, and thus rejects Ashland's proposed construction on this point in favor of that offered by Ro-Mai.

However, we reach a different result on the issue of how far the groove (and thus the projections) must extend along the side wall. Neither the claim nor the specification support Ro-Mai's attempt to place a fixed numeric limit (75 percent or otherwise) on the length of the groove -- or on the length of the projections needed to create the groove. We agree with Judge Coar's observation that "the benefits of the patented design can be gained from a non-continuous wall, as long as the walls are significantly longer than the flared tabs of the prior art Ro-Mai design." MEC, 1999 WL 184652, at *4. As Ashland correctly points out, what constitutes "substantially the length of the side wall" is a question of fact that should be left for the trier of fact. Markman, 517 U.S. at 384. If courts were to set out such strict constructions of patent claims, juries would function as mere rubber stamps in infringement cases; there would be no need for the jury at all. While patent claims do need to be sufficiently clear to allow competitors to know what is patented, there is no case law to support Ro-Mai's assertion that absolute mathematical precision is required here. See Vitronics, 90 F.3d at 1583 (competitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention).

3. The Prosecution History and Extrinsic Evidence.
Both parties agree that the prosecution history does not contain any information relevant to the construction of Claim 1 (except for some minor changes, the patent was accepted as filed). Other than the dictionary definitions discussed above and the samples of latches submitted by the parties, the Court does not find any extrinsic evidence, except for a dictionary, helpful in construing the claims -- and the parties have pointed to none.

* * *

Therefore, upon consideration of the relevant intrinsic and extrinsic evidence, we adopt Ashland's proposed construction that requires -- as Judge Coar also has held -- that the projections "extend substantially along the length of the side wall." MEC, 1999 WL 184652, at *5. However, as we discussed above, we emphasize that it is the projections themselves (and not the gaps between them) that literally create the groove, and that must extend substantially along the length of the side wall.

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B. "Longitudinal Slot"

TBC proposes that the claim term "longitudinal slot" be defined as: "A narrow channel with an essentially flat bottom and upstanding side walls formed within an extrusion or rail and extending along a length of the extrusion or rail." Forecast rejects TBC's proposal that a longitudinal slot must be "narrow" and have "an essentially flat bottom and upstanding side walls." Instead, Forecast proposes that "longitudinal slot" be defined as: "A slot formed within an extrusion or rail and extending along the length of the extrusion of rail." As set forth below, the Court agrees with Forecast, as TBC's construction impermissibly imports limitations from a mere preferred embodiment into the claim term.

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13 The term "longitudinal slot" is found in claims 1, 6, 7, 8, 9, 13, 14, and 15 of the '712 patent; claims 1, 5, 6, 7, 9, 10, 11, and 12 of the '088 patent; and claims 1, 2, 3, 4, 5, 7, 9, 11, 13, 15, 16, 17, 18, 19, and 20 of the '803 patent.

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TBC appears to be arguing that the definition of longitudinal slot should be limited to something akin to the "T-shaped slots" disclosed throughout the specification. The specification, however, is clear that a T-shaped slot is merely a "preferred" embodiment of the Forecast patents; it does not constitute an outer limit of the claim term.

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14 The Court notes that certain aspects of TBC's proposed definition are vague. Even if the Court were to agree with the substance of TBC's proposed limitation, it would be difficult to apply such requirements as an "essentially" flat bottom or a "narrow" channel to an accused device.

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First, both the claims and the specification refer to longitudinal slots that "preferably are T-shaped" or simply to "T-shaped" longitudinal slots. ("712 patent; col. 3, lines 2-3; Claims 7 & 14). The use of T-shaped to modify the claim term longitudinal slots thus suggests that the meaning of longitudinal slot, standing alone, is not so confined. See Phillips, 415 F.3d at 1324 (finding that claim language providing that "baffles" may be "oriented with panel sections disposed at angles" to deflect incoming projectiles, makes it likely that the patentee did not contemplate the term "baffles" already contained that specific limitation).

Second, when read as a whole, the Forecast patents do not disclose an intention to limit the longitudinal slots to a specific shape or size. The specification itself recites that various fingers must be "sized to fit within and engage" the relevant longitudinal slots -- suggesting that not all slots have the same simple narrow structure proposed by TBC. ("712 patent; col. 5, lines 64-66.) And TBC points to no evidence from the prosecution history to suggest that Forecast relied on any specific
The very character of the invention requires that a "finger" sufficiently engage a "longitudinal slot" to support the component and permit its horizontal adjustment; it does not require either to be (as explained above) the particular type or shape disclosed in the specification as the patentee's preferred construction. Thus, the Court agrees with Forecast's proposed definition and defines longitudinal slot as: "A slot or channel formed within an extrusion or rail and extending along a length of the extrusion or rail."

Plaintiffs seek to have the Court construe the term "longitudinal strand" as "strand or strands which run in the length-wise direction of the netting structure." Defendants propose the term be defined as "strands forming the netting arrangement extending in the longitudinal direction which do not include any stitch loops and are not immediately next to another parallel longitudinal loop." 2

Plaintiffs base their definition on the plain and ordinary meaning because "the term has no special meaning." (Plaintiffs' Opening Claim Construction at 16.) Defendants contend that plaintiffs provide no support for their construction, either intrinsic or extrinsic. (Defendants' Responsive Claim Construction at 15.) But according to plaintiffs, defendants' construction is premised on a preferred embodiment. A particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment. Electro Med. Sys. S.A. v. Cooper Life Sci., Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994).

In explaining why the definition of "longitudinal strand" should not include any stitch loops, defendants state that stitch loops are "the little loops in the lateral strands that connect to the regular loops of the stockinette." (Markman Tr. at 73.) "When the meat product is stuffed into the netting, the heavy yarn will be pulled tight, causing these little loops to disappear so that the heavy yarn with be firmly pressed against the product. So if these lateral strands disappear when the meat goes in there, we don't think they should be construed as a longitudinal strand." Id. Defendants do not "feel that a stitch loop can contribute to a four-sided shape when it disappears - when its longitudinal component disappears when it is stretched." Id. at 74. Defendants provide no intrinsic or extrinsic evidence to support their belief and the Court finds none in the claim language, specifications or prosecution history. As a result, the construction of "longitudinal strand" does not require the inclusion of "which do not include any stitch loops" language.

Defendants also seek to include language that the netting arrangement strands are "not immediately next to another parallel longitudinal loop" based upon the claim language which provides that the netting arrangement is comprised of a "first plurality of spaced strands" in the longitudinal direction. The dispute becomes whether a strand is a single yarn or whether a strand can be composed of several yarns. Plaintiffs argue that "[a] strand is a very broad concept and doesn't refer to one individual filament or 2 or 3 or 20, or however many you wanted to use. The strand is the structure itself; it's not the components of the structure." (Markman Tr. at 88.) Plaintiffs' interpretation is based on how the term "strand" is used in Claim 1 and how it is used throughout the patent. The Court agrees. Although the claim language requires that the longitudinal strands be spaced in order to create the checkerboard pattern, defendants seek to limit longitudinal strands to a single component, i.e., an individual strand, by including language that strands are "not immediately next to another parallel longitudinal loop." Defendants point to Figure 12 which "basically shows no spacing between the longitudinal strands and basically cannot create a checkerboard pattern." (Markman Tr. at 74.) It appears defendants are using the term "strand" as a component rather than as a structure. When "longitudinal strands" are considered as a structure, the claim language
requiring that those strands be spaced needs no further definition of the kind defendants suggest. Defendants have not offered any intrinsic or extrinsic evidence to support this construction.

The Court construes "longitudinal strand" as "strand or strands which run in the lengthwise direction of the tubular casing."

The only dispute between the parties is whether Medtronic's Premier infringes one limitation of claim 1 literally or under the doctrine of equivalents. Claim 1 states:

1. A bone plate assembly comprising;
   a fixation plate . . ., a locking plate, and a bone fastener . . ., and

   wherein the locking plate . . . is longitudinally adjustable along said longitudinal axis from a first position wherein the bone fastener can be fixed to said bone to a second position in which the bone fastener is locked into position by the locking plate.

   (Finkelstein Decl. Ex. A at col. 5.)

Plaintiff argues the words "from a first position . . . to a second position" should be construed to mean the locking plate can be fixed in only two positions. The Court disagrees. The plain language of the claim requires the locking plate be able to be fixed in two positions, but it is not limited to two positions. The language does not exclude the ability of the locking plate to be fixed in an intermediate position between the position where the bone fastener is fixed to the bone and the position where the bone fastener is locked into place.

The Court agrees with Plaintiff the word "a" refers to a single first position and a single second position. That there must be one first position and one second position does not exclude intermediate positions from the scope of the claim.

"a longitudinally extending center flange"

The term "longitudinally extending center flange" refers to a single, vertically planar projecting rim or rib located along the middle part or the centerline of the support and extending along the longitudinal length of the vehicle on which the detent plate structure is formed or attached. This structure is not attached to the inside of a supporting sidewall or a walled arrangement.

While noting that the article "a" can mean "one or more" in patent claims, see AbTox, Inc. v. Exitron Corp., 122 F.3d 1019, 1023 (Fed. Cir. 1997), the Court finds the specification language to express a singular embodiment of the invention's center flange. Notwithstanding Plaintiff's arguments comparing the use of "a" in this term to indefinite terms in other patents found to potentially contemplate the existence of multiple elements, the "center flange" element in this term is described more like the patent term "a cup" at issue in Insituform Techs., Inc. v. Cat Contracting, Inc., 99 F.3d 1098 (Fed. Cir. 1996) than the elements at issue in the cases cited by Plaintiff. The claim language and the specification in Insituform were interpreted as suggesting "a cup" was meant to encompass only one cup. There, the asserted claim repeatedly described a single cup, using the term "the cup" and describing a process in terms of a single cup. Insituform, 99 F.3d at 1105-06; See also AbTox, 122 F.3d at 1023-24 (interpreting the article "a" in the claim term "a metallic gas-confining chamber" as suggesting a single chamber). In Claims 1 and 5 in the '538 patent, the "center flange" element is referenced back to as "said center flange" and "the center flange," suggesting a single flange. ('538 patent, col. 5, at lines 40-41; col. 6, at lines 7-8, 11). Additionally, neither the specification nor the drawings of the '538 patent reveal the use of more than one center flange.

However, this interpretation does not create the outcome that any product containing an additional, unrecited structure in the
support (such as another flange or a wall) would not infringe upon the patent. The specific claim term construed here only refers to a single center flange, but the term "comprising" in these claims permits the claims to include additional elements. Use of the transitional term "comprising" in patent claims indicates that the claims are inclusive or open-ended and may be supplemented by additional, unrepeated elements. See Renishaw P.L.C. v. Marposs Societa' Per Azioni, 974 F. Supp. 1056, 1083 (E.D. Mich. 1997). Thus, an accused product need not exactly meet every limitation to infringe a patent claim that contains the term "comprising" in its preamble. Modification by merely adding elements cannot negate infringement if the accused device has otherwise adopted the basic features of the patent. Id. Nevertheless, in accordance with the stated objectives of the '538 patent, any modified version of the support covered by these claims must provide an open structure facilitating the mounting of the shift lever to the same extent as the invention to solve certain specified problems with known shifter support structures having a cup-shaped section. A support within the scope of Claims 1 and 5 must reduce weight and save material, as well as alleviate the semi-blind assembly problem. ('538 patent, col. 1, at lines 33-39).

2400

4. Claim 8 ("longitudinally extending cutting edge")
As noted above, Claim 8 of the '544 Patent uses the term "longitudinally extending cutting edge" in the following context: "An ultrasonic instrument according to claim 6, wherein the curved blade surface includes a longitudinally extending cutting edge." '544 Patent, Claim 8 (emphasis added). Plaintiff proposes construing the term as "the edge of the blade surface that engages tissue to achieve cutting and extends along the lengthwise dimension." Defendant proposes: "Edge adapted for cutting that extends outwardly and downwardly in the distal direction."

First, the Court notes that Claim 8 is a claim dependent on Claim 6, which is discussed above. The "curved blade surface" claim term from Claim 6 and dependent Claim 8, however, is distinct from the "longitudinally extending cutting edge" that is at issue here. Specifically, as defendant's counsel explained at the Markman hearing, "[what] claim 8 is adding to the independent claim [6] is [that] you can have a cutting edge which is longitudinally extending" on the curved blade surface. Markman Tr. at 118-19. This is because, the "blades" are designed for cutting with harmonic energy and therefore, "the blade can be . . . quite blunt or flat," id. at 118, and thus claim 8 adds a longitudinally extending cutting edge to the curved blade surface claimed in Claim 6.

It is clear from the claim language and other intrinsic evidence that the customary and ordinary meaning of "cutting edge" is a "blade surface designed for cutting," and thus, the Court will incorporate that description in its construction. Additionally, while the specifications of the '544 Patent describe the cutting edge as one that curves "downwardly and outwardly in the distal direction," '544 Patent 4:31-55, Figures 4 & 11, the Court will not import that limitation from the specifications into the claim language where there is no indication in the intrinsic evidence that the cutting edge must be curved in the downward and outward direction, particularly where counsel for Ethicon acknowledged that the cutting edge could extend upwards. Thus, the Court construes the term as: "The edge of the blade surface designed for cutting that extends along the lengthwise dimension."

2401

1. "Longitudinally flexible stent." Consistent with its ordinary meaning 1 and the specification, the court construes "longitudinally flexible stent" to mean "a stent that is flexible along its longitudinal axis (i.e. length) to facilitate delivery through tortuous body lumens." 2

--- Footnotes ---

1 See American Heritage Dictionary 741 (2d ed. 1984) (defining "longitudinal" as "of or pertaining to length"); id. at 513 (defining "flexible" as "capable of being bent or flexed; pliable").

2 Plaintiffs argue that "to facilitate delivery through tortuous body lumens" is an unnecessary restriction. However, the intrinsic evidence supports the conclusion that having longitudinal flexibility alone is not enough to meet the restrictions of the Lau design; a stent must be flexible enough to be delivered through "tortuous body lumens" before it will be considered to meet the "longitudinally flexible" limitation of the Lau patents.
"Longitudinally spaced" (’063 Patent):

Requiring a spacing surface providing at least enough separation between seating surfaces to enable a paddler seated on one seating surface to paddle without interfering with another paddler or passenger.

3. "Loop"

I have construed "loop" to mean "a C- or U-shaped structure." 111 The presence of such a loop is required by all asserted claims. Guidant argued in a letter preceding its motion that the Penta does not infringe these claims because its Access-Link is actually a five-turn "S-shaped" structure. 112 However, Guidant does not make this argument in its motion. 113

In any case, Guidant's argument is at odds with the clear language of my claim construction and the asserted claims themselves. First, Medinol is correct that the phrase "C- or U-shaped structure" does not by its terms exclude C-or U-shapes that happen to be part of an S-shape. 114 Second, the claims themselves only require that there be at least one loop between consecutive first meanders, clearly contemplating that there may be instances where there is more than one loop between first meanders of a stent based on the patents-in-suit. For these reasons, the Penta's Access-Links constitute "loops" for the purpose of these motions. 115

(4) "Loop." A structural element that turns back on itself.
The terms "loose hair" and "non-loose hair" appear in claim 1, and throughout the '540 Patent. Plaintiff argues that "loose hair" should be construed to mean "hair that is inactive and not growing," and that "non-loose hair" should be construed to mean "hair that is active and growing." Plaintiff states that these proposed constructions are supported by the claim language and specification, the prosecution history, and expert testimony. Defendants suggest that "loose hair" should be construed to mean "hair that is not attached or fastened to the furry pet," while "non-loose hair" should be construed to mean "hair that is attached or fastened to the furry pet." Defendants argue that these proposed constructions are based on the plain language of the patent and specification, in addition to expert and inventor testimony, and the construction of terms in prior litigation. The Court has determined that the proper construction of the term "loose hair" is "hair that is inactive and not growing," and likewise, that the proper construction of the term "non-loose hair" is "hair that is active and growing." The Court will review the arguments set forth by the Parties in their briefs and in oral argument, in order to establish the basis for the Court's conclusion.

Plaintiff makes numerous arguments in support of its proposed construction of the claim terms at issue. First, Plaintiff asserts that defining "loose hair" to mean "hair that is inactive and not growing," and defining "non-loose hair" to mean "hair that is active and growing," is consistent with the language of the '540 Patent. Specifically, Plaintiff points out that the claim terms are consistently used in the following context: "the blade edge being adapted to engage the loose hair of the pet and pull it from the pet without cutting or pulling the non-loose hair from the pet." ('540 Patent, doc. # 1-3, p.8 col.4 ll.29-31 (emphasis added)). Plaintiff argues that, as used in the patent language, "loose hair" must include hair that is capable of being "pulled" from the pet. Hair that is not attached or fastened to the pet inherently cannot be included in this category, because there is no need to "pull" hair that is not somehow connected to the pet. This Court finds Plaintiff's argument persuasive, considering that Phillips instructs courts that "the context in which a term is used in the asserted claim can be highly instructive." Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005).

Similarly, Plaintiff also asserts that its proposed construction is supported by the prosecution history of the '540 Patent. During the prosecution of the '846 Patent, the initial patent in the relevant family of patents, Plaintiff argued to the Board of Patent Appeals that "a blade that is too dull will not pull the loose hair from the furry pet." (Pl.'s Ex. 2, doc. # 101-3, p.3 (FURMO 577) (emphasis added)). Thus, Plaintiff now argues that "loose hair" must include hair that is at least partially within the hair follicle, in order to explain the use of the phrase "will not pull the loose hair from the furry pet" during the patent prosecution. The Court again finds Plaintiff's argument persuasive, considering that Phillips instructs courts that "the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention." Phillips, 415 F.3d at 1317.

Finally, Plaintiff argues that its proposed constructions of "loose hair" and "non-loose hair" are consistent with prior art cited in the '540 Patent. Specifically, Plaintiff cites to United States Patent Number 6,055,938 ("the '938 Patent"), which was issued less than one month before the '846 Patent application was filed. The '938 Patent discusses the growth cycle of hair, which is the basis for Plaintiff's proposed constructions of "loose hair" and "non-loose hair." Specifically, the '938 Patent provides: "the hair on cats and dogs go through growth and resting cycles (anagen and telogen phases, respectively) that occurs asynchronously (each follicle cycles independently) and continuously in the majority of breeds. There are similar processes in humans." ('938 Patent, doc. # 101-4, p.6 col.1 ll.13-19). Plaintiff argues, and this Court agrees, that this patent language provides evidence of what a person of ordinary skill in the art would understand about the hair growth cycle, and about the desirability of removing hair that is no longer growing, but that is still in the hair follicle. 3 Of course, determining the understanding of a person of ordinary skill in the art is the ultimate goal of the Court in construing claim terms. See Phillips, 415 F.3d at 1312-13 (noting that "the words of a claim are generally given their ordinary and customary meaning" and that "the ordinary and customary meaning of a claim term is the meaning that the term would have to a person of
ordinary skill in the art in question at the time of the invention"). Therefore, the Court finds that Plaintiff's proposed constructions are not only consistent with the specification and prosecution history, but also with the ordinary and customary meaning of the claim terms.

3 It is generally understood that inventors are considered to be persons skilled in the field of the invention. Phillips, 415 F.3d at 1313.

Defendants' arguments in support of their proposed constructions of the claim terms "loose" and "non-loose," on the other hand, are not persuasive. First, the Court rejects Defendants' argument that the '540 Patent uses the words "loose" and "shed" interchangeably. These two words are used in two very different contexts; "shed" is used in the background section, while "loose" is used in the actual patent claims. The term "shed" does not appear anywhere within the claims that this Court is charged to construe. Additionally, even if "shed" did appear in the actual claims, the Court would not necessarily find the word to be synonymous with "loose" because "[i]n the absence of any evidence to the contrary, we must presume that the use of . . . different terms in the claims connotes different meanings." CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co. KG, 224 F.3d 1308, 1317 (Fed. Cir. 2000). Ultimately, the words "shed" and "loose" are not generally considered to mean the same thing, so it is not proper to make such an assumption.

In addition to their argument that "loose" is synonymous with "shed," Defendants cite to the testimony of Angela Porter, one of the named inventors on the '540 Patent, to support their proposed construction. The Court does not find such testimony persuasive, considering that the Federal Circuit has instructed courts that "[t]he testimony of an inventor 'cannot be relied on to change the meaning of claims.'" Howmedica Osteonics Corp. v. Wright Med. Tech., Inc., 540 F.3d 1337, 1346 (Fed. Cir. 2008) (quoting Markman v. Westview Instruments, Inc., 52 F.3d 967, 983 (Fed. Cir. 1995) (en banc)). Additionally, Defendants cite to a joint claim construction statement that was filed in another case in the Eastern District of Missouri, involving the same parties, FURminator, Inc. v. Kim Laube & Co., Inc., Case No. 4:06CV01314 RWS (dismissed by stipulation, January 15, 2008). Even though a joint statement was filed, a Markman hearing was never actually held in that case, because briefing was delayed by the filing of Plaintiff's Motion to Voluntarily Dismiss, which was ultimately granted. While the Court recognizes that claim terms in related patents should be interpreted consistently, see generally Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1347-49 (Fed. Cir. 2004), this does not mean that a joint claim construction statement that was never actually examined or adopted by the presiding court has any bearing on the construction of claims in this case.

The Court has set forth and analyzed the arguments made by the Parties in support of their respective proposed constructions, and has concluded that Plaintiff's proposed constructions are proper. Therefore, the Court will construe the claim term "loose hair" to mean "hair that is inactive and not growing," and likewise, will construe the claim term "non-loose hair" to mean "hair that is active and growing."

4 The Court notes that the Parties included extensive extrinsic evidence (particularly expert testimony) in their briefs to support their proposed constructions. The Court finds that it is unnecessary to examine this extrinsic evidence in order to construe the claim terms, and thus exercises its discretion not to consider it. Phillips, 415 F.3d at 1319.

H. Low Modulus Material

Tessera argues that "low modulus material" means "a material with a relatively low elastic modulus (also known as Young's Modulus an/or shear modulus), which is a material property that is defined as the amount of stress needed to produce a
given amount of strain." Samsung originally proposed "low modulus material" to mean "a material with a low elastic modulus (also known as Young's Modulus), which is a material property defined as the amount of stress needed to produce a given amount of strain (deformation)." Joint Claim Construction Statement at B3:2-3. Samsung changed its position to eliminate reference to Young's modulus in its proposed construction, now proposing that the term means "a material with low elastic modulus, which is a material property defined as the amount of stress needed to produce a given amount of strain (deformation)." As such, Tessera and Samsung agree that measures of both normal and shear forces are proper.

The remaining difference between the parties is whether low modulus is a relative or absolute measure. The specification repeatedly refers to low modulus as an absolute, not relative value. '977 patent at 4:28-36, 17:40-49, 17:66-18:7, 18:43-47, 19:2-3, 24:25-26, 27:27-31, 27:67-28:3, 30:10-12. Nothing in the specification requires or suggests that modulus value is a relative measurement. Thus, the Court construes "low modulus material" to mean "a material with low elastic modulus, which is a material property defined as the amount of stress needed to produce a given amount of strain (deformation)."

6. Low Flow Rate

The sixth disputed claim term "low flow rate" is found in Claims 1 and 35 as set forth above.

Erbe's Proposed Definition: A flow rate that causes the gas exiting through the opening at the distal end of the flexible tube to be a non directed, non laminar stream that forms an inert gas atmosphere.

Canady's Proposed Definition: Much smaller than one liter per minute and producing flow velocities less than 19 km/hour. 5

(Docket No. 42, p. 7). The claim language set forth in Claim 1 describes the characteristics of a low flow rate as being" less than about 1 liter/minute." Docket No. 42, Ex. 1, col. 11, II. 42-43. Erbe's proposed construction ignores the plain claim language in Claim 1, which defines the characteristics of the term as a rate "of less than about 1 liter/minute." Docket No. 42, Ex. 1, col. 11, II. 42-43. The claim language set forth in Claim 35 describes a low flow rate in terms of what it produces: "a not directed, non laminar stream…." Id. at col. 16, l. 14. Canady's proposed construction ignores this description. Consequently, I turn to the specification to determine the proper construction.

5 I note that this proposed construction differs from the claim terms chart. In its Brief, Canady added the additional phrase "and producing flow velocities less than 19 km/hour," to the proposed construction. (Docket No. 66, p. 27). Erbe responded to the newly proposed construction in its Reply Brief. (Docket No. 68, p. 15). As a result, I will consider such proposed construction.

The abstract provides the following: "Argon or another inert gas is supplied from a source of gas through the tube to the exit opening with such a flow rate that gas exiting through the exit opening is a non laminar stream which forms an inert gas atmosphere…." Id. at Abstract. Canady argues, however, that the term "much smaller" should be included in the construction. (Docket No. 66, p. 27.) I disagree. While it is true that the specification uses the term "much smaller," 6 using this limiting term to construe "low flow rate" would be importing an impermissible limitation. Phillips, 415 F.3d at 1323 (warning against confining the claims to those listed in the embodiments).

6 The specification provides as follows: "Whilst the flow-rate scale for gas volume flow on the argon gas valve used in connection with equipment for open surgery normally indicates flow rates between e.g. 1 to 10 l/min, the actual flow rate is much smaller in the case of the described use in combination with an endoscope,…In a practical embodiment…the actual flow rate during an above described coagulation was 0.2 l/min. However, depending on desired condition,…flow rates may
be adjusted..." Id. at col. 9, II. 5-22 (emphasis added). Thus, the flow rates may be changes depending on the conditions such that a limitation of "much smaller" is improper. Phillips, 415 F.3d at 1323 (warning against confining the claims to those listed in the embodiments).

Canady next argues that based on the prosecution history, the term "low flow rate" is necessarily defined in terms of the flow velocity. (Docket No. 66, pp. 27-29). Canady points to Erbe's June 27, 1997 Amendment and Response after the patent officer rejected the claims based on Canady's '675 prior art reference. Id. at 28, citing Docket No. 63, Ex. 19, pp. 10-11. Therein, Erbe attempted to distinguish its low gas flow rate from the prior art in the '675 patent to the patent officer. "A flow rate of 1 liter per minute leads to a flow velocity of 19 m/h," and that "[s]uch velocities in Canady would certainly be classified as laminar jets..." (Docket No. 63, Ex. 19, pp. 10-11). Because the '745 patent is limited to low flow rates that avoid the production of laminar jets and produce only non laminar, inert gas atmospheres (Id.), Canady argues that Erbe necessarily limited its flow velocities to lower than the 19 km/hour it claimed was described in the '675 patent. Thus, Canady argues, the '745 patent is limited, necessarily, to flow velocities less than 19 km/hour. Erbe does not respond to this argument. See, Docket No. 54, pp. 22-24, and Docket No. 68, p. 15. I find Canady's rationale set forth in the prosecution history compelling and persuasive.

Consequently, I construe the term "low flow rate" as meaning a rate of flow of less than about 1 liter/minute and producing flow velocities less than 19 km/hour such that the gas exiting through the distal end opening forms a non laminar inert gas atmosphere.

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Plaintiffs focus on the term "low pressure" and define it as "any pressure below atmospheric pressure." Defendant's position is that the whereby clause is meaningful and is limiting. . . . Defendant originally argued that the term "low pressure" is a relative term that is vague in the context of claims 9 and 15 because it lacks a reference point. In its response brief, Defendant suggested that the specification and prosecution history dictate a meaning of "less than approximately 100 mbars." . . .

Although the court does not agree with Defendant's reasoning, the court does agree that the whereby clause has meaning as a limiting clause. Of the three terms in that clause on which Defendant focused, only one, "low pressure," requires much discussion. The court begins there. One dictionary definition of the word "low" is "[b]elow a standard or average." Webster's II New Riverside University Dictionary 706 (1984). 12 The court is convinced that atmospheric pressure (1000 millibars or 1 bar) is a standard recognized by persons skilled in the art of the patent. Accordingly, the definition proposed by Plaintiffs, "any pressure below atmospheric pressure," provides the term with its ordinary meaning. The term is easily understood and is not vague.

"[U]nless compelled otherwise, a court will give a claim term the full range of its ordinary meaning as understood by persons skilled in the relevant art." A court should not narrow a claim term simply based on descriptions of the invention in the specification and prosecution history. Rather, the ordinary meaning applies unless the patentee expressly narrows it, for example, by providing his own definition, by distinguishing the claim term from a prior invention, or by disclaiming certain subject matter. The party seeking to narrow the definition bears the burden of overcoming the presumption in favor of the term's ordinary meaning.

Defendant's efforts to narrow the meaning to cover only pressures below 100 millibars are unavailing for several reasons. First, the doctrine of claim differentiation supports the conclusion that different claims have different scopes. "Our court has made clear that when a patent claim does not contain a certain limitation and another claim does, that limitation cannot be..."
read into the former claim in determining either validity or infringement. In this case, only claim 1 is limited to pressures below 100 millibars. If not for this difference, claims 9 and 15 could have been written as dependent claims on claim 1.

Second, the specification supports a broad reading of "low pressure." In one place, the specification calls for pressure in the range of .5 millibars to 100 millibars, stating: "[O]ne result achieved by the invention is that a partial vacuum will prove sufficient resulting advantageously in a reduced pressure of between 0.5 mbars and 100 mbars." However, in another embodiment, it is contemplated that "depression on the order of 1 to 100 mbars, which optionally might not exceed a low pressure value of about 900 mbars" could be used under certain circumstances. In light of this second embodiment, the first does not evidence an intention to depart from the full range of ordinary meaning. Rather, the two references together support a finding that the patentee intended for low pressure to carry a broad meaning.

Third and last, the prosecution history indicates that the patentee relinquished a portion of the full range of meaning attributable to the term "low pressure" with regard only to claim 1. Upon application, the examiner rejected claims 1-3 over U.S. Patent No. 4,718,459 ("Adorjan"). Interestingly, the rejected claim 3 included a pressure requirement of 0.5 to 100 millibars. The examiner explained that Adorjan discloses a double-casing pipe for subsea pipelines, an annular sealed space, coaxially-arranged pipes, flexible open-pore microporous material, and a free passageway for gas flow. With regard to low pressure, he noted that Adorjan "described that the gas can be at 0.896 Pascals in certain water depths, which suggests at lesser depths lesser pressure is needed, and that this pressure falls between the range set forth in claim 3."

In his responsive amendment, the patentee made several changes to claim 1, but did not amend the low pressure requirements. Instead, he argued that Adorjan requires that high pressure, not low pressure, be maintained in the annular space, in order to keep water out. In response to this attempt to traverse his rejection by distinguishing Adorjan, the examiner stated:

"With respect to the gas pressure, applicant only claims low pressure, which is a relative term, and therefore the pressure set forth in Adorjan is considered to be a low pressure. Also, due to the fact that the pressure of Adorjan is dependent upon depth of the pipe in water, a pipe used for shallow water depths would have a relatively low gas pressure needed, and would still meet applicant's claim language.

Thereafter, the patentee acquiesced and added the limitation to claim 1 requiring that pressure below 100 millibars be maintained. This amendment also contained two previously dependent claims rewritten into what eventually became claims 9 and 15. Neither contained the 100 millibar limitation. The patentee explained the changes to claim 1, "In order to overcome [the] rejection, Claim 1 has been amended to make it clear that the self-sustaining plate is made of an open-pore microporous insulating material and that low pressure below 100 mbars is maintained throughout the annular space in which the self-sustaining plate is located." In addition, the patentee again argued against the examiner's position that Adorjan employs low pressure in the annulus:

"Contrary to the present invention, Adorjan teaches that a high pressure should be maintained throughout the annular space.

... The Examiner relies upon a typographical error... wherein Adorjan states, 'at 300 feet (91.4 meters), the external pressure on a pipeline will be 129.9 pounds per square inch (0.896 Pa).

Thus, gas in the annulus must be pressurized to a value greater than 129.9 psi (0.896 Pa).'

This statement contains an error because the text should read, '0.89 MPa' and not merely 0.896 Pa. If one thinks about it, the value of 0.896 Pa is completely absurd since a person of ordinary skill in this technology knows that 91.4 meters of water produce a pressure of about 9 bars which is 0.9 MPa. Thus, the apparent inadvertent deletion of the M creates an error by a factor of approximately 1 million.

Ultimately, the examiner approved the '547 patent with the additional low pressure limitation in claim 1, but not in claims 9 and 15. The discourse between patentee and examiner suggests at least two plausible reasons for approval; either the two clarifications to claim 1 satisfied the examiner or the patentee convinced the examiner that he had misread Adorjan. Either way, the examiner allowed the patentee's choice of words in claims 9 and 15, which facially did not include the limitation that the pressure be below 100 millibars. The court concludes from this fact that claims 9 and 15 were patentable (because
of other limitations they contained), without narrowing the bounds of "low pressure." Defendant conceded as much during the Markman hearing.

From a close review of the prosecution history, the court concludes that the only clear disavowal of subject matter in the prosecution history relates to claim 1. Even though prosecution history estoppel affects claim 1, it does not preclude the construction of "low pressure" advanced by Plaintiffs and recommended by this court or otherwise limit claims 9 and 15 in any way.

... In summary, the court recommends that "whereby low pressure is maintained throughout said annular space" be construed to refer to pressure below atmospheric pressure that is preserved within the annular space, which includes both the free passageway and the microporous insulation.

2005 U.S. Dist. LEXIS 39078, 2005 WL 3542577, at *9-*12 (internal citations and footnotes omitted; footnote added); see also ITP, Inc. v. BP Corp. North America, Inc., 2005 U.S. Dist. LEXIS 39074, 2005 WL 3542575, *2 (S.D. Tex. 2005) ("Contrary to BP's position, the Court finds that the recommended interpretation reflects the claim construction principles outlined in Phillips. That is, although Magistrate Judge Johnson consulted a dictionary definition in arriving at the ordinary meaning of the word "low," the recommended interpretation of the entire phrase was tested against the intrinsic evidence in the '547 patent. Specifically, the M & R addresses the language of the claims themselves and applies the doctrine of claim differentiation. Judge Johnson then considered in depth the patent's specification and found that it supported the recommended interpretation. Finally, the M & R explains that the prosecution history of the patent supports the recommended result. Thus, it is clear to this Court that intrinsic evidence was the primary source for generating the proposed construction. In light of the M & R's reliance on the intrinsic evidence, the Court finds that the proposed claim construction is appropriate and fully consistent with the guidance provided by the Federal Circuit in Phillips.").

--- Footnotes ---

11 This case is a published decision which this Court properly relies upon as persuasive authority.

12 This Court notes that another definition of "low" is "[a] region of depressed barometric pressure." Id.

--- End Footnotes ---

When one considers that atmospheric pressure is pressure caused by the weight of the atmosphere and, at sea level, has a mean value of one atmosphere, 13 see Webster's II, New Riverside University Dictionary, 135 (1984)(defining atmospheric pressure as "[a]n exerted pressure of 1 atmosphere."), it is understandable that the district court in ITP, Inc., supra, would construe the claim term "low pressure" as any pressure below atmospheric pressure since such definition is obviously broad enough to encompass the limitation in claim 1 of pressures below 100 millibars as well as the specification reference to "a low pressure value of about 900 mbars[.]" 14 Given that claims 9 and 15 are not dependent on claim 1 and further given that claims 9 and 15 refer simply to low pressure, this Court finds that the definition given "low pressure" by the ITP, Inc. court in the Southern District of Texas appropriately underscores the claim construction principle of reading the claims in view of the specification in order to give proper context to claim language. Accordingly, this Court, consistent with the ITP, Inc. court, defines "low pressure" as "any pressure below atmospheric pressure[.]"

--- Footnotes ---

13 One skilled in the art of the patent would recognize that one atmosphere equals exactly 1013.25 millibars (mb). www.unc.edu/rowlett/units/dict.A.html; see also http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/prs/def.xml ("1013.25 mb = 29.92 "Hg = 1.0 atm . . . Average pressure at sea level is 1013.25 millibars.").

14 The defendant has supplied this Court with the declaration of Dr. Douglas Smith, same reading, in relevant part, as follows: "For microporous insulation, pressures of less than 100 mbar are required to eliminate 90% of the gas phase conduction and pressures less than 10 mbar are required to eliminate essentially all of the gas phase conduction. For this
reason, a person of ordinary skill in the art of microporous insulation, such as myself, would understand that the term 'low pressure' in the context of microporous insulation means 100 mbar or less." (Doc. 33, Exhibit G, Declaration of Douglas Smith, Ph.D., at P 5) This Court declines, however, to define "low pressure" as "100 mbar or less" inasmuch as such definition does not take into account the specification reference to "a low pressure of about 900 mbars" and, therefore, would be contrary to the claim construction principle that the specification is to give proper context to the claim language (i.e., the claim language in Claims 9 and 15).

7. "low pressure chemical vapor deposition"

The parties agree that the term "chemical vapor deposition" means "a process in which one or more gases chemically react with each other and/or with a surface material thereby producing a solid substance (such as tungsten)." See Joint Statement of Claim Terms at 2. Agere argues that the phrase "low pressure chemical vapor deposition" (or "LPCVD") should be construed as "chemical vapor deposition that is carried out at reduced pressure relative to atmospheric pressure." Atmel argues that the phrase "low pressure chemical vapor deposition" should be construed as "chemical vapor deposition that is carried out at pressures below approximately 2 torr."

According to the expert testimony provided during the Markman hearing, chemical vapor deposition refers to a process in which a silicon wafer is placed in a reactor, certain gases are pumped into the reactor, and the gases react with each other (and may also react with the substrate) resulting in the deposition of a layer of tungsten on the substrate. See Tr. 12/05/02 at 55-56. It is also undisputed that the term "low pressure" preceding the term "chemical vapor deposition" describes the range of pressure inside the reactor at which the patentee intended the chemical vapor deposition to occur. The dispute here concerns the precise pressure range to which the term "low pressure" refers. Agere contends that "low pressure" means any pressure below atmospheric pressure (or 760 torr). Atmel, on the other hand, contends that the term "low pressure" refers to some smaller and more precise pressure range, although Atmel has been unable to settle on a precise proposed range. 4

4 In its initial Claim Construction Brief, Atmel argued that "low pressure" refers to a range between 0.5 and 1 torr. See Atmel Corporation's Opening Claim Construction Brief ("Def.'s Opening Brief") at 35. In its second Claim Construction Brief, Atmel argued that "low pressure" could refer to a range between 0.1 and 100 Militorr, or to a range between 0.25 and 2.0 torr, or to a range between 0.5 and 1 torr, emphasizing that "low pressure" refers to systems which operate "well below atmospheric pressure." Def.'s Second Brief at 33. At the Markman hearing, Atmel's expert witness explained that, practically speaking, low pressure chemical vapor deposition is not performed at pressure levels approaching atmospheric pressure because the deposition rate at such high pressure levels would be undesirably slow. See Tr. 12/05/02 at 222-23. Atmel's expert witness testified that the typical range for low pressure chemical vapor deposition "is somewhere around one torr," with pressures as high as "a few torr" and as low as "maybe .2 torr." Id. at 223. There is even a discrepancy between Atmel's present proposed construction of "low pressure" in its Revised Proposed Order Regarding Claim Construction ("chemical vapor deposition that is carried out at pressures below approximately to 2 torr") and its Post-Hearing Brief ("CVD at pressures below 1 torr"), see Def.'s Post-Hearing Brief at 10. In fact, even in its Post-Hearing Brief, Atmel "acknowledges that, because LPCVD is defined more often by example than explicitly, an upper limit of approximately 2 torr to 5 torr may be appropriate." Id.

The Court must determine the ordinary and accustomed meaning of the technical phrase "low pressure chemical vapor deposition" as it would have been understood by one of ordinary skill in the art at the time of the invention. See Bell Atlantic, 262 F.3d at 1267. The '335 patent arises from a patent application originally filed in 1986. The only evidence offered by Agere to support its construction of "low pressure" is the definition set forth on a current website. See Exhibit A26-27 from 12/05/02 Hearing. Agere has not shown that such a definition would have been applicable at the time of the invention. Atmel, on the other hand, has offered a number of pertinent definitions from treatises. The first edition of the
treatise Microchip Fabrication, printed in 1984, 1985 and 1986, states that "LPCVD systems operate in a pressure range from 0.1 Millitorr -- 100 Millitorr." Peter Van Zant, Microchip Fabrication 181 (1st ed. 1986). The second edition, with a copyright date of 1990, provides that one particular LPCVD system (the "Horizontal conduction-convection-heated LPCVD") operates in "a pressure range of 0.25 to 2.0 torr." Peter Van Zant, Microchip Fabrication 309 (2d ed. 1990).

The evidence and expert testimony introduced by the parties clearly establishes that a person of ordinary skill in the art at the time of the invention would have understood the term "low pressure" to refer only to an approximate pressure range well below 760 torr, and not to any precise pressure range with specifically defined lower or upper limits. The evidence and expert testimony also indicates that at the time of the invention, low pressure chemical vapor deposition would typically have been carried out at pressures no higher than 2 or 3 torr. Thus, the Court construes "low pressure chemical vapor deposition" to mean "chemical vapor deposition that is carried out at pressures well below atmospheric pressure (760 torr), typically at pressures below approximately 2 or 3 torr."

C. "Low Profile"

<table>
<thead>
<tr>
<th>Claim Terms</th>
<th>Plaintiffs' Construction</th>
<th>Defendants' Construction</th>
<th>Defendant ECCO's Construction</th>
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<tr>
<td>&quot;low profile traction teeth&quot; (Claims 3, 10, 17, 19)</td>
<td>&quot;traction teeth that are shorter in depth than conventional metal spikes&quot;</td>
<td>&quot;traction teeth that are shorter than conventional golf spikes&quot;</td>
<td>&quot;traction teeth that are less than 6 mm long&quot;</td>
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<tr>
<td>&quot;teeth being in low profile&quot; (Claim 6)</td>
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For the claim terms "low profile traction teeth" and "teeth being in low profile," '047 Patent, col.4, l.58, col.5, l.33-34, & col.6, l.10, 59, & 64, the parties dispute how to describe conventional spikes at the relevant time period for the patent, and whether the appropriate measurement for comparing spikes is length or depth.

1. The Parties' Contentions

Greenkeepers contend that the conventional spikes against which their "low profile traction teeth" must be compared, as of 1996, were eight millimeters long and metal. (Pls.' Opening 16-18.) Greenkeepers also aver that the relevant measurement is depth, not height, because the advantage of the cleats is that they bring the golfers lower to the ground, for which vertical height of the spikes while under load, which is measured by depth, and not the overall length of the spikes, is critical. (Pls.' Resp. 14-17; Pls.' Reply 10-11.)

Defendants first take issue with the fact that Greenkeepers' construction compares their spikes to "metal" ones, and argue that neither intrinsic nor extrinsic evidence supports the inclusion of this adjective, for example by using the word "metal" to describe conventional prior art spikes in the '047 Patent's specification. (Defs.' Opening 19, Defs.' Resp. 13.) In addition, ECCO, though agreeing with Plaintiffs that the relevant time period is 1996, contends that the conventional spikes were six millimeters in length, not eight millimeters, as is evident from the fact that the patent specification purportedly describes as prior art a six millimeters spike. (ECCO Opening 23-24, Resp. 17.) ECCO, relying on its own expert testimony, also argues that the relevant measure is overall length, not depth, because length determines damage to the greens, which is what the '047 Patent states that it aims to avoid. (ECCO Opening 24-26, ECCO Resp. 18-19.)

2. Analysis

"[I]n a case tried to a jury, the [C]ourt has the power and obligation to construe as a matter of law the meaning of language used in the patent claim," Markman, 52 F.3d at 978-79; however,
claims are often drafted using terminology that is not as precise or specific as it might be. As long as the result complies
with the statutory requirement to "particularly point[] out and distinctly claim[] the subject matter which the applicant
regards as his invention," 35 U.S.C. § 112, para. 2, that practice is permissible. That does not mean, however, that a court,
under the rubric of claim construction, may give a claim whatever additional precision or specificity is necessary to
facilitate a comparison between the claim and the accused product. Rather, after the court has defined the claim with
whatever specificity and precision is warranted by the language of the claim and the evidence bearing on the proper
construction, the task of determining whether the construed claim reads on the accused product is for the finder of fact.


In PPG Industries, the Federal Circuit determined that the district judge "properly left it to the jury to determine whether the
amounts of iron sulfide in SMG glass have a material effect on the basic and novel characteristics of the glass," because "the
patent is silent about iron sulfide and what constitutes a material effect on the properties of the glass." Id. at 1357. This is
exactly the situation the Court now faces in construing "low-profile traction teeth" and "teeth that are low in profile." The
claims did not specify whether the conventional spikes in relation to which the '047 Patent's covered cleats are "low profile," are metal, six or eight millimeters in length, or measured in height or depth. The Court will not read such additional
precision into the claims, and will not usurp the jury's "task of determining whether construed claim reads on the accused
product." Id. at 1355. Accordingly, the Court construes "low profile traction teeth" and "teeth that are low in profile" to be
"traction teeth that are shorter than conventional spikes as of 1996."

Said outlet duct being configured to radially expand said airflow to a low velocity and said return duct being configured for
low radial flow return velocity to said high pressure compressor

Key to both phrases above is the term "low velocity." While a person or ordinary skill in the art arguably would understand
that the air flow exiting the low pressure compressor is at a very high velocity, the parties disagree as to how the outlet and
return ducts in the '499 Patent are designed to slow the velocity. Thus, the Court will construe the term "low velocity" first.

Low velocity

Claim 1 specifies that the outlet duct of the low pressure compressor is configured to radially expand air flow "to a low
velocity" and the return duct is configured for "low radial flow return velocity." Rice contends that the term "low velocity"
should be construed to mean "a decreased air flow velocity." Rolls-Royce, on the other hand, wants a specific numerical
value and contends that the low velocity term means air flow velocity "less than approximately 200 ft./sec."

Notably, the claim language is not "to a lower velocity" or "to a reduced velocity." Rice, however, points out that dependant
claim 9 includes the specific numerical limitation of less than approximately 200 ft./sec. Rolls-Royce counters that claim 9
specifies "said low velocity of less than approximately 200 ft./sec." which indicates that the prior use of low velocity was
meant as "less than approximately 200 ft./sec." Rolls-Royce further identifies in the specification where Rice described the
preferred embodiment as having air flow velocity of about 200 ft./sec. See Def's Br. 33-35.

However, there is no indication in the descriptive passages cited by Rolls-Royce that a velocity less than approximately 200
ft./sec. is critical to the invention. While the reduction in velocity is identified as being advantageous to "reduce inlet
pressure loss" (col. 8, line 27), nowhere does the specification indicate that the velocity of 200 ft./sec. is in and of itself a
necessary parameter to be met in order to realize the gas generator of the invention. Rather, the specification indicates that
the low pressure loss benefit resulting from a lower air flow velocity between the low and high pressure compressors is
made possible by the additional radial space made available by the increased pitch-line radius, r, as a consequence of the
intercooler. See col. 8, lines 28-38. The description in the '499 patent specification of the air flow velocity is unlike the
situation identified in Toro Co. v. White Consolidated Industries, Inc., 199 F.3d 1295 (Fed. Cir. 1999), wherein the
specification described the advantages of a unitary structure of a ring permanently attached to a cover as being important to
the invention.

Rolls-Royce also relies upon the prosecution history for support of its proposed construction of "low velocity." Specifically,
Rolls-Royce identifies that the July 7, 1989 Amendment added the "low velocity" recitation to the claims and argues that Rice's remarks indicate that a low velocity of less than 200 ft/sec. was needed. Examination of Rice's remarks indicate that Hull was being distinguished on the basis of an absence of an external counterflow intercooler. Rice first points out that the compressed air being cooled in Hull's heat exchanger 16 and the coolant flow in the same direction. Rice then offered that Hull did not have a low pressure drop heat exchanger and ducting, which are realized by the claimed counterflow externally mounted intercooler. Amendment 8.

When Rice turned to the DuPont prior art, Rice again argued that a counterflow externally mounted intercooler was absent just as in Hull. Rice also pointed out that the discharge of the axial flow fan 18 of DuPont was directly to heat exchanger 26 and would be high. Similarly, the velocity to downstream heat exchanger 28 would be high "because there is very little change in the cross-sectional flow area shown." Amendment 9. Rice's remarks indicate nothing more than the prior art did not include the ducting that would radially expand the air flow to a lower velocity. His remarks do not indicate that either Hull or DuPont were being distinguished on the basis of the specific air flow velocity through the heat exchanger and ducting of each. The import of Rice's remarks do not extend beyond the requirement that the ducting radially expand the air flow to slow it to a lesser velocity. The remarks clearly do not amount to a clear disclaimer of air flow velocities through the intercooler and associated ducting above 200 ft./sec. Thus, the Court adopts Rice's construction for "low velocity" as being "a decreased air flow velocity."

Having adopted Rice's construction of low velocity, the Court turns to the disputed term "to radially expand." Rice proposes the construction "to cause air flowing away from the axis of the shafting to increase in volume." Rice argues that a person of ordinary skill in the art would understand that "radially expand" means something expands as it moves away from the axis, in contrast to "axial" which indicates a direction along the axis. Rolls-Royce, on the other hand, proposes the construction "to increase the cross-sectional flow area in a direction generally perpendicular to the axis of the gas generator."

However, the embodiment disclosed in figure 7a of the '499 patent depicts a duct that "radially expands" the air flow from the low pressure compressor. The air flowing radially through the duct in figure 7a is not perpendicular to the axis of the gas generator. Further, the specification describes how the direction of the flow with respect to the radial position can be "curved backwards" and vary in angle to accommodate the different structures. Col. 14, lines 44-50. Nothing requires that the expansion occur only when the air is flowing perpendicular to the axis. Thus, the Court adopts Rice's plain meaning "to cause air flowing away from the axis of the shafting to increase in volume."

The parties previously requested no construction for the term "outlet duct;" therefore, the Court will not construe that term. The Court previously construed "return duct" to mean "conduit for conveying air back from the externally mounted intercooler."

In sum, the Court construes the disputed term, "said outlet duct being configured to radially expand said air flow to a low velocity" to mean "said outlet duct shaped and positioned to cause air flowing away from the axis of the shafting to increase in volume resulting in a decreased air flow velocity."

Both parties dispute the meaning of the term "lower end." Plaintiff claims that the term "lower end" means below the ground surface and the term "upper end" means opening to the atmosphere above the ground surface. Defendants argue that the term "lower end" means the underground terminal point of the conduit and the upper end means the portion of conduit opening to the atmosphere.

First, the Court looks at the claim language to interpret the meaning of the terms "lower end" and "upper end." The ordinary
meaning of the term "end" is "... 1a ... (2): the extreme or last part lengthwise ... (the rear end of an automobile) ...." WEBSTER'S THIRD NEW INTERNATIONAL UNABRIDGED DICTIONARY ((c) 1961, 1993) at 748. The Court further notes that limitations to the term "end" are found in the claim language. The claim provides that the collection elements are connected to the "lower end" of the conduit. The collection elements are located within the contaminated area and this contaminated area is located underground. Combining the limitation in the claim that the collection elements are located underground and the ordinary meaning of the term "end", the Court concludes that the term "lower end" means the extreme or last part of the conduit located underground.

The Defendants would like the Court to construe the term "lower end" as a specific "point" located underground. The Court refuses to add the limitation of a specific "point." The Court believes that the issue of whether a specific "point" is the "lower end" is a question of fact, which should be decided during the infringement analysis.

The meaning of the term "upper end" is straight forward. The claim provides the limitation that the "upper end" opens to the atmosphere. Hence, the Court concludes that the term "upper end" must be construed to mean the portion of the conduit opening to the atmosphere.

4. "lower portion"

Floe contends that this phrase should be construed as "a portion of a structure that is physically located below another portion of the structure." In support of its construction, Floe maintains that the plain meaning of "lower portion" is a portion of a structure that is physically located below another portion of the structure. Floe asserts that the specification uses "lower portion" in this context, and thus supports a construction that gives "lower portion" its ordinary meaning. Floe also points out that its broad proposed construction is consistent with the Federal Circuit's construction of "portion." See Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1348 (Fed. Cir. 2001) (construing "portion" as "a part of any whole, either separated from or integrated with it.")

Newmans, on the other hand, asserts that this phrase should be construed as "a lower structural element that is one of three different structural components of the ramp member." Newmans does not refute the asserted plain meaning of "lower portion." Instead, Newmans maintains that the patentee disclaimed the plain meaning of "lower portion." Instead, Newmans maintains that the patentee disclaimed the plain meaning of "lower portion" in the prosecution history. The Court disagrees.

In support of its disclaimer argument, Newmans points to statements that the patentee made in response to a rejection by the Patent Trademark Office ("PTO"). Newmans, however, takes statements between the patentee and the PTO out of context. Further, Newmans asks the Court to rely on numerous statements and multiple inferences in the prosecution history in order to find that the patentee disclaimed the scope of "lower portion." The prosecution history, however, does not refer to "a lower structural element that is one of three different structural components of the ramp member." On this evidence, the Court does not find that the patentee clearly and unmistakably made such a disclaimer. Thus, consistent with the plain meaning of "lower portion" and the specification, "lower portion" should be construed as "a portion of a structure that is physically located below another portion of the structure."

A. "Lower Substrate" and "Conductive Layer Formed Over Said ... Substrate"

The disputes concerning these two terms are closely connected because a determination of the meaning of one term will almost automatically yield a determination of the meaning of the other. Paradigm contends that these terms connote a horizontal, planar surface only, so that the conductive layer is literally over, or on top of, the nonconductive substrate. In Paradigm's view, the conductive layer in its cylindrical array is not formed "over" the nonconductive layer, but inside it. Paradigm asserts that the nonconductive layer in its array is not "lower" than the conductive layer, but rather is an outer ring.
LDAI disagrees. According to LDAI, when the conductive layer is formed onto the surface of the nonconductive layer, it is formed "over" the nonconductive layer, regardless of whether the structure is planar or cylindrical.

After reviewing the evidence, and in particular the claims of the '951 patent itself, as well as the expert testimony concerning how these terms would be understood by a person of ordinary skill in the art, I agree with LDAI's interpretation of these terms. I believe that the words "lower" and "over," as used in the patent, do not mean that one layer is physically above, or higher than the other, but simply that one layer is applied or formed onto the surface of the other.

The word "over" has many different meanings. When used to describe the relative position of two objects, it can mean that one object is physically higher than the other, e.g., "the lamp hangs over the table." It can also be used, however, to connote that a surface is covered with some substance. If one were to say, for example, "the ceiling was stained, so I painted over it," that would not mean that the person painted above the ceiling, but only that he covered its surface with paint. In that example, the paint would, strictly speaking, physically be beneath the ceiling.

In my view, that is a more logical interpretation of the terms at issue here. The patent indicates that one begins with a nonconductive layer, and then forms a conductive layer "over" it. That simply means that one surface of the nonconductive layer is covered with a conductive layer. The fact that the nonconductive layer may be cylindrical does not mean that it cannot be covered "over" in this manner.

Likewise, the nonconductive layer can be described as "lower" than the conductive layer for the same reason: the conductive layer has been formed "over" it. Again using the analogy of a painted ceiling, one could speak in terms of what lies "beneath" the surface of the paint, even though the ceiling itself is physically higher off the ground than the paint that covers it.

Paradigm's interpretation of these terms is not persuasive, because according to Paradigm's logic, one could theoretically construct a laser diode array exactly like those made by LDAI, flip it upside down, and claim that it does not infringe the '951 patent because the conductive layer is physically lower than the nonconductive layer. Such a result is obviously absurd. Clearly, then, these terms are not meant so much to describe the physical position of these layers, but rather the order in which they are formed. The nonconductive layer is formed first, and then the conductive layer is formed "over" it, i.e., on the surface of the nonconductive layer. I conclude, therefore, that as used in Claim 1 of the '951 patent, "lower substrate" refers to the base or foundation on which the rest of the structure is built, and "conductive layer formed over" the substrate means that the conductive layer covers the surface of the substrate.

4 I also note that, as pointed out by LDAI, Paradigm's arrays are actually constructed of two identical pieces, each of which is shaped roughly like a half-cube with a semicylindrical concavity running along one side. Those pieces are made of a nonconductive material, and the concave surface is covered with a conductive layer. The two pieces are then joined together, with the concavities facing each other, to make the final product. See Fig. 3 (taken from the drawing sheets of the '850 patent). Even using Paradigm's own interpretation of these claim terms, then, the two halves, considered individually, could arguably be considered to have a conductive layer "over" the "lower" nonconductive layer.

3. "Lower surface"

Microthin contends that "lower surface" should be construed to mean "surface of the plastic sheet that faces or contacts the surface on which the mat or pad rests, the underside or bottom." SiliconeZone argues that "lower surface" has a plain and ordinary meaning in the context of the patent that requires no special construction.

While the plain meaning of "lower surface" may seem clear to a person of ordinary skill in the art, Microthin's construction adds greater clarity in light of the specification. The specification actually speaks of different lower surfaces such as the
lower surface of the main plastic sheet, the lower surface of an ink coating applied to the plastic sheet's lower surface, or, in some embodiments, the lower surface of the entire mat that includes a non-slip coating adhered to the bottom after the ink coating has been applied. See Memorandum, Ex. F(a), Patent No. 5,942,311, at 2:5-21. Which "lower surface" is actually the bottom depends upon which embodiment is used as disclosed in the specification. Because of the differing embodiments disclosed in the patent, a person of ordinary skill in the art would understand that "lower surface" speaks more generally of the bottom or underside of the mat that faces, if not actually contacts, the surface on which the mat rests. See Johnson Worldwide Assocs., Inc. v. Zebeco Corp., 175 F.3d 985, 991 (Fed. Cir. 1999) ("Varied use of a disputed term in the written description demonstrates the breadth of the term rather than providing a limited definition"). Therefore, the Court construes "lower surface" to mean "surface of the plastic sheet that faces or contacts the surface on which the mat or pad rests, the underside or bottom."

B. Claim 4

ASE argues that it is entitled to a judgment as a matter of law that its products do not infringe claim 4 of the '143 patent
because its products are based on the prior art of the Le Vine patent, rather than the teaching of the '143 patent. Issued claim 4 states as follows:

A gas concentration sensor system comprising:

a conductive metal oxide gas sensor having resistance which is variable in response to gas concentration, including concentration of a target gas;

means connected to the gas sensor for measuring a first resistance of the gas sensor at a lower temperature;

means connected to the gas sensor for intermittently heating the gas sensor from the lower temperature to a higher temperature;

means connected to the gas sensor for measuring a second resistance of the gas sensor at the higher temperature;

means connected to the measuring means for determining target has concentration as a function of both the first and second resistances;

register means for accumulating values of target gas concentrations exceeds a selected value; and

means for subtracting values from the register means when target gas concentration is less than selected value.

1. Scope of Claim 4

ASE first claims that it is entitled to summary judgment as to claim 8 because its sensors measure resistance only after the low temperature cycle. ASE asserts that it is practicing the Le Vine method of using high/low cycles to purge the sensor, rather than utilizing the '143 patent's methodology requiring measurements at the conclusion of both cycles. ASE concludes:

By the words of the claim itself, the second resistance measurement cannot be taken at any temperature higher than that of the low temperature cycle. The claim is restricted to a resistance measurement taken during or immediately following the high temperature cycle of the device.

ASE admits that it makes more than one measurement, but states that the second measurement is taken within one millisecond of the first measurement to ensure that an accurate measurement has been made. ASE asserts that the difference between the two temperatures at the times of measurement is infinitesimal.

Quantum responds that ASE's detectors infringe claim 4 because they measure resistance at one temperature and take a second measurement at a different temperature. Quantum argues that claim 4 does not designate a particular order or sequence of measurement. Quantum asserts that a millisecond time span between measurements and an infinitesimal temperature drop cannot be presumed because the period where the heater shut off is at least four seconds. Quantum questions the plausibility of ASE's claim that it makes the second measurement for accuracy purposes. According to Quantum, the true reason for the second measurement is to compensate for humidity effects, just as the '143 patent teaches.

The first step of the analysis, determining the scope of the patent, involves principally two questions: First, does claim 4 require a measurement to be taken after the high temperature cycle or does claim 4 only require that the two measurements be taken at different temperatures? The second question to be answered, assuming that a measurement need not be taken after the high temperature cycle, is whether there is a limit as to how small the differential in temperatures may be.

As to whether claim 4 requires that a resistance measurement be taken after the high temperature cycle, the language of the patent is examined first. Claim 4 requires a means to heat the sensor "from the lower temperature to the higher temperature" and means "for measuring a second resistance of the gas sensor at the higher temperature." From this language, it would appear that the second resistance measurement must be taken at the temperature to which the sensor is heated. The specification, however, states that the period between the pulses when the current is not flowing may be used for the measurement of the sensor's resistance. The preferred embodiment further notes that "although the method has been described in terms of measuring two resistances at two different temperatures, it will be apparent that enhanced results may
be provided by making three or more measurements at different temperatures."

To be consistent with this language, claim 4 must be interpreted to mean that the higher temperature measurement need not be taken precisely at the end of the high temperature cycle. The purpose of the high temperature cycle is to purge the sensor and return it to its high impedance state -- this is the teaching of the Le Vine patent. The teaching of the '143 patent is that two measurements at different temperatures allow "the effect due to humidity . . . [to] be deduced by suitable computation, and compensation can be mathematically performed." The specification states that "the resistance measurements made just after the high current interval are more dependent on ambient temperature and humidity than carbon monoxide concentrations." Therefore, claim 4 requires only that measurements be taken at different temperatures during a non-pulse period so that they are capable of being used in a calculation to deduce the effects due to humidity and ambient temperature.

Quantum argues that claim 4 does not include a humidity compensation limitation, but the specification expressly provides that the '143 patent's "improvement [over Le Vine] compensates for response changes due to changes in ambient temperature and humidity . . . without the need for additional compensating elements." If claim 4 is read to exclude this limitation, then there is no improvement on the Le Vine methodology.

Quantum also argues that claim 4 does not require any specific differential in temperature because the language of claim 4 refers only generally to "higher" and "lower" temperatures. The language of claim 4 does not limit the these temperatures to specific ranges, therefore it would be improper to read specific numerical range into claim 4. But similarly, the patent's stated innovation over Le Vine cannot be ignored. See Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1303 (Fed. Cir. 1997) (although term not limited in claim language, within the context of patent "conductive liquid-like medium," means a medium sufficiently conductive to perform its stated function as a variable capacitor plate). The temperature differential between the two measurements must be large enough to deduce the effects due to humidity and ambient temperature through a mathematical calculation, but this differential is not limited to the differential stated in the preferred embodiment.

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The parties' central argument is over the phrase "water-miscible lubricant," which appears in both independent claims and throughout the dependent claims. While the patent defines "water-miscible" substances as those "sufficiently water-soluble or water dispersible so that when added to water at the desired use level they form a stable solution, emulsion, or suspension," (Cleveland Decl. Ex. A at col. 2, ll. 46-50), the patent is silent as to the meaning of the word "lubricant." To resolve the meaning of the word "lubricant" in this phrase, the parties have advanced both dictionary definitions and the declarations of several individuals with experience in the testing and development of conveyor lubricants. It is a cannon of claim construction that claims are construed as one skilled in the art would understand them in light of the specification of which they are a part. See Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1575 (Fed. Cir. 1986). While the Court has not explicitly been asked to define who constitutes "a person with ordinary skill in the art" in this case, the parties' expert declarants possess, at the very least, a college chemistry background and several years of practical experience with conveyor lubricants. For the purposes of this motion, therefore, the Court will assume that a person with ordinary skill in the art possesses at least these qualifications.

Ecolab offers the definition of "lubricant" from Webster's Ninth New Collegiate Dictionary: "a substance (as grease) capable of reducing friction" or "something that lessens or prevents friction or difficulty." (Pl.'s Mem. Supp. Prelim. Inj. at 17.) Ecolab also relies heavily--especially in its testing of Dowanol DPM--on the "understanding" of Ecolab Senior Chemist Amy McBroom that "a lubricant is a substance that produces a COF [coefficient of friction] 3 lower than that produced using water alone." (McBroom Decl. P16.) Ms. McBroom has three years of college chemistry and has spent three and a half years formulating, testing, and analyzing conveyor lubricants. Ecolab provides no support, other than Ms. McBroom's Declaration, for her definition of "lubricant."

3 A coefficient of friction is a physics concept that deals with measuring the ease with which two surfaces slide against each other. (McBroom Decl. P7.) In technical terms, it is expressed:

\[
\text{Coefficient of Friction} = \frac{\text{(Friction Force Caused by Drag)}}{\text{(Load Mass (Normal Force))}}
\]
JohnsonDiversey advances a definition of "lubrication" from Hawley's Condensed Chemical Dictionary (14th Ed.)--a source used by Ms. McBroom for the definition of Dowanol DPM, but not thereafter. Hawley's defines "lubrication" as:

The introduction of a substance of low viscosity between two adjacent solid surfaces, one of which is in motion (bearing). From an engineering point of view, the chemical nature of the substance is not of critical importance. Thus, materials as diverse as air, water and molasses could theoretically be used as lubricants under appropriate conditions. Air and water have been used, as well as some solids such as graphite, but in general oils, fats, and waxes are utilized. The ability of a substance to act as a lubricant is sometimes called lubricity.

(Osswald Decl. P14.) Under this definition, whether or not a given substance is a "lubricant" depends on whether it, in fact, provides lubrication in a particular application. If "air, water, and molasses could theoretically be used as lubricants under appropriate conditions," then any of those substances could be counted as "lubricants" under the Hawley's definition so long as they lubricate a specific function.

In addition, JohnsonDiversey provides the definition of "lubricant" put forth by Jacques Rouillard, a current group manager of research and development at JohnsonDiversey and a former senior chemist. Mr. Rouillard's college education included eighteen credits in organic, inorganic, physical, and analytical chemistry, and he has worked with conveyor lubricants for over twenty-three years. His definition reads:

Lubricant. A substance applied to track surfaces to materially improve the mobility of containers through the filling process. Suitability for use as a lubricant in a given application is a factor to be considered by the person of ordinary skill in the art in determining whether or not a given chemical or compound can be used as a "lubricant" in that application.

(Rouillard Decl. P10.)

The Court finds none of these definitions to be entirely satisfactory. Ecolab's definitions, which strain to define lubricant in wholly function-neutral terms, fail to take into account the context in which the method disclosed by the '494 patent is actually applied. If materials such as air and molasses can be lubricants given the proper application, then the word "lubricant" clearly requires reference to its function to be properly understood. While Ms. McBroom's definition avoids such a reference, the totality of her declaration--especially her experiments with containers and a conveyor belt--makes clear that reference to a substance's application is crucial to determine whether it qualifies as a lubricant. In this context, Ms. McBroom's choice of water as a baseline for determining relative coefficients of friction fails to advance the Court's inquiry. Not only is the choice of water entirely arbitrary, but its use as a baseline is directly contradicted by Hawley's--a source cited by Ms. McBroom--which lists water as a potential lubricant. Obviously, a lubricant cannot be both water itself and "a substance that produces a COF [coefficient of friction] lower than . . . water." (McBroom Decl. P16 (emphasis added).)

JohnsonDiversey's definitions also present their share of problems. While Hawley's offers the most promising option, it never actually defines "lubricant," indicating, on one hand, that a lubricant is a "substance of low viscosity," and, on the other, that it could be almost anything at all. Likewise, Rouillard's definition is helped by reference to the method recited by the '494 patent, but it also imports a subjective component, relying, as it does, on an on-the-fly determination by a person of ordinary skill in the art on the "suitability of use" of "a given chemical or compound" "as a lubricant." Needless to say, this begs, rather than answers, the question.

Lurking behind all these definitions, however, is a fairly basic concept. The declarants all agree that a lubricant must, at bottom, lower the coefficient of friction of a given application. If it does not, then it is not a "lubricant" in terms of that application. Indeed, the specification of '494 patent itself, referring to the "lubricant coating," that the mixture of the water-miscible silicone and lubricant ultimately creates, states:

The invention provides a lubricant coating that reduces the coefficient of friction of coated conveyor parts and containers and thereby facilitates movement of containers along a conveyor line.
(Cleveland Decl. Ex. A at col. 2, ll. 2-5.) While this understanding of lubricant, drawn from the specification itself, refers to the "lubricant coating," the Court finds that it corresponds to the declarations before it and is applicable to the "water-miscible lubricant" set forth in claims 1, 21, and the dependent claims. Indeed, it seems clear that a "water-miscible lubricant" could not be a "lubricant" in the context of the '494 patent if it did not reduce the coefficient of friction of that "lubricant coating" with regard to "coated conveyor parts and containers."

Thus, the Court concludes that a person of ordinary skill in the art would understand the word "lubricant," as used in the phrase "water-miscible lubricant" in claims 1 and 21 of the '494 patent, as follows: "a substance that materially reduces the coefficient of friction of the lubricant coating with regard to coated conveyor parts and containers."

"Lug"

For similar reasons, the Court accepts Ricoh's definition of the term lug as "a projection or handle by which something may be grasped." 6 As discussed above, the patent repeatedly and invariably describes a lid that is removed and replaced so as to plug and unplug the discharge mouth of a developer container. It also repeatedly and invariably describes a lid containing a lug that is grasped so as to remove and replace the lid. (See, e.g., figs. 4a, 4b, 4c, 9a, 9b, 13a; col. 7, ll. 12 - 47; col. 11, ll. 12-16, 60-63; col. 12, ll. 2-10; col. 12, ll. 2-10; col. 13, ll. 13-45; col. 19, ll. 23-42.) Defendants' proposed construction -- "a projection with which the copier interacts" -- adds ambiguity to the term "lug" that does not exist in the patent. The patent not only conveys that the copier "interacts with the projection on the lid," but consistently specifies how the copier interacts with the lug of the lid: the copier grasps the lug.

6 The Court's August 2, 2005 opinion construed "phrases related to a 'lug' protrusion of a developer container." 380 F.Supp.2d at 430. Those phrases and the Court's analysis of them concerned the location on the lid from which the lug must protrude. Id. at 430-31. The Court did not directly address the definition of the term "lug," which the parties now dispute.

The Court is not persuaded by defendants' argument that the term "lug" must have a broader meaning because it is used elsewhere in the specifications to describe a projection on the bottle that is never grasped. (Defs.' Br. at 25.) The claims cover only a "lid." As used in those claims, the term "lug" refers only to the projection on the lid. The specifications uniformly describe that projection as being grasped. The other use of the term "lug" -- to describe a projection on the toner bottle -- appears only in the specifications, with reference to a structure that is not part of the claimed subject matter and is never discussed in the claims. Even where the same term appears more than once in the claims, the written description may support different definitions for the term. See, e.g., Pitney Bowes, Inc. v. Hewlett-Packard, Co., 182 F.3d 1298, 1310 (Fed. Cir. 1999). Here, the use of the term "lug" is entirely consistent within the claims; the other use of "lug" appears in the specification with reference to a portion of the toner bottle not claimed by the '963 patent. The Court finds that the proper construction of the claim term "lug" is "a projection or handle by which something may be grasped."
Nothing in the plain language of Claims 1 or 6 suggests such a limitation. Thus, the court is permitted to look to the specification to determine if the patentee intended to give the term a specialized meaning. Vitronics, 90 F.3d at 1582. The court is not, however, permitted to read the particular formulations and examples in the specification into the claims themselves. Advanced Cardiovascular Sys., Inc., 261 F.3d at 1338-39. This is exactly what Gerdes is asking the court to do. The court cannot find any language in the specification that demonstrates the patentee's intention to give "lug" a specialized meaning, nor could Gerdes provide any such citation to the court. Instead, Gerdes points only to Figure 1 in which two driven lugs are attached to a certain ring at only one end and asks the court to read this limitation into the term "lug" itself. This is clearly an improper use of the preferred embodiment. Thus, the court finds that the term "lug" should be given its ordinary meaning, that is, "a small projecting part of another member."

The reflector body has lugs on a side nearest the light emission window

The parties are not far apart on the meaning of "lugs". Philips urges that it means "small projecting parts of the reflector body used for positioning the light source." Iwasaki advocates that it means "projections, pads or ridges". Based upon my review of the specification and without reading a non-existent functional limitation into the claim language, I conclude that lugs, in the context of the claim language, means "small projecting parts of the reflector body". 7

The parties disagree as to the meaning of "on a side nearest" in the phrase "the reflector body has lugs on a side nearest the light emission window". Philips argues that it means the lugs are positioned at the front or top end of the reflector body closest to the light emission window. Iwasaki urges that it means a side at the front end of the reflector body.

The claim language describes the relationship of the lamp to the reflector body: "the electric lamp being fixed in the reflector body with the first end portion inside the neck-shaped portion, while the cavity lies within the reflecting portion and the electric element is on the optical axis wherein the reflector body has lugs on a side nearest the light emission window." There is no dispute that the "light emission window" means a part of the reflector body through which light is emitted outside. At first review, the use of the indefinite article "a" -as in "a side"--and the superlative "nearest" in the phrase "lugs on a side nearest the light emission window" appears ambiguous. The use of both terms assumes the possibility of multiple. Furthermore, the claim language does not differentiate between reflector bodies that, at the end through which light is transmitted, are circular in shape and those that are rectangular in shape. Thus, there can be multiple sides to a given reflector body. In claim 6, the term "front side" is employed and, for the reasons that will later be explained, I construe that term to mean the side that faces in the same direction as the emitted light I will not construe "a side nearest the light emission window" to be synonymous with "front side". I construe the term "a side nearest the light emission window" to mean any side that is at or near the end of the light emitting end of the reflector body and includes the "front side" as defined below, as well as the outer circumference of the reflector body at points closest to the light emitting end.

2. "Luminal attachment and intussusception means"

Independent claims 1 and 11 include the following language:

a luminal attachment and intussusception means coupled to said housing for attachment and inversion of a portion of the
lumen to be removed;

(emphasis added). The parties agree, as do I, that "a luminal attachment and intussusception means" is a means-plus-
function limitation recognized by 35 U.S.C. § 112, P6. Construing means-plus-function claims requires two steps: (1)
identifying the claimed function(s); and (2) identifying the corresponding structure identified in the written description

Here, I think that "luminal attachment and intussusception means" involves two functions: (1) attaching the lumen 2; and (2)
intussusception - or inversion - of the lumen. The parties do not appear to disagree over the recited functions. Instead, the
dispute lies in the corresponding structures. "In order to qualify as corresponding, the structure must not only perform the
claimed function, but the specification must clearly associate the structure with performance of the function." JVW
1106, 1113 (Fed. Cir. 2002).

As to the first function - that of attachment, I find that the corresponding structure consists of the annular groove. The
specification explains that, with respect to the first embodiment:

the bowel is attached to the central post 14, such as by tying the bowel portion to the central post at the annular groove
with a ligation member 26.

Col. 3, line 66 - Col. 4, line 2 (emphasis added). Ravo and Nicolo urge that the structure consists of the "central post" and
that the reference to the annular groove is simply intended to be an example of where on the central post the lumen could be
attached. At first glance, this argument holds some appeal. Yet, each of the drawings which correspond to the first
embodiment (Figures 1 - 3) shows the lumen attached to the central post at the annular groove. Accordingly, I read the use
of "central post" as Ravo's and Nicolo's short hand reference for "the annular groove located on the central post." Indeed,
the use of the shortened phrase "central post" in the '148 Patent does not occur until after the more thorough definition of
the annular groove located on the central post. Further, if, as Ravo and Nicolo suggest, the annular groove is not the
corresponding structure for attachment of the lumen, it is curious that the '148 Patent teaches that:

following the mobilization and resection of the mesentary, the surgical tool 10 is positioned into the bowel through the
anus such that the annular groove 16 of the central post 14 is aligned midway along the segment of the colon to be resected.

Col. 3, lines 59-66 (emphasis added). Clearly, the reference to the "annular groove" when positioning the device is vital
because the lumen will be attached to the annular groove.

The second embodiment also reveals the lumen being attached at the annular groove:

[a] surgical tool 50 includes an annular groove 56 around the housing 52 with the annular groove 56 being analogous to
the annular groove 16 on the central post 14 of the surgical tool 10 described above. The annular groove 56 is provided to
receive ligation member 26 for attaching the bowel to the surgical tool 50 as will be described hereinafter.

The colon can then be attached to the housing 52 at the annular groove 56 with the ligation member 26, as shown in FIG.
4, substantially in the same manner as discussed above in connection with surgical tool 10.

Col. 5, lines 54-58 and Col. 6, lines 34-37 (emphasis added). The illustrations also confirm that the lumen is to be attached
to the annular groove. See Figures 4, 5 and 7. 3 While Ravo and Nicolo argue that the first and second embodiments differ
and that only the second embodiment calls for attachment at the annular groove, the specification itself notes that the
attachment in the second embodiment occurs in "substantially the same manner" as in the first embodiment. Consequently, I
do not find their argument to be persuasive. 4

--- Footnotes ---

3 I note that, for attachment to be complete, an additional item is required - something external to the device itself. The '148 Patent teaches that the item could consist of glue or a ligation member. As the item is not part of the device, though, I do not consider it to be part of the "corresponding structure."

4 I note that Ravo and Nicolo cite to Col. 7, line 4 of the '148 Patent in support of their contention that the structure corresponding to performing the function of attaching the lumen is the central rod. See Plaintiffs' Brief, p. 18. Yet I read this passage as explaining, not how the lumen is attached for purposes of intussusception, but of how the lumen is gathered in, after intussusception, for purposes of stapling and resection. Indeed, the suture noose is offered as an alternative to the use of the carrier arms, which come into play "following intussusception of the bowel." See Col. 6, line 58.

--- End Footnotes---

As stated above, the "luminal attachment and intussusception means" references a second function as well - intussusception. The parties agree, as do I, that the term "intussusception" means a telescoping of the lumen, where the lumen is pulled inside itself. Ravo and Nicolo argue that the structure which corresponds to this function consists of the central post and the casing or other rigid member over or around which the lumen is inverted, and the equivalents thereof. See Plaintiffs' Brief, p. 18-19 and Docket No. 22, p. 4-5. Ethicon counters that the annular groove is also involved in intussusception.

As stated above, I have already concluded that the annular groove is part of the device to which the lumen is attached. The phrase at issue is "a luminal attachment and intussusception means." The plain meaning of the use of the conjunctive "and" is that the same structure is used both for attachment and intussusception. Consequently, then, the annular groove is used to accomplish intussusception.

I do, however, agree with Ravo and Nicolo that the '148 Patent uses the term "central post" to describe the structure which performs the function of intussusception. Indeed, with respect to the first embodiment, the '148 Patent reads that:

following ligation of the bowel to the central post 14, the central post 14 is moved relative to the annular housing 20 a distance approximately equal to one-half the length of the bowel to be resected…. With the bowel completely immobilized and attached to the central post 14, this relative movement will cause the intussusception of the segment of the bowel to be removed….

Col. 4, lines 9-20. Thus, with the understanding that the annular groove is part of the central post which plays a vital role in the attachment of the lumen, I find that the structure which performs the function of intussusception consists of the central post as a whole as well as the casing or other rigid member over or around which the lumen is inverted, and the equivalents thereof:

With respect to the second embodiment, the corresponding structure would involve the annular groove and the stapling assembly, see Col. 6, lines 37-47 (stating that "following the attachment of the colon to the surgical tool 50, the portion of the colon to be resected is intussuscepted by relevant movement of the stapling assembly 61 relative to the annular groove 56 as shown in FIG. 5. In the surgical tool 50 illustrated in FIG. 5, the stapling assembly 61 is advanced relative to the housing 52 by a threaded connection. The relevant portion of the bowel will be intussuscepted by a withdrawal of the distal end of the surgical tool 50 corresponding to the advancement of the stapling assembly 61 relative to the annular groove 56 and housing 52."), and the equivalents thereof.

--- End ---

4. "the lumen having a first diameter for the distal portion of the guide wire tube and a second diameter larger than the first diameter for the proximal portion of the guide wire tube"

The plaintiffs propose that this term carry its plain meaning. The defendants propose "the lumen having a first diameter for
the distal portion of the guide wire tube and a second diameter for the proximal portion of the guide wire tube that is greater than the first diameter such that a reservoir is created in the guide wire lumen."

The plaintiffs argue that this term is similar to the "proximal portion of a second length longer than the first length" term that the court declined to construe in the Cordis case. See Cordis Order at 10-11.

The defendants argue that according to Phillips and SciMed "the claims cannot be read so broadly as to cover balloon catheters without such a 'reservoir.'" Defendants' Response Brief at 4. The defendants provide three arguments in support of this construction. First, the lone embodiment of the patent, as shown in Fig. 7, includes a reservoir. The brief description of the drawings states that the Fig. 7 shows "the reservoir formed inside the guide wire lumen." '358 Patent at 3:21-22. The defendants cite to the plaintiffs' brief in the Cordis case, as well as the plaintiffs' expert's declaration in the Cordis case, to show that the plaintiffs agree that there is only one disclosed embodiment. Defendants' Response Brief at 4-5 (citing Plaintiffs' Opening Brief in the Cordis case at 7).

Second, the defendants argue that the prosecution history makes it "clear that the large diameter portion of the claimed guide wire lumen must form a 'reservoir.'" Defendants' Response Brief at 5. The statements that the defendants point to in the prosecution history are contained in excerpts from the inventor's notebook. As an example, the inventor's notebook contains a statement that "[t]he larger diameter lumen acts as a reservoir supplying heparin lubricant to the tip of the catheter." Id. at 5-6 (citing Wu Decl. Ex. 9 at MEDBSC00002727).

Finally, the defendants argue that the plaintiffs' statements to this court in the Cordis case result in the plaintiffs being judicially estopped from arguing that "the guide wire lumen need not possess a reservoir." Id. at 7. The statements relied on by the defendants come from the plaintiffs' briefing in the case. Id. at 6.

It is noteworthy that the definition proposed by the defendants is nearly identical to the claim language with the addition of the limitation "that a reservoir is created in the guide wire lumen." Notwithstanding the plaintiffs' statements made in the Cordis case, the defendants' proposed construction results in improperly importing limitations from the specification. In essence, the defendants' argument boils down to asking this court to limit the claims of the patent to the sole disclosed embodiment.

The court also notes that the language of claim 3 counsels against the defendants' proposed construction. Claim 3, which depends from claim 1, adds the limitation that "the guide wire lumen is adapted to receive an anticoagulant solution." '358 Patent at 7:43-45. Including the limitation of a reservoir in claim 1 as urged by the defendants would render claim 3 redundant.

With respect to the defendants' prosecution history argument, there is no evidence that the inventor made a clear and unmistakable disavowal of the claim scope. The inventor's notebook that contains the statements relied on by the defendants was provided by the prosecuting attorney to support an invention date that swore behind the reference relied on by the examiner.

The defendants' "judicial estoppel" argument is likewise unpersuasive. As this term was not in dispute in the Cordis case and the court did not address the issue of a reservoir, judicial estoppel simply does not apply here. New Hampshire v. Maine, 532 U.S. 742, 750-51, 121 S. Ct. 1808, 149 L. Ed. 2d 968 (2001) (discussing the general considerations in applying judicial estoppel, which include: (1) a party taking a position "clearly inconsistent" with its earlier position; (2) the party's success in persuading a court to accept that earlier position, and (3) whether the party would derive an unfair advantage or impose an unfair detriment on the opposing party if not estopped).

This term is straightforward as written and will be easily understood. Therefore, no construction is needed.

D. "lumen-traversing region of the resilient structure"

The parties dispute the phrase "lumen-traversing region of the resilient structure" from claims 37 and 38. As explained in an
earlier footnote, the lumen is the inner open space or cavity of a tubular organ. Used here, it is simply the open space within a fallopian tube.

CONCEPTUS'S PROPOSED CONSTRUCTION
"region of the resilient structure that crosses the width of the fallopian tube"

HOLOGIC'S PROPOSED CONSTRUCTION
"a section of the resilient structure that crosses the entire length of the fallopian tube lumen"

The parties could not be more diametrically opposed on the meaning of the phrase "lumen-traversing region." Conceptus argues that it refers to the part of the contraceptive device that traverses the entire width -- meaning the diameter or cross-section -- of the lumen, while Hologic contends that it pertains to the portion of the device traversing the entire length of the fallopian tube. As explained below, neither construction seems entirely correct.

Only some embodiments of the present invention have a clearly denoted "lumen-traversing region." In the embodiment shown in FIG. 1 (reproduced again below), the area denoted by number 24 is the "lumen-traversing region" (col. 9:7-12).

On either side of the lumen-traversing region are the "anchors" of the device, with the "proximal anchor" denoted by 20 and the "distal anchor" denoted by 22. These anchors serve their named purpose -- they keep the contraceptive device "anchored" in the fallopian tube so that the device is not expelled.

When the embodiment shown in FIG. 1 is inserted into the fallopian tube, the anchors are actually not curled -- rather, they held in a straight position to ease the insertion of the device. When the device is placed within the fallopian tube, the proximal and distal anchors are ideally placed on either side of the narrowest part of the tube (col. 8:43-53). That way, when the anchors are unfurled, the device is held snugly within the tube. FIG. 10 below illustrates the placement of the FIG. 1 embodiment within the fallopian tube.

In FIG. 10 shown above, the narrowest part of the fallopian tube, called the "isthmus," is denoted by 80, while the proximal and distal anchors of the FIG. 1 embodiment are shown as 92 (the proximal anchor) and 90 (the distal anchor).

Given this intrinsic evidence, it is clear that Hologic's proposed construction cannot be correct. The device shown in FIG. 10 clearly does not traverse the entire length of the fallopian tube. Rather, there are portions of the fallopian tube beyond the distal anchor of the contraceptive device (shown in FIG. 10 as 90) that the device does not occupy. Moreover, the specification expressly stated that the invented device could span various other portions of the tubal lumen (see cols. 3:49-52, 8:55-58). In sum, Hologic's proposed construction is contrary to the teachings of the specification, and improperly excludes numerous disclosed embodiments. As such, it must be rejected. See Vitronics, 90 F.3d at 1583 (holding that a construction that excluded a preferred or disclosed embodiment would be "rarely, if ever, correct and would require highly persuasive evidentiary support"); see also Verizon Servs. Corp. v. Vonage Holdings Corp., 503 F.3d 1295, 1305 (Fed. Cir. 2007) (if a disputed claim term has multiple ordinary meanings, the court should adopt the ordinary meaning that includes the disclosed examples in the specification).

Conceptus's proposed construction is also problematic. In claim 35 (which is not asserted in this action), the "lumen-traversing region" is expressly defined by the claim as the region "extending between the proximal and distal anchors" (col. 23:31-37). This is exactly as the "lumen-traversing region" is described for the embodiments in FIGS. 1 and 6 (col. 9:11-13).

Nothing in claim 36 or the specification requires that the contraceptive device "cross [] the width of the fallopian tube" to be permanently affixed within the fallopian tube. Granted, crossing the width of the fallopian tube might maximize the interaction of the device with the surrounding luminal wall, which might be ideal in ensuring that the device is permanently affixed within the tube (especially for those embodiments that promote tissue ingrowth). The intrinsic evidence, however,
does not require limiting the claims to such an ideal embodiment.

Indeed, a person having ordinary skill in the relevant art at the time the patent was filed would have understood, after reading the entire patent, that the lumen-traversing region of the contraceptive device could be lodged against one side of the fallopian tube (and not cross the entire width of the lumen) and still be entirely capable of becoming permanently affixed within the tube. This is because fallopian tube cross-sections can vary significantly in size, and the invention contemplates various means of affixing the device within the fallopian tube without mentioning any requirement that the device cross the entire width of the fallopian tube (see cols. 11:42-45, 16:52-54, 17:52-58). Moreover, it is unclear what Conceptus would consider the "width" of the lumen, given the fact that the lumen (depicted as "L" in FIG. 15A below) contains numerous folds.

[SEE FIG. 15A. IN ORIGINAL]

Since the specification failed to clearly define or denote the term "lumen-traversing region," this order will construe "lumen-traversing region" as it is defined by the language in claim 36. As such, the phrase "lumen-traversing region of the resilient structure" shall be construed as the "region of the resilient structure that interacts with the wall of the fallopian tube lumen to permanently affix the resilient structure within the fallopian tube lumen." 2

2 This order does not rely on the expert testimony of Dr. Mark Glasser to construe this, or any disputed phrase. As such, Hologic's evidentiary objections to Dr. Glasser's testimony are denied at moot.

b. "the luminal portion of the tunica mucosa"

ACell argues that the district court erred in construing the term "the luminal portion of the tunica mucosa." ACell asserts that this term was defined by the patentee through the '389 patent's incorporation by reference of the procedure for preparing intestinal submucosa as detailed in U.S. Patent No. 4,902,508 (the "'508 patent"). According to ACell, the '508 patent specification defines "the luminal portion of the tunica mucosa" as "layer G" which includes the lamina epithelialis mucosa (or the epithelium layer) and its lamina propria. Thus, ACell asserts that the term "the luminal portion of the tunica mucosa" in the '389 patent should be given the same meaning, i.e., the epithelium layer and the tunica propria layer.

5 The parties and patents at issue refer to this layer as the tunica or lamina propria and either reference is understood to refer to the same tissue layer.

Appellees argue in response that the phrase "at least the luminal portion of the tunica mucosa" does not require a special definition and accuse ACell of "fishing" for a special definition. Further, appellees assert that there is no basis for importing a definition, even assuming the term is defined as ACell alleges, of the term from the '508 patent into the '389 patent because the '508 patent is directed to SIS whereas the '389 patent is directed to UBS. Appellees assert that the district court's construction of the term as "the epithelial cells" should be affirmed.

The phrase "urinary bladder submucosa" is present in all three claims at issue. Based on our construction of that term as meaning "urinary bladder submucosa delaminated from . . . at least the luminal portion of the tunica mucosa," our construction of "the luminal portion of the tunica mucosa" applies to all three claims with equal force. We begin with the representative claim language from claim 1 of the '389 patent, which states:
1. A composition comprising urinary bladder submucosa delaminated from both the abluminal muscle layers and at least the luminal portion of the tunica mucosa of a segment of a urinary bladder of a warm blooded vertebrate.

’389 patent, col. 5, ll. 20-23 (emphases added). The ‘389 patent specification informs our inquiry into the meaning of the claims. The "BACKGROUND AND SUMMARY OF THE INVENTION" section discloses that "[t]he wall of the urinary bladder is composed of the following layers: the tunica mucosa (including a transitional epithelium layer and the tunica propria), a submucosa layer, up to three layers of muscle and the adventitia (a loose connective tissue layer)--listed in thickness crossection from luminal to abluminal sides." Id. at col. 1, ll. 49-55. The "DETAILED DESCRIPTION OF THE INVENTION" section sheds considerable light on the issue before us. It states:

The preparation of UBS from a segment of urinary bladder is similar to the procedure for preparing intestinal submucosa detailed in U.S. Patent No. 4,902,508, the disclosure of which is expressly incorporated herein by reference. A segment of urinary bladder tissue is first subjected to abrasion using a longitudinal wiping motion to remove both the outer layers (particularly the abluminal smooth muscle layers) and the luminal portions of the tunica mucosa layers—the epithelial layers). The resulting submucosa tissue has a thickness of about 80 micrometers, and consists primarily (greater than 98%) of a cellular, eosinophilic staining (H&E stain) extracellular matrix material.

Id. at col. 2, ll. 17-28 (emphasis added). That paragraph makes clear that "the luminal portions of the tunica mucosa layers" 6 were defined by the patentee as the "epithelial layers" and that "the procedure for preparing intestinal submucosa" as detailed in the ’508 patent is expressly incorporated by reference into the ’389 patent specification.

Footnotes

6 While we recognize that the phrase in the specification refers to the luminal portions and the claim language refers to the luminal portion, this section of the specification sheds the most light on how the patentee chose to define the claim term.

End Footnotes

The term "epithelial layers" may arguably be subject to two interpretations. On the one hand, it refers to "layers" which appears to reflect that it was meant to encompass more than just the transitional epithelium layer, i.e., the transitional epithelium layer and the tunica propria layer, the only other layer that the ’389 patent teaches is part of the tunica mucosa. See id. at col. 1, ll. 51-52. On the other hand, as recognized by the district court, the epithelium in the urinary bladder is made up of multiple layers of epithelial cells. Markman Order, slip op. at 10. Even accepting that the disclosure in the ’389 patent specification itself is less than clear as to which interpretation is correct, the second important disclosure of the ’389 specification is dispositive. As noted, the ’389 patent specification expressly incorporates by reference the procedure for preparing intestinal submucosa from the ’508 patent.

"Incorporation by reference provides a method for integrating material from various documents into a host document . . . by citing such material in a manner that makes clear that the material is effectively part of the host document as if it were explicitly contained therein." Advanced Display Sys., Inc. v. Kent State Univ., 212 F.3d 1272, 1282 (Fed. Cir. 2000) (citations omitted). "To incorporate material by reference, the host document must identify with detailed particularity what specific material it incorporates and clearly indicate where that material is found in the various documents." Id. (citations omitted). Whether and to what extent material has been incorporated by reference into a host document is a question of law. Id.

The relevant portions of the ’508 patent specification are as follows:

Layers E, F, and G collectively represent the so-called tunica mucosa. Layer E is a layer of smooth muscle cells known as the lamina muscularis mucosa. Layer F, the stratum compactum, consists of a cellular collagen and elastin fibers. Layer G consists of the lamina epithelialis mucosa and its lamina propria, which together and arranged in villous processes, a series of finger-like outgrowths of the mucous membrane.

The tissue graft material of this invention is prepared by abrading intestinal tissue to remove the outer layers including
both the tunica serosa and the tunica muscularis (layers B and C in FIG. 1) and the inner layers including at least the luminal portion (layer G) of the tunica mucosa (layers E through G in FIG. 1).

'508 patent, col. 3, ll. 13-20, 53-58 (emphases added).

GET DRAWING SHEET 1 OF 1.

Id. at fig. 1.

As this disclosure makes clear: (1) "the luminal portion of the tunica mucosa" is represented by "layer G" in Figure 1 of the '508 patent, and (2) layer G in that figure corresponds to the lamina epithelialis mucosa and its lamina propria. Id. Even acknowledging appellees' argument that the layers of the wall of the intestine are somewhat structurally different than the layers of the wall of the bladder, neither party disputes that the basement membrane of the transitional epithelium is located between the epithelialis mucosa layer and its lamina propria layer in both organs. Thus, because the basement membrane is located between the two tissue layers explicitly identified, "the luminal portion of the tunica mucosa" must also refer to the basement membrane. Therefore, "the luminal portion of the tunica mucosa" means the lamina epithelialis mucosa (or transitional epithelium layer), the basement membrane, and the lamina propria.

The '389 patent's incorporation by reference of the '508 patent's procedure for preparing intestinal submucosa, in combination with the '508 patent's disclosure pertaining to which tissue layers are removed by that procedure, leads to the conclusion that the patentee's definition of the claim term as reflected in the '389 patent as the epithelial layers and in the '508 patent as the lamina epithelialis mucosa and its lamina propria was intended to refer to the same structures, i.e., the lamina epithelialis mucosa (or transitional epithelium layer), the basement membrane, and the lamina propria.

The district court's reasoning is contradicted by its own analysis. Relying on a medical dictionary, the district court recognized that the tunica mucosa comprises the epithelium, basement membrane, lamina propria mucosae, and lamina muscularis mucosae. Markman Order, slip op. at 10-11. The court then rejected ACell's proposed construction that "the luminal portion of the tunica musoca" means the epithelial cells (i.e., the transitional epithelium), the basement membrane, and the lamina propria because the term "would not require the entire tunica mucosa including the basement membrane, tunica propria and all epithelial cells to be removed as ACell contends." Id., slip op. at 11.

That statement by the district court reflects that it believed ACell's proposed construction of that term encompassed the entire tunica mucosa, rather than just "the luminal portion" as the claim requires. The district court's reasoning, however, overlooks the fact that ACell's construction permits the retention of the lamina muscularis mucosae layer of the tunica mucosa. This construction is consistent with both the medical dictionary's list of layers that comprise the tunica mucosa, and the teachings of the '508 patent, which specifically refer to that layer as "layer E" of the tunica mucosa. '508 patent, col. 3, ll. 14-15. As this discussion indicates, ACell's proposed construction does not require removal of the entire tunica mucosa as the district court's opinion suggests, but rather removal of only a portion of the tunica mucosa. 7 Therefore, we construe "the luminal portion of the tunica mucosa" to mean "the lamina epithelialis mucosa (or transitional epithelium layer), the basement membrane, and the lamina propria."

7 The district court also relied upon extrinsic evidence in the form of testimony from a Dr. Harbin who convinced the court that there was no compelling reason on the part of Cook to remove the basement membrane, lamina propria, or any other non-cellular component of the bladder wall layers. Markman Order, slip op. at 11. In light of the discussion above, however, such extrinsic evidence cannot override the patentee's definition of the term contained in the intrinsic evidence of the '389 and '508 patent disclosures.

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2. "an attachment plate lying between the two implement-support plates"
 Plaintiff proposes a construction of

a plate separate from, and positioned between the implement-support plates that form the sides of the knife. The attachment plate is between the support plates and keeps them spaced apart. The attachment plate is a separate member from a liner lock, a liner lock being a different element. If both an attachment plate and a liner lock are found in the same knife, they are separate components positioned laterally adjacent to each other.

Defendant proposes a construction of "a plate that supports an attachment structure, the plate lying between the two implement-support plates."

The court finds that this language is clear on its face and requires no construction.

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3. "macromolecules" (claims 1, 4, 8, 15, and 16)

Plaintiff argues that "macromolecules" should be construed as "molecules having a molecular weight of at least 500." Defendant argues that the term should be construed as "molecules larger than about 500 molecular weight." The specification states that the "cardinal feature" of the patent is its ability to restrain macromolecules. See 7:39-41. The specification further states that "the precise size of the molecules that the minimally-porous sheet can restrain is not important, for the purposes of this invention, the pores should be small enough to restrain molecules greater than around 500 Daltons." 8:3-6. In light of the intrinsic record, the court defines "macromolecules" as "molecules with a molecular weight of at least approximately 500 Daltons."

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2. "Made of Film"

The Special Master next observed that "claims 5-6, 15, 35, 39-42, and 44 of the '668 Patent each call for either sheets or sections of material that 'are made of film.'" (R&R at 66.) The limitation "made of film" has been construed by this Court to mean "made at least partially of film." (8/4/04 Order accepting and adopting Special Master's R&R, as supplemented by 7/15/04 R&R.) The Special Master properly observed that TRW's noninfringement position here was likewise "founded upon its manufacturing process." (R&R at 67.) "According to TRW, its manufacturing method provides two separate reasons why film does not play a role in the formation of the compartments of its OPW airbags: First, because the film is applied after the chambers have already been formed, and second, because the compartments are formed in the interior of the airbag, while the film is applied to the exterior of the airbag." (R&R at 67.) The Special Master rejected TRW's arguments, finding that they sought to impermissibly limit the product claims of the '668 Patent by their method of manufacture. (R&R at 68, citing 3M Innovative Properties Co. v. Avery Dennison Corp., 350 F.3d 1365, 1371 (Fed. Cir. 2003), and Vanguard Prods., 234 F.3d at 1372.) Considering governing Federal Circuit case law and the wording of the '668 Patent, the Special Master concluded that "the scope of claims 5, 6, 15, 35, and 39-42, and 44 is not restricted to any particular method of manufacturing the claimed product." (R&R at 68.) "When these product claims call for sheets or sections of material that 'are made of film,' they are therefore referring to a passive, structural feature of the claimed air bag. These product claims do not require that the claimed airbags be manufactured via any particular sequence of steps, and in particular that each of the airbag's components be incorporated into the product simultaneously." (R&R at 68.) Accordingly, the Special Master recommended that TRW's motion for summary judgment of non-infringement be denied as to these claims. This Court accepts and adopts this recommendation. TRW's objections are overruled.

The Special Master then observed that claims 25 and 43 of the '668 Patent "calling for sections of material 'made out of film' are drafted in process format" and "concern a method for manufacturing an airbag for a vehicle. . . ." (R&R at 69.) He rejected TRW's argument that the limitation calling for a "sheet of film" must be performed simultaneously with an initial joining of sections of material. "The language of claims 25 and 43 'neither grammatically or logically indicate[]' that the steps must be performed in any particular order." (R&R at 70, quoting Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1370 (Fed. Cir. 2003).) Accordingly, the Special Master recommended that TRW's motion for summary judgment of non-
infringement be denied as to these claims. (R&R at 70.) This Court accepts and adopts this recommendation and overrules TRW's objections.

B. The Proper Construction of the Claim Element "Net Supporters Made of PFA, FEP or EPE" Excludes Any Material Other Than PFA, FEP or EPE.

43. The words "net supporters made of PFA, FEP or EPE" in the context of the 041 patent means that the net supporters must be made wholly of PFA, FEP or EPE, and cannot include any other fluorocarbon resin (e.g., PTFE) therein. In other words, the claimed "net supporters" cannot (1) be a mixture of two or more of the three materials specified or (2) contain a material other than PFA, FEP or EPE, e.g., PTFE. Tr. 125-26, 128.

44. Similarly, the claims also use the same "made of" language in connection with a PTFE membrane. PTFE filter membranes have always contained 100 wt.% PTFE. Thus, the use of the "made of" language in claim 1 connotes a component made wholly of one material (100 wt.% PTFE in the case of the membrane). PTX 1; Tr. 123-24.

45. The words "made of" in the context of the 041 patent mean that materials other than those specifically recited in the claim should be excluded. Tr. 94-96, 123-25.

46. This construction is also consistent with the specification and prosecution history of the 041 patent. Tr. 126-28; PTX 14, 15.

47. The specification refers to the net supporters as being provided from a single thermoplastic fluorocarbon material, with the filter membrane also being provided from a single fluorocarbon material:

The filter membrane of a fluorocarbon resin, especially PTFE, is placed between thermoplastic fluorocarbon resin net supporters in a sandwich form. These supporters are a spacer for the filter membrane.

As a material for the net supporter, there are used thermoplastic fluorocarbon resins such as . . . PFA . . . FEP . . . ETFE . . . PCTFE . . . ECTFE . . . PVDF . . . PVF . . . EPE . . . . Particularly preferred ones are PFA, FEP and EPE in terms of chemical resistance and temperature resistance.

PTX 14 at col. 3, ll. 16-19 and 31-47. The specification does not disclose the use of any non-thermoplastic fluoropolymer (e.g., PTFE) as a net supporter material. Tr. 372.

48. The only example of a filter provided by the Miyagi 041 patent includes a 100% PTFE membrane and 100% EPE net supporters superimposed above and below the filter membrane. PTX 14 at col. 5, ll. 44-49; Tr. 368.

49. The specification of the patent does not disclose the net supporters, filter material, or any other component of the filter element as being prepared from a mixture of two or more fluorocarbon resin materials. PTX 14; Tr. 126-27.

50. Since their introduction, none of the all-fluorocarbon filter cartridges commercialized by Kurabo and PTI under the 041 patent contained any net supporters prepared from a mixture of two or more of these fluorocarbon resins identified in the 041 patent as being suitable for the net supporter, e.g., at least two of PFA, FEP, ETFE, PCTFE, ECTFE, PVDF, PVF and EPE. Tr. 223, 331, 351-52, 367

51. The prosecution history provides further support for the claim construction. Tr. 127-28. The claims of the 041 patent as originally filed were broad, covering "net supporters made of a thermoplastic fluorocarbon resin" and "a filter membrane made of a fluorocarbon resin." PTX 15 at 15-17.

52. The U.S. Patent and Trademark Office ("Patent Office") rejected those claims over an earlier Pall patent, U.S. Patent 4,154,688. The Examiner asserted that Pall's 688 patent taught a filter cartridge in which all of the components are made of the same fluorocarbon material. PTX 15 at 46-47; Tr. 127-28.
53. The 041 patentees, in response to the rejection, changed the language of claim 1 to "a filter membrane made of PTFE" and "net supporters made of PFA, FEP or EPE." The patentees also told the Examiner that:

All of the constituents of the filter element now claimed are not the same. The membrane material is PTFE but the net, seal, etc. are not because there is risk that the filter membrane would be damaged if melting at a welding temperature is attempted.

PTX 15 at 52-54 (emphasis added); Tr. 127-28.

54. A Declaration was also submitted with the patentees' response. The Declaration contains an experiment which the patentees' characterize as being in accordance with "the present invention." The membrane used in the experiment is a 100% PTFE membrane. PTX 15 at 56; Tr. 309.

55. The significance of the prosecution history is two-fold. First, the patentees' remarks in the Amendment affirmatively state that the membrane material "is" PTFE, i.e., it constitutes 100% PTFE. The Experiment in the Declaration, which is characterized as "the present invention," uses 100% PTFE as the membrane and 100% PFA net supporters. PTX 15 at 52-54; Tr. 309-10. Thus, the evidence elicited at the hearing and arguments offered by the parties indicates that there is no dispute that the "filter membrane made of PTFE" recited in claim 1 refers to a filter membrane that is 100% PTFE. Tr. 96, 123-24, 29-10. One must therefore conclude that the words "made of" in relation to the filter membrane element mean made wholly of, or 100% of, PTFE. The net supporters, which include the same "made of" language, must be construed in a consistent manner. Tr. 123-25. The claimed "net supporters" therefore include 100% of one of the three recited thermoplastic fluorocarbon resins, PFA, FEP or EPE. Tr. 94-98, 109-10, 123-25, 128.

56. Second, the patentees' remarks distinguished the filter membrane material from that of the net supporters in order to obtain allowance of the claims over the Pall 688 patent. PTX 15 at 52-54. In stating that the membrane material is PTFE but the net is not, the 041 patentees indicated that the claimed "net supporters" do not include any PTFE. PTX 15 at 54.

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2. "Whereby said cutting edge surface is made thinner than a thickness of said cutter blade." Consistent with the plain language used in the claim and the teachings of the specification, the court construes the phrase "whereby said cutting edge surface is made thinner than a thickness of said cutter blade" to mean that "the horizontal thickness of the cutting edge surface after formation of the recess is thinner than the original horizontal thickness of the cutter blade." The specification states that the thickness of the cutting edge "will be the thickness of the cutter blade, which is referred to by A in Fig. 8." (Id. at ll. 4-6; see Fig. 8) Figure 8, in turn, shows the original horizontal thickness of the inner blade prior to formation of the recess.

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d. "Made to Engage" in Claim 11

Lastly, the Court must interpret the phrase "made to engage" found in claim 11, Col. 12, lines 24 and 26. The relevant claim language states: ". . . (j) a right elongated flexible member . . . made to engage said right one way clutch and said left elongated flexible member . . . made to engage said left one way clutch." Col. 12, lines 21-26 (emphasis added). The claim language is again silent as to what type of connection was contemplated by the inventor at the time of the invention. The specification and prosecution history are also unhelpful insofar as determining how such a structure is "made to engage" a right or left one way clutch. Finding no indication to the contrary in the intrinsic evidence that the claim language should be construed more narrowly, and again applying the customary meaning of "engage," the Court construes the terms "made to engage" to refer to the making of a mechanical connection, by means of coming into contact, interlocking, or meshing, between a right or left elongated flexible member with a right or left one way clutch.
A. "Magnet"

Plaintiff argues that the term "magnet" in Claims 1 and 4 means "either a permanent magnet or a ferromagnetic material capable of acting as a magnet or equivalents." (Joint Statement at p.5.) Conversely, Defendants argue that the term "magnet" means a permanent magnet. (Joint Statement at p.14.)

Following Vitronics, the Court should first look to the words of the claim itself to define the scope and meaning of the patented invention, then to the patent specification and prosecution history. The claims, specification and prosecution history of the '913 patent do not define the term "magnet;" they simply use the word. The ordinary meaning of "magnet" is "a body having the property of attracting iron and producing a magnetic field external to itself and "something that attracts." Webster's Ninth New Collegiate Dictionary (1986). (Radparvar Supp. Decl. at Ex.1; Williams Decl. at Ex.A.) "Permanent magnet" is defined as "a magnet that retains its magnetism after removal of the magnetizing force." Merriam-Webster Online Dictionary. (Trojan Decl. at Ex.4.) A "ferromagnetic material" is a material that is attracted by a permanent magnet, e.g., iron, nickel and cobalt. See Miracle Claim Construction Order at 19 n.9. The phrase "ferromagnetic material" is not used in the claims or the specification.

The ordinary meaning of "magnet" is essentially a permanent magnet, a body that attracts other materials and retains that attractive capability after the magnetizing force is removed. The ordinary meaning of "magnet" contrasts with the definition of "ferromagnetic material," which is a material that is attracted by a permanent magnet, rather than a material that attracts certain materials. The Court does not find that the ordinary meaning of magnet should be construed to include ferromagnetic materials.

Plaintiff argues that "magnet" should be construed to include ferromagnetic materials because "a review of the entire file history of the 913 patent demonstrates that no rejection can be found based upon the type of magnetic material used." (Opening Brief at 7:13-15.) This argument is irrelevant, because the fact that the patent examiner did not issue a rejection based on the type of magnetic material used has no bearing on the interpretation of the term "magnet." 2

--- Footnotes ---

2 This argument by Plaintiff was previously rejected in related litigation, Revolution Eyewear, Inc. v. Aspex Eyewear, Inc. et al., No. CV 02-01087 LGB (CWx), Order Construing Claims of U.S. Patents 6,343,858 and RE 37,545, May 5, 2003. The Court stated that "[t]he patent applicant in this case used the term 'magnets' in his application; and the most logical assumption is that the patent examiner simply considered 'magnets' to mean permanent magnets, and thus would have had no reason to consider other interpretations of that term." (Trojan Decl. at Ex.3, 15:8-13.)

--- End Footnotes ---

Plaintiff relies on the Court's construction of the phrase "magnetic members" in the case of Aspex Eyewear, Inc. v. Miracle Optics, Inc., CV 01-10396, 2003 U.S. Dist. LEXIS 26355, Order Construing Claims of U.S. Patents RE 37,545 and 6,109,747, February 14, 2003 (hereinafter "Miracle Claim Construction Order"). (Trojan Decl. at Ex.2). In the Miracle Claim Construction Order, the Court interpreted the phrase "magnetic member" to mean "a permanent magnet or a ferromagnetic member, but at least either the first or second magnetic members must be a permanent magnet." (Trojan Decl. at Ex.2, 20:5-8). The Court explained that the definition of "magnetic" includes "capable of being magnetized or of being attracted by a magnet." Miracle Claim Construction Order at 16. Plaintiff argues that based on the Miracle Court's construction of "magnetic," the Court should construe the term "magnet" as used in the '913 patent as either a permanent magnet or ferromagnetic material capable of acting as a magnet.

Plaintiff's reliance on Miracle is misplaced, because the words used in the patents at issue in Miracle and the '913 patent are different. Nowhere in the Miracle Claim Construction Order did the Court state or suggest that it was construing the noun "magnet." In fact, the Court in Miracle acknowledged the difference between the words "magnetic" and "magnet," stating "the Court agrees with Plaintiffs that the use of both 'magnet' and 'magnetic material' in the [claim] language [] counsels against limiting the phrase 'magnetic material' to a 'magnet.'" (Trojan Decl. at Ex.3, 41; 24-27.) The operative word at issue
in the '913 patent is the noun "magnet," not the adjective "magnetic." The only term used to describe the '913 patent in the claims and the specification is "magnet," not "magnetic member" or "ferromagnetic material." The definition of the adjective "magnetic" relied on by the Court in Miracle is different from the definition of the noun "magnet." The definition of "magnetic" specifically includes materials that are capable of both being magnetized and being attracted by a magnet. In contrast, the definition of "magnet" states only that the body has the ability to attract certain materials, and includes no reference to the body being attracted by certain materials. For the foregoing reasons, the Court also rejects Plaintiffs assertion that Defendant Aspex is estopped from asserting that the ordinary meaning of the term "magnet" used in the '913 patent claims does not include ferromagnetic materials.

In related litigation, Revolution Eyewear, Inc. v. Aspex Eyewear, Inc. et al., No. CV 02-01087-LGB (CWx), Order Construing Claims of U.S. Patents 6,343,858 and RE 37,545, May 5, 2003, the Court construed the term "magnet" found in Plaintiffs U.S. Patents 6,343,858 to mean "permanent magnet" (hereinafter "'858 Claim Construction Order"). (Trojan Decl. at Ex.3.) The '858 patent is a continuation-in-part of the application leading to the '913 patent, and both the '858 and '913 patents used the term "magnet" in the patent claims and specification. In the '858 Claim Construction Order, the Court distinguished the Miracle Claim Construction Order, because the latter construed the term "magnetic," rather than the term "magnet" that was used in the '858 patent. The Court found that the ordinary meaning of "magnet" is essentially a permanent magnet, a "body that attracts certain materials, as iron, by virtue of a surrounding field of force created by the motion of its atomic" and "[o]ne that attracts." (Trojan Decl. at Ex.3, 14.) In the '858 Claim Construction Order, the Court distinguished the meaning of "magnet" from "ferromagnetic material," finding that the ordinary meaning of "magnet" "cannot be ferromagnetic material because it needs to have the ability to attract certain material like iron" and a ferromagnetic material is a material attracted by a permanent magnet. Id.

Plaintiff disagrees with the ordinary meaning of magnet as construed in the '858 Claim Construction Order. However, this Court agrees with the prior court's construction of the term "magnet." In addition, the Court finds that since the '858 and '913 patents are related, the common term "magnet" should be construed consistently to mean a permanent magnet.

**Jump to:** A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

12. "Magnet liner"

This term is contained an independent claim in the 117 patent, 130 as well as a dependent claim in the 117 patent. 131

As to this term, the Court construes the following meaning: an individual separating device, distinct from the protector, which is inserted into a tool body recess, and then has a magnet placed into it. This interpretation is supported by the summary of the invention. 132 The specification also supports this interpretation: "A magnet liner is positioned inside each recess in contact with the surface... A magnet member is placed above the liner, and securing lugs are placed over the magnet..." 133 "Each magnet liner is configured to match the profile of the magnet, the recess and the lugs." 134 "Each magnet protector has a first surface which contacts the liner..." 135 "Each recess holds a liner and a magnet." 136 The drawing in the 117 patent also supports this interpretation. Construction of this phrase involves little more than the application of the widely accepted meaning of commonly understood words used in the patent.

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As to this term, the Court construes the following meaning: an individual separating device, distinct from the protector, which is inserted into a tool body recess, and then has a magnet placed into it. This interpretation is supported by the summary of the invention. 132 The specification also supports this interpretation: "A magnet liner is positioned inside each recess in contact with the surface... A magnet member is placed above the liner, and securing lugs are placed over the magnet..." 133 "Each magnet liner is configured to match the profile of the magnet, the recess and the lugs." 134 "Each magnet protector has a first surface which contacts the liner..." 135 "Each recess holds a liner and a magnet." 136 The drawing in the 117 patent also supports this interpretation. Construction of this phrase involves little more than the application of the widely accepted meaning of commonly understood words used in the patent.

As to this term, the Court construes the following meaning: an individual separating device, distinct from the protector, which is inserted into a tool body recess, and then has a magnet placed into it. This interpretation is supported by the summary of the invention. 132 The specification also supports this interpretation: "A magnet liner is positioned inside each recess in contact with the surface... A magnet member is placed above the liner, and securing lugs are placed over the magnet..." 133 "Each magnet liner is configured to match the profile of the magnet, the recess and the lugs." 134 "Each magnet protector has a first surface which contacts the liner..." 135 "Each recess holds a liner and a magnet." 136 The drawing in the 117 patent also supports this interpretation. Construction of this phrase involves little more than the application of the widely accepted meaning of commonly understood words used in the patent.

132 Col. 2, line 29-32.

133 Col. 3, line 38-41.
134 Col. 4, line 23-25.135 Col. 4, line 37-38.

136 Col. 5, line 30-31

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(4) "magnetic member" (claims 12, 16 and 24)

Plaintiffs argue that the term "magnetic member" in claims 12, 16 and 24 means "a magnet or magnetically attractive material." JS, Exh. B at 10, 19, 33, 42 and 51. Conversely, Defendant argues that the phrase "magnetic member" is limited to a magnet. Id., Exh. D at 1, 2, 4, 5 and 6.

Defendant contends that the magnetic members must be magnets because "[t]he specification requires that the magnetic members attract towards one another . . ." and ":[o]n [sic] 8 two magnets magnetically attract each other." Def. Response at 7:9.

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8 Presumably, Defendant intended to say "Only."

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As counsel acknowledged at Oral Argument on February 7, 2003, the construction of the phrase "magnetic member" is heavily contested by the parties. Preliminarily, the Court finds it helpful to re-state the applicable law on claim construction. In the seminal case of Vitronics, the Federal Circuit established a three-tiered hierarchy of intrinsic evidence that a court must first consider in construing claim terms. See Vitronics, 90 F.3d at 1581-83.

First a court must "look to the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention." Id. at 1582. In this case, claims 12, 16 and 24 of the '545 Patent do not expressly define the phrase "magnetic members." The ordinary meaning of "magnetic" is "having the properties of a magnet" and "capable of being magnetized or of being attracted by a magnet." Webster's II New College Dictionary ("Webster's"), Declaration of Michael A. Nicodema in Support of Plaintiffs' Opening Brief ("Nicodema Decl."), Exh. 5 at 140 (emphasis added). Additionally, dependent claim 13 states that the magnetic members are magnets. See Koo Decl., Exh. B, Col. 5, 11. 8-9. Under the doctrine of claim differentiation, where some claims are broad and others are narrow, the narrow claim limitations cannot be read into the broad claims. Yarway Corp. v. Eur-Control USA, Inc. 775 F.2d 268, 274-75 (Fed. Cir. 1985). On the basis of that doctrine, the construction of the phrase "magnetic member" includes a magnet but cannot be limited to only a magnet. Thus, based on the ordinary meaning of the claim terms and on the doctrine of claim differentiation, the Court initially construes the phrase "magnetic member" to be a magnet, a material with the properties of a magnet or a material capable of being attracted by a magnet.

Second, "it is always necessary to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning. The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." Vitronics, 90 F.3d at 1582. In this case, the specification of the '545 Patent does not expressly or impliedly define the phrase "magnetic member" in a manner inconsistent with its ordinary meaning here, a magnet, a material with the properties of a magnet or a material capable of being attracted by a magnet.

Third, "the court may also consider the prosecution history of the patent, if in evidence. This history contains the complete record of all the proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claims." Id. at 1582 (internal citations omitted). During the prosecution of the '545 Patent, the applicant's attorney acknowledged that the magnetic members 14 and 22 are magnets which couple to each other. See Koo Decl., Exh. E, Pros. History, at 375 (the applicant's attorney stated to the PTO: ":[a]s clearly shown in Figure 7 of
the '207 patent, the two magnetic members 14 and 22 are in proximity of, coupled to, but not in contact with each other. Magnets are coupled to each other when they are in proximity of each other."). However, and as Plaintiffs' counsel pointed out during Oral Argument, that portion of the prosecution history dealt with the issue of whether magnetic engagement "without contact" was new matter, see id., and not with the construction of the phrase "magnetic member." Thus, there was no clear intent on the part of the patentee to limit magnetic members to magnets. See Schumer v. Lab. Computer Systems, Inc., 308 F.3d 1304, 1313 (Fed. Cir. 2002) ("the prosecution history limits even clear claim language so as to exclude any interpretation that was surrendered during prosecution, but only where . . . the patentee surrendered that interpretation with reasonable clarity and deliberateness.") (emphasis added).

Additionally, Plaintiffs' counsel argued at Oral Argument that the Court should consider U.S. Patent No. 5,416,537 (the "Sadler Patent") in construing the instant phrase. In Vitronics, the Federal Circuit stated that "[i]ncluded within an analysis of the file history, [i.e., in the third tier of intrinsic evidence to consider during claim construction], may be an examination of the prior art cited therein." Vitronics, 90 F.3d at 1583; see also In re Cortright, 165 F.3d 1353, 1358 (Fed. Cir. 1999) (stating that "[p]rior art references may be indicative of what all those skilled in the art generally believe a certain term means."). In this case, not only was the Sadler Patent referenced in the '545 Patent, see '545 Patent, Koo Decl., Exh. B, Col. 1, 11. 22-23, but it was also cited by the examiner during the prosecution of the '545 Patent and a copy of the patent itself was incorporated in the file wrapper of the '545 Patent. See July 15, 1999 Office Action, Koo Decl., Exh. E at 173-179. Thus, and consistent with Vitronics, the Court now considers the extent to which the Sadler Patent sheds light on the construction of the phrase "magnetic member."

The Sadler Patent discloses "magnetic means for securing auxiliary lenses to eyeglasses." See the Sadler Patent, Koo Decl., Exh. E at 174. Like the '545 Patent, the Sadler Patent employs the phrase "magnetic members" to refer to the "first" member in the primary frame and to the "second" member in the auxiliary frame. See the Sadler Patent, Koo Decl, Exh. E, Col. 2, 11. 43-54. Additionally, the Sadler Patent defines "magnetic member" as being made of permanent magnetic material or a ferromagnetic material. 9 See id. at Col. 3, 11. 21-23. However, "[a]t least one of the first and second magnetic members must be made of a permanent magnetic material in order for a magnetic attraction to exist." 10 Id. at Col. 3, 11. 23-25. Additionally, the Sadler Patent contains a dependent claim, claim 2, that narrows the construction of "magnetic member" to a permanent magnet. Thus, the phrase "magnetic member" in the Sadler Patent is clearly construed to be a permanent magnet or a ferromagnetic member, but at least one of the first or second magnetic members must be a permanent magnet.

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9 A ferromagnetic material is a material that is attracted by a permanent magnet, e.g., iron, nickel and cobalt. See A Review of Magnets and Magnetism at http://my.executec.com/rhoadley/magencyc.htm. (hereafter "A Review of Magnets and Magnetism").

10 This, of course, makes sense since two pieces of ferromagnetic material, e.g., two pieces of iron, will not attract each other.

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As stated above, the Court initially construed the phrase in question to mean a magnet, a material with the properties of a magnet or a material capable of being attracted by a magnet. The first two parts of this construction, a magnet or a material with the properties of a magnet, are for all practicable purposes the same, a permanent magnet. The last part of this definition, a material capable of being attracted by a magnet, is but another way to describe a ferromagnetic material. However, the Court finds the use of the term "ferromagnetic" to be more precise and definite. 11 Therefore, the Court construes the phrase "magnetic member" to mean a permanent magnet or a ferromagnetic member, but at least either the first or second magnetic members must be a permanent magnet.

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

11 A ferromagnetic material is not the only material that exhibits attraction to a permanent magnet. For example, a paramagnetic material, e.g., aluminum, also exhibits such attraction. However that attraction is much weaker than the one between a ferromagnetic material and a permanent magnet, and thus is inapplicable to the technology at issue here. See A Review of Magnets and Magnetism at 2.

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12 Defendant argues that Plaintiffs should be judicially estopped from asserting that the phrase "magnetic members" is anything other than magnets based on statements made by Plaintiffs' counsel in their appeal brief to the Federal Circuit in the case of Aspex Eyewear, Inc. v. Revolution Eyewear, Inc. See Def.'s Surreply at 2:2-6:20. The Court disagrees. Statements by an attorney do not override the meaning of the claims as finally worded and issued. See Intervet America, Inc. v. Kee-Vet Labs., 887 F.2d 1050, 1055 (Fed. Cir. 1989).

--- End Footnotes ---

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c. "Magnetic or magnetizable"

The parties next dispute the construction of the term "magnetic or magnetizable" in claim 1 of the '196 patent. Ideal asserts that no construction of this unambiguous term is required, even as an alternative to Rivard's proposed construction. Therefore, the chart that follows shows only the claim term and Rivard's proposed construction.

THE '196 PATENT

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Rivard's Proposed Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>c. Magnetic or magnetizable</td>
<td>The needle or needle piece has been magnetized to be a permanent magnet that produces a magnetic field, or has been magnetized in a magnetic field to maintain a residual magnetism that produces its own magnetic field that persists when the magnetic field is removed, prior to use of a detector. The term does not refer to stainless steel which is merely attractable to a permanent magnet.</td>
</tr>
</tbody>
</table>

i. Arguments of the parties. Rivard argues that claim 1 refers to stainless steel that is "magnetic or magnetizable," then thereafter refers to the "magnetism" of the needle. Rivard argues that, to be grammatically and substantively consistent, the term "magnetism" must relate back to and be produced by the stated "magnetic or magnetizable" feature of the needle cannula, and that the term "magnetism" does not refer to the mere capacity to be magnetized, but to something that actually operates as a magnet. Rivard also argues that the specification repeatedly refers to a magnetic needle or one that is magnetized before detection and to "magnetic stainless steel." From this language, Rivard apparently infers that "magnetic or magnetizable" means already made a magnet, not merely capable of becoming a magnet. Similarly, Rivard argues that the prosecution history shows (1) that the invention requires the needle to be magnetized not just to have the capability to be magnetized, and (2) that the patentee distinguished prior art that was merely capable of being magnetized and not actually magnetized because non-magnetized prior art needles did not provide increased detectability. Rivard's arguments in its rebuttal brief concerning the "magnetism" terms of the two patents, which were discussed in reference to construction of the "magnetism" terms of the '668 patent, are also asserted as to the "magnetic or magnetizable" terms of the '196 patent. Ideal, however, argues that "magnetic or magnetizable" is unambiguous and that the prosecution history reveals no intent to disavow any scope to the term.

ii. Analysis. Beginning with the words of the claim, Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"), it is apparent that "magnetic or magnetizable" refers to two possible, and different, conditions. See Merck & Co., 395 F.3d at 1372 (the court must construe claims so that no term becomes "superfluous," and "[a] claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so."). The first problem with Rivard's construction, in the court's view, is that it improperly conflates the two stated conditions into a single condition, "magnetic."

The second problem with Rivard's construction of this phrase, in the court's view, is that "magnetic" and "magnetizable" do not have the same ordinary meaning, and nothing in the patent suggests that a specialized meaning conflating the latter term into the former one is appropriate. See Free Motion Fitness, Inc., 423 F.3d at 1348 (recognizing such use of a dictionary as appropriate, citing Phillips, 415 F.3d at 1320); Phillips, 415 F.3d at 1324 ("[A] judge who encounters a claim term while
reading a patent might consult a general purpose or specialized dictionary to begin to understand the meaning of the term, before reviewing the remainder of the patent to determine how the patentee has used the term.

More specifically, as to ordinary meaning, in the sense appropriate here from the intrinsic evidence of the patent, see Free Motion Fitness, Inc., 423 F.3d at 1348 ("The court must ensure that any reliance on dictionaries accords with the intrinsic evidence."). "Magnetic" means "magnetized" or capable of being magnetized, and "magnetize" means "to induce magnetic properties in." See MERRIAM WEBSTER'S COLLEGIATE DICTIONARY 700 (10th ed. 1995). Thus, "magnetic" means having been induced with magnetic properties, see OXFORD ENGLISH DICTIONARY (on-line ed. at dictionary.oed.com) ("magnetic" means, inter alia, "having the properties of a magnet"); and "magnetizable" means "capable of being magnetized." See OXFORD ENGLISH DICTIONARY (on-line ed. at dictionary.oed.com). While the definitions of "magnetic" and "magnetizable" overlap at the broadest definition of "magnetic" as "capable of being magnetized," Rivard argues that the appropriate meaning for both "magnetic" and "magnetizable" is the narrowest meaning of "magnetic" as "magnetized," which is a meaning that the term "magnetizable" simply will not bear. Moreover, in a context where both terms are used in succession, it is appropriate to read them to have different meanings. See Merck & Co., 395 F.3d at 1372 (the court must construe claims so that no term becomes "superfluous," and "[a] claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so."). Thus, applying ordinary meanings, "magnetic" means "magnetized" or "induced with magnetic properties," and "magnetizable" means "capable of being magnetized" or "capable of being induced with magnetic properties."

Returning to intrinsic evidence, the court is unpersuaded by Rivard's argument that the subsequent references to "magnetism" in claim 1 mean that "magnetic or magnetizable" must refer to something that actually operates as a magnet, not to something that merely has the capacity to be magnetized. It is true that claim 1 does not include any limitation requiring that the "magnetic or magnetizable" needle actually be magnetized, even though it later refers to the "magnetism" of the needle. See the '196 patent, claim 1. 16 The subsequent references to "magnetism" in claim 1 are in an extended "so that" clause, which "simply expresses the intended result of a process step positively recited"; consequently, that clause is not given weight and does not state a material limitation in the method claim. Cf. Hoffer v. Microsoft Corp., 405 F.3d at 1326, 1329 (Fed. Cir. 2005) (explaining that a "whereby" clause is given "no weight" when it "simply expresses the intended result of a process step positively recited" in a method claim, but "when the 'whereby' clause states a condition that is material to patentability, it cannot be ignored in order to change the substance of the invention"). Here, the method claim is "a method of injecting an animal health product into flesh of a living food animal." The '196 patent, claim 1, Col. 8, ll. 58-60. The "process" step is "providing an injection means comprising a needle assembly . . . wherein the needle cannula is made of stainless steel which is magnetic or magnetizable . . . ." Id., Col. 8, ll. 61-67. The intended result is "so that . . . the magnetism . . . enables detection of the magnetism of the needle cannula or piece thereof in the flesh of the animal upon slaughter and processing into a food if the needle cannula or piece thereof were to break off in the flesh of the living animal during the injection." Id., Col. 9, ll. 4-12. The fact that this intended result may not actually follow if a "magnetizable" needle is not also claimed to be "rendered magnetic" is beside the point; the references to "magnetism" in the "so that" clause cannot alter the meaning of the limitation actually claimed, that "the needle cannula is made of stainless steel which is magnetic or magnetizable." Id., Col. 8, II. 66-67 (emphasis added). Moreover, the Summary of the Invention repeatedly refers to a "magnetic or magnetizable" needle, not merely one that "is magnetic" or "is magnetized." Consequently, it cannot be said that a "magnetic" needle is the fundamental invention to the exclusion of a "magnetizable" needle, such that the references to "magnetism" in the "so that" clause limit the claimed method in claim 1. Compare Hoffer, 405 F.3d at 1330 (the condition stated in the "whereby" clause was part of the "fundamental invention," based on the specification, and did limit the method claimed).

- Footnotes -

16 On the other hand, independent claim 8 does not include a "magnetic or magnetizable" limitation, but nevertheless expressly claims an invention "wherein the needle cannula or piece thereof is magnetized . . . ." The '196 patent, Claim 8, II. 13-5 (emphasis added). Similarly, claims 1, 7, 13, and 15 of the '668 patent expressly claim that the needle is "rendered magnetic" or "is magnetized," even though they do not include a "magnetic or magnetizable" limitation.

17 The court will return to the question of the weight to be given a "so that," "such that," or "whereby" clause in more detail infra, beginning at page 132.

- End Footnotes -

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The specification also supports distinguishing between the meanings of the two words "magnetic" and "magnetizable." See Aquatex, 419 F.3d at 1380 ("Where . . . the disputed claim term is technical or a term of art, '[t]he best source for understanding [it] is the specification from which it arose, informed, as needed, by the prosecution history.") (quoting Phillips, 415 F.3d at 1315); Phillips, 415 F.3d at 1314 (the specification is not only "highly relevant" to claim construction, "[u]sually, it is dispositive," and "is the single best guide to the meaning of a disputed term"). The Summary of the Invention repeatedly refers to a needle that is "magnetizable or magnetic," see the '196 patent, Col. II. 10, 29, 43, and Col. 4, l. 2, thereby reinforcing the notion that the two terms have different meanings and that both conditions that the terms describe are intended to be fundamental to the invention.

The court turns, next, to the question of what is meant by "magnetic or magnetizable," in the context of the patent. Again, as with other "magnetism" terms in the '668 patent, it is clear from the intrinsic evidence that "magnetic" or "magnetizable" would be understood by one of ordinary skill in the art reading the patent to mean that the needle is or is capable of becoming a permanent magnet or a residual magnet, that is, a magnet that retains its magnetic field for a period of time. For example, the Detailed Description identifies a preferred embodiment as one in which the "stainless steel alloy is an alloy that is permanently magnetic or magnetizable before detection," but also notes that, "[a]lternatively, the needle cannula of the present invention can comprise a stainless steel alloy that is not a permanent magnetic [sic] but is capable of being magnetized in a magnetic field to maintain a residual magnetism." See the '196 patent, Col. 5, ll. 50-63.

Rivard contends, as it did with other "magnetism" terms of the '668 patent, that the construction of this phrase must state that it "does not refer to stainless steel which is merely attractable to a permanent magnet." The court finds, however, that such a construction, while accurate, is superfluous, where the claim term unambiguously requires that the needle be or be capable of being made magnetic, not merely that it be attracted or attractable to a magnet.

Also as with the "magnetism" terms of the '668 patent, Rivard argued at the Markman hearing that the court's tentative construction of "residual magnet" in the '196 patent should be modified to add that a residual magnet is a magnet that retains its magnetic field for a period of time "when removed from the magnetizing field" and that the court should add to its tentative construction "that [the magnetism] makes it possible for the magnetism to be detected in a metal detector and magnetic detector." Ideal contended that the first proposed addition improperly requires the magnetization of the needle and withdrawal of the magnetizing field before the needle enters the metal detector, a matter of timing of the magnetization of the needle addressed above. Again, the court finds it unnecessary to add that a "residual magnet" is one that retains its magnetism for a period of time "when removed from a magnetic field," as Rivard proposes, and potentially improper to do so, because the court has found nothing in the record that disavows a construction that permits the needle to be rendered a residual magnet as it is detected, i.e., a circumstance in which the residual magnetism of the needle is detected before the needle is removed from the magnetizing field. The court finds it improper to add to the construction of "magnetic or magnetizable" that "[the magnetism] makes it possible for the magnetism to be detected in a metal detector and magnetic detector," because enabling detection is not a limitation in claim 1, but only language appearing in a "such that" clause, as explained more fully below, beginning on page 132.

iii. The court's construction. In summary, the court concludes that "magnetic or magnetizable" in claim 1 of the '196 patent must be construed as follows: "Is or is capable of becoming a permanent magnet or a residual magnet, that is, a magnet that retains its magnetic field for a period of time."

GO BACK

10. "magnetic reed relay switch"

Dependent Claim 23 of the '571 Patent discloses a "magnetic reed relay switch." Cardiac Science asserts that this term should be construed as "a magnetically operated switch." Philips contends that the term should be construed as "a reed switch combined with a coil to create a relay."

Both parties rely upon the same dictionary definition to support their constructions. The IEEE 100 defines "reed relay" as a "relay using glass-enclosed magnetically closed reeds as the contact members. Some forms are mercury wetted." IEEE 100 Authoritative Dictionary of IEEE Standards Terms at 941 (7th ed. 2000). Philips also asserts that magnetic reed relay switches are known in the art to be a particular type of magnetic switch that has reeds and a coil. However, aside from one
unsubstantiated Internet reference and another company's data sheet that cites a coil requirement, Philips offers no support from the patent itself. Neither the IEEE definition nor the patent makes reference to a coil or, more specifically, a copper coil. On the other hand, Cardiac Science's definition adds nothing to the meaning of the term. The Court construes the term "magnetic reed relay switch" as "a relay switch that uses magnetically closed reeds as the contact members."

Next, the parties dispute the meaning of the terms "[the needle] is rendered magnetic at [or to] a level that enables detection of the magnetism of the needle," which appears in claims 1 and 13 of the '668 patent, and "the needle is magnetized to a level which enables detection of the magnetism of the needle," which appears in claims 7 and 15 of the '668 patent. The parties competing constructions of these terms are shown in the following chart:

<table>
<thead>
<tr>
<th>THE '668 PATENT</th>
<th>Rivard's Proposed Definition</th>
<th>Ideal's Alternative Definition (if any definition is required)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Claim Term</strong></td>
<td><strong>Rivard's Proposed</strong></td>
<td><strong>Ideal's Alternative</strong></td>
</tr>
<tr>
<td>c. [The needle] is rendered magnetic at [or to] a level that enables detection of the magnetism of the needle (In claims 1 and 13)</td>
<td>The needle or needle piece has been magnetized to be a permanent magnet that produces a magnetic field, or has been magnetized in a magnetic field to maintain a residual magnetism that produces its own magnetic field that persists when the magnetic field is removed, prior to use of a detector. The term does not refer to stainless steel which is merely attractive to a permanent magnet. It is the permanent or residual magnetism that must be detected by the detector in order to determine a needle or piece is present in the meat.</td>
<td>Prior to use of the needle or after the needle has broken off in the flesh of an animal which has then been killed for slaughter, the needle is magnetized to be a permanent magnet that produces a magnetic field or has been magnetized to produce a magnetic field for a period of time, whereby the magnetism of the magnetic needle facilitates locating a needle or needle fragment in the flesh of a slaughtered animal.</td>
</tr>
<tr>
<td>f. The needle is magnetized to a level which enables detection of the magnetism of the needle (In claims 7 and 15)</td>
<td>The needle or needle piece has been magnetized to be a permanent magnet that produces a magnetic field, or has been magnetized in a</td>
<td>The needle is magnetized, or the magnetism of the needle is enhanced, to a level which facilitates locating a needle or needle</td>
</tr>
</tbody>
</table>
magnetic field to maintain a residual magnetism that produces its own magnetic field that persists when the magnetic field is removed, prior to use of a detector. The term does not refer to stainless steel which is merely attractable to a permanent magnet. It is the permanent or residual magnetism that must be detected by the detector in order to determine a needle or piece is present in the meat.

As the chart above reveals, Rivard argues that the same proposed construction applies to the pertinent language in claims 1 and 13 and to the slightly different language in claims 7 and 15 of the '668 patent. Indeed, Rivard contends that the same proposed construction should apply to the term "magnetic or magnetizable" in claim 1 of the '196 patent, and to the term "the needle cannula or piece thereof is magnetized to a level which enables detection of the magnetism of the needle cannula or piece thereof" in claim 8 of the '196 patent. See Chart of Constructions In Dispute, supra beginning on page 23, the '196 patent, disputed claim terms c. and h. Ideal, on the other hand, contends that all four claim terms must be given different constructions. For now, the court will confine its analysis to the "magnetism" terms of the '668 patent.

a. Arguments of the parties

Rivard argues that the claims and specification demonstrate that these claim phrases require (1) that the needle be magnetized so as to act as a magnet prior to the use of a metal detector, and (2) that it is the magnetism that is detected. Rivard argues that, during prosecution of the patents, the patentee argued that the invention did not encompass needles that merely had stainless steel metallurgy with the capacity to be magnetized, and that, instead, the needle had to be made into a magnet, and on that basis, distinguished prior art. Rivard surmises that Ideal is now arguing that no construction of these claims is required, so that Ideal can argue that the claims read on a needle that could be made into a magnet, but is not yet one. Implicit in Rivard's argument is a contention that there is no difference between "rendered magnetic," "is magnetized," "magnetic," and "magnetizable." Rivard points out that the Summary of the Invention repeatedly refers to a needle that "is magnetized" or that is "permanently magnetizable or magnetic." Similarly, Rivard points out that the Detailed Description recites that the invention uses either a permanently magnetic or magnetizable alloy or an alloy that can be magnetized for a period of time, i.e., made a residual magnet, prior to use of a metal detector, and also describes an embodiment in which a magnetizing device is located in the conveyor line ahead of the metal detector in order to magnetize any needle parts located in processed meat. Rivard also cites portions of the prosecution history, including the examiner's rejection of newly added independent claim 30 as incomplete, pursuant to 35 U.S.C. § 112, because it recited that the needle was magnetizable, but omitted the step of magnetizing the needle. Rivard asserts that, in response to this rejection, the patentee amended the patent to add the step requiring that the needle be magnetized, and then distinguished prior art on the basis that the prior art did not teach use of magnetized needles. Rivard contends that the prosecution history reveals that the examiner and patentee understood that the needle must, itself, be made into a magnet. As extrinsic evidence, Rivard points out that Ideal's vice president confirmed that Ideal was initially magnetizing the detectable needles in a separate operation.

Ideal argues that Rivard's construction cannot be correct, precisely because Rivard has offered the same construction for four different claim terms, in violation of well established canons of patent claim differentiation. For its own part, Ideal argues that neither the "rendered magnetic" nor the "is magnetized" term requires any construction, because the ordinary
The court agrees that there are obvious differences between the language of the claim term "[the needle] is rendered magnetic" to what became claims 1 and 13. Ideal asserts, nevertheless, that the addition of this language does not require the court to adopt Rivard's construction. Ideal contends that Rivard's proposed interpretation comprises language that represents an embodiment described in the specification rather than language expressly or implicitly disclaiming or disavowing claim scope. In summary, Ideal contends that Rivard's proposed interpretation of the "rendered magnetic" term is improper for the following reasons: (1) the language of the claim is clear and unambiguous, and thus, requires no interpretation; (2) the language that Rivard uses, which is the same language Rivard uses to interpret "magnetic or magnetizable," would reincorporate language that was amended out of the '668 patent; (3) the language that Rivard uses is the same as the language that Rivard uses for several entirely different claim terms; and (4) the language that Rivard uses would effectively negate the amendment to overcome the § 112 rejection. If some construction of the "rendered magnetic" term is required, Ideal offers an alternative, shown in the chart above, which Ideal contends, without explanation, is well supported by the intrinsic evidence.

Ideal also argues that the "is magnetized" term in claims 7 and 15 requires no construction, because its meaning is clear and unambiguous to one of ordinary skill in the art. Again, Ideal asserts that Rivard's construction of this term is wrong, because Rivard uses the identical construction for the completely different term "magnetic or magnetizable" in the '196 patent. Ideal also contends that the language of the "is magnetized" term in the '668 patent is obviously different from the "rendered magnetic" language in the same patent, as well as the "magnetic or magnetizable" language in the '196 patent, but does not explain the difference in meaning between "rendered magnetic" and "is magnetized." If the court deems some construction to be necessary, Ideal again offers an alternative construction, shown in the chart above, which Ideal contends, without explanation, is well supported by the intrinsic evidence.

In its rebuttal brief, Rivard again asserts that the constructions of all of the "magnetism" terms in the two patents should be similar, because they have a common import and associated meaning in the patents-in-suit. Rivard contends that Ideal's claim differentiation argument is overcome here by the presence of only minor differences in language and the requirement in both of the patents that the magnetism of the needles must be what is detected, so that the claim terms must be interpreted consistently. Rivard also argues that it is a critical and necessary aspect of the claims that the magnetism be brought to such a level prior to detection that it enables detection of the needle or piece thereof. Rivard argues that Ideal's response to rejections by the examiners demonstrates that Ideal conceded that the needle must be magnetized, so that the claim language cannot be construed to cover a needle that is merely capable of being magnetized, and must, instead, be construed to require that the needle be magnetized prior to the metal detector, not in the metal detector, as Ideal argues. Rivard also argues that the prosecution histories of both patents are relevant to construction of these related claim terms, because they are interwoven, with cancelled claims of the '668 patent application later reasserted in the '196 patent application.

In its rebuttal brief, on the other hand, Ideal argues that Rivard is slyly attempting to narrow construction of this term to require that the needle be rendered magnetic "prior to the detector" or "before the detection process," when the claim term and intrinsic evidence refer to rendering the needle magnetic "prior to detection." Ideal contends that this subtle difference is important, because the detector may itself include a means for magnetizing or enhancing the magnetism of the needle, as such a product and such a practice is commonly used in the industry. Ideal also contends that Rivard's constructions would send the court off on a red-herring attempt to determine when the "detection process" begins. Ideal contends that the prosecution history provides no indication of when the needle is either magnetized or rendered magnetic, other than before detection. Ideal also argues that absolutely nothing in the prosecution history could be construed as a disavowal of needles capable of being magnetized, when the prosecution history specifically states that the patentee identified needles that either are or are capable of being magnetized.

The time at which the needle is rendered magnetic or is magnetized was one of only four issues that Rivard addressed in the Markman hearing in light of the court's tentative ruling. The court will summarize Rivard's Markman argument on this issue below, in the pertinent part of the court's analysis.

b. Analysis

i. Difference in words or difference in meaning? Starting with the words of the two claim terms in the '668 patent presently at issue, see Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"), the court agrees that there are obvious differences between the language of the claim term "[the needle] is rendered
magnetic at [or to] a level that enables detection of the magnetism of the needle" in claims 1 and 13 and the language of the claim term "the needle is magnetized to a level which enables detection of the magnetism of the needle" in claims 7 and 15 of the '668 patent. The court is considerably less convinced, however, that there is any difference in meaning between "is rendered magnetic" and "is magnetized."

Consultation of an ordinary dictionary, to assist in understanding the commonly understood meaning of words, see Free Motion Fitness, Inc., 423 F.3d at 1348 (recognizing such use of a dictionary as appropriate, citing Phillips, 415 F.3d at 1320); Phillips, 415 F.3d at 1324 ("[A] judge who encounters a claim term while reading a patent might consult a general purpose or specialized dictionary to begin to understand the meaning of the term, before reviewing the remainder of the patent to determine how the patentee has used the term.")., reveals that "rendered," in the sense appropriate here in light of intrinsic evidence, see id., means "to cause to be or become: MAKE." MERRIAM WEBSTER'S COLLEGIATE DICTIONARY 990 (10th ed. 1995); OXFORD ENGLISH DICTIONARY (on-line ed. at dictionary.oed.com) ("render" means "to make, to cause to be or become, of a certain nature, quality, etc."). Thus "rendered magnetic" would mean "is made magnetic" or "is magnetized." Indeed, as the chart of proposed claim constructions, above, reveals, Ideal's alternative construction actually equates "is rendered magnetic" with "is magnetized," because Ideal construes the term "[the needle] is rendered magnetic . . . " to mean "the needle is magnetized . . . ."

The intrinsic evidence of the Summary of the Invention and the Detailed Description confirm the appropriateness of equating "is rendered magnetic" with "is magnetized." See Phillips, 415 F.3d at 1314 (the specification is "highly relevant" to claim construction, "[u]sually, it is dispositive," and it "is the single best guide to the meaning of a disputed term"). The Summary of the Invention uses only "magnetized" to describe the process of making the needle magnetic at a level that enables detection of the magnetism of the needle, see the '668 patent, Col. 2, ll. 28-29, 42-43, 57-58; see also id., Col. 3, ll. 24-25 (needle cannula comprising a stainless steel alloy that is magnetized"), and nothing else in the specification suggests a different meaning. The court finds the obvious equating of "is rendered magnetic" and "is magnetized" in the '668 patent overcomes any presumption that the different words were intended to have different meanings. Compare Andersen Corp., 474 F.3d at 1369 (different words used in separate claims are presumed to indicate that the claims have different meanings and scope).

Ideal is correct, however, that claim terms "rendered magnetic" and "is magnetized" not only use different language but have different meanings from the claim term "magnetic or magnetizable," which appears only in the '196 patent, precisely because the former terms from the '668 patent require that something be done to the needle in question to make it become magnetic, while the latter term from the '196 patent does not. Compare OXFORD ENGLISH DICTIONARY (on-line ed. at dictionary.oed.com) ("render" means "to make, to cause to be or become, of a certain nature, quality, etc.", so that "rendered magnetic" means "to be made magnetic"), with OXFORD ENGLISH DICTIONARY (on-line ed. at dictionary.oed.com) ("magnetic" means, inter alia, "having the properties of a magnet," and "magnetizable" means "capable of being magnetized."). The court will return to the meaning of "magnetic or magnetizable" in the '196 patent, below, but for now, concentrates on the meaning of the "is rendered magnetic" and "is magnetized" terms in the '668 patent.

ii. Permanent and residual magnetism. The court turns to the question of what "is made magnetic" or "is magnetized" means in the context of the '668 patent. It is clear from both parties' constructions, and more importantly, clear from the intrinsic evidence, that "is made magnetic" or "is magnetized" would be understood by one of ordinary skill in the art, reading the patent, to mean that the needle must be made into or become a permanent magnet or a residual magnet, that is, a magnet that retains its magnetic field for a period of time. For example, the Detailed Description identifies a preferred embodiment as one in which the "stainless steel alloy is an alloy that is permanently magnetic or magnetizable before detection," but also notes that, "[a]lternatively, the needle cannula of the present invention can comprise a stainless steel alloy that is not a permanent magnetic [sic] but is capable of being magnetized in a magnetic field to maintain a residual magnetism." See the '668 patent, Col. 5, ll. 46-59. Rivard contends that the construction of this phrase must state that it "does not refer to stainless steel which is merely attractable to a permanent magnet." The court finds, however, that such a construction, while accurate, is superficial, where the claim term unambiguously requires that the needle be or be made magnetic, not merely that it be attracted or attractable to a magnet.

At the Markman hearing, Rivard contended that the court's tentative construction of "residual magnet" should be modified to add that a residual magnet is a magnet that retains its magnetic field for a period of time "when the magnetizing field is removed." Ideal contended that this construction improperly requires the magnetization of the needle and withdrawal of the magnetizing field before the needle enters the metal detector, a matter of timing of the magnetization of the needle
addressed below. The court finds it unnecessary to add the language that Rivard proposes and potentially improper to do so, because the court has found nothing in the record that disavows a construction that permits the needle to be rendered a residual magnet as it is detected, i.e., a circumstance in which the residual magnetism of the needle is detected before the magnetizing field is removed.

iii. Capacity to be magnetized. The parties' arguments concerning the "is rendered magnetic" and "is magnetized" language in the '668 patent, and indeed, their arguments concerning "magnetic or magnetizable" in the '196 patent, also suggest concerns about the "capacity" or "capability" of the needle to be so magnetized. Rivard contends that, based on the specification and prosecution history, the "magnetism" terms of both patents do not apply to a stainless steel needle that merely has the capacity to be magnetized, but only to a needle that has been made into a magnet. Ideal argues that the claims, specification, and prosecution history make clear that the invention applies to a needle that merely has the capacity to be magnetized until it is rendered magnetic, as well as to a needle that is magnetic.

The words of the claims, see Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"), suggest that the needle must be magnetized either prior to injecting the animal or after slaughter. Specifically, claim 1(a) claims an injection means wherein the needle, not otherwise identified as already magnetic or made from a magnetic alloy, "is rendered magnetic to a level that enables detection of the magnetism of the needle," and claim 1(b) claims injecting a living animal with "the needle, which has been rendered magnetic prior to injecting the living animal or while in the flesh of the animal after slaughter." The '668 patent, Claim 1. Because the claim permits rendering the needle magnetic as late as after slaughter, it clearly contemplates that the needle was, until that time, only capable of being magnetized. Indeed, logic dictates that something that "is rendered magnetic" is capable of being magnetized until it is "rendered magnetic."

The intrinsic evidence from the specification also supports this construction. See Phillips, 415 F.3d at 1314 (the specification is "highly relevant" to claim construction, "[u]sually, it is dispositive," and it "is the single best guide to the meaning of a disputed term"). While there are numerous references in the specification to the needle being made from a magnetized or magnetic stainless steel alloy, there are also references to a needle or alloy that is "capable of being magnetized" or "magnetizable." For example, one alternative embodiment describes a needle cannula that is comprised of "a stainless steel alloy that is not a permanent magnetic [sic] but is capable of being magnetized in a magnetic field to maintain a residual magnetism." The '668 patent, Col. 5, ll. 56-59. Similarly, the Detailed Description includes a description of a particular embodiment in which the detection apparatus "can further comprise a means for producing a high magnetic field (not shown) to magnetize or enhance the magnetism of the stainless steel comprising needle cannula 12 or piece thereof in animal flesh or meat product after slaughter 200 before it enters metal detector 104." Id., Col. 6, ll. 42-48. Thus, the patent contemplates a needle that is capable of being magnetized, but is not actually rendered magnetic until after slaughter of the animal in which it has broken off, as well as a needle that is a permanent magnet or that is rendered magnetic at some time prior to use to inject a live animal.

Rivard, nevertheless, argues that the prosecution history reveals that the patentee disavowed a needle that was only capable of being magnetized or only had the capacity to be magnetized, citing a portion of the June 2, 2002, amendment to the application for what became the '668 patent. See Joint Appendix at 47-53. Rivard characterizes the patentee's argument therein as (1) asserting that the invention requires the needle to be magnetized, not just to have the capability to be magnetized, and (2) distinguishing prior art that was merely capable of being magnetized but not actually magnetized, because such non-magnetized prior art needles did not provide increased detectability. Although prosecution history certainly can be relevant to the construction of claim terms, see Nystrom, 424 F.3d at 1142 ("In addition to the written description, the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.") (quoting Phillips, 415 F.3d at 1317), the court finds Rivard's characterization of this portion of the prosecution history to be strained at best.

Specifically, the cited portions of the amendment distinguish two prior art references, one for reusable stainless steel needles and one for Martensitic stainless steel, explaining,

[N]either suggests that the stainless steel be rendered magnetic and neither suggests that a magnetic stainless steel needle be used to inoculate animals because the magnetism of the magnetic needle would facilitate locating the a broken needle fragment in the flesh of a slaughtered animal in the event the needle should break during inoculation of the animal prior to
slaughter. Thus, neither prior art reference on its own teaches or suggests the applicant's claimed method for detecting broken needles in the flesh of slaughtered animals, which is using a needle comprised of a stainless steel that is magnetic.

Joint Appendix at 48-49. The amendment then argues that the combination of the two prior art references also would not render the claimed invention obvious, because there was no reason why one of ordinary skill in the art would have combined them. Id. at 49. At most, the patentee asserted that the two prior art references would have suggested making reusable needles from Martensitic steel, but would not have suggested rendering Martensitic steel needles permanently or temporarily magnetic to improve detectability. Id. at 49-52. The patentee certainly did not expressly or even implicitly disavow needles only capable of being magnetized by observing that nothing taught magnetizing needles made of an alloy capable of being magnetized.

In its rebuttal brief, Rivard again argues that, in response to a prior art rejection of application claims 16 and 23, Ideal argued "that the claim language itself already required that the needle be magnetized and did not cover a needle that merely had the capability of being magnetized." Rivard's Rebuttal Brief at 18 (citing Joint Appendix at 51-52). Rivard also argues that the patentee's contention that Martensitic stainless steel in the Hultin-Stigenberg prior art must be made permanently or temporarily magnetic in order for it to have a magnetic field that would render it more detectable means that the patentee disavowed needles that were only capable of being magnetized, because the Martensitic stainless steel of Hultin-Stigenberg would be capable of being magnetized. Rivard's Rebuttal Brief at 24-25. Such an argument completely mischaracterizes the patentee's argument, which was precisely that the prior art did not teach magnetizing needles made of alloys capable of being magnetized to improve detectability. See Joint Appendix at 51-52 ("There is nothing in the prior art that would have suggested that it would have been desirable to make Martensitic stainless steel permanently or temporarily magnetic for the purpose of making needles, the fragments of which would be more readily detected in the flesh of a slaughtered animal by a metal detector than would be nonmagnetic fragments."). Moreover, the patentee argued, "The applicant discovered that the ability of the detector to detect stainless steel needle fragments is enhanced by using needles which are magnetic or capable of being rendered magnetic in an electric field." Joint Appendix at 52 (emphasis added). Thus, the patentee expressly asserted that the invention was magnetizing needles capable of being rendered magnetic, as well as using magnetic needles, and an attempt to construe these statements as conveying exactly the opposite meaning, as express or implicit disavowals of needles capable of being rendered magnetic, is wholly unpersuasive.

Thus, the court finds no comments in the cited prosecution history expressly or implicitly disavowing needles made of stainless steel that had the capacity to be magnetized, even in the express assertions that what made the invention patentable was rendering the claimed needle magnetic. The proper construction does not require exclusion of needles capable of being magnetized, because the patent clearly contemplates needles with the capacity to be magnetized until they are rendered magnetic, as well as needles that are magnetic.

iv. Time at which the needle is rendered magnetic. The parties' arguments concerning the "is rendered magnetic" and "is magnetized" language in the '668 patent, and indeed, their arguments concerning "magnetic or magnetizable" in the '196 patent, also suggest concerns about the time at which the needle must be, become, or be made a permanent or residual magnet. Rivard argues that the needle must be rendered magnetic "prior to use of a [metal] detector." Indeed, this contention was one of only four arguments that Rivard asserted during the Markman hearing. Ideal argues that the claims, specification, and prosecution history make clear that the needle must be made magnetic prior to use to inject animals or after it has broken off in the flesh of an animal which has then been killed for slaughter, i.e., before detection, not before the detector.

Rivard may be on better ground when it asserts that the needle must be magnetized "prior to use of a detector." Logic suggests that, in order for the magnetism of the needle to be detectable, the needle must be rendered magnetic or magnetized before whatever does the detecting is used. Any uncertainty about what does the detecting is rapidly dissipated by copious intrinsic evidence that what does the detecting is a metal detector or a magnetic detector. See, e.g., the '668 patent, Summary of the Invention, Col. 1, l. 67, to Col. 2, l. 1 ("which enables the needle cannula to be detected in a metal detector"); Detailed Description, Col. 5, l. 46, to Col. 6, l. 19 (describing detection of magnetized needles by metal detectors or magnetic detectors, but suggesting that a drawback of a magnetic detector is that it cannot detect non-magnetizable metals). Indeed, no other method of detection is described anywhere in the patent. Furthermore, as noted above, the Detailed Description includes a description of a particular embodiment in which the detection "apparatus 100 can further comprise a means for producing a high magnetic field (not shown) to magnetize or enhance the magnetism of the stainless steel comprising needle cannula 12 or piece thereof in animal flesh or meat product after slaughter 200 before it enters metal detector 104," id., Col.
On the other hand, the court cannot simply import what is clearly a particular embodiment in the specification, see id., Col. 6, ll. 41-42 (stating that the apparatus described in ll. 42-48 is "[i]n particular embodiments"), into the construction of the claim term. See Playtex Prods., Inc., 400 F.3d at 906 ("The court must take care in its analysis, when locating in the written description the context for a disputed term, not to import a limitation from that written description. It must use the written description for enlightenment and not to read a limitation from the specification [into the construction of the term]." and "[i]t is axiomatic that claims, not the specification embodiments, define the scope of protection.") (internal citations and quotation marks omitted). Therefore, it is inappropriate to use the description of an embodiment in which the needle is magnetized by a high magnetic field before it enters the metal detector to limit the time at which the needle must be magnetized. See the '668 patent, Col. 6, ll. 41-48.

More importantly, the words of the claim, see Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"), suggest that the needle must be magnetized more generally either prior to injecting the animal or after slaughter. Specifically, claim 1(a) claims an injection means wherein the needle (albeit not otherwise identified as already magnetic or magnetizable or made from a magnetic or magnetizable alloy) "is rendered magnetic to a level that enables detection of the magnetism of the needle," and claim 1(b) claims injecting a living animal with "the needle, which has been rendered magnetic prior to injecting the living animal or while in the flesh of the animal after slaughter." The '668 patent, Claim 1 (emphasis added). None of the other claims in which either of the two claim terms at issue is used specifies precisely when the needle is magnetized, although each suggests that the detection of the magnetism of the needle occurs when the animal is slaughtered and processed. See id., claim 7, Col. 9, ll. 39-42; claim 13, Col. 10, ll. 22-24; claim 15, Col. 10, ll. 47-49.

In the tentative draft, the court concluded that the specification sheds no particular light on this question, either, despite its usual importance. See Phillips, 415 F.3d at 1314 (the specification is "highly relevant" to claim construction, "[u]sually, it is dispositive," and it "is the single best guide to the meaning of a disputed term"). The court found that this was so, because the specification refers once to a preferred stainless steel alloy "that is permanently magnetic or magnetizable before detection," see id., Col. 5, ll. 46-57 (emphasis added), and once, as noted above, to a preferred embodiment of the detection apparatus in which the stainless steel of the needle is magnetized "before it enters metal detector 104." Id., Col. 6, ll. 42-48 (emphasis added). The court found in the tentative draft that the specification does not otherwise specify when magnetism must be imparted to the needle or steel of which the needle is comprised.

Therefore, in light of the words used in the claim, the court concluded in the tentative draft that a proper construction of the "timing" aspect of these terms requires that the needle is magnetic or is made magnetic "either prior to injecting the living animal or while in the flesh of the animal after slaughter," as this language "stays true to the claim language and most naturally aligns with the patent's description of the invention." Nystrom, 424 F.3d at 1142 (quoting Phillips, 415 F.3d at 1316, in turn quoting Renishaw PLC, 158 F.3d at 1250); see also the '668 patent, claim 1(a) (claiming an injection means wherein the needle "is rendered magnetic to a level that enables detection of the magnetism of the needle"); id., claim 1(b) (claiming injecting a living animal with "the needle, which has been rendered magnetic prior to injecting the living animal or while in the flesh of the animal after slaughter").

At the Markman hearing, however, Rivard argued that the patents-in-suit and their prosecution histories make clear that the needle must be magnetized before the metal detector, not just before detection. First, Rivard takes issue with this court's observation, in a footnote in the tentative draft, that one portion of the Detailed Description--which describes a particular embodiment in which the detection "apparatus 100 can further comprise a means for producing a high magnetic field (not shown) to magnetize or enhance the magnetism of the stainless steel comprising needle cannula 12 or piece thereof in animal flesh or meat product after slaughter 200 before it enters metal detector 104," id., Col. 6, ll. 42-48 (emphasis added)--demonstrates that, contrary to Rivard's contention, the specification does describe an embodiment in which the needle is magnetized using the metal detector, or at least, is magnetized in an "apparatus for detecting metal" comprising a means for magnetizing the needle as well as the metal detector. See id. Col. 6, ll. 20-21 (describing the "apparatus 100" as "an apparatus for detecting metal in the flesh of an animal after slaughter"). Rivard argues that "apparatus 100" does not disclose an embodiment in which the needle is magnetized in the same device used for detecting metal, because "apparatus 100" is not a single component, but an assembly of multiple components. See the '668 patent, Col. 6, ll. 20-27 ("apparatus 100 compris[es] a conveyor means 102 for transporting animal flesh or meat products after slaughter 200 through metal
detector 104 for detecting whether animal flesh contains a broken piece of needle cannula 12 of the present invention

Indeed, Rivard argues that "apparatus 100" does not include any device for magnetizing a needle, although other
embodiments of the assembly may include such a device for magnetizing the needle before it enters the metal detector 104.
See id., Col. 6, ll. 41-47. As a matter of specificity, Rivard is correct: The description does not describe a single component
that both magnetizes and detects the magnetized needle. Nevertheless, Ideal argues that a metal detector itself may generate
sufficient magnetic field to magnetize a needle as the detector detects the needle. While Ideal's contention may be true, the
court does not find evidence either supporting it or disproving it in the record. Ultimately, however, whether or not the
patent discloses a method for magnetizing the needle with a metal detector is beside the point. The pertinent question is
what the patent discloses about when the needle must be magnetized.

Rivard argued at the Markman hearing that, because the needle can be magnetized to retain residual magnetism, and
residual magnetism is magnetism that persists after a magnetic field is removed, and because the magnetized needle is
described as detectable by a metal detector or a magnetic detector, it must be magnetized before the metal detector or
magnetic detector, and if it is not, it will not be detectable by both kinds of detectors. Finally, Rivard argued that, because
the patentee argued that the prior art does not disclose that the detectability of Martensitic needles would be improved by
magnetizing the needles, and indeed, the patentee argued that Martensitic needles that had not been magnetized would not
have improved the detectability of fragments from the needles, the claimed needles must be magnetized prior to the metal
detector.

8 A large portion of Rivard's argument concerning the time at which the needle is magnetized was illustrated using the
Horita patent incorporated into the '668 patent by reference. Rivard attempted to add the Horita patent to the record, but
Ideal resisted its inclusion. The court finds it unnecessary to address Rivard's arguments based specifically on the Horita
patent, as they are only illustrations of arguments otherwise summarized above in reference to the description and
prosecution history of the '668 patent.

These arguments are unpersuasive, however, because they fall well short of demonstrating that, in either the specification or
the prosecution history, the patentee disavowed magnetizing the needles at any time other than "prior to the metal detector."
See, e.g., Research Plastics, 421 F.3d at 1296 ("The purpose of consulting the prosecution history in construing a claim is to
"exclude any interpretation that was disclaimed during prosecution,"" quoting Rhodia Chimie, 402 F.3d at 1384, in turn
quoting ZMI Corp., 844 F.2d at 1580, and noting that "the prosecution history can reveal instances where the inventor
limited the invention in the course of prosecution and thus narrowed the scope of the claim."). To put it another way, the
court cannot find that language of the claims themselves--that is, language of claim 1(a) which claims an injection means
wherein the needle (albeit not otherwise identified as already magnetic or magnetizable or made from a magnetic or
magnetizable alloy) "is rendered magnetic to a level that enables detection of the magnetism of the needle," and language of
claim 1(b), which claims injecting a living animal with "the needle, which has been rendered magnetic prior to injecting the
living animal or while in the flesh of the animal after slaughter," the '668 patent, Claim 1 (emphasis added)--is contrary to
the portions of the specification or prosecution history on which Rivard relies. Thus, the court reiterates its conclusion that a
proper construction of the "timing" aspect of these terms requires that the needle is magnetic or is made magnetic "either
prior to injecting the living animal or while in the flesh of the animal after slaughter," as this language "stays true to the
claim language and most naturally aligns with the patent's description of the invention." Nystrom, 424 F.3d at 1142 (quoting
Phillips, 415 F.3d at 1316, in turn quoting Renishaw PLC, 158 F.3d at 1250); see also the '668 patent, claim 1.

v. Magnetized to a level that enables detection. The remaining question for these claim terms is the appropriate construction,
if any is required, for the phrase requiring that the needle be magnetized "at [or to] a level that enables detection of the
magnetism of the needle." Rivard contends that the construction of this phrase must state that "it is the permanent or
residual magnetism that must be detected by the detector in order to determine a needle or piece is present in the meat." Again,
the court finds this part of Rivard's construction to be superfluous, because the claim term itself clearly and
unambiguously states that what must be detected is "the magnetism of the needle."

Ideal, on the other hand, contends that, if any construction is required, the phrase "at [or to] a level that enables detection of
the magnetism of the needle" should be construed to mean "whereby the magnetism of the magnetic needle facilitates
locating a needle or needle fragment in the flesh of a slaughtered animal" or "to a level which facilitates locating a needle or needle fragment in the flesh of a slaughtered animal." The problem with Ideal's construction of this phrase, in the court's view, is that "enables" and "facilitates" do not have the same ordinary meaning, and nothing in the patent suggests that a specialized meaning of "enables" to mean "facilitates" is appropriate. See Free Motion Fitness, Inc., 423 F.3d at 1348 (recognizing such use of a dictionary as appropriate, citing Phillips, 415 F.3d at 1320); Phillips, 415 F.3d at 1324 ("[A] judge who encounters a claim term while reading a patent might consult a general purpose or specialized dictionary to begin to understand the meaning of the term, before reviewing the remainder of the patent to determine how the patentee has used the term."). As to ordinary meaning, in the sense appropriate here from the intrinsic evidence of the patent, "enable" means "to make possible, practical, or easy," or "to cause to operate." See MERRIAM WEBSTER'S COLLEGIATE DICTIONARY 380 (10th ed. 1995). "Facilitate," on the other hand, means "to make easier" or "help bring about." Id. at 415; see also Free Motion Fitness, Inc., 423 F.3d at 1348 ("The court must ensure that any reliance on dictionaries accords with the intrinsic evidence."). While the definitions of "enable" and "facilitate" overlap at the broadest definition of "enable," the one defining "enable" as "to make easy," it is inappropriate to select the broadest of the dictionary meanings as a matter of course. See id., 423 F.3d at 1348-49 (noting that use of the fullest range of a terms ordinary meaning does not mean that the term will presumptively receive its broadest dictionary definition or the aggregate of multiple dictionary definitions). The court also believes that "enable" in the context of the patent means "to make possible," not merely "to make easy." See, e.g., the '668 patent, Detailed Description, Col. 5, ll. 63-66 ("Thus, a needle cannula or piece thereof comprising a residual magnetism, which is embedded in the flesh of an animal or meat product, can be detected in a metal detector or magnetic detector . . . .") (emphasis added).

vi. The court's construction. In light of the foregoing, the court concludes that the proper construction of both "[the needle] is rendered magnetic at [or to] a level that enables detection of the magnetism of the needle," which appears in claims 1 and 13 of the '668 patent, and "the needle is magnetized to a level which enables detection of the magnetism of the needle," which appears in claims 7 and 15 of the '668 patent, is the following: "Either prior to injecting the living animal or while in the flesh of the animal after slaughter, the needle is magnetized to become a permanent magnet or a residual magnet, that is, a magnet that retains its magnetic field for a period of time, to a level that makes it possible for the magnetism of the needle to be detected by a metal detector or magnetic detector."

Looking first at claim construction, we agree with HoMedics that the district court correctly interpreted the phrase "magnetizable flexible sheet." Relying on that phrase's plain meaning and a dictionary definition, the court construed "magnetizable flexible sheet" to require that "the flexible sheet itself must be capable of being made a magnet." Summary Judgment Order at 13 (emphasis added). Indeed, that meaning is consistent with additional claim language, which requires the magnetization pattern to be "magnetized integrally into the sheet," '111 patent, col. 5, l. 46, as well as with the specification, which describes the curved magnetization pattern as being "magnetically imprinted" into "flexible magnetic sheet material," id. at col. 3, ll. 59-61; see id. at col. 4, ll. 61-63. Moreover, during prosecution the patent owner explained "magnetizable" as meaning "that the flexible sheet is capable of being magnetized." Nikken's argument that the court improperly required every aspect of the sheet to be magnetizable mistakenly focuses on how much of the sheet must be magnetizable; Nikken overlooks the fact that the sheet itself must be magnetizable. Thus, we conclude that the phrase "magnetizable flexible sheet" requires that "the flexible sheet itself must be capable of being made a magnet."

Looking first at claim construction, we agree with HoMedics that the district court correctly interpreted the phrase "magnetizable flexible sheet." Relying on that phrase's plain meaning and a dictionary definition, the court construed "magnetizable flexible sheet" to require that "the flexible sheet itself must be capable of being made a magnet." Summary Judgment Order at 13 (emphasis added). Indeed, that meaning is consistent with additional claim language, which requires the magnetization pattern to be "magnetized integrally into the sheet," '111 patent, col. 5, l. 46, as well as with the specification, which describes the curved magnetization pattern as being "magnetically imprinted" into "flexible magnetic sheet material," id. at col. 3, ll. 59-61; see id. at col. 4, ll. 61-63. Moreover, during prosecution the patent owner explained "magnetizable" as meaning "that the flexible sheet is capable of being magnetized." Nikken's argument that the court improperly required every aspect of the sheet to be magnetizable mistakenly focuses on how much of the sheet must be magnetizable; Nikken overlooks the fact that the sheet itself must be magnetizable. Thus, we conclude that the phrase "magnetizable flexible sheet" requires that "the flexible sheet itself must be capable of being made a magnet."

5. "main board"

This term appears in the '408 patent claims 1 and 9. Rackable asserts that "main board" means "main circuit board inside the computer that makes it possible for the other parts of a computer to communicate with each other, into which additional boards may be plugged if present." Supermicro asserts that "main board" means "a circuit board that contains the primary components of a computer."
The essence of this dispute is whether this term constitutes the principal board in the computer through which other parts of the computer communicate, as Rackable contends, as opposed to any printed circuit board having a processor, according to Supermicro.

Rackable explains that a computer may contain several printed circuit boards, but that the "main board" is "the largest printed circuit board in the computer" into which other circuit boards would plug. It asserts that many electronic devices contain circuit boards, but do not contain "main boards" as found in general purpose computers such as servers. In support, Rackable cites to extrinsic evidence, including several different print and online dictionaries. In addition to the dictionary definitions, in support of its construction, Rackable also argues that one of ordinary skill in the art "would expect a main board of the basic type that permits the level of functionality required of a general purpose computer, . . . also known as a 'motherboard'" and "would also know that the main board in a general purpose computer makes it possible for the other parts of the computer to communicate with each other."

Supermicro, in response, argues that specification language supports its construction, in addition to extrinsic evidence, including several computer and/or electronic dictionary definitions.

At the hearing, the parties agreed that "main board" is synonymous with "motherboard." Based on the admissions at the hearing, it is clear to the court that the parties agree that the "main board" includes "the primary components of a computer," and is distinguishable from a daughter board. In fact, Supermicro made a judicial admission that a "main board" is not the same thing as a daughter board. Thus, the real issue concerns the amount of detail that should be provided regarding the function of the motherboard or "main board" and its relation to other boards. As noted, per Rackable's construction, the "main board" should be construed to include language regarding communication, specifically that it is a circuit board that enables "other parts of a computer to communicate with each other," and should also be construed to note that additional boards, if present, may be plugged into it.

The only guidance in the specification itself appears to be several examples of "[p]referred main boards," which include "models N44BX, L44GX, 810, 810E and C440GX by Intel." However, the court cannot read limitations from the embodiment or the examples in the specification into the definition. Because analysis of the intrinsic evidence fails to resolve the ambiguity, the court will consider the extrinsic evidence -- most significantly, the dictionary definitions provided by the parties.

Rackable cites to five dictionary definitions in support of its construction, including: (1) a CNET.com definition (Ostapuk Decl., Exh. X); (2) Merriam-Webster's Online Dictionary (Exh. Y); (3) Free Online Dictionary of Computing (Exh. Z); (4) Microsoft Press Computer Dictionary (Exh. AA); and (5) an Answers.com definition (Exh. EE).

Supermicro cites to three different dictionary definitions in support of its construction, including: (1) Microsoft Computer Dictionary definitions of "main board" and "mother board;" (Yamashita Decl., Exh. D) (3) Dictionary of Computer and Internet Terms (Exh. F); and (4) the IEEE Standard Dictionary of Electrical and Electronic Terms (Exh. E).

Technical treatises and dictionaries are generally preferred over a definition in an ordinary dictionary based on "the principle that patents are to be construed by the hypothetical person skilled in the art." Kahrl, Patent Claim Construction, § 7.03[B], Technical Treatises (Aspen 2005 Suppl.); see also, e.g., Rambus, Inc. v. Infineon Technologies AG, 318 F.3d 1081, 1091 (Fed. Cir. 2003). "A technical treatise is more likely to provide a definition used by persons skilled in the art than an ordinary dictionary definition." Id. In defining electrical and computer terms, the Federal Circuit has employed computing dictionaries and the IEEE Standard Dictionary of Electrical and Electronic terms, as offered by Supermicro in this case. See Rambus, 318 F.3d at 1091; see also NeoMagic Corp. v. Trident Microsystems, Inc., 287 F.3d 1062, 1071 (Fed. Cir. 2002).

Here, the technical dictionaries overwhelmingly support Supermicro's construction of the term "main board," with one modification -- that the "main board" be "main" or "primary." Rackable's definition is unnecessarily complex and contains limitations on the definition of "main board" that are not universally present in the dictionary definitions.

For these reasons, the court adopts, with one addition, Supermicro's construction, and construes the term "main board" as a main circuit board that contains the primary components of a computer.
The parties dispute the meaning of the phrase "a core wire having a main body." Specifically, the parties dispute the proper construction of the phrase "main body." On the face of Claim 1, the core wire has a "main body" and a "distal portion" of the core wire. Except for its use in the claims of the '962 Patent, the phrase "main body" does not appear elsewhere in the specification.

The Court previously defined the phrase "core wire" in construing the elements of the '136 Patent. Based on the written description of the '962 Patent, the Court gives the phrase the same meaning here. 16

The guidewire comprises a core wire, and an elongate tip portion extending the core wire for a predetermined lineal extent. The tip portion is adapted to be packed into the vascular cavity to form the occlusion in the vascular cavity. The tip portion is coupled to the distal portion of the core wire.

('962 Patent, Col. 5:30-35.)

16 Although the Court gives core wire the same construction, the Court notes the following passage from the written description in the '962 Patent, which if taken literally would render all claims for which it may be used to define the phrase "core wire" arguably indefinite:

The core wire is adapted to being packed into the vascular cavity to form the occlusion in the vascular cavity and is coupled to the distal portion of the core wire.

The tip portion includes a first segment for disposition into the cavity and a second segment for coupling the first portion to the core wire. The second segment is adapted to be electrolysized upon application of current. An insulating coating is disposed on the first segment. The second segment is left exposed to permit selective electrolysis thereof. As a result, endovascular occlusion of the vascular cavity can be performed.

('962 Patent, Col.6:1-13.) If this passage is used to define "core wire," it would mean that "core wire" would include the elongate distal tip, which is contrary to the Court's earlier construction. Furthermore, the literal language of this passage has the "core wire" attached to the "core wire." The Court declines to include this passage in its construction of Claim 1 of the '962 Patent. Nor does the Court include this passage in its construction of "core wire" as it is used in the '136 and '578 Patents. Any party contending that the above passage has legal significance may file appropriate motions.

In the phrase "a core wire having a main body," as it is used in Claim 1 of the '962 Patent, the Court construes "main body" to mean:

the core wire not including the distal portion of the core wire.

1 "main case"

The parties dispute whether the scanner's main case necessarily contains the interface engine.

The mobile scanner disclosed by independent claim 13 comprises "a main case including an image sensing module and a
motion mechanism," "an interface engine coupled to the image sensing module and the motion mechanism" and "a universal serial bus." '506 patent, col 11, l. 39 through col 12, l. 11.

The parties originally agreed that "main case" means "a compact case that houses the image sensing module and the motion mechanism." Doc # 36, Ex 1 at 16. Plaintiff now rejects that construction and contends that "main case" means "a compact case that houses the image sensing module, the motion mechanism and the interface engine." Doc # 58-2 at 2 (emphasis original). Plaintiff argues that the previously agreed upon construction is inconsistent with dependent claim 14, which claims "the mobile scanner of claim 13, wherein the interface engine is enclosed in the main case and communicate[s] with the computing device through the universal serial bus." '506 patent, col 12, l. 12-14.

It is true that "the usage of a term in one claim can often illuminate the meaning of the same term in other claims." Phillips, 415 F3d at 1314; see also Fonar Corp v Johnson & Johnson, 821 F2d 627, 631 (Fed Cir 1987) ("[C]onstruction of disputed claims requires reference to the specification, the prosecution history, and the other claims."). But in this context, plaintiff's argument proves too much. The fact that claim 14 specifies that the main case houses the interface engine actually militates against implying such a spatial limitation into claim 13, for it suggests that the patentee contemplated that the interface engine would not necessarily be enclosed within the main case. See Phillips, 415 F3d at 1325 ("The inclusion of such a specific limitation on the term 'baffles' in claim 2 makes it likely that the patentee did not contemplate that the term 'baffles' already contained that limitation.").

This is confirmed by dependent claim 15, which specifies that interface engine is housed in "a separate case integrated with the universal serial bus." '506 patent, col 12, l. 12-17 (emphasis added). The additional and mutually exclusive limitations of claims 14 and 15 show that the location of the interface engine was not a limitation inherent to the "main case" language of claim 13. Hence, "main case" should not be construed so as to specify the interface engine location.

Plaintiff lastly contends that its construction is appropriate because this court found in the previous claim construction order that the "interface engine is enclosed in the main case." Id at 2-3. But the court merely observed that the claim language of the '506 patent "makes clear that the interface engine is contained within the main case in some embodiments." Doc # 57 at 17 (emphasis added). This observation is entirely consistent with the conclusion that the interface engine may be housed outside the main case, a possibility that should not be foreclosed in the manner plaintiff proposes.

In sum, the court declines to construe "main case" so as to import a limitation concerning the location of the interface engine into claim 13. Because (1) the location of the interface engine vis-a-vis the main case was the sole subject of dispute and (2) the parties agree that the main case is a compact case that houses the image sensing module and the motion mechanism, the court adopts the parties' previously agreed upon construction, which is amply supported by the claims and the specification. See '506 patent, col 2, l. 13-14 (proclaiming that the disclosed scanner fulfills the need for a "compact, energy-efficient and lightweight" scanner); col 2, l. 57-61 ("The main case houses the image sensing module and the motion mechanism ** *."); col 5, l. 41-42 (same); col 11, l. 31-40 (same).

The court construes "main case" as "a compact case that houses the image sensing module and the motion mechanism."

1. "Main Case"

Plustek asks the Court to construe this claim as "a compact case that can be made of light but rigid plastic material and that houses only a color image sensing module and a motion mechanism." [Alternatively, Plustek asks the Court to construe this term as "a compact case compatible with portability that can be made of light but rigid plastic material and that houses only a color image sensing module and a motion mechanism." (Emphasis added)]

Syscan argues for "a case compatible with portability that houses an image sensing module and a motion mechanism."

The specification clearly distinguishes the patented scanner from the prior art on the basis of the scanner's minimalist approach: "The disclosed invention, for the first time, provides a mobile scanner that has only the minimum components to operate." See Dang Decl., P 2, Ex. A ('124 Patent), 2:30-32, emphasis added. "It is disclosed that a mobile scanner includes
only the minimum components to operate as a scanner." See Dang Decl., P 2, Ex. A ('124 Patent), Abstract.


It should be pointed out that, fundamentally different from the scanners in the market, there is no microcontroller and other electronic components in main module to control the operation of the image sensor and the illumination source." See Dang Decl., P 2, Ex. A ('124 Patent), 7:3-7, emphasis added.

In summary, it is clear from the specification that the patentee intended only to claim scanners which contain only the components necessary to operate (an image sensing module and a motion mechanism) to distinguish the patented scanner from the prior art. The Federal Circuit has consistently held that "where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question." SciMed Life Systems, Inc., 242 F.3d at 1341; see also CCS Fitness, 288 F.3d at 1366-67 ("a claim term will not receive its ordinary meaning if the intrinsic evidence shows that the patentee distinguished the term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention.").

Therefore, the Court construes this claim as "a compact case that can be made of light but rigid plastic material and that houses only an image sensing module and a motion mechanism."
the main plateaus must make up the bulk of the interior of the cargo body or require a smooth-walled construction. Indeed, the patentee seemed rather keen on ensuring the broadest possible reach of his patent:

The various elements and combinations of elements described below and illustrated in the drawings can be arranged and organized differently to result in embodiments which are still within the spirit and scope of the present invention.

'564 Patent, 3:30.

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3 See also '564 Patent, 4:37-39 ("In reality, main plateaus 17, 18 . . . preferably make up the majority of panels 15, 16 and therefore, of an interior wall surface 38 of the trailer") and 4:42-44 ("in reality, the various sidewall panels preferably extend laterally a distance several times the width of joint 14.")

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If the patentee had wanted to claim an invention having a panel with a "main" plateau that was proportionately larger in size than the spliced plateau, it would have been easy to say this in the claims. To the contrary, by stating in the specification that it preferred the main plateaus to comprise the bulk of the interior of a cargo body but then failing to incorporate this preference into the claims, the patentee essentially disavowed this limitation. See Halliburton Energy Services, Inc. v. M-I LLC, 514 F.3d 1244, 1251 (Fed. Cir. 2008) (specification's statement that gel drilling fluid "preferably" contain no organophilic clays strongly suggests that absence of clays was simply preferred embodiment); see also Acumed LLC v. Stryker Corp., 483 F.3d 800, 807 (Fed. Cir. 2007) (it is improper to read a feature of the preferred embodiment into the claims as a limitation). If anything, the patentee's word and phrase choices suggest that he was aiming for the broadest possible coverage of his patent.

Accordingly, I decline to construe the term "main" as expressing any relative size requirement.

B. Limitation to trailers or other cargo-carrying containers

In its initial motion for claims construction, plaintiff also asked the court to construe the term "main plateau" as a "portion of a trailer wall panel." Defendant objected, asserting that there is no language in the claims defining a "wall joint" (claim 1 of both patents) or in the claims defining a "cargo body" (claim 15 of the '564 patent and claim 16 of the '902 patent) that limits "main plateau" to trailers. Indeed, noted defendant, the patentee defined the term "cargo body" in the specification as referring to "the sidewalls of a trailer, cargo container, truck body or other cargo carrying body." '564 patent, 1:17-20. In response, plaintiff concedes that the claims are not limited to trailers but also apply to containers, cargo bodies or any other structure designed to contain cargo. Pl. Response, dkt. 33, at 3 n.2. Plaintiff appears to be taking the position that this limitation applies not only to the "cargo body" claims but even to the "wall joint" claims.

From the perfunctory nature of plaintiffs' response, along with defendant's assertion that the patent claims and the specification "do not support limiting the claims to a trailer," Def.'s Br. in Supp., dkt. 27, at 5, it is unclear whether an actual dispute remains regarding the scope of the claims. Absent a clear indication that a concrete dispute requiring construction remains, I decline to address this issue at this time. Plaintiffs may renew their request that the claims should be limited to trailers, containers or other cargo-carrying structures if they deem such a construction necessary at the summary judgment phase.

Court's construction: "main plateau" means "a portion of a panel."

GO BACK

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a. main sealant

LGD contends that "main sealant" means "sealant material that encloses the display region." D.I. 376 at Exh. I-3. LGD further contends that the term "encloses" means "to surround on all sides; to enclose or contain completely." D.I. 384 at 30;
D.I. 430 at 16. Thus, according to LGD, the main sealant must completely surround the liquid crystal in the display area, with no opening or fill points.

AUO contends that the term "main sealant" means "a segment of sealant for enclosing the liquid crystal in the LCD panel." D.I. 376 at Exh. I-3. CMO contends that the term "main sealant" means "sealant material necessary for confining liquid crystal from leaking out from between the substrates." Id.

The Court concludes that the term "main sealant" means "sealant material that encloses the display region" with the understanding that "encloses" means "to surround on all sides; to enclose or contain completely." In the Court's view, this construction is consistent with the specification and reduces the likelihood of ambiguity and confusion. '374 patent, col. 3, ll. 23-24 ("The main UV sealant acts as a sealant to confine the liquid crystal."). 37 (describing a "closed type main UV sealant"). AUO's construction, which permits multiple separate segments of sealant, is inconsistent with the specification and the purposes of the patent in that it reintroduces the problem of excess sealant and contamination that the claimed invention is designed to address. Id. at col. 5, ll. 5-7, 26-34; col. 2, ll. 62-67; Figs. 3B, 4A, 5A. In addition, the specification makes clear that the main sealant encloses the place where the liquid crystal must be deposited, meaning the display area. Id. at col. 5, ll. 31-32. Thus, the Court finds AUO's construction of enclosing the liquid crystal to be imprecise.

Similarly, CMO's construction, while addressing the function of the main sealant, does not explain whether the sealant must fully enclose the display area and interjects confusion because it may refer to only a portion of the seal or include a subsequent "plug" seal after vacuum injection is used to fill an injection hole. Such plugged holes are not contemplated in the '374 patent, which discloses a main sealant formed as a closed loop completely surrounding the display area with no injection fill ports or other openings. Id. at col. 2, ll. 38-40.

"maintain centering"

Xinyi also asks the Court to construe the term "maintain centering," which appears in asserted claims 14 and 15 of the '395 patent. According to Xinyi, not only must the claimed invention provide for "centering" as discussed supra, it also must "maintain centering," which, according to Xinyi "means that the lip portion of the spacer provides sufficient force to keep or prolong a constant gap of even width all around the glazing, which force must be sufficient to overcome other external forces on the glass."

Saint Gobain counters that no construction is required, and the Court agrees. Much of Xinyi's proposed construction (the portion referring to "a constant gap of even width all around the glazing") coincides with its interpretation of "centering" which, as explained herein, the Court rejects. As for the latter segment of Xinyi's proposed construction (the portion referring to a force sufficient to overcome external forces on the glass), this interpretation is unsupportable. The phrase "maintain centering" simply adds the term "maintain" to the previously-discussed claim term "centering." The Court finds that the term "maintain" has a plain and ordinary meaning to one of ordinary skill in the art and, when added to the term "centering," simply indicates that the centering function performed by the spacer is prolonged, i.e., that it is not fleeting or temporary. Xinyi's suggestion that the phrase "maintain centering" independently requires a force sufficient to overcome external forces on the glass finds no support in the intrinsic record and, therefore, Xinyi's proposed construction is rejected.

"said protective barrier provides reduction of wind force sufficient to maintain the integrity of said structure"

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<th>Claim Term</th>
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<th>Defendants' Proposed Construction</th>
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provides vulnerable parts of the building, including under the eaves or overhangs, on the walls, and on the windows and doors, so that the structure is maintained whole.

The dispute between the parties over the instant phrase "maintain the integrity of said structure" in the instant claim term is essentially the same as their dispute over "process for maintaining integrity of a structure" in claim 1's preamble. The Court incorporates by reference its prior discussion covering this latter dispute, which sets forth specification statements showing that structural integrity may be maintained, as contemplated by claim 1, even if only select portions of the structure are shielded or protected. Additionally, the Court incorporates by reference its prior discussion rejecting what this Court described as Defendants' single embodiment theory related to figure 1.

This Court concludes that a person of ordinary skill in the art would readily understand this claim term as is. It is clear to this Court that this claim term contemplates a protective barrier device that aims to sufficiently reduce wind forces in order to maintain a structure's integrity. To construe the phrase "maintain the integrity of said structure" to mean "to reduce wind forces affecting all the vulnerable parts of the building, including under the eaves or overhangs, on the walls, and on the windows and doors, so that the structure is maintained whole" would unnecessarily limit the claim language for reasons stated in the foregoing sections. Any additional construction by this Court is unwarranted and not necessary. Instead, this claim term should be given its plain and ordinary meaning.

4. "Maintained." Technip contends that the low pressure must be "actively" maintained by the longitudinal gas flow. To be sure, nothing in the intrinsic evidence directly supports the defendant's position that the pressure need be actively maintained by the longitudinal gas flow inasmuch as that word "actively") is used nowhere in the intrinsic evidence and maintained is nowhere defined in the intrinsic evidence. Looking to extrinsic evidence, it is clear that "maintain" means "[t]o continue," "carry on" or "[t]o preserve or keep in a given existing condition[.]" WEBSTER'S II, New Riverside University Dictionary, 717 (1984); see also BLACK'S LAW DICTIONARY, 973 (8th ed. 2004)("To continue (something)"). Given this definition, and the language in the specification which speaks to vacuum generation, the varying of vacuum strength and pressure, and the achievement 15 of reduced pressure, 16 it is clear to this Court that adding the modifier "actively" in front of maintained does nothing more than recognize the very purpose of the invention; if low pressure is not actively maintained by longitudinal gas/air flow along the microporous insulation, the pipeline will inevitably form solid deposits and lead to replacement of the pipeline. In other words, it is the intrinsic characteristic of this invention that low pressure is actively maintained by longitudinal gas/air flow along the microporous insulation. Accordingly, this Court must agree with the defendant that the low pressure must be actively maintained.

15 Achievement means "[s]omething that has been accomplished successfully, esp. by means of persistent endeavor," WEBSTER'S II, New Riverside University Dictionary, at 73. Similarly, "achieve" means "[t]o accomplish successfully" or "[t]o attain with effort[.]"] Id.

16 (See Doc. 33, Exhibit A, at Columns 3, 7 & 8 ("A striking feature of the invention is that the space occupied by the microporous material within the annular space between the two coaxial tubes maintains a free passageway for laminar airflow thus promoting suction and generating reduced pressure from one section to another through the entire pipe as applied from one end thereof. . . . Partial vacuum aimed at dislodging air contained in open pores of the microporous material through the encasing tissue is conveniently accomplished by longitudinal gas flow in this empty space. Vacuum is generated until a reduced pressure on the order of 50 millibars is obtained, through suction by a temporary flow tap communicating with a hole drilled at one end of the pipe, which hole is subsequently plugged by a weld joint. . . . One proceeds then with vacuum generation using the layer of 3 mm mean thickness that has maintained free nearby the outer tube, to achieve a reduced pressure of 50 millibars, as mentioned previously. . . . Once such a pipe is installed, the gas flow
passageway may still be accessed from either end of the pipeline to vary the vacuum strength during service lifetime thereof, and hence vary the efficiency of insulation. . . . In such an example, there is contemplated according to the invention a method for using a pipe thus made, essentially characterized in that pressure maintained within said annular space is varied between values as high as 50 bars early in service, and values in the range of 1 mbars and 900 mbars late in service for a pipeline formed from said pipes.

--- End Footnotes ---

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8. "such that said blunt-ended cylindrical shape is maintained during flight and prior to impact"

Defendants argue that this language in the claim requires that the projectile's shape is "maintained after firing for at least 20 yards and until impact." Def. Br. at 13. The numerical limit in defendants' construction is derived from the explanation in the patent specification of the possible uses for plaintiff's invention, such as by police officers managing an unruly crowd, who might "strike [an unruly] individual, typically at eight to twenty yards, with a low lethality munition." '086 patent, 2:30-32 (emphasis added). Defendants argue that plaintiff's projectile must therefore be capable of maintaining its flight shape for at least 20 yards.

There is nothing, however, in the claim language that refers to the length of the projectile's flight. In the absence of such limiting language in the claim, the numerical limitation of twenty yards suggested by the specification should not be read into the claim language. See Modine Mfg. Co., 75 F.3d at 1551 (noting that a "claim element that is claimed in general descriptive words, when a numerical range appears in the specification and in other claims, is not limited to the numbers in the specification or the other claims"). Plaintiff's proposed construction, that the shape is "maintained at least up to the point immediately before impact," Pl. Br. at "Ex. F," reflects the ordinary meaning of the claim language.

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Claim 5

Finally, Claim 5 is directed to "the miter saw of claim 4 wherein the handle is rotatable to the same extent that the arm is adjustable about the horizontal axis so as to enable the handle to be maintained in a horizontal orientation during a compound miter cut." ('976 Patent, Col. 5, ll. 15-18) (emphasis on disputed terms). Rexon would construe the disputed words as: "the handle is rotated in a one-to-one relation to the adjustment angle of the arm assembly so that the handle is fixed horizontally, without any deviation from the horizontal, during operation of the miter saw." Rexon's proposed construction appears more an attack on validity or a defense to infringement than an effort to construe the terms in light of the otherwise ordinary meaning of the terms. Moreover, One World's proposed construction ("to keep the handle in a horizontal position") fails to add any clarity to the ordinary and accustomed meaning of the claim language, confirming my impression that the language is clear on its face and does not require any further construction. Whether a handle that deviates slightly from the horizontal falls within the scope of the claim--an argument alluded to by both parties--is a matter for the finder of fact to determine at a later stage of the litigation.

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1. "maintaining" and "maintain"

Micromass asserts that the plain meaning of "maintaining" or "maintain" is "to carry on," "to continue," and "to keep unimpaired." Thus, it asserts that the proper construction of "means for maintaining the kinetic energies of ions . . . at a relatively low level" in claim 1(k) and "maintain such kinetic energy at a relatively low value" in claim 14(h) is one that requires "the kinetic energies be kept unimpaired at a relatively low level through the relevant region."
AB/Sciex contends that "maintaining" and "maintain" are common words used in their everyday manner and therefore require no further construction. It notes, however, that Micromass's proposed construction of those terms -- that "the kinetic energies be kept unimpaired" -- contains two implications not required by the claim language. First, AB/Sciex is concerned that Micromass intends to imply that the kinetic energy of ions can never vary through the region between the inlet orifice and the first rod set. It argues that this construction is not supported by the claim language. The court agrees. Read in whole, the claim limitations require that the kinetic energies of the ions be maintained at a relatively low level throughout the relevant region. The claims do not require that the kinetic energy of ions never fluctuate. Indeed, the kinetic energies of ions may fluctuate greatly, as long as the kinetic energy of those ions does not surpass the relatively low value or level required by the claim.

Second, AB/Sciex is concerned that Micromass's construction implies that the kinetic energies of all the transmitted ions be maintained at a relatively low level. Again, such a construction would be at odds with the claim language. Claim 1(k) requires only "maintaining the kinetic energies of ions . . . ." It does not say "all ions," but instead indicates the number of ions needed to meet the limitation only be expressing "ions" in the plural. Thus, the court concludes that only a plurality of ions need to be maintained a relatively low level to satisfy this limitation.

Thus, "maintaining" and "maintain" are used in their ordinary sense and require no further construction except to note that the use of these terms in claims 1(k) and 14(h) requires neither that (1) the kinetic energies of the ions never vary, nor (2) all ions satisfy this claim limitation.

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(1) "maintaining a predetermined drying speed for a predetermined time in an initial drying step"

The parties dispute the term "maintaining a predetermined drying speed for a predetermined time in an initial drying step," which appears in Claims 1 and 10. LG proposes construing the term to mean "maintaining a predetermined drying speed [i.e., a preset speed occurring during a drying step] for a predetermined time in an initial drying step [i.e., a first drying step in a sequence of drying steps]." (Chart at 23.) Whirlpool proposes instead that the term be construed to mean "spinning the drum at a preset speed that discharges water contained in the laundry for a predetermined time." (Id.)

The summary of the patent states that "[a]n object of the present invention is to provide a drying method for a drum-type washing machine which can prevent the drum from generating a flushing noise upon activation of a drying step, and which can also prevent laundry from sticking to the drum and thus becoming crumpled." ('731 Patent, col. 2, ll. 11-15.) "To achieve these and other advantages and in accordance with the purpose of the present invention, as embodied and broadly described, a drying method for a drum-type washing machine of the present invention includes . . . draining water from a load of laundry by maintaining a predetermined drying speed for a predetermined time in an initial drying step . . . ." (Id., col. 2, ll. 23-29.)

Figure 5 is "a flowchart showing a method of carrying out a drying stroke process by sensing an eccentricity in a drum washing machine according to the present invention . . . ." (Id., col. 3, ll. 8-10.) Figure 6 is "a graph showing characteristics of the drying stroke of [Figure] 5." (Id., col. 3, ll. 12-13.) The written description for Figures 5 and 6 states that "the predetermined speed R2 is maintained in steps 53S and 54S for a predetermined time tc in order to discharge the water contained in the laundry, thereby preventing an eccentricity from being generated due to the water contained in the laundry." (Id., col. 3, ll. 40-44.)

Based on the intrinsic evidence, the Court will adopt Whirlpool's construction of the term. It is clear that the patent uses the term "maintaining a predetermined drying speed" with respect to the spinning of the drum. It is also clear that the proposed invention engages in the initial drying step for the purpose of discharging water. The Court therefore construes the term "maintaining a predetermined drying speed for a predetermined time in an initial drying step" to mean "spinning the drum at a preset speed that discharges water contained in the laundry for a predetermined time."
5. "maintaining desired physical characteristics"

Agere argues that the phrase "maintaining desired physical characteristics" should be construed as "preserving the physical integrity of the paddle support arm." Atmel argues that the phrase "maintaining desired physical characteristics" should be construed as "preserving physical integrity of the paddle support arm by preventing a necked down region from forming." Clearly, the only significant difference between the two proposed constructions is Atmel's inclusion of the language "by preventing a necked down region from forming."

In support of its proposed construction, Atmel points to the patent description of Figure 2, where it is noted that as a result of the existence of the deformation absorbing member, "the desired electrical and physical characteristics are maintained after the forming operation as the paddle support arm does not form a necked down region." '269 Patent at col. 3:7-9. Atmel further refers to the testimony of its expert witness that he is unable to identify any physical phenomenon other than "necking down" which would constitute a potential threat to "maintaining desired physical characteristics." See Tr. 12/6/02 at 112. However, an expert witness's inability to conceive of, and the specification's lack of reference to, any other examples of a pertinent physical phenomenon which would constitute a potential threat to "maintaining desired physical characteristics" does not mean that such a limitation should be read into the claim language, which does not itself include any such limitation. See E.I. du Pont, 849 F.2d at 1433. Moreover, the specification expressly indicates that the patentee did not intend to limit the patent in this way. The Background of the Invention states: "The deformation will generally be in the form of a necking down, i.e., a constriction of paddle support arms in the transverse axial direction." '269 Patent at col. 1:44-46 (emphasis added). The description of Figure 2, which presents a deformation absorbing member that specifically prevents necking down, provides merely an example of the invention, and does not provide a sufficient basis for reading such a limitation into the claim language itself. Thus, the Court construes the phrase "maintaining desired physical characteristics" as "preserving the physical integrity of the paddle support arm."

110. Step 6. Micro-Waste asserts that the maintaining of temperature in the temperature maintenance zone in step 6 is by means of a heating device.

111. Micro-Waste's proposed limitation of a "heating device" is derived from language in the specification which states, "[i]n order to maintain a minimum temperature, the temperature maintenance chamber is preferably encased by a heating device."

112. Industries asserts that to "maintain' means 'to keep in an existing state." (quoting WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 718). Read together with the specification, which states that the "articles so heated are … held [to] at [] least the minimum temperature during a minimum residence time[,]" the "existing state" is that of a minimum disinfecting or sterilizing temperature.

113. The ordinary meaning of "maintaining" does not require the use of a heating device.

114. "Maintaining." in step 6, is not limited to the preferred embodiment disclosed in the specification. See Amgen, Inc., 314 F.3d at 1328 ("[O]ur precedent is clear that claims are not perforce limited to the embodiments disclosed in the specification."); Rhine, 183 F.3d at 1346.

115. Step 6, prescribing the "maintaining" of temperature, is construed to mean the holding of the temperature at the disinfecting or sterilizing temperature.
The dispute here seems to be whether the flow of gas must be perpendicular to the substrate all the way to the surface of the substrate, or whether only the initial flow of the gas need be perpendicular to the substrate. Claim 1 requires that there be an "apparatus comprising a member having a plurality of gas flow apertures passing therethrough for maintaining said flow of gas perpendicular to said substrate and creating a stagnation point flow at a center of said circular substrate . . . ." (‘165 patent 5:39-43.) The plain meaning of this language is that the apertures must be positioned so that they always create a flow of gas that is directed perpendicular to the substrate, and the gas must approach the substrate so that it creates a stagnation point flow at the center of the circular substrate. A person of ordinary skill in the art would not read this language to require that the gas flow must always be precisely perpendicular all the way to the surface of the substrate; at some point close to the surface of the substrate, the substrate will act like a wall and deflect the flow of gas. As Peltzer states in his expert report,

"The flow is directed toward (more specifically, perpendicular to) to the substrate initially as it exits from the gas flow apertures, but the streamlines soon begin to curve. Indeed, the nature of stagnation point flow is that the gas approaching the substrate divided into streamlines that become parallel, rather than perpendicular to the substrate, and proceed away from the central streamline."

(Peltzer Expert Report at 12.) This is illustrated in figure 3 of the ‘165 patent, which shows that:

The gas 11 initially has a generally uniform velocity directed perpendicular to the entire surface of the substrate 10. The solid substrate, as the gas 11 approaches the substrate, causes the velocity vector to become parallel to the surface of substrate 20 and flow away from the axis of symmetry.

(‘165 patent 3:45-51.) Although this language appears in the description of the preferred embodiment, it describes what would happen whenever a perpendicular flow of gas is directed at a solid surface.

Genus has no counter-argument, but contends that ASM is rewriting the claim language by containing that "maintaining said flow of gas perpendicular to said substrate" only requires that the initial direction of the gas flow be perpendicular to the substrate. Genus' argument ignores the context of the claim language. By requiring that the apertures maintain the flow of gas perpendicular to the substrate, the claim language simply requires that the gas flow apertures always direct the flow of gas in an initial direction that is perpendicular to the substrate. Moreover, the summary of the invention provides that "a gas, introduced at a preselected distance from a circular substrate, has an initial uniform velocity toward the substrate." (‘165 patent 2: 45-47 (emphasis added.).)

As ASM points out, the disputed language, "maintaining said flow of gas perpendicular to said substrate," was not in claim 1 as originally drafted. (‘165 Prosecution History at 98.) The claim was amended to add the phrase "said apparatus further having means for varying a distance between said apparatus and said substrate and maintaining said flow of gas perpendicular to said substrate." (Id. at 40.) The inventors explained that:

Claim 1 has been amended to incorporate the feature of a means for varying the distance between the substrate and the apparatus while maintaining at all varied distances the perpendicularity of the gas flow relative to the substrate surface.

(Id. at 42.) The claim language later was amended further, but the Court agrees with ASM that the purpose of adding the "maintaining" language was to ensure that varying the distance between the gas flow apparatus and the substrate would not change the perpendicularity of the gas flow when it first exits the gas flow apparatus.

Thus, the Court agrees with ASM's proposed construction. ASM's definition uses the phrase "the initial vector of the velocity," however, which is not a phrase that is likely to elucidate matters for the lay jury. Instead, the Court construes "maintaining said flow of gas perpendicular to said substrate" to mean that "the gas flow apertures always direct the flow of gas in an initial direction that is perpendicular to the substrate."
2 It is undisputed that velocity contains two elements: direction and speed. At oral argument, the parties agreed that instead of using scientific terms like "velocity vector" and "magnitude of the velocity vector" to construe the claims, the Court could use "direction of the flow" for "velocity vector," and "speed of the flow" for "magnitude of the velocity vector" in order to make it easier for the jury to understand the claims.

I. "maintaining said locked configuration by use of a pin"

Regarding the first term to be construed, plaintiff proposes "keeping the locking member in a locked position relative to the security slot by use of a pin," while defendants propose "preventing the locking member from returning to a position aligned relative to the security slot by use of a pin." The dispute centers around the construction of the term "maintaining" as "keeping" or "preventing."

Defendants also ask the Court to construe the terms "a pin proximate said locking member" and "a movable locking member" as part of the construction of "maintaining said locked configuration by use of a pin." During the prior round of claim construction briefs, however, defendants did not believe it was necessary to construe these terms as part of the "maintaining" step of the claim, and it is not clear to the Court how the meaning of the "maintaining" phrase could have changed in the meantime. In addition, the Court has already held that claim construction would be limited to the phrase "maintaining said locked configuration by use of a pin" due to defendants' failure to respect the Patent Local Rule deadlines. September 20, 2005 Order at 8-9 n.7. For these reasons, and because the Court does not believe that "pin" or "a movable locking member" need to be construed beyond their plain meanings, the Court will not construe these additional terms.

1 For example, the PTO consistently used the term "locking member" in its reexamination order, indicating that "locking member" has "a reasonably well understood meaning in the art," Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996), and is not a means-plus-function element.

A. Presumption in favor of the ordinary and customary meaning

In general, courts "indulge a heavy presumption that a claim term carries its ordinary and customary meaning." CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002). The Federal Circuit has held that dictionary definitions may establish a claim term's ordinary meaning. Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1344 (Fed. Cir. 2001) (using Random House Unabridged Dictionary to ascertain the ordinary meaning of "portion"); Kegel Co. Inc. v. AMF Bowling, Inc., 127 F.3d 1420, 1427 (Fed. Cir. 1997) (using Webster's Third New International Dictionary to define "assembly"); Vitrionics Corp., 90 F.3d at 1584 n.6 ("Although technical treatises and dictionaries fall within the category of extrinsic evidence . . . [j]udges are free to consult such resources at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms.").

Here, the dictionary definition of "maintaining" is "keeping in existing state." Merriam Webster's Collegiate Dictionary Tenth Edition (1997) at p. 702. While keeping in existing state may encompass defendants' proposed construction of "preventing" the locking member from returning to a certain position, the definition is by no means synonymous with such a construction. The dictionary definition of "maintaining" thus supports plaintiff's proposed construction of "keeping." Accordingly, the Court adopts plaintiff's construction as the claim term's plain and ordinary meaning and finds a heavy presumption in favor of defining "maintaining" as "keeping" or "keeping in existing state." See CCS Fitness, Inc., 288 F.3d

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B. Overcoming the presumption

Courts have recognized at least two ways for an accused infringer of a patent to overcome the heavy presumption in favor of the plain and ordinary meaning of a claim term. First, a claim term may receive a meaning separate from its ordinary meaning if the patentee acted as his own lexicographer and clearly defined the term in the specification or prosecution history. See, e.g., Johnson Worldwide Assocs., Inc. v. Zebeco Corp., 175 F.3d 985, 990 (Fed. Cir. 1999); Rexnord Corp., 274 F.3d at 1342. The second route, which defendants rely on in this case, applies where the term "chosen by the patentee so deprives the claim of clarity" as to require recourse to the intrinsic evidence for a definite meaning. Johnson Worldwide Assocs., Inc., 175 F.3d at 990.

Defendants argue that neither the claim term "maintaining" nor plaintiff's proposed construction of "keeping" provides a clear meaning to a person with ordinary skill in the art, because of variations present in the preferred embodiments described in the specification. 2 The Court disagrees, for two reasons. First, there is nothing unclear about the meaning of "maintaining" or about plaintiff's construction of "maintaining" as "keeping the locking member in a locked position." Second, defendants' construction would violate an established canon of claim construction. It is well settled that limitations from patent specifications cannot be read into patent claims. See Sjolund, 847 F.2d at 1582 (structural limitations in specification of improved crab trap not allowed to be read into claim to decide obviousness); E.I. du Pont de Nemours & Co. 849 F.2d at 1432-3 (copolymers' environmental stress crack resistance and impact strength disclosed in specification not proper for consideration in claim construction); Laitram Corp., 863 F.2d at 864-5 (shape of a key shaft in a claim not limited by an embodiment of a square key shaft in the specification).

2 Specifically, defendants rely on Figures 3 to 17 for the proposition that the pins function to prevent a crossmember from rotating back to an aligned position relative to the security slot, on Figures 24 and 27 for the proposition that the pins prevent two engagement arms from returning to an aligned position relative to the security slot, and on all of the figures to show that the pins prevent the locking member from returning to an aligned position relative to the security slot.

Here, even if defendants are correct in drawing from the preferred embodiments in the specification that the pins essentially "prevent" the locking member from returning to a certain position, it is not proper to read this construction into the claim in a limiting fashion. The construction of "preventing" is necessarily more narrow than "maintaining" because such a construction introduces a new element into the claim, i.e., a locking member that would presumably return to a position aligned with the security slot but for the use of a pin. The court therefore rejects defendants' construction to avoid improperly importing claim limitations from the specification.


Staples defines "majority of abutting wooden surfaces in a building having a frame constructed from wooden components comprising said wooden surfaces" as "more than half of the abutting length of the touching wooden surfaces that are susceptible to outside air infiltration." (Joint Claim Construction Statement, P. 2). Defendants define it as "more than 50% of the total abutting length of all of the touching wooden surfaces in a building frame that are susceptible to outside air infiltration."
infiltration." (Id.).

Upon consideration, the Court sees little difference between the parties' proposed constructions. In other words, although Staples claims Defendants "want the Court to require that the glue be applied to the majority of all the abutting wooden surfaces in a building--including abutting surfaces on the interior of a building that have no bearing on air infiltration" (Doc. No. 60, P. 13 (emphasis added)), the Court finds no such limitation in Defendants' proposed construction. 3 The Court will adopt Defendants' definition, as it is more precise, and more accurately reflects the teachings of the patent as found in the specification and claims.

3 To the contrary, Defendants' construction specifically addresses only those wooden surfaces "that are susceptible to outside air infiltration."

5. make selections by causing contact across the [a] planar surface of the work platform

This phrase appears in claims 25 - 53 of the '213 patent and in claims 10 - 12 of the '283 patent. The plaintiff proposes a construction of "the child can cause contact across the surface of the work platform, as opposed to being limited to specific locations on the work platform." The defendant asserts that this term fails to comply with the written description requirement of § 112. Alternatively, the defendant proposes "arrange blocks in a particular configuration by movement across the work platform."

The disagreement between the parties stems from whether the claimed device is configured to sense objects continually (i.e., make selections) as the objects are moved across the work platform, or whether the claimed device senses objects only after the objects are located in a final position. Although the written description does not offer much explicit help, it does state that "[w]hile a block is moved on the working platform, the working platform transmits the identification of the moved block and the new locations of the block on the working platform." '874 patent at 9:2-5. The written description additionally states, "the block location information and the character identification information [can be] continuously generated and transmitted to the processing device 22." Id. at 4:46-47. This recited functionality is distinct from the generation of location and identification information upon the actuation of a button, such as by depressing a button upon completion of spelling a word, which is also described in the specification. Id. at 4:47-50.

Claim 25 of the '213 patent, as well as claim 10 of the '283 patent, describe the ability of the educational toy to sense or detect the lateral movement of a contact across the work platform while the contact is maintained with the work platform. See '213 patent, cl. 15; '283 patent, cl. 10. In light of the claim language, combined with the specification's disclosure, the court concludes that this term means "making selections by causing a maintained contact across the planar surface of the work platform."

4. "MAKING AVAILABLE TO CONSUMERS A SPECIAL LOCK"

Independent claims 1 and 10 of the 728 patent recite methods for improving carrier baggage inspection including the step of: "making available to consumers a special lock." Independent claims 1, 9, 14, and 18 of the 537 patent refer, substantively, to the same step. Tropp's proposed construction of "making available to consumers a special lock" is "[c]ausing, or otherwise facilitating, a special lock to be made available to consumers." Travel Sentry proposes that the term "making available" means "[m]anufacturing, selling, offering for sale, or distributing locks."
Travel Sentry argues, essentially, that "making available to consumers a special lock" should be read and understood as making available such locks in a commercial context. (Markman Hr'g Tr. 7). Specifically, Travel Sentry states that "making available" should mean "manufacturing, selling, offering for sale, or distributing locks." Travel Sentry argues that the Tropp's proposed construction is vague and unsupported by the patents themselves or the prosecution histories. Tropp, for his part, argues that "making available" is plainly understood as being broader than simply "manufacturing, selling, offering for sale, or distributing locks".

The Court is in accord with Tropp that "making available" as used in the claim terms, does not restrict "making available" to "manufacturing, selling, offering for sale, or distributing locks." While claims 3 and 5 of the 537 patent, dependent to claim 1, recite that a step of making available to consumers involves "mass producing the special lock and selling the special lock to the consumers," independent claims 9, 14, and 18, which also contain the term, include no such limiting language. Furthermore, the 537 patent's specification gives no indication that "making available to consumers a special lock" is limited to the manufacture, sale, distribution, or offering for sale of the locks. The 537 patent is focused on teaching a method of improving airline luggage inspection, of which making a special lock available to airline travelers is one step to that method. 537 Patent, col. 2, 11. 28-32.

This reading is further bolstered by how the term is used in the 728 patent. See, e.g., Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1334 (Fed. Cir. 2003)(presumption that claim terms appearing in related patents contain the same construed meaning). Dependent claims 3, 7, 8, 9, 12, 18, 19 and 20 of the 728 patent demonstrate that the term was meant to at least include methods such as selling the lock directly or indirectly, 728 patent, col. 8, 11. 7-9, mass producing the lock for ultimate provision to the consumer, id. at 11. 16-19, providing the identification structure to a third party, id. at 11. 20-23, and causing the lock having the identification structure to be made available to consumers, id. at 11. 24-27. Claims 12, 18, 19, and 20 are dependent to claim 10 and contain identical language as claims 3, 7, 8 and 9. In other words, these claims recite the method of independent claims 1 and 10 and each adds a limitation to the term "making available to consumers a special lock." Under the doctrine of claim differentiation, there is a presumption that the independent claims in both patents are not interpreted to include the limitations of the dependent claims. While this doctrine is not a rigid rule, see. e.g., Laitram v. Morehouse Indus., 143 F.3d 1456, 1463 (Fed. Cir. 1998), there is a strong presumption that an independent claim is not restricted by the limitations found in a dependent claim, since that would render the dependent claim superfluous. Acumed LLC v. Stryker Corp., 483 F.3d 800, 806 (Fed. Cir. 2007); see also Andersen Corp. v. Fiber Composites. LLC., 474 F.3d 1361, 1369-70 (Fed. Cir. 2007); Robert L. Harmon, Patents & the Federal Circuit 390-93, § 6.7 (8th ed. 2007)("In the most specific sense, 'claim differentiation' refers to the presumption that an independent claim should not be construed as requiring a limitation added by a dependent claim"). The Court declines to narrowly construe "making available to consumers a special lock" to "manufacturing, selling, offering for sale, or distributing locks".

Read together, the claims of both patents strongly support a construction that does not limit "making available to consumers a special lock" to manufacturing, selling, offering for sale, or distributing locks only, since they describe ways beyond those named by Travel Sentry that would constitute "making a special lock available to consumers". Furthermore, Travel Sentry has not pointed to any evidence within the patents' written descriptions nor their prosecution histories demonstrating that Tropp intended to restrict "making available to consumers a special lock" to "manufacturing, selling, offering for sale, or distributing locks," "as a step in teaching a method of improving airline luggage screening. Accordingly, the term should not be limited to the few particular methods enumerated by Travel Sentry. In sum, since neither the claims nor the patents' written descriptions provide a reason for limiting "making available to consumers a special lock" in the way Travel Sentry advocates, the Court construes "making available to consumers a special lock" as "causing the special lock to be available to consumers".

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1. "Making said support member from vermiculite." Consistent with the claim language and its ordinary meaning, 18 the specification, 19 and the prosecution history, 20 the court construes "making said support member from vermiculite" to mean "the principal ingredient of the mat is vermiculite.”
meaning of "a mandrel that carries said blades". The dictionary defines "mandrel" as "3. A shaft on which a working tool is mounted" and defines carry as "6. To hold or be capable of holding . . . 7a. To support." American Heritage(R) Dictionary. Hence, the ordinary meaning of "a mandrel that carries said blades" is a shaft on which a blade is mounted, held, or supported.

The Court held a Markman hearing and subsequently issued a Memorandum opinion (Docket No. 138) in which the Court construed the disputed claim terms of the '981 Patent and the '306 Patent. At issued were the following claim terms of the '981 Patent and the '306 Patent: 1) "Frame"; 2) "Formed Integrally Within"; 3) "Integrally Formed Within"; 4) "Integrally Formed With"; 5) "Including"; 6) "Attached"; and 7) "Manifold". The Court construed the terms as follows:

"Frame": "the underlying structure of the cone crusher to which other constituent parts may be fitted, attached or integrated."

"Formed integrally within" and "Integrally formed within": "created or constructed within or as a part of the frame."

"Integrally formed with": "created or constructed within or in combination with the frame."

"Attached": "fastened or affixed."

"Including": "to take in or comprise as a part of a whole."

"Manifold": "a fitting or a passage that has a plurality of openings for making connections."

A. "Manipulator"

The manipulator limitation of the claim states, "a manipulator mounted inside the container for driving crop material into the disintegrator." Duratech argues this is a means-plus-function limitation. Means-plus-function limitations are provided for under 35 U.S.C. § 112, P 6:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

Section 112, P 6, allows an applicant to protect a structure that performs a specific function without specifically describing

However, in order to take advantage of this shortened form, the applicant is limited to the structure's description in the specification. Id.

In a means-plus-function analysis, the Court must first identify what function is to be performed. Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc., 296 F.3d 1106, 1113 (Fed. Cir. 2002). The function can only include the limitations contained in the claim language. Id. After identifying the function, the Court must identify the "means" or structure that carries out the function. Id. The structure must perform the function, and the specification must clearly associate the two. Id.

Including the word "means" in a claim creates a presumption that the applicant intended § 112, P 6, to apply. Id. Inversely, excluding the word "means" creates a rebuttable presumption that § 112, P 6, does not apply. Phillips, 415 F.3d at 1311.

Bridgeview encourages the Court to adopt the plain meaning of manipulator. In support, it argues that a person of ordinary skill in the art would understand what "manipulator" means and that general purpose dictionaries provide a sufficient definition of manipulator. These arguments fail for two reasons.

First, none of the prior art disclosed in the ’104 patent (Markman hearing Exh. # 1), which is part of the prosecution history, uses "manipulator." The prior-art patents use many other terms to describe limitations similar to Bridgeview's manipulator, but "manipulator" appears to be a new way of expressing the limitation. By contrast, the term "disintegrator" used in the ’104 Patent is found in several of the prior-art patents in different forms such as "disintegrator," "disintegrating," or "disintegrate." Therefore, disintegrator provides a good example of a term ordinary people in the art would understand. Manipulator does not share this status.

Second, the dictionary definition cannot stand alone because the Phillips court warned against relying too much on a dictionary meaning of a term. 415 F.3d at 1320-21. Although the dictionary meaning is helpful, it cannot stand in the place of a specific specification that provides a clear construction of a claim. Id. Therefore, both of Bridgeview's arguments fail, and the Court cannot rely on the plain meaning of manipulator.

The manipulator limitation provides the function: "driving crop material into the disintegrator[.]" The structure associated with the function "manipulator." In the specification, the phrase "manipulator means" is used at least five times. The specification describes with particularity the engineering of the manipulator. The only embodiment discussed is the use of rollers with paddles protruding from the rollers. The specification does not provide any other examples of possible structures that would work as a manipulator. This language provides a clear indication that a "manipulator" is only the structure described in the specification.

Bridgeview notes the claims in the companion ’553 Patent uses language that is clearly intended to be a means plus function limitation: "means for supporting and manipulating the crop material for disintegration primarily by the disintegrator." (doc. # 80-2). Bridgeview argues this proves the manipulator limitation of the ’104 patent is not a means-plus-function limitation because the ’104 Patent was written after the ’553 patent. However, Duratech introduced into evidence at the Markman hearing the original applications for the ’104 Patent (Markman hearing Exh. # 5). These application documents reveal that Bridgeview tried to secure a broad protection for its manipulator limitation that did not include a function limitation: "a manipulator mounted inside the container substantially parallel to the disintegrator." The Patent and Trademark Office rejected this limitation twice. Bridgeview then added the function "for driving the crop material into the disintegrator." The Patent and Trademark Office approved this limitation. Although Bridgeview did not want to include a function limitation, the function was needed. This, combined with the specificity of the specification, rebuts the presumption that the manipulator limitation is not a means-plus-function limitation.

The Court construes the limitation "a manipulator mounted inside the container for driving the crop material into the disintegrator" to be a means-plus-function limitation as provided in 35 U.S.C. § 112, P 6. The function that is protected is "driving crop material into the disintegrator[.]" The Court construes the protected structure to be at least a pair of longitudinally extending crop material support rollers that are positioned above the disintegrator to define a disintegration opening between the rollers through which a portion of the disintegrator may rotate to engage the crop material supported by the rollers.

Bridgeview argues that even if the manipulator limitation is a means-plus-function limitation, it is entitled to protection of
equivalents as provided under 35 U.S.C. § 112, P 6. While this is true, see 35 U.S.C. § 112, P 6 ("and equivalents thereof."). the only purpose of a Markman hearing is to construe the claims of the patent. Whether Duratech's conveyor system is an equivalent entitled to protection is not before the Court.

A patentee's use of the word "means" in a claim limitation creates a presumption that 35 U.S.C. § 112 paragraph 6 applies. TriMed, Inc. v. Stryker Corp., 514 F.3d 1256, 1259 (Fed. Cir. 2008). Conversely, a claim term without the word "means" suggests that § 112, paragraph 6 does not apply. See Personalized Media Communns., L.L.C. v. ITC, 161 F.3d 696, 703-04 (Fed. Cir. 1998). This court has consistently held that "[m]eans-plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function." Phillips, 415 F.3d at 1311. Further, "[i]n considering whether a claim term recites sufficient structure to avoid application of section 112 P 6, we have not required the claim term to denote a specific structure. Instead, we have held that it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function." Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1359-60 (Fed. Cir. 2004).

The absence of "means" language in the disputed claim term "manipulator" entitles Bridgeview to a presumption that means-plus-function treatment does not apply. This presumption "is a strong one that is not readily overcome." Id. at 1358. Thus, this court looks to whether the term "manipulator" is one which does not recite "sufficiently definite structure." Id. The ordinary meaning of the term suggests that "manipulator" is a noun whose meaning connotes sufficient structure. "Manipulator" is not a generic structural term of the ilk of such placeholder terms as "mechanism," "device," or "element," whose meaning requires illumination from the specification. No doubt, the term "manipulator" does not conjure up any one specific structure. However, it does convey to one of skill in the art a certain genus of structures known as "manipulators."

Bridgeview presented evidence that practitioners within the mechanical arts field frequently use the term "manipulator" to define structure coupled with functions, pointing out several prior art device patents in which the term is used in claims without being coupled to the word "means." Tellingly, Duratech's own expert opined that "a manipulator performing nearly identical functions is shown in the prior art," implicitly evidencing his understanding of "manipulator" as a word whose meaning is not purely functional.

This court's precedent is clear that "the fact that a particular mechanism . . . is defined in functional terms is not sufficient to convert a claim element containing that term into a 'means for performing a specified function.'" Greenberg v. Ethicon Endo-Surgery, 91 F.3d 1580, 1582 (Fed. Cir. 1996). As this court noted in Greenberg, many devices take their names from the functions they perform, such as filters, brakes, locks, and clamps. Id. Similarly, simply because claim 1's "manipulator" takes its name from the verb "manipulate," this does not compel the application of § 112, paragraph 6.

This court also looked to dictionary definitions to discern whether a disputed term is recognized as a noun denoting structure. See Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996) ("Dictionary definitions make clear that the noun 'detent' denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms."); Lighting World, 382 F.3d at 1361 ("Dictionary definitions in this case disclose that the term 'connector' has a reasonably well-understood meaning as a name for structure."). In the instant case, dictionaries readily identify that a "manipulator" falls into a specific category of structural devices. For example, Random House Unabridged Dictionary (1997) defines "manipulator" as a "mechanical device for the remote handling of objects or materials in conditions not permitting the immediate presence of workers." Further, Oxford English Dictionary (2008) defines the term generally as "a device used for or in the manipulation of something" and then provides auxiliary definitions for specific types of manipulators, including: "the transmitter of a dial telegraph," "device for massaging or pummelling the body of a bedridden person, as a substitute for exercise," "an instrument used to teach deaf people how to articulate sounds," and "a mechanical device for handling radioactive or hazardous material, operated by remote control from behind a protective shield." This court has clarified in Phillips that dictionaries often lack the specific context relevant to the legal and technical art of claim drafting and interpretation. See Phillips, 415 F.3d at 1321. With that limitation on dictionary usages in mind, this court notes that these particular definitions bolster the conclusion that "manipulator" is not a mere "nonce word or a verbal construct," Lighting World, 382 F.3d at 1360, but instead a noun connoting sufficient structure.
Duratech assigns great weight to many references in the specification in which the inventor describes "manipulation means," "means for manipulating," or a "support and manipulation mechanism." This, however, ignores the fact that the '104 patent uses the word "manipulator" numerous times in a manner that connotes structure. For example, "[a]ny number of manipulator rollers are possible, however, the disintegrator is located between and below two of the manipulator rollers," '104 patent, Col. 1, ll. 31-34; "Often, the result of this impeded rotation is that the teeth of the manipulator rollers tend to break the crop material bale apart . . ." Id., Col. 2, ll. 23-25; "the manipulator rollers 26 would continue to be rotatable in either direction, though clockwise would be their preferred direction of rotation," Id., Col. 6, ll. 22-24. These references in the specification further support a conclusion that this record does not contain enough evidence to rebut the strong presumption against means-plus-function treatment.

Duratech further argues that means-plus-function treatment is appropriate here since Bridgeview, during prosecution, added the functional language "for driving the crop material into the disintegrator” to claim 1’s "manipulator” in order to obtain allowance over the prior art. To the contrary, the '104 patent's prosecution history does not carry such a preclusive meaning. Bridgeview's arguments to the Patent Office in the amendment which added the functional language served only to distinguish the “disintegrator” and “discharge opening” elements of claim 1 from a prior art Canadian reference. Nowhere in the file history did Bridgeview argue that the addition of functional language to the manipulator claim element distinguished the '104 invention from the Canadian reference. This court does not see any reason to limit the meaning of "manipulator" based on an unrelated amendment.

Thus, this court finds nothing to rebut the strong presumption against the application of means-plus-function treatment to the "manipulator” claim term.

2467 In this case, Bridgeview seeks a construction of "manipulator" consistent with its ordinary meaning. The Court is of the view, however, that such an overly broad construction would not be helpful to a jury because it could encompass virtually any structure that would drive the crop material into the disintegrator. More importantly, such a construction would contradict any sensible reading of the specification. Boston Scientific Scimed, Inc. v. Cordis Corp., 554 F.3d 982, 987 (Fed. Cir. 2009) ("Courts may of course rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents.") (quoting Phillips v. AWH Corp., 415 F.3d 1303, 1322-23 (Fed. Cir. 2005)).

Viewing "manipulator" in light of the specification, it is clear the inventor sought to protect a more specific structure, namely, one with rollers. 1 Erbe Elektromedizin GmbH v. Int'l Trade Com'n, 566 F.3d 1028, No. 2008-1358, 2009 U.S. App. LEXIS 10634, 2009 WL 1377855, at *5 (Fed. Cir. May 19, 2009) ("We generally do not construe claim language to be inconsistent with the clear language of the specification; [u]sually, it is dispositive."). 2 The Federal Circuit recognized as much in its opinion, noting that "'[t]he manipulator has rotating rollers which turn the bale above a simultaneously rotating 'disintegrator.'" Duratech, 292 Fed. Appx. at 932. Accordingly, the Court construes "manipulator" to mean "a device that handles objects or materials with rollers." This definition is consistent with both the specification and the dictionary definitions set forth in the Federal Circuit opinion. Id. at 933-34. See Erbe, 2009 U.S. App. LEXIS 10634, 2009 WL 1377855, at *6 (construing "working" in a manner consistent with both the specification and general dictionary definitions).

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1 See col. 3 ll. 1-13 ("the support and manipulation mechanism includes at least two manipulator rollers rotatably mounted inside the container . . . wherein at least one roller is located on each side of the flail roller . . . The cross-section of the manipulator rollers may be substantially square . . . The paddles are positioned . . . through the axis of the manipulator roller . . ."); col. 3 ll. 33-37 ("The support mechanism further includes a number of hoops mounted . . . substantially perpendicular to the . . . manipulator rollers."); col. 5 ll. 20-29 ("The manipulation means 24 comprises at least two rollers 26 rotatably mounted inside the container . . . Each roller 26 extends between the front wall 100 and the back wall 102 of the container 10. Each roller 26 is rotatable about its own longitudinal axis in either direction usually by a hydraulic motor 262, though electrical motors may also be used. A pair of rollers 26 . . . defines a disintegration opening 28 . . ."); col. 5 ll. 34-36 ("In addition to rotating the baled crop material, the rollers 26 define a support surface on which the crop material 12
is supported.); col. 6 ll. 22-23 ("In addition, the manipulator rollers 26 would continue to be rotatable in either
direction . . ."); col. 8 ll. 38-39 ("The crop material 12 is loaded into the container 10 onto the rollers 26 and the hoops 22.");
col. 8 ll. 41-42 ("In addition to supporting the crop material 12, the purpose of the rollers 26 is to rotate the crop material
12 . . ."); col. 8 ll. 53 ("As the rollers 26 rotate the baled crop material . . ."); col. 8 ll 66-67 ("In accordance with the present
invention, the manipulation means 24 which includes rollers 26 and walls 104 . . .").

2 Bridgeview correctly notes that Duratech's reliance on a Canadian court case involving a similar patent to the '104 is
misplaced. The analysis in that case, while interesting, is not controlling in this matter. However, in light of the
specification, the Court believes that "manipulator" in this case involves a structure with rollers.

--- End Footnotes ---

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B. Term 4: A manual actuator for adjusting the status of the electrical device (as used in claims 1 and 62).

Lutron contends that Term 4 means "A manual actuator, such as a button, knob, or touch screen element, for adjusting the
status of the electrical device." Control4 contends the term means "A manual actuator for adjusting the status of the
electrical device (which may include but is not limited to the on/off state, the intensity level, or both, of the electrical
device)." Lutron's definition focuses on defining a manual actuator, while Control4's definition focuses on defining status.
The distinction between this term and Term 3 is the use of the phrase "manual actuator" in place of "controllably conductive
device." Otherwise, they are the same.

The parties stipulated to the definition of a controllably conductive device. Thus, in Term 3, the Court focused on defining
the phrase "for adjusting the status of the electrical device." Because that phrase was defined in Term 3, focusing on the
definition of manual actuator in this claim is correct.

The claim does not define "manual actuator." The specification indicates the manual actuating device allows the user to
change the status of the electrical device, and an embodiment refers to a button when discussing the manual actuator. 18
While the embodiment provides this example, it would be inappropriate to import this limitation from the embodiment
because there is no evidence that Lutron intended to limit a manual actuator only to buttons. 19 Thus, other mechanisms,
such as a knob or touch screen sensor, fall within the meaning of "manual actuator." Providing such examples helps to
explain what constitutes a manual actuator.

--- Footnotes ---

18 '442 Patent, col. 23:62-63. The description of the drawings indicates that the "button" (meaning the actuator) is assigned
to a specific lighting control device. '442 Patent, col. 10:18-21. The detailed description of the embodiments speaks about
buttons in the context of how they are programmed to implement certain functions. '442 Patent, 16:64-67.


--- End Footnotes ---

Control4 argues, however, that a jury does not need any examples of what constitutes a manual actuator because the concept
is simple. Additionally, because Control4's device contains a touch screen, Control4 contends that including a touch screen
sensor as an example would be akin to granting Lutron summary judgment on this issue. Notably, Control4 does not refute
that a touch screen sensor is a manual actuator. It merely argues that it should not be included in the definition because its
device contains a touch screen. The Court is not persuaded that a "touch screen sensor" should be excluded from the
definition merely because Control4's device contains a touch screen. Because the use of examples does help explain what
constitutes a manual actuator, the Court concludes the meaning of the term is "A mechanism, such as a button, knob, or
touch screen sensor, for altering the condition of the electrical device."
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D. Manual Application of Force

**Phrase:** to allow the [axial] removal of said [cylindrical] sleeve from said aperture of said body portion by the manual application of force

**Construction:** to allow the removal of the sleeve from the bit holder using a tool which may be hand-powered by a worker in field conditions to generate forces of approximately 5,000-20,000 pounds.

**Reasoning:** The parties disagree as to whether the removal forces are limited to those that are exactly between 5,000 and 20,000 pounds, or can include those that are "in the order of" 5,000 to 20,000 pounds. In this instance, the patentee has acted as his own lexicographer and has explicitly defined the term "Manual" to refer to "the use of a tool which may be hand-powered by a worker in field conditions to generate the forces in the order of 5,000 to 20,000 lbs. to remove the sleeve." Col. 3, Ins. 19-23. We must use this definition. This definition contradicts defendant's argument that the patents require removal forces to be exactly 5,000 and 20,000 pounds. Therefore, we reject defendant's proposed construction.

However, in order to inject further meaning into the disputed claim term, we must examine the phrase "in the order of." Although this phrase appears within the specific definition that the inventor gave to the term "Manual," the phrase is not itself redefined. Therefore, we will assign the ordinary and customary meaning to that phrase. Phillips, 415 F.3d at 1313; Merck & Co., 395 F.3d at 1370; Vitronics, 90 F.3d at 1582. As such, we find that "in the order of" shall mean approximately.

We cannot further assign exact values to what forces qualify as "approximately 5,000 and 20,000 pounds" because the factual record is insufficient on this issue. We will make that determination at a later time, on a fully developed factual record. Ortho-McNeil Pharm., Inc. v. Caraco Pharm. Laboratories, Ltd., 476 F.3d at 1321, 1324 (Fed. Cir. 2007). At that time, the court will give appropriate consideration to the principles discussed in Amhil Enters. v. Wawa, Inc., 81 F.3d 1554, 1562 (Fed. Cir. 1996).

At issue in this appeal is the proper construction of the manual valve element that is common to independent claims 1 and 15:

- a manual valve operatively associated with said cap, in fluid communication with said tube of filtering material and manually movable between a position defining means for allowing liquid flow through said tube and a position defining means not allowing liquid flow through said tube . . . .

The district court ultimately construed that limitation to require the following:

- a valve mechanism that controls the flow of water through the valve by moving to an open position allowing flow of water through the valve and moving to a closed position that restricts the flow of water from the bottle, but which encompasses neither valve 156 nor the valve of Figure 7 of the Magnusson '649 patent.

The district court's construction of the manual valve element is incorrect, because it impermissibly limits the literal scope of the claims to exclude bottles employing the valve depicted in Figure 7 of U.S. Patent No. 5,273,649 to Magnusson. There is no basis in the claim language or the prosecution history for so limiting the scope of the claims. The claim language reads on the Magnusson valve, and nothing in the prosecution history evinces a disclaimer of subject matter including that valve. Accordingly, it was improper for the district court to limit the scope of the manual valve element as it did. See, e.g., Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995).

Aladdin argues that the manual valve limitation is in means-plus-function form and that, under 35 U.S.C. § 112, P 6, its scope is limited to the particular structure disclosed in the specification and its equivalents. Even if Aladdin is correct in that
regard, the valve in its accused device is still within the literal scope of the manual valve limitation. The specification of the '759 patent recites valve structure that describes in detail a standard push-pull squeeze bottle valve. The valve described in Magnusson and depicted in Figure 7 of the Magnusson patent is clearly within the scope of the description of the standard push-pull valve in the '759 patent and is therefore within the literal scope of the manual valve limitation of the '759 patent, even if the scope of that limitation is restricted to the structure disclosed in the '759 patent. Aladdin has admitted that the valve in its accused device is identical to the valve of Magnusson Figure 7. Aladdin's valve is therefore within the literal scope of the manual valve limitation of the '759 patent. For that reason, the district court erred in basing its noninfringement ruling on the valve limitation of claims 1 and 15 of Innova's patent.

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2. "a manually operable charging member for moving the guide to the charged position against the urging of the coil spring"

Plaintiff argues that this term should be construed to mean "a manually operable charging member or mechanism that is used to create a charge or stored energy, the charging member or mechanism configured to move the guide to the charged position against the urging of the coil spring," MDTech's proposed construction is "a charging member operable by means of the hand for moving the guide to the charged position against the urging of the coil spring." The parties' primary disagreement about this term's construction is based on Plaintiff's inclusion of the word "mechanism." Indeed, both parties' proposed constructions add very little to the claim language, other than Plaintiff adding the word "mechanism" and MDTech making a point of excluding it.

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8 In its brief and at the Markman hearing, Plaintiff also objected to MDTech's use of the phrase "operable by means of the hand," arguing that the term implies that the device can be operated by only one hand, which Plaintiff states is a possibility, but not a limitation. At the Markman hearing, counsel for MDTech clarified that MDTech was not seeking to impose a one-handed limitation, and, therefore, this is no longer a point of contention. Because the Court believes that "manually" does not require a definition, it includes "manually" and not "by means of the hand" in its construction of this term.

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In regards to this dispute, the detailed description of the invention in the patent describes the safety cap as the element that is retracted in order to move the guide against the spring, thereby compressing the spring and putting the device in the charged position. The dispute in this case is whether the safety cap or other structure that is used to move the device into the charged position can be described as a "mechanism."

MDTech objects to the inclusion of the word "mechanism" because, according to MDTech, "member" and "mechanism" are not interchangeable terms, and including "mechanism" improperly broadens the scope of the claim beyond the easy-to-use invention these patents describe. MDTech points out that the word "mechanism" appears only twice in the specification and, in those instances, only to describe the more complicated prior art upon which the patent sought to improve. ("797 patent, col. 1, l. 62-67 (describing prior art as disclosing "a complicated biasing mechanism") and col. 3, l. 8-12 (explaining that known biopsy instruments "incorporate biasing mechanisms which are either complicated in construction or require undue force to operate"). In addition, MDTech argues that its position is supported by the dictionary definitions, which will be discussed below.

In support of its proposed construction, Plaintiff relies primarily on CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359 (Fed. Cir. 2002), in which the Federal Circuit held that the ordinary and customary meaning of the term "member" was not limited to a single component only but, instead, encompassed a multi-component structure. Plaintiff argues that, although both the Fig. 1 and Fig. 5 embodiments describe a "charging member" by reference to the safety cap, the absence of a multi-component "charging member" in the specification should not be used to narrow the ordinary and customary meaning of the term "member." In addition, counsel for Plaintiff argued at the Markman hearing that his argument was also supported by the fact that claim 5 of the '797 patent further defines the term "charging member" by including the following: "the charging member comprising a safety cap means for blocking inadvertent actuation of the release lever." ("797 patent, col. 12, l. 48-50.) Counsel argued that, under the doctrine of claim differentiation, this definition supports his argument that the "charging
As an initial matter, the defendant does not seek to limit the term member to a single component structure. At the hearing, the term "comprising" is contrasted with the term "consisting of" in general principles of claim construction. Elements may be added and still form a construct within the scope of the claim. Genentech, Inc. v. Chiron Corp., 112 F.3d 995, 501 (Fed. Cir. 1997). The term "comprising" is used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim. ID. at 1362-63. In that case, the accused infringing device contained a curved-bar with multiple components that served the same purpose of allowing the circular motion. ID. at 1364. In reversing the district court's construction of "member" as being limited only to a single-component structure, the Federal Circuit held that both the technical meaning and the ordinary and customary meaning of "member" encompassed a "beam-like structure that is a single unit in a larger whole." ID. at 1367.

As an initial matter, CCS Fitness involved a different patent and is, of course, not directly controlling in this case. In addition, the term "mechanism" does not appear anywhere in the Federal Circuit's opinion in CCS Fitness. Rather, the Court held that the term "member" encompassed a multi-component beam, lever, or structure. Significantly, the Court consistently referred to the beam, lever, or structure in the singular, i.e., a single structure that has multiple components. On the other hand, the term "mechanism" connotes a group of independent parts working together. Indeed, "mechanism" is defined as "a piece of machinery: a structure of working parts functioning together to produce an effect." Webster's Third New International Dictionary 1401 (1993); see also Mirriam-Webster Online Dictionary, www.m-w.com (defining "mechanism" as "a piece of machinery."). On the other hand, "member" is defined as "a constituent part of a whole, as . . . d(2): an essential part of a framed structure, a machine, or a device." Webster's Third New International Dictionary 1408 (1993); see also Mirriam-Webster Online Dictionary, www.m-w.com, (defining "member as "a part of a whole."). A mechanism, therefore, is not commonly understood to be simply a single part that has multiple components; a mechanism itself has multiple parts. Nor can "member" and "mechanism" be treated as synonymous, as Plaintiff seemingly attempts to do.

Based on the Court's reading of CCS Fitness, it concludes that the case does not support Plaintiff's proposed construction, and Plaintiff has not pointed to any other source that would support the interpretation of "member" as including the alternate meaning of "mechanism." Indeed, as MDTech argues, the specification actually counsels that, in defining "member," the Court should err on the side of simplicity rather than on the side of complexity. The only references to "mechanism" in the specification relate to prior art, are accompanied by the term "complicated," and are the very types of elements that Baran asserts he was attempting to remedy by making his invention more simple. Given that, and absent any other source to expand the meaning of "member" as it is used in claim 7, the Court cannot define "member" as including the alternate term "mechanism."

In addition, the argument Plaintiff raised at the Markman hearing based on the doctrine of claim differentiation does not convince the Court that it should add the words "or mechanism" to this claim language. According to Plaintiff, because claim 5 of the '797 patent further defines "charging member" as "comprising a safety cap means for blocking inadvertent actuation of the release lever," the term "charging member" in claim 7 cannot be limited to a single-component structure. Presumably, counsel for Plaintiff is contending that, because claim 5 employs the term "comprising," claim 5 describes a charging member that includes a safety cap but is not limited to just the safety cap. 9 According to Plaintiff, then, defining the term "member" in this case as only a single component renders the language in claim 5 further defining the "charging member" as comprising more than one element superfluous.

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9 "Comprising' is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim." Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501 (Fed. Cir. 1997). The term "comprising" is contrasted with the term "consisting of" in general principles of claim construction. "Consisting of" generally is interpreted as including the subsequent elements listed, but no more and no less.

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As an initial matter, the defendant does not seek to limit the term member to a single component structure. At the hearing,
counsel for MDTech said: "I'm not saying it has to be a single part. I mean, if it were two things welded together that moved in unison, I would consider that still a member." (Tr. at 89.) Rather, MDTech simply argues that Plaintiff's effort to expand "member" to include the far more complicated concept of a "mechanism" reaches too broadly, and effectively rewrites the claim.

Even if the Court were to resort to the doctrine of claim differentiation, moreover, its application would not compel the result Plaintiff espouses. Although claim differentiation can apply outside of the independent/dependent claim scenario, the Federal Circuit has "observe[d] that two considerations generally govern this claim construction tool when applied to two independent claims: (1) claim differentiation takes on relevance in the context of a claim construction that would render additional, or different, language in another independent claim superfluous; and (2) claim differentiation 'can not broaden claims beyond their correct scope.'" Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1381 (Fed. Cir. 2006) (citing Fantasy Sports Props v. Sportsline.com, 287 F.3d 1108, 1115-16 (Fed. Cir. 2002)). The Federal Circuit has characterized this doctrine more generally as "the presumption that each claim in a patent has a different scope." Id. at 1380 (quoting Versa Corp. v. Ag-Bag Int'l Ltd., 392 F.3d 1325, 1330 (Fed. Cir. 2004)). Further, the Court has described claim differentiation as a "narrow tool of claim construction." Id. at 1378.

In this case, the doctrine of claim differentiation simply does not compel the result Plaintiff espouses. Even if this Court construed "charging member" in claim 7 as including only a single component, it would not render the language in claim 5 superfluous. In that instance, such a construction would not limit the charging member in claim 7 to a component that includes a safety cap (the single component could be some other structure or part), even though claim 5 does require such a cap. As such, the language in claim 5 would not be superfluous. This Court, therefore, does not find that claim differentiation affects its analysis of this disputed language.

The Court notes, however, that, in finding that "member" does not encompass "mechanism," it only determines what "member" is not; it does not determine how it should be defined. For their part, the parties offer little guidance and, indeed, do not even attempt to define member. 10 Given that the parties do not seek to define "member," and that their sole dispute over this term is whether it could be defined to include "mechanism," the Court sees no need to further define this term. Accordingly, the Court construes "a manually operable charging member for moving the guide to the charged position against the urging of the coil spring" pursuant to Plaintiff's proposed construction, absent the term "mechanism," as follows: "a manually operable charging member that is used to create a charge or stored energy, the charging member configured to move the guide to the charged position against the urging of the coil spring."

--- Footnotes ---

10 As noted at the Markman hearing:

THE COURT: But, you don't even seek to define member, really, other than - what you seek to define is manually.

MS. THOMPSON (counsel for MDTech): No, I seek to define member only insofar as to exclude the expansion that Plaintiffs put on it.

(Tr. at 88.)

--- End Footnotes ---

2. "Manufactured To Have"

The district court construed the expression "manufactured to have" as used in claim 1 of the '831 patent to be "a manufacturing process utilizing woodworking techniques." Claim Construction Order, 2002 U.S. Dist. LEXIS 27501 at *16. The district court relied on statements in the '831 patent written description that "the advantages of the invention" were achieved through "cutting or milling and the like," 2002 U.S. Dist. LEXIS 27501 at *17. The district court found this statement in the written description, combined with its prior construction of the claim term "board" to be "construction
material made from wood cut from a log," to be tantamount to a redefinition of the scope of the claimed manufacturing process. 2002 U.S. Dist. LEXIS 27501 at *16.

Nystrom argues that for many of the same reasons the district court erred in construing the word "board," the district court's construction of the phrase "manufactured to have" is also in error. Further, he argues the district court's reliance on language in the written description mentioning "cutting or milling or the like" impermissibly reads a limitation from a preferred embodiment into the claim. TREX responds that the district court properly relied on the reference to "cutting or milling and the like" in restricting "manufactured to have" in all of the claims to solely woodworking techniques. TREX argues that the district court's construction makes sense because the '831 patent covers only wood materials.

In light of our construction of "board" as encompassing only materials made from wood cut from a log, we see no error in the district court's limitation of the phrase "manufactured to have" in claim 1 to woodworking techniques. The use of the phrase "manufactured to have" in reference to the top surface of the board is necessarily limited to manufacturing techniques related to wood. Thus, we affirm the district court's construction of "manufactured to have."

7. "MARKETING"

The term "marketing" appears in the 537 patent in independent claims 1, 9, 14 and 18 and claims 1 and 10 of the 728 patent. The 537 patent states the following in claim 1: "Marketing the special lock to the consumers in a manner that conveys to the consumers that the special lock will be subjected by the luggage screening entity to the special procedure. " With respect to "marketing" the language is identical in claims 9, 14, and 18 and substantially similar to the claim term "marketing" which also appears in the 728 patent.

Travel Sentry argues that neither the 537 nor the 728 patent specifications adequately describe what "marketing the special lock to consumers" means, rendering the term "marketing" indefinite and the claims, therefore, invalid under 35 U.S.C. § 112. 6 (Pl.'s Br. 15). Alternatively, Travel Sentry proposes that the Court construe the term 'marketing' as "offering for sale or selling" since, "at its core, marketing a product is about offering and selling that product." (Id. 17).

Contrarily, Tropp urges that "marketing" is a common term with a well-understood meaning, and that Travel Sentry's proposed construction limiting "marketing" to sales-related activities in unsupported by the patents' language. Tropp, consistent with this theme, advances a construction of "marketing" as "promoting the sales of the special locks by conveying to consumers that the special lock will be subjected by the luggage/baggage screening entity to a special screening procedure." 7

7 In support of this meaning, Tropp cites Webster's II New College Dictionary, "marketing" is defined as: 1) The act or process of buying and selling in a market. 2) The commercial functions involved in transferring goods from producer to consumer. 3) The act or business of promoting sales of a product, as by advertising or packaging. Webster's II New College Dictionary 686 (3d ed. 2005).
To reiterate, claim terms are to be given their ordinary and customary meaning unless it appears from the specification and prosecution history that they were used differently by the inventor. Phillips v. AWH Corp., 415 F.3d. 1303, 1312-13 (Fed. Cir. 2005). In some cases, the ordinary meaning of claim language may be readily apparent even to lay judges and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words. Id. However, if the ordinary meaning itself is disputed by the parties, and the meaning of the claim term as understood by persons of skill in the art is not readily apparent, then the Court must determine what claim scope is appropriate for that meaning in the context of the patents-in-suit. O2 Micro Intern. v. Beyond Innovation Tech., 521 F.3d 1351, 1361 (Fed. Cir. 2008). Here, both parties assert that their proffered definition of "marketing" is the understood and customary meaning of that term.

Against this harmonious backdrop, the claims, read in light of the specifications, support a broader reading of the term "marketing" than simply "offering for sale or selling"-- the definition espoused by Travel Sentry. Claim 1 in both patents states in relevant part that the invention comprises "[m]arketing the special lock to the consumers in a manner that conveys to the consumers that the special lock will be subjected by the luggage screening entity to the special procedure." This claim addresses promoting the availability of the special lock to allow for a consumer's understanding that an arrangement exists where the lock would be subject to a special procedure (i.e. one that avoids the clipping or other destruction of the lock and/or luggage by the luggage screener). Claim 3, which is dependent to claim 1, states that "a step of making available to consumers a special lock involving the special lock directly or indirectly to the consumers."

The specification to the 728 patent states that "[a]s a result of marketing the special lock to consumers or to airline travelers, the indicia conveys to luggage purchasers that the special lock is a lock that the luggage screening authority has agreed not to break". 728 patent, col. 4, 11. 24-28. The background of the invention and discussion of the prior art in both the 537 and 728 patents discuss inter alia, the plummeting of sales after TSA began clipping locks, 537 patent, col. 1, 11. 62-63; 728 patent, col. 2, 11. 9-10, and that the present invention would be valuable to prospective luggage purchasers or lock purchasers since the indicia would convey to luggage purchasers that the special lock is 'approved' by a luggage screening authority,"537 patent, col. 2, 11. 36-38, 728 patent, col. 60-66. Indeed, the focus of the patents is on the system or method or improving airline luggage inspection, not, simply, sale of the lock itself--a conclusion also supported by the patents' prosecution histories. Furthermore, Travel Sentry's own submissions in support of its proposed construction are consistent with a broader reading of "marketing", all of which evidences that the plain and ordinary meaning of "marketing" extends beyond the mere act of "offering for sale or selling." 8

8 In any event, even assuming that the Court should consider Travel Sentry's submitted definitions, they are unavailing since they are also consistent with a more expansive interpretation of "marketing" beyond "selling or offering for sale".

In short, the patent claims, read in light of the written descriptions, do not support limiting the ordinary meaning of "marketing" to "offering for sale or selling". See, e.g., Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1344-46, 1348 (Fed. Cir. 2001)(crediting the broader interpretation of a claim term's ordinary meaning when there was no indication in the intrinsic evidence that a more restrictive definition be adopted). Accordingly, the Court construes "marketing" within the context of the patents as "selling or promoting the sale" of the special lock to consumers in a manner that conveys to them that the lock is subject to a special screening procedure.

As might be expected in light of the foregoing, Travel Sentry's invalidity argument founded on the asserted indefiniteness of "marketing" is rejected. The definiteness requirement of § 112 ensures that the claims, as written, provide notice of the patent's scope so that the public can determine whether or not there is a danger of infringing the patent. See All Dental Prodx, Inc. v. Advantage Dental Prods., Inc., 309 F.3d 774, 779 (Fed. Cir. 2002). When a claim cannot be construed, it is indefinite and therefore invalid. Aero Prods. Int'l, Inc. v. Intex Recreation Corp., 466 F.3d 1000, 1016 (Fed. Cir. 2006). This includes instances where the claim language is so inherently standardless that it cannot be meaningfully applied. Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1354 (Fed Cir. 2005). An issued patent is presumed valid, 35 U.S.C. § 282, so the party attacking a claim term on validity grounds must overcome that presumption by clear and convincing evidence. Bancorp Servs., LLC v. Hartford Life Ins. Co., 359 F.3d 1367, 1371 (Fed. Cir. 2004). Even where a construction reached is one which reasonable persons can disagree, that claim is not indefinite. Id. If the claims read in light of the specification
reasonably apprise those skilled in the art of the scope of the invention, § 112 demands no more. Id. (citing Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 705 (Fed. Cir. 1998).

Here, the claims and specifications sufficiently provide an appropriate understanding of "marketing". As demonstrated above, the claim term "marketing" is not so unamenable to construction that reasonable notice as to the scope of the claim is wanting. As a result, the Court concludes that Travel Sentry fails to meet its burden in proving by clear and convincing evidence that the term "marketing" is indefinite as to render the claim invalid under § 112.

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1. "Marking" and "Marked"

The claim language surrounding the use of the word "marking" supports the construction that "marking" and "marked" mean "placing an external visual symbol or identification code on the object (carrier or container)." The '415 patent requires "marking" a carrier with "an identification code," and the '670 patent requires "marking" a container and carrier with "a machine readable code." The plain claim language shows that "marking" and "marked" require an external (and visual) code because the dependent claims make clear that "marking" results in the placement of codes "on"—not "in" or "within"—the carrier and container. See Phillips, 415 F.3d at 1314 (context of disputed term, including use of other claim terms, is instructive in proper constructions).

For example, after the marking step, dependent claim 4 of the '415 patent recites "providing a sensor at each gate along the conveyor system for reading the identification code on a carrier . . . ." (Filing 64-3, Ex. C, '415 Patent, Claim 4 (emphasis added).) Likewise, dependent claim 2 of the '670 patent recites "inputting information into the computer database . . . including information as to . . . the code marked on the second container and the second carrier . . . ." (Filing 64-4, Ex. D, '670 Patent, Claim 2 (emphasis added).) Thus, "marking" plainly requires placing an external visual code "on" the carrier and container, as opposed to an internal (thus invisible) code in (or embedded within) the carrier and container.

Second, the court's construction is confirmed by the specifications of both patents, which state that after the carrier or container is "marked," the code appears "on" the object:

As carrier 26 moves along conveyor 24, it will pass within the zone of workstation 28 where a sensor 38 will detect the identification code on carrier 26.

(Filing 64-3, Ex. C, at 4:36-41; see also Filing 64-4, Ex. D, at 4:16-19 (same "on" language) (emphasis added).)

The specifications also confirm the court's construction because the patents' sole embodiment marks with a bar code, which is an external, visual code:

The inventor has found that a conventional bar code label applied to the specimen container is a simple and efficient method for fulfilling this function. . . . In the preferred embodiment of the invention, sensor 38 is a bar code reader while the identification code on the carrier 26 is a bar code.

(Filing 64-3, Ex. C, at 3:59-65, 4:36-41; Filing 64-4, Ex. D, at 3:41-43, 4:19-21 (same) (emphasis added).) While the fact that a patent describes a single embodiment does not mean the patent claims must be construed as being limited to that embodiment, the embodiment may inform the court regarding how a person of ordinary skill in the art would understand the claim terms, which is the issue upon which the court's focus should remain. Phillips, 415 F.3d at 1323.

The prosecution history also confirms that the patent examiner equated "marking" to "labelling" the carrier and containers, which implies that an external code is applied. (Filing 64-5, Ex. E, at SHD001435 (First Rejection) (examiner characterizing "marking" step as "labelling" both the specimen and container).) Likewise, the applicant argued that, unlike the claimed "marking" steps, in the prior art "[t]here is no teaching or suggestion to apply a label to a specimen container carried on the carrier, nor to automatically apply these labels to the separate units prior to placing the units on the conveyor system." (Id. at 1450 (First Amendment).)
The court's construction is further confirmed by the ordinary meaning of "mark." See Phillips, 415 F.3d at 1314 (claim construction can involve "little more than the application of the widely accepted meaning of commonly understood words," as supported by "general purpose dictionaries"). As a matter of common sense and experience, to "mark" something means to make a visible impression on the external surface of an object. This common understanding is confirmed by dictionary definitions of "mark" as a "visible impression on a surface" and "[a] visible trace or impression on something." (Ex. I-4, Webster's Desk Dictionary 278 (1993); Ex. I-2, The American Heritage Dictionary 417 (1989); see also Ex. I-3, Webster's II New College Dictionary (1995) (mark: "A visible trace or impression, as a spot, dent, or line . . . A visible sign or symbol, as a badge or brand . . . ").)

"Austempering" and "Marquenching"

The meanings of "austempering" and "marquenching," two metallurgical heat treating techniques, are jointly addressed to avoid repetition because the arguments with respect each term are similar and overlapping.

Claim 1 states:

A process for forming a rotary cutting blade, comprising the steps of

a) working a blank of boron steel to have a bevelled cutting edge; and

b) heat treating the formed blank to elevate the blank hardness to between 48 and 55 on the Rockwell Hardness Scale to thereby form a rotary cutting blade having Charpy Notch toughness of at least 15 ft. lb., wherein the heat treating step comprises austempering the formed blank.

(5:9-19.) (footnotes and emphasis added.)

Fisher-Barton relies upon the form of the definitions of "austempering" and "marquenching" in the American Society for Metals ("ASM") Metals Handbook ("Handbook I") (1964) and the ASM International Metal Handbook ("Handbook II") (1991) and the Turner Declaration. (Fisher-Barton Mem. Claim Construction ("Fisher-Barton Mem.") 4-5.) Fisher-Barton maintains that it may rely upon those definitions because the patent specifications use the terms consistently with the
Handbook I and II definitions. (Id. at 6.)

Turner avers that he owns a copy of the ASM International's Handbook II, which he has heard referred to as the "bible" of heat treating, he consults it regularly, and that when he drafted the patents he used the terms "austempering" and "marquenching" in a manner consistent with the Handbook II's definitions. (Turner Decl. PP 3-4.) Fisher-Barton proffers excerpts from the Handbook I and Handbook II which define the terms. (Turner Decl. P 4, Exs. A & B.) Handbook II defines the term "martempering" -- the patent uses the term "marquenching" -- but the two terms are used interchangeably in metallurgy. (Krauss Decl. P 8 n.1.)

Handbook II defines "austempering" as "the isothermal transformation of a ferrous alloy at a temperature below that of pearlite 4 formation and above that of martensite 5 formation." (Turner Decl., Ex. B at 3.) (footnotes added.) It further states that steel is austempered by being:

heated to a temperature within the austenizing range, usually 790 to 915 [degrees] C (1450 to 1675 [degrees] F); quenched in a bath maintained at a constant temperature, usually in the range of 260 to 400 [degrees] C (500 to 750 [degrees] F); allowed to transform isothermally to bainite 6 in this bath; and, cooled to room temperature.

(Id.) (footnote added).

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5 Martensite is a generic term for the microstructure formed by diffusion less phase transformation in which the parent and product phases have a specific crystallographic relationship. Id. at 462. "An important aspect of 'martempering' is that no transformation product other than martensite should form." Id. at 266.
6 Bainite is a transformation product that may form just above M[s]. See Id. at 267.

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Handbook II defines "martempering" as:

an interrupted quench from the austenizing temperature of certain alloy, cast, tool and stainless steels. This purpose is to delay the cooling just above the martensitic transformation for a length of time to equalize the temperature throughout the piece. This will minimize the distortion, cracking, and residual stress. The term martempering is somewhat misleading and is better described as marquenching.

(Id. at 5.) The steps of "martempering" steel consist of:

quenching from the austenizing temperature into a hot fluid medium (hot oil, molten salt, molten metal or a fluidized particle bed) at a temperature usually above the martensite range (M[s] point); holding in the quenching medium until the temperature throughout the steel is substantially uniform; cooling (usually in the air) at a moderate rate to prevent large differences in temperature between the outside and the center of the section.

(Id.)

The Defendants, rely upon the patent specification, and assert that the terms "austempering" and "marquenching" have special meanings given to them by the patentee. (Defs.' Opening Br. 9-12.) The Defendants state that although the general processes of "austempering" and "marquenching" were known in the art several decades before the patents were filed, the inventions claimed in the patents-in-suit are the specific "austempering" and "marquenching" steps required by the claims to arrive at the boron steel blades with the claimed hardness and toughness characteristics. The Defendants indicate that Fisher-Barton's proffered definitions of the terms should be rejected because they fail to read the terms in light of the rest of the claim and the specification, completely disregard the express definitions ascribed those terms in the patents, and are
inconsistent with the process disclosed in the preferred embodiment. (Id. at 16.)

The Defendants rely upon the Declaration of George Krauss ("Krauss"), 7 a university emeritus professor of the Colorado School of Mines since 1997, who holds a Science Doctorate in Metallurgy and a Master of Science from Massachusetts Institute of Technology and has been involved exclusively in metallurgy and material science since 1955 when he received his Bachelor of Science from Lehigh University. (Krauss Decl. PP 1-2.) Krauss indicates that austempering of medium carbon boron steels has been well known for many years and that austempering in general is a method of transforming austenite to lower bainite - a particularly hard and tough steel microstructure in boron steels. (Id. at P 21.) He indicates that austempering, like marquenching begins with heating the work piece to the austenitizing temperature and cooling the steel to a temperature above the martensite (M[\text{s}]) range. (Id.) Krauss states that the quenching step differs from marquenching, because in the austempering the steel is held at the quench temperature for a particular duration long past the temperature equalization of the steel in order to allow the formation of lower bainite and not martensite. (Id.)

The Defendants maintain that this Court should construe the "austempering" as a heat treating process in which the blades are first heated to approximately 1560 [degrees] F.; the heated blades are then quenched into a liquid salt bath at approximately 500 [degrees] F. for about 20 minutes; the quenched blades are then withdrawn from the salt bath and allowed to air cool to room temperature. This alternative process eliminates the need for further tempering. The Defendants' definition is taken from the preferred embodiment.

The Defendants maintain that this Court should interpret "marquenching," as the process whereby the formed blades are first heated to approximately 1560 [degrees] F; the heated blades are then quenched into a liquid salt bath at approximately 5000 F. for about 20 seconds; the quenched blades are then withdrawn from the salt bath and allowed to air cool to room temperature; and, the cooled blades then proceed to a tempering station where they are tempered at 3000 F. as a stress relief. This definition is taken from the description of the preferred embodiment. (See 3:66-67 & 4:1-6.)

Krauss notes that claim 4 of the patent sets forth a process for achieving hardness in boron steel to "between 48 and 55 on the Rockwell Hardness scale" and a "Charpy Notch toughness of least 15 ft. lb., wherein the treating step comprises marquenching the formed blank." (Krauss Decl. P 10.) Krauss opines that a person skilled in the art would understand that because the process claimed seeks to arrive at a particular hardness and toughness in the boron steel, "marquenching" as used in claim 4 must refer to the process that includes particular times, temperatures and quenchants that are necessary to achieve those results from boron steel. (Id.) Krauss maintains that because marquenching is not defined in claim 4 a person of ordinary skill in the art would refer to the specification to determine what process is being claimed. (Id. at P 11.) Krauss also avers that a skilled heat treater reading the patent would not understand the term "marquenching" as used in claim 4 to have as broad a definition as advanced by Fisher-Barton. (Id. at P 14.) He states that Fisher-Barton's proposed definition does not provide for achieving the specific hardness and toughness for the boron steels expressly set forth in claim 4. (Id.) 8

8 Krauss also indicates that Fisher-Barton's "marquenching" definition is problematic because it does not include a tempering stage once the blades are cooled to room temperature and a person of ordinary skill in the art would realize that a blade that is quenched according the Fisher-Barton general definition, and then air cooled without a subsequent tempering step would be of low toughness such that it would not achieve the claimed Charpy Notch toughness of at least 15 ft. lbs. (Krauss Decl. P 16.) In its responsive claim construction memorandum, Fisher-Barton agrees to include in its definition of marquenching the step of an additional tempering after cooling. (Fisher-Barton Responsive Br. 9 n.2.) Therefore, the tempering issue raised by paragraphs 16 and 17 of the Krauss Declaration is moot.
Krauss avers that the M\([s]\) temperatures for the medium boron steels that are disclosed in the patent would be known to a skilled person, "for example by using the Andrews equation from his book, Steels: Heat Treatment and Processing Principles." (Id. P 15.) He states that the appropriate M\([s]\) temperatures are:

<table>
<thead>
<tr>
<th>Steel</th>
<th>M([s]) Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>10B36</td>
<td>687 [degrees] F.</td>
</tr>
<tr>
<td>10B37</td>
<td>673 [degrees] F.</td>
</tr>
<tr>
<td>10B38</td>
<td>671 [degrees] F.</td>
</tr>
<tr>
<td>10B39</td>
<td>658 [degrees] F.</td>
</tr>
<tr>
<td>10B40</td>
<td>656 [degrees] F.</td>
</tr>
<tr>
<td>10B41</td>
<td>644 [degrees] F.</td>
</tr>
</tbody>
</table>

The Defendants' arguments regarding the meanings of "austempering" and "marquenching" have some initial appeal because they focus in part on intrinsic evidence, which is generally preferred over extrinsic evidence. However, Krauss's interpretation of the intrinsic evidence, upon which the Defendants rely, is extrinsic evidence. Krauss's construction of "marquenching" also centers on boron steel designations 10B36 through 10B42 but claim 4 provides for working a blank of boron steel blank but does not include designation of the boron steel type. (Compare claims 3, 7, 9 (5:21-24; 6:7-9; 6:26-28) ("wherein the blank is formed of a boron steel selected from the group consisting of 10B36, 10B37, 10B38, 10B39, 10B40, 10B41, and 10B42 steel.") Ultimately, careful consideration of the Defendants' position reveals that if accepted, the Court would be improperly importing the preferred embodiment into the claims. Furthermore, consideration of the terms in the context of the entire patent does not indicate that the patentee redefined the terms "austempering" and "marquenching." See Phillips, 415 F.3d at 1313. Therefore, the Court adopts Fisher-Barton's construction of the terms.

"Judges are free to consult dictionaries and technical treatises at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." Phillips, 415 F.3d at 1322-23 (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 n.6 (Fed. Cir. 1996).) The Handbook II was the starting point for the Court in construing these metallurgical terms, which are familiar to a metallurgical lay person. But, the Court has carefully considered the intrinsic evidence -- the patent claims and the rest of the specification in its analysis.

Claim 1 uses the term "austempering" as a component of the heat treatment process claimed. Claim 4 uses "marquenching" as a component of the heat treatment process claimed. Neither claim defines the term. However, each term has a commonly accepted meaning known to one skilled in the art of metallurgy.

The proposed constructions of the terms urged by the Defendants is drawn from the preferred embodiment portion of the patent. 9 However, limitations from the specification are not to be read into the claims. See Golight, Inc. v. Wal-Mart Stores, Inc., 355 F.3d 1327, 1331 (Fed. Cir. 2004). This principle was reaffirmed in Phillips, 415 F.3d at 1323, where the court recognized that the distinction between using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim can be a difficult one to apply in practice. Id. (citing Comark Commun. v. Harris Corp., 156 F.3d 1182, 1186-87 (Fed. Cir. 1998) ("there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification.")) However, the line between construing terms and importing limitations can be discerned with reasonable certainty and predictability if the Court's focus remains on understanding how a person of ordinary skill in the art would understand the claim terms. Id. "Although the specification often describes very specific embodiments of the invention, [the court] repeatedly warned against confining the claims to
those embodiments," and had "expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." Id.

9 The description of the preferred embodiment states, in pertinent part:

In one advantageous heat treating process, known as Marquenching, the formed blades are first heated to approximately 1560 [degrees] F. The heated blades are then quenched into a liquid salt bath at approximately 500 [degrees] F. for about 20 seconds. The quenched blades are then withdrawn from the salt bath and allowed to air cool to room temperature. The cooled blades then proceed to a tempering station 36 where they are tempered at 300 [degrees] degrees F. as a stress relief.

Alternatively, the formed and edged blade may be subjected to an austempering heat treating process in which the blades are first heated to approximately 1560 [degrees] F. The heated blades are then quenched into a liquid salt bath at approximately 500 [degrees] F. for about 20 minutes. The quenched blades are then withdrawn from the salt bath and allowed to air cool to room temperature. This alternative process eliminates the need for further tempering.

(3:66-67; 4:1-14.)

3. As used in claim 4 of the '114 patent "marquenching" means: Quenching from the austenizing temperature into a hot fluid medium (hot oil, molten salt, molten metal or a fluidized particle bed) at a temperature usually above the martensite range (M[s] range); holding in the quenching medium until the temperature throughout the steel is substantially uniform; cooling (usually in the air) at a moderate rate to prevent large differences in temperature between the outside and the center of the section. After the parts have been cooled to room temperature, they are tempered in the same manner as though they had been conventionally quenched.

11 Included among Wedgewood's summary judgment materials are the declaration of its proffered expert, Dr. Aldrich. (D.E.
27, Ex. A.) In his declaration, Aldrich expressly acknowledges that "the term mass region is not commonly used to describe structures within a golf club." (Id., Ex. A P 19.) Given this express recognition, the Court does not understand Wedgewood's passing footnote reference to the dictionary definitions of "mass" and "bulk" (see D.E. 26 at 7 n.6) to be the heart of its argument concerning the proper construction of the term "mass region." Moreover, as Nike points out, the related interrogatory-based proposed definition of Wedgewood (i.e., that the mass region is the "bulk area of a club head, located behind the striking surface") is materially defective and unworkable in that it is too vague and provides too little notice to the public regarding the scope of the patent claims. See D.E. 23 at 18. In any event, Wedgewood makes no serious attempt to advance or defend this vague definition, and the Court accordingly analyzes the term "mass region" in light of Wedgewood's more substantive arguments, which are based on the intrinsic record and which comprise the overwhelming majority of its presentation on this issue.

Nike argues that "mass region" should be construed to mean 'the portion of the golf club head that is behind the striking surface." (D.E. 23 at 18.) Plaintiff maintains that this construction is erroneous, since it relies on language in the specification that "identifies where the mass region is located--not what it is." (D.E. 26 at 8.) Furthermore, Plaintiff asserts, Nike's definition would vitiate the "lip" limitation, since, according to Wedgewood, the lip is adjacent to the striking surface, positioned between the striking surface and the top of the mass region. (Id.) Wedgewood proposes the following construction for the mass region: "the body of a wood-type club head extending above the median and below the top edge of said striking surface, delimited by a sole plate, a sole, a striking surface, a heel region, a toe region, a rear edge, a single and substantially continuous top side and a lip." (Id. at 7.) Nike objects, maintaining, among other things, that the phrases "single and substantially continuous topside" and "median" are "pulled . . . out of thin air." (D.E. 30 at 15.)

The disagreements between the parties as to the construction of mass region, therefore, include the following issues: whether (1) the mass region is simply "behind" the striking surface (without regard for the lip), (2) the topside of the mass region is necessarily "single and substantially continuous," and (3) the mass region is comprised of a region that is located above a "median" on the striking surface of the club.

i. Words of the Claims

Although the claims frequently refer to the "mass region," they do little to define it. Many parts of the club are described around the mass region—e.g., the club head's center of gravity is described as being "between the bottom edge of the striking surface and the rear edge of the top side of the mass region" (D.E. 20, Ex. A, Col. 8:23-27); the sole plate extends "from a bottom edge of the striking surface to a rear edge of said mass region" (id., Ex. A, Col. 6:59-60)—but the mass region itself remains undefined, at least in any single unified place. 12 Given the lack of any clearcut or comprehensive definition in the claims, the Court examines the specification and the prosecution history for further guidance.

12 As explained further below, the claims do provide meaningful guidance, at least on some issues. For example, the claims state that the "striking surface [of the club] extends above a top side of said mass region to form a lip extending between the striking surface and the top side of the mass region." D.E. 20, Ex. A, Col. 6:55-58 (emphasis added); accord id., Ex. C, Col. 6:57-58. This language makes clear that the top of the mass region under this patent cannot, at a minimum, extend beyond the top of the striking surface, at least in any contact area. The claims also state that "the height of said lip . . . is the vertical distance between the top edge of said striking surface and the top side of said mass region, [and] is between about 1/8 inch and about 1/2 inch." Id., Ex. A, Col. 7:3-6; accord id., Ex. C, Col. 7:11-13. This claims language indicates that if there is to be a lip, it must reach or span from an extended striking surface down to the mass region at any contact area.

ii. Specification

The specification contains many references to the mass region, and both parties rely heavily on them. At one point, as Nike notes, Plaintiff's specification states that "the mass region is provided behind the club head striking surface." (D.E. 20, Ex. A, Col. 4:66-67.) However, the specification goes on to explain that the mass region "is connected to the striking surface at
a lip extending between the two adjacent to the top edge of the striking surface. The top side of the mass region slopes downward linearly from the lip to the rear edge of the mass region." (Id., Ex. A, Col. 4:67-5:4.) Moreover, as explained above (see note 12, supra), the claims state that the "striking surface [of the club] extends above a top side of said mass region to form a lip extending between the striking surface and the top side of the mass region" (D.E. 20, Ex. A, Col. 6:55-58) (emphasis added), and further state that "the height of said lip . . . is the vertical distance between the top edge of said striking surface and the top side of said mass region, [and] is between about 1/8 inch and about 1/2 inch." (Id., Ex. A, Col. 7:3-6; accord id., Ex. C, Col. 6:57-58, Col. 7:11-13). This language also indicates that any lip must reach from an extended striking surface down to the mass region, and that the lip is not part of the mass region itself. All of this evidence indicates that Nike's assertion that the mass region is "behind" the striking surface, while true, is not sufficiently precise; more specificity is required, lest the placement of the lip be completely discounted and the lip limitation disregarded.

The specification also states that the mass region's lowest point is demarcated by its "sole plate" and "sole" (Id., Ex. A, Col. 2:61-62)), at its rear by its "rear edge" (Id., Ex. A, Col. 5:52-54) and on its top by a "top side"(Id., Ex. A, Col. 5:21-24). The pertinent drawings also indicate that the mass region is, generally, the body of a wood-type club head. (Id. at 2, 3).

There is nothing explicit in the specification, however, that mentions a "single and substantially continuous" topside or a "median" on the club face. Rather, these terms come from (as Plaintiff cites) the drawings of the club in the patent. The Court is reluctant to add the descriptive phrase "single and substantially continuous" to describe the topside simply based on the drawings. In its specification, Plaintiff saw fit to add the phrase "substantially flat" to describe the face on the striking surface of the golf club. (Id., Col. 3:35-36.) Wedgewood made sure to specifically define "substantially flat" as "lacks a bulge and roll sufficient to cause a gear effect." (Id., Col. 3:6-8.) In the paragraphs immediately preceding the discussion of the club's flat face, Plaintiff discussed the top side of the mass region with no explanatory phrases. Having recognized in the specification the significance of a portion of the club that is "substantially flat," it stands to reason that Wedgewood would have thought to include the phrase "substantially continuous" to describe the topside of the mass region if it indeed was necessary to do so. See Medinol Ltd. v. Boston Scientific Corp., 346 F. Supp. 2d 575, 598 (S.D.N.Y. 2004) (recognizing the validity of the canon of construction, expressio unius est exclusio alterius, in a discussion about the meaning of the term in patented items); accord, e.g., Świerkiewicz v. Sorema, N.A., 534 U.S. 506, 513, 152 L. Ed. 2d 1, 122 S. Ct. 992 (2002) (applying the expressio unius canon). The first meaningful representation or assertion that the top side of the mass region was "single and substantially continuous" appeared over six years after Plaintiff filed the patent, in its memorandum in opposition to Defendant's motion for summary judgment. The inclusion of this phrase appears to denote a conscious attempt to improperly reshape the scope of the patent. The Court respectfully refuses to adopt the "singular and substantially continuous" language. See also Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d at 1053 (limitations inferable from embodiments shown in patent drawings or specifications, but omitted from claims, are not to be read into claims).

Similarly, although the specification refers to the club head's vertical center of gravity as below the "median distance" between the top edge and bottom edge of the striking surface, it does not mention that a "median" point or region exists in or on the club. Conceivably, to a layman, the "median" could be interpreted to mean the club's midpoint, but that cannot be the case here. The "midpoint" is referred to specifically in both the specifications and the drawings. The "median," however, is not. As neither party has indicated where this point is or what its significance is, and since the patent does not provide any information to suggest that a "median" limitation exists within the four corners of the patent, the Court will not read one in.

iii. Prosecution History

As with the "sole" limitation, neither party points to any portion of the prosecution history to indicate that it would be helpful in construing the patentee's use of the disputed term. The Court's own analysis finds that the prosecution history does not provide anything more than what is in the final patent. Consequently, the prosecution history is of no help in construing the meaning of the "mass region."

Based on its analysis, the Court will construe the term "mass region" in the Wedgewood patent as "the body of a wood-type club head delimited by a sole plate, including the sole; a striking surface, though no higher than its top edge; a top side; a rear edge; a heel region; and a toe region." The Court further construes the term to recognize that a lip will reach or span from an extended striking surface down to a mass region. See D.E. 20, Ex. A, Col. 7:3-6 ("the height of said lip . . . is the vertical distance between the top edge of said striking surface and the top side of said mass region, [and] is between about 1/8 inch and about 1/2 inch."); accord id., Ex. C, Col. 7:11-13 (same); see also id., Ex. A, Col. 6:55-56 (the "striking surface [of the club] extends above a top side of said mass region to form a lip. . . .) Ex. C, Col. 6:57-58 (same).
2. "Master Cylinder Housing"

Formula proposes that this term be construed as meaning a cylinder housing with a first and second end that encloses the piston train assembly and that is connected to the reservoir housing. According to Formula, the reservoir housing and the master cylinder housing are two separate functional components. However, as was the case for several other disputed claim terms, Formula's interpretation impermissibly attempts to import limitations found in descriptions of preferred embodiments to limit the overall scope of the invention. See Phillips, 415 F.3d at 1323. Accordingly, we construe this claim as referring to the housing that contains the master cylinder, regardless of what other components may be included within or connected to that housing.

1."MASTER KEY"

The term "master key" appears in both the 537 and the 728 patents. Claim 1 of the 537 patent claims, in relevant part, a method of improving airline luggage screening comprising: "making available to consumers a special lock having a combination lock portion and a master key lock portion, the master key lock portion for receiving a master key that can open the master key lock portion of this special lock…" Claim 1 of the 728 patent claims, in relevant part, a method of improving carrier baggage inspection comprising: "making available to consumers a special lock, having a combination lock portion and having a master key lock portion, the master key lock portion for receiving a master key that can open the master key lock portion of this special lock…"

Tropp's construction of "master key" is a simple one. He suggests that "master key" is "a key that can open multiple locks," citing the American Heritage College Dictionary, which defines the term "master key" as "[a] key that opens each of a given set of locks." (Def.'s Ex. 5). Travel Sentry's proposed construction of the same term is a "single key or electronic sensor mechanism having the ability to open a dedicated key lock portion of multiple different locks."

In advancing this definition, Travel Sentry argues that there are "no material differences" between the two constructions, but for the inclusion of electronic sensor mechanisms. Tropp disagrees. Specifically, he objects to limiting "master key" to a "single key" since the written description allows for multiple master keys to be held by baggage screening officials, and because "the significant characteristic of a master key is that it can open each of a given set of locks - not whether there is a single key or multiple keys that have that capability." (Def.'s Reply Br. 7). Tropp also argues against Travel Sentry's use of "dedicated" and the insertion of "electronic sensor mechanism" in construing "master key" since the term "key" already embodies and contemplates electronic keys and the word "dedicated" is unsupported by the patents' claims.

The Court agrees with Tropp that "master key" does not require the word "single" to make the construction clear, and accordingly, the Court declines to read this limitation into the proposed construction of "master key". On the other hand, the ordinary meaning of "master key," does not make clear that its definition includes electronic or other sensor mechanisms, as the claim language, the surrounding claims, and the specifications suggest. In any event, and critically, the patents' written descriptions clearly teach that the definition of "master key," as it is used in the patents, extends beyond its centuries-laden description, i.e. a metal, jagged edge object, by contemplating electronic and other sensor mechanisms within the scope of the term. See Genzyme Corp. v. Transkaryotic Therapies Inc., 346 F.3d 1094, 1098 (Fed Cir. 2003)(a patentee can expand the scope of the term's generally understood meaning in the context of his claims). The specifications to the 728 and 537 patents state that "the terms 'master key' and 'master key lock portion' are broad terms intended to also include electronic or other sensor mechanisms for opening up the master key lock portion in [the special lock]" and that the "invention contemplates using in certain embodiments a special lock [] that makes use of an electronic sensor instead of a traditional physical key even though such a traditional physical key is typically understood by the term 'master key'. In such a case the locking mechanism inside [the] special lock [] would not be a traditional master key lock mechanism but rather would be a locking mechanism that is opened by an electronic sensor." 537 patent, col.5, 11.41-52; 728 patent, col. 6, 11. 66-67, col. 7,
11. 1-10 (emphasis added). In urging the Court to incorporate "electronic sensor mechanism" in its proposed construction, Travel Sentry similarly points to this same language, contrasting it with the term's plain meaning, which, as evidenced by a dictionary definition, has described "master key" as "a key designed to open several different locks". Merriam-Webster's Collegiate Dictionary 764 (11th ed. 2006).

While it is clear that the specifications expand the ordinary and plain meaning of "master key to include electronic and other sensor mechanisms, see Phillips, 415 F.3d at 1316 ("the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess...in such cases, the inventor's lexicography governs."), limiting "master key" to "a single key or electronic sensor mechanism" appears overly restrictive since the patent clearly contemplates other kinds of mechanisms that may also qualify as a "master key", and, as the specifications to both patents teach-- "master key" is meant to be broadly construed.

Travel Sentry's argument that the key lock portion is "dedicated" is also unduly limiting in light of the specifications of the patents-in-suit. In describing the interaction of the master key with the master key lock portion of the special lock, the specifications state that when an electronic or other sensor mechanism is used to open up the master key lock portion of the special lock, that locking mechanism would not be a traditional master key lock mechanism but a locking mechanism opened by an electronic sensor. The language of the claims does not support a limitation that the locking mechanism or master key lock portion, electronic or otherwise, be "dedicated". When a patent's specification does not provide for the proffered restriction stated in the proposed construction, that limitation should not be then read into the claim terms. Teleflex, Inc. v. Ficosa North Am. Corp., 299 F.3d 1313, 1327(2002)(claim terms take their ordinary and accustomed meanings unless the patentee shows an intent to deviate from them, or by using words of manifest exclusion or restriction, clearly disavows a claim's scope). Indeed, under a fair reading of the specifications to both patents, it is contemplated that sensor mechanisms would not have a dedicated key lock portion. Instead, the patents' written descriptions focus on the interaction between the "master key" (in its traditional physical incarnation or otherwise) and the locking mechanism, which may include (but is not limited to) a dedicated key lock portion.

Therefore, in light of the patents' written descriptions, the Court construes the claim term "master key" in the 728 and 537 patents to be a key, including electronic or other sensor mechanisms, that can open the master key lock portion or locking mechanisms of the special locks described in the patent.

C. Claim Construction Analysis

The Court turns first to the question of claim construction. Plaintiffs contend that the Accused Posters infringe on Claims 1 and 5 of the 272 Patent. As previously noted, a plaintiff alleging patent infringement must prove that the accused product contains elements identical or equivalent to each and every claimed element of the patented invention. Warner-Jenkinson, 520 U.S. at 40. It is undisputed that the Accused Posters have many of the same attributes claimed in the 272 Patent: (1) they consist of a poster made of one material and a housing unit made of another material; (2) the speaker, along with an electric circuit, is concealed between the housing unit and the poster; and (3) a trigger, actuated through the housing unit, is attached to the electric circuit. The parties disagree, however, about whether the Accused Posters satisfy the final element of Claims 1 and 5.

Claim 1 includes:

An assembly . . . wherein a surface of said housing is prepared with a matching art which is substantially the same as that area of said poster art which appears on said portion of said poster that said housing covers when said housing is attached to said poster, such that said housing artistically blends in with the surrounding poster art that is not covered by said housing.

(Ex. J. to Third Am. Compl.). Likewise, Claim 5 of the 272 Patent refers to:

A method for making a talking poster, comprising the steps of . . . applying matching art to said housing which is substantially the same as that area of said poster art which appears on said portion of said poster that said housing covers when said housing is attached to said poster, such that said housing artistically blends in with the surrounding poster art that
is not covered by said housing.

(伊d.).

Plaintiffs construe this element to mean only that the color of the housing must complement the colors used in the poster so that the housing "artistically blends in with the surrounding poster art" and forms a "harmonious visual effect." Plaintiffs then submit the declaration of their expert witness, Ellen Shapiro, who opines that the housing on the Accused Posters "artistically blends in" with the color schemes of the Accused Posters, thereby satisfying this final element.

Defendants, however, maintain that this element is considerably more narrow. They argue that it is not enough that the color of the housing unit complements the color scheme of the poster. Rather, the housing unit must be "camouflaged" because the plain language of the claim requires that the housing unit be prepared with "matching art which is substantially the same as that area of said poster art which appears on said portion of said poster that said housing covers when said housing is attached to said poster." (伊d.) (emphasis added).

1. Language of Patent Claim

"The starting point for any claim construction must be the claims themselves." Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999) (citing Vitronics, 90 F.3d at 1582). In construing the language of a patent claim, all words defining the scope of the invention must be given effect. Bicon, Inc. v. Straumann Co., 441 F.3d 945, 950 (Fed. Cir. 2006) ("claims are interpreted with an eye toward giving effect to all terms in the claim"); Merck & Co., Inc. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.").

Here, Claims 1 and 5 both require the surface of the housing unit to be prepared with a "matching art" which is "substantially the same as that area of said poster art which appears on said portion of said poster that said housing covers when said housing is attached to said poster, such that said housing artistically blends in with the surrounding poster art that is not covered by said housing."

Plaintiffs urge the Court to focus solely on the last phrase, which reads "such that said housing artistically blends in with the surrounding poster art that is not covered by said housing." They argue that because the colors of the housing units on the Accused Posters match certain colors used elsewhere in the posters, the housing units "artistically blend in," creating a harmonious visual effect, and therefore satisfy this element.

Plaintiffs' interpretation obviously ignores the remainder of the claim that requires that the artwork on the surface of the housing be "substantially the same as that area of said poster art which appears on said portion of said poster that said housing covers when said housing is attached to said poster." As Defendants correctly note, Plaintiffs' interpretation completely reads this key limitation out of the claims. Such a result cannot be condoned. See Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572, 1582-83 (Fed. Cir. 1996) (refusing to read a limitation out of the claim).

When Claims 1 and 5 are read as a whole, and when all of the words defining the scope of the invention are given effect, these claims unambiguously require that the artwork on the surface of the housing be substantially the same as the artwork on that portion of the poster directly underneath the housing. The practical effect of this limitation is that the housing unit is camouflaged. Only under these circumstances can it be said that the housing is prepared with "matching art" such that it "artistically blends in with the surrounding poster art that is not covered by said housing."

2. Specification

The patent claims must also be read in view of the specification, that portion of the patent document which describes the invention "in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the same." 35 U.S.C. § 112; Markman, 517 U.S. at 384. The court examines the specification "to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning. The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." Vitronics, 90 F.3d at 1582. In this case, nothing in the specification expressly defines the terms "matching art," "substantially the same," or "artistically blends in." Nor is there any indication that these terms are to be interpreted in a specialized, technical sense.
Plaintiffs note that the section entitled "Background and Summary of the Invention" describes the invention as "a talking poster that projects a recorded sound using a device that is attached to the poster with material that is painted to match the color scheme of the poster art." (Ex. J to Third Am. Compl.) (emphasis added). Admittedly, this introductory statement is broad enough to encompass Plaintiffs' interpretation of Claims 1 and 5. 4 Nevertheless, as discussed above, this interpretation is completely inconsistent with the claim language itself. As the Federal Circuit noted in Markman v, Westview Instruments, Inc., "[t]he written description part of the specification itself does not delimit the right to exclude. That is the function and purpose of the claims." 52 F.3d at 967, 980 (Fed. Cir. 1995). See also Environmental Instruments, Inc. v. Sutron Corp., 877 F.2d 1561, 1564 (Fed. Cir. 1989) ("[t]he claims alone delimit the right to exclude; only they may be infringed."). Because it is contrary to the claims themselves, this introductory statement may not be considered in determining the proper scope of the 272 Patent.

4 The Court notes that this same introductory statement also appeared in Plaintiffs' initial patent application. Even though the language of the claims was revised, this statement was not.

The specification also includes a "Preferred Embodiment" of the invention. It states that "[t]he invention uniquely provides the poster with the sound equipment without interfering with the artwork on the poster." (Ex. J to Third Am. Compl.) (emphasis added). Figure 4, a cutaway view of the preferred embodiment, indicates that the housing "may not be visible on the poster except on close inspection." Id. (emphasis added). An example for constructing a preferred embodiment describes how the housing

may be lithographed using a multi-color process printing technology to match the poster artwork. When finished, the material piece will artistically fit onto the poster, without any disruption in the poster artwork. In other words, the material piece will have the exact coloring and artwork on it, as would the space on the poster board where the piece resides, if the material piece was not present.

Id. (emphasis added).

Examples of the preferred embodiment are attached as Exhibit K to Plaintiffs' Third Amended Complaint. On one of those Talking Posters, depicting the group NSync, the housing unit is placed on the bottom right corner of the poster, over the top of Justin Timberlake's left foot. The housing unit is lithographed to match Timberlake's pants and shoe so that the poster artwork is not interrupted by the housing unit. In another Talking Poster, depicting entertainer Ricky Martin, the housing unit is camouflaged, being printed with the same purple-and-white checkered background that covers the rest of the poster. In this respect, the examples of the preferred embodiment are entirely consistent with the plain language of the claims.

In contrast to these examples, the Accused Posters do not have camouflaged housing units. Instead, each Accused Poster has a housing unit consisting of a solid color bar running the entire width of the bottom of the poster. Although the color of the housing unit generally complements the color scheme used in the poster, clearly the housing unit is not covered with artwork that is substantially the same as the poster artwork directly underneath it. See Ex. 1 toDefs.' Supp. Mem.

Plaintiffs correctly note that the Accused Posters "must be compared to the claims rather than to a preferred or commercial embodiment." Amgen Inc. v. Hoechst Marion Roussel, Inc... 314 F.3d 1313, 1347 (Fed. Cir. 2003). Plaintiffs accuse Defendants of importing claim limitations from the specification contained in the 272 Patent. As a general rule, the scope of the invention is not limited by the specification. See Phillips v. AWH Corp., 415 F.3d 1303, 1323 (Fed. Cir. 2005); JVW Enterprises, Inc. v. Interact Accessories, Inc., 424 F.3d 1324, 1335 (Fed. Cir. 2005) (holding that it is generally improper to limit claim language to the specific embodiment disclosed in the written description). The 272 Patent specifically states that "[t]he scope of the invention is not to be considered limited by the above disclosure, and modifications are possible without departing from the spirit of the invention . . ." (Ex. J to Third Am. Compl.).

Ordinarily, the patent claims will be broader than the preferred embodiment. Phillips, 415 F.3d at 1323. In such a case, the fact that the accused product differs from the preferred embodiment would not necessarily foreclose a finding of
infringement. In this case, however, the claim language and the preferred embodiment appear to be equal in scope. Properly construed, the claims are coextensive with the preferred embodiment as described in the 272 Patent. Both require that the housing be camouflaged.

3. Prosecution History

In addition to considering the plain language of the claims and the specifications, the Court may also consider the prosecution history of the 272 Patent. In this case, the prosecution history supports Defendants' interpretation of the claims. When Plaintiff Clark first submitted his patent application, the relevant portion of Claim 1 consisted of "a blister pack attached to said poster, wherein said blister pack . . . matches the artwork of the poster to which it is attached." (Ex. 5 to Kinsel Decl.). This claim, along with all others, was rejected as being "unpatentable over Hoshi (U.S. Patent No. 4,934,079)." (Ex. 5 to Kinsel Decl.). With respect to Claim 1, the examiner noted that "[t]he claimed blister pack matching the art work of the poster lacks criticality because the housing in Hoshi would still serve the same function as a housing for the electrical components." (Id.). Claim 8 of the original patent application, dealing with a method for making Talking Posters, included "printing a portion of the artwork on said poster on blister pack material." (Id.). The examiner rejected this claim as well, noting that although this claim was not met by Hoshi, it still lacked criticality for the same reasons given for rejecting Claim 1. (Id.).

In response to the rejection, Plaintiff Clark submitted amendments and remarks. Attempting to distinguish his invention from Hoshi's, he noted that Hoshi's poster and the display device containing the speakers were two separate pieces, whereas Plaintiff's invention consisted of one piece, allowing "artwork to be placed on the blister pack by lithograph color technology, for example, so that the electronic circuitry and sound emanating means under the housing is 'camouflaged' in the poster presentation." (Id.). He further noted that "the sound module housing can be printed with artwork so as to visually blend in with the actual artwork of the poster, and effectively hide the sound module so as not to disturb or interrupt the visual flow of the poster." (Id.). 5

5 The Court rejects Plaintiffs' attempt to now distance themselves from these statements. They argue that the use of the word "camouflaged" merely meant that the housing artwork could be used to render the functional components of the electronic circuitry and speakers less conspicuous by using housing that "artistically blends in" with the color scheme of the poster. As the Court has already held, this interpretation is clearly contrary to the plain language of the claims.

An interview was then held with patent examiner. The examiner's hand written note indicates that Clark agreed "to add limitation to the claim such that the blister pack is printed so that it blends in with the artwork at the area where the blister pack is attached to." (Id.). Accordingly, Clark amended his claims to include the language currently at issue, i.e., "wherein a surface of said housing is prepared with a matching art which is substantially the same as that area of said poster art which appears on said portion of said poster that said housing covers when said housing is attached to said poster, such that said housing artistically blends in with the surrounding poster art that is not covered by said housing." This amendment resulted in a narrowing of the scope of the invention. Whereas the original patent application required only that the blister pack "matches the artwork of the poster," the patent, as issued, requires the blister pack to be prepared with artwork that is "substantially the same" as the portion of the poster it covers.

4. Extrinsic Evidence

To summarize, an examination of the intrinsic evidence of record, i.e., the language of the claims, the specification, and the prosecution history, leads the Court to conclude that the claims at issue, as properly construed, unambiguously require the housing to be prepared with artwork that is substantially identical to the artwork on the area of the poster it covers so that the housing is, in effect, camouflaged and the visual flow of the poster art is not interrupted.

Because there are no remaining ambiguities, it would be improper for the Court to consult the extrinsic evidence submitted by the parties, including dictionary definitions and the declaration of Ellen Shapiro, submitted by Plaintiffs in support of their memorandum in opposition. Therefore, Defendants' motion to strike Shapiro's declaration is granted. 6
6 Even if the Court found that extrinsic evidence would be helpful in construing the claims, Shapiro's declaration is lacking in several respects. Shapiro is a graphic designer who concluded that because the housing units on the Accused Posters "artistically blend in" with the colors used in the posters and form a "harmonious visual effect," the Accused Posters infringe on Claims 1 and 5 of the 272 Patent. (Shapiro Decl. PP 12-13, 16). In the context of patent infringement cases, the Federal Circuit has held that "a court should discount any expert testimony 'that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent.' Key Pharms., 161 F.3d at 716." Phillips v. AWH Corp., 415 F.3d 1303, 1318 (Fed. Cir. 2005). Shapiro's declaration falls squarely within this category. Her interpretation of the claim language, like that of Plaintiffs, completely ignores the key limitation that requires that the housing unit be prepared with "matching art which is substantially the same as that area of said poster art which appears on said portion of said poster that said housing covers when said housing is attached to said poster."

--- Footnotes ---

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a. The Claim Term "Mate"

The court concurs with defendants that the proper construction of the claim term "mate" must include the following limitations: (1) a close confinement of the protrusion within the inset(s) of one or more blocks; (2) an ability to secure the blocks in place; and (3) an interlocking of the protrusion with the insets. This special limited meaning of "mate" is appropriate given the term's ordinary meaning as it appears in a general definition dictionary, the use to which "mate" is subjected throughout the specifications and the prosecution history.

--- Footnotes ---

6 The court also agrees with defendants' assertion that the meaning of the claim term "mate" includes the ability to restrict the movement of the block in a forwards and backwards direction. However, such a limitation is subsumed within the ability to secure the blocks in place. This limitation is not discrete enough to warrant addressing it separately. The court thus adopts this special limited meaning as part of the ability to secure the blocks in place.

--- End Footnotes ---

Dictionaries, which are a form of extrinsic evidence, hold a special place and may sometimes be considered along with the intrinsic evidence in construing claims. See Cybor Corp. v. FAS Tech., Inc., 138 F.3d 1448, 1459 (Fed. Cir. 1998); see also Vanguard Prod. Corp. v. Parker Hannifin Corp., 234 F.3d 1370, 1372 (Fed. Cir. 2000) ("a dictionary is often useful to aid the court in determining the correct meaning to be ascribed to a term as it was used"). According to Merriam-Webster's New Collegiate Dictionary 716 (10th ed. 1998), the term "mate" ordinarily means "to join or fit together." The patent applicant chose the term "mate" to describe the interrelationship of the protrusion and insets in separate blocks stacked upon each other. "Mate" necessarily implies two things joining together to create one.

It is true that dictionary definitions often may not represent the meaning of a claim term to one of ordinary skill in the art, and that the court should not manufacture such a technical meaning from an ordinary one. "Courts must exercise caution lest dictionary definitions, usually the least controversial source of extrinsic evidence, be converted into technical terms of art having legal, not linguistic, significance." Multiform Dessicants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1478 (Fed. Cir. 1998). It is also true that dictionary definitions, which are extrinsic evidence, must not be used to contradict the meaning of claim terms maintained throughout the specification. See Pitney Bowes v. Hewlett-Packard Co., 182 F.3d 1298, 1309 (Fed. Cir. 1999) (holding that Vitronics "warned courts not to rely on extrinsic evidence in claim construction to contradict the meaning of claims discernible from thoughtful examination of the claims, the written description, and the prosecution history -- the intrinsic evidence.")
Here, the dictionary definition of "mate" presents none of these problems. It is not inconsistent with the meaning of the term to one skilled in the art. Nor does it contradict the meaning of "mate" apparent from the specifications. Rather, the ordinary meaning of "mate" invites the special limited meanings put forth in the specifications.

i. Close Confinement

The specifications of the '363, '183, and '129 patents state that "the area of the inset adjacent the block bottom surface 8 should be approximately the same areas as, or only slightly larger than, protrusion 26 with which it will mate." ('183 Patent, col. 4, ln. 38-41.) The oversize of the inset with respect to the protrusion provides the block with setback capability of 1/8 to 3/4 inch. ('183 Patent, col. 4, ln. 52-57.) The court is satisfied that the qualitative description, i.e. "only slightly larger than" (emphasis added), and quantitative measure provided, 1/8 to 3/4 inch, are together sufficient to attach a connotation of close confinement to "mate." 7

7 The qualitative description emphasizes the relative closeness of confinement. The word "slightly" is sufficient on its own to impart the idea. Still, the specification adds "only" to intensify the meaning of "slightly." The quantitative measure, 1/8 to 3/4 inch, further reinforces the adoption of a special limited meaning. On a given block measuring almost 12 inches from front to back, 1/8 to 3/4 inch suggests relative close confinement. Even on a non-relative scale, 1/8 to 3/4 inch is small.

Plaintiff attempts to rebut defendants' argument that "mate" is limited to close confinement by offering the context from which this limitation is taken. However, the context fails to serve this end. The specification expressly says: "… the area of the insets adjacent the block top surface 10 is preferably larger than the protrusion 26 by a factor of 5% or more and preferably about 1% to 2% or more." ('183 patent, col. 4, lines 41-44.) This language only reinforces the conclusion that "mate" means close confinement. An inset that is larger than the protrusion it holds by a factor of 5 percent must be seen as closely confining that protrusion. 8

8 Plaintiff also argues that the prosecution history of the original patent application (U.S. Patent Application S.N. 07/957,598) prevents the court from attaching a special limited meaning to "mate." An examination of the prosecution history is particularly important where, as in the instant case, the claimed invention is in a crowded art. See Amhil Enter. Ltd. v. Wawa, Inc., 81 F.3d 1554, 1559-62 (Fed. Cir. 1996). Allegedly, claim 25 of that patent reads, "the block of claim 1 wherein the area of each inset adjacent said block bottom surface is larger than the area of said protrusion." This claim was allowed. Plaintiff argues, therefore, that "mate" can be no less broad than the above phrase, "larger than the area of said protrusion." This argument fails. The comparative phrase, "larger than the area of said protrusion" is too vague. "Larger than" could mean that the inset is larger than the protrusion it holds by a factor of 5% or 500%. The court is not prepared to grant the claim such a broad scope in an old and crowded art because doing so would probably invalidate the patent.

ii. Ability to Secure Blocks in Place

It is well established that:

the prosecution history of a patent contains: 'all express representations made by or on behalf of the applicant to the examiner to induce a patent grant. … Such representations include amendments to the claims and arguments made to convince the examiner that the claimed invention meets the statutory requirements of novelty, utility, and nonobviousness. Thus, the prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance.'

When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation. See Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 980 (Fed. Cir. 1999)(citing Jonsson, 903 F.2d at 817-818).

During prosecution of the common parent application to the '363, '183, and '129 patents Anchor argued that its claimed block is distinguishable over prior art references because the claimed insets are for mating with a protrusion of a second similarly configured block and that the prior art "references require some form of additional engagement structure … to secure each of the blocks in place." (See Skaar Aff., Ex. 7 at 11 (emphasis added).) The distinction argued by Anchor compels the court's adoption of a special limited meaning for the term "mate." Here, the prosecution history is compelling. The specifications state that the protrusion functions in concert with sidewall insets 22A and 22B to secure the blocks in place when positioned in a series or together by aligning the protrusions 26 within the given insets. ('183 Patent, col. 5, ins. 1-4 (emphasis added).) The claim term "mate" thus requires the ability to secure the blocks in place.

9 Plaintiff argues that the prosecution history is not controlling because the invention was distinguished from the prior art, not for its ability to secure the blocks in place, but rather because of the fact that the prior art had pins. That is, the prior art was distinguished for physical differences, not for different functions. Plaintiff is correct that, while the differences in the way the patented invention and accused device function certainly are relevant to a doctrine of equivalents analysis, these considerations are not legally relevant to whether a device falls within the literal language of the asserted claim, which is the question before the court. Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1278 (Fed. Cir. 1995).

iii. Interlocking of Protrusion with the Insets

The specifications attach "interlocking" to the meaning of "mate" because they use the words interchangeably. The specifications state, "the use of the dogbone shaped protrusion 26 allows for retention of these blocks in an interlocking fashion with the blocks of lower courses to form a wall of high structural integrity." ('183 Patent, col. 6, ins. 21-24 (emphasis added).) The court finds that this substitution of the term "interlocking" for what would be "mating" has two effects.

First, it raises a presumption that the patent applicant intended to create a special limited meaning for the claim term "mate." The claim itself uses the term "mate" to describe the function of the protrusion with respect to the insets. This excerpted part of each specification describes the very same function. Yet, here the patent prosecutor uses a different word, "interlocking." This variation in diction between two phrases designed to impart the same idea invites the meaning of "interlocking" into the claim term "mate."

Second, this interchange strengthens the connection of the other special limited meanings discussed supra with the term "mate." The term "interlocking" is highly suggestive of "close confinement" and the "ability to secure in place."

10 "Interlocking" is probably more suggestive of these connotations than "mate" itself, the term for which it is substituted synonymously. The adjective "interlocking" has its root in the verb "interlock," which is derived from "lock." According to Merriam-Webster Collegiate Dictionary 684 (10th ed. 1998), the term "lock" means "to make or become rigidly fixed or immovable." The court is satisfied that the interchange of "interlocking" with "mate" supports the adoption of the other special limited meanings of "mate."
The court chooses not to accord the extrinsic evidence marshaled by the plaintiff any weight in its analysis of the claim term "mate." Rockwood's technical literature is offered to provide the view of one skilled in the art. The court acknowledges that such evidence may properly serve this purpose. However, the court will not examine a brochure for the accused device in order to construe the claims of Anchor's patents when the meaning of the claims is clear from the intrinsic evidence. The expert testimony of Mr. Strawbridge is rejected for the same reason. It is the claim language of the patent that the public may rely upon for notice. See London v. Carson Pirie Scott & Co., 946 F.2d 1534, 1538 (Fed. Cir. 1991) ("if the public comes to believe (or fear) that the language of patent claims can never be relied on … then claims will cease to serve their intended purpose … competitors will never know whether their actions infringe a granted patent.")

The claims of the '363 patent family require that the protrusion be "configured to mate with an inset of one or more adjacent blocks." See, e.g., '183 patent, col. 16, ll. 20-33 (emphasis added). The district court construed "mate" to require the following three limitations: "(1) a close confinement of the protrusion within the inset(s) of one or more blocks; (2) an ability to secure the blocks in place in a forwards and backwards direction; and (3) an interlocking of the protrusion with the insets." Anchor, 252 F. Supp. 2d. at 844-45. Anchor does not dispute the district court's third limitation that "mate" is interchangeable with "interlock" in the patent specification. However, we hold that the first and second limitations of the district court's construction of "mate" are erroneous.

The ordinary meaning of "mate," as the district court found, is "to join or fit together." Id. at 845 (citing Merriam-Webster's New Collegiate Dictionary 716). Contrary to the district court's narrow construction, the written description does not define "mate" as requiring "a close confinement of the protrusion within the inset(s) of one or more blocks." Id. at 844. In describing one preferred design, the written description only states that the area of the inset "should be"--not must be--"approximately the same area as, or only slightly larger than, protrusion 26 with which it will mate." '363 patent, col. 4, ll. 37-40. The written description makes quite clear that the open-ended examples of "mating" are merely illustrative; that is, they do not exhaustively delineate the scope of the term "mate" whose ordinary meaning is clear from the claims. Id. at col. 4, ll. 35-38 ("The area of the insets adjacent the block to surface 10 is preferably larger than the protrusion 26 by a factor of 5% or more and preferably about 1% to 2% or more." (emphases added)). Moreover, the general rule, of course, is that claims of a patent are not limited to the preferred embodiment, unless by their own language. See, e.g., Va. Panel, 133 F.3d at 866. That the term "mate" is used in a nonlimiting way in the written description with respect to preferred degrees of confinement is simply not "a special and particular definition created by the patent applicant," Renishaw, 158 F.3d at 1249, and is thus an insufficient reason to limit the scope of "mate" to require close confinement.

Furthermore, the prosecution history does not attribute a special meaning to the term "mate" as requiring an ability to secure the blocks in place in a forwards and backwards direction. Anchor, 252 F. Supp. 2d at 844-46. During prosecution of the common parent application of the '363 patent family, the applicant distinguished features of its invention over prior art by admitting that the insets "(1) extend into side surfaces of the blocks and (2) are for mating with a protrusion from a second, similarly configured block." The applicant also argued during prosecution that the prior art "references require some form of additional engagement structure (i.e., pins in Forsberg, and mortar in Italy 709,599) to secure each of the blocks in place" (emphasis in original). As these statements show, the patentee did not clearly and unmistakably relinquish any claim to a block in which the "mating" does not include the district court's functional limitation of restricting the movement of the block in a forwards and backwards direction. Omega, 2003 WL 21517751, at *9 ("For prosecution disclaimer to attach, our precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable."). Rather, the applicant's statements distinguish the prior art primarily in structural terms by emphasizing that the invention of the '363 patent family does not require an additional engagement structure such as pins or mortar to secure the blocks in place. We therefore do not consider the applicant's remarks to be a clear and unmistakable disavowal of claim scope as required to depart from the ordinary meaning of the term provided by the specification and therefore hold that the proper construction of "mate" is to join or fit together.
IV. "mated for engagement"

Claim 1 of the ’783 Patent provides:

said center link tang portions configured to nest between the sprocket teeth and further configured with a bottom tang portion mated for engagement with the rounded bottoms in said gullets.

(disputed term emphasized).

Defendants contend "bottom tang portion mated for engagement with the rounded bottoms in said gullets" should be construed to mean "[t]he tang portion contacts the rounded bottom of the gullets over the entire radiused portion when the chain is entrained on the nose sprocket." As noted, the Court has found a radiused shape is not required by Claim 1 of the ’783 Patent.

Defendants’ proposed construction is not permissible because it is more limited than the specification. The specification provides the nose sprocket "receives the drive tang portion of the saw chain substantially along the entire semi-circular gullet formation." ’783 Patent col.5 ll.8-10. The word "substantially" demonstrates the patentee did not intend to limit the invention by requiring that the gullet formation contact the entire rounded bottom portion of the tang as Defendants contend.

Plaintiffs contend "bottom tang portion mated for engagement with the rounded bottoms in said gullets" should be construed to mean "[t]he tang portion is adapted to transmit operational forces to the bottom of the gullet." Here, however, Plaintiffs’ definition is not specific enough. As noted, the specification provides the nose sprocket "receives the drive tang portion of the saw chain substantially along the entire semi-circular gullet formation." ’783 Patent col.5 ll.8-10. This receiving means the drive tang contacts the gullet formation in a substantial manner. Plaintiffs’ proposed definition is too broad, however, because it might encompass some manner of adaptation that results in the transmission of operational forces to the bottom of the gullet in some way other than by substantial contact between the gullet bottom and the tang portion.

On this record, the Court construes the term "bottom tang portion mated for engagement with the rounded bottoms in said gullets" to mean that "the tang portion is adapted to contact the gullet formation substantially along the rounded bottom region of the gullet to transmit operational forces to the bottom of the gullet."

This construction is faithful to the text and construction of Claim 1 and is not subject to the over- or under-inclusiveness of the parties’ respective definitions.

A

The first issue we must decide is the meaning of "material for finishing." Since that phrase appears in the preamble of claim 4, we must first ask whether "material for finishing" is a claim limitation at all. Whether a statement of intent in a preamble should limit a claim is an inquiry we undertake on a case-by-case basis. As we have previously stated:

No litmus test can be given with respect to when the introductory words of a claim, the preamble, constitute a statement of purpose for a device or are, in themselves, additional structural limitations of a claim. To say that a preamble is a limitation if it gives 'meaning to the claim' may merely state the problem rather than lead one to the answer. The effect preamble language should be given can be resolved only on review of the entirety of the patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim.

Here, the '514 specification makes clear that the disclosed invention is a material and method for applying "a replaceable finish of uniform thickness onto a floor." '514 patent, col. 1, lines 67-68 (emphasis added). Furthermore, during prosecution of the '514 patent and its parents, the applicant amended what subsequently became the preamble of claim 4 several times to avoid prior art. Specifically, the applicant added the term "refinishing," which was later changed to "finishing," and argued to the examiner that "finishing" a bowling lane is patentably distinct from replacing the top of a bowling lane with a thick laminate material. Thus, based on the entirety of the '514 patent and its prosecution history, we conclude that the district court correctly read "material for finishing" as a claim limitation.

Having determined that "material for finishing" is a claim limitation, we must now decide what that limitation means. We begin, as we must, with the language of the claim itself. Terms in the claim are to be given their ordinary and accustomed meaning, within the context of the claim, unless a different meaning is clearly set forth in the written description or the prosecution history. See Johnson Worldwide Assoc., Inc. v. Zebco Corp., 175 F.3d 985, 989, 50 U.S.P.Q.2D (BNA) 1607, 1610 (Fed. Cir. 1999); Renishaw, 158 F.3d at 1249, 48 U.S.P.Q.2D (BNA) at 1121.

The text of claim 4 leaves little ambiguity as to the meaning of "material"—namely, at least one elongated sheet of a uniform flexible film of clear plastic having a thickness between about one and about twenty-five mils. What remains in dispute is the precise meaning of the phrase "for finishing." In the context of claim 4, "finishing" clearly refers to providing a clear, uniform layer on the top surface of a floor. Significantly, there is no indication in claim 4 as to what level of durability, if any, the "finish" layer must have. Thus, claim 4 implies a broad meaning for the term "finishing," which is consistent with the dictionary definition of "finish." See, e.g., Webster's Ninth New Collegiate Dictionary 464 (1984) (defining "finish" as "the final treatment or coating of a surface," but not identifying any specific properties).

The district court construed "material for finishing" to mean "a material that makes more durable the underlying surface of the floor." We have held that, absent a clear indication in the specification to the contrary, it is improper for a court to add a narrowing characteristic to an otherwise general term that stands unmodified in a claim. See Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 621-22, 34 U.S.P.Q.2D (BNA) 1816, 1821 (Fed. Cir. 1995). Thus, we now look to the specification of the '514 patent to determine whether the applicant gave a meaning to "finishing" that would require an element of durability to be read into claim 4. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1577 (Fed. Cir. 1996) ("It is always necessary to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning.").

The specification of the '514 patent contains numerous instances of the words "finish" and "finishing." Most refer to the material of the invention itself; e.g., "the flexible sheet finishing material of the present invention." '514 patent, col. 3, lines 56-57 (emphasis added). However, the applicant also used "finish" or "finishing" to refer to various other materials. For instance, the applicant noted that wooden playing floors "are finished with clear varnish or urethane applied in liquid form." Id., col. 1, lines 22-23 (emphasis added). Also, the applicant explained that, to facilitate sliding movement on bowling lanes, "a very light oil finish" could be applied to the surface. Id., col. 3, line 43 (emphasis added). Finally, the applicant described the use of his invention on "floors of wood, terrazzo, marble, or other smooth finish material." Id., col. 4, line 40-41 (emphasis added). In sum, the applicant's use of the words "finish" and "finishing" are consistent with the ordinary meaning of those terms--namely, a general reference to the top coat, layer or surface on a floor, whether it be varnish, oil, marble, or terrazzo.

3M argues that the '514 specification touts improved durability from the outset and that "material for finishing" must therefore be construed to mean a material that enhances durability. We disagree. Although the specification describes the invention as providing both durability and wear resistance, this does not necessarily mean that durability must be read into claim 4 as a limitation.

The '514 specification recites several objects of the disclosed invention. Some of these pertain to improved durability, but others contain no reference to durability whatsoever. See '514 patent, col. 1, line 62 - col. 2, line 12. The specification alternates between touting the improved durability of the invention and other characteristics that do not involve durability (e.g., simplicity of application, uniformity of thickness, etc.). Thus, there is nothing in the specification that requires "durable" to be read into claim 4 as a modifier of "finishing." See Renishaw, 158 F.3d at 1249, 48 U.S.P.Q.2D (BNA) at 1121 ("Where a specification does not require a limitation, that limitation should not be read from the specification into the claims." (citations omitted)).
In addition to considering the language of the claim and the specification, we may also look to the prosecution history of the patent, where relevant, to determine the proper meaning of claim limitations. See Vitronics, 90 F.3d at 1582-83, 39 U.S.P.Q.2D (BNA) at 1577. 3M argues that the prosecution history of the '514 patent and its parent applications sheds light on the meaning of "material for finishing."

During prosecution of the '428 application (one of the parents of the '514 patent), the applicant was forced to overcome U.S. Patent No. 4,221,620, issued to Milne. The Milne patent discloses the use of 1/8-inch thick flexible panels to "refinish" a bowling lane. The applicant sought to distinguish his invention from that of Milne on the basis that the present invention utilizes a finish film, rather than a 1/8-inch thick panel. To that end, the applicant explained to the examiner, in an Amendment After Final Rejection, dated July 6, 1988, that his invention "essentially duplicates the characteristics of a conventional liquid varnish." 3M asserts that this argument was made in an attempt to distinguish the claimed invention from the prior art on the basis of enhanced durability. According to 3M, the prosecution history requires that "durability" be read into the claim as a limitation. We disagree.

In making this statement, the applicant was clearly not referring to durability as a distinguishing characteristic. Indeed, the 1/8-inch thick panels taught by Milne are themselves quite durable and, thus, durability would not have been a distinguishing characteristic of the claimed invention. Instead, in equating his invention with varnish, the applicant was apparently referring to varnish's characteristic of providing a protective coating without transforming the physical and aesthetic properties of the underlying floor. See Amendment After Final Rejection at 6 ("Being only a finish film, [the claimed invention] does not change the physical characteristics of the wood floor . . . . By contrast, the one-eighth inch thick floor covering materials described by MILNE can modify the physical characteristics, such as resilience and hardness, of a wood bowling lane."). It was this characteristic--preserving the physical attributes of the underlying floor--that successfully distinguished the applicant's invention from that of Milne.

Having reviewed the language of claim 4, the specification of the '514 patent, and the relevant prosecution history, we conclude that the district court erred in reading "material for finishing" to require an element of durability. We recognize, as did the district court, that some degree of protection will be afforded by any type of floor covering, whether it be varnish, plastic, or marble. Middleton's claimed product provides some degree of protection, which varies depending on the thickness of the sheet (1 - 25 mils). Likewise, 3M's FloorMinders provides some degree of protection to the underlying floor. However, to the extent that the court drew a distinction between FloorMinders and the claimed invention on the basis of "durability," we must disagree. Durability is simply not a limitation of claim 4.

A.

With respect to the "material for finishing the top surface of the floor" limitation, Suitco contends that the Board should have been bound by this court's earlier construction of "material for finishing." In the alternative, Suitco contends that the Board's adopted construction is unreasonable. This court need not address Suitco's first argument because even under the broadest-construction rubric, the PTO's construction is unreasonable.

The express language of the claims requires a "material for finishing the top surface of the floor." '514 patent col.7 ll.67-68 (emphases added). A material cannot be finishing any surface unless it is the final layer on that surface. Otherwise, the material would not be "finishing" the surface in any meaningful sense of the word.

The PTO's proffered construction ignores this reality by allowing the finishing material to fall anywhere above the surface being finished regardless of whether it actually "finishes" the surface. Indeed, according to the PTO, the finishing surface need only be "structurally suitable for placement on the top surface of the floor"--i.e., several layers can be placed on top of the "finishing" layer. If the PTO's construction were accepted, a prior art reference with carpet on top of wood, on top of tile, on top of concrete, on top of a thin adhesive plastic sheet anticipates the claims in question because an adhesive plastic sheet falls at some point in the chain of layers. This construction does not reasonably reflect the plain language and disclosure of the '514 patent.
Although the PTO emphasizes that it was required to give all "claims their broadest reasonable construction" particularly with respect to claim 4's use of the open-ended term "comprising," see Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501 (Fed. Cir. 1997) ("the open-ended term comprising . . . means that the named elements are essential, but other elements may be added"), this court has instructed that any such construction be "consistent with the specification, . . . and that claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art." In re Bond, 910 F.2d 831, 833 (Fed. Cir. 1990) (quoting In re Sneed, 710 F.2d 1544, 1548 (Fed. Cir. 1983)) (emphasis added).

The PTO's construction here, though certainly broad, is unreasonably broad. The broadest-construction rubric coupled with the term "comprising" does not give the PTO an unfettered license to interpret claims to embrace anything remotely related to the claimed invention. Rather, claims should always be read in light of the specification and teachings in the underlying patent. See Schriber-Schroth Co. v. Cleveland Trust Co., 311 U.S. 211, 217, 61 S. Ct. 235, 85 L. Ed. 132, 1941 Dec. Comm'r Pat. 802 (1940) ("The claims of a patent are always to be read or interpreted in light of its specifications."). In that vein, the express language of the claim and the specification require the finishing material to be the top and final layer on the surface being finished. See, e.g., '514 patent, col.1 ll.15-20 ("The present invention is directed generally to a material and method for quickly and easily producing a transparent wear resistant finish on a smooth flat surface subject to wear and more particularly to a material and method for finishing a floor . . . ."). The PTO's proffered construction therefore fails.

When read in the appropriate context of the claim language and specification, the broadest reasonable construction is clear: the phrase "material for finishing the top surface of the floor" refers to a clear, uniform layer on the top surface of a floor that is the final treatment or coating of a surface. It is not any intermediate, temporary, or transitional layer. Because the PTO based its rejection on its unreasonable construction, this court remands with instructions to conduct a new invalidity analysis using the appropriate construction.

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Finally, Digital Angel argues that the term "material having characteristics equivalent to glass" viewed in the context of the claim as a whole and the specification, means "the material must be capable of preventing leakage of an amount of fluid that would be sufficient to cause failure of the claimed device for a period of at least two months." 7 Pl.'s Markman Br. at 26. Digital Angel further argues that the term inherently includes five additional criteria directed toward the reliable functioning of the transponder: the material must (1) be inert in tissue, (2) be not toxic, (3) be sufficiently impermeable to water and water vapor to protect the electronic circuitry, (4) have sufficient mechanical properties to protect the device during syringe implantation, and (5) be able to encapsulate the components of the claimed device without damaging them. Id. at 26-27. Digital Angel contends glass is merely a preferred material, and nothing in the prosecution history shows a "clear and unmistakable surrender" of non-glass encapsulating materials. In contrast, Defendants define "material having characteristics equivalent to glass" as "glass." Joint Claim Constr. Statement, App. A at 4, 12, 16. Defendants again rely on prosecution history and judicial estoppel arguments to support their contention that the encapsulating material of the '129 patent can be made only of glass. Defendants also assert an indefiniteness argument.

7 In the Joint Claim Construction Statement, Digital Angel avers that "material having characteristics equivalent to glass" means "having characteristics of low water vapor permeability which prevent leakage into the transponder." App. A at 4, 12, 16.

Judicial estoppel is a discretionary, equitable doctrine "that prevents a litigant from perverting the judicial process by, after urging and prevailing on a particular position in one litigation, urging a contrary position in a subsequent proceeding -- or at a later phase of the same proceeding -- against one who relied on the earlier position." Sandisk, 415 F.3d at 1290; see also Amtrust, Inc. v. Larson, 388 F.3d 594, 600 (8th Cir. 2004). The Supreme Court has identified three non-exclusive factors for courts to consider when determining whether to apply judicial estoppel:

(1) the party's later position must be clearly inconsistent with the earlier position, (2) the party must have succeeded in persuading a court to adopt the earlier position in the earlier proceeding, and (3) the courts consider whether the party
seeking to assert an inconsistent position would derive an unfair advantage or impose an unfair detriment on the opposing party if not estopped.


The exhibits submitted by Defendants concerning the prior Infopet litigation do not support that Digital Angel's position in this litigation is "clearly inconsistent" with its position in the Infopet litigation. Defendants' Exs. 7-8, 10-11. Digital Angel's previous briefs describe in considerable detail the history of the development of the transponder, including its initial encapsulation in plastic/polypropylene, failure due to leakage, and later encapsulation in glass. Fairly construed, Digital Angel's previous statements indicate an intent to disclaim the particular plastic/polypropylene previously used as an encapsulant due to its inability to prevent leakage, but not an intent to disclaim all plastic/polypropylene for all time. The claim language at issue, "materials having characteristics equivalent to glass," is not overwritten by any statements made in the previous litigation. While "plastic" may ultimately not be a "material having characteristics equivalent to glass," Digital Angel has not specifically disclaimed plastic, and as such, statements made in the prior litigation regarding plastic/polypropylene v. glass transponders do not work a judicial estoppel. 8

8 Whether "plastic" is a "material having characteristics equivalent to glass" is an issue likely to be determined under the doctrine of equivalents on summary judgment.

The specification establishes the characteristics of glass that material must have to be equivalent: "Glass encapsulation is preferred because glass is non-porous, corrosion-resistant, and amenable to sterilization, as compared to other possible encapsulation materials, such as plastic." '129 patent, col. 7:11-14. While the preferred embodiment described in the specification appears to be made of glass, the specification reveals that glass is a preferred but not required encapsulating material: "The transponder may be encapsulated in glass or a similarly durable material . . . ." Id. at col. 4:13-15. Also, as previously stated, the specification expressly states that the invention is not limited to the preferred embodiment. Id. at col. 13:1-7. Finally, and most importantly, the claims consistently recite "material having characteristics equivalent to glass," which is significantly different from reciting "glass." The Court is wary of incorporating limitations from the preferred embodiment into the claims, and mindful of the directive that effect must be given to all words in a claim. See Exxon Chemical Patents, Inc. v. Lubrizol Corp., 64 F.3d 1553, 1557 (Fed. Cir. 1995). In view of the claim language and the specification, and for the reasons stated above, the term "material having characteristics equivalent to glass" means "material that is non-porous, corrosion-resistant, and amenable to sterilization."

II. Material Object

As with the term point of sale location, the district court made several findings with regard to the construction of the term "material object." We address these findings below, agreeing with some and disagreeing with others.

1.

The district court held that a material object is "a tangible medium or device in which information can be embodied, fixed, or stored, other than temporarily, and from which the information embodied therein can be perceived, reproduced, used or otherwise communicated, either directly or with the aid of another machine or device." Interactive Gift Express, 47 U.S.P.Q.2D (BNA) at 1810. Although IGE admits in its brief to this court that a material object is a tangible medium, counsel for IGE argued to this court at the oral hearing that a material object is defined as the information itself and need not be a tangible medium. The appellees respond that the district court's construction is supported by the specification.

Although the appellees do not argue that IGE has waived this argument, we note that it is being presented for the first time
on appeal. However, given that the proper resolution is beyond any doubt, we exercise our discretion and consider it for the purpose of elucidating our further comments on the proper construction of the term "material object." L.E.A. Dynatech v. Allina, 49 F.3d 1527, 1531, 33 U.S.P.Q.2D (BNA) 1839, 1843 (allowing an appellate court to consider an issue not presented below if "the proper resolution is beyond any doubt").

A material object cannot be the information itself, as IGE now argues. Examining first the claim language, claim 1, for example, requires that the information be reproduced in a material object. See Freeny patent, col. 28, ll. 22-23 (preamble to claim 1) and 44-45 (step four of claim 1). If the information itself is the material object, as IGE argues, then claim 1 would require the information to be reproduced in itself. Such a construction is illogical and does not accord with the plain import of the claim language. See White v. Dunbar, 119 U.S. 47, 52, 30 L. Ed. 303, 7 S. Ct. 72 (1886) ("It is unjust to the public, as well as an evasion of the law, to construe [a claim] in a manner different from the plain import of its terms. This has been so often expressed in the opinions of this court that it is unnecessary to pursue the subject further."); Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572, 1579, 40 U.S.P.Q.2D (BNA) 1019, 1024 (Fed. Cir. 1996) (rejecting a proffered construction because "the plain meaning of the claim [would] not bear [such] a reading"); cf. Conopco, Inc. v. May Dep't Stores Co., 46 F.3d 1556, 1562, 32 U.S.P.Q.2D (BNA) 1225, 1228 (Fed. Cir. 1994) (noting that "a finding that the accused process literally infringed did not . . . eviscerate the plain meaning of the [relevant] term").

Despite the plain language of the claims, we turn to the specification to discern whether IGE attributed a different meaning to the term material object. See Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2D (BNA) at 1577 ("It is always necessary to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning."). Examining the specification, it is clear that even the broadest definition of material object in the specification requires that a material object be a "medium or device in which information can be embodied or fixed." Freeny patent, col. 4, ll. 36-38. Thus, IGE's argument that the reproduced information itself constitutes the material object is not only illogical, but unsupported in the specification as well.

2.

The district court further held that a material object must be: (a) separate and distinct from the IMM, (b) removed from the IMM after purchase, and (c) intended for use away from the point of sale location. See Interactive Gift Express, 47 U.S.P.Q.2D (BNA) at 1810. IGE argues that neither the claims nor the specification requires that a material object be separate and distinct from the IMM or intended for use at a location other than the point of sale location, and that these limitations were improperly read into the claims from the specification. The appellees respond that the district court's construction is supported by the specification. We agree with the district court on these three limitations, with one variation regarding point (c) above. On that point, we find that the material object could be intended for use at the point of sale location as long as it is on a device separate from the IMM.

Beginning with the claim language, we note that the preamble of claim 1, for example, describes a method in which IMMs are located at point of sale locations and in which information is reproduced in material objects utilizing the IMMs. See Freeny patent, col. 28, ll. 22-24. This language could be read to suggest that the material objects, which receive the reproduced information, are not part of the IMM and are intended to be purchased and removed from both the IMM and the point of sale location, but that reading is not clear from the claim itself. The claim later describes reproducing the information in a material object, but again there is no clear indication that the material object is or is not a separate and distinct item that is to be removed from the IMM after purchase and used on another device. See id. at col. 28, ll. 42-45. Thus, we look to the specification for further guidance.

The Freeny patent envisions and discloses only material objects that are separate from the IMM and that can be purchased by the consumer and taken away from the IMM. See, e.g., Freeny patent, col. 13, ll. 25-48 (retail store embodiment), cols. 26-27 (vending machine embodiment). The emphasis of the specification on distribution and sale consistently reveals that the material objects are intended to be separate from the IMM, removed from the IMM, and used apart from the IMM. See, e.g., Freeny patent, col. 4, ll. 13-18 ("The system of the present invention solves the problems associated with manufacturing, inventory, configuration distribution and collection . . . and permits sale of material objects embodying information in a more efficient, economical and profitable manner."). These three conditions, namely, that a material object be separate and distinct from the IMM, removed from the IMM after purchase, and used apart from the IMM, are fundamental to the meaning of a material object as clearly and consistently specified in the patent description. See, e.g., Freeny patent, col. 4, ll. 36-59; col. 5, ll. 47-50; col. 13, ll. 36-44; col. 26, ll. 28-34.
IGE contends that "material object" should be construed so broadly as to include a hard disk that is internal to a personal computer. Although the specification describes numerous material objects, a hard disk, internal or otherwise, is never mentioned as a possibility. In fact, where a hard disk is discussed, it is in relation to the implementation of particular aspects of the IMM or the ICM and not as an example of a material object. See id. at col. 22, ll. 6-34. Any construction of the expression "material object" which encompasses a hard disk is not only not envisioned anywhere in the specification but is also inconsistent with the definition of a point of sale location asserted by IGE before the district court. Specifically, a consumer would not go to a point of sale location to purchase an internal hard disk embodying predetermined or preselected information. See id. at col. 5, ll. 47-50.

3.

The district court also held that a material object "must be offered for sale independently from the information that may be reproduced onto the material object." Interactive Gift Express, 47 U.S.P.Q.2D (BNA) at 1810. The district court applied this same limitation to a point of sale location. For the reasons discussed earlier with respect to a point of sale location, we again disagree with the district court's reading of this condition into the claims.

4.

Accordingly, we construe a material object to be a tangible medium or device in which information can be embodied, fixed, or stored, other than temporarily, and from which the information embodied therein can be perceived, reproduced, used or otherwise communicated, either directly or with the aid of another machine or device. A material object must be offered for sale, and be purchasable, at point of sale locations where at least one IMM is located. Further, a material object must be separate and distinct from the IMM, removed from the IMM after purchase, and intended for use on a device separate from the IMM either at the point of sale location or elsewhere. "Material object" does not encompass the hard disk component of a home personal computer. Finally, a material object need not be offered for sale independently from the information that may be reproduced onto the material object, that is, as a blank.

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4. "layer having material release means for release of an at least one treating material in a directional manner" 2 (claim 1)

Both parties agree that this limitation is a means-plus-function limitation. Plaintiff argues that the recited function is "to release a drug preferentially toward the damaged tissue when the layer is placed adjacent to damaged tissue" and that the corresponding structure(s) in the specification is/are "various structures performing the claimed function, including chemical bonds and linkages such as a hydrophobic layer and a hydrophobic drug."

The defendant argues that the recited function is "the release of an at least one treating material in a directional manner from the first major surface when said first major surface of the layer has been placed facing the damaged tissue" and that the recited structure(s) in the specification is/are "the previously described layer (which as manufactured, has pores smaller than an at least one treating material such that the layer is impermeable to that treating material), wherein that treating material is initially affixed to the first major surface."

The court will first address the recited function. The parties disagree about the meaning of "directional." The specification supports construing "directional" to mean toward the damaged tissue. In the Background of the Invention, the patentee states that "the invention can be modified such that a treating material, when affixed to a major surface of the minimally-porous sheet, can be directed preferentially to the site of the injury." 1:24-27. Further, at col. 9, the patent states that "healing
macromolecules can be contained at the site of the injury, and medicine can be applied directly and preferentially to an injured wall to promote healing." 9:20-23. Additionally, the patent supports "administering antibiotics in a directional manner . . . at the site that they are needed most." 9:36-37; see generally 9:33-44.

Defining "directional" to mean "toward the damaged tissue" renders the term synonymous with "unidirectional," a term used in claims 8 and 15 when the sole direction is toward the damaged tissue. The prosecution history, however, supports this view. The patentee overcame the Scott reference by telling the examiner that the invention disclosed in the '760 patent was "directional" delivery, whereas Scott disclosed 'multidirectional' delivery. See 9/15/96 amendment at 5. In doing this, the patentee thus disclaimed "multidirectional" delivery in the application process.

Turning to the question of structure, the plaintiff argues that the corresponding structure includes chemical bonds or linkages. In support, the plaintiff correctly notes that the specification supports this argument. See e.g., 15:6-20, 22:4-17, and 14:58-15:5. For example, chemical bonds are clearly linked to the recited function in the specification at col. 15, ll. 6-20:

This device can be manufactured with several different medicines, each with their own particular release bond. Remarkably, one can implant the device of this invention such that one medicine is released by enzymes from Neutrophils (the first inflammatory cells to arrive), a second medicine released by enzymes from fibroblasts (cells that arrive later), and a third medicine which can be released only by osteoblasts (cells arriving even later). Although I have disclosed the implementation of multiple medicines in my application for the Malleable Fracture Stabilization Device with Micropores, the surprising specificity of medicine release provided by the chemical bond is entirely new and unexpected. The above-described feature of specific drug release is impossible using the prior art, and it represents a major advance in fracture treatment.

15:6-20

Elsewhere, the description states:

The rate of healing can be further accelerated by the attachment of a treating material, either mechanically or by chemical bond, to the inner surface of the device. The method of medicine release by chemical bond is also a method of highly significant improvement over the prior art. Prior art references all rely on the efflux of treating materials from micropores to deliver medicine. The ability to release medicine according to a rate constant, rather than relying on random efflux of molecules from various sized micropores, provide a surprising consistency to drug delivery not before seen in the art. Moreover, the chemical coupling of medicine and device provides for unprecedented specificity of release. The unexpected ability to be able to link medicine release with the specific enzymatic activity of healing cells is a highly significant improvement over the prior art.

22:4-17

Accordingly, the court construes the recited function as "releasing a treating material toward the damaged tissue." Because the patentee used a means-plus-function limitation, the patentee is limited to the structure clearly linked or associated with the claimed function. The court identifies the corresponding structure in the specification that is clearly linked to the claimed function to be chemical bonds and linkages. The court rejects the defendant's proposed structure because, inter alia, it recites limitations found elsewhere in the claim.

a. Mating Surfaces

The first term to be interpreted is "mating surface." The phrase appears in independent Claims 1, 7, and 8, and dependent Claim 5 (which depends from Claim 1) of the '644 Patent, and the phrase appears in independent Claims 1, 10, and 14 of the '884 Patent.

Claims 1 and 5 of the '644 Patent provide representative uses of "mating surface" in the '644 Patent. Claim 1 of the '644
The Court adopts Defendants' first proposed definition of "mating surface" as "those surfaces of the cartridge which fit with or mount to the manifold." Defendants' second proposed definition and Plaintiffs' proposed definition of "mating surface" include only mating surfaces of the two-stage cylindrical recess. Both definitions fail to include the "substantially planar mating surface" in Claim 5 of the '644 Patent. Although Plaintiffs have not asserted Claim 5, courts "look to the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention." Vitronics, 90 F.3d at 1582. Defendants' first proposed definition of "mating surface" encompasses the "substantially planar mating surface" in Claim 5 of the '644 Patent, as well as the mating surfaces presented by the first and second cylindrical stages of the two-stage recess. Additionally, Defendants' first proposed definition of "mating surface" is more useful than Plaintiffs' proposed definition because Defendants' definition defines the word "mate" as "to fit with or mount to." This definition of "mate" is consistent with the use of the term in the '644 Patent, and it is consistent with the plain and ordinary meaning of the term. See Anchor Wall Sys. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1309 (Fed. Cir. 2003) (noting that ordinary meaning of word "mate" is "to join or fit together"). Plaintiffs' proposed definition is circular because it fails to define "mate."
first and second meanders defining a plurality of enclosed spaces.

('120 patent, col. 7, Ins. 13-26)

The court construed disputed terms of the '120 patent as follows:

"Meander." A periodic or repeating pattern of structural elements oriented about a center line. "First meanders" and "second meanders" identify and differentiate two different patterns.

(D.I. 256)

A. "Meander" or "Meander Pattern," "First Meander" or "First Meander Pattern," "Second Meander" or "Second Meander Pattern"

The meander terms appear in claims: 13, 16, 27, and 28 of the '120 Patent; and 1, 2-15, and 17 of the '982 Patent. 63 Medinol contends that "meander" or "meander pattern" should be defined as "a periodic or repeating pattern about a center line," and that first and second meanders "identify and differentiate two different patterns." 64 Guidant (1) defines "first meander" as "[a] periodic sinusoidal pattern that is uniformly distributed about a center line and extends circumferentially [equivalent to vertically in Medinol's patent figures] around a stent" 65 and (2) finds "second meander" to be indefinite. 66 The parties agree that there is no customary meaning for these terms and that Medinol, in using them, has acted as its own lexicographer. 67 Accordingly, the Court looks to the patent specification and file history for guidance.

--- Footnotes ---

63 See '120 Patent, col. 7, ll. 16-17, 19, 21-25, 41-42, col. 8, ll. 45-51; '982 Patent, col. 6, ll. 32-33, 35-36, 37, 40-43, 45-48.

64 Pl. Mem. at 13. In the Claim Chart, Medinol words this slightly differently, equating "meander" with "[a] periodic or repeating pattern of structural elements oriented about a center line" and first and second meanders that "identify and differentiate two different patterns." Claim Chart at 4.

65 Guidant's Memorandum of Law on Claim Construction (filed under seal) ("Def. Mem.") at 12.

66 See id. at 14; see also 35 U.S.C. § 112, ¶ 2. Guidant adds that "to the extent that this term can be construed . . . it should be construed as a periodic pattern that is uniformly distributed about a center line from one longitudinal end of the cell to the other." See Claim Chart at 4.

67 See Pl. Mem. at 13 ("For these terms, the patentees acted as their own lexicographer and clearly set forth a different definition than the plain meaning.") (quotation marks and citation omitted); Def. Mem. at 13 ("It cannot be disputed that the term 'meander' has no ordinary meaning in stent design."); see also Tr. at 43 (statement of Dorothy Auth, counsel for Medinol).

--- End Footnotes ---

The specification for the '303 Patent provides that "the term 'meander pattern' is taken herein to describe a periodic pattern about [a] center line and 'orthogonal meander patterns' are patterns whose center lines are orthogonal to each other." 68 The summary of the invention explains:

The stent of the present invention is formed of a tube . . . which has first and second meander patterns having axes extending in first and second directions wherein the second meander patterns are intertwined with the first meander patterns. The first and second directions can be orthogonal to each other. 69

In the description of the preferred embodiments, it is further explained that "the present invention encompasses all stents
manufactured with a pattern formed of two meander patterns, orthogonal or otherwise." 70 Accordingly, while the first and second meanders can be orthogonal to one another, the patentee also contemplates that the meander patterns could be "otherwise" oriented. The inclusion in the patent specification of a non-orthogonal arrangement of the first and second meander patterns forecloses Guidant's suggestion that circumferential and longitudinal directions be assigned to the meanders. 71

Moreover, to so limit the meanders would render some of the claims redundant, violating the canon of "claim differentiation." Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 972 (Fed. Cir. 1999). This principle is not a "rigid rule" and is "ultimately based on the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope [and] normally means that the limitations stated in dependent claims are not to be read into the independent claim from which they depend." Id.

For example, claim 1 of the '982 Patent describes:

1. An expandable stent for supporting a vessel, wherein in the expanded and deployed state, the stent consists of:

(a) first meander patterns having loops, the first meander patterns being longitudinally spaced from each other and having axes extending in a first direction; and

(b) second meander patterns having loops, the second meander patterns having axes extending in a second direction, different than the first direction . . .

[(c)-(e) omitted]

'982 Patent, col. 6, ll. 29-36. Claim 3 asserts a "stent according to claim 2 and wherein said first direction extends in a circumferential direction." Id. col. 6, ll. 51-52. Claim 4 discloses a "stent according to claim 3, wherein the second direction extends in a longitudinal direction." Id. col. 6, ll. 53-54. To ascribe circumferential and longitudinal directions to the first and second meanders would render the words "circumferential" and "longitudinal" in claims 3 and 4 irrelevant.

However, the written description of the patent clearly provides that the first meander is sinusoidal about a center line. The written description states that "meander pattern 11 is a vertical sinusoid having a vertical center line 9." 72 Accordingly, the term "first meander" is construed as follows: a periodic sinusoidal pattern about a center line. 73 The phrase "second meander" is not indefinite. Rather, it is defined as a periodic pattern about a center line oriented in a direction different from the axis of the first meanders. 74

Guidant would also include the phrase "uniformly distributed" in the definition of a first meander, arguing that the ordinary meaning of "center line" is a "real or imaginary line that is equidistant from the surface or sides of something." Webster's Ninth New Collegiate Dictionary (1991), cited in Guidant's Markman Hearing Slide Presentation at 12. Thus, the phrase "about a center line" requires that the meander pattern be uniformly distributed about the line. But the meaning of "uniformly distributed" is adequately captured by the words "center line." To use both "uniformly distributed" and "center line" would be needlessly redundant.
III

The district court held that the "battery means" and "lamp means" limitations of claim 1 are "means" limitations that are subject to 35 U.S.C. § 112, para. 6 (1994). That was error. Paragraph six states:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.


Here, the limitations in issue recite structure - battery and lamp - and not functions. A battery and a lamp are not functions, and the addition of the word "means" does not convert the structure to a means or a step for performing a specific function. Consequently, the limitations fail the test of § 112, para. 6, and must be construed as ordinary limitations. The district court thus erred in thinking the limitations to be governed by § 112, para. 6.

That error, however, is harmless. The "battery means" and "lamp means" limitations, when construed in light of the specification, refer to a light bulb powered by a battery (‘229 patent, col. 1, lines 20-24, 61-62). As the district court properly found, the accused products use a chemiluminescent light instead. A chemiluminescent light does not require a battery to operate. The chemiluminescent light in the accused products results from a chemical reaction between chemical materials (chemiluminescent glow sticks and glow buttons) that generates light for a limited time. No electrical current is generated. On the other hand, the patent claims a lamp that is powered by an electrical current generated by the battery. Thus, the battery means and lamp means limitations are not met, and the accused products do not infringe the patent literally.

Neither is there infringement under the doctrine of equivalents. To prove infringement under the doctrine of equivalents, the patentee must show that the accused devices perform (1) substantially the same function, (2) in substantially the same way, and (3) to achieve substantially the same result, as the claimed invention. London v. Carson Pirie Scott & Co., 946 F.2d 1534, 1538, 20 U.S.P.Q.2D (BNA) 1456, 1458 (Fed. Cir. 1991).

Here, the claimed invention and the accused products generate the light in very different ways with different results. Generating light through chemiluminescence generally makes the saucer lighter because the battery is not needed. Also, no mechanical connections between the lamp and the battery are necessary, making it a sturdier construction. However, once the chemical reaction starts, chemiluminescence cannot be stopped. In a battery-operated lamp, on the other hand, a simple switch may be employed to turn off the lamp light (see ‘229 patent, col. 2, lines 6-11). Accordingly, the district court did not err in holding noninfringement under the doctrine of equivalents with respect to the battery means and lamp means limitations.

2) Product Coating Zones

We next turn to CMS's contention that the district court erred in concluding that the claimed "means defining a plurality of separate product coating zones" includes fully perforate reels. CMS raises this issue as another ground for affirming the district court's judgment of noninfringement. CMS argues that § 112, P 6 applies to the "product coating zones" limitation.
because there is no structure recited for performing the claimed function of "defining." CMS also argues that the only embodiment disclosed in the specification has a reel with alternating perforate and imperforate sections, and that the claimed "product coating zones" are limited to imperforate sections. Wenger responds that § 112, P 6 does not apply to the "product coating zones" limitation because there is no function that corresponds to the word "means." Wenger alternatively argues that there is sufficiently definite structure recited for performing the function of "defining." Wenger also asserts that the specification discloses fully perforate reels, and that the "product coating zones" limitation should not be limited to the preferred embodiment.

We conclude that the district court did not err in construing the "product coating zones" limitation. The court concluded that the "product coating zones" limitation was not subject to § 112, P 6 because there is no function recited that corresponds to the word "means." The court further concluded that, even if there was a corresponding function, the claim recited sufficiently definite structure to fall outside of § 112, P 6. Wenger I at 8-9.

Claim 1 reads in relevant part as follows:

1. An apparatus for coating and drying a food product comprising:

   . . .

   means defining a plurality of separate product coating zones longitudinally spaced along said reel, each of said zones including at least one spray nozzle directed toward said sidewall for pressurized spraying of a coating on the food product during passage of said food product from said inlet to said outlet.

'683 patent, col. 7, l. 24-25; col. 7, l. 45 to col. 8, l. 2 (emphasis added). Because the "product coating zones" limitation uses the word "means," there is a presumption that § 112, P 6 applies. Personalized Media, 161 F.3d at 703, 48 U.S.P.Q.2D (BNA) at 1886. However, it is unclear whether there is any function recited that corresponds to the word "means." See York Prods., Inc. v. Cent. Tractor Farm & Family, 99 F.3d 1568, 1574, 40 U.S.P.Q.2D (BNA) 1619, 1624 (Fed. Cir. 1996) ("Without an identified function, the term 'means' in this claim cannot invoke 35 U.S.C. § 112, P 6.").

CMS asserts that the function of "defining" is the function that corresponds to the word "means." Even assuming that is correct, we agree with Wenger that § 112, P 6 does not apply because the claim recites sufficiently definite structure for performing the function of "defining." See Rodime, 174 F.3d at 1302, 50 U.S.P.Q.2D (BNA) at 1434 ("Even if the claim element specifies a function, if it also recites sufficient structure or material for performing that function, § 112, P 6 does not apply."). The claim specifically recites structure including spray nozzles that are directed toward the sidewall of the reel, which "define" (i.e., establish the boundaries of) the separate product coating zones that are longitudinally spaced along the reel. We therefore conclude that the district court did not err in concluding that the "product coating zones" limitation was not subject to § 112, P 6.

CMS further argues that, even if § 112, P 6 does not apply, the claimed "product coating zones" do not include fully perforated reels, and should be limited to imperforate reel sections. According to CMS, the only embodiment disclosed in the specification is a reel with imperforate sections separated by perforate sections, with spray nozzles for coating the food product located in each of the imperforate sections. Based on this embodiment, CMS argues that the claimed "product coating zones" requires a reel with "spaced apart" imperforate sections wherein product coating takes place. We disagree. Although claims must be read in light of the specification of which they are a part, it is improper to read limitations from the written description into a claim. Tate Access Floors, Inc. v. Maxcess Techs., Inc., 222 F.3d 958, 966, 55 U.S.P.Q.2D (BNA) 1513, 1518 (Fed. Cir. 2000). While claim 1 expressly recites that the reel has "a plurality of perforations," it does not require that the reel have imperforate sections, nor does it limit the claimed "product coating zones" to such reel sections. See '683 patent, col. 7, l. 24 to col. 8, l. 2 (emphasis added). Likewise, the specification states that the claimed apparatus includes "an axially rotatable reel provided with a perforate sidewall"; it does not state that the reel must have imperforate sections, or that the "product coating zones" must be limited to such sections. Id. at col. 1, ll. 61-63 (emphasis added). Moreover, as the district court correctly noted, the references in the specification to imperforate sections and spraying zones that correspond to those sections are not limiting, as they merely describe the preferred embodiment. See Tate Access, 222 F.3d at 966, 55 U.S.P.Q.2D (BNA) at 1518 ("Although the specification may well indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than such embodiments."). We therefore agree with Wenger that the district court did not err in concluding that the "product
coating zones" limitation may be satisfied by fully perforate reels as well as reels with alternating perforate and imperforate sections.

VI. "Means defining an air collecting space"

The first issue raised by the parties, one that cuts to the core of what the '996 patent was intended to disclose, involves the claim language "means defining an air collecting space." All three Defendants assert that this language defines what is referred to as a "means-plus-function" element, and thus should trigger the claim interpretation rules of 35 U.S.C. § 112, P 6. Brita, on the other hand, argues that this claim language is not "means plus function" language and should not be construed as such. Since the resolution of this dispute will color much of our construction for this claim term, the Court must first resolve whether Section 112, P 6 should be applied.

Section 112, P 6 provides that:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112, P 6. This statutory provision thus allows a patent applicant to express a claim element as a means for performing a function without reciting any structure, material or acts in the claim's means-plus-function limitation. Valmont Industries, Inc. v. Reinke Mfg. Co., Inc., 983 F.2d 1039, 1042 (Fed. Cir. 1993). Section 112, P 6 then limits the broad language of a means-plus-function element to equivalents of the structures, materials or acts disclosed for that element in the specification. Id.; see also Fonar Corp. v. General Elec. Co., 107 F.3d 1543, 1551 (Fed. Cir.), cert. denied, 139 L. Ed. 2d 192, 118 S. Ct. 266 (1997). In addition to structural equivalence, the means described in the specification must also perform the exact function recited in the claim that corresponds to the means. Valmont, 983 F.2d at 1042; Micro Chemical, Inc. v. Great Plains Chemical Co., Inc., 103 F.3d 1538, 1547 (Fed. Cir.), cert. denied 138 L. Ed. 2d 1018, 117 S. Ct. 2516 (1997).

The import of having claim language construed as a means-plus-function element has been summarized as follows:

Section 112 thus permits means-plus-function language in a combination claim, but with a "string attached." The "attached string" limits the applicant to the structure, material, or acts in the specification or their equivalents. Indeed the section operates more like the reverse doctrine of equivalents because it restricts the coverage of literal claim language.

Valmont, 983 F.2d at 1042 (citing Johnston v. IV AC Corp., 885 F.2d 1574, 1580 (Fed. Cir. 1989)). Seeking a broad construction of the '996 patent, Brita argues against application of Section 112, P 6 and its limitation of the claim language to only those structures disclosed in the specification. The Defendants, of course, want the embodiments disclosed in the specification to strictly define the bounds of the patent claims.

The Federal Circuit has repeatedly opined that use of the word "means" in a claim element "triggers a presumption that the inventor used this term advisedly to invoke the statutory mandates for means-plus-function clauses." York Prods. Inc. v. Central Tractor Farm & Family Center, 99 F.3d 1568, 1574 (Fed. Cir. 1996); see also Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427 (Fed. Cir. 1997). Because the '996 patent does employ the word "means", Brita faces an uphill battle to avoid mean-plus-function treatment. This hill, however, is not insurmountable. The presumption for means-plus-function treatment can be rebutted where a claim, though using the word "means," specifies no corresponding function for the "means" to perform. See, e.g., York Prods., 99 F.3d at 1574 (construing "means" without reference to Section 112, P 6).

Alternatively, and more relevant to this case, a claim which recites "means," but then goes on to elaborate sufficient structure, material or acts within the claim itself (without referring to the specification) to perform the recited function, does not warrant means-plus-function analysis. See, e.g., Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531-32 (Fed. Cir. 1996). Thus, though certainly indicative of a means-plus-function element, "mere incantation" of the word "means" is not dispositive that an element deserves such treatment. York Prods., 99 F.3d at 1574.

Brita asserts that the "means" language in the '996 patent is like those cases in which means-plus-function treatment has
been found inappropriate. Rather than expressing a means "for performing a specified function without recital of structure" as required by the statute, Brita contends that the claim describes a physical structure defining "the air collecting space." The claim element goes on to specify that this space must be "located in at least a portion of the filter bottom" and "extend[] upwardly at least partially towards the side wall and to the opening in said sleeve." Since the structure which defines the "air collecting space" can be discerned from this subsequent claim language itself, Brita argues that it should not be treated as a means-plus-function element.

The Defendants note, however, that the inclusion of some structure in a "means" claim does not preclude the applicability of Section 112, P 6. See Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1536 (Fed. Cir. 1991). The phrases cited by Brita as purported examples of structural language are, according to the Defendants, merely "the place[] where the function occurs" - limitations which do not serve to remove an otherwise covered claim from means-plus-function treatment. See O. I. Corp. v. Tekmar Co., Inc., 115 F.3d 1576, 1581 (Fed. Cir. 1997) (court determined that the word "passage" should not be interpreted under § 112 P 6 but remainder of clause "means for passing the analyte slug through the passage" should receive means-plus-function treatment). Thus, the Defendants argue that the claim language following the clause "means defining an air collecting space" should not preclude this clause from being interpreted as a means-plus-function element.

The use of the words "means defining an air collecting space" does send mixed signals as to its proper construction. On the one hand, the drafter did not employ the prototypical language -- "means for [performing a function]" -- which normally epitomizes such claims; indeed, Brita acknowledges that an element claiming "means for collecting air" would be a means-plus-function element. The claim language also goes on to describe some spatial limitations on this "means" claim, though it is debatable whether these limitations are structural or merely provide location and direction information. On the other hand, however, the Court must start with the presumption that the use of the word "means" should trigger application of Section 112, P 6. Furthermore, the language "means defining" was added to the claim to satisfy an objection of the patent examiner, further indication that this term should be given means-plus-function treatment.

Though a close call, the Court believes that "means defining an air collecting space" should be construed as a mean-plus-function element. In our opinion, Brita has not overcome the presumption which use of the term "means" imposes upon it. The language used is admittedly not prototypical, but it does adequately describe a means for performing the specified function of collecting air as contemplated by Section 112, P 6. The limitations which follow the "means" language in the claim recite no more than limited structure, such that reference to the specification is needed in order to sufficiently define the "means defining an air collecting space" limitation. At bottom, the patentee's use of the loaded term "means," without clearly intending that it not define a way of performing a specified function, compels our conclusion. Thus, the Court will construe the clause "means defining an air collecting space" as a mean-plus-function element under Section 112, P 6.

Having concluded that Section 112, P 6 applies, we must next consider how the claim language must be construed in light of this statutory section. As a means-plus-function element, the claim language "means defining an air collecting space" is restricted to (1) the identical function described in the specification, and (2) the specific corresponding structure described in the specification that performs the function. See Valmont, 983 F.2d at 1042. The parties dispute the scope of both the function and structure disclosed in the specification. Thus, the Court must delve into the specification to determine the proper construction of this clause.

The parties first dispute what function this mean-plus-function language actually claims. The Defendants contend that the specification makes clear that the "means defining an air collecting space" must perform the function of fixing the limits of a space that gathers or directs air bubbles from the different areas of the filter bottom and then exhausts them through the chimney section and out the sleeve opening. Brita argues that the function of this claim is much more mundane -- that the function is not to collect air but simply to define a space. According to Brita, the "air collecting space" is just a space, and thus there is no requirement that the space gather and exhaust air from the filter bottom. It follows from Brita's assertion that, if this claim merely defines a space, the presence of air or gas bubbles is unnecessary to the function of the patent.

The Court agrees with the Defendants that this means-plus-function element claims the function of gathering and exhausting air bubbles entrained at the filter bottom. Defining a space is not a function; defining a space which collects air and then exhausts it out a chimney is a function. Indeed, the specification makes clear that the whole purpose of this claimed invention is to collect and vent air bubbles that would otherwise impede the flow of water from the filter bottom. For Brita to argue that the function of this means-plus-function element is to merely define a space defies common sense. Furthermore, the Court believes that the term "air collecting space" connotes more than merely a defined path for receiving
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

air bubbles (as Brita would have us find). Instead, we find this claim language to require the presence of air bubbles, such
that these bubbles are gathered by the "air collecting space" and removed via the chimney-portion of this space. Brita's
assertion that this is merely a passive space, which just may so happen receive air bubbles and let them escape, is without
merit.

The Court must also look to the specification to determine the corresponding structure for this mean-plus-function claim. As
for the structural elements disclosed, the Defendants contend that the "air collecting space" must have not only a vertical
component, but also a horizontal section extending along the filter bottom. Signature would seem to further argue that this
horizontal component must also match the cross-shaped, half-tube air channel system specifically described in the
specification. To the contrary, Brita argues that the specification discloses embodiments both with and without a horizontal
component, and that therefore this component should not be read into the claim language. Thus, the Court must decide
whether the "air collecting space" necessarily includes a horizontal portion along the filter bottom.

There is no dispute that the preferred embodiment of the claimed invention does include a horizontal component. Brita
points out, however, that references to a preferred embodiment are generally not to be construed as claim limitations.
Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988), cert. denied, 490 U.S. 1068, 104 L. Ed. 2d
634, 109 S. Ct. 2069 (1989); see also Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1303 (Fed. Cir. 1997). The Court agrees
with this general proposition. Nevertheless, because we are dealing with a mean-plus-function element, the "air collecting
space" is limited to the corresponding structure disclosed in the specification and its structural equivalents. Valmont Indus.,
983 F.2d at 1042. Thus, although our construction may not be limited by the preferred embodiment of the invention, we are
bound to those structures the specification discloses for accomplishing the function of this claim.

Brita argues that there is an embodiment in the specification which does not contain a horizontal component. Specifically,
Brita refers to the first embodiment discussed in the specification which describes "the filter bottom has an air collecting
space which is extended upwardly at least partially towards the side wall." Spec., col. 2, lines 4-6. Comparing this
embodiment to others disclosed in the specification, Brita argues that this language dictates that the air collecting space may
be comprised of only a vertical chimney portion without an accompanying horizontal section along the filter bottom. Thus,
according to Brita, the "corresponding structure" includes embodiments both with and without horizontal sections.

A more thorough reading of the specification reveals, however, that Brita's purported example of a vertical-only
embodiment actually does include a horizontal section. In describing this same embodiment in the same paragraph that Brita
cites, the specification states that "it is sufficient for only an e.g. tubular part of the region of the filter bottom to be extended
radially outwardly to the size [sic] and then towards the filter cover." Spec., col. 2, lines 16-19. Though not entirely clear,
the Court reads this sentence to require the air collecting space to extend (1) in a horizontal direction to the side wall, and
then (2) vertically towards the filter cover. The use of the words "and then towards" between these directions indicates that
some kind of discontinuity or change in direction is implied, and thus it is incongruous for Brita to assert that this
embodiment extends only in a vertical direction. Therefore, contrary to Brita's contentions, the Court finds that all of the
embodiments in the specification disclose "air collecting spaces" with both horizontal and vertical components.

In summary, the Court finds that the claim term "means defining an air collecting space" is a means-plus-function element
and thus must be construed under Section 112, P 6. The function disclosed for this element is a space which gathers and then
removes air bubbles from the filter bottom. The corresponding structure for this element requires a space with both a
vertical and horizontal component, though these components are not restricted by the precise structures disclosed by the
preferred embodiment.

1. "means defining an air collecting space"

The first claim construction issue concerns the "means defining an air collecting space" limitation. The district court
determined that this claim language was in means plus function form and should be governed by 35 U.S.C. § 112, P 6. We
disagree.

The use of the term "means" in a functional claim limitation raises the presumption that the limitation is governed by 35
The claim language itself structurally defines the air collecting space as a component of the insert—"an insert having approximately cylindrical sidewalls, a filter cover and a filter bottom, . . . with means defining an air collecting space." The claim further recites that the air collecting space is "located in at least a portion of the filter bottom" and "extends at least partially towards the side wall and to the opening in said sleeve." In other words, the air collecting space is a void that is formed as part of the insert, and is located at the bottom of the insert (the filter bottom), and extends upwardly along the side walls of the insert and to the opening of the sleeve in which the insert sits. Because this structural recitation sufficiently performs the function of "defining an air collecting space," 35 U.S.C. § 112 treatment is not proper.

Having determined that this limitation is not governed by 35 U.S.C. § 112, P 6, we must construe it in the usual fashion. As discussed above, the claim language describes the air collecting space as a void which is structurally defined as part of the insert, formed at the bottom of the insert and extending upwardly along the side walls and to the opening in the sleeve. This understanding of the claim language is also supported by the written description and figures included in the specification. Throughout the written description, the patentee describes the air collecting space as half-tubes and tunnels formed in the bottom and the side walls of the insert. See '996 patent, col. 2, ll. 27-30, ll. 42-48; col. 3, ll. 23-25; col. 4, ll. 52-65. This is also the arrangement shown in the figures of the '996 patent. See id. at Figure 1. Thus, while not limited to the specific embodiments disclosed in the patent, the claim requires the "air collecting space" to be formed by a void in the insert located at the filter bottom and extending upwardly along the side walls and to the opening in the sleeve.

Brita, on the other hand, contends that the air collecting space is all air space between the insert and sleeve, including any "ambient" air. Brita's contention is squarely contradicted by the claim language which explicitly defines the structural parameters of the air collecting space. Brita's proffered claim construction would entirely divorce the air collecting space from the structure of the insert, such that any slight gap between the sleeve and the insert would be "air collecting space." This is inconsistent with the claim language and must be rejected.

4. Means defining fluid flow passages in said manifold

The parties dispute whether "means defining fluid flow passages in said manifold" as used in claim 1 of the '935 patent is a means-plus-function limitation. The claim's use of the word "means" raises the presumption that the limitation is means-plus-function, but plaintiff contends that the claim language provides sufficient structure to overcome the presumption, placing the limitation outside the scope of § 112 P6. I disagree.

In plaintiff's view, the fluid flow passages are a structure and there cannot be a more specific structure to perform the function of defining fluid flow passages that communicate with hydraulic cylinders. However, a fluid flow passage is not a self-defining term. It is necessary to have some other structure or structures to create fluid flow passages that communicate with the hydraulic cylinder means as claimed in claim 1. Therefore, the term is properly constructed as a means-plus-function limitation.

In construing the term, it is helpful to read it in context: a manifold including means defining fluid flow passages in said manifold communicating with said hydraulic cylinder means. '935 pat., col. 6, ins. 56-58. According to the claim language the term's function is defining fluid flow passages that communicate with the hydraulic cylinder means. Defendant includes an additional function in its proposed construction. I understand defendant to contend that the function should include communicating with the solenoid valve means and being operative to selectively direct fluid to said lift hydraulic cylinder means and angle hydraulic cylinder means. Defendant is mistaken in its reading of the claim language. Although the language is somewhat muddled, it is clear that the solenoid valve means is a part of the manifold, separate from the means defining fluid flow passages. A plain reading of the claim language establishes that although a solenoid valve means is
located within the structures establishing the fluid flow passages, it is the solenoid valve means that selectively directs fluid and not the fluid flow passages.

With the claimed function defined, the next step is determining the corresponding structures. Defendant contends that the corresponding structures are all the valving, ports, flow channels and ancillary mechanisms in the manifold, as identified in Figures 3A, 3B and 4 through 7. Defendant's proposed construction includes too much. The specification states that "Figs. 3A and 3B show the actual structural relationships within the valve manifold, i.e., valves, ports and flow channels." Id., col. 5, lns. 34-36. According to the claim language, the manifold includes both a means defining fluid flow passages and a solenoid valve means. Id., col. 6, lns. 56-61. Thus, despite defendant's contention to the contrary, not everything pictured in Figures 3A or 3B is associated with the means defining fluid flow passages.

Nonetheless, many of the structures identified in Figures 3A, 3B and 4 through 7 are the only structures linked to defining fluid flow passages that communicate with hydraulic fluid cylinders. When there is only one embodiment of a structure linked or associated with a claimed function, the claimed function is limited to that embodiment of the structure and its equivalents. E.g., Cross Medical Products, Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1304 (Fed. Cir. 2005) ("because there is only one embodiment described in the specification . . . there is no basis on which to extend the limitation to cover alternative, non-disclosed structures not shown to be structurally equivalent").

Figure 3A, provided below, is an illustration of the entire manifold, which includes the structures for executing the claimed function.

[SEE FIGURE IN ORIGINAL]

Figure 6, provided below, illustrates the flow path to the right angle hydraulic cylinder 76.

[SEE FIGURE IN ORIGINAL]

The structures that define fluid flow passages that communicate with both the lift 72 and angled 74 and 76 hydraulic cylinders are those shown in Figures 3A, 3B and 4 through 7 and listed in column 5, lines 38 through 68 and column 6, lines 1 through 11 and their equivalents. For example, hydraulic conduits 167 and 169, ports 200, 202 and 204, passages 88, 94 and 100 and valves 80, 82 and 84 are clearly associated with performance of the claimed function. E.g., '935 pat., col. 5, lns. 38-60. They all play a necessary role in defining the fluid passages used to communicate with the hydraulic cylinders. E.g., id., col 5, lns. 53-60, 61-64 and 65-col. 6, ln. 1 ("fluid flows from reservoir . . . through passage . . . to pressurize cylinder 72"); "fluid returns through passage"; and "the flow path is again to the four way valve through passage . . . to pressurize cylinder 76").

Plaintiff contends that channels are the only structure necessary for performing the claimed function and that to require more would be reading limitations from the specification into the claim. Plaintiff would be correct but for the fact that the general rule against reading limitations from the specification into claims does not apply to means-plus-function limitations. A patentee's decision to use a means-plus-function limitation carries a price: "use of that convenience is limitation of the claim to the means specified in the written description and equivalents thereof." Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193, 1208 (Fed. Cir. 2002)(quoting O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1583 (Fed. Cir. 1997)). Defining fluid flow passages that communicate with hydraulic cylinders requires more than channels according to the specification. Without conduits, ports and valves, there would be a connection but no communication. Those structures are necessary for the communication aspect of the claimed function, which means that plaintiff's proposed construction is incorrect.

I conclude that "means defining fluid flow passages in said manifold" is a means plus function limitation. Its function is to define fluid flow passages that communicate with the hydraulic cylinder means. The structures clearly linked to performing that function are provided in Figures 3A, 3B and 4 through 7, which includes hydraulic conduits, ports, passages and valves.

Claim 1 of the '419 Patent
At the outset, the litigants dispute the logical way to divide claim 1 for analytical purposes. Though the precise manner of division is not necessarily essential to effective claim construction as such, convenience of organization and discussion is well served by looking at the issues in terms of these five numbered elements:

A dishwasher having an enclosure defining a washing chamber and a dish racking system mounted therein, the combination comprising:

1. a lower rack having a bottom support means including a plurality of spaced-apart generally longitudinal and lateral wire members and

2. means extending generally perpendicular to said bottom support means for defining front, rear and a first and a second side wall, said first side wall extending substantially higher than said front, rear and second side walls to define a protective barrier between a side panel of said washing chamber and various oversize articles placed adjacent said first side wall for washing;

3. rack mounting means associated with opposed side panels of said washing chamber; and an upper rack supported above said lower rack by said rack mounting means,

4. said upper rack having bottom support means including a plurality of spaced-apart generally longitudinal and lateral wire members formed to provide at least one upwardly stepped portion adjacent said first side wall of said lower rack,

5. said upper rack wire members projecting upwardly and generally perpendicular to said bottom support means for at least partially defining front, rear and side walls.

Of these, elements 2, 3 and 4 are in dispute. 12

--- Footnotes ---

12 Both sides concur that element 1 is not to be construed in means-plus-function form (see M. Mem. 10 and W. Mem.2).

--- End Footnotes ---

Element 2 Is Not Governed by Section 112 P6

Element 2 is presumptively in means-plus-function form because it employs the word "means." But because lots of structure and little or no function is recited, the element does not come within the scope of Section 112 P6. While the first side wall (a structure) is said to act as a "protective barrier" for oversized articles (its stated function), 13 the other walls are expressed in purely structural terms. Specifically, the "front, rear and a first and a second side wall" are perpendicular to the bottom support, with the "first side wall extending substantially higher" than the other walls. 14

--- Footnotes ---

13 W. Mem. 3 wrongly claims that all four walls function to form a protective barrier. As the claim language makes plain, only the higher side wall is said to perform that role.

14 Indeed, it could reasonably be argued, as M. Mem. 11 does, that structure only is recited by this claim element.

--- End Footnotes ---

W. Mem.3 attempts to transform the structure into function by stating that "the claimed function is 'defining front, rear and a first and a second side wall'" and that "defining something is not structure--it is a function." That odd notion is not only unsupported by any authority but also runs contrary to common sense, for "definition" and "structure" are practically synonyms. Regardless, complex language involving complex technology is not at issue. Claim 1 talks about four walls, one higher than the others, 15 and the element conveys to any casual reader the structure and orientation of those walls. Hence
element 2 is not in means-plus-function format.

15 In fact, as W. Mem. 4 states (including the numbers given to the four walls in the '419 Patent's illustrations), "both parties agree that the corresponding structure to this limitation is the front wall 68, back wall 70 and side walls 72 and 74."

The court first examines the claim on an element-by-element basis to determine which, if any, elements are drafted in "means-plus-function" language. Having carefully considered all of the papers submitted, including the extensive prosecution history of the '043 patent, the court first concludes that claim 4(a), detailing the "means for containing the bulk substance to be analyzed," is not subject to § 112 P 6's limitations. Claim 4(a) details sufficient definite structure so as to provide one knowledgeable in the prior art of nuclear bulk-substance analysis notice of the scope and meaning of the claim. Quite simply, the "means for containing" the bulk substance consist of an "elongated passageway," which is "at least partly surrounded by a [unspecified] neutron-reflecting substance," adapted, in an unspecified way, "to contain" the substance as it "flows through the apparatus." This structural disclosure is sufficient to support a finding that, despite the drafter's use of the word "means," this claim is not so indefinite as to require interpretation under § 112 P 6. See Cole, 102 F.3d at 531; Greenberg, 91 F.3d at 1584. Accordingly, the recited "means for containing" is limited in element (a) by structural details that clearly remove it from the purely functional form urged by defendants. Id.

The court then examines the plain claims language. In its relevant part, claim 4 contemplates an apparatus which analyzes "the composition of a bulk substance flowing through the measurement volume …" comprising "(a) means for containing the bulk substance … said means comprising an elongated passageway adapted to contain said bulk substance as it flows through said apparatus …" Simply defining the terms "passageway," "contains," and "flows" supports plaintiff's contention that these terms disclose a definite structure. In patent law, the patent drafter may act as his own lexicographer. Multiform Desiccants, Inc., 133 F.3d 1473 at 1477. "This rule of construction recognizes that the inventor may have imparted a special meaning to a term in order to convey a character or property or nuance relevant to the particular invention." Id. "Such special meaning, however, must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of invention." Id. As the patent drafter did not ascribe a technical definition to any of these terms in either the claims or specification -- and as neither party argues that any technical definition was intended -- the court attributes to them their ordinary meaning. A "passageway" is "a way that allows passage to or from a place or between two points." Webster's Third New Int'l Dict., at 1650 (1981). "Contain" is defined as, "… to have within; hold; … enclose …" (id., at 491), and "flows" is defined as, "to move with a continual change of place among the constituent particles or parts; run; stream; … designates the characteristic movement of a fluid, gentle or rapid, copious or meager, showing unbroken continuity …" (Id., at 875.) Taken together, one schooled in the prior art may read claim 4(a) and envision a tunnel-like passageway designed to hold a bulk substance, through which the bulk substance being analyzed enters the apparatus, moves or is moved, and exits the apparatus.

Moreover, both the prosecution history and the doctrine of claim differentiation support the court's construction. The prosecution history is particularly helpful. The Federal Circuit "has repeatedly stated that application of prosecution history estoppel does not necessarily limit a patentee to the literal language of the amended element -- even when an amendment has been made to overcome the prior art." Litton Sys., Inc. v. Honeywell, Inc., 140 F.3d 1449, 1998 WL 156754, *8 (Fed. Cir. 1998) citing LaBounty Mfg., Inc. v. United States Int'l Trade Comm'n, 867 F.2d 1572, 1575-76 (Fed. Cir. 1989). Rather, "the relevant inquiry is whether a competitor would reasonably believe that the applicant had surrendered the relevant subject matter" after reviewing the prosecution history of the disputed claim. Cybor Corp. v. FAS Tech., Inc., 138 F.3d 1448, 1998 WL 134028, *7 (Fed. Cir. 1998), citing Instiuniform Techs., Inc., v. Cat Contracting Inc., 99 F.3d 1098, 1107-08 (Fed. Cir. 1996). In analyzing this history, the court must bear in mind that "positions taken before the PTO may bar an
inconsistent position on claim construction under § 112 P 6." Id. (citations omitted).

The '043 patent application was a continuation of an earlier application (Ser. No. 866,488), and was pending for almost ten years prior to issue. During this time, the patent application was significantly redrafted on several occasions. In his several appeals briefs, the patentee continuously distinguished his device from those in the prior art -- identified by the PTO as Tittle (patent no. 3,053,388, issued September 11, 1962); Chope (patent no. 3,082,323, issued March 19, 1963); and Christell (patent no. 4,028,267, issued June 7, 1977). In his appeals to the Board of Patent Appeals and Interferences (following several rejections by the PTO), plaintiff argues repeatedly the prior art "did not even recognize the existence of the problem of attempting to obtain uniformity of response in analytical measurement ..." (11/18/80 Marshall App. Br., at 28.) Marshall argued he "solved this problem in a highly novel manner with his improved measurement volume 'geometry' and 'plural-source' configuration." (Id.) Following initial rejections by the Board for § 103 obviousness, the applicant (now MDH Industries) modified the application and added "new claim 39" 1 (present claim 4) "specifically directed toward the various novel features of the apparatus of the invention." The heart of the novelty as described by the applicant lay in the use of an "elongated passageway ... symmetrical in cross-section" at least partly surrounded by a "neutron-reflecting substance adapted to increase the neutron flux along the sides of the passageway," in conjunction with a plurality of neutron sources and gamma-ray detectors. (5/4/83 App. Br., at 7-8; 1/25/84 App. Br., at 25.)

1 Claim 39(a) was substantially identical to current claim 4(a) ("means for containing the bulk substance … said passageway including a neutron-reflecting substance adapted to increase the neutron flux along the sides of said passageway"), but as initially drafted included an additional recitation claiming "… which passageway is configured to exclude the bulk substance from regions of reduced measurement sensitivity and to direct it toward a region of maximum measurement sensitivity;"

In its March 25, 1986 decision the Board opined that claim 39 was not obvious in view of Tittle or Chope or the combined teachings of these two references. Ex parte J. Howard Marshall, Bd. Pat. App. Int., App. No. 596-18, at 2 (Mar. 25, 1986). However, the Board did reject independent claim 39 and its dependant claims under § 112 P 1 for containing inadequate disclosure to support certain included recitations pertaining to the functional configuration of the passageway. Once the applicant removed the offending language from 39(a), 2 the claim was approved and the patent issued in its present form. See PTO Feb. 24, 1987 Notice of Allowability.

2 Specifically, the applicant deleted the following parenthetical language and inserted the underlined language:

(a) means for containing the bulk substance to be analyzed, said means comprising an elongated passageway adapted to contain said bulk substance as it flows through said apparatus, said passageway [including] being at least partly surrounded by a neutron reflecting substance; [adapted to increase the neutron flux along the sides of said passageway, which passageway is configured to exclude the bulk substance from regions of reduced measurement sensitivity and to direct it toward a region of maximum measurement sensitivity.]

(See Applicant's 4/25/86 Amendments and Remarks, at 2, 4.)

Thus, the prosecution history supports a construction of element (a) as claiming an analytical apparatus with a symmetrical passageway designed to contain the bulk substance, at least partly surrounded by a neutron-reflecting substance. Defendants' argument that plaintiff disavowed the use of a conveyor belt to move the bulk material through the passageway so as to distinguish this claim against the prior art is unavailing, viewed in light of the entirety of the prosecution history concerning independent claim # 4. A fair and contextual reading of the applicant's appeals briefs indicates he attempted to distinguish his claims from Christell's "open conveyor belt" on the grounds that his proposed passageway was symmetrical, enclosed and partly surrounded by a neutron-reflecting substance. The means by which the bulk substances moves, or is moved,
through the apparatus is not contemplated or discussed by the applicant, nor does it appear as an element of claim 4.

Defendants' assertion that applicant surrendered all claims to the use of any type of conveyor belt is simply not supported by a fair reading of the record. Rather, the prosecution history supports plaintiff's contention that applicant was simply attempting to distinguish his apparatus from those conveyor belt-devices described in Tittle, Chope and Christell. In his final appeals brief to the Board of Patent Appeals applicant argued,

"While Applicant agrees with the Examiner and with the Board that the use of one or a plurality of sources, or one or a plurality of gamma ray detectors, is in and of itself obvious, the use of a plurality of sources and/or a plurality of detectors in conjunction with the apparatus of the invention … is clearly non-obvious. The invention as defined in the claims, when considered as a whole, is neither suggested or disclosed by either Tittle or Chope et al and would certainly not be obvious to one skilled in the art having those patents before him. Quite to the contrary, the only suggestion of such an arrangement could come only from the disclosure of the application itself."

(1/25/84 App. Br., at 27-28.) This argument was ultimately accepted by the Board. "Independent claim 27 … and independent claim 39 … each provide for the passageway 'including a neutron-reflecting substance.' Clearly, such is not shown or suggested by either Tittle or Chope or by the combined teachings of these references." Ex parte J. Howard Marshall, Bd. Pat. App. Int., App. No. 596-18, at 2 (Mar. 25, 1986). In so holding, the Board makes clear that the point of novelty of applicant's device was its use of a neutron-reflecting passageway in conjunction with the specified arrangement of sources and detectors. It therefore follows that a competitor reading the entire prosecution history could not reasonably conclude it may avoid infringing Marshall's patent by simply placing all of the Marshall apparatus's essential elements -- an elongated container, at least partly surrounded by a neutron-reflecting substance -- on a conveyor belt. Such a conclusion is simply not warranted by the prosecution history.

Finally, the doctrine of claim differentiation also supports the court's construction of claim 4(a). This venerable patent law doctrine dictates that language in one claim should not be interpreted so as to make another claim superfluous. See, e.g., Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277 (Fed. Cir. 1995). If the court were to construe element 4(a) as a means-plus-function claim as suggested by defendant -- and thereby interpret this claim as covering only the structure disclosed in the patent specification (or its equivalents) -- then the court would be hard-pressed to differentiate this claim from claim 1(a), not at issue in this suit. In drafting claim 4(a), the patentee wished to extend his patent protection to all nuclear bulk analysis devices employing elongated, symmetrical neutron-reflecting container-passageways, and did not intend to be limited only to those which are "substantially square in cross-section" as claimed in claim 1(a) and as disclosed in the specification.

The court therefore holds, without resorting to extrinsic evidence, that the plain language, specification and prosecution history of claim 4(a) adequately discloses the scope of the claim. Claim 4(a) encompasses an apparatus in which the "means for containing" the bulk substance to be analyzed includes a symmetrical "elongated passageway adapted to contain" the substance as it moves, or is moved, through the apparatus, said passageway "being at least partly surrounded by a neutron-reflecting substance."

6. Chad's claims can cover a system whose clinching pin goes down and up before it has finished bending all the leads to be bent on a particular component.

(a) The terminology in dispute.

The parties agree that, while the language is slightly different in different claims, interpretation of claim 1 will be dispositive of the dispute as to all claims. The pertinent part of claim 1 reads as follows:

means for driving said clinching element through a programmably determined path of travel substantially within a plane adjacent said lower surface in response to control signals to contact and bend one or more leads of said component adjacent said lower surface of said board,
ATS argues that the path of the clinch pin cannot go up and down because its path would then not be "substantially within a plane adjacent [the] lower surface" of the circuit board. Chad agrees that the pin has to stay in the same plane while it bends a lead, but Chad contends that the claim language does not exclude operations where the pin goes down and back up between leads. The claim language itself does not answer the question. Chad urges, correctly, that it can be read to mean that the path is in one plane only while the pin bends one lead. ATS urges that the language "one or more" means the pin bends all the leads on a component while it is in the plane adjacent the lower surface—whether there is only one lead or more than one.

(b) Reference to the specification supports Chad's view. 5

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5 Chad devotes a good deal of its arguments both in its pre-hearing brief and in its post-hearing brief challenging ATS's patent expert for taking inconsistent positions regarding the claim interpretation at different stages of the dispute. ATS devotes an equal amount of argument, with accompanying declarations, attempting to reconcile the expert's positions. The Court agrees with Chad that the attempted reconciliation is strained and not credible; however, the Court also agrees with ATS that it doesn't matter. The expert was an expert on law, not one skilled in the art of circuit board manufacture. Accordingly, his opinions are accepted merely as extensions of litigation counsel's arguments, not as evidence of how one skilled in the art would interpret the claims in issue. If it were probative evidence, the earlier admissions would indeed be indicative that those skilled in the art would favor Chad's interpretation of the claims.

--- End Footnotes ---

The specification refers to the invention as being able to adapt the system to the clinching requirements for "any type of inserted component." (See, patent at col. 14, 1. 14-16.) The adaptability is attributed to being able to program the path the clinching pin takes to handle different components (which is consistent with the general theme of the entire system—not just the clincher—that it can adapt to different sizes and types of components). (See, patent at col. 13, 1. 43-47.)

The programming operation itself shows that it was intended that a clinch path was contemplated to constitute the route of travel during the bending of a single lead, not all the leads on a component. As described in the specification, omitting the references to drawings and unnecessary verbiage, the procedure reads in substance as follows:

In a typical manual teaching sequence, an identifying number for the component to be clinched is entered into the controller via the keyboard. Then the operator … moves the clinch element to the appropriate start position required to initiate the desired clinch path. The start position … is then stored in the memory of the controller.

…. 

If, during the next move, it is desired to clinch a lead of the component, the operator activates the "clinch up" control…. The appropriate movement controls … are then activated to execute the desired clinch path. If the leads are not to be clinched during this sequence of moves, the "clinch up" switch is not activated.

In the next step of the … sequence, the final position of the clinch head and clinch element (up or down) are stored in the controller memory.

The preceding two steps are then repeated to perform all desired clinching movements for the particular component. The entire sequence is then repeated for each of the components on the board requiring clinching.

(See, patent at col. 19, 1. 6-32.)

While the interpretation of the specification urged by ATS is far from frivolous, it appears to the Court that the reference to a starting position and a final position for the bending of a single lead, repeated to perform all desired movements for each particular component, is indicative that it was contemplated that the precise meaning of a clinching path was contemplated.
as the route taken for bending a single lead, not all the leads on a component.

Even assuming the claims read in the light of the specification still were ambiguous, the ambiguity would be resolved in this case in favor of Chad by resort to extrinsic evidence of how those skilled in the art would interpret the patent language. The Court's interpretation of the disputed language is consistent with the declaration of the inventor that:

The definition of the clinch as disclosed in the patent is the act of running into and bending the lead, not moving the pin up to the board and dropping away from the board. ... The actual clinching takes place when the pin runs into a lead and bends it over. Everything before and after that is not clinching, it's just movement of the system in preparation for the clinching action.

(declaration of Gregory Holcomb filed February 8, 1996, p. 20-21.)

Although the inventor's declaration is entitled to no special deference, it does constitute evidence of what those skilled in the art would understand from reading the claims in issue. In this case, it, taken together with the testimony at the Markman hearing and all the other evidence and information presented, is persuasive that this Court's interpretation of the claims is correct. 6

ATS objects to the testimony of Holcomb as expert testimony from a witness who was not timely identified as an expert witness pursuant to local and federal rules. The Court agrees that Holcomb's testimony as to what terms as "clinching" would mean in the context of his invention constitutes expert testimony. Treated as a motion in limine to exclude the testimony at trial, ATS's objection may be well-founded; however, it is not an issue for the Markman hearing. This Court is required to make its own determination of the issues of law, including claim interpretation, and the Court instructed the parties to call all witnesses who would be useful for that purpose. Accordingly, for purposes of the Markman hearing only, ATS's objection is overruled.

Chad also argues generally that this Court should not consider the prior art cited by the examiner to limit the interpretation of the claims herein because they are means-plus-function claims, citing Intel Corp. v. I.T.C., 946 F.2d 821 (Fed. Cir. 1991). The Court agrees with ATS, however, that nothing in Intel prohibits this Court from considering the prosecution history, including the prior art cited therein. In fact, as noted above, this Court has an affirmative duty to do so. 7

It is elementary that a patentee cannot obtain, in an infringement suit, protection of subject matter that was relinquished in order to obtain allowance of other subject matter during prosecution of the patent application. Mannesmann Demag Corp. v. Engineered Metal Prods. Co., 793 F.2d 1279, 1285, 230 U.S.P.Q. 45, 48 (Fed. Cir. 1986). The standard for determining whether particular subject matter was relinquished is an objective one to be determined as a matter of law and is based on
the reasonable reading, by a person of skill in the field of the invention, of the entire prosecution history. Modine
1609 (Fed. Cir. 1996).

ATS refers to the fact that claims in Chad's patent application were rejected as unpatentable when they did not include the
limitation that the path of travel of the clinching pin was "substantially within a plane" adjacent the lower surface of the
circuit board. After that limitation was put in, the patent examiner allowed the claims. However, a review of all the papers
filed fails to show, objectively, that either the examiner or Chad construed the amendment of the claims as relinquishing
Chad's right to assert infringement over systems whose pins go up and down between clinching paths. The Court agrees
with Chad that the issue before the examiner was whether the claims were patentable over the Foley reference and others
without the "substantially within a plane" language. Without that language, Chad's claims could have covered a clinching
device that moved in an arc, rather than a plane, while performing the bending. Since Foley showed a prior art device that
moved in an arc, it was not surprising that the examiner rejected Chad's attempt to cover that subject matter.

Nor is ATS's argument persuasive that Chad limited the scope of its claims by arguing that the Chad pin did not have to go
up and down like Foley's device. This was simply an advantage of Chad's system, not a prohibition against using its ability
to go up and down when there was an obstacle in the way or other reason to do so. The flexibility of the Chad system--in
permitting an operator to choose when to have the pin extend or retract--was obviously a difference between it and the prior
art device, and it would be ironic to construe that as a restriction against asserting coverage of that very flexibility.

In short, there is nothing in the prosecution history presented in the papers filed that tends to lead to any interpretation of the
claims different from that which results from merely reading the claims and specification of the patent, as discussed above.
The claims are not interpreted as limited so as to preclude asserting infringement against systems whose clinching pins go
up and down between each bending step for each lead in the same component.

7. The claims cover a system programmed so that the pin never moves sideways while it is up unless it is touching the lead.

ATS argues that if horizontal movement of the clinch pin occurs only while the pin is actually in contact with a component
lead, the claims are not infringed. It bases its argument on Holcomb's submission to the examiner of an argument along with
a new claim 42. In the argument, Holcomb's counsel argued that the new claim distinguished over prior art because the prior
art apparatus "relies on actuating the clinch head after it has positioned relative to the lead." From this, ATS argues that
Holcomb was disclaiming any coverage of devices that operate by having the clinch pin come up along side the lead exactly
positioned to touch it, presumably by sliding along vertically beside it, before starting sideways.

Given that Holcomb's invention was expressed as one where the leads appear to point straight down and the pin points
straight up, it is not implausible that Holcomb was willing to disclaim an embodiment that would require such perfect
precision to function. There is simply no evidence that such a subject ever came up in discussions with the examiner,
however, and it is clear that what the examiner insisted on was a limitation that the bending part of the pin movement be in a
plane. The addition of that limitation is clearly what resulted in the allowance of the claims. 8

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8 To the extent that ATS is arguing that the claims cannot cover devices that operate without having the clinch pin go further
horizontally after it has finished bending the lead, there is nothing in Holcomb's arguments to the examiner to support that
interpretation, and it would be inconsistent with being able to bend leads only partially flat.

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In short, ATS's argument on this point is strained and is not persuasive that Chad's claims should be limited to prevent
coverage of a system programmed so that the clinch pin never moves sideways while it is up unless it is touching the lead.

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2. Claim 1(a)(i) -- "means for filtering"
The parties initially disputed the proper construction of "means for filtering" in limitation (a)(i) of claim 1. However, Defendants now withdraw their "proffered claim construction for the 'filter means' and accept[] RTI's claim construction for the limitation as 'any filter that performs the recited function of filtering cooking oil from the fryer station." (Defs. Ltr. Resp. Br., at 10.) Therefore, the Court adopts this interpretation.

A. Means for Retaining. . . .

Phrase: means for retaining said [cylindrical] sleeve member relative to said body portion

Construction: an area of interference fit between the bit holder and the sleeve

Reasoning: The central dispute regarding this claim term is whether means-plus-function analysis applies. Defendant asserts that it does, while plaintiffs contend that it does not. Regardless, both parties agree that the "means for retaining" is "an area of interference fit." Because this agreed upon structure appears in the claims themselves, it would be improper to apply means plus function analysis to this claim. Phillips, 415 F.3d at 1311 ("Means-plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function").

While the dependent claims reflect the inventor's preferred embodiment that the area of interference fit be in the form of band, or bands, of interference fit, the independent claim is not so limited. Claim 1 speaks broadly to a "means for retaining . . . . comprising an area of interference fit." In the dependent claims, this "area" is more narrowly defined to include "one band of interference fit", "at least two discrete bands of interference fit", and one or more bands found on cylindrical or conical sleeves. These dependent claims reflect the inventor's stated preferred embodiment that the areas of interference be created by "one or more bands of interference." Col. 2, Ins. 57-60. However, the disputed claim term need not be so limited.

The only claim element at issue is the "means for retaining" element of claim 1 of the '908 patent, which recites:

means for retaining said test pins in parallel alignment in said apparatus with said test pins extending through respective said through-bores in said mask plate, said means comprising an elastic plate formed of elastic material and mounted at a position spaced from said mask plate and extending parallel thereto, said test pins extending through said elastic plate in a manner such that said elastic material elastically contacts and grasps said test pins, whereby said test pins are maintained in said alignment due to the elasticity of said material.

The district court held, and neither party disputes, that this element should not be interpreted under 35 U.S.C. § 112, P 6. The district court's holding in that regard was based on the disclosure of: (1) the claimed structure to perform the function of alignment, (2) the structure's claimed location in the apparatus, and (3) the claimed physical properties of the elastic plate. We agree with the district court that the claim recites definite structure for performing the claimed function and that
therefore it should not be interpreted under section 112, P 6. See Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531, 41 U.S.P.Q.2D (BNA) 1001, 1006 (Fed. Cir. 1996) ("the alleged means-plus-function claim element must not recite a definite structure which performs the described function").

The district court construed the "means for retaining" element to cover:

elastic plates having the capability, when positioned parallel to and spaced from the mask plate, of maintaining the pins in proper parallel alignment. The literal terms of claim 1, therefore, do not cover elastic plates that are incapable of maintaining, in conjunction with a through-bored mask plate, the pins in proper alignment within the apparatus.

The district court further stated:

As a practical matter, to have the capability of maintaining test pins in proper alignment, when positioned parallel to and spaced from a mask plate, an elastic plate must possess either one of two characteristics. First, any elastic plate, regardless of its thickness or degree of flexibility, that is firmly affixed to the structure of the adaptor would be capable of working in conjunction with the mask plate to maintain the pins in parallel alignment. Second, an elastic plate that is not firmly affixed to the apparatus, but that is sufficiently rigid so that it can stand vertically without collapsing, would be equally capable of serving this function.

On appeal, Testerion argues that the district court improperly added a new limitation to claim 1. Specifically, it contends that the court improperly construed the claim to required that "the elastic plate be stiff or rigid enough that it independently (i.e., not in conjunction with the mask plate) maintains the test pins in parallel alignment." Testerion asserts that this interpretation impermissibly reads a limitation from the specification into the claim, and effectively eliminates the claim language "with said test pins extending through respective said through-bores in said mask plate." We do not believe that the district court impermissibly read a limitation into the claim. While claim 1 does not explicitly recite that the elastic plate independently maintains parallel alignment of the test pins, this limitation is inherent in the claim language that the pins are maintained in parallel alignment due to the elasticity of the plate. In addition, as indicated below, it is reinforced by the discussion of the term "elastic plate" in the specification and prosecution history.

Claim 1 of the '908 patent recites a means for retaining test pins in parallel alignment with the test pins extending through through-bores in a mask plate. The means for retaining the pins in parallel alignment is recited as an elastic plate formed of elastic material and mounted spaced from the mask plate. The claim further recites that the test pins are maintained in parallel alignment "due to the elasticity of the material." Thus, the "means for retaining" element recites an elastic plate, spaced from the mask plate, that maintains the pins in parallel alignment due to the elasticity of the elastic plate. This claim language indicates that the elastic plate independently maintains the pins in parallel alignment.

This interpretation of the claim is reinforced by the specification, which discloses that: "Elastic plate 4 is designed to be sufficiently stable while exhibiting the required resilience so that it may be mounted on the apparatus in the manner of a stable plate." '908 patent, col. 3, lines 27-30. Thus, the specification indicates that the elastic plate is stable or rigid. The specification further discloses that, in one embodiment, "elastic insert 4 may be in the form of a plate or sheet loosely placed in the space between top and bottom guide plates . . . ." Id. at col. 4, lines 36-38. This language draws a distinction between an elastic plate and an elastic sheet, which reinforces the interpretation that the elastic plate is stable, or rigid, as opposed to an elastic sheet, which is flexible.

The prosecution history also supports the interpretation that the elastic plate must be sufficiently rigid to maintain the test pins in parallel alignment. To distinguish the claimed invention from a prior art reference (the Eddy reference), the applicants argued that:

It is submitted that the "resilient binding material" 4 of Eddy cannot be compared with the elastic supporting and retaining plate 4 of the present invention, since the functions of the two elements are different. Thus, resilient binding material 4 of Eddy does not operate to retain the test pins in parallel alignment in the apparatus as is the case in the present invention. This function rather is achieved by rigid carrier 3 of Eddy. Material 4 of Eddy simply connects the two test probes and allows relative axial displacement therebetween.

* * *
The Examiner's reference to element 4 of Eddy as an "elastic support plate" is inaccurate for the above reasons.

(Emphasis in original). Thus, the applicants indicated that it was inaccurate to refer to material that simply connects the test probes and allows axial displacement between the test pins as an elastic plate because such material does not retain the test pins in parallel alignment like the elastic plate of the claimed invention. The applicants further distinguished their invention from a device that relies on a rigid carrier (or guide plate) to maintain the parallel alignment of the test pins.

Based upon the foregoing, we conclude that the "means for retaining" element of claim 1 of the '908 patent is properly construed to cover elastic devices that are sufficiently rigid to independently maintain test pins in parallel alignment, and that the element does not cover flexible elastic devices that rely on guide plates to maintain the parallel alignment of the test pins.

Thus, the district court's construction of claim 1 was both too broad and too narrow. To the extent that the court construed the claim to cover an elastic plate that maintains the pins in parallel alignment due to the interaction between the elastic plate and the mask plate, the construction was too broad. As discussed above, the proper claim construction requires the elastic plate to independently maintain the test pins in parallel alignment. On the other hand, to the extent that the court limited the claim to elastic plates that "can stand vertically without collapsing," the construction was too narrow. Although this may be one way to determine whether an elastic plate is sufficiently rigid to maintain the pins in parallel alignment, we are not prepared to say that it is only the way to make that determination. In other words, the district court went too far by imposing the limitation that the elastic plate be able to stand vertically without collapsing.

\[\text{Footnotes}\]

1 We note Testerion's argument that the district court improperly applied a prosecution history estoppel analysis in construing claim 1. Testerion is correct that there is a difference between prosecution history estoppel and interpreting the claim language based on the prosecution history. See Biodex Corp. v. Loredan Biomedical, Inc., 946 F.2d 850, 852, 20 U.S.P.Q.2d (BNA) 1252, 1262 (Fed. Cir. 1991) ("There is a clear line of distinction between using the contents of the prosecution history to reach an understanding about disputed claim language, and the doctrine of prosecution history estoppel . . ." (citation omitted)). As seen above, however, prosecution history is properly used in this case to interpret how the patentee defined the claim term "elastic plate," and the court did not improperly apply a prosecution history estoppel analysis.

We also note Testerion's argument that the district court erred by not reading claim 1 in light of Figure 3 of the patent. This argument is directed at the district court's construction that the elastic plate be sufficiently stable that it can stand vertically without collapsing. Because we have already determined that the district court erred on this point, we do not address this argument.

\[\text{End Footnotes}\]
Mitek's Motion for Reconsideration of Claim Construction argues that the court committed errors in its construction of the terms "drill means" and "means for securing". Mitek does not request modifications of the court's definition of "thread means". Mitek argues that the question of whether or not a drill means includes a screw, a pin, a nail or a trocar tip is a question for the jury and not a question of law for the court. This court disagrees. Mitek argued and presented evidence at length to support its contention that a drill means includes a trocar tip, a pin, a nail or a screw and requested that this court construe the term "drill means" to include these devices. Only when this court disagreed with Mitek's definition did it argue that this was an issue for the jury. The conclusion that a drill means does not include objects that do not have cutting edges and flutes is fully supported by the intrinsic evidence. Further, the Federal Circuit has affirmed claim construction rulings that define functions or structures that are excluded from the coverage of a claim. See, e.g. The Gentry Gallery, Inc., v. The Berkline Corp., 134 F.3d 1473, 1477 (Fed. Cir. 1998) (term "console" construed to exclude tray unit) and General American Transp. Corp. v. Cryo-Trans, Inc. 93 F.3d 766, 770 (Fed. Cir. 1996) (opening "adjacent" to a side was construed to exclude opening adjacent to an "end wall").

Mitek further argues that the court committed error in defining "means for securing" to exclude a freely sliding suture. As stated above, this court may properly define functions or structures that are excluded from the coverage of a claim. Mitek also argues that the court may not use the prior art to limit the range of structures that may be equivalent to the structure disclosed in a specification for performing an identified function. Once again, this court disagrees. It is well established that the prior art relied upon by the applicant "gives clues as to what the claims do not cover." Autogiro Co. of America v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 399 (Ct Cl. 1967). The holding that the structure of the means for securing cannot include an eyelet is fully supported by the intrinsic evidence. Therefore, Mitek's Motion to Reconsider Claim Construction is denied.

2503

Means for securing

Mitek argues that the district court erred by limiting the claim to the preferred embodiment with regard to the "means for securing" term. The district court defined a "means for securing a suture to said anchor to extend therefrom after said anchor is seated in the bone mass' as a structure having a suture permanently attached to a retention disk positioned internally within the anchor." Mitek Surgical Products, Inc. v. Arthrex, Inc., No. 1:96 CV 00087K, slip op. at 8 (D. Utah May 10, 1998). Mitek admits that the specification only discloses the structure of a means for securing that contains a retention disk attached to the means. However, Mitek's argument regarding the construction of "means for securing" revolves around differences between "attach" and "secure" and the fact that those two functions are used interchangeably in the specifications.

Mitek misses the focus of means-plus-function claim construction. There was no error in the district court's construction of "means for securing" because section 112 P 6 expressly restricts coverage of a means-plus-function claim to the structure disclosed in the specification and the equivalents of that structure. The internal retention disk is the only means for securing structure disclosed in the specification. Mitek argues that alternative embodiments of means for securing are disclosed in the prior art. These embodiments are irrelevant when attempting to outwardly expand claim scope as here. Structure in the prior art may be used to limit, but not broaden the scope of means-plus-function structures. See Biodex Corp. v. Loredan Biomedical, Inc., 946 F.2d 850, 863, 20 U.S.P.Q.2D (BNA) 1252, 1262 (Fed. Cir. 1991) (stating that prosecution history may be used to limit scope of means-plus-function claims).

An equivalent of a means-plus-function claim "results from an insubstantial change which, from the perspective of one of ordinary skill in the art, adds nothing of significance to the claimed invention." Valmont Indus., Inc. v. Reinke Mfg Co., Inc., 983 F.2d 1039, 1043, 25 U.S.P.Q.2D (BNA) 1451, 1455 (Fed. Cir. 1993). In this case, there is no question but that a person of ordinary skill in the art would conclude that there are substantial differences between the internal retention disk structure disclosed in the patent and the eyelets used in the accused device. The internal disk itself stands out as the primary example of a substantial difference in structure between the scope of Mitek's means-plus-function claim and Arthrex's suture anchors, and by itself is substantial enough to render Mitek's patent inapplicable in this case. We reject Mitek's characterization of the construction as erroneously reading limitations from the written description into the claim. We agree
with the district court's interpretation of the several disputed claim terms and determination of noninfringement.

IV.

Unlike claim 1, however, claim 32 does not explicitly limit the height of the ridge members forming the load locks in the sidewalls. Instead, claim 32 describes the load lock in terms of depth:

32. A protective liner for a cargo bed of a vehicle, said protective liner allowing a structure positioned in the trunk cargo bed to be supported and affixed in position in the vehicle cargo bed, including:

a liner floor portion having elevated portions formed thereupon to conform to wheel wells protruding from the cargo bed floor;

upwardly extending liner sidewall portions extending upwardly from opposite sides of the liner floor portion an upwardly extending liner frontwall portion extending upwardly from a front end of the liner floor portion; and

means formed on the upwardly extending liner sidewall portions including a plurality of spaced apart, vertically extending ridge members protruding from the liner sidewall portions and forming load locks in gaps separating adjacent ones of the ridge members, said load locks having a depth sufficient to anchor a structure positioned and supported in the cargo bed.

(Emphasis added). Despite the differences between claim 1 and claim 32, the district court interpreted claim 32 to require "the ridge member . . . [to] extend from near the bottom of the sidewall to near the top of the sidewall."


While the last paragraph of claim 32 begins with the word "means," what follows is a detailed recitation of structure. The clause begins with a description of "means formed on the . . . sidewall portions including . . . ridge members." This language describes generally, indeed expressly includes, ridge members that serve as anchors for load locks. The clause then refers to "forming load locks," followed by still more structural language about gaps between ridge members and the depth of the load locks ("load locks having a depth sufficient to anchor a structure positioned and supported in the cargo bed").

The claim language, however, does not link the term "means" to a function. In language again suggestive of structure, the claim notes that the "means" "protrude from the liner sidewall portions and form[] load locks." This language vaguely hints at the function of anchoring a load in the cargo bed. Nowhere does the claim language following "means" state that function. Instead, the claim recites structure. Without an identified function, the term "means" in this claim cannot invoke 35 U.S.C. § 112, P 6. Without a "means" sufficiently connected to a recited function, the presumption in use of the word "means" does not operate. In any case, the express structural limits of the claim language limit its scope. Thus, this court construes this claim without reference to section 112, P 6.
The parties agree that this claim term refers to the measurement of displacement, rotation, and tilts along the relevant axes, the measured displacements found along either the X or the Y axes, the measured rotation found about the Z axis, and the measured tilts registered about the X and Y substrate axis. ASML believes that the court need not investigate further, construing the claim as simply a "step of a method claim." To the extent that ASML argues that no limitations appear in the claim text, the court agrees.

But to the extent that ASML asserts that the court need not investigate further, the court cannot agree. The Federal Circuit has long noted that "claim language [must be] limited based on a feature that was described as essential to the invention." See Sunrace Roots Enter. Co., Ltd. v. SRAM Corp., 336 F.3d 1298, 1305 (Fed. Cir. 1305). Where specification language identifies an essential claim feature, and where the embodiments uniformly disclose that feature, the feature proves a required limitation of all the relevant claims. See, e.g., ATD Corp. v. Lydall, Inc., 159 F.3d 534, 542 (Fed. Cir. 1998); Gentry Gallery, Inc. v. The Berkline Corp., 134 F.3d 1473, 1478-80 (Fed. Cir. 1998). In this instance, specification language identifies an essential claim feature, and the embodiments uniformly disclose that feature; thus, the court must apply the attendant limitation. A seminal aspect of the '832 invention is the enhanced accuracy with which substrate and mask position can be determined by interferometer use. See '832 Patent at 3:35-40. "Integrated" with the interferometers is a block of mirrors, a block unequivocally described in the specifications as "an essential condition and an important aspect of the present invention." Id. at 4:39-50; 14:18-21. This mirror block is consistently depicted in the embodiments as the art's method of measurement, see, e.g., id. at figs. 7-9 & 25-26, and this mirror block is uniformly described as part of the structure serving as substrate support. Id. In such a context, Federal Circuit doctrine directs the court to apply a limitation to an otherwise unlimited claim term. See Sunrace Roots, 336 F.3d at 1305. For this reason, the court construes "measuring . . . of the substrate" to mean "determining and quantifying, by means of interferometers with an integrated mirror block, movement along either the X or Y axis or both, rotation around the Z axis, and tilts about the X and Y axes of the substrate."
mechanical reference would anticipate the claimed inventions. We therefore reject

The critical element of claim 9 is the phrase "plate being orthogonal to the direction of motion and skew to said axis of said sensor."

RVSI argues that the "measurement center line" or "axis" of the sensor is the line that bisects the angle between the projected and received beam of light. View, on the other hand, argues that the "measurement center line" is the line between the center of the sensor and the target point.

The task of claim construction is made difficult in this case because the term "measurement center line" appears nowhere in RVSI's written description, and neither party suggests that the term has a well-established meaning in the art. The prosecution history, however, provides some guidance as to what the patentee and the examiner understood the term to mean.

When RVSI filed the application that eventually issued as the '308 patent, the method claims recited the step of "aligning a sensor at an angle relative to said linear motion." Those claims were rejected as anticipated by U.S. Patent No. 4,682,894 to Schmidt et al. The examiner characterized Schmidt as disclosing a device in which "the center line of the sensor is aligned at an angle of zero degrees with the direction of linear motion" of the flat plate (the testing surface), and the side of the sensor facing the flat plate "is aligned at an angle of 90 degrees with the direction of linear motion of the flat plate." That is, the face of the sensor in Schmidt is parallel to the face of the test plate and perpendicular to the linear motion of the plate. Because the claims in RVSI's application referred to an "angle relative to [the] linear motion" of the flat plate, and did not exclude an angle of zero degrees, the examiner regarded Schmidt as an anticipating reference.

In response to the rejection, RVSI canceled all pending claims and added the claim that eventually became claim 1 of the '308 patent. That claim contained the critical language reciting a sensor "with a measurement center line located" at a "non-zero" angle relative to the linear motion of the flat testing plate. RVSI asserted that with the amended language, claim 1 and its dependent claims "define clearly the improvement over the prior art," including both Schmidt and U.S. Patent No. 4,375,921 to Morander. With a similar explanation, RVSI subsequently added apparatus claim 9, which contained the critical language reciting a testing plate "skew to" the axis of the sensor.

In light of the language of the claims and the prosecution history, RVSI's proposed claim construction cannot stand. If the "measurement center line" or "axis" of a sensor is the bisector of the angle between the projected and received light, as RVSI contends, then a sensor such as the one in View's device, which has two detectors, must have two measurement center lines or axes, however, is inconsistent with the language of the '308 patent, which uses those terms in the singular throughout. Moreover, it would be contrary to common understanding to use the terms "center line" or "axis" to refer to a line that does not pass through any central point in the sensor or form an axis of symmetry for the device. Finally, if the terms "measurement center line" and "axis" referred to the bisector of the angle of projection and reception, as RVSI argues, devices such as View's sensors would satisfy the limitations of the claim but not be capable of performing multiple simultaneous calibration, which the patent asserts as one of the principal advantages of the claimed invention. Based on the way the terms "measurement center line" and "axis" are used in the patent, we are therefore persuaded that those terms cannot be construed as RVSI proposes.

In addition, the prosecution history is inconsistent with RVSI's proposed claim construction. After amending the language of the claims, RVSI explained that none of the cited references, including Morander, anticipated the novel features of RVSI's invention. Yet Morander discloses a sensor in which the bisector of the angle of projection and reception forms a non-zero angle with the line of motion of the flat plate, and RVSI has not pointed to any other limitation of its claimed invention that is not found in Morander. Thus, if the critical claim language is construed as RVSI proposes, it appears that, contrary to RVSI's representation to the examiner, the Morander reference would anticipate the claimed inventions. We therefore reject RVSI's construction of the claims of the '308 patent and uphold the district court's ruling on the issue of literal infringement.

We also agree with the district court that View's process does not infringe the '308 patent under the doctrine of equivalents. The advantages that RVSI touted for its off-angle improvement over the "face-on" sensor systems disclosed in Schmidt and Morander include the capacity to calibrate multiple sensors at the same time and register them to one another. That capacity is not shared by View's device, in which the path of the laser between the projector and the plate is perpendicular to the testing plate and parallel to the path traveled by the plate. Accordingly, so far as the record reflects, View's device is no more
equivalent to the claimed invention than are the devices disclosed in Schmidt and Morander. The district court thus properly
granted summary judgment of non-infringement with respect to both literal infringement and infringement by equivalents of
the '308 patent.

Plaintiff contends that no additional construction is needed for this claim, whereas Defendant argues that this claim requires
a means-plus-function limitation pursuant to 35 U.S.C. § 112 P 6. (Chart at 9.) Plaintiff states that if the court finds a means-
plus-function to be required, then it agrees with Defendant's construction. (Id.)

"[T]he court must see to it that disputes concerning the scope of the patent claims are fully resolved" so that such questions
are not left open for a jury. Every Penny Counts, Inc. v. Am. Express Co., 563 F.3d 1378, 1383 (Fed. Cir. 2009) (citing O2
Micro Intl' Ltd. v. Beyond Innovation Tech. Co., 521 F.3d 1351, 1361-62 (Fed. Cir. 2008)). When a claim does not use the
word "means," there is a rebuttable presumption that § 112, P 6 does not apply." TIP Sys., LLC v. Phillips &
Brooks/Gladwin, Inc., 529 F.3d 1364, 1374 (Fed. Cir. 2008) (citing CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359,
1369 (Fed. Cir. 2002)). "In deciding whether the presumption has been rebutted, the focus is on whether the claim recites
sufficiently definite structure." Id. (citing CCS Fitness, 288 F.3d at 1369). "This court has consistently held that '[m]eans-
plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the
recited function." Welker Bearing Co. v. PHD, Inc., 550 F.3d 1090, 1095-96 (Fed. Cir. 2008) (quoting Phillips v. AWH
Corp., 415 F.3d 1303, 1311 (Fed. Cir. 2005)). "Further, a patentee's use of the word 'means' in claim limitation creates a
Corp., 514 F.3d 1256, 1259 (Fed. Cir. 2008)). However, the "generic terms 'mechanism,' 'means,' 'element,' and 'device,'
typically do not connote sufficiently definite structure," unless they are modified such that they have a specifically
"understood meaning in the art." Mass. Inst. of Tech. and Elec. for Imaging, Inc. v. Abacus Software, 462 F.3d 1344, 1354
(Fed. Cir. 2006) (finding that "colorant selection mechanism" did not have a sufficiently defined meaning in the art to avoid
means-plus-function construction). Finally, dictionary definitions to find synonyms are an appropriate method to aid in
resolving. Id.

Plaintiff does not use the word "means" in its claim and also argues that the '029 Patent explicitly states that means-plus-
fraction limitations should not apply, unless stated. See '029 Patent col. 48 l.6-14. In response, Defendant argues that
nonetheless Plaintiff's claim fails to give sufficient structure such that it can avoid a means-plus-function limitation.

This claim is properly construed in the means-plus-function format. "System" is of the same sort of generic term as
"means," "mechanism," and "device," defined as "a regularly interacting or interdependent group of items forming a unified
addition, the modifier "measurement" offers no further indication regarding what comprises the "system." See Mass. Inst. of
Tech., 462 F.3d at 1354 (finding that "colorant selection mechanism did not have a sufficiently defined meaning in the art
to avoid means-plus-function construction). Indeed, Plaintiff resorts to the specification in order to prevent its claim from
being construed in means-plus-function format. Defendant's argument is more persuasive, as the language of this claim does
not express a sufficiently definite structure. See TIP Sys., LLC, 529 F.3d at 1374 (citing CCS Fitness, Inc., 288 F.3d at
1369). Furthermore, this language is parallel to that of Claim 10 of the '029 Patent, which the parties agree is requires a
means-plus-function limitation, except that "measurement system" takes the place of "constraining means."

As for Plaintiff's argument that it did not intend means-plus-function construction for any claims not written in that format,
claim construction is a question of law for the court to decide. See Markman, 52 F.3d 967, 979. Finally, any citation of
Plaintiff to Watts v. XL Sys., Inc., 232 F.3d 877 (Fed. Cir. 2000), is distinguishable from this phrase because in Watts, even
if the court also looked to the specification, the claim itself had sufficient structure described. Id. at 879, 881 (finding that "a
second end formed with tapered external threads dimensioned such that one such joint may be sealingly connected directly
with another such joint" had sufficient structure to avoid means-plus-function construction).
The court does further bolster its argument by looking to the specification; however, only to confirm that sufficient and correct structure was provided by the claim. Id. Any more elaborate discussion of the use of the specification for purposes of construction in this case refer to construction, not determination regarding whether paragraph 6 of § 112 applies. Id.

Therefore, the court finds that this claim is properly construed in the means-plus-function format. Because the parties agree as to the construction of the claim if the court construes it in means-plus-function format, the court will construe "a measurement system for measuring the pressure in said at least one chamber" as follows:

Function:

measuring the pressure in the chamber or chambers.

Corresponding Structure:

a sensor or transducer.
be known. Hence, the claims recite a "step of measuring the temperature," which is how the temperature is ascertained or determined. The limitation's recitation of an act thus precludes application of § 112, P 6.

Aside from its step-plus-function argument, Defendant has presented no reason why these claim phrases should not carry their plain and ordinary meanings. The Court construes "measuring the temperature of the fluid, wherein the heating step is responsive to the step of measuring the temperature" as "determining the temperature of the cleaning fluid, wherein the heating step reacts or is responsive to such temperature determination."

For the reasons set forth below, the Court construes the claim term "meat" as "a single joint of boneless meat, not pressed meat."

The Court agrees with the defendant's contention that the doctrine of prosecution disclaimer applies in this case. "Arguments and amendments made during the prosecution of a patent application and other aspects of the prosecution history, as well as the specification and other claims, must be examined to determine the meaning of terms in the claims." Southwall Techs., Inc. v. Cardinal ID Co., 54 F.3d 1570, 1576 (Fed. Cir.), cert. denied, 516 U.S. 987, 116 S. Ct. 515, 133 L. Ed. 2d 424 (1995) (citing E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1438 (Fed. Cir.), cert. denied, 488 U.S. 986, 109 S. Ct. 542, 102 L. Ed. 2d 572 (1988)). "The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Id. at 1576 (citing ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580 (Fed. Cir. 1988); Senmed, Inc. v. Richard-Allan Med. Indus., Inc., 888 F.2d 815, 818 (Fed. Cir. 1989)). "Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers." Id. (citing Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1562 (Fed. Cir. 1991)). This doctrine "promotes the public notice function of the intrinsic evidence and protects the public's reliance on definitive statements made during prosecution." Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1324 (Fed. Cir. 2003) (citing Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1347 (Fed. Cir. 1998)).

Courts will not apply the doctrine of prosecution disclaimer where the alleged disavowal of claim scope is ambiguous. Id. at 1324. "Prosecution disclaimer does not apply, for example, if the applicant simply describes features of the prior art and does not distinguish the claimed invention based on those features." Computer Docking Station Corp. v. Dell, Inc., 519 F.3d 1366, 1375 (Fed. Cir. 2008) (citing Eolas Techs., Inc. v. Microsoft Corp., 399 F.3d 1325, 1337 (Fed. Cir. 2005)). If, however, "the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim congruent with the scope of the surrender." Omega, 334 F.3d at 1324. "A patentee could do so, for example, by clearly characterizing the invention in a way to try to overcome rejections based on prior art." Computer Docking Station, 519 F.3d at 1374. The patentee's statements must be both "clear and unmistakable." Omega, 334 F.3d at 1326.

The USPTO issued an Office Action on August 25, 1989, (the Office Action) rejecting Logan's patent application. Specifically, it rejected Claims 3-6 pursuant to 35 U.S.C. § 103 as being "unpatentable over Hoenselaar, Mart or Chesley in view of Doecken or Ferrarini." (Def.'s Markman Binder, Tab 4 at 2). The USPTO went on to state, "[i]t would be obvious to remove all bones from the spiral cut ham in any of the primary references since it is old to prepare a sliced ham from which the bones have been removed, as evidenced by either secondary reference. The 'support member' recited in the claims is not part of the final product." (Id.).

In his response, Logan makes various statements relevant to the issue of whether the doctrine of prosecution disclaimer should apply. Of specific importance is the following:

The present invention is directed toward a single joint of meat, not a pressed meat product. The present invention's commercial appeal is due substantially to the presentation of the meat as a single meat product having continuous spiral slices arranged around a longitudinal axis of unsliced meat in the absence of a bone. . . . [t]he use of pressed ham meat would not enjoy similar success as pressed ham is perceived as having a much lesser commercial appeal . . . [a]pplicant
respectfully submits that the Ferrarini reference is directed toward an entirely different product and does not teach the present invention: a single boneless meat product having a continuous spiral slice therethrough.

(Def.'s Markman Binder, Tab 5 at 6). Also in regard to the Ferrarini reference, Logan states that an attempt to spirally slice a ham following Ferrarini would cause the ham to disintegrate because of its pressed nature and lack of support. (Id. at 7). Logan further states that "the use of pressed meat in a boneless meat product significantly decreases [the product's] commercial appeal and value." (Id.).

The USPTO reviewed Logan's response and decided once more to reject claims 3-6 pursuant to 35 U.S.C. § 103. The USPTO found these claims "unpatentable over Hoenselaar, Mart, or Chesley in view of Doepkin. " (Def.'s Markman Binder, Tab 6 at 3). Although the USPTO said that Logan's arguments in response to the Office Action were unpersuasive, the USPTO did not reject the claims in view of Ferrarini as it had in August of 1989 when the Office Action was first issued.

The Court, therefore, finds that Logan clearly and unmistakably disavowed a certain meaning in an attempt to obtain his patent. Logan clearly characterized the product and process set forth in his patent application to overcome the USPTO's rejection of claims 3-6 in view of Ferrarini. He identifies his invention as "a single joint of meat, not a pressed meat product" in order to distinguish it from the product described in Ferrarini. He bolsters this with statements about Ferrarini's lack of structural support and lower commercial appeal and value. Although the USPTO chose not to change its decision to reject claims 3-6, it did accept Logan's arguments about Ferrarini and, as such, did not issue its rejection in view of Ferrarini as it had previously. The Court's decision to apply the doctrine of prosecution disclaimer in this case protects the public's reliance on Logan's clear and unmistakable statements.

Because the Court has determined that Logan's remarks constitute a clear and unmistakable disclaimer of the claim scope, the Court must now decide exactly what Logan disclaimed during the prosecution history. Specifically, the Court must define "a single joint of meat, not pressed meat." The Court will give this term its ordinary and customary meaning, which is the meaning it would have had to a person of ordinary skill in the art at question at the time of the invention. The Court has not only considered the intrinsic evidence, such as the '374 Patent, it has also reviewed patents for other inventions, expert and inventor declarations, and the Oxford English Dictionary.

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8. Second Mechanical Connection

"Second mechanical connection" is the next term for construction. The term appears in claims 1, 13, 14, 26, 27, 39, 40, 41, 49 and 50 of the '410 patent; in claims 1, 10, 21, 22 and 28 of the '579 patent; and, in claims 1, 16, 21, 22, 33, and 34 of the RE '439 patent.

The Plaintiffs contend that "second mechanical connection" should be defined as "structures that lock the panels to each other in the direction parallel to the principal plane and at right angles to the joint edges." (Pls.' Open. Br. 30-32.) Pergo maintains that "second mechanical connection" means "the arrangement of the locking element projecting from the strip and the locking groove such that when the locking element is inserted into the locking groove the two panels are locked in the horizontal direction parallel to the principal plane of the panels and at right angles to the joint edges such that a play exists allowing the joined panels to slide movably (i.e., be displaced) along the joined edges and disassembled by being rotated about the joint edge." (Unilin's Open. Br. 18-21.)

In considering the parties' proposed definitions of "second mechanical connection," the Court notes that the Plaintiffs' proposed definition does not include "play" which is inherent in all the claims of the patents-in-suit. The specification explains that in the second mechanical connection a "play exists between the locking groove and a locking surface on the locking element that is facing the joint edges and is operative in said second mechanical connection" and "that the first and the second mechanical connection both allow mutual displacement of the panels in the direction of the joint edges." (579 patent, 4:19:23; 4:24-26.) As described in the specification, "the second mechanical connection is so conceived as to allow the locking element to leave the locking groove if the groove panel is turned about its joint edge angularly away from the strip." (579 patent, 4:27-30.)
The first portion of the Pergo's proposed definition is consistent with the specification. However, the latter portion of Pergo's definition is subsumed by the Court's definition of play and, therefore, is surplusage. See infra at 64. Thus, the Court defines "second mechanical connection" as "the arrangement of the locking element projecting from the strip and the locking groove such that when the locking element is inserted into the locking groove the two panels are locked in the horizontal direction parallel to the principal plane of the panels and at right angles to the joint edges such that a play exists."

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2. "Mechanical Distortion"

In its original Claim Construction Ruling, the Court found that a person of ordinary skill in the art would understand the phrase "mechanical distortion" in Claim 21 to mean "by physical processes directed at the cannula." Although Plaintiffs concede that the Court's construction of "physical processes" is consistent with their proposed definition of "changing the diameter with the assistance of tools, fixtures, devices or machinery," they maintain that the Court improperly imported a limitation from the specification by requiring that these physical processes be directed at the cannula. (Pls.' Mem. at 5.) Instead, they ask the Court to include physical processes directed at the cannula and/or the plug. Id. at 6.

The primary focus of the original briefs was on what constituted a mechanical process and whether biological and chemical processes had to be expressly excluded. Defendant also argued that it was clear from the Specification that the "mechanical distortion" was a distortion of the cannula, which provides that the "cannula may be infinitesimally distorted externally to cause it to 'shrink' in the area of the plug and therefore hold the plug in position," (col. 4, ll. 13-16), and refers to "minute distortions of the cannula" (col. 4, ll. 64-67).

Plaintiffs, however, cite to the Summary of Invention, which states that "holding the biocompatible end plug in place inside the cannula . . . may be accomplished by modifying the diameter of the plug by mechanical distortion means" (col. 4, ll. 52-57) (emphasis added). Indeed, Claim 21 itself refers to modifying the diameter of the plug by mechanical distortion (col. 6, ll. 64-65).

The Court concedes that its earlier construction improperly read a limitation from the Specification into the claim, in contravention of the holding of Phillips v. AWH Corp., 415 F.3d 1303, 1323 (Fed. Cir. 2005)(en banc). Accordingly, upon reconsideration, the Court adopts the construction now proposed by Plaintiffs of "mechanical distortion," that is "by physical processes directed at the cannula and/or the plug."

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V. "mechanically embossing" and "a mechanically embossed portion"

The parties contest the meaning of "mechanically embossing" as used in claim 1 of the '903 patent and "a mechanically embossed portion as used in claims 1, 9, and 11 of the '008 patent.

Mannington argues that "mechanically embossing" as used in claim 1 of the '903 patent "means a technique using an etched or engraved roll, etched or engraved plate, or a similar tool that is capable of imparting a sharp, detailed texture to the vinyl surface (relative to chemical embossing)." D.I. 326 at 17. To support this proposed construction, Mannington contrasts the phrase "any embossing technique known to the those skilled in the art can be used" as contained in the '903 specification ('903 at 6:23-24) with the phrase "the texture created by the chemical embossing technique does not have a well-defined sharpness of real, natural products" and the phrase "mechanical embossing, on the other hand, is capable of reproducing … subtle [sic, subtle], sharp, and shallow textures" to support its positive inference that the use of "mechanically embossing" in claim 1 of the '903 patent would be understood by those skilled in the art to mean sharp and detailed imprinting. Id. at 18.

Mannington also asserts that this construction is supported by the prosecution history. Id. at 19. Mannington further argues that "a mechanically embossed portion" as used in claims 1, 9, and 11 of the '008 patent "means that created by mechanical embossing." Id. at 17. Moreover, asserts Mannington, as used in this phrase "portion" has an ordinary and accustomed meaning referring to "[the] 'portion' of the cushioned sheet vinyl flooring that has been mechanically embossed, i.e., has

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sharp, detailed textures (relative to chemical embossing) imparted by the use of an etched or engraved roll, etched or engraved plate, or similar tool." Id. at 21.

Armstrong confines its argument to "a mechanically embossed portion" as found in claims 1, 9, and 11 of the '008 patent. As to this process limitation, Armstrong reiterates its argument that the court should not construe this language and, in the alternative, Armstrong argues that the phrase as used therein means that the mechanical embossed "portion" is limited to the raised areas. D.I. 324 at 20. Furthermore, argues Armstrong, "these portions are … distinct, [referring to] a mechanically embossed portion and a [separate] chemically embossed portion." Id.

Domco asserts the same meaning for "mechanically embossing" in claim 1 of the '903 patent and "a mechanically embossed portion" as used in claims 1, 9, and 11 of the '008 patent. As properly construed, Domco argues that "these claim terms … mean the portion of the wear layer surface where mechanical embossing imparts any indent mark." D.I. 142 at 20. Furthermore, Domco alleges, that "an indent [mechanical indentation] can have any desired shape or form and the specification explicitly states that 'any surface texture can be embossed onto the wear layer' and 'any embossing technique known to those skilled in the art can be used.'" Id. (quoting '008 3:62-63; 6:22-24). Moreover, Domco argues the prosecution history does not contravene this interpretation. Id.

Domco correctly notes that the inventors disclose in the '903 and '008 patents that mechanical embossing is accomplished by techniques commonly known in the art when the patent was filed. '903 at 6:10-13; '008 at 6:22-24 ("For purposes of the present invention, any embossing technique known to those skilled in the art can be used …."). In contravention of this express language, Mannington is attempting, now, for the purpose of the present litigation, to limit mechanical embossing to the mechanical embossing of sharp, detailed texture as opposed to the more subtle rounded texture produced by chemical embossing. D.I. 326 at 18.

Although some mechanical embossing instruments are probably designed specifically for imprinting sharp and detailed textures, the '903 and '008 patents teach that mechanical embossing can be accomplished by "any embossing technique known to those skilled in the art." '903 at 6:10-13; '008 at 6:22-24. It is a highly speculative proposition to assume that those skilled in the art of vinyl surface coverings only knew of and practiced sharp and detailed mechanical embossing techniques and neglected entirely the countless variations of product textures that could be manufactured with less sharply detailed mechanical embossing instruments. This court, therefore, will not read a sharp and detailed texture limitation into the claims of the '903 and '008 patent were none is expressly present. Having concluded this query, the question remains as to what "portion" of the surface covering may be mechanically embossed consistent with the invention taught and patented by the inventors.

Similar to the analysis undertaken to arrive at the conclusion that the chemically embossed "portion" referred to those areas of the surface covering in which a "regulator," "inhibitor," "retarder," or similar chemical compound was applied to create the desired texture, this court construes the entire phrase "a mechanically embossed portion" to refer to the raised areas of the surface covering (the areas that are not chemically embossed) that are mechanically imprinted with a surface texture to produce the desired effect. This construction is clearly supported by the written description:

In any event, the portion of the foam layer which has been overlaid with the design layer having the retarder composition is not mechanically embossed.

'903 at 6:6-9; '008 at 6:17-20.

In the preferred embodiment of the invention, the chemical embossing of the joint or grout lines is deeper than that of the portions of the surface covering which have only been mechanically embossed. In this way, the surface texture created by the mechanical embossing is limited to the raised areas.

'903 at 2:45-50; '008 at 2:53-58.

Thus the surface covering of the invention, which does not include mechanically embossed surface texture in the joint or grout lines, has the appearance of mechanical embossing in register ….
In the preferred embodiment of the present invention, the chemical embossing of the joint or grout lines is deeper than that of the portions of the surface covering which have only been mechanically embossed. This process, which does not create the mechanically embossed surface texture in the joint or grout lines, imparts to the surface covering the appearance of mechanical embossing in register.

'903 at 6:45-49; '008 at 6:46-53.

... There is no mechanically embossed surface texture in the chemically embossed areas because the minimum chemical embossing depth of about 0.010 inches is deeper than the maximum depth of the mechanically embossed surface texture of about 0.008 inches.

'903 at 10:3-8; '008 at 10:13-18.

In contrast to the court's construction that chemically embossed portions were not limited to joint or grout lines as provided in the preferred embodiment, it is the opinion of this court that the inventors predicated the patentability of their invention on the mechanical embossing of the raised areas only, therefore, the '903 and '008 patent claims cannot support an invention containing mechanical embossing in the chemically embossed areas. This construction is also consistent with the prosecution history of the patents. 9

Footnotes

9 In response to an Office Action on November 20, 1998 rejecting original claims 9 and 10 of the '903 parent application, the inventors responded by stating that "the realism of applicant' surface covering comes from the fact that the claimed procedure prevents the joint or grout lines … from being textured by the mechanical embossing step." D.I. 328 at 89-93.

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3. "money dispensing mechanism"

Tidel proposes this term means "a device to dispense coins and/or paper currency from inside of the safe." FKI proposes the term means "a four-to-eight bin set of hoppers wherein a bin is assigned to loose dollar coins, quarters, nickels, pennies and optionally dimes the mechanism also dispenses rolled bills and single or multiple bills from a stack." FKI argues that the specification describes alternative embodiments of coin dispensing mechanisms having four bins, five bins, or six bins. Further, FKI argues, the specification teaches that the "money dispensing mechanism" has up to eight bins. FKI is attempting to limit the claim to the preferred embodiment described in the specification. Additionally, FKI is attempting to limit "money dispensing mechanism" to the "dispensing means" construed above. Here, however, the "dispensing means" is only one subcomponent of the "money dispensing mechanism." 1

Footnotes

1 "money dispensing mechanism . . . containing a supply of coins of a plurality of denominations, a receptacle for coins dispensed from said supply located on the exterior of said secure locking cabinet, and dispensing means for dispensing coins from said supply through a penetration in said secure locking cabinet to said receptacle for coins." [claim 1, 11:63-12:5]

At the court's request, the parties filed supplemental briefs on whether the term should be construed under 35 U.S.C. § 112 P 6. The Federal Circuit has found that "mechanism" at times lacks sufficient structure to avoid § 112 P 6. Because the word "means" is not found in the claim, there is a presumption that § 112 P 6 does not apply. Lighting World v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004) The presumption, however, is rebuttable. The "generic terms 'mechanism,' 'means,' 'element,' and 'device,' typically do not connote sufficiently definite structure" to avoid § 112 P 6.

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Massachusetts Institute of Technology and Electronics for Imaging, Inc. v. Abacus Software, 462 F.3d 1344, 1354 (Fed. Cir. 2006). Sometimes § 112 P 6 can be avoided if the generic term is further defined in the claim language. See id. For example, the Federal Circuit found that "detent mechanism" provided sufficient structure to avoid § 112 P 6. Greenberg v. Ethicon Endo-Surgery, Inc. 91 F.3d 1580, 1583 (Fed.Cir. 1996). The definition of "detent" was well understood in the art, and that definition "connoted sufficient structure to avoid § 112 P 6." Id. In MIT, however, the Federal Circuit held that "colorant section" as a modifier to "mechanism" did not provide sufficient structure to a claim because "colorant section . . . has no dictionary definition, and there is no suggestion that it has a generally understood meaning in the art." MIT, 462 F.3d at 1354.

In MIT, the claim language that defined "colorant mechanism" was only in terms of the function that "colorant section" provided. Id. Additionally, the defendant has cited to two recent cases where the Federal Circuit has found that "mechanism" did not connote sufficient structure to avoid § 112 P 6. See Aspex Eyewear, Inc. v. Altair Eyewear, Inc., 288 Fed.Appx. 697, 704 (Fed.Cir. 2008); See also Welker Bearing Co. v. PHD, Inc. 550 F.3d 1090, 2008 U.S. App. LEXIS 25069, 2008 WL 5205639 (Fed.Cir. 2008).

In Welker, the court found that "mechanism for moving said finger" did not provide sufficient structure to avoid § 112 P 6. Welker, 2008 U.S. App. LEXIS 25069, [WL] at *4. The claim "provide[d] no structural context for determining the characteristics of the "mechanism" other than to describe its function." Id. In Aspex, the Court found that "retaining mechanism" was too broad to connote structure, and unlike "detent" in Greenburg, "retaining" had no well understood meaning in the art. Aspex, 288 Fed.Appx. at 704.

While "money dispensing" may not have a well understood meaning in the art, the claim language as a whole connotes sufficient structure to avoid § 112 P 6. The generic term is defined in the claim language. See MIT, 462 F.3d at 1354. Unlike the cases cited by the defendant, the term at issue is not defined simply by the function it performs. Indeed, it is defined by structural elements: "supply of coins" and "receptacle for coins." [11:63-65]. Additionally, the inventor did not use "mechanism" synonymously with "means"; the "money dispensing mechanism" includes a "dispensing means" as one of its defined components. [11:63-12:5] Accordingly, the defendant has failed to rebut the presumption that "mechanism" should not be construed under § 112 P 6.

Because the term is defined by structural components in the claim, the court construes the term using the plain and ordinary meaning of the language used in the claim. The term incorporates both "stored coins" and "dispensing means," which the court has construed above. Those constructions, therefore, are incorporated in the construction of "money dispensing mechanism." The court construes "money dispensing mechanism" as "a device for dispensing money that includes stored coins of more than one denomination, a receptacle for coins dispensed from storage, and a dispensing mechanism 32 consisting of hoppers or bins 33, 34, 35, and 36 and their equivalents."


Although the parties fault each other for their failure to reach an agreement as to precisely which aspects of claim 1 remain in dispute, it is evident from their submissions that Plaintiff and Defendant disagree only as to one element of this claim. Specifically, the parties dispute the meaning to be given to the claim language referencing a "mechanism" for moving the pin clamp's fingers into and out of the locating assembly. Through the present motion, Defendant contends that the term "mechanism" as used in claim 1 should be viewed as a means-plus-function limitation, such that this term must be construed as encompassing only the corresponding structure described in the patent specification for performing the function of this "mechanism." The Court agrees.

The disputed term is found near the end of claim 1, which reads in its entirety:

1. A locating and clamping assembly comprising:

   a body defining an internal cavity and an opening from said cavity to the exterior of said body;
a locating pin disposed in said cavity and extending along an axis A out of said opening to a distal end;

an actuator for moving said locating pin rectilinearly along said axis A into and out of said opening;

at least one finger supported by said locating pin adjacent said distal end;

said assembly characterized by a mechanism for moving said finger along a straight line into and out of said locating pin perpendicular to said axis A in response to said rectilinear movement of said locating pin.

(Defendant's App'x, Ex. D, '254 patent at 8:12-24 (emphasis added).) Apart from their dispute over the term "mechanism," the parties evidently agree as to the ordinary and customary meaning that should be assigned to the remaining elements of this claim.

As to this sole disputed element, the parties' disagreement turns upon whether the term "mechanism" dictates that this element be construed as a means-plus-function limitation governed by 35 U.S.C. § 112 P 6. Under this statutory provision, a claim element "may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof," in which case the claim "shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112 P 6. As the Federal Circuit has explained, § 112 P 6 "permits the use of purely functional language in claims," but "limits the breadth of such claim language by restricting its scope to the structure disclosed in the specification and equivalents thereof." Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1582 (Fed. Cir. 1996).

"In determining whether a claim limitation is a means-plus-function limitation, the use of the word 'means' creates a presumption that § 112, P 6 applies." Wenger Manufacturing, Inc. v. Coating Machinery Systems, Inc., 239 F.3d 1225, 1232 (Fed. Cir. 2001) (internal quotation marks and citation omitted). By the same token, if the word "means" does not appear, the limitation in question "is presumptively not subject to [§] 112 P 6." Greenberg, supra, 91 F.3d at 1583-84 (emphasis added). Nonetheless, "a limitation lacking the term 'means' may overcome the presumption against means-plus-function treatment if it is shown that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." Greenberg, supra, 91 F.3d at 1583 (internal quotation marks and citations omitted). In this case, Defendant argues that the presumption against means-plus-function treatment is overcome by the use of the term "mechanism" in a purely functional way, unaccompanied by any sort of language suggestive of a structure that performs the function of this "mechanism."

As Defendant points out, MIT itself was a case in which the Federal Circuit held that a claim's reference to "mechanism" was synonymous with "means," and hence was properly construed as disclosing a means-plus-function limitation. The patent in that case "disclose[d] a color processing system for producing copies of color originals," and one of the elements of claim 1 of this patent was a "colorant selection mechanism" that received "appearance signals" derived from a scanned original image and selected "corresponding reproduction signals" that would result in a "colorimetrically-matched reproduction." MIT, 462 F.3d at 1353 (emphasis added). Nonetheless, "a limitation lacking the term 'means' may overcome the presumption against means-plus-function treatment if it is shown that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." MIT, 462 F.3d at 1353 (emphasis added). In this case, Defendant argues that the presumption against means-plus-function treatment is overcome by the use of the term "mechanism" in a purely functional way, unaccompanied by any sort of language suggestive of a structure that performs the function of this "mechanism."

We agree with the district court's conclusion that the presumption here [against means-plus-function treatment] is overcome and that the phrase "colorant selection mechanism should be construed as a means-plus-function limitation. The generic terms "mechanism," "means," "element," and "device," typically do not connote sufficiently definite structure . . . .

Here, the patentee used "mechanism" and "means" as synonyms. At least one dictionary definition equates mechanism with means. See The Random House Webster's Unabridged Dictionary 1193 def. 2 (2d ed. 1998) (defining "mechanism" as "the agency or means by which an effect is produced or a purpose is accomplished"); see also The Random House Dictionary of the English Language -- The Unabridged Edition 889 (1973) (same). The term "mechanism" standing alone connotes no more structure than the term "means."

462 F.3d at 1354 (citations omitted).

In so ruling, the court distinguished an earlier decision, Greenberg, supra, 91 F.3d at 1583-84, in which another Federal
Circuit panel had held that the phrase "detent mechanism" did not trigger means-plus-function treatment under § 112 P 6. In Greenberg, the district court had concluded that "detent mechanism" was subject to § 112 P 6, in part "because the term did not describe a particular structure but described any structure that performed a detent function." Greenberg, 91 F.3d at 1583. The Federal Circuit found this reasoning insufficient to justify means-plus-function treatment:

. . . [T]he fact that a particular mechanism -- here "detent mechanism" -- is defined in functional terms is not sufficient to convert a claim element containing that term into a "means for performing a specified function" within the meaning of section 112(6). Many devices take their names from the functions they perform. The examples are innumerable, such as "filter," "brake," "clamp," "screwdriver," or "lock." Indeed, several of the devices at issue in this case have names that describe their functions, such as "graspers," "cutters," and "suture applicators."

"Detent" (or its equivalent, "detent mechanism") is just such a term. Dictionary definitions make clear that the noun "detent" denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms. It is true that the term "detent" does not call to mind a single well-defined structure, but the same could be said of other commonplace structure terms such as "clamp" or "container." What is important is not simply that a "detent" or "detent" mechanism is defined in terms of what it does, but that the term, as the name for structure, has a reasonably well understood meaning in the art.

91 F.3d at 1583 (citations omitted).

Despite some similarity in the language at issue -- "colorant selection mechanism" in MIT versus "detent mechanism" in Greenberg -- the court in MIT nonetheless found that Greenberg was distinguishable:

Claim language that further defines a generic term like "mechanism" can sometimes add sufficient structure to avoid [§] 112 P 6. For example, in Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580 (Fed. Cir. 1996), which involved a mechanical device, we held that [§] 112 P 6 did not apply to the term "detent mechanism" because "the noun 'detent' denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms." Id. at 1583. The court recited several dictionary definitions for "detent," including "a mechanism that temporarily keeps one part in a certain position relative to that of another, and can be released by applying force to one of the parts." Id. (internal quotation marks and citations omitted). These definitions connoted sufficient structure to avoid [§] 112 P 6 . . . .

In contrast, the term "colorant selection," which modifies "mechanism" here, is not defined in the specification and has no dictionary definition, and there is no suggestion that it has a generally understood meaning in the art. We therefore agree with the district court that "colorant selection mechanism" does not connote sufficient structure to a person of ordinary skill in the art to avoid [§] 112 P 6 treatment.

MIT, 462 F.3d at 1354 (footnotes omitted).

Returning to the present case, this Court readily concludes that the claim language at issue here is far more analogous to the "colorant selection mechanism" of MIT than to the "detent mechanism" of Greenberg. As explained in MIT, "[t]he term 'mechanism' standing alone connotes no more structure than the term 'means.'" MIT, 462 F.3d at 1354. It follows that a "mechanism" should ordinarily be construed as a means-plus-function limitation absent accompanying claim language that is suggestive of structure, at least to a person of ordinary skill in the relevant art. This, then, was the crucial distinction between the claim language addressed in Greenberg and in MIT -- the additional "detent" qualifier in the former case was found to be a "name for structure" that had a "reasonably well understood meaning in the art," Greenberg, 91 F.3d at 1583, while the "colorant selection" modifier in the latter case lacked any comparable structural connotation that was "generally understood in the art," MIT, 462 F.3d at 1354.

The term "mechanism" as used in claim 1 of the '254 patent is still further along the means-plus-function spectrum than the "colorant selection mechanism" under consideration in MIT, because the reference to a "mechanism" in this case is utterly unaccompanied by any language that is suggestive of structure, whether specific or generic. As stated earlier, the pertinent portion of claim 1 discloses a locating and clamping assembly that is "characterized by a mechanism for moving said finger along a straight line into and out of said locating pin perpendicular to said axis A in response to said rectilinear movement of said locating pin." All that can be said about this "mechanism" is that it moves the device's clamping fingers into and out of
the locating pin in a direction perpendicular to the axis along which the locating pin travels, and that it does so in response to the "rectilinear movement" of the locating pin into and out of an opening in the clamping assembly.

While this claim language discloses the function to be performed by the referenced "mechanism" -- namely, to move the clamping fingers in a specified direction in response to the movement of the locating pin -- it says nothing at all about any sort of structure for performing this function. Nor is the generic term "mechanism" modified or further defined by any accompanying claim language that might connote structure, whether under an ordinary dictionary definition or to a person of ordinary skill in the relevant art. Rather, the term "mechanism" stands alone, and therefore "connotes no more structure than the term 'means.'" MIT, 462 F.3d at 1354. It follows that the presumption against means-plus-function treatment has been overcome, and that the "mechanism" referred to in claim 1 of the '254 patent must be construed in accordance with § 112 P 6 -- i.e., it must be restricted in scope "to the structure disclosed in the specification and equivalents thereof." Greenberg, 91 F.3d at 1582.

Although Plaintiff suggests a number of grounds for avoiding this result, the Court finds none of them persuasive. First and foremost, Plaintiff contends that the need for any construction of claim 1 of the '254 patent has been obviated by Defendant's purported concession in discovery that all of the claim's terms should be given their "ordinary meaning." As evidence of Defendant's purported "admission" on this point, Plaintiff cites (i) the deposition testimony of Defendant's vice president, William Davenport, who was designated as the firm's deponent under Fed. R. Civ. P. 30(b)(6), and (ii) Defendant's objection to Plaintiff's interrogatory requesting that Defendant identify any claim terms that should be given a "special meaning" rather than their "common and ordinary meaning."

Contrary to Plaintiff's assertion, the Court sees nothing in Defendant's conduct during discovery that might constitute any sort of "waiver" of Defendant's opportunity to advocate a particular claim construction in the course of dispositive motion practice. First, in the deposition testimony cited by Plaintiff, Mr. Davenport was not asked to offer any sort of construction of the term "mechanism" as used in claim 1. Rather, he was asked only (i) whether Defendant's allegedly infringing product "has a mechanism for moving [a clamping] finger along a straight line into and out of the locating pin," (ii) whether the straight line along which the clamping finger moves in Defendant's product is "perpendicular to the axis that has the rectilinear movement of the locating pin," and (iii) whether the mechanism in Defendant's product moves the clamping fingers "in response to rectilinear movement of the locating pin." (Plaintiff's Response, Ex. A, Davenport Dep. at 156-57.) By acknowledging that Defendant's product has such a "mechanism," Mr. Davenport was in no way confirming, or even postulating, that claim 1 of the '254 patent should be construed as encompassing any and all pin clamps that have any sort of "mechanism," as that term is commonly understood, for performing the function described in this claim. 1 Indeed, nothing in the cited passage of his deposition testimony can be viewed as an expression of any opinion whatsoever as to how any element of claim 1 should be construed, much less whether any of this claim's terms might trigger means-plus-function treatment under § 112 P 6. 2 Instead, Mr. Davenport merely was asked to confirm that Defendant's product had certain features and performed certain functions as identified by Plaintiff's counsel. The Court is at a loss to see how this testimony can be viewed as reflecting, much less limiting, the claim construction positions that Defendant would or could advocate in its dispositive motion practice.

--- Footnotes ---

1 Moreover, and for what it is worth, Mr. Davenport further opined at his deposition that the mechanisms used in Plaintiff's and Defendant's competing products were "[w]holly different," with Plaintiff's pin clamp using a "pivoting motion" to move the clamping fingers out of the locating pin and Defendant's product using purely "linear motion" to achieve this result. (Id. at 81.)

2 Of course, even if Mr. Davenport had offered an opinion on this latter subject, Plaintiff has failed to suggest a reason why any weight should be given to the testimony of a lay witness on a legal issue reserved to the Court. See Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004) ("The task of determining whether the limitation in question should be regarded as a means-plus-function limitation, like all claim construction issues, is a question of law for the court."). At most, Mr. Davenport's testimony might reflect how a person of ordinary skill in the relevant art might read and understand the language of the claim. On this point, however, his testimony seemingly suggests precisely the opposite of what Plaintiff would read into it, where he opined that the parties had settled upon two wholly different structures for accomplishing the function assigned to the "mechanism" in claim 1.
Neither can the Court discern how Defendant's objection to an interrogatory might be construed as either (i) an acknowledgment that Plaintiff's view of the "ordinary meaning" of claim 1 was correct, or (ii) a waiver of any opportunity to propound a means-plus-function reading of the term "mechanism" as used in this claim. In the interrogatory in question, Defendant was asked to identify any terms in the patents-in-suit that it believed should be given a "special meaning different from the[ir] common and ordinary meaning." (Plaintiff's Response, Ex. B, Interrogatory No. 10.) Defendant responded by objecting to the interrogatory as "premature," where "[d]iscovery ha[d] just begun," no deadlines had been set "relative to claim construction issues," and Plaintiff purportedly had yet to "[i]dentif[y] what claims of the patents-in-suit it contends to have been infringed and [which of Defendant's] products it believes to embody one or more of the claims of the patents-in-suit." (Id.) Because Defendant evidently did not supplement this response at any point during discovery, Plaintiff surmises that Defendant should be bound by the "ordinary meaning" of the terms of claim 1.

This argument is riddled with flaws, both factual and logical. First, the Court notes that Defendant's above-quoted discovery objection was merely an early salvo in a protracted squabble, spanning essentially the entire discovery period, over the timing, sequencing, and sufficiency of the parties' discovery responses regarding matters of claim construction. Plaintiff promptly responded to Defendant's objection by moving to compel full and complete responses to its first set of interrogatories. Yet, in a stipulated order dated December 27, 2006, the scheduled hearing on Plaintiff's motion was cancelled in light of Defendant's agreement to supplement certain of its interrogatory responses. Notably, the interrogatory now identified by Plaintiff was not mentioned in this stipulated order -- instead, this order recited Defendant's broader agreement to "provide its claim construction pursuant to a scheduled exchange as agreed to by counsel." (12/27/2006 Order at 2.) Since the parties did not exhibit any particular reluctance to seek the Court's intervention in their discovery disputes, the Court can only assume that Defendant satisfactorily discharged this obligation. 3

In any event, Plaintiff fails to explain why the means-plus-function construction advanced in Defendant's motion should qualify as a "special meaning" that Defendant was obligated to identify in response to Plaintiff's interrogatory, as opposed to merely an "ordinary" meaning that happens to differ from the "ordinary" meaning that Plaintiff would assign to the term "mechanism" as used in claim 1. To the extent that Plaintiff means to suggest that judicial claim construction is unnecessary so long as the parties agree that a claim's terms should be given their "ordinary meaning," this unduly discounts the capacity of patent litigants to argue over what this "ordinary meaning" should be. As one court recently observed, "parties in patent cases rarely agree on the 'ordinary meaning of [the patent's] claims' or what claims of the patents-in-suit it contends to have been infringed and [which of Defendant's] products it believes to embody one or more of the claims of the patents-in-suit." (Maytag Corp. v. Electrolux Home Products, Inc., 411 F. Supp.2d 1008, 1037 (N.D. Iowa 2006) (alteration in original).) Likewise, it begs the question in this case to appeal, without further discussion or explanation, to the "ordinary meaning" of the term "mechanism," because the "ordinary meaning" of this term, along with the words that accompany or modify it, determines whether means-plus-function treatment is warranted. Accordingly, the Court rejects Plaintiff's unstated premise that Defendant has advanced some sort of novel claim construction position by urging a means-plus-function interpretation of claim 1.

More fundamentally, even if Plaintiff could establish some element of sandbagging or "unfair surprise" in Defendant's motion -- and the record falls well short of such a showing -- there is no indication of any resulting prejudice or need for remedial measures. If, for example, Defendant had provided misleading or incomplete discovery responses that caused Plaintiff to forgo a particular line of inquiry, the proper remedy at this juncture would be a request for additional discovery

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pursuant to Fed. R. Civ. P. 56(f). Indeed, Plaintiff has made just such a request in response to one of the grounds advanced in Defendant's other pending motion, arguing that Defendant seeks to rely on a prior art reference that was not timely identified during discovery. In its response to Defendant's motion for claim construction, in contrast, Plaintiff fails to suggest any impediment to its ability to advocate an interpretation of claim 1 that differs from the one sought by Defendant. Consequently, the Court sees no reason to abstain from construing the disputed terms of claim 1, at least to the extent that such claim interpretation is a necessary predicate to the resolution of the parties' cross-motions for summary judgment.

Having addressed Plaintiff's threshold procedural challenges to Defendant's request for a judicial construction of claim 1 of the '254 patent, the Court turns to Plaintiff's substantive challenges, such as they are, to the particular claim construction advocated by Defendant. Beyond terse expressions of surprise, with little or no accompanying explanation, that Defendant has failed to discuss certain decisions that Plaintiff views as most relevant to the claim construction inquiry, 4 Plaintiff first contends that Defendant has failed to produce the "substantial amount of proof" that purportedly is necessary to overcome the presumption against means-plus-function treatment of claim elements that lack the word "means." Yet, the decision in MIT belies any such claim of an onerous evidentiary burden, where the court in that case relied solely on (i) language within the four corners of the patent-in-suit, (ii) a dictionary definition that "equates mechanism with means," and (iii) the absence of evidence that the modifying "colorant selection" language had "a generally understood meaning in the art." MIT, 462 F.3d at 1354.

4 Plaintiff chides Defendant, for example, for its "incredibl[e]" failure to discuss the Federal Circuit's Greenberg decision. Apart from the fact that Greenberg is, in fact, addressed in Defendant's motion, albeit only in a footnote, any arguable omission in this regard is overcome by Defendant's extensive reliance on the MIT decision, which in turn discusses Greenberg at length and finds it distinguishable.

There is even less of a need here for Defendant to supply a "substantial amount of proof" in order to overcome the presumption against means-plus-function treatment. As explained earlier, and in contrast to the claim language at issue in MIT, the term "mechanism" in claim 1 of the '254 patent is utterly unaccompanied by any language that modifies this "generic term" or that might connote "sufficient structure to avoid [§] 112 P 6." MIT, 462 F.3d at 1354. Rather, the accompanying language merely discloses the function that this "mechanism" performs, without in any way suggesting a structure that might perform this function. Under these circumstances, it is enough for Defendant to point to (i) the Federal Circuit's express recognition that "[t]he term 'mechanism' standing alone connotes no more structure than the term 'means,'" MIT, 462 F.3d at 1354, and (ii) the absence of any accompanying claim language that might be understood by a person of ordinary skill in the art as connoting a structure that performs the stated function. Certainly, with the one possible exception discussed below, Plaintiff has not identified any such language in claim 1 that supplies the structure that is otherwise lacking in the unadorned reference to "mechanism" alone. In a relatively easy case like the present one, where the term "mechanism" is "simply a nonce word or a verbal construct that is not recognized as the name of structure and is simply a substitute for the term 'means for,'" Lighting World, supra, 382 F.3d at 1360, the Court is confident that Defendant need not shoulder a particularly heavy burden in overcoming the presumption against means-plus-function treatment.

Plaintiff next contends that Defendant's proposed construction of claim 1 runs afoul of the doctrine of claim differentiation, under which each claim in a patent is presumed to have a different scope. See Comark Commns. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998). 5 If claim 1 were construed as including a means-plus-function limitation, thereby restricting its scope by reference to the corresponding structure described in the patent specification, Plaintiff submits that the result would be to eliminate a significant distinction between independent claim 1 and dependent claims 4, 5, and 6. In particular, claims 4 through 6 add structure to the "mechanism" of claim 1, disclosing that this "mechanism" includes a rotating central post. Yet, this same "rotating central post" limitation would be incorporated into claim 1, by way of the patent specification, if this claim's reference to the term "mechanism" were construed as a means-plus-function limitation.

5 Once again, Plaintiff prefaces its argument on this issue with a pointless and utterly gratuitous declaration that Defendant has failed to address the "leading case" on this subject.
As recognized in Comark Communications, however, "the doctrine of claim differentiation is not a hard and fast rule of construction," but rather establishes only a "presumption that each claim in a patent has a different scope." Comark Commun., 156 F.3d at 1187. Indeed, the Federal Circuit has expressly emphasized, in decisions both before and after Comark Communications, that "the judicially developed guide to claim interpretation known as 'claim differentiation' cannot override . . . the express mandate of section 112(6)." Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir. 1991); see also Wenger Manufacturing, supra, 239 F.3d at 1233. Moreover, the court has cautioned that "[a] means-plus-function limitation is not made open-ended by the presence of another claim specifically claiming the disclosed structure which underlies the means clause or an equivalent of that structure," as such a rule of construction "would provide a convenient way of avoiding the express mandate of section 112(6)." Laitram Corp., 939 F.2d at 1538.

This same reasoning defeats Plaintiff's appeal in this case to the doctrine of claim differentiation. Regardless of whether a means-plus-function limitation might diminish, or even eliminate, the distinction between claim 1 and claims 4 through 6 of the '254 patent, the Court has already explained why, in its view, there is simply no tenable reading of the term "mechanism" and the surrounding language of claim 1 that would connote sufficient structure to avoid the application of § 112 P 6. The situation was different in Wenger Manufacturing, 239 F.3d at 1233-34, for example, where the court applied the doctrine of claim differentiation to ensure that a means-plus-function limitation was confined strictly to those "structural limitations from the written description that are necessary to perform the claimed function." Thus, while the Court is mindful, as discussed below, of a similar need here to avoid the sweeping importation into claim 1 of structural elements that are not necessary to fulfill the function of the "mechanism" disclosed in that claim, the Court cannot allow a rule of construction to override the statutory command of § 112 P 6 where, as here, a claim element is stated in purely functional terms.

Plaintiff next suggests that Defendant's proposed construction of claim 1 is somehow undermined by the Federal Circuit's recent decision in Applied Medical Resources Corp. v. United States Surgical Corp., 448 F.3d 1324 (Fed. Cir. 2006). Yet, the parties in that case agreed almost entirely as to the proper construction of the claim at issue, and the court found that the one possible point of dispute was not preserved for appeal. See Applied Medical Resources, 448 F.3d at 1332-33 (electing to "apply the undisputed claim construction adopted by the district court"). The significance of that decision, then, lies not in its discussion of claim construction principles, but rather -- as Plaintiff itself characterizes it -- in its "enunciat[ion] [of] a precise process for determining infringement of a 'means plus function' claim." (Plaintiff's Response Br. at 7 (emphasis added).) Plaintiff does not explain what bearing, if any, Applied Medical Resources should have on the proper disposition of Defendant's motion for claim construction, and its relevance likewise is not evident to the Court.

Next, and rather remarkably, Plaintiff requests that the Court permit "full briefing" on the issue of claim construction, so that the parties and the Court alike may "not only decide the claims that need to be evaluated, but also clarify the decisions to be made, and the standards against which those decisions need to be framed." (Id. at 8.) Yet, Plaintiff fails to suggest any reason why the parties' existing round of briefing on Defendant's present motion for claim construction would not qualify as the desired "full briefing" on this subject. Neither has Plaintiff identified any impediment to its opportunity to fully address all of the issues of relevance to the Court's claim construction effort within the four corners of its response to Defendant's motion. To the contrary, Plaintiff appears to have accurately identified the points -- or, more accurately, the single point -- upon which the parties disagree in light of the arguments raised and interpretations propounded in Defendant's motion, and has taken the opportunity in its response to advance various reasons why its proposed construction should prevail over Defendant's as to this single point of contention. Under these circumstances, the Court finds no basis for permitting supplemental briefing on issues that have been thoroughly addressed and debated in the parties' initial round of briefs, as well as at oral argument.

Indeed, at the November 29 hearing, Plaintiff and its counsel suggested for the first time that claim 1 does, in fact, disclose structure corresponding to its "mechanism" element. In particular, Plaintiff contends that the term "mechanism" should be construed as part and parcel of the "actuator" referenced earlier in claim 1. Plaintiff further asserts that an "actuator," like the "detent" qualifier in Greenberg, supra, 91 F.3d at 1583, is a "name for structure" that has a "reasonably well understood meaning in the art." In Plaintiff's view, then, the close relationship between the "actuator" and "mechanism" elements of claim 1 obviates the need to consult the patent specification to determine the structure corresponding to the latter element.

This proposed construction, however, cannot be squared with either the language of claim 1 itself or the overall patent of
which it is a part. First and foremost, claim 1 discloses an "actuator" and a "mechanism" as two distinct elements that perform different functions. Under the express language of the claim, the "actuator" performs the function of "moving said locating pin rectilinearly along said axis A into and out of said opening" in the device's locating and clamping assembly. The "mechanism," in contrast, performs the function of "moving said finger along a straight line into and out of said locating pin perpendicular to said axis A in response to said rectilinear movement of said locating pin." To be sure, these functions are related, with the "mechanism" moving the device's clamping fingers "in response to" the actuator's movement of the locating pin. Yet, the two functions are nonetheless distinct, as the claim itself makes clear by disclosing them in two separate elements. There is simply no basis in the language of claim 1 for treating the "mechanism" as somehow ancillary to, and structurally defined by reference to, the "actuator" that serves a wholly distinct purpose in the overall device.

The specification confirms this distinction. It summarizes the invention as including an "actuator" that "moves the locating pin rectilinearly along the axis into and out of the opening" in the locating assembly, as well as a "mechanism" that "rotates in response to the rectilinear movement of the locating pin for moving the finger radially." (254 patent at 2:21-27.) It then devotes entire paragraphs to separately defining and describing (i) an "actuator 52" that is mounted to the body of the locating assembly and connected to the locating pin through a pin mount, and that performs the function of "rectilinearly moving the locating pin 12 along the axis A" using a combination of a piston, coupler, and coupler plate, (id. at 4:56-5:18), and (ii) a "mechanism 68" that includes a rotating central post "disposed between the actuator 52 . . . and the fingers" that "rotates in response to the rectilinear movement" of the actuator, as well as a "motion converter" that converts the rotational movement of the central post into radial movement of the fingers, (id. at 6:3-27).

The separate functions and structures of the "actuator" and "mechanism" are emphasized in the description of the latter's central post as "independent from" the actuator's piston in order to "separat[e] the rotational movement of the central post 70 from the rectilinear movement of the locating pin 12." (Id. at 6:14-16.) Similarly, the accompanying figures depict the "actuator" and "mechanism" as wholly distinct parts of the device with separate, albeit adjacent, structural components. Thus, if one were to review only those portions of the specification addressing the "actuator," no hint could be found of any structure corresponding to the distinct function performed by the "mechanism" in the patented device. Likewise, if one were to construct an "actuator" in accordance with the specification, the resulting component would not perform the function assigned to the "mechanism" -- namely, moving the device's clamping fingers in a straight line into and out of the locating pin in a direction perpendicular to the axis along which the locating pin moves.

The Federal Circuit has recognized a presumption that the use of different terms "connotes different meanings." CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co., 224 F.3d 1308, 1317 (Fed. Cir. 2000); see also Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111, 1119 (Fed. Cir. 2004) (explaining that the use of "different terms in a claim" raises the inference that the applicant "intended his choice of different terms to reflect a differentiation in the meaning of those terms"); Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572, 1579 (Fed. Cir. 1996) (holding that the "plain meaning" of the claim at issue in that case would "not bear a reading" under which two different claim terms were construed as describing a single element). Plaintiff has not identified any basis for overcoming this presumption here, but instead offers only its counsel's bare assertion at the November 29 hearing that the terms "actuator" and "mechanism" are used interchangeably in claim 1. Because such a reading is contrary to both the language of the claim itself and the patent as a whole, the Court adheres to its determination that the term "mechanism" discloses a means-plus-function limitation governed by § 112 P 6.

There remains only the question of precisely how the Court should construe this means-plus-function limitation. As noted earlier, the application of § 112 P 6 dictates that the "mechanism" referenced in this claim must be restricted in scope "to the structure disclosed in the specification and equivalents thereof." Greenberg, 91 F.3d at 1582. Yet, the Court must take care not to "import functional limitations that are not recited in the claim, or structural limitations from the written description that are unnecessary to perform the claimed function." Wenger Manufacturing, 239 F.3d at 1233. In this case, this means that the Court should look to the specification only for those structural limitations that are necessary to perform the function of the "mechanism" referenced in claim 1 -- i.e., the function of "moving said finger along a straight line into and out of said locating pin perpendicular to said axis A in response to said rectilinear movement of said locating pin."

In Defendant's view, this facet of the Court's claim construction inquiry is entirely straightforward, and flows directly from the description of the "mechanism" as disclosed in the specification. In particular, the specification describes this "mechanism" as "rotat[ing] in response to the rectilinear movement of the locating pin . . . to move the fingers . . . radially." (Defendant's App'x, Ex. D, '254 patent at 5:67-6:2.) The specification then discloses the structural elements that achieve this
function:

The mechanism 68 includes a central post 70 disposed between the actuator 52 at a first end 72 and the fingers 60 at a second end 74. The central post 70 rests on a surface 76 of the coupler plate 56, which rectilinearly moves the central post 70 in response to the rectilinear movement of the actuator 52. The central post 70 rotates in response to the rectilinear movement. The surface 76 of the coupler plate 56 in contact with the central post 70 functions as a thrust bearing to facilitate the rotational movement of the central post 70.

A motion converter 84 converts the rotational movement of the central post 70 into radial movement of the fingers 60. As shown in FIG. 7, the converter 84 includes the slots 64 in each of the fingers 60 and dowels 86 extending axially from the second end 74 of the central post 70 and into each of the slots 64, respectively. The dowels 86 are offset from the axis A for radially moving the fingers 60 in response to rotational movement of the central post 70.

The rotational movement of the central post 70 moves the dowels 86 along an arcuate path. As the dowels 86 move through the respective slots 64, which are straight, the dowels 86 force the fingers 60 to move radially to maintain the slots 64 in alignment with the dowels 86.

...[A] pair of cams 90 and corresponding cam followers 92 interconnect the central post 70 and the body 16 for rotating the central post 70 in response to the rectilinear movement of the locating pin 12. The pair of cams 90 and the corresponding cam followers 92 are disposed on opposite sides of the axis A. The pair of cams 90 and corresponding cam followers 92 stabilize the central post 70 to allow the central post 70 to rotate smoothly within the cavity 18.

(2d. at 6:3-55.)

Whether in its response to Defendant's motion or through the arguments of its counsel at the November 29 hearing, Plaintiff has failed to identify any specific respect in which Defendant's proposed construction of claim 1's means-plus-function limitation impermissibly imports either (i) functional limitations that are not recited in the claim itself or (ii) structural limitations that are unnecessary to perform the claimed function. Instead, Plaintiff has focused its arguments almost exclusively upon the threshold question whether the term "mechanism" as used in claim 1 warrants means-plus-function treatment under § 112 P 6. Having resolved this more general question in Defendant's favor, the Court adopts Defendant's construction of the claim's means-plus-function limitation as essentially unopposed.

---- Footnotes ----

6 In any event, and as will become clear below, many of the structural details of the "mechanism" as described in the '254 patent specification are not material to the determination whether Defendant's products infringe this patent. To the extent that the precise contours of this "mechanism" bear upon the question of infringement, the Court will consider below whether, as Plaintiff's counsel generally asserted at the November 29 hearing, Defendant has impermissibly sought to import functional or structural limitations from the specification beyond what is necessary to meet the dictates of § 112 P 6.

---- End Footnotes ----
that do not include the word "means," this presumption is rebutted if the claim does not "recite[] sufficiently definite structure." TIP Sys., 529 F.3d at 1374 (citing CCS Fitness, 288 F.3d at 1369).

The court finds that means-plus-function construction is appropriate for this claim because "mechanism" is the sort of generic term construed by the Federal Circuit to indicate a means-plus-function limitation. See Mass. Inst. of Tech., 462 F.3d at 1354. Nor does the claim provide sufficient structure to preclude means-plus-form construction. See TIP Sys., 529 F.3d at 1374 (citing CCS Fitness, 288 F.3d at 1369). Finally, the language of this phrase largely parallels those above which the court has construed in the means-plus-function format.

The parties disagree as to the construction of the function and the corresponding structure. The parties again disagree regarding the construction of the word "restrict": Plaintiff argues that "restrict" is the ordinary meaning and no further construction of the claim language is required, whereas Defendant argues for the use of "confine." (Pl.'s Reply at 14; Chart at 17.) The court finds that "restricting" is the better construction because it contemplates the flow of fluid from one bladder into another and maintains the possibility of the dynamic nature of process described, albeit limited or inhibited. Use of "confining" would limit the claim by not preserving this connotation and imputing a more static nature to the condition of the fluid.

The parties do not materially disagree regarding the construction of the corresponding structure, and the court will construe it in substantial accord with Claim 10 of the '029 Patent. The court will construe the claim as follows:

Function:

- a mechanism restricting the flow of fluid from one portion of the interior of the bladder to another portion.

Corresponding Structure:

- a bladder within a container;
- open-cell foam arranged within the interior of the bladder.

The term "a media writing device . . . whereby . . . works . . . can be written to a removable medium" appears in claims 43 and 68 of the '345 patent. The plaintiff proposes a construction of "a media interface, for writing digital works to a medium removable from the interface." The defendant's counter-construction is "a media writing device for writing works to a medium removable from the media writing device."

The term "a media write unit . . . for writing items . . . to a removable medium" appears in claim 34 of the '725 patent. The plaintiff proposes that this term be construed the same as the above term. The defendant proposes a construction of "a media write unit for writing works to a medium removable from the write unit."

The crux of the dispute is whether the terms "media writing device" and "media write unit" can be construed to mean an "interface" for communication with a separate device for writing a work. A secondary issue is whether the work must be "digital." With respect to the secondary issue, the specification states "[i]n yet another aspect, the method includes building a list of media elements which can come from a variety of sources. Preferably, the media elements are storable in a digital format." '725 patent at col. 2, 11. 15-18 (emphasis added). Therefore, the storage is not limited to a digital format.

Similarly, there is no warrant for imposing the plaintiff's interface construction. The plain language of the claim refers to a media writing device and a removable medium. Regardless of the language of the claims as originally filed, the grammar of the claim language as allowed suggests that "removable" characterizes the type of medium used in the media writing device. The specification is consistent with this construction, identifying audio and video tapes and CDs as examples of removable
media. '725 patent, col. 2, 11. 2-3. As a result, the court construes the relevant terms to mean "a media writing device for writing works to a medium removable from the media writing device."

ii. "Member" / "first frame member" / "second frame member" / "third frame member"

The chart below describes the parties' competing definitions of the "member" terms. 8

--- Footnotes ---

8 For the purpose of my limiting term constructions to ten to twelve, I consider these "member" terms collectively as a single term construction.

--- End Footnotes ---

<table>
<thead>
<tr>
<th>180s' Construction</th>
<th>Gordini's Construction</th>
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<tbody>
<tr>
<td>&quot;member&quot;</td>
<td>a unitary component having a length that may be coupled to one or more other unitary components; when the unitary components are coupled, they manifest motion relative to one another appropriate</td>
</tr>
<tr>
<td>term &quot;member&quot; never appears in the separate construction of the term &quot;member&quot; is necessary or appropriate</td>
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"first frame member" a part of an ear warmer frame a first "member" (construed above)

"second frame member" a part of an ear warmer frame, separate and distinct from the first frame member a second "member" (construed above)

"third frame member" a part of an ear warmer frame, separate and distinct from the first and second frame members a third "member" (construed above)

First, I construe "member" as a "part." In light of the claim language, specification, and illustrative figures in the patent, "member" is synonymous with "part." (See Pls.' Mem., Ex. A at col. 7, ll. 39-52, Figs. 16 & 17.) Gordini's proposed construction of "member" is both too narrow and unnecessarily confusing. Nothing in the claim language necessitates that
"members," when coupled, "manifest motion relative to one another." Although the specification indicates that some members in some embodiments "move relative to each other to adjust the overall length of the frame[,"] (see Pls.' Mem., Ex. A at col. 7, ll. 40-45), the widely accepted understanding of "member" does not, explicitly or implicitly, implicate "movement relative to one another."

Additionally, I construe "[first/second/third] frame member" as follows:

- "First frame member": a part of an ear warmer frame, separate and distinct from the second and third frame members
- "Second frame member": a part of an ear warmer frame, separate and distinct from the first and third frame members
- "Third frame member": a part of an ear warmer frame, separate and distinct from the first and second frame members

This construction closely, but not identically, parallels 180s proposed construction. I added the extra "separate and distinct . . ." language to the "first frame member" and the "second frame member" to make clear that each "member" is separate and distinct from each other "member." Any redundancy this language creates is outweighed by the clarity it establishes.

B. "Member positionable within said first hole and being extendable within said slot" and similar language as used in Claims 20, 43 and 48 of the '588 patent

The parties dispute two elements of this claim language: the meaning of "member" and of "positionable within said hole and being extendable within said slot." The pertinent language of Claim 20 of the '588 patent, with the disputed terms in italics, is representative:

20. A mounting device attachable to a raised portion on a building surface, said mounting device comprising:

(d) a securing assembly comprising a first hole extending from one of said side surfaces through said mounting body to interface with said slot and a first member positionable within said first hole and being extendable within said slot to secure at least said upper part of said raised portion within said slot by engaging said upper part of said raised portion within said slot with said first member.

The first disputed term, "member," is defined broadly by common and technical dictionaries to mean a "structural unit such as a . . . beam or tie, or a combination of these" or a "distinct part of a whole." CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1367 (Fed. Cir. 2002) (internal quotations and citations omitted). In CCS Fitness, the Federal Circuit found that these definitions encompass units of a larger whole and thus that the term "member" was not limited to single, unitary structure as asserted by the defendant in that case. See id.

Contek points to the prosecution history of the '248 and '588 patents to argue that "member" has a more limited meaning in these patents, namely a unitary blunt-nosed screw. CFE concurs that the prosecution statements relied upon by Contek show that Mr. Haddock and his counsel limited "member" to a "blunt-nosed fastening device," Pls.' Report in Further Support of Pls.' Markman Positions (Doc. 49) at 9, but dispute that the statements further limited this device to a unitary structure.

I find that the relevant prosecution history establishes that "member" as used in the '588 patent means "blunt-nosed screw." First, Claim 2 of the '248 patent application claimed a means for frictionally engaging that "comprises a member extendable from a wall of said cavity to contact said external surface of said one raised portion." Pls.' Markman Br., Ex. 3 [hereinafter "'248 patent prosecution history"] 27 (emphasis added). After the Examiner rejected this claim as unpatentable over the prior art Opplinger in view of Darnall, Mr. Haddock deleted "member" from the claim and amended it to provide that the means for frictionally engaging was limited to a "blunt nose screw." Contek's Br. re: Interpretation of Pls.' Patents (Doc. 35), Ex. D ('248 patent prosecution history) at 82-83, 110. This amendment provides insight into what Mr. Haddock originally
claimed as his invention, and what he gave up in order to meet the Examiner's objections. Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 978 (Fed. Cir. 1999); see Wang Labs, Inc. v. America Online, Inc., 197 F.3d 1377, 1384 (Fed. Cir. 1999); see also Phillips, 415 F.3d at 1317 (prosecution history can demonstrate "how the inventor understood the invention and whether the inventor limited the invention in the course of the prosecution, making the claim scope narrower than it otherwise would be.") Because the '588 patent derives from the '248 patent and its patent application, this history is relevant to the '588 patent and its use of this term as well. See Wang, 197 F.3d at 1384; Elkay, 192 F.3d at 980.

The conclusion that Mr. Haddock limited the meaning of the term "member" to "blunt nosed screw" is also supported by the prosecution history of the '588 patent. With respect to several application claims, Mr. Haddock equated the term "member" as used in these claims with a "screw" and/or the blunt-nosed screw disclosed in the specification. See, e.g., Contek's Br. re: Interpretation of Pls.' Patents (Doc. 35), Ex. E ('588 patent prosecution history) at 189-91. Given that the inventor himself defined "member" to mean "screw" or "blunt-nosed screw" to obtain issuance, it would be improper to find a broader construction than this.

The conclusion does not mean, however, that the term "member" as stated in Claims 20, 43 and 48 must be unitary in structure. Contek's arguments in this regard are based on its contention that a "screw" or "blunt-nosed screw" can only be a unitary structure. I reject this contention for the reasons stated earlier in this decision. "Member" as used in the referenced claims means “blunt-nosed screw,” which may have either a unitary or multi-part structure.

The referenced claims further require that the "member" or "members" be "positionable within" one or more holes in the "mounting body" and "being extendable within said slot to secure" the upper part of the raised portion "within said slot by engaging" the raised portion within the slot with the member(s). '588 patent, col. 20, ll. 33-37 (Claim 20); see id., col. 22, l. 66 - col. 23, ll. 3 (Claim 43), col. 23, ll. 7-12 (Claim 48). These terms are not defined in the claim language, specification or prosecution history, which leads me to consult dictionary definitions to determine their ordinary and customary meaning.

The root of the term "positionable" is the verb "position," whose ordinary meaning as relevant here is "to put in a or the proper position: PLACE, SITUATE." Webster's Third New Int'l Dictionary at 1769; see Knopik v. Amoco Corp., 96 F. Supp. 2d 892, 905 (D. Minn. 2000), aff'd, 95 Fed. Appx. 332 (Fed. Cir. 2004). The ordinary meaning of "within" as used here is "in the inner or interior part of: INSIDE OF." Webster's Third New Int'l Dictionary at 2627; see Watson Indus., Inc. v. Murata Elec. N. Am., Inc., 301 F. Supp. 2d 933, 942 (W.D. Wis. 2003), aff'd, 115 Fed. Appx. 441 (Fed. Cir. 2004). It is undisputed that the referenced "hole" is an opening in the "mounting body," which is the metal block or clamp, that extends from the outer surface of the clamp through the clamp body to the slot or cavity that surrounds the metal roof's standing seam. n6 Given these ordinary meanings and my construction of the term "member" to mean a "blunt nosed screw," I find the phrase "member positionable within first said hole" means the blunt-nosed screw, whether a unitary or multi-piece structure, is capable of being placed inside the hole that extends through the clamp to the slot surrounding the standing seam. This construction is consistent with the specification of both asserted patents. n7

n6 Claim 20 of the '588 patent, for example, describes the "first hole" as "extending from one of said side surfaces through said mounting body to interface with said slot." '588 patent, col. 20, ll. 32-34.

n7 CFE asserts that this phrase should be interpreted to mean that the member is "wholly or partially positionable within a fastening hole." Jt. Notice & Stip. Concerning Markman Hearing (Doc. 54), Ex. 1 (Plaintiffs' proposed interpretation, emphasis added). The ordinary meaning of a "member positionable within" the fastening hole, however, does not suggest that this requirement is satisfied if only a portion of the member (screw) is capable of placement within the hole. CFE also fails to cite any intrinsic or external evidence supporting this proposed interpretation.

The parties agree that the final portion of this disputed language, the phrase "member . . . being extendable into said slot" means that the "member" must be able to enter the slot or cavity of the clamp and physically contact and deform the roof seam. See Pls.' Report in Further Support of Pls.' Markman Positions (Doc. 49) at 9; Defs.' Br. re: Interpretation of Pls.' Patents (Doc. 35) at 27-28. This construction is supported by the dictionary definition of the relevant terms and is also consistent with the intrinsic evidence. Accordingly, I find this phrase means that the "member," construed for the reasons
stated above to mean "blunt-nosed screw," is able to enter the slot of the clamp and physically contact and deform the roof seam.

5. Luminal Attachment Member

Claim 15 includes the following element:

[a] luminal attachment member coupled to said housing, said luminal attachment member adapted to have a lumen portion attached thereto…

See Claim 15, Col. 8, lines 47-49. The parties disagree over whether this element is written in means-plus-function format under 35 U.S.C. § 112, P6. Ravo and Nicolo argue against such a construction. They insist that the word "member" is commonly used in describing structural elements of mechanical devices. Ethicon counters that the term "member" does not identify a specific structure and that the claim element must necessarily be written in means-plus-function format.

As Ravo and Nicolo point out, the phrase at issue does not include the word "means." Federal Circuit precedent establishes that "a claim term that does not use 'means' will trigger the rebuttable presumption that § 112 P6 does not apply." CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1369 (Fed. Cir. 2002). "The presumption that a limitation lacking the term 'means' is not subject to section 112 P6 can be overcome if it is demonstrated that 'the claim term fails to 'recite sufficiently definite structure for performing that function.'" Lighting World v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004), citing, CCS Fitness, 288 F.3d at 1369. However, "the presumption flowing from the absence of the term 'means' is a strong one that is not readily overcome." Lighting World, 382 F.3d at 1358 (citations omitted).

Thus, I begin with the presumption that § 112, P6 does not apply and consider whether Ethicon has successfully rebutted this presumption. Ethicon simply argues that the claim element recites a function - attaching the lumen - but recites no structure that would perform this function. See Docket No. 18, p. 20 and Docket No. 23, p. 5-7. I find Ethicon's argument to be unpersuasive for several reasons.

First, while I agree that the term "member" does not bring to my mind a particular structure, I must consider Ravo's and Nicolo's argument that persons of ordinary skill in the art would understand "member" to refer to something structural. Unfortunately, Ravo and Nicolo did not submit any expert testimony on this issue. Such testimony would have been helpful. Nevertheless, Federal Circuit precedent teaches that reference may be made to dictionaries. See Lighting World, 382 F.3d at 1361 (stating "we have looked to the dictionary to determine if a disputed term has achieved recognition as a noun denoting structure…"). Having consulted several dictionaries, I am convinced that the word "member" would be understood by those skilled in the relevant art to denote structure. The McGraw Hill Dictionary of Scientific and Technical Terms defines "member" as: "[a] structural unit such as a wall, column, beam or tie, or a combination of any of these…" McGraw Hill Dictionary of Scientific and Technical Terms (6th ed.), p. 1308. Similarly, Webster's Third New International Dictionary defines "member" as "a part of a building or other structure…[or] an essential part of a framed structure, a machine, or a device." Webster's Third New International Dictionary, p. 1408 (1993). Thus the luminal attachment must be structured in such a manner that a lumen may be attached to it.

In addition to the fact that the word "member" is defined in dictionaries as something structural, a review of the entire '148 Patent makes clear that Ravo and Nicolo used the phrase to mean a structure. For instance, the claim element itself does not describe a function. Additionally, Ravo and Nicolo use the word "means" elsewhere in the '148 Patent to take advantage of the means-plus-function manner of describing a claim. It would be odd, indeed, for the drafters to have used the word "means" in Claims 1, 2, 3, 4, 5, 7, 9, 10, 11, 12 and 13 to describe a means-plus-function element, yet suddenly substitute the word "member" for "means" in Claims 15, 16, 17 and 19. Additionally, the '148 Patent uses the word "member" in conjunction with several other phrases. See Col. 4, line 61 ("wedge-shaped member"); Col. 5, line 17 ("ligation member"); Col. 6, line 52 ("bowel members."). These phrases connote something structural.

Finally, I agree with Ravo and Nicolo that other prior art patents appear to use the word "member" to refer to structural elements. See Patent No. 4,304,236 entitled "Stapling Instrument Having an Anvil-Carrying Part of Particular Geometric
B. Construing the term "Member"

E'Lite argues the use of the term "member" in the '054 and '811 patents limits the patent claims to devices containing a separate magnetic piece that attaches to the bridge of the primary eyeglasses. E'Lite supports its position by noting the claim language does not speak of the magnetic connector member as included in the frame, but rather speaks of it as separate and secured to or in the frame. Consequently, E'Lite contends the C-Clip does not infringe the '054 and '811 patents because its magnetic connector member is not separate but is an integral part of the primary eyeglass frame.

Contour responds that an element of the accused device, namely the magnetizable substances Cobalt and Chromium located in the bridge of the C-Clip, corresponds to a patent limitation, the magnetic connector member secured in the bridge; therefore, E'Lite has no defense to the charge of literal infringement. Alternatively, Contour argues the C-Clip infringes patents '054 and '811 under the doctrine of equivalents. According to Contour, the C-Clip satisfies the doctrine of equivalents because the substance in the C-Clip's bridge performs the same function (attracting the magnet in the secondary frame) by the same means (magnetic attraction) to achieve the same result (magnetic engagement of the primary and secondary frame) as the magnetic connector member discussed in the patent claims.

Because the Federal Circuit has held the common definition of "member" is "distinct part of a whole" the Court concludes the C-Clip's lack of a separate magnetic member on the bridge of its primary frame is a defense to Contour's charge of literal infringement. However, E'Lite has failed to present evidence raising a genuine issue of material fact regarding whether the magnetic substance in the C-Clip performs the same function to achieve the same result by the same means as the magnetic member contained in the patent claim. Consequently, the Court concludes E'Lite's asserted defense to infringement under the doctrine of equivalents fails.

No genuine issue of material fact exists regarding whether either of E'Lite's two defenses against Contour's claim of infringement will prevail. The C-Clip contains a "frame" within the meaning of the term as used in patents '054 and '811. Additionally, although the C-Clip does not contain a magnetic member on the bridge of its primary frame, the magnetic substance in the bridge is equivalent. Because E'Lite has failed to show any lack of correspondence between the elements of the C-Clip and the limitations of patents '054 and '811 the Court will grant summary judgment on the issue of infringement to Contour.

5. A Member

Claim 5 refers to the patented device as a "member." Defendants ask that the term "member" be defined as "a single part, made of cardboard or a suitable plastic material that if scored and folded will fold repeatedly and uniformly without breaking." Def. Claim Construction Chart (DE # 38). Plaintiff suggests that the term be construed to mean the patented device is unitary, composed of one piece. Tr. at 8. Defendant seeks to include the enablement restrictions into the definition.
of "member." Def. Mem. in Support of Proposed Claim Construction (DE # 37) at 18. This Court holds that the term "member," by the terms of the claim, in context, refers to the unit which embodies the patent.

In Smith & Nephew v. Ethicon, No. CV 98-76-MA, (D. Or. June 11, 1999), 2 Magistrate Judge Hubel construed "member" as "the anchor itself." He further held this term requires "that the entire member is resilient." As set out in an earlier opinion, Judge Hubel's construction applies here under principles of claim preclusion. Judge Hubel did not, however, define "resilient," and the parties now dispute the import of this term.

The first dispute concerns the meaning of the claim's requirement that the lockup means "also include an elongated locking member." Col. 7, line 32. Giving the terms their ordinary meaning, the Court agrees with EPC that a "member," defined generally, is a part or a piece, a "locking member" is a part or piece capable of being locked, and an "elongated locking member" is a locking member which is slender in length relative to width. See, e.g., Webster's New World Dictionary, 2d ed. (1970); The American Heritage Dictionary, New College Ed. (1976). A more difficult issue regarding this phrase, however, is whether the patentee's use of the word "member" in the singular form limits the scope of the claim to one elongated locking member consisting of a single piece as arguably reflected in the patent drawings. Donaldson insists that it does consist of only one piece, while EPC argues that the use of the singular form in this instance cannot be so limited and that the claim would encompass a locking member made up of multiple elongated pieces.

Nothing in the specification suggests to this Court that the patentee intended to give a novel meaning to the term, "member." Donaldson cites the patent drawings and numerous references throughout the specification in support of its position that "member" -- under its ordinary meaning and as used by the patentee -- refers to a single piece. There can be no dispute that in the patent drawings the locking member is drawn as a single piece. Further, in the "Description of the Preferred Embodiment" ("Description"), the patentee's description of "an elongated locking member [= # 96] angled as shown at its upper end [= # 106] and having notches [= # 98] formed on its side" (emphasis added), and references to "the member" or "said member," appear to contemplate a single locking member. But, as repeatedly cautioned by the Federal Circuit, while the specification may inform the court as to the definition of a claim term, "particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiment." KCJ Corp., 223 F.3d at 1356 (citations omitted). To that effect, use of the word "member" does not necessarily define a component made of a single piece or exclude a component made up of multiple pieces. A recent opinion by a sister court in this district addressed a similar dispute and reached the same conclusion:

The pertinent definition of member is "a constituent part of a whole," see, e.g., Merriam Webster's Collegiate Dictionary (10th ed., 1995), and the synonym "part" is defined, inter alia, as "a constituent member of a machine or other apparatus." See id. Ordinary experience teaches that a constituent part or member of a machine or apparatus may itself consist of one or several components, depending, for example, on the intricacy of the "part" or "member" and the machine or apparatus to which it belongs.

Kudlacek, 115 F. Supp. 2d at 1023.

This Court agrees that one skilled in the art of air filter indicator manufacturing would read "member" in claim 1's lock-up
means element to encompass a piece or part of something else, regardless of whether that "member" is made of one or more components. Consequently, the Court finds that the lock-up means element of claim 1 encompasses a locking member, comprised of either a single piece or multiple pieces joined together, which is slender in length relative to width.

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The final set of disputed claim terms are "shoe mounting member," '047 Patent, col.4, 11.24, 28, 36-37, 52, & 67, col.5, 11.8, 25, & 60, & col.6, 11.8, 25, & 62-63, "shoe attachment means," id. col.5, 1.22, "mounting member," id. col.2, 1.41, and "shoe attaching member," id. col.4, 1.42, col.5, 1.5, & 56-58, col.6, 1.6, 23, & 58, col.7, 1.8, & col.8, 1.8. The parties contest whether the terms are means-plus-function terms, and assuming arguendo that they are, whether the construction should be limited to the figures and functions expressly stated in the patent, or also "equivalents thereof."

1. The Parties' Contentions

Greenkeepers aver that the '047 Patent's claim language details the structural features required to attach the covered cleats to a shoe, that being that the member has an axis AL and projects outwardly, and thus, that the disputed terms are not means-plus-function terms. (Pls. Opening 38-40, Pls.' Resp. 36.) In particular, Greenkeepers contend that the asserted claims do not use the word "means," thereby failing to trigger the statutory means-plus-function presumption, and that "member" has been routinely held to not indicative of a means-plus-function. (Pls.' Opening 38-39.) Greenkeepers contrast their proposed construction from that of Defendants, which purportedly reads limitations from the '047 Patent's preferred embodiments into the claims, a reading that is impermissible under Federal Circuit law, and is belied by the requirement that a term, even if construed to be a means-plus-function, be construed to include "equivalents" to the structure described in the patent specification. (Pls' Resp. 38.) Greenkeepers thereby urge the Court, should it find the disputed terms to have means-plus-functions, to construe them as not limited to the structures illustrated or described in the '047 Patent. (Pls.' Resp. 39.)

In response, Defendants contend that the '047 Patent's specification provides no structural limitations on a shoe attaching or mounting members, and only offer the function that such a member fix the golf cleat to a shoe. (Defs.' Opening 28.) Defendants continue that the disputed terms should be construed as being limited to the three structures identified in the specification: (1) a threaded stud with a plastic fillet, (2) a threaded stud surrounded by a series of latching teeth, and (3), an interlocking triangle. (Defs.' Opening 28.) Defendants fault Greenkeepers for focusing on an imaginary "axis AL" line that does not require the member to be symmetric about it. (Defs.' Reply 16-17.) To the extent that Greenkeepers urge the Court to construe the disputed terms as including functionally equivalent structures, Defendants aver that equivalences are questions of fact determined by the jury. (Defs.' Reply 17.)

ECCO adds that the '047 Patent abandoned the structural limitations defined in United States Patent Number 5,794,367 (filed Feb. 20, 1997), the original patent application filed by the '047 Patent's inventor to cover outwardly angled golf cleats, thereby indicating that the '047 Patent contains only a functional description. (ECCO Opening 9-10.) ECCO also contends that Greenkeepers' proposed means-plus-function construction is overbroad, and that a patentee cannot assert undisclosed techniques or methods that could perform the function, but must focus on the structures found in the specification. (ECCO Resp. 4-8.)

2. Analysis

The Federal Circuit has explained that "Section 112, paragraph 6 [of Title 35 of the United States Code,] allows a patentee to recite a function to be performed as a claim limitation rather than reciting structure or materials for performing that function." Omega Eng'g, 334 F.3d at 1321. "Means-plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function." Phillips, 415 F.3d at 1311. In construing means-plus function terms, courts first "identify the claimed function, staying true to the claim language and the limitations expressly recited by the claims"; then, courts must "ascertain the corresponding structures in the written description that perform those functions." Id. In sum, a means-plus-function term is construed so that it is limited to "the structure . . . necessary to perform the claimed function." Id.

When a term does not contain the word "means," courts presume that section 112, paragraph 6 does not apply. See, e.g., Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004). This presumption is a "strong one
that is not readily overcome." Id. In this case, the only term using the word "means" is "shoe attaching means," but Greenkeepers are not asserting claim 6 of the '047 Patent, the only claim containing the terms. Thus, the presumption that the terms are not means-plus-function terms applies; however, "merely because an element does not include the word 'means' does not automatically prevent that element from being construed as a means-plus-function element." Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed. Cir. 1996). The Court must examine whether "the alleged means-plus-function claim element" "recite[s] a definite structure which performs the described function." Id. If this question is answered in the affirmative, the terms are not means-plus-function ones, and need not be limited to the structures "necessary to perform the claimed function." Omega Eng'g, 334 F.3d at 1321.

Turning to shoe attaching or mounting members in the pending case, the Court finds that they are not means-plus-function terms for purposes of section 112, paragraph 6. The Federal Circuit has cautioned against employing "unduly restrictive" readings to determine whether claim terms recite sufficient structure, and has determined "that it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function." Lighting World, 382 F.3d at 1359-60. Here, even though the term shoe attaching or mounting member may not bring to mind a particular structure, there is language in the '047 Patent's specification that describes the required structure necessary for the members described in the patent: the member has "an axis AL which is perpendicular to said inner face and project[s] outwardly from said inner face and adapted to secure said cleat in a receptacle in said golf shoe upon rotation of said shoe mounting member about said axis in said receptacle." '047 Patent, col.4, 11.52-57. Contrary to Defendants' assertions, the '047 Patent's shoe attaching or mounting member does not cover "every conceivable device" (Defs.' Resp. 29); rather, the asserted claim language requires that a member be secured in a golf shoe's "receptacle" "upon rotation of said shoe mounting member," '047 Patent, col.4, 11.55-57, thereby eliminating structures that are recessed in the cleat or that are engaged by sliding into the receptacle.

In addition, courts, including the Federal Circuit, have repeatedly found that

- dictionary definitions, not to mention common sense, point to the word "member" (descriptive modifier notwithstanding) as a structural term. See Webster's New International Dictionary (2d ed. 1956) defining "member" as, inter alia, "... 5. A part of a whole; an independent constituent of a body, structure, or any organized thing, or a unit in a series... 12. Engin. Any essential part of a framed structure."

SDS USA, Inc. v. Ken Specialties, Inc., 107 F. Supp. 2d 574, 591 (D.N.J. 2000); see also, e.g., CCS Fitness, Inc., 288 F.3d 1359, 1367 (Fed. Cir. 2002) ("[M]ember,' as defined by common and technical dictionaries, refers to a structural unit such as a beam or tie, or a combination of these." (internal quotation marks and alteration omitted)). As a result, the Court has determined that there is insufficient evidence to overcome the "strong" presumption, Lighting World, 382 F.3d at 1358, that "shoe attaching member," "shoe mounting member," "shoe attachment means," and "mounting member" are not means-plus-function terms, and will adopt Greenkeepers' construction.

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1. "Flexible Sealing Member(s)"

Claims 19 and 35 of the 557 Patent present close variations in regard to the term "flexible sealing member," and neither claim uses the term "means" to recite any limitation of the claimed apparatus. (Id. cls. 19c, 35b) Although Dade acknowledges that the term "flexible sealing member" is presumptively not a means-plus-function limitation, Dade contends that Claims 19 and 35 fail to recite sufficient structure to perform the desired function. (Doc. 70 at 3). As support for this assertion, Dade has provided the affidavit of a potential expert witness, who states that the term does not have a generally understood meaning in the art of food storage. (See id. Ex. 8, P 8). Dade's other support for its assertion is an analogy between language used in the 557 Patent's claims and in the patent claims at issue in Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1213-1215 (Fed. Cir. 1998).

Mas-Hamilton involved a patent for a "High Security Electronic Dial Combination Lock" which included, inter alia, a claim requiring: "a movable link member for holding the lever out of engagement with the cam surface before entry of a combination and for releasing the lever after entry of the combination." Id. at 1209, 1214 (emphasis in original). Although the claim did not contain the term "means," the Mas-Hamilton court opined that the language, as to the two functions the
"movable link member" performs, is precisely what was contemplated by the statute governing means-plus-function limitations. Id. at 1215. Accordingly, the court concluded that "movable link member" was such a limitation. Id.

According to Dade, Mas-Hamilton reveals the term "flexible sealing member" to be a means-plus-function limitation. Yet, unlike the context in Mas-Hamilton, Claims 19 and 35 of the 557 Patent set forth, in relevant part, simple structural limitations starting with "a chamber defined by a floor, ceiling, and sidewalls" which together with certain internal barriers direct fluid flow in relation to stored product. (Doc. 66, Ex. A). Dade concedes that "member" connotes a part of this apparatus, "flexible" indicates that the member is capable of being bent or flexed, and "sealing" indicates that the member prevents air leakage. (Doc. 70 at 3). In regard to the flow directing function in Claims 19 and 35, the term "flexible sealing member" is one in a set of sufficiently definite performing structures. The presumption against the term being a means-plus-function limitation, therefore, prevails, and this term carries the following ordinary meaning in the following claims:

Claim 19c: a flexible constituent part of the apparatus that divides and seals the chamber into a first volume between the stored product and a sidewall and a second volume outside the first volume; and

Claim 35b: a flexible constituent part of the apparatus that divides and seals the chamber into a first volume and a second volume. 4

4 A flexible sealing member cannot divide the chamber into two separate volumes without forming a complete or substantially complete seal with stored product. Moreover, unless the member in interpreted to perform a sealing function, the "sealing" limitation is rendered superfluous.

B. Term One

Datascope argues that the term "fragmentation member" is governed by 35 U.S.C. § 112, P 6, which states:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.


"[Section] 112, P 6 operates to restrict claim limitations drafted in such functional language to those structures, materials, or acts disclosed in the specification (and their equivalents) that perform the claimed function." Personalized Media Communications, LLC v. Internat'l Trade Comm'n, 161 F.3d 696, 703 (Fed. Cir. 1998).

"[U]se of the word 'means' creates a presumption that § 112, P 6 applies" and "the failure to use the word 'means' creates a presumption that § 112, P 6 does not apply." Id. at 703-04. Datascope concedes that the word "means" is not used. Datascope Br. at 25. The presumptions, however, "can be rebutted if the evidence intrinsic to the patent and any relevant extrinsic evidence so warrant." Personalized, 161 F.3d at 704. "In deciding whether either presumption has been rebutted, the focus remains on whether the claim as properly construed recites sufficiently definite structure to avoid the ambit of § 112, P 6." Id.

Considering these principles, the Court concludes that the term "fragmentation member" is a means-plus-function term because the claim does not create a sufficiently definite structure. Although the presumption is against such a finding, the term "member" is a generic structural term like "element" or "device." See id. at 705. The term member does not evoke a particular structure or even a limited group of structures. Moreover, the "fragmentation member" has a specific function as described in the claims: expanding and causing fragmentation. Accordingly, it will be limited by § 112, P 6.

As the only structure corresponding to the term "fragmentation member" that is disclosed by the specification is the wire
cage or basket the term shall be so limited. E.g., 191 patent, Col. 2 Lns. 62, 65, 67; 191 patent Col. 3 Lns. 4, 10. Similar language is found in the specifications of the other two patents. Accordingly, a "fragmentation member" is a wire cage or basket (or their equivalents) that breaks up clots.

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F. "a peripheral flexible member extending from said support structure and including at least two independently flexible sections attached to said membrane" (claims 6 and 10)

PolyVision's proposed construction
No construction required. Alt.: peripheral flexible member: A structure or element (consisting of one or more components) that extends from the support structure at the edge (periphery) of the support structure and is flexible in at least some part.

including at least two independently flexible sections attached to said membrane:
Having a minimum of two flexible portions, where each portion can be separately flexed, and the flexible portions are attached to the membrane.

Smart's proposed construction
peripheral flexible member:
A peripheral flexible wall, a peripheral compressible member of foam, silicone, or rubber, or a compressible tube, which includes at least two flexible sections that are flexible independently of each other.

including at least two independently flexible sections attached to said membrane:
Independent, separate, or distinct sections of the claimed peripheral flexible member; having at least two component parts that are flexible independently with respect to each other and both of which are attached to the membrane.

Footnotes

3 The Court notes that Smart's construction has changed over time, although this proposed construction is taken from Smart's materials presented at the March 7, 2007, hearing. For example, a prior proposed construction required that the peripheral flexible member "be a unitary flexible member extending from the periphery of the support structure," while the present proposed construction does not include such a condition. Smart continued to advance the unitary requirement in its claim construction brief by asserting the Claim 1 does not read on a particular embodiment, but it has apparently abandoned that position.

The claim language itself, as well the written description, shows that the term "peripheral flexible member" refers to the part of the invention that extends from the edge of the support structure and is attached to the membrane and "pretensioned," such as the flexible wall 22 shown in Fig. 1. Smart contends that the prosecution history provides the definition of "peripheral flexible member" as a peripheral flexible wall, a peripheral compressible member of foam, silicone, or rubber, or a compressible tube. (Prosecution History Appendix at PLV 00472.) While the prosecution history does provide some support for this argument, it would be improper to limit the claim term to those embodiments because the inventors did not limit the peripheral flexible member to those embodiments. Rather, they stated that "the peripheral flexible member in any form prevents sagging of the flexible membrane" and that "[t]he flexible member could be," but did not have to be, one of those embodiments. Thus, the prosecution history does not constitute a clear disavowal, as is required to limit the scope of the claim to the disclosed embodiments. See NTP, Inc. v. Research In Motion, Ltd., 392 F.3d 1336, 1361-62 (Fed. Cir. 2004).

To the extent that Smart continues to assert that the peripheral flexible member must be a "unitary" or one-piece component,
such as that shown in Fig. 1, the Court rejects the assertion. The prosecution history, upon which Smart relies, states that the flexible member may be a compressible tube. Fig. 10, which illustrates that embodiment, shows that the compressible tube member would not be unitary. This conclusion is also supported by the specification, which states that "[t]he base and the flexible sections may be integral." (Col. 2, l. 40), and shows an embodiment in Fig. 7 where the peripheral wall consists of separate parts and "is not integral with [the] base." (Col. 4, l. 42.)

The Court concludes that PolyVision's construction is more accurate, although as Smart notes, there is no support in the patent for the phrase "flexible in at least some part." All of the intrinsic evidence shows that the peripheral member must be "flexible." Accordingly, the Court will adopt the following construction for "peripheral flexible member": A flexible structure or element (consisting of one or more components) that extends from the edge of the support structure which includes at least two independently flexible sections.

With regard to the phrase "independently flexible sections," the specification shows that it merely means separate sections or parts of the peripheral flexible member that may be pushed, moved, or flexed independently of each other. (Col. 2, ll. 20-21; Col. 3, ll. 31-34; Figs. 1, 2, 5.)

J. "flexible member" (claim 20)
PolyVision's proposed construction
No construction required. Alt.: A flexible wall, a compressible flexible part (consisting of one or more components) of an apparatus.

Smart's proposed construction
A flexible member of foam, silicone or rubber, or a compressible tube.

This term is similar to "peripheral flexible member," which the Court construed above. For the reasons stated above, the Court rejects Smart's proposed construction. Consistent with the above construction, the Court construes the term as: A flexible structure or element (consisting of one or more components) that is attached to the support structure.

F. Term 7: "membrane"

The Court construes the term "membrane" in claim 1 of the '291 patent to mean "a thin sheet or layer of material."

The word "membrane" is an ordinary word, and it is used in the '291 patent in its ordinary sense. For instance, in describing one embodiment, the patent says:

[T]he membrane is preferably formed of a thin, flexible material, such as a fabric which may be folded and pulled taut without being damaged. Elastic polymeric materials such as nylon, polyester, polypropylene, polytetrafluoroethylene (Teflon), and expanded polytetrafluoroethylene (GoreTex), as well as natural fabrics such as silk, have been found to work quite well, with elastic nylon appearing to be the best material for the present purposes. Alternatively, the membrane may be formed of a thin piece of a superelastic material, such as a thin sheet of [nickel-titanium] alloy or a superelastic polymeric composite.

'291 patent col. 4:60 to col. 5:4. In describing a second embodiment, the patent says:
The membrane . . . of the present invention is not a single layer of fabric, but rather is a flexible, collapsible balloon-type member which can be inflated to define an internal cavity . . . . The membranes . . . may be formed of any suitable material, such as a thin, flexible latex or the like.

The University asks the Court to construe "membrane" to mean "a relatively thin material." Am. JCCS Sched. B at 21. The Court believes that the University's proposed construction does not differ meaningfully from the construction adopted by the Court. The Court declines to describe the membrane as "relatively thin" because "relatively" confuses, rather than clarifies, the disputed term's meaning (relative to what?). And the Court describes the membrane as a "sheet or layer" of material, rather than simply "material," because the Court agrees with AGA that a wire could be called a "thin material" even though a wire is plainly not a "membrane." 17

But the Court rejects AGA's contention that the "membrane" referred to in claim 1 of the '291 patent must be "sufficiently impermeable to stop the flow of blood through a defect within an acceptably short period of time." Am. JCCS Sched. B at 21. The function of the claimed invention is, of course, to stop blood flow across a heart defect. But not every limitation in a patent claim incorporates the claimed invention's purpose. Put another way, there is no more reason to construe "membrane" in claim 1 to mean "membrane that stops the flow of blood" than there is to construe "disk" in claim 1 to mean "disk that stops the flow of blood."

To the extent that a term in claim 1 of the '291 patent could be construed to reflect the function of the claimed device, that term is "occluding," not "membrane." As described above, AGA asked the Court to construe "occluding" to mean "sufficiently impermeable to stop the flow of blood through the defect within an acceptably short period of time." Am. JCCS Sched. B at 19. Although the Court rejected AGA's proposed construction of "occluding" for the reasons already given, AGA's attempt to narrow the claim language to reflect the invention's purpose was at least reasonable in connection with "occluding."

AGA's attempt to narrow "membrane," however, is not reasonable. After all, the patent expressly says that the membrane in the preferred embodiment is "formed of a relatively porous material." '291 patent col. 10:5-6. In such an embodiment, blood flow is blocked not by the membrane alone, but rather because "blood will tend to coagulate in the conjoint disk after it has been in place for some time . . . ." Id. col. 10:8-10. In short, nothing in the '291 patent dictates giving the ordinary word "membrane" the extraordinary meaning proposed by AGA.
The '547 patent claims a method, system, and apparatus for performing PD. To that end, a medical fluid pump for a dialysis system is provided. See '547 patent, 1:4-8.

Claim 12 of the '547 patent recites:

A pump connected to at least one vacuum source for use in a system for providing dialysis treatment, the pump comprising:

- a first chamber wall;
- a second chamber wall, the second chamber wall defining an aperture;
- first and second fluid receiving membranes disposed between the first and second chamber walls, the [sic] at least one vacuum source operable to apply a vacuum between the membrane and the walls;
- a piston, at least a portion of which moves through the aperture, the piston including a piston head having an external shape substantially similar to a mating internal shape of the first chamber wall, the piston in operation contacting one of the membranes; and
- a dialysis fluid opening enabling dialysis fluid to be pulled in between the first and second membranes upon movement of the piston.

Fresenius contends that claim 12 of the '547 patent requires that the two "membranes" form a dialysate receptacle, and that in operation, the membranes be pulled apart from one another by application of the vacuum and movement of the piston, which allows the receptacle to fill with dialysate. Thus, Fresenius asserts, the "membranes" recited in claim 12 must be flexible, and must permit deformation in response to the pressures applied by the piston and the pneumatic vacuum.

The court finds, however, that none of the claims of the '547 patent - including claim 12 - suggests that the ordinary and customary meaning of the term "membrane" as a "barrier" should be given a construction other than the agreed-upon construction for the '369 and '626 patents. In particular, there is no indication in the language of the claims of the '547 patent that the generic word "membrane" should be given any special meaning, or that it should be construed as being "flexible."

In claim 12, both a rigid and a flexible membrane can be "fluid receiving," and both can "contact" the piston.

"[T]he person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." Phillips, 415 F.3d at 1313. The '547 patent specification refers both to generic membranes and to specific types of membranes. The specification uses the term "membrane" to refer not only to the disposable layers between which fluid flows during pump operation, but also to a patient's peritoneum, see '547 patent, 1:44-46 ("dialysate contacts the patient's peritoneal membrane in the peritoneal cavity"); to a flexible housing, see id., 6:12-17 (the disposable unit in one embodiment of the invention "includes a first flexible membrane and a second flexible membrane that house the pump receptacle, the fluid heating path and the rigid valve manifold" and a "rigid frame that attaches to at least one of the first and second flexible membranes"); and to hydrophobic tips that form a liquid barrier between the patient line and the atmosphere, see id., 22:32-40 (Fig. 12 illustrates cross section of tip protector 280, and a "hydrophobic membrane" is placed on outer edge of tip protector).

Fresenius argues, however, that the only "membranes" recited in claim 12 of the '547 patent are the "first and second fluid receiving membranes" that form the fluid receptacle within the pump chamber. Fresenius contends that the claimed "fluid receiving membranes" are different from the "hydrophobic membranes," which are located completely outside of the pumping chamber and are not claimed in the '547 patent, but are only mentioned in the specification.

Fresenius suggests, therefore, that only those portions of the specification that discuss the operation of the fluid-receiving membranes in the disposable unit are the portions that are relevant to the meaning of "membrane" in claim 12. Fresenius points to the "Summary of the Invention," which describes the invention as a dialysis system with a "disposable unit" that "has at least two flexible membranes that bond together at selected locations and to a rigid plastic piece or manifold . . . The membranes seal to one another so as to define a pump receptacle and a fluid heating pathway." Id., 3:32-37.
Fresenius also notes that the "Summary of the Invention" explains that "[t]he heater heats the fluid heating pathway defined by the flexible membranes of the disposable unit," id., 5:18-19; and that "[t]he disposable unit in another embodiment includes a first flexible membrane and a second flexible membrane that house the pump receptacle, the fluid heating path and the rigid valve manifold. The disposable unit also includes a rigid frame that attaches to at least one of the first and second flexible membranes," id., 6:12-17.

Based on the above-cited portions of the specification, Fresenius asserts that the specification explicitly distinguishes between the "flexible membranes" and the rigid plastic to which they are attached. Fresenius contends, moreover, that every embodiment disclosed in the '547 patent specification describes disposable unit 160 as including "a pair of flexible membranes, including an upper flexible membrane 162 and a lower flexible membrane 164," see, e.g., id., 15:38-47, 33:8-11; and that no broader category of "membrane" as part of a fluid receptacle is mentioned anywhere in the patent.

Fresenius contends in addition that the specification explicitly requires that the "membranes" of the fluid receptacle be capable of deformation by application of vacuum and mechanical pressure. The patent describes Fig. 13 as "a sectional view of one embodiment of a single layer film structure for the disposable unit membranes of the present invention," and describes Fig. 14 as "a sectional view of one embodiment of a multiple layer film structure for the disposable unit membranes of the present invention." Id., 8:25-30. The "Detailed Description of the Invention" refers to Figs. 13 and 14 in a section entitled "Membrane Material for the Disposable Unit," explaining that

upper and lower membranes 162 and 164 can be fabricated from a monolayer film structure 312 (Fig. 13) or a multiple layer film structure (Fig. 14). The film 312 is constructed from a non-PVC containing polymeric material and must satisfy numerous physical property requirements. The film 312 must have a low modulus of elasticity so that it can be deformed under low pressure to function as a pumping element. What is meant by low modulus is the film 312 has a modulus of elasticity when measured in accordance with ASTM D882, of less than 10,000 psi, more preferably less than about 8,000 psi and even more preferably less than about 5,000 psi and finally, less than 3,000 psi, or any range or combination of ranges defined by these numbers.


In addition, Fresenius notes, the membrane must be sufficiently flexible so that "it can be deformed under a pressure of 5 psi." Id., 29:14-15. "The film maintains its low modulus and deformability properties even after sterilization to continue to meet the pumping requirement." Id., 29:15-17. Fresenius contends that this is an express definition, and that it controls the meaning of the term "membrane" as used in the '547 patent.

"In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of widely accepted meaning of commonly understood words." Phillips, 415 F.3d at 1314. The word "membrane" is a widely understood term that means "barrier." Where a disputed claim term is accompanied by a clarifying adjective, that clarifying adjective may assist the court in construing the disputed term. See id.

Here, however, Fresenius is attempting to confine the construction to one embodiment in the specification. The specification for the '547 patent does not require that the "membrane" in claim 12 be flexible. In every reference cited by Fresenius, the specification clearly indicates that the description applies to one or more embodiments - not that it applies to every possible embodiment of the invention.

For example, while it is true, as Fresenius asserts, that the specification states with reference to Figs. 13 and 14 that the "film" from which the membranes may be fabricated "must have a low modulus of elasticity so that it can be deformed under low pressure to function as a pumping element," id., 23:67-24:2, the patentees earlier clarify that they are describing only one of many kinds of membranes that may be used in the invention:

Referring now to Figs. 3A, 4A, 4B, 5, and 6, various embodiments of the disposable unit 160 are illustrated. In each of the embodiments, the disposable unit 160 includes a pair of flexible membranes, including an upper flexible membrane 162 and a lower flexible membrane 164. . . . The flexible membranes 162 and 164 can be made of any suitable sterile and inert material, such as a sterile and inert plastic or rubber. . . . One preferred material for the flexible membrane is described
below in connection with Figs. 13 and 14.

Id., 15:39-56.

Fresenius has established that at least one embodiment utilizes two (or more) flexible membranes, capable of deformation. However, the specification also discloses embodiments in which only one of two (or more) membranes is flexible, while the other may not be. For example, the "Summary of the Invention" describes an embodiment in which only one of the two membranes has these characteristics:

Thus, in an embodiment, the system maintains a negative pressure on one of the membranes of the fluid receptacle of the disposable unit to pull same away from the other membrane and draw dialysis fluid into the fluid receptacle.

Id., 4:64-67; see also id., 5:1-7 ("The negative pressure on the active membrane is then released, which pushes the membrane toward the other membrane and dispels the dialysis fluid from the pump receptacle. In another embodiment, a mechanical pump piston can be pneumatically attached to one of the membranes, wherein the system mechanically pulls the membrane away from the other membrane.")

In examining the specification for proper context, the court should avoid importing limitations from the specification into the claims. See Varco, L.P. v. Pason Sys. USA Corp., 436 F.3d 1368, 1373 (Fed. Cir. 2006). Even if every disclosed embodiment uses flexible membranes, Phillips squarely rejects limiting the claim on that basis, unless the specification makes clear that "the patentee . . . intends for the claims and the embodiments in the specification to be strictly coextensive." Phillips, 415 F.3d at 1323, quoted in JVW Enters., Inc. v. Interact Accessories, Inc., 424 F.3d 1324, 1335 (Fed. Cir. 2005).

"Membrane" means "barrier."

The defendant argues that the term "membrane" in the '550 Patent should be construed as not including a plug. The defendant notes the plaintiff's admission that "the Graves plug is not a membrane." (Mattes Decl. P 5 & Ex. 213.) The defendant also cites evidence that, to those skilled in the art of injection molded plastics, the ordinary meaning of the term "membrane" is a relatively thin covering and does not include a plug. (Belcher Decl. P 9.) The Court also notes that this construction is consistent with the ordinary lay meaning of the term.

These proposed constructions are reasonable and supported by relevant evidence, and are not opposed by the plaintiff. Accordingly, the Court adopts the proposed constructions as a matter of law.

"Memory Selection Second Switch Means" - Claim 5

Claim 5 recites a "memory selection second switch means being adapted to select a first position . . . and . . . a second position." Because this claim element utilizes the term "means" and the claim does not specify any structure or material for performing the recited function, the district court properly held "memory selection second switch means" is a means-plus-function element under 35 U.S.C. § 112, P 6 (1994). See Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1318, 50 U.S.P.Q.2D (BNA) 1161, 1166 (Fed. Cir. 1999) ("if the word 'means' appears in a claim element in combination with a function, it is presumed to be a means-plus-function element"). Thus, "memory selection second switch means" covers the "corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112, P 6 (1994).
The district court's determination of corresponding structure is a matter of claim construction, see Chiuminatta, 145 F.3d at 1306, which this court reviews de novo. See Cybor, 138 F.3d at 1456. Determining whether Figure 3 is a "corresponding structure" for the "switch means" of claim 5 requires the court to consult again the language of the claim and the other factors that inform claim meaning. Of course, the central focus remains on the claim language. The written description, the prosecution history, and admissible extrinsic evidence may supply context to understand the claim language. See Vitronics Corp. v. Conectronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576-77 (Fed. Cir. 1996); Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1309, 51 U.S.P.Q.2D (BNA) 1161, 1169 (Fed. Cir. 1999).

In construing claim 5, the district court determined the term "memory selection second switch means" encompasses the same scope as the "memory selection switch" of claim 1. Specifically, the district court determined that "memory selection second switch means" covers only the mechanical switch of Figure 2, not the software embodiment of Figure 3. The written description of the '364 patent and the prosecution history, however, reveal a broader meaning of "memory selection switch means."

As previously explained in this court's analysis of claim 1, Figure 3 illustrates a flow diagram "describing both the operate and program modes of the invention." '364 patent, col. 4, ll. 23-24. The two lower-right corner dialog boxes of Figure 3 describe steps to "store code at location pointed to by the code location pointer" and "increment code location pointer[;] if pointer increments over five then load code location pointer with one." See id. at Fig. 3 (emphasis added). Dr. Rhyne's expert testimony shows that one of ordinary skill in the computer science art would understand the underlined terms to describe software operations.

Although software operations do not fall within the literal scope of the "memory selection switch" in claim 1, the reissue prosecution history also discloses a broader reading for the "switch means" of claim 5. First, the patentees' representation to the Patent and Trademark Office in its November 29, 1989 sworn declaration indicated their intent to include the algorithm of Figure 3 as a "corresponding structure" for the switch means. The patentees stated:

We believe the aforesaid Letters Patent to be wholly or partly inoperative or invalid by reason of our claiming less than we had a right to claim in the patent. More specifically, we believe the sole independent original claim [i.e., claim 1 of the '118 and now claim 1 of the '364 patent] is too narrow in three respects:

(c) The claim requires a "switch moveable" and a "memory selection switch" but should have required a --first switch means-- and a--memory selection switch means--, respectively, because switch means includes electronic switches as well as mechanical switches.

J.A. at 5388 (emphasis added). While this statement weighs against construing claim 1 to include software operations, it gives a broader reading to claim 5. This statement evinces the patentees' use of the term "switch means" to include microprocessor operations driven by software, i.e., "electronic" switches, as opposed to a mechanical switch of Figure 2. The patentees' use in claim 5 of the term "switch means" rather than "switch" and "being adapted to select" rather than "setable" and "set," to describe software operations, further support a broader construction.

Later in the reissue proceedings, the patentees argued in response to an anticipation rejection:

Applicants' method and apparatus is intended to simplify the remote control of equipment by code transmitters. . . . Such simplifications are provided by including multiple storage locations in the receiver and including a programming routine which receives and stores codes transmitted from the code transmitters of the system.

J.A. at 5822 (emphasis added). This statement further supports reading "switch means" to include structure corresponding to Figure 3.

The differences in claim language, bolstered by the patentees' statements during the reissue proceedings, cause this court to reach a broader construction for claim 5 than for claim 1. See Vitronics, 90 F.3d at 1582. The district court erred in ruling that only the mechanical switch in Figure 2 is "corresponding structure" for the claimed "switch means."

"Switch means," when properly construed, also covers the software-based embodiment described in Figure 3.
Chamberlain asserts that, should this court construe claim 5 to cover the software embodiment of Figure 3, then it is entitled to summary judgment of literal infringement. An accused device satisfies a means-plus-function element literally if it performs the identical function required by the limitation, and incorporates the structure disclosed in the specification or an equivalent thereof. See Cybor, 138 F.3d at 1456. The language of claim 5 and the written description establish that the function of "switch means" is to select different memory locations, thereby enabling the microprocessor to store transmitter identifiers in the memory locations. The parties do not dispute that the Intellicode's memory selection software program performs this function.

The Intellicode, however, constitutes a different "structure" than the software disclosed in the '364 patent because it uses a different algorithm to perform the recited function. Figure 3 and the corresponding description indicate that the code location pointer increments through a series of memory locations, automatically erasing the previous contents of a memory location when it stores a new transmitter code in that location. When the pointer can no longer increment, i.e., when it is pointing to the last memory location in the series, the microprocessor "loads code location pointer with one," causing the pointer to loop back and select the first memory location in the series. The Intellicode, on the other hand, randomly chooses an unused memory location. Thus, the Intellicode's memory selection scheme is not identical to the structure disclosed in Figure 3 of the '364 patent.

Moreover, Overhead Door presented evidence that its memory selection scheme is not structurally equivalent to that of Figure 3. A structure in an accused device is equivalent to the disclosed structure corresponding to a means-plus-function element if it is insubstantially different from the disclosed structure. See Chiuminatta, 145 F.3d at 1309. Overhead Door urged that the Intellicode software is substantially different from the claim element because its software uses memory more efficiently and minimizes the chances of overwriting previously-stored codes. Viewing the evidence in a light most favorable to the non-movant Overhead Door, this court finds that Overhead Door has raised a genuine issue of material fact precluding summary judgment of literal infringement of claim 5. Accordingly, this court remands for the fact-finder to determine whether the Intellicode uses a structure equivalent to the mechanical switch in Figure 2 or to the software-implemented algorithm in Figure 3, for selecting different memory locations.

"Memory Selection Switch" - Claim 1

The district court construed the "memory selection switch" element of claim 1 to mean "a switch separate from the microprocessor which is user operated to select different positions of the switch." The claim uses the term "switch," a word connoting a mechanical device with different settings, such as "on" or "off." Claim 1 further defines the memory selection switch as "connected to" the microprocessor, "setable in" a first position, and "set in" a second position. This claim language is more consistent with a mechanical switch attached to the microprocessor, rather than software programmed into the microprocessor.

In the '364 patent's "Brief Description of the Drawings," the patentee states that "Fig. 2 illustrates in block form the invention." Col. 2, l. 43 (emphasis added). Figure 2 complements the definition supplied by the claim language:

[SEE FIGURE 2 IN ORIGINAL] Figure 2 shows the program/operate switch 22 as a mechanical switch, which alternates between "program" and "operate." Moreover, the drawing depicts the memory selection switch 23 as a mechanical switch with five separate numbered positions. The associated written description identifies the memory selection switch with 23, see '364 patent, col. 3, ll. 9-11, and describes it as a five-position, moveable switch separate from and "connected to" the microprocessor 44. See id. at col. 3, ll. 9-19 (emphasis added); see also Fig. 2. Again this part of the patent suggests a mechanical switch.

Finally, Chamberlain does not contest the special master's interpretation of the program mode "switch" as a mechanical toggle switch. To interpret the term "switch" consistently in the claim and to harmonize the drawing depiction with the claim language, this court confirms the district court's reading of the term "switch." Thus, the term "memory selection switch" means a mechanical device separate from the microprocessor. This interpretation is also most in harmony with the prosecution history of the reissue application, as explained later.
In reaching this claim interpretation, this court considered but rejected the contention that Figure 3 discloses as part of the claim a software embodiment for the switch of claim 1. Figure 3 of the '364 patent, shown below, illustrates how the invention receives and validates codes:

[SEE FIGURE 3 IN ORIGINAL] In Figure 3, the two dialog boxes in the lower-right corner refer to storing the code at the location "pointed to" by the "code location pointer," "incrementing" the code location pointer, and "loading" the code location pointer with a value of one. The '364 patent, however, does not indicate whether the "code location pointer" is a particular embodiment of the "switch" of claim 1, or some other (unclaimed) component. "Code location pointer" appears nowhere in the claims. Moreover, the only reference to a code location pointer in the written description is a single sentence that does not illuminate Figure 3: "If the switch 22 is in the 'program' mode as shown in FIG. 3 when the incoming signal from a transmitter is received, the flow diagram is followed so as to store the new incoming program in the code location pointed to by the code location pointer 23." Col. 4, ll. 57-61. The vague terms in Figure 3 do not override the claim language and written description that closely identify the "memory selection switch" as a mechanical device. This court interprets "memory selection switch" to mean a mechanical switch with different positions, each position corresponding to a different location in memory, thus enabling the garage door operator to store codes in different memory locations. Thus, this court affirms on review the district court's interpretation of "memory selection switch."

Applying this claim construction to the accused device, this court affirms the district court's summary judgment of no literal infringement of claim 1. "Literal infringement of a claim requires that every limitation recited in the claim appear in the accused device, i.e., that the properly construed claim reads on the accused device exactly." Amhil Enters., Ltd. v. Wawa, Inc., 81 F.3d 1554, 1562, 38 U.S.P.Q.2D (BNA) 1471, 1476 (Fed. Cir. 1996). Claim 1 covers a mechanical "memory selection switch." The accused Intelicode system, in contrast, selects memory locations with a software program, not with a mechanical switch. Thus, the "memory selection switch," as correctly construed, is literally absent from the Intelicode. Therefore, the Intelicode does not literally infringe claim 1.

The district court erred, however, in also deciding on summary judgment that the Intelicode did not infringe under the doctrine of equivalents. The doctrine of equivalents requires that the accused product contain each limitation of the claim or its equivalent. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 40, 41 U.S.P.Q.2D (BNA) 1865, 1875, 137 L. Ed. 2d 146, 117 S. Ct. 1040 (1997). An element in the accused product is equivalent to a claim element if the differences between the two are "insubstantial" to one of ordinary skill in the art. Warner-Jenkinson, 520 U.S. at 39-40; Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1517, 35 U.S.P.Q.2D (BNA) 1,641 (Fed. Cir. 1995) (en banc), rev'd on other grounds, 520 U.S. 17, 137 L. Ed. 2d 146, 117 S. Ct. 1040 (1997). The district court found as a matter of law that the Intelicode had no equivalent of the memory selection switch claim element.

"Although equivalence is a factual matter normally reserved for a fact-finder, the trial court should grant summary judgment in any case where no reasonable fact-finder could find equivalence." Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1423, 44 U.S.P.Q.2D (BNA) 1103, 1106 (Fed. Cir. 1997). This case does not satisfy this lofty standard. The record contains considerable evidence, including several reports and declarations by Chamberlain's expert, Dr. Rhyme, that one of ordinary skill in the art would find the Intelicode's software-driven memory selection system insubstantially different from the hardware switch of claim 1. Dr. Rhyme averred in his June 2, 1997 report: "[i]t is a fundamental and well understood tenet of the computing art [that] . . . 'any software process can be transformed into an equivalent hardware process, and any hardware process can be transformed into an equivalent software process.'" See ED KLINGLER, MICROPROCESSOR SYSTEMS DESIGN 5 (1977). Dr. Rhyme stated that this "dualistic transformation," known as the "hardware/software" trade-off, effectively means that the selection of a software pointer for a microprocessor versus a hardware switch to control a microprocessor-based system is simply a matter of design choice. This record evidence shows that one of skill in the art would recognize these alternative systems as interchangeable substitutes. Drawing all reasonable inferences in favor of Chamberlain, as this court must in reviewing the summary judgment of non-infringement, this court concludes that Dr. Rhyme's statements and supporting citations to computer science literature show a genuine issue of material fact precluding summary judgment.

In discerning this genuine factual issue, this court also considered the district court's interpretation that a mechanical switch would necessarily require a human operator. In operation of a mechanical switch, a human operator would indeed set the memory selection switch to one of five positions. This "user operated" characteristic of a mechanical switch, however, would not necessarily preclude a finding that software performs equivalently without human operation. Indeed in other
contexts, this court has noted the interchangeability of hardware and software. See, e.g., Pennwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931, 935, 4 U.S.P.Q.2D (BNA) 1737, 1740 (Fed. Cir. 1987) (en banc) ("If . . . the accused devices differ only in substituting a computer for hard-wired circuitry, [the patentee] might have a stronger position for arguing that the accused devices infringe the claims."). Moreover the Supreme Court has acknowledged that interchangeability can be one of the hallmarks of an equivalent. See Warner-Jenkinson, 520 U.S. at 37 ("known interchangeability . . . for an element of a patent is one of the express objective factors . . . bearing upon whether the accused device is substantially the same as the patented invention"); Graver Tank & Mfg. Co., Inc. v. Linde Air Prods. Co., 339 U.S. 605, 609, 85 U.S.P.Q. (BNA) 328, 331, 94 L. Ed. 1097, 70 S. Ct. 854 (1950) ("An important factor [in determining equivalency] is whether persons reasonably skilled in the art would have known of the interchangeability . . .").

This court has explained that the "function-way-result" test may help detect an equivalent, particularly for mechanical elements. See Dawn Equip. Co. v. Kentucky Farms Inc., 140 F.3d 1009, 1016, 46 U.S.P.Q.2D (BNA) 1109, 1113 (Fed. Cir. 1998). The function-way-result test dictates that an element in the accused device is equivalent to the claim element if it "performs substantially the same function in substantially the same way to obtain the same result." Graver Tank, 339 U.S. at 608. Applying the function-way-result test to claim 1, the district court found that "the function of the memory selection switch [is] . . . to permit selection of a particular memory location at the receiver for subsequent storage of a transmitted code, by use of a switch connected to the microprocessor." Overhead Door Corp, No. 95-CV-1648-D, at 24 (N.D. Tex. Jan. 13, 1999) (emphasis added). The district court then found that this function was "totally missing" from the accused device because "the user is unable to predetermine selection of specific, desired memory locations." This application of the function-way-result test erroneously incorporates the claim element's "way" into the definition of the function, effectively limiting the claim element to its literal terms.

The claim language and the specification explain that the "memory selection switch" functions to select memory locations. This claim element accomplishes its function by way of a mechanical switch. This particular switch constitutes the claim element's "way" of accomplishing the memory selection function, not the function itself. The result of this element is storage of codes in different memory locations. The record at this stage, preliminary to a trial, creates a genuine issue of material fact whether the Intellicode accomplished substantially the same function, in substantially the same way, to achieve substantially the same result.

Moreover, contrary to the district court's determination, this court's ruling in Sage Products does not limit the range of equivalents to the memory selection switch in this case. In Sage Products, this court noted that the claim limitations "top of the container" and "over said slot" constituted "a precise arrangement of structural elements" and a "clear structural limitation" in a "relatively simple structural device." Sage Prods., 126 F.3d at 1425. Finding that Sage's theory of equivalence - i.e., a container having two constrictions below its top was equivalent to the claimed container having a constriction above and a constriction below -- would "remove entirely the 'top of the container' and 'over said slot' limitations from the claim," this court affirmed the district court's grant of summary judgment of non-infringement. Id. at 1423-24. Thus, the proposed application of the doctrine in Sage Products would have utterly written out of the claim not one, but at least two (maybe more) express limitations of the claim. Indeed under Sage Products' equivalents theory, a finding of equivalents for one limitation ("at the top") would necessarily require writing out of the claim another limitation ("over said slot"). No matter how the patentee purported to apply the claim to the accused device under the doctrine, the device was always missing at least one limitation. Thus, the claim language specifically negated the patentee's equivalence theory. Moreover, this court in Sage Products noted that "any subsequent change in the state of the art, such as later developed technology" would have been eligible for coverage under the doctrine of equivalents, thus clearly defining at least one type of expanded claim coverage under the doctrine. Id. at 1425.

In contrast to the facts in Sage Products, claim 1 of the '364 patent does not contain any clear structural limitations that preclude a reasonable jury from finding a software system equivalent to the claimed system. By definition, an equivalent does not fall literally within the claim language. Although the literal meaning of the "memory selection switch" does not cover the software-implemented Intellicode, this case does not preclude application of the doctrine under Sage Products because any application of the doctrine would not leave some aspect of the claim missing from the accused device. Applying the doctrine of equivalents to cover Intellicode's software does not vitiate the "memory selection switch" element. See id., at 1423-24.

As properly construed, the "memory selection switch" means a mechanical switch for selecting memory locations. The question remains whether the Intellicode's software-driven memory selection scheme is equivalent to a mechanical switch.
The parties ask the Court to construe the phrase "whereby the meniscus provides a constant flow of said chemical onto said substrate surface" in Claim 5 of the Allen Patent. Joint Statement at 1. The parties agree that meniscus refers to the "curved surface of the solvent." Oki's Response to AMD's Opening Markman Brief at 1; AMD's Markman Reply Brief at 9. The parties also agree that a meniscus forms as a result of surface tension. AMD's Markman Reply Brief at 9; see Oki's Response to AMD's Opening Markman Brief at 4.

Beyond that, the parties are at odds. Oki argues that the meniscus must extend "continuously from the nozzle tip to the substrate." Oki's Response to AMD's Opening Markman Brief at 1. AMD's definition only require the meniscus to form at the substrate. AMD's Markman Reply Brief at 9. Oki argues that prosecution history estoppel places limits on the definition. Oki's Response to AMD's Opening Markman Brief at 1-3. The dispute again boils down to two issues. (1) Does Oki's proposed requirement that the meniscus extend from the nozzle tip to the substrate have any support in the intrinsic evidence? (2) Does AMD's decision to amend the claims to overcome a rejection place any limits on the scope of the claims? The answers to those questions are no and yes, respectively.

1. The Claims of the Allen Patent

Nothing in the claims supports the requirement that the meniscus be continuous and unbroken. The Allen patent describes a method for removing coating from the edges of a silicon wafer. 678 Patent, at [57]. Claim 5 describes a process that involves "contacting one surface adjacent to the periphery of a [rotating wafer of] substrate with a chemical capable of dissolving the coating material." Id. at col.6 ls.48-50. This is accomplished "by forming a meniscus between [the] surface [of the substrate] and a nozzle positioned adjacent to the periphery of [that] surface." Id. at ls.50-52. The claim then introduces the limitation in dispute: "whereby the meniscus provides a constant flow of said chemical onto said substrate surface." Id. at ls.52-54. Thus, the claims impose three limitations on the meniscus. First, the formation of the meniscus must lead to the contact between the edge of the spinning wafer and the solvent. Second, the meniscus must form between the spinning wafer and the nozzle. Finally, the meniscus must provide a constant flow of the solvent onto the spinning wafer.

None of these requirements support Oki's contention that the meniscus must extend continuously and unbroken from the nozzle tip to the substrate. In fact, the claims hint that such a requirement is unlikely. Oki's requirement that the meniscus extend continuously and unbroken springs from a dictionary definition. That definition defines meniscus as "[t]he curved upper surface of a nonturbulent liquid in a container that is concave if the liquid wets the container walls and convex if it does not." Oki's Response to AMD's Opening Markman Brief at 3 (quoting the American Heritage Dictionary (4th ed. 2000)) (internal quotations omitted). Oki then derives the continuous and unbroken requirement from the word nonturbulent. Id. at 3. However, in the Allen Patent, the meniscus does not exist in a stationary container. Instead, it exists between a nozzle out of which the solvent flows and a rotating wafer of substrate that is covered with a coating material. 678 Patent col.6 ls.44-45, 56, 64-66. Given that the substrate is rotating, one would not expect the meniscus in the patent to replicate the behavior of a "nonturbulent liquid in a container." The Court rejects Oki's attempt to force the invention to behave in accordance with a dictionary definition that describes the behavior of a liquid in a context contrary to the plain language of the claims.

The claims also do not impose Oki's requirement that the meniscus extend from the nozzle to the substrate. Oki's logic proceeds as follows: (i) the definition refers to a single convex or concave surface between two stationary walls of a container; (ii) in the Allen patent, the liquid exists between the nozzle and the substrate; (iii) therefore, the meniscus here must be one concave or convex surface between the nozzle and the substrate. Again, this logic suffers from the same fallacy: the claims indicate that the solvent does not lie stationary in a container but flows from a nozzle to the substrate. Furthermore, the word "between" in the claims only requires that the meniscus exist between the nozzle and the substrate, not extend like a bridge from one to the other. The Court finds no support in the claims for Oki's requirement that the meniscus extend continuously and unbroken from the nozzle to the substrate.
2. The Specification of the Allen Patent

The specification also casts doubt on Oki's attempt to impose its dictionary-based limitation on the claims. The specification refers to the meniscus twice. Referring to an illustration of the preferred embodiment, the specification describes how the meniscus forms. First, a valve is opened and the solvent flows under pressure from a reservoir through a series of tubes into the nozzle. Id. at col.3 ls.46-50. "As the chemical exits [the] nozzle . . . at [the] nozzle tip . . ., a meniscus is formed by the exiting liquid between [the] nozzle tip . . . and the underside of [the] substrate. . . . Forming of this meniscus is expedited by closely spacing [the] nozzle tip . . . to [the] substrate. . . ." Id. at col.3 ls.50-54. The specification reveals two important features of the meniscus. First, it may be formed by a liquid that is flowing under pressure. Second, moving the nozzle tip closer to the substrate expedites formation of the meniscus. The first limitation runs counter to Oki's argument that the meniscus behave like a stationary liquid in a glass vessel. The second limitation is one that the parties conceded at oral argument when they both agreed that in order for the meniscus to form, the nozzle tip must be very close to the wafer.

3. The Prosecution History of the Allen Patent

The prosecution history sheds light on what the patent claims mean when they require that "the meniscus provide [] a constant flow of [the] chemical onto [the] substrate surface." Id. at col.6 ls.52-54. During prosecution, the Examiner rejected all the claims of the Allen Patent as obvious or anticipated in light of the Sato patent. Oki's Response to AMD's Opening Markman Brief, Ex. 2 ("Allen Rejection") at 1, 3. The Sato Patent teaches a process similar to that of the Allen Patent. The Sato Patent describes a device that ejects liquid from a nozzle towards the edge of a spinning substrate to remove coating at the edge of the substrate. U.S. Patent No. 4,113,492 col.3 ls.28-47. However, nowhere does the Sato Patent mention a meniscus. Thus, AMD responded to the rejection by adding a new claim which eventually issued as Claim 5 of the Allen Patent. Oki's Response to AMD's Opening Markman Brief, Ex. 3 ("Response to Allen Rejection") at 5, 7. AMD distinguished the Allen Patent from the Sato Patent by pointing to the meniscus language at issue here. AMD stated that ",while the applicant . . . does use a nozzle as does Sato, applicant's removal process comprises positioning the nozzle sufficiently close to the spinning coated wafer to establish a meniscus formed between the nozzle and the spinning wafer." Id. at 9. According to AMD, formation of this meniscus allows the invention to "control . . . the amount of surface contacted by the solvent solely by control of the rotational speed of the coated substrate." Id. at 12. AMD claimed that the Sato Patent neither anticipated nor made obvious this feature. See id. at 11-12. This exchange during the prosecution of the Allen Patent explains what the disputed claim terms mean. Because the meniscus provides a constant flow of the solvent onto the spinning wafer, the invention can control how much of surface area of the wafer the solvent contacts solely by varying the speed of rotation of the wafer. Thus, the claim limitation requiring the meniscus to provide a constant flow of the solvent onto the substrate distinguishes Claim 5 of the Allen patent over the Sato reference.

4. Construction of Disputed Terms in the Allen Patent

The intrinsic evidence directs the Court to construe the phrase "whereby the meniscus provides a constant flow of said chemical onto said substrate surface" of Claim 5 of the Allen Patent as follows. The meniscus, i.e., the curved surface of the chemical created by the surface tension of the chemical when the chemical contacts a solid, supplies a constant flow of the chemical onto the substrate. The meniscus exists between the nozzle and the substrate. The meniscus cannot form unless the nozzle is positioned sufficiently close to the spinning coated wafer.

2536

Titled "Stackable Recycling Crate," the '202 patent is directed to "a box-like structure with four walls and a bottom." '202 patent at Col. 2, lines 67-68. Like an ordinary, uncovered box, the '202 crate contains a bottom side, two side walls, a front wall, and a back wall. Two features alter the typical configuration of a box to enable simultaneously the placement of large articles in the crate when stacked with other crates of its kind, while retaining the articles within the confines of the crate once the articles have been so placed. First, the upper and lower portions of the front wall are cut out such that when stacked, the upper cut-out portion of each lower crate and the lower cut-out portion of each upper crate together form a large, overall opening into which articles may be easily placed. Second, the front portion of the bottom side tapers to an
incline that joins the central portion of the front wall, forming an internal storage compartment that is further enclosed laterally by the side portions, or "legs," of the front wall remaining after the upper and lower portions of the front wall have been excised.

The '202 patent originally recited 16 claims. The broadest original claim, claim 1, reads as follows:

1. A stackable crate comprising:

(a) a pair of opposing sidewalls;

(b) a back wall coupled to the sidewalls;

(c) a front wall coupled to the sidewalls and having a first substantially rectangularly shaped opening at the top portion of the front wall and a second substantially rectangularly shaped opening at the bottom portion of the front wall, thereby defining in the front wall a central portion with the bottom edge of the central portion extending to form at each end a lower leg segment and the top edge of the central portion extending to form at each end an upper leg segment; and

(d) a bottom side being planar as the bottom side extends away from the back wall and tapering upwardly to merge with the central portion, wherein the bottom side as joined to the sidewalls and to the back wall to define a storage compartment in the interior of the crate.

On January 3, 1994, Spectrum apprised Sterilite of its view that Sterilite's "Storage Cart" product may infringe the '202 patent. On that same day, Spectrum also mailed a request for reexamination to the U.S. Patent and Trademark Office ("PTO"). A protracted 30-month reexamination proceeding ensued, culminating in a decision by the Board of Patent Appeals and Interferences, mailed July 26, 1996, affirming the examiner's final rejection of 11 out of the original 16 claims, including claim 1. Only claims 2, 11, and 14-16 survived reexamination. Claims 14-16 are not pertinent to this appeal and will not be further discussed.

Claims 2 and 11 each contain the requirement that the bottom side of the crate merge with at least a substantial portion of the bottom edge of the central portion of the crate's front wall. See '202 patent at Col. 5, lines 24-26; Col. 6, lines 4-7. During reexamination, the examiner lodged a rejection of claims 2 and 11 over a prior art crate, shown in Figure 1, disclosed in DePutter, U.S. Patent No. 3,682,351 ("DePutter").

To rebut the rejection, Spectrum argued that in the prior art crate, the bottom side merges with the top edge of the central portion of the front wall, but not the bottom edge. The PTO sustained the patentability of claims 2 and 11 solely on the basis of this argument.

Armed with its Board decision, Spectrum filed suit in the Southern District of New York on October 24, 1996, charging Sterilite with infringement of claims 2 and 11 by the "Storage Cart" illustrated in Figure 2:

[SEE FIGURE 1 IN ORIGINAL]

[SEE FIGURE 2 IN ORIGINAL]
After discovery, a hearing was held on cross-motions for summary judgment, and on January 28, 1998, the district court issued an order and judgment granting Sterilite's motion for summary judgment of noninfringement and denying Spectrum's cross-motion for summary judgment of infringement. The court reasoned that because Spectrum did not, in the court's view, provide any special definition for the claim term "wall," the term's ordinary meaning, as discerned by the court, controlled. Given its construction of the claims, the court found that Sterilite's accused product does not have a front wall as required by claims 2 and 11, and as such does not infringe these claims either literally or under the doctrine of equivalents. Spectrum now appeals. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1) (1994).

II

Spectrum predicates its argument for reversal of the district court's decision as to both claims 2 and 11 on a deconstruction of Sterilite's accused product. This deconstruction, presented by Spectrum in its opening brief, is shown in Figure 3:

[SEE FIGURE 3 IN ORIGINAL]

Referring to this diagram, Spectrum asserts that Sterilite's accused product contains a back wall (b), a pair of opposing sidewalls (a) coupled to a front wall (c) having rectangular openings at the top (c[t]) and bottom (c[b]) that define a central portion (cp) with a top edge (cp[t]) and bottom edge (cp[b]), wherein the central portion extends to form an upper leg segment (l[t]) and a lower leg segment (l[b]), and further wherein a bottom side (d) that is planar as it extends away from the back wall tapers upwardly to merge with at least a substantial portion of the bottom edge of the front wall, along the line marked "X". As such, argues Spectrum, Sterilite's accused product meets each limitation common to claims 2 and 11.

Of particular note is Spectrum's reliance on line "X" as representing the set of points along which Sterilite's accused crate meets the limitation in claims 2 and 11 requiring that the upwardly tapering bottom side merge with at least a substantial portion of the bottom edge of the central portion of the front wall.

Spectrum recognizes that it must rely on line "X" because unless the merger of the bottom side and the front wall occurs along line "X", Sterilite's accused product cannot infringe either claim 2 or 11, whether literally or by equivalents. As the relevant portion of Sterilite's reply-brief diagram of its accused crate's side view, shown in Figure 4, makes clear, if the upwardly tapering (D2) bottom side (D1) of the accused crate is considered to merge with the front wall at the interface of D3 and D4, rather than at the interface of D2 and D3 as asserted by Spectrum, the merger of the accused crate's bottom side and its front wall occurs at the top, not the bottom, of the central portion, contravening the explicit requirement in claims 2 and 11 to the contrary. Accordingly, literal infringement is precluded. See, e.g., Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1211, 48 U.S.P.Q.2D (BNA) 1010, 1015 (Fed. Cir. 1998) ("To prove literal infringement, the patentee must show that the accused device contains every limitation in the asserted claims. If even one limitation is missing or not met as claimed, there is no literal infringement.") (internal citations omitted). Moreover, because merger of the bottom side and central portion of the front wall at the interface of D3 and D4 constitutes the very embodiment that Spectrum explicitly relinquished during prosecution, doctrine of equivalents infringement is precluded as well under the opposing doctrine of prosecution history estoppel. See, e.g., Wang Lab., Inc. v. Mitsubishi Elecs. Am., Inc., 103 F.3d 1571, 1577, 41 U.S.P.Q.2D (BNA) 1263, 1269 (Fed. Cir. 1997) ("Prosecution history estoppel acts as one check on application of the doctrine of equivalents, by precluding a patentee from regaining, through litigation, coverage of subject matter relinquished during prosecution of the application for the patent.") (internal citations omitted).

[SEE FIGURE 4 IN ORIGINAL]

Spectrum attempts to evade the consequences of a straightforward determination of noninfringement on this basis by presenting, in essence, two arguments. First, citing Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1271, 229 U.S.P.Q. (BNA) 805, 812 (Fed. Cir. 1986), for the proposition that a claim employing the transitional term "comprising" does not exclude additional, unrecited elements, Spectrum contends that the open "comprising" language of claims 2 and 11 permits Spectrum to deconstruct Sterilite's cart and call line "X" the merging interface of the bottom side and front wall in Sterilite's accused crate, because Sterilite has done nothing more than add an irrelevant, unrecited element to the "front" of an otherwise infringing device. Second, Spectrum argues that nothing of record either limits the front wall recited in claims 2 and 11 to any particular height or precludes claim 2 and 11 (again relying on the open claim language "comprising") from encompassing crates in which the bottom side merges with both the bottom and top of the front wall's central portion. As
such, the mere fact that the central portion of the "front wall" in Sterilite's accused crate--D3 in Figure 4, according to Spectrum--is a single, thin layer of plastic having a top and bottom that both merge with the upwardly tapering bottom side of the accused crate does not preclude, and indeed warrants, a finding of infringement.

The district court focused on, and found fault with, the first prong of Spectrum's second argument, i.e., Spectrum's contention that D3 in Figure 4 is a front "wall" for purposes of claims 2 and 11. Opening during oral hearing that such a construction of the term "wall" flies in the face of any reasonable interpretation of the term, the district court found that Sterilite's accused crate does not possess a "front wall" as required by claims 2 and 11, and therefore does not infringe these claims as a matter of law, either literally or under the doctrine of equivalents.

Spectrum asserts legal error in the district court's construction of claims 2 and 11 on the ground that as its own lexicographer, Spectrum had made clear in the claims and written description of the '202 patent that the "front wall" of claims 2 and 11 places no limitation on the size of the openings above and below the central portion, and hence on the height of the central portion itself. Spectrum also argues in the alternative that the "legs" in the accused crate supply any requisite height requirement imposed by the claim term "wall" and that the central portion, defined by the upper and lower openings, is unbounded by any requirement for a particular vertical dimension. In either event, Spectrum contends that the district court improperly interpreted claims 2 and 11, and as a result, erred in finding no infringement either literally or under the doctrine of equivalents. Sterilite points to a dictionary definition of "wall" in support of the district court's diagram, what Spectrum calls "legs" are clearly part of the side wall, not the front wall. As such, Sterilite urges this court to find no merit in either of Spectrum's theories for reversal.

III

Summary judgment is proper when no genuine issue of material fact exists and the moving party is entitled to judgment as a matter of law. See Fed. R. Civ. P. 56(c). Even disputed material facts will not defeat summary judgment when, taking all factual inferences in favor of the nonmovant, the moving party is nonetheless entitled to judgment as a matter of law. See Young Dental Mfg. Co. v. Q3 Special Prods., Inc., 112 F.3d 1137, 1141, 42 U.S.P.Q.2D (BNA) 1589, 1592 (Fed. Cir. 1997). We review a grant of summary judgment de novo. See id. Our review, as with any infringement inquiry, must first engage the legal step of construing the asserted claims and then dispose of the factual infringement issue by comparing the accused device with the asserted claims in accordance with their proper construction. See, e.g., Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1302, 41 U.S.P.Q.2D (BNA) 1364, 1366 (Fed. Cir. 1997).

In determining the proper meaning of the claims, "we first consider the so-called intrinsic evidence, i.e., the claims, the written description, and, if in evidence, the prosecution history." Digital Biometrics, Inc. v. Identiq, Inc., 149 F.3d 1335, 1347, 47 U.S.P.Q.2D (BNA) 1418, 1424 (Fed. Cir. 1998). Moreover, "if upon examination of this intrinsic evidence the meaning of the claim language is sufficiently clear, resort to extrinsic evidence, such as treatises and technical references, as well as expert testimony when appropriate, should not be necessary." Id.

Unambiguous intrinsic evidence in turn provides sufficient input to the rules of claim construction, in particular in this case, the rule that explicit statements made by a patent applicant during prosecution to distinguish a claimed invention over prior art may serve to narrow the scope of a claim. See Southwall Techs. Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2D (BNA) 1673, 1676 (Fed. Cir. 1995) ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution."); Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448, 452, 227 U.S.P.Q. (BNA) 293, 296 (Fed. Cir. 1985) (stating that the prosecution history, which includes "all express representations made by or on behalf of the applicant to the examiner to induce a patent grant," limits the interpretation of the claims "so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance").

2 Our recourse to language emphasizing the relinquishing of subject matter during prosecution should not be construed to undermine the "clear distinction between following the statements in the prosecution history in defining a claim term, and the doctrine of prosecution history estoppel, which limits expansion of the protection under the doctrine of equivalents when a claim has been distinguished over relevant prior art." Southwall, 54 F.3d at 1578, 34 U.S.P.Q.2D (BNA) at 1679 (citing
That explicit arguments made during prosecution to overcome prior art can lead to narrow claim interpretations makes sense, because "the public has a right to rely on such definitive statements made during prosecution." Digital Biometrics, 149 F.3d at 1347, 47 U.S.P.Q.2D (BNA) at 1427 (pointing to "notice [as] an important function of the patent prosecution process, as reflected by the [patent] statute itself"). Indeed, "by distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover." Ekchian, 104 F.3d at 1304, 41 U.S.P.Q.2D (BNA) at 1368. Therefore, a patentee, after relinquishing subject matter to distinguish a prior art reference asserted by the PTO during prosecution, "cannot during subsequent litigation escape reliance [by the defendant] upon this unambiguous surrender of subject matter." Southwall, 54 F.3d at 1581, 34 U.S.P.Q.2D (BNA) at 1681; Ekchian, 104 F.3d at 1304, 41 U.S.P.Q.2D (BNA) at 1368 (citing Southwall). Accordingly, "claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers." Southwall, 54 F.3d at 1576 (citing Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1562, 19 U.S.P.Q.2D (BNA) 1500, 1504 (Fed. Cir. 1991)); see also Alpex Computer Corp. v. Nintendo Co. Ltd., 102 F.3d 1214, 1221, 40 U.S.P.Q.2D (BNA) 1667, 1672 (Fed. Cir. 1996) ("Therefore, because Alpex admitted during prosecution that its claims do not cover a video display system based on shift registers as in Okuda . . . . Alpex's claims cannot now be construed to cover the [accused device], which possesses the same structural and functional traits as Okuda."). This principle applies with equal force to arguments made by a patentee to sustain the patentability of claims during reexamination. See, e.g., Cole v. Kimberly-Clark Corp., 102 F.3d 524, 532, 41 U.S.P.Q.2D (BNA) 1001, 1007 (Fed. Cir. 1996) ("We also believe the district court correctly interpreted the prosecution history to require that the 'perforation means' limitation cannot be construed to include ultrasonic bonded seams. Cole surrendered ultrasonic bonded seams in her requests for reexamination.").

IV

As discussed, Spectrum argued to the PTO during reexamination that the limitation in claims 2 and 11 requiring that the bottom side of Spectrum's claimed crate merge with the bottom edge of the central portion of the front wall distinguishes over DePutter because in DePutter's crate the bottom side merges with the top edge, and not the bottom edge, of the central portion of the front wall. Spectrum now argues that this claim limitation does not exclude infringement by a crate in which the bottom side merges with both the bottom edge and the top edge of the central portion of the front wall, because the open claim term "comprising" permits the addition of any elements to those listed in the claims. In effect, Spectrum argues for a broad construction of the phrase "wherein the bottom side merges with at least a substantial portion of the bottom edge of the central portion of the front wall" that does not exclude the possibility that the bottom side merges with both the bottom edge and the top edge of the central portion of the front wall.

Spectrum's argument must fail. If "comprising" permits the addition of any elements, then it not only permits the addition of merger of the bottom side with the top edge of the central portion of the front wall, but also allows the addition of a downward-projecting appendage to the central portion along the line at which the bottom side merges with both the bottom and top edges of the central portion, thus transforming merger of the bottom side with the bottom and top edges of the central portion into merger of the bottom side with the top edge alone. But this embodiment is in the prior art. Therefore, to have sustained the patentability of claims 2 and 11 over the prior art asserted during reexamination, Spectrum must have relinquished from the language of these claims the possibility that merger of the bottom side also occurs with the top edge of the central portion of the front wall. Were the result otherwise, Spectrum could cut off the downward-projecting central portion of DePutter's front wall, be left with a crate in which the bottom side merges with both the bottom and top edges of the central portion of the remaining front wall, add back the downward projection with "comprising,", and thus hold DePutter liable for infringement. This Spectrum clearly cannot do.

Spectrum's reliance on Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1271, 229 U.S.P.Q. (BNA) 805, 812 (Fed. Cir. 1986), as support for its attempt to encompass the additional, unrejected elements in Sterilite's accused crate within the confines of claims 2 and 11 through recourse to the recitation in these claims of the term "comprising" is thus misplaced. To be sure, Moleculon acknowledges that "a transitional term such as 'comprising' . . . . does not exclude additional unrejected elements, or steps (in the case of a method claim)," 793 F.2d at 1271, 229 U.S.P.Q. (BNA) at 812, but in the very same sentence the court limited this broad view of "comprising" to avoid altering the scope of the particular claim step at issue. See id. Neither may the term "comprising" alter the scope of the merger element in the claim at issue here. "Comprising" is
not a weasel word with which to abrogate claim limitations. See id.

To summarize, we conclude that the limitation in claims 2 and 11 requiring that the bottom side merge with the bottom edge of the central portion of the front wall excludes the possibility that the bottom side also merges with the top edge. The claim term "comprising" cannot restore this excluded subject matter.

5. "[W]herein, along a [180 degree] meridian, the distance between the inner zone and the peripheral edge is less than 1.3mm." Used in '903 patent, claims 29 and 34.

"[A] superior distance A being defined along the vertical meridian and within the inner zone from the optic zone to the peripheral zone, and an inferior distance B being defined along the vertical meridian and within the inner zone from the optic zone to the peripheral zone, and wherein .33A</=B</=A." Used in '903 patent, claim 38.

The dispute is about how to measure the distances described in the two limitations above. CooperVision believes the distance between two points on a contact lens should be measured by the straight line distance between the two points. CIBA believes that the distance between the two points should be measured over the lens curvature (the "arc length").

CooperVision proposes "the distance, measured as a straight line, between the ballast periphery and the peripheral edge of the contact lens body is less than about     mm along the     [degree] meridian. The     meridian is found by starting with zero degrees at the 3:00 position and moving counterclockwise around the circle of the lens." CIBA proposes "the distance, measured along the curve of the anterior face of the lens, between the outermost edge of the inner zone and the peripheral edge of the contact lens body is less than approximately     mm along the     meridian, which is found by starting with zero degrees at the 3:00 position and moving counterclockwise around the circle of the lens."

The Toric Patents do not explain how claim distances are to be calculated. However, the specification explains that "thickness is measured radially with respect to the curvature of the anterior face" of the lens. '903 patent, col. 9, ll. 24-26 (Italics added). There is no indication that the peripheral zone width and A:B ratio measurements should be made in any other way. Given that the patent discloses a methodology of measuring thickness using the curvature of the anterior face, the court finds that method of measurement is appropriate for these claims. 4

4 CIBA further directs the court's attention to the specification referring to a "flattened" lens. See '903 patent, col. 5, ll. 22-40 ("For simplicity, the elevational views shown herein are flattened, with the base sphere removed . . . so that the particular surfaces and thickness of the present invention can be more clearly illustrated."(Italics Added.)) This may lend credence to CIBA's argument that a linear measurement may be made after a contact lens is flattened, which is tantamount to measuring the arc length.

The court defines these terms, respectively, as:

"[W]herein, along a [180 degree] meridian, the distance between the inner zone and the peripheral edge is less than 1.3mm” means: the distance between the outermost edge of the inner zone and the peripheral edge of the contact lens body, measured along the curve of the anterior face of the lens, is less than approximately 1.3 mm along the [degree] meridian, which is found by starting with zero degrees at the 3:00 position and moving counterclockwise around the circle of the lens.

"[A] superior distance A being defined along the vertical meridian and within the inner zone from the optic zone to the peripheral zone, and an inferior distance B being defined along the vertical meridian and within the inner zone from the optic zone to the peripheral zone, and wherein .33A</=B</=A” means: Where A is defined along the vertical meridian and within the inner zone from the optic zone to the peripheral zone, measured along the curve of the anterior face of the lens, and B is defined along the vertical meridian and within the inner zone from the optic zone to the peripheral zone, measured
along the curve of the anterior face of the lens, then .33A</=B</=A.

A. The ‘231 Patent

On appeal, Backyard challenges the district court's claim construction, arguing that "mesh" should be construed to mean "non-woven, non-welded sheet material with a pattern of holes." It argues that the intrinsic evidence supports its construction and that the doctrine of claim differentiation lends further support. Backyard also relies on the examiner's allowance of a non-statutory disclaimer. Finally, Woodlink cross appeals, arguing that the district court improperly denied its motion for summary judgment as to invalidity of the ‘231 patent in light of the Finn patent.

Based on the intrinsic evidence, we hold that the district court properly found the claim term "mesh" means "expanded mesh." As the district court noted, the term "mesh" alone is ambiguous. Indeed neither party argues for a broad construction without limitation. Thus, because the meaning of "mesh" is ambiguous, we look to the specification and the prosecution history.

In light of the specification, the term "mesh" should be construed as "expanded mesh." As Woodlink properly points out, "expanded" modifies "mesh" eighteen times in the specification. Moreover, in a number of those instances that do not use "expanded" as a modifier for "mesh," the independent use of "mesh" simply refers back to the immediately prior reference, which was modified by "expanded." Beyond the sheer volume of references to "expanded mesh," the specification also suggests that the novelty of the invention resides in the use of expanded mesh. The specification particularly points out that expanded mesh does not require welding, weaving, or galvanizing. ‘231 patent, col. 1, ll. 37-38. It also notes that using expanded mesh allows one to regulate the size of the openings during manufacture, facilitating customization to attract particular bird species. ‘231 patent, col. 1, ll. 41-45.

As with the specification, the prosecution history suggests limiting the construction of "mesh" to "expanded mesh." In particular, the prosecution history repeatedly distinguishes between expanded and non-expanded mesh. These distinctions, discussed below in the context of determining whether Backyard should be estopped from arguing infringement under the doctrine of equivalents, all suggest construing "mesh" as "expanded mesh."

Further, we do not find support for Backyard's arguments regarding the doctrine of claim differentiation. Dependent claim 10 claims: "A bird feeder according to claim 1, wherein the mesh is expanded." As such, Backyard argues, the court should not read the "expanded" limitation into independent claim 1. As the district court correctly pointed out, however, the doctrine of claim differentiation only creates a presumption that claims cover different inventions. Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir. 1991) (citing Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391 (Ct. Cl. 1967)). Here, the evidence favors limiting the construction of "mesh" to "expanded mesh," thereby overcoming the presumption.

Finally, based on the facts of this particular case, we do not rely on the patent examiner's allowance of a non-statutory, rather than a statutory, disclaimer to overcome a double-patenting rejection. We are not bound by what the examiner perceived to be the scope of the claim. Here, the parent application specifically claimed coverage of "expanded mesh" in the sole independent claim. See U.S. Pat. No. 5,826,539, col. 4, ll. 8-15. The only change between the parent and continuation application was the removal of the term "expanded" modifying "mesh" in the independent claim. Otherwise, the Abstract, Specification, and Drawings are identical, focusing, as discussed above, on the use of "expanded mesh." Thus, based on the totality of the intrinsic evidence, we find that the term "mesh" must be construed as "expanded mesh."

Reviewing the grant of summary judgment of non-infringement de novo, we find no remaining issues of material fact based on the claim construction. Specifically, Woodlink does not literally infringe because it uses perforated mesh, not expanded mesh, in manufacturing its birdfeeders. As to infringement under the doctrine of equivalents, the district court properly applied the doctrine of prosecution history estoppel. The prosecution history contains a number of arguments that limit the range of equivalents. 1 First, in an affidavit submitted to the Patent and Trademark Office, the patentee favorably compared his own "expanded mesh" feeders to those employing "non-expanded mesh." Second, the prosecuting attorney repeatedly distinguished the invention over prior-art, non-expanded-mesh feeders. Third, the patentee submitted tests illustrating the
advantages of using expanded mesh over non-expanded mesh.

1 Notably, the prosecution history referred to here (and used by the district court) relates to the parent application, App. No. 08/679,049, July 12, 1996, issued as U.S. Patent No. 5,826,539 on October 27, 1998. We use this earlier prosecution history because "the prosecution history of a parent application may be considered in construing claim terms." Masco Corp. v. United States, 303 F.3d 1316, 1324 (Fed. Cir. 2002).

Mars' first argument is that the Preamble in Claim 1 ("A metal detector . . .") sets forth part of the invention that the inventor desired to define and protect, and that therefore its language may constitute a claim limitation. Coinco responds that even if the Preamble is a claim limitation, a "metal detector" would include a metal coin detector, and Mars' accused products would infringe that limitation because the accused Mars' products detect the presence of metal coins. In response to Coinco's argument that "a metal detector," as used in the '857 patent should be interpreted as anything which detects metal, Mars asserts that it is the "identifying" and "distinguishing" aspects of metal detection, rather than mere detection, which are relevant and useful in the context of the '857 patent. Therefore, Mars argues, all claims should be interpreted to require metal detection that also identifies and distinguishes coins and other objects. Mars points to the specification and the prosecution history for support. At column 2, lines 7-13 and lines 30-34, and column 6, lines 34-38, the specification emphasizes the importance of being able to distinguish and identify slugs and similar foreign and domestic coins. Another example is the reference to a "principal object" of the invention as "distinguishing between and identifying objects such as coins..." '857 patent, col. 3, lines 31-36. As to the prosecution history, in response to a rejection of Claim 1 and other claims, applicants argued that they had devised "a novel detecting device for accurately distinguishing between metal objects, such as between coins" and producing an output with characteristics "representative" of an object such as a coin. DX 640, Prosecution History, p. 61, line 1 of Remarks - p. 62, line 7. This is a clear expression of the applicants' understanding of the "distinguishing" aspect of their invention.

Nonetheless, the Court is unable to accept Mars' claim construction argument that "metal detector" should be interpreted to mean a metal detector that is also capable of recognizing individual coins and other objects and distinguishing one from another. While the specification and the prosecution history certainly provide some support for this interpretation, the claim language itself supports Coinco's interpretation because the language of claim 1 does not limit the claim in the way Mars suggests. See Merrill v. Yeomans, 94 U.S. 568, 570, 24 L. Ed. 235, 1877 Dec. Comm'r Pat. 279 (1876) (explaining that the claims are "of primary importance, in the effort to ascertain precisely what it is that is patented"); Markman, 52 F.3d at 980 ("The written description part of the specification itself does not delimit the right to exclude. That is the function and purpose of the claims."). Claim 1 refers to "an object to be detected" (col. 14, line 53) and the reference to "characteristics ... representative of the object" (col. 14, lines 60-61) is insufficient to support a claim limitation of identifying and distinguishing among coins as well as detecting them. The specification also to some extent supports Coinco's interpretation. At column 3, lines 46-48, it states:

Another object of the invention is to make use of the damped wave characteristics of a pulsed oscillator circuit in a metal detecting device.

This part of the specification makes no mention of the identifying and distinguishing functions that are at the heart of Mars' claim construction argument. The Court does not believe that the Preamble to Claim 1 should be expanded beyond the plain meaning of "metal detector," even where some other intrinsic evidence supports a qualification of that plain meaning, i.e., a metal detector which also can identify, and distinguish among, objects detected. Where, as here, the meaning of the relevant claim term is clear, the specification and prosecution history should not be used to modify that meaning. See, e.g., Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) ("In some cases, the ordinary meaning of claim language as understood by a person of ordinary skill in the art may be readily apparent even to lay judges, and claim construction in such cases
involves little more than the application of the widely accepted meaning of commonly understood words.

The Court's construction is also supported by the doctrine of claim differentiation. See Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1368 (Fed. Cir. 2007) (explaining that the doctrine of claim differentiation is based on "the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope" (citation and internal quotations omitted)). Claim 25, not at issue herein, refers to a circuit for detecting and discriminating between objects, but is otherwise similar in this context to other claims, including Claim 1 (emphasis added). If Mars' claim interpretation argument were accepted, Claim 25 would have little independent meaning.

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b. "metal interconnect layer"

The scope of an independent claim incorporates the embodiments recited in dependent claims. See Transmatic, Inc. v. Gulton Industries, Inc., 53 F.3d 1270, 1277 (Fed. Cir. 1995). Claim 1 of the '785 patent claims the method of "forming a metal interconnect layer above the substrate surface." Claim 3 recites the method of claim 1 "wherein said metal interconnect layer comprises an aluminum alloy." The court agrees with EMI that the term "metal interconnect layer" includes interconnects made of metal alloys. The specification lends further support for this construction, as it states that the most common metal interconnects are made "of aluminum or aluminum alloys." The term "metal interconnect layer" thus refers either to pure elemental metals or to alloys.

C. A Metal Wood-Type Golf Club Head (Claim 13)

The Court concludes that the subject term should be construed to refer to a type of golf club that had traditionally been made of wood. Drivers and fairway woods are such clubs. There may be others. Spalding seeks to have the term include all metal clubs which have a hollow head structure. 12 This would encompass, it appears, certain clubs that were not traditionally made of wood, but which were made of metal in the first place. On this theory, the claim language would include products which Spalding refers to as "trouble woods, hybrid irons (wood, utility woods, etc.) composed of hollow, metal bodies or shells." Defendants' Response at 31.

12 Traditionally, woods were made of solid wood, but metal "wood" clubs are hollow or filled with foam. Metal clubs are not solid metal. In fact, a solid metal wood-type club may well be too heavy for practical use.

The Court concludes that metal clubs with hollow heads other than drivers and fairway woods may well be analogous to wood-type golf clubs. But, they are not wood-type golf clubs in the context of the patent unless they are types of clubs that were traditionally made of wood.

In connection with the dispute over the construction of "wood-type club", the parties debate whether the following language adds a limitation to the claim: "thereby providing added strength and stability to the club head and minimizing pinging of the club head when ball contact is made."

This time, 13 Spalding seeks to have the Court treat the quoted language as a non-limiting description of the effect of the previously described structure. Plaintiff, this time, 14 seeks to have the Court give operative meaning to the claim language. The Court finds that, to the extent this subsidiary argument is relevant, it finds Plaintiff's position more sound. That is, the quoted claim language should not be ignored altogether. However, this subsidiary issue does not appear to be significant in regard to the "wood-type club" issue.
13 Compare Spalding's attempts to have the Court include as limitations language not even found in claims.

14 Compare Plaintiff's attempts to ignore other claim limitation language.

The term "meter" appears in independent Claims 1, 38, 40, and 49 of the '529 Patent. Plaintiffs propose that "meter" should be construed as "a device that transports, feeds, or dispenses something at a controllable, determinable, or regular rate." Defendants, on the other hand, contend that "meter" should be construed as "a structure that measures the amount of something as it flows."

The ordinary meaning of the term "meter" is "an instrument for measuring and recording the amount of something (as water, gas, electricity) as it flows" or "a device (as a valve in a carburetor) that regulates the flow of a fluid" or, in its verb form, "to supply (fuel, oil, or other fluid) in a measured or regulated amount." Webster's Third New International Dictionary 1422 (1993). The intrinsic evidence of the '529 Patent supports a construction that is more consistent with the latter two definitions of the term. The specification states that the device includes "a meter connected to the bin for controllably releasing a desired amount of the particulate matter from the bin into the conduit while disallowing entry of the liquid carrier to the bin." ('529, c. 1, ll: 46-51.) In the '529 Patent, the meter does not serve to measure precisely the amount of material that flows through the meter. Rather, measuring occurs during the initial calibration step of the device. Once calibration occurs, the meter dispenses or supplies the particulate matter at a controlled release rate, but does not measure or record the amount of material that passes through. Thus, the Court construes the term "meter" to mean a device that transports, feeds, or dispenses particulate matter at a controllable, determinable, or regular rate.

The district court correctly construed "metered manner" to require that the claimed invention must perform the feeding function using a predetermined amount of dough. Although the claim itself does not explicitly define "metered manner," the patentee successfully argued before the PTO that the "novel feeding arrangement" "assured a uniform feeding of the mixed ingredients by feeding small predetermined amounts of the entire mixture towards the extruder," in order to overcome the examiner's rejection over the prior art. The patentee's use of the language "predetermined amounts" in describing the "novel" feeding arrangement which the patentee argued expressly distinguished the '575 patent from the prior art, precludes the patentee from now broadening the meaning of "metered manner" to cover all uniform feeding of dough. The declaration of its expert that the claim itself does not require "uniform packing" or "metered" amounts of dough cannot now change what it defined the term to mean. Therefore, in light of the patentee's explicit definition of the term during the prosecution as meaning both measured and uniform amounts, and the fact that the ordinary meaning of "metered" is either measured or uniform and that nothing in the claims or specification precludes this definition of "metered," the correct meaning of "metered manner" is both measured and uniform. Because Popeil's device undisputably drops random amounts of dough into the extrusion chamber, there is no genuine issue of fact, and, as the district court correctly concluded, Popeil is entitled to summary judgment of non-infringement.
The parties propose different constructions for the term "method." Essentially, the difference in the parties' proposed constructions lies in the order of the steps described in claim one of the '400 patent. Caponey proposes: "the method imposes no specific order to the sequence in which all the steps are to be performed." (Pl.'s Claim Construction Br. 9.) ADA Enterprises proposes: "the claimed method must be performed in the order provided." (Def.'s Claim Construction Br. 5.)

"Unless the steps of a method actually recite an order, the steps are not ordinarily construed to require one. However, such a result can ensue when the method steps implicitly require that they be performed in the order written." Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1342 (Fed. Cir. 2001) (internal quotation marks and citations omitted).

The court construes the word "method" in the '400 patent to mean the steps described in claim one must be performed in the order listed in the claim, but that additional steps may be added. This result is dictated by logic and the language of the claim. Further, the parties agreed to this construction at the Markman hearing. (Markman H'g Tr. 57-58).

A. "A method for amusing pet animals"

The analysis of this preamble mirrors that of Claims 1 and 11, in that Plaintiff relied upon the amusement element to avoid prior art references during prosecution, and shall be limited by this. Accordingly, the preamble phrase "a method for amusing pet animals" shall be construed as: "A method for the amusement of an animal kept for pleasure or companionship, rather than solely for utility."

As a preliminary matter, I briefly address the preamble of Claim 14: "A method for monitoring the percentage of blood alcohol content of a human subject, said method comprising the steps of . . . ." '919 Patent col.13 ll.66-68. Although I expound on the import of this language below, this clause deserves quick mention at the outset. The phrase "comprising the steps of" signifies in patent parlance that the claim is an "open claim," meaning that the steps listed are not exclusive and an allegedly infringing device is not saved by the presence of additional elements outside the scope of the patent. See Gillette Co. v. Energizer Holdings, Inc., 405 F.3d 1367, 1371-72 (Fed. Cir. 2005).

Step (c) of Claim 14 describes a "method for monitoring the percentage of blood alcohol content of a human subject, said method comprising the [step] of . . . measuring a percentage of alcohol expelled through the subject's skin into said measurement device and storing a measurement result." '919 Patent col.13 l.66 to col.14 l.8. The parties disagree sharply about the extent of activity that a person of ordinary skill in the art would interpret this language to cover. Plaintiff essentially argues that Step (c) covers any measurement of the amount of alcohol expelled through a subject's skin.

Defendants, on the other hand, assert that Step (c), viewed more broadly as part of Claim 14 as a whole, only covers devices which measure the amount of alcohol expelled through a subject's skin and then convert that measurement to a percentage of blood alcohol content.

The parties have agreed for the purposes of this motion that a person of ordinary skill in the art is someone having at least a Bachelor of Science Degree in Biology, Mechanical Engineering, or Forensic Science and at least two years of experience in blood, breath, and/or transdermal alcohol testing. Pl.'s Br. in Opp'n to Defs.' Mot. for Sum. J. of Non-Infringement and Invalidity [Docket No. 139] at 45; Reply Br. in Supp. of Defs.' Mot. for Sum. J. of Non-Infringement and Invalidity [Docket No. 151] at 26.

Plaintiff argues that "the customary and ordinary meaning of 'measuring a percentage of alcohol expelled through the skin' could not possibly mean measuring blood alcohol content." Pl.'s Br. in Opp'n to Defs.' Mot. for Sum. J. of Non-Infringement and Invalidity [Docket No. 139] ("Pl.'s Opp'n Br.") at 23. Instead, plaintiff argues that "[u]sing the ordinary and customary
meaning of these terms, step (c) of claim 14 means ascertaining the proportion of the alcohol expelled through the skin into the device." Id. It is true that Step (c) by itself only describes "measuring a percentage of alcohol expelled through the subject's skin," and not the measuring of blood alcohol content. In plain language, "measure" means to ascertain a figure, extent, or amount. See Merriam-Webster's Collegiate Dictionary 769 (11th ed. 2007). "Percentage" means a part of a whole -- in other words, a proportion -- expressed in hundredths. 3 See Merriam-Webster's Collegiate Dictionary 918 (11th ed. 2007). By definition then, percentage is a relative term requiring more than mere detection of an amount in relation to a set unit of measure; it typically requires a calculation whereby one takes the amount measured, divides it by some larger whole, then multiplies it by 100.

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3 Although Phillips cautions courts against undue reliance on dictionary definitions, the case also recognized dictionaries' utility in claim construction where a dictionary definition is supported by intrinsic evidence. See Phillips, 415 F.3d at 1322. The '919 Patent's specification supports a conclusion that a person having ordinary skill in the relevant art would interpret the words "measure" and "percentage" as used in the patent in accordance with the common dictionary definition. For example, the '919 Patent's summary of the invention states that

[t]he system provides for the continuous monitoring of a subject's blood alcohol level by measuring the level of ethanol that has been expelled through the subject's skin. The system determines the subject's blood alcohol level by measuring the amount of ethanol at a predetermined distance away from the subject's skin, which provides an indication of the relative amount of ethanol in the subject's blood.

'919 Patent col.3 ll.23-31.

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J. Robert Zettl, whom the parties have accepted as a person of ordinary skill in the relevant art, on being questioned by defendants' counsel at a deposition in this case, testified as follows:

Q. But the SCRAM, is it fair to say in your opinion, is designed to yield a measurement that is analogous to a measurement from a breathalyzer?

A. Yes.

....

Q. So in letter (c), just so I'm clear, when it says "measuring a percentage of alcohol," to you, that means measuring so that you get a measurement that's in grams per 100 milliliters?

[Objection omitted]

A. Yes, since it says "percentage of alcohol."

Q. (By Mr. Tucker) By "percentage of alcohol," you mean blood alcohol concentration?

A. Yes.


Therefore, Step (c) contemplates more than the mere ascertaining of the amount of alcohol emitted from a person's skin. Some calculation or series of calculations must take place which lead to the identified percentage. It is true that Step (c) does not indicate literally that the calculation undergone at this stage arrives at a measure of blood alcohol content. However, Step (c) is only one part of the overall patented process of Claim 14. Claim 14 as a whole does indicate that such a calculation is to occur; its preambulatory language explains that the invention consists of a "method for monitoring the percentage of blood alcohol content of a human subject." '919 Patent col.13 ll.66-67. It is axiomatic that a device could not
"monitor" one's percentage of blood alcohol content without first determining what that percentage is.

The most logical step in Claim 14 which accommodates the calculation of a percentage of blood alcohol content is Step (c). Therefore, because a person of ordinary skill in the art would understand Claim 14 to require a calculation of blood alcohol content, I construe Step (c) as including that calculation. See Bell Commc'ns Research, Inc. v. Vitalink Commc'ns Corp., 55 F.3d 615, 620 (Fed. Cir. 1995) ("[W]hen the claim drafter chooses to use both the preamble and the body to define the subject matter of the claimed invention, the invention so defined, and not some other, is the one the patent protects."). Reading this requirement into Step (c) is consistent with Federal Circuit law instructing district courts to read patent terms in their context. See Phillips, 415 F.3d at 1314 (noting that "the context in which a term is used in the asserted claim can be highly instructive"). Therefore, Step (c) in particular and Claim 14 as a whole are infringed only where the raw measurement of the amount of alcohol emitted from a subject is in some way converted to a percentage of blood alcohol content.

The conclusion that Step (c) as part of Claim 14 requires both measurement of the amount of alcohol emitted and a calculation of blood alcohol content is well supported in the '919 Patent's specification. For example, the specification notes that "[t]he sensor measures the amount of alcohol being emitted through the subject's skin thereby providing an indication of the subject's blood alcohol content." '919 Patent, col.6 ll.64-66 (emphasis added). To get from an "indication" to an actual blood alcohol content, some calculation must be made. One possible series of calculations is described in the '919 Patent:

If alcohol is present, block 1002 transfers to block 1004 which calculates the amount of alcohol present. The amount of alcohol present is calculated by comparing a reading from the sensor 218 to the known readings in the characterization data to produce a base line blood alcohol result. This base line reading is then multiplied by the calibration factor which compensates for sensor drift from the time the characterization was performed. This result is further multiplied by a temperature coefficient to provide the final amount of blood alcohol present.

'919 Patent col.11 ll.28-39. Additional support for the Court's interpretation is found elsewhere in the specification:

. "There is need in the art then for an apparatus and method to passively test the blood alcohol content of a human subject. . . . The present invention satisfies these and other needs." '919 Patent col.2 ll.45-61.

. "It is an aspect of the present invention to perform testing which indicates the blood alcohol content of a human subject." '919 Patent col.2 ll.64-66.

. "The system provides for the continuous monitoring of a subject's blood alcohol level by measuring the level of ethanol that has been expelled through the subject's skin." '919 Patent col.3 ll.23-26.

. "Typically, the device can be attached to a subject's arm or leg to provide periodic monitoring of the subject's blood alcohol content." '919 Patent col.3 ll.42-44.

. "The portable blood alcohol monitor 102 analyzes the readings taken to determine whether the subject's blood alcohol content has exceeded a predetermined level." '919 Patent col.4 ll.47-50.

. "The characterization data is data that was created by characterizing the fuel cell 302 (FIG. 3) and is used to adjust the readings obtained from the fuel cell to obtain a more accurate percentage of alcohol content." '919 Patent col.8 ll.49-53.

Footnotes - End Footnotes

4 For the purposes of infringement analysis there is a "distinction between a claim to a product, device, or apparatus, all of which are tangible items, and a claim to a process, which consists of a series of acts or steps. A process consists of doing something, and therefore has to be carried out or performed." NTP, Inc. v. Research In Motion, Ltd., 418 F.3d 1282, 1317 (Fed. Cir. 2005) (quoting In re Kollar, 286 F.3d 1326, 1332 (Fed. Cir. 2002) (internal quotation marks, omission marks, and alteration marks omitted). The '919 Patent specification does not distinguish between descriptions of its method claims, of which Claim 14 is one, and its product claims. That distinction seems inconsequential to the claim construction at hand.
While the Federal Circuit admonishes courts against importing limitations from a patent's specification, it also notes that the specification is particularly useful in construing patent claims as a person skilled in the relevant art would interpret them. See Phillips, 415 F.3d at 1323 ("[T]he line between construing terms and importing limitations can be discerned with reasonable certainty and predictability if the court's focus remains on understanding how a person of ordinary skill in the art would understand the claim terms.")

Here, construing Claim 14 to include both measurement of the amount of alcohol emitted from a subject's skin and conversion of that figure to a percentage of blood alcohol content is not imported from the '919 Patent's specification. Rather, the specification is consulted to give context to Step (c) and Claim 14 as a whole, assisting the Court in understanding how a person of ordinary skill in the art would view the claim. The portions of the specification excerpted above do not contradict what is the plain reading of Claim 14 in light of its introductory clause; rather, they support it.

In summary, infringement of Claim 14 can occur only where a device not only measures the amount of alcohol being emitted from an individual's skin, but uses that measurement to calculate a percentage of blood alcohol content. Claim 14 does not preclude others from merely testing for the presence or amount of alcohol emitted through a person's skin. Rather, Claim 14 of the '919 Patent entitles the owner of that patent to exclude others from making, using, selling, offering to sell, or importing a device that otherwise infringes and measures the presence and level of alcohol in an individual and then converts that measurement into a percentage of blood alcohol content. See 35 U.S.C. § 271(a) (2006); NTP, Inc. v. Research in Motion, Ltd., 418 F.3d 1282, 1317 (Fed. Cir. 2005) ("A method or process consists of one or more operative steps, and, accordingly, it is well established that a patent for a method or process is not infringed unless all steps or stages of the claimed process are utilized." (internal quotation marks and alteration marks omitted).

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1. "Microscope station" (claims 16, 17, 21)

Cytyc argues that the term "microscope station" should be construed as "equipment, not including a cell analysis instrument, at which a human operator performs microscope analyses." Tripath objects to the exclusion of cell analysis instruments and the requirement of a human operator. It proposes a broader definition: "a place equipped with a microscope." The claims and the specification support the narrower definition.

Claim 16(b) describes three elements that each microscope within a "microscope station" must include: a movable slide stage, a means for computing that stores and shares information about the slide being examined, and a means for automatically recording location information of interest of the slide stage during slide examination. Claim 16 by itself appears to define "microscope station" broadly as any location equipped with a microscope that satisfies the three requirements. However, four dependent claims suggest a narrower meaning.

Claim 17 adds to the microscope station a terminal for a database having information relevant to the appropriate examination of the slide specimen. Claim 22 adds a means for recording time information, such as how long a previous user spent viewing a particular location of interest on the slide. These claims indicate that a "microscope station" is a place where a user can store and retrieve information about slides for use in diagnosis.

Claims 21 and 24 further narrow the definition of "microscope station" by distinguishing a "cell analysis instrument". Claim 21 states that the network "includes at least one cell analysis instrument and that at least one microscope station "comprises a terminal for receipt of analysis from the cell analysis instrument." Claim 24 states that separate microscope stations are "linked to a cell analysis instrument" and "analysis data from the cell analysis instrument and results of the microscope examination are simultaneously available at the separate microscope stations for review thereRouting." These two claims make clear that the cell analysis instrument is a specialized machine for producing analytical data. In contrast, the "microscope station" receives the data from the cell analysis instrument and other sources. Its purpose is to allow users to access the data.

The specification supports this distinction between a "microscope station" and a "cell analysis instrument." The specification repeatedly refers to "microscope stations" as places where end users access data. For example, the Detailed Description of the Invention states:
The network reviewing method comprises the step of causing the computer storage means to be independently accessible by at least two separate microscope stations in a network, each of the stations comprising a microscope and computer means, with each of the microscope stations being separately individually linked to at least one computer means capable of recalling the stored movements and location information from the . . . microscope used in the original examination.

Id. at col. 3, 11. 13-23. Another passage reads:

recalling, at one or more of said microscope stations from said computer storage means, a computer generated image of a slide . . . , onto the viewing means of the respective microscope station for review.

Id. at col. 3, 1.65 -- col. 4, 1. 1.

Beginning at column 8, line 10, the specification describes in detail how a pathologist uses the "microscope station" in practice. Id. at col. 8, 1. 10 -- col 9, 1. 24. The pathologist interacts with the "microscope station" by placing the slide on the stage, finding locations of interest, viewing data on a screen, and printing reports. Id. These examples show that a "microscope station" is a place where different types of information is gathered, stored, and viewed. It follows that the "microscope stations" must have some means for data storage, sharing, and access by a human.

The description of "cell analysis instrument" is quite different. The specification provides examples of four types of instruments: hemotology analyzers, PAP smear analyzers, image analyzers, and laser scanning cytometers. Id. at col. 9, 11. 25-27. n13 These instruments scan slides and process the data from these slides. Id. at col. 9, 11. 27-30. They then isolate, locate, and characterize cells based on the scan data. Id. Importantly for purposes of claim construction, the specification states that "one or more of the instruments can be interfaced with at least one of the microscope stations on the network in accordance with the present invention." Id. at col. 9, 11. 30-33. This last sentence makes clear that a cell analysis instrument is not part of a "microscope station." It can be linked to a "microscope station" so that its data can be accessed there, but it is a separate apparatus.

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n13 Claims 25-28 specifically claim each of these four types of instruments.

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Figure 1 illustrates these differences between "microscope station" and "cell analysis instrument" in a preferred embodiment. The Cytology Lab Pathfinders and Anatomic Pathology Pathfinders, represented by the number one, consist of a microscope equipped with stage position encoders, a microprocessor, a display screen and a keyboard. Id. at col. 6, 11. 54-58. These are "microscope stations." Id. The Pathfinder DS System, numbers four and eight, has similar components, and is also a "microscope station." The Laser Scanning Cytometer, which is a type of cell analysis instrument, is shown as number five. Id. at col. 9, 11. 36-37. It is depicted as a separate entity, with different components than the "microscope stations." Id. at col. 9, 11. 37-39.

TriPath contends that Figure 1 depicts four types of "microscope stations": Cytology Lab Pathfinders (number one), Anatomic Pathology Pathfinder (number one), Pathfinder DS System (numbers four and eight) and the Laser Scanning Cytometer (number five). It contends that these "stations" meet the requirements of claim 16 because each includes a microscope, some sort of microprocessor or personal computer, and a microscope staged encoder.

However, TriPath fails to recognize that the requirements of claim 16(b) refer only to the microscope component of a "microscope station." Claim 16(b) leaves open the possibility that a "microscope station" has other features." n14 As I explained above, the specification and the other claims define these other features in such a way that a "microscope station" is a place, separate from a cell analysis instrument, where a human conducts cell analysis and review.

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n14 The preamble of claim 16 (b) provides: "A network of interconnected microscope stations comprising . . ." From this
language, it is not clear whether "comprising" refers to the "network" or the "microscope stations." However, claims 16(a) and (b) refer to the connections between microscope stations, suggesting that claim 16 read as a whole describes the elements comprising the network, not the microscope stations.

TriPath also argues for a broader construction on the grounds that independent claims must be construed independently of and irrespective of dependent claims which specify a specific structure. It relies on Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir. 1991), for this proposition. However, Laitram does not apply to the present situation.

In Laitram, independent claim 21 contained a means-plus-function claim relating to a "means for joining" ends of a conveyer belt. Id. at 1534-35. Dependent claim 24 specifically required a cross-member as a means for joining the ends of the belt. Id. at 1538. Laitram argued that claim 21 could not also require a cross-member because that interpretation would violate the prohibition against reading limitations from a dependent claim into the independent claim and would frustrate the doctrine of claim differentiation. Id. The Federal Circuit rejected both of these arguments. Id. It held that the interpretation of "means for joining" as requiring a cross-member was proper because it derived from the specification, not the dependent claims. Id. It also found that claim differentiation was a judicially developed presumption that did not override § 112, P 6, the statute authorizing means-plus-function claims. Id.

In this case, unlike Laitram, the term "microscope station" itself is not a means-plus-function claim governed by § 112, P 6. Claim 16(b)(ii) and (iii) are means-plus-function claims describing two elements of the microscopes in a "microscope station." I do not read claims 17, 21, 22 and 24 as enumerating the means required to complete the functions in claims 16(b)(ii) and (iii) or as limiting claim 16 to the structures in the dependent claims. Rather, I look at the dependent claims to shed light on the meaning of a term that appears in the independent claim and three of the four dependent claims. See Phillips, 415 F.3d 1314 ("Other claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term.").

Finally, TriPath claims that Cytyc's proposed construction is incorrect because it would invalidate the preferred embodiment. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, (Fed. Cir. 1996) (holding that an interpretation that invalidates the preferred embodiment is "rarely, if ever, correct and would require highly persuasive evidentiary support"). This is simply not the case. Figure 1 represents the preferred embodiment. 969 patent at col. 6, ll. 54-55. As discussed earlier, the Cytology Lab Pathfinders and the Anatomic Pathology Pathfinders are "microscope stations" that contain the movable slide stage, means for computing, and means for automatically recording required by claim 16. Id. at col. 6, ll. 56-58. The Pathfinder DS System, depicted as numbers four and eight, is also a "microscope station" according to claim 16. Id. col. 7, ll. 50-55; col 8, ll. 28-29, 59-61. The Laser Scanning Cytometer is a "cell analysis instrument" that meets the requirements of claims 21, 24 and 28. Therefore, the preferred embodiment falls within the claims and is presumably valid.

In sum, the specification and claims support a narrow reading of "microscope station." Thus, I construe "microscope station" to be equipment, not including a cell analysis instrument, at which a human operator performs analysis.

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1. "Mid-section." Consistent with the claim language and its ordinary meaning, 1 and the specification, 2 the court construes "mid-section" to mean "a portion of the substrate that is between the substrate ends but does not extend to the substrate ends, and includes the middle point of the substrate."

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1 D.I. 148, ex. 6 at 722 (defining "mid-section" as "a section midway between the extremes"); D.I. 151, ex. E at 752 (same); Random House Dictionary of the English Language 1218 (2d ed. 1987) (defining "midway" as "in the middle of the way or distance; halfway").

2 '264 patent, col. 2, ll. 5-7; col. 6, ll. 6-9; figs. 1-10.

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PUBPAT
iv. Middle bridge portion

Plaintiffs argue that "middle bridge portion" means "the middle part of the eyeglasses spanning the nose." The Defendant has not indicated any disagreement with this interpretation.

The court finds that "middle bridge portion" means "the middle part of the eyeglasses spanning the nose."

E. Mildly Agitating

<table>
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<tr>
<th>Claim Term</th>
<th>Plaintiff's Proposed Construction</th>
<th>Defendants' Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>mildly agitated</td>
<td>being on the low end of an absolute scale which would involve less agitation than agitating the contents of the mixing chamber.</td>
<td>agitated gently, not significantly, on the low end of an absolute scale, and less than the level of agitation that results from inserting foam in the mixing chamber outside the lump ring.</td>
</tr>
</tbody>
</table>

The next term appears in both claims 25 and 36: the foam is inserted into the discharge conduit, "such that the foam is mildly agitated to thereby minimize destruction of the foam while uniformly dispersing the foam in the aqueous gypsum dispersion." As mentioned earlier, Judge Hart has already construed "mildly agitated." He concluded that, "mildly" should be given "its ordinary meaning of being on the low end of an absolute scale." United States Gypsum Co., 508 F. Supp. 2d at 620. In so doing, Judge Hart expressly rejected USG's contention that "mildly agitate" means "less agitation than is applied when mixing the gypsum and water to form the aqueous dispersion." Id. In distinguishing the language of the patent from USG's proffered definition of "mild" as a relative term, Judge Hart said: "Those statements [in the patent], however, are true even if 'mildly agitated' is construed as an absolute term. Viewed as points on an absolute scale, 'mildly agitated' would involve less agitation than 'agitating the contents of the mixing chamber' as stated in claim 25, or 'mixing and agitating calcined gypsum and water' as stated in claim 36." Id.

Notwithstanding Judge Hart's standing construction, Defendants claim "mildly agitated" is indefinite because the patent does not identify "where the dividing line is between mild and not mild agitation." (Defs' Br. at 20). The bright line Defendants would require is not a precondition for definiteness. Use of terms of degree are ubiquitous in patent claims; such usages, when serving reasonably to describe the claimed subject matter to those skilled in the field of invention, and to distinguish the claimed subject matter from the prior art, have been accepted in patent examination and upheld by the courts. Andrew Corp. v. Gabriel Electronics, Inc., 847 F.2d 819, 821 (Fed. Cir. 1988). The term "mildly agitating" is sufficiently clear to avoid indefiniteness. It clearly admits of a construction, since Judge Hart was able to provide one. Further, even had the court not previously construed the term, the court finds that a person skilled in wallboard construction would have understood "mildly agitating" to mean roughly what Judge Hart understood it to mean: agitating on the low end of an absolute scale. The court sees no reason to reconsider or depart from Judge Hart's construction.

If the court affirms Judge Hart's standing construction, Defendants urge, it should at least modify his language by defining mild as "gentle and not significant." The court finds the proposed modification adds nothing of value to the ordinary meaning of "mild," which does not require further definition. If anything, use of the language "not significant" is misleading. In common usage, mild is defined as "moderate in action or effect," and "not being or involving what is extreme." MERRIAM
WEBSTER COLLEGIATE DICTIONARY at 738 (10th ed. 1997). Insignificant is defined as "lacking meaning" and "not worth considering." Id. at 605. On the absolute scale proposed by Judge Hart, "mild" (being on the low end) seems to mean something greater than "not significant" (being almost nothing).

Both parties' proposed constructions suggest alternative points in the wallboard manufacturing process to serve as a reference point for determining just how much agitation is mild. The parties disagree, however, on which point in the process should serve as the reference. Plaintiff's proposed construction incorporates Judge Hart's language that mild agitation "would involve less agitation than agitating the contents of the mixing chamber," but Plaintiff takes Judge Hart's statement out of context. In effect, Plaintiff seeks to use the level of agitation in the mixer as a ceiling, under which everything is mild agitation. This is the very argument Judge Hart previously rejected. While Judge Hart's opinion indicates that "mild agitation" could be described by referring to other points in the manufacturing process, it makes clear "mild agitation" is to be defined as a point on absolute scale. In short, while the court has held that the parties may call witnesses and introduce evidence that compare levels of agitation at different points in the manufacturing process (i.e. the mixing chamber, lump ring, and discharge conduit, etc.), the definition of "mild agitation" itself is not relative. Mild agitation is assuredly less than the agitation that occurs in the mixer, but not every level of agitation below that of the mixer could accurately be called mild.

The court rejects Defendants' proposed construction for similar reasons. Defendants rely on the second embodiment of the patent, which depicts the foam intake inside the mixer, but outside the "lump ring," the outer periphery of the mixer. (Defs' Br. at 22-23; '635 Patent, Figure 3, element 30.) The patent does not identify the configuration depicted in the second embodiment as giving rise to "mild agitation." As a result, Defendants urge the court to draw the negative inference that the second embodiment acts as a limit on the level of agitation that could constitute "mild." Defendant's logic is tortured. It does not follow that because the patent fails to refer to the second embodiment as mild, it therefore must be understood to describe the second embodiment as "not mild." The disputed claims themselves make no reference to the "lump ring" and the description of the embodiment makes it clear that the claims are not limited to the type of mixing chamber depicted in the second embodiment. ('635 Patent col. 8, ll. 4-9) ("It should be appreciated that this depiction of an agitator is relatively simplistic and meant only to indicate the basic principles of agitators commonly employed . . . . Many different, and often more complex, agitator designs (having vertically extending pins or paddles, different shapes, etc.) can also be employed.") There is simply no reason to conform the term "mildly agitated" by measuring it against a substantially unrelated embodiment of the patent. Further, as Judge Hart observed, it is not necessary to define "mildly agitate" by comparing it to other steps in the manufacturing process. The ordinary meaning of the word "mild" is sufficient.

The court adheres to Judge Hart's existing construction. Accordingly, the court adopts the following construction for "mildly agitating": "agitating on the low-end of an absolute scale."

14. "Milling"
"Milling" is construed to mean, "using a machine to remove."

Claim 1 of the '099 patent recites a step of "milling a region of said core to a controlled depth so as to form a cavity which exposes at least one contact pad of said electronic element." '099 patent, col. 9:3-5. Claims 1 and 22 of the '367 patent recite virtually identical steps.

Claim 1 of the '099 patent recites a step of "milling a region of said core to a controlled depth so as to form a cavity which exposes at least one contact pad of said electronic element." '099 patent, col. 9:3-5. Claims 1 and 22 of the '367 patent recite virtually identical steps.

Plaintiff proposes that the ordinary meaning of the word milling, from the Dictionary of Composite Materials, p. 91, is "[a] machining process for removal of material." (Pl. Br. at 25.) The specifications are consistent with this construction, stating that each card undergoes a controlled-depth milling operation to form a window or cavity. '099 patent, col. 8:1-6. Defendant does not object, so I adopt Plaintiff's definition.
1. Claim interpretation

I begin with construction of the claims, which requires reference to the specification, the patent claims and the Prosecution history. Fonar Corp. v. Johnson & Johnson and Technicare Corp., 821 F.2d 627, 631 (Fed. Cir. 1987), cert. denied, 484 U.S. 1027, 98 L. Ed. 2d 764, 108 S. Ct. 751 (1988). The '049 patent contains three claims. All of these claims require the step of

immediately guiding the web and felt contiguous relative to each other around a vacuum guide roll disposed downstream relative to the dryer, the arrangement being such that the web is supported by the felt during passage of the web along a minimal felt draw between the dryer and the guide roll.

By itself, the claim language offers little to suggest the meaning of "minimal felt draw," making it necessary to turn to other sources to help in interpretation. As I have found, the only discussion of "minimal felt draw" contained in the specification of the '049 patent is set forth at column 2, lines 18-26. It indicates that the joint run of the web and felt between the dryers and the guide rolls be minimal. This language is consistent with Voith's position that "minimal felt draw" means that the vacuum rolls and the dryer rolls are in close proximity.

Voith asserts that the Prosecution history gives additional support to its position. Voith refers specifically to the attempts of Beloit's patent agent to distinguish Beloit's invention over the '762 patent on the ground that the felt draw in the '762 patent was not minimal as required in application claim 11. Although Beloit's efforts to distinguish from the prior art are consistent with the conclusion that minimal felt draw is synonymous with placing rollers in close Proximity to one another, they do not mandate that conclusion. Finally, Voith cites Wedel's testimony from the June 23, 1994 deposition to the effect that "minimal felt draw" means the vacuum roll is in close proximity to the dryer.

In opposition, Beloit cites only to another part of Wedel's deposition in which he defined "close proximity" as being "several feet," which is much longer than the joint runs otherwise described to this court. Assuming for now that it is proper to give weight to the post-issuance statements of an inventor when interpreting a patent, this evidence does not refute the argument that the term minimal felt draw means that the rolls are in close proximity to one another.

The parties cast but dim light on the meaning of minimal felt draw. However, Voith has the better of the argument. I agree that the fair construction of the term "minimal felt draw" is that the felt draw is kept to a minimal length, requiring the adjacent rolls to be "in close proximity." This raises the second question: whether a determination of the meaning of "close proximity" in a prior litigation between the same parties involving a different patent precludes Beloit from asserting infringement of the '049 patent.

2. Issue preclusion

Under the doctrine of issue preclusion, also called collateral estoppel, a judgment on the merits in an earlier suit precludes relitigation in a later suit of issues actually litigated and determined in the first suit. In re Freeman, 30 F.3d 1459, 1465 (Fed. Cir. 1994) (citing Lawlor v. National Screen Serv. Corp., 349 U.S. 322, 326, 99 L. Ed. 1122, 75 S. Ct. 865 (1955)). Issue preclusion does not require that the patent claim in the first and second suits be identical. Id. "Rather, application of issue preclusion centers around whether an issue of law or fact has been previously litigated." Id. (citing International Order of Job's Daughters v. Lindeburg & Co., 727 F.2d 1087, 1091 (Fed. Cir. 1984)). "Issue preclusion is appropriate only if (1) the issue is identical to one decided in the first action; (2) the issue was actually litigated in the first action; (3) resolution of the issue was essential to a final judgment in the first action; and (4) the party to be precluded had a full and fair opportunity to litigate the issue in the first: action." Id. (citing A.B. Dick Co. v. Burroughs Corp., 713 F.2d 700, 702 (Fed. Cir. 1983).

The parties agree that as a matter of law, the question whether the vacuum guide roll of Consolidated's Rapids 16 machine was "in close Proximity to the dryer" was an issue essential to the judgment in the prior litigation and was actually decided by the finder of fact. The parties agree also that Beloit had a full and fair opportunity to litigate this issue and did not appeal the jury's finding on that issue. The remaining question is whether the issue of the meaning of "close proximity" in the present litigation is identical to the issue of the meaning of "close proximity" in the prior litigation. Because I conclude that it is not, I will deny Voith's motion for partial summary judgment on this issue.

Delineating the issue on which litigation is foreclosed is one of the most difficult problems in applying the doctrine of issue preclusion. Restatement (Second) of Judgments § 27 comment c (1980); Freeman, 30 F.3d at 1465. The problem entails a
balancing of important interests: a desire not to deprive a litigant of an adequate day in court and a desire to avoid repetitious litigation of what is essentially the same dispute. Id.

Voith urges construction of the meaning of "close proximity" in the context of the '049 patent as identical to "close proximity" in the context of the prior litigation. But, as Justice Holmes stated in Towne v. Eisner, 245 U.S. 418, 425, 62 L. Ed. 372, 38 S. Ct. 158 (1918): "A word is not a crystal, transparent and unchanged; it is the skin of a living thought and may vary greatly in color and content according to the circumstances and the time in which it issued."

The words "close proximity" carry different meanings in different contexts. To say that two blades of grass are in close proximity to one another may connote a scale of inches, whereas a statement that two buildings are in close proximity might indicate a scale of several yards. The facts in this case present two situations of a much closer nature. In both instances, "close proximity" is used to describe the distance between rollers in a paper making machine. It is an inescapable fact, however, that the term is being examined in the context of one patent and a jury question posed at a trial involving a separate and distinct patent.

Because the doctrine of issue preclusion rests upon principles of fairness, courts have some discretion to decide whether the doctrine is appropriate in particular instances. Freeman, 30 F.3d at 1467 (citing A.B. Dick, 713 F.2d at 702). I am not convinced that it would be fair to preclude Beloit from arguing that the Combined Locks No. 7 machine contains vacuum and dryer rolls in close proximity (thus employing minimal felt draw) on the basis of the facts presented in the trial of this specific Patent. "A device not previously before the court, and shown to differ from those structures previously litigated, requires determination on its own facts." Del Mar Avionics, Inc. v. Quinton Instrument Co., 836 F.2d 1320, 1324 (Fed. Cir. 1987).

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7. "Minimal . . . Ram Pressure"

The word "minimal" in the phrase "minimal first ram pressure" means, "The smallest or least amount [of ram pressure] necessary to accomplish the designated step."

At the outset, I note that I am focusing here solely on the words "minimal…ram pressure" rather than on the entire phrase "minimal first ram pressure." This is because the parties greatly dispute what "first" means as used in this phrase, and this is not the place to discuss that issue. This phrase appears in claim 16 of the '207 patent, and claim 15 of the '155 patent:

positioning said core in a laminator apparatus, and subjecting said core to a heat and pressure cycle . . . comprising the steps of: (i) heating said core in said laminator, in the presence of a minimal first ram pressure.

'207, col. 8:19-23; '155 patent, col. 8:15-19.

The specifications for the '207 patent indicate that "minimal" means "little or no." Col. 4:41-44.

Defendant proposes that this phrase means "applying little or no pressure to the 'core,' but in no event a ram pressure more than about 10 pounds per square inch."

According to Defendant, "minimal" is not a technical term, and it is defined in Webster's to mean "relating to or being a minimum: constituting the least possible size, number or degree." (Def. Br. at 36.) "Minimum" is defined in Webster's to mean, "the least quantity assignable, admissible, or possible." (Id.) To this extent, Defendant is precisely correct.

But Oberthur goes on to argue Leighton has capped the minimal first ram pressure at 10 pounds per square inch for all applications. (Def. Br. at 37.) It derives this number from language in the specifications for the '099 and '367 patents (whose claims, interestingly, do not use the phrase "minimal….ram pressure"). The '099 patent (col. 5:56-61) says this about the amount of pressure required for a particular step:

One book is positioned in laminator . . . the first lamination cycle is initiated by closing laminator platens preferably
applying little or no ram pressure to book. This is preferably done using hydraulic pressure, and a pressure not to exceed about 10 pounds per square inch is believed sufficient for most applications.

'099 patent, col. 5:56-61 (numerical references omitted.)

I reject Defendant's proposed definition. The word "minimal" does not connote any sort of numeric cap. And to the extent the references in the '099 and '367 specifications to 10 p.s.i. are relevant at all, I am constrained to note that the patentee expressly states that he "believes" this amount of pressure will be "sufficient for most applications" -- indicating that it is entirely possible that slightly more pressure (how much is not specified) may be needed for some applications.

But nothing in Webster's or the patent specifications remotely suggests that 10 p.s.i. of ram pressure will qualify as "the least possible size" in every possible case. Therefore, I reject Defendant's argument.

6. Minimally Sufficient Pressure

This phrase is found in Claim 23 of the '575 patent.

Phrase: Minimally sufficient pressure

Construction: A summation of the pressure necessary to prevent airway collapse in the absence of respiratory efforts (collapse due to airway structure, muscle tone, and body position) and the pressure necessary to overcome the collapsing and splinting effects of respiratory efforts.

Reasoning: The real dispute between the parties as to the appropriate construction of this phrase stems from a disagreement as to how many of the claim elements, and how much of the patent specification, must be read into this phrase. Defendant contends that illustrative equations from the patent specification must be used to define this phrase and that claim language relating to proportionality, fluid characteristic, and first gain, must be read into the phrase. Plaintiffs argue that this phrase has been used consistently throughout the family of patents, and has a clearly established meaning. We agree with plaintiffs.

While the formulas urged by defendant may help illustrate the phrase, the phrase is not limited to them. Any additional limitations from the remainder of this Claim regarding proportionality, fluid characteristic, or gains can be addressed in the infringement analysis. However, in terms of construing the disputed phrase "minimally sufficient pressure", we find that the phrase is given a clear and consistent definition throughout the family of patents.

F. Minimize Destruction of the Foam

Claim Term  | Plaintiff's Proposed Construction | Defendants' Proposed Construction
---|---|---
[to thereby] minimize destruction of the foam | to reduce foam loss by inserting foam in such a way that it is "mildly agitated." | the least possible destruction of the foam

The next term follows the "mildly agitated" language in both claims 25 and 36. Defendants first contend that this term is indefinite because the term "offers no guidance or standard for measuring how much foam can be destroyed and still be minimized." (Defs' Br. at 24.) Again, Defendants urge a level of specificity that is not required for definiteness under the Patent Act. Claims must be read in view of the specification, of which they are a part. Markman, 52 F.3d at 978. Reading the claim in context, a person skilled in wallboard manufacture would understand the scope of the subject matter. As the background portion of the patent explains, a fundamental problem in wallboard manufacture is how best to "disperse the
foam relatively uniformly in the slurry while not destroying any more of the foam or producing any larger variations in bubble size than is unavoidable." (‘635 Patent, col. 2, ll. 49-52.) In that context, the disputed terms of claims 25 and 36--"to thereby minimize destruction of foam while uniformly dispersing the foam in the aqueous gypsum dispersion"--clearly indicate the scope of the subject matter. When read together, the terms indicate the invention achieves low levels of foam destruction while maintaining an even distribution of foam. This indication is sufficiently definite. The patent need not give an accounting of foam destruction with mathematical precision in order to be valid. Modine Mfg. Co. v. U.S. Int'l Trade Comm'n, 75 F.3d 1545, 1557 (Fed. Cir. 1996).

Again, each party's proposed construction of this term is unsatisfying. Plaintiff urges the court to consider the term in context and to construe "minimize" as to "reduce foam loss by inserting foam in such a way that it is mildly agitated." The court notes, first, that use of the term "mildly agitated" here is redundant. Although the court must consider terms in context, each term may be construed without repetition. The court further rejects Plaintiff's proposed construction of the term "to minimize" as meaning "to reduce." In its ordinary meaning, "to minimize," meaning "to keep to a minimum," has a more specific connotation than merely "to reduce." MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY at 741 (10th ed. 1997). In this usage, to minimize denotes an effort to reduce to the "least quantity assignable, admissible, or possible." Id. Defendants' proposed construction, "the least possible destruction of foam," comes closer to this connotation. Defendant's proposed construction is imperfect, however. It implies that "least possible" is a finite quantity; but the context of the claim suggests "minimize" is used here as a relative term. Efforts to minimize must be balanced against effort to achieve uniformity and other circumstances of manufacture.

Accordingly the court adopts the following construction for "minimize destruction of the foam": "to reduce destruction of the foam as much as possible given the circumstances."

"A minimum distance outward from the outer spatial volume expandable surface"

Cytoc's proposed construction
Xoft's proposed construction
(no construction required) (indefinite)

Claims 2, 24, 32, and 36 all include the phrase "the target tissue being defined between the outer spatial volume expandable surface and a minimum distance outward from the outer spatial volume expandable surface." 14 Xoft asserts that "minimum distance" is indefinite in this context because the patent does not explain how the minimum distance is determined.

Here, "minimum" does not appear to add anything to the patent. The "target tissue" is the tissue outside of the outer chamber for a fixed distance in all directions, but this fixed distance or how one determines it are not explained. It seems that one skilled in the art would know how to determine the distance. See Tr. at 85-89. But the patent may as well read "a short distance outward" or "a determined distance outward" or merely "a distance outward."

Cytoc claims that specification provides some guidance and that the minimum distance may in some instances be between half and one centimeter. The specification does state that

device A can readily be configured to provide a dose in a therapeutic range, say between 40 to 60 Gray, at a distance between 0.5 and 1.0 cm from the outer spatial volume for an outer spatial volume having a diameter of 4.0 cm and being in contact with the resection cavity wall.
'204 patent, col. 6, ll. 31-35. However, Cytyc neglects to mention that "device A" is "an interstitial brachytherapy apparatus . . . such as those employed in U.S. Pat. No. 5,429,582, having a single spatial volume 50 filled with a radioactive material in solution." '204 patent, col. 6, ll. 3-7. In any case, this discussion does not use the phrases "target tissue" or "a minimum distance outward." Nevertheless, Xoft has presented no evidence that one skilled in the art would not understand the phrase "the target tissue being defined between the outer spatial volume expandable surface and a minimum distance outward from the outer spatial volume expandable surface." Xoft has not met its burden of proving by clear and convincing evidence that this language is indefinite, and the court finds that no construction is necessary.

**Claim Language**

- A minimum distance outward from the outer spatial volume expandable surface

**Court's Construction**

- (no construction necessary)

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"Minimum prescribed dose"

<table>
<thead>
<tr>
<th>Cytyc's proposed construction</th>
<th>Xoft's proposed construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum prescribed dose received within a target tissue for delivering cells. therapeutic effects.</td>
<td>Minimum dose needed to treat cancer therapeutic effects.</td>
</tr>
</tbody>
</table>

The parties have requested construction of the phrase "minimum prescribed dose" and point out that the term appears in claims 2, 18, 24, 32, and 36 of the '204 patent. The parties do not argue that the term should be construed differently for different claims. However, claims 2, 24, 32, and 36 contain the phrase "minimum prescribed absorbed dose," and claim 18 contains the phrase "prescribed absorbed dose." These inconsistencies seem irrelevant, however, because the parties' dispute is whether any such doses should be limited to treatment of cancer cells or allowed to cover any potential therapeutic effects. The court's construction of "brachytherapy" limits the claims to treatments "at or near a tumor or other proliferative tissue disease site." Xoft's proposed construction is too narrow, and Cytyc's is too broad. However, in light of the construction of "brachytherapy," no construction of "minimum prescribed dose" or similar phrases is necessary.

**Claim Language**

- minimum prescribed dose

**Court's Construction**

- (no construction necessary)

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A. "Minimum Prescribed Absorbed Dose" Limitation in Claim 2 of the '204 Patent

In its motion for summary judgment of non-infringement, SenoRx contended that the multi-dwell position plans do not meet the "minimum prescribed absorbed dose" limitation to claim 2 of the '204 Patent. SenoRx's argument is that "minimum prescribed absorbed dose" means the total delivered dose to the target tissue. As a result, for any particular dwell position and source in a multi-dwell plan, the dose of radiation delivered to the tissue will be less than the minimum prescribed dose because the dose delivered by sources at other dwell positions contribute to the total dose. Thus, the multi-dwell position plans do not meet this limitation, and the court should grant summary judgment of non-infringement for these plans.

Hologic did not respond to this argument until its reply in support of its own motion for summary judgment and claimed that SenoRx had failed to previously disclose this non-infringement position. Hologic requested further briefing on this issue. The court granted leave for the parties to file supplemental briefing on this issue and withheld ruling on SenoRx's motion for summary judgment on claim 2 because the meaning of the "minimum prescribed absorbed dose" limitation was potentially dispositive.

Having reviewed the parties' supplemental briefs, the court finds that "minimum prescribed absorbed dose" means the total delivered dose to the target tissue. Three reasons support this construction. First, failing to interpret this language to mean
the total dose would read "prescribed" out of the claim. The plain meaning of a "prescribed" dose is the dose prescribed by a physician to be delivered to a patient during a course of radiation treatment. Hologic has provided no evidence that physicians ever prescribe less than the total dose to be delivered to the target tissue. Because a "claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so," Merck & Co., Inc. v. Teva Pharmaceuticals USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005), the court finds that "minimum prescribed absorbed dose" refers to the total delivered dose.

Second, this construction is supported by the specification. Claims are read in view of the specification, which is the "single best guide to the meaning of the disputed term." Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005). In the "Summary of the Invention" section of the specification, the patent states: "[t]he predetermined dose range is defined as being between a minimum prescribed absorbed dose for delivering therapeutic effects to tissue that may include cancer cells, and a maximum prescribed absorbed dose above which healthy tissue necrosis may result." '204 Patent 2:52-55 (emphasis added). Since the purpose of the invention is to deliver radiation to target tissue with a desired intensity without overexposing un-targeted tissue and causing healthy tissue necrosis (id. at 2:27-32), "maximum prescribed absorbed dose" must refer to the maximum total delivered dose to target tissue. After all, the objective is to keep the total delivered dose low enough such that it does not cause healthy tissue necrosis. Given that "maximum prescribed absorbed dose" refers to the maximum total delivered dose, one of ordinary skill in the art would logically conclude that "minimum prescribed absorbed dose" refers to the minimum total delivered dose.

In addition, the specification also states: "After a prescribed absorbed dose has been delivered to tissue surrounding the apparatus, the apparatus is removed." Id. at 3:9-11. As pointed out by SenoRx, no balloon brachytherapy device is removed prior to the complete delivery of treatment. Therefore, this language in the specification also demonstrates that a "prescribed absorbed dose" must refer to the total delivered dose.

Third, this construction is supported by the language in dependent claim 5: "wherein the minimum prescribed absorbed dose is 40 Gray." '204 Patent 8:47-48. The parties agree that the total, cumulative dose delivered to tissue during treatment is 34 Gray, and Hologic concedes that in claim 5, the minimum prescribed absorbed dose of 40 Gray would likely be the total, cumulative dose delivered to tissue during a course of treatment. Plaintiffs' Supplemental Brief p. 3. The Federal Circuit has made it clear that claim language in other claims is useful in construing a disputed claim term:

Phillips, 415 F.3d at 1314. Therefore, the fact that "minimum prescribed absorbed dose" is understood to mean the total delivered dose in claim 5 is strong evidence that "minimum prescribed absorbed dose" also means total delivered dose when used in claim 2.

For the foregoing reasons, the court construes "minimum prescribed absorbed dose" to mean the total delivered dose to the target tissue. As a result, the court also grants summary judgment of non-infringement of claim 4 of the '204 Patent with respect to multi-dwell dose plans using the Contura.

3. Mirror Image

Memory chips that are mounted on a circuit board in such a manner that the memory chips on the second side are located directly behind the chips on the first side and the pins or leads of the corresponding memory chips are matched. In other words, the memory chips are mirror images in both location on the board and lead location.
97. Step 3. Micro-Waste Micro-Waste seeks to limit "mixing" in step 3 to that which "is accomplished by a conveying screw." This proposed limitation relies on the specifications in the '000 patent, which explain:

To improve a uniform temperature distribution … the conveying device may be constructed as a microwave field distributor in the form of a shaftless metal conveying screw. This conveying screw consequently produces not only a thorough mixing of the refuse to be heated, but also produces multiple reflections, with the result that the occasional differences in heating are smoothed out by direct and indirect heating. Improved mixing can furthermore be achieved by an inclined installation of the microwave chamber and the falling back of the granulated material produced thereby.

98. Industries contends that "mixing" refers generally to "any degree of combining or blending." This interpretation derives from the dictionary definition of "mix" as "to combine or blend into one mass," "to combine with another," or "to bring into close association." See WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 761 (9th ed. 1987). None of these definitions specifies the extent to which the substances must be combined or blended.

99. There is "a heavy presumption that a claim term carries its ordinary and customary meaning." Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1327 (Fed. Cir. 2003). "Mixing," in its ordinary sense, does not contemplate the use of a specific device.

100. "[I]nterpreting what is meant by a word in a claim is not to be confused with adding an extraneous limitation, … which is improper." Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989) (quoting E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir. 1988)) (emphasis in the original); see also Rambus Inc. v. Infineon Techs. AG, 318 F.3d 1081, 1088 (Fed. Cir. 2003) ("While claims often receive their interpretative context from the specification and the prosecution history, courts may not read limitations into the claims.").

101. "[P]articular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments." See Rhine v. Casio, Inc., 183 F.3d 1342, 1346 (Fed. Cir. 1999)) (quoting Electro Med. Sys. S.A. v. Cooper Life Sciences, 34 F.3d 1048, 1054, 32 U.S.P.Q.2d 1017, 1021 (Fed. Cir. 1994)).

102. The specification cited by Micro-Waste does not mandate the use of a conveying screw. Cf. Rhine, 13 F.3d at 1346 (rejecting a proposed claim limitation, though it was included in the preferred embodiment, because the specification did not require it).

103. The Court construes "mixing" in Step 3 according to its common meaning, as any degree of combining or blending.

B. Mixing Chamber

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Plaintiff's Proposed Construction</th>
<th>Defendants' Proposed Construction</th>
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<tbody>
<tr>
<td>mixing chamber</td>
<td>a device equipped with a powered moving agitator having one or more inlets through which at least calcined gypsum and water are inserted</td>
<td>an enclosed space where mixing occurs</td>
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</table>

The term "mixing chamber" is mentioned three times in Claim 25: first the calcined gypsum and water is inserted into the mixing chamber "through one or more inlets," then the chamber's contents are agitated to "form an aqueous dispersion of the calcined gypsum" and, finally, its contents are discharged "through a discharge outlet into a discharge conduit." (635 Patent Claim 25.) Defendants propose reading "mixing chamber" as "an enclosed space where mixing occurs." (Def's Opening Br. at 16.) In contrast, Plaintiff would limit the term based on its reading of the patent specification and prior art to include a chamber with a powered agitator. (Pl's Br. at 10.) Plaintiff also proposes requiring that any mixing chamber have "one or more inlets through which at least calcined gypsum and water are inserted." The court rejects that addition as
redundant: the claim already specifies that the mixing chamber has calcined gypsum and water inserted into it through one or more inlets. Cross Medical Products, Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1307 (Fed. Cir. 2005).

According to Plaintiff, calcined gypsum and water cannot be agitated without a powered agitator, so when the claim refers to a mixing chamber in which those elements are agitated, it must be referring to a chamber "equipped with a powered moving agitator." (Pl's Br. at 10.) Limiting a patent to a preferred embodiment is improper, however. E.g., Howmedica Osteonics Corp. v. Wright Medical Technology, Inc., 540 F.3d 1337, 1345 (Fed. Cir. 2008). Plaintiff's contention appears to confuse the claim terms based on its contention of what the physically possible embodiments are. The court rejects this argument because Plaintiff provides no support for its assertion about how calcined gypsum and water must be agitated. The Patent specification specifically notes that an implementation of the device could use one of many different agitator designs. (‘635 Patent, col. 8, ll. 3-9.)

Where Plaintiff's proposed construction is too specific, Defendants' proposed construction is too general. (Def's Opening Br. at 16-18.) Any time two substances are placed in a chamber, some mixing occurs, but that does not require the conclusion that the enclosed space is a "mixing chamber." To distinguish between a chamber where mixing occurs incidentally and a chamber in which the mixing is intentional, the court relies on language from the Patent's background section that describes a mixing chamber as "containing a means for agitating the contents." (‘635 Patent, col. 1, ll. 48-52.) The court also finds that the word "chamber" needs no construction because the ordinary meaning is sufficient. O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., 521 F.3d 1351, 1361 (Fed. Cir. 2008). Accordingly, the court adopts the following construction for "mixing chamber:" "a chamber containing a means for agitating its contents."

A. "Mixing"

Claim 1 of the '989 patent recites the following limitation, "mixing said delivered blood with said shunt blood flow." On its face, the meaning of this limitation is clear. Plaintiff suggests that mixing is, "the combining or putting together of two or more substances or things so that the constituents of each are diffused among those of the other(s)." 2 Defendant propose the following construction: "to bring together with a loss of separateness or identity." In support of this construction, defendants state that "Transonic represented to the PTO that 'complete mixing' is required by the claims." However, this assertion overstates plaintiff's representations to the PTO.

2 This definition is consistent with at least one dictionary definition which defines the verb to mix as, "(1)(a)(1) to combine or blend into one mass; (2) to combine with another; (b) to bring into close association; . . . [mix] may or may not imply loss of each element's identity." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY (1991).

During the prosecution of patent '989, the PTO notified plaintiffs that a prior art referred to as "Hester" rendered plaintiff's patent claim obvious. In response to this allegation, plaintiffs met with the PTO examiner. Pursuant to this interview, the examiner noted on September 16, 1994, "applicants will submit claims defining the method steps including mixing, measuring shunt flow, measuring flow in venous line . . . . Method presented by applicants overcomes the prior art record." No mention of "complete mixing" was made by the examiner. Plaintiff did explain to the PTO in written remarks submitted following the aforementioned interview that "complete mixing" was a primary feature of the invention. However, when read in context, plaintiff's isolated reference to "complete mixing" appears to be a careless misstatement. Nothing in the prosecution history suggests plaintiff, by virtue of this isolated misstatement, intended to impart a limited meaning to the generic term "mixing" for the purposes of the patent.

Therefore, because the term is unambiguous, the Court adopts plaintiff's proposed construction of the "mixing" limitation as follows: "the combining or putting together of two or more substances or things so that the constituents of each are diffused among those of the other(s)."
NMT’s appeal of the district court’s grant of Transonic’s motion for a preliminary injunction is based on the court’s claim construction. Claim construction is a question of law that we review de novo. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 U.S.P.Q.2d (BNA) 1169, 1174 (Fed. Cir. 1998) (en banc). NMT argues that the court misconstrued the “mixing,” “changing,” and “calculating” and “determining” limitations of the asserted claims.

With regard to the “mixing” limitations, NMT raises the same arguments that it raised before the district court, asserting that the statement in the prosecution history regarding “complete mixing” limits the scope of the claims. NMT also cites external evidence, including correspondence between the inventors and their patent attorney and articles authored by the inventors, as demonstrating that “complete mixing” is a required aspect of the invention. Finally, NMT argues that the district court’s construction of “mixing” renders the term meaningless because mixing will always occur as a result of the “delivering” steps.

NMT argues that the “changing” limitations are drafted in step-plus-function form and, therefore, must be construed in accordance with 35 U.S.C. § 112, P6. When so construed, NMT argues, “changing” requires the addition of an indicator because that is the only corresponding act disclosed in the specification. NMT argues that even if the “changing” limitations are not construed under § 112, P6, statements in the prosecution history made by the applicant and by the examiner limit the “changing” step to the addition of an indicator. NMT also argues that the district court erred when it determined that the “blood parameter” that is changed to produce a “distinguishable blood characteristic” includes chemical and biological characteristics of the blood, in addition to the physical characteristics disclosed in the specification.

After careful consideration, we reject NMT’s arguments. We discern no error in the district court’s construction of the “mixing” and “changing” limitations or in its findings that those limitations are met by NMT’s Delta H method. However, as far as the “calculating” and “determining” limitations are concerned, we believe that the district court’s construction was too broad.

a. "Mobile, Road-Hauled"

Both the plaintiff and the defendants request the Court to construe the term "mobile, road-hauled." This term appears in the first sentence of claim 1, in which the patentee claims "[a] mobile, road-hauled aggregate material processing plant . . . ." The defendants request that the Court construe "mobile, road-hauled" to mean, “with a chassis mounted on wheels so that the plant can be towed or pulled along a road on its own wheels." The plaintiff opposes this definition and requests that the Court construe the term to mean, "mobile and capable of being hauled on a road, with or without any other devices." Neither party contends that "mobile, road-hauled" is a term that has special meaning within the art. Additionally, the parties agree that "road-hauled" limits the claim to an invention that can be transported on a road.

As a preliminary matter, the Court views "mobile, road-hauled" as a term with a straightforward definition for a lay person. The term "mobile" speaks for itself, and the Court may well encroach upon the province of the jury by acting as a mere thesaurus to interpret this term. Similarly, "road-hauled", in common parlance, means "capable of being hauled on a road." The term implies no additional restriction on how something is hauled on a road.

Nonetheless, the defendants contend that the patent specification limits the scope of "mobile, road-hauled." In particular, the defendants rely on the following passage from the patent specification:

[A screening plant's] processing capacity is heavily influenced by the ability to quickly and effectively deliver the processed material away from the plant. . . . (and while the manner in which such lateral conveyors are connected to the plant is relatively simple, where the processing plant is mobile, major problems arise in ensuring that the overall width and height of the mobile plant is within certain dimensions when carrying such conveyors during transport.)
The defendants argue that this passage demonstrates that the processing plant is described as "mobile" only in the sense that it could be transported over long distances.

The defendants also point out that the patent specification describes--both in writing and in drawings--a processing plant that is pulled on its own wheels when transported over long distances. Thus, the defendants maintain that, when the patentee described the invention as "road-hauled", he meant to limit the patent to a device that was capable of being pulled or towed on a road on its own wheels.

The Court agrees that, in the context of the entire patent, the term "mobile" refers to the plant's capacity to be moved over large distances. It is sufficiently clear to the Court that the essence of the invention was to create a screening plant that be moved among sites that are miles apart, and that the term "mobile" refers to this quality. However, the Court does not find that "road-hauled" was intended to limit the invention to a device that was towed or pulled on its own wheels. Being "towed or pulled" on its "own wheels" are qualities of the preferred embodiment of the invention, but they are not qualities that are implied by the term "road-hauled" itself, nor are they qualities that the Court views as essential to the invention. See Agfa Corp., 451 F.3d at 1376 (holding that is generally improper to incorporate limitations from a patent's preferred embodiment into the patent's claims).

The Court therefore construes "mobile, road-hauled" as meaning "capable of being hauled over long distances on a road, with or without other devices."

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7. "Mobile Scanner"

Plustek asks the Court to construe this term narrowly, as "a dual-mode portable scanner."

Syscan asks for a broader interpretation, as "a portable scanner, so lightweight that it can be used in any conditions."

The patentee distinguished prior art based on the patented scanner's ability to perform both opaque and transparent scanning:

According to one aspect of the present invention, the disclosed scanner comprises two demountable cases. The main case houses the image sensing module and the motion mechanism and the base case houses a second illumination source. The first illumination source in the image sensing module provides front illumination to an opaque scanning object while the second illumination source provides back illumination to a transparent scanning object, as such the disclosed scanner is capable of scanning both opaque and transparent materials, a dual scanning feature that has been long sought in the scanning market…21

Base module 404 is one of the distinctive features of the present invention. With base module 404 mounted to main module 402, mobile scanner 400 is capable of scanning both transparent and opaque documents.

Where the specification clearly shows a particular feature that is distinctive over the prior art, then the claims should be construed to include that feature. SciMed, 242 F.3d at 1342-44; see also CCS Fitness, Inc., 288 F.3d at 1366-67.

The Summary of the Invention of the '124 Patent states, "According to another aspect of the present invention, the disclosed scanner comprises two demountable cases" (2:59-60). The Specification further states that a "dual scanning feature" has been long sought in the scanning market (3:1-2) and further specified that (i) this embodiment of the mobile scanner has two demountable portions, a main case and a base case (5:24-27), emphasis added, (ii) in this embodiment the operator user uses a main module to scan paper-sheet materials (6:3-6), and (iii) the user can mount the base module onto the main module when the user decides to scan transparent materials (6:6-9), emphasis added.

The Specification makes clear that this embodiment of the mobile scanner can perform (i) a single-mode scanning feature solely for the opaque materials by using main case (2:60-66, 6:3-6), and (ii) another single-mode scanning feature for the transparent materials by mounting the base case to the main case (2:62-66, 5:43-46, 6:6-9).

The asserted claims can be assigned a narrower scope only if there is some indication in the patent or the prosecution history.
that the term was meant to have a more restrictive meaning as used in the patent, or a broader meaning was disclaimed during prosecution. Phillips v. AWH Corp., 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc).

The Court construes this claim as "a portable scanner, so lightweight that it can be used in any conditions."

II. Claim Construction

The sole issue of claim construction here is the proper interpretation of the phrase "mobility of said labelled reagent within said test strip is facilitated by . . . a material comprising a sugar, in an amount effective to reduce interaction between said test strip and said labelled reagent." The parties argue for two different definitions of the term "mobility." The appellee (alleged infringer) asserts that mobility must be facilitated at the time of release of the reagent. The appellant (owner of the patent) asserts that mobility need only be facilitated either at the time of release or during the subsequent transit of the reagent, i.e., at some time during the operation. The claim construction adopted by the district court and now supported by appellee requires the sugar to "help or improve the release of the labelled reagent from the test strip." Opinion at 8 (emphasis added).

We begin claim construction analysis with the ordinary meaning of the disputed claim term. Tex. Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 2002 U.S. App. LEXIS 21567, (2002); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 USPQ2d 1573, 1576 (Fed. Cir. 1996). It is well settled that dictionaries provide evidence of a claim term's "ordinary meaning." Tex. Digital Sys., 308 F.3d 1193, 2002 U.S. App. LEXIS 21567; CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366, 62 USPQ2d 1658 (Fed. Cir. 2002) (citing Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1344, 60 USPQ2d 1851, 1855 (Fed. Cir. 2001)). Such dictionaries include dictionaries of the English language, which in most cases will provide the proper definitions and usages, and technical dictionaries, encyclopedias and treatises, which may be used for established specialized meanings in particular fields of art. The parties here do not argue that the term "mobility" has an established specialized meaning in technical dictionaries, encyclopedias, or treatises of the relevant field of art, and we agree that "mobility" has no such specialized meaning. Accordingly, standard dictionaries of the English language are the proper source of ordinary meaning of the phrase.

We may look, therefore, to the dictionary definition of the claim term "mobility" as of the date the patents issued. 1 As with most words, the standard dictionaries offered multiple definitions. 2 "Where there are several common meanings for a claim term, the patent disclosure serves to point away from the improper meanings and toward the proper meaning." Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250, 48 USPQ2d 1117, 1122 (Fed. Cir. 1998); see also Tex. Digital Sys., 308 F.3d 1193, 2002 U.S. App. LEXIS 21567, Here, our examination of the available definitions and the specification suggest that there is only one relevant definition, namely "the quality or state of being mobile: the capacity or facility of movement: MOVABILITY." Webster's at 1450. The pertinent definitions of the word "mobile" 3 are fully consistent with the second portion of the definition provided for "mobility," namely "the capacity or facility of movement." The claim term "facilitate" means "to make easier or less difficult." Id. at 812. Accordingly, the ordinary meaning of the phrase "mobility . . . is facilitated" is properly interpreted as: the capacity to make movement easier. 4

--- Footnotes ---

1 Our decisions have not always been consistent as to whether the pertinent date is the filing date of the application or the issue date of the patent. Compare Tex. Digital Sys., 308 F.3d 1193, 2002 U.S. App. LEXIS 21567, No. 02-1032, with Schering Corp. v. Amgen, Inc., 222 F.3d 1347, 1353, 55 USPQ2d 1650, 1654 (Fed. Cir. 2000). No party here has suggested that the pertinent sources changed between the application and issuance dates.

2 Webster's defines mobility as "1: the quality or state of being mobile: the capacity or facility of movement: MOVABILITY . . . 2: the measure of the rate at which a solid is deformed under stress after the yield point has been exceeded 3a: the average speed at which either gaseous or electrolytic ions move under the influence of a unit potential gradient b: the average speed with which molecules in solution diffuse under the influence of a unit of osmotic pressure gradient." Webster's 3rd New International Dictionary 1450 (1968) (Webster's). The Oxford English Dictionary defines mobility as "the quality or condition of being mobile." 1 The Shorter Oxford English Dictionary 1267 (3d ed. 1947) (OED).
3 Webster's defines "mobile" as "capable of moving or being moved from one place to another . . . capable of moving or being moved about readily." Webster's at 1450. The Oxford English Dictionary defines "mobile" as "capable of movement; movable . . . characterized by facility of movement." 1 OED at 1266-67.

4 Appellee relies on part of the dictionary definition of the term "mobilize," which provides in part: "to put into movement or circulation: make mobile . . . to release (something stored in the body) for body use." Webster's at 1450. The dictionary, however, does not define the recited claim term "mobility," in terms of the word "mobilize." The definition of that term, therefore, is irrelevant.

Contrary to appellee's contention, there is nothing in the remainder of the claim language that introduces an ambiguity. In its analysis of the claim language, the district court found other language, which, it said, required that the term "mobility" be limited to mobility at the point of release. The district court concluded that "according to the claim language, 'release of the labelled reagent into mobile form' is caused by a liquid biological sample. The labelled reagent, therefore, becomes mobile when released from the test strip by urine or some other biological sample." Opinion at 5 (emphasis in original). The portion of the claim language cited by the district court, however, is not concerned with the expressly recited facilitation of mobility in the presence of sugar. The cited recitation merely states the obvious -- that mobility is commenced by the application of a liquid biological sample. The claim language relied upon by the district court does not restrict the meaning of "mobility" to the point of release. Indeed the language appears also to contemplate mobility after release. The recitation "release of the labelled reagent into mobile form," therefore, does not render the phrase "mobility . . . is facilitated" ambiguous. Similarly, contrary to the district court's view, the use of the claim term "upstream" to describe the position of the sugar prior to use does not limit mobility to the point of release, but rather simply limits the position of the sugar prior to use.

Appellee argues that the disputed language, when read in context, refers to "release," pointing out that "migration" of the reagent is separately recited, and that, therefore, "mobility" cannot include migration, i.e., movement after the point of release. That "mobility" and "migration" are used in the same claim, however, does not suggest that mobility excludes migration. The term "migration," in context, does not refer to the effect of the sugar. The claim language is equally consistent with the notion that "migration" is subsumed within "mobility."

Further weakening appellee's argument is the language of claims 17 and 18, which depend from claim 1, and provide "wherein mobility of said labelled reagent within said test strip is further facilitated by blocking excess binding sites within said test strip" respectively with "polyvinyl alcohol" or "protein." Claims 17-18 of the '871 patent (emphasis added). 5 A claim term used in multiple claims should be construed consistently ( CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1159, 42 USPQ2d 1577, 1586 (Fed. Cir. 1997), cert. denied, 522 U.S. 1109, 140 L. Ed. 2d 105, 118 S. Ct. 1039 (1998)), and it makes no difference that claims 17 and 18 refer to "mobility" facilitated respectively by polyvinyl alcohol and protein, rather than sugar. Construing the term "mobility" as used in claims 17 and 18 in the manner suggested by the district court and appellee would require the recited polyvinyl alcohol or protein to block excess binding sites at the point of release. The express language of the claims, however, requires the facilitation of mobility within the test strip. Further, the specification teaches that the polyvinyl alcohol or protein should be used throughout the test strip. '871 patent, col. 6, ll. 45-51. In short, considering the language of the claim as a whole and the use of the term in other claims, the term "mobility" is not ambiguous, but rather encompasses both release and migration.

5 Those claims provide:

17. The test device according to claim 1, wherein mobility of said labelled reagent within said test strip is further facilitated by blocking excess binding sites within said test strip with polyvinyl alcohol.

18. The test device according to claim 1, wherein mobility of said labelled reagent within said test strip is further facilitated by blocking excess binding sites within said test strip with a protein.
However, the general rule that the ordinary meaning of an unambiguous claim term controls is subject to two limitations. First, "a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification . . . ". Vitronics Corp., 90 F.3d at 1582, 39 USPQ2d at 1576 (citing Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578, 38 USPQ2d 1126, 1129 (Fed. Cir. 1996), cert. denied, 519 U.S. 911, 136 L. Ed. 2d 198, 117 S. Ct. 275 (1996)); see also Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325, 63 USPQ2d 1374, 1381 (Fed. Cir. 2002) ("The patentee may demonstrate an intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope."). Second, "even where the ordinary meaning of the claim is clear, it is well-established that the prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Pall Corp. v. PTI Techs. Inc., 259 F.3d 1383, 1392, 59 USPQ2d 1763, 1769 (Fed. Cir. 2001) (citing Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1676 (Fed. Cir. 1995) cert. denied, 516 U.S. 987, 133 L. Ed. 2d 424, 116 S. Ct. 515 (1998)), vacated on other grounds, 153 L. Ed. 2d 152, 122 S. Ct. 2324 (2002); see also Robotic Vision Sys., Inc. v. View Eng'g, Inc., 189 F.3d 1370, 1375, 51 USPQ2d 1948, 1952 (Fed. Cir. 1999). A broader definition may be disclaimed, for example, where the examiner adopts a narrow definition and the applicant does not object. See Elkay Mfg. Co. v. Ebe Co. Mfg. Co., 192 F.3d 973, 979, 52 USPQ2d 1109, 1113-14 (Fed. Cir. 1999), cert. denied, 529 U.S. 1066, 146 L. Ed. 2d 482, 120 S. Ct. 1672 (2000) (holding that failure to respond to an examiner's reason for allowance functioned as a disavowal of a different interpretation of the claim).

Appellee does not cite to a definition provided in the specification for the disputed claim term. Appellee does, however, cite to the following statement by the patentee in the prosecution history as providing a disclaimer of claim scope:

The use of sugar in the invention to facilitate mobility of the labelled reagent is advantageous over conventional methodology within the art in part because the sugar allows rapid and effective release of the water-insoluble particulate direct label from the porous carrier when liquid is applied.

Amendment After Final Rejection of Dec. 19, 1995, at 2 (emphasis added). The cited passage, however, states only that the improvement is "in part . . . rapid and effective release." This is not a clear and unambiguous disclaimer of a claim scope that would cover mobility after release as required to deviate from the ordinary meaning of the claim recitation. See, e.g., N. Telecom Ltd. v. Samsung Elecs. Co., 215 F.3d 1281, 1294, 55 USPQ2d 1065, 1075 (Fed. Cir. 2000) (requiring prosecution history statements cited as narrowing claim scope to have "reasonable clarity and deliberateness."); IMS Tech., Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1439, 54 USPQ2d 1129, 1141 (Fed. Cir. 2000), cert. dismissed, 530 U.S. 1299, 147 L. Ed. 2d 1047, 121 S. Ct. 24 (2000) ("In light of the ambiguity of the patentee's statements and the subject matter actually disclosed in the references, we cannot say that the patentee clearly disavowed coverage of [claim scope].")

The appellee also cites a statement by the examiner assigned to the '675 application provided in a "Reasons for Allowance" that "the prior art currently of record neither teaches nor suggests use of a material comprising a sugar . . . to facilitate the release of the water-insoluble particulate from the direct label from the porous carrier when liquid is applied.

Amendment After Final Rejection of Dec. 19, 1995, at 2 (emphasis added). The cited passage, however, states only that the improvement is "in part . . . rapid and effective release." This is not a clear and unambiguous disclaimer of a claim scope that would cover mobility after release as required to deviate from the ordinary meaning of the claim recitation. See, e.g., N. Telecom Ltd. v. Samsung Elecs. Co., 215 F.3d 1281, 1294, 55 USPQ2d 1065, 1075 (Fed. Cir. 2000) (requiring prosecution history statements cited as narrowing claim scope to have "reasonable clarity and deliberateness."); IMS Tech., Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1439, 54 USPQ2d 1129, 1141 (Fed. Cir. 2000), cert. dismissed, 530 U.S. 1299, 147 L. Ed. 2d 1047, 121 S. Ct. 24 (2000) ("In light of the ambiguity of the patentee's statements and the subject matter actually disclosed in the references, we cannot say that the patentee clearly disavowed coverage of [claim scope].")

The appellee also cites a statement by the examiner assigned to the '675 application provided in a "Reasons for Allowance" that "the prior art currently of record neither teaches nor suggests use of a material comprising a sugar . . . to facilitate the release and mobility of the labelled reagent as claimed." (Appellee's Br. at 30 (emphasis added)). Based on this statement, the appellee argues that "the Patent Office explicitly stated that the Unipath Patents were granted because Unipath's claims, in contrast to the prior art, taught the use of sugar to facilitate the release of the labeled antibodies." Id. at 29-30. The examiner's statement, however, contradicts the appellee's position, as that statement does not interpret mobility as meaning the same thing as release. Instead, the examiner refers to mobility and release as two distinct concepts.

Because the plain meaning of the unambiguous recitation "mobility . . . is facilitated" is not contradicted by either the specification or prosecution history, that meaning must control. Accordingly the disputed phrase means "the capacity to make movement easier." The district court having applied an incorrect construction of the claims when granting summary judgment, that judgment is vacated. 6 The case is remanded to the district court for consideration of any remaining issues including issues of claim construction not addressed in this opinion and issues of validity and infringement of the claims as correctly construed.

6 Contrary to the district court's ruling of December 18, 2000, the issue of infringement is not whether the accused device "works without sugar." Motion Hearing at 54. The question of infringement to be addressed on remand is whether the capacity for movement of the labelled reagent is made easier by the use of sugar in the accused product.
An audio recording and tape measuring system for enabling the measurement of distance using a measuring tape and enabling the measurements to be orally enunciated and recorded for later use, said system comprising

A. a housing

B. a measuring tape securely mounted in the housing for being removed therefrom, whenever desired, to any desired length to enable measurements of distances to be made; and

C. an audio signal recording circuit mounted in the housing and construction for receiving and recording audible information and replaying the recorded information upon demand, said circuit comprising

a. circuit controlling and processing means,

b. an information storage address

1. controllably interconnected to the controlling and processing means for receiving signals corresponding to orally enunciated information,

2. storing said signals therein, and

3. transmitting, upon demand, stored signals to the circuit controlling and processing means,

c. a microphone connected to the circuit controlling and processing means and constructed for

1. receiving an orally enunciated signal corresponding to the desired information to be recorded, and

2. transmitting the signal to the controlling and processing means for transmission to and retention in the storage address,

d. output means connected to the circuit controlling and processing means for receiving signals retrieved from the storage address and presenting the stored information as an audible signal corresponding to the stored information, and

e. a mode selector switch connected to the circuit controlling and processing means and movable between a RECORD and a PLAY mode, enabling the circuit controlling and processing means to establish the desired operation of the recording circuit.

The Activation Switch

I find that the plain language of Claim 3(C)(e) does not require an activation switch that initiates the operation of the recording circuit in the selected mode and is distinct from the mode selector switch. Zircon argues that Claim 3’s mode selector switch’s primary purpose is to define the operation performed by an activation button. In its preferred embodiment,
this dual mode selector and activation switch combination allows one button to perform either record or play function from multiple address locations; a distinct mode selector/activation switch combination requires only one activation button per location. Zircon argues that this differs from the Repeater's design. The Repeater requires both a record and a play button. From a distinct activation switch and mode selector switch requirement, Zircon maintains, it is a short step to find that the Repeater does not infringe on Claim 3(C)(e) because it does not have modes as Claim 3 requires. Unfortunately for Zircon, I find that while the preferred embodiment does have dual mode selector switch/activation switches, the patent is not necessarily so limited. Transmatic, Inc. v. Gulton Industries Inc., 53 F.3d 1270, 1277 (Fed. Cir. 1995). For Zircon's argument to be persuasive, I must read distinct activation and mode selector switch requirements into Claim 3.

After careful reading I hold that Claim 3 does not require separate activation and mode selector switches; Claim 5 does. Where some claims are broad and others narrow, the narrow claim limitations cannot be read into the broader claim. Transmatic, 53 F.3d at 1277 (Fed. Cir. 1995); D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1574 (Fed. Cir. 1985). Given this legal rule and Claim 3's language, I hold that the Claim 3(C)(e) does not require an activation switch distinct from its mode selector.

--- Footnotes ---

2 Claim 5 reads as follows:

The audio recording and tape measuring system defined in claim 3, wherein said system is further defined as comprising

D. at least one activation switch mounted to the housing for ease of access by the user and constructed for transmitting an activation signal to the circuit controlling and processing means for initiating the operation of the audio signal recording circuit in the selected mode.

--- End Footnotes ---

The following sets forth the claims which are disputed by the parties.

Claim Term | Plaintiff's Proposed Construction | Defendants' Proposed Construction
---|---|---
"modernized"/"modernizing" | "exchanging at least one old component for at least one newer component" | "a more or less complete exchange of components in an elevator installation. This would include replacement of all the elevator components, including the elevator car, the elevator drive, the conveying cable, and the elevator control"

('861 Patent, claims 1, 2, 3, and 11); ('465 Patent, claims 1, 2, 3, and 10)

Inconstruing this term, both Plaintiff and Defendants rely upon the specification of the '465 Patent, 3 which states:

If after such a length of time a general overhaul of the elevator installation is needed, the components of the elevator installation are often old in terms of technology, which obliges a more or less complete exchange of components. Such an exchange of components of an elevator installation is termed a "modernization" in the following. The modernization is often carried out in staggered time, wherein control units and elevator cars are modernized in a first stage, drives are modernized in the machine room in a further stage, and floor call transmitters are modernized at the individual floors in a final stage.

('465 Patent, col. 1:12-22.) Defendants seize on the language "a more or less complete exchange of components," and also cite to another portion of the specification which states that "at least one elevator 10, 10' is substantially completely modernized in each method step." (Id. col. 10:54-59.) Defendants argue that this language taken together indicates that Plaintiff meant to define "modernization" as a complete exchange of components that is performed through various steps,

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rather than merely a partial process in which only certain components are replaced.

--- Footnotes ---

3 Defendants actually cite to the specification for the '861 Patent; however, the relevant language in these patents is identical and has no bearing on construction of this claim.

--- End Footnotes ---

Plaintiff counters that the specification further describes "modernization" to include "in one method step, the drive is modernized, the conveying cable of the elevator is modernized, the elevator control of this elevator is modernized . . . " (Id. col. 3:49-54.) Plaintiff argues that this language indicates "modernization" occurs in stages such that it can include both: (1) the exchange of some components of an elevator installation; or (2) the exchange of individual components of an elevator installation. Plaintiff further cites language describing the modernization process as a "more or less complete exchange of components" (id. col. 1:11-14); and that an "elevator is substantially completely modernized" (id. col. 10:58-59); to indicate that a total replacement of components is not required.

The Court concludes that Defendants' interpretation is more consistent with the principles of claim construction since the specification implies a type of complete modernization process. A patent's specification is recognized by the Federal Circuit as strong evidence of a claim's meaning even where this meaning arises by implication. See Phillips, 415 F.3d at 1321 (stating that the "specification 'acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication.") (quoting Vitronics, 90 F.3d at 1582); Irdeto Access, Inc. v. Echostar Satellite Corp., 383 F.3d 1295, 1300 (Fed. Cir. 2004) ("Even when guidance is not provided in explicit definitional format, the specification may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents.") (internal citation omitted).

The specification clearly states that "[i]f after such a length of time a general overhaul of the elevator installation is needed, the components of the elevator installation are often old in terms of technology, which obliges a more or less complete exchange of components. Such an exchange of components of an elevator installation is termed a 'modernization' in the following." ('465 Patent, col. 1:12-18) (emphasis added). The specification essentially defines the term "modernization" by characterizing it as a "general overhaul" of an elevator system which requires "a more or less complete modernization," both of which are more consistent with Defendants' proposed construction. Furthermore, the use of the adjective "complete" to describe the modernization process belies Plaintiff's proposed interpretation that only one old component needs to be replaced in order to modernize the elevator system.

Defendants' proposed construction, however, goes too far in adding the language that "modernization" would necessarily "include replacement of all the elevator components." The qualifying language "more or less" in describing the exchange of components forecloses the argument that each and every component needs to be replaced in order to complete the modernization process. Thus, Defendants' proposed construction oversteps the definitional limitations in the specification.

Therefore, the Court will adopt Defendants' proposed construction in part, and define the term "modernized" and/or "modernizing" as "a more or less complete exchange of components in an elevator installation." The Court concludes that this definition is most consistent with the specification as it incorporates the exact language used in the specification itself. See Phillips, 415 F.3d at 1321 (explaining that the specification is the "single best guide to the meaning of a disputed term", and it "acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication") (internal quotation marks and citation omitted).

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d. "Modifying the Diameter"

The World Wide Plaintiffs also seek construction of the phrase "modifying the diameter" in Claim 18c, which uses the phrase in terms of "modifying the diameter of the plug to enhance its frictional engagement with the wall of the cannula." ('760 Patent col. 6, ll. 58-59.) Each of the three dependent claims that follow Claim 18 recites one of these three methods of
modifying the diameter. Id. at col. 6, ll. 60-65. The World Wide Plaintiffs propose a construction of "to change the form or qualities of the plug." AnazaoHealth suggests a more specific definition, "mechanical distortion so as to alter the diameter of the plug or expanding the diameter of the plug by heating the material until it swells or exposing the plug to solvents."

The specification states that holding the plug in place "may be accomplished" by modifying the diameter by mechanical distortion, or by expanding the diameter through heat, or by exposing the plug to solvents. Id. at col. 2, ll. 53-57, and depicts in Figure 5 a plug that "may be held in place" by a solvent coating to adhesively fix the plug in place, or by heat, or by minute distortions of the cannula. Id. at col. 4, ll. 65-67. The World Wide Plaintiffs argue that use of the term "may" indicates that the recited methods are merely illustrative examples. AnazaoHealth argues that the Court should construe the phrase in terms of the express disclaimers in the intrinsic record as to how modification of the plug is to be accomplished.

Where the specification makes clear that the invention does not cover a particular feature or embodiment, that feature or embodiment is deemed outside the reach of the patent even though the language of the claims without reference to the specification might be considered broad enough to encompass that feature in question. Harmon at § 6.3(a)(ii) at 345; Honeywell Inc. v. Victor Co. of Japan, Ltd., 298 F.3d 1317, 1325 (Fed. Cir. 2002). That disclaimer, however, must be clear. Likewise, a disavowal of the scope of a claim in the prosecution history must be clear and unequivocal. See Harmon at § 6.3(c); Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1324-25 (Fed. Cir. 2003). Here, the Court finds no such clear and express disavowal. Thus, the Court declines to limit "modifying the diameter" to the three methods disclosed in the three dependent claims. At the same time, the Court finds that Plaintiffs' proposed construction is overbroad and ignores the specific language of the Claim which speaks of modifying the diameter. The Court construes this phrase as "changing the diameter of the plug by means such as by heat, by treating the plug with a solvent, or by mechanical distortion."

Claims 20 and 24

As noted above, independent claim 20, from which claim 24 depends, recites, inter alia, a "modular motor body housing" and "a modular control unit in the form of an encasement, removably connected to said motor body in mating relationship therewith." '541 patent, col. 9, ll. 30-31. The disputed claim term is "modular." The district court construed modular units as "standardized units that may be conveniently removed and replaced without significant impact to other components." Animatics Corp. v. Quicksilver Controls, Inc., No. C99-05133 WHA, slip op. at 10 (N.D. Cal. Mar. 11, 2002) ("First Claim Construction Order").

During trial, Quicksilver presented an in-court demonstration in which a technician disassembled and reassembled the accused product. After viewing the demonstration, the district court stated that, "having seen that demonstration about how hard it is to take these things apart, no way does that satisfy the court's definition of 'modularity.'" Accordingly, the district court granted Quicksilver's JMOL motion for non-infringement with respect to claims 20 and 24.

On appeal, Animatics argues that the district court erred in construing claim 20 by adding the adverb "conveniently." According to Animatics, the court incorrectly added a reference to the level of ease with which the motor and controller modules may be taken apart and reassembled. Animatics argues that the district court's claim construction improperly imports a restriction from the specification into the claims. Quicksilver, on the other hand, argues that "it is clear from the specification and the prosecution history that the use of the term 'modular' was specifically meant to emphasize the ease with which the motor and the controller could be separated and individually replaced."

There is "a heavy presumption in favor of the ordinary meaning of the claim language." Johnson Worldwide Assocs. v. Zebeco Corp., 175 F.3d 985, 989 (Fed. Cir. 1999). The district court began its construction of "modular" by referring to a dictionary for the word's ordinary and accustomed meaning. See Texas Digital Sys., Inc., v. Telegenix, Inc., 308 F.3d 1193 (Fed. Cir. 2002). "Modular," according to Webster's Seventh New Collegiate Dictionary, means "constructed with standardized units or dimensions for flexibility and variety of use." Webster's Seventh New Collegiate Dictionary 244 (1976). The district court did not find that the specification compelled a different meaning. However, the court ultimately construed modular to mean "standardized units that may be conveniently removed and replaced without significant impact to other components."

First Claim Construction Order at 10 (emphasis added).
We think that the district court improperly imported a limitation from the specification into its construction of "modular." It is axiomatic that limitations from the specification should not be read into the claims. Comark Communications v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998). The specification describes a benefit of the claimed modularity as "providing for ease of interchange or replacement..." '541 patent, col. 2, ll. 13-15. However, there is no clear indication that the patentee intended to depart from the ordinary meaning of modular, which does not explicitly mandate a limitation on the ease with which the "modular" units may be removed or replaced. See Johnson Worldwide, 175 F.3d at 989 (stating that the ordinary meaning is to be used unless a special definition is shown "with reasonable clarity, definiteness, and precision"). Nonetheless, we believe this error was harmless. After reviewing the testimony surrounding the in-court demonstration of the disassembly of Quicksilver's accused product, we do not believe any jury could reasonably find that the accused product meets the ordinary definition of "modular." Furthermore, claim 20 requires that the modular control unit be "removably connected to said motor body in mating relationship therewith." '541 patent, col. 9, ll. 30-31. The in-court demonstration illustrated that this relationship is absent from the accused product. Accordingly, we affirm the district court's JMOL of non-infringement of claims 20 and 24.

1. "Modular Jack"

The term "modular jack" is used in the claims of the '641 patent as follows:

1. A modular jack to be mounted on a circuit board, said modular jack comprising:

   a printed board containing an electronic element for suppressing noise;

   a contactor for contacting with a plug, said contactor being electrically connected with the electronic element by a wire on the printed board;

   a terminal for contacting with the circuit board, said terminal being electrically connected with the electronic element by a wire on the printed board; and

   an insulating housing for encasing the printed board.

2. A modular jack as claimed in claim 1, wherein the noise suppressing electronic element is an array of common mode choke coils.

4. A modular jack as claimed in claim 1, wherein the noise suppressing electronic element is a chip capacitor.

6. A modular jack as claimed in claim 1, wherein the interior of the housing is divided into a first chamber in which the printed board is set and a second chamber to which the contactor is extended, and the terminal is protruded outside the housing from the first chamber.

The parties agree that "modular" refers to "the geometric configuration of jacks and their corresponding plugs, such as the RJ-11 series, RJ-45 series and the like, which are now commonly seen on telephony apparatus, computer modems, switches, and routers, and similar equipment." Murata's Opening Brief, at 12; Bel Fuse's Responsive Brief, at 25. Murata argues that "jack" should be construed as "a socket to which wires of a circuit are connected at one end and into which a plug is inserted at the other end." Murata's Opening Brief, at 12. Bel Fuse argues that a "jack" should be construed as "a female connector to which wires of a circuit are connected at one end and into which a plug is inserted at the other end." n4 Bel Fuse's Responsive Brief, at 25. Thus, the parties dispute whether a "jack" is more properly characterized as a "socket" or a "female connector." The parties have not explained to the court why construing some thing as a "socket" as opposed to a "female connector" is a distinction with a difference; indeed, their briefs indicate that both parties understand the meaning of "jack" as it is used in the '641 Patent. Nevertheless, the court will consider which is the more appropriate term.
Murata argues that "female connector" is too general a term because the '641 Patent does not claim female connectors generally; it claims a modular jack. Instead, Murata argues that "socket" is a more specific term that is consistent with the intrinsic record n5 of the '641 Patent. Dr. David Hughes ("Dr. Hughes"), Murata's expert, opined that the word "jack" means "a socket to which wires of a circuit are connected at one end and into which a plug is inserted at the other end." Hughes' Expert Report at 4, Ex. 2 to Murata's Opening Brief. He based his construction on a definition from Rudolf F. Graf, The Modern Dictionary of Electronics 529 (6th ed. 1984) ("The Modern Dictionary of Electronics") ("1. A socket to which the wires of a circuit are connected at one end, and into which a plug is inserted at the other end."). Id. Dr. Hughes also opined that the "plug" is usually thought of as the "male portion of the assembly," and the "jack" is usually thought of as the "female portion." Id.

n5 In evaluating the intrinsic evidence, the court notes that while the parties have provided the prosecution history of the '641 Patent, that history provides no assistance in the task of claim construction. See Ex. 11 to Bel Fuse's Responsive Brief. The patent application was filed on January 30, 1991. On May 30, 1991, the examiner held an interview with the applicant by telephone. According to the examiner's summary, in that interview, the examiner and applicant reached an agreement to amend claim 5. Subsequently, the examiner issued a notice of allowability along with an examiner's amendment. That amendment changed "the pitch among the terminals" in claim 5 to "the pitch among a plurality of terminals" and also deleted "the" from "among the contactors on the printed board."

Thus, the patentee made no representations during the prosecution of the '641 Patent about the constructions of the terms at issue here. Indeed, the claims at issue in this case (1, 2, 4, and 6) were issued without amendment.

In support of its position that "female connector" is too broad a term, Murata cites the deposition testimony of Albert Willette ("Willette"), who is apparently Bel Fuse's expert. Willette testified that there are other kinds of female connectors that are not jacks. Willette Dep., 81:5-15, Ex. 19 to Murata's Opening Brief. Willette also testified that a jack and plug together form a connector. Id. at 78:7-12. Murata also cites the specification of the '641 Patent which states: "The present invention relates to a modular jack in a modular connector. . . ." '641 Patent, col. 1, ll. 6-7. According to Murata, adopting Bel Fuse's construction would cause this sentence to be nonsensical, reading "a modular connector in a modular connector." The court notes that Murata is incorrect; Bel Fuse's construction would cause the specification to read, "a female modular connector in a modular connector." Given the fact that Willette testified that the jack and plug together form a connector, testimony that Murata cites, the court finds that this substitution makes sense.

Additionally, it appears that Bel Fuse's proposed construction would not cause the claims of the '641 Patent to read on all types of modular connectors. Instead, it would describe only the female portion of a connector into which a plug is inserted. This appears to be an appropriately narrow construction of a "jack." Other references in the same art area show that jacks are often described as "connectors." See U.S. Patent No. 4,772,224 (titled "Modular Electrical Connector" and describing a "modular jack"), Ex. 8 to Bel Fuse's Responsive Brief; U.S. Patent No. 4,799,901 (referring to jacks as "connector subassemblies" and stating "U.S. Patent No. 4,726,638 discloses a transient suppression assembly for retrofitting existing electrical connectors, such as telephone jacks") (emphasis added), Ex. 10 to Bel Fuse's Responsive Brief; U.S. Patent No. 4,878,848, col. 2, ll. 40-42 ("The adapter system comprises a modular connection means, such as a modular jack, and a housing structure connected to the modular jack."), Ex. 12 to Bel Fuse's Responsive Brief.

Thus, the court finds that a jack and plug together form a modular connector. Indeed, Murata cites Willette's deposition testimony in which he testified that a jack and plug together form a modular connector. Willette Dep., 78:9-10. Murata bases
its proposed construction of a "jack" as a "socket" on only a single dictionary definition in the Modern Dictionary of Electronics n6 and Dr. Hughes' expert report which refers only to that same definition without further explanation. The Federal Circuit has stated that "conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court." Phillips, 415 F.3d at 1318. While Dr. Hughes' assertion is not wholly unsupported (it refers to a dictionary definition), it is only marginally useful to the court because it provides no explanation as to why the particular definition was chosen or why it is consistent with the view of a person of ordinary skill in the art.

After reviewing all of the evidence, both intrinsic and extrinsic, the court finds that adopting a construction which characterizes a "modular jack" as "the female portion of a modular connector" is consistent with the intrinsic evidence, and reflects the view of a person of ordinary skill in the art. Adding the restriction "in which wires of a circuit are connected at one end and into which a plug is inserted at the other end" appropriately narrows the definition such that it is clear that a "jack" does not encompass all female connectors. Additionally, the parties have agreed that the additional modifier "modular" restricts the construction of the claim "modular jack" to certain configurations. Thus, the court construes the term "modular jack" as "the female portion of a modular connector in which wires of a circuit are connected at one end and into which a plug is inserted at the other end."

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B. "An Inner Moisture Transfer Material"

The composite liners described in Claims 1-7 incorporate a first layer termed "inner liner." In contrast, the first layer of the Claim 8 composite liner is named "inner moisture transfer material." The parties agree that the "inner liner" described in Claims 1-7 is synonymous with "inner liner 10," the name given to the first layer of a composite liner described in the specification and depicted in the patent diagrams. They disagree, however, whether the narrow definition that the examiner gave the term "inner liner 10" during patent prosecution also applies to the term "inner moisture transfer material."

Generally speaking, the doctrine of "claim differentiation" teaches that when different words or phrases are used in separate claims, there is presumed to be a difference in the meaning or scope of the claims. See Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987). Yet, this is not a hard and fast rule. The Tandon court also cautioned that "two claims which read differently can cover the same subject matter." Id. In the instant case, the specification does not clearly indicate whether "inner liner" and "inner moisture transfer material" have the same definition. Thus, the Court must dig deeper into the intrinsic evidence.

The prosecution history is instructive. Plaintiffs originally submitted fourteen claims for patent approval. Eight of them (Application Claims 1-8) described a composite liner with an "inner liner" attached to a "first layer of foam." The remaining six claims (Application Claims 9-14) described a composite liner with a first layer of "inner moisture transfer material" followed by a "first layer of foam." Finding no clear definition in the claim language, the patent examiner limited the definition of "inner liner" to a list of moisture transferring fabrics described in the specification at column 3, lines 7-61. He did not separately define "inner moisture transfer material."

The examiner then proceeded to approve the eight claims naming a first "inner liner" layer, and Application Claim 14, which named the first "inner moisture transfer material" layer. 2 He rejected the rest of the claims that named a first layer of "inner moisture transfer material," however, as anticipated by the prior art. It is the significance of the examiner's failure to define "inner moisture transfer material," and his subsequent rejection of most of the claims employing that term as a first layer, about which the parties now disagree.
2 Application Claim 14 recited the elements that are now Claim 8. It differed from the claims the examiner rejected by incorporating "reversible enhanced thermal properties" as a claim element.

Plaintiffs argue that throughout the specification and patent diagrams, the only liner found next to a "first foam layer" is "inner liner 10." By implication, they contend, "inner moisture transfer material" must be synonymous with "inner liner 10," since "an inner moisture transfer material" precedes a "first foam layer" as an element of Claim 8. Defendants counter that if "inner moisture transfer material" were synonymous with "inner liner," then there would have been no reason for Plaintiffs to use the term "inner moisture transfer material" in the first place. Rather, they contend, "inner moisture transfer materials" are any material that transfers moisture, not simply those fabrics enumerated in column 3, lines 7-61.

The prior art the examiner relied upon consists of three patents for layered composite materials that are permeable to water vapor and include a first, moisture vapor-permeable layer of film or "poromeric" (synthetic leather) material. Neither films nor poromeric materials are included in the list of fabrics described in column 3, lines 7-61. Nonetheless, the examiner found that these prior art liners anticipated composite liners with a first "inner moisture transfer material" layer. By implication, the examiner read "inner moisture transfer material" to include, at a minimum, moisture-transferring films and poromeric materials. 3 Plaintiffs did not object to this interpretation in their subsequent prosecution of the '810 patent. 4

3 It is irrelevant to this conclusion whether the examiner defined "moisture transfer" in the active sense in which the Court defines it in this Claim Construction. Even supposing that the first layers of the prior art did not actively conduct moisture, their failure to do so would be relevant only to the validity of the claims the examiner rejected. It would not undercut the conclusion that the examiner considered "inner moisture transfer material" to be a broader category than fabrics.

4 Plaintiffs argue that they did not disclaim a broader reading of the term because they have continued to prosecute Application Claims 9 through 13. That evidence does not form a part of the prosecution history in this case, however, and the Court will not speculate as to Plaintiffs' motivations for dropping those claims in earlier proceedings.

Because the Plaintiffs appeared to concede the examiner's construction, and because Plaintiffs need not have used the general term "inner moisture transfer material" when "inner liner" would have served the purpose, the Court finds that the terms are different. It construes "an inner moisture transfer material" as any material that actively conducts moisture as described in this claim construction, including, but not limited to, those materials listed in column 3, lines 7-61 of the '810 patent specification.

1. "[M]olded bucket" of Claim 5

Claim 5 includes the term "molded bucket." The defendants argue that the magistrate judge erred in failing to construe the term "molded bucket," and ask this court to do so. Specifically, the defendants ask this court to reject the plaintiffs' contention that the term "molded bucket" includes the mold used to make the bucket.

Before the magistrate judge, the plaintiffs initially contended that the patent covered buckets as well as molds. Pls.' Claim Chart at 2, Dkt # 413. However, the plaintiffs subsequently agreed that the issue of whether the patent covers molds to make buckets, as well as buckets, was not an issue of claim construction but rather an issue of applying the claims to a product. Tr. at 59-60, Def. Appx. Exh. 7. At the hearing, the magistrate judge did not construe the term "molded bucket" apart from its ordinary meaning, stating, "I'm going to find as a matter of claim construction that both parties agree that the term 'molded bucket' means a molded bucket." Tr. at 71:19-21, Def. Appx. Exh. 7.
"It is well settled that claims may not be construed by reference to the accused device." Neomagic Corp. v. Trident Microsystems, Inc., 287 F.3d 1062, 1074 (Fed. Cir. 2002). See also Info. Tech. Innovation, LLC v. Motorola, Inc., 391 F. Supp. 2d 719, 730-31 (Fed. Cir. 2005). Moreover, a court does not fail to discharge its duty under Markman when a term does not require construction or does not depart from its ordinary meaning. Biotec Biologische Naturverpackungen GmbH & Co. KG v. Biocorp, Inc., 249 F.3d 1341, 1349 (Fed. Cir. 2001)(discussing that the district court did not fail to discharge its duty when it declined to construe "melting" because the term did not require construction nor did it depart from its ordinary meaning, and the issue in dispute was the application of the melting step in the accused process, a factual question of infringement).

In this case, there is no dispute as to the ordinary meaning of the term "molded bucket." The plaintiffs conceded that a "molded bucket" means a molded bucket. Tr. at 70-71, Def. Appx. Exh. 7. To impose exclusions on the term "molded bucket," such as excluding molds, would be construing the terms in reference to the accused device. See Neomagic Corp., 287 F.3d at 1073-76 (determining that the district court erred by examining the accused device before it construed the term "power supply" to mean that it must supply a constant voltage, which would exclude the accused device).

It is an issue for claim infringement whether or not the term "molded bucket" in Claim 5 can apply to bucket molds that could make potentially infringing buckets. See Info. Tech., 391 F. Supp. 2d at 730-31 (where parties agreed on the ordinary meaning of the term "dynamic model" but the defendants wished to insert an exclusion to show that there was a distinction between the model itself and the data files that go into the model, determining that the defendants' exclusion was unnecessary and an issue for infringement, not claim construction). Therefore, the court concludes the meaning of the term "molded bucket" does not depart from its ordinary meaning and does not require further construction.

The phrase "said second end cap comprising molded polymeric material" appears in claim 7 of the '712 Patent. Donaldson asserts that the phrase has a meaning readily understood by one of skill in the art and construction of the language is not necessary. Baldwin asserts that the phrase should be construed as "the second end cap is made of a uniform molded polymeric material." Baldwin argues that its construction is appropriate because the claims are properly limited to a single type of material. In support, Baldwin argues that the claim language and references in the specification refer to the polymeric material of the end cap in singular form.

The Court determines that addition of the term "uniform" to the claim language is not warranted. As a threshold matter, the Court notes that Baldwin's proposed use of the word "uniform" to indicate a singular type of material is problematic because the word "uniform" has several meanings. For example, "uniform" can mean "having always the same form, manner, or degree: not varying or variable," "of the same form with others," or "presenting an undiversified appearance of surface, pattern, or color," Merriam-Webster's Collegiate Dictionary 1287 (10th ed. 2001). Thus, to the extent that Baldwin seeks to limit the claim to a single material, its proposed use of the word "uniform" is not appropriate. Looking to the claim language--"comprising molded polymeric material"--the Court further notes that there is no limitation requiring the polymeric material to be of a singular type; nor is there any requirement that it be "uniform." Baldwin is correct that there are references to "a" soft polymeric material in the patent specification. See '712 Patent, col. 3, ll. 11-12 ("In preferred embodiments, a soft polymeric material is utilized for the first and second end caps."); id., col. 6, ll. 65 ("[e]nd cap 24 is of an appropriate material"). However, the claim itself does not recite a single or uniform material. Therefore, the Court declines to read into the claims any such limitations from the specification. See Phillips, 415 F.3d at 1323.
support for Baldwin's proposed construction, the Court declines to construe the claim language.

8 The present case differs from the cases relied on by Baldwin wherein both the claim language and the specification indicated that certain patent claims were singular. See, e.g., Abtox, Inc. v. Exitron Corp., 122 F.3d 1019, 1024 (Fed. Cir. 1997) (construing "a metallic gas-confining chamber," noting that the article "a" suggests a single chamber); Insituform Techs., Inc. v. Cat Contracting, Inc., 99 F.3d 1098, 1106 (Fed. Cir. 1996) (construing claim reciting "a cup" followed by reference to "the cup"); Baldwin Graphic Sys., Inc. v. Siebert, Inc., 03-CV-7713, 2005 U.S. Dist. LEXIS 15527, 2005 WL 1838451, *4 (N.D. Ill. July 28, 2005) (construing "a pre-soaked fabric roll"). Here, the text of the claim does not refer to "a" polymeric material.

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CooperVision contends that this term means "a prism ballast portion made with front surface and back surface molds without subsequent machining or polishing." CIBA proposes "a prism ballast portion that is manufactured primarily in a mold."

CooperVision's construction would impermissibly read into claim 38 a limitation that the prism ballast portion be "fully molded" i.e. molded without any post-processing steps. Claim 38 of the '903 patent does not disclose a "fully molded" contact lens as do claims 29 and 34. A more generic description of "molded" accords with the text of claim 38, and it does not impermissibly read into claim 38 the limitation of a mold without need for subsequent machining or polishing.

The court defines this term as follows:

"[M]olded prism ballast portion" means: a prism ballast portion that is manufactured primarily in a mold.

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B. The '141 Patent and the '483 Patent

Cleanox owns two patents for inventions developed by R. Vigneri for the remediation of certain groundwater contamination. See Amended Complaint at 3, P 12. The '141 Patent was filed 12 February 1993 and was issued 15 February 1994. See '141 Patent. The '483 Patent was filed 10 February 1994 and was issued 28 May 1996. See '483 Patent.

Both patents describe their processes as "a method for remediating a hydrocarbon-contaminated region of a subterranean body of groundwater to destroy or reduce the initial levels of hydrocarbon contaminants." '141 Patent at col. 8, lines 23-26; '483 Patent at col. 9, lines 33-35. The two patents rely upon the interaction of hydrogen peroxide and the hydrocarbon contaminants to alleviate the harm caused by groundwater contaminants.

Claim One of the '141 Patent provides as follows:

1. A method for remediating a hydrocarbon-contaminated region of a subterranean body of groundwater to destroy or reduce the initial concentration levels of hydrocarbon contaminants, comprising the steps of:

(a) providing a plurality of mutually spaced wells intersecting said groundwater region ("Step A of the '141 Patent");

(b) determining the existence of acceptable continuity and well interflow paths for the said region by generating a test
flow of a solution of hydrogen peroxide from one of said wells and monitoring pH changes at each other of said wells as a function of time to detect a pH drop of at least 0.2 ("Step B of the '141 Patent"); and

(c) subsequent to detecting said pH drop, providing a treating flow of said hydrogen peroxide solution from one or more of said wells ("Step C of the '141 Patent").

Claim One of the '141 Patent (emphasis added).

Claim One of the '483 Patent provides as follows:

1. A method for remediating a hydrocarbon-contaminated region of a subterranean body of groundwater to destroy or reduce the initial concentration levels of hydrocarbon contaminants, comprising the steps of:

   (a) providing a plurality of mutually spaced wells intersecting said groundwater region ("Step A of the '483 Patent");

   (b) providing a treating flow of acetic acid from one or more of said wells into said groundwater region, to establish acidic conditions therein ("Step B of the '483 Patent");

   (c) introducing a turbulent flow of an aqueous solution of ferrous ion into said groundwater region, for mixing with said acidified groundwater, thereby providing a catalyst for disassociation of hydrogen peroxide ("Step C of the '483 Patent"); and

   (d) providing a treating flow of hydrogen peroxide solution from one or more of said wells into said groundwater region, said hydrogen peroxide undergoing a Fenton-like reaction in the presence of said acidic conditions and said ferrous ion to generate hydroxyl free radicals for oxidizing said contaminants ("Step D of the '483 Patent").

Claim One of the '483 Patent (emphasis added).

LEGAL STANDARD

A. Patent Infringement Generally

In a patent infringement action, a two-step analysis must be conducted. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454, (Fed.Cir. 1998) (in banc); CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1152 (Fed.Cir. 1997), cert. denied, U.S., 140 L. Ed. 2d 105, 118 S. Ct. 1039 (1998); Cole v. Kimberly-Clark Corp., 102 F.3d 524, 528 (Fed.Cir. 1996)), cert. denied, U.S., 139 L. Ed. 2d 20, 118 S. Ct. 56 (1997); Markman, 52 F.3d at 976 (citing Read Corp. v. Portec, Inc., 970 F.2d 816, 821 (Fed.Cir. 1992)); Phillips Elec. North Am. Corp. v. Universal Elec. Corp., 930 F. Supp. 986, 997 (D.Del. 1996). First, the meaning and scope of the patent claims asserted to be infringed must be determined. See Markman v. Westview Instruments, 517 U.S. 370, 384, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996); Cybor Corp., 138 F.3d at 1454; CVI/Beta Ventures, 112 F.3d at 1152; Cole, 102 F.3d at 528; Markman, 52 F.3d at 976. This step is commonly referred to as "claim construction" or "claim interpretation." 8 Markman, 52 F.3d at 976. Second, the properly construed claims must be compared to the device or method that is accused of infringing. See Cybor Corp., 138 F.3d at 1454; Markman, 52 F.3d at 976.

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8 For purposes of consistency, the term "claim construction" will be used throughout this opinion when referring to the first step in an infringement analysis.

- - - - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - -

As mentioned, the only issue sub judice is the question of the construction of Claim One of the '141 Patent and Claim One of the '483 Patent. Accordingly, only step one of the infringement analysis, i.e., claim construction, is discussed in this, the Supplemented Opinion.

B. Claim Construction

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A patent is a fully integrated document; it must set out a written description of the invention "in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains" to practice the invention. 35 U.S.C. § 112. "It has long been understood that a patent must describe the exact scope of an invention and its manufacture to 'secure to [the patentee] all to which he [or she] is entitled, [and] to apprise the public of what is still open to them." Markman, 517 U.S. at 373.

The interpretation and construction of a patent claim are "exclusively within the province of the court." Markman, 517 U.S. at 391; see Cybor Corp., 138 F.3d at 1454; CVI/Beta Ventures, 112 F.3d at 1152. A court therefore has "the power and obligation to construe as a matter of law the meaning of language used in the patent claim." Markman, 52 F.3d at 979; see Exxon Chem. Patents, Inc. v. Lubrizol Corp., 64 F.3d 1553, 1556 (Fed.Cir. 1995), cert. denied, 518 U.S. 1020, 135 L. Ed. 2d 1073, 116 S. Ct. 2554 (1996); CVI/Beta Ventures, 112 F.3d at 1152. When performing such an analysis, various sources may be consulted, including those that are intrinsic and extrinsic to the patent claims. See Cybor Corp., 138 F.3d at 1454; Lubrizol, 64 F.3d at 1556; Vironetics Corp. v. Conceptronics, Inc., 90 F.3d 1576, 1582-83 (Fed.Cir. 1996); CVI/Beta Ventures, 112 F.3d at 1152; Markman, 52 F.3d at 979-80.

There is a hierarchy of evidence which must be considered with the emphasis given first to the words of the claims, then to the specification of the patent, then to the prosecution history of the patent and finally to extrinsic evidence. Vitronics, 90 F.3d at 1582; see also Cybor Corp., 138 F.3d at 1454 (majority opinion) and Cybor Corp., 138 F.3d at 1462 (Plager, J. concurring); Lubrizol, 64 F.3d at 1556. Despite this hierarchy, a court nevertheless may properly decide to hear all proffered evidence prior to construing the claims, provided it does not accord any weight to extrinsic evidence that is inconsistent with the intrinsic evidence. Vitronics, 90 F.3d at 1584; see also Cybor Corp., 138 F.3d at 1454 (majority opinion) and Cybor Corp., 138 F.3d at 1475 (Rader, J. dissenting).

1. Intrinsic Evidence

The intrinsic evidence of the public record must first be examined when construing the meaning of a patent claim. See Vitronics, 90 F.3d at 1582. Such evidence is "the most significant source of the legally operative meaning of disputed claim language." Id. Reliance on intrinsic evidence enables individuals to review the public record, apply the established rules of claim construction, ascertain the scope of the claimed invention and, then, design around the claimed invention.

Intrinsic evidence includes (1) the claims, (2) the specifications of the patent and (3) the prosecution history of the patent. See Cybor Corp., 138 F.3d at 1466-67 (Mayer, C.J. concurring); Vitronics, 90 F.3d at 1582; see also Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 1580 (Fed.Cir. 1995), cert. denied, 517 U.S. 1167, 134 L. Ed. 2d 666, 116 S. Ct. 1567 (1996); Markman, 53 F.3d at 979. In most instances, an analysis of the intrinsic evidence alone will resolve any asserted ambiguity in a disputed claim term. Markman, 517 U.S. at 389; Vitronics, 90 F.3d at 1583.

a. The Claims

Section 112 of Title 35 of the United States Code requires a patent specification "conclude with one or more claims 9 particularly pointing out and distinctly claiming the subject matter which the applicant regards as his [or her] invention." 35 U.S.C. § 112. The claims of the patent define "the precise scope of the patent." Lucas Aerospace, Ltd. v. Unison Indus., L.P., 890 F. Supp. 329, 332 (D.Del. 1995) (citing Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 395 (Fed.Cir. 1967)).

9 A patent claim typically has three parts: the preamble, the transition, and the body. See Donald S. Chisum, Patents § 806(1)(b) (1997). The preamble is an introductory phrase summarizing the invention, its relation to the prior art, or its intended use or properties. The transition is a phrase connecting the preamble to the body of the claim. The body consists of a recitation of the elements and limitations that "define the product or process to be encompassed within the patent." Id.
Vitronics, 90 F.3d at 1582 (citing Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed.Cir. 1995)). The words are interpreted in accordance with their ordinary meaning, as understood by a person reasonably skilled in the art. See Quantum, 65 F.3d at 1580; Vitronics, 90 F.3d at 1582; Intelllicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387 (Fed.Cir. 1992); Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759 (Fed.Cir. 1984); Phillips Elec. North Am. Corp. v. Universal Elec. Corp., 930 F. Supp. 986, 997 (D.Del. 1996) (citing Loctite Corp. v. Ultraseal, Ltd., 781 F.2d 861, 867 (Fed.Cir. 1989)).

Technical terms should be construed from the perspective of a person experienced in the field of the invention. See CVI/Beta Ventures, 112 F.3d at 1153 (quoting Hoechst Celanese Corp. v. BP Chems., Ltd., 78 F.3d 1575, 1578 (Fed.Cir. 1996)). A claim should not be construed in a manner that renders the claim language "meaningless or superfluous." Lucas Aerospace, 890 F. Supp. at 332 (citing Texas Instruments, Inc. v. United States Int'l Trade Comm'n, 988 F.2d 1165, 1171 (Fed.Cir. 1993)).

If the inventor has used a term in a manner other than its ordinary meaning, that meaning should be given effect because the inventor is free to be his or her own lexicographer. See Vitronics, 90 F.3d at 1582 (citing Hoechst Celanese Corp. v. BP Chems., Ltd., 78 F.3d 1575, 1578 (Fed.Cir. 1996)); see also Markman, 52 F.3d at 980; accord Hormone Research Found., Inc. v. Genentech, Inc., 904 F.2d 1558, 1563 (1990); ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580 (Fed.Cir. 1988). Any term given a special meaning, however, must be so defined in the specification or its definition must be clear by implication. See Markman, 52 F.3d at 980; accord Vitronics, 90 F.3d at 1582.

b. The Specification

The patent claims "must be read in view of the specification, of which they are a part." Markman, 52 F.3d at 979 (citing Autogiro, 384 F.2d at 397)); see also SRI Intern. v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1121 (Fed.Cir. 1985). Section 112 of Title 35 of the United States Code provides:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

35 U.S.C. § 112. The specification is "highly relevant to the claim construction analysis" because it contains a written description of the invention that must be clear and complete enough to enable those of ordinary skill in the art to make and use it. Vitronics, 90 F.3d at 1582.

The specification must be reviewed "to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning." Vitronics, 90 F.3d at 1582; CBI/Beta Ventures, 112 F.3d at 1153. In this regard, the specification "may act as a sort of dictionary, which explains the invention and may define terms used in the claims." Markman, 52 F.3d at 979. It acts as a dictionary when it "expressly defines terms used in the claims or when it defines terms by implication." Vitronics, 90 F.3d at 1582.

The specification "does not delimit the right to exclude. That is the function and purpose of the claims." Markman, 52 F.3d at 980. In addition, "references in the specification to a preferred embodiment, or an illustrative example, do not limit the scope of the patent claim." Lucas Aerospace, 890 F. Supp. at 332.

c. The Prosecution History
When construing the language of a claim, the prosecution history of the patent also should be considered, provided that it is in evidence. Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed.Cir.), cert. denied, 516 U.S. 987, 133 L. Ed. 2d 424, 116 S. Ct. 515 (1995); Markman, 52 F.3d at 980; Vitronics, 90 F.3d at 1582 (citing Graham v. John Deere, 383 U.S. 1, 15 L. Ed. 2d 545, 86 S. Ct. 684 (1966)); CBI/Beta Ventures, 112 F.3d at 1155. The prosecution history "contains the complete record of all the proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claims." Vitronics, 90 F.3d at 1582. It is "often of critical significance in determining the meaning of the claims." Id.

The prosecution history "limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Southwall, 54 F.3d at 1576; see CBI/Beta Ventures, 112 F.3d at 1155. However, the prosecution histories "cannot 'enlarge, diminish, or 'vary the limitations in the claims." Markman, 52 F.3d at 980 (quoting Goodyear Dental Vulcanite Co. v. Davis, 102 U.S. 222, 227, 26 L. Ed. 149 (1880)).

In the instant action, the parties agree there is no relevant prosecution history that would be instructive in interpreting the disputed claims because the United States Patent and Trademark Office accepted all the claims without objection or amendment. See Brief - Cleanox at 3, 5; Markman Hearing Transcript at 62:10-12.

2. Extrinsic Evidence

Extrinsic evidence is "all evidence external to the patent, including expert and inventor testimony, dictionaries, and learned treatises." Markman, 52 F.3d at 979, 980; see Hormone Research Found., 904 F.2d at 1562. This type of evidence may be consulted during construction of a claim to assist with the understanding of "scientific principles, the meaning of technical terms, and terms of art that appear in the patent and prosecution history." Markman, 52 F.3d at 980; see Vitronics, 90 F.3d at 1584. In addition, extrinsic evidence may be received to aid in "coming to a correct conclusion' as to the true meaning of the language employed' in the patent." Markman, 52 F.3d at 979 (citations omitted). Moreover, if, after consideration of all available intrinsic evidence, there still is some genuine ambiguity in the claims, extrinsic evidence may be consulted to interpret the meaning of the language used in the claim. See Vitronics, 90 F.3d at 1584. Extrinsic evidence cannot be used, however, for the purpose of varying or contradicting the terms of the claims. See id.

ANALYSIS

A. Claim Construction of Claim One of the '141 Patent and Claim One of the '483 Patent

The preambles of Claim One of the '141 Patent and Claim One of the '483 Patents are identical. See '141 Patent at col. 8, lines 23-26; '483 Patent at col. 9, lines 33-36. In addition, sub-part (a) of Claim One of the '141 Patent and sub-part (a) of Claim One of the '483 Patent are identical. See '141 Patent at col. 8, lines 28-29; '483 Patent at col. 9, lines 37-38. The parties appear to agree on the interpretation of the preambles, which reads from the beginning of the claim up to the colon. See Brief - Cleanox at 3; Brief - Defendants at 6. The parties also appear to agree that the words in sub-part (a) of Claim One of each patent, "providing a plurality of mutually spaced wells intersecting said groundwater," must be construed to mean physically providing at least two wells. See Brief - Defendants at 6; Markman Hearing Transcript at 65:3-9.

As mentioned, however, the following issues are disputed by the parties: (1) the meaning of the term "well" in Claim One of the '141 Patent and Claim One of the '483 Patent, (2) whether Step B of Claim One of the '141 Patent requires that pH be monitored for a particular purpose, (3) whether the term "treating flow" in Step C of Claim One of the '141 patent requires a "pressure limitation" and permits "bioremediation," and (4) whether Claim One of the '483 Patent requires that each of its steps be performed separately and sequentiality in order to practice the invention. See Brief - Cleanox at 3 n.1; Brief - Defendants at 6 n.1 and Exhibits C and D thereto; 18 December 1997 Letter.

After briefs were requested and received, reply briefs were sought from the parties. In their briefs and at the Markman Hearing, the parties advised that extrinsic evidence need not be considered to properly construe the meaning of Claim One of the '141 Patent and Claim One of the '483 Patent. See Brief - Cleanox at 3; Brief - Defendants at 8-10. Nevertheless, the parties cited extrinsic evidence in their briefs. When offered a hearing on the construction issues, the parties stated that they did not believe one was necessary but welcomed the opportunity to address these issues. See supra, note 3. Accordingly, each party was permitted to present testimony and arguments at the Markman Hearing.
2. Construction of Step B of '141 Patent

The parties dispute whether Step B of the '141 Patent requires that pH be monitored for a particular purpose.

a. The Cleanox Argument

Cleanox argues that Step B of '141 Patent "does not require that the practitioner have any specific purpose or intent in monitoring pH." Reply Brief - Cleanox at 4 (emphasis in original). The practitioner's intent during monitoring, Cleanox argues, is irrelevant to an infringement analysis if the practitioner practices what Step B of '141 Patent teaches. See id. (citing Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1519 (Fed.Cir. 1995), rev'd on other grounds, 520 U.S. 17, 137 L. Ed. 2d 146, 117 S. Ct. 1040 (1997)). Cleanox contends, therefore, that any monitoring of pH by a practitioner infringes Step B of the '141 Patent. See id.

b. The Defense Argument

Defendants argue Step B of '141 Patent expressly requires "the pH be monitored for the particular purpose of determining the existence of acceptable continuity and well interflow paths." Reply Brief - Defendants at 3. They argue the reliance by Cleanox on the testimony of Dr. Piotrowski to interpret the meaning of Step B of the '141 Patent is misplaced because, among other things, it is extrinsic evidence. See id. at 4. Finally, in an effort to avoid jury confusion, Defendants seek a ruling that Step B of the '141 Patent requires all of the following:

1) generating a test flow of a solution of hydrogen peroxide from one of the wells provided in the step of subpart(a);

2) monitoring the other wells provided in the step of subpart(a) to detect a pH drop of at least 0.2; and

3) using the detected pH drop of at least 0.2 for the express purpose of determining that continuity and well overflow paths are acceptable to receive the treating flow.

See id. at 4 n. 1; see also Brief - Defendants at 11.

c. Judicial Construction

The express language of Step B of the '141 Patent requires that the pH be monitored to "determine the existence of acceptable continuity and well interflow paths." Step B of the '141 Patent. The reliance by Cleanox on extrinsic evidence, such as the testimony of Dr. Piotrowski, to construe the meaning of Step B of the '141 Patent is unnecessary for the reasons previously discussed in this Supplemented Opinion. Although Cleanox correctly states that the intent of a practitioner while practicing the invention is not a proper element of patent infringement, here the intent of the practitioner is not analyzed. Rather, the patent claim itself is construed to determine whether it discloses a purpose for the pH monitoring. As mentioned, the language of Step B of the '141 Patent expressly teaches the purpose of such monitoring is to "determine the existence of acceptable continuity and well interflow paths." Step B of the '141 Patent. Finally, Step B of the '141 Patent should be read to require all of the following:

1) generating a test flow of a solution of hydrogen peroxide from one of the wells provided in the step of subpart(a);

2) monitoring the other wells provided in the step of subpart(a) to detect a pH drop of at least 0.2; and

3) using the detected pH drop of at least 0.2 for the express purpose of determining that continuity and well overflow paths are acceptable to receive the treating flow.

Conclusion

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For the reasons stated, the claim construction of the disputed terms is as follows: (1) the term "well" in Claim One of the '141 Patent and Claim One of the '483 Patent means "a structure used for both monitoring and injecting the groundwater," (2) Step B of the '141 Patent is read to require that pH be monitored for the particular purpose of determining the existence of acceptable continuity and well interflow paths, (3) the term "treating flow" in Step C of the '141 Patent is read to have no pressure limitation associated with it and to be limited to "chemical remediation", and (4) Claim One of the '483 Patent is read to require the performance of Steps A-D both separately and sequentially to practice the invention.

A.

Initially we resolve a problem resulting from the fact that the district court never construed any of the '063 patent's claims. The district court opinion focuses primarily on weighing the credibility of the factual evidence presented to the court by various witnesses. While such credibility determinations are an important part of the district court's fact-finding role, an equally important role is the interpretation of the claims.

The parties dispute the meaning of the claims. Claim construction is a matter of law which we perform without deference to the district court. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 U.S.P.Q.2D (BNA) 1169, 1174 (Fed. Cir. 1998) (en banc). Although the district court never construed the claim language, on this appeal we may resolve the parties' legal dispute regarding the proper interpretation of "monitoring." The parties contest the meaning of the word "monitoring" as used in the preamble and in a claim limitation of claim 30. In particular, step (b) of claim 30 requires "monitoring the torque conditions during said step of sensing the torque to detect if a satisfactory threaded connection is obtained." '063 patent, col. 15, ll. 51-53. PMR's principal contention is that the method performed by the December 1980 device did not satisfy claim 30 because "monitoring" as used in step (b) of the claim requires the determination and instantaneous calculation of the torque and its rate of change so that the shoulder is identified ("picked" in the art) within a satisfactory range and the proper amount of supplemental torque is applied within the maximum allowable torque, all in real time so that the '063 system controls the makeup of the connection in real time without the necessity of human intervention.

Appellants Opening Brief at 38-39 (emphasis added). Thus, PMR contends that the monitoring step in the claim requires control over the make-up and performance of the step by the apparatus described in the '063 patent without the need for any human intervention. Appellees counter that "monitoring," as used in the patent claims, should not be interpreted as having the special meaning PMR proposes, and that the ordinary meaning of monitoring allows that "monitoring can be done by an operator" and "[is] not limited to instantaneous, computer-driven calculations and shut-off features excluding an operator as proposed by [appellant]." Brief for Connection Technology Ltd., et al. at 7. In particular, appellees urge that "monitoring' can be accomplished simply by an operator viewing a dynamic display unit (computer screen) that displays the torque applied during threading." Brief for Tubular Makeup Technology, Inc. at 42. The crucial distinctions between the claim constructions urged by the parties is (1) whether the "monitoring" requires that the make-up of the connection be controlled; and (2) whether "monitoring" must be performed by the apparatus described in the '063 patent or whether it may also be performed by a human operator using the apparatus.

In construing patent claims, we first look to the intrinsic evidence of record -- the claims, the specification, and, if in evidence, the prosecution history. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576-77 (Fed. Cir. 1996). If ambiguity remains after consideration of the intrinsic evidence, "extrinsic evidence may also be considered, if needed to assist in determining the meaning or scope of technical terms in the claims." Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1216, 36 U.S.P.Q.2D (BNA) 1225, 1228 (Fed. Cir. 1995) (citations omitted), cert. denied, 520 U.S. 1115, 137 L. Ed. 2d 326, 117 S. Ct. 1243 (1997). It is also well-settled that, as a general rule, "words in a claim will be given their ordinary and accustomed meaning, unless it appears that the inventor used them differently." Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759, 221 U.S.P.Q. (BNA) 473, 477 (Fed. Cir. 1984) (internal quotations omitted).

Here, the language of claim 30 (quoted in full above at page 6) generally claims in the preamble "[a] method of monitoring torque conditions during the make-up of a threaded tubular connection, wherein shoulder contact is formed in the threaded
connection" and in step (b) "monitoring the torque conditions during said step of sensing the torque to detect if a satisfactory threaded connection is obtained." '063 patent, col. 15, ll. 15-47, 51-53. On its face the language requires only the "monitoring" of torque. However, contrary to PMR's contention, the common meaning of "monitor" 8 does not require the application of torque. The clear language itself is also not limited to a machine- or computer-implemented method of monitoring, and does not explicitly exclude human intervention.

8 Dictionary definitions of "monitor" include: "15. to observe, record, or detect (an operation or condition) with instruments that have no effect upon the operation or condition. 16. to oversee, supervise, or regulate: to monitor the administration of a test. 17. to watch closely for purposes of control, surveillance, etc.; keep track of; check continually: to monitor one's eating habits." Random House Webster's Unabridged Dictionary 1242 (2d ed. 1998); "2: to test . . . for intensity of radiation . . . to determine whether the intensity comes within specified limits. . . . 3: to watch, observe, or check, esp. for a special purpose . . . 4: to keep track of, regulate, or control . . . ." Webster's Ninth New Collegiate Dictionary 1460 (9th ed. 1983).

We turn then to the specification to determine if the patentees defined "monitoring" to include the application of torque or to exclude human intervention. The "Operation of Apparatus" section of the written description and the flow charts shown in Figures 2A, 2B, 2C, and 2D do not suggest that "monitoring" requires the application of torque. Nor do they preclude human intervention. They may be understood to mean that the monitoring is generally done automatically by the apparatus. However, the specification also suggests an interpretation of "monitoring" under which a human operator detects the torque conditions. The specification states that "monitoring torque conditions . . . permits an operator of apparatus [sic] according to the present invention to initially detect whether or not the shoulder condition is achieved in making up a premium threaded connection," id. at col. 5, ll. 28-33, and that "the dynamic display unit permits an operator to monitor progress of each connection or joint as it is being made up . . . ." Id. at col. 5, ll. 8-10. Thus, while the apparatus described in the '063 patent may be necessary for performing the steps of "(a) sensing the torque imposed on the connection during makeup" and "(d) displaying the torque sensed during make-up," neither the plain language of the claim nor the specification excludes a human operator from performing the step of "(b) monitoring the torque conditions during said step of sensing the torque to detect if a satisfactory threaded connection is obtained." '063 patent, col. 15, ll. 49-57. Therefore, a human operator may use the apparatus described in the '063 patent to perform the method claimed in claim 30.

We conclude that "monitoring" as used in the '063 patent claims does not require the application of torque or exclude human participation during make-up of a connection.

The parties' dispute involves only two claim terms: "monolithically formed head" and "head members." Both parties appear to agree that the term "monolithic" means "cast as a single piece," as defined in Merriam Webster's Collegiate Dictionary. Dft.'s Reply to Plt.'s Resp. to Dft.'s PFOF, dkt. # 42, P 109. The language in claim 1 requires the "monolithically formed head" to be common to both cylinder housings and to include the "head members" and tube "so that the tube is joined to each head member with a fluid tight and fixed rigid connection." I understand the parties to use the term "head member" interchangeably with the term "cylinder head," and that the head member in combination with the tube forms the "monolithically formed head" in the '521 patent. It is undisputed that in the type of compressor technology at issue, a "cylinder head" with inlet and exhaust chambers is mounted on each cylinder and provides inlet and outlet chambers to the cylinders. It is undisputed also that to be operational, the portion of the compressor above the cylinder must: 1) communicate with the cylinder while enclosing the cylinder on its top; 2) provide inlet and exhaust chambers; and 3) close the chambers on top. Therefore, in order for the compressor to work correctly, the chambers inside the "cylinder head" must be closed, presumably with a "cover" or "cap." However, because of the need to open up the upper portion of the compressor for maintenance, the entire portion above the cylinder cannot be monolithically formed. There must be at least one separate piece in the upper portion of the compressor; it may be the "cover" that sits on top of the chamber portion of the compressor or it may be the bottom portion upon which the chamber portion rests. The crucial question is whether the term "head member" as used in the '521 patent includes a "cover" over the top of the inlet and exhaust chambers as part of the monolithic formation, as shown in the preferred embodiment of the '521 patent, or whether the '521 patent encompasses
something more than the preferred embodiment. According to plaintiff, the head member of the monolithically formed head does not include a cover or cap over the inlet and exhaust chambers. Plaintiff would define "monolithically formed head" as "A portion of a pump including head members and a tube, wherein the head members and the tube are formed into a single piece of continuous material."

Defendant asserts and plaintiff does not deny that defendant's proposed definition of "monolithically formed head" encompasses the concept of a cover over the head members. Defendant would define "monolithically formed head" as "a single piece of continuous material comprising the uppermost part of a compressor that includes head members completing the inlet and exhaust chambers."

The question is whether the '521 patent requires the "head" to have a cover over the inlet and exhaust chambers as part of its monolithic formation, as defendant argues, or whether the chambers in the "head member" could be covered by a separate piece on top. In plaintiff's view, the preferred embodiment in the '521 patent shows a mere design choice, that is, a cover formed monolithically with the inlet and exhaust chamber portions of the head members. It contends that the "monolithic" term of the '521 patent refers to the improvement over the prior art that makes the tubes and chamber portions of the head member one piece, instead of separately manufactured and fastened tubes and chamber portions of the compressor. The crux of plaintiff's argument is that the '521 patent did not explain whether the inlet and exhaust chambers were to be enclosed by a separate cover or cap or by a cover monolithically formed with the chamber portions because the different ways of doing so were well known in the art at the time the '521 patent was issued. Plaintiff limits the term "head member" to a portion of a compressor "in fluid communication with a cylinder that provides cavities or chambers which when enclosed facilitate or permit the flow of gases (air or liquid) into the cylinder and out from the cylinder to another head member or other desired location." Plt.'s Br., dkt. # 27, at 8 (emphasis added).

Resolving this question requires review of the '521 patent's preamble to claim 1, written description and prosecution history.

1. Preamble

Both parties agree that claim 1 of the '521 patent is written in Jepson format, which means that the claim contains a preamble describing the prior art and a subsequent portion that describes a claimed improvement made on the prior art. When a patentee employs a Jepson format, "the claim preamble defines not only the context of the claimed invention, but also its scope." Rowe v. Dror, 112 F.3d 473, 479 (Fed. Cir. 1997). Moreover, the application that resulted in the '521 patent was a continuation-in-part of the 1996 application and the patent examiner cited the Thomas 2619 compressor as a basis for rejecting the 1996 application. Furthermore, the background section of the '521 patent cites plaintiff's 2600 series of compressors as examples of two-cylinder, in-line compressors and the '521 patent relates to an improved version of those compressors. '521 pat., col. 1 Ins. 9-10, 34-36. Therefore, defendant argues, one should read the term "head member" in the preamble consistently with its use in the Thomas 2619 compressor.

It is undisputed that the head of the Thomas 2619 compressor appears as follows:

[SEE FIGURE IN ORIGINAL]

Plt.'s PFOF, dkt. # 25, exh. 14, at 12. It is undisputed also that parts 2 are "heads." The picture shows that the heads include covers over the chamber portions, making the covers monolithically-formed as part of the heads. In addition, the illustration of plaintiff's 2650 model compressor shows a cover formed monolithically with the head, as shown below:

[SEE FIGURE IN ORIGINAL]

Plt.'s Resp. to Dft.'s PFOF, dkt. # 37, exh. 47. Taking into consideration the facts that the preamble defines the scope of claim 1 and the patent examiner and '521 patent specified as prior art plaintiff's 2600 series of compressors, which had covers formed monolithically with the head, one could conclude that the applicant assumed in the preamble that the improved version claimed in the '521 patent would also have a cover formed monolithically with the head. Defendant's proposed definition for "monolithically formed head" includes the function of a cover by describing the head as a component that completes the inlet and exhaust chambers. However, unlike plaintiff's proposed definition, defendant's definition does not specify the tube that joins the head members as part of the monolithic formation. Claim 1 of the '521 patent requires the monolithically formed head to include both the head members and tube. Therefore, any definition of the
monolithically formed head would have to specify both the head members and tube.

2. Written description

Although the written description in the patent does not mention the term "monolithically formed head," the parties seem to agree that it refers to synonymous terms like "one-piece cylinder head" or "one-piece head." Plt.'s Br., dkt. # 35, at 22; Dft.'s Br., dkt. # 20, at 16. Defendant argues that the language in the written description supports its definition of "monolithically formed head" because 1) the abstract of the '521 patent states that the "one-piece cylinder head serves as the final retention member, clamping the housings axially while maintaining radial orientation" (emphasis added); 2) the figures in the '521 patent show the head attached as the final and uppermost part in the compressor; and 3) the '521 patent specification states that the "assembly [of the compressor] is complete by joining the two housings 14a and 14b with the one-piece head." '521 pat., col. 5, Ins. 58-59 (emphasis added). Plaintiff notes that having the head as the final retention member does not rule out the possibility that the patent encompasses products with a separate cover for the head. In fact, according to plaintiff, the language in the abstract supports the idea that a separate cover would not act as the final retention member because a cover could not clamp the housings and maintain them in a fixed orientation. Plt.'s Br., dkt. # 35, at 22.

Plaintiff is correct when it argues that the phrase "final retention member" would not necessarily rule out a head member with a separate cover. However, when this term is read together with other language in the written description, the '521 patent appears to limit the head members as including a cover in their monolithic formation. Plaintiff notes that the intrinsic evidence does not expressly limit the '521 patent to the preferred embodiment and that it is legal error to do so. The patent does not mention the need for a cover. According to plaintiff, this omission means that the '521 patent encompasses different methods of enclosing the chambers. Citing Teleflex, Inc. v. Ficosa North America Corp., 299 F.3d 1313, 1327 (Fed. Cir. 2002), plaintiff argues that an invention should not be limited to the preferred embodiment unless the specification or prosecution history includes "an expression of manifest exclusion or restriction demonstrating an intent" to impose such a limitation. Plaintiff fails to mention that in Teleflex the court added that "whether an invention is fairly claimed more broadly than the 'preferred embodiment' in the specification is a question specific to the content of the specification, the context in which the embodiment is described, the prosecution history, and if appropriate the prior art . . ." Id. For example, in Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1273 (Fed. Cir. 2001), the court found that because the patentees used the word "mode" consistently throughout the patent specification, they limited the word by implication. In the '521 patent, plaintiff uses the word "head" and "head member" to imply that a cover is already part of the head. Every figure shows a cover formed monolithically with the head. The specification states that the assembly is complete when the two housings are joined with the one-piece head. Indeed, it is undisputed that the compressor will not work unless the chambers are closed by something. Nothing in the written description suggests that the patented invention may require a separate cover for the head. It is logical to assume that if the '521 patent contemplated a head that required a separate cover for operation, the patent would disclose the need for such a cover somewhere. See, e.g., 3 Donald S. Chisum, Chisum on Patents § 7.03 (2000)("Since 1790, the patent laws have required that the inventor set forth in a patent specification sufficient information to enable a person skilled in the relevant art to make and use the invention.") (Emphasis added.)

3. Prosecution history

The prosecution history of the '521 patent provides additional support for the limitation that the cover is formed monolithically with the head. Plaintiff states that neither the prosecution history nor the language in the patent discusses covers or any methods to enclose the inlet and exhaust chambers but focuses instead on the way the tubes connect the chamber portions in one continuous piece of material. However, defendant points out that there was no need to discuss covers for the inlet and exhaust chambers because that function was performed by the monolithically formed head. It is undisputed that the patent examiner cited the Thomas 2619 compressor as a basis for rejecting both the 1996 and 1998 applications and that the 2619 compressor had a cover formed monolithically with the head. It is undisputed that plaintiff called the cover formed monolithically with the head in the 2619 compressor a "head" and that the patent examiner referred to these "separate heads" and tubes in the 2619 compressor as indistinguishable from the proposed invention in the 1996 application. The patent examiner's use of the word "head" in reference to a part that included a cover as part of the monolithic formation helps define the term as it is used in the '521 patent. See, e.g., Chimie, 402 F.3d at 1380-81 (prosecution history can and should be used to understand language used in claims)(citing Markman v. Westview Instruments, Inc., 52 F.3d 967, 980 (Fed. Cir. 1995)).
Because the intrinsic evidence, including the preamble, written description and prosecution history, supports defendant's argument that a "monolithically formed head" includes a cover, I am persuaded to include that part in defining the term. Plaintiff's argument that extrinsic evidence supports adoption of its proposed definition is not persuasive. Plaintiff cites three types of extrinsic evidence to give the claim terms meaning as they would be understood by persons in the field of invention: 1) prior art not cited in the patent or during prosecution; 2) expert testimony; and 3) technical dictionaries, especially as those dictionaries help to define the term "cylinder head." "Intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." Vanderland Industries Nederland v. International Trade Commission, 366 F.3d 1311, 1322 (Fed. Cir. 2004). Prior art not cited in the patent and expert testimony holds little value when compared to intrinsic evidence.

Even if I considered plaintiff's proposed definition for "cylinder head," a term that the '521 patentees use throughout the specification and plaintiff defines as "The cap that serves to close the end of the piston chamber of a reciprocating engine, pump or compressor," The McGraw-Hill Dictionary of Scientific and Technical Terms, (6th ed. 2003) at 538 (emphasis added), I would still include the concept of a cover in the definition for "monolithically formed head." According to Webster's New World College Dictionary (4th ed. 2001) at 216, a "cap" is a "cover or top." Similarly, The Oxford English Dictionary Online defines "cap" as "a cap-like covering; a cover or case." Both the intrinsic and extrinsic evidence support the inference that the monolithically formed head in the '521 patent includes a cover, which would be the uppermost portion of the compressor and would complete the inlet and exhaust chambers. Therefore, I will adopt the language of defendant's proposed definition for "monolithically formed head" that the head members complete the inlet and exhaust chambers of the compressor; in other words, they act as covers. However, I will add language to the definition that specifies that the tube is also part of the monolithically formed head. The resulting definition of "monolithically formed head" is: "A single piece of continuous material comprising the uppermost part of a compressor that includes head members that complete the inlet and exhaust chambers and a tube."

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

29 Docket No. 355, at 11.

30 Id.

31 Id. at 11-12.

32 Id. at 12.

33 Id. at 13-14.34 Id. at 15.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

Defendants argue that the proper construction of the term "monomers" is "small molecules capable of reacting with like or
unlike molecules to form a polymer." 35 Defendants point to two sources of intrinsic evidence to support their proposed construction. First, like Plaintiff, Defendants point to the '450 patent specification which states that "monomers are connected in a chain-like fashion to form a polymer." 36 Second, during the prosecution history of the '450 patent, the USPTO patent examiner stated that Plaintiff-defined monomers were not actually monomers in the sense that that term should be used. 37 Defendants also point to one source of extrinsic evidence, the Standard Terminology Relating to Rubber, to support their claimed construction. 38

--- Footnotes ---

35 Docket No. 356, at 10.
36 Id.
37 Id. at 10-11.
38 Id. at 10.

The Court believes that Plaintiff's intrinsic evidence, as well as Defendants' evidence from the prosecution history, support that Plaintiff acted as its own lexicographer with respect to this term. Collectively, the above mentioned limitations and specifications clearly state that Plaintiff referred to monomers as they existed within an already formed polymer, and not as unreacted molecules. This conclusion is supported by the fact that the USPTO, during the prosecution of the patent by Plaintiff, noted that the Plaintiff was using a rather unorthodox definition of the term. Additionally, the Court views Plaintiff's construction as correct because an adoption of Defendants' proposed definition, as it relates to this patent, would obviate Plaintiff's invention. 39

--- Footnotes ---

39 See Modine Mfg. Co. v. U.S. Int'l Trade Comm'n, 75 F.3d 1545, 1550 (Fed. Cir. 1996), overruled on other grounds by Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd., 234 F.3d 558 (Fed. Cir. 2000)("Indeed, a claim interpretation that would exclude the inventor's device is rarely the correct interpretation.").

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A. The '578 Patent - Claim 17

Claim 17 provides:

A method of using a catheter to form an occlusion comprising:

disposing an electrolyzable core wire near the situs of said occlusion;

disposing a separable elongate tip portion extending from said catheter and coupled to said core wire at said situs of said occlusion, said separable elongate tip portion being more resistant to electrolytic disintegration in fluid than said electrolyzable core wire, and being a long and substantially flexible segment prebiased to form a helix when extended from said catheter; and

detaching said separable elongate tip portion from said core wire by electrolysis.

The parties dispute the proper construction of only one phrase of Claim 17: "elongate tip portion being more resistant to electrolytic disintegration in fluid than said electrolyzable core wire." Specifically, the dispute is over the proper
construction of the phrase, "more resistant to electrolytic disintegration."

Claim 17 is a method claim. The method is performed with an apparatus which is comprised of an "electrolyzable core wire" with a "separable elongate tip portion." The language of Claim 17 provides that the "elongate tip portion" is "more resistant to electrolytic disintegration in fluid" than the "electrolyzable core wire."

The phrase "resistant to" is a commonly used non-technical phrase which means "not susceptible to," a phrase construed by the Court with respect to the '136 Patent. The same phrase appearing in different claims in the same patent should be given the same meaning unless it is clear from the specification and prosecution history that the phrases have different meanings. Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1322, 1328 (Fed. Cir. 2006). In addition, a phrase should be interpreted consistently if it appears in different claims of different patents but which are of common ancestry, unless the specification or prosecution history suggest otherwise. Epcon Gas Sys. Inc. v. Bauer Compressors, Inc., 279 F.3d 1022, 1031 (Fed Cir. 2002).

There is no suggestion in the specification that the Court should define the phrase "resistant to" inconsistently from the construction given to "not susceptible to."

The Court construes "more resistant to" as it is used in the phrase "elongate tip portion being more resistant to electrolytic disintegration in fluid than said electrolyzable core wire," in Claim 17 of the '578 Patent to mean:

An elongate tip portion of the invention which has attributes which make that portion more resistant to electrolytic disintegration than the electrolyzable core wire of the invention.

Omax proposes this construction: "Instructions to a machine tool that cause it to move." Flow argues for the following: "Time delay and incremental instruction consisting of a series of step and direction commands consisting of either a 1 or 0 with a sign of + or - that effect movement." Flow's proposed construction mirrors its proposed construction of the claim terms in claims 1 and 14, which refers to "a series of incremental motor commands for the motor, each increment for the motor being one of: zero, positive increment, or negative increment." 2 The Court agrees with Omax's argument that this approach violates the principle of claim differentiation. Comark Commc'ns. Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998) ("There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims."). The patent consistently refers to the incremental motion control commands in claims 1 and 14, and consistently refers only to motion control commands in claims 9 and 23. Moreover, Flow's proposed construction contradicts the intrinsic evidence available in the prosecution history of the '596 patent: "Claim 12 [which later became claim 9] is similar to Claim 1, except that the limitation that the segments are incremental motor commands is eliminated." FLO 002008-13. Accordingly, the Court adopts Omax's proposed construction.

2 The parties' slightly divergent constructions of this claim, addressed in the joint claim chart, are not addressed in their Markman briefs.

4. "Motion Mechanism"

Plustek asks the Court to construe this term as "a mechanism that is controlled by electronic components located outside of
the scanner, and that is responsible for moving the scanning document so as to cause it to pass through the image sensing module at a steady speed."

Syscan argues for "that mechanism responsible for moving the scanning document so as to cause it to pass through the image sensing module at a steady speed."

The specification states that "fundamentally different from the scanners in the market, there is no microcontroller and other electronic components in main module 402 to control the operation of the image sensor and the illumination source." See Dang Decl., P 2, Ex. A ('124 Patent), 7:3-7, emphasis added. The interface engine and the control circuit are electronic components that control the operation of the image sensor and the illumination source as well as the motion mechanism. See e.g., Dang Decl., P 2, Ex. A ('124 Patent), Fig. 3, 6:32-34, 11:9-13 (claim 5), Fig. 5, 7:63-65, 7:66-8:10.

The patent's express exclusion dictates that the image sensor (or image sensing module) and the motion mechanism must be controlled by electronic components located outside of the patented scanner. SciMed Life Systems, Inc., 242 F.3d at 1341 ("where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question"); see also CCS Fitness, 288 F.3d at 1366-67 ("a claim term will not receive its ordinary meaning if the intrinsic evidence shows that the patentee distinguished the term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention.").

The Court construes this claim as "a mechanism that is controlled by electronic components located outside of the scanner, and that is responsible for moving the scanning document so as to cause it to pass through the image sensing module at a steady speed."

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B. a motor for moving said plunger drive ram

<table>
<thead>
<tr>
<th>Term</th>
<th>E-Z-EM's Definition</th>
<th>Mallinckrodt's Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;a motor for moving said plunger drive ram&quot;</td>
<td>an electric motor for moving said plunger drive ram</td>
<td>a motor for moving the plunger drive ram</td>
</tr>
</tbody>
</table>

The parties dispute whether the motor of the invention must be an electric motor. Mallinckrodt argues that the motor can be any kind of motor where as E-Z-EM urges the court to construe "motor" to mean "electric motor." E-Z-EM argues that, based upon the specification, the invention is an improvement upon "typical injectors," and "typical injectors" contemporaneous with the filing date used electric motors. E-Z-EM further argues that the only motor disclosed in the patents is an electric motor.

The Court declines to construe "motor" narrowly, as E-Z-EM suggests. To do so would improperly import a limitation from the preferred embodiment. Nothing in the claims or specification supports the conclusion that the motor claimed cannot be a hydraulic motor, or any other type of motor. The Court construes "motor" to be "a device that imparts motion."

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"motor"

a machine that imparts motion
E. “Motor” and “Tracks the Location of Said Motor”

24 The Court reviewed L-F’s Supplementation in Reply (Doc. No. 220) relating to this issue, Medrad’s Motion to Strike L-F’s Supplementation (Doc. No. 224), and L-F’s memorandum in opposition (Doc. No. 235). These filings relate to extrinsic evidence not considered by the Court when construing the claim terms.

L-F requests that the Court interpret the terms “motor” and “tracks the location of said motor” as they are used in the 612 and 197 patents. Each of the asserted independent claims of the 612 and 197 patents recites that the injector has a motor which advances and retracts a plunger and that the device includes a control circuit which causes the motor to move and tracks the location of the motor while moving the motor.

L-F asserts that “motor” actually means the “drive mechanism” and “tracks the location of said motor” means “tracks the location of the drive mechanism.” (Doc. No. 164, pp. 26-27). Medrad, relying strictly on dictionary definitions, argues that “motor” means a machine that imparts motion and that “tracks the location of said motor” means that the motor is moving to another location within the injector and that this movement is being tracked. (Doc. No. 172, pp. 33-34). The Court finds both L-F’s and Medrad’s arguments illogical and unpersuasive.

The terms “motor” and “tracks the location of said motor” are not defined by any of the asserted claims in the 612 and 197 patents. Therefore, the claims must be read in light of the specification to define the terms. See Interactive Gift Express, 256 F.3d at 1331.

The Court believes the following excerpt from the specification sufficiently defines the terms in question.

The motor 98 is coupled to a gear box which translates rotary motion of the motor to linear translation of the plunger. . . The rotation of the motor is detected by optical encoder 166 . . . Encoder 166 sends electrical pulses to circuit board 160, which relays them to PowerPC 50, allowing CPU 52 on the PowerPC to monitor movement of the motor.

612 patent, col. 10, lines 50-62
197 patent, col. 10, lines 48-60

(Doc. No. 30, Exhs. 3, 4). In other words, the “motor” is a mechanism that rotates and this rotation causes gears in the gear box to move which ultimately results in the linear movement of the plunger. "Track the location of said motor" refers to the monitoring of the rotation of the motor. 25

25 In Plaintiff Liebel-Flarsheim Company's Opposition to Medrad's Motion for Partial Summary Judgment of Invalidity and Non-Infringement of the Asserted Claims of U.S. patent Nos. 5,662,612 and 5,928,197 (Doc. 174), L-F, in its argument regarding the construction of the terms "motor" and "tracks location of said motor", presented an argument identical to the Court's present analysis of these terms. It is unclear why L-F presented a completely different, and in the Court's opinion incorrect, argument in its summary judgment motion for claim construction.

L-F's proposed interpretation equates "motor" with the "drive mechanism of the plunger". However, the term "motor" is
shown in the specifications and used in the claims as a distinct element. "Motor" is assigned reference number 98 and is depicted in Figure 5 of both patents, where the motor is different and distinct from the "gear box" (Ref. No. 164), the "optical encoder" (Ref. No. 166), the "plunger" (Ref. No. 12), the "linear pot" (Ref. No. 168), the "main circuit board" (No. 160), and other elements. (Doc. No. 30, Exhs. 3, 4). It appears that the "drive mechanism" includes parts in addition to the motor such as the gearbox, the ram, and all of the component parts that work to drive the plunger. Therefore, the motor cannot be the equivalent of the drive mechanism of the plunger.

Medrad's proposed interpretation, that the motor is moving from location to location, ignores the specification which clearly indicates that the motor is stationary. Furthermore, Medrad's proposed interpretation would exclude the preferred embodiment disclosed in the 612 and 197 patents, which describes a motor that is stationary. See Vitronics, 90 F.3d at 1583; Burke, Inc. v. Bruno Independent Living Aids, Inc., 183 F.3d 1334, 1341 (Fed.Cir. 1999).

In light of the clear and unambiguous language of the specification, the Court finds that its construction of the terms "motor" and "tracking the movement of the motor" is the more logical construction. Therefore, the Court construes the term "motor" as a stationary mechanism that rotates causing the movement of the gears in the gearbox and the term "tracking the movement of the motor" as the monitoring of the rotation of the motor.

A. "Motor Powered Means"

The parties dispute the proper construction of "motor powered means" as used in the phrase "said assembly 4 having motor powered means including a dumping assembly and an extendable element carrying an engagement assembly." See 245 Patent, col. 8, lines 3-5 (emphasis added). The parties agree "motor powered means," as used in the above phrase, is not a "means plus function" term.

Plaintiff argues the subject term should be construed as "one or more motor powered structures, including a dumping assembly and an extendable element carrying an engagement assembly." (See Pl's Proposed Order at 2:2-4.) The phrase "including a dumping assembly and an extendable element carrying an engagement assembly," however, is already included in the claim. See 245 Patent, col. 8, lines 3-5. Consequently, plaintiff's proposed construction is, more precisely, "one or more motor powered structures." Defendant argues the term should be construed as "a tool or device that has a power source for use in obtaining a particular end." 5 (See Def.'s Proposed Order at 2:7-8.)

Plaintiff argues the subject term should be construed as "one or more motor powered structures, including a dumping assembly and an extendable element carrying an engagement assembly." (See Pl's Proposed Order at 2:2-4.) The phrase "including a dumping assembly and an extendable element carrying an engagement assembly," however, is already included in the claim. See 245 Patent, col. 8, lines 3-5. Consequently, plaintiff's proposed construction is, more precisely, "one or more motor powered structures." Defendant argues the term should be construed as "a tool or device that has a power source for use in obtaining a particular end." 5 (See Def.'s Proposed Order at 2:7-8.)

Because plaintiff's proposed construction includes the word "motor," and defendant's proposed construction does not purport to construe "motor," 6 the word "motor" does not require construction. See United States Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997) (holding "claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims" and is "not an obligatory exercise in redundancy"). Similarly, the word "powered" does not require construction because both parties' proposed
construction includes the word "power." See id. Finally, the ordinary definition of "means," the remaining word in the disputed term, is "structure." See Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1308 (Fed. Cir. 1998) (holding "means" is "generic reference for corresponding structure").

6 In its brief, defendant cites a dictionary definition of "motor" as "one that imparts motion: a source of mechanical power." (See Def.'s Response to Pl.'s Opening Claim Constr. Brief at 11:22 -- 12:1.) In its proposed construction, however, defendant does not include such, or similar, language.

Accordingly, "motor powered means" is construed as "one or more motor powered structures."

1. "a body . . . mountable to the underwater cable"

This phrase is used in claim 1 of the '992 Patent. WG argues that it should be construed as "a device attached externally to an underwater cable." Ion argues that the phrase should be construed as "a body attachable . . . to the underwater cable."

In a predictable role reversal, Ion now argues that WG's construction attempts to improperly limit the scope of the claim term to a disclosed embodiment in the specification. Ion points out that, unlike with the specification of the Bittleston and Zajac Patents, that the Ion Patent does not contain any "present invention" language that would suggest that it should be so limited. Ion further argues that the testimony of Peter Canter, WG's expert, describing the difference between in-line and external devices is conclusory and should be ignored. WG points out that Ion's invention is essentially a "clamping device," which should be distinguished from the in-line devices that are embodied in WG's patent and its "Q-Marine" product. (See Peter Canter Expert Report, WG Br. Ex. D, P 55 (noting the distinction between in-line and externally attached devices).) In order to establish this distinction, WG seeks to add the word "externally" to the claim construction.

The patent claim language does not immediately reveal how the term "mountable" should be construed. However, considering the plain and ordinary meaning of the claim term, the Court agrees with WG that the word "mountable" generally connotes an external connection of some kind, rather than on in which the connection allows the attachment to become part of the base structure. Moreover, WG's construction is consistent with the single embodiment of the invention revealed in the specification, which describes an "external device" mounted to an underwater cable. ('992 Patent, Pl. Br. Ex. 6, Doc. No. 161, col. 2 ll. 66-67, col. 3 ll. 16-18.) Figure 32 of the '992 Patent likewise portrays a diagram of the streamer with an attachment that is labeled "external device." ('992 Patent at WG00029644.) Although Ion is correct that the specification does not contain the kind of "present invention" language that courts have held signal a limitation to the patent scope, the Court must acknowledge that this is the single embodiment disclosed in the specification and is consistent with the natural meaning of the claim language, as something that is "mounted" is supported by something else while remaining an entirely separate object. Finally, as WG pointed out during the Markman hearing, an examination of the prosecution history of this patent reveals that the original application for the '992 Patent specifically described an invention "having one or more external devices mounted on the cable." ('992 File History, at ION617.) Nothing in the later amendments to the application appear to have altered this initial characterization of the claimed invention.

Moreover, to construe this claim term such that the body is attached externally does not undermine the possibility of an internal component to the invention. That a body is externally mountable says nothing as to whether there might be non-external component with which the mounted body interacts for inductive coupling, as Ion's invention apparently includes. In so recognizing, the Court will not adopt WG's language which attempts to equate the term "body" with the entire device, as the portion of the invention that remains under the skin of the streamer could certainly be said to be part of the device, though perhaps not part of the body.

In the Court's opinion, the term "mountable" sufficiently conveys the notion that the body of the device is externally connected to the steamer such that it needs no construction. However, both parties appear to seek construction of the phrase.

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Of the two proposed constructions, the Court is of the opinion that WG's more accurately reflects the Court's understanding of the term "mountable" as it is used in this claim term. Ion's use of the word "attachable" appears to broaden the scope of the claim language, because to say that an object can be "mounted" implies something slightly more specific that to say that it can be "attached." Neither the claim language nor the specification reveal any possible embodiment of the claimed invention in which the body in question is attached, but not mounted, to the seismic streamer. The Court therefore adopts WG's construction and construes this term as "a body attached externally to the underwater cable."

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The parties dispute whether the In-Bed Trunk(R) weatherstrip is mounted to the channel of the In-Bed Trunk(R). As defined by the court, "mounted" means "securely affixed or fastened to." Here, the In-Bed Trunk(R) weatherstrip is not mounted to the channel. When the lid is closed the weatherstrip is compressed between the channel and the lid, but once the lid is opened, the weatherstrip remains with the lid and no longer touches the channel. In essence, the difference between the '625 patent and the In-Bed Trunk(R) is that the '625 weatherstrip is mounted to the flange and the In-Bed Trunk(R) weatherstrip is mounted to a part of the lid. This difference causes plaintiff's literal infringement claim to fail. See, e.g., Budde v. Harley-Davidson, Inc., 116 Fed. App'x 270, 273-74 (Fed. Cir. 2004) (holding that fuel injectors mounted in the intake manifold did not literally infringe a patent that required fuel injectors to be mounted in the throttle body); Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1424 (Fed. Cir. 1997) (recognizing that an accused product containing a slot in a container could not literally infringe a claim requiring that the slot be at the top of the container).

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1. "mounted"

The district court construed "mounted" to mean "securely affixed or fastened to." Literal Infringement Op. 2007 U.S. Dist. LEXIS 78564 at *3. Felix argues that "mounted" has the broader meaning of simply "positioned." Felix offers four arguments in support of this broader construction, each of which we reject.

First, Felix argues that the claims consistently use the term "mounted" or "mounting" "to relate the relative position of one item with another," rather than to denote affixing or fastening. Appellant's Br. at 21. Felix cites various examples from the claim language, including "a proximate end pivotally mounted in said compartment interior," "a pair of hinges each mounted on said vehicle bed," "a catch mounted on said compartment back wall," "a latch mounted on said lid lower surface," and "a knob mounted on said cable proximate end." Id. at 21 (quoting '625 patent col.4 ll.7-9, 11, 16, 18, 23-24). Felix is correct that, "[b]ecause claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims." Phillips, 415 F.3d at 1314. But nothing in the language of any of the claims requires or even suggests that "mounted" means simply "positioned" as Felix asserts. To the contrary, the use of "mounted" in the very claim terms that Felix cites strongly suggests that "mounted" means "securely affixed or fastened to." Specifically, claim 1 recites a catch "mounted" on a back wall of the storage compartment. '625 patent col.4 l.16. If the catch were merely "positioned" on the back wall without being securely affixed or fastened to the wall, it would fall off. Likewise, claim 1 recites a latch "mounted" on the lid's lower surface--i.e., on the underside of the lid. Id. col.4 l.18. If the latch were merely "positioned" on the underside of the lid, it would fall off. It is difficult to imagine how--consistent with the law of gravity--any structure could be "mounted" on the underside of any other structure if "mounted" merely meant "positioned." Additionally, claim 1 recites a prop rod "pivotally mounted" in the interior of the compartment. Id. col.4 ll.7-9. The adverb "pivotally" modifies "mounted" to make clear that the rod can pivot on the compartment interior. But if "mounted" meant simply "positioned," then "pivotally" would be surplusage, because the rod would not be affixed to the compartment interior and could move freely, without needing to "pivot" relative to the interior. We therefore conclude that the claims use "mounted" consistently to mean "securely affixed or fastened to."

Second, Felix argues that the specification does not provide "a specific method of mounting one item on or to another," but merely provides one non-limiting example--"welding." Appellant's Br. at 21-22. To the contrary, like the claims, the specification repeatedly uses "mounted" to describe structures that must be securely affixed or fastened together, else they would fall apart by operation of gravity. See, e.g., '625 patent col.3 ll.28-29 ("catch . . . mounted on the compartment back

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Third, Felix relies on a dictionary to argue that "mount" means simply "position." Preliminarily, we note that "it is improper to read [a claim] term to encompass a broader definition simply because it may be found in a dictionary, treatise, or other extrinsic source." Nystrom v. TREX Co., 424 F.3d 1136, 1145 (Fed. Cir. 2005). But more importantly, Felix's argument concerning the dictionary definition of "mount" is at best highly misleading and borders on a misrepresentation to the court. Citing a page from Merriam-Webster's Collegiate Dictionary (10th ed. 1997), Felix asserts that "[t]he dictionary definition of 'mount' includes 'to put or have in position' . . . ." Appellant's Br. at 22 (citing J.A. 612). But this is a misquotation. The actual definition in the cited dictionary is: "to put or have (as artillery) in position." J.A. 612 (emphasis added). A definition concerning artillery is of little relevance to a patent concerning a truck bed. By omitting the "as artillery" qualification, Felix has distorted the meaning of the cited definition. Without ellipses or some other indication that the "as artillery" language has been removed, Felix's quotation is highly misleading. Each of Felix's other proposed dictionary definitions--though quoted accurately--concerns a specialized meaning of "mount" inapplicable in the context of the '625 patent, and is inconsistent with the patent's use of the word "mounted." See J.A. 612 (defining "mount" to include "to set on something that elevates" and "to seat oneself (as on a horse) for riding" (emphasis added)). Moreover, the very dictionary that Felix cites also includes the more general definition "to attach to a support," id.--which is fully consistent with the use of the term "mounted" in the '625 patent. We therefore reject Felix's dictionary definition argument.

Finally, Felix argues that the preposition "on" in the phrase "weathertight gasket mounted on said flange," '625 patent col.6 l.1 (emphasis added), suggests that "mounted" is meant to refer only to location of the gasket relative to the flange, rather than the relationship between the gasket and the flange. According to Felix, if the limitation had been intended to indicate a connection between the gasket and the flange, it would have recited "mounted to" rather than "mounted on." We reject this argument. The preposition "on" can be used to indicate attachment. See, e.g., Oxford English Dictionary (2008) (including definition of "on" as "[a]ttached to (a chain, lead, etc.), esp. by way of restraint"). Moreover, the specification of the '625 patent consistently uses the phrase "mounted on"--not "mounted to"--in each instance discussed above, in which the specification describes structures that must be securely affixed or fastened together, else they would fall apart. See '625 patent col.3 l.128 ("mounted on"); id. col.3 l.131 (same); id. col.3 l.134 (same); id. col.3 l.140 (same); id. col.3 l.144 (same); see also id. col.3 ll.15-16 ("A compartment . . . is mounted (e.g., welded) on the truck bed floor . . . ." (emphasis added)); id. col.3 ll.32-35 ("[A]n actuator cable [is] mounted on the lid lower surface . . . by mounting clips . . . ." (emphasis added)). Thus, we are not persuaded that the preposition "on" transforms "mounted" into "positioned."

We therefore conclude that the district court's construction of "mounted" was correct. As used in claim 6 of the '625 patent, "mounted" means "securely affixed or fastened to."

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6. "mounted"

<table>
<thead>
<tr>
<th>Plaintiff's Construction</th>
<th>Defendants' Construction</th>
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<tbody>
<tr>
<td>Set or arranged on something for to use</td>
<td>Fixedly attached to use</td>
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a. Innoveration's Proposed Construction

Innoveration insists that the Court must look to the claims only in defining the term "mounted" because the specification provides that the embodiments are provided only by way of example. In any event, Innoveration insists, the defendants cannot deny that the Laser Gun and Target Tower game pieces of the accused game are "mounted" to their game board.
b. The Defendants' Proposed Construction

The defendants insist that their proposed construction of "mounted" is supported by the claim language, which is given life by the specification and preferred embodiments. The defendants also contend that the Examiner noted that mounting the light source on the game board was a feature that distinguished the '242 patent from prior art.

c. The Court's Construction

Claims 15 and 25 teach that there are two beam emitting devices "mounted to the game board." The Court finds that the claim language and the specification favor the defendants' posited construction. Moreover, the Court finds that the term should be given its ordinary meaning, in light of the context of the claims and specification; accordingly, the Court adopts the defendants' proposed construction defines "mounted" as "fixedly attached to."

2591

5) "Mounted in an open configuration to said vehicle window frame"

When twisted and folded for storage, the sunshade is in a "closed configuration." Consequently, the above bolded phrase means that when untwisted and unfolded, the sunshade is in its "open configuration." When held against the window, whether by the use of visors or otherwise, the sunshade is "mounted." Contrary to Defendant's contention, "mounting" does not require "fastening." Just as one can "mount" a horse without being "fastened" to the horse, so there is no requirement that the sunshade be "fastened" to the window. There must merely be some means of holding the sunshade against at least a portion of the vehicle window.

2592

Although we disagree with the court's conclusion that, as a matter of law, the Ridian Server constituted the second microcomputer means in the IridNet system, that was not the only ground on which the district court based its summary judgment on claim 1. The court also held that claim 1 could not be infringed because, "even if there was a corresponding local second microcomputer means, it is not mounted." In particular, the court construed the '421 patent to require that the structures corresponding to the second microcomputer means be "mounted on the workstation, with the result that each workstation is independent." In the accused system, the court concluded that the alleged second microcomputer means is not mounted on each workstation, and each workstation does not contain a unique mounted microcomputer.

In support of the district court's claim construction, Jenoptik argues that the phrase "mounted thereon" should be given its ordinary meaning of "fastened into position" or "fixed securely to a support." Jenoptik contends that the cell controllers in the IridNet system, which are electrically connected to one or more workstations by a serial cable but are not otherwise attached to the workstations, cannot be regarded as "mounted on the respective workstation" within the ordinary meaning of that phrase. In contrast, Asyst argues that the phrase "mounted on the respective workstation" includes direct electrical connection with the workstation, such as by a serial cable. Asyst further contends that the fact that a single cell controller in the IridNet system may be connected to and serve more than a single workstation does not avoid infringement, because claim 1 does not require that there be a one-to-one relationship between each second microcomputer means and each workstation.

We agree with Jenoptik that the ordinary meaning of "mounted on," i.e., securely attached, affixed, or fastened to, applies here and that Asyst's much broader definition must be rejected. Asyst failed to point to any intrinsic evidence to show that in the pertinent art or in the context of the '421 patent the phrase "mounted on" means connected via a serial cable.

Asyst's expert, Phillip Faillace, submitted a declaration in which he stated that, in his opinion, a cable connection between the cell controller and the workstation satisfies the "mounted thereon" limitation. That single conclusory statement by Mr. Faillace, however, is insufficient to demonstrate that the term "mounted on" had that meaning to a person of ordinary skill in
the art at the time of the patent application, particularly in light of the fact that Mr. Faillace's definition departs significantly from the ordinary meaning of the phrase.

As Jenoptik points out, both the specification and the prosecution history support the district court's determination that the phrase "mounted on" should be accorded its ordinary meaning. The specification uses the phrase "mounted on" to refer to a number of other components, and the context makes clear that the phrase is used in those instances to mean securely affixed to objects such as the transportable container, a workstation, or some component of those structures. See, e.g., '421 patent, col. 2, ll. 19-41 (describing storage means "mounted on" the transportable container; communicating means "mounted" on the processing station "adjacent the engaging means"); data processing means "mounted on" the transportable container; and means for receiving data "on the transportable container"). The phrase "mounted on" is repeatedly used interchangeably with the term "on," which in context clearly denotes a form of attachment, not simply an electrical connection. See id., col. 3, line 41 to col. 4, line 20. Moreover, on occasion the patent distinguishes between features that are "mounted on" an object and those that are "connected to" or "in electrical communication with" an object, which strongly supports the court's conclusion that the phrases "mounted on" and "in electrical communication with" do not mean the same thing in the '421 patent. See id., col. 3, ll. 48-53 ("means 50 for communication with an electronic card 40" is "mounted on the processing station" but is "connected to a data processor 20 on the processing station"); id., col. 8, ll. 14-16 (local processor 20 "is mounted on the work station 100" but is "in electronic communication with the [communication] means 50").

The prosecution history also suggests that the inventors intended the phrase "mounted on" to have its ordinary meaning and not the broader meaning proposed by Asyst. In claim 10 of the parent to the application that matured into the '421 patent, the inventors referred to a "data processing means mounted on the transportable container," but did not specify any location for the associated "communication means." When the examiner rejected that claim based on a prior art patent to Hainsworth (U.S. Patent No. 4,492,504), the inventors added a limitation that required the communication means to be "disposed adjacent the at least one processing station." The examiner continued to reject the claim on the ground that "adjacent" simply meant "not distant" and thus did not sufficiently distinguish the prior art reference. At that point, the inventors filed the continuation-in-part application that matured into the '421 patent. Claim 21 of that application, which corresponded to claim 10 of the parent application, claimed both a second two-way communication means "mounted on" a workstation and a microcomputer means "mounted on" a transportable container. The inventors commented at that time that the new claim language distinguished the Hainsworth patent because Hainsworth did not teach or suggest "the 'second two-way communication means' mounted on a work station." Although those changes related principally to the communication means rather than to the second microcomputer means, they provide evidence that the inventors meant for the term "mounted on" to be narrowly limited to a structure that is "affixed to" an object and not to include structure that is "adjacent to" that object.

There are two further problems with Asyst's proposed definition of "mounted on." First, as the district court pointed out, in the IridNet system a single cell controller may be connected to multiple workstations, and it is awkward, at the very least, to refer to a single device as being "mounted on" two separate workstations. Second, Asyst's proposed definition is in tension with one of the objectives of the "distributed processing system," as expressed in the specification and the prosecution history, i.e., to enable a system that "does not require centralized control." '421 patent, col. 11, ll. 5-6. As the inventors explained to the examiner, the claimed apparatus "permits the control of the processing of articles . . . to be maintained locally (at the 'work station') without the need for a central computer." Since Asyst's definition of "mounted on" would be consistent with a system in which a single cell controller controlled all the workstations in the system (and thus, according to Asyst's definition, would be deemed "mounted on" all of them), that system would no longer feature localized control, but would be centralized in nature, contrary to the inventors' characterization of their invention in the specification and the prosecution history. These considerations lead us to conclude that the district court was correct in holding that the IridNet system does not literally infringe claim 1 of the '421 patent.

With respect to whether the IridNet system might infringe under the doctrine of equivalents, the district court concluded that the "mounted on" limitation is binary in nature. That is, the second microcomputer means must be either mounted or unmounted. For purposes of equivalents, the court concluded, "an unmounted microcomputer means cannot be equivalent to a mounted one."

We agree with the district court's conclusion with respect to the claim of infringement under the doctrine of equivalents. To hold that "unmounted" is equivalent to "mounted" would effectively read the "mounted on" limitation out of the patent. As the district court noted, the "all elements rule" provides that the doctrine of equivalents does not apply if applying the
doctrine would vitiate an entire claim limitation. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 29, 137 L. Ed. 2d 146, 117 S. Ct. 1040 (1997). This case falls within both that doctrine and its corollary, the "specific exclusion" principle, since the term "mounted" can fairly be said to specifically exclude objects that are "unmounted." See SciMed Life Sys. v. Advanced Cardiovascular Sys., 242 F.3d 1337, 1346 (Fed. Cir. 2001) (noting the close kinship of the "all elements rule" and the "specific exclusion" principle); Moore U.S.A., Inc. v. Standard Register Co., 229 F.3d 1091, 1106 (Fed. Cir. 2000) ("it would defy logic to conclude that a minority--the very antithesis of a majority--could be insubstantially different from a claim limitation requiring a majority, and no reasonable juror could find otherwise"); Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1582 (Fed. Cir. 1996) ("specific exclusion" principle is "a corollary to the 'all limitations' rule"). In this case we hold that the district court was correct in ruling that the doctrine of equivalents cannot be extended to reach an "unmounted" system such as the IridNet system without vitiating the "mounted on" limitation altogether. We therefore uphold the district court's summary judgment of noninfringement with respect to claim 1, both literally and under the doctrine of equivalents.

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4. "mounted on"

Tidel proposes the term means "attached to." FKI proposes the term means "mounted externally, not internally." Tidel's only argument is that FKI agreed to "attached to" for the construction of "mounted" in claim 3. FKI argues the plain and ordinary meaning; "on" is "on" and does not allow for "in." The specification provides that the bill receiving apparatus in the preferred embodiment can be "mounted on the interior surface or rear face of the safe door." [2:54-55] The applicant clearly intended for multiple ways to mount the apparatus. There is no support for FKI's argument that the mounting must only be on the exterior part of the door. The term mounted by itself does not connote only an attachment to the surface of the door. Mounted is defined as "set up or adjusted for use." Oxford English Dictionary. The court, therefore, construes "mounted on" to mean "attached for use."

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5. At Least Some of Said Clusters Are Mounted on Said Base for Selective, Relative Positional Adjustment

Microsoft argues that this phrase should be construed to mean that the keys or the keys clusters must be mounted in a way that allows the keys or the clusters "to be moved by the user to different locations relative to each other to fit different hand sizes." Microsoft's Memorandum in Support of Non-Infringement of '477 patent, p. 21. Plaintiff does not contest Microsoft's construction or offer an alternative one. Rather, plaintiff argues that the plain language of the claim does not require that the keys or key clusters be adjusted to accommodate different hand sizes. I disagree.

The claim language discloses key clusters "mounted . . . for selective, positional adjustment"; thus, the plain meaning of the terms require that the keys be attached in a manner that allows them to be adjustable. Further, the specification gives context to this claim language:

"The kind of positional adjustment which has just been described may, in a certain way, be viewed as a gross adjustment -- namely, one wherein entire clusters of keys are shifted as a unit to accommodate different hand sizes. . . . For example, one can imagine a modification in which . . . the mounting structure could actually be a divided structure which permits relative positional adjustment between . . . the two keys closet closest to the tip of the associated finger as a unit with respect to the other two keys in the row."

'477 Patent, Col. 6:53-64.

Whatever this means, it is clear that the keys or key clusters must be adjustable in relation to one another. Microsoft also relies on the patent specification, which describes the purpose of allowing adjustment of the keys or the key clusters to fit different hand sizes:
Recognizing that a one-size-fits-all approach may not be entirely appropriate to deal with users' hands that are significant larger or smaller than, say, hands fitting within the 'median' of hand sizes, the structure of the invention proposed herein permits positional adjustment of arrays and clusters of keys to accommodate a size-differential concern.

'477 Patent, Col 2:46-53; see also Col. 6:42-43, 52-63.

Thus, I find that Microsoft's construction reflects the plain meaning of the language and the description of the claimed element in the specification. Accordingly, I construe this claim element to mean that keys or key clusters must be mounted on a base so as to allow for selective adjustment of the keys or key clusters to accommodate different hand sizes.

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(A) "mounted on said body"

MBO insists that the term "mounted on" should be construed to mean "attached to" something or "fixed securely to a support." Becton claims that the words "mounted on" should be construed to mean "attached to the exterior surface of the body." The claim language unambiguously indicates that the disputed term should be interpreted to mean "attached to the exterior surface of the body." In addition, the drawings of the 885 patent uniformly display a blocking flange that is attached to the exterior surface of the body. Furthermore, in describing the spring and the flange, the preferred embodiment explains that the gripping legs of the spring "snap past the body projections 94, and positively hold the spring on the body with no chance or [sic] accidental removal." 885 patent, col. 6, ll. 10-12. I, therefore, construe the term "mounted on" to mean "attached to the exterior surface" of the body.

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F. The Term "Mounted on Said Body"

The district court found that where the term "mounted on said body" appears, the mounting must be on the body's exterior. There is no reason to so limit the patent's scope. The patent figures all depict the flange connected mainly to the outside, but patent coverage is not necessarily limited to inventions that look like the ones in the figures. See, e.g., Gart v. Logitech, Inc., 254 F.3d 1334, 1342 (Fed. Cir. 2001) ("These drawings are not meant to represent 'the' invention or to limit the scope of coverage defined by the words used in the claims themselves."). To hold otherwise would be to import limitations onto the claim from the specification, which is fraught with "danger." Phillips, 415 F.3d at 1323; see also Comark Commc'ns, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998) ("We recognize that there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification."). Limiting claims from the specification is generally not permitted absent a clear disclosure that the patentee intended the claims to be limited as shown. Phillips, 415 F.3d at 1323. The proper construction for "mounted on said body" is "attached to said body."

IX. Mounted to Said Inner Tubular

Claim Term | Davis-Lynch's Proposal | Weatherford's Proposal
---|---|---
"mounted to said inner tubular" | Formed in, fastened, or attached to said inner tubular. | Fastened or attached to the inner tubular.
Claims 34, 35, 37

With regard to this term, the parties dispute whether the drop member receptacle may be "formed in" the inner tubular. To the extent that it appears elsewhere in the claims at issue, the parties have agreed to construe the term "mounted" as "fastened or attached." (Doc. Nos. 135, 136.) This construction is consistent with the plain and ordinary meaning of the term.
"mounted," and with the patent specification. For example, it describes the drop member held in a cage-like catcher/seat as being "mounted." '336 patent at 7:49-51. It describes the inner tubular held in place inside the outer tubular by shear pins as being "mounted." 7:32-35. Finally, it describes the outer tubular as being "mounted" inside the tubular string. Davis-Lynch relies on this latter example to support its construction. It points out that the patent specification states that the outer tubular may be "cemented, molded, or otherwise mounted" within the tubular string. 7:4-6. Davis-Lynch argues that the term "formed in" is synonymous with the term "molded."

Weatherford contends that the specification reference relied upon by Davis-Lynch is irrelevant because it relates to the outer tubular rather than the drop member receptacle. It further contends that even if the reference were relevant, Davis-Lynch's proposal is inconsistent with the claim language. It argues that whereas the term "mounted" relates to the fastening together of two separate objects, the term "formed in" relates to the formation of two sections of a single object. It argues that Davis-Lynch's proposal implies that the drop member receptacle is a part of the inner tubular, rather than a separate component mounted to the inner tubular.

Weatherford correctly points out that the patent specification contains no support for Davis-Lynch's position that the drop member receptacle forms a part of the inner tubular. While Davis-Lynch is technically correct that the terms "formed in" and "molded" may be synonymous, the '336 patent never uses the term "molded" in that manner. The lone reference in the patent specification relied upon by Davis-Lynch reiterates the point that the term "molded" refers to the fastening together of two separate components. To explain how the outer tubular can be "molded, or otherwise mounted" into the tubular string, the patent specification states the outer tubular may be held in place by "cement, plastics, glues, composite materials, elastomers, fibers or combinations of the above . . . and/or other attachment means such as braces, grips, latches, grooves, insets, threads, or the like." '336 patent at 7:13-20. This passage explains that the term "molded" refers to the fastening together of two separate components, e.g., a shoe that molds to the wearer's foot, rather than the formation of one component out of a material, e.g., molding a vase out of clay. Thus, even if the intrinsic evidence discloses that the drop member receptacle may be "molded" to the inner tubular, this provides no support for Davis-Lynch's proposed construction of "formed in." Weatherford's proposed construction is consistent with every other use of the term "mounted" in the patent. Accordingly, the Court adopts Weatherford's proposed construction.

The Court construes this terms of this claim element in accordance with its construction of these terms in claim 50. A "patient support assembly" must include at least one conventional mattress and an underlying patient support frame. As "mounted" means "attached to a support," WEBSTER'S, at 1477, "mounted to the frame" indicates that the patient support assembly is attached to the hospital bed frame.
"Mounting"

When construing the term "stem mounting means for mounting the stem extension to the base mounting means," the Federal Circuit asserted that the claimed function is "mounting" and held that the disclosed structure for performing this function is a Morse taper. The Federal Circuit then cited two examples from the specification. First, the Federal Circuit referenced Figure 2 of the 313 patent, which depicts a Morse taper with the mating pin on the stem extension and the recess on the base portion. Next, it pointed to Figure 8, which shows the recess on the stem extension which mates with a corresponding pin on the base portion. Based on these assertions, Zimmer argues that this claim limitation requires either the pin or recess of a Morse taper or equivalent structures. Zimmer further asserts that in holding that the claimed function is "mounting," the Federal Circuit failed to construe the term "mounting."

Zimmer asserts that "mounting" should be construed according to its ordinary meaning. Zimmer alleges that "to mount" means "to fix on or in a support, backing, setting, etc. . . . mounting means fixing' which means to make fast." 04/06/05 Zimmer Mem. at 14. Zimmer states that this construction is consistent with the way those skilled in the art use the word "mount." As such, Zimmer believes that "mounting" in this claim should be construed as "a Morse taper or equivalents thereof for fastening the stem extension to the base portion, such that the stem extension and base portion are not free to move relative to one another." (emphasis added). 04/26/05 Zimmer Mem. at 13; 05/24/05 Zimmer Mem. at 5. Zimmer argues that, in orthopaedic art, a Morse taper is a tapered post or pin that is configured to connect with a tapered recess to form a secure mating interlock. Crowninshield Decl. P 50; ex. 4, U.S. Patent 609, col. 1 ll. 28-29; Ex. G to Vogler Decl. 835 patent, col. 2 ll. 24-28. Zimmer asserts that the goal of the invention is to substitute for rigid bone. Finally, Zimmer asserts that "mounting" means "fixing," which means "to make fast." 04/06/05 Zimmer Mem. at p. 14 (quoting Webster's New Universal Unabridged Dictionary (1992) at 537 ("to make fast, firm, or stable"); 688 ("to place securely; make stable or firm").

Howmedica opposes the inclusion of an additional function beyond merely "mounting," i.e. "fixing or fastening . . . such that the stem extension and base portion are not free to move relative to one another." Rather, Howmedica proposes that this term should be construed as "a Morse taper or equivalent structures capable of performing the claimed function of mounting the stem extension to the base." Transcript of Oral Proceedings Held on 06/09/05 at 5. In its argument, Howmedica also refers to mounting as mating. Howmedica asserts that claim 1 does not recite this additional "fixing without relative movement" function. Further, Howmedica argues that the Federal Circuit instructed that section 112, paragraph 6 equivalents "must merely perform that claimed function" and that "claim 1 does not include a radial adjustability' or a releasability during surgery requirement." Fed. Cir. Op. at 12.

Howmedica asserts that a broad construction of "mounting" is consistent with the intrinsic record. The specification states that the "stem mounting portion 2 is radially adjustable in cooperation with the base mounting portion 12." 313 patent, col. 3 11. 15-16. Howmedica asserts that Zimmer's narrow construction, requiring "fixing without relative movement," would necessarily exclude this preferred embodiment. 05/06/05 Howmedica Mem. at 11. Howmedica also disputes Zimmer's assertion that the "fixing without relative movement" limitation would serve to meet the goal of the invention by stating, "the specification only discusses certain embodiments that may have a fixed arrangement." Id.

Finally, Howmedica asserts that functions other than the claimed function, such as fixing without relative movement, are irrelevant and goes on to state that Zimmer's definition of "mounting" is not supported by its own dictionaries. Id. at 10. Rather, Howmedica states "while mounting' may also include fixing or fastening, it is not limited to this. The meaning of mounting' is broader." Id. To this end, Howmedica cited definition 10a for mounting in the American Heritage Dictionary, 2 which states "to set in position for use: mount guns." Id. Howmedica reasons that this definition is applicable and useful here and further analogized that a "mounted gun is not necessarily fixed or fastened to prevent movement." Id.
This Court's construction of "mounting" does not contradict the Federal Circuit's construction of the same term. Rather, the Federal Circuit held that the claimed function in "stem mounting means for mounting the stem extension to the base mounting means" is mounting, but did not construe what the term "mounting" actually means. Therefore, this Court undertakes to construe that particular term.

Again, this Court begins its consideration of this term by looking to the claim language itself and to the specification. The specification states that "after selecting the desired position for "axis B" relative to the base portion . . . the stem extension can be releasably fixed to the base portion in the selected orientation. 313 patent, col. 3. ll. 25-29. Further, the specification describes the Morse taper as providing a "secure mating interlock" between its recess and pin and notes that additional features may be used to "further secure" the tapered connection. 313 patent, col. 3 11. 48-50. Each embodiment in the specification discloses the base mounting means being fastened to the stem mounting means, but the specification never asserts that there is no movement between them. There is nothing, then, in the written description or specification to suggest that the base portion and stem extension would not or could not have freedom of movement once mounted. See Laitram Corp. v. Morehouse Indus., Inc., 143 F.3d 1456, 1462 (Fed. Cir. 1998). Rather, the specification merely discusses fixing the pin and recess together by way of a tapered or conical pin and mating recess. 313 patent, col. 3, 11. 48-50.

The specification states that the invention is "particularly suitable for modular tibial prosthesis components having modular stem extensions." 313 patent, col. 1, 11. 9-11. However, the features of this invention "could be adapted as appropriate, to other prosthetic components." 313 patent, col. 1, ll. 11-12; See also 313 patent, col. 2, ll. 5-7 ("it is particularly suitable for use with modular tibial prosthesis components, although it is not limited thereto"). This court may not limit the invention to the specific examples or preferred embodiment found in the specification. Phillips, 415 F.3d at 1323. Therefore, while the components may not actually move relative to each other when mounting tibial components, the same may not be true with other components, such as a wrist. It is not clear from the specification and prosecution history that this mounting must be accomplished without movement; in other words, a variation in the joint type (e.g. one allowing movement) might also be securely fixed in terms of mounting while still allowing for movement between the two. As such, it would be improper to limit this claim term in this manner.

A broad construction of "mounting" is consistent with the intrinsic record in this case. The specification states, "the stem mounting portion is radially adjustable in cooperation with the base mounting portion." 313 patent, col. 3, 11. 15-16. Restricting this claim in the manner requested by Zimmer would not only unnecessarily narrow this claim but also would exclude the preferred embodiment. This the Court will not do. Eolas Technologies, Inc., v. Microsoft Corp., 399 F.3d 1325, 1337 (Fed. Cir. 2005)(citing Telecom Ltd. v. Samsung Elecs., 215 F.3d 1281, 1293 (Fed. Cir. 2000). "It is elementary that a claim construction that excludes the preferred embodiment is rarely, if ever correct and would require highly persuasive evidentiary support." Neomagic Corp. v. Trident Microsystems, Inc., 287 F.3d 1062, 1074 (Fed. Cir. 2002)(quoting Vitronics, 90 F.3d at 1583 (Fed. Cir. 1996). Finally, Howmedica's construction of the term "mounting" is correct because it is consistent with the claim language and the specification. Zimmer's construction, on the other hand, is inconsistent with the claim language. If, after consulting extrinsic evidence, the claim is susceptible to a broader and narrower meaning, the narrower meaning is chosen if it is the only one clearly supported by the intrinsic evidence. Phillips, 415 F.3d at 1317-19 (discussing the proper use of extrinsic evidence). While Zimmer is correct that mounting is defined as "to make fast, firm, or stable" 3 and "to place securely; make stable or firm," 4 it also means "to set in position for use." 5 Thus, Zimmer's more narrow construction is not the only definition clearly supported by the intrinsic evidence. This Court declines to narrow the construction of this claim. Rather, it opts to construe the term in such a manner as to encompass all consistent meanings. See Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1343 (Fed. Cir. 2001). Therefore, this Court adopts Howmedica's proposed construction of this claim and construes this claim as: "a Morse taper or equivalent structures capable of performing the claimed function of mounting the stem extension to the base."
The proper construction of "mounting … to" is addressed next. Panduit argues that the term "mounting" requires that the exit trough be in contact with and rest upon the top edge, noting that the plain language of the claim is "mounting … to." ADC contends that the term "mounting" does not require the exit trough to be resting upon the top edge, but that it means attached to the top edge. However, ADC's construction implicitly presupposes an overly expansive meaning of "top edge," which is rejected as previously explained. The proper construction is that the term "mounting … to" requires the exit trough to be affixed to and in contact with the top edge of the lateral trough section.

a. "mounting a plurality of sensor systems at different locations on the vehicle"

Plaintiff contends that the court need not construe this phrase; however, Defendant maintains that the court should construe the phrase as "attaching at least two sensor systems to different vehicle components which are at different locations in the vehicle." (Chart at 22-23.) The parties primarily dispute whether "attaching" should be substituted for "mounting," and whether "different components" should be substituted for "different locations."

Plaintiff argues that the specification supports the use of the language in the claim, stating: "As used herein, a 'sensor system' includes any of the sensors listed below in the definition of 'sensor' as well as any type of component or assembly of components which detect, sense or measure something." '080 Patent col. 9 l.64-67. The specification also states: "Another method for controlling a part of the vehicle comprises the steps of mounting a plurality of sensor systems on the vehicle, measuring a state of the sensor system or a state of the respective mounting location of the sensor system." '080 Patent col. 8 l.36-40.

Defendant, however, argues that the prosecution history, specifically the reexamination of the '080 Patent supports its proposed construction. In particular, Defendant argues that the reexaminer rejected Plaintiff's claim because of prior art of Patent No. 5,481,906 to Nagayoshi, et al. ("Nagayoshi Patent"), which showed "a plurality of sensor systems (1) for the throttle position, for the air flow sensor, and for the oxygen sensor. Each of these respective sensor systems provides a measurement related to where it is mounted." (Def.'s Ex. 20 at 3 (internal citations omitted)). "Nagayoshi et al. does not disclose mounting a plurality of sensors systems at different locations on the vehicle. The sensor systems in Nagayoshi et al., e.g., a throttle position sensor, air flow sensor and oxygen sensor, are all mounted at the same locations, i.e., on the engine." (Def.'s Ex. 21 at 11.) Plaintiff argues that during been reexamination it argued that the Nagayoshi Patent did not disclose mounting a plurality of sensors at different locations because all of its components were located on the engine. (Def.'s Ex. 21 at 11.)

Plaintiff's claim construction is more persuasive. What constitutes a "location" or "component" on the vehicle is not defined here, nor does it appear to have been defined, or particularly considered during the reexamination in light of the Nagayoshi Patent. This prosecution history does not provide sufficient justification or explanation as to why it should override the ordinary meaning of the claim language. However, the court will construe the claim to include the term "attaching" in place of "mounting" as synonymous because "attaching" is plainer. See Merriam-Webster, available at http://www.merriam-webster.com/dictionary/mount[2] (last visited Jul. 7, 2009) ("mounting" has the meaning of "to attach to a support").

Accordingly, the court will construe "mounting a plurality of sensor systems at different locations on the vehicle" as
"attaching at least two sensor systems at different locations on the vehicle."

E. Mounting Member

Defendants seek a construction whereby the term "mounting member" would be limited to a horizontal platform. The Court finds no basis to so limit the term. Rather, the term should be construed to include a platform, frame or support on which a video game controller is mounted by the means specified in the claim.

D. Mounting Member

'092 patent claim 81 states that the table comprises two mounting members "connected to the table top" that receive the cross brace members of the retaining assemblies. (R. 58, Keller Decl., Ex. A, '092 Patent, Claim 81.) GSC claims that four of its tables (the Enduro four foot table, the Enduro Rochester table, and the 2003 Enduro six foot and eight foot tables) lack mounting members. The underside of these tables include a channel through which each cross bar passes, which GSC claims is not a mounting member.

By stating that the mounting member is connected to the table top, the claims indicate that the mounting member is a separate and distinct entity from the table top. Lifetime, once again, asserts that the specification indicates that the term "mounting member" should be broadly construed because it states that the mounting member "may be integral with the table top and may be formed by means of a corresponding mold and blow-molding process." (Id. at 11:47-53.) We decline to adopt this broad construction because it is at odds with the claim language that states that the mounting member is connected to the table top. The ordinary meaning of the term "connect" is "to become joined," which envisions that two connected items were at one time unconnected. Therefore, we construe the term "mounting member" as a structure that is separate and distinct from the table top; a mounting member cannot be an integral part of the table top.

Footnotes

6 We also note that the differences between the mounting member in this patent and the mounting member in patent '331, discussed in more detail below, which is "integrally formed in the mounting surface of the, [sic] table top." (R. 58, Keller Decl., Ex. B, '331 Patent, Claim 1.)

B. Mounting Surface

'092 patent claim 76 states that the table comprises "a frame connected to the mounting surface of the table top." (R. 58, Keller Decl., Ex. A, '092 Patent, Claim 76.) GSC contends that, even if the side rails on its tables constitute a frame, the side rails are connected to interior walls, rather than to a mounting surface. GSC asserts that the mounting surface should be construed as the "flat underside of the table top." For the reasons provided below, we adopt GSC's proposed construction.

The patent's claims do not explicitly define the term "mounting surface." Claim 1 simply states that the table comprises "a working surface and a mounting surface." (Id., Claim 1.) This claim does not provide any other details about the mounting surface. The patent's specification supports a broad interpretation of mounting surface because it states that the interior walls are part of the mounting surface. (Id. at 5:51-54.) This broad definition, however, is inconsistent with other claims. For example, claim 17 refers to a "boundary defined by the mounting surface and the downwardly extending lip." (Id., Claim
17.) The downwardly extending lip is, therefore, not part of the mounting surface. And claim 15 states that the support pedestals "are disposed generally parallel and adjacent to the mounting surface of the table top in the collapsed position." (Id., Claim 15.) The mounting surface must be generally flat to permit the support pedestals to be generally parallel to it in the collapsed position. Were the mounting surface to encompass the entire underside of the table top, there would be no boundary between the downwardly extending lip and the mounting surface and it would be impossible for anything to be generally parallel with the mounting surface. The claims, therefore, limit the scope of the mounting surface to the "flat underside of the table top." Notwithstanding the broad meaning of mounting surface used in the specification, we construe the term "mounting surface" as the "flat underside of the table top."

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6. "Mouth Feature"

Hoodlums defines "mouth feature" as "[t]he part of the face through which food is taken, including but not limited to the mouth features shown in Figures 5 through 9 of the '972 patent." (Doc. 37, Ex. B at 5-6.) Redtail defines "mouth feature" as "[p]rominent and distinctive characteristics of the opening in the head of an animal through which food is ingested." (Id.)

The term "mouth feature" closely resembles the previously defined terms "skull facial features," "facial features," and "nose feature." In this case, "mouth feature" is only found in claim 1, and the specification and the prosecution history do not provide any particular meaning to the term. The dictionary defines "mouth" as "an opening between lips of men and animals through which food is taken." New Webster's Dictionary and Thesaurus, 251. This definition captures the ordinary and customary meaning of the word "mouth." However, the addition of the word "feature" strongly suggests that the term "mouth feature" includes more than just the definition of "mouth." See Phillips, 415 F.3d at 1314.

Looking to the claims, the specification, Federal Circuit law, and the dictionary, the court defines "mouth feature" as "the part of the face through which food is taken, including, but not limited to, the mouth features shown in Figures 5 through 9 of the '972 patent."

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3. mouthpiece

P&M construes the term "mouthpiece", as used in both the '886 and '300 patents, as "that part of the apparatus which is placed in the mouth to introduce air into the housing where it moves over the pen and out the nozzle's outlet orifice." (Pls. Opening Mem. at 15.) P&M cites the Webster's Third New Int'l Dictionary definition of mouthpiece as "a part which goes in the mouth." (Pls. Opening Mem. at 16.) Rose Art construes "mouthpiece" in both patents as the "piece placed at the mouth for entry of air into the airbrush, but not including connectors (e.g. flexible tubes)." (Def. Pre-Markman Hr'g Br. at 21.)

Rose Art supports its argument by citation to extrinsic evidence, namely British Patent 237,278 from 1925 (the "Plasto-Vertrieb patent") which, Rose Art states, claims a mouthpiece which includes only the piece which comes into contact with the mouth and not the flexible tube attached to it. (Def. Pre-Markman Hr'g Br. at 22.) Rose Art contends that a person skilled in the art would understand this prior patent to mean that "mouthpiece" is never used to describe a connector.

The preferred embodiment of the '886 patent which is seen in figs. 1 and 4 has a mouthpiece which may be released or separated from the housing. ('886 patent, col. 4, ll. 22-23.) The fig. 8 preferred embodiment of the '886 patent has a mouthpiece which is the end of a tube connected to the barrel of the housing. ('886 patent, col. 3, ll. 21-22.) The description of fig. 8 in the '886 patent specification states "connected to one side of the barrel 20 is a tube 26 formed at its free end with a mouth piece 27. In this embodiment, therefore, air is blown through the mouth piece 27 and tube 26 into the barrel 20 . . . ." ('886 patent, col. 3, ll. 21-24.) Since the mouthpiece on the fig. 8 embodiment is part of the connector, the term "mouthpiece" cannot be construed to exclude connectors. Vitronics, 90 F.3d at 1583-84. Moreover, since the patent does not distinguish between the materials which could be used for this connector, the term cannot be construed to exclude connectors which are made of flexible plastic tubes. In fact, the specification states that the apparatus may "be produced from a variety of materials, one typical material being plastics." ('886 patent, col. 3, ll. 29-30.) Accordingly, the term

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"mouthpiece" as used in both the '886 and '300 patents is construed as "that part of the apparatus which is placed in the mouth to introduce air into the housing where it moves over the pen and out the nozzle's outlet orifice." Since the entirety of the intrinsic evidence with regard to this term is not ambiguous, the Court did not consider the extrinsic evidence submitted by the parties with respect to this term.

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b. "Movable" or "Moved"

The terms "movable" and "moved" are found in Claim 5 of the '477 Patent. See '477 Patent col. 10 ll. 3-4 ("elongate members being movable within said one or more shafts from an open position to a closed position"); id. col. 10 l. 17 ("elongate members are moved to said open position"). Millipore contends that the term "movable" should be given its ordinary meaning, namely "capable of being moved." Millipore further argues that the term "moved" should be construed to refer to the past principle of the verb to move, i.e., "to change position." In making this argument, Millipore relies on dictionary definitions.

As noted above, when the meaning of claim language is readily apparent, "general purpose dictionaries may be helpful." Phillips, 415 F.3d at 1314. Consequently, I adopt Millipore's construction of the terms "movable" and "moved," as being respectively "capable of being moved" and the past principle of the verb to move, i.e., "to change position." See Webster's Third New International Dictionary at 1479-80 (2002).

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The Meaning of "Movable"

Phillips teaches that words should generally be given their ordinary and customary meaning, particularly from the vantage point of a person of ordinary skill in the art. 415 F.3d at 1313. (This provides the objective baseline from which claim construction should begin. Id.) The parties predictably offer competing versions of the meaning of "movable."

<table>
<thead>
<tr>
<th>Plaintiff's construction</th>
<th>Defendants' Construction</th>
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<tbody>
<tr>
<td>able to be moved, or possible to move</td>
<td>movable from space to space or by rotation within a single space according to the rules of the game during game play</td>
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(1) Innovation's Proposed Construction

Innovation first insists that "movable" must be given its plain meaning; and adds that the defendants did not seek construction of "movable" despite having had an opportunity to do so during the Court's Markman proceeding. Unsurprisingly, Innovation equates plain meaning with a generous construction of "movable"; that "movable" be defined as it is in the dictionary: "able to be moved" (The Oxford American Dictionary (1980)) or "possible to move" (The American Heritage Dictionary of the English Language, 4th ed. (2006)). Innovation submits that the defendants fail to overcome the presumption that a claim term carries its ordinary and customary meaning, and therefore fail to demonstrate a reason to narrow the scope of the claim term from that meaning. Moreover, Innovation insists, the defendants' proposed construction (which begins with repeating the term it seeks to construe, then adding 21 additional words to modify "movable" rather than define the term) is contrary to its plain meaning. 13

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12 The plaintiff relies on Eli Lilly and Co. v. Aradigm Corp., 376 F.3d 1352, 1360 (Fed. Cir. 2004), in which the court determined that the defendant had waived its right to request construction of relevant claim, and had "thereby implicitly conceded that the meanings of the terms in [the relevant claim] are clear and not in need of construction." (The defendant
had never requested the district court construe the relevant term, and never offered a construction of the claim until all of the evidence was presented to the jury. Id.)

13 Innovention points out that it used additional wording beyond "move" when it intended to mean movement within the rules of the game; for example, each of claims 39 and 40 recite "each turn comprising moving, either a translational or a rotation, a piece" and go on to add "wherein moving a piece consists of a movement one space in a horizontal, vertical, or diagonal direction to an unoccupied adjacent space." Finally, Innovention seeks to overcome the defendants' argument that it is estopped from asserting a broad construction of "movable" by asserting that it did not contrast the stationary deflecting pieces with movable key game pieces; rather, Innovention states that it distinguished the key pieces of its claims from the deflecting pieces of the prior art by pointing out that the deflecting pieces "are two-sided mirrors", and as a result did not meet the "non-mirrored" requirement of the key pieces. In distinguishing Swift, Innovention stated:

[the Swift patent] fails to disclose that some of the game pieces have no mirrored surfaces (non-mirrored), as recited, for example, in independent claims 15, 25, 31, 40 and 41. Accordingly, Swift also fails to disclose non-mirrored game pieces that are movable, as recited in independent claims 31 and 41.

(2) Defendants' Proposed Construction

The defendants seek a contrary construction of "movable." They insist that the patentee intended to mean something more than "not cemented to the Earth"; defendants further suggest that the claims of the '242 Patent use the word "movable" to mean more than something that can be removed from the game board when the game is being disassembled. What Innovention is referring to, say defendants, is "moves that players make according to the rules of the game." 14 Accordingly, defendants submit that "movable" must be construed as: "movable from space to space or by rotation within a single space according to the rules of the game during play."

14 Indeed, during oral argument, counsel for defendants emphasized that, in the board game playing context, the concept of the root "move" is a term of art: telling your opponent "your move!" means none other than suggesting that it is your opponent's turn to move one of the game pieces on the board.

Because the claims of the '242 Patent themselves define "moving" as either "translational or rotation" of a game piece, and also specify that moving a piece "consists of movement one space in a horizontal, vertical, or diagonal direction to an unoccupied adjacent space" or that it consists of "remaining in the same space and rotating the piece", something limiting the plaintiff's advocated construction of the term is explicit in the claim terms. The written description of the '242 Patent confirms that there are two kinds of movement relevant to game pieces, say defendants: (1) translational movement from space to space or (2) rotational movement within a space.

(3) The Court's Construction

As this Court previously noted in its February 19, 2009 Order and Reasons:

[The] key pieces disclosed in the Swift reference are permanently fixed to the game board and, therefore, cannot be moved prior to or during game play. The key pieces of the '242 Patent, by contrast, may be positioned in different spaces at the beginning of each game and can also be moved during game play. There are thus two possible distinctions that may have been intended by the plaintiff with the addition of the term "movable" key pieces to claims 31, 39, 40 and 41. Which of those distinctions was in fact intended by the plaintiff will be a question for the Court to determine during its claim construction analysis.

Now faced with this task, though belatedly so, the Court begins with the words of the claims themselves. Claims 31, 39, 40, and 41 invoke the concept of "movable."
Claim 31, for example, discloses:

A board game for two opposing players or teams of players comprising:

- a game board, movable playing pieces having at least one mirrored surface, movable key playing pieces having no mirrored surfaces, and a laser source,

wherein alternate turns are taken to move playing pieces for the purpose of deflecting laser beams, so as to illuminate the key playing piece of the opponent.

Claim 39 discloses:

A method of playing a game by opposed players; said game comprising two sets of distinguishable playing pieces, each set having movable pieces with no mirrored surfaces, of which one is a key piece, and pieces with at least one mirrored surface, a game board consisting of a first end, a second end, and a plurality of rows and columns, intersecting to form a plurality of spaces, the method comprising the steps of: placing each player's set of playing pieces on the game in a predetermined starting configuration; and alternating turns, each turn comprising moving, either a translation or a rotation, a piece followed by activation of a laser, said alternating moves continuing until one player illuminates the opposing player's key piece; wherein moving a piece consists of a movement one space in a horizontal, vertical, or diagonal direction to an unoccupied adjacent space.

The Court adopts a slightly modified construction of "movable." The Court finds that, based on the claim language and the plain meaning of the term, "movable" means "capable of movement as called for by the rules of the game or game strategy."

--- Footnotes ---

15 The defendants' posited definition contains limitations not inherent in the ordinary meaning of "movable" and would render redundant other claim language, while the plaintiffs' posited construction is too far removed from the claim language and its contextual written description. The Court also notes that prosecution history appears to favor a less cramped construction of "movable", contrary to the defendants' suggestion, as noted by the Court in its February 19, 2009 Order & Reasons, given that the pieces in Swift were permanently fixed to the game board.

--- End Footnotes ---

E. "Movable"

Tessera proposes that the Court adopt the TI construction of "movable": "In the operation of the assembly, the terminals are capable of being displaced relative to the chip by external loads applied to the terminals, to the extent that the displacement appreciably relieves mechanical stresses, such as those caused by differential thermal expansion which would be present in the electrical connections absent such displacement." See TI Order at 19. Samsung proposes "capable of being moved."

The Court finds that Tessera's proposed construction is more appropriate. Movable, in the context of the claims at issue, is a term of degree. The claim term means movable enough to appreciably relieve mechanical stresses. Thus, "movable" means that "in the operation of the assembly, the terminals are capable of being displaced relative to the chip by external loads applied to the terminals, to the extent that the displacement appreciably relieves mechanical stresses, such as those caused by differential thermal expansion which would be present in the electrical connections absent such displacement."

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1. Movable Bridge.

The Court believes that the term "movable bridge" is not clear on its face to one of ordinary skill in the art and that, therefore, construction is warranted. The parties agree that the term refers to contact arms 50 and 70, listed in the specification. See Leviton's Memo at 18; Defendants' Memo at 29; Defendants' Presentation at 33, 36. The patent does not any where else define or reference, however, either "movable bridge" or contact arm, and thus the term "movable bridge" needs constructing.

Leviton points out that the examiner used "movable bridge" in communications with it during prosecution of the '766 patent. See Leviton Memo, Exhibit D, Examiner's Amendment at 2-3. The examiner merely restates the term, however, and does not further elucidate its meaning. See id. The Defendants' note that the '766 patent's re-examiner, reasoning that "all of the unfixed or non-permanent electrical connections in the claim are designed as 'capable of being connected,' whereas the connection between the movable bridge and the first electrical conductor is designed as being 'electrically connected,'" construed "movable bridge" as always connected to the "first electrical conductor." Defendants' Memo, Exhibit F, Inter Partes Reexamination at 2, 3, 6-8. Because "movable bridge" is not clear on its face to one of ordinary skill in the art, and because the patent does not, either in the claims or specification, give meaning to the term, it is appropriate to look to extrinsic evidence such as dictionaries and textbooks. See Markman v. Westview Instruments, Inc., 52 F.3d at 980 (stating that it is appropriate to consult extrinsic sources, such as dictionaries, learned treatises, and expert testimony, if ambiguity persists after reviewing intrinsic sources).

The McGraw-Hill Dictionary of Scientific and Technical Terms defines "bridge" as "[a]n electrical shunt path." Defendants' Memo at 29 (quoting McGraw-Hill Dictionary of Scientific and Technical Terms 268 (5th ed. 1994)). A "shunt path" is "an electrical path in which components are each connected in parallel (i.e. to the ends of the circuit)." Defendants' Memo at 29 (citing McGraw-Hill Dictionary of Scientific and Technical Terms 1443, 1818, 2002 ("shunt . . . [ELEC] 1. A precision low-value resistor placed across the terminals of an ammeter to increase its range by allowing a known fraction of the circuit current to go around the meter. Also known as electric shunt. 2. To place in parallel with another. parallel . . . [ELEC] Connected to the same pair of terminals. Also known as multiple; shunt. terminal . . . [ELEC] 1. A screw, soldering lug, or other point to which electric connections can be made. Also known as an electric terminal. . . . 3. One of the electric input or output points of a circuit or component."). Leviton does not dispute the Defendants' interpretation of the terms defined in the McGraw-Hill dictionary.

Based upon the claims, specification, re-examiner's statements, and the definitions extracted from the McGraw-Hill Dictionary, the Defendants propose that the term "movable bridge" be construed as: "At least one moveable arm that is always electrically connected to the first electrical conductor and that has the ability to create a parallel conductive path between the first, second, and third electrical conductors." Defendants' Presentation at 32. Citing its expert Dr. De La Ere's testimony, Leviton contends that the Defendants' construction is wrong, because the claim language refers only to the creation of a "single electrical connecting point," rather than two distinct electrical connecting points as would be required for a "parallel conductive path" to be created. Leviton's Memo at 18; De La Ere Declaration P 22, at 11. The Defendants counter, however, that the fact that the unbroken circuit paths constitute but a "single point" does not mean that the circuit does not have "separate conductive paths." Memorandum of Points and Authorities Further Supporting Defendants' Claim Construction for U.S. Pat. No. 6,864,766 at 11 ("Defendants' Response"). The Defendants support that assertion by pointing out that Dr. De La Ere conceded that the device claimed in the '766 patent would contain a first, second, and third electrical conductor when each of the conductive paths is electrically connected to the other, and would maintain electrical conductivity from the line terminals to the downstream terminals, even if the contact in the device was damaged such that it would not conduct electricity to the user accessible load terminals. See Defendants' Response at 11; Defendants' Response, Exhibit B, Deposition of Jaime De La Ere at 64:8-18 (taken August 31, 2006)("August 31 De La Ere Deposition"); Id. at 73:7-17.

The Court disagrees with Leviton's position that "movable bridge" is clear on its face to one of ordinary skill in the art. See Leviton Manufacturing Co., Inc.'s Responsive Brief on Claim Construction, Exhibit D, Plaintiff's Proposed Claim Construction of the '766 Patent, filed September 15, 2006 (Doc. 115). The Court also concludes that the construction Leviton proposes for the term, "a movable bridge is a movable structure," serves to make the term more open ended and less...
certain than it already is. Id. Given those conclusions, finding that there is sufficient prosecution history to support the "is always electrically connected to the first electrical conductor" portion of the Defendants' proposed construction, see Phillips v. AWH Corp., 415 F.3d at 1317 (the prosecution history is intrinsic evidence that should be considered in determining the meaning of claims); Defendants' Memo, Exhibit F, Inter Partes Reexamination at 2, 3, 6-8, finding that intrinsic sources leave the term "movable bridge" ambiguous, and concluding that the dictionary derived meaning the Defendants put forth clarifies the term, see Markman v. Westview Instruments, Inc., 52 F.3d at 980 (stating that it is appropriate to consult extrinsic sources, such as dictionaries, learned treatises, and expert testimony, if ambiguity persists after reviewing intrinsic sources); McGraw-Hill Dictionary of Scientific and Technical Terms at 268, 1443, 1818, 2002, the Court will adopt the Defendants' proposed construction of "movable bridge."

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D. "Moveable"

Claims 8, 26, and 40 describe the mobile workstation as being supported by "a moveable chassis." (Joint Claim Construction Statement at 6). The Plaintiff defines the term moveable as "adapted for mobility." (Joint Claim Construction Statement at 6). The Defendant counters with a broader definition and describes the term as "capable of being conveyed from one place to another." (Joint Claim Construction Statement at 6).

The Defendant argues that its limited definition of "moveable" is more consistent with the ordinary meaning of the term. The Defendant argues that many things can be moveable, and yet not mobile. In this vein, the Federal Circuit has cautioned against district courts reading limitations into terms from the specifications in the patent. See, e.g., Phillips, 415 F.3d at 1323. However, Phillips also made clear that "the purposes of the specification are to teach and enable those of skill in the art to make and use the invention and to provide the best mode for doing so." Id. Sometimes, it is clear from the patent documents that "the claims and the embodiments in the specification [are] to be strictly coextensive." Id. This is such a case. Here, the name of the invention is a "Mobile Clinical Workstation." (the '178 patent, Col. 1). In the "Summary of the Invention," the invention is described as "meet[ing] the needs [of] a mobile workstation that includes a wheeled chassis. . . . A medical practitioner making the rounds can push the mobile workstation from room to room..." (the '178 patent, Col. 2, lines 61-62). Every drawing of the chassis has wheels attached to it. Claim 1 says that the mobile workstation is comprised of a "wheeled chassis." (the '178 patent, claim 1). Even when the chassis is described as "moveable," it is still preceded as being part of "a mobile workstation." (the '178 patent, claims 8, 26, 40). Any person skilled in the art would recognize that the workstation was meant to be wheeled around by practitioners. It is clear that the moveable chassis is indeed adapted for mobility, and not meant to be capable of being conveyed - by any means - from one place to another.

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s. "Movable Element" (Claim 34)

121. This claim limitation uses the term "element" which is the equivalent of "means" for the same reasons stated above. The terminology "movable element" has not been shown to have a generally understood meaning in the art. Cf., Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996) ("detent mechanism" had well-understood meaning in the field). This term is neither mentioned nor defined in the specification of the '656 patent. The term finds its first appearance in Claim 34 where it is defined in purely functional terms.

122. The specific words chosen for this element by the patentee show an intent to define the claim language in the § 112 P6 format. The word "element" is modified by "movable", a functional description. The "element" or means is also described principally in terms of its five functions: (1) being disengaged from the driving surface on the cam before entry of the combination; (2) for projecting a sufficient distance; (3) so that movement of the driving surface on the cam moves the movable element which in turn causes the movable link member to be moved; (4) thereby permitting the lever to engage the cam surface; and (5) so that movement of the cam surface moves the lever. The "element" is thus described in terms of what
it does, i.e. its function, not in terms of what it is -- its mechanical structure -- thus bringing the claim limitation within § 112 P6.

123. In the specification of the '656 patent, the movable element or means is described as a spherical ball which is normally positioned below the upper surface of the solenoid housing and out of contact with the dial cam. When the solenoid is actuated, the spherical ball can project, extend or protrude outwardly of the upper surface of the solenoid housing so as to project into the path of a protrusion or boss on the dial cam. Further rotation of the dial cam causes the protrusion or boss to contact the spherical ball and move the solenoid housing linearly. Movement of the solenoid housing causes the lower end of the cantilever arm to be displaced from the recess on the upper surface of the solenoid housing allowing the lever arm to be released, thereby permitting the nose of the lever to engage the cam surface so that further rotation of the dial moves the lever arm to pull the bolt.

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124. This limitation should be construed as a means-plus-function claim element for the same reasons as "movable element"; the term "element" is the equivalent of "means". There is no evidence that a "movable link element" has any commonly understood meaning in the field. Cf., Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996) ("detent mechanism" had well-understood meaning in the field). In the '656 patent, the "movable link element" is defined as a spherical or curved surface detent ball 96 which can project, extend, or protrude outwardly of the solenoid housing to a detented or engagement position upon actuation of the solenoid. Col. 6, lines 12-22. Even though this element may be defined in terms of some minimal structure, "the recitation of some structure in a means-plus-function element does not preclude the applicability of § 112(6)". Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1536 (Fed. Cir. 1991).

125. In Claim 31, the "movable link element" is defined primarily in terms of its function. The term "movable" modifying "link element" shows an intent to define the term functionally -- that the link element is movable, rather than being defined in a particular structural way. The "movable link element" is also defined by the words which follow, principally in terms of seven functions: (1) being movable from a withdrawn position; (2) being movable to an engagement position; (3) being movable in such a way that at least part of the cam engages the movable link element; (4) being positioned substantially at the withdrawn position; (5) being movable to the engagement position only after entry of the combination; (6) wherein the cam contacts and moves the movable link element; and (7) movement of the link element by the cam causes the lever moving element to move the lever.

126. In the specification of the '656 patent, the movable link element is identified as a spherical or curved surface on detent ball 96. In connection with the portion identified as a "movable link element", actuation of the solenoid causes the spherical detent ball to move in a straight line from a first position within the solenoid housing to the detented position where the ball projects, extends or protrudes above the top of the solenoid housing within the path of a boss on the periphery of the dial cam. Movement of the solenoid housing releases the lower end on the cantilever arm which causes the arm to shift position and move the lever into engagement with the dial cam.

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127. This claim limitation defines a movable link member "for holding the lever out of engagement with the cam surface before entry of a combination and for releasing the lever after entry of the combination. Thus, the movable link member is defined in terms of an element for performing the described functions. As previously noted, merely because an element does not include the word "means" does not prevent that element from being considered as a mean-plus-function element under § 112 P6.

128. This term is neither used nor defined in the description of the '656 patent. The terminology appears for the first time in
the claims where the element is defined in purely functional terms. There is no evidence that a "movable link member" has a well-understood meaning in the art. Cf. Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996) ("detent mechanism" had well-understood meaning in the field).

129. The prosecution history demonstrates that the patent applicants used the word "member" and "element" interchangeably, since many of the claims were amended to change from one term to the other. In fact, Claim 43 was expressly amended to change from "movable link element" to "movable link member". PX 45, p. 140, 169, 194. The reason for this change was not for substantive reasons, but simply to "more clearly define the invention". Id, p. 169, 194. Consequently, no substantive change was intended by the patent applicants. Other claims were similarly amended to use the terms "element" and "member" interchangeably. See PX 45, p. 139, 168-9, 193-4 (Claim 57, "element" to "member"); p. 139, 169, 194, 237 (Claim 58, "element" to "member"); p. 168, 193, 237 (claim 56, "member" to "element"). These amendments, as well, were made to eliminate indefiniteness, and to more clearly define the invention, not for substantive purposes. Id, p. 169, 194. This demonstrates the applicants' intention to use the term "member" synonymously with "element". Since "element" has been shown hereinabove to be synonymous with "means", "member" is also synonymous with "means". Thus, while this claim limitation does not use the term "means for", its language is equivalent to means-plus-function format under the principles described above: the use of the term "member for" is synonymous with "means for". Even though this claim limitation may be defined in terms of some minimal structure, the recitation of some structure in a means-plus-function element does not preclude the applicability of § 112 P6. Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1536 (Fed. Cir. 1991).

130. In these claims, the "movable link member" is defined primarily in terms of its functions. The term "movable" modifying "link member" shows an intent to define the term functionally -- that the link member is movable, rather than being defined in a particular structural way. The "movable link member" is also defined by the words which follow, principally in terms of two functions: (1) holding the lever out of engagement; and (2) releasing the lever. This demonstrates a clearly expressed intent to claim in § 112 P6 format. Clearly, the applicants did not attempt to claim the "member" in terms of structure, but rather functionally in terms of its two stated functions. Consequently, this claim limitation should be construed according to § 112 P6.

131. In the specification of the '656 patent, the structure disclosed associated with the movable link member comprises a lever held up out of contact with the dial cam by a cantilever arm which is an integral part of the lever and which includes a movable spring-loaded pin contained within a bore. The lower end of the spring-loaded pin normally rests within a recess in the upper surface of the solenoid housing. The solenoid housing (which is also called a rigid body or element) slides in a channel to release the lever from its disengaged position. Consequently, after the combination has been entered, the movable link member releases the lever.

2. "Movable Sealing Baffle(s)"

The parties' other claim-construction dispute concerns the meaning of the term "movable sealing baffle" in the following two limitations: "one or more parallel, movable sealing baffles operatively connected to the chamber and extending along the height of the product for forming a seal between the product and the sidewall," (Doc. 66, Ex. A, cl. 19d); and "a movable sealing baffle operatively connected to the chamber and extending the height of the product for controlling fluid flow through the chamber," (Id. cl. 35c).

As to these limitations, Thermal and Dade propose competing interpretations, Thermal's toward abstraction, and Dade's toward a preferred embodiment. Thermal suggests that the term "movable sealing baffle" should be read broadly to include a baffle capable of partial movement, flexing, vibration, and compression in response to force. (See Doc. 80 at 37). Dade contends that the term "movable sealing baffle" describes a unitary baffle capable of being moved, in its entirety, into or out of a sealing arrangement between the sidewall and the stored product, so as to change the volume of the chamber to account for different sized loads of stored product. (Doc. 70 at 11). Thermal, in response, points out that Claims 19d and 35c do not say a "baffle that's movable in its entirety.' It just says, 'a movable sealing baffle.' Dade is seeking to add extraneous limitations." (Id. at 15).
To be sure, the Court cannot read extraneous limitations into a claim. See Intervet America, Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989). Nevertheless, "in judicial 'claim construction' the court must achieve the same understanding of the patent, as a document whose meaning and scope have legal consequences, as would a person experienced in the technology of the invention." Toro Co. v. White Consol. Indus. Inc., 199 F.3d 1295, 1299 (Fed. Cir. 1999). This is not achieved by simply relying on a dictionary of general linguistic usage. Id. The meaning of a claim is to be understood in context. See id.; Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1251 (Fed. Cir. 1998).

Although, in certain contexts, the term "moveable" may be understood, in a very general sense, to connote any type of movement, including flexing, the context of the instant claims does not admit such a meaning. Thermal's construction of the term "movable sealing baffle" conflates that term with the term "flexible sealing member." Neither the claim, nor the other intrinsic evidence, would put a person of ordinary skill in the art on notice of such a meaning. Rather, the movement about which the 557 Patent gives notice is a baffle's capacity to be moved, as an entire unit, into and out of a sealing orientation in respect to the chamber and the stored product. 5 The Court thus concludes that the term "movable sealing baffle" carries the following meaning in the following claims:

5 This understanding of the term "movable sealing baffle" extends to both Claims 19 and 35. The Court may undertake a more precise construction of that term once the issues, or contested embodiments, are drawn into sharper focus. Suffice it to say that the Court views the probable function of the movable sealing baffle(s) as being to reduce the volume (size) of the "first" or "second" volume into which the fluid control unit injects fluid. Variations in the amount of stored produce could create a need to reduce the volume into which fluid is injected. It appears, for instance, that a chamber half full of stored product would require a movable sealing baffle and a flexible sealing member to work together, in relation to the stored product, to create a division between -- thus, creating -- the first and second volumes.

Claim 19d: one or more parallel structures, operatively connected to the chamber and extending along the height of the product, that deflect, check, or regulate fluid flow by being positioned, as entire units, to create a seal between the sidewall and the stored product; and

Claim 35c: a structure, operatively connected to the chamber and extending the height of the product, that deflects, checks, or regulates fluid flow by being positioned, as an entire unit, to create a seal between the chamber and the stored product.

6 Claim 19 explicitly limits the sealing orientation to between the sidewall and the product. Claim 35 appears to contain the same limitation as the baffle "extends the height" of the product.

Safety 1st's argument with respect to the "movably connected" limitation of claim 36 is that it would be counter to the ordinary meaning of the chosen claim language if the "suspension assembly" and "support frame" were permitted to have in
common a major structural component, namely, one of the legs. In support, Safety 1st cites to Maxwell v. J. Baker, Inc., 86 F.3d 1098, 1105 (Fed. Cir. 1996), where we refused to construe a claim that separately recited a "shoe upper" and a "tab" that extended along the shoe upper in a manner that would have allowed the "tab" to include a portion of the "shoe upper." In similar fashion, Safety 1st asserts that "if one component is said to be 'movably connected' to another, and if 'movably connected' is given its ordinary meaning, it would seem that the two components would have to be separate.

The problem with this argument, as Fisher-Price notes, is that nothing in the plain meaning of the phrase "'movably connected' [inherently] eliminates the possibility of common portions shared between the members so connected." In fact, Fisher-Price compellingly argues that such a construction would read out a preferred embodiment of the invention. Finally, the district court noted that Fisher-Price put forth expert testimony to support its infringement theory. Fisher-Price, 279 F. Supp. 2d at 541. The expert used demonstrative exhibits and models of the accused products to support his testimony. Id. On the other hand, Safety 1st "adduced no expert opinion to the contrary, but merely argued though counsel that the accused products did not meet the 'movably connected' limitation." Id. As the district court noted, "the jury rejected [Safety 1st's] argument, as it was entitled to do." Id.

Because the district court did not err in its construction of the "movably connected" limitation, and because there is substantial evidence to support the jury's factual finding that the Bouncenette products meet this claim limitation, we will not disturb the jury's infringement determination.

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H. "Movably Mounted" and "Movably Suspended"

The next terms to construe are "moveably mounted" found in claim 1 of the '677 patent and "moveably suspended" found in claim 7 of the '677 patent. Hysitron asserts that these terms are common and easily understandable and do not require clarification. Joint Claim Construction Statement at 48, 58. To the extent the terms require a definition, Hysitron offers "the pick-up plate be mounted in a manner that enables it to move relative to the drive plate." Id. MTS asserts the terms mean "directly attached to springs or to some other compliant suspension element allowing movement or relative motion." Id. at 49, 58. The dispute over these terms echoes the dispute discussed in the previous section, and MTS's construction fails for the same reason. The Court construes "moveably mounted" and "moveably suspended" to mean that "the pick-up plate be mounted in a manner that enables it to move relative to the drive plate."
As with the previous two groups of terms, Crane urges the court to adopt the plain meaning for "movement by gravity." The defendants assert that claim differentiation warrants the restriction of the patents' use of "movement by gravity," generally, to "movement only by gravity." The defendants points to three claims in which the term "gravity" is used to move the beverage containers.

15. The method of claim 14, wherein the step of transferring one of the beverage containers from the selected container queue includes releasing said first-in-line container for movement by gravity into said robotic assembly.

57. The vending machine of claim 35, including release means cooperatively connected with said container holding means and activatable by said beverage container capture means for releasing by gravity a selected container from said container holding means to said beverage container capture means.

86. The vending machine of claim 85, wherein said robotic assembly is operable to remove said selected products from said at least one inclined queue by sliding said selected products with the help of gravity into said robotic assembly. '930 Patent, cls. 15, 57 & 86.

Generally, the defendants contend that the claims imply that the force of gravity may influence the movement of the product in varying degrees. In other words, because claims 57 and 86 include the terms "releasing" and "help of," respectively, use of the term "movement" in claim 15 must mean that gravity alone causes the product to move into the robotic assembly.

The court is not persuaded. Nothing in claim 15 requires that gravity alone causes the product to move into the robotic assembly. And, the specification expressly states that "the principles of this invention do not require movement of the products . . . to be accomplished entirely by gravity." This statement challenges the defendants' construction. '930 Patent, col. 10, 1. 46 (emphasis added).

For these reasons, the court rejects the defendants' proposed construction that "movement by gravity" means "movement only by gravity." The claim language needs no additional construction.
history, or in the extrinsic evidence to conclude that "movement" might be confusing to jurors, or that it is used in some technical sense recognized by those skilled in the art. The parties' agreement to the meaning of "initially ceasing to be in motion" as discussed above, supports this analysis.

To simply define "movement of the person" in terms such as "motion of the person" does not add much clarification. One skilled in the art, and the average juror, would likely understand that these are synonyms, and apply their ordinary meaning. Claim construction "is not an obligatory exercise in redundancy." U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997). The court finds no reason to construe "movement of the person" in these claims.

4. "Movement of the foot of the person." Used in Claims 27(b), 31, 44(b), and 55.

For the reasons discussed above, the court finds that this term has no special or technical sense from the point of view of one skilled in the art. This analysis is supported by the parties' agreement to the meaning of "foot initially ceasing to be in motion." The term is non-technical language, used in its ordinary, everyday sense, and needs no further construction.

12. movement tracking capability

This term appears in claims 25 - 38, 43, and 53 of the '213 patent and in claims 10 - 12 of the '283 patent. The plaintiff proposes a construction of "the processor receives information corresponding to the path of contact as it moves laterally across the face of the work platform." The plaintiff additionally avers that "movement tracking capability' is distinct from the 'occurrence of contact,' which is the act of causing contact to occur at a location on the work platform." The defendant's counter-construction is "the processor detects new locations of a block (object) while it is moved on the working platform." The defendant additionally urges that "laterally' means from side to side." The court concludes this term means "the ability to track the movement of an object."

E. Longitudinal Movement

Finally, the parties dispute the meaning of the phrase "the track incrementally moves longitudinally relative to the substrate" in claim 20 of the '518 Patent. Claim 20, in pertinent part, reads as follows:

An apparatus for printing on substrates having a tendency to deform when exposed to energy from a curing head comprising:

- a substrate support to support a substrate for printing thereon;
- a printhead track extending transversely of the support having a printhead carriage moveable thereon;
- a drive operative to impart longitudinal movement between a substrate on the support and the track;
- a carriage motor operative to move the carriage in a scanning motion transversely on the track;
- at least one ink jet printhead on the carriage;
- a controller operative to control the drive, the [carriage] motor and the printhead, to selectively jet UV curable ink onto a substrate on the support from the printhead with the carriage moving bidirectionally in successive transverse rows as the track incrementally moves longitudinally relative to the substrate.

L&P contends that the use of the word "relative" in the phrase "the track incrementally moves longitudinally relative to the

substrate" means that either the printhead track or the substrate may move relative to the other. Vutek maintains that claim 20 only refers to movement by the printhead track.

This dispute is significant in light of the two possible arrangements of the printhead discussed in the specification. The first, a "fixed bridge" embodiment, requires the printhead to travel transversely, or side-to-side, over a substrate along a "bridge" that remains in a fixed position on the printing machine frame. In this embodiment, a conveyor belt moves the substrate longitudinally under the "fixed bridge." The preferred embodiment teaches the opposite arrangement. In the preferred embodiment, the substrate remains in a fixed position while the "bridge" moves longitudinally along the "longitudinal tracks" labeled numbers 133b and 134b in Figure 1 of the specification.

While the specification clearly allows for either the "bridge" or the substrate to move relative to the other, the specific apparatus described in claim 20 does not encompass both of these arrangements. Claim 20 refers to the "bridge" as "a printhead track extending transversely of the support having a printhead carriage moveable thereon." (Emphasis added). The claim further provides that "the track incrementally moves longitudinally relative to the substrate." (Emphasis added). The subject of the verb "moves" is "track," thus clearly indicating that the "track," not the substrate, is the object that must move.

This interpretation is consistent with the use of the terms "move" and "relative to" in the specification. For example, when describing the "fixed bridge" embodiment, the specification states that the conveyor belt is "used to move the [substrate] relative to a printhead on a fixed bridge." (Emphasis added). It is clear from the description of the "fixed bridge" arrangement that the substrate, not the bridge, is the object that must move in the printing process. Likewise, the plain language of the phrase "the track incrementally moves longitudinally relative to the substrate" requires the "track," or "bridge," to move, not the substrate.

7. "moving a pair of spaced apart heating electrodes against another surface of said terminal to form a current path between said electrodes through a portion of said terminal extending there between"

This phrase appears in Claims 1 and 16. Plaintiff's proposed construction is as follows: "moving two side-by-side heating electrodes into compression contact with a surface of the terminal (other than a surface in contact with the wire) with sufficient pressure to establish and maintain electrical continuity between the electrodes and the terminal to allow a flow of electrical current through the electrodes and the portion of the terminal between the electrodes." Defendants, on the other hand, assert that the disputed phrase means "moving two electrodes against a surface of the terminal other than the surface in contact with the wire to allow a flow of electricity between said electrodes through a portion of said terminal extending therebetween."

Looking first to the beginning of the disputed phrase "pair of spaced apart heating electrodes," Defendants proposed construction would replace this phrase simply with "two electrodes." Such a construction is overly broad, and completely ignores the terms "spaced apart" and "heating." Plaintiff, on the other hand, proposes that "pair of spaced apart heating electrodes" be construed as "two side-by-side heating electrodes," which is more consistent with the claim language itself as well as the specification of the '015 Patent. Indeed, in the drawings and written description of the '015 Patent the heating electrodes are consistently depicted and described in a side-by-side relationship.

The parties disagreement regarding the remainder of the disputed phrase centers on the term "against" or, perhaps more accurately, the phrase "moving . . . against . . . said terminal to form a current path." Plaintiff argues that a person of ordinary skill in the art would understand this phrase to involve movement of the electrodes into "compression contact" with the terminal with sufficient pressure to establish and maintain electrical continuity. In support of its argument, Plaintiff points to the specification, as well as the testimony of the parties and other extrinsic evidence. For example, the specification states that "[t]he primary function of the fusing apparatus is to bring the free end of the fusing and ground electrodes into compression contact with the tang." '015 Patent col. 4:64-66 (emphasis added). The specification later again describes that "the fusing and ground electrodes are brought down via mounting arm or piston under control of the welding control unit into contact with tang," and that current is applied to generate heat only "once electrical continuity has been established between the fusing and ground electrodes." '015 Patent col. 6:5-10; see also col. 7:19-21 ("fusing electrode is brought down into compression contact with the tang").
Plaintiff also cites the testimony of Defendants' engineer, Douglas Walz, as well as the inventor of the '015 Patent, Edward Riordan. The testimony of both teach that pressure to the electrodes must be applied and maintained in order to establish electrical continuity. See Buckingham Decl., Ex. U at 34-35, 52-54; Ex. V at 67-70. Although, as Defendants argue, the particular testimony cited may relate to the fusing process generally as opposed to the '015 Patent specifically, the testimony is highly relevant to understanding how a person skilled in the art would construe the disputed claim terms.

Last, Plaintiff refers to other extrinsic evidence, namely technical journal papers and patents regarding fusing, that is consistent with the understanding that in order to "form a current path" electrodes must be moved against the terminal with sufficient pressure to establish electrical continuity. See Buckingham Decl. at Ex. P at 598 ("Low pressure when power is first applied can result in a poor contact between the electrode and the tang, resulting in arcing and possible destruction of the tang"); Ex. H at col.3:45-53 ("Downward force is applied by fusing electrode . . . until firm and extensive contact has presumably been established . . . It is then safe to begin passing substantial electrical current"); Ex. J at J01488 ("fusing to take place only when a predetermined electrode pressure is reached"); Ex. K at J01505 ("The most foolproof system is a spring override, which activates the fusing transformer when a given pressure is reached"); Ex. O (during initial stage of fusing, the"objective … is to achieve a consistent, reliable contact between the fusing electrode and the commutator tang prior to initiating current flow").

The Court concludes that a person of ordinary skill in the art would understand the phrase "moving . . . against . . . said terminal to form a current path" to mean movement of the electrodes into compression contact with the terminal with sufficient pressure to both establish and maintain electrical continuity. Accordingly, the Court shall construe the phrase

"moving a pair of spaced apart heating electrodes against another surface of said terminal to form a current path between said electrodes through a portion of said terminal extending there between" consistent with Plaintiff's proposed construction as follows: "moving two side-by-side heating electrodes into compression contact with a surface of the terminal (other than a surface in contact with the wire) with sufficient pressure to establish and maintain electrical continuity between the electrodes and the terminal to allow a flow of electrical current through the electrodes and the portion of the terminal between the electrodes."


Vnus argues the term "moving … along" does not require construction. Defendants argue "moving … along" should be construed as "moving the electrode catheter along the inner wall of the vein while maintaining physical contact between the electrode and the inner wall of the vein while the electrode applies energy to the vein."

The Court, for the reasons stated by Vnus, finds "moving … along" does not require construction.

7. "Moving the instrument in response to motor signals." The surgical instrument of the robotic surgical system is moved by the robot in response to signals received by drive mechanisms or motors/actuators in the robotic arm.

The first claim of the '261 patent describes a method for processing samples mounted on microscope slides that are placed on a platform. See '261 Patent 12:14-25. In addition to other characteristics, the method provides for "moving the platform and a liquid dispenser relative to each other." Id. at 21-22. The second claim of the '261 patent depends from claim 1 and describes the same method with the distinction that "each heating element heats only one slide." Id. at 26-28. The parties dispute the meaning of the language, "moving the platform and a liquid dispenser relative to each other," and each party bases its summary judgment argument on its proposed claim construction. According to plaintiff, the disputed language
means that "[t]here is relative movement between the platform and the liquid dispenser. Relative movement may be accomplished by moving the platform, or the liquid dispenser, or both." (Pl.'s Mem. in Support of its Combined Mot. 7). Defendant, on the other hand, urges that ",[t]his claim language requires moving both 'the platform' and 'a liquid dispenser.' It does not permit moving only one of them." (Def.'s Mem. in Opp. to Pl.'s Combined Mot. 6). Giving rise to the dispute are certain of defendant's slide processing products that -- solely for purposes of arguing the instant motion, the parties agree -- involve a mobile liquid dispenser but a stationary platform.

"[P]atent infringement analysis involves two steps: claim construction, and application of the construed claim to the accused product or process." Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1322, 1326 (Fed. Cir. 2006). The first step, claim construction, requires that the Court construe "only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy." Vivid Technologies, Inc. v. American Science & Engineering, Inc., 200 F.3d 795, 803 (Fed. Cir. 1999). "[T]he words of a claim 'are generally given their ordinary and customary meaning,'" in other words, "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005). A disputed claim term may be interpreted according to ","the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." Id. at 1314.

Plaintiff relies, first, on the plain language of the disputed claims and argues that the phrase, "relative to each other," requires only that either the platform or the dispenser move, since either event would create relative movement. As defendant argues, however, this interpretation negates the conjunctive term "and," as used in the phrase, "moving the platform and a liquid dispenser relative to each other." Plaintiff's expert, Professor Alexander H. Slocum, explains the term "and" from the perspective of an individual with ordinary skill in the art -- for example, an engineer with basic training in physics -- as creating reciprocal frames of reference. The platform is the frame of reference for whether the dispenser moves, and the dispenser is the frame of reference for whether the platform moves. (See Slocum Aff. P 9). Even if, in fact, the platform is static and only the dispenser moves, a tiny observer standing on the platform who sees the moving dispenser would not know whether to attribute the motion she observes to the platform or the dispenser. Thus, at least in theory, both the dispenser and the platform are moving relative to each other. The perspective is similar to that of a passenger who sits on a stationary northbound train next to a stationary southbound train on adjacent tracks. When one or both of the trains begin moving, the passenger will comprehend motion but will not know whether it is his train alone, the southbound train alone or both trains together that are moving.

The difficulty with this position is that it does not account for a third frame of reference created by the requirement that something or someone be "moving" the platform or dispenser. In describing a method of moving the platform or dispenser, the claim language adopts the perspective of the person or thing responsible for causing this movement, not the theoretical perspective of an observer sitting on either the platform or dispenser. While such a theoretical observer may be unable to discern whether movement comes from the dispenser or the platform, the person or thing responsible for moving the platform and dispenser will have this knowledge.

Defendant's expert, Professor Geoffrey Nunberg underscores this understanding from the view of a linguist interpreting the disputed claim language according to rules of grammar. However, "one of ordinary skill in the art" generally refers to an individual with expertise in the field of the patented invention, not someone skilled in the field of language and drafting. See Phillips, 415 F.3d at 1333 (explaining that ",[t]he words of a claim 'are generally given their ordinary and customary meaning,'" in other words, "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention."). Thus, while interesting, Professor Nunberg's testimony is not representative of a person of ordinary skill in the art, and I do not rely on his opinion in resolving the instant dispute.

Plaintiff next argues that its interpretation of the language in claim 1 is more consistent with the articulation of dependent claims in the '261 patent. Plaintiff focuses on claim 3 that describes a "method of processing samples . . . wherein the platform is a moving platform capable of indexing slides adjacent to a stationary liquid dispensing location." '261 Patent 12:29-32. According to plaintiff, depiction of the platform as "moving" necessarily implies that the platform may otherwise be immobile. Defendant counters that the purpose of claim 3 is not to identify the platform as moving, but to provide that it be "capable of indexing slides adjacent to a stationary liquid dispensing location." Defendant also relies upon claim 7 that references "said moving platform" and, thereby, implies that the "said" platform portrayed in claim 1 is mobile. Plaintiff asserts that this language resulted from a clerical error that should have been, and will eventually be, amended. "An error in the prosecution record must be viewed as are errors in documents in general; that is, would it have been apparent to the
interested reader that an error was made, such that it would be unfair to enforce the error." Biotec Biologische Naturverpackungen GmbH & Co. KG v. Biocorp, Inc., 249 F.3d 1341, 1348 (Fed. Cir. 2001). Because nothing suggests that an interested reader would have understood the inclusion of the term "said" to be in error, claim 7 should be read as originally drafted.

The patent specification further supports defendant's position, as the parties agree that none of the preferred embodiments describe a stationary platform. Plaintiff correctly notes that the embodiments do not foreclose the possibility of a stationary platform, but they certainly do not support an interpretation of the claim language as describing a stationary platform. While the Federal Circuit "ha[s] repeatedly warned against confining the claims to [very specific] embodiments" and "strictly limiting the scope of the claims to the embodiments disclosed in the specification," it has also discouraged "divorcing the claim language from the specification." Phillips, 415 F.3d at 1323-24. Appropriate interpretation will consider the full context of the patent. See id. Turning from the platform, plaintiff focuses on the first preferred embodiment's description of the liquid dispenser. The embodiment describes a stationary hammer that helps push liquid from the dispenser onto a slide. See '261 Patent 5:25-51. In order to define the dispenser as including a stationary element, plaintiff characterizes the hammer as part of the liquid dispenser. However, the patent specification defines the hammer as part of the dispensing station, not the dispenser, and plaintiff offers no rationale for a different characterization. See id. 5:25-26 (providing that "the dispensing station comprises a soft hammer . . .").

The file history of the '261 patent also favors defendant. It reveals amendments to the language in claim 1 that include replacing the term "moving platform" with "moving the platform and a liquid dispenser relative to each other." (Pl.'s Mem. in Support of Summ. J. and Claim Construction 10-11). Plaintiff believes that this change underscores the importance of relative motion and the ability to accomplish such motion between the platform and the liquid dispenser without having a moving platform. (Id.). This understanding is inconsistent, however, with the repeated description of "moveable slides" and the use of a carousel in describing the platform, as cited by defendant. (See Def.'s Mem. in Opp. to Pl.'s Combined Mot. 19-24). Plaintiff argues that independent slide heating, and not movability, constituted the Examiner's focus on the patent, so that use of these terms occurred only in passing, not deliberately. Even assuming arguendo that plaintiff is correct, "a patentee's statements during prosecution, whether relied on by the examiner or not, are relevant to claim interpretation." Microsoft Corp. v. Multi-Tech Systems, Inc., 357 F.3d 1340, 1350 (Fed. Cir. 2004). Plaintiff also posits that the term moveable "was appropriate, given that the movement had already [sic] been defined as relative to the liquid dispenser." (Pl.'s Mem. in Support of Summ. J. and Claim Construction Footnote 4). This reasoning cannot provide additional support for plaintiff's position, because it necessarily presumes that plaintiff's argument for relative motion would prevail and thus is circular.

In light of the applicable legal standard, the parties' written submissions, and the argument of counsel, I construe the disputed claim language as follows:

<table>
<thead>
<tr>
<th>Term</th>
<th>Court's construction</th>
</tr>
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<tbody>
<tr>
<td>Moving the platform and a liquid dispenser relative to each other</td>
<td>Moving both the moveable platform and a moveable liquid dispenser relative to each other</td>
</tr>
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</table>

In this case, the parties dispute the construction of claim 5 of the patent. 2 This claim, with the disputed terms highlighted, states as follows:

A method of forming a plurality of grooves in the surface of a road, the method including the steps of rotating a cutting cylinder about an axis which is substantially horizontal and which axis is at an angle to the longitudinal direction of the road, moving the rotating cutting cylinder along the road, and simultaneously, moving said cylinder alternately up above the road surface and down into said road surface, to thereby form a plurality of generally parallel grooves in the road each groove having a forward side wall and a rearward side wall.

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2 On April 11, 2006, the PTO issued an "Ex Parte Reexamination Certificate" which confirmed the patentability of claims 1-
The parties first dispute whether the inventor's use of the term "road" in claim 5 was intended to encompass the cutting of grooves on the shoulder of a road. Defendant asserts that it was intended as such and plaintiff asserts that it was not. The patent does not particularly define the term road and the term's general definition is simply "an open way for the passage of vehicles, persons, and animals." Webster's Third New International Dictionary, 1963 (2002). However, considering the language of the entire patent, including the specification, the court concludes the term road should not be read to include a shoulder.

The primary purpose of the patent is to drain water from the road surface onto the shoulder by cutting grooves on or near the "edge" of the road. See "Background of the Invention," P1; "Summary of the Invention," Column 2, lines 2-4. The grooves secondarily serve as rumble strips to alert a driver to the edge of the road. See "Detailed Description of the Invention," P 8, lines 25-28. For purposes of both, the patent refers to the edge and surface of the road distinct from the shoulder. In addition, the figures representing the embodiment of the invention indicate that the grooves are cut into the road surface not the shoulder. See, e.g., Figs. 2 & 4:

Accordingly, the court construes the term "road" in claim 5 of the patent to mean that portion of the roadway designed or ordinarily used for travel which does not include the shoulder. 3

3 Plaintiff has submitted extrinsic evidence on this subject in the form of the deposition testimony of Inventor Whitney. While the court affords little weight to such after-the-fact testimony, it notes the inventor's recent statement of his former intentions is consistent with the court's construction.

With respect to the second disputed phrase, both parties agree that the method of cutting grooves as defined in the patent requires three simultaneous moves -- moving the cutting cylinder along the road while it also moves up and then down to cut a groove. Defendant states that the language of claim 5 describes a continuous movement through the cutting of at least two or more grooves as opposed to stopping and starting the cutting cylinder between cuts. Plaintiff claims this interpretation is too narrow and asserts that the language also covers a method of cutting whereby the machine, essentially, stops between cuts and then is moved forward for the next cut. This method is referred to as "stopping and indexing." Plaintiff claims that while the preferred method may be continuous, that is not the only method embodied by the claim. In construing the meaning of these disputed terms, the court need look no further than the language of claim 5 itself. First, the claim refers to a method of forming "grooves" rather than a groove. Thus illustrating that more than one groove will be cut during the process. Second, the use of the term "plurality," which refers to a number greater than, one, 4 anticipates the cutting of at least two grooves. Finally, a repetitive cut is consistent with the entire language of the patent which advises that the method of cutting grooves is intended to be continuous. See, e.g., Summary of the Invention; Detailed Description of the Invention, P 7. Accordingly, the court construes the disputed language to mean that the cutting cylinder simultaneously rotates, moves along the road and moves up and down through at least two cuts.

Lastly, the parties dispute whether the phrase "generally parallel grooves" includes end-to-end or "co-linear" grooves such as those depicted in Fig. A of plaintiff's Markman brief:

[SEE FIGURE A IN ORIGINAL]

Plaintiff contends that such end-to-end grooves are anticipated by claim 5 because they are capable of being parallel along their width dimension. However, plaintiff's proposed construction contradicts the very purpose of the patent which is primarily rain drainage and secondarily rumble strips. In addition, it ignores clarifying language in the claim itself. The words of the patent refer to the "formation of transverse grooves in a road." Claim 5 states that such grooves have a "forward side wall and rearward side wall." Claim 5, lines 16-17. End-to-end grooves, which would not lie transverse or crosswise to the longitudinal direction of the road, would not have a forward or rearward side wall as required by claim 5 because their sides would run parallel to the longitudinal direction of the road. Further, the patent figures do not depict end-to-end grooves as the preferred embodiment of the invention. See Figs. 2, 3, & 4:

--- Footnotes ---

5 See Background of the Invention.

6 Thus, they would be more accurately described as having "end walls" rather than side walls.

--- End Footnotes ---

Accordingly, the court construes the disputed language to mean grooves which are arranged side by side with their long sides parallel to each other and which are generally oriented transverse to the travel direction of the road.

C. "Mulch flakes" (claim 1)

Plaintiff's proposed construction:

Defined by the claim.

Defendant's proposed construction:

Irregular platelets with a thickness which is less than the dimensions across the platelet.

Claim 1 discloses a mulch product comprising a seed component and "mulch flakes." The parties disagree whether claim 1's reference to "mulch flakes" requires that the mulch product be in "flake form," which the specification describes as "irregular platelets with a thickness which is less than the dimensions across the platelet." 499 pat., col. 2, Ins. 6-8. The plain language of the claim suggests that claim 1 requires flake form; after all, "flake" means flake. Plaintiff has several arguments in opposition to adopting defendant's construction, none of which is persuasive.

First, plaintiff contends that the term "mulch flakes" is a product-by-process claim, which means that it is "defined at least in part in terms of the method or process by which it is made." SmithKline Beecham Corp. v. Apotex Corp., 439 F.3d 1312, 1315 (Fed. Cir. 2006) (quoting Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 158, 109 S. Ct. 971, 103 L. Ed. 2d 118 (1989)). According to plaintiff, because claim 1 describes how mulch flakes are prepared (by agglomerating and compacting a raw material and then comminuting it), there is no need to include the shape requirement imposed by calling the mulch product a "flake." I disagree. The purpose of product-by-process claims is to allow inventors to define a claim by its process when it "resists definition by other than the process by which it is made." SmithKline Beecham, 439 F.3d at 1315
(citation omitted). Thus, to the extent an inventor can and does describe the claim by means other than a process, such as by describing the shape of a processed product, the plain meaning of that description should not be disregarded. Plaintiff cites no case to the contrary.

Next, plaintiff notes that the specification describes the flake form as a "preference," not a requirement, '499 pat., col. 2, ln. 5, identifies other shapes that may be useful for helping the mulch performing its intended functions, id., col. 2, Ins. 8-11 and appears to use "mulch" and "mulch flakes" interchangeably in the specification, id., col. 1, ln. 59 ("the mulch flakes of the present invention") and ln. 66 ("the mulch flakes of the present invention." If the claims themselves do not distinguish "mulch" and "mulch flakes," plaintiff might have a stronger argument for treating the two interchangeably or for treating "mulch flakes" as a mere preference. However, where claim 1 requires the mulch product to contain "mulch flakes," claim 11 does not, leaving that claim open to the other types of mulch shapes identified in the specification. Later, claims 17-21 build on claim 11 by disclosing a "flaked mulch product." The language within the claims themselves shows that the patentee was well aware of the difference between "mulch" and "mulch flakes" and intended to limit claim 1 to "mulch flakes." Therefore, I will reject plaintiff's construction and adopt defendant's construction of "mulch flakes."

**Court's construction:**

Irregular platelets with a thickness which is less than the dimensions across the platelet.

3. ANALYSIS

3.1 SPECIFICATION

The specification common to all the patents-in-suit uses the term "the present invention" 5 times to describe the 2 embodiments for achieving multifocality. Judge Love in the Vistakon claim construction opinion expressly found that only those 2 ways of implementing multifocality (undulating surface and ion implantation) were disclosed. (Vistakon Claim Construction Decision, 2007 U.S. Dist. LEXIS 5742 at *8-9.) And "each term must be construed to implement the invention described in the specification.” On Demand Mach. Corp. v. Ingram, Inc., 442 F.3d 1331, 1344 (Fed. Cir. 2006).

As originally filed in 1987 (and as issued), Portney's '461 patent announces his invention as follows:

**ABSTRACT**

An improved ophthalmic lens is disclosed which has a plurality of alternating power zones with a continuously varying power within each zone, as well as in transition from one zone to another. In other words, a plurality of concentric zones (at least two) are provided in which the variation from far to near vision correction is continuous, i.e., from near correction focal power to far correction focal power, then back to near, and again back to far, or vice versa. This change is continuous (progressive), without any abrupt correction changes, or "edges". Two versions of the invention are disclosed. In the first version continuous, alternating power variation is accomplished by a continuously changing curvature of the lens posterior surface, thereby altering the angle of impact of light rays on the eye. In the second version continuous, alternating power variation is accomplished by creating non-homogeneous surface characteristics having refractive material indexes which continuously vary in the lens radial direction (out from the optical axis).

(U.S. Patent Application No. 056,050 ("050 App.") at 20; '461 patent (all underscoring in quotations is added unless otherwise noted).) The desired progressive change in power is accomplished in only 2 ways: a constantly undulating surface or ion implantation. The application continues by saying exactly what is "the present invention":

**SUMMARY OF THE INVENTION**

The present invention provides an improved multifocal ophthalmic lens by combining (a) a series of alternating power zones with (b) a continuously varying power within each zone, as well as in transition from one zone to another. In other
words, a plurality of concentric zones (at least two) are provided in which the variation from far to near vision correction is continuous, i.e., from near correction focal power to far correction focal power, then back to near, and again back to far, or vice versa. This change is continuous (progressive), without any abrupt correction changes, or "edges". ('050 App. at 4; '461 patent, col. 2:35-45.) Thus, the "invention" always has two features: (1) a series of alternating power zones, and (2) continuously varying power across the entire surface, both in the "zones" and in the transitions between zones.

Portney has asserted that his invention shows areas of constant/spherical curvature beyond the lens center. (Portney's Opening Brief on Patent Claim Construction at 18.) But the specification says the opposite: "The present invention provides . . . (b) a continuously varying power within each zone, as well as in transition from one zone to another." ('461 patent, col. 2:35-39.) Both "zones" and "transitions" have continuously changing power. And, at his deposition, Portney agreed that an area of constant power could not be considered a progressive area. (Portney Dep. 140:2-8.)

The specification also discusses and distinguishes the prior art with reference to the use of constant/spherical curvature. Figure 1 of the '461 patent describes a "bifocal" contact lens with a central, circular, constant/spherical area for focusing near objects, surrounded by another constant/spherical area for focusing far objects. ('050 App. at 6-7; '461 patent, col. 3:33-40.) Figure 2 describes a multifocal lens that is completely aspheric (with "continuously changing curvature from its center to its periphery") and thus, "a continuous change of focusing power for . . . far objects . . . to . . . near objects. . . . " ('050 App. at 7; '461 patent, col. 3:46-58.) The specification then praises the "advantages" of continuously varying power "over" use of constant power. ('050 App. at 7-8; '461 patent, col. 3:59-68.)

The specification then again states what "the present invention" is:

\[\text{In order to minimize the problems due to the need for centering, due to pupil size variation, and due to fitting requirements (progressive type), the present invention, as shown in FIG. 4, uses several zones, each of which includes a progressive power change from near correction to far correction. In other words, a three zone contact lens, the progressive variation of the FIG. 2 lens would be repeated six times, three times as a variation from lower to higher power, and three times as a variation from higher to lower power.}\]

('050 App. at 8-9; '461 patent, col. 4:14-23.) The specification then gives this one exception:

\[\text{The specification continues:}\]

\[\text{The higher and lower corrective powers in each zone of the four annular concentric zones shown in FIG. 4, occur as the undulating curve progresses from one peak 54 to the adjacent valley 56, and then back to the next peak 54. Except for the small centrally placed zone of a constant curvature which provides power for middle correction, a zone is considered to include a complete cycle, i.e., from the intermediate power through the high power, then back through the intermediate power to the low power, and finally back to the intermediate power.}\]

('050 App. at 11; '461 patent, col. 5:9-19.)

Nowhere does the specification disclose that a Portney lens can have a segment of constant (i.e., spherical) curvature except at the very center of the lens. Portney told the public that the lens surface he invented, except at the very center, is "continuously" varying -- not sometimes varying, and sometimes constant. In the Vistakon litigation, Judge Love expressly held that "vary continuously" means "continuously changing." (Vistakon Claim Construction Decision, 2007 U.S. Dist. LEXIS 5742 at *14-15.) Because Judge Love had to construe a § 112 P 6 means-plus-function limitation, he had to determine what structures were actually disclosed in the specification. He held that the only structure using curvature to effect progressive vision correction was "an undulating lens posterior surface that has a continuously changing curvature."
(Vistakon Claim Construction Decision, 2007 U.S. Dist. LEXIS 5742 at *25.) Despite Portney's previous agreement with Judge Love's holding (Vistakon Claim Construction Decision, 2007 U.S. Dist. LEXIS 5742 at *25), Portney now argues that the PTO nonetheless "determined" in the '461 term extension process that the '461 claims covered the ARRAY lens having constant segments. (Portney's Opening Brief on Patent Claim Construction at 13-14.) But it is undisputed that CIBA Vision's accused lenses do not use ion-implantation to create multifocality. They use surface curvature. It is permissible during claim construction to focus on the aspects of the claims that matter for the determination of whether the claims cover the accused product. Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1322, 1327 (Fed. Cir. 2006); Pall Corp. v. Hemasure Inc., 181 F.3d 1305, 1308 (Fed. Cir. 1999). This claim construction applies only for structure using curvature to effect progressive vision correction.

Likewise, nowhere does the specification disclose that a Portney lens can have fewer than 2 cycles of Far-to-Near-to-Far (or Near-to-Far-to-Near). Although the word "series" usually means three, in this case it means "at least two" because that is what the patent specification says. There is no indication that Portney contemplated any alternative way to embody or accomplish the curvature-changing version of the invention.

Also, nowhere does the specification disclose that the Far and Near powers in one cycle can be different from the Far and Near powers in another cycle. Although Portney now argues that different Far and Near powers are disclosed in the coordinates included in column 6 of the '461 patent (Portney's Opening Brief on Patent Claim Construction at 18-21), that argument is contradicted by what the specification says occurs in each zone:

Except for the small centrally placed zone of a constant curvature which provides power for middle correction, a zone is considered to include a complete cycle, i.e., from the intermediate power through the high power, then back through the intermediate power to the low power, and finally back to the intermediate power.

('461 patent, col. 5:13-19.) The specification speaks in the singular: one high power and one low power per lens. As will be discussed, this is confirmed by the prosecution history.

Portney argues that "multifocal ophthalmic lens" should have its "ordinary and plain meaning" because two prior art lenses discussed in the specification are also called "multifocal ophthalmic lenses." (Portney's Opening Brief on Patent Claim Construction at 11-12.) But the "multifocal ophthalmic lens" for the Court to construe is the one Portney says he invented -- the one that follows the words "I claim" and "What is claimed is." Portney cannot claim to have invented the lenses disclosed in NUCHMAN or SCILIPOTI. He claims to have invented only "an improved multifocal ophthalmic lens." ('461 patent, col. 2:35-36.) The nature of that "improvement" is described as "the present invention" and is necessarily different from NUCHMAN or SCILIPOTI.

Using the same term for the prior art and "the present invention," does not rob that conspicuous phrasing of its dispositive legal effect.

3.2 PROSECUTION HISTORY

The descriptions of "the present invention" in the specification of the issued patent are echoed by the broadest claim originally filed by Portney in 1987 which also required "power . . . to vary continuously and progressively from a first vision correction value to a second . . . and then back to the first . . . ; each cycle of such continuous variation . . . being repeated in a plurality of zones . . . ." ('050 App. at 17.) The original application also included independent claim 11 which discussed fabrication of the invention by "preparing a lens . . . shaped as segments of spheres . . . ; reshaping . . . one surface . . . by cutting it . . . to create an undulating cross-sectional curve . . . ; and programming the . . . computer to continuously vary the center of curvature of the cutting tool . . . to form a lens surface which . . . has a progressively varying shape undulating between the adjacent peaks and valleys." ('050 App. at 18-19.) The specification calls this "aspherizing of
the surface by utilizing continuous curvature variation." ('050 App. at 5; '461 patent, col. 2:61-62.) Confirming this, the specification says, "[f]or full progressivity, each point on the undulating curve has a different radial center from the centers of the adjacent points." ('050 App. at 12; '461 patent, col. 5:45-47.)

As already discussed, Portney's argument that different Far and Near powers are disclosed in the coordinates included in column 6 of the '461 patent, (Portney's Opening Brief on Patent Claim Construction at 18-21), is contradicted by the specification, which speaks in the singular: one high power and one low power per lens. The prosecution history confirms that nowhere does the specification disclose that the Far and Near powers in one cycle can be different from the Far and Near powers in another cycle. Portney tried to amend the claims to permit different "Near" and "Far" powers from zone to zone, but the Examiner rejected that amendment as "new matter." ('461 File History, Amendments and Remarks (Jan. 18, 1989); '461 File History, Office Action (Mar. 23, 1989).) Portney acquiesced and removed the amendment. ('461 File History, Amendment (May 23, 1989).) Where an examiner rejects an amendment in this manner, it "implies that the examiner had determined that the [amendment] disclosed new matter." Dealertrack, Slip. Op. at 19. Thus, Portney's argument is not only contradicted by what the specification says occurs in each zone but also is almost twenty years late.

Events during prosecution of the non-U.S. patents also support CIBA Vision's proposed claim construction. The European Patent Office rejected claim 1 of Portney's European patent application because it did not recite "features [that] appear essential in order to realize the invention" including "continuously varying power within each zone, as well as in transition from one zone to another." (European Patent Office Examination Report at P 1(c) (June 11, 1993).) Responding to a rejection by the Canadian Patent Office, Portney stated "One feature of applicant's multifocal ophthalmic lens is the provision of multiple progressive power regions." (CA1326389 File History, Official Action (Jan. 18, 1993) & Remarks (May 18, 1993).)

3.3 PORTNEY'S SUBSEQUENT CONTINUATION-IN-PART PATENT APPLICATION

CIBA Vision's proposed claim construction is supported by other evidence. In 1991, Portney filed a "continuation-in-part" ("CIP") of the '461 patent which ultimately became U.S. Patent No. 5,225,858 (which CIBA Vision is not accused of infringing). In it, Portney characterized the '461 invention and distinguished the '858 invention. "The '858 application incorporated the text of the '461 Patent by reference but contrasted itself by saying that in the '461 lens, 'the progressive vision correction power is varied between far and near through the several zones,' while in the '858 lens, 'improved image quality . . . [is] accomplished by maintaining the near vision correction power of appropriate zones of the lens substantially constant for a major segment . . . .'" (Order Denying Portney's Motion for Partial Summary Judgment at 4, Dkt. No. 295 (Feb. 6, 2009); '858 patent, col. 1:18-29 and col. 1:64-2:17.)

Examiner Sugarman rejected all claims of the '858 CIP application on the basis of "obviousness-type double patenting," saying that the CIP's claims were not patentably distinct from the '461 patent. ('858 File History, Office Action (July 29, 1992).) In seeking to identify a patentable difference, Portney pointed to the following characteristic of the '858 invention: "In addition, each of the regions have 'a major segment in which the near vision correction power is substantially constant.'" ('858 File History, Response to Office Action (Nov. 30, 1992).) Examiner Sugarman apparently agreed this made the '461 and '858 different. He issued a Notice of Allowability. ('858 File History, Notice of Allowability (Feb. 23, 1993).) Portney thus overcame a double patenting rejection of the '858 continuation-in-part application by saying that the '858 claims were patentably distinct from the '461 claims because the '858 invention had "a major segment in which the near vision correction power is substantially constant." That is a clear and unmistakable statement by Portney that the '461 claims do not include major segments of constant power.

3.4 EXTRINSIC EVIDENCE

During the Vistakon litigation, Portney issued an Expert Report admitting as follows:

Thus, the objective of my new multifocal lens was to offer a continuous vision from distant to near similar to one produced by a pin-hole. . . . A continuous power variation can be produced by changing a surface shape, i. e. varying surface curvature over the lens surface.

. . . . In order to accomplish this objective the power variation from distant to near must be repeated over the lens surface. . . .
Thus, my multifocal lens invention is based upon two concepts: (1) continuous vision from distant through intermediate to near and (2) repeatability of regions of the power over the lens surface.

(Feb. 28, 2007 Portney Expert Report at 4.) As already discussed, the court issued a Markman ruling in that case. The court was not asked to rule on the exact scope of "multifocal ophthalmic lens," but several rulings support CIBA Vision's proposed claim construction. For example, Judge Love held that "the claim language . . . requires that the power 'vary continuously', which is the same as 'continuously changing.'" (Vistakon Claim Construction Decision, 2007 U.S. Dist. LEXIS 5742 at *14.) He also explained that "the only embodiment disclosed in the Portney Patents to demonstrate how vision correction power was adjusted . . . depicted a lens surface that gradually transitioned between high and low vision correction powers, through intermediate . . . ." 2007 U.S. Dist. LEXIS 5742 at *28. Indeed, he said: "The parties also substantially agree that the corresponding structures are the only two structures disclosed in the Portney Patents for carrying out the recited functions. Both parties agree . . . the first structure is an undulating lens posterior surface that has a continuously changing curvature . . . ." 2007 U.S. Dist. LEXIS 5742 at *25.

The Patent Office has interpreted Portney's '461 patent consistent with CIBA Vision's proposed claim construction. In 1995, Dr. John De Carle filed a patent for a multifocal contact lens that had Far ("Distance") zones with a spherical surface (i.e., constant curvature) and Near zones with aspheric surfaces (i.e., with a continuously changing curvature). (U.S. Patent No. 5,798,817 at 1:64-2:3.) Examiner Sugarman was assigned to the application, the same Examiner assigned to all of the Portney Patent Family U.S. applications after the '461 patent. Examiner Sugarman issued a § 102 rejection, saying claims were anticipated (not novel and not patentable) by the Portney '461 patent. ('817 File History, Office Action Summary (July 22, 1997).) In response, Dr. De Carle argued:

In the Portney reference, there are no separate near or distance vision zones. . . . there is no distance vision zone in Portney which is spherical, all of the zones in Portney being aspherical.

('817 File History, Amendment and Remarks (Nov. 21, 1997) at 3.) Examiner Sugarman accepted the argument and allowed the De Carle patent. ('817 File History, Notice of Allowability (Feb. 17, 1998).) Thus, persons of skill in the art, Dr. De Carle and Examiner Sugarman, agreed that "all of the zones in Portney ['461 are] aspherical."

The correctness of CIBA Vision's proposed claim construction is confirmed by the expert testimony of Dr. Duncan Moore. Dr. Moore directs his opinions toward the specification itself and says that the terms collectively referred to as "a multifocal ophthalmic lens" should be construed as proposed by CIBA Vision because a person of ordinary skill in the art would understand the "multifocal ophthalmic lens" of the patent to be the particular kind of lens invented by Dr. Portney and not just any multifocal lens in the abstract. (Moore Rebuttal PP 82-108.)

3.5 NON-U.S. PATENTS AND PATENT APPLICATIONS

Finally, Portney argues that the Court should not construe the terms of the asserted non-U.S. claims and that "the foreign patent claims should be given their ordinary meaning by the jury during trial." (Portney's Opening Brief on Patent Claim Construction at 18.) Portney, however, offered no support for his implicit proposition that non-U.S. claims are not construed by a court before infringement is determined. Of course Markman, as such, doesn't apply abroad. It holds that judges, not juries, interpret claims. Non-jury countries would not ask the question Markman answered. But claims still must be construed.

Portney cited no authority that non-U.S. jurisdictions would ever let a jury construe their patent claims, and it is contrary to U.S. authority not to instruct the jury on all material issues. Sulzer Textil AG v. Picanol NV, 358 F.3d 1356, 1366 (Fed. Cir. 2004). Accordingly, the Court will construe the asserted non-U.S. patent claims. Portney gives no reason why the scope of non-U.S. patent claims would be different. All claim priority to the '461 patent.

4. CONCLUSION

The Court therefore construes the term "multifocal ophthalmic lens" in the context of the Portney Patents as having the following scope: "a multifocal ophthalmic lens (1) that has no segment of constant (i.e., spherical) curvature except (optionally) at the center, and (2) that contains at least 2 cycles in which vision correction power moves from Far to Near
and back to Far (or vice versa from Near to Far to Near), and (3) that has the same Near power in each cycle."

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(1) "Multiple Embossed Pattern"

As discussed, there is a hierarchy to the evidence to be considered in claim construction: the claim language first, then the patent specification and finally the file history. Vitronics, Inc., 90 F.3d at 1582-85. In this case, the language of the claim, the patent specification and the file history clearly show that the term "multiple embossed pattern" defines a product-by-process patent requiring sequential embossing patterns.

While the language of the claim does not mention the word "sequential," it nevertheless illustrates that the term "multiple embossed pattern" requires sequential embossments. In particular, the claim provides for "[a] web carrier, comprising:

- at least one surface that has a multiple embossed pattern having a first embossed pattern and a second embossed pattern." (Adkisson Decl., Ex. A, Col. 9, Ins. 33-36.)

Moreover, even if the claim's language is ambiguous, which it is not, the patent specification makes absolutely clear that the term "multiple embossed pattern" mean sequential embossments. As the court in Vitronics stated, and as plaintiff cites, the patent specification is "usually dispositive; it is the single best guide to the meaning of a disputed claim." Vitronics, 90 F.3d at 1582; (P's Reply Mem. in Supp. of Mot. for Prelim. Inj. at 2.); see also, United States v. Adams, 383 U.S. 39, 49, 15 L. Ed. 2d 572, 86 S. Ct. 708 (1966)("while the claims limit the invention, and the specifications cannot be utilized to expand the patent monopoly, claims are to be construed in the light of the specifications and both are to be read with a view to ascertaining the invention."); Autogiro Co. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 397-398 (Ct. Cl. 1967)("the specification aids in ascertaining the scope and meaning of the language employed in the claims inasmuch as words must be used in the same way in both the claims and the specification. The use of the specification as a concordance for the claim is accepted by almost every court, and is a basic concept of patent law.").

The specification defines the term "multiple embossed:"

"Multiple embossed" means two or more embossing patterns that are superimposed on the web to create a complex pattern of differing depths of embossing.

(Adkisson Decl., Ex. A, Col. 2, In. 1-3.) Not only does that definition on its face describe a product-by-process patent, the definition specifically requires two or more embossing patterns. Moreover, that term read in the context of the rest of the specification is consistent with the understanding that "multiple embossed pattern" describes a product-by-process requiring sequential steps. In fact, the language of the sentence in the specification immediately following the definition of the term "multiple embossed pattern" provides: "Another aspect of the present invention is a carrier web having at least one surface that is multiple, sequentially embossed, wherein depressions created from the prior embossing pattern(s) are substantially preserved during the subsequent embossing pattern(s)" Id. (emphasis added). Other language in the specification further emphasizes that the term "multiple embossed pattern" in claim 1 means sequential embossing steps:

..."Although the multiple embossing steps could be combined into a single step with the design of a suitable tool or mold, the advantage of multiple steps is that the depressions formed by the prior step(s) can be filled with a material prior to the subsequent embossing step(s). The number of same or different materials can be as many as the number of sequential step(s) or can be any subset of them." (Adkisson Decl., Ex. A., Col. 2, Ins. 11-17 (emphasis added)).

..."An advantage of the present invention is to create a means of sequential manufacturing of articles using different depths of depressions of the same or different materials." (Adkisson Decl., Ex. A, Col. 3, Ins. 16-18 (emphasis added)).
"A sequential manufacturing process for the web 10 or liner 20 determines the order of the embossings. The manufacturing of the double embossed liner 20 actually requires the formation of the smaller embossing pattern 26 first, followed by the formation of the larger embossing pattern 24, second." (Adkisson Decl., Ex. A, Col. 5, Ins. 5-9.(emphasis added)).

"Because the embossing of the pattern 26 occurs before the embossing of pattern 24, the depths identified here are the cumulative effects of both embossings, not necessarily the height of the embossing tool." (Adkisson Decl., Ex. A, Col. 6, Ins. 16-24.(emphasis added)).

"A multiple embossed web of the present invention can be used for the formation of materials that utilize the complex topography of the surface of the web. Because the multiple embossings of the web occur sequentially, material can be placed in the depressions caused by first pattern being formed before the second embossing pattern is applied." (Adkisson Decl., Ex. A, Col. 6, In. 64- Col. 7, In. 2.(emphasis added)).

The prosecution history further illustrates this understanding. Plaintiff argues that because it took the word "sequential" out of claim 1, the court would commit an error of law pursuant to the theory of file wrapper estoppel to read "sequential" back into the claim. Plaintiff's argument is unpersuasive, given the context of the prosecution history. The examiner rejected the original claim 1, finding the claim confusing. (Adkisson Decl., Ex. A, No. 4. at p. 3.) In response, plaintiff filed claim 1 as "a multiple embossed pattern having a first embossed pattern and a second embossed pattern." In contrast to plaintiff's assertion, the file history makes absolutely clear that plaintiff's patent requires a second embossed pattern following a first embossed pattern. The court therefore rejects plaintiff's file wrapper estoppel argument and finds that the term "multiple embossed pattern" means sequential embossing patterns.

4 The court is well aware that the cannon of claim construction providing that the court cannot import a limitation from the specification's general discussion. See, e.g., Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1278 (Fed. Cir. 1995) (finding the district court "erred by importing unnecessary functional limitations into the claim."). The court, however, does not import a limitation from the specification into the claim but instead reads the term "multiple embossed pattern" in light of the specification's language, including the language about sequential embossing patterns, to interpret the term "multiple embossed pattern." See Young Dental Mfg. Co. v. Q3 Special Prods., Inc., 112 F.3d 1137, 1143 (Fed. Cir. 1996)("Although limitations may not be read into the claims from the specification, claims are to be read in view of the specification of which they are a part."); Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572, 1578 ("the district court did not import an additional limitation into the claim; instead, it looked to the specification to aid its interpretation of a term already in the claim, an entirely appropriate practice.").

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The district court erred when it defined the term "multiple embossed patterns" to include a limitation that the patterns be created sequentially. The use of the terms "first" and "second" is a common patent-law convention to distinguish between repeated instances of an element or limitation. See, e.g., Anchor Wall Sys., Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1304 (Fed. Cir. 2003) ("first and second sidewall surfaces"); Springs Window Fashions LP v. Novo Indus., L.P., 323 F.3d 989, 992 (Fed. Cir. 2003) ("first and second opposed ends"). In the context of claim 1, the use of the terms "first . . . pattern" and "second . . . pattern" is equivalent to a reference to "pattern A" and "pattern B," and should not in and of itself impose a serial or temporal limitation onto claim 1.

In the specification, 3M clearly acted as its own lexicographer, and the definition provided requires only that the "two or more embossing patterns" be "superimposed." '930 patent, col. 2, ll. 1-2. Despite Avery's arguments to the contrary, the use of "superimposed" in this definition neither transforms claim 1 into a product-by-process claim nor even limits the scope of the claim to a serial method of manufacture; it describes only the structural relationship between the embossing patterns.

See Webster's Third New International Dictionary 2294 (1993) (defining "superimposed" as "layered"). Furthermore, even words of limitation that can connote with equal force a structural characteristic of the product or a process of manufacture are commonly and by default interpreted in their structural sense, unless the patentee has demonstrated otherwise. See Hanzai v. United States Int'l Trade Comm'n, 126 F.3d 1473, 1479 (Fed. Cir. 1997) (concluding that "chemically engraved" was not a process term); Vanguard Prods. Co. v. Parker Hannifin Corp., 234 F.3d 1370, 1372 (Fed. Cir. 2000) (holding that the claim term "integral" describes a structural relation, not the particular manufacturing process related in the specification); cf. id. ("A novel product that meets the criteria of patentability is not limited to the process by which it was made." (citing 3 Donald S. Chisum, Chisum on Patents § 8.05, at 8-79 (2000))).

Nothing in the intrinsic evidence of the patent requires that a limitation of sequential creation of the "multiple embossed pattern" should be included in claim 1. The limitation of serial embossing clearly present in method claim 6 cannot be read into claim 1; furthermore, method claim 6 creates new terms--"the first embossing step" and "the second embossing step"--to carry the serial-embossing limitation. It is true that language in the specification of the '930 patent recurrently recites serial application of the two patterns. See, e.g., '930 patent, col. 3, ll. 16-17 ("An advantage of the present invention is to create a means of sequential manufacturing of articles using different depths of depressions and same or different materials."); id., col. 6, ll. 66-67 ("Because the multiple embossings of the web occur sequentially . . . ."). Limitations from the specification, however, cannot be imported into the claims, and this rule must be strictly enforced in light of the clear definition of "multiple embossed" provided in the specification--a definition devoid of sequential limitation. Furthermore, the specification also discloses the option, albeit not the preferred option, of creating multiple embossed patterns in a single step. See id., col. 2, ll. 11-15 ("Although the multiple embossing steps could be combined into a single step with the design of a suitable tool or mold, the advantage of multiple steps is that the depressions formed by the prior step(s) can be filled with material prior to the subsequent embossing step(s).")

A broadening claim amendment made during the prosecution history of the '930 patent supports a plain-meaning construction of claim 1 without a sequential-embossment limitation. As filed in the original patent application, claim 1 was expressly limited to a "multiple sequentially embossed" web. 3 In response to the examiner's § 112, P 2 indefiniteness rejection, 3M amended claim 1 to claim a carrier web "that has a multiple embossed pattern having a first embossed pattern and a second embossed pattern," referring to definitions of "multiple embossed" and "embossed" that were in the specification at the time of the original patent application. The fact that 3M broadened its claims in response to an indefiniteness rejection and dropped the sequential limitation is perhaps unusual, but it is entirely permissible, and the plain language of the claim as issued must control. Cf. Smith v. Snow, 294 U.S. 1, 16, 79 L. Ed. 721, 55 S. Ct. 279, 1935 Dec. Comm'r Pat. 757 (1935) ("It is of no moment that in the course of the proceedings in the Patent Office the rejection of narrow claims was followed by the allowance of the broader claim 1."); United States v. Telectronics, Inc., 857 F.2d 778, 782-83 (Fed Cir. 1988) (concluding that adding a limitation to a claim during prosecution and then removing it when the limitation failed to result in allowance of the claim over the prior art does not permit reading of limitation into claim when the claim issued without it).

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3 As initially filed, claim 1 read: "A carrier web, comprising: at least one surface that is multiple, sequentially embossed with a pattern, wherein depressions created from the prior embossing pattern(s) are substantially preserved during the subsequent embossing pattern(s) even though the subsequent embossing pattern(s) are superimposed on the depressions from the prior embossing pattern(s)."

- - - - - - - - - - - - - End Footnotes- - - - - - - - - - - - -

Avery also argues that claim 1 contains a sequential-embossment limitation because of the arguments that 3M made during prosecution to overcome section 102(b) anticipation and section 103(a) obviousness rejections by the examiner. To traverse an anticipation rejection of both product claim 1 and method claim 8 (which eventually issued as method claim 6) based on references that taught that "two or more adhesives having different properties may be coated into the same recesses" on the web, 3M stated that:

Applicants here are claiming two different embossed patterns where the first embossed pattern survives the embossing of the second pattern. See Fig. 2, for an illustration of this patentable point. In [the prior art reference], there is only one embossed pattern, that can be filled with the same or different adhesives. There are not two embossed patterns as Applicants
The examiner withdrew his objection in response to 3M's argument. 4

4 3M made similar arguments to traverse another anticipation and an obviousness rejection as well.

Avery argues that 3M thus expressly disclaimed any patent scope beyond sequential embossment of patterns when it used language pregnant with temporal implications--the first pattern "survives" the embossing of the second--to traverse the examiner's rejections. 3M's use of the term "survives" in the prosecution history, however, does not constitute the clear and unambiguous disavowal of claim scope that is required to read a limitation into an expressly defined term. See Middleton, 311 F.3d at 1388. To distinguish the prior art in question, 3M needed only to argue, as it did in the last two sentences of the quotation above, that the '930 patent claimed "two embossed patterns" rather than "one embossed pattern." When the patentee has expressly defined a term in the specification and remarks made to distinguish claims from the prior art are broader than necessary to distinguish the prior art, the full breadth of the remark is not "a clear and unambiguous disavowal of claim scope as required to depart from the meaning of the term provided in the written description." Storage Tech. Corp. v. Cisco Sys., Inc., 329 F.3d 823, 833 (Fed. Cir. 2003). Furthermore, Figure 2 of the '930 patent, to which 3M directed the examiner, illustrates only the coexistence of two distinct patterns in the final product, not the sequential embossing of the patterns.

Finally, in explaining a subsequent anticipation rejection under section 102(b) on the basis of other prior art, the examiner stated that claim 1 was "drafted in the product-by-process format." 3M never responded to this statement during the remainder of the prosecution because the objection was overcome without any need to address whether claim 1 was or was not a product-by-process claim. In this context, the examiner's statement does not constitute a clear and unmistakable surrender of claim scope. See Middleton, 311 F.3d at 1388. "Prosecution history . . . cannot be used to limit the scope of a claim unless the applicant took a position before the PTO." Schwing GmbH v. Putzmeister Aktiengesellschaft, 305 F.3d 1318, 1324-25 (Fed. Cir. 2002) (emphasis added). An applicant's silence in response to an examiner's characterization of a claim does not reflect the applicant's clear and unmistakable acquiescence to that characterization if the claim is eventually allowed on grounds unrelated to the examiner's unrebutted characterization.

III. DISCUSSION

The "multiply folded" term appears in certain claims of the '385 and '498 patents. Independent claims 7, 15, 32, and 38 of the '385 patent each refer to either a "relaxed coil capable of being multiply folded upon itself" 2 or a "deformable object capable of being multiply folded upon itself." Dependent claims 3 and 9 of the '498 patent each describe the "detachable elongate tip portion" as a "substantially pliable segment adapted to be multiply folded upon itself." While Defendant has requested construction of the phrase "multiply folded," (see Defendant Cordis's Brief in Support of Claim Construction of Term "Multiply Folded," "Def.'s Br.,” Docket Item No. 891, at 1), Plaintiffs seek construction of the phrases "capable of being multiply folded upon itself" and "adapted to be multiply folded upon itself," (see Plaintiffs' Brief Regarding Claim Construction of the "Multiply Folded" Claim Term, "Pls.' Br.,” Docket Item No. 893, at 1). The Court finds it appropriate to take this latter approach, but for convenience will continue to refer to these phrases collectively as the "multiply folded" term.

2 Although the Court construed the term "relaxed coil" in the '385 patent in its October 7, 2003 Markman Order, the phrase following that term, "capable of being multiply folded upon itself," was not construed by the Court. (See Markman Order at 17-18.)
 Defendant contends the "multiply folded" term should be construed to mean "a coil that is not prebiased, so that there is no restriction on its ability fold on itself multiple times in the body cavity being treated." (Def.'s Br. at 1.) Plaintiffs urge the Court to construe the term to mean having "an overall shape that is capable of being folded upon itself more than one time to conform to the shape of the cavity." (Pls.' Br. at 1.)

 Defendant contends its definition-which excludes prebiased coils- is consistent with the claims, specification, and prosecution history, including the recent statements made by the USPTO examiner in the reexamination proceedings of the '498 patent. With respect to the claim language, Defendant contends Plaintiffs' proposed construction cannot be adopted because "it would mean that a relaxed coil and a coil capable of being multiply folded upon itself are one and the same, even though both phrases are used in the claims." (Def.'s Br. at 3.) With respect to the specification, Defendant contends that while the specification does not specifically define the "multiply folded" term, "the context in which that phrase is used makes clear that the phrase was intended to encompass only a coil without prebias, so that there is no restriction on the ability of the coil to fold." 3 (Def.'s Br. at 4.) With respect to the prosecution history, Defendant makes two arguments. First, Defendant contends the USPTO, in the reexamination proceedings of the '498 patent, construed the "multiply folded" term to exclude prebiased coils. 4 (Def.'s Br. at 6-8.) Second, Defendant contends that during the prosecution of patent application number 07/840,211 ("the '211 application"), which was one of a series of continuation applications from which the '385 and '498 patents issued, the applicants repeatedly distinguished prior art on the ground that it was prebiased. (Def.'s Br. at 10-11.)

 3 The context to which Defendant refers is a sentence in the "Detailed Description" section of specification which states "[t]he tip may be elongate and flexible so that it packs the cavity by being folded upon itself a multiple number of times." (Declaration of Roland H. Schwillinski in Support of Plaintiffs' Brief Regarding Claim Construction of the "Multiply Folded" Claim Term, "Schwillinski Decl.," Ex. B, '498 patent, col. 6, Ins. 57-59.)

 4 Defendant also contends the patent owner (the Regents of the University of California) was obligated to file an objection during the reexamination proceedings and that silence in the face of the examiner's statement precludes Plaintiffs from making contrary arguments now. (Def.'s Br. at 8-10.)

 Plaintiffs disagree with each of Defendant's contentions. Regarding the claim language, Plaintiffs contend the claims of the '385 and '498 patents say nothing about whether the coil has a prebiased shape or not. (Pls.' Br. at 3.) Rather than having anything to do with prebias, Plaintiffs contend the "multiply folded" term "concerns the coil's ability to fold upon itself multiple times to conform to the interior shape of the aneurysm being occluded." (Pls.' Br. at 3.) With respect to the specification, Plaintiffs contend the specification not only emphasizes a coil may either be prebiased or not prebiased but also discloses various prebiased shapes that the coils may have, including a "spiral" or "helix" shape. (Pls.' Br. at 4.) With respect to the prosecution history, Plaintiffs contend the USPTO examiner in the reexamination of the '498 patent did "not state that all coils that multiply fold upon themselves cannot have any prebiased shape." (Pls.' Br. at 5.) Additionally, during the prosecution of the '211 application, Plaintiffs contend the applicants continued to emphasize the coils could be prebiased. (Pls.' Br. at 6.)

 The Court is not convinced there is a basis for construing the "multiply folded" term so as to exclude prebiased coils. The language of the claims does not provide any context from which it can be determined whether such an exclusion results from the "multiply folded" term. The Court also does not read in such a limitation given the disclosure of both prebiased and non-prebiased coils in the specification. See Vitrionics, 90 F.3d at 1583 (implying that excluding one of the disclosed embodiments from the claim scope is rarely, if ever, correct). The first embodiment described in the specification is a coil that is "prebiased to form a cylindrical or conical envelope. . . ." (Schwillinski Decl., Ex. B, '498 patent, col. 7, Ins. 60-61.) The third embodiment is a coil that is "not prebiased, nor does it contain any internal reinforcement, but is a free and open coil. . . ." (Schwillinski Decl., Ex. B, '498 patent, col. 9, Ins. 2-4.) Additionally, the specification states "it must be understood that the shape of the tip or distal platinum coil used in combination with the wire according to the invention may be provided with a variety of shapes and envelopes." (Schwillinski Decl., Ex. B, '498 patent, col. 12, Ins. 27-29.) The Court
does not find the claim language or specification support Defendant's proposed definition of the "multiply folded" term.

Aside from the claim language and specification, Defendant also relies on the USPTO examiner's statement in the NIRC as support for its proposed definition. Contrary to what Defendant contends, however, the examiner did not state that all coils which multiply fold upon themselves cannot be prebiased. Rather, the examiner merely states the '069 patent discloses coils which return to predetermined shapes and that these particular coils are not capable of being multiply folded upon themselves. (See Schwillinski Decl., Ex. F at 3.) Accordingly, the Court finds the examiner's statement does not support a definition of the "multiply folded" term that excludes prebiased coils. 5

5 As the examiner's statements do not bear on the definition of the "multiply folded" term, the Court does not reach the question of whether the patent owner had an obligation to respond to the examiner's statement. See supra note 4.

Finally, the Court considers whether statements made by the applicants during the prosecution of the '211 application support a construction of the "multiply folded" term that excludes prebiased coils. According to Defendant, in an attempt to distinguish the coils disclosed in the '069 patent, the applicants repeatedly relied on the fact the '069 coils were prebiased. (Def.'s Br. at 10.) Defendant cites the following statement made by the applicants in an information disclosure statement submitted to the USPTO:

Essential to the operation of [the '069 coil] is that the wire have a memory which returns it from its stretched to its relaxed condition as the wire is released from the catheter into the vascular cavity. . . .

An occlusion coil with this feature is more difficult to fabricate than a coil which is disposed within the catheter in a relaxed configuration and when disposed out of the catheter does not undergo any process wherein it conforms to some earlier shape or configuration. In addition, a wire having a preferred or memorized shape inherently requires that it have some type of springiness in order to conform to its predisposition configuration. This inherent springiness makes the coil less pliable. . . . [T]he coil will form a shape completely independently of the shape of the vascular cavity and will be modified only to the extent that a balance of force is obtained between the random mass, which the coil attempts to form, and the constraining force of the wall of the vascular cavity.

(Powers Decl., Ex. 5 at 9-10.) Defendant also cites the following statement made by the applicants as part of their explanation for certain claim amendments:

A relaxed coil which is flexible and which can be multiply folded in order to pack or substantially space fill a cavity necessarily can be described as relaxed or having no memory of a predisposed shape. Such a coil can be called not only flexible, but shapeless in that there is no preferred shape, but it assumes the shape into which it is folded within the vascular cavity.

(Powers Decl., Ex. 6 at 5.) This statement, Defendant contends, further shows that the applicants believed prebiased coils could not multiply fold on themselves. (Def.'s Br. at 11.) Defendant contends the public was entitled to rely on these distinctions drawn during the prosecution of the patent.

The Court recognizes the public has a right to rely on statements made by an applicant during the prosecution of a patent application. See Hockerson-Halberstadt, Inc. v. Avia Group Intl, Inc., 222 F.3d 951, 957 (Fed. Cir. 2000) ("The prosecution history constitutes a public record of the patentee's representations concerning the scope and meaning of the claims, and competitors are entitled to rely on those representations when ascertaining the degree of lawful conduct, such as designing around the claimed invention."). Nevertheless, "[t]o balance the importance of public notice and the right of patentees to seek broad patent coverage, [the Federal Circuit has] thus consistently rejected prosecution statements too vague or ambiguous to qualify as a disavowal of claim scope." Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1325 (Fed. Cir. 2003). In other words, for prosecution history disclaimer to attach, "precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable." Id. at 1326.
The Court does not find the applicants' statements cited above clearly distinguished the prior art on the basis that it was prebiased. Rather, in these statements, the applicants appear to have been emphasizing that the '069 coils were different because they had a "preferred or memorized shape" or "predisposition configuration." (See Powers Decl., Ex. 5 at 9.) The applicants certainly could have drawn a distinction based on the prebiased nature of these coils—a prebias that coincidentally enabled the coils to take on a memorized or predisposed configuration—but they did not do this. The emphasis instead was placed on the '069 coils' memory—i.e., their ability to return to a particular shape. As the applicants explicitly stated, "[e]ssential to the operation of [the '069 coils] is that the wire have a memory which returns it from its stretched to its relaxed condition as the wire is released from the catheter into the vascular cavity." (Powers Decl., Ex. 5 at 9.) Accordingly, the Court does not find the statements cited by Defendant distinguish the prior art on the basis of prebias.

IV. CONCLUSION

The Court construes (i) "capable of being multiply folded upon itself" to mean "capable of being folded upon itself more than one time" and (ii) "adapted to be multiply folded upon itself" to mean "adapted to be folded upon itself more than one time." The Court invites the parties to stipulate as to whether there is a difference between the terms "capable of" and "adapted to." If the parties do not file a stipulation within thirty (30) days of this Order, the Court will set a hearing for further construction of these terms.

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Claim 28
Preamble: "A multipurpose exercise apparatus adapted for providing an individual with support as a user moves between an upper first position and a lower second position during performance of an exercise"

Unlike the Preamble to Claim 15, the parties were not able to reach an agreement that construction of the Preamble to Claim 28 was unnecessary. Fitness Quest limited its request at the Markman hearing, and now primarily seeks construction of the term "multipurpose exercise apparatus" in the preamble, offering for its proposed construction: "an apparatus that permits a user to perform two exercises: (1) sit ups; and (2) lower abdominal flexion." Transcript 220. Monti contended that construction was unnecessary, as the preamble was not a limitation, and then (if necessary) offered his own broader construction. This Court determines that construction of the preamble in fact is not required.

Claim preambles, like all other claim language, are construed consistent with the basic principles of claim construction, including the principle that the language of the claim defines the scope of the invention protected by the patent. Bell Commun. Research, Inc., v. Vitalink Commun. Corp., 55 F.3d 615, 619-20 (Fed. Cir. 1995).

Whether a preamble to a claim requires construction depends on whether the preamble language limits the language found in the claim itself. "[A] preamble simply stating the intended use or purpose of the invention will usually not limit the scope of the claim, unless the preamble provides antecedents for ensuing claim terms and limits the claim accordingly." Boehringer Ingelheim Vetmedica, Inc., v. Schering-Plough Corp., 320 F.3d 1339, 1345 (Fed. Cir. 2003) (citation omitted). "[P]reamble language will limit the claim if it recites not merely a context in which the invention may be used, but the essence of the invention without which performance of the recited steps is nothing but an academic exercise." Id. (citation omitted). Stated differently,

A claim preamble has the import that the claim as a whole suggests for it. In other words, when the claim drafter chooses to use both the preamble and the body to define the subject matter of the claimed invention, the invention so defined, and not some other, is the one the patent protects.

Bell Commun., 55 F.3d at 620 (citations omitted). Whether the preamble to Claim 15 requires construction therefore depends on whether the language of the preamble is necessary to an understanding of the invention described in the body of the claim.

Fitness Quest asserts that the preamble to Claim 28 must be construed, and then offers its construction. Monti, by contrast, contends that it does not act as a limitation on Claim 28 and therefore need not be construed. Fitness Quest contends that the initial use of the terms "first position" and "second position" in the preamble, each preceded by an indefinite article ("an")
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

and "a", respectively), provides a necessary context to the use of those terms later in the elements of Claim 28. Fitness Quest Response Brief at 9-10. Fitness Quest further argues that Monti "clearly" relied upon the preamble language in the prosecution history of the 749 Patent. Id.

Fitness Quest's arguments are unavailing. The preamble to Claim 28, when reviewed in the context of the entire claim, does not constitute a limitation on the claim, as it is at best a summary description of the device more precisely described in the claim elements, rather than any kind of further-limiting language.

"[P]reambles describing the use of an invention generally do not limit the claims because the patentability of apparatus or composition claims depends on the claimed structure, not on the use or purpose of that structure." Catalina Marketing Ina, Inc., v. Coolsavings.com, Inc., 289 F.3d 801, 809 (Fed. Cir. 2002). Here, the preamble to Claim 28 broadly describes the apparatus formed by the elements of Claim 28 and the purpose of it. As such, it does not limit the claim language and requires no construction.

The preamble contains the language "an upper first position and a lower second position." Fitness Quest contends that the preamble must be construed, so that these terms, used later in Claim 28, may be correctly understood. The basis for Fitness Quest's contention appears to be the adjectives "upper" and "lower," which Fitness Quest contends do not appear elsewhere in the claim. Strictly speaking, this is true. But the claim does contain the following language: "the first position is oriented above the second position." It is not a very daunting leap of faith to understand from this language that the first position is the "upper" of the two, and the second position is the "lower" of the two. The language in the preamble simply is not "necessary to give life, meaning, and vitality' to the claim." Catalina Marketing, 289 F.3d at 808, quoting Pitney Bowes, Inc., v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999).

Fitness Quest's reliance on the Manual of Patent Examining Procedure is equally unavailing. Rather than providing the bright-line rule Fitness Quest suggested in the hearing -- that the use of a definite article in the claim elements required reference back to a corresponding indefinite article in the preamble -- the Manual is not so rigid. See Transcript 52, 67; Fitness Quest Inc.'s Response to Mr. Monti's Opening Claim Construction Brief (Doc. 32) at 9-10. "Obviously, however, the failure to provide explicit antecedent basis for terms does not always render a claim indefinite. If the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite." MPEP 2173.05(e). As noted above, the scope of the claim, at least at to the issues raised by Fitness Quest, is reasonably ascertainable without resort to the preamble.

Finally, Fitness Quest contends that Monti relied on the preamble language in the prosecution of the patent, and it therefore should be understood as limiting Claim 28. Fitness Quest Response Brief at 10. While the prosecution history can be relevant to an understanding of whether a preamble requires construction, this Court is hard-pressed to read the excerpt referenced by Fitness Quest as demonstrating Monti's reliance on the language of the preamble per se rather than the claim elements in the prosecution of this patent.

The preamble to Claim 28 is not essential to an understanding of the language of the claim, and therefore does not require construction.

GO BACK

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a. Narrow beam of light

One World asserts that the phrase to "emit a narrow beam of light" means to give off a thin ray of light. Porter-Cable's proffered definition is a ray of light that appears narrow regardless of the vantage point from which it is viewed and does not cover a fan-shaped projection of light. In submitting this interpretation, Porter-Cable urges the Court to define the term so as to explicitly exclude a fan-shaped projection of light, which is the type of laser beam emitted by the Porter-Cable defendants' inventions.

Thus, the ordinary meaning of narrow beam of light is a ray or shaft of light of slender width.

Porter-Cable does not appear to disagree that this is the ordinary meaning of the claim language. See Porter-Cable Resp. at 11. It urges the Court, however, to additionally specify that a fan-shaped projection of light does not fall within the bounds of this definition of "narrow beam." Porter-Cable refers the Court to the discussion of the Kelly Patent that appears in the background section of the patent and in the prosecution history. Porter-Cable argues that the Kelly Patent makes it clear that one of ordinary skill in the relevant technology would not include a fan-shaped beam within the definition of narrow beam. In essence, Porter-Cable urges the Court to undertake an infringement analysis, as all of Porter-Cable's products use light projectors that project light in a fan shape. It is settled law, however, that claims must not be construed with reference to an accused product. See SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1118 (Fed. Cir. 1985). "It is only after the claims have been construed without reference to the accused device that the claims, as so construed, are applied to the accused device to determine infringement." Id. Thus, Porter-Cable's request that the Court find that "narrow beam" does not encompass a fan-shaped projection of light is premature.

Porter-Cable also submits the testimony of its expert, Paul Hatch, as evidence that one of ordinary skill in the technology would construe a claim limitation containing the term "narrow beam" to mean narrow from any vantage point and that this limitation excludes a fan-shaped beam. Though the Court was willing to entertain Hatch's testimony during the claim construction hearing to educate itself about the underlying technology, we will not rely on his expert testimony in construing the claim. As mentioned above, courts should rely on extrinsic evidence only if the meaning of a claim is ambiguous from the intrinsic evidence. See Hockerson-Halberstadt, Inc., 222 F.3d at 955. The parties have not suggested that the meaning is ambiguous, nor does the Court find the language ambiguous. Nothing in the claim language, specification, or prosecution history suggests that the phrase narrow beam of light means something different from its ordinary and customary meaning. Moreover, the proposed expert testimony specifically relates to whether or not a fan-shaped beam falls within the scope of the claim limitation. The Court reiterates that it is premature to make that determination at the claim construction juncture. In sum, the Court construes "narrow beam of light" to mean a ray or shaft of light of slender width.

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3. "Narrowly confined scanning volume"

PSC argues that the term "narrowly confined scanning volume" refers to a scanning volume that is narrowly confined in the sense that the shape of the scanning volume diverges at a relatively small rate as it is projected from the scanner. See Def.'s Br. at 23. PSC argues that "narrowly confined scanning volume" is defined as follows:

The volume in which a bar code symbol can be scanned must be narrow. A scanner with a narrowly confined scanning volume is suitable for presentation scanning and is not designed for sweep scanning. Also the angle of divergence of each group of scan lines must not exceed the 12 [degrees] rate of divergence in the example. Furthermore, the term is not so broad as to cover all scanning volumes that are generally confined.

See Def.'s Markman Presentation, Slide 50. Defendant PSC thus contends that the claim must be construed such that the angle between the emitted parallel lines must diverge no more than 12 degrees. See '852 Patent Fig. 1, Def.'s Markman Presentation, Slides 47, 50.

Plaintiff Metrologic argues that "narrowly confined volume" refers to

An area in which the bar codes can be successfully read that is generally confined within a narrow, yet diverging volume, e.g., a pyramid, cone, frustum, etc., which is centered about a projection axis which is substantially but not precisely perpendicular to the plane of the window. Further, a "narrowly confined volume" must be sufficiently confined so that the operator can obtain a successful read of a bar code in the area in front of and slightly diverging from the front of the scanner (up to 6 inches), but not outside the area, thereby preventing unintended reads.

Pl.'s Markman Br. at 17.

This Court considers the claim language, the specification, and the prosecution history, and it finds that plaintiff's
construction is correct. The claim language referring to the "narrowly confined scanning volume" provides:

(h) control means within said compact housing for controlling the operation of said counter-top projection laser scanner so that, during scanner operation, the laser beam produced from said laser beam producing means passes along a portion of said central reference plane, to the first, second and third rotating light reflective surfaces of said laser beam sweeping means, and as the laser beam sequentially reflects off said first, second and third rotating light reflective surfaces, the laser beam is repeatedly swept across said first, second, third, and fourth and fifth stationary light reflective surfaces thereby producing first, second, third, and fourth and fifth groups of plural scan lines, respectively, which are projected out through said light transmission window and intersect about a projection axis within a narrowly confined scanning volume extending from adjacent said light transmission window to at least about six inches therefrom so as to produce a highly collimated scanning pattern within said narrowly confined scanning volume, . . . .

'852 Patent, col. 12, ll. 26-45. Plaintiff contends that language in Limitation 15 sets forth additional definition. That section states: "the code symbol is scanned omnidirectionally by said highly collimated scanning pattern while preventing unintentional scanning of code symbols on objects located outside of said narrowly confined scanning volume." '852 Patent, col. 12, ll. 53-57. Although plaintiff maintains that the "narrowly confined scanning volume" refers to preventing the "unintentional scanning of code symbols on objects" located outside the volume, the position of terms in the claim language indicates that the scanning volume refers to the area in which items are scanned, while "narrowly confined" refers to the characteristic of that area.

The specification throughout refers to the volume as "relatively narrow, yet diverging." Id. col. 3, ll. 15-20. The specification, in the summary of the invention and the detailed description of the preferred embodiment, indicates that the patent is designed to be projected downward or outward from the face of the scanner, as it gives examples of the following volumes: pyramid, cone, and frustum. See id. & col. 5, ll. 34-40. Specifically, with respect to the volume, the claim specification states:

The scanning pattern is generally confined within a relatively narrow, yet diverging volume, e.g., pyramid, cone, frustum, etc., centered about a projection axis which is substantially but not precisely perpendicular to the plane of the window.

'852 Patent, col. 3, ll. 15-20. From this language, it can be inferred that the scanning volume of this patent, much like the scanning pattern discussed above, is not wide, but rather, narrow.

Defendant states that, while there is little guidance, if any, to be found in the specification and prosecution history, the specification contains a few uses of the term "narrow," which it compiles at Palmer Declaration P44:

A bar code scanner for stationary disposition at a counter to [sic] projecting a scanning pattern comprising first, second, third, fourth and fifth group of parallel scan line within a relatively narrow, yet diverging volume . . .

'852 Patent, at Abstract (emphasis added).

For example, in some check-out counter applications it is desirable to create a scanning pattern which, although aggressive, is confined within a relatively narrow volume, to prevent unintentional scanning of nearby objects.

Id. col. 2, ll. 7-11 (emphasis added).

The scanning pattern is generally confined within a relatively narrow, yet diverging volume, e.g., pyramid, cone, frustum, etc., centered about a projection axis which is substantially but not precisely perpendicular to the plane of the window.

Id. col. 3, ll. 16-20 (emphasis added).

Moreover, by virtue of the fact that the volume or space in which [the] scanning pattern is projected is somewhat narrow or confined, the amount of counter space which must be kept clear of other bar coded items to enable the proper scanning of the selected bar coded items, can be kept to a minimum. This should be contrasted with the use of conventional "slot-type" scanners, if mounted on a counter to project the scanning pattern thereabove. In such an arrangement the slot scanner produces such a wide or divergent pattern that a large amount of counter space must be reserved for scanning, and thus
The scanning pattern 26 is projected into a confined space or volume 38 (see FIG. 1), which as mentioned earlier is a relatively narrow, yet diverging and is centered about a projection axis 38. The diverging volume 36 containing the pattern may be of any shape, e.g., pyramidal, conical, irregular, etc., depending upon the length of the various lines of the pattern (i.e., the "envelope" defined by the end points of each line of the pattern) and may be established by the size of the scanner's mirrors and/or the size and shape of the window.

Id. col. 5, ll. 31-40 (emphasis added). This specification language repeatedly refers to the volume as being "relatively narrow, yet diverging," with narrow being interchangeable with "confined." In addition, the volume may take a "pyramidal, conical, irregular" shape. This reinforces the construction of the term "narrowly confined volume" as narrow, and taking the shape of a cylinder that slightly diverges.

Plaintiff notes, however, that nothing in Limitation 13 or 15 requires that a "highly collimated" pattern be present throughout the entire narrowly confined scan volume, and that as long as a portion of the narrowly confined volume is highly collimated for purposes of omnidirectional scanning, these limitations are satisfied. Operating under its construction that the term "highly collimated" refers to the rich nature of the scan lines, plaintiff argues that the claim language simply does not require that the scan pattern be omnidirectionally read throughout the entire volume. Given the Court's construction of "highly collimated projected scanning pattern" above, there is no need to determine whether the "narrowly confined scanning volume" must contain a scan pattern that can be read omnidirectionally everywhere in the pattern.

Defendant argues in particular that "narrowly confined scanning volume" must be construed to require a volume in which the angle of divergence between the scan lines is 12 [degrees] or less. PSC notes that the mirror mounting angles of the rotating assembly of mirrors (the polygon) are 2 [degrees], 4 [degrees], 6 [degrees], and 8 [degrees]. '852 Patent, col. 8, ll. 14-15. Specifically, the specification provides:

The reflective faces 46 of the polygon are each disposed at a slight angle (e.g., 2, 4, 6, and 8 degrees) to the rotational axis 44 each reflective face of the polygon sweeps the laser beam 48 across a different portion of the folding mirrors 82-90, thereby producing the parallel lines 40 (i.e., the "raster") of the various groups.

'852 Patent, col. 8, ll. 13-19. Defendant submits that these angles determine how quickly the scan lines within each of the five groups in the scan pattern diverge from one another as the distance from the scanner increases, resulting in an angle of divergence no greater than 12 [degrees] for each group of scan lines. Specifically, the 12 [degrees] angle of divergence is arrived at by multiplying by two the difference between the largest (8 [degrees]) and smallest (2 [degrees]) angles, which is 12 [degrees] in this case.

The language in the specification that "the lines making up the scanning pattern are preestablished in configuration and orientation with respect to one another . . . ." supports defendant's contention that the angles of divergence are fixed. The specification, however, refers to these angles of the polygon in terms of approximation, as "e.g., 2, 4, 6 and 8 degrees," '852 Patent, col. 8, ll. 14-15, and "approximately 2, 4, 6, and 8 degrees," id. at col. 7, l. 67-col. 8, ll. 1-2. All degrees referred to are given in approximation, and are referenced in the specification, not the claim language itself. While the specification suggests this angle of divergence, there is nothing in the claim itself that requires it. To define the angle of divergence to be no greater than 12 [degrees] is to unnecessarily limit the claim.

Furthermore, given the estimated angles from the vertical axis, they may define the angle of divergence between the scan lines themselves, yet they do not substantially describe the "narrowly confined scanning volume" which contains the lines. Taking defendant's theory to its logical extreme, the exact dimensions of the resulting volume could be calculated, using the estimated angles and the estimated length of 6 inches from the light source. The claim language, however, does not require such a calculation, and a construction providing for more than is claimed would be in error.

Based on the language of the claim, the specification, and the prosecution history, this Court construes the term "narrowly confined scanning volume" to be a volume that is narrow, yet diverging, from the transmission window of the scanner, which may take a pyramidal, conical, irregular, or similar shape. There is no construction requiring that the scan lines in any
given group diverge at 12 [degrees] or less.

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4. A "natural tissue plane" is the interface between one tissue and another tissue, where tissue may include, but is not limited to, nerves, blood vessels, muscles, tendons and bone.

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A. Claim 1

Claim 1 reads as follows:

A feline onychectomy surgical method using a laser cutting instrument, the method comprising:

(a) forming a first circumferential incision in the epidermis near the edge of the ungual crest of the claw, thereby severing at least some of the epidermis from the ungual crest;

(b) applying cranial traction to the epidermis severed from the ungual crest to displace the distal edge of the epithelium cranially;

(c) incising the extensor tendon near its insertion on the ungual crest;

(d) incising the synovium of the PII-PIII joint;

(e) applying traction to the claw in the palmar direction for disarticulating the PII-PIII joint;

(f) ablating the medial and lateral collateral ligaments;

(g) incising the digital flexor tendon; and

(h) incising the subcutaneous tissues of the pad of the second phalanx.

Defendant argues that Claim 1 is invalid for indefiniteness because it is indistinguishable from the prior art and thus, cannot apprise one skilled in the relevant field of the scope of the invention. Specifically, Defendant argues that Step (a), which instructs the surgeon to form the "first circumferential incision in the epidermis near the edge of the ungual crest of the claw," contains a word of degree, "near," which the specification leaves unexplained. Defendant asserts that a surgeon attempting to begin a declaw procedure using any dissection method would be unable to avoid infringement because dissection procedures, long before Plaintiff received his patent, began the first incision "near" the ungual crest.

It is well-settled law that words of degree are permissible "when serving reasonably to describe the claimed subject matter to those of skill in the field of the scope of the invention. Specifically, Defendant argues that Step (a), which instructs the surgeon to form the "first circumferential incision in the epidermis near the edge of the ungual crest of the claw," contains a word of degree, "near," which the specification leaves unexplained. Defendant asserts that a surgeon attempting to begin a declaw procedure using any dissection method would be unable to avoid infringement because dissection procedures, long before Plaintiff received his patent, began the first incision "near" the ungual crest.

It is well-settled law that words of degree are permissible "when serving reasonably to describe the claimed subject matter to those of skill in the field of the scope of the invention." (citing Andrew Corp. v. Gabriel Electronics, Inc., 847 F.2d 819, 822 (Fed. Cir. 1988); see also Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1385 (Fed. Cir. 1986) ("The claims, read in light of the specification, reasonably apprise those skilled in the art and are as precise as the subject matter permits. As a matter of law, no court can demand more.") (citing Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 624 (Fed. Cir. 1985)). In Amgen, Inc. v. Chugai Pharm. Co., Ltd., 927 F.2d 1200, 1218 (Fed. Cir. 1991), the court found a claim indefinite because the following words of degree failed to inform the public of the patent's bounds:

4. Homogeneous erythropoietin characterized by a molecular weight of about 34,000 daltons on SDS PAGE, movement as a single peak on reverse phase high performance liquid chromatography and a specific activity of at least about 160,000 IU [international units] per absorbance unit at 280 nanometers. 1
Id. at 1203 (emphasis added). The court found the phrase "about 160,000 IU" indefinite because the range of measurement encompassed by the term "about" anticipated a measurement of as low as 120,000 IU, which had already been described in the prior art. The court explained that such wording "served neither to distinguish the invention over close prior art … nor … permitted one to know what specific activity values below 160,000, if any, might constitute infringement." Id. at 1217. Moreover, a physician-inventor behind the patent was unable to define "about" 160,000, stating only that he had not "given a lot of direct considerations to that." Id. The court held: "When the meaning of the claims is in doubt, especially when, as is the case here, there is close prior art, they are properly declared invalid." Id. (citing Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448, 453 (Fed. Cir. 1985)).

--- Footnotes ---

1 Erythropoietin (EPO) is a protein consisting of 165 amino acids that is used to stimulate the production of red blood cells. Medical professionals use it to treat anemias or blood disorders characterized by low red blood cell counts. Amgen, Inc. v. Chugai Pharm. Co., Ltd., 927 F.2d 1200, 1203 (Fed. Cir. 1991). EPO is created "through the concentration and purification of urine from both healthy individuals and those exhibiting high EPO levels." Id.

--- End Footnotes ---

Applying Amgen to Claim 1, Step (a), the Court finds the word "near" indefinite, pursuant to 35 U.S.C. § 112 P 2, for failing to distinguish the claimed subject matter from the prior art. Defendant has convinced this Court, by clear and convincing evidence, that a veterinary surgeon attempting to avoid infringement would be unable to do so because "near" fails to distinguish Plaintiff's patent from prior art. Plaintiff's attempts to distinguish the phrase "forming a first circumferential incision in the epidermis near the edge of the ungual crest of the claw" from the prior art are without merit. He argues that all prior art instructs surgeons to cut straight through the PII-PIII articulation, which means the point at which the two joints meet, rather than making the first incision at a point near the edge of the ungual crest. For example, during his February 15, 2005 deposition, Dr. Young testified that his procedure was distinguishable from that outlined in a well-established textbook. See THERESA WELCH FOSSUM ET AL., SMALL ANIMAL SURGERY 145-47 (1997) (hereinafter the "Fossum Reference"). In response to defense counsel's questions, Dr. Young testified as follows:

Q: And in your opinion, these previous techniques [referencing use of a scalpel, nail clippers, scissors, or electrocautery] did the incision at the PII-PIII joint?

A: Without fail.

***

Q: And in your view, scalpel technique [taught in Fossum] is different than the laser technique?

A: Yes

Q: Why is that?

A: In my laser technique, they're a lot different.

Q: Okay. Tell me.

A: In Fossum's scalpel technique?

Q: Sure.

A: Fossum's scalpel technique is a straight PII-PIII amputation.

Young Dep. II. at 30-32.
2 Dr. Young testified similarly during the September 7-8, 2004 Inequitable Conduct Hearing:

Every incision in Fossum, every incision in Slatter, ever incision in the Luxar reference is done in the plane of the PII-PIII joint. They may attack it from different angles, they may come through this way, they may come through that way, but in essence they only cut through PII-PIII. There is no cut at any time made outside the plane in that joint.

Inequitable Conduct Hearing Transcript at 11-74 (hereinafter "Inequitable Conduct Tr.").

Defendant, however, proved by clear and convincing evidence that the Fossum Reference instructs a surgeon to make the incision at essentially the same point described in the '579 patent. The Fossum Reference, in a chapter written by Dr. Cheryl S. Hedlund, Ph.D., reads: "Circumferentially incise the hairless, cuticle-like skin away from the claw near the articulation between the second and third phalanx." Id. at 146. Dr. Hedlund testified that she has always instructed her students, both in veterinary school and in her textbook chapter, to make the first incision circumferentially "at the most distal aspect of the nonhaired skin." Hedlund Dep. at 20. Specifically, Dr. Hedlund stated: "I insert the Number 11 scalpel blade parallel with the claw where the cuticle like skin attaches to the claw. So it goes around at that point. That's where the circumferential incision is made when I direct the declaw." Id. at 64. 3

Although the Fossum Reference mentions a scalpel as opposed to a laser, the Court finds the difference nominal. Dennis Olsen, DVM, a veterinarian who testified on behalf of Defendant, testified that the declaw process was "essentially identical" whether a surgeon uses a laser or a scalpel. Inequitable Conduct Tr. at I-72. He also explained that the increased use of lasers is a reflection of their decline in price over time. Olsen Supp. Decl. at P 23. ("When the price of lasers dropped in the late 1980's and early 1990's, veterinarians began to use them to perform surgery….").

In light of this strikingly similar prior art, the Court does not see how the first step in Claim 1 of the '579 patent adequately delineates the scope of the invention. Even Dr. Young, on cross-examination, admitted that he was unable to discern what constituted "near the most distal edge of the ungual crest." Markman Hearing Transcript at 86 (hereinafter "Mkmn. Tr.").

Alternatively, Dr. Young asserts that his patent is distinguishable from the prior art if the surgeon intends to, or does, save enough skin to cover the wound. 4 This argument fails, however, because infringement cannot depend on another's intent; rather, a patent's claims must be clear enough so that an objective person skilled in the art would be able to determine the patent's scope. See Hilton Davis Chem. Co. v. Warner-Jenkinson Co., Inc. 62 F.3d 1512, 1519 (Fed. Cir. 1995) (en banc), rev'd on other grounds, 520 U.S. 17, 117 S. Ct. 1040, 137 L. Ed. 2d 146 (1997) ("This question [of infringement] is one irrespective of motive. The defendant may have infringed without intending, or even knowing it; but he is not, on that account, the less an infringer…. The immediate question is the simple one, has he infringed?") (citation omitted). Thus, Claim 1, Step (a) is invalid for indefiniteness because Defendant has proved by clear and convincing evidence that it would be impossible for someone skilled in the art to determine the meaning of "near: so as to avoid infringement. 5

4 Dr. Young testified as follows during his February 15, 2005 deposition:

Q: Your view is that your claims are infringed if a person intends to use the tissue to cover the surgical site for a feline declaw as long as the incision is not made through the joint?

A: And it's sufficient, it is of sufficient nature to cover the declaw site, I think that is pretty clear.

Young Dep. II. at 332.
5 Defendant's papers contain extensive and persuasive arguments that Claim 1's remaining steps are indistinguishable from the prior art and thus, not valid. This argument, however, concerns the obviousness of the patent, not the construction of its claims. Because the patent's obviousness has been neither fully briefed nor argued in this Court, the Court will not now resolve that issue.

Because Claims 2 through 5 are dependent on Claim 1, they are similarly invalid for indefiniteness. Datamize, LLC, 417 F.3d at 1347 ("Since claim 1 is the '137 patent's sole independent claim, the court's grant of summary judgment of indefiniteness as to claim 1 invalidated each claim in the '137 patent."). The Court now turns Claim 6, the only remaining independent claim.

A. Indefiniteness

On appeal, Young argues that the district court incorrectly determined that the term "near" is indefinite. According to Young, the district court never considered the intrinsic evidence to determine the meaning of the term "near," and instead only relied on extrinsic evidence, such as the prior art Fossum Reference and the Hedlund deposition testimony. Young asserts that the term "near" is clearly defined in the specification and can be construed such that it is not indefinite. Moreover, Young asserts that all the witnesses understood the term, including Hedlund, who, in fact, used the term "near" in the Fossum Reference to describe the location of an incision. Finally, Young contends that the court misapplied Amgen, which involved a limitation that was not supported in the specification or the prosecution history.

Lumenis responds that the district court properly determined that the term "near" fails to distinguish the claimed invention from the prior art, and thus fails to apprise potential infringers of the scope of the claims. Lumenis further asserts that if the claims were unambiguous, there would have been no need to resort to extrinsic evidence. Lumenis contends that there is, in fact, no definition of the term "near" in the specification so that it was proper for the court to rely on extrinsic evidence. According to Lumenis, the district court's focus on whether the claims distinguished what was claimed from what was in the prior art was the appropriate inquiry, as stated by this court in Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342 (Fed. Cir. 2005). Lumenis argues that the prior art is very close. Lumenis further asserts that the term "near" is a word of degree and is indefinite because it fails to inform the public of its bounds and is thus akin to the situation in Amgen, as the district court noted.

We agree with Young that the district court erred in determining that the term "near" is indefinite. A patent specification must "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, P 2. The purpose of the definiteness requirement is to "ensure that the claims delineate the scope of the invention using language that adequately notifies the public of the patentee's right to exclude." Datamize, 417 F.3d at 1347 (internal citation omitted). Claims are considered indefinite when they are "not amenable to construction or are insolubly ambiguous . . . . Thus, the definiteness of claim terms depends on whether those terms can be given any reasonable meaning." Id. Indefiniteness requires a determination whether those skilled in the art would understand what is claimed. To make that determination, we have explained that "in the face of an allegation of indefiniteness, general principles of claim construction apply," Id. at 1348. In that regard, claim construction involves consideration of primarily the intrinsic evidence, viz., the claim language, the specification, and the prosecution history. Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc).

We first consider the claim language. The term "near" is recited in Claim 1(a) as: "forming a first circumferential incision in the epidermis near the edge of the ungual crest of the claw." That language implies that an incision is made in the epidermis somewhere close to or at the edge of the ungual crest. As used in the claim, the term "near" is not insolubly ambiguous and does not depart from the ordinary and customary meaning of the phrase "near" as meaning "close to or at" the edge of the ungual crest.

Reference to the specification shows that it is consistent with that understanding of the term. The specification makes
reasonably clear that the first incision is made very close to or at the edge of the ungual crest. In the "Brief Summary of the Invention," the specification describes the invented method as including a first incision in the epidermis "at the edge of the ungual crest of the feline's claw." 579 patent col.1 ll.63-67. The specification further describes that the first incision "severs the most distal portion of the epidermis from the underlying fascia of the ungual crest." Id. Additionally, in the "Detailed Description of the Invention," the disclosure states that the first incision "is made near the most distal edge of the epidermis and extends circumferentially around the claw to sever the epidermis from the ungual crest." Id. col.4 ll. 39-42. Thus, based on the several descriptions in the specification, we understand the term "near the edge of the ungual crest" as recited in the claims to mean close to or at the most distal edge of the epidermis. In fact, Figure 2 shows an example of such an incision "near" the edge of the ungual crest, as illustrated by line A-A. That figure illustrates where the first incision is made in relation to the crest and phalanx, and provides a standard for measuring the meaning of the term "near."

Moreover, because the term "near" describes a location on an animal, its use, as opposed to a precise numerical measurement, is not inappropriate because the size of the appendage and the amount of skin required to be incised will vary from animal to animal based on the animal's size. Akin to the term "approximately," a person having ordinary skill in the art would know where to make the cut; thus the use of the word "near" does not deprive one of ordinary skill from being able to ascertain where the cut should be made.

Lumenis argues that the district court properly applied Amgen and determined that the term "near" is indefinite because it fails to distinguish the claims over the prior art. We do not agree that Amgen supports the district court's decision. In Amgen, the invention was directed to homogeneous erythropoietin ("EPO"), a protein consisting of 165 amino acids that stimulates the production of red blood cells. 927 F.2d at 1203. The claim recited homogenous EPO characterized by the limitation "specific activity of at least about 160,000 IU per absorbance unit." Id. The district court determined that "bioassays provide an imprecise form of measurement with a range of error" and that the use of the term "about" 160,000 IU coupled with the range of error already inherent in the specific activity limitation, did not distinguish the invention over close prior art, which described preparations of 120,000 IU, or permitted one of ordinary skill in the art to know what specific activity values below 160,000 IU might constitute infringement. Id. at 1217. The claims as filed included the limitation "at least 120,000." After the examiner rejected the claims because the prior art included EPO having a specific activity of 128,620 IU, the claims were amended to change the "at least 120,000" language to "at least about 160,000" to avoid the cited prior art.

Because the term "about" did not give any indication as to which numerical value between the prior art specific activity value of 128,620 and 160,000 constituted infringement, the court held the term "at least about" to be indefinite. Id. at 1218. The district court further observed that there was nothing in the specification or prosecution history that provided any indication as to what range of specific activity was covered by the term "about," and no expert testified as to a definite meaning for the term. For those reasons, we affirmed the district court's determination of invalidity, stating that when the meaning of the claims is unclear, especially when there is close prior art, the claims properly may be held to be invalid. Id.

Unlike the situation in Amgen, here the intrinsic evidence does provide guidance on the meaning of the term "near." When intrinsic evidence resolves the claim construction, a term is not "insolubly ambiguous," and thus reference to the prior art is not needed. That is the situation here. In addition, there were no office actions issued by the PTO during the original prosecution rejecting the claims over the prior art. There were also no amendments or arguments filed by the patentee. Thus, unlike in Amgen, the claims were not amended to include vague language in order to overcome close prior art.

In sum, Lumenis did not prove by clear and convincing evidence that the claims are invalid for indefiniteness. The claim language and the specification make clear that the term "near" means close to or at the most distal edge of the ungual crest.
with an opening existing in the structure of a meter for securing said housing therein.

The Court construes the term "near" to mean not far distant in place. Webster's Collegiate Dictionary (9th Ed. 1984). CellNet's proposed definition of "near" as spacing sufficient so that the mounting holes will work for their intended purpose, which is to fit various standard watthour meters" is rejected because there is no indication in claim 6, where the term appears, that the term was intended to have a functional correlation. CellNet's definition is also indefinite because the physical dimensions of "standard watthour meters" are not given in claim 6, nor in claim 5 upon which claim 6 depends. Finally, Itron's proposed construction of "near" as "within a .0005 inch range" must be rejected since it clearly does not modify any specific number or dimension in claim 6.

HECO interprets this clause as follows:

The side wall of the bin is continuously curved; it includes an upper portion that is nearly vertical with respect to ground, and a lower portion that is "near horizontal" with respect to ground. The term "continuously" requires no flat, non-curved portions. "Near horizontal" means the lower portion must have some inclination with respect to ground above the horizontal, as outlined in Claim 1 above. In addition, the lower portion must be curved.

JCCC at 20. Cives and Monroe propose the following construction:

The side wall of the bin is continuously curved from an upper, outer portion that is nearly vertical with respect to the ground to a lower, inner portion that is "near horizontal" with respect to the ground. "Near horizontal" means substantially or approximately horizontal.

Id.

The parties do not expend much effort trying to distinguish between the two constructions, and at first glance it is unclear how they differ. It appears, however, that the difference is as follows: whereas HECO believes that the bin must be continuously curved, Cives and Monroe assert that it must only be continuously curved "from an outer, upper, near vertical portion of the sidewall to a lower, inner, near horizontal portion of the sidewall." Moreover, Cives and Monroe claim that "near horizontal" may be construed as "substantially" or "approximately" horizontal, whereas the court assumes that, to be consistent with its interpretation of claim 1, HECO believes that "near horizontal" means an inclination of "at least 7% degrees above horizontal."

Assuming the court has adequately stated the parties' respective positions, the court shall adopt the construction that Cives and Monroe propose. The claim only requires that a certain portion of the side wall of the bin be curved, i.e., "from an outer, upper, near vertical portion of the sidewall to a lower, inner, near horizontal portion of the sidewall." It does not require the entire sidewall to be curved, as HECO's construction suggests. For example, as the court discussed in Part VII.A.1, the sidewall can have an upper vertical portion. The specification makes clear that these optional upper vertical portions are part of the sidewall. See, e.g., Col.3, ll. 10-20 (discussing figure 3 and stating that "[u]pper vertical portions of the sidewalks are optional: the bin sidewalls may commence with inwardly curved portions" (emphasis added). The court also declines to adopt HECO's construction of "near horizontal" as an inclination of "at least 7 degrees above horizontal" for the same reasons outlined in Part VII.A.2. The plain and ordinary meaning of "near horizontal" is "substantially" or "approximately" horizontal. Cf. Aero Prods. Int'l, Inc. v. Intex Recreation Corp., 466 F.3d 1000, 1008 (Fed. Cir. 2006) (noting that the parties had agreed that "substantially hermetic seal" meant "nearly or largely impervious to air").
the reflector body has lugs on a side nearest the light emission window.

The parties are not far apart on the meaning of "lugs". Philips urges that it means "small projecting parts of the reflector body used for positioning the light source." Iwasaki advocates that it means "projections, pads or ridges". Based upon my review of the specification and without reading a non-existent functional limitation into the claim language, I conclude that lugs, in the context of the claim language, means "small projecting parts of the reflector body". 7

7 I note that "lugs" is defined in Webster's Third New Int'l Dictionary, Unabridged (1961) as "a small projecting part of a larger member".

The parties disagree as to the meaning of "on a side nearest" in the phrase "the reflector body has lugs on a side nearest the light emission window". Philips argues that it means the lugs are positioned at the front or top end of the reflector body closest to the light emission window. Iwasaki urges that it means a side at the front end of the reflector body.

The claim language describes the relationship of the lamp to the reflector body: "the electric lamp being fixed in the reflector body with the first end portion inside the neck-shaped portion, while the cavity lies within the reflecting portion and the electric element is on the optical axis wherein the reflector body has lugs on a side nearest the light emission window." There is no dispute that the "light emission window" means a part of the reflector body through which light is emitted outside. At first review, the use of the indefinite article "a" -as in "a side"--and the superlative "nearest" in the phrase "lugs on a side nearest the light emission window" appears ambiguous. The use of both terms assumes the possibility of multiple. Furthermore, the claim language does not differentiate between reflector bodies that, at the end through which light is transmitted, are circular in shape and those that are rectangular in shape. Thus, there can be multiple sides to a given reflector body. In claim 6, the term "front side" is employed and, for the reasons that will later be explained, I construe that term to mean the side that faces in the same direction as the emitted light. I will not construe "a side nearest the light emission window" to be synonymous with "front side". I construe the term "a side nearest the light emission window" to mean any side that is at or near the end of the light emitting end of the reflector body and includes the "front side" as defined below, as well as the outer circumference of the reflector body at points closest to the light emitting end.

7. "needle protector clip"

Braun construes "needle protector clip" to mean "needle guard." (D.I. 99 at 20; Tr. at 115) Terumo instead construes the term to mean "unitary needle guard." (D.I. 71 at 21) Thus, the only dispute is whether the word "unitary" should be part of the construction. (Tr. at 115)

There is not entire agreement as to what "unitary" means. To Terumo, "unitary" means made of a single piece of metal. (D.I. 71 at 23; Tr. at 129) Braun disagrees. (D.I. 99 at 21 n.5; Tr. at 116-17) For purposes of my analysis, I interpret "unitary" to mean "made of a single piece of metal."

Nothing in the language of the asserted claim itself indicates a limitation that the needle protector clip (or needle guard) be unitary. Independent claim 9, in which the disputed term appears, reads in pertinent part:

a needle protector clip positioned in the clip cavity and having a ready to use position, in which the needle protector clip is positioned proximally of the needle tip, and a protective position, in which the needle protector clip blocks the needle tip . . . .

(‘613 patent, col. 16 lines 4-8) (emphasis added)

Terumo, as support for its "unitary" limitation, points out that the other two independent claims -- claims 1 and 20, which
each claim "a tip protector" -- have dependent claims -- claims 7 and 23, respectively -- "wherein the tip protector is an integrally formed unit" (emphasis added). (See D.I. 71 at 22; '613 patent, col. 15 lines 60-61 & col. 17 lines 6-7.) To Terumo, it follows that claim 9, which lacks a similar dependent claim, must somehow also be limited to an "integrally formed unit," a phrase evidently having the same meaning as "unitary." I do not agree. Rather, the structure of these claims indicates that the patentee knew how to limit his claims to "unitary" clips when he wished to do so, rendering it meaningful that he chose not to do so in claim 9.

Turning to the specification, it, like the claims themselves, demonstrates that the patentee knew how to indicate when an embodiment was "unitary." Several embodiments are expressly described as a "unitary needle guard" or a "unitary spring clip." ('613 patent, col. 3 lines 13-14; id. col. 5 line 60) (emphasis added) Other embodiments, however, are not described as "unitary," such as "the spring clip needle guard 96" shown in Figures 7A-7C and "the spring clip 96" shown in Figures 8 and 9. ('613 patent, col. 8 lines 24-28)

Terumo offers several justifications for a "unitary" limitation, but none are persuasive. First, Terumo emphasizes the first sentence of the Abstract, which states: "[a] safety IV catheter includes a unitary, resilient needle guard received in a catheter hub." (D.I. 71 at 22-23) But neither the Abstract nor any part of the specification states that "unitary" is an "essential component" of the invention; there is no basis to import this limitation into the claims. See Saunders Grp. v. Comfortrac, Inc., 492 F.3d 1326, 1332-33 (Fed. Cir. 2007). Next, Terumo observes that the specification discloses that one of the objects of the invention is "to provide a safety IV catheter of the type described which is relatively simple and inexpensive to manufacture." (613 patent, col. 2 lines 46-48) However, even assuming it is easier and cheaper to manufacture a unitary needle guard than one consisting of multiple pieces, there is no teaching in the patent that these features of the manufacturing process are essential to the invention. Nor is there any requirement that every claim of a patent accomplish every objective of the invention. See generally i4i Ltd. P'shp v. Microsoft Corp., 598 F.3d 831, 843 (Fed. Cir. 2010) ("[N]ot every benefit flowing from an invention is a claim limitation."). Finally, Terumo again cites to Wynkoop's deposition, but again the testimony on which it relies does not address the scope of the claims. (D.I. 98 Ex. 1 at p. 140-41 (Wynkoop reiterating 2001 testimony about embodiment depicted in Figure 10A))

Thus, I recommend that the Court construe "needle protector clip" as a "needleguard."

2644

I. Top surface having a negative slope from left to right (Claims 1, 6-10, 18-21)

The plaintiff's proposed definition is "the top surface slants downward from left to right such that the highest point is left of center." The defendant's proposed definition is "the entire top surface slopes downwardly from the left wall to the right wall so that no arch is present when viewed from the rear." The defendant objects to the plaintiff's definition because it would encompasses an arch on the top of the mouse. The defendant points to the prosecution history, in which the patent examiner distinguished the '683 patent from the prior art.

In October 1996, the PTO rejected the plaintiff's application based in part on the prior art -- the Gart mouse, the Bacon mouse, the Kaneko mouse, and the Maynard mouse. See Joint Appendix ("JA") 77-78. In January 1997, the plaintiff filed an amendment addressing the examiner's concerns. See JA 81-89. The plaintiff argued that "the top surface of the Gart mouse does not have a negative slope from left to right" as recited in the plaintiff's claims, but a gentle, clearly distinctive arch. See JA 85. The plaintiff distinguished the Bacon, Kaneko, and Maynard mice on the same grounds. See JA 87 ("The Bacon mouse and the Kaneko mouse both have an arched top surface, not a top surface having a negative slope from left to right.").

In March 1997, the PTO again rejected the plaintiff's application in view of the prior art. See JA 99-104. The examiner found the slope of the Gart mouse from left to right in the range of 20 to 30 degrees to be "negative enough" to preclude the plaintiff's application. See JA 102. In April 1997, the plaintiff submitted another amendment, which was rejected by the PTO. See JA 112.

On May 21, 1997, the plaintiff had a personal interview with the examiner to discuss all pending claims. In the record of the interview, the examiner described the general nature of the meeting: "Applicant and his representative discussed the
difference between the instant invention and the prior art device (including the negative slope from left to right and the curved bottoms) and the criticality of these features for operation of the invention." JA 113.

In its summary of interview and request for reconsideration, the plaintiff emphasized that its invention requires a negative slope from left to right in a range of 20 to 30 degrees in contrast to the Gart patent, which shows a top surface with a negative slope from center to right but a positive slope from left to center. See JA 117. The examiner subsequently issued an amendment which permitted certain of the plaintiff's claims. The examiner noted that although the Gart mouse had a negative slope on the top surface, the slope "is not entirely negative as shown in the present invention." See JA 122 (addressing Figure 2 of the plaintiff's invention) (emphasis added). The examiner explained that "the negative slope claimed in the present invention is critical" to obtaining the positive results intended by the patent.

Based on this history, the defendant argues the examiner only permitted the plaintiff's patent after she was convinced that the plaintiff's invention avoided the prior art by requiring an entirely negative slope from left to right. The plaintiff responds that if the examiner meant to require the slope to be entirely negative, then the examiner would have required the plaintiff to amend the patent language before awarding the patent. The plaintiff argues that the claim language itself does not require an entirely negative slope. The plaintiff further points to the drawings in the specifications, which do not show an entirely negative slope.

After considering the prosecution history, the Court finds that the defendant's definition is correct. The plaintiff avoided the prior art before the examiner by claiming the slope was entirely negative from left to right and should not be permitted to change those representations now. See Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995) ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution."). If the plaintiff disagreed with the examiner's characterization of the invention as having an entirely negative slope, then the plaintiff had an obligation to correct it. 1 The plaintiff will not be permitted to benefit from the examiner's characterization and then try to disclaim that characterization in the above-styled cause.

- - - - - - - - - Footnotes - - - - - - - - -

1 The record reveals that the plaintiff did file a comment on the examiner's reasons for allowance, but failed to address the examiner's conclusion that the plaintiff's invention had an entirely negative slope. See JA 131-32.

- - - - - - - - - End Footnotes - - - - - - - - -

This same interpretation -- requiring an entirely negative slope -- will be applied to the definition as it applies to a negative slope from front to rear.

2645

The plaintiffs' patent concerns an ergonomically superior computer mouse that minimizes the amount of stress placed on the user's fingers, wrist, and hand. The invention is intended to conform as closely as possible to the user's neutral hand position, which is also referred to as the position of repose. The plaintiff contends that the defendant's products - specifically the Intellimouse Pro and the Intellimouse Explorer-are infringing claims 1, 6-10, and 18-22 of the '683 patent as well as claim 42 of the '553 patent.

On January 14, 2000, the Court entered an order construing the claims of '683 patent. One area of dispute concerned the phrase "having a negative slope" from left to right. The parties disagreed whether the term should be defined to encompass an arch. The defendant proposed defining the phrase to mean "the entire top surface slopes downwardly from the left wall to the right wall so that no arch is present when viewed from the rear." The plaintiffs' proposed definition was "the top surface slants downward from left to right such that the highest point is left of center."

During the prosecution, the patent examiner distinguished the '683 patent from the prior art, specifically the Gart mouse. The examiner noted that although the Gart mouse had a negative slope on the top surface, the slope "is not entirely negative as shown in the present invention." See Joint Appendix ("JA") 122; see also JA 85 (claiming the Gart patent does not have a negative slope from left to right but a gentle sloping arch); JA 87 ("The Bacon mouse and the Kaneki mouse both have an
arched top surface, not a top surface having a negative slope from left to right."). The examiner explained that "the negative slope claimed in the present invention is critical" to obtaining the positive results intended by the patent. Relying in large part on the prosecution history, the Court adopted the defendant's definition. See Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995) ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution.").

On December 21, 1999, the PTO issued the '553 patent, which is a continuation-in-part of the '683 patent. Claim 43 of the '553 patent discloses:

A computer mouse for operation, on an operating surface, by a right hand, the computer mouse comprising:

- a bottom wall having an opening to accommodate a controlling device; a housing, joined to the bottom wall, including a top surface, a front surface, a right side surface and a left side surface; the top surface having negative slope from front to rear and from left to right to support the right hand in a state of approximate repose with pronation in the range of approximately 10 degrees to approximately 45 degrees from the horizontal, while the heel of the right hand rests on the operating surface; a longitudinal peak running substantially left of center along the length of the mouse; and at least one button having negative slope downward to the front and right.

(Emphasis added). On January 18, 2000, the Court granted the plaintiff leave to file a third amended complaint that asserted claims based on the '553 patent.

The defendant urges the Court to apply the construction of "negative slope" in the '683 patent to the '553 patent. See, e.g., Wang Lab., Inc. v. America Online, Inc., 197 F.3d 1377, 1384 (Fed. Cir. 1999) (rejecting the patentee's argument that a statement made during the prosecution of the parent application should not apply to the continuation-in-part application); Elkay Mfg. Co. v. EBCO Mfg. Co., 192 F.3d 973, 980 (Fed. Cir. 1999) ("When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation."); Augustine Med. Inc. v. Gaymar Indus. Inc., 181 F.3d 1291, 1302 (Fed. Cir. 1999).

The defendant also argues it is entitled to summary judgment because the accused products do not contain "a flattened surface adjacent to said one or more buttons . . . such that the user's ring finger receives support from the flattened surface" as required by dependent claims 18 and 22 of the '683 patent, which the Court interpreted to require "a surface that is sufficiently flat, wide, and horizontal to support a user's ring finger without the finger touching the mouse button."

Finally, the defendant argues prosecution history estoppel precludes the plaintiff from prevailing under the doctrine of equivalents. See Augustine Med., Inc., 181 F.3d at 1298 (describing the numerous principles that "strictly limit" the application of the doctrine of equivalents). Because the plaintiff relinquished coverage for a mouse with an arched surface in its arguments to the examiner, the defendant argues the plaintiff is precluded from reclaiming this feature under the doctrine of equivalents. See Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1304 (Fed. Cir. 1997) ("By distinguishing the claimed invention over the prior art, an applicant is indicating that the claims do not cover."). The defendant concludes it is entitled to summary judgment of noninfringement as to both the '683 and '553 patents.

The plaintiff criticizes the defendant's noninfringement arguments as being based on a "faulty claim construction." The plaintiff continues to argue that the phrase "top surface having a negative slope from left to right" does not preclude the top surface from having an arch when viewed from the rear. The plaintiff argues the express terms of the '553 patent vitiate the
Court's interpretation of the '683 patent. As mentioned above, claim 43 of the '553 patent requires a "longitudinal peak running substantially left of center along the length of the mouse." Claim 46 of the '553 patent recites:

The computer mouse of claim 43, wherein the longitudinal peak runs along the length of the computer mouse, substantially from a forward juncture of said left side surface and said front surface, toward a rearward juncture of said top surface and said left side surface.

The plaintiff interprets claim 46 to require the longitudinal peak to be located on the extreme left edge of the top surface. Based on the doctrine of claim differentiation, the plaintiff argues that claim 43 permits the longitudinal ridge to be located somewhere between the extreme left edge of the top surface and substantially left of the center of the top surface. See, e.g., Kraft Foods, Inc. v. International Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000) (noting that the doctrine of claim differentiation creates a presumption that each claim in a patent has a different scope). If the longitudinal ridge is placed anywhere to the right of the extreme left edge of the top surface, the mouse will not have an entirely negative slope from left to right and an arch will be present when the mouse is viewed from the rear. The plaintiff asserts that by granting claim 43 of the '553 patent, the examiner must have recognized that the surface of the invention described in both the '683 and the '553 patents did not require an entirely negative slope from left to right. Thus, the plaintiff concludes the Court's interpretation of negative slope is manifestly erroneous.

Alternatively, the plaintiffs argue the accused products infringe under the doctrine of equivalents. According to the plaintiffs, the negative slope from left to right provides pronation relief by placing the hand in a state of approximate repose. The plaintiffs argue the left to right slope of the accused products perform the same function and achieve the same result. Similarly, the plaintiffs argue the negative slope from front to back of the accused devices provides support to the palm and fingers in the same way and achieves the same result as the claimed inventions. The plaintiffs reject the defendant's prosecution history estoppel argument. The plaintiffs allege they distinguished the prior art Gart design on various grounds, including the apparent symmetry in the top surface. The plaintiffs argue it is inappropriate for the defendant to focus on just one of the bases given for distinguishing the Gart mouse instead of focusing on the combination of reasons.

The defendant replies by disagreeing with the plaintiff's proposed interpretation of claim 46. The defendant interprets claim 46 as describing where the longitudinal peak starts and ends rather than telling where it is located with reference to the center of the top surface of the mouse.

The Court finds the defendant is entitled to summary judgment on noninfringement as to both the '683 and the '553 patents based on the prosecution history of the '683 patent. Although the prosecution history of the '683 was detailed in the Court's previous claims construction order, it is helpful to repeat that history here. In October 1996, the PTO rejected the plaintiff's application based in part on the prior art -- the Gart mouse, the Bacon mouse, the Kaneko mouse, and the Maynard mouse. See JA 77-78. In January 1997, the plaintiff filed an amendment addressing the examiner's concerns. See JA 81-89. The plaintiff argued that "the top surface of the Gart mouse does not have a negative slope from left to right" as recited in the plaintiff's claims, but a gentle, clearly distinctive arch. See JA 85. The plaintiff distinguished the Bacon, Kaneko, and Maynard mice on the same grounds. See JA 87 ("The Bacon mouse and the Kaneko mouse both have an arched top surface, not a top surface having a negative slope from left to right.").

In March 1997, the PTO again rejected the plaintiff's application in view of the prior art. See JA 99-104. The examiner found the slope of the Gart mouse from left to right in the range of 20 to 30 degrees to be "negative enough" to preclude the plaintiff's application. See JA 102. In April 1997, the plaintiff submitted another amendment, which was rejected by the PTO. See JA 112.

On May 21, 1997, the plaintiff had a personal interview with the examiner to discuss all pending claims. In the record of the interview, the examiner described the general nature of the meeting: "Applicant and his representative discussed the difference between the instant invention and the prior art device (including the negative slope from left to right and the curved bottoms) and the criticality of these features for operation of the invention." JA 113.

In its summary of interview and request for reconsideration, the plaintiff emphasized that its invention requires a negative slope from left to right in a range of 20 to 30 degrees in contrast to the Gart patent, which shows a top surface with a negative slope from center to right but a positive slope from left to center. See JA 117. The examiner subsequently issued an amendment which permitted certain of the plaintiff's claims. The examiner noted that although the Gart mouse had a
negative slope on the top surface, the slope "is not entirely negative as shown in the present invention." See JA 122 (addressing Figure 2 of the plaintiff's invention) (emphasis added). The examiner explained that "the negative slope claimed in the present invention is critical" to obtaining the positive results intended by the patent.

After considering the prosecution history, the Court confirms its earlier determination that the term "negative slope" requires an entirely negative slope. The plaintiff avoided the prior art before the examiner by claiming the slope was entirely negative from left to right and should not be permitted to change those representations now. If the plaintiff disagreed with the examiner's characterization of the invention as having an entirely negative slope, then the plaintiff had an obligation to correct it. See Elkay Mfg. Co., 192 F.3d at 979 (adopting the examiner's construction when the patentee failed to respond to the examiner's statement of allowance). The plaintiff will not be permitted to benefit from the examiner's characterization and then try to disclaim that characterization in the above-styled cause. The Court is unpersuaded by the plaintiff's argument that if the examiner intended the term "negative slope" to mean an entirely negative slope, the examiner would have required an amendment to the claim language. See id. (rejecting a patentee's argument that certain subject matter was not disclaimed because it did not result in a substantive amendment of the claim language).

--- Footnotes ---

2 The record reveals that the plaintiff did file a comment on the examiner's reasons for allowance, but failed to address the examiner's conclusion that the plaintiff's invention had an entirely negative slope. See JA 131-32.

--- End Footnotes ---

The issuance of the '553 patent does not alter the Court's conclusion. Contrary to the plaintiff's argument, the newly added element of "a longitudinal peak running substantially left of center along the length of the mouse" does not compel the Court to interpret the phrase "negative slope from left to right" to mean that the highest point on the top surface of the mouse is left of center. As the plaintiff has pointed out previously during this litigation, the subject of the '683 and the '553 is a computer mouse with a rounded construction. For this reason, although the claim recites a top surface, a front surface, a left side surface and a right side surface, the precise juncture of these surfaces is difficult pinpoint. The examiner might have permitted the addition of the longitudinal peak element in recognition of the mouse's somewhat amorphous boundaries, such that the placing of the longitudinal peak "substantially" left of center would still result in an entirely negative slope on the top surface of the mouse.

Nevertheless, the reason for the allowance of claim 43 of the '553 patent is not clear from the prosecution history. The examiner of the '553 did not expressly address the "negative slope" element or its relationship to the "longitudinal peak" element. Under these circumstances, the plaintiff remains bound by the Court's interpretation of the prosecution history of the '683 patent. During that prosecution, the plaintiff disclaimed an arched top surface. Although the plaintiff now argues it only disclaimed a symmetrical arched top surface, its written correspondence with the examiner and the PTO does not reflect this distinction. The Court finds the presumption of claim differentiation between claims 43 and 46 of the '553 patent is overcome by the prosecution history of the '683 patent. See Kraft Foods Inc. v. Int'l Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000) (finding the written description and prosecution history overcame any presumption arising from the doctrine of claim differentiation); Wang Labs, Inc. v. America Online, Inc., 197 F.3d 1377, 1384 (Fed. Cir. 1999) ("The doctrine of claim differentiation can not broaden claims beyond their correct scope, determined in light of the specification and the prosecution history and any relevant extrinsic evidence."). Because the summary judgment evidence establishes the accused products do not contain an entirely negative top surface, either from left to right or front to back, the defendant is entitled to summary judgment of no literal infringement.

--- Footnotes ---

3 Alternatively, the defendant is entitled to summary judgment of no literal infringement on claims 18-21 of the '683 patent because the accused products do not contain a flattened surface adjacent to the buttons that provides support for the user's ring finger. The summary judgment evidence establishes that the buttons on the accused products extend across the entire width of the top surface. As a practical matter, this precludes a flattened surface adjacent to the buttons. Based on the Court's claim construction, the right side wall of the accused devices, which is substantially vertical, does not meet this element.

--- End Footnotes ---
3. Netting Arrangement

Plaintiffs proposed construction of the term "netting arrangement" is "lateral and longitudinal strands that intersect in locking engagement to form a grid-like pattern." Although quite similar, defendants seek construction of the term as "longitudinal and lateral strands that intersect in locking engagement with one another to form a grid-like pattern and having not as close a knit and larger opening than the stockinette member." Defendants' construction is the flip side of their construction for "stockinette member." In other words, if the construction of "stockinette member" includes "having a closer knit and smaller opening than the netting arrangement," the netting arrangement must have a less close knit and a larger opening that the stockinette. As discussed above, this is an impermissibly narrow construction.

The term "netting arrangement" has a discernable plain and ordinary meaning. Accordingly, the Court construes "netting arrangement" as "longitudinal and lateral strands that intersect in locking engagement to form a grid-like pattern with less stretch capacity than the threads of the stockinette member."

3. nib

This term appears numerous times in claim 1 and claim 12. Chip-Mender argues that "nib" means "nib"--that the term does not require independent construction because the common meaning will suffice. Sherwin-Williams argues for the common meaning of "nib"--a small projecting point--but asserts that the term should be construed as "the fibrous or solid structure of a fluid applicator that contacts and transfers fluid to a surface."

Chip-Mender asserts that nib is used throughout the patent to describe the structure that seals the applicator, regulates paint flow from the applicator, and applies automotive paint composition to the painted surface of the vehicle in need of repair. Chip-Mender contends that the language of the claims makes it clear that the "nib" cannot be porous, citing specifically to "the flow of said paint through said passageway, to said nib," which appears in both claim 1 and claim 12, see col. 5, ll. 37; col. 6, ll. 19-20; and to "applying a slight pressure to force said nib upward allowing it to open and permit said paint to flow by gravity from said reservoir through said passageway to said nib and transferring to the painted surface of the vehicle," which appears in claim 12, see col. 6, ll. 23-27.

In opposition, Sherwin-Williams asserts that Chip-Mender cannot point to any claim language in the '299 patent that excludes fibrous structures from the ordinary and customary meaning of "nib," which Sherwin-Williams notes is defined in the McGraw-Hill Dictionary of Scientific and Technical Terms as "a small projecting point." Sherwin-Williams argues that because "nib" is not defined by its structural composition, it should be construed broadly, without any structural limitation.

Sherwin-Williams submits that the '299 patent describes "nib" as both porous and solid because it references three prior art patents, each of which discloses a pen system or device using a porous nib. In the "Background" section, the '299 patent states that "pen nib systems" are shown in U.S. Patent Nos. 5,468,082 ("the '082 patent"--"Hori") and 4,838,723 ("the '723 patent"--"Suzuki"), and that "pen devices using nibs" are described in U.S. Patent No. 4,923,317 ("the '317 patent"--"Bishop"). Sherwin-Williams notes that the '082 patent discloses a paint maker "with a felt tip as a nib"--i.e., a fibrous nib--and also discloses a solid "nib or ball tip;" that the '723 patent discloses a nib that is both porous and fibrous; and that the '317 patent discloses a "porous plastic wear-resistant tip."

Sherwin-Williams contends that because Russo used the Hori, Suzuki, and Bishop references to describe "nib" in the '299 patent, those prior art references are intrinsic evidence. Relying on Kumar v. Ovonic Battery Co., Inc., 351 F.3d 1364 (Fed. Cir. 2003), Sherwin-Williams argues that such prior art references may be of "particular value" in construing a disputed claim term because it may indicate not only the meaning of the term to persons skilled in the art, but also that the patentee intended to adopt that meaning.
The court finds that "nib" means "nib" or "a small projecting point." The term "nib" is not explicitly defined in the claims, the specification, or the prosecution history. The nib is identified in claims 1 and 12 as an essential element of the applicator unit. '299 patent, col. 5, II. 27-31; col. 6, II. 8-12. The claims also describe the location of the nib--"slidably located in [the] passageway… [and] including a portion extending from said passageway." Id. col. 5, II. 27-30; col. 6, II. 8-11. In addition, the claims and specification state that the nib transfers the paint to the painted surface of the vehicle. Id., col. 5, II. 35-39; col. 6, II. 17-21; col. 2, II. 25-28. Thus, in the context of the '299 patent, the nib is the structure of the applicator that contacts and transfers the paint to the surface. There is no dispute regarding the size or shape of the nib, and no dispute that the purpose of the nib is to transfer or apply paint to the painted surface of the vehicle.

Chip-Mender argues that the common meaning of "nib" applies, and that the term requires no construction. The common meanings of "nib" are "the point of a pen" and "a sharp tip or point." Webster's II New Riverside University Dictionary (1988). Sherwin-Williams asserts that a "nib" is "a small projecting point." The dictionary definition-- "sharp tip or point"-- combined with the language in claims 1 and 12--"including a portion extending from said passageway"--equates with "a small projecting point." The court concludes that both parties agree that the commonly understood meaning applies.

The primary dispute between the parties is whether the nib must be solid or whether it can also be made of a material that is porous or fibrous. The patent does not specify whether the whether the nib is solid or fibrous, and, as noted above, the claims do not define "nib." Sherwin-Williams contends that the nib can be porous or fibrous, based solely on the fact that certain prior art uses the word "nib" to refer to structures that are porous/fibrous.

The court finds, however, that the nib in the '299 patent should not be construed as "porous" or "fibrous," because the specification states that the nib "serves as a regulator of the flow rate of paint composition." '299 patent, col. 2, II. 10-12. Absent a clear definition in the claims, the specification is "the single best guide to the meaning of a disputed term." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). A porous/fibrous nib would not be effective in regulating the flow of paint, because it would have to absorb paint before it could transfer paint to effectuate the repair to the painted surface. Further support for this construction is found below, in the discussion of disputed terms Nos. 7 and 8.

The court disagrees with Sherwin-Williams' argument that under Kumar, the Hori, Suzuki, and Bishop references that disclose "pen nib systems" or "fluid pen devices" with porous and/or fibrous nibs must be taken into account as evidence that Russo intended the '299 patent to include a nib made of a porous/fibrous material. In Kumar, the Federal Circuit found a prior art reference cited during the prosecution history of the patent at issue to be controlling, on the grounds that the applicant and the examiner considered the reference to be highly pertinent, and that the reference was discussed extensively and distinguished during the prosecution of the patent. See 351 F.3d at 1368. In the present case, however, Sherwin-Williams has not demonstrated that Russo discussed the Hori, Suzuki, or Bishop references extensively during the prosecution of the '299 patent or that Russo embraced those references as applying specifically to the claims at issue. The prosecution history reflects only a discussion regarding whether claims 1-4, 6-9, and 11 were obvious in light of Kremer in view of Saad, and whether claims 5 and 10 were obvious in light of Kramer in view of Saad, and further in view of Nakai.

2648

1. "Nipple Cover"

For the term "nipple cover," Plaintiff proposes "an article for covering the nipple on a human breast, that is not supported by attached straps around the body or by a brassiere, that is smaller than a brassiere, and that does not substantially enhance the apparent size of a woman's breast." 2 Defendants offers: "a small, thin, flexible, flesh-colored device that covers the nipple and extends a short distance beyond the nipple and areola and that is not intended to replace or enhance a woman's breast and is not intended to provide support to the breast." 3

Footnotes

2 In both the initial joint claim construction charts provided to the court and the parties' claim construction briefs, Plaintiff initially included "an article for concealing the nipple..." for her proposed construction of nipple cover. Though the parties briefed the issue as if it were a point of contention, the most recent joint construction chart provided to the Court included
for Plaintiff's proposal "an article for covering the nipple..." instead. By using "covering" in the most recent joint construction, Plaintiff and Defendant apparently no longer have a dispute on this issue.

3 Defendants later agreed to drop the "thin, flexible, flesh-colored" language from their proposed construction. See Transcript of Markman Hearing at 5.

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The parties' proposed constructions contain essentially three key disputed elements: (1) the size of the cover, (2) whether the nipple cover is supported by straps or provides support, and (3) the enhancement element. After comparing the parties' proposals and considering all relevant evidence, the Court adopts the following construction for the term "nipple cover": "an article for covering the nipple that extends beyond the nipple and areola; is unsupported by attached straps around the neck, back, shoulders, or arms; and does not replace or substantially enhance the apparent size of a woman's breast."

Turning first to the size aspect of the nipple cover, both parties agree the concept of size is part of the ordinary meaning of "nipple cover." Plaintiff argues that a nipple cover must only be "smaller than a brassiere." Defendants argue that the nipple cover must, at a minimum, "cover the nipple and extend a short distance beyond the nipple and areola." The specification provides useful guidance for defining the nipple cover's minimum size. While the specification states that the illustrations in the figures are not intended to provide a specific size limitation, it also states that "the nipple cover is of sufficient size such that it can cover a user's entire nipple and areola." Compare '606 patent col. 2 ll. 60-64, with '606 patent col. 2 ll. 50-51. Indeed, the patent's purpose centers around the nipple cover's ability to cover the entire nipple shape-any less coverage, and the purpose would be frustrated. See, e.g., '606 patent col. 1 ll. 42-44; '606 patent col. 2 ll. 27-30; '606 patent col. 2 ll. 50-51. Between the overt statement in the specification and the overall purpose of the patent, there is strong evidence that the nipple cover must cover, at a minimum, the user's entire nipple and areola. The parties' proposed constructions seek, however, to either go beyond this basic defining characteristic or take an entirely different approach to specifying the size aspect of the cover.

Instead of defining the coverage area, Plaintiff takes the different approach of defining the nipple cover's size through a maximum size concept by arguing that the cover must only be "smaller than a brassiere." Plaintiff's proposal finds support in the specification, as it specifically states that the nipple cover is smaller than a brassiere. See '606 patent col. 1 ll. 46-47 ("The nipple cover is also an improvement over the use of a brassiere because it is smaller in size and bulk..."). However, solely using the language "smaller than a brassiere" would be confusing since the patent provides no pertinent comparison to define the 'smaller' size. Does 'smaller' mean the nipple cover is smaller than a particular brassiere cup size, or does it mean smaller overall when brassieres straps and belts are also included in addition to the cup portion of the bra? Given these uncertainties, particularly when taken in conjunction with the varying sizes, styles, and structures of brassieres, the phrase "smaller than a brassiere" provides little helpful guidance in defining the term "nipple cover." 4

- - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

4 Other parts of the Court's final construction incorporate the idea that the nipple cover is generally smaller in bulk and size than an average brassiere without having to specifically include that language in the construction. Both the sizes provided in the claims and the inclusion of language in the construction reflecting the lack of straps incorporate the idea that the nipple cover is conceptually lesser in bulk and size than a brassiere.

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - -

Defendants argue that not only does the specification disclose the nipple cover's size is sufficient to cover the entire nipple and areola, but that it should also extend a "short distance" beyond the nipple and areola. In support of their assertion, Defendants first point to the preferred embodiment in the specification. In the preferred embodiment, the specification outlines that "the nipple cover will extend approximately one-eighth to one-fourth of an inch beyond the areola." '606 patent col. 2 ll. 53-55. However, the specification on the whole qualifies the precise distances listed in the preferred embodiment by noting that "the exact size of the nipple cover... will vary." '606 patent col. 2 ll. 55-56. More importantly, the Federal Circuit has repeatedly cautioned against limiting the claims to the preferred embodiment. See Phillips v. AWC Corp., 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc). Defining the term using the precise distances described in the preferred
embodiment would be importing limitations into the claim, as the claimed invention seemingly allows for nipple covers of greater or lesser coverage than those described in the preferred embodiment. Using the preferred embodiment as the sole guidepost to require that the nipple cover must extend a "short distance" beyond the nipple and areola is therefore inappropriate.

In addition to the preferred embodiment, Defendants also point to other areas of the specification which state the nipple cover should extend a "short distance" beyond the nipple and areola. See '606 patent col. 2 ll. 51-53 ("The cover will also extend a short distance beyond this area to ensure complete coverage"). Between the preferred embodiment and other portions of the specification, it is clear the specification discloses that the cover should extend some distance beyond the nipple and areola. However, using the phrase a "short distance" in the nipple cover's definition presents the same problems as using "smaller than a brassiere," and is ultimately problematic for other reasons as well. Similar to the problem with using "smaller than a brassiere" to define the nipple cover's size, interpreting what qualifies as a "short distance" is ambiguous and difficult to assess. Also, the claims do not limit the invention to extending only a "short distance" beyond the nipple and areola. What is clear from the specification is that the patent's method utilizes a nipple cover to ensure complete coverage of the nipple and areola, and also to blend smoothly with the surface of the breast for aesthetic purposes. By stating that the nipple cover "extends beyond" the nipple and areola, the Court's construction effectively conveys this central purpose, and is also consistent with the claim language without limiting the claims (which require coverage of roughly one half of the breast at a minimum). See '606 patent col. 4 ll. 16-18. For the size aspect, the Court therefore adopts the phrase "extends beyond the nipple and areola" as part of the Court's construction.

Turning next to the question of support, Plaintiff offers as part of her construction the language that the nipple cover "is not supported by attached straps around the body or by a brassiere," while Defendants' construction incorporates the language "is not intended to provide support to the breast." Each party takes a different approach to the support element of the nipple cover. Plaintiff's construction focuses on how the nipple cover itself is not supported, while Defendant's proposal instead focuses on how the nipple cover does not support the breast.

Other than reference to use of an adhesive to attach the nipple cover in dependent Claim 4, the claims do not directly discuss this question of support to the nipple cover and breasts. In the specification, however, it is clear that the inventor was trying to distinguish the nipple cover from a brassiere through a lack of supporting straps: "the nipple cover is also an improvement over the use of a brassiere because . . . it also lacks the use of straps and belts which can cause discomfort." '606 patent col. 1 ll. 46-49. Indeed, a large part of the purpose of the patent was to avoid the discomfort of belts and straps pressing against the body. See '606 patent col. 1 ll. 30-33. Using this intrinsic evidence as a guide, the portion of Plaintiff's proposed construction stating that the nipple cover is "unsupported by attached straps" appears correct. 5 The parties' chief disagreement centers on Plaintiff's inclusion of the "around the body" language, and the Court agrees with Defendant that the language in Plaintiff's proposal that it lacks straps "around the body" is over-inclusive and vague. The key concept is that the nipple cover lacks straps supporting the cover itself, and also lacks straps to avoid visibility or pressure against the body. Straps around the neck, back, shoulders or arms attached to the nipple cover would provide support to both the nipple cover and the breast, and would likely be visible under sheer clothing and press against the body. The Court therefore adopts the phrase that the nipple cover "is unsupported by attached straps around the neck, back, shoulders, or arms" as part of the Court's final construction. 6 There is little support for any construction more specific or inclusive than the Court's construction.

5 The parties' actually agree that the nipple cover lacks straps. See Transcript of Markman Hearing at 9-10. The President of Ce Soir Lingerie, one of the defendants, also noted in her deposition that a nipple cover does not have straps. See Pl.'s Claim Constr. Br. 6, Exh. 8, Ann Deal Deposition, 6/1/2007, 128:25-129:10.

6 At the Markman hearing, there was much discussion about whether two nipple covers could have a strap between them. See Transcript of Markman Hearing at 5-10. Whether or not the claimed invention would allow for a strap between two nipple covers is unclear, since it is questionable whether such a strap would support the cover, cause discomfort, or be visible. What is clear from the specification is that the device is unsupported by straps which would be visible or press against the body.
Instead of discussing straps and belts in their construction, Defendants' cite the specification to argue only that the nipple cover is "not intended to provide support to the breast." See '606 patent col. 2 ll. 29-30. By saying the nipple cover lacks straps around the neck, back, shoulder or arms, the Court's construction largely incorporates Defendants' proposal. 7 If the nipple cover has no straps around the arms, shoulder, or back to support the cover, any incidental supporting effect the nipple cover provides is merely an unintended side effect of the other functions of the cover. Further, inserting an intent element in the construction could result in unnecessary confusion. 8 Again, the key concept in the specification is that the nipple cover lacks visible straps or belts pressing against the body, and the Court's construction accounts for these considerations.

7 At the Markman hearing, Defendants agreed "that the patented device is not intended to include straps or belts." Transcript of Markman Hearing at 9-10.

8 Though the specification states that the cover is not intended to provide support, the nipple cover could arguably contain some minuscule supporting effect through the use of the adhesive to attach the cover. Determining whether the incidental support from the adhesive or other aspects of the cover were intended could result in unnecessary confusion over a relatively minor point.

The final element of the support limitation that bears analysis is Plaintiff's proposed language that the nipple cover is not supported by a brassiere. Starting with the claim language, the only discussion of the interplay between a nipple cover and brassiere comes in Claim 3, which states: "The method of Claim 2, further comprising a step of wearing clothing in contact with an outer surface of the nipple cover without a brassiere." '606 patent col. 4 ll. 33-35. There are a couple noteworthy considerations in Claim 3's language. First, Claim 3 is a dependent claim—it is dependent upon Claim 2, which is in turn dependent upon Claim 1. Claim 3 is ultimately adding a limitation to an independent claim (Claim 1, via Claim 2), the limitation being a step of wearing clothing in contact with the surface of the nipple cover without a brassiere. The Federal Circuit has stated that when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. Phillips, 415 F.3d at 1314-15. The term "nipple cover" appears in both claims. Therefore, independent Claim 1 presumably does not contain the "step of wearing clothing in contact with an outer surface of the nipple cover without a brassiere," or Claim 3 would be unnecessary. Taken independently, Claim 1 therefore would seem to allow for a method of wearing the nipple cover in contact with a brassiere instead of other clothing.

The specification also supports such an assertion. Indeed, the specification directly discusses situations where a nipple cover can be worn with a brassiere. See '606 patent col. 2 ll. 17-20 ("The present invention consists of a flexible, reusable and flesh-colored apparatus that covers the nipple so that a woman can go braless or wear a thin bra or lingerie") (emphasis added). Though neither the claims nor the specification call for a brassiere to support a nipple cover; it nonetheless appears to be within the scope of the invention.

In support of her argument that a nipple cover is not worn with a brassiere, Plaintiff turns to the prosecution history, other portions of the specification, and prior art patents. During prosecution, the patentee distinguished certain prior art by pointing out that the claimed invention "is not for putting underneath a bra." See Pl.'s Reply Br. Claim Constr. 2, Exh. 9, Remarks, P5080. Plaintiff also argues the specification "repeatedly contrasts the invention with devices held on by belts and straps around the body or a brassiere," with lines stating that "[t]he present invention can therefore be used in instances where the use of a brassiere is not practical," and "a woman can go braless." Pl.'s Claim Constr. Br. 5 n.1 (citing '606 patent col. 1 ll. 44-45; '606 patent col. 2 l. 19). Finally, Plaintiff also cites prior art patents discussing nipple covers to support her assertion. See Pl.'s Claim Constr. Br. 6 (citing U.S. Patent No. 4,333,471 col. 1 ll. 19-28). The Court agrees with Plaintiff that generally it appears a nipple cover is designed to allow the cover to be worn without a brassiere. However, the quotes Plaintiff chose from the specification which "repeatedly contrast the invention" with devices held in place by a brassiere both state only that a nipple cover can be used without a brassiere, not that it must be worn without one. The second half of one of the quotes Plaintiff provides (that a "woman can go braless") even specifically states that the nipple cover can be worn under a brassiere. See '606 patent col. 2 l. 19-20. The specification therefore undermines Plaintiff's arguments. Plaintiff's references to the prior art patent's discussion of the nipple cover eliminating the brassiere, when taken in proper

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context, also offer no support. 9 When the patent is thoroughly examined, the only support for Plaintiff's assertion is the
isolated quote during the prosecution history that the invention is not to be worn under a bra.

9 In her claim construction brief, Plaintiff points to prior art patents for interpreting the ordinary meaning of nipple cover,
and argues that U.S. Patent No. 4,333,471 (hereinafter "the '471 patent") states that the nipple cover is not held in place by a
brassiere: "it was 'developed with an aim of eliminating the... brassiere [which] presses upon the breast and body of the user
by its belts and straps with a resultant inherent discomfort and inconvenience.'" Pl.'s Claim Constr. Br. 6 (citing '606 patent
col. 1 ll. 19-28) (emphasis in original). However, Plaintiff's cropped quote takes the statement in the '471 patent out of its
proper context, giving this section of the patent a different meaning than originally stated. Plaintiff's use of the ellipsis in the
quote makes it imply that the '471 patent directly stated or implied that the intent of the nipple cover in the '471 patent was
specifically to eliminate the brassiere. However, rather than specifically stating the nipple cover was designed to eliminate a
brassiere, the '471 specification states the nipple cover was designed to eliminate the disadvantages of a brassiere. See '471
patent col. 1 ll 27-28 ("The present invention was developed with the aim of eliminating the above disadvantages"). Much
as the '606 patent does, the '471 patent discusses the disadvantages of a brassiere as being the visibility of the brassiere
through clothing, discomfort of straps and belts pressing upon the body, and excessive perspiration under a brassiere during
hot weather. See '471 patent col. 1 ll. 16-24. The '471 patent does not, however, specifically discuss eliminating the brassiere
itself--only eliminating the disadvantages. Plaintiff's cropped and out-of-context quote is therefore misleading. The Court
agrees that the nipple cover is an option to women who wish to wear something other than a brassiere to hide their nipples,
however neither the specification of the '471 patent nor the method described in the claims of the present invention
specifically disclaim the possibility of a nipple cover and a brassiere being worn together.

Ultimately, Plaintiff has not presented enough convincing evidence limiting the definition of "nipple cover" to being
unsupported by a brassiere. 10 The claimed invention does not preclude the nipple cover being worn under a brassiere; in
fact, the specification specifically teaches that a nipple cover be utilized under a brassiere, which would ultimately provide
support to the nipple cover. See '606 patent col.2 ll. 19-20. Though Plaintiff did state during prosecution history that the
nipple cover is not for wearing under a bra, the method she claimed suggests the opposite, and the claims govern the
boundaries of the invention.

10 Plaintiff also points out in her reply brief that Defendants do not dispute this aspect of her proposed construction in either
their claim construction brief or at the Markman hearing. While true, Defendants did not include the 'unsupported by a
brassiere' language in their proposal, and the Court has no evidence before it indicating Defendants wished to adopt this
portion of Plaintiff's proposal.

The final disputed aspect of the definition of "nipple cover" included in both parties' proposed construction is the
enhancement limitation. To reflect her view on the invention's relation to enhancement of the breast, Plaintiff proposes that
the nipple cover "does not substantially enhance the apparent size of a woman's breast." Defendants propose that the nipple
cover "is not intended to replace or enhance a woman's breast." Defendants' proposed language that the nipple cover is not
intended to enhance a woman's breast would be incorrect. "Enhance" means either "to make greater," or "to provide with
certain sense, a nipple cover does intend to enhance a woman's breast--it serves to cover erect nipples, thereby enhancing the
breasts' appearance.

The Court agrees with Defendants that the nipple cover is not designed to replace a breast. However, the Court also agrees
with Plaintiff that the cover is not designed to substantially enhance the apparent size of the breast. The inventor stated as
much during the prosecution history. Pl.'s Claim Constr. Br. 11; Exh. 9, Remarks, dated 5/24/06 at 11 (P5080). Since the
nipple cover does enhance the breast in a certain manner, and it will inevitably increase the size of the breast at least a small
amount, the Court finds that Plaintiff's construction largely incorporates these concerns. The Court therefore adopts
Plaintiff's proposal, with the inclusion of Defendants' language that the nipple cover is also not intended to replace the breast, for this portion of the Court's construction.

With all of the above analysis in mind, the Court's final construction of nipple cover reads: "an article for covering the nipple that extends beyond the nipple and areola: is unsupported by attached straps around the neck, back, shoulders, or arms; and does not replace or substantially enhance the apparent size of a woman's breast."

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E. "Nominal Radial Interference"

The parties seek construction of the phrase "a nominal radial interference between the first and second lips as the lid and main body are engaged" and offer the following constructions:

   . Plaintiff: The first lip protrudes sufficiently from the inner surface of the groove and the second lip protrudes sufficiently from the outer surface of the rim so that, as the lid and the main body are engaged, the lips contact each other and a portion of at least one of the lips deflects, where each point of contact between the lips occurs in a direction along a radius of the cup.

   . Defendant: The outward extension of the first lip in the radial direction and the inward extension of the second lip in the radial direction overlap each other to cause deflection of the first and second lips during the process of assembling the lid and the cup.

1. The parties' disputes

The parties' primary dispute is whether both lips must deflect as the lid and cup are engaged or whether it is sufficient that one of the lips deflect during the process. Unsurprisingly, defendant is seeking the narrower reading. However, the evidence does not support such a limitation. The one piece of intrinsic evidence that remotely supports requiring both lips to deflect is the fact that the preferred embodiment is "molded by a polypropylene." '784 pat., col. 3, ln. 4. As defendant points out, polypropylene is flexible, suggesting that the lips would bend. Defendant's argument fails for a number of reasons. First, a preferred embodiment is rarely grounds for importing a limitation into a claim; defendant has not explained why the preferred material, polypropylene, should be the required material. Moreover, even polypropylene lips do not necessarily deflect; a lip supported by a sturdier base may not deflect at all as it passes by a lip supported by a much flimsier base. Thus, even the preferred embodiment does not require that both lips deflect.

Defendant's other argument in support of requiring both lips to deflect comes from testimony plaintiff's expert provided at a deposition. In particular, he answered the following question:

   23 Q Okay. So the deflection is essentially, and I'm going 24 to talk very simply, when the lips are moving past 25 each other, they're each squished a little bit to get 1 past each other as they're being engaged?

   .

   4 A Correct.

Dkt. # 23, Exh. 10, at 61-62. This statement is a far cry from admitting that the claim requires both lips to deflect. In short, I am not persuaded that the intrinsic or extrinsic evidence supports requiring both lips to deflect to achieve "nominal radial interference."

The other dispute involves plaintiff's proposed requirement that "each point of contact between the lips occurs in a direction along a radius of the cup." As with plaintiff's proposed constructions for "projecting radially," the reference here to a point occurring "in a direction" along a radius does not make sense. Plaintiff has no response to this. As with the concerns related to the proposed constructions for "projecting radially," it is not clear whether clearing up this confusion is necessary to resolve the parties' disputes. Therefore, I will decline to include that phrase. If the parties continue to disagree about whether
such a limitation is required, they may address the matter at summary judgment.

2. The court's construction

Because I agree with the gist of plaintiff's proposed construction, I will adopt it, with modifications to eliminate the questionable phrase related to "each point of contact." The construction is as follows. "The first lip protrudes sufficiently from the inner surface of the groove and the second lip protrudes sufficiently from the outer surface of the rim so that, as the lid and the main body are engaged, the lips contact each other and a portion of at least one of the lips deflects."

For purposes of the current summary judgment motion, the parties contest the interpretation of several key elements of claims one and nine of the '036 patent.

**Claim One states:**

A grass edging device that is stored without external packaging and adapted for use adjacent borders of walks and plant beds comprising:

- a length of flexible plastic material having a longitudinally extending upper body portion and a vertical barrier of nominal thickness depending therefrom, said vertical barrier having a blade extending perpendicular to a side surface of said barrier along a bottom portion thereof and a receptacle means disposed on an opposite side surface of said barrier for use when said device is placed into a coiled position whereby said grass edging device is stored without external packaging by securing said blade to said receptacle means, said blade and receptacle means are available for anchoring said device to the earth in an uncoiled position.

Claim nine states:

A grass edging device that is stored without external packaging and adapted for use adjacent borders of walks and plant beds comprising:

- a length of flexible extruded thermoplastic having a longitudinally extending body portion defining a circular transverse cross section along an upper portion thereof and a vertical barrier depending therefrom with a first outwardly extending blade disposed on a first side of said barrier and a second and third spaced apart outwardly extending blade disposed on a second side of said barrier, whereby said device is stored in a coiled position by placement of said first outwardly extending blade in between said second and third blades on said second side for use in maintaining said barrier in a common plane while in a coiled position wherein said blades are available for anchoring said barrier to the earth when said device is uncoiled.

The court will address only the contested elements of these claims.

The claims are open-ended because of the term "comprising" in both preambles, which state: "A grass edging device that is stored without external packaging and adapted for use adjacent borders of walks and plant beds comprising . . . ." (emphasis added). The term "comprising" "is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim." Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501 (Fed. Cir. 1997) (citations omitted). Avon, therefore, will not escape a finding of infringement merely by adding elements to the patented claims.

Avon first asserts that the "nominal thickness" of the vertical barrier should be read to mean "thin." Suncast did not dispute this language in its response. Avon's interpretation comports with ordinary usage, so the court will accept that interpretation.
Plaintiff urges the court to reconsider its construction of the claim term "non-conical and non-tapered distal end portion" in Claim 1 of the '155 patent. The court construed the term to mean that "the distal end [portion] of the catheter does not taper anywhere along its length." 2003 U.S. Dist. LEXIS 2329, 2003 WL 21078033, *5-6, and that "the distal end portion does not have a conical shape anywhere along its length." Id. 2003 U.S. Dist. LEXIS 2329, [WL] at *5, n.7. Plaintiff now contends that the court made an error of law by narrowly construing the term "non-tapered," thus limiting the term to what appears to be the preferred embodiment of the patent, contrary to the express statement in col. 3, lines 5-11 of the '155 patent that the invention is not limited to the preferred embodiment. (Plaintiff's Motion at 11.)

The court acknowledges that the patent is not limited to the preferred embodiment, but is not persuaded that its interpretation was in error. Plaintiff introduced the limitation "non-conical and non-tapered" during patent prosecution to distinguish his invention from a prior art catheter with a smooth tapered distal end. 2003 U.S. Dist. LEXIS 2329, 2003 WL 21078033, *6. Nothing in the claims, the specification, or the prosecution history of the '155 patent suggests that the distal end portion of the catheter may be non-conical and non-tapered at some points along its length and conical or tapered at other points. But even if one is to presume that the broad construction proposed by the Plaintiff is supported by the prosecution history (in particular, by presuming that the Plaintiff intended to surrender just enough scope to avoid the prior art but not more), the court's construction is correct under a controlling legal precedent. The Court of Appeals for the Federal Circuit has held in Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1581 (Fed. Cir. 1996) that when a claim is subject to two possible constructions, the narrower construction should be adopted. In Athletic Alternatives, the specification offered no guidance as to the scope of the term being construed, and the prosecution history supported both a broad and a narrow construction. Id. at 1580. The Athletic Alternatives court held that both proposed constructions were equally plausible and because under 35 U.S.C. § 112, P2 the patentee was required to "particularly point out" and "distinctly claim" the patented invention, the narrower construction should be adopted. Athletic Alternatives, 73 F.3d at 1581. Here, the court's construction is narrower and, hence, more appropriate.

Finally, Plaintiff contends that the court's construction of the term "non-conical and non-tapered distal end portion" is a manifest error of law because the court relied on a legally deficient construction of the term "distal end portion having a cross-sectional area." The court construed "having a cross-sectional area" to mean that the distal end portion has "only one cross-sectional area." 2003 U.S. Dist. LEXIS 2329, 2003 WL 21078033, *5. The Plaintiff relies on Crystal Semiconductor Corp. v. Tritech Microelectronics Int'l, Inc., 246 F.3d 1336, 1347 (Fed. Cir. 2001) for the proposition that "a" or "an," when used in a patent claim, means "one or more" in claims with open-ended transitional phrases. Plaintiff thus argues that the distal end portion may have one or more different cross-sectional areas since the phrase "having" is an open-ended transitional phrase.

As Defendants point out, Plaintiff has omitted crucial language from the Crystal Semiconductor opinion. (Defendants' Response at 12.) The Crystal Semiconductor court held that while "having" can make a claim open, that word "does not create a presumption that the body of the claim is open." Id. at 1348. The court must examine the claim in its full context to determine whether the use of "having" limits the claim to its recited elements.Id. Here, the article "a" is consistently used as a singular modifier in Claims 1 and 7 when preceded by the "having" transitional phrase. (Defendants' Response at 13.) The court concludes that its construction of the terms "a cross-sectional area" and "non-conical and non-tapered distal end portion" do not reflect a manifest error of law.

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2. "Non-Electronic Carrier"

A "non-electronic carrier" means, "A device that holds an electronic element to protect it from physical damage during lamination, where the device is not part of a circuit that utilizes a semiconductor device."

Plaintiff states that the phrase "non-electronic carrier" generally appears in the claims at issue in the following context: "positioning said at least one electronic element in the absence of a non-electronic carrier directly between said first and second plastic core sheets." (Pl. Br. at 18, citing Cohen Decl. at Exh. L, p. 2.) Defendant refers to the same language in claim 1 of the '207 patent. Thus, as noted above, the essence of the Patents is the lack of any "non-electronic carrier."
According to Plaintiff, a "carrier" is defined as a "compartmentalized holder used for storing, transporting, hauling, and testing electronic devices to protect them from physical damage." (Pl. Br. at 18, quoting the Electronic Packaging, Microelectronics, and Interconnection Dictionary ("EPMI Dictionary"), p. 26.) Plaintiff refers to its prior definition of "electronic" as "pertaining to circuits utilizing semiconductor devices," and to Webster's Collegiate Dictionary (10th ed. 1999) ("Webster's"), p. 788, for the definition of "non-" as negating the "usual especially positive characteristics" of "electronic." (Pl. Br. at 18.)

Plaintiff also urges that these dictionary meanings should be modified to reflect the prosecution history of the '207 patent, discussed above, during which Leighton clarified that no buffer zone or protection was needed for the embedded electronic element during lamination in any of the Patents. (See discussion supra, p. 12.)

Based on the dictionary definitions and the prosecution history, therefore, Plaintiff argues that a "non-electronic carrier" should be construed to mean "a holder used for electronic devices to protect them from physical damage, which device is not part of a circuit that utilizes a semiconductor device." (Id. at 18-19). Plaintiff omits from the dictionary definitions cited above words that it claims would be inaccurate here (i.e., compartmentalized, storing, transporting, hauling, and testing).

Defendant's proposed definition is very similar, and reads, "A structure without any substantial electronic function, such as a recess, buffer or protective carrier, that at least partially protects during lamination the 'electronic element' from damage caused by lamination pressure." (Def. Br. at 22.) Defendant also relies on the prosecution history of the '207 patent to support the idea that the significant difference between the '207 patent and the '024 patent is the fact that the '207 patent does not require protection of the electronic element during the lamination process. (Id.) Defendant additionally concludes--and I agree--that Leighton relinquished any interpretation of "non-electronic carrier" that includes any protection for the electronic element. Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570 (Fed. Cir. 1995). (See Def. Br. at 22.) Defendant notes that Leighton made the same arguments about the absence of protection of the electronic element during prosecution of the '099 patent. (Def. Br. at 52.)

I agree with the parties that Leighton intended to distinguish the Patents at issue here from the '024 patent on the basis of, among other things, the fact that no protection is needed for the electronic element during lamination in the Patents at issue. Plaintiff's construction of the phrase "non-electronic carrier" addresses this issue without redundancy or ambiguity. I therefore adopt it in haec verba.

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D. "the polymeric material . . . is non-flowable and non-adherent at room temperature" ('753 patent) and "the heat bondable material is non-flowable and non-adherent at room temperature" ('290 patent)

34) The claim language "the polymeric material . . . is non-flowable and non-adherent at room temperature" is more than a description of the heat bondable material in its isolated state. It requires the heat bondable material to be bonded by the application of heat.

35) The specification teaches that for the polymeric material to bond, it must be heated so as to flow and become adherent. Without heat, the material does not flow and will not adhere. D.I. 70, Ex. A ('753 patent) at 3:52-57; see id. at 3:59-65; 2:20-23. As Dr. Bonutti explained to the Patent Office - and thus to the public - this is an important limitation that distinguishes his invention from Palmaz's drug-eluting stent, where the polymeric material adheres merely by being "placed upon" the stent. D.I. 70, Ex. M at 5-6.

36) Consistent with the claim language, the specification, and the prosecution history, the Court construes the language "the polymeric material . . . is non-flowable and non-adherent at room temperature" from claim 1 of the '753 patent as meaning "the polymeric material cannot flow at room temperature and cannot adhere to the implant if placed on the implant at room temperature."

37) Consistent with the claim language, the specification, and the prosecution history, the Court construes the phrase "the heat bondable material is non-flowable and non-adherent at room temperature" from claim 1 of the '290 patent as meaning "the heat bondable material cannot flow at room temperature and cannot adhere to the tubular member if placed on the
Identifying two claims for interpretation - Claims 14 and 33 of the '845 patent - Defendant Ion Beam argues Plaintiff adopted a restrictive definition of terms used in the those claims during the prosecution of the '845 patent. The controversy turns on the meaning of the words "intensify," "intensification" and "non-intensify." (Compare Optivus P.&A. at 34-35; and Ion Beam P.&A. at 37.) Plaintiff argues the controversy would be resolved if the court construed the term "non-intensified" in Claims 1 and 25 according to its alleged ordinary and customary meaning. (Optivus P.&A. at 34:24-27.)

Claim 14 of the '845 patent recites, in pertinent part:

An imaging system for a proton beam therapy system . . . comprising: an X-ray source . . .; an X-ray beam receiver . . .; an image capture device which receives said photon image directly from said X-ray beam receiver, and produces a patient orientation image of the region of the patient's body that is positioned in said beam path so that said patient orientation image is substantially undistorted by intensification; and a controller . . . .

(Rosenberg Decl. Ex. 5, the '845 Patent at 14:66-15:47, emphasis added.) Defendant argues the proper construction of the relevant portion of Claim 14 is "an image capture device which receives a non-intensified photon image directly from said X-ray beam receiver, and produces a patient orientation image of the region of the patient's body that is positioned in said beam path so that said patient orientation image is substantially undistorted by intensification." (Ion Beam P.&A. at 38, emphasis added.) In other words, Defendant argues that the term "said photon image" in Claim 14, should be modified to read "a non-intensified photon image." (Id.) Defendant does not produce any evidence to support this construction. (Id. at n. 227.) 32

32 In an attempt to add argument to a 40 page brief that addresses issues the parties were explicitly instructed to avoid, the Defendant directs the court's attention to an exhibit that simply extends the Points and Authorities with pages of extra argumentation. (Id.) If counsel wanted more space, it should have followed instructions and only addressed claim construction in the instant Motion. Instead, counsel ignored the court's order and addressed issues beyond the scope of the instant set of Motions.

The court reminds counsel that it is not the task of the court to scour the record in search of a triable issue of fact. Keenan, supra, 91 F.3d at 1279. The court relies on the parties to identify, with reasonable particularity, the evidence supporting the parties' positions. See id. Counsel for the defense complicated this task by adding Exhibit 29 to the Rosenberg Declaration. Exhibit 29 is not evidence. Exhibit 29 contains additional argument presented in impermissible format in violation of court order and the local rules.

That being said, the court has taken considerable time and effort to review the patent specification and prosecution history to determine whether the claim should be limited in the manner Defendant suggests.

However, that is not an invitation for counsel to employ similar tactics in the future. If counsel for either party attempts to circumvent page limits or any other rule or order of this court by such "creative" devices, the pleading will be stricken.

Claim 33 provides:

A therapeutic imaging system for a treatment beam therapy system . . . comprising: an X-ray beam source mounted on said beam delivery system. . .; a fluorescing screen . . . ;
a digital camera which receives said photon image directly from said fluorescing screen and produces a patient orientation image of the region of the patient's body that is positioned in said beam path so that said patient orientation image is substantially undistorted by intensification.

(Id. at 18:8-31, emphasis added.) As in its construction of Claim 14, Defendant adds the following limitation: where the claim states "receives photon image," Defendant argues the patent should read "receives a non-intensified photon image."

Plaintiff directs the court's attention to the language of Claims 1 and 25. Claim 1 of the '845 patent describes:

An imaging system for a proton beam therapy system . . . comprising:

an imaging beam source mounted on said beam delivery system wherein said imaging beam source is movable . . . ;

an imaging beam receiver attached to said gantry . . . ;

an image capture device proximate to said receiver, wherein said image capture device directly receives a non-intensified signal from said receiver and produces a patient orientation image of the region of the patient's body that is position in said beam path; and

a controller which receives said master prescription image and said patient orientation image . . . .

(Id. at 13:20-68, emphasis added.)

Claim 25 recites:

A method of aligning a patient in a proton beam therapy system so that the center of a beam line from a nozzle is centered at a target isocenter positioned within the body of the patient, said method comprising. . . :

obtaining a master prescription image of the patient . . . ;

positioning the patient on a treatment table so that . . . ;

transmitting an imaging beam along the treatment beam path so that the imaging beam is transmitted into the region of the patient's body positioned in front of the nozzle;

receiving the imaging beam after it has been transmitted into the region of the patient's body and directly capturing a non intensified patient orientation image of the region of the patient's body that is position in said beam path that is provided to said computer system;

designating said one or more monuments, using said computer system, on said master prescription image. . . ;

designating said one or more monuments . . . on said patient orientation image . . . ;

determining the relative position of the center of said treatment beam with respect to one or more monuments designated . . . [.]

(Id. at 16:38-16:67, emphasis added.)

Relying on definitions taken from common dictionaries, Plaintiff contends the proper construction of the term "non-intensified" means "without the use of an image intensifier." (Optivus P.&A. at 35:1-7.) Defendant, on the other hand, argues the relevant claim term is "non-intensified photon image" in Claims 15 and 33. (Ion Beam P.&A. at 38.)

The court begins with the plain meaning of the terms. The American Heritage Dictionary defines "intensification" as "to make more intense"; or "To increase the contrast of (a photographic image)." Similarly, the Oxford English Dictionary defines "intensification" as "[i]he action of intensifying"; or in the context of photography, "The thickening or increasing of
the opacity of the film of a Negative." OXFORD ENGLISH DICTIONARY (2d ed. 1989). The following passage from the Oxford English Dictionary seems particularly germane: "To become intense, to grow in intensity... intensifying ppl. a., esp. in intensifying screen, a fluorescent screen placed in contact with the film or plate when a radiograph is taken in order to increase the effect on it of the X-rays." Id.

Plaintiff draws the court's attention to the following definitions from technical treatises. The Chamber's Dictionary of Science and Technology defines "image intensifier" as "an electronic device screen for enhancing brightness of an image in fluoroscopy, at the same time reducing patient dose." (Airhart Decl. Ex. R at 290.) Similarly, the Principles of Radiographic Imaging states that "an image intensification tube is designed to electronically amplify the brightness of an image." (Id. at Ex. S at 294.) Accordingly, the ordinary meaning of the term "intensify" in the context of X-ray fluoroscopy is "to enhance the brightness of an X-ray image." (See, e.g., id.) An intensifier accomplishes that task. (Id.)

Turning to the specification, the patentees distinguish a prior art reference and explain:

the '867 Patent (prior art reference) is designed to be used in conjunction with ionized particle beams and heavy particle beams and also uses an image intensifier to intensify the television image of the X-ray. This type of system is not readily adaptable to proton therapy treatment as the use of an image intensifier would introduce image distortion and, therefore, errors into the calculation of patient position which would be unacceptable. Since the proton beams can have a significantly more harmful effect on tissue, it is important to very accurately locate the patient in front of the nozzle and, consequently, the errors introduced by an image intensifier would result in too many inaccuracies for use in a proton therapy system.

(Rosenberg Decl. Ex. 5, the '845 Patent at 2:55-68.) The court finds nothing in this patent specification, including the preferred embodiment, to alter the ordinary meaning of the words "intensify," "intensification," or "intensifier" as those terms are used in the context of X-ray fluoroscopy. (See id. at 2:44-13:19.) In addition, as the above quoted passage indicates, there is nothing in the prosecution history to suggest the ordinary meaning of the term was altered or limited by the patentees. (See id.; see also Rosenberg Decl. Ex. 12.) Accordingly, the term "intensify" means "to enhance the brightness of an X-ray image." It follows that "non-intensified" means "generated without the use of an image intensifier." However, it is equally clear from the face of the patent (Rosenberg Decl. Ex. 5, the '845 Patent at 2:55-68) and the prosecution history (Id. at Ex. 12 at 6-7) that the device described by the '845 patent does not use an image intensifier. As Defendant suggests Claim 14 and Claim 33 cannot be construed to include an intensifier. (See, e.g., id.)

1. "said second connecting edge being non-parallel to said first connecting edge"

The phrase "said second connecting edge being non-parallel to said first connecting edge" is used in claim 1 of the '298 Kuepper patent. KC contends that this language means "at least some portion of the second connecting edge being non-parallel to the first connecting edge." (doc. 150 at 41.) In support of its proposed construction, KC indicates that Figures 1 and 5 of the patent show that portions of the first (38) and second (40) connecting edges are parallel and also non-parallel. KC refers specifically to the generally horizontal lowermost portion of the second connecting edge nearest the body of the diaper. (doc. 150 at 42.) KC argues that it's construction clarifies the meaning of the non-parallel limitation by placing it in context with the specification and figures. In response, First Quality argues that the phrase should be given its ordinary and customary meaning, and thus no construction is necessary. (doc. 168 at 19.) Specifically, First Quality asserts that the additional phrase "at least some portion" improperly limits the claim to embodiments found in the specification. (doc. 168 at 20.) The evidence supports First Quality's position.

KC's proposed construction would expand the disputed claim term beyond what is specifically found in the claims and specification. As First Quality indicates, the language of both Claim 1 and 15 provide that "said second connecting edge being non-parallel to said first connecting edge." U.S. Patent No. 5,496,298, Claim 1 & 15 (emphasis added). This language is clear and unambiguous. If KC wanted to expand the scope of Claim 1, it could have done so by drafting the claim to require only a portion, and not the total of the second connecting edge to be non-parallel. In fact, KC demonstrated that is was capable of this by including expansive language in Claim 11 when it provided that "said distal edge is generally parallel to said proximal edge." U.S. Patent No. 5,496,298, Claim 11 (emphasis added). In addition, the specification further supports the contention that the claim language is unambiguous because in one other embodiment, depicted in Figure 2, it
provides that the "first connecting edge (38) and second connecting edge (40) are non-parallel." U.S. Patent No. 5,496,298, col. 3, ll 64-65. KC makes much of the patent drawings depicting, presumably, portions of the first and second connecting edges being parallel. However, patent drawings do not define the precise proportions of a patent element. See Hockerson-Halberstadt, Inc. v. Avia Grp. Int'l, Inc., 222 F.3d 951, 956 (Fed. Cir. 2000). While the drawings may indicate that portions of the first and second connecting edges are parallel, the claim and specification makes clear that these elements of the invention are to be non-parallel. 1 In contrast, First Quality proposes that the claim language essentially speaks for itself. We agree. Thus, we will construe "said second connecting edge being non-parallel to said first connecting edge" to mean that "the second connecting edge is non-parallel to the first connecting edge."

1 Neither party addressed the peculiar language of the specification that indicates the possibility of two "proximal" edges. The specification provides:

[w]e have included a proximal edge 34, an opposed distal edge 36, a first connecting edge 38, and a second connecting edge 40. As used herein, the proximal edge is that edge of the elastomeric ears 24 which is joined to lateral edges 42 of diaper body 44 defined by, in the illustrated embodiment [FIG. 1], outer cover 12 and bodyside liner 14. The distal edge 36 is that edge of elastomeric ear 24 which is opposite the proximal edge 34 moving in a direction outward from a central longitudinal axis of the diaper 10. The first and second connecting edges 38 and 40 connect the proximal edge 34 and the distal edge 36 thereby defining a body of elastomeric materials which at least partially define elastomeric ear 24.

U.S. Patent No. 5,496,298, col. 3, ll. 1-13 (emphasis added). This language indicates that, at least pertaining to Figure 1, that a different proximal edge is described. This embodiment does not show that portions of the first (38) and second (40) connecting edges are parallel and also non-parallel. Instead, it provides that the second connecting edge (40) connecting to a proximal edge (42) is non-parallel to the first connecting edge (38). Thus, it appears that KC's reliance on FIG. 1 is misplaced.

<table>
<thead>
<tr>
<th>Disputed Claim Language</th>
<th>ASM's construction</th>
<th>Genus's construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposing the part to a gaseous first reactant, including a non-semiconductor element of the thin film to be formed, wherein</td>
<td>Exposing the part to a reactant gas that includes an element that is not a semiconductor</td>
<td>An element that is contained in the thin</td>
</tr>
</tbody>
</table>

w. "Non-Resilient" (Claim 3)

133. This claim terminology is only used in Claim 3 to describe the lever moving element. During prosecution of the '656 patent, the Examiner rejected a number of the claims on the basis of prior art which showed a lever moving element operated by springs. PX 45, p. 60, 118. To distinguish over that prior art, the '656 patent applicants expressly limited the claim to exclude lever moving elements which were resiliently mounted by incorporating the modifying limitation "non-resilient". PX 45, p. 113, 130, 155, 173, 174, 198, 199. A patentee may not obtain, in an infringement suit, protection of subject matter that was relinquished in order to obtain allowance of other subject matter during prosecution. Modine Mfg. Co. v. U.S. International Trade Commission, 75 F.3d 1545, 1555 (Fed. Cir. 1996). Consequently, this term should be interpreted to exclude lever moving elements which are operated resiliently, i.e. by means of springs, since a spring is resilient as LaGard concedes. LaGard's Supplemental Reply to Mas-Hamilton's Opposition to LaGard's Summary Judgment Motion (DE # 142), p. 9.
the first reactant adsorbs on the semiconductor, and part of the non-semiconductor thin film to be formed.

Here, the dispute is whether the thin film to be formed can be a semi-conductor film. ASM argues that the word "non-semiconductor" should be interpreted as if it were repeated twice in the claim, so that the first reactant must contain a non-semiconductor element of the non-semiconductor thin film to be formed. Genus argues that the plain meaning of the claim language is that the first reactant must contain a non-semiconductor element, but that the thin film to be formed does not have to be a non-semiconductor.

Genus' construction follows the plain meaning of the claim language. ASM argues, however, that a review of the specification demonstrates that the invention was only directed to the creation of non-semiconductor films.

As ASM points out, the specification explains that "[a] continuing problem in the commercial manufacture of integrated circuits is the achievement of conformal deposition of dielectric (e.g., silicon dioxide, silicon nitride) or conducting (e.g., aluminium, titanium nitride) thin solid films over large area wafers[]." (‘365 patent 2:66-3:3.) The Oxford English Dictionary Online defines "dielectric" as "non-conducting." ASM thus contends that the invention is concerned only with conducting or non-conducting films, not semi-conducting films. The language quoted by ASM is not a description of the invention, however, but simply part of a discussion of then-current problems in the commercial manufacture of integrated circuits.

The specification also contains schematic drawings of three preferred embodiments of the invention, one of which is "suitable for the deposition of any film, conducting or non-conducting[]." (Id. 5:46-47.) ASM contends that this phrase, which does not mention semi-conductor films, also indicates that the invention is not directed towards the creation of semi-conductor films. Nothing in the surrounding text, however, indicates that ASM's reading of this phrase is the correct one. If one were attempting to exclude semi-conductor films, one would be more likely to use the phrase "any conducting or non-conducting film" or "any non-semiconductor film." The use of the phrase "any film" suggests that the drafter intended to include semiconductor films within the range of films from nonconducting to conducting. In other words, "any film" could easily mean "any film." It is a somewhat strained reading to interpret the phrase "any film, conducting or non-conducting" to mean "any non-semiconductor film."

ASM argues that because the specification contains a schematic drawing for a reactor "suitable for the deposition of films that are not electrically conducting" (id. 5:40-41) and another for a reactor "suitable for the deposition of any film, conducting or non-conducting," (id. 5:46-47) that the invention excludes the deposition of semi-conductor films. This argument fails for the same reason stated above.

A more reasonable reading is that one reactor is suitable only for deposition of non-conducting films, and that the other can be used for deposition of any film. There is no language in the specification that expressly excludes semi-conductor films from the scope of the invention, or that indicates that the preferred embodiments cannot be used for the deposition of semi-conductor films.

In fact, the specification begins by stating that "the present invention relates to methods and apparatuses suited to the low temperature deposition of solid thin films of one or more elements by the technique of sequentially exposing the object being coated with chemically reactive gaseous species." (Id. 1:5-9.) The specification also states later that "it is an object of the invention to facilitate the growth of thin films of any element by using a radical generator to make available highly reactive gases (radicals)." (Id. 5:34-36.) The specification also explains that "the process of this invention is unique in that it allows, for the first time, the deposition of perfectly conformal and very pure films of any composition at low temperatures." (Id. 9:34-37.) This repeated use of language that makes no attempt to describe or limit the conductivity or composition of the resulting thin film also suggests that when the specification uses the phrase "any film," it means "any film," not any non-semiconductor film.

ASM also argues that the examples listed at the end of the specification all describe non-conducting or conducting films. (Id. 7:29-9:50.) Again, however, nothing in the specification limits the types of films that the invention can create, or
indicates that the invention is not directed to the creation of semi-conductor films. As noted above, the specification specifically states that the invention facilitates the growth of thin films "of any element" (id. 5:34-36) or "of any composition" (id. 9:34-37). The Court rejects Genus' argument that the examples show the formation of semiconductor thin films, however. Examples 1 and 3 do discuss depositing a layer of elemental silicon, which is a semiconductor, but those layers are clearly stated to be only one layer in the formation of non-semiconductor thin films of materials such as silicon dioxide and tantalum/silicon/nitrogen. ( '365 patent 7:34-39; 8:18-27.) Claim 1 itself makes clear that the thin film to be formed is created only after the interaction of the second reactant. ( '365 patent 9:61-64.) Thus, examples 1 and 3 do not discuss the creation of semiconductor films, but only discuss the deposit of semiconductor layers which are used to create non-semiconductor films.

Moreover, the Court notes that "thin film" is used in two other places in claim 1, both times without any limitation on the type of thin film that is to be formed. The claim begins: "A process of growing a thin film ...." (Id. 9:52.) The claim also explains that after the second reactant gas is added to the chamber, the first reactant on the part is converted "to one or more elements, wherein a thin film is formed[.]" (Id. 9:63-64.) The repeated and conspicuous absence in the claim language of any limitation on the type of thin film that is to be formed demonstrates that no such limitation should be imported into the claim. There is nothing at all in the specification that demonstrates that the thin film to be formed must be a non-semiconductor film. In fact, the specification defines "thin film" by expressly noting that it can be "of any element" (id. 5:34-36) or "of any composition" (id. 9:34-37).

ASM argues that the Court should not interpret the claim language according to its plain meaning, and cites cases such as Cultor Corp. v. A.E. Staley Manufacturing Co., 224 F.3d 1328 (Fed. Cir. 2000) and SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337 (Fed. Cir. 2001). Those cases are distinguishable, however, because in both cases, the specification clearly showed that the claim language was being used more narrowly than its plain meaning would suggest. Here, however, nothing in the specification excludes semi-conductor films, and there is language in the specification that explicitly supports Genus' claim that the thin film to be formed can be any film.

The extrinsic evidence is unhelpful. Oldham states in his expert report that a person of ordinary skill in the art "would have understood that this claim language does not require that the thin film to be formed is 'a non-semiconductor.'" (Oldham '365 Expert Report at 8.) Glew states in his report that one of ordinary skill in the art would interpret this language to require that a non-semiconductor film be formed. (Glew Expert Report at 11.) The inventor testified that it was his intent to exclude all semiconductor films. (Gasner Decl., Ex. 14, Sherman Dep. 147:1-25.) The inventor's intent, however, does not control over the unambiguous language of the patent. The inventor cannot "by later testimony change the invention and the claims from their meaning at the time the patent was drafted and granted." Voice Technologies, 164 F.3d at 615.

Finally, ASM contends that the Court should construe the "thin film to be formed" to be a non-semiconductor film in order to preserve the validity of the claim. Although there has been no argument that claim 1 is invalid in light of prior art, ASM asserts that there is prior art that addresses the use of radicals to grow a gallium arsenide film, which is a semiconductor. Without having received any evidence or developed argument about these prior art references, the Court is no position to opine on their effect on the validity of the claims of the '365 patent.

It is true that, where possible, the Court should construe claims to preserve their validity, but "claims can only be construed to preserve their validity where the proposed claim construction is 'practicable,' is based on sound claim construction principles, and does not revise or ignore the explicit language of the claims." Generation II Orthotics Inc. v. Medical Technology Inc., 263 F.3d 1356, 1365 (Fed. Cir. 2001). The problem with ASM's argument here is that the plain language of the claim indicates that the "thin film to be formed" can be any film, and the specification explicitly states that "it is an object of the invention to facilitate the growth of thin films of any element" ( '365 patent 5:34-35 (emphasis added)), and "the process of this invention is unique in that it allows, for the first time, the deposition of perfectly conformal and very pure films of any composition at low temperatures." ( '365 patent 9:34-37 (emphasis added.).) The very first line of the specification after the abstract states that "the present invention relates to methods and apparatuses suited to the low temperature deposition of solid thin films of one or more elements," without limitation as to the type of thin film. There is nothing in the specification that limits the thin film to a non-semiconductor film. Thus, the only way for the Court to construe the claim language to exclude semiconductor films would be to rewrite the claim language, which it may not do.

Accordingly, the Court agrees with Genus that the phrase "including a non-semiconductor element of the thin film to be formed" should be construed according to its plain meaning: "including an element that is not a semiconductor and that will be contained in the thin film to be formed." The claim contains no limitation on the conductivity of the thin film that is to be formed, and thus does not exclude semiconductor thin films from the scope of the claim.

4. "non-sinusoidal"

This phrase is found in the '037 patent only, in claims 1, 8-9, 12-13, 16-17, 20, 22, 29-30, 33-34, 40-41, 43, 45-48, 52-53, and 55-75. See Joint Statement, '037 Patent. Plaintiffs contend that the proper construction to be given "non-sinusoidal" is "not S-shaped," while defendants and the intervenor all contend that the phrase should be construed to mean "not forming a continuously curved shape consisting of a pair of joined, opposed curved sections wherein each curved section has an arc of approximately 180 degrees or greater."

All parties agree that the term "sinusoidal" can be defined with reference to the '037 Patent specification, and that the term "non-sinusoidal" should therefore be construed with reference to the same. Turning, then, to the language of the specification, it is immediately apparent that it expressly and continuously refers to the term "sinusoidal" as "s-shaped." See, e.g., Joint Statement, '037 Patent at 4:17-18 ("A particularly preferred embodiment of the flexure means comprises a sinusoidal or S-shaped section"); id. at 4:20, 28 (repeatedly referring to the "sinusoidal or S-shaped" portions of the claimed design); id. at 10:48-50; 10:60-63 (describing illustrated depictions of "sinusoidal (or S-shaped)" portions of figures 9 and 10). This constant referral to "s-shaped" and to "sinusoidal" in the alternative, is a strong indication that "sinusoidal" is meant by the patent authors to be synonymous with "s-shape." By extension, therefore, plaintiffs' argument that "non-sinusoidal" should be construed as "not s-shaped" makes sense.

Defendants' and the intervenor's proposed construction, by contrast, is ultimately unpersuasive. They contend that, while the specification generally defines "sinusoidal" to mean "s-shape," it goes further than this, and specifically requires that the claimed "sinusoidal" elements be comprised of "joined [or adjoined] curved sections." See Joint Statement, '037 Patent at 4:39-41 ("the sinusoidal or S-shaped portion may be comprised of a pair of joined curved sections wherein each curved section has an arc of about 180 [degree]"); 4:45-47 ("Alternatively, the sinusoidal or S-shaped portion may be comprised of a pair of joined curved sections wherein each curved section has an arc of greater than 180 [degree]"); 4:48-51; 10:49-52; 10:66-11:1. This supports, in defendants' and the intervenor's view, the notion that the claimed "sinusoidal" elements must be comprised of a pair of joined curved sections, which must furthermore be continuously curved -- as supported by both the dictionary definition of the word "adjoined," and the rules of mathematics.

The language that defendants rely on for their argument, however, specifically refers to alternative possible embodiments of the "sinusoidal or S-shaped portions" that are claimed. See id. at 4:39-52 (noting that "the sinusoidal or S-shaped portion may be comprised of a pair of joined curved sections … [each with an arc of about 180 [degree]]" and "[a]lternatively… may be comprised of a pair of joined curved sections … [each with an arc of greater than 180 [degrees]]") (emphasis added).

These alternative embodiments are described in the specification subsequent to the specification's unequivocal statement that, while the sinusoidal or S-shaped portion is "not particularly restricted," it "generally takes the form of an 'S.'" Id. at 4:35-39. Thus, the only unequivocal statement to be gleaned from this language is that, while a "sinusoidal" portion of the claimed element may be comprised of pairs of joined curved sections consisting of arcs of about or greater than 180E, the sinusoidal portion will always generally take the form of an S.

Defendants and the intervenor respond to this by noting that the specification, properly read, actually limits all possible embodiments of the "sinusoidal or S-shaped portion" covered by the claims of the '037 Patent to the two alternative embodiments specifically described therein, see id. at 4:39-52. As such, all disclosed embodiments that contain "sinusoidal" elements must be comprised of joined curved sections -- a limitation that only defendants' and the intervenor's construction recognizes.

Even assuming this to be the case, however, defendants' and the intervenor's construction still includes a limitation for which the court can find no support in the specification -- i.e., the requirement that sinusoidal be construed as "continuously
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curved," and that "non-sinusoidal" therefore be construed in part to mean "not forming a continuously curved shape."
Defendants and the intervenor claim that the "continuously curved" requirement follows naturally from applying the
dictionary definition to the specification's requirement that sinusoidal elements be comprised of "joined curved sections," or
"adjoined curved sections." See id. at 4:39-52; 10:48-50; 10:67. However, neither party points to anything in the
specification language itself that either supports this limitation, or in some other way suggests that the limitation should be
read into the meaning of "sinusoidal." Indeed, the court could find no mention of the phrase "continuously curved"
anywhere in the relevant specification language at all. Without any support for the claimed limitation, the court will not
voluntarily read it into the claim language itself. 4 See, e.g., Phillips, 415 F.3d at 1323.

4 Defendants' and the intervenor appear to have chosen the phrase "continuously curved" in order to clarify that the phrase
"sinusoidal" cannot include straight sections, a point with which plaintiffs take issue. This particular issue, however, need
not specifically be resolved by the court. Plaintiffs' proposed construction of "not S-shaped" contemplates only that
sinusoidal shall "generally take the form of an S." As such, regardless whether any portion of a design contains a straight
section or not, it will not qualify as sinusoidal if it does not generally take the form of an S.

In sum, therefore, and for the above reasons, the court finds plaintiff's proposed construction to be more consistent with the
intrinsic evidence of the '037 Patent. Accordingly, the court hereby adopts plaintiff's proposed construction, and construes
"non sinusoidal" to mean: "not S-shaped."

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1. "Non-slip"

Microthin contends that "non-slip" means, "to reduce or prevent smooth sliding motion without being sticky to the touch."
SiliconeZone claims that "non-slip" requires no construction but should be construed according to the term's plain and
ordinary meaning in the context of the claim language.

Certainly, the plain and ordinary meaning of "non-slip" essentially includes something that reduces or prevents smooth
sliding motion. Therefore, the dispute in the meaning of "non-slip" stems from a disagreement regarding whether the
language of the patent requires a limitation of the term to surfaces that are not "sticky to the touch."

"[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in
question is not present in the independent claim." Phillips, 415 F.3d at 1314-15. In the '311 Patent, the only additional
limitation in claim 8 that depends from claim 1 is that "the non-slip surface is not sticky to the touch." Memorandum, Ex.
F(a), Patent No. 5,942,311, at 6:4-5. If claim 1 were to be construed to only cover surfaces "not sticky to the touch," claim 8
would be completely superfluous. Therefore, this Court notes the presumption that claim 1 does not contain the limitation
that the surface is non-slip without being sticky to the touch.

Based on the written specification, Microthin fails to overcome this presumption against the proposed limitation. Indeed,
from the very beginning, even in the abstract, the '311 Patent speaks of a surface with a "tacky" characteristic, which is a
term commonly understood to suggest something that is sticky to the touch. Memorandum, Ex. F(a), Patent No. 5,942,311,
at [57]; Merriam-Webster's Collegiate Dictionary 1199 (10th ed. 1996) (defining "tacky" as "somewhat sticky to the touch").
The Court recognizes that the specification does mention that the non-slip characteristic is accomplished without being
sticky to the touch in two separate places. Memorandum, Ex. F(a), Patent No. 5,942,311, at 1:6-10; 3:3-5. However, nothing
in the '311 Patent specifically requires that the surface be non-sticky. This Court reads those phrases as simply describing a
preferred embodiment of the patent rather than disclaiming surfaces that are sticky to the touch. Therefore, the presumption
that claim 1 is broader than claim 8, which specifically claims the limitation of a surface not sticky to the touch, has not
been rebutted. Therefore, "non-slip" means something that "reduces or prevents smooth sliding motion."

GO BACK
Claim 1 of the '311 patent states:

A non-slip mat or pad consisting of a transparent plastic sheet having an upper surface and a lower surface, a coating of one or more inks forming a design on the lower surface and adapted to show through the plastic sheet to be seen through the top surface, and a non-slip coating adhering to the lower surface and inked coatings to form a mat or pad having a thickness in the range of 1.0 to 30.0 mils.

'311 patent col.4 l.64-col.5 l.3 (emphasis added). Claim 1 of the '995 patent states:

A method for manufacturing a non-slip mat or pad, including the steps of providing a mat or pad formed of a plastic material, printing a design or logo to show on the upper surface of the mat, and applying a non-slip surface to the underside of the mat or pad with the total thickness of the mat or pad in the range of 1.0 to 30.0 mils.

'995 patent col.5 ll.4-9 (emphasis added).

The district court construed "non-slip" to mean "reduces or prevents smooth sliding motion." Opinion at 7, 12. Microthin challenges the district court's interpretation, arguing that "non-slip" means "to reduce or prevent smooth sliding motion without being sticky to the touch." To support its proposed construction, Microthin points to two places in the specifications where the patents discuss a non-slip surface that is not sticky to the touch. See '311 patent col.1 ll.6-10, col.3 ll.3-5; '995 patent col.1 ll.7-11, col.3 ll.7-11.

We agree with the district court that the plain and ordinary meaning of "non-slip" is "reduces or prevents smooth sliding motion" and does not distinguish between sticky and non-sticky characteristics. Claim 1 in each patent does not include any limitation suggesting that the non-slip surface must not be sticky to the touch. Moreover, dependent claim 8 of the '311 patent adds a single limitation to claim 1, "wherein the non-slip surface is not sticky to the touch." '311 patent col.6 ll.4-5 (emphasis added). "[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc). In cases such as this, "where the limitation that is sought to be 'read into' an independent claim already appears in a dependent claim, the doctrine of claim differentiation is at its strongest." Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004). Hence, the claim language fully supports the district court's construction.

Microthin also cites the specification as indicating that the non-slip surface is not sticky. These statements do not, however, justify interpreting the term non-slip different from its plain and ordinary meaning. The patentee did not, in this case, act as his own lexicographer defining "non-slip" contrary to its plain and ordinary meaning. To be his own lexicographer, a patentee must use a "special definition of the term [that] is clearly stated in the patent specification or file history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1580 (Fed. Cir. 1996); see also CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 ("[T]he claim term will not receive its ordinary meaning if the patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim term in either the specification or prosecution history."). Here, the specification contains no such clear definition of "non-slip." The preferred embodiment does indicate that the non-slip surface is not sticky to the touch. See '311 patent col.3 ll.1-5; '995 patent col.3 ll.7-11. Additionally, in the Technical Field of the patent there is also a mention of the non-slip surface not being sticky. See '311 patent col.1 ll.4-8 ("The invention disclosed . . . provides the required frictional characteristics to prevent slipping upon substantially any surface without being sticky to the touch."); '995 patent col.1 ll.7-11 (same). These references, however, do not amount to a clear definition of non-slip.

Likewise, the specification and prosecution history do not present a clear disclaimer such as the patents in SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, 242 F.3d 1337 (Fed. Cir. 2001). We have stated that "claim terms take on their ordinary and accustomed meanings unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1327 (Fed. Cir. 2002). In SciMed, the patents at issue related to balloon dilatation catheters containing passageways, or lumens. 242 F.3d at 1339. Only two types of lumen arrangements, dual (or adjacent)
and annular (or coaxial), were known and practiced in the prior art. Id. Although the asserted claims did not claim a particular lumen arrangement, see id. at 1340, we determined that the common specification of the patents "lead[s] to the inescapable conclusion that . . . the asserted claims read only on catheters having coaxial lumens." Id. at 1342. For example, the abstract identified the lumen as annular, the written description distinguished the prior art by discussing the disadvantages of dual lumen configurations, the "Summary of the Invention" described the invention numerous times as having an annular lumen, and a section describing preferred embodiments stated that "all embodiments of the present invention contemplated and disclosed herein" had an annular lumen arrangement. Id. at 1342-43. We stated that "[t]he words 'all embodiments of the present invention' are broad and unequivocal," and that they "cannot reasonably be interpreted as limited to the preferred invention." Id. at 1344.

In contrast, in Liebel-Flarsheim, we reversed the district court's construction of claims related to powered injectors used in medical applications. 358 F.3d at 900. Although none of the asserted claims expressly referred to a pressure jacket--a jacket that surrounds a syringe and prevents it from breaking under pressure from the injection fluid--the district court concluded that "the specification makes clear that the injector includes a pressure jacket." Id. at 901 (citation omitted). The Appellee made several arguments as to why the district court's construction was correct: (1) all the embodiments described in the specification featured pressure jackets, id. at 905; (2) the abstract described the invention as including a pressure jacket, id. at 908; (3) the Summary of the Invention described two objectives of the invention in terms of use with pressure jackets, id.; and (4) the Summary of the Invention also described a "principle[] of the present invention" in terms of use with pressure jackets, id. Although all the embodiments contained pressure jackets, we nonetheless determined that "the written description does not contain a clear disavowal of embodiments lacking a pressure jacket." Id. With respect to the language in the abstract, we stated that it "does not suggest that a pressure jacket is an essential component of the invention, nor is there any language in that passage, or elsewhere in the specification, that disclaims the use of the invention in absence of a pressure jacket." Id.

The language in the specifications of the '311 and '995 patents does not constitute a clear disclaimer of sticky non-slip surfaces. Here, two statements in the specification mention that the non-slip surface is not sticky to the touch--one in the Technical Field and one in the description of the preferred embodiment. The remainder of the disclosure describes the non-slip surface as "tacky." See, e.g., Abstract, col.2 ll.63-66, col.4 ll.54-60. The term "tacky" is commonly understood as "sticky to the touch." Opinion at 12 (citing Merriam- Webster's Collegiate Dictionary 1199 (10th ed. 1996)). Nowhere in the specification does it suggest that a non-sticky surface is "an essential component of the invention," nor does it clearly disclaim the use of a sticky surface. See Liebel-Flarsheim, 358 F.3d at 908. We conclude that the district court correctly construed the non-slip limitation by giving it the plain and ordinary meaning.

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2. Construction of "bulb" and "socket" claim terms

Finally, defendants argue that the claim terms "standard bulb socket," "non-standard bulb socket," and "non-standard twinkle bulb" cannot be construed. Their only argument in this connection that merits any discussion is the argument that the '909 Patent encompasses an impermissible negative limitation. Relying on In re Schechter, 40 C.C.P.A. 1099, 205 F.2d 185, 188, 1953 Dec. Comm'r Pat. 323 (C.C.P.A. 1953), the defendants point to the fact that each of the bulb sockets and bulbs are defined as being of a type that receives or is received by one type of bulb or socket, while "not operatively receiv[ing]" or "not to be operatively received in" the other type.

In re Schechter has no relevance to the claims in the '909 Patent. In that case the claim attempted to cover all of a class of compounds except those shown in prior art. Id. There is no per se ban on the use of negative limitations, and In re Schechter does not suggest that one exists. See, e.g., In re Wakefield, 57 C.C.P.A. 959, 422 F.2d 897, 904 (C.C.P.A. 1970) (finding a claim still definite despite a negative limitation); see also SmithKline Beecham Corp. v. Apotex Corp., 403 F.3d 1331, 1363 (Fed. Cir. 2005) (suggesting patentees incorporate negative limitations such as "non-natural" or "non-human" into their claims); Animal Legal Defense Fund v. Quigg, 932 F.2d 920, 923 (Fed. Cir. 1991) ("The use of a negative limitation to define the metes and bounds of the claimed subject matter is a permissible form of expression."). The defendants have not shown that the use of negatives in the definitions in the '909 Patent's specifications creates any ambiguity or otherwise requires a finding of invalidity.
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2. Language in dispute: "non-tapered distal end portion" 7

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7 Defendants define the term "non-conical" as well as "non-tapered," however, Plaintiff does not address the meaning of "non-conical." The court therefore assumes that term is not disputed and adopts Defendants' proposed construction, interpreting "non-conical" to mean that the distal end portion does not have a conical shape anywhere along its length.

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Does "non-tapered distal end portion" mean (1) a distal end portion that has a perimeter wall that does not become progressively smaller toward the distal end reducing the cross section area of the distal end portion, or does it more generally mean (2) a distal end portion that is not tapered anywhere along its length?

Answer: the court interprets the language to mean that the distal end of the catheter does not taper anywhere along its length.

The parties agree that the distal end portion of the catheter refers to the section of the first lumen (the return lumen) that extends from the second opening described in the claim language to the end of the catheter and is the end that is inserted into a patient. (Defs.' Brief at 25, Pl.'s Reply at 11.) The parties also agree that "tapering" refers to a shrinking of the cross section area of the distal end. Plaintiff disputes that the claim language requires that the distal end portion must remain uniform in cross section throughout its length, however, contending instead that the claim only dictates that the perimeter wall does not become progressively smaller as it nears the distal end. Defendants argue on the other hand that "non-tapered" means that the distal end portion is not tapered anywhere along its length.

On this issue, the court agrees with Defendants that the term "non-tapered" means that the distal end's cross section area does not change throughout its length. Claim 1 describes the distal end portion as "having a cross-sectional area smaller than the cross-sectional area of said proximal cylindrical portion." The use of the singular word "a" indicates only one cross-sectional area. The language from the specification indicating that "both lumens . . . are straight along their entire lengths" lends more support to the conclusion that the width of the distal end does not change anywhere along its length.

Plaintiff argues that the prosecution history supports his interpretation, and explains that "non-tapered" was added to distinguish his invention from that of a double lumen catheter designed by Dr. Geoffrey S. Martin, in which the cross section of the lumens "smoothly tapers to provide a circular cross-section at the tip." (Tr. 127, U.S. Patent No. 4,451,252, col. 4, lines 37-39, Ex. H to Pl.'s Brief.) Plaintiff contends that because he specifically represented to the Patent Office that he included the word "non-tapered" to distinguish his invention from Martin's, the court should only exclude Martin's description of a tapered end to the '155 patent. (Tr. 128.) The court, however, finds the Defendants' argument more convincing. As Defendants point out, there is nothing in the claim language that indicates Plaintiff was limiting his affirmative disclaimer to only the taper shown in Martin's patent, (Tr. 133), nor do the words chosen lend themselves to the very restrictive construction Plaintiff wants to give them. Plaintiff suggests that the patent language would have the meaning Defendant ascribes to it only if it stated that the distal end was to be "nonconical and nontapered anywhere along its length." (Tr. 143) (emphasis added.) The court believes the additional language Plaintiff urges as necessary would instead be superfluous. The logical conclusion one makes upon reading the negative claim language is that it means the distal end shall not be tapered anywhere along its length.

Plaintiff also argues that because the words "substantially uniform" are used in claim 7 to describe the cross section of the tube containing the distal end portion, then by implication "nontapered" must mean something different from "uniform." The court is not persuaded by this argument. As Defendants point out, the terms are used to describe two different things. "Substantially uniform" modifies the internal cross section of the tube. "Non-tapered," on the other hand, describes the outside appearance or shape of the distal end. If anything, the terms complement each other: if the distal end did taper, then the cross section of the tube would probably not be substantially uniform. For these reasons the court construes the term to mean that the distal end of the catheter does not taper anywhere along its length.

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B. "Non-textured"

Claim 1 of the '418 patent describes a sheet with two surfaces, "the first surface being non-textured, and the second surface being textured . . . ." Plaintiffs contend that "non-textured" means "smooth," while Gore contends that "non-textured" means "completely lacking macroscopic surface characteristics."

The '418 patent's specifications describe numerous individual villi and great irregularity of the surface of the material. See U.S. Patent No. 6,921,418 at 3:32-35. Such a description is consistent with the plain and ordinary use and understanding of the term "textured" because it considers the tactile characteristics of the surface. See Pl. Claim Constr. Mem., Ex. H, Random House Dictionary of the English Language Second Edition, at 1964 (defining "textured" as "the visual and especially tactile quality of a surface") (emphasis added). The phrase "great irregularity of the surface of the material" essentially states that one surface is not smooth, without regard to the visibility of the irregularity. Under Gore's proposed definition, a material would only be textured when it has visible characteristics on the surface. Therefore, Gore's definition would ignore the important tactile element included within the plain and ordinary understanding of the term "textured."

To support its position, Gore relies on the prosecution history of the '418 patent and the rejection of a dependent claim for a sheet that included holes. The Patent Office rejected claims covering a channeled sheet and holes for failure to comply with the written description requirement in 35 U.S.C. § 112. See Joint App., Ex. B at FH343. The Court recognizes it must interpret patents with reference to cancelled or rejected claims so that the claim construction process does not change the scope of a patent to cover claims previously eliminated from the patent. See Schriber-Schroth Co. v. Cleveland Trust Co., 311 U.S. 21, 220-21, 61 S. Ct. 235, 85 L. Ed. 132, 1941 Dec. Comm'r Pat. 802 (1940); On Demand Mach. Corp. v. Ingram Indus., Inc., 442 F.3d 1331, 1338 (Fed. Cir. 2006). However, the rejection of the design that included holes in the sheet did not alter or inform the meaning of the term "non-textured" in Claim 1. The rejection for failing to comply with the writing requirement does not mandate that the term "non-textured" can only describe the visible characteristics of the sheet without reference to the sheet's tactile qualities. Therefore, the Court finds that the term "non-textured" means "smooth."

3. "Non-thrombogenic material which provides long term non-thrombogenicity to the device portion during and after release of the biologically active material."

Consistent with the claim language and its ordinary meaning, 6 the specification 7 and the prosecution history, 8 the court construes this phrase as meaning "a material that does not promote thrombosis for a period of time that extends both during and after release of the biologically active material."

Footnotes

6 '536 patent, col. 13, 11. 23-24; Stedman's Medical Dictionary 1831 (27th ed. 2000) (defining "thrombogenic" as "causing thrombosis or coagulation of the blood"). In the background of the invention, the patentee refers to prior art with "thrombolytic agents." ('536 patent, col. 2, 1. 36) Something that is "thrombolytic" "break[s] up or dissolve[s] a thrombus." Stedman's Medical Dictionary 1831 (27th ed. 2000). Notably, the patentees used a more passive term to describe their invention and the court has construed it accordingly.

7 '536 patent, col. 2, 11. 30-46; col. 6, 11. 52-55. Defendants argue that construction of this limitation should include the instruction that there is a "significant reduction in thrombogenicity over that experienced with bare metal stents." (D.I. 307) There is nothing in the specification or prosecution history that the patentees intended the claim to be limited in this way.

8 D.I. 300, Ex. 9 at DFH 106.
Cordis asserts that the district court erred by declining to construe the "non-thrombogenic" limitation to require less thrombogenicity than an uncoated metal stent. Cordis argues that, according to the language of claim 8, the specification, and the prosecution history, the non-thrombogenic material must have an effect different from the stent's natural effect, and that the specification itself compares the invention to metal stents. Also, according to Cordis, Boston Scientific admits that "non-thrombogenic" is a relative term requiring a comparison, and it waived any argument that the comparison should be to rough, porous coatings as opposed to bare metal stents. Cordis also argues that the court should not have relied on dictionary definitions, especially of unclaimed terms. Cordis asserts that undisputed evidence showed that Cypher stents and bare-metal stents were equally thrombogenic, such that Cypher stents would not infringe under the correct claim construction. Although Cordis publicly declared that its stents were non-thrombogenic, seemingly meeting the claim language and thus infringing, Cordis argues that its public statements used the term in a different sense from the patent and that its stents do not infringe.

Boston Scientific responds that nothing in the specification or prosecution history requires a comparison with bare metal stents; any comparison is to other coatings that promote thrombosis, so even if the Cypher stent were more thrombogenic than a bare metal stent, it would still infringe. Indeed, Boston Scientific points out that the claim language allows some metal to be left uncoated, so that a comparison to bare metal stents would not make sense. According to Boston Scientific, the court's definition conforms with both the ordinary meaning and experts' definitions of "non-thrombogenic." Boston Scientific adds that the Cypher stent infringes claim 8 of the '536 patent under either the district court's claim construction or Cordis's proposed claim construction. Boston Scientific notes that Cordis admitted in FDA submissions and promotional literature that the Cypher coating is "non-thrombogenic." Boston Scientific also points out that Cordis uses toluene to smooth the surface and remove pores, preventing thrombosis, indicating that its stents are non-thrombogenic. Finally, according to Boston Scientific, a new claim construction would require a remand to allow Boston Scientific to present a new infringement case.

We review claim construction de novo on appeal. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). We agree with Boston Scientific that the district court reasonably construed the "non-thrombogenic" limitation to mean "a material that does not promote thrombosis for a period of time that extends both during and after release of the biologically active material." To determine the meaning of "non-thrombogenic," we begin by considering the language of the claims. See Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc). The language of claim 1 requires that the non-thrombogenic topcoat material "provide[] . . . non-thrombogenicity" to the stent, but it does not require a comparison to any other stent, either bare metal or coated. '536 patent col.13 ll.22-26. As the claims themselves provide no other insight into the meaning of "non-thrombogenic," we turn to the specification in order to determine if it provides a clearer indication of the scope of "non-thrombogenic."

"[C]laims must be read in view of the specification, of which they are a part." Phillips, 415 F.3d at 1315 (quotation marks omitted). The abstract of the invention states that the "non-thrombogenic surface . . . is provided with sites . . . which aid in . . . reduc[ing] thrombogenic activity." '536 patent abstract; see also id. at col.2 ll.36-46 (using heparin "to impart a non-thrombogenic surface to the material"). Thus, we can discern that the non-thrombogenic material must reduce thrombogenic activity because of its particular properties. This conclusion accords with the fact that stents are known to promote thrombosis, and the goal of the patent is to have the claimed stent promote thrombosis as little as possible, or not promote thrombosis at all. However, it is clear from the specification that the reduced thrombogenic activity is not necessarily reduced from that of bare metal stents. Indeed, the specification discusses various ways of formulating a topcoat and then states that "a top coat or surface coating modified . . . to make the surface more non-thrombogenic presents a distinct advantage." Id. at col.6 ll.49-55. Thus, the reduced thrombogenic activity is clearly reduced from that of other coated stents whose topcoats have not been so modified.

Cordis argues that the prosecution history precludes the district court's construction of "non-thrombogenic" and that the claimed device must have had a reduced risk of thrombosis over that of a bare metal stent. "[A] court should also consider
the patent's prosecution history, if it is in evidence. . . . Like the specification, the prosecution history provides evidence of how the [Patent Office] and the inventor understood the patent." Phillips, 415 F.3d at 1317 (citations and quotation marks omitted). During prosecution, the applicant added the "non-thrombogenic" limitation to overcome an anticipation rejection, explaining that the topcoat "renders the coated device non-thrombogenic" and arguing that the prior art did not provide the same benefit. However, the prior art device, according to the applicant, was directed to "drug containing coatings . . . for metal stents." Parties' Joint App. at A482 (prosecution history of '536 patent, amendment dated July 30, 1997). Thus, if the amendment required reduced thrombogenicity over anything, it would be reduced over the prior art stent that is coated, not the bare metal prior art stent. The applicant therefore could not have considered "non-thrombogenic" to require reduced thrombogenicity over a bare metal stent.

Cordis also argues that the district court should not have compared dictionary definitions of "thrombogenic" and "thrombolytic" because "thrombolytic" does not appear in the claim, and because it is treated synonymously with "non-thrombogenic" in the specification. We disagree. Courts may of course "rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents," Phillips, 415 F.3d at 1322-23, and the court here did not err in relying on dictionary definitions to inform the meaning of the claim terms. The district court here permissibly looked to the definitions of "thrombogenic" and "thrombolytic" to inform the meaning of "non-thrombogenic." Because the court's definition accords with the specification, prosecution history, and the dictionary definition of a related term, we affirm the district court's definition of the term "non-thrombogenic." We therefore need not address Cordis's arguments that, under a different claim construction, the Cypher stent does not infringe claim 8 of the '536 patent.

2. Construction of "Long Term"

Cordis also argues that the district court erred by construing "long term" to mean a "period of time" and abused its discretion in denying Cordis's motion for a new trial based on newly discovered data. According to Cordis, the district court's construction improperly erases the claim requirement of "long term" because the claim requires both "long term non-thrombogenicity" and that the non-thrombogenicity be provided "during and after release of the biologically active material," whereas the court's definition only required "a period of time that extends both during and after release of the biologically active material." Cordis argues that the court's claim construction lessened the significance of what the specification describes as an important objective of the invention. Moreover, according to Cordis, data that became available after the trial but before entry of judgment showed that its Cypher stent had long-term thrombosis risks, and Boston Scientific itself publicly stated that the Cypher stent had a higher incidence of late thrombosis than bare metal stents.

Boston Scientific responds that the "long term" requirement has not been read out of the claim because the district court's construction includes a time limitation. Neither the specification nor the prosecution history limits "long term" to the phenomenon of late stent thrombosis, which occurs more than one year after implantation. Moreover, according to Boston Scientific, Cordis has publicly stated that the same data it now relies on is flawed. Boston Scientific also argues that the data Cordis seeks to include is cumulative and existed before trial, so it is not new evidence.

We agree with Boston Scientific that the district court correctly construed the "long term" aspect of the "non-thrombogenic" limitation. Neither the specification nor the prosecution history defines the period of time that is "long term," other than to require that it be longer than two weeks, '536 patent col.7 ll.1-5, and the claim construction includes two time limitations, like the claim itself. The claim construction requires both "a period of time" and that the period "extends both during and after release of the biologically active material." Even assuming, as Cordis argues, that the specification describes long-term non-thrombogenicity as an important objective of the invention, it does not further elucidate the meaning of "long term" or require that those specific words be used in the claim construction. We thus affirm the district court's construction of the "non-thrombogenic" limitation, including the "long term" aspect.

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E. Non-uniform

1. Plaintiff's Interpretation
Plaintiff PMT asserts that "non-uniform" should be defined simply as it is stated in the claims: "the dopant concentration in the first semiconductor regions is greater near the first contact layer than near the second contact layer and the dopant concentration in the second semiconductor regions is greater near the second contact layer than near the first contact layer." (R.49 at 11-17) (referencing Chen Patent, col.8, In.8-14). PMT argues that basic English grammar rules tell us that the language following the comma after "non-uniform" is an explanation of that term. (R. 247 at 18-22). PMT denies that a specific dopant gradient is required, arguing that the specification explains that all that is needed is a sort of inverse doping so that dopant is more diffuse at the bottom of p columns than at the top, and more diffuse at the top of n columns than at the bottom, or vice versa (R. 50 at 17-22 (referencing Chen Patent, col. 3, In. 41-47); R. 51 at 7-13). Further, PMT asserts that claim 11 covers any varying dopant concentration, no matter the method that produces it, including conventional manufacturing techniques. (R. 54 at 9-14, R. 255 at 5-12). Finally, PMT argues that defendants' proposed definition requires the impermissible reading of limitations from a preferred embodiment into claim 11. (R. 50 at 23 to 51 at 3; R. 218 at 15-24) (referencing Chen Patent, col. 3, In 37-47).

2. Defendants' Interpretation

Defendants assert that "non-uniform" should be defined as "doped to add an additional impurity gradient to the original 'uniform' impurity concentration." 24 (Infineon Br. at 40). Defendants argue that there are two components to this limitation: (1) additional dopant must be added to the normal dopant distribution that results from a conventional manufacturing process, and (2) the resulting distribution must be graded in some direction. (R. 126 at 12-16; R. 135 at 17 to 136 at 10). In support of the first component, defendants remind the Court that the parties had previously agreed that "uniform" meant those "items whose measure is within normal manufacturing variations." 25(R. 124 at 21-23; R. 160 at 7-9 and ST slide # 18 (paraphrasing)). Defendants argue that, since "non-uniform" is understood in terms of something not "uniform," by definition it must mean "variations beyond those that would result from a conventional manufacturing process." (R. 124 at 24 to 125 at 13; R. 139 at 22-23). Defendants also contend that, since these variations occur during normal manufacturing, they would necessarily be present throughout the prior art of semiconductor devices; thus, this first component of the limitation is necessary to distinguish over such prior art, including the Coe Patent cited during prosecution. (R. 126 at 16-19; R.143 at 4 to 146 at 7; R. 147 at 1-21) (referencing Coe Patent, U.S. Patent No. 4,754,310).

24 Defendant ST's proposed definition varies only slightly: "doping apart from any normal manufacturing variations (such as random changes in doping concentration and cross-boundary diffusion), as well as an additional impurity gradient added to the original uniform impurity concentration." (R. 162 at 4-6 and ST slide # 21).

25 However, during its rebuttal at the Markman hearing, PMT retracted its agreement to the meaning of "uniform" because it contends that manufacturing techniques change over time, so the definition provides no certainty. (R. 218 at 2-8; R. 253 at 20-25). PMT proposes instead a definition from the AMERICAN HERITAGE DICTIONARY, "always the same, unchanging, unvarying, without fluctuation." (R. 258 at 21-22).

In support of the second component of their proposed definition, defendants argue that the specification implicitly describes "non-uniform" as a graded doping condition, that claim 11 incorporates the grading limitation by reference to "non-uniform", and that Chen included such condition specifically to distinguish over the Coe Patent. (R. 126 at 12-19; R. 139 at 7-19 and ST slides # 6-10) (referencing Chen Patent, col. 3, In. 38-47, col. 8 In. 6-14 and Amendment at 12, In. 27 to 13, In. 23). Specifically, defendant ST explains that, in claim 11, "non-uniform" is a separate limitation from the clause immediately following and that PMT's proposed definition ignores the prosecution history and the definition provided in the specification and would effectively read the "non-uniform" limitation out of the claims. (R. 152 at 15 to 154 at 18 and ST slides # 18-19). Both defendants point out that the specification describes only two doping conditions, the uniform one that results from normal manufacturing processes and a graded doping condition. (R. 125 at 2-18; R. 158 at 17-18) (referencing Chen Patent, In. 37-47). ST further argues that claim 11 would fail for indefiniteness if the limitation of a gradient were not included. (R. 158 at 19-25). ST continues that, since it is a law of claim construction that patent claims should be construed to uphold validity, this Court should adopt its narrower construction that would render the claim definite. (R. 159 at 1-13 and ST slide # 20) (citing Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1557 (Fed. Cir 1996)).
3. Recommended Interpretation

The Special Master recommends that "non-uniform" be given its plain meaning of "not uniform." Out of the multitude of different doping possibilities in the voltage sustaining layer, the particular type of non-uniform doping that is chosen, is recited by the clause immediately following the use of "non-uniform" in claim 11. (Chen Patent, col. 8, In. 8-14). That language explains that the non-uniformity indicated is a condition wherein the p and n regions in the voltage sustaining layer are inversely doped such that the dopant concentration in each region increases as it approaches the contact layer of the corresponding conductivity type. (Chen Patent, col. 8, In. 8-14). The benefit to be achieved from such a doping condition, as explained in the disclosure, Chen Patent, col. 3, In. 37-47, is that the on-resistance of the device is lowered using this specific non-uniform doping profile. (Chen Patent, col. 8, In. 40-41).

How the non-uniformity is achieved is not relevant to the interpretation of this term. The claims at issue in the patent are structural claims, and the specific steps or methods used to achieve that structure is not part of a structural claim. Nor does the specification in any way limit the range of possible methods that could be used to achieve the non-uniformity. Specifically, nothing in the patent precludes a non-uniformity of the specific type described that is realized through conventional semiconductor processing techniques. Therefore, it is simply left to one of ordinary skill in the art to determine how best to achieve the specific non-uniform doping profile in the voltage sustaining layer.

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Claim Construction

The district court construed the claims, and instructed the jury accordingly. We review the claim construction as a matter of law, including any fact-based questions relating to claim construction. Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 1456, 46 USPQ2d 1169, 1174 (Fed. Cir. 1998). See Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 38 USPQ2d 1461, 134 L. Ed. 2d 577 (1996). Jury instructions are reviewed for correctness in their statement of the law, with due attention to their clarity, objectivity, and adequacy. United States Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1564, 41 USPQ2d 1225, 1232 (Fed. Cir. 1997).

Claim 1 of the Cooper patent is representative:

1. A submersible molten metal pump comprising:
   a pump casing having a cylindrical non-volute pump chamber defined therein, at least one inlet opening, and a tangential discharge opening;
   a rotor in said chamber sized to fit through said at least one inlet opening;
   a rotor shaft attached to said rotor and extending upwardly therefrom;
   at least one support post attached to said casing and extending upwardly therefrom in parallel with said rotor shaft; and
   superstructure positioned above said casing and including a mounting plate, means on said plate engaging said at least one support post, a motor mount attached to said plate,
   a motor on said motor mount, and coupling means for operatively connecting said motor to said rotor shaft.

The issues of infringement turned on the meaning and application of the claim element "cylindrical non-volute pump chamber." This element is defined in the Cooper patent in terms of the known spiral pump with increasing cross-section:

The pump chamber in the [prior art] casing generally defines a volute which is defined for the purpose of this application and as known in the art as a spiral casing for a centrifugal pump with an increasing cross sectional area viewed circumferentially as the outlet of the pump is approached.
Col. 2, lines 21-26. The district court instructed the jury, with respect to the definition of non-volute, as follows:

[A] non-volute pump chamber is a pump chamber that is not a volute pump chamber.

A volute pump chamber is . . . [a] three dimensional region wherein fluid is subjected to the force of an impeller, with a spiral casing, such that, when viewed circumferentially, the cross-sectional area of the chamber generally increases as the outlet of the pump chamber is approached.

"Viewed circumferentially," means viewed along the path that the liquid in the chamber follows; i.e., rotating around the chamber, in the direction of the outlet.

The "cross-sectional area," refers to the area defined that is between the pump chamber wall and the outer edge of the impeller.

"Generally increases," does not mean that the increase must be constant; however, the "widest" point must occur at the outlet of the pump, or as the outlet of the pump is approached, and the narrowest point occurs at the cutwater (or the other edge of the outlet).

Jury Instructions 28.

The definition of "volute" in the jury instruction is in accordance with the specification, which described its "non-volute" pump in comparison with the volute pumps of the prior art. The instruction has not been shown to be in error, and is confirmed.

D. "A Non-Woven Top Sheet"

There appears to be no dispute between the parties as to this definition. The '810 patent does not define "non-woven top sheet," although it names "wood pulp, rayon, cotton, polypropylene, polyester, lycra, or a combination thereof" as the elements of the non-woven material. In the absence of further clarification in the specification, the parties agree that various definitions of "non-woven" submitted as extrinsic evidence by Defendants are informative. The Court, borrowing from these definitions, construes "a non-woven top sheet" as a sheet, web or batt of fibers or filaments of wood pulp, rayon, cotton, polypropylene, polyester, lycra or a combination thereof that are bonded to each other by any of several means. Papers, wovens, knits and felts are specifically excluded. The parties each stressed qualifications to this generic definition, none of which was objected to by the other. The Court adopts these qualifications as incorporated into its construction: (1) there is no minimum thickness for the non-woven top sheet; (2) certain materials loosely defined as "felts," but not made of animal hair or paper, are not excluded from the definition of "non-woven" top sheet; and (3) a scrim, gauze, netting, yarn or other conventional sheet material may be added to one or both faces of the top sheet, or embedded within as reinforcement.

E. "the lower surface having no projections for connection to the seating surface;"

Plaintiff contends that this phrase must be construed in light of the prosecution history to mean "having no arms extend[ing] downwardly into the seating surface." (Claims Chart, p. 2, section 1.4.) In support of this construction, Plaintiff cites to the November 20, 1989 amendment in response to the examiner's prior art rejections. In this response, Plaintiff was forced to argue around the prior art disclosure of Postings and McMurry (U.S. Pat. # 2,831,457) when he stated: "[I]n both Postings and McMurry, the base member is physically secured to the ground surface via projections from its lower surface . . . . It therefore is not freely seated on the ground in either case. . . ." (Def's Exh. B at 37.) In conjunction with this argument, it appears that Plaintiff amended Claim 1 to include the above language, claiming a negative element of "no projections."
The Court does not agree with Plaintiff's contention that the prosecution history should be interpreted as limiting "no projections for connection to the seating surface" to "no arms extend[ing] downwardly into the seating surface." While Plaintiff's intention when drafting the amended claim may have been to only disclaim those projections which extended downwardly, he did not do so. It is a fundamental axiom in patent law that a Court may not redraft a claim, via construction, to encompass what the patentee intended to claim, or could have claimed. In a situation very similar to this one, where the patentee was relying on prosecution history to support construction of the term "permanently affixed" as meaning "affixed to prevent movement in at least a horizontal plane," the Federal Circuit stated:

To be sure, the prosecution history indicates that the applicant intended to amend the claims to avoid the "detachable" connection of the Johnson skate. The same history, however, indicates that the applicant chose to add the term "permanently" to the claims in order to achieve this result. That the applicant could possibly have added terms other than "permanently" to create a patentable distinction with the asserted prior art is simply irrelevant to our claim construction task. Courts do not rewrite claims; instead, we give effect to the terms chosen by the patentee. See, e.g., Texas Instruments v. United States ITC, 988 F.2d 1165, 1171, 26 U.S.P.Q.2d (BNA) 1018, 1023 (Fed. Cir. 1993) ("[T]o construe the claims in the manner suggested by TI would read an express limitation out of the claims. This, we will not do because courts can neither broaden nor narrow claims to give the patentee something different than what he has set forth" (quoting Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 396, 155 U.S.P.Q. (BNA) 697, 701 (Ct. Cl. 1967)).


Just as the court in K-2 refused to expand the scope of the phrase beyond that which was claimed, so must this Court. The distinction that the claim amendment here was a negative one, or specifically negating an element of the claim, does not distinguish K-2 from the present case. In this instance, reading "downwardly" into the claim would serve to expand the scope of Plaintiff's claim, because the claim would then encompass all projections not protruding "downwardly" - just as reading "permanently" to mean "affixed to prevent movement in at least a horizontal plane" would expand the scope of the K-2 claim to include fixation in methods outside the commonly understood definition of "permanently." Though a patentee is entitled to be his own lexicographer, "the words of a claim will be given their ordinary meaning, unless it appears that the inventor used them differently." K-2, 191 F.3d at 1364 (quoting Hoganas AB v. Dresser Industries, Inc., 9 F.3d 948, 951 (Fed. Cir. 1993). In this instance, Plaintiff has not demonstrated that the language used in the prosecution history is sufficient to overcome the ordinary meaning of the phrase. 4

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4 American Heritage Dictionary defines "projection," as used in the context of the '448 patent, as: "a thing or part that extends outward beyond a prevailing line or surface." "Connect," the root of the word "connection," is defined as: "to join or fasten together."

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As such, "the lower surface having no projections for connection to the seating surface" shall be construed as "the lower surface having no parts extending outwardly for attachment or fastening to the seating surface."
The district court did not explicitly construe the terms in question--"normal plunger performance" and "predetermined plunger performance"--but has conflated claim construction and infringement issues in its analysis. In analyzing the claim limitation "assigning first values . . . which represent normal plunger performance," the district court noted that Special Master Williams did construe "values" to require at least two different values, defining a window of time or a time interval. See Special Master's Report at para. 156; Markman Report at 23. The district court then turned to an example in the specification and determined that "normal plunger performance" should be equated with a good window of plunger arrival. Special Master's Report at para. 156. From there, the district court examined the accused device, and determined that the APC 1000 operator entered only a single target time, TT, from which the system generated a second TT+1 time. Id. at para. 158. The district court concluded that the window, bounded by the time entered by the operator, TT, and the generated value, TT+1, "does not per se represent 'normal plunger performance.'" Id. at para. 159 (emphasis in original). Although the district court then found that an operator might select a one-minute good window, it still determined that there was no infringement, because it concluded that "the TT+1 value does not bear any relationship to 'normal plunger performance.'" Id.

The determination of infringement is a two-step process. First, the court construes the claims at issue to correctly determine their scope. Second, it compares the properly construed claims to the accused device. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454-56 (Fed. Cir. 1998) (en banc). Claim construction is a question of law that we review de novo. Id. A determination of infringement, whether literal or under the doctrine of equivalents, is a question of fact. Instituform Techs., Inc. v. Cat Contracting, Inc., 161 F.3d 688, 692 (Fed. Cir. 1998).

We begin our claim construction analysis with the words of the claim. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). "In construing claims, the analytical focus must begin and remain centered on the language of the claims themselves, for it is that language that the patentee chose to use to 'particularly point[] out and distinctly claim[] the subject matter which the patentee regards as his invention.' 35 U.S.C. § 112, P 2." Interactive Gift Express, Inc. v. CompuServe, Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001). In the absence of an express intent to impart a novel meaning to the claim terms, the words take on the full breadth of the ordinary and customary meanings attributed to them by those of ordinary skill in the art. See, e.g., Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002). The ordinary and customary meaning of a claim term may be determined by reviewing a variety of sources. Some of these sources include the claims themselves, see Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1357 (Fed. Cir. 1999); dictionaries and treatises, Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202 (Fed. Cir. 2002); and the written description, the drawings, and the prosecution history, see, e.g., DeMarini Sports, Inc. v. Worth, Inc., 239 F.3d 1314, 1324 (Fed. Cir. 2001).

Words often have different meanings to different people and in different contexts, accounting for the multiple ordinary meanings found in dictionaries. Dictionary definitions, while reflective of the ordinary meanings of words, do not always associate those meanings with context or reflect the customary usage of words by those skilled in a particular art. The words used in the claims must be considered in context and are examined through the viewing glass of a person skilled in the art. Tegal Corp., 257 F.3d at 1342. It is the use of the words in the context of the written description and customarily by those skilled in the relevant art that accurately reflects both the "ordinary" and the "customary" meaning of the terms in the claims of a patent. As set forth in Brookhill-Wilk 1:

In construing claim terms, the general meanings gleaned from reference sources, such as dictionaries, must always be compared against the use of the terms in context, and the intrinsic record must always be consulted to identify which of the different possible dictionary meanings is most consistent with the use of the words by the inventor. "Where there are several common meanings for a claim term, the patent disclosure serves to point away from the improper meanings and toward the proper meanings."

Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1300 (Fed. Cir. 2003) (quoting Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998)); see also Tex. Digital, 308 F.3d at 1203. The written description must also be examined in every case, because it is relevant to determine if the presumption of ordinary and customary meaning is rebutted. See Renishaw, 158 F.3d at 1250. Once the court has construed the claim limitations, the second step in the analysis is to compare the properly construed claims to the accused device. Cybor Corp., 138 F.3d at 1454-56.

As noted, the claim limitations at issue are "normal plunger performance" and "predetermined plunger performance." The parties do not dispute the meaning of the terms "plunger performance," so the initial focus of our analysis is on the terms "normal" and "predetermined" within the context of each of the claim limitations in question. Starting with the claim
As to claim three, the claim has been amended to specify that the plurality of normally downwardly hanging fingers follows:

amending the claim to add the reference to gravity the patent applicant noted the significance of the claim change as even more apparent by the fact that the patent was amended expressly for the purpose of adding the gravity element. After device where the primary reason for the downward direction Of the fingers is something other than gravity. This is made affected by gravity to some degree. To avoid such an unreasonable result the claim must be construed not to extend to a

Plaintiff's expert suggests that normally hanging downwardly by gravity requires only that gravity be one of the forces operating on the fingers. Defendants argue that gravity must be the sole force which causes the fingers to hang down. The language of the patent and its prosecution history clearly require rejection of plaintiff's proposed interpretation.

Plaintiff's proposed interpretation would essentially render the reference to gravity meaningless since all objects will be affected by gravity to some degree. To avoid such an unreasonable result the claim must be construed not to extend to a device where the primary reason for the downward direction Of the fingers is something other than gravity. This is made even more apparent by the fact that the patent was amended expressly for the purpose of adding the gravity element. After amending the claim to add the reference to gravity the patent applicant noted the significance of the claim change as follows:

As to claim three, the claim has been amended to specify that the plurality of normally downwardly hanging fingers
actually hang downwardly by gravity. Since the fingers of the French patent are fixed in position, and are not even in a
directly vertical position, there is no suggestion in the patent of applicant's type of fingers.

Given this explanation it is absurd to suggest that the reference to gravity is no more than a recognition of an ever-present
physical force.

Plaintiff places great emphasis on the fact that a special master in a prior suit involving this patent accepted its
to suggest that this unpublished opinion from a sister district court adopting a special master's conclusion operates as stare
decesis unless the cases can be factually distinguished. Plaintiff's reply brief in support of its summary judgment motion at
page 4. This not only indicates a fundamental misunderstanding of the doctrine of stare decisis by plaintiff but a direct
disregard for the Federal Circuit's exposition of the doctrine in Mendenhall v. Cedarapids, Inc., 5 F.3d 1557, 1570 (Fed. Cir.
1993)

Stare decisis in essence "makes each judgment a statement of the law, or precedent, binding in future cases before the
same court or another court owing obedience to its decision." Thus, stare decisis could be invoked by a district court or by
this court based on a prior decision of this court, but the opinion of one district court is entitled only to comity in another
district court.

While it is true that the judgment of the district court was ultimately affirmed by the Federal Circuit it was affirmed not on
its merits but on the basis that the defendant appellant had waived its right to object to the use of a special master or to
challenge the special master's conclusions. Accordingly, the decision of the court in the Northern District of California is
persuasive only to the extent that the Court finds its reasoning to be so, which it does not.

III. The '325 Patent

Claim 1 of the '325 patent reads as follows:

In a sheet handling device:

(a) a conveyor for conveying a plurality of sheets in succession,

(b) a nip disposed at the discharge end of the conveyor for passing sheets therethrough,

(c) a sheet stacker disposed downstream of said nip for receiving and stacking said sheets

(d) and stop means disposed between said nip and said stacker for guiding the longitudinal sheet edges in a manner to
prevent transverse shifting of said edges as the sheets pass from said nip to said stacker, said stop means comprising:

(1) an elongated mounting element disposed above the path of the traveling sheets and extending transversely thereof and
outwardly beyond the said longitudinal sheet edges,

(2) and a plurality of fingers normally hanging downwardly by gravity and arrayed along said mounting element,

(3) a first portion of said fingers being disposed in the path of said sheets and engageable thereby so that said first portion
of fingers are swung forwardly and upwardly about a transverse axis and rest on the sheets,

(4) and a second portion of said fingers remaining out of the path of the traveling sheets and hanging downwardly to
guide the said longitudinal sheet edges.

(emphasis added).
The district court interpreted "hanging downwardly by gravity" as requiring that gravity be the "primary reason for the downward direction of the fingers." Marquip asserts that the phrase only requires that gravity act on the fingers, rather than that the gravity causes the downward hang. However, to interpret the phrase as Marquip contends would read the "by gravity" limitation out of the claim. Gravity acts on everything within our physical frame of reference. Therefore, the term must mean something beyond the universal action of gravity. Moreover, the prosecution history discloses that the applicant added the "by gravity" language to the claim after a rejection. Therefore, this court must assume that this limitation was significant. Thus, this court adopts the district court’s interpretation.

CLAIM 8

Claim 8 reads as follows, with the language at issue in italics:

8. A filter for removing air from fuel received from a fuel tank prior to delivery to an engine comprising: [issue # 1]

- a substantially enclosed vessel including a fuel inlet, a fuel outlet leading to the engine, and a fuel return line leading to said storage tank, said vessel including a normally upright tube presenting a substantially open upper margin defining an operating fuel level within said vessel, said vessel further including means in direct fluidic communication with said outlet for detachably mounting a cartridge thereon; [issue # 2] and

- a (sic) air removal filter cartridge detachably received within said vessel, said cartridge being positioned below said operating fuel level for allowing air bubbles separated by said cartridge to float upwardly to said fuel level and be discharged through said fuel return line. [issue # 3]

Claim 8; Issue 1 - The Preamble

The first issue in claim 8 again pertains to the construction of the preamble. As above, Plaintiffs assert that the preamble merely states a purpose or intended use of the invention and thus does not limit the claim. Defendants, on the other hand, again assert that the term "filter" must be construed as "a filter for removing air which allows fuel to pass but not air" in order to distinguish the "air removal filter cartridge" from prior art, citing to its prior arguments related to "filter media" in claim 1.

As Plaintiffs correctly note, however, if nothing in the claim preamble serves to distinguish prior art, the claim preamble is not a limitation. Compare STX, LLC v. Brine, Inc., 211 F.3d 588, 591 (Fed. Cir. 2000) (preamble not a limitation when used only to state a purpose or intended use of the invention and thus does not limit the claim. Defendants, on the other hand, again assert that the term "filter" must be construed as "a filter for removing air which allows fuel to pass but not air" in order to distinguish the "air removal filter cartridge" from prior art, citing to its prior arguments related to "filter media" in claim 1.

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In any event, for the reasons set forth above with respect to claim 1, the Court finds that the construction of the term "filter for removing air from fuel" suggested by Defendants is not supported by either the language of the claim itself, which clearly references "air bubbles separated by said cartridge," or the specification. See col. 7, lines 4-8.

Claim 8; Issue 2 -- The Vessel & Upright Tube

The parties agree that for the most part, the terms in the first element of claim 8 are not ambiguous. Plaintiffs assert that the language in the last clause referencing a "means . . . for detachably mounting a cartridge thereon" is a means-plus-function claim, and Defendants do not contend otherwise. The Court agrees. The structure described in the specification is a threaded coupling. See col. 2, lines 5-9; col. 4, lines 33; col. 7, lines 3-5. Thus, this portion of the claim is defined as "a threaded coupling or equivalents thereof for detachably mounting a cartridge which is in direct fluidic communication with such outlet, allowing fluid to travel directly between the cartridge and the outlet."
Defendants' arguments with respect to the vessel in Claim 8 center on the "normally upright tube." Defendants asserted at the hearing that the tube 88 is an "overflow tube." As the courts have recognized, claims are part of a "fully integrated written instrument," consisting principally of the specification, and "must be read in view of the specification, of which they are a part." Phillips, 415 F.3d at 1315 (quoting Markman, 52 F.3d at 978, 979). While language is normally given its ordinary meaning, the patentee may serve as his own lexicographer, and subscribe a meaning to a term in the specification that differs from or is more limited than the meaning it would otherwise have, and in such instance, "the inventor's lexicography governs." Phillips, 415 F.3d at 1316.

Throughout the specification, both in defining the invention itself and the preferred embodiment, the patentee has invariably described the upright tube as an "overflow tube." See col. 1, lines 68; col. 2, lines 24; col. 2, lines 31; col. 4, lines 20-21; col. 5, lines 41-42. Likewise, the Abstract described that the trapped bubbles float upward to the fuel level and "then spill over the upper margin of an upright tube within the vessel" leading to the fuel return line. Nowhere is the upright tube described in any other fashion. Accordingly, the Court finds that the substantially upright tube is defined to be "a substantially upright overflow tube." See Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1273 (Fed. Cir. 2001) (patentee "defined the term 'mode' by implication through the term's consistent use through the patent specification").

Defendants further assert that as described in the claim, the "normally upright tube" is not structurally or functionally connected to any element within the vessel. Plaintiffs do not suggest any such connection in the claim language itself, but assert that Defendants' argument is essentially one of invalidity rather than claim construction. The Court agrees, and will address Defendants' argument in connection with their motion for partial summary judgment.

Accordingly, the Court finds that one ordinarily skilled in the art would understand the challenged language pertaining to the vessel to be defined as follows:

"a substantially enclosed vessel that includes a fuel inlet, a fuel outlet leading to the engine, and a fuel return line leading to the fuel storage tank. The vessel includes a normally upright overflow tube that presents a substantially open upper portion, which defines an operating fuel level with the vessel. The vessel further includes a threaded coupling or equivalents thereof for detachably mounting a cartridge which is in direct fluidic communication with such outlet, allowing fluid to travel directly between the cartridge and such outlet."

Cone, Nose, Flank, and Shoulder Region

Claims in the '249, '715, and '631 Patents contain the terms "cone" or "cone region," "nose" or "nose region," "flank" or "flank region," and "shoulder region." The parties dispute whether these regions extend around the circumference of the drill bit face or are limited to the blades of the drill bit face. The parties further dispute the construction of these regions with respect to each other.

Whether the Regions Extend Around the Circumference of the Drill Bit Face

Baker Hughes contends "cone," or "cone region," means "the area or region extending around the entire circumference on the drill bit face and which is located radially closest to the centerline or longitudinal axis of the drill bit body (and which is shaped more or less like an inverted cone)." Baker Hughes proposes similar constructions for the other claim terms and contends these regions extend around the entire circumference of the bit face.

ReedHycalog contends "cone," or "cone region," means the "region, defined by the blades of the bit, radially between the nose and the center longitudinal axis of the bit." ReedHycalog proposes similar constructions for the other claim terms and claims these regions are defined by the drill bit blades and do not extend around the entire circumference of the bit face.

The specifications of the '249, '715, and '631 Patents support a construction that limits the "cone," "nose," "flank," and "shoulder" regions to the blades. The '249 and '715 Patents refer to the "cone," "nose," "flank," and "shoulder" regions as being regions within the bit profile. '249 Patent col. 5:66-col. 6:1; '715 Patent col. 9:34-39. As the blades define the bit
profile, and each of these regions are located in the bit profile, the blades likewise define the "cone," "nose," "flank," and "shoulder" regions.

Second, figures in the '249, '715, and '631 Patents confirm that these regions are limited to the area defined by the drill bit blades. Fig. 10 of the '249 and '715 Patents, displayed in Appendix C and annotated, shows the "cone," "nose," "flank," and "shoulder" regions along the bit profile. Fig. 13 of the '715 Patent, a quarter-sectional side view of the three-region embodiment of the claimed drill bit, similarly shows the disputed regions along the bit profile. '715 Patent Fig. 13. Figs. 14A and 14B of the '631 Patent, reproduced in Appendix C and annotated, show the "cone," "nose," "flank," and "shoulder" regions on the blades of the drill bit. While Fig. 14C of the '631 Patent, annotated and shown in Appendix C, tends to support Baker Hughes's contention that the "cone region" extends circumferentially around the drill bit, the above intrinsic evidence more clearly shows that this region, in addition to the "nose," "flank," and "shoulder" regions, is limited to the drill bit blades. Thus, the Court construes these terms to only extend on the blades of the drill bit.

Radial Location of Each Region With Regard to Other Regions

Baker Hughes and ReedHycalog additionally dispute the definition of each region on the drill bit in relation to the other regions. In short, Baker Hughes defines "cone" as "... located radially closest to the centerline or longitudinal axis of the drill bit body ..." and subsequently defines "nose" as the area or region radially between the cone and the "flank," which includes the leading most point on the drill bit body. Similarly, Baker Hughes defines "flank" as the area or region radially between the "nose" and the "shoulder" or "gage," and "shoulder region" as the area or region radially between the "flank" and the "gage," although in a given drill bit, the "flank" and "shoulder" regions may be the same part of the bit.

ReedHycalog's constructions are similar, except that ReedHycalog starts with the "nose," which it construes as "extending radially and proximately about the leading-most point." ReedHycalog defines "cone" as the region radially between the "nose" and the longitudinal axis of the drill bit body, "flank" as the area or region radially between the "nose" and the "shoulder region," and the "shoulder region" as radially proximate the "gage."

Nose

Similarly, there is little difference between the parties' constructions of "nose" and "nose region." The '249, '715, and '631 Patents specifications refer to the "nose," or "nose region," as part of "an outer region," as a "radially intermediate portion" of the bit face between the "cone" and the "flank" and "shoulder" regions, or as "more radially distant" from the centerline than the "cone." '249 Patent col. 8:14-18; '715 Patent col. 3:11-18, 36-45; '631 Patent col. 4:37-43, col. 5:37-43. This language in the specifications supports Baker Hughes's contention that the "nose," or "nose region," is located radially between the "cone" and the "flank" regions. Further, as the parties agree, all embodiments of the invention show the leading-most point of the bit within the "nose" or "nose region." '249 Patent Fig. 10; '715 Patent Figs. 10, 13; '631 Patent Figs. 15A, 15, 16, 17.

The Court slightly modifies Baker Hughes' construction. Thus, "nose," or "nose region," means "region, defined by the blades of the bit, located radially between the cone and flank regions, and includes the leading-most point on the blades, labeled 232 in Fig. 10 of the '249 and '715 Patents." 7

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7 Ref. No. 6 of Appendix B contains the disputed terms and their construction.

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5. "Nose Feature"

Hoodlums defines "nose feature" as "[t]he part of the face used for breathing and smelling, including but not limited to the
nose features shown in Figures 5 through 9 of the '972 patent." (Doc. 37, Ex. B at 5.) Redtail defines "nose feature" as "prominent and distinctive characteristics of the organ forming the nostrils used for smelling and breathing." (Id.)

The term "nose feature" closely resembles the previously defined terms "skull facial features" and "facial features." In this case, "nose feature" is only found in claim 1, and the specification and the prosecution history do not provide any particular meaning to the term. The dictionary defines "nose" as "the organ for breathing and smelling." New Webster's Dictionary and Thesaurus, 261. This definition captures the ordinary and customary meaning of the word "nose." However, the addition of the word "feature" strongly suggests that the term "nose feature" includes more than just the definition of "nose." See Phillips, 415 F.3d at 1314.

Looking to the claims, the specification, Federal Circuit law, and the dictionary, the court defines "nose feature" as "the part of the face used for breathing and smelling, including, but not limited to, the nose features shown in Figures 5 through 9 of the '972 patent."

E. Nose Segment

The term "nose segment" is recited in Claim 3(d) of the '649 patent which reads: 17 "said cutting head assembly further including a nose segment structured to applanate the cornea to be cut; said nose segment structured to move in unison at substantially all times with said cutting head assembly in both a forward and a reverse direction over said positioning ring along said generally arcuate path defined by said guide assembly." Defendants support the following construction: "the separable forward part of the cutting head assembly," (Court Reference Sheet at 1), and plaintiff proposes the following: "the forward section on the cutting head that applanates the cornea," (id. at 2). Thus, the key dispute is whether the piece is separable, as proposed by defendants, or integral, as argued by plaintiff.

Defendants argue that the nose segment must be separable or the claim would not specify that it "moves in unison at substantially all times with said cutting head assembly." In other words, if the nose segment was fully integrated with the cutting head assembly, there would be no need to point out that it moved in general unison with the cutting head assembly. This is a powerful argument, for if the nose segment is to be integrated, the last part of the claim would be wholly redundant.

Defendants further contends that any ambiguity is resolved by the specification of the '649 patent which reads: "Preferably, the depth adjusting means 75 comprise a separate nose segment 76, which is structured to be securely, yet removably interconnected with housing 51 by way of a conventionally known fasteners 74 such as a screw, bolt, etc." Col 10, ln. 60 - Col. 11, ln. 3 (emphasis added). Thus, the specification describes a separate piece. While it is clear that the patentee is not mandated to describe in the specification every possible embodiment, see Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1344 (Fed. Cir. 2001), one may turn to the written description to define a term already in a claim limitation because a claim must be read in view of the specification of which it is a part, Renishaw PLC v. Marposs Societa Per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998).

Plaintiff relies on Rexnord in which the Court of Appeals held that the term "portion" embraced structure that may be either integral or separate. 274 F.3d at 1345. Plaintiff analogizes "segment" to "portion," which shares a similar dictionary definition. The Rexnord court, however, found it significant that the specification described more than one embodiment. See id. The inventor had also specifically noted that the invention could be carried out in a number of ways. See id. Here, the specification describes only an embodiment of a separate nose segment which is secured to the cutting head assembly and removable therefrom. Therefore adopt defendants' proposed construction for the term nose segment: "the separable forward part of the cutting head assembly."
Plaintiffs contend that the phrase "each flange itself not being a magnet, including a magnetic material" means "(respecting the flanges) . . . that a portion or segment of each flange is a magnetically attractive substance, such as, for example, a magnet; but the entirety of the flange cannot be a magnet. The magnetic material may be embedded in or secured to the remaining portions of each flange." JS, Exh. A at 11.

Conversely, Defendant construes the entire phrase in question to mean that "the flange is not a magnet, but it includes magnetic material, specifically a magnet." JS, Exh. C at 107.

In examining the language of the claims, the Court agrees with Plaintiffs that the use of both "magnet" and "magnetic material" in the language of claim 12 counsels against limiting the phrase "magnetic material" to a "magnet." Pls.' Opening at 17:24-27. However, this fact, in and of itself, is not dispositive. Additionally, and as stated above, see supra section "III B 2 a (4)," the plain meaning of the term "magnetic" is "having the properties of a magnet and capable of being magnetized or of being attracted by a magnet." Having considered the language of the claims, the Court now turns to the specification.

In the "Detailed Description of the Preferred Embodiment" section of the '747 Patent, the patentee states that when there is a magnetic attraction between the primary and auxiliary frames, it is achieved through the engagement of magnets as depicted in Figure 3. See the '747 Patent, Koo Decl., Exh. C at 19 and 20, Col. 2, 11. 56-60 and 65-67. However, the references to magnets in the descriptions of the preferred embodiment are not claim limitations. Laitram Corp., 863 F.2d at 865. The Court next turns to the prosecution history.

In this case, the Sadler Patent was cited by the applicant in his Information Disclosure Statement ("IDS"), 19 which was filed with the PTO during the prosecution of the '747 Patent. 20 See IDS, Prosecution History of the '747 Patent, Koo Decl., Exh. F at 739. As discussed above, see supra section "III B 2 a (4)," the Sadler Patent defines the phrase "magnetic member" to be a permanent magnet or a ferromagnetic member, but at least either the first or second magnetic members must be a permanent magnet. Therefore, and consistent with the Court's analysis with regard to similar claim language in the '545 Patent, the Court construes the phrase "magnetic material" to mean a permanent magnet or ferromagnetic material, but at least either the magnetic material in the primary frame or in the auxiliary frame is a permanent magnet.

Therefore, the Court construes the phrase "each flange itself not being a magnet, including a magnetic material" to mean each flange is not a magnet, but it includes a permanent magnet or ferromagnetic material, and at least either the magnetic material in the primary frame or in the auxiliary frame is a permanent magnet.
even partly covers the "axial peripheral lip": for instance, where the panel lies only halfway up the side of the lip, but does
not rise over the top of the lip. Lacks argues, however, that the "not cover" limitation only teaches away from those
inventions where the panel covers the projecting top of the "axial peripheral lip." The ordinary meanings of "cover" permit
both constructions. 7

7 Webster's Third New International Dictionary (1986) ("Webster's") defines the verb "cover" to mean, among other things,
"to lie over; spread over; be placed on or often over the whole surface of" and "to appear here and there on the surface of."
Even though a dictionary is technically extrinsic evidence, the U.S. Court of Appeals for the Federal Circuit ("Federal
Circuit") has determined that judges may consult a dictionary "at any time" when construing claim terms, so long as the
dictionary's definition does not contradict the definition supplied by the intrinsic evidence of the patent. Vitronics, 90 F.3d at
1584, n.6. As will become clear, there is no contradiction.

Claim 1 states that the "ornamental panel" is "shaped to cover said entire wheel face outer surface and not cover said axial
peripheral lip." '809 patent, col. 11, lines 9-11. In order to be consistent with my construction of "axial peripheral lip" and
"wheel face outer surface," the "not cover" limitation must mean what defendants propose: that the panel cannot cover any
portion of the axial peripheral lip structure. Furthermore, reason alone dictates that the "not" negates all possible ordinary
meanings of "cover," absent a specific direction to the contrary in the specification or the prosecution history. See id. at
1582.

No such direction exists in the specification. Instead, cross-sectional drawings of the preferred embodiments (Figures 3 and
5) show the panel fitting snugly into the base of the shoulder of the axial peripheral lip. These drawings do not teach partial
coverage of the axial peripheral lip structure.

With respect to the prosecution history, Lacks argued at the hearings that it had amended claim 1 and inserted the "not
cover" limitation solely to distinguish the scope of claim 1 from prior art that taught a cladding panel that went over the top
of the "axial peripheral lip." In making that argument, Lacks has essentially asserted that it did not intend for the "not cover"
limitation to teach away from all forms of coverage, but only to teach away from coverage of the top of the lip. While this
may have been Lacks' intent, the prosecution history before me offers no persuasive evidence to support this argument.

Even if true, Lacks' contention about the purpose of the "not cover" limitation could not overcome the strong evidence of
the claim language and the specification. I conclude therefore that a person of ordinary skill in the art of cladded wheels
would understand the "not cover said axial peripheral lip" limitation of claim 1 to mean that the cladding panel cannot cover
any portion of the "axial peripheral lip." Because the intrinsic record of evidence has resolved any ambiguities as to the
meaning of the "not cover" limitation, I find it unnecessary to examine any extrinsic evidence on this issue (with the
permissible exception of Webster's). See id. at 1583.

11. Not Directed, Non Laminar Stream

The claim term "not directed, non laminar stream" appears twice in Claim 35. 7 Erbe defines the terms "not directed…
stream" and "non laminar stream" separately. Canady defines the terms together.

Erbe's Proposed Definition of "not directed…stream": A gas stream that is not necessarily oriented toward the surface of
the tissue to be coagulated.

Erbe's Proposed Definition of "non laminar stream": A diverging gas stream that allows an inert gas atmosphere to form.

Canady's Proposed Definition of "not directed, non laminar stream": A turbulent, diverging gas stream.
(Docket No. 42, p. 15, 16; Docket No. 66, pp. 34-49). After a review of the claim language, I find that the terms should be read in relation to each other since they are always together in the claim language and describe the type of stream that the invention envisions.

7 Claim 35 provides, in relevant part, as follows:

35. A method for coagulating tissue during endoscopic surgery comprising the following steps:...supplying the inert gas from the source of said gas thorough the tube to the distal end opening of said tube with such a low flow rate, that gas exiting through said distal end opening is a not directed, non laminar stream but forms an inert gas atmosphere between the distal end of the tube and the region of the tissue to be coagulated.....supplying an electric current by means of a plasma jet as a function of the direction of said electric field and the electric conductivity of the tissue surface to be coagulated, and coagulating an area of the tissue sidewardly of the extended longitudinal axis of the protruding end of the tube while the distal end opening of the tube is maintained in a substantially stationary position at a predetermined distance from the tissue to be coagulated, and while the ionized gas is being supplied through the distal end opening of the tube as a not directed, non laminar stream with a low flow rate.

Docket No. 63, Ex. 1, col. 15, ll. 53-58, and col. 16, ll. 3-14 (emphasis added).

8 Erbe changed its proposed definition to eliminate the term "turbulent," because upon further reflection, the term "turbulent" was "inadvertent and incorrect." (Docket No. 68, p. 24). Consequently, I will delete this term from Erbe's proposed definition.

In defining the claim terms, both Erbe and Canady propose some similar language: A diverging gas stream. I agree with the parties that "a diverging gas stream" should be included within the definition. See, Docket No. 63, Ex. 1, col. 8, ll. 31-33. I do not agree with Erbe, however, that the additional language "that allows an inert gas atmosphere to form" should be included. Such language would not make sense when read where the claim term appears for the first time in Claim 35. See, Docket No. 63, Ex. 1, col. 15, ll. 53-58. See, Footnote No. 8. Furthermore, I cannot agree with Canady, that the term "turbulent" should be included in the definition. To read "turbulent" into the construction would be placing a limitation set forth in the specifications into the claim, which is not permitted. Phillips, 415 F.3d at 1323, citing Comark Communs. v. Harris Corp., 156 F.3d 1182, 1186-87 (Fed.Cir.1998).

I do agree with Erbe, however, that I must give all terms, to the extent possible, meaning. Thus, I do not believe that the word "diverging" conveys the entire meaning of the term "not directed, non laminar stream." "Not directed" must be given some meaning. As such, I turn to the specifications which states that "the surgeon needs not take exactly aim" at the tissue to be coagulated. Docket No. 63, Ex. 1, col. 7, ll. 19-20. The specifications further state that [i]n many cases it is not necessary to direct the axis of the orifice 9 of the tube 2 or the attachment 11 to the surface to be coagulated, as shown in FIG. 15, since the ionization of the gas stream 17 is normally automatically directed to the adjacent surface of the tissue 18, even if the tissue 18 is in a position as shown in FIGS. 3, 4, 6, 7 and 9 to 12, whilst the axis of the tube 2 or the attachment 11 is oriented as shown in FIGS. 2, 5 and 8. Consequently, I construe the term "not directed, non laminar stream" as a diverging gas stream which need not be specifically aimed at the tissue to be coagulated:

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vii. Not parallel to the frontal plane

Plaintiffs construe the phrase "not parallel to the frontal plane" to mean "not on the front portion of the bridge, but on the top and bottom of surfaces of the bridge, in some cases perpendicular to the frontal plane." Defendant interprets the phrase "not parallel" to mean, simply, that the planes do intersect and objects to limiting the phrase to encompass coupling only at
"the top and bottom... surfaces of the bridge."

First, the court finds (and the parties appear not to contest) that "not parallel" means "substantially perpendicular." The language of Claim 2 states that "an eyeglass device as recited in claim 1 wherein the coupling occurs at a coupling surface on the second frame that is substantially perpendicular to the frontal plane." Therefore, "not parallel," read in the context of other relevant claim language, means "substantially perpendicular."

With respect to Plaintiffs' interpretation that coupling must be done "on the top and bottom of surfaces of the bridge," Defendant argues that, even if one of the non-parallel planes, such as the frontal plane, is vertically aligned, the other plane need not be horizontally aligned, and could in fact also be vertically aligned and still be substantially perpendicular. Defendant cites, as an example, a typical six-sided die; as Defendant points out, for any given side of a die, there are four sides that are perpendicular to it, two of which are horizontally aligned and two of which are vertically aligned. Therefore, Defendant contends, there is no basis for restricting the phrase "not parallel to the frontal plane" only to "the top and bottom of surfaces of the bridge."

The court agrees with Defendant. Plaintiffs cite prosecution history from the related '054 Patent as support for its interpretation, but the language Plaintiffs cite do not preclude Defendant's interpretation. Therefore, the court construes "not parallel to the frontal plane" to mean "substantially perpendicular to the frontal plane" without any limitation that coupling occur on the top and bottom of surfaces of the bridge.

II. "a notch through the entire thickness of the strip"

Lifescan proposes "a small cut through the entire thickness of the strip," while Roche proposes "a small cut into a lateral edge of the strip, such as the notches A, B, or C circled below [with three drawings]." The three drawings are based on Fig. 12 of the '420 patent ("Notch A"), Fig. 8 of Australian Provisional Application No. PN6619 2 ("Notch B"), and Fig. 3i from the Crismore '817 patent 3 ("Notch C"). According to Roche, the drawings are "genericized" versions of these figures; the drawings are not exact reproductions of those figures.

The Court declines to define the relatively simple term "notch" by reference to Roche's figures. Roche does not provide any legal or factual support for using its own drawings, based on one figure from the patent-in-suit and two figures from other sources, to construe "notch." Both parties agree that "notch" means "a small cut," and the Court finds that this construction is sufficient.

5. Notches

. Plaintiff's proposed construction: Angled or shaped portions in the lower edge surface of the helmet shell for preventing flexible members from freely sliding.

. Defendant's proposed construction: Concave or V-shaped cuts or indentations formed in the lower edge of a helmet shell.
The parties' dispute focuses on the expanse of a notch. Plaintiff asserts that notches are angled portions of the lower edge of the helmet shell and defendant contends that they are concave or V-shaped indentations in the lower edge of the shell. Defendant's construction of notch better reflects both the claim and specification language.

The specification says that "notches 107, 108 are generally V-shaped notches; however, other shapes of notches, if desired, could be utilized." '971 patent, col. 9, lns. 15-17. It also states that "the notches 107, 108 of chin protector connector 34 serve to provide improved stability of the lower chin straps, or flexible members 104, by preventing the lower strap 104 from being free to slide around the outer wall surface of ear flaps 32." Id., col. 9, lns. 59-63. The specification and diagrams show that "notches" are smaller indentations or cut outs and not large angled portions in the lower edge of the helmet. Instead of being merely angled, the lower edge of the shell is interrupted by an indentation of some sort.

Although defendant's construction of the word is more accurate, it is too narrow because it appears to limit notches to only two shapes: concave and V-shaped. Concave is defined as "arched in" or "curving in," implying a U shape. Merriam-Webster's Online Dictionary, accessed at http://www.merriam-webster.com/dictionary/concave (visited July 10, 2009). Therefore, I find that "indentations of any shape" better defines the claim term.

I conclude that the term "notches" as used in claims 42-47 of the '971 patent means indentations of any shape in the lower edge of the helmet shell that prevent the lower chin straps from moving.

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1. "A Number of Apertures"

In the preliminary injunction pleadings, Bradley argued that claim 6 requires more than one set of cold fluid apertures.Defs.' Br. in Opp'n to Pl.'s Mot. for Prelim. Inj. at 44 ("Def.' Prelim. Inj. Opp'n Br."). In fact, Bradley argued that one set of apertures was necessarily located within the shuttle bore (the portion of the valve liner in which the shuttle valve moves, '531 Patent, col. 14, ll. 14-15). Defs.' Prelim. Inj. Opp'n Br. at 44 (citing Ballanco Aff. P 8).

In contrast, Lawler argued that only one set of openings is all that claim 6 requires. Pl.'s Reply Br. in Supp. of Mot. for Prelim. Inj. at 19 ("Pl.'s Prelim. Inj. Reply Br."). Moreover, reading a requirement of two sets of openings, a set of apertures and a set of slots, into claim 6 would render claim 7 superfluous. Therefore, Lawler argues that pursuant to the doctrine of claim differentiation, claim 6 could not require two sets of apertures. Id. at 20 (citing Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir. 1991)).

The Court agrees with Lawler. There is nothing in the language of the claims or in the specification that requires more than "a number of apertures." Use of the plural form of aperture does imply that more than one aperture should be present, or implies a set of apertures, however, there is nothing that specifies that the number of aperture sets need be more than one. In addition, as Lawler points out, requiring more than one set of apertures in claim 6 would render claim 7 superfluous. Claim 7 states:

The thermostatic mixing valve of claim 6, wherein:

    said valve liner defines a number of slots in communication between said first source and said shuttle bore; and

    said shuttle valve is configured to variably restrict the flow of liquid through said number of slots into said shuttle bore in response to movement of said thermostat actuator.

'531 Patent, col. 14, ll. 20-26. Claim 7 clearly adds a requirement that the valve liner also define a number of slots between the cold liquid source and the shuttle bore. In other words, claim 7 adds a second set of apertures for the cold liquid source. If claim 6 required a second set of apertures, this portion of claim 7 would be repetitive and unnecessary.

Moreover, it appears that Bradley's argument that the specification supports a requirement that the valve described by claim 6 have at least two sets of apertures impermissibly imports a claim limitation from the description of the preferred embodiment. Bradley points to language in column 8 that describes the shuttle valve and its function of closing the cold
liquid bypass slots defined by the valve liner. Id. col. 8, ll. 4-14. The '531 Patent goes on to describe the cold liquid apertures, also defined by the valve liner. Id. col. 9, ll. 20-25. See also id. col. 7, ll. 46-50 ("Cold liquid apertures 77 are formed around the outer circumference of the liner and communicate directly with the shuttle bore 74. Likewise, cold bypass slots 78 are cut into the liner 70 above the cold liquid apertures 77.") However, this is a description of the preferred embodiment described by the patent. A court will not import a limitation into a claim from the specification absent means-plus-function language. Laitram, 163 F.3d at 1348. There is no such language in claim 6, nor did Bradley argue that the claim was written such that the Court should interpret the claim using a mean-plus-function limitation.

Therefore, the language of claim 6 itself has no requirement that the liner define a set of apertures and a set of slots. Claim 6 only requires that the valve liner define some number of apertures that communicate with the cold liquid chamber and have an orientation relative to the other parts as further described by the claim.

Bradley also appeared to argue at the preliminary injunction stage that apertures in claim 6 were limited to holes. In other words, slots were not apertures. However, the word apertures clearly means opening without limitation on shape. In addition, reading the word in the context of the claims and specification does not require that the apertures be of any particular shape, only that they are in communication with other parts of the valve assembly. For instance, at column 2, lines 53 to 57, the '531 Patent states: "The vane [sic] liner includes a plurality of cold liquid apertures circumferentially disposed around the liner. In one embodiment, the apertures serve as the primary flow path for the cold water to be mixed with incoming hot water." The description also states: "Cold liquid apertures 77 are formed around the outer circumference of the liner and communicate directly with the shuttle bore." Id. col. 7, ll. 46-48. None of this language limits the shape of the apertures to holes.

In one part of the specification, the preferred aperture shape is discussed. The patent states:

Preferably, each of the valve liners 70 includes 6-8 apertures 77 uniformly distributed around the circumference of the valve liner 70. In a specific embodiment, these apertures have a diameter of about 1/8 inch to ensure adequate cold flow at all times.

Id. col. 11, ll. 9-13. This part of the description implies that the inventor thought that holes with an 1/8 inch diameter would best perform the function of ensuring adequate cold liquid flow. But, the description of the preferred embodiment was not meant to limit the patent claims. In addition, the patent specification uses apertures and slot interchangeably when describing an alternative embodiment of the invention. The patent states: "In one specific embodiment, only four such apertures are provided so that about two-thirds of the cold flow is provided through the bypass apertures. Even in this embodiment, the bypass slots can still be shut off by the shuttle valve." Id. col. 12, ll. 53-58 (emphasis added).

Finally, as discussed briefly in the Preliminary Injunction Order, the plain meaning of the term apertures is not limited to holes. Prelim. Inj. Order at 47 n.9. Bradley's expert, Julius Balanco ("Balanco") admitted as much during the preliminary injunction hearing. Prelim. Inj. Hr'g Tr. at 572-73, Ballanco-Cross.

The Court finds that apertures in the context of the '531 Patent means openings of any shape or dimension. This definition includes, but is not limited to, holes and slots.

10. The claims in issue require asbestos free glass cloth held in place by fasteners which are "two woven nylon, hook and loop mating strips." Transco's fasteners have a Nomex(R) base and loops and a second strip of Nomex(R) base with stainless steel hooks.

11. At the time that the Pinsky patent application was filed in 1973, Nomex(R) was known generically as high temperature resistant nylon, as described in column 2, lines 51 through 60 of the Pinsky patent.

12. "Velcro"(R) hook and loop fasteners are made of woven simple nylon or Nomex(R) nylon strips. Either loop
components or hook components extend upwardly from the woven nylon strips. The hooks may be of stainless steel or simple nylon, and are stiff little hooks. The loops are tiny soft loops and may be of simple nylon or Nomex(R) nylon.

13. Simple nylon hooks are not suitable for containment areas because they cannot withstand gamma radiation levels in a containment unit. (Pinsky Tr. 506, 554.) Mr. Pinsky learned this in 1977.

14. I reject as did Judge Shadur, and for the same reasons, the argument that "nylon" in the sentence in claim 1 of the Pinsky patent that states that "the fasteners are two woven nylon, hook and loop mating strips" refers only to the mating strips without the hooks or loops. Velcro(R) mating strips are comprised or made up of hooks and loops. 813 F. Supp. at 622.

15. Since stainless steel hooks are suitable for nuclear containment areas and nylon hooks are not, stainless steel hooks are not the equivalent of nylon hooks.

The two claims of the '735 patent that the district court found relevant are claims 1 and 4, which read:

1. Readily removable and replaceable rewetable thermal insulation for use on vessels and piping within reactor containment areas of nuclear power plants comprising high temperature resistant mineral fiber or glass fiber encapsulated within rewetable, high temperature resistant, asbestos free glass cloth held in place with a plurality of spaced quick release and engage fasteners, wherein the glass cloth can withstand repeated wettings from spray systems within the reactor containment areas of nuclear power plants and wherein the fasteners are two woven nylon, hook and loop mating strips, wherein the glass cloth has a finish of a leachable, organic silicate carried in a fatty and mineral oil vehicle.

4. Thermal insulation according to claim 1 wherein the strips comprise a hook strip covered with stiff little hooks and a loop strip covered with tiny, soft loops.

Performance Contracting asserts that five general configurations of insulation blankets made by Transco infringe the '735 patent. The only dispute on appeal concerning infringement is whether the fasteners used by Transco in the five configurations of blankets meet the claim limitation "two woven nylon, hook and loop mating strips" of claim 1.

The types of fasteners used in the industry are marketed under the trademark Velcro nylon is a more durable nylon that can withstand higher temperatures, such as those in a nuclear containment area, than simple nylon without degrading. The district court found that the hooks of such fasteners, however, must be made of either simple nylon or stainless steel because Nomex (R) cannot be formed into monofilaments to create the hooks. See Transco Products, Inc. v. Performance Contracting, Inc., 1996 U.S. Dist. LEXIS 4027, No. 89 C 8001, 1996 WL 153676, at *5, P 30 (N.D. Ill. April 1, 1996).

The district court concluded that the '735 patent was invalid under 35 U.S.C. § 101 because it was inoperable, since its disclosed structures were not "useful." The district court determined that the claims of the '735 patent were directed to nuclear power plant containment areas only, and found as a matter of fact that simple nylon hooks are not suitable because they cannot withstand gamma radiation levels in such a containment area. Id. at *2, P 3, and *4, P 13. The district court further found that:

The [‘735] patent disclosed fastener(s) made of woven nylon. However, the patented insulation is only suitable for reactor containment areas of nuclear power plants if the fasteners are made of Nomex (R) material and stainless steel.

Id. at *5, P 29.

The district court noted that a patent is invalid because of inoperability "if the described result cannot be obtained by the described means." Id. at *11, P 66 (quoting Raytheon Co. v. Roper Corp, 724 F.2d 951, 958, 220 U.S.P.Q. (BNA) 592, 598 (Fed. Cir. 1983) (quoting Mitchell v. Tilghman, 86 U.S. 287, 397, 22 L. Ed. 125 (1873)), cert. denied, 469 U.S. 835, 83 L. Ed. 2d 69, 105 S. Ct. 127 (1984)). Therefore, based on these findings, the district court declared the '735 patent invalid because "the product disclosed in the [‘735] patent cannot survive in the containment area of the nuclear power plant unless the fastener(s) are Nomex (R) material and stainless steel. Because this crucial structure is not shown or discussed in the
The district court also held, alternatively, that none of the five configurations of Transco's products infringed the '735 patent either literally or by the doctrine of equivalents. The district court found that the phrase "two woven nylon, hook and loop mating strips" defining "fasteners" in claim 1 must be interpreted, by clear English construction, to mean "two woven nylon" modifies the entire phrase "hook and loop mating strips." Therefore, the district court rejected Performance Contracting's argument that "nylon" modifies only "mating strips" and not "hooks and loops," because Velcro (R) mating strips are comprised of hooks and loops. See id. at *4, P 14. The district court concluded, the whole construction of the quick release and engage fasteners must be made of nylon, such as simple nylon or Nomex (R), including the hooks and loops as well as the mating strips, to infringe claim 1.

The district court found that in all five of Transco's blanket configurations, Transco used fasteners that have a Nomex (R) base and loops and a second strip of Nomex (R) base with stainless steel hooks. Id. at *3, P 10. Because claim 1, as interpreted by the district court, literally calls for the hooks to be made of nylon, the district court found that Transco's five blanket configurations that all use stainless steel hooks do not literally infringe claim 1, the only independent claim of the '735 patent. Id. at *11, P 62.

The district court also found, based on its inoperability determination that "since stainless steel hooks are suitable for nuclear containment areas and nylon hooks are not, stainless steel hooks are not the equivalent of nylon hooks." Id. at *4, P 15. Based on this finding of fact, the district court held that the five Transco configurations did not infringe any claim of the '735 patent based on a doctrine of equivalents analysis. Id. at *11, P 62. 1

Discussion

The two issues in this appeal, claim interpretation and operability, are inextricably linked. In determining utility, we must assess the claimed subject matter. Raytheon, 724 F.2d at 956, 220 U.S.P.Q. (BNA) at 596. While utility is a question of fact subject to the clearly erroneous standard of review, id., claim construction is a legal question subject to de novo review, Markman v. Westview Instruments, Inc., 134 L. Ed. 2d 577, 116 S. Ct. 1384, 1387, 38 U.S.P.Q.2D (BNA) 1461, 1463 (1996), affg 52 F.3d 967, 34 U.S.P.Q.2D (BNA) 1321 (Fed. Cir. 1995).
A. Claim Construction and Literal Infringement

Performance Contracting challenges the district court's claim construction with respect to the phrase "two woven nylon, hook and loop mating strips" describing the fasteners in claim 1 of the '735 patent. Performance Contracting makes two arguments attacking the district court's claim construction. First, Performance Contracting asserts that when the phrase is read in light of the specification, it is clear that "nylon" modifies only "strips."

The written description of the '735 patent at column 2, lines 53-56, describes the hook and loop tape fasteners as "woven and [comprising] two mating strips. The hook or male section is covered with stiff little hooks and the loop or female section is covered with tiny, soft loops." Because the written description describes hooks covering the two mating strips, Performance Contracting asserts that the strips and hooks are separate and can be, and are, made of different materials.

Performance Contracting's second argument attacking the district court's claim construction applies a well known principle of claim construction that an ambiguous claim should be construed to preserve its validity. See, e.g., Texas Instruments, Inc. v. United States Internat'l Trade Comm'n, 871 F.2d 1054, 1065, 10 U.S.P.Q.2D (BNA) 1257, 1265 (Fed. Cir. 1989). Performance Contracting asserts that the term nylon should not be construed to modify the phrase "hook and loop" because the district court has held that claim 1 is invalid for inoperability based on its claim interpretation requiring the hooks to be made of simple nylon. For these reasons, Performance Contracting asserts that claim 1 is literally infringed by Transco's five products because stainless steel hooks are within the scope of claim 1 as properly construed.
Transco counters these arguments by asserting that extrinsic evidence, such as a brochure describing Velcro (R) fasteners and the testimony of Mr. Pacella, the attorney who prosecuted the '735 patent, supports the district court's claim construction. For instance, Transco states:

As the VELCRO (R) brochure illustrates, the two hook and loop mating strips are each unitary structures woven from nylon, and the hooks and loops are thus woven from nylon. This was consistent with the understanding of the patent attorney (Pacella) drafting the claim language, who believed that VELCRO (R) hooks and loops could only be made with nylon or some other plastic.

Also, Transco counters Performance Contracting's argument that the claim should be construed to preserve validity by asserting that if two equally plausible claim interpretations exist, the claim should be construed narrowly, citing Athletic Alternatives, Inc. v. Prince Manufacturing, Inc., 73 F.3d 1573, 1581, 37 U.S.P.Q.2D (BNA) 1365, 1372 (Fed. Cir. 1996) ("Where there is an equal choice between a broader and a narrower meaning of a claim, and there is an enabling disclosure that indicates that the applicant is at least entitled to a claim having the narrower meaning, we consider the notice function of the claim to be best served by adopting the narrower meaning.").

In construing a claim, "the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history. Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1581, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996) (citation omitted) (citing Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2D (BNA) 1321). When reviewing the file history, the court may examine the prior art cited therein. When such a review of the intrinsic evidence of the patent, which constitutes the public record, unambiguously describes the scope of the patent right, it is improper to rely on extrinsic evidence. Id. at 1583, 39 U.S.P.Q.2D (BNA) at 1577; see also Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1555, 42 U.S.P.Q.2D (BNA) 1737, 1742 (Fed. Cir. 1997). We find that the intrinsic evidence unambiguously determines the meaning of the claim limitation "two woven nylon, hook and loop mating strips." The written description of the '735 patent describes the hook and loop mating strips at column 2, lines 46-60, as follows:

Any quick release fasteners can be employed in this invention. These fasteners include metal hooks, metal snaps, tape fasteners and the like. An important point here is the use of quick release fasteners that require no accessory tools to be engaged or disengaged.

Hook and loop tape fasteners made of nylon are preferred. High temperature resistant nyons generally are employed. The tape fasteners are woven and comprise two mating strips. The hook or male section is covered with stiff little hooks and the loop or female section is covered with tiny, soft loops. When pressed together the hooks and loops engage, creating a secure closure. To open, the two strips simply are peeled apart. These tape fasteners can be opened and closed many thousands of times.

The drawings of the fastener are described at column 3, lines 12-21, as a "hook and loop tape fastener 6 . . . shown in FIG. 3 with hook strip 22 partially peeled apart from loop strip 24." Figure 1 shows where the hook and loop tape fastener 6 is positioned on the insulation blanket.

In describing the preferred embodiment of the fasteners, the specification indicates that the entire fastener, i.e., "hook and loop tape fastener," is preferably made of nylon. The description of the hooks and loops "covering" the two strips is merely an explanation of the construction of the entire fastener, which is described as woven and comprising two mating strips. From the written description it is clear that the entire fastener must be made of nylon. We hold that the district court correctly interpreted this limitation of claim 1 to require nylon to modify "hook and loop" as well as "mating strips."
ring elements." (Id.)

amended Claim 71, ICU stated, "the Examiner's attention is respectfully drawn to Figure 9 which illustrates a plurality of O-

'of a plurality of ringed wall portions 94 that expand and collapse in an accordion like fashion.'" (Id.) With regard to

stated that "[s]upport for amended Claim 70 can be found on page 15, lines 27-29, which disclose that the 'seal wall' consists

made up the seal. (D.I. 120, Ex. D, at 1236.) ICU clarified that the O-ring elements form a portion of the seal, and further

claims 2 and 3) for indefiniteness because it was unclear whether the "at least two O-ring elements" were on the seal or

During the course of the '862 Patent's prosecution, the Examiner rejected claims 70 and 71 (which ultimately issued as


The prosecution history of the '862 Patent provides additional confirmation that RyMed's more limited construction is

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2 In the '866 and '592 Patents, the term "O-ring elements" appears in an identical phrase: "a series of O-ring elements

stacked together and connected to form a unitary structure." '866 Patent, col. 15: 52-54; '592 Patents, col. 15: 63-65. In the

'862 patent, the term appears in the following phrase: "wherein said seal has at least one groove defined by at least two O-

ring elements forming a portion of said seal[.]" '862 Patent, col. 16, 17-19.

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RyMed responds that ICU's emphasis on the word "elements" in construing the claim term "O-Ring elements" is

inappropriate, (See D.I. 232, at 50:11-14), because it allows ICU to construe "O-ring elements" significantly more broadly

than the actual term "O-ring." (D.I. 116, at 21.) RyMed also argues that ICU's construction is confusing, unclear, and will be

unhelpful to the jury. (Id.) RyMed contends its construction is appropriate because it reflects the ordinary meaning of "O-

ring," and is consistent with the patent disclosure. (Id. at 20.)

Both parties agree as to the ordinary meaning of O-ring. (Compare D.I. 232, at 52:7-10 (RyMed stating that an O-ring is a

"circular torus or doughnut-shaped ring") with id. at 83:23-25 (ICU stating "we agree an O-ring is like a doughnut").) The

issue is whether the term "O-ring elements" has a different meaning than "O-ring," namely as a description of the seal's

appearance rather than as a description of its structure. The Court is persuaded that ICU's construction is more appropriate

because support for their position can be found in the Common Specification and prosecution history.

There is limited use of the term "O-ring elements" in the Common Specification. The Summary of the Invention states, "[a]

preferred embodiment of the seal comprises a series of O-ring elements stacked together and connected to form a unitary

structure." '866 Patent, col. 3: 63-66. A description of a preferred embodiment can help define what is claimed, but without a

specific declaration, it does not limit what the patent claims. See Liebel-Flarsheim Co., 358 F.3d at 906. In fact, both

Figures 9 and 13 illustrate features of the preferred embodiment. See '866 Patent, col. 5: 19-20, 47-48, 58-59. Figure 9

displays a "seal wall consisting of a plurality of ringed wall portions 94 that expand and collapse in an accordion like

fashion." Id. at col. 12:4-5. Figure 13 displays a seal with a "wall 150 comprised on circular tires 100 stacked in a series one

on top of an adjacent larger diameter tire." Id. at col. 12:47-49. Therefore, ICU's contention that "O-ring elements" should

not be construed as merely a device of actual O-rings is supported in the Common Specification.

The prosecution history of the '862 Patent provides additional confirmation that RyMed's more limited construction is

unsupported. "In order to disavow claim scope during prosecution 'a patent applicant must clearly and unambiguously


During the course of the '862 Patent's prosecution, the Examiner rejected claims 70 and 71 (which ultimately issued as

claims 2 and 3) for indefiniteness because it was unclear whether the "at least two O-ring elements" were on the seal or

made up the seal. (D.I. 120, Ex. D, at 1236.) ICU clarified that the O-ring elements form a portion of the seal, and further

stated that "[s]upport for amended Claim 70 can be found on page 15, lines 27-29, which disclose that the 'seal wall' consists

'of a plurality of ringed wall portions 94 that expand and collapse in an accordion like fashion.'" (Id.) With regard to

amended Claim 71, ICU stated, "the Examiner's attention is respectfully drawn to Figure 9 which illustrates a plurality of O-

ring elements. . ." (Id.)
Although RyMed contends these statements were irrelevant to the indefiniteness rejection, the prosecution history, at a minimum, demonstrates that the ICU patentee did not explicitly disavow the claim scope currently advocated by ICU's proposed construction. In sum, nothing in the Common Specification or prosecution history supports a reading of "O-ring elements" which gives no meaning to "elements," a word included in the disputed term. Thus, the Court concludes "O-ring elements" means "portions having a circular outer surface that is wider at the middle than at the top or bottom."

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10. Object

Defendants' Proposed Construction: An "object" is any article having three dimensions.
Plaintiff's Proposed Construction: Leave undefined.
The Court's Claim Construction: An "object" is any article having three dimensions.

MPT does not dispute Defendants' definition of object. Instead, it claims that it would confuse the jury to provide a definition for this non-technical term. However, the Court perceives no harm in providing this definition to the jury and adopts Defendants' definition.

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1. object(s)

The term "object(s)" appears in claims 1 - 24 of the '874 patent, claims 1 - 20 of the '786 patent, and claims 26 - 28 and 40 - 43 of the '213 patent. The plaintiff proposes a construction of "a physical thing capable of being grasped in a human hand." The defendant's counter-construction is "a block," and the defendant further argues that the term "'object' does not include keyboards, mice, pens, wands, instruments for writing or hand signing on graphic tablets or touch screens, or other devices not specifically adapted for a child's use." The court finds the defendant's arguments unpersuasive.

The defendant argues that the patentees' repeated use of the term "block" within the written description to describe certain preferred embodiments of the invention limits the construction of the term "object" to "block." In support of its argument, the defendant cites isolated claim construction canons from SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337, 1341 (Fed. Cir. 2001), Genzyme Corp v. Transkaryotic Therapies, Inc., 346 F.3d 1094, 1099 (Fed. Cir. 2003), and other Federal Circuit cases. These cases are inapposite. 2 As the Federal Circuit has stated, "[w]hether an invention is fairly claimed more broadly than the 'preferred embodiment' in the specification, the context in which the embodiment is described, the prosecution history, and if appropriate the prior art ... ." Wang Labs., Inc. v. America Online, Inc., 197 F.3d 1377, 1383 (Fed. Cir. 1999).

2 As the Federal Circuit has stated, "[a]lthough precedent offers assorted quotations in support of differing conclusions concerning the scope of the specification, these cases must be viewed in the factual context in which they arose." Wang Labs., Inc. v. America Online, Inc., 197 F.3d 1377, 1383 (Fed. Cir. 1999). "All rules of construction must be understood in terms of the factual situations that produced them, and applied in fidelity to their origins." Modine Mfg. Co. v. US. Int'l Trade Comm'n, 75 F.3d 1545, 1551 (Fed. Cir. 1996). "[W]hen the preferred embodiment is described in the specification as the invention itself, the claims are not necessarily entitled to a scope broader than that embodiment." Id. (emphasis added).

A review of the patentees' specification reveals that although many of the embodiments described in the written description use the term "block," other embodiments in the specification, including the written description, fail to use such limiting term. For example, the original claims, filed as part of the specification of the parent '437 application, use the term "object"
in contrast to the use of the more limiting term "block." Opening Brief of the Plaintiff, Exhibit 6 at 22-23. Additionally, the specification supports a broader construction of the term "object." For example, the specification describes "objects" as "computer-recognizable characters." See '874 patent at 1:12-19, 3:1-5. In light of the intrinsic evidence contained in the specification, the court concludes that the term "object" is not limited to a "block."

Next, the defendant argues that the term "object" does not include "keyboards, mice, pens, wands, instruments for writing or hand signing on graphic tablets or touch screens, or other devices not specifically adapted for a child's use." Brief of the Defendant at 19. In support of its position, the defendant asserts that the patentees disclaimed the above subject matter during prosecution before the patent office. 3

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The defendant's argument is misplaced. The cited portions of the prosecution history are consistent with the specification as originally filed. For example, the patentees' statements during prosecution are consistent with the following statement by the patentees in the Background of their specification: "young children have not yet developed the mental capabilities or the motor skills to interact well with conventional computers, which require data to be entered, for example via the keyboard or mouse, in a fixed format," as well as the following phrase in the plaintiff's reply brief: "[t]he kinesthetic activities of typing, manipulation of a mouse, or handwriting or hand signing are not covered by [this] invention." '874 patent at 1:33-36; Reply Brief of the Plaintiff at 11. Additionally, the specification contemplates that "objects" may be used by an adolescent or an adult. See '874 patent at at 3:13-16, 9:48-57 (describing embodiments for learning braille and playing board games).

For the foregoing reasons, the court rejects the defendant's attempt to limit this term and concludes that the term "object" means "a physical thing (or item)."

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A. "An Object to Be Magnetically Heated Including an Induction Heatable Element and an RFID Tag"

The parties dispute the proper construction of the term "an object to be magnetically heated including an induction heatable element and an RFID tag," which object is included in the apparatus claimed in the '585 Patent. TSI argues that the term means an object that includes an induction heatable element and an RFID tag; defendants argue that the term should be construed to mean a food delivery container made of a non-inductively heatable material that includes an element and an RFID tag; but not a temperature sensor. Thus, TSI essentially repeats the claim language, while defendants define "object" in the claims to include three limitations not found in the claim language: (1) the object is a food delivery container (2) that is made of non-inductively heatable material and (3) that cannot include a temperature sensor. Defendants do not rely on any express definition of "object" or disclaimer or disavowal of claim scope in the patent; rather, defendants rely on the Microsoft standard, discussed above, which allows the claim scope to be limited if the patent "repeatedly and consistently" describes the scope of the invention (and not a mere embodiment) as limited. 3

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3 The Court does not agree with defendants' argument that reference to the '585 Patent's specification is required here to provide context because "object" is a common, non-technical word that necessarily requires limitation. The word is not ambiguous, and the claims themselves provide sufficient context and limitations to ensure that not every conceivable "object" in the world is claimed in the patent. Because there is no clear disclaimer or disavowal of claim scope here, TSI is entitled to the entirety of its patent claims, subject to limitations imposed by consistent and repeated descriptions of the invention under Microsoft. Any argument that the patent's claims are impermissibly broad must await later proceedings, as only the construction of the patents is presently before the Court.
With respect to the first limitation urged by defendants, the Court concludes that the '585 Patent's specification does repeatedly and consistently describe the invention as a whole as a "food delivery system" involving a "food container". The title of the patent is "Temperature Self-Regulating Food Delivery System." The first sentence of the patent's Abstract states that "[t]emperature self-regulating food delivery systems are provided." The Background of the specification begins as follows:

The present invention is broadly concerned with food delivery systems designed to maintain food at a selected temperature over relatively long periods of time. More particularly, the invention pertains to such food delivery systems which include a magnetically heatable thermal storage device within a food-holding container . . . .

('585 Patent at 1:11-18.) The Background section concludes as follows:

There is accordingly a need in the art for an improved food storage and delivery system which will permit the purveyor to maintain the food products at or near a desired temperature over sustained periods, while also allowing delivery under conditions to substantially maintain this temperature. An effective hot food storage and delivery system thus requires a lightweight delivery container . . . .

(Id. at 2:5-11.) Similarly, the Summary of the Invention in the specification begins with the following statement:

The present invention overcomes the problems outlined above [in the Background] and provides a food delivery system broadly including a food delivery container equipped with a thermal storage device with the latter being heated while in the container by a magnetic induction charging station.

(Id. at 2:18-22.) The specification's Detailed Description of the Preferred Embodiments begins as follows:

The present invention provides a food delivery system broadly comprising a food delivery container . . . . As explained above, one type of food item requiring temperature maintenance during delivery is pizza, and accordingly certain embodiments of the invention are specific to this problem. However, it should be understood that the invention is not limited to pizza temperature maintenance, but rather relates to any type of food delivery system for virtually all food items which require or may be rendered more palatably by temperature maintenance.

(Id. at 5:25-38.)

Thus, contrary to TSI's argument, the patent's specification does not describe an invented heating system that can, among other things, be used to solve food delivery problems. Rather, the patent repeatedly and consistently describes the invention as a whole, and not a mere embodiment of the invention, as a food delivery system involving a food delivery container. Even the specification's language that attempts to ensure a construction broader than the mere embodiments, quoted above, describes the invention as a food delivery system (as opposed to the pizza delivery system described as the preferred embodiment). Accordingly, the Court agrees with defendants that the object described in the claims should be limited to a food delivery container.

TSI argues that application of the Microsoft standard is not appropriate here, despite the quoted descriptions of the invention as a food delivery system, because the claim refers to an "object" and not the more specific "container", and thus the required "consonance" between the claim and the specification is missing here. The Court rejects this argument, as there is no authority for limiting the Microsoft standard in this way. As explained above, claims are properly limited to the repeated and consistent description of the actual invention. TSI's citation to this Court's decision in MGP Ingredients, Inc. v. Mars, Incorporated, 494 F. Supp. 2d 1231 (D. Kan. 2007), is inapt, as that case did not involve application of the Microsoft "repeated and consistent description" standard. See id. at 1236-39.

TSI also argues, based on the doctrine of claim differentiation, that "object" in the independent claims of the patent must be broader than food delivery containers in light of dependent claims 2 and 5 in the patent, which claim the apparatus and method of independent claims 1 and 4 "with said object comprising a food holding container." The Federal Circuit has stressed, however, that the presumption that dependent claims must be narrower than their independent claims is rebuttable,
and the presence of such dependent claims is therefore not dispositive:

[While it is true that dependent claims can aid in interpreting the scope of claims from which they depend, they are only an aid to interpretation and are not conclusive. Indeed the presumption created by the doctrine of claim differentiation is not a hard and fast rule and will be overcome by a contrary construction dictated by the written description or prosecution history.

Regents of Univ. of Calif. v. Dakocytomation Calif., Inc., 517 F.3d 1364, 1375 (Fed. Cir. 2008) (internal quotations and citations omitted). In this case, the specification's clear description of the claimed invention (and not merely an embodiment) as a food delivery system involving a food container dictates the construction urged by defendants and overcomes any presumption raised by the dependent claims. See Sprint v. Big River, 2009 U.S. Dist. LEXIS 58161, 2009 WL 1992537, at *12-13 (concluding that consistent and repeated description of invention as limited rebutted presumption raised by dependent claims).

Defendants have not pointed to any portions of the patent's specifications in which the invention is consistently and repeatedly described with the second and third limitations urged by defendants in their construction of "object" (relating to non-inductively heatable material and the absence of a temperature sensor). Thus, there is no basis to construe the term "object" to include those limitations.

Accordingly, the Court construes the term "an object to be magnetically heated including an induction heatable element and an RFID tag," found in the claims of the '585 Patent, to mean a food delivery container to be magnetically heated that includes an induction heatable element and an RFID tag.

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d. '314 patent, claim 1, element 3: "objective lens means disposed on said surgical microscope positioned within said three-dimensional space." 27

27 Same construction for '314 patent, claim 14, element b.

This element is construed to cover an objective lens positioned within stereotactic three-dimensional space. The only dispute on this element is whether the objective lens must be attached to a stereotactic frame. The Court concludes that it does not because such a requirement would exclude potential embodiments not using a stereotactic frame. Drawings and passages in the specification support this interpretation. See '314 patent, col. 14, ll. 22-26 & Fig. 39.

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The Defendants raise four objections to the constructions by the SM of the '118 patent. The objections raised center upon claim 1 of the '118 patent which reads:

A load bearing deck structure comprising:

at least one sandwich panel formed of a polymer matrix composite material, said sandwich panel comprising a plurality of substantially hollow, elongated core members having side walls, said core members being provided with an upper facesheet and a lower facesheet wherein said facesheets are formed integrally with the side walls of the core members, and wherein at least one of the side walls is disposed at an oblique angle to one of the upper and lower facesheets such that the side walls and facesheets define a polygonal shape when viewed in cross-section.
The Defendants object to the construction recommended by the SM as to the term "oblique angle." The SM recommended that this term be construed as "an angle that is neither a right angle nor a multiple of a right angle." SM Report, p. 176. The Defendants disagree with this construction presenting several arguments.

First, the Defendants argue that the inventors meant such term "to describe an angle that is formed when two walls connect or intersect." Defendants' Obj., p. 8. The SM disagreed with this construction concluding that the claim language only required that one side wall be disposed at an oblique angle in order to define a polygonal shape in viewing the side walls and facesheets in "cross-section." SM Report, p. 161. The SM went on to review the specification and conclude that a specific measure of angle is not required for the oblique angle within this invention. SM's Report, pp. 170-172. The SM further analyzes the issue of connection or intersecting to form the oblique angle in claim 1, but the SM finds that the Defendants' true issue is with the word "disposed" and if the patentee wanted to claim an intersection between a side wall and an upper or lower facesheet at an oblique angle to define a polygonal shape, language to this effect would be within the claim. SM's Report, p. 174.

Second the Defendants argue that an angle "is only formed when two lines come together at a point" and that the side wall disposed at an oblique angle to the facesheets naturally must connect with a facesheet to form this angle. Defendants' Obj., p. 9. In evaluating the second argument, the Court agrees with the conclusions of the SM. In particular, the Court observes in addition to the SM's reasoning that the positioning of the side walls with respect to the upper and lower walls can be "in a variety of shapes angles with respect to the upper and lower walls." '118 Patent, col. 5, lines 24-25. Furthermore, the presence of the oblique angle "[proportional]" is shown within figure three of the '118 patent and it is present within the elongated core member without the attachment of the facesheets. This is explained by the SM at page 165 of the SM's report and in particular the citation of the specification in the following language: "The oblique angle "[proportional]" of the side wall 48 with respect to the upper wall 64 is preferably 45 [degrees], but angles between about 30 [degrees] and 45 [degrees] can be provided in alternative embodiments." '118 patent, col. 10, lines 5-8. Reading this portion of the specification with the preferred embodiment in figure three (see page 8, infra) demonstrates the existence of angle "[proportional]" independent of the integral formation of the sandwich panel as defined in the patent. The specification presents more relevant evidence demonstrating the existence of angle "[proportional]" independent from the integration of the core members with the facesheets: "When normalized by weight, the trapezoidal tube 46 with at least a 45 [degrees] angle between the sidewall 48 and the upper wall 64 and the lower wall 65 has a transverse shear stiffness 2.6 times that of a tube with a square cross-section. Alternatively, for a tube with an oblique angle of about 30 [degrees], the transverse shear stiffness is 2.2 times that of a tube with a square shaped cross-section." '118 patent col. 10, lines 31-37. To repeat the analysis of the SM, the language of the claim uses the words "disposed at", in reference to the placement of the sidewall in reference to the facesheet and does not use any words such as "connecting at", "intersecting at" or "forming" which would indicate the meeting of a sidewall and a face sheet to form the oblique angle. Furthermore, the disposal of the sidewall at the oblique angle is to achieve the purpose of having "the sidewalls and facesheets define a polygonal shape when viewed in cross-section" '118 patent col. 24, lines 12-14. The defining of the polygonal shape is obtained when viewing this sandwich panel, as defined, in a cross-section. However, a polygon is formed by the shape of the core member, not by its integration with the facesheets. The specification language describing the preferred embodiment makes this clear:

The core members are shown as hollow tubes of trapezoidal cross-section (FIGS. 2, 3 and 7). Each of the trapezoidal tubes includes a pair of sidewalls 48, 49. One of the sidewalls 48 is disposed at an oblique angle a to one of the upper and lower facesheets 35, 40 such that the sidewalls 48, 49 and the upper wall 64 and lower wall 65, when viewed in cross-section, define a polygonal shape such as a trapezoidal cross-section (FIG 3).
Third, the Defendants argue that with the integral formation of the facesheets and the sidewalls with one sidewall disposed at an oblique angle, a polygonal shape is defined and that any sort of "open shapes" similar to that suggested by the SM is not what was intended by the inventors. Defendants' Obj., pp. 10-11. Fourth, the Defendants argue that the oblique angle described in the '118 patent is "important to the invention, [and] increases the likelihood that the patent claims covering the invention were intended to include that important feature as it was described" and that such angle is formed from a sidewall and facesheet. Defendants' Obj., pp. 12, 11.

While the Court agrees with the SM's conclusions as to the matters concerning the Defendants' third argument, the Court understands the Defendants' concern within its third argument regarding the SM's discussion of the word "define" and his conclusion that five lines that do not intersect or connect and the drawing of the five lines on page 175 of the SM's Report define a polygonal shape (a pentagon in this instance), but not a polygon. While the Court does not adopt the SM's analysis on this matter, it understands that this exercise on page 175 of his report was meant to make a point of the exercise of claim construction. The Court takes this opportunity to explain its analysis on this matter and present its own analysis that arrives at the same claim constructions of the SM while simultaneously addressing the Defendants' third and fourth arguments presented above and touching upon issues related to the first and second arguments.

The claim language reads "wherein at least one of the sidewalls is disposed at an oblique angle to one of the upper and lower facesheets such that the sidewalls and facesheets define a polygonal shape when viewed in cross-section." '118 patent, col. 24, lines 11-14. The SM stated that "The following may be reasonably said to 'define' a 'polygonal shape,' i.e., one that identifies the essential qualities of a polygonal shape:

[SEE ILLUSTRATION IN ORIGINAL]

even though the lines do not intersect and the figure is not, therefore, a polygon per se, although it is a polygonal shape." SM's Report, p. 175.

The Court agrees that in the Defendants' third argument that the inventors never intended that the "polygonal shapes," which are defined when obtaining a cross-sectional view of the sandwich panel, included the "open" shapes as suggested by the SM. The SM used the term "define" as quoted above in the context of "identifies the essential qualities of." The word "define" has multiple meanings in the English language one of which is "to describe the nature or basic qualities of" and other meanings include "to delineate the outline or form of" and "to specify or fix distinctly." WEBSTER'S II NEW COLLEGE DICTIONARY 296 (2001). The Court agrees with the Defendants' argument that defining a polygonal shape, as those terms were used in claim 1 of the '118 patent, does not mean that a polygonal shape can be defined through a form that includes lines that never intersect or connect. Rather, the word "define" as the Court interprets it and will use within the following analysis, is in the sense of delineating the form of a shape, in this instance a polygon. At the risk of sounding redundant, the word "define" requires a definiteness to it; a certainty in its form. This is clear from the specification language which refers to figure three of the '118 patent. '118 Patent, col. 9, lines 65-67, col. 10, lines 1-5. This is apparent from figure three of the '118 patent:

GET DRAWING SHEET 3 OF 16

Nowhere is the trapezoidal shape of the core members defined by non-intersecting lines. The Court therefore finds that the language of the specification and the non-technical meaning of the word "define" is understood to have the same meaning in this instance: delineating the form of a shape. In this example, the shape is a trapezoid.

However, the Court still agrees with the SM as to the issue that one of the sidewalls and the upper and lower facesheets never connect, intersect or meet to create the oblique angle, contrary to the Defendants' contentions. The claim language requires integral formation of a sandwich panel, as defined by the inventors, that when viewed in a cross-section defines a polygonal shape. Figure three of the '118 patent illustrates the exploded view of a sandwich panel described in that patent, but not yet integrally formed with the trapezoidal shaped elongated core members. Figure seven of the '118 patent demonstrates a cross-sectional view of two sandwich panels after integral formation that are being joined with a key lock:

GET DRAWING SHEET 5 OF 16

The view of the trapezoidal shape is apparent after the integration of the facesheets and core members. To further explain
the Court's reasoning, the following illustration is made by the Court:

[SEE ILLUSTRATION IN ORIGINAL]

In the Court's illustration, the facesheets and the upper and lower walls of the core members are assumed to be formed integrally and the sandwich panel exists after this integration. In View 1 above, the areas labeled as "1" and "2" have the form of trapezoids having a common side and they have such a polygonal shape because of the form of the core members that were integrated with the facesheets to form the sandwich panel. The areas "1" and "2" are formed based upon the shape of the trapezoidal core members, not because of the integration of the facesheets with the core members. That is to say, the addition of the upper and lower facesheets does not add a missing side or piece that create the trapezoidal form shown in the preferred embodiment of figures three or seven in the '118 patent. It is clear from the language of the claim and specification and the illustrations above that the use of the word "disposed" within claim 1 sets forth a different purpose that is not the formation of a trapezoidal or other polygonal shape, but is for the purpose of ensuring proper formation of the sandwich for the deck described in the '118 patent.

It has been noted above that trapezoids and other polygonal shapes may be used to provide a form to the elongated core members. '118 patent, col. 10, lines 40-47. The core members are noted as being "substantially hollow" and it is apparent from this design that the description of the core members as "having sidewalls" that the core members are in the shape of a polygon, which is a form that is enclosed. Claim 1. Thus, the idea of a polygonal shape is rooted within the design of the elongated core members. The language of the specification proves this: "The core members 46 are shown as hollow tubes of trapezoidal cross-section (FIGS. 2, 3 and 7)."... "a variety of sizes, shapes and configurations of the elongated core members can be provided. Various other polygonal cross-sectional shapes can also be employed, such as quadrilaterals, parallelograms, other trapezoids, pentagons, and the like." '118 patent col. 9, lines 65-66, col. 10, 40-44. However, the core members are not the sandwich panel in and of themselves.

The Court finds the claim language, specifically the second "wherein" clause of claim 1, which includes the "disposed at an oblique angle..." language, is the basis for evaluating the proper integration of the core members with the facesheets to create the sandwich panel and not a description of how the oblique angle is formed. For instance, if one were to attempt to form the sandwich panel, but not follow the claim language and attach the facesheets to the core members while still having one of the sidewalls disposed at an oblique angle to the facesheets, the resulting structure would appear like View 2 in a cross-section because the facesheets could only attach to the core members in one alternative manner, that is by attaching to the sidewalls, instead of the upper and lower walls:

[SEE ILLUSTRATION IN ORIGINAL]

This resulting formation would be contrary to the claim language and clearly not covered by the patent. In View 2, a polygonal shape of a trapezoid is defined, but not in accordance with the claim language, which requires that the polygonal shape be defined by the sidewalls and the facesheets. Here one facesheet (as integrated with a sidewall), one sidewall of a core member (disposed at an oblique angle), and the upper and lower walls of a core member define the polygonal shape of a trapezoid. When compared with this view, the claim language is understood as requiring a sandwich panel that when properly formed, through whatever process instructed by the patent, presents a polygonal shape through the integration of core members with facesheets such that "wherein at least one of the sidewalls [of a core member] is disposed at an oblique angle to one of the upper and lower facesheets such that the sidewalls and facesheets define a polygonal shape when viewed in cross-section." '118 patent col. 24, lines 10-14 (Claim 1). View 1 above clearly comports with the claim language whereas View 2 does not. View 1 presents a polygonal shape as defined by facesheets (as integrated with the upper and lower walls) and the sidewalls. As the SM concluded, the definition of the term "disposed" is what the Defendants are truly arguing against when they attempt to argue that having a sidewall disposed at an oblique angle to a facesheet thereby establishes a "natural conclusion" that a connection, intersection or meeting exists between the sidewall, disposed at an oblique angle, and a facesheet. Such is not the case in the '118 patent when one follows the claim language and the specification language in attempting to create the sandwich panel as patented. The Court is therefore in agreement with the SM's analysis on this point. SM's Report, p. 175.

The Court further concludes that the integrated core members' sidewalls and facesheets, define, that is delineate the outline of, a polygonal shape when viewing the sandwich panel in a cross-section. However, the Court understands that the SM's discussion of non-intersecting lines that define a polygonal shape added confusion to his analysis on the issue of defining
the claim's phrase "disposed at an oblique angle" when it is clear from the language in the specification that the core members when viewed from the side are in the shape of a polygon, and the "core members being provided with an upper and a lower facesheets wherein said facesheets are formed integrally with the sidewalls of the core members, and wherein at least one of the sidewalls is disposed at an oblique angle…such that the sidewalls and facesheets define a polygonal shape when viewed in a cross-section." '118 patent, col. 24, lines 7-14. Reading this claim in context, it is apparent that the two "wherein" clauses direct the manner in which the core members are "provided" facesheets, specifically the placement of the facesheets and what a resulting cross-section of a properly integrally formed sandwich panel would appear like to the naked eye.

While the Defendants are correct that the oblique angle is the key to the strength produced in this sandwich panel, and deflection of the facesheet is created by this form, the oblique angle is not created by the connection of one of the sidewalls with the facesheets. It is clear from the specification that the oblique angle exists and is intact within an elongated core member prior to integration of the facesheets and core members as a sandwich panel.

II. Compliance with Phillips

The Defendants' next objection relates to the manner in which it views the SM's report as not complying with the requirements for claim construction set forth in Phillips v. AWH Corp., et al., 415 F.3d 1303 (Fed. Cir. 2005). In accordance with Phillips, a court construing claim terms is to avoid construction of terms in a broad manner by relying upon the meaning of the terms which derive from the patent itself; to achieve this result, the Court of Appeals for the Federal Circuit found that claim construction must rely primarily on intrinsic sources, in particular, the language of claim itself, and the specification which assists in defining claim terms and that placing primary reliance upon extrinsic sources such as dictionaries and treatises in order to establish the meaning of a claim term rather than use of intrinsic sources is incorrect when such extrinsic sources contradict the claim and specification language. Phillips at 1320-1324. However, the Court of Appeals did not establish a specific form for claim construction and recognized that the use of different sources in various sequences of analysis is permitted so long as no preference is made for construction of terms that would contradict an unambiguous construction derived intrinsic evidence, such as the specification. Phillips at 1324.

A review of the SM's Report reveals that the SM has complied with the manner of construing patent claims as set forth in Phillips. While the SM does refer to extrinsic evidence at times, such as dictionaries and different internet world wide web sites, such use of extrinsic evidence did not violate the dictates of Phillips. The SM consistently gave the intrinsic evidence, particularly the language of the claim and the specification, due deference. Although the references to extrinsic evidence may be in an order of presentation which one may find to be indicative of primary reliance on such sources, a specific order of presentation or review of evidence is not mandated by Phillips. Phillips at 1324. The SM gave proper weight to the intrinsic evidence in relation to any extrinsic evidence. The Court will now address specific references to the SM's Report in regard to the Defendants' objections on this matter.

While it is clear that the SM utilized common dictionary definitions in his analysis of the terms "disposed at an oblique angle," this use of dictionary terms was not inappropriate, but consistent with the claim language. SM's Report, pp. 160-176. In the beginning of the SM's discussion concerning the "disposed" issue, he relies upon the claim language but recognizes that the common dictionary definition of "disposed" presents the same meaning as the sense that word is used in the claim language and therefore cites to the specification language to buttress this conclusion. SM's Report, p. 160. The SM then dissects the idea of "oblique angle" and begins with the claim language, considers the idea of "customary' meaning," that is the meaning understood by one familiar in the art after considering the patent language and then moves onto the specification language and if that language provides interpretation of the claim term as it would be customarily understood in the patent's claim. SM's Report, pp. 161-164; Phillips at 1321. The SM further evaluates the specification language and embodiments and related patents as well as specialized and common dictionary meanings and the language of claim 1 again. SM's Report, pp. 165-172. The SM concludes that the meanings of "oblique angle" are the same whether one considers the patent language, or the common English or customary definition within the art meanings of that term and this is not contrary to the precedent in Phillips. SM's Report, pp. 172-173. Furthermore, the SM relies on the language of claim 1 to address the Defendants' concern regarding the construction of the term "disposed." SM's Report, p. 175. Aside from the exercise with the word "define" and the analysis thereon made by the SM, and the substituting of the Court's analysis on that matter for the SM's analysis of the word "define," the SM complied with the dictates of Phillips in the manner in which he conducted his construction contrary to the Defendants' objections. Defendants' Obj., pp. 13-16; SM's Report, pp. 175-176. These objections are denied.
Contrary to the Defendants' contention, the angle at issue in claim 1 of the patent is not formed when two structures come together, but the angle is formed by the inherent nature of the core member and the intersection of one of its sidewalls and upper or lower walls. Defendants' Obj., pp. 16-17. The "disposal" or arrangement of the sidewall to the facesheet establish the proper formation of the sandwich panel. In light of the Court analysis above, this will not be addressed again. These objections are denied.

The Defendants' remarks as to the disparagement of triangles has also been evaluated closely and again the Court agrees with the SM. See Defendants' Obj., pp. 17-18. The Defendants' contend that triangular shaped core members are not included within the patent, but the SM disagreed finding no such limitation within the patent. SM's Report, pp. 167-170, 171 n.37. The Defendants' quotations on page 17 and 18 of its objections point to an issue with regard to use of the triangular shape in the sandwich panel, specifically with regard to the language: "with composite materials has presented problems of failure in the resin bonded nodes of the triangular shape. Therefore, a modular structural composite component for structural supports is needed which overcomes this problem." '118 patent col. 3, lines 38-44. Without re-quoting the next quotation used by the Defendants, it is important to read the Defendants' quotation with the unquoted preceding sentence which reads: "It is believed that such forming overcomes the problem of node failure experienced in forming triangular shapes with composite materials." '118 patent col. 11, lines 18-20. Reading this sentence in context with the surrounding language reveals that this specific problem with node failure in triangular shapes of composite materials can be overcome through the manner of hand layup described in the preceding paragraph. '118 patent col. 11, lines 9-28. Therefore, the disparagement of triangular shapes is made in the context of the manner of using such shapes in the formation of the core members. This objection is denied.

To address the Defendants' argument that no recommendation has been made as to the issue of whether a "connection/intersection/meeting" between the sidewall disposed at an oblique angle and upper and lower facesheets, the Court finds that such sidewall is not required to be connected to, intersected with or meet with the upper and lower facesheets. See Defendants' Obj., p. 18. It is clear from the SM's Report that this issue was addressed and was found to require no connection between the sidewall and facesheets. SM's Report, pp. 160-161. The SM addressed this issue again in response to the Defendants' comments and the Court need not repeat that response here. SM's Report, pp. 173-176. The SM's recommendation did not include language referring to any "connection/intersection/meeting" because his analysis did not find that the language of the claim regarding "disposed at an oblique angle" was intended to mean or refer to such a meaning-this is clear from the SM's analysis. This objection is denied.

A suggested construction of the phrase "oblique zone" was given by the magistrate judge in addressing the related phrase, "a second oblique zone offset angularly from said first zone," which is found in the '525 patent. ADE Corp., 220 F. Supp. 2d at 315-19. Pursuant to Federal Rule of Civil Procedure 72, ADE has objected to the recommendation of the magistrate judge on that point. 18 (D.I. 533 at 15-22.) KLA, of course, urges the Court to adopt the construction suggested by the magistrate judge. (D.I. 615 at 1-12.) The Court takes this opportunity to deal with the term "oblique zone" as used in the '259 patent to simultaneously address ADE's objection to the magistrate judge's recommendation regarding the related phrase in the '525 patent. The following analysis is thus based not only on the parties' submissions with respect to the '259 patent but also on a de novo review of the evidence and arguments presented to the magistrate judge with respect to the phrase "second oblique zone offset angularly from said first zone" as found in the '525 patent claims.
18 Since patent claim construction is a question of law under Markman, even though not case dispositive, the magistrate judge's opinion is subject to plenary review. See, e.g., Haines v. Liggett Group, Inc., 975 F.2d 81, 91 (3d Cir. 1992) (district court exercises plenary review of magistrate judge's rulings of law).

The magistrate judge observed that the phrase "second oblique zone offset angularly from said first zone" first appeared in the prosecution history of the '525 patent "after being added almost two years into prosecution." Id. at 317. Although ADE argued that the inventors did not intend for the phrase to have a specialized meaning and that "those skilled in the art would readily comprehend what is meant[,]" id., ADE was unable to offer any pertinent art reference that would explain the meaning of the phrase. Id. at 317. Instead ADE urged the Court to apply a dictionary definition of "oblique" as modifying a dictionary definition of the word "zone." Id.

Turning to the specification and prosecution history of the '525 patent for assistance, the magistrate judge stated that the separate collection of forward, central, and backward scattered light was consistent with the "internal logic" of the '525 patent disclosure and it was also consistent with the applicants' arguments during patent prosecution. Id. at 318-19. In light of the record, she construed the phrase "second oblique zone offset angularly from said first zone" to mean "a second collection zone differing in polar angle from the central collection zone that does not collect the same light being collected by the 'central zone' but, instead, collects either forward or backward scattered light but does not collect both simultaneously." Id. at 319. The magistrate judge reached that conclusion by reasoning that, in prosecuting their application, "the inventors predicated patentability on separate collection of forward and/or backward scattered light … in addition to collection of light scattered generally in the normal direction." Id.

1. ADE's Position

ADE devoted most of its Opening Claim Construction Brief (D.I. 595) to a discussion of the relevance and importance of the "oblique zone" claim limitation. It argues that Federal Circuit precedent requires the Court to first assess the ordinary meaning of individual claim terms such as "oblique" and "zone" before considering the remainder of the intrinsic record to arrive at a construction for a disputed claim phrase. (Id. at 14-16.) According to ADE, the magistrate judge failed to follow that course and was instead persuaded by KLA to read the preferred embodiment of the invention into the construction of "oblique zone," which "resulted in the incorporation of the extraneous limitation that the oblique zone collects 'either forward or backward scattered light but does not collect both simultaneously.'" (Id. at 16-17.) The correct course, says ADE, is for the Court to consider the dictionary definition of the word "oblique" because it has a plain and ordinary meaning which, when combined with the common word "zone," gives the phrase "oblique zone" a plain and ordinary meaning as well. (Id. at 18-21.) The construction that ADE proposes be adopted would define "oblique zone" as "a light collecting zone positioned to collect light generally scattered obliquely (i.e., neither parallel nor perpendicular to the workpiece surface), and that is offset angularly from the central zone in the polar direction". (Id. at 3.)

ADE also asserts that the doctrine of claim differentiation supports its proposed construction for "oblique zone," since dependent claims 3, 4, 5, and 6 of the '259 patent "specify forward and backward limitations, reinforcing the breadth of claim 1." (Id. at 22.) In other words, ADE contends that since there are dependent claims that do have explicit limitations on the separate gathering of forward and backward scattered light, it is error to read claim 1, from which those later claims depend, to include such a limitation. (See id.)

Finally, in an attempt to rebut efforts by KLA to focus the Court's attention on the prosecution history of the patent, ADE argues that the intrinsic record is not clearly inconsistent with its proposed construction and does not evidence a clear and unambiguous disavowal of claim scope. (Id. at 22-27.)

2. KLA's Position

As earlier noted, KLA asserts that the magistrate judge properly construed the phrase "oblique zone" and, therefore, the construction given the phrase in connection with the '525 patent should apply to the '259 patent as well. 19 (D.I. 615 at 3.) In support of the approach taken by the magistrate judge, KLA points out that the magistrate judge first concluded that the phrase "oblique zone" has no ordinary or pertinent art meaning before she examined the remainder of the intrinsic record for guidance, all of which was and is consistent with Federal Circuit precedent. (Id. at 3-6.) Finally, KLA argues that an
Similarly, in Schumer v. Lab. Computer Sys., Inc., 308 F.3d 1304 (Fed. Cir. 2002), the Court held that the lower court's

because both possible constructions were viable, given the intrinsic record before the Court. Id. at 1379-82.

The Court then reversed the lower court for adopting only one of the two applicable meanings of the intrinsic record to "determine whether the specification or prosecution history clearly demonstrates that only one of the multiple meanings was intended." Id. at 1378-79 (citing Renishaw PLC v. Marposs Societa per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998)). The Court then commented that the word "on" had a special form of extrinsic evidence that it had not been defined by the specification or prosecution history, thus leading the Court to construe the remainder of the phrase in which the word appeared. Id. at 1378. The Court then used that definition in its construction of the remainder of the phrase in which the word appeared. Id.

For example, in Inverness Medical Switzerland v. Princeton Biomeditech Corp., 309 F.3d 1365, (Fed. Cir. 2002) ("Inverness I"), a case cited by ADE in support of its argument, the parties disputed a claim phrase containing the word, "mobility." 309 F.3d at 1369. The meaning of that word, reasoned the Court, was not disputed by the parties but was central to the controversy. Id. The Court, therefore, looked in a dictionary and chose, of the multiple dictionary definitions of "mobility," the one most appropriate in view of the intrinsic evidence before the Court. Id. at 1369-70. The Court then used that definition in its construction of the remainder of the phrase in which the word appeared. Id.

In Inverness Medical Switzerland v. Warner Lambert Co., 309 F.3d 1373 (Fed. Cir. 2002) ("Inverness II"), which ADE also cites, the Court "looked … to the dictionary definitions of the claim terms 'on' and 'onto' as of the date the patents issued." 309 F.3d at 1378. Reasoning that the definition of the word "onto" referred to the word "on," the Court concluded "that both prepositions are properly addressed through the interpretation of 'on'" Id. The Court then commented that the word "on" had been used to describe into the claims will be more easily avoided.”).

ADE would have this Court first recite a dictionary definition for each word in a contested patent claim phrase, add those definitions together, and adopt the resulting amalgamation as the Court's construction before proceeding to any consideration of the remainder of the intrinsic record. The cases cited by ADE, however, do not require the cataloguing of dictionary definitions before construing disputed claim phrases, nor do they require the adoption of a definition equal to the sum of the individual definitions of the words in a contested phrase.

For example, in Inverness Medical Switzerland v. Warner Lambert Co., 309 F.3d 1373 (Fed. Cir. 2002) ("Inverness II"), which ADE also cites, the Court "looked … to the dictionary definitions of the claim terms 'on' and 'onto' as of the date the patents issued." 309 F.3d at 1378. Reasoning that the definition of the word "onto" referred to the word "on," the Court concluded "that both prepositions are properly addressed through the interpretation of 'on'" Id. The Court then commented that the word "on" had been used to describe into the claims will be more easily avoided.”).

While it praises the magistrate judge's opinion on this particular issue, KLA too has filed objections to the opinion (D.I. 531), thus upholding the time-honored tradition of a party's accepting a court's conclusions only when they are in full agreement with the party's own.
"construction contradicts the plain meaning of the word 'or' in the claims." 308 F.3d at 1311. The Court then looked to a dictionary to define this ordinary word and compared that definition to the intrinsic record and held that the intrinsic record did not compel a construction different from the ordinary meaning of the word. Id. at 13-14.

Therefore, in contrast to what ADE seems to urge, the case law demonstrates that claim construction does not conclude with the shutting of a dictionary. If a court opts to use a dictionary when construing claims, it must still proceed to a consideration of remaining claim language and the remainder of the intrinsic record to determine whether the disputed claim language is used consistently with any ordinary meaning the claim language may have. A narrow approach to patent claim construction that focuses on summing dictionary definitions may well lead a court to adopt an inappropriate construction, one that is inconsistent with the pertinent art and the intrinsic record of the patent in suit. That danger is exacerbated when a phrase, rather than a single word, is at issue. The meaning of a phrase is often greater than the sum of the individual words. Ordinary experience with idiomatic phrases, particularly when translating them from one language to another, demonstrates the difficulties and misunderstandings that a literal, word-for-word translation can produce. A dictionary, encyclopedia, or treatise may also contain several definitions for the same word. In short, context is critical, and the import of the intrinsic record cannot be ignored. See Springs Window Fashions, LP v. Novo Indus., L.P., 323 F.3d 989, 2003 U.S. App. LEXIS 2681, Nos. 02-1309, 02-1347, 2003 WL 297500, *4-*6 (Fed. Cir. Feb. 13, 2003) (noting that a patentee is held to what was said during patent prosecution when distinguishing prior art even though there is no explanation in the prosecution history for particular claim language because competitors must be able to look to the intrinsic record and rely upon it).

As previously noted, 2003 U.S. App. LEXIS 2681, [WL] at 23-25, the magistrate judge reviewed the phrase "oblique zone" as part of the larger phrase "second oblique zone offset angularly from said first zone." ADE asserts that the magistrate judge read a limitation into the construction of "oblique zone" from the preferred embodiment. (D.I. 595 at 16-17.) In fact, however, the magistrate judge merely acknowledged the difficulties in construing the phrase "oblique zone," stating that the Court was "well aware … that a preferred embodiment does not, necessarily, define the claimed invention as detailed by the language of the claims." ADE Corp., 220 F. Supp. 2d at 318. The magistrate's Report and Recommendation went on to reason, in effect, that the phrase "oblique zone" was not clear on its face and that the inventors had failed to provide clues to its correct interpretation except through the intrinsic record and whatever further understanding could be gleaned from the description of the preferred embodiment. Id. at 318-19 (citations omitted). That conclusion about the phrase in the '525 patent is sound and is equally true with regard to the term "oblique zone" as used in the '259 patent. Cf. Schumer, 308 F.3d at 1312 ("It is well established that statements made during prosecution are used to interpret the scope and meaning of ambiguous claim terminology.") (citing Vitronics, 90 F.3d at 1582); E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 986, 102 L. Ed. 2d 572, 109 S. Ct. 542 (1988) ("Arguments made during prosecution history are relevant in determining the meaning of the terms at issue. Those arguments … must be examined to ascertain the true meaning of what the inventor intended to convey in the claims.") (citations omitted); ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580 (Fed. Cir. 1988), aff'd, 899 F.2d 1228 (1990) (rejecting patentees' proposed construction of disputed claim term as inconsistent with prosecution history).

The phrase "oblique zone" was first added to the claims of the '525 patent by amendment after an interview with a PTO examiner. (D.I. 627, '525 Patent Prosecution File History, Applicants' Response to Office Action mailed Oct. 28, 1999 at 4.) Under 37 C.F.R. § 1.133(b), it is the patentee's responsibility to complete a written statement as to the substance of that interview. See also 37 C.F.R. § 1.2; Manual of Patent Examining Procedure § 713.04 pp. 700-166 to 700-168 (8th ed., Aug. 2001). Failure to adequately explain why an examiner approved of that language does not erase the preceding prosecution history, which includes prior art citations that the examiner viewed as rendering the invention obvious. See Tate Access Floors, Inc. v. Interface Architectural Res., Inc., 279 F.3d 1357, 1372 n.4 (Fed. Cir. 2002) (prior art cited by an examiner in the prosecution history is part of the intrinsic record of the patent). That prosecution history clearly weighs against the interpretation sought by ADE.

In an Office Action mailed June 5, 1998, an examiner at the PTO rejected the applicants' original claims in the application leading to the '525 patent because, as written, those claims were obvious under Section 103(a). (D.I. 627 at '525 Patent Prosecution File History, Office Action mailed June 5, 1998 at 1-3.) Specifically, the examiner explained that a particular prior art reference known as "Quackenbos" made the claimed invention obvious:

Quackenbos teach [sic] of using a light beam … to send light to surface … of a disk … which is moved and rotated … to scan the entire surface in two directions. The perpendicular scattered light, caused by pits … is detected … and the other scattering angles, both back scattered light and forward scattered light … is detected using [a] sensor … The two detected
intensities are compared in [a] comparator … and then the system determines if the sensed region is a particle or pit where only the pits on the surface are mapped ….

(Id. at 3.) The examiner then explained that another prior art reference called "Wells" could, like the applicants' invention and unlike the Quackenbos reference, "be used to determine … the sensing of a defect/particle … either a pit or particle[.]") thus, rendering the applicants' invention obvious in light of the combination of those two references. (Id. at 3-4.)

There is little question from the quoted remarks that the examiner understood the pertinent art as disclosing a system that employs two detectors in which normally (or perpendicularly) scattered light is collected in one sensor and, in the other sensor, both forward and backward scattered light are collected for detecting defects on the surface of a silicon wafer or other workpiece. In Quackenbos, as depicted below in Figure 3 from that patent, the two sensors are conically shaped and depicted as item 28, which is capable of collecting perpendicularly scattered light, and as item 48, which is capable of collecting forward scattered light, back scattered light, and other light scattered in a 360 degree azimuthal range.

GET DRAWING SHEET 1 OF 4

(D.I. 626 at U.S. Patent No. 4,794,264 (issued Dec. 27, 1988), Figure 3.)

On August 26, 1998, the PTO received the applicants' response to the examiner's June 5, 1998 Office Action. (D.I. 627 at '525 Patent Prosecution File History, Applicants' Response to Office Action mailed June 5, 1998.) In that response, the applicants twice distinguished their invention from the Quackenbos reference by stating that "Quackenbos … does not separately collect back-scattered and forward-scattered light …." (Id. at 5 (emphasis in original).) The applicants also characterized their invention as employing "a plurality of collectors arranged at different angular positions … for collecting back-scattered, forward-scattered, and perpendicularly scattered light." (Id. at 2.) In addition, the applicants asserted that in Quackenbos "there are not truly any 'back-scatter' or 'forward-scatter' directions. Rather, light is scattered by a defect in a conical volume." (Id. at 5.) After making the foregoing statements with regard to their invention and the prior art, the applicants proceeded to a discussion of original claims 1 and 12. 20 (Id. at 7.) As to those two claims, the applicants argued that neither Quackenbos nor Wells teaches or even suggests the additional recitation in claim 12 of separately collecting perpendicularly and back-scattered light. (Id. at 7-8.) Moreover, asserted the applicants, "neither of the references teaches or suggests comparing scattered light intensities in different angular locations." (Id.) The applicants thus predicated the patentability of their invention on the separate collection of forward, backward, and perpendicularly scattered light.

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20 See supra note 12.

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In addition to the prosecution history that weighs heavily against ADE's proposed construction, there is a significant question as to whether the invention would be enabled if ADE's construction of "oblique zone" were adopted. Figure 16 and column 12 lines 19-36 of the '259 patent written description disclose a mathematical algorithm for comparing the center channel signal to either or both of the forward channel signal or the back channel signal. 21 This signal comparison algorithm is suited for comparing signals generated from forward, backward, and center "segmented" collection/detection apparatuses. The algorithm is not designed to process light signals produced from a center collection/detection apparatus and a single axisymmetric collection/detection apparatus that collects both forward and backward scattered light in a 360 degree azimuthal range. Granted, the mathematical algorithm taught by the inventors is qualified by the following language in the specification:

It should be apparent to those of skill in the art from this illustration that the present invention is not limited to the particular algorithm described herein, and that other approaches and other specific algorithms may be used to process the data obtained from the various detectors and to distinguish between pits and particles in accordance with the present invention.

(D.I. 627, '259 Patent Prosecution File History, '259 Patent at col. 12 II. 43-49 (emphasis added.) The Court is bound by what is disclosed. Those of ordinary skill in the art may be able to conceive of different algorithms to use in the '259
invention, however, those algorithms must work in accordance with the disclosed invention, which processes distinct signals gathered from separate collectors. (Id.)

21 See supra note 5.

The disclosed algorithm processes signals from three different sources, a forward channel collector/detector, a back channel collector/detector, and a center channel collector/detector. An algorithm that can process separate signals for comparison is, it would seem, a much different endeavor then a mathematical algorithm that can be used to analyze a single signal representing light collected in a forward and backward scatter region generated by a single collector/detector and then compare the scattered light pattern of the forward and backward scattered light to the light collected in a central region to determine whether the collected light in those regions is characteristic of a pit or particle defect. Such an algorithm, one capable of processing axisymmetric collected light, would be required to render the invention operable if ADE's construction of "oblique zone" was adopted by the Court, since ADE's construction would permit collection of forward and backward scattered light in one collector/detector positioned to collect light 360 degrees in the azimuthal range. There is, however, no disclosure in the '525 or '259 written descriptions or drawings supporting such an algorithm.

If the argument were made that the algorithm need not differentiate between forward and backward scattered light collected in a single apparatus because that is accomplished by the apparatus which collects the light from the two regions, then the '259 and '525 inventions do not teach a single collector/detector for capturing forward and backward scattered light and do not enable a single collector/detector that can perform such a function. Yet ADE's proposed construction of "oblique zone" would encompass just such a single conical or axisymmetric collector/detector, capable of capturing forward and backward scattered light and comparing the forward and backward collected light to light collected in a center channel collector/detector. Again, there is no teaching in the '525 or '259 written descriptions or drawings for such a device. ADE's proposed construction of "oblique zone" is simply not supported by the '525 or '259 intrinsic record before the Court. Indeed, as noted by ADE's efforts to distinguish Quackenbos and Wells, the record is contrary to ADE's position.

ADE, though, points to dependent claims 3, 4, 5, and 6 of the '259 patent in support of its argument for a broad construction of the phrase "oblique zone." ADE argues that the doctrine of claim differentiation requires the broader interpretation of claim 1 that it seeks. (D.I. 595 at 22.) The argument, however, ignores the Federal Circuit's warning that, "the dependent claim tail cannot wag the independent claim dog." North Am. Vaccine, Inc., 7 F.3d at 1577. Again, ADE's proposed construction of "oblique zone" was "disclaimed" by the inventors during patent prosecution in their effort to distinguish the Quackenbos and Wells references cited by the examiner. (See, e.g., D.I. 627 at '259 Patent Prosecution History, Applicants' Response to Office Action mailed June 5, 1998 at 2-3 ("Quackenbos and Wells wholly fail to teach or even remotely suggest the importance of … collecting scattered light in the backward, center, and forward-scattered regions, and comparing the intensities in these three regions to discriminate pits from particles.").)

The Court, therefore, adopts the magistrate judge's construction of "oblique zone" and will also apply it to the claims of the '259 patent. Accordingly, "oblique zone" means a collection zone that differs in polar angle from the central collection zone and that does not collect the same light being collected by the central zone but, instead, collects either forward or backward scattered light but does not collect both simultaneously. ADE's objection to the magistrate judge's construction of "second oblique zone offset angularly from said first zone" in the '525 patent is overruled.

**Claim 1 of the '602 patent has four elements:**

I. A method for diagnosing viral infection in a susceptible host, said method comprising:

II. obtaining a physiological specimen from said host; and
III. determining the presence of feline T-lymphotrophic virus [FIV] or antibodies to [FIV]

IV. in a physiological specimen from said host.

See '602 patent, attached as exh. A to Consalvi Declaration (paragraph numbers added to comport with the parties' referencing system). Defendants claim that their activities do not meet the second element -- obtaining a physiological specimen from said host. They accede that their activities otherwise fall within the language of claim 1.

1. Element II

It is undisputed that Dr. Hansen performs IFA assays on cat blood or serum samples sent to him by other veterinarians and laboratories. The parties dispute whether receiving samples from others meets the test of "obtaining a physiological specimen from said host." Defendants claim, however, that element II requires a positive, active step of obtaining a specimen and that Dr. Hansen did not meet this step because people sent him specimens rather than Dr. Hansen collecting them himself.

Defendants appear to draw the language of requiring a "positive, active step" from Ex Parte Erlich, 3 U.S.P.Q.2D (BNA) 1011, 1016 (Bd. Pat. App. & Interf. 1987). They interpret the language out of context. Under Erlich, "a method claim should at least recite a positive, active step(s) so that the claim will 'set out and circumscribe a particular area with a reasonable degree of precision and particularity' and make it clear what subject matter these claims encompass, as well as making clear the subject matter from which others would be precluded." See id.

Interpreting element II to mean "taking possession of a physiological specimen from said host" meets the goals of 35 U.S.C. § 112 and of Erlich. The subject matter is clear -- a physical specimen from a cat. The use of the patent is similarly clear -- diagnosing a viral infection in a host by taking a physical specimen from the host. How possession is gained is not important to either 35 U.S.C. § 112 or to the Erlich decision. Defendants try to twist the language of Erlich to make "active" mean that the person practicing the claim has to go out and draw the blood or serum themselves. The reasoning behind Erlich does not require such a narrow interpretation.

When construing a claim, the court must look to the intrinsic evidence including the claim itself and the specification. 6 See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1581 (Fed. Cir. 1996). To meet the purpose of the patent claim, the court need not narrowly interpret "obtain." The patent claim shows a method for diagnosing viral infection in a susceptible host. Who gathers the specimen is not important to the diagnosis. Furthermore, nothing in the specification supports a narrow interpretation of "obtain." The specification states that FIV may be isolated "from the sera of infected cats." See '602 patent, col. 3, attached as exh. A to Consalvi Declaration. Sera can be isolated from blood. See id. FIV may also be "obtained from other specimens particularly from the lymph tissues of infected animals." Id. at 4. Nowhere does the specification require that the person using the method for diagnosing the infection must be the one who gathers the sera, blood, or lymph.

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6 The specification is the term given to the portion of the printed patent which precedes the claims. The specification included written descriptions of the invention or discovery and the matter and process of making and using it.

The dictionary definition of "obtain" is "to gain or attain possession or disposal of, usually by some planned action or method." See Webster's 3rd New World International Dictionary, unabridged edition, G + C Meriam & Co, 1976. The court sees no reason to limit the ordinary definition. The dictionary definition is consistent with the case law, the statute, the language of the claim itself, and the specification. Consequently, the court interprets "obtain" in this context to mean take physical possession of the physiological specimen.

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7. "Obtaining Said Sample"

Although the parties do not agree about the meaning of the term "obtaining said sample" (claim 12), their definitions are similar. Plaintiffs think that this term refers to withdrawing blood or collecting urine, and rely on information in the patent indicating that samples are "drawn." See '103 Patent Specification at Fig. 5, 11:50-54. Nevertheless, these references are merely illustrative of particular applications of the patent, and do not claim to be exclusive of other methods. See id. at 11:44-46 ("Figs. 5 to 9 are flowcharts illustrating a specific method according to the present invention which is explained in detail below."). Intema argues that this phrase refers to obtaining a sample of any kind (including blood, urine, or cells). Indeed, the specification refers to "serum or plasma or urine or cells" as types of "biochemical samples." Id. at 5:27-28. Intema's interpretation is also consistent with the plain meaning of the terms, because "obtaining" could include receiving a sample from someone else who collected it, and "sample" need not be limited to blood and urine. Accordingly, I adopt Intema's construction.

2695

c. "an obtuse angle is formed between the strut and the guidewire"

The phrase "an obtuse angle is formed between the strut and the guidewire" appears in the '682 Patent. The Court construes this phrase as "an angle of more than 90 degrees and less than 180 degrees formed between the strut and the guidewire."

2696

E. Term 6: "occluding"

The Court construes the term "occluding" in claim 1 of the '291 patent to mean "blocking or obstructing."

The core of the parties' dispute over this term is whether "to occlude" means "to block completely" or instead means "to block partially or completely." See AGA Opening Br. at 37-38; Univ. Opening Br. at 35-37. AGA contends that the "occluding disk" identified in claim 1 of the '291 patent must be "sufficiently impermeable to stop the flow of blood through a defect within an acceptably short period of time." Am. JCCS Sched. B at 19. This is a lot to pack into a single word, and AGA has not provided any evidence that a person of ordinary skill in the art would construe "occluding" to mean, in effect, "totally occluding." Instead, AGA supports its proposed construction with evidence that "occluding" is used in the specification interchangeably with "closing" or "closure." AGA Opening Br. at 37-38.

This is true as far as it goes. 14 And it is also true that the purpose of the claimed invention is to stop completely -- though not immediately -- the flow of blood. See '291 patent col. 10:8-11. But it does not follow that "occlude" necessarily means "occlude completely," any more than "close" necessarily means "close completely." Put another way, a closure device that
blocks most of the blood flowing through a defect is obviously less effective than one that blocks all of the blood. But a leaky plug is a plug nonetheless. And there is no reason, in the abstract, why a device could not both infringe a patent and be less effective for its purpose than other embodiments of the patented invention. The '291 patent itself therefore does not establish that "occlude" means "occlude completely."

14 See '291 patent col. 1:11-16 ("The present invention generally relates to devices and methods for occluding septal defects . . . . In particular, the present invention provides a device for closing such defects . . . . and a method for delivering and deploying that device to close off the defect.") (emphasis added); id. col. 1:45-50 ("[A]n occluding device is delivered through a catheter. Once the closure device is positioned adjacent the defect, it must be attached to the rest of the septum in a manner which permits it to effectively block the passage of blood through the defect.") (emphasis added).

15 The evidence, such as it is, thus supports construing "occluding" to mean "blocking or obstructing." as proposed by the University.

16 The University actually proposes to construe "occluding" to mean "blocking or obstructing blood flow through a septal defect." Am. JCCS Sched. B at 19. But given that claim 1 of the '291 patent is already directed to a "septal defect closure device," the Court sees no reason to state, in its claim construction, the obvious fact that the device occludes blood flow through a septal defect.
percutaneous transluminal coronary angioplasty is used to open an occlusion of a coronary artery. Id., 88-89.

In contrast to procedures for removing an occlusion, the inventions of the '136 Patent are methods and devices for deliberately forming an occlusion to treat malformations within the vascular system.

The "Background of the Invention" section of the patent states that creation of an "occlusion" to block off vascular malformations was known at the time of the invention. The "Background" discusses intracranial aneurysms as examples of a vascular malformations which physicians sought to treat by "occluding" them in various ways. The "Background" discusses endovascular and extra-intravascular prior art methods for "occluding" intracranial aneurysms by inserting objects such as balloons or injecting coaggulants within them:

In such [endovascular] procedures a balloon is typically attached to the end of the microcather and it is possible to introduce the balloon into the aneurysm, inflate it, and detach it, leaving it to occlude the sac and neck with preservation of the parent artery.

('136 Patent, Col. 1:51-55.)

In the extra-intravascular approach, an aneurysm is surgically exposed or stereotaxically reached with a probe. The wall of the aneurysm is then perforated from the outside and various techniques are used to occlude the interior in order to prevent it from rebleeding.

('136 Patent, Col. 2:11-16.)

The "Background" also discusses prior art methods for forming a thrombus in an aneurysm as a means for occluding the aneurysm:

In the use of electrothrombosis for extra-intravascular treatment the tip of a positively charged electrode is inserted surgically into the interior of the aneurysm. An application of the positive charge attracts white blood cells, red blood cells, platelets and fibrinogen which are typically negatively charged at the normal pH of the blood. The thrombic mass is then formed in the aneurysm about the tip. Thereafter, the tip is removed.

('136 Patent, Col. 2:19-26.)

The disputed language under consideration appears in the Preamble of Claim 1, which states that the invention is a method "for forming an occlusion within a vascular cavity." The Summary of the Invention section of the '136 Patent discloses that the method is practiced by forming a thrombus in the vascular cavity:

A method for forming a thrombus within a vascular cavity comprising the steps of endovascularly disposing a guidewire near an endovascular opening into the vascular cavity. A distal tip of the guidewire is disposed into the vascular cavity. An electrical signal is applied to the distal tip within the vascular cavity to form a thrombus within the vascular cavity about the distal tip. The distal tip is detached from the guidewire to leave the distal tip within the vascular cavity and the thrombus electrically formed within the vascular cavity.

As a result, electrical formation of a thrombus is completely endovascularly formed. ('136 Patent, Col. 4:1-14.)

However, the language of Claim 1 does not limit "formation of an occlusion" only to formation of a thrombus. The Claim discloses that the vascular cavity is occluded by a thrombus and the distal tip:

whereby 3 said vascular cavity is occluded by said distal tip, and any thrombus formed by use of said tip.

Therefore, construction of the subject phrase must be broad enough to cover occlusion by the distal tip and any associated thrombus.
This language is taken from a "whereby clause." As discussed in Discussion Section I.A.3, below, the "whereby clause" of Claim 1 is limiting because it imposes a limitation on the composition of the occlusion.

In the area of vascular medicine concerned with removal of an occlusion formed due to disease, a vessel may be described as "occluded" if it is partially blocked. An additional aspect of the dispute over the construction of the subject phrase is whether the inventors intended the word "occlusion" to mean a blockage which completely obstructs the vascular cavity or whether a partial obstruction was intended to be included in the definition of "occlusion."

On its face, Claim 1 does not state what amount or degree of blockage is meant by "formation of an occlusion." In general, if a claim does not contain a limitation on the extent of a disclosed parameter, the Court should not add such a limitation. See Modine Manufacturing Co. v. U.S. International Trade Commission, 75 F.3d 1545, 1551 (Fed. Cir. 1996).

The written description discloses three embodiments of the invention. With respect to the first embodiment, the inventors discuss that in using that embodiment of the invention, a thrombus or blood clot is formed, but they do not specify any extent to which the thrombus occludes the aneurysm:

The positive charge on secondary coil 28 within the cavity of the aneurysm causes a thrombus to form within the aneurysm by electrothrombosis.

('136 Patent, Col. 6:52-55.) Similarly with respect to the second embodiment, no specification of an extent of occlusion is disclosed:

The embodiment of FIG. 2 is utilized in exactly the same manner as described above in connection with FIG. 1 to form a thrombic mass with an aneurysm or other vascular cavity.

('136 Patent, Col. 7:12-15.)

However, in a discussion of a third embodiment the inventors disclose circumstances under which the method results in the vascular cavity being "completely occluded:

Turn now to the third embodiment of the invention as shown in FIG. 3.

* * *

After the thrombus has been formed and the aneurysm completely occluded, tip 58 and coil 56 are detached from guidewire 42 by electrolytic disintegration of at least one portion of stainless steel coil 46.

* * *

After separation by electrolytic disintegration, guidewire 42, microcatheter 44 and the remaining portion of coil 46 still attached to guidewire 42 are removed from vessel 66, leaving aneurysm 64 completely occluded as diagrammatically depicted in FIG. 5 by thrombus 74.

('136 Patent, Col. 7: 42-43; 8:16-19, 26-30.)

There is no discussion in the extrinsic evidence that only complete occlusion would fulfill the medical purpose of the invention. Thus, in light of the inventors' choice of words, i.e., using "completely occluded" with only one embodiment, the Court declines to adopt a construction of "an occlusion" which requires that it completely block the vascular cavity because the construction arguably would not read on the first two embodiments. See SanDisk Corp. v. Memorex Products, Inc., 415 F.3d 1278, 1285 (Fed. Cir. 2005).

The Court construes "forming an occlusion within a vascular cavity" as it is used in the Preamble to Claim 1 of the '136 Patent.
Patent to mean:

forming a blockage within a vascular cavity. The vascular cavity does not have to be completely occupied by the blockage to be occluded.

2698

D. "Case occupies substantially the entire drive bay slot"

Comaper's proposed construction of "case occupies substantially the entire drive bay slot" is "when installed, the case occupies the slot leading to a drive bay." (Pl.'s Constr. Mem. at 6; Pl.'s Reply Mem. at 11.) According to Comaper, when installed, the case does not share, to any significant degree, the opening in the computer enclosure with other devices. Comaper supports this position with the intrinsic record. Comaper contends that this language was added to distinguish the '955 patent from the device at issue in Pollard because the Pollard device was "a minor integrated component of a drive" and not a dedicated system. (Pl.'s Constr. Mem. at 6.)

The Court constructs the above claim to mean "when installed, the case occupies almost entirely the slot leading to a drive bay." It is clear to the Court that this term was added to distinguish the '955 Patent from the Pollard invention. The invention in Pollard was not a dedicated system for cooling a computer's drive bay region - it was merely a subcomponent of a larger drive. As noted above, the '955 Patent is a dedicated system. It is the opinion of this Court, that during prosecution Comaper sought to distinguish its invention from Pollard. As a result the Court will adopt Plaintiff's construction, with some amendment.

2699

6. occurrence of contact; occurrences of contact

The term "occurrence of contact" appears in claims 25 - 53 of the '213 patent, and the term "occurrences of contact" appears in claim 39 of the '213 patent and in claims 10 - 12 of the '283 patent. The plaintiff's proposed construction is "the act of causing contact to occur at a location on the work platform." The defendant counters with "occurrences of physical contact with the surface of the work platform." The crux of the disagreement with respect to this term is whether or not an "occurrence of contact" includes a moving contact with the work platform (the defendant's position), or, in contrast, includes solely a stationary, location-based contact (the plaintiff's position).

In light of the intrinsic evidence, the court agrees with the plaintiff and concludes that this term means "the act of causing contact to occur at a location on the work platform."

2700

1. The term "of size to fit into the grate frame" (claims 6 and 9). 2

2 In claim 6, the phrase "of size to fit into the grate frame" modifies one noun phrase ("open top receptacle"), whereas in claim 9 the phrase "being of size to fit into the grate frame" modifies a different noun phrase ("erosion control housing"). The parties treat "of size to fit into the grate frame" and "being of size to fit into the grate frame" as if they are different claim terms. Joint Claim Const. Stmt. ("JCCS") at 1, 3 [Docket No. 17]. In fact, both phrases include the same term ("of size to fit into the grate frame"). Claim 9 merely makes explicit (with the word "being") what is implicit in claim 6: The modified noun phrase ("open top receptacle" in claim 6; "erosion control housing" in claim 9) has the property of being "of
size to fit into the grate frame." Accordingly, the Court treats the phrase "of size to fit into the grate frame," and not the phrase "being of size to fit into the grate frame," as the term to be construed, and gives the phrase the same meaning in both claim 6 and claim 9.

The Court construes this term to mean:

of a size to fit reasonably accurately into the grate frame.

WIMCO argues that this term does not need to be construed. Joint Claim Const. Stmt. (“JCCS”) at 1, 3 [Docket No. 17]; Pl. Claim Constr. Br. at 8-10. Lange proposes construing it to mean "of a size to conform correctly to the shape or size of the grate frame." Def. Claim Const. Br. at 27-28 [Docket No. 28]. Based on the patent specification, the Court adopts a position close to Lange's.

The word "fit" is at once ordinary and imprecise; its meaning varies significantly depending on the context in which it is used. In some contexts, object A "fits" inside object B if A is smaller than B, regardless of how much smaller. For instance, if a store clerk asks a customer if her new television will "fit" into the trunk of her car, the customer will answer "yes" as long as the trunk is larger than the television. It will make no difference whether the television will take up all of the room in the trunk or only a small portion of it; in either case, the customer will say that the television "fits" into the trunk. But if a mechanic is asked whether a nut "fits" onto a bolt, he will not say "yes" unless the threads on each are cut to match and the outer diameter of the bolt is nearly identical to the inner diameter of the nut, so that the threads on the nut will engage properly with the threads on the bolt. If the nut is so large that the bolt passes through without engaging, the mechanic will say that the nut does not "fit." In light of the protean nature of the word "fit," to leave the phrase "of size to fit into the grate frame" entirely undefined (as WIMCO suggests) would not give sufficient guidance to the jury that will have to decide infringement.

It is clear that, in the '207 patent, "fit" means something like the fit of a nut onto a bolt rather than the fit of a television into a car trunk. In several ways, the '207 patent specification indicates that the outer edges of the patented basin must fit fairly closely to the inside edges of storm-sewer grate frame. First, all of the patent drawings depict a basin that fits entirely within an existing storm-sewer grate frame, with neither significant gaps nor significant overlaps. In particular, Figure 2 shows a basin inside a grate frame and a grate inside that basin -- that is, it depicts a basin sized to accommodate the exact same grate that is accommodated by the grate frame itself. Second, in describing the preferred embodiments, the patent provides: "Storm sewer frame castings are available in many shapes and sizes, and each erosion control basin then would be designed to fit into the frame with which it is used." '207 Patent col. 3:12-15. This language assumes a close fit between the basin and the grate frame, because it suggests that basins should be customized to particular grate-frame designs. Finally and most importantly, the sole purpose of the basin is to catch debris before it enters the storm sewer below the basin. The basin cannot fulfill its purpose if there are substantial gaps between the basin and the grate frame through which debris may flow.

In light of this evidence from the '207 patent, the Court finds that the claimed basin is "of size to fit into the grate frame" only if it fits reasonably accurately into the grate frame. This construction is admittedly not very precise, but it is as precise as the intrinsic evidence permits, and it serves to exclude from coverage those basins that fit so poorly within grate frames that they fail of their purpose.
1. The '600 Patent

Claims 1 and 9 of the 600 patent describes a "second trough defining means for defining a substantially vertical trough extending the height of said panel . . . said vertical trough disposed offset from said horizontal trough defining means and located proximate said horizontal trough rear portion." Similarly, Claim 11 describes a "means for defining a vertical trough . . . said vertical trough-defining means lying in a plane parallel to and spaced apart from said horizontal trough-defining means . . . ." Defendants contend that this language, when read in the context of the patent specification, requires that there be absolutely no overlap between the space occupied by the vertical troughs and the space occupied by the intermediate horizontal troughs. The Court does not agree.

On their face, the claims do not require that the vertical trough and horizontal troughs have absolutely no overlap. In common parlance, "offset" means merely that the two objects are not perfectly aligned. 5 Similarly, "lying in a plane parallel to and spaced apart from" does not require the troughs to be completely offset. An entire object, with depth, cannot occupy a single plane, which, by definition, has no depth. Typically, however, an object is thought to "lie in the plane" which passes through its center. Thus, for the vertical and horizontal troughs to lie in parallel but separate planes, their center planes cannot be aligned.

--- Footnotes ---

5 Neither side has suggested that "offset" has a particular meaning within the telecommunications equipment field which differs from the common usage of the term. ADC has noted, however, that, in advertisements, T&B has used the term "offset" to describe the relationship between horizontal and vertical troughs in the allegedly infringing device—a device in which there is overlap between the horizontal and vertical troughs. The Court, however, need not consider this extrinsic evidence of the claim meaning to reach the conclusion that "offset," given its ordinary meaning, does not mean entirely without overlap.

--- End Footnotes ---

Defendants argue that the language used to describe the preferred embodiment of the invention suggests that Plaintiff intended a more narrow definition of "offset" and "spaced apart from." Specifically, Defendants quote the following language: "No interference is provided by the vertical troughs. Accordingly, a horizontal run is unrestricted between a plurality of side-by-side bays." U.S. Patent No. 5,220,600, col. 4, ll. 23-26.

"It is entirely proper to use the specification to interpret what the patentee meant by a word or phrase in the claim. But this is not to be confused with adding an extraneous limitation appearing in the specification, which is improper." See E.I. Du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir. 1988) (citations omitted). The language quoted by Defendants accurately reflects the spatial relationship between the vertical and horizontal troughs in the preferred embodiment, but the specification goes on to note that the preferred embodiment is not intended to serve as a limitation on the claims themselves. The Court cannot construe the claim language as limited to devices having the exact characteristics of the preferred embodiment, specifically "no interference" by the vertical trough and an "unrestricted run" through the horizontal troughs.

It is true that the specification makes clear that the vertical trough must be positioned in such a way as to allow jumper wires to run through a series of horizontal troughs without getting tangled in vertical wires. The background section of the patent notes the problems in the prior art: "The common planar arrangement of the horizontal and vertical troughs of the [prior art bays] results in interference of wires passing through tho [sic] intersection of horizontal and vertical troughs. . . . It is desirable for a wire to pass from one bay to other bays in the installation." U.S. Patent No. 5,220,600, col. 1, ll. 51-61. However, this function is not inconsistent with an arrangement of offset but overlapping vertical and horizontal troughs. So long as some portion of the horizontal troughs does not overlap with the vertical troughs, there is unrestricted access between horizontal troughs of different bays. Thus, to the extent that the specification discusses the purpose for having the vertical and horizontal troughs offset or in different planes, that specification does not suggest any limitation beyond the plain meaning of the claim language.

The Court concludes that the proposed claim construction of the Defendants unduly narrows the scope of the 600 patent. The claims should be read and construed as they are written, to require that the vertical and horizontal troughs not be
perfectly aligned so that there is some measure of unrestricted passage between horizontal troughs of different bays. The claims should not be limited to devices in which there is absolutely no overlap between horizontal and vertical troughs.

Claim 1 of the '427 Patent provides:

An altitude accumulator for selectively accumulating altitude changes, comprising:

receiver means for receiving a pressure signal representing atmospheric pressure; computer means for computing altitude based upon said received pressure signal; and accumulator means for selectively accumulating and providing an accumulated altitude signal representing accumulated altitude changes which reach a first accumulation threshold in a first direction from a reference altitude, said altitude changes being based upon said computed altitude, wherein altitude changes in a second direction which do not reach a second accumulation threshold offset subsequent altitude changes in said first direction, and further wherein altitude changes in said second direction which do reach said second accumulation threshold cause said reference altitude to change in accordance therewith.

a. "offset subsequent altitude changes in said first direction"

The parties dispute the meaning of the phrase "offset subsequent altitude changes in said first direction."

In the background section of the specification, the inventor discussed some of the desired features of the invention as follows:

"It is desirable to have an accumulating altimeter which can selectively accumulate altitude changes such as gains, while selectively ignoring some, but not all, opposing altitude changes such as losses. In other words, it would be desirable to have an accumulating altimeter that can selectively ignore insignificant altitude changes, due to such things as mechanical vibration, slightly rolling terrain or highway overpasses, while at the same time being capable of recognizing significant altitude changes, due to such things as riding over a hill or into a valley."

('427 Patent, Col. 1:58-68.)

This discussion of "selectively ignoring" opposing altitude changes describes the effect of an "offset." However, it does not define how an "offset" occurs.

The written description uses the word "offset" as follows:

As the user ascends 30 feet to point D, the display 20 now indicates an accumulated altitude gain of 30 feet, since the altitude gain has now reached the non-opposing accumulation threshold of 30 feet, relative to the latest reference altitude of -10 feet at point C. As the user continues to travel up the rise another 20 feet to the next peak at point E, the altitude gained continues to be accumulated, resulting in an accumulated altitude gain of 50 feet.

As the user descends 20 feet to point F, the accumulated altitude does not change since no further altitude gains have yet been made. Furthermore, since the descent is only 20 feet, i.e. less than the opposing accumulation threshold of 30 feet, a new reference altitude is not established at point F. This descent of less than the opposing accumulation threshold will be used to offset subsequent non-opposing altitude changes, i.e. altitude gains.

As the rider ascends to point G, this 20 foot gain is offset, or cancelled out, by the preceding descent of 20 feet between points E and F. As the user ascends 10 feet further to point H, an additional 10 feet of altitude gain is accumulated, i.e. 60 feet of altitude gain have now been accumulated and can be displayed.

('427 Patent, Col. 4:16-39.)

Thus, the word "offset" and the phrase "cancelled out" are used synonymously. However, neither "offset" nor "cancelled
"offset" is defined in the written description. Furthermore, the written description does not indicate that a person having ordinary skill in the art would understand the terms "offset" or "cancelled out" to have a special meaning. Thus, the Court interprets the subject phrase by giving the word "offset" its ordinary meaning.

In ordinary use, "cancelled out" is defined as "to match in force or effect." See WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 200 (1991). In ordinary use, "offset" is defined as "to counterbalance or compensate." Id. 820. Thus, the Court finds that "offset" means "to counterbalance, compensate, or match in force and effect."

Accordingly, as it is used in Claim 1 of the '427 Patent, the Court construes the phrase "offset subsequent altitude changes in said first direction" to mean:

- to counterbalance, compensate, or match in force and effect subsequent altitude changes in said first direction.

Construing the meaning of "on" and "onto":

As indicated above, the Court is asked to construe two disputed and undefined prepositions, "on" and "onto."

When construing a patent claim, the Court first looks to the "intrinsic" evidence of record, including the language of the claims themselves, the specification, and the prosecution history. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996); see also Markman, 52 F.3d at 979. This intrinsic evidence is "the most significant source of the legally operative meaning of disputed claim language." Vitronics, 90 F.3d at 1582-83. "In most situations, an analysis of the intrinsic evidence alone resolves any ambiguity in a disputed claim term." Id. If a review of the intrinsic evidence reveals no ambiguity, it is improper for the Court to use or rely on extrinsic evidence when construing the claims. Bell & Howell Document Management Products v. Altek Systems, 132 F.3d 701, 705 (Fed. Cir. 1997); Vitronics, 90 F.3d at 1583-1584. The claims are considered alone and not in light of the accused product or any other physical device. See S.R.I. Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1118 (Fed. Cir. 1985). At oral argument, the parties agreed that claim construction may proceed in this case based upon intrinsic evidence.

1. Plain meaning

A review of the intrinsic evidence begins with a plain meaning construction of the claim language, which defines the scope of the claim. York Prods., Inc. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572 (Fed. Cir. 1996). According to the claim language: "said labelled reagent is dry on said test strip prior to use" and mobilization of that labelled reagent is facilitated by "drying said labelled reagent onto a portion of said test strip." In analyzing the claim language the Court must employ "normal rules of syntax," Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1553 (Fed. Cir. 1997), and must read the claims in accordance with their ordinary dictionary meaning absent some contrary expression in the specification. Northern Telecom Ltd. v. Samsung Electronics Co., 215 F.3d 1281, 1295 (Fed. Cir. 2000).

The preposition "on" is "used as a function word to indicate position in contact with and supported by the top surface of" or the "outer surface," according to Merriam Webster's Collegiate Dictionary (10th ed.1997). The term "onto" means "to a position on." Id. Substituting this plain dictionary meaning, the claim language would read: "said labelled reagent is dry in a position in contact with the top or outer surface of said test strip prior to use" and "drying said labelled reagent to a position in contact with the top or outer surface of a portion of said test strip."

Plaintiff disagrees. As defined by Webster's Third New International Dictionary, "on" includes the term "within," as in "rode there on a train" or "booked passage on an ocean liner." Thus plaintiffs argues for an alternative claim construction that would read that the "labelled reagent is dry on and within said test strip prior to use" and mobility of the labelled reagent is facilitated by "drying said labelled reagent onto and within a portion of said test strip."

In considering this construction, it is significant to note that the language of Claim 1 describes an invention "wherein mobility of said labelled reagent within said test strip is facilitated by . . . drying said labelled reagent onto a portion of said test strip." Plaintiff's construction would use "on" and "onto" interchangeably with "within" and thereby require the Court
impermissibly to construe different words used in the claims so they have identical meanings. See Senmed, Inc. v. Richard-Allan Medical Indus., 888 F.2d 815, (Fed. Cir. 1989)(when two terms are clearly intended to have "different meanings within the context of the claim language," it is impermissible to construe these terms to have the same meaning).

Moreover, and contrary to plaintiff's construction, the patent specification reinforces the use of "on" and "onto" as position words being used here to describe something in contact with a surface.

2. Patent Specification:

Patent specification is one of source of intrinsic evidence used to give context to the claim language. As the Federal Circuit explained in Vitronics, 90 F.3d at 1582:

The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication . . . . As we have repeatedly stated, "claims must be read in view of the specification, of which they are part." . . . The specification contains written description of the invention which must be clear and complete enough to enable those of ordinary skill in the art to make and use it. Thus, the specification is always relevant to the claim construction analysis. Usually, it is dispositive: it is the single best guide to the meaning of the disputed term.

Id. The specification in the May patents supports only one of the possible meanings for "on." In each of three instances, the specification clearly describes the labelled reagent as applied on the surface of the test strip.

Column 6 of the specification reads as follows:

To assist the free mobility of the labelled reagent when the porous carrier is moistened with the sample, it is preferable for the labelled reagent to be applied to the carrier as a surface layer, rather than being impregnated in the thickness of the carrier. This can minimize interaction between the carrier material and the labelled reagent. In a preferred embodiment of the invention, the carrier is pre-treated with a glazing material in the region to which the labelled reagent is to be applied. Glazing can be achieved, for example, by depositing an aqueous sugar or cellulose solution, e.g. of sucrose and lactose, on the carrier at the relevant portion, and drying.

Column 6, line 48 - Col. 7 line 3 (emphasis added). The ordinary meaning of "on" requires contact with the top or outer surface, and the specification reinforces this meaning by affirmatively stating that the labelled reagent should be applied to the test strip as a surface layer, rather than being impregnated within the test strip.

The application of the labelled reagent as a surface layer is also referred to in Column 13 where the specification diagram is described:

A portion of the test strip surface opposite the backing strip 511 and adjacent the porous receiving member 506, carries a glaze 519 on which is deposited a layer 520 of labelled specific binding reagent. . . . . The essential objective of reducing any interaction between the labelled reagent and the carrier material forming the strip will be achieved.

Col. 13, lines 45-48. Again, the labelled reagent is deposited on a glaze and this achieves the "essential objective of reducing any interaction" between the labelled reagent and what the test strip is made out of.

Finally Column 17 describes the process of using an airbrush to apply the layer of sugar substance, and then a layer of labelled antibodies on top of the sugar layer as follows:

Prior to the deposition of dye labelled antibody, a sublayer of, for example, 60% w/v of sucrose in distilled water is applied by airbrush . . . . Then several passes (e.g. three) of dye labelled antibody . . . are applied by airbrush directly on top of the sublayer.

Col. 17, line 63 - Col. 18, line 6.

Each of the above excerpts from the specification describe what is the preferred embodiment of the May patent and clarify and strengthen the contextual meaning of the terms "on" and "onto."
In opposing this construction, plaintiff correctly states that claims are not construed to cover only a particular embodiment or example -- even if that embodiment is "preferred," Northern Telecom Ltd. v. Samsung Electronics Co., 215 F.3d 1281 (Fed. Cir. 2000), and offers three embodiments, also in the specification, to support a construction in which "on" means "within."

First plaintiff cites Column 8, which describes an embodiment in which the test strip area in question, Zone 12, is "loaded with a first antibody bearing a visible ('direct') label . . . . This reagent can freely migrate through the test strip in the presence of a liquid sample." Col. 8, lines 52-55. Plaintiff argues that the term "load" should be defined as "to put a load in or on (a means of conveyance); to fill with material, animals, or passengers to be transported (had loaded the moving van by noon)." Webster's Third New International Dictionary, Unabridged, Merriam Webster Inc., (1993). But plaintiff fails to point out that the very next line in the patent, Col. 8, lines 55-56, describes Zone 14, the test result zone, in which a second antibody is "impregnated" in the test strip. As defendant correctly argues, the reference to "loaded" when read in context with the reference to "impregnated" does not support plaintiff's construction. Instead it bolsters a construction that distinguishes between the zones containing impregnated immobilized antibodies and the labelled antibody zone, presumably not impregnated.

Plaintiff's second reference to the specification identifies language from Column 13:

The thickness of these two layers as depicted in FIG. 10 is grossly exaggerated purely for the purpose of illustration. It will be appreciated that in practice, the glaze may not form a true surface layer and the glazing material will penetrate the thickness of the strip to some extent. Similarly, the subsequently applied labelled reagent may also penetrate the strip.

"871 Patent, Col. 13, lines 49 - 55. But this is excerpted from the specification defendant points to, discussed above: "a portion of the test strip surface . . . carries a glaze on which is deposited a layer of labelled specific binding reagent." '871 Patent, Col. 13, lines 45-48, to achieve the "essential objective of reducing any interaction between the labelled reagent and the carrier material forming the strip." '871 Patent, Col. 13, lines 55-57. The fact that the glaze with the labelled reagent might "to some extent" penetrate the thickness of the strip is clearly in contrast with specification language describing antibodies in the test result zone as "impregnated throughout the thickness of the carrier." '871 Patent, Col. 7, lines 37-42. If the patent drafter intended to include labelled antibodies "within" the test strip, this language does not express it.

Plaintiff also cites to language in Column 18, which reads: "In another embodiment, the label may be dispensed/deposited into/on a restricted zone before cutting up the liquid-conductive material into strips." '871 Patent, Col. 18, lines 18-20, offering the term "dispensed into" to support its construction that the labelled reagent and sugar material can be dried "within" the test strip. But, once again, this reference is surrounded by language describing the labelled reagent as "applied . . . directly on top of the sublayer." '871 Patent, Col. 17, line 63 - Col. 18, line 1. The fact that the labelled reagent could be dispensed into a "zone" does not mean it is dried into or within the thickness of the test strip.

3. Final Claim Construction (Resolving "On" and "Onto")

The claim language is construed by the Court to define an invention that uses an undefined sufficient amount of material, of which sugar is an ingredient, to reduce the mutual action between the labelled reagent and the test strip by either coating the test strip with the material or drying the labelled reagent and this material together onto the surface of a portion of the test strip upstream from the test result zone. The claim is further construed to mean that the presence of this sugar material on the surface of the test strip will help or improve the release of the labelled reagent when the liquid biological sample is applied to the strip.

b. "Stops on the cable"

Claim 26 recites in relevant part "stops on said three cables whereby a manual exercising force applied [to one of the cables associated with the exercise unit in use] responsively tensions said first cable and applies a force tending to move said load." '572 patent 11:64-12:19.
The court has already construed the term "stops" to include both "ball" and "mechanical"-type structures. Defendants argue, however, that the stops on the accused products' butterfly units fail to satisfy the limitation that the stops be directly "on" on the cable. Plaintiff disagrees that the limitation requires the stop to be directly "on" the cable.

Since the term "on" is not further defined in the claim itself, the court looks to extrinsic evidence for guidance. Webster's defines "on" to mean "so as to be attached to or unified with." Webster's Encyclopedic Unabridged Dictionary 1005 (1989). Using this definition, the stops associated with the butterfly units are "on the cable." While the stops do not come into direct contact with the cable, the cable is "attached to" or "unified with" the mechanical structure that functions as the units' stop.

2706

4. On

a. **Depositing a Titanium Film Containing Nitrogen Atoms on a Semiconductor Substrate**

The titanium film containing nitrogen atoms must be deposited directly on a semiconductor substrate.

b. **Forming a Titanium Nitride Film on the Semiconductor Substrate**

The titanium nitride film must be directly on the titanium silicide film, which in turn must be directly on the semiconductor substrate.

2707

2. "Provided on an Exterior of the Housing"

One of the most important issues with respect to Claim 1 of the '559 Patent is the meaning of "provided on an exterior of the housing," element 1(n), in reference to the "on/off switch." All three parties agree that an "on/off switch," element 1(m), is "a switch that moves between at least an on position and an off position." Claim 1 states that the "on/off switch" is "provided on an exterior of the housing and electrically coupled to the motor of the shredder mechanism." Fellowes construes this to mean that "the on/off switch is located at least in part outside the housing so that it can be operated by the user." Fellowes' Opening Br. on Claim Construction 27 [Doc. No. 40] (emphasis added). Michilin, relying upon the prosecution history, urges the Court to find that the "on/off switch" is located, apparently exclusively, on the "exterior of the housing." Intek proposes that "the on/off switch is in contact with and supported by an exterior surface of the housing." The parties do not dispute that the "housing," element 1(c), is a "shell that houses components of the shredder."

Notwithstanding the parties' efforts to extract meaning from the words "provided on," the Court finds this phrase to be ambiguous as to whether the "on/off switch" is located entirely on the exterior of the housing, partially on the exterior, or on the interior. The Court finds the matter easily resolved, however, by looking to the rest of the claim itself and the preferred embodiments. Claim 1 teaches that the "on/off switch" is "electrically coupled to the motor of the shredder mechanism" and "includes a manually engageable portion." '559 Patent, col. 6, lines 46-50. The preferred embodiments clearly show that parts of the "on/off switch" are located on the interior of the housing, while other parts are located on the exterior. See id. figs. 2 (outside view) & 5-6 (inside view); id. at col. 3, lines 36-40 (the "on/off switch 42 includes a switch module 44 . . . mounted to the top wall 24 underneath the recess 38 by fasteners 45, and a manually engageable portion 46 that moves laterally within the recess 38"). Figure 2 shows a "manually engageable portion" on the exterior of the housing, and the "switch module" on the interior of the housing. If the claim were construed as limiting the location of the "on/off switch" to the exterior of the housing, as Michilin argues, the preferred embodiment in Figure 2 would not fall within the scope of the patent claim, a result which is untenable. See SanDisk Corp. v. Memorex Prods., Inc., 415 F.3d 1278, 1285 (Fed. Cir. 2005) ("A claim construction that excludes a preferred embodiment . . . is rarely, if ever, correct.") (quoting Vitronics, 90 F.3d at 1583). Finally, Michilin's construction of "provided on an exterior of the housing" in Claim 1 is inconsistent with the plain meaning of Claim 19, which is dependent upon Claim 1. "A claim term used in multiple claims should be construed
Michilin and Intek make much of the fact that during the prosecution of the '559 Patent the patentee amended its application to add "provided on an exterior of the housing" in order to distinguish Claim 1 from the prior art. On September 20, 2005, the USPTO issued an Office Action in which it rejected Claim 1, among other claims, as unpatentable under 35 U.S.C. § 103(a) over the admitted prior art, namely Patent No. 6,274,828 ("the Chu patent") or "the '828 Patent"). The Chu patent disclosed an electric power hand tool that included a "lock for preventing unintentional closing." '828 Patent, Intek's Am. Br. in Supp. of its Proposed Claim Construction, Ex. 12 ("Intek Br.") [Doc. No. 85]. 4 The USPTO found that a paper shredder having a "switch lock" to prevent operator injury was "obvious" in light of the Chu patent. '559 Patent, FE 000159. In response to the USPTO's rejection, on November 2, 2005, the patentee added amendments to its claim, including the phrase "provided on an exterior of the housing" after the term "on/off switch." Id. at FE 000165. In addition to the amendment, the patentee argued to the USPTO that "the 'on/off switch' and the 'manually engageable portion' of the 'switch lock' are both distinctly provided on an exterior of the housing." See id. at FE 000175. Following these amendments, the USPTO allowed the '559 Patent to issue. The Court sees no sufficient basis for applying prosecution disclaimer on these facts. Even assuming that the "on/off switch" must be "provided on an exterior of the housing" in order to overcome the Chu patent, Fellowes' construction--placing the "on/off switch" "at least in part" on an exterior of the housing--is entirely consistent with the patentees' amendment and supporting arguments to the USPTO. Intek is therefore incorrect in its assertion that Fellowes' construction, if adopted, would "render[] meaningless" the phrase "on an exterior of the housing." Intek Br. 23. The Court finds no "clear and unmistakable" disavowal of Fellowes' construction in the prosecution history. See Omega, Eng'g, 334 F.3d at 1325-26. The Court refuses, however, to add surplusage to the claims, and sees no value in adding Fellowes' phrase "so that it can be operated by the user."

4 Michilin directs the Court's attention to Figure 6 of the Chu patent. Figure 6 "is a cross-sectional side view of an electrical power hand tool incorporating the [on/off] switch of FIG. 1." '828 Patent, col. 2, lines 23-24. In Michilin's view, which the Court does not necessarily share, the "on/off switch" in Figure 6, depicted as element 100, is "in a housing." Markman Hr'g Tr. 42.

The only remaining issue is whether to adopt Intek's position that the "on/off switch is in contact with and supported by an exterior of the housing." Intek points to Figure 2 of the '559 Patent, which depicts a "perspective view" of the shredder without the container and with the switch lock in the releasing position thereof." '559 Patent, col. 1, lines 54-56. According to Intek, Figure 2 shows that a "switch recess 38 formed in an exterior of the surface, top wall 24, of the housing 14 receives the on/off switch 42. Thus, on/off switch 42 is provided on (in contact with and supported by) an exterior surface of the housing." Intek Br. 21; see Stern Decl., Intek Br., Ex. 14, 9 P 41. The Court is not convinced by Intek's argument. Nowhere in the patent claims or specifications is the "on/off switch" described as being "in contact with and supported by" an exterior of the housing. The notion that the "on/off switch" is "supported by" the "exterior of the housing" is seemingly irreconcilable with the specifications' description of the "on/off switch" as "includ[ing] a switch module 44 (FIGS. 4A-6) mounted to the top wall 24 underneath the recess 38 by fasteners 45, and a manually engageable portion 46 that moves laterally within the recess 38." '559 Patent, col. 3, lines 36-40 (emphasis added). See SanDisk, 415 F.3d at 1285 ("A claim construction that excludes a preferred embodiment . . . is rarely, if ever, correct.") (quoting Vitronics, 90 F.3d at 1583).

Intek argues, and Fellowes disputes, that "[t]here is not a single embodiment or description that shows an on/off switch can be 'outside the housing' but not in contact with and supported by an exterior surface of the housing." Intek Br. 23; Fellowes' Resp. to Intek's Br. 4 [Doc. No. 88] (citing '780 Patent, fig. 11B). Whomever is correct on this particular point, the specifications make clear that the embodiments in the '559 Patent "have been provided solely for the purposes of illustrating the structural and functional principles of the present invention, and should not be considered limiting. To the contrary, the present invention is intended to encompass all variations, modifications, and alterations within the spirit of the appended claims." '559 Patent, col. 6, lines 27-34. In light of the specifications and the claim itself, the Court finds no basis to graft "in
support of and in contact with" onto its construction. Finding no need to address Fellowes' additional arguments on this point, the Court FINDS that the phrase "provided on an exterior of the housing," element 1(n), means simply that "the on/off switch is located at least in part outside the housing."

2708

I. "on at least one of said surfaces"

TLI argues that the term "on at least one of said surfaces" means "on at least a portion of either or both the inside and outside enclosure surfaces" and this definition comports with the ordinary and customary meaning of the terms. See TLI's Br. at 21. The dispute concerning this issue is limited since Sylvania contends that the specification of the '017 patent states that the coating "preferably extends over at least about 90 percent of the exterior surface of the lamp envelope." … col. 19, Ins. 36-37." See Sylvania's Br. at 20. Accordingly, Sylvania asserts TLI's proposal to include the phrase "at least a portion of" should not be accepted. However, to the extent that a qualifier is included, it must be quantified to be at least about 90 percent covered. Id.

Both parties agree, for purposes of the present litigation that the definition of a lamp envelope is one "having an interior surface and an exterior surface[.]" See Joint Statement at p. 3. Under the plain meanings of these terms, I find that the claim term "said surfaces" from the phrase "on at least one of said surfaces" refers to the inner surface and outer surface of the lamp envelope requiring no specific limitation. There is no specific limitation in either the claim or the specification directing that the coating must be disposed on at least one entire surface. See refs. 620, 642, 644, 646, 648 of Figure 20 of U.S. Patent 5,666,017.

2709

CLAIM 1 OF THE 113 PATENT

Claim 1 of Somfy's 113 patent claims the following:

[A] A device for winding at least one suspension cord of a blind comprising a [B] winding drum, [C] one end of said suspension cord attached to said winding drum [D-E] an auxiliary drum means on said winding drum for ensuring that the cord is wound in even turns without overlapping, said auxiliary drum means having a smooth drum portion having a diameter which is greater than the diameter of the winding drum and located at a distance from the cord end, [F] a shoulder means on one end of said auxiliary drum means for moving successive cord windings axially away from the shoulder means and onto the auxiliary drum means, and [G] guide means for guiding the cord to be wound onto the shoulder means so that the successive cord windings are formed on the auxiliary drum means and are pushed off the opposite end of the auxiliary drum means onto the winding drum under the effect of the shoulder means on the cord.

The parties offer conflicting interpretations of elements C, D, E, F, and G in Claim 1 of the 113 patent. Before construing these elements, we will set forth the background and standards guiding our construction of Claim 1.

ANALYSIS

Congress enacted the Patent Act ("the Act") to encourage scientific advancement by granting inventors "the right to exclude others from making, using, offering for sale, selling, or importing the patented invention," in exchange for full disclosure of an invention. Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 1387, 134 L. Ed. 2d 577 (1996). This protection is not without its boundaries; although the Act affords protection for a specified process, machine, or design, a patent never shields the result achieved by that design. 116 S. Ct. at 1388. Accordingly, the burden lies with the inventor to fully disclose "the exact scope of an invention and its manufacture to 'secure to [the patentee] all to which he is entitled, [and] to apprise the public of what is still open to them.'" Id. at 1387 (quoting McClain v. Ortmayer, 141 U.S. 419, 424, 35 L. Ed. 800, 12 S. Ct. 76 (1891)).
A plaintiff satisfies its burden of proving infringement by demonstrating that every claim limitation is present in the accused device. Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1535 (Fed. Cir. 1991) ("the failure to meet a single limitation is sufficient to negate infringement of the claim"). Courts also recognize that devices that do not literally infringe a patent may do so under the doctrine of equivalents. The doctrine of equivalents "functions to forbid not only exact copies of an invention, but products that go to 'the heart of the invention but avoid the literal language of the claim by making a noncritical change.'" Markman, 116 S. Ct. at 1388 (quoting H. Schwartz, Patent Law and Practice I, 82 (2d ed. 1995)).

Resolving an infringement dispute is a two-step process. First, the Court must construe the patent claim. In determining its proper meaning, we begin with the claim language. Claim construction also requires us to consult the patent's written description and specification, and, when available, the prosecution history. Spectrum Int'l Inc. v. Sterilite Corp., 164 F.3d 1372, 1378 (Fed. Cir. 1998). Courts should resort to extrinsic evidence, such as treatises, technical references, and expert testimony, only when the intrinsic evidence fails to clearly reveal the meaning of the patent claim language. Id. It is only after the Court has determined the meaning and scope of the claim that the Court compares the accused device to the properly construed claim.

While the parties offer competing interpretations of elements C, D, E, F, and G, 1 we limit our discussion to the element F, because we find that our interpretation of element F precludes a finding of literal infringement. 2 Interstore Transfer Sys., Ltd. v. Hanger Management, Inc., 1997 U.S. Dist. LEXIS 1497, 1997 WL 106109, *6 (N.D. Ill. Feb. 10, 1997) ("Having found that the accused device fails to meet one limitation set forth in the asserted claims and thus does not literally infringe, the Court has limited its analysis accordingly, Laitram, 939 F.2d at 1535, and will not rule on issues presented in other subparagraphs of the asserted claims.").

--- Footnotes ---

1 To the extent that the parties disagree about the remaining elements, the Court finds as follows:

Element C: The plain language of element C, the specification and embodiments, and the inventor's testimony (Perache Dep. at p. 132) requires the cord to be attached, or affixed, to the winding drum.

Elements D and E: Nothing in the plain language of these elements requires the corresponding "drum" structures to be limited to constant-diameter cylinders.

Element G: The plain language of element G and the specification and embodiments requires the guide means to guide the cord (after the initial turns onto the drum) to come into contact with the shoulder means.

2 The Court acknowledges that this finding exceeds the scope of its present assignment, claim construction. However, because we find that the Somfy patent requires contact between the shoulder means and the auxiliary drum means -- a requirement that the Springs' device clearly does not satisfy -- the Springs' device could not be an equivalent of the Somfy shoulder means under 35 U.S.C. § 112, P6.

--- End Footnotes ---

Element F

a. Means-Plus-Function Format

The parties' dispute centers principally on the interpretation of the "shoulder means" in element F. Element F claims "a shoulder means on one end of said auxiliary drum means for moving successive cord windings axially away from the shoulder means and onto the auxiliary drum means as the cord windings are formed." This claim is largely written in a mean-plus-function format, and is therefore subject to the requirements of 35 U.S.C. § 112. Section 112, sixth paragraph states:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, materials, or acts described in the specification and equivalents thereof.
This provision enables inventors to draft claims without disclosing a definite structure by expressing limitations in a "means-plus-function" format, B. Braun Med. Inc. v. Abbott Labs, 124 F.3d 1419, 1424 (Fed. Cir. 1997). "The quid pro quo for the convenience of employing § 112," is that the specification must clearly show what the limitation means. Id; see also Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1581 (Fed. Cir. 1996) (rejecting the patentee's broad interpretation of the claim because the patentee particularly pointed out and distinctly claimed only the narrower interpretation). "Section 112 thus permits means-plus-function language in a combination claim, but with a 'string attached.' The 'attached string' limits the applicant to the structure, material, or acts in the specification and their equivalents. Indeed the section operates more like the reverse doctrine of equivalents than the doctrine of equivalents because it restricts the coverage of literal claim language." Valmont Indus. Inc. v. Reinke Mfg. Co., 983 F.2d 1039, 1042 (Fed. Cir. 1993) (quoting Johnston v. IV AC Corp., 885 F.2d 1574, 1580 (Fed. Cir. 1989)).

Because "the 'means' term in a means-plus-function limitation is essentially a generic reference for the corresponding structure disclosed in the specification," the Court must look to the specification to determine the corresponding structure and the equivalents thereof. Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus. Inc., 145 F.3d 1303, 1308 (Fed. Cir. 1998). First, however, we will set forth element F's function. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448 (Fed. Cir. 1998) (finding that a determination of a claimed function is a question of law).

b. Claim Interpretation

The function expressed in element F is to move successive cord windings axially away from the shoulder means and onto the auxiliary drum means as the cord windings are formed. The drafter did not stop there, however, and included additional limitations that must be incorporated into the construction of the element. See O. I. Corp. v. Tekmar Co. Inc., 115 F.3d 1576, 1580-81 (Fed. Cir. 1997). The drafter further defined this function by referencing a shoulder. Unidynamics Corp. v. Automatic Prods. Int'l, Ltd., 157 F.3d 1311, 1319 (Fed. Cir. 1998) (finding that "spring means tending to keep door closed" is within the ambit of § 112 even though the claim recites a "spring", which is clearly structural language, because the recitation of this structure merely served to further specify the function of the means). Instead of reciting pure structure, the inventor's reference to the shoulder merely elaborates how the means works -- the means moves the cord by blocking (or shouldering) the cord, and preventing the cord from winding beyond the auxiliary drum. Laitram, 939 F.2d at 1536 (finding that the recitation of some structure in a means-plus-function element does not preclude the applicability of 35 U.S.C. § 112, P 6 when it merely serves to further specify the identified function).

The inventor further limited element F by describing the shoulder means as being "on one end of said auxiliary drum means." The parties' conflicting interpretations of "on one end" lies at the heart of this litigation. Springs argues that "on one end" requires the shoulder means to contact the auxiliary drum, while Somfy's interpretation indicates proximity as opposed to physical contact. Both parties have submitted equally compelling dictionary definitions to support their respective interpretations. WEBSTERS NINTH COLLEGIATE DICTIONARY (Merian-Webster, Inc. 1990) (Springs relies on definition b: "used as a function word to indicate position on or in contact with an outer surface" and Somfy relies on definition c: "used as a function word to indicate position in close proximity with (a village on the sea).". Because "on one end" is susceptible to two equally plausible definitions, we must proceed to examine the remaining intrinsic evidence to properly construe the claim.

The patent clearly discloses a structure that corresponds to the function described in element F. Consistent with the proffered definitions of a shoulder, the disclosed device is a "step-like change in the contour of [the drum], for opposing or limiting motion along it, for an abutment, etc." The rounded device displayed in the embodiments has a diameter that is greater than the diameter of the auxiliary drum.

--- Footnotes ---

3 The RANDOM HOUSE DICTIONARY OF THE ENGLISH LANGUAGE (1980). See also DICTIONARY OF MECHANICAL ENGINEERING by G.H.F. Nayler (4th ed.): "That portion of a shaft or of a flanged structure where a sharp increase of diameter or other dimension occurs."

--- End Footnotes ---
We note that each embodiment in the specification and drawings depicts a shoulder in contact with the auxiliary drum; if there is any space between the shoulder and the drum, it is invisible to the human eye. Hoganas AB v. Dresser Indus., 9 F.3d 948, 951 (Fed. Cir. 1993) (finding that the claim must put "competitors on notice of the scope of the claimed invention."). However, only one of the embodiments demands that the shoulder be in contact with the auxiliary drum, because this embodiment (Figure 7) teaches that the shoulder means and the drum means "may be made in a single piece." Col. 4, lines 23-26. Because Springs does not argue that the shoulder and the drum must be made in a single piece, but merely that the two contact each other, the specification language fails to conclusively support either parties' position. 4

--- Footnotes ---

4 Somfy attempts to rely upon claim differentiation to bolster its position that the shoulder need not contact the auxiliary drum. The doctrine of claim differentiation provides that different claims should be presumed to cover different inventions; i.e., the Court should not interpret one claim so that it would read like another. However, the two claims that Somfy relies upon, Claim 5 ("the winding device as claimed in claim 2, wherein the lateral face of the shoulder means facing the auxiliary drum means is conical.") and Claim 6 ("the winding device as claimed in claim 5, wherein the conical lateral face (9a) is joined to the smooth drum portion (8') by a rounded portion (16) having a radius of the section of the cord to be wound") do not disclose that these are the only claims in which the shoulder and the drum may be joined. Rather, they merely disclose a different design or method for joining the shoulder and drum means. Therefore, this argument is without merit.

--- End Footnotes ---

The patent's language is consistent with an interpretation requiring contact between the shoulder and the drum. The 113 patent's abstract states that the auxiliary drum is "limited by a shoulder." Similarly, Plaintiff addressed the Patent Office's questions regarding patentability over prior art by explaining that "none of the prior art references teach the auxiliary drum having a shoulder means on one end and a free end on the other end." Somfy fails to adequately explain how the drum means would be "limited by" the shoulder means if there was no contact between the two structures. We find, however, that even this language does not conclusively establish that the phrase "on one end" and the term "shoulder" require contact between the drum and the shoulder.

Because the intrinsic patent evidence (while favoring the Defendants' interpretation) is inconclusive, we turn to the extrinsic evidence. Beginning with the inventor testimony, we note that while the inventor insisted that the shoulder need not contact the drum means, he conceded that the patent did not disclose such a teaching. On the contrary, every embodiment reveals a shoulder directly contacting the auxiliary drum. The inventor agreed that "the patent also doesn't teach how you would design a unit that had a shoulder means that's not in contact with the auxiliary drum." Perache Dep. at p125. And when asked if "the shoulder that's disclosed in the patent and that was used in the Somfy devices as of 1994, the shoulder rotates with the auxiliary drum, correct?" A: "From -- in '94?" Q: "Right", the inventor responded: "Beginning of '94, yes." Id. at p 56. Finally, the inventor admitted that Somfy had tinkered with a prototype incorporating a shoulder spaced away from the drum. However, the inventor neither disclosed this embodiment to the Patent Office or the attorneys preparing his claim, nor did Somfy incorporate this embodiment into any of its initial designs.

In addition, Springs has introduced evidence that its device was based a design patented after and over the Somfy 113 patent -- the Domel patent. During the patent application process, Domel distinguished his device from the Somfy patent on the grounds that his invention utilized a stationary finger placed above the drum and not a shoulder attached to and rotating with the drum. This allegedly allowed the inventor to reduce the friction created by Somfy's patented design. The patent examiner accepted these differences between the two devices as significant and granted Domel's patent application.

Springs' device, however, is not an exact replica of the Domel design -- while the Springs' device utilizes two fingers, the Domel design utilized only one. Nevertheless, the Springs device differs from the Somfy device in the same manner that the Domel device does: the Springs device utilizes fingers spaced away from the auxiliary drum and is stationary. This evidence strongly suggests not only that the Somfy 113 patent is not entitled to the broad interpretation proffered by Somfy, but also that the difference between the Somfy and Spring devices is substantial enough to avoid a finding of infringement.

Upon review, the Court finds that both the intrinsic and extrinsic evidence favor Defendants' interpretation of element F. In drafting its patent, Somfy bore the burden of distinctly claiming its invention in order to put competitors on notice. This
requirement "guard[s] against unreasonable advantages to the patentee and disadvantages to others arising from uncertainty
899 (1938). In failing to clearly disclose that the shoulder need not contact the drum, Somfy abandoned its right to
protection for such a broad interpretation of its patent. Athletic Alternatives, 73 F.3d at 1581 ("Were we to allow [plaintiff]
successfully to assert the broader of the two senses of 'between' against [defendant], we would undermine the fair notice
function of the requirement that the patentee distinctly claim the subject matter disclosed in the patent from which he can
exclude others temporarily."). Because the enabling disclosure reveals a shoulder contacting the auxiliary drum and because
the plain language of the claim fails to teach a broader interpretation, we find that the shoulder means must be in contact
with the drum means.

5. "on or in-line with"

This phrase is used in claim 15 of the '607 and '967 Patents. WG seeks to construe this term as "attached externally to or in-
line with." Ion seeks to construe the term as "attached to or in-line with."

In construing the word "on" as "attached externally to," WG seeks to distinguish between those devices that are attached
externally to streamers from those are in-line with, or part of the linear of, the streamer, as is WG's Q-Marine. WG also
argues that the plain meaning of the word "on" implies an external connection, rendering it appropriate to explicitly add
the word "external" to the construction of the term. Ion, however, takes issue with this "external vs. in-line with" dichotomy,
and argues that there are certain devices that are "hybrid" in that they contain a component that is in-line with the streamer
as well as a part that is attached externally. Ion also points out that the term "externally" appears nowhere in either the claim
language or the specification. Ion therefore seeks to construe this phrase without this limitation.

The Court notes that WG relies only on external evidence to establish the purported distinction between devices that are on,
and those that are in-line with, the seismic streamers. Ion apparently disagrees that this is binary framework is as exact as
WG avers. The Court will not rely on only external evidence to construe this term so as to create the binary distinction as
WG advocates.

In addition, the Court notes that to the extent that the word "on" implies a connection that is different from "in-line," this
difference is made apparent by the fact that the terms are separated with the word "or." Therefore, the Court holds that the
phrase "on or in-line" is sufficiently clear that it needs no construction. Any fact-finder can be trusted to understand the
plain and ordinary meaning of the word "on" such that the Court need not impose a construction, particularly one that finds
no support in the intrinsic evidence. A district court is not obligated to construe terms with ordinary meanings, lest trial
courts be inundated with requests to parse the meaning of every word in the asserted claims. O2 Micro Intern. Ltd., 521 F.3d
at 1360; see also Biotec Biologische Naturverpackungen GmbH & Co. KG v. Biocorp, Inc., 249 F.3d 1341, 1349 (Fed. Cir.
2001) (finding no error in non-construction of "melting"); Mentor H/S, Inc. v. Med. Device Alliance, Inc., 244 F.3d 1365,
1380 (Fed. Cir. 2001) (finding no error in the lower court's refusal to construe "irrigating" and "frictional heat").
oxide layer. We disagree with the district court's claim interpretation. The prosecution history shows that the claimed invention was distinguished from the relevant prior art on the basis that the claimed invention involves the deposition of a metal film directly onto the glass surface, whereas the prior art teaches the deposition of a metal film only after a distinct adhesive film is first applied intentionally to the glass surface. The '728 patent claims contain no limitation that the interface between the metal film and the glass sheet be devoid of unintended intermediate material, oxide or otherwise. The presence of an intermediate oxide layer in the PPG products thus does not alone render the accused devices noninfringing.

A. Claim Construction

Claim 7 of the '755 Patent is representative:

7. A food processor comprising:

   a housing having a first opening for introduction of food products and a second opening for discharging processed food products;

   a cutting member rotatably mounted within said housing, said cutting member comprising:

   a plastic hollow blade holder having a central axis of rotation, a closed end having an integrally formed driven member and an open end and a plurality of arcuate wall sections extending from said closed end to said open end and spaced circumferentially about said axis of rotation;

   at least one metal cutting blade member integrally and permanently molded into said blade holder between said arcuate wall sections and having openings through which processed items pass into the hollow interior of said holder;

   means on said housing for supporting said blade holder proximate its open end;

   means for rotatably driving said cutting member whereby food products are processed and discharged through said open end of said holder. [Emphasis added.]

In Markman v. Westview this court held that the appellate court must construe, de novo, the meaning and scope of disputed terms in the claims. F.3d at , 34 USPQ2d at 1329. This court on appeal will interpret the meaning and scope of the claim term as a matter of law. Id.

Black & Decker argues that the '755 Patent claims should be interpreted to require a structure distinct from the housing for supporting the open end of the cutting member. Such an interpretation could avoid infringement by the HSS-60, wherein a lip on the housing provides support for the open end of the cutting member. We do not agree with this view. The supporting structure in the '755 Patent is claimed in "means-plus-function" form in claims 7 and 8, and in descriptive form in claim 14. In claim 7 the term is "means on said housing for supporting said blade holder proximate its open end." In claim 8 the term is "housing farther having means for supporting the cutting member proximate the second opening of the housing." In claim 14 the term is "support member at the second opening of the housing," not in means-plus-function form. Although different usages in different claims are presumed to have different meanings, Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023, 4 USPQ2d 1283, 1288 (Fed. Cir. 1987), and each claim must be construed independently, in this case any difference in the meaning of the supporting means or support member in the several claims does not affect our conclusion.

Claims 7 and 8 are written in the means-plus-function form authorized by 35 U.S.C. § 112 P 6. Literal infringement is made out when an accused device performs the function stated in a claim clause written in means-plus-function form, by means of structure, material, or acts described in the specification or an equivalent thereof. Texas Instruments, Inc. v. United States Int'l Trade Comm'n, 805 F.2d 1558, 1562, 231 USPQ 833, 834-35 (Fed. Cir. 1986). The supporting means described in the '755 specification is a retaining ring that is attached to ridges in the housing. Presto argues that this description means that the cutting member is directly supported by the retaining ring and indirectly supported by the housing. Black & Decker argues that the '755 claims should be construed to require that the supporting structure on the housing is separate from the
housing, and therefore that the claims can not reach Black & Decker's HSS-60 wherein the supporting means is a lip of the housing on which the cutting member rests, while a retaining ring holds the cutting member within the housing. Black & Decker argues that because claim 7 requires a supporting means "on said housing", only a support not attached to the housing can be "on" the housing.

We do not share Black & Decker's interpretation of the term "on". Neither the specification nor the prosecution history requires or suggests that the support "on" the housing is a separate entity from the housing. Applying the ordinary meaning of words, a supporting means "on" a housing may be integral with or attached to the housing. See ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1579, 6 USPQ2d 1557, 1560 (Fed. Cir. 1988) ("terms of a claim will be given their ordinary meaning, unless it appears that the inventor used them differently.") Indeed, both sides acknowledge that being "on" does not necessarily mean separate entities.

We conclude as a matter of law, see Markman, supra that the correct interpretation is that the supporting means on the housing need not be a separate entity from the housing.

The second issue of claim construction raised by appellants is that the district court incorrectly construed the phrases "said labelled reagent is dry on said test strip" and "drying said labelled reagent onto a portion of said test strip." Opinion at 12. Appellants argue, however, that the phrase should be more broadly construed to include disposition of the labelled reagent within the test strip.

We begin claim construction analysis with the ordinary meaning of the disputed claim term. Tex. Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 2002 U.S. App. LEXIS 21567, *1, No. 02-1032 (Fed. Cir. Oct. 16, 2002); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 USPQ2d 1573, 1576 (Fed. Cir. 1996). It is well settled that dictionary definitions provide evidence of a claim term's "ordinary meaning." Tex. Digital Sys., 2002 U.S App. LEXIS 21567 at *1; CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366, 62 USPQ2d 1658, 1662 (Fed. Cir. 2002) (citing Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1344, 60 USPQ2d 1851, 1855 (Fed. Cir. 2001)). Potentially relevant dictionaries include dictionaries of the English language (providing general definitions and usages) and technical dictionaries, encyclopedias, and treatises (providing specialized meanings as used in particular fields of art). The parties here do not argue that the terms "on" and "onto" have established specialized meanings, and we agree that "on" and "onto" have no such specialized meanings. Accordingly, standard dictionaries of the English language are the proper source of ordinary meaning of the phrase.

We may look, therefore, to the dictionary definitions of the claim terms "on" and "onto" as of the date the patents issued. 2 Webster's provides the relevant definition of "onto" as "to a position or point on or upon . . . in position on." Webster's 3d Int'l Dict. 1577 (1968) ("Webster’s"). The Oxford English Dictionary provides a substantially identical definition, "to a position on or upon." 2 The Shorter Oxford English Dictionary 1371 (3d ed. 1947) ("OED"). The definition of "onto," therefore, refers to the word "on" as part of its definition, such that both prepositions are properly addressed through the interpretation of "on."

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We conclude as a matter of law, see Markman, supra that the correct interpretation is that the supporting means on the housing need not be a separate entity from the housing.

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2 Our decisions have not always been consistent as to whether the pertinent date is the filing date of the application or the issue date of the patent. Compare Tex. Digital Sys., 2002 U.S. App. LEXIS 21567 at *1, with Schering Corp. v. Amgen, Inc., 222 F.3d 1347, 1353, 55 USPQ2d 1650, 1654 (Fed. Cir. 2000). No party here has suggested that the pertinent dates changed between the application and issuance dates.
In reaching its construction of the word "on" the district court referred to the definition "used as a function word to indicate position in contact with and supported by the top surface of." Opinion at 12 (citing Merriam Webster's Collegiate Dict. (10th ed. 1997)). The standard dictionaries provide a number of definitions of "on" in positional, functional, and temporal contexts. "Where there are several common meanings for a claim term, the patent disclosure serves to point away from the improper meanings and toward the proper meanings." Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250, 48 USPQ2d 1117, 1122 (Fed. Cir. 1998); see also Tex. Digital Sys., 2002 U.S. App. LEXIS 21567 at *1. It is simple to rule out many of the definitions of "on" as contextually irrelevant, e.g., "occurrence during the course of a specified day." Webster's at 1574. Here there are two possibly pertinent definitions. One is the definition supported by appellee and adopted by the district court: "used as a function word to indicate position over and in contact with that which supports from beneath." Id.; The other is a definition of the term "on" encompassing internal positioning, providing: "used as a function word to indicate presence within." Webster's at 1574.

In such situations, a word that has an ordinary meaning encompassing two relevant alternatives may be construed to encompass both alternatives. Rexnord, 274 F.3d at 1343, 60 USPQ2d at 1855 (holding that the claim term "portion" may be interpreted to encompass both "separate" or "integral"). However, before finally concluding that the term encompasses both meanings, we must determine whether the specification or prosecution history clearly demonstrates that only one of the multiple meanings was intended. See Renishaw, 158 F.3d at 1250, 48 USPQ2d at 1122. 

Appellee asserts that the specifications of the patents-in-suit show that the term "on" was used in a limited sense to mean only surface deposition. Specifically, appellee argues that:

the specification clearly shows by Fig. 10 and otherwise describes the labelled reagent dried on the test strip as a surface layer in the presence of sugar: "The labelled reagent [is] applied to the carrier as a surface layer" (A70, col. 6, lns. 58-63); "the test strip surface . . . carries a glaze 519 on which is deposited a layer 520 of labelled . . . reagent" (A74, col. 13, lns. 45-48); "labelled antibody . . . [is] applied . . . directly on top of the [sugar] sublayer" on the test strip (A76, col. 17, ln. 63 to col. 18, ln. 4).

Appellee's Br. at 31. In effect, appellee argues that only surface deposition was disclosed, and that therefore, only surface deposition could have been intended by the use of the word "on."

The surface layer disposition is disclosed as a preferred embodiment of the invention, however, it is not the sole embodiment disclosed. Impregnation within the thickness of the test strip is also disclosed. The specification states, "it is preferable for the labelled reagent to be applied to the carrier as a surface layer, rather than being impregnated in the thickness of the carrier." '871 patent, col. 6, ll. 59-62 (emphasis added). 4 It is improper to limit the claim based on a preferred embodiment of the invention. Turbocare v. Gen. Elec. Co., 264 F.3d at 1111, 1123, 60 USPQ2d 1017, 1026 (Fed. Cir. 2001) (citing Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865, 9 USPQ2d 1289, 1299 (Fed. Cir. 1988), cert. denied, 490 U.S. 1068, 104 L. Ed. 2d 634, 109 S. Ct. 2069 (1989) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations.").

The patent also discloses that the labelled reagent, even if provided as the preferred surface layer, "may also penetrate the
strip." 871 patent, col. 13, ll. 54-55. We find this particular reference to be unhelpful because it is ambiguous as to whether it is referring merely to incidental penetration or to impregnation.

Appellee also cites to the prosecution histories of the patents as suggesting a limited use of the words "on" and "onto." Appellee argues that "in rejecting broader claims, the examiner stated that the only enablement for mobilizing the labelled reagent was 'as a surface layer by means of soluble glazing techniques as instantly described.'" Appellee's Br. at 36.

Appellee asserts that in response to this rejection the patentee amended the claims to require "wherein mobility of said labelled reagent within said test strip is facilitated by at least one of 1) coating at least a portion of said test strip with, and 2) drying said labelled reagent onto said test strip in the presence of, a material comprising a sugar." Appellee's Br. at 36.

Appellee effectively argues that by amending the claim in response to the examiner's rejection, which stated that only the glazing method was enabled, appellants disclaimed any interpretation broader than the enabled glazing embodiment.

To be sure, failure to object to an examiner's interpretation of a claim ordinarily disclaims a broader interpretation. See Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 979, 52 USPQ2d 1109, 1113-14 (Fed. Cir. 1999), cert. denied, 529 U.S. 1066, 146 L. Ed. 2d 482, 120 S. Ct. 1672 (2000) (holding that failure to respond to an examiner's reason for allowance functioned as a disavowal of a different interpretation of the claim). The passage from the prosecution history cited by appellee, however, was not the entirety of the examiner's rejection, which continued:

Thus, the disclosed glazing method of providing particulate labelled reagent is required for resolubilization and mobilization of the dried particulate labelled reagent. (In the alternative, Applicant is invited to provide evidence that the prior art recognized a number of equivalent pretreatment/application techniques for providing mobilizable/ resolubilizable dried particulate labelled reagents in a conventional porous test strip capable of capillary transport).

Office Action of Dec. 16, 1994 at 5 (emphasis added). 5 Based on the underscored language, during oral argument appellants asserted for the first time an alternative interpretation of the prosecution history.

5 When the claim was amended the applicant quoted the examiner's rejection and stated that the claims were amended in response thereto, stating that:

According to the examiner,

the disclosed glazing method of providing particulate labelled reagent is required for resolubilization and mobilization of the dried particulate labelled reagent. . . .

In response, claims 39, 70, and 75 have been amended hereinabove . . .

In making the rejection under § 112, first paragraph, the Examiner has correctly noted an existing problem within the art. That is, it is true that particle mobility may be constrained by interactions between the particles and the surrounding surfaces. Consequently, to achieve optimal particle mobility it is important to reduce any interaction between the particulate labelled reagent and the material forming the strip. In seeking to address this problem in the instant immunoassay invention, the inventors discovered unexpectedly that sugars were effective in avoiding those interactions.

Amendment of June 9, 1995, to the '313 application at 15.

On September 3, 2002, appellee filed a motion to preclude consideration of the argument on the ground that appellants failed to raise the argument before the district court or in its briefs on appeal or, in the alternative, "[to] consider its response contained in the . . . motion." (Appellee's Mot. at 19.) "[A] waiver may occur if a party raises a new issue on appeal, as by, e.g., presenting a new question of claim scope. . . . A waiver will not necessarily occur, however, if a party simply presented new or additional arguments in support of the scope of its claim construction, on appeal." CCS Fitness, 288 F.3d at 1370-
As we understand it, appellants' theory is as follows: at the time of the examiner's rejection of the claim it failed to recite a sugar glaze as an element of the claimed device, without which the examiner determined the claims were not enabled. While the examiner interpreted the sugar glaze as the only enabled embodiment, he invited the applicant to provide evidence of art-recognized equivalents. In amending the claim language to include the two methods finally claimed, the applicant was making reference to two prior art methods, those disclosed in European Patent No. 0 183 442 to Stiso ("Stiso") and U.S. Patent No. 5,120,643 to Ching et al. ("Ching").

The Stiso and Ching patents were cited by the examiner as prior art to the patents-in-suit in the Office Action just prior to the amendment in question. Stiso teaches that a disclosed testing device "can be coated with a wide variety of materials . . . [which] may include . . . sugars or the like, which are used particularly to enhance the stability of the materials . . . ." Stiso at 20-21. Appellants argue that the first alternative recitation, which provides for the "coating . . . said test strip," corresponds to the prior art coating method of Stiso. The abstract of Ching provides:

impregnation of solid substrate materials with labile protein materials including colloidal particle and enzyme labelled reagents in the presence of meta-soluble proteins provides for the rapid resolubilization of such materials which have been dried onto such substrate materials.

(emphasis added). This passage of Ching equates the use of the phrase "impregnation . . . [of] labelled reagents in the presence of meta-soluble proteins" with being "dried onto [the] substrate materials." Appellants argue that the prior art teaching of Ching corresponds to the second alternative recitation in the claim, which provides for the reagent being "dried onto [the] substrate."

Appellants argue that the examiner's rejection referred to a single enabled embodiment, but the patentee expressly amended the claim to recite two distinct embodiments, "coating at least a portion of said test strip" or "drying said labelled reagent onto a portion of said test strip." Appellants urge that the first recitation clearly corresponds to the glazing method referred to by the examiner, and that the second recitation is distinct in language from the first and is properly construed as reciting a different aspect of the invention, namely impregnation. See CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co. KG, 224 F.3d 1308, 1317, 55 USPQ2d 1804, 1810 (Fed. Cir. 2000) ("In the absence of any evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings.").

Although we are not convinced that the appellants' reading of the history is the only plausible reading, 6 we are also not convinced that the prosecution history demonstrates that the patentee clearly was using the disputed language in a limited sense that would foreclose the broader dictionary definitions that encompass both surface and internal positioning. It is inappropriate to limit a broad definition of a claim term based on prosecution history that is itself ambiguous. As we recently said in Schwing, "although prosecution history can be a useful tool for interpreting claim terms, it cannot be used to limit the scope of a claim unless the applicant took a position before the PTO that would lead a competitor to believe that the applicant had disavowed coverage of the relevant subject matter." Schwing GmbH v. Putzmeister Aktiengesellschaft, 305 F.3d 1318, 2002 U.S. App. LEXIS 20205, *1, No. 01-1615 (Fed. Cir. Sept. 24, 2002) (citations omitted).

--- Footnotes ---

6 As noted above, there is another plausible reading of the claim language as encompassing two alternative embodiments of surface positioning. Ante at n.3.

--- End Footnotes ---

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Accordingly, the plain meaning of the recitations "on" and "onto" must control, whereby disposition of the labelled reagent "on" or "onto" the test strip means disposition as a surface layer or within the test strip. The claim construction used by the district court in reaching summary judgment of non-infringement having been incorrect, the judgment is vacated. The case is remanded to the district court for consideration of any remaining issues including issues of claim construction not addressed in this opinion and issues of validity and infringement of the claims as correctly construed.

The most basic of the 158 Patent's disputed terms is the term "on" in the following limitation: "at least one top horizontal
Thermal claims that "on" signifies that the top horizontal baffle is supported by the horizontal rack structure. (Doc. 69 at 10-11). Dade counters that "on" need not mean that those items touch one another; rather, "on" may signify that the top horizontal baffle is elevated above but in close proximity to the horizontal rack structure. (Doc. 67 at 10).

The full ordinary meaning of a term is presumptively the meaning the term carries in a patent. See Johnson Worldwide Assocs., Inc., v. Zebco Corp., 175 F.3d 985, 989 (Fed. Cir. 1999). Among the foregoing interpretations of the term "on," Thermal's uses the ordinary meaning, and Dade's uses a figurative one. To support its interpretation, Dade argues that "vertical seals" positioned beneath the top horizontal baffle could provide independent support for the baffle. (See Doc. 68, Ex. 2, fig. 1, items 26-27). Yet the Claim itself provides no structure for, nor does it even mention, vertical seals. Instead, the vertical seals to which Dade refers are described in the 158 Patent's specification as extending down from the top horizontal baffle, 7 and all relevant indicators suggest that those vertical seals are themselves supported by the horizontal rack structure. 8 Dade's construction is strained to say the least. The top horizontal baffle is not simply near the horizontal rack structure.

The term "on" in Claim 1 means "on, that is, supported by,..."

To put the top horizontal baffle in perspective, at least one pressurizer (fan) 9 rests centrally on the top horizontal baffle, (Doc. 68, Ex. 2, claim 11); the baffle, itself, rests centrally on the horizontal rack structure, (id. cl.1k); the horizontal rack structure spans between, and rests on, at least two rack pillars, (id. cl.1j); the horizontal rack structure is thereby suspended vertically above an area of space between the rack pillars, separated wide enough to receive two pallets juxtaposed on opposite sides of a "central circulation section," (id. cls. 1g,j). Consistent with these structural limitations, the top horizontal baffle, and pressurizer(s), are centrally suspended above a "central circulation section." The term "on" in Claim 1 means "on, that is, supported by,..."

9 Dade indicates that a "pressurizer" is a fan. (Doc. 67 at 11)

We agree with Outlast that the district court erred in its construction of the asserted claims. First, we do not think that the patentees clearly disclaimed impregnated materials or materials made by an impregnation process 4 during prosecution of the '801 patent. It is true that in distinguishing Woo the patentees stated that the present invention is a coating that is applied to the surface or the substrate (i. e., the fabric or the fiber) and is intended to remain on the surface.

Summary Judgment, 298 F. Supp. 2d at 1122. However, as already noted, the patentees went on to state that

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in the present invention, the microcapsules are placed on the surface of the substrate as well as within the interstices of the substrate, should there be any such interstices.

Id. These seemingly contradictory statements do not unequivocally or unambiguously disclaim articles in which the microcapsules are impregnated within the interstices of the substrate. On the contrary, such contradictory statements are indicative of ambiguity. 5

4 We note that, absent clear and unambiguous evidence to the contrary, a product claim is not limited to, or does not exclude, products made by a particular process. See Vanguard Prods. Corp. v. Parker Hannifin Corp., 234 F.3d 1370, 1372 (Fed. Cir. 2000).

5 Contrary to Frisby's contention, our decision in Springs Window, supra, in no way suggests that we should ignore the second of two conflicting statements in the prosecution history.

The district court ignored the second statement on the ground that it could not overcome the substantive effect of the prior statement. Id. The court indicated that this was because, after the patentees amended the claim to overcome the first obviousness rejection, "the examiner found that application of microcapsules by impregnation was obvious under Woo, and the patentees were required following the second rejection to give up application by impregnation to gain patentability." Id. This, however, is not necessarily true. Woo appeared to disclose an article in which all of the microcapsules were impregnated within the fabric, i.e., no microcapsules remained on the surface of the fabric. The patentees' statement can consequently be interpreted as distinguishing Woo on that ground, i.e., on the more limited ground that, unlike Woo, in the claimed invention microcapsules are not only dispersed within the interstices of the fabric but also on the surface of the fabric. Indeed, in the same paragraph in which the patentees stated that the microcapsules were intended to remain on the surface of the fabric, they also stated that

the present invention allows a much greater quantity of microcapsules to be located on the substrate since the entire surface and not only the interstices between fibers is available for capsule loading.

(J. A. at 211.) In short, the prosecution history does not provide unambiguous evidence that the patentees disclaimed all impregnated fabrics or fabrics made by an impregnation process.

Second, we are also not persuaded by Frisby's argument that the plain language of the claim requires the article to consist essentially of a surface coated fabric or fiber. The claim does require that the article consist essentially of a base material and a coating. However, with respect to the coating, the claim expressly states that the coating must merely cover "at least a portion of the surface of said base material." '801 patent, col. 5, ll. 40-41 (emphasis added). Nor does the fact that the base material limitation is written in Markush format have a material effect on our construction because it merely requires the base material to consist of a fabric or a fiber. Therefore, if the base material is fabric, the claim requires at least a portion of the fabric's surface to be covered by the coating. However, it does not preclude the coating from also being dispersed within the interstices of the fabric.

In sum, we hold that "on the surface of said base material" does not exclude articles in which microcapsules are dispersed within the fabric, whether by impregnation or some other process. The limitation simply means that the coating (i.e., the mixture of microcapsules and polymeric binder) is dispersed on at least a portion of the surface of the base material, irrespective of whether the coating is also dispersed within the interstices of the base material.
Microthin argues that "printing a design or logo to show on the upper surface of the mat" means "a design or logo reverse printed on the lower surface of the mat such that it can be seen through the mat on the upper surface and can be viewed correctly through the upper surface." SiliconeZone contends that the phrase requires no construction and urges the Court to accept the plain and ordinary meaning in the context of the claim language.

For the reasons discussed in relation to the '311 Patent above, the Court will not read into the claim that the image must be "reverse-printed" such that it may be "correctly viewed" through the upper surface. However, the written description at least requires the printing to be on the lower surface such that the image may be seen through the upper surface. Therefore, "printing a design or logo to show on the upper surface of the mat" means "printing a design or logo on the lower surface of the mat such that it can be seen through the mat on the upper surface."

1. Claim Term One - "One End"

The term "one end" is found in all of the disputed claims. Plaintiff asks this Court to construe the term as encompassing any free end of the rod, not limited to a single end. Plaintiff bases its argument on dictionary definitions from Miriam Webster's Ninth New Collegiate Dictionary and The New Shorter Oxford English Dictionary, as well as the specific claims and figures in the '704 and '057 patents. Plaintiff also introduces extrinsic evidence in the form of the Federal Circuit's November 18, 2003, decision and expert testimony from R. Lee Rawls.

Defendant asks this Court to construe the term as limited to a single tip of the rod. Defendant bases its argument on a dictionary definition from Merriam Webster's Ninth New Collegiate Dictionary, as well as the specific claims and figures in the '704 and '057 patents. Defendant also introduces extrinsic evidence in the form of Judge Pechman's October 6, 2003, Order Granting Summary Judgment of No Infringement Under the Doctrine of Equivalents, and expert testimony from Evan R. Flavell.

The Court finds plaintiff's argument more persuasive. The patent claims:

In an exercise machine: a base, a plurality for resilient rods mounted on the base in cantilevered fashion with one end of each of the rods being free, a flexible cable adapted to be pulled upon by a person using the machine, and means for connecting the cable selectively to one or more of the rods so that the rods to which the cable is connected bend in bow-like fashion and thereby produce a force which opposes the pull on the cable, the magnitude of the force depending at least in part upon the number of rods to which the cable is connected.

'057 Patent at 7:50-60 (emphasis added). The pertinent language is also used in the '704 patent claims. '704 Patent at 7:30-33. In the context of the patent, the Court finds that the term "one end" means one portion or section of a rod that includes one of the rod's two extremities. Both parties have presented the same dictionary definition of "one" which means "a single particular unit." Merriam Webster's Ninth New Collegiate Dictionary, at 824 (1990). However, plaintiff also points to the definition of the word "end" meaning "a part of anything which includes either of its two extremities." The New Shorter Oxford English Dictionary, at 815 (1993). In this case, a broader definition of "one end" is the most consistent with the use of the words by the inventor. See Tehrani v. Hamilton Medical, Inc., 331 F.3d 1355, 1361 (Fed. Cir. 2003). In the detailed description portion of the patent, the inventor envisions rods with free ends that allow the rods to bend in a bow-like fashion in order to produce resistance. '704 Patent at 3:58-4:10 and '057 Patent at 3:31-54. This description does not preclude rods that have more than one free end.

Furthermore, this broader definition is consistent with the Federal Circuit's prior ruling in this case, in which that Court explained that a rod with two free ends literally includes one free end, and therefore, the limitation of the term requires only at least one free end. (Dkt. # 243, Ex. 1 at 6). Finally, plaintiff's expert, Mr. Rawls, has testified that a person of ordinary skill in the art would understand the term "one" to mean one or more than one. (Dkts. # 303 at 5 and # 316 at 5-6).

Accordingly, this Court construes the term "one end" to encompass a rod with two free ends, and the term "end" to encompass a portion of the rod that includes either of its two extremities.
C. The "One of" Limitations

Claim 6 claims:

An energy-absorption system comprising:

a terminal including an impact head ["Limitation 1"]; and

a cutable member having an axis ["Limitation 3"]; said energy-absorption terminal including one of the cutting section and cutable member ["Limitation 4"]; said one of said cutting section and cutable member being positioned in the energy-absorption terminal aligned with the impact head and the other of said cutting section and cutable member ["Limitation 5"]; said energy-absorbing terminal including one of the cutable member and the cutting section aligned with each other wherein the cutable member, and cutting section are forced together when the impact head of the energy-absorbing terminal is impacted by a vehicle ["Limitation 6"]; said cutting section including cutting means positioned to cut said cutable member as the cutable member and cutting section are moved with respect to each other by the impact head ["Limitation 7"].

('003 Patent, col. 9, ln.50-col. 10, ln.2).

The parties dispute the construction of Limitations 4, 5, and 6. As to Limitation 4, KEI contends that the "energy absorbing terminal" must include at least one or both of the "cutting section" or the "cutable member." (Docket Entry No. 75, p. 18). Trinity contends that the "energy absorbing terminal" includes either the "cutting section" or the "cutable member." (Docket Entry No. 76, p. 10). As to Limitations 5 and 6, KEI contends that at least one or both of the "cutting section" and "cutable member" must be positioned in the "energy absorbing terminal." (Docket Entry No. 75, p. 18). Trinity proposes that this court construe these limitations as requiring either the "cutting section" or the "cutable member" be positioned in the "energy-absorption terminal" and that the "energy absorbing terminal" include either the "cutable member" or "cutting section." (Docket Entry No. 76, p. 11).

The plain language of the limitations is imprecise. Claim 6 uses the term "comprising," which "signifie[s] that the claims do not exclude the presence in the accused apparatus of or method of factors in addition to those explicitly recited." Vivid Techs., Inc. v. American Science & Eng'g, Inc., 200 F.3d 795, 811 (Fed. Cir. 1999); Stiftung v. Renishaw PLC, 945 F.2d 1173, 1178 (Fed. Cir. 1991)(a claim "which uses the term 'comprising' is an open claim which will read on devices which add additional elements"). KEI contends that the limitation that the energy-absorption terminal include "one of the cutting section and cutable member" does not exclude the possibility that the terminal will include both the cutting section and cutable member.

Limitations 4, 5, and 6 also use the term "one of." Trinity contends that the phrase "one of said cutting section and cutable member" should be construed to mean that the terminal contains either the cutting section or cutable member, but not both. Trinity argues that the definition of the word "one" as "being a single unit or entire being and no more" supports this construction. (Docket Entry No. 77, Ex. F at T03027).

Trinity cites WMS Gaming, Inc. v. Int'l Game Tech., 184 F.3d 1339 (Fed. Cir. 1999) in support of its proposed construction of the "one of" limitations. WMS Gaming involved a patent on a type of electronic slot machine that could decrease the probability of winning through electronic circuitry. Each symbol or "stop position" on the reels of the slot machine was assigned one or more random numbers. The electronics would select a number at random from the list of randomly assigned
A person of ordinary skill in the art might select the cutting section to include in the terminal to satisfy Limitation 4, which requires that the terminal "include one of the cutting section and cuttable member." The phrase "said one of said cutting section and cuttable member" of Limitation 5 refers to the cutting section in this example. This makes "the other" element of Limitation 5 the cuttable member. In this example, the cutting section is placed in the terminal aligned with the impact head and the cuttable member. The cuttable member may or may not be included in the terminal. Limitations 4, 5, and 6 do not require that in this example the cuttable member be included in the terminal, but they do not exclude the possibility that the cuttable member is also included in the terminal.

This interpretation is consistent with the specification. The guardrail or structural pipe serving as the cuttable member could be notched at the places where the cutting section will cut on impact, and the cutting section and cuttable member could be fit snugly together, or perhaps even spot-welded together, such that both the cuttable member and the cutting section are included in the terminal. Figure 10 of the '003 Patent shows an example cuttable member with three slots into which the cutters of the cutting section fit. The cuttable member and the cutting section each starts within the terminal, but only the cutting section is attached to the impact head, such that on impact, the impact head and the cutting section move relative to the cuttable member and the cutting section cuts the cuttable member.

This court construes the limitation stating that "said energy-absorption terminal including one of the cutting section and cuttable member" as requiring that the energy-absorption terminal include either the cutting section or the cuttable member, and that the terminal may include both the cutting section and the cuttable member. Similarly, the limitation "said energy-absorbing terminal including one of the cuttable member and the cutting section numbers to determine which position would be the stop position for a given use, that is, which symbol would appear after the user pulled the slot. The patent contained a limitation that claimed a "means for randomly selecting one of said plurality of numbers," which described the step in which the electronics picked a number from the list of randomly selected numbers to determine which symbol would appear. The WMS Gaming court stated that the limitation -- "means for randomly selecting one of said plurality of numbers" -- claimed a step in which the random number generator randomly selected a single number from the list of numbers. Id. at 1349. Citing WMS Gaming, Trinity asserts that the phrase "said energy-absorption terminal including one of the cutting section and cutting member" in the '003 Patent must be construed as including either the cutting section or the cuttable member, but not both.

WMS Gaming is distinguishable and does not apply to the facts of this case. WMS Gaming involved the construction of means-plus-function claims, which are not present in this case. It was clear from the invention in WMS Gaming that a single number was being selected; the court did not engage in an extensive construction of the term "one of." The claim in WMS Gaming would make no sense if it was construed as meaning that the claimed function could select more than one number; once a single number was selected and a stop position determined, the function was complete. By contrast, it would be possible for the terminal to contain both the cutting section and cutting member. Limitation 4 requires only that one of the cutting section or cuttable member be present in the terminal; it does not exclude the possibility that both are present in the terminal.

Limitation 4 requires that "said energy-absorption terminal" include "one of the cutting section and cutting member." Limitation 5 states that "said one of said cutting section and cuttable member being positioned in the energy-absorption terminal aligned with the impact head and the other of said cutting section and cuttable member." The term "said one of said cutting section and cuttable member" refers back to Limitation 4. Limitation 4 is a list: the energy-absorption terminal must include one of the cutting section and cuttable member. The person of ordinary skill in the art must select one of the cutting section and cuttable member to include in the terminal. Limitation 5 instructs the person of ordinary skill in the art to take whichever of the cutting section and cuttable member he or she selected as having to be in the terminal and position that item in the terminal such that it is "aligned with the impact head (also a part of the terminal per the language of claim 6) and the other of said cutting section and cuttable member." "The other of said cutting section and cuttable member" refers to whichever of the cutting section and cuttable means the person of ordinary skill in the art did not select as having to be in the terminal. That element could be positioned in the terminal, but the claim limitations do not require that result. The claim limitations only require that "the other" element, which the person of ordinary skill in the art chooses not to include in the terminal, must be aligned with the element that the person did choose to be in the terminal.

Similarly, the limitation "said energy-absorption terminal including one of the cutting section and cuttable member" as requiring that the energy-absorption terminal include either the cutting section or the cuttable member, and that the terminal may include both the cutting section and the cuttable member. Similarly, the limitation "said energy-absorbing terminal including one of the cuttable member and the cutting section
aligned with each other wherein the cutable member, and cutting section are forced together when the impact head of the energy-absorbing terminal is impacted by a vehicle" requires that either the cutting section or cutable member must be present in the terminal, and both may be present in the terminal.

To summarize, Limitations 4, 5, and 6 do not exclude a configuration in which both the cutting section and cutable means are included in the terminal.

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G. Wherein a predefined one of the positions on the riser card has both ISA type and PCI type expansion connectors associated therewith

1. Parties' positions

The parties dispute whether this phrase limits the number of combi-connectors to one, and only one, or whether it is merely a requirement that there be at least one combi-connector. Tulip's proposed construction is that the disputed phrase means that "at least one position on the riser card is a combination slot (or combi-connector) that has both an ISA type connector and a PCI type connector." 124 Dell argues that "the phrase requires one and only one expansion position on the riser card that includes a combination of both an ISA type and a PCI type expansion connector." 125

Tulip suggests that the disputed phrase requires that there be a combi-connector on the riser card but does not limit the invention to including only one combi-connector. Tulip contends that Dell's proposed construction has the effect of adding the words "and only one" to the claims. Tulip argues Dell's construction reads an improper unstated limitation into the language of the claims. Furthermore, Tulip insists that maintaining the effect of the applicant's open transitional language is particularly appropriate here, as Tulip never amended its claims to limit the invention to having a single combination connector and there is no prior art in the prosecution history having multiple combination connectors on a riser card that a limitation to a single combi-connector would avoid.

Dell states the clear meaning of the word "one" limits the meaning of the disputed phrase to "one and only one," 126 and therefore, the disputed phrase limits the claimed invention to one and only one combi-connector. Dell disputes Tulip's assertion that the prosecution history does not distinguish the '621 invention from prior art based on the number of combination connectors on the riser card. During prosecution, Tulip stated that "independent claim 4 [claim 1 of the '621 patent as issued] … contains suitable recitations directed to the distinguishing aspects of the present invention--with those recitations being shown in bolded type." 127 The phrase "wherein a predefined one of the positions" was among the bolded type. 128 Dell contends this shows that Tulip considered "a predefined one" combi-connection to be one of its invention's distinguishing characteristics. Dell also notes that the claims at issue demonstrate that when Tulip contemplated more than one slot of a particular type on the riser card it drafted language to so provide. Both claims 1 and 2 include the language:

wherein a predefined one of the positions on the riser card has both ISA type and PCI type expansion connectors associated therewith and situated one above another so as to accommodate either an ISA type or a PCI type expansion board in said predefined one position, wherein said predefined one position is located on the riser card below at least one of the positions having the ISA type expansion connector and above at least one of the positions having the PCI type expansion connector. 129
Dell contends that Tulip is now attempting to broaden its claim by effectively adding the words "at least" before its reference to the "predefined one" combination connector. Dell also disagrees with Tulip's statement of the affect of the open transitional phrases in the claims at issue. Dell argues that Tulip's use of restrictive claim language with respect to one combi-connector trumps the transitional phrases "comprising" and "having."

--- Footnotes ---
126 See WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1575 (1993) (defining "one" as "a single unit or entire … thing and no more.").
127 D.I. 324, Ex. 2 at TLP2 117286.
128 Id., Ex. 2 at TLP2 117287.
129 '621 at 6:27-35 (claim 1); Id. at 6: (emphasis added).
--- End Footnotes ---

2. Court's construction

The parties are in agreement that the disputed phrase refers to a combi-connector. They disagree over whether the phrase limits the invention to a single combi-connector. The claim elements unambiguously make a distinction between the "predefined one" combi-connector position and "at least one" position for ISA and PCI connectors located above and below the "predefined one" combi-connector position. The word "one" is an adjective describing "a single unit." 130 A "predefined one of the positions on the riser card having both ISA type and PCI expansion connectors [a combi-connector]" would ordinarily be understood to mean a single combi-connector. This understanding is reinforced by claim language describing the location of ISA connectors and PCI connectors relative to the combi-connector which makes it absolutely clear that the invention is not limited to a single dedicated ISA connector and a single dedicated PCI connector. After the "predefined one" combi-connector position is defined as "having both ISA type and PCI type expansion connectors associated therewith and situated one above another so as to accommodate either an ISA type or a PCI type expansion board", that "predefined one position" is described as being located "below at least one of the positions having the ISA type expansion connector and above at least one of the positions having the PCI type expansion connector."

--- Footnotes ---
130 WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1575 (1993).
--- End Footnotes ---

Tulip's proposed construction would broaden the claims to read "at least one predefined" position would have a combi-connector. Unlike the court's earlier determination that the phrases "peripheral side edge" and "side edge" have the same meaning because they clearly reference the same area on the motherboard, here, the "predefined one" combi-connector position and "at least one" position having an ISA connector and "at least one" position having a PCI connector all refer to different areas on the riser card. It would be inappropriate, therefore, for the court to construe "one" to mean the same thing as "at least one." Contrary to Tulip's assertion, Dell's proposed construction, that "a predefined one" combi-connector position means "one and only one" combi-connector position, is not improperly imposing an unstated limitation on the claims at issue. 131 Dell's proposed construction merely applies the ordinary and accustomed meaning to the phrase. One means a single unit. One means one.

--- Footnotes ---
131 See Northern Telecom Ltd. v. Samsung Electronics Corp., 215 F.3d 1281, 1290 (Fed. Cir. 2000). ("This court has repeatedly and clearly held that it will not read unstated limitations into claim language."); Kemco Sales, Inc. v. Control Papers Co., Inc., 208 F.3d 1352, 1362 (Fed. Cir. 2000) ("We are fully cognizant of the need to avoid reading limitations into

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Tulip nevertheless argues that because the claims contain open transitional phrasing ("comprising" and "having"), it would be improper to construe the disputed phrase so as to limit the invention to having a single combi-connector. It is true that claims containing open transitional phrasing are not limited to covering only the elements specifically recited in those claims. 132 Acknowledging that Tulip's patent may cover products having additional elements not recited in its claims is different than agreeing that its claims cover more than the specific number of combi-connector positions claimed, i.e., one. 133 The court does not agree with Tulip's assertion of the effect of open transitional language (that "a predefined one" combi-connector means "at least one" combi-connector) because such interpretation means the words "at least" have no separate meaning when the claims refer to "at least one" ISA connector and "at least one" PCI connector. Having determined that the ordinary and accustomed meaning of the word "one" is a single unit, and that the use of transitional phrasing does not eliminate a self-imposed numerical limitation, the court must consider whether the specification or prosecution history eliminate this limitation.

132 See Crystal Semiconductor Corp., 246 F.3d 1336, 1348 (Fed. Cir. 2001) ("When a patent claim uses the word 'comprising' as its transitional phrase, the use of 'comprising' creates a presumption that the body of the claim is open. In the parlance of patent law, the transition 'comprising' creates a presumption that the recited elements are only a part of the device, that the claim does not exclude additional, unrecited elements. The transition 'having' can also make a claim open.") (citations omitted).

133 Innovad Inc. v. Mirocoft Corp., 260 F.3d 1326, 1333 (Fed. Cir.2001) (finding that "the term 'single,' … precludes the use of multiple switches to perform [a specifically recited function]" even where the preamble recited the transitional phrase "comprising"); see also Novo Nordisk A/ S v. Eli Lilly & Co., 1999 U.S. Dist. LEXIS 18690, No. Civ. A. 98-643 MMS, 1999 WL 1094213, at *12-13 (D.Del. Nov. 18, 1999) (The Novo Nordisk court construed a claim reciting two zinc ions to be limited to two and only two even with transitional phrase "comprising." The court noted that within the same claim the words "at least" preceded "three phenolics" and that "the expression of a limitation in one element of a claim implies the exclusion of that term in other elements of the claim …. In order to give meaning to the choice to use the term 'at least' to modify only 'three phenolics,' claim 1 must mean that a hexamer complex can contain more than three phenolics but not more than two zinc ions per hexamer.").

The language of the specification repeats the same limitation on the number of combi-connectors to "one position" and consistently recites that there is "at least one" ISA connector above "that one position" for a combi-connector and/ or "at least one" PCI connector below "that one position" for a combi-connector. 134 The language of the specification reinforces the plain language of the claims and provides no basis to broaden the scope of those claims. Likewise, nothing in the prosecution history indicates that the court should construe the "predefined one" combi-connector position to mean "at least one" combi-connector position.

134 See 621 at 3:3-13 ("the riser card has one position where either an expansion card of the ISA type or an expansion card of the PCI type can be arranged in that, at that position, a connector of the ISA type and a connector of the PCI type are arranged above each other and parallel to each other; and the riser card comprises above that position at least one position for an expansion card of the ISA type, at which position a connector of the ISA type is arranged, and/ or under that one position at least one position for an expansion card of the PCI type, at which position a connector of the PCI type is arranged"); Id. at 4:6-16 (same).
argument that its invention taught a riser card having only a single combi-connector. Although the court agrees it did not make that argument, that fact is irrelevant. 135 The fact that Tulip did not make that argument means that the court would not otherwise limit the '621 patent's coverage to single combi-connector riser cards had the claim language itself not so limited the patent's scope of coverage. The opposite does not follow. Just because Tulip did not need to distinguish its invention based on a particular claim element does not mean that its patent claims are entitled to broader coverage than the limitations clearly recited in those claims.

--- Footnotes ---

135 Dell's contention that the prosecution history reveals that Tulip did limit its claims to a riser card with a single combi-connector position because "a predefined one of the positions" was among bolded type used by Tulip to designate the distinguishing aspects of its invention is misleading. The entirety of the disputed phrase is bolded. That phrase is not otherwise defined in the prosecution history and the task of determining the meaning of the phrase now rests with this court.

--- End Footnotes ---

The ordinary and accustomed meaning of the word "one" is a single unit. Nothing in the specification or prosecution history contradict this ordinary meaning. Consequently, the court construes the phrase "wherein a predefined one of the positions on the riser card has both ISA type and PCI type expansion connectors associated therewith" to mean that the riser card has a single expansion position having a single combi-connector.

--- Footnotes ---

29 The phrase "one or more converters" is used in claims 1, 21, 25, 29, and 30 of the '259 patent.

--- End Footnotes ---

1. ADE's Position

ADE argues that "one or more converters" should be construed according to its plain meaning to mean "one or more components for converting light collected by the collectors into signals, typically electronic signals, which correspond to the amount of light, e.g., PMTs or photodetectors." (D.I. 613 17-18.) ADE further asserts that KLA, once again, attempts to read improper limitations into the construction of this claim language. (Id.) ADE then avers that a patent specification need not "catalogue and describe every possible embodiment [or arrangement of an invention] covered by the [patent] claims …." (Id.)

2. KLA's Position

KLA, on the other hand, argues that "one or more converters" "should be construed to mean: 'one or more separate detectors, each being in optical communication with a separate one of the first and second collectors.'" (D.I. 594 at 19.) KLA directs the Court to the '259 specification in urging adoption of this construction. (Id. at 19-20.) In particular, KLA refers to portions of the '259 specification describing that "each collector must have a converter associated with it." (Id. at 19.) In other words, argues KLA, "the specification describes a one-to-one correlation between collectors … and their respective detectors" and this "one-to-one correlation … is necessary to practice the claimed invention." (Id. at 20.)

3. Analysis

The '259 specification does not specifically define what is meant by a "converter." The claims in which the phrase "one or more converters" appears, however, do give guidance as to the proper construction. Claim 1 of the '259 patent is representative. The fifth element of that claim states that the invention covered by claim 1 employs "one or more converters
for converting the collected light components into respective signals representative of the light scattered into the central zone and oblique zone." (D.I. 627 at '259 Patent col. 12 II. 32-35.) It is clear, therefore, that the "converter" must be capable of transforming collected light into signals that represent the light that was collected. Given this, a person of ordinary skill in the art would reference the specification to determine what physical structures operating in combination could perform such a task, i.e., what did the inventors intend when they used the word "converter" to define their invention.

Both parties directed the Court to a specific passage in the specification to aid its interpretation. (JCCS at 7.) A portion of that passage provides that:

The dark channel detector … further includes a forward channel detector … a center channel detector … and a back channel detector … each respectively positioned in optical communication with a corresponding collector … and means electrically connected to the forward, center and back channel detectors … and responsive to electrical signals from said detectors for determining the presence of a particle [or pit] on the surface … of a workpiece …. The determining means of the collector is preferably electronic signal discrimination circuitry … and understood by those skilled in the art, which receives signals representative of collected light from the light channel detector … and the dark channel detector ….

(D.I. 627, '259 Patent Prosecution File History, '259 Patent at col. 7 II. 46-60.) It appears from the foregoing passage and the claim language surrounding the phrase "one or more converters" that a converter is a detector in optical communication and electrically connected to a corresponding collector. The Court, therefore, construes "converter" to mean a detector in optical communication and electrically connected to a corresponding collector. Accordingly, the phrase "one or more converters" means one or more such detectors in optical communication and electrically connected to one or more corresponding collectors.

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1. "One Piece Lever"

As demonstrated above, various iterations of the phrase "one-piece lever" appear in claims 19 and 21 to indicate a lever that is operatively associated with a piston inside a master cylinder. The lever engages the brake by moving between a rest position and an actuated position. According to SRAM, this term does not need to be construed. Formula disagrees and argues that the term means "a lever consisting of only one piece."

As SRAM points out, the phrase "consisting of" has special meaning when used in a patent: It excludes any unrecited claim element and the reach of a claim using the term is correspondingly very narrow. See CIAS, Inc. v. Alliance Gaming Corp., 504 F.3d 1356, 1360-61 (Fed. Cir. 2007). The ill-considered use of this phrase within a patent claim can have drastic consequences for the scope of the protection afforded to the inventor. See Immunocent, LLC v. Fullbright & Jaworski, LLP, 504 F.3d 1281, 1283 (Fed. Cir. 2007). Consequently, it would be inappropriate to import such a limitation into the claim in the course of litigation when neither the inventor nor the patent examiner deemed it necessary to do so.

Formula also proposes that we construe the term "one piece" to mean "only one piece" but does not offer any persuasive reason why the additional word is necessary. Formula's arguments appear more directed toward a determination of whether specific levers can be considered to be made of one piece or not. Our task at this point of the litigation is to construe the meaning of the claims as a matter of law, not to apply those meanings in particular contexts. See, e.g., Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 1454 (Fed. Cir. 1998). Accordingly, we conclude that the term "one piece" as used in these two claims is not in need of greater elaboration for purposes of claim construction. See Biotec Biologische Naturverpackungen v. Biocorp, Inc., 249 F.3d 1341, 1349 (Fed. Cir. 2001).

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5. "One-piece" (422 Patent, Claim 1)

"One-piece" is construed as "having no parts that separate from the unit during normal operation and containing no parts
that are not integrally formed."

When both terms are given their ordinary meaning, the term "one-piece" is the equivalent of "integral." See, e.g., Rexnord Corp. v. Laitram Corp., 274 F. 3d 1336, 1341, 1344-45 (Fed. Cir. 2001) (equating "integral" with "one-piece"; distinguishing "two-piece structure" from "an 'integral' structure"); Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp., 133 F. Supp. 2d 833, 840 (E.D. Va. 2001) (construing "one piece caliper" as "a caliper constructed or formed as a single, integral piece"). At the claim construction hearing, the parties agreed that when one part of a device is "integrally formed" with another part of the device, the two parts are not connected with mechanical joints. Such definition is consistent with the ordinary meaning of "integral" as distinguished from "two-piece," or "separate." See Rexnord Corp., 274 F. 3d at 1345 (noting "the other two embodiments do not describe two-piece, or separate, constructions"; further noting "words that connote a quality of being 'separate'" include "attachment"); compare 422 Patent, col. 4, II. 65 - col. 5, II. 37 (claiming "one-piece holder" comprising exclusively "integrally formed" parts), with id., col. 6, II. 1-18 (claiming "combination money clip and card holder" comprising both "integrally formed" parts and "pivotally attached" part).

6. "One-Piece Holder" (230 Patent, Claims 1, 7, 13)

"One-piece holder" is construed as "a holder having no parts that separate from the unit during normal operation and containing no parts that are not integrally formed."

A. Claims One and Six

With reference to claims one and six, Danek contends there is neither literal infringement nor infringement under the doctrine of equivalents. AcroMed relies solely on literal infringement, thus the motion is limited thereto.

The infringement issue centers around similar "one-piece" language in claims one and six. Claim one claims, inter alia, that the apparatus used to obtain the desired spatial relationship is comprised of a bone screw, rod, "and a one-piece connector means" used to connect the rod and bone screw. (PX A at column 8, lines 54-55.) (Emphasis added.) Claim six claims an apparatus is used to obtain the desired spatial relationship, comprised of a bone screw, rod, and "a one-piece L-shaped connector member" used to connect the rod and bone screw. (Id. at column 9, lines 42-43.) (Emphasis added.) Danek contends that none of its products contain a "one piece" connector.

The patent description notes "the connector member…is formed from one piece of biocompatible material…." (Id. at column 4, lines 46-47.) The prosecution history further defines "one piece."

The original patent application was received by the PTO on July 24, 1990. The proposed claims in that application did not contain the term "one piece." (DX D at 41-46.) 4 On June 6, 1991, all claims then pending in the application were rejected by the patent examiner. (Id. at 73-76.) The claims were rejected under 35 U.S.C. § 102(e) "as being anticipated by Frigg." (Id. at 74.) The examiner noted specifically that, among other disclosures, Frigg disclosed a connector means, or a connector member. (Id. at 74-76.)
4 Defendants' exhibit D was not paginated. It has been consecutively paginated.

An amended application was filed with the PTO on September 20, 1991. It added the language "a one-piece" to one of the claims. It added the phrase "a one-piece L-shaped connector member" to another claim. (Id. at 78.) In the accompanying remarks, Frigg was distinguished as follows:

In Frigg, a three-piece connector means 9 (Fig. 1) or a two-piece connector means (Fig. 6), interconnects a fastener 12 [bone screw] and a longitudinal member 10 [rod]. The three-piece connector means 9 (Fig. 1) comprises an upper jaw section 14, a lower jaw section 16 and a hook 20. The two-piece connector means (Fig. 6) comprises a block 50 and a hook 20. Accordingly, claim 18 which recites a one-piece connector clearly distinguishes over the prior art and is allowable.

(Id. at 81.)

On January 22, 1992, the patent application was allowed. (DX D at 84-86.) One of the reasons for allowing the patent was as follows:

In accordance with Applicant's definition of "one-piece" [above quoted]...Frigg fails to disclose or suggest a "one-piece" apparatus.

(Id. at 85.)

AcroMed's expert concludes that the "term 'one-piece connector means' requires that the lateral adjustability provided by the connector be accomplished by a single piece (in conjunction with a bone screw)." (PX C at P8.) He does not mention the prosecution history.

In summary, the meaning and scope of claim one requires that the connector, which provides lateral adjustability, be one piece, as distinguished from the two-piece and three-piece connectors disclosed in Frigg.

10. One-Way Snap Lock

The Court now considers the construction of the term "one-way snap lock" that appears in claims 1, 13, 14, 26, and 27 of the '410 patent. The Plaintiffs contend that the term means "a fastening device that closes with a catch and that once closed, cannot be opened by applying the reverse of the motion used to close the device." (Pls.' Open. Br. 35-36.)

Pergo asserts that one-way snap lock means "a lock in which two panels, having abutting vertical surfaces on their locking elements and locking groove, are snapped together by moving one panel horizontally toward the other, and once joined cannot be pulled apart without damaging the joint." (Unilin's Open. Br. 47.) In proposing its definition, Pergo relies on claim 1 of the '410 patent which states "said locking means being constructed so as to operate in as a snap lock in said horizontal direction during assembly of the panels." (Id. (quoting '410 patent, 10:58-60).) Pergo also relies upon the specification statement that "the locking surface 10 of the locking element 8 serves as a stop with respect to the surface of the locking groove 14 closest to the joint edge 4." (Id. (quoting '410 patent, 7:37-39).) Pergo asserts that if one or more surfaces are not vertical, the joint may be pulled together by a horizontal force.

The Plaintiffs' proposed definition is consistent with the claim language and the ordinary meaning of the terms "one-way snap lock." Pergo's suggestion that "vertical" should be included in the definition would improperly read language from the specification describing the preferred embodiment into the claim and is rejected. See Phillips, 415 F.3d at 1323. One-way means permitting in one direction only. Webster's II New Riverside University Dictionary 821. "Snap" means to open or close with a click. Id. at 1100. Considering these ordinary definitions in the context of the claims and specification as a whole, the Court construes "one-way snap lock" as meaning "a fastening device that closes with a catch and that once
I. Literal Infringement

Claim 3, Step 3 recites the step of supplying a dose of respirating gas "only for the duration T[1]." The meaning of Claim 3 and this limitation, in particular, are clear and unambiguous, in view of the claim language itself and other intrinsic evidence. The specification states, in pertinent part, "thus, no respirating gas is applied to the patient during expiration." Resort to extrinsic evidence to interpret Claim 3 in this regard would therefore be improper. Bell & Howell, 132 F.3d at 706; Vitronics, 90 F.3d at 1584-85.

The ImPulse Select device, however, like the Stewart device and the Invacare Venture device, can and does supply a dose of oxygen when a patient exhales. Dkt. no. 84, at 35 et seq. Although very few patients ever experience a pulse of oxygen during exhalation, the fact remains that the ImPulse Select is capable of delivering such a pulse, something the '303 patent states should never happen. I therefore conclude that the ImPulse Select does not meet the claim limitation that T[1] be less than T[2]. The dosing method of the ImPulse Select is simply not the same as the claim limitation of claim 3. Thus, the accused method omits at least one claim limitation recited in Claim 3 and there is no likelihood of literal infringement of that claim. Becton Dickinson, 922 F.2d at 796.

Plaintiff, however, argues that merely pointing out certain operating conditions under which the device may not infringe is insufficient to avoid liability if the device infringes under other circumstances. Canon Computer Sys., Inc. v. Nu-Kote Int'l, Inc., 134 F.3d 1085, 1089, 45 U.S.P.Q.2d (BNA) 1355 (Fed. Cir. 1998). As a general principle, this is unassailable. Simply because, under certain operating conditions, a device does not infringe is not persuasive evidence for defendant because "this has little bearing on whether [the accused infringer's device] will avoid infringement under other foreseeable operating conditions." Id. Rather, "for a manufacturer [of a device], infringement is determined by the use to which the device may reasonably be put or of which it is reasonably capable." Huck Mfg. Co. v. Textron, Inc., 1975 U.S. Dist. LEXIS 12539, 187 U.S.P.Q. (BNA) 388, 408, 1975 WL 21108 (E.D. Mich. 1975).

741 The fact that an accused device that only infringes during certain times of operation nonetheless infringes has been long accepted. If devices "were designed so that they could be operated normally in an infringing way, it would seem to be immaterial that some customers did not choose at times to operate them in that manner." Stearns-Roger Mfg. Co. v. Ruth, 87 F.2d 35, 38 (10th Cir. 1936). "[A] machine that infringes part of the time is an infringement, although it may at other times be so operated as not to infringe." Wright Co. v. Herring-Curtiss Co., 211 F. 654, 655 (2d Cir. 1914).

making a device capable of infringing use constitutes infringement even though it may be capable of some noninfringing use, see Bell Comm. Research, Inc. v. Vitalink Comm. Corp., 55 F.3d 615, 622-23, 34 U.S.P.Q.2d (BNA) 1816 (Fed. Cir. 1995); Kustom Signals, Inc. v. Applied Concepts, Inc., 52 F. Supp. 2d 1260, 1279 (D. Kan. 1999) (citing Bell, 55 F.3d at 622-23), and "it is of no moment that in certain modes of operation . . . [the accused infringing device] may not operate in a way that would infringe the . . . patent. It matters only that the insured device operate in an infringing way at some time]." Interspiro USA, Inc. v. Figgie Int'l, Inc., 815 F. Supp. 1488, 1512, 27 U.S.P.Q.2d (BNA) 1321 (D. Del. 1993), aff'd, 18 F.3d 927, 30 U.S.P.Q.2d (BNA) 1070 (Fed. Cir. 1994). But while true as a basic precept, plaintiff's argument based on this body of law fails to recognize the express claim limitation that the duration T[1] is "less than the duration T[2]," which was reinforced by the patentee's statement in the prosecution history that "gas supply can never last longer than the patient's inspiratory effort." The patentee having limited his claim by the express use of the inequality "less than"--confirmed as a matter of claim construction by the use of the word "never" in the prosecution history--Sunrise as assignee cannot now rely on the above-referenced general authorities to assert that this limitation should be of no effect and that infringement should be found merely because most users experience no oxygen flow during expiration.

For this reason, Canon is distinguishable. There, the claim at issue required an airflow passage and a "first chamber" in the
cartridge, while the accused device had a groove in the cartridge that the plaintiff contended acted as the air flow passage. Defendant submitted that under certain circumstances, the groove did not act as an air flow passage and the accused device did not infringe, although in other foreseeable operating circumstances the device could infringe. But there, the patent did not have limitations in the claim or language in the specification supporting a limitation that would exclude the accused device. In addition, there was no prosecution history in which the patentee specifically excluded certain devices or methods by distinguishing them over the prior art and by using the word "never."

Claim 3 further recites, in Step 2, that the duration \( T[1] \) is "less than the duration \( T[2] \)." The meaning of this limitation is clear from the claim language itself and from the specification. As the patentee states,

an object of this invention is to provide a respirator apparatus and method of operating same wherein respirating gas is supplied to a patient substantially at the beginning of an inspiration and for a time period thereafter which is a fraction of the duration of inspiration.

When in use, the accused device's pulse dose interval can be less than, equal to, or greater than \( T[2] \). Thus, for this additional reason, it is unlikely that there is literal infringement of Claim 3.

D. "For Initiating the Heating of Said Object Only upon . . ."

The parties' next dispute concerns the following term from the claims of the '585 Patent: "for initiating the heating of said object only upon placement of said object proximal to said heater and in a position for RF communication between said tag and said reader." Defendants seek to construe the term to mean the microprocessor will initiate heating of the object when the object is placed (i) proximal to said heater and (ii) in a position where RF communication between said tag and said reader, but not before both (i) and (ii) occur. TSI argues that no further construction is necessary for this term.

By their construction, defendants would limit the scope of the claims to require that two particular steps (placing the object in proximity to the heater and in a certain position to allow RF communication) and nothing more be completed for the heating to commence. Defendants argue that requiring more than a single step promotes safety and efficiency, while requiring only two steps furthers the goal of having an easy auto-start function. TSI responds that the claim language, which provides that heating will be initiated "only" upon placement of the object in proximity and in the proper position, requires
both steps but does not preclude a system in which more than those two steps are required for heating to commence.

Defendants cite only a single excerpt from the patent's specification in support of their urged limitation. That excerpt, however, refers to the completion of the two steps "permitting commencement of the heating cycle." See '585 Patent at 7:5-10. Thus, the specification does not preclude having additional required steps as well. Defendants also cite to the provisional application for the patent and to an affidavit from the inventor that refer to the ease of starting the process, but neither document states that no additional requirements could ever be imposed.

Defendants have not identified any disclaimer or disavowal of claim scope to support this limitation, and thus appear to rely solely on the Microsoft standard here. The specification does not contain any description of the invention as limited in this way, however. Accordingly, the Court rejects defendants' proposed construction and concludes that this term need not be construed further.

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B. Infringement

OSI argues that the district court erred in interpreting claim 1 of the '898 patent to cover gamma units with radiation sources and beam channels located between 0 degrees and 30 degrees. OSI asserts that the claim language "only within a zone extending between latitudes 30 degrees-45 degrees" unambiguously excludes gamma units with radiation sources between 0 degrees and 30 degrees. OSI contends that, even though the preferred embodiment discloses radiation sources between 0 degrees to 45 degrees, claim 1 should be limited to gamma units with radiation sources located exclusively between 30 degrees to 45 degrees because the scope of Elekta's right to exclude is governed by the language of the claims, not by the written description. OSI thus asserts that the district court erred in concluding as a matter of law that its RGS device literally infringes claim 1. Moreover, OSI argues that Elekta is barred by prosecution history estoppel from arguing infringement under the doctrine of equivalents, because coverage of gamma units with radiation sources in the range of 0 degrees to 30 degrees was surrendered in response to an obviousness rejection.

Elekta responds that the district court properly construed claim 1 as covering gamma units with radiation sources that are in a zone having an upper boundary between 30 degrees to 45 degrees. Elekta argues that the plain meaning of the term "extending" is "reaching," which includes 0 degrees to 30 degrees, and that the district court's claim construction is the only interpretation that is consistent with the claim language, the written description, and the prosecution history. Elekta contends that OSI's proposed interpretation is inconsistent with the drawings and the written description, and should not be adopted because it fails to cover the preferred embodiment and would render the claim invalid. Elekta further contends that the district court properly concluded as a matter of law that OSI's RGS device literally infringes claim 1 of the patent.

In interpreting claims, a court should rely upon "the claim language, the written description portion of the specification, the prosecution history, and if necessary to aid the court's understanding of the patent, extrinsic evidence." Gentry, 134 F.3d at 1476, 45 U.S.P.Q.2D (BNA) at 1500. "While we have held many times that a patentee can act as his own lexicographer to specifically define terms of a claim contrary to their ordinary meaning," the written description in such a case must clearly redefine a claim term "so as to put a reasonable competitor or one reasonably skilled in the art on notice that the patentee intended to so redefine that claim term." Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1357, 52 U.S.P.Q.2D (BNA) 1029, 1033 (Fed. Cir. 1999). Absent an express intent to impart a novel meaning, claim terms take on their ordinary meaning. See Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1249, 48 U.S.P.Q.2D (BNA) 1117, 1121 (Fed. Cir. 1998).

We agree with OSI that the district court erred in interpreting claim 1 to include gamma units with radiation sources and beam channels located "beginning at the edge of the helmet (0 degrees) and extending to a point between 30 degrees-45 degrees." The district court erred in its claim construction because it did not accord the claim language its ordinary meaning. Claim 1 explicitly provides that the radiation sources and the beam channels in the gamma unit are located "only within a zone extending between latitudes 30 degrees-45 degrees, as seen from the diametrical plane." '898 patent, col. 3, ll. 26-27 (emphasis added). When given their ordinary meaning, the terms "only" and "extending between" unambiguously limit claim 1 to gamma units with radiation sources and beam channels located in a zone stretching exclusively in the space separating the latitudes 30 degrees and 45 degrees. See, e.g., Webster's New World Dictionary 947 (3d ed. 1988) (defining
"only" as "solely; exclusively"; see id. at 480 (defining "extending" as "to stretch out"); see id. at 134 (defining "between" as "in or through the space that separates (two things)"). While Elekta argues that "extending" should be interpreted as "to reach" rather than "to stretch," we conclude that the key word is "between," and that the ordinary meaning of the phrase "only within a zone extending between" is inescapable. The claim only encompasses 30 degrees-45 degrees. Any other conclusion renders the reference to 30 degrees superfluous.

The written description does not convince us otherwise. It is true that, while "one may not read a limitation into a claim from the written description, . . . one may look to the written description to define a term already in a claim limitation, for a claim must be read in light of the specification of which it is a part." Renishaw, 158 F.3d at 1248, 48 U.S.P.Q.2D (BNA) at 1120. The parties do not dispute that the written description discloses a gamma unit with radiation sources and beam channels located between the latitudes of 0 degrees and 45 degrees. See, e.g., '898 patent, col. 2, ll. 16-22; id. at col. 2, l. 64 to col. 3, l. 3. However, the unambiguous language of the amended claim controls over any contradictory language in the written description.

OSI also argues that the prosecution history provides another reason why claim 1 should be limited to gamma units with radiation sources and beam channels located exclusively between 30 degrees and 45 degrees. Claims that have been narrowed in order to obtain issuance over the prior art cannot later be interpreted to cover that which was previously disclaimed during prosecution. See Graham v. John Deere Co., 383 U.S. 1, 33, 15 L. Ed. 2d 545, 86 S. Ct. 684 (1966); Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2D (BNA) 1673, 1676 (Fed. Cir. 1995). During prosecution, the examiner initially rejected claim 1 for obviousness, stating that:

Applicants [sic] stated point of novelty is only the elimination of the radiation sources which are located within a zone that is near or on the longitudinal plane of the patient. Applicant claims his sources within a zone of latitudes from 30 degrees-45 degrees. But the prior art gamma units have sources which are located within a zone which includes 30 degrees-45 degrees. Applicant does not claim the zone which is exclusively 30 degrees-45 degrees or that his sources specifically are not at latitudes near the longitudinal plane of the patient.

Paper No. 10 at 3. In response to the examiner's rejection, the applicant amended claim 1 as follows, with additions indicated by underlining and deletions indicated by brackets:

1. (Amended) An arrangement in a gamma unit, . . . the radiation sources [(9)] and the beam channels [(6, 19)] . . . located, in relation to the diametrical plane [through] extending across the opening to said face, only within a zone extending [to] between latitudes 30 degrees-45 degrees, as seen from said diametrical plane.

Paper No. 14 at 1.

Elekta argues that those amendments were made to address the examiner's concern that the original claims did not incorporate the point of novelty stated in the written description - the elimination of radiation sources near the longitudinal plane of the patient (90 degrees), not the elimination of radiation sources between 0 degrees and 30 degrees. While this may explain why the term "only" was added to the claim, Elekta's explanation fails to adequately address the change from the word "to" to "between." OSI responds that the word "to" was changed to "between" in response to the examiner's statements that "prior art gamma units have sources which are located within a zone which includes 30 degrees-45 degrees," and that "Applicant does not claim the zone which is exclusively 30 degrees-45 degrees." Paper No. 10 at 3. We agree. In view of these statements from the examiner, a person of skill in the art would understand that the term "to" was changed to "between" in order to respond to the examiner's statement and to distinguish the prior art by claiming exclusively the range of 30 degrees-45 degrees. We therefore agree with OSI that claim 1 is susceptible of only one reasonable construction, and is limited to gamma units with radiation sources located exclusively between 30 degrees-45 degrees.

Elekta argues that OSI's proposed claim construction should not be adopted because it would exclude the preferred and only embodiment disclosed in the specification. We have previously stated that "such an interpretation is rarely, if ever, correct and would require highly persuasive evidentiary support." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583, 39 U.S.P.Q.2D (BNA) 1573, 1578 (Fed. Cir. 1996). That proposition is correct. However, in light of the prosecution history and the unambiguous language of the amended claim, we conclude that this is the rare case in which such an interpretation is compelled.
Elekta further argues that OSI's interpretation would render claim 1 invalid, because a gamma unit with radiation sources solely between 30 degrees-45 degrees would be inoperative. We do not reach the issue of invalidity, and we note that the record is unclear as to whether such a device would be inoperative. Moreover, having concluded that the amended claim is susceptible of only one reasonable construction, we cannot construe the claim differently from its plain meaning in order to preserve its validity (upon which we do not opine). Cf. Process Control, 190 F.3d at 1357, 52 U.S.P.Q.2D (BNA) at 1033 ("Where, as here, the claim is susceptible to only one reasonable construction . . . we must construe the claims based on the patentee's version of the claim as he himself drafted it.").

5. "onto each other"

Read in context, the pertinent claim language discusses the "imaging [of] mask alignment marks and substrate alignment marks onto each other by the projection system." Specification language suggests that "onto each other" means to be placed with a substantial degree of overlap. See '832 Patent at 10:20-43. In so suggesting, the specification language implies that the imaging can occur in a unidirectional manner; i.e., the first pair of marks and the second pair of marks need not both be imaged onto the other so long as one pair is so imaged onto the other. Id. Congruent with this intrinsic evidence, the court thus construes "onto each other" to mean "projecting mask alignment marks and substrate alignment marks to a substantial degree of overlap."

7. Introducing Onto

The meaning of the term "introducing…onto" is in dispute. It appears in the following context: "introducing concentrated detergent solution having a concentration level in the range of 0.5 to 12% by weight onto said fabric as said fabric is tumbling." ('370 patent, claims 8,15.)

Whirlpool seeks the following construction: "This claim step means that concentrated detergent solution in the range of 0.5 to 12% by weight is introduced into the wash chamber by directing the concentrated detergent solution onto (i.e., on top of) the fabric as the fabric is tumbling in the wash chamber."

LG argues for the following construction: "Introducing concentrated detergent solution… onto the fabric in a wash chamber that does not contain a pool of detergent solution as the fabric is tumbling in the wash chamber. Introducing onto said fabric is not limited to introducing solution to only the top of the fabric."

The dispute is whether "introducing solution onto fabric" requires that the solution originate at a point vertically above the fabric. Whirlpool argues that the ordinary meaning of "onto" means "on top of, upon," AMERICAN HERITAGE DICTIONARY and thus the claim requires that the solution be introduced from above the clothes. LG counters that a definition of "upon" is "used to indicate contact with or extent over (a surface) regardless of position," which suggests that the contact may occur from any direction. AMERICAN HERITAGE DICTIONARY. The Court finds the dictionary definitions ambiguous and that the ordinary meaning of "onto" does not require movement from top to bottom. For example, someone painting his living room ceiling would be "introducing" paint "onto" the ceiling, but of course would do so from bottom to top. Thus, the Court construes the terminology to encompass contact from any direction. See Inverness Med. Switzerland v. Warner Lambert Co., 309 F.3d 1373, 1379 (Fed. Cir. 2002) ("A word that has an ordinary meaning encompassing two relevant alternatives may be construed to encompass both alternatives.").

Accordingly, the Court adopts LG's proposed construction of "directing…solution…onto said fabric."
E. "so that at least a portion of the fallopian tube is open"

The final disputed phrase from the '361 patent is "so that at least a portion of the fallopian tube is open" from claims 37 and 38. Proposed constructions are shown below.

**CONCEPTUS'S PROPOSED CONSTRUCTION**

"so that at least a portion of the fallopian tube is not completely occluded"

**HOLOGIC'S PROPOSED CONSTRUCTION**

Indefinite subject to 35 U.S.C. 112.

Otherwise:

"that there is no obstruction in the fallopian tube preventing the meeting of sperm and ovum"

As a preliminary matter, Hologic's indefiniteness argument must be rejected. As the analysis below illustrates, this phrase is amenable to construction in light of the specification. Given this conclusion, the phrase is not indefinite. See Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1374 (Fed. Cir. 2001).

This construction boils down to the differences between complete (or total) occlusion of the fallopian tube and "functional occlusion" of the fallopian tube. As explained in the summary of the invention, while the contraceptive device in the asserted patent "will generally result in occlusion, it need not completely occlude the fallopian tube to prevent the meeting of the sperm and ovum" (col. 3:22-24) (emphasis added). "[C]ontraception can be provided by disrupting the architecture and/or function of the fallopian tube, despite the presence of an open lumen" (col. 3:27-29) (emphasis added). "This concept is referred to herein as 'functional occlusion'" (col. 3:29-30). In other words, the specification clearly taught that the intrafallopian contraceptive device need not block the entire lumenal cavity to provide effective contraception (see cols. 4:29-34, 11:27-34). Despite the presence of an open lumen, the device may still provide effective contraception so long as there is "functional occlusion" to "inhibit fertilization and/or conception" (col. 3:30-34).

With this definition of "functional occlusion" from the specification, the claims provide all the information necessary to properly construe this disputed phrase. Specifically, claim 40 -- which is not asserted in this action -- covers "[a] method as claimed in claim 36, wherein permanently affixing the resilient structure with the fallopian tube provides functional occlusion of the fallopian tube." Given that "functional occlusion" is only necessary when the fallopian tube is not completely occluded, this necessarily implies that the fallopian tube in claim 36 has this feature. Indeed, this is exactly what a person having ordinary skill in the relevant art at the time the patent was filed would have understood "so that at least a portion of the fallopian tube is open" to mean.

Moreover, asserted claims 37 and 38, which cover "tissue ingrowth," would also be meaningless if the fallopian tube in claim 36 were already completely occluded (see col. 4:21-22). Indeed, the specification stated that "[i]n many embodiments, the presence of the contraceptive device in combination with [] tissue reaction can provide effective contraception without having to rely on total occlusion of the fallopian tube" (col. 4:30-34) (emphasis added). Stated differently, the promotion of tissue ingrowth into the device (claim 37) can produce sufficient ingrowth to inhibit contraception (claim 38), despite the fact that the fallopian tube was not completely occluded when the contraceptive device was initially affixed (claim 36).

As such, Conceptus's proposed construction is correct, and the phrase "so that at least a portion of the fallopian tube is open" from claims 37 and 38 patent shall mean "so that at least a portion of the fallopian tube is not completely occluded."

b. "said first end cap being an open airflow inlet"

The phrase "said first end cap being an open airflow inlet" appears in claim 7 of the '712 Patent. 4 Donaldson asserts that the phrase has a meaning readily understood by one of skill in the art and construction of the language is not necessary. Baldwin asserts that "said first end cap being an open airflow inlet" should be construed as "the first end cap having an opening and being assembled as part of a reverse flow air filter arrangement including a housing and an air flow direction arrangement." Baldwin argues that requiring an airflow inlet places an express structural limitation on the claimed device that cannot be
met by the filter element alone. Specifically, Baldwin submits that an end cap defines an inlet only if the claimed device is a combination of the overall air filter arrangement (housing, filter, and air flow direction arrangement). In part, Baldwin argues that a user cannot identify which end of the air filter is an inlet without reference to the housing and air flow direction arrangement. In the alternative, Baldwin argues that "said first end cap being an open airflow inlet" should be construed as "the first end cap having an opening" or at most "the first end cap having an opening capable of being used as an inlet." Baldwin submits that if the housing and air flow direction arrangement are not included in the claim, being an inlet is only an intended use because the opening standing alone (without being part of a reverse flow arrangement) is neither an inlet nor an outlet.

--- Footnotes ---

4 Also at issue is the phrase "defining an air inlet aperture" in claim 1 of both the '366 and '009 Patents. Baldwin argues that those claims require the same construction as "open airflow inlet" in claim 7 of the '712 Patent.

--- End Footnotes ---

Baldwin relies on Cross Medical Products, Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293 (Fed. Cir. 2005), in arguing that the "inlet" imposes an express structural limitation on the claim. The Court finds such reliance unpersuasive. In Cross Medical, the Federal Circuit reviewed the district court's construction of the term "operatively joined" in a patent concerning orthopedic surgical implants used to stabilize and align spinal bones. 5 424 F.3d at 1305-06. Although the claim does not "state explicitly whether 'the bone interface' and the 'bone segment' must be in contact," the Federal Circuit reasoned that use of the word "joined" indicates that the interface and the bone must be connected. Id. at 1305. The Federal Circuit concluded that the "lower bone interface [is] operatively joined to said bone segment" when the interface and the bone segment are connected and in contact such that the device is effective to perform posterior stabilization." Id. at 1306. In its infringement discussion, the Federal Circuit explained that the claim has a structural limitation that the "anchor seat be in contact with the bone." Id. at 1311. Cross Medical is distinguishable from the present case because the text of claim 7 of the '712 Patent does not provide that the air filter element is "joined" with a housing or an air flow direction arrangement.

--- Footnotes ---

5 The claim language recites an "anchor seat means which has a lower bone interface operatively joined to said bone segment."

--- End Footnotes ---

The Court determines that the phrase "said first end cap being an open airflow inlet" has not acquired the meaning proposed by Baldwin. Looking to the claim language, the Court notes that none of the structure that Baldwin requests be included in the claim forms a part of an end cap that is an inlet. The claim does not recite a housing or an air flow direction arrangement. Nor does it recite a detailed description of a housing's or an air flow direction arrangement's physical characteristics. Further, the Court declines to adopt Baldwin's alternative proposed construction. Doing so would improperly eliminate language essential to the claim. See Playtex Prods., Inc. v. Procter & Gamble Co., 400 F.3d 901, 908 (Fed. Cir. 2005) ("We think this view reads out the essence of the claim limitation 'substantially flat' as it equates 'flattened' to 'flat.'"). The claim language and the specification both describe an end cap with an inlet. See '712 Patent, col. 5, ll. 29-31 ("That is, end cap 23 includes a large inlet aperture 28 (FIG. 4) therein, for introduction of air to be filtered into filter element interior 35."). In addition, a reading of the claims by one skilled in the art would indicate which end of the air filter has the inlet and which end has the outlet. Specifically, claim 7 of the '712 Patent recites in part: "said first end cap being an open airflow inlet;" "said second end cap comprising molded polymeric material and having an outer surface;" with "said second end cap having a circular sealing trough." One skilled in the art could read the claims and understand that the inlet end of the filter is opposite the end with the circular sealing trough. Thus, it is unnecessary to read a housing or an air flow direction arrangement into the claim to understand the air inlet structure of the first end cap of the claimed filter. Accordingly, the Court declines to adopt Baldwin's proposed constructions and does not construe the phrase "said first end cap being an open airflow inlet."
6 In addition, one skilled in the art could read the claims of the '366 and '009 Patents and discern that the end caps of the air filter are structurally different.

(D) Open Channel

The term "open channel" appears in claim 12 of the '433 Patent, where it is described as "said plurality of ribs extend to a location below said upper edge, said ribs forming an open channel extending between said first and second ends of said body between said upper edges of said sidewalls and said plurality of ribs." Pl's Markman Br. Ex. F. col. 17 ll. 63-67. Defendants requests that the court determine that the term is not amenable to construction because it is indefinite.

Innovative responds that the prosecution history clarifies that "open channel" is an unobstructed channel or pathway between the first and second end bodies. See Pl's Resp. Markman Br. pp. 24-25 (citing the prosecution history of the term "open channel").

Defendants do not meet the high hurdle for declaring a claim term indefinite.

According to the Federal Circuit, clear and convincing evidence is required to invalidate a patent because patents are presumptively valid:

Only claims not amenable to construction or insolubly ambiguous are indefinite….If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds. In this regard it is important to note that an issued patent is entitled to a statutory presumption of validity. By finding claims indefinite only if reasonable efforts at claim construction prove futile, we accord respect to the statutory presumption of validity and we protect the inventive contribution of patentees, even when the drafting of their patents has been less than ideal.

Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1347-48 (Fed. Cir. 2005) (finding that the claim term "aesthetically pleasing" failed as indefinite) (internal citations omitted). Since one ordinarily skilled in the art would understand the claim term "open channel," the court will not find that it fails as indefinite. "Open channel" means "an unobstructed channel or pathway in the area defined in claim 12."

(1) Open-lattice sidewall structure.

Consistent with the claim language and its ordinary meaning, the court construes this limitation to mean "regular geometric pattern of openings in the side wall of the stent."

(3) Open-pore Microporous Material (Claims 9 and 15 37)

Microporous material is also referenced in claims 10 and 14.
Plaintiffs define open-pore microporous material as "material having a microcellular structure forming pores, the average size of which is 0.1 microns or less," "in which essentially all pores are open intercommunicating pores." 38 At the hearing, Plaintiffs refined its definition to comport with the National Insulation Association's Insulation Science Glossary (2004) definition of microporous material: "material with an average interconnecting pore size comparable to or below the mean free path of air molecules at standard atmospheric pressure." 39 Citing to the specification, Plaintiffs define "open-pore" as "where open intercommunicating pores represent essentially all pores contained in the microporous structure." 40

38 Plaintiffs' Opening Claim Construction Brief, Docket Entry No. 22, p. 10.

39 Plaintiffs' Markman hearing arguments.

40 Id.

Defendant offers a less complicated definition of "open-pore microporous material" as referring to "a material having very fine pores, essentially all of which are open and intercommunicating." 41 Despite using the words "essentially all" in its own definition, Defendant expressed some concern at the hearing that "essentially all" is not sufficiently descriptive for independent claim 9 because it contains the further limitation that eighty-five to ninety-five percent of the total pore volume must be open-pore.

41 Defendant's Brief on Claim Construction, Docket Entry No. 23, p. 10.

The patentee defined open-pore in the specification as follows:

Those skilled in the art will recognize that porosity is said to be open where open intercommunicating pores represent essentially all pores contained in the microporous structure, that is in practice in the range of 85 to 95% by volume based on total pore volume, which is itself close to 80% of apparent volume. 42

The court accepts this definition. As for the definition of "microporous material," the court finds no reason to strike out on its own when the parties agree. Because Defendant raised no objection to the definition provided by Plaintiffs from the National Insulation Association's Science Glossary 43 and the definition harmonizes with the specification, 44 the court adopts that definition. 45

42 547 patent at 3:1-6.

43 Plaintiffs represented to the court that the definition in 1996 would have not differed from the National Insulation Association's 2004 definition. As the representation was made without objection, the court accepts it as true.


45 Plaintiffs also mentioned that the microporous material may contain opacifiers to reduce the amount of radiant heat transmitted. Plaintiffs' Markman hearing arguments. Defendant objected to including this remark in the definition in light of claim 15, which further defines ingredients of the microporous material. Defendant's Markman hearing arguments. The court addresses Defendant's point about claim 15 in a subsequent section. However, the court agrees that whether the microporous material may or may not contain opacifiers is a gratuitous addition to the definition that could interfere with consistent construction of the term open-pore microporous material.
Combining the definition of "open-pore" with that of "microporous material," the court recommends that the term be defined as material with an average interconnecting pore size comparable to or below the mean free path of air molecules at standard atmospheric pressure in which the intercommunicating open pores represent essentially all pores contained in the microporous material.

This definition is subject to the more specific limitation of claim 9, in which the portion of open pores of the material "is 85 to 95% based on total pore volume, with an average pore diameter less than or equal to 0.1 μm." The court finds this limitation sufficiently clear on its face.

GO BACK

1. An "open space" is a space for the performance of a surgical procedure, which is not occupied by a bladder or other device, or by tissue.

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2. Specification and Prosecution History

The Defendants' proposed construction is "the cross-sectional area spanning the circumference of the top of the container including the rim to its outer diameter and all portions therein." Sunbeam's proposed construction is "a portion of the container opposite the closed bottom portion of the container, said portion having an interface and an area that is not closed." Thus, the parties dispute whether the term necessarily includes an interface.

1. Words of the Claim

Claim 4 of the '592 patent includes the disputed claim term, in the following context:

A beverage container assembly for use with a blender, comprising:

   a beverage container having an open top portion and a closed bottom portion;

   a first removable cover for selectively covering said top portion of said container, said first cover adapted to be removably mountable on and off a blender and comprising an adapter portion for mounting said container on a blender; and

   a second removable cover for selectively covering said open top portion of said container, said second cover comprising a cap, and wherein said first and second covers are interchangeable on said container.

'592 Patent at 20:50-63 (emphasis added). Claim 8 also references the disputed claim term, by claiming "[t]he assembly of claim 4, wherein said first and second cover each comprises a screw thread for engaging said open top portion." Id. at 21:3-5 (emphasis added).

2. Specification and Prosecution History
The specification and prosecution history say virtually nothing about "open top portion." It is not surprising that the patent's authors saw no need to define this self-explanatory term. The Defendants deceptively assert several figures showing an opening on the top of a container, proffering them as examples of an "open top portion" with misleading captions designed to make it appear as if the figures in the original patent were so captioned. However, the language of the specification does not discuss an "open top portion" as such, and, indeed, the Defendants set forth figures of a "blender jar" that is not the single-serving "beverage container" in question.

3. Extrinsic Evidence

Neither party has provided any extrinsic evidence on the term "open top portion."

4. Proper Construction of "Open Top Portion"

The open top portion must contain a screw-on interface. This is implicit in the overall language of the claim, which notes in numerous places that the interface by which the beverage container attaches to both the blender base and the various caps is of the screw-on variety. Thus, Sunbeam's construction is the proper one, and is adopted here: "a portion of the container opposite the closed bottom portion of the container, said portion having an interface by which a cap screws onto the beverage container and an area that is not closed."

B. "Opened"

The jury found infringement of claims 1-4 of the '018 patent in terms of the doctrine of equivalents. The only claim limitation presented for jury consideration of equivalency was the holder drive gear. Daewoo does not challenge the jury's finding of equivalency of the holder drive gear. However, Daewoo argues that the district court erred in its determination on summary judgment that the "opened" limitation was literally infringed, and that infringement under the doctrine of equivalents cannot be found because of prosecution history estoppel as to the "opened" limitation.

Daewoo argues that the court erred as to the "opened" limitation by focusing only on the status of the door upon movement of the cassette holder to the initial position, without also accounting for the claim's requirement that the VCR door is opened before the cassette holder moves from the play position. Daewoo states that in its VCRs the door is opened only after the cassette holder has moved two millimeters. The district court held that: "It does not matter that the door does not move before the holder shifts from the play position to the intermediate position. The critical point, not disputed by the parties, is that when the holder is moved towards the initial position from the intermediate position, the door has already begun its opening motion." Funai, 2006 U.S. Dist. LEXIS 93132, 2006 WL 3780715, at *8. Funai states that the district court correctly construed the "opened" limitation to mean "moved from a closed position such that the door has cleared the cassette so that ejecting the cassette will not interfere with the door." Funai, 2006 U.S. Dist. LEXIS 98055, 2006 WL 6130993, at *7. We agree that this claim construction is correct, for it is as described in the specification. This construction, and the summary judgment based thereon, have not been shown to be in error. The court's ruling that the "opened" limitation is literally met by the accused products is sustained. On the entirety of the claim, the jury verdict of infringement is supported by substantial evidence, and is affirmed.

iii. "opening"

180s argues for construing "opening" as "open space serving as a passage or gap." Considering its construction of "an opening that communicates with the receptacle, the opening being disposed proximate the interior side of the frame," Gordini seems to urge construing "opening" as "a port that is positioned near and within the inside surface, i.e., the surface closest to the user's head when worn." 13 Gordini also seems to urge a further limit that the "opening" be "unimpeded."
13 Matching Gordini's constructions with particular claim terms or language, especially for the '645 patent, is a difficult endeavor, in part because Gordini construed longer phrases and not individual words. For example, Gordini may actually be urging the Court to define "disposed proximate the interior side" when it urges the construction "near and within the inside surface, i.e., the surface closest to the user's head when worn." That said, the outcome of these claim constructions would remain the same regardless of where this opinion discusses each of Gordini's proposed constructions.

I construe "opening" as an "open space serving as a passage or gap." This definition is consistent both with the embodiments in the specification and the widely accepted understanding of the term and. To be sure, the "opening" must be "disposed proximate" the "interior" side of the ear warmer frame. However, any required proximity to the "interior side" is not found within the term "opening," but rather within terms "disposed proximate" and "interior." See infra Section II.B.v (construction of "disposed proximate"). Further, Gordini's "unimpeded" limitation is unnecessary and imprecise. If Gordini believes, as 180s suggests, that "unimpeded" means "unblocked to provide continuous access by the user," such a limitation is simply not found in the claim language or specification. For example, an "opening" that is somewhat impeded by fabric, but nonetheless allows access to the "connector," would in fact, I believe, still be considered an "opening" under this claim language. (See, e.g., Pls.' Mem., Ex. B. at col. 4, ll. 50-58 (specification describing an embodiment in which the "connector" is not stored within the "receptacle," but is protruding out of the "opening" such that the user need not have unimpeded access through the "opening" and into the "receptacle").)

In accordance with the invention, an improved cup construction and valve assembly is provided which provides an extremely secure seal against accidental liquid flow from the cup spout. Further to the invention, a user places his or her mouth against the spout of the cup assembly to suck liquid out of the cup when desired. The act of sucking at the spout of the cup creates negative pressure or a partial vacuum against a valve in the cup spout, causing the valve to invert, or turn inside out, either partially or totally, thereby unblocking an opening such as an orifice or slit in the valve. Once the opening is unblocked, liquid can flow freely through the valve and spout.

In contrast, when not in use, the valve sits in a resting, closed position, with the valve pressed against the center seal-off, thereby sealing off the opening or slit in the valve assembly. Thus, in its relaxed state, with no negative pressure applied, the valve sits in a closed position with the fluid opening sealed by the center seal-off. Moreover, in accordance with the dual valve nature of the device in the preferred embodiment, an adjacent valve similarly seals when no negative pressure is applied, thereby blocking off the air vents in the cover of the cup, and further preventing the possibility of fluid flow. Consequently, the closed position provides an extremely secure seal against fluid leakage, such that inadvertent spills or even deliberate attempts to force liquid outside of the cup, such as by turning the cup upside down, or shaking the cup, are ineffective.

During patent prosecution Hakim described his distinctions from the cited references as follows:

Thus two separate mechanisms are both used to close off the passage of liquid through the valve when not in use. The
first mechanism involves an inverting, flexible valve material which has a slit therein and responds to suction. The second mechanism involves the use of a blocking element, which is impenetrable to the passage of liquid. The slit sits against the blocking element, sealing or blocking off the slit, to yet further prevent the passage of liquid through the valve.

. . . . By providing both the elastomeric member with a slit and a blocking element, a sealing mechanism is provided which reduces spillage beyond that of either mechanism alone. None of the references cited in the Office Action [Robbins III, Bachman, and Belcastro] teach or suggest such a no-spill mechanism having a slit sitting against a blocking element such as is recited in all of the pending claims.

'931 Application Response, Oct. 2, 2000 (emphases added). Thus during prosecution the presence of the slit in the flexible valve material was emphasized as distinguishing all of the claims from the cited references.

Avent's accused drinking cup has a valve with a flexible diaphragm having a central opening, but the opening is not a slit that opens and closes, but simply a hole in the diaphragm. The diaphragm rests against a plastic mount that has a conical head that seals the hole. Upon suction by a person seeking to drink, the diaphragm is lifted off the conical head, exposing the hole and permitting fluid to flow from the cup to the drinking spout.

The district court held on summary judgment that Avent's device did not infringe the '931 claims, based on the claim construction that limited the '931 claims to a sealing mechanism that includes a flexible valve material or diaphragm having a slit. Hakim I, 2005 U.S. Dist. LEXIS 16830, [WL] at *1 (“For the reasons contained in the Report and Recommendation of the Magistrate Judge previously filed herein, and after a de novo review of the entire record and the written objections filed herein, and concurring with the Magistrate Judge's findings under the applicable law”; summary judgment was granted.) Mr. Hakim argues that the claim construction is excessively constricted and that all of the '931 claims do not require a slit that opens and closes with pressure, for claims 1 and 2 use the word "opening," not "slit," for the aperture in the diaphragm. Claim 1 is as follows:

1. An apparatus for use in a no-spill drinking cup, said apparatus comprising:

   a valve holder, such valve holder comprising at least one valve and a blocking element, said valve comprising a flexible material, said blocking element comprising an area of material which is impenetrable to the flow of liquid, said valve further comprising an opening through said flexible material, said valve having a resting position wherein said flexible material sits with said opening against said blocking element such that said valve is closed to the passage of liquid through said valve, said valve moving into an open position for the passage of liquid through said valve upon the application of negative air pressure to the top of said valve, said open position being a position wherein said flexible member comprising said opening lifts off of said blocking element.

(Emphasis added.) The word "opening" was placed in claims 1 and 2 when Hakim filed a continuation application after receiving a notice of allowance for claims wherein the word "slit" appeared instead of "opening." The filing of the continuation was accompanied by an attorney letter stating that Hakim was broadening claims 1 and 2, and an amendment changing "slit" to "opening" in claims 1 and 2. The continuation claims were allowed without any comment or rejection by the examiner. However, in construing the claims of the continuation patent, the district court held Hakim to his arguments in the parent application that the invention includes the presence of a slit in the flexible material. The court stated: "Because Hakim did not retract any of his arguments distinguishing the prior art, he is held to the restrictive claim construction he argued during prosecution of the patent." Hakim I, 2005 U.S. Dist. LEXIS 16830, [WL] at *5 (adopted Magistrate's Report).

Hakim argues that the district court improperly relied on the argument in the abandoned parent application. Hakim states that by re-filing the application with broader claims, he avoided any unnecessary restriction that may have crept into the prior prosecution. He states that he informed the examiner that the new claims were broader than those previously allowed, and that when the examiner allowed the new claims without rejection, there is a presumption that the examiner had assured himself of the patentability of the new claims. See United States v. Chemical Foundation, 272 U.S. 1, 14-15, 47 S. Ct. 1, 71 L. Ed. 131 (1926) ("The presumption of regularity supports the official acts of public officers, and, in the absence of clear evidence to the contrary, courts presume that they have properly discharged their official duties.") Hakim states that he did what was appropriate when he flagged this change to assist the examiner, and that the claims as granted should not be unnecessarily narrowed by the court.
Avent states that the totality of the prosecution history nonetheless limits Hakim to the embodiment with the slit, for the magistrate judge found: "The prosecution history makes perfectly clear that Hakim specifically distinguished his invention from the prior art by limiting it to an apparatus with (1) a slit which closes when suction is not applied, and (2) a second closure consisting of a blocking element which the slit rests against." Hakim I, 2005 U.S. Dist. LEXIS 16830, [WL] at *5 (adopted Magistrate's Report). Avent states that this was and is the distinction from the prior art, and that the claims are properly limited to this feature whether they use the word "slit" or the word "opening." Avent stresses that when Hakim wrote to the examiner that he was broadening the claims, he did not specifically point out that he no longer intended to be limited to the specific mechanism that he had previously argued was the distinguishing feature of his invention.

Hakim points out that a patent applicant is not precluded from filing a continuation application with broader claims. It is recognized that an applicant can broaden as well as restrict his claims during the procedures of patent examination, and that continuing applications may present broader claims than were allowed in the parent. Cf. Symbol Technologies, Inc. v. Lemelson Medical, Education & Research Found., 422 F.3d 1378, 1385 (Fed. Cir. 2005) ("Commonly, and justifiably, one might refile an application to add subject matter in order to attempt to support broader claims as the development of an invention progresses, although entitlement to an earlier filing date for any claimed subject matter may of course be necessary to avoid a statutory bar created by intervening events outlined in 35 U.S.C. §§ 102 and 103.").

Hakim had the right to refile the application and attempt to broaden the claims. See id. at 1385 ("One may also refile an application even in the absence of any of these reasons [refiling an application in response to a requirement for restriction; refiling in order to present evidence that may not have previously existed; or refiling to support broader claims as the development of an invention progresses], provided that such refileing is not unduly successive or repetitive.") However, an applicant cannot recapture claim scope that was surrendered or disclaimed. The district court did not err in holding that the examiner's action in allowing the continuation claims without further prosecution was based on the prosecution argument in the parent. See Omega Engineering, Inc. v Raytek Corp., 334 F.3d 1314, 1324 (Fed. Cir. 2003) ("The doctrine of prosecution disclaimer is well established in Supreme Court precedent, precluding patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution."). (citing Schriber-Schroth Co. v. Cleveland Trust Co., 311 U.S. 211, 220-21, 61 S. Ct. 235, 85 L. Ed. 132, 1887 Dec. Comm'r Pat. 185 (1940), Crawford v. Heysinger, 123 U.S. 589, 602-04, 4 S. Ct. 399, 31 L. Ed. 269, 1888 Dec. Comm'r Pat. 185 (1887), and Goodyear Dental Vulcanite Co. v. Davis, 102 U.S. 222, 227, 26 L. Ed. 149, 1881 Dec. Comm'r Pat. 131 (1880)). Although a disclaimer made during prosecution can be rescinded, permitting recapture of the disclaimed scope, the prosecution history must be sufficiently clear to inform the examiner that the previous disclaimer, and the prior art that it was made to avoid, may need to be re-visited. See Springs Window Fashions LP v. Novo Indus., L.P., 323 F.3d 989, 995 (Fed. Cir. 2003) ("The public notice function of a patent and its prosecution history requires that a patentee be held to what he declares during the prosecution of his patent. A patentee may not state during prosecution that the claims do not cover a particular device and then change position and later sue a party who makes that same device for infringement.").

The district court correctly ruled that the word "opening" is not correctly construed to eliminate the sealing mechanism provided by the slitted diaphragm. On this construction, the summary judgment of noninfringement of the '931 patent was correct, and is affirmed.

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Each time the term "opening" is used in the specification, it refers to a hole, breach, or aperture in the camera cover, either by textual description or by reference to the patent figures. In support of its broader claim construction, Fuji points to a sentence from the specification that describes the lens hole in the front cover as being "defined by a circular boss 37a." '168 patent, col. 5, ll. 27-29. Because the circular boss consists of a hollow bulge in the front cover section, and because the specification states that the hollow bulge is "for receiving therein the taking lens," Fuji argues that the term "opening" must be interpreted to include an open space such as is created by a bulge in the camera cover.

Significantly, the sentence on which Fuji relies does not refer to the circular boss as an "opening." Nor is the circular boss ever referred to as an opening. To the contrary, the specification characterizes the lens hole as being "defined by" the circular boss, and it characterizes the lens hole as an "opening." See '168 patent, col. 6, ll. 56-62. The sentence cited by Fuji thus does not support Fuji's argument at all, but in fact indicates that what the patent refers to as an "opening"--the lens hole--is different from what the patent refers to as the "boss" that surrounds and defines the opening. We therefore agree with the Commission that the claimed "front cover section being formed with at least one opening" uses the term "opening" to refer to a hole, breach, or aperture.

2. Openings & Holes

Plaintiff argues that "opening" should be defined as "unthreaded space, open on both ends, serving as a passage" and "hole" as "a threaded space that has a finite depth." Defendants suggest defining "opening" as "an open space, a breach, an aperture" and "hole" as a "cavity that can extend completely through a solid body, but is not required to do so."

Figure 4 of the '451 Patent, shown above, depicts both openings (in 34) and holes (in 31).

Defendants argue that "holes" and "openings" are synonymous, noting that the American Heritage Dictionary gives "opening" as one definition of "hole." The American Heritage Dictionary of the English Language 837 (Houghton Mifflin Co., 4th ed. 2004). Plaintiff responds by pointing to the presumption that when two similar terms are used in one claim, the terms have different meanings. CAE Screenplates, Inc. v. Heinrich Fiedler GmbH & Co. K.G., 224 F.3d 1308, 1317 (Fed. Cir. 2000). However, "the use of two terms in a claim requires that they connote different meanings, not that they necessarily refer to two different structures." Applied Med. Res. Corp. v. U.S. Surgical Corp., 448 F.3d 1324, 1333 n.3 (Fed. Cir. 2006) (citing CAE Screenplates, 224 F.3d at 1317).

There is no evidence to support Plaintiff's contention that an opening must be unthreaded or that a hole must be threaded. The claims make no reference to such properties. Plaintiff bases its argument on the fact that the specification states that fasteners can be "inserted through openings in flanges and into threaded holes," explicitly describing holes as threaded, whereas the specification attaches no adjective to "opening." '451 Patent col. 3, ll. 16-17. Once again, this is an inappropriate attempt to import limitations from the specification into the claim. Defendants' reference to a "solid body" is likewise not grounded in the claim language.

The only distinction found in the claims between "opening" and "hole" is that the fasteners are inserted "through openings" and "into holes." '451 Patent col. 4, ll. 40-41 (emphasis added). The fact that something can be inserted through an opening indicates that the opening has both an entrance and an exit. The fact that something can be inserted into a hole implies that the hole has an entrance, but not necessarily an exit.

The specification supports this distinction. Like the claims, the specification also states that fasteners are "inserted through openings in flanges and into threaded holes." '451 Patent col. 3, ll. 16-17. Thus the specification also indicates that a fastener can be inserted through an opening and then into a hole, meaning that the opening must have both an entrance and an exit to allow the fastener to enter the hole.

This distinction is consistent with at least one of the dictionary definitions of the terms. The American Heritage Dictionary gives "an open space serving as a passage or gap" as one definition for "opening" and "a hollowed place in something solid;
a cavity or pit" as one definition of "hole." The American Heritage Dictionary of the English Language, supra, at 1232, 837. The distinction also satisfies the presumption that the two claim terms have different meanings.

As used in claims 1, 6, and 10 of the '451 Patent, therefore, "opening" means an open space, breach or aperture with an entrance and an exit, and "hole" means an open space, breach or aperture with an entrance, but not necessarily an exit.

D. "Opening"

Mitek argues that the term "opening" should be limited to a "closed-end socket" in both the '477 and the '529 Patents. Mitek asserts that the claims describe and illustrate only closed-end sockets in the first clause which includes "forming an opening in a femur, the opening having an entrance facing a joint of the knee." Mitek cites to Claim 1 where it refers to "a tunnel in the tibia" and argues when Arthrex needed to use the term "tunnel" it did so elsewhere in the patents. Mitek also indicated that the term "opening" is not mentioned in the specification to refer to the longitudinal femoral hole. A court may look to other terminology in the specification which describes the same term as used in the claim if the exact term is not found in the specification. Network Commerce, Inc. v. Microsoft Corp., 422 F.3d 1353, 1361 (Fed. Cir. 2005) (when the term in the claim "download component" was not found in the specification, the court relied on the term "download file" in the specification which appeared to have the same function and description as the term "download component" had in the claim). Mitek asserts that the drawings all show a closed-end socket, and the Abstract refers to a longitudinal socket. (Doc. 140, Exh. 1, Abstract).

Mitek indicates that during the prosecution of the related U.S. Patent No. 5,918,604 ('604), the Patent Office rejected certain claims over prior art because the claims were not limited to a "blind hole or partial hole". (See, Doc. 140, Exh. 18, and Exh. 7, page 3). Arthrex amended these claims and specifically used the word "socket." (Doc. 140, Exh. 8, pgs. 2-3). Mitek argues that Arthrex distinguished its invention from prior inventions by having a socket form in the bone rather than a tunnel or hole. (See, Doc. 140, Exh. 8, p. 5).

Arthrex argues that the specification allows for either a femoral socket or a femoral tunnel. It cites to the language in the Summary of the Invention which states "[a]ccording to the present invention, forming the socket is preferred to forming a tunnel through the lateral femoral cortex." (Doc. 140, Exh. 1, 2: 42-44). Further, another part of the specification discusses "femoral tunnels" when describing the openings in the femur. (Doc. 140, Exh. 1, 3:30). In the Detailed Description of the Preferred Embodiments, a "femoral tunnel" is used to describe where the wire forms a loop. (Doc. 140, Exh. 1, 4:24-27). In this same section, the term "femoral tunnel" is used to state that the tendons must fit snugly within it, however later in the sentence the term "femoral socket" is also used. (Doc. 140, Exh. 1, 6:22-25).

Arthrex adds that it is improper to import a limitation to a claim from the language of the specification citing Ethicon Endo-Surgery, Inc., 93 F.3d 1572, 1578 (Fed. Cir. 1996). Arthrex asserts that it used specific language in the claim regarding the "transverse hole" that extends across the femur so that the flexible strand may be inserted, but did not use this type of limiting language when describing the opening in the femur, so that either a femoral socket or a femoral tunnel could be used. Arthrex indicates that the claim has no limiting language as to the type of "opening."

From the prosecutorial history, Arthrex asserts that the provisional patent '610, had the language in claim 1 of "forming a hole in a bone", and then in claim 4, stated the hole in claim 1 "is closed at one end." (Doc. 143, Exh. 1, p. 12). Claim 4 would be meaningless, Arthrex argues, if the hole in claim 1 was only a closed end hole. Arthrex argues that one claim cannot vitiate the meaning of another, and therefore, hole or opening in the '477 patent is not limited to being a socket, citing Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d. 898, 910 (Fed. Cir. 2004). Arthrex also argues that it never limited the term "opening" in the '604 patent to a socket.

To determine how a person of ordinary skill in the art would construe the term "opening," the Court will begin by reviewing the language of the claim itself, and the specification. The term "opening" is used in the claim as follows: "forming an opening in a femur, the opening having an entrance facing a joint of the knee." (Doc. 140, Exh. 1, 6:34-36). The claim language does not limit the meaning of the term "opening." Upon review of the specification, the term "opening" is not used. In the Summary of Invention, the term "femoral socket" is used repeatedly to describe the longitudinal hole in the
femur. (Doc. 140, Exh. 1, 2:41, 43, 45, 48, 50, 63, 64, 3:2). However, the term "femoral tunnel" is also used, although less frequently, to describe the opening in the femur. (Doc. 140, Exh. 1, 3:30, 4:24-27). In one clause of the Summary of the Invention, the following language is used: "[a]ccording to the present invention, forming the socket is preferred to forming a tunnel through the lateral femoral cortex. Advantageously, the diameters of the tibial tunnel and femoral socket are made just large enough to accommodate the graft in a snug fit." (Doc. 140, Exh. 1, 2:42-44).

Case law cautions that claims may not be broader than the scope of the invention that is set forth in the specification, yet the language of the specification may not import limitations on the claims. See, Varco, L.P. v. Pason Systems USA Corp., 436 F.3d at 1373, and On Demand Machine Corp. v. Ingram Industries, Inc., 442 F.3d at 1373. The patent as a whole must be consistent. Pfizer, Inc. v. Teva Pharmaceuticals USA, Inc., 429 F.3d at 1373. Reviewing the patent as a whole, it is clear that the preferred method is to have the "opening in the femur" be a femoral socket. The term "opening" is not used in the specification. However, the term "femoral socket," which is used to describe the opening in the femur, is used repeatedly throughout the specification. Even though "femoral socket" is used more frequently, the term "femoral tunnel" is also used in the specification to describe the "opening in the femur." In the Summary of the Invention, the patents provide that the preferred method is a femoral socket, however, a femoral tunnel is not specifically disavowed. The description of the invention contemplates the use of a femoral socket, but it also anticipates the use of a femoral tunnel by some and cautions that a femoral socket is the better practice. The purpose of the specification is to "teach and enable those of skill in the art" to use the invention and to provide the best method of using the invention. Phillips v. AWH Corporation, 415 F.3d at 1323. Even though the preferred embodiment uses a femoral socket, a claim is not limited to a preferred embodiment. See, Bell Atlantic Network Services, Inc. v. Covad Comm'cns Group, Inc., 262 F.3d at 1273.

The prosecution history is less useful for the term "opening" than the specification because it lacks the clarity of the specification. See, Phillips v. AWH Corporation, 415 F.3d at 1317. The provisional patent '610 does not use the term "opening." Rather, it does contain the clause that the "hole is closed at one end," however this modifies the term in claim 1 which states that the procedure is "forming a hole in a bone." (See, Doc. 143, Exh. 1, p. 12). If "forming a hole in a bone" meant a closed end socket, then the language "hole is closed at one end" would be superfluous. After the provisional patent '610, the later patents went through many amendments and modifications before the '529 and '477 patents were granted. Likewise, in the '604 patent which was cited by Mitek, the term "opening" does not appear. Mitek also cites to the prosecution of the '604 patent which modified the language in the patent based upon comments of the Patent Examiner. (See, Doc. 140, Exh. 7, p. 3). The comments of the Patent Examiner regarding the term "socket" are not clear in that he states, "[s]ince the 'socket' (a blind hole or a partial hole through the bone) is not claimed in these claims, they therefore reads [sic] on any strand that has been intersected and passing though a hole through the bone." (Doc. 140, Exh. 7, p. 3). The Court finds no support in limiting the term "opening" from these comments. Mitek also cites to a deposition of the inventor, Dr. Jeffery Whelan in support of its position, however, the subjective intent of the inventor is not appropriate to construe terms in the claim. Superior Fireplace Co. v. Majestic Products Co., 270 F.3d 1358, 1375 (Fed. Cir. 2001).

Relying mainly on the claim language itself, and the specification, the Court determines that "a person of ordinary skill in the art" would construe the "ordinary and customary meaning" of the term "opening" as being either a femoral socket or a femoral tunnel. Both femoral socket and femoral tunnel are mentioned in the specification for the '529 and '477 patents, and even though the femoral socket is the preferred embodiment, the femoral tunnel is also an option for the procedure.

"Opening"

In my February 24, 2003 Memorandum Opinion and Order, I provided a construction of the limitation "said housing having an opening in the bottom thereof." I noted that "no particular type of housing opening is required" and that "this element is not disputed so further discussion is unnecessary." Because there was no particular significance to the term "opening" raised by Krippel's summary judgment motion, I did not discuss or analyze the meaning of the term "opening" in the housing opening limitation. Ford now asks that the term "opening" in claim 2 be construed as "an unobstructed hole in the housing."

It is presumed that a claim term carries its ordinary meaning. CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002). To determine the ordinary meaning of claim terms, I may consult relevant dictionaries. Texas Digital Sys. v. Telegenix, Inc., 308 F.3d 1193, 1202-03 (Fed. Cir. 2002). Ford claims that the ordinary meaning of "opening" is "an open
space serving as a passage or gap;" "a breach or aperture." While Exhibit Q does define "opening" as a "breach" or "aperture," I do not see Ford's basis for "an open space serving as a passage or gap." This must be an inadvertent mistake. I do see the following definition: "something that is open."

Nonetheless, regardless of which definition one chooses, I see no basis for using Ford's additional term "unobstructed." More than merely adding an additional word, using the word "unobstructed" adds the additional meaning that an opening must be unobstructed in order to qualify as an opening under the claim. Under such a construction, even a partial obstruction of some type may prevent something from being considered an "opening" within the meaning of the term. Such a limitation, however, is not explicitly stated in the claim and, more importantly, goes beyond the ordinary meaning which Ford concedes I should use. Accordingly, the term "opening" will be construed as "something that is open; breach; aperture." 5

5 As Ford acknowledges, my construction of the term "opening" has no effect on my previous holding that the lens in the opening of the Ford Lighting Device is an additional element. If, at some point during the course of this litigation, Ford argues that this construction has some effect on this ruling, then I will revisit the construction of the term as opposed to the ruling.

2. Interpretation

Claims 1 through 20, 27, and 29 of the '709 reissue patent and all of the claims of the '397 patent require a housing that has an "opening." See, e.g., '709 reissue patent, col. 7 et seq., Exh. A to Clark Decl.; '397 patent, col. 5 et seq., Exh. B to Clark Decl. Claim 7 of the '709 reissue patent is representative in pertinent part 1: "A lighting system comprising a structurally supportive housing having a first opening; . . ." '709 reissue patent, col. 7, lines 9-11.

1 Defendant's Exh. A omits columns 5 and 6 of the '709 reissue patent. The Court relies on Exh. A of the First Amended Complaint for a complete copy of the '709 reissue patent.

The key dispute of the parties over the interpretation of these claims hinges on whether the "opening" referred to pertains to a structural element of the fixture or indicates that the overall lighting fixture be open upon assembly such that water and air can flow through the housing. Defendant alleges that the lighting assembly of the patents in suit allows air and water to flow through the fixture housing to cool the lamp assembly. To this end, both of the patents in suit claim a lighting assembly that is open to the weather.

Defendant supports its interpretation by considering the Background and Summary of the Invention of the patents in suit describing the problems with conventional outdoor lighting systems: "Conventional systems are especially vulnerable to the destructive effects of corrosive soils. . . . Conventional systems are also vulnerable to moisture and water intrusion." '709 reissue patent, col. 1, lines 20-29. The patents then describe how conventional outdoor lighting systems have approached such problems by employing "a fully sealed system of structural material," and the resulting disadvantages with such an approach: "Because of requirements to completely seal the outdoor systems, such devices are expensive, difficult to repair and difficult to cool." Id. at lines 31-32; 38-41.

According to Defendant, the Summary of the Invention suggests that Plaintiff's solution to this problem is, in part, to have a housing that allows air and water to enter.
The present invention contemplates an exterior housing to protect the system from corrosive soil conditions and to provide support and structural protection for the internal components. Components not capable of withstanding moisture and corrosive conditions may be positioned and sealed from moisture entry within the housing.

Id. at col. 1, line 66 - col. 2, line 4.

The Summary of the Invention goes on to state:

In a further aspect of the present invention, a face ring may be provided as an external cover that is contiguous with the lamp assembly and the housing. This external face ring is slotted to allow entry of air and water to dissipate heat away from the lamp. Both the lens and the face ring may be designed to support human foot traffic, allowing precise placement of the light assembly.

Id. at col. 2, lines 18-25. It then concludes:

Employing the foregoing features, both airflow and water in the housing may be used to cool the lamp. This provides improved thermodynamic characteristics for efficient operation of the lamp, enabling more design latitude. The use of a face ring can be advantageous because it can be easily removed to gain access to the interior of the housing as simple attachment mechanisms may be used to hold the face ring to the housing.

Id. at col. 2, lines 32-39. Defendant alleges that the face ring is a "further" aspect of the invention for the purpose of providing a contiguous surface to support human foot traffic and allow easy access to the housing. Additionally, Defendant contends that the slots are provided in the face ring to preserve the openness of the housing so that air and water can enter to cool the lamp assembly and other electrical components in the housing. 2

2 "Cooling is accomplished . . . through the multiple openings 82. As can be appreciated, water can enter and even fill up the housing 10 through these multiple openings 82. Thus, either air or water may provide the cooling medium for the components." '709 reissue patent, col. 5, lines 57-62.

In dispute, Plaintiff maintains that the claims neither state that the assembly has an opening nor state that the structurally supportive housing is open in the assembled state. Rather, the claims literally state that a component -- the structurally supportive housing -- has a first opening. According to Plaintiff, the fact that there is an opening in an element of a fixture does not require that an opening be found in the assembled fixture. It is the face ring and not the housing that provides and controls openings into the interior of the fixture. 3 Plaintiff asserts further that of claims 1 through 20 and 29 of the reissue patent and of all claims of the '397 patent, only claims 12 and 20 of the reissue patent -- not at issue here -- define openings that are open in the assembled fixture. See Pl. Opp., pp.5-6. As such, whether the entire assembly is open or closed is not recited in the language of the claims at issue.

3 "A structurally supportive housing 10 is illustrated. . . .One end of the housing 10 is open. This opening 20 is surrounded by an upper rim 22 of the housing 10 which is preferably arranged at approximately ground level 24. . . .Located at the opening 20 is a lamp assembly, generally designated 40. . . .Positioned over the space to span between the rim 22 and the lamp assembly 40 is a face ring 80. The face ring 80 has multiple openings or holes 82 which allow for the passage of water and air. These holes provide for cooling of the entire assembly." '709 reissue patent, col. 3, lines 8-20, 35; col. 4, lines 19-23.

The Court and Defendant agree with Plaintiff that only claims 12 and 20 define an open fixture. 4 But the Court finds that the only distinguishing feature of these claims from other claims in the patents is the recitation that the fixture includes a face ring with openings. The face ring with "openings" in claims 12 and 20 of the reissue patent could not result in an open
fixture unless a fixture lacking that face ring but having an "opening" in the housing as also recited in the claims, is open. It is not the face ring that provides and controls openings into the interior of the fixture and thus determines whether it is open or closed. Rather, the openings in the face ring can perform their function of admitting air and water to cool the lamp in the housing only if the "opening" in the housing is at least as large and as unobstructed as the "openings" in the face ring. Plaintiff's patent claims necessarily contemplate that the "opening" in the housing allows entry of air and water into the fixture at least as much as, if not more than, the "openings" in the face ring.

4 Claims 10 and 12 provide as follows:

10. A lighting system comprising

a structurally supportive housing having a first opening;

a lamp assembly having a socket enclosure and a lens, said socket enclosure with said lens defining a lamp cavity separately sealed from said housing;

a junction box affixed to said housing and having an access port into said housing, said junction box being sealed at said access port from the interior of said housing;

electrical lighting elements including a transformer in said housing electrically coupled between said junction box and said lamp assembly, said elements being sealed from the interior of said housing, from said lamp assembly and from said junction box.

12. The light assembly of claim 10 further comprising a face ring with multiple openings therethrough, said face ring being attached to said housing at said first opening, said lamp assembly and said housing providing an annular space therebetween at said first opening, said face ring spanning said annular space between said housing and said lamp assembly.

'709 reissue patent, col. 7, lines 9-23; 27-33.

Additionally, while one of the functions of the opening is, as Plaintiff asserts, to provide access to the lamp assembly and electrical lighting elements for servicing, an equally evident function of the opening is to admit air and water. The Court notes that Plaintiff's interpretation trivializes the claim limitation of an "opening" in the housing to the point of rendering it meaningless. The Court believes that all lighting fixture housings must have an opening at some point in the assembly process to permit the placement of the lamp assembly and electrical lighting elements in the housing. If this interpretation is all that Plaintiff meant by an "opening" in the housing, such a claim limitation would not distinguish the prior art or add in any meaningful way to the definition of Plaintiff's invention. The Court thus finds as a matter of law that the "opening" referred to in the claims in question refers to an opening in the assembled lighting fixture that deliberately allows air and water to enter for use in cooling.

B. "Syringe Receiving Opening" or "Opening"/Requirement of a Pressure Jacket

In this motion for partial summary judgment, L-F requests that the Court interpret the terms "syringe receiving opening" and "opening" as they appear in the asserted claims of the 669 and 261 patents. As the following analysis demonstrates, the construction of these terms is closely intertwined with L-F's contention that the injector referenced in the asserted claims of the 669 and 261 patents does not require a pressure jacket. The Court will, therefore, analyze these issues together.
The asserted claims are 10-11, 13, 16-19 of the 669 patent and 1, 8, 9, 11-13, 15-16, 18, 22, 27-28, 30-32, 34-37 of the 261 patent.

L-F proposes that the terms "syringe receiving opening" and "opening" refer to "an opening in an injector for receiving a syringe." (Doc. No. 164, p. 1). Medrad contends that the terms refer to the "open end of a pressure jacket." (Doc. No. 172, p. 16).

The difference in the parties' interpretations of these terms is significant. On the issue of non-infringement of the asserted claims, Medrad argues that the accused products do not infringe the 669 and 261 patents because both patent specifications describe an injector that requires a pressure jacket. 8 (Doc. No. 57, p. 19). Medrad's accused injectors are jacketless. L-F, on the other hand, argues that the term "pressure jacket" does not appear in the asserted claims, and thus, the claims do not describe an injector that requires a pressure jacket. (Doc. No. 164, p. 23). In response, Medrad has argued that the asserted claims contain the terms "syringe receiving opening" or "opening," which, in order to preserve the validity of the patents, must be interpreted as the opening of a pressure jacket. (Doc. No. 57, p. 18). Therefore, according to Medrad, the claims describe a device that requires a pressure jacket. (Id.).

8 It should be noted that the 669 and 261 patents do not claim the invention of a front-loadable injector. Rather, the 669 patent claims a method of front loading an injector and injecting fluid and the 261 patent claims a device of a front-loadable syringe. However, the claims of the 669 and 261 patents describe the injector with some specificity.

The Court begins its analysis where all claim construction begins -- the language of the claim. See Interactive Gift Express, 256 F.3d at 1331. With respect to the asserted claims, "syringe receiving opening" and "opening" are described as follows:

"a syringe receiving opening with a generally circular periphery therein adapted to receive a rearward end of a syringe having a generally circular rim"

669 patent, Claim 10

"an opening at the front end of the injector dimensioned to receive the back end of a disposable syringe…"

669 patent, Claim 19

"a circular syringe receiving opening therein bounded by a circular annular periphery…"

261 patent, Claim 11

"a circular syringe receiving opening bounded by a circular annular periphery…"

261 patent, Claim 30

(Doc. No. 30, Exhs. 1, 2). Clearly, this language describes a circular opening sized to accommodate the rear end of a syringe. Moreover, such a construction is supported by the ordinary dictionary definition of the terms. Webster's defines a "syringe" as "a device used to inject fluids into or withdraw them from the body or its cavities…" Webster's Third New International Dictionary at 2322 (1971). "Receive" is defined as "to take in: act as a receptacle or container for…", and "opening" is defined as "something that is open: as a (1) : BREACH, APERTURE … (2) : an open width : SPREAD, SPAN…." Id. at 1580, 1894. Thus, the dictionary definition of a "syringe receiving opening" is an open width able to take in a device used to inject fluids into or withdraw them from the body. The language of the claims requires that this "open width" be circular.

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The real issue dividing the parties is not the characteristics of a "syringe receiving opening" or "opening" but rather the location of such an opening. L-F, by asking the Court to conclude that the asserted claims involve an injector that does not require a pressure jacket, is asking the Court to conclude that the "syringe receiving opening" may be located anywhere, including the front-end of a pressure jacket. Medrad argues, on the other hand, that the injector described in the asserted claims requires a pressure jacket; therefore, the "syringe receiving opening" must be located at the front-end of the required pressure jacket.

Based on the language of Claim 19 of the 669 patent ("an opening at the front end of the injector), it appears, at the very least, such an opening would be somewhere on the front of the injector.

The parties do not dispute that the asserted claims do not contain the term "pressure jacket". However, the absence of the term "pressure jacket" does not necessarily lead to the conclusion that the injector referred to in the asserted claims does not require a pressure jacket. While the claim language does not explicitly require a pressure jacket, neither does it explicitly describe a jacketless injector. Because the claim language is ambiguous with respect to the requirement of a pressure jacket, the Court must conduct a review of all the intrinsic evidence (the claim language, the specification, and the prosecution history) to determine whether the injector described in the asserted claims requires a pressure jacket. See Interactive Gift Express, 256 F.3d at 1331.

Even the most cursory reading of the specification of the 669 and 261 patents reveals that the injector described in the specification includes a pressure jacket:

An animal fluid injector, replaceable syringe and method of replacement of the syringe in the injector are provided in which the syringe is loadable and unloadable into and from the injector through the open front end of a pressure jacket of the injector . . .

669 patent and 261 patent, Abstract

It is an additional objective of the present invention to provide an injector wherein a used syringe can be removed and a new one inserted in the injector without retraction of the drive from the pressure jacket in most applications. It is a further objective of the invention to allow for the removal of the used syringe from the jacket without disconnection of the injector tube from the syringe nozzle.

669 patent, col. 2, lines 32-39

261 patent, col. 2, lines 30-37

(Doc. No. 30, Exhs. 1, 2)(emphasis added). Not only does the specification contemplate an injector that includes a pressure jacket, a pressure jacket appears to be an essential component of the injector. According to the specification, the purpose of the pressure jacket is to reinforce the walls of the syringe used in the injector against pressures placed upon it by the injector:
The syringe 32 is disposable, and includes walls which will withstand only moderate or low pressure. The walls are usually outwardly deformable under operating pressures, particularly pressures of 300 psi or more. Such higher pressures are necessary to overcome pressure drops through the injection tubing at higher flow rates, which are often desirable. The jacket 31 is made of a stronger transparent material that will withstand the operating pressures. When the syringe 32 is contained in the jacket 31, it is surrounded by the jacket 31 and supported by the jacket 31 against expansion caused by the fluid pressure within as the syringe 32 expands against the jacket wall.

669 patent, col. 7, lines 15-26
261 patent, col. 7, lines 10-21
* * *

The pressure jacket 31 has a generally cylindrical inner bore . . . The bore 33 is dimensioned so as to receive through the remote end 35 the disposable syringe 32 and to support the syringe against expansion from fluid pressure within such fluid pressure may range to more than a thousand psi.

669 patent, col. 7, lines 26-33
261 patent, col. 7, lines 22-29
* * *

To provide this front end loadable feature, the syringes of the preferred and illustrated embodiments of the present invention are provided with a front wall that is pressure restraining, that is, of sufficient strength to support the front of the syringe against the expected pressures within the syringe, and that is securable to the front end of the pressure jacket so as to complete the pressure restraining enclosure of the syringe within the pressure jacket and hold the syringe in the jacket.

669 patent, col. 3, lines 1-9
261 patent, col. 2, lines 65-67 to col. 3, lines 1-7

(Doc. No. 30, Exhs. 1, 2)(emphasis added). Furthermore, the pressure jacket is an integral component of the injector described in the specifications. Other features of the injector, including the syringe used in the injector, rely on the existence of a pressure jacket, and the specification does not describe how such features would work without the existence of a pressure jacket. (Doc. No. 30, Exh. 1, 669 patent: col. 2, lines 53-56; col. 3, lines 1-9; col. 7, lines 35-48; col. 8, lines 45-65; col. 9, lines 45-55; col. 10, lines 45-51). Quite simply, the specification fails to describe the components, design, or operation of an injector that does not include a pressure jacket.

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11 As explained in detail in footnote 2, the 669 and 261 patents have the same specification.

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In light of the specification, the fact that the asserted claims do not mention a pressure jacket simply does not support the conclusion that the asserted claims describe a jacketless injector. In SciMed Life Systems, 242 F.3d at 1341, the court concluded that:

where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question.

In the present case, the opposite is true. The specification makes clear that the injector includes a pressure jacket. Accordingly, the Court concludes that the asserted claims do not cover a jacketless injector, even though the asserted claims
might be considered broad enough to disclose a jacketless injector when read without reference to the specification. See also, Watts, 232 F.3d at 882-83 (claim that described pipe joints that could be "sealingly connected" limited to a misaligned taper angle connection method because specification discussed "the present invention" only in terms of the misaligned taper angle connection method); Wang Labs., Inc. v. America Online, Inc., 197 F.3d 1377, 1382 (Fed.Cir. 1999) (court limited a computer system claim term ("frame") to character-based systems noting that the "only system that is described and enabled in the [patent] specification uses a character-based protocol" and that "references to other known protocols [did] not describe them as included in the applicant's invention, and that the specification would not be so understood by a person skilled in the field of the invention.").

Although L-F does not appear to disagree with the conclusion that the specification describes an injector that includes a pressure jacket, it maintains that a pressure jacket is not a required element of the injector described in the asserted claims. (Doc. No. 164, pp. 18-19). L-F argues that the specification of the 669 and 261 patents merely discloses a preferred embodiment of a front-loadable injector that includes a pressure jacket. (Id.). L-F points to the following excerpt, which appears immediately prior to the claims of the 669 and 261 patents:

the invention has been described in the context of its preferred embodiments. It will be appreciated by those skilled in the art that variations and alternatives to the embodiments described may be employed without departing from the principles of the present invention. Accordingly, this patent is not intended to be limited except by the scope of the following claims: . . .

669 patent, col. 13, lines 52-58
261 patent, col. 13, lines 54-60

(Doc. No. 30, Exhs. 1, 2). L-F correctly notes that a patent's claims are not limited to the preferred embodiment included in the specification, unless the language of the claims so limits them. See Karlin Technology, 177 F.3d at 973; see also SRI Int'l, 775 F.2d at 1122 (quoting Smith v. Snow, 294 U.S. 1, 11, 79 L. Ed. 721, 55 S. Ct. 279 (1935)). Because the asserted claims do not mention a pressure jacket, L-F argues that the limitation of a pressure jacket cannot be read into the asserted claims of the 669 and 261 patents. (Doc. No. 164 at 18-19).

However, as Medrad correctly argues, a review of the specification reveals that every embodiment disclosed in the asserted patents requires a pressure jacket. An injector that includes a pressure jacket is not a preferred embodiment of the injector. As the following excerpt demonstrates, the only injector contemplated by the specification is an injector with a pressure jacket:

According to the principles of the present invention, there is provided an angiographic injector having a front end loadable syringe that can be loaded into and removed from the injector pressure jacket through an opening that is provided in the front end of the pressure jacket. To provide this front end loadable feature, the syringes of the preferred and illustrated embodiments of the present invention are provided with a front wall that is pressure restraining . . . and that is securable to the front end of the pressure jacket . . .

669 patent, col. 2, lines 64-67 to col. 3, lines 1-4
261 patent, col. 2, lines 61-67 to col. 3, line 1

(Doc. No. 30, Exhs. 1, 2)(emphasis added). Thus, a pressure jacket is a required element of the injector described in the asserted claims. See Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551 (Fed.Cir. 1996), cert. denied, Showa Aluminum Corp. v. Modine Mfg., 518 U.S. 1005, 135 L. Ed. 2d 1048, 116 S. Ct. 2523 (1996)("When the preferred embodiment is described in the specification as the invention itself, the claims are not necessarily entitled to a scope broader than that embodiment."); Wang Labs, 197 F.3d at1382-83 (scope of claims limited to the only embodiment described in the specification).

The prosecution history also supports the conclusion that the asserted claims of the ' 669 and 261 patents involve an injector that requires a pressure jacket. The original applications which led to the 669 and 261 patents were filed on November 30, 1993 and April 6, 1995, respectively. (Doc. No. 57, Exhs. 23, 25). In the applications, all the independent claims included a pressure jacket and no dependent claims provided for the removal or elimination of the pressure jacket.
On September 12, 1994, L-F amended certain claims of the application that resulted in the 669 patent. (Doc. No. 57, Exh. 22). L-F removed the references to the pressure jacket in those claims. (Id.; Doc. No. 57, Exh. 2). Similarly, on April 6, 1995, L-F amended certain claims of the application that resulted in the 261 patent. (Doc. No. 57, Exh. 26). Again, L-F removed the references to the pressure jacket in those claims. (Id.; Doc. No. 57, Exh. 3). The specifications for the 669 and 261 patents remained the same.

It is undisputed that L-F amended the claims after it learned of Medrad's invention of a jacketless injector. Regarding the amendment of claims in light of a competitor's product, the Federal Circuit has held that:

there is nothing improper, illegal or inequitable in filing a patent application for the purpose of obtaining a right to exclude a known competitor's product from the market; nor is it in any manner improper to amend or insert claims intended to cover a competitor's product the applicant's attorney has learned about during the prosecution of a patent application. Any such amendment or insertion must comply with all statutes and regulations, of course….

Kingsdown Medical Consultants, Ltd. v. Hollister Inc., 863 F.2d 867, 874 (Fed.Cir. 1988), cert. denied, 490 U.S. 1067, 104 L. Ed. 2d 633, 109 S. Ct. 2068 (1989)(citing State Indus., Inc. v. A.O. Smith Corp., 751 F.2d 1226, 1235 (Fed.Cir. 1985)). Thus, despite Medrad's argument to the contrary, L-F did nothing improper in amending the claims submitted in the original applications.

Although the fact that the original claims of the 669 and 261 patents were amended has no bearing on the Court's analysis, the substance of the original claims is relevant to its analysis. The original claims described an injector that required a pressure jacket. The specification was drafted for claims that disclosed an injector that required a pressure jacket, and this specification was not amended when the original claims were amended. It is unlikely that the specification, which was drafted for claims that included a pressure jacket, would describe an injector that does not require a pressure jacket, much less enable one skilled in the art to make and use such a device.

L-F argues that the prosecution history actually supports a conclusion that the injector described in the asserted claims does not require a pressure jacket. In an April 22, 1996, amendment to the 261 patent, L-F stated:

In the claims as amended herein, the locking structure is not necessarily at the front end of the syringe, nor is there necessarily a pressure jacket . . .

(Doc. No. 84, Exh. 4(b), MED 000189). Based on this excerpt alone, L-F argues that "the Patent Office Examiner understood that the claims of the 261 patent were directed to the syringe/injector locking structure either at the front or the rear of the syringe and with or without a pressure jacket." (Doc. No. 164, p. 20). This Court cannot accept such an argument. When faced with a similar argument in DeMarini Sports, 239 F.3d at 1326, the court held that "drawing inferences of the meaning of claim terms from an examiner's silence is not a proper basis on which to construe a patent claim . . ." As in DeMarini Sports, it is L-F, not the Examiner, who commented on the absence of a pressure jacket. The Examiner did not comment either way on the existence of a pressure jacket.

Finally, L-F proposes that the doctrine of claim differentiation prevents the Court from interpreting the asserted claims as requiring pressure jackets. (Doc. No. 164, pp. 16-18). The doctrine of claim differentiation is based "on the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope." Karlin Technology, 177 F.3d at 971-72. However, courts cannot use the doctrine of claim differentiation to "broaden claims beyond their correct scope, determined in light of the specification and the prosecution history and any relevant extrinsic evidence." Multiform Desiccants, 133 F.3d at 1480. The doctrine of claim construction "only creates a presumption that each claim in a patent has a different scope; it is 'not a hard and fast rule of construction.'" Kraft Foods, 203 F.3d at 1368 (quoting Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed.Cir. 1998)); Karlin Technology, 177 F.3d at 972 (stating that the doctrine of claim differentiation is not a rigid rule).

According to L-F, the doctrine of claim differentiation precludes the Court from reading a pressure jacket requirement into claims 10 and 19 of the 669 Patent, as this requirement expressly appears in claim 14 which depends from claim 10. 12 (Doc. No. 164, p. 16-18). Likewise, L-F asserts that claim differentiation precludes the Court from reading a pressure jacket requirement into claims 1 and 18 of the 261 patent as this requirement expressly appears in dependent claims 2 and 19. 13
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

(Id.).

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12 Claim 14 of the 669 patent provides as follows:

The method of claim 10 wherein:

the injector includes a hollow pressure jacket projecting therefrom having an open front end, the opening being located at the front end of the pressure jacket, the jacket having an internal cross-section dimensioned to surround and provide pressure restraining exterior support to the body of a syringe, inserted in the jacket through the opening, between at least the rearward end of the body to the rim;

the peripheral rim of the syringe is located at the forward end thereof;

the syringe inserting step includes the step of translating the syringe rearwardly and inserting thereby the body of the syringe, from the rearward end to the rim, into the jacket; and

the rotating step includes the step of locking the forward end of the syringe to the front end of the jacket.

13 Claim 2 of the 261 patent provides as follows:

The disposable replacement syringe of claim 1 for use with an injector having a pressure jacket extending forwardly therefrom, the jacket having a cylindrical bore therein, the opening of the injector being the hollow bore of the jacket, and wherein the internal sections are fixedly located on the inside of the jacket, wherein:

the radially extending mating sections of the locking structure comprise mating sections positioned in a plane perpendicular to the axis of the body of the syringe so as to align with the internal sections on the jacket when the syringe is inserted in the jacket and to lock the syringe to the jacket.

Claim 19 of the 261 patent provides as follows:

The injector of claim 18 wherein:

the injector has a pressure jacket extending forwardly from the housing, the jacket having a cylindrical bore therein, the syringe receiving opening of the injector being in the bore of the jacket; and

the mating sections at the opening are fixedly located on the jacket, whereby the radially extending sections of the locking structure lock the syringe to the jacket.

(Doc. No. 30, Exhs. 1, 2).

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L-F is applying the doctrine of claim differentiation in an attempt to broaden the asserted claims beyond their scope determined in light of the specification. See Multiform Desiccants, 133 F.3d at 1480. The specification does not contemplate a jacketless injector or instruct on the concept, design, or use of a jacketless injector. Thus, the Court cannot conclude simply because the term "pressure jacket" was explicitly used in dependent claims and not in the asserted claims, that the patents disclose a jacketless injector. As stated above, claim differentiation only creates a presumption that each claim has a different scope. "Claims that are written in different words may ultimately cover substantially the same subject matter." Multiform Sesiccants, 133 F.3d at1480; see also, Tandon Corp. v. U.S. Int'l Trade Comm., 831 F.2d 1017, 1023 (Fed.Cir. 1987)("Practice has long recognized that 'claims may be multiplied . . . to define the metes and bounds of the invention in a variety of different ways'.") (quoting Bourns, Inc. v. United States, 210 Ct. Cl. 642, 537 F.2d 486, 492 (Fed.Cir. 1976)).

Accordingly, the Court concludes that the terms "syringe receiving opening" and "opening" refer to a circular width of a size
to accommodate the back end of a syringe. Furthermore, the Court concludes that the injector described in the asserted claims of the '669 and '261 patent requires a pressure jacket and that the syringe receiving opening/opening is located at the front of this pressure jacket.

Claim 10 of the '669 patent is representative of the asserted claims of the '669 and '261 patents. It provides as follows:

A method of loading a tubular replacement syringe into a high pressure power injector for injecting fluid into an animal, the method comprising the steps of:

providing a power injector having:

a syringe receiving opening with a generally circular periphery therein adapted to receive a rearward end of a syringe having a generally circular rim,

a ram and a motor linked to the ram and operable to reciprocate the ram along a segment of a line projecting through the opening; and providing a hollow tubular syringe that includes:

a cylindrical body having an axis, a generally circular rim, a rearward end and a closed forward end with a fluid discharge orifice therein, and

a plunger axially slidable in the body, the syringe body being structurally capable of withstanding, at least from the rim to the orifice, fluid at an operating pressure of at least 100 psi within the interior thereof;

then:

inserting into the opening, by generally rearward axial movement of the syringe, the rearward end of the body;

rotating the syringe in the opening a fraction of a turn to thereby lock the body around the rim to the injector around the periphery of the opening; and

engaging the plunger with the ram;

then:

energizing the motor and thereby driving the ram forward along the line and parallel to the axis to move the plunger axially forward at a programmed speed to inject the fluid at the operating pressure from within the syringe and through the orifice at a programmed rate into the animal.

Neither claim 10 of the '669 patent nor any of the other asserted claims recites a pressure jacket. The district court, however, construed the claims to require pressure jackets by focusing on the "syringe receiving opening" limitation in claim 10 (and similar language used in the other asserted claims). After finding that limitation to be ambiguous with respect to the location of the opening, the court looked to the specification and concluded that, because the syringe-receiving opening in each of the embodiments of the invention was located at the front end of a pressure jacket, the "opening" referred to in each of the asserted claims had to be located at the front end of a pressure jacket. Medrad embraces the district court's claim construction analysis and makes the more general argument that because the "pressure-jacketed injector" is the only subject matter described in the specification, that subject matter constitutes the invention itself, not simply a preferred embodiment of a broader invention.

We have had many occasions to cite one or both of the twin axioms regarding the role of the specification in claim construction: On the one hand, claims "must be read in view of the specification, of which they are a part." Markman v.
Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). On the other hand, it is improper to read a limitation from the specification into the claims. Arlington Indus., Inc. v. Bridgeport Fittings, Inc., 345 F.3d 1318, 1327 (Fed. Cir. 2003); Gart v. Logitech, Inc., 254 F.3d 1334, 1343 (Fed. Cir. 2001). Although parties frequently cite one or the other of these axioms to us as if the axiom were sufficient, standing alone, to resolve the claim construction issues we are called upon to decide, the axioms themselves seldom provide an answer, but instead merely frame the question to be resolved. We have recognized that "there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification." Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186-87 (Fed. Cir. 1998); accord Anchor Wall Sys., Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1307 (Fed. Cir. 2003). As we have explained, "an inherent tension exists as to whether a statement is a clear lexicographic definition or a description of a preferred embodiment. The problem is to interpret claims 'in view of the specification' without unnecessarily importing limitations from the specification into the claims." E-Pass Techs., Inc. v. 3COM Corp., 343 F.3d 1364, 1369 (Fed. Cir. 2003); accord Tex. Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1204-05 (Fed. Cir. 2002). That problem can present particular difficulties in a case such as this one, in which the written description of the invention is narrow, but the claim language is sufficiently broad that it can be read to encompass features not described in the written description, either by general characterization or by example in any of the illustrative embodiments.

At the outset, we reject the district court's conclusion that the term "opening" should be defined as limited to an opening in a pressure jacket. The specification does not define "opening" restrictively, nor is there anything in the specification that supports the district court's conclusion that the term is ambiguous. The asserted claims refer to the "syringe receiving opening," or simply the "opening," as having various characteristics, but none of the asserted claims state, explicitly or by necessary implication, that the opening must be formed in or in conjunction with a pressure jacket. Claim 10 of the '669 patent, for example, requires "a ram and a motor linked to the ram and operable to reciprocate the ram along a segment of a line projecting through the opening." The claim further provides that the rearward end of the syringe will be inserted into the opening and rotated in the opening to lock it in place. Thus, the "opening" must be located so that the ram reciprocates along a segment of a line projecting through the opening and so that the rear end of the syringe can be inserted into the opening and affixed to the injector at that point. But the claim language does not suggest that the "opening" must also be located at the front end of a pressure jacket.

Other asserted claims likewise refer to the location of the opening without referring to the location of the opening vis-a-vis a pressure jacket. For example, claim 19 of the '669 patent identifies the location of the opening as being "at the front end of the injector," and claims 1, 8, and 15 of the '261 patent refer, respectively, to the opening as being located "on the front [of the injector]." "at the front of the injector," and "on" the injector. Claim 27 of that patent refers to the injector housing as having "a tubular member extending forwardly from the front thereof and having a cylindrical bore therein forming the syringe receiving opening." In each case, the claim specifies the location and structure of the opening while making no mention of a pressure jacket.

In common usage, an opening is simply an aperture, and nothing in the '669 and '261 patents indicates that the term "opening" should be understood to carry with it the requirement that it must always be located in the front of a pressure jacket. Accordingly, contrary to the district court, we find no ambiguity in the term "opening" and no reason to resolve the purported ambiguity by reading that term restrictively. We therefore turn to Medrad's more general argument that the specification and the prosecution history demonstrate that the invention as a whole was limited to an injector system using a pressure jacket.

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1. "An opening" and "closed base"

Claim 9 includes "a battery holder shaped for containing a battery having first and second terminals, the battery holder having an opening at one end and a generally closed base at the other end. . . ." '900 Patent col.11 1.32-35 (emphasis added). Invisible Fence asserts that the term "an opening" means "an opening of the battery holder at an end opposite the generally closed base," and the term "closed base" means "an end of the battery holder that is opposite the opening." (Joint Statement 3.) Perimeter, however, submits that "an opening" is defined as "the open end of the cup-shaped battery holder through which the battery is inserted," and "closed base" is defined as "the end of the single-piece cup-shaped battery holder that is
opposite the open end through which the battery is inserted." (Joint Statement 3.)

Perimeter argues that the opening and the closed base are at opposite ends of a cup-shaped battery holder, while Invisible Fence counters that the claim language does not limit the battery holder to being cup-shaped. Perimeter supports its proposed construction by citing the Description, which provides that "the battery holder . . . is generally cup-shaped having a generally tubular sidewall . . . and a hollow interior with an opening at one end and a closed base . . . at the other." '900 Patent, col.6 1.8-11. Perimeter additionally cites to the Summary of the Invention ("Summary"), asserting that the following language necessarily depicts a cup-shaped battery holder: "The battery pack . . . includes a generally hollow holder for receiving and containing a battery . . . [which] is generally cylindrical in shape having an opening at one end and a generally closed base at the other end." '900 Patent col.1 1.54-58.

To adopt Perimeter's position, we would have to read the limitation from the Description into the claim construction. See Dayco Prods., 258 F.3d at 1327. Claim 9, however, merely provides that the battery holder is "shaped for containing a battery." '900 Patent col.1 1 1.32. Thus, the clear language of claim 9 does not limit the battery holder to a particular shape, and certainly does not limit it to being cup-shaped.

Perimeter also claims that the battery holder is a single-piece design, with the "closed base" and the "generally tubular sidewall" integrally connected as illustrated in the drawings. See '900 Patent figs. 8,10. However, claim 9 does not specify that the battery holder is single-piece; in fact, the written specification, including the Description, never describes the battery holder that way. Therefore, the Court will not import this limitation into claim 9. See Dayco Prods., 258 F.3d at 1327.

Furthermore, Perimeter proposes that the opening is defined as the end through which the battery is inserted and the base is defined as opposite the opening through which the battery is inserted. Any requirement, however, which limits the insertion of the battery is clearly not found in claim 9 or in the written specifications. Indeed, Perimeter points to fig. 3, "an enlarged perspective view of the battery pack," in which the battery is seemingly inserted through the opening, as the only intrinsic evidence in support of its proposed construction.

Perimeter does urge a common-sensical approach, arguing that the opening is the only possible way that the battery can be inserted into the battery holder, since the battery cannot be inserted through a closed base. This argument, however, seemingly depends upon the notion that the closed base and tubular sidewall are integrally connected-a concept we already have rejected. In addition, Invisible Fence proposes that even in a single-piece design, the battery could be inserted through the base before it is ultrasonically welded to the tubular sidewall. 6 Because generally the entire battery pack, and not just the battery, is replaced when the battery weakens, Invisible Fence's proposition is consistent with the invention's purpose-to make battery replacement simple. See '900 Patent col.11.40-46.

6 We do not suggest that the manufacturing process is limited in that way; indeed, the patent poses no requirements regarding the manufacturing process of the battery pack. Instead, Invisible Fence offered this explanation as just one example of how the claim could encompass more than just the limitation proposed by Perimeter.

Because claim 9 makes no reference to the insertion of the battery, the Court will not limit the definition of the opening to "the end . . . through which the battery is inserted." 7

7 Invisible Fence also supports its argument with intrinsic evidence from the prosecution history, specifically the Office Action dated April 5, 1994, when the Examiner stated that "the ends of the spring are recited as being in contact with the base of the battery pack, but they appear to actually be located opposite the base, at the open end closed by the retaining ring." U.S. Dep't of Commerce Patent & Trademark Office, Examiner's Action 2 (Apr. 5, 1994). Invisible Fence claims that because the Examiner made no reference to the insertion of the battery, the battery holder being cup-shaped, or the battery holder being single-piece, the Office Action reveals that claim 9 should not be narrowly construed in conformance with
Perimeter's proposed construction. However, the Court does not find the prosecution history particularly helpful here. The Office Action ostensibly has little to do with defining the opening or the closed base, since the Examiner was merely seeking clarification regarding the configuration of the "ends of the spring." Regardless, because the Court finds the language of claim 9 to be unambiguous, we need not rely on the prosecution history. See Interactive Gift Exp., 256 F.3d at 1332.

Finally, the parties dispute how the retaining ring defines the opening. Invisible Fence asserts that once the retaining ring is ultrasonically welded to the tubular sidewall, see '900 Patent col.7 1.44-47, the opening and the central aperture of the retaining ring become "one in the same." (Pl.'s Opening Br. 10.) Perimeter counters that the opening and the central aperture cannot be coincident with one another, since the central aperture is necessarily smaller than the opening in order to retain the battery within the holder. The Court agrees that the retaining ring does not define the opening. Because welding the retaining ring to the tubular sidewall is merely a preferred embodiment, it is impermissible to limit the definition of opening to coincide with the central aperture. See '900 Patent col.7 1.44-45 ("[The] retaining ring . . .may be securely attached to [the] battery holder. . . .")

For the reasons discussed above, the Court construes the term "an opening" to mean "an opening of the battery holder at an end opposite the generally closed base," and interprets the term "closed base" to mean "an end of the battery holder that is opposite the opening."
8. The term "opening for overflow" (claim 12)

The Court agrees with WIMCO that this term does not need to be construed. The words "opening for overflow" are ordinary words, and nothing in the intrinsic evidence requires those words to be given some unusual meaning.

The Court therefore rejects Lange's argument that an "opening for overflow" is necessarily the "top opening of [a] standpipe." JCCS at 4; Def. Claim Constr. Br. at 39-40. As the Court has already explained, claim 9 (from which claim 12 depends), like claim 6, is not limited to basins with standpipes. Accordingly, although an "opening for overflow" could be the top of a standpipe (as it is in the preferred embodiments disclosed in the '207 patent), it does not have to be the top of a standpipe.

The parties also disagree over the meaning of the phrase "switch housing formed with an opening therein." (052 Patent, col.7, l.66.) Specifically, the parties' interpretation diverges in relation to the word "opening." Both parties refer to the Oxford English Dictionary for the plain meaning of "opening" which defines it as "a vacant space between portions of solid matter; a gap, hole, or passage; an aperture." Oxford English Dictionary Vol X 044-045 (2d ed. 1989). However, based on this definition, the parties urge two entirely different constructions.

Transpec contends that "opening" refers to a hole or a slot located in the side of the switch housing that would allow passage from the inside to the outside of the housing. Specifically, Transpec contends that column 4, line 10 of the specification, which states: "the switch housing is formed with a large opening or slot," supports such a construction. Additionally, Transpec suggests that it is inherent in the meaning of "housing" that there is some empty space inside the housing and thus the term "opening" could be omitted without altering the meaning of the claim. 4

Ellison, however, asserts that "opening" in this sentence refers to the vacant space inside of the switch housing and not to a slot or passage from the inside of the housing to the outside of the housing. In support of its claim Ellison also relies on the plain meaning of "opening" but focuses instead on the portion which describes an opening as a "vacant space between portions of solid matter." Oxford English Dictionary Vol X, 044-045 (2d ed. 1989). Ellison also contends that Transpec's proposed construction is wrong because the claim language states that the housing has an "opening" therein and not thereon, thus suggesting that it is referring to the space within the housing and not some type of hole or slot in the side of the housing. Finally, Ellison argues that the language in the specification referring to the opening as a "slot" is not decisive because it serves only as a preferred embodiment of the invention and should not be used to limit the meaning of the claims. (Pl.'s Reply Br. 4-5.)

Although the specification is to be viewed as a preferred embodiment and not used to limit the terms of the claim language, the claim should not be interpreted in a way that renders the specification outside of the patent claim. See E-Pass Techs., Inc. v. 3COM Corp., 343 F.3d 1364, 1369 (Fed. Cir. 2003) ("The problem is to interpret claims 'in view of the specification' without unnecessarily importing limitations from the specification into the claims.") (citing Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1204-05 (Fed. Cir. 2002). Transpec's proposed interpretation, although conceivably suggested by the term "slot" in the specification, would result in such an interpretation. For example, column 4 of the specification contains the following description for the beam generators and sensors' location:
A pair of beam generators 38, 38' are mounted in the switch housing on one side of the opening 34 . . . for generating and directing a linear beam across the opening 34. A pair of beam sensors 40, 40' are mounted in the switch housing 30 on the other side of the opening 34 and directly in the path of the beams generated by the beam generators 38, 38' respectively.

('052 Patent, col.4, ll.14-23 (emphasis added).) This embodiment clearly describes the beam sensors and generators being inside the switch housing and on opposite sides of the switch housing. However, if the "opening" referred to was a hole or passage to the outside of the housing, it would be impossible for the generating and sensing means to both be located on opposite sides of the opening and at the same time be in the switch housing. Thus, if Transpec's interpretation were adopted, the specification would not fall within the scope of the patent. Such interpretations are highly disfavored. See Vitronics Corp., 90 F.3d at 1583-84 ("Such an interpretation is rarely, if ever, correct and would require highly persuasive evidentiary support . . . ."); see also Hoechst Celanese Corp. v. BP Chemicals Ltd., 78 F.3d 1575, 1581 (Fed. Cir. 1996) ("We share the district court's view that it is unlikely that an inventor would define the invention in a way that excluded the preferred embodiment, or that persons of skill in this field would read the specification in such a way."). Thus, the term "opening" in claim 1 will be interpreted to mean the space within the switch housing and will be construed as follows:

(c) An enclosed structure containing the three elements in subsection (i), (ii), and (iii) and also some vacant, unoccupied space.

The claims in patent 449 also require that the arcuate lower portion "opening toward the channel-shaped upper portion." The ordinary meaning of toward is "in the direction of." Webster's Third New International Dictionary of the English Language Unabridged, p. 2417 (Merriam-Webster Inc., 1986). Ameritex argues that opening toward requires the lower portion to open so that the center point of the lower portion is in a direct line with the center of the base of the upper portion.

First, the claims do not indicate a meaning different from the ordinary meaning of opening toward. Second, the preferred embodiment illustrated by figures 2 and 3 depicts a lower portion that lies along the circumference of a circle and that has a center point. 449 patent, col. 4, ll. 30-33. The angle formed by the mounting member is measured by the location of the center point. 449 patent, figures 2 and 3. The location of the center point determines which arcuately spaced opening is used to secure the lower portion to the deck. 449 patent, col. 4, ll. 65-68 and col. 5, ll. 1-16. However, figures 2 and 3 are preferred embodiments. The specification states that non-circular lower portions may be used. A non-circular lower portion does not have a center point. Moreover, the specification never refers to a requirement that the center point of the lower portion must be in a straight line with the center point of the base of the upper portion for the mounting system to function.

The prosecution history does not reveal any additional limitations placed on this claim term. Consequently, the phrase opening toward the channel shaped upper portion is provided its ordinary meaning of opening in the direction of the upper portion.

"Slots" and "Openings" are Limited to Slots and Openings Less than .254 mm Wide

The '940 patent employs the term "openings" in claims 1 and 37 and the term "slots" in claims 10, 11-14, and 39. In the specification and claims, the term "openings" is sometimes used in reference to a feature of the screening plate/medium, see id., Col. 5, Lns. 43-45; Col. 5, Lns. 55-57; Col. 13, Lns. 25-26, and sometimes used in reference to a feature of the backing plate, see, e.g., id., Col. 2-3, Lns. 66-67, 1-2; Col. 5, Lns. 55-57; Col. 13, Lns. 40-44, whereas the term "slot" is always used in reference to a feature of the screening plate/medium. 9 "Slots" is not defined in the specification, however, the term appears to be a subset of "openings," which the specification states "is intended to encompass apertures of all shapes and sizes, including holes, slots, orifices and passageways." Id., Col. 5, Lns. 38-41. One preferred embodiment of the present
invention provides "a slot width of 0.5 mm." Id., Col. 12, L. 5. Accordingly, AFT seeks to construe these terms broadly, with "openings" simply meaning, something that is open, and "slots" meaning a narrow opening or groove. Opp'n Construction Mot. at 16-18.

9 The terms "openings" and "slots" are also used in the specification in reference to a feature of traditional screens where no distinction is made as to separate screening medium and backing plate components. See, e.g., '940 patent, Col. 1 at 33, 60. Despite the apparent breadth of "openings" and "slots" provided for by the claims and specification, AFT unequivocally limited the scope of these terms during the prosecution history. Again while attempting to show that the Gillespie did not anticipate the present invention, AFT distinguished the former as inappropriate for the use towards which the latter was solely directed, namely pulp treatment. To do so, AFT emphasized, "the slot sizing of the Gillespie screen further underscores how inappropriate the device is for screening pulp fibers." Mesiti Decl., Ex. D1 (Dkt. No. 33-16) at 80. The slot size of the Gillespie is .762 mm. Id. AFT explained, "this slot size would be totally inappropriate for screening . . . pulp fibers. . . . [P]ulp fibers have diameters less than 50 microns . . . and typically slot widths of 0.2 mm would be used for aspects of the [present] invention." Id. (emphasis added). AFT continued, "[t]he slots of Gillespie are over three times the size of the slot width of the present invention." Id. (emphasis added). Based upon these statements to the Examiner, J&L seeks to narrow the definition of "slots" and "openings" to include only slots or openings with widths of 0.2 mm or less. Construction Mem. at 15-17.

The statements made by AFT during the prosecution history in order to avoid anticipation by the Gillespie constitute an unmistakable disavowal of the full scope that the claim terms and specification indicate for the terms "slots" and "openings." 10 That disavowal, however, is slightly narrower than the construction proposed by J&L. AFT, in arguing to the Patent Examiner, clearly disavowed any slot width that was not suitable for screening pulp. AFT stated that would "typically" limit slots used in the invention to 0.2 mm. That statement does indicate a clear intent to always limit the slots to 0.2 mm. AFT went on to assert a more definitive limit for slots employed in the invention when it flatly stated that the .762 mm slots found in the Gillespie "are over three times the size of the slot width of the present invention." AFT, thereby, unequivocally disavowed any slot with a width equal to or greater than 0.254 mm. Having done so during prosecution, AFT cannot now argue a broader interpretation of these terms. Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1578 (Fed. Cir. 1995) ("A patentee may not proffer an interpretation for the purposes of litigation that would alter the indisputable public record . . . and treat the claims as a 'nose of wax.'") (quoting Senmed, Inc. v. Richard-Allan Med. Indus., 888 F.2d 815, 819 n.8 (Fed Cir. 1989); see also Texas Instruments, Inc. v. Int'l Trade Comm'n, 988 F.2d 1165, 1174-75 (Fed Cir. 1993)) (prosecution history estoppel applies where unmistakable statements were made to the Patent Office in support of patentability); Cf. Haliczzer v. United States, 356 F.2d 541, 545, 174 Ct. Cl. 507 (Ct. Cl. 1966) ("Plaintiff may not here take a position inconsistent with the one he maintained before the Patent Office in the proceedings which led to the issuance of the patent"). Thus, the terms "openings" and "slots" mean openings or slots with widths less than 0.254 mm.

10 While AFT refers in this excerpted history only to "slots," it is clear that it is equally disavowing "openings" insofar as they relate to the screening plate/medium. AFT makes the above argument to show that "Gillespie does not anticipate the invention recited in claim 1." Mesiti Decl., Ex. D1 (Dkt. No. 33-16) at 80. Claim 1, however, employs the term "openings" rather than "slots." AFT later makes the same argument with regard to claim 10, which uses "slots." Id. at 81. Here, as in the specification, the terms "slots" and "openings" appear interchangeable, at least when directed to the screening plate/medium.
On September 19, 2003, the Court held a hearing in accordance with Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996), to construe the disputed terms and phrases of the asserted claims. The Court's October 7, 2003 Order Following Claims Construction Hearing construed the following disputed terms in the '415 patent which are relevant to the present findings on validity and invalidity:

"implant delivery assembly"  
"an apparatus for delivery of occlusive devices, such as embolic coils that comprises three distinct components: a pusher, a coupling, and an implant"

"pusher"  
"any device or structure intended to push another device or structure"

"selectively operable coupling"  
"a connecting device that connects the implant to the pusher and that can be selectively operated by the user"

"coupling"  
"a connecting device that connects the implant to the pusher and that can be selectively operated by the user"

"said coupling operable by fluid pressure so that when a sufficient amount of fluid pressure is applied to the coupling, the fluid pressure causes the occlusive implant to separate from the pusher"  
"the coupling is a connecting device that can be operated by selectively applying fluid pressure to the coupling to separate the implant from the pusher, and the application of the fluid pressure by the user to the coupling causes the detachment of the implant at the coupling"

"delivering fluid pressure through the pusher such that the implant detaches from the pusher by the fluid pressure"  
Plain and ordinary meaning applies, no specific construction by the Court

(The Markman Order at 22-29, Docket Item No. 177.)

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8. Claim 1 - "operable for flexing transversely to said longitudinal axis to relax the dunnage structure when the side walls are moved to a collapsed position such that the relaxed dunnage structure is generally positioned in the reduced size container for return"

Bradford proposes that this term means "being 'coupled to' the two 'side walls' such that folding the two 'side walls' causes bending or folding relative to said longitudinal axis to relax the 'dunnage structure' and occurs during the time that the two 'side walls' are being folded into a collapsed position such that the relaxed 'dunnage structure' is generally positioned in the reduced size container so that the container can be sent back while in the collapsed position." Defendants propose that this term means "being 'coupled to' the two 'side walls' such that moving the two 'side walls' causes bending, folding, or contracting relative to said longitudinal axis to relax the 'dunnage structure' and occurs during the time that the two 'side walls' are being moved into a collapsed position such that the relaxed 'dunnage structure' is generally positioned in the reduced size container so that the container can be sent back while in the collapsed position." Again the difference between the parties' proposed definitions is that Bradford limits the term to "fold" or "folding". In contrast, Defendants maintain the limitation "move" or "moving", albeit they do add that moving the side walls causes "contracting".

For the reasons stated in Part IV. A.3, supra, "moved to" should not be limited to folding operations. Accordingly, Bradford's
definition is rejected to the extent it limits this term to "fold" or "folding".

With respect to "contracting", Bradford argues that "contracting" is akin to "flexing", as in flexing a muscle. Bradford argues that flexing is not the same as the collapsing operation this invention performs. On the other hand, Defendants rely on the dictionary definition of "flex" in arguing that "flexing transversely" includes contracting. They note that flex means "to bend (something pliant or elastic). To bend (a joint). To bend a joint repeatedly. To contract."). Tr. at 67.

Defendants' dictionary indicates that "contracting" is encompassed within the term "bending." Bradford's proposed definition is an admission that the "upper edge" bends when the side walls are moved to a collapsed position. Therefore, the Court finds that adding the limitation of "contracting" to this term would be redundant. Accordingly, to that extent Defendants' definition is rejected.

The Court holds that "operable for flexing transversely to said longitudinal axis to relax the dunnage structure when the side walls are moved to a collapsed position such that the relaxed dunnage structure is generally positioned in the reduced size container for return" means "being 'coupled to' the two 'side walls' such that moving the two 'side walls' causes bending or folding relative to said longitudinal axis to relax the 'dunnage structure' and occurs during the time that the two 'side walls' are being moved into a collapsed position such that the relaxed 'dunnage structure' is generally positioned in the reduced size container so that the container can be sent back while in the collapsed position."

II

On appeal, On Serts argues that the district court's claim construction was erroneous, and no infringement can be found under On Serts's proffered construction. Because the parties dispute the meaning of terms in the claims of the patent, this court reviews the district court's order under Markman v. Westview Instruments, Inc., 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). The claim language, of course, defines the bounds of claim scope. Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 619-20, 34 U.S.P.Q.2D (BNA) 1816, 1819 (Fed. Cir. 1995) ("First, and most importantly, the language of the claim defines the scope of the protected invention."). "To determine the meaning of disputed claim terms, however, a construing court may consider other sources, including the patent specification and the administrative record leading to patent issuance. These additional sources may provide context and clarification about the meaning of claim terms." York Products, Inc. v. Central Tractor Farm & Family Center, 99 F.3d 1568, 1572, 40 U.S.P.Q.2D (BNA) 1619, 1622 (Fed. Cir. 1996) (citation omitted); see also Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1561, 19 U.S.P.Q.2D (BNA) 1500, 1503 (Fed. Cir. 1991). While extrinsic evidence may also be considered in claim construction, no such evidence was considered here.

Claim 1 of the '080 patent, the only claim at issue, states:

Apparatus for producing a succession of self-adhesive labels carried on a backing of release material, the apparatus comprising:

[1] means for conveying along a pathway a laminar material comprising a succession of label base portions, each of which is coated on its reverse side with a pressure sensitive adhesive, and having a backing of release material;

[2] detecting means situated along the pathway for detecting a succession of particular locations which are spaced along the length of the laminar material;

[3] an adhesive applying station situated along the pathway and including an adhesive applicator, which is operable in response to the means for detecting, for applying a layer of adhesive to a particular area on each label base portion;

[4] a label applying station situated along the pathway downstream of the adhesive applying station, the label applying station including label applying means, which are operable in response to the means for detecting, for successively applying individual pre-printed labels to respective successive layers of adhesive so that a pre-printed label covers each area of each label base portion to which adhesive has been applied.
This appeal focuses on the meaning of elements [3] and [4]. The parties offer conflicting interpretations of "operable in response to," the pertinent phrase in the relevant elements. Instance favors the construction of the district court.

The district court, in the form of jury instructions, determined that the words 'operable in response to', as they are used in claim 1 of the '080 Patent, do not imply that a specific control means is being claimed. In other words, if the web sensor in [On Serts's] label system causes a response in the operation of the adhesive applicator, that adhesive applicator may be found to be operable in response to the web sensor.

On Serts, on the other hand, suggests a different and narrower construction. On Serts argues that the adhesive applicator is only "operable in response to" the detector when the sensor initiates the operation of the adhesive applicator either "immediately or after a predetermined delay of time." Because the accused device does not contain a web sensor that initiates the operation of the glue applicator immediately or after a predetermined delay of time, On Serts argues that this fact precludes literal infringement.

III

On Serts's claim construction rests on an importation into the claims of limitations from the embodiments in the specification. See Intervet America, Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053, 12 U.S.P.Q.2D (BNA) 1474, 1476 (Fed. Cir. 1989) (stating that limitations from the specification should not be read into the claims); Sjolund v. Musland, 847 F.2d 1573, 1581, 6 U.S.P.Q.2D (BNA) 2020, 2027 (Fed. Cir. 1988) ("While . . . claims are to be interpreted in light of the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims . . . ."). In this case, "operable in response to" has a definite meaning without recourse to the specification for clarification. This claim term is not so amorphous a term that the court can only reconcile the claim language with the inventor's disclosure by recourse to the specification. See E.I. Du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433, 7 U.S.P.Q.2D (BNA) 1129, 1131 (Fed. Cir. 1988) (stating that the specification can supply understanding of unclear claim terms, but should never trump the clear meaning of claim terms).

Thus, the claim terms define the bounds of the patentee's property right. Stiftung v. Renishaw PLC, 945 F.2d 1173, 1177, 20 U.S.P.Q.2D (BNA) 1094, 1098 (Fed. Cir. 1991) ("Claim interpretation must begin with the language of the claim itself.") (citing Smithkline Diagnostics, Inc. v. Helena Laboratories Corp., 859 F.2d 878, 882, 8 U.S.P.Q.2D (BNA) 1468, 1472 (Fed. Cir. 1988)). In this case, the term "operable in response to" defines broadly the relationship between the various components of the claimed device. Broad terms, however, are not necessarily indefinite. Contrary to On Sets's assertion, this drafter did not choose either of the more limiting phrases "directly operable in response to" or "immediately operable in response to." Instead, as the district court correctly determined, "if the web sensor in [On Serts's] off-line system causes a response in the operation of the adhesive application, that adhesive applicator may be found to be operable in response to the web sensor." (Emphasis added.) The district court's instruction thus comports with the meaning of the claim language.

IV

The specification of the '080 patent also supports the district court's claim construction. In the preferred embodiment, for example, a START sensor detects the leading edge of the label. The specification then describes the action of the adhesive applicator in relation to the sensors: "When the START sensor 24 detects the said given point, an electrical signal is sent therefrom to initiate the operation of the adhesive applicator 30, either immediately or after a predetermined delay of time." This description is repeated for the STOP sensor. Reinforcing this reading, the specification continues:

It will be apparent to those skilled in the art that the separation of the START sensor 24, STOP sensor 26 and adhesive applicator 30, as well as any time delays in initiating and terminating the operation of the adhesive applicator 30, can be varied as desired.

(Emphasis added.) Clearly, in this embodiment, the sensor causes a response in the operation of the adhesive applicator. This response can vary according to the desires of the operator.
The specification offers an additional embodiment:

Instead of employing a START sensor 24 and a STOP sensor 26, the apparatus can employ a START sensor 24 which is coupled to an encoder . . . . When the START sensor 24 detects the given point on a respective label base portion 16, an electrical signal is sent to the encoder which acts to measure the distance travelled [sic] by the moving web from a given start position. After the web has travelled [sic] a prescribed distance, the encoder activates the adhesive applicator 30 for a given period.

In this embodiment, the distance traveled by the web determines the length of the glue application. In this embodiment, the response is measured in terms of distance traveled by the web instead of in terms of time elapse. This difference, however, is mostly semantics. At a constant rate of speed, a predetermined distance is equivalent to a predetermined period of time. Still another embodiment explicitly states that the START sensor 24 and the STOP sensor 26 may detect printed marks which activate initiation or termination responses in the application of adhesive. Each of these embodiments describe relationships between the adhesive applicator and the sensor properly described by the concept of "operable in response to."

The specification sheds similar light on the words "operable in response to" with respect to the application of the booklet to the label. The fourth element of the claim requires that the label applying means is "operable in response to" the sensors. Once again, the specification provides numerous references to the operation of that particular element. For example, like the activation of the adhesive applicator, the sensor "initiates the operation of the adhesive applicator 30, either immediately or after a predetermined delay of time." These statements from the specification reinforce the district court's interpretation of the claims.

F. "Lock spindle being operable to rotate between a lock position and a release position"

Pedicraft asserts that this claim language in Claims 10 and 18 should be construed to mean "in response to operation of the handle, portions of the lock spindle are rotated from a position that precludes unwanted side rail travel to a position that permits desired side rail travel." Dkt. 65, pg. 24. Once again, however, Stryker's construction is more specific as to the meaning of this language. Stryker argues that this language means that "the lock spindle turns about its longitudinal axis from a lock position whereby the lock pin is resting on a catch to a release position whereby the lock pin slides through a clearance groove without obstruction."

Pedicraft centers its argument around its broader construction of "vertical lock spindle" (i.e., as potentially an assembly) as well as its claim that the spindle does not necessarily have to rotate around a vertical axis. It contends that Claim 10 expressly provides for the rotation between lock and release positions using the locking pins, and it is the release that permits movement of the associated side rails between their uppermost and lowermost positions. Dkt. 65, pp. 24-25; '855 Patent, Col. 9., Claim 10. According to Pedicraft, Stryker's specific and limited construction is not contained in Claim 10, and as such there is no support in the '855 Patent itself for importing the "specific catch and clearance groove arrangement" proposed by Stryker. Dkt. 65, pg. 25. Instead, Claim 10 only requires that in response to the actuation of the handle component, the lock spindle rotates relative to the side rail such that it is either held in a vertical position or allowed to move. Id.

Stryker again disputes Pedicraft's broader and more vague construction and offers a more specific one it contends is supported by the specification and figures embodied in the '855 Patent. See '855 Patent, Col. 6. The Court agrees that there is no support for the contention that only "portions" of the lock spindle will rotate relative to the side rail, and as explained above, there is no evidence to suggest that a "spindle" could possibly be a multi-part assembly. Instead, the '855 Patent describes the entire vertical lock spindle as being rotatably attached, and the ordinary meaning of "spindle" in the context of the '855 Patent clearly suggests a longitudinal axis of rotation. The Court further agrees that Pedicraft's use of terms such as "unwanted" and "desired" side rail movement in its proposed construction does improperly introduce vagueness and confusion into the patent, particularly when the term "spindle" has an ordinary meaning and its vertical attachment, movement and rotation are made clear from the express language of the '855 Patent itself. See, e.g., Wang Labs, 197 F.3d at 1384.
Stryker's construction that "the lock spindle turns about its longitudinal axis from a lock position whereby the lock pin is resting on a catch to a release position whereby the lock pin slides through a clearance groove without obstruction" is once again based on common sense. The language "lock spindle being operable to rotate between a lock position and a release position" therefore simply means that it rotates about its axis in such a way that its lock pins are either resting on a catch to prevent movement of the side rails, or the pins are in a release position to allow clearance (and thus movement) of the side rails. Such construction comports with both logic and the specific language of the '855 Patent itself.

D. "Arranged for Operative Engagement" and "Operably Arranged"

"Arranged for operative engagement" is found in claim 1 of the '486 patent and claim 7 of the '677 patent and "operably arranged" is found in claim 1 of the '677 patent. Hysitron asserts that both of these terms are easily understood and do not require clarification by the Court. Joint Claim Construction Statement at 11, 47. MTS asserts the same construction for both terms: "where the sample is moved in the x, y, and z directions when in contact with a probe, or a probe is moved in the x, y, and z directions when in contact with a sample, and where said movement of the sample or said movement of the probe in the z direction is controlled by feedback from a force sensor." Id. at 11-12, 48.

MTS's construction of these terms follows from its proposed unitary construction of "scanning head." Adopting that construction would eliminate the possibility that components of the scanning head be "operably arranged" or "arranged for operative engagement." The Court has rejected MTS's construction of "scanning head" and accordingly rejects MTS's construction of "operably arranged" and "arranged for operative engagement." Webster's New Collegiate Dictionary (1977) defines "operative" as "producing an appropriate effect." Supra at 804. It defines "arrange" as "to put into a proper order or into a correct or suitable sequence, relationship, or adjustment." Id. at 62. It defines "engage" as "to interlock with." Id. at 378. Therefore, the Court defines "operably arranged" to mean "placed in a suitable relationship so as to produce the appropriate effect" and "arranged for operative engagement" to mean "placed in a suitable relationship so as to interlock appropriately."

b. Operably Connected

Claim 1 of the '662 Patent describes several components that are "operably connected" to other components of the invention. Plaintiff asserts that "operably connected" should be defined uniformly throughout the patent to mean that one component is connected to another component, either directly or indirectly, so that the components may interact with each other. Defendant, on the other hand, contends that the term "operably connected" is indefinite and not supported by structure and, thus, that the drawing and specification must be used to determine the structure and meaning of the term "operably connected" as to each connected set of components.

The Court agrees with Plaintiff that the common meaning of the term "operably connected" is that one component is connected to another component in such a manner that the components may interact with each other. In construing the term in that manner, the Court notes the principle that claim terms should be construed consistently. See Phonometrics, Inc. v. Northern Telecom, Inc., 133 F.3d 1459, 1465 (Fed. Cir. 1998) ("A word or phrase used consistently throughout a patent claim should be interpreted consistently."). Here, the language is used consistently throughout the patent to generically mean that the specified components interact with each other. Nothing in the language of the claims or specifications, or the prosecution history, urges the Court to reach a different result. Furthermore, Defendant's own witness has testified that this term means "that the interface between two components will serve the function causing one component to interact with respect to one another." See Plaintiff's Claim Construction and Brief Regarding '263 and '662 Patents at 14, citing Deposition Testimony of Paul Cross. The Court finds no reason to further narrow the term as the claims, not the specifications, should limit the scope of the patent.
Thus, the Court construes the language "operably connected" to mean that one component is connected to another component in such a manner that the components may interact with each other.

4. "Operably Connected"

Bradley also argues that the word operably in the phrase operably connected means directly because that is the only connection described in the specification. Defs.' Opp'n to Claim Constr. at 14-18. Bradley relies upon two cases for the proposition that operably in the '960 Patent can only mean directly, Toro Co. v. White Consolidated Indus., Inc., 199 F.3d 1295 (Fed. Cir. 1999) and Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473 (Fed. Cir. 1998). In those cases, the Federal Circuit found that the meaning of the disputed claim terms were limited by the disclosure in the patent specifications at issue. See Toro, 199 F.3d at 1301-02; Gentry Gallery, 134 F.3d at 1480. Bradley argues that the '960 Patent specification only discloses a multiple response thermostat that has a second, faster thermostat portion directly connected to the flow control valve means. Therefore, because no broader disclosure is made in the '960 Patent, operably must mean directly. Bradley specifically points to the following language in the '960 Patent:


2. "Yet another object of the present invention is to provide a thermostatic control valve assembly which quickly responds to changes in fluid temperature at low flow conditions." Id. col. 2, ll. 43-46.

3. "Thermostat portion 143 has a faster response rate but smaller travel than portion 142 to provide immediate, accurate control nearest the discharge of flow control valve 114, where at low flows the hot and cold fluids may not be fully mixed. Conversely, thermostat portion 142 has a slower response but greater travel than portion 143 to provide subsequent control way [sic] from the discharge of flow control valve 114, where the hot and cold fluids are more fully mixed." Id. col. 6, ll. 48-55.

See Defs.' Opp'n to Claim Constr. at 15-16.

However, Lawler argues that there is no means-plus-function language in this part of the claim that would limit the invention described in claim 1 to one with the second thermostat portion directly connected to the flow control valve means. Pl.'s Reply to Claim Constr. at 5-7. Lawler argues that the plain meaning of operably is broader than directly. Id. at 6. Moreover, limiting the definition of operably to directly imports a limitation from the preferred embodiment into the claims, which is improper. See id. (citing Virginia Panel Corp. v. MAC Panel Corp., 133 F.3d 860, 866 (Fed. Cir. 1997); Continental Paper Bag Co. v. Eastern Paper Bag Co., 210 U.S. 405, 418, 52 L. Ed. 1122, 28 S. Ct. 748 (1908)); see also id. at 6-7 (discussing Northern Telecom. Ltd. v. Samsung Elecs. Co., Ltd., 215 F.3d 1281, 1293 (Fed. Cir. 2000)). Furthermore, the '960 Patent specification discloses a multiple response thermostat where the second portion with the faster response rate is connected to the flow control valve means through the first thermostat portion. Id. at 8 (citing '960 Patent, col. 7, ll. 14-29). Thus, Lawler argues that the plain meaning of operably is "either directly or indirectly."

The Court finds that in the context of the '960 Patent, operably connected to means capable of performing work on or capable of effecting the movement of. The '960 Patent describes an assembly that performs a function -- quick regulation of the outlet temperature of water at low to high flow rates. '960 Patent, col. 1, ll. 46-60. The multiple response thermostat portion of the assembly is the key to performing the regulating function. Changes in the thermostat operate or work to move the parts that control the flow of hot and cold fluids through the valve assembly. See id. col. 2, ll. 5-14; id. Abstract (stating that the assembly has "an improved multiple response thermostat having a fast response rate adjacent to the entrance of the mixing dome for responding quickly to the temperature of fluid entering the mixing dome"). This is the basic principle upon which thermostatic mixing valves work and is well known to ones skilled in the art. See id. col. 1, ll. 13-23; id. col. 1, ll. 51-60; id. col.; id. Abstract. In the case of the '960 Patent invention, the specification provides that the thermostat works to move the push rod, which in turn works to make changes in the orientation of the liner and piston, or the flow control valve means, which in turn changes the amount of hot and cold fluid entering the valve assembly. Id. col. 4, ll. 3-24. Correspondingly, the change in the amount of hot and cold fluid flowing into the valve, changes the temperature of the
mixed fluid at the outlet. See id. col. 2, ll. 1-5 ("Flow control valve means is fluidly coupled with the hot and cold inlets and the mixing chamber for controllably mixing hot and cold fluid received through the hot fluid inlet and the cold fluid inlet, respectively, and supplying the mixed fluid to the mixing chamber."); id. col. 4, ll. 11-24. According to the '960 Patent, this chain of events is triggered by the action of the thermostat upon the push rod. See id. col.4, ll. 11-24. Therefore, in the '960 Patent, the term operably in the phrase operably connected cannot be limited to directly because the thermostat is actually directly connected to the push rod, not to the flow control valve means, or the liner and piston. The '960 Patent contemplates that the action of the thermostat on the flow control valve means will be indirect. Specifically, the patent discloses that "adjustment screw 27 acts against spring 23 and thus allows the vertical position of the thermostat 26 and ultimately of the piston 19 to be adjusted, which in turn alters the relative proportions of hot and cold fluid passing through the openings 20." Id. col. 4, ll. 20-24 (emphasis added). Clearly, the word ultimately implies something other than directly.

The language that Bradley pointed out does not alter this analysis. First, the object of the invention "to provide a thermostatic control valve assembly which quickly responds to changes in fluid temperature at low flow conditions" provides no limitation on the means for accomplishing that task. Id. col. 2, ll. 43-46. As described in the discussion above, the multiple response thermostat as a whole is one of the features intended to fulfill that objective. See id. col. 1, ll. 51-60; id. col. 7, ll. 1-13.

Second, the '960 Patent Abstract states that the thermostatic mixing valve assembly of the invention "also include[s] . . . an improved multiple response thermostat having a fast response rate adjacent to the entrance of the mixing dome for responding quickly to the temperature of fluid entering the mixing dome." Id. Abstract. Again, this language does not limit the invention to multiple response thermostats that have a second, faster portion directly connected to the flow control valve means. It does imply that the multiple response thermostat have a portion that has a fast response rate close to the entrance to the mixing dome. However, the remainder of the patent teaches that the entire thermostat assembly is attached to the piston by the push rod. In fact, as Lawler points out, the patent teaches that in an alternative embodiment

coiled tubing 144 is filled with a temperature sensitive fluid and is sealed at one end 151 and is fluidly coupled at its other end 153 with an internal control piston . . . contained within the hollow bore of cylindrical portion 145 of first thermostat portion 148. The temperature sensitive fluid expands with heat addition to advance the internal control piston which in turn acts on connecting rod 156 to advance piston 158.

Id. at col. 7, ll. 21-29. Clearly, this embodiment teaches that the second thermostat portion need not be directly connected to the flow control valve means; but, indeed, it need only be able to effect the movement of the flow control valve means.

For the same reason, Bradley's third argument fails. Bradley argues that the only arrangement of thermostat portions disclosed by the patent is one where the portion with the faster response rate is closest to or adjacent to the discharge of the flow control valve, therefore, the second thermostat portion must be directly connected to the flow control valve means. 2 As just discussed, the patent discloses an arrangement of thermostat portions where the second thermostat portion with the faster response rate is not directly connected to the flow control valve means, but must cause a change that effects the first thermostat portion that in turn effects the flow control valve means through movement of the push rod. Id. at col. 7, ll. 21-29.

--- Footnotes ---

2 At the Markman hearing Dr. Ovens testified that according to his experience and tests the arrangement of thermostat portions in the preferred embodiment pictured at figure 6 and described in the '960 Patent at column 6, lines 48-55 is backward. Thermostat response rate, as both experts testified at the preliminary injunction hearing, seems to be related to surface area exposed to the fluid. See Prelim. Inj. Hr'g Tr. at 164-65, 182, Ovens-Direct; id. at 219-20, Ovens-Cross; id. 547-48, 549-51, 553-54, Ballanco-Direct. The thermostat portions pictured in figure 6 indicate that the thermostat with the larger surface area is further away from the discharge of the flow control valve. See '960 Patent, Fig. 6; id. col. 6, ll. 48-55. Thus, Dr. Ovens testified that the faster thermostat portion is in fact further away from the discharge of the flow control valve. However, this revelation has no bearing on whether the second thermostat portion must be directly rather than operably connected to the flow control valve means. Claim 1, as interpreted by the Court in this order, supports either configuration.

--- End Footnotes ---
In accordance with the analysis above, Lawler's proffered definition for the phrase operably connected, "directly or indirectly connected," does not adequately define the term either. The '960 Patent makes clear that the thermostat of the valve assembly described must act or work upon the flow control valve means for the assembly to perform as desired. Id. col. 2, ll. 1-14. This fact is not changed by the requirement in claim 1 that the second thermostat portion of the multiple response thermostat be operably connected to the flow control valve means. The second thermostat portion is part of the whole thermostat that acts to control the flow of hot and cold fluids through the assembly. So long as the second thermostat portion is connected such that it can effect the movement of the flow control valve means, this element of claim 1 is met.

Reading the plain meaning of claim 1 in light of the specification, the Court finds that operably connected to means capable of performing work on or capable of effecting the movement of.

C. Construction of Clause (c): "air-permeable secondary wall means above said chamber upper wall portion and operably coupled with said chamber-defining means."

The '767 patent claims an air flotation, ventilated mattress apparatus comprising, among other things, "air-permeable secondary wall means above said chamber upper wall portion and operably coupled with said chamber-defining means." The parties disagree about the meaning of "operably coupled." According to plaintiff, the term means that "the two elements are in mutual relation so that the operation of one works with the other to achieve a common result." Plaintiff's Ex. 401. More specifically, plaintiff argues,

this limitation means that there is at least one air-permeable cover sheet (or secondary wall) that overlies the upper wall of the chamber. This secondary wall is connected, linked, or attached in some way to the chamber described in clause (a). This would include any operable method of coupling a cover sheet with a mattress, and specifically includes attaching a cover sheet to a mattress with straps or elastic bands.

Defendants disagree, arguing that under the patent language the secondary wall means and the upper wall portion must be "chamber-defining" in order to be "operably coupled." Defendants' Ex. 414. More specifically, according to defendants,

this limitation speaks of a "secondary wall means" that is "operably coupled" with the lower chamber. Defendants move this Court to interpret "operably coupled" so that it requires a device which (1) possesses a compartment "defined between" the upper wall and secondary wall, and (2) is assembled so as to allow the inflation of that compartment and the flow of air through "substantially the entire plan surface area" of the secondary wall.

Plaintiff contends that "operably coupled" means simply that those elements "be in such a mutual relation that the operation of one interacts with the operation of the other to achieve a common result -- not that they are mechanically joined to provide a particular function described elsewhere in the claim." 8 Plaintiff's Claim Construction Brief at 14. Plaintiff asserts that defendants' interpretation seeks to limit the claims to the preferred embodiment described in the specification or to the features of prototypes of the invention. Plaintiff asserts that it is improper to read into the claim limitations from the specification. Electro Medical Sys., S.A. v. Cooper Life Sciences, Inc, 34 F.3d 1048, 1054 (Fed. Cir. 1994).

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8 According to plaintiff, the coupling could be accomplished by snaps, zippers, buttons, velcro straps, elastic bands or other means.

At the Markman hearing plaintiff's expert testified that the term "operably coupled" should be read to mean two things that are mutually related so that the work of one thing is coupled with the work of the other. Plaintiff's expert testified that the term did not require that the items be physically attached. This opinion is not consistent with the meaning proffered in plaintiff's briefs.

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Defendants first rely upon the claim language that the upper wall of the lower chamber should combine with the secondary wall to "cooperatively define[] therebetween an inflatable compartment above said chamber." '767 patent, col. 6, 1.23-25. The secondary wall must allow "substantially uniform passage of air therethrough over substantially the entire plan surface area of the secondary wall means." Id., 1.20-22. Defendants argue that to serve the goals of the operable coupling the device must have a compartment "defined [] between" the upper wall and secondary wall and must be assembled to allow inflation of that compartment and the flow of air through "substantially the entire plan surface area" of the secondary wall.

Defendants also rely upon the specification that the upper compartment "inflate" and that the operable coupling should "define" the compartment "[]between" the upper wall of the lower chamber and the secondary wall. Defendants then point to the description of drawings that "the secondary wall 36 is detachably secured by means of a conventional zipper 38 at a point proximal to the joinder between the sidewall 24 and top wall 26. As seen in Fig. 3, an inflatable compartment 40 is defined between the top wall 26 and the secondary wall 36."

In the '767 patent, the function of the secondary wall means is to define, in cooperation with the upper wall portion, an inflatable compartment above the lower chamber. '767 Patent, Col. 6, 1.21-23. The Court believes that the phrase "operably coupled with said chamber defining means" has a plain meaning in light of the '767 claims, the '767 specification, and the '767 prosecution history. A person of ordinary skill in the art of air bed engineering would read "operably coupled" to mean that two elements work in concert to create an inflatable chamber, e.g. one which is not air tight but can receive and hold air. Thus, whatever means is used to operably couple must create an inflatable chamber between the top wall and the secondary wall.

Claim 3

Claim 3 provides as follows: "The system of Claim 1 in which the actuating mechanism is operated remotely by sending signals from a communication device." Graham-White contends that the italicized phrase should be construed as "the actuating mechanism receives signals from a communication device that is not in contact with the actuating mechanism." Ellcon argues that Claim 3 is limited to wireless remote control. This court agrees with Graham-White's construction and therefore construes the phrase as follows: the actuating mechanism receives signals from a communication device that is not in contact with the actuating mechanism.

C. Claim Construction

Medtronic asserts that the district court erred in construing the claim term "operative engagement." Claim construction is a matter of law, and we review the court's claim construction without deference. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1451 (Fed. Cir. 1998) (en banc). In doing so, we are mindful of the principle that "the claims of a patent define the invention to which the patentee is entitled the right to exclude." Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). We read the claims "in view of the specification," which is "the single best guide to the meaning of a
disputed term." Id. at 1315.

Claim 1 recites the limitation of "a lower part having a lower surface for engaging a vertebrae and an upper surface portion in operative engagement with the rounded portion of the upper part." '071 patent col.6 ll.60-62 (emphasis added). At claim construction, Medtronic proposed construing "operative engagement" to mean "the interaction between the pivot insert and the rounded portion of the upper part." Claim Construction Order, 2008 U.S. Dist. LEXIS 116648, at *18. The court observed that although the preferred embodiment of the '071 patent has a pivot, claim 1 does not recite such a limitation: rather, claim 1 recites only an upper and a lower part that are "in operative engagement" with each other. The court also found that claim differentiation weighed against reading a pivot limitation into claim 1, because various dependent claims add limitations relating to a two-piece lower part with a pivot insert. Therefore, the court adopted SSI's proposed construction, construing "operative engagement" as "permitting movement (for example pivotability)." Id. at *23.

Medtronic asserts that the court erred in construing "operative engagement" as not incorporating a pivot insert. According to Medtronic, the only "engagement" disclosed by the specification occurs between the upper part and the pivot insert, not between the upper and lower parts. SSI asserts that the court's construction is correct because the plain language of the claim does not limit the invention to the preferred three-piece embodiment.

We agree with SSI that the court correctly construed "operative engagement." The language of the limitation is straightforward: the lower part of the implant engages "operatively" with the rounded portion of the upper part. Given that the claimed invention is an intervertebral implant designed to replace a disc in a spinal column, "operative engagement" must be engagement such that the upper and lower parts of the implant can move relative to each other; otherwise, the implant would be rigid and would inhibit movement of the adjacent vertebrae. Thus, the court correctly determined that "operative engagement" relates to permitting movement. The court also did not err in identifying pivotability as an example type of movement; the '071 patent specifically discloses pivotability in association with the preferred embodiment. However, nothing in the claim suggests that the upper part of the implant must be specifically engaged with a pivot insert, as opposed to the lower part of the implant. To the contrary, the claim indicates that the upper and lower parts are engaged with each other directly. '071 patent col.6 ll.60-62 ("a lower part having . . . an upper surface portion in operative engagement with the rounded portion of the upper part"). Therefore, the court did not err in construing "operative engagement" as "permitting movement (for example pivotability)."

Medtronic asserts, in the alternative, that under the court's construction claim 1 is invalid for failure to comply with the written description requirement. Therefore, Medtronic argues, the court erred in granting summary judgment that the '071 patent contains adequate written description to support the limitation "lower part having . . . an upper surface portion in operative engagement with the rounded portion of the upper part." Medtronic argues that the '071 patent only describes a three-piece device with a separate pivot insert, not a two-piece device that permits movement between the top and bottom parts. However, Figures 3 and 6 of the '071 patent illustrate the implant outside the intervertebral space (i.e., prior to insertion) and show the pivot insert as embedded in the lower part. Additionally, the evidence at summary judgment included deposition testimony from Medtronic's expert that a person of skill in the art would have known that an implant having a lower plate with an embeddable pivot insert--such as that disclosed by the '071 patent--could have been assembled prior to insertion and inserted into the patient as a two-piece device. Medtronic does not point to any evidence rebutting this testimony. Therefore, we agree with the district court that a person of skill in the art would have understood the '071 patent to describe an implant that could be pre-assembled prior to insertion, such that the upper surface of the lower part is "operatively engaged" with the lower surface of the upper part.

Medtronic contends that the '071 patent does not describe a two-piece implant because the '071 patent actively disparages the two-piece design of the '477 patent. In discussing the two-piece design of the '477 patent, the '071 patent notes that it is "particularly difficult" to achieve a minimum structural height for an implant if the pivot is embedded prior to insertion. Id. col.1 ll.11-19. However, this does not rise to the level of an express disclaimer sufficient to limit the scope of the claims; ". . . disavowal requires expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Epistar Corp. v. ITC, 566 F.3d 1321, 1335 (Fed. Cir. 2009). Further, claim 1 is not directed to the height-minimizing embodiment. The originally-filed claims recited limitations directed to "protrusions and recesses . . . which are offset laterally from one another in such a way that . . . [the upper and lower parts] mesh with one another," see J.A. 17167; claim 1 as issued recites no such limitation.
4. "inoperative and operative positions"

This portion of claim 54 deals with the manner in which the hospital bed guard rails must be mounted to the sides of the bed frame. The guard rails must be moveable from one position that would allow access to the patient or bedding, to another position that would prevent the patient from falling off the patient support assembly. The patent describes the possible positions of the guard rails as "inoperative" and "operative," and the parties disagree as to the meaning of those terms.

**Safe Bed:**
"Inoperative position" means any position of the guard rail at which the guard rail adjustment prevention means is activated to stop movement of the patient support assembly relative to the bed frame. (Safe Bed's Mem., at 9; Safe Bed's Reply, at 9).

"Operative position" means any position of the guard rail at which the guard rail adjustment prevention means is not activated and the patient support assembly is allowed to continue movement relative to the bed frame relative to the bed frame. (Id.).

The parties essentially agree that the ordinary and customary meaning of "operative" is "producing an appropriate or designed effect," whereas "inoperative" means not producing such an effect. WEBSTER'S, at 1166, 1581. (Safe Bed's Mem., at 9; KCI Mem., at 12, 17). As such, it would seem clear enough that a guard rail is an "operative" position when it is producing its designed effect of preventing the patient from rolling off the bed. Conversely, a guard rail would be in an "inoperative" position when it would be ineffective at preventing a patient from rolling off the bed. According to Safe Bed, however, this is an instance where the ordinary and customary meaning is inapplicable. (Safe Bed's Mem., at 9). As noted earlier, a patent applicant may overcome the "heavy presumption" that a claim term carries its ordinary and customary meaning by clearly using the words in the specification, prosecution history, or both "in a manner inconsistent with its ordinary meaning." Schering-Plough Corp., 320 F.3d at 1347 (citing Teleflex, 299 F.3d at 1325-26). Here, however, there is nothing that evinces an intention to depart from the ordinary and customary meaning.

Rather than define "operative" and "inoperative" positions for guard rails in terms of the guard rails' effect on patient restraint, Safe Bed defines them in terms of the guard rails' effect on the mobility of the patient support assembly. Thus, as Safe Bed would have it:

In the context of the '939 patent, an operative guard rail position is defined as one which allows adjustable movement of the patient support assembly relative to the frame, while an inoperative position of one or both guard rails is defined as a position of the guard rail that initiates a guard rail activated safety apparatus to prevent translational movement of the bed. [939 patent], 3:18-21.

* * *

The '939 specification teaches that the guard rail position at which the patient support assembly adjustment prevention means are initiated is adjustable. [939 patent], 5:60-63; 12:12-13. Accordingly, an "inoperative guard rail position" is any position at which the patient support assembly adjustment prevention means is activated. Conversely, an "operative guard rail position" is any guard rail position at which the patient support assembly adjustment prevention means are not actuated and the patient support assembly is allowed to continue movement relative to the frame.
According to Safe Bed, then, an "operative" position for the guard rail does not refer to the guard rail being operative, or even the "guard rail safety apparatus" or "patient support assembly adjustment prevention means" being operative or activated. It is Safe Bed's position that the guard rail is in an "operative" position when the patient support assembly is in motion. This seems a somewhat tortured interpretation of the claim language, as well as an unnecessary abandonment of the ordinary and customary meaning of the words.

5 The Court is not unmindful of Safe Bed's inspiration for its unconvincing interpretation. The '939 patent specification teaches that the guard rail position at which the "guard rail safety apparatus" or "patient support assembly adjustment prevention means" is activated is adjustable. ("939 patent, 5:60-63; 12:12-13). That means the "designer, manufacturer, or user" determines the operative position of the guard rail by adjusting the trigger or activation point. (Safe Bed Mem., at 9). The "designer, manufacturer, or user" might, perhaps through poor judgment, establish a trigger point below the level where the guard rail is still effective in restraining the patient. While judgment might vary, the effectiveness of the guard rail at restraining the patient is absolute: either it will restrain the patient or it will not.

That being said, the Court is not convinced of KCI's construction either, because it, too, departs from the ordinary and customary meaning of "operative" and "inoperative." According to KCI, the guard rails are in their "operative position" when they are at their highest elevation, and in their "inoperative position" when they are at their lowest elevation, below the top edge of the patient support assembly. (KCI's Mem., at 12-13; 17-18). While there is little doubt that these positions would meet the respective requirements of being "operative" or "inoperative" in terms of restraining the patient, there is also little doubt that there are intermediate positions in which the guard rails would still have, or not have, their designed effect. In this instance, the Court rejects both parties' constructions and adheres to the ordinary and customary meaning of the terms: a guard rail is an "operative" position when it is producing its designed effect of preventing the patient from rolling off the bed; and a guard rail is in an "inoperative" position when it would be ineffective at preventing a patient from rolling off the bed.

The claim term "operatively connected" appears in both the '946 and '685 patents. Before discussing the parties' proposed construction of the term, the Court will address defendant's contention that the term is a means-plus-function limitation under 35 U.S.C. § 112, ¶ 6. As discussed above, a presumption arises that § 112, ¶ 6 does not apply when the disputed claim language omits the word "means." See Lighting World, 382 F.3d at 1358. However, "[t]he presumption . . . can be overcome if it is demonstrated that 'the claim term fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'" Id.

The claim term "operatively connected" standing alone does not invoke the application of § 112, ¶ 6. In Mas-Hamilton Group v. LaGard, Inc., the parties disagreed as to whether the claim term "movable" was a means-plus-function limitation under 35 U.S.C. § 112, ¶ 6. As discussed above, a presumption arises that § 112, ¶ 6 does not apply when the disputed claim language omits the word "means." See Lighting World, 382 F.3d at 1358. However, "[t]he presumption . . . can be overcome if it is demonstrated that 'the claim term fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'" Id.

In the instant case, the parties differ as to whether the claim term "operatively connected" is a means-plus-function limitation. 4 Similar to subsequent, functional language to the claim term "movable" in Mas-Hamilton, here the subsequent functional language to the term "operatively connected" recites: (1) "for moving the hinge plates between the closed and open positions;" (Doc. # 1-2, '946 patent, col. 9, lines 64-65); (2) "such that pivoting motion of the lever produces movement of the travel bar generally lengthwise of the elongate plate;" (Doc. # 1-2, '946 patent, col. 12, lines 25-27); and
"such that pivoting movement of the lever causes movement of the travel bar in translation relative to the housing from the first position in which the control structure locks the hinge plates . . . ." (Doc. # 51-2, '685 patent, col. 16, lines 45-51). However, like the term "movable" in Mas-Hamilton Group, the term "operatively connected" standing alone does not invoke § 112, P 6. Therefore, the Court does not construe the term "operatively connected" as a means-plus-function limitation.

4 Defendant repeatedly identifies the entire, three phrases that contain the term "operatively connected" as the disputed claim language that requires construction by the Court. See (Doc. # 26-2, at 12-16; # 29, at 24 n.6; # 51, at 28; # 79, at 16-18). However, in the "List of Disputed and Non-disputed Claim Terms (the List)," the parties inform the Court that "operatively connected" is one of the disputed terms that requires construction, not the phrases that contain the term. (Doc. # 78). Therefore, the Court will only construe the term "operatively connected" as noted in the List within the context of the phrases.

The claim term "operatively connected" appears in both the '946 and '685 patents. Before discussing the parties' proposed construction of the term, the Court will address defendant's contention that the term is a means-plus-function limitation under 35 U.S.C. § 112, P 6. As discussed above, a presumption arises that § 112, P 6 does not apply when the disputed claim language omits the word "means." See Lighting World, 382 F.3d at 1358. However, "[t]he presumption . . . can be overcome if it is demonstrated that 'the claim term fails to recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'" Id.

In the instant case, the parties differ as to whether the claim term "operatively connected" is a means-plus-function limitation. 3 Similar to subsequent, functional language to the claim term "movable" in Mas-Hamilton, here the subsequent functional language to the term "operatively connected" recites: (1) "for moving the hinge plates between the closed and open positions," (Doc. # 1-2, '946 patent, col. 9, lines 64-65); (2) "such that pivoting motion of the lever produces movement of the travel bar generally lengthwise of the elongate plate," (Doc. # 1-2, '946 patent, col. 12, lines 25-27); and (3) "such that pivoting movement of the lever causes movement of the travel bar in translation relative to the housing from the first position in which the control structure locks the hinge plates . . . ." (Doc. # 51-2, '685 patent, col. 16, lines 45-51). However, like the term "movable" in Mas-Hamilton Group, the term "operatively connected" standing alone does not invoke § 112, P 6. Therefore, the Court does not construe the term "operatively connected" as a means-plus-function limitation.

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Therefore, the Court will only construe the term "operatively connected" as noted in the List within the context of the phrases.

The parties agree that the claim language "operatively connected" requires construction within the context of the three phrases: (1) "a travel bar operatively connected to the hinge plates" in claim 1 of the '946 patent; (2) "the lever being operatively connected to the travel bar" in claim 26 of the '946 patent; and (3) "a travel bar operatively connected to the lever" in claim 1 of the '685 patent. (Doc. # 78). The Court will discuss each in turn.

1. "a travel bar operatively connected to the hinge plates" in claim 1 of the '946 patent

Plaintiff proposes that, in the context of the phrase "a travel bar operatively connected to the hinge plates," the term "operatively connected" means "mechanically associated so as to be capable of applying mechanical force to." (Doc. # 26-2, at 11). Plaintiff argues that the term should be given its common and ordinary meaning and relies on dictionary definitions to support its proposed construction. (Doc. # 26-2, at 12).

Plaintiff refers the Court to Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1117 (Fed. Cir. 2004), whereby the Federal Circuit analyzed the construction of the term "operatively connected" in the context of a water bottle filter assembly patent. After noting that "[n]either party assert[ed] that the term 'operatively connected' [was] a technical term having a special meaning in the art of water filtration," the Federal Circuit stated that the term was "a general descriptive term frequently used in patent drafting to reflect a functional relationship between claimed components." Id. at 1118. The Federal Circuit held that, "[g]enerally speaking, . . . [operatively connected] means the claimed components must be connected in a way to perform a designated function." Innova/Pure Water, 381 F.3d at 1118. The Federal Circuit then stated that "operatively connected' takes full breadth of its ordinary meaning, i.e., 'said tube [is] operatively connected to said cap' when the tube and cap are arranged in a manner capable of performing the function of filtering." Id. Plaintiff also notes that the District of Oregon construed the term "operatively connected" in the phrase "a spring operatively connected between the handle and the blade to assist in the opening of the blade" to mean "the spring, handle, and blade are arranged such that the spring operates to assist in opening the blade." (Doc. # 31, at 28) (citing Kai U.S.A., Ltd. v. Buck Knives, Inc., No. CV 05-446-HA, 2006 U.S. Dist. LEXIS 24924, 2006 WL 314456, at *4 (D. Ore. Feb. 9, 2006)).

Defendant requests that, if the Court does not construe the term as a means-plus-function limitation, the Court adopt its alternative, proposed construction:

"A travel bar operatively connected to the hinge plates . . . . A travel bar operatively connected to the hinge plates means the hinge plates are connected to the travel bar by placing at least one pivotally movable connecting link between the hinge plates and the travel bar such that the motion of the bar produces pivotal motion of the hinge plates.

(Doc. # 26-2, at 11-12, 14-15). Defendant refers the Court to a description of a preferred embodiment in the '946 patent specification, which recites: (1) "[a]n intermediate connector 76 is pivotally connected to the lever 68 and to the travel bar 70 for pivoting motion relative to both the lever and the travel bar," and (2) "[t]he hinge plates 56 are operatively connected with the travel bar 70 by placing at least one pivotally movable connecting link 72 between the hinge plates and the bar such that motion of the bar produces pivotal motion of the hinge plates." (Doc. # 1-2, '946 patent, col. 4, lines 30-32, col. 7, lines 23-27). Defendant maintains that the Court should adopt its proposed construction, which incorporates the description of the preferred embodiment of the phrase "a travel bar operatively connected to the hinge plates." (Doc. # 26-2, at 15). Based on the description of the preferred embodiment, defendant contends that "connecting links" are necessary structures. (Doc. # 79, at 17). Defendant asserts that its proposed construction is "consistent with the maxim that claims should be construed to maintain their validity and the Federal Circuit's interpretation of the written description and enablement requirements of 35 U.S.C. § 112, P 1." (Doc. # 26-2, at 15). Finally, defendant argues that "[p]laintiff's reliance on Innova is misplaced." (Doc. # 79, at 15).

The Federal Circuit, in Abbott Laboratories v. Sandoz, Inc., holds that:

When the specification describes a single embodiment to enable the invention, this court will not limit broader claim language to that single application "unless the patentee has demonstrated a clear intention to limit the claim scope using
words or expressions of manifest exclusion or restriction."

566 F.3d 1282, 1288 (Fed. Cir. 2009) (citing Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004) (quoting Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1327 (Fed. Cir. 2002))). The Court, therefore, will not import the description of the preferred embodiment into the '946 patent claim language. The claim language, specification, and prosecution history also do not make clear the definition of the term "operatively connected." Therefore, the Court adopts the Federal Circuit's ordinary and customary meaning of the disputed term, and concludes that "operatively connected" in the context of the phrase "a travel bar operatively connected to the hinge plates" in the '946 patent means "arranged in a manner capable of performing a designated function."

2. "the lever operatively connected to the travel bar" in claim 26 of the '946 patent

Federal Circuit law holds that, "[u]nless otherwise compelled, when different claims of a patent use the same language, we give that language the same effect in each claim." Innova/Pure Water, 381 F.3d at 1119. In the instant case, the term "operatively connected" appears in both claims 1 and 26 of the '946 patent, and the Court finds that "[o]peratively connected' carries the same meaning in both claims." Innova/Pure Water, 381 F.3d at 1119. Thus, the Court finds that "operatively connected" in the context of the phrase "the lever operatively connected to the travel bar" in claim 26 of the '946 patent also means "arranged in a manner capable of performing a designated function."

3. "a travel bar operatively connected to the lever" in the '685 patent

Defendant contends that the term "operatively connected" in the '685 patent is a means-plus-function limitation. However, as discussed above, the Court does not construe the term "operatively connected" as a means-plus-function limitation, and will only consider defendant's alternative, proposed construction.

Plaintiff argues that the term "operatively connected" in the '685 patent means "mechanically associated so as to be capable of applying mechanical force to." (Doc. # 51, at 27). Plaintiff relies on dictionary definitions and Innova/Pure Water and Kai to support its proposed construction. Defendant urges the Court to adopt its alternative, proposed construction:

[A] travel bar operatively connected to the lever such that pivoting movement of the lever causes movement of the travel bar in translation relative to the housing from the first position in which the control structure locks the hinge plates in the closed position to the second position in which the hinge plates are free to pivot to the open position. A travel bar operatively connected to the lever means the travel bar is connected to the lever by an intermediate connector.

(Doc. # 51, at 28). Defendant also provides the same arguments that it asserted with respect to the construction of the term in the '946 patent claims. Additionally, defendant contends that the construction of the term within the context of claim 1 of the '685 patent requires the inclusion of "an intermediate connector" because the structure "is the only enabling disclosure in the '685 patent specification." (Doc. # 51, at 31).

The description of the preferred embodiments in the '685 patent specification state that:

The intermediate connector 39 is located between the lever 15 and travel bar 41 and is elongate and beam shaped. . . .

As also seen, the travel bar 41 is disposed behind the plateau 17 of the housing 11 and is connected to the lever 15 by the intermediate connector 39. . . .

Pivoting the lever 15 pulls the intermediate connector 39 and travel bar 41 toward the lever. . . .

As also seen in FIG. 14, the intermediate connector 339 is located between the lever 315 and travel bar 341 and is illustrated as a wire bent into an elongate, rectangular form.

(Doc. # 51-2, '685 patent, col. 5, lines 33-35, col. 6, lines 36-39, col. 8, lines 54-55, col. 10, lines 61-63). As stated above, the Federal Circuit holds that:

When the specification describes a single embodiment to enable the invention, this court will not limit broader claim
language to that single application "unless the patentee has demonstrated a clear intention to limit the claim scope using 'words or expressions of manifest exclusion or restriction.'"

Abbott Laboratories, 566 F.3d at 1288. Upon review of the '685 patent specification, there is no clear indication that the patentee intended for the connection between the travel bar and the lever to include an intermediate connector. In fact, the patentee states that "[a] mechanism in which a pivoting lever is directly connected to a travel bar does not depart from the scope of the invention." (Doc. # 51-2, '685 patent, col. 6, lines 65-67). Additionally, the patentee states that, "[a]s various changes could be made in the above [preferred embodiments] without departing from the scope of the invention, it is intended that all matter combined in the . . . description and shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense." (Doc. # 51-2, '685 patent, col. 16, lines 8-12). The Court, therefore, believes that the connection between the travel bar and lever in the '685 patent does not require an intermediate connector.

Furthermore, the claim language, specification, and prosecution history do not make clear the meaning of "operatively connected" in the '685 patent, and the Court adopts the Federal Circuit's ordinary and customary meaning of the disputed term. As such, the Court finds that "operatively connected" in the '685 patent means "arranged in a manner capable of performing a designated function." See Innova/Pure Water, 381 F.3d at 1118, 1120.

I. Plaintiff's Eighth Motion In Limine

In its eighth motion in limine, plaintiff requests an order barring defendant "from arguing that the Insta-Clik does not infringe Claims 1, 2, 3, 5, 9, 10, or 11 of U.S. Patent No. 7,404, 685." (Doc. # 224). In a Memorandum and Order dated July 21, 2009, the Court denied defendant's motion for summary judgment of non-infringement of the '946 patent, and granted plaintiff's motion for partial summary judgment of infringement of the '685 patent. (Doc. # 162). In response to defendant's emergency motion for reconsideration, the Court issued an Amended Memorandum and Order dated August 5, 2009, wherein the Court denied both parties' motions for summary judgment. (Doc. # 173). With respect to plaintiff's motion for partial summary judgment, the Court "conclude[d] that defendant . . . failed to provide sufficient evidence to create a genuine issue of material fact as to whether the Insta-Clik literally infringes dependent claims 2, 3, 5, 9, 10, and 10 of the '685 patent, whose meaning depends on independent claim 1." (Doc. # 173, at 5). Section B.1. of the Court's Amended Memorandum and Order only addressed the claim language "housing, hinge plates, and rings" and "control structure" as used in claim 1 of the '685 patent. Then, on September 14, 2009, the Court issued an amended claims construction order and reconstrued the term "operatively connected" in the '685 and '946 patents to mean "arranged in a manner capable of performing a designated function." (Doc. # 187, at 21-23, 32).

"A determination of infringement requires a two-step analysis. First, the court construes the asserted claims in order to determine their proper meaning and scope." Union Carbide Chemicals & Plastics Tech. Corp. v. Shell Oil Co., 308 F.3d 1167, 1176-77 (Fed. Cir. 2002), citing Markman v. Westview Instruments, Inc., 517 U.S. 370, 391, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996). "After the court construes the claims, these claims are compared to the accused device." Union Carbide, 308 F.3d at 1177 (citing Bell Atl. Network Services v. Covad Communications Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001); Biovail Corp. Int'l v. Andrx Pharmas., Inc., 239 F.3d 1297, 1301 (Fed. Cir. 2001)). In light of the Court's new construction of the term "operatively connected," which appears in claim 1 of the '685 patent, (Doc. # 51-2, '685 patent, col. 16, line 45), the Court will permit defendant to compare such construction to the Insta-Clik, and to argue that the Insta-Clik does not infringe claims 1, 2, 3, 5, 9, 10, or 11 of the '685 patent.

Plaintiff proposes the construction of

the spring, handle, and blade are arranged such that the spring operates to assist in opening the blade. An outside motive force, such as from a user's hand, must manually move the blade some initial distance toward the open position, after which
the spring assists to complete the movement of the blade to the open position.

Defendant proposes the construction of "a spring connected between the handle and the blade which, in operation, imparts a rotational force onto the blade as it moves from a closed position to an open position." The court finds this phrase is clear on its face, except for the term "operatively connected." This term is addressed below.

A. "operatively connected"

The term "operatively connected" has a meaning that is broader than the term "connected." Innova/Pure Water, Inc. v. Safari Water Filtration Systems, 381 F.3d 1111, 1118 (2004). To be "operatively connected" requires "some tenacious means of physical engagement that results in a unitary structure." Id. It is a general descriptive term used in patents, and means the claimed components must be connected in a way to perform a designated function." Id. Items are operatively connected when they are. "arranged in a manner capable of performing the function." Id: at 1120.

Defendant argues that for the spring and blade to be "operatively connected" the spring must be physically connected to the blade. Defendant relies on Cross Medical Products, Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293 (Fed. Cir. 2005). Cross Medical construed the term "operatively joined" and held that it meant "connected and in contact such that the device is effective to perform [its function]." Id. at 1306. Defendant asserts this construction requires the items be "in contact" to be operatively connected.

The Cross Medical court construed "joined" as requiring contact, and distinguished "joined" from the term "connected," reasoning that it "would be improper to construe joined' more broadly to mean connected' without requiring contact." Id. The phrase at issue here, however, is "operatively connected," not "operatively joined." As noted by the Cross Medical court, the term "connected" is broader than "joined." Id. As used in the 476 patent, the term "operatively connected" does not require the spring and the blade be in contact. The spring and blade need only be arranged so that they perform the designated function of assisting in opening the blade.

Defendant also argues that the term "rotational force" must be included in the construction. The prosecution history includes a statement by the patentee, in differentiating a prior art, that the spring of the prior art did not "impart any rotational force onto the blade of the knife as the knife moves from a closed position to an open position, and therefore, cannot assist in the opening of the blade' as required by [this patent]." See Def's Ex. E at 6. However, the term "rotational force" never appears in the 476 patent itself. The context in which the phrase appears in the prosecution history fails to establish that "rotational force" must be construed as part of this patent.

Defendant seeks to insert the limitation of "rotational force" into a broader claim. To disavow claim scope, the prosecution history must show a "clear and unambiguous disclaimer." Middleton, Inc. v. Minn. Min'g & Mfg. Co., 311 F.3d 1384, 1389 (Fed. Cir. 2002). The written description of the patent does not limit the force to "rotational force." The single statement made in the prosecution history in reference to a prior art does not clearly and unambiguously surrender the subject matter. The court concludes that there are insufficient grounds presented for rendering "rotational force" into the 476 patent. Accordingly, the court accepts the first sentence of plaintiff's proposed construction of this term; "the spring, handle, and blade are arranged such that the spring operates to assist in opening the blade."

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A. "Said Tube Operatively Connected to Said Cap"

Safari contends that "operatively connected" requires a welded, adhesive, or similar connection for creating a "unitary device" and for enabling removal of the tube and the cap from the bottle simultaneously (Doc. 45). Based on the "common broad terminology," the dictionary, and the specification of an irrelevant patent for a faucet mounted water filter, Innova urges a broader construction of "operatively connected" to include "any type of joining or linking of [the tube and the cap] so that they operate to perform a designed function." However, Innova attempts to limit the broader construction to require the "joining or linking" of the tube and the cap only during operation of the filter assembly (Doc. 44). In other words, according to Innova, "operatively connected" "generically describes some sort of joining or linking between components when they are functioning together" (emphasis added). 7
7 Innova adds that "it is clear that the term 'operatively connected' simply means that during operation the cap and the tube of filtering material are functionally joined or linked" and that "when the components of the Safari product are assembled for operation (so that they are operatively connected, i.e. so that they function together) the cap and tube are connected to each other" (Doc. 49) (emphasis added).

Claims 1 and 15 (and claim 22) describe the tube as "operatively connected" to the cap. Because no special definition inconsistent with the ordinary and customary meaning of "operatively connected" appears in the intrinsic evidence, the ordinary and customary meaning of the terms controls. See Wolverine World Wide, 38 F.3d at 1197. Here, consultation with a dictionary is proper because the dictionary definition contradicts no "definition found in or ascertained by a reading of the patent documents." Vitronics, 90 F.3d at 1584 n.6. The Oxford English Dictionary defines (1) "operative" as "productive of the intended or proper effect" and "operatively" as "in an operative manner," VII The Oxford English Dictionary 145 (1970), and (2) "connected" as "conjoined; fastened or linked together." II The Oxford English Dictionary 837 (1970). In other words, the ordinary and customary meaning of "operatively connected" requires the conjoining or the fastening or linking together of the tube and the cap to produce the intended or proper effect.

In the context of the '759 patent, "operatively connected" requires conjoining, fastening, or linking the tube to the cap, by welding, adhesive, or other means, to create a filter assembly that seals the bottle and filters the contents as the contents are poured. 8 In other words, "operatively connected" requires not merely adjoining or abutting, but affixing the tube to the cap by some tenacious means of physical engagement that results in a unitary structure. Affixing the tube to the cap fixes the tube in position for its intended purpose (i.e., in a position that, upon inversion of the bottle, enables the contents of the bottle to flow through the tube). Affixing the tube to the cap also enables removal of the tube and the cap from the bottle simultaneously. Despite Innova's contention, no intrinsic (or other) evidence limits the conjoining or fastening or linking together of the tube and the cap to "when [the tube and the cap] are functioning together." Innova's construction ignores the limits of "operatively connected" and seeks impermissibly to inject an unsupported temporal limitation into the claims. 9

8 Examples of means for connecting the tube to the cap disclosed in the '759 patent include adhesive, such as ultraviolet cured adhesive; welding, such as ultrasonic, thermal, or spin welding; and mechanical connections, such as with the use of an O-ring with corresponding engaging grooves, a flange with corresponding engaging projections, or a friction fit with mating cylindrical suction.

9 As evident below, construction of the disputed claim element requires no reference to the extrinsic evidence submitted by the parties. See Vitronics, 90 F.3d at 1585; Markman, 52 F.3d at 983.

The other '759 patent claims that address the relationship between the tube and the cap, claims 2, 3, 10 through 14, 20, and 21, all of which depend from claims 1 or 15, support the construction of "operatively connected" meaning to affix the tube to the cap by some tenacious means of physical engagement that results in a unitary structure. 10 These claims describe means of affixing or connecting the tube to the cap for creating a filter assembly that seals the bottle and, upon inversion of the bottle, filters the contents. Claim 2 claims an adhesive connection; claim 3 claims a welded connection; and claims 11 and 20 claim a mechanical connection. Claims 12, 13, 14, and 21 claim types of mechanical connections and claim 10 claims an adhesive, mechanical, or welded connection. 11 Each of the claimed means of connecting the tube to the cap affixes the tube to the cap, creates a filter assembly that is removable as one piece from the bottle (or creates a unitary structure), and results in more than merely abutting or adjoining the tube to the cap only during operation. 12

10 Claims 2, 3, 10, and 11 depend from claim 1; claims 12, 13, and 14 depend from claim 11, which depends from claim 1;
which relationship fixes the tube in position for its intended purpose by (1) positioning the flange of the tube between the projections. This "associated" relationship is identical to the relationship between the tube and the cap in the Safari product, valve support between a tube and a cap and (2) connecting the tube to the cap by engaging the tube's flange with the cap's claim a relationship between a valve and a cap that fixes the valve in position for its intended purpose by (1) positioning the flange 45 abuts the bottom of the support 50. In other words, the patentees chose "associated" instead of "connected" to encompass a valve affixed or connected to a cap, as demonstrated, for example, by figures 1 and 2 of the '759 patent, "operatively associated," which encompasses broader subject matter than "operatively connected," to describe the relationship between the valve and the cap in claims 1 and 15 supports a construction of "operatively connected" in both claims 1 and 15 that requires affixing the tube to the cap. See Southwall Techs., 54 F.3d at 1579 (Noting that the same claim terms "cannot be interpreted differently in different claims because claim terms must be interpreted consistently."). 13 The "filter assembly" of claim 1 has a tube and a cap (as well as a "manual valve"), but nothing else. Construing "operatively connected" as affixing the tube to the cap is consistent with the claim language, "[a] filter assembly . . . comprising: a tube . . .; a cap . . .; [and] a manual valve," supports a construction of "operatively connected" in both claims 1 and 15 that requires affixing the tube to the cap. See Southwall Techs., 54 F.3d at 1579 (Noting that the same claim terms "cannot be interpreted differently in different claims because claim terms must be interpreted consistently."). 13 The "filter assembly" of claim 1 has a tube and a cap (as well as a "manual valve"), but nothing else. Construing "operatively connected" as affixing the tube to the cap is consistent with the "filter assembly" described in claim 1.

12 Under the doctrine of claim differentiation, "where some claims are broad and others narrow, the narrow claim limitations cannot be read into the broad whether to avoid invalidity or to escape infringement." United States of America v. Telecontrols, Inc., 857 F.2d 778, 784 (Fed. Cir. 1988) (quotations omitted). Accordingly, Innova argues, the claims describing means of connecting the tube to the cap cannot limit the claims from which they depend. In other words, Innova asserts the impermissibility of construing the broader language of claims 1 and 15 to cover only means of connecting the tube and the cap disclosed in the dependent claims. The construction adopted here does not so limit claims 1 and 15. For example, claims 1 and 15 read upon a magnetic connection between the tube and the cap, even though no dependent or other claim describes a means of connecting the tube to the cap by magnetic force. Cf. Tate Access Floors, Inc. v. Maxcess Techs., Inc., 222 F.3d 958, 967-68 (Fed. Cir. 2000) ("While two claims of a patent are presumptively of different scope, the doctrine of claim differentiation cannot broaden claims beyond their permissible scope.").

13 Southwall Techs. requires the construction of "operatively connected" of claims 1 and 15 to apply in claim 22 as well, the only other independent claim of the '759 patent. 54 F.3d at 1579.

In addition, the selection by the patentees of "operatively associated," which encompasses broader subject matter than "operatively connected," to describe the relationship between the valve and the cap in claims 1 and 15 supports a construction of "operatively connected" that requires not merely adjoining or abutting, but affixing the tube to the cap. The patentees emphasize (presumably unintentionally) the distinction between "operatively connected" and "operatively associated" by placing the phrases in the same claims and in adjoining sentences of the specification. Although "associated" encompasses a valve affixed or connected to a cap, as demonstrated, for example, by figures 1 and 2 of the '759 patent, "associated" also encompasses mere adjoining or abutting, as demonstrated by figure 10. 14 In the embodiment depicted in figure 10, the valve "operatively associated" with the cap is fixed in position for its intended purpose by resting the valve's support (or the valve's flange-like bottom end) on a mounting flange that forms the top end of a filter tube, which mounting flange is designed for engaging projections emanating from the interior wall of the cap. The cap has an "open top 51 perpendicular to . . . [the] hollow interior [of the tube of filtering material], and . . . [the] cap comprises one or more projections for engaging said flange, said flange and one or more projections providing mechanical connection between . . . [the] cap and . . . [the] tube."
In figure 1, the "valve element 24" is "integral with the cap 15," and in figure 2, the "valve 120 simply comprises a baby bottle nipple which is bonded to the cap 115."

The specification of the '759 patent contains examples only of embodiments of the invention that feature a tube affixed to a cap. The embodiments disclosed in the specification use adhesive, welded, or mechanical means of affixing or connecting the tube to the cap. The patent's abstract notes that the "tube is operatively connected to the cap . . . by sonic welding, a mechanical connection, or adhesively." The specification explains that "there is a great deal of versatility associated with the filter assemblies and containers according to the present invention, the actual filter element being connected to the other components either adhesively, mechanically, or by welding (e.g. sonic welding)." The specification adds:

the tube may be adhesively connected to the cap second surface, but preferably is welded (e.g. sonically welded) to it, or is mechanically connected to it. For example a mechanical connection may comprise an O-ring received by cooperating grooves formed in the tube and the cap second surface, or the tube may include a flange extending substantially perpendicularly to the hollow interior [of the tube], the so cap comprising one or more projections for engaging the flange, and the flange and one or more projections providing the mechanical connection, or a locking taper slip fit between the cap closure and filter assembly.

Similarly, the drawings of the '759 patent depict only welded, adhesive, or mechanical connections between the tube and the cap. See, e.g., Wolverine World Wide, 38 F.3d at 1197 (noting that the drawings of the patent-in-suit support the district court's claim construction). In short, a reading of the claims in view of the specification supports a construction of "operatively connected" that requires affixing the tube to the cap. See Vitronics, 90 F.3d at 1582 ("Claims must be read in view of the specification . . . .")

The prosecution history supports a construction that requires affixing the tube to the cap. See Watts v. XL Sys., Inc., 232 F.3d 877, 883 (Fed. Cir. 2000) (barring the plaintiff from advancing a construction that controverts the plaintiff's statements to the Patent and Trademark Office contained in the prosecution history). On November 6, 1995, the Patent and Trademark Office (the "PTO") rejected original dependent claims 2 through 6, 9, 17, and 18, among others, all of which depended from a claim requiring a tube "operatively connected" to a cap and all of which claimed means of connecting the tube to the cap (Doc. 45, Ex. B-2). 18 Innova distinguished the prior art of Daniels, United States Patent 5,431,813 ("Daniels"), cited by the PTO, and explained that "the dependent claims even more clearly and unequivocally distinguish from the art" because the claimed means of connecting the tube to the cap are taught neither in Daniels nor in other prior art cited by the PTO (Doc. 45, Ex. B-3). 19 On May 1, 1996, the PTO again rejected the claims disclosing the specific means of connecting the tube to the cap (original claims 2, 3, 5, 6, 9, 17, and 18), except claim 4, which the PTO cancelled (Doc. 45, Ex. B-4). The PTO found the mechanical connection claimed in original claim 17 20 obvious under section 103 of title 35, United States Code, in light of the flange and projections disclosed in Parker, United States Patent 647,580 ("Parker 580")
and United States Patent 690,457 ("Parker '457"). The PTO noted that "it would have been obvious to utilize the flange/projections of Parker '580 . . . to provide a means of securing the placement of the tube within the cap 3 of Parker '457." The PTO rejected original claim 17 also as obvious in light of the combination of Dehn, United States Patent 2,055,096 ("Dehn"), 22 and McDevitt, United States Patent 2,869,724 ("McDevitt"). 23 The PTO noted that "McDevitt is considered to disclose a flange, the use of projections to ensure proper attachment is considered to be conventional, and, in any event, the threads of McDevitt are considered to provide this feature. It would have been obvious to utilize the flange/projections of McDevitt in the device of Dehn . . . to provide an alternate but equivalent connection means." In response to the rejection of original claim 17, the patentees distinguished McDevitt as "using the flange to suspend the filter," compared to original claim 17's use of the flange to form a mechanical connection to the cap (Doc. 45, Ex. B-5). By arguing this distinction, the patentees conceded that McDevitt disclosed the suspension of a filter element in the neck of a bottle by resting a flange on the bottle mouth, the method employed in Safari's product. Notably, the patentees concluded "this is contrary to Dehn [(which discloses a filter "affixed" to a cap)] . . . and the claimed invention" (emphasis added).

18 Original claim 2 disclosed an adhesive connection; original claims 3 and 4 disclosed a welded connection; original claims 5, 6, 9, and 17 disclosed a mechanical connection; and original claim 18 disclosed an adhesive, mechanical, and welded connection (Doc. 45, Ex. B-1). The PTO rejected these claims and explained that "regarding the various means of attaching the tube to the cap, such as welding, adhesion, etc., these features are considered to be conventional and would have been obvious in the device of Nohren, Jr. [United States Patent 4,769,144] to provide alternative conventional attachment means" (Doc. 45, Ex. B-2).

19 Daniels discloses a water filtering bottle and a removable water filtering apparatus "snuggly mounted" in the neck of the bottle.

20 In relevant part, original claim 17 read as follows: "[the] tube includes a flange extending substantially perpendicular to . . . [the] hollow interior [of the tube], and . . . the cap comprises one or more projections for engaging said flange, said flange and one or more projections providing mechanical connection between said cap and said tube."

21 Parker '580 and Parker '457 disclose means for securing a filter tube in the mouth of the canteen, so that, upon inversion of the canteen for pouring the contents, the contents flow through the filter tube.

22 Dehn teaches an infusion apparatus for beverages, such as coffee or tea, which apparatus comprises a strainer that functions as a filter and as an "air interchanging device" that is "affixed" to a cap and is intended for a vacuum-type receptacle.

23 McDevitt teaches a device for demineralizing and filtering water that comprises a cartridge with a wider top, or annular flange, designed for resting on the mouth of a bottle and for suspending the cartridge in the bottle neck. The cartridge is "sealed in position by the cap" when the cap, which has internal threads, is screwed onto the corresponding threads on the exterior of the bottle neck.

The PTO rejected original claims 2, 3, 5, and 6 because the "use of adhesive, welds, or o-rings . . . are all considered to be conventional and would have been obvious in the device of Dehn . . . to provide a suitable connecting means" (Doc. 45, Ex. B-4). The PTO also rejected original claim 9 in light of figure 5 of Dehn, which disclosed a mechanical friction fit. The PTO also rejected original claims 10, 13 through 15, and 18 through 21 as obvious because, in part, "Parker '457 is considered to disclose a tubular filter block attached to a cap as instantly claimed" (emphasis added). 24 The PTO's use of "a tubular filter attached to a cap" in its response revealed the PTO's belief that the claims of the '759 patent require affixing the tube to the cap. See Phillips Petroleum Co. v. Huntsman Polymers Corp., 157 F.3d 866, 872-73 (Fed. Cir. 1998) ("Examiner's understanding of a term -- as evidenced in the file history -- is highly probative of what the term means.").

24 Original claims 10, 13 through 15, and 18 through 21 either claimed or depended from a claim that claimed a "tube
operatively connected to . . . [a] cap." Original claim 10 depended from original claim 1 (now claim 22); original claim 13 constituted the original filing of asserted claim 1; original claims 14 and 15 depended from original claim 13; original claim 19 constituted the original filing of asserted claim 15; and original claims 20 and 21 depended from original claim 19.

In the September 13, 1996, supplemental amendment, the patentees submitted a new claim (original claim 24) that claimed a "filter assembly mounted in a plastic bottle as recited in claim 22" (Doc. 45, Ex. B-6). Original claim 22 depended from original claim 1, which claimed a "tube [of filtering material] operatively connected" to the cap. In the amendment, the patentees explained:

filter assemblies, and plastic bottles with filter assemblies, according to the claimed invention have obtained substantial commercial recognition and acceptance in the trade. Also the general concepts of the invention have apparently been copied in bottles constructed by competitors, such bottles having tubes or other elements of activated carbon filtering material mounted in caps for plastic bottles.

(Emphasis added). In essence, the patentees conceded that the general concept of the invention of the '759 patent included "mounting" the tube in the cap.

Innova's appeal with respect to the asserted claims of the '759 patent turns on the correct interpretation of the disputed claim term, "operatively connected." According to the district court, the ordinary meaning of "said tube operatively connected to said cap" requires that the two components be "affixed . . . by some tenacious means of physical engagement that results in a unitary structure." Innova challenges this construction as improperly importing a tenacious physical engagement limitation into claim language that does not require any such thing. Safari concurs with the district court. The district court erred. The asserted claims do not require that the filter tube and cap be affixed to one another in a manner that results in the two components forming a unitary structure. Neither party asserts that the term "operatively connected" is a technical term having a special meaning in the art of water filtration. Rather, it is a general descriptive term frequently used in patent drafting to reflect a functional relationship between claimed components. Generally speaking, and as used in the '759 patent, it means the claimed components must be connected in a way to perform a designated function. In the absence of modifiers, general descriptive terms are typically construed as having their full meaning. See Johnson Worldwide, 175 F.3d at 992 (refusing to import a modifier for the term "coupled"); Va. Panel Corp. v. MAC Panel Co., 133 F.3d 860, 865-66 (Fed. Cir. 1997) (refusing to import a modifier for the term "reciprocating"). Thus, the district court was correct to look to the ordinary meaning of the terms "operatively" and "connected" and we discern no error in the district court's initial understanding that "the ordinary and customary meaning of 'operatively connected' requires the . . . linking together of the tube and the cap to produce the intended or proper effect." But the district court erred when it proceeded beyond this plain meaning based on the "examples of means for connecting the tube to the cap disclosed in the '759 patent," all of which reflect a "physical engagement [between the tube and the cap] that results in a unitary structure." See Teleflex, 299 F.3d at 1328.

The district court also erred in interpreting the "intended or proper effect," i.e., the designated function, to be the operation of "creating a filter assembly" with a unitary structure. Instead, as Innova contends, the proper designated function is the operation of the assembly, i.e., filtering. Thus, "said tube [is] operatively connected to said cap" when the tube and cap are arranged in a manner that affects filtering. Safari contends that the district court was correct because for a connection to be operative for filtering, the structure performing the filtering must also be associated with a bottle, a limitation not found in claim 1 of the '759 patent. We disagree because the claims, and also the written description, reflect that an intended purpose for the claimed invention is for use with a bottle to filter water.

Focusing first on the claims, we observe that the preamble of claim 1 recites: "A filter assembly for use with a bottle . . . to simultaneously cap the neck or open end and filter liquid poured out of the bottle . . . ")'759 patent, col. 6, ll. 45-49 (emphasis added). Language in a preamble limits a claim where it breathes life and meaning into the claim, see In re Paulsen, 30 F.3d at 1479, but not where it merely recites a "purpose or intended use of the invention." Id. In this case, we
need not decide whether the preamble adds a limitation to the claim because we hold that it recites a purpose or intended use of the claimed "filter assembly" as, inter alia, "filtering liquid poured out of the bottle." Other parts of claim 1 also show that the intended function of the claimed structure is filtering. Beyond stating that the "tube is operatively connected to said cap," the claim also states that a "valve" is "operatively associated with said cap, in fluid communication with said tube of filtering material." '759 patent, col. 6, ll. 58-59. The claim further explains that the "valve" controls the flow of liquid through the "tube of filtering material" as the valve is "manually movable between a position defining means for allowing liquid flow through said tube and a position defining means not allowing liquid flow through said tube." Id., ll. 59-63. In sum, we think the operation defined by controlling the flow of liquid through the "tube of filtering material" is the operation of filtering.

As Safari acknowledges, Innova's argument that "operatively" refers to the function of filtering, has even "more traction" when applied to claim 15. Claim 15 is directed to "[a] container for dispensing filtered water." '759 patent, col. 7, l. 55. It expressly claims a bottle as an element of the disclosed structure. Id., ll. 56-58. It contains the "in fluid communication" limitation present in claim 1. Id., col. 8, ll. 4-9. And, it contains additional language explaining the position of the tube of filtering material relative to the cap, the bottle, and the liquid flow:

sai, Id., ll. 10-17.

Not only do both claims evidence that an intended function or operation of the claimed structure is filtering, such a function is also evident from the written description, e.g., "there is a significant demand for filtered drinking water . . .," '759 patent, col. 1, l. 6; "a filter assembly is provided . . . capable of effectively treating drinking water to remove chlorine and organic taste contaminants therefrom and reduces a variety of chemical contaminants." Id., ll. 25-29. Unless otherwise compelled, when different claims of a patent use the same language, we give that language the same effect in each claim. See Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1334 (Fed. Cir. 2003). Here, we are not otherwise compelled. "Operatively connected" carries the same meaning in both claims.

Furthermore, we observe that Safari's interpretation largely reads the term "operatively" out of the phrase "operatively connected." While not an absolute rule, all claim terms are presumed to have meaning in a claim. Cf. Pickholtz v. Rainbow Techs., Inc., 284 F.3d 1365, 1373 (Fed. Cir. 2002). If, as Safari proposes, the claim refers in the abstract to the creation of a filter assembly structure, without any grounding to an intended use, the term "operatively" is unnecessary and superfluous as the patentee could have as easily used the term "connected" alone.

Safari also proposes that the district court's construction can be supported by the patentee's use, in claim 15, of "operatively connected" and "operatively associated." The argument is that the patentee's use of the term "connected" to claim the tube-cap relationship stands in such stark contrast to the patentee's choice of "associated" to define the valve-cap relationship, that the patentee could only have intended that "connected" and "associated" were of different scope. Despite Innova's assertion to the contrary, when an applicant uses different terms in a claim it is permissible to infer that he intended his choice of different terms to reflect a differentiation in the meaning of those terms. See Bancorp Servs., L.L.C. v. Hartford Life Ins. Co., 359 F.3d 1367, 1373 (Fed. Cir. 2004); Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 93 F.3d 1572, 1579 (Fed. Cir. 1996). For this argument to be dispositive of a particular claim construction, however, one must accept that "connected" and "associated" can be discerned along the lines Safari urges. In particular, one must accept the argument that although both terms can, by their plain meaning, include nonphysical attachment, "associated" was meant to define both nonphysical and physical attachment while "connected" was used in a narrower sense, incorporating only a physical attachment definition. Safari urges that we can make the distinction based on the disclosed embodiments. We disagree.

While an inference that "connected" and "associated" have different meanings in this case may be particularly appropriate because the words here define the relationship between two objects, the terms "connected" and "associated" are very similar in meaning. The context does not make clear to us that Innova's use of both terms means that "connected" should be limited to tenacious physical engagement. Moreover, we observe that in at least one circumstance, Innova described the filter as "associated" with the cap. '759 patent, col. 1, ll. 41-43 ("a cap with which the filter is associated being adaptable to fit any type of closure mechanism on a conventional plastic bottle"). Finally, as we discuss in further detail, infra, we decline to
limit the claims based only on the embodiments in the written description. Thus, the context does not show that "connected" and "associated" should be differentiated into the definitions proposed by Safari, and we must conclude that this is simply a case where the patentee used different words to express similar concepts, even though it may be confusing drafting practice. Bancorp Servs., 359 F.3d at 1373.

In sum, subject to any clear and unmistakable disavowal of claim scope, the term "operatively connected" takes the full breadth of its ordinary meaning, i.e., "said tube [is] operatively connected to said cap" when the tube and cap are arranged in a manner capable of performing the function of filtering.

A

Safari contends that in the written description and prosecution history the patentee clearly and unmistakably disavowed the full breadth of meaning of "operatively connected" and put the public on clear notice that the claims should be limited to cover only embodiments where the filter tube and cap are tenaciously physically engaged. Concerning the written description, Safari relies most heavily on the argument that at "every point" in the written description where "operatively connected" is discussed, it is discussed as having the "common denominator" of tenacious physical engagement. However, at argument, Safari's counsel had difficulty pointing to a statement in the written description that clearly and unmistakably shows the applicant's intent to limit the scope of the claims to tenacious physical engagement. Undaunted, Safari contends that even if we disagree that the written description contains specific language clearly showing disavowal, the applicant's clear and unmistakable disavowal of all embodiments in which the tube is not tenaciously engaged to the cap is evident from reading the written description as a whole. According to Safari, when one reads the written description from beginning to end, there is no disclosure of a tube and cap arrangement where the tube and cap are not, in the words of the district court, "affixed . . . by some tenacious means of physical engagement that results in a unitary structure." Safari also relies heavily on the observation that not a single drawing in the written description depicts an arrangement of tube and cap in other than tenacious engagement. 1 Thus, contends Safari, because courts do not construe claims beyond what is disclosed in the written description, the written description demands a finding by this court that "operatively connected" is limited to tenacious physical engagement. Making the same argument, although in different terms, Safari argues that, acting as his own lexicographer, the patentee in this case defined "operatively connected" as requiring tenacious physical engagement. Again, we disagree.

--- Footnotes ---

1 Innova unsuccessfully disputes this aspect of the disclosure.

--- End Footnotes ---

1

The abstract of the written description contains the statement: "The tube is operatively connected to the cap second surface at the tube second open end by sonic welding, a mechanical connection, or adhesively." '759 patent, Abstract. While a statement in the Abstract may operate as a clear expression of manifest exclusion, for several reasons, this statement does not. Nor does this statement weigh heavily when considering whether the applicant has acted as his own lexicographer. To begin, this statement is in the Abstract of the patent. This section of a patent speaks generally to the invention and, much like the syllabus of an opinion, sets forth general information about the document's content, which is described in more detail in the remainder of the document. Second, in our view, this statement reflects the applicant's attempt to disclose the broad array of means by which the tube can be connected to the cap. This observation begs a third point. Safari, and it seems the district court, appear to believe the term "mechanical connection" requires tenacious physical engagement, and accordingly, cannot include within its scope Safari's product, which suspends the tube of filtering material in the bottle mouth by means of an annular flange sealed in place by a cap screwed over the mouth of the bottle. We simply do not agree. By a twist of the wrist, the bottle cap is screwed tight, thus mechanically locking the filter to the lip of the bottle.

The connection of the filter and cap is addressed in other portions of the written description. The paragraph beginning: "According to the present invention . . .," '759 patent, col. 1, l. 23, describes the "filter assemblies and containers according to the present invention," id., ll. 38-39, as having "the actual filter element being connected to the other components either adhesively, mechanically, or by welding (e.g. sonic welding), a cap with which the filter is associated being adaptable to fit
any type of closure mechanism on a conventional plastic bottle . . . " Id., ll. 38-44. Although at first glance one might think that the use of the word "associated" creates a requirement that the filter and cap be affixed in tenacious physical engagement, it does not. Without doubt, a structural element "associated" with a separate structural element can be tenaciously physically engaged. However, there is no requirement that this be so because the word "associated" merely reflects that the recited elements be joined in some kind of relationship. Thus, in contrast to, for example, Scimed, this language is less direct, clear, and defining than the phrase "[the] structure . . . is the basic . . . structure for all embodiments." 242 F.3d at 1344.

The kernel of Safari's position is that the embodiment, or embodiments, depicted in the figures and written description show "not merely adjoining or abutting, but affixing the tube to the cap by some tenacious means of physical engagement that results in a unitary structure." Perhaps the most straightforward answer to Safari's argument is that the law does not require the court, where an applicant describes only a single embodiment, to construe the claims as limited to that one embodiment. See, e.g., Liebel-Flarsheim, 358 F.3d 898, 906-09. Indeed, such a construction is not encouraged or presumed. Id. From another level of abstraction, of course, the patentee's disclosures in this case could be viewed as the disclosure of many embodiments. So viewed, the patentee presented several examples of the types of connections between the filter tube and cap useful for the invention and in all examples depicted the connection as a tenacious physical engagement. Here, this is a difference without substance. As noted earlier, the specification as a whole reflects the patentee's efforts to describe and claim all operative connections. Also, the written description discloses that the operative connection can be "mechanical," a feature we conclude is present in the arrangement of the filter tube and cap in Safari's product as presented to this court. Finally, and most importantly, Safari's argument flies into the sun that is the plain import of the claim language "operatively connected." We thus decline to apply Safari's reasoning.

According to Safari, the prosecution history is "consistent with" their proposed definition of "operatively connected," and, based on "representations made to secure the '759 patent," "Innova is estopped" from arguing that any other construction is possible. We conclude that the prosecution history does not preclude the construction advanced by Innova and adopted in this opinion.

Safari first refers to a section 103 rejection made by the examiner to pending claims 1-18. In that rejection, the examiner stated:

Regarding the various means of attaching the tube to the cap, such as welding, adhesion, etc., these features are considered to be conventional and would have been obvious in the device of [the prior art] to provide alternative conventional attachment means.

We note here, that claim 13 ultimately issued as claim 1. At the time of the rejection however, claim 13 was merely a claim depending from then claim 1 and recited a type of filtering material. Claim 1, from this point in the prosecution history later issued as claim 22. 2 Even so, this claim contained the relevant "said tube operatively connected to said cap" language, and the cited portion of the examiner's rejection is properly read as referring to this connection.

2 At this stage in the prosecution, the claim that would issue as claim 15 in the '759 patent was claim 19. Although it contained, "said tube operatively connected to said cap," the examiner did not include it in this rejection.

Responding, the patentee made a number of arguments concerning pending claim 1, of which the district court and appellee make no issue. Then, addressing dependent claims 2-18, the applicant made the statement:

In fact, it is believed that the dependent claims even more clearly and unequivocally distinguish from the art. For example, no place in either [prior art reference] are the mutually exclusive adhesive connection of claim 2, welding, (e.g., ultrasonic welding) of claim 3, or mechanical connection of claim 5 pointed out in the previous action or seen in the references, let alone the particular O ring connection recited in claim 6, or the particular mechanical connection flanges of
Although asserting that the "significance placed on this feature by Innova estops Innova from disclaiming that the filter tube is affixed to the cap," Safari fails to explain how this statement demands such a conclusion. After careful consideration of the content of the statement, we conclude that it does not clearly and unambiguously disavow mechanical connections where the filter tube is not tenaciously physically engaged to the cap. See Omega Eng'g, 334 F.3d at 1323-24. In particular, we note that dependent claims are typically narrower and, by so being, are more likely to clearly distinguish the prior art. Generally speaking, this is, in part, their function. In addition, it is of little moment that the dependent claims mentioned in the response refer to connections that result in a unitary structure. This is so for at least two reasons. First, the language of the response refers to claims that specifically claim embodiments in which the filter tube and cap are tenaciously physically engaged. By the patentee's selection of language, which the examiner allowed, claims 1 and 15 are not facially limited to such embodiments. Second, to accommodate Safari's argument now, we would have to conclude that it would be appropriate to limit an independent claim by the additional limitations of claims depending from that claim. Although, in some cases this might be possible, the doctrine of claim differentiation "normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend." Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999) (stating that this interpretative tool stems from "the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope"). In sum, the argument that dependent claims, which require tenacious engagement, "more clearly . . . distinguish from the art" does not mean that claims from which those claims depend are equally limited.

Next, Safari points to a dialog between the examiner and patentee where the examiner rejected then-pending claim 17 because "it would have been obvious to utilize the flange/projections of [the prior art] . . . to provide an alternative but equivalent connection means." The claim addressed by this rejection literally claims a connection between the tube and cap that uses a flange extending from the filter tube to engage the cap. The applicant responded to the rejection thus:

For example, [the prior art] shows an axial filter that is sealed at the top and employs a mixture of anion and cation resins, using the flange to suspend the filter of ion exchange resins which operate in axial flow mode . . . . This is contrary to [other prior art] and the claimed invention.

Safari contends that this statement disavows the use of a flange to suspend the filter tube. Innova contends that this statement was directed to the distinction of radial as opposed to axial filtering. Careful inspection of the prosecution history indicates that Innova has the better argument. Beginning with the statement itself, we cannot distinguish whether it is referring to the filter or the flange. Examining the following Office Action, we observe that the examiner understood Innova's statement to be referring to the filter: "The applicants also argue that [the prior art] discloses an axial filter; referring to the filter or the flange. Examining the following Office Action, we observe that the examiner understood Innova's statement to be referring to the filter: "The applicants also argue that [the prior art] discloses an axial filter; however [the prior art] was cited solely for the feature of a conventional flange on the rim of the tubular filter." Following this discourse, a telephone interview occurred, after which the examiner allowed the claim, unamended, and still directed to the use of a flange to make the tube-cap connection. 3 This series of communications does not reflect the clear and unambiguous disavowal of caps and filters connected by mechanical means short of tenacious physical engagement. Rather, it reflects first, the examiner and applicant talking past one another. It reflects second, that the applicant was able to convince the examiner, by off the record communications, to retreat from her position. However unfortunate it is that the public and this court are prevented from knowing what arguments caused the examiner to abandon her position, the record finally reflects the examiner's acquiescence to the claim language chosen by the applicant. This is not clear evidence of the patentee's disavowal of claim scope.

3 It issued as claim 14 of the '759 patent.

Safari also points to a rejection entered by the examiner, where the examiner describes a piece of asserted prior art as "considered to disclose a tubular filter attached to a cap as instantly claimed." It is well settled, however, that it is the applicant, not the examiner, who must give up or disclaim subject matter that would otherwise fall within the scope of the claims.
V

Innova argues the district court erred by denying the motion to amend the complaint to add the '362 patent because there was no delay on Innova's part, and no unfair prejudice to Safari would result from granting the motion. At the outset, this is a nonpatent matter where we apply the law of the circuit in which the district court sits. See Cultor Corp. v. A.E. Staley Mfg. Co., 224 F.3d 1328, 1332-33 (Fed. Cir. 2000). This appeal is from the middle district of Florida, within the eleventh circuit, which reviews the refusal of leave to amend for abuse of discretion. Lowe's Home Ctrs., Inc. v. Olin Corp., 313 F.3d 1307, 1314-15 (11th Cir. 2002). On this deferential standard of review, we detect no abuse of discretion.

In the eleventh circuit, the court freely grants leave to amend when justice so requires. Carruthers v. BSA Adver., Inc., 357 F.3d 1213, 1217-18 (11th Cir. 2004). However, a motion to amend may be denied on "numerous grounds, such as undue delay, undue prejudice to the defendants, and futility of the amendment." Maynard v. Bd. of Regents of Div. of Univs. of Fla. Dep't. of Educ., 342 F.3d 1281, 1287 (11th Cir. 2003) (citation and internal quotation marks omitted). In addition, "it is not an abuse of discretion for a district court to deny a motion for leave to amend following the close of discovery, past the deadline for amendments, and past the deadline for filing dispositive motions." Lowe's, 313 F.3d at 1315.

A number of these considerations are present in this case. In particular, Innova sought to amend the complaint approximately six months after the '362 patent issued, ten months after discovery closed, and nine months after the filing of summary judgment motions. Accordingly, the district court did not abuse its discretion when it denied Innova's motion to amend.

VI

In conclusion, the correct claim construction does not limit claims 1 and 15 to only embodiments where "said tube [is] operatively connected to said cap" by mechanical means that result in tenacious physical engagement. Accordingly, the district court erred when it granted Safari's motion for summary judgment of no literal infringement based on the fact that in Safari's accused product the filter tube is "never affixed to the cap by some tenacious means of physical engagement as required by claims 1 and 15." For the same reasons, the district court erred in granting summary judgment of no infringement under the doctrine of equivalents based on its factual conclusion that "merely adjoining or abutting . . . is not the equivalent of affixing the tube to the cap." And, finally, as discussed, we disagree with the district court that the applicant, in the course of prosecution, surrendered the method employed in the Safari product of using a flange to position the filter element.

On the record before us, however, we cannot be certain that reversing and entering summary judgment in favor of Innova is the proper course of action. We leave that decision, in the first instance, to the district court. Thus, we vacate the district court's grant of summary judgment of noninfringement in favor of Safari and remand for further proceedings in light of the correct claim interpretation. Because we detect no abuse of discretion, we affirm the district court's denial of Innova’s motion to amend the complaint to add the '362 patent.

2775

1. "a travel bar operatively connected to the hinge plates" in claim 1 of the '946 patent

Plaintiff proposes that, in the context of the phrase "a travel bar operatively connected to the hinge plates," the term "operatively connected" means "mechanically associated so as to be capable of applying mechanical force to." (Doc. # 26-2, at 11). Plaintiff argues that the term should be given its common and ordinary meaning and relies on dictionary definitions to support its proposed construction. (Doc. # 26-2, at 12).

Plaintiff refers the Court to Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1117 (Fed. Cir. 2004), whereby the Federal Circuit analyzed the construction of the term "operatively connected" in the context of a water bottle filter assembly patent. After noting that "[t]he term 'operatively connected' [was] a technical term having a special meaning in the art of water filtration," the Federal Circuit stated that the term was "a general descriptive term frequently used in patent drafting to reflect a functional relationship between claimed components." Id. at 1118. The Federal Circuit held that, "[g]enerally speaking, . . . [operatively connected] means the claimed components must
be connected in a way to perform a designated function." Innova/Pure Water, 381 F.3d at 1118. The Federal Circuit then stated that "operatively connected" takes full breadth of its ordinary meaning, i.e., 'said tube [is] operatively connected to said cap' when the tube and cap are arranged in a manner capable of performing the function of filtering." Id. Plaintiff also notes that the District of Oregon construed the term "operatively connected" in the phrase "a spring operatively connected between the handle and the blade to assist in the opening of the blade" to mean "the spring, handle, and blade are arranged such that the spring operates to assist in opening the blade." (Doc. # 31, at 28) (citing Kai U.S.A., Ltd. v. Buck Knives, Inc., No. CV 05-446-HA, 2006 U.S. Dist. LEXIS 24924, 2006 WL 314456, at *4 (D. Ore. Feb. 9, 2006)).

Defendant requests that, if the Court does not construe the term as a means-plus-function limitation, the Court adopt its alternative, proposed construction:

[Comprising a travel bar operatively connected to the hinge plates . . . . A travel bar operatively connected to the hinge plates means the hinge plates are connected to the travel bar by placing at least one pivotally movable connecting link between the hinge plates and the travel bar such that the motion of the bar produces pivotal motion of the hinge plates.

(Doc. # 26-2, at 11-12, 14-15). Defendant refers the Court to the '946 patent specification, which recites: (1) "[a]internmediate connector 76 is pivotally connected to the lever 68 and to the travel bar 70 for pivoting motion relative to both the lever and the travel bar," and (2) "[t]he hinge plates 56 are operatively connected with the travel bar 70 by placing at least one pivotally movable connecting link 72 between the hinge plates and the bar such that motion of the bar produces pivotal motion of the hinge plates." (Doc. # 1-2, '946 patent, col. 4, lines 30-32, col. 7, lines 23-27). Defendant maintains that the Court should adopt its proposed construction, which incorporates the specification's definition of the phrase "a travel bar operatively connected to the hinge plates." (Doc. # 26-2, at 15). Based on the specification, defendant contends that "connecting links" are necessary structures. (Doc. # 79, at 17). Defendant asserts that its proposed construction is "consistent with the maxim that claims should be construed to maintain their validity and the Federal Circuit's interpretation of the written description and enablement requirements of 35 U.S.C. § 112, P 1." (Doc. # 26-2, at 15). Finally, defendant argues that "[p]laintiff's reliance on Innova is misplaced." (Doc. # 79, at 15).

The claim language, specification, or prosecution do not make clear the definition of the term "operatively connected," and the Court adopts the Federal Circuit's ordinary and customary meaning of the disputed term. As such, the Court finds that the ordinary meaning of the disputed term is "arranged in a manner capable of performing a designated function." See Innova/Pure Water, 381 F.3d at 1118, 1120. The stated function in claim 1 of the '946 patent is "for moving the hinge plates between the closed and open positions . . . ." (Doc. # 1-2, '946 patent, col. 9, lines 63-64). The specification states that "[t]he hinge plates 56 are operatively connected with the travel bar 70 by placing at least one pivotally movable connecting link 72 between the hinge plates and the bar such that motion of the bar produces pivotal motion of the hinge plates." (Doc. # 1-2, '946 patent, col. 7, lines 23-27) (emphasis added). Therefore, a the travel bar and hinge plates, without at least one connecting link, could not perform the function recited in claim 1 of the '946 patent. "[I]t is entirely proper to consider the functions of the invention in seeking to determine the meaning of particular claim language." ICU Med., No. 2008-1077, 2009 U.S. App. LEXIS 5271, 2009 WL 635630, at *4, citing Medrad, Inc. v. MRI Devices Corp., 401 F.3d 1313, 1319 (Fed. Cir. 2005).

The Court finds that the reference to the travel bar and hinge plates in claim 1 of the '946 patent contemplates the inclusion of at least one connecting link. The intended function described in the specification supports this conclusion. As such, the Court finds that "operatively connected" in the context of the phrase "a travel bar operatively connected to the hinge plates" of the '946 patent means "the travel bar and hinge plates are arranged in a manner such that at least one connecting link operates to assist in moving the hinge plates between the closed and opened positions."
Plaintiff argues that the term "operatively connected" in the '685 patent means "mechanically associated so as to be capable of applying mechanical force to." (Doc. # 51, at 27). Plaintiff relies on dictionary definitions and Innova/Pure Water and Kai to support its proposed construction. Defendant urges the Court to adopt its alternative, proposed construction:

[A] travel bar operatively connected to the lever such that pivoting movement of the lever causes movement of the travel bar in translation relative to the housing from the first position in which the control structure locks the hinge plates in the closed position to the second position in which the hinge plates are free to pivot to the open position. A travel bar operatively connected to the lever means the travel bar is connected to the lever by an intermediate connector. (Doc. # 51, at 28).

Defendant also provides the same arguments that it asserted with respect to the construction of the term in the '946 patent claims. Additionally, defendant contends that the construction of the term within the context of claim 1 of the '685 patent requires the inclusion of "an intermediate connector" because the structure "is the only enabling disclosure in the '685 patent specification." (Doc. # 51, at 31).

The claim language, specification, or prosecution history do not make clear the meaning of "operatively connected" in the '685 patent, and the Court adopts the Federal Circuit's ordinary and customary meaning of the disputed term. As such, the Court finds that the ordinary meaning of the disputed term is "arranged in a manner capable of performing a designated function." See Innova/Pure Water, 381 F.3d at 1118, 1120. The '685 patent specification states that:

As also seen, the travel bar 41 is disposed behind the plateau 17 of the housing 11 and is connected to the lever 15 by the intermediate connector 39. . . . Force is therefore transmitted from the lever 15, around the post 21a, and to the travel bar 41 while keeping direction of the force along a centerline of the connector 39. Thus, the connector is able to transmit force from the lever 15 to the travel bar 41 such that application of force to the lever produces the translational movement of the travel bar.

(Doc. # 51-2, '685 patent, col. 6, lines 36-39, 54-60). The travel bar and lever, without the intermediate connector, could not perform the function recited in both claim 1 and the specification. As stated above, "it is 'entirely proper to consider the functions of the invention in seeking to determine the meaning of particular claim language." ICU Med., No. 2008-1077, 2009 U.S. App. LEXIS 5271, 2009 WL 635630, at *4. Therefore, the Court finds that the reference to the travel bar and lever in claim 1 in the '685 patent contemplates the inclusion of an intermediate connector. The intended function described in the specification supports this conclusion. Accordingly, the Court finds that "operatively connected" in claim 1 of the '685 patent means "the travel bar and the lever are arranged such that the intermediate connector operates to assist the pivoting movement of the lever that causes movement of the travel bar in translation relative to the housing from the first position in which the control structure locks the hinge plates in the closed position to the second position in which the hinge plates are free to pivot to the open position."

Federal Circuit law holds that, "[u]nless otherwise compelled, when different claims of a patent use the same language, we give that language the same effect in each claim." Innova/Pure Water, 381 F.3d at 1119. In the instant case, the term "operatively connected" appears in both claims 1 and 26 of the '946 patent, and the Court finds that "operatively connected" carries the same meaning in both claims. Id. Claim 26 recites that "the lever is being operatively connected to the travel bar such that pivoting motion of the lever produces movement of the travel bar generally lengthwise of the elongate plate . . . ." (Doc. # 1-2, '946 patent, col. 12, lines 23-26). The specification states:

The lever 68 is operatively connected to the travel bar 70 such that application of force to the lever produces movement of the travel bar generally lengthwise of the elongate plate 32. . . . An intermediate connector 76 is pivotally connected to the lever 68 and to the travel bar 70 for pivoting motion relative to both the lever and travel bar. Force is transmitted from the lever 68 to the travel bar 70 through the intermediate connector 76.

(Doc. # 1-2, '946 patent, col. 4, lines 20-24, 30-34). A lever and travel bar, without the intermediate connector, could not perform the function recited in both claim 26 and the specification. As stated above, "it is 'entirely proper to consider the
functions of the invention in seeking to determine the meaning of particular claim language.” ICU Med., No. 2008-1077, 2009 U.S. App. LEXIS 5271, 2009 WL 635630, at *4. The Court finds that the reference to the lever and travel bar in claim 26 contemplates the inclusion of an intermediate connector. The intended function described in the specification supports this conclusion. Accordingly, the Court finds that “operatively connected” in claim 26 of the ‘946 patent means “the lever and travel bar are arranged such that the intermediate connector operates to assist the pivoting motion of the lever to produce movement of the travel bar generally lengthwise of the elongate plate.”

"impeller assembly operatively coupled to said motor"

Claims 1 and 11 of the ‘437 Patent contain the term "impeller assembly operatively coupled to said motor." SHURflo contends the term means "a rotating impeller apparatus coupled directly or indirectly to the pump motor so that they are operable together." Defendants contend that the term means "a rotating impeller apparatus coupled directly to the pump motor so that they are operable together when the impeller apparatus is not locked." The parties dispute centers around whether the phrase "operatively coupled" should be limited to "indirect" coupling.

Both parties agree that "magnetic" coupling is a type of "indirect" coupling. Defendants assert that the only embodiment disclosed in the specification is an impeller assembly coupled to a motor through a magnetic coupling. The magnetic coupling allows the motor to slip if the impeller locks. This means the motor is free to disengage from turning the impeller when the impeller locks and the impeller and motor stop turning together. In a "direct" coupling, the motor locks when the impeller locks. Defendants argue that the specification does not disclose a motor that is "directly" coupled and that "[d]irect coupling does not 'naturally align' with the specification's disclosure of indirect coupling because the motor circuit would not function as described by the patent if the impeller and motor were directly coupled." Defendants' Responsive Brief, at 28. SHURflo counters that claims cannot be limited to embodiments disclosed in the patent, even if the patent discloses only one embodiment. In addition, SHURflo argues that Claims 4 and 10 of the ‘437 Patent depend from Claim 1 and specifically require a "magnetic coupling." Thus, SHURflo argues that under the doctrine of claim differentiation, Claims 1 and 11 are broader than Claims 4 and 10.

There is nothing in the claim language or the specification that limits "operatively coupled" to "indirect" coupling. Although the specification only discloses "magnetic" coupling, the patentee chose to claim the coupling more broadly by using the term "operatively coupled." In addition, because courts presume a difference in meaning and scope when a patentee uses different phrases in separate claims, the doctrine of claim differentiation applies in this case and "operatively coupled" must be read to include both "direct" and "indirect" coupling. See Phillips, 415 F.3d at 1314-15. Accordingly, the Court adopts SHURflo's construction and construes the term "impeller assembly operatively coupled to said motor" to mean "a rotating impeller apparatus coupled directly or indirectly to the pump motor so that they are operable together."

1. Claim 1 ("the clamp including a camming member which operatively engages the actuation member such that movement of the actuation member pivots the clamp between the open and clamped positions")

Claim 1 (and all dependent claims) of the ‘544 Patent uses the above claim term in the following context:

[A] clamp pivotally mounted adjacent the distal end of the outer tube, the clamp being movable in relation to the jaw member between open and clamped positions, the clamp including a camming member which operatively engages the actuation member such that movement of the actuation member pivots the clamp between the open and clamped positions.

‘544 Patent, Claim 1 (emphasis added). Plaintiff proposes the following construction: "The camming member of the clamp (follower) and the actuation member constitute a camming mechanism to pivot the clamp." Defendant proposes: "A protrusion (follower) the motion of which is controlled by movement of the 'slot' with which it is engaged." n13

n13 Defendant originally argued that the means-plus-function limitation in 35 U.S.C. § 112 applied to this claim term, but
has since withdrawn that argument. See Markman Tr. at 6.

The Court adopts plaintiff's construction and construes the claim as follows: "The camming member of the clamp (follower) and the actuation member constitute a camming mechanism to pivot the clamp." First, the parties agree that the "camming member" is the follower part of the camming mechanism. Moreover, this construction is consistent with the claim language itself and the specifications. See '544 Claim 1, 4:26-30, 6:15-24, Figure 13. Lastly, as addressed above, there is no basis for importing the words "protrusions" or "controlled" into the claim construction.

1. "Anchor Seat Means" for Operative Joinder

Claim 5 requires "an anchor seat means which has a lower bone interface operatively joined to said bone segment ...."

Defendants argue "operative joinder" requires the screw be secured into the bone so the bottom surface of the anchor seat is joined to the bone, or to washers that sit above the bone. They assert the anchor seat must be joined to the bone to add stability to the rod, and, if the anchor seat were not joined as such, the anchor seat would move freely. Defendants claim their devices rigidly link the rod, the anchor seat, and the screw to the bone segment without joining the anchor seat to the bone segment.

Defendants argue the term "operatively" should be interpreted to mean "to produce an appropriate effect." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY at 827 (1991). They further argue the effect of providing limited motion and stability between the anchor seat and the bone segment can be found in the patent specification. The Court cannot accept Defendants' proposed definition, which would require incorporation of an additional limitation into the claim.

Plaintiff argues the word "operatively" means "involving surgical operations." WEBSTER'S COLLEGE DICTIONARY at 948 (1991). Since the claim language concerns a surgical procedure, this definition is logical. Thus, "operative joinder" in this claim means to "connect during a surgical procedure." 2

--- Footnotes ---

1 "Particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments." Rhine v. Casio, Inc., 183 F.3d 1342, 1346 (Fed. Cir. 1999).

2 "Joined" means "to bring together or in contact; connect," WEBSTER'S COLLEGE DICTIONARY at 728 (1991), or "a surface forming a common boundary of two bodies." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY at 631 (1991).

--- End Footnotes ---

Defendants' contentions its products are not designed for stabilization by connecting to the bone are irrelevant because the claim does not refer to the purpose of the connection, and the Court will not read this limitation into the claim. Further, "the accused device, to be infringing, need only be capable of operating in the [infringing] mode … actual [infringing] mode operation in the accused device is not required." Intel Corp. v. U.S. Intern. Trade Com'n, 946 F.2d 821, 832 (Fed. Cir. 1991); see also Hilgraeve Corp. v. Symantec Corp., 265 F.3d 1336, 1343 (Fed. Cir. 2001) ("an accused device may be found to infringe if it is reasonably capable of satisfying the claim limitations, even though it may also be capable of non-infringing modes of operation."). Defendants' devices are capable of operative joinder to the bone segment, 3 and are sometimes used in this way. 4 Defendants' products meet the "operative joinder" limitation of Claim 5.

--- Footnotes ---

3 Defendants correctly point out "a device does not infringe simply because it is possible to alter it in a way that would satisfy all the limitations of a patent claim." High Tech Medical Instrumentation, Inc. v. New Image Industries, Inc., 49 F.3d 1551, 1555 (Fed. Cir. 1995). However, the rule does not apply in this case because Defendants' products do not need to be altered to connect to the bone segment.
4 Plaintiff moved for leave to file a surreply to respond to Defendants' evidence on this issue. Since this evidence was not controlling, Plaintiff's arguments are moot.

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d. "Operatively positioned at the surgeon's operating station"

Claims 1 and 10 teach that the "surgeon's control panel" is "operatively positioned at the surgeon's operating station." '688 Pat. col.19 ll.51-52; id. at col.20 ll.66-67. KSEA asserts that "operatively positioned at the surgeon's operating station" should be construed as "operable from the surgeon's operating station." (Proposed Constructions Chart 2.) S&N contends that the term should be construed as "positioned at the surgeon's operating station within reach and view of the surgeon to allow control and monitoring of the pieces of surgical equipment." (Id.)

The Court adopts S&N's proposed construction. The '688 Patent teaches that a primary advantage of the surgeon's command and control system is that it allows a surgeon to directly monitor and control the operation of surgical equipment, an improvement over the prior art, which required a surgeon to indirectly monitor and control surgical equipment through verbal interaction with surgical staff members. See '688 Pat. col.2 ll.29-50. S&N's proposed construction recognizes this improvement over the prior art, while KSEA's proposed construction does not indicate that the surgeon may directly use the control panel. "The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." Phillips, 415 F.3d at 1316 (citation omitted).

S&N's proposed construction does not read "operatively" out of the claim as KSEA contends. The proposed construction explains that "operatively positioned" means positioned so that the surgeon may directly operate it.

The Court construes "operatively positioned at the surgeon's operating station" as "positioned at the surgeon's operating station within reach and view of the surgeon to allow control and monitoring of the pieces of surgical equipment."

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The next element of Claim 1 to which construction must be applied is:

[A]n engine control to control a parameter of said engine, said engine control including an operator input to allow an operator to signal a desire to eliminate torque between said engine output shaft and said transmission output shaft[.]\n
Exhibit A, col.7 ll.48-52 (emphasis added). Again, the Court looks first to the decision of the Board which noted:

The subject matter [of this invention] concerns . . . a vehicle drive having an engine control which in response to an operator signal determines a zero torque parameter value for the engine and which is operable to control the engine to achieve the zero torque parameter value[.] The significance of the zero torque parameter value is that when it is achieved, the transmission of the motor vehicle is free to be shifted to neutral without engagement of a clutch.

Exhibit D, supra, at 3 (emphasis added). The Board clearly stated that the operator signal resulted in the engine achieving zero torque parameter value. The Board did not go further and find that the operator signal also caused the shifting of gears after that zero torque parameter value had been met. In fact, the Board was quite specific: (1) the invention caused the transmission to achieve zero torque parameter in response to an operator signal; and (2) that torque elimination allowed the vehicle to be shifted to neutral without use of a clutch.

Despite the Board's conclusion, Meritor argues that the patent is not so limited, that is, there is nothing in the patent which excludes the signal from also accomplishing the gear shift. Eaton claims there is a distinction between eliminating torque and moving the gear into neutral versus selecting a gear and an automatic shift into that gear without further operator input.
For the same reasons as discussed above, the Court finds that Eaton's position is well taken.

Moreover, Meritor's expert, Dr. Hoff, opined that "[t]here are two distinct steps in shifting to another gear in a manual gearbox. The first step is to move the transmission from in-gear to neutral. The second step is to synchronize the speeds of the two halves of the transmission . . . so that the transmission can be engaged in a new gear." Exhibit Q, at 9. "The ['477] patent describes an apparatus to move transmission from in-gear to neutral without using the clutch, so the portion of shift . . . which is of primary interest occurs between the start of the shift . . . and the point when neutral is achieved[.]" Id. at 15.

By contrast, Eaton's expert, Mr. Speranza, opined:

Eaton's AutoShift and UltraShift transmissions are automated mechanical transmissions used on medium and heavy trucks. . . . Both AutoShift and UltraShift operate with a control console ("console"), which is the principal driver interface for these products.

The function of the consoles used in AutoShift and UltraShift is similar to that of the selector in a car having an automatic transmission. . . . In AutoShift and UltraShift, pressing the "D" button or moving the selector to "D" causes actuators in the transmission to put the truck transmission into drive mode and the transmission will shift to an appropriate starting gear[,] depending upon the start gear selected by the driver. The same is true for the other modes of operation: pushing the buttons or moving the selector to "R", "N" or "L" will cause actuators in the transmission to put the truck transmission into reverse, neutral or the selected starting gear, respectively. Pressing the "Manual" button or moving the selector to "Manual" on the AutoShift and UltraShift console permits the driver to hold the current gear. Provided the engine speed is not outside of defined limits, and other conditions related to the ability to perform the requested shift, the driver then may select the appropriate gear for road conditions using the up/down buttons. . . . Pressing the up/down button on the console while in "Manual" mode causes electronics in the console, transmission, and engine to evaluate whether a shift requested by the driver is allowable under the conditions.

The transmissions have an electric motor controlled by a computer that moves the dog clutch when disengaging from the currently engaged gear. . . . The net engine torque is a value that is continuously computed every 10 ms based on values broadcast over the J1939 data link - irrespective of any input from the driver or whether the driver has requested an upshift or downshift in Manual mode. . . . When the driver has requested a shift, the software routine will set a flag to true or false depending on whether the net engine torque is less than the "full on" torque thresholds. If net engine torque is less than the "full on" torque threshold during a software cycle after a shift request has been made, the flag will be set to "true" and the electric motor turned to "full on" power.

Exhibit E, at 2, 4-6 (emphasis added).

Despite the conclusion argued for by Meritor, its expert did not describe the '477 patent as including (1) torque elimination; (2) disengagement of the gear into neutral; and also (3) shifting by the transmission into a new gear. Indeed, the patent, both in the specification and claim language, refers to elimination of torque, followed by moving the gear into neutral with no description of a further shifting into gear except through the driver's use of the manual stick shift. See, e.g., Exhibit A, col.8 II.17-19 (Claim 9 - "A vehicle drive as recited in claim 1, wherein a manual stick shift allows an operator to manually shift said transmission speed ratios." (emphasis added)); id. col.8 II. 23-39 (Claim 11 - "A method of operating a vehicle drive comprising the steps of: . . . allow[ing] the operator to move said transmission to begin a speed ratio shift; . . . indicating a desire to eliminate torque by actuating said input switch; . . . manually moving said transmission out of engagement to a neutral position."). id. col.7 II. 5-14. 18

18 Lest Meritor argue that the Court is importing definitions from other claims, the Court notes that it is appropriate to consult "[o]ther claims of the patent in question, both asserted and unasserted, [which] can also be valuable sources of
enlightenment as to the meaning of a claim term." Phillips, 415 F.3d at 1314.

Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims. Differences among claims can also be a useful guide in understanding the meaning of particular claim terms.

Id. at 1314-15 (internal citations omitted).

Referring again to the specification,

an operator requests the torque elimination feature through button 48. The ECU [electronic control unit] varies the engine fueling as shown.[.] The operator applies force to the manual stick shift, attempting to move the collar and disengage the gear. As the actual engine fueling saw tooth profile crosses the actual zero torque value, the operator will be able to disengage the collar. A signal is sent to the ECU that the transmission is in neutral. Once a signal is received that the transmission is in neutral, control is either returned to the operator or an engine synchronization system as described generally in this application is then actuated to synchronize the speed to that which will be necessary at the next expected gear.

. . .

[A]fter the transmission is in the position shown[,] the operator must now engage a new selected gear. The present invention is preferably utilized with a system that then synchronizes engine speed with the speed necessary fo a smooth transition to the new transmission speed.

Exhibit A, col.6 II. 41-53; col.7 II. 3-8 (emphasis added). The patent does not claim the engine synchronization system, only the invention which allows the gear to be moved into neutral without a clutch. Cook Biotech, 460 F.3d at 1373. The Court concludes that Meritor's invention claims only the operator input to signal torque elimination without use of a clutch. Vitronics, 90 F.3d at 1582; Phillips, supra. It does not claim the further effecting of gear shift stemming from the initial operator signal. Id. Once the torque is eliminated, the transmission may be shifted into neutral and thereafter, into a new gear. Id. But, this requires further operator input. Thus, "operator input to allow an operator to signal a desire to eliminate torque" is so construed.

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The parties' first dispute concerns the construction of the phrase "side members which include opposing surfaces." Id. at col.6 I.22. The central issue in construing this phrase is the scope of the term "opposing surfaces." CPT argues "opposing surfaces" should be construed as "side members, each having a surface that faces or looks toward the corresponding surface of the other side members." Def.'s Claim Constr. Br. at 10. According to CPT, the "opposing surfaces" are restricted exclusively to the inner surfaces of the side members. IKN, on the other hand, contends the term "opposing surfaces" should not be so limited, but instead should be construed to mean "surfaces positioned across from each other." Pl.'s Claim Constr. Br. at 7. This construction would include, as IKN argues, the upper edges of the side members in addition to the inner surfaces.

Beginning with an evaluation of the claim language itself, the repeated use of the word "said opposing surfaces," which appears in relation to three limitations in the claim, reveals the patentee intended to use this term uniformly in defining the invention. According to Claim 1, the plate members must be "supported on," "extend[] transversely between," and be "releasably connectable" to "said opposing surfaces of said side members." The construction of this phrase must practically satisfy each of these conditions and remain logically consistent in defining the scope of the property right. More precisely, the term cannot be construed as the inner surfaces of the side members that oppose one another as applied to one limitation while, with respect to another limitation, given a broader construction to include additional surfaces.

The language in two of the dependent claims also informs the construction of independent Claim 1. My review of the
CPT advances the same prosecution history argument with respect to the construction of two of the limitations in Claim 1. Evidence.

Therefore, based on the logical relationship of the claim terms reveals construing the phrase "said opposing surfaces of said side members" as limited to the inner surfaces of the elongated side members ensures consistency and uniformity in defining the invention. For example, it would be inconsistent to construe the term "said opposing surfaces" in Claim 1 to include, as IKN contends, the surfaces positioned across from one another and to simultaneously impose this construction on dependent Claims 5 and 7, wherein the patentee distinguished the inner opposing surfaces from the upper edges of the longitudinally extending side members. Thus, the claim language, standing alone, does not permit a logically consistent construction of the term "opposing surfaces" that could include the upper, outer, and bottom surfaces of side members.

The specification in the '555 Patent also provides substantial support for construing the term "said opposing surfaces of said side members" as limited to the inner surfaces that oppose one another. Two preferred embodiments of the invention, which are depicted in Figures 2 and 6 of the '555 Patent, reveal the limitations associated with "opposing surfaces" can only be satisfied if the term is construed to exclusively include the inner surfaces of the frames that oppose one another. Stated conversely, upon consideration of these figures, it is impracticable to adhere to any of the limitations if "said opposing surfaces" were construed to broadly include the upper edge, outer surface, and lower edge of the side members. In the "Summary of the Invention," the patentee explained "the longitudinal guide profiles are . . . provided on the inner surfaces of the sidewalls above said upper edge of the front wall, which inner surfaces face one another . . . ." Id. at col.2 1.48-51 (emphasis added). Three paragraphs later, the patentee again distinguished the surfaces of the side members by stating "the plate members have on each of their lateral edges a longitudinal flange designed to cover the upper edge of an associated side member." Id. at col.3 1.9-11. The sentence from the specification that most informs the proper construction of the phrase "said opposing surfaces" is contained in the "Description of the Invention," wherein it states: "FIGS. 2 and 3 show that the longitudinally extending grooves 18, 20 are provided on the opposing inner surfaces of the sidewalls 12, 14." Id. at col.4 1.33-35 (emphasis added). When the patentee wished to refer to more than just the "opposing inner surfaces" of the three-dimensional side members, the patentee used the term "sidewalls" or "side members" to describe this structure. Id. at col.2 1.42-44 ("The side members are, in a preferred development of the invention, formed by sidewalls which are parallel to one another . . . ."). Simply put, the patentee, in describing the invention to a person of ordinary skill in the art, chose terms that plainly distinguish the opposing inner surfaces of the elongated side members from the other surfaces of the frame. Therefore, based on the logical relationship of the claim terms, the need for consistency in defining the invention, and the information from the specification, I will construe the term "side members which include opposing surfaces" as "side members, each having an inner surface that faces or looks toward the corresponding surface of the other side member." 9

9 CPT also argues that, during the prosecution of the '555 Patent, the patentee surrendered all other surfaces of the side members except the inner opposing surfaces. As originally submitted, the claim contained only one limitation: the plate members were required to be releasably connectable to the opposing surfaces. CPT contends a comparison of the claim as originally submitted and as eventually approved by the PTO reveals the claimed invention was narrowed to include only the inner opposing surfaces of the side members.

Although there is merit to CPT's argument, the claim language itself and the specification provide ample guidance in construing the phrase "said opposing surfaces of said side members." Therefore, the role of the prosecution history here is limited, at most, to confirming the scope of the property right as adequately revealed by the primary forms of intrinsic evidence.

CPT advances the same prosecution history argument with respect to the construction of two of the limitations in Claim 1.

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K. "an object attached to said connecting device opposite and directly below the free end of said member;"

The Court finds that the words used in describing the placement of the object do not require any definition. The Court construes the phrase "opposite and directly below the free end of said member" to simply mean "on the opposite side of the connecting device from the elongate member, and also directly below the free end of said member."

2. Claim Eight

Claim 8, clause 2 reads as follows: "wherein resilient gripping structures are mounted to extend along opposite sides of said housing." SCM argues that to remove any ambiguities, this claim should be interpreted to require that gripping structures appear on all opposite sides of the housing.

The term "opposite sides" is not defined in either the claims or the specifications. SCM's construction is unduly restrictive and not ordinary or usual. Its construction requiring gripping structures on all sides of the invention would essentially cover the calculator with rubber. This is at least unreasonable, if not absurd.

SCM also argues that if its construction is not accepted, the claim is too indefinite. Once again, SCM does not offer clear and convincing evidence that one skilled in the art would not be able to ascertain which "opposite sides" are at issue. We decline to invalidate the claim for indefiniteness.

The gripping structures function to aid someone in handling the calculator. This is illustrated by the definition of gripping, the claims and the specification. Gripping is defined as "having the ability to grip." Webster's Third New International Dictionary. In turn, "grip" is defined as "to seize or lay hold on tightly" or to "grasp firmly." Gripping, therefore, implies that the structures are intended to help someone, presumably the user, hold onto the calculator. Claim 9, clause 2 is consistent with this interpretation because it explains that the gripping structures are to "facilitate manual handling of the calculator."

Moreover, the preferred embodiment is also consistent with this interpretation, as it indicates that the gripping structures will prevent the calculator from slipping out of the hand of the user. Col. 6:32-36.

In light of the foregoing, we conclude that putting gripping structures on the front and rear sides would interfere with the use of the calculator and does not aid in its handling. While gripping on the back might prevent the calculator from slipping out of someone's hand, it is unnecessary and counterproductive to have gripping structures on the front where the actuator buttons are located.

Also, putting gripping structures on the top and bottom sides of the calculator would not facilitate handling because those
sides are unlikely to make contact with someone's hand if the calculator is being held when in use. Moreover, gripping on the top would most likely, if not invariably, inhibit the proper function of the lid. Thus, logically it appears that the only opposite sides that would facilitate the handling of the calculator are those on the right and left sides of the calculator.

One skilled in the art would understand "opposite sides" in Claim 8, clause 2 to be the pair of sides that facilitates the grasping of the hand-held calculator. Accordingly, we construe "opposite sides" to be the right and left sides of the calculator.

**2786**

B. Claim 2 of the '715 Patent

The Magistrate Judge recommends that the Court grant Defendants' Motion for Summary Judgment on claim 2 of the '715 patent. Plaintiffs object to the R&R, arguing that the Magistrate Judge improperly interpreted the "deflector plate" element of claim 2 and, thus, erroneously concluded that the accused devices lack that element. Specifically, Plaintiffs object to the conclusion that the accused devices do not equivalently infringe on the patented devices.

Claim 2 of the '715 patent includes the following limitation:

> a deflector plate mounted on the axial shaft opposite the passages for preventing straight line impingement of gas therefrom on the bag.

The Magistrate Judge rejected Plaintiffs' contention that "the extended area around the perimeter of the diffuser and the upper corner around the circumference" serves as the deflector plate in the accused devices. First, the Magistrate Judge interpreted the phrase "opposite the passages" as mandating that the deflector plate is not part of the element containing the gas passages. In doing so, the Magistrate Judge rejected Plaintiffs' argument that the phrase means "in opposition to the passages," reasoning that Plaintiffs' "definition twists the plain and common meaning of 'opposite' and finds no support in the claim, the patent specification, or the prosecution history." (R&R at 25). Accordingly, the Magistrate Judge found that the accused devices do not literally infringe on the patented device since the accused devices' diffuser contains the gas passages and "if the deflector plate is the diffuser, then it must be opposite itself to meet this claim limitation." Id. Defendants' Response corroborates this interpretation by emphasizing that the plain meaning of the claim requires such an interpretation by virtue of the term "therefrom"; in other words, "the deflector plate must deflect gas exiting 'therefrom' -- that is, gas exiting the gas passages." (Def.'s Resp. at 7 n.4). Defendants further point out that the specification corroborates the Magistrate Judge's interpretation, namely, in its discussion of Figure 3, which does not have a deflector plate separate and apart from the inflator housing, the specification states: "By angling the holes [gas passages] outwardly, the need for a deflector plate may be avoided." ( '715 patent, col. 7, ln. 3-4).

The Court construes Plaintiffs' objection, which conflates the claim interpretation, literal infringement, and doctrine of equivalents analyses, as objecting to the equivalency determination, because the gist of Plaintiffs' argument is that "the Report fails to fully analyze the functionality of the deflector plate which failure results in the Report's erroneous claim interpretation." (Pl.'s Obj. at 7)(emphasis added). The R&R explains that "the functionality of the deflector plate is for preventing straight line impingement of gas therefrom on the bag. Since the accused devices are all radial-flow (rather than axial-flow) designs, there is no need for the deflector plate to block gases from traveling into the front of the bag and thus toward the vehicle occupant."

Plaintiffs argue that the deflector plate "turn[s] the gas generated from an axial (toward the driver) direction to a radial (toward the sides of the bag and away from the driver) direction," and that the accused devices have structure designed to achieve the same function in substantially the same way to obtain substantially the same result as the deflector plate element of claim 2. Id. at 8. In support, Plaintiffs point to evidence that the gas generated within the accused devices flows in an axial direction and the area around the perimeter of the diffuser and the upper quarter around the circumference turn the gas to a radial direction.

However, as Defendants explain in their Response, Plaintiffs' argument is unavailing. Rather, the Magistrate Judge was referring to the gas exiting the inflator, whereas Plaintiffs' argument that the accused devices have an axial flow refers only
to the gas when it is within the inflator. This distinction is crucial to the equivalency determination, as it is an undisputed fact that the gas exiting an inflator determines whether that inflator has purely radial flow and, hence, thrust-neutrality. (SOF P 211). In contrast, gas exits the ’715 inflator with an axial flow. Because the purely radial flow achieved by the accused devices renders the differences in the allegedly equivalent structure substantial, Plaintiffs’ objections are overruled. Accordingly, the Court adopts the R&R as to claim 2 of the ’715 Patent and GRANTS Defendants’ Motion for Summary Judgment as to Noninfringement of claim 2 of the ’715 patent.

A. Court's Review of the Special Master's Report and Recommendation Regarding Definition of "Optical Arrangement."

In reviewing the Special Master's Report, this Court reviews de novo the findings of fact and conclusions of law objected to by the parties. Fed.R.Civ.P. 53(g)(3)&(4). All other findings of fact and conclusions of law may be reviewed de novo. See Fed.R.Civ.P. 53 advisory committee note on 2003 amendment.

The construction of patent terms is a question of law determined by the court. Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed.Cir. 1995). The Court must first look to the intrinsic evidence of the patent to determine the scope of the claims. Id. at 979. The intrinsic evidence includes the words of the claims themselves, the specification, and the prosecution history, if in evidence. Id. Where the use of intrinsic evidence alone will resolve the ambiguity in a disputed term consideration of extrinsic evidence is improper. Hockerson-Halberstadt, Inc., v. Avia Group, Int'l, Inc., 222 F.3d 951, 955 (Fed.Cir. 2000). However, the court may in its discretion receive extrinsic evidence to aid the court in coming to a correct conclusion as to the true meaning of language employed in the patent. Markman, 52 F.3d at 980. "Extrinsic evidence consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." Id.

B. Erchonia's Objections to Special Master's Final Report and Recommendation.

Erchonia has set forth multiple bases in opposition to the Special Master's Final Report and Recommendation regarding his interpretation of the term "optical arrangement." Erchonia contends that Special Master's final recommendation is flawed because "optical arrangement" does not necessitate that there be two or more optical devices but rather that it can consist of a single lens or other optical device. However, in reviewing these objections it is clear that the Special Master properly considered the record before him and evidence presented to come to a logical conclusion regarding the meaning of "optical arrangement."

(1) The Parties Discussed The Definition of "Optical Arrangement" That is Proposed by the Special Master.

First, Erchonia argues that the modifications added by the Special Master to the definition of "optical arrangement" were improperly raised by REM in its Response to the Special Master's Draft Report and Recommendation. (Erchonia Objection, p. 5). However, a review of the record simply does not support that argument. Rather, a review of the Markman Hearing transcript reveals that these modifications to the definition of "optical arrangement" were discussed by both parties and, at the very least, the parties were able to come to a common understanding of the meaning of "optical arrangement" at the Markman hearing. At the Markman hearing the following discussion took place:

Special Master Peterson: Okay, I am going to dictate slowly the definition for "optical system" taken from the McGraw-Hill Dictionary of Scientific and Technical Terms, and it is in the field of optics. It is, quote: A collection comprising mirrors, lenses, prism and other devices placed in some specified configuration which reflect, refract, disperse, absorb, polarize or otherwise act on light period, close quote. Now, my question, Mr. Brunelli, is what, if anything, in the specification or prosecution history would indicate that would incorrectly describe "optical arrangement"?

Mr. Brunelli: Okay. I've got two points. One, I read the definition as requiring at least -- Because of the word "collection," I read that as requiring at least two of these things. Is that how you're reading it, as well?

Special Master: Well, I hadn't gotten to that point yet, but all right.
Mr. Brunelli: So if there is -- I suppose you could read "collection" as requiring only one or more of these, as well, so there is an ambiguity there. If it's -- If it's not at least two, I think neither the Specification nor the file history support -- would support the reading. Second, I believe that a -- "other devices" is broad in that it may include things that are not optics such as mechanical elements, a mechanical mask, or an electromechanical element such as a motorized mirror. Those are clearly -- Those type of things are clearly not encompassed by the specification.

Special Master: Well, just a second. Let me -- We can solve that issue easily by changing "other devices" to "other optical devices."

Mr. Brunelli: Okay.

Special Master: And if we just make it clear, we say "a collection comprising two or more . . ."

Mr. Brunelli: If we went with "a collection comprising two or more mirrors, lenses, prisms or other optical devices placed in some specified configuration which reflect, refract, disperse, absorb, polarize, or otherwise act upon light" and you're asking me if that would be a acceptable definition for "optical system," and clearly I think that would because it came out of the dictionary, as you just stated, and the next question becomes does "optical system" -- can optical system" be changed for "optical arrangement"? Am I following you?

Special Master: Well, no, you're changing the second question slightly. Is that an accurate definition of the term "optical arrangement" as it is used in the context of the patent and prosecution history of the case?

Mr. Brunelli: Well, I really think that the -- because of the way this patent was drafted, I really think that the patentee defined "optical arrangement" as being a particular thing.

Special Master: I understand.

Mr. Brunelli: But let's -- let's assume that argument is falling -- is falling short, in your opinion, and so I will argue in the alternative. If, in the alternative, "optical arrangement" is -- is not -- has not been defined, then I think the proposed definition that we've just run through would work in understanding what is meant by "optical arrangement" as used in the claims of the 096 Patent.

Special Master: All right. Mr. Schwartz, did you have anything to say in closing?

Mr. Schwarz: Well, I think those are good questions then. I will tell you that I think that -- seeing the file history, that there is -- that the examiner, at least, had the opinion that optical -- Well, he had a discussion about other optical arrangements as taught in Oshiro and Blum, kind of my interpretation of his -- what you stated, he had a long discussion about other optical arrangements that could be used, including light generating prisms and lenses and those things, and discussed that they were well-known in the art. So I would support your -- I support the contention that "optical arrangement" is broader than just a line generating prism and a collimating lens. And I also, as I said earlier, believe "optical system" and "optical arrangement" are equivalent.

Special Master: All right. Let me -- Let me ask you, Mr. Schwartz, from that definition that we just discussed with Mr. Brunelli would that be acceptable from your standpoint?

Mr. Schwartz: I think that the definition you just read out of the McGraw-Hill Dictionary was extremely accurate. I don't have any concern what you've proposed as alternative language here other than making clear two things. When you say -- you had -- At one point in your discussion Mr. Brunelli said "comprising two or more." I'd like to make clear that it can be in combination. You could obviously have a lens and a prism, it doesn't have to be two lenses or two prisms, although I think that's what you intended anyway. (Emphasis added).

Special Master: Yes.

Mr. Schwarz: The only point where I disagree with Mr. Brunelli was he made a point of saying that a motorized mirror, he believed, would be a mechanical device. I think that a mirror, whether it's motorized or not, is an optical device, but I'm
not sure we need to go that far for purposes of this discussion.

Special Master: All right. All right. Anything else, Mr. Schwartz?

Mr. Schwartz: No sir. I think that gives you a good flavor. I would just refer you, as I know you're fully familiar, to the briefs or anything that we didn't address during oral argument.


The above discussion demonstrates that both parties were given an opportunity to discuss and dispute the meaning of "optical arrangement" wholly consistent with the construction the Special Master recommends now. Additionally, a plain reading reveals that the parties seemed to be in general agreement that the proposed definition by the Special Master in his Final Report and Recommendation was appropriate.

(2) The Prosecution History and Prior Art Support the Special Master's Recommendation.

Second, the Special Master's Final Report and Recommendation soundly describes his determination that an "optical arrangement" calls for two or more optical devices. Despite Erchonia's argument to the contrary, the prosecution history and prior art supports the Special Master's recommendation that "optical arrangement" consist of two or more optical devices rather than just a single optical device as Erchonia contends.

Specifically, Erchonia contends that the Special Master failed to appreciate that the Patent Examiner of the 096 patent considered the possibility that "optical arrangement" could be made up of a single prism. Erchonia cites the Patent Examiner's statement in rejecting claim 5 of the 096 Patent that it would have been obvious "to modify the combined device of Ohshiro et al and Blum et al, with Itzkan to provide a line generating prism as an alternative, equivalent means for focusing the light onto the tissue in a line." (Draft Report and Recommendation p. 82, citing Office Action at 4). Erchonia contends that this statement shows that the Patent Examiner considered the possibility of a single prism acting as an optical arrangement on the 096 Patent, thus supporting its position that "optical arrangement" does not necessitate two or more such devices. However, as noted by REM, this argument has been addressed by the Special Master with sound reasoning. Most significantly, the Patent Examiner's statement, cited above, was made in the context of rejecting claim 5 of the original 096 application on the basis of obviousness in light of the prior art. Specifically, application claim 5 (ultimately patent claim 4) specified in pertinent part:

5. The device of claim 1 wherein said optical arrangement includes:

   a. collimating lens; and

   b. line generating prism, said collimating lens and line generating prism disposed in a serial relation to said generating means.

(Final Report and Recommendation, p. 118).

The Patent Examiner's rejection was based upon two optical devices, a "collimating lens" and "a line generating prism." Thus, it cannot be said that the Patent Examiner contemplated only one optical device.

Additionally, Erchonia's reliance Ohshiro et al., patent # 4,905,690, a prior art reference to the 096 Patent, for the proposition that "optical arrangement" may consist of only one optical device is not persuasive. As noted by the Special Master, the Ohshiro patent consists of a "series of lenses." (Final Report and Recommendation, p. 49, Exhibit 1 to REM's Response, abstract of Ohshiro et al.). Obviously, a "series of lenses" would suggest more than one lens or optical device.

Lastly, Erchonia's reliance on the Sousa et al, patent # 5,822,345, to lend support to its argument that "optical arrangement" does not necessitate "two or more" optical devices is not persuasive. As Erchonia points out, the Special Master noted that the Sousa et al specification relates that "optical system 13, . . . can be a focusing lens or other suitable optical arrangement . . . " (Draft Report and Recommendation, p. 89, Exhibit 2 to REM's Response, 345 patent, col. 7, ll. 19-22). However, the Sousa patent specification also possesses language suggesting that "optical arrangement" calls for two or more
optical devices, or lenses. Specifically, in the same specification, the patent calls for a "series of lenses." (Exhibit 2, to REM's Response, 345 patent, col. 5-6, ll. 62-8).

Thus, the prosecution history of the 096 patent and the prior art addressing "optical arrangement" reasonably suggest that an "optical arrangement" would likely require at least two or more lenses or devices. At the very least, contrary to Erchonia's position, the prosecution history and prior art of the 096 Patent do not evidence that an ordinary person skilled in the art would equate "optical arrangement" with only one such device.

(3) The Special Master Did Not Improperly Apply The Preferred Embodiment Into The Claims.

Erchonia also argues that the Special Master improperly read claim limitations from the preferred embodiment when interpreting "optical arrangement" in the independent claims. Specifically, Erchonia relies on the Special Master's reference in the Final Report and Recommendation that the specific embodiment disclosed in the specification of the 096 Patent has at least two optical elements or devices; specifically the "collimating lens" and "line generating prism." (Final Report and Recommendation, p. 120). However, Erchonia's argument is not well taken as it even acknowledges that the Special Master did not relate that specific limitation from the preferred embodiment of a "collimating lens" and a "line generating prism" into the definition of "optical arrangement." (Erchonia's Objection to Final Report, p. 7-8). Rather, the definition of "optical arrangement" is broader in that it only requires "two or more . . . optical devices." Therefore, it is difficult to see how the Special Master improperly read the limitations of the preferred embodiment of the 096 into the definition of "optical arrangement."

This same line of reasoning also rebuts Erchonia's argument that the Special Master ran afoul of the doctrine of claim differentiation, which prohibits dependent claim limitations from being read into independent claims. See Curtiss-Wright Flow Control Corp. v. Velan, Inc. 438 F.3d 1374, 1380 (Fed. Cir. 2006). As discussed above, the Special Master's definition of "optical arrangement" requires only a collection of "two or more . . . optical devices." (Final Report and Recommendation, p. 123). Whereas, the limitations of the preferred embodiment, such as in dependent claim four, relate that the dependent claims involve a "collimating lens" and "a line generating prism" which are distinct types of "optical devices." (Final Report and Recommendation, p. 120). Therefore, because the independent claim is based upon the broad category of "optical devices" and the dependent claims involve specific types of "optical devices" it cannot be said the Special Master read the claim limitations into the independent claims.

(4) The Special Master Did Not Improperly Assign A Burden of Proof.

Lastly, Erchonia argues that the Special Master improperly assessed it a burden of proof in determining the meaning of "optical arrangement." Specifically, Erchonia cites the Special Master's determination that neither party had provided proof of the question of how one of ordinary skill in the art would interpret "optical arrangement." However, Erchonia's argument is not persuasive because the fact that the Special Master noted that both parties provided inadequate evidence in support of their purported interpretations of "optical arrangement" does not mean he assigned a burden of proof to either party. It simply demonstrates that the evidence presented by both parties was not helpful in making the ultimate determination. Rather, the Special Master turned to other reliable means of interpretation such as other intrinsic and extrinsic evidence.

C. The Definition of "Optical Arrangement"

The Special Master followed proper procedure in formulating his final recommendation regarding the term "optical arrangement." He looked first to the intrinsic record to determine the proper definition of "optical arrangement." However, after reviewing the intrinsic record, including the claim language, prosecution history and specification it is unclear if one of ordinary skill in the art would determine if an "optical arrangement" can be made up of just one "optical device" or calls for at least two. (Final Report and Recommendation, pp. 120, 121).

Because, of this uncertainty, it was appropriate for the Special Master and is appropriate for this Court to turn to available extrinsic evidence available. Here, the Special Master with the parties consent turned to the dictionary, to resolve any ambiguity. Phillips, 415 F.3d 1303 at 1318-19 (2005). Both parties generally agreed to the persuasiveness of the McGraw-Hill Dictionary of Scientific and Technical Terms (5th Ed. 1994) with its definition of "optical system."

First, as noted by the Special Master, the plain meaning of term "arrangement" connotes multiple parts. See Merriam-
Webster's Collegiate Dictionary (10th Ed. 1999) at 64 (defining "arrangement" as "something made by arranging parts or other things together"). Thus, the term itself would call for at least two devices, not a single device as Erchonia contends.

Second, the technical definition of "optical system" as defined in the McGraw-Hill Dictionary of Scientific and Technical Terms (5th Ed. 1994) is, "a collection comprising mirrors, lens, prisms, and other devices, placed in some specified configuration, which reflect, dispense, absorb, polarize, or otherwise act on light." (emphasis added). This definition speaks in terms of multiples and again indicates that "optical arrangement" would call for at least two or more devices.

Thus, when turning to plain language of the dictionary terms of "arrangement" and "optical system" it is apparent that the term itself indicates that more than one "optical device" is necessary. The Court in performing a review of the intrinsic record and extrinsic record agrees with the Special Master's final recommendation that "optical arrangement" as listed in independent claims 1 and 10 means:

A collection comprising two or more mirrors, lens, prisms, or other optical devices, placed in some specified configuration, which reflect, refract, dispense, absorb, polarize, or otherwise act on light. That definition allows for a combination of two or more different optical devices. Also, a mirror whether it is motorized or not, is an optical device.

Therefore, the Court adopts the Special Master's Final Report and Recommendation.

5. Optical Axis

The term "optical axis" is found in Claims 10(a), 14(a) and 14(b) of the '461 patent. Vision Advancement initially advanced a construction of the term "optical axis" as "A straight line perpendicular to the front of the lens and extending through the center of the pupil." Vistakon first proposed, "The straight line normal to both faces of a lens along whose path a ray will pass without being deflected."

At the Markman hearing, the parties agreed with the Court's proposed construction. Thus, the Court construes "optical axis" to be "A straight line perpendicular to the front of the lens and extending straight through the lens without being deflected."

1. An optical bench mounted in said compact housing and extending along a central reference axis

As for the above term, the parties agree on what constitutes a compact housing, see Pl.'s '852 Markman Br. at 9, as well as what constitutes an optical bench. See id.; see also Palmer Rebuttal, at 23. The issue in dispute is whether the optical components must be mounted on a separate structure that is attached to the housing by some fastening means, as defendant asserts, or whether the optical bench can be a rigid structure within the housing of the scanner to which the optical components are mounted on the housing itself to prevent movement of the individual optical components relative to each other, as plaintiff argues. Plaintiff construes the term "optical bench" as requiring that "the device have a rigid fixed structure to which the optical components are mounted. An optical bench is generally understood to be one of ordinary skill in the art as a rigid structure to which optical components are mounted." Pl.'s '852 Markman Br. at 9. Plaintiff argues that the limitation simply requires that "there be a rigid structure within the housing of the scanner to which the optical components are mounted to prevent movement of the individual optical components relative to each other." Id. at 10. Plaintiff further identifies the back wall of the housing as a rigid structure to which the optical components can be mounted.

Defendant PSC construes this term as requiring two structures: an optical bench and a housing that are interconnected in a particular way. Def.'s '852 Br. Mot. Partial Sum. J. at 32. Defendant construes the claim as specifying a further structural relationship between these two elements, namely, that the optical bench must be mounted in a specific way to the housing.
See id. Specifically, defendant provides the following definition of "optical bench mounted in a compact housing":

There are two distinct structures -- an optical bench and a compact housing -- that are interconnected in particular manner, through mounting. The optical bench is mounted in the compact housing. The optical bench itself is a flat, rigid piece of metal (or similarly dimensionally-stable material) to which optical components are mounted.

PSC Markman Presentation, Ex. 65. Defendant maintains that the optical components must be mounted on a separate structure that is attached to the housing by some fastening means, citing the specification, which provides that "optical bench 74 [is] mounted via fasteners 76, on the inside surface of the rear wall 50 of the housing section 64 (see FIG. 3.)" '852 Patent, col. 7, 11. 13-14.

Plaintiff argues that those of ordinary skill in the art recognize that an optical bench is any rigid structure for mounting optical components. In response to defendant's argument with respect to the specification language, plaintiff asserts that the embodiment depicted in the patent simply represents one way of fixing optical components within the housing, and thus the embodiment shown in the '852 patent should not be read into the claims as requiring that the optical bench be a separate structure attached to the housing using fasteners.

The claim language of Limitation 2 provides for "an optical bench mounted in said compact housing and extending along a central reference axis[]." '852 Patent, col. 11, 11. 43-45. The specification language regarding the optical bench provides:

The optical bench 74 as clearly seen in FIGS. 2-4 is a generally rectangular, plate-like member which includes a flange extending along its two side edges and along its bottom edge.

'852 Patent, col. 7, 11. 36-39 (emphasis added). The specification also refers to the optical bench in discussing the method by which a laser beam is produced and swept across the optical components in the housing:

The means for producing the beam, focusing it, sweeping it through the housing, folding it and directing it out of the housing window are all mounted on an optical bench mounted via fasteners 76 on the inside surface of the rear wall 60 of housing section 64 (see FIG. 3).

See id. at col. 7, 11. 11-16 (emphasis added). This language raises a question as to whether the optical bench is attached to the housing via fasteners, or whether the "means for producing the beam" are mounted to the optical bench via fasteners, due to the positioning of the words in the specification. Additional specification language provides the following:

All of the mirrors are of generally planar and are mounted on the optical bench 74 adjacent the polygon 42 and under the window 30. In particular the mirrors 82-90 are mounted via a spider member 116 having five angled brackets 118, one for each mirror. The spider 116 secured to the optical bench 74 via the fasteners 76. Preferably the mirrors 82-90 are glued in place on the spider's brackets 118.

'852 Patent, col. 8, 11. 21-29 (emphasis added). This language creates the implication that the mirrors 82-90 are included within the "means for producing the beam, focusing it, sweeping it through the housing, folding it and directing it out of the housing window." The specification language indicating that the fasteners 76 fasten these mirrors to the optical bench 74 necessarily implies that the fasteners 76 in the earlier passage of the specification functioned to fasten the "means for producing the beam" to the optical bench, not to fasten the optical bench to the housing.

As defendant pointed out at the Markman hearing, the specification further describes that certain components are mounted or fixedly mounted onto the optical bench:

The details of the reflecting means made up of mirrors 82-90 will now be described. All of the mirrors are of generally planar and are mounted on the optical bench 74 adjacent the polygon 42 and under the window 30.

'852 Patent, col. 8, ll. 20-24 (emphasis added).

The laser diode 78 is fixedly mounted on the optical bench adjacent the bottom edge flange and is oriented parallel to the bench so that it projects a laser beam 48 parallel to the optic bench and in a transverse direction, that is parallel to the
transverse axis 34 of the window 30.

Id. col. 7, ll. 40-44 (emphasis added).

The polygon is mounted on the rotary output shaft of a motor 112 which is fixedly mounted on the optical bench so that its rotation axis 44 intersects an axis 114.

Id. col. 7, ll. 55-57 (emphasis added).

The focusing lens 96, as can be seen in FIGS. 2-4 is mounted opposite the collecting mirror along central longitudinal axis 114 and above the polygon 42. The means for mounting the focusing lens at that position comprises a bracket 124 fixedly secured to the front portion of the optical bench 74.

Id. col. 9, ll. 38-44 (emphasis added). The specification language referring to optical components being mounted, fixedly mounted, or fixedly mounted to the optical bench by use of a bracket, supports the conclusion that the preferred embodiment of the patent clearly envisioned the use of brackets or fasteners to mount certain components to the optical bench. This language in no way, however, refers to the mounting of the optical bench to the compact housing. Contrary to defendant's argument, the specification language further supports the reference of fasteners or brackets in the patent to mounting the components involved in producing and focusing the beam onto the optical bench, not for mounting the optical bench inside the compact housing.

In considering the claim language and specification language, there being no relevant prosecution history either raised by the parties or found in the parties' submissions, the term "optical bench mounted in said compact housing" is construed as a rigid structure within the housing of the scanner to which optical components are mounted to prevent movement of the individual optical components relative to each other. There is no requirement that the optical bench be mounted to the compact housing by fasteners or brackets.

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C. Optical disk.

The plaintiffs propose that the term be defined as "an optical storage medium." The defendants argue that the term should be defined as "a disk shaped storage device that is read by a laser, or other form of light." In the context of this patent, the court is persuaded that one of skill in the art would agree that the defendants' construction is correct. Indeed, the plaintiffs note that the defendants' construction "does not substantively vary from their proposed construction." (Plaintiffs' Brief at 15).

"Optical disk" is defined as "a disk shaped storage device that is read by a laser, or other form of light."

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3. "an optical element collecting light scattered"

Unlike the previous disputed terms or phrases in the '325 patent, the phrase "an optical element collecting light scattered" appears only in claim 36. ADE does not assert any specific meaning for the phrase. KLA, however, maintains that the phrase means that a plurality of optical elements collect scattered light from the surface of a silicon wafer during scanning and distribute said light to two or more PMT type detectors. D.I. 338 at 18. This court agrees, in part, with KLA's argument.

Claim 36 recites "an optical element." '325 at 18:31-37. The indefinite articles "a" or "an" can carry the meaning of "one or more" given an open claim format (a claim using the word comprising, including, or similar terminology). North Am. Vaccine, Inc. v. Am. Cyanamid Co., 7 F.3d 1571 (Fed. Cir. 1993). To the extent that KLA construes this phrase to mean that a "plurality" of optical elements is an affirmative element of claim 36, this court disagrees. The '325 disclosure teaches that more than one optical elements can collect scattered light from the surface during a scan. '325 at 6: 39-41. Claim 36 claims "an optical element." '325 at 18:31-37. It does not claim a "plurality" of optical elements to the exclusion of a single optical
In terms of defining the scope of a patented invention there may exist a contrast between an invention that reads upon a device containing "an optical element" (meaning one or more) and an invention that requires as an element a "plurality" of optical elements. For example, a claim preceded by the transitional word "comprising" and containing as an element "an optical element" may read on a device with "one" or a "plurality" of optical elements. A claim preceded by the transitional word "comprising" and containing as an element a "plurality" of optical elements would not necessarily read upon a device with only "one" optical element. Infringement in this later scenario would depend upon whether a patentable distinction exists between an invention with "an optical element" and an invention with a "plurality" of optical elements.

Without making any ruling as to whether a patentable distinction does or does not exist in the present litigation with respect to "an optical element" or a "plurality" of optical elements, this court holds that the phrase "an optical element collecting light scattered" means that one or more optical elements collects light. It does not mean that a "plurality" of optical elements collects light to the exclusion of collection of scattered light by a single optical element. Although this may be a splitting of the proverbial hair, inventors are entitled only to what is claimed, not what the claim language is later asserted to subsume for the purposes of litigation. Bell & Howell DMP Co. v. Altek Sys., 132 F.3d 701 (Fed. Cir. 1997); see also Roton Barrier, Inc. v. Stanley Works, 79 F.3d 1112 (Fed. Cir. 1996).

2. "Optical Element in a Telescope"

The term "optical element" appears, in either singular or plural form, in claims 1, 10, 15, 18 and 20. As used in the '908 Patent, the term "optical element(s)" includes mirrors, lenses, or prisms.

Plaintiff argues that "optical element in a telescope" should be restricted to "mirrors." (Pl.'s Reply Br. at 2.) In contrast, defendant contends that the phrase "optical element" is much broader, and includes "lenses," "mirrors," and "prisms," thus comporting with its dictionary definition. (Pl.'s Reply Br. at 3, P2.)

As a threshold matter, the term "optical element" must include both lenses and mirrors because this Court's construction of the term "telescope" includes both reflecting and refracting telescopes. However, "optical element" includes both mirrors and lenses based on other intrinsic evidence as well.

Looking to the patent claims, there are several places in which the doctrine of claim differentiation indicates that the term "optical element(s)" is not limited to mirror(s). The clearest example of this point is a comparison of claims 15 and 16. Claim 15 is an independent claim that is nearly identical to claim 1. See '908 Patent at 7:3-8. It describes "[a] method of aligning an optical element in a telescope, comprising: (a) projecting a holographic image onto at least a portion of an optical element to be aligned; and (b) aligning the optical element in response to the projected holographic image." Id. Claim 16 is "the method of claim 15, further comprising employing a mirror as the optical element." Id. at 7:9-10. Since claim 16 is a dependent claim, which, by definition, must add a limitation, and the limitation it adds is that the optical element be a mirror, the doctrine of claim differentiation instructs that the term "optical element" is not limited to a mirror.

Claims 10 and 11 have a similar relationship. Claim 10, like claims 1 and 15, describes "[a] method of aligning an optical element in a telescope." Id. at 6:55 (emphasis added). Claim 11, which is dependent upon claim 10, is "the method of claim 10, further comprising employing a plurality of mirrors as the optical elements." Id. at 6:61-62 (emphasis added). If the only "optical element" in a "telescope" could be a "mirror," then claim 11 would be redundant in requiring a "plurality of mirrors as the optical elements," since the only optical elements in a telescope would be "mirrors." Based on the doctrine of claim differentiation, the claim language evinces an intent that "optical elements in a telescope" should include more than "mirrors."

Next, looking to the specification, the introduction states that "the present invention generally relates to the alignment of optical elements, and more specifically to the alignment of mirrors in a telescope." Id. at 1:6-8, 11. If the term "optical elements" were restricted to "mirrors" then the introduction to the specification would be redundant by using the phrase "the alignment of mirrors in a telescope." The presence of the second clause of the sentence indicates that the term "optical
elements," alone, is not sufficient to specify mirrors. Moreover, as discussed supra, the specification asserts that the invention can be used with a "refracting telescope." See id. at 6:11, 19-21. Refracting telescopes contain lenses rather than mirrors. (See Markman Hearing, Def. Ex. A.) Accordingly, the meaning of "optical elements in a telescope" should at the very least, include both "mirrors" and "lenses."

Plaintiff might argue that the introduction to the specification is a disclaimer limiting "the present invention . . . more specifically to the alignment of mirrors in a telescope." Id. at 1:6-8, 11 (emphasis added). According to Phillips, "the specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor. In that instance . . . the inventor has dictated the correct claim scope, and the inventor's intention, as expressed in the specification, is regarded as dispositive." 2005 U.S. App. LEXIS 13954, 2005 WL 1620331, at *8. However, as previously discussed, the plain language of the claims, as well as other parts of the specification, do not evince any attempt to limit the scope of the term "optical element." Given Phillips' insistence on maintaining the line "between using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim," 2005 U.S. App. LEXIS 13954, [WL] at *15, language in the specification will not be used to limit claim scope unless that language conveys a clear intent to use the term narrowly. Given the amount of intrinsic evidence in this case demonstrating a broader definition, the introduction to the specification cannot be given such a preclusive effect. The term "optical elements" must be construed to include both "mirrors" and "lenses."

What is less clear is whether the phrase "optical elements in a telescope" should include "prisms." As discussed supra, the claims may be interpreted such that the disputed term includes other "optical elements" besides a "plurality of mirrors;" however, the specification neither mentions, nor provides a diagram demonstrating the invention's use with a telescope containing a prism. Phillips specifically warns against confining claims to specific embodiments of the invention described within the specification. See id. Therefore, a lack of intrinsic evidence is not dispositive. The issue is whether a person of ordinary skill in the art would interpret the phrase "optical element in a telescope" to include "prisms." In ascertaining how a person of ordinary skill in the art understands a claim term, a court may look at extrinsic evidence where the intrinsic evidence is ambiguous. See 2005 U.S. App. LEXIS 13954, [WL] at *16. Both the prior art as well as technical dictionaries make it clear that a prism may be used as an "optical instrument" within a "telescope." (See Markman Hearing, Def. Exs. B, C; Def ’s Opp. Br. at 3, P2.) Therefore, this Court will not exclude "prisms" from the definition of "optical elements in a telescope." In sum, this Court rejects plaintiff's definition limiting the term "optical elements in a telescope" to "mirrors," in favor of a broader definition which includes "mirrors," "lenses," and "prisms."

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III. Optical Measuring Device.

Defendants object to the Magistrate Judge's recommendation as to the construction of the phrase "optical measuring device" on the ground that Defendant's proposed construction of "a device that measures the length of an optical path" is the only construction supported by the specification.

The Magistrate Judge recommended the Court construe the phrase "optical measuring device" as "a device that can measure at least one property of electromagnetic radiation in the wavelength range including only infrared, visible, ultraviolet, and X rays." The Magistrate Judge noted Defendant's proposed definition "improperly renders subsequent claim language superfluous." Thus, to give meaning to all of the words of the claim, the Magistrate Judge found the phrase "optical measuring device" should not be construed as restricted to a device that inputs data regarding the location of defects. The Magistrate Judge also found Defendant's proposed interpretation would improperly read embodiments appearing in the specification into the claim because the claim language is broader than those embodiments.

The Court has reviewed the pertinent portions of the record de novo and does not find any error in the Magistrate Judge's Findings and Recommendation as to the construction of the phrase "optical measuring device."

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One of the primary issues before the court is whether the term "an optically absorptive refractory transition metal," as claimed in the second element of claim 1, includes alloys. The court has determined that the term "metal," as used in the context of the metal interconnect layer, includes alloys. EMI urges that the court should construe the term "metal" similarly in this instance.

To interpret the meaning of this claim limitation, the court looks to the intrinsic evidence of the patent, which comprises the claims, the specification, and the prosecution history. See Pitney Bowes, 182 F.3d at 1309. Upon arriving at a claim construction based upon this intrinsic evidence, the court consults extrinsic evidence to verify that the claim construction under consideration is not inconsistent with widely held understandings in the pertinent technical field. Id.

A term appearing repeatedly in the same claim should be interpreted consistently. See Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1345 (Fed. Cir. 1998). The word "metal," however, is not a discrete claim term. In claim 1, the word "metal" has two different usages. The "metal interconnect layer" is distinct from the "optically absorptive refractory transition metal." These "metals" have different elemental compositions--the metal interconnect is made of an aluminum-based compound, while the metal absorptive layer comprises a transition metal. The "metals" also have different functions in the claimed method--the metal interconnect conducts electricity, while the metal absorptive layer absorbs laser light and transmits heat to the interconnect. Thus, the operative claim limitations are "a metal interconnect layer" and "an optically absorptive refractory transition metal," and the court is not bound by Digital Biometrics to interpret them consistently.

The specification does not provide grounds for finding that the term "an optically absorptive refractory transition metal" refers to alloys. The specification repeatedly distinguishes elemental metals from alloys. The specification recites that the interconnect may comprise "aluminum or aluminum alloys," and states that a diffusion barrier underneath the interconnect may comprise a "transition metal layer." In the context of the absorptive layer, however, the specification only discusses the use of "a transition metal." Although the specification does not recite the use of a transition metal alloy in the absorptive layer, this alone is not fatal to EMI's proposed construction, as an applicant need not disclose every possible embodiment of his invention. See SRI International v. Matsushita Electric Corp., 775 F.2d 1107, 1121 (Fed. Cir. 1985).

The prosecution history, however, indicates that the scope of the claimed absorptive layer is limited to pure elemental metals. As originally submitted by the applicants, the claim recites a method for "forming a layer of optically absorptive material." When the PTO examiner rejected the claim in light of prior art references that employ blackened aluminum or silicon oxides for absorptive layers, the applicants amended their claims to recite "forming a layer of optically absorptive metal." In a second rejection, the examiner noted that the prior art already disclosed the use of molybdenum in a laser cutting process and stated that "even the use of a novel starting material would not necessarily render the process patentable." The applicants finally changed their claim by emphasizing the function of the absorptive layer in transferring laser energy to the interconnect, and as such amended their claim to read "using an optically absorptive refractory transition metal having a higher boiling point than the interconnect beneath it." Notably, the introduction of the word "an" to qualify the metal in the final amendment shows that the scope of the claims progressively narrowed from the use of any suitable material to the use of "an optically absorptive . . . metal."

The applicants clearly contemplated that pure elemental metals are sufficient to enable the invention. In his first rejection letter, the examiner rejected the claims under § 112 for failure to enable the invention, as he asserted that pure elemental transition metals were insufficiently absorptive to induce the claimed explosion. In reply the applicants stated that "titanium, tungsten, tantalum and molybdenum are optically absorptive metals, especially in relation to aluminum." The applicants discussed the physical properties of pure titanium that render it sufficiently absorptive to enable the claimed invention. They stated that "no further processing steps need be taken to prepare the materials optically absorptive." In this exchange with the examiner, the applicants relied on the physical properties of pure elemental metals to enable the device.

Having found no support in the intrinsic evidence to suggest that the claim limitation "an optically absorptive refractory transition metal" covers alloys, the court looks to extrinsic evidence to determine if a person of reasonable skill in the art would interpret the term "an optically absorptive refractory transition metal" to include alloys. Hawley'sCondensed Chemical Dictionary defines the term "transition metal" equivalently as "transition element," and lists pure elements as
fulfilling this definition. The dictionary clearly distinguishes between alloys and elemental metals, as the definition of "alloy" states that "the properties of alloys are often greatly different from those of the components." Because the dictionary definition of the term "transition metal" does not indicate that this term refers to alloys, and because nothing in the intrinsic evidence suggests otherwise, the court concludes that the term "an optically absorptive refractory transition metal" refers only to pure elemental metals, and does not include alloys. The court reserves the question as to whether the claim may cover alloys under the doctrine of equivalents.

ii. the relative absorptivity

The parties dispute the extent to which the transition metal layer must be optically absorptive with respect to the interconnect. Based on language in the specification, EMI asserts that the transition metal layer is "more absorptive of optical energy than the metal interconnect layer." Cypress advocates that no such limitation should be read into the claim, and that the claim should simply mean that the upper layer be "optically absorptive." Since the plain language of the claim suggests no limitation on the degree of absorptivity of the transition metal layer, the court declines to construe the specification's description of the high relative absorptivity of this layer as a claim limitation. See Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1571 (Fed. Cir. 1988). No judicial interpretation is necessary for this limitation.

Claim 1 of the '750 patent reads as follows (with added emphasis on the disputed terms): 1

[1] A bar code scanner which comprises a housing having a port through which a beam of light for illuminating the bar code passes out of said housing and light reflected from said code passes into said housing,

[2] a laser diode and optics for forming said beam from the light from said laser diode,

[3] a photodetector for receiving said reflecting light,

[4] means supporting said photodetector in said housing,

[5] a printed circuit board having circuits thereon connected to said diode and said photodetector, and

[6] means assembling said laser diode and optics in supported relationship upon said printed circuit board and together with each other as a unitary structure located in said housing.

The crux of the dispute over claim construction is whether the "optics for forming said beam" include only the collimating lenses necessary to reduce the diverging fan of laser light into a ray, or whether the term includes other optics involved in the propagation of the laser beam, including the beamsplitters which shape and direct the beam after it is created. According to the claim, the "optics for forming said beam" must be together with the laser diode as a unitary structure. PSC has argued consistently that the only optics encompassed in the patent claims are the optics that create the beam, the collimating lenses. Under PSC's construction, optics which shape or direct the beam after its creation are not "optics" within the meaning of the patent claim. Therefore, the claim requires, according to PSC, only that the collimating lenses be together with the laser diode as a unitary structure.

The district court disagreed with PSC. The district court held that the term optics as used in [6] is defined by [2] as the "optics for forming said beam." After consulting a dictionary, the court held that the "optics for forming" could include optics which shape and direct the beam, including the beamsplitters. More importantly, the district court found PSC's
construction inconsistent with the specification, which states that the laser beam producing means and the beamsplitters are both part of the unitary structure. Thus, the court construed the claim as requiring the beamsplitters, which direct the beam and integrate the marker beam with the laser beam, to be part of the optics for forming said beam and concluded that they must be assembled together with the laser diode and the other optics as part of the unitary structure in [6]. The district court also found that its more limited construction was also supported by the fact that the invention claimed by the '750 patent is not a pioneering invention.

According to this construction, the district court held that Accu-Sort did not infringe because its Model 20 and 22 scanners both use mirrors which direct the laser beam after it is created. The court found that the mirrors were equivalent to the beamsplitters of the '750 patent (because both components change the direction of the beam) and concluded that there was no infringement because it was undisputed that Accu-Sort's mirrors were not integrated with the rest of the optics in a unitary structure.

II.


The district court correctly referred to the specification to define the means-plus-function language in claim 1. To literally infringe a means-plus-function claim, an accused device must employ a means that is identical to or the equivalent of the structures described in the specification. Valmont Indus. v. Reinke Mfg. Co., 983 F.2d 1039, 1042, 25 U.S.P.Q.2D (BNA) 1451, 1454 (Fed. Cir. 1993). The final inquiry as to whether an accused element is an "equivalent" is a question of fact. D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1575, 225 U.S.P.Q. (BNA) 236, 239 (Fed. Cir. 1985). The specification contains language which corresponds directly to the means-plus-function limitation in [6] and describes the means for accomplishing the function described in limitation [6] as follows: "The laser beam producing means 20, the marker beam producing means 54 together with the beam splitters 62 and 70, are mounted to each other and to a printed circuit board 68 . . . ." We agree with the district court that this language directly tracks the disputed claim language which provides: "means assembling said laser diode and optics [for forming] in supported relationship upon said printed circuit board and together with each other as a unitary structure located in said housing." Therefore, the proper construction of the terms "optics for forming" includes the collimating lenses and the beamsplitters or their equivalents.

During oral argument, PSC argued that the district court improperly found that all optics which change the shape or direction of the laser beam must be mounted together in a unitary structure. PSC argues that this claim construction is flawed because the collection lens, as described in the preferred embodiment for the '750 patent, is not part of the unitary structure. Therefore, PSC contends that the district court erred in construing the '750 patent claim in a manner which excludes the disclosed preferred embodiment. If PSC were accurately characterizing the district court's claim construction, this would be a persuasive argument. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583, 39 U.S.P.Q.2D (BNA) 1573, 1578 (Fed. Cir. 1996) (an interpretation of a patent claim which renders the disclosed preferred embodiment outside the scope of the claim is "rarely, if ever, correct and would require highly persuasive evidentiary support"); Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1581, 38 U.S.P.Q.2D (BNA) 1126, 1130 (Fed. Cir. 1996) ("We share the district court's view that it is unlikely that an inventor would define the invention in a way that excluded the preferred embodiment, or that persons of skill in this field would read the specification in such a way.").

However, no such situation arises in this case. PSC has mischaracterized the district court's claim construction. The district court did not, nor do we, construe the patent claim as requiring all optics which direct or shape the laser beam to be part of...
the optics for forming. The specification defines this means-plus-function limitation as including the beamsplitters, but not the collection lens. The specification states:

The laser beam producing means 20, the marker beam producing means 54 together with the beam splitters 62 and 70, are mounted to each other and to a printed circuit board 68 which contains a tone generator 78 and other analog circuitry for operating and controlling the laser diode 42 (the power control circuitry) and energizing lamp . . . . The board 68 is located in the bottom of the upper housing 14 which is substantially flat as is shown in FIGS. 2 and 3. The board is located by one of the mountings which supports the collection lens 32. . . . The entire unitary assembly 20 may then be inserted into the upper housing portion 14 and clipped in place.

The specification also explains that the "collection lens 32 is mounted against shoulders 36 and 38 of the housing in the beam port 28." Figure 1 of the patent also shows that the collection lens is not a part of the unitary structure. The specification and the figures support the conclusion that the optics for forming, which are ultimately a part of the unitary structure, include the collimating lenses and the beamsplitters, but do not include the collection lens. PSC would like us to construe the claims in a manner that is much broader than the specification permits. This, we cannot do. Therefore, we affirm the district court's construction of the '750 patent claims.

3 To the extent that PSC argues that the "together with each other" language in [6] does not require that the components be integrated as a unitary structure, but merely connected via the printed circuit board, we disagree. We agree with the district court's interpretation of these terms as requiring some integration of the components beyond their mere placement on the printed circuit board. The district court correctly refused to allow PSC to render this additional claim limitation meaningless. This construction is supported by the specification which states that the optics "are mounted to each other and to a printed circuit board."

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Claim 30 recites a dental endoscopic device comprising six separate elements:

(1) a rigid elongated handpiece having a proximal end and a distal end;

(2) a flexible cable having one end coupled to said proximal end and another end adapted for coupling to video imaging equipment;

(3) a housing removably coupled to said distal end of said rigid elongated handpiece;
(4) a sensor for sensing an image of a selected target, said sensor being coupled to said rigid elongated handpiece and said flexible cable, said sensor extending into said housing;

(5) opto-electric componentry extending from said sensor through said handpiece to said cable; and

(6) an objective element positioned in said housing and arranged to focus an image of a selected target upon said sensor when said housing is coupled to said rigid elongated handpiece.

The parties are now before the Court on cross-motions for partial summary judgment as to Claim 30, along with claim 32, which is based on Claim 30. The salient issue presented by the parties' motions is whether the AcuCam contains "opto-electric componentry extending from said sensor through said handpiece to said cable," as stated in Claim 30. The Court discusses this matter below.

Because the Court concludes that the AcuCam lacks the limitation regarding opto-electric componentry, the Court does not reach the issue of whether the AcuCam contains a "housing" as specified in Claim 30.

DISCUSSION

A. Legal Standard

Under Federal Rule of Civil Procedure 56, a court may properly grant a motion for summary judgment if the pleadings and materials demonstrate that there is "no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law." Celotex Corp. v. Catrett, 477 U.S. 317, 322, 91 L. Ed. 2d 265, 106 S. Ct. 2548 (1986). A dispute about a material fact is genuine "if the evidence is such that a reasonable jury could return a verdict for the nonmoving party." Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986). A court may grant a summary judgment motion in a patent infringement case, as in any other case. Avia Group Int'l, Inc. v. L.A. Gear Cal., Inc., 853 F.2d 1557, 1561 (Fed. Cir. 1988).

There is a two-step analytical process to determine whether an accused device literally infringes on an existing patent. First, the Court must construe or interpret the scope of the patent claims; this determination is a matter of law. Markman v. Westview Instruments, Inc., 52 F.3d 967, 1995 WL 146983 at *11 (Fed. Cir., filed April 5, 1995). Second, the Court must then determine "whether the properly interpreted claims encompass" the accused product. ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1579 (Fed. Cir. 1988).


B. New Image's Definition of Opto-Electric Componentry is Correct

1. Overview of The Parties' Respective Positions

The threshold issue presented by the parties' motions is the proper construction of "opto-electric componentry extending from said sensor through said handpiece to said cable," as recited in Claim 30 of the '001 patent.

New Image argues that because the '001 patent and its prosecution history are silent as to the meaning of "opto-electric
componentry," the Court should employ the ordinary meaning of the term as it is used by those persons skilled in the art. The ordinary meaning of "opto-electric componentry," argues New Image, is a device which converts optical power (photons) to electrical signals (electrons) or vice versa. In contrast, HTMI asserts that any wiring or circuitry between the sensor and the cables constitutes the opto-electric componentry. (Pl.'s Opp'n at 11.)

2. The Specification Provides No Guidance on the Meaning of Opto-Electric Componentry

In construing the meaning of a patent claim, the court should consider the claim itself, the specification, and the prosecution history. Markham, 1995 WL 146983 at *11. The Court, in its discretion, may also consider extrinsic evidence including "all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." Id. However, "extrinsic evidence is to be used for the court's understanding of the patent, not for the purpose of varying or contradicting the terms of the claims." Id.

In the instant case, HTMI asserts that the specification of the '001 patent demonstrates that the term "opto-electrical componentry" should necessarily be equated with the interconnections between the sensor and the cable. (Pl.'s Opp'n at 11.) HTMI contends that this fact is "obvious" from the drawings and supported by the deposition testimony of New Image's own expert, Robert Fischer. These contentions are without merit.

First, the mere reference to drawings in the '001 patent is insufficient to construe the meaning of "opto-electric componentry." As the Federal Circuit explained in Markham, "any special definition given to a word must be clearly defined in the specification." 1995 WL 146983 at *11 (emphasis added). Even assuming that the definition ascribed by HTMI is present in the specification, such meaning is far from "clearly defined." Id. In short, the conclusion advocated by HTMI is not "obvious" to the Court.

Second, HTMI misconstrues Mr. Fischer's testimony. Although Mr. Fischer did state that the wires extending between the sensor and the cable correlated to opto-electrical componentry, (Sobon Decl. Ex. I at 141), he later clarified that he misunderstood plaintiff's counsel's, previous questions and that his prior response was incorrect. (Barone Reply Decl. Ex. 2 at 152). Thus, the deposition testimony cited by HTMI is of dubious value as support for its argument.

3. HTMI's Reliance on The File History is Misplaced

HTMI next argues that the file history of the '001 patent establishes the proper meaning of opto-electrical componentry, as it is used in Claim 30. Specifically, HTMI highlights certain passages in the amendment filed by HTMI's attorneys in connection with the patent reexamination proceedings. (See Pl.'s Opp'n at 11; Sobon Decl. Ex. J.) This text states:

The interior of the handle also remains sealed, for example, through the provision of the O-Rings. In this way, the endoscopic apparatus can be immersed in a sterilizing solution without affecting the electro-optical componentry or interconnections that extend through the handpiece to couple the camera to video imaging equipment.

(Sobon Decl. Ex. J at 9-10.) HTMI contends that this demonstrates that it intended the terms "electro-optical componentry" and "interconnections" to be used interchangeably.

The Court disagrees with HTMI's assertion that the file history explicitly equates opto-electrical componentry with the interconnections between the CCD sensor and the extension cables. The above passage cited by HTMI clearly uses the terms "electro-optical componentry" and "interconnections" in the disjunctive. While the word "or" can be used to signify words that are synonymous, it can also be used to indicate alternative choices. (See Black's Law Dictionary 1095 (6th ed. 1990).) However, it is unclear from the file history which interpretation of the word "or" was intended. Moreover, there is nothing explicit in the above file history statement which suggests that HTMI intended to equate "electro-optical componentry" with either the "interconnections" or the term "opto-electrical componentry." Thus, contrary to HTMI argument, the file history simply does not clearly define the meaning opto-electric componentry in the manner so construed by HTMI. 5

5 The term used in Claim 30 is opto-electrical, not electro-optical. This distinction is noteworthy because the terms...
technically are not synonymous. The Photonics Dictionary specifically states that "Electro-optic is often erroneously used as a synonym [for optoelectronic]." (See Fischer Decl. Ex. 4.

--- End Footnotes ---

C. The Dictionary Definitions Provide the Ordinary Meaning of Opto-Electric

Because the specification and file history provide no decisive guidance in defining the term "opto-electronic componentry," this Court must determine the "ordinary meaning" of the claim at issue. Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 951 (9th Cir. 1994) ("Although a patentee can be his own lexicographer, . . . the words of a claim 'will be given their ordinary meaning, unless it appears that the inventor used them differently.'" (citations omitted).

The Court finds compelling the several definitions provided by New Image which were culled from various technical dictionaries. For example, The New IEEE Standard Dictionary of Electrical and Electronics Terms, (5th Ed. 1993), defines "optoelectronic" as:

Pertaining to a device that responds to optical power, emits or modifies optical radiation, or utilizes optical radiation for its internal operation. Any device that functions as an electrical-to-optical or optical-to-electrical transducer . . . .

(Fischer Decl. Ex. 4.; see also The Photonics Dictionary, (37th Ed. 1991) (identical definition).) From these definitions, it is evident that "opto-electric" components must, in some manner, convert optical power (photons) to electronic signal (electrons). See id. P 15 and Ex. 4 (copies of excerpts from technical dictionaries which define "optoelectronic.").

--- Footnotes ---

6 The term "optoelectronic" is synonymous with "opto-electrical." (Fischer Decl. P 16.)

--- End Footnotes ---

HTMI does not controvert New Image's dictionary definitions. 7 Instead, HTMI asserts that these definitions are sufficiently broad such that "all the components that extend from the CCD sensor to the cable connector 'pertain to' the CCD sensor." (Pl.'s Opp'n at 15.) in essence, HTMI has defined opto-electric componentry as any device or part connected to an opto-electric device. However, such a construction would result in a definition of "opto-electric" based solely on the physical proximity of the component, as opposed to its actual function. Such a definition is so vague that it would effectively render the term "opto-electric componentry" meaningless. It is precisely for this reason that the Court, in its preliminary injunction order, seriously questioned whether HTMI would succeed on the merits on infringement based on Claim 30. 8

--- Footnotes ---

7 Tellingly, HTMI does not attempt to explain its interpretation of the "ordinary meaning" of opto-electric. Instead, HTMI ignores the applicable rules of infringement analysis and argues that New Image's own evidence and testimony demonstrate that the AcuCam possesses opto-electric componentry within the meaning of Claim 30. 8 In the Court's preliminary injunction Order, this Court explained that:

HTMI, . . . assert[s] that the terms "opto-electric componentry" also encompass components which carry optical images in an electrical format, and as the AcuCam possesses such components between the CCD and the cable, it possesses this element of claim 30.

HTMI's description of opto-electrical componentry, however, overly stretches the ordinary meaning of the term as defined above. The CCD is the only component which the AcuCam possesses which fits within the plain meaning of the term opto-electric." Furthermore, HTMI conceded at oral argument that the CCD in the AcuCam corresponds to the sensor of claim 30, and not to the optoelectric componentry.

(Order Granting Pl.'s Mot. for Prelim. Inj. at 16 (emphasis added).)
Moreover, the dictionary definitions proffered by New Image clearly specify that "optoelectronic" relates to a device which "responds to optical power, emits or modifies optical radiation, or utilizes optical radiation for its internal operation." (Fischer Decl. Ex. 4 (emphasis added)). This definition is corroborated by the expert testimony adduced by New Image as well as by the technical articles authored by those skilled in the art. (E.g., Fischer Decl. P 15; Magen Decl. Ex. 1 (excerpts from deposition of Dominick Danna, an electrical engineer and endoscope designer) 9; Magen Decl. Ex. 2 (article by Hugo Vifian published in the Microwave Journal).) 10

9 In response to HTMI's attorney's questions, Mr. Danna testified at his deposition that an optoelectronic device is one which converts "photoenergy into electronic signals." (Sobon Decl. Ex. O at 124.) This is consistent with the various dictionary definitions discussed above and appended to the Fischer declaration.

10 In this article, Mr. Vifian writes:

The final group is the optoelectrical components. This group includes lightwave detectors or receivers, and demodulator sensors. These components have optical input and electrical output ports, and are O/E [optical/electrical] components.

(Magen Decl. Ex. 2 at 68.) HTMI does not address the significance of this article in its opposition. Although HTMI raises an evidentiary objection to this article in its inappropriate and unauthorized surreply (see n.1), said objection is untimely, and therefore, is deemed waived.

HTMI does not proffer its own definition of opto-electric, other than to state that opto-electric componentry essentially means anything between the sensor and the cable. Instead, HTMI attempts--unsuccessfully--to attack the evidence offered by New Image. For example, HTMI attempts to undermine the significance of Mr. Danna's testimony by noting that he stated that there "possibly" were other definitions to "optoelectronic" other than that which he had previously given. Unfortunately, HTMI, for reasons not evident from the record, did not query Mr. Danna any further concerning the nature of those other possible definitions.

HTMI's citation to the deposition testimony of George Sutton, one of New Image's experts, is equally misplaced. (Pl.'s Opp'n at 15.) In his deposition, Mr. Sutton testified that the wires in the AcuCam "carried" images taken by the CCD. (Sobon Decl. Ex. E. at 47.) This testimony does not--as argued by HTMI--establish that Mr. Sutton "thinks that all the components that extend from the CCD sensor to the cable connector pertain to' the CCD sensor." (Pl.'s Opp'n at 15.) Rather, Mr. Sutton simply acknowledged that the wires leading from the CCD act as a conduit for electrical signals produced by the CCD.

At bottom, the Court rejects HTMI's contention that either Claim 30 or its file history explicitly equate "opto-electric componentry" with the interconnections between the CCD sensor and the external cable. The Court agrees with New Image that the ordinary meaning of the term "opto-electric componentry," as it is used in Claim 30, relates to an optical-to-electrical or an electrical-to-optical transducer extending from the sensor to the cable. If the drafters of the '001 patent had envisioned something different, they "could have prevented this result through clearer drafting." Hoganas AB, 9 F.3d at 951. Therefore, the Court concludes that Claim 30 of the '001 patent (with the disputed claim language emphasized) reads as follows:

Claim 30 of the '001 patent (with the disputed claim language emphasized) reads as follows:

A dental endoscopic apparatus comprising:

- a rigid elongated handpiece having a proximal end and a distal end;
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a flexible cable having one end coupled to said proximal end and another end adapted for coupling to video imaging equipment;

a housing removably coupled to said distal end of said rigid elongated handpiece;

a sensor for sensing an image of a selected target, said sensor being coupled to said rigid elongated handpiece and said flexible cable, said sensor extending into said housing;

opto-electrical componentry extending from said sensor through said handpiece to said cable; and an objective element positioned in said housing and arranged to focus an image of a selected target upon said sensor when said housing is coupled to said rigid elongated handpiece.

The district court construed the term "opto-electrical componentry" to mean "an optical-to-electrical or an electrical-to-optical transducer." High Tech, 1995 WL 381502, at *6. The court then determined that the AcuCam device did not meet the limitation of "opto-electrical componentry extending from said sensor through said handpiece to said cable" because it did not contain a transducer connecting the CCD sensor to the cable. See id. The court therefore granted New Image's motion for partial summary judgment. The district court did not construe any of the other limitations in claim 30.

II.


On appeal, HTMI argues that the district court erred in construing the term "opto-electrical componentry." HTMI contends that the term should be construed to mean an electrical component that conveys optical images in an electrical form. HTMI also argues that we should construe on appeal other claim terms such as "objective element" and "housing," which the district court did not address. In light of its proposed claim construction, HTMI urges us to hold that the AcuCam device infringes claim 30 of the '001 patent.

When interpreting a claim, the court should look first to intrinsic evidence: the claim itself, the specification, and the prosecution history. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1581, 39 USPQ2d 1573, 1576 (Fed. Cir. 1996). If an ambiguity remains after considering intrinsic evidence, then the court may refer to extrinsic evidence, such as expert and inventor testimony. Id. at 1584, 39 USPQ2d at 1577. In addition, although technically considered extrinsic evidence, the court is free to consult technical dictionaries at any time in order to determine the ordinary meaning of claim terms. Id. at 1584 n.6, 39 USPQ2d at 1578 n.3.

In construing the term "opto-electrical componentry," the district court concluded that neither the claims, the specification, nor the prosecution history provided clear guidance for defining the term. Accordingly, the court looked to various dictionaries and technical articles, and to expert testimony for the ordinary meaning of the term. As noted, the court concluded that the ordinary meaning of the term "opto-electrical componentry" was an "optical-to-electrical or an electrical-to-optical transducer," and it adopted this meaning in its claim construction. The court then determined that the only component in the AcuCam device which had an opto-electrical function was the CCD camera, which corresponded to the "sensor" in claim 30. The court found that the components connecting the CCD sensor to the cable in the AcuCam device were resistors, capacitors, logic gates, transistors, diodes, voltage regulators, and wires. The court further found that none of these components were "opto-electrical" within the ordinary meaning of the term. The court therefore concluded that the AcuCam device did not possess "opto-electric [sic] componentry extending from said sensor through said handpiece to said cable," as recited in Claim 30. High Tech, 1995 WL 381502, at *6.

When construing a patent claim, terms should generally be given their ordinary and customary meaning. See Vitronics, 90 F.3d at 1581, 39 USPQ2d at 1576. However, we have stated that: "[a] technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent and the prosecution history that the inventor used the term with a different meaning." Hoescht Celanese Corp. v. BP Chem. Ltd., 78 F.3d 1575, 1578, 38 USPQ2d 1126, 1129 (Fed. Cir.) (emphasis added), cert. denied,
136 L. Ed. 2d 198, 117 S. Ct. 275 (1996). We also have stated that courts may refer to technical dictionaries in construing claims, as the district court did in this case, "so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." Vitronics, 90 F.3d at 1584 n.6, 39 USPQ2d at 1578 n.3 (emphasis added). Although the term "opto-electrical componentry" does not appear anywhere in the written description, it is apparent that the patentee used the term "opto-electrical componentry" to refer to electrical components that carry an optical image in an electrical form. The written description states: "Camera 56 will have connected to it a number of lead wires 64 which travel through hollow regions 62 and 48, exit handpiece 12, and are ultimately connected to an image processing system 14." '001 patent, col. 6, ll. 6-10. These wires are the only structure disclosed that connects the sensor to the cable as required by claim 30 ("opto-electrical componentry extending from said sensor through said handpiece to said cable"). We therefore conclude that a person skilled in the art reading the patent document would understand that the term "opto-electrical componentry" referred to the indicated wires.

It also should be noted, we believe, that the claim construction we have adopted is appropriate because the ordinary meaning of the term "opto-electrical componentry" would not cover any of the disclosed embodiments of the invention claimed in the '001 patent. The Supreme Court has stated that the terms in a claim must be defined in a manner that fully comports with the instrument as a whole and that preserves the patent's internal coherence. See Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 1395, 38 USPQ2d 1461, 1470, 134 L. Ed. 2d 577 (1996). Furthermore, a claim interpretation that does not cover a disclosed embodiment is "rarely, if ever, correct." Vitronics, 90 F.3d at 1583, 39 USPQ2d at 1578; see also Hoechst, 78 F.3d at 1581, 38 USPQ2d at 1130 ("it is unlikely that an inventor would define the invention in a way that excluded the preferred embodiment"); Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1550, 37 USPQ2d 1609, 1612 (Fed. Cir.) ("a claim interpretation that would exclude the inventor's device is rarely the correct interpretation"), cert. denied, 116 S. Ct. 2523 (1996). The ordinary meaning of "opto-electrical componentry," which forms the basis for the district court's claim construction, would require the presence of a second transducer in the device. However, there is no support for a second transducer in the specification or in the prosecution history because the only transducer described in the specification is the CCD camera.

For the foregoing reasons, we conclude that the term "opto-electrical componentry," as used in Claim 30, means electrical components that convey optical images in an electrical form. However, we are not prepared on the basis of the record before us to say that the AcuCam device contains "opto-electrical componentry extending from said sensor through said handpiece to said cable." We believe that the district court should make the appropriate factual determination as to whether this limitation of claim 30 is met in the accused device. In addition, we leave construction of the terms "objective element" and "housing" and determination of whether these limitations of claim 30 are met in the accused device to the district court in the first instance.

The decision of the district court is vacated, and the case is remanded for further proceedings consistent with this opinion.

Each party shall bear its own costs.

MAYER, Circuit Judge, dissents.

GO BACK

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2. "Organic Material"

Both Claim 1 and Claim 67 also use the phrase "organic material." HISI requests that "organic material" be interpreted to mean "carbon containing materials (including wood, wood sawdust, and charcoal)." (HISI Brief 18). TPI, on the other hand, argues that "organic" should be limited to things that are "of, relating to, or derived from living organisms," such as wood, wood sawdust, leaves, bagasse from sugar cane, pineapple husks, and rice hulls. 2 (TPI Brief 14-15.)

2 TPI also requests that "organic" be limited to materials which can burn at temperatures of 510 [degrees] C or less. TPI argues that charcoal should be excluded because it burns above 510 [degrees] centrigade. TPI's temperature arguments, however, have already been addressed above.
Both the broad definition of "organic" proposed by HISI and the narrower definition of "organic" advanced by TPI appear equally valid and equally plausible. The claims themselves provide no insight into the intended meaning of "organic." The specifications, however, do describe the types of burning material utilized in this process, albeit without explicitly defining the term "organic." The patent states that "[t]ypical wood fuels for smoking contain primarily a hydrocarbon composition of hydrogen and carbon along with other elements . . . ." (Kowalski Patent, Col. 7, at 4-5 (emphasis added).) This language, focusing on the chemical component of smoking materials, and in particular, the presence of carbon, as opposed to focusing on the materials' relation to living organisms, indicates that Kowalski did not intend to limit his patent to the narrower definition of "organic." The Court therefore finds that "organic material," as used in the Kowalski Patent, means carbon containing materials, including wood, wood sawdust, and charcoal.

2800

1. The "multiple orientation" limitation

Lamson argues that the district court erred in construing the "multiple orientation" limitation in claims 1 and 12 to cover one hundred eighty degree rotations of the insert. Lamson contends that the language of the claims and the specification make clear that the "multiple orientation" limitation requires an outlet cover that can encompass both horizontal and vertical electrical outlets by using a single, symmetrical insert that can be rotated ninety degrees. Intermatic responds that the plain language of the relevant claims and the specification allow one hundred eighty degree rotations of the insert to be included within the construction of the "multiple orientation" limitation. Intermatic further argues that claim 3, which depends from claim 1, claims the precise construction advocated by Lamson, and that therefore the doctrine of claim differentiation requires that the "multiple orientation" limitation not be restricted to outlet covers that accommodate both horizontal and vertical electrical outlets.

We agree with Intermatic that the district court properly construed the "multiple orientation" limitation to include one hundred eighty degree rotations of the insert. Absent an express intent to impart a novel meaning, "terms in a claim are to be given their ordinary and accustomed meaning." Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1249, 48 U.S.P.Q.2d (BNA) 1117, 1121 (Fed. Cir. 1998). The relevant claims at issue require that the aperture be large enough to enable the insert to fit within the aperture "in a first orientation and a second orientation." 135 patent, col. 8, II. 48-49, col. 9, II. 38-39. The ordinary meanings of the terms "first" and "second" do not require that the orientations be separated by any specific degree of rotation, such as the ninety degree difference argued by Lamson. Rather, such language broadly claims an outlet cover with an aperture large enough to accommodate an insert placed in any two orientations, whether those orientations be separated by one hundred eighty degrees, ninety degrees, or any other degree of rotation.

The specification supports this construction of the "multiple orientation" limitation. The "Summary of the Invention" states that "the insert may be fitted within the aperture of the base plate in a plurality of orientations in order to encompass electrical outlets of either a horizontal orientation or a vertical orientation." Id. at col. 2, II. 30-33 (emphasis added). That language suggests that, in addition to being able to rotate the insert ninety degrees to accommodate both a vertical and horizontal outlet with the same outlet cover, the insert may be rotated one hundred eighty degrees, i.e., turned upside down, to accommodate only a horizontally oriented outlet or only a vertically oriented outlet. Such a degree of rotation may be necessary, for example, to accommodate outlets in which the plug receptacles are not arranged in a symmetrical fashion. Indeed, the examiner recognized this very use of the claimed outlet cover, stating that "an insert . . . could be placed in two different orientations . . . each 180 degrees apart." The ninety degree rotation construction proffered by Lamson is therefore merely a preferred embodiment of the invention. See id., col. 3, II. 49-59 ("In this embodiment . . . the aperture and the insert are such that the insert can be positioned in the aperture in two separate orientations . . . 90 degrees apart.").

Moreover, claim 3 of the 135 patent, which is dependent on claim 1, differs from the latter only in that the aperture must be "of sufficient size to enclose an electrical outlet positioned in a first substantially vertical position and a second substantially horizontal position . . . ." Id. at col. 8, II. 65-67 (emphasis added). Under the doctrine of claim differentiation, each claim in a patent is presumptively different in scope. Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187, 48 U.S.P.Q.2d (BNA) 1001, 1005 (Fed. Cir. 1998). This presumption can be strengthened under certain circumstances. One of
those circumstances was espoused in Wenger Manufacturing, Inc. v. Coating Machinery Systems, Inc., wherein this court stated that "claim differentiation, while often argued to be controlling when it does not apply, is clearly applicable when there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims." 239 F.3d 1225, 1233, 57 U.S.P.Q.2d (BNA) 1679, 1685 (Fed. Cir. 2001). Because the only meaningful difference between claim 1 and claim 3 involves the potential orientations of the insert, the doctrine of claim differentiation provides additional support for not limiting the "multiple orientation" limitation to the construction proposed by Lamson. We therefore conclude that the district court did not err in interpreting the "multiple orientation" limitation to include one hundred-eighty degree rotations of the insert.

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A. "Oriented" and "Oriented Coextruded Film"

1. The Parties' Proposed Constructions

Cryovac asserts that the term "oriented" should be construed as a part of the term "oriented coextruded film" to mean "a film formed by coextrusion that is then heated to its orientation temperature range and stretched to realign the molecular configuration, this stretching accomplished by a racking or blown bubble process." (D.I. 203 at 11.) Cryovac contends that this construction is supported by the definition given for the term "oriented" in the specification, and that broader constructions were disclaimed during prosecution. (Id. at 11-16.) Pechiney, on the other hand, claims that the term "oriented" should be construed to mean "a polymeric material which has been heated and stretched to realign the molecular configuration." (D.I. 204 at 20.) Pechiney asserts that the language "this stretching accomplished by a racking or blown bubble process" should not be included in the construction of the term oriented, as this language would improperly import a product-by-process limitation into the claim. (Id. at 21-22.) Pechiney further argues that the term "oriented coextruded film" should simply be a combination of the definitions of "oriented" and "coextruded", not a separate claim term, and should be defined to mean "an oriented film formed by coextrusion." (D.I. 204 at 20.)

2. The Court's Construction

The specification of the '419 patent states that "the term 'oriented' and the like is used herein to define a polymeric material which has been heated and stretched to realign the molecular configuration, this stretching accomplished by a racking or blown bubble process." U.S. Patent No. 4,755,419 at col. 3, Ins. 45-49. The parties agree that where a patent applicant provides "an explicit definition in the specification for a claim term[,...] the definition selected by the patent applicant controls." Renishaw PLC, 158 F.3d at 1249.

The dispute between the parties over the construction of the term "oriented" centers on whether the phrase "this stretching accomplished by a racking or blown bubble process" should be included in the construction of the term. (See D.I. 204 at 21.) While Pechiney asserts that the inclusion of this phrase improperly imports a product-by-process limitation into the claim (id.), Cryovac argues that this final phrase is part of the definition intended by the patentee, and that to define the term differently is inconsistent with the specification of the patent (D.I. 203 at 16-18).

Phillips teaches that claim construction is a practical exercise, in which a claim term is defined to reflect what one of ordinary skill in the art reading the patent would understand. 415 F.3d at 1324 ("There is no magic formula or catechism for conducting claim construction. Nor is the court barred from considering any particular sources or required to analyze sources in any specific sequence..."). However, as earlier noted, the language of the specification "usually ... is dispositive, it is the single best guide to the meaning of a disputed term." Id. at 1315 (quoting Vitronics, 90 F.3d at 1582).

Federal Circuit precedent, is seemingly in conflict regarding whether a product-by-process claim is limited by the process disclosed in the claim. In Scripps Clinic & Research Found. v. Genentech, Inc., 927 F.2d 1565, (Fed. Cir. 1991), the court stated that "the correct reading of product-by-process claims is that they are not limited to product prepared by the process set forth in the claims." Scripps Clinic & Research Found., 927 F.2d at 1583. However, just over one year later, the Federal Circuit relied on "a line of [Supreme Court] cases that [stated] the infringement inquiry for product claims with process limitations focuses on whether the accused product was made by the claimed process or its equivalent." Atlantic Thermoplastics Co. v. Faytex Corp., 970 F.2d 834, 842 (Fed. Cir. 1992). Thus, the court in Atlantic Thermoplastics held that
"process terms in product-by-process claims serve as limitations in determining infringement." Id. at 846-47. In light of the decisions in Scripps, Atlantic Thermoplastics, and the Supreme Court cases cited by the Federal Circuit in Atlantic Thermoplastics, 2 it appears that the determination of whether the process is properly viewed as a limitation is a context-specific inquiry. 3 Thus, in keeping with the en banc decision of the Federal Circuit in Phillips, each claim, whether it contains a product-by-process limitation or not, must be construed in light of the specification.


3 Indeed, in the Federal Circuit's most recent statement on this issue, SmithKline Beecham Corp. v. Apotex Corp., 439 F.3d 1312, 2006 WL 435838 (Fed. Cir. 2006), although the majority stated that it "need not address this controversy here" ( 439 F.3d 1312 at 1316-17, [WL] at *4), Judge Newman filed a dissenting opinion which clearly sets out the debate between Scripps and Atlantic Thermoplastics. 439 F.3d 1312, [WL] at *8-11. In her dissent, Judge Newman stated that the rule emphasized in Phillips, that "claims are construed in light of the specification … is not suspended when product and process limitations appear in the same claim." Smithkline Beecham Corp., 439 F.3d 1312 at 1322, 2006 WL at *9. Judge Newman goes on to state that Scripps and Atlantic Thermoplastics are "not in conflict; they simply deal with different situations." 439 F.3d 1312 at 1323, [WL] at *10.

Here, the patentee specifically defined the term "oriented" in the specification to include the language "accomplished by a racking or blown bubble process." U.S. Patent No. 4,755,419 at col. 3, Ins. 48-49 Additionally, the examples provided by the patentee in the specification strongly suggest that this limitation was intended to be a part of the claim. See id. at col. 4, Ins. 52-55 (stating that the film was "produced by … cast coextrusion methods, and subsequently oriented … typically by means of a blown bubble process"); id. at col. 8, Ins. 60-64 ("the coextruded and cooled tube is heated to its orientation temperature range to orient the film in e.g. a blown bubble process"). Under the guidance given by Phillips, the language in the specification of the '419 patent "is the single best guide" to the meaning of the term oriented. Phillips, 415 F.3d at 1315. Under Federal Circuit and Supreme Court case law, this is not changed simply because the definition given by the patentee contains a limitation that describes a process. Thus, I will use the definition given by the patentee in the specification, and will construe the term "oriented" to mean, with reference to a polymeric material, "heated and stretched to realign the molecular configuration, this stretching accomplished by a racking or blown bubble process.

4 Cryovac asserts that I should construe the phrase "oriented coextruded film" rather than just "oriented." (D.I. 203 at 11-16.) However, the construction of this phrase is simply a combination of the construction of "oriented" given here, and the meaning of "coextruded," on which the parties fundamentally agree (see supra note 1). Thus, the term "oriented coextruded film" needs no further definition here.

The 253 patent includes claim language stating as follows: "each hypotenuse is oriented at least one of towards and away from the centrally positioned long axis." ('253 patent, 7:15-18, 44-46.) 6 Plaintiff contends that the court should construe this claim as follows "each hypotenuse may face either toward or away from the centrally positioned axis." (Pl.'s Opp'n 30.)
6 The words "at least one of" are not here construed; plaintiff conceded at oral argument that this phrase is superfluous.

7 The figure located on page 16 depicts the orientations of the hypotenuses of the teeth of two embodiments of the patents-in-suit and of the allegedly infringing product.

Plaintiff's proposed construction would prevent the claim language from limiting or modifying the claims in any way, and would therefore render the language unnecessary. Plaintiff discusses the orientation of the hypotenuse as being either towards or away from the center line, but discusses no other possible orientation for hypotenuses. (Pl's Opp'n to Mot. for Summ. J. 33.) A limitation within a claim should not be construed in a manner that would cause it to be "meaninglessly empty." See Ethicon Endo-Surgery v. U.S. Surgical Corp., 93 F.3d 1572, 1578 (Fed. Cir. 1996). Because there are only two possible orientations for each hypotenuse, plaintiff's proposed claim construction that each individual hypotenuse may face either toward or away from the centrally positioned axis, without regard to the positions of the other hypotenuses, does not limit the claim in any way. Such a statement would be true of the bone saw claimed by the patent even if that claim language had been omitted. Furthermore, the term "each" means "all considered one by one," according to Webster's Third New International Dictionary 713 (4th ed. 1976). Therefore, the court construes the phrase "each hypotenuse is oriented at least one of towards and away from the centrally positioned long axis" to mean "either all of the individual hypotenuses are oriented towards the centrally positioned long axis, or all of the individual hypotenuses are oriented away from the centrally positioned long axis." 8

8 Plaintiff argues that under this proposed definition, the dependent claims would become superfluous because they are subsumed within the definition. (Pl.'s Opp'n 33.) However, patentees have an obligation to include broader and narrower claims to retain coverage of the invention. See Johnson & Johnston Assoc's. Inc. v. R.E. Serv. Co., Inc., 285 F.3d 1046, 1057 (Fed. Cir. 2002) (explaining that "the patentee has an obligation to draft claims that capture all reasonably foreseeable ways to practice the invention"). Such construction additionally protects a patentee in the event that the broader claims are rejected by the patent office or invalidated in the course of litigation. Of concern is when a claim limitation becomes "meaninglessly empty," in that it contributes nothing to the understanding of the claim. It is not concerning when a claim is dependent upon another; that type of superfluousness is common to any well-drafted patent.

II. First Light Fixture: "oriented to direct light downwardly to a selected reading area under said body." 5

A. Words of the Claim

In accordance with the standard set out in Phillips and reiterated in Nystrom, when construing a claim the Court first considers the words of the claim, which "themselves provide substantial guidance as to the meaning of particular claim terms." Pfizer, Inc. v. Teva Pharm., USA, Inc., 429 F.3d 1364, 1373 (Fed. Cir. 2005) (quoting Phillips, 415 F.3d at 1314). "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." Phillips, 415 F.3d at 1314. In most cases, however, courts must dig deeper into the meaning of the claim language.

Although in the Joint Statement, the parties ask the Court to construe the phrase, "selected reading area under said body," neither party addressed this issue in their briefs. (R. 23, Joint Statement at 2.)

With regard to the first light fixture, Kenall claims that the phrase "oriented to direct light" requires that "the fixture in question be designed to emanate more light toward the designated target than in any other direction." (R. 26, Kenall Markman at 3.) Genlyte counters that "oriented to direct light" simply means "to set or arrange to direct light." (R. 27,
Genlyte Markman at 22.) However, when considering the entire disputed, "oriented to direct light downwardly," very little difference between the parties' proposed constructions remains. To set or arrange to direct light downwardly has the same meaning as to emanate more light in a downward direction. This construction is clear on the face of claims 1 and 3. Claim 1 states that the first light fixture is oriented to direct light "downwardly," while the second light fixture is oriented to direct light "downwardly and outwardly." Thus, the first light fixture in claim I must direct more light downwardly than outwardly; otherwise, the words "and outwardly" would be meaningless. "An interpretation of one claim that renders another claim meaningless is disfavored." CytoLogix Corp. v. Ventana Med. Sys., Inc., 424 F.3d 1168, 1173 (Fed. Cir. 2005).

Genlyte admits that light from lamps of a light fixture can go downwardly, outwardly, and/or upwardly, and the '254 Patent specifies the direction or directions the light goes. (R. 31, Genlyte Surreply at 3.) It follows that a light fixture oriented to direct light downwardly is not oriented to direct light outwardly or upwardly. This distinction would be meaningless without an understanding that "more" light must go downwardly than outwardly or upwardly. Far from reading a quantitative term into the claim or limiting the '254 Patent to its preferred embodiment (R. 27, Genlyte Markman at 15), the modifier "more" follows from the language of the '254 Patent itself. Accordingly, the Court finds the correct construction of the phrase, "oriented to direct light downwardly" to be: "to set or arrange to direct more light in a downward direction than in an upward or outward direction."

B. Intrinsic Record

"The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." Phillips, 415 F.3d at 1316; Nystrom, 424 F.3d at 1142. The intrinsic record consists of the patent specification -- the claims and the written description of the patent -- and the prosecution history. 6 Nystrom, 424 F.3d at 1142. "The specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." Phillips, 415 F.3d at 1315 (citations omitted).

6 As explained above, the absence of prosecution history for the '254 Patent does not aid the Court in claim construction.

The '254 Patent's specification supports the construction that "oriented to direct light downwardly" means that more light is directed in the downward direction than in an upward or outward direction. The same language is used in the undisputed portion of claim 3, which states: "third light fixture within said body oriented to direct light downwardly under said body to a selected patient examination area." (254 Patent at col.4, 11.1-3.) The light from the third light fixture arranged to direct more light downwardly than upwardly or outwardly so that a selected patient examination area may be highlighted. The written description supports this interpretation, as the "Abstract" states that the reading light -- a.k.a., the "first light fixture" - is "directed toward a selected reading area on a hospital bed directly below the medical lighting system." (254 Patent.) The first light fixture must be set or arranged to direct more light downwardly to this "selected reading area" like the "selected patient examination area," to avoid rendering this language meaningless. Likewise, this meaning is bolstered by the "Background of the Invention" section, which states that the reading light "provides direct light to a portion of the patient's bed" (254 Patent at col. 1, 11.14-16), and the "Objects and Summary of the Invention" section of the '254 Patent, which states that the first light fixture is "designed to direct light toward the forward portion of the patient's bed so as to allow the patient to read comfortably." (254 Patent at col.2, 11.3-6.)

C. Extrinsic Evidence

Extrinsic evidence is all evidence outside the patent and its prosecution history. Markman, 52 F.3d at 980. Extrinsic evidence is less significant and less reliable than the intrinsic record in determining the legally operative meaning of claim language. Phillips, 415 F.3d at 1317-18. Sources of extrinsic evidence, such as expert testimony, dictionary definitions, technical treatises, and articles may not be used to vary or contradict a claim's meaning that is unambiguous in light of the intrinsic evidence. Phillips, 415 F.3d at 1324 (adhering to and reaffirming the Federal Circuit's approach to claim construction outlined in Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 (Fed. Cir. 1996)). Accordingly, the Federal Circuit has found it unnecessary to consider extrinsic evidence where the intrinsic evidence was unambiguous and sufficient to support the claim construction. See Koepnick Med. & Educ. Research Found., L.L.C. v. Alcon Labs., Inc., 162 Fed. Appx. 967, 2005 U.S. App. LEXIS 28880, No. 05-1215, 2005 WL 3543012, at *6 (Fed. Cir. 2005); Vitronics, 90 F.3d at 1584 ("Where the patent documents are unambiguous, expert testimony regarding the meaning of a claim is entitled to no
A. Brackett Statement

opinions rather than the other way around." Solaia Tech. LLC v. ArvinMeritor, Inc., 361 F. Supp. 2d 797, 805 (N.D. Ill. 2005). The "relevant art is defined by the nature of the problem confronting the would-be inventor." Id. Genlyte argues that the relevant art is lighting design, or even more specifically, medical lighting design. (R. 32, Genlyte Mot. to Strike at 12-15.) Kenall, on the other hand, claims that the relevant art is light distribution and measurement or lighting design. (R. 40, Resp. to Mot. to Strike at 10.) Contrary to Genlyte's contention, the relevant art is not limited to medical lighting systems, or even lighting fixture design. Although the inventor of the '254 Patent sought to improve medical lighting systems over patients' beds, the "nature of the problem confronting the would-be inventor" is broader than Genlyte contends: the problem is how to appropriately distribute light from the light fixtures to serve certain stated purposes. Expertise in lighting design, measurement, or distribution would be important to solve this problem. Thus, the relevant art is lighting design, measurement, or distribution. See Ryko, 950 F.2d at 718-19.

"The level of ordinary skill in the art" is determined by considering factors such as the educational level of the inventor and those who work in the industry, and the sophistication of the technology involved. Id. at 718. Genlyte contends that Brackett does not have the level of ordinary skill in the art when the relevant art is defined as lighting design. (R. 32, Genlyte Mot. to Strike at 12-15.) While it is true that Brackett only has limited experience in the field of lighting design, he has extensive technical experience in the art of lighting measurement and distribution, as this Court has defined the relevant art. Brackett has thirty years experience in the application, testing and analysis of a wide variety of light fixtures. (R. 28, Kenall Reply, Ex. 1 ("Brackett Statement") at 1-2.) In addition, he has published six papers in the Journal of the Illuminating Engineering Society dealing with lighting measurements and he served as chair of the Illuminating Engineering Society of North American ("IESNA") Technical Knowledge Exam Committee. (Id.) Thus, Brackett qualifies as one of ordinary skill in the art.

Genlyte also argues that Brackett's Statement should be stricken on the grounds that it was largely ghost-written by Kenall counsel. (R. 32, Motion to Strike at 1.) Federal Rule of Civil Procedure 26 requires an expert's report to be "prepared and signed by the witness." Fed. R. Civ. P. 26. Although Rule 26 does not prohibit a party's attorney from providing assistance to the expert, "preparation implies [an expert's] involvement other than perusing a report drafted by someone else and signing one's name at the bottom to signify agreement." Manning v. Crockett, 1999 U.S. Dist. LEXIS 7966, No. 95 C 3117, 1999 WL 342715, at *3 (N.D. Ill. May 18, 1999). Genlyte points primarily to Brackett's October 11, 2005 deposition testimony to show that Kenall counsel in essence drafted the Brackett Statement. (R. 32, Mot. to Strike at 3-8.) At his deposition, Brackett did not remember and showed some uncertainty about the details of the preparation of his Statement. (R. 32, Mot. to Strike at 3-8; R. 44, Reply to Mot. to Strike at 5-7). In response to Genlyte's motion to strike, Kenall provided evidence that Brackett's statement was indeed drawn from Brackett's opinion and not from Kenall's attorney. Kenall attached to its response: (1) eight pages of Brackett's notes about the '254 Patent (R. 40, Resp. to Mot. to Strike, Ex. 1); (2) a declaration by Brackett stating that (a) Kenall's attorney, Matthew Fannin, spoke with Brackett for one and a half hours before Fannin drafted a report of Brackett's opinion, (b) Brackett spent three hours reviewing and editing this draft "to ensure it was a complete representation of my opinion," and (c) the next day Brackett requested further changes be made until "the Statement represented the opinion [he] wanted to put forth" (R. 40, Resp. to Mot. to Strike, Ex. 2); and (3) e-mail correspondence with attachments of various forms of the Brackett Statement after edits by Brackett and Fannin (R. 40, Resp. to Mot. to Strike, Exs. 3-4). After considering Brackett's deposition testimony, the drafts of Brackett's Statement, Brackett's declaration, and the e-mails, "the Court cannot exclude the possibility that the [brief] was drawn from [Brackett's] opinions rather than the other way around." Solaia Tech. LLC v. ArvinMeritor, Inc., 361 F. Supp. 2d 797, 805 (N.D. Ill. 2005). Therefore, Genlyte's motion to strike is denied. (R. 32.)

a. Brackett Statement
Although the Court declines to strike Brackett's Statement, it nevertheless has very little probative value. "Conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court." Phillips, 415 F.3d at 1318 (citations and quotations omitted); see also Invitrogen Corp. v. Clontech Labs., Inc., 429 F.3d 1052, 1068 (Fed. Cir. 2005). Brackett's Statement consists almost entirely of conclusory, unsupported assertions. Although Brackett states that he reviewed several patents, the IESNA Handbook, and the parties' Markman statements, he does not once reference any of these or other materials in support of his seven-page opinion of the correct construction of claims 1 and 3 of the '254 Patent. (See Brackett Statement.) Rather, Brackett sets forth his opinion without any support for it. Therefore, this Court accords very little value to Brackett's Statement.

b. Lemons

In contrast, the conclusions of Genlyte's expert, Thomas Lemons, are generally well-supported by lighting handbooks and other primary materials, 7 and, in fact, support the Court's construction of the phrase "oriented to direct light downwardly." Lemons defined this phrase as "to set or arrange to direct illumination to an area below the product." (Lemons Statement at 2.) Lemons' response to Brackett's Statement shows that he believes more illumination must be directed below the product than above. In his surreply, Lemons states that Brackett does not identify the "certain direction" where the fixture "emanates more light." (R. 31, Genlyte Surreply, Ex. F ("Lemons Surreply") at 4.) However, Lemons agreed that "if the 'certain direction' is down and the other direction is up then I can accept that [Brackett] understands the use of these terms." (Id.)

7 Kenall does not dispute that Lemons is a person of ordinary skill in the art.

2. Dictionaries and Treatises

"Within the class of extrinsic evidence, the court has observed that dictionaries, especially technical ones, and treatises can be useful in claim construction." Phillips, 415 F.3d at 1318. They may not, however, be used to construe a claim "divorced from the context of the written description and prosecution history." Nystrom, 424 F.3d at 1144-45. Both parties have attached excerpts from the IESNA Lighting Handbook, the Hospital Lighting Data Book, and Webster's Ninth New Collegiate Dictionary; however, most of these excerpts do not shed light on the disputed claims in this case. This evidence primarily goes to the issue of whether a certain construction of the '254 Patent claims would render the '254 Patent invalid in light of the prior art. 8 Only the definition of "orient" in Webster's Ninth New Collegiate Dictionary 832 (1987), relates directly to claim construction in this case. Webster's defines "orient" as "to set or arrange in any determinate position esp. in relation to the points of the compass." (R. 27, Genlyte Markman, Ex. D). This definition, referring to a "determinate position" in relation to points of the compass, supports this Court's construction that the first light fixture sets or arranges more light in a downward direction than in any other direction. Another construction would render the term "determinate" pointless.

8 The issue of invalidity is generally not relevant when construing unambiguous claims. See infra, section 4, "Invalidity."


Kenall argues that the '254 patent is the "parent application" for two continuation-in-part patent applications, Patent No. 5,086,375 ("the '375 Patent") and Patent No. 5,160,193 ("the '193 Patent"), and that these patents should be considered relevant intrinsic evidence in construing the '254 Patent claims. (R. 26, Kenall Markman at 8, Exs. 2 and 3.) A separate patent, however, even if it is a continuation-in-part patent application, does not constitute relevant intrinsic evidence for the '254 Patent. See Goldenberg v. Cytogen, Inc., 373 F.3d 1158, 1167 (Fed. Cir. 2004) (while first patent cited in the prosecution history was part of intrinsic record, second patent created as a continuation-in-part of the original patent was new matter that at most constituted extrinsic evidence). In addition, the '375 and '193 Patents have little value as extrinsic evidence, as there is no proof that use of the phrase "oriented to direct light" in the '375 and '193 Patents has the same construction as in the '254 Patent, where the '375 and '193 Patents deal with a "light fixture module" rather than a "light fixture." (R. 26, Kenall Markman at 8, Exs. 2 and 3.)

Kenall also argues that Patent No. 3,928,757 ("the '757 Patent") is relevant extrinsic evidence, and Kenall asks the Court to determine that the word "directs" in the '254 Patent has the same meaning as in the '757 Patent. (R. 26, Kenall Markman at 11.) The '757 Patent, unlike the '254 Patent, however, deals with a spotlight, and there is no evidence that the term "directs" is used in the same way in both patents. (R. 26, Kenall Markman, Ex. 4.)
4. Invalidity

Kenall also claims that the Court should not adopt the claim construction proposed by Genlyte because if such a construction were adopted the claims would be invalid. 9 (R. 28, Kenall Reply at 5.) While claims should be construed to preserve their validity, validity analysis is not a regular component of claim construction. Phillips, 415 F.3d at 1327 (citations and quotations omitted). Instead, this maxim is limited to cases in which "the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous." Id. (citations and quotations omitted). See also Free Motion Fitness, Inc. v. Cybex Intern., Inc., 423 F.3d 1343, 1349 (Fed. Cir. 2005) (rejecting party's request to construe claims to preserve their validity because claim was not ambiguous). As this Court has already ruled, the claims are not ambiguous in light of the words of the claims themselves and the intrinsic record.

9 Kenall also claims that Genlyte's proposed construction would exclude Genlyte's commercial embodiment of the '254 Patent, specifically the MD*4 lighting systems. (R. 28, Kenall Reply at 12-13.) A commercial embodiment, like the preferred embodiment, should not limit the claims of a patent. Callicrate v. Wadsworth Mfg., Inc., 427 F.3d 1361, 1368 (Fed. Cir. 2005). Moreover, the MD*4 information sheets' statement that direct glare is eliminated does not mean that no light shines directly beneath the light. (See R. 31, Genlyte Surreply at 6-7.)

I. Claim Construction

Despite this Court's prior claim construction ruling following extensive briefing by the parties, Kenall and Genlyte continue to dispute the meaning of the claim terms "downwardly" and "outwardly," as well as the meaning of the words "upwardly" and "more," as used by this Court in construing the disputed claim terms. It is well-settled that "[d]istrict courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves." Network Commerce, Inc. v. Microsoft Corp., 422 F.3d 1353, 1364 (Fed. Cir. 2005). Claim 1 of the '254 Patent reads, in relevant part: "a second light fixture within said body oriented to direct light downwardly and outwardly to a vertical wall surface outwardly adjacent from said body whereby light is reflected back to a broad area under said body." (R. 63, Kenall Mem. Supp. Summ. J., Ex. 1, '254 Patent at col.3, ll.37-48.) In the previous claim construction ruling, this Court construed this phrase to mean: "set or arranged to direct more light in a downward and outward direction than in an upward direction to a vertical wall surface next to or near either end of said body whereby light is reflected back to a broad area under said body." 5 Kenall, 413 F. Supp. 2d at 949. While this interpretation is correct, this Court will clarify and elaborate on the meaning of the "second light fixture" so as to eliminate further confusion-or manipulation-of its meaning by the parties.

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5 The parties agree that the relevant "vertical wall surface" is the headwall, the wall located at the head of the hospital patient's bed. (R. 63, Kenall Mem. Supp. Summ. J. at 8-9; R. 74, Genlyte Opp'n Mot. at 5.)

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In arguing for their proposed interpretations of the second light fixture, the parties continue to read terms within claim 1 of the '254 Patent in isolation, thus eliciting conflicting definitions. "Proper claim construction, however, demands interpretation of the entire claim in context, not a single element in isolation." ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1090 (Fed. Cir. 2003) (quoting Hockerson-Halberstadt, Inc. v. Converse Inc., 183 F.3d 1369, 1374 (Fed. Cir. 1999)). Genlyte completely ignores the phrase "to a vertical wall surface" to support its argument that while more light must be directed in a downward and outward direction than upwardly, it is irrelevant whether the ambient light directs more light toward the vertical headwall than toward the sides. 6 (R. 74, Genlyte Opp'n Mem. at 5, 10-11.) In addition, Genlyte's expert, Thomas Lemons, constructs a chart matching precise angles of light with "directional zones" of light-up, upward, out, outward, down, and downward-providing only conclusory reasons for this construction. (R. 74, Genlyte Opp'n Mem., Ex. 1, Lemons Rebuttal Decl. at 5.)
By contrast, Kenall argues that its products do not infringe the ambient light fixture in claim 1 of the '254 Patent because its products directs more light downward and to the sides of the light fixtures than to a vertical wall surface. (R. 75, Kenall Resp. at 5.) Furthermore, Kenall's expert, Ian Lewin, PhD., uses the Illuminating Engineering Society of North American ("IESNA") Handbook's Glossary to define "downward" as all light below the horizontal and "upward" as all light above the horizontal. (R. 75, Kenall Resp., Lewin Resp. at 1-2.) Lewin, however, ignores the term "outward," even though the Federal Circuit discourages construing terms in a way that would render other parts of the claim superfluous. Merck & Co., Inc. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005).

Neither expert has it right. "][A] court should discount any expert testimony that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words with the written record of the patent." Pause Tech., 419 F.3d at 1333 (quoting Phillips v. AWH Corp., 415 F.3d 1303, 1318 (Fed. Cir. 2005)). As such, Lemons' disregard of the phrase "to a vertical wall" cannot be right, and Lewin's disregard of the term "outward" cannot be right either. Furthermore, the '254 Patent is a ceiling mounted medical lighting system, which necessarily directs almost no light above the horizontal; in fact, the ambient light fixture of the MPC24 provides 0 lumens of light to the area between 90 and 180 degrees (the area above the horizontal, with 0[Degree] going directly down to the patient's hospital bed), and the MPC22 provides only 7 lumens, or 3% of light to that same area. (R. 56, Genlyte Facts PP at 51, 65-66.) Thus, Genlyte's definition of upward as including area below the horizontal does not make sense.

Given the parties' continued disagreement over-or manipulation of-the meaning of the second light fixture, this Court's prior claim construction warrants elaboration. District courts begin their claim construction analysis with the words of the claim, as they define the invention, and "][t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." Nystrom v. TREX Co., Inc., 424 F.3d 1136, 1142 (Fed. Cir. 2005). The '254 Patent does not include any specific angular measurements, and indeed, the '254 Patent's specification indicates that the "downwardly and outwardly" oriented light is not meant to be interpreted according to strict angular measurements and is not conducive to such measurements. Lewin's and the IESNA's definition of downwardly, however, is incomplete, as it ignores the term "outwardly." That term, however, is not rendered superfluous because as the experts agree, light is emitted on multiple planes. (R. 79, Genlyte Reply, Ex. 3, Lemons Reply Decl. at 3; R. 63, Kenall Mem. Supp. Summ. J., Lewin Decl. at 5.) While upward light is indeed light above the horizontal and downward light is light below the horizontal (as defined by the IESNA and in accordance with the '254 Patent), "outwardly" here identifies the direction of light in a different plane: specifically, "to a vertical wall," as specified in claim 1 of the '254 Patent.

Furthermore, while some ambient light travels directly downward toward the hospital bed-hence the term "downwardly,"-the patent specification of the '254 Patent demonstrates that the majority, or "more," of the downwardly and outwardly directed light goes "outwardly to a vertical wall surface." See Kenall, 413 F. Supp. 2d at 948; R. 63, Kenall Mem. Supp. Summ. J., Ex. 1, '254 Patent at col.3, ll.44-45. The Abstract of the '254 Patent states that: "[t]he ambient light directs light to a wall abutting the head of the hospital bed thereby providing reflected light to the vicinity of the hospital bed." (R. 63, Kenall Mem. Supp. Summ. J., Ex. 1, '254 Patent at Abstract (emphasis added).) Similarly, the Patent Object and Summary of the Invention section of the '254 Patent states that: "[a] second light fixture includes a fluorescent bulb and a reflector designed to direct light toward a vertical wall surface abutting the head of the patient's bed so as to provide a reflected light over a large area around the patient's bed." (Id. at col. 2, ll.6-10 (emphasis added).) This is in contrast to the reading light, which "is directed toward a selected reading area on a hospital bed directly below the medical lighting system." (Id. at Abstract.) Claim 1 states this difference as "oriented to direct light downwardly to a selected reading area under said body" versus "oriented to direct light downwardly and outwardly to a vertical wall surface . . . whereas light is reflected back to a broad area under said body." (Id. at col.3, ll.43-47.) This distinction shows that "downwardly" means directly below the medical system, while "outwardly" means toward the wall, specifically, the identified "vertical wall. Accordingly, not only is the ambient light fixture set or arranged to direct light both downwardly and outwardly to a vertical wall as opposed to
upwardly, but more of this light is directed outwardly to the vertical wall than downwardly, so that the light can be reflected off the vertical wall onto the patient's bed.

In addition, the parties now specifically agree that the "vertical wall surface outwardly adjacent from said body" is the wall located at the head of the hospital patient's bed. (R. 63, Kenall Mem. Supp. Summ. J. at 8-9; R. 74, Genlyte Opp'n Mot. at 5.) As such, this Court clarifies its previous construction of the second light fixture in claim 1 of the '254 Patent as follows:

"a second light fixture within said body set or arranged to direct some light in a downward direction toward the hospital bed and the majority of light in an outward direction toward the wall located at the head of the hospital patient's bed, whereby light is reflected back to a broad area under said body." 7

7 As both the parties and their experts spent significant time debating the construction of these phrases in claim 1 of the '254 Patent in their summary judgment briefs, the Court will not entertain further briefing on claim construction in this case.

1. "The rearward regions of the top and bottom walls being oriented toward a back of the shoe"

adidas argues that the term "oriented toward a back of the shoe" should be construed as "placed at or near the side or surface of the shoe that is opposite the front (toe) of the shoe." It reaches this definition through the dictionary definitions of "back" ("the side or surface of something that is opposite to the side regarded as its front or face"), "orient" ("place in relation to"), and "toward" ("near" or "at a point in the direction of"). adidas claims that this is consistent with the specification's use of the term because in every disclosed embodiment, the rearward regions of the U-shaped member are placed at the back of the shoe. Akeva, in opposition, argues that the referenced rearward regions in the claim need not be physically located at or near the back of the shoe. Plaintiff proposes that the term's construction should stem from the plain and ordinary meaning of "oriented toward": "directed towards or placed in the direction of a location at or near the back of the shoe."

The dictionary definition of "oriented" is "directed toward" or "placed in relation to." Webster's Third New Int'l Dictionary 1591 (1986). The definition of "toward" as a preposition is "in the direction of." Webster's Third New Int'l Dictionary 2417 (1986). adidas has pointed to no compelling evidence suggesting that the plain and ordinary meaning should be rebutted or limited. The plain meaning of the phrase "oriented toward" does not include the requirement that an object that is "oriented toward" something must be placed physically near the thing. It encompasses only the notion that the object be facing a particular direction.

Therefore, the proper construction of "oriented toward a back of the shoe" should be construed as "directed toward or placed in the direction of a location at or near a back of the shoe."

2. "orifice" is a hole or opening through which something (axle and sleeve) may pass. Although it need not be completely enclosed, it must be sufficiently enclosed to "substantially surround" that which it holds, an axle (col. 10, ll. 32-34; col. 11, l. 67) or sleeve (col. 12, l. 2-3);
not appear to be in dispute among the parties, however, the Court agrees with Plaintiff that the term should be construed so as to avoid confusion as to the meaning of the term. According to the Academic Press Dictionary of Science and Technology, "orthogonal" is defined, among other things, as "perpendicular." Academic Dictionary of Science and Technology at 1534 (Christopher Morris, ed.) (1992). The Court sees no reason to diverge from this dictionary definition, as it is consistent with the patent specifications. Thus, the term "orthogonal" should be construed to mean perpendicular.

GO BACK

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BACKGROUND

Plaintiff's invention improves upon prior methods for removing earwax from a person's ear canal using water. Previously syringes, capable of delivering only limited amounts of water, had been used to flush out the ear. Patients whose ears were being thus irrigated had had to rely on a waterproof apron for protection from the likely splatter each time the syringe was removed to permit drainage and begin a fresh flushing.

Inventor Daniel J. Pender recognized the benefit of a method that would involve a continuous flow of water in and out of the ear, via a tightly fitted device, until irrigation was completed, thereby avoiding splattering of the patient. He filed the application resulting in the '711 patent in December 1997. An office action rejecting the application's single claim issued in November 1998. The applicant successfully responded the next month, and the application was allowed in May 1999.

The final '711 patent contains only one claim, Claim 1, which covers:

A method of irrigating a patient's ear using an otoscope of a type having an operating mode of flushing cerumen therefrom with body temperature water, said method comprising the steps of [providing an otoscope,] 1 configuring a tip of said otoscope in a cylindrical shape in cross section and of a selected outside diameter, selecting a tip outside diameter that is slightly oversized with respect to a diameter of an anatomical opening of said patient's ear canal, inserting said tip into said ear canal, establishing at a site of engagement of said different diameters of said tip and said ear canal opening a friction fit obviating fluid leakage externally of said site, providing a source of body temperature water and a return sump therefore, and continuously flowing said body temperature water from said source into and removing water and cerumen from said ear of said patient for return to said sump through said tip until the removal of cerumen is completed, whereby a maintained said fluid leakage seal during said continuous flowing of said body temperature water obviates a splattering of said patient.

(Weiss Decl., Ex. A, '711 Patent, col. 4.)

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1 The parties agree that this bracketed phrase should appear in the claim and that it was erroneously omitted by the U.S. Patent and Trademark Office ("PTO") from the printed version of the Patent.

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This motion concerns the meaning of the term "otoscope" as used in this claim. Defendants would define an otoscope to be "an instrument fitted with lighting and magnifying lens systems and used to facilitate visual examination of the auditory canal and eardrum." (D. Mem. at 4.) It is undisputed that defendants' accused product does not include an otoscope fitting this description. Plaintiff, however, would define the term as "a medical device which provides access to the ear canal via a tip (or speculum) for the purposes of examination, diagnosis, and/or treatment of the ear canal and/or eardrum." (P. Opp. at 1-2.) The key conceptual difference between the two definitions is that defendants style the otoscope as a viewing device, while plaintiff casts it as an access device (that does not necessarily facilitate viewing).

To support their respective definitions, the parties have submitted the record of the patent itself, comprising the specification, the single claim, and the prosecution history, in addition to other documentary evidence and the opinions of certain witnesses. This record will be described as appropriate during discussion of the issues.
DISCUSSION

I. Summary Judgment Standard

Summary judgment shall be granted "if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits . . . show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(c). A "genuine issue of material fact" exists if the evidence is such that a reasonable jury could find in favor of the non-moving party. Holtz v. Rockefeller & Co., 258 F.3d 62, 69 (2d Cir. 2001). The moving party bears the burden of establishing the absence of any genuine issue of material fact. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 256, 106 S. Ct. 2505, 91 L. Ed. 2d 202 (1986). In deciding a summary judgment motion, the court must "resolve all ambiguities and draw all reasonable references in the light most favorable to the party opposing the motion." Cifarelli v. Vill. Of Babylon, 93 F.3d 47, 51 (2d Cir. 1996). The nonmoving party, however, may not rely on "conclusory allegations or unsubstantiated speculation," Scotto v. Almenas, 143 F.3d 105, 114 (2d Cir. 1998), and "must do more than simply show that there is some metaphysical doubt as to the material facts," Matsushita Elec. Indus. Co., Ltd., v. Zenith Radio Corp., 475 U.S. 574, 586, 106 S. Ct. 1348, 89 L. Ed. 2d 538 (1986).

II. Literal Infringement

A. Legal Standards

To determine whether a patent has been infringed, it is necessary first to resolve any dispute about the meaning or scope of the invention claimed in the patent. U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997). Interpretation of a patent claim, which defines a patentee's rights, is a matter of law reserved entirely for the court. Markman v. Westview Instruments, Inc., 517 U.S. 370, 372, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996). Whether an accused method or product infringes a properly construed claim is a question of fact. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996).

Summary judgment of no literal infringement may be granted only "when no reasonable jury could find that every limitation recited in the properly construed claim . . . is . . . found in the accused device." Gart v. Logitech, Inc., 254 F.3d 1334, 1339 (Fed Cir. 2001). On this summary judgment motion, the only limitation with respect to which literal infringement is disputed involves the use of an otoscope. Construing the definition of "otoscope" as used in the '711 patent, the parties agree, will determine whether defendants are entitled to a judgment of no literal infringement as a matter of law.

The Court has not yet been asked, nor is it necessary to the instant decision, to construe all of the limitations of the '711 patent's claim. While the parties essentially agree that construction of the claim term "otoscope" will dispose of any literal-infringement issue, because the claim is clearly limited to require use of an otoscope, they have not stipulated to a specific understanding of all the limitations of the claim. Plaintiff, for instance, proposes that, "for purposes of claim construction, the critical inventive elements of Dr. Pender's invention are: (a) use of an ear-irrigating instrument having a tip of defined dimensions which creates a watertight seal between the ear wall and the tip, and (b) a continuous flow of warm water in and out of the ear to remove cerumen." (P. Opp. at 3.) Defendants differently describe the claim as "allow[ing] the doctor to: (a) clean the ear canal by delivering and then removing a flow of warm water to the inside of the ear; and (b) look deep into the ear to determine if it is clean without removing the modified otoscope from the ear." (D. Mem. at 2.)

As the equivalence-infringement claim survives, and may ultimately require resolution on a "limitation-by-limitation basis," Texas Instruments Inc. v. Cypress Semiconductor Corp., 90 F.3d 1558, 1566 (Fed. Cir. 1996); see also Warner-Jenkinson Co., Inc. v. Hilton Davis Chemical Co., 520 U.S. 17, 29, 117 S. Ct. 1040, 137 L. Ed. 2d 146 (1997) ("Each element contained in a patent claim is deemed material to defining the scope of the patented invention, and thus the doctrine of equivalents must be applied to individual elements of the claim, not to the invention as a whole.")., the parties may require a further opportunity to argue in detail the construction of other aspects of the claim. See also Sofamor Danek Group, Inc. v. Depuy-Motech, Inc., 74 F.3d 1216, 1221 (Fed. Cir. 1996) (trial court need not conclusively interpret claims at an early stage in a case). For now, it is sufficient to address the otoscope issue.

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In construing a patent claim, courts are to look first to the intrinsic evidence of record: the claim, specification, and prosecution history. Vitronics Corp., 90 F.3d 1576 at 1582. "Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language," because the court's task is to construe the meaning of a disputed term "as it is used in the claim" Id. at 1580, 1582 (emphasis added). Intrinsic coherence is also emphasized by statute -- the specification must describe an invention in "full, clear, concise, and exact terms;" 35 U.S.C. § 112, P1 -- and thus "the inventor's intention, as expressed in the specification, is regarded as dispositive." Phillips v. AWH Corp., 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc) (citation omitted).

Courts may also consider evidence extrinsic to the patent in issue, including expert and inventor testimony, dictionaries, and treatises. Phillips, 415 F.3d at 1317. Such extrinsic evidence is "less significant than the intrinsic record in determining the legally operative meaning of claim language." Id. Indeed, where "an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term," it is not merely inadvisable but also "improper" to rely on extrinsic evidence. Vitronics Corp., 90 F.3d at 1583. The primacy of the patent evidence rests on the premise that "competitors are entitled to review the public [patent] record, . . . ascertain the scope of the . . . claimed invention and, thus, design around [it] . . . . [Neither a] patentee [nor an alleged infringer] may . . . proffer an interpretation for the purposes of litigation that would alter the indisputable public record." Id. For this reason extrinsic evidence that is publicly accessible in advance of litigation, such as prior-art documents and dictionaries, is preferable for the purpose of claim construction to such extrinsic evidence as expert testimony. Id. at 1585.

A claim term should be afforded its "ordinary and customary meaning," which is "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention" reading the patent. 3 Phillips, 415 F.3d at 1312-13. The "ordinary and customary meaning" standard is consistent with the emphasis on intrinsic evidence: The inventor, whose explanations constitute the intrinsic record, may be presumed to be, if anyone is, a person of ordinary skill in the art relevant to the invention. See Phillips, 415 F.3d at 1313 ("That starting point is based on the well-settled understanding that inventors are typically persons skilled in the field of the invention and that patents are addressed to and intended to be read by others of skill in the pertinent art."). The question is not the inventor's private or subjective intention, but the meaning that would be given his words by a person skilled in the art in the context of the patent.

3 Neither party offers, let alone attempts to support, a description of the person of ordinary skill in the art in this case. In briefing this motion, the parties address the nature of the person of ordinary skill in the art only in the context of the credibility of expert witnesses. However, nothing in this decision depends on crediting either one of the proffered witnesses as such a person. In the absence of any argument or showing to the contrary, the Court adopts for purposes of resolving this motion the vantage point of a person of ordinary skill in the "field of invention." Phillips, 415 F.3d at 1313, that is named in the '711 patent itself: the field of "ear irrigation procedure" (Weiss Decl., Ex. A, '711 Patent, col. 1).

B. Construction of "Otoscope"

In this case, the intrinsic evidence dictates an interpretation of the disputed claim term, "otoscope," in accordance with defendants' proposed construction. Consideration of extrinsic evidence thus is not necessary to the decision; the extrinsic evidence submitted by plaintiff, even though considered, does nothing to negate such a construction.

1. Intrinsic Evidence

Plaintiff argues that "[t]here is nothing in the language of Claim 1 of the '711 patent that limits the term 'otoscope' to a device including a light and a lens that is used for visualizing the ear canal" (P. Opp. at 6) -- in other words, to defendants' proposed definition. Yet the claim describes a method involving "us[e of] an otoscope of a type having an operating mode of flushing cerumen" from the ear with water, and the insertion of a specially configured tip of the otoscope tightly into the ear canal for flushing "until the removal of cerumen is completed." (Weiss Decl., Ex. A, '711 Patent, col. 4, emphasis added.) The reference to a point of completion implies the necessity of incorporating into the claimed method a means for observing the progress of earwax removal. Plaintiff points to nothing in the claim that explains how such observation could be effected
other than by use of a device such as that which defendants have defined the claim's "otoscope" to be. It is true that, as plaintiff contends, the method claimed does not "[explicitly] include visualization of the ear canal." (P. Opp. at 7.) Yet the method clearly if implicitly contemplates visualization of some aspect of the earwax-removal process. Because defendants' definition of "otoscope" would satisfy that visualization aspect of the claimed method, while plaintiff's definition would leave mysterious how such visualization could occur, the language of the claim supports acceptance of defendants' definition.

For the same reason, the specification, which "is the single best guide to the meaning of a disputed term," Vitronics Corp., 90 F.3d at 1582, supports accepting defendants' definition of "otoscope" rather than plaintiff's. Plaintiff correctly points out that the portions of the specification distinguishing the prior art do not "include any reference to visualization of the ear." (P. Opp. at 8.) However, as with the claim, the lack of explicit mention of visualization in the specification does not establish that "the key elements of Dr. Pender's invention . . . have nothing to do with visualization." (Id.) Rather, the specification's focus on "maintaining the patient splatter-free" (Weiss Decl., Ex. A, 711 Patent, col. 1), via a flushing mechanism that does not "ha[ve] to be removed from time to time during the ear canal irrigation procedure" (id.), would plainly teach a person of ordinary skill in the art reading the patent that some means would be required for observing the progress of that procedure without removing the flushing device. A careful reading of the specification supports this view. The specification states that "[u]nderlying the present invention is the recognition that an operating mode which contemplates the use of a continuous warm water supply under pressure is one which obviates the removal of the ear-irrigating instrument prior to an observed completion of cerumen removal." (Weiss Decl., Ex. A, 711 Patent, col. 2, emphasis added.)

Moreover, the specification describes a preferred embodiment as involving an "otoscope [with] . . . a flushing water delivery and removal head[,] . . . a view port lens telescoped, . . . [and] a fiber optic light source," permitting "observation through the lens [to see if] removal of cerumen is completed." (Id., cols. 2-3.) While it is well established that descriptions of possible embodiments do not by themselves limit a claim, see Phillips, 415 F.3d at 1323, the description in this case is relied upon not to limit the claim to the particular embodiment described, but rather to help determine what a term of the claim would mean to an ordinary skilled person in the field reading the claim in the context of the specification. See Phillips, 415 F.3d at 1313 ("Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification."). As with the claim, adoption of plaintiff's definition of "otoscope" would leave mysterious how the visualization of earwax-removal as clearly contemplated -- and instructively, if not dispositively, described -- in the specification would occur. The language of the specification, therefore, in conjunction with the language of the claim itself, supports acceptance of defendants' definition, to satisfy the visualization aspect of the claimed method. 4

--- Footnotes ---

4 The preferred embodiment specifies a particular lens type and light source. These preferences are particular to the embodiment described, but they illustrate the point that the "otoscope" in question has some capacity for visualization -- as surely as it has a capacity for "flushing water delivery and removal" (Weiss Decl., Ex. A, 711 Patent, col. 2), which plaintiff concedes is central to the invention.

--- End Footnotes ---

Finally, the prosecution history also supports acceptance of defendants' definition. "[B]ecause the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes [than the language of the claims and specification themselves]." Phillips, 415 F.3d at 1317. Even allowing for such ambiguity and construing it in plaintiff's favor, the '711 patent's prosecution history at best provides no reason to doubt that defendants' definition of "otoscope" is the most consistent with the claim and specification; at worst for plaintiff, it affirmatively supports defendant's definition.

In her only rejection of the '711 patent application, on November 20, 1998, the PTO examiner wrote that "Claim 1 is confusing because it is unclear if an otoscope is used or not. The preamble suggests using the otoscope, while the body of the claim is merely directed to the tip of the otoscope. It is suggested that applicant add a step of 'providing an otoscope' to clarify that an otoscope is used." (Weiss Decl., Ex. C, Prosecution History of '711 Patent, Office Action P 8.) The patentee subsequently amended the claim to add precisely the suggested language (see id., Response to Office Action), as reflected in
what the parties agree should be treated as the final version of the claim.

That the patentee complied with a PTO directive to modify the claim language to clarify that "an otoscope is used" -- as opposed to merely the tip of an otoscope -- without more does not do anything to define what the term "otoscope" means in this context. At most, this aspect of the prosecution history only cements that the '711 patent claim "requires the use of an otoscope" (D. Mem. at 6), a proposition that is not contested on this motion.

In her rejection of the '711 patent application, however, the PTO examiner went on to evince an understanding of "otoscope" that accords more closely with defendants' proposed definition than with plaintiff's. Rejecting the claim as obvious in light of certain prior art, she wrote:

Goldenberg discloses the use of an otoscope in combination with a middle ear fluid sampling device for the purpose of removing a specimen from the ear. The purpose of the otoscope is to provide visual control of the Goldenberg device . . . . [Prior art] Grossan is cited to exemplify that irrigating the ear canal with a friction fitting end portion . . . is well known. Accordingly, it would be obvious to one of ordinary skill in the art to use the Goldenberg device with an otoscope to irrigate and clear the ear canal as taught by Grossan, for the purpose of having an ear cleaning device which is fitted with an otoscope for greater visual control of ear irrigation.

(Weiss Decl., Ex. C, Prosecution History of '711 Patent, Office Action P 10, emphases added.) The prosecution history may serve as evidence of how the patent examiner and the inventor understood an aspect of a claim and of whether their understandings excluded any particular interpretation. See Phillips, 415 F.3d at 1317; Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995). The language of her rejection makes clear that the examiner regarded the otoscope in the context of this patent application to mean a device for viewing inside the ear canal.

Plaintiff does not address this particular passage of the rejection at all. However, the submitted evidence of the inventor's response to that rejection could be taken at least as rendering ambiguous whether the inventor shared the examiner's apparent understanding of "otoscope." The patentee sought "[r]econsideration of the rejection . . . on the basis of Goldenberg in view of Grossan," arguing that Goldenberg was "non-analogous art" and that "Grossan clearly does not disclose or suggest establishing a site of a friction fit by selection of the outside diameter of the otoscope tip so it is slightly oversized in relation to the patient's ear canal." (Weiss Decl., Ex. C, Prosecution History of '711 Patent, Response to Office Action at 4-5.) This response evidently sufficed, as the examiner thereafter approved the application for issuance of a patent. The response statements do not directly counter the examiner's apparent understanding of "otoscope" - indeed, they could be taken to accept that understanding without objection. However, it could also be argued that the response succeeded in negating any applicability of Goldenberg, and thus Goldenberg's version of an "otoscope," as irrelevant, and that it expressed the patentee's understanding of "otoscope tip," not of an entire otoscope, leaving the examiner's understanding uncorroborated.

None of this prosecution history, however, affirmatively supports adoption of plaintiff's definition of "otoscope" as a non-viewing device over defendant's definition. At best, construed in plaintiff's favor, it leaves construction of the term to hang, as already discussed, on the claim and specification. The fairest analysis of the prosecution history, though, is that, because the examiner clearly understood "otoscope" in the context of the application to mean a device for viewing inside the ear canal, it is likely that a person of ordinary skill in the art viewing the patent evidence would similarly understand the term.

2. Extrinsic Evidence

While it is not necessary to do so, as the intrinsic evidence suffices for choosing between the two proffered constructions of the disputed claim term, the Court has reviewed the extrinsic evidence submitted by plaintiff and determined that none of it counsels against adopting defendants' definition, and indeed, that resort to dictionaries supports defendants' interpretation.

Plaintiff first points to the primary definition of "otoscope" found in the online Oxford English Dictionary ("OED"): "Originally: an instrument resembling a stethoscope, used to listen for the sound of air in the middle ear or Eustachian tube (now rare or disused). Later (in full acoustic otoscope): an instrument that measures sound reflected from the tympanic membrane, used chiefly to detect fluid in the middle ear." OED Online, www.oed.com (search for "otoscope") (emphases in original). The first use of the term "acoustic otoscope" noted in the explanatory examples following that definition is dated 1984. See id. The secondary definition provided is: "An instrument used for visual inspection of the ear." Id.
Courts may consult and even rely on dictionary definitions when construing claim terms, "so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." Phillips, 415 F.3d at 1322-23. The primary source for defining a disputed term must remain the intrinsic evidence of the patent itself, because "elevating the dictionary to such prominence" problematically "focuses the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent." Id. at 1321. Such a focus is undesirable, because "[t]he patent system is based on the proposition that claims cover only the invented subject matter . . . . The use of a dictionary definition can conflict with that directive because the patent applicant did not create the dictionary to describe the invention." Id.

Here, plaintiff's proffered dictionary entry, defining an otoscope as an acoustic device, not only contradicts the definition ascertainable, as discussed, on a reading of the patent's intrinsic evidence, but also fails to support plaintiff's interpretation of "otoscope" as an access device. The online OED's primary definition does not describe the referenced otoscope as providing access to the ear canal.

Moreover, the dictionary's acoustic definition suggests that its relevance as the principal meaning of "otoscope" is historic. Currently, the acoustic reference is "rare or disused," and at least as early as 1984, the OED suggests, this meaning required express specification by the term "acoustic otoscope." In contrast, the secondary definition, referencing "visual inspection," is not described as archaic or outdated. The "ordinary and customary meaning of a claim term" is to be gauged as of "the time of the invention, i.e., as of the effective filing date of the patent application," Phillips, 415 F.3d at 1313, and the '711 patent application was filed in December 1997. Thus, the primary dictionary definition advanced by plaintiff does nothing to persuade against adopting defendants' construction of "otoscope" as supported by the intrinsic patent evidence.

For similar reasons, plaintiff's evidence that "the earliest otoscopes" lacked lights and lenses and were used to "provide access to the ear canal" (P. Opp. at 12, citing C. Keith Wilbur, M.D., Antique Medical Instruments (4th Ed. 2000)), cannot be taken to counter defendants' suggested construction. As the title of the reference makes clear, it relates to "antique," rather than contemporary, understandings. In any case, the treatise's need to remind readers that "the earliest otoscopes" lacked lights and lenses strongly suggests, by negative implication, that the understanding of the device by those familiar with its use at the time of this invention would include such means of visual inspection.

Defendants' construction, in contrast, is supported by a definition provided in a leading online medical dictionary: "an instrument fitted with lighting and magnifying lens systems and used to facilitate visual examination of the auditory canal and eardrum." (See Nash. Decl., Ex. 3, printout of Medline Plus: Medical Dictionary by Merriam-Webster, definition of "otoscope;" also at www.nlm.nih.gov/medlineplus/mplusdictionary.html, search for "otoscope.") Other dictionaries similarly support defendants' proposed understanding. Supporting the OED's conclusion that the use of the term to reference primarily an acoustic device was long outdated by the time the instant patent application was filed, Funk and Wagnalls Standard College Dictionary (1966) already promotes "[a]n instrument for viewing or examining the interior of the ear" to pride of place as the principal definition, noting that the term can "also" refer to an "instrument for auscultation [in turn defined as "a listening"] of the ear." Webster's New Universal Unabridged Dictionary Deluxe Second Edition (1983) provides the same two meanings, in the same order. Like the OED, these sources make no reference to plaintiff's preferred definition of the term as a means of introducing other instruments into the ear.

The very derivation of the word, moreover, provides further support for defendants' construction. The American Heritage Dictionary of the English Language (4th ed. 2000) defines the suffix "-scope" as "[a]n instrument for viewing or observing," for example, a bronchoscope, derived from the Greek "skopein," to see. Though some words containing this suffix may involve only metaphorical "seeing" (as with the stethoscope and acoustic otoscope), all appear to involve methods of enhancing perception, and none suggests a usage that involves a means of introducing instruments to inaccessible locations without some sense - most often, literal - of "seeing."

The other extrinsic evidence submitted by plaintiff is similarly unpersuasive. Plaintiff cites Welch Allyn's U.S. Patent No. 4,380,998 ("998 patent"), as referencing different kinds of otoscopes, but it fails to explain how that patent, for a "soft tip speculum" (Dep. of Stephen Burnett, Ex. 10), may be considered within the same field of invention ("ear irrigation procedure") as the subject patent. (See P. Opp. at 13.) Moreover, even assuming that the reference can properly be considered, it at best supports a conclusion that the term "otoscope" may sometimes be understood in the sense plaintiff advocates: "Two types of otoscopes are used by physicians in examining and/or treating the ear. One is an operative
instrument through which other smaller instruments are passed to gain access to various parts of the inner ear . . . . The other is a diagnostic instrument which is used to visually observe the functional activity of the ear." (See P. Opp. at 13, citing '998 Patent, col. 1.) Plaintiff does not claim that its invention entails any operation-type procedure, 5 and it provides no other rationale explaining why, if the word may have two different senses, the claim in issue should be construed in accordance with one rather than the other of the two understandings of "otoscope" identified in the '998 patent.

Finally, plaintiff offers the testimony of a purported expert against adoption of defendants' construction. However, this testimony largely recites the extrinsic documentary evidence about "the earliest otoscopes" and operating otoscopes, which, as already discussed, does nothing for plaintiff's case. (See Decl. of Jack J. Wazen, M.D. PP 6, 7.) All it offers in addition is the witness's endorsement of plaintiff's proposed construction of "otoscope," apparently based on his 30 years' experience using otoscopes in the field of otolaryngology. (See id. PP 1, 4, 5.) As claim construction presents a question of document interpretation, and the standard interpretation rule requires that a term should be defined in a way that comports with the document as a whole, the adoption of an expert's testimony about a definition will depend on whether the definition "fully comports with the specification and claims and so will preserve the patent's internal coherence." Markman, 517 U.S. at 390. Because "[a]ny other rule would be unfair to competitors who must be able to rely on the patent documents themselves," "expert testimony . . . may not be used to vary or contradict the claim language." Vitronics Corp., 90 F.3d at 1584. Even where there is intrinsic ambiguity that credible expert testimony purports to clarify, courts are not compelled to rely on such testimony. Markman, 517 U.S. at 387 (Courts may "avail themselves" of expert testimony but "are not . . . obliged to blindly follow" it.) (citation omitted). Therefore, even if the Court were to deem the intrinsic evidence insufficient to support adopting defendants' construction of otoscope, which it does not, and even if plaintiff's witness were to be credited as a qualified expert, the testimony would be rejected as advancing a definition that contradicts the internal coherence of a patent that requires a means for visualizing earwax removal. 6

Because the intrinsic evidence dictates an interpretation of the disputed claim term in accordance with the defendants' proposed construction, because, even if it were properly considered, the extrinsic evidence suggests no reason to adopt plaintiff's proposed construction instead; and because understanding the otoscope to be an instrument fitted with a light and lens and used for visual examination of the inner ear means defendants' device, which undisputedly lacks such features, cannot literally have infringed the otoscope-requiring '711 patent, judgment of no literal infringement is granted to defendants.

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I. Term 11: Outer bezel disposed over said antenna (as used in claim 23).

Lutron contends that Term 11 means "A structure which frames or surrounds a manual actuator or display element, physically arranged to cover or surround the antenna." Control4 contends the term means "A structure, attached to the front of the support yoke, disposed over the antenna."
The bezel is the outer component of the remote control device, which means it must have spaces or holes so that the buttons or other controls on the manual actuator may be accessible. In this sense, the bezel frames or surrounds a manual actuator or display element. The claim itself states, however, that the outer bezel is "disposed over" the antenna. This implies that it covers or at least partly covers the antenna as opposed to merely surrounding it. "Partly covers" allows for the outer bezel to be disposed over the antenna, but also captures that the outer bezel has spaces or holes in it for access to the actuator.

Control4 asks the Court to specify that the outer bezel is attached to the front of the yoke. While the "outer" bezel is an exterior component, it is not required to attach to the yoke. Figure 3 provides an example where multiple components are between the outer bezel and the yoke. Consequently, it is possible for the outer bezel not to touch the yoke. Based on these factors, the Court concludes the term means "An exterior structure that covers, at least in part, the antenna."

62 '103 Patent, Fig. 3 (showing multiple components in between the bezel (330) and the yoke (318).)
a removable cushion disposed within the outer covering to form a cushioned bottom portion; and a bolster removably disposed within the interior of the outer covering and substantially all of said bolster disposed exteriorly about at least a portion of the perimeter of the bottom portion without being secured to the removable cushion.

'502 patent at col. 3, ll. 37-46 (emphasis added).

Beginning with the claim language itself, the term "outer covering" is singular and the articles "the" and "an," which are used in connection with "outer covering" in the claim and throughout the specification, are also singular. This suggests that the patentee intended there to be only one cover enclosing both the cushion and the bolster. This language alone does not preclude the possibility that the single cover contains interior pockets or compartments providing some separation between the two pillows.

The other claims and the specification, however, indicate that the term "outer covering" does not include coverings that completely seal off the bolster from the pillow. Claim 2 claims "a reclosable access opening." 502 patent at col. 3, ll. 49-50. Claim 7 states: "the removable cushion and bolster are separately removable from the outer covering interior through the reclosable access opening." Id. at col. 4, ll. 20-22. The use of the singular here again indicates that the covering has only one opening. Figures 3, 4, and 5, although arguably representing only preferred embodiments, clearly depict a single opening.

The specification explains that the invention was designed to allow removal of both the cushion and the bolster through a single opening:

the bolster is easily removable by the simple expedient of unzipping the zipper 7 on the bottom of the pet bed 1, disengaging the straps 8, and withdrawing the bolster through the reclosable access opening. . . . The bottom cushion 4 can also be withdrawn in the same way.

Id. at col. 3, ll. 9-14. If the covering contained an internal partition completely sealing off the cushion from the bolster, removal of the two pillows through a single opening in the bottom of the covering would be impossible.

The same issue arises from claims 4, 7, 9, and 11. They describe a bolster that is "removably affixed" or "removably secured" to the interior of the outer covering. The specification contemplates no other mode of access to the affixed bolster other than through the single opening in the covering. If the bolster were completely walled off from the compartment containing the opening, the user would be unable to detach it from the interior of the covering and remove it for cleaning.

In anticipation of this problem, the specification teaches that the pocket of the covering containing the bottom cushion must "communicate" with the bolster pocket. Id. at col. 2, ll. 12-14. In other words, the spaces containing the bolster and the bottom cushion must open into each other. Figure 5, which clearly illustrates the insertion of both the bolster and the cushion through a single opening, further supports the conclusion that the two pillows must communicate.

Although the claims and specification present a strong case for a narrow construction of "outer covering," the parties debate extensively whether the patentee disavowed such a construction during prosecution. Arguments made by the applicant during patent prosecution may serve to refine the scope of claim coverage. Omega Engineering, Inc. v. Raytek Corp., 334 F.3d 1314, 1323-24 (Fed. Cir. 2003). In order for the doctrine of prosecution disclaimer to apply, the patentee must make "clear and unmistakable" actions or statements disavowing claim scope. Id. at 1325-26. In determining the scope of disavowal, the test is "whether a competitor would reasonably believe that the applicant had surrendered the relevant subject matter." Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1457 (Fed. Cir. 1998).

The patent examiner initially rejected claims 1-3 of the 502 patent as anticipated by U.S. Patent No. 5,010,843 ("Henry patent" or "'843 patent"). Docket No. 86, Ex. 2 at DMC000034-36. The Henry patent discloses a pet bed having a pair of top cushions that rest on a base cushion. '843 patent at Abstract. The top cushions are joined to the base cushion by stitching or other means. Id. at col. 2, ll. 19-28. One embodiment of Henry's invention consists of a circular base cushion with two semi-circular top cushions, or bolsters, that leave a circular space in the middle for a pet. Id. at Fig. 5. The patent examiner found that this embodiment of the Henry patent anticipated the 502 patent. Docket No. 86, Ex. 2 at DMC000034.

In response, claim 1 was amended to read that the bolster is located within the outer covering "without being secured to the
removable cushion." Docket No. 86, Ex. 2 at DMC000039. In accompanying remarks, the inventor attempted to distinguish his invention from Henry by arguing that Henry teaches "separate covers" for each cushion with the potential for exposed connections that a pet could tear apart. In contrast, the present invention avoids the problem of exposed connections because "a single cover encompasses both cushions." Id. at DMC000042; 843 patent at col. 2, ll.56-60. at DMC000042. He further argued that "Henry does not suggest a single cover for all of the cushions, and it would be difficult to design such a cover and assemble such a bed using the interconnected cushions of Henry." Id.

The patent examiner did not comment further on the issue of separate covers. He merely proposed two additional amendments to claim 1: adding the phrase "substantially all of said bolster" and the word "exteriorly" to describe the position of the bolster relative to the bottom cushion. Id. at DMC000046. After a telephone interview with the examiner confirming that the 502 patent as amended read over the prior art, the patentee accepted the amendments and the patent issued. Id. at DMC000044.

Defendants contend that in distinguishing Henry on the basis of separate covers, the patentee limited the scope of his claims to a single cover with one interior compartment for both the bottom cushion and the bolster. Flexi-Mat argues that the examiner's response and suggested amendment indicate that the examiner rejected the patentee's attempt to distinguish Henry, and because the patentee accepted the examiner's proposals without further comment, any disavowal of claim scope is ambiguous.

I find that the patentee's comments during prosecution "clearly and unmistakably" disavow separate covers. Flexi-Mat effectively concedes this point. What is not clear from the record is the patent examiner's interpretation of the scope of the disavowal and his reasons for ultimately allowing the claims. Although the applicant and examiner discussed the issue of separate covers, Docket No. 86, Ex. 2 at DMC000034, 42, the examiner's final communication offers only two amendments unrelated to the nature of the covering and no further explanation of his reasoning. Id. at DMC000046.

Flexi-Mat argues that this silence on the part of the examiner suggests that examiner rejected the patentee's expressed claim limitation. Flexi-Mat, however, misconstrues the law: the examiner's silence does not discount the value of the patentee's comments. The fact that "the prosecution shifted to a different focus does not blunt the impact of those remarks made to overcome the prior rejection." Springs Window Fashions LP v. Novo Industries, LP, 323 F.3d 989, 995 (Fed. Cir. 2003). See also Laitram Corp. v. Morehouse Indus., Inc., 143 F.3d 1456, 1462 (Fed. Cir. 1998) ("Regardless of the examiner's motives, arguments made during prosecution shed light on what the applicant meant by its various terms. The fact that an examiner placed no reliance on an applicant's statement distinguishing prior art does not mean that the statement is inconsequential for claim construction.") (internal citation omitted). Thus, although I can draw no conclusion directly from the examiner's silence, the clarity of the patentee's disavowal is sufficient to cause a competitor, after reviewing the specification and the prosecution history, reasonably to conclude that the claimed invention consisted of a single covering, not multiple separate coverings. 2

--- Footnotes ---

2 Flexi-Mat distinguishes Springs Window Fashions LP v. Novo Industries, LP, 323 F.3d 989, 995 (Fed. Cir. 2003) from this case on the grounds that the examiner here rejected the patentee's attempt to distinguish Henry on the basis of separate coverings. As discussed above, the examiner's proposal for two further amendments sheds no light on his acceptance or rejection of the separate covers argument. Thus, Spring Windows, which addresses the situation in which an examiner's motivations are unclear, is on point.

Flexi-Mat analogizes this case to Hoganas AB v. Dresser Industries, Inc., 9 F.3d 948, 953 (Fed. Cir. 1993), in which an applicant attempted to distinguish his invention for making light-weight bricks over the prior art by arguing during prosecution that the fibers had to be thicker than capillaries. The district court found that the patentee disavowed coverage of capillary-sized fibers. Id. The Federal Circuit affirmed this conclusion, explaining that a "reasonable competitor could have concluded, from a reading of the prosecution history, that the examiner relied on this distinction in allowing the claim, and thus, that Hoganas had given up coverage" of that subject matter. Id.

Flexi-Mat ignores this central holding. Instead, it mistakenly focuses on the Court's rejection of Hoganas' argument that the scope of the disavowal encompassed all of the distinctions that the patentee made between his invention and the prior art. Id. The Court refused to apply prosecution history estoppel to arguments that the examiner could not reasonably have relied
on in allowing the claims. Id. In this case, the separateness of the coverings was clearly a meaningful way to distinguish over Henry, and there is no question that the examiner would have relied upon it. Thus, Flexi-Mat’s reliance on Hoganas is misplaced.

The prosecution history clarifies that the “outer covering” must be a single covering, but it is of little use in resolving the main point of contention between the parties: whether that single covering includes compartments in which the bolster and cushion are entirely sealed off from each other. That point of contention reduces the dispute to the definition of “separate.”

“Separate” in this context is not a technical term, and its meaning is readily apparent: to set or keep apart. Webster’s Third New International Dictionary (1986). The 502 patent refines this definition in that it teaches that the pillows may be “separate” in the sense that they are located in different parts of the interior, but they cannot be entirely sealed off from each other; the spaces containing each pillow must “communicate.” 502 patent, col. 2, ll. 12-13.

Flexi-Mat contends that the definition of “separate” turns on the way the covering was manufactured. Specifically, it argues that the distinction between the “separate” covers in Henry and those at issue here is that each Henry cover is manufactured individually and completely and then connected together; the 502 cover, in contrast, is a unitary structure. Thus, Flexi-Mat argues, the 502 patent covers a bolster and pillow enclosed in a single covering sewn to create entirely sealed off pockets for each, but does not cover a bed made from pillows enclosed in individually made coverings, then connected together. Id.

This argument makes little sense in light of the claims and the specification. The patentee distinguished his invention over Henry because the Henry pillows were physically isolated in individual coverings and his were not; the method of manufacture was not at issue. 3

In sum, relying primarily on the claim terms, the claims, and the specification in accordance with Phillips, I construe the term “outer covering” as an article for receiving and enclosing both the removable bottom cushion and the removable bolster within an interior space such that the two pillows communicate with each other. 4

Flexi-Mat suggests that a construction of “outer covering” that excludes coverings with walled off compartments would exclude the preferred embodiment. Docket No. 107 at 2, n.1. This is not the case. The preferred embodiment describes a covering with two “pockets” -- one for each pillow -- and no suggestion of a barrier between them. 502 patent at col. 2, ll. 45-46, 51-52, 65-67, and col. 3, ll. 1-2. This design fits comfortably within the construction that I have given to the term “outer covering.”

Next, the district court construed the term “outer housing” to require an outer housing that “functions as a handle for the use of the swab,” and is “not designed to be removed and thrown away.” Hemphill, 134 F. Supp. 2d at 727. Specifically, the
district court found that during prosecution of the 720 patent, Hemphill distinguished her invention from U.S. Patent No. 2,393,677 (the 677 patent), noting that her "outer housing" transformed into a "handle structure," a metamorphosis absent from the invention of the 677 patent. We find that the district court properly construed the term "outer housing."

2813
"Outer spatial volume"

Cytyc's proposed construction  Xoft's proposed construction
(no construction required)  Balloon or cage.

or
A region of space defined by an expandable surface element and surrounding an inner spatial volume.

The phrase "outer spatial volume" in the '204 patent is analogous to the "outer, closed, inflatable chamber" of the '813 patent. The "outer spatial volume" is also explained in a similar manner; it is "defined by an expandable surface element disposed proximate to the distal end of the body member in a surrounding relation to the inner spatial volume." '204 patent, col. 8, ll. 22-25. Xoft again confuses the concepts of a volume with the boundary of a volume. Cytyc's proposed construction is congruent with the language of claim 1 of the '204 patent, so the court will construe "outer spatial volume" as "a region of space defined by an expandable surface element and surrounding an inner spatial volume."

2814
2. '589 Patent, Claims 1 and 9; and '703 Patent, Claim 15: "(c) . . . having an outer surface defining a drive head that accepts a driving mechanism for rotating and linearly translating said bolt."

Gillespie asks the court to construe "having an outer surface defining a drive head that accepts a driving mechanism for rotating and linearly translating said bolt," as used within Claims 1 and 9 of the '589 patent and Claim 15 in the '703 patent, to mean that the drive collar has a surface, separate from the frusto-conical inner surface of the drive collar, for defining a drive head capable of accepting a mine roof bolt driver mechanism that can rotate and linearly translate the mine roof bolt; the drive head may be of any shape or configuration that accepts a mine roof bolt driver mechanism. (See Pl.'s Brief, at 12.)

DSI asserts that Gillespie should be estopped from asserting a scope under the doctrine of equivalents of the term "outer surface defining a drive head" that would encompass a mine roof bold with a collar having a cylindrical outer surface (see Defs Brief, at 23) because during the prosecution in support of patentability to the United States Patent and Trademark Office ("USPTO"), and in response to rejection over the Spies patent, Gillespie specifically argued that Spies (attached as Exhibit E to Def.'s Brief) did not disclose his hexagonal collar because the Spies collar was "cylindrical on the outside" surface. Thus, DSI argues that Gillespie cannot rebut the presumption of prosecution history estoppel nor assert that the '589 patent claims a cylindrical collar. (See Def.'s Brief, at 17-23.)

It does not appear to this court that the prosecution history should be read in such a limited way. Although it is true that during the prosecution of the '589 patent, Gillespie stated to the USPTO:

- There is nothing in the Spies patent to suggest that the collar 17 should be used for this purpose. In fact, Spies teaches away from such an interpretation of the drawings. Collar 17 appears to be cylindrical on the outside, thus impractical for being rotated by a mine roof bolting machine. * * *
Applicant's invention comprises essentially a solid, effectively single-piece bolt head comprising the tapered plug 20 and the hexagonal head collar 26, that when pressed tightly together, define the bolt head as set forth in amended claims 1 and 10.

(Def.'s Brief Exh. F, at 6-7), this argument must be read into context. The central point of Gillespie's argument was that the Spies bolt has a fundamentally different construction which would prevent it from being driven by the collar, no matter its shape. And although the patent specification consistently describes a mine roof bolt having a drive collar with a hexagonal outer surface defining a drive head (see, e.g., Pl.'s Brief Exh. A, col. 3, In. 54-55; col. 4, In. 52-53; col. 5, In. 6), the surrender of other-shaped outer surfaces defining the drive head must be clear and unmistakable, which it is not. See Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1325-26 (Fed. Cir. 2003). Rather, the patent specifications of the '589 and '703 patents state

"[a]lthough the collar 26 is shown as a hexagonal head, obviously a square head or any other shaped head that accepts a mine roof bolt driver mechanism and boom should function adequately for the intended purpose"

('589 Patent, col. 3 In. 54-58; '703 Patent, col. 5, In. 10-14.)

Moreover, although DSI argues that the plain meaning of the term "outer" means "exterior," the court must determine the ordinary meaning that would be attributed to those words by persons skilled in the relevant art. See SuperGuide Corp. v. DirecTV Enters., Inc., 358 F.3d 870, 874-75 (Fed. Cir. 2004) (emphasis added). In which case, the meaning of the word "outer" is not limited to merely the "exterior" surface. This claim term clarifies that a surface of the drive collar that is "outer" (relative to the frusto-conical "inner" surface portion thereof) provides a drive head.

Thus, the ordinary meaning of the claim, the written descriptions, the context of the prosecution of the patent, and the described embodiments persuade the court to construe claims 1(c), 9(c) and 15(c) to mean the drive collar has a surface outside and separate from the frusto-conical inner surface of the drive collar for defining a drive head capable of accepting a driving mechanism that can rotate and linearly translate the mine roof bolt. The drive head may be of any shape or configuration that accepts such a driving mechanism.

Claim Construction

The claims of a patent define what is protected, i.e., what a patentee has the right to exclude the public from making, using, importing, offering for sale, or selling. See Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) ("It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'"). The meaning and scope of patent claims are reviewed as a matter of law. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). Precedent establishes that no deference is owed to the district court's claim construction or to any underlying factual findings predicate to construing the meaning and scope of the claims. Id. at 1451.

Dywidag states that the prosecution history negates the district court's claim construction. During prosecution Gillespie distinguished his invention from a cited reference, U.S. Patent No. 4,798,501 (the Spies patent), that shows a bolt-like rock anchor having a head with a recess in the end whereby a tool can rotate the bolt. When the examiner rejected Gillespie's application on the ground of obviousness in view of Spies, Gillespie argued that the collar at the end of the Spies bolt was cylindrical on the outside and was impractical for engagement by a mine roof bolting machine:

There is nothing in the Spies patent to suggest that the collar 17 should be used for this purpose. In fact, Spies teaches away from such an interpretation of the drawings. Collar 17 appears to be cylindrical on the outside, thus impractical for being rotated by a mine roof bolting machine.

'589 Patent Application (Paper No. 3).

However, Gillespie stresses that his claims should not be limited in a way that excludes the Spies structure, because the Reasons for Allowance did not depend on how the drive collar is rotated:
The following is an Examiner's Statement of Reasons for Allowance: The prior art does not teach a tapered plug and a tapered drive collar, as recited in the claims, wherein the tapered plug is placed over the end of a cable and inserted into a recess of the internally tapered drive collar and wherein the drive collar is rotated.

Mr. Gillespie also argues that the term "outer surface" in the specification and claims means the surface outer of the mine roof, not the outside of a hexagonal collar. He argues that the "outer" surface is thereby distinguished from the usage of "inner" for the conical surface that wedges the cable into the bolt head. The district court accepted this construction, stating:

"It does not appear to this court that the prosecution history should be read in such a limited way."

The central point of Gillespie's argument was that the Spies bolt has a fundamentally different construction which would prevent it from being driven by the collar, no matter its shape. And although the patent specification consistently describes a mine roof bolt having a drive collar with a hexagonal outer surface defining a drive head, the surrender of other-shaped outer surfaces defining the drive head must be clear and unmistakable, which it is not. Rather, the patent specifications of the 589 and 703 patents state "[a]lthough the collar 26 is shown as a hexagonal head, obviously a square head or any other shaped head that accepts a mine roof bolt driver mechanism and boom should function adequately for the intended purpose" of the word "outer" is not limited to merely the "exterior" surface. This claim term clarifies that a surface of the drive collar that is "outer" (relative to the frusto-conical "inner" surface portion thereof) provides a drive head. . . .

Moreover, although DSI argues that the plain meaning of the term "outer" means "exterior," the court must determine the ordinary meaning that would be attributed to those words by persons skilled in the relevant art. In which case, the meaning of the word "outer" is not limited to merely the "exterior" surface. This claim term clarifies that a surface of the drive collar that is "outer" (relative to the frusto-conical "inner" surface portion thereof) provides a drive head. . . .

The drive head may be of any shape or configuration that accepts such a driving mechanism.

437 F. Supp. 2d at 1266-67.

We agree with the district court to the extent that the mechanism by which the bolt is grasped by a tool and rotated is not the only difference from the Spies bolt. However, we do not agree that a person of ordinary mechanical skill would read the specification, the drawings, and the claims to construe "outer surface" of the drive collar to include a collar whose interior, not exterior, accepts the drive tool. The specification and drawings describe and illustrate a drive collar whose inner (interior) surface engages the tapered plug, and whose outer (exterior) surface accepts the drive tool. Although we agree that the surface need not be hexagonal, it must be outer with respect to the collar. This is the meaning that Gillespie used when he argued during prosecution that the Spies reference was distinguished by its smooth outer surface, as contrasted with Gillespie's angular outer surface. In this argument, Mr. Gillespie clearly used "outer" to refer to the outside surface of the bolt head, and pointed out that the cylindrical outside surface of the Spies bolt head rendered it incapable of being driven by a mine roof bolting machine. Although Gillespie argues that this distinction was not material to the grant of his patent, citing the examiner's Reasons for Allowance, supra, he nonetheless argued this distinction from the Spies mine roof bolt. The words of a claim are generally given the ordinary meaning that they would have to a person of ordinary skill in the field of the invention, see Phillips, 415 F.3d at 1312, and are read in view of the specification, of which they are a part. Phillips, 415 F.3d at 1315. In addition, "claim terms are normally used consistently throughout the patent," Phillips, 415 F.3d at 1314, the words "inner" and "outer" appearing several times in each claim.

Gillespie's specification and argument are directed to an exterior surface of the drive collar, shaped to accept the drive tool. This is the meaning that Gillespie used when he argued the difference from Spies. A cylindrical outer surface that is not adapted to be grasped by a drive tool characterizes the Spies and the Dywidag bolt heads. Such construction was negated during prosecution. The patentee is held to what he declares during the prosecution of his patent. North American Container, Inc. v. Plastipak Packaging, Inc., 415 F.3d 1335, 1345-46 (Fed. Cir. 2005). See also Springs Window Fashions L.P. v. Novo Indus., L.P., 323 F.3d 989, 995 (Fed. Cir. 2003) ("The public notice function of a patent and its prosecution history requires that a patentee be held to what he declares during the prosecution of his patent.")

On this construction, the judgment of literal infringement cannot stand. See Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1322, 1326 (Fed. Cir. 2006) ("in reviewing claim construction in the context of infringement, the
The legal function of giving meaning to claim terms always takes place in the context of a specific accused infringing device or process"). The judgment of infringement is

REVERSED.

2816

16. "an outer surface of one of said members"

This phrase is found in Claim 16. Plaintiff proposes the following construction: "a surface on the outside of the U-shaped terminal." Defendants assert that the phrase need not be construed, and the Court agrees. Because the Court see no ambiguity as to the meaning of the phrase "an outer surface of one of said members" and because its ordinary and customary meaning is clear to one skilled in the art, the Court declines to construe the phrase as it is used in the '015 Patent.

2817

G. Claim language to be construed from Claims 3 and 6 -- "the outer surface of said sheathing being tapered towards the immersion end of said tube such that a minimum thickness of said sheathing is directly adjacent to and exposing said immersion end of said tube for minimizing trapped gases adjacent to the measuring head when immersed in a metal bath" --

col. 4, ll. 53-58; col. 6, ll. 54 60

HEN contends that no construction of these terms is required and that they should be given their plain and ordinary meaning. (HEN CC Br. at 27.) Minco, however, proposes the following construction: "the outer surface of said sheathing is continuously and substantially tapered, and the minimum thickness of the sheath at the immersion end does not taper to a flat, radially outwardly extending annular shoulder (like that described in Russian/Soviet reference 144620 or German patent 1928845)." (Minco CC Br. at 40.) We agree with HEN that no construction of this claim language is required, and we reject Minco's proposed construction.

Minco argues that the specification and the prosecution history support its proposed construction. Minco argues that the specification language calls for a sheathing that has a minimum thickness at the immersion end in order, inter alia, to reduce the trapping of liberated oxygen and other gases in the area of the oxygen sensor. Minco contends that to conform to this requirement, the sheathing cannot taper to a "flat, radially outwardly extending annular shoulder." (Minco CC Br. at 40.) We disagree. A sheathing that tapers towards the immersion end of the probe and comes to a flat, radially and outwardly extending annular shoulder adjacent to the immersion end would still have its minimum thickness adjacent to the immersion end. Additionally, although the figure included in the specification does not contain a flat, radially and outwardly extending annular shoulder, but rather continuously tapers towards the immersion end, it would be improper to import this limitation appearing solely in the specification into the patent claims.

We also disagree with Minco's argument based on the prosecution history. Minco argues that during the prosecution of the '736 patent, HEN distinguished its probe from Russian/Soviet Patent No. 144,620 ("the Russian patent") and German Patent No. 1,928,845 ("the German patent") because they both had flat, radially and outwardly extending annular shoulders proximate to the measuring area that would serve to trap gases near the measuring unit and negatively affect the accuracy of the readings. Therefore, according to Minco, a taper that comes to a generally annular flat shoulder near the measuring area is not covered by the '736 patent. However, when distinguishing the Russian patent, HEN stated:

[i]t appears as though the outer sheath (5) of the Russian probe does not taper down to a minimum cross-sectional thickness. Instead, while it does slightly taper, a radially outwardly extending annular shoulder of approximately one-half of the overall wall thickness of the outer sheath remains proximate the measuring element. A shoulder of this type could disrupt the flow of gases away from the measuring element.

(Minco App. 4L at HEN000164.) The distinction identified by HEN is not simply that the Russian probe has a radially and outwardly extending annular shoulder while its probe does not. Rather, HEN stated that the Russian probe's radially and
outwardly extending annular shoulder was approximately one-half of the overall wall thickness of the outer sheath. HEN stated the following with respect to the German patent:

[j]it appears as though the [German patent] relates to a probe which includes an outer sheath (7) which is tapered toward the immersion end. The manner in which the sheath is tapered is different from that of the applicants' sheath in that both the inner diameter and the outer diameter are tapered toward a generally flat annular shoulder which extends outwardly from the probe body. An additional annular member (6) extends beyond the outer sheath towards the immersion end and forms an additional radially outwardly extending annular shoulder closer to the measuring element (5). Thus, neither the outer sheath (7) nor the additional element (6) tapers down to a minimum thickness proximate the measuring element to avoid trapping the gases proximate to the measuring element.

(Minco App. 4L at HEN000163-164.) Again, HEN did not distinguish the German patent based on the fact that the German patent has a radially and outwardly extending annular shoulder and its probe does not. Rather, HEN distinguished the German patent because the German probe's sheath tapered both towards and away from the probe's body, and the German probe included an additional annular member that extended beyond the sheath. We conclude that the arguments HEN made to distinguish the Russian and German patents do not amount to a clear disavowal of claim coverage over any sheath that tapers to a radially outwardly extending annular shoulder as proposed by Minco.

Finally, Minco argues that HEN submitted a drawing to the PTO attached to its application that showed a flat, outwardly extending annular shoulder, and that later, during the prosecution of the patent, HEN submitted a revised drawing omitting the flat, outwardly extending annular shoulder and showing instead a rounded shoulder like that depicted in the figure in the '736 patent specification. Minco argues that HEN revised the drawing of its probe in order to distinguish it from the German and Russian patents, which included flat, outwardly extending annular shoulders, and that, therefore, we should construe the patent claim to exclude coverage of probes with such shoulders. We find that Minco's argument is not supported by the record. The drawing submitted by HEN to the patent office showing a flat, outwardly extending annular shoulder is from the Belgian patent application No. 2/59866 from which the '736 patent claims priority. (Minco App. 4B at HEN000034, 000042.) HEN argued during the Markman hearing that it submitted the drawing as part of its Claim of Foreign Priority and Transmittal of Priority Document. Additionally, the parties have submitted into evidence the original patent application. (See Minco App. 4A at HEN000020-29.) However, while the original patent application in the record before us does not include a drawing of the applicant's probe, there is evidence which leads us to conclude that the original drawing of the applicant's probe is not the drawing with a flat, annular shoulder as Minco asserts. First, HEN argues that the original patent application was stamped with the number "513532." (See Minco App. 4A at HEN00022.) The first time a drawing depicting a probe with a rounded shoulder appears in the record before us is in a document titled "Request for File Wrapper Transmittal of Priority Document. Additionally, the parties have submitted into evidence the original patent application. (Id. at HEN000082.) HEN argues that this shows that the figure with the rounded shoulders was how the probe was depicted in the original patent application because it was stamped with the same number by the PTO. Finally, the original patent application contains references to a drawing containing elements marked 6A and 8A. (Minco App. 4A at HEN00024025.) The drawing alleged by Minco to have been the original depiction of the probe, and which shows a probe with a flat annular shoulder, does not contain any elements marked 6A or 8A, whereas the drawing that contains rounded shoulders does have elements marked 6A and 8A. (See Minco App. 4B at HEN000042 and Minco App. 4F at HEN000082.) During the Markman hearing Minco did not present any evidence or make any arguments countering this evidence. We therefore reject Minco's claim that HEN limited the scope of its patent by allegedly modifying the depiction of its probe during the patent prosecution in order to distinguish it from the German and Russian prior art.

GO BACK

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84. The court construes the fourth additional limitation in claim 24, "an outlet line interconnecting a compressor outlet to said compressed [nitrox] storage assembly," as follows: a line which connects the outlet end of the compressor to the nitrox storage assembly.

GO BACK
III. Second Light Fixture: "oriented to direct light downwardly and outwardly to a vertical wall surface outwardly adjacent from said body whereby light is reflected back to a broad area under said body."

A. "Vertical wall surface outwardly adjacent from said body whereby light is reflected back to a broad area under said body"

10 Kenall claims that with regard to the second light fixture, "outwardly adjacent" refers to "the vertical wall surface closest to the body of the lighting system." (R. 26, Kenall Markman at 3.) Genlyte argues, however, that "outwardly adjacent" merely means "next to or near." (R. 27, Genlyte Markman at 2.) While Kenall's proposed construction goes too far, Genlyte's does not go far enough.

10 Although in the Joint Statement, the parties ask the Court to construe the phrase, "whereby light is reflected back to a broad area under said body," neither party addressed this issue in their briefs. (R. 23, Joint Statement at 1.)

1. Intrinsic Record

"Outwardly adjacent" must mean more than "next to or near," because to decide otherwise would render the term "outwardly" meaningless. "When different words or phrases are used in separate claims, a difference in meaning is presumed." Nystrom, 424 F.3d at 1143; see also Georgia-Pacific Corp. v. United States Gypsum Co., 195 F.3d 1322, 1331 (Fed. Cir. 1999) ("Unless the patent otherwise provides, a claim term cannot be given a different meaning in the various claims of the same patent"). The term "adjacent" is found several times within the claims of the '254 Patent, in addition to claims 1 and 3. Dependent claim 9 states that:

The medical lighting system of claim 5 11 . . . wherein said second fluorescent light fixture is inwardly adjacent to said first fluorescent light fixture and said second fluorescent light fixture is parallel to first shorter end; and wherein said third fluorescent light fixture is outwardly adjacent from said second fluorescent light fixture and abuts a second shorter end of said body . . .

('254 Patent, col. 4, 11.24-37) (emphasis added). In contrast to claim 9, claim 14 refers to the term "adjacent" on its own: "The medical lighting system of claim 3 wherein a distribution of light from said first and second light fixtures excludes glare from areas adjacent to a standard hospital bed placed below the medical lighting system." (254 Patent, col.4, 11.60-64) (emphasis added).

11 Claim 5 involves "the medical lighting system of claim 4," which involves "the medical lighting system of claim 3."

Claim 9 provides valuable insight into the meaning of the phrase "outwardly adjacent," as it is used together with the phrase "inwardly adjacent." The second light fixture is "inwardly adjacent to" the first light fixture, and the third light fixture is "outwardly adjacent from" the second light fixture and "abuts a second shorter end of said body." (254 Patent, col. 4, 11.24-37.) Claim 9 further explains that "said body is rectangular and a first shorter end [sic] of said body is designed to abut the vertical wall surface," and the first light fixture abuts this first shorter end. (254 Patent, col.4, 11.25-28.) This language plainly states that the first light fixture (the reading light) is closest to the vertical wall surface, as it "abuts" the wall surface. Therefore, the second light fixture (the ambient light), which is "inwardly adjacent" to the first light fixture, must be further from the vertical wall surface. It follows that the third light fixture, which is "outwardly adjacent from" the second light fixture, is even further away from the vertical wall surface, since the first light fixture abuts the wall.

The written description of Figure 1, which is described as a "Preferred Embodiment" of the '254 Patent (254 Patent, col.2, 11.27-28), supports the Court's construction of the terms in claim 9. 12 Figure 1 is a diagram of the ceiling mounted structure. The description of Figure 1 states that: "ambient light reflector 24 is inwardly adjacent to reading light reflector 20" (254 Patent col.2, 1.50); and "examination light reflector 28 is outwardly adjacent to ambient light reflector 24, includes short side 18 and is opposite from reading light reflector 20." (254 Patent col.2, 11.66-67.) In the preferred embodiment figure, reading light reflector 20 is at the end of the ceiling mounted body that is closest to the wall. (254 Patent, Fig. 1.) Ambient light reflector 24 is close to the center of the ceiling mounted body, further away from the wall. (254 Patent, Fig. 1.) Examination light reflector 28 is even further away from the wall, and thus further from the center of the ceiling mounted body. (254 Patent, Fig. 1.)
12 While Figure 1 is described as a "side plan view of lighting fixture 10" (‘254 Patent, col.2, 1.32), the ‘254 Patent only contains claims for a light fixtures 1, 2, and 3. As Figure 1 is the preferred embodiment of the '254 Patent, "lighting fixture 10" must be the ceiling mounted body of the preferred embodiment of the medical lighting system at issue.

The language in claim 9 and the written description of Figure 1 shows that "a vertical wall surface outwardly adjacent from said body" does not necessarily mean "the vertical wall surface closest to the body of the lighting system," as in both cases, the "outwardly adjacent" light fixture or reflector was the furthest from the vertical wall surface abutting the body of the lighting system. In addition, the "inwardly adjacent" light fixture or reflector in both cases is closest to the center of the ceiling mounted body. It follows that "inwardly adjacent" to a vertical wall would be the vertical wall closest to the center of the ceiling mounted body; that is, any vertical wall that is adjacent to the horizontal side of the ceiling mounted body, but not the ends of said body.

Moreover, claim 9 shows that the '254 Patent refers to the vertical wall surface closest to the body of the lighting system as "designed to abut the vertical wall surface" (‘254 Patent, col.4, 1.26) (emphasis added) or in claim 12 as "substantially abutting the vertical wall surface." (‘254 Patent, col.4, 11.53-54) (emphasis added). Thus, the Court finds that the '254 Patent's claims and written description show that the meaning of the phrase, "a vertical wall surface outwardly adjacent from said body," is "a vertical wall surface next to or near either end of said body."

2. Extrinsic Record
   a. Expert Reports
   This Court's construction of the phrase "a vertical wall surface outwardly adjacent from said body" aligns with Lemons' original opinion that the phrase means "the wall is next to or near one end of the housing." (R. 27, Genlyte Markman, Ex. C at 2.) Interestingly, in stating its proposed construction, Genlyte dropped the second part of the phrase, "one end of the housing," arguing that "outwardly adjacent" should simply mean "next to or near." (R. 27, Genlyte Markman at 20-22.)

   b. Dictionary Definitions
   Genlyte points to the Webster's Dictionary definition of "adjacent," which is "not distant: nearby." (R. 27, Genlyte Markman at 21, Ex. D at 56). As explained above, the Court agrees with this construction of "adjacent;" however, Genlyte omits any definition or discussion of "outwardly," which is a key modifier in this phrase. See also Free Motion, 423 F.3d at 1349 (upholding district court's construction of "adjacent" as meaning "near").

   B. "Oriented to direct light downwardly and outwardly"
   In their Joint Statement, the parties originally agreed that the phrase "oriented to direct light downwardly," as used twice in claim 1 and 3, was the only phrase in dispute. (R. 23, Joint Statement at 1-2.) In their briefs, however, the parties realized that the phrase, "oriented to direct light downwardly" (‘254 Patent, col.3, 11.40-41), was only used once in the claims, to describe the first light fixture, and a different phrase, "oriented to direct light downwardly and outwardly," was used to describe the second light fixture. (‘254 Patent, col.3, 11.43-44.) The parties dispute the construction of both of these phrases. Thus, the Court separately addresses construction of the phrase "oriented to direct light downwardly and outwardly" below.

1. Intrinsic Record
   Kenall asks the Court to construe the phrase "downwardly and outwardly" to mean a single intended directionality of light from the second light fixture, specifically, "the single direction of the focus of the light toward the wall." (R. 28, Kenall Reply at 14.) By contrast, Genlyte argues that the phrase "downwardly and outwardly" means "below and away from center (of the light fixture)." This Court agrees with Genlyte that the plain language of the claim shows that the light is oriented in more than one direction - both downwardly and outwardly, but this Court declines Genlyte's invitation to deviate from this Court's previous claim constructions.

   There is no support in the '254 Patent, the extrinsic evidence, or common sense for Kenall's argument that downwardly and outwardly means only one direction: outwardly, toward the wall. The words of the claim plainly state that the light has more than one intended directionality: downwardly and outwardly. To hold otherwise would render the terms "and outwardly" meaningless. In the first section of claim 1, the '254 Patent describes a light that is oriented only "downwardly," as opposed to both "downwardly and outwardly." (‘254 Patent, col.3, 11, 40-44.) Contrary to Kenall's claims, the fact that the second light fixture is directed to a vertical wall and reflected from there to a broad area under the body, does not mean that "all" of the light goes toward the vertical wall and no light travels directly downward. The phrase "oriented to direct light downwardly and outwardly" means "to set or arrange to direct more light in a downward and outward direction than in an upward direction."
2. Extrinsic Record

a. Expert Report

In his initial statement, Lemons broke apart the phrase "oriented to direct light downwardly and outwardly," defining "oriented to direct light downwardly" as "to set or arrange to direct illumination to an area below the product." (Lemons Statement at 2.) Lemons then defined "and outwardly to a vertical wall surface" as "also aims illumination towards the wall." (Id.) In his surreply statement, Lemons slightly altered this definition to: "(oriented to direct light) below and away from center [of fixture] (to a vertical wall surface)." (Lemons Surreply at 6.) Lemons explains that "downwardly and outwardly" does not mean the light is separated in two separate directions, but that light will also travel below the lighting system without first being reflected off the vertical wall. (R. 31, Genlyte Surreply at 3; Lemons Surreply at 2-6.) This explanation accords with this Court's construction.

b. Other extrinsic evidence

In its reply, Kenall attached a copy of technical information sheets for MD*4 lighting systems sold by Genlyte. (R. 28, Kenall Reply, Ex. 4). Not only is this evidence of very little probative value, but it does not show that the second light fixture directs all light toward a vertical wall. (R. 28, Kenall Reply at 13.)

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A. "Outwardly Angled Traction Surface"

<table>
<thead>
<tr>
<th>Claim Terms</th>
<th>Plaintiffs' Construction</th>
<th>Defendants' Construction</th>
</tr>
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<tbody>
<tr>
<td>&quot;outwardly angled traction surface&quot; (Claim 7)</td>
<td>&quot;a surface facing away from the axis AL that provides traction, having an outward angle relative to the axis AL that is predetermined&quot;</td>
<td>&quot;a surface facing away from the axis AL that provides traction, having an outward angle relative to the axis AL that is predetermined, such that the angle does not change in use&quot;</td>
</tr>
<tr>
<td>traction surface having an outward angulation (Claims 9, 19-23)</td>
<td></td>
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<tr>
<td>extending from said main body in a direction away from and at an angle to said axis AL&quot; (Claims 12-14, 17-18)</td>
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The '047 Patent describes the covered golf cleats as having a traction surface that is "outwardly angled." '047 Patent, col. 5 l.50; see also id. col.5, 11.66-67, col.7, 11.1, 14-15, 30-32, & col. 8, l.1. The parties agree as to the first part of the definition, that being, "a surface facing away from the axis AL that provides traction, having an outward angle relative to the axis AL," but disagree as to the second part respecting whether the angle can change in use.

1. The Parties' Contentions

Greenkeepers contend that the '047 Patent's intrinsic evidence indicates that the outward angle "is predetermined," which means that the angle is settled in advance and "maintain[s] the desired angle . . . throughout the life of the cleat," '047 Patent, col.2, 11. 12-14, not that the angle will not change in use. (Pls.' Resp. 2-3, Softspikes, Docket No. 70, Taylor Made, Docket No. 68.) Greenkeepers aver that the claim language and patent specification provide that the cleats are made of "resilient and flexible material," '047 Patent, col.6, l.28; see also id. col.1, 11.56-57, that is, polyurethane material that may have the hardness of a tire and may flex slightly under load. (Pls.' Opening 8-11, Softspikes, Docket No. 61, Taylor Made, Docket No. 56.)

Defendants respond that the patent specification shows that the cleats were designed to not flex. (Defs.' Opening 11-12, Softspikes, Docket No. 57.) 1 According to Defendants, Greenkeepers expressly disavowed claim coverage of flexible cleats during the patent's prosecution history, 2 by characterizing their cleats as having the "hardness of a bowling ball," and by distinguishing cleats covered by a prior Dassler patent that had outwardly angled teeth, on the basis that because such the angle of such teeth change under load, the teeth are not suitable for golf cleats because any bending may interfere with a
golfer's swing. (Defs.' Opening 12-14 (internal quotation marks omitted).) Defendants aver that Greenkeepers have not presented extrinsic evidence showing that virtually all golf cleats bend or flex under load. (Defs.' Reply 3-6, Softspikes, Docket No. 77, Taylor Made, Docket No. 79.)

1 Taylor Made, Callaway, and ECCO joined onto Softspikes's construction briefs. (Taylor Made, Docket Nos. 54, 67, & 69; see also Oral Arg. Tr. 71:25-72:8, Jan. 21, 2010.) At the January 21, 2010 oral argument, counsel for Defendants confirmed that Pride shares Softspikes's constructions and supporting arguments. (Oral Arg. Tr. 4:19-23.)

2 The "prosecution history" includes the prosecution of United States Patent Number 5,794,367 (filed Feb. 20, 1997), the first of '047 Patent inventor Francis C. Carroll's patent applications for outwardly angled golf cleats, United States Patent Number 6,530,162 (filed Feb. 28, 1998), a continuation-in-part application of the then-pending '0367 Patent, and of which the '047 Patent is a reissue. Carroll's prosecution efforts are attributed to Greenkeepers, to whom the patents have been assigned.

Greenkeepers reply that even the hardness of a bowling ball permits some flexing, and that they differentiated Dassler cleats on the basis that such cleats had an angle that changed greatly under load, not that the cleats' angle changed at all. (Pls.' Reply 3-6, Softspikes Docket No. 78, Taylor Made, Docket No. 89.)

2. Analysis

The primary question for the Court is whether Greenkeepers disclaimed coverage of cleats for which the outward angle changes under load. "The doctrine of prosecution disclaimer is well established in Supreme Court precedent, precluding patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution." Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1323 (Fed. Cir. 2003). "Where the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim congruent with the scope of the surrender." Id. at 1325. The Federal Circuit, however, requires statements to be "both so clear as to show reasonable and deliberateness" and "so unmistakable as to be unambiguous evidence of disclaimer" before applying the doctrine. Id. at 1325; see also id. at 1324-25 (describing and comparing cases involving an ambiguous claim disavowal with those involving a clear disavowal). Such a requirement aims "to balance the importance of public notice with the right of patentees to seek broad patent coverage." Id. at 1325.

The prosecution history indicates that Greenkeepers differentiated prior art Dassler cleats whose angle changed greatly under load: Greenkeepers stated that because the Dassler cleats' angle "change[s] because of the great flexibility thereof" and "varies on load application," they are not "adaptable to use in golf cleats," since bending, "minute that it may be, may interfere with the golfer's swing." (Defs.' Resp., Ex. J at SS_00006013, SS_00006015-16, Ex. I, at SS_00006033.) As a result, Greenkeepers "expressly disclaimed" coverage of golf cleats whose outward angle substantially changes under load, and prosecution disclaimer applies. Omega Eng'g, 334 F.3d at 1323.

On the other hand, the Court is not convinced that Plaintiff's disavowal is so broad as to cover golf cleats with an outward angle that does not change at all under load, because the patent language repeatedly emphasizes that the cleats are to be made of a "flexible" material, '047 Patent, col.6, 1:28; see also id. col.1, 11:56-57. Moreover, examination of a sample of the '047 Patent at the January 21, 2010 oral argument confirmed that the cleats can bend, however slightly, when pressure is applied. (Oral Arg. Tr. 44:7-22, Jan. 21, 2010, Softspikes, Docket No. 88, Taylor Made, Docket No. 83.) Rather than accepting either of the parties' proposed constructions, the Court, therefore, finds that the intrinsic evidence indicates that the outward angle referenced in the patent may permit some bending under load, albeit not significant bending, which Greenkeepers previously disclaimed. The parties, in their post-argument supplemental briefing, did not expressly object to the Court's construction. (Pls.' Supp. Br. 1-2, Softspikes, Docket No. 92, Taylor Made, Docket No. 86; Defs.' Supp. Br. 1-2, Softspikes, Docket No. 93, Taylor Made, Docket No. 87.) Accordingly, the Court construes "outwardly angled traction surface," "outer traction surface having an outward angulation," and "outer traction surface extending from said main body in a direction away from and at an angle to said axis AL," as "a surface facing away from the axis AL that provides traction, having an outward angle relative to the axis AL that is predetermined, such that it does not change significantly in use."
Next Avon asserts that the phrases "outwardly extending blade disposed on a first side of said barrier" in claim one and "a second and third spaced apart outwardly extending blade disposed on a second side of said barrier" in claim nine require a direct connection between the blade and the vertical barrier. Suncast disputes this interpretation, asserting that "outwardly extending" does not require a direct connection. Suncast does not provide an alternative definition of the terms. The claim language does not state "extending from" the barrier. Rather it states, more generally, "outwardly extending" and "disposed on a . . . side" of the barrier. "Dispose" means "to arrange" or "to place." Webster's, at 365. Thus, the blade is arranged on a side of the barrier, but this does not necessarily mean directly attached. The phrase "outwardly extending" does not imply a connection. "Extend" merely means "reach" or "to stretch out in distance." Id. at 439. So the phrase suggests that the blades project away from the barrier. But they do not necessarily originate from the barrier.

Avon looks to the figures in the patent, which show the blades as being in direct contact with the barrier, and the prosecution history, in which Suncast told the PTO that the "blades are integrated into a lower portion of the barrier," to support its interpretation. Def. Memo. Non-Infringement, Ex. I. However, Avon seeks to add an extraneous limitation that is not necessary for the claim language by requiring the blade to extend from the barrier. The prosecution history and the specification cannot be used to read limitations into a claim. See Intervet America, Inc., 887 F.2d at 1053. Accordingly, the claim language does not require the blade to extend directly from the barrier.

11. "outwardly facing surface"

The parties propose the following constructions for "outwardly facing surface," which is present in claims 24 and 36. Dkt. No. 114.

RTI
A surface that faces toward the outside of the syringe

BD
A surface that faces away from the center of the syringe and is parallel to the direction of the plunger motion

The parties present arguments similar to those presented in connection to the term "inwardly facing surface." For the same reasons as stated above in connection with inwardly facing surfaces, the Court finds that the claimed outwardly facing surfaces should not be limited to a direction parallel to the plunger motion.

Accordingly, this Court finds that the term "outwardly facing surface" means "a surface that faces away from the center of the syringe."

8. "Outwardly projecting edges," and "projecting edges." Consistent with the patents at issue 14 and their prosecution history, 15 the court construes "outwardly projecting edges" to mean "portions of the U-shaped, Y-shaped or W-shaped members that tip outwardly during expansion, resulting in projections on the outer surface of the expanded stent."

- Footnotes -

14 See, e.g., '154 patent, col. 2, ll. 46-51; col. 4, ll. 10-12; col. 6, ll. 17-26; col. 8, ll. 14-23.

15 D.I. 438 at 1537.
C. Over A Substantial Portion Of The Height/Over Substantially The Entire height Of A Pleat Leg 4

4 The parties have agreed that the phrase "substantial portion of the height," which appears in several claims of the '765 patent, shall have the same meaning that is ascribed to the phrase "substantially the entire height."

This Court finds that the term "over a substantial portion of the height" means largely but not necessarily wholly the height of a pleat leg including at least 50% of the leg height. This construction, which Pall has argued for, is intrinsically supported. Cuno's proposed construction - to include as much of the pleat height as is practically possible - is not supported intrinsically. Furthermore, the Court declines, once again, to impose limits on the claims that do not appear in the claim language or the other intrinsic evidence other than preferred embodiments.

The claims and the specification of the asserted patents support a claim construction that "over a substantial portion of the height" means largely but not necessarily wholly the height of the filter including at least 50% of the height. The relevant part of claims 1 and 54 of the '047 patent provide that there is intimate contact "over substantially the entire height of each leg and over a continuous region extending for at least approximately 50% of the" length of the filter element. '047 patent, col. 26, lines 26-28; '047 patent, col. 30, lines 14-16. Claim 92 of the '047 patent states that there is intimate contact "over substantially the entire height of each leg and over a continuous region extending for at least approximately 95% of the longitudinal length of the pleated filter element." '047 patent, col. 32, lines 45-48. Similarly, claims 1, 8, and 40-41 of the '765 patent contain almost identical language to the language in claims 1 and 54 of the '047 patent, and claim 39 of the '765 patent tracks the language in claim 92 of the '765 patent.

Cuno argues that, although "substantially" and "at least 50%" appear in the same claim, "at least 50%" modifies the length of the filter element and not the pleat height. (Def.'s Opp'n 28.) While the Court takes note of Cuno's point, the specification, albeit in the description of preferred embodiments, seems to use the terms substantial, significant, entire, portion, and at least 50% interchangeably when describing the pleat heights and the axial length of the filter element. See, e.g., '047 patent, col. 4, lines 5-10 ("the opposing inner surfaces 11d of the legs 11a of each pleat 11 are in intimate contact with one another over substantially the entire height h of the legs extending for a significant portion of the axial length of the filter length.") (emphasis added). Moreover, there is nothing in the intrinsic evidence that supports Cuno's proposed construction - as much as practically possible.

Cuno's argument that the prosecution history does not support Pall's position is untenable. The examiner stated that "over substantially the entire height of the legs of the pleats and a continuous region existing for at least 50% of the axial length of the element, the pleats are in intimate contact." (Korniczky Decl., Ex. 5 p. 188.) Accordingly, the prosecution history supports Pall's position and this Court's finding. To support a finding that the intended meaning was as much as possible, the
examiner's writings would have been different. For instance, if the examiner was concerned that the claim be limited to "as much as possible," there would have been a more careful use of the terms.

Finally, this Court considered this language when it construed the term "intimate contact" in the 1997 Action. The Court held that the

meaning of the term 'intimate contact' and the examples set forth in the specifications require a layering of drainage and filter materials and laid-over pleating such that contact between the adjacent pleat legs would be substantially continuous; that is, over at least 50 percent of the axial length of the filter element.

Pall Corp. v. Cuno Inc., No. 95-CV-7599, 2001 U.S. Dist. LEXIS 16778, at *24-45 (E.D.N.Y. Sept. 7, 2001) ("Pall I"). Based on the intrinsic evidence, the Court declines to assign any other meaning to "over substantially the entire height" than as set forth in this Order. That is, "over substantially the entire height" means largely but not necessarily wholly the height of a pleat leg, including at least 50% of the height.

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

5 To be clear, the Court did not construe the language "over substantially the entire height" in the 1997 Action, but it did consider the language and use it in its construction of intimate contact.

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - -

2825

overall size of the binder

Plaintiff argues that the term also requires no definition. Defendants propose that the term be defined as: "overall longitudinal length including shield and levers."

The language of the Claim relates the length of the paper to the overall size of the binder; therefore, Defendants are on the right track. The size of the binder as used in this Claim relates to its length and the length of a sheet of paper. Accordingly, the Court construes the term "overall size of the binder" as:

The overall size of the binder means the overall length of the binder.

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B. "over-center spring"

The parties also request the Court to construe the meaning of "over-center spring". As Claim 1 explains, the over-center spring is "coupled to the activating lever and bias[es] it to a first position in which the arm moves the actuator pawl to the automatic locking position and also bias[es] it to a second position out of engagement with the actuator pawl." '912 patent, col. 8, ll. 29-33.

The parties agree "over-center spring" is not "a newly coined term with no definite meaning," D.I. 91 at 19, but rather is "a particular type of spring the characteristics of which are recognized by those skilled in the art," D.I. 94 at 9. Indeed, the proposed definitions to which the parties have stipulated are not far apart. Takata proposes an over-center spring is "a spring that biases a member toward a first stable position under a first set of mechanical conditions and toward a second stable position under a second set of mechanical conditions, with the member passing through an intermediate meta-stable position." D.I. 98, P 3(b). Defendants urge that an over-center spring is "[a] spring that biases a member in one direction until the member passes a transition point, and then biases the member in another direction." D.I. 98, P 3(c). Thus, the primary dispute between Takata and Defendants is whether the over-center spring biases a member toward a position or in a
direction. 24

Although the competing definitions also differ regarding the language of the "transition point" or the "meta-stable" position of the member, the language of each definition encompasses the same notion and the difference is not significant.

Interestingly, although Takata uses "intermediate" in its proposed definition, it is not a point of dispute between the parties here.

Both definitions are consistent with the usage of the term "over-center" in technical treatises. See Mechanical Design and Systems Handbook § 4.2.9, at 4.7 (Harold A. Rothbart, ed., 2d ed. 1985); Mechanisms & Mechanical Devises Sourcebook 214-17 (Nicholas P. Chironis, ed. 1991). Because the common usage of the term is unclear with regard to whether an over-center device biases a member in a direction or to a position, the Court turns to language of the claim itself. The claim, which is of primary importance in claim construction, Smiths Indus., 1999 WL 498219, at *9; Johnson Worldwide, 175 F.3d at 989-90, describes the action of the over-center spring in the patented invention as follows: "an over-center spring coupled to the activating lever and biasing it to a first position in which the arm moves the actuator pawl to the automatic locking position and also biasing it to a second position out of engagement with the actuator pawl . . . " 912 patent, col. 8, ll. 30-33 (emphases added). In writing the claim, the inventor envisioned the over-center spring not in terms of direction, but in terms of position. Indeed, as described in the claim, the activating lever is either engaged with the actuator pawl or out of engagement with the actuator pawl: the importance of the motion of the activating lever described in the claim is the position at which it arrives. Nothing in the claim language suggests that the bias of the activating lever toward either the first or second position occurs in a particular direction. It follows the claim itself indicates that the inventor used "over-center spring" to mean "a spring that biases a member [the activating lever] to a first stable position under a first set of mechanical conditions and to a second stable position under a second set of mechanical conditions, with the member passing through an intermediate meta-stable position."

The discussion of the over-center spring in the specification confirms this interpretation of the claim language. For example, the over-center spring "holds the [activating] lever in the position . . . ." 912 patent, col. 6, ll. 30-31 (reference number omitted). While the definition of over-center spring urged by Defendants encompasses an over-center spring which biases the activating lever in a direction, connoting motion, Defendants' proposed construction does not encompass an over-center spring which holds the activating lever. On the other hand, defining an over-center spring as a spring that biases a member to a position does connote a spring which can hold the activating lever.

One portion of the specification does describe the bias of the over-center spring in directional terms. In describing the way in which the preferred embodiment achieves engagement between the activating lever and the actuator pawl, the specification states, "The bias of the over-center spring on the lever is transferred to counter-clockwise . . . ." 912 patent, col. 7, ll. 6-8. This use of direction does not, however, contradict the Court's conclusions. First, as a general rule, the preferred embodiment cannot serve to limit the terms of a claim. Karlin Technology Inc., 177 F.3d at 973; Laitram Corp. v. NEC Corp., 163 F.3d at 1348; Enercon v. International Trade Commission, 151 F.3d at 1384; CVI/Beta, 112 F.3d at 1158. To import this configuration of the preferred embodiment, which has an over-center spring which biases to the first and second positions in two different directions, would be an impermissible importation of the preferred embodiment into the claim. Secondly, even if the over-center spring described in the preferred embodiment does bias the activating lever to each position in a direction, interpreting "over-center spring" based only on this statement would ignore those portions of the specification which describe the over-center spring as holding the activating lever.

The Court adopts the "construction that stays true to the claim language and most naturally aligns with the patent's description of the invention," Renishaw, 158 F.3d at 1250, and construes "over-center spring" to mean "a spring that biases a member toward a first stable position under a first set of mechanical conditions and toward a second stable position under a second set of mechanical conditions, with the member passing through an intermediate meta-stable position."
4. "Overhang" or "Overhang Portion"

The parties dispute the meaning of the term "overhang" and the following related phrases: "defines an overhang portion that extends beyond an edge of said backer" (claim 1 of '018 Patent); "overhang portion" (claims 1, 3, and 18 of '018 Patent and claims 6, 7, 8, 12, and 22 of '493 Patent); and "defines an overhang portion" (claims 6 and 17 of '493 Patent). Specifically, Defendants argue that the overhang portion must be long enough to fold over the backer or serve to attach the facer to a post and proposes that the term "overhang portion" be defined as "a segment of the facer that is long enough to fold over the backer." Plaintiff contends that the overhang portion must simply extend "beyond an edge of the backer." Defendants appear concerned that under Plaintiff's construction, infringement would exist in a panel where the backer and facer were designed to be the same size but where manufacturing issues resulted in a de minimis overhang.

The patents at issue in this action use the term "overhang portion" in a number of claims that do specify whether the "overhang portion" is to be folded over the backer or folded away from the backer so that it may be used to attach the liner panel to a vertical post. (See, e.g., claim 4 of '018 Patent (claiming overhang portion that wraps around the edge surface so that the facer covers at least a portion of the back side of the backer); claim 24 of '018 Patent (claiming overhang portion that folds out to form an edge surface for attaching the liner panel to a vertical post).) In the claims central to this dispute, however, there is no indication of how far the overhang portion extends beyond the edge of the backer. The specification states that "more or less than" one inch of facer can be left to overhang the backer. (‘018 Patent, col. 6:22-24.) Defendants contend that the overhang portion must be long enough to serve a purpose, such as attaching the facer to a post or folding over the edge of the backer to prevent fraying of the facer.

There is no support in the claim language or the specification for Defendants' proposed limitation on the term "overhang portion"; nothing requires that it be long enough to fold over the backer. Therefore, the Court is thus inclined to adopt Plaintiff's proposed definition. The Court notes, however, that the claim language and the specification suggest that the overhang portion must be long enough to serve some purpose. Instead of simply specifying that a facer extends beyond the edge of the backer, the claims define "overhang portion" as a specific structure. The specification recites several functions for the overhang portion. For example, the overhang portion may fold over the backer to protect against fraying-whether or not it wraps around to the backer's opposite side (id. col. 7:5-12), or it may be used to attach the liner panel to a vertical post (id. col. 7:22-27). Accordingly, it is clear to the Court that a de minimis extension of the facer beyond the edge of the backer would not be an "overhang portion." For this reason, the Court construes "overhang portion" to mean "a portion of the facer that extends more than a trifling amount beyond an edge of the backer."

As to the '122 patent, "overlapping edges" means two edges of a continuous piece of copper foil aligned to completely encircle a layer of dielectric material where there is no discontinuity of copper along the equatorial direction or circumferenc of the copper, and there is only discontinuity of copper in the axial direction of the cable. See Column 3, lines 5-12. The final configuration being one that the beginning edge of the continuous piece of copper is completely covered by the body of the copper on top and the bottom of the beginning edge of copper is resting on the dielectric material, while the terminating edge of the copper is covered on its top by a metallic braid and the bottom of the terminating edge of copper is resting upon the continuous piece of copper. See Figures 2, 3.

D. "Overlying" ('715 patent, claims 1 and 23; '419 patent, claims 1 and 11)

The parties' contentions regarding this claim language mirror their arguments over "on and in contact with" above. However, "overlying" is used in four different claims in two patents and in relation to at least three different pairings of materials: aluminum is overlying polysilicon in claims 1 and 23 of the '715 patent and claim 11 of the '419 patent, while a
metallization layer is overlying an insulating layer in claim 1 of the '419 patent and polysilicon is overlying a semiconductor substrate in claim 1 of the '715 patent. Although APT proposes only the vague sentence described above by way of addendum to Ixys' proffered construction, its brief seems to suggest that this court read into the claim the requirement that "overlying" require electrical contact when used to reference certain pairings of materials.

Not only does the claim language itself not hint at the necessity of reading in such limitations, the specifications provide no further support for APT's assertions. The sections APT cites do not themselves require such connection. See '715 patent, 5:66-6:11. Even if the specifications had indicated the necessity of electrical contact between polysilicon and the first metallization layer, "absent a clear disclaimer of particular subject matter, the fact that the inventor anticipated that the invention may be used in a particular manner does not limit the scope to that narrow context." Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1301 (Fed. Cir. 2003).

The court construes this claim language (in all locations) to mean: "In a layered device formed on a substrate, a relationship between first and second layers wherein the second layer is above or over the first layer."

--- Footnotes ---
27 Motorola's proposed construction is: "Molding by transferring or injecting an encapsulating material under pressure into a mold cavity covering one side of a substrate."

--- End Footnotes ---

C. "overprinting layer"

The specification does not expressly define the term "overprinting layer." However, the language of the specification suggests that an overprinting layer is a design that is printed over an area that has previously been printed. This construction is supported by several dictionaries specific to the field of graphic arts and printing, which define "overprinting" as "printing that is done on top of a previously printed area," The GATF Encyclopedia of Graphic Communications 567 (1998) ("GATF Encyclopedia"), and "double printing; printing over an area that already has been printed," Pocket Pal: A Graphic Arts Production Handbook 199 (16th ed. 1995). Additionally, even the Defendant's expert witness stated that "[o]ne of ordinary skill in the art of security (lottery) printing would understand an overprint layer to be a design printed over the scratch-off layer," and that "[i]n the lottery industry, the term overprint' or overprint layer' is the design printed on the scratch off layer." (Summary of Expert Opinion of Gordon E. Pickett PP 59, 69.) Thus, the meaning of the term "overprinting layer" to a person of ordinary skill in the relevant art is "a design printed on top of a previously printed area." In the context of the claims at issue, the previously printed area is the scratch-off layer.

However, the Defendant contends that the specification refers to a particular type of overprinting layer. It argues that the patentee acted as his own lexicographer by expressly limiting the ordinary meaning of overprinting layer in the claim itself. For example, claim 1(c) of the 647 patent states:
applying an overprinting layer over the scratch-off layer, said overprinting layer comprising an image obtained from a design in which at least two colors in the design have been separated into screened half tone images of each color and then said images are superimposed in separate printing steps to form said overprinting layer.

(‘647 patent, claim 1(c)) (emphasis added). Similar language appears in the specification. (See 647 patent, col. 3, 11. 50-54; 504 patent, col. 3, 11. 32-36.) The Defendant argues that the claim and specification language clearly give a special meaning to overprinting layer. The Court disagrees.

The Defendant's proposed definition of "overprinting layer" is preceded by the term "comprising." Comprising is a term of art used in patent claims that is open-ended, meaning that the named elements are essential but that other unrecited elements may be added and still fall within the scope of the claim. Mars, Inc., 377 F.3d at 1375-76 (citing Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501 (Fed. Cir. 1997)); Manual of Patent Examining Procedure § 2111.03 (8th ed., rev. 1 2003)). "A drafter uses the term comprising' to mean I claim at least what follows and potentially more." CollegeNet, Inc. v. ApplyYourself, Inc., 418 F.3d 1225, 1235 (Fed. Cir. 2005) (quoting Vehicular Techs. Corp. v. Titan Wheel Int'l, Inc., 212 F.3d 1377, 1383-84 (Fed. Cir. 2000)). Therefore, by using the term comprising in the claim, the patentee did not clearly and unambiguously limit or redefine "overprinting layer." See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Although the cited language still has the practical effect of limiting the scope of the invention to require a particular type of overprinting layer that includes at least the recited elements, the language does not redefine the term itself. Moreover, claim terms are to be construed in relation to the context in which they appear. Phillips, 415 F.3d at 1315. The fact that the claim describes the specific elements that must be part of the particular overprinting layer indicates that the patentee did not contemplate that "overprinting layer" inherently includes those limitations. See id. Thus, consistent with the ordinary meaning of the term, "overprinting layer" means "a design printed on top of the scratch-off layer."

F. Term 9: "overrunning clutch means"

The Court construes the term "overrunning clutch means" in claim 24 of the ’325 patent and claim 9 of the ’664 patent to be a means-plus-function limitation under 35 U.S.C. § 112 P 6. The claimed function and corresponding structure are those identified above in connection with disputed Term 8.

The use of the word "means" in the term "overrunning clutch means" raises a presumption that this is a means-plus-function limitation. Micro Chem., 194 F.3d at 1257. The presumption can be overcome "if the claim itself recites sufficient structure, material, or acts to perform the claimed function." Id.

Toro argues that the presumption is overcome because "overrunning clutch" is a sufficiently definite structure. Toro Opening Br. at 37. The Court disagrees. As noted above, the adjective "overrunning" describes only function, not structure. And the noun "clutch" denotes a large class of devices for creating an interruptible connection between a driving element and something being driven. See generally BorgWarner, Inc. v. New Venture Gear, Inc., 237 F. Supp. 2d 919 (N.D. Ill. 2002) (discussing various types of clutches in construing patent claims related to an all-wheel-drive system). Thus the term "overrunning clutch" does not describe sufficient structure to take the term "overrunning clutch means" outside of § 112, P 6.

Claim 27:

1. "an oversized tang portion of the blade that is sized to extend through the opening in the handle when the blade is stored in the handle so that the oversized tang portion is exposed for manipulation from the back of the handle"

Plaintiff proposes

the oversized tang portion has a size such that, when the blade is closed, the oversized tang portion extends only out of the back of the handle opposite the side of the blade receiving opening. This permits a user's finger to press on the oversized
tang portion to move the blade from the closed position. The oversized tang portion does not extend out of the pivot end of
the handle opposite the blade tip end when the blade is in the closed position.

Defendant contends that the term is clear on its face.

The court finds that the term is clear on its face and does not require construction.

4. "Overturned Rim Extending From the Periphery of the Side Wall"

a. Construction

This limitation is present only in the ‘500 patent. The construction favored by Hallmark is "a rim which is curved from the
periphery of the sidewall and which has an edge portion extending downward for a length sufficient to contain compressed
pleats and provides increased rigidity to the claimed container." This is based on a modification made during prosecution, in
which the PTO required amendment from an "outwardly extending rim" to an "overturned rim extending from the periphery
of the sidewall." PX-11. pp. 71, 73-74. Moreover, the specification describes the "overturned rim" as being "found to
particularly enhance the rigidity of the container structure." DX-2. col. 3, lines 12-14. In addition, the specification refers to
the rim having "a downturned edge portion, compressed and densified" and the rim being seen to "curve over and down
about a smaller radius to form the overturned rim." DX-2, col. 3, lines 12-12; DX-2, col. 4, lines 64-68.

James River favors the meaning of "a rim that is a termination and outward extension of the sidewall and that serves to add
geometric stability to the plate and to provide an area for grasping the plate."

Any uncertainty about the natural meaning of "overturned rim" is eliminated by the specification. The rim of the invention
clearly must turn over, i.e. curve downward. Moreover, the specification indicates the rim must curve about a smaller radius.
One can easily imagine a rim that would remain flat and not curve down, or angle upward at a shallower angle than the side
wall. These would not be overturned rims. Moreover, the specification clearly indicates that the overturned rim's
downturned edge portion must be compressed and densified so as to add strength and rigidity.

6. Construction of "Oxidation Index"

Howmedica argues that the Court should construe this term to mean "a relative measurement of the amount of oxidized
material present in the UHMWPE." Defendants propose that oxidation index should be read to mean "the area of the IR
absorption peaks in the frequency range of between 1660 and 1800/cm divided by the area of the 1463/cm peak."

"020 Patent, claim 3: "the polyethylene has an FTIR ... oxidation index which does not increase with oven aging in
air . . ."

"020 Patent, claims 6, 10: "polyethylene having ... an oxidation index which does not increase during oven aging in air"

"020 Patent, claim 7: "polyethylene having ... a non-increasing FTIR oxidation index during oven aging in air"

"020 Patent, claim 11: "polyethylene ... irradiated and annealed ... for a sufficient time to have an non-increasing FTIR
oxidation index of .01 during oven aging in air"

"020 Patent, claim 12: "polyethylene ... irradiated and annealed ... for a sufficient time to have an non-increasing FTIR
oxidation index of .01 or less during oven aging in air"

The meaning of this term is impossible to derive from the language of the claim itself, nor is the ordinary meaning of this
In contrast, to support their construction, defendants point to the sole occasion in which the term "oxidation index" appears in the '020 Patent specification. The term appears in the context of an involved description of how the oxidation index for a particular set of materials was obtained:

Two sets of 1-mm-thick UHMWPE sheets prepared by Methods A through D above were oven aged in air at 80 [degree] C for 11 and 23 days respectively. After these sheets were cooled in room temperature, a thin film specimen of about 100 microns in thickness was cut from each of the 1-mm-thick aged UHMWPE sheets and placed in an IR window for a standard FTIR (A Nicolet 710 FTIR system was used) transmission run. A total of 32 spectra (scans) was collected and averaged. To determine the extent of oxidation, the IR absorption peaks in the frequency range of between 1660 and 1800 cm<-1>, corresponding to carbonyl (C--O) functional groups, were integrated for the peak area. The peak area is proportional to the amount of oxidized UHMWPE in the specimen. To correct for difference in specimen thickness, the integrated peak area was then normalized to the specimen thickness, by dividing by the area of the 1463 cm<-1> (methyl) peak which is proportional to the specimen thickness. The obtained ratio was defined as oxidation index.

'020 Patent 7:63-8:13 (emphasis added). This portion of the specification expressly defines the term "oxidation index" to mean a ratio which is derived from the spectroscopic measurements described by the specification. When the specification gives a special definition to a term, that definition trumps the ordinary meaning of that term. See Phillips, 415 F.3d at 1316; CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002); Markman, 52 F.3d at 979-80. Accordingly, the Court adopts the definition of "oxidation index" expressed by the specification.

To the extent that defendants' proposed definition accurately conveys the process for obtaining an oxidation index for UHMWPE material, the Court adopts that definition. If the parties further contest the construction of this term, additional briefing and/or arguments may be required.

B. Package

The parties' dispute centers on the meaning of the word "package." Webster's defines package as: "(1) the act or process of packing; (2) (a) a small or moderate-sized pack (b) a commodity or a unit of a product uniformly wrapped or sealed (c) a preassembled unit; (3) a covering, wrapper or container; (4) something that suggests a package as (a) package deal … ." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 845 (1990) [hereinafter WEBSTER'S]. Blank proposes that "package" should be construed to mean "an independently created bundle or container into or onto which items are subsequently encased or attached." (Def.'s Markman Brief at 12.) Fiala would interpret "package" to mean "a small or moderate-sized pack, something that suggests a package, a preassembled unit, for merchandising and display of the product prior to purchase." (Pl.'s Markman Brief at 20.) Either construction is consistent with the dictionary definition.

Considering first the language of the claim itself, the court must eliminate part of Fiala's proposed definition. "Package" cannot mean a "preassembled unit," because the claim language makes clear that the package is something distinct from the first card. Preassembled unit, in the context of the patent, means a unit consisting of the first card and the package together. Thus, it would make no sense to read the claim language "in combination a first card … and a [preassembled unit]." The claim language does not further require, however, that either party's construction be accepted or rejected.

The specification repeatedly refers to the package holding a card. See e.g., U.S. Patent No. 5,918,909, Column 4;5, 5:6-7, 9:65-66. The specification also refers at several points to cards "in" or "within" a package. See id. at Column 20:37, 49, 63. The court notes that these stated functions of a package comport with the ordinary and customary meaning of "package." The specification, however, indicates that the "independently created" part of Blank's proposed definition should be
rejected. The specification states that "the package can be separately manufactured," thus implying that the package could also be manufactured simultaneously with the product itself. Id. at Column 5:11-12 (emphasis added). Nothing in the ordinary and customary meaning of "package" requires that a package be created independently of the product or that the product be inserted or attached to it after creation. Those aspects of Blank's definition, therefore, must be rejected.

The court also has reviewed the file wrapper for this patent. Nothing in the prosecution history, however, aids in interpreting the meaning of package.

Having considered the claim language, specification and prosecution history, the court construes "package" to mean: a covering, wrapper or container capable of holding a product for the purposes of merchandising and display prior to purchase. This definition is consistent with the ordinary and customary meaning of the word. The evidence before the court also indicates that a person of ordinary skill in the art would have so defined "package" at the time the patent was prosecuted.

Webster's defines package as: "(1) the act or process of packing; (2) (a) a small or moderate-sized pack (b) a commodity or a unit of a product uniformly wrapped or sealed (c) a preassembled unit; (3) a covering, wrapper or container; (4) something that suggests a package as (a) package deal … ". WEBSTER'S at 889. Plaintiff seeks to define package as "a small or moderate-sized pack, something that suggests a package, a preassembled unit, for merchandising and display of the product prior to purchase." (Pl. Brief at 21.) SVS asks the court to define package as "a preassembled unit ready for use, unaltered from the time of manufacture." (Def. Brief at 7.)

Considering first the language of the claim itself, the court must eliminate part of each party's proposed definition. "Package" cannot mean a "preassembled unit," because the claim language requires that the package be something distinct from the first card. Preassembled unit, in the context of the patent, means a unit consisting of the first card and the package together. Thus, it would make no sense to read the claim language "in combination a first card … and a [first card and package]."

The remaining issue is whether the claim language can be construed so that the "package" must be "unaltered from the time of manufacture." It is well established that "the prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Southwall Techs. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995); see also Spectrum Intl, Inc. v. Sterilite Corp., 164 F.3d 1372, 1378 (Fed. Cir. 1998) ("Explicit statements made by a patent applicant during prosecution to distinguish a claimed invention over prior art may serve to narrow the scope of the claim"). SVS argues that Fiala offered this narrower definition to the patent examiner as a basis for distinguishing the patent from prior art. (Def. Resp. at 1-2.) SVS relies on the portion of the prosecution history in which the plaintiff states:

" … the lateral displacement of the data-encoded strip from the package enables the data-encoded strip to be read by an appropriate "point of purchase" reader so that the card can be "activated" without removing the card from the package and without tampering with the package. By lateral displacement of the data-encoded strip from the package, the activation of the card does not harm or alter the package during activation.

In contrast, the magnetic strip of the card disclosed in the Hill reference cannot be read by a standard "point of purchase" (e.g., at the cash register) reading device without removing the card from the package, precisely because the Hill reference does not disclose laterally displacing the magnetic strip remote from the package in a direction substantially parallel to the plane of the card.

(Id. at 2 (quoting Prelim. Am. Prior to First Exam. at 8)(emphasis in original.)) SVS argues that the magnetic strip disclosed in the Hill reference (the prior art) could only be activated by opening its packaging, whereas the invention claimed in the '909 patent is distinguished by its ability to be activated without opening its package. SVS claims that this distinction was necessary to procure the '909 patent, and that it is therefore a definitional element of the invention which Fiala cannot now disclaim.
There are two flaws in this argument. The first is the misidentification of precisely what was claimed and disclaimed to distinguish the '909 patent from the Hill reference. The distinguishing feature of the invention claimed in the '909 patent was "the lateral displacement of the data-encoded strip from the package." In other words, the magnetic strip of the card claimed in the Hill reference did not "stick out" in a direction parallel to its packaging panel; the magnetic strip of the card at issue here does stick out in such a way from its packaging. It is clear from a review of the patent documents that this spatial feature is what distinguished the '909 patent from the prior art. The specific language added to gain acceptance for the '909 patent refers to the packaging having an "outer perimeter" and requires that "at least a portion of the data-encoded strip is exposed and displaced externally remote from a portion of said outer perimeter . . ." (Pl. Brief Ex. B, '909 Prosecution History at FH 186 (Applicant's Remarks Supporting Consideration of Amendment, filed Jan. 12, 1999.))

No part of the magnetic strip of the card disclosed in the Hill and McIntire references, on the other hand, was "displaced externally remote from a portion of the outer perimeter of the panel." (Id.) The added language refers only to the arrangement of the card in relation to its packaging. One functional advantage of such a spatial arrangement is, of course, that the magnetic strip disclosed in the '909 patent can be activated without removing the card from its packaging. There is no reason, however, that this functional advantage should be read into the requirements of the patent, when the amended claim language refers only to the physical structure of the invention. See Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1301 (Fed. Cir. 2003) ("the fact that the inventor anticipated that the invention may be used in a particular manner does not limit the scope to that narrow context").

The second flaw is that, even if the patent required that the card be activated without altering the package, it is not clear why such a requirement should be read specifically into the word "package." "Package" was not one of the terms amended to distinguish the claimed invention from the prior art. Furthermore, an ordinary reading of the defendant's proposed definition suggests that the phrase "unaltered from the time of manufacture" refers to a particular kind or class of "package," and is not meant to expand or clarify the meaning of the term itself. The defendant has offered similar constructions -- suggesting that the package must be intact at the time the card is activated -- to at least two other claim terms, each of which refers more specifically to the relationship between the card and the packaging panel. (See Def. Brief at 8, 11.) These suggestions demonstrate further that such a construction is not easily attached to the word "package" itself.

Nothing in the ordinary and customary meaning of the word requires that a package be "unaltered from the time of manufacture." Nothing else in the specification or prosecution history aids in further interpreting the meaning of the term. Considering the '909 patent previously, this court construed "package" to mean: a covering, wrapper or container capable of holding a product for the purposes of merchandising and display prior to purchase. See Barry Fiala, Inc. v. Arthur Blank & Co., No. 02-2282 Ma, 2004 U.S. Dist. LEXIS 28624 (August 24, 2004). This definition is consistent with the ordinary and customary meaning of the word. The evidence before the court also indicates that a person of ordinary skill in the art would have so defined "package" at the time the patent was prosecuted. The court accordingly construes "package" in this case to mean: "a covering, wrapper, or container capable of holding a product for the purposes of merchandising and display prior to purchase."
single package, and statements made by Destron/IDI on appeal to the Federal Circuit in the Infopet case.

In the "Background of the Invention" section of the specification, the packaging is described as follows:

In particular, it is an object of one aspect of the invention to provide a conveniently prepackaged, sterile cannula and identification transponder combination, such that the individual implanting the transponders into animal can be provided with all the equipment needed in a single sterile package which is used on a one-time basis; the cannula then being simply disposed of. In this way, sterility is ensured and operator convenience is optimized.

'129 patent, col. 3:48-56. In the "Summary of the Invention" section, the specification states "[the transponder] may be supplied together with a disposable cannula for convenient syringe implantation into an animal." Id. at col. 4:16-18. The "preferred packaging" of the invention is depicted in Figure 2, and is described as follows:

In order to reduce the expense of implanting transponders, operator convenience should be maximized, without compromising the goals of sterility and minimization of trauma to the animal. Figure 2 shows a combination of a sterile cannula 30 with a sterilizable transponder 32 according to the invention, and as discussed in detail below, supplied already located within the tubular portion of the cannula. As shown, the cannula 30 with the transponder 32 packaged therein can both be supplied together in a sterile package 34; this clearly will maximize the convenience of the operator, who needs merely to open the package 34, attach the ferrule of the cannula to a syringe, inject the transponder and throw the cannula away.

Id. at col. 6:36-49.

The preferred packaging of the invention depicted in Figure 2 accomplishes the primary packaging goals of sterility, convenience, and low-cost. Even though separate packaging would detract from the primary packaging goals, the specification reveals, by its use of words such as "can" and "may," that the inventors contemplated packaging in which the cannula and transponder would not be packaged together in a single package. Id. at cols. 4:16, 6:44. However, separate packaging is not contemplated by claim 6, which claims "said transponder and said cannula being packaged together in sterile packaging means." Id. at col. 14:14-16. The claim language as well as the teaching of the specification show that claim 6 is directed toward a combination in which a cannula and transponder are packaged together in a single sterile package. See Phillips, 415 F.3d at 1323-24 (describing the sometimes "difficult task" of determining when the embodiments define the outer limits of the claim term or are merely exemplary in nature, and stating that "the manner in which the patentee uses a term within the specification and claims usually will make the distinction apparent."). The term "packaged together in sterile packaging means" is construed to mean "packaged as a combination in a single sterile package."

The parties also dispute the construction of the term "packaging" and "packaged." Michael Foods contends that the terms means placed or placing in a container, (Michael Foods' Initial Markman Br. at 43), while Sunny Fresh argues that the term means aseptically packaged or packaging (Sunny Fresh's Resp. at 25-26).

Some claims terms use "aseptically packaged," (see,e.g., Kempf Aff., Ex. 1, Col. 15, l. 65; Claim 4, Col. 16, l. 21), and some use just "packaged," (see, e.g., Id., Col. 16, l. 3; Col. 16, l. 33). Interpreting the terms identically erroneously would read the additional limitation of "aseptic" into the claim element "packaging." See Texas Co. v. Globe Oil & Ref. Co., 112 F. Supp. 455, 467 (7th Cir. 1955)("the presence of an express limitation in one claim negatives an intent similarly to limit by implication a claim in which the limitation is not expressed...."). It also would render the term "aseptic" redundant and thus the phrase "aseptic packaging" nonsensical. 16 See, e.g., Binargo Western Sales v. Helena Chemical Co., 160 F. Supp. 2d 1112, 2001 WL 980961 (E.D. Cal. 2001)(stating that a patent claim should not be construed to render language in patent meaningless). Thus, the court construes the terms "packaging" and "packaged" to mean placed or placing in a container.
Based upon Sunny Fresh's interpretation of "packaging" as "aseptic packaging," the term "aseptic packaging" when written in the claim literally would be interpreted to mean "aseptic packaging packaging." The court cannot adopt such a meaningless interpretation of the claim language. See Biagro Western Sales v. Helena Chemical Co., 160 F. Supp. 2d 1112, 2001 WL 980961 (E.D. Cal. 2001).

--- End Footnotes ---

2840

1. Pad assembly

- Plaintiff's proposed construction: One or more pads attached to the helmet.
- Defendant's proposed construction: Two or more ear flap or jaw pads attached or releaseably secured together.

The parties dispute 1) what pads are included in a pad assembly and 2) whether the individual pads of the pad assembly are secured together or merely secured to the inside of the helmet. Claims 1 and 20 claim "a pad assembly attached to each ear flap, each pad assembly having an ear flap pad and a jaw pad." However, claim 25 merely claims "a pad assembly attached to an inner surface of the shell." Although the specification does not mention "pad assembly," it teaches that a "shock absorbing liner" preferably "is releaseably connected to the inner wall surface" and "generally includes a plurality of resilient members." '376 patent, col. 10, lns. 51-55 and 61-66. The specification further teaches that although a "resilient pad member" could be "integral with" all of the other pads, it is preferable for resilient pad members to be releaseably attached to each other, forming a shock absorbing liner. Id., col. 11, lns. 9-18.

Neither the claims language nor the specification supports defendant's construction that a pad assembly must always include both an ear flap pad and a jaw pad and that the individual pads have to be secured together or secured "releaseably" to a liner in every instance. These appear to be only embodiments.

Defendant argues that plaintiff used the term pad assembly in prosecuting the patent to refer to jaw and ear flap pads, that although claims 25-29 do not use the terms "ear flap pads" and "jaw pads," plaintiff added these claims late in the prosecution and that because plaintiff represented that claims 25-29 did not introduce new matter, the use of the term "pad assembly" in these claims must include ear flap and jaw pads, as specified in the other claims. This is not a persuasive argument. Nothing in the patent prosecution history shows that the examiner required a pad assembly to be limited to ear and jaw pads. Further, any statements plaintiff made about the pad assembly being limited to those areas was directed to a particular claim (number 34 at that time). Although the later-added claim 25 is broader, the examiner apparently had no problem issuing a notice of acceptability following its addition to the patent.

I conclude that the term "pad assembly" as used in claims 1-6, 9-19 and 20-28 of the '376 patent means one or more pads.

2841

1. Painted surface of a vehicle

--- Footnotes ---

1 This appears to be a typo. The word in the amended claims, which were allowed without amendment by the Examiner, was "comprising."

--- End Footnotes ---

The term "painted surface of a vehicle" appears in claim 1 and claim 12. In the joint claims construction statement and in the papers filed in connection with the hearing on claims construction, Chip-Mender argues that "painted surface of a
vehicle" means "painted surface of an automobile," while Sherwin-Williams asserts that "painted surface of a vehicle" means "any vehicle surface with paint, regardless of whether the surface is metal, plastic, or otherwise, including any self-painted surface of a self-propelled land vehicle such as a car or a motorcycle."

Chip-Mender proposes no construction for "painted surface," presumably intending that the phrase have its ordinary meaning, 2 while Sherwin-Williams contends that "painted surface" means "any… surface with paint," which simply rephrases the term "painted surface." Sherwin-Williams adds that the "surface" can be metal, plastic, or "otherwise," while Chip-Mender does not specify the composition of the "surface." Sherwin-Williams provides no support for its proposed limitation regarding the type of surface, simply asserting that because there are vehicles made of materials other than metal--such as the 1950s Corvettes, made of fiberglass--the correct construction must specify that the "surface" can be any material, so long as it is "painted."

2 In its proposed construction for disputed term No. 8, below, Chip-Mender defines "painted surface" as "painted body."

Nevertheless, there appears to be no real dispute regarding the construction of "painted surface." Moreover, the court finds nothing in the patent claims or specification which requires that the construction include a limitation as to the composition of the "surface" that is "painted."

The only real dispute reflected in the papers involves the meaning of "vehicle." Sherwin-Williams asserts that "vehicle" is not limited to passenger cars, but also includes any "self-propelled land vehicle" that has a "surface" with paint, such as motorcycles, trucks, vans, sport utility vehicles (SUVs), farm equipment, trailers, and trains. The court interprets this as an argument that "vehicle" not be construed as "automobile." Although Chip-Mender argues in its moving papers that "vehicle" means "automobile," counsel for Chip-Mender stated at the hearing that he would be "happy" to construe "vehicle" as "vehicle" instead of "automobile." Moreover, Chip-Mender asserts in its reply brief that the invention of the '299 patent is not limited to application of automotive touch-up paint to "passenger cars," and argues that the term "automobile" includes all modes of transportation normally associated with that term, including pick-up trucks and SUVs.

Based on the claim language and the specification, the court finds that the term "vehicle" is not a "technical term[] of art, and do[es] not require elaborate interpretation," see Brown v. 3M, 265 F.3d 1349, 1352 (Fed. Cir. 2001), as the parties agree that "vehicle" is a commonly understood word with a widely accepted meaning. See Phillips, 415 F.3d at 1314. Thus, in light of the parties' arguments, the court finds that "painted surface of a vehicle" means "any vehicle surface with paint."
argues that the reference to "trouser grafts" demonstrates that the term "pair" must mean something of equal length, because trousers have legs that are the same length. Cook supports that definition by reference to a dictionary definition in which "pair" is defined as "two things equal." (See Cook Ex. 14.)

The word "pair" also means "two corresponding things designed for use together" or "something made up of two corresponding pieces (a - of trousers)." These definitions of the word, however, do not necessarily require a pair to be "equal" in all respects. See Webster's Ninth New Collegiate Dictionary at 847 (1987); id. at 293 (definition of corresponding: "having or participating in the same relationship (as kind, degree, position, correspondence, or function)). Thus, apart from the reference to "trouser grafts," neither the specification nor the prosecution history provide clear support for Defendants' proposed construction.

Gore also argues that the construction of the term should also include the requirement that each of the connector legs "has an opening for connecting to a graft adapted to be anchored within the branch." (Gore Br. at 14:21-23.) The Court agrees with Gore on this point. The word "connector" is an adjective for the verb "connect," which means "to become joined," or "to join or fasten together … by something intervening" or "to place or establish in relationship." See, e.g., Webster's Ninth New Collegiate Dictionary at 278. Support for incorporating a connection function in the construction of the term "a pair of connector legs," also is supported by the specification. The inventors state therein that supplemental grafts can be introduced to overlap or dock, i.e. connect to or with, the ends of a bifurcated device. ('458 Patent, col. 4, ll. 18-32.)

Accordingly, the Court construes the term "a pair of connector legs" to mean: "The two branches at the downstream end of the bifurcated base [graft] structure, each of which has an opening to which an additional graft may be connected."

(c) Claim One, Clause Four

Claim 1, clause 4 reads as follows: "said housing including a pair of flanges extending from opposite side edges of said housing in parallel spaced relationship[]." The parties' only dispute is whether the prepositional phrase "in parallel spaced relationship" modifies the noun "flanges" or the noun phrase "extending from opposite side edges." In other words, the parties dispute whether "parallel spaced relationship" refers to the flanges or the opposite side edges.

SCM asserts that the claim is indefinite because this language is capable of two meanings. However, it has not demonstrated that someone skilled in the art would find the language ambiguous. SCM has not shown indefiniteness by clear and convincing evidence.

We conclude that, in ordinary English, the "parallel spaced relationship" modifies the noun (flanges), not the noun phrase (extending from opposite side edges). This construction is supported by the shape of the invention which has a generally flat rectangular housing. Claim 1(a). If the housing is rectangular, then by definition, all of the opposite sides would be parallel to one another. See Webster's Third International Dictionary (defining rectangle as "a parallelogram all of whose angles are right angles"). Since the opposite sides are parallel by definition, they would be in parallel spaced relationship to one another. As such, it would be superfluous to have the phrase "parallel spaced relationship" modify "opposite side edges." On the other hand, the flanges would not necessarily be in a "parallel spaced relationship" to one another absent this language in the claim. Accordingly, we conclude that the phrase "parallel spaced relationship" modifies the "flanges," not the "opposite side edges."

Budde argues that the district court erred in construing the "pair of fuel injectors mounted in a fuel injector and throttle body" limitation in claim 1 of the '348 patent. This claim limitation states in pertinent part: "a pair of fuel injectors mounted in a fuel injector and throttle body secured to said intake manifold." '348 patent, col. 12, ll. 33-34. The district court initially construed this term to require "that two fuel injectors be mounted in a fuel injector and throttle body." Budde I, slip op. at 8. The parties did not appeal the construction of this claim term, and this court did not decide issues related to this claim.
construction in the prior Budde II appeal. On remand, the district court clarified its claim construction, stating that this limitation required that the fuel injectors be mounted in the throttle body. Budde III, 2003 U.S. Dist. LEXIS 25990, *24.

We discern no error in the district court's claim construction. The express language of the claim distinguishes between a "fuel injector and throttle body" and an "intake manifold" and recites that the fuel injectors are mounted to the "fuel injector and throttle body," which is secured to the "intake manifold." See '348 patent, col. 12, ll. 33-34. Under the ordinary and customary meaning of the words of the claim, the pair of fuel injectors must be mounted in the "fuel injector and throttle body" and not the "intake manifold." Thus, the district court was correct in concluding that mounting the pair of fuel injectors in the intake manifold does not literally infringe the claim.

The district court found undisputed evidence that in Harley-Davidson's "old" EFI system, the parts corresponding to the throttle body and intake manifold claim limitations were combined into an integral "induction module." Budde III, 2003 U.S. Dist. LEXIS 25990, *26. Because the pair of fuel injectors are mounted in the induction manifold portion of the induction module rather than the throttle body portion, the "old" EFI system did not literally meet the claim limitation. Id. Concerning Harley-Davidson's "new" EFI system, the district court found it was undisputed that the throttle body and intake manifold are separate parts bolted together and that the fuel injectors are mounted in the intake manifold. Id. We agree and, thus, concur in the district court's conclusion that no reasonable juror could find that either of Harley-Davidson's "old" or "new" EFI systems literally met the "pair of fuel injectors" limitation of claim 1 of the '348 patent. Claim 1 is therefore not literally infringed by these systems.

1. The Pair of Actuators in Claim 1

a. The Language of the Claims

The crucial clause of claim 1 requires "a pair of linear actuators mounted on said frame and connected to said levers for swinging said levers and thus tilting said cradle . . . from said first position through a second position . . . to a third position . . . ." 2 The claims provide for no other actuators in the carrier to perform this lifting and dumping function. Claim 2 requires struts be mounted to the frame to support the cradle in its second, or carrying, position. Claim 3 requires that these struts be linear actuators that support the cradle in the second position. Thus, it appears that the claims set forth a carrier with two pairs of linear actuators and each performs a specific function: one pair has the function of lifting the cradle through its three positions and the other pair has the function of supporting the cradle in its second position.

Kress argues unpersuasively that the plain meaning of the claim language can include an additional pair of actuators to perform the lifting and dumping function. For example, Kress urges us to ignore the functional limitation in claim 1, which provides that one pair of actuators lift the cradle through its three positions. Kress does not cite to any controlling authority for this proposition that would require us to ignore the clear language of the claims. To the contrary, we have consistently held that all limitations of claims must be considered meaningful. See Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1562, 19 U.S.P.Q.2D (BNA) 1500, 1504 (Fed. Cir. 1991); see also Perkin-Elmer Corp. v. Westinghouse Elec. Corp., 822 F.2d 1528, 1532-33, 3 U.S.P.Q.2D (BNA) 1321, 1324-25 (Fed. Cir. 1987). We decline Kress' invitation to ignore clear limitations in the claims.

b. The Written Description

The language used in the specification preceding the claims also supports this construction of the claims. For example, the written description explains that "it is an object of the invention to provide a carrier . . . that utilizes only two major primary working linear hydraulic actuators and two small simple secondary holding cylinders." (emphasis added). The specification...
Further states that:

a pair of linear actuators, acting through lifting levers, are operable for tilting the cradle from its first position to a second position wherein the pot is raised from the ground but held substantially level and then to a third position wherein the pot is at least partially inverted to a dumping position.

(emphasis added and numerical references omitted). The specification further reinforces the concept that one pair of actuators performs the lifting and dumping function by stating "the lifting levers are swung by the actuators through less than 90 degrees to produce tilting of the cradle through approximately 140 degrees. In this way, just two main actuators can both lift the pot to travel position as well as swing the cradle to its third dumping position." (emphasis added and numerical references omitted). The specification reinforces this point by stating that "those skilled in the art will appreciate that the slag pot carrier is of relatively simple design so as to be economical to manufacture and maintain, particularly in that only two primary linear actuators are utilized for lifting and dumping." (emphasis added and numerical references omitted).

There are other references in the specification to the effect that one pair of actuators independently performs the lifting and dumping function.

However, there is one section of the specification that reads:

to eliminate the load on the main actuator hydraulic system and its links during travel of the carrier while carrying a loaded pot, as well as to assist the main linear actuator in picking the pot off the ground, a pair of struts in the form of simple two-position linear actuators are [sic] mounted on the frame in box-like guides and are [sic] adapted to be positioned for supporting the cradle in its second, traveling position.

(emphasis added and numerical references omitted). Kress argues that this sentence should overcome the clear meaning of claims as well as the other statements in the specification. The Appellees argue that this language describes an alternative system not covered in the claims. We agree that this portion of the specification describes a use for the second pair of actuators that is not described elsewhere in the claims or in the written description. This sentence merely describes an alternative use for the second pair of actuators; it does not define the function of the second pair of actuators as the structural and functional limitations in the claims are not ambiguous from the claim language and the remainder of the specification. Indeed, any possible confusion that this sentence may have injected into the claim construction process is vitiated by the analysis of the prosecution history below.

c. The Prosecution History

Finally, the prosecution history supports our understanding that claim 1 of the '658 patent sets forth one pair of actuators performing the lifting and dumping function and claims 2 and 3 set forth the other pair performing the support function. During prosecution of the '658 patent, the patent examiner rejected claims 1 and 2 of the application as obvious in light of three other patents, the Freedy patent, the British patent, and the Livingston patent. Kress specifically emphasized to the examiner that:

Claim 1, the main independent claim, stands rejected on a combination of three references (one of which, the patent to Freedy et. al., being somewhat far afield), but even if these three disclosures could be assembled in the manner suggested by the Examiner, the resulting structure still does not meet the terms of claim 1. In the British patent, two sets of actuators are required, one to initially lift the pot and a second set to perform the tilting function. The patent to Livingston does not use actuators at all. The patent to Freedy et al., if at all relevant, also shows multiple actuators and levers for producing the desired front end loader bucket movement.

In contrast, the structure claimed includes only a pair of linear actuators which, as the last six lines of the claims state, produces three different positions of the cradle and hence of the pot carried by the cradle. That is not in the art.

(emphasis added).

Eventually, claim 1 issued. Kress argues that because no amendment to incorporate this statement into the claim was made, this statement should not be used to limit the scope of its claim. In addition, Kress argues that the statement was not related to the examiner's patentability concerns, which Kress argues regarded the linkage structure and not the number of actuators.
for lifting, and therefore Kress' statement should not limit its claims.

Although an amendment was not made to the claimed language to incorporate specifically Kress' statement during prosecution, Kress' clear disavowal of claim coverage is relevant in interpreting the meaning of its claims. See York Products, Inc. v. Central Tractor Farm & Family Center, 99 F.3d 1568, 1575, 40 U.S.P.Q.2D (BNA) 1619, 1624 (Fed. Cir. 1996). By Kress' own clarification to the patent examiner, its claim was for an invention in which only one pair of actuators could independently perform the lifting and dumping function. This functional limitation is clearly set forth in the claim language as well as the written description and the prosecution history, and cannot be ignored. The prosecution history supports our understanding that claim 1 of the '658 patent requires one pair of linear actuators independently perform the lifting and dumping function and claims 2 and 3 require an auxiliary pair of actuators to provide independently the support function.

Kress argues that such a construction of claims 1 through 3 ignores the legal doctrine of claim differentiation. The doctrine of claim differentiation "presumes that there is a difference in scope among the claims of a patent." Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1479, 45 U.S.P.Q.2D (BNA) 1429, 1434 (Fed. Cir. 1998). This interpretation does not ignore this doctrine, but rather follows it - no claim is rendered identical to another claim. This construction renders claims 1, 2, and 3 as claiming different subject matter: claim 1 claims a pair of linear actuators to move the cradle through its three positions; claim 2 claims an additional pair of struts to support the cradle; and claim 3 requires these struts to be in the form of actuators. Thus, such an interpretation does not render any two claims identical.

Our independent review of the claim language thus reveals that the district court's construction of the '658 patent was supported by the language of the claim itself, the written description, and the prosecution history. We have considered all of Kress' arguments in support of its proposed claim construction and find them to be without merit. We hold that claim 1 of the '658 patent requires one pair of actuators to perform independently the lifting and dumping function.

14. "pair of spaced members"

This phrase is found in Claim 16. Plaintiff proposes the following construction: "two parts separated by a distance that form the sides of the U-shaped terminal." Defendants assert that the phrase need not be construed, and the Court agrees. Because the Court see no ambiguity as to the meaning of the phrase "pair of spaced members" and because its ordinary and customary meaning is clear to one skilled in the art, the Court declines to construe the phrase as it is used in the '015 Patent.

III. "Panel"

Plaintiffs' proposed construction: none, or, "a large unitary piece of construction material that forms a trailer wall when coupled to other large unitary pieces of construction material" 4

4 In its reply brief, plaintiff argues that "panel" means "a discrete piece of construction material capable of being coupled to another discrete piece of construction material" although it does not explicitly advocate this as a proposed construction. See dkt. 33 at 6.

Defendant's proposed construction: "a distinctive part of a construction surface or material"

The term "panel" is used in all claims of the patents-in-suit. Claim 1 of both patents recites a wall joint comprising a first
panel and a second panel. Claim 15 of the '564 patent and claim 16 of the '902 patent recite a cargo body comprising a plurality of panels. The parties' dispute over the meaning of this term centers on whether a panel is a discrete structure (plaintiff's position) or merely a part of a construction surface or material (defendant's position).

Defendant's contention that a "panel" must be part of a construction surface or material as opposed to a discrete structure is not supported by the claims or the specification. All of the references to "panel" in the claims are consistent with a panel being a discrete structure. The patent is titled "Wall Joint Configuration," the invention "relates generally to devices and configurations for joining panels" ('564 Patent, 1:1-2), and it teaches a configuration for joining "a pair of adjacent first and second panels" with "each joint being at least partially defined by an edge of the first panel and an edge of the second panel adjacent to the first panel." '564 Patent, Claim 15. Claim 10 refers to a wall joint comprising first and second panels located substantially in the same plane, coupled together by a splicer plate. Claim 13 claims a joint composed of panels "having a first core material sandwiched between layers of a second material, different from the first core material."

All of these references suggest that the term "panel," as used in the patents-in-suit, is a unitary structure and not merely a "part" of a structure. Further, the preferred embodiment depicted in Figure 1 shows 13 separate sidewall "panels" joined together using the patented invention to create a sidewall. If the panels were merely a portion of a construction surface or material, as defendant proposes, there would be nothing to join.

Court's construction: "panel" means "a discrete structure capable of being coupled to another discrete structure."

Delta's non-infringement argument centers on the claim language requiring "at least one print receiving layer consisting of a paper, a synthetic paper or a coated film." U.S. Patent Nos. 5,418,026, col. 7:12-14; 5,543,191, cols. 6:66-7:1.

Delta first argues that its baggage tags cannot infringe because they do not possess "at least one print receiving layer." Delta's baggage tags are designed for use in direct thermal printing. Direct thermal printing uses neither ink nor toner to produce an image, but instead creates an image by causing a chemical reaction to occur within the top layer of the print stock. Delta argues that because direct thermal printing, for which its baggage tags are designed, transfers neither ink nor toner to the printed sheet, its baggage tags do not have a "print receiving layer." This argument is without merit. The top layer of Delta's baggage tags bear the words "Delta Air Lines." These words are printed in ink. Thus, whatever else it may be, the top layer of Delta's baggage tags is a print receiving layer. Moreover, the image that appears on the top layer as a result of the heat-induced chemical reaction is print and is received as a result of the printing process. That layer is thus accurately described as the "print receiving layer."

Delta also argues that its baggage tags do not infringe because, so Delta argues, the top layer of its tags does not "consist of" "a paper, a synthetic paper or a coated film." The phrase "consisting of" is a term of art in patent law. The phrase is a restrictive one, "closing the claim to the inclusion of materials other than those recited except for impurities ordinarily associated therewith." Ex parte Davis and Tuukkanen, 80 U.S. P.Q. 448, 450 (Pat. & Tr. Off. Bd. App. 1948). See also PPG Industries v. Guardian Industries Corp., 156 F.3d 1351, 1354 (Fed. Cir. 1998) (describing claims written in "consisting of" format as "closed"). In light of the claim language, the claim encompasses a baggage tag only if the top layer of the tag is made from "a paper, a synthetic paper or a coated film" and nothing else.

Delta asserts that its baggage tag does not infringe because its top layer, which is designed for use in direct thermal printing, is not "a paper, a synthetic paper or a coated film." Delta maintains that the top layer of its baggage tag is a coated paper, and that coated paper is not included within the meaning of "paper" as that term is used in the asserted claims. Relying heavily on the fact that the adjective "coated" is specifically used elsewhere in the asserted claims to modify the term film, Delta argues that the claims' failure to use "coated" in connection with paper precludes construing the claim to include coated paper.

Delta's argument, however, is contrary to well-established principles of patent construction. Patent claims are to be read in light of the patent specification. See Markman, 52 F.3d at 979; ACS Hosp. Systems, 732 F.2d at 1577. Here, the specification of each patent-in-suit states that a "laser or thermal transfer printing enhancing coating . . . can be spread on the print receiving face of the top sheet." U.S. Patent Nos. 5,418,026, col. 6:43-47; 5,543,191, col. 6:33-36. Thus, because
the patent specification of each patent-in-suit clearly contemplates the use of a coated paper for the top layer, the term "paper" is properly construed to include coated paper. This result is strengthened by the principle that a court should not "add a narrowing modifier before an otherwise general term that stands unmodified in a claim." Johnson Worldwide Assocs., 175 F.3d at 989. See also Renishaw, 158 F.3d at 1249. Here, the term "paper" stands unmodified. It would be improper for this Court to impute a limiting modifier that would exclude coated paper from the scope of the general term "paper."

--- Footnotes ---

3 The patent prosecution history does not dictate otherwise. While it is true that the patent examiner required the plaintiff Mr. Dronzek to change the claim language from the open phrasing "comprising a paper, synthetic paper or a coated film" to the closed phrasing "consisting of a paper, synthetic paper or a coated film," see Hardy Decl., Ex. II, that says nothing about the scope of the term "paper."

--- End Footnotes ---
1. Parties' positions

Tulip proposes that "parallel" be given its ordinary and accustomed meaning, "extending in the same direction." 77 Dell's proposes that "parallel" be construed according to its ordinary meaning, "extending in the same direction … everywhere equidistant … and not meeting," 78 but that the phrase "substantially parallel" must be given a different meaning than when "parallel" is used without that modifier.


Dell notes that Claims 1 and 2, as originally filed, contained the phrase "substantially parallel" in reference both to the location of the mating connector on the motherboard and to the orientation of expansion boards to the motherboard when inserted into the riser card. 79 After those claims were rejected by the examiner, the substituted claims removed the modifier "substantially" from before "parallel" in reference to the location of the mating connector on the motherboard, but "substantially" was not removed from before "parallel" in reference to the expansion boards being "substantially parallel" to the motherboard. Dell cites Jeneric/ Pentron, Inc. v. Dillon Co., Inc. for the proposition that when flexible language ("about" in that case) is included in a claim, the court must strictly construe terms without flexible language. 80 Dell argues that by removing the word "substantially" during prosecution, Tulip surrendered an interpretation of the claims that would allow the mating connector to be anything but exactly "parallel" to "a peripheral side edge." Therefore, Dell insists that the court apply its proposed construction, "extending in the same direction, everywhere equidistant and not meeting," with mathematical precision.

79 Claims 1 and 2 as filed on June 13, 1996 in the original patent application recited: "said riser card having a predetermined number of positions for expansion cards and comprising a number of connectors, substantially arranged in a row parallel above each other, for such expansion cards, while the plane of an expansion card, when it is arranged in a connector of the riser card, extends substantially parallel to the plane of the motherboard, characterized in that the connector for the riser card is arranged adjacent a side edge of the motherboard and substantially parallel thereto." D.I. 324, Ex. 2 at TLP2 117060-61 (emphasis added).

80 See 205 F.3d 1377, 1381 (Fed. Cir. 2000).

Tulip asserts that Dell's proposed construction, which includes the limitation of being "everywhere equidistant," is impracticable as it is beyond the ordinary tolerances of circuit board manufacturing and, therefore, that definition could not be consistent with the ordinary and accustomed meaning of "parallel" to one of ordinary skill in the art. Tulip argues that Jeneric/ Pentron is inapplicable here as that case concerned precise numeric limitations in chemical composition claims where the precise numeric limitations were required to distinguish over the prior art, circumstances different from those of this case. Finally, Tulip contends that the '621 patent specification supports its proposed construction which explicitly discloses a riser connector that is substantially parallel to a side edge of the motherboard. 81
81 See '621 at 2:65-3:1 ("To that end, the invention provides a motherboard of the above-mentioned type, characterized in that the connector for the riser card is arranged adjacent to a side edge of the motherboard and substantially parallel thereto, …"); Id. at 4:1-4 ("characterized in that the connector for the riser card is arranged adjacent a side edge of the motherboard and substantially parallel thereto, ….").

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2. Court's construction

Although Tulip suggests defining "parallel" according to its ordinary and accustomed meaning, Tulip only cites part of the definition put forth to define that term. The dictionary Tulip cites as reciting the ordinary and accustomed meaning of "parallel" defines that term as: "extending in the same direction and at the same distance apart at every point, so as never to meet," 82 a definition no different than that recited by Dell as the ordinary and accustomed meaning of "parallel."

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Tulip is correct, however, in arguing that the facts of Jeneric/ Pentron are distinguishable from those presented in this case. The patent at issue in Jeneric/ Pentron was directed to a porcelain composition used in dental restoration products. Within one of the claims at issue in that case, the patent recited both precise ranges the for chemical components of its claimed composition and imprecise language, "about," to qualify the values of other elements of that claim. 83 The Jeneric/ Pentron court also noted that those precise ranges had to be written narrowly to avoid being found anticipated or obvious in light of a prior art patent incorporated by reference into the patent at issue in that case. 84 Based on those facts, the Federal Circuit agreed with the trial court's determination that the scope of the asserted claim was limited to the precise ranges recited stating, "Jeneric may not rely on the precise ranges of the claims to distinguish itself from prior art during prosecution and then later construe the ranges more broadly during an infringement action." 85

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83 Jeneric/ Pentron, 205 F.3d at 1381.
84 Id. at 1382.
85 Id.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

In this case, Tulip amended the '621 patent application to avoid the examiner's initial determination of obviousness in light of two prior art references. Tulip did not, however, rely on its substitution of a claims reciting that the mating connector was "parallel" to the side edge of the motherboard for cancelled original claim which recited a mating connector that was "substantially parallel" in order to avoid a prior art reference. Instead, Tulip argued that the two references cited by the examiner would not have made its claimed invention obvious to one of ordinary skill in the relevant art. The Harwer patent (U.S. Patent No. 5,440,755) teaches a riser card with a plurality of expansion connectors. The Harwer patent teaches form factor wherein the riser card is centrally located on the motherboard with expansion connectors for PCI boards at the top of the riser card and expansion connectors for ISA boards on the lower part of the riser card. The Lam patent teaches, in the context of a notebook computer, placing a riser card on the edge of the motherboard with only one expansion connector thereon. As discussed in the section concerning the term "personal computer," Tulip argued that the physical environment of a notebook computer would not accommodate its claimed invention and, therefore, no one in skilled in the art would have looked to the Lam patent to remedy the disadvantages of a centrally located riser board having a plurality of expansion connectors. This court determined, above, that these representations narrowed the scope of Tulip's invention so as not to encompass notebook computers. Tulip's successful attempts to distinguish the prior art referenced by the examiner did not, however, depend on, or even mention, whether the claimed mating connector was "parallel" or "substantially parallel" to the
side edge of the motherboard. The fact remains, though, that Tulip did delete the word "substantially" from before "parallel" in describing the orientation of the mating connector to the side edge of the motherboard and may have, inadvertently or not, narrowed the scope of the claims in suit.

Perhaps in realization of this fact, Tulip seems to contradictorily argue that the term "parallel" should be given its ordinary and accustomed meaning but proposing a truncated version of the definition contained in its cited dictionary because the full definition would purportedly be impracticable as beyond standard circuit board manufacturing tolerances. Such manufacturing tolerances are extrinsic evidence not necessary to the court's understanding of the commonly understood term "parallel." That extrinsic evidence might be relevant to the finder of fact at a later stage of this litigation should the issue of infringement, either literal or by the doctrine of equivalence, depend on whether a mating connector is "parallel" or "substantially parallel" to the side edge of the motherboard. For the purposes of construing the word "parallel," however, the court need look no further than the intrinsic record.

Nothing in the claims, specification, or prosecution history leads this court to accept the truncated definition of "parallel" suggested by Tulip. Based on each party's assertion that "parallel" be given its ordinary and accustomed meaning, and finding no need to examine extrinsic evidence, the court construes the term "parallel" to mean extending in the same direction with every point the same distance apart and never meeting. 86

86 The parties have not submitted "substantially" as a disputed term this court needs to construe. As the definition of parallel is to the same each time it is recited in the claims, "substantially" parallel provides deviation from the precise meaning of "parallel" to the extent a future finder of fact may determine. Although the court need not address Dell's contention that the definition be applied with "mathematical precision," it is noted that the relevant reference for a determination of whether the mating connector is parallel is no greater than the length of the side edge of the motherboard adjacent to which the connector is mounted and would not be determined by an infinite extension of imaginary lines coextensive with the mating connector and the side edge of the motherboard.

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C. "Parallel to a Major Surface of Said Conductive Layer"

The parties also disagree about the proper construction of the word "parallel" as it is used to describe the position of the emission face of a diode with respect to a "major surface" of the conductive layer. LDAI takes the position that this language covers curved surfaces as well as flat ones. LDAI contends that where a major surface extends along an axis, and an emission face of a diode bar follows that same axis along the length of the bar, the major surface and the diode bar are both parallel to the axis, and hence to each other. To put it another way, using Paradigm's array as an example, an imaginary line (the "z axis," in Paradigm's words) runs through the center of the cylinder. Any line that runs through the conductive surface, i.e. through corresponding points at either end of the cylinder, is parallel to the z axis. Likewise, the emission faces also run parallel to that axis, i.e. they remain equidistant from the axis throughout their length. In LDAI's view, that makes the emission faces and the surface of the conductive layer parallel to each other as well.

Paradigm disagrees. Paradigm asserts that under the laws of geometry, a flat surface can never be parallel to a curved surface. According to Paradigm, the whole concept of parallelism is based on linear or planar geometry. Paradigm's expert, Dr. Richard W. Dixon, who testified at the Markman hearing stated that, a "curved surface cannot be parallel to a plane." Transcript ("Tr.") at 149. He added that "parallel is defined to be a term that applies to straight lines and planes. So two planes can be parallel. … But you can't have a spherical surface or a cylindrical surface parallel to a plane." Tr. at 153.

I find Paradigm's position more persuasive. I credit Dr. Dixon's statements that as a simple matter of geometry, a curved surface cannot be parallel to a curved surface. The concept of parallelism implies that two parallel objects are everywhere equidistant. See, e.g., Webster's Third New International Dictionary (Unabridged) (1981) at 1637 (defining "parallel" as, inter alia, "extending in the same direction and everywhere equidistant," and "everywhere equally distant"). At different
points on a curved surface, however, a neighboring flat surface will be different distances away, even if it runs in the same
direction. Even if parallelism does not completely exclude all curved surfaces (e.g. arguably two concentric cylinders might
be considered parallel to each other), I do not see how that concept can be applied to both a curved surface and a planar
surface.

True, the planar and curved surfaces at issue here--the emission faces and surface of the conductive layer in Paradigm's
arrays--run in the same direction. As stated, however, parallelism requires more than that. If a cylinder of infinite length
shared a line in common with a plane, one would not describe them as parallel, but as tangent to each other. Id. at 2337
(defining "tangent" as "having a common tangent line at a point -- used of two curves in a plane, two space curves, or a
surface and a space curve"). In fact, in his testimony at the hearing, LDAI's own expert, Dr. J. Stanley Whiteley, conceded
that in a diagram in his expert report, which uses tangent lines to demonstrate the relative positions of the emission faces
and the major surface of the conductive layer, see POB Ex. A at 22 (Fig. 4), the major curved surface was not parallel to
surface of the emission face. Tr. at 115.

LDAI's attempt to reduce this concept to geometric lines running through the respective surfaces distorts the fact that we are
not in fact dealing with lines, i.e. with one-dimensional objects, but with two- and three-dimensional objects: planes and
cylinders, or at least planar and cylindrical objects. To focus on the fact that any given line running the length of the cylinder
is parallel to any line running the length of the emission face, then, is to sidestep the real question, which is whether the
cylinder itself can be considered parallel to the emission faces. After considering all the evidence, including the expert
reports and testimony, I do not believe that a person of ordinary skill in the art would understand the word "parallel," as used
in the '951 patent, to cover both curved and flat surfaces. I conclude, then, that this claim language requires that the surface
of the conductive layer be substantially planar and that the plane of the emission face of the diodes be parallel to that
surface.

As used in claim 1 of the '112 patent, the phrase "to partially block the extrusion of said molten thermoplastic material from
said first side passage" means that the plug prevents the extrusion of molten thermoplastic material through the first side
passage only at the location on the circumference of the first side passage where the plug is disposed. As used in claim 2 of
the '112 patent, the phrase "to partially block the extrusion of said molten thermoplastic material from said second side
passage" means that the plug prevents the extrusion of molten thermoplastic material through the second side passage only
at the location on the circumference of the second side passage where the plug is disposed.

Plaintiff proposes that the phrase "an intake passageway . . . at least partially defined by said runner filler" does not need to
be construed because its meaning is clear. Defendant proposes that the phrase be construed to mean that the runner filler
must enclose at least a segment of the intake passageway. I conclude that the runner filler may "at least partially define" the
intake passageway without enclosing it.

Defendant argues that the preferred embodiments shown in the '502 patent disclose two types of runner fillers. Some
completely enclose the intake passageway when inserted into the runner filler. Defendant calls these "closed" runner fillers.
Others are only semi-circular and, when inserted into the runner filler, cooperate with the intake runner to form the intake
passageway. Defendant calls these "open" runner fillers. Defendant contends that independent claims 15 and 22 equate the
claim term "defined" with the word "enclosed." Therefore, defendant argues, claims 15 and 22 require the use of closed
runner fillers.

In support of its position, defendant relies solely on the embodiments shown in the patent specification. The embodiments
that correspond to claims 15 and 22 show closed runner fillers. However, the court will "not import limitations into claims
from examples or embodiments appearing only in a patent's written description, even when a specification describes very
specific embodiments of the invention . . . unless the specification makes clear that the patentee intends for the claims and the embodiments in the specification to be strictly coextensive." JVW Enterprises, Inc. v. Interact Accessories, Inc., 424 F.3d 1324 (Fed. Cir. 2005). The '502 patent does not indicate that the invention taught by claims 15 and 22 is limited to those in which a closed runner filler is used to completely enclose the intake passageway. In order to "at least partially define" the intake passageway, the runner filler must form only a portion of the intake passageway. It may do so by completely forming a segment of the intake passageway or by partially forming a segment of the intake passageway. Therefore, the rejection should be withdrawn.

B. "Partially Overlapping Said First Gelatinous Coating And Forming A Seam"

The parties are essentially in agreement about the meaning of the phrase "partially overlapping said first gelatinous coating"; their proffered definitions differ only in choice of words, not in any substantive sense. With regard to the meaning of "seam", however, defendant argues that the patentee disavowed coverage of any surface feature other than "a visible transition" consisting of "a thickened portion and a non-uniformity in the surface".

Defendant argues that the specification in the '524 patent assigns this narrow definition to the term "seam," but the specification simply does not disclose any such definition. Rather, the specification uses "seam" simply to refer to a surface feature of the medicament, without clearly setting out any particular description of the physical appearance of that feature. The specification does note that several drawings set out in the accompanying sheets of illustrations display a "seam", but the indicated drawings simply display a region on the medicament where the seam is located. Defendant argues that the drawings display a visible raised portion in the region of the seam, but any such elevation in the surface area is extremely slight, possibly an accidental by-product of the drafter's effort to set off the seam in order to indicate its location on the surface. Nothing in the language of the specification mentions a "visible raised portion" as a surface feature, or mentions such a feature as something worth noting in the drawings.

Defendant also argues that the prosecution history reveals that the patentee disclaimed any meaning of "seam" other than "a visible transition in the thickness of the coating material... [consisting of] a thickened portion and a non-uniformity in the surface." (Defendant's Markman Brief at 30) Plaintiff responds that "seam" does not refer to thickness, but rather means a "line of junction formed by the abutment (touching) of edges between the two gelatinous coatings." Plaintiff argues that the patentee "did not amend the language of the claims to include a limitation relating to gelcaps having different gelatin thicknesses." (Plaintiff McNeil's Responsive Pre-Markman Hearing Brief at 25) The remarks accompanying the amended claims in the prosecution history of the '524 patent make plain, however, that the patentee was revising the language of the claims to emphasize the seam in order to distinguish the claimed medicament from the older patent, by Richards, and thereby escape rejection by the PTO, and that plaintiff's revised language did indeed define "seam" to refer to a transition in the thickness of the coating material.

The original patent application had been rejected because the claimed structure was too similar to an invention patented earlier by Richards. The original '524 patent application had described "first and second gelatinous coatings substantially covering said caplet to form a simulated capsule-like medicament with a seam." This original description did not indicate that that seam resulted from the overlap of the coatings; rather, it simply stated that the medicament featured a "seam" which might have been a gap, an abutment, an overlap, or something else. In the amended claim, the patentee specifically altered this language to describe "[a] second gelatinous coating... partially overlapping said first gelatinous coating and forming a seam." The patentee stated that he had "amended the claims to more clearly state the structure of the coated caplet as having an overlapping seam of gelatin. Therefore, the... rejection should be withdrawn."

The remarks consistently emphasize two features that set the claimed invention apart from the medicament described by Richards: different colors on either end of the medicament, and a "thickened portion" formed by the overlap of the two gelatin coatings at the midsection of the medicament. The remarks declare that the separate colors provide an illusion that the medicament is, in fact, a capsule. The remarks go on to stress that further enhancing the illusion, is the specifically claimed structure... calling for a seam... provided by the overlapping of the two gelatinous coatings which form a thickened portion at the overlap. The change in thickness accompanied by the changing color makes it appear that... the medicament is actually a... capsule. These features and structural limitations...
are clearly not disclosed by, or inherent in Richards.

These comments leave no doubt that the "seam" is a "thickened portion" of the surface at the location of the transition in color, i.e. the point where the two differently colored gelatinous coatings meet. The comments make it clear that, for the purpose of escaping rejection and distinguishing the claimed invention from Richards, the patentee disavowed any type of seam other than an overlap of two coatings resulting in a 'change in thickness.'

This interpretation is confirmed by the comment later in the remarks that "what Richards is attempting to provide is a smooth continuous coating about the entire pill…. [The '524 a]pplicant's claimed structure, however, actually… requires non-uniformity in its surface. The transition of color, the transition of thickness, the clear demarcation between the two gelatinous coatings are not disclosed or inherent from Richards." From the repetition of this point, and the explicit insistence that the "transition in thickness" is one of the crucial elements entitling the patentee to escape rejection, any competitors reading the prosecution history would reasonably believe that the patentee had surrendered any claim to a "seam" other than one consisting of a "transition in thickness." Contrary to plaintiff's arguments, the patentee did indeed amend the language of the claim and place the word "seam" in a different context for the specific purpose of escaping rejection. Having done so, the patentee went on, in remarks which are recorded in the prosecution history, to emphasize that "seam" had a specific definition: a feature consisting of a transition in thickness at the location of the transition in color. Plaintiff is therefore barred from asserting an inconsistent position on claim construction, and the Court will apply the definition of "seam" that the patentee assigned in the prosecution history.

Plaintiff attempts to argue that the definition of "seam" suggested by defendant would constitute a 'limitation' on that claim term, and that courts are prohibited from reading limitations from prosecution history into claims which do not contain those limitations, citing Intervet America, Inc. v. Kee-Vet Labs, Inc., 887 F.2d 1050, 1054 (Fed.Cir. 1989). Intervet can be distinguished from the present case, however. There, the prosecution history included a statement by the attorney that all seven claims under consideration would, in the future, prior to issuance of the patent, be amended specifically to include a numerical limitation on the frequency of administration of an action. In fact, only four of the seven claims were actually amended to include the limitation that the attorney had described, and the court held that it was erroneous to read that specific, discrete, numerical limitation into the three claims which did not contain it. When an attorney's erroneous remark tending to ascribe a limitation to the claims which is not present there, the court held, the claim language controls. See id. at 1053 - 1054. In the present case, there was no erroneous remark in the prosecution history. The term "seam" appears in the claim, and the prosecution history allows the public to understand the meaning of that term as it is used in the '524 patent. See Markman, 52 F.3d at 980 ("The court has broad power to look as a matter of law to the prosecution history of the patent in order to ascertain the true meaning of language used in the patent claims."). The explanation in the prosecution history of what is meant by a seam is properly read, not as a diminishment or variation of the limitations in the claims, but rather as a definition of the term "seam." The Federal Circuit has made it clear that the prosecution history cannot be used to enlarge, diminish, or vary the limitations in the claims, so that when the claims contain limitations, the prosecution history cannot contradict those limitations. See id. The prosecution history can, however, serve effectively to limit the meaning of terms used in the claims by providing a definition of terms as they are used in that patent, as the amendment remarks do here.

Plaintiff's contention that "it is impossible to specially define a claim term in the file history" (Plaintiff's Responsive Brief at 24) is broadly correct as a statement of law, but is irrelevant to the present case. The Federal Circuit has held that when the patentee wishes to serve as his or her own lexicographer and provide an 'uncommon' definition, one which "differs from the conventional definition," that special definition must be clearly set out in the specification. See Beachcombers Intl', Inc. v. Wildewood Creative Products, Inc., 31 F.3d 1154, 1158 (Fed.Cir. 1994); Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1388 (Fed.Cir. 1992). 2 In the present case, the prosecution history does not provide a special, novel, unconventional definition for the word "seam," but simply one particular understanding of a word which could have numerous potential meanings in the context of a medicament. Both in the claims and in the prosecution history, the "seam" is the feature of the medicament where the edges of the two gelatinous coatings are in proximity, just as a seam on a garment is the feature where two pieces of fabric are connected. The '524 patent's prosecution history does not provide a novel definition in contradiction of the common understanding, but rather limits the definition to a particular type of seam, in accordance with the claimed structure that is described and the possible alternatives, such as a line of abutment, which are disavowed. The definition in the prosecution history is thus not a "special" definition, which can only appear in the specification, but is rather an explanation of "the true meaning of language used in the patent claims," which is a proper purpose for it to serve under Markman, 52 F.3d at 980.
Defendant has also argued that the prosecution history limits plaintiff to a definition of "seam" which provides that the transition in thickness is "visible." The patentee asserted at one point in the amendment remarks that the amended claims call for "a visible seam, something which is unwanted in the Richards process." The claim language was not amended to add any mention of visibility of the seam, however, and the remarks do not consistently and specifically emphasize visibility as an element of the seam which separates the claimed invention from the medicament described in Richards. Where the remarks do discuss visibility, they generally describe it as a function of the seam generally, and not as a specific result of the transition in thickness.

The remarks, such as the sentence quoted by defendant regarding a "visible seam", place great stress on the fact that the claimed medicament has a bifurcated color structure, which Richards does not, and that the seam is the feature that occurs at the location of the transition in color, i.e. the juncture of the two gelatinous coatings. The remarks do suggest that the seam is visible, but since they do not describe visibility as a specific result of the transition in thickness, it is doubtful from the remarks that the 'visibility' of the seam results from the transition in thickness. Reading the remarks in context, they suggest that the seam's visibility is due to the transition in color which occurs at the point of the seam. The sentence quoted by defendant, referring to a "visible seam", appears in the context of a discussion of the process for drying the gelatinous coatings. The patentee states that in Richards, the coatings might be blurred, which is adequate for Richards because in that patent "no color difference is disclosed." In the '524 patent, by contrast, the patentee explains, the gelatin sets quickly, which "prevents undesirable blurring between the colors. It is clear [the remarks continue] that Applicant's structure calls for a visible seam." In that context, the reference to the visibility of the seam appears to refer to the transition in color and not the transition in thickness.

In addition, one aspect of the remarks suggests that the change in thickness is not itself visible at all. The remarks state that the contrast of the colors gives "the illusion of different sizes to the two ends" of the medicament. The fact that the appearance that the two ends of the medicament are of different sizes is only an illusion strongly suggests that any appearance of a 'change in thickness' is also an illusion, and that, even though there may in fact be a change in thickness, no such change is actually visible to the ordinary viewer. The remarks do not establish with any certainty that the change in thickness is not, in fact, visible, but the failure of the remarks to address this point consistently and directly, and the ambiguity of the references to the visibility of features on the surface of the medicament, prevent the prosecution history from serving to clarify whether the "change in thickness" is to be understood as visible or non-visible. The amendment remarks therefore do not limit the construction of the claim term "seam" to a transition of thickness which is actually visible.

*   *   *

IV. CONCLUSION

The Court concludes that the disputed terms have the following meanings:

1. "Simulated capsule-like medicament" shall mean "a medicinal form that imitates, resembles, or suggests in form or appearance a gelatin shell enclosing medicine."

2. "Partially overlapping said first gelatinous coating and forming a seam" shall mean "extending over and covering part of, but not all of, the first gelatinous coating in a manner such that there is a transition of color and a transition of thickness."
The disputed claim in this case is the "first mirror being partially reflecting" as mentioned in claims one and seven. This mirror is referred to multiple times in the remainder of the patent by three different names: "partially transparent," "two-way mirror," and "partially reflecting." The mirror is also described as "appear[ing] to be fully reflecting" to an adjacent observer. Plaintiff interprets his claim broadly, to cover any surface made of any material that reflects more than a de minimis amount of light and is at all transparent. Defendant takes issue with this broad interpretation for two reasons. First, Defendant contends that the descriptions of the partially reflecting mirror in Plaintiff's actual patent show an intent to cover only partially reflecting mirrors that appear to be fully reflecting to an adjacent observer. Second, Defendant asserts that Plaintiff disavowed transparent covers in the patent prosecution process when he distinguished his patent from the Giboney patent. For the reasons stated below, the court finds the first argument dispositive, and therefore does not reach the prosecution history issues.

Defendant's argument regarding the language in the patent description is well taken. Plaintiff's broad interpretation of the term "partially reflecting mirror" runs counter to the patent description language. Plaintiff's position is that anything that reflects some light, but not all light, is a partially reflective mirror:

THE COURT: Because anything that reflects, I mean is a mirror anything that reflects?

MR. LINDON: Are you talking about a mirror or a partially reflective mirror?

THE COURT: Any mirror.

MR. LINDON: Yes. I mean as I'm standing here, I can see a reflection of that light in that window. It's reflecting it.

THE COURT: So anything that --

MR. LINDON: I can see my reflection in it. I can see the image that is reflecting off of it. That's a mirror. It doesn't even have to be a piece of glass.

It could be a highly polished piece of metal. That's a mirror.

THE COURT: That's a partially reflecting mirror.

MR. LINDON: That window right there, yes, it is. You can turn the light off behind it and in front of it and vary the amount of light and you will get a completely different effect.

* * *

THE COURT: But you're saying almost anything can be a partially reflecting mirror under the right light and circumstance?

MR. LINDON: Well, it has to have at least some transparent property to it or it won't, you know, it's a functional consideration as you are pointing out. It's functional. Does this thing function as a mirror. If it does, it's what my client is going after, regardless of the methods or the materials, if it functions as a mirror and allows -- reflects some of the light and allows the rest of the light to go through it, it's a partially reflective mirror. Okay?

(Hearing Tr. 64-66.) However, the patent language does not support such a broad interpretation. The patent claims a "partially reflective mirror," but there is no definition of the term in the actual claim. Rather, the description section regarding the patent clarifies that the "partially reflective mirror" must appear fully reflecting to an adjacent observer. This is inconsistent with Hargabus' current position that a partially reflective mirror is any mirror that reflects more than a de minimis amount of light.

In claim construction, "the specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." Phillips v. AWH Corp., 415 F.3d 1303, 2005 U.S. App. LEXIS 13954, *29 (Fed. Cir. July 12, 2005) (quoting Markman, 90 F.3d at 1582). The Federal Circuit went on to
clarify the proper use of patent specifications or descriptions:

[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs. In other cases, the specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor. In that instance as well, the inventor has dictated the correct claim scope, and the inventor's intention, as expressed in the specification, is regarded as dispositive.

Phillips, 415 F.3d 1303, 2005 U.S. App. LEXIS 13954 at *33-34. In the instant case, Hargabus offers a specific description of what he means by "partially reflective mirror" in the "Detailed Description of the Invention." Under the applicable case law, this specification is highly relevant, usually dispositive, and evidence of the inventor's intent. Therefore, since Hargabus asserts that the "partially reflective mirror" should appear fully reflective to the adjacent observer, this court construes the claim as such. There is no literal infringement unless the partially reflective mirror appears fully reflective to an adjacent observer.

Having reached this conclusion, it is unnecessary for the court to further address the patent prosecution history and Defendant's position that there was prosecution history estoppel. 1

--- Footnotes ---

1 The court notes that any alleged subject matter disclaimer is not as simple as Defendants contend. At a minimum, Plaintiff's argument that the Giboney patent had a different purpose and function than the Hargabus infinity mirror display, and that as such, there was no clear and unmistakable surrender of subject matter, is not frivolous.

--- End Footnotes ---

II. "Particles"

For the claim construction hearing, Claims 2-4 of the ’358 Patent were at issue. The parties agree that the only claim term that is in dispute is the word "particles" as it appears in independent Claim 2. Thus, the purpose of the Markman hearing was to determine the meaning of the word "particles." Independent Claim 2 of the ’358 Patent, in its entirety, reads as follows: (See Column 6, Lines 5-20).

--- Footnotes ---

2 The term "particles" is also found in Claims 1 and 8 of the ’342 Patent and Claim 1 of the ’358 Patent.

--- End Footnotes ---

2. A semi-resilient exercise grip comprising:

a core containing a deformable mixture of tightly packed individual dry particles that are in continuous contact with each other; and

a resilient covering surrounding said core, wherein said covering is in the form of a plurality of nested sacks, wherein each sack is made of a resilient material and includes an opening, and wherein the sacks are located about the core, the openings of adjacent sacks are spaced apart from each other, and wherein each sack applies its own inward force on the core and the total inward force on the core is the combined total of the individual inward forces exerted on the core by each of the sacks making up the covering.

Claims 3 and 4 of the ’358 Patent further limit the coverings of the exercise grip. Dependent Claims 2 and 3, in their entirety, read as follows: (See Column 6, Lines 21-25).
3. The grip of claim 2 wherein each of the sacks that make up the covering are substantially ball-shaped when in a non-stressed state.

4. The grip of claim 2 wherein each of the sacks are made of a latex rubber material.

Sport Squeeze contends that the term "particles" is limited to particles that are similar in size and shape to millet (roughly the size of bird seed), which is one of the examples of particles disclosed in the Scatterday patents. The allegedly infringing Ad Squeeze product uses silicon beads which are much smaller in size than millet. Accordingly, Sport-Squeeze contends that the term "particles" is limited to larger, millet-sized particles, which, under its proffered construction, would result in the Ad Squeeze product not infringing the asserted claims.

In opposition, Pro-Innovative contends that the term "particles" should be given its broad and ordinary meaning which includes particles not limited in size and shape to millet. Specifically, Pro-Innovative requests the court to construe the term "particles" to mean "small specks of matter which include starch particles, microsphere particles, hard plastic or silicon beads and millet."

IV. Discussion

A. Legal Standards

a. Construing the Term "Particles" in the '342 and '358 Patents is a Question of Law for the Court

Construing a claim to determine its scope and meaning, also known as "claim construction," is a pure question of law for the court. Markman, 52 F.3d 967, 970-71. The language of the claim defines the scope of the protected invention. Bell Communications Research v. Vitalink Communications Corp., 55 F.3d 615, 619-620 (Fed. Cir. 1995). "Words in a patent claim are construed as they would be understood by a reader skilled in the relevant art unless it appears that the inventor used the words differently." Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed. Cir. 1997).

When interpreting disputed claim language, the court must first look to "intrinsic" evidence, including "the patent itself, including the claims, the specification and, if in evidence, the prosecution history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) (citing Markman, 52 F.3d at 979). The parties agree that the disputed claim language can be construed with reference to intrinsic evidence only. Thus, it would be improper to look to extrinsic evidence. Id. at 1583.

b. The Doctrine of "Claim Differentiation"

"There is presumed to be a difference in meaning and scope when different words or phrases are used in separate [patent] claims. To the extent that the absence of such [a] difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant." Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987). The doctrine of claim differentiation has its greatest force when an interpretation of a dependent and independent claim would render the dependent claim superfluous. Beachcombers v. WildeWood Creative Products, Inc., 31 F.3d 1154, 1162 (Fed. Cir. 1994) (interpretation that renders dependent claim superfluous is "presumptively unreasonable" under doctrine of claim differentiation); United States v. Teletronics, Inc., 857 F.2d 778, 783 (Fed. Cir. 1988) (where some claims are broad and others narrow, the narrow claim limitations cannot be read into the broad claims). The doctrine may also be used to interpret an independent claim in light of another independent claim. See, e.g., Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1055 (Fed. Cir. 1988); Caterpillar Tractor Co. v. Berco, SPA, 714 F.2d 1110, 1116 (Fed. Cir. 1983).

"Although the doctrine of claim differentiation may at times be controlling, construction of claims is not based solely upon the language of other claims; the doctrine cannot alter a definition that is otherwise clear from the claim language, description, and prosecution history." O.I. Corp. v. Tekmar Co., Inc., 115 F.3d 1576, 1582 (Fed. Cir. 1997); see also Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998) ("While we recognize that the doctrine of claim differentiation is not a hard and fast rule of construction, it does create a presumption that each claim in a patent has a different scope.").

B. Claim Differentiation Supports Pro-Innovative's Construction
Pro-Innovative argues that its three exercise grip patents contain a wide spectrum of language regarding certain "particles," describing them in narrow and broad terms. It argues that the claims of the '342 Patent use the term "particles" both with and without qualifying language, and that the '358 Patent includes no language limiting "particles" based on size and shape. Upon review of the three patents, the court finds that the doctrine of claim differentiation supports Pro-Innovative's position.

1. The '504 Patent

Claim 1 of the first patent issued to Scatterday, the '504 Patent issued in 1993, limited the "particles" used to fill the exercise ball to millet-sized particles. (See Column 5, Lines 23-26).

1. A semi-resilient exercise grip comprising a nonresilient core containing a deformable mixture of individual particles identical in size and shape to millet

Claim 7 of the '504 Patent is also limited to "millet-sized" particles. (See Column 6, Lines 15-19). The parties do not dispute that the plain language of Claim 1 of the '504 Patent and the patent's prosecution history confirm that Claim 1 is limited to millet-sized particles.

2. The '342 Patent

However, the term "particles" in the subsequently issued '342 Patent is not expressly limited to "millet-sized" particles. Specifically, Claims 1-3 of the '342 Patent read: (See Column 5, Lines 27-43; Column 6, Line 1).

1. A semi resilient exercise grip comprising a non-resilient dry core containing a deformable mixture of tightly packed individual particles that are in continuous contact with each other.

2. The grip of claim 1 wherein the particles are hard and are similar in size and shape to millet.

3. The grip of claim 2 wherein the particles are millet.

Applying the doctrine of claim differentiation, the term "particles" in Claim 1 cannot be limited to particles "similar in size and shape to millet." Under such a construction, Claim 2 would have the same scope as Claim 1, rendering Claim 2 superfluous—a construction that is "presumptively unreasonable." Beachcombers, 31 F.3d at 1162. Sport Squeeze presented no evidence during the hearing or in its papers rebutting the strong presumption that the "millet-sized" limitations in dependent Claim 2 should not be incorporated into Claim 1.

Sport Squeeze argues that the prosecution history of the '342 Patent supports a narrow reading of the term "particles." Specifically, Sport Squeeze emphasizes that the Patent Office rejected the initial Claim 7 as obvious under U.S. Patent No. 3,601,923 issued to Rosenberg. (See Sport Squeeze Exhibit G). To overcome the Patent Office's rejection, Scatterday limited the "particles" in initial Claim 7 to "substantially millet-sized" particles and explained to the Patent Examiner that the "millet-sized" particles in the revised claim distinguished the claim from Rosenberg, which used considerably smaller starch particles. (See Sport Squeeze Exhibit B, at 6-7 (Stamp no. 122-123) (stating that "the tiny particles used by Rosenberg form a crucial component of his invention.")).

--- Footnotes ---

3 The claim which became Claim 7 of the '342 Patent was originally designated as Claim 15 in Scatterday's earlier applications. For purposes of this Order, the court will refer to Claim 15 as the "initial Claim 7," and the claim issued by the patent office as "issued Claim 7."

4 The Patent Office also rejected various claims of the '342 Patent under the doctrine of "double-patenting." Scatterday subsequently filed a terminal disclaimer to cure the rejection so that all three patents ('504, '342, and '358) would expire on the date of the first patent. See In re Goodman, 11 F.3d 1046, 1052 (Fed. Cir. 1993) (filing of terminal disclaimer cures double patenting rejection).
In essence, Sport-Squeeze argues that the prosecution history of Claim 7 (which resulted in a claim dependent upon "millet-sized" particles) supports its contention that the "millet-sized" limitation should be implied into claims that do not contain this limitation. This argument is unpersuasive. The fact that Scatterday limited "particles" in initial Claim 7 to "millet-sized" particles while leaving "particles" in Claim 1 without such a limitation supports Pro-Innovative's contention that the term "particles," standing alone, is not limited to particles that are millet-sized. Moreover, the difference between the "particles" in Claim 1 and issued Claim 7 provides additional support for Pro-Innovative's arguments that claim differentiation forecloses a construction of the term "particles" limited to particles that are millet-sized. 5

Sport-Squeeze argues that Scatterday represented to the Patent Office during prosecution of the '342 Patent that millet-sized particles were essential to the semi-resilient nature of the exercise grip. (See Sport-Squeeze's Opening Brief at 9-10 (quoting Sport-Squeeze's Exhibit I, at 6)). However, those comments were made in reference to a claim which explicitly contained a "millet-sized" limitation. Thus, Sport-Squeeze's "file wrapper estoppel" arguments concerning the other claims are without merit as this explanation was not offered to obtain allowance on any other claim. Moreover, Sport-Squeeze presented no evidence during the Markman hearing that the invention's semi-resilient characteristics depend upon millet-sized particles. In any event, this statement does not overcome the presumption raised by the doctrine of claim differentiation.

Sport-Squeeze argues that this language discloses that the "particles" in the '358 Patent are limited to millet-sized particles. However, while "the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims." Comark Communications, Inc., 156 F.3d 1182 at 1187; see also Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations."). Sport-Squeeze has provided no basis for reading the specification's illustrative use of "millet-sized" into the claims of the patent. The court has found nothing in the long and somewhat confusing prosecution history of the '358 Patent which would warrant a narrow reading of "particles" inconsistent with its plain meaning and the construction of that term in the '342 Patent.

With all three patents, when Pro-Innovative sought to limit the "particles" in its claims to a particular size or shape, it qualified that term by including the limitation that the particles be the size or shape of "millet." When Pro-Innovative did not wish to limit the size or shape of the "particles," it did not include any size or shape limitation.

i. Application of Claim Differentiation to the '358 Patent

Sport-Squeeze contends that the doctrine of claim differentiation cannot be applied to the '358 Patent because the doctrine is "inapplicable to continuation patents." The sole case Sport Squeeze relies upon, Jonsson v. Stanley Works, 903 F.2d 812 (Fed. Cir. 1990), held that the prosecution history of one patent can be used to determine the scope and to interpret the meaning of another patent where both patents stem from a common parent application. 903 F.2d at 818. The court found it unnecessary to apply the doctrine of claim differentiation because the court's finding that the claim contained a limitation existing in a separate dependent claim was supported by the prosecution history, the patent, the specifications, and
deposition testimony. Id. at 820 ("Hence, since it is apparent that the court had ample evidence to determine the scope of the '912 patent, Jonsson's reliance on claim differentiation requires no discussion."). Thus, Jonsson merely reinforces the rule that the doctrine of claim differentiation can be overcome by a patent's prosecution history. 6

6 Most of the sections of Jonsson quoted in Sport-Squeeze's Opening Brief were not the opinion of the court, but rather arguments asserted by the parties.

In this case, however, the court need not necessarily rely upon the doctrine of claim differentiation to conclude that the "particles" in the '358 Patent are not limited to "millet-sized" particles. As discussed in the preceding section of this order, nothing in the prosecution history or specifications justifies departing from the plain meaning of the term "particles." Rather, the prosecution history of all three patents reveals that both Scatterday and the patent examiner understood that differing particle sizes were significant in light of Tarnoff and Rosenberg.

Although not necessary to the court's conclusion, it notes that the doctrine of claim construction may provide additional support for Pro-Innovative's position. All three patents (1) involved the deformable exercise grip, (2) were issued over a relatively short period (three years), (3) involved the same patent examiner (Stephen Crow), and (4) made reference to the same prior art references. These facts support the court's conclusion that the term "particles" in the '358 Patent should be construed consistently with that term in the '342 Patent.

V. Sport-Squeeze's Arguments in Opposition

Sport-Squeeze presents two main arguments to support its contrary position that the "particles" in the '358 Patent must be millet-sized. First, Sport-Squeeze argues that the term "particles" should be narrowly construed to avoid conflict with prior art patents. Second, Sport-Squeeze argues that Judge Moskowitz previously ruled that the "particles" in the '342 and '358 Patents are millet-sized and that this determination is "law of the case."

a. Sport-Squeeze's Argument that a Narrow Reading of "Particles" is Necessary to Avoid Invalidation in light of Tarnoff is Logically Flawed

Sport-Squeeze argues that a broad construction of "particles" should be avoided because such a construction would read back on the Tarnoff prior art. According to Sport-Squeeze, a broad reading of the term "particles" would render the '342 and '358 Patents invalid under Tarnoff and Rosenberg because both of these patents use microspheres that are substantially smaller than millet.

Sport-Squeeze's argument is logically flawed because it assumes the term "particles" must be analyzed as an isolated term, construed outside the context of the claim it limits. In fact, it is of little consequence that a single term in a patent claim reads back on a term in a prior art patent so long as the claim as a whole does not read back on a claim in the prior art. Here, particle size is only one of many possible limitations contained in the claims of the '342 and '358 Patents. (See, e.g., Pro-Innovative's Exhibit 369). Claim 2 of the '358 Patent, for example, contains numerous limitations not found in Tarnoff or Rosenberg, including: (1) a plurality of nested sacks, (2) openings of adjacent sacks that are spaced far apart from one another, (3) each sack applies inward force on the core, and (4) the total inward force is the combined total of the individual inward forces. Id. These limitations, rather than an implied limitation on particle size, likely formed the basis for patentability of Claim 2. 7

7 In its Reply brief, Sport-Squeeze contends that "to have any differentiation between the claimed squeeze ball and the prior art, the term 'particle' must be defined as including particles approximately millet-like, but excluding microspheres ranging from 0.0001 inches to 0.06 inches." (See Sport Squeeze's Reply at 6:17-19). A similar argument appears in its Opening brief, where Sport-Squeeze argues that a narrow reading of the term "particle" is necessary to avoid conflict with Tarnoff. (See Sport-Squeeze's Opening Brief at 5:11-15). This arguments are rejected for the reasons stated in the text.
Thus, the court rejects Sport-Squeeze's argument that the term "particles" must be construed narrowly because the term may read back on the microspheres of Tarnoff. Moreover, Sport-Squeeze made no arguments during the Markman hearing or in its briefs that the broad construction of "particle" urged by Pro-Innovative would cause any of the claims of the '342 or '358 Patents to read back on Nichols, Rosenberg, Cherl, or Tarnoff.

b. Judge Moskowitz's Previous Ruling is not "Law of the Case"

Sport-Squeeze relies heavily upon the language of two orders from Judge Moskowitz, both dated August 10, 1998. (See Sport-Squeeze Exh. D, E). Sport-Squeeze relies particularly on page 5 of Judge Moskowitz's August 10, 1998 order denying Pro-Innovative's motion for summary judgment. (See Order Denying Motion for Summary Judgment on Patent Infringement (Doc # 106)). In that order, Judge Moskowitz rejected Pro-Innovative's contention that the term "particles" in the '358 Patent consisted of particles of any shape and size. He noted that this construction was "incredibly broad" and "unsupported by the record." (See id. at 5:15-23). Sport-Squeeze contends that Judge Moskowitz's ruling is "law of the case" and is binding on this court. The court finds this argument unpersuasive for two reasons.

First, the sole issue before Judge Moskowitz was whether Pro-Innovative was entitled to summary judgment on the issue of Sport-Squeeze's alleged infringement of the '358 patent. Since a Markman hearing had not been conducted, the question of claim construction was not before the court. In fact, in a footnote Judge Moskowitz observed that the parties had failed to lodge the Rosenberg and Tarnoff patents, and that without those references, "the Court cannot at this time determine whether 'particles' should be construed to include the 'size and shape of millet' limitation urged." (See id. at 6 n.2). At the conclusion of his order, Judge Moskowitz scheduled a Markman hearing and set a briefing schedule, negating any inference that he intended his previous order to serve as the final word on the construction of the three Scatterday patents.

Second, the court notes that, to the extent "law of the case" is applicable, it "merely expresses the practice of [a] court generally to refuse to reopen what has been decided." Christianson v. Colt Industries Operating Corp., 486 U.S. 800, 817, 100 L. Ed. 2d 811, 108 S. Ct. 2166 (1988) (quoting Messenger v. Anderson, 225 U.S. 436, 444, 56 L. Ed. 1152, 32 S. Ct. 739 (1912)) (Holmes, J.). It is not a limit to the court's power. Id.; Capital Investors Co. v. Executors of Morrison's Estate, 584 F.2d 652, 654 (4th Cir. 1978) ("The principle [of law of the case] is not absolute nor inflexible."). The court retains inherent authority to revise interim or interlocutory orders any time before judgment, including orders denying motions for summary judgment. See, e.g., FED. R. CIV. P. 54(b) (any order not certified under Rule 54(b) and which adjudicates fewer than all the claims as to all the parties "is subject to revision at any time before the entry of [final] judgment"); Balla v. Idaho State Bd. of Corrections, 869 F.2d 461, 465 (9th Cir. 1989) ("Courts have inherent power to modify their interlocutory orders before entering a final judgment."); Curran v. Kwon, 153 F.3d 481, 487 (7th Cir. 1998) ("When a district judge is presented with additional evidence, therefore, he is free to revisit a denial of summary judgment."). Thus, even assuming the issue of claim construction was addressed in the court's August 10, 1998 Order, the doctrine of "law of the case" would not preclude this court from revisiting the issue, especially where, as here, the parties presented evidence and argument they did not present at the time the court issued its previous order.

VI. Conclusion

For the foregoing reasons, the court concludes that the term "particles" in the claims of United States Patent Nos. 5,350,342 and 5,556,358 means particles in its ordinary sense without limitation based on the size or shape of millet. Specifically, the court finds that the term "particles" contemplates small specks of matter, including but not limited to, starch particles, microsphere particles, hard plastic or silicon beads and millet.
9 This order resolves only the issue of claim construction. The court expresses no opinion on the determination of infringement, the applicability of any defenses Sport-Squeeze may wish to assert, or the viability of the non-patent claims.

The dispute here centers on the phrase "particles that pass through a screen" (emphasis added). The Court agrees with Plaintiff's reading. Plaintiff claims that the verb "pass" refers to particles and that particles does not mean briquettes alone.

Defendant argues that this claim refers to the additive -- something that is added either as a granular, mixture or briquette -- and that is made up of particles (Tr. 42-43). The Court agrees that this claim further refines the metallurgy addition referenced in Claim 1. However, Defendant's explanation that "pass" refers to "addition" is strained. The verb "pass" describes the closest preceding noun: "particles" (Tr. 46). To paraphrase the meaning of this claim, the additive is made up of particles which are of a size small enough to pass through a screen with four inch square openings.

HEN contends that "particulate material which is loosely packed such that it is gas permeable" should be construed to mean "particles/particulate-matter arranged such that gas may pass through it." (HEN CC Br. at 22.) Minco, on the other hand, argues that this claim language should be construed to mean "particulate material which is unrestrained, not bonded together into a solid or rigid form, but rather free to move." (Minco CC Br. at 31.)

Minco argues that the specification supports its proposed construction. First, Minco notes that the figure in the specification depicts the sheathing and the particulate matter inside the tube differently and in a manner consistent with the PTO guidelines for how to indicate loose particulate matter versus packed particulate matter. Minco asserts that the area showing the particulate matter inside the conductive tube (see Minco Ex. A at Figure 1, number 10) is depicted by dots, indicating that it is loose, whereas the sheathing (see id. at Figure 1, number 2) is depicted with dots and hash lines indicating that it is packed. Additionally, Minco asserts that the specification states that both the sheathing and the particulate material inside the tube can be resin coated molding sand. Minco asserts that the sheathing must be physically solid and rigid because it is not otherwise contained by any structure, but that since the particulate matter in the conductive tube is contained by the tube, it does not need to be solid and rigid. Minco concludes that because the sheathing and the particulate matter are depicted differently and the sheathing is solid and rigid, the logical consequence is that the particulate material must be loose, unbonded, and free to move. We find this reasoning to be an insufficient basis for us to conclude that the particulate matter cannot bonded together and must be free to move because, by depicting the two areas differently, the applicant could simply be conveying that the two areas are different elements, not that one element must necessarily be solid and the other loose. Moreover, even if we were to accept Minco's arguments that the specification shows the particulate matter inside the conductive tube as being loose, unbonded, and free to move, construing the claim language to require the particulate material to be in such a state would result in the importation a limitation that only appears in the specification, and not in the claim language.
Minco also relies on the prosecution history to support its proposed construction. First, Minco claims that, in order to overcome the prior art contained in German Patent No. 2207307 to Kunzer ("the Kunzer patent"), HEN stated, "Note that the resin coated molding sand of the present invention is utilized for the refractory sheath 2 while molding sand is provided within the support tube 1." (Minco App. 4D at HEN000058.) Minco claims that this statement supports the conclusion that the sheath must be physically hard baked, but that the interior of the tube is filled with loose particles of sand, since molding sand contains no resin and cannot be baked hard or rigid. Regardless of whether molding sand can or cannot be baked into a solid form, we find that this statement by HEN does not amount to a clear disavowal of claim coverage over particulate matter that is bonded together. Minco also asserts that the patent examiner clearly understood the particulate matter to be loose sand, not baked hard rigid sand. However, what the patent examiner thought is not a clear disavowal of claim coverage by HEN.

Consequently, Minco's arguments that HEN limited the allowable construction of these claims terms during the prosecution history are without merit and we construe the claim language "particulate material which is loosely packed such that it is gas permeable" to mean "particles/particulate-material arranged such that gas may pass through it."

Honda argues that this phrase should be construed as "two crankcase portions connected together at a separation surface that crosses, at a slant, an axis of said first and second bearing portions". Coast argues that the phrase should be construed as "first and second parts of the crankcase are coupled together at a seam that defines a plane that is neither parallel nor perpendicular to the center axis of first and second portions for accommodating bearings, each portions completely encircling the entire periphery of one end of a crankshaft." As an alternative, Coast argues that the phrase should be construed as "two crankcase portions connected together at a planar separation surface that crosses, at a slant, the axis of rotation of the crankshaft."

The parties' dispute centers primarily around the proper construction of the term "parting plane." Honda argues that the plain meaning of term "parting plane," to one of ordinary skill in the art, is a "separation surface." (Shariati Decl., Ex. F ("Stern Decl., P 64").) Honda further argues that, because the parting plane is the point at which the first and second crankcases are coupled to one another, this separation surface need not limited to a flat surface. The Court begins with the claim language. Although the term "plane" implies a flat or level surface, see, e.g., Webster's at 899, in the context of the claim, it is clear that the "plane" claimed relates to the point where the two crank cases are coupled to one another.

Coast argues that, because the claim also requires that the parting plane "obliquely intersect[s] an axis of said first and second bearing portions," the term plane must be construed to mean a level or flat surface. Otherwise, according to Coast, "it would be impossible to determine at which angle it intersects an axis of the bearing portions." (Opp. Br. at 16.) However, as Coast itself argues, the term "obliquely," implies that the parting plane intersect the axis "as slant."

Accordingly, the Court construes the term "first and second case halves which are coupled to each other at a parting plane extending to obliquely intersect an axis of said first and second bearing portion" to mean: "two crankcase portions connected together at a separation surface that crosses, at a slant, an axis for the supports for opposite ends of a crankshaft, the axis for the supports being a line coincident with the axis of rotation of the crankshaft."

Turn-Key argues that this limitation must be construed as referring to the surfaces of the two mold parts between the two mold parts that either touch or lie adjacent to the other mold part before the mold parts separate, excluding the product
molding cavity(ies) that is situated internally to the parting surfaces. In so arguing, Turn-Key specifically objects to the "additional limitations" of Defendants' interpretation. Pl's Opening Brief at 7-8. Defendants argue that a parting surface consists of those faces of each of the two mold parts that touch each other when the mold is closed and that oppose each other when the mold is open. They, however, note that portions of these faces may be slightly relieved so that they do not touch each other when the mold is closed but face each other in close proximity and with no intervening structure. Crest's Responsive Brief at 11-13; KM, MC & Concord's Brief at 5. The dispute over the interpretation of "parting surface" thus centers around (1) whether the faces of the mold parts must touch each other, (2) whether the faces must oppose each other when the mold is "open," and whether (3) there can be no intervening structure. 2

2 Here, Defendants utilize the term "open" to refer to the position of the mold parts during the "separating" process described in Element (b). See IV.A.3.

The Court construes "parting surface" to signify the faces of the two mold parts that either touch or lie adjacent when the mold parts are brought together in the "combining" process described in Element (a). See supra at Section IV.A.2. In applying the ordinary and customary meaning of "combining" as the act of bringing into or joining in a close union or whole, the Court finds that not all of the faces of the two mold parts are required to actually touch each other; they need to be only in some proximity to each other. Random House Webster's College Dictionary at 261. Having said that, however, the Court notes that there must be at least some point at which the faces of the two mold parts touch other, thus preventing the fluid from leaking out of the cavity before it is molded into the plastic product. The Court declines to construe the mold parts as "opposing" each other when they are being kept apart in the "separating" process described in the first portion of Element (d) on the grounds that it adds an extra limitation not present in the claim language. See supra Section IV.A.5.a. 3 In addition, the Court further declines to construe this claim as requiring an absence of an intervening structure on the grounds that it adds an extra limitation not present in the claim language.

3 The Court agrees with Turn-Key that with a "claim" model mold, the parting surfaces would not "oppose" each other like paired opposites upon opening their book-like hinges. Pl's Reply Brief at 19.

The parties disagree on the meaning of the terms "air plenum" and "partition" in Claim 15. Claim 15 calls for:

a partition disposed in said interior chamber for defining an air plenum on one side of said partition and a rack receiving chamber on the opposing side of said partition, said air plenum and said rack-receiving chamber being in fluid communication with each other such that cooled air can be channeled through said air plenum and into said rack-receiving chamber.

See '569 Patent at column 8, lines 6-33.

The words of the claim itself make clear that an "air plenum" refers to an air flow passage through which cooled air travels to an adjacent dispensing rack. Because the patent specification and prosecution history do not give the term "air plenum" any special meaning, it must be given its ordinary meaning. The best place to look for that meaning is a technical dictionary. See Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1203 (Fed. Cir. 2002) (acknowledging that dictionaries "may be the most meaningful sources of information to aid judges in better understanding . . . the terminology used by those skilled in the art"). The ordinary meaning of the word "plenum" used in the heating, ventilating, and air-conditioning ("HVAC") field is an "air flow passage". Home Energy Magazine Online DUCTIONARY, Ex. H to Thompson Dec. (defining "plenum" as an "air flow passage made of duct board, metal, drywall, or wood" that "joins supply and return ducts . . .").
with HVAC equipment"; see also WordNet 1.6 (1997), available at http://dictionary.reference.com/search?q=plenum (defining "plenum" as "an enclosed space in which the air pressure is higher than outside"). This definition is consistent with the use of the term in Claim 15. However, the claim language includes one limitation -- that cooled air be able to travel through the air plenum to an adjacent rack-receiving chamber. Thus, the definition of the term "air plenum" in Claim 15 of the '569 Patent must include this limitation.

The meaning of "partition" in Claim 15 is an interior wall that forms an air plenum on one side and a rack-receiving chamber on the other. The ordinary meaning of "partition" is "an interior wall dividing one part of a structure (as a house, room, or enclosure) from another." Webster's Third New Int'l Dictionary of the English Language Unabridged at 1647 (2002), Ex. N to Thompson Dec. This meaning is consistent with the use of the term "partition" in the patent, specification, and prosecution history. However, Claim 15 further specifies that the "partition" must "define" the space inside the interior chamber into an air plenum on one side and a rack-receiving chamber on the other side. Thus, it is necessary to construe the term "define" (or "defining") as well.

In this case, the Court must look first to the patent specification because it assigns a particular meaning to the term "defining" in Claim 15. The specification states that the air plenum is "formed" by the rear wall and the partition, 13 see '569 Patent at column 4, lines 53-54, thereby using "formed" as a synonym for the term "defined" in Claim 15. This definition, with slight variations, is found in many dictionaries. See, e.g., The American Heritage Dictionary of the English Language (4th ed. 2000), Ex. A to 3/5/03 Third Declaration of Roger Thompson ("Thompson Third Dec.") (indicating that one meaning of the term "define" is "to delineate the outline or form of"); Random House College Dictionary at 348 (rev. ed. 1975), Ex. A to Thompson Third Dec. (stating that one meaning of the term "define" is "to make clear the outline of form of"). Thus, in order to infringe Claim 15, the partition must "form" an air plenum on one side and a rack-receiving chamber on the other.

13 If the air plenum is "formed" by the partition, then the rack-receiving chamber must also be "formed" by the partition because the claim recites that the partition "defines" both the air plenum and the rack-receiving chamber.

14 Although the diagram in the patent shows the partition extending from one side wall of the merchandiser to the opposite side, nothing in the patent, specification, or prosecution history suggests that the partition must extend from one side wall of the merchandiser to the opposite side wall. Likewise, the existence of vent holes in the partition is a preferred embodiment, not a requirement. See '569 Patent at column 4, lines 34-36 ("The merchandiser may include ventilation openings, such as lower vent holes and upper vent holes in the . . . partition."). Thus, contrary to TPI's suggestions, see Def. Mem. at 11-13, these limitations are merely preferences, which cannot be read into the claim.

2862 Parts

Defendants argue this term should be construed to mean "sub-components of equipment." Orion contends "parts" does not require construction, and the Court agrees. Defendants have not demonstrated that this term is used in a manner inconsistent with its ordinary lay meaning. Further, Defendants' construction overly complicates the term. "In the preferred embodiment, the types of parts under the cross-referencing/parts selection procedure include batteries, filters, remanufactured electric parts, lubrication and bearings." Col. 9:4-8. While a lay jury would likely consider batteries or lubrication to be "parts," it is less certain that they would consider them to be "sub-components of equipment.

2863 A. Apparatus Claim 17
Although a threaded configuration is shown for the second section, other non-smooth geometries may be used to remove geometries and a conical shape:

1576-77 (Fed. Cir. 1996). Here, the written description states that the structure for the passage includes non-smooth necessary, extrinsic evidence. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83, 39 U.S.P.Q.2D (BNA) 1573, 1580 (Fed. Cir. 1996). In construing a claim limitation, we look to the claim language, the written description, the prosecution history and, if necessary, extrinsic evidence. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83, 39 U.S.P.Q.2D (BNA) 1573, 1576-77 (Fed. Cir. 1996). Here, the written description states that the structure for the passage includes non-smooth geometries and a conical shape:

Although a threaded configuration is shown for the second section, other non-smooth geometries may be used to remove
water vapor and cause that water vapor to be trapped in the second section of the bore. For example, a series of ridges may be included in the interior surface of the second section. Alternatively, the second section of the bore may be conical in configuration. As with the threaded or ridged configuration, the conical shape causes a swirling effect on the water vapor to remove that vapor from the analyte slug.

'557 patent, col. 7, lines 13-22 (emphasis added). The written description also distinguishes over prior art geometries as follows:

A number of different geometries for the second section are contemplated, including those having an irregular shaped surface or noncylindrical shape. In contrast, the prior art has generally specified that the pneumatic tubing and passageways between the trap and GC are smooth-walled.

'557 patent, col. 7, lines 45-50 (emphasis added).

All of the "passage" structures contemplated by the written description are thus either non-smooth or conical. In addition, the description expressly distinguishes over prior art passages by stating that those passages are generally smooth-walled. OI has not identified anything in the prosecution history contrary to those statements. Therefore, we conclude that one skilled in the art reading the claims, description, and prosecution history would conclude that the term "passage" in claim 17 does not encompass a smooth-walled, completely cylindrical structure. Because the description adequately explains the meaning of "passage" as used in this patent, we need not consider extrinsic evidence. See Vitronics, 90 F.3d at 1582-83, 39 U.S.P.Q.2d (BNA) at 1577. It is undisputed that the accused device contains a smooth-walled, completely cylindrical passage. Thus, even though the district court erred in construing the claim term "passage" to be subject to the interpretation required by section 112, P 6, it did not err in concluding that there is no genuine issue of material fact that the accused device does not meet the terms of claim 17 of the '380 patent and that Tekmar is entitled to a judgment as a matter of law that it does not infringe that claim. The court's error thus was harmless. See Fed. R. Civ. P. 61.

OI argues nonetheless that construing the word "passage" to exclude smooth-walled geometries violates the doctrine of claim differentiation, noting that dependent claims further limit the meaning of the word "passage" to a structure that produces swirling or spiraling of the analyte slug. OI argues that the independent claim, being broader in scope than the claim that depends from it, should not be limited to structures that swirl the analyte slug. We do not agree. Although the doctrine of claim differentiation may at times be controlling, construction of claims is not based solely upon the language of other claims; the doctrine cannot alter a definition that is otherwise clear from the claim language, description, and prosecution history. See Hormone Research Found., Inc. v. Genentech, Inc., 904 F.2d 1558, 1567 n.15, 15 U.S.P.Q.2d (BNA) 1039, 1047 n.15 (Fed. Cir. 1990) (stating that the doctrine of claim differentiation "cannot overshadow the express and contrary intentions of the patent draftsman"). We conclude that the description provides a clear meaning for the language of the claim in this case and that it trumps the doctrine of claim differentiation.

B. Method Claim 9

We next address method claim 9 of the '557 patent. OI argues that the district court erred in applying section 112, P 6, to the asserted method claims. In particular, it argues that the court erred in relying upon the broad recital of a purpose in a claim preamble as a function that requires application of section 112, P 6, to a series of process steps. It asserts that section 112, P 6, only applies to steps having an individually associated function, and to steps without recited acts in support thereof. Tekmar responds that the "passing" clauses of claim 9 of the '557 patent are step-plus-function clauses subject to the limitations of section 112, P 6, and that, when so construed, the claims are not infringed.

We first address the application of section 112, P 6, generally to method claims. Appellant asserts, as have other parties, that we have not done so previously. Section 112, P 6, provides that:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112, P 6 (1994) (emphasis added). This statutory provision clearly applies to claims for a combination. It is well-established of course that, in combinations that are apparatus claims, means for performing a specified function are
subject to this paragraph when they lack recital of definite structure or material. Logically, structure and material make up
the various means of apparatus. However, "the word 'combination' in this paragraph includes 'not only a combination of
mechanical elements, but also a combination of substances in a composition claim, or steps in a process claim." In re
186 (Mar. 1993)) (emphasis added).

The statute of course uses terms that might be viewed as having a similar meaning, namely, steps and acts. It refers to means
and steps, which must be supported by structure, material, or acts. It does not state which goes with which. The word
"means" clearly refers to the generic description of an apparatus element, and the implementation of such a concept is
obviously by structure or material. We interpret the term "steps" to refer to the generic description of elements of a process,
and the term "acts" to refer to the implementation of such steps. This interpretation is consistent with the established
correlation between means and structure. In this paragraph, structure and material go with means, acts go with steps. Of
course, as we have indicated, section 112, P 6, is implicated only when means plus function without definite structure are
present, and that is similarly true with respect to steps, that the paragraph is implicated only when steps plus function
without acts are present. The statute thus in effect provides that an element in a combination method or process claim may
be recited as a step for performing a specified function without the recital of acts in support of the function. Being drafted
with the permissive "may," the statute does not require that steps in a method claim be drafted in step-plus-function form but
rather allows for that form.

Here, the language in question is "the steps of . . . passing the analyte slug through a passage." The district court considered
the statement which appears in the preamble, "removing water vapor from an analyte slug," as a function which invokes
application of section 112, P 6. We do not agree. The preamble statement of the purpose of the overall process does not
constitute an associated function for the two "passing" steps of claim 9. Performing a series of steps inherently produces a
result, in this case the removal of water vapor from the analyte slug, but a statement in a preamble of a result that
necessarily follows from performing a series of steps does not convert each of those steps into step-plus-function clauses.
The steps of "passing" are not individually associated in the claim with functions performed by the steps of passing.

Section 112, P 6, as is well-documented, was intended to permit use of means expressions without recitation of all the possible
means that might be used in a claimed apparatus. See Federico, supra, at 25 (stating that the statute authorizes
greater liberality in the use of functional expressions in combination claims than had been permitted by some court
decisions such as Halliburton Oil Well Cementing Co. v. Walker, 329 U.S. 1, 91 L. Ed. 3, 67 S. Ct. 6 (1946)). The price that
must be paid for use of that convenience is limitation of the claim to the means specified in the written description and
equivalents thereof. Similarly, a step for accomplishing a particular function in a process claim may also be claimed without
specificity subject to the same price. But claiming a step by itself, or even a series of steps, does not implicate section 112, P
6. Merely claiming a step without recital of a function is not analogous to a means plus a function. We note that the
Halliburton case concerned an apparatus claim, not a process claim, and we must be careful not to extend the language of
this provision to situations not contemplated by Congress. If we were to construe every process claim containing steps
described by an "ing" verb, such as passing, heating, reacting, transferring, etc. into a step-plus-function limitation, we
would be limiting process claims in a manner never intended by Congress. Accordingly, we conclude that the "passing"
limitations of claim 9 are not step-plus-function limitations subject to the requirements of section 112, P 6.

Tekmar argues that, because the method claims "parallel" the apparatus claims, they must be construed consistently with the
apparatus claims. Assuming that the limitations of the apparatus claim are subject to the limitations of section 112, P 6,
Tekmar thus reasons that the steps of the method claim must likewise be subject to those limitations. Moreover, it argues
that OI made no distinction between the method and apparatus claims during the prosecution of the patents and that,
accordingly, they must be construed consistently with each other. We understand that the steps in the method claim are
essentially in the same language as the limitations in the apparatus claim, albeit without the "means for" qualification.
However, even if we were to hold that the word "passage" in the apparatus claims meets the section 112, P 6, tests, we
would not agree with Tekmar that the "parallelism" of the claims means that the method claims should be subject to the
requirements of section 112, P 6. Each claim must be independently reviewed in order to determine if it is subject to the
requirements of section 112, P 6. Interpretation of claims would be confusing indeed if claims that are not means- or step-
plus-function claims were to be interpreted as if they were, only because they use language similar to that used in other
claims that are subject to this provision. As discussed above, the method claim is not drafted in step-plus-function form and
is thus not subject to this provision.
We will therefore construe the meaning of the word "passage" in claim 9, freed from the strictures of section 112, P 6. OI argues that the word "passage" should be given its ordinary and accustomed meaning and that the district court erred in limiting the passage to its preferred embodiment. We do not agree. The textual language describing the passages in the '380 written description are also present in the '557 patent. Therefore, for the reasons explained above, we conclude that the word "passage" in claim 9 does not encompass a completely cylindrical, smooth-walled structure. There is no dispute that the accused device contains such a structure. Tekmar is therefore entitled to a judgment as a matter of law that it does not infringe claim 9. Although the district court erred in concluding that the method claims are subject to the requirements of section 112, P 6, it did not err in concluding that the accused device did not contain a passage as required by those claims. The district court's error thus was harmless. See Fed. R. Civ. P. 61.

CONCLUSION

The word "passage" in the asserted claims, properly construed, does not encompass a completely cylindrical, smooth-walled structure. There is no genuine issue of material fact concerning whether the accused device contains such a passage, and Tekmar thus is entitled to judgment as a matter of law that it does not infringe the asserted claims. Accordingly, the district court's judgment is affirmed.

GO BACK

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iii. "Passageway"

180s construes "passageway" as "a long, narrow way, typically having walls on either side, that allows access." (180s seemed to abandon its request for "long" and "narrow" at oral arguments.) Gordini defines "passageway" as "a loop, like a belt loop, having a perimeter fully enclosing an opening and is topologically genus one."

I construe "passageway" as a "way, typically having barriers at least on either side, that allows access." This parallels 180s' proposed construction, with two exceptions. First, "at least" is added to clarify that a "passageway" may have barriers on more than just two sides. For example, the "passageway" in Figure 17 has, in addition to barriers on two walls, a barrier on what looks like, depending on how the ear warmer is positioned, the roof. Figure 17, therefore, has barriers on three sides of the "passageway." Second, "narrow" and "long" are omitted because the passageways referenced in the specification are neither "long" nor "narrow." (See, e.g., id., Ex. A at col. 7, ll. 57-60.) Nor am I convinced, despite some dictionary evidence to the contrary, that "long" and "narrow" are a part of the ordinary meaning of "passageway." Regardless, the meaning supported by the specification--that a "passageway" need not be "long" or "narrow" (although it may be)--trumps any extrinsic dictionary definition. (See Def.'s Mem. at 7-8 (citing Phillips, 415 F.3d at 1317).)

Gordini's assertion that a "passageway" must be "fully enclosed" is contrary to the plain meaning of "passageway," and Gordini does not present any evidence that "passageway" is understood differently to someone of skill in the art. Although the specification only refers to figures showing "passageways" that are in fact fully enclosed (see Pls.' Mem., Ex. A at col. 7, ll. 57-60, Fig. 17), "a court should not read a limitation from the specification into the claim." See Tate, 185 F. Supp. 2d at 595. "Similarly, the mere fact that the patent drawings depict a particular embodiment of the patent does not operate to limit the claims to that specific configuration," Anchor Wall Sys., 340 F.3d at 1306-07. Further, the '483 patent noted its relation to the application for U.S. Patent No. 6,502,248 ("'248 patent") (Pls.' Mem., Ex. A at col. 1, ll. 10-12.), and the '248 patent includes an illustrative figure showing a passageway that is not "fully enclosed" on all four sides. (Id., Ex. H at col. 8, ll. 50, Fig. 14.) All of these points highlight the fact that a passageway may be fully enclosed, but it need not be. If 180s intended to for "passageway" to mean a "fully enclosed passageway," the claim should have read "fully enclosed passageway" or "tunnel."

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2. Passageway
The intrinsic record reveals that the term "passageway" was never used in the '130 application by itself. Instead, the foundational term that is found in the summary of the invention and in numerous claims is "central passageway." See '130 application summary at 7 and claim 1 at 35 ("a housing which defines a central passageway having fluid inlet and fluid outlet openings"). The patents that followed contain the additional term "internal passageway" along with "central passageway." See '609 patent summary 4:2-4 ("a housing which defines a central passageway having fluid inlet and fluid outlet openings"); '958 patent claim 1 at 17:62-64 ("a housing defining an internal passageway having a gas inlet opening near an upstream end of said housing, and a gas outlet opening spaced from said gas inlet opening"); see also '674 patent claim 13 at 27:31-35.

Two Forty acknowledges that there is different terminology used in the patents such as "central passageway" and "internal passageway." Two Forty proposes that the Court define "passageway" by itself, as it is the structural element, and any adjective placed before it can be dealt with by the jury. The jury, for example, can plug in the definition of "passageway" regardless of whether it is preceded by "internal" or "central." The Court agrees, and therefore, will only define the major structural portion.

Aqua-Lung proposes that "passageway" be defined as "a conduit formed in the housing that leads gas through the housing and which is filled with pressurized gas when the housing is connected to a source of gas." Two Forty proposes that it be construed as "a path in the device."

Aqua-Lung's proposed definition attempts to add in extraneous limitations, which are found nowhere in the representative claims set forth above or the illustrative embodiments. Neither the identified claim language nor any of the claims appear to include any limitation regarding the "passageway" being filled with pressurized gas, or the passageway leading gas through the housing. The intrinsic record reveals that the conduit is a fixed thing, which cannot actively lead anything. That is, it is a fixed structure and gas may or may not flow through it. Said another way, the claim is directed at a defined structure, and not any contents that may or may not be in the passageway at any given time. Any resulting construction, therefore, cannot include any extraneous portion of Aqua-Lung's proposed definition detailing: (1) any leading of "gas through the housing"; and (2) the conduit being "filled with pressurized gas when the housing is connected to a source of gas."

This leaves the Court with Two Forty's self-styled simplistic proposed definition and the first portion of Aqua-Lung's proposed definition of the term "passageway." In some cases, the ordinary meaning of a claim by one of ordinary skill in the art may be readily apparent even to lay judges. Phillips, 415 F.3d at 1314. In such a case, claim construction involves nothing more than the application of the widely accepted meaning of the commonly understood words through the use of a general purpose dictionary used in conjunction with the intrinsic evidence. Id. In Brown v. 3M, 265 F.3d 1349, 1352 (Fed. Cir. 2001), for example, the word "or" was construed to mean that the apparatus was capable of converting "only two-digit, only three-digit, only four-digit, or any combination of two-, three-, and four-digit date-data." The Federal Circuit held that was a correct plain reading of the claim text and it did not constitute a technical term of art requiring elaborate interpretation. Id.

At the hearing, Two Forty acknowledged that its proposed definition, while comporting with the plain meaning of a simple term, might be overbroad. Accordingly, they proposed a modified definition of "passageway" as "a conduit formed in the housing that allows gas through it." This definition incorporates the remaining first part of Aqua-Lung's proposed definition and excludes the extraneous second part described above. In light of this amended definition, and based on the foregoing, the Court adopts Two Forty's amended construction of "passageway" as "a conduit formed in the housing that allows gas to pass through it."

C. "Passing an amount . . . in excess of that necessary to saturate the wash load"

In the second step recited of Claim 13 the parties also dispute the meaning of the term "passing an amount . . . in excess of that necessary to saturate the wash load." Whirlpool contends that if this term has to be construed at all, it should be construed as "an amount that is just more than that which is needed to saturate the wash load." Defendants contend that it should be construed to require that "the total amount of wash liquid continuously passing through the clothes, exceeds the amount of liquid required to saturate the clothes." According to Whirlpool, Defendants' insertion of the word "continuously"
has no basis in the claim term or anywhere in the intrinsic evidence, and its insertion causes a fundamental and improper change to the claim term.

The patent specification describes the quantity of detergent solution as follows:

> It has been found that an amount of detergent solution only slightly in excess of that required to saturate the clothes load is sufficient for the concentrated washing operation.

'666 Patent, col. 2 ll. 34-37 (emphasis added).

The concentrated detergent solution is preferably a volume which is slightly in excess of the saturation level for the clothes load. For the purposes of this specification, saturation is defined as the point at which a load of clothes contains all the liquid it can hold. Adding additional liquid at this point merely causes a like amount of liquid to be discharged from the load.

'666 Patent, col. 5 ll. 49-55 (emphasis added).

Defendants contend that their addition of the concept of "continuously" passing through to the construction of the term comes from the prosecution history, and that it was a limitation agreed to by Whirlpool in order to gain allowance of the claim.

The Examiner's Interview Summary record reveals that the attorney "proposes to amend the claims to include "continuously passing a concentrated detergent solution so that the total amount passed through would be greater than the amount necessary to saturate the wash load." Def. Ex. L., LGE 257 (emphasis added). Thereafter, on April 11, 1988, Whirlpool filed Amendment "B," in which it summarized the agreement reached during the interview with the Examiner as follows:

> It was agreed that if each of the claims were clarified, where necessary, to specify the method feature capturing the essence of "continuously passing a concentrated detergent solution so that the total amount passed through would be greater than the amount necessary to saturate the wash load", then the claims would be allowable and the case would be in condition for allowance.

Def. Ex. L, Amendment "B" at 4, LGE 266 (emphasis added). Whirlpool then represented that it had amended the claims "to more clearly set forth the specifics of the step just identified along the lines agreed to during the interview." Def. Ex. L., Amendment "B" at 4, LGE 266.

In construing this term Whirlpool has relied solely on the specifications and dictionary definitions. Whirlpool has not responded to Defendants' citation to the discussion of "continuously" in the prosecution history. It is not clear to the Court what the insertion of this limitation adds to the meaning of the claim, but the Court cannot ignore what appears to be a concession in the prosecution history. Having agreed to one meaning during the prosecution of the patent, Whirlpool cannot now avoid this concession. See Lemelson v. General Mills, Inc., 968 F.2d 1202, 1208 (Fed. Cir. 1992). Accordingly, the Court will construe the term "passing an amount . . . in excess of that necessary to saturate the wash load" consistent with the prosecution history as "continuously passing a concentrated detergent solution so that the total amount passed through would be greater than the amount necessary to saturate the wash load."
of the pulley. Pulleys, by virtue of their function, have a certain direction; if the cables are pointed upward, the tension is going up, and the cable is “over” the pulley even if, from an earth-centered perspective, the cable is “under” the pulley. In other words, the cable is "over" the pulley relative to whether the tension is going upward or downward.

Having thus construed the claim, there is no question that this limitation reads on the accused product. The WeiderPro 9930 includes first and second cables that "pass over" their respective floating pulleys.

Step 5. Micro-Waste contends that step 5, “passing particulate articles from said microwave field to a temperature maintenance zone,” must be construed as a passing of said articles between two distinct physical areas.

A "field" is "a region or space in which a given effect (as magnetism) exists ...." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 460. Thus, a microwave field, according to its ordinary meaning, is an area in which there is microwave radiation.

A "zone" is "a region or area set off as distinct from surrounding or adjoining parts ...." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 1372. Thus, the temperature maintenance zone, according to its ordinary meaning, is a distinct area in which the temperature is maintained.

It is erroneous to adopt a construction "that ... eliminates the distinction between ... terms that is set forth in the written description of the patent itself." AFG Indus., Inc. v. Cardinal IG Co., 239 F.3d 1239, 1249 (Fed. Cir. 2001).

The distinction in the terms, "field" and "zone" implies that the microwave irradiation and maintenance of temperature occur in two distinct areas.

The Court construes Step 5 as the passing of the particulate articles from one area where microwave radiation exists to another area described as "the temperature maintenance zone."

The court adopts Rexam's proposed construction as modified, below.

Claim 13 of the '230 patent recites: "a curvilinear anti-fracture score formed in the frangible panel generally parallel to said score groove, said anti-fracture score having a tail portion passing through the hinge segment."
Claim 7 of the ’728 patent recites: "[t]he end member of claim 1, wherein, at least a portion of the second score groove passes through the hinge line generally transverse to a hinge line passing between the first end and second end of the primary score groove." 120

Here, the claim language does not clearly define what the inventors meant by "passing through." Examining the specification, Crown argues that the patent illustrates four embodiments depicting the anti-fracture, or second, score groove: figures 2, 4, 6, and 7. Crown maintains that figures 2, 4 and 7, each illustrate the second score "passing through the hinge segment 26 from one end to the other." 121 Crown then cites the specification's description of figure 4 wherein the can end "includes a score gro[o]ve 62 that passes through the hinge segment 26." 122 Crown acknowledges that the embodiment shown in figure 6 "appears to penetrate into but does not pass through the hinge segment 26," but contrasts the description of figure 6 with that of figure 4. 123 Figure 6, Crown points out, is described differently: "[i]n the alternative embodiment of FIG. 6, the tail portion 25 terminates in the end wall 12 beyond the score 22, and at least slightly transecting the line defining the hinge segment 26." 124 Crown argues that this difference in language indicates that in the embodiment illustrated in figure 6, the second score does not "pass through" the hinge segment and that "there is no reason why a claim term should be construed to encompass every embodiment described in the patent . . . ." 125 Crown also cites a dictionary definition of "through" which purportedly supports its position. The court is not convinced by Crown's arguments.

First, although Crown accurately cites the specification's description relating to figures 4 and 6, the contrasts in those descriptions do not compel acceptance of Crown's proposed construction.

Describing figure 2, the specification states that "the anti-fracture score 24 has a tail portion 25 that intersects the hinge segment 26." 126 The specification describes the preferred embodiment as having a "the tail portion 25 that transects the line defining the hinge segment 26." 127 The inventors used various words (e.g., "intersects," "transects," "at least lightly transects," and "passes through") in describing various embodiments of the claimed invention and, arguably, a differing extent to which the anti-fracture score enters or crosses the hinge segment. The disputed phrase "passes through" in these claims encompasses penetrating into as proposed by Rexam and, as so construed, does not exclude an embodiment described in the specification.
Furthermore, when the inventors intended to claim a second score line "pass[ing] through the entire hinge, not merely penetrate into a portion of the hinge," as Crown argues, 128 they were specific in their intent, as with claim 1 of the '230 patent: "a second score groove having a tail portion passing from the frangible panel into said adjacent area of the central panel and transecting said hinge segment." 129 Finally, although not relied upon in construing these terms, the court notes that both parties cited dictionary definitions of the word "through" which would not require acceptance of Crown's proposed construction. Each cited a definition that included "penetration or passage within, along or across an object." 130

Therefore, the court adopts a modified version of Rexam's proposed construction: "at least penetrating into." 131

It is not clear whether any part of this claim language is in dispute. Perouse provided constructions of "cord," "holds," and "edges" in its opening brief. (Perouse Opening Br. 32-33.) Gore did not address this claim language in either its opening or reply brief. However, in the proposed order accompanying its reply brief, Gore construed this phrase to mean "a single cord extends through a conduit formed by all of the 'gussets' and holds the opposing edges of the housing part in contact with one another." (Gore Proposed Order 3.). Neither party addressed this claim language during the Markman hearing.

There appears to be no dispute regarding the claim terms "cord" and "edges." Therefore, the Court will not construe these terms.
Finally, Gore's proposed construction apparently construes "holds said edges together" to require that the opposing edges of the housing part contact one another. Figure 8 depicts the two edges of the housing part in contact with one another. Again, however, this is a limitation from the specification that should not be imported into the claim. See Phillips, 415 F.3d at 1323. Furthermore, this limitation is not consistent with the ordinary meaning of the non-technical term, "holds together," and is rejected. "Holds said edges together," in ordinary usage, means "holds said edges near or in contact with one another." See, e.g., The Oxford English Dictionary (2d Ed.), vol.18 p. 189 ("Of two persons or things: Into companionship, union, proximity, contact, or collision"). Nothing in the intrinsic evidence warrants departure from this ordinary meaning.

The Court construes the phrase "said cord passing through each of said gussets along each of said edges such that said cord holds said edges together" to mean "said cord extending through each of said gussets along each of said edges such that said cord holds said edges near or in contact with one another."

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1. "a patient support assembly"

The parties' dispute of the construction of this claim element focuses on what "a patient support assembly" includes.

Safe Bed:

"A patient support assembly" is a conventional mattress or other assembly for supporting a patient directly or indirectly. (Safe Bed's Memorandum in Support of its Claim Construction ("Safe Bed's Mem."), at 7).

KCI:

"A patient support assembly" must include at least one conventional mattress and an underlying patient support frame. (KCI's Memorandum in Support of its Claim Construction ("KCI's Mem."), at 6).

While the parties disagree over the construction of this claim element, both sides support their proposed construction by reference to the same language in the patent specification. (Safe Bed's Mem., at 7; KCI's Mem., at 7). The pertinent portion of the specification reads:

Supported by the frame 10 is a patient support assembly 12 including one or more conventional mattresses 12A, possibly, an optional overlying pressurizable member 12A' and an underlying patient support frame 12B. ('939 patent, 5:15-18). While Safe Bed submits that "a patient support assembly" could be interpreted as nothing more than "one conventional mattress," KCI argues that the use of the word "assembly" dictates that the term require more. According to KCI, it must, at a minimum, include not only one conventional mattress, but an underlying patient support frame as well. The Court agrees with KCI's construction of this claim.

Claim interpretation begins with the ordinary and customary meaning of the words. "Assembly" is defined as "a collection of parts [fit together] as to form a complete machine, structure, or unit." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY, at 131 (1986). 1 From this standpoint, then, a "patient support assembly" cannot be a single item, such as one conventional mattress, but must be a collection of more than one part. To accept Safe Bed's interpretation that the "patient support assembly" could be one mattress or other assembly would render the term "assembly" superfluous, which would violate a cannon of patent claim construction. Elekta Instrument S.A. v. O.U.R. Scientific Intern., Inc., 214 F.3d 1302, 1307 (Fed. Cir. 2000) (rejecting claim interpretation that would term superfluous).

--- Footnotes ---

1 Throughout its submissions in this case, Safe Bed repeatedly faults KCI for relying on a dictionary published in 1993, two years after the March 12, 1991 issue of the '939 patent. (Safe Bed's Reply Memorandum on Claim Construction Issues, at 2). Because it is true that the court should consult a dictionary that was "publicly available at the time the patent is issued" to determine the ordinary and customary meaning of a disputed term, Telegenix, Inc., 308 F.3d at 1202-03, the court employs a dictionary that predates the issue of the '939 patent. Nevertheless, the passage of a few years has not had the dramatic effect on the language that Safe Bed suspects.
Safe Bed also argues that the specification cannot be grammatically read in the manner KCI suggests. According to Safe Bed:

the plain English meaning of the quoted specification language is that a patient support assembly is comprised of one or more conventional mattresses. The sentence continues that the patient support assembly could "possibly" include an optional overlying pressurizable member and an underlying patient support frame. . . . This refers to the pressurizable member and an underlying support frame as optional, not required elements.

(Safe Bed's Reply Memorandum on Claim Construction Issues ("Safe Bed's Reply"), at 4). To the contrary, the sentence construction suggests that only "overlying pressurizable member" is modified by "an optional." The support assembly is said to include, "possibly, an optional overlying pressurizable member and an underlying patient support frame" as opposed to "possibly, an optional overlying pressurizable member and underlying patient support frame." The second version would more readily indicate both were optional, but that is not the version in the specification. To be sure, the specification language evinces a battle with grammar, but it is more amenable to KCI's interpretation than to Safe Bed's.

Safe Bed also points out that claim 52, which is dependent on claim 50, specifies that "said patient support assembly has an articulated frame mounted for adjustable movement." (Safe Bed's Reply, at 6 (quoting ’939 patent, 20:12-14)). According to Safe Bed, KCI's claim construction would import the "articulated frame" of claim 52 into claim 50, thus violating the doctrine of claim differentiation. (Safe Bed's Reply, at 6). While not a hard and fast rule of claim construction, the doctrine of claim differentiation does create a presumption that each claim in a patent has a different scope. Sunrace Roots Enterprise Co., Ltd. v. SRAM Corp., 336 F.3d 1298, 1302 (Fed. Cir. 2003). That presumption is especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim, and one party is urging that the limitation in the dependent claim should be read into the independent claim. Ecolab Inc. v. Paraclipse, Inc., 285 F.3d 1362, 1375 (Fed. Cir. 2002). This is not the case here, however. KCI is not arguing that the limitation of an articulated frame be read into claim 50, but merely an underlying support frame. The two phrases are not identical. The term "articulated" adds a meaningful difference between claim 50 and dependent claim 52: the difference between an ordinary frame and one "consisting of segments united by joints." WEBSTER'S, at 124. The specification, for example, indicates that a patient support frame might be mounted to the hospital bed frame in one fashion, while an articulated frame -- which would have interconnected segments -- would be mounted in another. (’939 patent, 5:19-24). Accordingly, the Court construes "patient support assembly" to include at least one conventional mattress and an underlying patient support frame.

Tanita's first argument is that in order to infringe on the '163 or '000 patents, the accused device must measure patients in a prone position. Tanita points to various statements throughout the specification that the patient must be prone and asks this court to construe the term "patient's body" in the claim to mean "patient's prone body." Tanita then argues that because none of its devices measure a patient in a prone position, it does not infringe on either of the patents-in-suit. Healthport argues that the statements relied upon by Tanita come from the preferred embodiment and other portions of the specification, and that it is improper to read a limitation from the preferred embodiment or specification onto the claim.

Neither of the patents-in-suit use the term "prone" in their claims. Both of the patents-in-suit do, however, specifically state in the section titled "Test Procedure" that the patient must be measured prone: "Position the patient prone on a non-conductive surfaced table. . . . The patient must be prone to minimize interference from muscle contractions. (Antagonist muscle contractions in standing or sitting patients create inaccurate Impedance results.)" The instruction to place the patient prone also appears in the sections titled "Operation" and "Operation Checklist."

The general rule in patent law is that the specification may aid in claim interpretation but particular limitations or embodiments appearing in the specification will not be read into the claims. E.I. DuPont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir. 1988). Tanita, however, directs the court to a line of cases, beginning with
In SciMed, the asserted patent claimed a catheter with two passageways, or "lumens." 242 F.3d at 1339. Although the claims did not on their face specify that the two lumens were coaxial (one inside of the other), the trial court found the discussion in the specification criticizing catheters with dual (side by side) lumens to control. The court held that the claims were limited to coaxial lumens and could not be construed to cover dual lumens. The Federal Circuit affirmed. In its opinion, the Federal Circuit court addressed the argument that the trial court had committed one of the "cardinal sins of patent law -- reading a limitation from the written description into the claims." Id. at 1340. The court explained that the district court properly read the claims in view of the specification, of which they are a part. Id. The court noted that "one purpose for examining the specification is to determine if the patentee has limited the scope of the claims." 242 F.3d at 1341 (quoting Watts v. XL Sys., Inc., 232 F.3d 877, 882 (Fed. Cir. 2000)). The court continued, "[w]here the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question." Id.

In AstraZeneca v. Mutual Pharmaceutical Company, Inc., 384 F.3d 1333 (Fed. Cir. 2004), the asserted patents claimed new pharmaceutical preparations related to extended-release felodipine tablets for use in treating hypertension. The claim construction dispute centered around the term "solubilizer." The parties agreed that an ordinary and customary meaning as understood by one of ordinary skill in the art of the term solubilizer would include surface active agents, known as surfactants, co-solvents, and complexation agents. The defendant argued, however, that in the context of the specification and prosecution history, the term solubilizer encompasses only surfactants. The Federal Circuit agreed, holding that "the intrinsic evidence . . . clearly binds AstraZeneca to a narrower definition of 'solubilizer' than the extrinsic evidence would support." Id. at 1338. The court based it's holding on, inter alia, the fact that the specification clearly disavowed nonsurfactant solubilizers in two ways. Id. at 1340-41. First, the inventors implicitly disavowed nonsurfactant solubilizers by stating in the specification that "[t]he solubilizers suitable according to the invention are defined below," and then two paragraphs later, stating "[t]he solubilizers suitable for the preparations according to the invention are semi-solid or liquid non-ionic surface active agents" Id. at 1339; 1341 (emphasis in original). And second, the "Description of the Invention" described "micelle structures" as a feature of the invention and surfactants were the only solubilizers believed to form micelle structures in watery environments. Id. at 1341.

AstraZeneca argued that those statements simply addressed features of the preferred embodiments and should not be read to limit the claims. The court disagreed, stating,

AstraZeneca seems to suggest that clear disavowal requires an 'expression of manifest exclusion or restriction' in the form of 'my invention does not include . .' But again, such rigid formalism is not required: Where the general summary or description of the invention describes a feature of the invention (here, micelles formed by the solubilizer) and criticizes other products (here, other solubilizers, including co-solvents) that lack that same feature, this operates as a clear disavowal of these other products (and processes using these products).

Id. at 1341 (citing SciMed, 242 F.3d at 1340-45).

In Phillips, the Federal Circuit's most recent seminal case on claim construction, the court affirmed the importance of the specification in construing patents:

The claims, of course, do not stand alone. Rather, they are part of "a fully integrated written instrument," Markman, 52 F.3d at 978, consisting principally of a specification that concludes with the claims. For that reason, claims "must be read in view of the specification, of which they are a part." Id. at 979. As we stated in Vitronics, the specification "is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." 90 F.3d at 1582.
Here, the patents-in-suit emphasize that the key aspect of the "present invention" is to generate more accurate, valid measurements of human body composition. As a result, the public is on notice that any statements in the patents concerning how that invention achieves accurate results limit the scope of the claims. See e.g. Aguayo v. Universal Instruments Corp., 356 F. Supp. 2d 699, 727 (S.D. Tex. 2005) (Where the "specification calls an embodiment the 'invention' or the 'present invention,' it is appropriate to limit the claims to that embodiment.") (citations omitted). The patents-in-suit then go on to specify that the "patient must be prone to minimize interference from muscle contractions," and warn that the device will not measure accurately if the patient is standing or sitting. I find that the specification expressly disavows measurements taken of a standing or sitting patient, and that limitation must be read onto the claim. Accordingly, I construe the term "patient's body" in the claims of the patents-in-suit to mean "patient's prone body."

This case is slightly different from SciMed in that SciMed addressed what the invention itself looked like and this case involves how the invention is applied. Nonetheless, I find that the language in the patents-in-suit discussed above constitutes a sufficient disavowal such that it falls under the umbrella of SciMed and its progeny.

A. Pattern

A variable color display device includes a plurality of variable color display areas arranged in a pattern.

Plaintiff, Texas Digital Systems, Inc., alleges that the proper interpretation of the word pattern encompasses not only a seven segment display and matrix array, but any type of systematic arrangement of pixels. The Defendant alleges that the term pattern is limited to the seven segment font. The starting point for any claim construction must be the claims themselves. Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999). Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759 (Fed. Cir. 1984). In looking at the strict words of the claim, the claim states as follows:

In the patent language description of the prior art, Havel states in his 619 Patent:

A display device that can change color and selectively exhibit characters as described in my U.S. Patent No. 4,086,514 entitled "Variable Color Display Device" and issued on April 25, 1978. This display device includes display areas arranged in a suitable display font, such as well-known seven segment font, which may be selectively energized in groups to exhibit all known characters.

This language specifically informs the public and a person of ordinary skill in the art, at the time of the filing of the patent application, this was not a limiting term, but rather an expansive term giving an example, as opposed to a limitation on the patent. Further, Mr. Cooper, who was admitted as a person of ordinary skill in the art at the time of the invention, has defined the word pattern in his testimony and in his chart exhibit, Exhibit 81, as having a systematic arrangement. The defendant in its argument relies upon the 514 Patent as well as the file wrapper on the 619 Patent. However, the reliance upon the examiner's refusal to accept original Claims One through Eight and Claims Nine through Fourteen is misplaced. The Court finds that pattern is defined as having a systematic arrangement.

E. "display areas arranged in a pattern"

The limitation "display areas arranged in a pattern" appears in the asserted claims of the '481 and '619 patents, as well as claim 4 of the '890 patent. The district court construed "pattern" to mean "having a systematic arrangement." Telegenix argues that this construction is too general, and the limitation should be limited to a seven-segment display pattern, for
example, that shown in Figures 1a-c of the '890 patent. TDS responds that this limitation is not limited to a seven-segment display or any other fixed pattern, and that the scope of the claims is broad enough to encompass a matrix display.

Where "pattern" is described in the specifications of the patents in suit, the seven-segment display is listed as an example of the preferred font. The '481 patent specification describes "seven elongated display segments a, b, c, d, e, f, g, arranged in a conventional pattern." '481 patent, col. 2, ll. 24-25. The preferred embodiment of the '890 patent is described as including "a variable color display area consisting of seven segments 31 arranged in a well known 7-segment font." '890 patent, col. 2, ll. 16-18. Nowhere in the specification is the limitation "display areas arranged in a pattern" restricted, explicitly or implicitly, to the seven-segment arrangement of the preferred embodiment.

Telegenix does not dispute that the patents in suit describe the seven-segment pattern in exemplary language. Instead, Telegenix argues that U.S. Patent No. 4,086,514 ("'514 patent") establishes that the same inventor represented matrix displays and seven-segment displays as two separate embodiments of the same invention. We fail to understand the relevance of Telegenix's argument. Whether or not the claims in an unrelated patent are broad enough to encompass both a matrix and the familiar seven-segment pattern, this proposition sheds no light on whether the claims of the patents in suit are limited to the seven-segment pattern. See Abbott Labs. v. Dey, L.P., 287 F.3d 1097, 1104, 62 USPQ2d 1545, 1550 (Fed. Cir. 2002) (finding the relationship between two unrelated patents, although having common subject matter, a common inventor, and the same assignee, "insufficient to render particular arguments made during prosecution of [one of the patents] equally applicable to the claims of [the other patent]").

Referring to the prosecution history, the Examiner's Statement of Reasons for Allowance for the '619 patent stated, "In this manner, multicolored arrays (i.e., color cathode ray tube displays such as Takeda, of record) in which there is no physical distinction between a foreground or background pixel (display area), are distinguished from by the claimed subject matter." Although the prosecution history may help define the scope of a term if relevant, see Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1676 (Fed. Cir. 1995), this Examiner's statement has no bearing on the meaning of the term "pattern." Nor does this statement limit the scope of "pattern" to the familiar seven-segment font.

Accordingly, because there is nothing in the claims or the intrinsic evidence of record to indicate otherwise, we conclude that this limitation was correctly construed by the district court according to the ordinary meaning of "pattern." The district court's construction, "having a systematic arrangement," is not in error.

2. Pattern, Design, Logo or Other Marking

Even if Thilmany's coating is a recurring one, Thilmany asserts that its coating does not constitute a "pattern," much less a "design," "logo" or "other marking." These are terms, Thilmany argues, which suggest the coating must have some sort of visible effect, whereas Thilmany's coating is not intended to be seen, and in fact is essentially invisible. CEI argues that the coating need not have any visible decorative properties; it is enough that the varnish layer is "discontinuous;" in other words, the coating does not completely cover the film. CEI finds support for its position in the specification, which describes the coating as being in a "recurring pattern or design, such as a logo or other marking, rather than flood-coated over the entire surface of the film." (Id. col. 6, 58-61; col. 7, 7-9.) Similarly, it describes the invention being coated "with a varnish or other material in a recurring pattern, design, logo, or other marking (rather than flood-coated across the entire surface)." (Id., col. 7, 21-23.) Thus, the distinction CEI draws is between a fully coated surface and one where the surface is incompletely coated with a pattern or other marking.

The distinction also finds support in the prosecution history. The examiner had objected that the claims were obvious in light of a patent to Balloni. In response, CEI amended the claims and argued that:

Amended Claim 1 requires that the first or second layer of the solid film ream wrapper be coating [sic] in a recurring pattern, design, logo or other marking on one side with a material that alters that static COF by at least .02. Balloni does not coat the film in any manner and transfers the silicon oil to both layers of film. Therefore, amended claim 1 is not obvious over Balloni.
When the examiner ultimately accepted the amended claims, he noted: "[t]he applicants have … amended the claims to require a repeating pattern or image (i.e. discontinuous layer) wherein the pattern alters the COF measurement. … the coating in Balloni et al. was applied as a continuous coating and there is no obvious reason to apply it discontinuously (i.e. in the form of a pattern)." (Franzini Aff., Ex. G at 2) (italics added).

Thus, both the prosecution history and the patent itself support CEI's argument that the importance of the term is that it describes a discontinuous coating instead of a complete one. There is nothing in the evidence indicating that the coating must have a decorative effect in order to be a "pattern, design, logo, or other marking." Nothing in the specification suggests any additional usefulness arising from the fact that the pattern might be visible or have a decorative effect; in fact, the only advantage the patent mentions is that the coating will make the wrap less prone to slipping and easier to open. Neither of these advantages has anything to do with decoration. And, although the terms "logo" or "other marking" would imply that the coating must be visible, there is nothing so limiting about a pattern or design. To return to the earlier example, the dollar bill contains several designs or patterns that, for security reasons, are invisible to the untrained eye. Accordingly, I will decline to interpret the claim in the fashion Thilmany suggests.

The phrase "pattern, design, logo, or other marking" needs no further elaboration apart from the clarification that the coating need not be visible or have a decorative effect.

--- Footnotes ---

3 My ruling at this stage does not address the validity of the patent in suit. As Thilmany seems to anticipate, the potential for validity problems increases as the claims are construed more broadly.

--- End Footnotes ---

11. "Patterning the continuous layer of transparent conductive material" ('682 Patent, claims 22, 25, 26, 29) (Claim Element 10)

a. The Parties' Positions

The '682 and '711 Patents provide for a method of fabricating a liquid crystal display that involves arranging two different substrates. Claim 22 of the '682 Patent can be used as an example of this fabrication process. According to Claim 22 of the '682 Patent, the fabrication of a liquid crystal display is comprised of different steps. Specifically, this Claim provides as follows:

A method of fabricating a liquid crystal display, said method comprising the steps of:

providing a substantially transparent first substrate member;

disposing a layer of substantially opaque material upon one side of said first substrate;

forming at least one opening through said layer of substantially opaque material;

disposing a light influencing material in said at least one opening;

disposing a continuous layer of a transparent, passivating material atop said layer of opaque material and said light influencing material;

disposing a layer of transparent, conductive material atop said passivating layer;

providing a second substantially transparent substrate member having a continuous layer of a transparent conductive material disposed on one surface thereof, said second substrate being spacedly disposed from said first substrate and arranged so that the layer of transparent conductive material of the second substrate faces the layer of transparent conductive material of the first substrate;
patterning the continuous layer of transparent conductive material; and

disposing a layer of liquid crystal material between said first and said second substrates

(1) "Patterning" the Conductive Layer

The Parties do not dispute that Claim Element 9 relates to the method of fabricating the second substrate and finally completing the liquid crystal display. Dkt. No. 113 at 7-8. The Parties do, however, dispute whether Claim Element 10 relates to patterning the conductive layer on the first or the second substrate, as each substrate includes a separate conductive layer. ATI argues that this "patterning" is of the conductive layer on the second substrate. Dkt. No. 81 at 23-26. ATI argues that such a construction is supported by the specification. Id.

Sharp argues that the "patterning" must be of the conductive layer on the first substrate. Dkt. No. 113 at 8-9. Sharp argues that the conductive layer on the second substrate cannot be patterned because it is a continuous conductive layer. Dkt. No. 113 at 7-8. Specifically, Sharp argues that a continuous conductive layer is first placed on the "second substrate." Id. Then, later in the claim element, the phrase "said second substrate" is used to refer back to this second substrate. Id. When the inventor refers back to the second substrate by saying "said second substrate," Sharp argues that he was referring also referring back to the continuous conductive layer placed on the second substrate. Id. Sharp argues that if this construction is not adopted, this Court will be ignoring the importance of the word "said" and the fact that this word should be used to refer back to the previous use of the word. Id.; Hearing Transcript at 146-148.

In its response, DNP focuses more on the timing of the patterning and does not specifically argue as to which conductive layer is patterned. Dkt. No. 84 at 28-29. Instead, DNP merely argues that the "transparent electrically conductive material" is patterned. Id.

(2) Timing of the "Patterning"

The Parties also dispute whether this patterning step must be completed before or after the substrates are arranged so as to face each other. ATI argues that the patterning step is completed before the substrates are so arranged. Dkt. No. 81 at 23-26. ATI argues that nothing in the intrinsic record precludes the patterning of conductive material before the substrates are arranged. Id.

Sharp does not provide any specific argument regarding the timing of this patterning. Dkt. No. 113 at 8-9. However, Sharp does propose that the "patterning" cannot be of the conductive layer on the second substrate because then the patterning would have to occur after the substrates were arranged. Id. Sharp argues that if the "patterning" were found to be of the conductive layer on the second substrate then this phrase violates 35 U.S.C. § 112 as ambiguous. Id. DNP argues that the "patterning" must occur after the substrates are arranged. Id. DNP argues that if this construction is not adopted, then this claim element is insolubly ambiguous and the corresponding claims would be invalid as indefinite under 35 U.S.C. § 112.

b. Construction

(1) "Patterning" the Conductive Layer

The claim language establishes that Claim Element 10 requires the patterning of the conductive layer on the second substrate. Specifically, Claim Element 10 requires the patterning of "the continuous layer of transparent conductive material." (emphasis added). The only other reference to the continuous layer of transparent conductive material is in Claim Element 9 (referring to the second substrate). Accordingly, the "patterning" must be of the conductive layer on the second substrate, not of the conductive layer on the first substrate.

Furthermore, Sharp's argument that the patterning must be of the conductive layer on the first substrate is not persuasive. As noted above, Sharp argues that Claim Element 9 uses the phrase "said second substrate" to refer back to the second substrate with the continuous conductive layer. While Sharp is correct in its argument that "said second substrate" refers back to the second substrate, nothing in this claim element requires that this "said second substrate" must also include a continuous (as opposed to patterned) conductive layer. 19
19 However, this Court does find that Sharp's argument that a layer cannot be both "continuous" and "patterned" at the same
time is persuasive. Such a construction is supported by the specification. See, e.g., Col. 7, Lines 44-52 (stating that the
conductive layer may be patterned or "[a]lternatively" may be left unpatterned). ATI also does not dispute this proposed
construction. Hearing Transcript at 134-135, 138. Therefore, this proposed construction is adopted.

(2) Timing of the "Patterning"

DNP's proposed construction that the "patterning" must occur after the substrates are arranged to face each other cannot be
adopted. Under the general rule, method steps need not be performed in the order written. Baldwin Graphic Systems, Inc. v.
Siebert, Inc., 512 F.3d 1338, 1345 (Fed. Cir. 2008). Defendants have not established that an exception to this general rule
should be applied. Also, the claim language itself does not explicitly or implicitly require a specific order. Id. (holding that
"although a method claim necessarily recites the steps of the method in a particular order, as a general rule the claim is not
limited to performance of the steps in a particular order, unless the claim explicitly or implicitly requires a specific order.")
(internal citation omitted). Therefore, these method steps need not be performed in the order written.

Moreover, the specification does not require that these method steps be performed in a specific order. See, e.g., Col. 8, Lines
10-24. DNP even recognizes that the specification does not require these method steps to be performed in the order written:

A second plate is then prepared by first depositing a layer of conductive material upon one surface of a second transparent
substrate. (Id. at Fig. 4, ref. No. 42; id. at 8:10-12). The layer of conductive material may be left as a continuous layer or
may be patterned by photolithography to form display electrodes. (Id. at Fig. 4, ref. No. 42; id. At 8:14-17). The two plates
are then arranged so that the different layers of material disposed on the two substrates face each other. (Id. at Fig. 4; id. At
8:21-24).

Dkt. No. 84 at 3 (emphasis added).

Additionally, DNP's proposed construction--which would require the patterning after the substrates are arranged--would
render this invention inoperable. Even a rudimentary understanding of the technology behind the fabrication of a liquid
crystal display would dictate against requiring such a construction. Namely, after the two substrates are arranged so as to
face each other, it would be unreasonable to then pattern the conductive layer. Even DNP recognized that such a
construction would be impractical:

THE COURT: . . ."That is, from DNP's briefing it seemed to me that you seem to require or are wanting to require Claim
22 to be done in sequence. In other words you're--the way you interpret that is once the assemblies are put together, the
subassemblies are put together, then if there is going to be any patterning on the second substrate, it has to happen then. Is
that the way you're--is my reading of your position correct?

MR. CHALSEN: Yes, that's our argument, Your Honor. And actually this is another one of our indefinite--it's really an
indefinite in that this claim really is inoperable or it's invalid. It can't be--it's not practical--

Hearing Transcript at 136.

Accordingly, this Court adopts the following construction for Claim Element 9: "Providing a second substrate having a
continuous layer of transparent conductive material placed on one surface. The substrates are assembled so that the first and
second substrates are spaced apart from each other and the layer of conductive material of the first substrate and the layer of
conductive material of the second substrate face each other." This Court adopts the following construction for Claim
Element 10: "Patterning the continuous layer of transparent conductive material on the second substrate. This patterning
step may be done before or after the substrates are arranged such that they face each other."

Furthermore, DNP's proposal that the transparent conductive material be placed "directly onto the second substrate" should
not be adopted. As noted repeatedly in this opinion, these claims use the open-ended word "comprising" when detailing their steps. Such a word indicates there could be additional steps included in the invention with the potential for intervening layers between the second substrate and the continuous layer of transparent conductive material. CollegeNet, Inc., 418 F.3d at 1235.

C. Pavement Construction Material Mixture

This term is found in claims one and thirteen. The Plaintiff proposes "a mixture of materials for use in constructing pavement, including without limitation soils, aggregates, asphalt, cement asphalt and concrete mixes." The Defendants propose "a construction pavement mixture of constituent raw materials that includes one or more aggregates, soils, asphalt, cement asphalt, and cement." The parties agree that the term is limited to construction pavement and that it includes aggregates, asphalt, cement asphalt, and concrete/cement.

This disputed term appears only in the claims of the patent, so the specification does not provide an explicit definition. The patentee does state in the background of the invention, "to ensure that the materials conform to the specification, various tests have been developed for standard test methods for Quality Assurance/Quality Control of soils, aggregates, asphalt, cement asphalt, and concrete mixes." Col 1: 34-37. The patentees also listed various types of tests that can be performed, including soil test methodologies (col. 2:12), asphalt test methodologies (col. 2:18-19), asphalt mix test methodologies (col. 2:23), concrete mix test methodologies (col. 2:28), and aggregate test methodologies (col. 4:27). The patentees also specified that the server allows the consumer to use software packages for standardized tests for "soils, aggregates, asphalt, cement asphalt and concrete mixes." Col. 3:63-64.

The dispute in this term is whether the disputed phrase is a mixture of constituent raw materials. The Defendants argue that the mixture must be made of "constituent raw materials." The Defendants argue that this is the definition of a mixture, but they do not offer any evidence for that argument. The Defendants also point to a statement in the prosecution history where the patentees distinguished their invention over two Harbuda references because those references related to manufacturing raw material and lacked the construction material mixture required by the claims. See ATSER_R_0000806. This prosecution history evidence does not, however, limit the disputed term or the claimed invention to a mixture of constituent raw materials. In fact, the Defendants' own expert testified that the disputed term could be a blend of raw and pre-processed materials. Adding a limitation that the mixture be made up of constituent raw materials is unhelpful to a jury and inconsistent with the evidence presented.

Construction: A mixture of materials used to construct pavement. Such materials include soils, aggregates, asphalt, asphalt mix, cement asphalt, and concrete mix.

Payload Platform

Payload Platform

Each parties' claim construction of the relevant term in the '662 patent is listed as follows:

<table>
<thead>
<tr>
<th>Disputed Term</th>
<th>Defendants' Proposed Const.</th>
<th>Plaintiffs' Proposed Const.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payload Platform</td>
<td>The platform on which the payload (e.g., a camera) is directly mounted and not any other element of the device</td>
<td>Of rigid construction, either as a solid manufactured piece or as a rigid construction of pieces which together form the payload platform, and to which payloads can be attached. It comprises the structure of the '662 device that is stabilized from the motion</td>
</tr>
</tbody>
</table>
impacted by the vehicle or moving
object upon which the '662 device
is mounted, and it is the structure
that is moved by the 'means
of moving.'

Neither parties' formulation is very illuminating, but for different reasons: Defendants' construction is not specific or precise, but is all too self-referential (a payload platform is the platform where the payload is affixed); plaintiff's formulation is simply indecipherable and unintelligible as it gives no meaning to the term (a payload platform is something which forms a "payload platform structure"). That said, it does seem apparent from the parties' accompanying arguments that defendants' seek to limit the payload platform to the horizontal surface or plate upon which the device in question is directly mounted or affixed, while plaintiff seeks to include within the term not only the horizontal surface or plate but also the supporting structure thereto, namely struts, legs, etc., that is, then attached to and moves in conjunction with the motors or other means of moving. (Compare Defs' Reply at 8 ("the definition proposed by Defendants ... limits the structure to the horizontal piece that holds the camera") with Pls' Reply Br. at 6 ("the payload platform ... is the entirety of the platform that is stabilized by the device' or stated another way "a single machined element that attaches to the motors or means for moving and includes the horizontal attachment plate"). With this understanding and refinement of the parties' respective proposed constructions, the Court now turns to determining which most aptly captures what is meant by the term as used in the '662 patent.

Turning to the language contained in the patent, both sides make much of the fact that the '662 patent alternately speaks of the payload platform as the "camera support platform 22" or a "platform for supporting an article to be stabilized" (see Col 4, lines 39-40 ("sensor package B [(the second sensor package)] is mounted on the camera support platform") and Col. 2, lines 1-3 ("In accordance with one aspect of the present invention, a stabilized platform includes a payload platform for supporting an article to be stabilized")). Defendants argue that, by specifically linking the concept of the payload platform to the device in question (the camera), the patent plainly directed that it was only that portion of the invention upon which the device was affixed or mounted, and not the remainder, that was covered. Plaintiff counters by focusing on the use of the word "support" as indicating that the "platform" extended beyond the area where the device was affixed or mounted to the length of the structure that attached the device to the means of moving (e.g., motors).

The Court is not persuaded by either sides' argument, as each proposed definition suffers from the same imprecision as that of the term it is being used to substitute. That the word "camera" is mentioned does not necessarily mean that the platform in question is limited to just the top of the tripod/structure. Nor is the fact that the '662 patent provides that the payload "platform ... support[s] an article to be stabilized" necessarily mean that such support must include not only the immediate area providing such support (that is, the horizontal attachment plate) but also the metal legs or struts coming off of the horizontal plate that affixes that plate to the rest of the device. Simply put, it is not clear to the Court that the different linguistic formulations of the relevant aspect of the device was intended to serve, or indeed does serve, as a means to delimit or otherwise define the precise scope of how far down the device a payload platform is considered to extend.

Rather, it appears these alternative formulations for the part of the device in question are as unilluminating on the precise question at issue in this case -- what is the extent of the platform? -- as the original formulation of "payload platform." The reformulations do not specifically point, one way or the other, to how far down the support structure the word "payload platform" extends, whether that be just to the mounting plate or further down to the support structure holding/attaching the mounting plate area to the rest of the invention's structure. Instead, they speak in broad terms that could be read to support either proposed definition.

Telling in this regard is the fact that, when using the alternative phrasing "camera support platform," the '662 patent makes references to item 22 in FIGS 1 and 2 of the preferred embodiments. As made apparent during the Markman hearing, it is not entirely clear (especially in connection with FIG 2) whether item 22 is simply the horizontal plate, or if it also includes the hatched lines forming a triangular shape revealing the support structure connected to the horizontal plate (that is, those hatched lines which appear to connect the horizontal plate to the invention's motorized apparatus).

The parties' reference to the dictionary is equally unilluminating, as it too is subject to supporting either party's construction. The dictionary defines a "platform" as "a device or structure incorporating or providing a platform especially such a structure on legs used for offshore drilling (as for oil)." MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 891 (10th
ed. 1999). Such a definition could support, although does not require, the notion that the part of the device performing the function of a platform (or at least being encompassed within it) extends beyond the flat horizontal attachment plate to the support structure. The Court emphasizes the word "could" because the definition speaks of a "structure on legs." Thus, it is equally possible that the definition seeks to separate the relevant "structure" from the "legs" that support it; the "structure" being the horizontal platform. Another dictionary definition emphasizes the horizontal attachment plate as being the relevant part of the invention performing the function required by the term "platform": "A raised horizontal surface especially a raised flooring." Id.

As can be discerned from these competing dictionary definitions, a platform can either be viewed as the horizontal surface upon which a person or device stands or rests, or it can extend to the supporting struts or legs holding the horizontal surface aloft.

In the end, the Court finds that what is key to deciphering the meaning of this term is the comparable structures mentioned in prior art concerning gimbal-based devices, and how that prior art was discussed and distinguished by both Grober and the PTO during the re-examination of the '662 patent. Specifically, an understanding of what specific structural aspect of the prior art Grober and the PTO re-examiner were talking about in relation to the "payload platform" provides meaningful insight into what part of the '662 patent is sought to be captured through use of that term in the '662 patent itself. Notably, in Howes v. Medical Components, Inc., 814 F.2d 638 (Fed. Cir. 1987), the Federal Circuit held that the prosecution history of a reissue application must be considered in interpreting a claim even when the claim appeared in the original patent and was not altered or amended during the reissue proceedings. Similarly, in Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448 (Fed. Cir. 1985), the Federal Circuit held that a disclaimer or concession made by a patent owner during reissue proceedings is binding as to the interpretation of the claim. As one district court noted: "The arguments and amendments made by the patent owner during the prosecution are pertinent to claim interpretation. . . . They also limit the allowable equivalents under the doctrine of equivalents. . . . This prevents the patent owner from construing the claims narrowly before the PTO and broadly before the courts." Total Containment, Inc. v. Environ Prods, Inc., 921 F. Supp. 1355, 1389-90 (E.D. Pa 1995).

3 Although not recited in the body of this Order, the Court is mindful of and has employed the standards set forth in Phillips v. AWH Corp, 415 F.3d 1303, 1312-17 (Fed. Cir. 2005), that in executing the Markman mandate the Court must follow certain rules ranking in importance various sources of evidence (i.e., intrinsic and extrinsic evidence, and that within those broad categories there is a hierarchical ranking of subcategories of such evidence) to elucidating the meaning of claim terms.

This principle applies with equal force to a patent owner's construction of claims made during reexamination proceedings in order to avoid prior art. "[A]rguments made to distinguish prior art during reexamination proceedings are retroactively applied to limit the scope of a claim limitation as of the issue date of the patent, not the date those arguments were made." Intermatic Inc. v. Lamson & Sessions & Co., 273 F.3d 1355, 1367 (Fed. Cir. 2001), vacated on other grounds, 535 U.S. 722, 122 S. Ct. 1831, 152 L. Ed. 2d 944 (2002).

PTO Re-examination Proceedings

It is clear to the Court that, through arguments advanced by Grober during the reexamination proceedings, amendments to the patent he submitted in connection therewith, as well as the PTO's subsequent adoption of at least one of those arguments, the defining characteristic of the '662 patent which distinguish it from a long line of prior art concerning two-axis gimbal based devices (most notably the Welch and Duckworth patents) was the fact that the '662 patent "requires 'the second sensor package [be] fixed to the payload platform.'"

This distinguishing feature of the '662 patent is central to defendants' most persuasive argument: If the payload platform is more than just the horizontal plate or surface upon which the camera is directly affixed, then the '662 patent runs up against the prior art should it be demonstrated that sensors from the second sensor package in the prior art similarly showed them affixed to the metal support.struts/legs to the horizontal plate. If that is the case, then the PTO's finding (and Grober's
similar representation to that effect to the PTO re-examiner) that the prior art did not teach that there were sensors from the second sensor package on the "payload platform" must mean, logically, that such supporting legs/struts are not and cannot be considered part of the payload platform in the '662 patent. To hold otherwise would be to render large parts of the claims in the '662 patent invalid as being anticipated or rendered obvious by the prior art in Welch and Duckworth. To understand whether there is anything to this argument, it is important to understand the particulars of the Welch and Duckworth's devices, the arguments advanced before the PTO re-examiner in regards to the prior art, and the PTO re-examiner's resolution of those arguments.

Welch device

Welch described the critical part of his invention in the '039 patent as follows: "FIG. 1 illustrates the active stabilized platform system in one embodiment of the present invention. FIG. 2 is an enlarged view of the stabilized structure of the first embodiment of the present invention." With respect to the "stabilized platform system," Welch made clear that there were three subparts comprising it:

The principle mechanical design will be discussed first. There are three major mechanical subassemblies of the stabilized platform: (1) the protective enclosure or radome 12, (2) the base structure 14, and (3) the stabilized structure 16, which further includes a platform structure 18 and a counterbalance structure 21. FIGS. 1 and 2 show the stabilized structure 16 and these subassemblies. Each of the three (3) subassemblies serves a specific purpose in the overall active stabilized platform system 10.

It is this last subassembly, the stabilized structure and its accompanying subassemblies, that was the focus of the re-examination proceedings related to Grober's '662 patent and the present Markman hearing. As best the Court can tell, Welch further divided his stabilized structure as including within it a platform structure and a counterbalance structure. The stabilized structure was the equivalent of the '662 patent's flat horizontal plate, as it was the part of the Welch invention upon which the antenna was directly mounted and touching the plate. The question remains -- what to make of the platform structure? On FIG 1 to the Welch patent it shows that a sensor, the pitch potentiometer item 27, is affixed to the "platform structure" which appears to include both horizontal surface as well as the vertical legs or support structures.

Duckworth device

Duckworth described the critical part of his invention in the '312 patent as follows:

FIG. 1 is a schematic view of a conventional stabilized platform. . . . Referring to FIG. 1, a radar antenna 1 is mounted to be rotated about the azimuth axis 2 upon a stabilized platform 3. The stabilized platform 3 is carried from the deck of a ship represented at 4 by a two axis gimbal system, consisting of a frame 5 carried from two supports 6 and 7 fixed to the deck of the ship 4. The frame 5 is mounted between the two supports 6 and 7 so as to be capable of rotation about a horizontal roll axis 8. The stabilized platform 3 is mounted within the frame 5 so as to be rotatable about a horizontal pitch axis 9, the axes 8 and 9 being orthogonal.

So item 3 in the Duckworth device is the equivalent of the horizontal plate in the Grober '662 patent. It would appear that item 5 is the most equivalent to the metal legs or support to the horizontal plate on the Grober '662 patent.

This raises the question of where Duckworth calls for his sensors to be placed. And herein lies the problem: It is not at all clear that the Duckworth patent calls for a specific location for the sensor to be placed; instead it emphasizes that wherever the sensor is placed it must be able to measure certain movement along the two axis. As Duckworth explains:

Referring to FIG. 2, this is a schematic diagram of the error signal detection and control system provided in respect of one of the axes 8 and 9 of FIG. 1. . . . Again the antenna is represented at 1. The synchro transmitted 10 is arranged to detect movement of the aerial 1 about the roll axis 8, i.e., movement of the frame 5 relative to the supports 6 and 7 about axis 8.

From reading this, and then looking at the schematic in question, it is hard to decipher were, if anywhere, the synchro item 10 is attached or affixed to the device.

Resolution by the PTO
Among the twenty-nine grounds proffered in its re-examination of the '662 patent, defendants argued in grounds one, two, and eleven that claim 1 and certain other dependent claims in the patent were anticipated or rendered obvious by Welch (grounds one and two) or Duckworth (ground eleven). Ultimately, the PTO re-examiner agreed with Grober and did not adopt grounds one, two, or eleven. However, in doing so, the PTO re-examiner drew a distinction -- advocated by Grober -- between the '662 patent and the Welch and Duckworth patents that served to place a limit on the claim terms contained in the '662 patent. Specifically, the PTO re-examiner noted that it was the failure in the Welch or Duckworth prior art to fix sensors from the second sensor package to the payload platform that made the '662 patent device distinguishable and thus patentable:

Claims 1-13 are confirmed because the prior art of record fails to teach or make obvious a stabilized platform having a second sensor package that is fixed to the payload platform as recited in claim 1. The inclusion of a second sensor package being fixed to the payload platform defines patentability over the prior art of record because it defines a distinguished structure of a stabilized platform which is not taught or made obvious by the prior art of record alone or in combination.

However, as to what parts of the prior art were considered to be analogous to the '662 patent's "payload platform" (and by extension what was meant by use of that term in the '662 patent) differed from those advanced by Grober during the re-examination proceedings (as detailed below); it is this interplay between the position advocated by Grober and defendants, and the PTO re-examiner's resolution of the same, that is highly probative of the central claim term at issue here.

In articulating why the grounds put forward by defendants were mistaken, Grober emphasized the importance of the payload platform in his device, especially in relation to the positioning of the second sensor package. First, Grober sought to amend the claims in the '662 patent in several places to emphasize the point that, in the '662 patent, the "second sensor package . . . is wholly fixed to the payload platform." (Defs' Am. Opening Br., Ex. E at 10, 13, & 15 ("patent owner, in the amendment filed on 12/20/05 . . . explained the fundamental difference between Welch and the '662 patent 'by point[ing] out that claim 1 . . . requires "the second sensor package is fixed to the payload platform," and argued that Welch does not teach this limitation").). As explained by Grober to the PTO re-examiner, "the wording 'Fixed to' found in claim 1 . . . especially within the context of Grober's patent specifications and drawings show that no part of the second sensor is fixed to anything other than the payload platform. Therefore by definition it is 'wholly fixed to'. Grober FIG 2 item B, and FIG 3 item B, and FIG 13 item 38, clearly show the sensor as 'wholly fixed to' the payload platform." (Defs' Am. Opening Br., Ex. E at 23-24).

Next, Grober argued that neither the Welch nor the Duckworth patents taught this requirement for their devices to work. "The amendment precludes any possible terminology confusion when comparing with Welch and Duckworth's potentiometers, encoders, synchros or resolvers which are clearly identified in their specifications and figures as not wholly on the payload platform. Welch never uses the words 'fixed to' or 'mounted on' to describe his potentiometers 27 and 29. They are clearly not 'fixed to', and most definitely not 'wholly fixed to' Platform Structure 18. Welch and Duckworth would not work if they were." (Defs' Am. Opening Br., Ex. E at 24).

Grober also commented on the location of the payload platform in the preferred embodiments to the '662 patent. Grober thus remarked that, unlike the prior art, the '662 patent taught that, using "the wording 'fixed to' found in claim 1, and the wording 'mounted on' in claim 4 especially within the context of Grober's patent specifications and drawings show that no part of the second sensor is fixed to anything other than the payload platform. Grober FIG. 2 item B, and FIG. 3 item B, and FIG 13 item 38, clearly show the sensor as 'wholly fixed to' the payload platform." 4 (Defs' Am. Opening Br., Ex. E at 23-24). Interestingly, in those figures (see FIGs 2 and 3, whose depictions are illustrated above) mentioned by Grober, the sensor (item B in FIGs 2 and 3) is shown attaching to the horizontal plate upon which the camera is directly fastened, not to the supporting structure or struts to the plate. At oral argument during the Markman hearing, however, Grober correctly noted that in FIG 2 to the '662 patent there is a hatched line that could indicate that the area encompassed by item 22 extended beyond the horizontal surface to what appears to be legs supporting that horizontal surface. However, it is also equally clear that the relevant sensor depicted in FIG 2 to the '662 patent, that is, item B, is also clearly shown as being affixed to the flat horizontal portion of item 22 and not the hatched line area pointed to by Grober (assuming Grober is correct and item 22 extends beyond the flat horizontal plate to the supporting legs thereto).

--- Footnotes ---

4 Claim four in the '662 patent referenced by Grober in his pleadings before the PTO stated: "The stabilized platform of
Nevertheless, in the PTO reexamination proceedings, Grober also went on to specifically describe what parts of the devices in the prior art he viewed as being a comparable to the '662's "payload platform." In speaking of the Welch invention before the PTO, Grober wrote "Welch never uses the word 'fixed to' or 'mounted on' to describe his potentiometers [sensors] 27 and 29. They are clearly not 'fixed to,' and most definitely not 'wholly fixed to' Platform Structure 18." 5 (Defs' Am. Opening Br., Ex. E at 24). Later, in the same response submitted to the PTO, Grober made the following observation about the Welch patent: "Are potentiometers and encoders [in the Welch patent] 'fixed to the payload platform'? Grober submits they are not. If they were, they would not work. Grober submits that his terminology in view of his claim 1 wording 'fixed to the payload platform' is clearly shown in Grober's drawings and specifications as well as dictated by the sensor type to be wholly 'fixed to the payload platform.' Welch and Duckworth's potentiometers are not wholly fixed to the payload platform, nor are they even 'fixed to the payload platform' because they would not work if they were." (Defs' Am. Opening Br., Ex. E at 40-41). As explained by Grober: "[Defendant] proposes that Welch's position sensor(s) 27 and/or 29 are fixed to platform 18, the equivalent of Grober's payload platform. This is not supported by Welch's claims, specification or figures. Welch's second sensor package is two distinctly separate sensors located in two separate positions at the gimbal between the framework parts. The parts are not attached or fixed to the payload platform. . . . Pitch Potentiometer 27 is shown fixed to the frame structure of which Platform Structure 18 rocks within." (Defs' Am. Opening Br., Ex. E at 42-43).

5 Grober similarly distinguished Duckworth device on the grounds that the sensors were not fixed to the payload platform on that device. (Id. at 58).

Notable from this discussion is that Grober argues that the structure on the Welch gimbal-based device that is comparable to his payload platform was FIG 1 item 18 (the Platform Structure) in the Welch patent. What is remarkable about this assertion is that the Platform Structure identified in the Welch patent was not just the horizontal surface upon which the device in question (an antenna) was mounted, that item being item 16 the Stabilized Structure. Instead, FIG 1 item 18 to the Welch patent was comprised of the struts and supports upon which the Stabilized Structure was affixed and which were themselves connected to the motor used to maintain the stability of the antenna. Even more remarkable is that, despite Grober's assertion that no part of the potentiometers (again defined by Grober as being items 27 and 29 in the Welch patent) were "even fixed to the payload platform" (which again he defined as item 18 to the Welch patent), it is not entirely clear that is the case. From a review of FIG 1 to the Welch patent, it is not clear whether or not sensor 27 is affixed to item 18 Platform Structure or is affixed to something else. Sensor 27 is depicted as being affixed to a raised squarish object that is itself either attached to or is part of the Platform Structure. Nowhere does the preferred embodiment in FIG 1 or in the Welch patent identify whether or not this raised squarish part is considered part and parcel of the Platform Structure.

Nonetheless, Grober sought to reinforce this point in his response to the re-examination: "Requestor proposes that Welch's position sensor(s) 27 and/or 29 are fixed to platform 18, the equivalent of Grober's payload platform." (Defs' Am. Opening Br., Ex. E at 42). Grober thus again points to the "framework parts" as being part and parcel of the payload platform, and then goes on to rebut the argument that in the Welch patent the sensors are affixed to platform item 18, noting instead that the sensors were taught in Welch's device as one being affixed to "the frame structure of which Platform Structure 18 rocks within" and the other sensor "fixed to the Base Structure 14." (Id. at 43). That the support structure to the flat mounting plate were all considered part of the payload platform by Grober was made plain by his statement to the PTO re-examiner that the sensors used on the Welch device are not described as "fixed to the payload platform' or Welch's Stabilized structure 16, or its attached Platform Structure 18." (Id. at 46-47). Again Grober lobbed the mounting plate (the Stabilized Structure item 16 in FIG 1 to Welch's invention) and the support to that plate (the attached Platform Structure item 18 in FIG 1 to Welch's invention) as part and parcel of the "payload platform."

The PTO examiner was not convinced by Grober's argument over whether item 27 was or was not affixed to item 18. "[The] examiner notes that neither the patent owner's argument nor the requester's argument is found persuasive because figure 1 of Welch does not clearly show whether sensors 27 or 29 are fixed to the payload platform or not. Frankly, one can not say
with certainty] by looking only at the figure." (Defs' Am. Opening Br., Ex. B at 16).

Instead it was another argument that would convince the PTO examiner that the '662 patent was distinguishable from the prior art, an alternative argument that Grober directed to the claim language found in the Welch patent.

Grober noted to the PTO that claim 30, column 12, lines 18 to 22, to the Welch patent provided that "said first sensor; a first drive motor for rotating said stabilized structure about a first axis, and said dual-axis gimbal, being mounted between said stabilized structure and said base structure." From this it was argued that the Welch patent implied that the portion of the device that the second package of sensors were fixed to was not the payload platform but an area between the base and the stabilized structure. The obvious implication being that the stabilized structure (i.e., item 16 in FIG 1 to the Welch patent) was considered the payload platform, it being the only area left that could fill such a role without having a sensor attached to it. Thus Grober, in this alternative argument, asserted by implication that the horizontal plate/surface in the Welch patent, upon which the antenna was directly affixed, was considered the payload platform. The PTO examiner accepted this argument and found that item 16 in FIG 1 to the Welch patent, the Stabilized Structure, was the equivalent of the payload platform found on the '662 patent. "Examiner agrees with the patent owner's argument. Claim 30 of Welch clearly teaches the second sensor package (sensors 27 and 29) being mounted between the stabilized structure (16) and the base structure (14). Thus, Welch does not teach the second sensor package is fixed to the payload platform 16. . . . because Welch does not teach a second sensor package being fixed to the payload platform, Welch cannot anticipate claims 1, and 34-36 of the '662 patent." (Defs' Am. Opening Br., Ex. B at 17). Grober did not challenge this finding by the examiner in the responses he later tendered to the PTO re-examiner's action closing the prosecution of the reexamination. (Pls' Reply Br., Ex. 2 at 10("In the responses, patent owner and requester did not comment on the reasons set forth by the examiner").

The same process played itself out with respect to the Duckworth patent. It was argued by Grober that "the fundamental difference between Duckworth and the '662 patent" was that "Duckworth does not teach the limitation that the second sensor package being fixed to the payload platform as required" by claim 1 in the '662 patent. (Defs' Am. Opening Br., Ex. B at 30). Defendants responded that the Duckworth patent teaches that "the synchros [that is, sensors] are fixed to the gimbals of stabilized platform 3." In other words, defendants pushed what was considered the equivalent payload platform in the Duckworth patent to extend beyond the horizontal surface upon which the device (the antenna) was directly affixed (item 3 in FIG 1) to include the "gimbals" or support structure holding item 3 in place. The PTO examiner was not persuaded by defendants' argument, finding that it conflated the gimbal system itself with the payload platform on the Duckworth patent, item 3 the Stabilized Platform. "Duckworth teaches a payload platform 3, a base 4, a stabilizing system which includes a gimbal system (frame 5 and supports 6 and 7) and motors 16, a first sensor package 12 and a second sensor package (synchro 10). As it is clear . . . payload platform 3 and gimbal system are distinct elements and cannot be lumped together. Thus, Duckworth teaches the second sensor package is mounted on the gimbal system, not the payload platform." (Defs' Am. Opening Br., Ex. B at 30). From this it is apparent that the PTO re-examiner classified (and Grober advocated for) item 3 on the Duckworth patent as being the equivalent to the payload platform in the '662 patent. This is important because item 3 again is simply the horizontal surface or plate upon which the device (an antenna) is mounted, implying again that it is this mounting surface upon which a device (such as an antenna or a camera) in question is directly affixed, not the supporting brackets or struts that constitutes the payload platform for purposes of the '662 patent.

Now Grober argues that item 3 in the Duckworth patent is comprised of more than just the "rigid platform" or "box" to which a line is drawn toward in FIG 1 to the patent's preferred embodiment, but also the "shaft attachment points" connecting the box to both the gimbal to the side as well as the antenna above. Instead, Grober argues that the payload platform in the Duckworth patent is akin to an inverted platform, with the legs, struts, going upwards from the flat horizontal surface. As explained in his papers, "Duckworth's payload platform 3 is the rigid platform which comprises both the vertical box uprights to which the axis shafts indicated along the axis 9 are attached, as well as the horizontal top plate to which is then mounted the radar antenna 1, attached to another vertical axis." (Pl's Reply at 4). The problem for Grober is there is no indication in the Duckworth patent that these "attachment points" are in any sense of any substance (other than their connectivity of the various parts of the particular embodiment of the device) as being considered part and parcel of item 3, which is clearly identified in the patent and the identification line drawn in FIG 1 of the preferred embodiment as the "rigid platform" or "box." Grober's argument on this point thus suffers for much of the same reasons as his argument over the sensor placement of item 27 in the preferred embodiment to the Welch patent.

Given the admissions and representations made by Grober during the re-examination proceedings, and giving context to the prior art, it is apparent that the payload platform is the flat horizontal metal plate to which the camera is attached and
nothing else, be it the metal arms or legs immediately supporting that plate, which are in turn connected to the motors continuously moving about to keep the camera stabilize by correcting the movement of the base. Those other parts of the "structure" (the motors, support struts, legs, etc.,) do not comprise the payload platform. Thus, the motors and support structures beyond the ones directly attached to the horizontal mounting plate would not be part of the payload platform.

Given the parts of the relevant FIGS in the Welch and Duckworth patents that the PTO reexaminer concluded were considered the "payload platform," it is evident that, Grober's present argument notwithstanding, the term as used in the '662 patent was meant to refer to the horizontal plate or surface upon which the relevant device is affixed or mounted. If the Court were to hold otherwise and include the supporting struts, legs, etc., as advocated by Grober, then not only would this be inconsistent with the position advocated by him and then adopted by the PTO during the re-examination proceedings, but it would render claim 1 in the '662 patent invalid as it would have been rendered obvious or anticipated by the prior art. And it is in this respect that the Court finds defendants' proposed construction is correct because, as their Markman brief makes clear: "The definition proposed by Defendants . . . limits the structure to the horizontal piece that holds the camera." (Defs Reply at 8).

Accordingly, as the re-examination proceedings make plain and a review of the prior art discloses, the Court finds that a "payload platform" is nothing more than just a raised flat horizontal surface upon which a device (be it an antenna or a camera) is directly mounted and touching, it does not include the support structure to that horizontal surface from which it is attached to the rest of the device or to any other part of the device.

The Court accordingly construes the claim term "payload platform" to mean "the horizontal plate, piece or surface upon which the device (e.g., a camera) is directly mounted upon or affixed to."

The next disputed term, "payment mechanism," first appears in claim 1 and occurs in several subsequent, dependent claims, including the disputed claim 49. Plaintiffs define "payment" as "paying money in some form," and "mechanism" as "machinery or process for achieving a result." (Pls.' Mem. On Claim Construction 13). Defendant interprets "payment mechanism" to mean "an arrangement of connected parts for payment that is part of the vending machine," as based on its understanding of the specification and the dictionary definition of mechanism. (Def.'s Rebuttal Claim Construction Br. 19). Defendant properly disputes plaintiffs' construction of mechanism as a process or method, since the Patents disclose an apparatus, not a method or process. The specification language cited by plaintiffs in support of its proposed definition allows payment by currency or "in electronic form," referring to contemporaneous payment by an electronically-read or magnetically-read card (e.g., credit card, debit card, hotel key card) or other such device. ('400 Patent 2:50-56). The specification also suggests that payment may be "carried out through software that is present in the user's laptop or other device," and that "no physical method need be included in the vending machine." ('400 Patent 2:55-56, 3:23). Contrary to plaintiffs' claim, this does not mean that the vending machine's payment mechanism is located external to the vending machine, especially in light of the specification and claim language that clearly defines a vending machine as comprised of, in part, a payment mechanism. Rather, instead of being made by a credit card, the payment may be made by electronic currency, e.g., "e-money," or an online service that issues credit to the user and separately bills the user. These are examples of forms of payment, and while these may be dictated by the type of payment mechanism located in the vending machine (for example, if the vending machine does not contain a mechanism for accepting currency but only for processing e-money), they do not dictate the location of the vending machine's payment mechanism.

Accordingly, I construe the disputed claim language as follows:

<table>
<thead>
<tr>
<th>Term</th>
<th>Court's construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payment mechanism</td>
<td>An arrangement of connected parts for paying money in some form and that is part of the vending machine</td>
</tr>
</tbody>
</table>
B. Payment Mechanism

Claim 1(a) discloses "a payment mechanism for obtaining information from the customer to initiate a vending transaction." '400 patent col. 16, 11. 5-6. The parties' dispute concerns the meaning of the term "mechanism." T-Mobile argues that a mechanism is "an arrangement of connected parts," T-Mobile Br. at 19, while PowerOasis contends that "'mechanism' means machinery or process for achieving a result." PowerOasis Br. at 13.

T-Mobile offers two unconvincing arguments to support its interpretation. First, T-Mobile notes that the dictionary definition of "mechanism" is "an arrangement of interconnected parts." T-Mobile Br. at 19 (citing American Heritage College Dictionary). In fact, "mechanism" has several dictionary definitions, including ones that comport with PowerOasis' proposed construction of "payment mechanism." See Compact Oxford English Dictionary of Current English (defining "mechanism" as "the way in which something works or is brought about"). Thus, dictionaries are unhelpful.

Second, T-Mobile argues that the patentees' earlier patents used "mechanism" in terms such as "cover mechanism," '643 patent col. 9, 1. 22, "steam supply mechanism," '169 patent col. 18, 11. 25-26, "hydrocarbon supply mechanism," id. col. 18, 11. 28-29, and "electric supply mechanism," id. col. 18, 1. 34, "to describe items that are made of connected parts." T-Mobile Br. at 19. These references do not support T-Mobile's argument because they use "mechanism" in the same way as it is used in the phrase "payment mechanism" without providing any additional guidance as to the term's intended meaning.

In contrast to the other "mechanisms," the patentees explained that a "cover mechanism" is a protective enclosure for the customer's electronic device. '643 patent col. 9, 11. 17-23. While I agree with T-Mobile that a "cover mechanism" is a physical structure, my conclusion derives from the patentees' explication of how the "cover mechanism" functions as a cover for the customer's device rather than their use of the term "mechanism." Accordingly, "cover mechanism" sheds no light on the meaning of "mechanism" in "payment mechanism."

T-Mobile's argument also falters in light of the specification's statement that "no physical payment method is required [in which case] payment is carried out through software that is present in the user's laptop or other device." '400 patent col. 2, 11. 54-56; see also '400 patent col. 3, 11. 22-23. I agree with PowerOasis that this language refutes T-Mobile's contention that a "mechanism" must be "an arrangement of connected parts." As this statement demonstrates, the patentees clearly envisioned an embodiment in which the "payment mechanism" consists of software on the customer's laptop rather than a coin acceptor, card reader, or other "arrangement of connected parts."

Although I agree with PowerOasis that "payment mechanism" includes software loaded on the customer's computer, I decline to adopt its proposed definition without qualification. As T-Mobile has correctly pointed out, the '658 and '400 patents are apparatus claims rather than method claims. PowerOasis' definition of "mechanism" as "a process for achieving a result" improperly attempts to convert disclosed structure into a method for achieving the result. In order to clarify that the term "payment mechanism" does not encompass all possible methods for obtaining payment from the customer, I construe "payment mechanism" to mean "a mechanical, electrical, or electronic (i.e., software) means for achieving payment."

2. "peaks and valleys"

The phrase "peaks and valleys" is found in claims 1, 8-9, 12-13, 16-17, 20, 22, 29-30, 33-34, 40-41, 43, 45-48, 52-53, and 55-75 of the '037 patent, and in claims 11-25 of the '255 patent. See Joint Statement, '037 and '255 Patents. Plaintiffs contend the phrase should be construed to mean "[w]hen viewed in two dimensions, the upper surface of the crest of the wave is the peak, the upper surface of the trough of the wave is the valley." Defendants contend that the phrase should be construed to mean "when two slopes or curves meet, the furthest projecting point or surface on the outside of that intersection is a 'peak' and the furthest recessed point or surface on the inside of that intersection is a 'valley.'" The intervenor, for its part, contends that the phrase should be construed as "the inside of an apex is a 'valley' and the outside of
The phrase "peaks and valleys" is not described in either the claim language or the specification, although there is -- as defendants point out -- a limited mention of the term "peak" in the specification. Specifically, in connection with a description of illustrated Figure 12c, which is discussed as a type of flexure means disposed in the "longitudinal struts" of the claimed stent design, the specification states that Figure 12c may be considered "to be an in line symmetric double peak." See Joint Statement, '037 Patent at 11:47-49. Turning to the illustration at issue, the "peak" looks to be the point at which two sloped lines meet or, as defendants propose, the "furthest projecting point" at the place where two slopes meet. This would-be support for defendants' proposed construction falters, however, because a closer look at the specification language discloses that the description of Figure 12c as "an in line symmetric double peak" is made in the context of the specification's general description of differing types of longitudinal struts -- e.g., connectors -- that form a part of the claimed stent design. Yet the actual claim language makes clear that "peak," when construed in connection with the phrase "peaks and valleys," is to be construed with reference to circumferential members, not longitudinal struts. See id. at 14:39-41 (Claim 1 covers stents having a "circumferential portion comprising alternating peaks and valleys"). Accordingly, the specification's description of "peak" in connection with Figure 12c of the patent is not all that relevant to the proper construction to be given the phrase "peak" as used in the disputed phrase at issue. And defendants' corresponding argument that Figure 12c therefore supports a construction of "peak" as "the furthest projecting point or surface" on the outside of the intersection where "two slopes or curves meet," is also unpersuasive.

Since neither the claim language nor the specification therefore shed any light on the ordinary meaning of the phrase "peaks and valleys," the court turns to the prosecution history, which both parties rely on in support of their differing proposed constructions. Plaintiffs note that the prosecution history of the '037 Patent indicates that the applicants understood Figure 5 of the patent to depict "peaks and valleys," as illustrated by the undulating patterns of circumferential members in Figure 5. They also note that the '255 prosecution history indicates the same understanding of "peaks and valleys," as depicted by the figure drawing included by the applicants in their submissions to the examiner, and Figures 2D and 3 of the prior art Orth Patent, which the applicants also relied on in prosecution the '255 Patent. See Declaration of Kadie M. Jelenchick ("Jelenchick Decl."), Ex. E at AB0732124-25. According to plaintiffs, both Figure 5 of the '037 Patent and, all the figure drawings relied on by the applicants in prosecution the '255 Patent all depict undulations, or "waves," in which the entire upper surface of the crest is a "peak," and the entire upper surface of the trough is a "valley."

Defendants, for their part, also rely on Figure 5 of the '037 Patent, and the same figure drawing disclosed by the applicants in the prosecution history of the '255 Patent, to support their differing construction for "peaks and valleys." Defendants contend that, as disclosed therein, a "peak" is the "furthest projecting point" on the outside of the intersection of two slopes, while the "valley" is the "furthest recessed point" on the inside of same.

In the court's view, however, neither of these arguments is especially compelling. The court could find no support for plaintiffs' proposed construction, which essentially adds, without defining, new elements to the claim language -- i.e., "crest" and "wave" -- that are nowhere found in the prosecution history, or in the claim language or specification, for that matter. Moreover, Figure 5 of the patent, which defendants assert depicts "peaks and valleys," does not, in the court's view, actually depict any shapes that would necessarily qualify as "crests," "troughs," or "waves." See, e.g., Merriam-Webster's Collegiate Dictionary 295, 1342, 1415 (11th Ed.). As for defendants' proposed construction, the court is not convinced that "peaks" and "valleys" must be construed as limited solely to the furthest projecting or furthest recessed points on the outside and inside surfaces of the claimed intersections. For as plaintiffs point out, Figure 10 of the '037 patent depicts "valleys" that include a slightly raised point of connection where a connector meets the valley. See Joint Statement, '037 Patent at Fig. 10. In other words, the valley appears similar to a "w" shape, with the connector rising out of the valley to form that "w." Defendants' proposed construction, however, is inconsistent with this depicted "valley," since there is no single furthest recessed point that can be located in the valley. Rather, there are at least two furthest recessed points. Yet the prosecution history and claim language indicates that even the "w" shaped valley is still a "valley."
Forced to conclude, therefore, that neither of the parties' proposed constructions is accurate, the court must nonetheless construe the disputed phrase at issue. On balance, the court finds that the construction of "peaks and valleys" that is most consistent with the intrinsic evidence is as follows: "the surface outside the point at which two slopes or curves meet is the peak, and the surface inside the point at which two slopes or curves meet is the valley." The court hereby adopts this construction.

In so doing, the court notes that it is reluctant to construe any disputed term in a manner not proposed by either side. For that reason, the court will be amenable to accepting a revised construction, jointly agreed upon by the parties, in place of the one herein adopted. Should the parties wish to submit a jointly revised construction in place of the present one adopted by the court, they are instructed to do so, via joint letter brief, within 2 weeks of the date of this order.

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2. "Material, peculiarly responsive to a particular form of radiant energy not normally present in ambient light in amounts sufficient to cause said material to discolor." Used in Claim 1.

Flashmark suggests that no construction is necessary. In the alternative, Flashmark proposes "a material that responds distinctively to an intensity of light in a range of wavelengths, or of heat, which is not normally encountered in ordinary use in amounts sufficient to cause said material to discolor." GTECH has suggested:

a material, including an infra-red absorbing dye, formulated to dramatically enhance sensitivity to radiant energy and to reduce the amount of time and energy required to cause the material to become visible in response to radiant energy in infrared wavelengths, in comparison to dry silver materials. 5

A construction of this term requires a definition of "radiant energy," which is addressed above. The court must also construe the "ambient light" in which the "radiant energy" is not normally present.

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5 In the responsive brief, GTECH suggested: "a material including an infra-red absorbing dye, formulated to dramatically enhance sensitivity to radiant energy and to reduce the amount of time and energy required to cause the material to become visible in response to wavelengths of radiant energy outside the visible spectrum in the range of about 750-950 nm, and at intensity levels not normally encountered in ordinary use, namely about 50 ergs per square centimeter."

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a. Use of Term in Claims and Specification

Claim 1 describes the material as being responsive to radiant energy that is "not normally present in ambient light in amounts sufficient to cause said material to discolor." '153 patent, col. 7, 11. 22-23. It does not place any further restrictions on the type of material that can make up the article.

The specification states that the "material" is normally invisible, which means that the "material is only slightly visible or visible as background, and does not interfere with the genuinely visible markings on the coupon." '153 patent, col. 3, 11.25-30. "The material 13 may be responsive to radiant energy such as heat or light. Upon being exposed to heat or light energy not normally encountered in ordinary use, the material 13 will become visible." '153 patent, col. 3, 11. 33-37.

In a preferred embodiment, the specification states that the "presently preferred material 13 is a photosensitive material formed by a mixture of a dry silver material and an infrared absorbing dye." '153 patent, col. 3, 11. 42-44. "The preferred materials exhibit high absorption of light wavelengths in the approximate range of about 750 nanometers to 950 nanometers." '153 patent, col. 3, 11. 61-63.

This preferred embodiment is seen in Claims 5 and 6, which are dependent on Claim 1. Claim 5 states: "The article of claim
4 wherein said range of light wavelengths covers about 750 nanometers to about 950 nanometers." Claim 6 states: "The article of claim 5 wherein said material comprises a mixture of dry silver and infra-red absorbing dye."

GTECH's proposal, therefore, is based upon limitations in a preferred embodiment and the dependent claims. In general, an independent claim is presumed to be broader in scope and to encompass the dependent claim. See Phillips, 415 F.3d at 1315 ("[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.")

Flashmark argues that in defining this term, the words "ambient light" be changed to "ordinary use," relying upon a single appearance of that phrase in the specification at Col. 3, l. 36. If "ambient light" could just be changed to "ordinary use" then "radiant energy" would be more likely to refer to "heat" in forms other than electromagnetic wavelengths. The patentee could have picked any words he wanted for the claims, but he chose to add "ambient light," not "ordinary use," to Claim 1 to overcome the Examiner's initial rejection. Amendment, 6/25/1991 p. 2, FLASH 0000078 in GTECH's Ex. E [Doc. # 107, Attach. # 11, p. 18 of 76]. And, in distinguishing prior art while trying to overcome that rejection, the patentee stressed that prior inventions discolored in ambient light. Amendment, 6/25/1991, pp. 4-5, FLASH 0000080-81 in GTECH's Ex. E [Doc. # 107, Attach. # 11, p. 20-21].

A further indication of what the patentee intended by the use of "ambient light" is found in the same amendment: "As stated in the description, color formation is caused in DYLUX by UV found in daylight or artificial light which contains UV. To prevent discoloration in ambient light the DYLUX paper must be deactivated . . . ." Amendment 6/25/1991, p. 8, FLASH 0000084 in GTECH's Ex. E [Doc. # 107, Attach. 11, p. 24] (emphasis added). The court need not consider at this point whether the "ordinary use" term is a disclosure of an invention in the specification which was not claimed, and so is donated to the public. Johnson & Johnston Assoc. V. R.E. Serv. Co., 285 F.3d 1046, 1054 (Fed. Cir. 2002) ("[W]hen a patent drafter discloses but declines to claim subject matter, . . . this action dedicates that unclaimed subject matter to the public.").

At the hearing the court discussed a proposed definition, together with numerous changes suggested by the parties. In the end, Flashmark would not agree to a construction that defined "ambient light" as anything but "ordinary use." For the reasons noted above there is no basis to adopt "ordinary use," especially when the patentee chose not to use the phrase in amending the claim.

Flashmark's expert stated that while "direct" light would be "focused," ambient light would include "normal lighting" in a room and direct sunlight outdoors, or "conditions of the environment without that presence of the directed light." This is a more expansive definition of ambient light than that suggested by the court, and agreed to by GTECH. However, it is not outside the ambit of the use of the term in the specification and in the prosecution history references set out above, and it comports with its use in some dictionaries.

The court was concerned about imposing a limitation requiring that the "material" of the invention not discolor even in direct sunlight, as will a newspaper and many other papers. However, Flashmark insisted that "ambient light" included direct sunlight, perhaps because their idea of "ordinary use" includes using the articles in direct sunlight. The court is not adverse to adopting this concept as it is reasonable and narrows, rather than expands, the scope of the claim. This term will be construed as follows:

- Material peculiarly responsive to a particular form of radiant energy not normally present in ambient light in amounts sufficient to cause said material to discolor means "a substance which darkens or changes color when exposed to radiant energy (as previously defined by the court) of a type or intensity (or both) that is not ordinarily present in sunlight or normal indoor lighting."

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Both parties agree that a pen-light laser is "about as small and slender as a fountain pen." Irwin, though, contends that this limitation applies to the whole device, while Orosz argues that the limitation only requires that a pen-light laser be included in the device.

According to Irwin, the specification consistently uses the terms "pen-light sized laser" and "portable laser unit"
interchangeably. Moreover, some figures included in the specification point to the whole device as being the pen-light laser. Thus, to Irwin, the consistent use of the term pen-light laser in this manner impliedly defines the term as the whole device. See Bell Atlantic Network Servs., Inc. v. Covad Communication Group, Inc., 262 F.3d 1258, 1273 (Fed. Cir. 2001) ("The patentees defined the term . . . by implication, through the term's consistent use throughout the . . . patent specification.").

However, the specification does not reveal that Orosz consistently used the term pen-light laser in this fashion to implicitly define the term as applying to the whole device. In column 1, lines 33-35 of the patent, Orosz refers to the pen-light sized laser as an exemplification of the compact, pocket-sized light beam device. The specification further explains that other components may be affixed to the device and that the portable laser unit may include more components than just a pen-sized laser. 

"[A] flat surface member . . . might be provided at the bottom of the pen-like housing incorporating the beam circuitry and power source." (Column 4, lines 54-56). Furthermore, the specification and figure 5 also explain that in another embodiment of the invention, a second pen-light laser can be used in the device; the specification specifically states that "a unit assembly of two portable pen-light lasers . . . can be aligned side-by-side in an assembly." (Column 5, lines 32-34). If a second pen-light laser or other components can be added to the portable laser unit, then the pen-light laser cannot, in and of itself, constitute the whole device.

Irwin further argues that the claimed pen-light laser itself must be fully functional by including a power source. Otherwise, the device would be rendered inoperable; and, therefore, the patent would not contain an enabling disclosure. According to Irwin, the specification reference stating the pen-light housing incorporates the beam circuitry and electric power source demonstrates that the device is an independently functioning laser that is pen-light sized, while Orosz's construction leaves the device inoperable because the claim would not include a power source.

Adopting Irwin's construction, however, would improperly add a claim limitation from the specification. See Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1204-05 (Fed Cir. 2002). Moreover, the specification, and not just the claim, may enable those skilled in the art to make the claimed invention. See, e.g., Johns Hopkins Univ. v. CellPro, Inc., 152 F.3d 1342, 1359 (Fed. Cir. 1998). Whether the specification makes an enabling disclosure is not proper to resolve in a claim construction proceeding.

The prosecution history of the '081 patent also fails to expressly state that the pen-light laser is the whole device. A patentee may not state that the claims of a patent do not cover a particular device during prosecution and then change that position during an infringement suit. Springs Window Fashions LP v. Novo Industries, L.P., 323 F.3d 989, 995 (Fed. Cir. 2003).

Irwin argues that Orosz distinguished the patented invention over the prior art by including a leveling means with a pen-light-sized laser, instead of using a multiple combination of elements in a case housing a level and a laser disclosed in the prior art. However, Orosz distinguished the invention over the prior art by being the first to use a leveling means with a pen-light-sized laser that, significantly, used a line-forming lens instead of a diffuser. (Pl.'s App. at A0064-A0065).

Lastly, the patent claims demonstrate that the pen-light laser is not the whole device. Initially, the unit is described as a portable laser unit which is comprised of a pen-light laser. Other claims of the '081 patent that are dependent on claim 1 also explain that the portable laser unit may incorporate a second laser. For example, claim 4 states "[a] portable laser unit as set forth in claim 1 in which a second laser is incorporated in said unit . . . ."

Therefore, Orosz did not consistently use the term pen-light laser in the specification and prosecution history to implicitly define it as being the whole device. Instead, a pen-light laser is defined as a laser that is about as small and slender as a fountain pen; and the pen-light laser, consistent with the claim, may be part of a larger, portable laser unit.

Penetrate

Claims in the '930 and '631 Patents require the cutters to "penetrate" the formation or "penetration" of the formation. Baker Hughes contends "penetrate" means "cut into." ReedHycalog contends "penetrate" means "shear." Baker Hughes uses the term "penetrate," and ReedHycalog uses the term "shear" to construe related terms in dispute.
The Court agrees with Baker Hughes. All of the patents-in-suit use the term "depth of cut" and refer to "cutters" that penetrate the formation. Thus, "penetrate" means "cut into," and "penetration" means "cutting into." 25

--- Footnotes ---

25 Ref. No. 27 of Appendix B contains the disputed terms and their constructions.

--- End Footnotes ---

Per revolution of the drill bit

The Court next must determine whether the term "per revolution of the drill bit" found in Claims 6 and 8 measures only by complete drill bit revolutions. The relevant language from Claim 6 is "calculating the volume of formation cut by each cutting structure per revolution of the drill bit," and from Claim 8 is "calculating the axial force acting on each cutting structure per revolution of the drill bit." Relying on the American Heritage College Dictionary, Smith claims that the word "per" means "to, for, or by each; for every." Thus, Smith argues that the word "complete" is implicit in Claims 6 and 8, and "per revolution of the drill bit" means "for each complete 360 degree turn."

The Court finds that a person of skill in the engineering field would read the word "per" in Claims 6 and 8 as the English word for the mathematical function "divide." There is no question but that Claims 6 and 8 describe calculations because they begin with the word "calculating." When performing a calculation, a person of ordinary skill would convert English words into mathematical symbols whenever possible, and in math the English word "per" directly translates into "divide." Thus, "per revolution of the drill bit" means "divided by the drill bit revolutions."

Because the denominator in any mathematical formula may be a whole number or a fractional number, the Court finds that a person of skill in the relevant field would not limit the denominator in Claims 6 and 8 to a whole number. Haliburton's analogy to calculating an automobile's speed is appropriate. Miles per hour simply means the number of miles traveled divided by hours. Even though a car may have only driven for half of an hour, one may calculate the speed by dividing the miles traveled by .5 hours. Indeed, for every instant that a car moves, or does not move, one may calculate miles per hour, and no one would argue that the term "miles per hour" means "miles per complete hour." Therefore, the Court adopts Haliburton's construction and finds that "per revolution of the drill bit" in Claims 6 and 8 means: "as a function of the number of revolutions of the drill bit."

---

4. "Perforated" Means Pierced or Punctured with Holes

In oral arguments, AFT raised "perforated" as a term requiring construction. Tr. (Dkt. No. 106) at 53-56. AFT suggests the term means "having holes or perforations." AFT's Post-Hearing Br. at 8. J&L agrees that the term requires holes, but asserts that they must be made by piercing or puncturing. J&L Post-Hearing Br. at 10. The Court adopts J&L's construction.

The claims and specification do not define "perforated," however, extrinsic evidence makes clear that its construction requires puncturing or piercing; that conclusion in no way contradicts the claims. J&L's construction comes from the McGraw Hill Dictionary of Scientific and Technical Terms' definition of the verb, perforate, and the noun perforation. See Cross Decl., Ex. C (Dkt. No 39-5). Both forms of the term note a hole resulting from piercing or puncturing. Id. Similarly, the general use dictionary supplied by AFT defines "perforation" to mean "a hole or pattern made by or as if by piercing or boring." O'Brien Decl., Ex. G (Dkt. No. 113-8). Thus, both the technical and general use dictionaries supplied by the parties strongly suggest that "perforated" should be construed to mean characterized by holes made by piercing or puncturing. That construction fits easily with the specification. The sole exception is a one-sentence mention that "a wedgewire screening plate may be used." '940 patent, Col. 11, Lns. 64-65. "Wedgewire" is not recited in any of the claims. Its singular mention in
the specification, particularly in light of AFT's representation to the Patent Office in which it defined the screening element as "a perforated barrier" or "perforated metal plate," does not change the Court's conclusion that the ordinary meaning and the meaning given to "perforated" in the '940 patent is pierced or punctured with holes.

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7. '181 Patent, Claim 37: "perforated plate"

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Dyson Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>'181/37. The vacuum cleaner according to claim 36 and further comprising a perforated plate in a flow path between the upstream and downstream cyclones.</td>
<td>A flat disc which is annular or circular and which has holes through it. (Jt. State.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Bissell Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>'181/37. The vacuum cleaner according to claim 36 and further comprising a perforated plate in a flow path between the upstream and downstream cyclones.</td>
<td>A thin sheet with holes in it. (Jt. State.)</td>
</tr>
</tbody>
</table>

Dyson's proposed construction would require that the perforated plate be annular or circular, while Bissell's proposed construction would not limit the perforated plate to a particular shape. The patent language does not support, and indeed explicitly departs from, Dyson's proposed construction. The patent states, for example, that "[i]n another embodiment, the outlet of the first cyclonic airflow chamber if [sic] formed by a perforated wall . . . . Typically, the perforated wall is substantially cylindrically shaped but other shapes of the perforated wall can be used." (4:47-55.) (emphasis added.) Figure 15 depicts the perforated plate as a thin cylinder, not a flat disc. Claim 36 itself does not impose any limitations on the shape of the perforated plate. Unlike Dyson's proposed construction, which would exclude embodiments the patent describes explicitly, Bissell's proposed construction is consistent with the language of the patent itself. The Court adopts Bissell's proposed construction of "perforated plate," as a "thin sheet with holes in it."

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3. Perforating

The next claim term at issue is "perforating." AVI construes perforating to mean using any device that creates "channels" in the foam, which channels may be any cross-sectional shape, including rectangular. Dow does not disagree with that definition insofar as it goes; however, it seeks to add a functional limitation that the channels formed must "allow accelerated release of the blowing agent so that the cure time is substantially reduced."

As I have already noted, accelerated release is to be read into the claim to the extent stated above. Accordingly, I construe "perforating" to mean using any device that creates "channels" in the foam, which channels may be any cross-sectional shape, including rectangular, that allow for the accelerated release of a blowing agent.
4. Construction of "Perforation Means"

For purposes of this appeal, we focus our attention on the fifth element of claim 1, which reads,

perforation means extending from the leg band means to the waist band means through the outer impermeable layer means for tearing the outer impermeable layer means for removing the training brief in case of an accident by the user.

The district court correctly ruled that the claimed "perforation means . . . for tearing" is not a means-plus-function element under § 112, P 6, which reads as follows:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112, P 6 (1994). To invoke this statute, the alleged means-plus-function claim element must not recite a definite structure which performs the described function. Patent drafters conventionally achieved this by using only the words "means for" followed by a recitation of the function performed. Merely because a named element of a patent claim is followed by the word "means," however, does not automatically make that element a "means-plus-function" element under 35 U.S.C. § 112, P 6. Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 19 U.S.P.Q.2D (BNA) 1367 (Fed. Cir. 1991), cited in the dissenting opinion, creates no presumption to the contrary. The converse is also true; merely because an element does not include the word "means" does not automatically prevent that element from being construed as a means-plus-function element. See, e.g., Raytheon Co. v. Roper Corp., 724 F.2d 951, 957, 220 U.S.P.Q. (BNA) 592, 597 (Fed. Cir. 1983) (construing functional language introduced by "so that" to be equivalent to "means for" claim language), cert. denied, 469 U.S. 835, 83 L. Ed. 2d 69, 105 S. Ct. 127 (1984); 1162 O.G. 59, 59 (17 May 1994) (examination guidelines stating that the term "means" is not required to invoke § 112, P 6). We decide on an element-by-element basis, based upon the patent and its prosecution history, whether § 112, P 6 applies. See Palumbo, 762 F.2d at 975, 226 U.S.P.Q. (BNA) at 8 (Fed. Cir. 1985) (courts should consider prosecution history when construing "means-plus-function" claims).

The drafter of claim 1 in the '239 patent was clearly enamored of the word "means": six of seven elements in that claim include the word "means," which occurs in the claim fourteen times. We find, however, no reason to construe any of the claim language in claim 1 as reciting means-plus-function elements within the meaning of § 112, P 6. For example, the "perforation means . . . for tearing" element of Cole's claim fails to satisfy the statute because it describes the structure supporting the tearing function (i.e., perforations). The claim describes not only the structure that supports the tearing function, but also its location (extending from the leg band to the waist band) and extent (extending through the outer impermeable layer). An element with such a detailed recitation of its structure, as opposed to its function, cannot meet the requirements of the statute. Here, the claim drafter's perfunctory addition of the word "means" did nothing to diminish the precise structural character of this element. It definitely did not somehow magically transform this element into a § 112, P 6, "means-plus-function" element. The district court correctly recognized that words in a patent claim are construed as they would be understood by a reader skilled in the relevant art unless it appears that the inventor used the words differently. Since there is no evidence to suggest that "perforation" has any meaning other than the dictionary definition accepted by the court, we look to that definition, which reads as follows:

a hole, or one of a number of holes, bored or punched through something, as those between individual postage stamps of a sheet to facilitate separation.

Webster's Encyclopedic Unabridged Dictionary (1989). We construe the "perforation means . . . for tearing" to mean "perforations" as did the district court. We further construe "perforations" in view of the above dictionary definition.

Cole is also bound by her representations to the PTO during the prosecution of the '239 patent. Therefore, we next consider what effect the prosecution history of the '239 patent has, if any, on our construction of "perforation means."

Subsection II(A)(1) above discusses how Cole distinguished the Roberts patent. We believe Cole erred in her response to
the first office action when she stated that "the stitched seams can not be readily torn apart in the Roberts patent . . . ." The stitched seams in Roberts are designed to be readily torn apart by "grabbing the chain stitch and pulling same which disassociates edges 18 and 19." Further, Roberts' preferred embodiment uses a perforate seam rather than a chain stitch seam. We do not, however, agree with the district court's interpretation of what Cole surrendered when distinguishing the Roberts patent in her first office action. The only thing Cole expressly surrendered when distinguishing the Roberts patent was stitched seams when she argued that perforations are not stitched seams.

As noted above in subsection II(A)(2), in Cole's first request for reexamination, she stated, "The side seams of the [Strohbeen] patent are substantially different from the side seams of the instant [Cole] patent." The Strohbeen patent notes, however, that ultrasonic sealing is a "particularly preferred system for the [Strohbeen] invention." Cole made similar arguments regarding the significance of the Repke patent. The district court found that an estoppel arose from Cole's distinction of the Strohbeen and Repke patent. We agree. When Cole distinguished these references, she thereby surrendered any argument that her "perforation means" encompasses ultrasonic bonded seams.

This estoppel was bolstered when Cole distinguished the Heran patent in her second request for reexamination. As noted above in subsection II(A)(3), Cole stated that the Heran patent was not pertinent structurally, except possibly for having tearable side seams. Heran, however, discloses ultrasonic bonding to make its seams. See subsection II(A)(2). In summary, we believe the district court correctly concluded that the "perforation means" element is not a means-plus-function element under § 112, P 6. We also believe the district court correctly interpreted the prosecution history to require that the "perforation means" limitation cannot be construed to include ultrasonic bonded seams. Cole surrendered ultrasonic bonded seams in her requests for reexamination.

My divergence on literal infringement focuses on the term "perforation means" in the fifth element of claim one. Under the statutory regime of 35 U.S.C. § 112, P 6, a means-plus-function format has significant implications. Because the "perforation means . . . for tearing" claim also recites some structure, this court avoided addressing those implications. The recitation of some structure, however, does not remove a claim from the scope of section 112, P 6. Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1536, 19 U.S.P.Q.2D (BNA) 1367, 1369 (Fed. Cir. 1991). Mere invocation of the word "means" also does not magically conjure all the implications of means-plus-function claiming, but Laitram suggests that the use of "means" creates at least a presumption in favor of section 112, P 6. See id.; see also York Prods. Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 40 U.S.P.Q.2D (BNA) 1619, 1623 (Fed. Cir. 1996) ("The use of the word 'means' triggers a presumption that the inventor used the term advisedly to invoke the statutory mandates for means-plus-function clauses.") (citing Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584, 39 U.S.P.Q.2D (BNA) 1783, 1787 (Fed. Cir. 1996)). Some claim language describing the location of the structure should not be sufficient to over-come this presumption. Nor does the word "perforation" provide enough structure to negate the import of the very next word - "means." I would honor the presumption and construe this claim under the statutory guidance of section 112.

The parties also dispute the meaning of the term "perimeter." Jennmar contends that no claim construction is needed because this is a common mathematical term, but proposes the following definition: "boundary or outer limit around a piece or product." Excel argues that when there is a three-dimensional shape, such as where one or more of the edges is folded, the perimeter must reflect all of the edges in all of the dimensions. Thus, Excel proposes the definition: "Edge or outer limit or free end around a piece or product." There is no dispute about that which constitutes the "perimeter" with respect to the three preferred embodiments of the '933 Patent. Because plates with rolled, looped and folded edges do not have a "free end" in that the "edge" is joined to the major surface, Excel agrees with Jennmar that the perimeter would be the outer limit. Excel's definitional dispute arises only when a product (such as the Spider Plate) has a "free end."

After careful and deliberate consideration, the Court finds that Plaintiff's proposed definition of "perimeter" is the correct
construction. The language of the Patent appears to use the terms "perimeter" and "periphery" as synonyms. Compare, e.g., '933 Patent Column 4 ("safety edge 32 is formed around the peripheral section") with '933 Patent Column 7 ("safety edge formed around the perimeter"). It is apparent that Jennmar did not intend to re-define the common, ordinary meaning of "perimeter" as a two-dimensional measurement. See Merriam-Webster Online Dictionary (which defines "perimeter" as "the boundary of a closed plane figure").

The theoretical concerns of defense counsel about which two dimensions of a three-dimensional object should be measured need not be resolved in the context of this case. The plates described in the Patent are basically flat, square objects. If a plate were placed on a surface and a line was drawn around the outer limit of it, that would commonly be understood to be the "perimeter." Indeed, the Court takes judicial notice from Excel's website that it markets a Spider Plate with the dimensions 17" x 17". 2 Jennmar's Roof and Rib Plate is 18" x 18". It is a simple matter to determine which two dimensions will constitute the "perimeter" of the products at issue and the objections of defense counsel appear to be a "red herring."

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

2 Interestingly, these dimensions do not change based on whether the Spider Plate has a standard, flat edge or a "curled edge." It appears that, in the marketplace, Excel defines the term "perimeter" as Jennmar suggests, as opposed to the definition it proposes in this litigation.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

The proposed definition of Excel is fraught with difficulty, complexity and unnecessary ambiguity. Excel suggests three alternative definitions ("edge or outer limit or free end") with no rule to determine how to choose among the alternatives. There is no principled way to determine when the "edge" becomes flush with or joined to the major surface such that it is no longer a "free end" and the "outer limit" becomes determinative. Similarly, as to objects in which all of the edges or free ends lean inward (for example, a pyramid shape), the definition of Excel would lead to the non-sensical result that the "perimeter" might be far smaller than the outer boundary. The common understanding is that the "perimeter" of a pyramid is measured around its base - the widest part. There is no indication that the '933 Patent intended to depart from this ordinary meaning. Moreover, Excel's language is difficult to reconcile with the language of the '933 Patent Column 5, which describes an "end" that is "spaced from the perimeter," a condition that could not occur under Excel's definition if the "end" were the same as the "perimeter." In summary, the Court agrees with Plaintiff that the term "perimeter" simply means the "boundary or outer limit around a piece or product." The Court rejects the efforts of Excel to unduly complicate this term.

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(iii). Claim 20

What is claimed in claim 20 is the following:

A tray kit comprising:

a first tray having a body portion and a perimeter portion extending around said body portion, said body portion having a plurality of pockets formed therein, said perimeter portion including a latch disposed on a lower surface thereof; and

a second tray, said second tray having an upper surface with a cavity formed therein and defined by a rim extending around said cavity, said rim including a recess formed therein, said latch of said first tray being selectively coupleable with said recess to retain said first tray in said cavity.

Fisher-Price alleges infringement of claim 20 by Evenflo's Simplicity tray set only, and points to two protrusions integrally molded on the rear lower surface of the body portion of the tray insert. Pl. Reply, p. 10; Pl. No. Demo 1 (Tab 5), Figs. S-20B, S-20C and S-20D. Fisher-Price advocates for a construction that includes the "perimeter portion" (as well as the "outer portion") of the tray insert on the "body portion." Pl. Reply, p. 10, citing '830 patent, Figs. 5 and 6.

Evenflo, consistent with its position on claim 1, argues that the "perimeter portion" of the claimed tray insert is completely
separate and distinct from the "body portion" of the insert. Def. Memo, pp. 14-15. It urges that, because the rear latches are located on the body portion, rather than the perimeter portion, its Simplicity insert tray does not infringe claim 20.

This Court notes that the phrase "perimeter portion" does not appear anywhere in the patent except claim 20. However, the claim is worded in such a way that one assumes the body and perimeter portions are discrete parts of the insert tray, with the "perimeter portion extending around [the] body portion."

The specification does not provide further guidance; the phrase "perimeter portion" is not used at all and the word "perimeter," standing alone, appears only once relative to the insert tray:

[T]he tray insert 200 includes a perimeter 218 that defines a contour for tray insert 200 that conforms to the contour of the cavity 114 formed in the base tray 100. Col. 4, lines 14-17; see also, Figs. 5 and 7.

When perimeter 218 is shown on Figure 5, supra, it appears as the outer boundary of outer portion 210. However, the use of the term "portion" in claim 20, along with a reference to a lower surface thereof, indicates to this Court that the "perimeter portion" is a substantial element, rather than a boundary line.

In claim 20, the body portion is described as having pockets formed therein and the perimeter portion as including a latch on its lower surface. Were the perimeter portion part of the body portion, as Fisher-Price contends, this claim could more clearly and simply read "body portion having a plurality of pockets formed therein (or in its upper surface) and a latch disposed on its outer (or lower) surface." However, that is not how the claim reads. Rather, the "perimeter portion" reads as a distinct element of the insert tray that extends around its "body portion."

--- Footnotes ---

20 The terms "latch" and "coupler" are not defined in the patent documents, but do not appear to be interchangeable. Couplers are described as being "releasably engageable" whereas the latch is "selectively coupleable."

--- End Footnotes ---

Considering the patent language in its entirety, this Court concludes that the claimed "perimeter portion" of claim 20 and the "outer portion" 21 of claims 12 and 27 are one and the same. "[C]laim drafters can . . . use different terms to define the exact same subject matter. Indeed [the Federal Circuit] has acknowledged that two claims with different terminology can define the exact same subject matter." Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380-81 (Fed. Cir. 2006) (citations omitted).

--- Footnotes ---

21 As with the "perimeter portion," the patent describes and shows the "outer portion" extending around the "body portion." Col. 3, lines 41-43, Fig. 5.

22 Ascribing the same construction to "perimeter portion" in claim 20 and "outer portion" in claims 12 and 27 is not prevented by the doctrine of claim differentiation because other distinguishing limitations remain.

--- End Footnotes ---

c) "Period Of Time"

The last to be interpreted is "period of time." There is no specific definition, but the specification indicates that Ricci used a period of "approximately 5 minutes" to achieve one of his desired looks. ( '213 patent, col. 3, l. 14-15.) None of the claims that depend from claim 6 mention the length of the period. However, because claim 1 also uses those words, we can use limitations of that claim to try to define "period of time." Claim 4 tells us that the period of time may vary "commensurate

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with the strength and the desired appearance of the faded cloth or garment," thus allowing longer tumbling for more fading, lesser tumbling for less fading. Just as the exact ratios of bleach to fabric or granules to fabric were left to the skilled artisan to determine what is needed "to achieve the desired effect," the amount of time necessary to produce the desired effect itself must be "within the skill of the person of ordinary skill in the art." (Amendment of Nov. 16, 1987 at 7, in Pros. Hist., Tab I.) Since the "desired effect" is a "random faded effect," the length of time is such to produce that effect.

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2. a peripheral cover hook, said peripheral cover hook comprising ('826 patent, claim 13);

a circumferentially extending peripheral cover hook ('875 patent, claims 32 and 50)

Crown's proposed construction is a "[c]urved portion of the can end that is to be formed into a portion of a double seam." 16 Rexam's proposed construction is "[w]hen looking at a cross section of the can end, the outermost portion of the can end that is curved or conforms to one or more radii, which engages a can body flange to form at least a part of a double seam, and ends where the curved or radiused portion(s) stops." 17

--- Footnotes ---

16 D.I. 325 at 2.
17 Id.

The court adopts Crown's proposed construction.

Claim 13 of the '826 patent recites a "can end comprising: a peripheral cover hook, said peripheral cover hook comprising a seaming panel adapted to be formed into a portion of said double seam during said seaming operation." 18 Claim 13 also recites "a wall extending inwardly and downwardly from said cover hook." 19 The common specification uses the term "cover hook" and the term "curl" synonymously. 20 The common specification also describes the peripheral cover hook as a "flange." 21

--- Footnotes ---

18 '826 patent, claim 13, 10:43-47 (emphasis added). Similarly, claims 32 and 50 of the '875 patent recite "providing a can end having (i) a circumferentially extending peripheral cover hook, said peripheral cover hook comprising a seaming panel to be formed into a portion of said double seam during a seaming operation." '875 patent, claim 32, 13:4-7 (emphasis added); '875 patent, claim 50, 15:11-15 (emphasis added).
19 '826 patent, claim 13, 10:50-51 (emphasis added).
20 See '826 patent, 3:23-24 (describing a prior art can end, "FIG. 2 shows on an enlarged scale the chuck 5 and can end 10. The can end comprises a peripheral curl 13, a chuck wall 14 dependent from the interior of the curl . . . ") (emphasis added); '826 patent, 3:54-57. (describing a can end according to the invention, "FIG. 4 shows a can end, according to the invention, comprising a peripheral cover hook 23, a chuck wall 24 extending axially and inwardly from the interior of the peripheral cover hook . . . ") (emphasis added).
21 See '826 patent 4:39-42 (describing a can end according to the invention, "FIG. 5 shows the peripheral flange 23 of can end 22 of FIG. 4 resting on the flange 11 of a can body 12 before formation of a double seam as discussed with reference to FIG. 1") (emphasis added).

--- End Footnotes ---
At the Markman hearing, Crown noted that it did not disagree with the first part of Rexam's proposed construction ("the outermost portion of the can end that is curved or conforms to one or more radii, which engages a can body flange to form at least a part of the double seam") but disagreed with the last portion of that construction ("and ends where the curved or radiused portion(s)"). 22 Rexam argues that its proposed construction identifies the location of the cover hook and where the cover hook should begin and end--the end being where the curved portion ends. Rexam contends that Crown's proposed construction purportedly fails to identify the location at which the cover hook ends and the wall begins. Citing figures 4, 5, and 6 of the patents, Rexam argues that the only way to identify where the cover hook ends and the wall begins is that cover hook 23 is curved and wall 24 is not curved.

--- Footnotes

22 See D.I. 322 at 28 (transcript of March 16, 2006 Markman hearing).

--- End Footnotes

The court declines to accept Rexam's additional limitations. To the extent that the can ends illustrated in the cited figures support Rexam's position, the Federal Circuit has cautioned against importing limitations contained in preferred embodiments into a patent's claims. 23 Also, claim 32 of the '875 recites that the can end has a "first wall portion extending from said seaming panel to a first location on said wall and comprising a radiused portion extending from said seaming panel." 24 Moreover, the description of figure 4 includes radius r[1], identified as "seaming panel/chuck wall radius," indicating that the chuck wall is not necessarily flat as Rexam contends.

--- Footnotes

23 See Phillips v. AWH Corp., 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc) ("[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments."); see also id. ("[W]e have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.").

24 '875 patent, claim 32, 13:11-14 (emphasis added).

--- End Footnotes

It is clear from the patents' common specification and claim language that Rexam's proposed construction must be rejected as it relies on the assertion that the chuck wall extending from the cover hook necessarily must be flat. Therefore, the court adopts Crown's proposed construction: "curved portion of the can end that is to be formed into a portion of a double seam."
Defendants' Response Brief, Docket No. 46, at 10).

At the very least, one skilled in the art of swimming pool skimmer assemblies would understand that the claimed device must have an edge extending entirely around the central opening so that a cover element may be sealingly engaged to prevent pool water from entering the skimmer. Nevertheless, the question remains: must the location of that edge be limited to the outer edge of the face plate? The intrinsic evidence, namely the claim language itself, the language in the written description, and the file history must be examined to answer this question. See Phillips, 415 F.3d at 1313.

A. The Language of Claim 1

Defendants contend that the context of the claim itself as well as language from the specification limit the term "peripheral edge" to only the outer edge of the face plate. In support they note that introduction of a claim term "provides antecedent basis" for further reference to that term. See Energizer Holdings, Inc. v. ITC, 435 F.3d 1366, 1370-71 (Fed.Cir. 2006). They argue that in the second full paragraph of Claim 1, the use of the definite article "the" prior to "peripheral edge around the face plate" indicates that the claim term "peripheral edge around said face plate" has been previously introduced in the claim. (Docket No. 46 at 9-10). Accordingly, the only way the term "peripheral edge around said face plate" could have been previously introduced is if the term "peripheral edge extending therearound" in the first full paragraph refers to the face plate. (Id.).

Plaintiff posits that as used in the clause in question, the word "therearound" is parallel to and means the same thing as the use of the words "around said central opening." (Reply Brief, Docket No. 47, at 6). She reiterates that in the context of Claim 1, the word "around" is always used to refer to the area around the central opening in order to emphasize that the primary purpose of the invention is to cover the central opening. (Id. at 6). Therefore, the only limitation on the term "peripheral edge" is that the "edge" be located "peripheral" to the central opening. (Id. at 7). Thus, according to Plaintiff, the "peripheral edge" can be either the "outer peripheral edge" or the "inner peripheral edge" of the frame-like face plate, which in any event is still peripheral to the central opening. (Id. at 7).

The language of claim 1 does not support defendants' position. The term "peripheral edge around said face plate" on column 4, lines 41-42 of the '538 Patent, refers back to the term "peripheral edge" on column 4, line 34. Thus, as used in the first instance, the term "peripheral edge" is not clearly limited to the outer edge of the face plate.

Moreover, in the '538 Patent plaintiff did not attach any special meaning to the terms "peripheral" or "edge" as they are used in Claim 1. (Docket No. 47 at 8). Accordingly, the terms must be given their ordinary and plain meaning as understood by one skilled in the art.

Generally, the term "peripheral" refers to a positional relationship, something located outside of a bounded or central area. The Oxford Dictionary and Thesaurus defines peripheral to mean "of the periphery; on the fringe." The Oxford Dictionary and Thesaurus, American Edition (1996). Periphery in turn means "the boundary of an area or surface" or "an outer or surrounding surface." Id. Synonyms include circumferential, external, perimetric, outside, outer and border. Id. And as used in general parlance is not restricted to the outer-most part of a thing or device. For example, the phrase "peripheral vision" indicates the part of vision located on either side of the central gaze. Or in computer parlance, the word "peripherals" means devices outside of the Central Processing Unit, including the keyboard, mouse, monitor, printer, etc. Therefore, to one skilled in the art of swimming pool skimmer assemblies, something peripheral to the central opening may reasonably be anywhere beyond the central opening, and not necessarily limited to the outer-most edge of the faceplate.

Furthermore, the language of claim 1 does not explicitly limit the location of the "edge" to the outer border of the face plate. The only clear limitation as to the location of the "edge" is that it must be "carried by the face plate" beyond the central opening such that it can sealingly engage the cover element and seal the entire opening. (the '538 Patent, col. 4, Ins. 29-45). The patentee could have used language in the claim that explicitly limited the location of the peripheral edge to the outermost edge of the face plate but elected instead to use broader language. See Acumed, 483 F.3d at 807.

Even though the claim language itself does not explicitly limit the term "peripheral edge" to mean the outer edge of the face plate, the language of the claim must be further evaluated in light of the specification before reaching a definitive conclusion as to its proper construction. See Vitronics, 90 F.3d at 1582.
B. The Specification

The specification describes the face plate as having a "substantially flat border surface surrounding the opening and laterally extending from the opening to a peripheral edge of the face plate." (the '538 Patent, col. 2, lns. 64-67). Defendants cite to numerous passages in the specification to support their contention that the location of this edge must be the outer perimeter of the face plate:

The face plate has a flat border area 30 surrounding opening 28 and laterally extending from sidewall 32 of opening 28 to a peripheral edge of the face plate, see FIGS. 2, 3, and 4. (‘538 Patent, col.2, lns. 64-67).

The cover element is square or rectangular in shape, sized in plain view to fit snugly around the peripheral edges 26 of the face plate. (‘538 Patent, col.3, lns. 10-12).

The skimmer face plate 22' has an upstanding or raised flange 40 outwardly extending from the flat border surface 30' around the outer peripheral edge 26' thereof. As seen in FIG. 3, the flange 40 is substantially perpendicular to a plane defined by the flat border surface 30' of the face plate. (‘538 Patent, col. 3, lns. 45-51) (emphasis added).

The U-Shaped sides of the lip portion 27' are adapted to snugly engage opposed sides of the raised flange 40 of the face plate completely around the outer peripheral edge 26'. Additionally, the planar portion on 25' preferably engages the flat border surface 30' to provide secondary sealing when the cover element is in place. (‘538 Patent, col. 3, lns. 54-60) (emphasis added).

The face plate may carry a raised bead 36 or similar looking means formed around the outer peripheral edge 26. (‘538 Patent, col. 3, lns. 65-67) (emphasis added).

Defendants assert that these are further evidence that the patent teaches only the art of securing a corner around the outer edge of the face plate.

The Federal Circuit has repeatedly warned against importing limitations from the specification into the claim and limiting claims only to the preferred embodiments. See Phillips, 415 F.3d at 1316; Voda, 536 F.3d at 1320. The only exceptions are where the specification contains words of "manifest exclusion or restriction" or the patentee intentionally disavows the scope of its invention. See Liebel-Flarsheim Co., 358 F.3d at 905-06: Phillips, 415 F.3d at 1316.

The above-referenced language describes the preferred embodiments of Plaintiff's invention, namely a skimmer assembly that includes a face plate that carries the sealing means along the outer perimeter of the face plate. But this language only identifies the preferred design of the invention; the specification contains no words of "manifest exclusion or restriction" that limit the invention to the preferred embodiments. Consequently, the language in the specification does not provide a basis for restricting the scope of the claim language. See Liebel-Flarsheim, 358 F.3d at 905 (noting that even where the specification describes only one embodiment, the claim should not be read restrictively unless the specification contains words of manifest exclusion or restriction); Innova, 381 F.3d at 1120 (same).

Furthermore, the specification makes clear that

[t]he … preferred embodiments described herein are meant to be illustrative only and not limiting as to the scope of the invention which is to be given the full breadth of the appended claims and any and all equivalents thereof.

(the '538 Patent, col. 4, lns. 17-21). Plaintiff has not, therefore, "intentionally disavowed" the scope of its invention in the specification. Phillips, 415 F.3d at 1316.

While the embodiments describe a device in which the cover element engages the sealing means along the outer perimeter of the face plate, the claim covers more than the specification. Plaintiff claims in the '538 patent a device that includes a frame-like face plate that surrounds the central opening to the swimming pool skimmer and also carries a means to completely seal that opening. The sealing means are located on an edge peripheral to the central opening. The embodiments describe the preferred design that does have the sealing means located along the outer perimeter of the face plate. However, the claim language does not make or implicitly require such a limitation. (the '538 Patent, col. 5, lns. 26-43).
Further, if the Court were to adopt Defendant's proposed claim construction, corresponding language in the specification would be rendered redundant and thus superfluous. The term "outer peripheral edge" (the '538 Patent, col. 3, lns. 46-47, 55-56) would then read "outer outer edge of the face plate." In other words, the use of the word "outer" would be rendered redundant because the concept already would be included through the use of the term peripheral. The patentee likely did not intend to include such redundant and thus superfluous language when describing its claimed invention. The term "outer peripheral edge" itself contemplates the existence of an "inner peripheral edge." And as Plaintiff notes, the face plate resembles a picture frame in appearance, and a typical picture frame has both an outer and inner edge. (See Plaintiff's Reply Brief, Docket No. 47, at 3 n.1). Given the logical force of this analogy, we decline defendants' invitation to read the claim in a manner that produces an inconsistency in the provisions of the specification.

While the patent only discloses embodiments that describe a skimmer assembly with the sealing means located at the outer edge, the claim itself uses language that provides a broader effect, calling for a peripheral edge extending around the central opening. Given that (1) the claim language is of a broader scope than the language in the specification, (2) the specification does not contain words of manifest exclusion or restriction, (3) the patentee did not intentionally disavow the scope of the claim language, and (4) that reading the claim in the manner pressed by defendants would attribute the use of superfluous language without justification for doing so, the claim cannot be limited to the embodiment set forth in the specification. Compare Acumed, 483 F.3d at 807 (refusing to limit the particular claims to the preferred embodiments, even where the embodiments were the only description of the invention, because the claim language had a broader scope than the embodiments); Ventana, 473 F.3d at 1181 (same); Innova, 381 F.3d at 1120 (same).

The file history is considered part of the intrinsic evidence. Therefore, the file history of the '538 patent must be reviewed to examine the intrinsic evidence fully.

C. The File History

The prosecution history of the patent is part of the intrinsic evidence. See Medrad, 401 F.3d at 1319. The patent examiner rejected Plaintiff's initial application because the term "associated with the face plate" was vague and indefinite and because the claim was obvious in light of two previous patents. (Plaintiff's Reply Brief at 10-11). Defendants contend that because Plaintiff argued during the application process that the prior art did not permit sealable engagement "around a peripheral edge of the face plate", the term "peripheral edge" is limited to the outer edge of the face plate. (Defendants' Response Brief, Docket No. 46, at 15). Defendants accuse Plaintiff of trying to characterize the claims and the art in a manner different than she did during the patent prosecution. (Id.).

Plaintiff counters that she only amended the patent to include the term "carried by" in response to an examiner's rejection that the corresponding term "associated with" was vague and indefinite. (Docket No. 47 at 11). Further, by distinguishing its invention from the prior art, Plaintiff assertedly was arguing that the examiner's obviousness rejection was improper, and her current characterization is quite consistent with the patent prosecution. (Id.).

The pertinent language from the prosecution history is:

Applicant takes issue with the Examiner's position and respectfully requests reconsideration in light of the following remarks.

The device of Dengel et al. includes a rigid cover plate 30 and gasket 32 having a plurality of aligned holes formed therein to permit the insertion of threaded screws 34 therein for subsequent attachment to the faceplate 20 of the skimmer. Applicant has obtained a snap-on faceplate cover from Hayward Pool Products, Inc., Catalog No. SPX-1094R, and photographs of the part, along with its container, are enclosed herewith for the Examiner's information.

The Hayward part depicted in the photograph is a square faceplate cover having an open interior. The part is adapted to be fitted over an existing screw-fitted faceplate in spas/hot tubs in order to cover the screw heads for cosmetic purposes. The inner throat portion of the faceplate cover surrounding the water opening carries a plurality of protrusions which apparently mechanically engage the interior walls of the pre-installed screw-fitted faceplate. It would appear that a mechanical, interface-type fit is established between the protrusions of the cover and the walls of the faceplate to hold the parts together. Thus, the Hayward part in no way seals the water opening in the preinstalled faceplate. As such, it is difficult to ascertain
how or why the "snap-on" feature of the Hayward could be adapted to modify Dengal at al. [sic] The Dengal et al. cover has no open throat area to modify in the manner suggested by Hayward.

In addition, neither of the cover elements of Dengel, et al. or Hayward are constructed of a flexible material to permit sealable engagement around a peripheral edge of the faceplate, as required by the claims. Dengel et al. has no peripheral lip, as claimed, to sealably engage the peripheral edge of the faceplate. In this regard, not that the plate 30 and gasket 32 of Dengel et al. are flat...Hayward has a peripheral lip, but it is rigid and inflexible and could not function to sealably engage the peripheral edge of the faceplate. It is, therefore, not seen how Dengel et al. could or would be modified by resort to the Hayward part to arrive at the claimed structure, other than by improper hindsight reconstruction. Clearly, the modified structure of Dengel, et al. (if it could be modified) would not perform in the same way as Applicant's claimed device since the rigid peripheral lip could not perform the necessary "sealable engaging" function as required in the claims(emphasis added).

The various embodiments set forth in claims 2-9 are, likewise, not rendered obvious by the applied references. As stated above, these claimed features are not fairly suggested by Hayward since Hayward includes a rigid peripheral lip. Taken with Dengel et al.'s structure, which contains no peripheral lip, it is difficult to understand how the references can be combined to arrive at Applicant's claimed structure which all require...a flexible, peripheral lip.

(Letter of July 9, 1993, Defendants' Response Brief, Docket No. 46, Ex. 6).

In these remarks to the examiner, Plaintiff distinguishes her device from the Hayward and Dengel patents by highlighting the fact that her claimed invention uses a flexible cover element with a peripheral lip to sealably engage a peripheral edge of the faceplate, while the prior art uses a rigid peripheral lip or lacks a peripheral lip altogether. In doing so, plaintiff does not disavow the scope of the claim in any way, much less in one that limits the term "peripheral edge" to the outer edge of the faceplate. See Purdue Pharma L.P. v. Endo Pharms, Inc., 438 F.3d 1123, 1136 (Fed.Cir. 2006). To the contrary, throughout the specification and the above-referenced letter to the examiner, plaintiff was careful to signify that the flexible material forming the sealable engagement need only attach "around a peripheral edge of the faceplate." The use of such language clearly indicates that there could be multiple peripheral edges available for sealability, and undermines defendants' attempt to restrict the construction of the claim language to only one possible location of the edge on the face plate. Absent such a clear and unmistakable disavowal, it cannot be said that Plaintiff is or was so limiting her claim. Id.; see also Liebel-Flarsheim, 358 F.3d at 905.

Moreover, Plaintiff did not rely on having a peripheral edge around the outer edge of the face plate to distinguish its invention from the prior art. Instead, it was argued in the application that the difference was in the cover elements: Plaintiff's invention utilized a cover element with a flexible peripheral lip that would sealingly engage the peripheral edge while the prior art cover elements had either a rigid peripheral lip or no peripheral lip to sealingly engage a peripheral edge. (Docket No. 46, Ex. 6) ("[N]either of the cover elements of Dengel, et al., or Hayward are constructed of flexible material to permit sealable engagement around a peripheral edge of the faceplate, as required by the claims."). It follows that Plaintiff is not presently characterizing the claims and art in a materially different manner. Because there was no clear and manifest disavowal of claim scope and because Plaintiff did not rely on the peripheral edge being located along the outer-most edge of the face plate to distinguish her device from the prior art, it is apparent that Plaintiff did not limit her claim during the patent prosecution process to encompass a peripheral edge only around the outer edge of the face plate.

V. CONCLUSION

Based on the above, the disputed claim terms will be construed as follows:

"Peripheral Edge" - any edge of the face plate that is peripheral to the central opening of the face plate;

"Peripheral Edge Extending Therearound" - a peripheral edge that extends entirely around the central opening;

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a. The first disputed term in Claim 7: "A base wall including a peripheral portion from which extends an annular sidewall
that diverges radially outwardly to a terminal edge"

i. Claim language. The first term in the '809 patent that the court must construe is found in Claim 7. The disputed term in this claim is "a base wall including a peripheral portion from which extends an annular sidewall that diverges radially outwardly to a terminal edge." Claim 7, with the disputed term italicized, states the following:

7. A method of making an integral, smooth and uniformly constructed plastic washing machine basket having a base wall including a peripheral portion from which extends an annular sidewall that diverges radially outwardly to a terminal edge in an apparatus including a mold core, cavity sidewall members spaced about the mold core which carry core pins each having a beveled tip portion adapted to abut the mold core during a molding operation and a cavity cover member spaced about an end of the mold core and abutting the cavity sidewall members so as to define a cavity between the mold core and both the cavity cover member and the cavity sidewall members comprising:

injecting a plastic material to fill the cavity while flowing around the beveled tip portion of each of the core pins to form a plastic washing machine basket having sidewalls provided with a plurality of spaced beveled apertures; and ejecting the washing machine basket from the apparatus by separating the mold core and cavity cover member and shifting the cavity sidewall members away from the mold core.

The '809 patent, Claim 7 (emphasis added).

ii. The parties' definitions and arguments. The parties' proffered definitions of this term are shown below, with bold font indicating differences between their definitions. Also, the authority on which each party relies for its definition is shown just below that party's definition.

"A BASE WALL INCLUDING A PERIPHERAL PORTION FROM WHICH EXTENDS AN ANNULAR SIDEWALL THAT DIVERGES RADially OUTWARDLY TO A TERMINAL EDGE"

Maytag's Definition
"A base wall including a peripheral portion from which extends an annular sidewall having a radius measured from the vertical center axis to the sidewall that increases from the base wall to the terminal edge"

Electrolux's Definition
"the bottom wall of the washing machine basket is the base wall; the peripheral portion of the base wall is the outside edge of the bottom wall of the washing machine basket; the sidewall of the washing machine basket is disposed from a central axis a greater degree at the top edge than at the bottom; the terminal edge is the top edge of the sidewall"

Maytag's Authority
'809 patent, Fig. 2; col. 2, ll. 8-15; col. 4, ll. 22-25; col. 6, ll. 3-44; claims 24, 29 and 34; '909 patent claims 11, 12, and 18; dictionary definitions of "diverge" and "radial"

Electrolux's Authority
'809 Patent at Fig. No. 2, No. 5 (base wall); Fig. 2, No. 10 (peripheral portion); Fig. 2, No. 8 (sidewall); Fig. 2 (radially outwardly); Fig. 1, No. 36 and Fig. 2, No. 36 (terminal edge); col. 2, lines 9-15 and lines 48-50; col. 3, lines 8-9, lines; col. 6, lines 36-42; dictionary definitions of "radial"
The parties agree that the "heavy lifting" on this claim term has already been done, because the parties have already argued, and at this point, the court has already construed "annular sidewall that diverges radially outwardly to a terminal edge." See supra, beginning on page 62. The parties also argued the proper construction of other parts of this claim term, but in reference to claim terms that the court has held are not "in dispute" at this time. Therefore, while the parties' work was done with briefing of other claim terms, the court must still consider for the first time the parties' constructions of the constituent terms "base wall," "peripheral portion [of the base wall]," and "terminal edge."

Maytag did not address these remaining constituent terms in its initial brief, because it took the position that they were not "in dispute" for purposes of infringement. In its opening brief, however, Electrolux construes "base wall" as "the bottom of the washing machine basket," albeit in reference to Claims 23 and 25 of the '909 patent. Electrolux's primary argument is that the drawings in both the '909 patent and the '809 patent depict the "base wall" as the bottom of the washing machine basket. Also in reference to Claims 23 and 25 of the '909 patent, Electrolux argues that "peripheral portion [of the base wall]" means the "outside edge of the bottom wall of the washing machine basket." Again, Electrolux contends that the drawings with the patents support its construction. On the other hand, Electrolux contends that Maytag's construction of this term (as "a portion of the base wall located away from the center of the base wall") is overly complicated. Finally, in its opening brief, again in reference to Claim 25 of the '909 patent, Electrolux argues that "terminal edge" means the "top edge of the sidewall." Electrolux again asserts that the illustrations in the patents support its construction, while Maytag's definition (which refers to the "access opening") is overly complicated.

In its rebuttal brief, Maytag takes issue with Electrolux's definition of "base wall," because Maytag argues that the pertinent patent claims and parts of the specification do not teach a "top" and "bottom" orientation of the washing machine basket. As to "peripheral portion [of the base wall]," Maytag contends that Electrolux is improperly construing "portion" to mean "edge." While Maytag concedes that the peripheral portion includes the base wall's edge, Maytag contends that it includes more than just the edge, indeed, the rest of the outside portion of the base wall--apparently meaning by "outside" any portion not in the center of the base wall. Thus, Maytag contends that Electrolux's construction is too narrow. Maytag also contends that use of "edge" in other patent claims means that the patentee knew how to claim an "edge" when one was intended. Finally, Maytag asserts that "terminal edge" does not mean merely "top edge," again because there is no "top" and "bottom" orientation to the washing machine basket to be drawn from the patent claims; rather, Maytag contends that "terminal edge" simply means what it plainly states, a "terminal edge."

In its surrebuttal brief, Electrolux contends that "base wall" and "terminal edge" are as depicted in the patent illustrations, regardless of their orientation as "bottom" or "top." As to "peripheral portion [of the base wall]," Electrolux contends that Maytag's definition is hopelessly vague, because it includes any and all portions of the base wall that are not in the center of the base wall. Thus, Electrolux contends that Maytag's construction is broader than the claim language.

iii. Analysis. In its construction of the disputed term in Claim 25 of the '909 patent above, the court concluded, inter alia, that the two ends of the washing machine basket are properly defined as the "base wall" and the "open end," respectively. See supra, page 66. Implicit in that conclusion was a finding that the court now confirms explicitly: "base wall" is unambiguously the "closed end" of the washing machine basket and no further construction of the term--for example, to indicate "up" or "down" orientation of the basket by referring to the "closed end" as the "bottom"--is required. In the same discussion leading to that conclusion, the court also found that the "terminal edge" is not the "top edge of the sidewall," but the "edge of the sidewall at the open end of the washing machine basket."

These prior conclusions leave for resolution here only the proper construction of the term "peripheral portion [of the base wall]." Unfortunately, neither the plain language of the claims in which "peripheral portion [of the base wall]" appears, see Nystrom, 424 F.3d at 1142 (construction begins with the words of the patent); Biagro, 423 F.3d at 1302 (same), nor the portions of the specification cited by the parties, see Phillips, 415 F.3d at 1314-16 (the specification remains of "central importance" to determining the proper construction of the term and may even be "dispositive"), provide any real illumination for the meaning of this term, because all of the cited portions merely repeat the term.

Consequently, the court turns, once again, to standard dictionary definitions for assistance. See Free Motion Fitness, Inc., 423 F.3d at 1348 ("Phillips confirms that courts may "rely on dictionary definitions when construing claim terms" and that 'dictionaries are often useful to assist in understanding the commonly understood meaning of words.'") (quoting Phillips, 415 F.3d at 1322, in turn quoting Vitronics Corp., 90 F.3d at 1584 n.6). Indeed, the court again finds that it is possible to
Finally, the parties disagree as to the meaning of "peripheral region," as that term is used in claim I of the '253 patent. Fujinon does not believe this term needs to be construed by the Court. See Tr. at 55, 58. If, however, the Court is to construe "peripheral region," Fujinon proposes the "outer" region or the area "located away from the center." See id. at 58. Motorola, on the other hand, contends that "peripheral region" is "an ambiguous term by ... itself," making construction necessary. Id. at 68. Motorola proposes that "peripheral region" be construed as "the region outside 70% of the radius of the third lens."

I agree with Motorola that "peripheral region" is ambiguous and that the jury would be left confused without a construction of this term. Fujinon's proposed constructions do little to reduce either the ambiguity or risk of confusion. I also agree with Motorola that the '253 patent indicates where the "peripheral region" is to be found: "outside 70% of the radius" of the lens. The Abstract states that "the peripheral region of the third lens component, outside 70% of its radius, has positive refractive power." '253 patent Abstract (JCCC at M00016); see also Netcraft v. eBay, 549 F.3d 1394, 1398 (Fed. Cir. 2008) (affirming district court's construction after finding support for it in patent's Abstract).

I do not agree, however, with Motorola's suggestion that the "peripheral region" must include the entirety of the area outside 70% of the radius. See Tr. at 71-72. According to Motorola, only the area from 71-100% is the "peripheral region;" subparts of that area are not, in Motorola's view, part of the "peripheral region." In other words, Motorola contends that if something happens in just the 91-100% area, for example, then that something is not happening in the "peripheral region." This is inconsistent with the specification, which explains that in the "peripheral region" the third lens component will have "positive refractive power," and adds that "the lens region that has positive refractive power is set at a relatively distant position from the optical axis X." '253 patent, col. 3 lines 58-60 & col. 4 lines 35-44 (emphasis added)(JCCC at M00007)

These statements indicate that something happening in the positive refractive region "at a relatively distant position" from the optical axis X is happening in the peripheral region. Accordingly, I conclude that there is no basis to exclude from "peripheral region" any portion or subpart of the entire peripheral region.

Therefore, I recommend that the Court construe the "peripheral region" as "any portion of the region that begins outside 70% of the radius of the third lens."
E. The side edge and peripheral side edge

The terms "peripheral side edge" and "the side edge" refer to the position on the motherboard of the mating connector for the riser card ("a mating connector for a riser card, said mating connector situated on the motherboard and adjacent and parallel to a peripheral side edge thereof") 87 and the location and orientation of the riser card and any attached expansion boards when the riser card is plugged into the mating connector ("said riser card being oriented with respect to the motherboard such that each one of the plurality of expansion boards inserted into a corresponding one of said expansion connectors is oriented in a direction substantially parallel to a horizontal plane of the motherboard and extends inward from a vicinity of the side edge towards a central portion of the motherboard"). 88

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87 '621 at 5:66-6:1 (claim 1); Id. at 6:38-40 (claim 2).
88 Id. at 6:20-26 (claim 1); Id. at 6:59-65 (claim 2).
--- End Footnotes ---

1. Parties' positions

As with the disputed term "riser card," Tulip has offered several definitions for the term "peripheral side edge. In its final Markman brief, Tulip proposes giving the words of the phrase "peripheral side edge" their ordinary and accustomed meanings and construing the disputed phrase to mean "an edge on a side at the periphery of the motherboard, as contrasted to an edge on the front or back of the motherboard." 89 Dell contends that the phrase has no clear meaning and is indefinite. If any meaning can be ascribed to the phrase, Dell suggests that, "edge" means a line where the motherboard ends, "side edge" means a long edge, rather than a short edge or end, of a rectangular motherboard, and "peripheral side edge" means a side edge on the periphery of the motherboard.

--- Footnotes ---

89 D.I. 368 at 14. In the parties' joint submission of disputed terms, Tulip suggested "peripheral side edge" be defined as: "a side on the periphery of the motherboard." D.I. 308 at 6. In its initial Markman brief, Tulip defines "peripheral side edge" as: "one of the sides at the periphery of the motherboard, as contrasted to the front or back edge of the motherboard." D.I. 326 at 13.
--- End Footnotes ---

Tulip contends that "peripheral" has an ordinary and accustomed meaning of "pertaining to, constituting, or of the nature of a periphery." 90 Tulip suggests the ordinary and accustomed meaning of "side" is "(a) any of the lines or surfaces that bound or limit something; as, a square has four sides, a cube six; (b) any bounding line or surface of an object other than the ends or top and bottom; (c) either of the two bounding surfaces of an object that are distinguished from the front, back, top, and bottom." 91 Tulip states that the ordinary meaning of "edge," is "the abrupt border or margin of anything; the brink, as the edge of the table; the edge of a precipice." 92 These ordinary meanings, Tulip contends, support a construction of the phrase "peripheral side edge" as a border on the periphery of a motherboard which is not the front, back, top, or bottom. Tulip argues further that its use of the indefinite article "a" ("a peripheral side edge thereof"), indicates that the claimed peripheral side edge of a motherboard is not limited to a single peripheral side edge running the entire length of the motherboard but also encompasses a side edge on the periphery of the motherboard that may extend across a portion of that length if, for example, a motherboard was not rectangular or had an irregular side edge. Tulip contends that its proposed construction is consistent with the disclosure of a preferred embodiment recited in the '621 patent's specification reciting, "FIG. 2 shows how, in accordance with the invention, by moving the connector 22 for the riser card 23 to the side of the motherboard 21, the above-outlined problems are obviated and additional advantages are obtained." 93
Tulip suggests that the phrase "the side edge" be construed to mean the "peripheral side edge" (according to Tulip's proposed construction) of the motherboard adjacent to the connector for the riser card. Tulip argues that the antecedent basis for "the side edge" is "a peripheral side edge," introduced earlier in the claims. Tulip also points out that there is no language in the specification which refers to the relative lengths of the sides of the motherboard, as is included in Dell's proposed construction.

Dell contends that the meaning of the term "the side edge" is clear from the language of the claims. Dell states that the term "edge" should be given its ordinary meaning of a line where the motherboard ends and that "side edge" should be construed to mean the longer edge, rather than a shorter edge or end, of a rectangular motherboard. Dell insists that the terms "side" and "edge" must be given different meanings or those terms would be redundant. Dell argues that its construction is also consistent with the specifications of the '621 patent and points to Figure 4 where the motherboard 41 includes four edges: two sides (or longer edges) and two ends (or shorter edges). The riser card 43 is located along one of the two sides or longer edges. Dell also directs the court's attention to Figure 2 which shows that the expansion boards inserted into the riser card 23 extend inwardly from one of the two side edges toward a central portion of the motherboard 21.

Dell argues that because the phrase "peripheral side edge" is not clearly defined within the language of claims 1 and 2, and since "peripheral side edge" is not referenced in the written description or prosecution history, this court should determine that the phrase is indefinite. Dell contends that if the court disagrees with its argument that the term is indefinite, since "peripheral" is qualified by the term "thereof," the only proper reference point is the motherboard and the phrase must be construed to mean either of the side edges on the periphery of the rectangular motherboard. Although Dell argues this construction is proper, it contends that the word "periphery" in this construction is surplusage.

Dell maintains that Tulip improperly suggests a construction where "the side edge" and "peripheral side edge" be given the same meaning. Such a construction, Dell argues, is contrary to the principal of claim construction that different terms used in a claim should be construed differently. Dell also urges the court to reject Tulip's antecedent basis argument for construing the two phrases identically. Dell points out that the phrase "a peripheral side edge" is properly the antecedent "the peripheral side edge" not "the side edge." Dell notes that original claims 1 and 2 referred had a single reference to a "side edge" but did not include the word "peripheral." 94 Claims 1 and 2 of the '621 patent as issued contain the two references to "side edge" contained in the disputed phrases. The word "peripheral" precedes the first reference to "side edge" but not the second reference to "side edge." Dell argues that if Tulip intended the phrase "a peripheral side edge" to serve as the antecedent for the phrase "the side edge," the word "peripheral" would have been included before both references to "side edge."

--- Footnotes ---


91 Id. at 1685 (emphasis in original).

92 Id. at 576 (emphasis in original).

93 '621 at 5:5-8.

2. Court's construction

The parties agree that "peripheral side edge" and "side edge" refer to the motherboard. The parties' proposed definitions of
"edge" are consistent with the definition of that word as "the line or point where a material object or area begins or ends: BORDER." 95 The parties disagree as to how "side" is to be defined so as to give that word a different meaning from "edge." The court disagrees with Dell's suggestion that "side" means the long, as opposed to the short, edges of a rectangular motherboard. There is no claim element referencing the relative lengths of the edges of the motherboard. In fact, there is no evidence in the specification or prosecution history that necessitates narrowing the scope of Tulip's invention to a rectangular motherboard. That being the case, the '621 patent could cover a square motherboard whose edges are, by definition, all the same length; a shape to which Dell's proposed construction could not be applied. The court also disagrees with Dell's argument that Figures 2 and 4, showing a rectangular motherboard having the mating connector for the riser card along one of the longer edges of that motherboard, support its proposed construction. Accepting Dell's argument would improperly narrow the claims at issue to a preferred embodiment illustrated by those figures.

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The court agrees with Tulip's suggestion that the "side" the motherboard referred to in the disputed term is an edge of the motherboard which is not a front edge or a rear edge of the motherboard. 96 This construction gives a different meaning to the words "side" and "edge" and can be applied to motherboards of differing shapes (whether rectangular, square, or as Tulip posits, having an irregular shape). Therefore, the court construes "side edge" to be the border of the motherboard which is not the front or rear of the motherboard.

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96 See WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 2111 (1993) (defining "side" as "one of the surfaces or surface parts of an object which are distinguished … from the front or back as being more or less perpendicular to the observer").
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The addition of the modifier "peripheral" to "side edge" is somewhat perplexing. Peripheral is an adjective referring to the periphery of something, here a "side edge." Periphery is defined as "the outward bonds of something as distinguished from its internal regions or center." 97 Periphery and edge (when referring to a border, as here) are synonyms 98 so it is unclear what, if anything, the word "peripheral" adds to the phrase "side edge." Tulip's proposed construction of the phrase "peripheral side edge" ("an edge on a side at the periphery of the motherboard, as contrasted to an edge on the front or back of the motherboard") attempts to define the disputed phrase using "periphery" without suggesting how "periphery" adds meaning to the phrase. Indeed at oral argument, Tulip appeared to concede that the word "peripheral" does not add additional meaning to the phrase "side edge." When asked to distinguish "peripheral side edge" from "side edge" Tulip responded that "peripheral side edge and side edge are mutually reinforcing terms. They're saying the same thing. They are not trying to define different terms." 99 Like Tulip's proposed construction, Dell's definition of "peripheral side edge" as "a side edge on the periphery of the motherboard" is no different in scope than the court's construction of the phrase "side edge." For the reasons that follow, the court determines that the word "peripheral" and "edge" are redundant and construes the disputed phrase "peripheral side edge" to have the same meaning as the disputed phrase "side edge."

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97 Id. at 1681.
98 See WEBSTER'S COLLEGIATE THESAURUS 272 (edge), 595 (periphery) (1976).
99 D.I. 396 at 37 (Transcript of Markman hearing).
- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - - -
There is no evidence, and neither party argues, that the disputed phrases are referring to different locations on the motherboard or that "peripheral side edge" is intended to refer to a more limited area than "side edge." 100 As Dell points out, the single reference to a "side edge" was not modified by the word "peripheral" in claims 1 and 2 as originally filed. During prosecution, original claims 1 and 2 were cancelled and the claims that ultimately issued as claims 1 and 2 in the '621 patent were added by amendment and included two references to the phrase "side edge," the first of which included the modifier "peripheral." As explained above, however, the cancellation of original claims 1 and 2 was in response to an obviousness rejection which had nothing to do with the definition of the phrase "side edge." The modifier "peripheral" was not added to avoid the referenced prior art and the applicant's comments with regard to the claims in the amendment did not discuss the phrase. 101

100 Tulip did argue that, in order to give some meaning to the word "peripheral," the court could construe the disputed phrase "to refer to the side edge of the motherboard that is closest to an outer side wall (i.e., a periphery) of the computer housing." D.I. 383 at 9. This would not be a reasonable construction as ascribing such meaning to the term requires reference to the computer housing. A computer housing is not mentioned in either claim 1 or 2. Additionally, the claim language recites, "said mating connector situated on the motherboard and adjacent and parallel to a peripheral side edge thereof." '621 at 5:66-6:1 (claim 1); Id. at 6:38-40 (claim 2) (emphasis added). That language unambiguously refers to the peripheral side edge of the motherboard. Moreover, the parties are in agreement that the disputed term is directed to a location on the motherboard. The court will not adopt Tulip's tortured alternative construction by interpreting two words of the disputed phrase, "side" and "edge," as referencing the motherboard and the third word, the adjective "peripheral," as referring to a structure not mentioned in either claim at issue, the computer's housing.

101 The fact that "peripheral" was not added during prosecution to narrow the scope of coverage of "side edge" distinguishes this case from CAE Screenplates Inc. v. Heinrich Fiedler GMBH & Co. KG, 224 F.3d 1308 (Fed. Cir. 2000), which Dell cites for the uncontroversial proposition that different claim terms should be construed differently. There, the court determined from the language of substituted claims, and the applicant's arguments to the examiner contained in the prosecution history, that the applicant had narrowed the scope of its claim to avoid prior art referenced in an anticipation rejection. Id. at 1317-18. Significantly, and contrary to the facts of this case, the changes that further defined and narrowed the applicant's claims in CAE Screenplates were made to the claim term whose meaning was in dispute. Similarly in Jack Guttman, Inc. v. Kopykake Enterprises, Inc., 302 F.3d 1352 (Fed. Cir. 2002), the court determined, when construing the term "tortuous bend" that the dictionary definition of "tortuous," ("marked by repeated twists, bends, or turn") could not be used to define the disputed phrase "because [that definition] simply makes the phrase 'tortuous bend' redundant, without providing any insight into the crucial issue of how curved a bend may be before it becomes 'tortuous' within the meaning of claim 11." Id. at 1357 (emphasis added). There, the construction of the disputed phrase "tortuous bend" was crucial to the court's determination of whether the plaintiff in that case had a reasonable likelihood of success on its infringement claim. Here, the plaintiff is not basing its infringement allegations on a distinction between the phrase "peripheral side edge" and "side edge" and the defendant is not proposing a more narrow definition of the phrase "peripheral side edge" which would avoid its products alleged infringement of the '621 patent. In fact, Dell responded to the court's question at oral argument, "is there any example of edge that's not also in the periphery?" by stating, "no. I think they're redundant with each other." D.I. 396 at 78. The effect, if any, of that redundancy will be addressed in this court's opinion on Tulip's motion for summary judgement of validity under 35 U.S.C. § 112 (D.I. 336) in which Tulip challenges Dell's argument that the phrase "peripheral side edge" is so ambiguous so as to make the '621 patent invalid.

Next, this is not a case where considerations of claim differentiation come into play. Both claims 1 and 2 have identical bodies, each reciting both disputed phrases. Neither claim is rendered surplusage if the court construes "peripheral side edge" and "side edge" to have the same meaning. Furthermore, none of the other claims of the '621 patent, those not at issue in this case, are rendered surplusage by that determination.

Finally, Tulip suggests that "a peripheral side edge" provides the antecedent basis for "the side edge" and contends that this further supports its position that both phrases refer to the same area of the motherboard. Although Dell is correct in pointing out that according to standard claim drafting "a peripheral side edge" is the proper antecedent for "the peripheral side edge," there is no other antecedent basis in the claims for the phrase "the side edge" other than the disputed phrase "a peripheral

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side edge." A review of the intrinsic record convinces the court that, despite an apparent sloppiness in claim drafting, the two references to "side edge" are do have the same meaning.

Nothing in the intrinsic evidence has been cited to, or discovered by, the court which indicates that the adjective "peripheral" changes, or adds to, the meaning of the phrase "side edge." 102 Because the court finds that word "peripheral" is synonymous with the word "edge" as a reference to the border of the motherboard, the court construes "peripheral side edge" as having the same meaning as "side edge," the border of the motherboard which is not the front or rear of the motherboard.

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102 The extrinsic record before the court also fails to suggest a meaning for the phrase "peripheral side edge" that is different from the meaning of the phrase "side edge." During his deposition, Tulip's expert Ronald S. Bader, was asked, "in 1994 or prior thereto, had you personally ever used the term peripheral side edge in connection with your work as an engineer?" Bader answered, "no. I have not. That's an interesting term." D.I. 370, Ex. 14 at 197. Nevertheless, Bader stated in his expert report that a person of ordinary skill in the art would understand the phrase "peripheral side edge" to have an ordinary and accustomed meaning of "border or margin." D.I. 326, Ex. D at 8. That meaning is merely a definition of the word "edge" and fails to give the words "peripheral" and "side" any effect at all.

--- End Footnotes ---

2899

1. ":[A] peripheral zone being defined adjacent the peripheral edge of the anterior face that is tapered thinner toward the peripheral edge of the lens." Used in '740 patent, claim 1.

"[A] peripheral zone being defined adjacent the peripheral edge of the lens that tapers thinner toward the peripheral edge of the lens." Used in '903 patent, claim 29, 34, 38.

"[A] peripheral zone adjacent the peripheral edge of the anterior lens." Used in '746 patent, claim 1.

CooperVision proposes "a portion of the lens with a decreasing thickness to provide a ramp from a ballast periphery to the lens edge, to create a comfort zone around the edge of the lens." CIBA contends that this term should mean "a zone or region on the anterior face of the lens that is tapered thinner toward the peripheral edge of the lens, is located adjacent to the peripheral edge, and that circumscribes and is separated from the INNER ZONE by either a curved or rounded transition (i.e., an area of the lens that creates a smooth junction between adjacent curvatures) or by a discrete boundary, discontinuity or corner (collectively, 'boundary'). The boundary separating the zones is the only such identifiable boundary between the peripheral edge and the boundary of the optic zone."

The parties do not dispute that a peripheral zone can be construed similarly among the Toric patents. The claim language describes a contact lens comprising a contact lens body with an anterior face, a posterior face, and "a peripheral edge there between with a peripheral zone being defined adjacent the peripheral edge of the anterior face that is tapered thinner toward the peripheral edge of the lens body." '740 patent, col. 11, ll. 42-46.

The present invention includes three zones on the anterior face of the lens: an optic zone, an inner zone, and a peripheral zone circumscribing the inner zone. '903 patent, col. 4, ll. 5-7; col. 5, ll. 50-55. Although smooth, rounded transitions between the different zones are preferred, discrete boundaries or corners are not excluded. '903 patent, col. 10, ll. 15-17. The peripheral zone is adjacent to the peripheral edge of the lens and tapers so as to be thinner at the lens edge than at the inner zone. '903 patent, col. 3, ll. 65-67; col. 6, ll. 6-7. This taper within the peripheral zone provides a "so-called" comfort zone around the edge of the lens. '903 patent, col. 9, ll. 5-7. Because of the reduced thickness, movement of the eyelids across the contact lens is facilitated, and there is less irritation. Id.

CooperVision's assertion that the peripheral zone extends to a ballast periphery is unsupported by the specification. The specification provides that the inner zone has a circular ballast periphery that is slightly offset toward the top of the lens.
along a vertical meridian. '903 patent, col. 6, ll. 3-5 (emphasis added). The ballast surface may be contained wholly within
the inferior portion of the inner zone. '903 patent, col. 6, ll. 59-61; col. 10, ll. 39-44. If CooperVision's construction is
adopted, then the peripheral zone would encompass a large portion of the lens, rather than around the edge of the lens, when
the ballast surface is contained wholly within the inferior portion. This would contradict what is required by the patents. See
'903 patent, col. 9, ll. 5-6. Although in one "exemplary embodiment" discussed in '903 patent, col. 7, ll. 48-50, the lens
tapers downward within the peripheral zone between the ballast periphery to the inferior edge, the court will not import
limitations from a preferred embodiment into the construction of claims. Electro Med. Sys. S.A. v. Cooper Life Sciences,
Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994).

In its proposed construction, CIBA places the limitation that there can only be one transition between the optic zone and the
peripheral edge of the lens. CIBA also states that there must be distinct boundaries between each zones. The court rejects
this construction based on Gillette Co. v. Energizer Holdings, Inc., 405 F.3d 1367, 1374 (Fed. Cir. 2005). There, the Federal
Circuit followed the maxim that claims will not be read restrictively unless the patentee has demonstrated a clear intention
to limit the claim scope using words or expressions of manifest exclusion or restriction. In that case, the patent-in-suit
claimed a wet-shave safety razor with multiple blades. Id. at 1369. Specifically, the patent claimed a "safety razor
comprising . . . a group of first, second, and third blades," but the defendant manufactured a four-blade safety razor. Id. After
reviewing the patent specification, the Federal Circuit determined that the invention relates to safety razors having blade
units with a plurality of blades and despite numerous cites to three-bladed razors, "no statement in the patent surrenders or
excludes a four-bladed razor." Id.

The written description of the Toric Patents is similar to the written description in Gillette in that the written description
defines a claim term but nonetheless provides a disclosure of examples of limited scope. The specification states that the
anterior face defines a "plurality of zones thereon . . . ." In fact, the patentee stressed that "although the present application
describes distinct zones or portions in contact lenses, those zones are shown for clarity of description of the invention
only. . . . [T]here are no sharp distinctions between-these different zones of the lens, but that, they are instead smoothly
blended into one another." '903 patent, col. 8, ll. 62-67.

Moreover, the specification teaches:

the clear delineations in the drawings between the optic zone 22 peripheral zone 24 and inner zone 26 should not be taken
to imply that there is a discontinuity or corner at those locations, and in fact the exemplary lens of the present invention
possesses gradually curved transitions between the zones. '903 patent, col. 8, ll. 62-67.

Analogously, between the different portions (i.e., superior, intermediate, and inferior) the present invention may have either
smooth, rounded transitions or discrete boundaries or corners. '903 patent, col. 10, ll. 15-17.

There is no authority for the addition of superfluous limitations in claim construction, and certainly not from description of
the preferred embodiment, even if they may later be useful to the infringement analysis of a party. The claim language at
issue involves only the peripheral zone, and the court will not include additional language involving the number of zones or
transitions. That is a matter for another time.

The court defines these terms as follows:

"[A] peripheral zone being defined adjacent the peripheral edge of the anterior face that is tapered thinner toward the
peripheral edge of the lens" and "a peripheral zone being defined adjacent the peripheral edge of the lens that tapers thinner
toward the peripheral edge of the lens" and "a peripheral zone adjacent the peripheral edge of the anterior lens" means: A
zone or region on the anterior face of the lens located adjacent to the peripheral edge, and that circumscribes and is
separated from the inner zone by either a curved or rounded transition or by a discrete boundary, discontinuity or corner.
The zone has a decreasing thickness toward the peripheral edge of the lens to provide comfort to the wearer.

11. Permanently
Defendants' Proposed Construction: "Permanently" means affixed to an "object" or "container" such that a placard permanently attached or affixed to the substrate cannot be removed without damaging the placard or the "object" or "container."

Plaintiff's Proposed Construction: "Permanently" means capable of continuing or enduring through multiple cycles of labeling and relabeling of the container.

The Court's Claim Construction: "Permanently" means affixed to an "object" or "container" such that a placard permanently attached or affixed to the substrate cannot be removed without damaging the placard or the "object" or "container."

Defendants first note that all of the claims at issue involve "substantially permanently attaching" or "substantially permanently affixing" a placard to a container or an object, yet none of those claims mention the removal of the placard after it is attached or affixed. Similarly, the patent specification does not discuss the possibility of removing the placard once it has been attached to a the container. This supports Defendants' definition of permanently.

MPT counters that there is no reason that removal of a placard from a container must cause damage to one of these items. MPT draws support for its definition from the patent specification, which generally describes multiple applications of pressure sensitive adhesive labels on the release coated face of the placard. (‘790 patent, col. 1, ln. 49-54, col. 2, ln. 47-57). The implication is that the only requirement for a permanently attached placard is that it is attached in a manner that allows for the repeated application of labels. MPT also draws support from a lay dictionary definition of permanent as "continuing or enduring (as in the same state, status, place) without fundamental or marked change . . . ."

Defendants also rely on the specification. One of the advantages of the invention is the ability to release a label even if it has a "so called permanent adhesive backing" such that "inexpensive permanent pressure sensitive adhesive coatings rather than more expensive removable coatings" may be used. (‘790 patent, col. 1, ln. 52-3, col. 2, ln. 65-68). During prosecution, a permanent adhesive was described as follows:

Permanent: An adhesive designed to stick to a substrate without edge lifting that cannot be removed without damaging either the label or the substrate.
Removable: An adhesive designed to stick to a substrate without edge lifting that can be removed without damage to either the label or the substrate.

(‘882 file, p. 51).

If permanent means something that "cannot be removed without damaging either the label or the substrate," it follows that a permanently attached placard could not be removed without damaging the placard or the container. Industry publications provide the following definitions:

"PERMANENCY A measure of an adhesive's ultimate holding power or bond strength. A permanent adhesive will develop a bond that makes label removal difficult or impossible without distorting the face stock." (TLM p. 43).

"PERMANENT ADHESIVE An adhesive characterized by having relatively high ultimate adhesion to a wide variety of surfaces." (TLM p. 43).

"A label is considered permanent if the bond to the substrate makes removal difficult or impossible without distorting the facestock or damaging the substrate." (Fasson p. 6).

MPT does not dispute these definitions. Instead, it argues that they are inapplicable, since the specification's reference to a permanent adhesive was with respect to the labels, not the placard. Although the Court recognizes the distinction, it does not support a different definition in the claims. For example, Claim 1 of the '790 patent describes the process of "substantially permanently attaching the placard to the object . . . using said adhesive coated face [of the placard] . . . ."

There is no indication that an adhesive used to "permanently attach" the placard to the container would be any different than the permanent adhesive of a label. Therefore, the Court adopts the definition of "permanently" proposed by Defendants. 32

Claim 6 of the ‘790 patent and Claim 1 of the ‘164 patent do not recite a placard adhesive face. However, MPT has made no argument that these claims should be treated differently with respect to their use of the term permanently. Because MPT has applied the same definition to all instances of permanently, and Claims 1 and 4 must adopt the definition supplied by Defendants, the Court applies this definition to all instances of permanently.
K-2 Corporation ("K-2") is the owner of reexamined U.S. Patent No. 5,437,466 ("the '466 patent"), issued August 1, 1995, entitled "In-Line Roller Skate." The '466 patent is generally directed to an in-line skate that has a soft, pliable inner "bootie" or "shoe" surrounded in certain areas by molded plastic or straps affixed to the base of the skate. This arrangement allows the wearer's foot to breathe and offers a substantially lighter skate while retaining structural stiffness required for performance.

Claims 1, 5, and 6 of the '466 patent are the only claims at issue in this case. Representative claim 1 recites five major claimed components, as set forth in brief form below with the key limitation underlined:

1. In an in-line roller skate having
   an upper shoe portion and a lower frame portion . . .
   a non-rigid shoe portion adapted to receive and substantially enclose the entire foot of the skater . . .
   support means positioned adjacent selected areas of said non-rigid shoe portion for providing support to aid the skater in maintaining said in-line roller skate in a substantially vertical position . . . and
   a base portion, . . .
   said non-rigid shoe portion being permanently affixed to said base portion at least at said toe area and said heel area for substantially preventing movement therebetween at least in a horizontal plane, wherein at least a portion of said non-rigid shoe portion extends continuously from said base portion to at least the top of said ankle support cuff.

Claims 5 and 6 contain what the parties agree is equivalent language with respect to the key limitation:

5. . . .
   said non-rigid shoe portion being permanently interconnected with said base portion at least at said toe area and said heel area for substantially preventing movement therebetween at least in a horizontal plane . . .

6. . . .
   said non-[rigid] upper portion being non-removably affixed to said rigid base adjacent both said heel and toe portions of said base for substantially preventing movement therebetween at least in a horizontal plane . . .

Salomon S.A. and Salomon North America (collectively, "Salomon") make and sell an in-line skate, designated as model TR, that includes a soft inner bootie surrounded by a rigid plastic structure ("the TR skate"). The TR skate's inner bootie is fastened to the lower, rigid portion of the skate by the use of rivets and a screw in the toe area and by a removable hex-head screw in the heel area. The parties agree that the dispositive issue in this case is whether the use of a removable screw in the heel area of the TR skate can meet the "permanently affixed" limitation found in claims 1, 5, and 6 of the '466 patent.

In April 1998, K-2 sued Salomon for infringement of the '466 patent. On cross-motions for summary judgment, the district court rejected K-2's arguments that the disputed "permanently affixed" claim limitation should be construed to be synonymous with "affixed," "secured," or "firmly held," and instead held that the ordinary meaning of "permanently
affixed" could not encompass the removable screw used in the heel area of the TR skate. See K-2 Corp. v. Salomon S.A., 1998 U.S. Dist. LEXIS 21869, 50 U.S.P.Q.2D (BNA) 1054, 1056 (W.D. Wash. 1998). The court determined that because the TR skate was missing an element of the '466 patent claims, it could not, as a matter of law, literally infringe those claims. See id.

The district court also held that the TR skate could not, as a matter of law, infringe under the doctrine of equivalents because of prosecution history estoppel. See 50 U.S.P.Q.2D (BNA) at 1057. The court concluded that in amending the relevant claims during prosecution and examination to add the "permanently affixed" limitation and the heel and toe locations of the fastening, K-2 had relinquished coverage of in-line skates that did not have a bootie permanently affixed at both the heel and the toe. See id. The court further noted that the relevant prosecution history suggested that K-2 amended the claim to avoid a prior art reference, U.S. Patent No. 5,331,752 to Johnson ("the Johnson reference"), that discloses an in-line skate in which the bootie is removable and affixed at the toe and mid-foot. See id. The district court concluded that K-2's relinquishment of such subject matter prevented it from now asserting that the heel screw of Salomon's TR skate was equivalent to the "permanently affixed" limitation of the '466 claims. Summary judgment of noninfringement was granted in favor of Salomon. See id.


II

We review the grant of summary judgment de novo. See Conroy v. Reebok Int'l, Ltd., 14 F.3d 1570, 1575, 29 U.S.P.Q.2D (BNA) 1373, 1377 (Fed. Cir. 1994). In doing so, we must keep in mind that summary judgment is appropriate only if there is no genuine issue of material fact. See Fed. R. Civ. P. 56(c). To this end, the court must draw all reasonable factual inferences in favor of the nonmovant. See Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 255, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986).

An infringement analysis is a two-step process in which the court first determines, as a matter of law, the correct claim scope, and then compares the properly construed claim to the accused device to determine, as a matter of fact, whether all of the claim limitations are present in the accused device, either literally or by a substantial equivalent. See Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1247-48, 48 U.S.P.Q.2D (BNA) 1117, 1120 (Fed. Cir. 1998); General Mills, Inc. v. Hunt-Wesson, Inc., 103 F.3d 978, 981, 41 U.S.P.Q.2D (BNA) 1440, 1442 (Fed. Cir. 1997); Young Dental Mfg. Co. v. Q3 Special Prods., Inc., 112 F.3d 1137, 1141, 42 U.S.P.Q.2D (BNA) 1589, 1592 (Fed. Cir. 1997). See also Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454, 46 U.S.P.Q.2D (BNA) 1169, 1172-73 (Fed. Cir. 1998) (en banc).

Because the relevant aspects of the accused device's structure and operation are undisputed in this case, the question of whether Salomon's TR skate literally infringes the asserted claims of the '466 patent turns on the interpretation of those claims. See Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1578, 37 U.S.P.Q.2D (BNA) 1365, 1370 (Fed. Cir. 1996) ("Where, as here, the parties do not dispute any relevant facts regarding the accused product but disagree over [claim interpretation], the question of literal infringement collapses to one of claim construction and is thus amenable to summary judgment.").

We begin, of course, with the language of the claims. See Renishaw, 158 F.3d at 1248, 48 U.S.P.Q.2D (BNA) at 1120; Abtox, Inc. v. Eexitron Corp., 122 F.3d 1019, 1023, 43 U.S.P.Q.2D (BNA) 1545, 1548 (Fed. Cir. 1997); Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 619-20, 34 U.S.P.Q.2D (BNA) 1816, 1819 (Fed. Cir. 1995). The general rule is that terms in the claim are to be given their ordinary and accustomed meaning. See Johnson Worldwide Assoc., Inc. v. Zebo Corp, 175 F.3d 985, 989, 50 U.S.P.Q.2D (BNA) 1607, 1610 (Fed. Cir. 1999); Renishaw, 158 F.3d at 1249, 48 U.S.P.Q.2D (BNA) at 1121; York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572, 40 U.S.P.Q.2D (BNA) 1619, 1622 (Fed. Cir. 1996). That is, the ordinary and accustomed meaning of a disputed claim term is presumed to be the correct one, see Johnson Worldwide, 175 F.3d at 989, 50 U.S.P.Q.2D (BNA) at 1610, subject to the following. First, a different meaning clearly and deliberately set forth in the intrinsic materials--the written description or the prosecution history--will control. See id.; In re Paulsen, 30 F.3d 1475, 1480, 31 U.S.P.Q.2D (BNA) 1671, 1674 (Fed. Cir. 1994); Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387-88, 21 U.S.P.Q.2D (BNA) 1383, 1386 (Fed. Cir. 1992); Lear Siegler, Inc. v. Aeroquip Corp., 733 F.2d 881, 888-89, 221 U.S.P.Q. (BNA) 1025 (Fed. Cir. 1984). Second, if the ordinary and accustomed meaning of a disputed term would deprive the claim of clarity, then further reference must be made to the intrinsic--or in some cases, extrinsic--evidence to ascertain the proper meaning. See
Johnson Worldwide, 175 F.3d at 990, 50 U.S.P.Q.2D (BNA) at 1610-11. In either case, a party wishing to alter the meaning of a clear claim term must overcome the presumption that the ordinary and accustomed meaning is the proper one, demonstrating why such an alteration is required. See Johnson Worldwide, 175 F.3d at 989-90, 50 U.S.P.Q.2D (BNA) at 1610.

**Here the critical claim language is "permanently affixed."** The parties agree that the relevant language in claims 5 and 6 is equivalent, and there is no dispute about the meaning of "affixed" in this context. Thus, our analysis begins with the ordinary and accustomed meaning of the term "permanently" in the phrase "permanently affixed." The ordinary and accustomed meaning of this phrase, as the district court noted, see K-2, 50 U.S.P.Q.2D (BNA) at 1056, does not encompass affixation via removable screw. That is, the ordinary and accustomed meaning of "permanently affixed" in this context requires that the fastening be unremovable.

K-2's primary argument is that the functional language in the claim following this limitation--"for substantially preventing movement therebetweent at least in a horizontal plane"--dictates the meaning of "permanently affixed." That is, K-2 suggests that the inclusion of this functional language converts the meaning of "permanently affixed" to mean "affixed to prevent movement in at least a horizontal plane." We cannot accept this reading of the claim. The functional language is, of course, an additional limitation in the claim. See, e.g., Wright Med. Tech., Inc. v. Osteonics Corp., 122 F.3d 1440, 1443-44, 43 U.S.P.Q.2D (BNA) 1837, 1840 (Fed. Cir. 1997) (functional language analyzed as a claim limitation). This limitation requires that the attachment between the bootie and the base "substantially prevent[]" movement of the bootie (and presumably, the user's foot when inserted in the bootie) in a horizontal plane. In other words, the functional language requires that the attachment prevent the bootie from sliding around on top of the base; it demands a structural rigidity in the horizontal dimension to the connection between the bootie and the base. It also, as K-2 correctly notes, may be accomplished with an attachment that is easily removable, or at least something less than permanent. But it is undeniable that this language is fully consistent with a permanent attachment as well. That is, the functional language tells us something about the structural requirements of the attachment between the bootie and the base; it speaks not at all, however, about whether that attachment is permanent, something less than permanent, or entirely removable. The only answer to that question, of course, is the specific claim limitation that the bootie be "permanently affixed" to the base. K-2 reads the functional language in a way that would effectively expunge the term "permanently" from the claim language. Cf. Perkin-Elmer Corp. v. Westinghouse Elec. Corp., 822 F.2d 1528, 1533 n.8, 3 U.S.P.Q.2D (BNA) 1321, 1325 n.8 (Fed. Cir. 1987) ("Specific claim limitations cannot be ignored as insignificant or immaterial in determining infringement."). A more natural construction reads the two clauses as complementary, recognizing that "permanently affixed" requires an unremovable attachment, while the functional language requires that the attachment prevent sliding. See, e.g., Renishaw, 158 F.3d at 1250, 48 U.S.P.Q.2D (BNA) at 1122 (Fed. Cir. 1998) ("The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.").

While the claim itself provides no reason to alter the ordinary and accustomed meaning of "permanently affixed," K-2 may (and does) argue that the intrinsic evidence clearly sets forth an alternate definition. See Beachcombers v. Wildewood Creative Prods., Inc., 31 F.3d 1154, 1158, 31 U.S.P.Q.2D (BNA) 1653, 1656 (Fed. Cir. 1994) ("As we have repeatedly said, a patentee can be his own lexicographer provided the patentee's definition, to the extent it differs from the conventional definition, is clearly set forth in the specification."); Hoganas AB v. Dresser Indus. Inc., 9 F.3d 948, 951, 28 U.S.P.Q.2D (BNA) 1936, 1938 (Fed. Cir. 1993) ("Although a patentee can be his own lexicographer, as we have repeatedly said, the words of a claim will be given their ordinary meaning, unless it appears that the inventor used them differently" (internal quotations omitted)). In particular, K-2 points to amendments and arguments made in support of patentability over the prior art Johnson skate. There, the applicant stated that the addition of the term "permanently" served to distinguish the claims from the "detachable" boot disclosed in Johnson. The applicant further argued that an advantage of the permanent connection was that it avoided the sliding heel the applicant noted as a problem with the prior art. From these passages, K-2 draws a conclusion similar to that outlined above: that "permanently affixed" must mean simply "affixed to prevent sliding in a horizontal dimension." We reject this conclusion: the proposed definition of "permanently" as "preventing sliding in a horizontal dimension" does not appear with the required clarity, deliberateness, and precision to impart an unaccustomed meaning to an otherwise clear claim term. See In re Paulsen, 30 F.3d at 1480, 31 U.S.P.Q.2D (BNA) at 1674 ("Although an inventor is indeed free to define the specific terms used to describe his or her invention, this must be done with reasonable clarity, deliberateness, and precision."); Hoganas, 9 F.3d at 951, 28 U.S.P.Q.2D (BNA) at 1938-39 (finding patentee's proposed definition unsupported in the specification or prosecution history). Nowhere in the passages cited to us does the applicant squarely describe the nature of the connection (i.e., "permanently affixed") in the pending claims. Instead, the relevant language focuses on the connection in the prior art Johnson skate ("detachable") and the advantages provided by
the "permanently affixed" connection. K-2 therefore asks that we infer that the distinctions the applicant draws between the "detachable" boot in the prior art and the "permanently affixed" connection required by the claims constitute a clear explication of an unaccustomed meaning of the term "permanently." We decline, however, to adopt a proffered unaccustomed meaning with so little support in the intrinsic record. See In re Paulsen, 30 F.3d at 1480, 31 U.S.P.Q.2D (BNA) at 1674 ("The specification merely describes in a general fashion certain features and capabilities desirable in a portable computer. This description, however, is far from establishing a specialized definition [of computer].").

To be sure, the prosecution history indicates that the applicant intended to amend the claims to avoid the "detachable" connection of the Johnson skate. The same history, however, indicates that the applicant chose to add the term "permanently" to the claims in order to achieve this result. That the applicant could possibly have added terms other than "permanently" to create a patentable distinction with the asserted prior art is simply irrelevant to our claim construction task. Courts do not rewrite claims; instead, we give effect to the terms chosen by the patentee. See, e.g., Texas Instruments Inc. v. International Trade Comm'n, 988 F.2d 1165, 1171, 26 U.S.P.Q.2D (BNA) 1018, 1023 (Fed. Cir. 1993) ("To construe the claims in the manner suggested by TI would read an express limitation out of the claims. This, we will not do because 'courts do neither broaden nor narrow claims to give the patentee something different than what he has set forth'" (quoting Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 396, 155 U.S.P.Q. (BNA) 697, 701 (Ct. Cl. 1967))). Here, we hold that the district court correctly construed "permanently" according to its ordinary and accustomed meaning--that is, the phrase "permanently affixed" requires that the connection between the bootie and the base of the skate be unremovable.

K-2 argues that its proposed definition of "permanently affixed"--meaning "affixed to prevent sliding in a horizontal plane"--is the ordinary and accustomed meaning of the phrase, and that in any event, Salomon has not presented evidence to support its contention that the ordinary and accustomed meaning of the phrase is "unremovable." We, of course, recognize that the "ordinary and accustomed" meaning of a claim term will often be in dispute, irrespective of the clarity of the terms used. See Senmed, Inc. v. Richard-Allan Med. Indus., Inc., 888 F.2d 815, 819 n.8, 12 U.S.P.Q.2D (BNA) 1508, 1512 n.8 (Fed. Cir. 1989) ("Lawyers may create a 'dispute' about any word, but there is nothing ambiguous or linguistically obscure about [the disputed claim term] as used in the present claim."). But a dispute over the ordinary and accustomed meaning does not imply that such a meaning does not exist. Here, for example, we recognize that the term "permanently" has what can be said to be the flavor of infiniteness about its meaning, which might raise questions about the use of the term in this claim: even the most permanent of "permanently affixed" connections between the bootie and the base of the skate can, after all, be undone upon the total destruction of the skate itself. This, however, does not mean that because no connection between the bootie and skate can be "infinitely" permanent, there can be no ordinary and accustomed meaning for the claim term. Indeed, we would be hard pressed to describe anything as "permanent" if that term is understood to require an infinite duration. But claim construction is not philosophy; we need not wring our hands when considering the implications of a metaphysical analysis of claim terms. Instead, we need only recognize that claim construction is firmly anchored in reality by the understanding of those of ordinary skill in the art. See, e.g., Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578, 38 U.S.P.Q.2D (BNA) 1126, 1129 (Fed. Cir. 1996). In this case, the parties and the district court agree that the rivet and screw attachment in the toe area of the accused skate meet the "permanently affixed" claim limitations. This is so because the rivet supplies the permanent, unremovable connection. Indeed, in the written description of the '466 patent, a rivet is cited as a conventional fastening means to accomplish a permanent connection. See '466 Pat., col. 8, ll. 55-58 (describing connection between base and lower frame). The rivet-made permanent connection is of course not "infinitely" permanent, because the rivet can be broken. The same is true of an embodiment of the invention that achieved a permanent connection between the base portion and the lower frame portion of the skate by using a single injection molded unit. See id. at col. 8, ll. 58-61. Likewise, were an adhesive laminate used to provide the permanent connection, see id. at col. 13, ll. 48-55, that permanence too could be destroyed by breaking the structure apart. Screws, unlike rivets and laminates, are meant to be unscrewed, that is, to be removed. A rivet or a laminate, to the contrary, is meant to remain permanent, unremovable unless one is bent on breaking the permanent structure apart.

Here, we are convinced that the district court was correct in holding that the ordinary and accustomed meaning of "permanently affixed" requires an unremovable connection between the bootie and the base.
The third disputed phrase is "permanently affixing the resilient structure within the fallopian tube" found in claims 37 and 38. Proposed constructions are shown below:

CONCEPTUS'S PROPOSED CONSTRUCTION
"affixing the resilient structure within the fallopian tube, such that it remains (or is intended to remain) affixed in the fallopian tube for a long, indefinite period"

HOLOGIC'S PROPOSED CONSTRUCTION
"affixing the resilient structure within the fallopian tube so long as it is in the tube, e.g., is not expelled or absorbed"

At the heart of this dispute is what is meant by the word "permanently." Both parties agreed during oral argument that the term pertains to permanent contraception -- a conclusion that finds ample support in the specification (see, e.g., cols. 1:27-35, 1:57-58, 2:54-60, 7:65-67). Indeed, the specification frequently emphasized that one of the objects of the present invention was to improve upon the "unacceptably high percentage" of non-surgical intrafallopian contraceptive devices that became unintentionally dislodged (i.e., did not remain in place and were expelled) after being inserted into the fallopian tube (cols. 2:1-4, 8:46-48).

Despite this agreement, Conceptus and Hologic nevertheless propose two different constructions commensurate with their respective strategic needs. Both constructions are confusing and flawed. For example, Conceptus's proposed construction inexplicably introduces a subjective element -- "intended to remain" -- into the claim, but never explains whose subjective intent is at issue. Additionally, Conceptus would require the contraceptive device to remain "affixed in the fallopian tube for a long, indefinite period." How one would go about proving that an accused device met such a limitation is a mystery to all involved.

Hologic's proposed construction is equally confusing. Not only does it inexplicably add the limitation that the contraceptive device not be "absorbed," it equates "permanently" with simply being "within the tube." This is contrary to the plain meaning of the word "permanently" as used in the context of the claim, and would only serve to confuse the jury.

1 Hologic's last-minute argument that this phrase is indefinite is both untimely and without merit. Both parties essentially agreed at oral argument on the basic meaning of the term "permanently." The parties merely differ over the details of its construction. See Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1374 (Fed. Cir. 2001) ("If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds.").

Having considered the context of the disputed phrase within the claim language, and the fact that the specification did not impart "permanently" with a definition that was different from its plain and ordinary meaning, this order finds that no construction is required for the phrase "permanently affixing the resilient structure within the fallopian tube."

Permanently fixed to

Again, in Claim 24 of the 851 patent, the parties dispute the term "permanently fixed to" as stated in Claim 24 as follows:

"at least one protrusion permanently fixed to said first end cap…"

According to Plaintiffs, the term needs no construction, while Defendants contend it means "permanently attached and immovable relative to." The parties do not dispute the term "permanent" but do dispute whether something that is permanently fixed to something else is also necessarily immovable. Plaintiffs argue that an object - i.e an inner ring and an
outer ring may be permanently fixed together yet the inner ring may rotate inside the outer ring. Defendants argue to the contrary, contending that the general definition of fixed means "attached or placed so as to be firm and not readily moveable; stationary; rigid." Citing Expert A. Wahls Ex. 3 and Merriam Webster's College Dictionary (1999).

Court's Construction

Defendants concede there is no language in the claim or specification stating that the protrusion be immovable. In the absence of such limiting language in the claim or specification, the Court will not read such limitation onto the claim. Therefore, the Court agrees with Parker and finds "permanently fixed to" needs no construction.

5. permanently secured

Fargo affixed in such a manner as to stay in the same state or without any change that destroys form or character

Iris the pins cannot be removed without damaging the pin receiving plate

Iris contends that Fargo's definition, and specifically the phrase "stay in the same state," is vague and adds more uncertainty to the meaning of "permanently secured." Fargo contends that its definition takes into account both references in the specification, because the specification refers to the pins being prevented from falling out during shipping or use. (Fink Aff., Ex. B.) The Court agrees with Iris, however, that the second part of Fargo's definition adequately encompasses the first. If, as both parties agree, the pins are secured so as to be incapable of removal without damage, they are also secured so as not to fall out accidentally. In contrast, Fargo's definition itself would require further construction concerning the meaning of the phrase "stay in the same state." The Court accordingly adopts Iris's definition of the term.

The court construes the second limitation of claim 23, "a permeable membrane gas separation system for separating a nitrogen gas component and [a nitrox] component from said compressed air," as follows: The structure for the separation system is a standard, commercially available, permeable membrane, nitrox and nitrogen gas separation system. (‘845 patent, col. 3, lines 60-66.) The limitation is further narrowed by specifying a function for the element, namely to separate the compressed air into nitrogen and nitrox components.

C. "permitting compression"; "such that compression and rebound of said fork are permitted"

The parties again agree on part of the construction; that "permitting" means "allowing." They differ on the construction of "compression." SRAM argues that the term needs no further definition, and that to the extent that it is further construed, it should be given the term's plain meaning. Fox argues that "compression" should be construed as "the pair of inner tubes of the fork slide into the pair of outer tubes of the fork." "Compression" needs no further construction; its meaning is clear and ordinary. Fox's proposed construction states the means by which compression is accomplished within the structure described by Claim 16; it does not define the term itself. The parties also disagree on the construction of "rebound" in the second phrase. SRAM again argues for no construction or for plain meaning; Fox argues for "the pair of inner tubes of the fork slide out or the pair of outer tubes of the fork." The plain meaning here - that "rebound" means "expansion" - is appropriate. The terms are used interchangeably throughout the ’049 Patent. (1:38-39; 9:8-17) To the extent that these phrases require construction, they should be read as "allowing compression" and "such that compression and expansion of said fork are allowed."
a. "personal delivery pattern"

i. The Parties' Proposed Construction

Smiths argues that I should construe the term "personal delivery pattern" to mean "an individual pattern of multiple infusion rates." (D.I. 165 at 36.) MiniMed argues that I should construe the term to mean an "individual pattern of multiple basal rates to be infused into a user over a 24 hour period." (Id.)

Smiths argues that MiniMed's construction imports limitations, specifically the "24 hour" and "basal rate" requirements, found nowhere in Claim 10 and unsupported by the specification. (D.I. 218 at 38.) MiniMed argues that the specification and prosecution history support this construction. Specifically, one of the preferred embodiments describes a "delivery pattern" as being programmed to operate over 24 hours. (‘798 patent, col. 27:1-16.) To support its argument that the term be construed to cover only basal rates, MiniMed cites to a response to an office action. (D.I. 169 at 35.) In that response, the patentee overcame the prior art by pointing out that "the ability to switch between bolus and basal rates is not the same as the at least two personal delivery patterns . . . [and that] there is no pattern since one merely switches between two rates." (D.I. 207, Ex. J at 35.) MiniMed argues that the patentee "overcame prior art rejections specifically by distinguishing between basal delivery and bolus delivery." (D.I. 169 at 36.)

ii. The Court's Construction

"Personal delivery pattern" means "an individual pattern of multiple infusion rates." "Personal delivery pattern" contains no durational limitation nor is it restricted to only basal rates, as opposed to bolus rates. With respect to limiting "personal delivery pattern" to just basal rates, MiniMed's arguments are unconvincing. In the cited text, there is nothing singling out basal rates as being connected to "personal delivery pattern." (D.I. 207, Ex. J at 35.) The patentee merely states that "the ability to switch between bolus and basal rates is not the same as the at least two personal delivery patterns . . ." (Id.) Moreover, the specification describes a bolus that is programmed ahead of time with a variable delivery pattern. (‘798 patent, col. 10:48-62.) In describing such a bolus, the specification states that "the user may program a profiled bolus that uniquely matches the needs of the individual user (for instance it may contain square, ramp, pulse or curved portions that make up the profile to be delivered over a period of time)." (Id. at 10:53-57.) This supports the argument that a "personal delivery pattern" could be used to supply a bolus as well as a basal rate. 25

--------- Footnotes ---------

25 Because I have construed "personal delivery pattern" to include both basal and bolus rates and I have construed "basal rate profile" to be limited to basal rates, see supra, Part IV.C.2.a, I am not confronted with a problem under the doctrine of claim differentiation. See Comark Commun. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998) (stating that "there is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims"). The doctrine of claim differentiation supports this construction of "personal delivery pattern."

--------- End Footnotes ---------

The intrinsic evidence does not support adding the "24 hour" limitation. The part of the specification cited by MiniMed to support adding this limitation represents only one of the preferred embodiments of the invention. (‘798 patent, col. 6:10-12,27:1-16.) It is improper to limit the claim to one of its preferred embodiments. Thus, I construe "personal delivery pattern" to mean "an individual pattern of multiple infusion rates."
Plaintiff's Construction
Physical material that was
especially created or
adapted to allow access to
an event, including, for
example, a card provided by
the seller or event managers
or a ticket embodiment such
as a paper or cardboard
ticket, a physical token, or
a smart card containing a
physical token.

Defendant's Construction
Physical material bearing or
containing information specific
to an individual ticket holder.

The dispute between the parties is whether "personalized physical material" is limited only to items that are "especially created or adapted to allow access to an event" (Plaintiff's position) or not (Defendant's position). In essence, the parties are disputing whether the term "personalized physical material" is broad enough to encompass items such as a credit card or driver's license (Defendant's position) or not (Plaintiff's position). To be clear, the claims require that access to events be granted without the presentation of "personalized physical material." Thus, under Plaintiff's proposed construction, the presentation of credit cards or driver's licenses for admission to an event would fall within the scope of the claims, whereas under Defendant's proposed construction it would not.

In the Court's view, Plaintiff's proposed construction does not comport with the ordinary meaning of "personalized physical material." Indeed, Plaintiff's proposed construction does not in any way embody the concept of "personalization." For instance, although Plaintiff notes that a dictionary defines the term "personalized" as "custom tailoring to the individual," (D.I. 60 at 10 (citing Alan Freedman, Computer Desktop Encyclopedia (Osborne/McGraw-Hill 1981-2008))), the Court simply does not see such a concept in Plaintiff's proposed construction. Rather, Plaintiff's proposed construction is instead focused on limiting "personalized physical material" to information "especially created or adapted to allow access to an event." In these circumstances, the Court is highly reluctant to adopt Plaintiff's proposed construction.

A review of the prosecution history further confirms that Plaintiff's proposed construction is inappropriate. During prosecution, the examiner focused on two pieces of prior art: U.S. Patent No. 6,067,532 issued to Lucas Gebb ("Gebb") and U.S. Patent No. 5,724,520 issued to Joel R. Goheen ("Goheen"). Both Gebb and Goheen pertain to ticketing systems. Gebb discloses that the ticket buyer "can use a ticketless entry into the event, such as, for example, by an e-token on a smart card." (D.I. 51, Exh. B at 7:12-13.) Goheen discloses that airline passengers can access an airplane using "an identification plastic card" that has a "card number . . . encoded onto a magnetic strip at the back" and that, if the card is lost, passengers can gain access to the airplane using identification "such as a driver's license or the like." (Id., Exh. C at 2:50-60, 6:8-10, 8:13-20.) In light of this art, following an April 2002 interview with the patentee, the Examiner "indicated that the claims as currently recited don't indicate that the authentication data is provided without the use of any man-made tokens or physical material, however, an added limitation to this effect would appear to be allowable over the prior art of record." (Id., Exh. I.) In response, the patentee amended the claims "to clarify that, according to the present invention, the authentication data does not constitute a physical material." (Id., Exh. J at 6.) The Examiner, dissatisfied with the amendment, responded as follows:

Furthermore, the claims do not currently recite that the buyer presents non-physical authentication data to gain access to the event. The claims merely recite that the paperless tickets are reassociated with authentication data of the ticket buyer and that the buyer presents this authentication data to gain access to the event. Examiner submits that this language does not preclude the use of physical forms of authentication data such as an identification card. Examiner submits that Gebb discloses wherein the buyer possesses a paperless ticket in the form of an electronic token (Col. 3, lines 34-42) wherein the ticket holder can use a ticketless entry into the vent (Col. 7, lines 7-13) and further include authentication data such as identification or unique security code (Col. 8, lines 63-67).

( Id., Exh. K at 3.) After an additional Examiner Interview to discuss this issue (see id., Exh. L), the Examiner, with the patentee's authorization, amended the claims to specifically state that the ticket buyer is granted access to the event "without the buyer presenting any personalized physical material." (Id., Exh. M.) In his statement for reasons of allowance, the Examiner explained that Gebb, either individually or in combination with other prior art of record, fails to teach that "the
buyer is granted access to the event by presenting the authentication data without presenting any personalized physical material." (Id., Exh. M at 6.)

Notably, during prosecution, the Examiner expressed concern that the "specification does not provide support for a system with an access device that accepts authentication data without the use of some form of physical man-made token such as a credit card or bar code." (D.I. 63, Exh. P.) In a supplemental response to an office action, the patentee asserted that they had identified support in the specification for this particular mode of operation and thus resolved the Examiner's concerns. (D.I. 63, Exh. R at 3.) Specifically, the patentee wrote that "[a]s Applicant pointed out during the interview, neither the specification nor the claims require presentation of a physical cell phone or credit card. Instead, the Application sets forth examples of non-physical information that can constitute authentication data (i.e., a credit card number or a phone number)." (Id.) The applicant further stated that "contrary to the Examiner's contention, the present Application provides support for an access device that accepts authentication data without the use of some form of physical man-made token such as a credit card or bar code." (Id. at 4.) In the Court's view, this exchange confirms that both the Examiner and the patentee mutually understood that to make the claims allowable, they would need to be amended to exclude the use of "personalized physical information" - such as credit cards - to gain access to an event.

In view of this prosecution history, the Court concludes that the claims should not be understood to encompass granting access to an event through the presentation of a credit card or driver's license. Accordingly, the Court will construe the term "personalized physical material" to mean, as Defendant contends, "physical material bearing or containing information specific to an individual ticket holder."

Plaintiff contends that this construction will exclude a preferred embodiment from the scope of the claims, and that such constructions are "rarely, if ever, correct and . . . require highly persuasive evidentiary support . . . ." Vitronics Corp. v. Conceptronic, 90 F.3d 1576, 1583 (Fed. Cir. 1996). In the Court's view, the prosecution history discussed above constitutes "highly persuasive evidentiary support." Furthermore, the Federal Circuit has explained that where, as here, both the claim language and prosecution history support a particular claim construction, that claim construction should perhaps nevertheless be adopted even if it excludes a sole embodiment. See Lucent Techs., Inc. v. Gateway, Inc., 525 F.3d 1200, 1216-17 (Fed. Cir. 2008) (based on the claim language and prosecution history, adopting a construction that excluded the sole embodiment).
erroneously implies that there are only two shafts; but Figure 1 of the patent illustrates a preferred embodiment showing three shafts, with "Angle A" associated with two shafts that rotate in one direction, and "Angle B" associated with a third shaft that rotates in the opposite direction. (‘763 patent, Fig. 1 & col. 3 lin. 55-56.) That embodiment is consistent with claim 5's language that the first vibratory drive assembly "includ[es] a first rotatable shaft" (without excluding the possibility of additional rotatable shafts), while the second vibratory drive assembly explicitly "ha[ve] a single second rotatable shaft." (‘763 patent, col. 8 lin. 4-8) (emphasis added). Third, GK's construction is inconsistent with the specification's explanation of how a phase angle is measured: referring to Figure 1, for example, the specification explains that angle A is "measured between an outwardly directed radial line from the center of the respective rotating shafts through the midpoint of the weights (or some other selected reference point on the shaft) and a data plane" and that the weight on the third shaft "will have an angle B similarly measured." (‘763 patent col. 4, lin. 5-9) (emphasis added). 4 But GK's construction accounts neither for the radial line nor the data plane and instead implies that a phase angle inherently depends on the relationship between two shafts. That limitation is not supported by the specification and is inconsistent with DiEuliis's understanding. (R.67, Ex. 2, Markman Tr. 30.) Fourth, GK's contention that its construction is consistent with Figure 5 is unpersuasive; although that drawing shows proximity switches detecting a "flag" or reference point on each of the shafts, it does not suggest that the process of detection is inherent to the phase angle itself. (‘763 patent, Fig. 5.)

4 GK contends that these angles are not "phase angles" because, in its view of Figure 1, they "inherently vary continuously during rotation of the shafts." (R.68, GK Post-Markman Br. 4.) Although the court does not dispute that, as understood in Figure 1, angles A and B may vary during rotation of the shafts, the court finds no language in claim 5 requiring that a phase angle remain constant. Moreover, the court disagrees with GK's contention that, because the portion of the specification discussing angles A and B deals with the resultant force acting on the conveyor, angles A and B could not be phase angles; the resultant force, as explained in this same section, depends upon the relative values of angles A and B. (‘763 patent col. 4 lins. 12-35.)

In contrast, CVE's proposed construction uses the words "angular position . . . with respect to a reference plane," which better captures the specification's notion of an angle measured "between . . . [a] radial line . . . and a data plane." In defining the term "phase angle" with reference to a "phase element," moreover, CVE's construction appropriately draws a connection implicit in the use of the modifier "phase" in each of the terms. And that the angular position is "of a phase element on a rotating shaft" also is consistent with the specification: in Figure 1 the radial line extends outward from the center of the shaft through a weight on the shaft, known as a "phase element," which operates as a "reference point" for measuring the angle. (‘763 patent Fig. 1.) Finally, CVE's proposed construction is consistent with DiEuliis's understanding of this term.

In its post-Markman brief, GK relies on the description of the ‘763 patent invention contained in U.S. Patent No. 6,024,210 (‘210 patent) to contend that CVE's proposed construction, which allows for the phase angle to change during operation of the machine, is contradictory. Specifically, it cites the following language in the ‘210 patent:

"The invention in the aforementioned Patent ['763 patent] addresses the problem of maintaining a predetermined phase angle for providing the desired angle of attack throughout an operating cycle of the conveyor through use of a control system."

(‘210 patent at col. 1, lin. 31-35.) This extrinsic description implies that a single predetermined phase angle could be maintained throughout an operating cycle of the ‘763 invention. But claim 5, which controls the court's analysis, explains that the resultant vibratory force is "determined by a relative phase angle relationship between [the] first and second phase elements" (emphasis added), which strongly implies that there is a phase angle associated with each phase element. Moreover, the specification in the ‘763 patent further explains that, "[b]y varying the relative positioning or relative phase angle between the shafts, the direction or angle of attack of the resultant forces can be changed . . . ." (‘763 patent at col. 4, lin. 30-33.) This language supports CVE's construction, which defines "phase angle" based on the positioning of a phase element with respect to a data plane, thereby allowing for the "relative positioning" of phase elements on different shafts, along with a "relative phase angle relationship," as contemplated by claim 5 and the rest of the specification. GK's construction, on the other hand, would read out the words "relative" and "relationship" from the claim. Accordingly, the court adopts CVE's construction.

- 3469 -
In this case, the district court determined that the Sweda catalogue anticipated, or disclosed and enabled each and every element of, the claimed invention. The Sweda catalogue advertises three different methods of making customized watches: a "full color watch rendering" method, a "mock-up sample" method, and a "speculative sample" method. The catalogue states that the first two methods use a computer laser printer, and the "speculative samples" method uses silk-screening, hot stamping, color process/offset printing, etchograph stamping, or engraving. The catalogue then shows images of color watch faces made with each of the advertised methods. All three methods require the customer to submit "camera ready, color separated artwork," i.e., separate pieces of black and white artwork representing each color in the design.

Top concedes that the Sweda catalogue does not teach expressly all limitations of the asserted claims. Hence, the only issue for this court to determine is whether the claim limitations not taught expressly by the Sweda catalogue are nevertheless disclosed inherently. This inherent anticipation question implicates claims 3 and 8. Claim 3 recites, in relevant part:

3. A method of constructing a functional multicolor element having indicia thereon, utilizing a computer and a color photocopier, comprising the steps of:

(a) electronically creating or providing in the computer an electronic simulation of the desired functional multicolor element, with indicia thereon,

(b) under the control of the computer, transmitting electronic signals from the computer to the photocopier so that the photocopier transforms the electronic simulation of the desired functional multicolor element onto a piece of sheet material . . . .

Col. 7, ll. 16-26 (emphases added).

The district court construed the term "color photocopier" to mean a "color printer." The district court noted that the Sweda catalogue expressly advertises: "A color picture of your customers custom logo produced by our new advanced computer laser printer." Based on this, the district court determined that the Sweda catalogue inherently disclosed a color printer because "those in the graphic arts industry would have recognized that a color printing device is necessarily present in the catalogue's description of 'a full color rendering' produced from a 'computer laser printer.'" Nevertheless, a color printer is not a color photocopier.

The '717 patent specification teaches that a "major component" of the invention "is a printer, preferably a color photocopier." Col. 3, ll. 62-64. At the same time, the patent also recognizes that a color photocopier does more than print in color -- it copies. Specifically, the specification teaches "photocopying with a color photocopier, such as of the types earlier described." Col. 6, ll. 20-21. The undisputed trial testimony of Dr. Steven J. Bares underscores this point: "Digital color copiers comprise a digital color scanner and a digital color laser printer which are directly connected together so that graphics transformed into digital information through the scanner are transmitted to the digital color laser printer for printing." As a matter of correct claim construction, therefore, a "color photocopier" requires the ability both to print and photocopy subject matter with color.

The difference between a printer and a photocopier may be minimal and obvious to those of skill in this art. Nevertheless, obviousness is not inherent anticipation. Jones v. Hardy, 727 F.2d 1524, 1529, 220 U.S.P.Q. (BNA) 1021, 1025 (Fed. Cir. 1984) ("though anticipation is the epitome of obviousness, [they] are separate and distinct concepts"). Given the strict identity required of the test for novelty, on this record no reasonable jury could conclude that the Sweda catalogue discloses either expressly or inherently a color photocopier. Because claim 3 is not inherently anticipated, dependent claims 4 and 5 also are not anticipated.

GO BACK
The district court found that Guttman was unlikely to prove that the Kwik-Kopy contained the claimed "photocopy machine." Though the court did not explicitly define photocopy machine in its order denying the preliminary injunction, it is clear that the court assigned it its ordinary meaning: a standard office photocopy machine. Guttman argued to the trial court, as it does here, that the patent explicitly defines photocopy machine to include any apparatus with scanning and image reproduction (i.e., printing) capabilities that operate in tandem--regardless of whether the scanner and printer equipment are housed separately.

As Kopykake notes, the preferred embodiments described in the specification are all conventional plain paper photocopy machines that conform to the district court's understanding of the "photocopy machine" claim limitation. However, after detailing the preferred embodiments, the specification explains ways in which the invention is broader than the specific embodiments illustrated in the drawings and detailed in the text; for example, the patentee states that edible toner formulae would be covered as well as the edible ink described and shown in the drawings. With respect to the photocopy machine, the patentee states:

Similarly, while the photocopy machine is shown as an integral unit, the scanning and image reproducer aspects need not be in the same housing. As will be appreciated, a characteristic of plain paper photocopy machines is that single button operation results in scanning of an image on the copy glass and reproduction of same on the [edible] web. Thus, where the scanning and image reproduction aspects are separate (within or without the same housing), but cooperate to produce the effect of a plain paper photocopy machine with, in essence, one button operation to scan and reproduce the image, the two aspects are deemed to define a photocopy machine as that term is used herein.

"'530 Patent, col. 6, lines 39-51 (emphasis added). We agree with Guttman that the above statement explicitly defines photocopy machine to include a system with separate scanner and printing capabilities so long as the two parts function cooperatively with one-button operation to produce the effect of a plain paper photocopy machine.

It is black letter law that a patentee can "choose to be his or her own lexicographer by clearly setting forth an explicit definition for a claim term that could differ in scope from that which would be afforded by its ordinary meaning." Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342, 60 U.S.P.Q.2D (BNA) 1851, 1854 (Fed. Cir. 2001). "The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1577, 39 U.S.P.Q.2D (BNA) 1573, 1577 (Fed. Cir. 1996). Where, as here, the patentee has clearly defined a claim term, that definition "usually . . . is dispositive; it is the single best guide to the meaning of a disputed term." Id. In this case, the definition of photocopy machine provided in the specification does indeed dispose of the claim construction dispute, and it was error for the district court to overlook it.

Kopykake argues that we may affirm the district court's claim construction because the language from the specification quoted above was merely meant to ensure that the patent would capture plain paper photocopy machines that happened to place the scanning and image reproduction components in separate housings. In Kopykake's view, it was not meant to include any machine with both scanning and image reproduction capabilities that work cooperatively. We disagree. Had the patentee intended to claim only conventional plain paper photocopy machines, whether composed of a single housing or not, he would not have used the phrase "cooperate to produce the effect of a plain paper photocopy machine." Such a phrase indicates that the term includes an apparatus that is not a conventional "plain paper photocopy machine," but that nonetheless possesses scanning and reproduction features that work together to produce the effect of such a photocopy machine.

Kopykake also argues that the patentee expressly disclaimed systems without conventional photocopy machines during prosecution. Kopykake focuses on a statement in the prosecution history distinguishing a Patent Cooperation Treaty (PCT) application by explaining that the PCT application "is completely silent with respect to the use of a photocopy machine in a method of decorating an iced bake [sic] good." But far from disclaiming anything other than plain paper photocopy machines, this statement simply begs the question what a photocopy machine is. The PCT application, WO95/01735 to Douglas Stewart (the same inventor as for the '530 patent), discloses making edible substrate films for bakery applications, as well as a method of decorating the edible sheets with edible ink. The application discusses many different methods of depositing an image on the edible sheets, including conventional printing presses, silk-screening, and ink-jet printing. What it does not disclose, however, is a scanner combined with an inkjet printer--or any other machine that contains both scanning...
and reproduction capabilities working together to give the effect of one-button copying. Therefore, there was no need for the patentee to disclaim all machines other than conventional photocopiers in order to distinguish the PCT application, and the claims should not be narrowed on this basis.

Because the patentee provided an explicit definition of "photocopy machine" in the specification, and because no other intrinsic evidence casts doubt on that definition, the patentee's definition controls. Thus, a photocopy machine is defined to include not only conventional plain paper photocopy machines, but also systems with separate scanner and printing capabilities so long as the two parts function cooperatively with one-button operation to produce the effect of a plain paper photocopy machine.

2913

D. "photographic quality"

a. Parties' Positions

As with the preceding terms, Plaintiff contends that the "photographic quality" does not require construction but offers a construction nonetheless. "Photographic quality" is found only in the text of claim 21. The parties' main dispute is whether the claim term is indefinite.

Plaintiff
(Having the) accuracy or representation sufficient to resemble a photograph

Defendants
Indefinite

Plaintiff argues that claim 21 sufficiently provides the public with notice of what is required of the "enlarged graphic" print. Dkt. No. 104 at 31. Plaintiff argues that "photographic quality" is a common term such that a person of ordinary skill in the art would understand its meaning. Id. at 32. As support, Plaintiff cites to Defendant 3M's patents and advertising materials using the same term. Id. at 32-33.

Defendants argue that "photographic quality" lacks an "objective anchor." Dkt. No. 110 at 25. That is, Defendants contend that "photographic quality" must fail because it relies too heavily on subjective opinion and that the intrinsic evidence does not provide an objective standard for "photographic quality." Id. at 27. For support, Defendants cite to the deposition testimony of one of Plaintiff's founders, Ed Cies, and attempt to correlate "photographic quality" to other indefinite terms like "aesthetically pleasing." Id. at 25-26.

In reply, Plaintiff argues that Mr. Cies is not one of ordinary skill in the art and that even though the term "photographic quality" could mean different things to different people, it is not indefinite. Dkt. 119 at 10-11.

b. Court's Construction

The test for indefiniteness is whether a person of ordinary skill in the art would understand all of the language in the claims -- that is, understand what is claimed -- when they are read in light of the specification. Morton Int'l Inc. v. Cardinal Chem. Co., 5 F.3d 1464, 1470 (Fed. Cir. 1993); see also, Young v. Lumenis, Inc., 492 F.3d 1336, 1346 (Fed. Cir. 2007). If the skilled artisan would understand the bounds of the claim when read in light of the specification, then the claim satisfies the definiteness requirement of 35 U.S.C. § 112 P2. The definiteness requirement does not mandate absolute clarity. The proper inquiry is whether the terms can be given any reasonable meaning, and a difficult issue of claim construction does not automatically require a finding of indefiniteness. Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001). A finding of indefiniteness requires showing by clear and convincing evidence that the patent does not meet the statutory requirements and is thus invalid. Budde v. Harley-Davidson, Inc., 250 F.3d 1369, 1376 (Fed. Cir. 2001). In determining whether a claim term fails for indefiniteness, general principles of claim construction apply. Young, 492 F.3d at 1346.

In this case, Defendants argue that a person of ordinary skill in the art would not understand the meaning of "photographic quality." For support, Defendants cite to Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342 (Fed. Cir. 2005). In
Datamize, the Federal Circuit affirmed the district court's finding of invalidity based on indefiniteness of the phrase "aesthetically pleasing" because none of the evidence provided any meaningful definition for the phrase. Datamize, 417 F.3d at 1349-1350. The Datamize panel examined the intrinsic and extrinsic evidence for some objective standard with which to "anchor" the subjectivity of the term "aesthetically pleasing." Id. at 1351-1355. After a similar examination of the relevant evidence, this Court finds that, unlike "aesthetically appealing," the phrase "photographic quality" is sufficiently defined so as to meet the requirements of § 112 P2.

Defendants -- who bear a heavy burden to demonstrate indefiniteness -- have failed to demonstrate that a person of ordinary skill in the art could not discern a meaningfully precise scope of "photographic quality." Defendants argue that "no portion of the intrinsic evidence … provides an 'objective anchor.'" Dkt. No. 110 at 27. This argument does not withstand a thorough examination of the claims and specification.

The claim language uses "photographic quality" in independent claim 21 to describe the "graphic print." The subsequent dependent claims describe the print as being able to create a "substantially full-size, full scale simulation" of a retail product or a "photographic simulation" of an object, floor covering, or ground terrain. '632 Patent c.6 ll. 34, 41, 43-45. Additionally, the specification repeatedly provides other situations where the claimed inventions may be used. For example, the specification discusses using the images to "create a simulated decor." Id. at c.2 l.17. The specification describes the images used in conjunction with the invention using words like of "simulation," "illusion," and life-sized decor. For example:

[P]hotographic floor tiles with life size photographs of naturally occurring objects such as sand, water, leaves, foliage, rock, or marble can be used to create a simulation of those articles without actually having to use the articles themselves in the setting. A life size photographic floor tile of a sidewalk, rocky path, or a stream or pond, or the like can be used appropriately. Similarly, a beach or water setting could be simulated using the photographic floor tiles. Also, a marble floor could be simulated using photographic tiles made from a photograph of a marble floor. In this manner the photographic tiles create the illusion that the photographed item is actually present.

Id. at c.2 ll.18-29 (emphasis added). Thus, even though the specification does not contain the phrase "photographic quality," it is within these situations that the boundaries of "photographic quality" are defined such that a person of ordinary skill would understand the scope of the asserted claims. A skilled artisan would understand that the graphic prints must be of sufficient quality to be able to "create the illusion" or simulate an environment or terrain, such as a marble facade. That is, regardless of size, the images must be of sufficient resolution, clarity, and accuracy to do so. Thus, a person of ordinary skill would know that the patent recognized the image quality generally associated with a photograph as integral to the purported invention.

Additionally, Defendants' argument that even Mr. Cies and Ms. Bisker cannot agree on "photographic quality" lacks merit. Bancorp Services, L.L.C. v. Hartford Life Ins. Co., 359 F.3d 1367, 1371 (Fed. Cir. 2004) ("[I]f the meaning of the claim is discernible, 'even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds.'") (quoting Exxon Research and Eng'l, 265 F.3d at 1375).

In sum, the term "photographic quality" is not insolubly ambiguous so as to render it indefinite. A print or image may be of photographic quality if its resolution, clarity, and accuracy allow it to simulate or create the illusion -- at least in two dimensions -- of specific objects and things. Generally, a photograph accurately reflects its subject's attributes such as color, shape, or size. A photograph can be distinguished from other media on the basis of clarity and resolution as well. In light of the foregoing, the Court construes "photographic quality" to mean "having the qualitative properties -- for example resolution, clarity, and accuracy -- of a photograph."

**2914**

B. "photographic print"

a. Parties' Positions

The parties propose the following constructions for "photographic print," which is present in claims 1 - 4 of the '632 Patent.
The primary dispute between the parties is whether the claim term should include images generated through ink printing.

**Plaintiff**

Plain meaning

An enlarged positive image on light-sensitive material made from a film negative or plate and

Alternatively, "a reproduction resembling a photograph"

Plaintiff again argues that the ordinary meaning sufficiently defines "photographic print." Again, though, Plaintiff submits that a combination of the dictionary definitions for "photographic" and "print" would be appropriate should the Court feel a construction is warranted. Dkt. No. 104 at 25-26.

**Defendants**

Defendants' main argument is that their construction most accurately reflects "the patentee's characterization of her invention as involving traditionally developed images and her dismissal of ink printing." Dkt. No. 110 at 15. Defendants contend that the patent expressly defines "photographic printing" to exclude ink printing. Id. at 16. Defendants cite multiple portions of the specification to support their position that the patentee intended a "clear distinction" between photographic printing and ink printing:

Also, large format ink prints have been used to make large scale posters. However, ink printing is very expensive and is usually only cost-efficient where very high volumes are involved. Furthermore, ink printing does not provide the high quality images which can be achieved through photography. As a result, photographic printing is far superior to ink printing where low volume and high quality products are desired. '632 Patent at col.1, ll.43-50.

Because of its lower quality images and higher cost, ink printed images are not a viable alternative for the photographic tiles of the present invention. The photographic tiles of the present invention are typically used where a low volume of tiles is desired and a very high quality print is desired. As a result, tiles using ink printed images would be prohibitively expensive and of an inferior quality. Id. at col.2, ll.1-7.

Defendants claim that these statements represent clear expressions of manifest exclusion or restriction that disavow ink printing. Dkt. No. 110 at 17 (citing Teleflex v. Ficosa North America Corp., 299 F.3d 1313, 1328 (Fed. Cir. 2002)).

b. Court's Construction

Plaintiff argues that these statements provide "background" of the prior art or "are nothing more than general statements about advantages over the prior art, which is insufficient as a matter of law to create a disavowal of claim scope." Dkt. No. 104 at 28-29. To the contrary, the patentee's statements about the potential role of ink printing clearly and unmistakably disclaim ink printing as a means to generate images.

First, Plaintiff contends that the embodiments in the specification should not limit broader claim language. Dkt. No. 104 at 28. While this Court generally agrees, the limiting statements were made in the Background of the Invention and the Summary of the Invention portions of the specification, not in the Description of the Preferred Embodiment. A statement's location is not determinative, but the location can signal the likelihood that the statement will support a limiting definition of a claim term. Statements that describe the invention as a whole, rather than statements that describe only preferred embodiments, are more likely to support a limiting definition of a claim term. See C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 864 (Fed. Cir. 2004) (finding that the description of the claimed "plug" in the summary of the invention section globally required a pleated surface); see also, SciMed Lifesystems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337, 1343 (Fed. Cir. 2001) (concluding that characterization of one structure as part of the "present invention" is strong evidence against reading the claims to encompass the opposite structure).

Second, Plaintiff points to a statement in the specification as evidence that the patentee intended no disavowal. The statement that "the photographs used in the photographic tiles can be created using conventional or digital photography" demonstrates that the patentee did not disclaim ink printing. Plaintiff argues. This language, however, must be read in context with the rest of the specification. In the same portion of the specification, the patentee disparages the ink printed images as "not a viable alternative for the photographic tiles of the present invention." This latter phrase -- significantly
The Court finds that the term "image" is too broad, and the parties do not dispute the construction of "print" but rather the proposed construction, however, is too narrow. Therefore, the Court construes the term "print" to mean "a photographic print" to mean "a photograph that has been printed or a print created by conventional photographic processes rather than by ink printing." 2

In sum, Defendants have met their burden of demonstrating that the patentee has surrendered ink printing. Defendant's proposed construction, however, is too narrow. Therefore, the Court construes the term "photographic print" to mean "a print created by conventional photographic processes rather than by ink printing." 2

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2 The Court finds that the term "image" is too broad, and the parties do not dispute the construction of "print" but rather
what constitutes a "photographic print" within the scope of the patent.

D. "Physical Indicia"

L-F moves the Court to construe the term "physical indicia" as it is used in the asserted claims of "the 612 patent" and the 197 patent. 18

Each of the asserted independent claims of the 612 patent and the 197 patent includes the term "physical indicia." 19 These "physical indicia" relate to various properties of a syringe such as the capacity of a syringe, the distance of the plunger from the end of a syringe, the amount of fluid in a syringe, the end of travel position of an injector ram, the range of travel of an injector ram, and an offset value.

18 The asserted claims of the 612 patent are 7, 8, 10, and 11 and the asserted claims of the 197 patent are 1, 2, 4, 5, 7, 8, 10, 11, 13, 14, 16, 17, 19, 20, 22, 23, 25, and 27.

19.

...a detector located proximate to a syringe . . .for detecting a physical indicia on said syringe related to the capacity of said syringe, and generating an electrical signal representative of said physical indicia,

612 patent, Claim 7,

detecting a physical indicia on a syringe . . ., said indicia being related to the capacity of said syringe, and generating an electrical signal representative of said physical indicia...

612 patent, Claim 10

...a syringe having . . . physical indicia related to the distance of the plunger from an end of said syringe ...

197 patent, Claim 1

... detecting a physical indicia on a syringe installed on said injector, said indicia being related to the distance of the plunger from an end of said syringe ...

197 patent, Claim 4

... a syringe having . . . physical indicia related to the amount of fluid in the syringe

...

197 patent, Claim 7

...detecting a physical indicia on a syringe installed on said injector, said indicia being related to amount of fluid in said syringe ...
197 patent, Claim 10

...a syringe having ... physical indicia related to the end of travel position of an injector ram coupled to the plunger when the syringe is coupled to an injector ...

197 patent, Claim 13

...detecting a physical indicia on a syringe installed on said injector, said indicia being related to the end of travel position of a ram moved by said motor when said syringe is mounted to the injector ...

197 patent, Claim 16

... a syringe having ... physical indicia related to the range of travel of an injector ram coupled to the plunger when the syringe is coupled to an injector ...

197 patent, Claim 19

... detecting a physical indicia on a syringe installed on said injector, said indicia being related to the range of travel of a ram moved by said motor when said syringe is mounted to the injector ...

197 patent, Claim 22

... wherein the control circuit is operable obtain an offset value from physical indicia detected on the syringe ...

197 patent, Claim 25

... detecting a physical indicia on a syringe . . . , said indicia being related to the capacity of said syringe, to obtain an offset value, computing a value indicative of the location of said plunger within said syringe by applying the store offset value to the tracked location of said motor, and ceasing motion of said plunger when said computed value indicates that said plunger is at an end of said syringe.

197 patent, Claim 27

(Doc. No. 30, Exhs. 3, 4).

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - - -

L-F urges this Court to give the term "physical indicia" its ordinary and customary meaning without looking beyond the claim language. Physical is defined as "of or relating to ... material things as opposed to things mental, moral, spiritual, or imaginary." Webster's Third New International Dictionary at 1706 (1971). Indicia is defined as "a distinctive mark that indicates or that is felt to indicate the nature or quality or existence or reality of something." Id. at 1150. Thus, the term "physical indicia" means a tangible marking on a syringe that relates to a specific property of the syringe. L-F proposes that these specific properties include the capacity of a syringe, the distance of the plunger from the end of a syringe, the amount of fluid in a syringe, the end of travel position of an injector ram, the range of travel of an injector ram, and an offset value that is related to the capacity of a syringe. (Doc. No. 164, p. 24).

Medrad does not appear to disagree that the term "physical indicia" means a tangible marking on a syringe that relates to a specific property of the syringe. Rather, Medrad is arguing that "physical indicia", as used in the 612 and 197 patents, is limited only to indicia that indicate the length of an extender element used in a syringe. 20 (Doc. No. 172, pp. 29-30).

- - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - - -

20 An extender is an element in a syringe that compensates for variations in the location of the plunger in pre-filled syringes to accommodate varying syringe volumes.
It should be noted that the language of the asserted claims does not limit the term "physical indicia" to the use of an extender element. Rather, the claim language unambiguously states that "physical indicia" are related to capacity of a syringe, the distance of the plunger from the end of a syringe, the amount of fluid in a syringe, the end of travel position of an injector ram, the range of travel of an injector ram, and an offset value. Supra, fn. 19. Therefore, unlike the ambiguous language construed in Section III(B) ("syringe receiving opening"/requirement of a pressure jacket), the claim language relating to the term "physical indicia" is clear and unambiguous. This distinction is significant because it affects the manner in which this Court will view the rest of the intrinsic evidence, i.e., the specification and the prosecution history. The Federal Circuit has recently held that:

If the claim language is clear on its face, then our consideration of the rest of the intrinsic evidence is restricted to determining if a deviation from the clear language of the claims is specified. A deviation may be necessary if "a patentee [has chosen] to be his own lexicographer and use terms in manner other than their ordinary meaning." Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2D (BNA) at 1576. A deviation may also be necessary if a patentee has "relinquished [a] potential claim construction in an amendment to the claim or in an argument to overcome or distinguish a reference." Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 979, 52 U.S.P.Q.2D (BNA) 1109, 1113 (Fed.Cir. 1999). If however the claim language is not clear on its face, then our consideration of the rest of the intrinsic evidence is directed to resolving, if possible, the lack of clarity.

Interactive Gift Express, 256 F.3d at 1331. Therefore, when construing the term "physical indicia", the Court will rely on the rest of the intrinsic evidence to determine only if a deviation from the clear language of the claim is specified rather than to resolve the meaning of the claim language, as it did in Section III(B).

Medrad bases its argument that "physical indicia" is limited to indicating the length of an extender on the following excerpts from the specifications of the 612 and 197 patents 21:

The offset value. . . may be automatically computed by detecting physical indicia on the syringe or extender which indicate the length of the extender.

612 patent, Abstract

Alternatively, the offset value may be automatically computed by detecting physical indicia on the syringe or extender which indicate the length of the extender.

612 patent, col. 4, lines 2-3

197 patent, col. 4, lines 1-2 22

(Doc. No. 30, Exhs. 2, 3). Medrad argues that this language defines "physical indicia" as indicia related only to length of extender. Not surprisingly, L-F counters that this language is merely a preferred embodiment in which the physical indicia on the syringe indicates a specific property -- the length of an extender. 23 (Doc. No. 182, p. 15). L-F argues that this embodiment does not preclude the use of physical indicia in relation to other properties of the syringe (i.e., capacity, distance of the plunger from the end, amount of fluid, etc.).

21 As explained in detail in footnote 4, the 612 and 197 patents have the same specification.

22 Medrad also cites to unasserted Claim 3 of the 612 patents which states, in pertinent part, that the injector contains a detector used for "detecting the length of the extender which is attached to said plunger from physical indicia on the syringe or extender and generating an electrical signal representative of the detected length..." (Doc. 30, Exh. 3). In light of the law of claim differentiation discussed in section III(B), this claim language does not support Medrad's argument. Unlike the situation in section III(B), L-F is not attempting to broaden the asserted claims beyond the scope of the claim language.
23 The Court notes that the language in question falls under the heading "Summary of the Invention" as opposed to the later heading of "Description of the Preferred Embodiments."

Medrad also cites to the prosecution history of the 197 patent to support its interpretation. (Doc. No. 172, pp.30-32). Claim 7 of the 197 patent includes the element "physical indicia related to the amount of fluid in the syringe," and claim 10 of the 197 patent includes the element of a "[physical] indicia being related to amount of fluid in said syringe." During the prosecution of the 197 patent, the PTO Examiner rejected L-F's proposed claims 7 and 10 due to failure to comply with the written description requirement of 35 U.S.C. section 112. In the Detailed Action, the PTO Examiner, in rejecting claims 22-45, explained that

The specification, as originally filed on 28 August 1997, does not adequately support the embodiments set forth in claims 22-27 wherein the syringe includes physical indicia related to the position of the plunger; claims 28-33 wherein the syringe includes physical indicia related to the amount of fluid in the syringe; claims 34-39 wherein the syringe includes physical indicia related to the end of travel position of a ram moved by the motor; and claims 40-45 wherein the syringe includes physical indicia related to the range of travel of a ram moved by the motor. The only recitation in the specification regarding the indicia on the syringe is on page 6, lines 23-26:

'Alternatively, the offset value may be automatically computed by detecting physical indicia on the syringe or extender which indicate the length of the extender.'

Thus there is inadequate disclosure of such indicia being related to plunger position, fluid quantity, end of travel position of the ram, and range of travel of the ram as now claimed. The disclosure only provides support for the indicia being related to the length of the extender.

The PTO Examiner rejected claims 22-45 based on failure to comply with 35 U.S.C. section 112, first paragraph. (Id. at 3).

In response to the PTO Examiner, L-F argued that the other elements of "capacity of the syringe" and "amount of fluid in the syringe" were related to the length of the extender, and thus, those elements were supported in the specification through the references to the length of the extender:

With respect to claims 28-33, the Examiner submits that the specification does not support physical indicia on a syringe related to the amount of fluid in the syringe, and does not support computing the amount of fluid in the syringe.

In response, Applicant would note that a comparison of Fig. 1A to Fig. 1B clearly shows that the capacity of a syringe having an extender is less than the capacity of a syringe that does not have such an extender. Notably, the syringe shown in Fig. 1B is a 'pre-filled' syringe, thus the syringe is filled to its capacity when it is installed on the injector. Since the capacity of the syringe is directly related to the length of the extender in the syringe, it follows that the amount of fluid in the syringe is directly related to the length of the extender. Accordingly, the indicia recited at page 6, which indicates the length of the extender, also thereby indicates the amount of fluid in the syringe. Indeed, at page 4, line 4 it is stated that the extender 'reduces the initial volume of the pre-filled syringe'. Accordingly, Applicant submits that the specification clearly describes a syringe having indicia related to the amount of fluid in the syringe.

(Id. at 12-13). L-F made similar arguments with respect to physical indicia relating to the distance of the plunger from the end of a syringe, the end of travel position of an injector ram, and the range of travel of an injector ram. (Id. at 10-12, 13-16). The patent was subsequently issued by the PTO without any substantive amendment by L-F of the claims or specification. (Doc. No. 174, Exh. 4, Notice of Allowance on 4/1/99, p. 139).

The Court would agree with Medrad's argument that the term "physical indicia" is limited to indicia related to the length of the extender if the preceding excerpts from L-F's response to the PTO Examiner reflected the entirety of L-F's response. However, in the final paragraph of L-F's response, L-F stated that:
Applicant would further note that although the supporting specific embodiment of the invention found in the specification is disclosed in the context of compensating for the presence of a plunger extender attached to the plunger, the independent claims do not necessarily require a plunger extender, but rather are directed generally to using information from indicia on a syringe, to compensate for syringes having differing initial plunger positions, differing initial amounts of fluid, differing end-of-travel positions or ranges of travel for the ram.

(Id. at 16). Thus, L-F unequivocally stated to the PTO Examiner that the asserted claims of the 197 patent were not limited to indicia relating to the length of an extender.

In order to narrow unambiguous claim language based on the prosecution history, an accused infringer must "demonstrate that the patentee 'defined' the claim as 'excluding' a broader interpretation 'with reasonable clarity and deliberateness.'" Pall Corporation v. PTI Technologies, Inc., 259 F.3d 1383, 1392-93 (Fed.Cir. 2001)(quoting Northern Telecom Ltd. v. Samsung Elecs. Co., 215 F.3d 1281, 1294-95 (Fed.Cir. 2000)). Based on the final paragraph of L-F's response, the Court cannot conclude that L-F limited the asserted claims to "physical indicia" only related to the length of an extender. L-F clearly viewed "physical indicia" as encompassing other syringe characteristics besides the length of the extender.

Thus, the Court construes the term "physical indicia" as a tangible mark on a syringe relating to various properties of the syringe. The properties may include the capacity of a syringe, the distance of the plunger from the end of a syringe, the amount of fluid in a syringe, the end of travel position of an injector ram, the range of travel of an injector ram, or an offset value.

Medrad argues that in the event the Court accepts L-F's construction of the term "physical indicia", the 612 and 197 patents are invalid pursuant to 35 U.S.C. § 112 for lack of enablement and failure to provide an adequate written description. (Doc. No. 172, pp. 32-33). This argument will be addressed in section VII(A).

Each of the asserted claims, except for claim 25 of the '197 patent, requires that the syringe possess "physical indicia related to" a property of the syringe. For example, claim 7 of the '197 patent, quoted above, recites "physical indicia related to the amount of fluid in the syringe," while other claims recite physical indicia related to "the distance of the plunger from the end of said syringe," "the end of travel position of an injector ram," "the range of travel of an injector ram," and "the capacity of the syringe."

Medrad argues that we should construe the term "physical indicia" as limited to features that indicate the length of the extender. To support its position, Medrad asserts that the only reference to the "physical indicia" limitation in the specification describes the "physical indicia" as providing information as to the length of the extender:

In preferred embodiments, the offset value may be computed by querying the operator as to the capacity of the syringe and determining therefrom the appropriate offset value. The controller may be configurable so that this query is not made (for example, if the injector will not be used with pre-filled syringes, and therefore the offset value will not change). Alternatively, the offset value may be automatically computed by detecting physical indicia on the syringe or extender which indicate the length of the extender.

The claim language itself does not limit "physical indicia" to indicia related to the length of the extender. Instead, the various claims explicitly state that the physical indicia are related to a variety of properties, such as the amount of fluid in the syringe, the distance of the plunger from the end of the syringe, the distance to the end of the plunger's travel position, and the range of travel of the ram. Medrad thus must overcome the "heavy presumption' that [the claims] mean what they say." Tex. Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202 (Fed. Cir. 2002); Teleflex, 299 F.3d at 1325 ("We indulge a 'heavy presumption' that a claim term carries its ordinary and customary meaning."). As we explained above, it is improper to read limitations from a preferred embodiment described in the specification--even if it is the only embodiment--
into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited. See ACTV, 346 F.3d at 1088; Brookhill-Wilk, 334 F.3d at 1301; Altiris, 318 F.3d at 1371, 1373; Teleflex, 299 F.3d at 1327. Although the passage Medrad cites describes an embodiment in which the physical indicia are related to the length of an extender, Medrad does not point to any language in the specification that expresses an intention to limit the scope of the term "physical indicia" to that embodiment.

Nor does the prosecution history support Medrad's narrow reading of the asserted claims. During the prosecution of the application that matured into the '197 patent, the examiner rejected the claims as lacking support for physical indicia related to properties other than the length of the extender. The applicants responded by explaining that various properties, such as the amount of fluid in the syringe, could be calculated from the information as to the length of the extender. The applicants went on to explain, however, that

although the supporting specific embodiment of the invention found in the specification is disclosed in the context of compensating for the presence of a plunger extender attached to the plunger, the independent claims do not necessarily require a plunger extender, but rather are directed generally to using information from indicia on a syringe, to compensate for syringes having differing initial plunger positions, differing initial amounts of fluid, differing end-of-travel positions or ranges of travel for the ram.

Far from a clear disavowal of claim scope, the quoted passage makes clear that the application contemplated that the claims of the '197 patent would encompass "physical indicia" related to properties other than the length of an extender.

Moreover, Medrad's own version of the prosecution history of the '612 and '197 patents cuts against reading the claims at issue restrictively. The original claims in the applications for the two patents limited the term "physical indicia" to features indicating the "length of the extender" and excluded features indicating other syringe properties such as "the capacity of the syringe." According to Medrad, when the applicants learned of Medrad's injectors they amended the claims at issue in an effort to encompass Medrad's injectors, as they did with respect to the "pressure jacket" issue. That characterization of the prosecution history, however, is unhelpful to Medrad's claim construction argument: By broadening the claims to cover Medrad's devices, the applicants covered physical indicia other than those indicating the length of an extender. The district court therefore correctly concluded that the term "physical indicia" is not limited to indicia related to the length of an extender.

Medrad further suggests in passing that the broad reading of "physical indicia" given by the district court would render the asserted claims of the '612 and '197 patents invalid for lack of a sufficient written description or enablement. As we discussed above, however, the canon that claims should be construed to preserve their validity, if possible, applies only if the scope of the claims is ambiguous. The asserted claims at issue in this case clearly cover more than the "indicia indicating the length of the extender." We therefore may not interpret the claims narrowly because of concerns about their possible invalidity. Rather, the issue of invalidity must be addressed head-on in the remand proceedings where the questions of priority, and the adequacy of the written description and enablement, will be directly presented.

"pin"

Claims 4, 12, and 18 of the '767 Patent contain the term "pin." SHURflo contends that "pin" means "a piece used to attach or support," while Defendants contend that "pin" means "a separate elongated fastener." The parties' dispute centers around whether a fastener must be "separate" and "elongated."

SHURflo's proposed construction is again unduly broad as the several other mechanisms disclosed in the patent would seem to fit the definition (e.g., a "hook" or "clip" is used to attach or support). Defendants argue that because the specification provides "[p]ins or screws 82 are placed into through bores 80 and into holes 24 where they are secured," a pin is necessarily a "separate elongated fastener" to attach a pump to the housing. '767 Patent, col. 6:34-36. Although Defendants are correct that a "pin," as disclosed in the cited embodiment, is not integral with the housing, the specification does not indicate that the "pin" must be completely separate. In addition, the term "pin" is a commonly understood word and there is no support in the specification to limit "pin" to an "elongated" fastener. Although "pins" are generally elongated (e.g.,
sewing pin, cotter pin, or split pin), a "pin" does not necessarily have to be elongated (e.g., pushpin or thumbtack). Rather, the essence of a "pin," as used in the specification and elsewhere, is that it works by being inserted through bores and holes to fasten or hold by insertion. See '767 Patent, col. 6:34-36. Accordingly, the Court construes the term "pin" to mean "a device not integral with the housing that assists in holding something by insertion."

Claim 8 is dependent upon claim 1 and claims: "The system of claim 1 wherein the base mounting means includes a recess therein, and wherein the stem mounting means includes an extending pin for mating with the recess." 313 patent, col. 6, 11. 1-4.

"Extending pin" and "recess"

Zimmer asserts that "extending pin" should be construed as "the male component of a Morse taper." To support this reasoning, Zimmer points to the specification, which states that the mounting structure, itself, is a Morse taper. As such, Zimmer asserts that the proper construction of "extending pin" is the pin, or the male component, of a Morse taper connection. 04/06/05 Zimmer Mem. at 16. After consulting the specification, and in coordination with the construction of "extending pin," Zimmer asserts that the proper construction of "recess" is as the "female component of a Morse taper." Id. Howmedica only responds to these arguments by way of presenting anticipation arguments.

In construing the stem mounting means of claim 1, the Federal Circuit stated that the disclosed structure for performing the mounting function is the Morse taper. The specification states that a Morse taper includes an extending pin and a recess. 313 patent, col. 3, 11. 45-50. The base mounting means must include a recess therein, and the stem mounting means must include an extending pin for mating with the recess. 313 patent, col. 3, 11. 45-48. Moreover, this Court finds that Zimmer's construction is supported by the intrinsic evidence and more clearly defines the terms' boundaries than if they were left otherwise undefined. Stmicroelectronics, Inc. v. Motorola, Inc., 327 F.Supp.2d 687, 697 (E.D. Tex. 2004). Accordingly, this Court adopts Zimmer's construction of "extending pin" as the "male component of a Morse taper" and "recess" as the "female component of a Morse taper."

The defendants have urged the court to construe this limitation to mean "a pin, displaced from the side of said shaft." The plaintiff argues that construction of this term is unnecessary, as the terms are readily understandable. The court agrees with the plaintiff that the terms used in this element are readily understandable and that no construction is necessary.

The eighth disputed claim language states:

pins attached to said storage structure for releasably engaging said bores,

Joint Statement, Table X, at 74-75. The language is clear and does not need construction. The language describes pins that engage the bores to secure the cover member. Sukup argues that the phrase must be interpreted under the means plus function method. The Court disagrees. The word "means" is not used so there is no presumption. The language also describes objects, pins that are part of a latching apparatus. The means plus function analysis therefore does not apply.
2. Claim 8(e) -- "piping network"

Limitation (e) of claim 8 claims, "piping network interconnecting said first and second containers, said filter unit and said first and second couplings". (Dkt. entry no. 1, Ex. A, '511 patent, at col. 12, lines 5-7.) Defendants argue that they stay true to the language of this limitation by interpreting it as "a network of pipelines that interconnects the various elements." (Defs. Resp. Br., at 18 (emphasis in original).) RTI argues that "Defendants have done no more than paraphrase the claim language for this claim element, which suggests that the claim does not need construction." (RTI Reply Br., at 19.) Based on the parties' submissions at this juncture, the Court believes there is no dispute with respect to limitation (e) of claim 8, and thus, we will not construe this limitation at this time, but note that it should be read in accordance with the ordinary and plain meaning of its terms.

7. Piston

Synventive proposes "a drive mechanism having a flange defining a radial clearance for self-alignment of the actuator cap with the piston." Husky proposes "a drive mechanism." The parties agree that a piston is a drive mechanism, but Synventive claims that the piston of the claim language must be read in light of the specification to include an annular flange that extends inward from the piston and creates a clearance that enables limited lateral motion as the hot runner manifold expands. See '025 Patent col.7 l.1-4; figs. 3-6.

One of the objects of the invention is "to provide an improved valve pin actuator that provides for a clearance between the actuator piston and actuator cap." '025 Patent col.2 l.24-26. The '025 Patent also describes one of the benefits of the invention as essentially a self-alignment between the actuator assembly and the valve pin assembly . . . ; the valve pin assembly is supported in such a manner that would allow some limited side-to-side motion in any direction thereof as the hot runner manifold undergoes certain expansion . . . . This is facilitated by the interaction of the ring, actuator cap and the annular flange extending inwardly of the piston. When the manifold, and valve pin assembly mounted thereto, moves, the flange and piston can move side to side within the clearance that is formed between the actuator cap and the flange.

'025 Patent col.6 l.64-col.7 l.11.

Claim 12 does not specifically recite a requirement that the piston include an annular flange, however. Other claims in the '025 patent do recite the requirement that the piston have an annular flange: for example claim 5 and claim 7 as they depend from claim 1. According to the principles of claim differentiation a piston as used in the '025 patent need not therefore include an annular flange; otherwise the language in dependent claims 5 and 7 would be superfluous, and claim 5 might well be invalid. The term is construed as "a drive mechanism that moves the valve pin."

The third element also states that the chamber has "a piston reciprocally mounted therein, the piston sliding through the seal." The ordinary meaning of "piston" is a sliding part moved by or moving against fluid pressure. The specification is consistent with this meaning, describing the piston as being "driven and accurately positioned longitudinally within the chamber" by a stepper motor and lead screw. '562 Patent, col. 2, ll. 46-50. The specification figures are consistent with the ordinary meaning, and the patent prosecution does not reveal a contrary definition. Accordingly, the Court construes "piston" to be a sliding part moved by or moving against fluid pressure.

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1. "Pitch of the helix"

Plaintiffs construe the term "pitch of the helix" to mean "the distance between any point on a visible turn and the corresponding point on an adjacent visible turn." (D.I. 272 at 39) "Pitch of the helix" is not defined either in the claims or in the specification. Both parties appear to agree that pitch is the distance between turns of the helix. The parties also agree that, in the industry, "pitch is typically expressed in only inches (or millimeters) as shorthand for inches per turn." (Compare D.I. 272 at 39 with D.I. 289 at 28; D.I. 274 at S.A. 371) Consistent with the court's construction of "turn," the court shall construe "pitch of the helix" as the distance between each "turn" or "loop" or "coil" of the wire core.

2925

I. On appeal, Minebea argues that the district court's decision of noninfringement was based on an erroneous construction of the claim term "pivot." According to Minebea, by construing the term "pivot" to exclude sliding motion, the court did not give the term its ordinary meaning. Minebea contends that the ordinary meaning of "pivot" does not preclude sliding motion.

Minebea also asserts that the patentee did not disclaim sliding motion in its central pivot in either the patent specification or the prosecution history. Although the specification expressly provides that other articulating joints in the claimed invention can have both pivoting and sliding motion, Minebea argues that the specification does not suggest that those two types of motion are otherwise mutually exclusive.

1 Minebea also appeals from the district court's holding that the SPK does not meet either the "means for pivotally mounting said first and second ends" or the "means for pivotally mounting said third and fourth ends" claim limitations. Given our affirmance of the district court's judgment of noninfringement based on the "pivot" limitation, it is not necessary for us to decide whether the SPK meets the two "means for pivotally mounting" limitations.

Think Outside contests Minebea's argument that the district court improperly construed the claim term "pivot." According to Think Outside, claim 1 differentiates between the motion allowed at the central pivot and the motion allowed at the articulating joints at the ends of the lever arms in its description of each. Specifically, Think Outside cites the portion of claim 1 that requires the central pivot to form a "scissors-like linkage," whereas the joints at the ends of the lever arms must "slide in addition to pivot." Think Outside also points to portions of the patent specification to support its position. Think Outside asserts that the only type of central pivot disclosed in the specification is a structure that is fixed in position relative to the lever arms. Think Outside further notes that the written description, like claim 1, expressly states that the joints at the ends of the lever arms both rotate and slide, but conspicuously fails to mention that there is any sliding motion at the central pivot.

We agree with Think Outside that the district court did not err in its construction of the claim term "pivot." As an initial matter, we note that the parties do not dispute the portion of the district court's construction of "pivot" defining it as "a structure about which something turns or rotates." The parties, however, do disagree as to whether the "pivot" of claim 1 must be "fixed relative to the two arms."

In Phillips v. AWH Corp., 415 F.3d 1303, 1317 (Fed. Cir. 2005), we noted that it is "entirely appropriate for a court, when conducting claim construction, to rely heavily on the written description for guidance as to the meaning of the claims."

Although the dictionary definition of the term "pivot" does not appear to exclude sliding motion, the district court properly determined that the written description limits the scope of the claim term "pivot" to a structure that is fixed in position relative to the lever arms, and thus excludes sliding motion. As the written description provides, "the levelling [sic] mechanism of the present invention utilizes a scissors-like linkage" fixed at an intermediate position relative to the lever arms. See '225 Patent, col. 4, ll. 8-11. Because the linkage in a pair of scissors is fixed in position relative to the scissors, it necessarily follows that the central pivot of the written description must also be in a fixed position, as the district court's claim construction requires. Moreover, a sliding central pivot would be inconsistent with the engineering principles behind the leveling mechanism disclosed by the specification. Applying basic mechanics, because the joints at the ends of the lever
arms in the specification's disclosed embodiment are capable of sliding in their respective slots, the leveling mechanism would not also need a sliding central pivot in order to allow the keytop to travel downward when it is pressed down. In Phillips, we also stated that "quite apart from the written description and the prosecution history, the claims themselves provide substantial guidance as to the meaning of particular claim terms." 415 F.3d at 1314. There is no question in this patent that sliding and pivoting are different motions. Indeed, claim 1 provides that certain structures will "slide in addition to pivot." Such language would be superfluous if sliding motion were subsumed in pivoting motion. See id. at 1317 (explaining that the term "steel baffles" strongly implies that the term "baffles" does not inherently mean objects made of steel). Moreover, claim 1, like the written description, requires the "pivot" to "form a scissors-like linkage." Inherent in this language is the requirement that the "pivot" of claim 1 must have structural characteristics that allow it to "form a scissors-like linkage." As explained above, a structural characteristic of a pivot with "a scissors-like linkage" is to be fixed in position relative to the lever arms. Lastly, we find unavailing Minebea's argument that because the district court did not construe the term "scissors-like," we too should not consider that term in our review of the court's construction of "pivot." Such a request is tantamount to construing claim limitations in a vacuum, and is plainly inconsistent with Phillips, which compels us to construe claim limitations in the context of the claim in which they appear. Id. at 1314.

II.

BFTC's accused device, the "Spinal Care System," is also designed to protect the head and neck during a collision. However, it performs its safety function through both rotational and lateral movement of the headrest. The Spinal Care System utilizes two vertical side supports attached to the seat cushion frame; an inverted U-shaped seat back frame, rigidly attached to a headrest and suspended between the two side supports; and horizontal crossbars that traverse the seat back frame. These crossbars serve essentially the same purpose as the '019 patent's "impact plate"—when the passenger pushes back on them during a collision, the headrest and upper seat back frame are rotated to protect the passenger's head and neck.

In the court below, the parties disputed the construction of several terms of the '019 patent, but the claim limitation most pertinent to infringement was "pivot axis." The district court construed claim 1 of the '019 patent to include the following
limitation:

pivot hinges connecting the upper part with the lower part and defining a common fixed pivot axis about which the upper part and the headrest can pivot in a forward direction, and in which the impact plate can pivot in a rearward direction from a normal position . . . .

Claim Construction Order, 2002 U.S. Dist. LEXIS 26866, at *17 (emphasis in original).

To arrive at this construction, the district court looked to a scientific dictionary, which defined "axis" as a "line about which a body rotates," and to the "plain language" of Claim 1, which suggested to the court that "pivot axis" must refer to a common line defined by the location of the pivot hinges. 2002 U.S. Dist. LEXIS 26866 at *23. The court then weighed statements by the inventor during prosecution that suggested to the court that the '019 patent's invention was a simpler alternative to a prior invention in its field, claimed in United States Patent No. 5,378,043 (issued on Jan. 3, 1998) (the "Viano patent"). 1 2002 U.S. Dist. LEXIS 26866 at *42-47. The court also viewed it as significant that both the description and drawings relating to the '019 patent's sole preferred embodiment depict only rotational movement. The court felt bound to adopt a construction that would appropriately reflect what it viewed as prosecution disclaimers by the patentee of much of the Viano device's functionality and capabilities.

1 Lear also owns the Viano patent, which it initially asserted against BFTC in this litigation.

Based on its claim construction, the district court granted BFTC's motion for summary judgment of noninfringement of the '019 patent on July 30, 2002. Lear does not challenge the grant of summary judgment insofar as it relates to the doctrine of equivalents. Rather, Lear argues that the district court erred in granting summary judgment of no literal infringement.

We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

III.

Lear makes two arguments on appeal. First, it contends that the ordinary and customary meaning of "pivot axis" encompasses both fixed and non-fixed axes of rotation. Second, it claims that since the ordinary meaning of "pivot axis" is clear, consideration of extrinsic evidence, such as the Viano patent, during claim construction was improper.

BFTC defends the district court's claim construction. It urges that the court's construction is true to the ordinary meaning of the term "pivot axis"--both as it is defined in technical dictionaries and as it is used by Lear in the '019 patent. BFTC emphasizes that the inventor's references to the Viano patent during prosecution of the '019 patent are properly characterized as a surrender of complex mechanisms of rotation (like Viano's) in favor of a simple, fixed axis. BFTC asks us to uphold the district court's narrow construction, which it contends reflects the relative simplicity of the invention of the '019 patent.

Summary judgment is appropriate where the record shows "that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c); Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 247, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986). We review a grant of summary judgment of non-infringement by a district court de novo, applying the same standard as the district court. Cortland Line Co. v. Orvis Co., 203 F.3d 1351, 1355-56 (Fed. Cir. 2000). We review a district court's claim construction without deference. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454 (Fed. Cir. 1998) (en banc).

When construing a claim limitation, a court must avoid importing limitations from the written description and prosecution history into the claim. See Tex. Digital Sys. v. Telegenix, Inc., 308 F.3d 1193, 1204 (Fed. Cir. 2002). The words used in a claim are presumed to have their ordinary meaning. CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002). In rare instances, "an accused infringer may overcome this heavy presumption and narrow a claim term's ordinary meaning, but he cannot do so simply by pointing to the preferred embodiment or other structures or steps disclosed in the specification or prosecution history." Id.
We respectfully disagree with the district court's claim construction because we conclude that the intrinsic evidence imposes no requirement that the "pivot axis" described in Claim 1 be fixed permanently in space. Applying our presumption in favor of ordinary meaning, we hold that "pivot axis," as used in Claim 1, must refer to "a line about which a body rotates, fixed relative to a pair of pivot hinges." Dictionary definitions proffered by the parties establish that "pivot axis" must refer to a line about which rotation occurs. At the same time, the plain language of the claim requires that the location of this line be defined by the placement of the "pivot hinges." The district court concluded that the "pivot hinges" need not be rigidly attached to the side members of the seat back, see Claim Construction Order, 2002 U.S. Dist. LEXIS 26866 at *36, and there is nothing in the claim language or plain meaning of "pivot axis," as used in Claim 1, that requires that the line of rotation be permanently fixed in space.

Under CCS Fitness, when the ordinary meaning of a claim term is clear, the specification or prosecution history must contain an explicit suggestion of an alternate definition before the "heavy presumption" in favor of ordinary and customary meaning will be overcome. Here, during prosecution of the '019 patent, the inventor did emphasize the simplicity of his device relative to Viano's complex rotational mechanism, but these statements do not constitute the strong disavowal required to overcome the CCS Fitness "heavy presumption" of ordinary meaning. As far as the district court's inquiry into the specific features of the '019 invention relative to the Viano patent is concerned, since the inventor did not expressly reference to those specific distinctions to secure the patenting of his own invention, they should not influence the construction of Claim 1. Consultation of extrinsic sources, such as the Viano patent, was not appropriate in this case.

Since there is no compelling evidence that would require the ordinary and customary meaning of "pivot axis" to be narrowed or changed, that meaning must control. "Pivot axis," as defined in Claim 1, refers to "a line about which a body rotates, fixed relative to a pair of pivot hinges."

For the foregoing reasons, we vacate the district court's grant of summary judgment of no literal infringement in favor of BFTC. The case is remanded to the district court for determination of literal infringement under the correct construction of the term pivot axis.

a. The Scope of the Vaida Patent

"In determining the proper construction of a claim, the court has numerous sources that it may properly utilize for guidance . . . including both intrinsic and extrinsic evidence." Vitronics, 90 F.3d at 1582. In the first instance, however, the court must turn to "the patent itself, 4 including the claims, the specification and, if in evidence, the prosecution history," which constitute "the most significant source of the legally operative meaning of disputed claim language." Id.

4 A patent document contains several components "describing the exact scope of an invention and its manufacture." Markman, 134 L. Ed. at 581. The first patent element is the specification, "describing the invention 'in such full clear concise and exact terms as to enable any person skilled in the art to make and use the same.'" Id. (quoting 35 U.S.C. § 112). "Second, a patent includes one or more 'claims,' which 'particularly point out and distinctly claim the subject matter which the applicant regards as his invention.'" Id. (quoting 35 U.S.C. § 112).
In looking at the patent language, the Court will assign each word its plain meaning, unless the patentee has chosen "to be his own lexicographer and [to] use terms in a manner other than their ordinary meaning, [provided that] the special definition of the term is clearly stated in the patent specification or file history." Vitronics, 90 F.3d at 1582.

The Vaida patent consists of nine claims, only one of which is independent. The particular aspect of the Vaida patent at issue in the Defendant's first Motion for Summary Judgment is the reinforcement of the lower edge of each louver member by the "pivot axis" of the adjacent lower member.

In large measure, the determination of infringement in this case turns on the scope afforded the phrase "pivot axis." The Plaintiff would have the Court endow the phrase with broad meaning to incorporate any structure that "houses" the pivot axis, while the Defendant urges a definition that limits the phrase to its technical definition.

The language of the claim is plainly understood. The claim describes the manner in which the device provides continuous longitudinal support for the upper and lower edges of each louver member:

actuating means attached to the actuating section of each of said louver members for pivoting said louver members between open and closed positions, so that in said closed position, the lower longitudinal edge of an upper louver member overlaps the pivot axis of the adjacent lower louver member so that the upper and lower longitudinal edges of the closing section of said louver members are completely supported along their longitudinal lengths by said pivot axis at the upper longitudinal edge thereof and by the pivot axis of the adjacent lower louver member at the lower longitudinal edge thereof.

Vaida Patent, p. 6, lines 29-40, Plaintiff's Exhibit 1 (emphasis added). The patent clearly contemplates the use of the "pivot axis" as the means for supporting the longitudinal edges of the louver members. Cf. Cole, 102 F.3d at 531 (refusing to invoke "means-plus" statute, 35 U.S.C. § 112 P 6 (1994), when the patent explicitly states the structure performing the function). The word "pivot" has meanings as a verb, a noun, and an adjective. As a noun, a pivot is a "shaft or pin whose pointed end forms the fulcrum and center on which something turns about, oscillates, or balances." Webster's Third New International Dictionary (Unabridged) 1726 (1981). As a verb, to pivot is "to turn about or oscillate or balance on or as if on a pivot." Id. at 1727. As an adjective, as in the Vaida patent language, the word "pivot" is used to describe something as "turning on or as if on a pivot." Id. An axis is "a straight line about which a body or a 3-dimensional figure rotates." Id. at 153. In this sense, the axis is an imaginary geometrical reference line, described by all points in three dimensional space dependent on a single independent variable. As such, it has an infinitesimal width, and could not include any actual structure in the window. Technically, then, the pivot axis is the imaginary line about which each louver member rotates as it closes and opens. That definition, however, while technically correct, cannot suffice to describe the phrase as used in the Vaida patent, because the claim expressly states that the longitudinal edge of each louver is supported by the pivot axis.

V 6 An imaginary geometric frame of reference cannot provide actual support.

Henceforth, when referring to the imaginary line that defines the axis of rotation of a louver member, the Court will use the phrase, "pivot axis line," and when referring to the element of the Vaida patent claim, the Court will use only the phrase "pivot axis."
The specifications in the Vaida patent help clarify the phrase. The "Detailed Discussion of Preferred Embodiment of the Invention" states that the "pivot axis is reinforced by having [a] bead member formed therein, and may be further reinforced by providing [a] steel rod extending completely through the hollow bead member." The bead member (a hollow tube holding the pivot pins and/or the steel reinforcing rod), and the reinforcing rod are both linear cylindrical forms whose center lines describe the imaginary pivot axis line of the louvers. See Figure # 2. 7 Additionally, each of these elements form part of the pivot mechanism by which the louver rotates between the open and closed positions -- the bead member and either the pivots or the steel reinforcing rod form a hinge. Moreover, dependent claims Five and Six expressly incorporate the hollow bead member and steel reinforcing member, respectively, into the Vaida "pivot axis." Nothing else in the Vaida patent both describes the technical pivot axis line and performs the task assigned to the pivot axis by the patent. Therefore, the Court must logically conclude that the bead member and the reinforcing steel rod comprise the "pivot axis" of the Vaida patent. 8 As already noted, the patent claim expressly utilizes the pivot axis as a means for supporting the longitudinal edges of the louvers. Therefore, using the Court's definition of pivot axis, the claim is limited to louver systems that utilize the louvers' pivot axes -- structural elements that describe the imaginary axis line about which the louvers turn and which serve as elements of the pivoting mechanism -- as support for the longitudinal edges of the louvers. See Figure # 1.

7 In Figure # 2, the bead member is labeled 14a, the pivot pins 62, and the reinforcing rod 60.

8 Where the Court is deciding an issue at the summary judgment stage for which it would bear responsibility for determining at trial, and the Court has before it all of the evidence from which it would make that determination at trial (here, the patent itself and the prosecution history), the Court may determine the issue as if at trial. Posadas, 856 F.2d 399, 400.

The limited definition that the Court bestows on the phrase "pivot axis" is supported by reference to the prior art. It is common knowledge that in louver window assemblies, the louvers overlap. 9 If they did not, gaps would form between the louvers even when in the closed position. That being the case, the upper edge of each louver member always acts to provide some support to adjacent upper louver member, because in the closed position, the upper louver will rest on the lower. The problem with most of these designs, however, as demonstrated by the Plaintiff's exhibit, see Declaration of Paul Beers, Defendant's Exhibit 2, p. 2, is that the inherent support furnished by overlapping louvers is not of sufficient rigidity to prevent flexion against heavy wind loads or other external forces. See Vaida Patent, p. 1, Plaintiff's Exhibit 1. The Vaida patent expressly addresses this shortcoming by placing the louvers in a position such that the lower edges of each louver member overlap the pivot axes of the adjacent lower louver members. See Vaida Patent, pp. 1-2, Plaintiff's Exhibit 1. The prior art in this case is important because it narrows the advancement claimed by the Vaida patent - the advancement lies in the particular use of the pivot axis. Whereas the typical louver assembly (i.e., the prior art) makes use of overlapping louvers, the Vaida patent achieved an advantage in reducing deflection by extending the lower edges of its louver members over the pivot axes of adjacent lower louver members in order to make use of the structural properties of the pivot axis.

9 The Court may consider on a motion for summary judgment that of which it could take judicial notice at trial. See Harris v. H & W Contracting Co., 102 F.3d 516, 522 (1996), reh'g denied, 109 F.3d 773 (11th Cir. 1997). The Court may take judicial notice of facts commonly known. See, e.g., In re Martin's Famous Pastry Shoppe, Inc., 748 F.2d 1565, 1567 (Fed. Cir. 1984) (not error to take judicial notice of the fact "that deli counters may well display bread and rolls in close proximity to the cold cuts and cheeses purveyed there"). The Defendant's brief states that all louver windows utilize overlapping louvers. The Plaintiff's have not disputed that fact. Indeed, the Plaintiff's expert implies as much in his affidavit. See also, e.g., United States Patent No. 3,381,601; United States Patent No. 4199898.
actuating means attached to the actuating section of each of said louver members for pivoting said louver members between open and closed positions, so that in said closed position, the lower longitudinal edge of an upper louver member overlaps the pivot axis of the adjacent lower louver member so that the upper and lower longitudinal edges of the closing section of said louver members are completely supported along their longitudinal lengths by said pivot axis at the upper longitudinal edge thereof and by the pivot axis of the adjacent lower louver member at the lower longitudinal edge thereof.

Plaintiff's Exhibit 3, p. 14. The patent examiner rejected Claim One of the original application "as being anticipated by Bishop." 10 Plaintiff's Exhibit 3, p. 24. The Vaida patent applicant responded by attempting to "traverse this rejection:

In the present invention, when the louveres are in their closed position, the lower longitudinal edges of each louver overlaps the pivot axis of an adjacent lower louver member. However, in the Bishop reference . . . [the louveres] do not meet the claim limitations in lines 20 to 24 of claim 1. More particularly, these lines of claim 1 specifically recite that the upper and lower longitudinal edges of the closing section are completely supported along their longitudinal lengths: by the pivot axis at the upper longitudinal edge of that louver member and by the pivot axis of the adjacent lower louver member at the lower longitudinal edge thereof.

Plaintiff's Exhibit 3, pp. 31-32. These remarks indicate the specificity of the Vaida improvement - the use of the pivot axis as a structural support.

--- Footnotes ---

10 The patent examiner did not explain why he determined that the Bishop patent anticipated the Vaida application.

--- End Footnotes ---

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f. "pivot structure"

The term "pivot structure" refers to a separate, functional structure located at the lower end of the post of the shift lever between the pivot flanges that pivotally attaches the shift lever to the pivot flanges and operationally couples the shift lever to the shifter.

2929

2. Infringement

The Court finds that, as a matter of law, the accused product does not read on the following claim limitation: "said locking means including a lock member pivotably attached to said second pivoting means . . . ." Accordingly, the accused product does not literally infringe claim 3 or claim 7 of the '400 patent.

Apollo asserts that Mastercare's product reads on this claim limitation because the locking means 1 (the cam) is "free to pivot" and because it is attached to a horizontal member called the "swing arm" which in turn is attached to the second pivoting means (the pneumatic cylinder situated at the center of the door mechanism). However, the cam is not pivotably attached to the second pivoting means.

--- Footnotes ---

1 The parties dispute which element of the Mastercare product constitutes a "locking means" and whether or not there is a second pivoting means. However, for the limited purpose of this motion, the Court takes the evidence in the light most favorable to Apollo and adopts Apollo's perspective on these two issues. If the Court were to adopt Mastercare's position,
that a mechanism on the pneumatic cylinder that prevents further adjustment of the door position is the element of the Mastercare product that corresponds to the claims' "locking means," the Court would nevertheless find no literal infringement, because this other locking element is not pivotably attached to anything.

Claim interpretation "begins with the language of the claim itself." National Recovery Technologies, Inc. v. Magnetic Separation Systems, Inc., 166 F.3d 1190, 1195 (Fed. Cir. 1999) (citing Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 619 (Fed. Cir. 1995)). The terms of a claim are given their ordinary meaning as understood by one of ordinary skill in the art, unless the inventor intended the terms to be construed otherwise. Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc., 222 F.3d 951, 955 (Fed. Cir. 2000); Karlin Technology, Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971 (Fed. Cir. 1999).

Neither party has suggested that the words "pivotably" and "attached" have meanings in the context of mechanical engineering, either generally or with respect to bath tubs, that differ from the ordinary meanings those words have to a layperson. The claim limitation requires not only that the locking means be attached to the second pivoting means, but that the attachment be pivotal. The Court finds, as a matter of law, that the claim limitation requires that the locking means be in physical proximity to the second pivoting means and that the "interface" between the locking means and second pivoting means allow the locking means to pivot relative to the second pivoting means.

Apollo seems to argue that the pivotal attachment can be accomplished by having the locking means pivot and be connected, however tenuously and with however many intervening structures, to the second pivoting means. Not only does this construction require a strained interpretation of the plain meaning of the claim language, it is inconsistent with the prosecution history of this patent. "The prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985).

In a response to the PTO, the patentee distinguished the invention claimed in the '400 patent from a similar device disclosed in a "510(k) pre-market notification submittal document to the Food & Drug Administration (FDA)" ("the 510(k)"). 2 Specifically, the patentee noted that, unlike the invention disclosed in the '400 patent, "the 510(k) does not show locking means having a lock member pivotally attached at the second pivoting means." Declaration of Kent R. Erickson, Ex. 8, at MAS01589-90. The 510(k) does show a tub door with a "swivel post" attached to the center of the door, and the "door pivots or swivels on this post"; a "hinge bar" running from the swivel post to the side of the door; and a "locking lever," attached to the hinge bar at the side of the door, that rotates to cause the door to lock. 3 In other words, the 510(k) discloses a pivoting locking means remotely "attached" to a centrally located second pivoting means by a non-pivoting bar. If, as the patentee asserted during the prosecution history, the claim limitation of the '400 patent does not cover the configuration of the 510(k), then it cannot cover the configuration embodied in the Mastercare tub.

2 In the response to the PTO, the patentee disputed whether the 510(k) was a printed publication for purposes of 35 U.S.C. § 102(b). Apollo, however, seems to concede that the 510(k) constitutes prior art.

Moreover, for purposes of construing the language of the '400 patent in the context of the prosecution history, the "printed publication" status of the 510(k) does not matter; it is sufficient to note that the patentee did not consider the configuration disclosed in the 510(k) to fall within the ambit of the claim language.

3 Apollo disputes that the locking lever mechanism disclosed in the 510(k) is a "locking member" within the meaning of that term in the '400 patent. Specifically, Apollo points to the Declaration of Dr. Barry Feinberg in which Dr. Feinberg opines that a locking means must cause the door to seal with the tub; in the 510(k) device, the sealing function is achieved through inflation of a rubber gasket. However, it is clear from the claim language that the "locking means" is distinct from the "sealing means" and that the function of the "locking means" is to immobilize the door in the closed position.
Moreover, because the "prosecution history estoppel precludes a patentee from obtaining under the doctrine of equivalents coverage of subject matter that has been relinquished during the prosecution of its patent application," Pharmacia & Upjohn Co. v. Mylan Pharmaceuticals, Inc., 170 F.3d 1373, 1376 (Fed. Cir. 1999), Apollo's infringement claim under the doctrine of equivalents is precluded, and summary judgment is appropriate.

IV.

This appeal raises the question of the proper meaning of the phrase "swing arm, which in turn is pivotably attached to the structure." As noted above, the district court construed the phrase to mean "a pivot, that constrains motion of an element to rotational movement but which prevents any vertical or axial movement of the element." Deere, No. 99-4100, slip op. at 9 (C.D. Ill. Nov. 14, 2001).

As a general rule, the words used in a claim are deemed to have their ordinary and customary meaning in their normal usage in the field of the invention. Toro Co. v. White Consol. Indus., 199 F.3d 1295, 1299, 53 USPQ2d 1065, 1067 (Fed. Cir. 1999). To help inform the court of the ordinary meaning of the words, a court may consult a dictionary, encyclopedia, or treatise. Texas Digital Sys., Inc. v. Telegenix Inc., 308 F.3d 1193, 1202, 64 USPQ2d 1812, 1818 (Fed. Cir. 2002). Nevertheless, an inventor may act as his own lexicographer and use the specification to supply implicitly or explicitly new meanings for terms. Markman, 52 F.3d at 979-80, 34 USPQ2d at 1330. Thus, to help determine the proper construction of a patent claim, this court consults the claims themselves, the written description, and, if in evidence, the prosecution history. Id. During prosecution, an inventor may surrender coverage of material that would otherwise be covered by a claim; however, the surrender must be clear and unmistakable. Bayer AG v. Elan Pharm. Research Corp., 212 F.3d 1241, 1252, 54 USPQ2d 1710, 1718 (Fed. Cir. 2000) ("In determining whether there has been a clear and unmistakable surrender of subject matter, the prosecution history must be examined as a whole."). To determine whether an inventor surrendered material during prosecution history, we must determine "whether a competitor would reasonably believe that the applicant had surrendered the relevant subject matter." Cybor, 138 F.3d at 1457, 46 USPQ2d at 1175. Having reviewed the prosecution history, we do not think that Banks surrendered coverage of a swing arm with any vertical motion. Rather, he only disclaimed excessive vertical and oscillatory motion. 2

- - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - - -

2 Henceforth, when we refer to excessive vertical and oscillatory motion, we mean vertical and axial movement that goes beyond that amount of vertical and axial movement that is inherent in the kind of rotation in which the swing arm engages.

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We begin our analysis with the claims themselves. The plain language of claim 1 does not exclude vertical motion from the movement of the pivotably attached swing arm. 3 The term "pivotally attached" does not have a special technical meaning to one of skill in the art. CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366, 62 USPQ2d 1658, 1662 (Fed. Cir. 2002) (stating that terms used in a claim bear a "heavy presumption" that they mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art). The term "pivot," in the normal sense of the word, means "to turn about." Webster's Third New International Dictionary 1727 (1986). The dictionary definition defines pivot in terms of rotational motion, but does not explicitly exclude vertical movement. Since the patentee did not draft claim 1 to expressly disclaim vertical movement, the claim, in its face, is not so limited. We must further consult the specification and the prosecution history to determine whether the inventor limited the invention in the manner suggested.

- - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - - -

3 However, claim 9, which is nearly identical to claim 1, expressly requires that the pivoting motion of the swing arm occur about a fixed axis. There is a rebuttable presumption that differing claims are of different scope. Kraft Foods, Inc. v. Int'l Trade Comm'n, 203 F.3d 1362, 1366-67, 53 USPQ2d 1814, 1817 (Fed. Cir. 2000).
The written description does not further limit the claimed term, but merely reiterates the requirement that the swing arm be pivotably attached. Additionally, the prosecution history supplied to us does not clearly and unequivocally establish that the inventor disclaimed all vertical movement of the swing arm. Rather, a competitor would reasonably believe that Banks disclaimed excessive vertical and oscillatory motion of the swing arm caused by the movement or play of the pin in the oblong hole of the TM 1500 machine.

The TM 1500 cultivating machine, which included the urethane block dampening system, is shown below:

[SEE FIGURE IN ORIGINAL]

In response to an office action of December 30, 1996 from the United States Patent & Trademark Office ("USPTO"), Evans discussed the differences between the TM 1500 machine and the purported invention. 4 His letter to the Examiner stated in relevant part as follows:

In the TM-1500 machine, the end of the swing arm conrod connected to the structure in the cultivating machine was imbedded in a block of urethane plastic inside a steel housing on the structure. [. . .]

The urethane plastic provided insufficient biasing and, therefore, the swing arm could not be pivoted to the structure as claimed in claim 1 about an axis in a fixed position, as in claim 12. Instead, as shown in the attached sketch, the receiving holes in the steel housing had to be made oblong to accommodate movement of the pivot (not shown) of the swing (conrod) along the axis of the oblong holes, i.e. axial movement of the swing arm.

Referring now to Figures 3 to 6 of the application, it will be appreciated how axial movement of the swing arm 87 would change the vertical orientation of the cultivating tool 86 as well as does the claimed pivotal rotation of the swing arm. As a result, it will also be appreciated how the biasing forces of the TM-1500 could not be uniform because the swing arm would either first move in the oblong holes on the structure and then flex the urethane block or vice versa. The result is that the swing arm does not pivot relative to the structure, as in claim 1, about a fixed axis, as in claim 12, but rather executes an oscillatory motion. The result is less uniform cultivating operation than the claimed invention, as would be anticipated intuitively from the play of the pin in the oblong hole of the structure of the TM-1500.

(emphasis added). In this response, Evans suggested that the hole through the center of the TM 1500 block was originally round to accommodate a round pin. When the swing arm failed to pivot, Banks made the hole through the center of the block oblong. The oblong hole allowed the swing arm to move vertically (called axial movement in the response) and in an oscillatory manner, leading to a change in the vertical position of the cultivating tool. 5 It is clear that Banks believed that the excessive vertical and oscillatory movement of the swing arm in the TM 1500 was undesirable, because the irregular motion of the swing arm created unclean holes. Banks, therefore, disclaimed such motion in the prosecution history. In sum, the proper construction of "swing arm, which is pivotably attached to the structure" is a swing arm that is connected to the structure in a manner so that it can rotate about the connection, but cannot move excessively in the vertical direction and cannot oscillate excessively.

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4 The response to the office action of December 30, 1996, dated May 30, 1997, added the claim limitation that the swing arm is bi-directionally biased, in order to overcome a rejection based on a prior art reference.5 The oscillatory motion likely resulted from a small amount of rotational motion in combination with the excessive vertical motion. A later preliminary amendment, dated December 9, 1997, stated with respect to the TM 1500 machine that "the oblong shape of the opening allows the conrod to shift axially as well as radially." This statement suggests that the swing arm in the prior art was able to move in a radial direction, contributing to the oscillatory motion.

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - -
B. The Swing Arm Pivotably Attached to the Aerator

Toro argues that the phrase "swing arm pivotably attached to the aerator" means an arm that is attached to the aerator frame with a pivot so that the arm can only move rotationally in one plane. As pointed out by Toro, each of the independent claims recites that the swing arm is pivotably attached to the structure in a particular manner (e.g., "pivotally attached," claims 1, 13, 15, and 17; or attached "for pivotal motion about an axis having a fixed position with respect to the structure," claims 9 and 16; or "pivoted on the structure," claims 14 and 18. Accordingly, the Court must construe the meaning of "pivotably attached" in its various forms. Toro suggests that this term means "a physical structure, a pivot, that constrains motion of an element to rotational movement in one plane." In its reply memorandum, Deere suggests that this claim language only means that the swing arm is attached to the structure by a pivot which is a shaft or pin on which something turns. There is nothing in the specification to show that the patentee intended to use the term "pivot" in a manner different from its ordinary meaning. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 (Fed. Cir. 1996). There does not appear to be a substantial difference between the parties in their respective construction of this element except for Toro's limitation of rotation to one plane. Toro’s argument that the rotation of the swing arm around the pivot must necessarily be in one plane is erroneous since the rotation could be other than in one plane if the pivot, for instance, was in the nature of a ball joint or if the pivot was not in a fixed position. Only independent claim 9 and its dependent claims have language suggesting that the pivot is in a fixed position thereby relegating the rotation of the swing arm around the pivot to one plane. None of the remaining claims have such limiting language and as to those claims the rotation of the swing arm around the pivot is not limited to one plane.

However, as Toro contends, the prosecution history shows that Deere is estopped from asserting this construction by its contrary construction before the PTO. During prosecution, Deere distinguished its claimed invention over the prior art device, the TMI 1500 machine, by indicating that Deere's invention involved the movement of the swing arm around a fixed axis (limiting rotation to one plane) as distinguished from the TMI 1500 machine where the swing arm moved in an oscillatory motion. In their response to the examiners office action Deere stated:

In the TM-1500 machine, the end of the swing arm conrod connected to the structure of the cultivating machine was imbedded in a block of urethane plastic inside a steel housing on the structure. . . .

The urethane plastic provided insufficient biasing and, therefore, the swing arm could not be pivoted to the structure as claimed in claim 1 about an axis in a fixed position relative to the structure, as claimed in claim 12. Instead, as shown in the attached sketch, the receiving holes in the steel housing had to be made oblong to accommodate movement of the pivot (not shown) of the swing arm (conrod) along the axis of the oblong holes, i.e. axial movement of the swing arm.

Referring to Figures 3 to 6 of the application, it will be appreciated how axial movement of the swing arm 87 would change the vertical orientation of the cultivating tool 86 as well does the claimed pivotal rotation of the swing arm. As a result, it will also be appreciated how the biasing forces of the TM-1500 could not be uniform because the swing arm would either first move in the oblong holes on the structure and then flex the urethane block or vice versa. The result is that the swing arm does not pivot relative to the structure, as in claim 1, about a fixed axis, as in claim 12, but rather executes an oscillatory motion. The result is less uniform cultivating operation than the claimed invention, as would be anticipated intuitively from the play of the pin in the oblong hole of the structure of the TM-1500. (Benchbook of Exhibits in Support of the Prehearing Memorandum of Deere & Company Relating to the Markman Hearing, Doc. # 31, Exhibit D at D100111.)

Accordingly, considering the prosecution history, the proper construction of the term "pivotally attached" is the construction proffered by Toro, that being "a physical structure, a pivot, that constrains motion of an element to rotational movement in one plane."

1. "Pivotally Connected" and "Pivotally Connecting"
The parties agree that the claim terms "pivotally connected" and "pivotally connecting" mean "attached (attaching) and capable of rotating or turning about the point of attachment." (Doc. # 78, at 2). They differ as to "whether the terms . . . as used in claims 1, 11 and 13 of the '685 patent, require a direct attachment." (Doc. # 78, at 2 n.2). Plaintiff asserts that the parties' stipulated construction "encompasses [both] direct and indirect connections." (Doc. # 80, at 15). Plaintiff relies on the testimony of defendant's expert witness, Mr. Whaley, at the Markman hearing to support its proposed construction. In that testimony, Mr. Whaley admitted that the term "pivotally connected" as used in his patent, U.S. Patent No. 6,966,108, included both direct and indirect connections. (Doc. # 72, at 128, 131). Defendant, however, argues that "[t]he parties' stipulated construction requires [only] a direct connection between the components that are connected." (Doc. # 79, at 18). Defendant refers the Court to the '685 patent prosecution history, whereby the patent examiner interpreted the term "connecting" to mean "touching engagements." (Doc. # 79, at 18; # 51-6, at 4).

In the '685 patent, claim 1 refers to "the control structure including an actuator and a hinge pin pivotally connecting the actuator to the housing for movement relative to the housing to cause movement of the control structure between said first and second positions . . . ." (Doc. # 51-2, '685 patent, col. 16, lines 35-39) (emphasis added). Claim 11 states that "the lever is pivotally connected to the travel bar." (Doc. # 51-2, '685 patent, col. 18, line 2) (emphasis added). Claim 13 describes "a hinge pin pivotally connecting the lever to the housing for movement relative to the housing to cause movement of the control structure between said first and second positions . . . ." (Doc. # 51-2, '685 patent, col. 18, lines 27-30) (emphasis added).

As stated above, claims "must be read in view of the specification, of which they are a part." Vitronics, 90 F.3d at 1582 (citations omitted). The '685 patent specification states that "[t]he wider end of the intermediate connector 39 is pivotally connected to the lever 15 by hinge pin 95 through holes 96 of the lever 15 and holes 97 of the connector 39 . . . ." (Doc. # 51-2, '685 patent, col. 6, lines 39-41). The specification states that the lever includes an enlarged head and a narrow body. (Doc. # 51-2, '685 patent, col. 5, lines 28-30). Figure 4 shows that the lever, which includes items 53 and 55 that appear in the figure, is directly connected to intermediate connector, item 39a. (Doc. # 51-2, '685 patent, Fig. 4). However, the term "pivotally connected" in claim 11 does not require a direct connection. As stated above, claim 11 refers to a lever that is pivotally connected to the travel bar. Figure 4 shows that the lever, which includes items 15, 53, and 55, is directly connected to the intermediate connector, item 39, and that the intermediate connector is directly connected to the travel bar, item 41. Therefore, the lever is indirectly connected to the travel bar. As such, the Court finds that the intrinsic evidence supports the conclusion that the claims do not restrict the attachment to a direct connection. Thus, the Court finds that "pivotally connected" and "pivotally connecting" in the '685 patent mean "attached (attaching) and capable of rotating or turning about the point of direct or indirect attachment."

Pivotaly connected to, Movably connected to, & Rotatably connected to

The Court construes "pivotally connected to" to mean "a connection between two bodies allowing the bodies to change positions relative to one another around or about at least one point," "movably connected to" to mean "a connection between two bodies allowing the bodies to change positions relative to one another," and "rotatably connected to" to mean "a connection between two bodies allowing the movement of the bodies relative to one another around or about an axis."

At the Markman, MASS stated that the only dispute remaining was the meaning of “connected to.”10

fn10 At the Markman, MASS stated that the only dispute was how to define 10 “connected to.” MASS stated it was “happy” with the way Dell defined the modifiers of “connected to.” Markman Hr’g Tr. 99:12–20.

MASS’s proposed construction for “connected to” is “the secondary display is supported from and directly hinged [or joined] to the primary display.”11 MASS attempts to import limitations from certain embodiments, which is improper. See Phillips, 415 F.3d at 1323. MASS requires that the connection be a hinge and that the secondary display be supported by the primary display via the hinge. Neither of these limitations finds support in the intrinsic evidence.

The term “connected to” has its plain and ordinary meaning. Although MASS insists that this term be narrowly construed to
mean “directly hinged,” neither the intrinsic nor extrinsic evidence supports such a narrow construction. While the specification does describe direct connections associated with certain embodiments, at least one embodiment implements an indirect connection. In Figure 4, the secondary display is neither directly hinged nor directly connected to the primary display, it is indirectly connected via two arms. See ‘170 patent, Fig. 4; Col. 4:14–20 (stating that the secondary display is pivotally connected to arms, which are connected to a hinge). Thus, “connected to” is not limited to a direct connection, and the plain and ordinary meaning applies, which is simply a “connection.”

As neither the specification nor prosecution history provides special definitions for the terms, the plain and ordinary meaning of “pivotally,” “movably,” and “rotatably” applies. See Enercon, 151 F.3d at 1384. Dell’s constructions advance how one skilled in the art would understand each of the three terms. MASS does not offer competing meanings for the terms; therefore, the Court adopts Dell’s constructions, which incorporate the terms ordinary and plain meanings.

3. "Pivotally Mounted"

The claim term “pivotally mounted” appears in claim 26 of the ’946 patent. While the parties agree that the term means "attached and capable of rotating or turning about the point of attachment." (Doc. # 78). The parties differ as to whether the term "requires the actuating lever to be pivotally mounted 'directly' on the elongate plate." (Doc. # 78, at 1 n.1). Plaintiff argues that the claim language permits both a direct and indirect connection. (Doc. # 80, at 14-15). However, defendant contends that the attachment requires a direct connection between the components. (Doc. # 79, at 18).

The claim language, specification, and prosecution history do not make clear whether the disputed term requires a direction connection. Accordingly, the Court will consult extrinsic evidence to “shed useful light on the relevant art[].” Phillips, 415 F.3d 1303, 1318. At the Markman hearing, defendant's expert witness, Paul Whaley, testified that he (1) had thirty years of experience in the ring metal industry and (2) held 29 U.S. patents on ring metal designs. (Doc. # 72, at 76, 79). Mr. Whaley also testified that, in his U.S. Patent No. 6,966,108 (the '108 patent), the specification recites: "[a] ring assembly 18 is pivotally mounted to the notebook by the hinge panel 20." (Doc. # 72, at 128-29). Mr. Whaley admitted that, in the '108 patent, the ring assembly is pivotally mounted to the notebook and that "it is an indirect connection by way of the hinge panel." (Doc. # 72, at 130). The '946 patent specification statement nearly mirrors the quoted statement from the '108 patent, by stating that "[t]he lever is pivotally mounted by a hinge pin 74 to one end 42 of the elongate plate 32 in a position readily accessible for grasping and moving the lever." (Doc. # 1-2, '946 patent, col. 4, lines 14-17). Moreover, the '108 and '946 patents are similar in that they both cover the design of ring metals. Therefore, Mr. Whaley's testimony supports plaintiff's contention that the term "pivotally mounted" encompasses both a direct and indirect connection. As such, the Court finds that the claim term "pivotally mounted" in the '946 patent means "attached and capable of rotating or turning about the point of direct or indirect attachment."

The 90 [degree] Limitation in Claim 1

The final limitation of claim 1 describes a side dump trailer dumping the material from a dump body "without the necessity of pivotally moving said body greater than 90 [degree] from its non-dumping position." (filing no. 62, Ex. 1, claim 1) The parties dispute how the dump body's degree of movement should be measured. Trail King asserts that the court should construe the 90 [degree] limitation so as to include frame twist. In other words, Trail King suggests that since there is no reference to "level ground" in the 90 [degree] limitation, the dump angle should be measured from its starting position to its finished position, thereby including in the measurement any inherent feature of the trailer, such as twist or lean of the frame. Circle R counters by claiming that the measurement of the dump angle should not include any frame twist, pointing out that the claim limitation does not make use of the "frame twist" terminology. Thus, rather than applying the 90 [degree] limitation to the total amount of angular movement of the body from its non-dumping position to its fully dumped position, the 90 [degree] limitation should be applied to the pivotal movement of the body with respect to the frame.
After examining the '214 patent's claim language, the patent specification, and the patent's prosecution history, the court holds that the 90 [degree] limitation in claim 1 does not include frame twist or lean. An examination of the actual text of the 90 [degree] limitation reveals that the 90 [degree] measurement, to one skilled in the art on the application date, only takes into account the pivotal movement of the body, disregarding any additional movement resulting from frame twist. Including additional frame twist into the 90 [degree] limitation measurement would have troublesome ramifications. Inherent features of the trailer such as the strength of the steel in the trailer's frame, the type of suspension system on the trailer, and the weight of the trailer body would all have to be taken into account when designing and constructing a trailer so as to arrive at the desired amount of dump body movement. This would be a complex determination, to say the least. The simpler type of measurement by one constructing a side-dumping trailer would include only the pivotal movement of the body with respect to the frame, thereby excluding from the measurement the various inherent features of the trailer. A reasonable competitor of the patentee reading the claim language would thus be directed to measure the dumping angle using the frame as a point of reference, thereby excluding any additional movement of the dump body resulting from the inherent features of the trailer in the measurement. Because the critical measurement must be relative to the frame in both the non-dumping and fully-dumping position, an alleged infringer may not benefit from any twist or lean of the frame during the dumping process. Nothing in the prosecution history suggests a contrary construction.

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"pivotally secured"

The parties agreed that this element required construction; as with prior terms, they continue to disagree on the proper construction to give it.

In its post-hearing brief, Fitness Quest modifies its construction to bring it closer to Monti's proposed construction; the items in Fitness Quest's construction to which Monti objected at the hearing, however, still are present.

Fitness Quest includes two concepts in its construction to which Monti chiefly objects: first, that the guide member is "directly" secured to the user support; and second, that the user support pivots around a "stationary" pivot point. Transcript 126. Monti contends that these concepts are not necessary to an understanding of the term "pivotally secured," and accuses Fitness Quest of looking to the drawings and preferred embodiments to impermissibly limit its construction of "pivotally secured." Transcript 128.

Fitness Quest's arguments about the necessity of the words "directly" and "stationary" to an understanding of "pivotally secured" are unpersuasive. Monti's construction -- "secured through a pivoting joint" -- conveys the meaning of the term without adding unnecessary language (and hence inappropriate restriction) to the construction. This Court adopts Monti's construction: "secured through a pivoting joint."

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Pivoting Discharge Control Member

Herzog contends that the meaning of this term is clear on its face and should be defined simply as something that pivots and controls the discharge of material. The Court finds that this term is not clear on its face. When read in light of the specification, however, the meaning becomes clear. The specification contemplates a "pivoting discharge control member" being a "conventional" one "as taught by the [Fearon] patent." '822 Patent, at col.1, 1.67-68. The background and summary sections of the specification incorporate U.S. Patent No. 3,654,872 (filed May 11, 1970) ("Fearon") into the '822 Patent. Telemac Cellular Corp. v. Topp Telecom, Inc., 247 F.3d 1316, 1329 (Fed. Cir. 2001) ("When a document is 'incorporated by reference' into a host document, such as a patent, the referenced document becomes effectively part of the host document as if it were explicitly contained therein."). The Fearon patent contains the following definition of a pivoting discharge control member:

The discharge control member 30 comprises an arcuate top member 34 whose surface has a radius equal to the distance
from pivot point 32 to substantially the lower end of discharge opening 26. The arcuate member extends the full longitudinal width of discharge opening 26 and, in normal position, covers the discharge opening entirely, preventing discharge of any ballast material.

Fearon, at col.2, 1.19-26. In addition, the '822 Patent specification itself contains the following similar definition:

A pivoting discharge control member 21 comprises an arcuate top surface 22 with a radius approximately equal to the distance from a pivot point 23 on the end support plates 14 and 15, to the lower end of the discharge opening 11. The arcuate top surface 22 covers the entire discharge opening 11 when the discharge control member 21 is pivoted to a center position to prevent discharge of any of the ballast material 4.

'822 Patent, at col.3, 1.63 to col.4, 1.1.

When viewed in light of the specification, then it becomes clear that the phrase pivoting discharge control member actually refers to a structure which, in its normal position, covers the hopper car discharge opening to prevent discharge of material and which pivots to release material from the hopper car.

Placard

Plaintiff's Proposed Construction: A "placard" is a card used to support the display of information.
Defendants' Proposed Construction: A "placard" is a structure adapted for supporting a pressure sensitive adhesive backed label where the structure has two faces, a "release coated" face and a face with an adhesive coating.
The Court's Claim Construction: A "placard" is a structure adapted for supporting a pressure sensitive adhesive backed label.

Although MPT would prefer to leave the term placard undefined, it does not disagree with the portion of Defendants' definition that describes "a structure adapted for supporting a pressure sensitive adhesive backed label . . . ." However, MPT does take issue with the remainder of the definition. It argues that the coatings of the placard faces are defined within each claim, and therefore should not be included in a generic definition of the term placard.
The Court agrees. For example, Claim 1 of the '790 patent describes a "placard having a release coated face and an adhesive coated face" while Claim 6 of the '790 patent and Claim 1 of the '164 patent describe a "placard . . . with a release coated surface of the placard oriented outwardly" without reference to an adhesive coated face. Because the placard face coatings are further defined within each claim, the Court defines the generic placard as "a structure adapted for supporting a pressure sensitive adhesive backed label."

Claim 24 continues with limitation (b):

(b) Placing a collapsed soft tissue expander device in the pocket with the cover of the device facing the separated tissue layer;

Consistent with the earlier construction of "collapsed," the court finds this limitation to mean "placing a collapsed soft tissue expander device in the pocket with the cover of the device facing the separated tissue layer," where "collapsed," at this time and without the knowledge of the "conventional manner," means the device is empty of fluid.

Step 2 of Claim 9 requires the placing [of] said laser emitting section of said emitting means into intraluminal contact with the blood vessel at
The parties agree that "intraluminal contact" requires physical contact between the vessel wall and the laser emitting section of the optic line. The dispute is over what is meant by "placing" the laser emitting section "into intraluminal contact." Diomed argues that it means "contacting the bare tip and the inner wall of the vessel as the fiber optic line is moved within and along the vessel lumen." Diomed's Claim Construction Memorandum, at 16. Defendants contend that it means "deliberately and systematically putting the uncoated tip of the fiber optic line in physical contact with the interior surface of the artery, capillary or vein at a treatment site; this requires drainage of blood and compression of the vein."

AngioDynamics' Claim Construction Motion, Exhibit 2, at 2.

--- Footnotes ---

5 Intraluminal is a synonym for "intratubal," which means "within any tube." Stedman's Medical Dictionary, (26th ed. 1995).

--- End Footnotes ---

I find defendants' argument the more persuasive as it more closely conforms with the procedure taught in the patent, as well as with the prosecution history. As previously noted, Diomed distinguished its invention in the Patent Office proceedings from Goldman's prior art by emphasizing "contact" with the blood vessel wall.

Independent claim 1 recites a blood vessel treatment device including means "adapted for intraluminal contact with a wall of a blood vessel, for emitting laser energy to cause a decrease in the diameter of said blood vessel." Thus the device according to the claimed invention is arranged inside the vein to be treated and then the laser is directed against a wall of the vein to thereby cause fibrosis of the vein leading to a decrease in the diameter of the vein. (See specification p. 8, lines 16-28). It is respectfully submitted that a close review of the Goldman reference reveals that the device disclosed therein is not adapted to deliver energy to the vein wall in an intraluminal manner to thereby decrease the diameter of the vein.

File History, at 83-84. (Emphasis added).

To explain how this contact with the vessel wall was to be achieved in a manner different from the method taught by Goldman, Diomed directed the examiner to the discussion of compression in the specification.

Fig. 10 shows an application of a compression bandage to the leg of Fig. 9. . . . Fig. 13 shows a manual finger compression of the lesser saphenous vein at the tip of the laser energy carrier during delivery of laser energy to the leg of Fig. 9.

File History, at 29.

Figure 13 was further described in the patent as follows.

As illustrated in Fig. 13, leg 10 is then elevated and lesser saphenous vein 50 is drained of blood and compressed. The drainage of blood is important to ensure direct contact of the vessel walls with tip 41 during delivery of laser energy. . . . The above described procedure is followed, with compression of lesser saphenous vein 50 maintained around tip 41, while fiber optic line 40 is incrementally withdrawn.

File History, at 35. (Emphasis added). Thus, "placing said laser emitting section of said emitting means into intraluminal contact with the blood vessel" must, as defendants contend, be construed to mean "deliberately putting the uncoated tip of the fiber optic line in physical contact with the wall of the blood vessel, which requires the drainage of blood and compression of the vein."

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3. Claim 1: Step (b)
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Text:

placing the patient in an operation site having a second coordinate system;


ZMED's Proposed Construction:

Putting the patient in a location relative to a second coordinate system, for example, the coordinate system of the treatment room or the second imaging device.

ZMED Opening Brief at 8.

NOMOS's Proposed Construction:

NOMOS agreed at oral argument with ZMED's construction up to the point at which ZMED suggests that the patient would be placed relative to a second coordinate system, "for example, the coordinate system of the treatment room or the second imaging device." Oral Argument at 66-67.

Construction:

Step (b) means "placing the patient in a location at the operation site relative to a second coordinate system."

Commentary:

The additional detail that ZMED proposes, "for example, the coordinate system of the treatment room or the second imaging device," is unnecessary and not within the claim language, and therefore is omitted.

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10. Claim 10: Step (b)

Text:

placing the patient with respect to a second coordinate system;

'154 Patent, col. 12, ll. 67-68.

ZMED's Proposed Construction:

Placing the patient in a location relative to a second coordinate system, for example, the coordinate system of the treatment room or the second imaging device.

ZMED Opening Brief at 13.

NOMOS's Proposed Construction:

NOMOS agreed at oral argument with the ZMED construction up to the point at which ZMED describes the second coordinate system, "for example, the coordinate system of the treatment room or the second imaging device." Oral Argument at 86-87.

Construction:
Step (b) means "placing the patient in a location relative to a second coordinate system."

Commentary:

The additional detail that ZMED proposes, "for example, the coordinate system of the treatment room or the second imaging device," is unnecessary and not within the claim language, and therefore is omitted.

"Planar":

A surface that is flat.

To prove infringement, the patentee must show that every limitation in the asserted claim is met by the accused product either literally or under the doctrine of equivalents. Dolly, Inc. v. Spalding & Evenflo Cos., 16 F.3d 394, 397, 29 U.S.P.Q.2D (BNA) 1767, 1769 (Fed. Cir. 1994). We first address the literal infringement issue with respect to the limitation that the needles "extend laterally of the axis" of the branch. The district court held that the limitation requires that the needles radiate at right angles from the branch, and found noninfringement because the accused Barcana product has the needles radiating at about a 45 degrees angle to the axis of the branch.

In construing a claim limitation, we look to the claim language, the specification and the prosecution history. Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 1580, 36 U.S.P.Q.2D (BNA) 1162, 1165 (Fed. Cir. 1995), cert. denied, 134 L. Ed. 2d 666, 116 S. Ct. 1567 (1996). As the district court properly found in reference to The American Heritage Dictionary (2d ed. 1976), the term "lateral" in its usual dictionary usage means "coming from the side." The court properly noted that there is nothing in the dictionary definition that would limit the term "lateral" to "perpendicular."

The specification confirms the above interpretation. The term "extending laterally" is used several times in the specification. The most illuminating passage on the issue is found at col. 4, lines 1-5 (emphasis added):

Each transverse element itself includes a pair of twisted wires 612 and 614 that support a plurality of densely packed laterally extending filaments 616, in all respects similar to filaments 16 described above.

The above passage describes the embodiment of the patent in Fig. 7. As shown in Fig. 7, filaments 616 extend from twisted wires 612 and 614 at an angle of about 45 degrees - definitely not perpendicularly. Thus, it is clear from the above passage that the patentee used the term "laterally extending" based on its ordinary meaning: extending sideways irrespective of the angle.

The district court, in deciding the "extending laterally" issue, seems to have been most influenced by a statement made by American Permahedge during prosecution regarding a prior art patent to Goodridge. The Goodridge patent (U.S. Patent No. 3,343,357) discloses a new method of making an artificial Christmas tree branch. The branch disclosed in Goodridge is
essentially a circular brush with the needles radiating in all directions and attached to the stem at an upward angle (rather than perpendicularly as in prior art Christmas tree branches) to simulate real Christmas tree needles more closely. During prosecution, American Permahedge sought to distinguish Goodridge by the following statement (emphasis added):

In Goodridge the fibers are bunched together in discontiguous clumps, leaving defined spaces between each clump at the root, i.e. where the wires are twisted. Further, the fibers are bent permanently at an angle to the axis so that a planar array capable of forming shubbery [sic] is not possible. As a result, Goodridge could not provide a densely packed contiguous planar array simulative of shubbery [sic]. Goodridge provides a tree branch but not shubbery [sic].

The district court interpreted the above statement to mean that the patent in suit could not cover any product that had needles extending at an angle other than 90 degrees. That was error. We think that by the above statement the patentee only represented the Goodridge tree branch as having needles permanently bent at a fixed angle, radiating in all directions so that those needles cannot be flattened out to form a flat plane. Thus, as we discuss below, the above passage is pertinent on the "planar array" issue, but not on the "extending laterally" issue. We therefore conclude that the "extending laterally" limitation simply means extending from the side, with no limitations on the angle.

B

We next turn to the "planar array" issue. The dispositive question is whether the "planar array" limitation means that: (a) the branches and needles form a thin, flat plane, or (b) the overall hedge (comprised of several rows of branches) forms a plane when the branches are woven into the fence. The accused Barcana product has the needles radiating in many directions (like a circular brush) from the stem. However, when the accused products are woven into the fence, the overall finished look is more or less a uniform, planar surface. Thus, if the "planar array" limitation refers to a branch with its needles forming a flat plane, then the accused product does not infringe literally.

Claim 1, in pertinent part, reads (emphasis added):

said filament means forming a bush-like planar array that extends along the entire length of said support element, . . . so that when a plurality of such elements are thus inserted the fence assumes a hedge-like appearance.

Thus, the claim requires that the filament means (which are the needles extending from the branch) form a planar array. The claim also requires that the fence, after the insertion of the branches, assume a hedge-like appearance, not a hedge-like, planar appearance. Accordingly, we agree with the district court's claim construction that the "planar array" limitation refers to the filament means forming a flat plane before they are woven into the fence and not the overall look of the fence after the artificial greenery is woven into the fence.

The specification confirms the above interpretation. All of the embodiments shown in the specification show the needles forming a flat plane, and none of them shows needles radiating in all directions, as they do on a circular brush. See Figs. 1, 2, 6, and 7 of the '647 patent. Furthermore, the following passage clearly defines the meaning of "planar array" (emphasis added):

A plurality of mini-leaves or flat privets 524 [the needles] extend essentially laterally of a respective stem 522 as shown. Similar to element 10, element 510 has, when viewed edgewise, a flat, planar construction.

'647 patent, col. 3, ll. 50-54. Both elements 10 and 510 refer to the needles. Thus, the specification shows that the needles form a flat plane when viewed edgewise.

The file history further supports this interpretation. As quoted in the preceding "extending laterally" discussion, American Permahedge unambiguously represented to the Patent Office in response to the Goodridge prior art rejection that a Christmas tree branch configuration having needles radiating in all directions (as in the Goodridge patent) could not constitute a "planar array." The accused Barcana product, on the "planar array" issue, seems remarkably similar to the Christmas tree branch of Goodridge. The Barcana product has needles that are not flat, but rather, protrude at various angles in a three-dimensional arc. In much the same way that Goodridge's needles did not form a flat plane in the patentee's own words, the needles of the accused product do not. The "planar array" limitation is not met literally by the accused product.
The Court finds that a genuine issue of material fact precludes summary judgment in favor of FPI as to whether Pregis's Airspeed 5000 series and Airspeed SMART series machines with Pregis's Airspeed 5000 and Airspeed SMART film include every limitation of asserted Claims 1-3 and 5-14 of the Perkins '837 Patent. Among the asserted claims, Claims 1, 8, 13, and 14 are independent claims and contain identical segment "drive rollers that cause the plastic film to be gripped at or near the narrow longitudinally extending channel and drawn in a continuous and uninterrupted manner through inflation, sealing and slitting mechanisms in a planar path." Perkins '837 Patent col.14 ll.4-8, 65-66, col.15 ll.1-3, 44-48, col.16 ll.29-33 (emphasis added). After reviewing the claims, specification, and the prosecution history, the Court construes the term "planar" as "flat or level." However, "planar path" does not mean "precisely planar path" as Pregis suggests because the term "precisely planar path" never appeared in any of the communications between the agency and the applicants or in the patent itself.

I. Claim Construction

"It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) (citing Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), aff'd 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996)). When examining the intrinsic evidence, the court should first "look to the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention." Vitronics, 90 F.3d at 1582 (citing Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed. Cir. 1995)). In doing so, the court must bear in mind the "heavy presumption in favor of the ordinary meaning of claim language." Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1366 (Fed. Cir. 2000) (quoting Johnson Worldwide Assocs., Inc. v. Zebo Corp., 175 F.3d 985, 989 (Fed. Cir. 1999)). After considering the ordinary meaning of the claim language, the court should "review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning," Vitronics, 90 F.3d at 1582, but "any special definition given to a word must be clearly defined in the specification," Kraft Foods, 203 F.3d at 1366 (quoting Markman, 52 F.3d at 980).

Claim construction often entails a Markman hearing, the purpose of which is to provide the court with guidance on the interpretation of complex technical information. But where, as here, neither party has requested such a hearing, and the subject matter of the patent is not highly technical, the patent claims may be construed without benefit of a Markman hearing.

The key claim term is "planar plate member." As used in the '200 patent, a planar plate member is a planar member that is "a perfectly flat sheet of a material of uniform thickness throughout." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE 1734. All the drawings in the '200 patent depict a flat plate member of uniform thickness that is unpierced, with the exception of holes for attachment hardware, and there is nothing in the specification that redefines the term "plate" to include anything other than a sheet of uniform thickness. See Kraft Foods, 203 F.3d at 1366 (citation omitted).

As always, the claim language governs the meaning of a claim. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1992). In construing a claim, this court construes the meaning of claim language according to its usage and context. ResQNet.com, Inc. v. Lansa, Inc., 346 F.3d 1374, 1378 (Fed. Cir. 2003).

The claim language, drawings, and written description of the '200 patent offer insight into the proper construction of "planar
plate member." Every drawing containing planar plate member 20 in the '200 patent shows the planar plate member 20 as a flat structure with at least one edge aligned to a bedframe. The written description reinforces this point. It states:

Planar plate 20 is typically shaped such that at least one edge 21 is aligned with the end 13 and side rails 14 of bedframe 12. Preferably, planar plate 20 is triangular- or rectangular-shaped to provide a flush fit with end 13 and side rails 14, and corner 15 of the bedframe 12. Most preferably, planar plate 20 is trapezoid shaped, to provide a notch which allows for the bedframe's legs 16 (or wheels) to project downward.

'200 patent, col. 3, ll. 15-23. Further reinforcing this point is the relevant dictionary definitions of both "planar" and "plate." "Planar" is defined as "of or relating to a plane: lying in one plane." Webster's Third New International Dictionary of the English Language 1730 (1993). "Plate" is defined as "a perfectly flat sheet of material of uniform thickness throughout." Id. at 1734. Based upon the foregoing, a planar plate member is a flat sheet of material of uniform thickness throughout.

In the context of Mr. Leoutsakos' Motion for Partial Summary Judgment and CHP's Motion for Summary Judgment, the trial court construed "planar plate member" as a "planar member that is a perfectly flat sheet of a material of uniform thickness throughout." Because the written description of the '200 patent, the drawings of the '200 patent, and the dictionary definitions of "planar" and "plate" support the trial court's construction of "planar plate member," this court affirms its claim construction.

4. The Proper Construction of the Term of a "Planar Slot" as Used in the Claims of Both the '203 and '885 Patent.

The Parties' Proposed Claim Construction of a Planar Slot.

Plaintiff submits the following for the proper construction of the term "planar slot": 1) a slot in the guide member; or 2) an outer edge of the guide member; or 3) a surface of the guide member that can be used to position the saw used for resecting the knee.

Defendants submit the following for the proper construction of the term "planar slot": a narrow opening or groove in the guide member, but simply not an outer edge or surface of the guide member. Essentially, the parties dispute whether the planar slot's location must be "in" the guide member or "either in or on" the guide member.

Plaintiff asserts a function-way-results analysis to support plaintiff's construction of the term "planar slot." A doctrine of equivalents analysis uses the function-way-results test. The scope of structures included by the doctrine of equivalents is a question of fact for the trier of fact to determine, and thus is inappropriate at this stage of the litigation in which the court construes the literal scope of the claims as a matter of law.

Defendants submit a dictionary definition to support their interpretation of the ordinary meaning of the term "slot". "A narrow opening through which something is to be put. A groove or channel or slit into which something fits." Oxford American Dictionary, 788 (1980). Plaintiff asserts that defining "planar slot" by using the term an "opening" would contradict the patent's specification because an opening describes a structure already found in the patent's specification. The court agrees, and finds that the term "slot" is a commonly used word possessing its own ordinary meaning.

The Language of the Patents' Claims Concerning a Planar Slot.

The term "planar slot" appears in the claims 1 through 5 of the '885 patent and claims 1, 2, 3, 6, and 8 of the '203 patent. These claims do not explicitly define whether the slot is located either "in" the guide member or "in or on" the guide member. However, claim 1 of the '885 patent recites "A guide member having a first planar slot therein." The term "therein" modifying the term "planar slot" implies that the slot is located "in" rather than "either in or on" the guide member.

The Specification's Use of a Planar Slot.

The specification discloses that "A vertical guide slot is centrally located in the guide member relative to the sides." ( '203
patent, Col. 3, Lines 59-60.) That statement from the specification directly conflicts with the plaintiff's concept of a side of the guide member being a planar slot. Further, the specification discloses that, "An oscillating saw is inserted through the center slot 52 of the guide member, and the proximal tibia is then resected." ('203, Col. 5 Lines 18-20.) Similarly, "An oscillating saw is inserted into center slot 52 of the guide member, and the distal femur is then resected." ('203, Col. 6 Lines 46-48.) The words "inserted" suggest a slot "in" the guide member rather than a surface or edge of the guide member. When the specification refers to the drawings for a visual indication of the planar slot's location, the drawings illustrate a slot "in" the guide member rather than "in or on" the guide member. Nowhere in the specification do the patents indicate that the guide member's surface or edge may be use as a planar slot to guide the cutting of the saw. The court finds that the specification strongly indicates that the planar slot is located "in" the guide member.

The Prosecution History Concerning a Planar Slot.

The prosecution history sheds some light on the term "planar slot." Plaintiff told the examiner in his Amendment that "a slot in the guide member is spaced from the outer surface of the second portion of the guide rod for a distance which is equal to the determined flexion gap. (Emphasis added.)

Conclusion of the Meaning of a Planar Slot.

The court finds that the specification does not use the term, "planar slot," in a special or unique way. The court finds that plaintiff's own understanding of the location of the slot in his effort to obtain the patent was that the slot was located in the guide member. The court does not find support in the claims or the specification for plaintiff's assertion that the term "planar slot" may refer to an edge or surface of the guide member. Thus, the court construes the term "planar slot" to mean "a slot located within the guide member that can be used to position a saw used for resecting the bones that form the knee."

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Top Surface Planarity Deviation

The Court adopts ST's proposed construction and construes the term "top surface planarity deviation" as "the difference between the average height of the entire top surface and the point most removed from the average." ST's proposed definition finds support from the McGraw-Hill Dictionary of Scientific and Technical Terms, which defines "deviation" as "the difference between any given number in a set and the mean average of those numbers." Additionally, the Court rejects Motorola's proposed construction, "statistical deviation of the average height of the top surface" because the term "statistical deviation" would itself require construction for the jury.

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I. "The Plane of the Ridge Regions"

Claim 7 of the '418 patent describes "[t]he sheet of claim 1 wherein the plane of the ridge regions is substantially parallel to the plane of the trough regions." Plaintiffs contend that "the plane of the ridge regions" means "the plane defined by the areas of the ridges." Gore claims that "the plane of the ridge regions" is fatally indefinite because it is not amenable to description.

In constructing claim 11 of the '418 patent, the parties have agreed that "planar" means "flat." The parties have also agreed that "ridges" are "raised narrow regions." Based upon their agreed usage of those terms, the "plane of the ridge region" is the flat area defined by the ridges. Therefore, the term "the plane of the ridge region" is amenable to construction. Accordingly, the Court determines that "the plane of the ridge regions" means "the plane defined by the areas of the ridges."

J. "The Plane of the Trough Regions"

As previously stated, claim 7 of the '418 patent describes "[t]he sheet of claim 1 wherein the plane of the ridge regions is
substantially parallel to the plane of the trough regions." Plaintiffs claim that "the plane of the trough regions" means "the plane defined by the areas of the troughs," while Gore claims that "the plane of the trough regions" is fatally indefinite because it is not amenable to description.

As described above in Part I, the parties have agreed that "planar" means "flat." In construing claim 1, the Court has determined that "troughs" are "surface structures formed by two successive ridges and an interposed channel." See supra, Part G. Therefore, the "plane of the trough regions" is the flat area defined by the troughs. That construction is consistent with the prosecution history of the '418 patent, as the inventor originally described the "surface of the valley regions" located within the channels. Joint App., Ex. B, at FH 203. By replacing the term "surface" with the term "plane," the inventor described the flat area corresponding with the wells of the troughs. Because the only plane that runs parallel to the plane of the ridge regions corresponds with the plane of the wells located within the troughs, the term "plane of the trough regions" must refer to the plane created by the wells within the troughs. Therefore, the term "the plane of the ridge regions" is amenable to construction. Accordingly, the Court determines that "the plane of the trough regions" means "the plane defined by the areas of the troughs."

A. Plank

The '552 patent discloses a "Plank for a Bench or the Like." (R. 59, Duke Decl., Ex. A. '552 Patent.) GSC claims that six of its tables (the exception is the Enduro II five foot round table) do not infringe this patent because a table top is different from a plank. GSC's argument is supported by the ordinary meaning of the term "plank:" "a heavy thick board." The ordinary meaning of the term "board" is "a piece of sawed lumber of little thickness and a length greatly exceeding its width." Lifetime asserts that a plank can be a table top because the specification states that "the plank can be used for both the bench seats and the table top." (Id. at 5:26:27.) The associated figure, however, shows a table top that consists of three planks. (Id., Fig. 1.) The specification, therefore, indicates that a table top can consist of planks, not that a plank can be a table top. Table tops, however, can come in a variety of shapes and sizes. Side tables and buffet tables are almost always in the shape of a plank. Therefore, we find that the term "plank" includes table tops whose length greatly exceeds their width.

12. "Plastic Core Sheets"

The phrase "plastic core sheets" is construed to mean, "Sheets of plastic between which the electronic element is positioned."

The phrase appears in claim 1 of the '207 patent, for example:

A process for incorporating at least one electronic element in the manufacture of a plastic card, comprising the steps of:
(a) providing first and second plastic core sheets; (b) positioning said at least one electronic element in the absence of a non-electronic carrier directly between said first and second plastic core sheets to form a core, said plastic core sheets defining a pair of inner and outer surfaces of said core; (c) positioning said core in a laminator apparatus, and subjecting said core to a heat and pressure cycle.

'207 patent, col. 6:18-29. See also '099 patent, col. 5:13-17.

Defendant does not address this term.

Plaintiff asks me to construe the phrase, but urges that the meaning of the phrase is clear from the wording of the subject claims. (Pl. Br. at 17.) I agree.
This suit involves United States Patent No. 4,438,584 (the '584 patent), issued on March 27, 1984, to Stanley Z. Baker and Benjamin H. Baker. The patent, assigned to Eaton, discloses a "Trap for Rats, Mice, and Other Vermin." Claim 1, the patent's only independent claim, reads, with emphasis added:

A commercial trap product for catching mice or rats comprised of a generally flat support formed of a non-porous, thin sheet material, said support having at least one positioning surface, at least one indented portion having a given depth below said positioning surface, and a relatively thick layer of pressure sensitive adhesive material contained within said indented portion having a thickness of at least 1/16 inch, a plastic flow temperature above 120 degrees F. and an upper surface; said indented portion having a greater depth than the thickness of said layer of adhesive and said positioning surface being spaced above said adhesive layer upper surface.

Claim 1 thus recites a dishlike container holding a pressure sensitive adhesive material in which vermin become stuck, and thereby trapped. The commercial embodiments of the invention feature two plastic containers or traps, typically packaged together, one on top of the other, face-to-face, capable of being hung in a vertical position at the point of sale.

After a bench trial, the district court issued findings of fact and conclusions of law in which it interpreted the limitation, "a plastic flow temperature above 120 degrees F." Based on its interpretation, Atlantic's accused product was found to infringe claim 1. Additionally, the district court held claim 1 not invalid under § 103 for obviousness, or under 35 U.S.C. § 102(b) (1994) for having been on sale for more than one year before the filing date of the '584 patent. For the reasons set forth in the opinion of the district court, we hold that, on the facts presented in this case, claim 1 is not invalid under § 102(b), and we thus refer no further to that issue.

Whether claim 1 is infringed by Atlantic's accused product, and whether Eaton's commercially successful product is an embodiment of the invention claimed (the latter being germane in this case to the validity of the patent under § 103), depend on what is meant by "a plastic flow temperature above 120 degrees F." As we will explain below, the correct meaning of that term is established by reading the prosecution history of the '584 patent. That is a legal exercise which we are obligated to conduct independently. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2d (BNA) 1321, 1329 (Fed. Cir. 1995), aff'd, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996).

The district court construed the limitation "a plastic flow temperature above 120 degrees F," with reference to the claimed adhesive, to mean:

That the adhesive has a flow characteristic which enables the trap product to be shipped and stored at the highest ambient temperature expected to be encountered in connection with such shipping and storage, namely 120 degrees F, without the adhesive flowing from the support.

A pressure sensitive adhesive material in a trap for catching mice or rats, in accordance with the invention in Eaton's '584 patent, has a plastic flow temperature above 120 degrees F if the adhesive passes the two tests established by Mr. Kenneth A. Nelson, . . ., namely (1) disposing a support, such as a tray, and the adhesive therein in an inverted horizontal orientation on an underlying substrate and exposing the support and adhesive to a temperature of 120 degrees F for sixteen (16) hours, and (2) disposing a support, such as a tray, and the adhesive therein in a vertical orientation on an underlying substrate and exposing the support and adhesive to a temperature of 77 degrees F for sixty-three (63) hours. An adhesive passes these tests and has a plastic flow temperature above 120 degrees F if the adhesive does not flow from the support onto the underlying substrate during the test. These two tests are set forth in the file history of Eaton's '584 patent.

In addition, the district court cited another test to determine if an adhesive has a plastic flow temperature above 120 degrees F. That test, devised by Findley Adhesives, Inc., called for heating the adhesive to 250 degrees F for one-half hour, allowing the adhesive to set at room temperature for 24 hours, then disposing the adhesive in an inverted horizontal orientation at a
temperature of 120 degrees F for 16 hours. With regard to those tests, the district court held that:

The two tests devised by Mr. Nelson and the test procedure established by Findley Adhesives, Inc. are appropriate for determining that an adhesive has a plastic flow temperature of 120 degrees F in accordance with the invention claimed in the '584 patent.

Based on undisputed testimony offered by Eaton, Atlantic's mouse traps—when subjected to these tests—were found to infringe claim 1. As we will explain below, however, these tests cannot, as a matter of law, be the measurement for determining if an adhesive meets the plastic flow temperature limitation of claim 1, because the tests do not measure plastic flow at 120 degrees F in a vertical orientation, which is required when the claim is properly construed.

After a thorough analysis of the prior art, the district court found the "primary indicia of patentability . . . lacking." Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 306, 227 U.S.P.Q. (BNA) 657, 675 (Fed. Cir. 1985), for claim 1, and that the claim would have been obvious when viewed in the light of the prior art and the level of skill in the art. Nevertheless, the district court held the patent nonobvious because of the strong commercial success of Eaton's commercial product. The finding of commercial success was based on Eaton's $17 million of sales from 1979 through 1984, and its $4 million of annual sales from 1985 through 1989.

III

The '584 patent emerged from claims originally set forth in Patent Application No. 338,621, which is a continuation of Ser. No. 53,381, filed on June 29, 1979. The examiner rejected the claims, inter alia, for failure to disclose the best mode of making the invention. The Nelson tests, used by the district court as the measurement of plastic flow temperature, assessed prior art adhesives and an adhesive which Nelson's employer, Findley Adhesives, had been requested by Eaton to prepare that would meet the limitations of claim 1. Even though Eaton had expressly directed Nelson to test the adhesives for plastic flow at 120 degrees F in an orientation other than horizontal, Nelson's test results did not refer to any tests or test results at 120 degrees F in a vertical orientation. Instead, the only 120 degrees F test performed by Nelson was on adhesive in a horizontal orientation. Nelson's tests for plastic flow in a vertical position at 77 degrees F were unrelated to the 120 degrees F plastic flow limitation in the '621 application, and were not requested by the performance specifications supplied to Nelson by Eaton. The results of Nelson's tests, as well as his test protocols, were introduced by the applicants to overcome the best mode rejection and to show that prior art adhesives failed to meet the Nelson tests.

The examiner, however, was troubled by the information disclosed in the Nelson tests. In particular, the examiner noted that one of the prior art adhesive traps tested by Nelson anticipated the claims under 35 U.S.C. § 102 (1994). Accordingly, the examiner requested additional tests by Nelson from the applicants to overcome the rejection. Eaton's attorney communicated the examiner's concerns to Nelson by letter dated November 6, 1981, which was introduced at trial on the public record as Defendant's nonprivileged Exhibit 197. In that letter, Nelson was instructed by Eaton's counsel to perform additional tests on the prior art adhesive. In particular, the attorney noted the need for a 120 degrees F test with the adhesive vertically oriented. The attorney recommended a vertical 120 degrees F test "for a period of a day or several days." Whether Nelson performed the particular vertical tests requested by Eaton's attorney is unknown, and the prosecution history of the '584 patent contains no reference to the results of such vertical tests. The examiner rejected the claims for failure to disclose best mode, nonenablability of the adhesive, and obviousness over the prior art.

On appeal to the Board of Appeals of the U.S. Patent and Trademark Office (Board), the claims were held not prima facie obvious over the prior art, and in any event not obvious because of the commercial success of Eaton's products. The applicants, in their brief to the Board, stated that the adhesive claimed must not flow when exposed to 120 degrees F in vertical orientation, even for unlimited periods of time. The requirement that the claimed adhesive not flow when exposed to 120 degrees F in a vertical orientation had been noted several times during prosecution up to the filing of the applicant's brief to the Board, and the same point was emphasized throughout subsequent prosecution proceedings. For example, the applicants stated in their brief to the Board:

Also importantly, the adhesive must have temperature-flow characteristics such that even if the surface of the adhesive is vertical, the adhesive will not flow or sag at ordinarily encountered ambient storage temperatures (less than 120 degrees F). That is to say, the plastic flow temperature of the adhesive must be above 120 degrees F. [Emphasis added.]
On another occasion, in its statement to the Patent Office dated November 19, 1985, the applicant distinguished prior art references on the basis that:

Nowhere in any of these references is there any mention whatsoever of a body of adhesive having a particular plastic flow temperature which enables a vermin trap to be shipped and stored in positions other than horizontal at the highest ambient temperature expected to be encountered in connection with such shipment and storage without the body of adhesive running from the support therefor. [Emphasis added.]

In sum, the prosecution history abounds with unambiguous declarations by the applicants that their claimed traps would reasonably be exposed to 120 degrees F when vertically oriented. That history is consistent with the evidence introduced at trial showing Eaton's repeated efforts to test adhesives at 120 degrees F in vertical orientations, and refutes any notion that Eaton's only vertical flow concerns were satisfied by Nelson's 77 degrees F vertical test. However, despite the applicants' repeated emphasis on the requirement that the adhesive not flow when exposed to 120 degrees F in a vertical orientation, the file history contained no reference to any vertical test at 120 degrees F when the '584 patent issued on March 27, 1984.

In July of 1985, a request for reexamination was filed by Hampton Chemical, Inc., based on several prior art references not previously considered by the examiner or the Board. For purposes of our review, two items of the prior art are of concern: two U.K. patents, disclosing an adhesive in a mousetrap, and a domestic adhesive product, Formula 31, which were said to render obvious the mousetrap claimed in the '584 patent.

IV

When the patent was subjected to reexamination, the applicants, Hampton Chemical, and the examiner knew that the invention as claimed specified that the adhesive not flow when exposed to 120 degrees F in any orientation, including vertical. However, before the reexamination proceedings, no reference had been made in the file history to any test of plastic flow at 120 degrees F when the material is vertically oriented. All previous references to plastic flow in a vertical orientation were with respect to relatively long-term exposure at ambient room temperatures. In particular, the earlier references to vertical plastic flow cited the Nelson tests, which exposed the adhesive to 77 degrees F for 63 hours. The concern over possible flow at room temperature after exposure for several days stemmed from the inventors' understanding that at commercial points of sale, the packaged traps might remain suspended vertically for such times. The 77 degrees F test, while of interest to the inventors for shelf life marketability of their product, is irrelevant to the determination of whether an adhesive will flow when exposed to 120 degrees F for any period of time. In short, claim 1 of the '584 patent cannot be enforced against a mousetrap product with an adhesive which passes Nelson's 77 degrees F vertical test, but which fails the 120 degrees F test. Nor can a product which passes the 77 degrees F test, but which fails the 120 degrees F limitation, be used to demonstrate commercial success of the invention as part of a defense to legal challenge under § 103.

Before reexamination, a competitor of Eaton wishing to avoid infringement of claim 1 would not have known how to test his product to determine if it satisfied the 120 degrees F limitation when the adhesive is vertically oriented. Indeed, such a competitor, Southern Mill Creek Productions Company, Inc., had already appeared, in protest to the application before the patent issued, complaining that “no where in the confines of this Application have Applicants defined how one might measure the flow temperature of the pressure-sensitive adhesive material.” The applicants, however, took no steps to disclose a test protocol for measuring plastic flow at 120 degrees F in a vertical orientation. The record in this case reflects that Eaton learned in 1983, while Southern Mill's complaint was pending, and before issuance of the patent, that its own product failed the 120 degrees F flow test when exposed vertically for 16 hours. We do not know, however, whether that fact affected Eaton's failure to disclose a 120 degrees F vertical test protocol to the examiner.

V

During reexamination, Hampton Chemical sought to prove that Eaton's claimed mousetrap employing a special adhesive was rendered obvious in view of the two U.K. patents and Formula 31. To make its case, Hampton employed one of ordinary skill in the art, Donatas Satas, to test the adhesive disclosed in the U.K. patents. Satas selected the test protocol for the 120 degrees F limitation, and determined that the adhesive should be tested for flow at 120 degrees F for 24 hours in a vertical orientation, and for 12 hours at 120 degrees F in an inverted horizontal orientation. Satas concluded that the prior art adhesives so tested met the limitations of claim 1.
Eaton, also in the reexamination, sought to prove that Formula 31 did not meet the limitations of claim 1. Toward that end, Eaton hired John M. Questel, also one of ordinary skill in the art, to test Formula 31. Questel's tests were performed under his supervision by his employee, Lore Hise. The test protocol selected by Questel exposed the adhesive to 120 degrees F for 24 hours in both horizontal and vertical orientations. Questel concluded that Formula 31 did not meet the limitations of the claim, and that he lacked sufficient information to comment—one way or another—on the conclusion reached by Donatas Satas on the adhesive disclosed in the U.K. patents.

On March 10, 1986, the examiner rejected the claims on reexamination as obvious under § 103 over the references brought to the examiner's attention by Hampton Chemical. Eaton responded to that rejection, arguing that Questel's tests had shown Formula 31 not to be invalidating prior art, and that Satas's test results were inconclusive. In its response, Eaton relied on the Questel tests, and notably, did not question the propriety of the test protocols employed by Satas. From this episode in the file history of the '584 patent, a reasonable competitor of Eaton would surmise that Eaton would measure satisfaction of "a plastic flow temperature above 120 degrees F" by testing accused adhesives at 120 degrees F for 24 hours in both vertical and horizontal orientations. In short, after seven years of patent application prosecution, the file history clearly supplied the missing vertical 120 degrees F test parameter and a corresponding horizontal test.

VI

The final chapter of the file history of the '584 patent is the second appeal to the Board following another rejection of the claims by the examiner as obvious over the prior art, including the U.K. patents and Formula 31. Both Eaton and the examiner again relied on the Questel tests, with Eaton arguing the tests showed that the prior art failed to meet the 120 degrees F claim limitation, and the examiner arguing that the tests showed the prior art met the limitation. The Board, during the course of its detailed review of the prior art, relied on the 24-hour parameter in the Questel tests in concluding that the adhesive in Formula 31 met the 120 degrees F limitation. In light of the prior art, the Board concluded that the claims are prima facie obvious, but that the claims are nevertheless nonobvious under § 103 because of the commercial success of Eaton's product, as demonstrated to the Board by Eaton's submission of sales data and consumer testimonials. During this final chapter of the prosecution history, neither Eaton, the examiner, nor the Board referred to the then-ancient Nelson tests as the protocol for ascertaining the meaning of the 120 degrees F claim limitation. Instead, there was unanimous recognition that the Questel test protocols were understood by one of ordinary skill in the art to define the 120 degrees F claim limitation.

VII

We now turn to the events at trial in the district court. Both Eaton and Atlantic offered testimony through expert witnesses about the meaning of the 120 degrees F claim limitation. "Plastic flow temperature above 120 degrees F" is a term with no previous meaning to those of ordinary skill in the art. Its meaning, then, must be found somewhere in the patent. See 35 U.S.C. § 112, P 2 (1994) (inventor must particularly point out and distinctly claim the subject matter of his invention); In re Paulsen, 30 F.3d 1475, 1480, 31 U.S.P.Q.2D (BNA) 1671, 1674 (Fed. Cir. 1994) (inventor as lexicographer must define his terms in the patent disclosure). Both expert witnesses understood that the adhesive in claim 1 had to withstand plastic flow at 120 degrees F when subjected to horizontal and vertical tests. Both witnesses also understood that the claim prohibits plastic flow at 120 degrees F after the adhesive has been exposed to the specified degree of heat for such reasonable periods of time as the commercial product might experience during shipping and storage.

The experts, however, disagreed over the length of time that the patented product might remain exposed to 120 degrees F during shipping and storage. Eaton's expert, Richard Muny, testified regarding adhesive tests that he had been asked to run on Eaton's products and the accused products of Atlantic. Muny testified that he took no part in selecting the test protocols; instead, he simply ran his tests using protocols given to him by Findley Adhesives at the direction of Eaton. The tests used by Muny were those devised by Nelson (horizontal at 120 degrees F for 16 hours and vertical at 77 degrees F for 63 hours), plus a vertical test at 120 degrees F for 5 hours. Muny did not explain why he was asked to conduct the 120 degrees F vertical test. Muny also testified that it might go "too far" to describe these Findley tests as standard quality control procedure. Muny, however, testified that in his opinion the tests he had been asked to run reflected the time periods during which the products might be expected to be exposed to 120 degrees F when in shipment or storage.

Dr. Harold Zeliger testified that he had been retained by Atlantic to devise and carry out tests to demonstrate whether the products of Eaton and Atlantic met the limitations of claim 1. Zeliger read claim 1 to require the adhesive to resist plastic
flow when exposed to 120 degrees F in a vertical orientation. Zeliger did not state whether he tested any product for plastic flow when in a horizontal orientation. His tests exposed six commercial products of both Eaton and Atlantic to 120 degrees F, vertically oriented in their packages of two trays facing one another. Zeliger periodically examined the products being tested to determine if they had experienced plastic flow. Zeliger concluded that an adhesive "failed," when the adhesive in the two trays flowed into each other. According to Zeliger's tests, two of Eaton's products resisted plastic flow for 44 hours, but the other four Eaton products "failed," or flowed, one after 11 hours and the other three after 20 hours. Of Atlantic's accused products, one failed after 24 hours, three failed after 11 hours, and two failed after 20 hours.

Zeliger testified that, in his view, all of the products of Eaton and Atlantic failed during times he considered reasonable times when the adheres would be exposed to 120 degrees F during shipping and storage. Zeliger expressly disagreed with Muny's conclusion that five hours of exposure at 120 degrees F was the reasonable maximum exposure time. Zeliger testified that a five-hour time limit was not indicative of real world conditions. On cross-examination, Zeliger admitted that in real world conditions, one would not find exact temperatures of 120 degrees F maintained evenly over periods of time. Zeliger thus cast some doubt on his own tests as effective measurements of actual shipping and storage conditions.

After hearing all the testimony, the district court rejected Zeliger's view that infringement of claim 1 should be measured by the length of time required for the adhesive in the trap to flow when exposed to 120 degrees F in a vertical position. The district court also rejected the portion of Muny's tests that had subjected Atlantic's traps to 120 degrees F in a vertical orientation for five hours. Instead, the district court held that Nelson's tests, as conducted by Muny, proved that Atlantic's product infringed claim 1. For the reasons explained above, the district court's reliance on the Nelson tests is legal error, since those tests fail to subject the claimed adhesive to 120 degrees F when vertically oriented.

If Muny is correct that his five-hour vertical test and a 16-hour horizontal test satisfy claim 1, Atlantic's accused product would infringe claim 1 because Atlantic apparently concedes the 16-hour, 120 degrees F horizontal measurement and Zeliger proves that at least some of Atlantic's product survives for five hours when tested vertically. If, however, Zeliger is correct that the reasonable times for exposure at 120 degrees F can vary, and that his failure times are all within a zone of reasonable exposure times, then none of Atlantic's product infringes claim 1. Eaton's own product also would not meet the limitations of claim 1, and Eaton would thus be unable to claim commercial success of that product to establish that claim 1 is not obvious under § 103.

We may not rely on either Muny or Zeliger, because, as we have often stated, trial testimony regarding the meaning of a claim cannot vary the meaning of a claim that is established either by the claim itself or by the claim as correctly understood by reference to the specification and the file history. See Senmed, Inc. v. Richard-Allan Medical Indus., Inc., 888 F.2d 815, 819 n.8, 12 U.S.P.Q.2D (BNA) 1508, 1512 n.8 (Fed. Cir. 1989); see also North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1577, 28 U.S.P.Q.2D (BNA) 1333, 1337 (Fed. Cir. 1993) (patentee cannot take one position before the Patent Office and a different position before the court); Jonsson v. Stanley Works, 903 F.2d 812, 820-21, 14 U.S.P.Q.2D (BNA) 1863, 1871 (Fed. Cir. 1990) (same).

For the reasons set forth above, we have concluded that the district court erred, as a matter of law, when it construed the term "a plastic flow temperature above 120 degrees F" to exclude any amount of plastic flow when the adhesive is exposed to 120 degrees F in a vertical orientation. The 120 degrees F vertical tests proposed by Muny and Zeliger are also legally insufficient; Muny's because it sets the time for horizontal and vertical testing incorrectly, and Zeliger's because it sets no times for testing, but simply tests until failure, and then asks if the time to failure is within reasonable real world exposure times. While Zeliger's test may have some common sense appeal, it provides no certainty to Eaton's competitors, who are entitled to know the point in time at which their products will infringe claim 1. Nor does Zeliger's test give any measure of certainty to Eaton, which is also entitled to know in advance how to test competing product for infringement of claim 1.

In this case, the dispositive claim limitation is a term unknown to those of ordinary skill in the art at the time the patent application was filed. It thus fell to the applicants, as a duty, to provide a precise definition for the 120 degrees F limitation. Early in the prosecution history of the '584 patent, a competitor noted the absence of any definition of the key term. The applicants' proffer of the Nelson tests did not respond properly to the competitor's plea, because the Nelson tests failed to supply a test parameter for flow at 120 degrees F when the adhesive is vertically oriented. The record in this case amply demonstrates that the applicants intended their adhesive to withstand plastic flow at 120 degrees F when vertically oriented. Their disclosures to the examiner repeatedly stated that intention, as did their testing of products, demonstrated by evidence submitted at trial, for flow at 120 degrees F when vertically oriented. The applicants were obligated to give a meaning to the
key limitation during the prosecution history, and they did so with the Questel tests.

VIII

Having concluded that "a plastic flow temperature above 120 degrees F" means that the adhesive must resist flow when exposed for 24 hours to 120 degrees F in both horizontal and vertical orientations, we now review the holdings of the district court that Atlantic's accused products infringe claim 1, and that the claims of the '584 patent are not invalid as obvious under § 103.

To reach its idiosyncratic claim interpretation, this court relies on a few isolated excerpts from over 1400 pages of prosecution history. In particular, this court abstracts two paragraphs from an eleven-page declaration of John M. Questel, filed in the second reexamination, to convert a stringent vertical flow test into a claim requirement. In fact, neither Eaton, nor the Board, nor even Mr. Questel himself, relied on his 120 degrees F vertical flow test to distinguish prior art. The administrative record, when considered as a whole, does not support this court's adoption of this test as the measure of Eaton's claims.

This court need not have strained to interpret the claims. The patent record -- the claims, specification, and prosecution history -- provides ample support for the claim interpretation adopted by the United States District Court for the Eastern District of New York. In fact, the examiner, the Board, and at least two federal judges have already accepted the same interpretation -- a reading compelled by the prosecution history as a whole.

I.

The phrase "plastic flow temperature" has no fixed meaning in the adhesive art. However, an inventor may freely define unfamiliar claim terms in the specification or in the prosecution history. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2d (BNA) 1573, 1576 (Fed. Cir. 1996); Lear Siegler, Inc. v. Aeroquip Corp., 733 F.2d 881, 889-90, 221 U.S.P.Q. (BNA) 1025, 1031 (Fed. Cir. 1984). Eaton took that course to define its claim term.

Eaton's Patent No. 4,438,584 (the '584 patent) distinguished its ready-to-use glue trap for mice and rats from the prior art with an adhesive having a "plastic flow temperature above 120 degrees F." The inventors, Stanley and Benjamin Baker, recognized that the adhesives used in prior art traps would melt and flow at temperatures normally encountered during shipping and storage. The Bakers learned from the United States Department of Transportation that the maximum ambient temperature encountered during shipping was 120 degrees F. To solve the problem with the prior art, the Bakers set out to stabilize their adhesive at temperatures up to 120 degrees F. Thus, the requirements of secure shipping became the benchmark for "plastic flow temperature."

Throughout the lengthy administrative proceedings, Eaton and the PTO clarified this meaning of plastic flow temperature. For example, in its Amendment filed July 24, 1981, Eaton explained:

Because the plastic flow temperature is above 120 degrees F, the body of the adhesive will not flow plastically at normally encountered ambient temperatures while being shipped or stored. The traps can be disposed horizontally, upside down or vertically at normally encountered temperatures with no fear of touching of adjacent surfaces or the adhesive of one trap to the other.

Thus Eaton explained that its claimed adhesive would not flow upside-down or "vertically at normally encountered temperatures."

To underscore this message, Eaton submitted the declaration of Kenneth A. Nelson, the chemist who developed the claimed adhesive. Mr. Nelson's declaration disclosed a two-prong test for the claim requirement. That test requires, first, placing a 1/16 inch layer of adhesive upside-down in an oven preheated to 120 degrees F for sixteen hours. Second, the test requires that the adhesive be hung vertically in an oven at 77 degrees F for sixty-three hours. An adhesive meets Eaton's requirement if the glue does not flow from the tray during either of these tests.
The Board understood and accepted this specific definition of plastic flow temperature. In its November 30, 1983, opinion, the Board recognized "plastic flow temperature" as the "characteristic of the adhesive . . . required to prevent the adhesive from flowing or sagging at temperatures at which the trap is shipped, stored, or used." The Board noted that prior art publications did not anticipate Eaton's claims because they lacked adhesives with these plastic flow properties:

Prior to the instant invention, glue traps were prepared by the user rather than the manufacturer in that ready made traps could not be readily shipped and stored. Workers in this art were working to find various means to solve these problems. Appellants recognized this problem and conceived of the idea embodied in the instant claims of utilizing an adhesive having special plastic flow properties.

Thus, the full administrative record gives an explicit and reasonable meaning of "plastic flow temperature" that focuses on shipping and storage of the commercial trap product without adhesive spillage. Mr. Nelson's two-prong test makes Eaton's definition unmistakable to one of skill in the art. For this reason, the Eastern District of New York adopted the Nelson tests as the definition of "plastic flow temperature." Indeed, another district court interpreted "plastic flow temperature" in the same '584 patent precisely in accordance with Mr. Nelson's declaration. See J.T. Eaton & Co. v. Bell Lab., Inc., No. 95-C-0441-S (W.D. Wis. March 29, 1996) (oral jury instructions). Thus, the examiner, the Board (twice), and two district courts read the plastic flow limitation in accordance with the Nelson tests.

Trial testimony from one skilled in the art confirmed the logic of this uniform claim interpretation. According to this testimony, Mr. Nelson's sixteen hour inverted horizontal test at 120 degrees F properly tested the product under typical shipping conditions. After all, elevated temperatures would not last longer than normal daylight hours. Testing the adhesives beyond sixteen hours made little sense in the context of shipping these products in trucks and boxcars. Likewise, according to the same testimony, the lengthy vertical test at 77 degrees F properly reflected the prolonged periods of shelf storage at normal room temperatures. Given this logical explanation, there is little wonder every other agency and court that reviewed Eaton's claims accepted the same interpretation.

II.

Despite the overall stringency of the prosecution history, this court stretched the vertical flow test concept out of proportion, exaggerated the stringency of that test beyond the realities of storage and shipping, and made it the sole talisman of the Eaton claim. In its brief, Atlantic urged this court to find a stringent vertical flow test in a single sentence of the voluminous prosecution history:

Plastic flow temperature, as used herein, is that temperature below which the adhesive will not flow or sag even if stored with the surface of a thick (1/16 to 1/8 inch) layer of adhesive vertical for unlimited periods of time. (Applicant's Brief to Board of Patent Appeals and Interferences, December 27, 1982)

Based on this statement, Atlantic argued that an accused trap product could not infringe unless it could dangle in a vertical position at 120 degrees F for an infinite period of time without any glue flow. Like the district court before it, however, this court recognized that one skilled in the art could not reasonably rely on such obvious hyperbole as if it affected the scope of the claim. See Intervet Am., Inc. v. Kee-Vet Lab., Inc., 887 F.2d 1050, 1054, 12 U.S.P.Q.2d (BNA) 1474, 1477 (Fed. Cir. 1989) (holding that claim language controls over an attorney's "erroneous remarks" made during the course of prosecution). Accordingly, the panel rejected this rationale. In so doing, it rejected the only claim interpretation proffered by Atlantic for "plastic flow temperature."

Without any basis in argument from either party or testimony from the trial record, the panel's ultimate claim construction rests on its own collection of orphaned passages from the file history. According to the panel, these passages show that Eaton did not provide a test for measuring vertical flow. To the contrary, Eaton provided Mr. Nelson's 77 degrees F vertical test -- a test designed for temperatures where the products are likely to hang on vertical displays. Nonetheless, this court created the myth of a "missing vertical test" to justify its reliance on two paragraphs in Mr. Questel's declaration (paragraphs 22 and 23) -- a declaration filed two years after the '584 patent originally issued.

This court's reading of the record goes astray in several ways. First, nowhere does the '584 patent prosecution suggest the necessity of a 120 degrees F vertical flow test. The "missing" test was not missing at all, but was simply not required by the claims. Before the PTO, Eaton consistently stressed that the Nelson tests defined "plastic flow temperature" under
temperature conditions likely to be encountered during shipping and storage. Second, the brief extract from Mr. Questel's
declaration simply lacks the meaning and the importance attributed to it by the panel.

A.

The premise underlying this court's opinion is that Mr. Questel supplied a missing test for vertical flow two years after the
patent issued. The panel divines this premise from a few passages in which Eaton generally describes the advantages of the
claimed adhesive. For example, the panel opinion relies on Eaton's statements to the Board on December 27, 1982:

Also importantly, the adhesive must have temperature-flow characteristics such that even if the surface of the adhesive is
vertical, the adhesive will not flow or sag at ordinarily encountered ambient storage temperatures (less than 120 degrees F).
That is to say, the plastic flow temperature of the adhesive must be above 120 degrees F.

According to the panel, this quote demonstrates that "plastic flow temperature" had a vertical component that Mr. Nelson
did not measure. To the contrary, Eaton did not shirk its duty to define the claim terms. In the very same 1982 brief, when
actually distinguishing the prior art cited by the examiner, Eaton specifically cited to the Nelson tests as the definition of
"plastic flow temperature."

The record is replete with other instances in which Eaton mentioned the word "vertical" in contexts fully consistent with
using the Nelson tests as the measure of plastic flow temperature. For example, in its Amendment filed July 24, 1981, Eaton
argued:

A trap made [in the manner described in the application] has been evaluated by Kenneth A. Nelson and found to have
acceptable plastic flow characteristics. The trap can therefore be shipped or stored in vertical or inverted horizontal positions
without fear of plastic flow and thus contamination of adjacent surfaces or spilling.

Eaton simply did not argue for its patent on the basis of some undefined vertical flow capabilities. Eaton had no need to test
vertical flow above 77 degrees F because its traps would be displayed vertically only at room temperature.

More importantly, the PTO understood this simple principle. The PTO did not understand Eaton to rely on a stringent
vertical test for flow characteristics. Both the examiner and the Board expressly disclaimed any reliance on vertical or
horizontal testing to determine patentability of the claimed invention. For example, the examiner stated on May 27, 1986:

Whether the body tests were done in vertical, inverted horizontal or flat horizontal position has no relevance. The claims
do not specify what position the adhesive is in regarding vertical flow.

The Board expressed a similar view in its January 16, 1987, decision on the second reexamination:

The claims on appeal do not include any limitations restricting the orientation of the commercial trap product defined
therein to any particular horizontal, vertical, or inverted disposition, nor are there any limitations requiring flow of the
adhesive from the container to be prevented for any particular length of time.

These passages make absolutely clear that the PTO did not decide to issue the '584 patent based on any of Eaton's
statements about vertical flow or any of Mr. Questel's tests. Instead, it is this court that first imports into the claims a
supposed limitation from the prosecution history -- a limitation on which neither the applicant nor the PTO relied during
acquisition of the patent.

In fact, the PTO never objected to the phrase "plastic flow temperature" as indefinite for lack of a vertical flow test. If
vertical flow was the pivotal claim parameter perceived by this court, then the PTO should have noted its absence. Instead,
the lengthy prosecution culminated in the issuance of the '584 patent without so much as a mention of a mythical "missing"
vertical test.

Finally, Eaton did not, as the panel suggests, switch its focus from the Nelson tests to the Questel tests during the final
chapter of the prosecution. Rather, at the conclusion of the second reexamination, as at the beginning, Eaton relied on its
consistent definition of plastic flow temperature:
The terminology "plastic flow temperature" in appellants' claims on appeal has that meaning which is made clear elsewhere in the patent or in the file wrapper. . . . Appellants defined their terminology "plastic flow temperature" throughout the prosecution of their application which matured as the subject patent as being a characteristic of the adhesive which would prevent the adhesive from sagging or flowing from its support at temperatures at which their product is shipped, stored, or used.

This passage shows that Eaton did not attempt to switch arguments on the PTO in the closing chapter of the prosecution.

Perhaps aware of the danger of stringing together isolated passages out of context, this court tries to correlate these passages by reference to private communications between Eaton's lawyers and scientists. Specifically, the panel relies on Eaton's attorney's instructions to Mr. Nelson about vertical flow testing. Far from supporting the missing test myth, this tactic betrays this court's flawed method of seeking claim meaning. These privileged exchanges are not part of the public record. Even if Eaton's attorneys believed patentability turned on vertical flow at 120 degrees F, such private correspondence, not a part of the public record, cannot possibly supply evidence of claim meaning. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2D (BNA) 1321, 1329 (Fed. Cir. 1995) (patent claims are construed in light of the public record), aff'd, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). Thus, this court relies not only on out-of-context extracts, but on extracts without any relevance to claim interpretation. Indeed, few of the isolated passages on which this court relies had anything to do with the meaning of the plastic flow characteristic. Neither Eaton nor the Board relied on the passages to which this court attaches dispositive significance.

For all these reasons, I must conclude that this court has created a requirement for a stringent vertical flow test that the claims, read in light of the prosecution history, do not require. Had Eaton truly acquired its patent by requiring such a test, the record would surely contain far more emphatic evidence than the few isolated passages cited in the panel opinion. See York Prods., Inc. v. Central Tractor Farm & Family Center, 99 F.3d 1568, 1575, 40 U.S.P.Q.2D (BNA) 1619, 1624 (Fed. Cir. 1996) ("Unless altering claim language to escape an examiner rejection, a patent applicant only limits claims during prosecution by clearly disavowing claim coverage.").

B.

Without doubt, the precedent of this court indicates that a patentee's remarks during patent prosecution can illuminate the meaning of the claims. See Markman, 52 F.3d at 980; Vitrronics, 90 F.3d at 1582-83. However, our precedent makes equally clear that this court construes an administrative record in its full context, not on the basis of snippets lifted out of context. See Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1565, 19 U.S.P.Q.2D (BNA) 1500, 1506 (Fed. Cir. 1991) ("We construe claims in the light of the language of the claim itself, the specification on which it is based, and the whole prosecution history.") (Rich, J., dissenting); see also Mark I Mktg. Corp. v. R.R. Donnelley & Sons Co., 66 F.3d 285, 292, 36 U.S.P.Q.2D (BNA) 1095, 1100 (Fed. Cir. 1995), cert. denied, 133 L. Ed. 2d 847, 116 S. Ct. 917 (1996). Moreover, the reviewing court must examine the full context of prosecution history to discern not only what the applicant said, but why he said it. Cf. Hebert v. Lisle Corp., 99 F.3d 1109, 1118, 40 U.S.P.Q.2D (BNA) 1619, 1627 (Fed. Cir. 1996) ("It is of course necessary to consider not only the amendments to the claims but the reason why they were made . . . .").

These basic legal principles disclose the infirmity of the court's reliance on two paragraphs from a single declaration at the end of the second reexamination. A fair reading of the declaration indicates that Mr. Questel distinguished the prior art Formula No. 31 adhesive on two grounds: (1) it exhibited unacceptable levels of cold flow (i.e., 72 degrees F) in a vertical orientation; and (2) it exhibited unacceptable levels of hot flow when tested at 100 degrees F in a vertical orientation. Thus, although Mr. Questel conducted twenty-four hour vertical tests at 120 degrees F, neither he nor Eaton ever relied on such tests to distinguish any prior art. Nor did Mr. Questel in any way suggest that he considered a twenty-four hour vertical test at 120 degrees F to be the measure of "plastic flow temperature." This record simply does not support the court's conclusion that Eaton's claims are measured by the 120 degrees F vertical flow test. See Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572, 1581, 40 U.S.P.Q.2D (BNA) 1019, 1025-26 (Fed. Cir. 1996) (looking to "the prosecution history as a whole" to determine how one skilled in the art would understand a claim term) (Clevenger, J.).

Sadly, this court's fixation on the 120 degrees F vertical flow test foreclosed the one claim construction that was used repeatedly by all parties throughout the public record. The district court properly used that claim interpretation. This court errs in departing from the full context of the administrative record, and importing a false limitation from the prosecution
Plaintiff asserts that this term should be construed to mean "plastic film," while defendants seek the construction, "a self-supporting film or sheet of polymeric material." Their dispute ultimately comes down to whether the term requires a plastic film that is "self-supporting." 4

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4 The parties appear to agree that whether the word "plastic" or the phrase "polymeric material" is used in the definition is immaterial.

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Defendants insist that the quality of self-support is inherent in the ordinary meaning of the word "foil," pointing to household aluminum foil as an example. While acknowledging that nothing in the claims, the specification, or the prosecution history of the '613 patent explicitly defines "foil" with reference to self-support, defendants emphasize the patent's use of the word "laminate" to describe the foil, and argue that this word makes it clear that only a self-supporting film or sheet of material was contemplated. Plaintiffs, for their part, argue that nothing in the intrinsic or extrinsic evidence supports importing into the claims the "extraneous" limitation of self-support.

It is true that the word "self-support" cannot be found in the patent. The patent's use of the term "laminate" in both the claims and the specification does appear to support defendants' construction, however. At oral argument, defendants explained--and plaintiff did not dispute--that while sheets of material can be laminated together, a liquid (i.e., a non-self-supporting material) cannot.

Plaintiff emphasized, both in its briefs and at oral argument, that the specification teaches the use of polyethylene "in an almost liquid form," arguing that this demonstrates that the plastic foil need not be self-supporting. 5 But "liquid" polyethylene is disclosed only as the adhesive, inner layer of a multi-layered component collectively referred to in the claims as the "impermeable plastic foil," and does not suggest that the entire foil can be liquid.

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5 Plaintiff also pointed to similar language in claim 9, which claims "one of the polyethylene foils (1c) extruded on wet which functions as an adhesive for joining the absorbent inner layer… ."

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Moreover, claim 8, which depends from claim 1, recites, "wherein the impermeable plastic foil (1) comprises at least two foils laminated together… ." As noted above, "claim terms are normally used consistently throughout the patent," Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005), so if the "foils" of claim 8 can be "laminated together," it is reasonable to conclude, in the absence of specific evidence to the contrary, that the "plastic foil" recited in claim 1 is capable of being laminated, i.e., it is self-supporting.

Both parties direct me to a portion of the prosecution history in which claim 1 was amended to recite, instead of an "impermeable foil," an "impermeable plastic foil." The parties agree that the reason for the amendment was to distinguish U.S. Patent 4,446,167 ("Smith"). Each side submits that the following passage supports its own construction:

While the nature of the "barrier coats" of this patent is not clear, the Examiner suggested incorporating into claim 1 a portion of previous claim 7 or 8. Accordingly, new claim 11 incorporates the plastic foil of the first portion of previous claim 7. The remainder of claim 7 has been rewritten as new claim 13 with the modification proposed by the Examiner of
using the term "laminated" in place of "joined together so as to be flat" for clarity…. It is submitted that these new claims with their plastic foils clearly distinguish over the barrier coats of the above patent.

'613 File History, Exh. F to Viskase's opening claim construction brief, p. 62-63. 6

6 This page number refers to the numbering generated by the ECF system for this exhibit, which is Docket No. 64-2.

The parties present conflicting interpretations of this portion of the file. In an earlier iteration of the referenced claims, claim 1 included the phrase "impermeable foil," while claim 7 recited a "tight plastic foil." Plaintiff contends that the patentee's insertion of the word "plastic" in claim 1 was the reason the examiner allowed the new claim over Smith. Defendants insist that it was the self-supporting nature of the plastic foil of claim 1 that was the basis for overcoming the barrier coat of Smith, reasoning that Smith (and other prior art) previously disclosed the use of plastic, so that the insertion of "plastic" could not have been the basis for overcoming Smith, and explaining that the word was inserted for clarity in response to the examiner's suggestion of incorporating part of claim 7 into claim 1. Frankly, both interpretations are plausible. Standing alone, the cited excerpt does not unambiguously support one construction or the other.

In short, I conclude that the use of the word "laminate" in conjunction with the foils described and claimed in the patent supports defendants' proposed construction, and that neither plaintiff's argument about the use of liquid polyethylene, nor the ambiguous language in the prosecution history, is a sufficient basis for second-guessing the apparent meaning of the words in the patent itself. Accordingly, I construe "plastic foil" as "a self-supporting film or sheet of plastic."

2956

The '979 patent contains nineteen claims. Only claim 17, an independent claim, is alleged to be infringed by the Lithonia fixtures. "Each claim must be considered as defining a separate invention." Jones v. Hardy, 727 F.2d 1524, 1528 (Fed.Cir. 1984); 35 U.S.C. § 282. Claim 17 claims the following invention:

A recessed lighting support frame for holding a lamp housing, comprising:

a molded recessed lighting frame member of a plastic material having an opening in which a lamp housing is mounted so that light from the lamp housing is projected through said opening; and

hangerways molded in one piece with said frame member and being disposed on either side of said opening, said hangerways adapted and constructed to receive hanger bars for supporting said frame member or said hanger bars.

The intrinsic evidence of record, consisting of "the patent itself, including the claims, the specification and, if in evidence, the prosecution history," Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir. 1996), is "the most significant source of the legally operative meaning of disputed claim language," Id., and so should be the first source to which the court refers. The words in a claim are generally given their ordinary and customary meaning unless the patentee clearly states a special definition of a term in the patent specification or file history. Id. Claims must be read in view of the specification of which they are a part. Id., quoting, Markman, 52 F.3d at 979. Finally, the prosecution history is often of significance in the construction of claims. Id., citing, Markman, 52 F.3d at 980.

Genlyte asserts that no special definitions are given to any of the terms in claim 17. It contends that we should give ordinary meaning to the terms. Reading the claim language itself, the invention taught in claim 17 comprises a plastic plaster frame having an opening in which a lamp housing is mounted so that light from the lamp housing is projected through the opening, and having hangerways which are molded as one piece with the plastic frame for holding hanger bars on either side of the opening. We find that this construction comports with the elements in claim 17 and the description of the invention contained in the specification.
Lithonia contends that in its prosecution of the '979 patent, Genlyte disclaimed all but elastomeric plastic for its plaster frame, in distinguishing its invention over the prior art patent to Druffel. Lithonia urges that the limitation is evidenced by 1) Genlyte's reference to "molded elastomer" in the prosecution history, and 2) its statement in the specification that "the present device is preferably molded of Polyman 509, a tradename of a flame retardant mix of ABS and PVC by A.L. Schulman Company." '979 Specification, Col. 8, lines 34-36.

2 Lithonia contends that ABS contains an elastomer, polybutadiene. For purposes of this opinion, we will accept this statement as true.

First, we note that "as a general rule claims of a patent are not limited to the preferred embodiment [citation omitted] or to the examples listed within the patent specification [citation omitted]." Dow Chemical Co. v. United States, 226 F.3d 1334, 1342 (Fed.Cir. 2000). Therefore, a reference to an elastomer-containing product in a preferred embodiment of the device, without more, is wholly insufficient to limit the scope of "plastic material."

If we consider the mention of Polyman 509 along with the mention of elastomer in the prosecution history, Lithonia still fails to carry the day. Lithonia suggests that the court utilize the prosecution history as an aid in construing the claim. "A claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention." Burke, Inc. v. Bruno Independent Living Aids, Inc., 183 F.3d 1334, 1340 (Fed.Cir. 1999), quoting, Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257, 9 U.S.P.Q.2d 1962, 1966-67 (Fed.Cir. 1989). Limitations, therefore, cannot be read into the claims from the specification or the prosecution history. Id., citing, Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed.Cir. 1989); Texas Instruments, Inc. v. United States Int'l Trade Comm'n, 805 F.2d 1558, 1563 (Fed.Cir. 1986)("This court has cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification."). The prosecution history would be useful only in interpreting the claims, not altering them. In this instance, we find that the term "plastic material" needs no further construction than its ordinary meaning, to one skilled in the art. Further, the prosecution history does not contain any suggestion that Genlyte clearly disavowed claim coverage to any "plastic material" which might be utilized by one skilled in the art in practicing this invention. See, York Products, Inc. v. Central Tractor Farm & Family Center, 99 F.3d 1568, 1575 (Fed.Cir. 1996)("Unless altering claim language to escape an examiner rejection, a patent applicant only limits claims during prosecution by clearly disavowing claim coverage.").

The reference to elastomer arose in remarks to an amendment filed in response to the February 8, 1991 final office action. In that action, the examiner allowed claim 17, but rejected claim 1 of the application as anticipated by the prior art patent to Druffel. 3 In order to further distinguish claim 1 over the teachings of Druffel, the words "molded plastic" were added to further define "frame," and the integrated "nailways" File History, pg. 67. The term "elastomer" is not in the claim language as originally drafted nor as rewritten. In the remarks concerning this rewritten claim, it is noted that "the frame of Druffel is apparently of sheet metal or the like and is not molded elastomer." File History, pg. 70. This remark is an observation concerning what material is utilized, and what is not utilized, in Druffel. It is not a remark which identifies the materials taught in claim 1 of the '979 patent. If the remark can be read to imply a contrast between the materials taught in Druffel and in the '979 patent, the statement simply compares Druffel's sheet metal with the '979 patent's preferred embodiment which specifies Polyman-509, by way of example.

3 On its second amendment, the claim was allowed as rewritten and became claim 3 in the patent's final form.

Further, the revisions and the single mention of "elastomer" were addressed to claim 1, not claim 17. Claim 17 had been approved without any discussion concerning the element of "plastic material." The initial rejection of the claim was on the basis that it was anticipated by the prior art patent to Cohon. The anticipation found by the examiner concerned structure rather than materials. See, Patent History, pg. 46. The term "plastic material" appeared in all drafts of claim 17, including
the approved revision.

Lithonia asserts that the same language cannot be interpreted in two different ways in two different claims in the same patent. See, Defendants' Response to Plaintiff's Motion for Partial Summary Judgement, pg. 14. However, the mention of elastomer to which Lithonia refers does not compel differing constructions of claim 1 and claim 17.

Considering the reference to elastomer in the prosecution history together with the specification still does not yield the construction sought by Lithonia. The term "molded plastic" was rewritten into claim 1 and was approved. Nothing in claim 1, in the file wrapper, or the specification, or considering all of these sources together, limits the coverage of claim 17 to elastomeric plastic.

Lithonia urges the court to construe claim 17 as teaching "a prior art plaster frame; wherein the plaster frame is formed from elastomeric plastic." Defendants' Response to Plaintiff's Motion for Partial Summary Judgment, pgs. 17-18. To the extent that this construction requires "plastic material" to be limited to elastomeric plastic, the contention is rejected for the reasons just discussed. To the extent that Lithonia seeks a finding by the court that claim 17 teaches nothing more that a prior art plaster frame formed of a different material, this contention constitutes a challenge to validity which will be addressed at a later date. A separate motion by Lithonia for summary judgement of invalidity (DN 82) and a motion by Genlyte for partial summary judgment that the patent-in-suit is not anticipated, indefinite or unenforceable (DN 80) remain pending.

2957

A. Rigid Plate

An essential component of the Briggs & Riley patent is the "rigid plate" that provides the bag's "substantially rigid framework." Briggs & Riley argues that a "rigid plate" is "a rigid, smooth flat thin piece of material," (Pl. Mem. at 4, 9; Tr. at 8), and more specifically, as articulated in the specification with "a width approximately equal to the width of the walls . . . when [the] suitcase . . . is in its contracted position" (col. 3, lines 51-53) and with "a length less than the length of the walls" (col. 3, lines 53-54). Paragon advances a broader definition of "rigid plate" and would have the Court eschew all description beyond "rigid," leaving simply "a rigid piece of material." (Tr. at 13.) Paragon argues that as articulated in the specification, the '078 Patent "is broad enough to cover any substantially rigid plate member or strip member . . . [that would] provide a rigid link between the frame members. . . when the suitcase is so expanded." (Col. 7, lines 28-36; see also Def. Reply at 3.) Citing other descriptive words used in the specification for the "rigid plate" component, such as "stiffening member" and "strip member" (see, e.g., col. 5, lines 50-51, 58), Paragon asks the Court to construe "rigid plate" as any rigid link. (Def. Reply at 4; Tr. at 10-11.)

The plain meaning of the words "rigid" and "plate" do not support Paragon's broad construction. The Oxford English Dictionary defines plate much as Briggs & Riley defines it, as "[a] flat, comparatively thin, usually rigid sheet, slice, leaf, or lamina of metal or other substance, of more or less uniform thickness and even surface." Oxford English Dictionary [hereinafter OED], available at http://www.oed.com. To accept Paragon's construction, the specification must show that the patentee intended to alter the ordinary meaning of "plate." Nothing in the specification suggests that "plate" should be given anything but its ordinary meaning. Neither the plate's purpose of providing a rigid link nor the alternative description of the plate as a "stiffening member" are inconsistent with the ordinary meaning of "plate." While the specification suggests that a "strip member" would also be covered by the Patent, even though a "strip" is generally "a narrow piece . . . of approximately uniform breadth," OED available at http://www.oed.com, "strip member" is not clearly used in the specification to define "plate," but rather is presented as an alternative structure that could perform the plate's function. To the extent that the drafters were overly ambitious in suggesting in the specification that the '078 Patent could cover other shapes besides plate-like structures to provide the required rigid link, it is the "claims, not the specifications, that afford the measure of the grant to the patentee," Milcor Steel Co. v. George A. Fuller Co., 316 U.S. 143, 145-46, 86 L. Ed. 1332, 62 S. Ct. 969, 1942 Dec. Comm't Pat. 772 (1942), and the claim covers only a "rigid plate." Alternatives suggested in the specification do not broaden the ordinary and unambiguous meaning of the word "plate." Use of "strip member," while inconsistent, is, at most, presented as an alternative means of providing a rigid link, and comes nowhere near the required standard of showing that the patentee intended an unconventional or original definition of "plate."

Accordingly, a "rigid plate" is a rigid, flat, comparatively thin piece of material of more or less uniform thickness and even
surface with generally wide breadth. Whether a particular "stiffening member" or "strip member" would fit that description, or whether there is something novel about using a "plate" that was not anticipated in prior art, are questions of fact properly reserved for later proceedings on infringement.

C. Toe and Heel Plates

Except for independent claim 17 and its dependent claims in the '466 patent, each claim of the Wrike patents requires toe and heel plate elements having an upper surface affixed to the corresponding toe and heel sole surface. See e.g., supra, claims 1 of the '584, '466, and '143 patents. Benetton and Salomon contend that the toe and heel plate elements must be construed to be separate elements from the skate boot. V-Formation asserts that the toe and heel plates in the Wrike in-line skate need not be distinct from the underside of the skate boot, and that the toe and/ or heel plate could be formed as an integrated part of the bottom portion of the skate boot.

A plain reading of the claims shows that V-Formation's claim construction cannot be correct. Each of the claims in the Wrike patents that recite a toe and heel plate further requires that the plates "have an upper surface," which is affixed to the bottom portion of the skate boot. If the claimed toe or heel plate were an integral part of the bottom portion of the skate boot, as V-Formation suggests, the upper surface of the plate would not exist, which would render immaterial portions of the recited claim. "Specific claim limitations[, however,] cannot be ignored as insignificant or immaterial." Perkin-Elmer Corp. v. Westinghouse Elec. Corp., 822 F.2d 1528, 1533 n.8 (Fed. Cir. 1987). If V-Formation's proposed claim construction were followed, the structural relationship between the upper surface of the plate elements and bottom portion of the skate book that is recited in the claims would be effectively and improperly eliminated.

The requirement that the toe and heel plates are separate from the skate boot is confirmed by the specification and file history of the '466 and '143 patents. These patents describe two alternative embodiments of the invention -- one with toe and heel plates and one in which flanges form an integral body with the base of the skate boot. See e.g., '143 patent, Figs. 1-5; cf. '143 patent, 6:65-7:5, Fig. 6; '466 patent, 6:62-7:2. During prosecution of the '143 patent, Wrike had submitted claims directed to both embodiments. Salomon Exh. 13 at V21-26. After examination by the patent examiner, however, Wrike cancelled the claims directed to the latter embodiment, id. at V85-92, demonstrating a clear and unequivocal surrender of the second embodiment disclosed by the '143 patent specification. Indeed, V-Formation admits that the integral skate boot disclosed by the '143 patent is not claimed by the '143 patent but rather is claimed in a separate, related application (i.e., claim 17 of the '466 patent). V-Formation Opp. Memo. to Salomon's Motion for Summary Judgment at 22. In view of the surrender of the integral skate boot embodiment during the '143 patent prosecution history, and V-Formation's own admission that this embodiment does not come within the scope of '143 claims, I am persuaded that "toe plate" and "heel plate" should be construed to mean structural elements that must be separate elements from the skate boot and have an actual and identifiable upper surface that is affixed to the sole surface of the skate boot.

2. "top plate"

a. Parties' Positions

The parties propose the following constructions for "top plate," which is present in claim 2 of the '631 Patent, which generally describes Dr. Rippel's invention using a "cover plate." The electrical component to be cooled sits on one side of the "top plate," and this side serves as the "first surface" as described in both claims 2 and 3. The heat sink's "fins" protrude from the other, "second surface." The primary dispute between the parties is whether the claim term "top plate" should exclude "integral" connections.

Plaintiff: A generally planar member to which fin

Defendants: A flat member that is separate
structures may be either integrally or non-integrally connected from the fin structures.

b. Court's Construction

Plaintiff suggests that "generally planar" could include the protrusions from the top plate. However, throughout the specification, the top plate is shown as flat. Figures 1 - 3 and 6 - 8 depict the top plate and planar member. In the figures, the plate is flat. Figure 6 is a picture of the fin supports. They support the fin structures between them and are not the top plate; they are labeled differently. The top plate in Figure 6 is flat. Figures 7 and 8 also depict flat top plates. Plaintiff's generally planar language is not supported by the intrinsic evidence. The Court will utilize the first part of Defendants' proposed construction, "a flat member." The Court now considers the parties' primary dispute, whether the claim term should exclude "integral" connections.

While Plaintiff asserts its proposed construction takes no position on whether or not protrusions are integrally connected to the flat member, Defendants assert the term is inconsistent with the notion that the fin structures could be integrally bound. According to Plaintiff, Defendants focus on a mechanical bonding method referenced in the specification (i.e., the use of an epoxy) and the claim language does not compel any such limitation. Plaintiff asserts there is nothing inherent in the concept of a "plate" that would prevent these connections from being "integral" connections. Plaintiff further asserts the Abstract specifically identifies soldering and dip brazing, both of which produce integral connections, as appropriate means for connecting the plate element with the fins. ('631 patent at Abstract); see also U.S. Patent No. 6,284,985 Abstract (describing circuit plates as "plates" even though a semiconductor element has been "integrally bonded" into plates).

Plaintiff further asserts the preferred embodiment in the '631 Patent specifically utilizes "a plurality of fin supports which extend integrally from and perpendicular to the top plate." ('631 Patent at 5:51-53)(emphasis added). According to Plaintiff, Defendants' narrow reading of "plate" cannot be reconciled with the structure of this preferred embodiment which makes clear that the existence of "integral" protrusions will not destroy the top plate's status as a "plate." See NeoMagic Corp. v. Trident Microsystems, Inc., 287 F.3d 1062, 1074 (Fed. Cir. 2002) (claim constructions that exclude the preferred embodiment are strongly disfavored).

Defendants' proposed construction does not import process limitations regarding the manufacture of the claimed structures as suggested by Plaintiff. 2 Defendants' proposed construction is directed to describing the relationship between the specific structural components of the invention. See Vanguard Prods. Corp. v. Parker Hannifin Corp., 234 F.3d 1370, 1372 (Fed. Cir. 2000) (affirming a construction that "describes the relationship" between two components). More importantly, Defendants' proposed construction does not import any limitations, but rather stems from the plain language of the claims. In claim 2, the heat sink assembly comprises a "top plate" having first and second surfaces, the second surface of which is for "receiving" fin structures that are "bonded to" the second surface. Similarly, claim 3 recites a heat sink assembly that comprises at least two fin structures "in intimate contact with" the second surface of a thermally conductive planar member.

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2 Plaintiff asserts the '631 Patent is an apparatus patent, not a process patent. According to Plaintiff, it would be a mistake to look past the physical configuration of the apparatus' elements by focusing instead on the manufacturing methods used to achieve that configuration.

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The heat sink has a top plate having a first surface for receiving said component and a second surface for receiving fin structures. If the inventor had intended to cover extruded heat sinks, there would have been no need for a second surface for receiving fin structures as the second surface's purpose is for receiving, gluing, bonding, or putting the separate fin structures on top of it.

The Court agrees with Defendants that the invention does not cover extruded heat sinks. Rather, the top plate should be construed as a flat member that is separate from, rather than integrally connected, to the fin structures. Therefore, the Court construes the term "top plate" to mean "a flat member that is separate from the fin structures."
B. "Moving Platform"

"Moving platform" is found in all of the claims at issue. Pictometry acknowledges that "[w]ithout reference to the '946 patent itself, the plain, ordinary meaning of the term 'moving platform' might be considered by one of ordinary skill in the art to [be] broad enough to include satellite, an aircraft or a ground-based vehicle." Def.'s Opening Mem. in Supp. of Claim Constr. at 18. Pictometry argues, however, that "when read in the context of the intrinsic record of the '946 patent as a whole, it is apparent that a 'moving platform' is limited to a ground-based platform" such as a van or a backpack. Id.

In support of its proposed construction, Pictometry contends there is language in the specification that describes "moving platform" and its ascribed characteristics in a manner that is consistent only with a ground-based platform such as a van. The language cited by Pictometry includes:

. "The present invention includes a collection system comprising video cameras, a GPS receiver, an inertial navigation system (INS) and a control computer. The collection system is mounted in a moving vehicle such as a van." '946 patent, col. 2:21-24;

. "Generally, the collection system 10 is located on a moving platform such as a moving vehicle 11, as shown in FIG. 1." Id., col. 3:36-38;

. "The INS 28 can also include an odometer coupled to an undriven wheel of the vehicle 11, which reduces the need to stop for re-alignment of the INS 28." Id., col. 8:21-24;

. "If the vehicle must be stopped for an extended period of time, or if a previously recorded street must be driven again to reach a desired location, a pause command is given by the navigator to stop the recording of both video images and positional information." Id., col. 8:44-49;

. "[T]he offset between the spatial position of the vehicle 11 and the street centerline is calculated as shown by box 132 using the images on the collected video tape 130." Id., col. 9:31-33;

. "Generally, the vehicle 11 travels to one side of the center of the street." Id., col. 10:29-30;

. "This process further takes into account changes in the location of the vehicle 11 relative to the street centerline as the vehicle 11 travels down the street, including those caused by traffic and obstructions." Id., col. 11:40-43;

. "[A]n address seen in a video image can be compared to a calculated street address. If the two addresses are not the same, the visually observed address can be used to correct the model by which the address was calculated." Id., col. 15:9-13.

The only instance in which a platform other than a van is arguably implicated, Pictometry contends, is a passage referring to another ground-based platform: "the collection system 10 can be located on or in any moving platform, including a platform capable of being carried by a single person." Id., col. 18:23-25.

Pictometry also argues the specification's explanations of how the invention works make sense only if "moving platform" is limited to a ground-based platform. For example: (1) ground-based vehicles often have "odometers" but aircraft do not; (2) ground-based vehicles, but not aircraft, travel "down the street" and encounter "traffic and obstructions"; and (3) cameras mounted on ground-based vehicles, but not aircraft, capture images in which an address can be seen. Furthermore, the patent's teaching of the calculation of the street centerline offset is possible with a ground-based vehicle but not with an aircraft. The patent teaches that calculating the offset requires (1) mounting the front and rear-facing cameras so that their lenses are aligned with the vehicle's line of travel and (2) a known vector extending perpendicularly from one of the camera lenses to the surface of the street. See '946 patent, cols. 10:37-11:1. Pictometry explains that barring serious weather conditions or extreme wheel-alignment problems, the nose of a van will remain directly in line with the van's line of travel. In addition, the distance and angle of an imaginary vector extending from a camera mounted on top of the van to the surface of the street will remain constant. With an aircraft, however, cross-winds and turbulence cause the aircraft to pitch, roll, and...
yaw. Thus, to account for such forces, the nose of the aircraft will be pointed at any given time in a slightly different direction—perhaps several degrees—from the line of travel. Similarly, the length and the angle of the vector extending down to the surface of the street also will vary as the aircraft rises, falls, rolls, pitches, and yaws when encountering wind forces and turbulence. Accordingly, because the front and rear camera lenses must be aligned with the line of travel and the angle and length of the vector extending from one of the cameras to the surface of the street must be known, the calculation of the street centerline offset as instructed in the patent is possible only with a ground-based moving platform.

Pictometry argues that its proposed construction is supported by the Federal Circuit's decisions in Nystrom v. Trex Co., 374 F.3d 1105 (Fed. Cir. 2004) (Nystrom I) and Nystrom v. Trex, Inc., 424 F.3d 1136 (Fed. Cir. 2005) (Nystrom II). In Nystrom I, a district court construed the claim term "board" in a patent for construction material for use in exterior flooring surfaces to mean "a piece of elongated construction material made from wood cut from a log." 424 F.3d at 1107, 1110. The district court adopted such a construction after finding that the patentee "had limited the scope of the claim term 'board' by statements in the specification that a board is cut or obtained from a log ... and statements by [the patentee] during [the prosecution history]." Id. at 1110. On appeal, the patentee argued that (1) "board" is not limited to conventional wood boards that are cut from logs; (2) the claim language does not contain a description of the material from which the board is composed and, thus, the claim should not be limited to a particular material; and (3) the district court erred by relying on statements in the specification and the prosecution history to limit the claim because those statements did not represent a clear disavowal of claim scope. Id. at 1110-11. The Federal Circuit agreed, concluding that "the ordinary meaning of the word 'board' encompasses both a piece of cut wood or sawn timber and a similarly-shaped item made of a rigid material" and that nothing in the specification, claim language, or prosecution history revealed a disavowal or disclaimer of the full range of that ordinary and customary meaning. Id. at 1111-1113.

One year after Nystrom I was decided, the Federal Circuit issued its decision in Phillips and, shortly after, granted a petition for rehearing in Nystrom I for the limited purpose of addressing the effects of the Phillips decision. Nystrom II, 424 F.3d at 1138. On rehearing, the patentee made the same arguments it had made in Nystrom I. See id. at 1142. The Federal Circuit acknowledged that the claims did not include any language restricting the term "board" to a particular material or describing characteristics of wooden boards cut from logs. Id. at 1143. Nevertheless, the court concluded that "[a]n examination of the term 'board' in the context of the written description and prosecution history of the ... patent leads to the conclusion that the term 'board' must be limited to wood cut from a log." Id. The court explained that although the ordinary meaning of the word "board" encompasses both a piece of cut wood or sawn timber and a similarly-shaped item made of a rigid material, the decision in Phillips made clear that the patentee was "not entitled to a claim construction divorced from the context of the written description and prosecution history," which consistently used the term "board" to refer to wood decking materials cut from a log. Id. at 1145. "The problem is that if the district court starts with the broad dictionary definition in every case and fails to fully appreciate how the specification implicitly limits that definition, the error will systematically cause the construction of the claim to be unduly expansive." Id. (citing Phillips, 415 F.3d at 1321). Applying the principles of Nystrom I and Nystrom II here, Pictometry reasons that the language of the specification shows that "moving platform" has been limited by the inventors to mean a ground-based moving platform.

Geospan responds that Pictometry's proposed construction restricts the claims to "the exact disclosed preferred embodiments" when "neither the plain language of the claims, nor the specification and file history, support [such a restriction]." Pl.'s Rebuttal Mem. [Docket No. 142] at 1. In addition, Geospan claims that Pictometry's reliance on Nystrom II is erroneous. In Nystrom II, "both parties acknowledge[d] the ordinary meaning of 'board' as a 'piece of sawed lumber,'" and the court rejected the patentee's proposed construction, which sought to "broaden the term 'board' to encompass relatively obscure definitions that [were] not supported by the written description or prosecution history." Id. at 1145. Here, by contrast, both parties have acknowledged that "the plain, ordinary meaning of the term 'moving platform' might be considered by one of ordinary skill in the art to [be] broad enough to include satellite, an aircraft or a ground-based vehicle." Def.'s Opening Mem. in Supp. of Claim Constr. at 18.

Pictometry's position that the specification limits the scope of the claim term is untenable. First, Pictometry's emphasis on the specification's description of a specific, narrow embodiment of the invention is not a proper basis for limiting the construction of the claim to that specific embodiment. See Phillips, 415 F.3d at 1323 ("[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.").

Second, Pictometry's position misapprehends the import of Nystrom II and in the process, violates the very principles
articulated in that case. "In [Nystrom II], both parties acknowledged the ordinary meaning of [the claim term] . . . [and] we refused to impose a construction broader than the term's ordinary meaning. Here, on the contrary, we decline to impose a construction narrower than the term's ordinary meaning."). Acumed LLC v. Stryker Corp., 483 F.3d 800, 808-9 (Fed. Cir. 2007) (second alteration in original) (quotation and citations omitted). As in Acumed, there is no dispute that the ordinary meaning of "moving platform" can include air-based moving platforms, and Pictometry's proposed construction would improperly seek to narrow that plain and ordinary meaning.

Third, Pictometry's argument that the specification fails to explain how the invention could be applied to an air-based moving platform essentially takes the position that "moving platform" should not receive a construction that would include embodiments that are not enabled in the patent. Indeed, Pictometry expressly argues that "moving platform" should not receive a construction broader than that which is both "described and enabled" in the specification. Def's Reply Mem. [Docket No. 150] at 4. But arguments regarding enablement go to validity, not claim construction. See Roche Palo Alto LLC v. Apotex, Inc., 531 F.3d 1372, 1379 n.1 (Fed. Cir. 2008); see also Phillips, 415 F.3d at 1327 ("While we have acknowledged the maxim that claims should be construed to preserve their validity, we have not applied that principle broadly, and we have certainly not endorsed a regime in which validity analysis is a regular component of claim construction."); Motorola, Inc. v. STMicroelectronics, N.V., 2004 WL 5707527, at *13-15 (E.D. Tex. Sept. 21, 2004) (concluding that arguments that a patent failed to teach an embodiment other than the preferred embodiment and that another embodiment could not be accomplished under the teachings of the patent were enablement arguments going to validity, not claim construction). But see Chiron Corp. v. Genentech, Inc., 363 F.3d 1247, 1263 (Fed. Cir. 2004) (Bryson, J., concurring) ("I think the proper approach . . . is to . . . construe[e] claims, where possible, as they would have been understood by one of skill in the art at the time of the invention, and not construe[e] them to reach the as-yet-undeveloped technology that the applicant did not enable.") (emphasis added).

Pictometry next argues that during the prosecution of the '946 patent, the inventors and the United States Patent and Trademark Office ("PTO") examiner "consistently described the 'moving platform' as a ground-based platform." Def's Opening Mem. in Supp. of Claim Constr. at 31. Specifically, Pictometry cites the examiner's statement in an October 31, 1994 office action that:

GPS users in other field[s], however are already conscious about that [sic] GPS receivers can resolve the size of the moving platform carrying GPS receivers. For example, positional data from two GPS receivers on opposite aircraft wing tips are different, and such differences should be considered for aircraft landing application.

Hobson Decl., Ex. 4 at 10-11. But Pictometry's reliance on the quoted language assumes the examiner's reference to other fields and aircraft indicates that the examiner viewed the invention as applying to ground-based photogrammetry as opposed to the air-based field of photogrammetry. The more natural understanding of the quoted language is that the examiner was instead referring to fields other than photogrammetry, such as aircraft landing applications.

Pictometry cites several statements made by the inventors in responding to the PTO examiner as showing that the invention was limited to ground-based platforms:

. the inventors' statement that aspects of their invention were "particularly helpful for the application of short range terrestrial photogrammetry." Id., Ex. 5 at 6;

. the inventors' statement that for data collected according to the invention "to be usable for short range terrestrial photogrammetry, which differs from traditional stereophotogrammetry . . . , it is critical that for each recorded video image the position of the camera from which [it] was obtained, at the time [it] was obtained, be precisely known." Id.; and

. the statement to the examiner that prior art cited in an office action "cannot resolve the length of the van, let alone determine a precise instantaneous position and orientation of each camera at the time the image is obtained." Id., Ex. 7 at 5.

These statements during the prosecution of the '946 patent do not, however, evince a "clear and unmistakable disavowal of scope," and thus, are not a basis for limiting the meaning of the claim term. Computer Docking Station Corp. v. Dell, Inc., 519 F.3d 1366, 1374 (Fed. Cir. 2008) (quotation omitted). To the extent that the statements could be viewed as having a limiting effect, they do not indicate that the inventors were both distinguishing between ground-based photogrammetry and air-based photogrammetry and disclaiming that their invention pertains to the latter. The inventors' discussion of the prior art
Based on the intrinsic evidence—the claim language, the specification, and the prosecution history—the Court concludes that no construction of "moving platform" is necessary because the term is used in the claim in accordance with its plain and ordinary meaning to one skilled in the art and is not limited to a ground-based platform. Having resolved the construction of the claim term based on intrinsic evidence, an examination of extrinsic evidence is unnecessary.

The next term for definition is "play" in claim 49 of the ‘410 patent, in claims 2 and 11 of the ’579 patent, and in claim 1 of the RE ’439 patent. The Plaintiffs contend that play means "a dimensional relationship of the locking surfaces of interlocking panels such that the locking surfaces can be displaced or slide relative to one another in the direction of their joined edges." (Pls’ Open. Br. 38.) Pergo contends that "play" means "an intentional space allowing for free movement, displacement or sliding of joined panels relative to each other along adjacent joined edges." (Unilin’s Open. Br. 35-36.)

Claim 1 of the RE ’439 patent states:

A system for providing a joint between adjacent building panels, comprising: each of said building panels including a first edge and a second edge such that the first edge of each of said building panels forms a first mechanical connection with the second end of an adjacent one of the building panels locking the first and second edges of the building panels to each other in a first direction at right angles to a principal plane of the panels, and a locking device arranged on a rear side of the building panels forming a second mechanical connection locking the building panels to each other in a second direction parallel to the principal plane and at right angles to the first and second edges, said locking device fitting within a locking groove extending parallel to and spaced apart from the first edge of said building panels, and which locking groove is open at the rear side of the building panels, the locking device comprising a strip integrated with the second edge of each of said building panels, said strip extending throughout substantially an entire length of the second edge and being provided with a locking element projecting from the strip, such that when two adjacent building panels are joined together, the strip projects from the rear side of the second edge of the panels with its locking element received in the locking groove of an adjacent building panel, the building panels, when joined together, can occupy a relative position in said second direction where a play exists between the locking groove and a locking surface on the locking element that is facing the first and second edges and is operative in said second mechanical connection, the first and the second mechanical connections both allow mutual displacement of the building panels in a direction of the first and second edges, and the second mechanical connection enables the locking element to leave the locking groove if the respective building panel is turned about its first edge angularly away from the strip.

(’439 patent, 10:35-67.) (Emphasis added).

The parties' proposed definitions are similar. The Plaintiffs object to the inclusion of "intentional" and "free movement." The Alloc court did not revise the construction of "play" as being "space between the locking groove on a first panel and a locking element on a panel adjacent to the first panel." 342 F.3d at 1367. Play allows the displacement and disassembly of the panels. The Plaintiffs' use of the phrase "dimensional relationship" is analogous to "space," but is more cumbersome. Pergo's definition is deficient because it does not identify where the space exists. Thus, the Court defines "play" as meaning "space between the locking surfaces of interlocking panels such that the locking surfaces can be displaced relative to one
On appeal, Saunders argues that the district court improperly limited the scope of the term "pneumatic cylinder." Saunders contends that the term "pneumatic cylinder" does not inherently require the presence of a pressure activated seal and that nothing in the specification or the prosecution history suggests that the term pneumatic cylinder, as used in the patent, requires such a seal. For that reason, Saunders argues, claim 1 of the '690 patent reads on the accused products, which have pneumatic cylinders without pressure activated seals.

Claim terms are generally given the meaning those terms would have to a person of ordinary skill in the art. Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). It is not disputed that the ordinary meaning of the term "pneumatic cylinder" does not require the presence of pressure activated seals. The asserted claims can be assigned a narrower scope only if there is some indication in the patent or the prosecution history that the term pneumatic cylinder was meant to have a more restrictive meaning as used in the patent, or a broader meaning was disclaimed during prosecution. See Phillips, 415 F.3d at 1316; Honeywell Int'l, Inc. v. ITT Indus., Inc., 452 F.3d 1312, 1319-20 (Fed. Cir. 2006); SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1342-44 (Fed. Cir. 2001). We conclude that the text of the '690 patent and its prosecution history do not justify such a restrictive construction of the term.

The strongest indication that the term pneumatic cylinder, as used in the '690 patent, was not meant to include pressure activated seals as a matter of definition can be found in a comparison of independent claim 1 and claim 6, one of the claims that depend from claim 1. Claim 1 recites a pneumatic cylinder but does not expressly require a "pressure activated seal." Claim 6 recites the apparatus of claim 1 and then adds a limitation reciting a pressure activated seal. Claim 6 reads as follows (emphasis added):

The apparatus of claim 1 comprising at least one pressure activated seal in the pneumatic cylinder extending circumferentially around a piston, the pressure activated seal movable between a relaxed position and an extended position so the pressure activated seal engages an internal surface on the pneumatic cylinder when the pneumatic cylinder is in the pressurized state for engagement with an inside surface of a cylinder housing when in the pressurized state.

Given that claim 6 adds the pressure activated seal limitation to claim 1, the doctrine of claim differentiation supports the inference that claim 1 encompasses cylinders without pressure activated seals. Otherwise, claim 6 would add nothing to claim 1 and the two would cover identical subject matter. See Phillips, 415 F.3d at 1314-15 ("[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim."); Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004).

The defendants argue that there is a meaningful difference in scope between claim 1 and claim 6 under their construction because claim 6 requires the seal to "extend[] circumferentially around a piston" while being movable so as to engage the cylinder in a particular place. That language from claim 6, however, is better read as simply definitional language that describes the operation of a pressure activated seal. The patent does not disclose any other way of constructing a pressure activated seal, and the recitation of the operation of the pressure activated seal adds nothing of substance to the recitation of the seal itself. The defendants have not pointed to any evidence that those of skill in the art would have understood the referenced language as carving out a subset of all pressure activated seals.

The prosecution history of the '690 patent provides further support for Saunders' argument that the term "pneumatic cylinder," as used in the patent, is not restricted to pneumatic cylinders that use pressure activated seals. The '690 patent resulted from a continuation application claiming priority to an application that specifically required at least one pressure activated seal in all its claims. When the patentees filed the continuation application, they omitted that limitation from some, but not all, of the new claims. Had they omitted the limitation from all of the claims, it might be argued that the limitation was assumed to be present and did not need to be explicitly recited. Making such a change to only some of the claims,
however, is a strong indication that the claims not reciting pressure activated seals were not intended to require them.

The Petition to Make Special is also significant because the applicants asserted in that document that a device lacking a pressure activated seal infringed the independent claims of the application. To be sure, the petition did not specifically discuss pressure activated seals. It is undisputed, however, that the petition accused the device of infringing only those claims that lacked a pressure activated seal requirement and that the accused device had no pressure activated seals. Under those circumstances, the petition indicates that the applicants did not regard the presence of pressure activated seals as a necessary condition for infringement of those claims.

B

The defendants point to various features of the patent and the prosecution history in support of their argument that one of skill in the art would necessarily conclude that only pneumatic cylinders with pressure activated seals are within the scope of claims 1 and 16 of the ’690 patent. They first contend that such a limitation is evident from the claim language requiring that the cylinder be capable of "maintaining a generally static traction force for a period in excess of 10 minutes when in the pressurized state without additional pressurized air being supplied." Because the specification does not describe any pneumatic cylinders without pressure activated seals, and because the specification does not disclose any other way to maintain the necessary traction force, the defendants argue that a person of skill in the art would understand that a pressure activated seal is necessary to maintain the recited traction force. Accordingly, they contend that the claims must be limited to pneumatic cylinders with pressure activated seals.

A patent that describes only a single embodiment is not necessarily limited to that embodiment. Liebel-Flarsheim, 358 F.3d at 906 (citing cases). "Even where a patent describes only a single embodiment, claims will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope. . . ." Innova/Pure Water, Inc. v. Safari Water Filtration Sys., 381 F.3d 1111, 1117 (Fed. Cir. 2004) (internal quotations omitted). While an assertion by the patentee that using pressure activated seals is the only way to maintain the needed traction force would evidence an intention to narrow the scope of the independent claims, the patent contains no such assertion.

To be sure, the specification of the ’690 patent, which is identical to the specification of the parent ’174 patent, contains passages that describe the portable traction device as comprising at least one pressure activated seal. See ’690 patent, abstract; col. 2, ll. 13-16. But those passages do not expressly state that the pressure activated seal is an essential component of the invention. While the restrictive language of the specification might be sufficient in other contexts to limit the scope of the claims, it is not sufficient in this case, where the language of the claims so clearly distinguishes between those claims that require the presence of a pressure activated seal and those that do not. See Liebel-Flarsheim, 358 F.3d at 908.

The defendants argue that the specification in this case closely resembles the one at issue in Alloc, Inc. v. International Trade Commission, 342 F.3d 1361 (Fed. Cir. 2003). In that case, the court construed the claims to include a feature that was common to all the disclosed embodiments but was not explicitly recited as a limitation in any of the claims. The claims at issue in Alloc recited floor system features related to "displacement" and "disassembly" of the flooring components. Id. at 1368. The court construed the claims to require "play" between the flooring components because the patent specifically taught that such play enabled the displacement and disassembly features and because the patent criticized prior art systems that lacked play as being impossible to disassemble nondestructively. Id. at 1369-70. In contrast, the ’690 patent does not criticize prior art cylinders based on their lack of pressure activated seals. The specification indicates that pneumatic cylinders "typically" cannot maintain an adequate traction force, but the patent does not state that the only way to accomplish the goal of maintaining traction force is through the use of pressure activated seals. Accordingly, the specification does not support the narrowing construction that the defendants propose.

The defendants next argue that in the prosecution history the applicants unambiguously disclaimed pneumatic cylinders lacking pressure activated seals. In making that argument, the defendants focus on the prosecution history of the parent ’174 patent. The fact that the prosecution history relied upon was created in connection with the parent application would be unimportant if the claim language at issue were present in both patent applications. In this case, however, all the claims in the ’174 patent explicitly require at least one pressure activated seal while the ’690 patent omits that language from the asserted claims. At the same time, the alleged disclaimer distinguishing the prior art focused on a particular claim limitation—the "pressure activated seal" limitation found in each of the claims of the ’174 patent—and was not directed to the invention as a whole. See SciMed Life Sys., 242 F.3d at 1343-44. When the purported disclaimers are directed to specific
claim terms that have been omitted or materially altered in subsequent applications (rather than to the invention itself), those disclaimers do not apply. Ventana Med. Sys. v. Biogenex Labs., 473 F.3d 1173, 1182 (Fed. Cir. 2006) ("[T]he doctrine of prosecution disclaimer generally does not apply when the claim term in the descendant patent uses different language."); Invitrogen Corp. v. Clontech Labs., Inc., 429 F.3d 1052, 1078 (Fed. Cir. 2005) ("[T]he prosecution of one claim term in a parent application will generally not limit different claim language in a continuation application."); Advanced Cardiovascular Sys. v. Medtronic, Inc., 265 F.3d 1294, 1305-06 (Fed. Cir. 2001) (omitting the claim term to which the prosecution history disclaimer argument was directed precluded those statements from being applied to the child application). Accordingly, any arguments in the prosecution history of the '174 patent that distinguish prior art based on the presence or absence of a pressure activated seal are inapplicable to the '690 patent.

The defendants contend that there is common language in the applications and that the statements in the prosecution history of the '174 patent apply to that common language. They note that the patentees distinguished the '174 patent claims not only by arguing that the prior art lacked pressure activated seals, but also by arguing that the prior art pneumatic cylinders were unable to maintain the required traction force, a requirement that is found in both the '174 patent and the '690 patent. While the statements about traction force apply to both the '174 patent and the '690 patent, they do not establish that the cylinder in the '690 patent must contain a pressure activated seal. That is, the prosecution history contains no argument that the prior art devices failed to maintain the requisite traction force because of the absence of activated seals.

The first passage from the prosecution history cited by the defendants distinguishes a prior art patent to Loveless. The relevant portion of the argument reads as follows:

The seal in Loveless is a conventional O-ring 37 that does not change shape with air pressure. The O-ring 37 is always engaged with the engagement surfaces 41, 42 so that the level of friction between the cylinder sleeve 14 and the piston 23 is generally constant. Therefore, Loveless does not disclose the claimed pressure activated seal, and no prime facie case of obviousness is set forth.

It is asserted on page 6 of the office action that the cylinder of Loveless would be able to maintain a static traction force for a period in excess of 10 minutes since the air leakage in the cylinder will not occur. There is no teaching in Loveless for this capability. Moreover, Applicants' experience has been that such pneumatic cylinders do leak over time and are not sustainable for maintaining a static traction force. Applicants submit that the combination and [sic] Dyer and Loveless fails to disclose the claimed pressure activated seal and a pneumatic cylinder capable of maintaining a static traction force for a period of time without addition of pressurized air being supplied.

The first paragraph of that passage distinguishes Loveless based on the absence of the claimed pressure activated seal and thus is not relevant to the '690 patent claims at issue. The first three sentences of the second paragraph are relevant to the '690 patent, but they argue only that the Loveless seal is incapable of maintaining the required traction force. They do not state that the Loveless cylinder lacks the capacity to maintain sufficient traction force because it lacked a pressure activated seal. Rather, the two paragraphs address different limitations of the claims, the seal and the need to maintain traction force. The last sentence is consistent with the two-part structure of the argument and in effect summarizes the two distinguishing arguments. Accordingly, the cited passage does not constitute a disclaimer of all cylinders lacking pressure activated seals, as the defendants contend.

The second passage relied on by the defendants discusses a prior art patent to Gantz. That passage reads as follows:

The use of [the] rolling diaphragm type piston and cylinder arrangement disclosed in Gantz may be the result of the small vacuum pump. The pump disclosed in Gantz develops about 0.5 torr of pressure. . . . The small pressure generated by the pump of Gantz makes an air tight piston system with little or no friction extremely important. Applicants speculate that any friction due to the sliding seals or air leakage would render the traction device of Gantz inoperative.

That argument also fails to demonstrate a relationship between maintaining the traction force and the presence of pressure activated seals. The passage argues only that the particular seal disclosed in Gantz would not be feasible for use in the patentee's invention because it does not maintain the required traction force. While that passage rejects the particular seal used in Gantz as sufficient to satisfy the requirements of the invention, it does not mean that the invention excludes all seals other than pressure activated seals.
The district court concluded that, "[a]t the very least, the specification and prosecution history . . . make claims 1 and 16 of the '690 Patent ambiguous as to whether the pneumatic cylinder must utilize at least one pressure activated seal." In that setting, the court held that it was proper to apply the maxim that claims should be construed to preserve their validity. See Phillips, 415 F.3d at 1326. The court further concluded that if claims 1 and 16 were construed broadly, they would not be enabled because the specification "would provide absolutely no indication of how to construct the claimed invention because a pneumatic cylinder 'having at least one pressure activated seal' is the only pneumatic cylinder described in the specification" and because the inventors made clear that they did not believe an ordinary O-ring seal would work in a device of the sort they claimed.

In light of the structure of the claims (with some reciting pressure activated seals and others lacking that limitation), the focus of the Petition to Make Special on the defendants' device, and the absence of any clear disclaimer in the specification or the prosecution history, we hold that the term "pneumatic cylinder," as used in the '690 patent, encompasses cylinders that do not use pressure activated seals, and that claims 1 and 16 are not ambiguous. For that reason, it was error for the district court to use the possible invalidity of those claims, if broadly construed, as a basis for construing them narrowly. See Liebel-Flarsheim, 358 F.3d at 911. That is not to say that we reject the district court's validity analysis; we hold only that the court's validity analysis cannot be used as basis for adopting a narrow construction of the claims. Instead, any validity issues that the defendants have preserved and wish to press can be addressed on remand, as was done in the Liebel-Flarsheim case. See Liebel-Flarsheim Co. v. Medrad, Inc., 481 F.3d 1371 (Fed. Cir. 2007) (holding invalid claims that had been given a broad construction at the patentee's behest in an earlier appeal).

While we reverse the district court on the issue of claim construction, we do not suggest that the resolution of the claim construction issue presented in this case, or in other similar cases, is easy or that the outcome is dictated by the straightforward application of patent law principles. Cases such as this one, in which predecessor applications or patents were drawn to narrow claims and in which the claims in the successor application are arguably broader than the invention described in the specification, present difficult questions of both claim construction and validity. Where the applicant expressly and unambiguously states his intention to claim broadly, the claim construction issue is easier and the question becomes one of validity--whether the specification supports the full breadth of the new claims. On the other hand, where--as in this case--the patentee has not been explicit about the scope of the new claims, the case can pose interdependent problems of both claim construction and validity. We have concluded that the change in claim language between the '174 patent and the '690 patent, and in particular the inclusion of the "pressure activated seal" limitation in some claims and its omission from others, is a sufficiently powerful indicator as to the proper construction of the asserted claims that it outweighs the portions of the specification in which the invention is described narrowly. We emphasize, however, that the problem is a difficult one, made more so by the failure of applicants to state expressly to the examiner, whether for tactical reasons or otherwise, the extent to which they intended their new claims to depart from the scope of the claims in the predecessor applications. In many such cases, as in this one, we and the district court are required to draw sometimes conflicting inferences from different sources of guidance as to proper claim construction and to weigh those conflicting inferences in reaching a conclusion as to the proper construction. After engaging in that process in this case, we reach a different result from that reached by the district court, but not easily.

GO BACK

7. "forced point-bonding"

KXI contends that the phrase "forced point-bonding" means two or more primary particles joined together by an adhesive where the binder has been forced under pressure into some of the primary particle's macropores or exterior voids. PUR counters that "forced point-bonding" means two or more primary particles joined together by an adhesive. PUR states that the court adopted its proposed construction of the phrase in Culligan.

The specification of the '311 patent states that forced point-bonding materials have "adhesive-like bonds between the particles caused by the melting of the binder resin and squeezing this material to a point insufficient to consolidate into a continuous web." The specification also explains forced point-bonding as follows:
In many cases involving porous materials such as activated carbon, activated aluminas, and similar porous adsorbents, the binding agent is forced into the macropores and exterior voids of the individual particles to form physical connections between particles. This 'forced point-bonding' (FPB) results in structures that are generally more fragile than those having the continuous web matrix structure.

Based on this language in the specification, the court agrees with KXI that "forced point-bonding" means two or more primary particles joined together by an adhesive where the binder has been forced under pressure into some of the primary particle's macropores or exterior voids.

13. The '622 Patent - Claim 1 - Elements [d] and [f]

44. Elements [d] and [f] of Claim 1 recite that the spacer element includes a "locking means" to interlock with "an interlocking means provided on the protruding portion of the fixture," where "one of said means is an n-sided polygon and the other means is a 2n-sided polygon."

45. The parties disagree on the meaning of the term "polygon" in element [f] of claim 1. Neither the word "polygon" nor the phrases "n-sided polygon" or "2n-sided polygon" are found in the specification.

46. "Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning." York Prods., Inc. v. Central Tractor Farm and Family Center, 99 F.3d 1568, 1572 (Fed.Cir.1996). To find the ordinary meaning of a word, the Federal Circuit has reviewed dictionary definitions. See, e.g., Id.

47. The term polygon is defined in RANDOM HOUSE DICTIONARY OF THE ENGLISH LANGUAGE, Unabridged Edition (1979), p.1115, as follows:

Pol-y-gon . . . n. a figure, esp. a closed plane figure, having three or more, usually straight, sides. [<<L <ITALICS>polygon(um) <<GK <ITALICS>polygonon, neut. Of polygonos many-angled. See POLY -, - GON]

Thus, by definition, the term "polygon" does not require that the sides be straight.

E. Pre-calculated Calibration Plane

The dispute concerning the term "pre-calculated calibration plane" is over whether the calculation occurs in two dimensions or whether it involves a Z coordinate as well. The parties do not dispute that the calculation occurs prior to the inspection, or run-time. Scanner asserts that the term is defined as a calculation of a representation of a calibration plane in two dimensions where a three dimensional model is formed by views from two different cameras. (Scanner Post-Hr. Br. at 14). ICOS asserts that the term includes the calculation of the Z=0 world plane during the calibration process. (ICOS Post-Hr. Br. at 22).

Figure 2B is "a flow chart illustrating the steps within the pre[-]calculated calibration process." (Tr. at 144, ll. 1-3). The final step of Figure 2B, step 114, states "define X and Y world coordinates." Step 114 does not include any reference to determining the Z=0 world plane. (See Fig. 2B). According to the written specification describing step 114, however, the process includes determining the Z=0 world plane as well. (See Col. 7, ll. 6-8 ("In step 114 the processor defines the X and Y world coordinate and the Z=0 plane.")). Because the description of Figure 2B expressly states that the processor defines the Z=0 world plane, the term "pre-calculated calibration plane" is construed to define the X and Y world coordinate and the Z=0 world plane.
I. Both Cortland and Orvis are in the fishing equipment business. Cortland acquired the rights and interests to the '003 patent and a registered trademark, "CASSETTE." The '003 patent--issued from an application filed on August 2, 1990--covers a fishing reel with an interchangeable cartridge spool.

Traditionally, fishermen had great difficulty changing fishing lines in response to varying fishing conditions. To change fishing lines, a fisherman had to remove the entire reel spool from the pole and substitute another reel spool. This process made it difficult to quickly change fishing lines to accommodate changing fishing conditions. In addition, multiple spare reel spools with different fishing lines was an expensive proposition for most fishermen. The invention solves this problem by providing a fishing reel with an easily interchangeable cartridge spool that mounts onto the reel spool. Claim 1, the only independent claim, recites:

1. A fishing reel that provides for an interchangeable line bearing cartridge spool comprising:

   a housing, said housing including a flat wall, said housing having a rigid first spool receiving shaft affixed thereto and protruding away from said wall;

   a cartridge spool;

   first spool means for mounting said cartridge spool, said first spool means comprising a first end plate, a first spool axle attached rigidly to said first end plate, a second end plate, and means for connecting said second end plate to said first spool axle, said first spool axle having a hollow aperture which is fitted over said first spool receiving shaft;

   means attached to said first spool means for manually rotating said first spool means;

   said cartridge spool comprising two end plates and a central cartridge spool axle unitarily connected therebetween, said cartridge spool axle being fitted over and mounted upon said first spool axle, said cartridge spool carrying a supply of fishing line, whereby said cartridge spool can be installed on or removed from said first spool.

'003 patent, col. 6, ll. 12-34 (emphasis added). As shown below, Figure 1 of the '003 patent illustrates the invention:

GET DRAWING SHEET 1 OF 1.

Specifically, cartridge spool 26 is mounted between end plates 18a and 18d. To operate the invention, a fisherman places a cartridge spool between the two end plates, which essentially act as a reel spool of the fishing reel. The fisherman then couples female threaded connector 24a to male threaded connector 24b. The fisherman then simply attaches the assembled unit--first spool means--to fishing reel housing 12. To change fishing lines, the fisherman disengages the end plates 18a and 18d and replaces cartridge spool 26 with another cartridge spool. By carrying several different cartridges, a fisherman can speedily change lines according to different fishing conditions.

Orvis sells the accused fishing reel--marketed as Rocky Mountain Reels--having an interchangeable cartridge spool for quick and inexpensive changing of fly line. British Fly Reels, Ltd. (BFR), a British corporation, manufactures the Rocky Mountain Reels based on the technology described in Duffelen, United Kingdom Patent No. 2,183,431. BFR owns the Duffelen patent, which issued on June 10, 1987. The figure below illustrates a side elevational view of the Rocky Mountain Reel:

[SEE FIGURE IN ORIGINAL]

As shown above, the Rocky Mountain Reel contains a housing, a cartridge spool, and an end plate. The housing features a wall, a receiving shaft, and, at the base of the receiving shaft, a plastic insert with two receiving slots (not shown). The cartridge spool has two end faces connected by a cylindrical axle. A hollow, circular rubber grommet outlines the
circumference of the cylindrical axle facing the housing (not shown). The end plate includes a hollow spool axle with two prongs. For assembly, the cartridge spool slides over the spool axle, which in turn, slides over the receiving shaft of the housing. The two prongs of the spool axle then snap into the two receiving slots of the plastic insert.

On September 4, 1997, Cortland sued Orvis alleging infringement of the '003 patent and the registered trademark "CASSETTE." The district court granted summary judgment of no patent infringement. The district court determined that the Rocky Mountain Reel has no second end plate either literally or equivalently. Additionally, the district court decided on summary judgment that Orvis does not infringe Cortland's trademark. Cortland appeals.

II.


The first step, claim construction, is a matter of law, which this court reviews de novo. See Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 U.S.P.Q.2D (BNA) 1169, 1172 (Fed. Cir. 1998) (en banc). Although the central focus remains on the claim language as illuminated by the written description and the prosecution history, extrinsic evidence may supply context to understand the claim language. See Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1309, 51 U.S.P.Q.2D (BNA) 1161, 1168 (Fed. Cir. 1999); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996).

The only disputed element of claim 1, the first spool means, contains four components: (1) a first end plate, (2) a first spool axle attached to the first end plate, (3) a second end plate, and (4) means for connecting the second end plate to the first spool axle. In dispute are the second end plate and the means for connecting.

This court first examines the meaning of the claim term "a second end plate." Claim terms receive their ordinary and customary meaning unless the patentee assigns a special meaning. See Vitronics, 90 F.3d at 1582. The plain meaning of the term "plate" means a broad, flat piece of material. See WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 901 (1990). The words and drawings in the '003 patent reinforce this customary meaning of the word "plate."

The written description of the '003 patent describes the end plate as a structure that can accommodate "frictional contact" with a cartridge spool to resist relative rotation between the cartridge spool and the end plates. See '003 patent, col. 2, ll. 54-60. Figure 1 of the '003 patent illustrates two distinct end plates 18a and 18d as flat, disc-like structures. End plates 18a and 18d have surfaces of sufficient diameter so that "the end faces of cartridge spool 26 flush against the inside of spool 18 end faces [and] keep the outside end plate 18d firmly locked in position." Id., col. 4, ll. 62-65. When in place, these end plates have frictional contact with the cartridge spool and resist rotation.

Moreover, in the '003 patent's "Brief Description of the Drawings," the patentee states that "FIG. 1 shows a side elevational view exploded of a fishing reel in accordance with the present invention including the interchangeable spool." '003 patent, col. 3, ll. 31-33 (emphasis added). Indeed, figure 1 illustrates the only embodiment of the claimed invention. In figure 1, the second end plate is a disk-like structure of sufficient diameter that is separate from the cartridge spool and abuts the end face of the cartridge spool. Thus, the specification supports the conventional meaning of the word "plate" as a broad, flat disc.

The record of the administrative proceedings before the United States Patent and Trademark Office supports this interpretation of the '003 patent. Specifically, in seeking allowance of the pending claims, the applicant stated during prosecution:

The rotatable spool fishing reel shown by Duffelen is itself completely different than applicant's reel both in structure and
function. Clearly, neither Kovalovsky or Duffelen shows a cartridge spool mounted on a conventional type spool with one of the spools functioning as a removable cartridge to the primary reel spool that functions in a conventional way. . . . The fact is that when combined, there is no logic that would allow one to end up with a spool mounted on a spool as specifically claimed in applicant's claims 1 through 8.

J.A. at 200 (emphasis added). Accordingly, the two end plates constitute outer surfaces of a "primary reel spool that functions in a conventional way." The end plates thus secure the removable cartridge spool within the conventional reel spool. To secure the cartridge spool within the reel spool, as illustrated in the patent drawings, the second end plate must be a disk-like structure that abuts the end face of the cartridge spool. The function and description of the second end plate also require sufficient diameter--approximating that of the cartridge spool--to hold the cartridge spool in place. In sum, the prosecution history also supports the customary meaning of the term "plate."

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A. "plate"

The parties agree that the word "plate" may be used to describe flat or slightly curved disc-like structures. NJI argues that the word "plate" encompasses many other forms including bent plates, curved plates and planar plates. While Fisher acknowledges that "plates" may be bent to form other structures such as "tubes," Fisher contends that the term "plate" comprises only flat or slightly curved structures and that, once plates are combined or a plate is altered to form another structure, that structure can no longer be referred to as a "plate."

The claims of the '510 Patent refer to "plates" generically and to "plates" which are "planar." Clearly the term "plate" in isolation encompasses more than merely "planar" (flat) structures. The specification expressly defines "plate":

The term "attenuator plate" as used with respect to the structures is considered in its broadest sense, and may include screens, nets, etc., as more fully described above with respect to the FIGS. 1 through 12 embodiments.

'510 Patent at col. 7, 11. 9-13. The descriptions of Figures 1 through 12 of the Patent disclose "plates" which are "twisted in a spiral configuration" and "screens" (one variety of "plate") which are "curved." Id. at col. 5, 11. 36 & 49. The description of figures 8 and 9, however, distinguishes between "plates" and "tubes." Id. at col. 5, 11. 36-43.

The ordinary meaning of the word "plate" is a structure that is thinner than it is wide or long and that is generally flat and solid. 1 The claims and specification of the '510 patent expand that definition to encompass structures that may be flat, curved or twisted and that may be perforated such as a screen or net. The specification specifically excludes "tubes" from that expanded definition of "plate." This Court will therefore construe a "plate" as a structure that is thinner than it is wide or long and that may be flat, curved or twisted and perforated such as a screen or net but that is not a tube.

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1 Based upon the testimony of Cullen Langford, a mechanical engineer certified as an expert in valve operations and standards for valves, this Court concludes that there is no special definition of "plate" in the field of mechanical engineering and that, therefore, a person of ordinary skill in the art of valve mechanics would give the word "plate" its ordinary meaning.

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3. work platform; planar work platform

The term "work platform" appears in claims 1 - 24 of the '874 patent, and claims 1 - 20 of the '786 patent. The term "planar
work platform" appears in claims 25 - 53 of the '213 patent and claims 10 - 12 of the '283 patent. The plaintiff proposes a common construction for both terms of "a planar surface designed to allow the child to interact with the toy by causing contact with the surface." The defendant initially proposed different constructions for each term, arguing that "work platform" meant "an integral planar physical platform of the toy housing for receiving blocks," and that "planar work platform" meant "an integral planar physical platform of the toy housing for receiving blocks and not containing defined cavities for receiving objects." In light of the intrinsic evidence, the defendant changed each of its proposed constructions to "a planar platform of the toy housing for receiving a plurality of blocks." Brief of the Defendant at 31.

The defendant's proposed construction improperly incorporates separately claimed features. For example, claim 10 of the '283 patent states "a planar work platform on which a child can make selections by causing contact across a surface of the planar work platform," as well as "correctly solved by the child causing contact with the work platform." '283 patent, cl. 10. As is evident from the claim language, the "work platform" is distinct from the interactive limitation of "causing contact." Additionally, as discussed above, the patentees' invention is not necessarily limited to children.

The defendant's construction improperly incorporates a requirement that the work platform be a part of, e.g. integral with, the toy's housing. The specification contradicts this limitation. For example, Figure 1 depicts an embodiment where the work platform is separate from toy housing, while Figure 2 depicts an alternative embodiment where the toy housing and work platform are joined in a unitary structure. See '874 patent, 3:6-67.

The defendant's attempt to incorporate the word "planar" within the construction of "work platform" is improper because the term "planar" is separately included in the claims. See '283 patent, cl. 10. Additionally, as discussed above, the defendant's proposed construction improperly incorporates the term "block."

For the foregoing reasons, the court concludes that the term "work platform" means "a surface for receiving objects," and the term "planar work platform" means "a planar surface for receiving objects."

A. Pleat

Cuno and Pall have submitted competing constructions of the term Pleat -- which appears literally hundreds of times in the '047 and '765 Patents. Pall asserts that the proper construction of the term is "two legs which are joined to one another at a crown and to a leg of an adjacent pleat at a root." Cuno argues that the term should mean "two legs which are joined to one another at the crown of the outer periphery of the filter element and which are joined to a leg of an adjacent pleat at the root of the inner periphery of the filter element." This Court finds that Pall's construction of this claim is proper.

Applying the legal standard, stated above, to the construction of the term Pleat results in a determination that it has a meaning that is broader than Cuno asserts. To interpret a term, this Court must first consider the words of the claim and all other intrinsic evidence. In this case, the consideration of intrinsic evidence ends the inquiry and provides this Court with certainty as to the meaning of this disputed term.

Pall's asserted definition of the term Pleat is supported by the wording of the claims themselves. The wording of the 143 patent claims of the asserted patents does not contain language that requires the Pleats to have crowns and roots located at the outer and inner peripheries of the filter element. Rather, the claim language Pleat is somewhat broader. Specifically, claim 1 of the '047 patent, provides that each pleat has "a pair of legs, each of the legs having a first and a second surface." '047 patent, col. 26, lines 19-20. Claims 54 and 92 of the '047 patent state, in pertinent part, that

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each of the pleats has a curved configuration and includes a crown, a root, and a pair of legs, . . . the legs of each pleat being joined to one another at the crown and joined to a leg of an adjacent pleat at the root . . . .

'047 patent, col. 30, lines 5-9; '047 patent, col. 32, lines 34-39.
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Other intrinsic evidence also supports Pall's construction of the term Pleat. The specifications of the asserted patents describes the term Pleat broadly without limiting the crowns and roots of the Pleats to be located at the outer and inner
Cuno argues, however, that the specifications, specifically the preferred embodiments, should limit the construing of the term Pleat to include crowns and roots that are joined at the outer periphery and inner periphery of the filter element, respectively. (Def.'s Mem. in Supp. 15.) This Court declines to agree with Cuno's argument. The Federal Circuit has made clear that descriptions and drawings of the preferred embodiments are not to be used to limit the language of the claims. See Phillips, 415 F.3d at 1323 ("although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments"); Home Diagnostics, Inc. v. Lifescan, Inc., 381 F.3d 1352, 1355 (Fed. Cir. 2004); Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1306-7 (Fed. Cir. 2003). Thus, despite the fact that the patents contain a preferred embodiment, which may show and describe crowns and roots that are joined at the outer and inner peripheries, the term Pleat is not construed to contain such a limitation. See Phillips, 415 F.3d at 1323 (discussing the importance of not "importing limitations from the specifications into the claims").

3. "Pliable sheet material"

At the preliminary injunction hearing, I found that claim 1 of the '909 patent requires three things: a core made of a pliable sheet material, a layer of adhesive and a light absorbing coating. As I noted at the hearing, and as is undisputed here, defendant's product has only a layer of ink and a layer of adhesive and no pliable sheet material separating the two. (I will construe defendant's assumption that this conclusion was final as an argument that this construction is correct.) Plaintiff contends that the patent does not necessarily require three layers; it argues that the limitation may be satisfied by an ink layer and an adhesive layer that combine to form a pliable sheet material.

Plaintiff cites the following passage from the claim specification as teaching both a two-and three-layered structure:

As to the light absorbing coating 12, while it may be a coloring material or dye which permeates the body layer, the light absorbing surface may comprise a non-reflective, such as black, hypo-allergenic coating uniformly applied over the surface of the body sheet.

'909 Pat., col. 2, Ins. 37-41 (emphasis added). According to plaintiff, this passage confirms that the '909 patent encompasses two-layered devices wherein the light absorbing coating becomes "one and the same" with the body layer. To the extent that plaintiff is suggesting that this portion of the specification indicates that the color material or dye might qualify as the body layer itself, such a reading would rest on an unsustainable interpretation of the word "permeates." Instead, I understand plaintiff to posit the far more reasonable construction that the patch might consist of two layers wherein one is the adhesive layer and the other is a body material permeated with a some sort of dye. Although I would tend to agree that this portion of the patent specification reveals that the body layer and the coloring material do not need to be physically distinct, plaintiff makes a sleight-of-hand-like suggestion that because the patch might be characterized as a "two-layered" that any two layers will do. If anything, this passage indicates that there must be some sort of body material in addition to the adhesive and the dye or other coloring material.

Other portions of the specification provide further confirmation that "pliable sheet material" means something other than the dye and adhesive:

For the body sheet layer [], any economically feasible, self-sustaining, pliable sheet material may be used such as a medical grade air permeable tissue. This may be a felted fibrous material such as semi-bleached craft, porous thin plastic sheet, plastic mixed or impregnated paper tissue, or any other thin sheet material such as may be used for medical adhesive bandages, and which is susceptible to mass production die cutting or stamping of the patches.

'909 Pat., col. 2, Ins. 28-36. This specification teaches that the pliable sheet material must be akin to a medical grade air permeable tissue, a semi-bleached craft, a porous thin plastic sheet, a plastic mixed or impregnated paper tissue, or any other thin sheet material that may be used for medical adhesive bandages. Additionally, it shows that the sheet material must be sufficiently "pliable" as to be "susceptible to mass production die cutting or stamping of the patches." See also Merriam
Webster's Collegiate Dictionary 894 (10th ed. 1997) (defining "pliable" as "supple enough to bend freely or repeatedly without breaking").

In light of the above specifications, I conclude that "pliable sheet material" means a thin, flat bendable material, similar to a medical grade air permeable tissue, porous thin plastic sheet or a plastic mixed or impregnated paper tissue, having one side either coated or permeated with a light absorbing material and having a layer of pressure sensitive adhesive on its opposing side.

1. "pliable tubular body"

The parties first dispute the meaning of the language in claims 1 and 7 of the '133 patent that describes a "pliable tubular body having a closed front end and a rear edge bounding an opening into a body compartment into which an amount of lead shot is inserted prior to closure of the body compartment." '133 patent, 4:57-60. The plaintiff's proposed construction of the phrase is "a non-rigid structure having a tubular shape and a cavity of unspecific dimensions with an amount of lead shot therein." Plaint. Br. at "Ex. G." Defendants' proposed construction is "a stretchable tube shape hollow body having a single inner compartment formed by one closed end opposite one opening formed by a rear edge." Def. Br. at 14.

3 Claim 7 is identical to Claim 1, except that the word "maintained" is substituted for "augmented." Claims 1 and 7 are the two independent claims in the '133 patent.

The parties agree that the claims describe a projectile body containing a single cavity or compartment. The parties disagree as to whether "pliable" means "stretchable" or "non-rigid." The ordinary meaning of "pliable" is not "stretchable," but rather "bendable." Therefore, the claim language is properly construed to mean "a bendable tube shape structure having a single compartment that is formed by a closed front end and a rear edge that bounds an opening, through which opening an amount of lead shot is inserted prior to closing the opening."
to define the term "plug" by what it does not mean rather than by what it does mean. The discussion of the use of bone wax
in the prior art focused on problems with the manner in which it was used. They maintain that the term "plug" should not be
construed based upon its composition where there is no restriction in the claim language regarding the material composing
the plug.

The competing constructions offered by the parties present several issues: (1) whether the Court should construe the term
"plug" to cover only embodiments that do not include bone wax in light of the disclaimers in the specification; (2) whether
the World Wide Plaintiffs' construction is so broad as to encompass prior art; and (3) whether the limitations in
AnazaoHealth's proposed construction are necessary to preserve the validity of the '760 Patent.

(i). Exclusion of Bone Wax

The specification discusses complications in the prior art that "stem from the use of bone wax or other materials that are
used to plug the cannulas prior to the loading of the radioactive seeds." (‘760 Patent col. 2, ll. 1-3 (emphasis added).) The
specification then lists four drawbacks associated specifically with the use of bone wax. Id. at col. 2, ll. 4-20. Elsewhere, the
specification describes the invention as including a "biocompatible end plug which may be made of a variety of materials
including absorbable or non-absorbable suture materials either in a braided or monofilament configuration or molded
biocompatible polymers." Id. at col. 2, ll. 35-39 (emphasis added). Repeatedly thereafter, the specification refers to a
"biocompatible end plug" without further limitation as to the composition of the end plug. Id. at col. 2, ll. 53, 58. In the
Description of the Preferred Embodiments section, the material of the end plug is described as

biocompatible and biodegradable. It may be formed, for instance, of processed collagen (catgut), Nylon or various other
organic substances. A preferred material is polyglactin acid (PGA) available under the trademark POLYGLACTIN 910.

Id. at col. 4, ll. 2-7. This section also recites the exact positioning of the end plug as a significant advantage over "the
hazard positioning of the more proximate end of a bone wax material as used in the needle assemblies of the prior art." Id.
at col. 4, ll. 36-38 (emphasis added). The inventors note that other variations of the invention are contemplated. Id. at
col. 5, ll. 29.

The Federal Circuit has repeatedly cautioned against importing limitations from the specification into claim terms. See, e.g.,
Phillips, 415 F.3d at 1323-24; Callicrate, 427 F.3d at 1368; North Am. Container, Inc. v. Plastipak Packaging, Inc., 415 F.3d
1335, 1348 (Fed. Cir. 2005). At the same time, if the specification makes clear that the invention does not include a
particular feature, that feature is deemed outside the claims of the patent even though the claims might otherwise be
considered broad enough to encompass that particular feature. SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.,
242 F.3d 1337, 1342 (Fed. Cir. 2001).

Based on a review of the intrinsic evidence, the Court concludes that the term "plug" should not be construed so as to limit
the composition of the plug to materials other than bone wax. Although the specification does discuss the disadvantages
associated with the manner in which prior art used bone wax to plug cannulas prior to loading the radioactive seeds, the
specification discloses that the end plug may be composed of any material that is suitable for brachytherapy operations.
While it lists specific examples of preferred materials, it does not limit or foreclose the use of any other materials. Nothing
in the intrinsic evidence to suggest that the inventors intended to exclude or disavow any particular material from the scope
of the claim, if that material was suitable for use in brachytherapy and could be fashioned in such a manner as to create a
plug that could be inserted into the cannula a predetermined distance from the distal end. Statements in the specification
discussing the disadvantages of prior art do not necessarily require a limiting construction, particularly where the language
of the claim and the presumption of claim differentiation call for the opposite conclusion. See Acumed LLC v. Stryker
Corp., 483 F.3d 800, 805 (Fed. Cir.) (rejecting the alleged infringer's reliance on the discussion in the specification of the
disadvantages of certain features of prior art to limit the claim of the asserted invention), cert. denied,552 U.S. 1022, 128 S.
Ct. 615, 169 L. Ed. 2d 393 (2007).

(ii). Distinguishing the Claimed Invention from the Prior Art

AnazaoHealth also cites to the prosecution history as limiting the breadth of the term to something that is a "separate
ejectable member" and of "predetermined dimensions."
Clearly, statements made during prosecution may also affect the scope of a claim. Computer Docking Station Corp. v. Dell, Inc., 519 F.3d 1366, 1374 (Fed. Cir. 2008). "Specifically, a patentee may limit the meaning of a claim term by making a clear and unmistakable disavowal of scope during prosecution." Id. (internal citation and quotation marks omitted). For example, a patentee might clearly characterize an invention in a particular way to try to overcome a rejection based on prior art. Id.

As AnazaoHealth points out, the prosecution history reveals that Claim 1 was rejected initially as being anticipated by prior art, the Mercereau Patent, et al. (U.S. Patent No. 6,450,937), which showed two different yieldable means. (W0470.) The patentees then revised Claim 1 of the ‘760 Patent to add "including a plug" after yieldable means (and later "fronctionally held"). The Remarks submitted with the revision describe Mercereau as showing a lubricious coating, some of which was allowed to accumulate by surface tension in the end of the tube to form a web. This was formed by dipping the tube into a vat of coating material, where capillary action and surface tension caused a small quantity of the coating material to remain in the forward end of the tube. The quantity of lubricious material entering the tube was "notoriously unreliable" and would extend over different distances, varying from one tube to the next. Additionally, the web was comprised of solid polymers that were not absorbable or biodegradable. (W0481.) In the second version of Mercereau, the lubricious coating was allowed to accumulate by capillary action and surface tension to form a "plug" that was "not a separate ejectable member," as described in the ‘760 Patent. Rather it was the solidified overflow into the distal end of the cannula by capillary action when the cannula was dipped into a vat. This embodiment of the prior art was considered even more unreliable in terms of the distance the material would extend into the cannula. Id.

The patentees asserted that an essential feature of their invention was the yieldable means of positioning the element a pre-determined distance from the distal end includes a plug of predetermined dimensions with a rearward end that is positioned an exact length back from the extreme distal end of the beveled point. This distance is critical and does not vary from assembly to assembly. . . . Since Mercereau clearly does not include a plug which positions an element a predetermined distance from the distal end, Mercereau does not anticipate Claim 1.

(W0481-W0482 (first emphasis added, second emphasis in original).)

According to AnazaoHealth, these statements constitute a clear and unambiguous disavowal by the patentees that the plug of their invention was anything other than one of predetermined dimensions that was separate and ejectable. The Court agrees that these statements, as well as the specification and other claims of the Patent, support AnazaoHealth's interpretation that the plug must be ejectable. However, that requirement is already included in Claim 1, which describes a "plug" as an example of a "yieldable means," i.e., "means capable of yielding, or giving way under force." Therefore, to include the limitation that the plug must be ejectable would be redundant.

The Court disagrees, however, that the these statements in the prosecution history constitute a clear disavowal of a plug being anything other than of predetermined dimensions. While the remarks describe features of the claimed invention, including a plug of predetermined dimensions, which differentiate it from Mercereau, they do not expressly disavow other embodiments of a plug for positioning an element a predetermined distance from the distal end of the cannula. See Northern Telecom Ltd. v. Samsung Elecs. Co., 215 F.3d 1281, 1294 (Fed. Cir. 2000) (refusing to limit scope of claim where statements in the prosecution history did not exclude the possibility of using a particular process); Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1458 (Fed. Cir. 1998) (holding that statements in prosecution history distinguishing prior art could not properly be interpreted as precluding coverage for every type of external reservoir). In fact, the specification and other claims in the ‘760 Patent describe methods of changing the size of the plug to enhance its frictional engagement with the wall of the cannula, which contradicts the requirement that the plug must be of predetermined dimensions. See, e.g., Claims 18-21. Rather, the critical distinction between the ‘760 Patent and Mercereau was the ability of the claimed invention to position an element a "predetermined distance from the distal end," not that the plug itself was of predetermined dimensions. The court declines to include the limitation that of "predetermined dimensions" in the definition of "plug."

(iii). Invalidity of Plaintiffs' Construction

Lastly, AnazaoHealth argues that Plaintiffs' attempts to construe "plug" in a manner than extends to bone wax renders the patent invalid for want of enablement under 35 U.S.C. § 112, P 1, because the Patent does not enable the full scope of the
invention claimed. AnazaoHealth asserts that Plaintiffs’ position puts this case squarely within the holding of AK Steel Corp. v. Sollac and Ugine, 344 F.3d 1234 (Fed. Cir. 2003).

As AnazaoHealth correctly observes, when claims are amendable to more than one construction, they should be interpreted to sustain their validity if reasonably possible. See Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed. Cir. 1999). Claims, however, "can only be construed to preserve their validity where the proposed claim construction is 'practicable,' is based on sound claim construction principles, and does not revise or ignore the explicit language of the claims." Generation II Orthotics Inc. v. Med. Tech., Inc., 263 F.3d 1356, 1365 (Fed. Cir. 2001). In Phillips, 415 F.3d at 1327, the Court acknowledged this "maxim," but noted that it had not been applied broadly nor had the Federal Circuit endorsed "a regime in which validity analysis is a regular component of claim construction." Instead, this principle has been limited to cases in which "the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous." Id. (quoting Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 911 (Fed. Cir.), cert. denied, 543 U.S. 925, 125 S. Ct. 316, 160 L. Ed. 2d 223 (2004). "In such cases, [the Federal Circuit has] looked to whether it is reasonable to infer that the PTO would not have issued an invalid patent, and that the ambiguity in the claim language should therefore be resolved in a manner that would preserve the patent's validity." Id.

The first paragraph of section 112 provides in relevant part that the specification shall describe "the manner and process of making and using [the invention]," in such clear and concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use [the invention]." The enablement requirement is met when one skilled in the art could, after reading the specification, practice the full scope of the claimed invention without undue experimentation. AK Steel, 344 F.3d at 1244. "That is not to say," however, "that the specification itself must necessarily describe how to make and use every possible variant of the claimed invention, for the artisan's knowledge of the prior art and routine experimentation can often fill gaps, interpolate between embodiments, and perhaps even extrapolate beyond the disclosed embodiments, depending on the predictability of the art." Id. (citing Genentech, Inc. v. Novo Nordisk A/S, 108 F.3d 1361, 1366 (Fed. Cir.), cert. denied, 522 U.S. 963, 118 S. Ct. 397, 139 L. Ed. 2d 310 (1997)).

In AK Steel, the Court held that the patent was invalid because the specification failed to enable the full scope of the patent claims where the patentee had made it clear that a specific type of material would not work with the invention, yet this material was encompassed within the construction of the claim. Id. at 1244. Here, however, as discussed above, unlike AK Steel, the patentees have not disavowed the use of any specific material, including bone wax, as a plugging material. Rather, they have disavowed the manner in which bone wax and other plugging materials were used or applied in the prior art. The Court does not find the Patent invalid for failure to meet the enablement requirement of section 112, paragraph 1.

The Court concludes that, in light of the specification, the words of the claims themselves, and the prosecution history, a person of ordinary skill in the art would interpret the claim term "plug" to mean "an object or material used to fill or seal an opening," as urged by the World Wide Plaintiffs. Thus, Claim 1 would read in relevant part, "a needle assembly comprising a cannula . . ., a line of elements . . ., yieldable means, including a frictionally held object or material used to fill or seal an opening, for positioning an element more proximate the distal end a predetermined distance from the distal end. . . ."

Poly-America maintains that the term "plug" should be construed to mean "an object that prevents, rather than one that merely throttles or constricts, extrusion of thermoplastic flow at the location where it is disposed in the first side passage." Serrot contends that the term "plug" should be construed to "mean any of various devices or masses of material, resembling or functioning as a stopper, which can be placed by any means in an extrusion passage to partially block the extrusion passage and prevent the extrusion of material in the area intended to yield a smooth surface." Concerning the phrase "to partially block the extrusion of said molten thermoplastic material from said first side passage," Poly-America urges that, read in conjunction with the term "plug," the phrase means "the plug is disposed, and prevents extrusion, only along a part of the circumference of the first side passage, so that molten thermoplastic material is extruded through the side passage except at the portion of its circumference where the plug is positioned."

2 This construction, although addressed to claim 1 and the "first side passage," would also control claim 2, the dependent
Having considered the parties' briefs and the intrinsic evidence and appropriate extrinsic evidence, the court concludes that one of ordinary skill in the art at the time of the invention would have understood the term and phrase in question to mean the following: 3

3 The request that the court construe the term "plug" arose at the November 26, 2002 pretrial conference. The court received briefing on the construction of that term, and of the phrase in question, on December 3 and 4, 2002. In order to provide the parties sufficient advance notice of its rulings before the commencement of trial on December 9, 2002, the court is filing a memorandum opinion that sets out its construction, but it reserves the option of elaborating on the ruling if necessary to facilitate appellate review.

As used in claim 1 of the '112 patent, the term "plug" means an object located in the first side passage that prevents extrusion of molten thermoplastic material through the location where the object is disposed in the first side passage. As used in claim 2 of the '112 patent, the term "plug" means an object located in the second side passage that prevents extrusion of molten thermoplastic material through the location where the object is disposed in the second side passage.

To determine whether or not a term that uses the word "means" should be construed pursuant to § 112, P 6, "the focus is on whether the claim term recites no function corresponding to the means or recites sufficient structure or material for performing that function." Apex Inc. v. Raritan Computer, Inc., 325 F.3d 1364, 1372 (Fed. Cir. 2003) (citing Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1302 (Fed. Cir. 1999)). The Court finds that the term "pluggable memory key means" has sufficient structure to fall outside the ambit of § 112, P 6. There is no dispute between the parties that the term "pluggable" allows the memory key to be alternatively inserted and removed from the meter. Furthermore, there is no dispute between the parties that the "memory key" is a chip or module that contains data.

Apex/HDI contend that the prosecution history makes clear that the "pluggable memory key means" is a means plus function term. However, as pointed out by Roche in its reply brief, the references cited by Apex/HDI all refer to claim 5 to bolster their argument that Roche has failed to rebut the presumption that the language used for the term makes it a term subject to § 112, P 6. The prosecution history reads:

Claim 5 specifically recites the operation of the processor means performing certain functions in relation to a CRC value read from the pluggable key means. . . . Applicants are unable to comprehend the basis for the inclusion of claims 5 and 16 in the rejection under 35 USC 112 [sic], fourth paragraph. Applicants respectfully submit that claims 5 and 16 are clearly proper dependent claims and fall well within the bounds of paragraph 6 of 35 USC 112 [sic]. Applicants further submit that
the Examiner's statement at the bottom of page 6 of the official Office Action is in clear error when considering the recitations contained in the presently pending claims. For the record, the Examiner indicated as follows:

"The dependent limitations with respect to how the processor or pluggable memory key means is to be sued have not been given any patentable weight with respect to the apparatus limitations. Patentability of apparatus claims are dependent upon features not on how the particular feature is to be used. The claimed feature only need to be capable of performing the function". [sic]

35 USC 112 [sic], sixth paragraph provides a statutory basis for means plus function claims. Function recitations is [sic] means plus function claims limit how the "means" are to be used. Thus, by definition, the functional recitations contained in the pending claims are entitled to be given "patentable weight" and to be considered as defining Applicants [sic] invention in full conformance with 35 USC [sic]. Applicants respectfully submit the Examiner was in error in taking the above-noted position. Withdrawal of the rejection of claims 5 and 6 under 35 USC 112 [sic], fourth paragraph is respectfully requested.

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. . . Claim 5 recites that the pluggable key means stores a cyclic redundancy check value (CRC). Claim 5 further recites a function performed by the processor means in combination with the CRC values. No such teaching is present in Keiser et al.

Apex Defs.' Exh. 2, at A70-A73. In summary the patentees stated:

In view of the above, Applicants respectfully submit that claims 1, 2, 5, 15, and 16 clearly differentiate over any teaching of Keiser et al. or any teaching which one skilled in the art might derive from Keiser et al. Applicants respectfully submit that the functional statements contained in the rejected claim must be considered in determining the patentability thereof in conformance with 35 USC 112 [sic], sixth paragraph. Reconsideration and withdrawal of the rejection of claims 1, 2, 5, 15 and 16 under 35 USC 102(b) [sic] is respectfully requested.

Id. at A73. These sections indicate that the patentees argued for evaluation of at least original claims 5 and 16 pursuant to § 112, P 6, however, there is no connection between these arguments and claim 1.

Even if there were such a connection, there is no distinguishable difference between the structure identified by a plain-meaning interpretation of the term "pluggable memory key means" and a means-plus-function interpretation of the term. The clear meaning and/or structure for the term "pluggable memory key means" in the 609 patent is: a removable and/or reinsertable read-only-memory ("ROM") chip and/or module. The parties apparently agree that the 609 patent specification repeatedly refers to interchangeably a "removably, pluggable memory module" or a "pluggable read only memory(ies)" or a "pluggable memory key" or "pluggable ROM key" or simply a "ROM key." See, e.g., 609 Patent, col. 1, ll. 9-10; id. col. 3, ll. 13-33; id. col. 3, ll. 46-64; id. col. 4, ll. 40-56; id. col. 5, ll. 5-17. It is the reinsertable, ROM or memory key/module that is inserted into an electrical receptacle of the meter, and stores parameter values and procedure routine specifications (or procedure routines), throughout the 609 patent's specification.

For the foregoing reasons, the Court finds that the "pluggable memory key means" is: a removable and/or reinsertable read-only-memory ("ROM") chip and/or module.

10. "one or more plugs for external drives and devices, and ports for switches"

This term appears in the '408 patent claim 9. Rackable contends that "one or more plugs for external drives and devices, and ports for switches" means "one or more plugs for drives and peripheral computer subsystems (such as disks, keyboards, monitors, mice, printers, scanners, tape drives, microphones, speakers, or cameras) that are external to the computer chassis, and one or more ports for switches." Supermicro asserts that "one or more plugs for external drives and devices, and ports for switches" means "one or more connectors for drives or elements that are external to the computer, and openings that provide access to switches."
Again, it is helpful to provide the full language of claim 9 of the '408 patent, which recites:

A computer comprising:

- a main board having I/O connectors including one or more data transmission ports mounted thereon; and
- a chassis comprising a front panel providing access to the I/O connectors including the one or more data transmission ports and access to each component provided for the computer selected from the group consisting of removable power supplies, removable drives, removable media drives, one or more plugs for external drives and devices, and ports for switches.

The essence of this dispute is really how "device" should be defined. It is clear to the court from the parties' arguments in their papers and at the hearing that there really is no dispute regarding the definition of "plug" or "drive;" that the drives and devices are "external" to the computer; and that "ports for switches" are openings. Accordingly, the court declines to define those terms, which are undisputed.

As for the definition of "device," Supermicro advocates a broad definition of the term, contending that "device" is synonymous with "element," and should be construed as a generic term referring to any item that is hooked up to a computer. Rackable, on the other hand, argues for a narrower definition, one that limits a "device" to a "peripheral computer subsystem" and provides examples of "peripheral computer subsystem[s]."

Rackable argues that Supermicro improperly attempts to broaden the definition of the term "device." Rackable cites to the '366 patent specification, including figure 1, in support of its argument that "referred-to 'devices'" include "peripheral computer devices, such as keyboards, monitors, mice, printers, scanners, tape drives, microphones, speakers or cameras." See '366 patent at 6:11-18. Rackable also cites to a dictionary definition for "device." See Ostrapuk Decl., Exh. DD.

Supermicro counters that Rackable's narrow definition of the word "device," limiting it to a "peripheral computer subsystem" is contrary to the specification. It asserts that the patent application intentionally chose to use the generic term "device," as opposed to the more specific "computer subsystem" or "peripheral device." Supermicro also cites to a technical dictionary definition for the term "device."

It is not necessary for the court to resort to extrinsic evidence to construe the term "device" because the specification provides meaning for the term. The related '366 patent abstract clarifies that Supermicro's broader construction of "device" is more appropriate. That abstract explains that "by placement of access space to all elements which require periodic attention at the front of each computer, the need for significant space at the rear of a computer is eliminated." '366 patent abstract. Later in the specification's "summary of invention," the specification utilizes a similar broad term for "devices" -- "attachments." '408 patent at 4:8. The specification also provides examples of such "devices," but the list is not exhaustive. In the detailed description of the embodiments, the specification provides that "a number of devices may be optionally used in this port" and then continues with a discussion of the possible types of "drives" (not to be confused with "devices"). '408 patent at 6:7-13. The specification then suggests that devices may include "USB/external SCSI or parallel port devices or other auxiliary data drives configured for plug-in use." Id. at 6:13-19. However, nowhere does the specification define "devices" as narrowly as Rackable would have the court construe it.

Because the court finds that the specification supports a broader construction of "device," and also finds that "attachment" is clearer than "element," as advocated by Supermicro, the court construes "one or more plugs for external drives and devices, and ports for switches" as one or more plugs for external drives and attachments, and ports for switches.

3. "plunger"

Plaintiff's Proposed Construction: "a device that can be inserted into a blender"

Defendant's Proposed Construction: "an elongated device having a cross-sectional size that is approximately equal to the
cross-sectional size of a member associated with the blades, which is inserted into a blender and positioned within the area where an air channel would otherwise form during blending" and "not a stirrer, i.e. not used in a stirring operation"

The Court's Construction: "a device that can be inserted into a blender"

Plaintiff argues that a "plunger" is any "device that can be inserted into a blender" including a "stir stick" such as that used in defendant's blenders. Defendant argues that plaintiff disclaimed all "stirrers," including stir sticks. Defendant also seeks a claim construction adding limitations to the claim term that would require the plunger to be "elongated," "having a cross-sectional size that is approximately equal to the cross-sectional size of a member associated with the blades," and "positioned within the area where an air channel would otherwise form during blending." Defendant acknowledges that its arguments are all directed to the functionality and operation of the plunger (that is, to limitations on the claimed method) rather than to the structure of the claim term "plunger."

The Court finds that, while the inventors have disclaimed a method of stirring to break up an already formed air pocket, such a disclaimer is not equivalent to disclaiming the structure of a stirrer. In fact, the parties have not identified any structural differences between a plunger and a stirrer. Tellingly, during the prosecution of the '892 application, the examiner equated the structure of the prior art stirrers with that of the claimed plunger in rejecting the apparatus claims as anticipated by the prior art stirrers. Further, the disclaimer of stirring methods is encompassed by the Court's construction of the term "preventing the formation of an air pocket," above.

Turning to the limitations defendant seeks to add to the term "plunger," defendant first argues the plunger must be "elongated." In the specification, the plunger is not well-defined. It is described as having a "stop member," which is a member that would keep the plunger from falling into the blender and contacting the blades in the absence of constant user attention. During prosecution, the inventors characterized the plunger portion and handle portion of the then-claimed apparatus as being "longitudinally extending members with the stop member being positioned therebetween." However, in doing so, the inventors were describing three claim elements that do not appear in Claim 1: a plunger portion, a handle portion, and a stop member. Because the intrinsic evidence lacks any clear and unambiguous characterization of the plunger as elongated, the Court declines to so limit the claim.

Defendant next suggests that the plunger must have a cross-sectional size approximating the cross-sectional size of the member associated with the blades. This limitation already appears elsewhere in the claim and need not be imported into the term "plunger."

Defendant also asks the Court to require that the plunger be positioned within the area where an air channel would otherwise form during blending. Claim 1 already contains a limitation with respect to the position of the plunger; it must be adjacent to and above the rotating blades. The meaning of "adjacent to and above the rotating blades" is also disputed by the parties and construed below. Therefore, the Court will address defendant's arguments regarding the position of the plunger below.

Finally, the Court finds no need to rely upon the dictionary definitions provided by defendant.
The district court did not provide reasoning for its conclusion that "plurality" means more than three "gaps" or "pockets" on each sidewall. Moreover, this court detects no support for this conclusion in the plain meaning of the word or any of the public documents, including the patent and the administrative record of its procurement. The term means, simply, "the state of being plural." American Heritage Dictionary Second College Edition 955 (2d ed. 1982). Thus, this term requires only at least two ridge members on each sidewall to form a load lock.

There is nothing in the file history that would alter this plain meaning. Rye, which may not qualify as prior art, discloses a bed liner with three recesses. Rye, however, does not disclose sidewall ridges. Instead, Rye secures a load with its recesses. In any event, the '876 patent differs from Rye in many more respects than simply having more than three "gaps" or "pockets." Furthermore, the administrative record does not disclose that the '876 inventors took any steps to distinguish the Rye reference other than to swear behind it. In sum, the mere invocation of Rye does not support the conclusion that "plurality" must mean more than three "gaps" or "pockets" to escape prior art.

Without reason to construe "plurality" other than in accordance with its ordinary meaning, this court notes that the district court erred by unduly limiting the meaning of "plurality."

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1. Count Construction

Bilstad first argues that the Board's decision must be reversed because its claim construction of the term "plurality" is erroneous. In particular, Bilstad argues that the Board's combination of multiple dictionary definitions to arrive at a range is inconsistent with precedent. 2 Wakalopulos argues instead that the Board properly construed "plurality" because the written description of the '657 patent does support a broad construction and the Board's analysis is fully consistent with precedent.

Before the Board, Bilstad and Wakalopulos offered competing definitions of the term "plurality." Wakalopulos argued that "plurality" means "a large number; multitude," whereas Bilstad argued that "plurality" simply means "two or more items." The Board began by noting that the parties did not argue that "plurality" had any special meaning in the art, nor did the parties argue that Bilstad's specification provided a definition of "plurality." Original Decision, 2003 Pat. App. LEXIS 84 at *36. The Board then consulted a dictionary to ascertain the ordinary meaning of "plurality" and was confronted with multiple definitions, including those proffered by the parties. 2003 Pat. App. LEXIS 84 at *37. Specifically, the Board noted that Webster's Third New International Dictionary included multiple definitions of "plurality," including "the state of being plural," "the state of being numerous," and "a large number or quantity: MULTITUDE." 2003 Pat. App. LEXIS 84 at *37 (quoting Webster's Third New International Dictionary 1745 (Philip Babcock Gove, Ph. D. ed. 1993) ("Webster's"). The Board also included the definition of "plural" from the same dictionary: "relating to or consisting of or containing more than one." The Board went on to state:

As is apparent from the Webster's definitions, the ordinary meaning of plurality encompasses both parties' proposed meanings. Therefore, we do not accept either party's proposed definitions because they are incomplete. Two may properly be referred to as a plurality and so may a large number. Thus, "plurality" connotes an indefinite numerical range. The range is bounded by two . . . and . . . infinity . . . .

Original Decision, 2003 Pat. App. LEXIS 84 at *37.
We see no error in the Board's construction of "plurality." When confronted with competing arguments, the Board looked to a dictionary to ascertain the ordinary meaning of "plurality." Here, the dictionary shows ordinary meanings of "plurality," including: "relating to or consisting of or containing more than one," "the state of being numerous," and "a large number or quantity." Webster's, at 1745. The Board then looked to the written description for context in ascertaining the meaning of "plurality," determined that the dictionary definitions and both Bilstad's and Wakalopulos's proffered definitions were consistent with Bilstad's disclosure, and construed the term to encompass all of those meanings. As we have stated, "if more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all consistent meanings." Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc., 334 F.3d 1294, 1300 (Fed. Cir. 2003) (citing Tex. Digital Sys. Inc. v. Telegenix, Inc., 308 F.3d 1193, 1203 (Fed. Cir. 2002)). "Where there are several common meanings for a claim term, the patent disclosure serves to point away from the improper meanings and toward the proper meaning." Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998); see also Tex. Digital, 308 F.3d at 1203. None of these definitions is inconsistent with the Bilstad disclosure or the Wakalopulos disclosure.

With respect to the Bilstad disclosure, the Board found that Bilstad disclosed manipulation in a small number of directions. Thus, the Bilstad disclosure is entirely consistent with the meaning of "plurality" as "relating to or consisting of or containing more than one." With respect to "the state of being numerous" and "a large number or quantity," we see nothing in Bilstad's disclosure that disclaims, disavows, or is inconsistent with such definitions of plurality. See Brookhill-Wilk, 334 F.3d at 1300. Because all of the definitions are consistent with the Bilstad disclosure, the term "plurality" when construed in view of the Bilstad disclosure is entitled to the full extent of its ordinary meaning.

Similarly, each of the ordinary meanings of "plurality" is consistent with the disclosure of the '657 patent. First, nothing in the written description of the '657 patent defines the term "plurality," nor is there any disclaimer or disavowal of the ordinary meaning of the term "plurality." See Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1327 (Fed. Cir. 2002). Second, although, as Bilstad argues, Wakalopulos uses the term "plurality" to describe a set of three items, this is simply one use of the term in a particular context. This single use alone does not limit the term. Third, the Wakalopulos written description, in Figure 3 and its accompanying text, illustrates an embodiment wherein a glove box arm is provided to allow a user to place his hand in and pick up and manipulate an object to be sterilized. This description is consistent with a construction of "plurality" that includes everything from "relating to more than one" to "a large number or quantity." Thus, the Wakalopulos written description does not limit the ordinary meaning of "plurality." We therefore conclude that "plurality" encompasses all of the relevant definitions; namely, relating to or consisting of or containing more than one, the state of being numerous, and a large number or quantity.

Bilstad, however, argues that the Board improperly incorporated the several dictionary definitions into a range from two to infinity. While it is common to consider the full meaning of "plurality" as any number greater than one, the Board's definition does little more than incorporate the several distinct definitions into a single one covering the entire scope of "plurality." In combining the definitions into a single one, the Board did not change the scope of the term or alter the ordinary meanings in any significant way. Thus, we affirm the Board's construction of the term "plurality."
Nothing in the '304 patent's specification points to a definition of "plurality" different from Webster's. Indeed, the specification always refers in the plural to the rings which comprise the drum shell. For example, in defining the sounding ring, the specification states that "one or more of such rings function as sounding rings which have a greater outer radius than the other shell rings." (Lovelett Aff., Ex. A, col. 3, lines 21-23) (emphasis added). Therefore, each of plaintiff's independent claims -- 1, 9 and 15 -- requires a "multitude of" or "numerous" annular shell rings.

The contested phrase "a plurality of beams of light" appears in claims 1 and 3 of the '272 patent. They read

1. A method for producing on a photoreceptor an image of generated shapes made up of spots, comprising: directing a plurality of beams of light toward a photoreceptor, each beam of light generating a spot on the photoreceptor and controlling a parameter of the light beams to produce spots of different sizes whereby the appearance of smooth edges are given to the generated shapes.

3. Apparatus for producing on a photoreceptor an image of generated shapes made up of spots, comprising: means for directing a plurality of beams of light toward a photoreceptor to generating a plurality of spots on the photoreceptor and means for generating spots of different sizes whereby the appearance of smooth edges are given to the generated shapes.

It is undisputed that the accused HP printers use the same prior art light scanning system as that shown in Figure 1 of the '272 patent. The HP printers employ light from a single laser source which is reflected off a polygonal mirror to a photoreceptor mounted on a drum. Instead of adjusting either the beam's intensity or diameter, as is described in the '272 patent, the accused printers solve the "jaggies" problem by modifying the duration of time the laser beam is on.

In 1990, PB notified HP that several of HP's marketed laser printers infringed the claims of the '272 patent. This action followed.

STANDARD

Summary judgment is appropriately granted when the evidentiary record reveals that there are no genuine issues of material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c). In determining whether the record presents genuine issues for trial, the court must view all inferences and ambiguities in a light most favorable to the non-moving party. See Bryant v. Maffucci, 923 F.2d 979, 982 (2d Cir.), cert. denied, 502 U.S. 849, 112 S. Ct. 152, 116 L. Ed. 2d 117 (1991). A plaintiff raises a genuine issue of material fact if "the jury could reasonably find for the plaintiff." Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 252, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986). Rule 56(c) "provides that the mere existence of some alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment; the requirement is that there be no genuine issue of material fact." Liberty Lobby, supra, at 247-48. The Supreme Court noted that:

Rule 56 must be construed with due regard not only for the rights of persons asserting claims and defenses that are adequately based in fact to have those claims and defenses tried to a jury, but also for the rights of persons opposing such claims and defenses to demonstrate in the manner provided by the Rule, prior to trial, that the claims and defenses have no factual basis.

Celotex v. Catrett, 477 U.S. 317, 327, 91 L. Ed. 2d 265, 106 S. Ct. 2548 (1986). "One of the principal purposes of the summary judgment rule is to isolate and dispose of factually unsupported claims. . . [and] it should be interpreted in a way that allows it to accomplish this purpose." Celotex, supra, at 323-24. In a case of patent infringement, summary judgment is appropriate when comparison of the accused device and the claim reveals that there is an absence of disputed material fact. Chemical Eng'g Corp. v. Essef Indus. Inc., 795 F.2d 1565 (Fed. Cir. 1986).

DISCUSSION

I
Claim Construction

"The construction of a patent, including the terms of art within its claim, is exclusively within the province of the court." Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 1386, 134 L. Ed. 2d 577 (1996). In determining the meaning of a claim, the court first examines the intrinsic evidence of the record, including the claims, specification, and the prosecution history. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Intrinsic evidence is "the most significant source of the legally operative meaning of the disputed claim language." Id. at 1582. If the intrinsic evidence does not sufficiently resolve ambiguities, then the court may consider extrinsic evidence, including expert and inventor testimony, in order to arrive at a "proper understanding of the claims." Id. at 1583.

1. Intrinsic Evidence

a. Language of the Claims

HP first argues that the term "a plurality of beams" plainly means that a device must direct "two or more beams of light originating from two or more separate light sources" toward a photoreceptor. Alternatively, they contend the "plurality of beams" limitation requires that a single light beam must be "split or divided into multiple beams." Since it is undisputed that the accused devices employ neither multiple light sources nor beam splitters, HP argues that they do not infringe the '272 patent.

PB responds that the plain meaning of a "plurality of beams" does not require a device to use either multiple light sources or beam splitters. They argue that there are no limitations in the claim which require that "each beam of light originate from a different power source or be divided into multiple beams." Rather, given the nature of the described invention, they propose that it is possible to generate a plurality of beams from a single laser source.

Interpreting the claim language is of primary importance. The "language of the claims frames and ultimately resolves all issues of claim interpretation." Abtox, Inc. v. Exitron Corp, 122 F.3d 1019, 1023 (Fed. Cir. 1997). Claim terms are to be given their ordinary and customary meaning, unless it is apparent that the inventor expressly intended a different meaning. Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578 (Fed. Cir.), cert denied, 519 U.S. 911, 117 S. Ct. 275, 136 L. Ed. 2d 198 (1996). When reviewing claim language, a court must apply "normal rules of syntax" and consider the context of the claim. Eastman Kodak Co. v. The Goodyear Tire and Rubber Co., 114 F.3d 1547, 1553 (Fed. Cir. 1997).

Applying these principles to the instant case, the court concludes that the phrase "a plurality of beams of light" when used in the '272 patent means multiple beams of light generated sequentially from one or more light sources. The plain language of the '272 claims indicates that PB's invention operates by "directing a plurality of beams of light toward a photoreceptor, each beam of light generating a spot on the photoreceptor." The relevant dictionary definition for the word plurality is a "state or condition of being plural or numerous," with the word plural being defined as "containing, consisting of, or designating more than one." See Funk and Wagnall, Standard College Dictionary, (1963). 2 Multiple beams of light can be generated sequentially over time by one laser source. The ordinary meaning of the word "plurality" contains no requirement that "a plurality of beams" be created simultaneously, as suggested by HP.

2 The conclusion that the ordinary meaning of plural is two or more also derives support from the Federal Circuit's decision in York Products v. Central Tractor Farm & Family Center, 99 F.3d 1568, 1575-76 (Fed. Cir. 1996)(holding that the word plurality means at least two).

Applying the "normal rules of syntax" to the claims provides further support for the conclusion that "a plurality of beams" can be generated sequentially. See Eastman Kodak Co. v. The Goodyear Tire and Rubber Co., 114 F.3d 1547, 1553 (Fed. Cir. 1997). Claim 1 describes a method which operates by "directing a plurality of beams of light toward a photoreceptor, each beam of light generating a spot on the photoreceptor." The use of the phrase "each beam of light generating a spot" modifies the term "plurality of beams." The use of the term "each beam" implies that multiple beams can individually strike
the photoreceptor in turn to create multiple spots. The preferred embodiment of the '272 patent describes a system in which beams of light are reflected off a rotating polygon mirror towards a photoreceptor. Sequential production of multiple light beams by one or more laser source produces a plurality of beams, which are individually directed toward the photoreceptor by the rotating mirror.

Further, if this court were to adopt HP's suggestion that multiple laser sources are required to produce a plurality of beams of light, the preferred embodiment of the '272 patent would fall outside of the claims. Figure 1 of the '272 patent depicts a device which employs a single laser source and does not discuss the use of beam splitters. To hold that a plurality of beams can only be generated either by the simultaneous operation of multiple laser sources or by the use of beam splitters would exclude coverage of the preferred embodiment from the claims of the '272 patent. "Such an interpretation is rarely, if ever, correct and would require highly persuasive evidentiary support." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996). Since such evidence is lacking in the instant case, it is logical to conclude that the preferred embodiment is covered by the patent claims. 3

3 HP argues that Claims 4-7 of the '272 patent cover the preferred embodiment. However, the file history reveals that claims 4-7 were not prosecuted in the '532 application in which Claims 1 and 2 were allowed and in which Figure 1 was included. This fact reveals that Figure 1 must relate to Claims 1 and 2 of the '272 patent.

b. The Specification

HP next argues that the specification of the '272 patent describes the apparatus in Figure 1 as a device which "directs a single beam of light toward a photoreceptor." They contend that the only instance where the specification refers to multiple beams of light is in the discussion of the two laser embodiment. "The use of the term 'beams' exclusively in connection with the embodiment of the alleged invention which employs two light sources . . . is in stark contrast to the description of the first embodiment." They contend that "a plurality of beams" can only be produced by the multiple laser version of the '272 patent, not the single laser embodiment depicted in Figure 1.

PB replies that the specification reveals that Figure 1 is "the one and only preferred embodiment" of the '272 patent. "The teaching in the specification confirms that the invention applies to printers with one or two laser power sources." PB contends that either embodiment generates the required "plurality of beams."

After reviewing the claim language, the court must review other parts of the patent document, including diagrams or figures, which are collectively referred to as the specification. Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 1387-88, 134 L. Ed. 2d 577 (1996); see also Al-Site Corp. v. Bonneau Co., 22 F.3d 1107 (Fed. Cir. 1994). "The specification contains a written description of the invention that must enable one of ordinary skill in the art to make and use the invention. For claim construction purposes, the description may act as sort of a dictionary, which explains the invention and may define terms used in the claims." Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (internal citations omitted). A court reviews the patent specification to determine whether the patentee "used any terms in a manner inconsistent with their ordinary meaning." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). However, although a review of the specification may add context to the claim language, it may not be used to read limitations into the claims. Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1571 (Fed. Cir.), cert. denied, 488 U.S. 892, 102 L. Ed. 2d 218, 109 S. Ct. 228 (1988).

In the instant case, the specification of the '272 patent provides, 4 inter alia,

The light source, such as the laser 10, which may be a three mw helium-neon laser, generates a collimated beam 12 of monochromatic light which is direct through a neutral density filter 14 to control the light intensity. The beam 12 then passes through a modulator 16, such as an acousto-optical modulator. The beam 12 is next directed through a first lens 20 and intercepted by a knife edge 22 placed at the focal point of the first lens 20. [. . .] It is desirable to use the first order beam to produce a spot because the position of the spot can be displaced in accordance with the frequency modulation applied to the modulator which will selectively deflect the beam 12 in a desired direction such as indicated by the arrows a,
b. The first order beam 12 is then directed towards a second lens 24 which directs the converging beam onto a reflecting face of facet of a rotating polygonal mirror, herein referred to as polygon 28. The polygon 28 is continuously driven by a motor drive 30 and preferably is maintained at a constant velocity. . . . The beam 12 is thus reflected successively from each of the facets off the rotating polygon 28 and onto a photoreceptor 32.

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -
4 Numbered references refer to Figure 1 of the '272 patent, which is contained in Exhibit 1 of this decision.
- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

The specification supports the conclusion that the phrase "a plurality of beams" when used in the '272 patent means multiple beams of light generated sequentially from one or more light sources. It indicates that reflecting each beam of light "off the rotating polygon and onto a photoreceptor" creates a small discharged area on the photoreceptor. Each symbol or picture produced by this process is composed of hundreds or thousands of these small discharged areas. since each discharged area is created by one beam of light, it takes many beams, or a plurality of beams of light, to create one image. The specification of the '272 patent teaches that that these beams can be produced sequentially by one or two laser sources. The meaning of the phrase a "plurality of beams of light" derived from the specification is consistent with the plain meaning of the claim language.

c. The Prosecution History

HP further argues that the prosecution history of the '272 patent supports the assertion that a "plurality of beams of light" requires more than one laser source. Specifically, they direct this court's attention to the PTO office action of September 23, 1981, which rejected claims 15 and 16 of the '532 application. These claims, which eventually became claims 1 and 2 of the '272 patent, were initially rejected since the examiner believed the specification did not clearly describe how "one photoreceptor would distinguish between the plural beams and how one or both beams would be controlled." HP contends that this rejection is evidence that the preferred embodiment of the '272 patent requires multiple laser sources to create a plurality of beams.

PB responds that the examiner's initial rejection was in reference to the two laser source embodiment of the application, not the "plurality of beams" language found in claim 1 and 3 of the '272 patent.

The undisputed public record of the proceedings in the PTO is of primary importance in understanding the claims. Markman v. Westview Instruments, Inc., 52 F.3d 967, 980-81 (Fed. Cir. 1995). The file history can function to limit claim construction so as to exclude any interpretation which was disclaimed during prosecution. Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570 (Fed. Cir.), cert. denied, 516 U.S. 987, 116 S. Ct. 515, 133 L. Ed. 2d 424 (1995). The prosecution history must be read "in its full context, not on the basis of snippets lifted out of context." J.T. Eaton & Co. v. Atlantic Paste and Glue Co., 106 F.3d 1563, 1576 (Fed. Cir. 1997).

In the instant case, there is nothing in the prosecution history which indicates that multiple laser sources are required to create a plurality of beams. The text of the examiner's initial rejection of the '532 application indicates that he was referring to the two laser embodiment of the invention. For example, his concern that the initial application did not teach how "one or both beams" indicates that he was discussing the two laser embodiment. Interpreting this single comment to require that the PB patent covers only multiple laser source applications would improperly "diminish or vary the limitations of the claims." Goodyear Dental Vulcanite Co. v. Davis, 102 U.S. 222, 227, 26 L. Ed. 149 (1880); see also Constant v. Advanced Micro-Devices Inc., 848 F.2d 1560, 1571 (Fed. Cir.), cert. denied, 488 U.S. 892, 102 L. Ed. 2d 218, 109 S. Ct. 228 (1988)(holding that it is improper to read limitations from the specifications into the claims).

2. Extrinsic Evidence

The court concludes that the use of extrinsic evidence is unnecessary in this case. Extrinsic evidence may be evaluated "in order to aid the court in coming to a correct conclusion as to the true meaning of the language employed in the patent." Markman v. Westview Instruments, Inc., 52 F.3d 967, 981 (Fed. Cir. 1995)(internal citations omitted). However, "reliance
on such evidence is unnecessary, and indeed improper, when the disputed terms can be understood from a careful reading of the public record." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 (Fed. Cir. 1996).

In this case, the meaning of the phrase "a plurality of beams of light" can be understood from a careful reading of the claims, the specification, and the prosecution history. Accordingly, consideration of extrinsic evidence is unnecessary and improper.

The "plurality of electronic switches" of Claim 8 and the "means for selectively connecting the energy source to the electrodes in a first polarity and a second polarity" of Claim 1 refer to the same element of the defibrillator. This element is generally described as a "connecting mechanism" or "connector" that connects the defibrillator's energy source to the electrodes for shock delivery. 212 Patent at 6:44-50 & Fig. 10, element no. 34. Subsequently, the patent describes the connector in substantially greater detail as a specific five-switch configuration. 212 Patent at 6:61-7:52 & Fig. 11. The dispute over these terms is whether, as Defibtech contends, Claims 1 and 8 require this five-switch configuration. Philips contends that any of numerous configurations of two or more switches known to persons of skill in the art would satisfy Claims 1 and 8.

The means-plus-function term in Claim 1 presents the easier interpretation issue. Philips points to the general disclosure of a "connecting mechanism" as sufficient disclosure of the structure corresponding to the claimed function. The court disagrees. The patent's discussion of a "connecting mechanism" discloses no structure at all. As Defibtech noted in oral argument, the "connecting mechanism" corresponds to no more than a two-dimensional box in Figure 10 of the 212 Patent. This is insufficient, as a matter of law, to fulfill the inventors' duty to pinpoint a structure that corresponds to the function cited in a means-plus-function term. See Med. Instrumentation & Diagnostics Corp. v. Elekta AB, 344 F.3d 1205, 1211 (Fed. Cir. 2003). The court cannot designate the "connector" in Figure 10 and the written description of a "connecting mechanism" as corresponding structure, because they serve merely as an introduction to the five-switch configuration in Figure 11 and the accompanying disclosure of actual structure. See Tex. Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1212 (Fed. Cir. 2002). Moreover, Philips cannot cure the lack of structure other than the five-switch configuration by noting that "[o]ther switches and switch configurations may be used, of course, without departing from the scope of the invention." 212 Patent at 7:48-49. An inventor cannot meet his obligation to disclose structure corresponding to a means-plus-function term merely by stating that the structure will be obvious to those of skill in the art. Med. Instrumentation, 344 F.3d at 1212 ("It is important to determine whether one of skill in the art would understand the specification itself to disclose the structure, not simply whether that person would be capable of implementing that structure."). Claim 1 sends the public on a search for structure corresponding to a "means for selectively connecting." It would be incongruous to conclude that the inventors satisfied their obligation to reward that search by disclosing nothing more than a "connecting mechanism." The only disclosure of structure corresponding to the "means for selectively connecting . . ." is the five-switch configuration noted above, and the court interprets the means-plus-function claim accordingly.

--- Footnotes ---

n1 Med. Instrumentation and other Federal Circuit precedent focus on an inventor's duty to "clearly link[]" structure in the specification to a means-plus-function term. 344 F.3d at 1211. Philips did not fail to "clearly link" the "connecting mechanism" to its means-plus-function term; it failed instead to pinpoint any structure for the connecting mechanism other than the five-switch configuration.

n2 The court notes that Claim 7, which depends from Claim 1, discloses the five-switch configuration. Claim differentiation compels the presumption that the terms have different scope. In this case, however, because the "means for selectively connecting" has no corresponding structure other than the five-switch configuration, Defibtech has overcome the presumption. Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir. 1991) ("A means-plus-function limitation is not made open-ended by the presence of another claim specifically claiming the disclosed structure which underlies the means clause or an equivalent of that structure.").
The "plurality of electronic switches" in Claim 8 presents a closer question. Freed from the strictures of means-plus-function format, the inventors arguably signaled their intent to permit other switch configurations by noting that such configurations would be apparent to those of skill in the art. 212 Patent at 7:48-49. In addition, because Claim 11 depends from Claim 8 and discloses the five-switch configuration explicitly, claim differentiation requires the court to presume that Claim 8 encompasses other configurations.

Defibtech insists that Philips disavowed all but the five-switch configuration as a "plurality of switches" in the prosecution of the patent. Defibtech points to an office action in which the examiner rejected Claims 1 and 8 as obvious in light of the Swanson Patent, which also disclosed a five-switch configuration in an internal defibrillator, although not the same configuration as in the 212 Patent. J.A. 02692. Defibtech correctly notes that the inventors disavowed Swanson's five-switch configuration. J.A. 02692, 02697. The inventors did not, however, expressly limit the invention to the five-switch configuration that they disclosed in their patent application. The inventors explained that it would take undue experimentation to implement Swanson's five-switch configuration in an external defibrillator because the configuration would not work with high voltage. J.A. 02692. In an affidavit accompanying the response to the office action, inventor Daniel Powers stated that Swanson's five-switch configuration would not work in an external defibrillator, and that "[d]eveloping a circuit design that protects the [external defibrillator] circuit from load faults is a major design challenge." J.A. 02701.

The interpretation of the "plurality of switches" term, for which the intrinsic evidence does not provide an unambiguous definition, requires the court to consider extrinsic evidence for the first time. n3 In a rebuttal report, Philips expert Dr. Leslie Geddes reviewed a different prior art reference and noted that it did not disclose "what types of switches" should be used, and that one skilled in the art would have "extensive difficulty" designing an external defibrillator switching circuit based on that reference. Snyder Decl. Ex. 12 (Geddes Rebuttal Report at 23). Unlike Dr. Powers, Dr. Geddes does not even mention the configuration of the switches. The court cannot draw conclusions regarding his views on the ease of configuring an appropriate switch array. The court concludes that Dr. Geddes' testimony lends some support to the notion that designing an appropriate switch array was no simple task for one skilled in the art.

n3 In its prior order, the court stated that the only extrinsic evidence before it was a set of dictionary definitions. October 25 order at 5. That was true for the first round of asserted terms, but the parties have introduced inventor and expert testimony in support of some of the remaining terms. The court is mindful of the Federal Circuit's cautious approach to extrinsic testimony, id., and has considered the evidence accordingly.

The court has also considered Mr. Powers' deposition, in which he testified that he knew of no functional switch configurations other than the five-switch configuration when the inventors first filed a shock delivery patent application. Powers Dep. at 85 (DM 034). Defibtech has not provided enough of the deposition transcript to provide full context for his testimony. The court determines that, like Dr. Geddes' testimony, Mr. Powers' testimony slightly strengthens the evidence in favor of a limited construction of "plurality of switches," because it shows that they, as persons of skill in the art, had no actual alternative configuration to back up their statement in the 212 Patent that other switch configurations would be apparent to those of skill in the art.

Based on all of the evidence before it, the court concludes that the "plurality of switches" is limited to the five-switch configuration disclosed in the specification. Philips cannot deny that it disavowed the Swanson five-switch configuration. Thus, the construction of "plurality of switches" is not as broad as the claim language would suggest. At best, the court could construe the term to mean "a plurality of switches, but not the plurality of switches disclosed in Swanson." Even this interpretation, however, would be unreasonable in light of the inventors' statements during prosecution. Mr. Powers admitted in prosecuting the patent that designing an appropriate switch configuration was difficult. In light of that admission, the statement in the specification that "other switches and switch configurations may be used" rings hollow, at least as a statement of what one of skill in the art could accomplish without undue experimentation. Although the inventors'
five-switch configuration might be equivalent to other configurations, the term "plurality of switches" must be limited to the disclosed five-switch configuration and those equivalents. The court therefore construes the "plurality of switches" in Claim 8 in the same manner it construed the "means for selectively connecting" in Claim 1. n4 The term requires the five-switch configuration from the 212 Patent or its equivalent.

n4 Philips suggests, without explanation, that the presence of the "plurality of switches" term in Claim 17 of the 454 Patent (which neither party has offered for construction) should affect the court's construction. Phillips Opp'n at 29. As the court previously noted, the 454 Patent incorporates the specification of the 212 Patent (October 25 order at 6), and the court finds no new disclosure in the 454 specification that would alter its construction of "plurality of switches."

The next disputed phrase is "a plurality of flexible sheet members enclosing the container." The parties agree that "plurality" means "more than one" or "two or more." It is apparently undisputed that the top and floor (bottom) "walls" are not bowed. McNeilus suggests that the claim should be construed as to require "enclosure" by four (all) bowed walls. This is, obviously, a substantial dispute; more so than some of the earlier discussed ones.

One possible interpretation is that all areas of the enclosing apparatus be flexible sheet members. Another possible interpretation is that the enclosure include a plurality (two or more) flexible members. The latter interpretation is consistent with that of the special master. The court adopts his reasoning (see pages 58-60). The court interprets the claim as requiring two or more flexible sheet members in the enclosing frame or outside walls, etc. 1

1 The parties may wish to suggest better wording as to how the total enclosure frame should be described. Neither party has discussed the "enclosure" at the two ends.

The next disputed phrase is "A Plurality Of Longitudinal Pleats". This Court construes the term "A Plurality of Longitudinal Pleats" in conformity with neither parties' proposed definition. Cuno argues that this term means "a sufficient number of longitudinal pleats to form a cylindrical filter element with pleats in intimate contact over substantially their entire height." Pall takes the position that the term means "two or more longitudinal pleats." Having reviewed the intrinsic evidence and considered the parties' positions, this Court construes this term to mean a sufficient number of longitudinal pleats to form a cylindrical filter element.

Intrinsically, the claims themselves indicate that this term must mean that the filter contain some number of pleats forming a cylindrical filter. For instance, Claim 1 of the '047 Patent states:

A filter comprising:

a cylindrical filter element having a longitudinal axis, first and second end surfaces, and a plurality of longitudinal pleats, each of the pleats having a pair of legs, each of the legs having a first and a second surface, the pleats being in a laid-over state in which the first surface of one leg of one pleat is in intimate contact with the first surface of an adjoining leg of said one pleat and the second surface of said one leg is in intimate contact with the second surface of an adjoining leg of an
adjacent pleat over substantially the entire height of each leg and over a continuous region extending for at least approximately 50% of the axial length of the filter element; and

a first impervious end cap connected to the first end surface of the filter element.

'047 patent, col. 26, lines 16-31 (emphasis added).

Pall argues that a plurality of longitudinal pleats should be construed to mean two or more pleats. In support of this construction, Pall cites to the patent specifications, in which it uses “plurality” interchangeably with “two or more.” The specifications to which Pall cites do not use plurality with respect to longitudinal pleats. '047 patent, col. 5, lines 30-34; '047 patent, col. 10, lines 1-5. The specifications that describe longitudinal pleats speak to a cylindrical filter element, which has a plurality of longitudinal pleats. '047 patent, col. 2, lines 5-8, 17-19. There is no way to read the claim language and specifications without the construction that, however many pleats comprise the filter element, there must be enough so that they form a cylinder.

Cuno argues that the term, A Plurality of Longitudinal Pleats, must also include intimate contact along substantially the entire height of each pleat. Pall counters with the principal of claim differentiation, stating that under Cuno Enhanced Coverage Linking's proposed construction, certain claims would be rendered superfluous. See TurboCare Div. of Demag Delaval Turbomachinery Corp. v. GE, 264 F.3d 1111, 1123 (Fed. Cir. 2001) (holding that claim terms should not be read to contain a limitation "where another claim restricts the invention in the [same] manner"); Comark Communs, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998).

This Court finds that Cuno's definition limits the disputed language in a way that would render language of certain claims, including language contained in claims 39 and 40 of the '765 Patent, meaningless. As Pall notes, the patent claims have different scopes and do not all require that every pleat be in intimate contact, as suggested by Cuno.

For example, in the '765 patent, claim 8 states that intimate contact must exist between the "first surface of a first leg of one pleat with the first surface of an adjoining leg of said one pleat and a second surface of an adjoining leg of an adjacent pleat[,]" while claim 39 requires intimate contact with respect to "each of the plurality of pleats" and claim 40 with respect to "each pleat in the filter element." Although the patent claims include the terms "plurality of the longitudinal pleat" and "intimate contact" in the same claim, there are many words in between these terms and, taken together with the other claims of the '047 and '765 patents, Cuno's proposed narrow construction would render other claims redundant.

D. "Plurality"

In accordance with standard dictionary definitions, we have held that "plurality," when used in a claim, refers to two or more items, absent some indication to the contrary. York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1575, 40 U.S.P.Q.2d (BNA) 1619, 1625 (Fed. Cir. 1996) ("The term means, simply, 'the state of being plural.'"). 5 TCI does not address, or even cite, York Products in its brief, but argues that in the context of the specification and the claim language of the patents that "plurality of . . . projections" must be defined as three or more projections. TCI points to the figures of the patents, which show a preferred embodiment of the insert means having four projections and three recesses. As we have already stated, however, it is not proper to treat characteristics of a preferred embodiment as claim limitations.

5 The York Products court cited the American Heritage Dictionary Second College Edition 955 (2d ed. 1982), which defines plurality as "the state of being plural." Other dictionary definitions of plurality include "a number greater than one." Random House Webster's Unabridged Dictionary 1490 (2d ed. 1998).
therebetween" requires that the limitation be construed to cover only insert means with three or more projections. The theory is that because "recesses" is plural and because recesses are located between projections, three or more projections must exist if there are to be two or more recesses.

In the phrase "projections with recesses therebetween," the use of "recesses" can be understood to mean a single recess where there are only two projections and more than one recess where there are three or more projections. Indeed, in the present context, if the patentees had wanted to require an insert means with more than one recess, it would have been natural to limit the claimed invention to an insert means with a "plurality of recesses." The patentees, however, did not do so. Thus, we find no reason to give "plurality . . . of projections" any definition other than its ordinary definition of "two or more."

2985

1. "A Plurality of Sheets of Material"

The Special Master first observed that "[c]laims 1-6, 9-13, 15, 17, 18, 20-25, and 45 of the '668 Patent each require the recited product to incorporate a 'plurality of sheets of material.'" (R&R at 63.) That limitation was previously construed to mean "at least two pieces of material, with each piece having a fairly broad surface relative to its thickness." (8/4/04 Order accepting and adopting Special Master's R&R, as supplemented by 7/15/04 R&R.) The Special Master rejected TRW's arguments that it cannot infringe the "plurality of sheets of material" claims as a matter of law because, by virtue of its use of the One Piece Woven (OPW) technique, only one piece of fabric goes into the loom and one piece of fabric comes out of the loom (albeit with pockets that hold air). Relying on a similar argument raised and rejected in Vanguard Products Corp. v. Parker Hannifin Corp., 234 F.3d 1370 (Fed. Cir. 2000) and the text of the '668 Patent, the Special Master concluded that "the limitation 'a plurality of sheets of material' refers not to the method by which the airbag is made, but rather to the completed airbag itself." (R&R at 65.) Thus, as the Special Master observed, "TRW's assertion that, during the manufacturing process of its OPW airbags, no separate pieces of material are joined through a distinct sewing or folding step, is simply besides the point with respect to the asserted 'plurality of sheets of material' claims of the '668 Patent." (R&R at 65.) Rather, what is required is a comparison of "the structural relationship of the components of the OPW airbag." (R&R at 66.) These are product, not process claims. Drawing all justifiable inferences in favor of the non-moving party (ATI), the Special Master determined that he could not "conclude as a matter of law that the opposite sides of the compartments do not qualify as 'two pieces of material' simply because they intermittently are combined in order to form the joints between the compartments." (R&R at 66.) Because questions of material fact were found to exist, the Special Master recommended that TRW's motion for summary judgment of noninfringement be denied with respect to the limitation "a plurality of sheets of material." (R&R at 66.)

This Court accepts and adopts the Special Master's recommendation. Despite TRW's claims to the contrary, drawing all justifiable inferences in favor of ATI, and considering testimony of ATI's experts Dr. Beholz and Dr. Watson and proffered micrographs, this Court agrees that questions of material fact exist as to whether the accused OPW airbags incorporate the limitation "a plurality of sheets of material."

2986

2. "pocket" -- Amesbury argues that this phrase should be construed as meaning "a contour formed to mate with a rivet or fixed structure", whereas Caldwell has construed the phrase as "a U or C-shaped channel bounded on three sides with an opening designed to mate with a rivet."

The parties agree that, however described structurally, the "pocket" must be shaped to "mate" with something, which the parties agree means "to join or fit together" with that something. As to the something', Amesbury argues that the "pocket" must be "formed to mate with a rivet or fixed structure". However, Claim 2 specifically says that the "pocket" is "adapted to mate with a rivet". Thus, even though, the specification describes a "fastener, such as a rivet", [368 Patent, col. 6, 1. 41], I find that the Claim is clear -- the "pocket" must be shaped to mate (ie. "to join or fit together") with a rivet.
The crux of the debate revolves around what shape dimensions and descriptors should be included in the reference to "pocket" in Claim 2. I will consider the Claim terms, the specification, and the prosecution history to determine the structural description implicit in yet another metaphor.

Claim 2 states that the "second end of the frame of the balance shoe further forms a pocket positioned in the second end of the frame adapted to mate with a rivet." [368 Patent, col. 8, 11. 60-63.] In the Summary of the Invention, the patent describes a "frame pocket sized to receive a fastener", [368 Patent, col. 2, 11. 3-4], and how "the balance shoe can be further secured to the rigid U-shaped channel with a fastener that interfaces with a frame pocket in the balance shoe." [368 Patent, col. 2, 11. 38-41.] The specification mentions the "pocket" four times. In the detailed description of the invention, the patent describes how "to accommodate the fastener, the snap lock balance shoe can form a connection pocket sized to receive or mate with the fastener", [368 patent, col. 5, 11. 37-40], and how during installation one of the steps "is to slide the snap lock balance shoe into the rigid U-shaped channel such that the fastener is received in the connection pocket of the snap lock balance shoe." [368 patent, col. 6, 11. 42-46.]

Amesbury argues that nothing in the specification requires the "pocket" to have a specific shape, other than a shape capable of mating with a rivet. Thus, while conceding it may not be the best choice of words, Amesbury proposes the term "contour". On the other hand, Caldwell argues that describing the "pocket" as a "contour" shaped to mate with a rivet insufficiently describes what the patentee meant by "pocket". Instead "pocket" should be construed as "a U or C-shaped channel bounded on three sides with an opening" shaped to mate with a rivet.

Caldwell's reference to the file history and the deposition of the inventor, Gary Newman, to elucidate the patentee's understanding of the term "pocket" is unavailing. While some of the patentee's initial claims were rejected as being anticipated by Schmidt's "Locking Slide Balance", U.S. Patent No. 5,301,467, 15 that patent did not have a "pocket" to fasten the balance shoe inside the U-shaped channel of the window balance with a horizontal rivet as is described in the 368 Patent. Rather, the Schmidt 467 Patent described a new design for the "locking slide block", the component referred to as the "balance shoe" in the 368 Patent. The figures and the specification in the 467 Patent do not demonstrate how the "counter-balance spring", which is not shown, is attached to the metal plate at the top of the "locking slide block". It is clear from the patentee's response to the initial rejection, that what distinguishes the 368 Patent from the 467 Patent is that the top' or "second end" of the balance shoe is "adapted to be received by a U-shaped channel of a window balance." The mating of the "pocket" and a rivet through the U-shaped channel referenced in Claim 2 is part of the design for securing the balance shoe within the U-shaped channel of the window balance. 16 Consequently, neither party has identified anything in the file history that aids in the interpretation of the term "pocket". As to Mr. Newman's deposition, I will not treat a non-lawyer's response as an admission as to the proper construction, even though "[testimony against a patentee's own interest . . . is perhaps the most persuasive extrinsic evidence." Bristol-Myers Squibb Co. v. Tera Pharmaceutical USA, Inc. 288 F.Supp.2d 562, 585 (S.D.N.Y. 2005). I have only been provided with a snippet of Mr. Newman's deposition testimony and I credit Amesbury's suggestion at the hearing that Mr. Newman may have been describing the "pocket" in the patent's figures rather than explaining what he as the inventor meant by choosing to use the term "pocket" in Claim 2.

15 The Examiner wrote that "Schmidt discloses a balance shoe assembly 20 ["locking slide block" in the patent] for a sash comprised of a frame 24 ["housing" in the patent], . . ., a connecting device 28 ["metal plate" in the patent], which connects the shoe to a counter-balance spring and has a pocket therein, and is received within the frame 24, . . ., and a frame pocket, which can receive a fastener." [Smalley Declaration, Exhibit L, at C000793] The "frame pocket" does not refer to the same component or element as the "pocket" in the 368 Patent; it refers to a "channel" at the bottom' of the block/shoe that receives the locking cam. The Examiner's other use of "pocket" seems to refer to the "pocket" in the "metal plate" at the top' of the "locking slide block" that attaches to the counter-balance spring. The Schmidt 467 Patent itself never uses the term "pocket". The patentee seems to have understood this distinction when responded to the rejection.

16 The other way that the shoe is attached within the window balance is by the "connecting device", also referred to in Claim 2.

Returning back to the specification, I find that the function of the "pocket" is clear -- to receive a rivet, thereby aiding to secure the balance shoe within the U-shaped channel of the inverted window balance. This function defines the shape. Consequently, I find that the shape of the "rivet" in effect defines the shape of the interfacing pocket.

Neither of the parties has presented any argument on how the term "rivet" should be construed. However, I find that the
ordinary meaning of "rivet" as understood by a person of skill in the art is readily apparent. Thus, I will construe the term according to the "widely accepted meaning" of these "commonly understood words". Phillips, 415 F.3d at 1314. The term "rivet" encompasses a variety of fasteners consisting of a shaft with heads on either end. Typically the shaft is a smooth cylinder, as depicted as 635 in Figure 6A shown below, for instance.

As a result, the "pocket" would typically have to be shaped to receive a smooth cylinder through the shoe. However, the patent does not require that the "pocket" and rivet match perfectly. As a result, the "pocket" could have a cylindrical contour with a diameter long enough to fit the rivet or the "pocket" could be a "U-shaped channel bounded on three sides", as depicted as 213 in Figure 3B shown above, with a height and depth long enough to fit the rivet. The problem with Caldwell's suggestion is that it requires the pocket to have sides, which denies the possibility that the indent might actually be a cylindrical match to the rivet without sides per se. Consequently, to the extent any ambiguity remains about the shape of the "pocket", I will adopt as a definition a notch shaped to mate with a rivet, thereby aiding to secure the balance shoe within the U-shaped channel of the inverted window balance.

Nevertheless, I will adopt Caldwell's suggestion that the definition of "pocket" must incorporate the idea that the rivet slides into the "pocket" through an opening. The installation discussion in the specification explains that "the snap lock balance shoe ["is to slide"] into the rigid U-shaped channel such that the fastener is received in the connection pocket of the snap lock balance shoe". [368 patent, col. 6, 11. 42-46.] In order for the balance shoe to be installed in this way, the "pocket" must have an opening into which the rivet can slide. Without incorporating the idea of an opening, one could erroneously interpret the term "pocket" to include a fully enclosed channel through the balance shoe, in which the rivet would have to be thread through rather than snapping in. However, it is clear from the specification that this is not what the patentee understood the term to connote.

Construction -- A notch with an opening shaped to mate (ie. "to join or fit together") with a rivet, thereby aiding to secure the balance shoe within the U-shaped channel of the inverted window balance.

A. "Point" as used in Claims 1, 5, 6, 21, and 27 of the '416 Patent and Claim 6 of the '730 Patent 2

The claims and patents are hereafter abbreviated as follows: [Patent number]:[Claim number(s)]. For example, claim 1 of the '416 patent is claim 416:1; claims 1, 5, 6, and 8 of the '416 patent are claims 416:1, 5, 6, and 8.

The term "point" is found in several claims and in both patents. Alden asserts that the term should be construed to mean "a small central area of the tip of the bit where the scraping and rearward edges and tapered surfaces converge. The term point does not refer to a dimensionless dot." Alden Br. at 5. Eazypower's construction is "the position where the scraping edges intersect" for claims 416:1, 5, 6, and 8 and "the position where the scraping edges and rearward edges intersect" for claims 416:21 and 27 and 730:6. Eazypower Br. at 10, 25. The dispute is essentially whether, as Alden asserts, the "point" can have some amount of material to it such that the edges do not intersect at the axis, or is a geometric dot where edges intersect, as Eazypower asserts.

1. Claim Language

a. Claim 416:1

The claim reads, in full:
For removing damaged screws, a bit having an axis and a tip end formed with a point and a rear end formed in hexagonal cross-section adapted for installation in a chuck of a variable speed reversible drill, the tip end having a plurality of longitudinal recesses uniformly disposed about the tip end, each bordered by a longitudinal surface facing in a counter-clockwise direction, the surface formed with a distal straight scraping edge, the scraping edges of the recesses each being in a plane including the axis and being at an acute angle less than 70 [degrees] to the axis, and a support portion behind each scraping edge, the support portions each defined by a relief surface curving away from the scraping edge down to a rearward edge bordering one of the longitudinal recesses, each rearward edge also lying in a plane including the axis and being disposed at more acute angle to the axis than the scraping edge angle.

DX B, col 3, lns 50-65. 3 The relevant language is "a bit having an axis and a tip end formed with a point." Nothing in the claim either refers to the intersection of edges or describes the point as a "central area."

b. Claim 416:5

Claim 416:5 reads:

A method for unscrewing threaded fasteners installed in an object and having a head with a deformed end surface, the method comprising the steps of:

a. providing a bit having an axis and a tip end formed with a point, the tip end having a plurality of longitudinal recesses uniformly disposed about the tip end, each bordered by a longitudinal surface facing in a counter-clockwise direction and being in a plane including the axis, and formed with a straight scraping edge, the scraping edges of the recesses each being at acute angles to the axis and a support portion behind each scraping edge, the support portions at the tip end each defined by a relief surface curving away from the scraping edge down to a rearward edge bordering one of the longitudinal recesses, each rearward edge also lying in a plane including the axis and being disposed at more acute angle to the axis than the scraping edge,

b. engaging the head with the tip end with the scraping edges engaging the end surface of the fastener,

c. rotating the bit in a counter-clockwise direction.

DX B, col 4, lns 12-32. There is no material difference in the language of claims 416:1 and 5 related to the term "point."

c. Claim 416:6

Claim 416:6 reads:

In combination:

a. a threaded fastener having an axis, a threaded section and a head section, the head section being formed with a generally radial end surface having a damaged cross slot having sloping sidewall portions defining a first angle to the axis, and

b. a cylindrical extraction bit having an axis aligned with the axis of the fastener and a tip end formed with a point, the tip end having a plurality of longitudinal recesses about the tip end, each bordered by a longitudinal scraping surface facing in a counter-clockwise direction and having a scraping edge, the scraping edges each lying in a plane including the axis of the bit and disposed at a second angle to the axis, the second angle being less sharp than the first angle, the scraping edges
engaging the end surface of the faster at the margin of the cross slot.

DX B, col 4, lns 33-49. Again, nothing about the claim language dictates either proposed interpretation.

d. Claim 416:8

This claim reads:

A tool for removing damaged screws comprising: a bit having an axis and a tip end formed with a point and a rear end formed in hexagonal cross-section adapted for installation in a chuck of a variable speed reversible drill, the tip end having a plurality of longitudinal recesses uniformly disposed about the tip end, each bordered by a scraping surface facing in a counter-clockwise direction, the scraping surface formed with a distal straight scraping edge, the scraping edges of the recesses each being disposed at a scraping edge acute angle to the axis less than about 70 [degrees], and a support portion behind each scraping edge, the support portions each defined by a relief surface curving away from the scraping edge down to a rearward edge bordering one of the longitudinal recesses the rearward edge being disposed at a more acute angle to the axis than the scraping edge acute angle.

DX B col 4, lns 58-67; col 5, lns 1-5. This claim does not materially differ from claim 416:1.

e. Claim 416:21

This claim states:

A tool for removing damaged screws as defined in claim 16 herein the rearward edge borders one of the longitudinal recesses and meets at a point with the scraping edge associated with the scraping surface of the one of the longitudinal recesses.

DX B, col 6, lns 13-17. The limitations added to claim 416:16 by claim 416:21 refer to the recesses meeting "at a point." This language, by itself, does not lead the to Court to accept either proposed claim construction, as the recesses could meet at a point regardless of whether the intersection of the recesses forms the point. In other words, even if the "point" is more than the intersection of the recesses and has its own material, the recesses could meet "at [the] point."

f. Claim 416:27

This claim uses the same "meets at a point" language as claim 416:21. DX B, col 6, lns 52-56. There are no other relevant differences.

g. Claim 730:6

This claim reads exactly the same as claim 416:6, except that claim 730:6 refers to "a pair of longitudinal recesses," as opposed to "a plurality of longitudinal recesses." DX A, col 4, lns 37-54.

2. Specification

The '416 specification states, under the heading of "Summary of the Invention," that "[t]he edges meet in a point at an obtuse angle." DX B, col 1, lns 35, 43-44. Because this language appears in the portion of the specification purporting to describe the invention as a whole, it is highly relevant in construing every claim. See Honeywell, 452 F.3d at 1318. Stating that the edges "meet in a point" implies that the point is formed by the intersection of the edges.

Under the heading "Detailed Description of the Embodiments," the patent states that "the two scraping edges are in the same plane and intersect at the axis of the bit in a point." DX B, col 2, lns 7, 38-39. The figures that illustrate the embodiments also show edges intersecting to form a point. DX B, figs 1, 2, 4, 5a, 5b, 5c, 5d, 6, 7a, 7b, 7c, 7d. This supports Eazypower's position, but because the language and figures describe only particular embodiments, they are accorded limited weight in construing the claim terms. See Phillips, 415 F.3d at 1323. Nonetheless, the embodiments are consistent with the language found under "Summary of the Invention."
The specification to the '730 patent, beneath the heading "Detailed Description of Embodiments," states that "[t]he point, having the angle of about 110 [degrees] to 140 [degrees] when engaging the vestiges of a standard screw slot serves as a centering means." DX A, col 2, lns 51-53. Alden argues that this implies a structural area of contact with the damaged screw, but has not explained why a point formed by the intersection of the edges would not serve the same purpose. Further, Figure 2, to which this language points, shows what appears to be a dimensionless point at the tip of the bit that does not contact the damaged screw. DX A, fig 2.

Because the '416 patent is a continuation of the '730 patent, the Court considers the '730 specification in construing all of the claims. Cf. Advanced Cardiovascular Systems, Inc. v. Medtronic, Inc., 265 F.3d 1294, 1305 (Fed. Cir. 2001) ("The prosecution history of a related patent can be relevant if, for example, it addresses a limitation in common with the patent in suit.").

3. Prosecution History

During the examination process for the '730 patent, the examiner cited patent 500,213 ("Richards patent"). DX A (cover sheet). In rejecting the '730 patent on September 24, 2002, the examiner stated that "Richards discloses the claimed invention comprising, as shown in Figs. 2 and 4, a bit having an axis and a tip end formed with a point" and concluded that the '730 patent was anticipated by Richards. DX C, tab 5, page 3. 4 Alden amended the '730 patent in light of the September 24 rejection, keeping the "tip end formed with a point" phrase. Alden argues that because the patent was issued with the phrase "tip end formed with a point," "point" should be construed by reference to the Richards patent. DX C, tab 8, page 2.

Alden asserts that "[t]he metal drill shown in the Richards [patent] has cutting edges which taper toward a central area in the center of the tip, not a geometric dot." Alden Br. at 6. The basis of Alden's assertion that the "point" in Richards is not formed by intersecting edges is Figure 1 in the Richards patent. Alden has not sufficiently demonstrated what Figure 1 of the Richard patent shows, and has not cited any portion of the written specification or claims of the Richards patent. Therefore, the Court gives the Richards patent no weight. Cf. Franklin Elec. Co. v. Dover Corp., 2007 U.S. App. LEXIS 5083, 2007 WL 634430, at * 6 (Fed. Cir. March 1, 2007) (rejecting construction based on figure where written specification did not describe limitation allegedly shown in figure because "patent figures are generally not intended to convey such detail"), citing Hockerson-Halberstadt, Inc. v. Avia Group Int'l, 222 F.3d 951, 956 (Fed. Cir. 2000). 5

Alden submitted the affidavit of Yvon Desaulniers, Alden's President. DX E. The Desaulniers affidavit describes Alden's
process for manufacturing bits, which it asserts is consistent with the patent. Desaulniers states that because of manufacturing tolerances and design integrity concerns, the edges "approach close to the axis of the bit at the tip, but do not actually intersect the axis." Id. The affidavit does not provide Desaulniers' education or training, and fails to establish that Desaulniers is a person of ordinary skill in the art of designing or manufacturing bits; it merely states that he is the President of Alden. Therefore, the Court finds the Desaulniers affidavit unpersuasive.

5. Construction

The claim language itself does not dictate a construction. The specification states under "Summary of the Invention" that the edges meet in a point. The Richards patent and Desaulniers affidavit on which Alden relies are entitled to no weight. Therefore, the Court accepts Eazypower's proposed construction of "point": "the position where the scraping edges intersect" for claims 416:1, 5, 6, and 8 and claim 730:6, and "the position where the scraping edges and rearward edges intersect" for claims 416:21 and 27.

6 Alden has provided a separate argument for the phrase "meets at a point" as used in claims 416:13, 21, and 27, but asserts the same construction. Eazypower relies on its arguments related to the term "point." The Court construes "meets at a point" as used in claims 416:13, 21, and 27 consistent with its construction of the term "point."

I. Point of Sale Location

The district court made several findings with regard to the construction of the expression "point of sale location." We address these findings below, agreeing with some and disagreeing with others.

1. In response to the district court's request for binding definitions of the disputed terms, described earlier, IGE identified the passage at column 5, lines 47-50 as defining a point of sale location. That passage states that a point of sale location is "a location where a consumer goes to purchase material objects embodying predetermined or preselected information." Freeny patent, col. 5, ll. 47-50. The district court held this definition to be correct, and we agree. Clear support is provided for this definition in the Freeny patent specification at column 5, lines 47-50.

2. The district court further held that, although point of sale locations are not restricted to retail locations, a home is not a point of sale location. See Interactive Gift Express, 47 U.S.P.Q.2D (BNA) at 1810 & n.9. IGE contends that the district court was wrong. IGE argues that a point of sale location is simply the location at which the consumer makes or effects a purchase. IGE argues that the concept of a home being a point of sale location is not new, citing home shopping networks, pay-per-view cable television, and home Internet shopping. IGE further argues that the specification defines a home as a point of sale location and discloses at least two embodiments in which the home is a point of sale location. IGE also argues that the
prosecution history lists several transmission systems that could be adapted for use in the home. The appellees respond that IGE's asserted definition before the district court precludes a home from being a point of sale location, and that any references in the specification to homes as point of sale locations cannot overcome this definition. The appellees further respond that the rest of the intrinsic evidence, as well as the extrinsic evidence of standard dictionaries and references, supports the district court's construction.

We agree with IGE's position that a home is not precluded from being a point of sale location. Looking first, as we must, to the claim language itself, we find nothing precluding a home from being a point of sale location. See Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2D (BNA) at 1576. Except for requiring that an IMM be present, the independent claims are silent regarding the possible venues of a point of sale location.

Looking next to the specification, see id. at 1582, 39 U.S.P.Q.2D (BNA) at 1577, we acknowledge the great likelihood that a point of sale location will not be a home, given that: (1) IGE's asserted definition, with which we agree, requires that a consumer go to a point of sale location "to purchase material objects," Freeny patent, col. 5, ll. 48-49; and (2) the specification requires, and IGE does not dispute, that the IMM be located at the point of sale location, see, e.g., Freeny patent, col. 5, ll. 32-33, col. 12, ll. 66-67. However, IGE's asserted definition, premised on the specification at column 5, lines 48 and 49, does not preclude a home from serving as a point of sale location, and the specification further describes a vending machine embodiment that could be utilized in a home. See Freeny patent, cols. 26-27. This intrinsic evidence unambiguously allows a home to serve as a point of sale location. Therefore, it is unnecessary to address IGE's arguments alleging that the prosecution history additionally supports our conclusion.

Given the lack of ambiguity in the intrinsic evidence, it would be improper to address any of the parties' arguments relating to extrinsic evidence, such as other examples of point of sale locations and standard references. See Vitronics, 90 F.3d at 1583, 39 U.S.P.Q.2D (BNA) at 1577 ("In those cases where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper.").

3.

The district court also held that a point of sale location "must have . . . at least two blank material objects." Interactive Gift Express, 47 U.S.P.Q.2D (BNA) at 1810. IGE argues that this limitation is not recited in the claims or required by the specification and has improperly been read into the claims from a particular embodiment. The appellees respond that the specification supports the requirement that there be two or more blank material objects. We agree with IGE that a point of sale location need not have two blank material objects.

We begin, as we must, with the language of the claims. See Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2D (BNA) at 1576 (stating that construction begins with the claim language). The claim language specifically recites "reproducing in a material object." Freeny patent, col. 28, l. 44 (claim 1; emphasis added); id. at col. 36, l. 63 (claim 37; emphasis added). Although the single element of claim 37 initially mentions material objects in the plural, it is later modified by a singular reference and does not require more than one material object. Compare id. at col. 36, l. 49 with id. at l. 63. The preambles of the independent claims similarly recite plural "material objects," but they do so in the context of multiple IMMs and/or multiple point of sale locations. See, e.g., id. at col. 28, ll. 22-24 (claim 1); id. at col. 36, ll. 45-46 (claim 37). The preambles do not require multiple material objects at each point of sale location. Given the preambles' generality, we need not consider whether they are more than statements of intended use.

We look next to the specification. See Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2D (BNA) at 1577. We note that the district court based the requirement of two blank material objects on a passage in the specification stating that "each point of sale location has . . . a plurality of blank material objects." See Interactive Gift Express, 47 U.S.P.Q.2D (BNA) at 1805 (citing to the Freeny patent, col. 12, ll. 66-68). From the passage itself, it is unclear whether this isolated statement in the specification is intended to be a general statement or to be limited to a particular embodiment. However, there is nothing in the rest of the specification supporting the position that a point of sale location is defined as having at least two blank material objects. To the contrary, it is clear that the IMM requires only a single material object to fully process a consumer's request. See, e.g., Freeny patent, col. 5, ll. 21-31 ("Each [IMM] 14 is constructed to . . . provide . . . information . . . to a reproduction unit 24 which is adapted to reproduce received information in a material object.") (underlining added). Further, the opening sentence of the background section of the Freeny patent states that "the present invention relates generally to a system for reproducing information in a material object." Freeny patent, col. 1, ll. 7-8 (emphasis added).
Accordingly, we hold that the entirety of the specification dictates that the reference to a plurality be understood to refer to a "supply" of blank material objects, and that the supply can consist of one material object. See Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1345, 47 U.S.P.Q.2D (BNA) 1418, 1425 (Fed. Cir. 1998) (basing the claim construction on the entire written description, despite an isolated passage in apparent conflict).

4. The district court also held that a point of sale location must have blank material objects "available for sale to consumers." Interactive Gift Express, 47 U.S.P.Q.2D (BNA) at 1810. IGE argues that this limitation is not recited in the claim or required by the specification and has improperly been read into the claim from a particular embodiment. Notably, the appellees do not argue in defense of this limitation. We agree with IGE that a point of sale location need not have any blank material objects separately for sale.

Looking again to the claims, nothing in the claim language itself requires that blanks be for sale. The claims require only that information be reproduced in a material object. See, e.g., Freeny patent, col. 28, ll. 22-23 (preamble to claim 1) and 44-45 (step four of claim 1); id. at col. 36, ll. 45-46 (preamble to claim 37) and ll. 62-63 (single element of claim 37). Looking next to the specification, we note that nothing in IGE's asserted definition, derived from the Freeny patent at column 5, lines 47-50, requires that blanks be for sale. That definition refers exclusively to the purchase of non-blank material objects, that is, to "material objects embodying . . . information." Id.

The district court based its conclusion that blanks must be for sale on the passage at column 13, lines 25-44. See Interactive Gift Express, 47 U.S.P.Q.2D (BNA) at 1805. However, that passage does not state that the blanks are sold to the customers as blanks, but only that the retailer is reimbursed for the cost of blanks on which information is reproduced. See Freeny patent, col. 13, ll. 25-44. The district court, therefore, misconstrued the specific embodiment in that passage. Further, there is no support in the rest of the specification for this requirement; all of the embodiments are directed at providing material objects with information on them and not at selling blank material objects. See, e.g., id. at col. 13, ll. 1-13 (reproducing information on an 8-track or cassette tape); id. at col. 22, l. 62 - col. 23, l. 6 (describing various material objects in which information can be reproduced); id. at cols. 26-27 (describing the reproduction of information in the vending machine embodiment). Indeed, the opening sentence of the background section of the Freeny patent states that "the present invention relates generally to a system for reproducing information in a material object." Freeny patent, col. 1, ll. 7-8 (emphasis added).

5. Accordingly, we construe a point of sale location to be a location where a consumer goes to purchase material objects embodying predetermined or preselected information. This construction permits a home to be a point of sale location. A point of sale location need not have more than one blank material object and it need not have any material objects separately for sale as blanks.
Kathrein argues the terms "pointer element" and "point element" should be given their plain and ordinary meaning. (See '130 Patent, Claim 1, Col. 5, ll. 61-67 & Col. 6, ll. 1-19; id., Claim 24, Col. 8, ll. 10-38.) Kathrein states that Claim 1 of the '130 Patent requires a pointer element that extends from the pivoting axis across two concentrically arranged stripline sections. (See id., Fig. 2.) Thus, according to Kathrein, the pointer element extends in one direction only. (Pl.'s Claim Construction Br. 11.)

However, RYMSA argues that Kathrein's proposed construction of "pointer element" and "point element" ignores an exemplary embodiment described in the specification and depicted in Figure 5 of the '130 Patent. (See '130 Patent, Claim 24, Col. 8, ll. 10-38; id., Col. 5, ll. 32-44; id., Fig. 5.) Courts "normally do not interpret claim terms in a way that excludes disclosed examples in the specification." Verizon Servs. Corp. v. Vonage Holdings Corp., 503 F.3d 1295, 1305 (Fed. Cir. 2007); see MBO Labs., Inc. v. Becton, Dickinson & Co., 474 F.3d 1323, 1333 (Fed. Cir.2007) ("[A] claim interpretation that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct.") (internal citation omitted); Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578 (Fed. Cir. 1996) ("[I]t is unlikely that an inventor would define the invention in a way that excluded the preferred embodiment, or that persons of skill in this field would read the specification in such a way.").

Independent Claim 24, in pertinent part, claims a "radio-frequency phase shift assembly coupled to a feedline comprising . . . at least two stripline sections offset with respect to one another . . . wherein [they] . . . are disposed in straight lines parallel to one another . . . [and] the tapping element comprises a pointer element which rotates about the pivoting axis." (See '130 Patent, Claim 24, Col. 8, ll. 10-33.) The specification states that Figure 5 "shows two straight striplines . . . which are . . . offset with respect to one another through 180[degrees] with respect to the pivoting axis." (Id., Col. 5, ll. 32-35.) Thus, Figure 5 shows one stripline positioned outward from the pivoting axis and another stripline positioned parallel to the other stripline on the opposite side of the pivoting axis, such that the pointer element points in one direction in relation to one of the striplines and, at the same time, points in the opposite direction in relation to the other stripline. (See id., Fig. 5.)

The Court agrees with RYMSA that the construction of "pointer element" and "point element" must be consistent with and support the language of Claims 1, 4 and 24, as shown in the embodiments of Figures 2, 4, 6, and 7 of the original specification. (See Defs.' Claim Construction Br., Ex. 2 at 44-49.) Because Kathrein's claim interpretation excludes one of its exemplary embodiments, the Court rejects it.

However, the Court also finds fault with RYMSA's proffered claim interpretation: "device that is shaped to point or indicate one or both direction(s) along a line." (Defs.' Claim Construction Br. at 18.) RYMSA's claim interpretation's inclusion of the phrase "device that is shaped" is unnecessary for a jury to understand that a pointer element must not be amorphously shaped such that it does not point. Further, RYMSA's inclusion of the phrase "along a line" is confusing because it is unknown whether "along a line" means along a line on the stripline or along a line on the pointer element or point element itself. Thus, the Court also rejects RYMSA's claim interpretation. Instead, the Court construes the terms "pointer element" and "point element" to mean "an indicator that points either unidirectionally or bidirectionally in two opposite directions."

7. "polygon"

This phrase is found in claims 12, 33, 47, and 58-75 of the '037 patent, and in claims 13-14, and 19-25 of the '255 patent. See Joint Statement, '037 and '255 Patents. Originally, plaintiffs contended that "polygon" should be construed to mean "a closed figure made up of curved lines, straight lines, or a combination of curved and straight lines" and defendants contended that the phrase should be construed to mean "a closed arrowhead shape." As with the disputed phrase "arcuate," however, the court requested at the claim construction hearing that the parties attempt to arrive at a jointly agreed upon construction, in view of the court's inclination to adopt plaintiffs' proposed construction, modified to include the term "arrowhead."

Unsurprisingly, the parties have not been able to agree upon a jointly proposed construction. Plaintiffs now propose that "polygon" be construed as "a closed figure made up of curved lines, straight lines, or a combination of curved and straight lines, for example, a closed arrowhead shape." Defendants, by contrast, propose the following construction: "a closed
On the whole, the court finds defendants' proposed construction more persuasive. Beginning with the specification, it clearly describes "the present invention" as an expandable stent, which in turn has a longitudinal axis and a porous surface "defined by a plurality of intersecting members arranged to define a first repeating pattern comprised of a polygon having a pair of side walls substantially parallel to the longitudinal axis." See Joint Statement, '037 Patent at 5:5-12. Thus, a first repeating pattern is comprised of a polygon with side walls essentially parallel to the longitudinal axis. Turning to the actual description of the various figure drawings of the patent, the specification explains that a first repeating pattern -- comprised of a polygon -- might look like the portion of Figure 1A that is labeled 'A.' See id. at 8:35-37 ("As illustrated and with further reference to FIG. 1A, repeating pattern A is a polygon comprising a pair of side walls 35, 40"). And viewing that portion labeled "A," it is, in fact, a closed figure in the shape of an arrowhead. Thus, the phrase "polygon" is referenced by the specification as a closed figure in the shape of an arrowhead.

Moreover, defendants correctly note that the specification, in discussing all the "illustrated embodiments" of the '037 patent, nearly all of which contain adjacent rows of "repeating pattern A" and repeating pattern B, expressly describes those repeating patterns as "polygons or "arrowheads."" See id. at 8:58-60 (emphasis added). This implies, as defendants propose, that polygon be construed to mean a "closed arrowhead shape." Plaintiffs correctly point out, however, that a polygon, as described in the patent, can include curved flexure members, and sides that include a sinusoidal -- or curved -- shape. For just as defendants rely on the description attached to the figure drawings of the patent, which indicate that polygons are synonymous with arrowheads, those descriptions and illustrations also indicate that the polygon shapes include curvatures. See id. at figures 5-10; see also 4:26-28 ("polygon comprises the sinusoidal or S-shaped section"). Defendants, moreover, do not appear to dispute this. See Joint Statement at p. 17 (defendants' acknowledgment that "as used in the patents, a polygon can have curved sides").

In sum, while the intrinsic evidence supports construction of a "polygon" as a closed "arrowhead" shape, it also makes clear that this shape can include "curved lines, straight lines, or a combination of curved and straight lines." Accordingly, the court adopts defendants' current proposed construction, which is most consistent with this understanding, and construes "polygon" as: "a closed arrowhead shape made up of curved lines, straight lines, or a combination of curved and straight lines.

Porcelain Powder

Ivoclar asks the Court to construe the claim "porcelain powder" as "porcelain matter in a finely divided particulate state." Def. Mem. at 3. PSN, on the other hand, seeks to construe the same claim as "a medium containing porcelain particles." Defendant's Local Rule 56.1 Statement of Facts, Ex. 14 (hereafter "Def. 56.1 Ex. 14"). The parties do not dispute that the '530 Patent describes applying a porcelain powder that has been mixed into an "opaque water slurry," while the Empress product uses a "ceramic ingot" that has been heated into a "flowable" state.

Ivoclar relies on several technical dictionary definitions of "powder" as "finely divided particles." See Def. 56.1 Exs. 15-17. Therefore, maintains Ivoclar, a hard ceramic ingot cannot be a powder. But the Phillips decision specifically cautions courts against using the analysis urged by Ivoclar- that is, reading the claimed term in isolation and relying upon a dictionary definition of that term that is at odds with the use of the term throughout the specification of the patent. See Phillips, 415 F.3d at 1321. A person of ordinary skill in the art is presumed to read the claimed term in the context of the entire patent. Phillips, 415 F.3d at 1313. Ivoclar maintains that only powder, and not a solid form of powder, can be a "powder" in the '530 Patent. But taking Ivoclar's proposed construction to its logical conclusion, the claimed step "applying porcelain powder to the surface of said statue" would mean that someone following the '530 Patent must apply powder, alone, to the surface of the statue to form the veneer. At no point in the '530 Patent summary, preferred embodiment, or example does the Patent describe use of the porcelain powder without a medium. To the contrary, the specification describes complimentary functions for the medium, such as adding pigment to the medium to render the porcelain opaque. See '530 Patent, col. 4, ll. 4-9.

The preferred embodiment and example in the '530 Patent describe applying the porcelain powder to the statue after mixing
it with water. To read the term "porcelain powder" as excluding porcelain powder in a medium, as proposed by Ivoclar, would make it impossible to make the invention as described. See Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578 (Fed. Cir. 1996) ("[I]t is unlikely that an inventor would define the invention in a way that excluded the preferred embodiment, or that persons of skill in this field would read the specification in such a way.") Therefore, the Court construes the claim "porcelain powder" as proposed by PSN: a porcelain powder is a medium containing porcelain particles.

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Dandy's next claim construction argument is that the court erred by interpreting the pores in the "porous material" to be of a certain size (1/2 inch). At the threshold, we disagree with the premise of Dandy's argument -- the court's construction did not require a specific size of pore. The court construed "porous material" as being a material having small openings (or pores) that allow gasses and liquids to pass through while sediment and other solids are substantially blocked from passing through. "Sediment," in turn, was construed as dust, soil, silt, and other particulates of a type suspended in runoff waters. The court, then, merely applied its constructions of "porous material" and "sediment" to the accused product -- and its outer layer containing 1/2 inch holes or pores -- and determined that the "porous material" limitation was not met because 1/2 inch holes cannot block particulate matter.

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DISCUSSION

I.

In the 1980s, Aronowitz and Louis Terminiello (Terminiello) began researching methods for testing heterogeneous bodily fluids for the presence of certain materials. Technical Chems. I, slip op. at 2-3. Such methods are useful in testing biological fluid samples, containing multiple components, for the presence of analytes such as glucose, cholesterol, and urea. Aronowitz's and Terminiello's research efforts resulted in the technology disclosed in the '192 and '580 patents.

The '192 patent, entitled "A Dry Reagent Delivery System With Membrane Having Porosity Gradient," discloses a system for detecting the presence of an analyte in a heterogeneous fluid sample. Claim 11, the only independent claim of the '192 patent at issue, provides:

A dry chemistry reagent system for detection of an analyte in a heterogenous [sic] fluid sample, said system comprising:

a porous membrane of essentially uniform composition and a porosity gradient from one planar surface thereof to the other, wherein said porous membrane's inherent fluid absorption and distribution characteristics have been modified by imbibing a conditioning agent, an indicator, flow control agent and reagent cocktail into its matrix, the effect of such absorption being to effect an essentially uniform distribution of indicator, flow control agent and reagent cocktail within the porous membrane thereby enhancing the uniformity of internal structure of said film so as to enhance the uniformity of absorption and modulate the rate of absorption of the fluid sample and its interaction with the reagent cocktail.

'192 patent; col. 22, ll. 56-68, to col. 23, ll. 1-5. This system is commercially embodied in products known as test strips. When a biological fluid sample, such as a drop of blood, containing the analyte for which a test is being conducted is placed on the reaction zone of the test strip, a chemical reaction occurs. The reaction produces a characteristic color change that indicates the presence of the analyte.

The '580 patent, entitled "Assay Kit Including An Analyte Test Strip And A Color Comparator," discloses a kit comprised of a test strip and a color comparator. The test strip functions in a manner similar to that disclosed in the '192 patent. The color comparator consists of a series of color fields which correlate color intensity to corresponding numerical values of the amount of analyte present. The color comparator contains apertures that allow a section of the reaction zone of the test strip, where the characteristic color change occurs, to be compared to the various colors on the comparator, while shielding the remainder of the reaction zone and the inert support medium of the test strip from view. The kit allows the user to compare
the characteristic color intensity of the indicator in the reaction zone of the test strip to the color comparator and thereby
determine the numerical amount of analyte present in the sample. Claims 1 and 8 of the ’580 patent, the only claims of the
’580 patent at issue, provide:

1. A test means comprising:

(a) a test strip which includes an inert support and a sample receptive medium comprising a dry chemistry reagent system
specific for an analyte of interest which upon interaction with said analyte produces a characteristic color indicative of an
assay value of said analyte of interest, said receptive medium being positioned on said test strip so as to be bordered on one
or more sides by said inert support;

(b) a color comparator including a plurality of different color fields representing a range of assay values of said analyte
physically arranged in a predetermined ordered succession for comparison with the color of the sample receptive medium of
the test strip, each of said color fields having an aperture which permits viewing therethrough of at least a portion of a
reaction zone of the sample receptive medium after said analyte has reacted to produce a color therein, and

2. means for positioning said test strip relative to the aperture of each of said color fields so as to mask from view the inert
support which borders the reaction zone of the sample receptive medium.

8. A test means comprising an analyte test strip having an analyte reaction zone and a color comparator therefor, said color
comparator comprising a plurality of color fields physically arranged in a linear succession, each successive field connoting
a different numerical assay value of said analyte, characterized in that each color field has an aperture therethrough entirely
framed by said color field, each aperture permitting at least a portion of said reaction zone to be viewed when said reaction
zone is positioned behind the color field framing the aperture.

’580 patent; col. 4, ll. 60-68, to col. 5, ll. 1-14, 46-56.

II.

The ’192 patent issued on September 27, 1988, and the ’580 patent issued on October 31, 1989. Aronowitz and Terminiello
assigned both patents to Technimed Corp. (Technimed), a Florida corporation formed by Aronowitz in the 1970s. Technical
Chems. I, slip op. at 2-3. Aronowitz originally served as Technimed's President and later as its Executive Vice President and
Technical Director. Id. at 2. Aronowitz claims that at the time he assigned his interest in the patents to Technimed, he also
executed an additional agreement whereby the patents would revert to him if Technimed failed to successfully
commercialize the inventions disclosed in the patents. Id. at 3.

Technimed attempted to commercialize the inventions claimed in the patents by entering into an agreement with HDI on
April 15, 1988 (1988 agreement). Id. The agreement consisted of two parts: (1) a Supply Agreement, under which HDI was
to purchase glucose and cholesterol test strips from Technimed, and (2) a Contingent Manufacturing Agreement, which
allowed HDI to become licensed to make glucose and cholesterol test strips using Technimed's technology if Technimed
was unable to meet HDI's demand for these products. The Contingent Manufacturing Agreement was conditioned on HDI
having purchased specified minimum quantities of test strips from Technimed. Under the Contingent Manufacturing
Agreement, HDI was assessed royalties based on the number of strips it produced, subject to a minimum annual royalty
provision.

On January 8, 1990, the parties entered into a second agreement (1990 agreement). The 1990 agreement invoked the
Pursuant to the 1990 agreement, Technimed released certain technical information and "Know-How" to HDI, and HDI was
licensed to manufacture glucose and cholesterol test strips. Id. at 3-4. As part of the 1990 agreement, HDI purchased a
portion of Technimed's test strip manufacturing facilities and hired nine employees who were working in test strip
manufacturing-related positions at Technimed. The district court found that almost simultaneously with the 1990 agreement,
Technimed assigned the ’192 and ’580 patents to Pacific National Bank (Bank) as part of a refinancing agreement. 1
1 The court noted that TCPI and Aronowitz failed to present any evidence to support their claim that the ’580 patent had been assigned to the Bank. Technical Chems. I, slip op. at 4.

Id. at 4. Shortly thereafter, Technimed defaulted on its obligations to the Bank. Id. at 4-5.

On September 24, 1992, Aronowitz obtained a Partial Final Judgment By Default against Technimed in the Circuit Court of the Seventeenth Judicial Circuit in and for Broward County, Florida. The judgment was in a suit by Aronowitz against Technimed in which Aronowitz asserted that Technimed had failed to commercialize the inventions of the two patents, as required under an agreement which Aronowitz alleged existed between Technimed and himself. Technical Chems. I, slip op. at 5. This judgment purported to rescind the assignments from Aronowitz to Technimed and purported to give Aronowitz superior rights relative to Technimed in the ’192 and ’580 patents, as well as in U.S. Patent No. 4,790,979 (the ’979 patent). On October 14, 1992, Aronowitz obtained a Final Judgment By Default against the Bank. Id. This judgment purported to give Aronowitz superior rights relative to the collateral claim of the Bank. 2

2 It is unclear from the Judgment By Default and from the record evidence which patent or patents were covered by this judgment.

On November 2, 1992, Aronowitz granted TCPI, the company of which he is President and Chief Executive Officer, a purportedly exclusive license under the ’192 and ’580 patents. Id.

As early as 1991, Technimed had attempted to terminate the 1988 and 1990 agreements, claiming that HDI had failed to pay the required royalties. In fact, Technimed and Aronowitz threatened to terminate the agreements on at least two occasions. Id. On November 22, 1993, TCPI and Aronowitz sued HDI, alleging willful infringement of the ’192, ’580, and ’979 patents. 3

3 At the close of plaintiffs' case, the court entered judgment as a matter of law, in favor of HDI, under Fed. R. Civ. P. 52(c), with respect to all claims under the ’979 patent. Technical Chems. II, slip op. at 1. The ’979 patent is not at issue in this appeal.

TCPI alleged that the Ultra+ test strips manufactured by HDI infringed the ’192 patent. Technical Chems. I, slip op. at 6. TCPI also alleged that HDI's LipoScan Total Color Cholesterol Chart and Ultra+ Blood Glucose Color Chart infringed the ’580 patent. Id. After filing the action, TCPI and Aronowitz sent a letter to HDI dated October 18, 1994, entitled "Formal Notice of Termination of License." The letter purported to terminate, because of HDI's alleged failure to pay royalties, whatever rights HDI had by virtue of the 1988 and 1990 agreements. Id. at 5.

III.

The case was tried to the bench from September 18-22, 1995. Id. at 1. After trial, the court determined that Aronowitz and TCPI had standing to assert the ’192 and ’580 patents against HDI, subject to any existing license HDI had previously been granted by Technimed. Technical Chems. I, slip op. at 9-10. The court also determined that HDI had not infringed independent claim 11 and dependent claims 14 and 15 of the ’192 patent, either literally or under the doctrine of equivalents. 4
With respect to the other claims of the '192 patent, the court stated: "Because of the absence of any evidence to support a finding of infringement on claims 1 through 10, 12, 13, 16 through 40, the Court concludes that such claims have not been infringed." Technical Chems. I, slip op. at 14.

Id. at 17-18. The court further determined that HDI's LipoScan product and its Ultra+ Blood Glucose Color Chart, when used in conjunction with the Ultra+ test strips, were within the scope of the claims of the '580 patent. Id. at 20. The court concluded, however, that HDI had not infringed claims 1 and 8 of the '580 patent because it was validly licensed pursuant to the 1988 and 1990 agreements. Id. at 21-22. The court additionally concluded that HDI had not materially breached the agreements and that, therefore, the agreements could not have been terminated. Technical Chems. I, slip op. at 21-22. Finally, the court held that HDI was not required to pay royalties under the agreements because the contingencies giving rise to royalty payments had not occurred. Id. On August 30, 1996, the court entered final judgment in favor of HDI on all counts. Technical Chems. II, slip op. at 2-3.

We address the arguments of the parties in turn, beginning with the infringement issues. A determination of infringement requires a two-step analysis. "First, the claim must be properly construed to determine its scope and meaning. Second, the claim as properly construed must be compared to the accused device or process." Carroll Touch, Inc. v. Electro Mechanical Sys., Inc., 15 F.3d 1573, 1576, 27 U.S.P.Q.2D (BNA) 1836, 1839 (Fed. Cir. 1993). Claim construction is a question of law, which we review de novo. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2D (BNA) 1321, 1329 (Fed. Cir. 1995) (in banc), aff'd, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996). Infringement, both literal and under the doctrine of equivalents, is a question of fact which we review for clear error when tried to the court. See SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1125, 227 U.S.P.Q. (BNA) 577, 589 (Fed. Cir. 1985) (in banc); Critikon, Inc. v. Becton Dickinson Vascular Access, Inc., 120 F.3d 1253, 1255, 43 U.S.P.Q.2D (BNA) 1666, 1668 (Fed. Cir. 1997). In interpreting the claims of a patent, the court first looks to the intrinsic evidence of record, including the claims of the patent, the specification, and the prosecution history. See Vitronics Corp. v. Conceptor Inc., 90 F.3d 1573, 1576, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996). When intrinsic evidence unambiguously delineates the scope of the patented invention, resort to extrinsic evidence, including expert testimony, is unnecessary. See id. at 1583, 39 U.S.P.Q.2D (BNA) at 1577.

Claim 11 of the '192 patent requires "a porous membrane of essentially uniform composition and a porosity gradient from one planar surface thereof to the other." '192 patent; col. 22, ll. 59-61. The district court construed this limitation to mean "that the untreated membrane, to which the dry chemistry reagent system is added, must have a porosity gradient[,] . . . a gradual change in the porosity from one planar surface [of the membrane] to the other." Technical Chems. I, slip op. at 15-16. The court determined that the claimed membrane was "prior to conditioning, anisotropic, in that there existed a density gradient from one planar surface to the other." Id. at 16. The court rejected TCPI's and Aronowitz's argument that a "'porosity gradient' can also be characterized by differences in the density of the two planar surfaces [of the membrane], rather than a gradual, continuous change in the internal structure." Id. at 16-17.

TCPI and Aronowitz argue that the court misconstrued claim 11 by limiting the term "porosity gradient" to gradual changes in porosity from one planar surface of the membrane to the other. They contend that "porosity gradient" means that one surface of the membrane or the area immediately contiguous thereto is denser than the other surface of the membrane or the area immediately contiguous thereto. We cannot agree.

The language of claim 11 requires that the porosity gradient run "from one planar surface [of the membrane] . . . to the other." '192 patent; col. 22, ll. 60-61. The specification provides that the membrane of the claimed invention "is, prior to conditioning, anisotropic, in that there exists a density gradient from one planar surface to the other." Id.; col. 11, ll. 32-34. Since the patentee did not express in the patent an intent to impart a novel meaning to the term "gradient," we give that term its ordinary meaning. See York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572, 40 U.S.P.Q.2D
(BNA) 1619, 1622 (Fed. Cir. 1996). "Gradient" is defined as a "change in the value of a quantity . . . per unit distance in a specified direction." Webster's Third New International Dictionary 985 (1986). We agree with the district court that "porosity gradient", as used in the claims of the '192 patent, requires "a gradual change in the porosity from one planar surface [of the membrane] to the other." Technical Chems. I, slip op. at 16. The term "gradual" is used to describe the change in porosity in contrast to a discontinuity. Thus, moving from one surface of the membrane to the other, porosity changes continuously, rather than exhibiting two regions of uniform porosity separated by a plane of discontinuity. Under TCPI's and Aronowitz's proffered construction, the claimed membranes could consist of two layers joined at a single plane. Such a structure does not contain a gradient as the term is ordinarily defined, but rather a discontinuity. We reject this construction because it is inconsistent with the claims and the specification, which require that the porosity gradient run "from one planar surface [of the membrane] to the other" rather than existing at only a plane of discontinuity within the membrane.

The district court also construed claim 11 to require that "the untreated membrane, to which the dry chemistry reagent system is added, must have a porosity gradient." Id. at 15-16. While claim 1 of the '192 patent addresses the membrane prior to chemical conditioning, claim 11 is directed to a system in which the membrane has "been modified by imbining a conditioning agent, an indicator, flow control agent and reagent cocktail into [the membrane's] matrix." '192 patent; col. 22, ll. 63-65. Claim 11 does not require the membrane to have a porosity gradient prior to chemical conditioning, but instead requires that the membrane of the chemically conditioned reagent system have a porosity gradient. In other words, the proper construction of claim 11 requires the membrane to have a porosity gradient, but does not require the gradient to be present prior to chemical conditioning. The court thus erred in reading the "prior to conditioning" limitation from the specification, see '192 patent; col. 11, ll. 31-34, into claim 11. See Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1571, 7 U.S.P.Q.2D (BNA) 1057, 1064 (Fed. Cir. 1988) ("Although the specification may aid the court in interpreting the meaning of disputed language in the claims, particular embodiments and examples appearing in the specification will not generally be read into the claims."); E.I. Du Pont De Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433, 7 U.S.P.Q.2D (BNA) 1129, 1131 (Fed. Cir. 1988).

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8. "Port"

The term "port" can be found twice in Claim 5 of the '477 Patent. See '477 Patent col. 9 ll. 5-6 ("the fluid receptacle provided with a port"); id. col. 9 ll. 12-15 ("said body shaped to fit substantially water-tight within said port such that said first open end faces inside said fluid receptacle and said second open end faces outside said fluid receptacle"). However, Millipore initially sought to have the term "port" construed to include other parts that permit attachment of additional devices to the port, such as seals, alignment features, clamps, and collars, which in combination permit the additional devices (here, the fluid sampling device) to be in fluid communication with a fluid receptacle.

While the language of Claim 5 itself does not provide any other language helpful in further construing the term "port," the specification provides some assistance. The specification of the '477 Patent expressly provides as follows:

Although port insert 10 is structured to fit snugly within host port, to prevent it from being popped into or out of the port during use, additional mechanical restraints are highly desirable. As shown in FIG. 2, this is accomplished by means of a threaded collar 40 that engages with and holds an annular lip 45 provided on the port insert when said collar 40 is screwed into port 5. Other mechanical restraints - such as clamps, screws, bolts, or mated interlocking parts - are known in the art.

Id. at col. 5 ll. 11-19. From the specification, it is therefore clear that the port is distinct and separate from the mechanical restraints, such as clamps, screws, bolts, or mated interlocking parts. Construing the term "port" to include such restraints would therefore be improper.

Consequently, I adopt Gore's construction of the term "port" and construe that term, as Millipore now agrees, as "a part of a fluid receptacle that provides an opening to the receptacle."
8. Ports

The fifth element of Claim 1 is "two ports for aspirating and dispensing fluid from the chamber." The ordinary meaning of "port" is an opening. The specification and figures are consistent with the ordinary meaning, and the prosecution history does not contain a contrary definition. Accordingly, the Court construes "port" to be an opening.

7. "Port Insert"

The term "port insert" appears in Claim 1 of the '477 Patent. See '477 Patent col. 8 l. 38. Millipore Enhanced Coverage Linking initially argued that this term is not a claim limitation but rather a collective term for the elements of the claimed device recited in paragraph (a) of Claim 1. To support its argument that the term "port insert" is not a claim limitation, Millipore observes that this term precedes the transitional term "comprising." This fact alone supports a finding, according to Millipore, that the term "port insert" was part of a preamble, i.e., the language preceding the transitional term "comprising," thereby preventing this term from being a claim limitation.

Usually, "the preamble does not limit the claims." Allen Eng'g Corp. v. Bartell Indus., Inc, 299 F.3d 1336, 1346 (Fed. Cir. 2002). Yet, "the preamble may be limiting 'When the claim drafter chooses to use both the preamble and the body to define the subject matter of the claimed invention.'" Id. (quoting Bell Comm'n's Research, Inc. v. Vitalink Comm'n's Corp., 55 F.3d 615, 620 (Fed. Cir. 1995)). Here, Millipore ignores the fact that Claim 1 of the '477 Patent begins with the preamble "[a] fluid sampling device comprising" before defining the term "port insert." See '477 Patent col. 8 l. 37. Under these circumstances, I conclude that the term "port insert" is not solely a part of the preamble and should be construed as a claim limitation.

Accordingly, I now turn to the construction of the term "port insert" as a claim limitation. Anticipating that the term "port insert" might be determined to be a claim limitation, Millipore initially sought to have this term construed as "device to be mated with a port." Gore countered that the term "port insert" should be construed to mean "a structure installed into a port provided on a fluid receptacle." I note that the specification contemplates an embodiment ",[w]hen the port insert is installed into a suitable port," '477 Patent col. 2 ll. 21-22. In this instance, I find that using the specification would merely interpret the meaning of a claim rather than to import limitations from the specification into the claim. See Phillips, 415 F.3d at 1323.

Consequently, I construe the term "port insert," as Millipore now concedes, to mean "structure installed into a suitable port."

5. Portable

The term "portable electronic navigational aid device" appears in claims 9, 10 and 11. The dispute is over the term "portable." The parties advance the same arguments they made in the context of the '873 patent. For the reasons discussed in section C.9, I construe "portable" as "easily transportable."

6. Portable

The term "portable" appears in Claims 1, 38, 40, and 49 of the '529 Patent. Plaintiffs assert that the portable limitation
means "a structure (upon which the bin, conduit and meter are mounted) that is capable of transportation with some particulate matter in the bin." Defendants propose that this limitation should be construed as "a structure of sufficiently small size and sufficient durability to be transported with an operationally significant amount of particulate matter in the bin."

The ordinary meaning of the term "portable" is "capable of being carried" or "easily or conveniently transported." Webster's Third New International Dictionary 1768 (1993). In the context of the independent claim language of the '529 Patent, the term "portable" requires that the device be sufficiently portable to allow "transportation with particulate matter in the bin." ('529, c. 8, ll: 60-62; c. 11, ll: 32-34; c. 11, ll: 65-67; c. 12, ll: 46-48.) The background of the invention describes a "device and method for shipping and dispensing precise amounts of dry particulate matter, such as fertilizer and pesticide products and such, into a liquid carrier stream." ('529, c. 1, ll: 5-8.) The summary of the invention states that the invention "features a means of transporting and storing a dry particulate matter, and then dispensing controlled quantities of that material directly into a stream of liquid carrier." ('529, c. 1, ll: 35-38.) The patent specification further states as follows:

In some embodiments, the method also includes, before distributing each device, filling the bin of the device with the corresponding quantity of agricultural chemical; and then, after accepting the returned devices, refilling the bins of the devices with additional agricultural chemicals. . . . Additionally, transportation of pre-mixed liquid chemicals can be avoided, with the chemicals being transported all the way to their use site in dry form.

('529, c. 3, ll: 36-40, 45-57.)

First, the Court agrees with Defendants that a construction of the portability limitation of each of the contested claims of the '529 Patent must include some reference to transporting an operationally significant amount of particulate matter. If the Court were to construe the portable limitation without such a requirement, the Court would have to define the claim language to allow portability with any amount--even a dusting--of particulate matter in the bin. This construction would not square with the Patent specification and claim language that clearly contemplates transporting the device with an operationally significant, or usable, amount of particulate matter in the bin. Second, the Court does not agree with Defendants' attempts to import size and durability limitations into the claim construction. Such requirements are not supported by the claim language or the prosecution history of the '529 Patent. Thus, the Court construes the "portable" limitation of Claims 1, 38, 39, and 40 to mean a structure (upon which the bin, conduit, and meter are mounted) that is capable of being transported with an operationally significant amount of particulate matter in the bin.

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2. "Portable Housing"

Plustek asks the Court to construe this term as "a compact case that can be made of light but rigid plastic material and that houses only a color image sensing module and a motion mechanism," the same as its proposed construction for "main case." Alternatively, "a compact case compatible with portability that can be made of light but rigid plastic material and that houses only a color image sensing module and a motion mechanism."

Syscan prefers "a mobile case."

The portable housing must be the main case. The specification fails to mention or describe the term "portable housing", although the claims recite the term. See e.g., Dang Decl., P 2, Ex. A ('124 Patent), 11:28 (claim 8), 12:4 (claim 15), 12:50 (claim 21). In fact, the first time the term "portable housing" is mentioned is in claim 8. See Dang Decl., P 2, Ex. A ('124 Patent), 11:28. In addition, the claims consistently recite that the image sensing module is mounted in the portable housing. See e.g., Dang Decl., P 2, Ex. A ('124 Patent), 11:29 (claim 8), 12:5 (claim 15), 12:51 (claim 21). The specification discloses only one structure, the main case (also referred to as the "main module" or the "compact case"), that contains the image sensing module and the motion mechanism. See e.g., Dang Decl., P 2, Ex. A ('124 Patent), Fig. 4A (element 402 is the main case, element 406 is the image sensing module, and element 408 represents the motion mechanism), 5:18-20 ("both image sensing module and motion mechanism are housed in a compact case"), 5:27-29 ("Main case 402 houses an image sensing module and motion mechanism... "). Although the specification does not include the term "portable housing", the claims actually recite the term. See e.g., Dang Decl., P 2, Ex. A ('124 Patent), 11:28 (claim 8), 12:4 (claim 15), 12:50 (claim 21).
When the patentee wanted to claim that a particular element resides in the portable housing (or main case), the patentee specifically did so. See e.g., Dang Decl., P 2, Ex. A ('124 Patent), 11:29-30 ("an image sensing module mounted in the housing …" emphasis added), 10:44 ("a main case housing an image sensing module and a motion mechanism …" emphasis added).

For all the above reasons, this Court construes the term "portable case" to be "a compact case that can be made of light but rigid plastic material and that houses only a color image sensing module and a motion mechanism."

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3001

4. "portable ultrasound diagnostic instrument"

Plaintiffs' construction: an ultrasonic diagnostic instrument used to evaluate a patient's condition or state and that by design is carried or moved about.

Defendant's construction: an ultrasound instrument used to evaluate a patient's condition or state and that can be easily carried.

The parties' proposed constructions of this term differ only with respect to whether the instrument must be "designed to be carried or moved about" or "easily carried." On this front, the parties engage in a battle of dictionary definitions, both contending that their dictionaries prove that their construction is accurate. This is not a winning or productive strategy.

Fortunately, the patent specification helps settle the dispute. The parties agree that the Background Art portion of the patent specification is important. In it, the patentee describes "premium ultrasound systems" that are "mounted in carts for portability." '651 pat., col. 1, lns. 12-13. Defendant argues that this reference was meant as a point of comparison. That is, it should be understood from this passage that the claimed invention was not like these examples of prior art in that it could be carried, not just mounted in a cart and moved around. Plaintiffs draw another conclusion, which is more consistent with the use of language in the '651 patent. They contend that by describing the "portability" of systems that weigh several hundred pounds and are cart-mounted in the specification and then using the term "portable" in the claim language, the patentee made clear that in the context of the '651 patent, "portable" is a term that relates to units that can be easily moved about by means other than carrying. I agree. An inventor "may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning." Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001). The inventor in the '651 patent used the term "portability" to describe ultrasound units that could not be carried. Therefore, there is no reason to believe that the use of the term "portable" in the claim terms should be so limited.

Court's construction: an ultrasonic diagnostic instrument used to evaluate a patient's condition or state and that by design is carried or moved about.

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The dispositive question in this case is whether the word "portion" as used in the claims of the 550 patent should be limited to parts of an object that are "separate," as opposed to parts that can be either "separate" or "integral." Since each of Laitram's accused conveyor belts contains chain links having an integral, or one-piece construction, Rexnord contends that the broader interpretation should be adopted. Not surprisingly, Laitram argues that the narrower interpretation requiring separate parts should prevail.

A

Cases presenting issues of claim interpretation are often close. When words used in claims have more than one possible meaning, our canons of claim interpretation are the tools that permit resolution of disputes as to the correct meaning of
claim language. In this case, the district court recognized that the word "portion" could be defined, from the perspective of
dictionary sources, as both Rexnord and Laitram contend. The district court correctly understood the need to examine the
intrinsic record of the patent, its specification and its file history, to determine which meaning of the term must govern.
Examination of a specification or of a file history entails close scrutiny. For the reasons set forth below, we conclude that the
district court's analysis of the specification and the file history led it to the wrong legal conclusion.

We begin our claim construction analysis as it always should: with the language of the claims. Johnson Worldwide Assocs.,
175 F.3d at 989, 50 U.S.P.Q.2D (BNA) at 1610; Renishaw PLC, 158 F.3d at 1248, 48 U.S.P.Q.2D (BNA) at 1120; AbTox,
Inc. v. Exito Corp., 122 F.3d 1019, 1023, 43 U.S.P.Q.2D (BNA) 1545, 1548 (Fed. Cir. 1997). As we have often stated
before, as a general rule, all terms in a patent claim are to be given their plain, ordinary and accustomed meaning to one of
ordinary skill in the relevant art. Toro Co. v. White Consol. Indus., Inc., 199 F.3d 1295, 1299, 53 U.S.P.Q.2D (BNA) 1065,
1067 (Fed. Cir. 1999) ("Words in patent claims are given their ordinary meaning in the usage of the field of the invention,
unless the text of the patent makes clear that a word was used with a special meaning."); Johnson Worldwide Assocs., 175
F.3d at 989, 50 U.S.P.Q.2D (BNA) at 1610; Renishaw PLC, 158 F.3d at 1249-50, 48 U.S.P.Q.2D (BNA) at 1120. In
addition, unless compelled to do otherwise, a court will give a claim term the full range of its ordinary meaning as
understood by an artisan of ordinary skill. Johnson Worldwide Assocs., 175 F.3d at 989, 50 U.S.P.Q.2D (BNA) at 1610;
"plasticizer" given full range of ordinary and accustomed meaning to those of ordinary skill in the arts of polymer chemistry
and the plastics industry). Furthermore, a claim term should be construed consistently with its appearance in other places in
the same claim or in other claims of the same patent. See Phonometrics, Inc. v. Northern Telecom Inc., 133 F.3d 1459, 1465,
45 U.S.P.Q.2D (BNA) 1421, 1426 (Fed. Cir. 1998) ("A word or phrase used consistently throughout a claim should be
interpreted consistently."); CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1159, 42 U.S.P.Q.2D (BNA) 1577, 1586
(Fed. Cir. 1997) ("We are obliged to construe the term 'elasticity' consistently throughout the claims."); Southwall Techs.,
Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579, 34 U.S.P.Q.2D (BNA) 1673, 1679 (Fed. Cir. 1995) (holding that claim terms
found in different claims should be interpreted consistently).

Once a disputed claim term is identified by the parties and its plain meaning to the ordinarily skilled artisan is ascertained
by the court, the next step is to examine the written description and the drawings to confirm that the patentee's use of the
disputed terms is consistent with the meaning given to it by the court. Watts v. XL Sys., Inc., 232 F.3d 877, 882, 56
U.S.P.Q.2D (BNA) 1836, 1839 (Fed. Cir. 2000); Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2D
(BNA) 1321, 1329 (Fed. Cir. 1995) ("Claims must be read in view of the specification, of which they are a part."); aff'd, 517
U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). This confirmatory step is necessary for several reasons. First, patent
law permits the patentee to choose to be his or her own lexicographer by clearly setting forth an explicit definition for a
claim term that could differ in scope from that which would be afforded by its ordinary meaning. Mycogen Plant Science v.
Monsanto Co., 243 F.3d 1316, 1327, 58 U.S.P.Q.2D (BNA) 1030, 1039 (Fed. Cir. 2001) ("[A] patentee is free to be his own
lexicographer, so long as the special definition of a term is made explicit in the patent specification or file history.").
Second, because a claim construction that would exclude the preferred embodiment "is rarely, if ever, correct and would
require highly persuasive evidentiary support," Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583, 39 U.S.P.Q.2D
(BNA) 1573, 1578 (Fed. Cir. 1996), a court mindful of this canon of construction would need to examine the written
description and the drawings to determine whether the preferred embodiment falls within the scope of a construed claim.
Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1580-81, 38 U.S.P.Q.2D (BNA) 1126, 1130 (Fed. Cir. 1996)
(refusing to adopt a claim construction of "stable" that would exclude the preferred embodiment disclosed in the
(Fed. Cir. 2000) (adopting a claim construction in light of the prosecution history and the unambiguous language of an
amended claim which excluded a preferred and sole embodiment disclosed in the specification).

Furthermore, an examination of the written description and drawings is necessary to determine whether the patentee has
disclosed subject matter or has otherwise limited the scope of the claims. SciMed Life Sys., Inc. v. Advanced
Cardiovascular Sys., Inc., 242 F.3d 1337, 1344, 58 U.S.P.Q.2D (BNA) 1059, 1065 (Fed. Cir. 2001) (relying on a disclaimer
in the written description of subject matter that could have otherwise fallen within the scope of the claim language); Watts,
232 F.3d at 882, 56 U.S.P.Q.2D (BNA) at 1840 (restricting claim limitation to a particular structure based in part on
distinguishing remarks contained in the specification). And, of course, if "the term or terms chosen by the patentee so
deprive the claim of clarity that there is no means by which the scope of the claim may be ascertained" by one of ordinary
skill in the art from the language used, a court must look to the specification and file history to define the ambiguous term in
the first instance. Johnson Worldwide Assocs., 175 F.3d at 990, 50 U.S.P.Q.2D (BNA) at 1610.
After examining the written description and the drawings, the same confirmatory measure must be taken with the
prosecution history, since statements made during the prosecution of a patent may affect the scope of the invention. See
(affirming the use of prosecution history to construe a claim). The comprehensive examination of the claims, the
specification, and the prosecution history in the claim construction process is not meant to impose an undue burden on
the district court, but instead serves to ensure that all pertinent intrinsic evidence is considered in the proper interpretation of a
claim. Markman, 52 F.3d at 979, 34 U.S.P.Q.2d (BNA) at 1329 ("To ascertain the meaning of claims, we consider three
sources: The claims, the specification, and the prosecution history.") (quoting Unique Concepts, Inc. v. Brown, 939 F.2d
1558, 1561, 19 U.S.P.Q.2d (BNA) 1500, 1503 (Fed. Cir. 1991)). Likewise, the parties should provide the district court with
all relevant arguments and point out with specificity the relevant statements in the specification and prosecution history in
support of their arguments.

In this case, the district court noted that the plain, ordinary meaning of "portion" included two possible readings--parts that
were "separable from the whole" and parts that were "not separated from the whole." Rexnord, slip op. at 24-25. Instead of
giving the term the full range of its ordinary meaning (which would encompass both readings), the district court incorrectly
concluded that the term was uncertain. Id. Upon considering the intrinsic evidence, the district court determined in the first
instance that the term should be construed to have the narrower meaning of "separate" parts. In doing so, the district court
relied solely on the preferred embodiment in the written description and its drawings (which admittedly reads on the
narrower meaning of the key word) and on one passage from the prosecution history. Concerning the latter, the district court
concluded that the examiner's objection during prosecution to a particular paragraph structure used in an original claim
implied that the examiner viewed the "portions" to be separate pieces. Rexnord, slip op. at 36-37. For the reasons explained
below, we conclude that the district court erred in its assessment of the written description and of the prosecution history.

B

The parties agree that the dictionary definition of "portion" is "a part of any whole, either separated from or integrated with
it." Random House Unabridged Dictionary 1507 (2d ed. 1993). Hence, according to its ordinary meaning, so long as a
"portion" of an object is a "part" of that object, it can connote either the quality of being "separate" or of being "integral." That
there is no doubt that "portion" has a broad meaning is evidenced by Laitram's explicit concession at oral argument that
the dictionary definition contemplates both meanings.

In the 550 patent, the patentee used the word "portion" in the phrases "link module portion" and "cantilevered portion" to
describe the two parts of the "chain link." 1 The district court construed the claims so as to require the "link module portion"
and the "cantilevered portion" to not only be distinct parts of the "chain links" (which is agreed by both parties to be proper)
but also to be separate from one another. In so doing, the district court held that the claimed "chain link" structure must be
limited to a two-piece embodiment, as opposed to encompassing both one- and two-piece embodiments. The primary
rationale articulated by the district court for its claim construction was that, of the embodiments Rexnord alleged to be
disclosed by the 550 patent, the only one described with detail in the written description and depicted in the drawings of the
550 patent was a two-piece embodiment. Rexnord, slip op. at 28-31. The district court also noted that no "figure or
embodiment described in the specification describes a one-piece construction explicitly." Id. at 31 (emphasis added).

--- Footnotes ---

1 Although claims 12 and 16 contain slight variations of the phrases "link module portion" and "cantilevered portion" used
in claim 5, these differences are insignificant for the purposes of this appeal. For instance, claim 12 uses "second portion"
instead of "cantilevered portion." But the operative language, "portion," remains the same. Also, claim 16 uses "first side
dge" and "second side edge." However, for purposes of Laitram's motion for summary judgment of noninfringement, the
parties agree that "side edge" is equivalent to "end portion." Rexnord, slip op. at 27.

--- End Footnotes ---

Our case law is clear that an applicant is not required to describe in the specification every conceivable and possible future
embodiment of his invention. See SRI Int'l v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1121, 227 U.S.P.Q. (BNA)
577, 585 (Fed. Cir. 1985) (en banc). "If structural claims were to be limited to devices operated precisely as a specification-
described embodiment is operated, there would be no need for claims. Nor could an applicant, regardless of the prior art, claim more broadly than that embodiment.” Id. In short, it is the claims that measure the invention, as informed by the specification. As we noted long ago: “Specifications teach. Claims claim.” Id. at 1121 n.14, 585 n.14.

Since the preferred embodiment of the invention, in all of its representations (drawings and text), is a two-piece structure (the "link module portion" being separate from the "cantilevered portion"), one would not expect to find a description of an "integral" structure under the heading of "Description of A Preferred Embodiment." Indeed, no one contends that the preferred embodiment could be an integral structure. Therefore, references to the preferred embodiment simply beg the dispositive question, rather than answer it.

When we examine the section in the written description entitled, "Summary of the Invention" (a pertinent place to shed light upon what the patentee has claimed), we find only three references to distinct embodiments that mention "link modules" and "cantilevered" portions. One of the three embodiments unquestionably teaches a "separate" attachment. 550 patent, col. 2, ll. 34-39 ("In one embodiment . . . each chain link includes a molded plastic link module. . . and an attachment that is mountable in cantilevered relation on the side of the link module." (emphases added)). This teaching should come as no surprise, since there is no dispute that the plain meaning of the word "portion" is broad enough to cover separate structures. Significantly, though, the other two embodiments do not describe two-piece, or separate, constructions. In fact, the embodiment disclosed at column 2, lines 40-57, is described completely without the use of any words that connote a quality of being "separate"--such as "attachment," "mountable," "second piece," or "securable." Cf., 550 patent, col. 8, ll. 61-64 ("Each of the chain links 256 also includes a second piece comprising an attachment 272 that is securable in cantilevered relation to a link module 260. . . ." (emphases added)). Similarly, the embodiment disclosed from col. 2, line 63, to col. 3, line 9, describes another embodiment without the use of any words that might connote a "separate" attachment. Hence, in the "Summary of the Invention" section, there are two embodiments that support a broader interpretation of "portion," as opposed to one embodiment that requires "separate" parts. Moreover, the written description explicitly states that aside from the preferred embodiment, "the invention is capable of other embodiments and of being practiced or being carried out in various ways." 550 patent, col. 3, ll. 57-59. The inventor was careful to consistently use phrases throughout the written description such as: "In one embodiment . . .", "Before one embodiment . . .", "of other embodiments . . .", "of a preferred embodiment . . .", or "In the particular embodiment . . .". These phrases reflect the inventor's teaching that his invention could be embodied "in various ways." Finally, the inventor explicitly qualified his detailed "Description of A Preferred Embodiment" by stating that "it is to be understood that the invention is not limited in its application to the details of construction and the arrangements of components set forth in the following description or illustrated in the drawings." 550 patent, col. 3, ll. 54-57.

When the claim language is assessed on its own, and when the written description is examined carefully, one finds that the patentee has described an invention that embraces, through the word "portion," structure that may be either "integral" or "separate."

Given that the plain meaning of "portion" and the specification both support an interpretation that can cover either one-piece or two-piece embodiments, the remaining inquiry is whether such construction must be altered or discarded because of statements made during the prosecution history. The district court singles out a part of the prosecution history where the examiner contested the accuracy of the inventor's indented paragraph structure in proposed claim 33 (issued as claim 5). The examiner stated:

The paragraph in [claim 33] defining the "cantilevered portion . . ." must be moved to the left to line up with "a link module portion" because the cantilevered portion is defined as "extending laterally from said link module portion" and therefore can not also be part of the link module portion as claimed.

To spell out our understanding of the examiner's rejection, the following is proposed claim 33 as originally presented to the examiner with lines and arrows added to convey the thrust of the examiner's remarks:

33. A conveyor apparatus comprising

a frame,

a sprocket supported by said frame,
a first conveyor supported by said frame and including
an article supporting surface defining a plane, and
a transition section supported by said sprocket along an arcuate path deviating from said plane, and
a second conveyor supported by said frame, oriented transversely to said first conveyor, and including
a plurality of elongated chain pins, and
a plurality of chain links interconnected by said chain pins and respectively including
a link module portion including
an article supporting surface generally coplanar with said article supporting surface of said first conveyor, and
a cantilevered portion extending laterally from said link module portion, from said chain pins, extending over said sprocket, and into overhanging relation to said transition section of the first conveyor to provide an extension of said second conveyor article supporting surface, and including
a lower edge portion contoured to follow the arcuate path of said transition section.

(emphases added). The examiner, in rejecting the proposed claim, made it explicitly clear that the basis for his rejection was that, from a logical standpoint, the paragraph structure was inaccurate, as opposed to being too broad in light of the prior art. In other words, the examiner rejected the proposed claim because, as a technical matter, if the "cantilevered portion" was "extending laterally from" the "link module portion," it could not be simultaneously a part of the "link module portion" (as suggested by the alignment in the original indented paragraph structure). It is significant that the examiner made no explicit reference or hint to any notion of "separate" or "integral." The district court, however, interpreted the examiner's statements, without further elaboration, to compel the conclusion that the examiner must have viewed "the cantilevered portion as a separate part of the chain link with equal status to the link module." Rexnord, slip op. at 36 (emphasis added). Although, no doubt, the "cantilevered portion" shares distinct and equal status with the "link module portion" from a hierarchical standpoint, it does not necessarily follow that the two portions must be "separate."

For example, a typical tapered bottle includes a "cylindrical portion" and a "neck portion." It would indeed be technically inaccurate to describe the bottle as including a "cylindrical portion" which, in turn, includes a "neck portion" (especially if the "neck portion" is described as "extending laterally from" the "cylindrical portion"). The inaccuracy stems from the fact that the "neck portion" should not be viewed as a sub-part of the "cylindrical portion," but rather, should possess equal status with the "cylindrical portion" as parts of the same bottle. Hence, to be accurate, the bottle ought to be described simply as having a "cylindrical portion and a neck portion." However, it does not follow, as made obvious by this simple illustration, that the two "portions" must be physically separate. There is no doubt that within the structure of a bottle, the "cylindrical portion" and the "neck portion" must be integral. Therefore, although the "link module portion" and the "cantilevered portion" possess equal status as distinct parts of the "chain link," it cannot be said that they must be separate. The district court arrived at its contrary conclusion based solely on the preferred embodiment and a single piece of prosecution history which is simply silent regarding the notions of "separate" and "integral."

At most, the prosecution history is inconclusive regarding the proper interpretation of the word "portion." If read as the district court did, the examiner's comments make no sense; if read properly to require clarification that the "link module portion" and the "cantilevered portion" have equal status, the examiner's comments support a broad reading of "portion." Furthermore, we may presume that the examiner gave the terms in the proposed claim their "broadest reasonable interpretation consistent with the specification," since he was obliged to do so. See Hyatt v. Boone, 146 F.3d 1348, 1355, 47 U.S.P.Q.2d (BNA) 1128, 1133 (Fed. Cir. 1998) (regularity of routine administrative procedures is presumed); In re Hyatt, 211 F.3d 1367, 1372, 54 U.S.P.Q.2d (BNA) 1664, 1667 (Fed. Cir. 2000) ("During examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification."); see also Manual of Patent Examining Procedure § 2111 ("Claim Interpretation; Broadest Reasonable Interpretation"). Given the examiner's obligation to confer
the broadest reasonable interpretation on "portion," if the examiner wanted to hinge patentability upon the "link module portion" being structurally separate from the "cantilevered portion," he would have said so, and required a specific amendment to reflect the separate structures.

Moreover, elsewhere in the claims, the word "portion" is used by the patentee to indicate parts of the invention that are undisputably "integral" with their neighboring parts. In claim 5, the patentee makes reference at col. 11, line 8, to a "lower edge portion" that no doubt refers to an integral part of the "cantilevered portion." This "lower edge portion" is the arc-shaped part on the bottom of the "cantilevered portion" referred to in the written description as "stiffeners or gusset members on the underside of the top plate." 550 patent, col. 9, ll. 19-20. In claim 16, the patentee also specifies that the chain link modules must "extend in cantilevered relation over a portion of the transversely oriented conveyor" which, again, no doubt refers to an integral part of the transversely oriented conveyor. 550 patent, col. 14, ll. 3-4.

Given the claim language's abundantly clear use of the word "portion" to refer to parts that are "integral" and not "separate," we are obliged to give "portion" the broader interpretation that encompasses both "separate" and "integral" parts of the invention. The fact that the patentee did not explicitly disclose a one-piece embodiment in the specification or that the examiner failed to require an illustration of a one-piece construction is not enough to import a "separate" limitation from the specification into the claims.

In the end, we have a term, "portion," that is unambiguous in encompassing meanings of both "integral" and "separate." When the invention is being described in the specification (as opposed to when the preferred embodiment is being described), we have two distinct embodiments distinguished from one other embodiment. With the score two to one (i.e., two embodiments broadly defined as opposed to one narrowly described), the embodiments not restricted to "separate" structures must be understood to refer to a single structure that includes both the "link module" and "cantilevered" portions.

The only possible basis for dismissing the otherwise dispositive intrinsic evidence requiring "portion" to mean both "integral" and "separate," is the isolated comment by the examiner. It is true that the two embodiments permitting "integral" parts both refer to a "cantilevered portion extending laterally from the link module portion," which of course is the language of the claim itself. Indeed, the reason why the examiner required original claim 33 to be rewritten as it now appears in claim 5 was the examiner's conclusion that if something is "extending laterally from" other structure (viz., the "cantilevered portion" "extending laterally from" the "link module portion"), the two structures must be distinct (as opposed to separate). As noted earlier, we reject the notion that the examiner's requirement that the paragraph structure of claim 33 be rearranged is dispositive of the claim interpretation issue.

For the foregoing reasons, we hold that the district court should have construed "portion" broadly to contemplate parts that are either "separate" or "integral." Because the district court unnecessarily limited the meaning of the disputed term, we reverse and remand for proceedings consistent with this opinion.

I construe the term to mean: "a part of any whole."
### B. Effect of Prior Litigation

As stated above, SunTiger prevailed in a prior patent infringement suit against Scientific Research Funding Group (SRFG) on the same patents now in question. Both SunTiger and Sunglass Products have stipulated that the claim construction in the prior suit will control here:

The patents-in-suit have already been construed by the U.S. District Court for the Eastern District of Virginia [and that] construction . . . is binding on the parties in this case. To the extent that the terms in the asserted claims were not construed in the said prior litigation, the parties are asking the Court to make a claim construction based on the arguments submitted in the summary judgment motions.

Stipulation at 1-2. "In a patent litigation action, where the parties do not dispute any relevant facts regarding the accused product but disagree over possible claim interpretations, the question of literal infringement collapses into claim construction and is amenable to summary judgment." Rheox, Inc. v. Entact, Inc., 276 F.3d 1319, 1324 (Fed. Cir. 2002).

The relevant terms and their stipulated construction are as follows:

<table>
<thead>
<tr>
<th>Term</th>
<th>Stipulated Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;substantially block&quot;</td>
<td>&quot;... in reference to wavelengths, it is defined as blocking over 99% of the incident radiation at each and every wavelength&quot; and &quot;[in] reference to polarization, it is defined as blocking 80% or more of the horizontally polarized incident radiation at each and every wavelength&quot;</td>
</tr>
<tr>
<td>&quot;substantially transmit&quot;</td>
<td>&quot;... in reference to wavelengths, [it] is defined as transmitting more than 1% of the incident radiation at each and every wavelength&quot; and &quot;[in] reference to polarization, it is defined as transmitting more than 20% of the horizontally polarized incident radiation at each and every wavelength&quot;</td>
</tr>
<tr>
<td>&quot;sharp cut-on&quot;</td>
<td>&quot;... sharp cut-on is defined in the context of a dye or filter, having a cut-on slope that at some concentration or dye density rises more than one half percent (0.5%) change in transmission for every one nanometer of increasing wavelength change. The cut-on slope is that portion of the transmission spectra of a cut-on dye that represents the transition between [the] substantially blocking and the substantially transmitting region.&quot;</td>
</tr>
<tr>
<td>&quot;cut-on filter&quot;</td>
<td>&quot;... an optical filter that substantially blocks all wavelengths shorter than the cut-on wavelength and substantially transmits all wavelengths that are longer than the cut-on wavelength. The cut-on wavelength is that wavelength in the transition zone at which the transmission is 1%.&quot;</td>
</tr>
<tr>
<td>&quot;portion&quot;</td>
<td>&quot;... part or share of something&quot;</td>
</tr>
</tbody>
</table>


Plaintiff SunTiger contends that this Court cannot apply the stipulated construction in a way that would contradict the
finding of the Eastern District of Virginia that YE-82 infringed SunTiger's patents. Pl.'s Mot. at 1 ("[T]he YE-82 lens material must literally infringe whatever claim construction the Court adopts in this case."). In essence, SunTiger argues the following: (1) the parties have stipulated to the prior construction, (2) the decision in the prior suit does not bind this Court, but (3) any ruling that this Court issues must not be inconsistent with the fact that YE-82 was found to infringe its patents.

I disagree with this assessment. My decision is not foreordained by the result in SunTiger, Inc. v. Scientific Research Funding Group. SunTiger attempts to elevate the prior claim construction to the level of a decision. Despite the parties' agreement that the prior claim construction would be binding, that prior court's decision applying its own construction is only persuasive. Although the parties have agreed to be bound to the use of the prior construction, they have not agreed that this Court's application of that construction must be consistent with prior decisions involving a different defendant and different lenses. Indeed, were consistency with prior results necessary, that would be tantamount to an improper form of collateral estoppel against a current party, i.e., Sunglass Products, which was not a party (nor a party in privity) to SunTiger v. Scientific Research Funding Group. Cf. MCA Records, Inc. v. Charly Records, Ltd., 865 F.Supp. 649, 654 (C.D. Cal. 1994) ("[D]ue process requires that the party to be estopped must have had an identity or community of interest with, and adequate representation by, the losing party in the first action as well as that the circumstances must have been such that the party to be estopped should reasonably have expected to be bound by the prior adjudication.").

Kristar's '574 patent claims as follows:

A contaminant absorbing drainage trough apparatus for use with a water drainage structure, said water drainage structure having an inside surface, said drainage trough apparatus enabling collection of contaminants while permitting passage of drainage water through said drainage structure, said drainage trough apparatus comprising:

- a non-perforated outside wall portion;
- a perforated bottom portion connected to said outside wall portion;
- a non-perforated inside wall portion connected to said perforated bottom portion;
- a trough portion defined by said outside wall portion, perforated bottom portion, and inside wall portion; and
- a filter media portion removably placed in said trough portion, wherein when said trough apparatus is installed on the inside surface of the drainage structure so that drainage water that would normally flow directly through the drainage structure is caused instead to flow through said filter media portion, said filter media portion removes contaminants that may be carried in the water, while permitting the water itself to pass through the drainage structure.


This claim language refers to "non-perforated outside wall portion," "perforated bottom portion," and "non-perforated inside wall portion." It is clear from the context of the claim language and the specifications in the patent that "non-perforated inside wall portion," means "that portion of the trough structure which constitutes the inside wall." Similarly, "perforated bottom portion," means "that portion of the trough structure which constitutes the bottom section." Finally, "non-perforated outside wall portion" means "that portion of the trough structure which constitutes the outside wall."

Kristar suggests a rather strained definition of the word "portion." It argues that by referring to a "non-perforated inside wall portion," the patent covers any device in which a portion of the side wall is non-perforated. One only needs to examine the plain meaning of the claim language to determine that Kristar's proposed construction is incorrect. Therefore, the Court construes the language of the patent as described above. As shall be explained below, this construction disposes of Kristar's argument that the new SIFT Filter, even with its partially-perforated side wall, infringes the '574 patent.
On appeal, KriStar argues that the district court erred in concluding that there is no genuine issue of material fact as to literal infringement and infringement under the doctrine of equivalents. With respect to literal infringement, KriStar argues that the district court misconstrued claim 1 of the patent. According to KriStar, the "bottom portion" referred to in claim 1 denotes the lower part of the trough, regardless of its structure. KriStar contends that the bottom portion of the SIFT filter includes not only the solid bottom of the trough, but also the perforated section of the inside wall of the trough, because the perforated section is on the lower part of the inside wall. Thus, KriStar argues that the "bottom portion" of the SIFT filter is perforated, as required by claim 1. The upper portion of the inside wall, according to KriStar, constitutes the non-perforated "inside wall portion" referred to in the claim.

We reject KriStar's proposed claim construction. The patent claims a trough that is defined by a non-perforated inside wall portion, a non-perforated outside wall portion, and a perforated bottom portion. The claim language makes clear that all three components are essential to defining the trough. Under KriStar's interpretation, the outside wall, the bottom, and the inside wall would not necessarily reflect different structural components. Because the bottom would include at least part of the vertical wall on the inside of the drain, it would be impossible to determine where the bottom portion ended and the inside wall portion began. In fact, as long as the trough had a small unperforated segment at the top of the inside and outside walls, the claim would read on any other structure and arrangement of perforations, because any part of the trough containing perforations could be defined as part of the "bottom portion."

The claim language does not allow such an interpretation. The bottom portion of the trough cannot be arbitrarily defined as all portions of the trough below the point at which any perforations are found, regardless of the structure of the trough and the location of the perforations. To define the "bottom portion" of the trough to include the entire perforated segment of the inner wall would abandon the requirement that the trough consist of three distinct structures.

The Application To "Portion" In The Patent Claim

Although Overbreak does not explicitly state that it believes that the term "portion" is ambiguous, it is clear from the briefs that its interpretation of that term is at odds with Spinmaster's interpretation, and I must rule on how that term should be construed in the context of the claim. Claims 1-3, 6 and 9 specifically refer to a flying toy containing a hub that has an "upper portion," a "lower portion," and a "center portion." Spinmaster claims that the term "portion" can refer to both separate parts as well as regions of a whole item. Overbreak argues that "portion" should only refer to a separate part, as if the patent said "separate portions" or "severable portions."

The Davis patent specification supports Spinmaster's interpretation. The specification contains two "embodiments" of the claimed device. The first embodiment has a hub with two separate parts, referred to as an "upper section," a "lower section," which are "received by an inner hub" (Davis, col. 2, lines 59-61). In the second embodiment, "the upper hub section and lower hub section are integrally formed as a single piece" (Davis, col. 5, lines 12-14). In both cases, the specification refers to two "sections," the only difference is that in one embodiment the two sections are received by an inner hub, while in the second there is no need for the inner hub because the two parts are already joined as an integral whole. Both parties agree that the patent claims the first embodiment from the specification, but then Overbreak attempts to ignore Davis' use of the exact same terms to describe the second embodiment. It can be inferred from Davis' use of "section" to refer to both embodiments and then his use of "portions" to refer to "sections" that he intended to adopt a similar meaning for the term "portion" in the actual claim as well.
Overbreak believes that the patent prosecution history supports its interpretation of "portion" because the original versions of claims 1, 6 and 12 submitted to the PTO only used the terms "upper" and "lower" portions, with no reference to a "center" portion. 2 Overbreak contends that this wording means that the claims initially only covered the second embodiment of the invention and, after speaking with an examiner, Davis changed the terms to describe "upper," "lower" and "center" portions in the final application. According to Overbreak, this was done to correspond with the "upper" and "lower" sections and "inner hub" referred to in the first embodiment of the invention. In Overbreak's view, that change implies a conscious decision by Davis to claim only the first embodiment instead of the second. However, Overbreak has not raised any substantial question that this change was an attempt to escape rejection. It seems more likely that this was an attempt to improve the clarity of the description. Overbreak also is not able to show a clear disavowal of claim coverage by Davis; it may or may not be implied by the change in language, but an implication still would not meet the appropriate standard.

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2 Although Overbreak puts forth this argument toward the issue of infringement, discussed infra, it is more applicable to the claim construction, so I have addressed it here instead.

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - - -

Dictionary definitions are considered extrinsic evidence. Phillips, 415 F.3d at 1318. Such extrinsic evidence should not be used to change the meaning of the claims, and may only be considered within the context of the intrinsic evidence. Id. at 1319. The common definition of "portion" (already recognized by the Federal Circuit) is, "a part of any whole, either separated from or integrated with it." Random House Unabridged Dictionary 1507 (2d ed. 1993); Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1344 (Fed. Cir. 2001). "Hence, according to ordinary meaning, so long as a 'portion' of an object is a 'part' of that object, it can connote either the quality of being 'separate' or of being 'integral.'" Rexnord, 274 F.3d at 1344. This definition also supports Spinmaster's interpretation. Therefore, it is highly likely that I would construe the claims in the '586 patent to refer to an "upper portion," a "lower portion" and a "center portion" of a hub in which the "upper section" and "lower section" can be either separate parts received by an "inner hub," or parts of an integral whole.
Amarr identifies three areas of dispute in this claim term: whether "clearance" and "gap" have the same meaning; whether some portion of clearance must be maintained along the entire length of the panels; and whether "deflection" properly references both situations where the panels are deflecting differently from one another and situations where they are deflecting similarly. Transcript at 92-93.

As discussed infra, Amarr conceded at the Markman hearing that "clearance" could be used in place of Amarr's preferred "gap." See Transcript at 35.

This Court addressed infra Amarr's argument concerning the notion of a particular clearance being necessary along the entire joint between two panels in its discussion of the first claim term at issue, and will not further address it here, except to say that Amarr's proposed construction constitutes an unnecessary limitation on the meaning of the claim term and it will not be accepted.

Amarr's concern regarding the word "deflection" is misplaced. It is particularly difficult for this Court to accept Amarr's contention that the word is improper when a variant of it -- "deflecting" -- is found in Amarr's own proposed construction. Amarr's proposal to add the word "sagging" is equally unavailing, given that Amarr merely contends that "deflection" is a technical term . . . sagging is something that would be much easier for the jury to understand." Transcript at 99. Wayne-Dalton pointed out that "deflection," as used in this claim term, is not limited to sagging -- although that can be a form of deflection -- and the term therefore should not be so limited; Wayne-Dalton further noted that deflection vis a vis other panels is not the only possible form of deflection referenced in this term, and Amarr's attempted limitation on that point should not succeed. Transcript at 106-07.

In considering the terms that have gone to a jury without construction in patent litigation, this Court is not even remotely persuaded that the word "deflection" is beyond the jury's capacity to understand, nor is the Court inclined to limit its meaning here to "sagging," as Amarr proposes. Further, Amarr's proposed construction of "variations in the deflection of said panels" as "when one of those panels is deflecting or sagging differently than the other" is unduly limited. As noted in section 3 of this Memorandum Opinion and Order, it is plain that the patentee of the 872 Patent knew how to so restrict the meaning of "deflection," in that various forms of the word "sag" appear throughout the specification and in other claims. See Acumed, 483 F.3d at 807. The fact that the patentee chose not to do so here is significant and should not be disregarded in the absence of clear evidence that the intent was to so limit the language of this term. Amarr has offered no such clear evidence; and the inference it seeks will not be made.

The language of the claim term at issue requires no construction. It will be accorded its ordinary and customary meaning.

A. "a first portion of the elements of said pattern are of a first shade and a second portion of the elements of said pattern are of a second shade different from said first shade" (Disputed Terms 1 and 2)

The above language appears in claim one of the 477 patent. As Plaintiff points out, the Court interpreted language nearly identical to that in dispute here in its June 18, 2001 Order Denying Plaintiff's Motion for a Preliminary Injunction. In that order, the language at issue appeared in claim 17 of the patent. Although it denied Plaintiff's motion on other grounds, the Court nonetheless adopted Plaintiff's position as to this language, finding that the limitation proposed by the defendant was not present in the claim language. (P.I. Order, 6:4-10). 2

2 The Court incorporates that earlier order in this analysis.

At issue in construing this language is the degree to which the two colored portions of the iris section may intermix or overlap. Plaintiff's position is that the first portion, which includes a pattern of opaque dots of one shade or color, may cover
most, if not all, of the iris section of the eye. (Joint Statement of Disputed Terms ("Joint Statement"), Term 1). As a result, the second portion, which consists of opaque dots of a totally different color or of the same basic color but having a different intensity from the first shade, may overlay significant portions of the first shade. Therefore, necessarily, "the second portion may comprise primarily elements of the second shade but with some elements of the first shade showing through the interstices of the second portion." (Joint Statement, Term 2). According to Plaintiff, this is permissible "as long as the inner portion (a product of overlap) is of a 'noticeably different shade' from the outer portion…" (Joint Statement, Term 1).

By contrast, Defendant asks this Court to interpret the language in claim 1 as allowing for little or no overlap between the first and second shades. Defendant relies on what it argues is the plain language of the claim, which contemplates two shades of totally different colors that cannot be intermixed. (Joint Statement, Term 2). 3

3 Apart from the declaration of Silver, the defendant cites only to two sections of the specification in support of this position. One section addresses an undisputed point -- that the second shade must be either of a totally different color than the first shade or of the same basic color, but having a different intensity. (Shull Decl., Ex.B at 56, col. 3, ln. 36-41). The other does not support the defendant's position. (Shull Decl., Ex. B at 56, col. 4, ln. 48-58).

The limitation proposed by the defendant is not supported by the intrinsic evidence. Rather, the language of the specification expressly supports Plaintiff's position. Specifically, it states that the outer pattern (first shade) "comprises a substantial portion of the area of the iris and is not merely a thin outer ring at the periphery…" (Shull Decl., Ex. B at 57, col. 6, ln. 55 - 58). This supports Plaintiff's argument that the first shade may cover most of the iris. In addition, and more significant, the preferred embodiment expressly contemplates overlap between the elements of the first shade and the second shade. For example, the specification states, "[the lens] will thus have an outer portion comprised solely of elements of the first shade…and an inner portion comprised primarily of the second shade…" (Shull Decl., Ex. B at 57, col. 6, ln. 61-65) (emphasis added). In addition, it states, "It [elements of the first shade] covers most of the iris section…After the ink is cured, the first pattern is overprinted with the pattern shown in FIG. 2 [elements of the second shade]…" (Shull Decl., Ex. B., col. 6, ln. 16-21). As these statements indicate, the preferred embodiment of the 477 patent expressly provides for intermixing of the first and second shades. Thus, Defendant's position would appear to exclude from coverage the preferred embodiment of the 477 patent. As Federal Circuit case law indicates, "such an interpretation is rarely, if ever correct." Vitronics, 90 F.3d at 1583. In short, as stated in this Court's prior order, because the specification does not require the complete absence of elements of the first shade from the second, "Defendant has provided no intrinsic basis for reading such a limitation into the claim language." (P.I. Order, 6: 9-10).

4. "PORTION OF THE LUMEN"

Claims 1, 11, 12 and 15 use the phrase "portion of the lumen" or "lumen portion." The parties agree that the term "lumen" is universally known to mean "the cavity of a tubular organ." I agree with Ethicon that "portion of the lumen" means "segment of the lumen." Indeed, the '148 Patent uses the word "segment" interchangeably with "portion." For instance, the "Summary of the Invention" reads:

the surgical device of the present invention includes a main housing adapted to be positioned within the bowel, a mechanism for first intussuscepting a segment of the bowel to be removed, a mechanism for anastomosis of the remaining portions of the bowel prior to the resection and a mechanism for resecting the intussuscepted segment of the bowel to be removed.

See Col. 2, lines 32-38 (emphasis added).
The "Background Information" also uses the word "segment," when discussing resecting, removing, attaching or intussuscepting something:

the techniques of resecting a segment of the colon ... where a segment of the diseased bowel must be removed... . The first step is mobilization of the segment to be resected... . Second, resection of the segment to be removed follows the mobilization procedure. Often in removing the interior segment... . Following the resection of the segment to be removed, the remaining ends are anastomosed to guarantee the continuity of the intestinal track.

See Col. 1, lines 18-37 (emphasis added).

Further, in discussing the first embodiment of the invention, the drafters use "segment" and "portion" interchangeably:

following the anastomosis of the bowel sections and the severing of the intussuscepted bowel segment, the surgical tool 10 can be withdrawn, ... bringing with it the resected portion of the bowel. The resected portion of the bowel remains attached to the tool 10 by ligation member 26 around central post 14.

See Col. 5, lines 12-17 (emphasis added); see also Col. 3, lines 62-66; Col. 4, lines 18-20 and 24-27.

It is not clear whether Ravo and Nicolo object to defining the term "portion of the lumen" to mean "segment of the cavity of a tubular organ." Nowhere in their two briefs do I see a discussion of the word "segment." Instead, Ravo and Nicolo discuss whether the inversion of the intussuscepted lumen requires the inversion of multiple layers which may make up the entire lumen wall or simply the inversion of the innermost layer. To the extent that this is a point in dispute, or is even relevant to the issue of claims construction - I find the '148 Patent is silent in this matter. Further, neither Ravo and Nicolo nor Ethicon offered any admissible expert testimony on the issue of whether the thickness of the walls of various tubular organs varies and whether or not it is possible to intussuscept or invert only certain layers of those walls. As such, I cannot resolve the issue at this juncture.

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B. an implant, at least a portion of which is expandable" ('753 patent) and "at least a portion of the tubular member has a second cross sectional size ... larger than the first cross sectional size to thereby lock the tubular member against tissue in the human body" ('290 patent)

17) The term "expandable" only appears in the specification with regard to the distal suture anchor of Figure 9 that "expands" to block removal of the suture. D.I. 70, Ex. A at Abstract; 2:27; 3:21-22; 8:44-9:2. This device has nothing to do with tubular members. The device of Figures 11A-C, which Dr. Bonutti pointed to as support for his claims (D.I. 70, Ex. N at 7; D.I. 70, Ex. O; D.I. 70, Ex. P), does not undergo expansion, but rather spreads. To the extent Figure 11 could be considered to expand at all, it necessarily must expand only in part. The body or sleeve of the rivet remains the same diameter so that the head has a greater diameter than the sleeve. That is how the rivet locks in place. This is no disclosure of a fully expandable device such as a stent. The claims are limited to what Dr. Bonutti "actually invented." Phillips, 415 F.3d at 1316 (quoting Renishaw, 158 F.3d at 1250).

18) Consistent with the claim language, the specification, and the prosecution history, the Court construes the language "an implant, at least a portion of which is expandable" from claim 1 of the '753 patent as meaning "a portion, but not all of the implant, is expandable."

19) Consistent with the claim language, the specification, and the prosecution history, the Court construes the language "a tubular member ... mechanically expandable ... from a contracted condition ... to an expanded condition in which at least a portion of the tubular member has a second cross sectional size ... larger than the first cross sectional size to thereby lock the tubular member against tissue in the human body" from claim 1 of the '290 patent as meaning "a portion, but not all, of the tubular member is expandable so that when expanded, its cross-sectional size is larger than its initial cross-sectional size. The expansion of only a portion of the tubular member enables it to be locked against tissue."
J. "Portion with a Substantial Longitudinal Component"

Claims 56-58, 61, 63, 65-66, and 68-70 of the '381 Patent contain references to "portion with a substantial longitudinal component." 130 Medinol proposes that this term means "a part of a member that has ends at positions a discernable distance from each other with respect to the stent's longitudinal axis." 131 Guidant suggests a different definition: "A stent element that is substantially more horizontal than vertical along the stent's horizontal [i.e., longitudinal] axis." 132 The Cordis court defined a similar term, "member having a longitudinal component," as follows: "A 'member' is a structural element that has its ends at different longitudinal positions with respect to the stent's longitudinal axis. A member's 'longitudinal component' is the distance between the longitudinal positions of the first and second ends of the member." 133

The parties' dispute stems from their conflicting views as to the plain meaning of the word "substantial." 134 Medinol suggests that the meaning of "substantial" as it relates to the disputed phrase, is captured by the construction, "a part of a member that has ends at positions a discernable distance from each other with respect to the stent's longitudinal axis." 135 Because substantial means "of or having substance," Medinol's use of "discernable" to describe "of or having substance" in this context is consistent with the ordinary meaning of "substantial." Guidant counters that "substantial" means that the stent element must be more horizontal than vertical, with respect to the longitudinal axis. This argument lacks merit, however, because it imposes an additional restriction supportable by neither the ordinary meaning of the words or the patent specification. That is, Guidant's definition requires that a portion with a substantial longitudinal component has a greater longitudinal length, when compared with its circumferential length. But imparting special meaning to the phrase is not warranted by the intrinsic record. Thus, "portion with a substantial longitudinal component" means a part of a member that has ends at positions a discernable distance from each other with respect to the stent's longitudinal axis.

131 Pl. Mem. at 23.132 Def. Mem. at 27.
133 Cordis Order at 2.
134 See, e.g., Tr. at 150 (Lehman) (noting that the parties disagree as to the "plain meaning" of "substantial"); Pl. Sl. at 109 (presenting the "plain meaning" of the words); Def. Reply at 17 ("Medinol's definition is simply inconsistent with both the dictionary and any common understanding of 'substantial' and should be rejected."). Indeed, the specification uses these words in accordance with their accustomed meaning, and nothing in the intrinsic record suggests that Medinol intended for these words to have a special meaning for purposes of the asserted claims.

135 Pl. Mem. at 23 (emphasis added). Medinol notes that the plain meaning of: (1) "'portion' is 'a part . . . of anything,'" id. at 24 (quoting New World Dictionary at 1110-11); (2) "'substantial' is 'having substance,'" id. (quoting New World Dictionary at 1420); (3) "'longitudinal' is 'of or in length' or 'running or placed lengthwise,'" id. (quoting New World Dictionary at 834 (defs. 1-2)); and (4) "'component' is 'an element or ingredient,'" id. (quoting New World Dictionary at 291).
2. "Position" and "Location"

The terms "position" and "location" are used in the claims in their ordinary sense. That ordinary sense is the common, broad understanding of both of these words as "where a thing is." The fact that "position" and "location" are broad terms does not detract from their clarity. The terms are not restricted to providing geodetic information and certainly not restricted to a particular coordinate system.

The broad sense of these terms can be seen in claim 1, for example, which uses the term "position" twice without any modifier or qualification before using the term in the context of a GPS receiver. Therefore, even accepting LET's argument that a GPS receiver always provides position or location using latitude/longitude or some other geodetic information, claim 1's use of the term "position" is not restricted to that narrow understanding. That is, claim 1 refers to the position of the cup without requiring it to be provided in terms of latitude/longitude or any other coordinate system. It is entirely consistent with claim 1 for the position of the cup to be expressed in relative terms such as, for example, 100 yards north of the first tee. It is true that any differences in how the positions of the cup and the ball are stored would have to be resolved before a distance could be computed. However, claim 1 does not limit the ways in which such differences can be resolved.

The term "location" is used interchangeably with "position" in the claims and has the same broad ordinary meaning. For example, the claims alternate between reciting the displaying of a position (claim 11) and the displaying of a location (claim 19), and between reciting the determining of a position (claim 1) and the determining of a location (claim 19). And it appears that claim 1's reference to the "position" of a remote receiver is intended to have the same meaning as claim 19's reference to the "location" of a remote receiver.

Because "position" and "location" are used in their ordinary sense in the claims, we look to the specification only to determine if the patentee defined these terms differently. Interactive Gift Express, 231 F.3d at 865, 56 U.S.P.Q.2D (BNA) at 1652. In the specification, we find that the word "position," not surprisingly, can be used to mean many things, such as: (1) "known position" (col. 2, ll. 37-38); (2) "apparent position" (col. 2, ll. 38-39); (3) "corrected position" (col. 6, l. 45); and (4) "position A," a position on the X-Y grid of a display, not providing latitude/longitude or any other geodetic information (col. 6, l. 66). Similarly, the word "location" has various uses, including: (1) "apparent location" (col. 2, l. 29); (2) "corrected location" (col. 2, l. 32); and (3) "a location (e.g. 'A') on the display" (col. 6, ll. 57-58). These uses show the synonymous meaning attributed to the words "position" and "location" by the patentee in referring to positions or locations that were: (1) fixed or relative; (2) geodetic or not; and (3) in latitude/longitude, some other coordinate system, or none at all. These uses also show consistent attribution by the patentee of the common, broad understanding that one skilled in the art would have of these terms. The patentee did not, therefore, redefine these terms in the specification, and they retain their ordinary meaning.

LET argues that the specification's use of the terms "position" and "location," with respect to the ball and the cup, must presume the existence of latitude/longitude information. LET concludes, therefore, that these terms must be construed to require that a latitude/longitude be provided. This argument is not persuasive. Any position or location will have a latitude/longitude, but the specification does not define position or location to require that a latitude/longitude be specified. For example, the specification uses these terms with respect to the mark "A" on the display screen of one of the embodiments, but the user of the preferred embodiment is never informed of the latitude/longitude of this mark, being told only its distance to the ball, the cup, or another mark. '093 patent, col. 6, l. 54 - col. 7, l. 36.
location at which the coupon will be positioned for insertion into a container. '901 patent, col. 13, ll. 53-54. Claim 20 of the '280 patent refers to the sensing position of the coupon sensor, which generates a sensing signal upon sensing the presence and absence of the forwardmost coupon, and then, in combination with a timing signal creates a first output signal that causes the bursting of the coupons. '280 patent, col. 18, ll. 4-18. The abstract, summary of the invention, and detailed description of both patents require that the coupon sensor be in a particular position: between the feed rolls and the positioning rolls. '901 patent, abstract; col. 3, ll. 25-28; col. 5, ll. 48-52; col. 6; ll. 6-9; col. 7; ll. 27-30; col. 11, ll. 56-58. '280 patent, abstract; col. 3, ll. 27-29; col 5, ll. 46-49; col. 6, ll. 4-6; col. 7, ll. 21-24; col. 11, ll. 35-37. Throughout the written description, the sensing position is defined only at this location. This location is not merely a preferred embodiment, as Unique asserts. Rather, this location is the only embodiment disclosed in the summary of the invention and throughout the disclosure. This sensing position appears to be necessary to the proper operation of the invention because the claimed device is orchestrated to receive a message from the sensor only when the presence and absence of the forwardmost coupon is detected between the feed rolls and the positioning rolls. See, e.g., '901 patent, col. 13, ll. 53-55; '280 patent, col. 18, ll. 3-5. Northfield asserts that, if the coupon sensor position were beyond the positioning rolls, then the claimed device would not function properly. At least two coupons would be burst with each activation because the sensor would detect the next succeeding coupon only after it had already been burst from the web. We cannot interpret claim terms in a vacuum; resort to the specification is necessary in this case to determine what the patentee meant by the coupon sensing position. Although there is a fine line between interpreting claim language in light of the specification and reading a limitation from the specification into the claim, Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186-87, 48 U.S.P.Q.2D (BNA) 1001, 1005 (Fed. Cir. 1998), we do not improperly cross that line when we interpret "sensing position" consistently with the clear guidance in the specification as to that term.

In SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337, 58 U.S.P.Q.2D (BNA) 1059 (Fed. Cir. 2001), we affirmed the district court's narrow claim construction because the abstract limited the patents to particular lumen catheters, the patents distinguished the prior art on the basis of such catheters, and the "Summary of the Invention" portion of the written description characterized the invention as having that type of catheter. Id. at 1343, 58 U.S.P.Q.2D (BNA) at 1064. Similarly, in this case, in every statement in the written description referring to the coupon sensing position, the patentee emphasized that it is located between the feed rolls and the positioning rolls, and this location appears to be necessary for the proper timing sequence of positioning the coupons into containers. In Wang Laboratories, Inc. v. America Online, Inc., 197 F.3d 1377, 53 U.S.P.Q.2D (BNA) 1161 (Fed. Cir. 1999), we determined that the claim term "frame" was necessarily limited to a character-based protocol because that was the only embodiment that was described and enabled in the specification. Id. at 1382, 53 U.S.P.Q.2D (BNA) at 1165. We sought in that case, and in this one, to interpret the claims to preserve, rather than defeat, their validity. Id. at 1383, 53 U.S.P.Q.2D (BNA) at 1165. The only coupon sensing position described and enabled in the '901 and '280 patents is between the feed rolls and positioning rolls. Finally, we are not persuaded by Unique's claim differentiation arguments that the coupon sensor cannot be limited to a particular location in claim 1 of the '901 patent or claim 20 of the '280 patent because other claims in those patents explicitly limit the sensor location. The doctrine of claim differentiation does not broaden claim terms beyond their correct scope, determined in light of the intrinsic evidence and any relevant extrinsic evidence. Id. at 1384, 53 U.S.P.Q.2D (BNA) at 1166. We therefore interpret the coupon sensing position in the claims as being between the feed rolls and the positioning rolls.

Having construed the position of the coupon sensor in light of the specification, and in view of our discussion on infringement, infra, we do not reach Northfield's arguments about other asserted claim limitations and the prosecution history of the '280 patent.

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F. "positionable between"

The parties agree that this phrase means "able to be switched between." Fox, however, would add another phrase, "at the preference of the user." Fox argues that "positionable between" must include this limitation, as the specification of the '049 Patent describes a mechanism that can be switched on or off by the user. Even if the specification of a patent only describes one embodiment of an invention, the patent will not be limited to that embodiment unless the "patentee has demonstrated a clear intention to limit the claim scope using 'words or expressions of manifest exclusion or restriction.'" Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004). No such limiting intention can be found within the '049 Patent. The phrase is construed as "able to be switched between."
C. Base . . . positionable on a surface so as to permit a video game player to stabilize said base by placing lower body weight on said base

The Defendants contend that this limitation excludes a base that would be stable without the application of the player's lower body weight. The Defendants seek to have the Court distinguish between a base that requires a player's lower body weight to be stabilized and one that may be somewhat stable alone, but can be made more stable by application of the player's lower body weight on the base.

As noted above, in the context of the 754 Patent, the word "stabilize" is used as a relative term, that is to mean "to make more stable" rather than to mean to render a completely unstable object a completely stable one.

The Court concludes that the limitations here at issue should be construed to include a base that would permit (but would not require) a player to make it more stable by application of the player's lower body weight on the base. Thus, the limitation would exclude a base that did not permit the use of a player's lower body weight to render it more stable. But, the limitation would not exclude a base that was somewhat stable alone, but would be made more stable by application of the player's lower body weight.

B. "Member positionable within said first hole and being extendable within said slot" and similar language as used in Claims 20, 43 and 48 of the '588 patent

The parties dispute two elements of this claim language: the meaning of "member" and of "positionable within said hole and being extendable within said slot." The pertinent language of Claim 20 of the '588 patent, with the disputed terms in italics, is representative:

20. A mounting device attachable to a raised portion on a building surface, said mounting device comprising:

   . . .

   (d) a securing assembly comprising a first hole extending from one of said side surfaces through said mounting body to interface with said slot and a first member positionable within said first hole and being extendable within said slot to secure at least said upper part of said raised portion within said slot by engaging said upper part of said raised portion within said slot with said first member.

The first disputed term, "member," is defined broadly by common and technical dictionaries to mean a "structural unit such as a . . . beam or tie, or a combination of these" or a "distinct part of a whole." CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1367 (Fed. Cir. 2002) (internal quotations and citations omitted). In CCS Fitness, the Federal Circuit found that these definitions encompass units of a larger whole and thus that the term "member" was not limited to single, unitary structure as asserted by the defendant in that case. See id.

Contek points to the prosecution history of the '248 and '588 patents to argue that "member" has a more limited meaning in these patents, namely a unitary blunt-nosed screw. CFE concurs that the prosecution statements relied upon by Contek show that Mr. Haddock and his counsel limited "member" to a "blunt-nosed fastening device," Pls.' Report in Further Support of Pls.' Markman Positions (Doc. 49) at 9, but dispute that the statements further limited this device to a unitary structure.

I find that the relevant prosecution history establishes that "member" as used in the '588 patent means "blunt-nosed screw." First, Claim 2 of the '248 patent application claimed a means for frictionally engaging that "comprises a member extendable from a wall of said cavity to contact said external surface of said one raised portion." Pls.' Markman Br., Ex. 3 [hereinafter
fails to cite any intrinsic or external evidence supporting this proposed interpretation. That this requirement is satisfied if only a portion of the member(s) is capable of placement within the hole. CFE also emphasizes that this phrase should be interpreted to mean that the member is "wholly or partially positionable within a fastening hole." Jt. Notice & Stip. Concerning Markman Hearing (Doc. 54), Ex. 1 (Plaintiffs' proposed interpretation, emphasis added). The ordinary meaning of a "member positionable within" the fastening hole, however, does not suggest this construction is consistent with the specification of both asserted patents.

The referenced claims further require that the "member" or "members" be "positionable within" one or more holes in the "mounting body" and "being extendable within said slot to secure" the upper part of the raised portion "within said slot by engaging" the raised portion within the slot with the member(s). '588 patent, col. 20, ll. 33-37 (Claim 20); see id., col. 22, l. 66 - col. 23, ll. 3 (Claim 43), col. 23, ll. 7-12 (Claim 48). These terms are not defined in the claim language, specification or prosecution history, which leads me to consult dictionary definitions to determine their ordinary and customary meaning. The root of the term "positionable" is the verb "position, " whose ordinary meaning as relevant here is "to put in a or the proper position: PLACE, SITUATE." Webster's Third New Int'l Dictionary at 1769; see Knopik v. Amoco Corp., 96 F. Supp. 2d 892, 905 (D. Minn. 2000), aff'd, 95 Fed. Appx. 332 (Fed. Cir. 2004). The ordinary meaning of "within" as used here is "in the inner or interior part of: INSIDE OF." Webster's Third New Int'l Dictionary at 2627; see Watson Indus., Inc. v. Murata Elec. N. Am., Inc., 301 F. Supp. 2d 933, 942 (W.D. Wis. 2003), aff'd, 115 Fed. Appx. 441 (Fed. Cir. 2004). It is undisputed that the referenced "hole" is an opening in the "mounting body," which is the metal block or clamp, that extends from the outer surface of the clamp through the clamp body to the slot or cavity that surrounds the metal roof's standing seam. n6 Given these ordinary meanings and my construction of the term "member" to mean "blunt-nosed screw," I find the phrase "member positionable within first said hole" means the blunt-nosed screw, whether a unitary or multi-piece structure, is capable of being placed inside the hole that extends through the clamp to the slot surrounding the standing seam. This construction is consistent with the specification of both asserted patents. n7

The conclusion does not mean, however, that the term "member" as stated in Claims 20, 43 and 48 must be unitary in structure. Contek's arguments in this regard are based on its contention that a "screw" or "blunt-nosed screw" can only be a unitary structure. I reject this contention for the reasons stated earlier in this decision. "Member" as used in the referenced claims means "blunt-nosed screw," which may have either a unitary or multi-part structure.

The conclusion does not mean, however, that the term "member" as stated in Claims 20, 43 and 48 must be unitary in structure. Contek's arguments in this regard are based on its contention that a "screw" or "blunt-nosed screw" can only be a unitary structure. I reject this contention for the reasons stated earlier in this decision. "Member" as used in the referenced claims means "blunt-nosed screw," which may have either a unitary or multi-part structure.

n7 CFE asserts that this phrase should be interpreted to mean that the member is "wholly or partially positionable within a fastening hole." Jt. Notice & Stip. Concerning Markman Hearing (Doc. 54), Ex. 1 (Plaintiffs' proposed interpretation, emphasis added). The ordinary meaning of a "member positionable within" the fastening hole, however, does not suggest that this requirement is satisfied if only a portion of the member (screw) is capable of placement within the hole. CFE also fails to cite any intrinsic or external evidence supporting this proposed interpretation.

The parties agree that the final portion of this disputed language, the phrase "member . . . being extendable into said slot"
means that the "member" must be able to enter the slot or cavity of the clamp and physically contact and deform the roof seam. See Pls.' Report in Further Support of Pls.' Markman Positions (Doc. 49) at 9; Defs.' Br. re: Interpretation of Pls.' Patents (Doc. 35) at 27-28. This construction is supported by the dictionary definition of the relevant terms and is also consistent with the intrinsic evidence. Accordingly, I find this phrase means that the "member," construed for the reasons stated above to mean "blunt-nosed screw," is able to enter the slot of the clamp and physically contact and deform the roof seam.

The primary claims terms at issue are "positional coordinates," "identification of a position" and "relative to" in independent claims 1, 17 and 26. The patent's specification (together with the plain language of the claims and the prosecution history) mandates the court's construction of "positional coordinates" as "a set of coordinates defining a single reference point within a corresponding geographic vicinity which operates to determine the corresponding geographic vicinity." CIVIX slip op. at 35. CIVIX argues that the term should be construed to refer to any "collection of values sufficient to identify a vicinity . . .". This argument reads out the word "coordinates" in the claim, and is contrary to the repeated language and examples in the specification and the claims stating that the positional coordinates represent a single location, within a vicinity. (See '525 patent, col. 5, II. 16,17 ("The positional coordinates locate one location within the geographic vicinity . . ."); col. 8, II. 36-38 (stating that figure 4A "illustratively shows the positional coordinates . . . for each vicinity. . ." and depicting geographic vicinities each centered around positional coordinates)). Figures 3A and 3B are limited to the user display and do not correspond to the "positional coordinates" limitation of the claims. The Semple letter in the file history, which the inventor with counsel chose to include in the '525 patent's public record, further confirms this construction.

E. "Positioned"

Switchcraft and ADC disagree over whether the term "positioned" is ambiguous and requires construction. The term "positioned" is used in claims 16 and 21 as follows:

16. . . . wherein said projections are positioned to provide impedance matching of said coaxial device jack device with said telecommunications line

21. . . . wherein said projections are positioned such that impedance through said jack device is within a range of . . .

Switchcraft proposes the Court should interpret "positioned" as it is defined by Webster's New Collegiate Dictionary: "to put in proper position." Supra at 890 (1979). Switchcraft argues the '378 patent and the record consistently used the term "positioned" to denote the purposeful placement of an element to provide impedance matching. Switchcraft cites to language in the '378 patent teaching, "through the use of waveguides such as waveguides 210 through 222, impedance matching is achieved." '378 patent at 9:20-21. It also relies on the prosecution history statement that "waveguides . . . are positioned adjacent to the moveable portions within the switch so as to provide impedance matching." Patent Application File History at 104-05. During the course of this litigation, ADC also stated "the '378 patent discloses and claims the use of a waveguide projecting from a sidewall (claim 1) or a plurality of projections from the side walls (claim 16) having particular shapes, in a particular location, and extending from a particular portion (sidewall(s)) of the housing." ADC Prior Art Statement (Stephen Decl. Ex. F) at 6 (emphasis added). ADC further elaborated "that by adding specially shaped structures (sometimes called 'waveguides') at select locations within ADC's switching jack it was possible to provide a jack with improved performance over large bandwidths." Pl.'s Markman Brief at 3-4 (emphasis added). Switchcraft claims these statements, coupled with the language in claims 1 and 16, evidence an intent requirement that the elements be specifically positioned, or "put in proper position" to impedance match.

ADC contends "positioned" is well-understood and does not require interpretation. It denies the term "positioned" itself has
any intent requirement that projections be placed in a proper or specific location. Instead, it argues other language in claim 16 teaching that projections extend “from said side walls” and are “adjacent to said moveable portions” and “provide impedance matching of said coaxial jack device with said communications jack,” rather than the term "positioned," explain the location of the projections. ADC argues Switchcraft's argument conflates these claim limitations into an intent requirement for "positioned." In the event the Court believes interpretation of "positioned" is necessary, however, ADC proposes it be interpreted as "placed."

Switchcraft's argument that the term "positioned" denotes an intent requirement to properly place an element for the purposes of impedance matching is rejected. Again, intent is generally not relevant to whether a product directly infringes a patent. See, e.g., Florida Prepaid Post Secondary Edu. Expense Bd., 527 U.S. at 645; Intel Corp., 946 F.2d at 832. Switchcraft again argues, based on Koito, that the use of "positioned" injects a scienter requirement into the '378 patent. 381 F.3d at 1150.

The terminology at issue in Koito is distinguishable from "positioned" at issue in the instant case. Again, Koito dealt with a method claim rather than the apparatus claim presently before the Court. Second, "predetermined" inherently requires foreknowledge in a manner "positioned" does not. The Court accepts ADC’s interpretation that the other limiting language in claim 16, rather than an intent requirement in "positioned," dictate placement of the projections.

Having found "positioned" does not carry an intent requirement, it is unnecessary to further construe the term. As the Federal Circuit has explained:

The Markman decisions do not hold that the trial judge must repeat or restate every claim term in order to comply with the ruling that claim construction is for the court. Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy.

U.S. Surgical Co. v. Ethicon, 103 F.3d 1554, 1568 (Fed. Cir. 1997). Switchcraft's proposed interpretation of "put in proper position" effectively adds the word "proper" to the claim. Rather than defining "position," the chief impact of adding "proper" would be to add a limitation not present in the claim.

The parties' dispute concerning this claim term tracks that discussed above with respect to Claims 9 and 12 of this patent and Claim 12 of the '286 Patent. As with those other claim terms, nothing in the actual claim language or specifications expressly states that these elements are "directly" adjacent to one another. And, as plaintiff argues, a construction using the phrase "directly next to" would exclude the very instrument the inventors were disclosing in the patent because there must be some space between the two elements in order for the instrument to work properly, and a claim interpretation that excludes the device disclosed is rarely the correct interpretation. See Pl. Reply Br. at 4-5 & n.9, citing '544 Patent, 4:5-6, 11-13 (describing the dysfunctionality that would arise if the two elements were "directly next to" each other); see also Playtex Prods., 400 F.3d at 904 ("Claim constructions that exclude the preferred embodiment are rarely, if ever, correct.") (internal citation omitted). n14 Accordingly, because nothing in the intrinsic evidence supports adoption of defendant's more restrictive definition and, in fact, such a definition might exclude the patentees' preferred embodiment, the Court will construe the claim term in accordance with the term "adjacent" in Free Motion Fitness, 423 F.3d at 1348-49, supra, as "placed so as to be near the jaw member."

n14 Defendant further argues that the "tissue receiving stops" must be "directly next to" the "blade surface," because the pair of stops define the proximal end of the exposed blade surface so as to prevent tissue from moving past the proximal end of
that surface. See Def. Claim Construction Br. at 15-16; '544 Patent, 4:5-6, 6:43-44. This argument, however, ignores the use of the word "proximal" in the specification language, and that a construction of "adjacent" as simply "near" would also fulfill the requirement that the pair of stops define the "proximal" end of the blade surface and would prevent tissue from moving past that "proximal" end.

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Positioned between

The term "positioned between" is used twice in Claim 1. First, a combustor is recited as being "positioned between" the high pressure compressor and the high pressure turbine. Second, the externally mounted intercooler is "positioned between" the low pressure compressor and the high pressure compressor. Rice proposes to construe the term as "in an intermediate position relative to." Rolls-Royce disputes this construction as improperly indicating a spatial relationship and proposes to construe the term as "positioned to receive the air flow directly from and to provide the air flow directly to." Rice replies that Rolls-Royce is misunderstanding its construction. Rice's only dispute with the construction proposed by Rolls-Royce is the "directly" limitation. Rice agrees that as to the intercooler, the construction proposed by Rolls-Royce correctly refers to "a position in the air flow path."

The only support offered by Rolls-Royce for inclusion of the limitation "directly" is a reference to Fig. 1 showing the intercoolers connected in the air flow path that extends from the low pressure compressor to the high pressure compressor. Apparently, Rolls-Royce's position is that "directly" signifies that there is nothing in addition to the intercooler in that air flow path other than ducting. The specification, however, does not indicate any requirement to exclude additional equipment from that air flow path. Moreover, the inventor's choice of the term "positioned between," rather than some more restrictive language to indicate that only the intercooler is in the air flow path, indicates that inclusion of the limitation "directly" in the construction is not appropriate.

The Court construes "positioned between" as to the combustor to mean "positioned to receive the air flow from the high pressure compressor and to provide the combustion gas to the high pressure turbine."

The Court construes "positioned between" as to the intercooler to mean "positioned to receive the air flow from the low pressure compressor and to provide the air flow to the high pressure compressor.

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1. Construction of Claim 1 of the '574 Patent

As stated above, the claim interpretation analysis begins with the language of the claims.

The relevant portion of claim 1 states the following:

1. An adjustable in-line skate comprising:

   . . . the liner including a generally inelastic heel portion and an extendible region positioned between a toe region of the liner and the tongue, the extendible region being configured to allow the toe end to be moved longitudinally relative to the tongue and heel end such that the liner can accommodate feet of different sizes.

(See Def.'s Ex. A at col. 4, lines 30-41)

First Team argues that claim 1 of the '574 patent includes the following three limitations: (1) an extendible region of the liner positioned between the toe region and the tongue; (2) a toe region made of an inelastic material while the extendible region is made of an extendible material; and (3) a toe region that moves longitudinally relative to both the tongue and the heel region. (See Def.'s Mem. at 15-16) Contending that its Xpander and Transformer skates do not include any of those
limitations, First Team argues that its skates cannot literally infringe the '574 Patent.

The parties do not dispute that one limitation of claim 1 is that the extendible region of the liner is "positioned between" a toe region and tongue of the liner. What is disputed, however, is the proper scope of this limitation. First Team argues that proper construction of the claim requires that the extendible region be distinct and separate from the toe region of the liner. Benetton disagrees, and contends that "between-ness" does not require a specific demarcation line. (See Hearing Tr. at 14.15-14.18)

In order to construe the phrase "positioned between," the Court looks first to the claim language, the written description, and the prosecution history. See Zelinski 185 F.3d at 1315. Because the intrinsic evidence does not clearly and precisely provide a special meaning or definition for the phrase "positioned between," the phrase is given its "ordinary and accustomed meaning[,]" or "if a term of art, it is given the ordinary and accustomed meaning as understood by those of ordinary skill in the art." Zelinski, 185 F.3d at 1315. Here, neither party has contended that the phrase "positioned between" is a term of art. The Court therefore reviews the ordinary and accustomed meaning of the phrase.

a. Ordinary and Accustomed Meaning of "Positioned Between"

The phrase "positioned between" is susceptible to varying meanings. The most relevant question in determining its meaning here is whether the phrase requires that the extendible region be positioned entirely between a toe region of the liner and the tongue, or if the phrase requires only that portions of the extendible region sit between the toe region of the liner and the tongue. "Positioned" is the verb form of "position," and simply means to put or to place. See WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE (3d ed., Merriam-Webster, Inc. 1993). Of more significance to the construction of the claim at hand is the definition of the word "between." The term "between" can have a variation of meanings. "Between" can refer to the space "in an intermediate position in relation to two other objects," or it can refer to the space "limited by two objects." Id. The former definition of "between" supports the interpretation that the claim limitation is met as long as some portion of the extendible region is located between the toe region and the tongue. The latter definition is consistent with the interpretation that the extendible region of the liner must be located entirely between the toe region and the tongue.

Zelinski v. Brunswick Corp., 185 F.3d 1311, provides considerable guidance regarding how to analyze particular words and phrases when construing a claim. In Zelinski, the case turned upon the meaning of a very similar phrase: "located between." Id. at 1315. The claim at issue in Zelinski described a bowling ball that utilized a weight block, which, among other things, was comprised of two elongate sections, the second of which was "located between the center of the spherical mass and the first elongate section." See id. at 1313 (emphasis added). The district court had construed the relevant limitation to require that the second elongate section "be located entirely between the center of the spherical mass and the first elongate section." Id. at 1314 (citing Zelinski v. Brunswick Corp., 996 F. Supp. 757, 761 (N.D. Ill. 1997) (emphasis in original)). Because not all of the annular ring of the allegedly infringing bowling ball was located between the center of the spherical mass and the first elongate section, the district court held there could be no literal infringement of the patent in question. See id.

In beginning its review of the lower court's decision, the Federal Circuit in Zelinski first recognized that because "neither the claims nor the written description specifically define the phrase 'located between,' and "the prosecution history of the [relevant] patent contained no relevant amendments or explanations," the court would construe the phrase "by its ordinary and accustomed meaning to one of ordinary skill in the art." Id. at 1316 (citing Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387, 21 USPQ2d 1383, 1386 (Fed. Cir. 1992)).

The Federal Circuit determined that language within the intrinsic evidence existed to suggest that the district court interpreted the phrase "located between" too narrowly. See id. By reviewing the written description within the patent, the Zelinski Court determined that the second elongate section did not need to be entirely located between the first elongate section and the center of the spherical mass. See id. (emphasis in original). The Court pointed to the portion of the description which stated that no portion of the weight block is disposed in the bottom portion of the ball, followed by the statement that the entire weight block is "relatively localized" in the top half of the ball. See id. (citations omitted). Based on this language, the Zelinski Court found that the relevant claim would be satisfied "if the bulk of the second elongate section is between the first elongate section and the center of the spherical mass, and the entire weight block is in the top half of the
Here, as in Zelinski, the specific meaning of the word "between" is similarly uncertain. Review of the claim's language alone does not clearly define the precise scope of the claim limitation, and the Court must look to the other intrinsic evidence. See Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1579, 37 USPQ2d 1365 (Fed. Cir. 1996) (where the language of the claim, "varies between," was susceptible to two equally plausible meanings, the court looked to other intrinsic evidence to construe the claim terms).

b. The Relevant Prosecution History

Insofar as the written description does not clearly and precisely define the meaning of "positioned between," the Court turns to the prosecution history for guidance. 6 The Federal Circuit has shed considerable light on the importance of reviewing intrinsic evidence, including the prosecution history, in construing claims:

Arguments and amendments made during the prosecution of a patent application and other aspects of the prosecution history as well as the specification and other claims must be examined to determine the meaning of terms in the claims. The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution. Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers.

Southwall Techs., Inc. v. Cardinal IG, Co., 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1676 (Fed. Cir. 1995) (internal citations omitted).

6 The written description of the patent does provide some details concerning the embodiment of the liner and, specifically, the location of its extendible section. For instance, the written description of the preferred embodiment states that the "expandable resilient section" is positioned surrounding the "instep" area of the foot. The instep area generally refers to the arched, middle area of the foot, thus excluding the toe region. This description of the preferred embodiment thus supports the claim construction that the extendible region be positioned entirely between the toe region of the liner and the tongue. However, the Court will focus the discussion regarding the interpretation of this limitation on the patent's prosecution history, which is more conclusive as to proper placement of the liner's extendible region. See discussion, infra.

Additionally, the written description of the '574 patent specifically describes the "preferred embodiment" of the invention, and not the invention generally. Although a court may "construe claims in light of the teaching of the specification, [it may] not treat characteristics of a preferred embodiment as claim limitations." Dayco Products, Inc. v. Total Containment, Inc., 2001 WL 818229, at * 6 (Fed. Cir. 2001) (citing Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186, 48 USPQ2d 1001, 1005 (Fed. Cir. 1998); see Interactive Gift Express, Inc. v. Compuserve Inc., 2001 WL 792669, at * 16, 59 USPQ2d 1401 (Fed. Cir. 2001) (finding that where a preferred embodiment specified certain features that were not recited in the independent claims, a court could not read those features into the claims) (citing Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865, 9 USPQ2d 1289, 1299 (Fed. Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations"); Electro Med. Sys. S.A. v. Cooper Life Sci., 34 F.3d 1048, 1054, 32 USPQ2d 1017, 1021 (Fed. Cir. 1994) (stating that "particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments"). This rule does not contradict the general principle that "claims must be read in view of the specification, of which they are a part." SciMed Life Sys., Inc. v. Advanced Cardiovascular Systems, 242 F.3d 1337, 1349, 58 USPQ2d 1059 (Fed. Cir. 2001) (quoting Markman, 52 F.3d at 979-980). A patent's written description can "provide guidance as to the meaning of the claims, thereby dictating the manner in which the claims are to be construed, even if the guidance is not provided in explicit definitional format." SciMed Life Sys. F.3d at 1344; see also, Northern Telecom Ltd. v. Samsung Electronics Co., 215 F.3d 1281, 1295, 55 USPQ2d 1065 (Fed. Cir. 2000) (citation omitted) (stating that "the plain and ordinary meaning of claim language controls, unless that meaning renders the claim unclear or is overcome by a special definition that appears in the intrinsic record with reasonable clarity and precision") (emphasis added). Descriptions limited to the preferred embodiment, however, cannot limit claim language.
Prior to its amendment, claim 1 stated that the liner included "an extendible region positioned adjacent to a toe region of the liner, the extendible region being configured to allow the toe end to be moved longitudinally relative to the heel end such that the liner can accommodate feet of different sizes." (See Amendment and Response, Def.'s Exh. G at 2) As mentioned above, this claim was rejected as unpatentable. Describing its rationale for rejecting the claim, the Office Action states:

Scholz teaches having a sock-like structure (liner) with a generally inelastic heel region . . . and an elastic extendable region . . . positioned adjacent to a toe region of the liner, the extendable region being configured to allow the toe end to be moved longitudinally relative to the heel end such that the liner can accommodate feet of different sizes.

(See Office Action, Def.'s Exh. B at FT000969)

Review of the Scholz patent reveals an invention that claims: "A stocking protector with narrow rubber strips running approximately horizontally between the toe and heel cap placed on the sides, characterized in that the bottom part . . . of the toe cap . . . is connected to the bottom part . . . of the heel cap . . . by a flat, elastic connecting piece . . . consisting of one piece and corresponding to the width of the sole of the foot." (See Scholz, German Patent No. 597,644, Def.'s Exh. F at FT000481C (emphasis added))

As previously mentioned, Benetton amended its claims for purposes of patentability. With respect to the extendible region of the liner, Benetton replaced the phrase "positioned adjacent to a toe region of the liner" with the phrase "positioned between a toe region of the liner and the tongue." (See Amendment and Response, Def.'s Exh. G at FT000985) In discussing the rejection of its claims, Benetton commented that the claim was "amended to include the recitation that the extendible region of the liner is positioned between the toe region of the liner and a tongue of a liner. . . . None of the prior art references of record in this application, either alone or in reasonable combination, teaches or suggests the non-obvious combination of elements recited by claim 10 [now claim 1]." (See Amendment and Response, Def.'s Exh. G at FT000987)

Benetton's amendment specified that the location of the extendible region was between a toe region and tongue, and not simply adjacent to a toe region, in order to distinguish the liner from the prior art. If the extendible region of Benetton's liner extended beyond the tongue toward the heel, that liner would wholly resemble the stocking protector claimed in the Scholz patent. Indeed, the Notice of Allowability states that the "positioned between" amendment was significant to the patent examiner reviewing the claims:

The prior art does not show a liner for an adjustable in-line skate that includes an extendible region positioned between a toe region of the liner and tongue, wherein the extendible region is configured to allow the toe end to be moved longitudinally relative to the tongue and the heel end. Scholz shows an elastic region in a liner, however, the elastic region is not arranged between the toe end and the tongue area.

(See Notice of Allowability, Def.'s Exh. I at FT001007 (emphasis added))

When Benetton amended its claim and added the "between" language, it represented to the Patent Office that portions of the liner's extendible region would not carry over beyond the tongue towards the heel. The claim must be construed in the same fashion. Because the claim must be interpreted to require that no part of the extendible region extends beyond the tongue towards the heel, the claim must also be construed to mean that no part of the extendible region extends in the other direction -- beyond the toe region toward the toe end. The Court therefore concludes that the only reasonable construction of the claim is that the extendible region of the liner must be positioned entirely between the toe region of the liner and the tongue.

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B

Here, the district court found the plain meaning of the term "positioned between" to be uncertain, encompassing two alternative meanings, either referring to the space "in an intermediate position in relation to two other objects" or to the space "limited by two objects." Benetton, slip op. at 12. The court found the first definition supportive of a claim
interpretation requiring only that some portion of the extendible region be located between the toe region and the tongue (thus leaving open the possibility that the extendible region extends to cover the entire front portion of the liner). In contrast, the court found the second definition consistent with an interpretation that the extendible region must be located entirely between the toe region and the tongue (requiring some form of toe region distinctly separate from the extendible region). Id. at 12-13.

The preferred embodiment of the liner shows the elastic extendible region as strictly defined by two rigid borders, the tongue and the rearward defining line of the toe region. The written description of the drawing refers to a "generally inelastic toe portion" joined to "the generally inelastic main body portion" by "an expandable resilient section." '574 patent, col. 3, lines 62-64. These references in the specification support the notion that the toe portion and the main body portion have distinct, carefully delineated boundaries. The district court, however, was careful not to use the preferred embodiment to narrow the disputed claim limitation. Instead, the district court rested its conclusion on evidence found in the file history.

With regard to the prosecution history, the district court examined the effect of the patentee's amendment and statements to distinguish over the PTO's rejection in light of the Scholz prior art patent. In order to distinguish over Scholz's disclosure of a stocking protector with an elastic extendable region in the mid-foot area, the patentee replaced the phrase "positioned adjacent to a toe region of the liner" with the phrase "positioned between a toe region of the liner and the tongue." As the district court correctly noted, if the extendible region of the liner defined in the patent reached beyond the tongue and toward the heel, "that liner would wholly resemble the stocking protector claimed in the Scholz patent." Benetton, slip op. at 17. It was therefore necessary for the patentee to amend the claim to avoid this potential conflict with Scholz. According to the district court, the patentee included the "between" language to create a clear rear boundary of the extendible region, the tongue, and that the same reasoning required finding a front boundary of the extendible region, namely the toe region. In the district court's own language,

Because the claim must be interpreted to require that no part of the extendible region extends beyond the tongue towards the heel, the claim must also be construed to mean that no part of the extendible region extends in the other direction - beyond the toe region towards the toe end.

Id. at 17-18.

As the accused device has an extendible region which covers the entire forward part of the shoe, the court found that no toe region separate from the extendible region existed, and thus that the extendible region could not be "between" the toe region and the tongue. Id. at 18-19. As a result, the district court concluded that summary judgment of noninfringement was appropriate. Id. 1

--- Footnotes ---

1 The district court noted that it was uncertain as to the definition or extent of the recited toe region, stating that "the Court does not mean to suggest that the toe region is clearly marked. For the purposes of this action, it is unnecessary to know the exact area of what is referred to in the claim as the 'toe region.'" Benetton, slip op. at 18.

--- End Footnotes ---

For the reasons given below, we conclude that this was in error.

C

The critical phrase in question is "extendible region positioned between a toe region of the liner and the tongue." Benetton argues that while the claim explicitly requires the heel to be inelastic, it says nothing about the elasticity of the toe nor about the existence of any particular boundary location between the extendible region and the toe region. As a result, according to Benetton, the district court improperly construed the claim to exclude a liner in which the entire forward part of the liner is elastic. First Team argues that such an interpretation would have the effect of reading the claims to merely require an extendible region positioned forward of the tongue, essentially reading out the meaning of the word "between."

As the district court correctly noted, the adverb "between" can refer to the space "in an intermediate position in relation to
two other objects," or to "filling the space limited by two objects." Id. at 12. While the former definition would allow the extendible region to overlap with the toe region, the latter would suggest the contrary.

The district court focused its attention on the need to define the word "between" in the context of this patent, and in the process did not focus on whether the term "toe region" bears a particular meaning. The patent speaks in terms of "portion" and "region" when describing the toe area of the boot and liner. The claim terms and the written description consistently refer to "portion" when defining the toe area of the boot, and thus define the toe area of the boot as restricted by delineated boundaries. Not so with respect to the toe area of the liner. The claim language speaks of a "toe region." The patentee's deliberate choice of different language to define the toe area of the boot and of the liner certainly suggests that the two terms need not bear the same meaning. The written description's use of "portion" to describe the toe area of the liner is consistent with the preferred embodiment of the liner, which indeed shows a clearly delineated toe area, a toe "portion." But as the district court correctly surmised, we cannot narrow the meaning of toe "region" simply because of the preferred embodiment.

We find the interpretation of "toe region" to be of critical importance in construing the claims. It is precisely the positioning of the extendible region in relation to the toe region that the parties adamantly dispute. To the extent that the "toe region" refers to an object distinctly separate from the "extendible region," there is a need for a delineating boundary of some kind between the two. Such a case would correspond with the district court's analysis of the latter of the two definitions of "between." In contrast, if the "toe region" of the liner is merely understood as an indeterminate reference to the generic part of the liner where the toes reside, then it is eminently possible for the extendible region extending forward of the tongue to lie between the toe region and the tongue, while at the same time extending yet further to cover the entire front portion of the liner.

The most relevant dictionary definition of "region" is "an indefinite area surrounding a specified body part." Webster's New Third International Dictionary 1912 (1993). Other definitions similarly comprise a quality of indefiniteness. Id. (providing alternative definitions as "a major indefinite division of inanimate creation" and "a broad geographical region . . ."). We note that in common parlance, when a weather forecast predicts thunderstorms between the Mississippi and Ohio Rivers, there is some sense that the rivers delimit the zone of rain on either side. In contrast, if the prediction is for thunderstorms between the Mississippi River and the Northeast region, residents of Missouri can leave their raincoats at home while those as far away as Maine may feel compelled to bring theirs out.

The preferred embodiment does depict an "extendible section" distinctly separate from the inelastic toe. Figure 2 of the '574 patent (below) illustrates this.

GET DRAWING SHEET 1 OF 8.

The preferred embodiment provides that "The present liner 110 includes a generally inelastic toe portion 112 joined to the generally inelastic main body portion 114 by an expandable resilient section 116 positioned surrounding the instep area of the foot." '574 patent, col. 3, lines 62-65 (emphasis added).

As our "case law is clear that an applicant is not required to describe in the specification every conceivable embodiment of the invention," Rexnord, 274 F.3d at 1344, 60 U.S.P.Q.2D (BNA) at 1856, it would of course be improper to conclude that merely because the preferred embodiment and the drawings reveal an inelastic toe clearly distinct from an "extendible section," the claim language itself must contain a similar requirement. Rather, the importance of the written description here lies in its use of language. The written description does not refer to a "toe region," but rather to a "toe portion." This is consistent with the references in the patent to the different component parts of the in-line skate itself as definite, distinct "cuff," "heel," and "toe" "portions." See '574 patent, col. 1, lines 42-47 (stating that "the heel portion includes a sole and the heel portion is fixed to the frame" and "the toe portion is slidable relative to the heel portion"). In contrast, the term "region" is not used in the specification at all. 2 This difference in usage suggests that the patentee employed "portion" to refer to distinctly separate objects, while reserving "region" to refer to a more indeterminate area.

--- Footnotes ---

2 Indeed, unlike the "toe," "cuff," and "heel" "portions," there is no anatomical reason why an "extendible region" could not overlap entirely with the "toe region."
Next, we consider the effect of the patentee's amendment to distinguish over the prior art Scholz patent, a diagram of which is reproduced below.

[SEE FIGURE IN ORIGINAL]

The examiner stated:

Scholz teaches having a sock-like structure (liner) with a generally inelastic heel region (d) and an elastic extendible region (e) positioned adjacent to a toe region of the liner, the extendable region being configured to allow the toe end to be moved longitudinally relative to the heel end such that the liner can accommodate feet of different sizes.

In response, the patentee amended the claims as follows (additions are underlined, deleted elements are in brackets):

a liner having a heel end, [and] a toe end, a cuff and a tongue, the liner sized for the toe end to be received within the toe portion, and the heel end to be received within the heel portion, and the cuff to be received within the cuff portion of the boot, the liner including a generally inelastic heel region and an extendible region positioned [adjacent to] between a toe region of the liner and the tongue, the extendible region being configured to allow the toe end to be moved longitudinally relative to the tongue and heel end such that the liner can accommodate feet of different sizes.

According to First Team, in delineating the tongue as a clear rear boundary for the extendible region, this amendment must also be interpreted as requiring a clear forward boundary between the tongue and the toe region. We agree with First Team that Scholz stood in the patentee's way, but we do not agree that the patentee needed to provide both a precise front and rear boundary for the extendible region in order to distinguish the invention over Scholz. The mere fact that the patentee added a further level of specificity as to the rear boundary does not necessarily say anything about the forward boundary of the extendible region. See Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1378-79, 49 U.S.P.Q.2D (BNA) 1065, 1069 (Fed.Cir.1998) (stating that "Explicit arguments made during prosecution to overcome prior art can lead to narrow claim interpretations . . . . 'by distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover' (quoting Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1304, 41 U.S.P.Q.2D (BNA) 1364, 1368 (Fed. Cir. 1997))). It was enough for the patentee to mark a clear boundary in the heel area to overcome Scholz, as the district court recognized. First Team's argument, and the district court's conclusion on the point, assumes that a patentee surrenders more than is necessary to overcome prior art. That view is mistaken; we can fairly presume that the patentee makes only necessary surrenders.

Further, the examiner's Notice of Allowable Subject Matter indicates a similar understanding of the amendment, stating that "Scholz shows an elastic region in a liner, however the elastic region is not arranged between the toe end and the tongue area." (emphasis added). In employing the term "toe end" rather than "toe region," the examiner indicated an understanding that the amended language merely served to introduce a rearward boundary, rather than a forward one, on the "extendible region." Indeed, the examiner's language would appear to contemplate precisely the situation posed by the accused device, in which the elastic region of the accused product extends to cover the entire front part of the shoe.

D

In the context of this patent, we think it clear that the patentee chose the claim's words with care. "Portion" is a word used to define an area that has particular boundaries. "Area" is a word used in the written description to describe a part of a foot, as in "surrounding the instep area of the foot." '574 patent, col. 3, line 65. "Area" lacks the precision of "portion," as does "region."

Both the language of the claims and the specification support an interpretation of "toe region" as a generic reference to the region of the liner where the toes reside rather than requiring a discrete part of the liner separate from the "extendible region." Further, the prosecution history clearly indicates that in amending the patent claims, the patentee had no need to introduce a requirement of a fixed forward boundary to the "extendible region." Nor did the examiner understand the amendment to have such an effect. As a result, the disputed phrase "extendible region positioned between a toe region of the
linier and the tongue" should be construed to cover a liner in which the "extendible region" overlaps or entirely covers the "toe region."

10. The Opening at the Distal End of the Tube Positioned Longitudinally From the Tube

The next disputed claim term, "the opening at the distal end of the tube positioned longitudinally from the tube," is found in Claim 3 as set forth above.

Erbe's Proposed Definition: The opening at the distal end of the tube is perpendicular to the longitudinal axis of the distal end of the tube.

Canady's Proposed Definition: The opening of the distal end of the tube is on the longitudinal axis of the tube.

(Docket No. 42, p. 14). In reading the claim language, I find it to be ambiguous. As a result, I turn to the specifications, and in particular the figures showing the opening at the distal end of the tube. See, e.g. Docket No. 42, Ex. 1, Figs. 13-15 and 20. This shows that the opening at the distal end of the tube is perpendicular to the tube. Consequently, I construe the term "the opening at the distal end of the tube positioned longitudinally from the tube" to mean the opening at the distal end of the tube that is perpendicular to the tube.

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Housing Opening/Source of Light Positioning Element: This element of claim 2 reads:

said opening and said source of light being positioned to prevent said beam of light from directly impinging on said side of said vehicle.

Krippelz argues that this element merely provides that there is a structural relationship or cooperation between the relative positioning of the source of light and the opening to prevent the beam of light from "directly impinging" on the side of the vehicle but does not require that the beam of light actually not strike the side of the vehicle. Rather, the beam of light must not directly strike the vehicle. Therefore, he argues that this element is still present in a device where the beam light is redirected, such as by a lens. Ford, on the other hand, argues that the prosecution history precludes such an interpretation and requires an interpretation that the beam of light not impinge on the vehicle at all. What Ford fails to consider is that there is a distinction between "impinging" and "directly impinging" that must be taken into consideration. There is merit to Krippelz's argument that the phrase "directly impinging" refers to "light that emanates directly from the source of light in the absence of any intervening optical elements that redirect the light." Construing the phrase to mean "simply that no light from the source strikes the vehicle," as put forth by Ford, would ignore the claim language "directly." In fact, Ford's interpretation would be sufficiently conveyed solely by the word "impinging." Failing to distinguish direct from indirect or re-directed rays would give no meaning to the word "directly," but it is fundamental that claims must be given their proper meaning. Stiftung, 945 F.2d 1173, 1177. Correctly construed, preventing the "beam of light" from "directly impinging" means that no light directly from the source strikes the vehicle! Therefore, I hold that the beam of light referred to in claim 2 likewise must not directly impinge on the vehicle itself to satisfy the element of the claim.

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VIII. Restrict

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Davis-Lynch's Proposal</th>
<th>Weatherford's Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;being positioned to restrict fluid flow&quot;</td>
<td>Davis-Lynch contends this term does not need</td>
<td>Being positioned to block the flow path through</td>
</tr>
</tbody>
</table>
through said inner tubular flow path to be defined. Being the inner tubular.

Clubs 34, 35, 37
flow through the path for flow through the inner tubular so as to allow for pressure build up.

Davis-Lynch argues that this term only requires that the drop member limit fluid flow through the inner tubular to allow pressure to build up. Weatherford maintains that the drop member must completely seal the flow path through the inner tubular. In other words, the parties dispute the meaning of the word "restrict." This word has a "widely accepted meaning," and nothing in the claim language compels the Court to disregard this meaning. Phillips, 415 F.3d at 1314. The commonly understood meaning of "restrict" is to limit rather than to completely seal, thus, unless the patentee has implicitly limited the scope of this term, the Court presumes that Weatherford's proposal is inappropriate. See Brookhill-Wilk 1, LLC v. Intuitive Surgical Inc., 334 F.3d 1294, 1301 (Fed. Cir. 2003); Aloft Media, LLC, 2009 U.S. Dist. LEXIS 24124, 2009 WL 803133 at *3; see also Phillips, 415 F.3d at 1312-13.

12 Although Weatherford proposes that the term "restrict" be construed as "block," Weatherford's brief makes clear that it believes this term requires the drop member to "completely seal" the drop member receptacle.

Weatherford argues that the patentee has limited the scope of this term because the specification refers to the drop member as "sealing" the drop member receptacle to build up fluid pressure. '336 patent at 4:55-56, 8:60-65, 10:15-19. However, these statements in the specification do not demonstrate that the claims at issue require this limitation. The patent does not state that the invention as a whole requires the drop member to seal the drop member receptacle. Cf. Verizon Servs. Corp., 503 F.3d at 1308 ("when a patent thus describes the features of the 'present invention' as a whole, this description limits the scope of the invention"). At best, Weatherford has shown that the '336 patent discloses one embodiment in which the drop member seals the drop member receptacle. Weatherford has not shown that the limitation of this embodiment should be imported into the claims at issue. See E.I. du Pont de Nemours & Co., 849 F.2d at 1433 (explaining that Courts must not import extraneous limitations from the specification into the claims).

While Weatherford focuses on embodiments in the specification that discuss sealing the drop member receptacle, the term to be construed is "restrict." This word appears several times in the specification, and it always refers to some sort of obstruction that limits, but does not completely seal off the pathway through the tubular string. '336 patent 1:31-37, 6:29-36, 7:49-54, 9:51-54. Thus, the patentee has not implicitly given the term "restrict" a meaning different from its commonly understood meaning. See Bell Atl. Network Servs., Inc., 262 F.3d at 1271. Overall, Weatherford has failed to show why a limitation in one preferred embodiment should be imported into the claims at issue. Having rejected Weatherford's argument, the Court will not construe the term at issue. See O2 Micro Int'l Ltd., 521 F.3d at 1362; Fenner Inv. Ltd., 2008 U.S. Dist. LEXIS 65686, 2008 WL 3981838 at *3.

GO BACK

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A. "a manifold positioned within an open end" of an atomizing tank

As shown in the figures included in the patent, the atomizer portion of the manifold (20) is inserted into the end of the atomizing tank (12). (Doc. 25, Exh. 1, figs. 1-4). Defendants argue that the language of Claims 1 and 7 that states that the manifold is "positioned within an open end" of an atomizing tank means that the manifold must be "actually within" the open end or mouth of the tank.

This interpretation, according to the defendants, is mandated in light of an Amendment filed on April 11, 1997. The original application stated that the manifold was "adjacent" to the atomizing tank. The Amendment substituted the term "within" for "adjacent" to describe the location of the manifold.
The Amendment clarified the location, because "adjacent" does not precisely convey the structure of the invention, which involves injection of aerated water into the atomization tank through a nozzle (40). Atomization can occur only if the aerated water is introduced into the tank, which requires placement of the nozzle portion of the manifold into the tank.

The term "adjacent" describes something that is next to, but not necessarily a part of, an adjoining item, artifact, or structure. Penetration into the atomizing tank, which would not necessarily be described through use of the term "adjacent," is an integral element of the patented method and apparatus. The Amendment, accordingly, clarified the description, and made it more accurate.

The Amendment did not limit the scope of the patent by requiring (as defendants contend) that the manifold be "actually within" the open end or mouth of the tank. (Doc. 27 at 4). Rather, as is clear from a reading of the patent and its figures, the atomizing nozzle and atomizing tank (i.e., outlet) tube (65), both of which are part of the manifold, are located in the open end of the atomizing tank. It is not necessary for any other portion of the manifold to occupy the opening, nor is it necessary that the nozzle and outlet tube take up the entire cavity formed by the opening and the open end of the atomizing tank. The figures clearly show that the cavity is sealed by a cap through which the atomizer and outlet tube are held in place, and the cap contains the actual openings through which each passes. As a result, and as described in Claims 1 and 7, the manifold is "positioned within an open end" of an atomizing tank.

8. "positioned within the catheter shaft"

The plaintiffs propose that this term carry its plain meaning. The defendants propose "connected at spaced locations to the inner wall of the catheter shaft."

The defendants argue that the patent never suggests or teaches that the stiffening wire would not be attached at all. In support, the defendants cite a few passages from the specification, including a statement in the Summary of Invention section: "[t]he stiffening wire is attached to the inner wall of the catheter shaft at a plurality of points along its length...." 358 Patent at 2:37-41.

The defendants’ argument is not persuasive. Claim 6, which depends from claim 5, recites only one additional limitation: "the stiffening wire is attached to the inner wall of the catheter shaft at at least two spaced locations." 358 Patent at 7:49-51. In light of claim 6, the meaning of "positioned within the catheter shaft" can be informed by the presumption of claim differentiation. Nothing in the intrinsic record rebuts this presumption.

This phrase is easily understood as written and no construction is needed.

III. Claim Construction of Disputed Terms

A. '529 Patent Claim Language (Exhibit 2 to Doc. 141)

1. A method of anterior cruciate reconstruction surgery of the knee, comprising the steps of:

   forming a [sic] opening in a femur, the opening having an entrance facing a joint of the knee;

   forming a transverse hole in the femur extending completely across the femur, the transverse hole extending through a first sidewall of the opening on a first side of the femur, intersecting the opening, and extending through an opposite sidewall of the opening on an opposite side of the femur;
positioning a flexible strand in the knee such that the flexible strand extends from outside of the knee, through the transverse hole and into the opening in the femur through the first sidewall of the opening, out through the entrance of the opening and through a tunnel in the tibia, and, after forming a loop outside of the tibial tunnel, extending back into the tibial tunnel and into the opening through the entrance of the opening, and out of the knee through the transverse hole in the opposite sidewall of the opening;

looping a graft over the loop of the strand extending outside of the tibial tunnel;

pulling the loop of the graft through the tibial tunnel and into the opening; and

securing the graft in the opening by advancing an implant transversely into the opening and under the graft.

2. The method of claim 1, wherein the strand is used as a guide for advancing the implant transversely into the opening and under the graft.

3. The method of claim 1, wherein the implant has a threaded back end, the method further comprising the step of securing the implant in the knee by engaging a wall of the transverse hole with the threaded back end of the implant.

B. '477 Claim Language (Exhibit 1 to Doc. 141)

1. A method of anterior cruciate reconstruction surgery of the knee, comprising the steps of:

   forming an opening in a femur, the opening having an entrance facing a joint of the knee;

   forming a transverse hole in the femur extending completely across the femur, the transverse hole extending through a first sidewall of the opening on a first side of the femur, intersecting the opening, and extending through an opposite sidewall of the opening on an opposite side of the femur;

   positioning a flexible strand in the knee such that the flexible strand extends from outside of the knee, through the transverse hole and into the opening in the femur through the first sidewall of the opening, out through the entrance of the opening and through a tunnel in the tibia, and, after forming a loop outside of the tibial tunnel, extending back into the tibial tunnel and into the opening through the entrance of the opening, and into the transverse hole in the opposite sidewall of the opening;

   looping a graft over the loop of the strand extending outside of the tibial tunnel;

   pulling the loop of the graft through the tibial tunnel and into the opening; and

   securing the graft in the opening by advancing an implant transversely into the opening and under the graft.

2. The method of claim 1, wherein the strand is used as a guide for advancing the implant transversely into the opening and under the graft.

3. The method of claim 1, wherein the implant has a threaded back end, the method further comprising the step of securing the implant in the knee by engaging a wall of the transverse hole with the threaded back end of the implant.

The language of the claims in the ‘529 and ‘477 Patents are identical with the exception of the last clause in the section beginning "positioning a flexible strand." The last clause in the ‘427 Patent does not have the words "and out of the knee through."

*   *   *

E. "Positioning"

Mitek argues that the "positioning" clause requires a two-step process, first the flexible strand is pulled though the entire transverse tunnel in the femur, and then a loop of the strand is formed outside of the tibial tunnel by pulling the flexible strand using a tool, such as a tunnel hook. Mitek cites to the Abstract in the ‘477 patent which includes the following
language: "A flexible strand is drawn with the pin through the bone. A looped portion of the strand is diverted so as to protrude out of the entrance to the longitudinal socket. The ends of the strand remaining accessible on either side of the bone." (Doc. 140, Exh. 1, Abstract). Mitek cites to the Summary of Invention arguing it refers to the two-step process as follows: "Next, a flexible strand, preferably a wire formed of nitinol, is attached to the guide pin and pulled through the femur. Equal lengths of the strand protrude from the medial and lateral sides of the femoral shaft, and are secured to prevent accidental pull-out. The tunnel hook is withdrawn, the strand being captured in the slot of the hook." (Doc. 140, Exh. 1, 2:57-62). Mitek claims that the two-step procedure is not just the preferred embodiment, but characterizes the overall invention, citing to Detailed Description of the Preferred Embodiments which states that the "method of the present invention is described with reference to FIGS 10 through 16." (Doc. 140, Exh. 4:62-63). Later in the Detailed Description of the Preferred Embodiments, the following language appears, the flexible wire "is hooked onto hook 18 on the proximal end of drill pin. By pulling on the drill pin, the graft-passing wire is drawn through the femur until it is positioned with equal lengths at either end protruding from the medial and lateral sides of the femoral shaft. Hemostats 74 are clipped onto the ends of the wire to prevent them from being pulled into the transverse femoral tunnel as shown in FIG 14." (Doc. 140, Exh. 1, 5:51-58). Mitek argues that no other procedure is mentioned to position the flexible wire, into the opening and then forming a loop through the tibial tunnel. (Doc. 140, Exh. 14, p. 2).

Arthrex argues that the flexible strand extends from the outside of the knee, through the transverse tunnel, into the femoral socket through a first sidewall of the femoral socket, out of the entrance to the femoral socket, down through the tibial tunnel, out of the tibial, back up through the tibial tunnel, into the femoral socket, and into the transverse tunnel on the opposite sidewall of the femoral socket. Arthrex argues that the patents are not limited to Mitek's asserted two-step procedure.

The Court will begin its analysis by reviewed the language of the claim and the specification. The positioning clause contains the following procedure:

positioning a flexible strand in the knee such that the flexible strand extends from outside of the knee, through the transverse hole and into the opening in the femur through the first sidewall of the opening, out through the entrance of the opening and through a tunnel in the tibia, and, after forming a loop outside of the tibial tunnel, extending back into the tibial tunnel and into the opening through the entrance of the opening, and into the transverse hole in the opposite sidewall of the opening.

(Doc. 140, Exh. 1, 6:42-50). The language in the Summary of the Invention, is as follows when describing the flexible strand in the femur:

Next, a flexible strand, preferably a wire formed of nitinol, is attached to the guide pin and pulled through the femur. Equal lengths of the strand protrude from the medial and lateral sides of the femoral shaft and are secured to prevent accidental pull-out. The tunnel hook is withdrawn, the strand being captured in the slot of the hook. The hook is retracted completely, through the femoral socket and out of the tibial tunnel, such that a loop of the flexible strand protrudes from the entrance to the tunnel.

(Doc. 140, Exh. 1, 2:57-62).

The Detailed Description of the Preferred Embodiments provides the

nitinol graft-passing wire 30 is hooked onto hook 18 on the proximal end of drill pin 12. By pulling on the drill pin, the graft-passing wire is drawn through the femur until it is positioned with equal lengths at either end protruding from the medial and lateral sides of the femoral shaft. Hemostats 74 are clipped onto the ends of the wire to prevent them from being pulled into the transverse femoral tunnel 70 as shown in FIG 14.

Referring to FIGS 13 and 14, once the graft-passing wire has been drawn through the femur, tunnel hook 2 is retracted from femoral socket 60 and tibial tunnel 56, pulling graft-passing wire 30 with it to form a loop that protrudes from the entrance of the tibial tunnel.

The preferred embodiment in the patents is limited to the two-step procedure raised by Mitek. From the Summary of the
Invention and the Detailed Description of the Preferred Embodiments, the preferred method is to insert the flexible strand through the transverse tunnel in the femur, through a hook on the proximal end of a drill pin, and then through the remaining transverse tunnel. Next, the hook pulls the flexible strand through and out of the tibial tunnel. However, the claim language itself is not limited to this process. A court may not limit a claim to the preferred embodiment or make an inferences from the description of the preferred embodiment. Bell Atlantic Network Services, Inc. v. Covad Comm'c'ns Group, Inc., 262 F.3d at 1273. The claims are not limited to an embodiment even if the embodiment is very specific. LizardTech, Inc. v. Earth Resource Mapping, Inc., 433 F.3d at 1377. In this case, the claim language is not limited to the preferred embodiment or the language in the Summary of the Invention. Rather, the actual claim language allows for the flexible strand to extend from the outside of the knee, through the transverse hole, into the opening in the femur, through the first sidewall of the opening, out through the entrance of the opening, through a tunnel in the tibia, making a loop outside of the tibia, back through the tunnel in the tibia, into the opening, and into the transverse hole in the opposite sidewall. The prosecution history is not useful regarding construing the "positioning" clause in that Mitek cites to statements by the Patent Examiner, however his statements alone cannot limit a claim. Bell Atlantic Network Services, Inc. v. Covad Comm'c'ns Group, Inc., 262 F.3d at 1273. 6

6 The Court did not rely on the dictionary definitions as asserted by Mitek in that the Court relied on intrinsic evidence to make its determinations.

Relying on the claim language itself, and the specification, the Court determines that "a person of ordinary skill in the art" would construe the "ordinary and customary meaning" of the "positioning" clause not to be limited to the two-step method asserted by Mitek. Rather, to the meaning as set forth by Arthex which is the following: "positioning a flexible strand in the knee such that the flexible strand extends from outside of the knee, through the transverse tunnel on one side of the knee and into the opening in the femur. The flexible strand then extends out through the entrance of the opening and through and out of a tibial tunnel. The flexible strand then extends back into and through the tibial tunnel and into the opening, and into the transverse tunnel on the opposite sidewall of the opening. A loop exists where the flexible strand is at its furthest point outside the tibial tunnel." 7

7 Although the language in the '529 patent differs slightly from the '477 patent, the claim construction by the Court applies equally to both patents.

The Court, for the reasons stated by Vnus, finds "positioning … at a treatment site" does not require construction.
Each of the asserted independent claims (3, 5, and 8) recites a "positioning means," the interpretation of which is central to this case. In claim 3, this element reads:

- positioning means for moving said transducer means between the concentrically adjacent tracks on said micro hard-disk;
  said positioning means including:
    - two support arms each supporting one of said read/write heads with each read/write head being mounted at one end of its respective support arm;
    - a pivot shaft having an axis located on one side of said support arms and spaced away from said support arms;
    - a positioning arm to which the other ends of said support arms are attached, said positioning arm having one end thereof coupled to said pivot shaft;
    - a bearing assembly supporting said pivot shaft for rotational movement thereby enabling said positioning arm to be pivoted about the axis of said pivot shaft;
    - a stepper motor having an output drive shaft;
    - means for operating said stepper motor in step increments; and
    - a tensioned steel band coupling said drive shaft of said stepper motor to the other end of said positioning arm, said band being arranged in a pulley arrangement whereby rotational movement of said stepper motor causes pivoting of said positioning arm about said pivot shaft for moving said support arms and the read/write heads in incremental steps with each increment causing said read/write heads to move from one track to the next adjacent track on said micro hard-disk.

Claims 5 and 8 recite an almost identical "positioning means" to each other, but somewhat different from that of claim 3:

- positioning means for moving said first and second transducer means between the concentrically adjacent tracks on said micro hard-disks, said positioning means including a positioning arm disposed within the sealed housing, a pivot shaft coupled to one end of said positioning arm and supporting said positioning arm for rotational movement relative to said micro hard-disks, four support arms, each supporting one of said heads at one end and each connected to said positioning arm at its other end, a stepper motor having a shaft extending into said sealed housing and means for operating said stepper motor in step increments, each increment causing said read/write heads to move from one track to the next adjacent track on said micro hard-disks . . . .

Rodime accuses Seagate's ST157 hard drive of infringing the '383 patent. The parties do not dispute that Seagate's drive incorporates some of the thermal compensation mechanisms disclosed in the '383 patent. Specifically, Seagate's drives use materials with favorable thermal compensation properties in their positioning mechanisms. Seagate's ST157 also relies, however, on a "thermal pin" which works in conjunction with the selection of materials to provide thermal compensation. This pin within Seagate's positioning mechanism has a precise amount of stiffness. When temperature rises and the disk components begin to expand, this expansion stresses the thermal pin causing it to bend. The bending of the pin causes a corrective movement of the head to maintain it at the proper position in the track.

* * *

III.

Determining infringement is a two-step process. This court first construes the claims, then compares the properly construed claims to the accused device. See Cybor Corp. v. FAS Tech., Inc., 138 F.3d 1448, 1454, 46 U.S.P.Q.2d (BNA) 1169, 1172 (Fed. Cir. 1998) (en banc). A central issue in this case is the district court's interpretation of the "positioning means" in
The prepositional link "for" ties the "means" to its function. Later in the same element, the claim reiterates: "causing said
language itself clearly states the function of the positioning means: to move the transducer between tracks on the hard-disk.

Based on these principles, the district court's strained interpretation of the claimed function cannot stand. The claim
be read into the claims.

A claim need not claim every function of a working device. Rather, a claim may specify

The word "means" is "part of the classic template for functional claim elements." Sage Prods. Inc. v. Devon Indus., Inc., 126
F.3d 1420, 1427, 44 U.S.P.Q.2D (BNA) 1103, 1109 (Fed. Cir. 1997). Accordingly, in determining whether a claim element falls within § 112, P 6, this court has presumed an applicant advisedly used the word "means" to invoke the statutory mandates for means-plus-function clauses. See id. Two specific rules, however, overcome this presumption. First, a claim element that uses the word "means" but recites no function corresponding to the means does not invoke § 112, P 6. See id. at 1427. Second, even if the claim element specifies a function, if it also recites sufficient structure or material for performing that function, § 112, P 6 does not apply. See id. at 1427-28 ("Where a claim recites a function, but then goes on to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format."); Personalized Media Communications, Inc. v. International Trade Comm'n, 161 F.3d 704 ("In deciding whether [the] presumption has been rebutted, the focus remains on whether the claim as properly construed recites sufficiently definite structure to avoid the ambit of § 112, P 6."); Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531, 41 U.S.P.Q.2D (BNA) 1001, 1006 (Fed. Cir. 1996) ("An element with such a detailed recitation of structure . . . cannot meet the requirements of § 112, P 6.").

In claim 3, the element at issue begins: "positioning means for moving said transducer means between the concentrically adjacent tracks on said micro hard-disk." Claims 5 and 8 use language nearly identical to claim 3, but with the addition of "first and second" before "transducer." Because the element uses the word "means," this court presumes that § 112, P 6 applies. This court next looks to whether the element specifies a function for performing the claimed means. In making that determination, this court relies primarily on the claim language itself. See York Prods., Inc. v. Central Tractor, 99 F.3d 1568, 1574, 40 U.S.P.Q.2D (BNA) 1619, 1624 (Fed. Cir. 1996).

The claim element clearly associates the function of "moving said transducer means between the concentrically adjacent tracks" with the "positioning means." The district court, however, interpreted the element to require more than movement between tracks: "In the disputed claims, the positioning means must not only function to move the head from track to track, it must be able to record data onto a disk and retrieve that data at a later time. Accordingly, the positioning means . . . must be able to accurately locate a track upon which information was recorded at an earlier time." (emphasis added). The district court reasoned that the positioning means could only achieve such "accuracy" with thermal compensation. Thus, according to the district court, thermal compensation must be a function of the claimed means.

In so construing the claims, the district court erred by importing the functions of a working device into these specific claims, rather than reading the claims for their meaning independent of any working embodiment. See Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1278, 35 U.S.P.Q.2D (BNA) 1035, 1041 (Fed. Cir. 1995) ("The district court erred by importing unnecessary functional limitations into the claim."); Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1571, 7 U.S.P.Q.2D (BNA) 1057, 1064 (Fed. Cir. 1988) ("Although the specification may aid the court in interpreting the meaning of disputed language in the claims, particular embodiments and examples appearing in the specification will not generally be read into the claims."). A claim need not claim every function of a working device. Rather, a claim may specify improvements in one function without claiming the entire machine with its many functions.

Based on these principles, the district court's strained interpretation of the claimed function cannot stand. The claim language itself clearly states the function of the positioning means: to move the transducer between tracks on the hard-disk. The prepositional link "for" ties the "means" to its function. Later in the same element, the claim reiterates: "causing said
read/write heads to move from one track to the next adjacent track on said micro hard disk." The claim says nothing about accurate placement of a head within a track. Nor does it mention thermal compensation in any respect.

The specification underscores the function of movement amongst tracks. It explains that the "positioning mechanism moves the transducer between the tracks." Col. 3, ll. 45-46 (emphasis added). Again at col. 3, ll. 53-56, the specification states that the "positioning means moves the transducer along an arcuate path that extends in the radial direction with respect to the disk" so that "the transducer can move between the innermost and outermost tracks on the disk." Col. 3, ll. 53-56 (emphasis added). These passages emphasize that the function expressly recited in claims 3, 5, and 8 is the claimed function.

To summarize, § 112, P 6 presumptively applies to the "positioning means" in the asserted claims because that element employs traditional "means" language. In addition, the claim language links the means with a function, namely, moving the transducer between tracks on the hard-disk. Accordingly, to this point, the claim element would appear to fall within § 112, P 6. The final step in the analysis, however, requires this court to determine whether the claim nevertheless recites sufficient structure for performing the moving function to take it outside the bounds of that provision.

Following the portion of the claim element quoted above ("positioning means for moving said transducer means between the concentrically adjacent tracks on said micro hard-disk"), claim 3 further provides a list of the structure underlying the means: "said positioning means including: two support arms ... a pivot shaft ... a positioning arm ... a bearing assembly ... a stepper motor ... means for operating said stepper motor ... and a tensioned steel band ... " The claim also recites the specific location and interconnection of each of these structural sub-elements. The pivot shaft, for example, has "an axis located on one side of said support arms and spaced away from said support arms." The positioning arm has attached to it "ends of said support arms" and is also "coupled to said pivot shaft." The tensioned steel band couples "said drive shaft of said stepper motor to the other end of said positioning arm." This detailed recitation of structure for performing the moving function takes this claim element out of the scope of § 112, P 6.

The analysis of claims 5 and 8 proceeds similarly. Those claims recite: "positioning means for moving said first and second transducer means between the concentrically adjacent tracks on said micro hard-disks, said positioning means including a positioning arm ... a pivot shaft ... four support arms ... a stepper motor ... and means for operating said stepper motor." In addition to the recited structure, these claims also recite the interconnection of the structural components and their location with respect to other elements of the claimed combination. For example, the positioning arm is "disposed within the sealed housing." The pivot shaft is "coupled to one end of said positioning arm" and supports "said positioning arm for rotational movement relative to said micro hard-disks." As with claim 3, this detailed recitation of structure for performing the moving function removes this element from the purview of § 112, P 6.

In reaching the opposite conclusion, the special master seemed concerned that the claim did not recite every last detail of structure disclosed in the specification for performing the claimed moving function. This court's case law, however, does not require such an exhaustive recitation to avoid § 112, P 6. Instead, the claim need only recite "sufficient" structure to perform entirely the claimed function. See Sage, 126 F.3d at 1427-28; Personalized Media, 161 F.3d at 704. Based on the structure disclosed in the specification for performing the moving function, these claims recite nearly all (if not all) of the structural components of the positioning mechanism. In any case, they clearly recite more than sufficient structure for moving the transducer from track to track. Moreover, this case is different from Laitram -- relied on by the district court -- where the claim element merely recited "some" structure that only "served to further specify the function of [the] means." 939 F.2d at 1536. Rather, in the words of Laitram, the structure specified in claims 3, 5, and 8 tells what the means "is structurally." Id.

The district court thus erred in interpreting the claims at issue to require the function of thermal compensation and further erred in using § 112, P 6 to read the structure for performing thermal compensation into the claims. As discussed above, the "positioning means" in claims 3, 5, and 8 does not require the function of thermally compensating and recites sufficient structure to fall outside the limits of § 112, P 6.

On appeal, Seagate argues that the district court correctly interpreted the "positioning means" in claims 3, 5, and 8 to include the thermal compensation function. Moreover, Seagate notes, because the claims do not contain structure for the thermal compensation function, these claims fit within the regime of § 112, P 6. To strengthen this argument, Seagate points to the modifier "positioning" in "positioning means." According to Seagate, "positioning denotes placement beyond mere moving." As noted above, however, the language of claims 3, 5, and 8 do not recite a thermal compensation function at all.
Beyond their claim language, however, the context for claims 3, 5, and 8 within the patent underscores that they do not include a thermal compensation function. For example, the language of claim 11, not asserted in this litigation, supports the reading of claims 3, 5, and 8 to require only a moving function. Claim 11 recites: "positioning means for moving said transducer means between the tracks on said hard-disk, said positioning means being formed of selected materials for compensating for any mispositioning arising from thermal effects . . . ." (emphasis added). Thus, the "positioning means" claimed in claim 11, unlike those in claims 3, 5, and 8, explicitly adds the function of "compensating for any mispositioning arising from thermal effects." In other words, the narrower claim 11 adds a thermal compensation function expressly not included in the broader claims 3, 5, and 8. Had Rodime intended or desired to claim thermal compensation as a function of the positioning means in the asserted claims, it could have done it explicitly, as in claim 11. The absence of any such explicit language, however, shows that claims 3, 5, and 8 do not include the function of thermal compensation.

Any difficulty in identifying the function performed by the claimed means apparently stems from the description of the preferred embodiment of the positioning mechanism, which has thermal compensation built into it. As the specification explains: "By appropriately selecting materials of different coefficients of thermal expansion for the various components of the positioning mechanism, it is possible to provide thermal compensation so as to ensure that the read/write heads remain on track irrespective of thermal effects." Col. 8, ll. 22-27. This passage, however, merely highlights the unremarkable fact that a particular means may perform more than one function. It does not follow, however, that the positioning means in claims 3, 5, and 8 necessarily performs both these functions. See Velo-Bind, Inc. v. Minnesota Mining & Mfg. Co., 647 F.2d 965, 968-69, 211 U.S.P.Q. (BNA) 926, 929 (9th Cir. 1981) (declining to interpret "cutting means" to include a binding function merely because the specification disclosed a hot knife that performed both cutting and binding). Indeed, the two functions are not inextricably intertwined. Rather, the specification associates separate structure with each separate function. The specification teaches one of ordinary skill in this art to construct and use a positioning mechanism to move the transducer heads from track to track without "appropriately selecting materials of different coefficients of thermal expansion." While such a construction would not compensate for thermal effects, it would nevertheless operate to move the read/write heads from track to track. In other words, thermal compensation is an additional function, with separate, additional structure, included within this patent as a separate claimed feature within the broader parameters of the entire claimed invention. Each claim, however, need not carry the limitations of narrower, specific claimed features. The specification makes this distinction and supports the interpretation of this language of claims 3, 5, and 8 which recite only the function of movement between tracks.

Finally, the prosecution history of these claims also supports the express claim language. During reexamination, the examiner rejected claim 11 -- which specifically recites thermal compensation as a function of the positioning means -- based on European Patent Application No. 0,055,568. That reference describes a thermal compensation system in a prior Rodime hard-disk. Responding to that rejection, Rodime distinguished its claimed thermal compensation structure from the prior art. The examiner, recognizing the additional function in narrower claim 11, cited no thermal compensation art against claims 3, 5, and 8, nor did Rodime raise thermal compensation at all in relation to those claims. This prosecution history accords with this interpretation of the language of the claims. The claim language does not recite any thermal compensation function in claims 3, 5, and 8 and the examiner understood that interpretation. In addition to the claim language, this prosecution history also served to notify the public of differences between the narrower functions of claim 11 and the broader functions of claims 3, 5, and 8.

In sum, claims 3, 5, and 8 do not warrant interpretation under § 112, P 6 because they recite sufficient structure to perform the entire claimed function. By applying § 112, P 6 to these claims, the trial court mistakenly read limitations from the specification into the claims. Properly interpreted, the asserted claims do not require thermal compensation. Because the district court granted summary judgment of noninfringement on grounds relating only to the particular thermal compensation scheme used in Seagate's drives, this court vacates that judgment and remands for further proceedings to determine whether Seagate has infringed the claims.

D. "Positioning Mechanism" and "Positioning Member"

The parties agreed that "positioning member," which is used in claim 10, means "a structure that positions the auxiliary-device relative to the weapon." They state in their stipulation that they disagree about the construction of "positioning mechanism" as used in claims 5 and 21. In their submissions on claim construction, Insight and SureFire agree that
"positioning mechanism" and "positioning member" should be construed to have the same meaning. Glock contends that no construction is necessary. To avoid any confusion or inconsistency between the terms, both terms are construed to have the same agreed meaning.

A review of the proffered constructions shows that the parties agree that this claim requires the protective barrier device to be in front of frangible portions of the structure. The parties' disagreement centers on whether the claim term requires spacing of the barrier device apart from a structure's frangible portions at a minimum calculable distance.

In its rebuttal statement, Plaintiff states that the specification does not define the term "juxtaposed," but that the term's ordinary meaning is placed side-by-side. Plaintiff also contends that the specification does not contemplate that there be any spacing between the barrier device and a structure's frangible portions. Defendants counter in their rebuttal statement that "[t]he centerpiece of [Patent '852's] specification devotes significant passage as to this feature of using a formula for calculating minimum spacing requirements." At the hearing, both parties agreed that the term "juxtaposed" should be defined.

The Court agrees with Defendants. The Court looks to the specification for guidance in ascertaining the scope of the instant claim term and, in particular, the meaning of the term "juxtaposed." Although "juxtaposed" is not expressly defined in the specification, the specification is replete with passages showing that this term should be construed to mean spaced apart from a structure's frangible portions. This Court counts over ten such specification passages. For instance, the specification's summary of the invention section states that "[t]he flexible barrier of the invention is placed a distance out from the surface to be protected" and that the barrier's deflection "is a determinate of the minimum distance that this barrier is to be spaced out from the frangible area to be protected." Patent '852, col. 3, Ins. 10-12; Ins. 19-21. The specification further states that "[t]his invention provides a method of calculating the minimum spacing of said barrier from the frangible surface" and "[t]he use of flexible fabric distance out from the frangible area as a protective barrier allows extended deceleration…[b]y mounting the protective barrier device some distance from the frangible surface, a distance that is calculable, the missile can be decelerated to a stop prior to contacting the frangible surface." Patent '852, col. 3, Ins. 45-47; col. 4, In. 61-col. 5, In. 1.

The summary of the invention section goes on to state that "[a] feature of this invention is spacing the barrier out from and in front of the frangible area to be protected… [a]other feature is the formula for calculating minimum spacing" and "[t]he barrier is sufficiently spaced from the structure being protected in order to absorb and dissipate the energy from impact prior to the impacting object reaching the structure." Patent '852, col. 5, Ins. 17-22; Ins. 30-33. As part of the detailed description of the preferred embodiment, the specification states that "to calculate the minimum distance that the barrier must be placed out from the area to be protected, the frontal area, weight and speed of the test missile must also be known." Patent '852, col. 6, Ins. 50-53. The detailed description also sets forth criteria "constitut[ing] the basis for calculating the spacing of the barrier from the object being protected" and that "[s]aid spacing is calculated" according to a three-step process expressly set out in the specification. Patent '852, col. 8, Ins. 24-43.

The foregoing specification statements clearly establish a proper basis for this Court to construe this claim term as proposed by Defendants. Indeed, the specification goes to great lengths to describe the patented invention as requiring spacing of the
barrier device apart from a structure's frangible portions at a minimum calculable distance. Thus, this Court adopts Defendants' proposed construction and constructs the instant claim term to mean "the protective barrier device is positioned in front of the frangible portions, and is spaced apart from the frangible portions of the structure at a minimum calculable distance."

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x. Positively Driving (Claims 1, 31)

134. This claim terminology is used to describe the lever operating means of Claim 1, which is admitted to be a means-plus-function element. The terminology also is used to describe the lever moving element of Claim 31 which has been shown above to also be in the means-plus-function format.

135. The specification of the '656 patent describes the claim term "positively driving" as providing "positive" engagement of the lever with the cam wheel. As described in the specification of the '656 patent, when the proper conditions are met, the solenoid housing shifts linearly to release the spring-biased spring at the lower end of the cantilever arm, thus causing the lever to be pushed into contact with the cam to enable withdrawal of the bolt. Thus, as described and illustrated in the '656 patent, "positive" driving is associated with pushing the lever into the cam wheel.

136. During prosecution of the '656 patent application, LaGard expressly disclaimed operation of a lock mechanism that depended on the force of gravity to move the lever into contact with the cam. PX 45, p. 141.

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C. Mixing v. Positive Mixing

81. A third significant claim interpretation issue involves the meaning of the terms "intermixing" and "positive intermixing." MCI's position, as expressed by Mr. Vilhauer, is that these terms mean the same thing, i.e., simply "mixing." But this interpretation is contradicted by the file history of the '971 Patent. The original application Claim 42 called only for "intermixing" the feed additives. This claim was rejected by the patent examiner and withdrawn by the applicant. The claim was then re-submitted as calling for "positive intermixing," and was subsequently allowed by the patent examiner, as Claim 94 of the patent. The applicant's attorney argued before the Patent Office that the claim was now distinguished over the "known prior art." Since the prior art before the patent examiner included various references which disclosed "mixing," the term "positive mixing" should be construed as being limited to a type of mixing which was not before the Examiner. The only such type which was not before the examiner and is also supported by the patent specification is mechanical mixing.

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B. Positively different

The parties dispute the meaning of "positively different," which is used in claim 1 to describe two different directional relationships: (1) "the second plastic layer has a second-direction-flow-record which is positively different from said first-direction flow record" '268 Patent, col. 8, lines 39-42, and (2) "the first plastic flows in the first-cavity-flow-channel in a direction which is positively different from said first predetermined general direction." Id. col. 8, lines 58-61. Claim 21 uses "positively different" in the same way as claim 1, except that in instance (2) the claim refers to the second plastic flow in the second-cavity-flow-channel as being "positively different" from the second predetermined general direction. Id. col. 11, lines 32-35. Ordinarily, a term appearing multiple times should be interpreted consistently, see Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1345 (Fed. Cir. 1998), and therefore the court will construe "positively different" in a fashion that embraces all of the uses of the term in claims 1 and 21.

The parties agree that "positively different" has no specialized meaning to persons of ordinary skill in the injection molding
art. Thus, the ordinary meaning of "positively different" controls, absent some indication that the inventor used the term in a fashion other than according to its ordinary meaning. Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971 (Fed. Cir. 1999). The claim language itself does not provide a definition of "positively different," and therefore the court will turn to the dictionary to ascertain the customary meaning of the phrase. The dictionary defines "positively" as "definitely" or "expressly," Oxford English Dictionary (2nd Edition 1989), or "extremely, obviously, notably, certainly." Webster's Third New International Dictionary 1770 (emphasis omitted). Different means "having characters or qualities which diverge from one another; having unlike or distinguishing attributes; not of the same kind; not alike; of other nature, form, or quality." Oxford English Dictionary (2nd Edition 1989). Of these definitions of "different," "not alike" is most consistent with the use of the word "different" in the '268 patent, and therefore the court will adopt that meaning. See Inverness Med. Switzerland GmbH v. Princeton Biomeditech Corp., 309 F.3d 1365, 2002 WL 31428861 at *4 (Fed. Cir. Oct. 31, 2002). Thus, the ordinary meaning of "positively different" is "definitely or certainly not alike."

Next, the court examines the written description and drawings to determine whether the patentee's use of "positively different" is consistent with the term's ordinary meaning. The specification does not provide an explicit definition of "positively different." However, in the description of the preferred embodiments, the written description states:

The flowed second plastic is then adjusted in the second-layer-defining-mold-cavity section 4, to thereby form a second plastic layer 15, so that the second plastic layer 15 has a second-direction-flow-record, similarly indicated by the second arrow 14, which is approximately at a right angle to the first-direction-flow-record and therefore is positively different from the first-direction-flow-record, indicated by the first arrow 12 . . . .

'268 Patent, col. 4, lines 11-18 (emphasis added). In addition, the drawings, which show the flow directions and flow records as arrows, always show the first and second flow records at right angles to one another. Koito therefore argues that "positively different" means that the flow records and flow directions must intersect at 90 degree, or substantially 90 degree angles. Turn-Key argues that the claim language contains no such numerical limitation, and that adopting such a construction would improperly import a limitation based on the preferred embodiment into the claims.

The court need not decide whether adopting Koito's construction would indeed cross the line between using the written description as an aid in interpretation (which is permissible), and using it to import limitations into the claims (which is not), because Koito is simply incorrect: the written description clearly indicates that directions intersecting at other than 90-degree angles can still be "positively different." As noted above, the claims use "positively different" both to describe the difference between the first and second flow records, and to describe the difference between the flow direction through and out of the flow channel (i.e., between the direction of flow in the flow channel and the "predetermined general direction" of flow through the layer-defining-cavity-section). As Koito notes, the preferred embodiments consistently show the difference in flow records as approximately 90 degrees. However, the patent also teaches that the two flow directions can be "positively different" even while the angle between them is as little as 45 degrees, as shown by arrows 33 and 32 in Figure 6 of the patent. The specification specifically describes flow directions 32 and 33 as being "positively different." '268 Patent, col. 6, lines 16-26. Thus, it is clear that two flow directions can be "positively different" without intersecting at a 90 degree angle. Furthermore, Figure 6 illustrates a preferred embodiment of the invention, and this preferred embodiment would be excluded from the scope of the claims if the court were to limit the term "positively different" to angles of 90 or substantially 90 degrees. The Federal Circuit has repeatedly cautioned that an interpretation that excludes the preferred embodiment is "rarely, if ever, correct," Vitronics, 90 F.3d at 1583, and without highly persuasive support -- which Koito has not provided -- the court is unwilling to adopt such an unduly narrow construction of "positively different." In addition, the specification teaches a method of obtaining a variety of angles between the flow directions by varying the relative cavity thicknesses of the flow channel and layer-defining-mold-cavity-section. See '268 Patent, col. 6, lines 24-26, 38-40. The patentee, therefore, obviously did not contemplate limiting the angle between the flow directions to a specific number, but rather envisioned a range of possible angles obtainable by the patented method. And, the patentee clearly did not intend the phrase "positively different" to refer only to 90 or substantially 90 degree differences, or he would not have used that phrase to describe the various angles between flow directions obtainable by the patented method.

In short, the specification does not explicitly or implicitly narrow or otherwise contradict the rather broad customary meaning of "positively different;" indeed, it is consistent with that meaning. Nor have the parties pointed to any portion of the prosecution history in which the patentee either explicitly defined or otherwise limited the scope of the "positively different" limitation. Thus, this term carries its ordinary meaning. The court therefore holds that "positively different," in accordance with its dictionary definition discussed above and consistent with the patentee's use of the term in the
specification, means "definitely or certainly not alike," and therefore this claim limitation requires that the two flow records, as well as the directions of flow through the flow channel and adjacent layer-defining-cavity-section be definitely or certainly not alike.

At issue in this appeal is the "means for positively engaging" limitation found in independent claims 1, 18 and 22. The district court did not treat this limitation as a means-plus-function claim subject to the requirements of section 112, P 6, and construed "positively engaging" to "require both prevention of up and down movement and lock-up with the wall of the hole." Both parties assert that the critical "means for positively engaging" limitation is in means-plus-function form, subject to the requirements of 35 U.S.C. § 112, P 6 (1994). The parties disagree, however, as to the meaning of the term "positively engaging."

We agree that this limitation is in means-plus-function form, see Micro Chemical, Inc. v. Great Plains Chemical Co., Inc., 194 F.3d 1250, 1257, 52 U.S.P.Q.2D (BNA) 1258, 1265 (Fed. Cir. 1999); Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1314 1318, 50 U.S.P.Q.2D (BNA) 1161, 1166 (Fed. Cir. 1999), and that the district court erred when it did not analyze the claim under section 112, P 6. This error is harmless, however, because the same result is required under the proper claim construction.

The first step in analyzing a claim written in means-plus-function form is to identify the claimed function. See Chiuminatta, 145 F.3d at 1308, 46 U.S.P.Q.2D (BNA) at 1755. We agree with the parties that the claimed function in this disputed limitation of representative claim 1 is "positively engaging." The next step is to construe the meaning of the words used to describe the claimed function, using ordinary principles of claim construction. Terms in a claim are to be given their ordinary and accustomed meaning, within the context of the claim. See Johnson Worldwide, 175 F.3d at 989-90, 50 U.S.P.Q.2D (BNA) at 1610. The heavy presumption in favor of the ordinary meaning of claim language is overcome if the meaning of the term is unclear from the context of the claim, see id.; or if the patentee has chosen to be his or her own lexicographer by clearly setting forth an explicit definition for a claim term. See id.; In re Paulsen, 30 F.3d 1475, 1480, 31 U.S.P.Q.2D (BNA) 1671, 1674 (Fed. Cir. 1994) (applicant may act as his own lexicographer, but definition must be done with "reasonable clarity, deliberateness and precision"); Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387-88, 21 U.S.P.Q.2D (BNA) 1383, 1386 (Fed. Cir. 1992) ("where an applicant chooses to be his own lexicographer and to give terms uncommon meanings, he must set out his uncommon definition in some manner within the patent disclosure so as to give one of ordinary skill in the art note of the change"); Lear Siegler, Inc. v. Aeroquip Corp., 733 F.2d 881, 888-89, 221 U.S.P.Q. (BNA) 1025, 1031 (Fed. Cir. 1984) (same).

Koenig argues that the ordinary meaning of "positively engaging" controls in this case, and sets forth that meaning as "resisting of axial movement." This is a case, however, in which the heavy presumption in favor of the ordinary meaning is overcome because the patentee has chosen to act as his own lexicographer and present a clear alternative definition for "positively engaging." See Paulsen, 30 F.3d at 1480, 31 U.S.P.Q.2D (BNA) at 1674; Intellicall, 952 F.2d at 1387-88, 21 U.S.P.Q.2D (BNA) at 1386. During prosecution, a rejection was made under 35 U.S.C. §§ 102 (b) and 103 over several prior art references, including the Langenbach reference. Arguing against the prior art, Koenig proclaimed his right to act as his own lexicographer, stating "as taught so eloquently in Autogiro Company of America v. U.S., … patent law allows the inventor to be his own lexicographer." Koenig then defined "positively engaging" and "reactive force" in terms of the structure and function of collar 200, the preferred embodiment. Specifically, Koenig stated that positive engagement is achieved by the interaction of collar 200 with the discontinuity in the wall of the hole so that axial force is resisted. Koenig added, when defining "reactive force," that this interaction introduces an interference so that "lock-up" is achieved. From these definitions, we conclude, as did the district court, that "positively engaging" requires (1) resisting axial movement by the interaction of a collar with a discontinuity or groove in the wall of a hole; and (2) introduction of an interference so that "lock-up" is achieved.
Koenig argues, however, that the district court erred by reading into the claims limitations from the preferred embodiment, collar 200, based on remarks made by Koenig during prosecution. According to Koenig, applicant sought to "clarify" the meaning of "reactive forces, in the context of discussing "positively engaging." We disagree with this re-characterization of Koenig's statements during the prosecution of the '392 patent. During prosecution, Koenig defined "positively engaging" by explicitly referencing the preferred embodiment, collar 200. This definition was presented with the requisite "reasonable clarity, deliberateness, and precision," Paulsen, 30 F.3d at 1480, 31 U.S.P.Q.2D (BNA) at 1674, and Koenig further referenced his definition when arguing over the asserted prior art. Having advanced this definition during prosecution, Koenig may not now assert a broader meaning for the term.

2. The Term "Pot" in the '658 Patent

Kress argues that the term "pot" in the '658 patent does not require the slag pot to be full. Essentially, Kress argues that the definition of "pot" can be a pot that is always empty or almost empty. This argument fails, however, in light of the claims and the written description.

a. The Language of the Claims

As already discussed, claim 1 sets forth a pair of actuators that can tilt the cradle from the first position to the second, or carrying position, and then to the third, or dumping, position. This dumping function would be rendered completely meaningless and superfluous if the term "pot" could mean a pot that was "always empty" because there would, obviously, be nothing to dump. In addition, claim 3 also clearly contemplates that the term "pot" must include a pot that is, at times, full. Specifically, claim 3 states that the struts described in claim 2 are to be "linear actuators which, when fully extended, support said cradle so that the pot is slightly tilted to the rear to minimize spilling to the front and to reduce sway." (emphasis added) If the term "pot" could mean a "pot that is always empty or almost empty," then the reference to, and concern with, spillage would be unnecessary.

b. The Written Description

In addition, the written description also contemplates that the term "pot" must include a pot that is, at times, full. For example the written description provides "to eliminate the load on the main actuator hydraulic system and its links during travel of the carrier while carrying a loaded pot, . . . a pair of struts in the form of simple two-position linear actuators are [sic] mounted on the frame . . . ." (emphasis added and numerical references omitted). Again, the written description contemplates the definition of "pot" must include a pot that is, at times, full when it provides the following advice against "spillage": "the pot is held tilted slightly rearwardly . . . to reduce the swing of the pot during acceleration in transport and to encourage and [sic] spillage toward the rear so as to minimize the likelihood of spillage over the projection." (numerical references omitted). This concern with spillage, which appears in both claim 3 and the specification, would be unnecessary if the term "pot" could mean a pot that is "always empty or almost empty." In addition, the written description begins by stating that "it is therefore the primary aim of this invention to provide a slag pot carrier of relatively simple design that will lift, transport and dump small load slag pots or similarly shaped boxes weighing, when loaded, 35 tons or less." Again, this passage demonstrates that the term "pot" was intended to mean a pot that is sometimes full (i.e., when the carrier is transporting the slag to the dump) and is sometimes empty (i.e., after the slag is dumped and the carrier is returning to the steel mill). We hold that the term "pot" means a pot that is sometimes full and sometimes empty. In short, we do not leave common sense on the side of the road when we construe patent claims.

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identifying those claims in which the parties indicate the disputed terms occur. In so doing, the Court notes that it has nevertheless considered each term in the context of the entire patent, including the specification and the unasserted claims.

Plaintiff a combination of galvanic and electrolytic power sources
Defendant generates, rather than consumes, power

The parties agree that the term "power source" means, at a minimum, something that generates, or contributes power to the patch. Plaintiff argues that the term "power source" also includes parts of the patch, which, although they may not individually generate power, are used to regulate the provision of power to the patch. Defendant responds that the term "power source" cannot include portions of the patch that do not directly generate power to the patch.

The Court finds that defendant's proposed definition is the most appropriate construction of the term "power source." The ordinary and customary meaning of the term "power source," means something that is a source of, or generates, power. Further, this construction of the term "power source" is supported by the claim specification. In particular, the description of Figure 10 in the '014 specification refers to a patch that contains both a battery as well as electrodes, but makes clear that the pair of electrodes would provide power to the patch in addition to the battery:

Figure 10 represents a schematic diagram of another multiple-cell . . . embodiment of the power source . . . [with] an electrolytic battery or cell that produces one volt. To this is added . . . a galvanic cell [pair of electrodes] that also produces one volt . . . resulting in an overall total system that will theoretically produce a two-volt source . . . .

The Court construes the claim term "power source" to mean only parts of the patch that generate power, and parts of the patch that merely regulate the provision of power to the patch, but do not individually generate power, are not part of the "power source."

IX. "Power tool"

The Court next addresses the term "power tool" from claim 7 of the '059 patent.

A. The Parties' Proposed Constructions

Black & Decker proposes construing the term "power tool" as "an electrically powered tool." Bosch proposes that the term "power tool" means "a device that aids in accomplishing a task that is powered by an energy source."

B. The Parties Arguments

The Court agrees with Black & Decker that Bosch's proposed construction is overly broad because it would cover devices such as a bicycle or a toothbrush. Bosch derives its proposed construction from the dictionary definition of the word "tool" (i.e., a device that aids in accomplishing a task). The Federal Circuit in its en banc decision in Phillips recently warned against using dictionary definitions to construe claims when the intrinsic evidence would be clear to one of ordinary skill in the art. Therefore, the Court construes the claim term "power source" to mean only parts of the patch that generate power, and parts of the patch that merely regulate the provision of power to the patch, but do not individually generate power, are not part of the "power source."

The intrinsic record does not support the broad construction proposed by Bosch. The "Objects Of The Invention" section of the specification provides that: "It is yet another object to be able to power the radio with modular batteries normally used in professional portable power tools." ('059 patent, col. 1, ll. 55-57.) Further on, the specification states that the invention may include "an adapter engageable with a secondary direct current power source, such as a tradesworker's hand tool battery pack." ('059 patent, col. 2, ll. 28-30.) Black & Decker also points out that The New Shorter Oxford English Dictionary (1993) defines "power tool" as "an electrically powered tool." This confirms the understanding that one of ordinary skill in the art would have of the term "power tool" based on a reading of the intrinsic record, and specifically the specification. Accordingly, the Court construes the term "power tool" as "an electrically powered tool."
n10 Although this construction essentially recites the claim term itself, counsel for Bosch conceded at the Markman hearing that people understand what a "power tool" is. (Markman Transcript at 69:17-20.) Accordingly, the Court does not find it necessary to further define a term that the trier of fact will already understand.

6. Claim 16

Initially, AnazaoHealth and the World Wide Plaintiffs identified six terms requiring construction in Claim 16, a dependent claim. They have since agreed on the construction of three of those, "distal end," discussed above; "seals" as meaning "closes the distal tip of the cannula, thereby preventing radioactive seeds from spilling out of the cannula or bodily fluids from entering the cannula prematurely;" and "sterile," as meaning "free from living germs or microorganisms." The Court adopts those constructions.

Two of the remaining terms, "line of elements" and "end plug," have already been construed by the Court. The Court adheres to those prior constructions. 33

The intrinsic evidence contains several references to the needle assembly being pre-loaded. The title of the '760 Patent is "Pre-loaded Needle Apparatus." The Summary of the Invention describes one of the advantages of the Patent as being that the needle assembly may be delivered to the user already loaded and sterile, which reduces preparation time as well as personal exposure to radioactive seeds. ('760 Patent col. 2, ll. 23-26.) This is reiterated in the prosecution history, which states that a new Claim 21 34 was added to recite this improvement disclosed in the specification. (W0483.)
The claim at issue in IPXL read:

covered both the system and the user's active "use" of the system. Therefore, was ambiguous under section 112, paragraph 2. Id. In that case, the claim at issue clearly was not sufficiently precise to provide competitors with an accurate determination of the "metes and bounds" of the user of the apparatus later performed the claimed method of using the apparatus. Id. Thus, the Court concluded that such a procedure was to take place? Or, does it mean that it just had to be pre-loaded in a different room? The intrinsic evidence of record does not answer these questions. The specification simply states that the needles could be delivered to the user already loaded and sterile, (760 Patent col. 2, ll. 24-25), but there is no limitation on where the pre-loading had to take place. Therefore, the Court declines to add this limitation to the construction of the term "pre-loaded." Instead, the Court construes the term "pre-loaded" according to its customary meaning - "loaded beforehand."

As to AnazaoHealth's argument that the patentees' introduction of the term "pre-loaded" as a claim element created an ambiguity between what is claimed in dependent Claim 16 and what is claimed in Claim 9, the independent claim on which it depends, the Court disagrees. Claim 9 expressly claims as a distinct element, "a line of elements in the cannula." Thus, AnazaoHealth argues, the World Wide Plaintiffs' interpretation of "pre-loaded" logically means that the needle assembly, already containing a line of elements, is somehow again being loaded beforehand at a facility other than the location of the procedure. As AnazaoHealth points out, it does not make sense that the needle assembly would be loaded with a line of elements twice. This simply is not a logical reading of dependent Claim 16.

As the prosecution history reveals, Claim 16 was added to "recite the improvement disclosed by the specification by which the needle assembly may be delivered to the user already loaded (pre-loaded) and sterile." (W0483.) The Court finds that when "pre-loaded" is given its ordinary and customary meaning of "loaded beforehand" or already loaded, this claim is not rendered "insolubly ambiguous," as urged by AnazaoHealth. Cf. Star Scientific, Inc. v. R.J. Reynolds Tobacco Co., 537 F.3d 1357, 1371 (Fed. Cir. 2008), cert. denied, ___ U.S. ___, 129 S. Ct. 1595, 173 L. Ed. 2d 678 (2009).

Alternatively, AnazaoHealth argues that even if a reasonable construction of the term "pre-loaded" could be determined, the Plaintiffs' proffered construction would render the claim invalid because it combines a product claim ("the assembly as claimed in Claim 9") with a method claim ("wherein the needle assembly is pre-loaded with said line of elements and is sterile"). The Federal Circuit has squarely held that a single claim purporting to cover both an apparatus and a method for using that apparatus is invalid as a matter of law under 35 U.S.C. § 112 P 2, citing IPXL Holdings, LLC v. Amazon.com, Inc., 430 F.3d 1377, 1384 (Fed. Cir. 2005). Here, as in IPXL Holdings, AnazaoHealth asserts that it is unclear whether infringement of claim 16 would occur when someone created a needle assembly comprising a line of elements, or when the off-site facility loaded it beforehand and sterilized it. Thus, it would be invalid because, in reciting both an apparatus and the method for using the apparatus, it would not apprise a person of ordinary skill in the art of its scope. Id. at 1384. Again, the Court disagrees.

Section 112, paragraph 2, requires that the claims of a patent "particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention." 35 U.S.C. § 112 P 2. A claim is considered indefinite if it does not reasonably apprise someone skilled in the art of its scope. IPXL, 430 F.3d at 1384. In IPXL, the Federal Circuit considered for the first time the issue of whether a single claim that covers both an apparatus and a method of using that apparatus is invalid. Id. The Court held that where a claim combines two separate statutory classes of invention, a manufacturer or seller of the apparatus would not know from the claim whether it might also be liable for contributory infringement if a buyer or user of the apparatus later performed the claimed method of using the apparatus. Id. Thus, the Court concluded that such a claim was not sufficiently precise to provide competitors with an accurate determination of the "metes and bounds" of the protection involved and, therefore, was ambiguous under section 112, paragraph 2. Id. In that case, the claim at issue clearly covered both the system and the user's active "use" of the system. 35
The system of claim 2 [including an input means] wherein the predicted transaction information comprises both a transaction type and transaction parameters associated with that transaction type and the user uses the input means to either change the predicted transaction information or accept the displayed transaction type and transaction parameters.

430 F.3d at 1380 (emphasis in original).

In this case, however, Claim 16 describes an apparatus - a "needle assembly," modified by the term "sterile," which is simply an adjective that further describes the apparatus. It does not describe a separate method of use. Where "[t]he clause at issue is not a separate method step, but rather is descriptive of the apparatus itself," the holding of IPXL is not implicated. Sienna LLC v. CVS Corp., No. 06 Civ. 3364, 2007 U.S. Dist. LEXIS 2, 2007 WL 13102, at *8 (S.D.N.Y. Jan. 3, 2007). As the court noted in Ricoh Co., v. Katun Corp., 486 F. Supp. 2d 395, 412 (D.N.J. 2007), in almost all cases where this issue has been raised post-IPXL, the courts have found that the suspect claims did not cover both an apparatus and a method, but rather were apparatus claims containing functional limitations. (Citing cases).

Accordingly, the Court construes the term "pre-loaded" as "loaded beforehand."

8 The Court has not adopted defendants' proposed construction that the compression must be external to the "body"; although the specification states that a tourniquet "can be used" to "externally compress" the vein, see, e.g., '433 Patent, col. 4, ll. 18-25, the specification does not include language limiting the patent to only that manner of external compression. Additionally, the Court has not included in its construction the phrase "the vein such that the inner wall of the vein," because such language is already included in Claim 1. See id., col. 19, ll. 20-21. Finally, the Court has not included in its construction defendants' proposed additional phrase "collapses into contact with the electrode device"; such language is a proposed construction of "is brought toward the working end of the catheter," which is not one of the ten disputed terms before the Court.

The plain meaning of the next disputed term, "one piece caliper," as confirmed by reference to a standard dictionary, is "a caliper constructed or formed as a single, integral piece." See Webster's Third New International Dictionary 1576 (1993). The same dictionary also identifies the plain meaning of the next disputed term, "preassembled," as simply "assembled beforehand." See id. at 1783. Likewise, standard dictionary definitions establish that the plain meaning of the terms "largely closed" and "substantially closed," used interchangeably throughout the '445 patent claims and specification, is "for the most part, to a large degree, or in the main closed." See id. at 1273, 2280.
2) "Predetermined Accurate Work Position"

The relevant portion of Claim 1 reads:

said method comprising the steps of positioning said two planar abutment surfaces of said broach cutting tool member contiguous said first planar and said second planar abutment surfaces, respectively, of said broach tool holder and simultaneously locating said bottom end surface of said broach cutting tool member on said intermediate surface of said broach tool holder whereby when said broach cutting tool member is positioned in said broach tool holder a predetermined accurate work position is established for said broach cutting tool member … '857 Patent, Col. 7, ll. 57-67.

Utica contends that the term, "predetermined accurate work position," should be given the ordinary meaning that a person of ordinary skill in the art would attribute to it. Utica asserts that "predetermined" means to determine beforehand or to settle in advance, and that "accurate" means free from error or mistake, precisely fixed, executed with care. Webster's. Utica proposes that predetermined accurate work position means "a work position that was determined in advance and in which care was taken to make it as free from error or mistake as reasonably possible." Pl.'s Post-Markman Br., p.6. Utica also relies on Roseliep's testimony that the predetermined accurate work position is determined by the designer in advance by measuring from the center axis of the tool to the planar surfaces, and then machining the planar surfaces to accurately reflect that measurement. Hearing Tr., p. 27. Utica posits that Federal Broach's President, William Martin ("Martin"), also testified that the cutting tool's work position is measured from the center axis of the cutting tool to the appropriate surface. Hearing Tr., p. 91.

Federal Broach contends, however, that predetermined accurate work position means "a position in which the tool is supported on the tool holder with the complementary planar abutment surfaces of the tool and the tool holder in engagement with one another with no clearance between the surfaces." Def.'s Post-Markman Br., p.6. To support its contention, Federal Broach relies on Claim 1's plain language, as well as the specification that "it is an object of the present invention to provide a cutting tool retention device that provides for accurate positioning of a cutting tool by eliminating any clearance between the cutting tool and the tool holder." '857 Patent, Col. 2, In. 61. Federal Broach further relies on the specification that "the accuracy in positioning the cutting tool 12 is improved because the clearance between the mounting block hole and the cutting tool, as shown in the prior art, is eliminated." '857 Patent, Col. 6, In. 45 (referencing FIGS. 1-5). Federal Broach also references Utica's statements to the PTO on two occasions that

when the broach cutting tool is mounted in a broach tool holder, the two precision planar faces of each of the broach cutting tool and broach tool holder are forced against each other by the use of the locking force applied against the oblique portion of the third planar surface locking so as to generate an accurate work position. See Def.'s Markman Br., App. C, Preliminary Amendment, Aug. 22, 2000, p. 10; PTO Prosecution History, Dec. 21, 2000, Reply, p. 8.

Utica's contention that predetermined accurate work position should be limited to its ordinary meaning is expressly contradicted by the specification's clear, unambiguous, and express language that an object of the invention is to eliminate any clearance between the cutting tool and the tool holder. In its initial brief, Utica represented to this Court that:

In other words, the flat mounting surfaces of the tool holder against which the corresponding abutment surfaces of the cutting tool will be radially positioned are fixed and not subject to accumulated clearances or tolerances that would compromise the accuracy of that location, as the wedge like device locates and locks the cutting tool into the tool holder. Because the flat mounting surfaces of the tool holder are in a fixed position, rather than fitted into a slot or bore, there is a net surface that remains in the same position as the cutting tool is located and locked into place. This creates a predetermined accurate work position not only when the tool is initially installed, but also when resharpened, refurbished, or replacement tools are positioned and locked into the tool holder. Pl.'s Br. Regarding Claim Construction, p. 9 [Emphasis added].

The Court is not persuaded that the term "predetermined accurate work position" should be given its ordinary meaning, and doubts that upon reading the '857 Patent in its entirety, particularly upon reviewing Roseliep's representations to the PTO, a person of ordinary skill in the art would ascribe the meaning for which Utica advocates. In fact, the specifications state that
"it should be appreciated by those skilled in the art that the closer the tolerance obtained in manufacturing the flat faces … the higher the accuracy of the radial positioning of the cutting tool." '857 Patent, Col. 4, ll. 27-32. Though the language of Claim 1 itself does not limit the term "predetermined accurate work position" to the elimination of clearances, this Court cannot ignore the construction Roseliep gave when he presented his invention to the PTO in order to obtain the patent. Teleflex, 299 F.3d at 1326.

The Court agrees that the term "predetermined" means determined beforehand or settled in advance. Webster's. The Court finds that Roseliep's and Martin's testimony that the cutting tool's position is measured from its center axis to the appropriate surface of the tool holder is consistent with this definition. As previously indicated, however, the specifications and the prosecution history, here in evidence, indicate that the inventor intended to deviate from the ordinary meaning of the term "accurate," by "characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Teleflex, 299 F.3d at 1327; see also Beckson Marine, Inc. v. NFM, Inc., 292 F.3d 718 (Fed. Cir. 2002)(explaining that "the inventor may act as his own lexicographer and use the specification to supply implicitly or explicitly new meanings for terms"). The inventor amended Claim 1 with the PTO to indicate that the predetermined accurate work position specifically meant that the "planar faces of the tool and tool holder are forced against each other." Def.'s Markman Br., App. C, Preliminary Amendment, Aug. 22, 2000, p. 10; PTO Prosecution History, Dec. 21, 2000, Reply, p. 8.

While adhering to the admonishment that claim terms should be given their ordinary meaning and that the limitations of the specifications should not be imported into the claim language, the Court may look to the specifications for guidance and context for claim construction, as well as to the prosecution history when it appears that the inventor offered a particular embodiment in order to obtain the patent. Ecolab, 264 F.3d at 1366 (Fed. Cir. 2001). The Court, thus, is constrained to grant a construction of the term predetermined accurate work position that includes a reference to the elimination of clearances because it appears that the inventor ascribed that meaning to the claim term in the patent's specifications, as well as in the inventor's representations to the PTO and to this Court.

The Court finds that the term "predetermined accurate work position" means the fixed placement of the tool in the tool holder. This placement is achieved by precisely measuring the distance from the surface of the center axis of the tool to the appropriate surfaces of the tool holder in advance, such that the flat mounting surfaces of the tool directly contact the corresponding surfaces of the tool holder, without any spaces in between, thereby maintaining the cutting tool's original placement until the tool is removed.

3. Predetermined Asymmetric Isodose Curves

This term appears in asserted Claims 1 and 8 of the '142 patent. For example, Claim 1 requires "the radiation source further being asymmetrically located and arranged within the expandable surface to provide predetermined asymmetric isodose curves with respect to the apparatus volume." Id. at 9:3-6. The parties propose the following constructions:

*   *   *

SenoRx asserts that its proposed definition is more consistent with the claim language. SenoRx asserts that Hologic's proposed construction, in particular "the longitudinal axis" limitation, is a limitation found in some but not all of the embodiments of the patent and thus should not be part of the construction of the term. SenoRx points to the specification that states:

The present invention solves the problems described above by providing an interstitial brachytherapy apparatus for delivering radioactive emissions in an asymmetric fashion to target tissue surrounding a surgical extraction site. . . .

Id. at 2:56-59.

In one configuration, asymmetric isodose curves are created in the target tissue by shaping or locating the radiation source so as to be asymmetrically placed with respect to a longitudinal axis of the apparatus. . . .

Id. at 2:65-3:1.
In another example, the radiation source comprises a plurality of spaced apart solid radioactive particles disposed within the apparatus volume and arranged to provide a predetermined asymmetric isodose curve within the target tissue.

Id. at 3:7-11 (emphasis added). Asymmetry in the isodose curves, SenoRx argues, need not be limited to longitudinal asymmetry. SenoRx further points to Claim 6, which explicitly requires an elongated member "shaped to provide asymmetric placement of a radiation source with respect to a longitudinal axis through the apparatus volume." Thus, asserts SenoRx, when the inventors intended to define asymmetry with respect to the longitudinal axis of the device, they did so explicitly. Finally, SenoRx points to the testimony of Hologic's expert Dr. Verhey who testified as follows:

Q. Is the radiation profile that is provided by the embodiment of Figure 3 asymmetric with respect to the longitudinal axis of the device?

A. No, actually, it's not with respect to the longitudinal axis.

Verhey Depo Tr. at 146:13-17.

Hologic asserts that SenoRx's proposed construction is incorrect. Hologic asserts that the radiation sources in the claims are arranged asymmetrically so as to not be on the longitudinal axis and it is a direct result of this arrangement that creates the "predetermined asymmetric isodose profile." Hologic looks to the specification for support, including the same language cited by SenoRx. Hologic also explains that Dr. Verhey made a mistake during his deposition.

It does appear Dr. Verhey may have made a mistake with respect to Figure 3. However, although the specification and claims frequently refer to symmetry with respect to the longitudinal axis, they do not always do so. Claim 6 does include a specific requirement that the asymmetry be longitudinal. The patentee did not do so in Claims 1 and 8. No express limitation suggests that those claims require configurations with isodose curves that are asymmetric only with respect to the longitudinal axis. The Court therefore interprets "predetermined asymmetric isodose curves" to mean "isodose curves determined before radiation is administered which are not substantially the same shape as the apparatus volume and/or not concentric with the apparatus volume."
path is stored somewhere in the memory of the control unit. Notably, the selection step requires that only one of the bevelling paths be selected from the collection. The whereby clause which states that the control means "controls the displacement of said lens in accordance with the selected intermediate path to form the edge of the lens", by its very language, also requires that the path selected from the collection be the actual bevel path that is taken when the bevelling wheel makes contact with the edge of the lens.

B. Specification

As mentioned earlier the bevel path is described in the specification as when the point of contact of the lens with said grinding wheel follows a specific path. The specification explains that by knowing the location of the reference paths, the thickness of the lens can be determined such that a bevelling path can be selected that would fall between the two reference paths.

There is nothing in the specification which discusses using equations or formulas to store, compare and select a bevel path. In describing the storing, comparing and selecting steps the specification refers to the paths as "stored typical paths" or "stored specific typical paths," suggesting that the number of paths is limited. In fact the specification also explains that "a limited number of specific typical paths can be permanently stored."

The specification also explains that the apparatus is preferably equipped with a keyboard where the operator can preselect a path from the collection of typical paths stored in the computer.

Whether stored "point by point" or by another means, the overall impression rendered from reading the specification is that the number of these stored paths is limited. This would also exclude using equations to calculate bevelling paths which could result in millions of bevelling paths.

C. Prosecution History

The arguments made in response to the rejections from the PTO do not assist the court in interpreting the meaning of the phrase "predetermined belling path."

We conclude that claim 1 is limited to storage, comparison and selection of a collection of paths that have been determined beforehand, i.e. they actually exist in the memory of the control means of the device and are not calculated from a combination of different values using equations. It is these paths in memory which will be compared to the reference paths and out of these paths will be selected the path that the bevel will take. While in practice, equations or formulas can be used in a bevelling apparatus which would require that the machine choose between different routes, that choice is not the selection of a discreet actual path for a bevel that is to be placed on the lens. That the route may be based on a characteristic representative of a bevel path is irrelevant, the literal language of the claims requires that what is stored, compared, and selected be an actual bevelling path, not a parameter or characteristic of the bevelling path.

2. Predetermined Condition.

The Court believes, contrary to Leviton, that the term "predetermined condition" is not clear on its face to one of ordinary skill in the art and that, therefore, it requires construction. The term "predetermined condition" is not specifically defined or described in the '766 patent. See The '766 Patent. The Defendants' initial proposed construction of the term is "the occurrence of a current imbalance from an actual or artificially induced ground fault." Defendants' Memo at 32.

In their initial memorandum in support of their proposed claim constructions, the Defendants' assert that the specification describes only three conditions in which the "circuit interrupting portion" would cause "electric discontinuity:" sensing an actual fault, pressing the test button, and pressing the reset button. See Defendants' Memo at 32; The '766 Patent, Col. 7, ll. 13-18; id. at Col. 7, ll. 19-23; id. at Col. 8, ll. 35-38; id. at Col. 6, ll. 8-12. The Court agrees that those are the only three conditions that the specification describes that would lead the circuit interrupting portion to cause electric discontinuity. See The '766 Patent. The Defendants, in their initial claim construction briefing, also maintain that those three conditions have
one thing in common: they create a circuit imbalance from an actual or artificially induced ground fault. See Defendants' Memo at 32-33; The '766 Patent, Col 3, ll. 1-5; see id. at Col 3, ll. 21-31.

In further support of their construction, the Defendants cite Dr. De La Ere's testimony concerning the '558 patent. See Defendants' Response at 14. The Defendants point out that Dr. De La Ere testified that "predetermined condition" meant the same thing in U.S. Pat. No. 6,040,967 ("the '967 patent") and the '558 patent, see Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d at 1334 ("We presume, unless otherwise compelled, that the same claim term in the same patent or related patents carries the same construed meaning."); August 31 De La Ere Deposition at 68:17-20; id. at 69:3-6, and that he admitted that the term "test cycle," as used therein, was synonymous with "stimulating a ground fault," see Defendants' Response, Exhibit A, Deposition of Jaime De La Ere at 149:18 (taken December 14, 2004)("December 14 De La Ere Deposition"); id. at 150:2.

Leviton contends that the '766 patent incorporates by reference the language concerning "predetermined condition" contained in the '967 patent. See Leviton's Response at 11-12. The Court concurs. See The '766 Patent at Col. 1, 12-15. With regard to "predetermined condition," the '967 patent states: "Predetermined conditions include, without limitation, ground faults, arc faults, appliance leakage faults, immersion faults and a test cycle." The '967 Patent at Col.2, ll. 25-27. Leviton also contends that "arc faults" and "test cycles" do not necessarily create or require current imbalances. See Leviton's Response at 12. The Defendants respond to that contention by noting that may be true, but pointing out that in such "open-neutral" test circumstances, the circuit interrupting portion does not cause electrical discontinuity -- because no electricity is flowing through the device -- and that the relevant claim expressly states: "A circuit interrupting portion configured to cause electrical discontinuity." Transcript at 53:9-54:18 (Fry); The '766 Patent, Claim 1. Essentially, the Defendants argue that the claim language effectively excludes "open-neutral test cycles" that do not cause current imbalances, and that, therefore, the "upon the occurrence of a current imbalance" portion of their proposed claim construction is correct. See id. The Court also notes that the proposed construction the Defendants presented at the Markman hearing replaced "ground fault" with "electrical fault," seemingly acknowledging that the '967 patent was incorporated by reference and that it allows for the possibility that the circuit interrupting portion may cause electrical discontinuity upon the occurrence of arc faults, appliance leakage faults, immersion faults, in addition to ground faults and test cycles. See Defendants' Presentation at 73.

--- Footnotes ---

1 Leviton does not discuss the circumstances surrounding such "arc faults," and thus fails to give the Court sufficient information to evaluate this element of Leviton's contention.

--- End Footnotes ---

The Court believes that the term "predetermined condition" is not clear on its face to one of ordinary skill in the art and that, therefore, construction is required. The Court finds that the '967 patent is incorporated by reference in the '766 patent, and that, as a result, it is proper to use "electrical fault," rather than "ground fault." Defendants' Memo at 32; Defendants' Presentation at 73. Moreover, the Court notes that Dr. De La Ere has testified that, for purposes of the '558 patent, "test cycle" is synonymous with "stimulating a ground fault," see December 14 De La Ere Deposition at 149:18; id. at 150:2, and that it is not disputed that ground faults create and/or require current imbalances. Further, the Court agrees with the Defendants and finds that the claim language excludes "open-neutral test cycles" that would not create or require current imbalances. As such, the Court will adopt the Defendants' proposed claim construction for "predetermined condition."
material from within the bag is discharged more freely, said engagement of the neck within the predetermined shape minimizing tearing stresses placed on the bag by the opposed members.

Plaintiff contends that "[p]roperly construed in view of the patent specification, this limitation means that:

   When the opposed members engage a bag opening to restrict discharge of material from the bag by moving the opposed members closer toward each other, the confined shape between the opposed members is substantially maintained while the confined area between the members is changed so that the opposed members engage the bag neck evenly from all sides to minimize tearing stresses on the bag. Movement of the opposed members toward each other gathers the neck of the bag so that it may be easily tied, and movement of the members away from each other enlarges the bag opening so that material within the bag is discharged more freely."

"Plaintiff's Motion For Claim Construction" (Document No. 62 at 2) (emphasis added).

Defendant contends that for claim 20 the "language should be construed to require:

   The predetermined shape (or spatial contour decided beforehand) formed between the opposed parts must be maintained (or kept in its existing shape) when the confined area between the members changes or becomes different as the members move."

"Defendant's Memorandum In Support Of Its Motion..." (Document No. 77 at 4).

Based on the same reasoning as described in the analysis above, the undersigned finds Defendant's construction more persuasive. Viewing the patent as a whole, and relying principally on intrinsic evidence, the undersigned again finds that a "predetermined confined shape" is properly construed in the context of this patent as describing a shape or contour that is preset by the apparatus and is not altered (or changed) by the functioning of the apparatus. In other words, the area of the shape created by the apparatus may enlarge or shrink with its movement, but the shape itself should remain constant.

In reaching this construction, the undersigned finds the language of the claim most instructive: "maintaining the predetermined confined shape between the opposed members while changing the confined area thereof during said movement of the opposed members..." (Patent P.8, L. 47-50) (emphasis added). As discussed in the analysis of claim 1 above, the juxtaposition of words chosen by the patent's author are telling - "maintaining the predetermined confined shape" compared to "while changing the confined area" describes a shape that is maintained, or stays the same or is constant, while in contrast the area changes.

This construction rests on the "bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." Innova, 381 F.3d at 1115. The undersigned's construction also "indulge[s] a 'heavy presumption' that claim terms carry their full ordinary and customary meaning, unless the patentee unequivocally imparted a novel meaning to those terms or expressly relinquished claim scope during prosecution." Omega Engineering, Inc. v. Raytek Corp., 334 F.3d 1314, 1323 (Fed. Cir. 2003) (citations omitted).

"Predetermined constant spacing between said inner spatial volume and radiation transparent wall"

Cytyc's proposed construction
The spacing between the inner spatial volume and the radiation transparent wall of the outer, closed, inflatable chamber, when inflated, can be made constant in all directions if the outer chamber is spherical, or constant along a radial plane if the outer chamber is not spherical

Xoft's proposed construction
(indefinite)
Xoft argues that the '813 patent is indefinite because it does not disclose how one "predetermines" the amount of spacing. Xoft points out that the spacing between the edges of the inner and outer volumes may change as parts of the apparatus are inflated or deflated, so the spacing is not constant. Cytyc's expert explained that "predetermined constant spacing" means that "the spacing between the inner spatial volume and the wall of the outer inflatable chamber can be made constant in all directions if the outer chamber is spherical, or constant along a radial direction if non-spherical, whenever the outer chamber is inflated." Su Decl. (dkt. # 49), Ex. D (Verhey Decl.) at 7 (citations omitted). Cytyc also argues that "[o]ne skilled in the art knows how to determine an appropriate 'predetermined constant spacing' and Xoft provides no evidence, testimony, or case law to the contrary. Xoft cannot possibly show that the term is indefinite by clear and convincing evidence." Reply Br. (dkt. # 53) at 15.

Because 35 U.S.C. § 282 gives a patent "a statutory presumption of validity," a challenger bears the burden of proving "by clear and convincing evidence" that a patent is invalid. Monsanto Co. v. Scruggs, 459 F.3d 1328, 1336-37 (Fed. Cir. 2006), "[P]atent documents need not include subject matter that is known in the field of the invention." S3 Inc. v. NVIDIA Corp., 259 F.3d 1364, 1371 (Fed. Cir. 2001). From the testimony of Dr. Verhey, it appears that one skilled in the art would know how to "predetermine" the amount of spacing. 5 See Tr. at 56-61, 85-89. Xoft offered no evidence suggesting otherwise. As the burden of proof is Xoft's, its indefiniteness argument necessarily fails given the absence of supporting evidence. The court will therefore adopt Cytyc's proposed construction of "predetermined constant spacing between said inner spatial volume and radiation transparent wall" modified only to make the definition easier to understand. A separate construction for "predetermined constant spacing" is not necessary.

<table>
<thead>
<tr>
<th>Claim Language</th>
<th>Court's Construction</th>
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<tbody>
<tr>
<td>&quot;predetermined constant spacing&quot;</td>
<td>(no construction necessary)</td>
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<tr>
<td>spacing predetermined by one skilled in the art between the wall or edge of</td>
<td></td>
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<tr>
<td>the inner spatial volume and the radiation transparent wall of the outer,</td>
<td></td>
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<tr>
<td>closed, inflatable chamber, when inflated, which is constant in all directions</td>
<td></td>
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<tr>
<td>if the outer chamber is spherical, or constant along a radial plane if the</td>
<td></td>
</tr>
<tr>
<td>outer chamber is not spherical</td>
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5 Xoft argues that the size of the cavity determines the size of the apparatus when fully inflated, but this alone does not determine the spacing between the inner spatial volume and the wall of the outer chamber.
one another from a hub body defining (1) a common center point and (2) an overall contact face defined in part by said bars; the contact face including outwardly-most extending ends corresponding to the ends of said bars and displaying predetermined curvatures corresponding to the outwardly-most extending ends of said bars, the predetermined curvatures of the ends of said contact face displaying radii of curvature smaller than the distance from said center point of the contact surface to the outwardly-most extending ends of said bars; each of said bars having a through hole (1) which is adapted to receive an axle bolt and (2) which extends in a direction perpendicular to said contact face such that, when the wheel structure is mounted to said vehicular axle, said contact surface is contiguous with the axle end plate.

Plaintiff first proposes construing the term "outwardly-most extending ends" as defining "a 'contact face radius' which is less than the distance from the wheel center to the outwardly-most extending ends of the contact face," (Pl.'s Br. at 31.) Plaintiff next contends that "[t]he 'contact face radius' must be the same as a 'bar radius' defined by the outwardly-most extending ends of the bars." (Id.) Finally, Plaintiff submits that "[b]oth the 'contact face radius' and the 'bar radius' must be 'predetermined', i.e., selected or determined prior to the forming (stamping) operation of the hub." (Id.)

In their brief, Defendants object only to Plaintiff's proposed location of the outwardly-most extending ends, as illustrated by reference numeral 104a in Plaintiff's edited reproduction of Figure 7. (Id. at 32.) Claim 1 requires that the "predetermined curvatures correspond[] to the outwardly-most extending ends of said bars." ('596 Patent, col. 4, ln. 12-14.) Defendants argue that the "outwardly-most extending ends of said bars" are illustrated in Figure 3 by reference numeral 47. (Defs.' Reply at 13.) Plaintiffs, however, argue that reference numeral 47 only designate the "ends" of the bars and not the "outwardly-most extending ends of said bars." (Pl.'s Sur-Reply at 13.) Plaintiff contends that Figure 3 fails to identify the outwardly-most extending ends, which Plaintiff claims are illustrated in Figure 1 by reference numeral 18 and in Figure 2 by reference numeral 36. (Id.)

Because the '596 Patent specification refers to Figure 3 reference numeral 47 as simply the "end" of the bar, ('596 Patent, col. 3 ln. 7, 14), and refers to Figure 1 reference numeral 18 and Figure 2 reference numeral 36 as the "outwardly most extending ends" of the bar, ('596 Patent, col. 2, Ins. 37-38, 58-59), the court finds that only Figures 1 and 2 designate by numerical reference the outwardly-most extending ends of the bar. Plaintiff's edited Figure 7 reference numeral 104a corresponds to Figure 1 reference numeral 18 and Figure 2 reference numeral 36 and appropriately illustrates the outwardly-most extending ends as the ends of the bar that is farthest from the center of the hub. Accordingly, the court will adopt Plaintiff's proposed construction in its entirety.

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<table>
<thead>
<tr>
<th>1. Claim 1</th>
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<tbody>
<tr>
<td><strong>Claim Language</strong></td>
<td><strong>Court's Construction</strong></td>
</tr>
<tr>
<td>&quot;the predetermined curvatures of the ends of said contact face displaying radii of curvature smaller than the distance from said center point of the contact surface to the outwardly-most extending ends of said bars&quot;</td>
<td>The outwardly-most extending ends define a contact face radius which is less than the distance from the wheel center to the outwardly-most extending ends of the contact face.</td>
</tr>
<tr>
<td></td>
<td>The contact face radius must be the same as the bar radius, defined by the outwardly-most extending ends of the bars.</td>
</tr>
<tr>
<td></td>
<td>Both the contact face radius and the bar radius must be predetermined (selected or determined prior to the forming operation of the hub).</td>
</tr>
<tr>
<td></td>
<td>The outwardly-most extending ends of said bars are the points of the bars that are the furthest from the center of the hub.</td>
</tr>
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</table>
C.

The clause of claim 1 set forth above also requires that each deposited sheet move in a "predetermined direction along a predetermined path." Weber patent, col. 9, ll. 34-35. Grapha asserts that this phrase means only that the sheets must travel on the drum axially from one end to the other along a "non-random" path, and that the plain meaning of this language does not require that the path be helical. A "non-random" path ensures that each sheet will be properly positioned with respect to subsequent sheet feeding units or other elements of the machine, and arrives at the proper time and in the proper alignment. Hence, the path may be, but is not required to be, helical.

Ferag reads this language in the Weber patent as requiring a helical path because the only path described in the Weber patent is a helical path, and in fact, no other path could be created because in the Weber machine, there is constant axial and rotational movement. Ferag points out that the patent specification states, "a sheet transporting device which serves to advance folded sheets in a predetermined direction (preferably along a helical path)" and further states, "moving the sheets on the carriers in parallelism with the axis so that the sheets advance along the aforementioned helical path." Weber patent, col. 3, ll. 11-14, 48-50.

Grapha responds that Ferag's reading violates the doctrine of claim differentiation, which requires that claims should be presumed to cover different inventions. Claim 20 of the Weber patent claims "the machine of claim 1, wherein said path is a helical path." Because Claim 20 claims a "helical path," the "predetermined path" in Claim 1 cannot mean "helical": "An interpretation of a claim should be avoided if it would make the claim read like another one." Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir. 1991).

The doctrine of claim differentiation is not a hard and fast rule, however; indeed, "if a claim will bear only one interpretation, similarity will have to be tolerated." Id. In the Weber patent, a "helical" path is the only interpretation the element "predetermined path" can bear. The Weber patent teaches against changing the direction of the sheets, and therefore, requires a continuous rotational and axial movement, which results in a helical path. Although the patent does state that a helical path is "preferable," there is no other path that could be created by application of the Weber patent.

As interpreted, this element does not read onto the IPEX machine either literally or under the doctrine of equivalents. Ferag's IPEX machine moves sheets in a stepwise fashion, not helical. The axial motion of the sheets is not continuous in the IPEX machine. Indeed, during 75% of a revolution, the sheets do not move axially, only circularly. Axial and circular motion occur together in less than 25% of a revolution, which creates only a small section of a helix. May 15, 1996 Trial Tr. at 48 (Felix direct). Therefore, there is no literal infringement.

Even under the doctrine of equivalents, there is no infringement because there are substantial differences between a stepwise path and a helical path. Principally, the stepwise path allows for the alignment of sheets because the absence of continuous axial movement permits the operator of the IPEX machine to monitor the quality of the gathered product. One of the major advantages of the IPEX machine is its ability to monitor product integrity throughout the binding process. See Pl.'s Ex. 395 (Field dep. at 20-21). Furthermore, the stepwise path avoids the problem of having axial movement on the bottom side of the drum, where the sheet would rub against the belts. Therefore, Grapha's helical path and Ferag's stepwise path are substantially different in manner and in result.

e. "Predetermined Distance"

The fifth term requiring construction in Claim 1 is "predetermined distance." Claim 1 recites a "yieldable means, including a plug, frictionally held, for positioning an element more proximate the distal end a predetermined distance from the distal end." ('760 Patent col. 5, ll. 46-48.) This phrase is also used in Claim 9, which refers to "a generally cylindrical end plug frictionally held in the distal end having a rearward end extending from the distal end a pre-determined distance." Id. at col.
The World Wide Plaintiffs maintain that an important feature of their invention is the consistent positioning of the first seed in the needle assembly, unlike prior art which was notoriously unreliable in this regard. Thus, for the positioning to be consistent, the measurement must be determined beforehand. AnazaoHealth argues that its construction is compelled by the description of the invention and its prosecution history, which repeatedly refer to predetermined distance as being an exact distance back from the extreme distal end of the needle tip. Id. at col. 3, ll. 61-64. The Terwilliger Plaintiffs, in their response to this argument in Claim 9, assert that AnazaoHealth's definition improperly imports an exactness requirement, despite the fact that all manufacturing processes have some degree of reasonable and necessary tolerance. Additionally, they argue that the "predetermined distance" is not necessarily limited to the extreme end of the distal tip.

The specification describes the invention as "exactly locat[ing] the first seed a repeatable and known distance from the distal end of the cannula," id. at col. 2, ll. 27-29, the clear implication being that the distance was known beforehand. One of the claimed advantages of the invention is that the needles can be preloaded, which would require knowing the spacing of the seeds beforehand.

The normal definition of "predetermine" is "to determine beforehand." Webster's at 1786. Nothing in the specification defines "predetermined" in a non-standard way. The Court agrees with the World Wide Plaintiffs that the ordinary and customary meaning of "predetermined" to one skilled in the art would be something that is specified or determined beforehand. See Crystal Semiconductor Corp. v. TriTech Microelectronics Inl'l, Inc., 246 F.3d 1336, 1350 (Fed. Cir. 2001) (holding that "predetermined distance" meant "a distance that is determined before the fourth conductive layer is disposed on the substrate and is sufficiently close to the second shielded conductive layer to provide acceptable shielding"); Koito Mfg. Co. v. Turn-Key-Tech, LLC, 381 F.3d 1142, 1150 (Fed. Cir. 2004) (construing the phrase "predetermined general direction" as requiring that the flow direction be chosen or known beforehand, or in other words, as requiring intent or foreknowledge in the fixing of the flow direction); Precor Inc. v. Fitness Quest, Inc., No. C05-0993L, 2006 U.S. Dist. LEXIS 63244, 2006 WL 2469123, at *5 (W.D. Wash. Aug. 23, 2006) (construing "predetermined distance" as "a distance determined beforehand"); Garmin Ltd. v. Tomtom, Inc., No. 06-C-0062-C, 2006 U.S. Dist. LEXIS 61187, 2006 WL 6005801, at *32 (W.D. Wis. Aug. 24, 2006) (defining predetermined as "specified").

The Court finds that it unnecessary to add to the construction "the distance from the distal and of the cannula," as urged by the Terwilliger Plaintiffs, or "back from the extreme distal end of the needle tip," as suggested by AnazaoHealth. Both Claims 1 and 9 reference a "predetermined distance" from the distal end. Therefore, to add this language referring to the distance from the distal tip would be redundant.

The more difficult issue is whether the construction of "predetermined distance" should include the concept of exactness as urged by AnazaoHealth and whether including this term would inject an ambiguous term. The World Wide Plaintiffs maintain that it is not the "exact" distance that the first seed is located from the distal end of the cannula that must be determined beforehand; rather, the positioning of the first seed only needs to be precise and repeatable from assembly to assembly during the same procedure. The Terwilliger Plaintiffs raise concerns that AnazaoHealth's requirement of exactness would not permit any tolerance in the measurement of the predetermined distance, including any manufacturing tolerances.

AnazaoHealth's position finds considerable support in the specification, which repeatedly uses the words "exact," "exactly," or "precise" to describe the positioning of the plug and the first seed.

The needle assembly of the invention exactly locates the first seed repeatable and know distance from the distal end of the cannula in each needle . . . ("760 Patent col 2, ll. 26-30.)

The end plug . . . is positioned at an exact length back from the extreme distal end of the tip . . . This distance is critical and does not vary from assembly-to-assembly. Id. at col. 3, ll. 61-65.

It will be understood that the exact positioning of the rear end surface 32a at the pre-established distance back from the tip . . . The arrangement of the present disclosure enables the operator to be assured of the precise positioning of the front end of the first seed . . . Id. at col. 4, ll. 33-41.
Thus, in the 6a, 6b, and 6c embodiment, the first seed 28 is positioned precisely. . . . Id. at col. 5, ll., 12-13.

Here again, the rearward surface 332a is the means for precise positioning of the forward end of the first seed. Id. at col. 5, ll. 26-28.

The difficulty the Court has with AnazaoHealth's proposed construction that includes the term "exact" is that "exact" is a relative term. Including it in the construction of "predetermined distance" only serves to interject ambiguity into the claim. 20 The Court has reviewed countless number of patent cases involving the phrase "predetermined distance," and in the vast majority of cases, no construction of this phrase was even required. See, e.g., Gemtron Corp. v. Saint-Gobain Corp., 572 F.3d 1371, 1375 (Fed. Cir. 2009); Helena Labs. Corp. v. Alpha Scientific Corp., 274 Fed. Appx. 900, 903 (Fed. Cir. 2008); Intamin Ltd. v. Magnetar Technologies, Corp., 483 F.3d 1328, 1332 (Fed. Cir. 2007). The Terwilliger Plaintiffs argue that including the word "exact" eliminates all manufacturing tolerances. The Federal Circuit, however, has held that manufacturing tolerances are "immaterial to claim construction." Senmed, Inc. v. Richard-Allan Medical Indus., Inc., 888 F.2d 815, 820 (Fed. Cir. 1989)(internal citation omitted), disapproved of on other grounds by Cardinal Chem., Co. v. Morton Intl, Inc., 508 U.S. 83, 113 S. Ct. 1967, 124 L. Ed. 2d 1 (1993). The Court finds that one of ordinary skill in the art would construe "predetermined distance" as "a measurement that is specified or determined beforehand," and that no further "exactness" standard needs to be read into this claim term.

20 What is an "exact predetermined distance" as opposed to a "predetermined distance"? If the distance is specified beforehand, does that not define what is the "exact" distance? For example, if the physician specifies beforehand that the first seed is to placed 5 mm. from the distal end of the cannula, or 5.2 mm., or 5.225 mm., or whatever distance, does that not determine how exact the measurement must be?

3055

D. Predetermined General Direction

The parties dispute the meaning of "predetermined general direction," which appears in steps (a), (d), and (g) of claims 1 and 21. Step (a) recites "injecting a quantity of first plastic into the first mold cavity so that the first plastic flows in the first-layer-defining-mold-cavity-section in a first predetermined general direction." '268 Patent, col. 8, lines 19-22 (claim 1); col. 10, lines 61-64 (claim 21) (emphasis added). Step (d) recites "injecting a quantity of second plastic into the second mold cavity so that the second plastic flows in a second predetermined general direction . . . " Id. col. 8, lines 30-36 (claim 1); col. 11, lines 4-10 (claim 21) (emphasis added). Step (g) of claim 1 recites "directing the first plastic into the first-layer-defining-mold-cavity-section via the first-cavity-flow-channel, so that the first plastic flows in the first-cavity-flow-channel in a direction which is positively different from said first predetermined general direction." Id. col. 8, lines 56-61 (emphasis added). Similarly, step (g) of claim 21 recites "directing second plastic [sic] in the second-layer-defining-mold-cavity-section via the second-cavity-flow-channel, so that the second plastic flows in the second-cavity-flow-channel in a direction which is positively different from said second predetermined general direction." Id. col. 11, lines 30-55 (emphasis added).

The parties agree that "predetermined general direction" is not a term of art in injection molding, and therefore the ordinary meaning of the claim term controls, absent some indication that the patentee used this term in a fashion inconsistent with its customary meaning. The patent does not specifically define this term in either the written description or the claims themselves, and the parties have not presented the court with any evidence that the patentee limited this term during prosecution. Thus, the court will look to a standard English dictionary to help provide the customary meaning of this claim term.

The dictionary defines "predetermined" as "determined beforehand," Oxford English Dictionary (2d Edition 1989), and "general" as "applicable to or characteristic of the majority of individuals involved: prevalent," Webster's Ninth New Collegiate Dictionary 510 (1986). Therefore, the ordinary meaning of "predetermined general direction" is the prevalent
direction of plastic flow, and the ordinary understanding of the term further requires that the prevalent direction be determined before injection of the liquid plastic into the mold cavity. While it does not provide an explicit definition of the term, the written description is consistent with the ordinary meaning of predetermined general direction. The patent teaches that the direction of flow out of the flow channel and into the layer-defining-mold-cavity-section is largely a function of the relative cavity thicknesses in the first mold cavity. E.g. '268 Patent, col. 4, lines 38-40. Thus, according to the teachings of the patent the mold cavity design, together with the injection parameters, can -- and in the claimed invention, must -- be arranged to result in a predetermined prevalent flow direction. The preferred embodiments provide further support for a construction of "predetermined" as "determined beforehand." As Koito notes, the preferred embodiments have first and second flow records in the cross-laminated section that are at right angles to each other. See id. at col. 4, lines 11-22. 4 While the invention is not limited to the ninety degree angles of the preferred embodiments, the specificity of the angles called for in the preferred embodiments nevertheless demonstrates that the invention involves distinct flow directions determined in advance.

4 As discussed in the court's construction of "flow record," below, the first and second predetermined general directions of flow are preserved in the first and second flow records.

Turn-Key objects that this definition of "predetermined" improperly injects an intent element into the infringement inquiry by requiring proof of the mental state of the mold designer. Turn-Key's objection is without merit. It is true, of course, that "there is no intent element to direct infringement" of a patent. Intel Corp. v. United States Int'l Trade Comm'n, 946 F.2d 821, 832 (Fed. Cir. 1991). This simply means that a patent may be infringed regardless of whether the accused infringer intended to copy the patented design--or even knew of the patent at all. The issue of intent to infringe, and the cases cited by Turn-Key on this point, are simply irrelevant to the problem facing the court today, which involves interpretation of a claim limitation that expressly requires a particular direction to be "predetermined." The patentee chose this wording during prosecution, and there is no indication that he used the word inconsistently with the ordinary meaning discussed above. That meaning requires that the flow direction be determined prior to injection of the plastic into the mold.

For the reasons discussed above, the court construes "predetermined general direction" as the prevalent direction of flow determined before injection of the liquid plastic into the mold.
prosecuted based upon an understanding that incubation period meant time.

* Alternatively, Lifespan argues, based on the specification, that even if the patent is construed to refer to a time period, the length of the predetermined time period may depend on the glucose concentration that it encountered during the test (20 seconds for one concentration and 30 seconds for another), and that "predetermined incubation period" should be construed to include a choice of a time period that is affected by the results of the test while it is being conducted. Whether or not that is so, there is no contention here that the allegedly infringing product requires a choice to be made among predetermined time periods known in advance. Rather, the time period for the test in the allegedly infringing method is constantly variable, depending on the conditions encountered during the test.

5. Predetermined Minimum Safety Distance

The fifth disputed claim term "predetermined minimum safety distance" is found in Claims 1 and 35 as set forth above.

Erbe's Proposed Definition: The minimum distance between the electrode and the tissue to be coagulated that allows the electrode to operate in a safe manner.

Canady's Proposed Definition: A sufficient distance to prevent an electrode from coming into contact with the tissue under any circumstances; the distance being greater than 2 mm.

(Docket No. 42, p. 5). From the claim language itself, it is evident that the electrode cannot come in contact with the tissue. See, (Docket No. 42, Ex. 11, col. 1, II. 35-37 and col. 15, II. 44-46). As a result, I agree with Canady to the extent that the term is construed to mean the minimum distance to prevent an electrode from coming into contact with the tissue.

I do not agree with Canady, however, that the term should be construed with the further limitation of "the distance being greater than 2 mm." Canady's looks to the prosecution history to support this limiting definition. (Docket No. 66, pp. 25-26). After a review of the cited documents (Docket No. 63, Exs. 16 and 17), I am not persuaded that Erbe characterized the predetermined minimum safety distance as being greater than 2 mm. Consequently, I construe the claim term "predetermined minimum safety distance" to mean the minimum distance to prevent an electrode from coming into contact with the tissue.

3059

i. "Predetermined Number of Cardiac Cycles"

The crux of the Parties' dispute regarding this element is the meaning of the term "predetermined number of cardiac cycles." Specifically, Medtronic argues that the ordinary meaning of the word "cycles" and the specification support an interpretation requiring more than one cardiac cycle. Guidant, on the other hand, proffers a definition in which "cardiac cycles" encompasses both the singular and the plural of the word "cycle." Guidant argues that under the rules of grammar, a plural noun may refer to a set that includes only one item. For support, Guidant relies on Astra Aktiebolag v. Andrx Pharms., Inc., 222 F. Supp. 2d 423, 469 (S.D.N.Y. 2002).

The plural form of a word "pertain[s] to more than one." The Random House College Dictionary 1022 (rev. ed. 1982). Thus, the ordinary meaning of the word "cycles" means more than one cycle. At the Markman hearing, Guidant argued: "Just as it is appropriate to say 'one or more apples' and grammatically incorrect to say 'one or more apple,' it would have been incorrect for the claim to recite 'a predetermined number of cardiac cycle.'" Guidant Exh. 67 at GR08.14. Guidant's
argument is misplaced. The claim does not state "one or more cardiac cycles." Had the claim included that language, there
would be no question that the claim was intended to include the singular.

The Court finds that the instant patent can be distinguished from the patents at issue in Astra, the case relied upon by
Guidant, because the Astra patents stated that the inventions required "one or more layers of materials," and "one or more
layers comprising materials." Astra, 222 F. Supp. 2d at 469. The Astra court found that even though the term "materials"
was used, the patents were clearly intended to include the singular, and that the plural form was merely used to "comply
with grammatical correctness." Id. This is not the case with the '836 Patent: the patentee did not state "one or more cardiac
cycles." Therefore, unless the specification clearly indicates that "cardiac cycles" was intended to include the singular, the
ordinary meaning will control.

As discussed above, the specification includes three different preferred embodiments. All the embodiments state that pacing
is conducted for "consecutive" cardiac cycles. See '836 Patent, 8:35-36; 9:5-6, 29. The term "consecutive" implies that
pacing for more than one cardiac cycle is required for stabilizing the cardiac rate of the heart before shock. The Court is
aware that it may not limit the claim language by importing limitations from the specification. See Tex. Digital Sys., Inc. v.
Telegenix, Inc., 308 F.3d 1193, 1204 (Fed. Cir. 2002). The Court merely cites this specification language to demonstrate that
in the context of the patent, the ordinary meaning of the word "cycles" makes sense. See Renishaw PLC v. Marposs Societa'
per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998).

Guidant also argues that the use of the open variable "N" in figures two through four of the patent indicates that any number
of cardiac cycles may be chosen, including one. The Court agrees with Guidant that "N" is an open ended variable, and that
"N" does not necessarily imply that any certain number of cardiac cycles must be employed. However, the Court does not
agree that in the context of this patent, "N" can represent only one. The ordinary meaning of the "cycles" precludes that
interpretation, and the intrinsic evidence supports this ordinary meaning.


The parties disagree about the meaning of "predetermined" and "expected." Curiously, Innovatron urges a narrow reading
under which, "predetermined operations' and 'predetermined expected response' are technical terms and mean operations
and responses, respectively, that are established at the time of design and do not change over time." Innovatron's Prop. Or.

Thomson, on the other hand, argues that:

'Predetermined' means 'determined beforehand.' 'Expected' means 'predicted' or 'to look forward to the probable
occurrence or appearance of.' Neither word requires a determination at the time of the design of the electric device which
cannot change over time.

Thomson's Prop. Or.

The ALJ adopted Innovatron's narrow construction. The Commission disagreed. "We find nothing in the specification or the
claim that indicates that predetermined operations must be established at the time of design." ITC at 8. "We believe
'predetermined' should be construed to have its ordinary dictionary definition." "Accordingly, we construe 'predetermined' to
mean determined or decided in advance." ITC at 9. "We also disagree with the ALJ's construction that 'expected' means 'not
changing over time.' We find no indication in the patent that expected should be construed other than in accordance with its
ordinary dictionary meaning." "Taking these definitions together, we construe 'expected' in the phrase 'a predetermined
expected response' to mean a response that is predicted to occur." ITC at 9.

The burden is on Innovatron to show that "predetermined operations" and "predetermined expected response" are technical
terms narrower in scope than when used ordinarily. Innovatron argues that these "are not terms that one normally confronts
in everyday conversation." Innovatron's Post-Hrg. Reply at 22. Innovatron argues that this observation justifies reliance on
extrinsic evidence. Innovatron then relies on Dr. Kuc's testimony to support its argument.
The Court will not go down that path. Innovatron cites no authority for the proposition that a term not frequently used in conversation must be a term of art. On the contrary, "absent a special and particular definition created by the patent applicant, terms in a claim are to be given their ordinary and accustomed meaning." Renishaw, 158 F.3d at 1249. Nothing in the claim language, the specification, nor the prosecution history indicates that Moreno intended a "special and particular definition" to attach to these terms. Moreover, reading "predetermined" to mean "determined beforehand" and "expected" to mean "predicted" is entirely consistent with the purpose of the method and the specification. 7

7 Independently, the Court has considered and rejected two arguments that would support Innovatron's reading. First, it may have been that in 1978 "predetermined" meant at the time of design because the technology required that the system be hard wired. However, no persuasive evidence was introduced to compel that result. Second, the term "predetermined expected response" is potentially redundant when given its ordinary meaning. The term "expected" implies that a determination or prediction has been made prior to receipt of the response. That being so, "predetermined" only makes express a necessary implication of the term "expected." However, "predetermined" does not require "at the time of design," and the Court is persuaded that "predetermined" adds enough by requiring that the "expectation" arise from a conscious prediction to find that giving the terms their ordinary meaning does not produce a redundancy.

9. **Predetermined pattern of slits**

FieldTurf's Proposed Construction: "An arrangement of openings, cuts"

SCG's Proposed Construction: "An arrangement of longitudinal openings placed according to a plan established before the longitudinal openings are created"

SCG's Proposed Construction of "pattern of slits": "An arrangement of openings along a longitudinal axis before the arrangement is produced"

SCG's Proposed Construction of "predetermined": "According to a prior plan"

SCG's Proposed Construction of "slit": "Opening formed by slicing a frayed sheet along a longitudinal axis"

The Court's Claim Construction: "An arrangement of openings or cuts according to a prior plan"

The various SCG constructions of "predetermined pattern of slits," "pattern of slits," "slit" and "predetermined" all boil down to the overall concept of a predetermined pattern of slits as "an arrangement of longitudinal openings placed according to a plan established before the longitudinal openings are created." FieldTurf essentially omits the "predetermined" aspect of the claim in its definition, dismissing it with the general argument that "predetermined" improperly places a temporal aspect into the claim and that it is lacking support in the specification. However, the "predetermined" limitation is in the claims because FieldTurf put it there. It cannot now complain that predetermined requires the "pattern of slits" to be "predetermined." The Court also finds that SCG's proposed construction of predetermined as "according to a prior plan" is appropriate. The Court of Appeals for the Federal Circuit has given predetermined a similar meaning. Planet Bingo, LLC v. Gametech Int'l, 472 F.3d 1338, 1344 (Fed. Cir. 2006) (holding that a "predetermined winning combination" for a game requires a "winning combination before the game begins"); Pause Tech. LLC v. TiVo Inc., 419 F.3d 1326, 1335 (Fed. Cir. 2005) (holding that "the district court properly construed 'time interval of predetermined duration' to mean that the duration of the time interval for recording signals into the buffer memory must be fixed prior to operation"); Koito Mfg. Co. v. Turn-Key-Tech, LLC, 381 F.3d 1142, 1150 (Fed. Cir. 2004) (explaining that predetermined "connotes an element of forethought and planning"). However, the Court declines to adopt SCG's proposed definition for a "predetermined pattern of slits" because it includes unnecessary and redundant language such as longitudinal, which is set out earlier in the same claim phrase. Accordingly, the Court construes a "predetermined pattern of
slits as "an arrangement of openings or cuts according to a prior plan".

3062

As to the term "predetermined plunger performance," again the initial focus is on the word "predetermined." The ordinary meaning of "predetermine" is "to determine beforehand." Webster's, supra, at 1786. This is the meaning consistent with that found by Special Master Williams in construing the separate phrase "predetermined . . . time increment," Markman Report at 23, and we conclude that it is also the meaning that should apply to the phrase "predetermined plunger performance."

The written description is consistent with this construction, noting that an operator may set a window for operation beforehand. '991 patent, col. 10, ll. 2-6. We disagree with the district court's implicit conclusion that "predetermined plunger performance" necessarily has the same construction as "normal plunger performance." Predetermined in this context simply means determined beforehand, and may include performance that is normal or subject to correction. The coincidence of a particular predetermined window with a good window is irrelevant. There is no requirement, either in the claim itself or in the written description, that the values selected beforehand in the limitation "predetermined plunger performance" must represent the good window, as with "normal plunger performance." There is also nothing in the claim language, written description, or prosecution history to require that the upper and lower values that define the window of "predetermined plunger performance" be set independently of each other. The values must just be determined beforehand.

3063

(a) '575 Patent, Claim 21

A proportional positive airway pressure apparatus for delivering pressurized breathing gas to an airway of a patient, said apparatus comprising:

- a gas flow generator;

- a patient interface adapted to couple said gas flow generator to an airway of a patient;

- a sensor adapted to detect at least one physiological condition of such a patient, wherein said physiological condition is suitable for use to differentiate between an expiratory phase and an inspiratory phase of a breathing cycle of such a patient and to output a signal indicative thereof;

- a pressure controller associated with at least one of said gas flow generator and said patient interface to control a pressure of said breathing gas provided by said gas flow generator;

control means for controlling said pressure controller so as to cause said breathing gas to be delivered to such a patient at a first pressure level during at least a portion of said inspiratory phase of said breathing cycle and in accordance with a predetermined pressure profile during said expiratory phase of said breathing cycle, wherein a shape of said predetermined pressure profile is set independent of any monitored respiratory characteristics of such a patient.

* * *

2. Predetermined Pressure Profile

This phrase is found in Claims 21 and 43 of the '575 Patent.

Phrase: Predetermined Pressure Profile

Construction: This phrase is not part of the means plus function language.
Reasoning: The dispute between the parties regarding construction of this phrase is the extent to which section 112, P 6 applies. Defendant contends that no structure in the specification is linked to the "Predetermined Pressure Profile", making the claim fatally flawed. Plaintiff claims that "Predetermined Pressure Profile" is not part of the means plus function language, and is to be construed in accordance with standard claim construction standards.

Limitations contemplated by section 112, P 6, often referred to as means-plus-function or step-plus-function limitations, recite a specified function to be performed rather than the structure, material, or acts for performing that function. Such limitations are "construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112, P 6 (1994); IMS Technology, Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1429-30 (Fed. Cir. 2000). In claim 21, the recited function consists of controlling said pressure controller. The claim recites no structure supporting the means for performing that function. Therefore, in accordance with § 112, P 6, the means is construed to cover the disclosed structure, PPAP circuitry, and its equivalents. We reject defendant's argument that the "Predetermined Pressure Profile" is part of the means plus function language. Rather, we find that it is not part of the steps that perform the recited function of controlling, and is therefore not subject to construction under section 112, P 6.

5. "Predetermined Rate"

Claim 59 recites, in part, "engaging said clutch at a predetermined rate to transfer torque from said primary drive line to said secondary drive line" and "disengaging said clutch at a predetermined rate to substantially inhibit torque transfer from said primary driveline to said secondary driveline." The dispute regarding this claim is over the meaning of the term "rate."

BorgWarner:

A "predetermined rate" is a preset time for each step of the clutch engagement and disengagement. (Plaintiff's Markman Brief, at 27).

NVG:

A pre-set change in the clutch engagement or disengagement per pre-set time interval. (Markman Brief of NVG, at 27).

Here, the parties claim to agree that a rate is defined as a relationship between two variables, but apparently disagree as to what those two variables are. BorgWarner contends that they are the number of times the clutch engagement is changed -- a potential number of steps -- and a period of time. NVG, on the other hand, argues that the rate must involve the force or pressure of clutch engagement and a period of time.

BorgWarner defines "predetermined rate" as a pre-set number of steps that can occur per a unit of time. In the specification, it is explained each step lasts 30 milliseconds before the engagement level can be changed. As a result, in BorgWarner's interpretation, the clutch engagement may be changed at a rate of 200 times per minute. NVG adds to this ratio the "amount of clutch engagement," interpreting the rate to involve the act of engagement, the pressure or force of the engagement, and the time period. At the same time, NVG allows that the term "rate" refers to a relationship between only two variables. (Post Markman Hearing Brief of NVG, at 12). This would allow for BorgWarner's interpretation: the variables would be the number of engagement steps and the period of time. Clutch force or pressure would be a third variable. Accordingly, we construe this claim as the number of engagement steps that can occur per a unit of time.

A. Construction of the "Predetermined Sequence" Limitation As Originally Recited

As explained more fully below, after examining the claims of the '444 Patent as recited in the original issue, the specification, and the prosecution history that led to the '444 patent, the Court concludes that the "predetermined sequence"
limitation as originally recited in independent claims 1, 14 and 25 means:

the order in which eggs are released from the egg-carrying conveyor so that each released egg drops into the receiving station for the egg's particular grade, the order being defined before the eggs arrive at the locations from which they are released.

Additionally, the Court interprets the "predetermined sequence" limitation in dependent claim 30 to mean an order that causes eggs to drop into particular receiving stations and that also effects an equal distribution of released eggs across the width of the receiving station.

1. Examination of the Claim Language

The '444 Patent as originally issued contains four independent claims. 4 Three of those claims -- apparatus claim 1, apparatus claim 14, and method claim 25 -- contain similar language: in the preamble, the three claims recite that eggs are conveyed "to a receiving station . . . at which the eggs are packaged according to their . . . physical characteristics"; in the body, they recite that eggs having the same physical characteristics are released "in a predetermined sequence" at that receiving station. 5

4 "Claims can either be independent or dependent. An independent claim does not refer to any other claim of the patent and is read separately to determine the scope of the patent." Baracuda Int'l Corp. v. Hoffinger Indus., Inc., 4 F. Supp. 2d 1188, 1193 (N.D. Ga. 1998); Pave Tech., Inc. v. Snap Edge Corp., 952 F. Supp. 1284, 1295 (N.D. Ill. 1997).

5 Independent apparatus claim 14 recites in relevant part:

An apparatus for delivering eggs to a receiving station of an egg grading apparatus at which the eggs are packaged according to their individual physical characteristics, comprising:

. . .

means, disposed on said frame means, for actuating said releasable egg-engaging means when said egg-engaging means are conveyed to said receiving station so as to release eggs having the same physical characteristics from said egg-engaging means in a predetermined sequence at said receiving station,

. . .

'444 Pat., col. 15, ln. 16-19, 26-31.

The fourth independent claim, method claim 29, recites, in the preamble, steps for transferring eggs from a variable speed conveying means to a receiving station, and also recites, in the body, steps for "providing a plurality of egg receiving means at the receiving station" and "releasing the eggs at a point prior to the egg receiving means." Dependent method claim 30, which refers to claim 29 and thus incorporates all of the limitations or words of claim 29, 6 includes a "predetermined sequence" limitation. 7

6 "[A] dependent claim refers to at least one other claim in the patent and thus incorporates all of the limitations or words of that other claim to which the dependent claim refers. Accordingly, to determine what a dependent claim covers, both the dependent claim and the claim or claims to which it refers must be read." Johns Hopkins Univ. v. CellPro, 894 F. Supp. 819 (D. Del. 1995).

7 Dependent method claim 30 recites:
The method of claim 29, wherein the step of releasing the eggs comprises releasing the eggs successively from the conveyor means at the receiving station in accordance with a predetermined sequence in order to effect an equal distribution of the released eggs across the width of the receiving station.

'444 Pat., col. 118, ln. 5-10.

Giving the language used in independent claims 1, 14, and 25 its ordinary meaning, see Desper Products, Inc. v. QSound Labs, Inc., 157 F.3d 1325, 1336, 48 U.S.P.Q.2D (BNA) 1088 (Fed. Cir. 1998), the Court preliminarily construes the term "sequence" as used in the phrase "predetermined sequence" to mean "the order in which the eggs are released from the egg-carrying conveyor so that each released egg drops into the receiving station for the egg's particular grade," and the term "predetermined" to mean that the sequence is determined "before the eggs arrive at the locations from which they are released."

The "predetermined sequence" limitation in dependent method claim 30 further recites steps for achieving "equal distribution" of eggs across the width of a receiving station. Giving the language in dependent claim 30 its ordinary meaning, therefore, the Court preliminarily interprets the term "sequence" in that claim to mean "the order in which the eggs are released from the egg-carrying conveyor so that each released egg drops into the receiving station for the egg's particular grade and so that released eggs are evenly distributed across the width of a receiving station." The term "predetermined" has the same meaning in dependent claim 30 as it does in independent claims 1, 14, and 25.

2. Review of the Specification and Prosecution History

"Although words in a claim are generally given their ordinary and customary meaning, a patentee may . . . use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history." Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2D (BNA) at 1577. The Court therefore reviews the specification and the prosecution history to determine whether a special definition of the phrase "predetermined sequence" is clearly stated. See id.

A review of the specification and prosecution history reveals that the patentee did not use the phrase "predetermined sequence" in an uncommon way, and, consequently, the Court finds that the inventor intended to give the phrase its ordinary meaning. Plaintiffs, however, argue that the only embodiments described in the specification disclose "receiving means" that are divided into channels, and that the specification therefore must be read to limit the phrase "predetermined sequence" to mean the sequence in which eggs are released into particular channels of a particular receiving station. 8 (Pls.' Br., Doc. # 113 at 10-12.)


Plaintiffs' argument misapprehends the principle that claims are interpreted in light of the specification. "Although the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims." Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186, 48 U.S.P.Q.2D (BNA) 1001, 1005 (Fed. Cir. 1998) (quoting Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1571, 7 U.S.P.Q.2D (BNA) 1057, 1064 (Fed. Cir. 1988)). Moreover, the specification expressly states:

the invention has been described with reference to specific exemplary embodiments thereof. It will, however, be evident that various modifications and changes may be made thereunto without departing from the broader spirit and scope of the invention as set forth in the appended claims. The specification and drawings are, accordingly, to be regarded in an
illustrative rather than in a restrictive sense.

'444 Pat., col. 13, ln. 44-52. Accordingly, the Court declines Plaintiffs invitation to limit the phrase "predetermined sequence" to the embodiments set forth in the specification.

In sum, because neither the patent specification nor prosecution history set forth a special definition of the phrase "predetermined sequence," the Court gives the phrase its ordinary meaning as stated above.

B. Construction of the "Predetermined Sequence" Limitation After Reexamination

The '444 Patent was reexamined twice. As explained more fully below, the Court construes the "predetermined sequence" limitation after reexamination to mean the following: In claims 14-16, 19-22, 33-35, 38, 41-43, 67-69, 72, 74 and 76, the phrase "predetermined sequence" means:

the order in which eggs are released from the egg-carrying conveyor so that each released egg drops into the receiving station for the egg's particular grade, the order being based on the stored physical characteristics of the eggs and defined before the eggs arrive at the locations from which they are released.

Additionally, the Court concludes that for claims 25-28, and 56 the "predetermined sequence" limitation means an order that determines into which receiving station each egg drops and also "effects an equal distribution of released eggs across the width of the receiving station." In claim 44, 45 and 48-51, the phrase "predetermined sequence" means:

the order in which eggs are released from the egg-carrying conveyor so that each released egg not only drops into the receiving station for the egg's particular grade but also drops into a different channel than an adjacently conveyed egg is dropped when adjacent conveyed eggs have substantially the same physical characteristics, the order being based on the stored physical characteristics of the eggs and defined before the eggs arrive at the locations from which they are released.

In claims 54 and 55, the phrase "predetermined sequence" means:

the order in which eggs are released from the egg-carrying conveyor so that each released egg drops into the receiving station for the egg's particular grade, the order being defined before the eggs arrive at the locations from which they are released.

1. Examination of the Reexamined Claim Language

During the first reexamination (the "B1 Reexamination"), Defendant amended claims 14 and 25 and added several new claims. 9 All the amended and new claims include a limitation that eggs are released in a "predetermined sequence." The new and amended claims use the limitation in the same manner in which the original patent claims used the limitation, and the Court therefore interprets the phrase "predetermined sequence" in the new and amended claims in accordance with its ordinary meaning, as set forth above.

9 The new independent claims are apparatus claims 33 and 44 and method claims 54 and 56.

After the B1 Reexamination, two more reexamination requests were filed. The Patent and Trademark Office merged the requests into a single reexamination (the "B2 Reexamination"). See 37 C.F.R. § 1.565(c). Defendant again amended the '444 Patent during the B2 Reexamination, and added to some of the claims a limitation that the order in which the eggs are released is based upon their stored physical characteristics. 10 The meaning of the phrase "predetermined sequence," however, remained unchanged.
10 First, Defendant amended claims 1, 14, 25, 33, 44 and 56 to recite a new limitation regarding storage of the measured physical characteristics of the eggs and release of the eggs "in a predetermined sequence" based on the stored characteristics.

Second, Defendant amended claims 25 and 56 to recite a new limitation that the eggs are released in a "predetermined sequence" in order "to effect equal distribution" across the width of the receiving station.

Finally, Defendant amended claim 44 to add a limitation that the receiving station has a plurality of adjacent channels so that adjacently conveyed eggs having substantially similar physical characteristics are released and drop into different channels at the receiving station.

In addition to amending the existing claims, Defendant added new claims 67 and 76, which include a limitation regarding storage of the physical characteristics, and release of eggs "in a predetermined sequence" based on the stored characteristics. See B2 Certificate, col. 1, ln. 30 - col. 12, ln. 46.

2. Review of the Specification and Reexamination History

Defendant did not amend the specification during any of the reexaminations, and nothing in the history of the B1 Reexamination indicates that Defendant intended the phrase "predetermined sequence" to have a special or unusual meaning. The B2 Reexamination history likewise does not provide cause to depart from an ordinary construction of the "predetermined sequence" limitation.

As noted above, reexaminations occur when "a substantial new question of patentability affecting any claim of a patent is raised" by new information about prior art. 35 U.S.C. § 304. The B2 Reexamination followed a request for reexamination based on new information about prior art of U.S. Patent No. 3,224,579 issued to Alvoid V. Scollard, et al. ("Scollard '579") and published Netherlands Patent Application 67,06017 ("Netherlands '017").

During the B2 Reexamination, the patent examiner initially rejected claims 1, 14, 25, 33, 44, and 56 on the ground that they were unpatentable over the prior art of Scollard '579 and Netherlands '017, and advised Defendant to amend existing claims and to add new claims to distinguish its invention. In response to this advice from the patent examiner, Defendant amended several claims "to specify more clearly that the eggs are released in a predetermined sequence based on a prior determination and storage of the physical characteristics of the eggs." Reexam. Cont. No. 90/0011573, Patent Owner's Amendment, June 15, 1989 at 27-28.
Amendment, June 15, 1989 at 26. 13

The central issue addressed by the B2 Reexamination is the patentability of the combination of the following features:

1. A means or method for determining a physical characteristic of each of the eggs and storing the measured characteristics;
2. A means or method for controlling the discharge of the eggs by the stored physical characteristics; and
3. A means or method for controlling the position of the release point to accommodate changing operating conditions.

The examiner advised Defendant to "amend claims to define the measurement & storage of the measured characteristics to distinguish over the balance beam weighing arrangement of Scollard et al. [and to] amend claims to define the equal distribution feature." Reexam. Cont. No. 90/001573, Examiner Interview Summary Record, Paper No. 14, June 8, 1989.

In light of those amendments, the patent examiner withdrew the rejection of the claims, agreeing with Defendant's position that the amended claims were distinguishable from the prior art, in part because the prior art did not contain any "teaching or suggestion of determining and storing the physical characteristics of the eggs, and then, based on the stored characteristics, selectively releasing the eggs in a predetermined sequence with compensation for trajectory dependent upon conveyor speed." Id. at 27.

The "predetermined sequence" limitation thus played a central role in the B2 Reexamination. The prosecution history does not, however, use or imply a special definition of the phrase "predetermined sequence." In sum, because the specification was not amended during reexamination, and because the reexamination history does not set forth a special definition of the disputed phrase, the Court construes the "predetermined sequence" limitation in the amended and new claims in accordance with its ordinary meaning, as stated above.

C. Comparison of the Original and Reexamined Claims

A comparison of the original claims of the '444 Patent with the amended claims of the '444 Patent shows that Defendant did not delete the "predetermined sequence" limitation from the original patent, but, in several instances, narrowed its scope. Specifically, Defendant amended claims 1, 14, 25, 33, 44, and 56 to recite a new limitation regarding storage of the measured physical characteristics of the eggs and release of the eggs "in a predetermined sequence" based on the stored characteristics. Defendant also added claims 67 and 76, each of which recites this new limitation.

IV. CONCLUSION

Because the amended and new claims did not violate 35 U.S.C. § 305, it is ORDERED that Plaintiffs' Motion for Partial Summary Judgment is DENIED.

3066

"Predetermined spacing"

Cytyc's proposed construction: (no construction required)
Xoft's proposed construction: (indefinite)

"A predetermined spacing is provided between said inner spatial volume and the expandable surface element" / "A predetermined spacing between said inner spatial volume and the expandable surface element"
Xoft's contention that these phrases are indefinite is based on its argument that "expandable surface element" means "deflated balloon or cage," and Xoft has again presented no evidence to back up arguments that the phrases are indefinite. No construction of "predetermined spacing" is necessary. The court will adopt Cytyc's proposals and define both of the long phrases ("a predetermined spacing is provided between said inner spatial volume and the expandable surface element" and "a predetermined spacing between said inner spatial volume and the expandable surface element") as "the distance between the inner spatial volume and the expandable surface element is determined in advance."

<table>
<thead>
<tr>
<th>Claim Language</th>
<th>Court's Construction</th>
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<tbody>
<tr>
<td>&quot;a predetermined spacing&quot;</td>
<td>(no construction necessary)</td>
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<tr>
<td>between said inner spatial volume and the expandable surface element&quot;</td>
<td>the distance between the inner spatial volume and the expandable surface element is determined in advance</td>
</tr>
<tr>
<td>&quot;a predetermined spacing between said inner spatial volume and the expandable surface element&quot;</td>
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B. The '133 Patent - Claim 10

Claim 10 patent provides:

The apparatus of claim 1 where said distal tip is detached from said wire by applying a positive direct current to said distal tip for a predetermined time period.

The parties dispute the meaning of only one phrase of Claim 10: "applying a positive direct current to said distal tip for a predetermined time period."

The written description discusses the phrase "predetermined time period" in connection with an embodiment of the invention:

As will be described below in greater detail in connection with the third embodiment of FIG. 3, after placement of secondary coil 28 within the interior of the aneurysm, a direct current is applied to wire 10 from a voltage source exterior to the body. The positive charge on secondary coil 28 within the cavity of the aneurysm causes a thrombus to form within the aneurysm by electrothrombosis. Detachment of the tip occurs either: (1) by continued application of current for a predetermined time when the portion 18 is exposed to blood; or (2) by movement of the wire to expose portion 18 to blood followed by continued current application for a predetermined time. Ultimately, both threadlike portion and stainless steel coil 26 will be completely disintegrated at least at one point, thereby allowing wire 10 to be withdrawn from the vascular space while leaving secondary coil 28 embedded within the thrombus formed within the aneurysm.

('133 Patent, Col. 7:61 - 8:10.)

The written description discusses other embodiments in which detachment is achieved by conditions other than applying current for a predetermined time period:

Many alterations and modifications may be made by those having ordinary skill in the art without departing from the spirit and scope of the invention * * * Still further, the diameter of the wire, various of the wire described above and the stainless steel coil immediately proximal to the detachable tip may be provided with differing diameters or cross sections to vary the times and current magnitudes necessary in order to effectuate electrolytic detachment from the tip. Still further, the invention may include conventional electronics connected to the proximal end of the wire for determining the exact instant of detachment of the distal tip from the wire.

('133 Patent, Col. 12:17-35.)
The Court finds that one of ordinary skill in the art would understand the term "applying a positive direct current to said distal tip for a predetermined time period" to have its customary meaning, namely, applying current for a time period that is determined in advance.

The Court construes "predetermined time period," as it is used in the phrase, "applying a positive direct current to said distal tip for a predetermined time period" in Claim 1 of the '133 Patent to mean:

applying a positive direct current to the distal tip for a time period determined in advance of the initiation of the detachment process.

A. The Proper Construction Of The Term "Predetermined Weight."

Independent claims 1, 7, 11, and 20 all require a method that produces product portions that have "a predetermined weight." Specifically, Claim 1 provides in relevant part:

A method for forming, cooking and processing a meat or poultry containing food product . . . comprising the steps of . . . dividing said lengths of cooked product into a plurality of cooked product portions which have a hand-formed, randomly shaped irregular appearance and have a predetermined weight.

('094 patent, col. 9, lns. 4-7). Claim 7 provides:

A method for producing a plurality of pre-cooked meat product portions comprising the steps of . . . continuously cutting said elongated continuous lengths of cooked product on a second side of said extrusion plate thereby producing a plurality of randomly shaped, irregular cooked product portions which have a predetermined weight.

('094 patent, col. 9, lns. 44-48). Claim 11 provides:

A method for making a precooked meat or poultry product comprising the steps of . . . cutting said lengths of cooked emulsion during extrusion to form randomly shaped irregular pieces of finished product having a cross-section less than the cross-section of the formed emulsion and having a predetermined weight.

('094 patent, col. 10, lns. 7-11). Finally, claim 20 states:

A method for making a precooked sausage product suitable for use as a pizza topping comprising the steps of . . . simultaneously cutting said lengths of extruded precooked sausage product to form a plurality of randomly shaped irregular precooked sausage portions which have a predetermined weight.

('094 patent, cols. 10-11, lns 67-3).

Defendants contend that the term "predetermined weight," as used in the asserted claims, refers to a single weight that is selected prior to the beginning of the claimed process. Defendants further contend that each piece of the cooked product portions must have precisely the same pre-selected weight. Pointing out that the inventors did not provide any special definition for the above term, Defendants argue that the construction they advance is required by not only by the plain meaning of the term but also by the patent specification and prosecution history. We disagree.

In interpreting the asserted term, we begin with the words of the claims themselves. Vitronics, 90 F.3d at 1582. Defendants define the term "predetermined weight" by resort to the dictionary definition -- namely -- a weight determined beforehand and, from this definition, contend that the weight must be a single weight rather than a range of weights. The Defendants' method of defining the term does little, however, to clear up the confusion surrounding the term's proper definition because the problem is not in defining the two words "predetermined" and "weight." Rather, the dilemma lies in understanding how these two words relate to the claims as a whole in defining the claimed invention.
To resolve this problem, it is necessary to look at both the claims and the patent specification, in its entirety. Having done so, we conclude first that the term "predetermined weight" modifies or defines, in the words of claim 1, "a plurality of cooked product portions." Thus, it is not the individual pieces of each portion that must have a "predetermined weight." Rather, it is the portions as a whole (in this case, portions, e.g. per pizza, of Italian sausage pizza topping) which must have a predetermined weight. The question that then remains is whether the term "weight" refers to a single weight or a range of weights. We conclude that the term "weight" refers to a single weight. We reach this conclusion based on the language of the specification. Specifically, the specification uniformly refers to a predetermined weight rather than a predetermined range of weights. Nowhere in the specification is a range of weights ever referred to. This omission is especially noteworthy in light of the numerous other references to ranges contained in the specification. Thus, it is clear that the patentee included ranges where he intended them to apply.

2 For example, the specification provides ranges for the lengths and diameters of casing materials (col. 6, lns. 11-13); the temperature to which the food emulsion is to be heated (col. 6, lns. 13-16); the cooling temperature for the emulsion (col. 6, lns. 32-34); and the force to be applied to the cooked food product during the extrusion step (col. 6, lns. 46-48).

However, in concluding that the term "weight" refers to a single weight rather than a range, we do not imply that the weight must be exact. Rather, the use of a single weight implicitly acknowledges the existence of a weight tolerance. This finding is supported by both common sense and the patent specification itself. Specifically, the patent specification provides for a process which is capable of forming a "plurality of different shapes and sizes of food products with very close weight tolerances which have the appearance of being hand formed." (’094 patent, col. 1, lns. 61-63). Additionally, common sense establishes the practical impossibility of producing, by machine, multiple food product portions which have precisely the same weight.

Thus, after reviewing the claims and specifications, we construe the term "predetermined weight" to mean that each of the food product portions must have the same predetermined weight within a very close weight tolerance.

1. Preformed

Plaintiff Minuteman contends that the term "preformed", if determined to require further definition, should be construed to mean "formed before." Defendants contend that "preformed" should be construed to mean "a predetermined shape." The specification is useful in resolving the parties' dispute over the meaning of the word "preformed." The specification describes the shape and flexibility of the molded pocket (Def. Ex. A, Col. 2, lines 8-10). In describing the molded pocket's shape, the specification explains, "The molded pocket is made of a synthetic rubber and is of a thickness that is flexible yet will retain its original shape under its own weight." Webster's Third International Dictionary defines "preformed" as, "to form beforehand", "shape previously", "to fix or determine the form of beforehand", or "predetermine." Therefore, in light of the specification and the dictionary definitions of "perform", the construction most in line with the specification's guidelines is the Defendants' proposed definition. Therefore, the Court will construe "preformed" to mean "a predetermined shape."

3. Preformed endless loop

Wadsworth argues the phrase "preformed endless loop" in the '329 Patent is "literally inaccurate as the loop to which Callicrate refers has two ends that are joined together and therefore the loop involved with this structure is not literally 'endless.'" Wadsworth argues Callicrate's endless loop must be defined by the description set forth in the '329 Patent's
specification and is confined to a loop that is large enough to pass over the animal's scrotal pouch without stretching. Wadsworth distinguishes its own endless loop from Callicrate's, noting that it is truly endless and that it must be stretched before attaching it to the scrotal pouch.

Callicrate counters that Wadsworth is reading ambiguity into the phrase "preformed endless loop" so he can confine the phrase to the language set forth in the '329 Patent's specification. Callicrate further states that the '329 Patent's specification defines "preformed endless loop" as a loop "having either a unitary structure or a loop formed by joining two ends of a linear length of material." Callicrate also argues that Wadsworth's proposed size limitation is unsupportable because the argument is based on language in the specification rather than language in the claim itself.

Wadsworth does not offer any support for his argument. The language of the claims in the '329 Patent do not limit the size of the loop, nor do they state that the loop must be circular. Contrarily, the claims in the '329 Patent speak of the preformed endless loop having a "forward end and a rearward end." This language undermines Wadsworth's argument that the loop must be circular.

Wadsworth is attempting to limit the structure of the preformed endless loop to that disclosed in the preferred embodiment. However, Callicrate did not use the term "means" in relation to the preformed endless loop. Therefore, he is not presumed to have invoked the means-plus-function language of 35 U.S.C. § 112, Par. 6. The language of the Claims is clear and the Court cannot read in limitations from the specification. Therefore, Callicrate's interpretation is the most accurate.

4. Conclusion

According to the discussion above, the '329 Patent is interpreted as follows:

1. "preliminarily"

Initially, the parties dispute the meaning of the language in claims 1 and 91 of the '086 patent: "using preliminarily an unfilled tubular sock-like projectile body having a closed front end and a rear edge bounding a rear opening thereinto." '086 patent, 5:5-7. Plaintiff argues that this phrase describes the initial shape of the projectile body, "preliminarily" or "prior to" taking the first step in the patented preparation process. Under plaintiff's proposed construction, the "projectile body" may have multiple openings at earlier stages in the preparation sequence, as long as a closed front end is formed prior to 1 taking the first enumerated step in plaintiff's patented preparation method, which is filling the sock-like body with shot.

Defendants disagree. They argue that the inclusion of the word "preliminarily" requires "that the method of shaping a low lethality projectile starts with using an unfilled tubular sock-like shape, i.e., a tube shape hollow body having a single inner compartment formed by one closed end opposite one opening formed by a rear edge." Def. Br. at 6. 2 Defendants argue that the claim requires that the projectile body have only one opening at the very beginning of the preparation process, prior to the employment of any steps taken to shape the projectile body, not merely prior to the first enumerated step in plaintiff’s patented preparation method.

The plain meaning of "preliminarily" is "at first" or "prior to." In the patent claims, "preliminarily" is used as an adverb which modifies "using," meaning that the claimed preparation process begins by using "an unfilled tubular sock-like projectile body having a closed front end." Therefore, the claim covers all processes which use an "unfilled", "tubular", "sock-like" projectile body prior to taking the first enumerated step in the preparation process of filling the projectile body with shot.


Independent Claims 37, 56, and 75 are apparatus claims that include a limitation wherein the device scans "a preselected segment of a central portion of each bill." The Court in its Markman Order construed this phrase to mean "a central, approximately two-inch portion of a bill scanned across the central portion of the narrow dimension of the bill."

It is undisputed that S-Machines use four optical sensors to scan bills. Two of the sensors scan each bill from above, while two other sensors scan the underside of each bill, as the bills pass between the sensors. By using four sensors, two segments on each bill surface are simultaneously scanned. Each scanned segment is approximately 0.39 inches wide and extends across the bill's narrow dimension. The inner edge of the segment scanned by the first upper sensor is offset 1.30 inches from the center of the bill. The second sensor scans a segment that is 0.2 inches away from the first segment. Thus, the first segment is offset 1.30 to 1.69 inches from the center of the bill, and the second segment is offset 1.89 to 2.28 inches from the bill's center.

U.S. currency measure approximately 6 inches in its long dimension, or about 3 inches on each side of center. Thus, the S-Machines scan segments that are on the outer third of each bill -- 40% to 70% removed from the center of the bill.

Defendants assert that there must be central segments within the central portion as construed by this Court. The Court agrees. There are central segments. However, for infringement, these central segments must be within the approximately two-inch portion of a bill scanned across the central portion of the narrow dimension of the bill.

Further, many of Cummins' assertions for finding infringement are nothing more than its Markman positions re-cast in different clothing. Cummins' positions regarding central portion were rejected during claim construction and the Court continues to reject them now.

The S-Machines do not scan the two-inch central portion of the bill. Rather, the S-Machines scan segments that are on the outer third of the bill -- 40% to 70% removed from the center of the bill. Accordingly, the S-Machines do not infringe independent claims 37, 56, and 75. Summary judgment of non-infringement is therefore proper as to Claims 37-40, 42, 44-47, 55-59, 61, 63-66, 74-75. 3

Footnotes

3 Infringement under DOE is equally inappropriate because such a result would ignore the express claim limitation of central portion. See K-2 Corp., supra.
Claim 30 also contains the limitation "to preserve structural integrity." Beginning with the claim language itself, this phrase is commonly understood to mean to "keep safe from injury, harm, or destruction," or to protect the soundness of, the "arrangement of . . . parts in a . . . body." Merriam Webster's Collegiate Dictionary (10th ed. 1996).

The patent specifications do not provide a definition different than this ordinary meaning. The Defendants have argued, based on the testimony of their expert, Giampaolo, that the patent specifications refer to preserving structural integrity as avoiding cracking of components of the gas turbine. The patent specifications, after describing essentially the language of Claim 30 regarding "preserving the overall structural integrity of the gas turbine engine," state that:

In this regard, temperature shocks due to very rapid modification of the mass flow of nebulized water to the compressor inlet 102 can induce cracking in certain alloyed components within the gas turbine engine.

(P1, col. 17, ll. 33-36) (emphasis added). In another portion of the patent specifications, however, the concern of preserving structural integrity is again described, and the specifications further state:

For example, the size and spacing of the increments should be such that the housing 125 and rotor shaft 127 are not caused to expand or contract to such different degrees and at such different rates, that a mechanical rub occurs between these elements because of axial misalignment.

(Id. at col. 18, ll. 58-63). In light of these different descriptions, including but not limited to cracking, the Court construes the term in its more broad form to include protecting, or keeping from harm or destruction, the parts and arrangement of components of the gas turbine engine.

The claim term "preslit" appears in claims 1 and 2 of the '862 Patent. RyMed contends that if construction of this claim term is required, then construction in Alaris should be adopted. (D.I. 116, at 33.) In particular, RyMed contends that this construction is correct because the Common Specification's antecedent bases for the term "preslit" all refer to cutting of the seal before activation of the valve. (Id. at 33-34.) ICU takes issue with the Alaris construction for its use of the word cut, which ICU contends is an improper limitation on how the opening is formed. (D.I. 118, at 27.) Further, ICU contends that the Common Specification only requires the slit to be placed in the seal "prior to use," not "before axial compression." (Id. at 27-28.)

In the Court's view, ICU's proposed construction is more appropriate. As the Alaris court noted, the word "preslit" does not appear anywhere in the Common Specification, yet the word "precut" appears numerous times. See '866 Patent, col. 4: 1-4 ("The proximal end of the seal may be precut to form a tiny orifice therein that allows the tip of the spike to pass therethrough easily upon compression of the seal"); id. at col. 4: 47-49 ("Typically, the pressure responsive element is a section of the seal having an entryway into a precut orifice."). However, "[w]here a specification does not require a limitation, that limitation should not be read from the specification into the claims," E.I. DuPont de Nemours & Co., v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir. 1988) (citing Specialty Composites v. Cabot Corp., 845 F.2d 981, 987 (Fed. Cir. 1988)(emphasis in original)). Despite several uses of this word, the Common Specification does not require that "preslit" can only mean "precut," and in fact, suggests that the preslit can be made through piercing. See '866 Patent, col. 14: 3-7 ("Prior to the use of valve 10, it is preferable that the seal caps 40 or 92 be pierced centrally by a steel needle in the axial direction, precutting the seal to provide the slit 11 in order to allow for more rapid decompression. . ."). Accordingly, it is unnecessary to use the Common Specification to impose a limitation on how the preslit must be made.

Although RyMed contends that construing "preslit" to mean "beforehand" is nebulous and offers no real construction, (D.I.
165, at 34), the Common Specification provides clear guidance on when the slit must be made: "[p]rior to use of the valve." '866 Patent, col. 14: 3. Thus, the Court concludes that "preslit" means "an opening made beforehand."

3075

B. "Preslit Orifice"/"Seal Being Preslit"

Either or both of the terms "preslit orifice" and "Seal being preslit" appear in claims recited in the '509, '592 and, '862 patents, although neither term or any variation thereof appears in the Common Specification. Alaris proposes the following definition for these terms: "an opening that is cut in the seal before the seal is axially compressed." ICU in turn proposes the following definition: "an opening made or formed beforehand."

ICU added the "preslit" terms to its patent claims several years after filing the original application from which the Common Specification derives, and as such the word "preslit" does not appear in the Common Specification. However, every claim term must have an antecedent basis in the specification. See Tandon, 831 F. 2d at 1024; Lockwood, 107 F.3d at 1572 ("[A]ll the limitations must appear in the specification.").

The seal disclosed in ICU's original 1991 application contained no orifice at all until punctured by the spike during use. However, in 1992 ICU added new matter to the Common Specification containing various references to the term "precut". For example, the following references to precutting were added to the Summary of the Invention: "[t]he proximal end of the seal may be precut to form a tiny orifice therein that allows the tip of the spike to pass therethrough easily upon compression of the seal"; and "[t]ypically, the pressure responsive element is a section of the seal having an entryway into a precut orifice." '862 Patent at 4:3-6, 4:49-51 (emphasis added). Under the "Detailed Description of the Preferred Embodiment" section, the Common Specification states that "[p]rior to the use of the valve 10, it is preferable that the seal caps 40 or 92 be pierced centrally by a steel needle in the axial direction, precutting the seal to provide the slit 11 in order to allow for more rapid decompression and reformation of the seal upon piercing by the spike." Id. at 14:3-8 (emphasis added). These and other similar references to "precutting" are the only antecedent bases in the specification for "preslit", making clear that the term refers to cutting of the seal prior to axial compression, i.e., before activation of the valve. This meaning also comports with the ordinary meanings of the component prefix "pre-" and word "slit The court thus agrees with Judge Stotler's July 2004 Order that ICU's proposed construction, which would encompass any opening in the seal, however made, finds no support in the Common Specification. See July 2004 Order at Sec. III, PP13-22.

The court therefore finds that the proper construction for the term "preslit orifice" is "an opening that is cut in the seal before the seal is axially compressed," and that the proper construction for "being preslit" is "having had an opening cut in the seal before the seal was axially compressed."

3076

A. "Spherically-Shaped" and "Pressed Against"

Claim 1 recites that the screw "head is pressed against the hollow spherically-shaped portion." The court construed "spherically-shaped" to mean "approximately spherical, such as a globe or a basketball." The parties do not dispute this construction on appeal. The parties dispute, however, whether the "pressed against" limitation requires that the screw head engage the entire spherically-shaped portion or whether it is enough that the head engage just the "edge" of the spherically-shaped portion.

In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence. See Phillips, 415 F.3d at 1312-17. First, the claim language does not indicate that "hollow spherically-shaped portion" must be limited so as not to include the edge of that portion, nor does it indicate how much of the hollow spherically-shaped portion must be "pressed against" the screw head. Claim 4, which depends from claim 1, requires that "the radii of the hollow spherically-shaped portions (9, 19) and of the spherically-shaped screw head (4) [be] substantially equal." '678 patent, col. 4, ll. 37-40.

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That implies that independent claim 1 must be broad enough to read on a device with components of unequal radii that nonetheless are pressed against each other. If the screw head has a smaller radius than the hollow spherically-shaped portion, the only part of the spherically-shaped portion against which the screw head would be pressed would be the edge of the hollow spherically-shaped portion.

Second, the specification does not indicate that the "hollow spherically-shaped portion" must be limited to exclude the edge of that portion or that "pressed against" requires a certain amount of contact between the spherically-shaped portion and the screw head. In the absence of a stated reason to exclude the edge, it would ordinarily and customarily be understood that the referenced portion includes any and all parts of the structure. Similarly, in the absence of a stated reason to require a certain amount of contact, it would ordinarily and customarily be understood that the referenced portion is pressed against a screw head when any amount of that portion presses against the screw head. Figures 1 and 2 of the ‘678 patent depict hollow spherically-shaped portion 9 in crosshatching that appears to include the edge of the portion. The corresponding description of that portion does not exclude the edge, noting that "[a] portion 9 in the form of a hollow spherical segment is provided in the interior immediately adjacent to the bore." ‘678 patent, col. 2, ll. 21-23. That description indicates that the relevant portion extends all the way to the bore, which necessarily implies that it includes the edge. Further, the description does not indicate how much of the spherically-shaped portion presses against the screw head; rather, it notes only that there is "contact" between the components. Id., col. 2, ll. 33-34. The prosecution history provides no further guidance.

For the foregoing reasons, we find Medtronic's argument unpersuasive, and we conclude that "hollow spherically-shaped portion" includes the edge of that portion and that the screw head is "pressed against" the "hollow spherically-shaped portion" if it presses against all or any part of that portion--including the edge.

### 3077

The Court defines "pressed meat" as "meat products that are formed from multiple joints of meat, that is, from pieces of meat that are separated from the bone and from one another into numerous small pieces, then reformed into a single conjoined meat product." Logan uses the clause "not pressed meat" in his response to the Office Action to distinguish it from the term "a single joint of meat." Additionally, he describes a "pressed meat" product as having a lack of structural support, as well as a lower commercial appeal and value, than "a single joint of boneless meat." Logan proposes that the Court define "pressed meat" in accordance with 9 C.F.R. § 319.105 which provides the following definition for pressed ham: "[f]inely divided (chopped, ground, flaked, chipped) cured ham products such as 'ham patties,' 'chopped ham,' 'pressed ham,' and 'spiced ham.'" 9 C.F.R. § 319.105(a). This regulation further provides the minimum meat Protein Fat Free (PFF) percentage requirements for various types of cured pork products. On the other hand, the defendant, based upon the declaration of Dr. Mills, contends that "pressed meat" should be defined as "meat products that are separated from the bone and from one another into numerous small pieces, then reformed into a single conjoined meat product." Dr. Mills asserts that a person having ordinary skill in the art of the '374 Patent would not need to refer to a government regulation to obtain an understanding of the term "meat." Additionally, the Court notes that Logan's response to the Office Action refers to pressed meat in the context of Ferrarini, a French patent. It, therefore, seems misplaced for the Court to rely on a federal regulation to define "pressed meat" in this context. Viewing the extrinsic evidence in the context of the intrinsic evidence, the Court defines "pressed meat" as "meat products that are formed from multiple joints of meat, that is, from pieces of meat that are separated from the bone and from one another into numerous small pieces, then reformed into a single conjoined meat product."

### 3078

2. "Pressing"

Plaintiff argues that the term "pressing" means "to push downward into a position without the need to force fit." (Id. at 17). Defendants object to this proposed definition to the extent it seeks to modify the claim language. In particular, defendants point out that neither the claim nor the specification address the method or process by which the filler is to be pressed into the space between the rail and the panel. Therefore, the term "pressing" should not exclude installation procedures that require force fitting.
The common and ordinary meaning of "press" implies nothing about the degree of force necessary to accomplish an action. See WEBSTER'S II NEW COLLEGE DICTIONARY at 875 ("to exert steady force or weight against"); MERRIAM WEBSTER'S COLLEGIATE DICTIONARY at 922 ("to act upon through steady pushing or thrusting force exerted in contact"). However, the prosecution history tends to support plaintiff's argument. On August 19, 1995, the patent examiner noted that the invention claimed both a product and a process of installation and needed to be restricted to one or the other. He distinguished the product from the process because "the insert could be installed by an entirely different process, such as force fitting without rotating a leg . . ." (Plf. Brief, Exh. 3, Office Action Summary of Aug. 19, 1995 at 2) (emphasis added).

5 The prosecution history thus injects a degree of ambiguity into the meaning of the term "pressing."

Both sides rely on extrinsic evidence to resolve this ambiguity. Defendants have submitted the declaration of Chris Gaudet, an expert in the field of railroad crossing materials and accessories. Gaudet states that "press" and "pressing" are not terms of art and have no special significance in the railroad industry. (Gaudet Decl. P 2). However, these terms must be construed in light of the relevant claim and specification. See Vitronics, 90 F.3d at 1582. To that end, plaintiff has submitted the declaration of William K. Hull, one of the inventors of the '947 Patent. Hull explains that persons of ordinary skill in the art would understand that the inserts should be installed:

"by rotating the leg around the rail head and pressing the inserts into position between the rail and the gauge panel . . . A person of ordinary skill in the art would understand that the inserts do not need to be, and should not be, beaten down with powerful swings of a spike maul or forced down with a heavy piece of railroad track equipment such as a back hoe bucket or a ballast regulator, as such actions may result in 'overdriving' the inserts into an improper position. Therefore, a person of ordinary skill in the art would understand that the terms 'pressing' and 'pushed,' as used and described in the subject patents, would be to press or push, or their equivalent . . . with hand tools such as the lining bar, spike maul, or their equivalent."

(Hull Decl. P 10). This testimony is consistent with the particular niche plaintiff's product was designed to fill. See CVI/Beta Ventures, 112 F.3d at 1160. Other than defendants' insert, plaintiff's invention is the only elastomeric flangeway filler that can be retrofit without moving the gauge panel from its center position. (Hull Decl. PP 3 & 8). The unique ability to "press" this insert into position without disturbing the surrounding materials supports a definition of the term that excludes force fitting. Accordingly, the Court finds that the term "pressing" means "to push into position without the need to force fit."

GO BACK

3079

A. Claim 12

Claim 12 of the 844 patent states:

12. A method for the simultaneous removal of a plurality of hairs from a skin region . . ., the method comprising the steps of:

   (a) placing an applicator in contact with the skin surface in said skin region; and

   (b) applying optical radiation of a selected wavelength and of a selected fluence through said applicator to said skin region . . .;

   pressure being applied to the applicator during steps (a) and (b) so as to cause the applicator to deform the skin region thereunder.

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In this Court's claim construction order, the term "applicator" was construed as meaning "[a] device for applying optical radiation," and the phrase "pressure being applied to the applicator . . . so as to cause the applicator to deform the skin region thereunder" was construed as meaning "pressure being applied to the applicator so as to cause the applicator to compress the area of skin under it." (Feb. 24, 2004 Order, at 3).

Cutera seemingly concedes that the CoolGlide handpieces are "applicators" within the meaning of claim 12, but denies that pressure is applied to the handpieces. Cutera's first argument is that pressure is not applied to the CoolGlide handpieces because doing so would make little sense. Cutera points out that the 844 patent calls for pressure to be applied to the applicator in order to achieve a specific purpose, i.e., "more efficient delivery of light to the follicular target regions" (Garretson Decl., Ex. A, at 6:60-66). Because applying pressure to Cutera's devices allegedly would not achieve this result, Cutera maintains that pressure is not applied to the accused devices within the meaning of claim 12.

However, claim 12 does not refer to the reasons for applying pressure to the applicator; it merely describes the application of pressure as part of the patented method. The Court's Markman order construed claim 12 simply as specifying that a certain amount of pressure (i.e., an amount sufficient to compress the underlying skin) be applied to the applicator. (See Feb. 24, 2004 Order, at 3). The issue before the Court, therefore, is not why pressure is applied to the accused devices (or why not), but rather whether or not pressure sufficient to compress the underlying skin is applied to the accused devices. On this issue, summary judgment is inappropriate. According to Cutera, no "appreciable" compression of the skin occurs during use of the accused products, and any compression of the skin is "minimal." (Cutera Jan. 14, 2005 Mem., at 13 n.6). The chilled footplate is, Cutera maintains, never pressed into the skin, but is instead "glided over the skin." (Id. at 12). Whether compression of the underlying skin occurs during use of the Cutera devices, however, and whether pressure results in compression that is "appreciable" or more than "minimal" are disputed questions of fact. As Palomar notes, Cutera's training and instruction materials warn users to ensure that the footplate remains in contact with the skin, "especially over curves." (Saxton Decl., Ex. 15, at ALT 000137). Reasonable jurors could find that pressure sufficient to compress the underlying skin was required in order to maintain constant contact between the footplate and curved areas of skin. Furthermore, a video displayed at oral argument on Cutera's motion depicts through animation the application of a Cutera product; the animation shows the skin beneath the Cutera device being somewhat compressed as the footplate passes over the skin. Perhaps most significant, the record includes the notes of Michael Sasnett, the designer of a prototype of the CoolGlide products, which state that the handpiece is to be pressed upon the skin. (Saxton Decl., Ex. 22, at ALT 017390).

Cutera argues that even if the skin beneath the applicator is somehow compressed, there is no evidence in the record that such compression results from pressure being brought to bear upon the applicator, and further challenges the relevance of Sasnett's notes, which it claims reflect only early stages of product development. On a motion for summary judgment, however, the Court draws inferences in the nonmovant's favor; in doing so, it is clear that a material issue of fact exists as to whether pressure sufficient to compress the underlying skin is applied to Cutera's CoolGlide devices. For substantially the same reasons, a factual dispute exists as to whether Cutera intends that its customers apply pressure to its devices so as to compress the skin under them and thereby induces infringement. Accordingly, summary judgment as to both direct infringement and inducement of infringement of claim 12 is denied.

3. "Pressure controlled valve . . . to prevent liquid from exiting the carafe through the liquid passageway"

The term "pressure controlled valve" is specifically defined in the patent: "As used herein, the term 'pressure controlled valve' means that the described valves are moved between opened and closed positions by pressure of liquid and/or gas, and not by mechanical contact with any part or component by manipulation." Column 5, lines 13-17. What is disputed is whether the term "solely" should be imported into this definition.

a. The Parties' Proposed Construction

Defendants argue that the purpose of the patent is to address the problem of losing heat from a thermal carafe. They claim that the invention seeks to accomplish this objective by use of a pressure controlled valve that is "operated (opened and closed) solely by liquid and/or gas pressure." (emphasis added). They maintain that a valve that moves by force of gravity is
not within the patent because such a valve would not prevent hot gasses from escaping the carafe. They argue that Sunbeam's broad construction would defeat the purpose of the invention.

In contrast, Sunbeam objects to the importation of the term "solely" into the interpretation of the term "pressure controlled valve." Sunbeam argues that the definition does not require that the uni-directional flow be in any particular direction, be completely air-tight and water-tight, or be solely moved by liquid and or gas pressure. Rather, Sunbeam maintains that it is sufficient for the flow to be substantially one-way and for liquid and/or gas pressure to play a role in moving the valve between open and closed while not requiring manual manipulation. According to Sunbeam, a minimal amount of air flow may occur when the valve is used in practice and that a slight amount of leakage occurs does not absolve patent infringement.

c. The Court's Construction

It is appropriate for a court to look to the written description for guidance as to the meaning of the terms. Phillips, 415 F.3d at 1316. Where specifications reveal a particular definition given to a claim term, the inventor's lexicography governs. Id. Here, the conflict of construction occurs because "pressure controlled valve" is described in two instances -- once with the limiting word "solely" and once without. However, the Court defers to the specific definition of "pressure controlled valve." At the end of the specifications, the patent clearly reads: "As used herein, the term 'pressure controlled valve' means that the described valves are moved between opened and closed positions by pressure of liquid and/or gas, and not by mechanical contact with any part or component by manipulation." Column 5, lines 13-17. As such, the inventor has told us precisely what he intended "pressure controlled valve" to mean. And this definition does not include the word solely. Accordingly, the Court follows the instructions of the inventor and construes the claim term as "a valve, moved between open and closed positions by pressure and/or gas and not by mechanical contact with any part or component by manipulation."

3081

I. Claim Construction for "Pressure Controlled Valve"

DeLonghi requests that the Court correct its claim construction for the term "pressure controlled valve," because it believes that the claim construction stated in the Opinion includes a typographic error. DeLonghi notes that the Court states: "the Court defers to the specific definition of 'pressure controlled valve' [that is found] [a]t the end of the specifications." However, the Opinion omits the words "or by", as well as a preceding comma, which are found in the cited section of the specification of the '719 patent. The specification reads:

As used herein, the term "pressure controlled valve" means that the described valves are moved between opened and closed positions by pressure of liquid and/or gas, and not by moving mechanical contact with any part or component, or by manipulation.

Col. 5, lines 13-17, of the '719 patent (emphasis added). DeLonghi asks the Court to amend its Order to avoid any confusion.

The omission of the words ", or by" was a typographic error. The Court amends its Order to reflect the correct construction.

3082

3. pressure conveying element ('626 patent, claims 34, 38, 41, 44)

This term appears in asserted independent claims 34, 38, 41, and 44 of the '626 patent. The parties' dispute centers on whether this term requires construction, and, if so, whether the patent requires specific pressure-conveying components.

Plaintiffs propose that "pressure conveying element" means "a pressure conveying element." Fresenius proposes that "pressure conveying element" means "an assembly including at least (1) a pressure transfer element (e.g., 102) in contact
against the diaphragm of the pump chamber to apply positive and negative fluid pressure to the diaphragm; (2) pneumatic control valves; (3) inflatable reservoir/main bladder (e.g., 128; (4) a conduit for transporting positive pneumatic pressure from the source to the inflatable reservoir (e.g., 216); (5) a pressure regulator communicating with the inflatable reservoir; and (6) a carrier (e.g., 104) that moves the pressure transfer element."

The court finds that the claims and specification support the plain and ordinary meaning. In some cases, "the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and . . . involves little more than the application of the widely accepted meaning of commonly understood words." Phillips, 415 F.3d at 1314. Here, the widely accepted and commonly understood meaning of "pressure conveying element" makes sense in conjunction with the rest of the asserted claims in the '626 patent.

For example, claim 34 recites "a pressure conveying element carried within the housing for conveying fluid pressure to the diaphragm to operate the pump chamber and valve . . . ." '626 patent, 42:66-43:2. In other words, the claim itself explains that the "pressure conveying element" is for "conveying fluid pressure to the diaphragm to operate the pump chamber and valve." Similarly, claims 38, 41, and 42 all recite "a pressure conveying element carried within the housing for conveying fluid pressure . . . to operate the pump chamber and valve . . . ." '626 patent, 43:59-64, 44:23-31, 44:56-61. The claim language therefore suggests that the court should not further limit this term.

Nothing in the specification indicates that any further limit should be placed on this term. The patent describes several different types of pressure-conveying elements. See '626 patent, 13:50-57 ("As Fig. 15B shows, when the main bladder 128 inflates, it presses the plate 104 against the spring element 132. The open cell structure of the spring element 132 resiliently deforms under the pressure. The piston element 102 moves within the window 134 into pressure contact against the cassette diaphragm 59.") and Fig. 15B; '626 patent, 13:6-8 ("The ports 120 convey positive or negative pneumatic pressures from the pneumatic pressure distribution module 88 (as will be described in greater detail later)"); id., 19:66-68 ("Valve A6 is either opened to convey air in the main branch line 216 to the low pressure reservoir 214 or closed to block this conveyance.")

However, because the '626 patent does not suggest that the "pressure conveying element" is limited to any particular embodiment, specific "pressure conveying" components cannot be read into the claim. Fresenius' proposed construction would improperly exclude the above-described embodiment, because the embodiment lacks the six specific features Fresenius has included in its proposed construction.

The doctrine of claim differentiation also precludes Fresenius' attempt to read the additional specific components into the general and straightforward term "pressure conveying element." Dependent claims 2 and 3, which depend from independent claim 1 (not asserted here), recite the same structural limitations on "pressure conveying element" that Fresenius proposes to read into claim 1 (except for the second item - "pneumatic control valves").

Under the doctrine of claim differentiation, the "pressure conveying element" in claim 1 must have a broader and different scope than the specific configuration claimed in claims 2 and 3. The additional limitations claimed in claims 2 and 3 would be redundant if "pressure conveying element" itself necessarily included these structures. See SunRace Roots Enter. Co., Ltd. v. SRAM Corp., 336 F.3d 1298, 1303 (Fed. Cir. 2003). Fresenius points to no language in either the claims, the specification, or the prosecution history that expressly requires that the additional limitations to "pressure conveying element" in dependent claims 2 and 3 be imported into the construction of "pressure conveying element" generally. See id.

"Pressure conveying element" means "pressure conveying element."
Clinical Innovations argues that these claim terms should be construed to mean:

The catheter includes a structure that can detect, ascertain, or determine changes, alterations, or transformations in fluid pressure that exist outside the distal end of the catheter (such as the uterus). There are no limitations on the type of pressure detector or in its location in the catheter. 17

Utah Medical argues that they should be construed to mean:

The pressure being exerted against the exterior of the distal end of the tube is translated for detection using either an interior balloon, an exterior balloon, or an interior/exterior balloon. (The '529 patent has excluded at least sensor-tipped catheters, such as the accused device, from the scope of this claim limitation by asserting, for example, that they kill expectant mothers and their unborn babies). 18

Because the specifications reveal the correct claim scope, including a disclaimer, and because the claims are means-plus-function limitations, the Court agrees that the claims are limited to balloon configurations for the following reasons:

1. Specification Disclaimer

Utah Medical contends that Clinical Innovations disclaimed sensor-tip configurations in the specifications of the '524 Patent and in the prosecution history. Utah Medical contends that Clinical Innovations disclaimed sensor-tipped devices by its statements in the patent disparaging sensor-tipped devices. Clinical Innovations disparaged the sensor-tip devices because, among other reasons: "they cause discomfort during insertion" and the "major disadvantage of inserting sensor-tipped IUP devices, as well as fluid-filled IUP devices, is the possibility of perforating the placenta or uterus as a result of the higher insertion force required to insert a larger tip . . . deaths have been reported of both fetuses and mothers from damage caused by insertion of sensor-tipped devices." 19 Clinical Innovations also listed as disadvantages of sensor-tipped devices the tingling caused by the electrical current running to the sensor in the tip and difficulties in recalibration.
Clinical Innovations contends that the '524 patent, as a continuation of the application that became the '497 patent, which in turn, is a continuation-in-part of the '879 patent, must be considered as a family of patent application. It contends that to construe the '524 patent as limited to the balloon configuration would "totally vitiate" the patent. It contends that the case Ventana Medical Systems, Inc. v. Biogenex Laboratories, Inc is squarely on point in its ruling that "general statements by the inventors" in the Background section should not, "without more, . . . be interpreted to disclaim every feature of every prior art device discussed in the 'BACKGROUND ART' section of the patent." 22

20 A position clarified by Clinical Innovations' counsel at argument.

21 473 F.3d 1173 (Fed. Cir. 2006).

22 Id. at 1181.

Under the doctrine of specification disclaimer:

"[T]he specification may reveal an intentional disclaimer, or disavowal, of claim scope by an inventor. In that instance, . . . the inventor has dictated the correct claim scope, and the inventor's intention, as expressed in the specification, is regarded as dispositive." 23

23 LG Electronics, Inc. v. Bizcom Electronics, Inc., 453 F.3d 1364, 1378 (Fed. Cir. 2006) (quoting Phillips, 415 F.3 at 1316 and citing SciMed Life Sys. v. Advanced Cardiovascular Sys., 242 F.3d 1337, 1341 (Fed. Cir. 2001)). In LG Electronics, the Court found that "because the statements relied upon by defendants relate to the invention not elected during prosecution, there is no clear disavowal with respect to the invention actually claimed" in the patent in suit.

In the situation of "an intentional disclaimer, or disavowal, of claim scope by the inventor," 24 the Court "interprets the claim more narrowly than it otherwise would to give effect to the inventor's intent to disavow a broader claim scope." 25

24 Phillips, 415 F.3d at 1316.25 Ventana, 473 F.3d at 1181 (citing Phillips, 415 F.3d at 1316).

Further, the specification is always highly relevant to the claim construction analysis.

In explaining the importance of referring to the specification in determining and understanding the meaning and scope of a patent claim, we have stated that "the specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" Furthermore, "the specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor. In that instance as well, the inventor has dictated the correct claim scope, and the inventor's intention, as expressed in the specification, is regarded as dispositive." 26

Having considered the entire patent, the Court finds that this is a case like SciMed Life Systems, 27 and SafeTCare Mfg., 28 where we must "rely on the specification merely to understand what the patentee has claimed and disclaimed." 29 As explained in SafeTCare,

We "recognize that the distinction between using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim can be a difficult one to apply in practice." In this case, however, we are not in danger of importing any limitations from the specification into [the claim]. Rather, we rely on the specification merely to understand what the patentee has claimed and disclaimed. [Phillips] (finding "the inventor's intention" to be "expressed in the specification"). In this case, the written description repeatedly emphasizes [an attribute]. The inventor makes clear that this attribute of the invention is important in distinguishing the invention over the prior art. Thus, we are persuaded by the language used by the patentee that the invention disclaims [the attribute distinguished]. 30

--- Footnotes ---

27 242 F.3d 1337 (Fed. Cir. 2001).

28 SafeTCare, 2007 U.S. App. LEXIS 18464, 2007 WL 2215718 at *6. SafeTCare was issued after argument in this case but did not announce a new rule of law. Instead, it applies the existing law as previously cited by the parties herein.

29 Id.

30 Id.

--- End Footnotes ---

In the present case, the specifications repeatedly emphasize and discuss the balloon configuration and its attributes. The inventor makes it clear that the attributes of the balloon configuration are important in distinguishing the prior art. The prior art of the sensor-tipped configurations is clearly disparaged and disclaimed.

Reading the specifications, the Court is convinced that what is intended to be claimed are the attributes of the balloon configuration that are repeatedly described therein as important in distinguishing the invention over prior art. In contrast, the partially clear nature of the tube, emphasized at argument as the improvement added to the family of patents by the '524 patent, is referred to in the nature of an aside. 31

--- Footnotes ---

31 E.g., Col. 7, lines 10 to 15.

--- End Footnotes ---

Clinical Innovations also contends that sensor-tipped configurations are also described in the specifications because the use of a pressure transducer is described. However, the use of a pressure transducer is discussed in the specifications as used in combination with a balloon configuration is such a manner that it is not a sensor-tipped catheter that is described. 32

--- Footnotes ---

32 E.g. Col. 6, lines 10 through 30; col. 12, lines 28-46; col. 2, lines 7-9 (prior art).

--- End Footnotes ---

In sum, the Court finds that Ventana is distinguishable because the present case involves much more than "general statements by the inventors indicating that the invention is intended to improve upon prior art . . . ." 33 The present case is one like SafeTCare where the Court in construing the claims is "relying on the specification merely to understand what the patentee has claimed and disclaimed." 34 The Court finds that the specification makes it clear that what was claimed is the
balloon configuration and what was disclaimed is the sensor-tipped configuration. For this reason, the Court need not address the parties' arguments regarding prosecution history.

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33 Ventana, 473 F.3d at 1181.


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Accordingly, the Court construes "a structure for detecting changes in fluid pressure external to said first, distal end of said elongated outer tube;" "a pressure detection device for detecting pressure changes external to said distal end of said elongated outer tube;" and "a pressure detection device associated with said second lumen of said elongated tube structure for detecting changes in fluid pressure external to said first end of said elongated tube structure" in claims 1, 13, and 25 to mean "the pressure being exerted against the exterior of the distal end of the tube is translated for detection using either an interior balloon, an exterior balloon, or an interior/exterior balloon."

2. Means-Plus-Function

Utah Medical contends that the phrases "pressure detection device" and "a structure for detecting changes" are a means-plus-function limitation under § 112, 35 which provides:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof. 36

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36 Id.

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This section "operates to restrict claim limitations drafted in such functional language to those structures, materials, or acts disclosed in the specification (and their equivalents) that perform the claimed function." 37

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37 Personalized Media Communications, LLC v. International Trade Com'n, 161 F.3d 696, 703 (Fed. Cir. 1998).

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The parties agree that if the phrase does not contain the term "means," it is presumptively not subject to § 112. 38

"However, a limitation lacking the term 'means' may overcome the presumption against means-plus-function treatment if it is shown that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." 39

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38 Massachusetts Institute of Technology (MIT) and Electronics For Imaging, Inc. v. Abacus Software, 462 F.3d 1344, 1353 (Fed. Cir. 2006) (quoting CCS Fitness Inc. v. Brunswick Corp., 288 F.3d 1359, 1369 (Fed. Cir. 2002)).

39 Id. (quoting CCS Fitness, 288 F.3d at 1369) (quotation marks omitted).
The parties rely on many of the same cases, such as Lighting World, Inc. v. Birchwood Lighting, Inc., 40 and Personalized Media Communications, LLC v. Int'l Trade Comm'n. 41

In considering whether a claim term recites sufficient structure to avoid application of section 112, P 6 we have not required the claim term to denote a specific structure. Instead, we have held that it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.

* * *

Thus, while it is true that the term "connector assembly" does not bring to mind a particular structure, that point is not dispositive. What is important is whether the term is one that is understood to describe structure, as opposed to a term that is simply a nonce word or a verbal construct that is not recognized as the name of structure and is simply a substitute for the term "means for." The court in Personalized Media Communications drew the pertinent distinction in holding that the term "detector," although broad, is still structural for purposes of section 112 . . . because it "is not a generic structural term such as 'means,' 'element,' or 'device'; nor is it a coined term lacking a clear meaning such as 'widget' or 'ram-a-fram.'" 42

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40 382 F.3d 1354, 1358 (Fed. Cir. 2004) (holding that "the presumption flowing from the absence of the term "means" is a strong one that is not readily overcome").

41 161 F.3d 696 (Fed. Cir. 1998).

42 382 F.3d at 1359-60 (citing and quoting Personalized Media, 161 F.3d at 704) (other citations omitted).

--- End Footnotes ---

Utah Medical argues that terms such as "structure" and "pressure detection device" do not denote any particular structure. It also argues that it has rebutted the presumption by showing that the '524 patent uses the terms "pressure detection device" and "pressure detection means" interchangeably. 43 It contends that because the other structure disclosed in the specification for performing the pressure detection function is a balloon configuration, the claims are limited to that balloon configuration.

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43 Citing Lightening World, 382 F.3d at 1362 and citing the '524 patent col. 3, lines 44-50 (Summary of Invention referencing "pressure detection device" and "pressure detection means").

--- End Footnotes ---

Clinical Innovations relies upon Personalized Media's holding that "detector," unlike the term "device" denotes a type of structure. 44 It argues that a specific kind of structure is required--namely one for fluid pressure detecting, pressure detection, or fluid pressure detection. It argues that under Personalized Media, adding a qualification in front of the noun "detector" does not render it insufficient for purposes of § 112.

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44 161 F.3d at 704.

--- End Footnotes ---

- 3656 -
"The task of determining whether the limitation in question should be regarded as a means-plus-function limitation, like all claim construction issues, is a question of law for the court . . ." 45 The Court finds that the resolution of this issue depends upon the noun that is being qualified. The noun "device" is a "generic structural term." 46 So, too, is the noun "structure." As such they are not sufficient to preclude application of § 112. Detector, is of course, "a sufficiently definite structural term to preclude the application" of § 112. 47 But, in the instant case, the claims involve the nouns "device" and "structure," not the noun "detector." Unlike Personalized Media, where an adjectival qualification (digital) was added to "an otherwise sufficiently definite structure" (detector); in the present case the qualification (pressure detecting) is added to an otherwise insufficiently definite structure--"device" or "structure."

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45 Lighting World, 382 F.3d at 1358.
46 Personalized Media, 161 F.3d at 704.47 Id. at 705.
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The claims do not use the phrase "pressure detector." Instead, they use the phrases "pressure detecting device" and "structure for detecting pressure"--phrases that describe a function, not a definite structure. By using the phrase "pressure detecting device," which does not identify a definite structure, Clinical Innovations has included not just the definite structures known as detectors, but also any indefinite structure or device that arguably performs that function, a means plus function limitation.

Having carefully considered the nuanced case law in this area, the Court finds that the use of the phrases "pressure detection device" and "a structure for detecting changes" is a means-plus-function limitation under § 112. The function disclosed is detecting pressure. Because the only structures disclosed in the '524 Patent are balloon configurations, the Court construes the claims as limited to balloon configurations and their equivalents.

10. Pressure Responsive Element

As mentioned above, Aqua-Lung seeks to have "pressure responsive element" carry the same definition as "retractable filter cover," namely as: "A gas pressure-responsive valve closure element that covers the filter and has a rounded or tapered heard to seal the gas inlet opening from the inside in the absence of applied gas pressure, and which is displaced axially against the action of a spring to open the gas inlet opening in the presence of applied gas pressure." Two Forty proposes a significantly broader construction of the term as "a portion of the device which responds to a force, such as by an object or fluid pushing against it."

The phrase "pressure responsive element" or alternately "pressure responsive member or element" appears extensively throughout the '130 application as filed and the claims of the '609 and '674 patents. The summary of the '609 patent provides that: "A pressure responsive element is disposed within the passageway for selectively opening and closing of the inlet opening to fluid flow in response to fluid pressure exerted thereon at the inlet opening." 4:4-7 (emphasis added). In the first seven embodiments of the specification, the element is described particularly and identified in the corresponding figures as "88." In its description of the first embodiment, for example, the '609 patent explains: "A pressure responsive member or element 88 is positioned within the bore 78 proximate the upper or inlet end 64. In this particular embodiment, the pressure responsive element 88 is in the form of a piston 90 having a head portion 92 terminating in an upper curved surface 94 which seals against the lip 82 and projects outwardly from the opening 80." Id. at 9:17-23 (emphasis added).

The phrase appears in claims of the '609 patent, for example, as "a pressure responsive element mounted within said duct proximate said gas inlet opening and adapted for movement between a first position for sealing said duct to prevent gas from entering said inlet opening, and a second position for opening said duct to permit gas to enter said inlet opening and pass through said duct[.]" Claim 1 at 17:60-65 (emphasis added). The term also appears in the claims of the '674 patent. See Claim 1 at 26:43-48 ("A filter assembly for use with a regulator device, said filter assembly comprising . . . a pressure
Responsive element located within the bore and moveable between a first position and a second position.

As explained in the discussion of "retractable filter cover," Aqua-Lung's proposed construction is too narrow in that it imports specific structural limitations, i.e. the shape of the head and the spring, into the definition. Conversely, Two Forty's definition as essentially any element that responds to a force is too generic and lacks meaning derived from the specification. In light of the stated purpose of the invention, one skilled in the art would understand that the "pressure responsive element" provides a seal against fluid flow in order to prevent contamination of a regulator. As identified by Aqua-Lung, one skilled in the art would understand that the "pressure responsive element" is the same object as the "retractable filter cover." Based on the foregoing, the construction adopted for "pressure responsive element" will be "an element of a device which can move from a first position where it prevents fluid flow into the device, to a second position, where it allows fluid flow into the device."

**D. "Pressure Sealing Engagement."**

The term "pressure sealing engagement" is recited in claim 5, which recited as follows (col. 17:41-57):

5. An improvement in a bundle breaker as defined in claim 1 comprising:

   a. said first and second fluid pressurized structures are each formed with a generally planar upper rigid wall affixed to said first and second clamp means, and a depending perimeter wall affixed to and extending downwardly from said generally planar upper rigid wall of said first and second fluid pressurized structures;

   b. said first and second flexible members are joined to said respective perimeter walls in pressure sealing engagement therewith; and

   c. said first and second engagement areas of said first and second flexible members each present a substantially planar unbroken surface area with infinite indentation flexibility upon the application of forces to any portion of said substantially planar unbroken surface area.

At the hearing, the differences between plaintiffs' and defendant's constructions fell away, and the parties and the Court were able to agree on the following construction: "an interface between two surfaces that maintains liquid or gas pressure." Accordingly, the term "pressure sealing engagement" is held to mean "an interface between two surfaces that maintains liquid or gas pressure."

**3085**

a. "Pressure sensitive adhesive." A composition which allows adhesion to be initiated through the application of pressure.

**3086**


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7 Parties agree that the similar terms, "pressure-sensitive variable conductance sensor," 7 "pressure-sensitive analog sensor," "pressure-sensitive variable conductance structural arrangement," "pressure-sensitive variable conductance structure," "pressure-sensitive variable sensor," and "pressure-sensitive . . . button sensor," which appear in the '802, '991, '525 and '700 patents should be construed the same way.
Introduction

Anascape proposes that this term should mean "an electricity manipulating device for varying electrical output proportional to varying physical force."

Microsoft contends that this term should be defined as follows:

A pressure-sensitive variable-conductance sensor has material to contact conductive elements. This type of sensor has a conductivity that changes due to a volume effect. As pressure on the material increases the material volume decreases. This decrease in volume of the material increases the internal conductivity through the material. As a result, the conductivity through the sensor increases.

A pressure-sensitive variable-conductance sensor does not include a variable conductivity sensor utilizing a micro-protrusion surface area effect. In such a sensor, as pressure on the material increases the surface area of contact between the microprotrusions and the conductive elements increases. As a result, the conductivity through the sensor increases.

Here, the central question is whether a PSVC sensor must utilize PSVC material. The patent uses language of requirement in this regard, and every embodiment described incorporates PSVC material. The court concludes that sensors using PSVC material are what the patents disclose.

Analysis

It is clear from the claim language that a sensor is an electricity manipulating device. 8 '802 Patent, Col. 12, ll. 29-30; '991 Patent, Col. 14, ll. 60-62. The specifications also describe a sensor as an "electricity manipulating device." See '802 patent, Col. 3, ll. 39-42. In differentiating the present invention from prior art, the specifications of the patents state that a "pressure sensitive variable conductance analog sensor" is different from a prior art on/off sensor due to its ability to vary electrical output or flow proportional to varying physical force. Compare '991 Patent, Col. 1, ll. 42-56 with '991 Patent, Col. 6, ll. 2-5.

See also '084 Patent, Col. 2, ll. 8-12. Anascape's proposal includes these elements. Microsoft's wants to add the presence of PSVC material, and the absence of other material, as limitations.

Many of the claims in the patents state specifically that the PSVC sensor (or the means for creating an analog output proportional to varying physical pressure) utilizes PSVC material. These include: '802 Patent, Claims 1-4, 7, and 10; '084 Patent, Claims 1-11; '886 Patent, Claim 7.

Other claims refer to a PSVC sensor or a button which manipulates electric current or imagery relative to physical pressure (or means or a method for the same) but there is no express statement that PSVC material is utilized. These include: '802 Patent, Claims 5, 9, 12, 13, 14, 15, 16, and 17; '991 Patent, Claim 11, 23, 29, and 44. Anascape therefore argues that claim differentiation mandates a construction by which the analog sensor may, or may not, have PSVC material. Claim differentiation is a guide to proper construction, not a card that trumps a careful review of the specification and prosecution history. See Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380-1381 (Fed. Cir. 2006).

The real issue is whether a PSVC sensor must have it, somewhere, at least some PSVC material as defined above. Here the court is faced with the familiar duel between powerful opposing canons of construction. Anascape argues that "limitations may not be imported from the specification to the claims." Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 904 (Fed. Cir. 2004), cert. denied, 543 U.S. 925, 125 S. Ct. 316, 160 L. Ed. 2d 223 (2004).

Even if a specification describes only a single embodiment, the claims "will not be read restrictively unless the patentee has
demonstrated a clear intention to limit the claim scope using "words or expressions of manifest exclusion or restriction." Id. at 906. On the other hand, the same case recites that claims must be read in the context of the specification, and notes the "particular difficulties" which arise when the claim language is broad but the specification is narrow. Id. at 905. The importance of the specification has since been given even more emphasis. Phillips, 413 F.3d at 1315.

The specification of the '802 patent describes a sensor in which the flow of current through the PSVC material (Item 36 in fig. 7 & 8) is increased because "material 36 which is flexible deform[s] with additional applied pressure to somewhat flatten-out and contact additional surface area of both traces 32 and 34." The results include "additional conductivity changes . . . by the additional surface contact area." See '802 Patent, Col. 8, 58 - Col. 9, l. 4, Fig. 7 & 8. There is increased conductivity through the PSVC material due to the surface effect.

Another specification explicitly describes an embodiment in which the intrinsic conductivity of the PSVC material does not change very much during deformation. The patentee points out that in the prior art a "carbon-rich conductive pill or disc" had been used as "simple On/Off momentary-On switches" but not to provide "action intensity control of electronic imagery." '991 Patent, Col 9, ll. 16-36. "Carbon-rich pills are typically made of granular carbon in high concentrations in a silicone rubber binder producing a resilient conductive material resistant to mechanical bouncing when depressed onto a surface." '991 Patent, Col. 9, ll. 28-31.

The patentee states he had discovered that such a carbon rich pill or disc could be used in his variable conductivity invention. '991 Patent, Col. 9, ll. 39-47. Anascape points out that the carbon-rich pill does not change its conductivity very much with deformation, so one skilled in the art would know that the surface effect would be a significant contributor to variable conductivity in such a device. '991 patent, Col. 9, ll. 43-60.

Resistivity in a device with a carbon-rich pill changes only within a narrow range of approximately 3 thousand ohms to a low value near 10 ohms. Id. In that particular configuration, most of the change in conductivity of the sensor as a whole will come from the deformation of the domed/convex conductive material 36 as it presses against the contact wires - the surface effect.

Microsoft responds with "fire" from its own canon: claim language can not be read to exceed the scope of the unequivocal language of the specifications of the patents. See Nystrom v. Trex Co. Inc., 424 F.3d 1136, 1143 (Fed. Cir. 2005), cert. denied, 547 U.S. 1055, 126 S.Ct. 1654, 164 L. Ed. 2d 396 (2006). Microsoft argues that the specifications of the patents compel a construction of "pressure-sensitive variable conductance analog sensor" that excludes the possibility that electrical conductivity is modulated only by varying the surface area of contact between micro-protrusions and conductive elements, as for example explained in the Yaniger patent. Microsoft does not point to any clear disclaimer by the patentee of an embodiment which includes only a surface area effect.

Microsoft cites Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1372 (Fed. Cir. 2004) and Honeywell Int'l, Inc. v. ITT Indus., Inc., 452 F.3d 1312, 1318 (Fed. Cir. 2006) and argues that with regard to the presence of PSVC material in the sensors, the following statements in the specification of the patents use language of requirement, not preference:

1. In the "Summary of the Invention": "The present invention involves the use of structures (pressure sensors) having pressure-sensitive variable-conductance material across proximal circuit traces in order to provide variable output ." '802 Patent, Col. 2, ll. 55-58.

2. "Pressure-sensitive variable-conductance material 36 is an important aspect of the present invention." '802 Patent, Col. 6, ll. 49-50.

3. "With the present sensor in all embodiments shown and described herein, pressure-sensitive variable-conductance material 30 is positioned as a variably conductive element . . . ." '084 Patent, Col. 8, ll. 10-12.

4. "At this point in the disclosure it should be quite clear that the pressure-sensitive variable conductance material 30 is a very important aspect, as is the tactile feedback from the snap-through dome-cap 16 of the present invention." '084 Patent, Col. 6, ll. 53-56.

5. In the "Summary of the Invention": "The present invention involves the use of structures (pressure sensors) having
pressure-sensitive variable-conductance material across proximal circuit traces in order to provide variable output." '991 Patent, Col. 2, ll. 59-62.

6. "Pressure-sensitive variable-conductance material 36 is an important aspect of the present invention." '991 Patent, Col. 6, ll. 53-54.

7. The '886 patent describes related prior art having a dome cap with a conductive "pill" referred to as the "active element." '886 Patent, Col. 1, ll. 36-37. The specification then goes on to say: "With applied varying pressure changes, the active element changes it's conductivity . . . . This pressure-sensitive variable-conductance aspect of the active element in the . . . dome cap opens many new and valuable possibilities of use." '886 Patent, Col. 3, ll. 14-23.

Microsoft's argument is bolstered by the fact that every single embodiment described in the four patents is of a sensor that utilizes PSVC material. As discussed above, there are descriptions of the surface area effect when the PSVC material is flattened across contacts. That is always an additional effect, involving PSVC material. Even the description of the use of a carbon-rich pill with a narrow range of resistivity changes did not imply an embodiment with no PSVC material. Rather, that discussion concluded by pointing out that a greater range of resistivity change could be achieved by replacing the carbon with tungsten carbide. "Therefore, tungsten carbide is a preferred active material for use with the present invention." '991 Patent, Col. 10, ll. 1-3.

Finally, two of the patents cite the '471 Patent (Mitchell) while discussing sensors '886 Patent, Col. 2, ll. 16-28; '084 Patent, Col. 2, ll. 13-22. As mentioned earlier, all four patents referred to the Mitchell patent as having information about PSVC material that increased conductivity through the volume effect. It only teaches sensors that use such material.

The '886 Patent refers to Mitchell as "describing sensors which utilize pressure-sensitive variable-output material to produce analog output" but distinguished that invention only by noting that Mitchell did not use or suggest an elastomeric dome cap to carry the PSVC material, to transfer force, or to provide tactile feedback. '886 Patent, Col. 2, ll. 36-48.

The '084 Patent cites the Mitchell patent as describing sensors which use PSVC material, but distinguishes it only with: "Mitchell fails to anticipate any structuring useful for providing a tactile feedback discernible to a human user of his sensors." '084 Patent, Col. 2, ll. 20-22. These references to the PSVC sensors disclosed in the Mitchell patent, which all use PSVC material, have "particular value as a guide to the proper construction of the term" "PSVC sensor." LG Elec., Inc. v. Bizcom Elec., Inc., 453 F.3d 1364, 1375 (Fed. Cir. 2006), cert. granted, 128 S. Ct. 28, 168 L. Ed. 2d 805 (2007)(No. 06-936, 2007 Term).

The question is whether, in light of the foregoing, one of ordinary skill could read the patent and conclude that patentee was claiming sensors without PSVC material? In view of Phillips and the resulting line of decisions that have wrestled with the "don't import limitations" - "read claims in light of the specification" dichotomy, the court thinks not. Anascape argues that a skilled artisan would realize that a depressible sensor suitable for game controllers that varies electric current in response to varying pressure only by action of a surface effect, is equivalent to such a sensor with PSVC material. That is an argument for infringement by equivalents - a matter for trial, not claim construction. The court will construe this claim term as follows:

"Pressure-sensitive variable-conductance analog sensor" means: "an electricity manipulating device that uses pressure-sensitive variable conductance material to vary electrical output as varying physical force is applied."

The similar terms, "pressure-sensitive variable-conductance sensor," "pressure-sensitive analog sensor," "pressure-sensitive variable-conductance structural arrangement," "pressure-sensitive variable-conductance structure," "pressure-sensitive variable sensor," and "pressure-sensitive . . . button sensor," which appear in the '802, '991, '525 and '700 patents shall be construed the same way.

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1. "Pressure-sensitive variable conductance material." Used in '084 Patent, Claims 5-6, 11; '802 Patent, Claims 1, 7, 10; '886 Patent, Claim 7; '991 patent, claims 12, 29, 31, 50.
Introduction

Anascape proposed, "a conductive element that provides for variable electrical flow dependent upon the applied force." Microsoft suggested that this term means:

Material that has a conductivity that changes due to a volume effect. As pressure on the material increases the material volume decreases. This decrease in volume of the material increases the internal conductivity through the material. As a result, the conductivity through the sensor increases.

This does not include material utilizing a micro-protrusion surface area effect. In such material, as pressure on the material increases the surface area of contact between the micro-protrusions and the conductive elements increases. As a result, the conductivity through the sensor increases.

The main point of contention is whether the construction should exclude the surface effect - the increased flow of current as two conductors come into contact over a greater area. Because the specification describes a surface effect, it will not be excluded.

Analysis

The skilled artisan would know, and the parties agreed, that "conductivity" (resistance to the movement of an electrical charge) is the inverse of "resistivity." Trans. p. 9-10. In other words, as resistivity goes down, conductivity goes up. The parties also agreed that, as used in these patents, conductivity may refer to resistive or rectifying properties depending on the pressure sensor material utilized. See '802 Patent, Col. 3, ll. 2-3 & '991 Patent, Col. 3, ll. 7-8; Trans. p. 10-11.

This claim, like many others in the patents, says the material is "positioned as a variably conductive element." So Anascape's suggestion to define the "material," which can be used or positioned as an element as "an element," could be misleading, or at the least redundant. Nothing in the patents hints that the PSVC material is a device, like a transistor or a relay in a circuit. It is a substance or compound, as described in detail at '802 Patent, Col. 6, l. 50 - Col. 7, l. 21.

The claim states that the electrical conductivity of the substance (the PSVC material) is altered relative to received force. '084 Patent, Col. 12, ll. 50-52. See also '802 Patent, Col. 2, l. 67 - Col. 3, l. 5. In other words, PSVC material "changes its conductivity with applied pressure to alter the conductance of the electrical path provided thereby . . . ." '802 Patent, Col. 6, ll. 24-26. See also '991 Patent, Col. 6, ll. 28-30.

Referring to "the present invention," the patentee stated "Compressive force against pressure-sensitive variable conductance material 30 causes it to become sufficiently conductive as to allow current flow therethrough, the degree of conductivity being dependant upon the applied, received, or transferred pressure or force." '084 Patent, Col 9, ll. 1-6.

In another patent, the PSVC material is labeled the "active element." '886 Patent, Col. 1, ll. 36-37. "The active element, while a moderate to poor conductor when not under compressive force, drops in resistivity when placed under compressive force, such drop in resistivity being related to the amount of compression of the active element." '886 Patent, Col. 3, ll. 16-20.

The patents describe PSVC material as formed from conductive particles in a rubbery or elastic type binder. The patents specifically refer to U.S. Patent No. 3,806,471 (Mitchell), as having "[a]dditional information regarding such materials." See '886 Patent, Col. 9, ll. 6 43-47; '084 Patent, Col. 7, ll. 8-12; '991 Patent, Col. 6, ll. 61-66, '802, Col. 6, ll. 57-62.

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The '471 patent describes and diagrams the way in which the conductive elements in PSVC material are forced closer together as pressure is applied. This creates a greater number of electrical pathways between the conductive elements, thus increasing the conductivity of the material. See '802 Patent, Col. 6, l. 55 - Col. 7, l. 11; '471 Patent (Mitchell) Col. 2, l. 58 - Col. 3, l. 5, Fig. 3-6. This is sometimes referred to as the "volume effect."

Microsoft's proposed definition seeks to exclude "material utilizing a microprotrusion surface area effect." This effect is explained in U.S. Patent No. 5,296,837 (Yaniger). Briefly, a thin coat of resin with conductive particles such as carbon mixed with particles of a less conductive material (stannous oxide in the preferred embodiment) is applied to a supporting ply, creating a base. The stannous oxide particles are larger than the more conductive particles and create "micro-protrusions." As flexible conductors on a flexible base are pressed down on the base, the conductors make contact with the conductive resin and the circuit is completed. As more pressure is applied, more of the flexible conductor material is pushed down around the micro-protrusions, resulting in more contact with the conductive resin and thus a greater flow of current.

The parties do not dispute that one skilled in the art would know that bringing two conductors into contact over a greater area will result in an increase in current flow, assuming voltage is constant. This will be referred to as the "surface area effect." Once good contact is made between conductors of a material with low resistivity (high conductivity) such as copper, the change in resistance as surface area contact is increased might be insignificant, when compared to the overall resistance of the circuit. But with materials of higher resistivity (lower conductivity), such as the PSVC materials described in these patents, the increase in current flow resulting from increasing the area of contact between conductors (the surface area effect) can be significant. See '084 Patent, Col. 7, ll. 28-37.

The problem with expressly excluding a surface area effect in the definition of PSVC material is that Figures 7 and 8 of the '802 patent, and the accompanying text of the specification, describe additional current flow through the PSVC material caused by greater surface area contact between the PSVC material 36 and the circuit traces 32 and 34 (the open electrical contacts in the circuit) as the PSVC material is compressed and flattens across the traces. '802 Patent, Col. 8, l. 58 - Col. 9, l. 4, Fig. 7 & 8. In short, Microsoft's construction improperly limits the definition of the disputed claim term by excluding a preferred embodiment.

Of course, simply because a greater flow of current can be achieved between two electrical contacts by increasing pressure on them, or increasing the surface area of contact, does not mean either contact is made of a PSVC material. The metal used for car battery terminals and cable clamps would not fit the patent's description of a pressure-sensitive variable conductance material, nor would it be recognized as such by a skilled artisan. However, tightening the clamp on the terminal could still improve the flow of current. PSVC material, as described in the claims and specification, and as known to those skilled in the art, must itself change in conductivity as a result of pressure, even though in certain applications increasing the surface area of contact may also increase the flow of current. The court will define this term as follows:

"Pressure-sensitive variable conductance material" means: "a substance that changes in conductivity to allow a greater flow of electric current through it, as pressure is applied to it."

Microsoft stated this definition was acceptable and Anascape's only concern was that "changes in conductivity" was redundant and might be used in later arguments before a jury. Trans. p. 29-32. Since the specifications of the patents make it clear that the conductivity of the material itself changes, even if in some applications there is a surface effect, the slight redundancy is justified. Learned counsel are well equipped to handle a misleading argument before the jury.

Anascape suggests that this term should be construed as "variable electrical flow produced by a button associated with an electricity manipulating device for varying electrical output proportional to varying physical force." Microsoft contends that this term should mean "the conductivity of a pressure-sensitive variable-conductance sensor."

The proposals are substantially similar. In the end the definition of this term really depends on the construction of the prior term, because there is no real dispute over what a button on a game controller is. See Trans. p. 68-71. The button, or dome
cap 28, with the pressure-sensitive conductance material together comprises the sensor. '802 patent, col. 8, ll. 36-45. The court will define this term as follows:

"Pressure-sensitive variable conductance of one of said buttons" means: "the conductivity of a pressure-sensitive variable-conductance sensor associated with one of said buttons."

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a. Claim Construction of '744 Patent

i. Claim 1

Claim 1 of the '744 patent reads as follows:

A turf treating machine comprising:

(a) a frame;

(b) means connected to said frame for propelling said frame over the turf to be treated;

(c) a plurality of fluid nozzles mounted on said frame, each of said fluid nozzles being a specified distance apart from adjacent nozzles and having an input port and an output port, the output port of each nozzle being a specified distance above said turf;

(d) pressurized fluid generating means mounted on said frame.

(e) control means connecting said pressurized fluid generating means to the input ports of each of said nozzles so as to produce periodic fluid injections from the output port of each said nozzle at a system pressure sufficient, commensurate with the spacing of said nozzles, to cause said fluid to penetrate through said turf into the soil in a first direction and at the same time create a dispersion of said fluid in a direction generally outward from said first direction of penetration sufficient to coat with dispersion patterns from adjacent nozzles to lift and fracture the soil so as to reduce the general turf and turf subsoil density.

The parties agree that the only disputed clauses in claim 1 are (d) and (e).

Defendant contends that clauses (d) and (e) of claim 1 are means-plus-functions clauses while plaintiff counters that these are not. Whether a claim limitation is in means-plus-function format is a matter of claim construction and is thus a question of law. See Kemco Sales, Inc. v. Control Papers Co., Inc., 208 F.3d 1352, 1360 (Fed. Cir. 2000). Title 35 § 112, P 6 provides that a patentee may define the structure for performing a particular function generically through the use of a means expression, provided however that it discloses specific structure corresponding to that means in the patent specification. See 35 U.S.C. § 112, P 6. See also Valmont Indus., Inc. v. Reinke Mfg. Co., Inc., 983 F.2d 1039, 1042 (Fed. Cir. 1993) (explaining that the patent applicant must describe in the specification some structure which performs the specified function recited in the limitation). The Federal Circuit has referred to § 112, P 6 as embodying a statutory "quid pro quo" since the duty to link or associate structure to function is exchanged for the convenience of utilizing § 112, P 6. See Kemco, 208 F.3d at 1360; B. Braun Medical, Inc. v. Abbott Labs., 124 F.3d 1419, 1424 (Fed. Cir. 1997).

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.
Once a court establishes that a means-plus-function limitation is at issue, it must construe that limitation to determine what the claimed function is and what structure is disclosed in the written specification that corresponds to the "means" for performing that function. Kemco, 208 F.3d at 1360; Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1308 (Fed. Cir. 1998) (after establishing that a means-plus-function limitation is at issue, the district court must construe the function recited and determine what structure has been disclosed in the specification that corresponds for performing that function); Odetics, Inc. v. Storage Tech. Corp., 185 F.3d 1259, 1264 (Fed. Cir. 1999) (claim limitations written as means-plus-function limitations pursuant to 35 U.S.C. § 112, P 6 must be construed to cover the structure described in the patent specification for accomplishing the recited function and any equivalents thereof). A court, however, may not import functional limitations that are not recited in the claim or structural limitations from the written description that are unnecessary to perform the claimed function. Wenger Mfg., Inc. v. Coating Mach. Sys., Inc., 239 F.3d 1225, 1233 (Fed. Cir. 2001).

Use of the term "means" in a claim limitation creates a presumption that § 112, P 6 has been invoked, but that presumption may be rebutted if the properly construed claim limitation itself recites sufficiently definite structure to perform the claimed function. See Kemco, 208 F.3d at 1361. Conversely, absence of the word "means" creates a presumption that § 112, P 6 has not been invoked, but that presumption may likewise be rebutted if the claim limitation is determined not to recite sufficiently definite structure to perform the claimed function. See id.

In particular, plaintiff argues that in clause (d) no function can be associated with the term "means," and thus this clause can only be construed as reflecting an "apparatus providing pressurized fluid." Plaintiff also argues that both clauses (d) and (e) recite sufficient structure to remove them from treatment under § 112, P 6. Plaintiff lastly contends that even if clauses (d) and (e) are construed as means-plus-function clauses, the RZI 700 still infringes as a § 112, P 6 equivalent. 5

5 Plaintiff specifically asserts that defendant's solenoid actuated valve system is the equivalent of plaintiff's mechanical cam actuated valve system when considered "within the context of the invention as a whole." (Pl.'s Reply Mem. Supp. Summ. J. at 11.)

After a careful review of the '744 patent, the court determines that clause (d) of claim 1 is not a means-plus-function clause. Clause (d) calls for a "pressurized fluid generating means." Although containing the word "means," the court agrees with plaintiff that in the absence of an associated function, the use of this word does not signal a means-plus-function clause, but rather indicates an "apparatus providing pressurized fluid." Simply put, in clause (d) there is no function associated with the word "means." Any person of ordinary skill in the art would agree that this element merely refers to an apparatus for providing pressurized fluid, i.e., a pump. Clause (d) is thus construed as covering an apparatus to provide pressurized fluid, i.e., a pump.
PolyVision contends that pretensioned refers only to the condition or state of the flexible member having tension in its installed configuration, while Smart contends that this term refers to the process of applying spring tension to the flexible member.

PolyVision's primary support for its proposed construction is a definition from a mechanical engineering dictionary, which defines pretension as: "The amount of tensile load applied to a bolt or tie-rod when it is installed, but not subjected to its working environment." Dictionary of Mechanical Engineering (4th ed. 1996). PolyVision contends that this definition shows that engineers use the term "pretensioned" to refer to a member that is stressed in its installed condition. It further argues that this definition comports with the usage of the term in the written description, which states:

In this pretensioned condition, any expansion or contraction will be accommodated by a deflection outwardly or inwardly, respectively, of section 46 and its counterpart sections so that an opposing or counter tension or force, arrow 30, is always being applied to membrane 24 to keep it taut and away from surface 18.

(Col. 3, ll. 57-62.)

The primary difficulty with PolyVision's proposed construction is that it is based upon a technical dictionary definition that really has no relevance to the subject matter of the invention at issue. The definition refers to a bolt or a tie-rod, neither of which is a subject of the patent, and the definition in fact refers to a measurement of tensile strength, which is not addressed in the patent. More importantly, although Phillips acknowledges that such extrinsic evidence has its place in construing a patent, it counsels that it is less reliable for a number of reasons but, primarily, because it "is not part of the patent and does not have the specification's virtue of being created at the time of patent prosecution for the purpose of explaining the patent's scope and meaning." Phillips, 415 F.3d at 1318.

Turning to the written description, the Court notes that the description and drawings disclose a substantial basis for concluding that the inventor intended the term "pretension" to connote imparting spring tension to the flexible member. The summary of the invention discloses the focus of the invention as follows:

The invention results from the realization that a truly self-tensioning membrane digitizer can be effected by attaching the membrane in a support structure that includes flexible walls which are pretensioned to deflect and maintain tension on the membrane to keep it spaced from the substrate despite expansion or contraction of the membrane. . . .

(Col. 2, ll. 9-14, 26-28 (italics added).) According to this language, then, to accomplish the purpose of the invention, some force or tension must be applied to the flexible walls themselves in order to allow the opposing flexible walls to maintain the tension on the membrane. This is the essence of "self-tensioning."

Fig. 1, set forth below, illustrates this application where the flexible walls are "pretensioned" or pushed inward relative to the frame.

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The specification explains that "[f]lexible wall 22 is pretensioned by pushing inwardly as indicated by arrow 29 toward base 14 and toward digitizer area 28 before membrane 24 is attached to wall 22 at 26." (Col. 3, ll. 32-35.) It further explains that flexible wall 22 is in the phantom position indicated by the dotted line and then, after being pushed, assumes the position shown in the full line 22. (Col. 3, ll. 35-38.) In that position, "flexible wall 22 applies a counter tensioning force as indicated by arrow 30 which pulls membrane 24 taut across digitizer area 28 over pacer 20." (Col. 3, ll. 38-40.)

Fig. 5, shown below, shows a different construction in which the flexible sections are pretensioned by applying an outward force.
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The flexible wall 22a is pushed outwardly in the direction shown by arrow 90, and the membrane is attached to the flexible wall. (Col. 4, ll. 24-27.) "After the attachment is complete at 26a, the now pretensioned wall 22a tends to return to its initial position, exerting a tensioning force 92 which stretches membrane 24 tautly over spacers 20a establishing a separation between membrane 24 and conductive surface 18a." (Col. 4, ll. 24-29 (emphasis added).) Similarly, Fig. 9 shows an embodiment of the invention using compressible foam members in place of flexible walls. Column 4, lines 54-67, which describe that particular embodiment, states that "[p]eripheral compressible member 22c is pretensioned by compressing it inwardly toward substrate 16c in the direction of arrow 29c." (emphasis added.) It also notes that after compression, the membrane is attached to the bottom of the substrate and the compression member is then released, pulling the membrane taut across the digitizer area. (Col. 4, l. 67 - Col. 5, ll. 1-4.)

Consistent with this construction, Fig. 4 shows a "jig" or a box "which can be used to pretension" the flexible walls "while the membrane is being attached." (Col. 2, ll. 60-62.) The specification explains that the digitizer is placed into the jig, forcing the peripheral flexible wall 22 inwardly while membrane 24 is attached to flexible wall 22. (Col. 2, ll. 65-67 - Col. 4, ll. 1-2.)

Based upon the foregoing, the Court concludes that Smart's proposed construction is consistent with the patent and accurately describes the term "pretension" as used by the inventor. (Col. 3, ll. 48-52 (stating that "[t]he pretensioning of flexible wall 22 is done simply by applying a lateral force 29, FIG. 3A, to each of the flexible wall sections, for example section 46, while membrane 24 is being attached at 26 to flexible section 46").)

PolyVision contends that Smart's construction must be rejected because it improperly reads manufacturing limitations into a product claim. PolyVision cites AFG Industries, Inc. v. Cardinal IG Co., 375 F.3d 1367 (Fed. Cir. 2004), and 3M Innovative Properties Co. v. Avery Dennison Corp., 350 F.3d 1365 (Fed. Cir. 2003), as support for this argument. However, those cases are distinguishable from the instant case because the products involved in those cases -- multiple layers in a glass product in AFG Industries and "multiple embossed patterns" in connection with pressure sensitive adhesives in 3M Properties Co. -- were not tied to any specific manufacturing process. In contrast, regardless of whether the "jig" shown in Fig. 4 or some other method is used, the flexible sections must be pretensioned by exerting an inward or outward force, as the case may be, in order to obtain the self-tensioning feature of the invention. PolyVision further contends that Smart's proposed construction, which states a process involving pushing the flexible walls inward or outward and then attaching the membrane, is at odds with the plain language of the patent that "[t]he flexible sections are attached to the membrane and pretensioned counter to the tension of the tensioned membrane for deflecting to maintain tension on the membrane to sustain the spaced relationship of the membrane relative to the structure." (Col 2, ll. 21-25.) The Court disagrees. Rather than stating that the membrane may first be attached to the flexible sections before they are "pretensioned," the quoted language merely describes the purpose of the flexible sections in the invention as: (1) attached to the membrane; and (2) pretensioned. Finally, the Court rejects PolyVision's argument that limiting the term "pretension" to the process described in the preferred embodiment is improper. The inventors chose to act as their own lexicographers in defining the term "pretension" and the preferred embodiment, as well as the remainder of the specification, show the precise meaning of this term. See Phillips, 415 F.3d at 1316.

I. PolyVision's Motion Regarding the '309 Patent

PolyVision contends that reconsideration of the Court's construction of the claim terms "pretensioned" and "biased to tension" is required under the Federal Circuit's decision in Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361 (Fed. Cir. 2007), which, according to PolyVision, "clarified and narrowed the law on reading manufacturing limitations into product claims." (PolyVision's Br. Supp. at 2.) The Court has read Andersen and, for the reasons set forth below, disagrees with PolyVision that Andersen compels a different result.

Initially, the Court notes that, contrary to PolyVision's reading, Andersen does not appear to establish any new rule or limitation regarding incorporating "manufacturing limitations" into product claims. Rather, it applied well-established rules of construction (in fact, the same rules which this Court applied in its construction of the claims) to reach the particular
Although PolyVision first cited Andersen in the instant motion for reconsideration, the Court notes that the decision was issued on January 26, 2007, and PolyVision had ample time to bring the decision to the Court's attention prior to its issuance of its claim construction memorandum, had it believed it important to do so.

PolyVision contends that this case is distinguishable from Andersen, which limited the product claim to method of manufacture, for several reasons. First, it contends that contrary to the Court's construction, the specification discloses two embodiments shown in Figures 9 and 10 in which the membrane is attached to the support substrate rather than the flexible members. It also asserts that the specification describes an embodiment in which one end is fixed and the other is flexible, such that the membrane could be attached to the fixed end prior to the storing of spring energy rather than afterward, as required by the Court's construction. This argument fails for several reasons. First, according to the Court's construction, the pretensioning occurs by pushing or imparting spring energy to the flexible member and then attaching the membrane to the flexible member. The fact that the membrane is attached to the support substrate instead of the flexible member in Figures 9 and 10 is irrelevant because the specification explains that the compressible flexible member in Figure 9 is first pretensioned by compressing it inwardly toward the substrate, following which the membrane is affixed to the bottom of the substrate. (Col. 4, ll. 65-67 to Col. 5, ll. 1-2.) Thus, in either situation (attachment to the flexible member or the support substrate), the flexible member is pretensioned (pushed to impart spring energy prior to the attachment of the membrane). PolyVision's point regarding a fixed-end configuration is unavailing, because even in such a configuration, the flexible member would still be pretensioned prior to attachment of the membrane to either the flexible member or the support structure, as required by the invention.

Second, PolyVision argues that the '309 patent specification contains none of the limiting words present in the patents in Andersen, such as "necessary," "critical," or "controlling." The Court rejects this argument because, as fully set forth in the Court's claim construction memorandum, the specification establishes that pretensioning requires that tension be imparted to the flexible members prior to the attachment of the membrane. Thus, while the specification may not contain the exact words of limitation used in the patents in Andersen, the specification establishes that the flexible members must be tensioned prior to the attachment of the membrane.

PolyVision's final argument is that, unlike Andersen, the prosecution history in this case contains no clear disavowal of claim scope to a specific manufacturing process. Nothing in Andersen suggests that the prosecution history must contain a disclaimer of claim scope limiting the claims to a particular manufacturing process. The court in Andersen looked to the prosecution history only because the specification was not entirely clear with regard to the process limitation. The prosecution history resolved this question. In this case, the absence of a disclaimer from the prosecution history is irrelevant because the specification provides sufficient guidance on the proper construction of the disputed claim language.
7. prevent airway collapse, wherein said minimally sufficient pressure is a summation . . .

This phrase is found in Claim 23 of the '575 patent.

Phrase: prevent airway collapse, wherein said minimally sufficient pressure is a summation of a pressure needed to prevent airway collapse and pressure needed to overcome respiratory effort

Construction: prevent airway collapse, wherein said minimally sufficient pressure is a summation of a pressure needed to prevent airway collapse and pressure needed to overcome respiratory effort.

Reasoning: This phrase requires no construction by the court.

Second, the Court finds that "prevent pivoting" means to hinder pivoting from the initial position to the ready position, by less than 45 degrees. Because the customary meaning of "prevent" can be to stop or to hinder, the Court turned to the specification for guidance because "it is dispositive; it is the single best guide to the meaning of a disputed term." Vitronics Corp., 90 F.3d at 1582. To begin, the specification defines the initial position as the locked position and the ready position as the position where the arm is secure and abutting the dimples. When describing the term "prevent pivoting," the specification states that the abutment is positioned such that "further rotation would be restricted . . ." within 45 degrees from the initial position to the ready position. Specification at column 4, 1. 39 (emphasis added). In the Webster's Third New International Dictionary, restrict is defined as "to hamper or to diminish." Indeed, the specification uses the word "restrict" several times to describe what the abutment does to the arm.

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2 Even the definition of "prevent," provided by the Defendants, in the Third College Edition of Webster's New World Dictionary defines prevent as to "hinder."

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Finally, the Court considered the prosecution history and the prior art. In considering the prosecution history, the Court notes that Plaintiff surrendered coverage of latches that do not hinder the latch from pivoting by more than 45 degrees as a condition of receiving its patent and in order to fall outside of the Wolf patent. 3 Thus, an abutment that restricts or hinders rotation beyond 45 degrees is the key delineation between the prior art and Plaintiff's '834 patent. The Court has specifically construed this claim in such a way so as to preserve the validity of the claim. See Modine Mfg. Co. v. I.T.C., 75 F.3d 1545, 1557 (Fed. Cir. 1996).

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3 The Wolf patent required an abutted latch arm that pivoted past 45 degrees.

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In connection with the prosecution history and the prior art, the Court has considered the purpose of the patent. The specification described the purpose of the limitation on the rotation of the arm beyond 45 degrees as a means to prevent a "hazard to adjacent equipment and/or personnel." Specification at column 1, 1. 45-46. While the Court acknowledges that the intent of this patent's design was to hinder rotation beyond 45 degrees in order to reduce the possibility that somebody will be hurt by an arm on the latch that could easily rotate 145 to 165 degrees, such a purpose does not mean that the arm must stop at 45 degrees. Rather, the Court interprets the claim and its intent to mean that the abutment hinders movement.
beyond 45 degrees from the ready position, as a safety mechanism, but does not stop a full rotation of the arm. Therefore, the Court hereby finds that the scope of the ‘834 patent includes two key limitations: (1) an abutment positioned in the path of the latch arm, even if only slightly and (2) this abutment hinders the arm from pivoting more than 45 degrees from its initial position.

C. "Prevent"

1. The claim term and proposed constructions

The relevant portion of claim 42 recites:

42. . . . said shield having forward and rearward edges, said forward edge being adapted for releasable engagement upon a rearward side of a pair of eyeglasses and said rearward edge adapted to engage with a wearer's face and prevent the passage of solid and liquids therebetween. . . .

'688 patent at 14:1-6 (emphasis added).

Preventive proposes a construction of "hinder" for the term "prevent," based in part on dictionary definitions that denote several degrees of meaning. Panoptx contends that the phrase should be construed, as for "blocks" and "resists," to mean "stops or does not allow the passage of liquids or solids." Panoptx argues this construction would be consistent with the alleged overall purpose of the invention, and because "blocks" and "prevent" both appear in claim 42 they should have the same meaning.

2. Plain meaning of the claim

The ordinary meaning of "prevent" is to "keep from occurring." Globetrotter Software, Inc. v. Elan Computer Group, Inc., 362 F.3d 1367, 1380 (Fed. Cir. 2004) (citing Random House Webster's Unabridged Dictionary 1535 (2d ed. 1998)). The claim recites that the rearward edge of the shield is adapted to engage the face so as to keep liquids and solids from passing between the face and the shield edge. Thus, the claim language is focused on the properties of the rearward edge, and the importance of achieving conformal contact between the shield system and face. By this contact, the shield is intended to "prevent" seepage along the interface by preventing gaps from appearing at the interface between face and shield. The claim language does not require any other mechanism, such as applying pressure to keep the shield against the face, to ensure that such a gap does not open or that the interface is resistant to seepage. Thus, the plain meaning of "prevent" as used in the claim is to stop the passage of solids and liquids between the shield and the face.

The claim language, however, is not clear about the degree to which the shield edge stops fluids and solids. This uncertainty arises because of the range of meanings associated with troponyms of "prevent." Manners of "preventing" include: deflect, avert, obstruct, hinder, thwart, frustrate, baffle, stop and block. WordNet: An Electronic Lexical Database (Christiane Fellbaum, ed., MIT Press 1998), available at http://wordnet.princeton.edu; see also Sightsound.com, Inc. v. N2K, Inc., 391 F. Supp. 2d 321, 334-35 (W.D. Pa. 2003) (concluding based on the breadth of definitions in multiple dictionaries that "prevent" incorporates both the "concept of absolutely stopping . . . as well as merely hindering the event" by making it difficult for the event to occur). Given this range of possibilities, it becomes necessary to consult the specification to determine the scope of the invention. Interactive Gift Exp., 256 F.3d at 1331.

3. Specification

The critical question is whether the invention, as described by the specification, requires the shield edge to absolutely prevent the passage of materials between the face and shield, such that it would be appropriate to limit the claim accordingly. An objective of the eye shield system is to provide a sufficient fit "between the shield and the face to adequately protect the eyes from materials splashed onto the face." ‘688 patent at 2:42-43. The shield is to be "resilient and to mold itself to the contours of the face, thus creating a seal preventing entry into the protected area of either liquids or solids splashed on the face." Id. at 3:15-18.
Consideration of the specification as a whole indicates that the eye shield system is not intended to be perfect. First, the words used by the patentee in the summary of the invention, "adequately protect," indicate a tolerance for less than absolute protection. The plain meaning of adequate itself admits of a variable degree of protection that is commensurate with the circumstances. The specification contains no explicit notice that the eye shield system must only provide the highest level of protection, that is, it must be an impermeable shield. Protection adequate to the needs of "any workers who must wear some protective shield" is within the scope of the claim. Therefore, less-than-impermeable shielding is part of the invention.

Second, the lack of any mechanism to ensure a tight, secure fit of the eye shield system to the head and face of wearer also indicates a tolerance for less than absolute protection. The means for keeping the system in place is generally described with reference to Figure 1, as follows: "[w]hile standard temple connectors are shown it is understood that the temple connectors may be of various shapes and may extend around the head of a user and may be adjustable. Any of these types of temple connectors that hold and retain the eyeglasses or eye goggles on a user's head are acceptable." '688 patent at 4:5-10. Based on this description, one of skill in the art would not understand the invention to require positively securing the shield against the face by anything more than the downward angle of a standard temple connector pressing against the rim of the ear. Gas masks and safety goggles known in the art that do absolutely prevent the entry of liquids require more secure retention means in order to create such a seal, but this invention lacks any such teaching or limitation.

Where a claim is expressed in general descriptive words, the court will not put a narrowing modifier before an otherwise general term that stands unmodified in a claim. Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1249-50 (Fed. Cir. 1998). "Prevents" connotes a range of degrees of "keeping from occurring." Panoptx' preferred reading would essentially require the claim to be rewritten as "absolutely prevents." Absent clear indication in the specification to justify this narrowing interpretation, and in view of the invention as understood as a whole, the broader interpretation is preferred.

4. Conclusion

The term "prevent the passage of solids and liquids" as used in claim 42 means to "substantially stop the passage of solids and liquids." 7 See Playtex Products, 400 F.3d at 907. The rearward edge engages with the face to stop, although not to the degree of absolutely stopping, the passage of liquids and solids at the interface. The specification does not require the term to carry only the most restrictive meaning that the rearward edge of the shield "not allow" the passage of liquids or solids.

7 Claim 42 incorporates the two construed terms "blocks passage of liquids and solids" and "prevent passage of liquids and solids." The two should not, simply because they appear together in the claim, have the same meaning. In fact, the presumption is the opposite. See Innova/Pure Water, 381 F.3d 1111, 1119: Pickholtz v. Rainbow Technologies, Inc., 284 F.3d 1365, 1373 (Fed. Cir. 2002). Here, the two refer to different protective modalities. "Blocks" modifies the shield material itself, whereas "prevents" is a limitation on the interface between shield and face. That both are construed in a similar sense - stopping, but not absolutely - is not to say they have the same meaning. The different modes, made operational by different principles, are however understood to achieve a similar degree of performance from the intrinsic evidence, read as a whole.
passage means to pass from one place to another. As such, in the context of the claims at issue, the court interprets the wall means to call for a virtual elimination of any air from passing through the seal. On the other hand, the shaft seal means requires a disruption of any smooth, continuous air travel, which could include something less than a virtual stoppage.

This interpretation is further supported by the specification in this case. As to the wall means, the specification describes a mounting plate and sealing compound that "effectively prevents passage of atmospheric air." The inclusion of a suitable sealant demonstrates a desire for an airtight seal. The use of the word "effectively" does not detract from this conclusion. Effective means to produce a desired effect. Adding the word "effectively" simply reinforces the need for an airtight seal.

Regarding the shaft seal means, the specification states that such seal is to be used to "provide a gas tight seal." Gastight means impervious to gas. Gas, in turn, is defined as a gaseous mixture other than atmospheric air. Thus, gastight does not necessarily mean airtight. Accordingly, the specification is consistent with the interpretation of the claim that allows for some air to pass through the shaft seal means.

The prosecution history sheds additional light on this interpretation. In response to an initial rejection of the patent, the applicant argued that "preventing the passage of atmospheric air through the upright passage to the propeller and further providing a mechanical shaft seal … has been found essential to avoid cavitation at the propeller." This reflects an understanding by the applicant that the wall means only was designed to prevent the passage of air. In a later argument, the applicant submitted that it would not be obvious from the prior art to "additionally provide a mechanical shaft seal … for the dual purpose of preventing the flow of atmospheric air through the shaft enclosure to the anti-deflection bearing and also to prevent flow of atmospheric air through the shaft enclosure to the propeller." This reinforces the court's view that the shaft seal was not intended to prevent virtually all air from passing through.

Thus, it is evident from reading the claim language, the specification and the relevant prosecution history that the wall means was intended to create an airtight seal while the shaft seal means was intended to allow some amount of air through. The critical question remains, however, as to how much air is some air in the context of the shaft seal claims.

Plaintiff contends that any amount of air is acceptable so long as it does not allow for cavitation of the propeller and drying of the anti-deflection bearing. It is apparent from a reading of the specification and prosecution history, however, that plaintiff's claims contemplate a minuscule or negligible amount of air to pass through the shaft seal. While some amount of air greater than that may not cause cavitation or bearing drying, so long as it is more than a minuscule or negligible amount, it does not run afoul of the claims at issue.

Plaintiff places heavy reliance on the case of Read Corp. v. Portec, Inc., 970 F.2d 816 (Fed. Cir. 1992), in arguing that the term "prevent" in the claims must be interpreted to mean preventing sufficient amounts of air to achieve the function attributed to it in the specification, that is, to eliminate excess vibration of the propeller and drying of the anti-deflection bearing. The court is unpersuaded by the Portec case, however, as there the claim limitation described the short end of the device as closed and the long end of the device as "completely" open. Id. at 823. Thus, the court in Portec concluded that "closed" did not mean completely closed. Id. Accordingly, a jury could reasonably find that the accused device literally infringed so long as its short end was sufficiently closed to the ground to effect its intended purpose of separating the soil types during the scooping process. Id.

In this case, the claim language, specification and history do not leave the question of how much air is allowable open-ended as was the case in Portec. Here, the court has already interpreted the claims to require the allowance of only a minuscule or negligible amount of air. 2 Anything greater will not literally infringe the patent.

2 Having so interpreted the claims as to the wall seal means and the shaft seal means, the court denies plaintiff's motion for
Aqua-Aerobic argues that both of these claim clauses must be interpreted as permitting the passage of more than a minuscule or negligible amount of air, for its engineering expert testified that persons of skill in this field of mechanics would understand that the structure described in the specification is not air-tight. Aqua-Aerobic states that the correct claim construction is that the seals prevent the passage of sufficient air to cause cavitation at the propeller. From this construction, Aqua-Aerobic argues that the Aerators mixer must be in infringement because it does not experience cavitation at the propeller.

Aerators responds that the specification states, clearly and explicitly, that the patented invention is the sealing of the system to exclude all atmospheric air. Aerators argues that the claims must be construed as they are written and as the invention is described in the specification, and that these critical limitations can not be negated by a litigation position, even if supported by evidence, that contradicts the plain reading of the specification and claims. Aerators states that its system is not air-tight, and that its expert witness demonstrated that the Aerators mixer passed significantly more than a negligible or minuscule amount of air. Thus Aerators states that its mixer can not infringe the claims.

The expert witnesses for both sides agreed that persons of skill in this field would understand that the structure described in the '771 patent is not air-tight. The district court stated that it had not considered the expert evidence, stating that Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583, 39 U.S.P.Q.2D (BNA) 1573, 1577 (Fed. Cir. 1996) barred consideration of evidence extrinsic to the patent documents. However, expert testimony that is admissible in the proceeding, see Fed. R. Evid. 702, 3 may be considered by the court and given weight appropriate to its content. See Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1308, 51 U.S.P.Q.2D (BNA) 1161, 1167 (Fed. Cir. 1999) ("Despite the district court's statements to the contrary, Vitronics does not prohibit courts from examining extrinsic evidence, even when the patent document is itself clear.")

The experts agreed that the system is not air-tight. However, the district court's claim construction is in accord with the teachings of the specification, which do not permit more than a negligible or minuscule amount of air to enter and pass through the mixer. The undisputed testimony that experts would understand that the described sealing system would not produce an air-tight device, does not broaden the claims to the extent Aqua-Aerobic now proposes, that its claims should be construed to reach a system that passes a significant amount of atmospheric air. This is directly contrary to the limitations in the claims and the description in the specification.

Expert testimony is often useful to clarify the patented technology and to explain its meaning through the eyes of experience, but it may not correct errors or erase limitations or otherwise diverge from the description of the invention as contained in the patent documents. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 981, 34 U.S.P.Q.2D (BNA) 1321, 1331 (Fed. Cir. 1995) (en banc) ("Extrinsic evidence is to be used for the court's understanding of the patent, not for the purpose of varying or contradicting the terms of the claims.") aff'd, 517 U.S. 370, 38 U.S.P.Q.2D (BNA) 1461, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). The district court correctly rejected Aqua-Aerobic's proposal that the claim should not
be limited by the amount of air that passes or flows through the system but instead should be construed to cover any downflow mixer that does not suffer cavitation at the propeller. That is not the invention described and claimed by the patentee.

Aerators presented, through its expert, experimental evidence that the Aerators mixer admits more than a negligible or minuscule amount of air to the propeller. This evidence was not controverted by any technical submission of Aqua-Aerobic, although Aqua-Aerobic’s expert generally criticized the experiment and the conclusion drawn. However, Aqua-Aerobic did not proffer any evidence to show the extent of Aerators’ exclusion of air, or to show any relation between the absence of cavitation in the Aerators mixer and the exclusion of air. Aqua-Aerobic relied solely on Aerators’ advertising statement that its mixer does not add air to the system being mixed, and on the argument that since the Aerators mixer does not experience cavitation it must practice the ‘771 invention. Aerators responds that it indeed does not experience cavitation, and attributes this result to improved design, not to the exclusion of air.

Aqua-Aerobic did not proffer evidence whereby a reasonable jury could have found infringement, either literally or under the doctrine of equivalents, of claims that permit no more than a minuscule or negligible amount of atmospheric air to pass to the propeller. The summary judgment of non-infringement is AFFIRMED.

Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

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1. "preventing the formation of an air pocket"

Plaintiff's Proposed Construction: "preventing the formation of an air pocket"

Defendant's Proposed Construction: "throughout the mixing process (or while the blades are rotating) the potential for the formation of an air pocket around the rotating blades is eliminated before the air pocket can begin to form" and expressly excludes "stirring to disperse, dislodge, or break-up an air pocket after it has begun to form"

The Court's Construction: "preventing the formation of an air pocket [around rotating blades positioned in a pitcher of a blender] but not including a method of stirring to disperse, dislodge, or break-up an air pocket after it has begun to form"

Plaintiff urges the Court to adopt the ordinary meaning of this phrase but then goes on to assert that the ordinary meaning of "preventing" includes eliminating an existing air pocket so long as it is eliminated before it becomes so large that it creates dead space around the blades. Defendant, on the other hand, asserts that the word "preventing" must be construed to exclude methods that eliminate an existing air pocket, such as stirring, based on the doctrine of prosecution disclaimer. Defendant also seeks to add a limitation requiring the method to be performed "throughout the mixing process (or while the blades are rotating)." Plaintiff responds by arguing that there was no unambiguous disclaimer of claim scope during prosecution and that, in any event, the disputed term appears in the preamble of the claim and, thus, should not limit the scope of the claim.

The preamble will be relevant to the scope of the claim if it limits the claimed invention or is "necessary to give life, meaning, and vitality to the body of the claim." E.g., MBO Labs., Inc. v. Becton, Dickson & Co., 474 F.3d 1323, 1330 (Fed. Cir. 2007) (holding that where the patentee provided a specific meaning for a term in the specification and the prosecution history, that term, which appeared in the claim preamble, was limited to the meaning given it by the patentee).

The Court finds that the term "preventing" in the preamble of Claim 1 is "necessary to give life, meaning, and vitality to the body of the claim." First, the inventors repeatedly emphasized during prosecution that preventing the formation of an air pocket was fundamental to their invention and used this argument to distinguish their invention over the prior art. See In re Cruciferous Sprout Litigation, 301 F.3d 1343, 1347 (Fed. Cir. 2002) (a preamble may be limiting if it recites an essential step or the inventor relied on the preamble during prosecution to distinguish the claimed invention from the prior art). Further, the term "preventing" also appears in the body of the claim: "thereby preventing the formation of an air pocket." "When limitations in the body of the claim rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention." NTP, Inc. v. Research in Motion, Ltd., 418 F.3d 1282, 1306 (Fed. Cir. 2005).
The Court also finds that plaintiff's proposed claim language is contrary to the plain and ordinary meaning of "preventing." To "prevent" something is to keep it from occurring at all. Plaintiff's position would expand the meaning of "preventing" beyond its ordinary and customary meaning to include "eliminating" an air pocket that has already formed. Plaintiff's position finds no support in the intrinsic evidence. First, plaintiff argues that there is a difference between the "air pocket" and the "dead space" or the "air pocket around the blades." Plaintiff directs the Court to the following from the specification in an attempt to establish this point: "In the absence of the plunger accessory [], and in particular when processing viscous fluids, such action may tend to form an air channel extending from the blades to the top of the fluid much like a whirlpool. Eventually, an air pocket will form around the blades which renders the blades ineffective for a total blending of the fluid." These sentences, however, do not distinguish a nascent "air pocket" from an "air pocket around the blades." Instead, they distinguish the "air channel" from the "air pocket." This excerpt from the specification does not support plaintiff's position that "preventing" can also include "eliminating."

Plaintiff also argues that the inventors' statements during prosecution do not amount to a "clear and unambiguous" disclaimer of stirring operations, because the prosecution history directed to the apparatus claims cannot serve to limit the method claim of the '021 Patent. However, the cases cited by plaintiff in support of this argument all involved instances where the words used in the method claims in dispute were different from the words in the earlier-prosecuted apparatus claims. Such is not the case here. The claim term "preventing the formation of an air pocket" appeared in the preamble of at least one of the independent apparatus claims of the '892 application. Thus, any arguments made to the examiner defining the word "preventing" are relevant to the interpretation of the identical term that appears in Claim 1 of the '021 Patent.

During prosecution of the '892 application, the inventors presented argument to the examiner to overcome rejections based on prior art. The inventors responded to all of the novelty rejections together: "Turning now to the rejections based on prior art, … It is believed that these rejections are in error based primarily on a fundamental distinction between the present invention and the prior art." In their remarks to the examiner, the inventors repeatedly emphasized that their invention was the prevention of the air pocket, which invention was "fundamentally" different from stirring to dislodge an already formed air pocket. Nothing about those statements was ambiguous.

The inventors also made this distinction specifically in the context of the method claim: "Because the operation of the plunger of the present application is completely distinguishable from a stirring operation, Applicants have also added a method claim." (emphases added) The referred to "stirring operation" was defined elsewhere by the inventors as dispersing or dislodging an air pocket. Accordingly, stirring operations were expressly and unambiguously disclaimed during prosecution.

Plaintiff also argues that the statement in the specification that the plunger "can also be utilized by the user as a stirring mechanism" requires the Court to adopt a contrary meaning. The Court disagrees. The Court must construe the claim terms in light of the specification and also the prosecution history. While the specification may provide for multiple objects of the invention or broad meanings of claim terms, the inventors may also limit the meaning of those claim terms during prosecution. E.g., Phillips, 415 F.3d at 1317. That is exactly what the inventors did here.

Finally, defendant seeks the addition of a limitation to this claim element, namely that the method be performed "throughout the mixing process (or while the blades are rotating)." While, as a practical matter, it may make sense that the plunger must be present in the pitcher at all times during mixing to prevent the formation of an air pocket, defendant points to no evidence in the specification or prosecution history to so limit the claim. Further, the claim already provides for a "method of preventing the formation of an air pocket around rotating blades." (emphasis added) Therefore, the Court finds it inappropriate to add defendant's proposed limitation to Claim 1.

In sum, the Court finds that the prosecution of the '892 application does serve to limit the term "preventing" as it appears in Claim 1 of the '021 Patent. The Court agrees with defendant that plaintiff has disclaimed "stirring to disperse, dislodge, or break-up an air pocket after it has begun to form." Because the Court needs no assistance in understanding the technology involved or the meaning of the terms at issue, the Court declines to consider the dictionary definitions provided by defendant.
The Court adopts Dell’s construction and construes “primary display” to mean “a first display in a multi-display system.” The only dispute relates to the meaning of “primary.”

MASS proposed the term be construed as “the original, principal electronic display supported by the computer’s main chassis and supplying a visible display area of a given size.” MASS offers no intrinsic support for requiring the primary display to be the “original, principal” display. MASS ignores its own extrinsic evidence’s definition of “primary;” instead, it relies on the definition of “secondary” for support. MASS also requires the display to be supported by the computer’s main chassis, which is an improper attempt to import a limitation from a preferred embodiment. See Philips, 415 F.3d at 1323.

As with the “connected to” terms, neither the specification nor claim language provide a special meaning for “primary”; thus, its plain and ordinary meaning applies. See Enercon, 151 F.3d at 1384. As MASS’s own extrinsic evidence confirms, “primary” ordinarily means of “first rank” or “first in order of time.” See MASS’s Response Brief, Ex. H. Also, the inventor implicitly adopted Dell’s proposed ordinary meaning by using the term “first” and “primary” interchangeably to describe display. See '170 patent, Col. 6:50–51 (“system of claim 20 . . . adjacent said first display”). Dell’s proposed construction properly incorporates this ordinary meaning. Accordingly, the Court construes “primary” to mean “a first display in a multi-display system.”

7. “[P]rimary metal particles settling area"

This term is contained in an independent claim in the 781 patent 115 and the 117 patent. 116

As to this term, the Court construes the following meaning: the first and most important settling area, also implying there is more than one settling area. The claim language of both patents explicitly states the exterior surface of the magnets defines a primary metal particles settling area. While the 781 patent Abstract and specification make no special reference to a primary settling area, the Abstract of the 117 patent explains that each magnet member forms a primary debris settling area. Further, the specification explains that the primary debris settling area is "defined by the exterior surface of the magnet member" 117 and a secondary debris settling area is "defined by a surface, which is located immediately behind the inclined surface of the protector." 118 The specification language establishes that there are two distinct settling areas, with two distinct definitions, when mention is made of primary and/or secondary.
(2) "primary spectacle frame" (claims 12, 16 and 24) Plaintiffs argue that "primary spectacle frame" means "the entirety of the primary eyeglass frame with the exception of the lenses, the plastic nose pieces (which touch the upper sides of the wearers's nose), and the legs . . . which extend back over the wearer's ears." JS, Exh. B at 1. Plaintiffs further state that the primary spectacle frame "includes the lens rims (if provided), nose bridge, extensions, projections (if provided), and first magnetic member." Id.

Defendant does not dispute the components which Plaintiffs contend are included in the primary spectacle frame. Instead, Defendant contends that the primary spectacle frame also includes "two lens rims of a continuous eye-loop type to secure eyeglass lenses as depicted in Figures 1 and 3" of the patent. JS, Exh. D at 1. Defendant's proposed construction infers that the primary spectacle frame cannot include rim locks. 5 Defendant points to a statement that David Chao, the inventor of the '747 patent, made during the prosecution of patent application 847,710 (the "'710 Application"). 6 Def. Opposition at 6:9-13. Specifically, David Chao stated that "[t]he [Richard] Chao ['207] Patent has not explicitly described using rim locks to attach primary frames to auxiliary frames. In fact, there is no discussion of rim locks in the Chao Patent." Prosecution File History of the '207 Patent, Declaration of Dave B. Koo ("Koo Decl."), Exh. O at 1459.

5 A "rim lock" is a structure built in the lens rim of the spectacle frame, which allows the spectacle frame to be opened so that lenses can be easily inserted. The rim lock usually includes an upper and a lower member, each with a hole for engaging with a fastener. See e.g., U.S. Patent Application No. 847,710, Koo Decl., Exh. O at 1398 and 1404 (describing a spectacle frame with rim locks).

6 Patent Application No. 847,710, filed on April 28, 1997, was directed to an eyeglass assembly wherein the spectacle frame includes rim locks. See Koo Decl., Exh. O at 1396. The application was deemed abandoned by the PTO on August 16, 1999, after the applicant failed to timely respond to a PTO office action. See PTO Notice of Abandonment, Id. at 1471-72.

The PTO examiner, however, was not persuaded by David Chao's attempt to distinguish the '207 Patent on the basis of rim locks. Specifically, in a subsequent and final Office Action dated January 3, 1999, the PTO examiner stated:

Claims 1-2 [of the 710 Application] are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of [the '207 Patent]. Although the conflicting claims are not identical, they are not patently distinguishable from each other because the claimed invention in claims 1-2 is substantially similar to that in claim 1 of Chao '207 [Patent].

Koo Decl., Exh. 0 at 1466.

In addition, since the patentee is not required to describe in the specification every conceivable embodiment of his or her invention, the '545 Patent did not need to include a discussion or drawings of primary frames with rim locks for the claims to cover that particular embodiment. See Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1344 (Fed. Cir. 2001) (stating that a patentee "is not required to describe in the specification every conceivable and possible future embodiment of his invention.").
Therefore, the court declines to limit the definition of a "primary spectacle frame" to a continuous eye-loop type. Instead the Court construes "primary spectacle frame" to mean the entirety of the primary eyeglass frame with the exception of the lenses, the plastic nose pieces (which touch the upper sides of the wearer's nose), and the legs, which extend back over the wearer's ears; thus, the primary spectacle frame includes the lens rims (if provided), nose bridge, extensions, projections (if provided), the first magnetic member and conceivably rim-locks.

2. "Printed board" and "Wire on a printed board"

The parties have asked the court to construe "printed board" and "wire on a printed board." Because construction of these two terms involves the resolution of a single disputed issue, namely, whether a wire on the printed board must be printed or can be discrete, the court will address the construction of these terms together.

Claim 1 of the '641 patent uses these terms as follows:

1. A modular jack to be mounted on a circuit board, said modular jack comprising:
   
a printed board containing an electronic element for suppressing noise;

   a contactor for contacting with a plug, said contactor being electrically connected with the electronic element by a wire on the printed board;

   a terminal for contacting with the circuit board, said terminal being electrically connected with the electronic element by a wire on the printed board; and

   an insulating housing for encasing the printed board.

As to "printed board," Murata proposes the following construction:

A generally flat piece of material typically fabricated from insulating material that provides support and structural integrity for a plurality of interconnected components comprising a circuit. In printed circuit board technology, some or all of the conducting interconnection pattern is formed on the board.

Murata's Opening Brief, at 17. Bel Fuse proposes:

A flat board made of nonconducting material on which electronic components are adapted to be mounted and electrically connected by a pattern of conductive metal pathways or traces that are printed on the surface of the printed board.

Bel Fuse's Responsive Brief, at 11. Thus, the parties' primary dispute as to the construction of "printed board" is whether all of the wires on the printed board must be printed.

As to "wire on the printed board," Murata proposes: "A conductive metallic element interconnecting various regions, or contributing to the interconnecting of various regions, on the printed board." Murata's Opening Brief, at 20. Bel Fuse proposes: "A conductive metal pathway or trace formed (printed) on a surface of a printed board for electrically connecting components held on the board." Bel Fuse's Responsive Brief, at 11. As with "printed board," the parties dispute whether a "wire on the printed board" must be a printed wire.

The court begins with an examination of the specification of the '641 patent. As part of the summary of the invention, the specification states: "A contactor for contacting with a plug and a terminal for contacting with a circuit board are electrically connected with the electronic element by wires on the printed board. "641 Patent, col. 2, ll. 1-4. The specification also describes three preferred embodiments. As to the first embodiment, it states that "the printed board 30 has printed wires 33 and 34 on both sides," id. at col. 3, ll. 23-24 (emphasis added), and "[i]n order to increase and decrease the number of signal circuits, it is only required to change patterns of the wires 33 and 34 on the printed board 30." Id. at col. 3, ll. 59-62.
"Design of the wires 34 on the printed board 30 is comparatively free, and the pitch P among the holes 32, that is, the pitch among the terminals 36 can be set to 1.02 mm which is the pitch of an ordinary circuit board on which the modular jack is mounted." Id. at col. 4, ll. 11-16. Likewise, the second and third embodiments disclose printed wires. See id. at col. 4, ll. 22-23 ("printed wires 44 and 45 on the board 41 are connected to chip inductors 40."); col. 4, ll. 37-39 ("printed wires 54 and 55 and an earth electrode 57 on the board 51 are connected to the [chip] capacitors 50."). Finally, the specification states:

Although the present invention has been described in conjunction with the embodiments above, it is to be noted that various changes and modifications are apparent to those who are skilled in the art. Such changes and modification are to be understood as included within the scope of the present invention defined by the appended claims.

Id. at col. 4, ll. 50-56.

Thus, the preferred embodiments in the specification of the '641 teach only printed wires on the printed board, but the specification does not expressly exclude the use of discrete wires and states that the invention includes variations to the preferred embodiments that would be apparent to persons of ordinary skill in the art. The question then becomes whether a person of ordinary skill in the art would recognize that some of the printed wires could be replaced by discrete wires.

Murata argues that jumper wires are well-known in the art; jumper wires create "a direct electrical connection, which is not a portion of the conductive pattern, between two points in a printed circuit." The Modern Dictionary of Electronics 532. Murata also cites a photo of an IBM circuit board which includes a jumper wire and the NASA Workmanship Standards which provide standards for the use of jumper wires on printed boards. Exs. 26 and 30 to Murata's Opening Brief. Because the use of jumper wires is well-known in the art and the patent does not specifically exclude them, Murata argues that "printed board" as used in claim 1 of the '641 patent can include discrete wires as well as printed wires and that "wire on a printed board" as used in claim 1 can be either a discrete wire or a printed wire.

Bel Fuse argues that a "wire on a printed board" as used in claim 1 includes only printed wires. Bel Fuse relies on the description of the preferred embodiments in the specification of the '641 Patent, which, as discussed above, include only printed wires. Bel Fuse also argues that one of the objects of the invention of the '641 Patent is that "[a] change in wire patterns on the printed board meets an increase of the required number of signal circuits, thereby never requiring more space." '641 Patent, col. 2, ll. 15-18. Because wire patterns on a printed board are composed of printed wires, Bel Fuse argues that, to achieve this advantage, the invention must include only printed wires. However, Bel Fuse has not explained why this advantage could not be achieved if a discrete wire was used for a connection while the remaining pattern was composed of printed wires, and Bel Fuse does not argue that discrete wires on the type of printed board used in the '641 patent are not known in the art.

Significantly, limiting a "printed board" to one with only printed wires or traces and a "wire on a printed board" to a printed wire would restrict the interpretation of these terms to the preferred embodiments, despite language in the specification saying that modifications apparent to a person of ordinary skill in the art are not excluded. Murata has provided evidence that the use of jumper wires is known in the art, and Bel Fuse has provided the court with no reason to believe that such the modification of using a jumper wire(s) would not have been apparent to a person of ordinary skill in the art. Thus, the court finds that adopting a construction that excludes discrete wires would improperly import a limitation from the specification into the claims. Phillips, 415 F.3d at 1323 (stating that courts should avoid "reading limitations from the specification into the claim"). The court construes "printed board" as "a generally flat piece of material typically fabricated from insulating material that provides support and structural integrity for a plurality of electrically interconnected components comprising a circuit, with some or all of the conducting interconnection pattern formed on the board," and the court construes "wire on the printed board" as "a conductive metallic element interconnecting various regions, contributing to the interconnecting of various regions, on the printed board."

GO BACK

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J. Ref. Nos, 15, 22, and 24 "Printer."

This disputed term is recited in or referred to in Claims 5, 21, and 24.
The parties have agreed that Ref. Nos. 15, 22, and 24 should be grouped together because they can be decided on the construction of the single term "printer."

The Court adopts the reasoning set forth in Ref. No. 13, discussing the inventor's intention that the printer provide no additional record of the voting event. The Court construes the term "printer" as follows:

A printer that retains no record of the data printed (including but not limited to a thermal jet printer, a dot matrix printer, an ink-jet printer, a bubble jet printer, a laser printer, and the like).

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1. The '798 patent -- Claim 1.
   a. "Printer." This phrase is not limited to the IBM 3800 printer. See Moore U.S.A. v. Standard Register Co., 229 F.3d 1091, 1111 (Fed. Cir. 2000).

5. "PRIOR AGREEMENT"

Travel Sentry proposes that "prior agreement" be defined as an "an agreement that is binding and enforceable by law between the baggage screening entity and another party to process locks pursuant to the special procedure." Tropp advances an alternative definition: "a prior arrangement between the luggage or baggage screening entity and another party to process special locks in accordance with a special procedure."

The term "prior agreement" appears in claims 1,9,14, and 18 of the 537 patent and claims 1 and 10 of the 728 patent. The dispute over whether the term "baggage" should be construed as synonymous with "luggage" having been resolved, the principal remaining difference in the parties' proposed constructions hinges on whether a prior agreement, within the meaning of the claims, must be understood as a legally binding and enforceable agreement. Essentially, Travel Sentry argues that the whole objective of the invention is defeated if the screening entity can choose whether or not to follow the agreed-upon special procedure at its own whim. (Pl.'s Br. 13).

The patent claims themselves lend no support to narrowly construing "prior agreement" as an agreement that is legally binding and enforceable by law. "Prior agreement", as reflected in the claim language of both patents, contemplates some coordination and pre-planning on the part of the screening entities regarding possession of the master keys to the special locks. That is all. Additionally, the specifications of both patents fail to draw any distinctions about how formal such arrangements should be; neither party has pointed to any prosecution history supporting any such limiting distinction. Since the Court finds no need to construe "prior agreement" claustrophobically, it rejects any requirement that a "prior agreement" must be a legally binding and enforceable one. Therefore, the Court construes the term "prior agreement" as "a prior arrangement between the luggage screening entity and another party to process special locks in accordance with the special procedure."

9. "prisms"

As claim 1 describes it, a photolithographic "exposure apparatus" includes, inter alia, a "plurality of prisms of which at least one is movable along the optical axis, arranged on the optical axis." See Patent '336 at 44:27-38. Two questions grow from this claim text: one, whether the generic "prisms" term embraces so-called conical (or cone) prisms or is limited to polyhedral forms, and, two, whether Nikon nevertheless acted as its own lexicographer when using the word "prisms." See Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1306 (Fed. Cir. 2003) ("The presumption in
favor of the ordinary meaning of claim language as understood by one of ordinary skill in the art may be overcome where the
patentee chooses to be his or her own lexicographer by clearly setting forth a definition for a claim term in the
specification.”) (citation omitted); see also Akamai Techs., Inc. v. Cable & Wireless Internet Servs., Inc., 344 F.3d 1186,

Taking the second question first, the court finds that Nikon did not act as its own lexicographer regarding the term "prisms." The Federal Circuit has long noted that, when attempting to act as a lexicographer, a patentee must posit new or different definitions with clarity, deliberateness, and precision. See, e.g., In re Paulsen, 30 F.3d 1475, 1480 (Fed. Cir. 1994). Nikon did not do so here, leaving completely impressionistic any attempt to assign "prism" a meaning different from--or otherwise antithetical to--common understanding. The specification language does, of course, expressly disclose a "so-called cone prism having a conical shape inclined incidental surface and the emission surface so that the irradiation light beams are formed into the annular band shape." See Patent '336 at 32:24-30 (referencing Figure 23A). But the specification language posits this disclosure in reference to a different embodiment and a distinct function (viz., to distribute an illumination beam in an annular portion) than those at issue in the relevant claim language. Id. at 45:29-45. Plain as it is that Nikon referenced "so-called cone prism[s]" in crafting the '336 patent invention, the evidence Nikon adduces does not "provide [the type of] reasonable clarity, deliberateness, and precision sufficient to narrow the definition of the claim term in the manner urged." Abbott Labs. v. Syntron Bioresearch, Inc., 334 F.3d 1343, 1354-1355 (Fed. Cir. 2003). But it is unnecessary to rely on Nikon's self-styled lexicography to fit conical prisms within the broader meaning of the "prisms" term. Prisms of a cone shape are expressly contemplated by the patent, and no linguistic or scientific rule mandates that "prisms" possess two flat planes rather than one flat plane with an affixed conical surface. The essence of a prism is simply that it alters or refracts the direction or path of incident light; like any other prism shape, conical prisms may perform this function, even if it does not do so in a manner identical to a polyhedral prism. Specification language makes clear that a lithographic exposure apparatus comprises a surfeit of prism forms: "Pyramid type prism[s]," "polyhedron prism[s]" (of convex and concave varieties), and "cone prism[s]" occupy various parts of the overall apparatus, see Patent '336 at 23:1-13; 32:24-28, and the claim itself identifies a "plurality of prisms," id. at 44:28-38, making unequivocal that the "prism" term is an incorporative one. The court thus includes conical prisms within the generic category of "prisms," construing "prism" to mean "an optical element, made up of two or more planar or conical surfaces, capable of changing the direction or path of light."
5. "Profile"

The parties offer different interpretations of the term "profile" as used in claim 1. Plaintiff argues that "profile" means "an outline of an object." (Plf. Brief at 16). Defendants suggest that the term "profile" is synonymous with "cross-sectional view." (Def. Brief at 11). This distinction is important because an outline of the gauge insert would not include voids in the filler, such as the pin cavity. However, the pin cavity would be included in a cross-sectional view of the insert.

In common usage, profile can mean either an outline or a cross-section. See WEBSTER'S II NEW COLLEGE DICTIONARY at 883 ("1 . . . b. A representation of an object or structure seen from the side. 2. An outline of an object."); MERRIAM WEBSTER'S COLLEGIATE DICTIONARY at 931 ("1: a representation of something in outline . . . 3: a side or sectional elevation . . ."). However, the claim is better understood as using the term synonymously with "cross-section." The specification refers to Figures 2 & 5, which show "cross-sectional views" of the gauge insert. (Plf. Brief, Exh. 1, col. 2, ln. 27 & 35; id., col. 5, ln. 42). The drawings themselves are not outlines, but show the entire structure of the insert, including the pin cavity. Therefore, the Court finds that "profile" means cross-section.

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e. "does not project laterally beyond the chassis"

The defendants request that the Court construe the term "does not project laterally beyond the chassis." The term appears twice in claim 1, once at the conclusion of the "tail articulation means" limitation and once at the conclusion of the "head articulation means" limitation. In each instance, the term describes the way the lateral conveyors fold when the plant is in transport mode. That is, the conveyor folds so that it "does not project laterally beyond the chassis."

The defendants propose that this term be interpreted to mean that "no elements of the lateral conveyor extend or protrude beyond the longitudinal beams." The plaintiffs object to the replacement of "chassis" with "longitudinal beams", and further urge the Court to construe "project" to mean "to jut out: extend beyond a given line."

As discussed above, the Court construes "chassis" to encompass more than just the longitudinal beams described by the defendants. The use of "chassis" in this part of the patent must conform to the Court's construction, and the Court therefore rejects the defendants' request that "chassis" be replaced with "longitudinal beams" in the construction of "does not project laterally beyond the chassis."

With respect to interpretation of the word "project", neither party argues that this term has a special technical meaning in this context. The Court finds that the entirety of the patent, including the drawings of the preferred embodiment, belie the defendants' argument that the term "project" would admit of elements that extend, even minimally, beyond the device's chassis. Thus, the Court finds the term "does not project laterally beyond the chassis" to mean "does not extend, in any amount, laterally beyond the chassis".

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19. Projecting

The Plaintiffs request construction of the term "projecting" as used in claims 1, 10, 27, and 31 of the '267 patent; in claims 39, 40, 41, 44, and 49 of the '410 patent; and, in claims 1, 21, 22, and 23 of the RE '439 patent. The Plaintiffs propose that the projecting be construed according to its ordinary meaning as "protruding." (Pls.' Open. Br. 35.) Pergo has not responded to the Plaintiffs' proposed definition.

Claim 39 of the '410 patent, in pertinent part, states: "with a locking strip at one long edge and at one short edge, each locking strip extending throughout substantially an entire length of the corresponding edge of the panel and being provided with a projecting locking element." ('410 patent, 14:22:26.) (Emphasis added). Project is defined as to "extend forward or out," and protrude is a synonym. Webster's II New Riverside University Dictionary 940. Therefore, the Court construes...
"projecting" as "protruding."

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z. "Projecting" (Claims 34, 43)

140. This claim term describes the operation of the movable element (Claim 34) and the movable projecting element (Claim 43). LaGard identifies these elements in the '656 patent lock with spherical detent ball 96 which is normally positioned below the upper surface of the solenoid housing. When the solenoid is activated, the detent ball projects, extends or protrudes outwardly of the solenoid housing to a detented position. Col. 6, lines 15-20. Thus, as described and illustrated in the '656 patent specification, "projecting" means to be pushed by the solenoid from a position within the solenoid housing to a position where the detent ball protrudes above the upper surface of the solenoid housing.

141. The meaning of the term as used in the '656 patent is consistent with the usual definition of "project". Generally, "project" means to cause to protrude. PX 8. "Protrude" means to thrust forward, to cause to project, or to jut out from the surrounding surface. Id.

142. Thus, as used in the '656 patent claims, "projecting" means that the separate detent is caused to move so as to protrude above the upper surface of the solenoid housing.

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D. "Said Housing Including a Plurality of Projections Projecting from Said Side Walls"

The parties agree that "said housing including a plurality of projections projecting from said side walls," as used in claim 16, requires two or more projections. The parties contest whether at least one projection must extend from each side wall or whether all projections may extend from a single side wall.

Switchcraft argues the phrase should be interpreted as "two or more projections where at least one projection extends from each side wall." In support of this argument, Switchcraft notes that claims 1 and 16 first describe:

An electrically grounded housing have a rear end, front end, a top wall, a bottom wall, and two side walls defining generally planar surfaces facing one another, wherein said front ends, and said top, bottom and side walls form an enclosed housing . . . .

'378 patent at 10:3-7, 16:27-31 (emphasis added). Claim 16 subsequently teaches the projections extend from "said side walls." Id. at 14:11. Switchcraft argues any interpretation that does not require the projections to extend from each side wall ignores the claim's use of "walls." Switchcraft gives significance to the description and illustration of the preferred embodiment showing at least one projection coming offeach side wall. See '378 patent at 8:45-48, FIGS. 21, 22.

Conversely, ADC contends the phrase should be construed to mean "two or more projections with each projection projecting from either of the side walls." ADC argues the claim refers consistently to "side walls" collectively as a single entity. Collective use of "side walls," ADC avers, does not require any particular distribution of projections on one or both side walls.

The Court finds claim 16 teaches that the plurality of projections may extend from either of the side walls. To eliminate any ambiguity, the Court interprets the phrase "said housing including a plurality of projections projecting from said side walls" to mean "two or more projections extending from one or both side walls." Adopting Switchcraft's interpretation would ignore the consistent collective use of "side walls" throughout the claim. In addition, the claim does not specify whether the projections must extend from one or both walls but merely teaches they extend into "previously empty spaces." '378 patent at 9:46-52. In the preferred embodiment, all projections extend from one side wall, with the exception of waveguide 210, which projects from the other side wall. Figures 21 and 22 show projection 210 necessarily extends from the cover sidewall.
because a lever arm occupies the space on the other side wall. However, the specification also describes an alternative embodiment that possesses only one forward port (rather than the two in the preferred embodiment). Id. at 9:32-35. Claim 16 also acknowledges the alternative embodiment through the language "said front end having at least a first jack port." Id. at 16:32 (emphasis added). The alternative embodiment omits forward port 34, which uses projection 210 for impedance matching purposes. In the absence of forward port 34, projection 210 would not be necessary and all of the remaining projections would extend from one side wall. For these reasons, the Court finds "two or more projections extending from one or both side walls" is the appropriate interpretation.

4. Claim 5 only

1. "at least one leg projecting laterally from each side of the center flange, each laterally projecting leg including an attachment flange defining an aperture for receiving a fastener for securing the support to a vehicle"

The term "at least one leg projecting laterally from each side of the center flange" means each side of the longitudinal length of the center flange must include at least one "laterally projecting leg," a term referring to a structure providing support for one side of the shifter support and having an attachment rim or rib projection extending outwardly from the side and fitted with a hole for receiving a fastener, such as a screw, to secure the support to the vehicle.

Second, the claims also describe a method for "projecting the corner edge portions of the duct section end portions beyond the corner section." For example, Claim 1 requires "projecting the corner edge of the duct section end portions beyond the corner pieces into the gasket member to deform a surface of said gasket member. . . ." (Emphasis added). The Court construes this language to require an assembler to take some action to cause the offset portion of the corner section to be moved relative to the corner piece front surface. 8
iv. "Projection"

180s' proposed construction for "projection" is "something that extends outward," and Gordini's is "a tooth-like extension protruding radially from a member surface."

I construe "projection" as "something that extends outward from a surface." The portion of this construction that reads "something that extends outward" is the widely accepted understanding of "projection." The entire construction, including the phrase "from a surface," is consistent with all the relevant language in the specification. (See, e.g., id., Ex. A at col. 7, ll. 47-49, Figs. 16 & 17.) Furthermore, although this Court need not consult extrinsic evidence because the intrinsic evidence is clear, Phillips, 415 F.3d at 1324, this construction closely tracks the dictionary definition. (Pls.' Mem., Ex. D ("projection" is "a thing that extends outward from something else").)

Defining "projection" as, in part, "tooth-like" would be vague and imprecise. In fact, as 180s points out, the "projections" shown in the patent figures do not particularly resemble teeth. Nor do claims 3 or 4 require that the "projections" protrude "radially" from the "member." Such a limitation simply does not exist in the claim language.

v. Projection

Plaintiffs interpret "projection" to mean "any portion of the auxiliary bridge which extends toward the primary bridge for the purpose of going over and engaging with the primary bridge." The Defendant agrees with this interpretation, but requests that the court specifically note that a "projection" is not limited to a single-component straight piece, but that it can also be a multi-component, bent or even U-shaped structure. Plaintiffs object to Defendant's request that the term be read to include "multi-component structures." 5

--- Footnotes ---

5 It is not entirely clear to the court whether Plaintiffs also object to Defendant's request insofar as it requests that the court note that the term also comprises bent and U-shaped structures. The court will presume that Plaintiffs do object.

--- End Footnotes ---

The court finds that the term "projection" means "any portion of the auxiliary bridge which extends toward the primary bridge for the purpose of going over and engaging with the primary bridge" and agrees with Defendant that a "projection" can also be a multi-component, bent or even U-shaped structure.

Nothing about the term "projection" indicates that a "projection" could not be a multi-component, bent or U-shaped structure, nor does the other claim language suggest that the term "projection" should be limited as Plaintiffs request. If an apparatus claim recites a general structure (e.g., a noun) without limiting that structure to a specific subset of structures (e.g., with an adjective), the Federal Circuit generally construes the claim to cover all known types of that structure that are supported by the patent disclosure. See Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998). Notably, the patentee need not "describe in the specification every conceivable and possible future embodiment of his invention." See Ccs Fitness v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002) (internal citations omitted).

--- Footnotes ---

6 This, of course, assumes that the term in question is not a means-plus-function claim limitation. See infra. In this case, neither Plaintiffs nor the Defendant, nor the court, would construe the term "projection" as a means-plus-function claim.
Here, the court finds no reason to limit the term projection to the kind of single-component structure described in the specification. See id. at 1364-65 (reversing the district court's decision to interpret the term "reciprocating member," in a patent involving fitness equipment, as not comprising a multi-component structure simply because the embodiments did not include such a structure). Therefore, the court construes "projection" to mean "any portion of the auxiliary bridge which extends toward the primary bridge for the purpose of going over and engaging with the primary bridge." The court adds that, all things being equal, 7 the term could comprise a multi-component, bent or U-shaped structure.

7 It, of course, goes without saying that the fact that a "projection" could be a multi-component, bent or U-shaped structure does not imply that every multi-component, bent or U-shaped structure necessarily constitutes a "projection."

The relevant background facts are set forth in the order deferring action on the partial summary judgment motions, 2005 DNH 138, slip op. at 2-5, and therefore will be repeated here only insofar as is necessary to explain the court's analysis. Claim 1 of the '243 patent claims:

An elongate member, comprising: a base portion, and a great multiplicity of resiliently flexible hook-like projections extending generally toward said base portion, with at least some adjacent ones of said projections, in a direction along the length of said member, extending in generally opposite directions; said base portion and integral projections being formed from an extrusion of molten plastic material by providing a first, cooled forming roller having a plurality of hook-forming cavities . . . ; providing a second pressure roller in position for coaction with said first forming roller; concurrently rotating said first and second rollers in opposite directions . . . ; directing said extrusion in between said first and second rollers at an interface thereof so that said plastic material fills said hook-forming cavities to form said base portion of said strip-like fastener member and with said hook-like projections extending integrally from one surface of the base portion, each said hook-like projection having a free end portion; cooling said fastener member . . . by carrying it on the periphery of said rotating cooled forming roller through a substantial portion of a revolution of said forming roller; and removing said strip-like fastener member from the first forming roller . . . so that said hook-like projections are withdrawn from said hook-forming cavities, after being sufficiently cooled so that unacceptable deformation of the hook-like projections is avoided . . . by drawing the free end portion of each hook-like projection through the throat portion of the respective one of said cavities, the free end portion of each said hook-like projection extending generally toward the base portion of said fastener member.


In its order deferring action on the summary judgment motions, the court construed the phrase "with at least some adjacent ones of said projections, in a direction along the length of said member, extending in generally opposite directions" to require that the projections which are adjacent along the length of the member extend in generally opposite directions. 2005 DNH 138, slip op. at 14-15.

Paiho manufactures molded plastic hook fasteners under the name "Easy Tape." First Rocha Decl. P 4, Exs. AA, BB. One of these products consists of rows of hooks extending along the length of the product where the hooks in one row all face in one direction and the hooks in the alternating row all face in the opposite direction. Id. P 8; see also id. P 4, Ex. AA. Another product consists of "double hooks," i.e., "hooks that contain two hook-like projections from each stem." Id. P 6; see also id. P 4, Ex. BB. Paiho has never produced plastic hook fasteners of any other design. Id. PP 8-9.
C. Discussion

Based on the foregoing facts, Paiho seeks summary judgment on the ground that its fasteners "have hooks in the same direction." Mem. Supp. First Mot. Part. Summ. J. at [2]. In Rocha's words, however, each "stem" on Paiho's double-hook fasteners contains "two hook-like projections" which appear to face away from each other. Rocha Decl. P 4, Ex. BB. Thus, resolving Paiho's first motion for partial summary judgment depends, at least in part, on whether the phrase "adjacent ones of said projections . . . extending in generally opposite directions" encompasses two hooks extending in generally opposite directions from a single projection. See 2005 DNH 138, slip op. at 15-16.

In response to the court's order for briefing on this claim construction issue, the parties have proffered similar constructions of the term "projections." Velcro argues that a "projection" is "material that projects from the base of the member and has a general hook shape, with a free end portion that extends toward the base of the member." Velcro Cl. Constr. Br. at 1. Paiho argues that "'projection' means the entire portion of the elongate member that extends from the base portion of the member up to and including any free end portions." Paiho Cl. Constr. Br. at 1. Thus, the parties differ on whether a single "projection" can have more than one "free end portion." Velcro says no, and that therefore a single double hook amounts to "two 'hook-like projections' that abut each other" and extend in generally opposite directions. Velcro Cl. Constr. Br. at 6. Paiho, however, contends that the term "projections" is not limited to projections with only one free end portion. Accordingly, Paiho characterizes a double hook as a single projection which has two free end portions extending in generally opposite directions, but which does not itself extend in a direction generally opposite from its adjacent projection.

The court set forth the methodology for claim construction in its prior claim construction order in this case:

In the absence of an express intent to impart a novel meaning to the claim terms, the words take on the full breadth of the ordinary and customary meanings attributed to them by those of ordinary skill in the art.

To ascertain this meaning, the court must first examine the intrinsic evidence, which includes the claims themselves, the specifications, and any prosecution history submitted by the litigants. The court starts with the actual language of the claim. If the claim language is clear on its face, then the consideration of the rest of the intrinsic evidence is restricted to determining if a deviation from the clear language of the claims is specified.

Although the court must therefore construe the claims in light of the specifications, it must take care not to read limitations from the specifications into the claims. If the meaning of the claim limitations is apparent from the totality of the intrinsic evidence, then the claim has been construed. If, and only if, a "genuine ambiguity" still persists, the court may turn to extrinsic evidence, such as expert testimony, to interpret the claim.

2005 DNH 38, 2005 WL 483400, at *1 (internal citations, quotation marks, and bracketing omitted).

Beginning with the language of the claim itself, Paiho points out that claim 1 uses the term "projections" ten times, not once stating that a projection can have only one free end portion. "A word or phrase used consistently throughout a claim should be interpreted consistently." Phonometrics, Inc. v. Northern Telecom Inc., 133 F.3d 1459, 1465 (Fed. Cir. 1998). Here, the claim specifically describes the projections as "including free end portions extending generally toward [the] base portion, with at least some adjacent ones of said projections . . . extending in generally opposite directions . . . ." '243 patent, col. 10, lines 12-16 (emphasis added). Velcro does not point to the usage of "projections" anywhere else in the claim to suggest that, despite the plural form of "portions" in the language at issue, the scope of "projections" is restricted to those with only one free end portion each. 2

--- Footnotes ---

2 Velcro itself cites the Federal Circuit's recent opinion in Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 423 F.3d 1343, 2005 U.S. App. LEXIS 19886, 2005 WL 2241249 (Fed. Cir. 2005), for the proposition that the use of an indefinite article in a patent claim does not restrict the accompanying noun to its singular form. 423 F.3d 1343, 2005 U.S. App. LEXIS 19886, [WL] at *5. Thus, the claim's references to "a free end portion" do not limit the projections to just one. As Free Motion Fitness also explains, even the use of the definite article in connection with "free end portion" toward the end of the claim also does not limit "projection" in the manner Velcro suggests. 423 F.3d 1343, 2005 U.S. App. LEXIS 19886, [WL] at *5.
Instead, Velcro argues that the claim "does not limit the 'hook-like projections' in size or relative positioning, except for the . . . requirement that some of the hook-like projections be adjacent, and that these adjacent hook-like projections extend in generally opposite directions." Velcro Cl. Constr. Br. at 5. Velcro therefore suggests that "two back to back hook-like projections can even abut each other." Id. at 6. This reading, however, appears to ignore that the projections must be "adjacent," rather than "abutting," and Velcro does not explain why "adjacent" should be read to encompass "abutting" in the context of the claim. Cf. Int'l Rectifier Corp. v. IXYS Corp., 361 F.3d 1363, 1373-74 (Fed. Cir. 2004) (reversing construction of "adjoining" to mean "adjacent" given dictionary's notation that "as between adjacent and adjoining, adjoining may more strongly indicate the existence of common bounding lines or points of junction") (internal quotation marks and bracketing omitted). Indeed, as Paiho points out, the claim requires "hook-like projections extending integrally from one surface of the base portion . . . ." '243 patent, col. 10, lines 34-35; see also id., lines 10-11. Two projections that abut each other would not appear to extend integrally from the surface of the base portion, but from a common "stem" that itself extends from the base. Velcro's interpretation of "projections" to embrace extensions from the base portion which abut each other is therefore inconsistent with the language of the claim.

Velcro further suggests that construing "projection" to mean a structure with two or more free end portions "pointing in different directions" flouts the requirement that the projections be "hook-like." Velcro Reply Cl. Constr. Br. at 2. To paraphrase the court's reasoning in considering the term "strip-like" in the claim construction order in this case, 2005 DNH 38, 2005 WL 483400, at *3, the adjective "hook-like" conveys a mere suggestion of configuration, rather than a complete resemblance to what Velcro now considers the shape of a hook, i.e., a "J" shape. In any event, as the fact that both parties have been using the term "double hook" to describe the protuberances on Paiho's product attests, the common understanding of "hook" is not limited to those shaped like the letter J.

The court therefore concludes that, as Paiho argues, "projection" means the entire portion of the elongate member that extends from the base portion of the member up to and including any free end portions. This construction of "projection," in contrast to Paiho's more limited reading, gives the term the full breadth of its ordinary and customary meaning. Because the meaning of the term is clear from the language of the claim itself, "the court peruses the remaining intrinsic evidence for the sole purpose of determining if a deviation from the clear language . . . is specified." 2005 DNH 38, 2005 WL 483400, at *4 (internal quotation marks and footnote omitted).

Here, as Velcro acknowledges, the specification largely "mirrors the claim language" in relevant part. Velcro Cl. Constr. Br. at 6-7. Like the relevant passage from the claim, discussed supra, the specification notes that "the hook-like projections of the fastener member include free end portions," using that term in the plural. '243 patent, col. 2, lines 51-52. Furthermore, in describing the preferred embodiment, the specification states that "the hook-forming cavities are provided in the periphery of the forming roller such that adjacent ones of the cavities, in a direction circumferentially of the roller, extend or face in generally opposite directions." Id., col. 7, lines 24-28. Because each projection corresponds to a single cavity, id., lines 28-29, this description further undermines Velcro's contention that "adjacent" projections can abut each other. See also id., lines 20-21 ("many variations are possible with respect to the exact size, shape, and relative positioning of the cavities . . . .") (emphasis added). Neither Velcro's principal claim construction brief nor its reply persuasively demonstrates that any part of the specification is inconsistent with Paiho's proffered construction of "projection." Consistent with the court's order deferring action on the motions for partial summary judgment, neither party has submitted any prosecution history or other intrinsic, or extrinsic, evidence shedding light of the meaning of the term. 3 The court therefore adopts Paiho's proposed construction of "projection" to mean the entire portion of the elongate member that extends from the base portion of the member up to and including any free end portions.

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3 In requesting the additional briefing, the court announced that it would "consider the parties' claim construction arguments in light of the principles of waiver discussed" in the order, 2005 DNH 138, slip op. at 16, which noted that Paiho had forfeited its ability to argue that the prosecution history supported its construction of the term "adjacent" in seeking summary judgment by failing to identify any dispute as to the meaning of that term during claim construction. Id. at 13-14.

--- End Footnotes ---
This term is used in Claim 19 the '328 Patent, which defines an end cap including pairs of projections extending inwardly opposing each other from said sidewall of the endcap. Pl's Markman Br. Ex. D. col. 16 ll. 10. Innovative argues that this term should be construed to mean "a part which projects or juts out from the sidewall of the end cap." Innovative bases this definition on the ordinary meaning of the term projection as a portion which projects or juts out and the specification for the patent and drawings that show pairs of spaced apart projections. The ordinary meaning is strong evidence of the proper claim construction. Phillips, 415 F.3d at 1313.

Defendants argue that the court should define projection as "a functional stop member" because this is the only meaning provided for in the specification for the projections. This language comes from an example in the specification. I agree with Innovative that the example is not a limitation. Further, it is problematic to define the term by its stopping function. The claim language selects a broader term, "projections," while the specification uses the more narrow terminology of "projections such as stops." Pl's Markman Br. Ex. D. col. 6 ll. 59. When the patentee uses a broader term in the claim language than the specification, it is improper to limit the claim term to an example in the specification. See Teleflex, Inc., 299 F.3d at 1326.

Based upon the ordinary meaning supported by the specification, I find that "projection" means "a part which projects or juts out from the sidewall of the end cap."

4. "projection means" -- Amesbury contends that the term "projection means" in Claim 8 is not a means-plus-function term. Rather, the term ought to be interpreted as though it just said "projection". In that respect, Amesbury argues that the term connotes "at least one projection or protrusion", with the word "projection" meaning "a part that juts out". By contrast, Caldwell argues that the term is a mean-plus-function claim and that the term should be construed more narrowly as "a means that projects from the mounting means and cooperates with the flanges of the channel, which is limited to the rectangular or elongated structure of a spine or rib. Furthermore, the spine or rib must fit snugly between the flanges." 4

At the hearing, Caldwell proposed the following definition on page 18 of its handout:

Function: projecting between the inwardly turned opposed flanges and cooperating with the flanges of the channel means (jamb). The corresponding structure is a spine or rib.

The Federal Circuit has observed that "if the word means' appears in a claim element in association with a function, this court presumes that § 112, P 6 applies. This presumption collapses, however, if the claim itself recites sufficient structure, material, or acts to perform the claimed function." Micro Chemical, 194 F.3d at 1257; accord Allen Engineering Corp. v. Bartel Industries, Inc., 299 F.3d 1336, 1347 (Fed. Cir. 2002); but see Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed. Cir. 1997) ("Patent drafters conventionally [invoked the means-plus-function statute] by using only the words means for' followed by a recitation of the function performed. Merely because a named element of a patent claim is followed by the word means,' however, does not automatically make that element a means-plus-function' element under 35 U.S.C. § 112, P 6.").

In submissions following the Markman hearing, both parties cited to several more decisions of the Federal Circuit regarding the issue of whether a particular claimed term invokes the means-plus-function statute, and more particularly, whether a term that includes the word "means" recites sufficient structure or material for performing the claimed function to rebut the presumption. See e.g. Altiris, 318 F.3d at 1375-76 (finding that "means of booting" 5 is a means-plus-function even though "commands" represent structure and the claim states a location); Cole, 102 F.3d at 531 (finding that "perforation means" 6 is not a means-plus-function because the claim "describes the structure supporting the tearing function (i.e. perforations) . . . [and] also its location (extending from the leg band to the waist band) and extent (extending through the outer impermeable
layer)); Wenger, 239 F.3d at 1237 (finding that "means defining a plurality of separate product coating zones" is not a means-plus-function because, even assuming sufficient function, the "claim specifically recites structure including spray nozzles that are directed toward the sidewall of the reel, which" accomplish the function); Envirco Corp. v. Clestra Cleanroom, Inc., 209 F.3d 1360, 1365 (Fed. Cir. 2000) (finding that "second baffle means" is not a means-plus-function because the term baffle itself imparts structure and further, the "claims describe the particular structure of this particular baffle (having inner surfaces for directing airflow . . . radially outward . . . and thereafter . . . between said first baffle means and said air filter means") and the claims describe "details about the location and formational details"); TI Group Automotive Systems (North America) v. VDO North America, L.L.C., 375 F.3d 1126, 1135 (Fed. Cir. 2004) (finding that "pumping means" is not a means-plus-function because the claim recites "its structure (including a nozzle and a venturi tube in alignment with the nozzle), location (being located within the reservoir in the region of the opening), and operation (the passage of fuel out of the nozzle and through the venturi tube causing fuel to be entrained through the opening into the interior of the reservoir)").

5 The relevant claim stated: "means of booting including a first set of commands . . . resident on said storage device of said digital computer . . . , and a second set of commands resident on a storage device external to said digital computer . . . " Altiris, 318 F.3d at 1368.

6 The relevant claim stated: "perforation means extending from the leg band means to the waist band means through the outer impermeable layer means . . . " Cole, 102 F.3d at 526.

7 The relevant claim stated: "means defining a plurality of separate product coating zones . . . , each of said zones including at least one spray nozzle directed toward said sidewall . . . " Wenger, 239 F.3d at 1229.

8 The relevant claim stated: "second baffle means disposed radially outwardly of said centrifugal fan means . . . [and] having inner surfaces for directing the airflow from said centrifugal fan means inwardly of said primary housing and between said first baffle means and said filter means whereby air being introduced into said housing by said centrifugal fan means will be directed radially outwardly of said centrifugal fan means and guided by said first baffle means towards said second baffle means and thereafter by said second baffle means between said first baffle means and said air filter means." Envirco Corp., 209 F.3d at 1363.

9 The relevant claim stated: "pumping means for pumping fuel into the reservoir, said means being located within the reservoir in the region of the opening and including a nozzle and a venturi tube in alignment with the nozzle, the passage of fuel out of the nozzle and through the venturi tube causing fuel to be entrained through the opening into the interior of the reservoir;" TI Group, 375 F.3d at 1131.

Turning to the patent at issue, I find that this is not a case where the drafter of the patent was as "clearly enamored of the word means" as in Allen Engineering, 299 F.3d at 1348, where the Court ignored the word means’, which appeared 32 times in the relevant claim, in all but one of the twelve means’ limitations, or in Cole, 102 F.3d at 531, where the Court declined to construe any of the six elements that included the word means’, which occurred in the claim 14 times, as means-plus-function terms. The 368 Patent used the word "means" 13 times, but only with respect to four limitations: channel means, sash frame support means, mounting means/means for mounting, and projection means. And as discussed above, at least "mounting means" or "means for mounting" is a means-plus-function. The question, therefore, is whether Claim 8 recites sufficient structure or material associated with projection means' to rebut the means-plus-function presumption. Amesbury argues that the presumption is overcome in Claim 8 because the claim describes the structure carrying out the function of inhibiting the rotational movement of the mounting means (ie. a projection’ or a thing or part that extends outward beyond a prevailing line or surface’), its location ("positioned between said inwardly turned opposite flanges of the channel"), and its extent (sufficient to cooperate with the channel flanges). See Cole, 102 F.3d at 531; Amesbury's Post Markman Hearing Brief, p. 2.

Claim 8 does not articulate the extent of the "projection means", although the extent' suggested by Amesbury could be inferred. It is clear, however, that Claim 8 describes the location or position of the "projection means", namely "positioned between said inwardly turned opposite flanges of the channel." Location is a relevant factor and part of the structure according to the Federal Circuit. See Cole, 102 F.3d at 531; TI Group, 375 F.3d at 1135; and Envirco, 209 F.3d at 1365 (holding that "the claims recite sufficient structure, including details about the location and formational details"). However, as suggested by Caldwell, one could interpret Altiris, 318 F.3d at 1376, as implying that a location alone will not necessarily
provide sufficient structure. Consequently, I find that the crucial question is whether the term "projection" imports sufficient structure like the term "perforation" in Cole, or whether the term is, as Caldwell argues, "functional and inherently meaningless" as "any three-dimensional object will project from the surface to which it is attached." [Caldwell's Supplemental Submission, p. 1.] As to this issue, I agree with Amesbury; "projection" imports sufficient structure to overcome the presumption.

The ordinary meaning of "projection" as understood by a person of skill in the art is readily apparent. In Amesbury's initial submissions, they suggested the definition of "a part that juts out", and in the supplemental submission, Amesbury suggested the definition of a "thing or part that extends outward beyond a prevailing line or surface." I do not believe that it is necessary to adopt one or the other definition, because the debate seems to be whether or not "projection means" should be limited to the structures in the specification that correspond to and perform the function, namely the "raised spine" and the "locating rib", not over the definition of "projection". 10

10 In construing "raised spine", Caldwell argued that "spine is not broad enough to encompass any projection' or protrusion' such as a knob or a bump." [Caldwell's Brief, p. 7.] Thus, it appears that Caldwell shares Amesbury's understanding of the term.

Construction -- Projection(s).

**3120**

Projection Near A Terminal End

Claims 6-9, 16, 18, 20, and 23 call for a "projection near a terminal end" of a spring pin. Zettl argues that the term "near" includes the term "at" and, therefore, the projection can be located near or at the terminal end of the spring pin. Defendants disagree. But ordinary understandings of the term "near" clearly includes "at." See Webster's at 1510. Therefore, a "projection near the terminal end" refers to any part that juts out at or near a terminal end of the spring pin.

**3121**

3. "projection optical system"

During previous stages of this litigation, the parties did not dispute the meaning of the term "projection optical system"; indeed, they apparently stipulated before the ITC that the term should be construed as "a lens system or other component or components that project or expose a pattern onto an object." Before this court, ASML still favors this construction, but Nikon now proposes an alternative, asking the court to read the term to mean "a collection of optical components for forming an image of a pattern onto a photo resist layer on a substrate."

Neither party disputes that the "projection optical system" constitutes part of the larger lithographic exposure apparatus. See Patent '041 at 5:29-37. Nor does either party dispute that the role of the "projection optical system" is to project an image of a pattern onto a specific substrate. Id. But by comparison to this limited (and particularized) role, the parties' proposed constructions either overspecify or overgeneralize the operation of the relevant art. Cf. id.; see also id. at 3:17-37 & 11:60-12:45 (discussing the image formation process). Nonetheless, without resort to the parties' imprecise definitions, the court can construe the claim term by reference to the words' ordinary meaning and by reference to the intrinsic evidence. As the claim phrase itself suggests, a "projection optical system" is "a component or combination of components that project or transfer a mask pattern onto a substrate." The specification language, in turn, repeatedly refers to "projection optical system" as the mechanism by which mask patterns are translated to a substrate. See, e.g., id. at 12:55-13:62; 15:42-16:53. Consistent with plain meaning and the lessons of the specification language, the court construes the term "projection optical system" to mean "a component or combination of components that transfers or translates a mask pattern onto a substrate."
C. Orientation of the Projections

The '686 patent requires "outwardly convex projections." The '050, '023, '752, and '022 patents require "outwardly directed projections." The district court granted summary judgment for TCI because it found that TCI's products do not contain these elements. Order at 8.

The district court correctly held that the '686 patent requires that "the projections of the insert means have a width or diameter defined by a radius, meaning that [they] must be convex." Id. at 5.

With respect to the '050 and '023 patents, the district court held that TCI did not infringe because its products "have a space between the recesses which consists of a line segment. They do not have outwardly directed projections with a transverse cross-sectional configuration of a certain length." Id. at 8 (internal quotations omitted). Similarly, with respect to the '752 and '822 patents, the district court held that TCI did not infringe because its products "have spaces between the recesses which are line segments, not outwardly directed projections having a transverse cross-sectional configuration of a certain length." Id. (internal quotations omitted). In an attempt to address these portions of the district court's decision, the parties engage in extensive, and rather arcane, debate about the shape of the projections required by the patent claims. As the parties argue their positions, they hotly contest such details as the meaning of "transition points" and "radius end points," the definition of which is said to require that the length of the projections be measured in a particular way, whether or not the length of the projections and recesses must be measured with reference to a radius or a parameter equivalent to a radius, and what such an equivalent parameter might be. While the details of this debate may be interesting to the parties, we find the debate difficult to follow and irrelevant to settling the dispute before us. Indeed, at oral argument, counsel for the parties agreed that the issue of how to measure the length of the projections is not involved in this appeal. We believe the issue on appeal is what constitutes an "outwardly directed projection" and that this question should be addressed directly, rather than obliquely by referring to various measurement techniques for determining a length of the projections. At oral argument, counsel for TCI urged that the limitation "outwardly directed projections" implies that the peaks of the projections extend above the recesses and that the recesses should have been defined as extending above the lowest point of the depressions. We do not agree.

The claim language states that the surface of the insert means is "defined by a plurality of outwardly directed projections with recesses therebetween." '752 patent, col. 10, lines 31-33. Thus, the existence of "outwardly directed projections" necessarily requires the existence of "recesses" - the voids between the projections - and vice versa. Recesses and outwardly directed projections are complements of each other, and one cannot exist without the other. There is no requirement that these projections extend for any particular distance above the recesses. "Outwardly directed" is used to modify "projections" to distinguish the projections on the insert means from the "inwardly directed projections" on the surface of the inner hose, see '822 patent, claim 1, col. 10, lines 16-43, but does not have a special meaning or require that the projections have a particular shape. It simply clarifies that the insert means projections point towards the outside of the hose construction, so that they may engage with the recesses of the inner hose, while the projections of the inner hose point toward the inside of the hose construction, so that they may engage with the recesses of the insert means. In other words, "outwardly directed projections" means simply that bumps exist on the outer surface.

In each of the three claim constructions discussed above, the district court erroneously read a limitation into the claim language. Our cases make clear, however, that adding limitations to claims not required by the claim terms themselves, or unambiguously required by the specification or prosecution history, is impermissible. See Laitram Corp. v. NEC Corp., 163 F.3d 1342, 1347, 49 U.S.P.Q.2D (BNA) 1199, 1203 (Fed. Cir. 1998) ("a court may not import limitations from the written description into the claims"); SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1121, 227 U.S.P.Q. (BNA) 577, 585 (Fed Cir. 1985) (en banc).
d. Projection of the locking-member

Finally, with regard to the lock-up means, the parties dispute the meaning of the claim's requirement that "the second end of the locking member projects from the second chamber through the opening in the second end of the housing." Col. 7, lines 40-45. "Project" means to jut out or protrude and an "opening" is an open place or part, a hole, or a gap. See, e.g., Webster's New World Dictionary, 2d ed. (1970); The American Heritage Dictionary, New College Ed. (1976). There is nothing in the specification that suggests any intended meanings other than these ordinary ones. Thus, giving the claim language its ordinary meaning, the claim requires that the second end of the locking member protrude from the second chamber through an open place or gap in the second end of the housing.

III.

We ultimately conclude that it was proper to grant the motion for summary judgment of non-infringement albeit taking issue with some of the reasoning relied upon by the district court. Although the district court determined that it need not decide "whether the condenser is part of the process chamber or a separate unit," Semitool Order, 2005 U.S. Dist. LEXIS 4889 at *11, we find that summary judgment of non-infringement can only be properly granted if we determine that the condenser is inside the processing chamber.

The district court decided it did not have to reach that issue because "regardless of whether the condenser is merely an area within the process chamber or a separate unit, it does not 'supply a drying gas to the process chamber.'" Id. "The Tornado system is a closed system, meaning no external air enters or exits the machine during operation," and in the Tornado system "there is no introduction of 'drying gas'" into the process chamber. Id.

As stated above, the Claim Construction Order construed "supplying drying gas to the process chamber" to require that "supplying gas is introduced into the process chamber" and furthermore "once inside the process chamber, all that is required is that the "drying gas"...is capable of readily absorbing evaporated cleaning liquid from the carriers and removing said vapor(s) from the process chamber as it is evacuated therefrom." Id. The Claim Construction Order focuses on introduction of gas into the process chamber and evacuation of drying gas from the process chamber. Whether gases enter or are evacuated from the processing chamber, as required by the claims, is quite different from whether "air enters or exits the machine during operation" as described by the district court in its infringement determination. For example, depending on how the processing chamber is defined, air may not exit the machine but nonetheless could be introduced into the processing chamber and could remove vapors from the processing chamber. Specifically, as argued by Semitool, if the condenser were located outside the processing chamber and yet still within the machine then the condenser could potentially introduce drying gases into the processing chamber and could remove vapors when drying gases are evacuated from the processing chamber despite the fact that the apparatus as a whole is a closed system. Because of this, we find it is necessary to reach the question that the district court did not reach: Is the condenser inside the processing chamber or is it outside the processing chamber?

While the Claim Construction Order does not explicitly construe the term "processing chamber," the term appears throughout the Claim Construction Order. As a result, in order to resolve this dispute, we must turn to the standard tools of claim construction to determine what the Claim Construction Order meant when it used the term "processing chamber."

In order to properly understand how the district court was using this term in its Claim Construction Order, it is necessary to define the relationship between the processing chamber and the major structural limitation in the patent: the processing vessel. Semitool argues that the processing chamber encompasses only the area inside the processing vessel where wafer carriers are loaded, cleaned, and dried. In other words, the processing chamber is only the central region of the processing vessel; the other outlying regions of the processing vessel are not part of the processing chamber. In contrast, DMS argues
that the processing chamber encompasses the entire enclosed area bounded by the processing vessel's walls and that this interpretation is based on the specification from the '127 and '113 patents.

In resolving this issue, we begin with the claims. "Quite apart from the written description and the prosecution history, the claims themselves provide substantial guidance as to the meaning of particular claim terms." Phillips v. AWH Corp., 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc). "First, we look to the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention." Vitronics Corp. v. Conceptionic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996).

Asserted independent claims 1 and 39 of the '113 patent have the limitation that the apparatus contain "a processing vessel defining a process chamber therewithin." In fact, as described above, Semitool supports its interpretation by pointing to DMS's own admissions wherein DMS stated that "the central area of the DMS Model 300 contains a vessel defining a process chamber in which wafer carriers are loaded, cleaned, and dried." Semitool argues that this supports their interpretation of process chamber. We do not agree. In fact, according to the explicit language of the claims themselves, the process chamber is defined as the interior of the processing vessel. For these claims, there is no doubt that the processing chamber encompasses the entire interior of the processing vessel and this conclusion is consistent with DMS's interpretation of processing chamber.

Asserted claim 28, however, presents a more complex question. In contrast to the other asserted claims, independent claim 28 of the '127 patent does not itself contain the limitation of "a processing vessel defining a processing chamber therewithin." Rather, that claim only specifies "a processing chamber within the processing vessel." All that can be concluded from claim 28 itself is that the processing chamber must be within the processing vessel. In other words, according to claim 28, the processing chamber could constitute the entire interior of the process vessel or it could constitute some smaller space within the processing vessel. However, the clear definition of the process chamber language in the claims of the earlier '113 patent application suggests the same definition of the processing chamber in the continuation application which issued as the '127 patent. See, e.g., NTP, Inc. v. Research in Motion, Ltd., 418 F.3d 1282, 1293 (Fed. Cir. 2005); Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1350 (Fed. Cir. 2004).

In any event, the specification makes clear that the processing chamber is coextensive with the processing vessel. As we stated in Phillips, "the specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" 415 F.3d at 1315 (quoting Vitronics, 90 F.3d at 1582).

DMS argues that the specification emphasizes that the processing chamber is meant to include the entire interior of the processing vessel. In other words, even regions of the processing vessel that are not areas where wafer carriers are loaded, cleaned, and dried are described by the patent as part of the processing chamber. In contrast, Semitool argues that the specification limits the process chamber because the specification describes a bottom baffle that separates the area where wafers are cleaned and dried from the rest of the processing vessel. Such a partition, according to Semitool, is quite relevant as the infringing device has a spray guard between the condenser and the area where the carriers are cleaned and dried.

The specification states that "the processing chamber 47 is also most preferably provided with a false bottom or bottom baffle 85." '127 patent, col. 5, ll. 57-60. The specification describes the baffle as a "false bottom" rather than an actual bottom. As argued by DMS, this suggests that the area below the baffle is still part of the processing chamber. The specification also further describes this region below the bottom baffle by stating that "the outer bottom wall piece 77 [of the processing vessel] has a processing chamber outflow opening or port formed therethrough adjacent to the outflow box." '127 patent, col. 7, ll. 26-30. Because this opening is specifically labeled as the "processing chamber outflow" rather than the "processing vessel outflow," the specification further reinforces the conclusion that the area below the false bottom baffle is still part of the processing chamber. Therefore, contrary to Semitool's contentions, the specification supports an interpretation of processing chamber as the entire interior of the processing vessel.

Furthermore, the specification treats the three terms processing bowl, processing chamber, and processing vessel synonymously thus further reinforcing the fact that processing chamber should be interpreted to encompass the entire interior of the processing vessel. First, the specification describes the processing vessel synonymously with the "bowl." The specification introduces these two terms together by discussing "a processing bowl or vessel 21." '127 patent, col. 2, l. 66. Similarly, the specification describes a "sidewall of processing vessel or bowl 21." '127 patent, col. 3, l. 20. From these passages, the specification makes it clear that the processing vessel and the processing bowl are one and the same structural
element.

But the specification also uses "bowl" in association with the processing chamber. The specification describes that "the processing chamber bowl and other conduits which supply gas or liquids are preferably made of stainless steel." '127 patent, col. 11, l. 44. This passage indicates that the processing chamber is associated with the "processing bowl" and in every other portion of the specification the processing bowl is used synonymously with the processing vessel. The specification makes no meaningful distinction between the vessel, the bowl, or the chamber and therefore the specification further reinforces that the entire interior of the processing vessel and the processing chamber should be interpreted to be coextensive.

Thus, for claims 1, 4, 9, 17, 19, 39, 55, 56, and 57 of the '113 patent, the claims themselves state that the "processing vessel defines a process chamber therewithin." Therefore, we agree with DMS that the processing chamber encompasses the entire interior of the processing vessel. Similarly, for claims 28-33 of the '127 patent, although the claims themselves leave room for argument, the specification makes clear that the processing chamber is coextensive with the entire interior of the processing vessel. Having interpreted processing chamber to be coextensive with the processing vessel, we now turn to the question of the alleged infringement of the asserted claims by DMS's Tornado wafer carrier cleaner.

5. "A product finishing station"

Many of the same concerns fueling the parties proposed constructions for "customer service station" are also present in their proposed constructions of "product finishing station." Foodie offers for its construction "any area(s) where product finishing is located," while Jamba Juice offers "a specific defined location, separate from the customer service station, where an employee stands and remains to operate blending units, access ice, dispense cups, rinse blenders and place them on a drain board. All the elements contained within the product finishing station are within reach of a stationary employee."

The Court's analysis of the parties' construction is the same as it was for "customer service station." There is insufficient support in the patent mandating that a customer service station and product finishing station must be separate. While items such as Fig. 2, which show separate stations, may show a preferred embodiment, this by itself does not limit the patent in such a manner. However, the Court does agree with Jamba Juice that the area is intended to be limited to a "station," encompassed by the items called for in the claims. See '448 patent col. 8 l. 16-19. Therefore, the Court's construction for "product finishing station" is: "a station including at least one blending unit, an ice bin, at least one cup dispenser and foot or hand activated rinse sink with integrated or detached drain board."

2. Progressive/Progressively

The terms progressive/progressively are found in Claims 1, 10(b), 14(b), 19, 28, 29, 30, 32, 35, 36 and 44 of the '461 patent; Claims 1 and 8 of the '108 patent; Claims 3, 4, 5, 9, 10, 12, 14, 17 and 18 of the '839 patent; Claims 1, 3, 4, 5, 7, 10, 13, 16 and 17 of the '625 patent; Claims 1 and 8 of the '744 patent; Claims 1, 4, 7 and 14 of the '389 patent; Claims 1, 4, 9 and 10 of the '711 patent; and Claims 1, 3, 5 and 10 of the '340 patent.

Vision Advancement asserts that the term "progressive/progressively" should be construed as "continuous change or continuously changing," while Vistakon submits "A controlled, gradual gradient designed to provide a certain vision correction power, without any abrupt changes or edges or breaks or transitions."

Turning first to the claims, claim 1 of the '461 patent states that "the correction power being caused to vary continuously and progressively." '461 patent, 7:50-51. Vision Advancement's definition would appear to make "progressively" superfluous because the claim language already requires that the power "vary continuously", which is the same as "continuously changing." See Merck & Co. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so."). Therefore, the claim language
supports a construction of "progressive" different than that urged by Vision Advancement.

The specification of the Portney Patents describes "progressive" when discussing the nature of the change in power in the lens of the invention. As the specification states, "This change is continuous (progressive), without any abrupt correction changes, or "edges." '461 patent, 2:44-45; see also 461 patent Abstract. Vision Advancement points to that language as showing that the '461 patent defines "progressive" as continuous. However, that would require the Court to ignore the rest of that sentence. Additionally, in the preceding sentence, the specification appears to define continuous when it states that the variation of the vision correction of the invention "is continuous, i.e., from near correction focal power to far correction focal power, then back to near, and again back to far, or vice versa." '461 patent, 2:40-44. The term "progressive" appears in the next sentence along with the requirement that the change or variation also be "without any abrupt correction changes, or edges."

Furthermore, the only embodiment disclosed in the Portney Patents to demonstrate how vision correction power was adjusted by the curvature of the lens surface, depicted a lens surface that gradually transitioned between high and low vision correction powers, through intermediate vision correction powers. See Col. 4:16-17; Col. 5:48-6:40. The fact that the Portney Patents disclose that "The undulating surface of the lens is preferably formed by a computer-controlled machining apparatus" underscores the gradual nature of the undulating surface. See Col. 5:48-6:40.

The statements and arguments made by the patentee to distinguish the prior art further support that the term "progressive" requires a gradual change or gradient of vision correction power without any abrupt correction changes or edges. In the Background section of the specification, the patentee distinguished U.S. Patent No. 4,162,122 ("Cohen") because the lens disclosed there had "disadvantages due to . . . abrupt curvature change of the lens surface from one zone to another." '261 patent, 2:3-13. Consistent with that statement, during prosecution of the '461 patent Portney distinguished the prior art Cohen and DeCarle bifocal lenses as lacking "any true progressive correction powers between the bifocal regions." Prosecution History, Def Br., Ex. P., VIST029127 (also noting "no suggestion that DeCarle's polishing is done to provide true progressive intermediate correction powers between the purely bifocal zones"). Portney further argued that his "progressive multifocal ophthalmic lens tends to reduce or eliminate this shadow image [of the prior art]" and "provides progressive intermediate imaging." Id.

Vistakon urges that the gradient of vision correction power should also be defined as "controlled" and that the vision correction power should be "certain". However, the Court finds no basis to add those terms to the definition of "progressive/progressively." Both of those terms appear to add ambiguity to the definition. For example, what does it mean to be "controlled" or "certain"? The specification of the '461 patent refers to the lens as preferably being formed by a "computer-controlled" apparatus, but it does not require it be so formed. '461 patent, 5:48-49. Therefore, the Court declines to add those terms to the definition of "progressive/progressively."

Accordingly, the Court construes the terms "progressive/progressively" to mean "A gradual gradient of vision correction power without any abrupt correction changes or edges."

Further, likelihood of success on the merits here turns on claim construction. Indeed, Engel admits that it inserts the plates in "one quick step." Thus, an interpretation of "progressively pressing" that defines only one step will necessarily result in a finding of literal infringement of that claim. However, if "progressively pressing" is construed to require two steps, as Engel argues, Engel clearly does not literally infringe claim 1 of the '880 patent. The district court construed "progressively" to mean "steady" and did not interpret that term as requiring two steps.

Engel argues that the depiction of the claimed process in the written description and the drawings discloses a method where a first portion of the angle plate is pressed at an angle into the flange, and then another portion of the plate is pressed to insert the entire angle plate completely into the flange (thus, involving a two-step process). Systemation argues that the two-step process of the interpretation advocated by Engel is merely the preferred embodiment of the claimed method. The word "progressively," according to Systemation, is broadly referring to the steady pressing on the plate to move it onto the flanges, without requiring any two-step method.
We agree with Engel that a portion of the written description does disclose a two-step process for inserting the angle plates into the flanges. See '880 pat., col. 4, ll. 17-24 ("In an initial step of pressing an angle plate 22 into the pair of channel flanges 24, the corner portion of the angle plate 22 is depressed within the notch 48 with the legs 38 being tilted upwardly and tightly engaged with the panels 26 of the duct 20. Thereafter, as is shown in Fig. 5, the angle plate 22 is then fully pressed into the channel flanges 24.") (emphasis added). However, there is nothing in the specification that suggests Systemation limited the scope of claim 1 to such a "two-step" method. There was no prosecution history or prior art cited that would render it reasonable to limit the claims in such a way because an automatic method of inserting angle plates was not known in the prior art. Further, other portions of the written description support the conclusion that the disclosure of a two-step process was merely a preferred embodiment, not the entire invention claimed by Systemation. See '880 pat., col. 1, ll. 57-60 ("An angle plate may be best positioned for pressing into the channel flanges with a corner thereof tilted into the notch.") (emphasis added); col. 9, ll. 21-26 ("Although only a preferred embodiment of the angle plate positioning machine has been specifically illustrated and described, it is to be understood that minor modifications may be made therein without departing from the spirit and scope of the invention as defined by the dependent claims.") (emphasis added).

Finally, the doctrine of claim differentiation also supports the conclusion that "progressively pressing" in claim 1 is not limited to the two-step pressing disclosed in a portion of the specification because a two-step method is expressly claimed in claim 5, which depends from claim 1:

5. The method of claim 1 wherein there is a notch between adjacent flanges at a corner of each duct, and in the pressing of an angle plate into said flanges, said angle plate is tilted with a corner of said angle plate tipping into said notch, and thereafter pressing said tilted angle plate fully into said flanges.

Id. at col. 10, ll. 4-9 (emphasis added). Claim 5 is directed to the two-step pressing method that Engel advocates as the legally correct interpretation of the final limitation of claim 1. However, claim 5, which depends from claim 1, is presumed to be narrower than claim 1. Further, under the doctrine of claim differentiation, absent clear and persuasive indications to the contrary, claim 1 is not limited to the two-step process, the limitation of the narrower dependent claim 5. See Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551, 37 U.S.P.Q.2D (BNA) 1609, 1612 (Fed. Cir. 1996). Engel has not pointed to any such indications. Accordingly, we agree with the district court that "progressively pressing" does not require two-step pressing, but instead is correctly construed merely to require only steady pressing.

2. "Projection"

This term is also an element of claim 1 of the '053 patent. The pertinent phrase within the claim is "wherein the means for selecting comprises a projection extending therefrom and fitting into the slot of the holder." (Col. 8, lines 43-45.)

In this context, Rutherford proposes the construction, "portion of the mode selector that fits into a slot in the holder." Security Door, on the other hand, suggests "a pin moveable within a slot."

Rutherford contends that the definition urged by Security Door improperly limits construction of the term at issue to a single embodiment. Directing the Court's attention to column 5, lines 37-38 of the '053 patent, Rutherford rejoins that the specification describes a mode selector with a slotted head and a projection that fits into the slot in the holder. Security Door counters that the preferred embodiments refer to a pin moveable within the slot. In Security Door's view, they uniformly portray a pin fitting into a slot in the holder that serves to keep the mode selector in whichever position is selected. Harco and Vanguard take no position on this claim term.

While it would appear that each of the preferred embodiments included in the '053 patent refer to a pin moveable within the slot, neither the specifications nor the claims appear to include such a limitation. The United States Court of Appeals for the Federal Circuit has consistently counseled district courts against importing claim limitations from illustrative preferred embodiments unless the claim is drafted in a means-plus-function format. See Laitram Corp., 863 F.2d at 865; DSW, Inc. v. Shoe Pavilion, Inc., 537 F.3d 1342, 1348 (Fed. Cir. 2008).

The limitation proposed by Security Door, namely that the means for selecting comprises a "pin", is not supported by either
the claim language or specifications. The Court will therefore construe the term "projection" to mean "portion of the mode selector that fits into a slot in the holder."

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3129

1. A Proportional Positive Airway Pressure Apparatus

This phrase is found in the preamble of Claim 21 of the '575 Patent.

Phrase: A proportional positive airway pressure apparatus

Construction: The inclusion of the term "proportional" in the preamble of this claim is found to be in error and not to effect the claimed invention.

Reasoning: Plaintiffs contend that the term "proportional" appears in the preamble of Claim 21 by mistake. According to plaintiffs, the balance of Claim 21 discloses the predetermined pressure profile version of the invention, and not the proportional version. Defendant argues that because the '575 patent does claim an alternative proportional version of the invention, we cannot find that there is no reasonable debate that the word appears in this preamble by accident, and thus, cannot excise it. We disagree and find that upon consideration of the patent as a whole, it is clear that Claim 21 refers not to the proportional version of the invention, but to the predetermined version of it.

There is no question that the '575 patent includes a proportional version and a predetermined version of the invention. The proportional version is more complex and constantly monitors the patient in order to ensure that only the minimally sufficient pressure is applied at any time. The predetermined version monitors the patient only to determine when exhalation begins, and upon sensing it, applies a predetermined pressure profile. This latter version is described as more cost effective and able to be used in conjunction with existing CPAP devices. '575 Patent, cl. 20, Ins. 16-20, 66-67; cl. 21, Ins. 1-11. Claim 21 discloses this predetermined version of the invention, as evidenced by the fact that the pressure applied during exhalation is predetermined and by the fact that the claim does not require or mention a minimally sufficient pressure.

GO BACK

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The parties primarily dispute whether proportioning is permissible, rather than mandatory. They also dispute whether proportioning is "mixing in a measured amount" or "adjusting in relation to other [substances]." As previously explained, "allows" or "allowing" are not correct. What largely remains for the Court to decide is whether proportioning is adjusting or mixing.

The specification explains that proportioning foam concentrate and water can be accomplished by adjusting water pressure relative to foam concentrate. '336 patent, 7:59-65. It also explains that the foam concentrate and water can be pre-mixed in a container for small fires. '336 patent, 7:53-57. Claim 3 of the '965 patent recites specific pressures. The specification also explains that the foam concentrate are combined as ratios: "The foam concentrate ... is normally proportioned with water in percentages ranging from about 0.1% by volume foam concentrate to about 1% by volume foam concentrate." '336 patent, 7:44-51. See also '965 patent, 4:28-31 ("The foam concentrate is proportioned with water in percentages ranging from about 0.1% by volume to about 1% by volume depending on the hardness of the water."). Claim 6 of the '965 patent also recites specific percentages.

Looking to the claim language, the relevant limitations use "proportioning ... into" to produce a mixture. For example, Claims 1 and 9 of the '965 patent recite, "proportioning a foam concentrate into a stream of non-flammable liquid to form a stream of foam concentrate/liquid mixture." Defendants' verb of choice, "mixing," seems redundant considering the ultimate product is a "mixture." US Foam's verb choice of "adjusting" is inappropriate for the pre-mixed embodiment. The verb "measuring," however, is instructive and more accurately describes how the foam concentrate/liquid mixture is created for each of the embodiments. The embodiments described include "premix[ing] the foam concentrate and water in a suitable container," Venturi "line proportioning devices" that measure the flow rate of the foam and water, and "around the pump"
The Court construes "proportioning" to mean "measuring," "proportioned" to mean "measured," and "proportions" to mean "measures."

2. "protecting a portion of the interior of a structure from the force of the wind and objects carried thereby"

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Plaintiff's Proposed Construction</th>
<th>Defendants' Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>protecting a portion of the interior of a structure from the force of the wind and objects carried thereby.</td>
<td>A protective barrier device configured to be quickly deployed on or within a portion of a structure for protecting an interior of the structure from the force of the wind and objects carried thereby.</td>
<td>The protective element configured to be quickly deployed in or within a portion of a structure for protecting an interior of a building to protect a life.</td>
</tr>
</tbody>
</table>

The key dispute between the parties is whether claim 10 is meant to include only protective devices placed on the inside of a structure, or if it is meant to include devices placed inside or outside of a structure. Defendants contend that the phrase should be limited to a device configured to be quickly deployed only "in an interior of a building to protect a life." On the other hand, Plaintiff asserts that there is no structural feature described by this phrase, i.e. the phrase should not be narrowly interpreted to include only devices deployed on the interior of a structure. Plaintiff argues that this claim term, when read together with the specification, clearly encompasses a device that can be configured for quick deployment inside or outside of a structure.

For the reasons already noted in the previous section, the Court rejects the portion of Defendants' proffered construction limiting this claim term to protection of a life. As to the interior/exterior dispute, Defendants referred the Court to figures 2, 3, and 8 of Patent '085 at the hearing in support of their argument that this term should be construed to include only devices placed on the inside of a building. While it is true that these three figures show the placement of the device inside a structure, Defendants' selective and isolated reference to and reliance upon these figures alone is both misleading and misplaced. Indeed, figures 9 and 10 of Patent '085 clearly show the placement of the patented device on the outside of a structure, which offers support for a construction encompassing a device configured for placement on the inside or outside of a structure.

Defendants also rely heavily on a September 5, 2003 amendment by the patentee during the prosecution of Patent '852, a continuation-in-part of Patent '085. The Court has reviewed the relevant prosecution history related to this September 5, 2003 amendment. This prosecution history shows that during the prosecution of Patent '852, a PTO examiner rejected claim 1 of the originally filed Patent '852 application based on the judicially created doctrine of double patenting. Specifically, the examiner stated that the proposed claim, if allowed, "would improperly extend the 'right to exclude' already granted" by claim 10 of Patent '085. JCCS, 3 Exhibit D (DE 161-5), July 3, 2003 Official Action at 4. In response to this PTO examiner rejection, the applicant, through counsel, filed the September 5, 2003 amendment, which states:

"Claim 10 of [Patent '085] recites a kit for use in the interior of a building having a material with opposite edges which are connected to the building. The instant application is directed to a material for extended use and one edge is connected to the building and the opposing edge is connected to the ground. This is a fundamental difference between the patent claim and the application. There is no teaching in [Patent '852's] application to use [the invention set forth in Patent '852] in the interior of a building. Therefore, it is not evidence how any claim that may be allowed in this application would extend the life of claim 10 of the patent."
the device rather than a limitation on where the device is placed. A review of the claim and specification does not support

The Court concludes that the phrase "protecting a portion of the interior of the structure" is meant to be an intended use of and "on or within" a structure. Patent '085, col. 1, Ins. 14-16; col. 1, Ins. 61-62.

This Court finds additional support for this conclusion when considering that Patent '085's specification unambiguously coverage of Patent '085's claim 10 to placement of the patented device only in a structure's interior.

While the Court recognizes that explicit arguments made during a later prosecution to overcome prior art can lead to narrow claim interpretations, Seachange Int'l, Inc. v. C-COR, Inc., 413 F.3d 1361, 1372-73 (Fed. Cir. 2005) ("[w]here an applicant argues that a claim possesses a feature that the prior art does not possess in order to overcome a prior art rejection, the argument may serve to narrow the scope of otherwise broad claim language"), any such disclaimer must be clear and unambiguous. Id. at 1373; see also Purdue Pharma L.P. v. Endo Pharm., Inc., 438 F.3d 1123, 1136 (Fed. Cir. 2006) ("[u]nder the doctrine of prosecution disclaimer, a patentee may limit the meaning of a claim term by making a clear and unmistakable disavowal of scope during prosecution"). In determining whether the doctrine of prosecution disclaimer applies to disavow a claim's scope, the prosecution history must be considered in its entirety. Seachange, 413 F.3d at 1372.

Here, Defendants argue that the applicant's statement in the September 5, 2003 amendment that "Claim 10 … recites a kit for use in the interior of a building" narrows the scope of claim 10 to cover only devices used "in an interior of a building." Plaintiff counters that this statement does not amount to a clear and unambiguous disclaimer of claim scope. This Court agrees with Plaintiff. Viewing the prosecution history in its entirety shows that, in an effort to overcome the examiner's rejection, the applicant emphasized that claim 10 of Patent '085 discloses a device "having a material with "opposite edges which are connected to the building" while Patent '852's application "is directed to a material for external use and one edge is connected to the building and the opposing edge is connected to the ground." JCCS, Exhibit D (DE 161-5), September 5, 2003 Amendment at 3 (emphasis in original). A reasonable reading of the amendment in context is that the applicant attempted to distinguish claim 10 from Patent '852's application on the basis of whether the edges were connected to the building or not, rather than whether the device is deployed in the interior or exterior of a structure. Under these circumstances, the Court declines to find the later prosecution statement to be a clear, unequivocal disclaimer limiting the coverage of Patent '085's claim 10 to placement of the patented device only in a structure's interior.

This Court finds additional support for this conclusion when considering that Patent '085's specification unambiguously provides for the device to be placed inside or outside of a structure. See Elbex Video, Ltd. v. Sensormatic Elecs. Corp., 508 F.3d 1366, 1372 (Fed. Cir. 2007) (reaffirming that "because the prosecution history represents an ongoing negotiation between the PTO and the applicant … it often lacks the clarity of the specification and thus is less useful for claim construction purposes") (quoting Phillips, 415 F.3d at 1317). Specifically, Patent '085's Abstract states that the "flexible material may be included within the confines of a building in a free standing form or incorporating one or more interior walls of the building or structure" or "attached to the exterior of a structure to cover openings in the structure." Patent '085, Abstract. Further, the specification expressly contemplates use of the material "as an enclosure within the building or structure [which] could be free standing or incorporate one or more interior walls of the building or structure," while also expressly providing for the use of "material deployed on the outside of buildings to cover small openings such as windows and doors." Id. at col. 2, Ins. 5-11. The patent specification also refers to the patented device as being placed "on or inside" and "on or within" a structure. Patent '085, col. 1, Ins. 14-16; col. 1, Ins. 61-62.

The Court concludes that the phrase "protecting a portion of the interior of the structure" is meant to be an intended use of the device rather than a limitation on where the device is placed. A review of the claim and specification does not support
the narrowing construction proposed by Defendants. To the contrary, Plaintiff's proposed interpretation is consistent with the claim language and specification. Thus, the Court declines to construe this disputed phrase as being limited to a device deployed only in a structure's interior and hereby adopts Plaintiff's proposed construction, which accurately refers to a protective barrier device configured to be placed on the interior or exterior of a structure with the overall intended purpose of protecting the structure's interior.

The available intrinsic evidence relating to the '873 patent indicates that the phrase "protecting back panel" has a special meaning. It refers to a relatively stiff structure that protects the food tray compartments from indentation and damage. It specifically does not include flexible, pressure-sensitive labels which the patent specification consistently distinguishes from back panels. Plaintiff's assertion that the '873 patent uses the phrase "protecting back panel" to mean any back panel that enhances the structural integrity of the food tray runs counter to the available intrinsic evidence. Accordingly, it is rejected.

The Court's analysis begins with the presumption that Claim 2's back panel need not be relatively stiff. As noted, Claims 1 and 2 contain similar elements. Both claims refer to a back panel. However, whereas Claim 1 specifies "a back panel comprising a flat relatively stiff planar sheet," Claim 2 refers only to a "protecting back panel." The doctrine of claim differentiation directs courts to presume that claims that use different words or phrases have different meanings. Comark Communications, 156 F.3d at 1187. Accordingly, Claim 1's clear reference to a "relatively stiff" back panel gives rise to the presumption that Claim 2's "protecting back panel" need not be relatively stiff.

Nevertheless, the patent specification and prosecution history rebut this presumption. See Laitram Corp. v. Morehouse Industries, Inc., 143 F.3d 1456, 1463 (Fed. Cir. 1998) (presumption of claim differentiation is rebutted where differently-worded claims will bear only one interpretation). In discussing the patent's preferred embodiments, the inventors plainly declared that "any of the back panels would be constructed of a relatively stiff material such as paperboard or a relatively thick plastic material such as high density polyethylene." This statement recognizes no distinction between a Claim 1 back panel and a Claim 2 back panel; it declares that any back panel used in the patented invention is to be relatively stiff.

This declaration is consistent with Claim 2's prosecution history. As noted, an early version of Claim 2 (Claim 41) called for the "protecting back panel" to include an "end portion" that would allow the food tray to be displayed vertically. When the claims examiner rejected the inventors' attempt to describe this back panel as "non-bendable," he observed that "the present specification discloses this panel as being paperboard or HDPE" which could be described as "stiff" but not as "non-bendable." Accordingly, the patent examiner and the inventors understood the "protecting back panel" was relatively stiff even though this feature was not expressly claimed in the proposed patent but rather appeared only in the specification.

The inventors later amended Claim 41 to eliminate the claimed end portion. This amendment changed the shape of the back panel (it was not longer required to extend beyond the bottom edge of the package) but there is no indication that it changed the material from which it was to be constructed. Indeed, the above-cited declaration in the issued patent that "any of the back panels would be constructed of a relatively stiff material" including paperboard or HDPE confirms that the material from which Claim 2's protecting back panel was to be constructed was unaffected by the amendment to the claim.

The intrinsic evidence not only demonstrates that Claim 2's "protecting back panel" is to be relatively stiff, it also shows that a flexible, pressure-sensitive label is not a "protecting back panel." The specification recognizes that in some circumstances "it may be desirable to attach a conventional thin pressure sensitive label directly to the bottoms of the [tray] compartments." It then advises that "it is preferable that [these labels] not bridge gaps between compartments." By contrast, Claim 2 requires that a "protecting back panel" be "adhered immovably to [the] bottom walls of at least two of [the tray's] compartments." Accordingly, whereas labels should not bridge gaps between compartments, protecting back panels must. The '873 patent therefore teaches that conventional thin pressure sensitive labels are not "protecting back panels."

The requirement that Claim 2's "protecting back panel" be constructed of relatively rigid material is consistent with the panel's purpose which is to shield the bottom of the food tray from indentation and damage. This purpose is revealed in part
in the patent specification where the inventors list among the invention's objects "protecting the bottoms of the compartments of the tray against damage." This object is later linked specifically to Claim 2's "protecting back panel" when the patent specifies that if "a protective back panel" is not used, it may be necessary to alter the design of the tray so as "to protect the bottoms of the compartments against damage." Accordingly, the protection afforded by the "protecting back panel" is protection of the bottoms of the tray compartments against damage.

The prosecution history of the patent application reinforces this conclusion. During the prosecution of the patent application plaintiff's counsel noted that in some cases the proposed patent called for a back panel to cover the bottoms of all of the tray compartments. He observed that "this affords additional protection for those bottoms which are vulnerable to damage." When read with the patent specification, this intrinsic evidence strongly suggests that the function of a "protecting back panel" is to shield the bottom of the food tray from indentation and damage. The requirement that a "protecting back panel" be relatively stiff is consistent with this purpose.

Plaintiff disputes the purpose of the "protecting back panel." Plaintiff contends the "protecting back panel" is intended to enhance the structural integrity of the food tray. In support of this position plaintiff notes that Claim 2 requires the "protecting back panel" to adhere to more than one of the tray's compartments. The prosecution history shows that this requirement was added to ensure that the back panel would enhance the food tray's structural integrity. Prior art apparently did not disclose a back panel playing such a role. Accordingly, plaintiff argues defendant's labels are "protecting back panels" because they adhere to more than one tray compartment and thereby enhance the food tray's structural integrity.

Plaintiff's argument is contrary to the weight of the intrinsic evidence. The language of Claim 2 indicates that a "protecting back panel" is not synonymous with a "back panel that enhances the tray's structural integrity." If it were, then Claim 2 need only specify a "protecting back panel" or a "back panel adhered immovably to at least two of the tray's compartments." It does not. It requires both. Accordingly, these phrases must be interpreted to refer to different ideas or else some of the language of Claim 2 would be rendered superfluous. The Court's interpretation gives meaning to each of the words used in Claim 2 by interpreting the term "protecting" to refer to the back panel's role in shielding the bottom of the tray from damage. Such a back panel plays the additional role of enhancing the structural integrity of the tray only when it adheres to the bottom of more than one of the tray's compartments.

The prosecution history of the '873 patent also reveals that the inventors did not use the term "protecting" to refer to the back panel's role in enhancing the structural integrity of the food tray. To see this one need only consider the fact that the patent applicants referred to Claim 2's back panel as a "protecting back panel" well before the Patent Examiner "suggested" this role for the panel. Compare Prosecution History of '873 Patent at K 000163 to id. at K 000172. As the intrinsic evidence amply demonstrates, the protecting function the inventors ascribed to the "protecting back panel" was its role in shielding the bottom of the tray compartments from damage.

On July 13, 1998, Kraft sued ITC in the United States District Court for the Western District of Wisconsin, alleging that the packaging of ITC's lunch combination products infringed independent claim 2 of the '873 patent and its dependent claims. Claim 2 recites:

2. A food package comprising:

(a) a generally rectangular rigid plastic base tray having four side edges, a top, a bottom located in a bottom plane, and a plurality of compartments, said base tray having peripheral and internal flanges, said peripheral flanges defining said four side edges of said tray, each said compartment being defined by side walls extending from said flanges and a bottom wall located along the bottom plane, said flanges sized and adapted to form a hermetic seal with a film attached thereto,

(b) a film adapted to be affixed to said flanges so as to hermetically seal said compartments, said film adapted to receive and display information, and

(c) a protecting back panel adhered immovably to said bottom walls of at least two of said compartments of said tray, said back panel being planar and adapted to receive and display information.
In its January 14, 1998 claim construction and summary judgment opinion, the district court construed the term "protecting back panel" as having a "special meaning," i.e., a "relatively rigid structure[] that serves the function of protecting the food tray compartments from indentation and damage." 1 Kraft Foods, slip op. at 8. The court further stated that, "when adhered immovably to more than one compartment of the food tray [the "protecting back panels"] serve the additional function of enhancing the structural integrity of the tray." Id. The court declared the term "protecting back panel" to specifically exclude "flexible, pressure-sensitive labels which the patent specification consistently distinguishes from back panels." Id. at 10. Because the district court found that the labels on the bottom of ITC's trays were not relatively rigid, the court granted ITC's motion for summary judgment of no literal infringement. See id. at 15.

--- Footnotes ---

1 In its opinion, the district court used the terms "relatively stiff" and "relatively rigid" interchangeably.

--- End Footnotes ---

In addition, the district court construed Chiuminatta as precluding infringement under the doctrine of equivalents where the accused structure was "not new technology" arising after the time that the patent issued. See id. at 15-16. Stating that "[a] flexible, pressure sensitive label is not new technology," the district court held that ITC's use of labels on tray bottoms could not infringe limitation (c) of claim 2 under the doctrine of equivalents as a matter of law. See id. at 16.

DISCUSSION


I. Claim Construction

Claim construction is a question of law decided by the court. See id. at 979, 34 U.S.P.Q.2D (BNA) at 1329. "In interpreting an asserted claim, the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996). Within this intrinsic evidence, "the appropriate starting point . . . is always the language of the asserted claim itself." Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186, 48 U.S.P.Q.2D (BNA) 1001, 1005 (Fed. Cir. 1998). A claim term should be given its ordinary meaning unless the specification or prosecution history provide a special, different meaning or definition. See Kegel Co. v. AMF Bowling, Inc., 127 F.3d 1420, 1427, 44 U.S.P.Q.2D (BNA) 1123, 1127 (Fed. Cir. 1997). There is a "heavy presumption in favor of the ordinary meaning of claim language." Johnson Worldwide Assoc's. v. Zebco Corp., 175 F.3d 985, 989, 50 U.S.P.Q.2D (BNA) 1607, 1610 (Fed. Cir. 1999); cf. Markman, 52 F.3d at 980, 34 U.S.P.Q.2D (BNA) at 1330 ("Any special definition given to a word must be clearly defined in the specification."). Although the written description may aid in the proper construction of a claim term, limitations, examples, or embodiments appearing only there may not be read into the claim. See Comark, 156 F.3d at 1186-87, 48 U.S.P.Q.2D (BNA) at 1005.

After the claims at issue have reasonably been construed, a district court may grant summary judgment "when it is shown that the infringement issue can be reasonably decided only in favor of the movant, when all reasonable factual inferences are drawn in favor of the non-movant." Voice Techs. Group, Inc. v. VMC Sys., Inc., 164 F.3d 605, 612, 49 U.S.P.Q.2D (BNA) 1333, 1337 (Fed. Cir. 1999); see Fed. R. Civ. P. 56(c). This court reviews both a district court's claim construction and its grant of summary judgment de novo. See Johns Hopkins Univ. v. Cellpro, Inc., 152 F.3d 1342, 1353, 47 U.S.P.Q.2D (BNA) 1705, 1713 (Fed. Cir. 1998).

A. Relatively Rigid

The district court began its claim construction by presuming that the "protecting back panel" of claim 2 did not need to be "relatively stiff." Under the doctrine of claim differentiation, two claims of a patent are presumptively of different scope. See Comark, 156 F.3d at 1187, 48 U.S.P.Q.2D (BNA) at 1005-06; Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017,
The district court noted that claim 1, which also recites a "back panel," expressly declares its back panel to be comprised of "a flat relatively stiff planar sheet." 2 Claim 2, by contrast, does not explicitly require that its "protecting back panel" be relatively stiff.

2 Claim 1 recites:

1. A food package comprising: . . .

    (c) a back panel comprising a flat relatively stiff planar sheet which is adhered immovably to the bottom walls of at least two of said compartments of the tray to preserve the structural integrity of the package and providing means to convey label information.

(Emphasis added).

The district court, however, viewed the written description and prosecution history as overcoming this presumption. The district court focused on the unequivocal declaration in the written description that "any of the back panels would be constructed of a relatively stiff material such as paperboard or a relatively thick plastic material such as high density polyethylene." '873 patent, col. 9, ll. 43-45 (emphasis added). The district court further recognized that, in prosecuting application claim 41 (the predecessor to issued claim 2), the inventors previously had required that the "protecting back panel" include an "end portion" to allow the food tray to be displayed vertically. Although the inventors later amended application claim 41 to eliminate this "end portion" of the "protecting back panel," they did not indicate that they were eliminating its relatively stiff attribute. The district court also noted that the inventors had amended application claim 41 to require that the "protecting back panel" be "non-bendable" in an attempt to overcome a prior art reference disclosing a bag supported by a hinged paperboard panel. In response to this amendment, the examiner had stated that the written description did not support a characterization of the back panel as "non-bendable," since it described the back panel as composed of paperboard or HDPE (high density polyethylene). The examiner acknowledged that the panel was "stiff," however. The applicants subsequently removed this "non-bendable" requirement.

Kraft offers a litany of arguments against the district court's requirement that the "protecting back panel" be "relatively rigid." First, Kraft reiterates the presumption arising from the doctrine of claim differentiation, arguing that the inventors plainly knew how to say "relatively stiff" when they so desired. Kraft also contends that "protecting back panel" must be given its plain and ordinary meaning of "a label or other structure adhered to the back of the food tray that protects the structural integrity of the claimed food package." Second, Kraft maintains that the written description does not support a special meaning of "protecting back panel" as being "relatively stiff," citing its express declaration that "the back panel may take many different forms." '873 patent, col. 3, l. 48. Kraft disputes the effect of the written description's statement that "any of the back panels would be constructed of a relatively stiff material such as paperboard or a relatively thick plastic material such as high density polyethylene," claiming that this declaration applies only to those embodiments that use the back panel to provide the stand-on-edge feature, as shown in Figures 10-15. See '873 patent, col. 8, l. 11 - col. 9, l. 41.

Finally, Kraft denies that the prosecution history is supportive of the "relatively stiff" nature of the "protecting back panel." Kraft emphasizes that the inventors amended application claim 41 to eliminate both the "non-bendable" and "end portion" limitations. Kraft notes that the stand-on-edge feature, which an "end portion" of the "protecting back panel" would have enabled, is claimed by a related Kraft patent issuing from the same parent application over two-and-a-half years before the '873 patent. See U.S. Patent No. 5,375,701 ("the '701 patent"). Each of the '701 patent's claims requires a "back panel comprising a flat relatively stiff sheet" so that the "package can stand upright." '701 patent, col. 14, l. 67 - col. 15, l. 8.

Notwithstanding Kraft's contentions, we agree with the district court that the written description and prosecution history overcome any presumption arising from the doctrine of claim differentiation, and thus approve the district court's construction of claim 2's "protecting back panel" as one that must be relatively stiff. Addressing each of Kraft's contentions in turn, we first note that claim differentiation only creates a presumption that each claim in a patent has a different scope; it is "not a hard and fast rule of construction." Comark, 156 F.3d at 1186, 48 U.S.P.Q.2D (BNA) at 1005. "Claim
Although Kraft had argued that "protecting" actually referred to protecting the structural integrity of the food package, the district court viewed the written description and prosecution history as supporting its interpretation of the "protecting" modifier as meaning protecting the back panel's immovable adherence to the bottom of the tray compartments either flat or indented. See id. Although the district court did not interpret "protecting" as also referring to the relatively stiff characteristic of the "protecting back panel." Similarly, the examiner's broadened the claim to the extent that the food package no longer needed to be capable of standing-on-edge, it did not alter the inherent "relatively stiff" characteristic required of the "protecting back panel." Similarly, the examiner's acknowledgment that the written description "certainly provides a description of this material [of the back panel] as being 'stiff,'" but not non-bendable, reveals that the inventors' subsequent removal of the non-bendable limitation did not change the back panel's relatively stiff characteristic.

B. Protecting

The prosecution history is similarly illustrative. The purpose of the former "end portion" limitation was to provide, in concert with the lowermost peripheral flange of the food tray, a stand-on-edge feature. As Kraft admits, the inventors eliminated this "end portion" limitation because it was already claimed by a related patent. Although this amendment broadened the claim to the extent that the food package no longer needed to be capable of standing-on-edge, it did not alter the inherent "relatively stiff" characteristic required of the "protecting back panel." Similarly, the examiner's acknowledgment that the written description "certainly provides a description of this material [of the back panel] as being 'stiff,'" but not non-bendable, reveals that the inventors' subsequent removal of the non-bendable limitation did not change the back panel's relatively stiff characteristic.

The district court construed the modifier "protecting" in "protecting back panel" as "protecting the food tray compartments from indentation and damage." Kraft Foods, slip op. at 8. Although the district court did not interpret "protecting" as also protecting the structural integrity of the food package, it viewed the back panel's immovable adherence to the bottom of more than one tray compartment as serving this additional role. See id.

The district court viewed the written description and prosecution history as supporting its interpretation of the "protecting" function. For example, the written description generally notes:

In the absence of a protective back panel, and depending on the particular material used to form the rigid base tray, it may be desirable to protect the bottoms of the compartments against damage by thermoforming the lower corners of the respective compartments either flat or indented.

'873 patent, col. 4, ll. 35-39 (emphasis added). Similarly, during the prosecution of the patent application, the inventors noted that some dependent claims of the proposed patent called for the back panel to cover the bottoms of all tray compartments. The inventors observed that such coverage "affords additional protection for those bottoms which are vulnerable to damage."

Although Kraft had argued that "protecting" actually referred to protecting the structural integrity of the food package, the
district court viewed claim 1 and the prosecution history as contradicting this interpretation. Claim 1 describes the back panel as "adhered immovably to the bottom walls of at least two of said compartments of the tray to preserve the structural integrity of the package." '873 patent, col. 14, ll. 15-16 (emphasis added). Although claim 2 also requires that the back panel be "adhered immovably to said bottom walls of at least two of said compartments," '873 patent, col. 14, ll. 32-33, it does not expressly associate such immovable adherence to preserving the structural integrity of the package. The district court reasoned that the "protecting" function of claim 2's back panel must serve a different purpose to avoid rendering claim 1's structural integrity language superfluous. The district court further emphasized that application claim 41 had always recited a "protecting back panel," and noted that it was the examiner who had suggested that the inventors amend the claim to require that the panel be "adhered immovably to said bottom walls of at least two of said compartments" to preserve the structural integrity of the package.

Kraft disputes the district court's conclusion that the "protecting" function concerns indentation and damage, instead interpreting "protecting" as protecting the food tray's structural integrity. Kraft contends that if, as the district court reasoned, the "adhered immovably" limitation inherently served the purpose of preserving the structural integrity of the food package, then claim 1's express recitation of this purpose would be redundant. Kraft thus concludes that the district court merely shifted the superfluity from claim 2 to claim 1.

We note that, with respect to back panels, the written description uses the term "protecting" in two different contexts: (1) "protecting the structural integrity of the tray," see, e.g., '873 patent, col. 3, ll. 33-35; and (2) "protecting the bottoms of the compartments against damage," see, e.g., '873 patent, col. 4, ll. 37-38. The district court apparently believed that it had to choose between these two different protecting functions in construing the "protecting" function, and did not consider the possibility that "protecting" included both. Similarly, though Kraft argues zealously that "protecting" must be limited to protecting the structural integrity of the food package, it offers no rational basis for preferring such protection over that against tray damage and indentation. Kraft further fails to present any sound argument clarifying or otherwise qualifying the written description's discussion of the back panel's role in protecting the tray compartment bottoms.

We thus agree with the district court's construction of the word "protecting," as used in the phrase "protecting back panel," to mean protecting both the structural integrity of the food package and the tray compartment bottoms against indentation and damage. This construction avoids the superfluity concerns voiced by the district court and Kraft, yet is consistent with the written description's repeated references to both forms of protection.
barrier device is "deployed to completely envelop the building structure." The written description further explains that "the roof is completely covered" by multiple panels joined together that provides "a continuous barrier surrounding the structure." Patent '852, col. 7, Ins. 2-15.

Defendants' essentially rely on a single embodiment theory; that is, that the Court's construction should reflect one single, preferred embodiment, which in this case, is the single barrier device structured to protect an entire structure, as illustrated in figure 1. Admittedly, figure 1's illustration and written description supports Defendants' proposal. However, the Federal Circuit specifically rejects single embodiment theories, stating that:

"[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments. In particular, we have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment. That is not just because section 112 of the Patent Act requires that the claims themselves set forth the limits of the patent grant, but also because persons of ordinary skill in the art rarely would confine their definitions of terms to the exact representations depicted in the embodiments."

Phillips, 415 F.3d at 1323; see also Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1204 (Fed. Cir. 2002). Accordingly, it is clear that the proper construction of "protective barrier device" should not be limited to any single preferred embodiment described in the specification, which includes figure 1.

Plaintiff proposes that "protective barrier device" means "a barrier against wind and windborne objects." This Court agrees. A review of the surrounding claim language of the first step recited in claim 1 shows that the phrase "protective barrier device" contemplates a device "arranged to prevent passage of wind-borne objects." The fourth step in this process claim states that "said protective barrier provides reduction of wind force."

In addition to the above surrounding claim terms, the specification specifically describes the invention as a "device for protection of property against high winds comprising a flexible material…utilized to protect the side of a structure including its windows and doors from the strong winds and debris impacts occurring during a hurricane." Patent '852, Abstract. The specification further states that the "invention relates to the protection of property against high winds and, in particular, to a flexible protective barrier device for securing property from damage from the wind itself and from the impact of foreign objects carried by the wind." Patent '852, Col 1., Ins. 13-17. Distinguishing prior art, the specification states that "what is lacking in the art is a flexible protective barrier constructed from a mesh material that can be easily stored and deployed for protecting the frangible portion of a structure from objects carried by the wind." Patent '852, Col. 2, Ins. 50-54. In light of the foregoing, this Court adopts a slightly modified version of Plaintiff's proposed construction and construes this claim term to mean "a protective barrier device in the form of one or more panels of a flexible textile material that acts as a barrier against wind and windborne objects."

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11. Protruding portion/peg/stepped hole

Each of the terms "protruding portion," "peg," and "stepped hole" should be accorded their plain and ordinary meaning. Vitronics, 90 F.3d at 1582. Accordingly, the Special Master's constructions are as follows:

<table>
<thead>
<tr>
<th>Term</th>
<th>SPECIAL MASTER CONSTRUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>protruding portion</td>
<td>A protuberance that extends away from the flat display panel</td>
</tr>
<tr>
<td>peg</td>
<td>A small cylindrical or tapered protuberance</td>
</tr>
<tr>
<td>stepped hole</td>
<td>A countersunk hole</td>
</tr>
</tbody>
</table>

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IV. "protruding surface" 9

9 The term "protruding surface" is contained in claims 1, 9, and 12 of the '025 patent and claims 1, 17, and 27 of the '891 patent.

Plaintiff argues that the "protruding surface" is not limited to any shape, so long as the second socket surface "cooperates" with the opening of an engine workpiece. OPENING at 17-18. Defendant argues that this term is used interchangeably with the term "curved socket surface," and therefore, the "protruding surface" should be limited to being curved. RESPONSE at 10-11.

Claim 1 of the '891 patent discloses:

1. A process for manufacturing a valve operating assembly, comprising the steps of:
   a) cold forming, at least in part, a socket comprising the steps of:
      i) providing a first rod;
      ii) cold forming, at least in part, a first socket surface into the first rod so that the first socket surface includes a push rod cooperating surface;
      iii) cold forming, at least in part, a second socket surface into the first rod so that the second socket surface includes a protruding surface, a first flat surface, and a second flat surface, wherein the protruding surface is located between the first flat surface and the second flat surface;
   b) cold forming, at least in part, a leakdown plunger, comprising the steps of:
      i) providing a second rod;
      ii) cold forming, at least in part, a first plunger opening into the second rod so that the first plunger opening is provided with an annular plunger surface that defines a plunger hole shaped to accommodate a generally spherical member;
      iii) cold forming, at least in part, a second plunger opening into the second rod;
   c) cold forming, at least in part, a valve lifter body that is provided with a valve lifter axis, comprising the steps of:
      i) providing a third rod;
      ii) cold forming a first lifter cavity into the third rod so that the third rod is provided with a first inner lifter surface that includes a first wall, a second wall, a third wall, and a fourth wall that extend axially into the third rod with the fourth wall being located adjacent to a first curved surface, the third wall being located adjacent to a second curved surface, and the first and second curved surfaces are located adjacent to a lifter surface that is oriented to be generally orthogonal to the valve lifter axis of the valve lifter body; and
protrusion" when the absence of this feature would destroy the ability to make serpentine walls claimed as part of the protrusion and the insets. The court fails to see how the limitation of having a central narrow portion does not inhere in the narrowed portion were not present, binding would prevent the claimed relative rotation due to the interference between the drawn from this statement is that such curving is impossible without the central narrow portion of the protrusion. If the narrowed portion were not present, binding would prevent the claimed relative rotation due to the interference between the.

As the specification explicitly states, the central narrow protrusion allows for curving walls. The negative inference to be characteristic of having a central narrowed portion to the term "protrusion."

c. The Claim Term "Protrusion"

The specifications state, "the central narrow portion in the protrusion 26 (FIGS 1-6) allows for orientation of the blocks to provide inner curving and outer curving walls by the aligned seating and the relative rotation of the protrusion 26 within, and in relationship to, any block inset 22A or 22B." ('183 patent, col. 5, Ins. 9-13.) The court concludes that this attaches the characteristic of having a central narrowed portion to the term "protrusion."

As the specification explicitly states, the central narrow protrusion allows for curving walls. The negative inference to be drawn from this statement is that such curving is impossible without the central narrow portion of the protrusion. If the narrowed portion were not present, binding would prevent the claimed relative rotation due to the interference between the protrusion and the insets. The court fails to see how the limitation of having a central narrow portion does not inhere in the "protrusion" when the absence of this feature would destroy the ability to make serpentine walls claimed as part of the

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b. "Protrusion"

The claims of the '363 patent family require "a protrusion on one of said top or bottom surfaces" of the claimed block. See, e.g., '183 patent, col. 16, ll. 20-33 (emphasis added). The district court construed "protrusion" to include the limitation of having a "central narrow portion." This was error.

The ordinary meaning of the claim term "protrusion" is something that protrudes. See Webster's Third New International Dictionary 1826. The district court relied on the written description, which states that, "the central narrow portion in protrusion 26 (FIGS 1-6) allows for orientation of the blocks to provide inner curving and outer curving walls by the aligned seating and the relative rotation of the protrusion 26 within, and in relationship to, any block inset 22A or 22B," '183 patent, col. 5, ll. 9-13, to conclude that this statement attaches the characteristic of having a central narrow portion to the term "protrusion." Anchor, 252 F. Supp. 2d at 848. Contrary to the district court's claim construction, the written description does not describe "with reasonable clarity, deliberateness, and precision," In re Paulsen, 30 F.3d 1475, 1480 (Fed. Cir. 1994), that "protrusion" requires a "central narrow portion." Indeed, the many uses of the term in the written description are consistent with the ordinary meaning of "protrusion," one encompassing protrusions of any number of shapes. See, e.g., '363 patent, col. 4, ll. 55-56 ("While the protrusions may take any number of shapes, they preferably have a kidney or dogbone shape." (emphases added)). The general rule, of course, is that claims of a patent are not limited to a preferred embodiment, unless by their own language. See, e.g., Va. Panel Corp. v. Mac Panel Co., 133 F.3d 860, 866 (Fed. Cir. 1997) ("It is well settled that device claims are not limited to devices which operate precisely as the embodiments described in detail in the patent."). There is nothing in this case that warrants departing from the general rule.

Moreover, it is axiomatic that a claim construction that excludes a preferred embodiment such as the circular protrusions disclosed in Figure 3A "is rarely, if ever correct and would require highly persuasive evidentiary support." Vitronics, 90 F.3d at 1583; see, e.g., '363 patent, fig. 3A. Contrary to the district court's conclusion, varied use of a disputed term in the written description attests to the breadth of a term rather than providing a limiting definition. See, e.g., Enercon GmbH v. Int'l Trade Comm'n, 151 F.3d 1376, 1385 (Fed. Cir. 1998) (refusing to limit a term used "interchangeably" in the written description to only one of the uses of the term). That the term "protrusion" is used at various points in the written description to refer to "protrusions that may take any number of shapes" is simply not "a special and particular definition created by the patent applicant," Renishaw plc v. Marposs Societa' per Azioni, 158 F.3d 1243, 1249 (Fed. Cir. 1998), and is thus an insufficient reason to limit the scope of the claim. Furthermore, the parties point to nothing in the prosecution history compelling us to deviate from the ordinary meaning of "protrusion." Accordingly, we hold that the proper construction of "protrusion" is something that protrudes.

1) "Protrusion" and "Protruded"

The terms "protrusion" and "protruded" appear in the '296 patent. MKS contends that "protrusion" and "protruded" should be construed in accord with the ordinary meaning of the terms as "a portion that projects from a surface" and "having a portion that projects from a surface" respectively. Pursuant to its plain and ordinary meaning, the Court concludes that "protrusion" means "a projection" and "protruded" means "projecting."
connecting struts 400, as a result of which the protrusions 44 described in connection with FIG. 4 remain on each side of the support elements." The construction flows from the plain and ordinary meaning of protrude: "to thrust forward" or "to cause to project." Merriam-Webster Online Dictionary (2010). Defendant's proposal that the structure must project "outwardly," is unsupported by the intrinsic and extrinsic evidence of record.

15 '434 patent, claims 4 and 8.

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c. "provided in the engine body"

Claim 1 provides that "the first breather chamber, the first through passage, the second breather chamber, the second through passage and the communicating passage are provided in the engine body." ('215 Patent at 10:3-6.) Honda argues that the disputed term means "furnished with at least one component forming a structural framework for an engine," whereas Coast argues that the term should mean "contained within the combination of a crankcase, a cylinder barrel and a cylinder head." Although the parties proffer different meanings for the term "provided in," the focus of the dispute is over what constitutes an "engine body."

Honda argues that the term "engine body" needs no special construction and that it should be construed to mean "the structural framework for an engine." Honda also argues that Coast's proposed construction "may encompass crankcase portions that do not provide a structural framework for the engine and would not be considered by one of ordinary skill in the art to be part of an 'engine body.'" (See Shariati Decl., Ex. F (Declaration of Dr. Elliott L. Stern, PP 57-58.).) Notwithstanding Dr. Stern's opinion, the inventors acted as their own lexicographer and "set forth a definition of the disputed claim term in … the specification." CCS Fitness, 288 F.3d at 1366. Specifically, in the detailed description of the preferred embodiment, the inventors stated that "an engine body … has a crankcase 15, a cylinder barrel 17 and a cylinder head 20." ('215 Patent at 3:51-53.) Further, the use of the term "provided" in the claim language implies location.

Accordingly, the Court construes the term "provided in the engine body" to mean: "contained within the combination of a crankcase, a cylinder barrel and a cylinder head."

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VII. CONSTRUCTION OF THE '230 PATENT

Next, the parties ask the court to construe various portions of claims 1, 2, 3, 7 and 9 of the '230 Patent. The '230 Patent concludes with the following:

The embodiments of the invention in which an exclusive property are claimed are as follows:

1. A bin for containing material to be spread by a spreader vehicle having a floor-mounted conveyor positioned within the bin to extract such material, wherein the bin walls are provided with:

   (a) a curved portion that bends inwardly towards the conveyor, commencing from a first height that is above the level of the conveyor, and terminating at a second, lower height that is also above the level of the conveyor;

   (b) a terminal region extending to the edge of the conveyor, such terminal region being upwardly angled, proceeding outwardly from the conveyor, at an inclination that is sufficient to cause material to be spread when contained thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion.
2. A bin as in claim 1 wherein the terminal portion is elevated at an inclined angle of between 7 to 30 degrees.

3. A bin as in claim 2 wherein the terminal portion is elevated at an inclined angle of 14 to 17 degrees.

4. A bin as in claims 1, 2 or 3 wherein the curved portion of the bin has a circular radius of 24 to 48 inches.

5. A bin as in claim 4 wherein the curved portion has a circular radius of 35 to 40 inches.

6. A bin as in claim 5 wherein the curved portion terminates virtually tangentially with a vertical upper bin wall portion.

7. A bin as in claim 1, wherein the curved portion terminates at a relatively flat terminal region having a width of from one to 20 inches.

8. A bin as in claim 1, wherein the curved portion terminates at a relatively flat terminal region having a width of from 4 to 6 inches.

9. In a spreader vehicle having a bin with a conveyor disposed along the bottom portion of the bin, a bin sidewall which is continuously curved from an outer, upper, near vertical portion of the sidewall to a lower, inner, near horizontal portion of the sidewall, the terminal boundary of the inner portion of the curved sidewall being inclined above the horizontal at an angle sufficient to induce sand contained therein to slide downwardly, in the presence of agitation arising from vehicle motion, into the conveyor.

'230 Patent, col.4, ll.19-63 (underlining added). Figures 3, 4 and 5 are instructive to visualize the claims:

GET DRAWING SHEET 3 OF 3

'230 Patent, figs.3-5. The specification discloses that, in these figures, 9 is a "conveyor platform," 10 is a "conveyor boundary," 13 is a "bin wall," 14 is an "upper vertical portion," 15 is a "curved portion" and 18 is a "terminal portion."

The court now discusses each of the disputed underlined clauses, in turn.

A. Claim 1

HECO proposes the following construction of the underlined portion of claim 1:

The "terminal portion" is an additional portion of each bin wall that is different from the curved portion and begins at the second, lower height where the curved portion terminates. The terminal region must be inclined to the point where the terminal region meets the curved portion is above the point where the terminal region meets the conveyor (with respect to the ground), and this upward inclination must be at least 7 degrees above horizontal.

JCCC at 19. Cives and Monroe do not believe that claim 1 requires construction. In the alternative, they propose the following construction:

Each "bin wall" has a terminal portion that extends to the conveyor. The terminal region is oriented at an upward angle away from the conveyor which enables material to slide to the conveyor by reason of irregular, rapid or violent action resulting from the movement of the vehicle.

Id.

The parties' proposed constructions and arguments to the court reveal two points of disagreement. First, Cives and Monroe object to the portion of HECO's construction that states that "the terminal region meets the curved portion." HECO construes claim 1 to require that the curved portion and terminal portion meet. Cives and Monroe contend that "there is nothing in the claim that requires the terminal region to begin at the second lower height at which the curved portion terminates" and imply that the inventor claimed that one or more other portions could fit in between the curved and terminal...
portions. Second, HECO contends that claim 1 is invalid for indefiniteness, unless the court Construes "at an inclination that is sufficient to cause material to be spread when contained thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion" as requiring "at least 7 degrees above horizontal."

1. Other portions between the curved and terminal portions?

A critical starting point in determining whether claim 1 permits other portions between the terminal portion and the curved portion is the transitional phrase "provided with" at the outset of the claim. The question is whether "provided with" is an open- or closed-ended transitional phase.

Certain transitional language has customary meaning in patent law. For example, the word "comprising" means including the elements that follow in the body but not excluding additional, unrecited elements. Claims that use "comprising" are referred to as open claims . . . .

The transitional phase "consisting of" yields a claim of more limited scope. "Consisting of" basically means including only the elements that follow . . . and no more. Claims that use "consisting of" are referred to as closed claims . . . .

Herbert F. Schwartz, Patent Law & Practice 149-50 (5th ed. 2006) (footnotes omitted). Compare Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501 (Fed. Cir. 1997) ("'Comprising' is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.")., with Conoco, Inc. v. Energy & Envtl. Int'l, L.C., 460 F.3d 1349, 1360 (Fed. Cir. 2006) ("The phrase 'consisting of' signifies restriction and exclusion of unrecited steps or components."). 17

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

17 The transitional phrase "consisting essentially of" occupies a middle ground between "consisting of" and "comprising." "By using the term 'consisting essentially of,' the drafter signals that the invention necessarily includes the listed ingredients and is open to unlisted ingredients that do not materially affect the basic and novel properties of the invention." PPG Indus. v. Guardian Indus. Corp., 156 F.3d 1351, 1354 (Fed. Cir. 1998).

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

Unfortunately, in this case the drafter of the patent chose the curious transitional phrase "provided with." The parties do not cite, and the court cannot find, any cases construing this transitional phrase as either open-ended or close-ended. The Federal Circuit Court of Appeals has, however, recognized that "comprising" is synonymous with "including," "containing" or "characterized by." Mars Inc. v. H.J. Heinz Co., L.P., 377 F.3d 1369, 1375-76 (Fed. Cir. 2004); see also Amgen v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1345 (equating "comprising" with "including"). At first blush, "provided with" strikes the court as similar to "including" or "containing." For example, a child's toy is "provided with" batteries when it includes or contains batteries. This does not mean, however, that the toy does not have other essential parts.

The structure of the claims also indicates that they should be construed as open-ended. Claim 6, a claim that is dependent on claim 1, claims "a bin as in claim 1, wherein the curved portion terminates virtually tangentially with a vertical upper bin wall portion." '230 Patent, col.4, ll.46-48. Ordinarily, an independent claim has a broader scope than a claim that depends from it. Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 423 F.3d 1343, 1351 (Fed. Cir. 2005). Here, the specification makes clear that "a vertical upper bin wall portion is not a further description or a delimitation of the curved portion or the terminal portion, but rather adds a new element. See '230 Patent, col.2, ll. 18-31; see also id. col.3, ll.10-32 (discussing Figure 3 and remarking that "[upper vertical portions 14 of the sidewalls are optional: the bin sidewalls 13 may commence with inwardly curved portions 15"). Because dependent claim 6 adds an additional element to claim 1, it stands to reason that claim 1 is open ended.

The court must consult the specification, however, to determine whether one skilled in the art would read claim 1 as claiming a possible additional portion between the terminal and curved portions. See Lampi Corp. v. Am. Power Prods., Inc., 228 F.3d 1365, 1376 (Fed. Cir. 2000) (requiring the court to consult the specification to determine whether "having" was open-ended or close-ended). Here, the specification makes clear that, even if the phrase "provided with" construed to be an open-ended transitional phrase, the patent does not claim any additional portions between the terminal portion and the curved portion. In the specification, the patentee described the invention as follows:

- 3713 -
Each of the sidewalls is provided with a curved configuration that bends inwardly towards the conveyor, commencing from a height that is above the height of the conveyor. The curvature of this surface terminates at a second, lower height that is, as well, above the height of the conveyor. The bin surface then continues with a relatively flat, terminal region to the edge of the conveyor. This preferably flat terminal region is upwardly angled, proceeding outwardly from the conveyor, at an inclination that is sufficient to cause the material to be spread contained thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion.

'230 Patent, col. 1, l.67, col.2, ll.1-11 (emphasis added). The specification clearly indicates that the terminal portion and the curved portion are together, because the entire surface "continues" from one to the other. Indeed, none of the figures, preferred embodiments or anything else in the specification contradicts such construction of the claim. 18

Accordingly, the court shall construe claim 1 to require that "the terminal region meets the curved portion," as HECO suggests.

2. "sufficient to cause"

HECO contends that claim 1 is invalid for indefiniteness, unless the court construes "an inclination that is sufficient to cause material to be spread when contained thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion" as requiring "at least 7 degrees above horizontal." HECO asserts that the specification "teaches that inclination must be at least 7 degrees." Brief at 18 (citing '230 Patent, col.3, ll.21-28). Without any explanation, Cives and Monroe claim that the clause is clear and does not merit construction.

HECO has presented the court with insufficient reasons to construe the clause as requiring an inclination of at least 7 degrees. In support of its argument, HECO only cites to one preferred embodiment of the invention, in which the inventor stated that, under such embodiment, the angle should be "between 7 and 30 degrees, preferably substantially 16 degrees." Moreover, HECO does not explain or cite any legal authority to show why the clause is indefinite absent such construction. Because of the lack of argument and authority cited, the court declines to construe the clause at this time.

3. Conclusion

The court construes claim 1 as follows:

A terminal region extending to the edge of the conveyor, such terminal region being upwardly angled, proceeding outwardly from the conveyor, at an inclination that is sufficient to cause material to be spread when contained thereon to slide spontaneously to the conveyor, under the agitation arising from vehicular motion. The terminal region must be inclined to the point where the terminal region meets the curved portion is above the point where the terminal region meets the conveyor (with respect to the ground).

As should be clear, this is a hybrid of the parties' competing constructions.
Defendants' proposal for "providing" incorporates the remainder of the claim limitation into the definition of providing. Claim 1 of the '965 patent recites "providing at least one ingress point to said area of said mine shaft involved in fire." Defendants' proposal would make the trailing language superfluous. US Foam's use of "allowing" is equally impermissible. The parties also dispute whether an ingress point is "constructed" or "supplied." They offer little assistance to the Court on this point. The specification uses the word "constructing" with respect to the seals, which is where the ingress point is located in at least one embodiment. '336 patent, 4:46-47. In the first example, the specification explains that water pipes served as the ingress point and were "installed." '336 patent, 8:34-51. The definition of "provide" is "to supply for use." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE UNABRIDGED 1827 (1993). While constructing may be appropriate in some scenarios, constructing is narrower than supplying as it implies more planning and labor than supplying. The Court can envision supplying a hole in a mine without constructing it. The Court construes "providing" to mean "supplying."

2. "providing a flowpath"

Claim 1 of the '491 patent recites similar flowpath language but recites it in the form of "[a] method of cleaning hydrocarbons from a part in a parts washer . . . including the step [] of . . . providing a flowpath for the fluid between the basin and a tank." With respect to this instance of the "flowpath" term, Defendant argues the Court should construe the limitation as a step-plus-function limitation under 35 U.S.C. § 112, P 6. As a result, Defendant contends the phrase must be "limited to methods for providing a flowpath for the fluid between the basin and the tank, using the acts disclosed in the '491 patent, or equivalents thereof . . . ." (Def.'s Opening Brief at 21.)

Section 112, P 6 permits a patent applicant to claim his invention in "means-plus-function" or "step-plus-function" format:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112, P 6. When the language of the claim uses the introduction "step of," instead of "step for," a presumption arises that the claim does not trigger step-plus-function treatment:

Method claims necessarily recite the steps of the method, and the preamble words that "the method comprises the steps of" do not automatically convert each ensuing step into the form of § 112 P 6. Nor does the preamble usage "steps of" create a presumption that each ensuing step is in step-plus-function form; to the contrary, the absence of the signal "step for" creates the contrary presumption.

Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc., 381 F.3d 1371, 1382 (Fed. Cir. 2007). The Federal Circuit has cautioned district courts to tread carefully when invoking the step-plus-function doctrine:

Where the claim drafter has not signaled his intent to invoke § 112, paragraph 6 by using the "step[s] for" language, we are unwilling to resort to that provision to constrain the scope of coverage of a claim limitation without a showing that the limitation contains nothing that can be construed as an act.

Masco Corp. v. United States, 303 F.3d 1316, 1327 (Fed. Cir. 2002); see also id. ("[C]ourts must be cautious before adopting changes that disrupt the settled expectations of the inventing community.") (citing Festo Corp. v. Shoketsu Kinzoku Kabushiki Co., 535 U.S. 722, 739, 122 S. Ct. 1831, 1834, 152 L. Ed. 2d 944 (2002)).

Claim 1 of the '491 patent recites "[a] method of cleaning hydrocarbons from a part using a parts washer, the method including the step [] of . . . providing a flowpath for the fluid between the basin and a tank . . . ." Because the Applicant
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

signaled his intent not to invoke 35 U.S.C. § 112, P 6 by using "step of" instead of "step for," a presumption arises that the claim is not in step-plus-function format. Thus, the Court will not construe the claim as such unless "the limitation contains nothing that can be construed as an act." Masco, 303 F.3d at 1327.

The issue is thus whether "providing a flowpath" can be construed as an act. Judge Rader has noted "[t]he difficulty of distinguishing acts from functions in step-plus-function claim elements": "method claim elements often recite phrases susceptible to interpretation as either a function or as an act for performing a function. Both acts and functions are often stated using verbs ending in 'ing.'" Seal-Flex, Inc. v. Athletic Track and Court Constr., 172 F.3d 836, 848, 849 (Fed. Cir. 1999) (Rader, J., concurring). The Court is not without guidance, however, in distinguishing between acts and functions:

In general terms, the "underlying function" of a method claim element corresponds to what that element ultimately accomplishes in relationship to what the other elements of the claim and the claim as a whole accomplish. "Acts," on the other hand, correspond to how the function is accomplished. Therefore, claim interpretation focuses on what the claim limitation accomplishes, in relation to what is accomplished by the other limitations and the claim as a whole.

Id. at 849-50.

Claim 1 of the '491 patent is directed primarily to the biodegradation aspect of the parts washing patents. The claim recites, inter alia, the steps of "exposing" the part to the cleaning fluid in the basin, "providing a flowpath" between the basin and the tank, and "biodegrading" the grease and oil in the tank. The underlying function of the "providing a flowpath" limitation, in view of what the other steps of the claim accomplish, is the transportation of the oil and grease from the basin where it is washed off a part to the tank where biodegradation takes place. How that function is accomplished is "providing a flowpath between the basin and [the] tank."

Because "providing a flowpath" can be construed as an act, the claim element is not subject to § 112, P 6. Accordingly, the Court construes the phrase to mean "supplying a flowpath," or "supplying a path to be taken by the cleaning fluid from the basin to the tank."

II. Infringement of the '368 and '107 Patents


Claim 1 of the '368 patent contains the following first step:

1. In a method of stabilizing the below-grade foundation of an existing building structure having a predetermined weight and an assumed live load, the improved steps of:

   providing a foundation support for the foundation at a plurality of positions along the foundation . . .

Claim 1 of the '107 patent is the same.

In an opinion construing the claims of the '368 and '107 patents, the district court said that the "the term 'providing' [in claim 1] means that the support must be supplied or furnished at each location where stabilization is to occur." Because the "brackets are in existence and provided as required by the claims," the district court found that the Fasteel methods infringed
claims 1 through 4 and claims 6 through 8 of the '368 and '107 patents. Alternatively, the district court found that Chance proved infringement under the doctrine of equivalents. Neither party disputes the district court's claim construction.

Ruiz and Fasteel contend that the district court ered in finding that their method of underpinning infringed the '368 and '107 patents. Ruiz and Fasteel argue that in their method, the bracket does not have to be located near the stabilizing positions when the screw anchor is screwed into the ground. Instead, the bracket may be located elsewhere, such as in a nearby truck or near a supply pile on the ground of the job site.

In Fasteel's method, because metal brackets are in existence and available for use by the installer, they are "provided" within the meaning of claim 1. There is nothing in the claims or specification which indicates that the metal bracket had to be physically attached to or located next to the foundation before the other steps in the method could proceed. Thus, we find that the district court did not commit clear error in finding that the Fasteel method infringed claims 1 through 4 and claims 6 through 8 of the '368 and '107 patents.

ZMED's Proposed Construction:

Providing a third device (e.g., a linear accelerator) having its own coordinate system (e.g., relative to the isocenter) and determining the position of the third device relative to the position of the second image (and thus the organ) and moving the machine and patient relative to each other to place the third device in the desired position relative to the organ.

ZMED Opening Brief at 11.

NOMOS's Proposed Construction:

The "third device having a third coordinate system" of step (f) of claim 1 is defined in the specification of the '154 patent as being an imaging device such as a gamma-scintigraphy camera, a positron emission tomography (PET) apparatus, a magnetoencephalography (MEG) apparatus, or a synchrotron radiation apparatus. Accordingly, step (f) of claim 1 should be construed as the step of "providing a third imaging device having a third coordinate system."

NOMOS Opening Brief at 20-21 (citation omitted).

Construction:

Step (f) means "providing a third device (e.g., a radiation transmission apparatus or an imaging device) having its own coordinate system and determining the position of the third device relative to the position of the second rendering and therefore the first rendering (and thus the organ or lesion)."

Commentary:

The "third device" may be a "third imaging device" or may be another device, such as a linear accelerator. This construction is based on the text of the claim, which uses the terms "first imaging device" and "second imaging device," but not "third
imaging device." Logically, this difference suggests that "third device" is meant to be broader than simply a "third imaging device." Given the primacy of claim language in the patent construction process, that closes the inquiry. However, the specification provides additional support for this construction by listing several embodiments of the "third device," including a radiation transmission apparatus and an imaging device. See '154 Patent, col. 1, ll. 14-21.

A. Claim Construction

To construe claims, we first consider the ordinary and customary meaning of the claim language. Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). The claim's "ordinary and customary meaning" is the reading a person of ordinary skill in the art would give the claim at the time of the invention. Id. at 1313. The person of ordinary skill in the art should read the claim term "not only in the context of the particular claim in which the disputed terms appears, but in the context of the entire patent, including the specification." Id. Claim 2 of the '653 patent reads as follows:

A method of treating an area of a body vessel, comprising the steps of:

[1] introducing a catheter with a collapsed inflatable balloon and a collapsed sleeve encircling the balloon on its end into the vessel at a point remote from the area to be treated;

[2] manipulating the catheter axially along the vessel to cause the balloon and sleeve to enter the area to be treated;

[3] inflating the balloon by introducing fluid under pressure into the balloon through a tube of the catheter in a manner wherein the sleeve surrounding the balloon is radially expanded towards the wall of the vessel;

[4] providing in the sleeve a material which increases in rigidity after expansion of said balloon;

[5] maintaining said balloon in an expanded condition in the vessel while said sleeve increases in rigidity; and

[6] thereafter removing the balloon and catheter from the vessel and allowing the sleeve to remain in the area to be treated (emphases added, bracketed numbers added)

AGR argues that the district court's claim construction was not justified and urges us to adopt a different claim construction. The district court defined "providing in the sleeve a material which increases in rigidity after expansion of said balloon" to mean "supplying in the sleeve a material that is separate and distinct from the sleeve itself." It rejected AGR's argued-for construction that this limitation somehow means that the sleeve has been pre-formed with a material that increases in rigidity after the balloon expansion. Rather, the district court held that the limitation requires the addition of a material to the stent after the balloon expansion. Rather, the district court held that the limitation requires the addition of a material to the stent at some point in the process.

When interpreting the claims, we must read them "in view of the specification, of which they are a part." Phillips, 415 F.3d at 1315 (quoting Markman v. Westview Instruments, Inc., 52 F.3d 967, 978 (Fed. Cir. 1995) (en banc)). In interpreting the '653 claim, the district court considered the intrinsic evidence contained in the patent specification to determine the meaning of the term "provided in." AGR's argument that the sleeve has been pre-formed with the material that increases in rigidity is without merit. The written description establishes that if the inventor intended to claim that the material was part of the invention, he would not have used the term "providing." In a description of one of the preferred embodiments, the specification speaks of the "sleeve unit ...including the ring balloons," which are intended to be filled with fluid, being "provided with sufficient radiopaque material ...." 653, col. 4, ll. 43-45 (emphasis added). Moreover, in another preferred embodiment, the specification speaks of the "sleeve space ...containing a fluid plastic material ...which is caused to become solidified ...." and "introduction into the sleeve space" of such material. Id, col. 6, ll. 22-26 (emphasis added). In short, the specification makes clear that in drafting his claims, when the patentee used the word "providing" - a word that like "introducing" or "supplying" denotes the addition of a separate substance into the stent - he did so deliberately, and not through an accident of quirky or idiomatic usage. This conclusion can be drawn from the fact that when he meant to convey the preexistence of a material in the sleeve he used an appropriate verb, such as "containing." Id.
Similarly, when Dr. Rockey wanted to convey the idea "formed of a material" he so stated specifically. In a description of one of the embodiments, the patent states that the "balloon …is formed of any suitable plastic or rubber material." Id., col. 6, ll. 7-9 (emphasis added). In another example, the specification teaches that an "outer sleeve wall …may be formed of Dacron" and an "inner wall …may be formed of Teflon." Id., col. 6, ll. 16-17 (emphasis added). Finally, the patent teaches that "the sleeve …is preferably formed of relatively inelastic material." Id., col. 5, ll. 52-53 (emphasis added). Thus, Rockey used the term "formed of" throughout the patent, yet specifically claimed the method of "providing in" for the claim involving the material. Considering this intrinsic evidence, we agree with the district court's construction of the fourth claim limitation.


This term is part of the claim limitation which reads:

. . . the shell further including proximal and distal lips retaining the viscoelastic hand/finger surface positioned in a central section of the tubular shell.

Kwitek proposes "the edges at or near each end of the shell and which go about the circumference of the shell." Pilot suggests "portions of the shell outwardly extending about the circumference of the shell at each end of the shell."

Now the party's positions about importing limitations from the specification are reversed. Pilot wants a single reference to outwardly extending lip and a diagram to be added to the claim. But Kwitek says no, that is merely an embodiment.

The parties agreed at the hearing that "proximal" and "distal" did not have to mean right at the very end of the tubular shell. Tr. pp. 68-69. Pilot noted that "at or near" was not as definite as "near" alone and might be confusing to the jury. Tr. pp. 68-69. Words are to be given their ordinary meaning as understood by one skilled in the art, in the context of the patent. However there is no indication from either party, the patent, nor the prosecution history that "proximal" or "distal" are specialized words of art in the field of writing implement grip design.

The field of art involves grips for writing implements. The claim and specification describes a writing implement with a "longitudinally extending, tubular shell." '190 patent, col. 8, l. 66; '190 patent, Figs. 1 & 4. Therefore, one skilled in the art would know the claim deals with objects in the shape of a common pen or pencil which has a longitudinal axis and two ends. One of these ends is toward the writing tip (the "proximal" end), and the other is toward the other end (the "distal end"). See '190 patent, col. 3, l. 41. This comports with common dictionary definitions. See THE MERRIAM-WEBSTER THIRD NEW INTERNATIONAL DICTIONARY, UNABRIDGED (2002)("proximal" means "next to or nearest the point of attachment or origin"); ("distal" means "remote from the point of attachment or origin"). Nothing in the claim itself, the specification, nor the prosecution history implies a further limitation of "at" or "right at" the very end of the shell. The court will not add such a limitation.

The next argument is whether the lip must be "outwardly extending" as urged by Pilot. The specification does use the term "outwardly extending" in reference to the lips. '190 patent, col. 1, ll. 53-55. But, as Pilot agreed, nothing in the claim or specification, prohibits lips from extending both inwardly and outwardly. Tr. p. 59, ll. 11-23. Further, nothing in the claim states the lips must extend outwardly.

This is not to say the lips are unimportant. The claim itself refers to lips "retaining the viscoelastic hand/finger surface positioned in a central section of the tubular shell." '190 patent, col. 9, ll 5-6. Initially the claim did not describe lips, and it was rejected by the PTO as anticipated by the McCall patent. See Office Action, 12/27/2001, p. 3, Ex. 2 to Defendants' Responsive Claim Construction Brief [Doc. # 61, Attachment # 3, p. 5 of 6].

The patentee responded by adding the term in dispute. See Kwitek's Amendment, 4/12/2002, p. 8, Ex. 4 to Defendants' Responsive Claim Construction Brief [Doc. # 61, Attachment # 5, p. 11 of 12]. The patentee argued to the PTO that McCall failed to disclose "a shell including proximal and distal lips retaining the viscoelastic hand/finger surface . . . ." Kwitek's
Amendment, 4/12/2002, p. 5, Ex. 4 to Defendants' Responsive Claim Construction Brief [Doc. # 61, Attachment # 5, p. 8 of 12]. The PTO stated "[t]he primary reason for allowance of the claims is the inclusion in claim 1 of the shell including proximal and distal lips that serve to retain the viscoelastic hand/finger surface positioned in a central section of the tubular shell. None of the art cited disclose [sic] this concept." Notice of Allowance, 4/12/2002, p. 2, Ex. 5 to Defendants' Responsive Claim Construction Brief [Doc. # 61, Attachment # 6, p. 4 of 4].

The claim itself limits the lips to those "retaining the viscoelastic hand/finger surface positioned in a central section of the tubular shell," so there is no need to repeat those words in the definition of "lips." Claims should be read broadly, and additional limitations should not be imported from the specification, and certainly not from description of the preferred embodiment. Additionally a claim construction hearing at which a party has no person skilled in the art to discuss the matter is not the place to determine, as a matter of fact, that such retention is only physically possible by lips pointing a certain direction. Pilot's arguments, and the "lips" limitation, may very well be dispositive of whether an accused device infringes. But that is a matter for another time. **The court will construe this term as follows:**

"Proximal and distal lips" means "portions of the shell which extend about the circumference at or near each end of the shell."

--- Footnotes ---

5 For each issue to be decided by the court, Plaintiff's proposed claim interpretation is listed as (1) and Defendants' proposed claim interpretation is listed as (2).

--- End Footnotes ---

Plaintiff proposes that the court construe the term to mean that the proximal end of the catheter has a cross-section defined by a fixed curved surface, or (2) the proximal end of the catheter is an elongated tube that has a proximal portion that is circular in cross section? 5

Answer: "proximal cylindrical portion" refers to a tube that is either circular or oval in cross section.

Both parties focus on the language "semicircular or 'D' shaped," but form opposite conclusions regarding the meaning of these terms. Plaintiff contends that the specification provides support for embodiments comprised of lumens either of a semicircular cross section or of an alternative D shaped cross section. Plaintiff's Reply to Defendants' Response Brief Re. Claim Construction, hereinafter "Pl.'s Reply" at 10.) Plaintiff recognizes that if the lumens were semicircular, the cylindrical portion would be circular, but argues that if the D shaped lumens are used, the cylindrical portion would therefore be oval in shape. (Markman Hearing Transcript, hereinafter "Tr." 100.) 6 Defendants counter that "D shaped" and "semicircular" are to be read as synonyms, and therefore only support a circular proximal cylindrical portion. (Tr. 111.) Alternatively, Defendants claim that the inside shape of the lumens does not necessarily define the outside shape of the cylindrical portion. (Id.) Therefore, in theory, the lumens could be something other than semicircles, but the outside cylinder would still be a circular tube.

--- Footnotes ---

6 The court interprets this to mean that the shape of the lumens dictates the shape of the cylindrical portion, which makes logical sense. However, Plaintiff conceded that this need not always be the case. (Tr. 117.) For example, the cylindrical
portion could be larger in diameter than the two lumens inside it, and thus a different shape than the one formed by the two lumens.

Even though the parties agree that the shape of the lumens does not necessarily define the shape of the outside cylindrical portion, the court notes that the specification, which describes the preferred embodiment of the patent, does suggest that the shape of the lumens determines the shape of the cylinder. The specification describes the "internal planar axial divider or septum" as "defining the return lumen and inlet lumen within the interior of the hollow tube." (‘155 patent, Ex. A to Second Amended Complaint, Col. 3, lines 21-25) (emphasis added.) The specification also states that the divider "bise[cr] the tube into the two lumens." (Id., Col. 3, lines 25-27.) While "tube" may not refer to the "cylindrical portion" (the tube could be inside of the cylindrical portion), the description of the patent's preferred embodiment, from which the language is quoted, does not refer to the cylindrical portion at all. This indicates that the term "tube" is used as a synonym for the cylindrical portion in the description, and suggests that although the lumens need not always define the shape of the cylinder, in the case of the preferred embodiment, they do. Therefore, assuming that D shaped means something other than semicircular, Defendants' interpretation is overly narrow.

Further evidence in favor of Plaintiff's interpretation comes from claim 7, which describes an alternate embodiment of the invention. Claim 7 depicts the septum inside the proximal cylindrical portion as "planar . . . and dividing the interior of said proximal cylindrical portion into first and second lumens." (Id., Col. 4, lines 67-68, Col. 5, lines 1-2.) Claim 8, which modifies claim 7, claims "the double lumen catheter as claimed in claim 7, wherein the first and second lumens and said distal end portion are each 'D' shaped in cross section." (Id., Col. 5, lines 23-25.) It is not disputed that the term "cylindrical" encompasses a circular tube. But if it truly encompassed only a circular tube, as Defendants contend, and if "D shaped" were equivalent to semicircular, then it would have been superfluous for claim 8 to specify D shaped lumens. The court concludes that claim 8 describes an alternative embodiment of the patent, one in which the lumens are D shaped but not necessarily semicircular. And this makes sense from a practical point of view: the letter "D" can be represented in various ways and does not obviously equate with a semicircle. For these reasons the court adopts Plaintiff's proposed claim interpretation; "proximal cylindrical portion" means that the proximal end of the catheter has a cross-section defined by a fixed curved surface, which can be either a circle or an oval shape.

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3. "proximal portion of a second length longer than the first length"

The plaintiff proposes "a proximal section of the guide wire tube that is longer and has a larger inner diameter than the distal portion." To support its proposed construction, the plaintiff makes a similar SciMed argument as for the previous phrase. The defendant, on the other hand, argues that this construction impermissibly adds limitations that are already specified elsewhere in the claim.

The Court agrees with the defendant that the plaintiff's proposed construction adds limitations that are already specified elsewhere in the claim. Therefore, no further construction is needed.

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2. "a proximal portion of a second length longer than the first length"

The plaintiffs propose "a proximal section of the guide wire tube that is longer and has a larger inner diameter than the distal portion." The defendants propose that this term carry its plain meaning.

As with the term "a distal portion of a first length," the plaintiffs rest on their arguments made in the Cordis case (which include a similar SciMed argument), and present no new arguments. The defendants do not present any arguments on this term in their briefing.
The court declined to construe this term in the Cordis case. See Cordis Order at 10-11. After carefully considering the arguments raised by the parties in this case, the court is not persuaded to alter its decision from the Cordis case. Accordingly, the Court concludes that this term does not require construction.

1. "proximal wall"

The parties first dispute the meaning of "proximal wall," a term which appears in all three independent claims (claims 1, 9, and 20), as well as in dependent claims. While Braun's proposed construction has evolved, Braun ultimately requested the construction "a wall on the proximal side of the needle guard." (Tr. at 11, 15) Terumo, by contrast, proposes that "proximal wall" be construed as "rear end wall closest to the user." (D.I. 71 at 7)

3 Braun earlier proposed that "proximal wall" be construed as "a structure on the proximal side of the needle guard that includes a proximally facing wall surface and a distally facing wall surface." (D.I. 74 at 10) In this earlier Braun construction, the "proximal wall" could have been a structure such as a "proximal vertical arm" or a "vertical arm" or a "proximal arm." (D.I. 74 at 12) At the hearing, Braun agreed that "proximal wall has to be a wall." (Tr. at 11; see also id. at 15 (Braun acknowledging it would be willing to drop from its proposal the language following "that includes").)

Both parties agree that the dispute is essentially whether the claimed "proximal wall" may be any wall on the proximal side of the invention -- that is, on the side closest to the medical practitioner who is inserting the IV -- or whether it must instead be the wall closest to the user. Braun proposes the former, as its construction would permit the "proximal wall" to be "a wall towards the back." (Tr. at 10) Terumo proposes the latter: "We say it's the rear wall." (Id. at 28) I recommend that the Court adopt Braun's construction. Thus, I recommend that "proximal wall" be construed as "a wall on the proximal side of the needle guard." The claim language in which the disputed term appears neither supports nor detracts from either side's proposed construction. That is, the claim language itself is consistent with the proximal wall being either a wall towards the back or being the rear wall. Claim 9, for instance, describes a proximal wall that has both a proximally facing and distally facing wall surface and two resilient arms extending distally of it. ('613 patent, col. 16 lines 9-13) These limitations could be satisfied by either a wall close to the user or the wall closest to the user.

Turning next to the specification, I find strong support for Braun's proposal. The specification repeatedly uses the term "proximal" as a relative term, to describe an area rather than a specific point within an area. For example, the specification refers to "a continuous, larger diameter proximal section 30." ('613 patent, col. 5 lines 27-28) Many other uses of "proximal" in the specification likewise relate to a direction or side. (See, e.g., id. col. 3 lines 44-45 ("further movement of the needle in the proximal direction"); id. col. 6 lines 1-2 ("guard . . . extends upward and proximally"); id. col. 6 lines 28-29 ("the needle moves proximally past the curved lip"); id. col. 6 lines 33-34 ("a result of needle 16 moving proximally past point C"); id. col. 6 lines 47-48 ("[if] desired, a slot 60 may be formed in the needle shaft slightly proximal to the needle tip"); id. col. 6 lines 52-53 ("move the needle further in a rearward or proximal direction"); id. col. 6 lines 63-64 ("move the protected needle . . . in the rearward or proximal direction"); id. col. 6 line 66 ("prevent further proximal movement of the needle"); id. col. 7 line 39 ("front wall 82 extends in the proximal direction"); id. col. 8 lines 29-30 ("section 102 extends from section 98 in the proximal direction"); id. col. 8 lines 51-52 ("at a location proximal to point B").) 4

4 Other uses of the word "proximal" in the specification are ambiguous as to whether they are referring to relative areas or specific points. See '613 patent, col. 3 lines 5-6 (describing a catheter "having a proximal end and a distal end"); id. col. 3 lines 8-9 ("catheter hub is attached to the proximal end of the catheter"); id. col. 5 line 22 ("proximal end of a needle"); id.
Terumo further argues that the specification uses "proximal wall" interchangeably with "rear wall" and "end wall," such that the patentee explicitly defined "proximal wall" to be the "rear wall of the needle guard." (D.I. 71 at 7-9) It is true that a patentee is free to be her own lexicographer and, when she is, her explicit definition will be adopted for purposes of claim construction. See Phillips, 415 F.3d at 1316. Here, however, I find no such express definition. The portions of the specification on which Terumo relies are, instead, descriptions of preferred embodiments of the invention depicted in the specification's Figures 10A and 10B. This section of the specification begins by describing "[t]he embodiment of the spring clip needle guard 120 disclosed in FIGS. 10A [and] 10B." (613 patent, col. 9 lines 28-29) One of the lines on which Terumo relies from a description of the embodiment depicted in FIG. 10A. (613 patent, col. 9 lines 40, 48-49 ("As shown in FIG. 10A ... [t]he proximal end of the needle 16 passes through the opening 134 in the rear wall 126.").) The other line on which Terumo relies is from a description of the embodiment depicted in FIG. 10B. (613 patent, col. 10 lines 12, 17-21 ("As also shown in FIG. 10B ... the crimp 138 on the needle shaft will come into contact with the end wall 126, and, since its width is greater than that of the opening 134, the end wall 126 will at this point prevent any further axial movement of the needle out of the needle guard."). It would be improper in the context of this patent to limit the broader claim language ("proximal wall") to the particular preferred embodiment ("rear wall") described in this portion of the specification, as nothing in either the claim language or specification calls for such a narrowing here. See, e.g., Phillips, 415 F.3d at 1323 ("Although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments"); Liebel-Flarsheim, 358 F.3d at 908 (refusing to limit asserted claims to embodiments disclosed in the specification because the portions of the specification disclosing those embodiments "do not expressly or by clear implication restrict the scope of the invention").

Terumo points out, correctly, that the claim term being construed is "proximal wall," not "proximal." Yet this does not change the fact that in the numerous instances cited above the specification uses "proximal" to describe something in a relative manner. Terumo identifies no instances in which the specification uses "proximal" to describe something as the "rearmost of its kind."

The pertinent prosecution history is not inconsistent with these conclusions. During prosecution of the patent-in-suit, certain claims were rejected in light of U.S. Patent No. 5,135,504 (hereinafter "the McLees Patent"). (D.I. 74 at 14; D.I. 85 Ex. B (2/6/06 Office Action at 4 (BBM-TER0000336)); D.I. 85 Ex. B (11/23/05 Appellant's Brief at 5 (BBM-TER0000303))) The Patent Examiner viewed the McLees Patent as disclosing a proximal wall. But the patent applicant disagreed. (See, e.g., D.I. 85 Ex. B (6/12/06 Amendment at 15 (BBMTER0000359) (applicant stating: "[t]he issue of whether McLees discloses a proximal wall was also discussed. While consensus was not reached, [the examiner] agree[d] that McLees does not disclose a proximal wall comprising both a proximally facing wall surface and a distally facing wall surface.").) Subsequently, the applicant amended the claims to clarify that the claimed "proximal wall" in the patent-in-suit "comprises a proximally facing wall surface [and] a distally facing wall surface." (D.I. 74 at 14; D.I. 85 Ex. B (6/12/06 Amendment at 8-11 (BBMTER0000352-55))) Thereafter, the Examiner allowed the claims to issue. (D.I. 85 Ex. B (2/7/07 Notice of Allowability at 2-3 (BBM-TER0000517-18)) ("The subject matter not found was . . . the tip protector comprising a proximal wall having a proximally facing wall surface, a distally
In light of the claim language and the specification, there is nothing in this prosecution history that would justify construing "proximal wall" in the manner Terumo requests.

Terumo also cites to a great deal of extrinsic evidence but it, too, does not support Terumo's proposed construction. First, Terumo referred the Court to a dictionary definition of "proximal" (despite Terumo's point that the term in dispute is "proximal wall" and not just "proximal"). Specifically, Terumo cited Webster's Collegiate Dictionary, which defines "proximal" as "next to or nearest the point of attachment or origin." (See D.I. 72 Ex. G at p. 949; Tr. at 31-32 (Terumo's counsel discussing Terumo's slides 11 and 22).) However, this is the second (of three) definitions of "proximal" given at that same page of that same dictionary. The first definition given is "situated close to: proximate." (See D.I. 72 Ex. G at p.949.) Hence, the first-listed definition in the dictionary cited by Terumo appears to support Braun's proposal, not Terumo's.

Next, Terumo points to the 2001 deposition testimony of Mark Wynkoop, the '613 patent's primary inventor, given in other litigation. (D.I. 97 at 6) According to Terumo, in this earlier deposition Wynkoop described the proximal wall as the "back wall," the "[b]ackside of the clip," and the part of the clip that "has to be there to hold everything together." (D.I. 97 at 6) (quoting D.I. 98 Ex. 2 at p. 210) Then, in the instant case, in testimony given on December 30, 2009, Wynkoop again made clear -- in Terumo's estimation -- that he thinks of wall 126 as the "back wall," and that the back wall has to be there to "hold everything together." (D.I. 97 at 6) (quoting D.I. 98 Ex. 1 at pp. 141-42, 157-58) However, as Braun correctly notes, Wynkoop's testimony in the cited portions of these depositions addresses either Braun's Introcan Safety(R) product, an embodiment of the '613 patent (see D.I. 140 Ex. A at pp. 209-10 (Wynkoop's 2001 deposition, answering "the scissor clip on the Introcan Safety, what's its function?") (emphasis added)) or relates to an embodiment disclosed in the '613 patent specification (see D.I. 140 Ex. B at pp. 137-42, 157-58 (Wynkoop, in his 2009 deposition, reiterating his 2001 testimony and adding that he calls 126 in Figure 10A the "back wall," but not opining as to meaning of "proximal wall" in the claims)). In neither instance does Wynkoop's testimony address the distinct issue of the breadth of the claimed "proximal wall" of the '613 patent.

Finally, Terumo argues that if the Court adopts Braun's construction of "proximal wall," then the disclosed invention would not work. (Tr. at 30-31, 35) This is because Braun's construction would permit more than one proximal wall, but, Terumo asserts, "[n]one of these designs work with multiple proximal walls." (Tr. at 35) Braun responds with the observation that, even under its construction of "proximal wall," "[t]here are all these other elements there as well that are required to make this thing function." (Tr. at 42) Therefore, according to Braun, the disclosed invention would work even if multiple proximal walls are permitted. I have been unable to find anything in the record that would support either of these attorney arguments. Therefore, I find no evidence on this point that persuades me the conclusion I reach above is incorrect.

Thus, again, I recommend that the Court construe the term "proximal wall" to mean "a wall on the proximal side of the needle guard."
meaning of the term. If the claims intended a "near and within" meaning, they should have used that language. "Proximate" is widely understood as meaning "close to" or "near," but not necessarily "within." Furthermore, this construction makes sense in light of the specification and fits both uses of "disposed proximate" in claim 1: "the connector" is "located closely in space" to "the opening" and "the opening" is "located closely in space" to "the interior side." Finally, the dictionary supports this construction. The most relevant definition of "dispose" is "to put in place: set in readiness: arrange"; the most relevant definition of "proximate" is "very near: close." MERRIAM-WEBSTER ONLINE DICTIONARY, http://www.merriam-webster.com/dictionary/proximate; Merriam-Webster Online Dictionary, http://www.merriam-webster.com/dictionary/disposed.

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Claim 1 (c) refers to "the second end of said cylindrical body member engaging said tubular post proximate the second end thereof." According to the dictionary, "proximate" means "very near" or "immediately preceding or following." Merriam-Webster Dictionary online at http://www.m-w.com/cgi-bin/dictionary. "Immediately preceding or following" makes little sense as a definition when the referent is a tubular member encased by a cylinder for most of its length. As the drawings show, the second end of the cylindrical body member cannot engage the post at its very end because of the post's lip that projects slightly beyond the cylindrical body member. See Fig. 1, below.

[SEE FIG. 1 '194 PATENT IN ORIGINAL]

That the patent applicant intended the meaning to be "very near" is shown in Fig. 7, where the cylindrical body member is depicted as slightly farther from the very end of the tubular post than in Fig. 1, with an O-ring and a small portion of the nut separating it from the end of the post, as shown.

[SEE FIGURE IN ORIGINAL]

In both instances, the second end of the cylindrical body member is closer to the second end of the tubular post than to the first end or to the middle of the tubular post. From this, I am persuaded that the patent applicant used proximate to mean "very near" and used the term to identify the place along the tubular post at which the second end of the cylindrical body member engages the second end of the tubular post.

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B. Proximate

Claims 1(c) and 2(c) of the '194 patent require the second end of the cylindrical body member to engage the tubular post "proximate" to the second end of the tubular post. The ordinary meaning of "proximate" means "very near" or "immediately preceding or following." See July 25, 2003 Op. and Order, dkt. # 41 (citing Merriam-Webster Dictionary online at http://www.m-w.com/cgi-bin/dictionary). In the July 25 opinion and order, I concluded that a definition of "immediately preceding or following" would be inconsistent with the patent because, in the second preferred embodiment, there is an O-ring and a small portion of the nut separating the cylindrical body member from the very end of the tubular post. Using the specification to choose between multiple definitions is an accepted method of claim construction. See Texas Digital, 308 F.3d at 1203 ("Because words often have multiple dictionary definitions, some having no relationship to the claimed invention, the intrinsic record must always be consulted to identify which of the different possible dictionary meanings of the claim terms in issue is most consistent with the use of the words by the inventor."); Vitrionics Corp. v. Conceptoronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1995) ("an interpretation [excluding the preferred embodiment] is rarely, if ever, correct and would require highly persuasive evidentiary support").

Although I rejected defendant's position in the July 25 opinion and order, it continues to argue that the "ordinary meaning of proximate does not permit anything to come between one thing and another thing." Dft.'s Cl. Constr. Br., dkt. # 103, at 30. However, it fails to explain why a definition of "next to" is preferable to "very near." Further, defendant does not even attempt to reconcile its proposed construction with the second preferred embodiment. I adhere to my conclusion in the July
25 opinion and order that the term "proximate" means "very near."

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2. Claim 1, Element [b]: "proximate said slot engagement member."

The plaintiff argues that this limitation needs no construction. The defendants maintain that the court should define the term "proximate" and proposes a dictionary definition of the term to mean "next to or very close to." The court agrees with the defendants that the term "proximate" should be defined and adopts the definition of the term proposed by the defendants. The court notes that the plaintiff does not suggest that the defendants' proposed definition is inadequate or otherwise unnecessarily imposes limitations into the claim language. The limitation is defined as "next to or very close in space to said slot engagement member."

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2. "proximate the longitudinal ends of said panels" -- Claims 1 and 25

Amarr contends that this term should be construed as, "very near the right and left ends of the panels." Amarr's Opening Brief at 11. Wayne-Dalton declares that it requires no construction. See Transcript at 110.

With respect to the term "proximate," Amarr argues that "the jury won't understand that term to mean right at or very near or near, if the court doesn't give direction." Transcript at 111. Amarr therefore seeks the construction "very near" for that term. Wayne-Dalton, on the other hand, contends that it is entitled to all consistent meanings of the term "proximate." Wayne-Dalton is correct.

A court construing claim terms may not unduly limit its reading of those terms. TI Group Auto. Sys. (N. Am.), Inc., v. VDO N. Am., L.L.C., 375 F.3d 1126, 1136 (Fed. Cir. 2004). Rather, "a patentee is entitled to a definition that encompasses all consistent meanings" of the term. Id. "All consistent meanings" of the term "proximate" include more than "very near," or even "near." In the absence of an express statement in the 872 Patent that "proximate" bears the constricted meaning Amarr proposes, the requested limitation is not proper. The term "proximate" therefore does not require construction.

Amarr's effort to construe "longitudinal ends" to mean "the right and left ends of the panels" also must fail, as it seems more likely to add confusion than to remove it. Whether any given end is the right end or the left end depends on the viewer's position in relation to the door. The meaning of "longitudinal ends" is not similarly variable. Further, the parties do not dispute what is meant by "longitudinal ends." Once the first expert takes the stand, if there was any confusion to begin with (which this Court doubts), the jury will know what is meant by "longitudinal ends." The disputed language does not require construction.

3158
E. The Term "Proximity"

Again, we believe that the specification as delineated by the figures cited above renders the district court's construction--requiring that the needle be "flush with" the front of the guard when the flange activates--too narrow. In the embodiments designated by each figure, the blocking flange rests against the needle closely in front of, but not exactly at, the front of the guard body. As the needle moves, it will reach a point where it still protrudes from the front of the guard but is already clear of the blocking flange. The flange will therefore activate slightly but definitely before the needle submerges fully into the guard body and has its tip flush with the front; therefore, the district court's construction impermissibly excludes these embodiments. The proper construction of this term is "near."
IV. Pseudoelastic Shape Memory Alloy

In addition to the above terms BSC requests that the Court interpret pseudoelastic shape memory alloy. BSC's purpose for having the Court define this term is to add the language "without cooling" when discussing how stress-induced martensite is formed. As discussed previously, the Court does not find that such a limitation is warranted by the plain meaning of the term. Accordingly, the Court construes pseudoelastic shape memory alloy to mean an alloy, that when subjected to deforming stress in its austenitic state, first deforms elastically, and then, at a critical stress, deforms by the formation of stress-induced martensite.

4 There are additional claims that BSC asks the Court to construe. After reviewing BSC's proposed claim construction, however, it appears that the only substantive difference in BSC's proposed claim construction is its addition of the phrase "without cooling" to stress-induced martensite. The Court, therefore, will not address the claim constructions proposed by BSC.

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F. "Pulling"

Mitek construes the term "pulling" to mean pulling the flexible strand which extends outside of the femoral transverse tunnel. Mitek argues that in the Summary of the Invention, the method used for pulling the graft into the femoral socket is by "pulling evenly on the medial and lateral ends of the strand." (Doc. 140, Exh. 1, 3:3-4). Mitek also cites to the Detailed Description of the Preferred Embodiments which states that the graft is retracted through the femoral socket "by pulling evenly on the medial and lateral ends of the graft-passing wire." (Doc. 140, Exh. 1, 6:2-3). Mitek argues that the inventor only contemplated one method of graft-loading, and the claim should be limited to that method. Mitek also asserts that in the Summary of the Invention, the inventor claimed this technique of graft-loading eliminated sutures. (Doc. 140, Exh. 1, 2:33-34). Mitek argues that since Arthrex distinguished suture in-line graft-loading techniques (the prior art) from its transverse-wire technique, it cannot now assert that the claim broadly encompasses in-line graft-loading techniques.

Arthrex asserts that the patents disclose the preferred embodiment of how the graft is raised through the tibial tunnel. The preferred embodiment procedure is by pulling the ends of the flexible wire. However, the claim is not limited to the preferred embodiment. Arthrex argues that a person with ordinary skill in the art would know that the graft could be pulled through the tibial tunnel and into the femoral socket by the preferred method discussed in the Detailed Description of the Preferred Embodiments or any other method, including the method in prior patents known as the "in-line" technique of pulling the graft. Arthrex also argues that a "flexible strand" is a type of suture, which is used in the '477 patent to load the graft into the knee. Further, the '477 patent eliminates sutures as graft fixation devices not graft-loading devices.

The language in the claim is general in that it uses the term "pulling" in the following clause: "pulling the loop of the graft through the tibial tunnel and into the opening." (Doc. 140, Exh. 1, 6:53-54). This language is not limited to pulling the ends of the flexible strand that are protruding from the femur. The Summary of the Invention as well as the Detailed Description of the Preferred Embodiments does describe the method of pulling on the ends of the flexible strand that protrude from the femur to raise the graft into the knee. The issue is whether the outer limit of the claim is the method of pulling the flexible strand at both ends to raise the graft. It is impermissible to limit a claim to specification or the preferred embodiment, even if it is a single embodiment. Bell Atlantic Network Services, Inc. v. Covad Comm'n's Group, Inc., 262 F.3d at 1273, LizardTech, Inc. v. Earth Resource Mapping, Inc., 433 F.3d at 1377, Phillips v. AWH Corporation, 415 F.3d at 1323. The claim in this case is not limited by the specification nor by the preferred embodiment. A person of ordinary skill in the field would understand that the graft must be raised through the tibial tunnel and into the femur by some method, and the
preferred method is by pulling on the flexible strand that is protruding from the femur, however any method of raising the graft would comply with the claim. The argument by Mitek that the Summary of the Invention shows that the graft-pulling technique eliminates sutures is without merit. The method articulated eliminates sutures as graft-fixing devices, not graft-pulling devices. (Doc. 140, Exh. 1, 2:33-34).

Relying on the claim language itself, and the specification and preferred embodiment, the Court determines that "a person of ordinary skill in the art" would construe the "ordinary and customary meaning" of the term "pulling" to mean pulling the loop of the graft through the tibial tunnel and into the opening in the femur.

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"pulling the handle portion generally along the handle axis"

37. The third step of claim 1 requires "pulling the handle portion generally along the handle axis." Def. Munchkin Ex. A, Porter Patent, Col. 4, l. 3.

38. "Pulling" is a common, non-technical term that means "apply[ing] force to so as to cause or tend to cause motion toward the source of the force." Def. Munchkin Ex. MMM, American Heritage Dictionary 1002 (2d Coll. ed. 1991). This definition is consistent with the description of "pulling" in the Porter Patent's Summary of the Invention and Description of the Preferred Embodiment. Def. Munchkin Ex. A, Porter Patent, Col. 1, ll. 50-55; id., Col. 2, ll. 48-54. Both of these sections describe a user exerting force on the handle portion of the grooming tool to cause movement of the tool. In contrast, FURminator's proposed construction of "pulling" as meaning "the action of moving a comb or brush through hair" is not consistent with the ordinary and customary meaning of this term in the context of the Porter Patent, is not found in the patent, and is not referenced in the prosecution history.

39. With respect to the meaning of the phrase "the handle axis," the Porter Patent and prosecution history again make clear that the handle axis being described is the long axis of the elongate handle. See id., Col. 3, ll. 34-49; Def. Munchkin Ex. B, Porter Patent File History, at 447 ("If a user makes or otherwise acquires a grooming tool as described in Applicants' specification at pages 5-7 and uses the tool in the manner described on page 7, line 4-16 [Col. 3, ll. 34-49], loose hair will be removed from the furry pet without removing non-loose hair."). The referenced portion of the specification expressly discloses pulling the handle portion 22 of the grooming tool along the handle axis X. See Def. Munchkin Ex. A, Porter Patent, Col. 3, ll. 34-49; Def. Munchkin Ex. B, Porter Patent File History at 308.

40. FURminator's argument that "the handle axis" can be any one of an infinite number of axes that might be drawn from a handle of the grooming tool lacks merit, as previously discussed. Use of the definite article "the" with the term "handle axis" clearly refers back to the handle axis previously described (the elongate handle axis), not some new handle axis not previously disclosed or discussed. See Insituform, 99 F.3d at 1104-06 (construing "a cup" and "the cup" as singular because the claims, specification, and file history all supported that construction). Indeed, it is inconsistent with the arguments made to the Patent Office during the Porter Patent's prosecution for FURminator to argue that "the handle axis" referenced in this third step of the claim is anything other than the long axis X depicted in Figure 1. See Def. Munchkin Ex. B, Porter Patent File History at 447; Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1578 (Fed. Cir. 1995) ("A patentee may not proffer an interpretation for the purposes of litigation that would alter the indisputable public record consisting of the claims, the specification and the prosecution history, and treat the claims as a 'nose of wax.'").

41. Contrary to FURminator's arguments, this construction does not contravene the claim differentiation doctrine. Claim differentiation is an aid to construction, is not a hard and fast rule, and applies only when a proposed construction would make "a claim superfluous." Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998) (emphasis added). Dependent claim 4 adds to claims 1 and 3 a limitation "wherein the blade portion is mounted on the handle portion in a manner so that the blade portion trails the handle portion as the handle portion is pulled generally along the handle axis while the pet engageable portion is in engagement with the pet." Def. Munchkin Ex. A, Porter Patent, Col. 4, ll. 14-18. Construing claim 1 to require that "a handle axis" or "the handle axis" is the longitudinal axis X of the handle does not render claim 4 superfluous, because claim 4 further requires the blade portion to trail the handle portion. Claim 1 says nothing about the longitudinal placement of the blade on the handle -- the blade could be at the front end (and thereby trail the handle when the handle is pulled along the long axis), in the middle, or on the back end (and thereby "lead" the handle.
during the pulling step).

42. Accordingly, this Court construes the disputed phrase "pulling the handle portion generally along the handle axis" as "applying force to the handle portion so as to cause or tend to cause motion toward the source of the force generally in the direction of the long axis of the handle."

43. Because it is not necessary to resolve for purposes of this preliminary injunction motion, the Court declines at this time to determine whether the third step of claim 1 of the Porter Patent is a step-plus-function claim pursuant to 35 U.S.C. § 112, P6, as asserted by Munchkin. See Wireless Agents, L.L.C. v. Sony Ericsson Mobile Communications AB, 390 F. Supp. 2d 532, 538 n.7 (N.D. Tex. 2005) (declining to construe multiple patent claim terms where the court only needed to construe one term to conclude that the plaintiff was not entitled to preliminary injunctive relief)."

44. FURminator has proposed other terms to be construed as part of this motion. However, because the Court's construction of the terms above is all that is needed to conclude that there is no likelihood of FURminator's success on the merits, the Court need not reach the construction of other claim terms requested by FURminator at this stage in the litigation.

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2. "Pump Discharge Outlet"

The parties also disagree on the correct construction of the term "pump discharge outlet." Aqua seeks to have the claim construed as being "the point at which the pressurized water stream enters the housing for the remainder of the apparatus." (Pl. Claim Const. Stmt. at 19.) 3 It states that its construction is given support by the amendments it submitted after its Request for Continued Examination in response to the prior art it found after the Notice of Allowability, in which it stated that the volumetric flow of water made only one turn after exiting the pump discharge outlet. (Pl. Claim Const. Stmt. at 18.) Aqua reasons that the amendment would be nonsensical if the term "pump discharge outlet" were construed in a way other than its preferred construction. While Aqua's statements in prosecuting the amendment support its contention that it did not intentionally surrender external pumps, they do not support its argument that this Court should construe the claims to cover external pumps.

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In contrast, Intex seeks to have the claim term "pump discharge outlet" construed "in accordance with its ordinary meaning." (Deft. Claim Const. Stmt. at 14.) 4 Using a dictionary, Intex defines each word in the term and arrives at the conclusion that the only possible construction of the term is that the discharge outlet is the point at which the water exits the pump. (Id.) This use of extrinsic evidence is acceptable here, as there is no use of the term "pump discharge outlet" anywhere in the patent specification or prosecution history. Intex contends that Aqua's construction argument contravenes the plain meaning of the words in the claim, thus violating the precept laid down in Phillips that without support from the specification the claim construction must be tethered to the claim language.

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Intex also argues that Aqua's proposed construction conflicts with Figure 12, which demonstrates more than one right angle turn even using Aqua's construction. Figure 12, while illustrative of one possible embodiment of the invention, does not limit the entire scope of the patent's claims. The claims should not be confined by the embodiments disclosed in the specification. Phillips, 415 F.3d at 1323.
Intex's construction is correct. Aqua has presented no reason to go beyond the ordinary and customary meaning of the words in the term "pump discharge outlet." Because Aqua never defined the term "pump discharge outlet" either explicitly or implicitly in the specification, Aqua did not act as its own lexicographer in prosecuting the patent. Intex also correctly notes that in the case of an external pump, the Patent Office considered the pump discharge outlet an integral part of the pump apparatus, rather than inside the cleaning apparatus, because it described the external pump as being connected to a "housing adapter" rather than a "pump discharge outlet" in its December 19 Office Action. (Crisona Decl. Ex. 4 at 4.) A person of ordinary skill in the art of reading the '133 patent could not conclude that the PTO had considered the '133 patent to include external pumps, and while the PTO's understanding of the '133 patent is not binding upon this Court, it is nonetheless persuasive. Aqua's proposed construction is so far divorced from the meaning of the terms of the claim that without support from the specification it cannot stand, while Intex's construction simply applies the meaning of the words in the term as they would be understood by one skilled in the art. Both the prosecution history and the language of the claim point to the conclusion that the term "pump discharge outlet" should be construed to mean "the point at which water exits the pump."

2. Pumping Means

TI Group next argues that the district court erroneously construed the term "pumping means" as a means-plus-function limitation under 35 U.S.C. § 112, paragraph 6, resulting in a more narrow definition than called for by the written description. TI Group argues that the district court should not have analyzed the limitation under § 112, paragraph 6, because the limitation specified any necessary structure required. See Cole v. Kimberly-Clark Corp., 102 F.3d 524, 530-31 (Fed. Cir. 1996) (noting that, in order to invoke § 112, paragraph 6, "the alleged means-plus-function claim element must not recite a definite structure which performs the described function"). VDO argues that the phrase "pumping means" clearly gives rise to a presumption that § 112, paragraph 6 applies and that TI Group has not rebutted the presumption, because the structure recited does not perform the stated function.

The claim limitation at issue recites not only a pumping means, but its structure ("including a nozzle and a venturi tube in alignment with the nozzle"), location ("being located within the reservoir in the region of the opening"), and operation ("the passage of fuel out of the nozzle and through the venturi tube causing fuel to be entrained through the opening into the interior of the reservoir"). While the use of the word "means" gives rise to a presumption that § 112, paragraph 6 applies, the presumption is overcome by the recitation of the structure needed to perform the recited function. The written description informs and fully supports the structure recited in the claims: "Jet pump 30 includes nozzle 54 and venturi tube 58." '714 patent, col. 4, ll. 61-66.

The district court's construction, urged before this court by VDO, concludes that the pumping means must also include check valve 22, connecting tube 164, and jet block 144. Markman Order at 2. This construction, however, includes elements that are not necessary for performing the recited function. There is no indication in the patent that the function found by the district court, namely "to pump fuel into the reservoir," id. at 1, requires anything other than the structure recited in the claim. Therefore, the proper construction of the "pumping means" limitation in claim 2 is "a pump including a nozzle and a venturi tube in alignment with the nozzle."

In light of our conclusion that § 112, paragraph 6, is not invoked, we need not, and do not, address TI Group's alternative arguments about structure corresponding to "pumping means," including its arguments regarding check valve 22 and connecting tube 164.

IV. "Puncture Closure" as Used in the '004 Patent

Kensey submits that "puncture closure," as used in the claims, refers to any closure device that has a filament and that uses a
knot to hold the closure in place. Pls.’ Mem. at 53. Perclose submits that "puncture closure" means "a device for sealing a percutaneous incision or puncture in a vessel, duct or lumen comprised of a sealing member within the puncture tract, an anchor member within the vessel, duct or lumen, and a filament member connecting the anchor and sealing members in a pulley-like arrangement." Def.’s Mem. at 49, 5. Additionally, a "puncture closure" also has a "filament lock," which is a "combination of a knot in engagement with the sealing member and the system for exerting tension on the filament means, which includes a tag, a tamper means, and a torsion spring." Def.’s Mem. at 50.

As is evident in their favored definitions, Kensey and Perclose agree that "puncture closure" is a specific term but disagree about the precise meaning of the term. Neither party submits that the term would have a particular meaning to one of ordinary skill in the art, and therefore, the court is guided by the meaning of the term as it is understood in the patent and in the patent's prosecution history.

A. Claim Language

The '004 patent contains six independent claims. For the purpose of defining "puncture closure," Claims 1 and 10 contain language representative of the relevant language from all of the independent claims. The pertinent parts of Claim 1 read as follows:

A system for sealing a percutaneous puncture in the wall of a vessel, duct or lumen of a living being…

[a] said system comprising… a puncture closure,

[b] said closure comprising a first portion[,] 9 at least one extending filament portion and a filament lock . . .

[c] [with] said closure [deployed] in the puncture with said first portion of said closure within the interior of the vessel, duct or lumen and with said at least one extending filament portion extending from said first portion of said closure into the puncture tract,

[d] said closure being arranged to be disposed at an operative position in the puncture sealing the puncture,

[e] said filament lock comprising a knot locatable on said at least one filament portion within the puncture tract for cooperation with a portion of said closure[,] said knot, when in said puncture tract and when said first portion of said closure is within the interior of the vessel, duct or lumen, holding said closure at said operative position . . .

'004 Patent, 14:63-15:19. The language of Claim 10 that pertains to "closure device" is consistent with Claim 1 except in its description of the filament lock. The relevant portions of Claim 10 read as follows:

…said filament lock comprising a knot coupled to and movable with respect to said at least one filament portion within the puncture tract to a position holding said closure at said operative position…

Id., 16:38-42.

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9 Kensey's brief incorporates this comma without noting its absence in the text of the claim. See Pls.' Mem. at 53. I find no coherent way to understand the claim without this comma, and I assume that it was erroneously left out of the text of the patent.

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deployed within the puncture, the first portion sits within the interior of the vessel, the extending filament runs from the first portion into the puncture tract. Section e of Claim 1 and the quoted portion of Claim 10 specify that the filament lock is a knot and is either located on the extending filament or is coupled to the extending filament. "Puncture closure," based on the language in Claims 1 and 10, captures a class of devices smaller than the class suggested by Kensey but significantly larger than the class suggested by Perclose.

B. Specification

Kensey argues that Claims 1 and 10 adequately describe the term "filament lock" and that no special construction is required. See Pls.' Mem. at 53-56. Perclose, however, suggests a restricted definition of "filament lock" and argues that there is no support in the specification for the broad definition of "filament lock" contained in Claims 1 and 10. 10 See Def.'s Mem. at 51-55. Specifically, Perclose claims that, in the preferred embodiment of the '004 patent, neither of the two knots described--a knot tied around a plug member and a slip knot formed by the filament portions of the closure--can do all that Claims 1 and 10 require of the knot comprising the filament lock. See id. at 54-55; see also '004 Patent, 7:48-49 (describing knot 68 as the knot tied around the plug member securing the filament to the plug member); '004 Patent (Figure 2 - knot 68 tied around a plug member; and Figure 6 - knot 68 configured as a slip knot). Therefore, according to Perclose, "filament lock" must mean something more than just those knots. See Def.'s Mem. at 54-55. Kensey clarifies its position by admitting that the filament lock in the preferred embodiment of the invention is knot 68, but disagrees with Perclose's assertion that knot 68 cannot do all that Claims 1 and 10 require of the knot comprising the filament lock. See Pls.' Resp. at 20-22. Thus, the real issue before the court appears to be whether or not knot 68 can do what Claims 1 and 10 require of the knot comprising the filament lock.

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10 Perclose also points out that during the application process, Kensey amended the claims of the '004 patent to use "filament lock" instead of "locking means," suggesting that the terms have different meanings. See Def.'s Mem. at 51. Any different meaning would be important because the "filament lock" claimed in Claims 1 and 10 appears to describe the locking means discussed in the specification of the '004 patent. See, e.g., '004 Patent, 2:49-57.

After reading the claims and the specification of the '004 patent, the interchangeability of "locking means" and "filament lock" is apparent. Furthermore, a perfectly acceptable reason for not using "locking means" in the claims is also apparent. As discussed with respect to "location detector" in the '689 patent, means-plus-function claim terms are construed in a very particular manner. If Kensey did not want to define the knot et al. in this fashion, then changing the claim language from "locking means" to "filament lock" makes sense.

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The knot described in Claim 1 must be locatable on the extending filament portion. See '004 Patent, 15:14-15. Knot 68 can do this. In the preferred embodiment, extending filament portion 34 passes through the plug member and out of the puncture tract. See id., 7:36-49. Thus, using the "pulley-like connection" the plug member can be positioned at a desired location on extending filament portion 34. Id., 7:36. Because knot 68 is tied around the plug member, knot 68 can also be positioned at a desired location on extending filament portion 34. Thus, knot 68 is locatable on the extending filament portion. Indeed, Perclose recognizes this. See Def.'s Mem. at 54.

Knot 68 must also be able to hold the closure in the operative position. See '004 Patent, 7:16-19. Perclose argues that in the preferred embodiment, the closure is not held in place by knot 68 but by the "combination of the pushing force exerted by the tamper on the sealing means, not on knot 68, and the pulley-like pulling force exerted on the filament." Def.'s Mem. at 54. In making this argument, however, Perclose points out exactly how knot 68 holds the closure in the operative position. The "pulley-like pulling force exerted on the filament" depends on knot 68. Without knot 68, the force exerted on extending filament portion 34 by the torsion spring would be unopposed, and the anchor member would not be held in the operative position. Although knot 68 does not hold the closure in the operative position by itself, in the preferred embodiment, knot 68 is essential to accomplishing this task. Thus, knot 68 satisfies the requirements imposed by Claim 1 on the knot comprising the filament lock.

Knot 68 can quickly be shown to satisfy two of Claim 10's three requirements. Claim 10 requires that the knot comprising
the filament lock be movable with respect to the extending filament portion. See '004 Patent, 16:38-39. In its brief, Perclose correctly acknowledges that knot 68 is, in at least some ways, movable with respect to extending filament portion 34. See Def.'s Mem. at 54. Moreover, it is already plain that, in cooperation with other elements of the preferred embodiment, knot 68 holds the closure in the operative position. See '004 Patent, 16:40-41.

The remaining requirement of Claim 10 is that the knot comprising the filament lock be coupled to the extending filament portion. See id., 16:38-39. Claim 10 also reveals, however, that between the filament lock and the extending filament portion lies that portion of the closure inside the vessel. See id., 16:32-36. In the preferred embodiment, the first portion would be made up of the anchor member and whatever filament from the pulley-like arrangement that remains inside the vessel. See id., 12:37-13:18. Assuming that there is some of this filament inside the vessel, knot 68 could satisfy this requirement of Claim 10. Taking the ordinary meaning of "coupled" to be connected, knot 68 is connected to the filament inside the vessel, and the filament inside the vessel is connected to extending filament portion 34. Thus, knot 68 is indirectly connected to extending filament portion 34, but connected nonetheless. For this reason, knot 68 satisfies the final requirement of Claim 10.

C. Prosecution History

Neither party analyzes the prosecution history of the '004 patent in detail. The '004 patent's application follows in the same line of continuation applications from which the '689 patent arose. The submission of the '004 patent's application immediately followed the submission of the '689 patent's application. The '004 application also arises from the same initial application, namely the '974 patent's application. It is clear the "puncture closure" is a particular type of "closure device" or "closure means." Hence, "puncture closure" refers to some subclass among the class of devices identified by "closure device" or "closure means." Hence, a puncture closure is some particular type of anchor, plug, and filament closure.

The '004 patent's prosecution history only further confirms that a puncture closure is a type of "closure device." In rejecting Kensey's initial application for the '004 patent, the examiner specifically stated that the application shared a "common subject matter" with the '974 patent and approval of the application would result in nonstatutory double patenting. PTO's June 30, 1998 Office Action at 2. 11 The common subject was "[a] system for sealing a percutaneous puncture comprising a deployment member or carrier means, a positioning means or anchoring means, a puncture closure or closure means, a filament, a locking means having a knot…." Id. at 3. As relevant here, both devices must include plugs or sealing members of some sort. Furthermore both closure assemblies must be positioned by the closures' anchors. Consequently, it is clear that the PTO examiner understood "puncture closure" to include both an anchor and a plug. In response, Kensey disclaimed, under 37 CFR 1.321, the subject matter of '974, and by so doing, Kensey gave up any extension of patent protection through the '974 patent that might have resulted from the approval of the '004 application. See August 21, 1998 Terminal Disclaimer. 12 This disclaimer, at a minimum, serves to indicate that Kensey did not dispute that "puncture closure" and "closure means" cover the same ground.

Footnotes: 11 In Dec. of Charles Cantine (Doc. 33) at Ex. 21.

12 In Cantine Dec. at Ex. 21.

In sum, "puncture closure" must be understood to have all the essential elements of "closure means" with the additional element of a "filament lock." "Puncture closure" must include, therefore, an anchor and plug. Furthermore, the plug can only be understood as being bound by the knot. Consequently, "puncture closure" as used in the '004 patent refers to the class of closure devices (1) that use an anchor, plug, and filament bound together in a pulley like arrangement whereby the filament draws the anchor and plug together so as to effectuate a seal and (2) that have a filament knot which holds the closure in place by holding the plug in place.
Kensey also appeals the construction of "puncture closure" as recited in the claims of the '004 patent. The district court held that "puncture closure" referred to

closure devices (1) that use an anchor, plug, and filament bound together in a pulley like arrangement whereby the filament draws the anchor and plug together so as to effectuate a seal and (2) that have a filament knot which holds the closure in place by holding the plug in place.

Thus, the court held that "puncture closure" is the same as "closure device" (i.e., an A-P-F device) but with an added element: a filament lock. The court based its construction on its belief that "puncture closure" refers to the same devices as identified for "closure device" in the '689 patent. The district court then added the filament lock requirement based on other language in the claims of the '004 patent. The '004 patent is a continuation of the '689 patent. Because a continuation cannot add new material, the usage of "puncture closure" must accord with the teachings of the '689 patent. Other than in the invention title, the term "puncture closure" appears only once in the specification of the '689 patent. That instance refers to a "hemostatic puncture closure device," indicating that the specification treats "puncture closure" and "closure device" as interchangeable terms. '689 patent, col. 14, l. 41. The '004 patent continues to refer to "closure device 22" throughout the specification in a manner that equates that term with "puncture closure." Similarly, in the '004 patent, the term "puncture closure" appears only in the claims, the summary of the invention, and in one reference to "hemostatic puncture closure device." '004 patent, col. 14, l. 48 (emphasis added). Hence, the district court correctly construed "puncture closure" as an A-P-F closure device with a filament lock.

B. Claims Construction in the '415 Patent

On September 19, 2003, the Court held a hearing in accordance with Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996), to construe the disputed terms and phrases of the asserted claims. The Court's October 7, 2003 Order Following Claims Construction Hearing construed the following disputed terms in the '415 patent which are relevant to the present findings on validity and invalidity:

"implant delivery assembly"  "an apparatus for delivery of occlusive devices, such as embolic coils that comprises three distinct components: a pusher, a coupling, and an implant"

"pusher"  "any device or structure intended to push another device or structure"

"selectively operable coupling"  "a connecting device that connects the implant to the pusher and that can be selectively operated by the user"

"coupling"  "a connecting device that connects the implant to the pusher and that can be selectively operated by the user"

"said coupling operable by fluid pressure so that when a sufficient amount of fluid pressure is applied to the coupling, the fluid pressure a user causes the occlusive implant to separate from the pusher"  "the coupling is a connecting device that can be operated by selectively applying fluid pressure to the coupling to separate the implant from the pusher, and the application of the fluid pressure by the user to the coupling causes the detachment of the implant at the coupling"
"delivering fluid pressure through the pusher such that the implant detaches from the pusher by the fluid pressure"

Plain and ordinary meaning applies, no specific construction by the Court

(The Markman Order at 22-29, Docket Item No. 177.)

GO BACK

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I. "putter head" 1

--- Footnotes ---

1 The term "putter head" is contained in claims 1 and 2 of the '927 patent.

--- End Footnotes ---

Plaintiff's Proposed Construction

No construction required.

Defendant's Proposed Construction

The portion of the putter connected to the distal end of the shaft, small enough to enter the putting hole cup to retrieve a golf ball.

The instant claim construction dispute centers on two portions of the specification where the inventor describes (1) "The object of my invention is to provide a putter that is balanced, easy to line up, hit out of deep grass, easy to control, and can pick up a golf ball out of a putting cup," '927 patent at 1:20-23, and (2) "the putter head is small enough to enter the putting hole cup to retrieve a golf ball." Id. at 1:38-40. The parties dispute whether these descriptions suggest that the inventor and the Patent Examiner understood the claimed invention to necessarily be small enough to enter the putting hole cup to retrieve a golf ball.

Plaintiff contends that "putter head" is not limited in size as Defendant proposes. OPENING at 7. Plaintiff argues that the '927 patent's claim language properly claims a putter head that can be small enough to retrieve a golf ball from the putting hole cup, but is not limited to this embodiment. Id. Plaintiff contends that the claims should not be limited to the embodiment discussed in the Summary of the Invention section because those size limitations were not carried throughout the patent, or otherwise mentioned in the Description of the Preferred Embodiment or claim language. See id. At the Markman hearing and in the Opening brief, Plaintiff asserts that it is impermissible under Federal Circuit and Supreme Court precedent to read into a claim an element that is not present, even though it may be found in the description portion of the patent. OPENING at 8; Innova/Pure Water Inc, 381 F.3d 1111, 1117 (Fed. Cir. 2004) (citing White v. Dunbar, 119 U.S. 47, 51-52, 19 S. Ct. 72, 30 L. Ed. 303, 1886 Dec. Comm'r Pat. 494 (1886); Continental Paper Bag Co. v. E. Paper Bag Co., 210 U.S. 405, 419, 28 S. Ct. 748, 52 L. Ed. 1122, 1908 Dec. Comm'r Pat. 594 (1908)). Specifically, Plaintiff maintains that "even where a patent describes only a single embodiment, claims will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim using 'words or expressions of manifest exclusion or restriction.'" Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004) (quoting Teleflex, 299 F.3d at 1327). All in all, Plaintiff denies that the intrinsic record demonstrates the requisite intent to clearly limit the claim. OPENING at 8.

Defendant argues that Colucci has intentionally disavowed any embodiment that is too large to fit in the putting hole cup because the specification states that "[t]he putter head is small enough to enter the putting hole cup to retrieve the ball." '927 patent at 1:38-40; RESPONSE at 9. According to Defendant, by using affirmative language to set forth the object of his invention, Colucci is describing his invention as a whole and effectively limiting the embodiment to the invention itself--despite the abstract possibility that the claim could be read more broadly. See TRANSCRIPT at 22:2-7; see also (Doc. No. 61) ("Callaway Letter Brief"). Callaway contends that Colucci has provided "clear and express definitions" that amount to specification disclaimer. Id. at 10; TRANSCRIPT at 23:16-18 ("So we think that Mr. Colucci did disclaim anything other than a putter head that is larger- or that is larger than something that could fit inside of a cup."). In support of its position, Callaway cites Federal Circuit law governing specification disclaimer to conclude that the claims must be read to limit the invention to a putter head small enough to pick up a golf ball out of a putting cup. RESPONSE at 10 (relying on Netcraft
Examination of the Claim Language

The Court does not read the '927 patent to contain a clear disavowal of the full scope of the claim language. See Home Diagnostics, Inc. v. Lifescan, Inc., 381 F.3d 1352, 1358 (Fed. Cir. 2004) (holding that "[a]bsent a clear disavowal or contrary definition in the specification or the prosecution history, the patentee is entitled to the full scope of the claim language."). Importantly, the claim language does not mention the size of the putter head, and accordingly, Defendant does not support its contention with any reference to language from the claims. See Innova/Pure Water, 381 F.3d 1111, 1116 (Fed. Cir. 2004) (emphasizing that the claims are the measure of an invention). In common parlance, a "putter head" need not be small enough to fit within a putting hole cup. Therefore, the absence of claim language suggesting a restrictive reading of "putter head" weighs against Defendant's position.

Examination of the Specification

A review of the specification in its entirety also weighs against reading the claims restrictively because Defendant has not identified language that rises to the level of a "clear and unmistakable" disclaimer. Cordis, 561 F.3d at 1329. Defendant has the burden of overcoming the "heavy presumption" in favor of giving the claim terms their ordinary meaning, and the patentee's intention, as expressed in the specification, fails to confine the putter head to a single embodiment. Phillips, 415 F.3d at 1312-13, 1323; Liebel-Flarsheim, 358 F.3d at 913 (finding that claim terms must be given their ordinary meaning unless the claim language is overcome by statements of "clear disclaimer" expressly indicating "manifest exclusion or restriction"). 2 As noted above, the ordinary meaning of a "putter head" need not be restricted in size, and the disputed language in the specification supports a finding that embodiments of Colucci's invention may be small enough to fit within a putting cup, but the specification does not limit that embodiment to the exclusion of its broader effect. Innova/Pure Water, 381 F.3d at 1117 ("Accordingly, particular embodiments appearing within the written description will not be used to limit the claim language that has broader effect. And, even where a patent describes only a single embodiment, claims will not be read restrictively unless the patentee has demonstrated a clear intention to limit claim scope 'using words or expressions of manifest exclusion or restriction.'").

Footnotes

2 The Federal Circuit's holding in Liebel-Flarsheim provides a particularly relevant discussion of the "inherent tension" that exists in a situation where, as here, "the written description of the invention is narrow, but the claim language is sufficiently broad that it can be read to encompass features not described in the written description" (i.e. a putter head that is too large to fit within a putting hole cup). 358 F.3d at 904-05. Judge Bryson discusses in great detail two axioms often relied upon for contrary arguments: On the one hand, claims "must be read in view of the specification of which they are a part." Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995). On the other hand, it is improper to read a limitation from the specification into the claims. Arlington Indus., Inc. v. Bridgeport Fittings, Inc., 345 F.3d 1318, 1327 (Fed. Cir. 2003). Judge Bryson then comments that parties frequently cite to one or the other of these competing principles as if the axioms, standing alone, were sufficient to decide a claim construction dispute. Liebel-Flarsheim, 358 F.3d at 904.

End Footnotes
Embodiment section and the claims themselves, results in an inconsistent treatment of the claim term throughout the specification that cannot amount to an intentional disclaimer.

When the specification describes certain features as "preferable" or as examples, courts have found no disclaimer of claim scope. Fenner Investments, Inc. v. 3Com Corp., No. 6:08-cv-61, 2009 U.S. Dist. LEXIS 44842, 2009 WL 1505407, at *12 (E.D. Tex. May 26, 2009). Here, although the disputed language is not explicitly discussed as "preferable" or an example, the discrepancy between the specification and the claims, as well as the inconsistency within column 1 of the specification suggests that the patentee was considering embodiments that were not necessarily limited by the size of the putting hole cup. This is in contrast to circumstances where the patentee expressly contemplated "all embodiments of the present invention." 3 See SciMed, 242 F.3d at 1345.

3 Defendant argues that when a patentee discusses his invention with particular phrases such as "present invention" or "the object of my invention," the patentee's intention is unambiguous and courts should limit claim scope. RESPONSE AT 9; CALLAWAY LETTER BRIEF. Even if the Court were to find that "the object of my invention" is equivalent to the usage of "the present invention" in Verizon, the Court will not limit claim scope simply due to the use of that language. Fenner Investments, Inc. v. 3Com Corp., No. 6:08-cv-61, 2009 U.S. Dist. LEXIS 44842, 2009 WL 1505407, at *11-12 (E.D. Tex. May 26, 2009) (discussing Verizon, 503 F.3d at 1308) (noting in Fenner that the Court will not read a specification discussing "present invention" to be magic words that automatically triggers a narrowing of the claim language).

Examination of the Prosecution History

The prosecution history primarily focuses on the mechanics of the weight distribution means without further elaboration on the means for retrieving the golf ball. Claim 1 discusses only the broad situation where the putter head is comprised of a "means for retrieving a golf ball" and where a golf ball is retrieved "when the putter head is placed over a golf ball and pressure is applied downward." '927 patent at 2:53, 2:61-62. The claim language makes no attempt to distinguish this invention from prior art through limiting the size of the putter head, although it would have been straightforward for either the patentee or the Examiner to have done so. In the file history, neither the patentee nor the Examiner sought to impose such a limitation. (Doc. No. 51, EXHS. E, F, and H) ("Colucci File History") (the complete file history containing Colucci's patent application and all related papers prepared by the Patent Office and the applicant during the patent prosecution). Instead, the file history shows that Colucci originally filed four claims, none of which reference the putter head fitting in the putting hole cup, and after an initial rejection, Colucci amended his claims to more clearly define the weight distribution means behind the blade. See COLUCCI FILE HISTORY; TRANSCRIPT at 31-33. Absent any discussion in the file history as to the size of the retrieval means, the Court concludes that claim 1 is broad enough to cover a putter head that can be either small enough to fit within a putting hole cup or too large for the cup but still able to retrieve the ball somewhere else.

CONCLUSION

For the foregoing reasons, the Court is not persuaded that one skilled in the art would read the intrinsic evidence as containing explicit expressions of exclusion or restriction such that the size of the putter head was limited to an embodiment
that fits within a putting hole cup. Accordingly, the Court finds that the term "putter head" needs no construction. The term, when read in the context of claim 1, will be readily understood by a jury.

The prosecution history of the '055 patent is the next category of relevant intrinsic evidence. A patent's prosecution history also provides relevant information about the scope and meaning of claim terms. Markman, 52 F.3d at 980. Arguments and amendments made during the prosecution of the patent application, and other aspects of the prosecution history, are relevant in determining the meaning of terms in the claims. See Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995). The definition for a disputed claim term might appear in the prosecution history. See Honeywell, Inc. v. Victor Co. of Japan, Ltd., 298 F.3d 1317, 1323 (Fed. Cir. 2002) (observing that it is well settled that an inventor may define a claim term in the prosecution history).

EZ Dock cites to a May 11, 1993 Amendment submitted to the PTO in support of its argument that the applicants defined "pylon" to mean "conical." The Amendment indicated that the applicants had "amended page 6 of the specification to state that the pylons formed by the docking members are generally frustoconically shaped." (Mitchell Aff. Ex. 10 at 3.) The Amendment also stated, "Webster's New Collegiate Dictionary, Copyright 1979 by G. & C. Merriam Co., defines a pylon as a structure that is 'conical.'" 8 (Id.) The Amendment concluded with the assertion that, therefore, the words "generally frustoconically shaped," added to page 6 of the specification "are equivalent to the word they are describing in the specification [i.e., pylon] . . . and do not represent new matter." The PTO allowed this amendment.

8 In point of fact, no such definition appears in that edition of Webster's New Collegiate Dictionary. The only definition for "pylon" in that edition which contains the word "conical" states that a "pylon" can mean "a conical marker used on a road (as for directing traffic)."

From the foregoing, the Court determines that the inventors defined the term "pylon" to mean "a structure that is 'conical.'" To construe the phrase at issue, therefore, it must determine what an individual who has completed high school would understand "a structure that is 'conical'" to be. The Defendants argue that a conical structure must be shaped like a right circular cone and must have a circular base. Placing it in the parlance of teenagers, the Defendants contend that the pylon in question must look like an ice cream cone. 9

9 The Defendants argue, with no supporting evidence, that a "typical high school educated person would not think of a shape with a noncircular base as a cone." Noting that a pyramid has a noncircular base, the Defendants go on to argue, again without a supporting factual basis, that "[a] typical high school educated person would not think of a pyramid as a cone." The Court rejects this line of argument as speculative.

When one compares that argument to the '055 patent, however, problems arise. The specification refers to a preferred embodiment having strips of pylons, and Figure 2 of the patent shows two parallel strips of openings on the bottom surface of a docking member. Each strip consists of a pattern of alternating rectangular openings and oblong openings. The drawings of a patent are relevant intrinsic evidence that the Court may consider in construing claims. See Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1324 (Fed. Cir. 2002). The Defendants offer no compelling explanation as to what those strips shown in Figure 2 represent if not the strips of pylons discussed in the specification, as seen from the bottom. Viewing the patent as a whole, it is evident that the '055 patent contemplates "pylons" which have something other than perfectly round bases.

"A claim construction that excludes from its scope a preferred embodiment 'is rarely, if ever, correct and would require
highly persuasive evidentiary support." Bowers v. Baystate Techs., Inc., 302 F.3d 1334, 1345 (Fed. Cir. 2002) (quoting Vitronics, 90 F.3d at 1583). The Defendants contend that EZ Dock's proposed construction of a "pylon" as a "conical" structure having a base in the shape of any closed plane (not just a circle) would encompass Heinrich's flange, found in the prior art in United States Patent No. 4,365,577. The Court has carefully reviewed the Heinrich patent and finds the Defendants' arguments to be unpersuasive. The Defendants have not presented the "highly persuasive evidentiary support" necessary to warrant their narrow proposed interpretation of the phrase at issue.

The Court concludes that, in the context of the '055 patent, a "pylon" is a conical structure; that is, it is a structure having a closed plane base and a surface formed by line segments joining every point of the boundary of the base to a common vertex. Having determined what a pylon is, the Court turns to the modifying adjective and adverbs, "generally frustoconically shaped."

Having determined what a pylon is, the Court turns to the modifying adjective and adverbs, "generally frustoconically shaped."

I.

The '895 patent originally issued on April 6, 1982. The patent, "Stabilized Athletic Shoe," claims a shoe that provides additional stability during running. According to the patent, the midsole design of prior-art shoes did not provide adequate stability. Fig. 2 of the patent illustrates a rear view of prior-art running shoes:

[SEE FIGURE 2 IN ORIGINAL]

The figure shows a shoe upper (12) mounted above a sole (14). The sole has a pyramid shaped midsole (16) with outwardly-flaring sides. In such a design, any supination or pronation by the runner compresses the sole as indicated by the arrows in Fig. 2. This compression results in a lack of stability and control for the runner's heel.

To solve this problem, the patent secures a support band (38) to the upper rim of the midsole (32) and the sides of the heel cup (26), as shown in the rear view of Fig. 6:

[SEE FIGURE 6 IN ORIGINAL]

According to the patent, this support band stabilizes the heel cup. If a runner's heel lands off center, the support band resists flexing to the side. The runner's foot, then, returns to a more stable position and better absorbs shock. The patent teaches that the support band can be formed "integral with the upper rim of the midsole" as shown in Fig. 6, or can be "a separate piece which is secured as by fusion to the sole during manufacture." Col. 3, ll. 14-25.

In 1991, HHI filed suit against Nike, Inc., Reebok International, Ltd., Hyde Athletic Industries, Inc., L.A. Gear, Inc., Brooks Shoe, Inc., and Kinney Shoe Corp. alleging infringement of the '895 patent. Reebok requested reexamination of the '895 patent in view of various prior art references. The United States Patent and Trademark Office (PTO) decided that the references raised a new issue of patentability and granted Reebok's request. During reexamination, HHI amended both the written description and the claims. In the written description, HHI added the following language describing the shoe structure:

The heel portion is pyramid shaped in lateral cross section with a lower rim having opposite side [sic] which flare outwardly. The lateral sides of the pyramid are not shown in the cross section of Fig. 6 because in the preferred embodiment they merge with the support band.

In a subsequent telephone interview with the examiner, HHI made similar statements summarized in a March 22, 1994 Telephone Interview Summary: "In Fig. 6 the pyramid is there, but one can only see the top and bottom sides. Patent Owner's attorney further stated that this is clear from the specification and drawings which show that the invention starts with the prior art pyramid-shaped midsole . . . ."

HHI amended claim 1 as follows:
1. An Athletic Shoe comprising a sole having a midsole [with a forefoot and heel portions] formed of a resilient force-absorbing material,

an outsole mounted below the midsole, said outsole being formed of a durable material for contact with a surface,

an upper mounted on the sole, the upper having a counter forming a heel cup having exterior sidewalls with lower edges,

a support band carried on the upper rim of the midsole and secured about the sidewalls of the heel cup,

said band extending upwardly and merging with the vertical midsapn of the heel cup for supporting and stabilizing the
heel cup relative to the sole during contact of the sole onto the surface when in use,

said midsole comprising a forefoot portion and heel portion means, said heel portion means being pyramid shaped in
lateral cross section with a lower rim having opposite sides which flare outwardly to locations which lie sufficiently laterally
beyond the lower edges of the heel cup for substantially stabilizing the shoe during initial contact on the surface along one
side of the sole,

the opposite sides of the lower rim of the heel portion means having a lateral width greater than the lateral width of the
heel cup midsapn, and the

midsole and support band having wall means which inclines upwardly from the lower rim of the heel portion means to
the heel cup midsapn for resisting flexing of the [side] sidewalls of the heel cup relative to the sole during said initial
contact on the surface along one side of the sole.

The PTO issued a reexamination certificate on August 8, 1995.

In 1996, HHI filed suit against Converse. The district court consolidated the suit with the original action against Nike and
the others. Converse moved for summary judgment of invalidity of all claims of the '895 patent for violation of 35 U.S.C. §
305 (1994). That section states: "No proposed amended or new claim enlarging the scope of a claim of the patent will be
permitted in a reexamination proceeding under this chapter." To illustrate the alleged violations of § 305, the parties referred
to two figures supplied to the district court by HHI during summary judgment briefing:

[SEE FIGURE A AND FIGURE B IN ORIGINAL]

These figures show two possible locations of the support band (38) in relation to the midsole (32). In Fig. A, the support
band rests atop the midsole, while in Fig. B, the support band surrounds the midsole.

Arguing that HHI had impermissibly broadened the claims, Converse emphasized the following amended limitation: "the
midsole and support band having wall means which inclines upwardly from the lower rim of the heel portion means to the
heel cup midsapn." The original claim, Converse noted, required that the support band incline upwardly "from" the lower
rim of the heel portion, meaning that the support band must "start from" the lower rim. Such a construction covers Fig. B
above, in which the support band (38) starts from the lower rim of the midsole (32), but not Fig. A. The amended claim,
Converse continued, requires only that the midsole and support band together form a wall means that inclines upwardly
from the lower rim. In other words, the amended claim allows the support band to start at some location other than the lower
rim of the heel portion so long as the wall means starts at the lower rim. Under that view, the amended claim covers both
Figs. A and B and is thus broader than the original claim.

HHI responded that the word "from" in the original claim does not mean "starting from" but rather "in a direction from." Thus,
the original claim did not require the support band to start at any particular location. It required only that the support
band incline "in a direction from" the lower rim of the heel portion to the heel cup midsapn. Under that interpretation, both
the original and amended claims cover both Figs. A and B. Thus, HHI argued, it did not broaden the claims.

The district court adopted Converse's proposed construction of "from" to mean "starting from." Thus, the district court held
that HHI impermissibly broadened its claim by dropping the requirement that the support band start from the lower rim of
the heel portion. HHI moved for reconsideration of the district court's decision, advancing a different claim construction
than the one it argued in opposition to Converse's motion. HHI argued that both the original and amended claims require the support band to be "carried on" the upper rim of the midsole. According to HHI, only Fig. A satisfies this requirement. Thus, HHI concluded, neither the original claim nor the amended claim covers Fig. B. The district court denied HHI's reconsideration motion.

On appeal, HHI advances a claim construction different from either of those advanced below. HHI now accepts that the original claim does not cover Fig. A because the support band in that figure does not start from the lower rim of the heel portion. HHI argues, however, that the amended claim also does not cover Fig. A because the midsole is not pyramid shaped as required by the amended claim. Thus, the claims have not been broadened. For its part, Converse advances the same arguments accepted by the district court, namely, that the reexamined claim is broader than the original claim because it only requires the wall means -- not the support band -- to start from the lower rim of the heel portion. Converse also contends that HHI waived its newest claim construction by not presenting it to the district court.

II.

Whether amendments made during reexamination enlarge the scope of a claim is a matter of claim construction. See In re Freeman, 30 F.3d 1459, 1464, 31 U.S.P.Q.2D (BNA) 1444, 1447 (Fed. Cir. 1994). Claim construction is a matter of law that this court reviews without deference to the trial court. See Cybor Corp. v. FAS Tech., Inc., 138 F.3d 1448, 1456, 46 U.S.P.Q.2D (BNA) 1169, 1174 (Fed. Cir. 1988) (en banc).

III.

In determining whether a patentee broadened a reexamined claim under 35 U.S.C. § 305, this court uses the same test as for reissue claims, see In re Freeman, 30 F.3d at 1464, namely:

A claim of a reissue application is broader in scope than the original claims if it contains within its scope any conceivable apparatus or process which would not have infringed the original patent. A reissue claim that is broader in any respect is considered to be broader than the original claims even though it may be narrower in other respects.

Tillotson Ltd. v. Walbro Corp., 831 F.2d 1033, 1037 n.2, 4 U.S.P.Q.2D (BNA) 1450, 1453 n.2 (Fed. Cir. 1987) (internal citations omitted). Stated another way, a "claim is enlarged if it includes within its scope any subject matter that would not have infringed the original patent." In re Freeman, 30 F.3d at 1464.

As a preliminary matter, this court decides that HHI has not waived the claim construction it advances on appeal. The recent case of Key Pharmaceuticals v. Hercon Laboratories Corp., 161 F.3d 709, 48 U.S.P.Q.2D (BNA) 1911 (Fed. Cir. 1998) presented a similar issue. In Key, Hercon challenged on appeal the very claim construction it convinced the trial court to adopt. Finding Hercon's position "highly questionable," this court noted: "Ordinarily, doctrines of estoppel, waiver, invited error, or the like would prohibit a party from asserting as 'error' a position that it had advocated at the trial." Id. at 715. However, because this court had not issued an opinion publicly condemning this behavior and because Key did not object, the Key court exercised an "abundance of fairness" and revisited the claim construction issue. See id. at 715-16.

The parties completed briefing in the case at bar on November 19, 1998, about a week before this court's November 25, 1998 decision in Key. Thus, the present parties, as in Key, did not have the benefit of an opinion of this court noting the impropriety of switching claim constructions on appeal. Accordingly, this court again exercises an abundance of fairness and reviews the correctness of the district court's claim construction.

As far as it goes, the district court's analysis is correct. The original claim required that the support band incline upwardly from the lower rim of the heel portion. This court accepts the district court's interpretation of "from" -- which neither party contests on appeal -- to mean "starting from." Under that interpretation, the original claim covers only Fig. B, 1 which depicts such a support band. The amended claim element, however, does not limit itself to a support band that starts from the lower rim. Rather, it allows the midsole and support band together to form a wall means that starts from the lower rim. Thus, that element, standing alone, would cover the configurations of both Figs. A and B.
Because the district court relied on Figs. A and B submitted by HHI during summary judgment briefing, and because on appeal both parties couch their arguments in terms of these figures, this court will also use them as a vehicle for analyzing the subject claims.

Proper claim construction, however, demands interpretation of the entire claim in context, not a single element in isolation. Therefore, this analysis cannot end without consideration of the rest of the amendments made during reexamination. In particular, HHI amended the claim to recite that the heel portion means is "pyramid shaped in lateral cross section with a lower rim having opposite sides which flare outwardly." This additional limitation constrains the amended claim to cover, like the original claim, only the Fig. B configuration.

Specifically, the written description describes the midsole of the prior art shoe configuration of Fig. 2 as pyramid shaped. See col. 2, ll. 50-52. Although "trapezoidal" or some other geometric term might better describe the shape of the Fig. 2 midsole, patentees may choose their own descriptive terms as long as those terms adequately divulge a reasonably clear meaning to one of skill in the art. See Digital Biometrics v. Identix, Inc., 149 F.3d 1335, 1344, 47 U.S.P.Q.2D (BNA) 1418, 1424 (Fed. Cir. 1998) ("The written description is considered, in particular to determine if the patentee acted as his own lexicographer, as our law permits, and ascribed a certain meaning to those claim terms."). In this case, HHI has assigned a clear meaning to the phrase "pyramid shaped," namely, the shape of the midsole in the prior art shoe of Fig. 2. By using the same phrase in the amended claim, HHI invoked the definition it assigned to that phrase in the written description.

Indeed, the claim language as a whole supports the meaning given to the term "pyramid shaped" by the written description. For instance, other language in the claim requires the lower rim of the heel portion to have opposite sides that "flare outwardly." The written description uses almost identical language to describe the midsole shape of Fig. 2: "The sole has a pyramid-shaped midsole 16 which is characterized in having an outwardly flared lower rim 15." Col. 2, ll. 50-52 (emphasis added). This parallel use of the "flare outwardly" language in both the claim and written description leaves no doubt about the shape HHI intended to invoke in the amended claims.

The prosecution history also supports this interpretation. During reexamination, HHI added language to the written description to note that the lateral sides of the pyramid do not appear in Fig. 6 because the preferred embodiment merges the midsole with the support band. Nonetheless, the written description explains, the heel portion is "pyramid shaped in lateral cross section." The prosecuting attorney further confirmed in a telephone interview that "the invention starts with the prior art pyramid-shaped midsole . . . ."

Under this interpretation, the amended claim does not cover Fig. A. Not only is the midsole (32) of Fig. A not "pyramid shaped" as the amended claim requires, but the lower rim does not "flare outwardly." Thus, although the "wall means" limitation would appear to cover the Fig. A shoe construction, the "pyramid shaped" limitation prevents such coverage. Moreover, Converse has not presented this court any other possible shoe configurations that would fall within the scope of the amended claim, but would not fall within the scope of the original claim. Nor can this court conceive of any. Viewing the claim amendments in conjunction, then, this court holds that the amended claim does not encompass any subject matter beyond that encompassed by the original claim.

That said, this court hastens to clarify a key point. From the above analysis, an observer might conclude that the reexamination broadened the claim in one respect (by amendment of the "midsole and support band having wall means" limitation) and narrowed it in another respect (by addition of the "said heel portion means being pyramid shaped" limitation). That situation, which would violate 35 U.S.C. § 305, did not occur in this case. These limitations do not exist independently, but rather operate together to define the same aspect of the claim. The "pyramid shaped" limitation constrains the scope of the "wall means" limitation, preventing the overall claim from covering a shoe structure such as that shown in Fig. A.

B. Quality Control
This term is in the preambles to claims one and thirteen. The parties agreed that the preambles are limiting. The Plaintiff argues that this term does not need construction, but offers "techniques used to sustain the quality of a product or service in order to satisfy given requirements" if the Court determines that a construction is necessary. The Defendants ask that the term be construed as "the activities performed by a contractor to make sure that a product or service meets established construction criteria such as material specifications."

The parties dispute whether the patent limits the performance of quality control to contractors. In support of its argument that it does, the Defendants cite to col. 1:49-57 and col. 7:5-14. These citations state (1) that many construction contracts contain pay incentives that are performance based and (2) that contractors can track quality control and acceptance results on a real-time basis in order to maximize bonus payments and reduce penalties for non-conforming materials. Although this citation shows that contractors can perform quality control, this section does not limit it to performance only by contractors.

The Defendants' next citation is a description of the process in FIG. 2 that states that results are given in a statistical comparison between "the contractors' quality control test results and the owners' quality acceptance results." Here again, this language indicates that contractors could have quality control test results, but it does not limit quality control to contractors.

Other instances of the disputed phrase occur in the patent. See col. 1:35-36; col. 3:61-63; col. 2:51-52; col. 7:15-16; col. 7:30-49. The patent does not specify that the quality control must be performed by a contractor, but it identifies a contractor as one person who would perform quality control. The non-specific identification of the quality control performer is reinforced by the patent's repeated description of the person performing the steps in the process as the "user."

Both the Plaintiff and Defendants provided extrinsic evidence to support their definitions in the form of reference materials. Both sides also offered experts to testify to the meaning of this term. The Plaintiff's expert testified that while quality control is a contractor's responsibility, it can be performed by third-parties, the contractor, or vendors. The Defendants' expert testified that quality control is performed by the contractor and quality assurance is performed by the owner. Both experts agreed that quality assurance is the province of the owner.

Taken as a whole, the evidence does not establish that there was a meaning of the term "quality control" to a person of ordinary skill in the art at the time of the invention that requires a contractor to perform quality control.

**Construction:** The activities performed to make sure that a product or service meets established criteria.

1. "quality of result" or "desired quality of result" (claims 9 and 23, respectively)

Omax proposes that the Court adopt the following construction:

Desired quality of result means and includes any characteristic(s) of a part or other work piece that a user desires to result from operation upon the work piece of a machine tool following a desired trajectory. These characteristics include surface finish and dimensional accuracy and precision, as well as uniformity of cut surface. More specific examples include: accuracy in cutting curves; accuracy as to the desired depth of a cut when cutting only partially through a workpiece; and avoidance of any of the following: undesirable marks or troughs, rounding of sharp corners, excessive kerf width; excessive taper, errors (beyond desired tolerance limits) caused by jet lag; deflection of the jet into areas not intended to be cut; and failure to cut portion intended to be cut.

Flow proposes the following construction: "The relative grade of cut surface finish of a work piece (specified by the user) that is cut at a speed just fast enough to cut through a work piece having a virtual thickness equal to or greater than the actual thickness of the material being cut, the grade of quality increasing as the virtual thickness of the material increases. Quality of result does not include dimensional tolerance or precision (e.g. error)." The first parenthetical is included where the construed phrase includes the term "desired."

This claim appears in the following context: "9. A method for determining tool motion control commands for operation of a machine tool on a desired trajectory to achieve a desired quality of result. . . ." 596 Patent, col. 17, 11. 14-16. The term
"quality of result" or "quality" appears throughout the specification, as well, including the following:

The resulting finish is assigned a quality of 1. The top half of a material that has just barely been cut through has a much better surface finish than the bottom half. If the speed is reduced so that the jet could just cut through a piece twice as thick, the surface finish is much better. This finish is assigned a quality of 2. Moving slowly enough to cut more than 5 times the material thickness does not significantly improve the finish. Therefore, quality 5 is regarded as the best finish possible.

's376 Patent, col. 14, ll. 58-67 (emphasis added). This explanation in the patent specification appears to suggest that the quality value (Q) relates exclusively to the resulting finish of the piece that is cut. Flow relies heavily on this passage to argue that "quality of result," as used in the claims, is either ambiguous or refers to a single feature of quality: surface finish. Flow argues that the Court should defer to the term as defined by the patentee in this passage. Johnson Worldwide Assocs. v. Zebco Corp., 175 F.3d 985, 990 (Fed. Cir. 1999) (requiring "the entry of a definition of a claim term other than its ordinary and accustomed meaning [when] the patentee has chosen to be his or her own lexicographer by clearly setting forth an explicit definition for a claim term").

Omax concedes that the above-quoted passage focuses exclusively on the finish of the cut, but argues that Flow relies on that passage to the exclusion of many passages that address other aspects of quality. For example, the claim terms frequently refer to the "uniformity of resulting cut surface." 's376 Patent, claim 10, 11. The claims also refer to a method for which the goal is to "limit lag error." 's376 Patent, claim 12. The specification frequently refers to both the surface finish and the "precision" of the cut. E.g., 's376 Patent, col. 7, l. 31. Other references to characteristics of quality include tapering, troughs, marks, and excessive kerfs, issues that arise in the context of the regularity of speed and the traversing of curves and corners. 's376 Patent, col. 14, ll. 30-53, col. 15, l. 40--col. 16, l. 10. These references make clear that the passage referring only to surface finish is only an exemplary, and not limiting, embodiment. See Phillips, 415 F.3d at 1323 (reiterating the requirement to "avoid the danger of reading limitations from the specification into the claim").

The Court finds that this claim term and its use in the patent do not support the narrow reading proposed by Flow. First, it is clear that contrary to Flow's argument, Dr. Olsen never "acted as his own lexicographer" in regards to "quality," nor defined it exclusively as surface finish. According to Flow's approach, if quality does not refer only to surface finish, then it is ambiguous beyond retrieval. This argument is unpersuasive. While the patent's construction of "quality" does not reach the exacting specificity proposed in Flow's construction, it is clear that quality or "cut quality" refers to a variety of characteristics that are recognizable by all experts of ordinary skill in the art. Flow's expert, Dr. Garris, does not deny that issues like lag are related to quality, but limited his argument largely to the notion that an individual of ordinary skill in the art would have read the passage quoted above and assumed that quality for the purpose of the patent focused only on surface finish. Finding this argument unavailing, the Court adopts the following construction: "Quality of result refers to any number of features or characteristics of a cut, including but not limited to surface finish, uniformity of cut surface, precision and dimensional accuracy. A user specifies his or her desired quality of result using an associated value."

The '181 Patent's "Summary of the Invention" describes the potential for tungsten evaporated from the electrodes to be deposited on the wall of the envelope (bulb), thereby causing blackening of the walls which would lead to higher wall temperatures and a shorter life of the lamp. It further describes how the presence of a small quantity of a halogen (chlorine, bromine or iodine) creates a cycle by which the evaporated tungsten is transported back to the electrodes, thereby lessening the blackening. (col. 2, ll. 30-34)

The parties dispute the interpretation of the phrase "that at least one of the halogens Cl, Br or I is present in a quantity between 10<–6> and 10<–4> [mu] mol/mm<3>." Neither party disputes that "Cl," "Br" and "I" are the abbreviations for the halogens chlorine, bromine and iodine. I construe "quantity" to mean a concentration--the amount per unit volume.

Philips reads the phrase "is present in a quantity" to mean only such of the halogen that is "participating, supporting and keeping in existence the tungsten transport cycle during lamp operation." (Philips Br. at 14-18; Philips Reply Br. at 4-5.) Philips relies upon the preamble language--"a halogen for maintaining a tungsten transport cycle during lamp operation"--
preceding the transitional phrase "characterized in that:"  I conclude that the phrase "a halogen for maintaining a tungsten transport cycle during lamp operation" identifies a filling material and describes the function of that material and nothing more. The phrase, fairly read, does not qualify or limit the halogen that "is present in a quantity".

1 As Philips urges me to do, I read the claim language as a whole and consider the preamble language to be relevant to claim interpretation. I note that a Jepson-type claim is one in which the existing art is described in a preamble followed by a transitional phrase such as the "improvement comprising" or "wherein the improvement comprises" after which the claimed elements are stated. See U.S. Pat. Off. Rule 75(e), 37 C.F.R. § 1.75(e). Ex Parte Jepson, 243 O.G. 525 (1917). Iwasaki asserts that the "characterized in that" language (common in certain European applications) should be given a similar construction, thereby rendering everything prior to the transitional phrase admitted prior art. I need not and do not decide the issue at this time. See generally Landis on Mechanics of Patent Claim Drafting at § 6:8 (R. C. Faber ed., PLI 2004).

Reading the claim as a whole, one of ordinary skill in the art would conclude that the quantity that is stated following the transitional phrase "characterized in that:" means the quantity of halogen in the bulb or envelope. It would be a strained construction to interpret the language to mean an amount of halogen less than the total quantity of halogen present in the envelope, i.e. only such of the quantity of halogen that is necessary "for participating, supporting and keeping in existence the tungsten transport cycle during lamp operation." 2 I also have considered the extrinsic evidence and do not find it persuasive in Philips' favor.

2 "I would say that the quantity being added, when we look to measure this quantity, it is this quantity has to be there that is for the tungsten transport cycle. Any quantities that are there that are not used for the tungsten transport cycle are irrelevant. We're only claiming the quantities in the bulb for maintaining a tungsten transport cycle." (Counsel for Philips, Nov. 22 Hr'g at 38)

I have examined other uses of scientific notation in the specification. There are references to quantities of methyl bromine in quantities of "5.10^{-6}". (col. 3, l. 53) Elsewhere there is a reference to "5.10^{-4} to 5.10^{-2} g atoms of at least one of the halogens per cubic millimeter are fed into the envelope." (col. 1, l. 22.) While the use of a numerical multiplier is of some significance, it is also true that a numerical multiplier is not universally used when the multiplier is 1. 3 For example, to one skilled in the art, 10^{-5} means 100,000 and it may also be expressed as 1 x 10^{-5}. But, depending upon how it is used, it could also mean an order of magnitude of 10^{-5}, i.e. any numerical value in the hundreds of thousands. The specific context becomes critical to understanding. Here, I conclude that the use of two numbers in the phrase "a quantity between ___ and ___" implies a specific range, as argued by Iwasaki. It does not imply a range between two values which are themselves ranges.
3 I have considered the reference to "10^{-5} \text{ [} \mu \text{ mol of Br/} \text{mm}^3\text{]" (col. 3, l. 54) and conclude it to be ambiguous for the reasons discussed at the hearing. (Nov. 22 H'g, compare 25-27 with 56-59.)

Philips disclaims inexactitude in its interpretation. (Nov. 22 H'g at 78) To bring precision, Philips urges that, utilizing rounding principles, "10^{-6} and 10^{-4} \text{ [} \mu \text{ mol/} \text{mm}^3\text{]" represent a specific numerical range and that the concentration of the halogen "could be as low as 5 \times 10^{-7} \text{ [} \mu \text{ mol/} \text{mm}^3\text{] and as high as 5 \times 10^{-4} \text{ [} \mu \text{ mol/} \text{mm}^3\text{]." (Expert Report of Dr. David R. Lide at 9) I am reluctant to read more into the claim language than is written. A more natural interpretation is that the phrase "between 10^{-6} and 10^{-4} \text{ [} \mu \text{ mol/} \text{mm}^3\text{]" means a quantity between 1 \times 10^{-6} and 1 \times 10^{-4} \text{ [} \mu \text{ mol/} \text{mm}^3\text{]. If the claim language were intended to refer to orders of magnitude, it likely would have used a modifier or qualifier and not have expressed the quantity in the seemingly absolute terms implied by the form "present in a quantity between ___ and ____." 6

4 Another of Philips experts states as follows: "in my opinion, one skilled in the art would interpret the lower limit of halogen concentration in the '181 Patent Claims as extending downwards to 10^{-5.6} and the upper limit extends upwards to 10^{-3.5} \text{ [} \mu \text{ mol/} \text{mm}^3\text{]." (Expert Report of Dr. Robin Devonshire at 15)

5 Philips relies upon Holmes, et al. (U.S. Patent No. 3,382,396). In that patent in this field of art, quantities of iodine are displayed in a one single table in the form "1 \times 10^{-5}\text{" and also in the form } "10^{-4}\text{". For the reasons discussed at the November 22 hearing, these references are ambiguous.

6 I note that Claim 5 employees the language "that the mercury vapor pressure is about 400 bar." (emphasis added).

I conclude that the phrase "a quantity between 10^{-6} and 10^{-4} \text{ [} \mu \text{ mol/} \text{mm}^3\text{]" means that the halogen is present in the envelope or bulb in a quantity between 1 divided by 1,000,000 and 1 divided by 10,000 micromoles per cubic millimeter.

3174

1. "rack"

This term appears in the '366 patent claims 1, 4, 6, 18, 23, 29, 30, 32, 35, 37, 41, 42, 46, and 47. Rackable contends that "rack" means "frame or cabinet for holding multiple computer chassis that can be removed and are accessible after installation, such as a standard industry server rack" Supermicro proposes that "rack" means "a frame or cabinet that contains mounting arrangements for holding electronic devices in a stacked manner."

The essence of the parties' dispute concerns whether "rack" should be construed to mean a particular type of frame or cabinet used in the server storage industry, or whether it should be construed as a more general purpose rack capable of holding all types of electronic devices; and whether the device enables the mounting or the removal of the computers or electronic devices.

Rackable argues that "rack" refers to a particular type of electronic device -- computer chassis -- and enables removal. In support of its construction, Rackable contends that the patent itself targets the computer server industry, and notes that the specification example, figure 4, is of a type of rack used for holding computers in the high-density computer industry. It also argues that figure 4 of the patent demonstrates that the rack is a type that enables the removal of the computers after installation. Rackable further asserts that its construction, referring to the "standard industry server rack," is consistent with the patent itself, which describes a rack whose dimensions are those of a "standard industry server rack."
Supermicro contends that "racks" store electronic devices generally, and enable the mounting of the devices. Supermicro responds that figure 4 to the '366 patent supports its construction. It also relies in part on the expert declaration of Sam Wood. In support of its mounting argument, Supermicro also cites to language in the patent for the proposition that "[i]n a typical setup, the rack will have holes and the electronic devices will contain 'ears' that are screwed into the holes, thus connecting the electronic devices to the rack." It further argues that the specification discloses that the rack can hold items other than computers. Finally, Supermicro asserts that its construction is supported by technical dictionary definitions.

Because the patent is not ambiguous, the court declines to consider extrinsic evidence as to this term. It also declines to adopt either party's construction in full. First, the court finds that the intrinsic evidence supports Rackable's construction that the "rack" holds computers, as opposed to Supermicro's more general construction, which encompasses all "electronic devices." The '366 specification's field, background, and summary of the invention clarifies that the patent concerns the storage of computers, as opposed to simply "electronic devices." There is absolutely no suggestion anywhere in the patent that the rack is utilized for holding other types of electronic devices. See, e.g., Phillips, 415 F.3d at 1313 (person of ordinary skill is "deemed to read the claim term not only in the context of the particular claim . . . but in the context of the entire patent, including the specification").

The court also rejects both of the parties' injection of the mounting and removability limitations on the computers held by the racks. Those are limitations that are not properly read into this court's construction of the claims. The law is clear that it is error to import a limitation from the specification into the claim. Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 904 (Fed. Cir. 2004). The "fact that a patent asserts that an invention achieves several objectives does not require that each of the claims be construed as limited to structures that are capable of achieving all of the objectives." Id. at 908. Nor should an embodiment disclosed in the specification limit the claims. Id. at 906.

In conclusion, the court adopts a modified version of Rackable's construction of the term "rack" as a frame or cabinet for holding multiple computer chassis.

3175

Claim 4 of the '419 Patent

Claim 4 can be framed in terms of three elements:

A dish racking system according to claim 3 and

1. further including a second rack spaced above said basic rack and

2. rack mounting structure supporting said second rack for movement into and out of said washing chamber,

3. said second rack having bottom support means and front, rear and side walls with said bottom support means upwardly stepping above said one higher side wall of said basic rack.

Element 1 is not at issue, but the parties differ as to elements 2 and 3.

Element 2

First, the parties dispute whether element 2 is governed by Section 112 P6. Because the words "means" is not used, there is a presumption that the element is not in means-plus-function form. But W. Mem. 25 contends that the element is purely functional, with the words "rack mounting" and "structure" failing to connote sufficient structure.

M. Mem. 28 attempts to counter with the completely conclusory assertion that "the term 'mounting structure' has a meaning that is understood in the field," but it offers zero support for that conclusion. Thus having failed to establish a term of art that connotes basic structure, Maytag lacks the necessary predicate to urge that a precise structure is not needed to escape the application of Section 112 P6. Indeed, the very authority sought to be invoked by M. Mem. 29, Personalized Media
Communications, 161 F.3d at 704-05, teaches that "precise physical structure" is not required only if the claim sets forth a term "connotative of structure" to those of skill in the art. **Whirlpool wins on this issue.**

**3176**

c. "Radial"

Finally, with regard to the term "radial," the difference in the parties' positions on the proper construction is somewhat unclear. Formula contends that the term describes something that is "characterized by a protrusion or divergence from a center." SRAM asserts that the term indicates something that is "arranged like rays or straight lines or radiating from or converging to a common center." As an adjective, the word "radial" must describe a characteristic of the noun or noun phrase that it modifies, i.e., the portion of the exterior or exterior surface of the master cylinder. If each of these constructions is interpreted as including a requirement that the action at issue, be it protrusion, divergence, radiation, or convergence, comes from or goes to a center point, there is no practical difference between the two constructions.

If, however, the first phrase of each definition is interpreted as not being tied to a center point, the difference is clear. Under Formula's definition, any protrusion of the exterior surface would be radial; under SRAM's definition, any arrangements of rays or straight lines that do not originate from or terminate in a common point would be radial. These positions, particularly when grounded in the context of the larger patent document, are nonsensical. Though the radial portion of the cylinder exterior can certainly protrude into other things, such as the reservoir, that is not the characteristic that makes that portion of the exterior "radial" in nature. Conversely, it is easy to imagine arrangements of straight lines or rays that would not be radial, such as lines that run parallel to each other.

Accordingly, we construe the term "radial" to describe the quality of radiating to or from, diverging from, or converging to a common point.

**3177**

The disputed language contained in claims 9 and 11 of the '954 is similar, and thus, can be analyzed together. In regards to claim 9 of the '954 patent, the language at issue is "may be inserted therein in a radial direction with respect to said groove. . . ." (Am. Compl., Exh. A, col. 6, 11. 50-51). With respect to claim 11 of the '954 patent, the language at issue is "allowing insertion of said pin or rods in a radial direction with respect to said passageway." (Am. Compl., Exh. A, col. 7, 11. 6-7). The word "radial" is defined as "relating to, placed like, or moving along a radius." Webster's Collegiate Dictionary, 971 (9th ed. 1985). The word "radius" is defined as "a line segment extending from the center of a circle or sphere to the circumference or bounding surface." Id. at 972. Plaintiffs propose that the language of claims 9 and 11 means that the structure be capable of allowing the bar, pin or rod to be inserted into the passageway solely in a radial direction. The Court finds that the use of the words "radial direction" can be reasonably interpreted to mean that a radial direction solely with respect to the insertion of the bar, pin or rod, was not contemplated. As Defendant correctly observes, the unequivocal language of the claims states nothing concerning the bars, rods or pins being inserted in a perpendicular or radial direction alone.

Clearly, it is settled law that a patentee may be his own lexicographer and grammarian. Feed Serv. Corp. v. Kent Feeds, Inc., 528 F.2d 756, 762 (7th Cir. 1976), cert. denied, 429 U.S. 870, 97 S. Ct. 182, 50 L. Ed. 2d 150 (1976); Harrington Mfg. Co., Inc. v. White, 475 F.2d 788, 796-98 (5th Cir. 1973). However, in order to do so, a lexicographer "must set out his uncommon definition in some manner within the patent disclosure." In re Paulson, 30 F.3d at 1480 (quoting Intellicall, 952 F.2d at 1387). Here, however, there is no contention that Plaintiffs have set forth a definition for "perpendicular" to mean solely perpendicular or perpendicular alone. Likewise, there has been no such definition provided with respect to the word "radial."

Defendant maintains that the intrinsic record, in particular the specifications and the prosecution history of the '954 patent further supports its construction of the claim language. The specifications of the '954 patent supply the 'essence' of
substance of the invention. It provides:

[T]he great advantage of the articulation element 200 of the present invention is that it can at all times be arranged on the pins or the bars which can be engaged by a lateral snapping action with the intermediate jaws moving freely against the spring 70. This spring is sufficiently powerful to hold the pins or the bars when snapped in position during reduction and before the practitioner has clamped the shaft 50 by turning head 51 to compress the assembly, which makes it possible to lock the pins or bars as well as the angular position of the intermediate jaws in a single operation.

(Am. Compl., Exh. A. Col. 4, 11. 52-62). The specifications language does refer to a lateral motion, but there is no apparent indication or requirement for an action solely in a lateral direction. The Court is persuaded that this language supports Defendant's claim construction.

The prosecution history also provides some guidance in interpreting the claim language before the Court. Specifically, during the prosecution, the applicants stated:

Applicant has clearly claimed that the rod, pin, or bar of his design is inserted in his bore in a radial direction, not axially as shown in Fig. 9 of Englehardt or Fig. 2 of Radwell. Fig. 2 of Radwell suggests that the rod is inserted axially since the gap between the edges 4 and 10 of each clamp is too small to allow the insertion of a rod in the radial direction.

(Chin Decl., Exh. J, p. 6). The applicants further stated:

[The prior art reference has] no external opening along the transverse direction allowing the bar, pin or rod to be placed in the passage by pressure in a direction perpendicular to both the shaft axis and the transverse direction. . . . Rather, rod 50 [of the prior art reference] is slid in the bore . . . in the axial direction of the rod 50.

(Chin Decl., Exh. K, p. 6). This language is important in aiding this Court in claim interpretation, as it clearly demonstrates that Plaintiffs distinguished their claims on the basis of lateral insertion versus axial insertion. There is no indication or mention that Plaintiffs distinguished their claims with respect to prior art on the basis that the clamps provide for insertion in a perpendicular or radial direction alone.

Additionally, the Court is persuaded by the testimony of Raymond W. Augustin, Esq., the attorney who prosecuted the '954 patent. He was specifically questioned concerning the meaning of the language "perpendicular to both said access and said transverse direction." Mr. Augustin testified as follows:

Q: You added the language perpendicular to both said access and said transverse direction. . . . ?

A: Yes, I see that.

Q: Why did you add that?

A: To make clear which direction the rod had to be inserted.

Q: When you made this amendment what did you understand this language to mean?

A: That it would go in laterally.

Q: Exactly perpendicular to the shaft?

A: Just that it could be inserted. . . . laterally.

Q: So if came down at an angle and snapped in, that would still be perpendicular to the shaft?

A: I would consider that to be the case, yes.

(Chin Decl., Exh. H, p. 85, 1. 15 - p. 86, 1. 9) (emphasis added). The foregoing testimony of the attorney who prosecuted
that patent at issue further supports Defendant's proposed interpretation that the claim language merely required at least some movement or pressure in the perpendicular or radial direction, and not pressure or movement in said directions alone.

Additionally, during the Markman hearing, both parties offered the testimony of experts whom they claimed possessed ordinary skill in the art. "[I]t is permissible, and often necessary, to receive expert evidence to ascertain the meaning of a technical or scientific term or term of art so that the court may be aided in understanding … what [the instruments] actually say." Markman, 52 F.3d at 981 (quoting U. S. Industrial Chemicals, Inc. v. Carbide & Carbon Chemicals Corp., 315 U.S. 668, 678, 62 S. Ct. 839, 86 L. Ed. 1105 (1942)). "The purpose of expert testimony is to provide assistance to the court in understanding, when the claims are technologically complex or linguistically obscure, how a technician in the field, reading the patent, would understand the claims." Advanced Cardiovascular Sys., Inc. v. Scimed Life Sys., Inc., 887 F.2d 1070, 1076 (Fed. Cir. 1989) (Newman, J., dissenting); Snellman v. Ricoh Co., Ltd., 862 F.2d 283, 287 (Fed. Cir. 1988) ("[E]xpert testimony is admissible to explain the meaning of technical terms in the claims. . . ."). Here, Plaintiffs' expert, Dr. Albert H. Burnstein, Ph.D., an orthopedic surgeon in the field of biomechanical engineering, testified concerning the structure of the device described in the '954 patent. Dr. Burnstein specifically noted: "[i]n order to practice the patent, in other words if you want to make the device the patent talks about, then if you take the rod and push on the perpendicular direction, it must go in, so that is a requirement that you must have if you want to make this device." (Trans. of Markman hearing, p. 46, 11. 15-19). Plaintiffs utilize this testimony to support their contention that given the described structure of the patent, the '954 patent was a device or product claim, and not a method claim.

Defendant's expert, Dr. James P. Stannard, M.D., an orthopedic trauma surgeon, also testified concerning the use of the external fixator device. Dr. Stannard testified that the direction in which the rod could be engaged with the clamp are not exclusively perpendicular or exclusively lateral. Dr. Stannard made reference to a drawing included with his expert report to demonstrate the different possible lateral approaches. (Def.'s Markman, Exh. 9). He specifically noted:

Q: What is this drawing, Dr. Stannard?

A: It's a drawing from the patent that has had additional lines added to it.

Q: And what does that demonstrate with regard to the lateral approaches that you were just demonstrating from the physical exhibit?

A: Just demonstrating that the line marked "A" is a purely perpendicular or straight lateral approach. However the lines marked "B" and "C," you could draw a number of significant other lines. All are coming in from the lateral side, but they are not exclusively lateral or exclusively perpendicular.

Q: Are all of those directions A, B, C examples of lateral?

A: Yes.

(Trans. of Markman hearing, p.84, 1.12 to p.85, 1.11). Dr. Stannard concluded that all of the directions set forth in the diagram were examples of lateral entry.

In sum, it is clear that the plain and ordinary meaning governs the claim construction before the Court. Here, the Court concludes that the plain and ordinary meaning of the disputed language in claim 1 of the '954 patent does not mean purely or solely perpendicular; but rather, indicates that the bar or pin is to be placed in the structure of the clamp in a generally perpendicular direction. Further, this Court finds that the plain and ordinary meaning of claims 9 and 11 can be interpreted to mean that a solely radial direction with respect to the insertion of the bar, pin or rod was not contemplated. These interpretations are further buttressed by the intrinsic record, as contained in the specifications language and the prosecution history of the '954 patent.
Brandon's independent claim 1 provides in relevant part:

a radial positioning means comprising a compressed spring means biased against said ring segments to forcibly cause said segments to move to said large clearance position, while working fluid which is freely admitted to the annular space between said casing and said ring segments will urge said segments toward said small clearance position, whereby at low speed and small turbine loads the spring forces will predominate, while at high flows and high working fluid pressure the pressure forces will predominate.

Because the term "radial positioning means" uses the word "means," it is presumptively subject to section 112, paragraph 6. Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427, 44 U.S.P.Q.2D (BNA) 1103, 1109 (Fed. Cir. 1997). However, the claim recites sufficient structure to overcome that presumption.

The claim states that the function of the "radial positioning means" is to position the ring segments "whereby at low speed and small turbine loads the spring forces will predominate, while at high flows and high working fluid pressure the pressure forces will predominate." The claim recites two structures for achieving that function: (1) a compressed spring means and (2) working fluid. The claim also describes how those structures act to achieve the claimed function--the compressed spring means is biased against the ring segment while the working fluid is freely admitted to the space between the casing and the ring segment. As the court explained in the Sage Products case, "where a claim recites a function, but then goes on to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format." 126 F.3d at 1427-28, 44 U.S.P.Q.2D (BNA) at 1109.

While it is true that the "compressed spring means," which is one of the elements of the "radial positioning means" also uses the term "means," we conclude that it, too, does not invoke section 112, paragraph 6. The claim states that the function of the compressed spring means is "to forcibly cause said segments to move to said large clearance position." The claim then recites structure to achieve that function--a compressed spring biased against the seal ring segment. Although the term "spring" has a functional connotation, a "compressed spring" denotes a type of device with a generally understood meaning in the mechanical arts. See Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583, 39 U.S.P.Q.2D (BNA) 1783, 1786 (Fed. Cir. 1996) (construing the term "detent mechanism" as not invoking section 112, paragraph 6, because it is generally understood in the mechanical arts to describe structure). There is nothing in the specification or the prosecution history suggesting that the patentee used the term "compressed spring means" generally to refer to any structure that can perform a biasing function; on the contrary, both the specification and the prosecution history disclose only a type of device denoted as a "spring" or a "compressed spring." In these circumstances, the term "compressed spring means" is not subject to section 112, paragraph 6.

Our decision in Unidynamics v. Automatic Products International, Ltd., 157 F.3d 1311, 48 U.S.P.Q.2D (BNA) 1099 (Fed. Cir. 1998), is consistent with the conclusion we reach in this case. In Unidynamics, we concluded that the claim language "spring means tending to keep the door closed" was in means-plus-function form and therefore governed by section 112, paragraph 6. The specification in Unidynamics stated that a "spring" was only one example of a "spring means," which indicated that the claim term "spring means" was broader than the meaning of the term "spring" generally recognized in the mechanical arts. Thus, we concluded that the patentee in Unidynamics defined spring means functionally as anything that performs a springing or biasing function.

In this case, by contrast, the claim recites a particular kind of spring--a "compressed spring"--and the specification makes clear that the claim term "compressed spring means" was used to denote structure, not function. The preferred embodiment uses S-shaped compressed springs. The specification adds that other types of springs can be employed, but there is no suggestion that the claim was meant to include biasing mechanisms other than springs. Accordingly, we conclude that the patentee in this case has defined "compressed spring" to refer to a particular type of device. Because neither the term "radial positioning means" nor the term "compressed spring means" is subject to section 112, paragraph 6, those limitations are not restricted by the corresponding structures disclosed in the specification and their equivalents.

GE concedes that a flat spring is a type of compressed spring, as that term is generally understood. Nonetheless, GE asserts that Brandon disclaimed the use of flat springs in the course of the prosecution and that flat springs are therefore not covered by the claims.

During prosecution, the examiner rejected Brandon's claims as anticipated by a British patent issued to Warth. Warth's
patent specifically disclosed the use of flat (or leaf) springs interposed between the casing shoulder and the inner surface of an outer ring portion of the seal segment. In distinguishing Warth, Brandon stated:

In summary, Applicant's invention is essentially a two-position packing ring system. That is, at low speeds and low loads it is fixed at a large clearance position. When a low, predetermined load, and pressure condition is reached, the ring moves swiftly to its small clearance position. This is a significant distinction over Warth's system that employs leaf springs with nearly frictionless ring segments that gradually allow the ring clearance to lessen as load is increased.

GE argues that this statement disclaims all embodiments employing flat (or leaf) springs.

GE reads too much into the prosecution history. The clear thrust of Brandon's argument was that his invention is a two-position packing ring system, while Warth's invention is a multiple-position packing ring system. Brandon described Warth's invention as including an equalizing passage through the seal segment, which was designed to reduce the axial fluid pressure and allow the space at the top of the seal segment to communicate with the annular space on the low pressure side of the seal segment. According to Brandon, the equalizing passage enabled the Warth seal to assume a medium clearance position as well as a small and large clearance position, which had certain disadvantages that were cured by his two-position seal. Whether or not Warth employed flat springs was irrelevant to that distinction. In fact, in the same response, Brandon added a claim specifically directed to flat springs. The addition of that claim further indicates that Brandon was not disclaiming all embodiments employing flat springs. Instead, it appears that Brandon was simply noting that while Warth's invention used flat springs, it was otherwise distinguishable from the claimed invention. We therefore conclude that the term "compressed spring means" should be construed to include flat (or leaf) springs, because such springs are within the generally understood meaning of that term and because Brandon did not disclaim such springs or otherwise indicate that a special meaning should be given to the term "compressed spring means."

Finally, GE argues that the "compressed spring means" limitation includes a stricture on the location of the spring. However, there is no such limitation in claim 1. On the contrary, dependent claims 2 and 4 add such a limitation, providing that the springs must either be interposed between the casing shoulders and an inner surface of the outer ring portion of the ring segment, or be interposed between the ends of the ring segments.

The "radial positioning means" limitation of claim 1 also recites the use of "working fluid which is freely admitted to the annular space between said casing and said ring segments." In construing that term, it is appropriate to consider the "for example" language that was added to the specification during prosecution of the '311 patent. Although the district court concluded that the amendment added new matter, the amendment actually added no more than the concept, originally disclosed, that "various other modifications of the invention may occur to those skilled" in the art. '311 patent, col. 5, ll. 17-18.

With respect to the "working fluid" limitation, GE argues that Brandon disclaimed certain steam pathway configurations when he distinguished the Warth prior art reference. In distinguishing Warth, Brandon stated that "drilled holes above the ring, as used in Warth, are unnecessary since this space already communicates to the upstream pressure by way of slots [cutouts] in the ring and holder." According to GE, that statement disclaims all embodiments that do not employ cutouts in the casing shoulder for steam passage.

Brandon made several arguments to distinguish Warth, including the argument that his invention did not require "drilled holes above the ring." Brandon thus represented to the public in clear and definite terms that his invention did not require any such holes. See Watts v. XL Sys., Inc., 232 F.3d 877, 883, 56 U.S.P.Q.2D (BNA) 1836, 1840 (Fed. Cir. 2000) (holding that the patentee limited his invention by arguments made to distinguish the primary reference cited by the examiner). TurboCare cannot now retreat from that position in asserting the Brandon patent against GE. However, Brandon's statement about Warth should not be construed unduly broadly. Brandon characterized his invention as not employing drilled holes above the ring, but he did not characterize it as lacking drilled holes altogether or as requiring local cutouts in the high pressure side of the casing shoulder. Claim 1 requires that steam or working fluid be freely admitted to the annular space between the casing and the ring segments. In accordance with Brandon's characterization of his invention in the course of the prosecution, the "working fluid" limitation should be construed to exclude devices in which steam is admitted to the space between the casing and ring segments through a drilled hole above the ring. But that limitation should not be interpreted to exclude any device in which steam is admitted through a drilled hole, regardless of where the drilled hole is located.
1. "and which is radially compressible upon insertion into the defect from a first configuration which is larger than the defect into a second configuration which approximates the shape of the defect"

The parties dispute the meaning of the claim limitation "and which is radially compressible upon insertion into the defect from a first configuration which is larger than the defect into a second configuration which approximates the shape of the defect."

Plaintiffs, adhering to the plain meaning of the claim language, propose that this limitation be construed to mean "and which can be radially compressed upon insertion into the hole from a configuration that is larger than the defect or hole into a second configuration that approximates the shape of the hole."

U.S. Surgical contends that the term "radially compressible," as used in the above claim limitation, means the capability of being compressible in a radial direction without "kinking or buckling."

U.S. Surgical bases its proposed construction of this claim limitation on a statement made by Bard to the examiner in its May 1, 1995 Request for Reexamination. As noted above, Bard attempted to distinguish its claimed invention from the reexamination references by noting that the prior art did not disclose a plug that is radially compressible without kinking or buckling. Bard stated that "this feature is an element of each claim, except method claim 21." U.S. Surgical argues that this statement demonstrates that the phrase "radially compressible" should be not construed to cover a hernia plug that kinks and buckles when it is compressed. U.S. Surgical contends that Bard's statement to the examiner is consistent with the language of the specification, which states that the pleated surface of the implant allows the device to "conform to irregularities in the shape of the hernia without kinking." The specification, moreover, distinguishes the claimed invention from the prior art by stating that the prior art "may be susceptible to kinking and buckling during placement." U.S. Surgical contends that the specification and prosecution history dictate an interpretation of the term "radially compressible" in claim 20 as meaning compressible in a radial direction without kinking or buckling.

Bard notes that only eleven of the twenty-six claims of the '432 patent, as reexamined, expressly recite compression without kinking and buckling. Plaintiffs assert that the statement made by the prosecuting attorney in the Request for Reexamination was an erroneous remark about the number of claims containing the kinking and buckling limitation. Plaintiffs argue that the language of the claims, and not the statement of the attorney, should control. See Intervet, 887 F.2d at 1050 ("When it comes to the question of which should control, an erroneous remark by an attorney in the course of prosecution of an application or the claims of the patent . . . we think the law allows for no choice. The claims themselves control."). Moreover, plaintiffs note, the attorney's comment was made as part of his initial request to the PTO to commence a reexamination proceeding, rather than in response to an office action. Plaintiffs contend that the comment should not be construed as an interpretative remark intended to import the kinking and buckling limitation into claim 20.

Only eleven of the twenty-six claims of the patent recite the kinking and buckling limitation. As such, the court finds that the remark by the prosecuting attorney that the kinking buckling limitation "is an element of each claim, except method claim 21" was an error. Because the erroneous statement was made in the context of an initial request for reexamination, rather than as a response to objections raised by the examiner, the court does not find that the claims, as allowed, should be construed in light of the attorney's statement. The court will adopt the existing language of this claim limitation.

B. Radially Extending Member

The Court construed "radially extending member" to mean "[a] member extending in the direction of the radius, which is perpendicular to the longitudinal axis of the tubular body."
The Court finds that defendant's device does not literally infringe because the inflation arm extends from the main body of the catheter at a 40-45 degree angle. Under the plain language of the Court's construction, the radially extending member extends in the direction of the radius, and the radius is positioned perpendicularly to the longitudinal axis. Therefore, the radially extending member extends in a direction that is perpendicular to the longitudinal axis. Merriam-Webster's Dictionary defines "perpendicular" as "being at right angles to a given line or plane." The dictionary likewise defines "right angle" as "an angle of 90[degrees]". Because the radially extending member extends at a 90[degrees] angle, the Court rejects Venetec's argument that the inflation arm literally infringes by extending radially and laterally.

The Court rejects Venetec's argument that any portion of the inflation arm extends in a direction perpendicular to the longitudinal axis. Venetec identifies a section of the inflation arm, 1/16 to 1/8 of an inch in length, which purportedly extends perpendicular to the longitudinal axis. (See the section labeled "A" in Opp., App. B.) Although this section appears in plaintiff's diagrams of its device, the Court has reviewed the actual Foley catheter and finds that no such perpendicular section exists. Plaintiff's expert testified that section "A" is perpendicular only if the catheter is visualized with certain pieces missing. (See Layton Depo., at 155:3-4 ("If I remove the spur out of there, then it's perpendicular"); 170:20-21 ("And you have that portion that you take out of there"); and 170:25-171:1 ("When I remove the fill at the round, the fill-in, they're both perpendicular").

Even if a medical professional temporarily extended the inflation arm at a 90-degree angle when inserting the Foley catheter into defendant's device, the Court finds no literal infringement because the claims describe the radially extending member as "positioned" within the lateral slot. (See, e.g., 230 patent, claim 1, at 22:12-13.)

The Court declines to apply the doctrine of equivalents because no reasonable jury would conclude that a 40-45 degree inflation arm is equivalent to a 90-degree radially extending member. Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 39, 117 S. Ct. 1040, 137 L. Ed. 2d 146 (1997). Venetec's argument that the precise angle is irrelevant "would vitiate a claim limitation," i.e., the requirement that the member extend "radially," where the radius is perpendicular to the longitudinal axis. See Tronzo v. Biomet, Inc., 156 F.3d 1154, 1160 (Fed. Cir. 1998).

Therefore, summary judgment is appropriate wherever a radially extending member is claimed, including claims 4 and 5 of the 230 patent and all asserted claims of the 676 patent. However, plaintiff asserts that claims 1 and 19 of the 230 patent and all contested claims of the 892 patent reference, but do not require, the radially extending member. Plaintiff's argument contradicts the deposition of its expert, who testified that "radially extending member" is a limitation of all the asserted claims in the 230 and 892 patents. (Layton Depo., at 117:3-118:25.) Plaintiff's argument is also inconsistent with its Final Infringement Contentions, which claim the radially extending member as a limitation of all asserted claims in all patents. (See Def. Exhibit 64.) By failing to seek the Court's Order to modify its final infringement contentions, plaintiff violated Patent Local Rule 3.7. 2 See O2 Micro Int'l Ltd. v. Monolithic Power Sys., Inc., 467 F.3d 1355, 1366-68 (Fed. Cir. 2006) (affirming district court's enforcement of local rule under abuse-of-discretion standard). This violation warrants summary judgment for defendant on all claims in the 230 and 892 patents that reference the "radially extending member".

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2 Patent Local Rule 3.7 reads: "Amendment or modification of the Preliminary or Final Infringement Contentions . . . may be made only by order of the court, which will be entered only upon a showing of good cause." In O2 Micro, the district court enforced a similarly worded local rule and denied plaintiff's motion to amend its final infringement contentions because plaintiff failed to show "good cause."

467 F.3d at 1361. Limiting plaintiff to the theory set forth in its unamended infringement contentions, the court granted the defendant's motion for summary judgment of non-infringement. Id. at 1362. Reviewing for an abuse of discretion, the Federal Circuit affirmed the district court's enforcement of the local rule. Id. at 1366-68. Applying de novo review, the Federal Circuit also affirmed the grant of summary judgment. Id. at 1369. The Federal Circuit relied on the exclusion (under the local rule) of the untimely infringement theory and arguments that plaintiff submitted in opposition to the defendant's motion for summary judgment. Id. Therefore, O2 Micro is authority for the proposition that this Court may grant summary judgment of non-infringement where plaintiff fails to comply with the local rule on amending final non-infringement contentions and submits arguments in opposition to summary judgment that are inconsistent with those contentions.

- - - - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -
In addition, with respect to the 230 patent, the Court rejects plaintiff's argument as incorrect on the merits. Applying the Pitney Bowes rule, the Court finds that "radially extending member" recites limitations of claims 1 and 19 of the 230 patent and "is necessary to give life, meaning, and vitality" to those claims. In these claims, the patent claims a retainer in an anchoring system which includes a lateral slot with a longitudinal length "so dimensioned to substantially equal the thickness of the radially extending member." (230 patent, at 22:6-8.) The claim preamble explains that the radially extending member "projects from the tubular body." The claim's description of the lateral slot's dimensions makes sense only in the context of the preamble's description of the radially extending member as a projection from the tubular body. Therefore, summary judgment for defendant on claims 1 and 19 of the 230 patent is appropriate on both procedural and substantive grounds.

Radially Intermediate the First and Second Regions

Baker Hughes contends "radially intermediate the first and second regions" means "located radially (from the longitudinal axis of the drill bit body) between the first and second regions." ReedHycalog argues this term does not require construction. The Court agrees with ReedHycalog. The term does not require construction. A lay jury will be able to understand the drill bit location of a "third region, radially intermediate the first and second regions."[14]

--- Footnotes ---

14 Ref. No. 13 of Appendix B contains the disputed term "radially intermediate the first and second regions" and its construction.

--- End Footnotes ---

radially spaced from an axis of rotation of the roll core (claim 8)

Fargo positioned at a known distance from the axis of rotation of the roll core

Iris the pins are spaced an equal distance apart from the axis of rotation as well as from each other

As with the earlier phrase concerning supports "spaced annularly . . . at known intervals," Iris contends that this phrase indicates that the pins to which it refers must be spaced at equal distances from each other. Iris contends that "radial" means "developing symmetrically around a central point." A review of the dictionary entry Iris submitted, however, demonstrates that Iris’s proposed definition is only one of the definitions. The first three definitions do not require symmetry. Iris also relies on the specification, but nowhere in the specification does it state that the pins must be at an equal distance from each other. While the drawings do not refute Iris's definition, neither do they clearly support or require it. The Court thus adopts Fargo's proposed definition.

"Radiant Energy." Used in Claims 1, 3, 4, 12, and 24-30.

Flashmark suggests "the forms of energy described in [dependent] Claims 3 and 4, or any form of heat or range of light wavelengths." GTECH proposes "energy transferred by electromagnetic waves, rather than by conduction or convection." The main dispute here is whether "radiant energy" is limited to electromagnetic energy, or can include heat transferred by contact with a hot object (conduction) and heat transferred by hot liquid or gas moving past an object (convection).
A common example may help illustrate the difference. A microwave oven uses the part of the electromagnetic spectrum known as microwaves to heat food. A microwave safe plate will not feel hot after being placed in an operating microwave oven. However, the microwave will heat food on that plate. When the food heats, the plate can become hot from the transfer of heat from the food through conduction.

Flashmark maintains that the patentee acted as his own lexicographer in defining "radiant energy" as both electromagnetic energy, such as visible light and infrared light, and as "heat," of a type which is not electromagnetic energy. Flashmark points to language in the specification such as "a particular form of radiant energy, whether it be heat or light . . . ." '153 Patent Col. 1,11.65-66. Several other similar references are made in the specification, and the claims themselves use phrases such as:

"3. The article of claim 1 wherein said particular form of radiant energy comprises heat." Col. 7, 11. 30-31;

"4. The article of claim 1 wherein said particular form of radiant energy comprises a range of light wavelengths." Col. 7, 11. 32-34; and

"5. The article of claim 4 wherein said range of light wavelengths covers from about 750 nanometers to about 950 nanometers." Col. 7, 11. 35-37.

Flashmark invokes the doctrine of claim differentiation to assert that "heat" must therefore surely be different than "light." They are different, but that does not answer the question of whether one of ordinary skill would understand "radiant energy comprises heat" to refer to some form of energy outside of the electromagnetic spectrum. As discussed below, "light" and "heat" are commonly used to describe different bands of wavelengths in that spectrum.

In spite of Flashmark's impassioned arguments, the patentee provided no special definition of "radiant energy." On the other hand, the task is not made easy by a clear intentional disclaimer. The court is faced with the familiar problem of the "twin axioms," which require reading claims in view of the specification but forbid importing limitations from the specification into the claims Liebel-Flarsheim Co. v. Medrad, 358 F.3d 898, 904 (Fed. Cir. 2004). Resort to dueling canons of construction is not going to resolve this dilemma.

No single statement in the patent nor in the prosecution history is sufficient by itself to determine the meaning of "radiant energy." Rather the court must examine the claim, the specification, the prosecution history, and relevant scientific principles to determine how one of ordinary skill trying to use, or design around, the invention would have understood the term.

Scientific Principles Relevant to the Art

A court may not attempt to define claim terms from extrinsic evidence. However, the "customary meaning" of a term "refers to the 'customary meaning in [the] art field.'" Phillips, 415 F.3d at 1313 (citation omitted). A review of basic, uncontroversial scientific principles provides "an objective baseline from which to begin claim interpretation." Id. The words of the claims are viewed from the point of view of one of ordinary skill in the art - in this case, someone with a knowledge of science, including the properties of energy.

The parties agreed that "light," in its everyday meaning, and as used in this patent, is a form of electromagnetic energy that travels at specified wavelengths. The parties also agreed that the electromagnetic spectrum can be divided into ranges, shown generally on the chart, attached as Appendix A, and discussed at the hearing as Court Exhibit 1.

The ranges are marked on the chart in micrometers or one thousandth of a millimeter, denoted by the symbol "[mu] m." The patent uses the unit of measurement known as the "nanometer," 31 which is one thousandth of a micrometer. So Claim 5's description of light wavelengths "from about 750 nanometers to about 950 nanometers" would be shown on the chart from about .750 [mu] m to about .950 [mu] m. As shown on the chart, this would range from about the bottom end of the visible red light spectrum into what is called the "near infrared" area on the chart. Longer wavelengths, from about 5.5 [mu] m to about 1000 [mu] m fall into what is sometimes denoted as "thermal infrared." 31 This is generally the range of electromagnetic radiation felt as heat and used in cooking.
Language in the Claim and Specification

Given a basic understanding of the electromagnetic spectrum, it would not be unusual for one skilled in the art to understand "heat" as referring to energy at a particular wavelength. With this interpretation, Claims 3, 4, and 5 are simply dependent claims, each of which limits the broad scope of "radiant energy" of Claim 1 to a smaller portion of the electromagnetic spectrum. This does no violence to the presumption that flows from claim differentiation. See Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380 (Fed. Cir. 2006). Of course, this does not by itself dispose of Flashmark's claim that "heat" may be something other than radiant energy.

Claim 1, upon which each of these claims is dependent, limits "radiant energy" to "a particular form . . . not normally present in ambient light . . . ." Col. 7, 11. 21-23. This phrase is important, because, as discussed in more detail below, it was added by the patentee to overcome a rejection by the PTO. Flashmark admits that "light" refers to a portion of the electromagnetic spectrum, but insists that "heat" does not. If "heat" as used in this patent is not in the form of electromagnetic waves, it is not going to be "in," i.e., a component of, ambient light. 3 Flashmark has shown no basis to ignore this limitation of the independent claim.

--- Footnotes ---

3 Claim construction can not rest the sophistical argument that anything placed in a room can be "in" the room's ambient light, but since the non-electromagnetic heat source is not normally "in" a room it meets the limitation of Claim 1.

--- End Footnotes ---

Independent Claim 24 teaches a device that invalidates the voidable articles and documents of Claims 1 - 23. It describes "a radiant energy source which exposes at least a portion of said article to a dose of radiant energy . . . ." Col. 8, 11. 34-35. Again, the dependent claims describe a variety of forms of "radiant energy" including "heat." But all are dependent upon Claim 24, in which the patentee carefully chose "dose" to describe the application of radiant energy. It would be unusual to describe the application of a heated scanner head to an article as a "dose." However the use of "dose" is consistent with radiation in the form of wavelengths of the electromagnetic spectrum. The dependent claims 25, 26, 27, 28, 29, and 30 would then each describe the "dose of radiant energy" of Claim 24 as occurring in different bands of the spectrum.

The use of "dose," by itself, is not enough for the court to construe the term in dispute. It must be taken in conjunction with the other references discussed. However, it is illuminating that in describing the device that voided his voidable articles, the patentee made no attempt to formulate a claim, nor to describe in the specification, any application of "heat" by contact with heated metal, ceramic, or other material (conduction), nor through exposure to moving heated gas or liquid (convection).

One of ordinary skill in the art would know of the different types of energy transfer. A voidable article could be touched with a hot material (conduction) or placed in a blast of hot air (convection). But nearly every use of the word "energy" in this patent is preceded by the word "radiant." Except in the discussion of prior art, there is no hint in the specification, nor in the prosecution history, of an article or document placed in direct contact with a hot surface or exposed to heated air or other gas. Accordingly, the claims and specification support a construction of "radiant energy" as part of the electromagnetic spectrum.

Prosecution History

Another indication of the way in which claim language was interpreted at the time of the application is seen in the "Supplemental Information Disclosure Statement." See Supplemental Information Disclosure Statement, 1.28/1991, FLASH 0000061-63 in GTECH's Ex. E [Doc. #107, Attach. # 11, p. 1-3 of 76]. As required by law, the patentee was disclosing relevant prior art. Distinctions drawn between the patented invention and prior art may be useful "since they indicate in the inventor's own words what the invention is not." MBO Labs., Inc. v. Becton, Dickinson, & Co., 474 F.3d 1323, 1330 (Fed. Cir. 2007).
prosecution history at the time of the invention.

In this case the patentee disclosed European Patent Application No: 0 305 211 ("Herbert"), with the explanation: "Herbert discloses a mail item treated with heat sensitive material. Heating causes the material to turn color." Supplemental Information Disclosure Statement, 1/28/1991, FLASH 0000063 in GTECH's Ex. E [Doc. # 107, attachment # 11, p. 3 of 76]. The Herbert Application describes applying a thermal print head to items treated with a heat sensitive material that changes color when heat is applied. See European Patent Application No: 0 305 211, pp. 2-3 in GTECH's Ex. J [Doc. # 107, Attach. # 16, pp.3-4 of 8].

In other words, Herbert discloses a heated surface (the thermal print head), applied to "a material peculiarly responsive to" the heat from that heated surface, causing the item to change color. Unless one is to assume that the patentee in the present case intended to inform the PTO of invalidating prior art, the "heat" and "heat sensitive materials" of Herbert are not what was claimed in the '153 patent by "radiant energy" and "material peculiarly responsive to a particular form of radiant energy."

Finally, the correspondence between the patentee and the Examiner indicate that both understood "radiant energy" to refer to energy of particular wavelengths. The Examiner initially rejected claims 1-23 as unpatentable over earlier patents that had disclosed materials that changed colors upon exposure to light. "It would have been obvious to have made the Jenkins tickets respond to non-visible wavelengths of energy as taught by Parrotta in order to obtain energy levels . . . ." Office Action, 3/26/1991, FLASH 0000065 in GTECH's Ex. E [Doc. # 107, attachment # 11, p. 5 or 76](emphasis added).

The patentee did not respond that his invention claimed a form of "heat" that was not part of the electromagnetic spectrum at all, and thus was not affected by these prior references. That would have run afoul of the Herbert patent. Rather, the patentee amended Claim 1 by adding "not normally present in ambient light in amounts sufficient to cause said material to discolor." Response to Office Action, 6/28/1991, FLASH 0000078 in GTECH's Ex. E [Doc. # 107, Attachment # 11, p. 18 of 76]. As discussed above, the added language indicates that the "radiant energy" of Claim 1 can be defined by wavelengths, as can "ambient light." Otherwise, the amendment means nothing, and was used only as a subterfuge to confuse the Examiner.

This understanding is confirmed by the Examiner's Reasons For Allowance, which substitutes "radiation" for "radiant energy."

Claims 1-23 and 36 are considered allowable over the prior art because the art of record does not disclose or teach voidable machine-readable articles or documents utilizing a material responsive to radiation which is not normally present in sufficient amounts in ambient light.

Notice of Allowability, p. 2, 9/10/1991, FLASH 0000085 in GTECH's Exhibit E [Doc. # 107, Attach. # 11, p. 25 of 76] (emphasis added). It strains credulity to argue that either the patentee or the Examiner even imagined that the language of the claims referred to energy that was not part of the electromagnetic spectrum and thus would not be part of the waves that make up ambient light.

Flashmark argues that the Examiner could have been referring only to Claim 14, which describes documents (not articles) exposed not to "radiant energy," but to "a sufficient intensity of non-visible wavelength light . . . ." Col. 7,11.62-63. But Claim 14 simply limits the kinds of articles to documents, and the range of wavelengths to those in the non-visible range. Only a very strained interpretation of the referenced dialogue in the prosecution history would support a conclusion by one skilled in the art that "radiant energy" refers to anything other than energy in the form of specified wavelengths of the electromagnetic spectrum.

In the end, the court must determine what the patentee invented and, more importantly, described. This description can not be read from the point of view of the present patent holder years after the patent was issued, nor of a lawyer, nor even from that of the uneducated inventor operating in a field of art strange to him. The description in the patent is addressed, "as section 112 says, to those skilled in the art to which the invention pertains or with which it is most connected." Phillips, 415 F.3d at 1313 (citation omitted). Accordingly, the court must reject Flashmark's argument that Mr. Johnson had only a high
The issue here reduces to whether the substance and scope of claims 2 and 13 were changed by amendments made during the reexamination process. If the amendments amount to a substantive change, there can be no infringement because the accused activity occurred prior to March 22, 1994. If, however, the amendments function only to clarify, then infringement may exist. This determination is to be made by analyzing the original language of the claim and the amendment language to ascertain whether the claims are "identical."

The determination of whether a claim is identical to the original claim is a question of law. Westvaco Corp. v. International Paper Co., 991 F.2d 735, 741 (Fed.Cir. 1993). Generally, "identical" does not mean verbatim. Laitram Corp. v. NEC Corp., 952 F.2d 1357, 1361 (Fed.Cir. 1991). "Identical' means, at most 'without substantive change.}' Seattle Box, 731 F.2d at 828. Moreover, "it is the scope of the claim that must be identical not that the identical words must be used." Slimfold Mfg. Co. v. Kinkead Industries, Inc., 810 F.2d 1113, 1115 (Fed.Cir. 1987). There is no per se rule to determine whether a claim change is substantive when the claim is amended during a reexamination following a rejection based on prior art. Instead, it is necessary to analyze the claims of the original and the reexamined patents in light of the individual circumstances, the prosecution history, the prior art, and other pertinent information. Laitram, 952 F.2d at 1363.

Reissuance of a patent where the amendments clarify the original language are not considered a substantive change in scope and will rise to the level of identical for purposes of the statute. Kaufman, 807 F.2d at 977. Similarly, where a claim is made more definite by the addition of a term without a change in scope, there is no substantive change and the claims are "legally identical." Tennant Co. v. Hako Minuteman, Inc., 878 F.2d 1413, 1417 (Fed.Cir. 1989). For example, in Kaufman the court reasoned that the amendment in the reissuance was "unnecessary and redundant with the language already in the claims" and found the reissuance to be legally identical within the meaning of § 252. In contrast, where the reissue claims changed the "precise placement of the material layers within the structure," the claim was not a clarification but rather was a change in scope. Seattle Box, 731 F.2d at 828.

In the instant case, plaintiff argues that claims 2 and 13 are identical to the claims in the original patent and were changed only to the extent of clarifying the original claims. Plaintiff argues that the addition of words such as "communicating with a radiant tube extending into and exiting from a furnace," "radiant tube," and "separate from the combustion" do not constitute substantive changes in the original patent but rather function only to clarify the original claims. In opposition, defendant stresses that the changes are substantive and were made only after the examiner rejected the claims as obvious and anticipated by G.B. '585. Defendant argues that the changes were made so that claims 2 and 13 could define over prior art and without a substantive change, patentability could not have been achieved.

Bloom's first amendment to claim 2 involved the addition of the phrase "communicating with a radiant tube extending into the furnace." This amendment does not rise to the level of a substantive change. This language clearly is intended to explain or clarify the claim. Furthermore, the amendment does not differ from what is displayed in the drawings and specification. An amendment which explains the technical application of what a claim already reveals cannot be a substantive change. Compare Kaufman, 807 F.2d at 970 ("so that the downstream roller means rotates faster than the upstream roller means" was found to be clarifying because it was a technical clarification of what already was present in the specification). The language of the amendment to claim 2 in this case did not signify anything new but instead detailed what already was covered by the original claim.

Similarly, by amendment to claim 13, Bloom added an additional explanation of the apparatus. The amendment consisted of "a radiant tube extending into the furnace interior and communicating with each of the first and second burners." This language clearly explains or clarifies what is presented by the specification and drawings. Furthermore, one skilled in the art would recognize this aspect of the apparatus by viewing the drawings and specification and such language may even be considered redundant. See, e.g., Kaufman, 807 F.2d at 977 (explanatory language added to claim was considered redundant.
Bloom's second and third amendments to claim 2, however, yield a different result. Bloom made a change to the claim which was substantive. In its second amendment, Bloom substituted "radiant tube" for "furnace" in two separate places. On its face "radiant tube" implies that it is a different mechanism from a furnace. Although not dispositive, terms of a claim are given their ordinary meaning unless it is clear that the inventor used them differently. Schneider AG, 852 F. Supp. at 851. The use of "radiant tube" in place of "furnace" narrows the claim significantly. The use of "furnace" leaves open a broad interpretation. A furnace is a very large apparatus. In comparison, "radiant tube" is a much smaller part and limits or narrows the claim to one particular component of the furnace.

In General Elec. Co. v. Hoechst Celanese Corp., 698 F. Supp. 1181, 1185 (D.Del. 1988), a change of "comprising" to "consisting essentially of" was found to be a substantive change because it narrowed the claim in order to avoid the prior art. See also Fortel Corp., 825 F.2d at 1580-81 (claim which is narrowed by imposing a specific limitation is not identical). Similarly, in Bloom's third amendment, the addition of the phrase "separate from the combustion air stream" to both claims 2 and 13 indicate a change in what the claims originally defined. In Seattle Box, 731 F.2d at 828, a change made during the reexamination process from "greater than the diameter of the pipe" to "substantially equal to or greater than the thickness of the tier of the pipe length" was held to be a substantive change rather than a clarification.

Because Bloom made substantive changes to the scope of the original claims, it cannot be said that the changes were clarifications or the equivalent of "identical" as defined by case law. Accordingly, Bloom is not entitled to continuous patent protection for the invention because the original claims were surrendered and Bloom's rights are effective only from the date of the reissuance.

3. Radiation-Cured Adhesive Material

The parties agree that a radiation cured adhesive material is an adhesive cured by radiation, especially ultraviolet radiation. The only difference in the two proposed definitions is Whitlam's attempt to define this material as transparent. The plain meaning of the term, which the Court is required to adopt, is an adhesive cured by radiation. Nothing from that phrase can be used to infer whether this layer is transparent or opaque. The plain meaning of this term, which the Court adopts is: "An adhesive cured by radiation such as ultraviolet radiation."

"Radiation source"

Cytyc's proposed construction (no construction required) Xoft's proposed construction radionuclide

The patent provides a clear definition of "brachytherapy": "The term 'brachytherapy,' as used herein, refers to radiation therapy delivered by a spatially confined radioactive material inserted into the body at or near a tumor or other proliferative tissue disease site." All asserted independent claims of the '204 patent contain the phrase "interstitial brachytherapy," which the court has construed as "radiation therapy delivered by a spatially-confined radioactive material inserted into the body at or near a tumor or other proliferative tissue disease site." Cytyc's argument that "radiation source" should not be constructed to exclude any radiation sources must be rejected; the claims clearly do not contemplate a radiation source other than "radioactive material."

There is still, however, the question of whether "radioactive material" means the same thing as Xoft's proposed construction of "radionuclide." 12 In describing the preferred embodiment, the patent says: "[t]he inner volume 30 is then filled with a material containing a predetermined radionuclide, for example, I-125, I-131, Yb-169 or other source of radiation, such as radionuclides that emit photons, beta particles, gamma radiation, or other therapeutic rays." '204 patent, col. 4, ll. 9-13
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

(emphasis added). Since all the examples of sources of radiation given in the specification are radionuclides, the patentee appears to have intended to define "radioactive material" as "radionuclides." Cytyc argued at the Markman hearing that "or other therapeutic rays" could refer to other sources such as x-rays. The words "or other therapeutic rays," however, clearly refers to types of radionuclides. Cytyc's construction would require the patentee to have inserted the word "or" before "gamma radiation," indicating the end of the list of types of radionuclides. 13

12 The parties have agreed that "radionuclide" means "an isotope that undergoes radioactive decay."

13 Cytyc also stated that this was an "Oxford comma" issue. Tr. at 137-38. However, in the sentence at issue, the Oxford comma is the one after "gamma radiation." Whether it is present does not alter the meaning of the sentence. Cytyc also argued that "we're in the land of eats, shoots and leaves." If Cytyc was referring to a book of such title, the court does not see how that would support Cytyc's argument; the theme of Eats, Shoots & Leaves is that punctuation should be used correctly. See Lynne Truss, Eats, Shoots & Leaves: The Zero Tolerance Approach to Punctuation (2004).

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12 Ref. No. 21 of Appendix B contains the disputed terms and their constructions.

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Radial Location of Superabrasive Cutters and Depth of Cut Control Features

Claims in the '930 Patent discuss the radial location of the superabrasive cutters and depth of cut control features. The parties dispute whether the claims require the superabrasive cutters and depth of cut control features to be centered. At a Radius

Claims in the '930 Patent require at least one superabrasive cutter to be secured to the bit body "at a radius from the centerline of the bit body" or "positioned at a radius from the centerline." Baker Hughes and ReedHycalog dispute whether this claim term includes a "centered" limitation wherein the superabrasive cutter is centered at a distance from the radius. The "centered" limitation is not present in the claim language of the '930 Patent, nor is it supported by the specification. Thus, these terms mean "at a distance perpendicular (at a ninety degree angle) from the centerline of the drill bit body (the radius)." 18

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - - -
18 Ref. No. 21 of Appendix B contains the disputed terms and their constructions.

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16. a radiused portion extending from said seaming panel ('875 patent, claim 32)

Crown's proposed construction is "a portion formed on an arc extending from the seaming panel." 73 Rexam's proposed construction is "[a] curved portion that is different from the radius of the seaming panel (i.e., the radiused portion of the upper portion of the wall is a part of the cover hook)." 74

The court adopts Crown's proposed construction.

Claim 32 of the '875 patent recites a "first wall portion extending from said seaming panel to a first location on said wall and comprising a radiused portion extending from said seaming panel." The parties agree that the "first wall portion extending from said seaming panel" refers to "the first wall portion extending from the end of the seaming panel." 75

Rexam's proposed construction presupposes that the court accepted its proposed construction of "peripheral cover hook" and "seaming panel" which were rejected in 2 and 3, above. Here, Rexam's proposal that the radiused portion of the can wall is "a curved portion that is different from the radius of the seaming panel" is inconsistent with the court's determination that the seaming panel is not limited to a single radius, but rather $r[2]$ ("seaming panel radius") and $r[1]$ ("seaming panel/chuck wall radius"). Also, the parenthetical of Rexam's definition, "(i.e., the radiused portion of the upper portion of the wall is a part of the cover hook)," adds undue confusion. That language begins with "the radiused portion of the upper portion of the wall," seemingly acknowledging that the wall has a radiused portion, but ends by defining that radiused portion as "a part of the cover hook."

The court, therefore, adopts Crown's proposed construction: "a portion formed on an arc extending from the seaming panel."

3) "rail"

Plaintiff proposes that "rail" be defined as "a bar or relief that serves to direct the planar motion of an interfacing component substantially along the axis of the rail." Defendant proposes the definition, "a bar with at least two substantially perpendicular surfaces that is fixed to one structure extending longitudinally upon which another structure is slidable and which serves to direct the motion of that structure along the axis of the bar." I construe "rail" to mean a bar that serves to direct substantially the motion of another component along the axis of the rail.

The specification does not define the term "rail." Although the written description states that the disclosed invention "also includes at least one rail interconnected with the crankcase housing such that the counterbalance weight is slidable along the rail," nothing in the claim language itself requires that the component guided by the rail must "slide" along, or otherwise
maintain constant contact with the rail at all times as the weight reciprocates. '166 patent, col. 1, Ins. 55-57. Neither the claim nor the written description indicates that the rails must direct the motion of the counterbalance weight completely, rather than "substantially" or generally along the axis of the rail. Also, however, neither the claim language nor the written description limits rails to guiding only the planar motion of the counterbalance weight.

Figure 4 of the 166 patent shows rails (34, 40 & 42) along which the counterbalance weight slides. Because all the rails shown in Figure 4 are bars with at least two substantially perpendicular surfaces, defendant contends that the term rail should be construed to require a bar with two substantially perpendicular surfaces. "Although the specification may well indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than such embodiments." Tate Access Floors, Inc. v. Maxcess Technologies, Inc., 222 F.3d 958, 966 (Fed. Cir. 2000); Kemco Sales, Inc. v. Control Papers Co., 208 F.3d 1352, 1362 (Fed. Cir. 2000). The claim language does not include any limitation requiring two "substantially perpendicular" surfaces. Therefore, I will construe "rail" to mean a bar that serves to direct substantially the motion of a component that slides along the axis of the rail.

A. Defendant's Motion to Reconsider Revised Claim Construction

When construing a claim term, the court must not limit or broaden the claims, but rather must define, as a matter of law, the invention that has been patented. Netword, LLC v. Centraal Corp., 242 F.3d 1347, 1352 (Fed. Cir. 2001). The court must be careful not to restrict the scope of a patent by importing limitations not contained in the patent claims. Phillips v. AWH Corp., 415 F.3d 1303, 1323 (Fed. Cir. 2005). At the same time, the court must not permit a claim term to be read in a way that enlarges the patent beyond the scope of the invention itself. Netword, LLC, 242 F.3d at 1352. Simple though it may sound, striking a balance between an overly restrictive and an overly broad construction can be as treacherous as navigating between Scylla and Charybdis, as this case has demonstrated.

As a remedy for the overly broad construction adopted in the November 3 summary judgment order, the parties have proposed several alternative constructions which they contend capture more closely the meaning of the term "rail" as it would be understood by those skilled in the art of mechanical engineering. Plaintiff has proposed two definitions:

1. A bar that serves to direct substantially the planar motion of a component that slides along the axis of the rail. Plt.'s Br. in Resp. to Dft.'s M. for Reconsideration, dkt. # 165, at 2.
2. A bar supported along its length that serves to direct substantially the motion of a component that slides along the axis of the rail. Id.

Defendant offers a third alternative:

A bar that is interconnected to a component that supports the rail along its length, and which fits into the recess or slot of an interfacing component and acts to direct the linear motion of either component along the axis of the bar. Def.'s Supp. Br. on Claim Constr., dkt. # 203, at 8.

At the November 25, 2005 hearing, I heard oral argument concerning plaintiff's proposed definitions. At the time, I indicated a preference for plaintiff's first proposal because it resembled more closely the construction adopted on summary judgment. However, having heard the parties arguments and having studied the briefs, I conclude that adopting the "planar motion" description would create more problems than it would solve, given the parties' starkly different interpretations of the meaning of "planar." Therefore, I will focus on plaintiff's second proposed construction and defendant's alternative construction, neither of which contains the phrase "planar motion."

From the parties' proposed definitions, it appears that they agree upon several key elements of the term "rail" as it is used in the '166 patent. First, a rail is a bar supported along its length. 2 Second, a rail directs substantially the motion of another component along the rail's axis. Plaintiff would add the requirement that the moving component "slide" along the axis of the bar, while defendant would add that (1) the rail directs the linear motion of the moving component and (2) the rail and
moving component are interconnected by means of a slot or recess.

Footnotes

2 At the November 25, 2005 hearing, defendant objected to plaintiff's suggestion that a rail was supported along its length. Hearing Transcript, dkt. # 199, at 10:6-17. However, because defendant proposes in its most recent filing a definition that requires a rail to be supported along its length, Def.'s Supp. Br. on Claim Constr., dkt. # 203, at 8, I will assume that defendant concedes the point.

End Footnotes

Plaintiff suggests that a rail directs the motion of a component by permitting it to slide along the rail's axis. I understand "sliding" to mean movement along the length of the rail during which the moving component contacts the rail to some extent as it moves. I do not understand "sliding" to require perfect or constant contact with the surface of the rail. Although defendant has not included the word "slide" in its proposed construction, it does not dispute that a rail directs the motion of a component that slides along the rail's axis. Because this description is not a limitation, but rather a characterization of how one skilled in the art would understand a rail to function, it is a reasonable addition to the claim construction.

Defendant proposes that a rail directs the linear motion of the moving component. This limitation is a transparent attempt to re-litigate the question of linear motion addressed at length in the November 3, 2005 summary judgment order. As stated in that order, the '166 patent does not require a counterbalance weight to move in a straight line, but only "in a linear manner." Order dated Nov. 3, 2005, dkt. # 110, at 71-72. It follows that a rail need not direct purely linear motion. Defendant's attempt to import this limitation is unavailing.

Defendant's second suggested addition to the construction of rail merits greater attention. Defendant contends that a rail must be interconnected to the moving component whose motion it directs by means of a slot or recess. In support of this contention, defendant focuses on Figures 4 and 9 of the '166 patent, which show two embodiments of the patent's rails and guides. The figure below (Figure 4 of the '166 patent), shows a rail (34) interconnected with a counterbalance weight (26) by means of a slot (32).

Two guides (40 and 42) support the weight but do not direct the weight's motion along their axes. Similarly, the figure shown below (Figure 9 of the '166 patent) shows a rail (50) interconnected with a counterbalance weight (46) by means of a slot (58).

Defendant asserts that the distinguishing difference between a rail and a guide is that a rail connects to the counterbalance weight by means of a slot or recess. Without such an interconnection, defendant contends, there is no meaningful difference between rails and guides. Although it is true that the "single rail" embodiments shown in Figures 4 and 9 of the '166 patent feature a slot or recess that guides the motion of the counterbalance weight along the axis of the rail, other embodiments do not necessitate such an interconnection. The patent envisions "multiple rail" embodiments in which the need for a slot or recess becomes optional. The patent specification states:

'166 patent, col. 1, Ins. 55-59 (emphasis added). Simply put, the patent does not mandate interconnection of a rail with the counterbalance weight by means of a slot or recess.

As defendant asserts, the difference between a guide and a rail cannot be found in the shape of the object itself. Neither can
it be found in an "interconnection" between a rail and the component whose motion it directs. Rather, the difference between guides and rails is purely functional. A rail directs substantially the motion of a component along its axis. A guide does not direct motion along its axis. As long as a bar (or combination of bars) directs the motion of a component along its axis, the bar need not interconnect with the moving component in order to constitute a rail.

For the foregoing reasons, I find that plaintiff's second proposed definition best captures the meaning of the term rail as it is used in the '166 patent and as it would be understood by those skilled in the relevant art. Therefore, I will construe a "rail" to be a bar supported along its length that serves to direct substantially the motion of a component that slides along the axis of the bar.

4. "Rail end"

Claim 11 of the '662 patent describes "a cantilevered leg extending from the rail side of said main body, said leg having a rail end, a bottom side extending from the rail end to said main body, and a top side extending from the rail end to said main body." (Plf. Brief, Exh. 1, col. 8, ln. 1-4). The specification provides that "[a] rail end 342 of the leg 340 contacts the rail web 144 of the rail 140." (I., Exh. 1, col. 4, ln. 12). Defendants maintain that "rail end" must be construed to mean an end in contact with, or abutting, the rail web. (Def. Brief at 17). Plaintiff suggests a broader definition that allows contact at any point on the rail. (Plf. Reply at 15-16).

The Court agrees with defendants. The specification and patent drawings clearly illustrate that the rail end abuts the web of the rail. Plaintiff argues that the Court should draw a distinction between claim 1, which specifically refers to the web of the rail, and claim 11, which does not. This is known as the doctrine of claim differentiation. See Tandon Corp. v. United States International Trade Commission, 831 F.2d 1017, 1023 (Fed. Cir. 1987) (when applicant uses different words or phrases in different claims, it is presumed that the claims have different meanings). However, this presumption is merely "a guide, not a rigid rule." ATD Corp. v. Lydall, Inc., 159 F.3d 534, 541 (Fed. Cir. 1998), quoting Autogiro Co. of America v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 404 (Ct. Cl. 1967). More importantly, it cannot expand the scope of a claim beyond that which is supported by the specification. The Court therefore construes the term "rail end" to mean the end of the cantilevered leg that contacts the web of the rail.

B Rail portion

Independent claims 1 and 4 of patent 351 and independent claims 1, 5, and 6 of patent 980 claim the structure of the rail portion as generally semi-circular. Independent claim 5 of patent 351 claims the structure of the rail portion as rounded. The parties agree that the term rail portion means the portion extending across the channel formed by the two arms.

Ameritex argues that the patents do not require that the rail portion is the top portion of the header. The specification describes the rail portion as "a semi-circular rounded rail portion extending between the two sides, and which is slightly offset outwardly with respect to each side." 351 patent, col. 2, ll. 40-44. If the rail portion were not the top of the header it could not offset outwardly from the two sides of the header.

In addition, figure 1 is a cross sectional illustration of the header. The top of the header is labeled 20. The specification does not identify the structure designated 20 in figure 1, but 20 is semi-circular and offsets outwardly from the sides of the header, which corresponds to the specification's description of the rail portion. Therefore, the Court holds that one of ordinary skill in the art would understand that 20 identifies the rail portion and that the rail portion is the top of the header.

Ameritex also argues that the rail portion is limited to a structure with no flat surfaces. Taylor contends that generally semi-circular and rounded claim a rail portion that includes flat sections. The claims do not provide a more detailed description of the shape of the rail portion other than describing it as rounded and generally semi-circular. The specification states that the
header has a curved upper surface with means for supporting a boat canopy. 351 patent, col. 2, ll. 40-41. The rail portion labeled 20 and found on figure 1 appears semi-circular and has a curved upper surface.

The term generally allows for a slight deviation from the mathematical boundaries presented by the term circular. Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1310-1311 (Fed. Cir. 2003). The claims and specification indicate that generally semi-circular and rounded are used to claim a rail portion that is a semi-circle or that is similar to a semi-circle. The specification requires a rail portion with a curved upper surface. Consequently, generally semi-circular and rounded do not claim a rail portion that has a top surface that is entirely flat, but neither the claims nor the specification provide additional limitations.

Ameritex submits several headers that existed prior to the filing of patent 351. This prior art has top portions with a flat top and bottom surface. Ameritex contends that the Court must impose limitations on the rail portion claimed in patents 351 and 980 that will avoid reading on this prior art. However, the Court may only alter the ordinary meaning of a claim term to avoid anticipation when it can reasonably infer that the examiner would not have issued an invalid patent. Phillips, 415 F.3d at 1327. Ameritex has not offered any evidence relating to the prosecution of the 351 patent and fails to demonstrate that the examiner even considered this issue during the patent's prosecution. Consequently, the Court denies Ameritex's request that it impose a limitation that patents 351 and 980 claim only rail portions completely void of flat sections.

8 The Court notes that the parties provided documents regarding the prosecution of divisional patent 980, which was filed after patent 351. This prosecution history indicates that the patentee used the terms generally semi-circular and rounded to avoid reading on prior art that had flat or D-shaped top portions. However, Ameritex did not present similar evidence concerning the prosecution of patent 351, and the Court will not use the evidence regarding the prosecution of 980 to speculate as to what took place during the prosecution of patent 351.

3 The Court concludes that Baden has provided the more accurate construction.

3 The numbers refer to the identifying numbers in Fig. 3 of Baden's '835 patent.
The Court looks first to the ordinary meaning of the claim terms and then reads those terms in the context of the other claims in the patent. The '835 patent claims, in part, "a plurality of raised seams, defined by strips of a seam material, wherein the sponge layer underlies the raised seams, and further, the inner carcass portion, the cellular sponge layer and raised seams together define a ball carcass.' (Claim 1). Considered in isolation, the words "raised seams" suggest seams that are heightened in relation to something else. Thus, considered in light of the ordinary meaning of the words, Molten's construction does not make sense. Molten suggests comparing the height of the seam to the exterior skin panels. But under Molten's construction, the seam is not heightened in relation to the exterior skin panels, but "flush with the upper surfaces of the adjacent skin panels." (Emphasis added.) Molten's construction would therefore eliminate the ordinary meaning of the word "raised."

Baden's proposed construction is consistent with the '835 patent claims. As explained in claims 1 and 3, the "inner carcass portion, the cellular sponge layer and raised seams together define the ball carcass." Thus, before the skin panels are attached, the ball carcass is composed of an inner carcass, encircled by a cellular sponge layer, with seams extending upwards from and on top of the cellular sponge layer. This phraseology suggests that the seams are "raised" regardless of the height or positioning of the exterior skin panels; they are "raised" in relation to the underlying sponge layer.

Molten points to other claim language to support its construction of the term. Specifically, Molten points, to that portion of Claim 1, which states, "wherein . . . each strip of seam material comprises: a raised portion positioned between spaced, outer edges of the skin panels on opposite sides of the raised portion." And Molten points to Claim 5, which states, "the raised seams defining the boundaries of skin panel placement areas . . . each strip of seam material includes a raised portion." But this claim language describes the horizontal position of the seams in relation to the exterior panels, not the vertical position. This language explains that the raised portion of the seams are exposed between and touch the exterior panels. It does not describe the height of the seam vis-a-vis the adjacent exterior skin panels.

In addition, Molten points to language in the specification of Baden's '835 patent that refers to the raised seams "exposed between the edges of exterior skin panels" (col. 1, 11. 11-12); "the boundaries of the exterior skin panels [being] defined by the raised seams" (col. 2, 11. 29-31); and the "raised central portion 22 of the seam material 20 fill[ing] the space between the outer edges 24, 26 of two adjacent skin panels 28, 30" (col. 3, 11. 32-34). Like the claim language, these specifications do not describe the height of the seam compared to the adjacent exterior skin panels, but rather, the horizontal position of the seam in relation to the skin panels.

Finally, Molten points to prior art mentioned in the prosecution of the '835 patent. But Molten has not cited to where this prosecution history is in the record. And even if the Court considered the relevance of this prior art (the Anderson patent, U.S. Patent No. 3,863,923), which itself refers to the Henderson patent (U.S. Patent No. 3,508,750), the Court is not persuaded that Anderson or Henderson affect the meaning of "raised seams" in Baden's '835 patent. As explained by Molten, Anderson, in describing the Henderson patent, discloses that the diameter of the exterior skin panels constitute the diameter of the ball, as defined by the elevated raised seam. Not only is this evidence attenuated, it does not explain that the Henderson seam must be "raised" in relation to the exterior panel; it only explains that in the Henderson design, that seam was designed to be the same height as the highest portion of the exterior skin panel. This prior art thus provides little guidance in understanding the meaning of "raised seams" in Baden's '835 patent.

The ordinary meaning of the term and the claim language support Baden's construction of "raised seams." Baden's construction is also supported by Figures 1, 3, and 5 of the '835 patent, which all indicate a seam with a raised portion at a height above the underlying sponge layer. And finally, the patent specifications support Baden's construction. The specifications describe how the ball is molded: In the mold, the carcass is cured under heat, the heat causes the foaming agent to expand the foambale sections into a single, uniform cellular sponge layer, and "[t]he seam strips are molded at the same time, thereby creating the raised seams familiar to conventional basketballs." (Col. 4, 11. 25-34). This specification suggests that the seams are "raised" regardless of the height of the exterior skin panels; rather, their raised characteristic explains the seams' height in relation to the underlying foam section.

Because the ordinary meaning of the words, the claim language, and the patent specifications are all consistent with Baden's proposed construction, the Court adopts Baden's proposed construction of the term "raised seams."
In conclusion, in an attempt to deconstruct the metaphor of "raised spine" I will not limit its meaning with descriptors not component. A shape that corresponds and cooperates with the jagged flanges, which is at bottom the defining characteristic of this flanges, for instance, a rectangular shape would not fit. Rather, the raised spine of the mounting element would have to have inwardly turned opposed flanges had straight edges. If for some reason a window jamb channel were designed with jagged the crest of a ridge is not normally rectangular. Furthermore, a rectangular shape would only fit snugly in the channel if the flanges with the requisite width thereby inhibiting rotation. A rectangular shape is not necessarily required, and I note that be designed to have at least some of the edges positioned between and in the same plane as the inwardly turned opposed projections sculpted into it. The Claim encompasses variously shaped raised formations that could imports such a characteristic. Furthermore, the raised formation in Figures 9, 10 and 11 is not even a true rectangle because require the raised formation to be elongated as it is depicted in Figures 9, 10 and 11 except to the degree that the term spine' is to be operatively received. "[638 Patent, col. 5, 11. 8-11.] Neither the Claim nor the description in the specification is a snug fit between open lip portions . . . of a channel section sash frame member . . . within which the mounting element is to be operatively received." [638 Patent, col. 5, 11. 8-11.] Therefore, the raised formation in Figures 9, 10 and 11 is not even a true rectangle because of the inter-engagement projections sculpted into it. The Claim encompasses variously shaped raised formations that could be designed to have at least some of the edges positioned between and in the same plane as the inwardly turned opposed flanges with the requisite width thereby inhibiting rotation. A rectangular shape is not necessarily required, and I note that the crest of a ridge is not normally rectangular. Furthermore, a rectangular shape would only fit snugly in the channel if the inwardly turned opposed flanges had straight edges. If for some reason a window jamb channel were designed with jagged flanges, for instance, a rectangular shape would not fit. Rather, the raised spine of the mounting element would have to have a shape that corresponds and cooperates with the jagged flanges, which is at bottom the defining characteristic of this component.

Here Caldwell argues for the inclusion of the adjectives elongated and rectangular because in Claim 1 the "raised spine" is supposed to be "positioned between and in the same plane as the inwardly turned opposed flanges of said channel means whereby rotational motion of said mounting means is inhibited." [638 Patent, col. 6, 11. 12-15.] Similarly, an embodiment corresponding to this description is depicted in Figures 9, 10 and 11 and described as having a width "arranged such that it is a snug fit between open lip portions . . . of a channel section sash frame member . . . within which the mounting element is to be operated." [638 Patent, col. 5, 11. 8-11.] Here again, I feel confident that the ordinary meaning of "raised spine" as understood by a person of skill in the art is readily apparent. This is not the case where the term has a "particular meaning in [the relevant] field of art", nor does it appear that the term is being used "idiosyncratically". Phillips, 415 F.3d at 1315. Thus, I will construe the term according to the "widely accepted meaning" of this metaphor. Id. at 1314.

It is unclear how Amesbury determined that "a raised projection or protrusion" is the plain and ordinary meaning of "raised spine". Caldwell, on the other hand, points me again to the American Heritage Dictionary (3d ed 1992), which includes the following definition for spine" -- "Something that resembles or suggests a backbone, as: a. The hinged back of a book. b. The crest of a ridge." I find that this definition more accurately describes the ordinary meaning of this term as used in the context of Claim 1 and I agree with Caldwell that the words "raised projection or protrusion" do not sufficiently capture the concept of "raised spine" intended by the patentee's choice of that term in both Claim 1 and the specification. Rather, the ordinary meaning of the term "spine" is more specific than the broader terms "projection" or "protrusion", which may encompass simple knobs, bumps, or even a "poorly-hammered nail". The Federal Circuit gave some guidance in International Rectifier Corp. v. IXYS Corp., a pre-Phillips case, where it disapproved of the district court's adoption of a synonym of the claim term as the definition because it "disregard[ed] entirely the distinction between the two terms set forth in the usage note." The court observed that "had the inventor meant [the synonym], he could have used that word. However, we must consider the word that the inventor actually chose and use the definitions of that term that are consistent with the written description." International Rectifier Corp. v. IXYS Corp., 361 F.3d 1363, 1374 (Fed. Cir. 2004).

Having recognized the importance of fully capturing the proposed usage, I must disagree with Caldwell that the disputed term is necessarily limited to the elongated and rectangular shapes depicted in the patent drawings. To do so "would be to impermissibly read a limitation into the claims from the written description", Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1308 (Fed. Cir. 2003) citing Comark, 156 F.3d at 1186, and "the patent drawings depict[ing] a particular embodiment". Id. at 1306-07. See also Phillips, 415 F.3d at 1323. 3

3 Amesbury points to the Federal Circuit's reversal on the meaning of "protrusion" in Anchor Wall for the proposition that shape-based limitations should not be included in the definition unless expressly set forth in the patent. However, I find the general principle re-affirmed in Phillips that claims should not be confined to the specific embodiments in the specification more compelling for purposes of construing the patent before me.

Here Caldwell argues for the inclusion of the adjectives elongated and rectangular because in Claim 1 the "raised spine" is supposed to be "positioned between and in the same plane as the inwardly turned opposed flanges of said channel means whereby rotational motion of said mounting means is inhibited." [638 Patent, col. 6, 11. 12-15.] Similarly, an embodiment corresponding to this description is depicted in Figures 9, 10 and 11 and described as having a width "arranged such that it is a snug fit between open lip portions . . . of a channel section sash frame member . . . within which the mounting element is to be operatively received." [638 Patent, col. 5, 11. 8-11.] Neither the Claim nor the description in the specification require the raised formation to be elongated' as it is depicted in Figures 9, 10 and 11 except to the degree that the term spine' imports such a characteristic. Furthermore, the raised formation in Figures 9, 10 and 11 is not even a true rectangle because of the inter-engagement projections sculpted into it. The Claim encompasses variously shaped raised formations that could be designed to have at least some of the edges positioned between and in the same plane as the inwardly turned opposed flanges with the requisite width thereby inhibiting rotation. A rectangular shape is not necessarily required, and I note that the crest of a ridge is not normally rectangular. Furthermore, a rectangular shape would only fit snugly in the channel if the inwardly turned opposed flanges had straight edges. If for some reason a window jamb channel were designed with jagged flanges, for instance, a rectangular shape would not fit. Rather, the raised spine of the mounting element would have to have a shape that corresponds and cooperates with the jagged flanges, which is at bottom the defining characteristic of this component.

In conclusion, in an attempt to deconstruct the metaphor of "raised spine" I will not limit its meaning with descriptors not
included in either the Claims or the specification. However, simply analogizing "raised spine" with "raised projection or protrusion" loses the ordinary meaning implicit in this common usage of spine. To the extent that Caldwell is suggesting that the meaning of the term "raised spine" ought to embody the qualifier that it be "positioned between and in the same plane as [the] inwardly turned opposed flanges of [the] channel . . . whereby rotational motion of [the] mounting means is inhibited", I decline the invitation. To do so would make the remainder of the Claim just quoted redundant and unnecessary.

Construction -- A raised portion of the mounting element that resembles or suggests the spine of the mounting element, shaped to cooperate with the window jamb flanges to inhibit the rotational motion of the mounting means.

7. "ramp"

Floe contends that the term "ramp" should be construed as "a structure that includes a flat sloping surface and an upper portion and a lower portion, where the structure provides ease of sliding objects onto a trailer deck." Newmans, on the other hand, contends that the term "ramp" should be construed as "uniformly sloping." Floe alleges that its construction is consistent with the specification, which describes a "ramp" as a structure that has a sloped surface and assists in loading vehicles or other objects onto a trailer. Floe also contends that its construction is consistent with standard and technical dictionary definitions. In particular, Floe cites the definition in the McGraw-Hill Dictionary of Engineering (1984), which defines "ramp" as a "uniformly sloping platform, walkway, or driveway." See id. at 470. Newmans also asserts that technical dictionary definitions support its construction and cites the same definition as Floe from the McGraw Hill Dictionary of Engineering.

Consistent with the specification and the technical dictionary definitions of "ramp," the Court construes "ramp" as "a uniformly sloping platform that provides ease of sliding objects onto a trailer deck."

1. "ramp means"

The parties disagree over whether this phrase is a means-plus-function limitation. Floe contends that "ramp means" is a means-plus-function limitation and thus subject to 35 U.S.C. § 112, ¶ 6. Specifically, Floe supports its contention by pointing out that the claim is in means-plus-function format, that the prosecution history reveals that the patentee believed that the claim was a means-plus-function claim, and that Newmans, until recently, and Newmans' expert believed that the claim was a means-plus-function limitation. Floe originally asserted that the phrase "ramp means" should be construed as "the corresponding structure for carrying out the ramp means function is a ramp such as that shown by structure 74 in figure 10. The corresponding structure includes structures that are equivalent to structure 74." But at the Markman hearing, Floe suggested that the Court adopt Newmans' proposed construction, which avers that the corresponding structure is illustrated in figures 3 and 10 and described in c. 5, ll: 20-40 of the patent. Specifically, Newmans contends that this phrase should be construed as follows:

If "ramp means" in claim 11 is truly a "means-plus-function" claim element, then the corresponding structure is illustrated in figure 3 and figure 10 of the '379 patent, and is described in c. 5, ll: 20-40. It is Newmans' position that given the structure described in the "ramp means" claim element of claim 11, "ramp means" must be construed in light of the construction of its structural components as set forth herein.

Newmans refutes that the use of the phrase "ramp means" is a means-plus-function limitation. Newmans acknowledges that the use of the word "means" presumes that the patentee intended to invoke the statutory mandates for means-plus-function clauses. Additionally, the parties agree that the claimed function is "for assisting in loading the vehicles when the frame structure is positioned for loading." (379 Patent, c. 8, ll: 26-32.) Newmans, however, refutes that "ramp means" is a means-plus-function limitation, alleging that the claim language recites sufficient structure or material for performing that function. Specifically, Newmans points to the claim language that states, "wherein said ramp means has a lower surface and a ramp surface disposed between said lower surface and said upper edge at a first predetermined angle to said trailer bed support.
The Court disagrees. Here, Claim 11 requires, "ramp means formed with said edge protection means for assisting in loading the vehicles when the frame structure is positioned for loading, wherein said ramp means has a lower surface and a ramp surface disposed between said lower surface and said upper edge at a first predetermined angle to said trailer bed support means[]."

Although the claim language describes some structure, the claim does not recite sufficient structure to perform the undisputed function of assisting with the loading. Thus, the Court finds that this language does not overcome the presumption that this is a means-plus-function limitation.

Next, the Court addresses the parties' arguments regarding the corresponding structure disclosed in the specification for carrying out the function. Originally, Floe contended that structure 74, shown in figures 3 and 10, of the specification, was the disclosed structure but agreed at the Markman hearing to use Newmans' proposed construction, which asserts that the corresponding structure is illustrated in figures 3 and 10 and described in c. 5, ll: 20-40. Floe, however, added that it was important to emphasize to the jury that in c. 5, ll: 20-40, the ramp means is formed with the edge protection means. The preferred embodiment is described as follows in c. 5, ll: 20-40:

"ramp means" is a means-plus-function claim element, and consistent with the parties' agreement, the Court finds that the corresponding structure is illustrated in figures 3 and 10 and described in c. 5, ll: 20-40.

1. "ramp member"

Newmans contends that the phrase "ramp member" should be construed as:

a structure that is joined to said deck support member in a cooperative relation that has a length substantially equal to said predetermined length, and consists of three structural components: (1) a deck edge protecting surface extending upwardly from said deck support surface and having an upper edge, (2) a lower portion having a longitudinal edge, and (3) a ramp surface disposed between said upper edge and said longitudinal edge at a predetermined angle less than ninety degrees to said deck support surface and arranged to protect an edge of a deck to be supported by said deck support surface[]."

At the Markman hearing, Floe withdrew its proposed claim construction and requested that the Court either not interpret "ramp member," or use Newmans' proposed construction but substitute "includes" for "consists of."

Floe contends that the phrase "ramp member" means a structure that includes, but is not limited to, the structure set forth in the ramp-member limitation. In support of this contention, Floe points to the definition of "ramp member" in Claim 1, which states:

said ramp member having a length substantially equal to said predetermined length, a deck edge protecting surface extending upwardly from said deck support surface and having an upper edge, a lower portion having a longitudinal edge, and having a ramp surface disposed between said upper edge and said longitudinal edge at a predetermined angle less than ninety degrees to said deck support surface and arranged to protect an edge of a deck to be supported by said deck support surface.
Specifically, Floe contends that the intrinsic evidence indicates that "having" is an open-ended term. Additionally, Floe alleges that Newmans' proposed construction would limit "ramp member" to the structure disclosed in the preferred embodiment. Newmans, on the other hand, contends that the term "having" does not carry the presumption of open-ended interpretation. Newmans further asserts that here, the patentee did not indicate that "having" is non-limiting. Newmans also contends that the "ramp member" element absolutely requires three structural components and urges the Court to reject any attempts by Floe to disregard any one of the three required limitations of "ramp member."

The Court finds that it must first construe "having" before it can construe "ramp member." The transitional word "having" indicates that a claim may be open or closed. Crystal Semiconductor Corp. v. TriTech Microelectronics Int'l Inc., 246 F.3d 1336, 1348 (Fed. Cir. 2001). After examining the intrinsic evidence, the Court finds that "having" is an open-ended term. "Having" is used multiple times in Claim 1 in an open-ended context. For example, "a lower portion having a longitudinal edge" does not suggest that the lower portion only has a longitudinal edge. Instead, "having" indicates that the lower portion has at least a longitudinal edge. And "deck edge protecting surface extending upwardly from said deck support surface and having an upper edge" does not mean that the deck edge protecting surface only has an upper edge. Likewise, "having" indicates that the deck edge protecting surface has at least an upper edge, but is not limited to only having an upper edge. Further, Newmans' proposed construction would limit ramp member to the structure disclosed in the preferred embodiment.

After concluding that "said ramp member having" is an open-ended construction, the Court construes "ramp member" using Newmans' proposed construction, but substitutes "includes" for "consists of." Thus, "ramp member" is construed as:

- a structure that is joined to said deck support member in a cooperative relation that has a length substantially equal to said predetermined length, and includes three structural components: (1) a deck edge protecting surface extending upwardly from said deck support surface and having an upper edge, (2) a lower portion having a longitudinal edge, and (3) a ramp surface disposed between said upper edge and said longitudinal edge at a predetermined angle less than ninety degrees to said deck support surface and arranged to protect an edge of a deck to be supported by said deck support surface.

8. "ramp surface"

Floe asserts that this phrase should be construed as "a surface of a ramp." Newmans, on the other hand, contends that this phrase should be construed as "uniformly sloping surface." Floe contends that its proposed construction is consistent with the plain meaning of "ramp surface." As stated above, Newmans contends that because the word "ramp" means "uniformly sloping," a "ramp surface" means a "uniformly sloping surface." The parties appear to agree that "surface" does not need to be separately construed. Here, the Court finds that the ordinary meaning of "ramp surface" is "a surface of a ramp," and therefore construes the phrase as such.

(a) "Random Faded Effect"

Lee argues in its reply memorandum that the look of garments processed by the various stonewashing methods is irrelevant, especially as it pertains to garments finished with commercial processes. 29 Lee is correct that comparisons between commercial products have no meaning in discussing interpretation of patent claims. 30 See Jackson Jordan, Inc. v. Plasser American Corp., 747 F.2d 1567, 1578 (Fed. Cir. 1984) (claims, not embodiments, are the focus of the obviousness inquiry). Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed. Cir. 1995). However, the look of the garments processed by allegedly anticipatory processes 31 is not totally irrelevant because as Lee has acknowledged the random faded effect of the garments or fabrics using one of the processes claimed in the '213 patent is an element of the inventions.
29 This argument is in response to Golden Trade's assertions that Lee's allegedly anticipatory "sponge-bleach process" (see infra Section IV-D.) produced garments that were "distinctively different" in appearance from those finished with Lee's Frost process, the process that Golden Trade asserts infringes the '213 patent, and therefore the sponge-bleach process cannot anticipate the '213 patent because the appearances are different. The sponge-bleach process and the Frost process are not the same. Because this is a motion for invalidity, not infringement, Golden Trade's invocation of the Frost process borders on the irrelevant, tends to mislead the Court, and is not looked upon favorably.

It is worth noting that just because results of different processes are different does not mean that one result is more correct than the other, as long as both processes meet the limitations of the claim. Thus, all of Lee's commercially produced garments that Golden Trade attempts to compare may actually fall within, and anticipate, the claim limitations of the '213 patent. This inquiry is considered below in Section IV-D.

30 Lee is also correct that Golden Trade mischaracterizes these comparisons when the processes (the Frost process and Ricci's commercial process) use pumice stones to create appearances on jeans. Lee has specifically not moved to invalidate claims 2 and 10 using its sponge-bleach process because those claims limit the processes in claims 1 and 6, respectively, to "granules" which are pumice. Thus, Golden Trade's statement that Lee "concedes" lack of identity between Lee's sponge-bleach process and "Mr. Ricci's invention" is totally out of place. (Pltf.'s § 102 Op. Mem. at 92.) One embodiment of "Mr. Ricci's invention" uses stones (Ricci's commercial process), but Ricci chose to patent a much broader process using "granules." By not contesting claims 2 and 10, Lee has conceded lack of identity between the sponge-bleach process and a process that uses stones, but not one that uses "granules" for which "Mr. Ricci's invention" calls. That is perfectly appropriate.

Similarly, Golden Trade mischaracterizes testimony of one of Lee's witnesses by using the words "bleach-impregnated granules" when the testimony only referred to "stones." (Id. at 52 (emphasis added).) This mischaracterization is improper because "granules" and "stones" are not equivalent terms within the patent claims.

Further, Golden Trade's invocation of claim 10 for infringement purposes in this memorandum directed to validity issues misleads the court. (See id. at 92; cf. supra note 27.) But what is worse is that even its attempt to mislead is wrong. In a footnote, Golden Trade states that because Lee does not address claim 10, even if its motion for invalidity on the other claims were to be granted, infringement on that claim would still have to be tried against Lee and the other defendants. (Id. at 92 n.271.) Golden Trade fails to realize that a claim only has to be invalidated once, so if Levi's motion for invalidity on all the claims were to be granted, claim 10 would be invalid and an infringement trial would then be a waste of time. See Blonder-Tongue Labs., Inc. v. University of Ill. Foundation, 402 U.S. 313, 28 L. Ed. 2d 788, 91 S. Ct. 1434 (1971) (patentee estopped from litigating patent declared invalid in prior action).

31 This includes its sponge-bleach process and Consolidated's dry process.

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The effect is included in the preambles to both claims 1 and 6 which recite "method of producing a random faded effect." 32 Regarding when a preamble may also be a limitation, the Federal Circuit has said:

No litmus test can be given with respect to when the introductory words of a claim, the preamble, constitute a statement of purpose for a device or are, in themselves, additional structural limitations of a claim.

Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257 (Fed. Cir. 1989); In re Paulsen, 30 F.3d 1475, 1479 (Fed. Cir. 1994). Thus, a term appearing in the preamble is a "necessary limitation" where it "breathes life and meaning into the claims." Loctite Corp. v. Ultrasel Ltd., 781 F.2d 861, 866 (Fed. Cir. 1985). "The effect preamble language should be given can be resolved only on review of the entirety of the patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim." Corning, 868 F.2d at 1257. Corning held that the words "optical waveguide" (a subset of optical fibers) in the preamble of a patent for optical fibers did not "merely state[] a purpose or intended use" for the fibers, id. at 1256, but was an element because the specification made clear that the inventors were working on a specific problem in optical communications systems not on general improvements to conventional optical fibers. To read the specification to include all types of optical fibers in that claim rather than limit it to optical waveguides would be "divorced from reality." Id. at 1257.
Because the specification and prosecution history make clear that the intent of Ricci's process was to produce a random faded effect, a subset of faded effects, that phrase is needed to "breathe[] life and meaning" into the claims. Thus, a "random faded effect" is a necessary element in both claims 1 and 6.

The prosecution history leads to the same conclusion. Ricci added claims 6-14 in his first amendment and claims 15-20 in his second and third amendments. Although the effect of claim 1's process is further limited in claims 4 and 5, none of the claims depending from claim 6 further limit that claim's effect. Thus, claims 14 ("faded made-up garment") and 20 ("faded cloth fabric") are product-by-process claims "produced by the method of claim 6." Because claims for uniformly faded products would not have been allowed by the Examiner, (see Notice of Allowability of Dec. 30, 1987 at 2, in Pros. Hist., Tab O (comparative showing distinguished claimed products from prior art ones)), claims 14 and 20 must be directed to randomly faded fabrics in order to retain their validity. 33 As these are merely the products of claim 6 with no further description of the faded effect, the effect as listed in claim 6 must be an element.

Defining "random faded effect" is harder. Claim 1 merely says that dry-tumbling must "produce a random faded effect." Claim 4 limits the effect to "irregular patches or areas of dissimilar color shading distributed at random over the entire expanse of the treated cloth or garment," and claim 5 limits it to "non-uniform, irregular patches or areas of dissimilar color shading." Thus there are two aspects to the randomness: intensity and placement (distribution).

The specification says that a random faded effect includes "a 'used' look characterized by the contrast between light and dark areas." ('213 patent, col. 1, l. 40-41.) Then it distinguishes the prior art which included this effect only on the seams of a made-up garment, the color of the rest of the garment remaining "substantially uniform." (Id., col. 1, l. 44.) The "essential feature" of the effect is "the appearance of a plurality of irregular patches that vary in intensity of color shading and are distributed in a non-uniform manner over the entire expanse of the cloth, or garment." (Id., col. 1, l. 54-58.) Because this "essential feature" is the same as the limitation in claim 4, it must not be as broad as the effect claimed in claim 1. Whereas a fabric with a prior art "uniform faded effect" is at least a little faded all over, one with a "random faded effect" may have areas where no fading occurs. (See '213 patent, col. 3, l. 46-49 (specification says that differences in color shading appear where random contact by stones on clothes occurs); see also claim 4 (calling for random shading over "the entire expanse of the" fabric).)

Therefore, a "random faded effect" is an element of the '213 patent and includes fading on fabric or a made-up garment where (a) some areas are more faded than others, (b) some areas may not be faded at all, and (c) the placement of the faded areas is not uniform. This effect is the same in claim 1 and claim 6.

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(a) "Random Faded Effect"

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commercial products have no meaning in discussing interpretation of patent claims. See Jackson Jordan, Inc. v. Plasser American Corp., 747 F.2d 1567, 1578 (Fed. Cir. 1984) (claims, not embodiments, are the focus of the obviousness inquiry). Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed. Cir. 1995). However, the look of the garments processed by allegedly anticipatory processes is not totally irrelevant because as Lee has acknowledged the random faded effect of the garments or fabrics using one of the processes claimed in the '213 patent is an element of the inventions.

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It is worth noting that just because results of different processes are different does not mean that one result is more correct than the other, as long as both processes meet the limitations of the claim. Thus, all of Lee's commercially produced garments that Golden Trade attempts to compare may actually fall within, and anticipate, the claim limitations of the '213 patent. This inquiry is considered below in Section IV-D.

30 Lee is also correct that Golden Trade mischaracterizes these comparisons when the processes (the Frost process and Ricci's commercial process) use pumice stones to create appearances on jeans. Lee has specifically not moved to invalidate claims 2 and 10 using its sponge-bleach process because those claims limit the processes in claims 1 and 6, respectively, to "granules" which are pumice. Thus, Golden Trade's statement that Lee "concedes" lack of identity between Lee's sponge-bleach process and "Mr. Ricci's invention" is totally out of place. (Pltf.'s § 102 Op. Mem. at 92.) One embodiment of "Mr. Ricci's invention" uses stones (Ricci's commercial process), but Ricci chose to patent a much broader process using "granules." By not contesting claims 2 and 10, Lee has conceded lack of identity between the sponge-bleach process and a process that uses stones, but not one that uses "granules" for which "Mr. Ricci's invention" calls. That is perfectly appropriate.

Similarly, Golden Trade mischaracterizes testimony of one of Lee's witnesses by using the words "bleach-impregnated granules" when the testimony only referred to "stones." (Id. at 52 (emphasis added).) This mischaracterization is improper because "granules" and "stones" are not equivalent terms within the patent claims.

Further, Golden Trade's invocation of claim 10 for infringement purposes in this memorandum directed to validity issues misleads the court. (See id. at 92; cf. supra note 27.) But what is worse is that even its attempt to mislead is wrong. In a footnote, Golden Trade states that because Lee does not address claim 10, even if its motion for invalidity on the other claims were to be granted, infringement on that claim would still have to be tried against Lee and the other defendants. (Id. at 92 n.271.) Golden Trade fails to realize that a claim only has to be invalidated once, so if Levi's motion for invalidity on all the claims were to be granted, claim 10 would be invalid and an infringement trial would then be a waste of time. See Blonder-Tongue Labs., Inc. v. University of Ill. Foundation, 402 U.S. 313, 28 L. Ed. 2d 788, 91 S. Ct. 1434 (1971) (patentee estopped from litigating patent declared invalid in prior action).

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32 Lee in fact cites the preamble wording in its element-by-element comparison in its opening memorandum. (Lee's § 102 Mem. at 28, 30.)

Because the specification and prosecution history make clear that the intent of Ricci's process was to produce a random faded effect, a subset of faded effects, that phrase is needed to "breathe[] life and meaning" into the claims. Thus, a "random faded effect" is a necessary element in both claims 1 and 6.

The prosecution history leads to the same conclusion. Ricci added claims 6-14 in his first amendment and claims 15-20 in his second and third amendments. Although the effect of claim 1's process is further limited in claims 4 and 5, none of the claims depending from claim 6 further limit that claim's effect. Thus, claims 14 ("faded made-up garment") and 20 ("faded cloth fabric") are product-by-process claims "produced by the method of claim 6." Because claims for uniformly faded products would not have been allowed by the Examiner, (see Notice of Allowability of Dec. 30, 1987 at 2, in Pros. Hist., Tab O (comparative showing distinguished claimed products from prior art ones)), claims 14 and 20 must be directed to randomly faded fabrics in order to retain their validity. 33 As these are merely the products of claim 6 with no further description of the faded effect, the effect as listed in claim 6 must be an element.

33 Even though these claims are invalidated in this opinion, see supra Section IV-A, they can still be used to construe the other valid claims because all claims were valid at the time the patent issued.

Defining "random faded effect" is harder. Claim 1 merely says that dry-tumbling must "produce a random faded effect." Claim 4 limits the effect to "irregular patches or areas of dissimilar color shading distributed at random over the entire expanse of the treated cloth or garment," and claim 5 limits it to "non-uniform, irregular patches or areas of dissimilar color shading." Thus there are two aspects to the randomness: intensity and placement (distribution).

The specification says that a random faded effect includes "a 'used' look characterized by the contrast between light and dark areas." ( '213 patent, col. 1, l. 40-41.) Then it distinguishes the prior art which included this effect only on the seams of a made-up garment, the color of the rest of the garment remaining "substantially uniform." (Id., col. 1, l. 44.) The "essential feature" of the effect is "the appearance of a plurality of irregular patches that vary in intensity of color shading and are distributed in a non-uniform manner over the entire expanse of the cloth, or garment." (Id., col. 1, l. 54-58.) Because this "essential feature" is the same as the limitation in claim 4, it must not be as broad as the effect claimed in claim 1. Whereas a fabric with a prior art "uniform faded effect" is at least a little faded all over, one with a "random faded effect" may have areas where no fading occurs. (See '213 patent, col. 3, l. 46-49 (specification says that differences in color shading appear where random contact by stones on clothes occurs); see also claim 4 (calling for random shading over "the entire expanse of the" fabric).)

Therefore, a "random faded effect" is an element of the '213 patent and includes fading on fabric or a made-up garment where (a) some areas are more faded than others, (b) some areas may not be faded at all, and (c) the placement of the faded areas is not uniform. This effect is the same in claim 1 and claim 6.
B. The Court will not Reconsider its construction of the term "random orientation" of the bamboo segments.

Teragren asks the Court to Reconsider its ruling that the term "random orientation" in the '197 patent requires that the "bamboo segments have random, not uniform lengths, and are staggered or lapped along the length of the beam." [Markman Claims Construction Ruling, Dkt. # 59, at 9].

Specifically, the Court ruled:

The randomness feature of Plaehn's invention specifically included the notion that the bamboo segments would be of random lengths, and placed into the beam in a generally parallel fashion, but randomly with respect to their vertical, horizontal, and rotational orientation, and furthermore that they would be randomly staggered and lapped along the length of the beam. For these reasons, the Court concludes that the term "random" or "randomly oriented" as used in claims 1, 5, and 7 means that the bamboo segments and stocks used to construct the bamboo beam are not placed in an orderly or uniform fashion; they do not have a top or a bottom, or a front or a back. Instead, they are placed at random. As used in the '197 patent, the term also requires that the generally parallel bamboo segments have random, not uniform, lengths, and are staggered or lapped along the length of the beam.

Plaintiff Teragren argues that the requirement of "random lengths" and "staggered or lapped" placement along the length of the beam are both in error.

It focuses on the language of the claims themselves which describe segments having a random vertical and horizontal orientation with respect to each other (see claim 5), and about the length and width of each of said segments (see claim 1) and with respect to each other about the width and height of the bamboo beam (see claim 7).

Teragren argues that none of these claims requires that the bamboo segments have random (or not uniform) lengths, or that they be staggered or lapped along the length of the beam. Indeed, they argue, the lengths of the segments are specified in claim 5 -- the segments are to be, in substantial number, between 5 and 20 feet long, with shorter or longer segments permissible in small quantities.

Teragren argues that the '197 patent describes a beam that contains bamboo segments randomly oriented vertically, horizontally, and rotationally, but that are not necessarily lapped or staggered, and are not necessarily of random (or non-uniform) lengths. Teragren effectively argues that the beams described in the patent could be like a box of uncooked spaghetti; the individual segments are randomly placed, but are of uniform length and are not staggered.

Defendant argues that Teragren itself argued in its opening Brief [Dkt. # 41] (as Plaehn had argued to the Examiner) that the staggered bamboo segments eliminated the inherent limitation in using bamboo as a structural wood substitute. That inherent limitation -- the distance between the annual rings (weak points) in a given bamboo segment -- was overcome in the Plaehn invention, because the staggering allowed the manufacture of beams that were longer than that distance.

Teragren wrote:

In addition, the parallel stacking used in prior art beams limited the length of bamboo beams. The beams could only be as long as the distance between the annular rings in the bamboo stock. In contrast, the random stacking of the patented invention eliminated this limitation because the staggering of the bamboo segments allowed the length of the beam to exceed the length of the individual bamboo segments. This staggering also created a stronger and more consistent product. As the inventor explained:

[T]he only mention in [the prior art] of a beam refers to using longitudinal layers exclusively. The "longitudinal bamboo strips (1) are bamboo strips cut lengthwise uniformly," and [the prior art] recognizes the limitations created by the "presence of annular rings in the bamboo trunk." citation omitted Therefore, the length of the longitudinal strips, which are uniform in length, are limited by the distance between the annular rings in the bamboo stock. (The presence of an annular
ring in a bamboo strip may present a weak point and discontinuity, greatly reducing the strength and uniformity of the bamboo strip.) This limitation greatly limits the possible lengths of the bamboo beams in [the prior art].

In the present invention, however, such limitations in beams [sic] length are not present. The bamboo strips do not have to be uniform lengthwise and may include the annular ring portions of the bamboo segment. Furthermore, though the strips are parallel in direction, they are random in horizontal and vertical orientation and length. The advantage is that the randomness of this process assures a uniform and length-wise staggered stacking of the bamboo segments, allowing the length of the beams to exceed the length of the bamboo segments themselves and negating any weaknesses of the discontinuity of the annular rings. This randomness not only ensures consistency in the physical characteristics of the bamboo beams, it also provides a product which is cheaper to manufacture because less work is required due to the random parameters.

[Dkt. # 41 at 4, 5].

Teragren acknowledges that it recited this claims history, but strenuously denies that it ever asserted that the issued claims should be interpreted so as to require random lengths or staggering. [See Dkt. # 70 at 2]. Teragren's opening Brief did not attempt to distinguish or explain away this prosecution history, though it also did not specifically reference it when articulating its own meanings for the claims' terms.

In any event, it is clear that Plaehn, and then his counsel, consistently sought a patent by emphasizing the primary benefit of his invention: the beams created could be longer than the distance between the annual rings because the segments were staggered. He repeatedly emphasized this feature in distinguishing the Chu patent. [See Seyedali Dec.; Dkt. # 39, at: Ex. A, Original Application, p.4; Ex. D, First Amendment, at p, 5; Ex. G January 1996 Amendment, at pp.7-8]. Each iteration of Plaehn's submissions to the Examiner, and the '197 patent itself, touted the invention's object as providing "a beam which can be manufactured to virtually any dimension." [ See '197 Patent, Seyedali Dec., Ex. H at 3]. As Plaehn consistently argued, this feature was the direct result of the randomness (as opposed to Chu's orderliness) of the bamboo strands, including their random lengths (generally within a range of 5 to 20 feet), and their random placement -- or staggering -- along the beam's length.

It is true that the issued '197 patent's claims do not specifically reference this feature. However, it is also clear that the Examiner, who repeatedly rejected Plaehn's applications before ultimately accepting his final Amendment, was not at any point concerned that the "randomness" described by Plaehn over time was an impediment to the issuance of the patent. Instead, the Examiner (and Plaehn) focused on whether or not his invention was sufficiently distinguished from the Chu patent's orderly stacking.

Based on this claim prosecution history, the Court concluded, and does conclude, that the meaning of the term "random orientation" as used in the '197 patent, means bamboo segments which have random, not uniform lengths, and which are staggered or lapped along the length of the beam.

The Plaintiff's Motion for Reconsideration on this point [Dkt.# 60] is therefore DENIED.

GO BACK

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"in rapid succession"

Claim 17 of the '387 patent contains the term "in rapid succession." The term is used to define the "burst state" of the camera. The Court has previously construed the term "burst state" as meaning "the camera takes a pre-determined number of pictures in rapid succession in response to one or more signals from a motion detector." Good Sportsman Mktg, 440 F. Supp. 2d at 576. There, the Court specifically found that the patent's specification did not define the term "in rapid succession" more precisely and that "it is a phrase potential jurors [would] be familiar with . . . ." Id. at 577. For those reasons, the Court declined to provide an additional definition the term. Id.

Nevertheless, Defendants essentially argue that the term "rapid" is insolubly indefinite because it fails to define, with mathematical precision, the amount of pictures that must be taken per unit of time in order to meet the limitation.
Defendants' assertion suggests that "rapid" is entirely subjective. However, they do concede that the specification provides guidance to the meaning of "rapid" by contrasting a "burst state" with the camera's "pause state." For instance, with respect to the "pause state" the specification provides that "[i]n one embodiment, the controller is programmable by a user so that the time of the pause between possible exposures is set optionally between 1 to 60 minutes." See '387 patent at 4:41-44. In contrast, the specification describes that the "burst state," in one embodiment, allows the user to "provide anywhere between 1 and 9 exposures per triggering event." See id. at 4:33-35. Inherent in the patent's description of the user's ability to select the number of exposures taken in the "burst state" is the understanding that a user does not control the rate that those exposures are taken. This fact is further bolstered by the specification's description of the "pause state" where, as quoted above, a user does control the rate that the camera takes exposures.

Defendants produce various declarations by their experts concluding that one skilled in the art could not determine the meaning of "in rapid succession" because it is not defined within the patent with mathematical precision and has no mathematically precise meaning within the art. See Stoneburner Decl., Docket No. 109-8 at P 23; Laws Decl., Docket No. 109-13 at PP 7-9. These extrinsic statements misapply the law. A claim term is not indefinite simply because it does not describe or define the invention with mathematical precision. BJ Servs. Co. v. Halliburton Energy Servs., Inc., 338 F.3d 1368, 1372 (Fed. Cir. 2003). In fact, terms of degree are often used in patent claims for the specific purpose of avoiding having to define a claim with precise mathematical precision. Ecolab, Inc. v. Envirochem, Inc., 264 F.3d 1358, 1367 (Fed. Cir. 2001) (explaining that the term "substantially" was used in claim terms to avoid mathematical precision). Furthermore, a term does not have to be specifically explained in the specification to be understood by one skilled in the art. Med. Instrumentation & Diagnostics Corp. v. Elekta AB, 344 F.3d 1205, 1217 (Fed. Cir. 2003) (finding that the term "computer" was commonly recognized by those skilled in the art without the necessity of further description in the specification). Thus, Defendants' experts' assertions that their understanding of "rapid" requires mathematical precision is irrelevant to the issue of indefiniteness.

"Rapid" is commonly understood to mean "moving, acting, or occurring with great speed." See The American Heritage College Dictionary 1032 (3d ed. 1997). The parties agree that neither the specification nor the prior art attach a specialized meaning to the term. Within the context of the patent and the general field of photography, the "great speed" at which exposures can be taken is inherently limited by the physical capabilities of a camera. The term "rapid" is further limited by the claims themselves because of the contrast between a "burst state" (where there is no control over the speed of exposures) and a "pause state." Thus, the term "in rapid succession" within the context of the claims would be commonly understood to mean "one after another without any intentional delay or pause such as in the pause state." However, given that the term "rapid" is commonly understood and the contrast between "burst" and "pause" states is inherent within the claims themselves, it is not necessary to further limit or clarify the term. Therefore, while "in rapid succession" is not insolubly ambiguous, it does not need further construction beyond its plain and ordinary meaning. Accordingly, Defendants' motion is denied with respect to claim 17 of the '387 patent. To the extent that this claim term arises at trial, the Court instructs the parties to tailor their trial arguments to accord with this Order.

Unlike the above terms, "rapidly" is not amenable to construction. The term is entirely subjective and is judged purely from the consumer's standpoint. See Datamize, 417 F.3d at 1347 (Fed. Cir. 2005) (finding indefinite a term that was "completely dependent on a person's subjective opinion."). Although Crane suggests that it may be possible to measure the average time of vending machines and then determine a competitively advantageous time, the patent does not disclose any such method. Absent a comparison method or a quantifiable method for measuring rate of time, the court is not persuaded that "rapidly" is amenable to construction.

7. What is the Proper Construction for the Phrase "rapidly cooling" in the '311 Patent?
Claim 1 and claim 94 of the '311 patent contain the phrase "substantially immediately after formation of said continuous binder structure, rapidly cooling said mixture to below the softening point of the binder material to retain said converter binder material in its continuous webbing structure condition to produce the composite material." KXI contends "rapidly cooling" requires cooling the mixture to below the softening temperature of the binder material in a sufficiently short enough time to prevent wetting of the carbon by the binder and deterioration of the bonds. Culligan contends "rapidly cooling" means cooling as rapidly as practicable to retain the composite material's structure. Culligan contends "rapidly cooling" includes cooling by ordinary methods to a temperature below the softening temperature of the binder, including by allowing the part to cool naturally in ambient air.

The term "wetting" never appears in the '311 patent. KXI contends wetting means the softened binder particles penetrate the primary particles or completely surround the primary particles. KXI alleges that wetting of carbon particles by softened binder particles can cause the bonds between carbon and a binder to break down, causing deterioration of the bonds.

KXI argues the inventors recognized that wetting is a problem, and that it may be solved by rapid cooling. KXI relies on column 14, lines 8-16 of the '311 patent's specification, which reads in relevant part:

"It has been shown that, if the product of the [continuous web matrix] or [forced point-bonding] processes is held for an extended period at the elevated temperature, there is a rapid deterioration of the product and loss of the continuous web or binding points. Therefore, following the formation of continuous binder resin structure in the [continuous web matrix] product or bonding points in the [forced point-bonding] product, the material should be cooled rapidly, preferably as rapidly as possible.

KXI contends the inventors developed "rapid cooling" to solve the wetting problem. KXI argues, "rapidly cooling" requires cooling the mixture to below the binder's softening temperature in a sufficiently short enough time to prevent wetting of carbon by binder. KXI therefore construes "rapidly" to mean sufficiently quickly to prevent wetting or deterioration of the bonds.

Culligan argues its interpretation is supported by the '311 patent's specification. Culligan cites column 13, lines 4-8. This reads in relevant part: "the resulting immobilized material is relatively quickly cooled to a temperature below the melting point of the binder to 'freeze' the unstable structure once it is formed." Culligan cites column 14, lines 22-23. This states that "water sprays or air blasts may be used to hasten cooling." Culligan also cites example 1, at column 26, lines 34-35, which discloses utilizing air cooling to cool pellets that were made in a 0.5 inch diameter cylindrical compression molding die.

KXI responds that Culligan's construction of the phrase containing "rapidly cooling" would allow air cooling in any situation. According to KXI, air cooling may not be appropriate in certain circumstances to "rapidly cool" the product. KXI argues that:

"because the type of cooling depends on many factors, including the temperature and size of the article and the thermal mass of the mold surrounding the article, it would be improper to define 'rapidly cooling' as allowing any type of cooling. . . . Instead . . . the cooling must be sufficiently fast to prevent wetting of the carbon and deterioration of the bonds."

The court finds that preventing "wetting" never appears in the '311 patent, and is not required by the claim. Otherwise, the court agrees with KXI's interpretation. The court construes "rapidly cooling" to mean cooling the mixture to below the softening temperature of the binder material in a sufficiently short enough time to prevent deterioration of the bonds.

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c. "reaches"

The term "reaches" appears in several claims of the '987 Patent. ev3 argues that the term should be construed as "is within or beyond." Boston Scientific argues that the term is easily understood and need not be construed. The Court construes "reaches" as "is within or beyond." 8
2. "directly facing at least one radiator element"

The Court construes the term "directly facing at least one radiator element" as meaning that at least one outlet opening must be pointing squarely toward at least one radiator element. The term "face" means "to stand or sit opposite to: occupy a position with the face toward (he stood facing the window)." Webster's Third New Int'l Dictionary at 811. Another source similarly defines facing as "positioned with the front toward a certain direction; opposite: a book with Italian and English lyrics printed on facing pages." The New Oxford American Dictionary at 606. This understanding of "facing" is consistent with the context in which the term is used in the claims and with the specification, which indicates that the cooling air passes "directly over the radiator elements." '766 patent, col. 3, lines 44-48.

The claim uses the term "directly" in reference to direction or location. Used in that sense, the ordinary meaning of the term is "squarely" or "exactly." See Webster's Third New Int'l Dictionary at 641 ("without any intervening space or time: next in order: squarely, exactly <<directly opposite the city hall>> <<directly in the center of the room>> <<during the decade directly before his birth>>); The New Oxford American Dictionary at 483 ("exactly in a specified position: the ceiling directly above the door, the houses directly opposite").

The parties propose to define "directly" as denoting the absence of any obstruction (Alcon) or any significant obstruction (Brembo), but neither the ordinary meaning of the term nor its usage in the claim or specification involve the presence or absence of obstructions. By way of example, two house can be "directly opposite" each other yet still have objects between them, such as trees. None of the dictionaries consulted by the Court contained a reference to obstruction in the definition of "directly." Nor does the specification include any reference to the presence or absence of obstructions between the outlet opening and radiator element.

Alcon argues that for the air to pass from the duct to the radiator element, no obstructions can exist between the two. To support its position, Alcon relies on the fact that the dictionary says that "directly" means, among other things, "without any intervening space," which, it says, requires the term to be construed as meaning "without obstruction." This argument fails, for two reasons. First, even were "without intervening space" a relevant definition in context, the absence of space is not the same as the absence of obstruction. Second, the diagrams included in the specification depict that there is, in fact, space between the duct and the radiator elements. See, e.g., '766 patent, figure 2.

Defining "directly" as meaning squarely or exactly is more consistent with the use of the term in context of the claim language. See Texas Digital, 308 F.3d at 1203 (court must determine which of possible alternative meanings of a term is most consistent with the use of the word in the patent). Substituting the words squarely or exactly for "directly" in the examples provided by Webster's Dictionary make this clear -- exactly opposite the city hall; squarely in the center of the room.

In sum, the phrase "reaching into the immediate vicinity and directly facing at least one radiator element" means that at least one outlet opening must extend into the proximate area of, and must point squarely toward, at least one radiator element.
1. "reaction frame"

In its "summary" section, the '500 patent specifications describe the relevant invention as a "precision motion stage mechanism including the stage itself . . . surrounded by a 'window frame' guide structure." See '500 Patent at 1:55-58. The parties agree that "reaction frame" has no generally accepted meaning in the art, and however obvious the meaning of "reaction" and "frame" may be when disaggregated, the conjoined "reaction frame" term has no plain meaning, either. The court must look to the intrinsic record accordingly.

In pertinent part, the specifications discuss a "frame" separate and distinct from that supporting the various precision photolithographic components. The abstract to the '500 patent discusses "a mechanical support for the stage independent of the support for its window frame guide," see Patent '500 at Abstract, and "reaction force" is understood as being "transmitted independently directly to the earth's surface by an independent supporting structure." See id. at 2:36-40. According to the intrinsic record, moreover, the reticle stage mechanism is placed "apart [] and [is] independently supported from the other elements of the photolithography machine." Id. at 2:49-52; see also id. at 5:23-28 (discussing an "independent support structure"); id. at 2:35-40 ("An additional aspect . . . is that the reaction force of the stage and window frame drive is not transmitted to the support frame . . . but is transmitted independently directly to the earth's surface by an independent supporting structure."). The specification language for the incorporated '118 patent is largely in accord, as is the '118 patent's prosecution history. See, e.g., Patent '118 at 4:5-9 & 7:17-19; Appendix to ASML's Memorandum, Exh. 21, Patent '118 file history (noting that Nikon, in prosecuting the '118 patent, emphasized an "independently supported reaction frame [that] has its own supporting pillars resting on [a] foundation . . . without any mechanical coupling to the XY stage 30 or to the optical elements").

But not all of the specification language suggests that the reaction frame must go separately and independently to the ground. Both the '500 patent specifications and the correlative '118 patent text discuss a structural support that "underlies"--i.e., buttresses from below, perhaps through a stacked-frame structure--the mechanism's frames. See Patent '500 at 5:15-17; 5:23-52; Patent '118 at 4:11-19; 6:66-7:4. Nothing in the intrinsic (or extrinsic) record demands that the reaction frame itself run independently to the ground in every case, rather than to a separate component of the larger device which itself contacts "the earth's surface." '500 Patent at 2:36-40. Only by limiting the claim to a particular embodiment does such a limit emerge, and the court is unwilling to impose such a limit here. See, e.g., Intervet Am., Inc. v. Kee-Vet Lab., Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989) (noting that attempts to impose such limits rarely, if ever, succeed). A "cardinal sin of claim construction," the Federal Circuit has observed, is to import limitations into claims where claim language permits a construction broader than the embodiments. Teleflex, Inc. v. Ficosa North Am. Corp., 299 F.3d 1313, 1324 (Fed. Cir. 2002). It is equally problematic, of course, to construe a claim to exclude a preferred embodiment, see Vitronics, 90 F.3d at 1583-84 (noting that a construction that excludes the preferred embodiment is "rarely, if ever, correct"), but construing "reaction frame" to include a stacked-frame configuration suffers neither of these flaws. For one, the claim language is broader than the relevant embodiment and the specification text; nothing in the claim language excludes a stacked-frame configuration, and nothing in the claim language requires separate and independent attachment to the ground. Indeed, embodiments in the incorporated '118 patent depict precisely the contrary. See Exh. 14 at 1:40-64; Fig. 1B. For another, a construction of the term "reaction frame" that includes a stacked configuration does not exclude the preferred embodiment; it simply acknowledges that the reaction frame need not extend separately and independently to the ground.

The court thus construes "reaction frame" to mean "a physical structure, separate and distinct from the structure supporting the precision components, that transfers reaction forces, caused by the movement of a stage drive, away from the precision components."
Here, the parties agree that "reaction space" is expressly defined in the specification, but argue over how much of that definition actually is necessary to define the term. The specification provides:

According to the invention, the term "reaction space" includes both the space in which the substrate is located and in which the vapor-phase reactants are allowed to react with the substrate in order to grow thin films, namely, the reaction chamber, as well as the gas inflow/outflow channels communicating immediately with the reaction chamber, said channels serving for admitting the reactants into the reaction chamber, inflow channels, or removing the gaseous reaction products of the thin-film growth process and excess reactants from the reaction chamber, outflow channels …. According to the invention, the reaction space is the entire volume to be evacuated between two successive vapor-phase pulses.

( '590 patent 4:29-43.) ASM argues that "reaction space" should not be construed to include the last sentence of this definition, on the ground that it would be confusing, tautological, subjective, and unhelpful.

It appears that ASM's concern is that the reaction space should be described in terms of a physical description of its boundaries, rather than by describing it by volume of space to be evacuated. The specification clearly defines the term both ways, however, and for good reason. Without the last line of the definition, it is not clear whether there is any limitation on the amount of the inflow and outflow channels that are included in the reaction space. With the last line included, it becomes clear that only the portions of the inflow and outflow channels that are evacuated of reactants between pulses are included in the reaction space.

The specification provides that the different reactant gases are not permitted to mix in the inflow channels or in the reaction space. ( '590 patent 5:10-15.) In order to prevent this, there must be some sort of valves or baffles on the inflow channels that control the flow of reactant gases into the reaction space. (See, e.g., '590 patent 6:19-22.) The location of those valves or baffles defines the limit of the reaction space on the input end. The limit of the reaction space on the output end must be either the vacuum pump itself, or any exhaust valve or baffle through which the vacuum pump draws the reactant gases out of the reaction space.

Accordingly, the Court agrees with Genus that the last sentence of the specification's definition of "reaction space" must be included in order to clearly define the limits of the reaction space. Thus, the reaction space includes the reaction chamber as well as the gas inflow/outflow channels communicating immediately with the reaction chamber, and includes the entire volume to be evacuated between two successive vapor-phase pulses.
Def. Supp. Mem. at 3. PSN does not provide a proposed construction.

The '530 Patent summary describes performing touch-ups, smoothing, and if desired, adding a glaze after the veneer has been removed from the statue. See col. 2, 11. 52-60. But the preferred embodiment section describes finishing treatments performed while the veneer is still attached to the statue, and the example section describes glazing the veneer and then re-firing the veneer prior to removing the veneer from the statue. See col. 4, 11. 40-47; col. 5 11. 65 - col. 6 11. 2. Tellingly, the preferred embodiment specifically states that "the support provided by the statue with the casing still mounted while such treatment is conducted is a feature of this invention." Col. 4, 11. 44-47.

While two parts of the patent specification may be internally inconsistent, the plain meaning of "ready for" and the specific affirmation of the statue's presence during finishing as "a feature of this invention" support Ivoclar's proposed construction. Reading the claimed term "ready for mounting" to include finishing steps after the statue has been removed effectively reads the disputed phrase out of the claim. See, e.g. Texas Instruments, Inc. v. U.S. Int'l Trade Comm., 988 F.2d 1165, 1171 (Fed. Cir. 1993) (rejecting a proposed claim construction because it would "render the disputed claim language mere surplusage").

PSN also argues that the specification's references to cleaning, sterilization, etching, and adding cement to the veneer support PSN's position that the patent contemplates additional steps between removing the statue and mounting the veneer on the tooth. But these steps described by PSN are steps associated with mounting rather than finishing. See col. 2, 11. 57-60 (describing cleaning, etching and adding a cement coating "to permit the veneer to be mounted and fixed in place"). Therefore, "ready for mounting" means "leaving the veneer restoration ready to be fitted to and cemented on a patient's tooth for which it was custom-made."

Discussion

In the Opinion, the Court construed the phrase "ready for mounting" in Claim 1 of the '530 Patent to mean, as proposed by Ivoclar, "leaving the veneer restoration ready to be fitted to and cemented on a patient's tooth for which it was custom-made." Opinion at 10. On the basis of the construction of the phrase "ready for mounting," the Court granted summary judgment for Ivoclar after finding that no reasonable jury could conclude that Ivoclar's manufacturing process left the tooth veneer ready for mounting after the investment material had been removed.

As part of the claim construction portion of the Opinion, the Court noted that PSN did not provide a proposed construction counter to that provided by Ivoclar. PSN brings to the Court's attention that PSN provided the Court with a proposed construction as part of its Local Rule 56.1 Additional Statement of Material Facts. PSN does not dispute that it did not discuss or argue its proposed construction in its Opposition to the Motion for Summary Judgment, although it added a citation to the statement of fact that contained the construction. PSN also briefly referenced its proposed construction in its Response to Ivoclar's Short Supplement to its Motion for Summary Judgment. PSN's proposed construction for "ready for mounting" is: "the statue has been eroded from the veneer and is substantially fabricated other than finishing and fitting operations required for its placement on the tooth."

While the Court admits that it overlooked PSN's proposed construction and will address that proposed construction on its merits as part of this opinion, it bears mention that PSN is not entirely blameless for the error. 2 Claim construction is a matter of law; proposed claim constructions are not material facts and are inappropriate for placement in a Local Rule 56.1 statement. See Kenall Mfg. Co. v. Genlyte Thomas Group LLC, 439 F. Supp. 2d 854 (N.D. Ill. 2006) (legal conclusions regarding infringement and claim construction arguments do not comply with Local Rule 56.1). This Court is obligated under Local Rule 56.1 not to consider legal arguments and conclusions of law that parties place in their statements of undisputed facts. In both the Opposition and Response to Supplement briefs, PSN made the strategic decision to focus its argument on the reasons that Ivoclar's proposed construction should not be used rather than providing support for its own proposed construction.

2 Ivoclar also apparently missed the proposed construction in PSN's 56.1 Statement of Additional Facts. Ivoclar stated in its
Reply to the Motion for Summary Judgment that PSN had not provided a proposed construction. Reply Mem. in Support of Summary Judgment at 8 (Docket No. 248).

Because the Court overlooked the presence of a proposed construction, however improperly stated, the Court will re-address the claim construction on the merits. In the Opinion, the Court adopted Ivoclar's revised construction of "ready for mounting":

Leaving the veneer restoration ready to be fitted to and cemented on a patient's tooth for which it was custom-made.

PSN's proposed construction for "ready for mounting" is:

the statue has been eroded from the veneer and is substantially fabricated other than finishing and fitting operations required for its placement on the tooth.

The major difference in the two proposed constructions is the presence of the term "finishing" as a separate step from "fitting" that should be included in the construction of "ready for mounting." While the Opinion did not have the benefit of PSN's proposed language, the Opinion did analyze and conclude on the basis of the specification in the '530 Patent that "ready for mounting" did not include finishing steps. The Opinion specifically addressed the types of activities that PSN raises in its Motion for Reconsideration as "finishing" steps, including beveling, shaping, and glazing. Therefore, although PSN argues that it has been prejudiced by the Court's failure to consider PSN's proposed construction, the Court did discuss the finish steps and determine that the claim construction should not include them - the key difference in construction language that PSN proposed.

The Opinion also explained the reasoning behind the Court's decision that "finishing" could not be included in the phrase "ready for mounting." While PSN chose to phrase its arguments on summary judgment as arguments against Ivoclar's construction (rather than in favor of its own construction), PSN made the same legal arguments in briefing that it now makes on reconsideration; the Opinion addressed those arguments and ruled against PSN. For the sake of completeness, those arguments are addressed again in brief.

First, PSN argues that a claim construction that does not cover the description in the summary of the invention is "rarely, if ever, correct." But PSN draws this quote from a case discussing the preferred embodiment, not the summary of the invention. That case, Globetrotter Software, Inc. v. Elan Computer Group, Inc., 362 F.3d 1367, 1381 (Fed. Cir. 2004), states that "a claim interpretation that excludes a preferred embodiment from the scope of the claim 'is rarely, if ever, correct.'" The preferred embodiment in the '530 Patent would be excluded if PSN's proposed construction were to be adopted, the position that these exact cases counsel to be an incorrect result. PSN's proposed construction states that finishing will take place after the statue is removed, while the preferred embodiment states that "the support provided by the statue with the casing still mounted while such treatment is conducted is a feature of this invention." '530 Patent, Col. 4, ll. 43-46.

Ivoclar's proposed construction is consistent with the preferred embodiment, but PSN's proposed construction would exclude, or at very least ignore, the inventor's statement in the preferred embodiment that the support provided during finishing treatment has significance in the invented process because it provides a structure during the finishing steps. The inventor's statement is not an expression of an option, or a suggestion of one method among many. The sentence describes a "feature" of the inventor's process. A description in the specification that specifically notes a feature of the invention can inform the Court of the proper construction of a claimed term. See Boss Control, Inc. v. Bombardier, Inc., 410 F.3d 1372 (Fed. Cir. 2005) (where the specification limited a term to a process involving two steps in order, claim would not be construed broadly to allow for any step); Inpro II Licensing, S.A.R.L. v. T-Mobile USA, Inc., 450 F.3d 1350, 1355 (Fed. Cir. 2006) (limiting a claim for an interface to a specific type of interface because the preferred embodiment specified it was an "important feature" and explained the purpose behind that feature). To construe the phrase "ready for mounting" to allow finishing after the investment material has been removed would be to ignore an aspect of the invention that the inventor himself felt important enough to highlight as one of the invention's features. This statement may be present in the preferred embodiment, but that alone does not allow the Court to ignore its implications.

Contrary to PSN's position, construing the claim "ready for mounting" to exclude finishing steps does not necessarily result
in a complete exclusion of the summary of the invention. The Summary of the Invention describes single or double baking the veneer on the statue, allowing the statue to cool, and then removing the statue from the veneer. See '530 Patent, Col. 2, ll. 40-53. In the next paragraph, the summary describes touching up, smoothing, and possibly glazing the veneer casing "produced by either the single or double bake process. Col. 2., ll. 54-56. The description of these steps follows the description of removing the investment material in the summary description, but do not dictate that the touching up necessarily follows the removal. The Summary is not clear on the sequence of removing the statue vis-a-vis finishing, but the preferred embodiment, as discussed above, is clear that the sequence of events is significant. Additionally, the prosecution history of the '530 Patent supports the statement in the Preferred Embodiment, and the Opinion's finding, that "ready for mounting" allows for fitting and cementing steps, but not for the finishing steps such as smoothing and glazing. In its brief appealing the results of a reexamination of the '530 Patent, Yukiyo (then the assignee of the '530 Patent) argued that the patented process smoothed and glazed the veneers prior to erosion of the investment material, consistent with the description in the preferred embodiment. See Def. Ex. 26 at 8-9.

Second, PSN argues that the Court should have recognized the ambiguity in the '530 Patent and relied upon the extrinsic evidence provided in the form of affidavits from experts Dr. Gerald McLaughlin (the inventor of the '530 Patent) and David Andrus, and that PSN suffered prejudice from the Court's failure to consider these expert affidavits. As explained above, the Court overlooked the single statement of material fact that contained PSN's proposed construction. But the Court reviewed the statement of material facts and the exhibits attached to the statement of fact, including the often-referenced affidavits of McLaughlin and Andrus. Contrary to PSN's assertions, PSN was not deprived of review of the testimony of those of "ordinary skill in the art." This testimony is part of the record and was reviewed prior to publication of the Opinion. The Court did not choose to rely on the extrinsic evidence of expert testimony because the claims could be construed on the basis of the intrinsic evidence found in the language of the claims themselves and in the patent specification. See Phillips v. AWH Corp., 415 F.3d 1303, 1317 (Fed. Cir. 2005) (in construing claims, expert testimony is "less significant than the intrinsic record in determining the legally operative meaning of claim language") (internal citations omitted). Extrinsic opinions from experts can help clarify the meaning of terms and can educate a court on the technology at issue in the case, but its use in construing claims is within the sound discretion of the court. See Inpro II, 450 F.3d at 1357.

Based on the intrinsic evidence alone, reading the phrase "ready for mounting" to include finishing steps would have the effect of reading out a feature of the preferred embodiment - a situation which case precedent counsels to be an inappropriate outcome. Therefore, the construction of the phrase "ready for mounting" in Claim 1 of the '530 Patent remains, as it was in the Opinion, "leaving the veneer restoration ready to be fitted to and cemented on a patient's tooth for which it was custom-made."

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Readily disengaged

The term "readily disengaged" appears in both the '823 and '302 patents. Litepanels contends that the term's plain meaning should apply. Gekko proposes "readily disengaged" should be construed as "capable of being disengaged from a lighting frame by manually applying pressure to release locking tabs and twisting in an opposite direction from that originally used to bring it into a locking position." Although the claim language does not reference limitations such as "locking tabs," "manually applying pressure," or "twisting" in certain directions, Gekko's construction tracks one of the preferred embodiments. See '823 patent, Col. 10:56-62; '302 patent, Col. 10:56-62. It argues that this embodiment is the only reference made to "readily disengaged" in the specifications and, thus, must be used to construe the phrase.

"Although the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims." Comark Commc'n's, Inc, 156 F.3d at 1187. In both patents, the specification also references other methods for affixing the camera mounting assembly. The specifications state, "the mounting assembly receptor may comprise any suitable mechanism." '823 patent, Col. 10:30-32; '302 patent, Col. 10:30-32. They teach that "a variety of other means may alternatively be used to affix a camera mounting assembly." '823 patent, Cols. 11:1-2, 12:36-37; '302 patent, Cols. 11:1-2, 12:36-37. The specifications also state that the camera mounting assembly figures are "merely examples" and other assemblies may be used. '823 patent, Col. 13:40-44; '302 patent, Col. 13:40-44. Adopting Gekko's construction would limit the claim to a preferred embodiment. See Phillips, 415 F.3d at 1323 (warning against confining claims to a particular embodiment).
Neither the specification nor claim language gives "readily disengaged" a special meaning. In fact, the specification states a "variety" of methods for attachment exist, which indicates a variety of methods for detachment exist. When reading the phrase in the context of the claim language, no ambiguity exists. A lay juror will have no difficulty in understanding what "readily disengaged" means. See Phillips, 415 F.3d at 1314. It is difficult to conceive of a more clear way to convey the meaning of this phrase; accordingly, the Court does not construe "readily disengaged."

A. The '920 Patent

Hearing Components argues that the district court erred in finding claims 1 and 2 of the '920 patent indefinite. According to Hearing Components, the phrase "readily installed and replaced by a user" is not ambiguous, as a person of ordinary skill in the art would know that it means "simple to install, without tools or specialized skills." Hearing Components contends that the specification disparages the prior art that required a tool and touts that the invention requires no tools. According to Hearing Components, the specification does not suggest that a person must have a certain level of physical disability to be the claimed "user," and although the '920 patent describes that the invention benefits older persons, the patent does not distinguish the prior art on that basis.

Hearing Components also argues that the "readily installed" phrase is not a claim limitation that required construction at all, as it is in the preamble and is not an essential component of the invention. According to Hearing Components, the phrase is duplicative of other language in the claim, and the prosecution history does not clearly distinguish the invention on the basis of the preamble language.

Shure responds that the "readily installed" phrase is indefinite, as nothing in the specification or prosecution history of the '920 patent clarifies the claim scope. According to Shure, the use of subjective terms such as "readily" renders a claim indefinite. Shure asserts that it presented unrebutted testimony that the art has no commonly understood definition of the word "readily." Shure also argues that the "readily installed" term is a claim limitation at least because Hearing Components relied on it to distinguish prior art during prosecution and in the specification.

Finally, Shure asserts that Hearing Components never presented the claim construction to the district court that it now proposes on appeal, as it previously argued for the definition "easily placed on and taken off the tube." According to Shure, Hearing Components also first suggested that the limitation was part of the preamble in a footnote to its claim construction reply brief. Hearing Components replies that there was no waiver, as its proposed construction is similar to the one presented to the district court. Hearing Components also replies that the court specifically considered whether the phrase was a limitation or part of the preamble.

We agree with Hearing Components that the claim limitation "readily installed and replaced by a user" is not indefinite. "A determination that a patent claim is invalid for failing to meet the definiteness requirement in 35 U.S.C. § 112, [paragraph] 2 is a legal question reviewed de novo." Young v. Lumenis, Inc., 492 F.3d 1336, 1344 (Fed. Cir. 2007). A patent is presumed to be valid, so Shure faces an evidentiary burden of clear and convincing evidence to show facts supporting a conclusion of invalidity. Id. at 1345.

As an initial matter, the "readily installed" phrase is a claim limitation, as Shure argues. A preamble to a claim may or may not be limiting, depending on the circumstances. "In considering whether a preamble limits a claim, the preamble is analyzed to ascertain whether it states a necessary and defining aspect of the invention, or is simply an introduction to the general field of the claim." Computer Docking Station Corp. v. Dell, Inc., 519 F.3d 1366, 1375 (Fed. Cir. 2008) (quotation marks omitted). A term is often limiting when the patentee has relied on it during prosecution to distinguish prior art, as such reliance demonstrates that the feature disclosed in the preamble is necessary to the patentability of the claim. See id.; Jansen v. Rexall Sundown, Inc., 342 F.3d 1329, 1333 (Fed. Cir. 2003). In this case, Hearing Components clearly relied on the "readily installed" phrase during prosecution to distinguish prior art. See J.A. 5768 ("The Moser et al device clearly lacks (1) a 'disposable wax guard' that is (2) 'readily installed and replaced by a user' . . . as expressly called for in applicant's claim 1."); J.A. 5769 (The membrane in the Siemens device "is not 'readily installed and replaced'; indeed, it apparently remains in place, where it is cleaned ultrasonically."); J.A. 5770 (In the Oliveira device, "the sleeve is certainly
not intended to be 'readily installed and replaced,' . . . as specifically called for by applicant's claim 1."). We do not consider the "readily installed" phrase to be duplicative of other language in the claim. Although the claim recites a membrane "that permits a user to position [a] guard over [an] outlet port," the "readily installed" phrase refers to the entire wax guard and therefore is more limiting. We thus conclude that the "readily installed" phrase is a claim limitation.

However, Hearing Components correctly asserts that the limitation is not indefinite. Under 35 U.S.C. § 112, second paragraph, the "specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention," which is known as the definiteness requirement. "Claims are considered indefinite when they are not amenable to construction or are insolubly ambiguous. Thus, the definiteness of claim terms depends on whether those terms can be given any reasonable meaning. Indefiniteness requires a determination whether those skilled in the art would understand what is claimed." Young, 492 F.3d at 1346 (internal citations and quotations marks omitted). The purpose of the definiteness requirement is to ensure that "the claims, as interpreted in view of the written description, adequately perform their function of notifying the public of the scope of the patentee's right to exclude." Honeywell In'لو, Inc. v. Int'l Trade Comm'n, 341 F.3d 1332, 1339 (Fed. Cir. 2003) (quotation marks omitted).

Here, the district court noted that the patentee has used a word of degree, "readily." "[A] patentee need not define his invention with mathematical precision in order to comply with the definiteness requirement." Invitrogen Corp. v. Biocrest Mfg., L.P., 424 F.3d 1374, 1384 (Fed. Cir. 2005) (quotation marks omitted). Not all terms of degree are indefinite. However, the specification must "provide[ ] some standard for measuring that degree." Datamize, LLC v. Pluritree Software, Inc., 417 F.3d 1342, 1351 (Fed. Cir. 2005) (quotation marks omitted). Although "readily" does not refer to a mathematical measure of degree, in Datamize, we addressed the "purely subjective" claim term "aesthetically pleasing" and stated that, as with terms of degree, "a court must determine whether the patent's specification supplies some standard for measuring the scope of the phrase. Thus, we next consult the written description." Id.

As the district court correctly noted, the written description of the '920 patent states that one of the advantages of the wax guard is that it "requires no tools for installation or removal." '920 patent col.2 ll.6-9. Indeed, that statement appears in the context of the following two sentences: "It is simple to install, easy to remove, and convenient to replace, even for older persons. The guard is inexpensive and requires no tools for installation or removal." Id. Assuming the patentee intended the second sentence to elaborate on the first sentence, a wax guard that is "inexpensive and requires no tools for installation or removal" will be "simple to install, easy to remove, and convenient to replace, even for older persons." Id. That assumption is supported by the repetition of variations on the words "install" and "remove" in both sentences. Furthermore, given that the words "readily," "simpl[y]," "eas[ily]," and "convenient[ly]" are all synonyms, the language of those two sentences in the specification closely tracks the language of the disputed claim term, "readily installed and replaced by a user." Thus, the written description gives a clear example of a wax guard that is "readily installed and replaced by a user": one that "is inexpensive and requires no tools for installation or removal."

The district court was also correct in noting that the specification discusses the phrase "readily installed and replaced by a user" in the context of prior art. The specification disparages prior art guards that were not "readily installed and replaced." It states that some prior art inventions "have mechanically mounted screens or other filters beyond the sound delivery tube opening, but removal and replacement has been difficult, especially since persons wearing hearing aids are often advanced in years and unable either to see clearly enough or to perform fine physical actions well enough to replace the filters." '920 patent col.1 ll.62-68. By negative implication, the patent thus explains that a filter that must be mounted beyond the sound delivery tube opening is not "readily installed and replaced."

Those two examples are the only examples or discussion provided by the specification of the "readily installed" phrase. Although the court cited parts of the written description discussing "prior products [that] needed a tool or solvent to remove wax buildup," Claim Construction Opinion, slip op. at 12 (citing '920 patent col.1 ll.59-60), that discussion is irrelevant to the wax guard because the tools and solvents that removed wax buildup were not used for "install[ing]" or "replac[ing]" a wax guard on the prior art products; they were simply used to clean parts of the products. See '920 patent col.1 ll.43-44 (discussing "a hearing aid through which solvent may be pumped to remove wax buildup"); id. at col.1 ll.51-62 (discussing prior art patents that discussed previous prior art, but not giving a reason for "the apparent difficulty in replacing [previous prior art wax filters] after they are soiled" and describing only a reusable wax guard in which "ear wax is removed by pushing a tool through [a] cross passage").

The district court found the "readily installed" phrase indefinite because the written description did not address the level of
Accordingly, the container and dunnage is readily reused"

Bradford proposes that "the container and dunnage is readily reused" means "easily used again." Defendants propose that "the container and dunnage is readily reused" means "the container and the 'dunnage structure' are capable of moving back into the erected position for receiving product without any manipulation of the container beyond erecting the two opposing and moveable 'side structures' into an upright position." In support of their construction of this term, Defendants draw on the prosecution history of the '096 Patent and the specification of the '119 Patent.

The Court does not believe that the prosecution history supports Defendant's construction of "readily reused". In contesting the Examiner's rejection of the claimed invention over the reference of Rader, Bradford argued that "[t]here is absolutely no teaching or suggestion in Rader to operably couple the hanging files to the side structures so that they simultaneously move between erected and collapsed positions along with the moveable side structures." Doc. No. 48-3, at 5. Bradford also stated, "Furthermore, [in Rader] hanging files are not operably coupled to the side structures as taught in the present invention, for moving to an erected position when the side structures are erected, and moving to a collapsed position when the side structures are collapsed." Id. As the Court reads these excerpts of the prosecution history, the point of distinguishing Rader was not that the dunnage in the claimed invention was readily reusable and Rader's was not. Rather, the main point of distinction was that the dunnage in the claimed invention was coupled to the side structures of the container whereas in Rader the hanging files had to be removed from the container before it could be collapsed. See id. at 4-5. Bradford did state that the hanging files in Rader would likely not be reusable if they remained in the container while it was collapsed. Id. at 5. Nevertheless, there is no indication that the hanging files in Rader could not be reused if they were removed from the container before it was collapsed. In other words, the distinction Bradford was making was that the claimed invention teaches a system wherein the dunnage is operably coupled to the container and Rader does not.

Defendants' contention that the specification of the '119 Patent demonstrates that its construction of "readily reused" is correct has more appeal. For instance, the "Summary of the Invention" states: "To reuse the dunnage structures, the container is simply erected for another shipment and the dunnage structures will again move into the engagement position." '119 Patent, col. 3, ll. 26-28. Nevertheless, the Court rejects this argument. As Bradford persuasively argues, Defendants' construction is overly restrictive in that it would seem to preclude the performance of additional operations needed to erect the container, such as locking and securing sides.

Accordingly, the Court holds that "readily reused" means "easily used again."
a. Scope of the '468 Patent Claims

The parties dispute whether the '468 patent claims only the testing strips, and thus is a "product" patent, or whether it is a "method" patent or "combination" patent of the strip and meter. This is an issue of law to be determined by interpreting the claims of the patent.

The claims of the '486 patent are quoted below, as they appear in the patent itself.

What is claimed is:

1. A reagent test strip for use in an apparatus for determining the blood glucose concentration of a sample of whole blood, said apparatus comprising optical means for detecting intensity of light at wavelengths of about 635 nm and about 700 nm reflected from at least a portion of said strip by reading the reflectance of at least a portion of said strip;

   said strip having a porous portion disposed near a distal end of said strip such that the porous portion generally registers with the optical means of the apparatus when the strip is retained by the apparatus during determination of said blood glucose concentration, said porous portion having a sample receiving surface for receiving a sample of whole blood and a testing surface, said porous portion further comprising reagent means for indicating the concentration of blood glucose in said whole blood sample in the presence of optically visible hemoglobin by creating a change in reflectance at said testing surface indicative of the concentration of glucose present in said sample, said reagent means comprising chemical reagents selected to produce said change dependent upon the glucose concentration wherein said chemical reagents comprise a dye precursor forming a chromophore indicative of the concentration of glucose present in said sample, said chromophore absorbing light at about 635 nm but not to any significant extent at about 700 nm.

2. The strip of claim 1 wherein said dye precursor comprises 3-methyl-2-benzothiazoline hydrazone hydrochloride and 3-dimethylaminobenzoic acid.

3. The strip of claim 2 wherein the chemical reagents are at a pH of 3.8 to 5.

Claims 1-3, '468 Patent.

Most persuasive to the court on the issue of claim interpretation is the language of the three claims themselves. Claim 1 begins with the words "[a] reagent test strip" while Claims 2 and 3 refer to "the strip of claim 1." It is clear that each claim constitutes a description of the claimed strip, not a claimed method. Each claim provides a detailed description of the makeup and qualities of the claimed strip, not of the method employed in testing blood glucose levels. Claim 1 repeatedly refers to the strip and its characteristics. Mention of the meter in which the strip is used serves to describe certain strip features, not to describe a combination of strip and meter. The mention of the meter apparatus in the first sentence of claim 1 serves to identify the environment in which the strip will be used, not to create a claim to the method of determining glucose levels in blood or to the combination of strip and meter. See e.g., Smith Corona Corp. v. Pelikan, Inc., 784 F. Supp. 452, 463 (M.D. Tenn. 1992), aff'd, 1 F.3d 1252 (Fed. Cir. 1993); see also In re Stencel, 828 F.2d 751, 754-55 (Fed. Cir. 1987).

In addition to the language of the claims, i.e. the repeated references to the strips described in claims 1 through 3, the court finds that the prosecution history favors a finding that the '468 patent is directed solely to the strips themselves. The '468 patent arose out of a continuation application which was amended to contain new claims directed to a "reagent strip." In June, 1993, these amended claims were amended again, but still directed to a "reagent test strip." Although this amendment, given the number Claim 55, described the apparatus in which it was to be used, the dependent claims added along with Claim 55 each begins with the phrase "the reagent test strip of claim 55 ..." After considering the amendments of claims 55 through 59, the patent examiner stated that it was "the examiner's position that the claims are directed to a test strip." Additionally, the examiner referred twice more in that communication to "the claimed test strip." Thereafter, LifeScan submitted an amendment canceling prior claims and adding Claim 60 incorporating the limitations of Claim 55. During and after the submission of Claim 60, LifeScan did not dispute the examiner's interpretation of Claim 55 as referring to the strip itself. In addition, Claim 60 added a feature relating to the nature of the chemicals in the strip.
After an initial rejection by the patent examiner, LifeScan conducted an interview with the examiner, during which drafts of new claims 61 and 62 were discussed. The first of the new claims, which later became claim 1 of the '468 patent, was directed to "a reagent test strip for use in an apparatus for determining the blood glucose concentration in a sample of whole blood." The second new claim, which became claim 2 of the '468 patent, was directed to "the strip of" the first claim. Following the interview, LifeScan also submitted a new claim 63, later claim 3 of the '468 patent, which also was directed to "the strip" of the preceding claim. Claim 61, which was later allowed, contains fewer references to the nature of the apparatus in which the strip is to be used. The references to the apparatus, i.e. the meter, which do exist are merely descriptive of the environment of the intended use of the strip. See e.g. In re Stencel, 828 F.2d at 754-55; see also Smith Corona, 784 F. Supp. at 463-65. Based on the court's review of the language of the claims and the patent history, the court has determined that, as a matter of law, the '468 patent claims the testing strip and therefore a product, not a method or combination of method and product.

In addition, this court is not persuaded by Polymer's argument that the '468 patent claims are limited to the reagent strip when in place in the meter with a whole blood sample present thereon. This interpretation is simply not supported by the claim language or the claim prosecution.

The court also finds unpersuasive Polymer's arguments concerning the interpretation of claim 3 of the '468 patent, which reads as follows: "The strip of claim 2 wherein the chemical reagents are at a pH of 3.8 to 5." Based on the claim language and the prosecution history, the court finds that the claim language refers to the pH of the chemical reactants in the dry strip, rather than the "pH of all of the chemicals in the strip when it is placed in the meter and a sample of whole blood is applied thereto" as is argued by Polymer.

Finally, based upon the language of the claims and the claim prosecution, the court finds that the language in claim 1 requiring that the porous portion of the strip

comprise reagent means for indicating the concentration of blood glucose in said whole blood sample in the presence of optically visible hemoglobin by creating a change in reflectance at said testing surface indicative of the concentration of glucose present in said sample, . . .

does not limit the claim to a strip in which the only hemoglobin that can be optically sensed by the apparatus is that which is "in the red blood cells filtered out and held at the surface of the test strip."

Polymer argues that its strip does not meet the elements of claim 1 because hemoglobin not "in the red blood cells filtered out and held at the surface of the test strip" is optically visible. However, the court disagrees with Polymer's interpretation of the claim language. First, the court finds that there is no indication that the '468 patent claim 1 is limited to a strip in which the only optically visible hemoglobin is that which is in the red blood cells. On this point, the court notes that the patent expressly refers to "blood being analyzed [flowing] through the pores of the matrix" and to "blood . . . wetting the polyamide matrix without having an excess liquid penetrate the porous matrix to interfere with the reflectance reading on the opposite side of the matrix." This language indicates that the claim is not limited to hemoglobin inside red blood cells, but rather also encompasses "free" hemoglobin released into the remainder of the sample. Second, even if the claim were limited in the manner alleged by Polymer, Polymer has not asserted that the hemoglobin presence in red blood cells applied to First Choice strips is not "optically visible" to at least some extent by the LifeScan home-use blood glucose meter.

Therefore, after reviewing the claim language, the patent specification, the prosecution history, the expert deposition testimony submitted, and the prior art, the court has determined that the proper meaning or interpretation of the '468 patent is that it is directed to the test strips per se, rather than to a method or combination of strip and meter. Additionally, the '468 patent claims refer to the strips themselves and are not limited to the strips when in the apparatus, with whole blood upon them. Finally, the phrase "in the present of optically visible hemoglobin" does not limit claim 1 to a strip in which the only hemoglobin optically visible is that which is in red blood cells filtered out and held at the surface of the test strip.

1. Term 1: "rear cavity"
The principal claim construction dispute between the parties relates to the "rear cavity" limitation of claim 1. Lightspeed contends that the rear cavity is an enclosure within and separate from the enclosure of the earcup that is attached to the rear of the baffle and encloses the driver. Lightspeed's Opening Claim Construction Br. at 3 [Doc. No. 42]. Bose contends that the rear cavity is the cavity within the earcup that is farther from the user. Bose's Opening Claim Construction Br. at 14 [Doc. No. 43]. More specifically, Lightspeed argues that the area behind the baffle is a cavity separate from the claimed "rear cavity" while Bose maintains that there is no second such cavity and the area behind the baffle and the "rear cavity" is a solid structure. See Bose's Claim Construction Reply Br. at 3-4 [Doc. No. 45]; Lightspeed's Sur-Reply to Bose's Reply Br. at 1 [Doc. No. 47]. The '252 patent includes figures illustrating the claimed invention. The parties seem to agree that 11R of Figure 2 of the '252 patent is the rear cavity; the parties' disagreement as to the construction of the term "rear cavity" seems to fall on what constitutes the earcup wall. Lightspeed interprets the earcup wall as the outer lining of the headphone structure, resulting in a broad definition of "rear cavity." In contrast, Bose interprets the earcup wall as the whole area behind the baffle and rear cavity, with a smaller area designated as the "rear cavity." See Bose's Claim Construction Reply Br. at 3.

--- Footnotes ---

1 Claim 1 of the '252 patent is as follows:

A headset comprising:

at least one earcup having a front cavity and rear cavity with front cavity and rear cavity compliances respectively,

a baffle separating the front and rear cavities,

a high compliance driver with a driver compliance that is greater than said rear cavity compliance having a diaphragm joined to a voice coil normally residing in a gap mounted on the baffle, and

an active noise reduction system coupled to said driver.

--- End Footnotes ---

Looking at the language of the claims first, claim 1 states that the headset has "at least one earcup having a front cavity and rear cavity." The '252 patent at 5:10-14. This language does not include any reference to more than two cavities - the front cavity and the rear cavity. Id. Lightspeed's construction requires that there be three cavities in total - one front cavity, one rear cavity, and another cavity between the rear cavity and the earcup wall - an interpretation not supported by the language of the claim.

In addition to the words of claim 1, the '252 patent specifications seem to support the idea that there are only two cavities within the earcup. The specifications provide that active noise-reducing headphones are known to "use a headphone having front (inside) and rear (outside) cavities separated by a baffle carrying a small driver." The '252 patent at 1:18-20. The patent specifications further state that ",[i]n the invention includes a baffle that separates a front or inside cavity from a rear or outside cavity . . . ." Id. at 1:53-55. Also, "[b]affle 11 separates front or inside cavity from rear or outside cavity . . . ." Id. at 2:11-12. Additionally, the patent specifications state that ",[i]t is convenient to refer to the cavity nearer the user and encompassing his ear with headphones properly positioned as the front or inside cavity and the cavity further from the user as the rear or outside cavity." Id. at 2:17-21. The patent specifications indicate that there are two cavities contained within the earcup, a front and a rear cavity, and there is no mention of an additional cavity, contrary to Lightspeed's assertion.

The prosecution history confirms this interpretation. The United States Patent and Trademark Office ("PTO") objected to Figure 2 of Bose's original application in an Office Action dated March 1, 1991, because the original illustration did not show the front cavity, rear cavity, and the high compliance driver of claim 1. Lightspeed's Opening Claim Construction Br. at 7. Bose amended Figure 2 on June 6, 1991, to overcome the PTO's objection by adding a new paragraph that stated, in part, ",[r]eferring to FIG. 2, there is shown a diagrammatic sectional view . . . with headphone cup structure added to better illustrate the relationship among the front cavity, rear cavity, high compliance driver and raised portions on the basket surface." Id. at 8.
Lightspeed proposes that in the prosecution history, Bose distinguished between the claimed "rear cavity" and the earcup enclosure, as Lightspeed calls it, demonstrating that the "rear cavity" is something different from the earcup enclosure, and thus Bose's proffered construction cannot stand. Id. at 7-8. Bose's construction is not that the rear cavity and earcup enclosure are the same, but rather that there is only one rear cavity within the earcup. The prosecution history does not support Lightspeed's contention that there are two separate rear cavities.

Moreover, the extrinsic evidence teaches against Lightspeed's construction. To support its argument that there is a solid structure behind the rear cavity, Bose points to parts of Figure 2 of the '252 patent that include "cross-hatching" or "section lining," and offers extrinsic evidence such as the PTO's Manual of Patent Examining Procedure and several engineering textbooks to prove that solid-line cross-hatching is used to denote solid materials, and not empty spaces or cavities in drawings. Bose's Claim Construction Reply Br. at 7.

Lightspeed counters that "in the acoustics industry, dashed lines are often used in patent drawings to identify cavities within headsets" and points to the original '252 patent drawing which contained such dash lines. Lightspeed's Sur-Reply to Bose's Reply Br. at 2. Lightspeed, however, does not cite to extrinsic sources to support this assertion. Id. Instead, Lightspeed offers one example of a patent drawing using dashed lines to denote a sound-absorbing material, but this material is expressly discussed in that patent's specifications, which is not the case with the '252 patent. 2 Id.

2 Moreover, Lightspeed does not acknowledge that Figure 2 in the final '252 patent differs from the original Figure 2 drawing with the dashed lines because Figure 2 in the final '252 patent contains solid lines throughout the contested region. See '252 patent, Figure 2. The driver in the original Figure 2 drawing Lightspeed provides also looks different than the driver in Figure 2 of the final '252 patent. Id. Figure 2 in the final '252 patent contains solid lines which does not seem to indicate an open space in light of the extrinsic evidence.

The intrinsic and extrinsic evidence of the '252 patent, weighed appropriately in terms of importance, indicate there are only two cavities - a front and rear cavity - within the headphone cup structure. This Court construes the term "rear cavity" as "the cavity within the headphone cup structure that is farther from the user and attached to the rear of the baffle."
intersection of two plane faces (as of a pyramid) or of two planes." Merriam-Webster's Colledge Dictionary available at
http://www.m-w.com. Defendants offer no real argument in support of their position, and I conclude that their construction
is unconvincing.

Plaintiff asks this Court to adopt the construction given by the United States District Court for the Central District of
California in a related action: 29 "having a margin of intersection between the top and bottom surfaces of the blade in which
at least some part of the surface boundary defined by that margin is at the rearmost point of the blade. There is no limitation
on the shape of the surface boundary defined by the margin of intersection." (Pl.'s Reply Br. at 50 (citing Bausch and Lomb,
Inc. v. Oasis Med., Inc., CV 00-11298 (C.D. Cal. July 18, 2001) (slip op.); Pl.'s Ex. 8.)) The Court in Oasis Medical, upon
rejecting both proposed definitions, noted first that the blade includes three types of edges: the rear edge, the cutting edge,
and the side edge. The Court further noted that the term "rear edge" has dual meaning in that the term is physical because it
describes a location (within the rear, trailing portion), and it is relational because, as explained in the preferred embodiment,
it is "generally parallel to the forward cutting edge." Oasis Med. at 4 (quoting Col. 11, Ins. 26-28). The Court determined
that the relational description would be meaningless unless the patentee intended to describe "the two dimensional
relationship between the front and rear surface borders." Id. (emphasis omitted). The Court further observed that the rear
edge had no shape restriction. See id. I am persuaded by the thorough logic of the Court in Oasis Medical and adopt it here.

30 In summary, the term "rear edge" is construed as: having a margin of intersection between the top and bottom surfaces of
the blade in which at least some part of the surface boundary defined by that margin is at the rearmost point of the blade;
there is no limitation on the shape of the surface boundary defined by the margin of intersection.

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29 This related action was brought by plaintiff against a different defendant and appears to exclusively involve the '009
patent.

30 In reaching this conclusion, this Court also found Figures 6-B and 7 of the '009 patent useful.

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B. Claim Construction

Claim construction begins with the language of the claims. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.
Cir. 1996). The words of a claim are generally to be accorded their "ordinary and customary meaning," id. at 1582, which is
"the meaning that term would have to a person of ordinary skill in the art in question at the time of invention," Phillips v.
It is presumed that the person of ordinary skill in the art read the claim in the context of the entire patent, including the
specification, not confining his understanding to the claim at issue. Id. at *24; see also V-Formation, Inc. v. Benetton Group
SpA, 401 F.3d 1307, 1310 (Fed. Cir. 2005) (noting that the intrinsic record "usually provides the technological and temporal
context to enable the court to ascertain the meaning of the claim to one of ordinary skill in the art at the time of the
invention"). Further, claim terms are presumed to be used consistently throughout the patent, such that the usage of a term in
one claim can often illuminate the meaning of the same term in other claims. Phillips, 2005 U.S. App. LEXIS 13954, at *28;
see also Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001).

As the court summarized in Renishaw,

ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what
the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim
language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.

Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998) (citations omitted). In furtherance of
this full understanding, an invention must be construed "with reference to the file wrapper of prosecution history in the
LEXIS 13954, at *35. "The purpose of consulting the prosecution history in construing a claim is to 'exclude any interpretation that was disclaimed during' prosecution. Rhodia Chimie, 402 F.3d at 1384 (quoting ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580 (Fed. Cir. 1988)). Thus, the prosecution history can reveal instances where the inventor limited the invention in the course of prosecution and thus narrowed the scope of the claim. Phillips, 2005 U.S. App. LEXIS 13954, at *36.

The district court defined the claim term "rear end" as referring to the "outermost edge of the tube." Claim Construction Order, slip op. 12. Although the district court properly construed the term "rear end" to mean the point forming the edge of the tube body rather than merely the rearward portion of the tube, it erred to the extent that it treated the chamfer angle as being inside the rear end of the tube. Properly construed, the claim term "rear end" refers to the entire rear edge of the tube, including the point at the rear end on the inside of the tube, the point on the rear end at the outside of the tube, and the area in between. Specifically, the "rear end" does not just refer to the point on the outside of the rear end of the tube. The district court erred by selecting the outer edge as the end point of the tube, thereby impermissibly limiting the scope of the claim. Both the inside and the outside edges are part of the rear end of the tube.

The language of the claims supports this construction. Claim 10 of the '433 patent uses the term twice. It claims "[a] hollow tube body being generally cylindrical and extending from a rear end to a nozzle end," '433 patent, col. 4, ll. 41-42 (emphasis added), and "ribs extending to said rear end of said hollow tube body," id., col. 4, ll. 52-53 (emphasis added). In the context of the claim, "rear end" clearly refers to a point defined by the rear edge, such that the tube body extends between two points: the rear end and the nozzle end. Research argues that the claim term "rear end" should be construed as the rear portion of the tube. However, it would be illogical to describe a tube that extends to two regions in the manner that Research suggests, since this would leave the extension of the tube ill-defined. Claim 10 also describes the ribs as "extending to said rear end," which clearly indicates that the rear end is conceived of as a point capable of being attained, and not as a region.

Claim 1 of the '433 patent uses the term "rear end" in the same manner as claim 10. It claims "[a] tube body being elongated and extending from a rear end to a forward nozzle end." '433 patent, col. 3, ll. 66-67 (emphasis added). Claim 1 describes the positioning of air spaces "adjacent said rear end of said tube body by air space defining members extending to said rear end." '433 patent, col. 4, ll. 7-9 (emphases added).

The written description further supports construing "rear end" as referring to the rear edge of the tube. The written description uses the term "rear end" in a manner consistent with its usage in the claim terms. It discusses prior art tubes as being "generally cylindrical and extending from a rear end to a front nozzle." '433 patent, col. 1, ll. 11-12. Research contends that the written description's statement that the "plunger is received within the rear end" precludes defining the rear end as a point. '433 patent, col. 1, l. 12. However, this argument is not persuasive. It is not incongruous to treat the use of "rear end" in this portion of the written description as meaning a point on the tube, particularly in light of the designation of the "rear end" as the end point of the tube in the preferred embodiment. Figure 2, shown below, depicts the preferred embodiment. The written description specifies that the rear edge, labeled 33, is the "rear end" of the tube.

GET DRAWING SHEET 1 OF 1.

The prosecution history also provides substantial support for construing the claim term "rear end" as the point defined by the rear edge of the tube. During prosecution, the '433 patent was rejected as anticipated by the Ennis patent. The Ennis patent claimed a tube with channels or ribs located at the nozzle end of the tube. In overcoming the examiner's rejection, Research distinguished Ennis by claiming ribs that "extend to the rear end of the tube." In thus amending its claim, Research affirmatively disclaimed, at a minimum, tubes with channels immediately adjacent to the nozzle. However, Research further stated to the patent examiner that the amendments made to overcome the rejection over Ennis limited the claims to cover tubes in which "the air spaces are provided adjacent the rear end of the tube such that the air spaces are provided when the tube is full." If the term "rear end" was construed as an undefined area, and the ribs were positioned adjacent to this area, further inside the tube, air spaces would not be provided when the tube was full. Rather, spaces would only be provided when the tube was partially full. Such a construction would not avoid the prior art that Research distinguished. Positioning ribs of unlimited length adjacent to a rear region could feasibly entail placing the ribs in the forward portion of the tube, near the nozzle. Such a construction would negate the clear disclaimer of claim scope made during the prosecution of the '433 patent. See Phillips, 2005 U.S. App. LEXIS 13954, at *36; Rhodia Chimie, 402 F.3d at 1384. Consequently, Research's amendment must be seen as an affirmative disclaimer of ribs not extending to the rear edge of the tube.
For the foregoing reasons, we construe the claim term "rear end" to mean "a reference point defined by the rear edge of the tube."

2. Rear Mountable

a. The Parties' Constructions

LPL asserts that the term "rear mountable" means "capable of being substantially supported with the rear housing via a fastening part(s) located on the rear surface of the first frame and positioned on or inside the border of the flat display panel." LPL Opening Brief (D.I. 370) at 8 (emphasis supplied).

Defendants argue "rear mountable" excludes front and side mounting and that the term is not limited to a specific location of the fastening parts with respect to the flat display panel.

b. The Special Master's Construction

As discussed above, by amending the claims to include "rear mountable" and distinguishing the prior-art mountings both in the common specification and the prosecution history, front and side mounting were expressly disclaimed. Thus, front and side mounting are excluded from "rear mountable."

LPL urges that "rear mountable" means the fastening elements cannot be just anywhere on the rear surface of the device, but must be "on or inside the border of the flat display panel." LPL identifies Figures 4C and 10 of the patents-in-suit as supporting that construction.

Neither of the referenced figures -- indeed none of the figures -- depict fastening elements that are located "on or inside the border of the flat display panel." Moreover, in discussing Figures 4C and 10, the patents are completely silent about the location of the fastening elements relative to the flat display panel. '641 patent, 4:12-41, 6:16-52. LPL relies on the broken line in Figure 4C (above) as proof that the fastening elements 15 must be positioned on or inside the border of the flat display panel 12. It is the Special Master's view that the broken line simply indicates that the displayed components are sandwiched together as a single device, as the patents state, and not that the fastening elements are on or inside the border of the flat panel display. Additionally, although the broken line appears to align with one corner of the panel 12, that apparent alignment does not necessarily mean the fastening elements 15 fall on or inside the border of the panel 12. In fact, at least two of the other three corners of the panel 12 do not align with the corners of the frame 14g having the fastening elements 15:

[SEE FIGURE IN ORIGINAL]

Figure 4C is therefore, at best, unclear regarding the location of the panel 12 relative to the frame 14g and its fasteners 15. Finally, nothing in the language of the patents helps to explain Figure 4C in this regard.

Figure 10 utterly fails to provide further clarity. Notably, Figure 10 identifies no fastening elements, such as by reference numeral:

The common specification, likewise, is silent as to any fastening elements with respect to Figure 10. LPL's reliance on what
is, at best, an ambiguous artifact in Figure 10 does not further their argument. Indeed, one skilled in the art considering Figure 10 and its accompanying description in the common specification could only speculate as to the location of the fasteners with respect to the panel.

Given the context of the invention and that the phrase "on or inside the border of the flat display panel" is not found in the intrinsic evidence, the Special Master concludes that one skilled in the art would understand "rear mountable" excludes front and side mounting, rather than defining the location of the fasteners with respect to the border of the panel. 15

--- Footnotes ---

15 The term "rear mountable" connotes the capability of being rear mounted, and therefore the term "rear mounted" does not need to be construed. Similarly, the phrase "flat display panel that is rear mounted" does not require construction.

--- End Footnotes ---

Accordingly, the Special Master's construction is as follows:

<table>
<thead>
<tr>
<th>CLAIM TERM</th>
<th>SPECIAL MASTER CONSTRUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>rear mountable</td>
<td>A flat-panel display device that is capable of being mounted to a housing solely from the back of the first frame and that has no front or side mounting fastening elements</td>
</tr>
</tbody>
</table>

A review of the specification compels the conclusion that the disputed terms "rearward area" and "end area," also used interchangeably throughout the '445 patent claims and specification, are correctly defined as "the area facing away from the brake disk." See '445 Patent Specification, Column 1, lines 54-57 (providing that "a direct transmission of the braking forces into the caliper is permitted since the rearward area, which faces away from the brake disk, of the caliper receiving the application unit is essentially closed...") (emphasis added). The specification also teaches that the last disputed term, "application unit," is properly defined as "a mechanical mechanism that multiplies an input force using a lever to provide a greater output force that presses the brake shoes against the brake disk."

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5. "receptacle" or "receptacles"

<table>
<thead>
<tr>
<th>Plaintiff's Construction</th>
<th>Defendants' Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>A physical structure that can receive, contain, or hold something</td>
<td>Formations in the raised periphery surrounding the game board, not on the playing surface, used for mounting batteries, wires, and/or laser devices, and not used for holding playing pieces</td>
</tr>
</tbody>
</table>

a. Innoventions' Proposed Construction

Innovention agrees with the defendants that the ordinary-meaning of "receptacle" connotes that it is a structure that receives or holds something. However, Innovention asserts that, even though "space" and "receptacle" are distinct concepts, the '242 patent does not preclude that a "receptacle" could be located at a "space" on the game board. In support of this assertion, Innovention points to claim 26, which teaches that "each space provides a recess that is receptive of a game piece."

Innovention contends that "[t]here is strong linguistic and structural relationship between a 'receptacle' and a 'recess that is receptive' of some other item (such as a 'game piece'), which still exists if the 'recess' (i.e., a 'receptacle') happens to be
located at a 'space' on the 'game board.'" 13

13 Thus, Innovention contends that, because the claims contemplate that a space may be recessed, that a recessed space may receive or be receptive of a game piece, and that a game piece may include electronic components, it follows that a "recess" existing at a "space" must be capable of "holding electronic components."

b. Defendants' Proposed Construction

The defendants assert that even Innovention's proposed constructions of "space" and "receptacle" do not strongly support the view that a "space" could be a "receptacle", unless the Court adopts the strained and unnatural reading that requires a space on the game board to "receive, hold, or contain" the game piece, which (say defendants) is an interpretation that is contrary to the specification. The defendants also point out that the terms "spaces" and "receptacle" are used in close proximity, which creates an inference that they have different meanings.

c. The Court's Construction

Claim 15 teaches that the invention is:

A game comprising:

a game board having a playing surface and one or more receptacles for holding electronic components.

Based on the scarce claim language (and clarified by the specification, and the drawings that illustrate the point), it is clear that the patentee differentiates between "spaces" and "receptacle" (while "receptacle" and "cavity" are similar in their ordinary meanings and as claimed). Accordingly, as it did with "cavity", the Court adopts a slightly modified version of the defendants' proposed construction of "receptacles": "Formations in the raised periphery surrounding the playing surface that contain batteries and wires."

3. "Received"

The parties dispute the meaning of the term "received" as used to refer to a fastener being received in a recess. 3 Part of the dispute involves whether a recess must be pre-formed to "receive" a fastener, as discussed above. In addition, Defendants claim that the term "received" means that the fastener's head resides "below the inward surface of the panel." Plaintiff argues that there is no such limitation. The Court agrees. The claims at issue recite that the "head portion" of the fastener is "received" in the recess. (See, e.g., claim 16 of '493 Patent.) There is no language in the claims suggesting that the fastener head must reside below the inward surface of the liner panel. Furthermore, the specification states that the fastener heads "may extend out from [the] surface [of the liner panel] but could also be countersunk into recesses . . . so that the heads are at or below the panel surfaces." (493 Patent, col. 8:33-37.) Accordingly, the Court finds that the limitation Defendants propose is not supported by the claims or the specification, and the Court concludes that the term "received" is straightforward and does not call for any construction.

3 The parties dispute the meaning of the word "received" as used in the following related phrases: "received in said recess" (claims 16, 17, and 23 of '493 Patent) and "is received in said recess and abuts said facer" (claim 17 of '493 Patent).
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

3223

A. "Completely Received"

The claims of all the patents require that the projections of the insert means be "respectively received in said recesses of said inner hose . . . whereby the interior of said tubular hose is substantially sealed to the interior of said coupling." 2 '752 patent, col. 10, lines 34-38. The district court construed the claim language "respectively received in" to require that the projections be "completely received" in the recesses of the inner hose, "resulting in an alignment of the projections with the recesses." Order at 4. As TCI conceded at oral argument, the claim language does not explicitly require that the projections be completely received in the recesses. TCI nevertheless argues that the specification of the patents teaches that the invention requires complete reception. We disagree. We find the teaching of the specification at most ambiguous regarding the degree of reception required to form a seal. The specification states only that the projections of the insert means are initially "partially received" in the recesses of the inner hose, "752 patent, col. 7, lines 37-38, and then, when the inner sleeve is radially expanded, that the projections "more firmly move into the recesses" to create the seal. Id. at col. 7, line 66. We cannot conclude from the foregoing that the patentees unambiguously limited the scope of the claimed invention to require complete reception. For us to do so here would be to impermissibly read an unclaimed (and arguably undisclosed) limitation into the claims. As we said in Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186, 48 U.S.P.Q.2D (BNA) 1001, 1005 (Fed. Cir. 1998), "while . . . claims are to be interpreted in light of the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims," quoting Sjolund v. Musland, 847 F.2d 1573, 1581, 6 U.S.P.Q.2D (BNA) 2020, 2027 (Fed. Cir. 1988). Here, the claims only require that the insert means projections be received in the hose recesses such that a substantial fluid seal is formed between the interior of the hose and the interior of the coupling. Complete reception is neither explicitly nor implicitly required.

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

2 Because the '822 patent claims a "coupling for a hose construction," '822 patent, col. 10, line 16, rather than a "hose construction," its analogous claim language requires that the "interior of said tubular hose is adapted to be substantially sealed to the interior of said coupling." Id. at col. 10, lines 36-38 (emphasis added).

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

Similarly, alignment of the projections and recesses is not required by the claim language. Nor does the specification limit the claim coverage to projections aligned with recesses. Indeed, the specification describes an embodiment of the invention in which the spacing between adjacent insert means projections differs from the spacing between adjacent inner hose recesses, see '752 patent, col. 8, lines 54-57 and col. 5, lines 40-42, such that only one projection may be exactly aligned with a recess. Thus, alignment is not required by the claims.

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3224

3. "receiving an indication of a speed" (claim 1)

Flow proposes that this phrase should be construed as: "To acquire a value related to speed, such as supplied by a computer system." Omax agrees generally, but argues that "related to speed" changes the meaning of the claim term and, moreover, is equally ambiguous. Omax proposes instead that the term "speed" be specifically construed as "distance per unit time."

Omax's expert endorses this approach, but fails to note that in the claim term, the word "speed" is preceded by the words "an indication of." These words support the use of the more general construction proposed by Flow. Their inclusion would signal to someone of ordinary skill in the art that the value acquired by the computer system might not be an actual velocity, in distance per time, but something more generally related to speed. Omax is correct, however, that "related to" opens up the realm of possibilities too far, at the risk of the inclusion of every aspect of the cutting process, such as the "nozzle orifice diameter." Instead of introducing a new term to the claim construction, the Court finds the term "indicating" to be adequately understandable by a lay jury. See Phillips, 415 F.3d at 1314. As such, the Court will construe the claim term as:
"To acquire a value indicating speed, such as supplied by a computer system."

3225

(3) insert-receiving area

Plaintiff proposes that this term be construed to mean "a region of the eccentric weight portion that is capable of receiving an insert." Joint Disputed Claim Terms Chart, Dkt. # 29-2, p. 7. Defendants' proposed construction is "the area in the portion of the counterweight that projects from the gear portion that is shaped to receive an insert." Id.

The dispute regarding construction of this term is generated by a dispute over the location of the eccentric gear portion and the cylindrical gear portion. Defendant contends that the insert-receiving area is in the portion of the counterweight that extends forward from the front face of the cylindrical gear portion. Defendants' Opening Claims Construction Brief, Dkt. # 31, p. 21. Defendants' argument is based on their contention that the eccentric gear portion and the cylindrical portion are separate and discrete areas of the counterweight. Plaintiff, on the other hand, directs the Court's attention to the preferred embodiment described in the specifications, and the accompanying drawings which show the bores which constitute the inset-receiving area as extending fully through the cylindrical gear portion. '964 patent, Fig. 3B and col 5, lines 61-65.

This dispute has been resolved by the Court's construction of the term "eccentric weight portion," which declined to adopt defendants' proposal to assign a specific location to the eccentric gear portion, as well as the construction of the term "integral" as meaning a one-piece unit. Considering the term as it is used in the claims and the specifications, together with the Court's construction of the other terms, the Court declines to adopt defendants' proposed construction which would limit the location of the inset-receiving area. Plaintiff's proposed construction, however, is vague in that it does not clarify that the "inset-receiving area" is a bore through the counterweight. The Court therefore adopts the following construction for this term: "a bore formed in the eccentric weight portion of the counterweight that is capable of receiving an insert."

3226

3. pin-receiving plate (claims 1, 17); pin-receiving plate secured to said sleeve (claims 1, 17)

Fargo pin-receiving plate: a surface that receives pins
pin-receiving plate secured to said sleeve: a surface that receives pins and is attached to or formed integral with the sleeve

Iris pin-receiving plate: a flat thin piece of material for receiving the pins
pin-receiving plate secured to said sleeve: the two parts are attached in some fashion to each other while still retaining their identity

Iris objects to Fargo's use of the word "surface," because that term indicates that the plate exists in only two dimensions. Fargo argues that because the plate may be formed integral with the sleeve, Iris's proposed definition is too constricting. The Court agrees with Iris that the word "surface" is at odds with the ordinary meaning of the word "plate," and also recognizes the validity of Fargo's argument that the claims permit the plate to be formed integral with the sleeve. Accordingly, the Court will adopt Iris's definition of "pin-receiving plate" and the following definition of "pin-receiving plate secured to said sleeve." "A plate that receives pins and is attached to or formed integral with the sleeve."

3227

2. "Receiving Portion"
Plaintiff's proposed construction of the term "receiving portion" is "a part of the structural connection device that holds or supports an end portion of an elongate member." (Pl.'s Br. at 8.) Defendant's proposed construction is "that portion of the bracket ('structural interconnection device') that receives the end portion of the vertical post ('elongate member') as construed above. The 'receiving portion' includes a bore sized to receive the 'end of the elongate member,' as construed above, and includes walls of sufficient thickness around the bore to have threaded openings for grub screws forming the 'locking means' as construed below." (Def.'s Br. at 13.)

The heart of the parties' dispute over the term "receiving portion" is whether the '230 patent requires that the end portion of the elongate member be inserted into the receiving portion itself, or whether the receiving portion must merely support or hold the end portion of the elongate member. There appears to be no disagreement between the parties that the receiving portion must support the end portion of the elongate member, and the claims consistently refer to the end of the elongate member being "secured to" the receiving portion. (230 patent, col. 4, l. 48.) The question raised by the parties' competing approaches to construing the term is thus whether, in addition to holding/supporting the end portion of the elongate member, the receiving portion must, as Defendant argues, be able to take in or contain (as a receptacle) the end portion of the elongate member. The ordinary meaning of the word "receive" can be read to support either construction. See Webster's New Int'l Dictionary 1894 (3d ed. 1993) (defining "receive" alternatively as "to take in: act as a receptacle or container for," or "to support the weight or pressure of: bear"). 10

10 Reliance on the dictionary definition for the construction of these terms is appropriate here, where there is no suggestion from the remainder of the intrinsic evidence that the words were used "idiosyncratically," Phillips, 415 F.3d at 1314, and where "the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." Vitronics, 90 F.3d at 1584 n.6.

Plaintiff argues that the only bases for Defendant's assertions that the receiving portion must be able to take in or contain the end portion of the elongate member are the descriptions of preferred embodiments of the structural interconnection device in the specification and the deposition testimony of the inventors as to their intentions in utilizing the term. Plaintiff is correct that neither of these sources is sufficient, in itself, to confine the scope of the claims. While it is true that the preferred embodiment of the receiving portion set forth in the specification describes "a tubular shaped formation into which the end portion of the elongate member may be received." (230 patent, col. 2, l. 1-3), it is well-settled that the "general rule . . . is that the claims of a patent are not limited to the preferred embodiment" of the invention described in the specification. Karlin Tech. Inc., 177 F.3d at 973. Additionally, Defendant's reliance upon the inventors' deposition testimony to derive their intent in using particular claim terms is misplaced, because the "subjective intent of the inventor when he used a particular term is . . . irrelevant to the issue of claim construction." Howmedica, 540 F.3d at 1346-47 (internal quotations and citations omitted). 11 If the specification's preferred embodiment and the inventors' testimony were the only sources of support for Defendant's proposed construction of the term "receiving portion," then such a construction would be unsupportable.

11 While inventor testimony "may be pertinent as a form of expert testimony, for example, as to understanding the established meaning of particular terms in the relevant art," Howmedica, 540 F.3d at 1347 n.5, there is no suggestion from the cited testimony that the inventors were speaking about such "established meaning . . . in the relevant art," as opposed to their own subjective intent in using the terms. Id. In the absence of a stronger indication that the inventors were addressing the established meaning of these terms in the relevant art, the Court will heed the caution prescribed by the Court of Appeals for the Federal Circuit, and will not rely upon the inventors' testimony in construing the disputed claim terms.

As the Court now explains, however, the requirement that the receiving portion be able to take in or contain the end portion of the elongate member finds support in "the words of the claims themselves," Phillips, 415 F.3d at 1312, and the specification's "written description of the invention." Vitronics, 90 F.3d at 1582. Specifically, the use of the word "receive"
in the unasserted claims of the '230 patent, as well as in the specification, leaves little doubt that the term, as it is used in the patent as a whole, encompasses taking in as well as holding/supporting. See Phillips, 415 F.3d at 1314 ("Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims"); Cf. Chamberlain Group, Inc. v. Lear Corp., 516 F.3d 1331, 1337 (Fed. Cir. 2008) ("the 544 patent's term 'trinary code' is relevant to construing 'binary code' because the term 'code' presumptively should carry the same meaning throughout the patent") (citation omitted). The '230 patent repeatedly refers to an object being received into the receiving portion. In claim 3, for example, which is not asserted in this lawsuit, see Phillips, 415 F.3d at 1314 ("[o]ther claims of the patent in question, both asserted and unasserted, can . . . be valuable sources of enlightenment as to the meaning of a claim term"); the patent describes a limitation in which the "receiving portion comprises a tubular shaped formation into which the end portion of an elongate portion may be received." (230 patent, col. 5, l. 2-4) (emphasis added). Likewise, in the specification's description of the locking means, the patent states that the locking means comprises "at least one screw threaded aperture formed in a wall portion of the receiving portion and into which a grub screw or like member may be received and rotated to bear at an inner end against the surface of an end portion of an elongate member." (Id. at col. 2, l. 9-13) (emphasis added).

The word "received" in this context necessarily designates the act of taking in an inserted object through an opening. That is, if the '230 patent's use of the term "receiving" were intended solely to signify the act of supporting, then in describing the act of placing screws or elongate members into holes in the receiving portion, the patent could easily have used the word "inserted" - i.e., "an aperture into which a grub screw or like member may be inserted." In view of the presumption that "claim terms are normally used consistently throughout the patent," Phillips, 415 F.3d at 1314, the '230 patent's repeated use of the word "receive" to signify the act of taking in an inserted item provides strong support for a construction of the term "receiving portion" which requires that the portion be able to take in or contain the end portion of the elongate member. Because the term "receive" "presumptively should carry the same meaning throughout the patent," Chamberlain, 516 F.3d at 1337, the use of the term to signify taking in an inserted object in claim 3 and in the specification indicates that the term "receiving portion" must be construed to permit the portion to take in or contain the end portion of the elongate member through an opening in the receiving portion.

Plaintiff's argument to the contrary is not persuasive. Plaintiff draws the Court's attention to claim 3, which is dependent upon claim 1, and which, as noted above, asserts an additional limitation in which "the receiving portion comprises a tubular shaped formation into which the end portion of an elongate portion may be received." (230 patent, col. 5, l. 2-4.) Plaintiff, relying on the principle of claim differentiation, 12 suggests that claim 3 would be rendered redundant if the receiving portion were, by definition, required to take in or contain the end portion of the elongate member.

12 See Phillips, 415 F.3d at 1314-15 ("the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim").

Plaintiff's reliance on the doctrine of claim differentiation is misplaced. The limitation added by claim 3 is that the opening into which the elongate member is received is "a tubular shaped formation." (230 patent, col. 5, l. 2-3.) This limitation is to be contrasted with other variations in the shape of the space in the receiving portion into which the elongate member is received, which is described in separate claims, as summarized in the specification:

The receiving portion may comprise a tubular shaped formation into which the end portion of an elongate member may be received. Said receiving portion may comprise a bore of circular or, for example square cross-section. The bore may be of uniform dimension along its length, or it may be formed with axially spaced ribs that extend inwards and provide bearing surface regions for contact by the end portion of the elongate member.

(Id. at col. 2, l. 1-8.) The limitation added by claim 3 - the specified "tubular shaped formation" - is not rendered redundant by a construction that requires the receiving portion to take in or contain the end portion of the elongate member; claim 3 adds specificity to the "formation" into which the elongate member is inserted (i.e., that it is "tubular shaped").

While the Court will therefore construe the term "receiving portion" to require a structure which can take in or contain the
end portion of the elongate member, Plaintiff is correct that Defendant's proposed construction improperly incorporates criteria for the locking means into the definition of the receiving portion. Claim 1 explains that the interconnection device includes "a receiving portion comprising [a] locking means . . ." ('230 patent, col. 4, l. 41-42.) "In the patent claim context the term 'comprising' is well understood to mean 'including but not limited to.'” CIAS, Inc. v. Alliance Gaming Corp., 504 F.3d 1356, 1360 (Fed. Cir. 2007) (citation omitted). While the receiving portion in this patent thus includes (but is not limited to) a locking means, if the definition of "receiving portion" inherently encompassed a locking means, then the "comprising locking means" language in claim 1 would be redundant. See Phillips, 415 F.3d at 1314 ("the claim in this case refers to 'steel baffles,' which strongly implies that the term 'baffles' does not inherently mean objects made of steel").

Based on the above considerations, the Court will adopt the following construction of the term "receiving portion": "the part of the structural interconnection device which takes in the inserted end portion of an elongate member, and which holds or supports the end portion of the elongate member."

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3228

a. "Receiving floating pulley units"

Claim 26 requires first and second floating pulley units, and "a first cable receiving said floating pulley units." According to Vectra, the meaning of the term "a first cable receiving said floating pulley units" is functionally defined in the remainder of the claim as meaning that the first cable and the floating pulley units are associated such that "a force exerted on either one of said floating pulley units or on said first exercise unit responsively tensions said first cable and is resisted by said load."

'572 patent 12:3-6. Vectra contends that "receiving" means "associated" and does not, as defendants contend, require the first cable to have direct physical contact with the two floating pulley units. According to defendants, "first cable receiving said pulley units" requires that the cable pass over, under, around or part way around at least one pulley of each of the pulley units.

Once again, defendants' strained interpretation -- in this instance, of the term "receiving" -- is unsupported by the language in the claim. Elsewhere in claim 26, more restrictive terms are used to characterize the relationship between cables and pulleys. For example, claim 26 recites "a second cable carried by said first floating pulley unit" and also "a third cable carried by said second floating pulley unit." '572 patent 12:7-10. Clearly, then, more restrictive terms are used when intended to express a particular physical relationship between a cable and a pulley. Cf., e.g., '572 patent at 7:10, 7:68-8:1, 12:54:61 (using the terms "passing over, "passing under," "passing party way around" or "looping party-way around" to express the relationship between the cable and the pulley).

Thus, the term "first cable receiving said floating pulley units" does not require that both floating pulley units be in direct physical contact with the first cable. Instead, if a force exerted on either one of the floating pulley units responsively tensions the first cable and is resisted by the load, then the floating pulley units are "received" by the cable as recited in claim 26.

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19. "Recess:" 19 No construction is needed.

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

19 '434 patent, claim 8.

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2. "Recess" or "Area Depressed"

The parties dispute the meaning of the terms "area depressed" and "recess," which refer to an area of the liner panel at or around the head of a fastener that allows the fastener which attaches the liner panel to the vertical post to be countersunk so that it is flush with the inner surface of the trailer. The parties agree that a "recess" or "area depressed" is an indentation, but they dispute whether the "recess" or "area depressed" is formed before the facer and backer are fastened to the vertical post. Plaintiff contends that the claims simply require a "recess" or "area depressed" to be present, regardless of when and how it was created, while Defendants argue that a "recess" or "area depressed" must be pre-formed.

Footnotes

2 The specific disputed terms and phrases are: "area depressed" (claims 16, 17, and 25 of '493 Patent); "deflects into said area [depressed]" (claims 16, 17, and 25 of '493 Patent); "define a recess" (claims 16, 17, and 23 of '493 Patent); "define said recess" (claim 25 of '493 Patent); "backer defines an area depressed from said inward side of said backer" (claim 16 of '493 Patent); "facer deflects into said area so that said facer and said backer define a recess" (claim 16 of '493 Patent); "defines an area depressed from said inward side of said backer" (claim 17 of '493 Patent); "define a recess at said inner surface" (claim 17 of '493 Patent); "define a recess" (claim 24 of '493 Patent); "depressed from said inward side of said backer" (claim 25 of '493 Patent); "received in said recess" (claims 16, 17, and 23 of '493 Patent); and "is received in said recess and abuts said facer" (claim 17 of '493 Patent).

End Footnotes

In the claims, the facer and backer "define a recess" and the head of the fastener "is received" in the recess. (Claims 16, 17, and 23 of '493 Patent.) Defendants argue that if the recess were not to be pre-formed, then the fastener-and not the backer and facer-would define the recess in the backer and facer. Defendants also assert that a recess cannot "receive" the head of the fastener if it were formed by the head of the fastener; rather, the recess must exist before the fastener is placed there. Plaintiff contends, however, that the recess can be formed by forcing the fastener head at the time the liner panel is attached to the post. Plaintiff further argues that the method restrictions proposed by Defendants are inappropriate.

Where the patent claims a novel product, methods of manufacture cited in the patent do not limit the product claims. See Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1375 (Fed. Cir. 2007). "However, process steps can be treated as part of a product claim if the patentee has made clear that the process steps are an essential part of the claimed invention." Id. Here, the claims do not specify that the recesses must be pre-formed. The specification states that the recesses may be formed by a variety of methods, including "crushing, cutting, milling, drilling or sanding" the backer or backer and facer together so that the liner's thickness at the recess is reduced. ('493 Patent, col. 8:37-46.) The Court agrees with Plaintiff that at least one proposed method-crushing-does not require the recess or area depressed to be pre-formed; the fastener itself could create a recess during the fastening process. The Court further concludes that the patent does not require a specific method, essential to the claimed invention, of creating the recess. Accordingly, the Court construes the terms "recess" and "area depressed" to mean "indentation."

Unilin asserts that Alloc is proposing a construction that would limit the scope of the term "recess" to only that part of the
recess that "performs a locking function" and has incorrectly transposed the structural requirements of the "recess" and the "locking element." (Unilin Reply Claim Constr. Br. ("Unilin Reply Br." ) 7.) Alloc counters that Unilin seems to suggest that the italicized phrase in claim 10 of the '836 patent modifies the term "lip" rather than the term "recess"; that is, "wherein said locking elements comprise a recess located in a lower lip extending at least to a side edge and defining at least in part a lower side of said groove and a protrusion provided at a lower side of said tongue." (Alloc Reply Mem. 7-8.) But, Alloc states that it is clear from the claim language that the italicized language describes the recess, not the lip. Id.

The parties' arguments focus, in part, on the language of claim 10 of the '836 patent which states "wherein said locking elements comprise a recess located in a lower lip extending at least to a side edge and defining at least in part a lower side of said groove." (836 patent, 17:42-44)(emphasis added.) Claims containing the transitional phrase "comprising" or "comprises" create an open-ended claim. 10 See Scanner Techs. Corp. v. ICOS Vision Systems Corp., N. V., 365 F.3d 1299, 1304 (Fed. Cir. 2004)(construction of "comprises an illumination apparatus"). Claim 10 indicates that a "recess" is part of the locking element. Thus, there is no need to include reference to the locking element in the definition of recess. See Scanner Techs. Corp. v. ICOS Vision Systems Corp., N.V., 365 F.3d 1299, 1304 (Fed. Cir. 2004)(construction of "comprises an illumination apparatus"). Claim 10 indicates that a "recess" is part of the locking element. Thus, there is no need to include reference to the locking element in the definition of recess.

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10 An example of an open-ended claim is found in Gillette Co. v. Energizer Holdings, Inc., 405 F.3d 1367, 1371 (Fed. Cir. 2005)(holding that a claim directed to a razor "comprising . . . a group of first, second, and third blades" did not exclude a razor having four blades, noting that the "word 'comprising' transitioning from the preamble to the body signals that the entire claim is presumptively open-ended. . . . The addition of elements not recited in the claim cannot defeat infringement").

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The term "recess" is used in claims of the '486 patent and '836 patent claims other than claim 10. Claim terms are normally used consistently throughout a patent. See Phillips, 415 F.3d at 1314. As with claim 10, the other words of the specific claims give further context to the term "recess." See id.

The specification states: "As represented in Figs. 5 to 7, the locking element 33 preferably consists of a protrusion of the lower side 35 of the tongue 31 which can be located in a recess 36 in a lower lip 43 extending distally from the lower wall 37 of the groove. The locking element 34 is formed by the upward directed part or protrusion which defines the distally outer end of the recess 36." ('486 patent, 6:54-56.) The specification shows that as long as a portion of an indentation or hollow is part of the locking element or performs a locking function, then the entire indentation or hollow is within the scope of the claim term "recess."

Unilin's suggested definition of "recess" is consistent with its ordinary definition. (Jt. App. Ex. 6 (American Heritage Dictionary (4th ed. 2000)) 1459.) Moreover, it is in agreement with the use of "recess" throughout the patent claims. Therefore, the Court interprets "recess" as meaning "an indentation or small hollow." Therefore, the Court interprets "recess" as meaning "an indentation or small hollow."

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E. "THE HANDLE PORTION HAVING A RECESS"

Another term in claim 1 that is at issue is "the handle portion having a recess," although the real dispute with this claim term is only with respect to the term "recess." Plaintiff argues that "the handle portion having a recess" should be construed to mean "the handle portion having an indentation." Plaintiff asserts that its proposed construction is based on the ordinary meaning of the claim term, in conjunction with the drawings included in the patent specification. Defendants argue that the claim term should be construed to mean "the handle portion having a space." They also argue that their proposed construction is based on the ordinary meaning of the claim term, and that it is consistent with inventor testimony.

Both Parties have given the term "recess" what they assert is its "ordinary and customary meaning." Phillips, 415 F.3d at
1312 (internal quotations omitted). The Court agrees that this is a term that has a readily apparent meaning and, therefore, that further examination of intrinsic and extrinsic evidence is not necessary. While either definition would be appropriate, the Court has concluded that Plaintiff's proposed construction is more helpful than Defendants' proposal. Accordingly, the Court will construe "the handle portion having a recess" to mean "the handle portion having an indentation."

B. "Locking Recess"

"Locking recess" is the next disputed term in claim 1. This term appears in the first element of claim 1 as follows: "said tie wings having a locking recess in their labial faces." See '715 patent, Col. 16, ll. 57-58 (emphasis added). Plaintiff proposes that the term be construed as follows: "an indentation or small hollow that permits engagement by the locking body." Pl.'s Ex. 3 at 5. Defendants' proposed construction of this term is:

A definite and pronounced structure, consisting of an indentation or depression whose purpose is to complete locking the structure in place in a corresponding structure when in the closed position. The indentation that comprises the locking recess must be a structure separate and independent from the archwire slot.

Id. at 6.

Claim Construction of "Locking Recess"

The term "locking recess" is discussed in the prosecution history and the prior art cited by the Patent Examiner during prosecution of the patent. The Examiner identified U.S. Patent No. 4,492,573 to Hanson (Pl.'s Ex. 7) as including locking recesses in the labial faces of the tie wings and rejected certain proposed prosecution claims based on Hanson. See Pl.'s Ex. 8 at 3, Office Action dated Feb. 2, 1994. The features of the Hanson reference identified by the Patent Examiner are two small indentations in the labial face of the bracket (items 60 and 64) in Figs. 1 and 2 of Hanson. Id. Figures 1 and 2 of the Hanson patent show how the free end (item 58) of the retainer member (item 48) comes together with and fits into (engages) one of the locking recesses (item 60) when in closed position. See Ex. 7, Col. 3, l. 64 - Col. 4, l. 57.

OrthoArm's proposed construction is also supported by the common dictionary definition of the word "recess," which is "an indentation or small hollow" or a "receding part or space." See Pl.'s Ex. 4 at 1033, American Heritage Dictionary; Pl.'s Ex. 5 at 1102, Random House College Dictionary. Persons of ordinary skill in the art understand the term "locking recess" to mean a recess -- i.e., an indentation or small hollow -- that permits engagement by the locking body. See Voudouris Decl. at PP 13-14; Jerrold Decl. at PP 17-20.

Defendants ask the Court to construe the term "locking recess" as "a definite and pronounced structure, consisting of an indentation or depression whose purpose is to complete locking the structure in place in a corresponding structure when in the closed position. The indentation that comprises the locking recess must be a structure separate and independent from the archwire slot." See Pl.'s Ex. 3 at 7. The Court cannot accept this proposal.

As defined in the dictionary cited by Defendants, a "recess" is "any small depression or indentation." See id. at 7 (emphasis added). Yet, Defendants propose that the term be defined (contrary to its own dictionary definition) to require a "definite and pronounced" depression or indentation, rather than "any" depression or indentation. Defendants also attempt to add the limitation that the locking recess is a "structure separate and independent from the archwire slot." This creates a redundancy in the claim language because it is clear from the claim itself that locking recess and slot are different features. The additional limitations inserted by Defendants unnecessarily complicate the plain and ordinary meaning of the term "locking recess."

As support for this construction, at page 19 of their Memorandum, Defendants refer to one specific example of a "locking recess" disclosed in the specification, wherein a "combination of opposing notches 44 on each set of occlusal and gingival tie wings defines a locking recess 48, as best illustrated in Fig. 7. Each notch 44 on each of the four tie wings includes an upstanding wall 50 and a shoulder 52." Col. 5, ll. 31-34. This exemplar structure, however, is specifically claimed in dependent claim 2, which provides: "The edgewise orthodontic bracket defined in claim 1, wherein said locking recess
consists of opposing notches in the occlusal and gingival tie wings, each said notch having an upstanding portion and a shoulder portion." Col. 17, ll. 9-12. Construing claim 1 as limited to the structure described in connection with this embodiment would violate the claim differentiation doctrine.

Footnotes

1 Under the claim differentiation doctrine, each claim in a patent is presumptively different in scope. See SunRace, 336 F.3d at 1302-03. "This presumption is especially strong where there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims." Ecolab, Inc. v. Paraclipse, Inc., 285 F.3d 1362, 1375 (Fed. Cir. 2002) (internal quotation omitted).

Defendants' proposal does not comport with the plain and ordinary meaning of the disputed term, nor does it comply with the principles of claim construction. Defendants' attempt to limit the scope of the claim language to the structures disclosed in the specification is at odds with the case law cited by both Plaintiff and Defendants. In particular, the Court notes that Dayco Products, Inc. v. Total Containment, Inc., 258 F.3d 1317 (Fed. Cir. 2001), cited at pages 5-6 of Defendants' Memo, involved a case where an accused infringer offered claim constructions that were unduly limiting and inconsistent with the plain meaning of the terms and phases of the patent and the prosecution history. The District Court adopted those constructions and granted the accused infringer's motion for summary judgment of noninfringement. Id. at 1324-25. The Federal Circuit reversed that judgment because the District Court's claim constructions "erroneously read an additional limitation into the claim language," and construed the disputed terms "contrary to the plain meaning of the limitation." Id. at 1325. In defense of the District Court's proposed construction, the accused infringer invited the Federal Circuit to "embark on a speculative and convoluted reading of the claim language, the specification, and the prosecution history." Id. at 1324. The Federal Circuit declined to do so. Id. at 1325. This Court must follow the Federal Circuit's lead and decline Defendants' invitation to adopt a construction of the disputed terms and phrases that is unduly limiting and at odds with the plain and ordinary meaning of the claim language, the specification, the prosecution history, and the extrinsic evidence of record.

Accordingly, for all the foregoing reasons, the Court construes the term "locking recess" as "an indentation or small hollow that permits engagement by the locking body."
cutting edge surface.

We are not, however, prepared to give Izumi the broad interpretation that it currently seeks. The specification states that an objective of the disclosed invention is "to provide an electric razor which assures that the shaving debris and other substances do not easily adhere to the cutter blades of the inner cutter." '749 patent, col. 2, ll. 25-28. The invention accomplishes this objective by cutting out the rear portion of the cutting edge surface. Id., col. 2, ll. 40-44. The specification further teaches that inner cutter blades having a recess with a cutout angle \( \theta \) of greater than 90 degrees between the rear side surface of the inner cutter blade surface and the cutting edge surface, as seen in the prior art electric rotary razors, will not prevent shaving debris adhesion. Id., col. 5, ll. 9-13. In disclosing that the cutout angle \( \theta \) must be 90 degrees or less, the specification is not describing an embodiment of the disclosed invention, but rather defining a critical aspect of the invention itself. We therefore construe the claim term "recess," as used in both claims 1 and 3, to be a cutout having an angle \( \theta \) of 90 degrees or less between the rear side surface of the inner cutter blade and the cutting edge surface.

Furthermore, we reject Izumi's attempt to construe the limitation "recess formed below," as used in claim 3, more broadly than the limitation "recess … formed immediately beneath," as used in claim 1. As we construe it, the claim term "recess" has a cutout angle \( \theta \) between the rear side surface of the inner cutter blade and the cutting edge surface. But there can be no cutout angle \( \theta \) if the "recess" is not immediately below the cutting edge surface. Indeed, an intervening section of the inner cutter blade would preclude the existence of an angle between the rear side surface portion of the cutout and the cutting edge surface. Thus, the "recess," as that term is used in claim 3, must be immediately below the cutting edge surface. Moreover, Izumi's proposed construction of "recess formed below" would be contrary to a stated objective of the invention, viz., to minimize the contact pressure between the surfaces of the inner and outer cutter blades by reducing the thickness of the cutting edge surface of the inner cutter blade. Id., col. 2, ll. 19-24. Under Izumi's construction, the cutting edge surface of the inner cutter blade would not necessarily have a reduced thickness.

Next, we address the district court's construction requiring the recess to be "orientated in a horizontal direction, parallel to the cutting edge surface." We agree with Izumi that the patent specification does not support this claim construction. As we have construed them here, the claims require only a recess having a cutout angle \( \theta \) of 90 degrees or less. A semi-cylindrical recess having a cutout angle \( \theta \) of 90 degrees or less would not be "orientated in a horizontal direction, parallel to the cutting edge surface." We agree with Izumi that the patent specification does not support this claim construction. As we have construed them here, the claims require only a recess having a cutout angle \( \theta \) of 90 degrees or less. A semi-cylindrical recess having a cutout angle \( \theta \) of 90 degrees or less would not be "orientated in a horizontal direction, parallel to the cutting edge surface." But would otherwise appear to fall within the scope of the claim term "recess," as we have defined it. Thus, we conclude that the district court erred in requiring the recess to be "orientated in a horizontal direction, parallel to the cutting edge surface."

18. A Recess Located in a Lower Lip Extending to a Side Edge and Defining At Least in Part a Lower Side of Said Groove

The parties disagree on the meaning of "a recess located in a lower lip extending to a side edge and defining at least in part a lower side of said groove" in claim 10 of the '836 patent. Alloc states that "a recess located in a lower lip extending to a side edge and defining at least in part a lower side of said groove" means that "the recess must extend at least to a side edge and must define a part of the lower side of the groove." (Alloc Resp. Mem. 17-18.) Unilin maintains that "a recess located in a lower lip extending to a side edge and defining at least in part a lower side of said groove" means "it is the lower lip that must extend to a side edge and define at least in part a lower side of the groove." (Unilin Reply Br. 7-8.)

Claim 10 of the '836 patent reads:

[W]herein said locking elements comprise a recess located in a lower lip extending at least to a side edge and defining at least in part a lower side of said groove; and a protrusion provided at a lower side of said tongue;

wherein the-[sic]panels at the side edge comprising the groove, of at least one of the side edge of both pairs of the side edges, include an upper lip above the groove, said upper lip defining at least in part an upper side of said groove, and said upper lip terminating at a distal outer end, wherein said lower lip extends distally beyond the distal outer end of the upper lip, and further wherein the recess is located in the lower lip in an area of the lower lip that is located at least partly beyond the distal outer end of the upper lip.
While Alloc suggests that the language in bold type modifies the term "recess," the language "extending at least to a side edge and defining at least in part a lower side of said groove" is more properly read as modifying the more proximate term "lip." Such construction is consistent with the remainder of the claim which recites analogously that the upper lip above the groove "defines at least in part an upper side of said groove." ('836 patent, 17:48-50.) This construction is reinforced by reference to the final phrase of claim 10, which states "and further wherein the recess is located in the lower lip in an area of the lower lip that is located at least partly beyond the distal outer end of the upper lip." ('836 patent 17:52-55.)

Specification figures 22 through 25 of the '836 patent also support the Court's construction of the phrase. Those figures (see infra at 70-71) demonstrate that the lower lip 43 extends at least to a side edge. Therefore, "a recess located in a lower lip extending to a side edge and defining at least in part a lower side of said groove" means "it is the lower lip that must extend to a side edge and define at least in part a lower side of the groove."

4. "recessed underportion"

This claim term appears in the '068 patent in claim 15 (it does not appear in the '726 patent). The portion of claim 15 describing the burner body states:

the lower portion of the burner body having a substantially flat undersurface portion extending away from the spacer generally parallel to the base of the burner pan, the lower portion having a recessed underportion spaced apart from the burner pan's base and recessed from the burner body's flat undersurface portion, the recessed underportion defining a portion of the gas distribution chamber . . . .

(The '068 patent, 12:51-59 (emphasis added)).

Travis proposes that the term be construed to mean "a portion of the underside of the burner body that is recessed." Hearth proposes that it be construed to mean "a channel in the lower portion of the burner body's flat undersurface portion that receives a spacer." As these two proposals reflect, the parties dispute centers on whether "recessed underportion" refers to the gas distribution chamber formed by a hollowed out area on the underside of the burner body (Travis' position), or the channels that are on the perimeter of the gas distribution chamber and that are recessed into the undersurface than the burner body, which the spacers fit into (Hearth's position). Based on the intrinsic evidence, the Court agrees with Travis and construes "recessed underportion" to mean "a portion of the underside of the burner body that is recessed."

The ordinary and plain meaning of this claim term supports the Court's construction. "Recess" is defined as "an indentation or small hollow." (Rossman Decl., Ex. D (The American Heritage Dictionary, 3d ed. 2000)).

The term "recessed underportion" does not appear anywhere in the specification. In some of the figures (see figures 6, 15, and 16), there is an H-shaped hollowed out area on the underside of the burner body. This area is described as an "interior chamber." (See the '068 patent, 4:9-11; 4:39-40; 7:1-3). In other figures (see figures 18 and 20), the burner pan has a perimeter fence near the edges of the burner pan, as well as internal fences dividing the area into various sub-areas. The burner body has "channels," sometimes called "shallow channels" or "fence channels," into which these fences are inserted when the burner body is placed on top of the burner pan. (See Id., 9:19-35; 10:3-28; 10:37-39; 10:48-50). Hearth maintains that "recessed underportion" is only these channels and does not include the H-shaped hollowed-out area. In contrast, Travis maintains that "recessed underportion" can be either the H-shaped hollowed-out area or the channels into which the spacers fit.

While the specification language describing the H-shaped hollowed area in figures 6, 15, and 16 does not use the term recessed underportion to describe it, likewise, the specification language describing the channel into which the spacer or fence fits in figures 18 and 20 does not use the term recessed underportion to describe it. Therefore, it is illogical to argue that, based on the specification language alone, this term can apply to only one but not the other.
The prosecution history does not compel a contrary construction. During prosecution of the '068 patent, Travis added the term "recessed underportion" to claim 15 after the provisional application was rejected as anticipated by prior art, including the Shimek '743 patent. (Ex. 4 at 102). The Shimek '743 patent included a figure representing an "H-shaped area recessed into the ceramic fiber top," which is similar to the burner body in Travis' invention, and which "provides . . . [a] hollow manifold [an area enclosed by the bottom and top to hold the gas-air mixture]." (Ex. K, figure 9, 4:61-64; see also 2:59-61). The remarks accompanying Travis' amended claim 15 stated that:

Shimek '743 does not teach each and every feature of claim 16 [later changed to 15] as amended. . . . Shimek '743 is also silent in connection with a lower portion of a burner body having a substantially flat undersurface portion substantially parallel to the base of the burner pan and having a recessed underportion spaced apart from the burner pan's base and recessed from the burner body's flat undersurface portion to define a portion of a gas distribution chamber.

(Ex. 4 at 98 (emphasis added)). In this remark, Travis did not state that Shimek '743 lacked a recessed underportion; rather, Travis remarked that Shimek lacked the combination of a substantially flat surface with a recessed underportion.

2) "reciprocating"

Plaintiff proposes that "reciprocating" be defined as "to and fro movement." Defendant proposes the definition "back and forth motion in a straight line."


Defendant argues that when "reciprocating" is construed in the context of the entire patent specification, it is limited to purely linear motion. The '166 patent abstract states "an engine counterbalancing system [with] a counterbalance weight that reciprocates in a linear manner in opposition to piston movement." (Emphasis added) Moreover, the written description reads:

An engine balancing system is disclosed in which the counterbalance weight moves in a linear manner in opposition to the reciprocating piston . . . An advantage of this present invention is that the counterbalance weight moves in a linear manner in opposition to the linear motion of the reciprocating piston, for improved balancing.

'166 patent, col. 1, Ins. 43-45 (emphasis added).

Plaintiff contends that its construction best captures the meaning that "one skilled in the art" would attribute to "reciprocating." In support of its broader reading of the term, plaintiff cites Virginia Panel Corp. v. Mac Panel Co., 133 F.3d 860 (Fed. Cir. 1997), in which the court construed the meaning of "reciprocating" in the context of a mechanism for engaging a test adapter and receiver. In that case, the defendant argued that the term "reciprocating" should be limited to linear motion because (1) the "reciprocating" slide plates shown in the preferred embodiments moved only in a line and (2) because the patent's written description referred twice to the motion of the slide plates as linear. Id. at 866. The court held:

Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning. That ordinary meaning was established at trial; the uncontroverted evidence, including a recognized treatise, indicated that those skilled in the mechanical arts would have understood "reciprocating" to mean motion in which "a point traverses the same path and reverses its motion at the ends of such a path."

Id.

The role of claim construction in infringement analysis is not to limit or to broaden patent claims, but rather to define the
invention that has been patented. Netword, LLC v. Centraal Corp., 242 F.3d 1347, 1352 (Fed. Cir. 2001). Claims are always construed in light of the specifications of which they are a part. Id. However, where a specification does not require a limitation, that limitation should not be read from the specification into the claims. Specialty Composites v. Cabot Corp., 845 F.2d 981 (Fed. Cir. 1988). In this case, the patent specification describes the motion of the counterbalance weight as movement "in a linear manner." The description distinguishes the motion of the 166 counterbalance weight from prior "rotating" counterbalance weights but it does not require that the counterbalance weight move in a perfectly straight line in all possible embodiments. The phrase "in a linear manner" (instead of "in a straight line") leaves room for the possibility of a counterbalance weight that reciprocates along a less than a perfectly straight path.

Moreover, plaintiff argues that the term "reciprocating," cannot be limited to purely linear reciprocation as used in independent claim 1 because if it did dependent claim 12 would be rendered meaningless. (Claim 12 claims "the system of claim 1, wherein said counterbalance weight moves linearly in opposition to piston reciprocation." (Emphasis added)). Under the doctrine of claim differentiation, it is presumed that different claim will have different scopes. E.g., Phillips, 415 F.3d at 1315 ("the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim"). The presumption is especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim and one party is urging that the limitation in the dependent claim should be read into the independent claim, as defendant does here. Sunrace Roots Enterprise Co., Ltd. v. SRAM Corp., 336 F.3d 1298, 1303 (Fed. Cir. 2003).

Defendant suggests that the claims can be distinguished on the ground that claim 12 requires the counterbalance weight to move "in opposition to piston reciprocation," whereas claim 1 requires merely that the counterbalance weight reciprocate "in response to the rotation of the crankshaft." The suggestion is unpersuasive because it depends upon a presumption that the limitations "moves linearly" and "reciprocating" have the same meaning. Such a presumption is unwarranted when the patentee has chosen to use different claim terms, raising the presumption that the terms are intended to reflect differences in the scope of the claims. Forest Labs, Inc. v. Abbott Labs, 239 F.3d 1305, 1310 (Fed. Cir. 2001). Because the plain language of the claim is consistent with the meaning plaintiff proposes and because defendant has not provided evidence sufficient to overcome the presumption in favor of differentiating between the meaning of claim 1 and claim 12, I will construe reciprocating to mean back and forth motion.

2. Means adapted for reciprocating the substrate carrier past the work stations a plurality of times

AVL contends that "reciprocating" means to move back and forth and that because the substrate carrier in the ARx10 rotates in a circle it does not infringe the '095 patent. AVL points to language in the specification that describes coating a substrate by moving it past the processing stations and from there "it is returned in the opposite direction . . . . The forward and reverse transport cycle is repeated until the desired oxide thickness of metal has been built up on the substrate." '095 Patent at col. 17, lines 4-5, 10-12.

OCLI protests that this description is taken from one particular embodiment of the invention and should not be read to limit the claim, nor can the dependent claim describing that embodiment be used to limit the independent claim at issue.

OCLI is quite right that the language AVL relies on is a description of an "in-line transitional system" that is distinguished from the rotary system depicted in the rest of the specification. In the rotary system, the workpiece carrier is cylindrical and moves "rotatably." Claim 25, '095 Patent at col. 24, lines 62-64. The in-line system, in contrast, utilizes a flat workpiece carrier whose movement is linear. Claim 26, '095 Patent at col. 25, lines 1-3. Both the rotary system and the in-line system--described in the specification and disclosed in dependent claims 25 and 26 respectively--are particular embodiments of the system disclosed in claim 24. Such limitations, as they exist in the specification, should not be read into claims. Sjolund v. Musland, 845 F.2d 1573, 1582 (Fed. Cir. 1988). Nor should explicit limitations in one claim be introduced into another. Caterpillar Tractor Co. v. Berco, S.P.A., 714 F.2d 1110, 1116 (Fed. Cir. 1983). Accordingly, as "reciprocating" can mean either moving back and forth or just simply returning, and as the embodiments described in the specification and claims contemplate both linear and rotary workpiece carriers, this court construes the term to be broad enough to include carriers that move in a circular rotation.
Applying these principles, we hold that the claim term "reciprocating member," as used in the asserted patents, encompasses the multi-component, curved structure used by the accused exercise machines. The parties agreed before the district court that "reciprocating" simply means to move back and forth, and we accept that definition on appeal. More important, "member," as defined by common and technical dictionaries, refers to a "structural unit such as a . . . beam or tie, or a combination of these," see McGraw-Hill Dictionary of Scientific and Technical Terms 1237 (5th ed. 1994), or to a "distinct part of a whole," see American Heritage Dictionary 849 (3d ed. 1996). Based on these definitions, we agree with CCS Fitness that the term "member" denotes a beam-like structure that is "a single unit in a larger whole." It is not limited to a straight-bar structure comprising a single component only.

In addition, Life Fitness has not shown that anything in the specification or prosecution history overcomes the "heavy presumption" that "member" carries its ordinary meaning. The specification never requires a certain number of components or certain shape; nor does it limit the "member" in either regard. Contrary to the district court's analysis, moreover, the specifications did not need to include a drawing of a multi-component, curved member for the claimed invention to cover that particular embodiment. The drawings merely illustrated a particular embodiment of the claimed member and the specifications did not clearly assign a unique definition to "member," distinguish "member" based on the prior art, disclaim subject matter or describe a single-component, straight-bar "member" as important to the invention.

Nor does the prosecution history contain any clear statements that would narrow the ordinary meaning of the claimed "member." Indeed, Life Fitness itself characterizes the statements in the prosecution history as posing a mere "inconsistency" with the ordinary meaning of "member," not as assertions that, e.g., clearly disclaimed subject matter. In any event, having reviewed the statements identified by Life Fitness, we see nothing that bears on the shape or the number of components comprised by the term "member." We see only a terse mention of the "angle" that a "foot platform" takes "relative to a reciprocating member" and the members' wheels and attachment to the crankshaft.

Life Fitness also relies on expert testimony, but this testimony does not establish the assertion that "member" lacks clear meaning. First, we can resolve the ordinary meaning of the claimed "member" by resort to the intrinsic evidence and dictionary definitions only. Thus, we do not need to examine expert testimony. Even doing so, however, we do not view this expert testimony as particularly helpful, since the inventor himself, presumably also an artisan of ordinary skill in the art, offered testimony that essentially contradicts the expert's assertion that "member" lacks an ordinary meaning. In other words, the battle between Life Fitness' expert testimony and CCS Fitness' inventor testimony is inconclusive. Unsurprisingly, the district court's infringement analysis did not rely on the testimony of either the expert witness or the inventor in reaching its claims construction conclusions. Neither do we.

Scimed Life Systems does not compel a different conclusion. See 242 F.3d at 1342-44, 58 USPQ2d at 1064-65. In that case, we determined that the claim term "lumen," as used in three patents covering a type of catheter, meant a "coaxial lumen" only. 242 F.3d at 1342, 58 USPQ2d at 1064. The specification distinguished the claimed invention from the prior art based on that art's use of "dual lumens" and pointed out the advantages of coaxial lumens. 242 F.3d at 1343, 58 USPQ2d at 1064. It also described "the present invention" as using a coaxial lumen, and it stated that "all embodiments of the present invention" use coaxial lumens. 242 F.3d at 1343-44, 58 USPQ2d at 1064-65. We therefore determined that a catheter employing coaxial lumens was the invention. 242 F.3d at 1345, 58 USPQ2d at 1066.

Here, on the other hand, nothing in the specifications distinguishes the claimed "member" from prior art based on its shape or number of components. And the specifications do not even imply that "all embodiments" of the claimed exercise machine must use a single-component, straight-bar member or else tout the advantages of using that particular structure. In short, Life Fitness cannot use the intrinsic evidence's silence to narrow the ordinary meaning of an unambiguous claim term. See, e.g., Johnson Worldwide, 175 F.3d at 992, 50 USPQ2d at 1612 ("Mere inferences drawn from the description of an embodiment of the invention cannot serve to limit claim terms."); Kegel, 127 F.3d at 1427, 44 USPQ2d at 1127 ("Without an express intent to impart a novel meaning to a claim term, the term takes on its ordinary meaning."); see also Wang Labs, 197 F.3d at 1384, 53 USPQ2d at 1165-66 (limiting term "frame" to the character-based system in the specification when (among other things) the prosecution history distinguished the claimed invention from prior art based on that system).
In Toro Company, also relied on by Life Fitness, we limited a claim term -- "said cover including means for increasing pressure" -- to the structure shown in the patent's specifications and drawings. 199 F.3d at 1300-01, 53 USPQ2d at 1069. We did so because dictionary definitions of "cover" and "including" did not "shed dispositive light" on the scope of that claim limitation, 199 F.3d at 1300, 53 USPQ2d at 1069, and the specification described the particular structure at issue, a ring physically attached to the cover, as "important to the invention." 199 F.3d at 1301, 53 USPQ2d at 1069. But this precedent does not rescue Life Fitness' argument, for unlike the intrinsic evidence in Toro, nothing in the intrinsic evidence here describes a single-component, straight-bar "member" as important to the invention. See id.; see also Watts, 232 F.3d at 882-83, 56 USPQ2d at 1840-41 (limiting claim term "sealingly connected" to the "misaligned taper angles" disclosed in the specification when the claim term was "not clear on its face" and the prosecution history showed that the patentee had distinguished the claimed invention from prior art based on the "misaligned taper angles"); Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp., 93 F.3d 1572, 1579, 1581, 40 USPQ2d 1019, 1024, 1026 (Fed. Cir. 1996) (limiting term "pusher assembly" to the structures stated in the claims themselves and shown in the drawings when the claim term itself did not define the makeup of the "assembly" and the specification provided only "minimal guidance" about the term's scope).

Life Fitness' mild attempt to make the claimed "reciprocating member" a means-plus-function clause fares no better. A claim using that format will cover only the corresponding step or structure disclosed in the written description, as well as that step or structure's equivalents. 35 U.S.C. § 112 P 6; Watts, 232 F.3d at 881, 56 USPQ2d at 1838; Personalized Media Communications, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 703, 48 USPQ2d 1880, 1886 (Fed. Cir. 1998). A claim limitation that actually uses the word "means" will invoke a rebuttable presumption that § 112 P 6 applies. Personalized Media Communications, 161 F.3d at 703-04, 48 USPQ2d at 1887. By contrast, a claim term that does not use "means" will trigger the rebuttable presumption that § 112 P 6 does not apply. 161 F.3d at 704, 48 USPQ2d at 1887; Watts, 232 F.3d at 880, 56 USPQ2d at 1838. In this case, the claims at issue do not phrase the "reciprocating member" limitation in means-plus-function language, thereby triggering the rebuttable presumption that § 112 P 6 does not govern.

Still, Life Fitness can rebut this presumption if it demonstrates that the claim term fails to "recite sufficiently definite structure" or else recites a "function without reciting sufficient structure for performing that function." Watts, 232 F.3d at 880, 56 USPQ2d at 1838. To help determine whether a claim term recites sufficient structure, we examine whether it has an understood meaning in the art. 232 F.3d at 880-81, 56 USPQ2d at 1838.

Here, we conclude that Life Fitness cannot rebut the presumption that "reciprocating member" is not restricted by § 112 P 6 and thus covers more than the single-component, straight-bar structures (and their equivalents) shown in the patents' drawings. For one thing, Life Fitness itself has offered nearly no analysis in this regard, i.e., has done nothing to try to overcome the presumption. Moreover, as set forth above, the dictionary definitions of "member" show that an artisan of ordinary skill would understand this term to have an ordinary meaning and to connote beam-like structures. See Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583, 39 USPQ2d 1783, 1786 (Fed. Cir. 1996) ("'Detent' . . . is just such a term. Dictionary definitions make clear that the noun 'detent' denotes a type of device with a generally understood meaning in the mechanical arts, even though the definitions are expressed in functional terms."); Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531, 41 USPQ2d 1001, 1006 (Fed. Cir. 1996) (using dictionary definition of "perforation" to discern whether one of ordinary skill would understand this term to connote structure).

Further, in addition to the structure suggested by these dictionary definitions (e.g., a "structural unit such as a . . . beam or tie, or a combination of these"), the claims themselves describe the "member" as having a "rear support and a front end" with one end of this structure circulating around a crankshaft and the other having wheels so that it can "rollably engage the base portion" of the claimed invention. This suffices for purposes of § 112 P 6 and the presumption thereto, since a term need not connote a precise physical structure in order to avoid the ambit of that provision. E.g., Personalized Media Communications, 161 F.3d at 705, 48 USPQ2d at 1888.

Because the claim term "reciprocating member" encompasses a multi-component, curved structure, and because the parties do not dispute the structure of the accused device, we must reverse the district court's summary judgment determinations of no literal infringement and no infringement by equivalents.

- 3812 -
E. "reciprocating path of travel"

Precor argues that this claim should be construed exactly as the patentee defined it in the patent: "any back and forth path of travel which is repetitively traversed by the end of the foot link and includes a generally linear path of travel as is provided by the flat track 28, 32 of the Figure 1 embodiment as well as curved paths provided by other embodiments shown here in." Col. 3, lines 20-26. Fitness Quest argues for a more straightforward version: "Any back and forth path of travel which is repetitively traversed." Fitness Quest here is in the unusual position of arguing that the longer version might be misinterpreted by the jury as limiting. Precor argues against Fitness Quest's version because it fails to make explicit that the reciprocating path could be straight or curved. Because the Court has included reference to curved or straight paths in the previous claim construction, the longer, more explicit version proposed by Precor is unnecessary. Fitness Quest's shorter, clearer proposed construction will be used.

Contrary to MAC's arguments, the claims of the '005 patent do not indicate that the "slide plates" must move linearly. Rather, the claim phrases "adjacent to the fixed hanger plates" and "spaced profiled cam slots including entrance portions parallel to straight slots" refer only to the stationary position of the slide plates relative to the hanger plates, not to the paths traversed by the slide plates. Also, while the claim phrase "in unison relative to the fixed hanger plates" refers to the slide plates' motion, it does so without specifying whether that motion is linear or along a curved path.

Similarly, the other intrinsic evidence relied on by MAC does not indicate that the claimed "slide plates" must move linearly. The portions of the specification on which MAC relies, col. 3, lines 29-32, and col. 1, lines 44-46, do not even include the word "reciprocating." These passages only state that the dry lube bearings and their pads are useful in reducing friction when and if the slide plates move linearly; they do not require the slide plates to move linearly. MAC's reliance on the absence of a drawing describing the non-linear motion of a slide plate is similarly unsound, for it is well-settled that device claims are not limited to devices which operate precisely as the embodiments described in detail in the patent. See SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1121, 227 U.S.P.Q. (BNA) 577, 585 (Fed. Cir. 1985). Additionally, we note that MAC does not rely on any language in the prosecution history to support its argument that the "reciprocating" motion of the slide plates must be purely linear.

Thus, the intrinsic evidence does not require that the word "reciprocating" be interpreted differently from its ordinary meaning. See York Prods., Inc. v. Central Tractor Farm & Family Cent., 99 F.3d 1568, 1572, 40 U.S.P.Q.2D (BNA) 1619, 1622 (Fed. Cir. 1996) ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning."). That ordinary meaning was established at trial; the uncontested evidence, including a recognized treatise, indicated that those skilled in the mechanical arts would have understood "reciprocating" to mean motion in which "a point traverses the same path and reverses its motion at the ends of such a path." Accordingly, because neither the '005 patent nor its prosecution history uses or implies a special definition for "reciprocating," the language "reciprocating slide plates" is not limited to plates that exhibit only linear motion, as opposed to the broader, ordinary meaning of that phrase. Thus, the disputed term literally encompasses rotating motion, such as that exhibited by the MAC mechanism.
Since the jury necessarily adopted the correct meaning of this claim language, we will not disturb the judgment of infringement. We thus affirm the judgment that the '005 patent was infringed.

2. "recirculation pipe"

The main point of contention between the parties on the construction of "recirculation pipe" is whether one end of the pipe must be submerged under wastewater effluent. Cecil's argues that it must be (Dkt. No. 22 at 38-45), while Chaffin posits that this is too narrow a reading, and puts forth a construction whereby the recirculation pipe is merely somewhere within the storage mixing tank. Dkt. No. 21 at 7-8.

This argument turns on the distinction between reading the claims of the patent in light of the specification, which the Court must do, and limiting the claims to the specification, which the Court must not do. See Phillips, 415 F.3d at 1317, 1323. In light of the admonition that it is the words of the claim that must be construed, the Court believes that Cecil's' construction is too narrow, importing limitations that do not belong to the claim. While the device may well be less efficient if the pipe is not submerged because the recirculation will not create the level of turbulence desired, this only means that the preferred embodiment contains a submerged recirculation pipe. The claims themselves betray no hint that the recirculation pipe must be submerged.

The construction put forth by Cecil's does, however, contain an element of specificity that the Court finds necessary. While Chaffin proposes the construction "a tubular fluid pathway for returning a fluid to a starting point," the Court believes that a variation of Cecil's proposed phrase, "having at least a section downstream from the venturi," is required for a proper construction of the term.

Thus, the Court construes "recirculation pipe" as follows: "a tubular fluid pathway for returning a fluid to a starting point, with at least a portion of that pathway being downstream from the venturi."

2. Rectangular

Plaintiff proposes defining "rectangular" as "having parallel, opposing edges disposed at right angles to one another." Tr. at 10. Defendants propose, in one document, that a "rectangle" be defined as "a four sided figure with opposite sides parallel and adjoining sides intersecting at right angles, the area of which equals the product of its length times its width." Def. Proposed Order on Claim Construction (DE # 47-2). In another document, Defendants suggest the proper construction to be "shaped like a rectangle, a parallelogram, a quadrilateral with opposite sides parallel," Def. Claim Construction Chart (DE # 38). There was no significant debate on this term during the Markman hearing.

This Court will construe the term "rectangular" to mean having four sides, with opposite sides parallel, and four right angles.
Both plaintiff and defendants have submitted briefs requesting that this court, pursuant to Markman v. Westview Inc., 52 F.3d 967, 979 (Fed. Cir. 1995), determine the meaning of the term "recyclable adhesive" as used in certain claims of U.S. Patent No. 5,205,473 ("the '473 patent").

The patent, in simple terms, is for an external wrap of corrugated paper that is placed over a standard paper cup so that, if the cup contains hot beverages or food items, it can comfortably be held despite the hot contents.

Claim 10, for purposes of the present Markman hearing, is the only one that the parties agree, the court need construe.

Claim 10 claims the invention of:

An insulating beverage container, comprising a cellulosil corrugated tubular member consisting essentially of recyclable material, said container including a first opening and an internal cavity for containing a hot or cold medium, said container including fluting means adhesively attached with a recyclable adhesive to a liner for containing insulated air.

Plaintiff contends that the term "recyclable adhesive" means an adhesive that does not interfere with recycling paper.

Defendants contend that the term "recyclable adhesive" means an adhesive that, after use, can be recovered, processed and reused in some form as an adhesive.

Defendants list four reasons why its definition should be adopted by the court:

First, the term "recycle" has a commonly understood meaning, supported by definitions contained in ordinary dictionaries, trade literature and statute law, which requires both collection and reuse of the product at issue.

Second, nothing in the '473 patent claims, specification or prosecution history indicates that the patentee, in using the term "recyclable," intended to give some unique or novel meaning to the term "recyclable adhesive." To the contrary, the limited evidence in the prosecution history demonstrates that DBÜ was embracing the ordinary meaning, rather than some novel meaning.

Third, both the inventor and the prosecuting attorney testified that they did not have (or could not recall) any novel definition of "recyclable adhesive" in mind when they filed and prosecuted the patent application.

Fourth, as DBÜ's professed expert himself has admitted, the proffered evidence with respect to the definition a paper recycler might give to the term "recyclable adhesive" is wholly irrelevant to a patent in the field of paper cup manufacturing. The expert has admitted his lack of any pertinent expertise and, even in his narrow area of non-pertinent expertise, has admitted that his proffered definition is an inaccurate one.

Plaintiff makes four arguments as to why the court should accept its definition. They are:

First, extrinsic evidence must be used to interpret "recyclable adhesive" because the term is not defined by the claims, specification or prosecution history.

Second, the Dictionary of Paper supports the ordinary meaning of "recyclable adhesive" understood by one skilled in the art that the adhesive does not interfere with recycling paper.

Third, the parties' respective experts agree that in the paper recycling industry, a "recyclable adhesive" is one that does not interfere with recycling paper.

Fourth, plaintiff's definition of "recyclable adhesive" upholds the validity of the claims of the '473 patent and claims should be construed to sustain their validity.

Because, on balance, I feel that plaintiff's arguments are more persuasive both legally and logically, I find that "recyclable adhesive" means an adhesive that does not interfere with recycling paper.
adhesive” as used in the claims of the ’473 patent means an adhesive that does not interfere with recycling paper. To find otherwise is to suggest that the adhesive would likely be recovered, collected, processed or reused by a recycler, a result that defendants' own witness decries. See Declaration of James A. Gatcomb.

Moreover, while defendants argue that the word "recycle" has a commonly understood meaning, those meanings do not necessarily attach to the word "recyclable", the connotation of which certainly includes a product or substance that does not impede the recyclability of another product to which it may be attached or applied.

In this case, the adhesive material is applied between the fluting material and the liner board. The adhesive is not stripped from the corrugated paper product prior to the recycling because it does not interfere with recycling the paper product.

As to defendants' second reason, plaintiff agrees that the '473 patent and file history does not impart a novel or special definition to the term in issue. In fact, the term "recyclable adhesive" is not defined anywhere. In brief, the file history, in my judgment, is of arguable help to both sides regarding the definition of the term. It certainly is not conclusive as to either position.

As to defendants' third reason, it seems that neither the inventor nor the prosecuting attorney had, what I would characterize as, a fixed definition of the term in question. That is, both sides can point to deposition testimony favoring its position. Thus, I find defendants' argument in this regard to be unpersuasive.

Most important to my analysis, I do not believe that plaintiff's proffered expert is irrelevant. Dr. Ling testified as an expert in paper recycling and his testimony, referred to in plaintiff's brief, is:

...when we say adhesive is recyclable, basically the adhesive has to be repulpable or dispersable during pulping.

In the context of what this patent is all about, the external wrap over a paper cup, the definition plaintiff urges upon us is the one with which I agree.

5. "Applying glue to abutting wooden surfaces to...reduce air infiltration to less than 0.7/0.5 air changes per hour"

Claim 11 states in relevant part as follows: "A method for reducing air infiltration to less than about 0.7 air changes per hour in a residence having a frame comprising wooden components, the method comprising applying glue to abutting wooden surfaces to provide a seal between such surfaces to block air flow between such surfaces and reduce air infiltration to less than about 0.7 air changes per hour." 4 ('088 Patent, Ex Parte Reexamination Certificate, P. 12, Col. 2, ll. 36-42). Staples requests the following construction of the disputed phrase: "Lower the number of air changes per hour to a value lower than approximately 0.7 [or 0.5]." (Joint Claim Construction Statement, P. 2). Defendants construe the phrase as follows: "Application of the glue to abutting wooden surfaces alone causes the air changes per hour to drop from a value above 0.7 [or 0.5] to below 0.7 [or 0.5]." (Id.). The differences in the parties' construction thus hinge on whether the air changes per hour must be greater than 0.7/0.5 before the glue is applied, and whether there must be a nexus between the application of the glue and the reduction of air infiltration to the specified levels. 5

-------- Footnotes --------

4 The language in Claim 12 is identical to that in Claim 11, except that it requires a reduction of air infiltration to "less than about 0.5 air changes per hour." ('088 Patent, Ex Parte Reexamination Certificate, P. 12, Col. 2, ll. 45-51).

5 In their claim construction brief, Defendants further maintain the intrinsic evidence, "makes clear that air changes per hour is not an estimate or predicted value, but is a value that is actually demonstrated, such as through a blower door test." (Doc. No. 61, P. 19). Upon consideration, the Court finds it need not decide this issue, as such a requirement is found nowhere in Defendants' proposed construction of the phrase at issue.

-------- End Footnotes --------
Upon consideration, the Court will adopt Defendants' proposed construction. Specifically, the Court finds the claim language itself requires that air infiltration be reduced to a level less than about 0.7/0.5 air changes per hour. Implicit within that language is the requirement that the level be greater than 0.7/0.5 air changes per hour before the application of glue. Furthermore, the claims language, the specification, and the prosecution history all support the notion that a nexus must exist between the application of the glue and the reduction of air infiltration. Defendants' proposed construction thus more accurately reflects the teachings of the patent, and will be adopted here.

BACKGROUND


Baldwin initially filed the instant action against Siebert based on its belief that Siebert calendered its fabric, a process by which air is reduced in the fabric by pressing it between two heated rollers. After discovery, Baldwin learned that Siebert's accused fabric was in fact not calendered, nor was its air reduced by any other mechanical process prior to being wound on the roll. At the Markman hearing on June 16, 2005, Baldwin argued that the claim term, "reduced air content cleaning fabric," did not exclude fabric whose air content was reduced by the process of winding or rewinding on a roll. Siebert argued that the patent, the prosecution history, and Baldwin's initial basis for infringement, precluded such a construction, and that calendering was the only method of air content reduction envisioned by the patent. We disagreed, noting that claim construction is an analysis wholly independent from plaintiffs theory of infringement and is not influenced by such. Baldwin, 2005 U.S. Dist. LEXIS 15527, 2005 WL 1838451. We further found that the patent, while mentioning only the method of calendering for reducing air content, specifically stated that calendering was "not the exclusive method" of reducing air content. Id.

Siebert moved for reconsideration of that decision on September 1, 2005, on grounds that we gave too much weight to extrinsic evidence, namely the report of John McPhee, plaintiffs expert. We denied Siebert's motion, finding that we did not principally rely on McPhee's report, but relied mainly on the claim language and other intrinsic evidence. Baldwin, 2005 U.S. Dist. LEXIS 42051, 2005 WL 4034698.

In its current motion, Siebert devotes most of its attention to its contentions that the patent is invalid based on anticipation, obviousness and indefiniteness. There may well be merit to one or more of its contentions. The specification does not suggest reducing air content by winding on a core, and neither do the claims (with the possible exception of claim 26) - winding on a core may well result incidentally in some reduction of air content, and that procedure has been around for a very long time. A person with ordinary skill in the art would have a difficult time trying to determine what level of tension might trigger patent infringement. We do not, however, determine whether any of those contentions justifies summary judgment Rather, we revisit claim construction.

Alternatively, Siebert puts forth a new theory that it contends requires us to reconsider our construction of the claim term. Siebert argues that it is clear from the language of the patent, its claims and specification, and the prosecution history, that the term "reduced air content cleaning fabric" indicates a fabric whose air content is reduced by some means prior to winding on a core to form a roll. Siebert goes on to argue that in light of this construction, and since there is no genuine issue of material fact that Siebert's fabric does not go through any mechanical process before being wound on the roll, it is entitled to summary judgment on grounds of non-infringement. Upon close consideration of parties' arguments, the patent, and the prosecution history, we agree with Siebert's proposed claim construction and grant its motion to revise our construction of the claim term "reduced air content cleaning fabric." We further grant its motion for summary judgment based on non-infringement. 1
I Additionally, we grant Siebert's motion to file an over-length brief in support of its motion for summary judgment. Furthermore, we find moot Baldwin's argument that we should disregard Siebert's exhibits 28B and 28C (as they were not disclosed during discovery) because, as will be evident below, we do not rely on them in our analysis (Baldwin's response to motion for summary judgment at 10). We also find moot Siebert's motion to strike certain paragraphs in Baldwin's statement of material facts for the same reason.

ANALYSIS

Generally motions for reconsideration are only appropriate to correct manifest errors of law, or to present newly discovered evidence. Oto v. Metropolitan Life Ins. Co., 224 F.3d 601, 606 (7th Cir. 2000); United Mun. Leasing Corp. v. Lexington Corporate Props., 1997 U.S. Dist. LEXIS 14428 (N.D.Ill 1997). Such motions are valuable where the court misunderstands a party, makes a decision outside of the adversarial issues presented by the parties, or makes an error of apprehension. Bank of Waunakee v. Rochester Cheese Sales. Inc., 906 F.2d 1185, 1191 (7th Cir. 1990). Baldwin argues that Siebert's theory that any reduction in air content must occur prior to the fabric being wound on the roll is not new, but merely a rehashing of his prior theory that calendering is the only process envisioned by the '976 patent to reduce air content. We do not agree. Siebert's earlier argument was that calendering was the only method of reducing air content. We disagreed with that argument because, among other reasons, the patent specifically stated that calendering was not the exclusive method of reducing air content. Here, Siebert is not arguing that there is only one method of reducing air content. Rather, it appears to concede that there may be many methods. What Siebert argues here is that regardless of the method used to reduce air content, the reduction of air content as envisioned by the patent occurs prior to winding the fabric on the roll. Because Siebert suggests that we made an error of law with respect to our construction of the claim term, and because we find this new theory to be different from the one it posited earlier in this litigation, its motion to reconsider is appropriate. See Chamberlain Group, Inc., v. Lear Corp., 2007 U.S. Dist. LEXIS 12004, *5 (N.D. Ill. 2007).

Claim Construction

In order to determine the proper construction for a claim term, we first look at the term as used in the claims themselves. Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir.2005). The two independent claims, claims 1 and 14, standing alone, do not aid much in our construction analysis, for while both recite the term, "reduced air content cleaning fabric," both claims are very broad and vague, neither teaching the winding of the fabric on a core. At first glance, these claims appear to envision an invention that does not require a core. But given that every manifestation of Baldwin's invention throughout the specification and prosecution history includes a fabric roll on a core, and given that the patent was an improvement on an earlier pre-soaked fabric roll wound on a core, we decline to read these claims as being so much broader than what the invention as a whole teaches. See Phillips, 415 F.3d at 1316 (citing Markman v. Westview Instruments Inc., 517 U.S. 370, 389, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996)("[A claim] term can be defined only in a way that comports with the instrument as a whole."). Yet, because of the lack of specificity in the independent claims, we must look to the other claims to determine the construction of the disputed term. Forest Laboratories, Inc. v. Abbott Laboratories, 239 F.3d 1305, 1310 (Fed. Cir. 2001) ("We … construe independent claims consistently with the claims that depend from them.").

Once outside claims 1 and 14, our analysis is complicated by the fact that the term "reduced air content cleaning fabric" does not appear in any of the other claims. Instead, the dependent claims use a variety of ambiguous terms, including "cleaning fabric," "fabric," "strip," "strip of cleaning fabric," and in one instance, "strip of cloth." These terms are ambiguous because they are often used to indicate both a "reduced air content cleaning fabric" and a fabric whose air content has not yet been reduced. In order to determine the meaning of the disputed term, we must first discern which instances of the word "fabric," and its equivalents, translate to "reduced air content cleaning fabric." To do so, we resort to the rules of construction.

To interpret the meaning of the word "fabric," and its equivalents, we will first look at the word in the context of the dependent claim we are looking at, in light of the independent claim upon which that claim relies. Gart v. Logitech, Inc., 254 F.3d 1334, 1341 (Fed. Cir. 2001). Where possible, we give claim terms their ordinary and plain meanings, so as to be understood by a person of ordinary skill in the art. Smithkline Diagnostics, Inc. v. Helena Laboratories Corp., 859 F.2d 878, 882 (Fed. Cir. 1988). Additionally, under a principle of consistency, it is presumed that "the same terms appearing in
different portions of the claims should be given the same meaning unless it is clear from the specification and prosecution history that the terms have different meanings at different portions of the claims." Fin Control Systems Pty, Ltd. v. OAM. Inc., 265 F.3d 1311, 1318 (Fed. Cir. 2001). We understand that consistency is especially important when discussing multiple instances of a claim term within any one claim, Digital Biometrics v. IdentiXML, Inc., 149 F.3d 1335, 1345 (Fed. Cir. 1998) ("[T]he same word appearing in the same claim should be interpreted consistently."). We also read the term in light of the specification and the prosecution history, as "the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." Phillips, 415 F.3d at 1313; Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342-43 (Fed. Cir. 2001).

We will begin our analysis with the two claims that appear to be the most appurtenant to the issue at hand, claims 18 and 26. However, in order to interpret these claims we first must set out and interpret the independent claim upon which they both depend, claim 14. That claim reads:

14. A method for making a cleaning system comprising: reducing air content of a strip of cleaning fabric by 1 to 50 percent to form a strip of reduced air cleaning fabric; and contacting said strip of reduced air content cleaning fabric with a low volatility, organic compound solvent which does not evaporate readily at ambient temperature and pressure and pre-soaking and saturating said reduced air content cleaning fabric with said solvent.

Reading the terms of claim 14 in context, we find that the patentee used two different terms to mean two different things. "Where claims use different terms, those differences are presumed to reflect a difference in the scope of the claims." Forest Laboratories, 239 F.3d at 1310. The first term, "strip of cleaning fabric," refers to a cleaning fabric whose air content has not yet been reduced. We find this to be so because that term, a noun, is being modified by the verb "reducing." Thereafter in the claim, the term used is "reduced air content cleaning fabric," because the reducing of the air content has already occurred. The strip of fabric which comes into contact with the solvent, then, is already reduced in air content.

Additionally, while claim terms should generally be read consistently throughout a claim, here there is a clear manifestation that these two terms be read differently. First, the terms themselves are different, one being merely "cleaning fabric," while the other is "reduced air content cleaning fabric," Second, as stated above, reading the first term in context with a modifier such as "reducing," indicates that the patentee intended that term to mean a non-reduced air content cleaning fabric.

This reading is not only clear from the claim itself, but is supported by both the specification and the prosecution history. The specification states that "the reduced air content provides for an absorptive solvent amount and a reduced displacement of solvent during storage and thus less shift or no shift in the fabric roll's center of gravity and allows for better and more even distribution of the solvent within the fabric roll" ("976 patent, col. 7, In. 20-25, Bald. App. 4). During prosecution of the patent, Baldwin made clear that the air content of the fabric is reduced prior to soaking it in the solvent. In response to an objection by the examiner, Baldwin asserted that "[b]y reducing the air content of the cleaning fabric prior to saturation, the present invention improves the wettability of the fabric and improves the distribution of the solvent in the fabric" ("976 patent prosecution history, FH 0764-65, FH 0783-84, Bald. App. 19). Baldwin also made clear that saturation itself is not a method for reducing the air content of the fabric as taught by the invention ("976 patent prosecution history, FH 0665-6, FH 0764-65, Bald. App. 19). Therefore, while steps in a method need not necessarily be performed in the order they are listed in a patent, here it is clear that the step of reducing air content of a fabric necessarily must occur prior to saturation. See Loral Fairchild Corp. v. Sony Corp., 181 F.3d 1313, 1332.

We turn to claim 18, which reads:

18. The method as defined in claim 14 including providing an elongated core wherein said strip of cleaning fabric is wrapped about said elongated core prior to contacting said strip of cleaning fabric with said solvent.

Here we find that in both instances in claim 18, the term "strip of cleaning fabric" refers to "reduced air content cleaning fabric." It is clear that in the second instance, the term "strip of cleaning fabric," means "reduced air content cleaning fabric." This is because, as discussed above, the invention requires that the air content in the fabric be reduced prior to coming in contact with the solvent. Reading the term as indicating a non-reduced air content cleaning fabric would go against the principles of the invention, as it would be reading the claim to involve contacting non-reduced air content cleaning fabric with solvent. Secondly, we must attempt to construe all like terms alike, unless it is clear from the patent that they are to be construed differently. Unlike the distinction made between terms in claim 14, here there is no modifying verb.
used in conjunction with the first use of the term, "strip of cleaning fabric," which would make clear the manifest intent that the term denote a non-reduced air content cleaning fabric. Without that manifest intent, we must construe these claims to mean the same thing, and thus we construe them both to mean "reduced air content cleaning fabric."

We then turn to claim 26, which states:

26. The method as defined in claim 14 wherein said step of reducing air content of said strip of cleaning fabric further comprises the step of increasing the length of said cleaning fabric by at least about 25% without substantially effecting \[\text{sic}\] the diameter of said fabric roll after the cleaning fabric has been wound about a core.

This claim is also dependent on claim 14, which delineates the general method for the invention. Claim 26 permits an additional step to the method—that of increasing the length of the cleaning fabric. We find that although generally we are required to construe like terms consistently, here, as in claim 14, it is clear from the context that these two terms refer to different states of the fabric. The terms "strip of cleaning fabric" and "cleaning fabric," when mentioned in the first clause of the claim, refer to non-reduced air content cleaning fabric, because in both instances the terms are being modified by a word signifying an element of an air reduction process, i.e. "reducing" or "step of increasing". Because "increasing" is an additional step in the air-reduction process, it necessarily implies the fabric at issue has not already bad its air content reduced. However, the term "cleaning fabric," in the second clause of the claim, refers to "reduced air content cleaning fabric" because it is no longer being used in conjunction with the process of reducing air content (of which increasing length is a step), but with the result of the air content reduction—that the diameter of the roll after the cleaning fabric is wound is not substantially affected.

Just as in claim 14, we have claim terms that are defined differently within the claim. While here, unlike in claim 14, the claim terms themselves are not different, there is the presence of the modifiers, "reducing" and "step of increasing," which demonstrate a manifestation of the intent that those terms, as used with those modifiers, relate to non-reduced air content cleaning fabric. Yet, it would be illogical to construe the last term as also meaning non-reduced air content cleaning fabric, as construing the term in that way would read, "without substantially effecting \[\text{sic}\] the diameter of said fabric roll after the non-reduced air content cleaning fabric has been wound about a core." This reading makes no sense because only the action of reducing the air content would increase the length of the fabric without increasing the diameter of the fabric roll. Winding non-reduced air cleaning fabric onto a roll would either not increase the length of the fabric, or it would increase the diameter of the roll. Nor do we see how the step of reducing air content could be achieved after the fabric is wound on the roll. If one of the advantages of reducing air content is increasing the length of the fabric, that is not an advantage that can be wrought from a process that reduces air content after the fabric is already wound. Thus, we find that the only logical meaning of the term "cleaning fabric" in the context of the last clause of claim 26, is "reduced air content cleaning fabric."

There is a possibility that the clause as a whole could support an argument that claim 26 envisions reduction in air content through winding the fabric on the roll. We find this possibility unlikely, however, as we find it would require more specificity than is present with regards to the method of winding. As Baldwin's expert John McPhee conceded, not every winding of fabric onto a roll has the effect of reducing air content (expert rebuttal report of John McPhee, at 20, Siebert App. 25). We find that to interpret this claim to cover air content reduction through winding or rewinding would require additional language that is not present here, and thus the claim should not be so construed. 2

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2 Even if this claim were construed in a way as to support an argument of air reduction through winding or rewinding, we find that the construction of this claim in this way cannot be imported to the other claims in the patent, which we find clearly do not envision air reduction through winding or rewinding. Furthermore, claim 26 covers an increase in the length of the fabric (through air reduction) of at least about 25%. There has been no evidence that Siebert's fabric's length has been increased by this amount, and Baldwin has not even asserted that Siebert infringed claim 26. Thus, even if we were to construe this claim alone to cover reduction in air content through winding or rewinding, there has been no allegation of infringement, nor has there been any evidence of the same, and thus Siebert would be entitled to summary judgment on that point.

--- End Footnotes ---
Having parsed the term "fabric," and its equivalents, in the relevant claims 18 and 26, into the more precise terms of "reduced air content cleaning fabric" and non-reduced air content cleaning fabric, we can then determine whether or not the term "reduced air content cleaning fabric" should be construed as requiring that the air content of the fabric be reduced prior to being wound on the core to form a roll. It is clear from the discussion above that claims 18 and 26, dependent on claim 14, envision that the air content of the fabric is reduced prior to it being wound on the roll. Claim 18, as construed, teaches the wrapping of the reduced air content fabric about an elongated core prior to its contact with the solvent. This implies the air content is reduced prior to the wrapping because, as the claim reads, what is wrapped around the core is reduced air content cleaning fabric. Claim 26 teaches that the step of increasing the length of the non-reduced air content fabric can be achieved without affecting the diameter of the fabric roll after the subsequently reduced air content fabric is wrapped around the core, again implying reduction in air content prior to wrapping.

By performing this same analysis throughout the claims, we are able to distinguish the patentee's intent to refer to non-reduced air content cleaning fabric, from its intent to refer to "reduced air content cleaning fabric," in almost all the claims. The only claims where, even after our analysis, the term could still mean either substance, is in claims 8 and 10, which talk about the composition of the fabric in general. However, the use of either term in these two claims has no effect on the question of whether or not "reduced air content cleaning fabric" means a fabric whose air content is reduced prior to winding it on a core to form a roll.

Our position that the claim term does require a reduction in air content prior to winding is further supported by the patent specification. The abstract states; "The system includes a cleaning fabric treated to reduce the amount of air volume the cleaning fabric contains. The cleaning fabric is saturated to functional equilibrium with a low volatility organic compound solvent. The cleaning fabric is wrapped around an elongate core to form a fabric roll" (976 patent, col. 2, In. 34-39, Bald. App. 4).

Here, like in claim 14, the term "cleaning fabric" is modified by its treatment to reduce air content. Thereafter in the abstract, the term "cleaning fabric" necessarily refers to "reduced air content cleaning fabric," which necessitates the reduction in air content prior to the fabric being wound on the roll.

The summary of the invention states this even more clearly when it states that "[a] cleaning fabric with a reduced air content is wrapped around the core to form a fabric roll" (976 patent, col. 3, In. 65-66, Bald. App. 4). The use of the word "with" implies that the fabric being wound on the roll has already had its air content reduced prior to winding. Later, in the broad recitation of the method, the patent states that "[t]he saturated cleaning fabric is wrapped around a core to form a pre-soaked fabric roll" (976 patent, col. 4, In. 32-33, Bald. App. 4). Because, as discussed above, the air content of the fabric must be reduced prior to saturation, it follows that here the air content is reduced prior to winding.

The preferred embodiment, in conjunction with the relevant claims, teaches that the invention covers not only saturation of the fabric prior to winding, but saturation after winding as well, or both saturating before and after winding. In one section it states: "The fabric is pre-soaked and saturated with a low volatility organic compound solvent, as described in more detail herein below, before or after it is wrapped around the core to form roll in any convenient manner" (976 patent, col. 5, In. 58-61, Bald. App. 4). It is clear that the term, "fabric," means "reduced air content cleaning fabric," because just as in claim 18, it is being used in conjunction with contacting the solvent, which can only be done with fabric whose air content is already reduced, according to the invention. The subsequent pronoun, "it," then necessarily refers to the same term, and thus means "reduced air content cleaning fabric." By reading this sentence as such, the patent clearly envisioned the reduction in air content taking place prior to winding on the roll, because the soaking of the reduced air content cleaning fabric can occur either before or after the reduced air content cleaning fabric is wrapped around the core, which can be done "in any convenient manner."

The preferred embodiment further states:

In one variation of the method, the fabric is preferably wrapped around the core prior to contacting the same with the solvent. In yet another embodiment, the fabric is wrapped around the core after being saturated with the cleaning solvent. It is also within the invention to saturate the fabric with solvent both prior to and after forming the fabric roll. The wrapping of the fabric can be done in any convenient manner and requires no special apparatus, a wide variety of roll making equipment being readily available for accomplishing the same. (976 patent col. 9, In. 1-10, Bald. App. 4.)
Here, again, the term, "fabric," indicates "reduced air content cleaning fabric." The term is used both in the context of saturating prior to winding (which requires the fabric to have its air content already reduced), and then, without any modification of the term, in the context of winding on a roll prior to saturation. Because no modification of the term has occurred, we should construe it consistently, which requires us to construe it as "reduced air content cleaning fabric."

Additionally, if we were to construe this term to include non-reduced air content cleaning fabric, it would not follow that the wrapping could be done in any convenient manner, but would have to be done in such a way as to reduce the air content of the fabric. Thus, construing "fabric" here to mean "reduced air content cleaning fabric," is the only logical construction in light of the context in which the term is used. We find similar examples throughout the specification, thus solidifying our determination that the term "reduced air content cleaning fabric" must be construed as a fabric whose air content in reduced prior to its being wound on a core to form a roll.

The fact that Baldwin's patent states that descriptions in the summary and the preferred embodiment should not be construed as to limit the variations and advantages of the invention to those disclosed, does not alter our determination. (See '976 patent, col. 4, In. 49-54, col. 11, In. 49-55, Bald. App. 4). We are not importing a limitation from the specification into the claims. See SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337, 1340 (Fed. Cir. 2001)("... one of the cardinal sins of patent law-reading a limitation from the written description into the claims"). Rather, we are interpreting the claim terms first in light of their context and logical construction, and referring to the specification and prosecution history to ensure that our construction is the proper one. The one limitation that we draw from the prosecution history, that reduction in air content must occur prior to saturation, is not a "limitation" at all, but part of what makes the invention patentable over prior art. 3 Hence, our construction of the claim term is not importing a limitation from the specification, but construing the claim in the context of the necessary limitations in the patent itself. We are not limiting the various ways that the reduction in air content can be achieved, rather, we construe the term to indicate that any reduction in air occurs prior to winding the fabric on the roll. We therefore reconsider our prior construction of the term, "reduced air content cleaning fabric," and construe that term to mean "a fabric whose air content has been reduced by some method prior to being wound on a roll."

3 In fact, the possibility that the air content could be reduced by saturation, or after saturation, was a major sticking point for the patent examiner. The examiner indicated in its rejections that reduction in air content after saturation rendered the invention obvious in light of the Meisen patent (U.S. Patent No. 4,712,472, FH 0623, Bald. App. 19), and reduction in air content by saturation rendered the invention unpatentable over Baldwin's earlier 157 patent, which taught a pre-soaked fabric roll. Baldwin distinguished its invention by making clear that reduction in air content had to occur prior to saturation.

6 D.I. 151, ex. E at 1016 (defining "ring" as "a circular band for holding, connecting, hanging, pulling, packing, or sealing"). Plaintiff proffered its own ordinary meaning of "ring." D.I. 148, ex. 6 at 990 (defining "ring" as "a circular line, figure, or object"). As defendant points out, the dictionary plaintiff cites for its ordinary meaning gives "smoke ring" as an example for the definition. This example is not consistent with the subject of the '264 patent. When multiple dictionary definitions are given, courts should adopt the definition most consistent with the inventor's use of the words. Tex. Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1203 (Fed. Cir. 2002). Consequently, the court adopts defendant's ordinary meaning.

7 264 patent, col. 2, ll. 34-38, 42-52; col. 3, ll. 1-5, 47-55; col. 4, ll. 14-18; col. 5, ll. 30-31; figs. 1, 3, 9, 10.

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2. "A reduced diameter cylindrical central portion." Consistent with the claim language and its ordinary meaning, 25 and the specification, 26 the court construes "a reduced diameter cylindrical central portion" to mean "the portion of the tubular body that includes the middle point has a smaller diameter than adjacent portions of the tube."

25 D.I. 148, ex. 6 at 179 (defining "central" as "situated at, in, or near the center"); D.I. 151, ex. E at 221 (defining "central" as "containing or constituting the center"); see also Random House Dictionary of the English Language 335 (2d ed. 1987) (defining "center" as "the middle point").

26 '476 patent, col. 2, ll. 48-57; col. 3, ll. 49-55; figs. 1, 9, 10. Another embodiment of the specification describes a "telescoping configuration." '476 patent, col. 4, l. 44 - col. 5, l. 65. In this configuration, the tubular body consists of two halves, one of which is deformed to have a reduced diameter central portion. '476 patent, col. 5, ll. 5-10. The body is then formed by sliding the undeformed half over the reduced diameter central portion and welding the two halves together. '476 patent, col. 5, ll. 11-18. Because this embodiment does not join enlarged diameter cylindrical end portions, it does not affect construction of "a reduced diameter cylindrical central portion" in claim 1 of the '476 patent. See claim 1, '476 patent, col. 6, ll. 29-33.

2. "reference" (claims 5, 8, 15, 16, and 17)

At a basic level, the parties agree that "reference" denotes a "position." ASML suggests that "reference" denotes "a position or item (other than the object) relative to which displacement can be measured"; Nikon, by contrast, reads "reference" to mean a "position defined in a coordinate space, from which the object/substrate is displaced and positioned relative thereto." The court cannot accept either definition as offered, and it finds that a person of ordinary skill in the art would understand "reference," as it is used in this context, to denote a basis of comparison. The specifications are not to the contrary. In various places, the patent uses "reference" to describe four positions: the initial position determined by global alignment, the position of the projection lens system, the position of the mask, and the position of location-related stationary mirrors. See, e.g., '832 Patent at 3:23-27; 18:9-13. Throughout the patent, usage of "reference" is invariably comparative and positional, assessing one thing relative to another and pegging the location of one item with respect to a second item. Id. Nothing in the intrinsic evidence supports Nikon's attempt to limit "reference" to positional definition in "a coordinate plane," and nothing in the claim language suggests the court need read in claim terms (viz., "object"); found elsewhere in the relevant claims. Consistent with plain meaning and the specification, the court construes "reference" to mean "a position or item relative to which displacement, location, or both can be measured."

C. "Reflective inner coating"

Consistent with the Claim itself, the prosecution history and the ordinary meaning of the Claim terms, Yanova contends that "reflective inner coating" must be construed as:

[A] coating applied to the inside of a light transmission element that reflects light interiorly from a light device to prevent or minimize light dissipation as the light travels along the light transmission element to the edible confection.
Yanova Memo at 15. However, according to Defendants, the ordinary meaning of the claim language and intrinsic evidence when viewed as a whole requires that "reflective inner coating" be construed as:

[A] coating may be a texture or appearance of a surface, or may be a layer of a substance that is spread over a surface.

Def's Memo at 16-18.

"Reflective inner coating" consists of three parts: (i) reflective, (ii) inner, and (iii) coating. First, as defined by American Heritage Dictionary, Fourth Edition (2000), "reflective" means "of, pertaining to, produced by, or resulting from reflection." As a verb, "reflective" means, "to throw or bend back (light for example) from a surface." The form, direction, method, purpose, or style of reflection is never delineated and never limited.

Second, Claim 1 states that the "light transmission element" include a "reflective inner coating." ('816 Patent, Claim 1, col. 5, 24-26). Therefore, contained within the "light transmission element" is the "reflective inner coating."

Third, the term, "coating," as defined by the American Heritage Dictionary, Fourth Edition (2000), means "a layer of material covering something else." Analogous to the term "reflective coating," "mirror coating," as defined by McGraw-Hill Dictionary of Scientific and Technical Terms, Sixth Edition (2003), means "a thin film of highly reflective material spread over a correctly shaped glass surface to produce a mirror . . . also known as reflective coating."

Consistent with its plain meaning, the term "reflective inner coating" in the asserted claims of the patents-at-issue is construed to mean:

[A] thin film of highly reflective material spread over a correctly shaped glass surface to produce a mirror contained within the light transmission element.

"INTERNAL REFLECTING SURFACE"

Black Matte

The reflective surface inside the housing, as described in the Ecolab patents, receives light from a source within the housing and reflects that light upward and onto the wall above the trap. Ecolab contends that the term "internal reflecting surface" means any surface of any color which is positioned inside the housing to reflect any degree of light onto the wall where the trap is mounted, i.e., onto the vertical mounting surface. Paraclipse contends that the term "internal reflecting surface" means a shiny metallic reflective surface and does not include a black matte surface.

Each of the independent claims of the Ecolab patent includes, as an element, a "reflecting" "layer" or "surface" inside the housing. The specifications of the '690 and '017 patents expressly define "reflective layer" as follows:

The interior of the housing contains a reflective layer, and it is at least partially reflective. Such reflective layers can be made from shiny metallic surfaces such as aluminum foil, metallized polyester bright-white reflective panels, silver glass mirrors and other related reflective surfaces.

See, e.g., '690 patent, Column 3, lines 5-10 (Emphasis added.)

Column 7, at lines 48-64, of the '690 patent, describes experiments conducted to "compare the effect of the installation of the shiny metallized polyester (Mylar) reflective surface within the housing with the effect of a non-reflecting surface." The results of the experiment are shown in Table 5. The "non-reflecting surface" mentioned in the patent is a black surface. Table 5 compares the effectiveness of the trap with an interior housing surface of metallized Mylar, as opposed to covering the Mylar with a "non-reflective black surface." Id. The Note beneath Table 5 states:

Our experimentation shown in Table 5 demonstrates a substantial increase in capture rates when a shiny reflective surface is installed within the housing. The metallized Mylar surface we have used shows a substantial increase (by 26% in capture
rates when compared to a black non-reflective surface).

(Emphasis added.)

The court concludes that the term "internal reflecting surface" used in the claims of the Ecolab patents does not include a black matte surface on the inner wall of the housing. Direct light, as described in the patents, means light radiated directly from the source of light onto the wall above the unit. The term "reflected light" as used in the patent claims means the light from the source which bounces off, i.e., is reflected off, the reflecting layer on the inside wall of the housing cover. The "non-reflecting" surface mentioned in the patent at Table 5 is a black surface.

In addition, the court cannot accept Ecolab's assertion that the patent does not exclude a black matte internal surface because all surfaces are partially reflective. The "Detailed Description of the Invention" in Column 2 of the '690 patent at lines 60-63 states: "The light source is substantially enclosed within a housing having an internal surface at least partially covered with a reflecting layer." If the patent includes any internal surface of any kind, such an interpretation would render the word "reflecting" superfluous.

Therefore, if, as Ecolab argues in the context of the disputed claims, all surfaces reflect and no surface is excluded, a critical element of the patent, namely, the term "internal reflecting surface" or "interior reflective layer" becomes meaningless. Neither Ecolab nor any witness at the Markman hearing has explained the meaning of, or provided an example of, a non-reflecting surface. Thus, the court is left to speculate why the terms "reflecting" and "reflective" appear in the patent at all. Consequently, for the foregoing reasons, which are not exclusive, the court determines that a person of ordinary skill in the art would conclude that, for the purposes of the Ecolab patents, a black matte layer or surface inside the housing does not constitute a "internal reflective surface" or an "internal reflecting surface" within the meaning of the Ecolab patent claims.

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2 Paraclipse offers excerpts from the prosecution history which reinforce the conclusion that the terms "reflecting surface" and "reflective layer" exclude a black matte surface. See Paraclipse's Proposed Findings of Fact and Conclusions of Law at PP 8 & 11 (as modified by this court): In the prosecution history of the '690 original application, the patent examiner initially rejected all 25 claims, some for obviousness in view of two prior art references, including a Phillips patent. Ecolab responded: "The prior art is replete with inventions directed toward insect traps…. Applicant's invention is also based on the discovery that insect attractancy can be increased through the use of a combination of diffused and reflected light." (Emphasis added.)

Ecolab distinguished Phillips on the basis of Ecolab's "reflective surface." Ecolab's attorney argued: "The examiner concedes that Phillips does not disclose the use of a pheromone, a shiny metallic surface, or a lethal electrified surface." Following Ecolab's argument that its patent distinguished over Phillips by including a "shiny metallic surface," the Examiner withdrew his rejection of the claims.

Also, during the reexamination proceeding, the examiner rejected certain claims as anticipated by White, a prior art patent. Ecolab submitted the declaration of inventor-Thomas D. Nelson which stated that the commercial White trap contains a black matte finish and horizontal white adhesive board which reflects light into the room when the top of the White trap is open.

Nelson stated in pertinent part: "A critical distinction between White and the claimed invention is that this reflected light does not form a part of the light pattern on the wall. Light . . . is reflected off the reflective glue board. . . and onto the inside black matte surface of the enclosure. . . of the White trap. Similarly this reflected light does not contribute to the light pattern on the wall. The black matte surface of the commercial White trap is further evidence that White did not consider the housing to participate in the reflection of light, relying instead on the reflective glue board. . . . Even if the top is removed from the trap when installed on a wall, no important amount of reflected light is used in the light pattern on the wall either above or below the trap. The light pattern from the White trap is composed entirely of directly radiated light." (Emphasis in original.) The foregoing provides additional evidence that a person of ordinary skill in the art would conclude that black is not a reflective surface within the meaning of the Ecolab patents.
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1. Black matte surface

The section of Instruction No. 11 excluding a black matte surface from the scope of the term "internal reflecting surface" was based on the district court's Markman ruling that "a black matte layer or surface inside the housing does not constitute a [sic] 'interior reflective surface' or an 'internal reflecting surface' within the meaning of the Ecolab patent claims." Markman Order at 21.

Ecolab argues that any surface of any color positioned inside the housing to reflect any degree of light onto the wall qualifies as an "internal reflecting surface." But Table 5 of the '690 patent makes it clear that not every black surface is an "internal reflecting surface." Table 5 outlines the results of an experiment "comparing the effect of the installation of the shiny metallized polyester (Mylar) reflective surface within the housing with the effect of a non-reflecting surface." '690 patent, col. 7, ll. 48-64. The "non-reflecting surface" used in the experiment was black. Ecolab has not distinguished the black matte surface from the non-reflecting surface of Table 5. Moreover, if "a surface that does reflect light from the source, even if only a small amount," is "reflective" within the meaning of claims 1 and 16, then no surfaces would be excluded and the term "reflective" would be meaningless. The district court concluded, and we agree, that because the term "internal reflecting surface" requires a surface having at least some small amount of reflectivity, the black matte surface on the inner wall of the housing cover (which is only minimally reflective) does not qualify. Markman Order at 11.

We therefore find that the section of Instruction No. 11 excluding the black matte surface as an "internal reflecting surface" was not erroneous.

3.3 Interpretation of the "Reflector Means" Claim Limitation

Genlyte argues that the "reflector means" claim limitation limits the scope of that claim element to a one hundred percent reflectivity reflector as opposed to a partially reflective reflector or a partially transmissive reflector. Genlyte further contends that the "reflector means" claim limitation excludes from its scope a reflector which provides uplighting or upwardly directed light rays.

Before addressing the intrinsic evidence relevant to the interpretation of this claim term, it is important to note that Federal Circuit precedent states that an interpretation of a claim limitation in a way that would exclude an inventor's preferred embodiment disclosed in a patent represents an "... interpretation [which] is rarely, if ever correct, and would require highly persuasive evidentiary support." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996). See also, Modine Mfg. Co. v. Int'l Trade Comm'n, 75 F.3d 1545, 1550 (Fed. Cir. 1996).

The Tickner '414 patent discloses three distinct preferred embodiments. Tickner's first preferred embodiment is illustrated in Figs. 2-8 of the '414 patent where the reflector is identified by Reference Nos. 14A and 14B. Tickner's second preferred embodiment is disclosed in Figs. 9-15 where the reflector is designated by Reference No. 100. Tickner's third embodiment
is illustrated in Fig. 16 where the reflector is designated by Reference No. 200.

The written description of the Tickner '414 patent recites a detailed explanation of design features implemented to provide for the circulation of cooling air through various openings in the second and third embodiments. At Column 8, lines 28-48, Tickner describes open spaces 112, central aperture 130 and smaller apertures 136 which provide openings designed to circulate cooling air -- and inherently the radiation of light through those holes -- literally through the reflector itself. At Column 9, lines 15-22, Tickner further describes how his structural ribs 121 cooperate with openings 130 and 136 to provide air circulation -- and necessarily for radiation of light through the reflector itself.

At Column 9, lines 56-61, Tickner describes his Fig. 16 third reflector embodiment which includes a plurality of elongated vertically oriented slots designated by Reference No. 215. Those slots similarly provide for both the circulation of cooling air through the reflector as well as the radiation of light through the reflector.

This intrinsic evidence in the form of Tickner's patent drawings and the written description clearly teaches the incorporation of numerous apertures, or open spaces and slots all representing holes in the reflector in two of his three preferred embodiments to provide cooling flow air; and inherently for the escape compact fluorescent light radiation through the reflector itself. The light passing through these numerous holes in the reflectors radiates both laterally to the side as well as vertically upwardly.

With Genlyte's proposed claim interpretation requiring total containment of all compact fluorescent light radiation within the reflector with one hundred percent reflectivity, two of Tickner's three embodiments would be excluded from the scope of the "reflector means" claim limitation. In view of Vitronics and the intrinsic evidence, however, the Special Master interprets the "reflector means" limitation as encompassing either a totally reflective reflector, a partially reflective reflector, as well as a partially light transmissive reflector, with or without apertures or openings in the reflector itself, where the reflector is capable of radiating light through or out of the reflector in all directions, including both laterally and upwardly.

This interpretation expressly encompasses a reflector providing uplighting. This interpretation is consistent with and is, in fact, required by the claim interpretation guidelines stated in the Vitronics case which requires that a claim limitation be interpreted to encompass the preferred embodiments disclosed in the intrinsic evidence. In the present case, the intrinsic evidence does not stand in the way of such a broad interpretation. To the contrary, it requires it.

This interpretation is consistent with a lighting industry publication which was jointly submitted to the Court by the parties which defines the term "reflection" as the process by which a part of the light falling on a medium leaves that medium from the incident side. Lighting Handbook Reference & Application (8th ed. 1993) (Illuminating Engineering Society of North America). That definition is consistent with the Special Master's interpretation of the "reflector means" claim limitation.

The Special Master, in construing the "reflector means" limitation "recommends that it be construed:

as encompassing either a totally reflective reflector, a partially reflective reflector, as well as a partially light transmissive reflector, with or without apertures or openings in the reflector itself, where the reflector is capable of radiating light through or out of the reflector in all directions, including both laterally and upwardly.

(Report and Recommendation, p.5).

Defendants object to this construction because the Special Master's proposal erroneously permits the transmission of light through the reflectors due to the existence of "apertures or openings" within the reflector itself. According to the Defendants, "the Special Master errs by not recognizing that light passing through such apertures is irrelevant to defining what the 'reflector' itself must be." (Defendants' Objections, p.13) (Emphasis original).

However, the Defendants' argument is not well taken as it appears to import an additional limitation that is not contemplated in the '414 Patent claims or specification; that is, a reflector that is completely reflective despite the existence of "apertures
or openings" that undoubtedly allow for the transmission of light through the reflector. Notably, Claim One of the '414 Patent does not expressly or impliedly separate the existence of the "apertures or openings" from the scope of the reflector. Rather, the plain language of the claim simply contemplates a reflector which encompass all of its characteristics and aspects such as "apertures and openings." In other words, the relevant reflectors with their openings are not somehow separated out so as to exclude the "apertures or openings" from the reflector's scope. To accept Defendants' position would appear to require this Court to exclude two of the three preferred embodiments disclosed in the '414 Patent. For instance, as noted by the Special Master, the specification of the '414 Patent, when describing the second embodiment disclosed in Figure 9 discusses the existence of open spaces "to permit the passage of air into the interior of the fixture" and "to permit the passage of heated air outwardly from the fixture." ('414 Patent, Col.8, 11.30-44). In addition, the specification, when describing Figure 16 of the third embodiment states that the reflector possesses "slots to permit the passage of heated air outwardly from the reflector." ('414 Patent, Col.9, 11.53-59). Thus, it is clear that the preferred embodiments and specification of the '414 Patent contemplate the existence of holes within the reflectors themselves that would allow for the transmission of light along with the passage of air. To accept Defendants' proposed construction of "reflector means" the Court would simply have to ignore the relevant "apertures or openings" within the reflectors. However, to do so would run contrary to what is already contemplated within the relevant embodiments and thus would potentially exclude such embodiments as well as add an additional limitation requiring the reflectors to be completely reflective despite the existence of holes that permit the passage of light. Such a construction is contrary to Federal Circuit authority. See Primos, Inc. v. Hunter's Specialties, Inc., 451 F.3d 841, 848 (Fed.Cir. 2006) ("[W]e also should not normally interpret a claim term to exclude a preferred embodiment."). In addition to the support of the Special Master's construction of "reflector means" within the preferred embodiments and specification of the '414 Patent, it appears that the extrinsic record would support the determination that the reflector may allow the transmission of light through the reflectors themselves. Notably, the Lighting Handbook from the Illumination Engineering Society of North America, which both Parties placed heavy reliance on, contemplates the possibility that a "reflection" provides for the possibility of the transmission of light through the reflecting material. (Defendants' Markman Hearing Exhibits, Exhibit 39, p.17). While this extrinsic evidence is by no means controlling it is consistent with the Special Master's interpretation and the intrinsic record of the '414 Patent. Accordingly, the Court will adopt the Special Masters' construction of "reflector means."

21. The method according to claim 33, wherein during said seaming operation at least a portion of said can end wall first portion is reformed by bending upward by an angle of at least about 26 [degree] ('875 patent, claim 34)

Crown's proposed construction is "[t]he can end wall first portion is formed again by turning upward by an angle of at least about 26 [degree]." 89 Rexam's proposed construction is "[a] portion of the upper wall (chuck wall), which is about the first location, is bent upwards, when looking at a cross section drawing, around the first location by 26 degrees (less 1 degree or plus 1 degree or more)." 90

89 Id.

90 Id.

The court adopts Crown's construction for the same reasons set forth in 18, above: "the can end wall first portion is formed again by turning upward by an angle of at least about 26 [degree]."

- 3828 -
1. "At Least Three Layers Reformed Into"

a. Construction

This claim limitation is present in all four patents at issue. While the patents' wording varies slightly, the parties agree that this limitation should be construed the same in all four claims. The parties dispute the meaning of this limitation.

Hallmark contends that this limitation incorporates the limitation that the paperboard is folded and turned back upon itself to form three thicknesses of paperboard laid one over the other. It bases this argument on the prosecution history. In that history, James River changed the phrase "folded areas in which the paperboard has been turned over and sealed on itself" (PX-9) to "densified region…including fiber from at least three thicknesses of said blank" (PX-8, Preliminary Amendment) and then to folds or pleats "including at least three layers of paperboard." (PX-8, Amendment at 2).

James River contends that the limitation refers to the three layers that are necessary to form any pleat. It argues that Hallmark's error is in construing the claim limitation to refer to the pleats as containing three layers after formation, not to the origin of the pleats as being formed from three layers before being pressed.

It is not the densified regions, but the pleats from which they are formed, that contain at least three layers of paperboard. This is clear from the language of the claims. The '496 claim reads: "densified regions being formed from pleats including at least three layers of said paperboard reformed…." PX-003 at 11, lines 17-19 (emphasis added). The '140 claim speaks of: "a plurality of circumferentially-spaced densified regions radially extending through annular portions of said rim, said densified regions including at least three layers of paperboard reformed into substantially integrated fibrous structures…." PX-001 at 14, lines 12-14. The '500 claim describes a process in which: "during said shaping step, forming a plurality of radially-extending, circumferentially-spaced pleats in said rim, each said pleat including at least three layers of fibrous substrate….." and "applying heat and pressure to said rim sufficient to … transform each said pleat into a substantially integrated fibrous structure." PX-002 at 13, lines 62-68, at 14, line 1. Finally, the '499 claim refers to "pressing said blank to form said container including pleats of at least three layers of said paperboard" and "applying sufficient heat and pressure … to reform each said pleat into a substantially integrated fibrous structure…. PX-004 at 11, lines 6-16. Each patent claim is clear from its own language, given its ordinary meaning, and together, they reinforce each other. Pleats are formed in the shaping step, and the application of heat and pressure alters the pleats to form the densified regions. In understanding how this limitation fits into the claims as a whole, it is clear that the three layers retain separate identity only in the pleat before reformation; the densified regions cannot have three layers after reformation if the layers no longer have separate identities. Thus, it is the pleats, before reformation by heat and pressure, not the densified regions, that must contain at least three layers of paperboard.

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1. "Refrigerated source liquid"

The parties agree that "refrigerated source liquid" means "juice, yogurt, etc. which serves as base level ingredients in the preparation of pulverized, slush-like consistency consumer beverages." See '448 patent col. 1 l. 10. The parties disagree, however, over whether "at least one" needs to be included in the construction of "refrigerated source liquid." The issue of whether "at least one" needs to be included in both the terms to be construed and the definition runs throughout a number of the terms. Foodie argues that if the term itself includes "at least one," then the definition should include it also. The Court agrees with that proposition, but also agrees with Jamba Juice that "at least one" should not actually be included in any of the terms at issue. 3 The meaning of "refrigerated source liquid" is what is at issue, and "at least one" is not relevant to the construction of the actual term (or any of the other terms including "at least one"). Moreover, "at least one" is obvious to the jury and need not be construed, and it would be cumbersome and redundant to include the extra phrase in both the terms to be construed and in the definitions. Accordingly, because the Court finds that "at least one" should not be included in any of the terms to be construed, the Court adopts the parties' agreed construction as stated above for "refrigerated source liquid" as the construction of the Court.

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We believe that the district court erred in the first instance by applying the recapture rule to rewrite the claims, essentially claim. Id. at 1470. If it does, the recapture rule bars the "whether the broader aspects of the reissue claims relate to the surrendered subject matter." Id. at 1468-69. This is broader than the patent claims." Id. at 1468. First, the original and reissued claims are construed to ascertain "whether and in what aspect the reissue claims are pertinent to the subject matter surrendered during prosecution are impermissible." Hester Indus., Inc. v. Stein, Inc., 142 F.3d 1472, 1480 (Fed. Cir. 1998). We described in depth the required analysis in a recapture case in In re Clement, 131 F.3d at 1468-70. First, the original and reissued claims are construed to ascertain "whether and in what aspect the reissue claims are broader than the patent claims." Id. at 1468. If the reissue claims are broader in some way, the court must determine "whether the broader aspects of the reissue claims relate to the surrendered subject matter." Id. at 1468-69. This is accomplished by reviewing the prosecution history to determine what has been surrendered and determining whether the additional coverage of the reissue claim reads on the surrendered matter. Id. at 1469-70. If it does, the recapture rule bars the claim. Id. at 1470.

We believe that the district court erred in the first instance by applying the recapture rule to rewrite the claims, essentially
unmaking the change that the PTO had permitted. Claim construction should not, of course, be blind to validity issues: "claims should be so construed, if possible, as to sustain their validity." Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed. Cir. 1999). A claim that is interpreted too broadly will run into validity issues, providing motivation for the construing court to choose a narrower interpretation if possible. However, validity construction should be used as a last resort, not a first principle: "we have limited the maxim [that claims are to be construed to preserve validity] to cases in which the court concludes, after applying all the available tools of claim construction, that the claim is still ambiguous." Phillips, 415 F.3d at 1327 (quotation marks omitted). Construction of the claims here is not so difficult a problem as to require resort to the validity maxim.

MBO clearly sought in reissue to broaden the scope of its patent coverage by rewriting its claims to cover all relative movement, not just retraction. That broadening was the explicitly stated purpose of the reissue application. Application for Reissue of U.S. Patent No. 5,755,699, Reissue Declaration of Blecher et al. at 2 (July 1, 1999) (original claims "claim less than we had a right to claim in that they fail to claim clearly that any relative movement . . . will achieve the desired result of preventing needlestick hazard, whether or not the needle moves toward the body and connected safety device"). In light of these clear statements in the prosecution history of the RE '885 patent, we are compelled to give effect to MBO's stated intent to broaden the coverage of its claims. Whether those broadened claims are invalidated by the recapture rule is an issue separate from construction. In the narrowly limited appellate posture of this case, only the question of infringement, not validity, is before us. 3

3 This is not to say that the recapture rule may never properly factor into claim construction. In a case where the available techniques of construction yield two possible interpretations of a reissue claim, only one of which includes previously surrendered matter, it would be correct to resolve the ambiguity by selecting the interpretation not barred by the recapture rule.

All of the disputed method claims, both original and reissued, refer to "providing a body slidably receiving the needle." The district court construed that phrase as referring to "a stationary body into which the movable needle retracts." We disagree with that construction. In our view, the term refers to the physical relationship between the guard body and the needle, such that the guard body is capable of sliding relative to the needle. That construction of "slidably receiving" is dictated in part by the embodiment depicted in Figures 3 and 4 of the RE '885 patent; those figures show the needle extending forward, not retracting backwards, relative to the guard body. See RE '885 patent col.6 ll.25-32. Therefore, we find that the terms "relatively moved," "slidably receiving," and their cognates permit the needle and guard to slide in any manner.

2. "a relatively smaller patch of web material"

First Quality argues that "a relatively smaller patch of web material" found in Claim 1 of the Ungpiyakul Patent should be construed to mean "a piece of material that is smaller than the absorbent pad, topsheet layer, and backsheet layer." KC offers that the phrase means "a piece of material that is at least somewhat smaller than the backsheet layer."

After review, we find that the intrinsic evidence supports KC's proposed construction. The specification provides, in relevant part:

The article generally includes a backsheet layer 236, and a substantially liquid permeable topsheet layer 239 which is disposed in an adjacent facing relation with the backsheet layer. An absorbent pad 54 is sandwiched between the topsheet and backsheet layers...Accordingly, marginal portions of the topsheet and backsheet extend beyond the periphery of the absorbent pad to form front and rear waistband edges and lateral side edges. A relatively smaller patch of web material 228 is secured to an inward or outward facing surface of the backsheet layer.

U.S. Patent No. 5,286,543 at col.6, ll. 10-23 (emphasis added). Likewise, Claim 1 specifies that "[a]n article comprising: a
backsheet layer; a substantially liquid permeable topsheet layer...An absorbent pad sandwiched between said topsheet and backsheet layers; and a relatively smaller patch of web material secured to an inward or outward facing surface of the said backsheet." U.S. Patent No. 5,286,543, Claim 1. Each of these pieces of evidence indicate that a small patch of web material must be attached to the inward or outward facing surfaces of the backsheet. It follows that in order to be attached to the backsheet the web material must be smaller than said backsheet. Furthermore, the only term appearing in the same clause as a "relatively smaller patch of web material" is the word "backsheet." This indicates that the web material must be relatively smaller than the backsheet in order to be attached to said backsheet. Contrary to First Quality's argument, KC's construction does not impermissibly expand nor limit the scope of the patent. Instead, KC's construction is supported by the claim and specification language. Therefore, we conclude that "a relatively smaller patch of web material" means "a piece of material that is at least somewhat smaller than the backsheet layer."

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The court heard oral argument on the issue of claim construction in order to better understand the extent of the parties' disagreement about the construction of the claims. During oral argument, both parties focused primarily on the '273 patent. Since neither party has distinguished the facestock claims of the '273 patent from the facestocks claimed as part of the process patents, the court's reasoning in this opinion regarding construction of the '273 patent should be considered applicable to the '532 and '669 patents.

When considering the claims, the "terms of a claim will be given their ordinary meaning, unless it appears that the inventor used them differently." ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1579 (Fed. Cir. 1988) (citation omitted). Claim 19 of the '273 patent provides:

19. A multilayer facestock for use in pressure-sensitive label, tape or sign applications comprising a coextrudate of cojoined layers comprising a relatively thick core or base layer of polymeric film material of a stiffness of between 10 and 100 Gurley and which contributes the majority of the dimensional stability and stiffness of labels or signs cut or formed from the facestock, and at least one relatively thin skin layer, said skin layer being on the face side of the coextrudate and having an ink-printable surface, and a pressure-sensitive adhesive layer combined at the side of said coextrudate opposite said face side.

Claims 20 and 21 are dependant on claim 19 and necessarily incorporate by reference all the elements of claim 19. Claims 19-21 cover a plastic multilayer facestock or film. Claim 1 of the '532 patent provides:

1. A method of economically manufacturing die-cut labels or signs using roll or sheet facestock, comprising the steps of providing a plurality of at least two charges of film-forming resin, coextruding said charges to thereby form a construction in the form of a multilayer extrudate comprising a relatively thick core layer and at least one relatively thin skin layer, the former layer providing the majority of the dimensional stability and stiffness of the construction, preselecting the charge for said core layer, as by selection of density or flex modulus, to provide a degree of stiffness suitable for the label or sign application, preselecting the charge for said skin layer to provide a skin adapted to the intended decorating process, such as printability, or surface performance characteristics, such as weatherability of the facestock, and combining said extrudate with a pressure-sensitive adhesive layer to form label or sign facestock, combining said facestock with a liner, die-cutting said facestock to form a label or sign releasably adhered to said liner and surrounded by a matrix of excess facestock material to utilize non-tearing self-supporting properties of said material to pull said matrix away from the die-cut label or sign.

Claims 3 and 8 are dependent on claim 1 and claim 9 is dependent on claim 8. Claim 14 of the '532 patent provides:

14. A method of economically manufacturing die-cut labels or signs using roll or sheet facestock, comprising the steps of providing a plurality of at least two charges of film-forming resin, coextruding said charges to thereby form a construction in the form of a multilayer extrudate having a face side and a back side, said multilayer extrudate including stiffening layer means which contributes the majority of the stiffness of the construction, preselecting at least one of the charges, as by selection of density or flex modulus, to provide said stiffening layers means with a degree of stiffness suitable for the label or sign application, and combining said multilayer extrudate with a pressure-sensitive adhesive layer and release liner to form linered label or sign facestock, die-cutting said facestock to form a label or sign releasably adhered to said liner and
surrounded by a matrix of excess facestock material, and stripping said matrix of excess facestock material to utilize non-tearing self-supporting properties of said material to pull said matrix away from the die-cut label or sign.

Claim 16 is dependent on claim 14. Claim 1 of the ’669 patent provides:

1. A method of economically manufacturing die-cut labels using roll or sheet facestock, comprising the steps of providing a plurality of at least two charges of film-forming resin, coextruding said charges to thereby form a construction in the form of a multilayer extrudate comprising a relatively thick core layer and at least one relatively thin skin layer, preselecting the charge for said core layer, as by selection of density or flex modulus, to provide said facestock with a degree of stiffness suitable for the label application, preselecting the charge for said skin layer to provide a skin adapted to the intended decorating process, or surface performance characteristics, of the facestock and combining said extrudate with a pressure-sensitive adhesive layer to form label facestock, combining said facestock with a liner, die-cutting said facestock to form a label releasably adhered to said liner and surrounded by a matrix of excess facestock material, and stripping said matrix of excess facestock material to utilize non-tearing self-supporting properties of said material to pull said matrix away from the die-cut label.

Claims 2, 3, 7, 8 and 9 are dependent on claim 1. Claim 11 of the ’669 patent provides:

11. A method of economically manufacturing die-cut labels using roll or sheet facestock, comprising the steps of providing a plurality of at least two charges of film-forming resin, coextruding said charges to thereby form a construction in the form of a multilayer extrudate comprising a relatively thick core layer and at least one relatively thin skin layer, preselecting the charge for said core layer, as by selection of density or flex modulus, to provide said facestock with a suitable degree of stiffness and sufficient body and strength for the label application, preselecting the charge for said skin layer to provide a skin adapted to the intended decorating process, or surface performance characteristics, of the facestock, hot-stretching and combining said extrudate with a pressure-sensitive adhesive layer to form label facestock, combining said facestock with a liner, die-cutting said facestock to form a label releasably adhered to said liner and surrounded by a matrix of excess facestock material, and stripping said matrix of excess facestock material to utilize non-tearing self-supporting properties of said material to pull said matrix away from the die-cut label.

The construction of the facestock claims’ terms and phrases desired by the parties, especially "coextrudate of cojoined layers" and "comprising a relatively thick core or base layer," require the court to look beyond the language of the claims. To aid in construction of the claims, the court must look at the patent specifications. "The specification acts as a dictionary when it defines terms used in the claims or when it defines terms by implication." Vitronics at 1582. The patent inventor is his or her own "lexicographer." ZMI at 1580. Therefore, "the specification aids in ascertaining the scope and meaning of the language employed in the claims inasmuch as words must be used in the same way in both the claims and the specification." Id. (citation omitted).

The patent specifications for the ’273 patent offer several illuminating claim descriptions. The specifications for the facestock offer two prototypical examples in Figures 5 and 6. The coextrudates in these examples "comprise polymeric film materials, are formed by simultaneous extrusion from a suitable know type of coextrusion die, and are adhered to each other in a permanently combined state to provide a unitary coextrudate." Patent ’273, Column 9, Lines 21-26. The elements of the facestock, as described in the specifications, are as follows: "a relatively thick core layer of polymeric film material . . . having a cojoined, relatively thin, ink-printable skin layer at least at the face side of the construction, and having a pressure-sensitive adhesive layer combined at the sides of the construction opposite the face side." Patent ’273, Column 10, Lines 59-66. The facestock is produced "by coextruding a plurality of at least two charges of film-forming resin to form a coextrudate having a relatively thick core layer and at least one relatively thin skin layer . . . and combining the coextrudate with a pressure-sensitive adhesive layer." Patent ’273, Column 10, Lines 67-68; Column 11, Lines 1-8.

The prosecution history of the patents provides similarly helpful evidence for this court. A patent's "prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985). The prosecution history reveals that in the application for the ’273 patent, Serial No. 06/853,772, the inventor, Melvin S. Freedman, distinguished his facestock from a product which is "formed by adhering preformed layers." The patent examiner issued a restriction requirement on October 17, 1986 stating: "the product as claimed can be made by a materially different process such as by adhering pre-formed layers." Def's Resp. Ex. W. In an amendment filed
October 27, 1986, Freedman responded: "The process pointed out by the Examiner, namely adhering preformed layers, cannot be used to form the claimed coextrudate, since if the layers were preformed they would not have been coextruded and would not constitute a coextrudate as called for in [the] independent product claims." Def's Resp. Ex. X.

Based upon a review of the entirety of the patent, including the claim language, specifications and prosecution history, the court concludes that claims 19-21 of the '273 patent should be plainly construed to cover a coextrudate which is a facestock, or plastic film, formed solely by simultaneous, or joint, extrusion of several materials through a die. The immediate result of this simultaneous extrusion, or coextrusion, is a multilayer film wherein the layers are firmly adhered to one another in a permanently combined state, i.e., the patented coextrudate. A facestock formed by adhering preformed layers is not within the scope of claims 19-21 of the '273 patent. Further, in claim 19, the coextruded product must have (1) a thick core or base layer (with a stiffness of between 10 and 100 Gurley); (2) at least one thin ink-printable skin layer on the face side of the product; and (3) a pressure-sensitive adhesive layer on the side opposite the face side. In claim 20, the product is the same as in claim 19 with the addition of a second skin layer between the core or base layer and the adhesive layer. In claim 21, the product is the same as in claim 19 with the addition of a releasable liner on the adhesive.

The parties, especially UCB Films, have also devoted substantial time to arguing that the phrase "core or base layer" in the claims must mean "core layer or base layer" (meaning the core must be made up of only one layer) and not, as Avery argues, "core" (which could have one or more layers) or "base layer." However, the court finds that the patent specifications, on which UCB Films primarily relies, use both the term "core" (e.g. '273 Patent; Column 10, Line 46) and the phrase "core layer" (e.g. '273 Patent, Column 10, Line 60). This court is thus unwilling to apply UCB Films' reading to the claims and cannot find on the basis of this argument that the claims are limited to a core composed of a single layer.

As stated previously in this opinion, the court's construction of the claims of the '273 patent is largely applicable to the facestock portions of the process patents. In light of the above claim construction, this court finds that there are disputed issues of material fact as to whether UCB Films infringed the patents and that infringement remains a question of fact to be submitted to a jury. The motions for summary judgment [154-1, 250-1] are therefore denied.

3262

SurgiLance's primary claim construction argument is that the district court erred in construing the phrase "spring means acting between the lance and the body so that in a relaxed condition of the spring means the lance is in a first retracted position within the body" from claim 1 of the '249 patent. '249 patent, col. 4, ll. 25-27. SurgiLance contends that the term "relaxed condition" refers to a state "free of tension" or "non-energized."

In the 2002 order, the district court held, and the parties continue to agree, that this phrase is styled in means-plus-function format. The district court identified two functions for this means-plus-function limitation, which are that the structure "(1) acts between the lance and the body, and (2) retains the lance in a first retracted position within the body." As to the term "relaxed condition," which is contained within the phrase in question, the district court concluded that neither the intrinsic record nor the prosecution history provided guidance in c on struing the term "relaxed condition. " The district court instead referred to a general usage dictionary definition, stating that "the dictionary definition of the verb 'relax' indicates that the term embodies some relativism: 'to make less tense or rigid, 'to lessen the tension or pressure, 'and 'to abate in intensity. ' See WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1917 (3rd Ed. 1986)." Based on this definition, the district court construed the term "relaxed condition" as requiring only a relatively "less energized" state. "The 'springs mean' [sic] limitation is, therefore, interpreted to cover a spring, whether zig-zag or coiled, that regains its original shape after being compressed or extended, that functions between the body and the lance that is in an initial state less energized than a second, extended state of the spring, as well as its equivalents under section 112."

In its 2003 order, the district court again addressed its construction of the term "relaxed condition," but found "no good cause to disturb its prior construction of 'spring means'" related to the relaxed condition limitation.

We hold that the intrinsic record demonstrates that the term "relaxed condition" refers to a condition in which the spring has no potential energy. The claim term "relaxed condition" itself suggests an absolute state of no potential energy because it is
not written in a relative fashion, such as "more relaxed" or "less relaxed." Moreover, the specification refers to the condition of the spring depicted in Figure 1, which is not in tension because the end to which the needle is attached is free to move, as "the relaxed state of the spring." '249 patent, col. 2, ll. 25-26. Thus, the specification equates a "relaxed condition" with a condition in which the spring is free from tension, i.e., has no potential energy.

At oral argument, Owen Mumford attempted to counter this evidence from the intrinsic record. Owen Mumford first cited to column 3 lines 7 to 21 of the specification of the '249 patent, which describes the process of energization as the cap slides onto the body. Owen Mumford's counsel emphasize d that the spring becomes more energized as the cap is slid further onto the body. This fact, however, tends to prove only that the term "energizing" has a relativistic component. It proves nothing about the term "relaxed condition," which relates to the initial state before the cap is slid onto the body. Owen Mumford contended that the function of the spring of the '249 patent as a whole is to "impart[,] the necessary energy to spring the lance forward" and that "it is not critical to that function that the spring in its first condition be totally relaxed or partly energized." At most, this argument demonstrates that the function of the device is consistent with an interpretation of "relaxed condition" as either without potential energy or less energized. Accordingly, Owen Mumford's two arguments provide no reason based on the intrinsic record for adopting an interpretation of "relaxed condition" as "less energized."

Nor does the general usage dictionary definition cited by the district court suggest that "relaxed condition" should be interpreted as "less energized." To begin, the district court focused on the "relativism" of the definition of the verb "relax" but did not consider the lack of relativism of the definition of the adjective "relaxed" in the same dictionary. See Webster's Third New International Dictionary 1917 (3d ed. 1986) (defining "relaxed" as, inter alia, "set at rest or at ease"). A further dictionary definition of the adjective "relaxed" in the appellate record that also lacks relativism is "being free from or relieved from tension or anxiety." Random House Dictionary of the English Language 1627 (2d ed. 1987). Other things being equal, the relativistic dictionary definition of the verb "relax" chosen by the district court would appear to be less appropriate than the non-relativistic definition of the adjective "relaxed" because the claim term at issue uses the adjective "relaxed."

Finally, we note that expert testimony from both sides confirms our construction based on the intrinsic record that a "relaxed condition" is a state in which the spring has no potential energy, not merely a state of relatively less energy. Owen Mumford's own expert Robert Mann testified in his deposition that a "relaxed condition of a spring" is "one in which there's no energy." By affidavit, SurgiLance's expert Stephen Lisak testified that "when a spring is in a relaxed condition, it has zero potential energy."

Accordingly, we hold that the term "relaxed condition" as used in the '249 patent refers to a state in which the spring has no potential energy, i.e., is free from tension.

3263

a. "release layer"

DuPont asks the Court to construe the term "release layer" as meaning "[a] transparent or substantially transparent layer to actinic radiation," or, as corrected for grammar, "a layer that is transparent or substantially transparent to actinic radiation." (DuPont Responsive Br. at 37.) But MacDermid proposes this construction: "A layer used for ease in placing and removing an image bearing transparency onto and from the photopolymerizable surface after exposure to a vacuum frame by providing a substantially non-tacky surface to the typically tacky surface of the photopolymerizable layer." (MacDermid Opening Br. at 43.)

Both parties cite the '859 patent specification as support for their respective positions. (DuPont Opening Br. at 37; MacDermid Opening Br. at 43; Tr. at 53-58, 62-65, 171-75, 179.) According to DuPont, MacDermid's proposed construction incorrectly limits the use of a release layer to analog imaging and ignores that, as recognized by both the specification and the Court, such a layer could be used in digital imaging. (Tr. at 53-58, 62-65, 179.) It further contends that MacDermid's proposed construction improperly restricts the term to a preferred embodiment and reads functional limitations into a structural claim element. (DuPont Opening Br. at 37; Tr. at 53-58, 62-65, 179.) MacDermid attacks DuPont's proposed construction as overly broad and inconsistent with the explicit patent language, and adds that a release layer would serve little if any real function in the digital imaging context. (Tr. at 171-75.)
The Court turns to the specification -- which provides a lengthy discussion of "release layer" -- to construe this term:

The primary purposes of a release layer are for ease in placing and removing an image-bearing transparency onto and from the photopolymerizable surface after exposure in a vacuum frame. (An image-bearing transparency may also be referred to herein as a mask, target, silver halide target, and phototool.) The release layer provides a substantially non-tacky surface to the typically tacky surface of the photopolymerizable layer. The release layer can also protect the surface of the photopolymerizable layer from being damaged during removal of an optional temporary coversheet and can ensure that the photopolymerizable layer does not stick to the coversheet. When the thermally removable layer is functioning as a release layer, the layer is transparent or substantially transparent, i.e., insensitive or substantially insensitive, to actinic radiation. ('859 Patent at col. 10, lines 1-15.)

DuPont's proposed construction comes from the final sentence above, but Dupont fails to take into account the remainder of the specification's "release layer" discussion. The proposed construction also is inconsistent with the actual language of claim 21 itself, which refers to an additional layer selected from the group consisting of a "release layer, adhesion-modifying layer, barrier layer, and surface modifying layer, wherein the at least one more additional layer is transparent to actinic radiation." (Id. at col. 45, lines 17-21 (emphasis added).)

But MacDermid recommends an unduly narrow construction of this term, overlooking language in the specification regarding the presence of a release layer in digital imaging. The Court, in the Preliminary Injunction Opinion, addressed the term in the context of tentatively construing the term "thermally removable layer". (Prelim. Inj. Op. at 33-36.) Quoting the specification, the Court noted that "[a] release layer can also be used with digital imaging." (Id. at 35 (citing '859 Patent at col. 40, lines 1-17).) Specifically, the specification describes an example of digital imaging where the plate structure includes a release layer. (Id.)

The Court therefore rejects each proposed construction. Returning to the specification passage quoted above, it appears that the patent essentially characterizes a "release layer" as a "substantially non-tacky surface". ('859 Patent at col. 10, lines 6-7.)

The Court construes the term "release layer" as referring to "a substantially non-tacky surface."
piece needle holder to retract. Id. at 14-15 (citing '733, 11:49-52).

b. Court's Construction

For the reasons stated above, this Court finds that the invention operates through the use of a clamping or fictional force. This Court, however, is not persuaded that the claimed release must be accomplished in the same manner as the installation. The patent teaches alternative methods for providing release of the holding force. Specifically, the patent allows the holding force to be released by spreading the barrel apart slightly, thus releasing the retraction mechanism. See '733, 11:49-52 ("The barrel is flexible and is spread outwardly a slight amount to the position of FIG. 6 just prior to retraction. Here the mating surfaces are separated an amount which reduces the clamping force on the needle holder."). Therefore, although the holding force is created by sliding engagement in this claim, the Patent contemplates another method of its release.

Accordingly, the Court finds that the term "releaseably installed by sliding engagement of said retainer member and said inwardly facing surface" means "installed by sliding the retainer member along the inwardly facing surface to engage it with the wall of the syringe, which creates a clamping or frictional force that can be released at a later time."

The terms "a first region" and "a second region" appear in claim 2 of the '717 patent:

(2) An apparatus according to claim 1 wherein the video display includes a first region for displaying the video game menu options and a second region for displaying the video game menu choices.

Because it refers back to claim 1, claim 2 is considered "dependent" on claim 1. In addition to its own limitations, its also includes all of the limitations of claim 1. 35 U.S.C. § 112, P 4. Accordingly, the "video display" of claim 2 is the same "video display" claimed in limitation (b) of claim 1.

"a first region" and "a second region"

Again relying on Figure 2 of the '717 patent and the constructions it propounded for claim 1, JVL argues that "a first region" and "a second region" are "separate and distinct areas. The first region displays all video game menu choices and the second region simultaneously and separately displays all video game menu options." Def.'s '717 Presentation at 35. Merit proffers an alternative construction of claim 2: "The apparatus of claim 1, wherein: The video screen includes a first area for showing images relating to all of the selectable game menu items. And a second area for showing images relating to the chosen game menu items." Pl.'s '717 Presentation, Ex. 3 at 4.

The primary dispute concerns JVL's use of the additional words "separate and distinct" and "simultaneously and separately." Merit argues nothing in the specification or prosecution history supports the insertion of these words. It specifically takes issue with JVL's reliance on the '717 patent's description of the preferred embodiment. JVL argues that the "detailed description of preferred embodiments" teaches that Figure 2 is a game menu screen "divided into first, second and third regions." '717 patent at 3:48-50. This justification for the "separate and distinct" construction is improper because Figure 2 is a preferred embodiment of the '717 patent that should not limit construction of the claims. Phillips, 415 F.3d at 1323. ("Although the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments."); Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998) (cautioning against limiting claimed invention to preferred or specific embodiments). More importantly, the specification expressly notes that the invention is "not limited" to preferred embodiments depicted in the drawings. '717 patent at 2:65 - 3:2.

Nonetheless, there can be no doubt that "a first" and "a second" region are distinct regions. Anyone, including one of ordinary skill in the art, would understand these terms to refer to two different regions. The specification advises "[t]he present invention is an apparatus for providing menu choices of video games on a video screen having first and second regions." '717 patent at 2:20-22. As JVL points out, Merit stated during the reexamination that "menu options from a region are placed into specific locations in another region" when addressing the construction of claim 8, 3 which also includes the terms "a first region" and "a second region." Def.'s Suppl. Br., Ex. E at 8 (emphasis added).
Claim 8 reads as follows:

(8) An apparatus for programming video game menu choices on a display from a group of video game menu options, the apparatus comprising:

(a) a video screen having

(i) a first region for displaying video game menu choices;

(ii) a second region for displaying video game menu options, the video game menu choices and video game menu options being simultaneously displayed; and

(b) a display controller for causing video game menu options selected from the second region to be displayed in the first region as a video game menu choice.

Relying on the fact that claim 2 depends on claim 1, JVL argues that the first and second regions "simultaneously and separately" display options and choices. The basis for JVL's current interpretation is its earlier construction of "displaying … options and choices" as requiring simultaneous and separate display. Because that construction was rejected, it does not support JVL's current construction of "a first region" and "a second region."

There is no clearer way to interpret "a first region" and "a second region" than the language of the claim itself. The clear and unambiguous meaning is that they are two different regions. No further construction is necessary.

b. "region of interest"

ev3 seeks a construction that would limit the term "region of interest" to "the lesion or stenotic portion of the vessel that is being treated--i.e., the portion of a vessel that has been narrowed by disease." Boston Scientific, on the other hand, argues that the term should be construed as the "area within the patient's vessel where a medical treatment procedure is to be performed." Neither party disputes that the term "region of interest" refers to a fixed location.

The term "region of interest" appears in several claims of the '520 Patent. There is no indication in the intrinsic evidence that the term "region of interest" should be limited strictly to the lesion or stenotic portion of the vessel being treated. Instead, the Court construes "region of interest" as the "location of a percutaneous procedure to be performed within a patient's vessel." 2

2 This construction also applies to the term "region of interest" in the '987 and '505 Patents.

f. "first and second regions"
The phrase "first and second regions" appears in claim 1 of the '366 Patent. The term "regions" is used to describe the outer surface of the bottom end cap that seals against the inside wall of a housing. Specifically, claim 1(c)(ii) reads: "said second end cap sealing portion including at least first and second regions of different diameters." 19

Donaldson asserts that this phrase should be construed as "areas of a structure's surface" or "areas of an end cap's surface." Baldwin asserts that the phrase should be construed as "two parallel offset sealing surfaces." In support, Baldwin argues that the patent specification describes a single embodiment of the regions on the second end cap outer annular surface, which "in the broadest sense are parallel and offset." In particular, Baldwin argues that FIG. 6 of the patent includes a set of parallel offset sealing surfaces. In addition, Baldwin argues that the specification uses the term "region" interchangeably with the term "step" in describing the annular sealing portion surface, and that such "steps" are parallel and offset.

The patent specification uses the term "region" to describe the surface of both the top end cap and the bottom end cap that seals against a housing. With respect to the top end cap, the specification provides:

Thus, when inlet tube 14 is inserted through aperture 28, end cap material in region 40 will be compressed. In this manner a seal is formed at region 41.

'366 Patent, col. 6, ll. 37-40; '009 Patent, col. 6, ll. 41-43. The specification goes on to describe the "region" of the upper end cap as a ribbed, stepped, or tapered funnel:

For the particular arrangement shown in FIGS. 1-7, material at region 40 is compressed between and against both inlet tube 14 and inner support 26; that is, inner support 26 is set sufficiently deeply into end cap 23 that a portion of it is positioned behind compressible region 40, to provide support. Thus, a good seal is effected. The shape of aperture 28 in region 41 will preferably be as a ribbed or stepped funnel (or tapered), to facilitate engagement."

'366 Patent, col. 6, ll. 50-58; '009 Patent, col. 6, ll. 54-61. The description of the term "region" with respect to the top end cap is relevant to the Court's construction of "regions" in claim 1(c)(ii), as it is used to describe the outer surface of the bottom end cap. See Phillips, 415 F.3d at 1314 ("Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims.").

The specification also describes the outer surface of the bottom end cap that seals against the filter housing. See '366 Patent, col. 9, ll. 26-48; '009 Patent, col. 9, ll. 30-53. While that portion of the specification describes a "preferred configuration for surface 75" that "includes steps 101, 102 and 103, with extensions 105 and 106 therebetween," the patent also describes different shapes for the bottom end cap. In particular, FIG. 13 of the '366 Patent illustrates a mold used to make a second end cap with a different configuration than the "stepped" configuration pictured in FIG. 6. Even though the specification does not discuss in detail the end cap that would result from using the mold in FIG. 13, it discloses a generally tapered configuration to one skilled in the art.

Accordingly, the Court determines that Baldwin's proposed definition of regions requiring two parallel offset sealing surfaces would improperly limit the claim to the "stepped" configuration of an embodiment. Consistent with the claim language and the specification, the Court construes "regions" as "areas of an end cap's surface."
There is no dispute that the term "support member" means that it holds up or serves as a foundation or prop for the connector and/or a portion of the connector. The parties hotly debate, however, the meaning of the modifier "reinforcement." Amphenol argues, and Maxconn disputes, that it indicates that the member must be removable. In particular, Amphenol argues that the prosecution history demonstrates that the term "reinforcement support member" indicates a component that reinforces and supports the contact in such a manner that it can be removed to allow access to the interior of the connector for inspection and/or repair of the contacts without destroying the integrity of the connector so that the connector is reusable.

a. Claim language

The Court agrees with Maxconn that the language of the claim itself does not support Amphenol's position that the word "reinforcement" somehow implies "removable." Indeed, at oral argument, Amphenol concurred that the ordinary meaning of the term "reinforcement" does not require that the member be removable.

b. Specification

At oral argument, the parties took the position that the specification provides no useful guidance on whether the support member must be removable.

c. Prosecution History

The entire debate over the meaning of this term centers on the prosecution history. Maxconn points out that the examiner had rejected all claims of the '017 patent as being anticipated by a patent issued to Evans, which describes a connector body with contact receiving cavities. In Evans, the contacts are not independent of the supporting member; rather, the supporting apparatus and the contacts are molded into one piece. Amphenol argues that Maxconn gave a special meaning to "reinforcement" in the course of prosecution in order to emphasize that the member was removable to prevent damage to the contacts.

i. The Original Application

The original application contained three independent claims: Claims 1, 7, and 14. Application Claim 1 was ultimately cancelled. Application Claim 7 ultimately became Claim 1 and Application Claim 14 ultimately became Claim 6 of the Maxconn '017 patent. Accordingly, the Court will focus its discussion on the prosecution history of Application Claims 7 and 14.

Neither of these claims initially included the word "reinforcement." Application Claim 7 claimed "a locking support member having a mating means for selectively engaging said connector body at said open-ended rear surface . . . ." Application dated April 24, 1987, at 9. Application Claim 14 claimed "[a] support device for portions of angulate contact elements within an interior of a multiple contact connector having a front mating surface and an open-ended rear surface, comprising, a locking support member slidably fit within an open-ended rear surface of a multiple contact connector . . . ." Application dated April 24, 1987, at 11. Initially, the applicant explained that the "locking support member" "permits repair of individual contact elements" in that it "may be removed from the connector," Application dated April 24, 1987, p. 7, and that "[the member] may be detached from the connector to facilitate connector repair." Application dated April 24, 1987, p. 3.

ii. Rejection of Original Claims

The patent examiner found Application Claim 7 unpatentable as anticipated by Evans in view of Reuss or Silbernagel. The examiner also found Application Claim 14 to be anticipated by Evans.

iii. Applicant's First Amendment

The applicant thereafter filed a Substitute Amendment, 3 amending the original claim for a "locking support member" with "locking reinforcement support member." Substitute Amendment mailed December 30, 1987 (emphasis added). The Substitute Amendment pointed out the differences between the present invention and the Evans patent. Among other things,
the applicant argued that Application Claim 14 was distinguishable from Evans in that the "contacts are independent of the supporting member and remain so when the supporting member is removed, such as for visual inspection of the interior of the connector." Substitute Amendment mailed December 30, 1987, p. 6.

3 On December 1, 1987, the applicant filed the first amendment, but the Examiner refused to enter it for failure to comply with a rule concerning renumbering of claims.

As to Application Claim 7, the applicant distinguished the prior art by saying that "the locking support member is removable to allow access to the interior of the connector for inspection and/or repair." Substitute Amendment mailed December 30, 1987, p. 9. He further explained that the removability element was nonobvious: "If the support wafer assembly was removed from the Evans connector, the wire array would be eliminated. . . . Therefore, it teaches away from a removable support connector and would not be obvious to do such." Substitute Amendment mailed December 30, 1987, p. 9.

"Applicant is claiming a connector with a support member . . . [which] when removed does not destroy the integrity of the connector." Substitute Amendment mailed December 30, 1987, p. 9.

Discussing the applicable level of skill in the art, the applicant stated that "the present invention is a connector with a support member that when inserted or removed does not destroy the integrity of the connector . . . . The prior art does not anticipate, teach or suggest the present invention of a removable locking support member in an electrical connector." Substitute Amendment mailed December 30, 1987, p. 10.

iv. Rejection of First Amendment

On July 21, 1988, the examiner rejected the claims, explaining that Application Claim 7 was anticipated by McHugh and that Application Claim 14 was anticipated by Silbernagel.

v. Second Amendment

The applicant then filed an Amendment After Final Rejection. As to Application Claim 7, the applicant amended the claim to incorporate features the examiner had deemed to be patentable (and unrelated to removability). Amendment mailed September 13, 1988, pp. 5-6. As to Application Claim 14, the applicant stated that the invention is an improvement over Silbernagel because the reinforcement support member "is removable to allow access to the interior of the connector for inspection and/or repair." Amendment mailed September 13, 1988, p. 6.

This review of the patent prosecution reveals that the applicant repeatedly argued to the examiner that the point of novelty of the '017 patent was that, unlike previous incarnations of connectors featuring contact wires inextricably encased in supporting material, this new type of support device could be removed from the connector body so as to leave the connector wires intact and to facilitate inspection or repair of the wires.

Maxconn seeks to avoid the effects of the prosecution history by arguing that the statements concerning removability related only to the cancelled Application Claim 1. This argument has no merit. As demonstrated above, the applicant made many representations concerning removability directed to all application claims in general and to claims that became patent Claims 1 and 6. Patent claims may not be interpreted one way in order to obtain their allowance and a different way against accused infringers. See Southwall Technologies, 54 F.3d at 1576.

d. Extrinsic evidence

Reliance on expert testimony is unnecessary since the meaning of the disputed terms can be ascertained from a reading of the prosecution history.

e. Construction
The "reinforcement support member" is a member that can be removed from the connector body without destroying the integrity of the connector in general or the contact wires in particular so as to facilitate inspection or repair of the contacts.

1. Language in Dispute: "A relative concentration of material."

4 Does "a relative concentration of material" mean (1) the presence of some material relative to the hollow lumens or (2) sufficient material to stiffen the tip relative to the remainder of the catheter body?

--- Footnotes ---

4 For each issue to be decided by the Court, Plaintiffs' proposed claim interpretation is listed as (1) and Defendant's proposed claim interpretation is listed as (2).

--- End Footnotes ---

Answer: "A relative concentration of material" means sufficient material to stiffen the tip relative to the remainder of the catheter body.

a). Claim Language

The Court must interpret the term "relative concentration of material." The term "relative" is a comparative term and requires a determination of what is being compared. The claim does not explain to what the relative concentration of material should be compared. Plaintiffs argue it should be compared to the hollow lumen. Arrow argues that when looking at the claim language in the patent, the meaning of "relative concentration of material" cannot be determined because it does not say to what it is relative. The Court agrees. Therefore, the Court must look to the specification and written descriptions for guidance.

b). Written Description

The specification of the '968 patent supports Arrow's construction of the claim. The specification clearly demonstrates that the term "relative" relates to a comparison of the stiffness or rigidity between the catheter tube, the body, and the tip. Each time the words "relative concentration of material" appear in the specification, they appear as a relative concentration to stiffen the tip. This is true in the Abstract, the Summary of the Invention, and also in the Preferred Embodiment.

The abstract explains: "to provide improved dilator characteristics, preferably the tip includes a relative concentration of material for rigidity." (Abstract). Similarly, the summary of the invention describes the conical tapered tip: "[it] comprises a relative concentration of material to impart relative rigidity so that the tip functions as an effective dilator for soft tissue and veins." ( '968 patent, col. 2, lines 38-41). In the preferred embodiment, the specification describes figure 7 as showing a conical tip formed with "a relative concentration of material 23 to stiffen the tip 20. This stiffening aids penetration of the tip 20 into the body cavity (not shown) and also aids the dilation of soft tissue such as veins." ( '968 patent, col. 4, lines 16-21).

c). Prosecution History

The prosecution history is also consistent with Arrow's claim construction. Dr. Mahurkar described the purpose of the relative concentration of material in his prosecution of the '968 patent: "This relative concentration of material further prevents kinking of the catheter tip during insertion." (Def. Ex. 2 at NSHN 128717). Thus, it is the relative concentration of material that stiffens the tip relative to the catheter body, which prevents it from kinking.

d). Prior Litigation

Judge Easterbrook in his opinion In re Mahurkar, 831 F. Supp. 1354, 1359 (N.D. Ill. 1993) discussed figure 7 of the '968 patent.
patent. He explained that figure 7 "shows that the intake lumen of the Mahurkar catheter is sealed off below the intake ports and replaced with a plug of plastic, which the claims of the patent call a 'relative concentration of material.' (This both stiffens the tip and eliminates space in which blood may pool and clot.)" In re Mahurkar, 831 F. Supp. at 1359.

Relative Movement

Konami argues that "relative movement" should be construed as "continuous movement of one thing with reference to another." Defendants Roxor and Redoctane contend that the term requires no construction, and Defendant MadCatz proposes that if the Court decides to construe the term, it should mean "movement of one thing with reference to another." In addition to whether "relative movement" should be construed at all, the parties disagree about the propriety of Konami's requirement that the movement be "continuous." The Court finds that the term requires no construction because the patentee used the term in accordance with its ordinary accustomed meaning, and additionally finds that Konami's "continuous" limitation lacks support as applied to "relative movement." n10

"Relative movement" is generally found in the following context: n11

a guidance unit effecting display of relative movement between said first and second display parts;

said guidance unit including a control section for controlling said relative movement to display a matching relationship between said first and second display parts in timed relationship with said rhythmic piece to thereby direct the player to actuate said actuateable parts (emphasis added).

This claim language suggests that the patentee used the term "relative movement" in accordance with its normal and accustomed meaning, which encompasses all types of movement including "continuous" and "non-continuous" movement. Rexnord Corp., 274 F.3d at 1342. However, Konami argues that the specification teaches that the display parts are, in fact, a series of discrete stationary images rapidly displayed to create the illusion of continuous movement. In support, Konami points to a part of the preferred embodiment describing the allocation of memory that loads the display parts "without interruption." See 8:26-29. The Court finds this excerpt is insufficient to overcome the presumption that "relative movement" should carry a broader meaning, which is in accord with its ordinary and accustomed meaning. CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d at 1366.

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n10 The Court finds that "movement of one thing with reference to another" is not helpful because it merely confirms the ordinary meaning of "relative movement." Thus, the Court will focus on Konami's "continuous" limitation, and on whether "relative movement" should be construed at all.

n11 "Relative movement" appears in claims 11, 22, 28, 36, 42, 46, 48, 49, and 50, but once again, the Court will use claim 11 as an exemplar.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - -
display surface 31 of the monitor 3 in scroll display is written. The scroll display control section 110 causes a stepping position indication marks from the mark memory 111 to be written as scroll images into a display memory 3a in such a manner that the reading addresses are shifted sequentially at predetermined time intervals. In this manner, in addition to dance images which are not scrolled, stepping indication marks which are scrolled are also transferred in sequence to the display memory 3a, and furthermore, the contents of the display memory 3a are repeatedly read and displayed in known display scanning means at a cycle, such as 1/60 seconds, and on the display surface 31, the stepping position indication mark is scrolled and displayed on the display surface 31 and the dance image is displayed in a moving-picture manner as a background image (emphasis added). 8:19-44.

The emphasis on "scrolling," which appears in dependent claim 32 as a particular sub-category of "relative movement," indicates that this excerpt describes a preferred embodiment including "scrolling" but the more general concept of "relative movement" is not implicated.

As noted above, the patentee used "relative movement" in its normal and accustomed meaning, which includes both "continuous" and "non-continuous" movement. The claims do not suggest that any particular type of movement was contemplated, and although Konami argues that the specification teaches a particular type of movement, that guidance is not particularly strong or clear as to "relative movement" and seems to read more directly on "scrolling." Therefore, the Court finds that this term's ordinary and accustomed meaning controls, and no construction is necessary.

Relative Position

The '754 patent teaches:

a programmable microcomputer control apparatus for controlling the relative motion between a tool and a workpiece comprising … indicator means for providing at an output digital signals indicative of the relative position between the tool and the workpiece.

Def. Ex. A (Pat.) at col. 14, ll. 41-46. Defendants argue that this is a means-plus-function element. Defendants are correct; the element discloses a function (providing output signals indicative of relative position) and does not describe the structure used to accomplish that function. See Cole v. Kimberly-Clark, 102 F.3d 524, 531 (Fed. Cir. 1996) ( means-plus-function elements "must not recite a definite structure which performs the described function."). In such cases, the Court must adopt the structures set forth in the specification as a limit on the element.

Defendant also argues that this element must be limited to an indicator which directly measures the relative distance between the tool and the workpiece rather than indirectly calculating this distance by measuring the absolute distances of the tool and the workpiece from some fixed reference point. Plaintiff argues that the indicator successfully indicates the "relative distance" between the tool and the workpiece regardless of whether it directly measures the distance between the tool and the workpiece, or indirectly determines their relative distance from each other by reference to some fixed point. Plaintiff therefore argues that the language of this element does not support such a distinction. To the contrary, plaintiff argues that the patent specification mandates against it.

Defendants contend that plaintiff relied on a distinction between direct and indirect calculation of the distance between the tool and the workpiece by distinguishing between devices that measure "relative" and "absolute" position in the prosecution history. For example, Hurco distinguished the Kokai patent by stating: "Kokai discloses current position register 7 storing absolute position, but no apparent indication of relative position," See Def. Ex. D at HA022961, while simultaneously claiming that the '754 patent "requires the indication of the relative position of the tool and the workpiece."

In response, plaintiff notes that although the '754 patent uses the phrase "relative position," the patent's specification itself describes the position of the workpiece as being determined by reference to an absolute, fixed point on the machine tool table. In particular, the specification states:

When the program is in data block zero the table zero may be established over the full range of table travel by pushing
Def. Ex. A (Pat.) col 6, ll. 30-34. Plaintiff therefore argues that the phrase "indicative of the relative position between the tool and the workpiece" must be construed to include systems that measure the location of the workpiece from some fixed point on the machine tool table. Although plaintiff cannot explain the prosecution history excerpt defendant cites regarding "absolute position," the exact meaning of this excerpt is unclear, and plaintiff's interpretation seems to accord better with the language of the specification itself. The Court therefore rejects defendants' proposed limitation.

H. "Relative Sliding Movement Between the Auxiliary Device and Weapon Causes the Inclined Surface to Cause the Latching Mechanism to Overcome the Biasing Force of the Spring-Biased Mechanism"

The quoted phrase is used only in claim 27. Insight proposes a construction for the phrase, while Glock and SureFire contend that no construction is required. Insight states that the phrase means "that the spring-biased mechanism includes an inclined surface, such as depicted in the patent's Figure 6, [] that is configured so that when the auxiliary device slides onto the weapon, the sliding motion of the weapon causes the sloped surface to be pushed against the biasing force of the spring that biases the spring-biased mechanism." Neither Glock nor SureFire have responded to Insight's proposed construction.

Claim 27 is dependent on claim 24, which claims the auxiliary device of claim 1 in the circumstance when the "spring-biased mechanism comprises a latching mechanism." Claim 27 provides a specific form of latching mechanism, using an inclined surface as part of the spring-biased mechanism. The distinction appears to be that the inclined surface of the spring-biased mechanism "facilitates the installation of the auxiliary device on the weapon." 8:21-22. In other words, the inclined surface causes an "automatic retraction as the auxiliary device is slid onto the weapon [that] simplifies installation, as it eliminates the need to manually retract the transverse bar as the auxiliary device is being installed." 8:34-38. Therefore, the specification provides sufficient additional description of the invention claimed in claim 27 so that additional construction is not necessary.

b. Court's Construction

Plaintiff contends this term should be given its commonly understood meaning, and no construction is necessary. Alternatively, if some construction is required, Plaintiff asserts the term describes an orientation whereby one item is positioned apart from another, forming a gap in between and that there is no requirement that the spaced relationship be "parallel." (’631 Patent at 7:6-11).

In one of the embodiments, the fin structures have been oriented "in parallel spaced apart relation" to one another. (’631 Patent at 3:19-20.)
Patent at 4:30-31). The specification explains that, in this particular embodiment, "the cover plate is provided with an elongated inlet which is generally aligned with [the] gap." (631 Patent at 4:32-33). That is, the parallel positioning of the fin structures in that embodiment is tied to the corresponding shape of the air flow inlet.

According to Plaintiff, while a parallel arrangement may be a sufficient structure, it is not necessary. Plaintiff argues there is no reason why another embodiment using a differently-shaped air inlet would not be allowed to use a differently-shaped gap. Plaintiff relies on the fact that the claim language only requires a "relative spaced relation" instead of a "parallel spaced relation" like the embodiment discussed at Col. 4, Lines 30-31. Again, Plaintiff assert the specification warns that the claims do not require any particular shape or design for the gap, including any shape or design described in the preferred embodiments. (631 Patent at 7:6-11).

Defendants suggest that unless "relative" is defined to mean "parallel," it would be meaningless. The Court agrees. If construed as Plaintiff proposes, the term "relative spaced relation" would encompass any spatial positioning of the fin structures so long as a gap is formed therebetween. As urged by Defendants, such a construction is inappropriate because it encompasses a seemingly infinite number of spatial orientations of the fin structures. Positioning the fin structures at any position other than parallel to each other would hinder the stated goal of the '631 Patent, namely to provide a split-feed, transverse air flow such that air flow is divided into two portions and passed through the fin structures.

The specification of the '631 Patent discloses, in all shown embodiments, that the fin structures are positioned in a parallel relationship. Each figure depicting the heat sink assembly in the '631 Patent shows the fin structures positioned parallel to each other with an unoccupied space extending from the second surface. This "spaced relationship" is described in the specification as nothing but "parallel." (631 Patent at 4:27-30 ("It will be seen further in FIG. 1 that first fin structure 16 and second fin structure 18 are affixed to the top plate 12 on the surface opposite mounting surface 13 in parallel spaced apart relation")). The Court notes that the '631 Patent describes the invention as a whole. Thus, this description of parallel spaced relation limits the scope of the invention. See Tivo, Inc. v. Echostar Comm. Corp., 516 F.3d 1290, 1300 (Fed. Cir. 2008) (Noting the specification referred to the separation aspect of the "invention" and not merely one embodiment of a broader invention, the Federal Circuit held that "[w]hen a patent thus describes the features of the 'present invention' as a whole, this description limits the scope of the invention."). This construction is further supported by the fact that the cover plate of the '631 Patent, which encloses the fin structures, is specifically designed to fit with fin structures that are positioned in a parallel relationship.

The "cautionary language" in the '631 Patent that Plaintiff relies upon, which states that "various modifications" can be made and "alternative materials, shapes and dimensions may be utilized," does not compel the construction Plaintiff advances. Such boilerplate language is given no weight here. Fromson v. Anitaec Printing Plates, 132 F.3d 1437, 1447 (Fed. Cir. 1997) (rejecting boilerplate statement that other "suitable liquids" could be used as insufficiently specific); Honeywell Intl', Inc. v. ITT Indus., 452 F.3d 1312, 1318-19 (Fed. Cir. 2006) (stating, in the context of patentee's statement during prosecution, that "such a broad and vague statement cannot contradict the clear statements in the specification describing the invention more narrowly"); Aspex Eyewear, Inc. v. Altair Eyewear, Inc., 386 F. Supp. 2d 526, 535 (S.D. N.Y. 2005) (In the absence of any specific statement in the specification, "[g]eneralized disclaimers provide no guidance in defining which variations are within the scope of the claim language and which are not.").

Although the Court agrees the fin structures must be positioned apart in a paralleled relationship, the Court is not convinced, as urged by Defendants, that the unoccupied space extends from the second surface. Therefore, the Court construes "being in relative spaced relation" to mean "positioned apart from and parallel to each other such that an unoccupied space is formed between the fin structures."

Similarly, the district court also properly construed the term "relative to" ("identification of a position . . . relative to the positional coordinates and other items of interest . . . ") to denote that the "information transmitted to a user of the system displays the items of interest only relative to the positional coordinates" in an internal grid system, as opposed to absolutely, such as by reference to that item of interest's latitude and longitude. CIVIX slip op. at 40. The prosecution history, together with the claims language, require this construction. CIVIX amended independent claims 1, 17 and 26 by adding the limitation "relative to" in order to overcome an examiner's rejection for indefiniteness, which stated that "the position of
CIVIX argues this construction renders the GPS embodiment unworkable, because the system would have to store nearly an infinite number of positional coordinates for each item of interest to allow for continuous redefinition, and because, by referring to a GPS system, the specification implicitly references the use of a system such as latitude and longitude to define a position. However, as the district court's opinion thoroughly discussed, the prosecution history, the overall structure of the specification and the appended source code (which only provides for the user to select a pre-defined area of interest, and not define the positional coordinates himself), as well as the extrinsic evidence, all lead to the conclusion that the claims identify the position of the item of interest in relation to an arbitrary reference point, not by its "absolute" location in a generally accepted coordinate system. There is no indication in the record that the GPS embodiment stores or transmits location using latitude and longitude. Even if there were, the GPS embodiment was described prior to the claim amendment, and remained in the specification without modification. If the GPS embodiment uses absolute positioning, it falls outside the amended claims and is dedicated to the public. Moreover, as further discussed below, even if CIVIX' claims encompassed the use of latitude and longitude as positional coordinates, defendants' systems still would not infringe because they do not locate each item of interest through "positional coordinates" of a reference point other than that of the item of interest searched by the user, and they do not locate their geographic vicinities by reference to such positional coordinates.

The only disputed claim term is "relatively resilient end edge portion which temporarily deflects and subsequently rebounds to snap-secure." '573 patent col.8 ll.61-62. The district court construed this term to mean that "the end edge portion is sufficiently resilient that it can temporarily deflect and subsequently rebound when glass is being inserted into the frame." S.J. Op. at 3 (emphasis added). Saint-Gobain argues that the term should have been construed to mean that "the end edge portion is sufficiently flexible to permit the glass in the finished product to be pushed out of the frame and pushed back into the frame." Br. for Defendant-Appellant Saint-Gobain Corp. at 25 (emphasis added). More particularly, Saint-Gobain argues that "relatively resilient" should not mean "temporarily resilient immediately after cooking in an oven and before any opportunity to cool." Id. at 26. Gemtron argues that the district court's construction was correct. The parties do not dispute that the "relatively resilient" limitation requires that the frame be flexible at some point in time. The dispute is about precisely when the frame must be flexible to satisfy the "relatively resilient" limitation.

Because neither party has identified any portion of the prosecution history or any extrinsic evidence bearing on the claim construction issues before us, we confine our analysis to the claim language and the specification. Looking first to the claim language, we note that claim 23 has no express temporal or temperature limitation requiring that the end edge portion be relatively resilient "always," or "at all temperatures," or "when in use in a refrigerator," or "when in use in a refrigerator." Additionally, the claim does not merely claim a frame with an end edge portion that is "relatively resilient." The full expression recited in the claim calls for a frame with a "relatively resilient end edge portion which temporarily deflects and subsequently rebounds to snap-secure" one of [the] glass piece front and rear edges in the glass piece edge-receiving channel." '573 patent col.8 ll.61-64 (emphasis added). The use of the phrase "temporarily deflects and subsequently rebounds to snap-secure" suggests that the claimed resilience of the frame need only be exhibited during assembly. The "snap-secure" interaction of the frame and glass piece, facilitated by the "relatively resilient end edge portion," is a characteristic of the shelf that is maintained even after assembly in the claimed shelf. While the claim language ties the "relatively resilient" characteristic of the frame's edge portion to its function in the assembly of the shelf, that characteristic is nonetheless a structural attribute possessed by the claimed frame and is not a process limitation. See, e.g., In re Garnero, 412 F.2d 276, 279, 56 C.C.P.A. 1289 (CCPA 1969) (listing similar examples of claim terms "held capable of construction as structural, rather than process, limitations").

Like the claims, the specification focuses on the characteristics of the frame that enable snap-secure assembly of the claimed shelf. In the "Background of the Invention" section, the specification describes the structure of prior art shelves by reference to the way in which the shelves are assembled. See, e.g., '573 patent col.1 ll.21-27 (describing assembly of prior art shelf as "[t]he glass [panel] is basically 'dropped-in' from above, not snapped-in from below"); id. col.1 ll.28-36 (describing other prior art shelves as "the same type shelf structure" but assembled using different methods, in which "a sheet of glass … is slid into opposite channels of a frame and then is locked into position" or "a panel . . . is dropped-in from above and rests upon a flange"). The specification characterizes all of the prior art as disclosing a shelf assembled by "adhesively bonding a peripheral edge of a sheet of glass to [the] frame." Id. col.1 ll.43-45. The specification goes on to criticize this type of shelf
structure, because of the additional cost of the adhesive and the "additional steps [that] are required during the assembly process." Id. col.1 ll.46-55. Likewise, in the "Brief Summary of the Invention" section, in discussing the advantages of the disclosed shelf over this prior art, the specification stresses the advantages that the claimed structure has in the manufacturing and assembly process:

In this manner, a sliding shelf is manufactured at a relatively low cost from only two pieces of material (a frame and a glass panel) in the absence of the added costly manufacturing step of applying adhesive and removing excess adhesive, while at the same time increasing conductivity because the fingers cover but minor lower surface areas of the glass panel side, front and rear edges.

Id. col.2 ll.58-65. In fact, every time the structure of the "relatively resilient" edge portions is mentioned in the specification, it is in the context of a discussion of how that structure functions while the shelf is assembled. See id. col.2 ll.42-47 (describing "relatively resilient" ends of fingers "such that the glass panel can be snap-secured"); id. col.5 ll.57-60 ("Due to this relative dimensioning and the relatively flexible nature of the fingers 90 and the finger terminal edge portions 91 thereof, the latter are free to temporarily flex and deform as the glass panel 35 is inserted upwardly . . . ."). There is no discussion in the specification of any purpose for or value of the 'relatively resilient' structural characteristic of the end edge portions of the frame, other than to facilitate assembly of the shelf. This indicates that the end edge portions of the frame have the claimed structural characteristic--"relatively resilient"--if they are able to deflect at the time the shelf is assembled, to "snap-secure" the glass panel within the frame.

For these reasons, we affirm the district court's construction of "relatively resilient end edge portion which temporarily deflects and subsequently rebounds to snap-secure" as used in claim 23 to mean that the end edge portion must be sufficiently resilient that it can temporarily deflect and subsequently rebound when glass is being inserted into the frame.

Saint-Gobain argues that a construction requiring only that the frame deflect at the time that glass is being inserted into the frame during assembly transforms the "relatively resilient" limitation of claim 23 into a product-by-process limitation. We disagree. The limitation requires that the glass panel be "snap-secure[d]" in the frame. "Snap-secure[d]" describes the structural relationship between the glass panel and the frame, which is possessed by the claimed shelf because of the structural characteristics of the individual components. See, e.g., 3M Innovative Props. Co. v. Avery Dennison Corp., 350 F.3d 1365, 1371 (Fed. Cir. 2003) ("[E]ven words of limitation that can connote with equal force a structural characteristic of the product or a process of manufacture are commonly and by default interpreted in their structural sense . . . ."); Hazani v. U.S. Int'l Trade Comm'n, 126 F.3d 1473, 1479 (Fed. Cir. 1997) (holding that claim is not product-by-process claim if it "describes the product more by its structure than by the process used to obtain it"); see also Garnero, 412 F.2d at 279 (noting that past-tense verbs such as "'intermixed,' 'ground in place,' 'press fitted,' 'etched,' and 'welded,' all . . . at one time or another have been separately held capable of construction as structural, rather than process, limitations."); Eric P. Mirabel, Product-By-Process Claims: A Practical Perspective, 68 J. Pat. & Trademark Off. Soc'y 3, 4-7 (1986). Defining a structural component by its functional as well as its physical characteristics is different from defining a structure solely by the process by which it is made. Our construction therefore does not transform the "relatively resilient" limitation of claim 23 into a product-by-process limitation.

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E. "relatively rigid system"

As noted above, "system" means just that, and not "fork" as Fox would construe the term. The parties here differ on the meaning of "relatively rigid." "Rigid" itself requires no further construction; SRAM's proposed definition of "stiff" is unnecessary for understanding the claim. SRAM also proposes that "relatively" be construed as "comparatively." Although Fox argues for a further clarification, none is necessary.

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2. "Relatively short length"

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SBM seeks to construe the phrase "relatively short length" in Claim 1, as follows:

. . . said mooring arm having a relatively short length such that when/if in an essentially upright position from the buoyant body toward sea level, it extends/would extend no further than to just below or just above sea level

APL, however, argues for the following construction:

. . . said mooring arm having enough length to exert significant turning forces on the turntable, and such that when in an essentially upright position from the buoyant body toward sea level, the mooring arm extends no further than to just below or just above sea level,

Although neither party disputes that Claim 1 contains a maximum length limitation on its face (i.e., "a relatively short length such that when in an essentially upright position from the buoyant body toward sea level, the mooring arm extends no further than just below or just above sea level"), APL's construction proposes that a minimum length limitation be read into Claim 1. The minimum length limitation does not appear on the face of Claim 1. APL argues, however, that the prosecution history of the '183 Patent supports the reading of the limitation into Claim 1.

In distinguishing the SBM device from the Urdshals et al. 5,288,253 reference (the "Urdshals patent"), SBM argued to the Patent and Trademark Office ("PTO"):

By contrast, the relatively short arm 6 of the present invention, to which the vessel is connected via an anchor chain or rope, as can clearly be seen from Figure 1, will, upon weatherwaving of the vessel around the buoy, transmit a rotational torque onto turntable 5. The rigid arm 6 is relatively short and can exert a rotational torque on the turntable which is significantly larger than if the mooring hawser 14 in Figure 1 of the present invention were to be directly connected to the turntable 5 as is the case in the URDSHALS et al. reference.

Amendment, Document No. 55 ex. B, at SBM 00294-00295. In this passage, SBM is distinguishing from the Urdshals patent the specific ability of the '183 Patent's "relatively short arm" to exert a significantly larger rotational torque on the turntable than if the mooring hawser were directly connected to the turntable. See CCS Fitness, 288 F.3d at 1366-67 (noting that prosecution disclaimer may operate to limit claim scope where "the patentee distinguished [a] term from prior art on the basis of a particular embodiment."). This language from the prosecution history is sufficient to meet the "clear and unmistakable" standard set forth in Omega Engineering to support a finding of prosecution disclaimer. Thus, prosecution disclaimer applies and a minimum limitation is read into Claim 1 such that the "rigid mooring arm" be long enough to exert a significantly larger rotational torque on the turntable than if the mooring hawser were directly connected to the turntable.

Based on the foregoing, the claim phrase "relatively short length" as used in Claim 1 is construed to mean "said mooring arm having a minimum length long enough to exert a significantly larger rotational torque on the turntable than if the mooring hawser were directly connected to the turntable and having a maximum length such that when in an essentially upright position from the buoyant body toward sea level, the mooring arm extends no further than to just below or just above sea level."
Claim 9. A condenser for a refrigerant in a cooling system comprising:

[1] a pair of spaced, generally parallel, elongated cylindrical tubes defining headers;

[2] a vapor inlet in one of said tubes;

[3] a condensate outlet from one of said tubes;

[4] said header tubes each having a series of elongated generally parallel slots with the slots in the series on one header tube aligned with and facing the slots in the series on the other header tube;

[5] a tube row defined by a plurality of straight, tubes of flat cross-section and with flat side walls and having opposed ends extending in parallel between said header tubes, the ends of said flat cross-section tubes being disposed in corresponding aligned ones of said slots and in fluid communication with the interior of said header tubes, at least some of said tubes being in hydraulic parallel with each other;

[6] web means within said flat cross-section tubes and extending between and joined to the flat side walls at spaced intervals to (a) define a plurality of discrete, hydraulically parallel flow paths within each flat cross-section tube that extend between said header tubes; to (b) absorb forces resulting from internal pressure within said condenser and tending to expand the flat cross-section tubes; and to (c) conduct heat between both said flat sides and fluid in said flow paths;

[7] said flow paths being of relatively small hydraulic diameter which is defined as the cross-sectional area of the corresponding flow path multiplied by four (4) and divided by the wetted perimeter of the corresponding flow path;

[8] serpentine fins incapable of supporting said flat cross-section tubes against substantial internal pressure extending between facing flat side walls of adjacent flat cross-section tubes;

[9] each of said flow paths including at least one elongated crevice extending generally along the length of the associated flow path.

Claim 10. The condenser of claim 9 wherein each flow path has a plurality of said crevices.

It is not disputed that all of the elements of the claimed invention have counterparts in the accused condensers, and that infringement turns on the meaning and scope of the terms "flat side walls" and "relatively small hydraulic diameter."

Modine challenges the correctness of the Commission's claim interpretation and the ensuing finding of non-infringement.

II

INFRINGEMENT

As we have recently held, "because claim construction is a matter of law, the construction given the claims is reviewed de novo on appeal." Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2D (BNA) 1321, 1329 (Fed. Cir.) (en banc), cert. granted, 116 S. Ct. 40 (1995). Disputes as to the meaning and scope of terms as used in the claims are determined as a matter of law, based on the patent specification and the prosecution history if it is in evidence. Id. at 979-80, 34 U.S.P.Q.2D (BNA) at 1329-30. As stated in Markman, "when legal 'experts' offer their conflicting views of how the patent should be construed, or where the legal expert's view of how the patent should be construed conflicts with the patent document itself, such conflict does not create a question of fact nor can the expert opinion bind the court or relieve the court of its obligation to construe the claims according to the tenor of the patent. This opinion testimony also does not change or affect the de novo appellate review standard for ascertaining the meaning of the claim language." Id. at 983, 34 U.S.P.Q.2D at 1333.

*   *   *

B. RELATIVELY SMALL HYDRAULIC DIAMETER
The Commission held that the claim term "relatively small hydraulic diameter" is a limitation to hydraulic diameters no larger than exactly 0.040 inch. Since the hydraulic diameters of the Showa condensers are all larger than 0.040 inch, the Commission held that the claims are not infringed, literally or under the doctrine of equivalents.

Hydraulic diameter is an engineering designation that measures the flow path within the condenser. It is defined as the cross-sectional area of the corresponding flow path multiplied by four and divided by the wetted perimeter of the corresponding flow path; this definition is included in claim clause [7]. Claims 9 and 10, the claims in suit, describe the hydraulic diameter as "relatively small." Claims not in suit describe the hydraulic diameter as "about 0.015 to 0.040 inches" (claims 1-3), "in the range of 0.015 to 0.040 inches" (claims 4-5), and "sufficiently small . . . so that surface tension and capillary forces acting upon condensate within said flow paths improve heat transfer efficiency" (claims 6-8). The Commission held that "relatively small" in claims 9 and 10 has an upper limit of 0.040 inch.

Ordinarily a claim element that is claimed in general descriptive words, when a numerical range appears in the specification and in other claims, is not limited to the numbers in the specification or the other claims. See Specialty Composites v. Cabot Corp., 845 F.2d 981, 987, 6 U.S.P.Q.2D (BNA) 1601, 1604 (Fed. Cir. 1988) ("Particular embodiments appearing in the specification will not generally be read into the claims . . . What is patented is not restricted to the examples, but is defined by the words in the claims.") It is usually incorrect to read numerical precision into a claim from which it is absent, particularly when other claims contain the numerical limitation. In D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1574, 225 U.S.P.Q. (BNA) 236, 239 (Fed. Cir. 1985), the court stated:

Where, as here, the limitation sought to be "read into" a claim already appears in another claim, the rule is far more than "general." It is fixed. It is long and well established. It enjoys an immutable and universally applicable status comparatively rare among rules of law. Without it, the entire statutory and regulatory structure governing the drafting, submission, examination, allowance, and enforceability of claims would crumble.

When a limitation is included in several claims but is stated in terms of apparently different scope, there is a presumption that a difference in scope is intended and is real. Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023, 4 U.S.P.Q.2D (BNA) 1283, 1288 (Fed. Cir. 1987). Such a presumption can be overcome, but the evidence must be clear and persuasive. Conversely, it is incorrect to construe a claim as encompassing the scope that was relinquished in order to obtain allowance of another claim, despite a difference in the words used. See Builders Concrete, Inc. v. Bremerton Concrete Prods. Co., 757 F.2d 255, 260, 225 U.S.P.Q. (BNA) 240, 243 (Fed. Cir. 1985).

All rules of construction must be understood in terms of the factual situations that produced them, and applied in fidelity to their origins. Thus, although Modine stresses the rule that the description of the preferred embodiment in the specification does not limit the claims to that embodiment, when the preferred embodiment is described in the specification as the invention itself, the claims are not necessarily entitled to a scope broader than that embodiment. See Autogiro Co. of America v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 398, 155 U.S.P.Q. (BNA) 697, 703 (Ct. Cl. 1967) ("where the patentee describes an embodiment as being the invention itself and not only one way of utilizing it," this description guides understanding the scope of the claims).

Modine accurately states that the '580 specification describes "about 0.015-0.040 inch" as the "preferred embodiment." However, it is the only embodiment remaining for, as we shall discuss, the broader range of 0.015-0.070 inch was removed from the specification on refiling of the patent application. Modine thus limited the invention of the '580 patent to hydraulic diameters in the range of about 0.015-0.040 inch. Although Modine states that it neither abandoned, nor intended to abandon, the broader range of hydraulic diameters, and is prosecuting in another application claims that include hydraulic diameters up to 0.07 inch, that does not control the construction of the claims of the '580 patent.

Thus we agree with the Commission that "relatively small" in claims 9 and 10, interpreted in light of the '580 specification and the prosecution history, is not entitled to the range of up to 0.070 inch as sought by Modine. However, the Commission erred in literally restricting the hydraulic diameter range to an upper limit of exactly 0.040 inch, and in barring access to the doctrine of equivalents. See Hilton Davis Chem. Co. v. Warner-Jenkinson Co., 62 F.3d 1512, 1522, 35 U.S.P.Q.2D (BNA) 1641, 1648 (Fed. Cir. 1995) (en banc) ("The trial judge does not have discretion to choose whether to apply the doctrine of equivalents when the record shows no literal infringement.")

1. The Specification and the Prosecution History
The ’580 patent evolved from two continuation-in-part applications. The first-filed application, called the "grandparent," described condenser tubes with flow paths having hydraulic diameters in the range of "about 0.015-0.070" inch. The specification stated that "heat transfer is increased in the range of hydraulic diameters of about 0.015 inches to about 0.070 inches through the use of the invention with some variance depending upon air flow." The specification also stated that the preferred range was "about 0.015-0.040" inch. The specification included a graph of heat transfer as a function of hydraulic diameter, and described the graph as showing improved performance at hydraulic diameters up to about 0.070 inch.

In the second-filed application, called the "parent," the hydraulic diameter upper limit of "about 0.070" inch in the grandparent was replaced, at every occurrence in the text, with "about 0.040" inch. The graph showing improved performance at hydraulic diameters up to 0.070 inch was retained in the application, but the explanatory text now described the graph as showing that

heat transfer is advantageously and substantially increased in the range of hydraulic diameters of about 0.015 inches to about 0.040 inches through the use of the invention with some variance depending upon air flow.

In the ensuing prosecution, when the examiner objected that the specification did not show "criticality" of the 0.015-0.040 inch range, Modine argued that this was the peak range "and it is this peak heat range that is sought to be covered by the applicant." During prosecution of the parent application Modine told the patent examiner of the "Cat-Folded Front" condenser that was made by Modine for the Caterpillar Company for use in tractors, and sold more than a year before the filing date of the grandparent application. The Cat condenser had several structural differences from the condenser described in these applications: it had an overall hydraulic diameter of 0.0496 inch (or 0.04822, the record shows both figures); it did not have a web joined to the tube walls; and it did not have a plurality of elongated crevices in the flow paths. The Cat condenser was treated as prior art, along with several cited references.

Modine again refiled the patent application (the "child" application), without further change in the description of the hydraulic diameter. Although Modine points out that hydraulic diameters up to 0.070 inch continued to be shown in the graph that appeared in all three applications, the replacement of 0.070 with 0.040 in the text requires the conclusion that the applicant limited the invention described in the refiled applications to hydraulic diameters of up to about 0.040 inch.

Modine argues that the limitation in the parent/child specifications to hydraulic diameters of about 0.015-0.040 inch was not required by the prior art, pointing out that it is appropriate to consider not only the changes made during prosecution but also the reason for the changes. See Insta-Foam Prods., Inc. v. Universal Foam Sys., Inc., 906 F.2d 698, 703, 15 U.S.P.Q.2D (BNA) 1295, 1298 (Fed. Cir. 1990) ("A close examination must be made as to not only what was surrendered, but also the reason for such a surrender.") Although Modine may be correct that it was not necessary to reduce 0.070 to 0.040, this change was conspicuous and unambiguous. It was made in the context of the cited references and the Cat condenser, and the interested public is entitled to rely on it in interpreting the claim term "relatively small" as used in the ’580 patent.

2. The Incorporation by Reference

The '580 specification incorporates by reference a patent entitled "Method of Making a Heat Exchanger," U.S. Patent No. 4,688,311 (the ’311 patent). The ’580 specification states that the ’311 patent describes a "highly preferred means by which the tubes 20 with accompanying spacers 40 may be formed." Modine places great weight on this incorporation to support its position that "relatively small" is correctly construed to mean hydraulic diameters up to 0.07 inch, for the ’311 patent states:

The invention may be used with particular efficacy where the flow passages are to be of relatively small hydraulic diameter as, for example, 0.07 inches or less. When such dimension is selected, particularly where the hydraulic diameter is 0.040 inches or less, the structure is ideal for utilization in a high efficiency condenser.

Modine stresses that the ’311 patent defines "relatively small" as "0.07 inch or less," and that incorporation by reference has the same effect as if the host patent had set forth the entire text of the incorporated document. See In re Lund, 54 C.C.P.A. 1361, 376 F.2d 982, 989, 153 U.S.P.Q. (BNA) 625, 631 (CCPA 1967).

However, incorporation by reference does not convert the invention of the incorporated patent into the invention of the host patent. The use of "relatively small" to describe the condenser flow paths to which the ’311 manufacturing method is applicable did not reinstate into the parent and the child applications the hydraulic diameter range that was deleted from the
grandparent. The words "relatively small" appear only once in the '580 specification, and do not change the presentation of the invention as defined by the hydraulic diameter numerical range stated throughout the specification:

In addition to the utilization of a relatively small hydraulic diameter for the flow paths as mentioned previously, as another facet of the invention, it is contemplated that each of the flow paths have at least one crevice preferably extending along the entire length of the flow path, . . .

"Relatively small" does not appear to have an independent meaning in this art that would distinguish between 0.040 and 0.070 inch. In view of the replacement of the "relatively small" parameter of about 0.070 in the grandparent application with the "relatively small" parameter of about 0.040 in the parent and child applications, it does not appear to be correct to read the scope of "relatively small" in the '311 patent as overriding that replacement.

3. The Prosecution of Claims 9 and 10 (Application Claims 27 and 28)

The claims in suit were added near the end of the prosecution of the child application, and contain the only usage of "relatively small" in the claims. During prosecution Modine cancelled allowed claim 10 and added application claims 25-28. Modine points out that when application claims 25-28 were added Modine told the examiner that the claims were broader than allowed application claim 10 in some respects and narrower in others:

New Claim 25 is somewhat like original Claim 10 although it is broader in some respects and narrower in others.

. . .

As regards new Claims 25-28, independent Claim 25 is basically directed to the improved strength characteristic of the invention. See page 7 of the application as filed. Should the Examiner believe it to be dispositive, or otherwise helpful in determining the patentability of these claims, counsel notes that when the hoop strength containment feature of the Cat folded front type tubes is removed by removing the plate fins at the rounds of the flattened tubes, that is, at the radius of the flattened tubes, deformation and/or bursts occur at about 1,800 PSI; whereas the tubes of the present invention remained intact at pressures at least as high as 2,000 PSI. These sort of results are believed to commend the patentability of independent Claim 25.

Thus in presenting this group of claims Modine focused on the additional strength assertedly provided by the web means, not that these claims broadened the scope of the hydraulic diameter. Independent claim 25 used the words "relatively small hydraulic diameter." Showa argues, and we agree, that the examiner viewed all the claims as referring to the hydraulic diameter range of 0.015 to 0.04, for the examiner stated at one point during the prosecution of this claim:

Therefore, to achieve increased heat transfer and to save on material consumption it would have been obvious to one of ordinary skill in the art of heat exchange to reduce the hydraulic diameter of flow passages to within the claimed range of 0.015 to 0.04 as taught by Asselman et al.

The examiner persisted in the rejection of application claims 25 and 26, but held that claims 27 and 28 were allowable. In view of the prosecution history, we conclude that "relatively small" in application claims 27 and 28 (patent claims 9 and 10) did not enlarge the range of hydraulic diameters beyond that described in the specification as the invention.

The specification and prosecution history of the '580 patent do not permit a construction of "relatively small" to include the 0.070 inch range that was described in the grandparent application, when that range was reduced in the parent and child to about 0.040 inch. However, neither are the claims correctly construed as limited to exactly 0.040 inch. Although the Commission correctly held that "relatively small" in claims 9 and 10 is limited by the description of the invention in the specification, the Commission incorrectly limited the hydraulic diameter to exactly 0.040 inch, for that is not the description in the specification and is not required by the prosecution history.

The specification uses the qualifier "about," and also states that the optimum hydraulic diameter varies with the conditions. Such broadening usages as "about" must be given reasonable scope; they must be viewed by the decisionmaker as they would be understood by persons experienced in the field of the invention. Andrew Corp. v. Gabriel Electronics, Inc., 847 F.2d 819, 821-22, 6 U.S.P.Q.2D (BNA) 2010, 2013 (Fed. Cir.), cert. denied, 488 U.S. 927, 102 L. Ed. 2d 330, 109 S. Ct. 312
(1988). Although it is rarely feasible to attach a precise limit to "about," the usage can usually be understood in light of the technology embodied in the invention. When the claims are applied to an accused device, it is a question of technologic fact whether the accused device meets a reasonable meaning of "about" in the particular circumstances. Thus we turn to the factual aspects of the infringement determination.

C. LITERAL INFRINGEMENT

The record shows hydraulic diameter ranges of the nine Showa models before the Commission as follows: 0.0484-0.0519 inch; 0.0453-0.0520 inch; 0.0477-0.0577 inch; 0.0577-0.0606 inch; 0.0482-0.0497 inch; 0.061-0.065 inch; 0.0445-0.0682 inch; 0.0424-0.0573 inch; and 0.0513-0.0547 inch. The ALJ also referred to a model having a range of 0.0453-0.0477 inch. The Commission, incorrectly limiting "relatively small" to precisely 0.040 inch, did not consider variability based on the nature of the coolant, as stated in the specification, and did not determine whether any of the Showa models were within a reasonable literal scope of "relatively small" interpreted as meaning "about 0.015-0.040" inch.

Precedent illustrates the fact-dependency of determinations of the technologic scope of "about" and similar terms, depending on their contexts and the precision or significance of the measurements used. See, e.g., Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 36 U.S.P.Q.2D (BNA) 1162 (Fed. Cir. 1995) (the addition of "approximately" during reexamination was a significant broadening of the claims); Hybritech, Inc. v. Abbott Labs., 849 F.2d 1446, 1455, 7 U.S.P.Q.2D (BNA) 1191, 1199 (Fed. Cir. 1988) ("at least about 108 liters/mole" is literally satisfied by 4.8 x 107 liters/mole and 7.1 to 7.5 x 107 liters/mole); W.L. Gore & Assoc., Inc. v. Garlock, Inc., 842 F.2d 1275, 1280, 6 U.S.P.Q.2D (BNA) 1277, 1282 (Fed. Cir. 1988) (an "imprecise limitation, such as the phrase 'about 100% per second'" is to be considered in determination of infringement); Rosemount, Inc. v. Beckman Instruments, Inc., 727 F.2d 1540, 1546-47, 221 U.S.P.Q. (BNA) 1, 7 (Fed. Cir. 1984) ("close proximity" is as precise as the subject matter permits).

The Commission's determination of literal infringement was based on a hydraulic diameter limit of exactly 0.040 inch, with no consideration of the scope of "about" and no determination of the effect of relevant factors such as the nature of the coolant and the precision of measurement. The finding of non-infringement was based on an incorrect claim construction, leading to an inadequate application of the claims to the accused devices. The finding is vacated. On remand the Commission shall determine whether any of the accused condenser models literally infringes the claims, upon construction of the claim term "relatively small" as meaning a hydraulic diameter in the range of about 0.015-0.040 inch, and upon applying the claims to the various accused Showa models.

D. INFRINGEMENT BY EQUIVALENCY

The Commission held that the doctrine of equivalents did not apply because Showa did not "unscrupulously" copy the Modine condenser. This ruling was based on an incorrect view of the law. As was explained in Hilton Davis, 62 F.3d at 1522, 35 U.S.P.Q.2D (BNA) at 1648, there is no equitable threshold for determination of the factual question of infringement by equivalency. Although the ALJ received evidence on the facts relevant to equivalency, the findings were made in the context of an incorrect view of prosecution history estoppel, the ALJ holding that Modine's claims were limited to hydraulic diameters no larger than exactly 0.040 inch. The ALJ's determination of estoppel was based on the same factors that led to the incorrect claim interpretation.

Modine argued to the Commission that the teachings in the specification, including the graph showing superior coolant activity up to a hydraulic diameter of 0.070 inch, support a range of equivalents up to 0.070 inch. Modine alternatively argued that even if the Commission found that Modine was not entitled to this range of equivalents, it is entitled to establish equivalency up to the overall hydraulic diameter of the prior art Cat condenser, i.e. about 0.48-0.49 inch.

Discussing the imported accused condensers, the ALJ found as fact that their function and result are the same as those of the claimed invention, but that the imported condensers do not meet the "same way" test because of the presence of internal fins in some of the Showa models. However, Modine's evidence was substantially unrebutted that the presence of inner fins did not substantially change the way the condensers function, by surface tension and capillary forces. Although the intervenors argue that their condensers with larger hydraulic diameters are less efficient, equal performance is not required to establish equivalency. Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 859, 9 U.S.P.Q.2D (BNA) 1289, 1294 (Fed. Cir. 1988), cert. denied, 490 U.S. 1068, 104 L. Ed. 2d 634, 109 S. Ct. 2069 (1989). The ALJ's finding is against the heavy weight of the evidence. There was not substantial evidence supporting the finding of non-equivalence.
However, the ALJ correctly recognized that prosecution history estoppel limits the application of the doctrine of equivalents, even when the function/way/result or other test of equivalency is met by the accused devices. Prosecution history estoppel implements the principle that a patentee cannot obtain, in an infringement suit, protection of subject matter that was relinquished in order to obtain allowance of other subject matter during prosecution of the patent application. Mannesmann Demag Corp. v. Engineered Metal Prods. Co., 793 F.2d 1279, 1285, 230 U.S.P.Q. (BNA) 45, 48 (Fed. Cir. 1986) (the relinquished subject matter must be material to the issuance of the patent). The standard for determining whether particular subject matter was relinquished and was material is an objective one which we determine as a matter of law, LaBounty Mfg., Inc. v. United States Int'l Trade Comm'n, 867 F.2d 1572, 1576, 9 U.S.P.Q.2D (BNA) 1995, 1998 (Fed. Cir. 1989), and is based on the reasonable reading, by a person of skill in the field of the invention, of the entire prosecution history.

We have discussed the prosecution history ante, and concluded that in connection with the patent application that led to the '580 patent, Modine relinquished the range of hydraulic diameters that extended to 0.070 inch, based in substantial part on the hydraulic diameter of the prior art Cat-Folded Front condenser. Although Modine points out that the '580 invention differs in several respects from the Cat condenser, the prosecution history shows that the hydraulic diameter of the Cat condenser was a factor in limitation of the '580 claims. The change in the description of the hydraulic diameter in the specification from grandparent to parent/child application, and the arguments to the patent examiner, highlighted the applicant's action in distinguishing the '580 claims from the Cat condenser.

Thus we conclude that the available range of equivalency is limited, by estoppel, to the hydraulic diameter of the Cat condenser. Within this boundary, however, the prosecution history and the prior art do not eliminate equivalents if substantial identity is shown. The controlling criterion, as reaffirmed in Hilton Davis, 62 F.3d at 1518, 35 U.S.P.Q.2D (BNA) at 1645, is whether the accused device is substantially the same as the claimed invention. See Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 607, 94 L. Ed. 1097, 70 S. Ct. 854 (1950) (insubstantial changes do not avoid the application of the doctrine of equivalents).

The ALJ incorrectly held that Modine was estopped to assert equivalency against any condenser with a hydraulic diameter larger than exactly 0.040 inch. The holding is vacated, and the case is remanded to the Commission for findings in accordance with the doctrine of equivalents.

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C. Indefiniteness claim pursuant to 35 U.S.C. § 112

Defendant also claims that the 998 patent is invalid because the language "a relatively small incision" is too vague. The pertinent language of 35 U.S.C. § 112 reads:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

While defendant does cite some case law to support the proposition that the use of the term "relatively" in a patent's claim can render the patent invalid under § 112, see Long Manufacturing Co. v. Lilliston Implement Co., 328 F. Supp. 268 (E.D. N.Car. 1971), aff'd 457 F.2d 1317 (4th Cir. 1972), cert. denied 409 U.S. 874, 34 L. Ed. 2d 126, 93 S. Ct. 119 (1972); Ex Parte Oetiker, 23 U.S.P.Q.2D (BNA) 1651 (Bd. Pat. App. & Int'l 1991), aff'd 951 F.2d 1267 (Fed. Cir. 1991), defendant also admits that the term "relatively small" is not per se indefinite. Modine Mfg. Co. v. U.S. Intern. Trade Comm., 75 F.3d 1545 (Fed. Cir. 1996), cert. denied 116 S. Ct. 2523 (1996). The Modine court held that "when claims are amenable to more than one construction, they should when reasonably possible be interpreted so as to preserve their validity." Id. Defendant also cites the declaration of its expert Doctor Leo D. Bores, who testified that even he, despite all of his experience in the field,
finds the term "relatively small" to be indefinite.

Plaintiffs counter by arguing that the term "relatively small" is clear to doctors in the field, who know whether they are preforming "small incision" (foldable) or "large incision" surgery. Plaintiffs also point out that an exemplary "relatively small incision" is illustrated in figure 1 of the patent. Although the court finds that this indefiniteness argument is not a frivolous one, it concludes that defendant has not met its burden of showing that it will likely succeed on the merits of this claim at trial, and as such declines at this time to invalidate the 998 patent on the grounds of indefiniteness.

1) The meaning of the "relatively thick layer" of absorbent material.

With regard to the term "relatively thick," the '381 patent's specification addresses this question.

In the present application, any reference to "relatively thick" or "relatively thin" are with respect to each other. The entire disposable menstrual panty of this invention is really very thin and lightweight. The thickness of the mesh-like covering of the top portion is very thin, about the thickness of the leg portion of a conventional pair of nylon pantyhose, a hairnet, a silk scarf, or the like. The thickness of the inside layer lining the bottom portion is between substantially less than one eighth of an inch to approximately seven-eighths of an inch, depending on the particular end use of the panty, and a range of between one-sixteenth of an inch and one inch is possible for particular applications.

(Def. App. II Ex. E at KC 017.) (diagram reference numbers omitted) K-C reads this specification as requiring the "relatively thick layer" lining the bottom portion of the panty to be "no less than 1/16th of an inch to no more than 1 inch thick." (Motion at 3.) Plaintiff vociferously disagrees.

First, plaintiff argues that when read as a whole the '381 patent makes clear that the thickness of the "relatively thick" portion is just that, relative. In other words, plaintiff argues that the specification quoted above merely "describes a layer that is thick relative to another layer of material in the panty. While stating in a number of places that all dimensions of the panty are variable, the Specification provides, by way of example, two possible ranges for the thickness of the 'relatively thick' layer." (Resp. at 10-11.) (footnote omitted)

2 At the outset plaintiff argues that the Patent Examiner's rejection of this argument ought be dispositive. However, for the reasons stated previously, that simply is not so.

In support, plaintiff notes that the specification, by stating that references to "relatively thick or relatively thin are with respect to each other," incorporates the standard dictionary definition of the term "relatively." She also cites to various other points within the patent in which it is made clear that "the relative thickness of the absorbent layer can be varied." (Def. App. II Ex. E at KC 021.) 3 Plaintiff argues that these statements, coupled with the larger block quote above, demonstrate that the "relatively thick" layer is not tied to a strict numerical range of between 1/16th of an inch and one inch in thickness. The court disagrees.

3 These citations include: "the thickness of the various portions of the panty and liner may be varied, as desired" (Def. App. II Ex. E at KC 015-016); "the entire disposable menstrual panty of this invention is really very thin and lightweight" (Id. at KC 017); and "modifications can be made without departing from the spirit and scope of the present invention which is limited only by the appended claims" (Id. at KC 022).
The above block quote makes clear that a numerical range for the "relatively thick" layer was contemplated by the applicant. Having recited that range in her patent, plaintiff is bound by that recitation. Moreover, this is the only fair reading of the specification. To adopt plaintiff's interpretation would essentially read out the very language that she chose to describe the relatively thick layer. This the court declines to do. Finally, the court notes that plaintiff's interpretation would ultimately give no meaning to the term "relatively thick layer." Stating that the relatively thick layer is thick relative to the relatively thin layer is simply insufficient, for such a statement says nothing. Indeed, it can be safely surmised that plaintiff recognized this fact and chose to give meaning to the term "relatively thick layer" by defining it against something more concrete than the relatively thin layer—namely, a numerical range of thickness.

Plaintiff also argues that this interpretation is flawed because "references to a preferred embodiment, such as those often present in a specification, are not claim limitations." Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988). However, as defendant correctly notes, the numerical limitation does not relate to a particular preferred embodiment. This section is clearly definitional. As noted above, absent this numerical range the terms "relatively thick" and "relatively thin" have no empirical meaning.

Plaintiff next contends that even if the relatively thick portion of the panty is tied to a numerical definition, it is not the 1/16th to one inch range claimed by defendant. Rather, plaintiff argues that the relatively thick portion of her panty can be as thin as "substantially less than one eighth of an inch." (Def. App. II Ex. E at KC 017.) However, as noted by defendant, such an interpretation "makes the specification nonsensical." (Reply at 4 n.2.) The only way to harmonize the two ranges specified by the patent is to read the second range as setting the outer boundaries for the relatively thick layer. In other words, the only logical interpretation is that, although the relatively thick layer can be "substantially less than one eighth of an inch" and still be the relatively thick layer, it ceases to be so if it falls below 1/16th of an inch.

**B. The "Relatively Thick" Limitation**

Solomon also challenges the district court's interpretation of the claim limitation "relatively thick." Solomon asserts that no particular thickness is required by the claims and that the term "relatively" implies that the thick material is thick only in relation to other material. Specifically, Solomon argues that the "relatively thick" layer need only be more thick than the "relatively thin" layer and repeatedly cites the statement in the specification, quoted below, that the thick and thin portions "are relative to each other." Solomon also directs our attention to the statement in the specification that the "thickness . . . may be varied as desired" and notes that a thickness range is not specified for the "relatively thin" layer. Solomon asserts that the district court impermissibly read the preferred embodiment into the claims when defining "relatively thick." We disagree.

The district court properly turned to the written description and drawings in order to determine the meaning of the term "relatively thick." In the section entitled "Detailed Description of the Preferred Embodiment," the patent specification describes the preferred embodiment and certain variations encompassing a number of different styles and structures of the disposable panty. Before describing further alternative embodiments, the specification states:

In the present application, any reference to "relatively thick" or "relatively thin" are with respect to each other. The entire disposable menstrual panty 21 of this invention is really very thin and lightweight. The thickness of the mesh-like covering of the top portion is very thin, about the thickness of the leg portion of a conventional pair of nylon pantyhose, a hairnet, a silk scarf, or the like. The thickness of the inside layer 51 lining the bottom portion 27 is substantially less than one eighth of an inch to approximately seven-eighths of an inch, depending on the particular end use of the panty 21, and a range of between one-sixteenth of an inch and one inch is possible for particular applications.

This paragraph is clearly definitional. It provides two ranges of thickness, indicating its general applicability to varied situations. It does not purport to be exemplary, but rather states that it applies to any reference to "relatively thick" in the present application. Solomon's attempt to limit the applicability of this paragraph solely to the preferred embodiment is clearly belied by the text itself. It is equally clear that the "inside layer 51" refers to the "relatively thick" layer as used
throughout the application. Numerous alternative embodiments refer explicitly to the "relatively thick layer of absorbent material 51" or the "inner lining 51 of relatively thick absorbent material."

The public is entitled to rely on the sole unequivocal statement by the patentee regarding the meaning of "relatively thick" used throughout the specification. The passage cited by Solomon does not contradict this interpretation. Rather, while the specification elsewhere makes clear that the thickness of the "relatively thick" layer may be "varied . . . as desired," it may only vary within the enumerated range. Thus, the two passages are consistent with one another. Having expressly defined the term "relatively thick" in the specification, Solomon cannot now succeed in her argument that an undefined "ordinary and accustomed meaning" should govern. See Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277, 35 U.S.P.Q.2D (BNA) 1035, 1040 (Fed. Cir. 1995).

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Turning now to the relaying step, claim 14 reads as follows:

14. A method for automatically regulating the release of the drill string of a drilling rig drill, comprising the steps of:

   relaying said selected signal or signals to a drill string controller which regulates the release said drill string in response to said selected signal or signals.

'142 patent, col. 28, ll. 34-38 (emphasis added).

As outlined above, nothing in the claim language requires or even suggests the use of pneumatically operated valves in performing the relaying step. Rather, the only discussion of pneumatically operated valves in the intrinsic record comes from the specification: "In the preferred embodiment, valves 236-239 are pneumatic valves that operate as relays to supply compressed air to air motor 204." '142 patent, col. 7, ll. 35-37. This disclosure and corresponding Figures do not limit the invention as a whole to the use of pneumatically operated valves; rather they merely list such valves as but one example of relays operable in the present invention. See C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 864 (Fed. Cir. 2004) ("Statements that describe the invention as a whole, rather than statements that describe only preferred embodiments, are more likely to support a limiting definition of a claim term.") (citing Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1347 (Fed. Cir. 1998)); SanDisk Corp. v. Memorex Prods., Inc., 415 F.3d 1278, 1286 (Fed. Cir. 2005) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations.") (quoting Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988)); Gillette, 405 F.3d at 1374 ("This court has cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.") (quoting Texas Instruments, Inc. v. U.S. Int'l Trade Comm'n, 805 F.2d 1558, 1563 (Fed. Cir. 1986)); Gart v. Logitech, Inc., 254 F.3d 1334, 1342 (Fed. Cir. 2001) (noting that "drawings [depicting the preferred embodiment] are not meant to represent 'the' invention or to limit the scope of coverage defined by the words used in the claims themselves."); see also '142 patent, col. 24, ll. 27-35 (stating the present invention is not limited to the preferred embodiment).

Moreover, the specification's disclosure of valves that "operate as relays" implicitly suggests that "relay" has a broader meaning than simply the preferred pneumatically operated valves. To illustrate, the applicant could have used terminology such as "relays are pneumatically operated valves" that expressly disavows alternative structures. As written, however, the specification contemplates that other structures may "operate as relays" in addition to the preferred pneumatically operated valves. Hence, the intrinsic record does not support the district court's interpretation of the relaying step.

Finally, the extrinsic evidence in this case confirms that the relaying step is not limited to pneumatically operated valves. For example, Pason's expert, presumably one of ordinary skill in the art, testified that "relaying" in claim 14 was not limited to the use of pneumatically operated valves:

Court: It's not your opinion, is it, that claims 11 and 14 are limited to a pneumatic control system -

Expert: No. Well -- no. It's not limited to a pneumatic control system as the way they're written, that's true.

In addition, Pason's counsel at oral argument similarly conceded that relaying in claim 14 should not be limited to
pneumatically operated valves. Hence, there is no support, either in the intrinsic or extrinsic record, for the district court's interpretation of the relaying step. Thus, as with the selecting step, the district court's interpretation of the relaying step is unduly narrow.

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5. "Relaxed Diameter"

Next, Bridgeport argues that the fact that its designs indicate an adaptor with a relaxed diameter greater than the outer diameter of the connector compels summary judgment in its favor on claims 1, 2, 3, 4, 5, 8, and 9 of Patent '164, which provide, in pertinent part, as follows:

[A] circular spring metal adaptor surrounding said leading end of said electrical connector which also has a leading end, a trailing end, and an intermediate body, said circular spring metal adaptor being less than a complete circle when on the electrical connector and when separated from said electrical connector has a relaxed diameter, less than the diameter of the portion of the connector which it surrounds 15 ....

(Doc. 83, Exs. A, B (emphasis added)). Again resorting first to reference materials, Webster's Third New International Dictionary defines "relaxed" as "set at rest" and "relax" as to "lessen the tension or pressure of." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1917. Thus, the "relaxed diameter" of a circle is the diameter 16 as measured when any outside force or pressure has been removed. See also id. (defining "relaxation" as "the adjustment of a system to a state of equilibrium following the abrupt removal of some influence"). This construction is apparently conceded by both parties (Doc. 115 PP 28, 30-34), and, indeed, the claims themselves identify the adaptor as "relaxed" when it is removed from the larger-diameter connector. The court will construe "relaxed diameter" to mean the diameter of the adaptor when it is removed from the connector.

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15 In contrast, claim 1 of Patent '050 requires that the relaxed diameter be "less than the diameter of the hole into which it is to be inserted." (Doc. 83, Ex. B).

16 "Diameter" is "the length of a straight line through the center of an object."WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 623. Neither party disputes the meaning of this term. See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc., 200 F.3d 795, 803 (Fed. Cir. 1999) ("Only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.").

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

At this stage in the proceedings, considering the evidence in the light most favorable to Arlington, the court cannot say that Bridgeport's products do not, as a matter of law, infringe on the claims at issue. Bridgeport may establish at trial that the inner diameter of its adaptors exceeds the outer diameter of its connectors, but Arlington has presented evidence, in the form of expert reports and deposition testimony, that some of Bridgeport's designs include "dimples" that lessen the inner diameter of the adaptor and that Bridgeport's manufacturing processes have produced units in which the connector has a greater diameter than that of the relaxed adaptor. (Doc. 119, Ex. 38 PP 3-9, 13, 15, 17; Doc. 199, Ex. 41 at 4-5). Because clear factual issues remain to be decided, summary judgment on these claims is inappropriate.

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1. "a plurality of releasable fasteners for attachment of said protective barrier to said structure"

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<tr>
<th>Claim Term</th>
<th>Plaintiff's Proposed Construction</th>
<th>Defendants' Proposed Construction</th>
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Plaintiff asserts in its rebuttal statement that Defendants' proposal disregards the well settled rule that construction must begin and remain centered on the claim language. Plaintiff argues that Defendants "ignore the unambiguous claim language" in an improper "attempt to rewrite the claim." According to Plaintiff, Defendants "also violate the principles that limitations not be imported from the specification into the claim and that claims are not to be confined to those embodiments described in the specification." Defendants counter that someone of ordinary skill in the art would construe "releasable fasteners" to mean readily easy to separate like velcro or latches. Defendants maintain that Patent '852 does not disclose any releasable fastener attached to the structure. Instead, Defendants assert that Patent '852 discloses embodiments illustrating the "attachment of the protective barrier to the structure via fasteners anchored to the ground."

Claim 8 discloses the process of claim 1 plus an additional step of providing a plurality of releasable fasteners for attachment of the barrier device to the structure. Defendants would have this Court construe claim 8 as meaning a number of fasteners to secure adjacent panels to each other in order to form a single protective barrier device. Plaintiff contends that claim 8 plainly means what the language itself says, that a plurality of fasteners connect the barrier device to the structure and not to each other. This Court agrees with Plaintiff. In so agreeing, the Court follows Federal Circuit precedent establishing that "[i]n construing claims, the analytical focus must begin and remain centered on the language of the claims themselves, for it is that language that the patentee chose to use to 'particularly point[ ] out and distinctly claim[ ] the subject matter which the patentee regards as his invention.'" Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1201-02 (Fed. Cir. 2002) (citing 35 U.S.C. § 112; Interactive Gift Express, Inc. v. CompuServe, Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001)). Federal Circuit precedent further holds that "terms used in the claims bear a 'heavy presumption' that they mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art," and "unless compelled otherwise, a court will give a claim term the full range of its ordinary meaning as understood by persons skilled in the relevant art." Id. at 1202 (citations omitted). Such is the case here. Specifically, the Court concludes that Defendants' proposal is unsupported by the claim language. Further, the Court declines to rewrite the claim language, which would effectively import limitations from the specification. The Court finds the ordinary and customary meaning of this claim language to be readily apparent such that additional construction is unwarranted.

4. "wherein the continuous retainer member is releasable from the inner head"

a. Parties' Positions

The parties offer the following constructions for the term "wherein the continuous retainer member is releasable from the inner head," which appears in claim 43. Dkt. No. 114.

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<th>RTI</th>
<th>BD</th>
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<tbody>
<tr>
<td>The plunger releases the continuous retainer member from the inner head as the plunger is further depressed in</td>
<td>The plunger releases the continuous retainer member from the inner head by pushing the continuous retainer</td>
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</table>
the barrel member off of the inner head as the plunger is depressed in the barrel to reduce the frictional force with the wall of the syringe.

The parties' arguments in connection with this term closely mirror those proffered in connection with the term "releaseably installed by sliding engagement of said retainer member and said inwardly facing surface" construed above. See Dkt. Nos. 111 at 19-20 & 112 at 26-27.

b. Court's Construction

For the reasons stated above, this Court finds that the invention operates through the use of a clamping or fictional force. However, since the clamping or frictional forces are already part of this Court's construction of "continuous retainer member," this Court finds that it would be unnecessarily confusing and duplicative to include a reference to those forces in this term's construction. As also discussed above, this Court finds that that the holding force may be released by some other manner than that with which it was installed.

Accordingly, the Court finds that the term "wherein the continuous retainer member is releasable from the inner head" means "the plunger releases the continuous retainer member from the inner head as the plunger is further depressed in the barrel."

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Releasable Stopper

The parties next ask the Court to construe "releasable stopper" in Claim 22 of the 011 Patent. The parties do not dispute that the term "stopper" ordinarily means "something inserted to close an opening" and that the term "releasable" ordinarily means "capable of being freed." Thus, the ordinary meaning of "releasable stopper" is "something inserted to close an opening which is capable of being freed." RTI proposes that "releasable stopper" simply means "a member that seals or closes one end of the plunger and can be freed such that it no longer seals or closes." In contrast, NMT proposes that "releasable stopper" means "a plug capable of being freed from its position where it is fitted in the opening of the plunger which slides relative to the plunger opening after the injection is complete and before retraction of the needle." Because the relevant portion of Claim 22 discusses a plunger, RTI properly limits its definition to a stopper which closes the plunger. However, the Court must determine whether the claim language and other intrinsic evidence require the restrictions in NMT's proposed construction.

--- Footnotes ---

6 NMT also asks the Court to construe the term "stopper" separately from "releasable stopper." Claim 22 provides in relevant part: "the head of the plunger having an opening into said cavity, sized to receive the retractable parts and a releasable stopper extending from said opening, the stopper sealing the interior of the plunger ...." NMT does not explain, and the Court cannot imagine, how the second "stopper" could refer to anything other than "releasable stopper." This is a prime example of the many instances where NMT has attempted to unnecessarily multiply and complicate the issues in this claim construction. The Court will not indulge NMT's request for duplicative analysis and disregards NMT's "stopper" arguments.

--- End Footnotes ---

The Court rejects NMT's proposed construction. NMT's proposed construction apparently comes from Claim 6 of the 011 Patent. Claim 6 claims:

The tamperproof retractable syringe of claim 5 wherein the plunger head has a tip with an opening sealingly closed by a dislodgeable held stopper which slides relative to the plunger in response to dislodging force applied by depression of the plunger at the end of the injection cycle before retraction occurs.

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It is apparent that Claim 6 is dependent on Claim 5 and thus that its restrictions are directly aimed at Claim 5. NMT has provided no briefing on its proposed construction, so the Court is somewhat at a loss to understand why it should apply Claim 6's restrictions to Claim 22 when those claims are wholly separate. Because the drafter intended for Claim 6 to limit Claim 5 and because Claim 22 is unrelated to either Claims 5 or 6, the Court finds that a person of skill in the art would not read Claim 6 as a limitation on Claim 22. Therefore, the Court rejects NMT's proposed construction and adopts RTI's statement of "releasable stopper's" ordinary meaning as used in Claim 22: "a member that seals or closes one end of the plunger and can be freed such that it no longer seals or closes."

--- Footnotes ---

7 The Court takes NMT's proposed construction from the Amended Consolidated Claim Interpretation Chart ("Chart") jointly submitted by the parties. To facilitate the claim construction process, the Court requires parties in patent cases to submit a claim interpretation chart as a matter of course. The Chart lists disputed terms along with proposed constructions. In this case, the parties submitted the Chart after briefing. Moreover, NMT chose to change its proposed construction in the Chart from that proposed in briefing. Because the Chart is the parties' most recent statement of their positions to the Court, the Court examines the Chart's proposed construction even though NMT submitted no supporting argument.

--- End Footnotes ---

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B. "Releasably Attached" and "Releasably Attaching"

Independent claims 1, 9, and 17 of the '466 patent and independent claims 1 and 7 of the '584 patent each recite either fasteners or fastening means that "releasably attach" the sidewalls to the mating portions of the toe and heel plates or sidewalls that are releasably attached. Representative claim 1 of the '466 patent reads as follows:

1. An in-line roller skate, comprising:
   a boot having a sole surface with toe and heel portions;
   a frame, comprising:
      a toe plate having an upper face and a lower face, said upper face being affixed to said sole surface toe portion, and two pair of spaced apart flanges extending downwardly from said toe plate lower face, each of said flange pairs defining a cavity therebetween;
      a heel plate having an upper face and a lower face, said upper face being affixed to said sole surface heel portion, and two pair of spaced apart flanges extending downwardly from said heel plate lower face, each of said flange pairs defining a cavity therebetween;
   first and second downwardly extending sidewalls having front and rear upper portions, wherein said first sidewall is configured such that said rear upper portion is received into a corresponding one of said heel plate cavities and said front upper portion is received into a corresponding one of said toe plate cavities, and wherein said second sidewall is received into the other opposing said toe and heel plate cavities;
   a plurality of fasteners for releasably attaching said first and second sidewalls to respective ones of said toe and heel plate flange pairs; and
   a plurality of wheels rotatably mounted between said first and second sidewalls.

 Neither the '466 patent nor the '584 patent define explicitly the scope of the term "releasably attaching" or its variant, "releasably attached."
Benetton asserts that the terms should be construed to mean that the sidewalls can be separated from the flanges without destroying any part of the skate, including the means of attachment. Salomon suggests that the disputed limitations should be construed to mean that the fasteners can be conveniently removed and reused without special tools or skills to permit easy removal of a sidewall. V-Formation essentially argues that any attachment method that allows the sidewalls to be released should be construed to the terms, releasably attaching and releasably attached.

In support of its claim construction, Benetton cites to Webster's Third New International Dictionary (1993), which defines "releasable" to mean "capable of being released." While Benetton concedes that any fastened together structure is in a sense "releasable," it argues that the ordinary connotation of that term is narrower, referring to attachment mechanisms that permit easy and repeated detachment of the fastened structures. Benetton further argues that its construction of the term is consistent with the way the term is used in the Wrike patents. In particular, Benetton observes that the Wrike patents describe the use of bolts as an example of releasable fastening means, but then discusses the use of rivets or high-strength adhesives to secure the wheel frame to the sole surface of the boot. Benetton suggests that this alone indicates that Wrike did not consider rivets and high strength adhesives to be releasable fasteners. Benetton argues that the preferred embodiment described by the '466 and the '143 patents provides additional evidence for its claim construction. Specifically, the '466 patent (and the '143 patent, which is a continuation of the '466 patent and therefore contains a virtually identical disclosure to the '466 patent) states:

> It is preferred that the fasteners be releasably attached to the frame flanges 32a, 32b, 32a', 32b' and sidewalls 50a, 50b so that if one of the sidewalls needs to be replaced, it can easily be removed conveniently without special tools or skills.

Benetton further notes that Wrike, during prosecution of the '584 patent, stated that the sidewalls of his invention "can easily be removed and replaced," thus allowing the skaters to change the wheels on the skate "quickly and easily."

Salomon makes arguments similar to Benetton, alleging that the '466 patent specification repeatedly uses the words "easily" and "without special tools or skills," to describe the releasability of the sidewalls. In particular, Salomon alleges that the '466 patent clearly distinguishes between fasteners that can be easily removed and reused without their destruction, such as threaded bolts, and fasteners that are difficult, if not impossible to remove, such as rivets or high-strength adhesives. Salomon adds that, as a matter of common sense, the scope of the term "releasably attaching" cannot be construed to reach any and all types of attachments. To further support its claim construction, Salomon cites which discusses the scope of the term "permanently affixed" for a patent assigned to K-2 Corp. v. Salomon, S.A., 191 F.3d 1356 (Fed. Cir. 1999). In K-2, the Court of Appeals for the Federal Circuit stated that, "the ordinary and accustomed meaning of "permanently affixed" [in the context of the K-2 patent] requires that the fastening be unremovable." Id. at 1363.

According to V-Formation's expert, rivets should be considered releasable because they can be removed by detaching either of the heads that hold the rivet in place. Addendum to Steven R. Thomas Declaration in Support of V-Formation's Opposition to Benetton's Motion for Summary Judgment ("Thomas Addendum"), pp. 28-29. V-Formation asserts that the '466 patent claims do not require that the "releasably attached" element be removable without destroying or damaging any part of the skate, and contends that nothing in the '466 patent specification places any limitation on the destruction of the fasteners in the course of releasing the sidewalls. Furthermore, V-Formation avers that nothing in the '466 patent claims requires the attachment be "quick and easy" or "easily removed and replaced." Even if the fastening element were limited to attachments that could be easily removed, V-Formation submits that, like screws, rivets may be easily replaced in a matter of seconds.

V-Formation further argues that the defendants' claim construction arguments based on the prosecution history of the '584 patent cannot succeed because the "releasably attached" limitation in the initial application was introduced in the original claims and were never amended during prosecution. In addition, V-Formation, citing Abbott Labs. v. Dey, L.P., 287 F.3d 1097, 1104 (Fed. Cir. 2002), contends that the defendants improperly argue that limitations from prior art, which was cited by the patent examiner during prosecution of the patent application that eventually lead to the issuance of the '584 patent, should be read into the disputed claim term.

I find V-Formation's arguments for its claim construction, on the whole, unpersuasive. While I agree with V-Formation's view that many of the arguments advanced by its opponents, which are grounded on the intrinsic evidence fail to unambiguously demonstrate the meaning of the term "releasably attached," I believe that the patent specification and
prosecution history of the Wrike patents provides sufficient guidance to resolve the ambiguity of the disputed term. Upon consideration of the claims, I find no evidence that the claims, on their face, require that the sidewalls be removable without destroying the means of attachment, as Benetton suggests, or that the fasteners must be capable of being removed and reused without special tools or skills, as Salmon suggests. Benetton and Salomon suggest that the Wrike patent specifications identify rivets and high strength adhesives to be non-releasable. The passage cited by them, however, says nothing about the perceived releasability of these types of fasteners. Although '466 and '143 patents describe a preferred embodiment in which the sidewalls can be removed without special tools or skills, I find nothing in the specifications of these two patents to support the view that the patentee has so limited the scope of the claims to exclude fastening means that requires special tools or skills. Scimil Life Systems, 242 F.3d at 1341. It is a cardinal sin of patent law for a court to "read into a claim a limitation from a preferred embodiment, if that limitation is not present in the claim itself." Bayer AG v. Biovail Corp., 279 F.3d 1340, 1348 (Fed. Cir. 2002); see also Benetton Sportswear USA, Inc. v. First Team Sports, Inc., 38 Fed. Appx. 599, No. 02-1004, 2002 WL 1312678, at *6 (Fed. Cir. June 14, 2002) (stating that it would be improper to conclude that merely because the preferred embodiment has a certain requirement that the claim language itself must then contain a similar requirement). Thus, I cannot adopt Salomon's construction, which requires that the claimed inventions must include sidewalls that can only be removed without special tools or skills.

On the basis of the file history and patent specification of the '584 and '466 patents, I am convinced that the term "releasably attached" means that the fasteners claimed in the Wrike patents must permit the sidewalls to be easily removed and replaced. The intrinsic evidence for each patent repeatedly emphasizes the ease with which the sidewalls can be removed and replaced. In the '584 patent specification, for instance, it states that "it is an object of the present invention to provide an in-line roller skate having a frame that includes sidewalls that can be easily and inexpensively replaced when damaged." (emphasis added). Elsewhere, the '584 patent indicates that the invention "allows users to replace one or both sidewalls without replacing the other components of the wheel frame. As a result, the user can inexpensively replace damaged sidewalls, easily reconfigure the skate to carry wheels of a different diameter, and use sidewalls with anodic coatings of different colors." 2:57-62. (emphasis added). During prosecution of the '584 patent, Wrike characterized the claimed inventions to have sidewalls that can be "easily removed and replaced," which thus allows quick and easy change of the wheels on the skate. Polk Ex. 31, August 13, 1996 Amendment, p. 6 (emphasis added).

The criticality of the ease with which the fastener may be removed to permit replacement of the sidewalls is also repeated by the '466 patent. For instance, the '466 patent states that "if one of the sidewalls [in the invention] needs to be removed from the skate frame to be replaced, it can easily be removed without special tools or skills." 7:25-27 (emphasis added). In view of this requirement, the '466 specification states that "another aspect of the invention is a repair kit for allowing for faster or more convenient sidewall replacement." 3:34-36. In view of the object sought by the '466 and '584 patents to provide a frame that include sidewalls that can be easily separated and singularly replaced ('466 patent, 2:39-44, 3:3-6; '584 patent, 2:57-60), I am convinced that the term "releasably attached" means that the fastening element claimed in the Wrike patents must be easily removed and replaced.

V-Formation disputes, however, whether rivets may be properly considered easily removed and replaced. To begin, the claims of a term must be construed to have the meaning that would be given by persons of ordinary skill in the relevant art, unless it is apparent from the patent and prosecution history that the inventor used the term with a different meaning. Dow Chemical, 257 F.3d at 1372; Vitronics, 90 F.3d at 1582. The prior art cited by the patent examiner during the prosecution of the '584 patent provides evidence of what one skilled in the art would consider "releasably attached." In a misguided effort, V-Formation argues, on the basis of Abbott Laboratories, that it is improper to rely on prior art cited by the examiner because it constitutes extrinsic evidence. V-Formation is incorrect. The passage referenced by V-Formation in Abbott Laboratories pertains to determining the scope of permissible equivalents under a doctrine of equivalents analysis, which is not relevant to claim construction. See 287 F.3d at 1104; cf. Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed. Cir. 1995). Prior art cited in the prosecution history falls within the category of intrinsic evidence and may be initially considered in construing a patent claim. Tate Access Floors, Inc. v. Interface Architectural Resources, Inc., 279 F.3d 1357, 1372, n.4 (Fed. Cir. 2002).

In the second office action to the priority patent application that lead to the eventual issuance of the '584 patent, the patent examiner rejected the submitted claims as being anticipated by United States Patent No. 5,549,310 ("the Meibock patent"). According to the Meibock patent, the toe and heel plates are described as "being permanently attached to the [boot sole] through the use of rivets or releasably attached through the use of fasteners such as screws or bolts." 4:53-56; see also 5:22-29. Furthermore, according to the Meibock patent, the frame sidewalls are "shown in the preferred embodiment [of the
Meibock patent] as [being attached to the heel and toe plates by] a screw and retainer . . . [although] any suitable releasable fastening device could be used. In alternate embodiments a more permanent fastener such as a rivet could also be used. The Meibock patent provides evidence that rivets are considered by persons of ordinary skill to be permanent fasteners.

I find it notable that the Meibock patent describes the in-line skate construction in strikingly similar language to that used in the Wrike patents. The Meibock patent states that "the frame and the base of the boot are generally integrally molded as a single piece or are permanently fastened together by riveting or bonding." 1:36-40. By comparison, the Wrike patents state that the wheel frame may be secured to the base of the boot by rivets or high-strength adhesives e.g., bonding. '466 patent, 5:13-16; '584 patent, 4:4-6; '143 patent, 5:16-19. According to the Meibock patent, the permanence of the structure created by riveting or bonding "prevents a user from adjusting the location of the frame with respect to the boot or from removing and exchanging one set of frames for another set of frames of a different configuration." (1:36-43). In view of the distinction drawn by prior art, which was discussed and cited during prosecution of the '584 patent prosecution, between rivets and other fastening means, I am persuaded that those skilled in the art would not consider rivets (or high strength adhesives) to fall within the category of releasable fasteners. 1 See Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998) ("The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction."). 2

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1 Although the K-2 case, which Salomon cites, is by no means controlling in the instant case, the K-2 case appears to affirm my understanding of the nature of rivets, which I derived from the intrinsic evidence reviewed herein. 191 F.3d at 1365 ("Screws, unlike rivets and laminates, are meant to be unscrewed, that is, to be removed. A rivet or a laminate, to the contrary, is meant to remain permanent, unremovable unless one is bent on breaking the permanent structure apart.").

2 Although claim 1 of the '584 patent recites a "fastening means for releasably attaching" the sidewalls, which would ordinarily require a thorough analysis of the "corresponding structure" disclosed in the '584 specification and its equivalent, this analysis is unnecessary given the difference in function performed by rivets and releasable fasteners, such as screws and bolts. See Micro Chem., Inc. v. Great Plains Chem. Co., Inc., 194 F.3d 1250, 1257 (Fed. Cir.1999) ("§ 112, P 6] does not permit limitation of a means-plus-function claim by adopting a function different from that explicitly recited in the claim.").

--- End Footnotes ---

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CLAIM CONSTRUCTION

This court must address the meaning of the claim term "releasably attaching" in claims 1 and 9 of the '466 patent. Claims 1 and 9 state: "a plurality of fasteners for releasably attaching said first and second sidewalls to respective ones of said toe and heel plate flange pairs." '466 patent, col. 9, ll. 25-27; col. 10, ll. 16-18 (emphasis added). The district court construed the term "releasably attaching" to mean that the fasteners "must permit the sidewalls to be easily removed and replaced." V-Formation, Inc., 2002 U.S. Dist. LEXIS 22394, at *24. The district court also determined that "those skilled in the art would not consider rivets . . . to fall within the category of releasable fasteners." Id. at *29.

The intrinsic record in a patent case is the primary tool to supply the context for interpretation of disputed claim terms. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). This tool usually provides the technological and temporal context to enable the court to ascertain the meaning of the claim to one of ordinary skill in the art at the time of invention. Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings, 370 F.3d 1354, 1360 (Fed. Cir. 2004); Moba v. Diamond Automation, Inc., 325 F.3d 1306, 1315 (Fed. Cir. 2003) ("Moreover, as this court has repeatedly counseled, the best indicator of claim meaning is its usage in context as understood by one of skill in the art at the time of invention."); Ferguson Beauregard v. Mega Sys., LLC, 350 F.3d 1327, 1338 (Fed. Cir. 2003) ("The words used in the claims must be considered in context and are examined through the viewing glass of a person skilled in the art."); Interactive Gift Express, Inc. v. Compuserve Inc., 256 F.3d 1323, 1332 (Fed. Cir. 2001) ("It is important to bear in mind that the viewing glass through which the claims are construed is that of a person skilled in the art."); Markman, 52 F.3d at 986 ("The focus is on the objective test of what one of ordinary skill in the art at the time of the invention would have understood the term to
mean.").

In most cases, the best source for discerning this proper context is the patent specification wherein the patent applicant describes the invention. Metabolite, 370 F.3d at 1360. In this case, the '466 patent's specification informs this court that the sidewalls must be "easily" removed and replaced. The specification repeatedly emphasizes the ease of sidewall removal and replacement. For instance, the '466 patent states: "If one of the sidewalls [in the invention] needs to be removed from the skate frame to be replaced, it can easily be removed without special tools or skills." '466 patent, col. 7, ll. 25-27 (emphasis added). In view of this requirement for easy replacement, the '466 patent specification further states: "Another aspect of the invention is a repair kit for allowing for faster or more convenient sidewall replacement." Id. at col. 3, ll. 34-36 (emphasis added). In fact, the specification lists as one of the invention's objects that it provides an in-line skate frame with sidewalls that can be separated and singularly replaced. Id. at col. 2, ll. 39-42. Thus, the specification supports the district court's claim interpretation.

The district court properly considered other intrinsic evidence to aid its construction. For instance, the district court considered U.S. Patent No. 5,549,310 (the Meibock patent). The Meibock patent is prior art that was listed as a reference on the face of the '466 patent and in an Information Disclosure Statement. This prior art reference to Meibock is not extrinsic evidence. This court has established that "prior art cited in a patent or cited in the prosecution history of the patent constitutes intrinsic evidence." Kumar v. Ovonic Battery Co., 351 F.3d 1364, 1368 (Fed. Cir. 2003); Tate Access Floors, Inc. v. Interface Architectural Res., Inc., 279 F.3d 1357, 1371-72 n. 4 (Fed. Cir. 2002); Vitronics, 90 F.3d at 1582 (Fed. Cir. 1996); Markman, 52 F.3d at 979-80. For example, in Arthur A. Collins, Inc. v. Northern Telecom Ltd., 216 F.3d 1042 (Fed. Cir. 2000), this court rejected the district court's claim construction, which "declined to consider the teachings of [prior art referenced in the patent] to ascertain the meaning" of the claim term "time-space-time (TST) switch." Id. at 1044. Instead, this court interpreted the term based on its usage in the prior art that was cited in the patent, explaining that "when prior art that sheds light on the meaning of a term is cited by the patentee, it can have particular value as a guide to the proper construction of the term, because it may indicate not only the meaning of the term to persons skilled in the art, but also that the patentee intended to adopt that meaning." Id. at 1045.

The district court properly used the Meibock patent to set the context for its claim construction. The Meibock patent explains that the toe and heel plates are "permanently attached . . . through the use of rivets or releasably attached through the use of fasteners such as screws or bolts." Meibock patent, col. 4, ll. 53-56 (emphases added); see also col. 5, ll. 22-25. The Meibock patent further explains: "Each fastener is shown in the preferred embodiment as a screw and retainer; however, any suitable releasable fastening device could be used. In alternative embodiments, a more permanent fastener such as a rivet could also be used." Id. at col. 5, ll. 54-58. Thus, the district court correctly concluded: "[The] Meibock patent provides evidence that rivets are considered by persons of ordinary skill to be permanent fasteners." V-Formation, Inc., 2002 U.S. Dist. LEXIS 22394, at *28.

As the district court noted, the Meibock patent uses "strikingly similar language" to the '466 and '143 patents to describe its in-line skate construction. Id. For instance, the Meibock patent recites: "The frame and the base of the boot are generally integrally molded as a single piece or are permanently fastened together by riveting or bonding." Col. 1, ll. 36-40. In addition, the Meibock patent explains that the permanent rivet or bonding structures "prevent[] a user from adjusting the location of the frame with respect to the boot or from removing and exchanging one set of frames for another set of frames of a different configuration." Id. at col. 1, ll. 38-42. By comparison, the '466 and '143 patents state that rivets or high-strength adhesives may secure the wheel frame to the base of the boot. '466 patent, col. 5, ll. 13-16; '143 patent, col. 5, ll. 16-19. Consequently, this court agrees with the district court's conclusion that one skilled in the art would not consider rivets within the category of releasable fasteners.

Finally, the district court properly weighed this court's opinion in K-2 Corp. v. Salomon, S.A., 191 F.3d 1356 (Fed. Cir. 1999), when considering the available intrinsic evidence. The district court quoted the following portion of K-2 Corp. in footnote 1 of its opinion: "Screws, unlike rivets and laminates, are meant to be unscrewed, that is, to be removed. A rivet or a laminate, to the contrary, is meant to remain permanent, unremovable unless one is bent on breaking the permanent structure apart." V-Formation, Inc., 2002 U.S. Dist. LEXIS 22394, at *29 (quoting K-2 Corp., 191 F.3d at 1365). The district court put this reference in its proper context by explaining that "although the K-2 case . . . is by no means controlling in the instant case, the K-2 case appears to affirm my understanding of the nature of rivets, which I derived from the intrinsic evidence . . . ." Id. Thus, the district court properly used K-2 Corp. to merely further confirm the correctness of its independent claim construction and not as controlling authority for its decision. Likewise, this court does not rely on K-2.
Corp. in reaching its conclusion regarding the trial court's claim construction. The district court properly referred to a related, non-binding judicial opinion to support its independent conclusion in this case.

In sum, this court affirms the district court's claim construction defining "releasably attaching" in claims 1 and 9 of the '466 patent to mean that the fasteners "must permit the sidewalls to be easily removed and replaced" and determining that "those skilled in the art would not consider rivets . . . to fall within the category of releasable fasteners."

C. "Releasably Attached"

The claim term "releasably attached" appears in Claims 3 and 5. In Claim 3, "the diaphragm has a connector extending upwardly therefrom and the actuating means are releasably attached thereto." In Claim 5, "the connector is a separate member releasably attached to the diaphragm." The parties agree that a releasably attached structure is one designed for repeated assembly and disassembly.

Cannon contends that the term "releasably attached" requires that the components be "capable of being readily attached to and separated from [each other] by ordinary manual force and without the use of specialized tools." Cannon argues that the purpose of the invention compels this construction -- the breast pump is to be assembled and disassembled by a mother in the home environment, not by engineers in a laboratory.

TFY argues that the term requires that the components must be "capable of being readily attached to and separated from" each other in a non-destructive way. The Court agrees with TFY. The specification teaches that "an advantage of the illustrated breast pump is the ease by which it may be assembled and disassembled to enable it to be properly sterilized before use." '850 patent, col. 7, Ins. 58-60. The summary of the invention teaches that "it is an object of the present invention to provide an improved pump which is easier and more convenient to use and simpler to strip down for cleaning and reassembly." '850 patent, col. 1, Ins. 46-48.

The definition of "releasably" is: "capable of being released." Webster's Third New Int'l Dict. at 1917. "Release" is defined as: "to set free from restraint, confinement, or servitude; the act of liberating or freeing: discharge from restraint." Webster's Third New Int'l Dict. at 1917. The definition of "attach" is: "to make fast or join (as by string or glue); bind, fasten, tie; to fix or fasten itself, adhere." Id. at 140.

Although Cannon's definition is consistent with the purpose of the patent, nothing requires the construction of "releasably attached" to require the limitation of ordinary manual force. Indeed, nothing in the specification specifies the degree of difficulty with which the components can be attached and separated.

TFY's proposed construction is consistent with the ordinary meaning and with the specification and summary of invention. Accordingly, the Court defines "releasably attached" as "capable of being non-destructively attached to and separated from."
counter-profiles on each plate member. I agree with CPT because the specification precisely describes the manner in which the connection between the plate members and the opposing surfaces is achieved. For example, the specification states: "The connection of the plate members with the side members is structurally very easily accomplished, as . . . described in . . . connection with several exemplary embodiments," which are represented by Figures 2 and 6. Id. at col.2 l.8-11. In both of these figures, and from the accompanying descriptions in the specification, it is evident the connection between the plate members and the opposing surfaces is accomplished solely via the cooperating profiles and counter-profiles. Although IKN argues the specification describes a connection between the flanges and the upper edges of the side members, this phrase reveals only a contact relationship between these parts and, as such, is insufficient to satisfy the limitation. Thus, I will construe the "releasably connectable" limitation as requiring each individual plate member to be "connected directly to the opposing surfaces of the two side members in such a manner that it is capable of being freed from the opposing surfaces of the two side members." 13

--- Footnotes ---

12 This argument also assumes the proper construction of the term "opposing surfaces" includes the upper edges - a position I have previously rejected.

13 The modifier "releasably" simply refers to the various references in the specification to the ease with which the plate members can be inserted and removed from the frame when the invention is disassembled for the purpose of removing and replacing worn plates.

--- End Footnotes ---

2. Claims 2 and 4

The parties have asked the Court to construe the term "releasably secured" which appears in dependent claims 2 and 4. Claim 2 claims an "apparatus as claimed in claim 1 wherein the nozzle is releasably secured to the tubular housing." ('886 patent, col. 4, ll. 18-19.) Claim 4 claims an "apparatus as claimed in claim 1 wherein the mouthpiece is releasably secured to the tubular housing." ('886 patent, col. 4, ll. 22-23.) Since the same term is used in both claims, it should be construed in the same way in both claims. Georgia-Pacific Corp. v. U.S. Gypsum Co., 195 F.3d 1322, 1331 (Fed. Cir. 1999) ("Unless the patent otherwise provides, a claim term cannot be given different meaning in the various claims of the same patent.").

P&M construes "releasably secured" as "connected, but detachable." (Pls. Opening Mem. at 21.) Rose Art construes the term as having "a control mechanism that provides the ability to easily free the nozzle portion [or the mouthpiece in claim 4] from the fastened position and secure the nozzle [or mouthpiece] to the tubular housing in a fastened position." (Def. Pre-Markman Hr'g. Br. at 28-29.) There is nothing in the claim language or the specification which would require the term to include "a control mechanism" for freeing and securing either the nozzle or the mouthpiece relative to the housing. Rose Art relies on extraneous evidence in the form of dictionary definitions, the "Plasto-Vertrieb" patent and expert testimony to support its definition of this term. The Court finds that the term "releasably secured" is not ambiguous and, therefore, it is not necessary to consider extrinsic evidence to construe the disputed claim language. Consequently, the Court construes the term "releasably secured" as "connected, but detachable."

aa. "Releasable Means" (Claim 3)

143. LaGard concedes that the releasable means of Claim 3 is a means-plus-function element subject to § 112 P6. LaGard's Reply Re Summary Judgment Motion on Infringement (DE # 127), p. 11; LaGard's Supplemental Reply to Mas-Hamilton's Opposition to LaGard's Summary Judgment Motion (DE # 142), p. 8. LaGard asserts, however, that the word "releasable" is unimportant for claim interpretation. However, no claim term is to be ignored in interpreting a claim; each element is to be

144. In describing the "releasable means", the '656 patent specification states that the cantilever arm (an integral part of the lever) and detent on the lever (the spring-biased pin at the lower end of the cantilever) releasably maintains the lever in a position disengaged from the cam wheel. See '656 patent Abstract. These parts are also described in the specification to releasably maintain the pivotable lever in a position disengaged from the cam wheel. Col. 2, lines 24-26. As shown by the description and drawings of the '656 patent, when the solenoid housing translates linearly, the detent pin is released from the recess on the upper surface of the solenoid housing. Once the lower end of the cantilever arm is released, there is no mechanical connection between the upper surface of the solenoid housing and the lower end of the cantilever arm. Thus, as used in the '656 patent, "release" has the usual meaning of a mechanical arrangement of parts for holding or freeing a device or mechanism as required, or a setting free from restraint. PX 187, PX 188.

145. As described in the '656 patent specification, the "releasable means" identifies a lever which is held up out of contact with the dial cam by a cantilever arm including at its lower end a movable spring-loaded detent pin within a bore which normally engages a recess in the solenoid housing which retains the detent pin in place. The detent pin, as well as the lower end of the cantilever arm, are releasable from the recess when the solenoid housing moves linearly to cause the lever to engage the dial cam. That is, as the solenoid housing moves linearly, there is no mechanical connection between the lever and the solenoid housing -- the lever is set free from the solenoid housing.

146. The function of the releasable means is to maintain, through the operation just described, the lever in a stationary position disengaged from the cam wheel and independent of rotational movement of the cam wheel, yet release the lever at the appropriate time during operation of the lock.

bb. "Release" (Claims 34, 43)

147. In Claims 34 and 43, "release" is used to describe the interaction between the movable link member and the lever, i.e., that the movable link member is moved so as to "release" the lever. This term is to be defined in the same way as described in connection with the releasable means. When the mechanical mechanism operates, the movable link member (the solenoid housing) is moved to free the lever so that there is no longer any mechanical interconnection between the movable link member and the lever.

c. "Releasing" (Claims 34, 43)

148. This claim term is used to describe the action of the movable link member after the combination has been entered. This term has the same meaning in these claims as "release", i.e., setting free the lever from the solenoid housing.

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1. Release Coating and Release Coated 14

Plaintiff's Proposed Construction: A "release coating" is a covering that permits the easy and complete removal of pressure sensitive adhesive labels.

Defendants' Proposed Construction: A "release coating" is a material such as silicone or lacquer applied to a substrate by a liquid coating operation, which allows pressure sensitive labels to release. The term does not encompass an uncoated film or the films of Rigggsbee (U.S. Patent No. 4,767,654) or Du Katz (U.S. Patent No. 5,248,536) which Plaintiff told the Patent Examiner were not coated materials in order to induce the Patent Examiner to grant the patents-in-suit nor does it include a laminate that is made by bonding two or more films together.

The Court's Claim Construction: A "release coating" is a covering that permits the easy and complete removal of pressure sensitive adhesive labels. "Release coated" means a material having a "release coating."

14 Defendants have asked the Court to define "release coated" as "a material having a 'release coating' which allows pressure sensitive labels to release." MPT does not dispute this definition. Because release coated is defined by reference to
the definition of release coating, both terms will be addressed in this section.

The parties do not dispute the function of a release coated surface. They have not argued that MPT's proposed construction which "permits the easy and complete removal of pressure sensitive adhesive labels" differs in any appreciable manner from Defendants' proposed construction which "allows pressure sensitive labels to release." Instead, the parties disagree over the materials that may perform this function. Defendants are involved in the sale of a product that incorporates a Teflon(R) film to allow for the removal of pressure sensitive labels. Defendants argue that under their proposed definition, a Teflon(R) film could not literally infringe the patents because it is a film that is bonded to a second film, rather than a silicone or a lacquer applied to a substrate by a liquid coating operation. MPT believes that any material that performs the release function and covers another material is release coated.

The release coating of the claims is on the release coated surface (or face) of the placard and allows for the placement and removal of adhesive coated labels. For example, in Claim 1 of the '790 patent the "placard [has] a release coated face . . . ." The method involves "placing a pressure-sensitive adhesive coated label on the release coating of the placard[,] . . . removing said label from the placard" and "replacing said label with another adhesive coated label . . . ." The claims do not attempt to further define the release coating by its structure. This claim language supports MPT's definition. There is nothing in the claims to limit a release coating to a particular material or manufacturing process. Instead, the focus is on the ability to permit the easy and complete removal of pressure sensitive adhesive labels.

Defendants counter that release coating has a special meaning in the art, and further, that the inventor meant to incorporate that meaning by his alternative use of "release layer" to describe the liner release surface in Claim 5 of the '790 patent and Claim 10 of the '164 patent. By using different terminology for the "release layer" of the liner and the "release coating" of the placard, Defendants believe the inventor was providing public notice that a placard with a release layer does not infringe. Defendants then posit that a laminated film such as Teflon(R) is a release layer.

However, the claims do not disclose any structural difference between a "coating" and a "layer." In fact, in the '164 patent the same liner release surface is described as both a "release coated" surface (Claims 3, 5 and 8) and a "release layer" (Claim 10). MPT points out that Claim 1 and Claim 4 of the '790 patent describe the same adhesive face of the placard as "an adhesive coated face" and "a pressure sensitive placard adhesive layer," respectively. Also, later in Claim 4 the adhesive surface of the label is described as "a pressure sensitive adhesive coating." Thus, it appears from the claims that "coating" and "layer" are used interchangeably.

Both parties argue that the specification supports their position. 15 Defendants argue that the specification always describes the liner release surface as a "release layer" while the placard release surface only has a "release coating." MPT counters in a number of ways. First, Defendants are incorrect that the release surface of the liner is always referred to as a "release layer." The "release layer 20" of the liner is referred to as a "a release coating 20" at one point in the specification. ("790 patent, col. 2, ln. 20) (emphasis added). Second, the "release coating" of the placard is referred to as a "layer" on a number of occasions. For example, the specification describes the entire lamination, including the release coating of the placard, as "a multi-layer lamination 10." ("790 patent, col. 2, ln. 8-12) (emphasis added). The patent drawings do not depict the placard release coating (element 24) in a different manner than the liner release layer (element 20). Third, in the preferred embodiment both release surfaces are made of the same material: "The liner is provided with a silicone release layer 20" and the placard release surface has "a silicone release coating 24." ("790 patent, col. 2, ln. 14-15, ln. 29-30).

15 The specifications for the '790 patent and the '164 patent are essentially the same. For that reason, the Court will reference the '790 patent specification only.

Defendants explain the interchangeable use of "layer" and "coating" as follows: "The release layer may be either a 'release coating' [i.e., a lacquer or silicone applied by a liquid coating process] or it may be a film that has inherent release properties such as Teflon(R) film." The Court disagrees. Nothing in the claims or specification supports Defendants' position. There is no indication that "coatings" are not "films" or even that "coating" is a subset of "layer." Instead, the specification contemplates that a "layer" can be "laminated" to a "film" such that it "coats" the film. Although the specification does not address the manufacturing process for the placard release coating, 16 it does give an example of how the full lamination can be constructed from a commercially available liner and film. In short, the paper liner 18 has a "layer of white modified acrylic adhesive 26 laminated to one side." ('790 patent, col. 2, ln. 32-33) (emphasis added). The film and liner are combined by "laminating" the "non-release coated side of the film" to the adhesive side of the liner, after
which the adhesive surface initially referred to as a "layer" is referred to as providing an "adhesive coated surface." 17 ('790 patent, col. 2, ln. 34-37 (emphasis added); see also '790 patent, col. 2, ln. 18-19 (describing an "opposite face [of the film] with a coating of adhesive 26"). This supports MPT's argument that a release coated surface may also be formed by the lamination of layers or films.

16 MPT argues that "the placard acquires its 'release coated surface' through a process of laminating two solid webs together . . . ." This is not correct. The specification never describes how the release coated surface is applied to the film, beyond noting that a film already having a release coated surface is available from the Mobil Chemical Corporation. ('790 patent, col. 2, ln. 28-31).

17 Defendants cite to Satas to explain the lamination process of the adhesive: "The adhesive is usually transfer coated. That is, the adhesive is applied to the silicone coated sheet and transferred to the label stock in the final laminating step." Satas at p. 398. However, this reference merely confirms that a coating can be applied by a lamination process.

Moreover, assuming arguendo that "release coating" is a subset of "release layer," this does not mean that a release coating is "a material such as silicone or lacquer applied to a substrate by a liquid coating operation . . . [not] including a laminate that is made by bonding two or more films together." What is noticeably absent from the claims or specification is any indication that the terms "layer" and "coating" were intended to refer to materials produced by a particular manufacturing process. Those terms simply describe the relationship between components of the full "multi-layer lamination 10" used to perform the method. For example, the "release coating 24" is the outside "layer" of the lamination ('790 patent, col. 2, ln. 8-12), even though it is a "release coating 24" for the placard film 22. ('790 patent, fig. 2; col. 2, ln. 23-24). Similarly, the "release layer 20" of the liner may generally be described as a layer located near the center of the lamination. ('790 patent, fig. 2). However, it is specifically referred to as "a release coating 20" with respect to the "liner 18" that it coats.

Defendants also focus on the fact that the release coating 24 coats a film 22. ('790 patent, col. 2, ln. 17-18, 29-30). The film 22 has a "non-release coated side." ('790 patent, col. 2, ln. 34-35). Starting from the premise that the film 22 is not a release coating, Defendants conclude that no film can be used as a release coating. This results in Defendant's proposed definition that a release coating cannot include "a laminate that is made by bonding two or more films together." However, Defendants' logic is flawed. A person of ordinary skill in the art would understand that the film 22 needs a release coating 24 not because it is a film, but because it is a film without release properties.

Defendants also point to the specification's specific reference to silicone as the release coating. However, the claims never limit the release coating to silicone. 18 Courts are not permitted to import the preferred embodiment into the claims unless it is justified by the claim language. Specialty Composites v. Cabot Corp., 845 F.2d 981, 987 (Fed. Cir. 1988). The error would be particularly egregious here, since the patents' only references to a silicone release coating are in the description of the preferred embodiment. In re Am. Acad. of Sci. Tech Ctr., 367 F.3d 1359, 1369 (Fed. Cir. 2004). The claims and the remainder of the specification recite a generic release coating. By leaving silicone out of the claims, the inventor chose not to limit his invention to a silicone release coating. See SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1121 n.14 (Fed. Cir. 1985) (explaining that "there is nothing in the asserted claims themselves about" the preferred embodiment).

18 Indeed, defendant Marathon Labels, Inc. responded to an interrogatory that "release coating" had a broad meaning that included materials other than silicone, but that "the silicone release coating is the only enabling disclosure for the claimed feature." (Marathon's Resp. to PI's 1st Req., Interr. # 8).

These conclusions are confirmed by reading the patent specification in light of its purpose to "teach and enable those of skill in the art to make and use the invention and to provide a best mode for doing so." Phillips, 415 F.3d at 1323. As is demonstrated by the extrinsic evidence discussed below, although numerous materials have release properties, the most common material for this application at the time of the invention was silicone. It makes sense that the inventor would use silicone in the "Description of the Preferred Embodiment" section of the patent to teach and enable others to perform the inventive method. Moreover, the inventor risks invalidity if he fails to "set forth the best mode contemplated by the inventor of carrying out his invention." 35 U.S.C. § 112. It certainly appears that the inventor's contemplated best mode included a silicone release coating.

It is also important to consider exactly what the specification would teach a person of ordinary skill in the art. As is confirmed by the technical references discussed below, silicone is immediately recognizable as a material that permits the easy and complete removal of pressure sensitive adhesive labels. There is no indication anywhere in the specification that
silicone is being used to explain the manufacturing process or original physical state of the release coating. Instead, the specification assumes that materials with appropriate release properties are commercially available from others. In sum, it is clear that the references to silicone were intended to teach and disclose the best mode for the invention rather than to limit the scope of the claims. Phillips, 415 F.3d at 1323.

The Court turns next to the prosecution history. The parties focus on two patents that were discussed during prosecution, Riggsbee and Du Katz. Riggsbee discloses an improved detachable coupon label. Prior to Riggsbee's invention, it was widely believed "that an effective detachable coupon label had to employ an adhesive to ensure that the coupon or label did not prematurely detach from the carton or container." (Riggsbee, col. 2, ln. 31-34). Other label structures required "a release polymer" to allow for the easy removal of labels. (Riggsbee, col. 2, ln. 38-41).

Riggsbee recognized a need for "a coupon label that will securely adhere to packaging without the use of an undesirable tacky adhesive and which can be readily removed without the use of a release substance." (Riggsbee, col. 2, ln. 42-45) (emphasis added). Riggsbee accomplished this goal by applying a resin film to the label base sheet to form a composite web. (Riggsbee, col. 4, ln. 15-19). This process created the necessary London or dispersion force between the resin film and the base sheet such that the label would separate from the film only upon the application of a desired release force. (Riggsbee, col. 4, ln. 15-19). London or dispersion force is a force of attraction between two materials that does not require an adhesive. (Riggsbee, col. 4, ln. 20-25). Riggsbee goes on to describe in detail some examples of materials and the manufacturing process used to produce labels with the necessary London or dispersion force.

The examiner initially rejected the claims of the original '119 application in light of Riggsbee. The prosecuting attorney responded with two arguments, the first addressed the method of relabeling and the second the film material. First, "Riggsbee is designed for one-time use" and "no relabeling with a different label is disclosed." ('119 file, p. 40) (emphasis in original). Second, "once the coupon [i.e., the label of Riggsbee] is removed [from the film of Riggsbee], there is no release-coated face exposed for receiving another label. The coupon itself has no adhesive coating on it so it cannot be adhered to the film." ('119 file, p. 40).

It is not entirely clear why the examiner eventually rescinded the rejection under Riggsbee. 19 ('119 file, p. 67). In any event, the '119 application was abandoned in favor of the '882 continuation-in-part application, which added the following material to the specification:

A label is applied to the placard outer face such that a pressure sensitive adhesive backing of the label is releasably attached to the release coated surface even if the label has a so called permanent adhesive backing.  

* * *  
Moreover, because of the release coating 24 any commercially available label can be used including those with inexpensive permanent pressure sensitive adhesive coatings rather than more expensive removable coatings.

(Compare '882 file, p. 6, with '119 file, pp. 9-10)

19 Following the applicant's filing of an appeal brief, and before an appeal, the examiner ended the Riggsbee line of rejections with the following terse statement: "The Final rejection dated November 10, 1993 has been rescinded[.]") ('119 file, p. 67). This provides some anecdotal support to the Federal Circuit's warnings about the lack of clarity often present in patent prosecution histories. Phillips, 415 F.3d at 1317.

Among other rejections, the '882 claims were rejected under 35 U.S.C. § 102(e) as anticipated by Du Katz and 35 U.S.C. § 103 as obvious under Du Katz in light of Riggsbee. Regarding Riggsbee, a declaration of Michael Kennedy stated as follows:

I have reviewed Riggsbee Patent 4,767,654 and failed to see where it in any way suggests the use of a release coating to enable a user to utilize labels with either permanent or reusable adhesive and be able to remove such a label without damage to the substrate. Indeed, this patent teaches the use of a casting substrate to avoid "an undesirable tacky residue" when a coupon is removed.

('882 file, p. 8). 20

20 This declaration was also submitted with the '202 application. ('202 file, p. 68).
Du Katz describes an apparatus for displaying removable indicia in a setting such as a fast food restaurant. (Du Katz, col. 4, ln. 21-27). A base sheet is manufactured of ABS or other commercially available materials. (Du Katz, col. 4, ln. 47-66). The base sheet displays information such as combo meals with predetermined non-printed zones. (Du Katz, col. 4, ln. 67 - col. 5, ln. 20). The non-printed zones of the base sheet receive removable indicia which include information such as the price of the combo meal and can be changed without replacing the entire display. (Du Katz, col. 5, ln. 21-67). The removable indicia (i.e., the Du Katz component which is similar to a label) "may have a removable adhesive deposited thereon, such as, for example, the water-base adhesive KIWO(R)" for attachment to the base sheet. (Du Katz, col. 5, ln. 35-37). A substantially transparent cover sheet "is conformably dimensioned to mate with the base sheet 20, and is operable to selectively locate and substantially seal the removably interchangeable indicia 30 within the apparatus 10 for view by the consumer." (Du Katz, col. 7, ln. 20-24).

The declaration of Michael Kennedy was submitted in response to this rejection. ('882 file, p. 48). He referred the patent examiner to definitions for permanent adhesive and removable adhesive provided by the Fasson company:

Permanent: An adhesive designed to stick to a substrate without edge lifting that cannot be removed without damaging either the label or the substrate.

Removable: An adhesive designed to stick to a substrate without edge lifting that can be removed without damage to either the label or the substrate.

('882 file, p. 51).

He then argued that the surface of Du Katz could release only removable adhesive labels, and thus did not have a release coating:

The ABS "base sheet" 20 of [Du Katz] is printed on its outer surface and does not have a release coating. The removable labels 30 must necessarily have a removable adhesive. Otherwise the outer surface of the "base sheet" 20 could be damaged when the "indicia" 30 are removed and replaced. Any printing that might underlie the labels could be stripped away.

('882 file, p. 48). 21

21 These statements are repeated elsewhere in the '882 application and also in the '202 application. ('882 file, p. 8; '202 file, p. 68).

Kennedy also submitted evidence that the invention enjoyed commercial success. The examiner ultimately found this latter basis persuasive, relying on "the weight of evidence relating to long felt need and commercial success . . . to overcome the prima facie case for obviousness that had existed against the claims in this case." 22 ('882 file, p. 92). That application then issued as the '790 patent.

22 A prima facie case of obviousness is a procedural tool used by the PTO. In re Oetiker, 977 F.2d 1443, 1445 (Fed. Cir. 1992). The patent examiner has the initial burden of setting forth a prima facie case of obviousness. Id. This may be overcome by objective evidence of nonobviousness such as commercial success and long felt need. Graham v. John Deere Co., 383 U.S. 1, 17-18, 86 S. Ct. 684, 15 L. Ed. 2d 545 (1966); Rouffet, 149 F.3d at 1355.

The '882 application was also continued as the '202 application. The '202 application was initially rejected as obvious under Du Katz and two other patents. 23 ('202 file, p. 36). The arguments made above were largely repeated during prosecution of the '202 application. (E.g., '202 file, p. 68). The claims were eventually allowed on the basis that the "prior art fails to teach a placard having a release coating." ('202 file, p. 79). The '202 application issued as a patent and was reissued as the '164 patent.

23 Riggsbee was not cited in the initial rejection of the '202 application. ('202 file, p. 42).

Defendants essentially repeat their film/release coating argument with respect to the prosecution history. The argument goes as follows: 1) Riggsbee and Du Katz are films (or layers); 2) Riggsbee and Du Katz are not release coatings; and 3) therefore, no film can be a release coating. Defendants' argument is flawed. The prosecution history clearly indicates that, to the extent Riggsbee and Du Katz were distinguished based on their materials, the critical distinction was the materials' lack of release...
properties to accommodate both permanent and removable pressure sensitive adhesive labels. Rigsbee teaches away from using any release substance or adhesive labels, while Du Katz only allows for the use of removable adhesive labels. That the materials of Rigsbee and Du Katz might have been referred to as films was wholly irrelevant. 24

24 Indeed, Rigsbee describes a prior art patent where a "film is . . . coated onto the release polymer."

(Riggsbee, col. 2, ln. 12-13) (emphasis added). Du Katz was not concerned with the nature of the base sheet as a film. The base sheet or main body may be made of numerous materials which might not be characterized as a film, such as "styrene, vinyl, paper, polyester, foam stock or polycarbonate, to name a few." (Du Katz, col. 4, ln. 64-66). ABS itself is not necessarily a film. (See Lantz).

Defendants also wish the Court to include in the definition of release coating the following statement: "The term does not encompass . . . the films of Rigsbee (U.S. Patent No. 4,767,654) or Du Katz (U.S. Patent No. 5,248,536) which Plaintiff told the Patent Examiner were not coated materials in order to induce the Patent Examiner to grant the patents-in-suit . . . ." Their request is denied for a number of reasons. First, Defendants' statement focuses on the incorrect "films are not coatings" argument. The applicant certainly made limiting statements with respect to Rigsbee and Du Katz, but again, those statements were focused on the function of the release coating as permitting the easy and complete removal of pressure sensitive adhesive labels, something that the Court has already included in its claim definition. Second, Defendants' definition is unwieldy and inappropriate for presentation before a jury. The Court can define release coating in a concise and understandable manner that does not require reference to other patents and create the potential for a backdoor around this Markman ruling. Third, if Defendants are seeking to make a prosecution history estoppel argument, that limitation on the doctrine of equivalents is more appropriately addressed to the Court after the claim term has been defined. The prosecution history instead confirms the Court's reading of the claims and specification. As was discussed above, there is no indication in the prosecution history that a film cannot be a release coating. Nor is there any indication in the cited passages that the release coating is limited to "a material such as silicone or lacquer applied to a substrate by a liquid coating operation." Similar to the specification and claims, the prosecution history focuses on the functionality of the release coating. Specification language was added stating that labels with "permanent pressure sensitive adhesive coatings" could be released from the release coating and both Du Katz and Rigsbee were distinguished on this basis. Finally, the extrinsic evidence also supports the Court's conclusion. The following industry definitions were provided by Defendant:

. "RELEASE COAT The release liner treatment material that allows pressure sensitive labels to release from the release liner. Usually made from silicone." (TLM p. 49).
. "Release Coat (release lacquer, lacquer, silicone coat) Material coated on the liner which allows [pressure sensitive] labels to release." (Fasson p. 35).
. "Release coating -- The release liner treatment material -- usually silicone -- that is coated onto the backing paper or film and which enables pressure-sensitive face materials or labels to be readily removed from the protective release liner prior to application. See silicone release coatings." (Fairley p. 167).
. "Release layer. A thin layer of chemicals, usually silicones, which 'release' the adhesive from the liner. This layer is sometimes referred to as the silicone or lacquer layer." (Avery § 4 p.1).

Despite Defendants' arguments to the contrary, these industry definitions are consistent with the Court's reading of the intrinsic record. All four define the release coat or release layer by reference to its function of allowing for the release of adhesive surfaces. As is indicated by the qualifying language that the release coat is "usually" made from silicone or lacquer, the examples are not intended to exclude other materials with the same properties. In fact, the citation of silicone as an exemplary material supports the Court's conclusion that the patent specification's recitation of a "silicone release coating" in the preferred embodiment would be recognized by a person of ordinary skill in the art as describing release properties rather than a manufacturing process.

These definitions provide no support for limiting a coating to a material "applied to a substrate by a liquid coating operation" as Defendants suggest. The definitions say nothing about a liquid coating operation. Nonetheless, Defendants' argue as follows: 1) a release coating must be silicon or lacquer; 2) silicone and lacquer are applied by a liquid coating operation; and 3) therefore, a release coating must be applied by a liquid coating operation. Defendants are wrong on all three counts. As was stated above, silicone and lacquer are merely provided as examples of a release coating. Moreover, Defendants have not pointed the Court to any evidence that silicone or lacquer must be applied by a liquid coating operation. Thus, the technical definitions provide no support for Defendants' proposed limitation. 25
25 Defendants also provide the following definition:

COATING In printing, an emulsion, varnish or lacquer applied in-line or off-line, often over a printed surface to give it added protection.

(TLM p. 12). This does not support limitation of a coating to a liquid coating process. First, the definition requires the same logical leap as every other definition proffered by defendants; namely, the Court must assume that the enumerated substances may only be applied as a liquid. Second, this definition is explicitly limited to printing. A brief review of a few pages of the TLM glossary indicates that there are many types of coatings, such as "clear coat," "clay coat," "barrier coat," "sealer coat" and "anchor coat." None of these coatings appear to be limited to a liquid coating process, and if one had been, the Court assumes that Defendants would have pointed this out.

Defendants next point to a definition of a "laminate" as "[a] web material formed by bonding two or more materials together as in a pressure sensitive construction. To apply one layer of material over another." (TLM p. 32). Defendants apparently believe that the inclusion of this definition in the same glossary necessarily means that "coating and lamination are two different processes." However, the TLM glossary defines a release coating by its properties, not by a manufacturing process. A laminate, by contrast, is defined by its method of manufacture. It is entirely consistent for a product produced as a laminate to have the properties of a release coating. 26

26 The only definition relating to a "coating" process, provided by MPT, confirms this conclusion:

Coating - A thin polymeric layer applied to the surface of a film to provide enhanced surface characteristics.

(Ampef p. 1). Although this definition is not entitled to great weight since it postdates the patent application by a number of years, it is notable in that it is the only generic technical definition of coating provided by either party. MPT also notes that it manufactured a placard from a material called Tefzel, which it believes is similar to Teflon. (See Tefzel). Although the inventor testified that "he didn't consider [the Tefzel lamination] any different from our regular one" (Petrou Dep. pp. 46-50), MPT has provided no evidence for its assertion that "the Kennedy Group placed notification of the '790 patent on the Tefzel-coated placard."

Defendants also note a definition of "release liner" as "the component of the pressure sensitive label stock which functions as a carrier for the pressure sensitive label. Prior to application, it protects the adhesive, and readily separates from the label immediately before the label is applied to product." (TLM p. 50). Defendants posit, without explanation, that this means that a release coating is merely a subset of materials with release properties. A careful review of the definitions reveals the opposite. The TLM release liner definition refers to a unitary component of the label stock that is made up of both the release coating and the material it coats. (See TLM p. 49 (defining a release coating as a release liner treatment material)). The release coating is what allows the release liner to release. Defendants other arguments are similarly flawed. 27 The extrinsic evidence only supports the definition dictated by the intrinsic record.

27 Defendants' argument that MPT's definition would not be enabled is an invalidity argument. Defendants' reference to a later Kennedy application is similarly irrelevant. First, the application was filed well after the original application and has little bearing on how a person of ordinary skill in the art would understand that application at the time the application was filed. Second, the application states that "the release surface 23 may be a coating applied to the protective layer 22 or may be a property of the material from which the protective layer is made." This passage merely recognizes that some materials may operate as both a "protective layer" and as a "release surface." There is nothing to indicate that a protective layer with release properties could not be used as a release coating in another application.

The final issue is the use of the term "covering" in the Court's definition. The claims, specification, prosecution history and technical definitions all define release coating by reference to its release function rather than the fact that it is a coating. Throughout these materials, the term coating was used according to its plain meaning as a material that covers another material. Although Defendants are correct that lay dictionary definitions cannot trump an art-specific meaning from the claims, specification, prosecution history or technical literature, all of those sources use the term coating in a manner consistent with the dictionary definition as a covering. (E.g., Websters p. 433) (defining "coating" as "a layer of any substance used as cover, protection, decoration or finish").
Accordingly, the Court construes "release coating" as "a covering that permits the easy and complete removal of pressure sensitive adhesive labels." "Release coated" is construed as "a material having a 'release coating.'" 28

28 In light of the Court's definition of "release coating." Defendants proposed definition of release coated as "a material having a 'release coating' which allows pressure sensitive labels to release is redundant.

3294

Release Element and Retainer Member

The Court addresses the terms "release element" 11 and "retainer member" 12 together because NMT argues that the two are inextricably intertwined. Indeed, NMT argues that one cannot define "retainer member" without using the term "release element." Thus, NMT proposes that "retainer member" mean "a release element that surrounds the needle holding member." Furthermore, NMT argues that a person of ordinary skill in the art would read the two-word term "release element" as "a separable member that frictionally engages the needle holding member along the sliding interface and itself holds the needle holding member against the retraction force provided by the biasing element until it moves axially thereby reducing the area of the sliding interface until the retraction force exceeds the remaining friction force." Moreover, all of the limitations from NMT's definition of "release element" would also apply to "retainer member" because NMT's "retainer member" construction incorporates "release element."

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11 Used in Claims 1 and 23.

12 Used in Claims 23 and 24.

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First, the Court finds that a "release element" is simply a "part that holds and later frees the needle holding member." The plain and ordinary meaning of "release element" is a "part that has to do with releasing or freeing." Furthermore, neither party disputes that the 551 Patent clearly envisions the "release element" as something which is initially involved in holding the needle holding member. The Court further notes that while Claim 1 does not restrict the scope of "release element," Claim 23 clearly defines exactly what a release element is for that claim. 13 The patentee expressed no intent to incorporate Claim 23's "release element" definition into Claim 1, and so the Court finds that a person of ordinary skill in the art would not do so either. The Court's construction of "release element" when inserted into the 551 patent will give Claim 1 its proper scope and will be limited by the clear and express definition found in Claim 23.

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13 Claim 23 states in relevant part: "the release element is a retainer member surrounding the needle holder and serving to hold the needle holder against the biasing influence of said biasing element acting on the needle holder with the needle extended from the syringe for use." 551 Patent, Col. 18, Ins. 35-39.

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Moreover, the Court rejects NMT's proposed definition as overly complicated, redundant, and an improper attempt to incorporate limitations from the specification into claim terms. The Court does not give a full written analysis of NMT's numerous arguments but rather notes a passage from RTI's construction brief which aptly sums up NMT's proposed construction: "NMT's construction tries to fold the entirety of both claims-along with extraneous limitations not found in the claims-into the one term 'release element.' Construction should not import limitations nor be an exercise in redundancy." Pls. Retractable Technologies, Inc. And Thomas J. Shaw's Markman Brief on U.S. Patent No. 5,385,551, p. 26. Although RTI's passage is perhaps overly broad as a general rule, it is correct in this case. A person of ordinary skill in the art simply would not roll all of the limitations NMT proposes into the two words "release element."
Second, the Court finds that a "retainer member" is a "separable part that holds the needle holding member." The ordinary meaning of the term "retainer member" is a "part that holds something." Moreover, neither party disputes that the "retainer member" holds the "needle holding member" and neither party disputes that the retainer member in the 551 patent is a "separable part."

Defendants propose that the term be defined as follows:

[A] rigid bar that pivots about one point and that is used to move an object at a second point by a force applied at a third. The rigid bar attaches to and is retained by the leaves of the ring binder and does not rock about a pin or incorporate or rely on any additional mechanisms or fasteners to provide for operation of the lever.

At the claim construction hearing, all parties agreed that "release lever" is one of the two most significant terms in the patent for purposes of this claim construction litigation.

Defendants arrived at the first part of their definition from a dictionary defining the term lever. The second part of Defendants' definition is extracted from the prosecution history.

According to the specifications in the '729 patent, the release lever is made up of a "thumb or finger plate" and a "lever arm" beneath the plate. ('729 patent, col. 3, ll. 36-38.) The "release levers" are mounted on opposite ends of the ring metal and move the hinged leaves to open and close the binders. (Id. at col. 3, ll. 31-34.) The specifications further provide that "[e]ach release lever extends longitudinally of and co-planar with [the] cover of the ring metal." (Id. at col. 13, ll. 34-36.) "Each release lever includes a thumb or finger plate and a lever arm." (Id. at col. 13, ll. 36-37.) The claim language provides that the release lever is located at one end of the shield and includes "a finger plate sized to receive a finger of the user" to move the levers to open and close the binder. (Id. at col. 4, ll. 66-col. 5, ll. 4.) The patent abstract advises that "both release levers extend substantially co-planar to the cover" and "generally correspond[] to the length" of the paper stored, thereby allowing the size of the binder to be smaller. (Id. at 1.) The background section claims an advantage of the patent is that it provides for a ring binder with ring metal shorter than conventional binders for the same size of paper. (Id. at col. 2, ll. 20-23.)

In response to an Office Action of December 18, 1997, the patentee provided a distinction between the '729 patent and the Trussell patent. (Plf. Ex. A at 58.) This response concentrated, at least partially, on the lever arm and advises the Patent and Trademark Office that the Trussell patent teaches away from the claim release lever. A careful reading of that excerpt, however, makes it clear that the response is addressing the function of the lever arm.

The Court finds that the claim term "a release lever" can be defined using the language, teachings, and limitations set out in the patent specifications and claim language. Accordingly, the Court construes the term "a release lever" as follows:

A rigid bar mounted at opposite ends of the cover or shield extending longitudinally of and coplanar with cover or shield sized to fit the finger of user and operable by user of ring binder to move leaves to open and close the binder. Each release lever includes a thumb or finger plate and a lever arm.

Venus argues "remain at the specific size" should be construed in the same manner as "durably assumes a smaller size."
size"/"durably assumes a reduced size" and "durably assume a diameter at least as small as the reduced diameter achieved in the step of pre-shaping." specifically, "assumption and retention of compressed diameter after treatment smaller than pre-treatment." Defendants argue "remain at the specific size" should be construed as "until the hollow anatomical structure will maintain the predetermined smaller but non-zero diameter, accommodating ordinary levels of fluid (e.g., blood) flow for a lasting (i.e., non-temporary) period without external compression."

The Court, for the reasons stated by defendants, finds "remain at the specific size" is properly construed as "maintain the predetermined smaller but non-zero diameter for a lasting (i.e., non-temporary) period without external compression."

6 The Court has not adopted defendants' proposed additional language, specifically, the phrases "accommodating ordinary levels of fluid (e.g., blood) flow" and "until the hollow anatomical structure will." Defendants have failed to show the patent requires accommodation of "ordinary" flow, and the claim already includes the phrase "such that the hollow structure will." See '273 Patent, col. 19, line 18.

B. "remote home base"

Claim 1 of the '490 patent contains the term "remote home base": "said modem adapted to link said memory to a remote home base to establish a communication link between said remote home base and said plurality of various job sites at which said retractable and self-contained mobile repair unit is working." The term appears several times in the specification, e.g., "[a] monitor senses the load on the derrick and conveys that information to a remote home base where the time of critical events is identified," ('490 patent, 2:13-15), and "[m]onitor 48 converts signal 94 to a digital value, stores it in a memory 96, associates it with a real time stamp, and eventually communicates the data to a remote home base 100 by way of a modem 98," ('490 patent, 3:52-55) (emphasis added). According to Key, no construction of "remote home base" is necessary. Alternatively, Key proposes "a location remote from the work site where the repair unit is operating." The defendants' proposed construction is "the location where the operator of the mobile repair unit receives data related to the repair unit, and such location is removed from the work site at which the repair unit is operating."

Forbes and Petron contend that the following sentence from the specification supports their proposed construction: "An operator at a home base 100 remote from the work site at which repair unit 20 is operating accesses the data stored in circuit 124 by way of a PC-based modem 98 and a cellular phone 136." ('490 patent, 4:28-31). But Key argues that the operator requirement unnecessarily imports a limitation from the preferred embodiment. Furthermore, Key contends that the "operator at a home base" may be the well operator, not just the service rig operator.

The court is persuaded by the plaintiff's argument. Nothing in the patent requires "remote home base" to be limited to the preferred embodiment. Thus the court construes this term to mean "a location remote from the work site where the repair unit is operating."

2. Meaning of "Remote Location"

Following the rules laid out above, we now construe the proper meaning of "remote location beyond a range of direct manual contact," as used in the 003 patent. In this regard, it is the task of this Court to determine the meaning of "remote location" at the time Wilk filed the application that led to the 003 patent, not in hindsight. Schering Corp. v. Amgen Inc., 222 F.3d 1347, 1352 (Fed. Cir. 2000).
The crux of the dispute between the parties is whether a "remote location beyond a range of direct manual contact" includes a location in the very same operating room as the patient being operated upon. While Brookhill maintains that this phrase does indeed include such a location, Intuitive strenuously disagrees. For the reasons that follow, we find that Intuitive has the better of the argument. Moreover, as shown below, our interpretation of this language is dispositive on the question of literal infringement.

a. Claims

First, we look to the language of the claims themselves. The only independent claims of the 003 patent, and, thus, the only ones relevant to this inquiry, are claims 1, 10, and 17. Each of these independent claims include the following language: "transmitting [a video signal to a surgeon in] a remote location beyond a range of direct manual contact with [the] patient's body." 003 patent, col. 4, lines 17-21, col. 5, lines 5-9, col. 6, lines 16-21 (emphasis supplied).

In considering the "ordinary and customary" meaning of this language, see K-2, 191 F.3d at 1362, we note that Webster's defines "remote" as "separated by intervals greater than usual; far apart . . . far removed; not near; far; distant." Webster's Third New Int'l Dictionary 1921 (Merriam-Webster 1993). Furthermore, this comports with the popular use of the word "remote." For example, "remote sensing" is a technique for collecting scientific data that is defined as "reconnaissance from a distance," and Remote, Oregon is a city from which "there are many lonely miles in every direction." What is Remote Sensing?, at http://www.geog.nau.edu/RemoteSensing (last modified Apr. 8, 1998); Remote Oregon - City Guide, at http://www.scod.com/cities/remote (last modified June 25, 2001). On the other hand, however, Brookhill points out that "remote," as used in a "remote control" of a television or toy vehicle, means only control "without directly touching" the object being controlled. Pl.'s Opp. at 8.

We find, as a matter of law, that the ordinary and customary meaning of "remote" is "far away" rather than "not directly touching." This lends support to Intuitive's view that a "remote location" is one that is at least as far away from the patient so as to not be in the same room as her. The 003 patent does not, however, use the single word "remote," but rather the more specific phrase, "remote location beyond a range of direct manual contact." Because a patentee is free to "be his own lexicographer," Vitronics, 90 F.3d at 1582, the relevant construction is not simply the meaning of "remote," but rather the meaning of this phrase as a whole.

Brookhill asserts that "remote location beyond a range of direct manual contact" "means what it says." Pl.'s Opp. at 6. From Brookhill's point of view, this includes all locations "beyond arm's reach of the patient," including most of the operating room. See Pl.'s Opp. at 7, 9. This interpretation emphasizes the "direct manual contact" language. On the other side, Intuitive stresses the "range" language. Intuitive asserts that the plain meaning of this phrase is that within the "range" it defines, the surgeon has the ability to go near and touch the patient with her own hands, while outside of this "range, " such "manual contact" is impossible. See Defendant's Reply to Plaintiff's Opposition to Motion for Summary Adjudication or Summary Judgment ("Def's Reply") at 5. Such a reading would exclude a location within the operating room. Id.

Both of these definitions have arguable merit. Thus, we find the meaning of this phrase is not free from ambiguity when read in isolation, so we proceed to the next stage of the analysis, and examine the specification of the 003 patent. See Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 621 (Fed. Cir. 1995) (because "it is legal error to construe a claim by considering it in isolation," a "claim must be read in view of the specification of which it is a part").

b. Specification

Intuitive argues that the key to understanding what is meant by "remote location" in the 003 patent is to consider its purpose, as described in the specification. Specifically, Intuitive asserts that the "single described advantage [of the 003 patent] over the prior art [is] getting the surgeon out of the operating room so that leading surgeons can operate anywhere in the world without having to physically travel to the patient's location, thereby decreasing the cost and time required for surgery." Def.'s Mem. at 7. Therefore, Intuitive continues, the 003 patent accomplishes its purpose only if "remote location" is construed to mean a location outside the operating room. Id.

Brookhill disputes this point on two fronts. First, Brookhill maintains that the 003 patent has three stated objectives, rather than just one. These are: "1) performing surgery at reduced surgical costs; 2) further providing for surgery with endoscopic
and/or laparoscopic equipment; and 3) facilitating the performance of operations by surgeons from all over the world."

As to the first of Brookhill's responses, we find that the only real and actual advantage of the 003 patent over the prior art is the facilitation of endoscopic and laparoscopic surgery by surgeons not physically present in the operating room, and possibly located hundreds or thousands of miles away. The other two claimed objects or advantages of the 003 patent are not, in fact, advantages over the prior art in any way. As to the first claimed advantage, namely the reduction of surgical costs, the 003 patent merely takes the existing art of endoscopic and laparoscopic surgery and adds several components, such as a "transmitter," two "computers," and a "joy stick." 003 patent, col. 3, lines 13-22. This addition of hardware would not appear cost reductive. Rather, the only reduction in "surgical costs" effected by the 003 patent is the elimination of the costs of patients and surgeons traveling to each other. Id., col. 1, line 41. This savings is, however, encompassed by the advantage acknowledged by Intuitive.

Furthermore, Brookhill's second claimed "object" of the 003 patent merely restates the nature of the system and apparatus, namely, that it is "a method and apparatus usable with endoscopic and/or laparoscopic surgery." 003 patent, col. 1, lines 43-44. That is not a purpose or object of the 003 patent, but merely a description thereof. Thus, we are left with the only actual advantage of the 003 patent being the facilitation of remote surgery by leading surgeons at a considerable distance from their patients.

We must, however, grapple with Brookhill's second, more substantial, objection to Intuitive's use of the purpose of the system enumerated in the specification to define the 003 patent. Brookhill calls attention to, inter alia, Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182 (Fed. Cir. 1998) to support its argument that while "the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims." Id. at 1187 (internal citation and quotation marks omitted); see also, e.g., TurboCare Div. of Demag Delaval Turbomachinery Corp. v. General Elec. Co., 264 F.3d 1111, 1123 (Fed. Cir. 2001) (citing Laitram); Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations.").

On this issue, Brookhill is correct, but only to a point. Recent Federal Circuit opinions on this issue make clear that while the general proposition that a description of a preferred embodiment should not be read into the claims is still good law, it is not the end of the discussion. See, e.g., Bell Atl. Network Servs., Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1270 (Fed. Cir. 2001) (while "mindful of the fact that limitations from the specification may not be read into the claims," holding that a preferred embodiment may be used to construe the claims); Wang, 197 F.3d at 1383. This is due to the fact that a patentee has at least two distinct obligations to the public under the patent statutes. The first is to describe "the invention," and the second is to "set forth the best mode contemplated by the inventor of carrying out his invention." 35 U.S.C. § 112, P 1.

There are times, and Intuitive argues that this is one of them, when an enumerated "best mode" or "preferred embodiment" of an invention is, in fact, nothing more than the invention itself. Wang, 197 F.3d at 1383 (citing Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551 (Fed. Cir. 1996) and General Am. Trans. Corp. v. Cryo-Trans, Inc, 93 F.3d 766, 770, 772 (Fed. Cir. 1996)). When this occurs, it is because the patentee has, permissibly, collapsed these two independent requirements into one. Moreover, in such a case, it is proper for a construing court to read the claims as being constrained by the singular embodiment of the invention. See, e.g., Wang, 197 F.3d at 1383 (because the "only embodiment described in the '669 patent specification is the character-based protocol, the claims were correctly interpreted as limited thereto"); General Am. Trans., 93 F.3d at 770 (where the teaching in the specification was "not just the preferred embodiment of the invention [but, rather,] the only one described," the district court erred by interpreting the claims as encompassing matter beyond this sole embodiment).

We find, as a matter of claim construction, that Wilk was granted the 003 patent for a method of endoscopic or laparoscopic surgery by which the operating surgeon is located at some significant distance from the patient. This is not merely one example of a broadly useful invention, but, rather, is the only reasonable way to interpret Wilk's system, as he described it in the specification.
The specification has a consistent theme: location. For example, the 003 patent describes the then-current state of laparoscopic and endoscopic surgery. The specification notes that under traditional laparoscopic and endoscopic surgery, visual images captured by the laparoscope or endoscope may only be transmitted to "other rooms in the hospital or other institutional clinical setting." 003 patent, col. 1, lines 27-28. The 003 patent clearly contrasts this situation with the possibilities available to one using the system therein described, whereby the visual images are transmitted "to a remote location beyond a range of direct manual contact with the patient's body." Id., col. 2, lines 9-10. This contrast shows that "remote location" means a location that is farther away from the patient than other rooms within the hospital would be.

Moreover, the specification notes that in traditional laparoscopic and endoscopic surgery, "the surgeon is always present in the operating room to manipulate the surgical instruments." Id., col. 1, lines 30-31. In contrast, the 003 patent "enables operations to be performed by ... surgeons who are not present in the operating room." Id., col. 2, lines 18-19. This is further support for interpreting "remote location" to mean a location outside the operating room.

Finally, and perhaps most forcefully, the 003 patent states: "It is to be understood, of course, that surgeons and other personnel are present in the operating room at the time of surgery to oversee and supervise the proper operation of the equipment. These personnel may communicate with the remote surgeon via [a] telecommunications link." Id., col. 3, lines 41-46 (emphasis supplied). This language clearly distinguishes between the local surgeons located within the operating room on one hand, and the "remote surgeon" located outside the operating room on the other hand, thus lending further support for an interpretation of "remote location" that excludes the operating room where the patient is located.

Thus, considering only the four corners of the 003 patent, we find that "remote location" is being used in its customary sense to mean "far away," and that Brookhill has not overcome the presumption that this ordinary meaning is the correct one. See K-2, 191 F.3d at 1363. At this stage, then, after considering the claims themselves and the specification of which they are a part, we would construe "remote location beyond a range of direct manual contact" to mean a location necessarily outside the operating room. We shall, nevertheless, complete or review of the intrinsic evidence by considering the prosecution history of the 003 patent.

c. Prosecution History

As originally filed, the application for the 003 patent repeatedly used the phrase "remote location beyond a range of direct visual contact." Declaration of John B. Pegram in Support of Defendant's Motion for Summary Adjudication or Summary Judgment ("Pegram Decl.") Ex. 10, passim (emphasis supplied). The patent examiner found this phrase to be "indefinite" because "the range of direct visual contact may be different for certain operators of the system and this cannot be given weight in the claims." Id., Ex. 11, at 4.

In order to overcome this indefiniteness objection, Wilk replaced this phrase with the language in dispute here, namely, "remote location beyond a range of direct manual contact." Id., Ex. 11, at 5. Wilk's explanation of this change was that "it means that the remote location is beyond the arm's reach of the patient. Inasmuch as an arm's length is a well understood distance, it is believed that the remote location is sufficiently defined for purposes of the Patent Statute." Id. Brookhill points to this as evidence that being in a "remote location beyond a range of direct visual contact" with the patient is consistent with a surgeon being in the same room as the patient, and, therefore, that the 003 patent includes within its teaching a surgical system whereby the surgeon and patient are in the same operating room. Pl.'s Opp. at 10-11. Brookhill further asserts that, under the teaching of the 003 patent, a surgeon in the same room as the patient must "look at the monitor," and, thus, at that moment cannot, "be in direct visual contact with the patient." Pl.'s Opp. at 10. This argument does not withstand analysis.

First, as Intuitive points out, "if the key phrase were to require merely that the surgeon observe a monitor instead of the patient when operating, the prior art surgeon [using traditional endoscopic or laparoscopic surgery] would also be 'beyond the range of direct visual contact with the patient.'" Def.'s Reply at 2. Such an interpretation of Wilk's "invention" would render the 003 patent invalid for lack of novelty, because it would be no different than the prior art of endoscopic or laparoscopic surgery. See 35 U.S.C. § 101 (requiring that an invention be "new" to be eligible for a patent). As the 003 patent, like all patents, is presumed to be valid, 35 U.S.C. § 282, this interpretation cannot be correct.

Furthermore, the application for the 003 patent did not say that it covered the situation where the surgeon is "beyond direct visual contact" with the patient, but rather "beyond a range of direct visual contact" with the patient. Pegram Decl., Ex. 10,
passim. It is obvious that a surgeon in the same room as a patient, even at the moment that she is looking at something apart from the patient, such as a monitor, medical chart, or another surgeon, remains within the "range" of direct visual contact with the patient. The surgeon in the same room as the patient is within this range because she need only shift her gaze in order to achieve "direct visual contact" with the patient.

It is equally clear that a surgeon located in another part of the world from the patient, however, is truly "beyond a range of direct visual contact" with her. In other words, she is out of "range." In order to make "direct visual contact" with the patient, such a surgeon would have to leave her location, travel to the operating room, and look at the patient. Thus, the 003 patent only encompasses the scenario where the surgeon must travel to the patient to see her directly, and not the circumstance where the surgeon need only shift her gaze to do so.

We note that Brookhill asserts that this change in language from "direct visual contact" to "direct manual contact" did not impermissibly add "new matter" to the application because these two phrases are consistent. Pl.'s Opp. at 19-24. See also 35 U.S.C. § 132. While Intuitive contests this assertion, see Def.'s Mem. at 13-19, for purposes of this summary judgment motion, we accept Brookhill's contention as true. We are thus operating under the assumption that this change in language worked no change in the matter claimed by the 003 patent. As we have found that the language "location beyond a range of direct visual contact" is properly construed to mean a location outside the operating room, we find that "location beyond a range of direct manual contact" has the same meaning.

Thus, this final piece of intrinsic evidence, the prosecution history, confirms our construction of the language in question. To reiterate, a "location beyond a range of direct manual contact," as used in the 003 patent, necessarily means a location outside of the operating room where the patient is located.

C. Extrinsic Evidence

Because our analysis of the intrinsic evidence alone resolves all ambiguity in the disputed claim term, it is improper to, and we do not, consider extrinsic evidence. Covad, 262 F.3d at 1268-69.

D. Comparison of '003 Patent and the da Vinci System

It is undisputed that, when using the da Vinci system, both the surgeon and the patient are, at all times, in the same operating room. Wagner Decl. at P 7; Pl.'s Opp. at 12. As we have found that the 003 patent is limited to surgery where the surgeon is located outside the operating room, see Part II.B, supra, we find that the da Vinci system does not read on any claims of the 003 patent.

III. CONCLUSION

We grant Intuitive's motion for summary adjudication of the meaning of claim limitation "remote location." As used in the 003 patent, this term means "a location outside the operating room where the patient undergoing surgery is located." Furthermore, there is no dispute that a surgeon using the da Vinci system is located in the same operating room as her patient, and, thus, the da Vinci system does not read on the 003 patent. It follows, then, that Intuitive did not infringe that patent.

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B. Analysis

As noted above, the district court interpreted the limitation "remote location" as meaning "a location outside the operating room where the patient undergoing surgery is located." 178 F. Supp. 2d at 358. Brookhill challenges this interpretation, stating that the plain meaning of the claim term, the patent's written description, the prosecution history, and extrinsic evidence all support a broader reading that does not restrict the surgeon to a location outside of the operating room. Intuitive, on the other hand, argues that the written description and prosecution history foreclose Brookhill's broad interpretation and instead limit the interpretation of "remote location" to a location outside of the operating room. We agree
We begin our claim construction analysis with the words of the claim. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 USPQ2d 1573, 1576 (Fed. Cir. 1996). "In construing claims, the analytical focus must begin and remain centered on the language of the claims themselves, for it is that language that the patentee chose to use to 'particularly point[] out and distinctly claim[] the subject matter which the patentee regards as his invention.' 35 U.S.C. § 112, P 2." Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1331, 59 USPQ2d 1401, 1406 (Fed. Cir. 2001). The words used in the claims are examined through the viewing glass of a person skilled in the art. Tegal Corp. v. Tokyo Electron Am., Inc., 257 F.3d 1331, 1342, 59 USPQ2d 1385, 1393 (Fed. Cir. 2001). In the absence of an express intent to impart a novel meaning to the claim terms, the words are presumed to take on the ordinary and customary meanings attributed to them by those of ordinary skill in the art. See, e.g., Teleflex, 299 F.3d at 1325, 63 USPQ2d at 1380. The ordinary and customary meaning of a claim term may be determined by reviewing a variety of sources. Some of these sources include the claims themselves, see Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999); dictionaries and treatises, Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202, 64 USPQ2d 1812, 1818 (Fed. Cir. 2002); and the written description, the drawings, and the prosecution history, see, e.g., DeMarini Sports, Inc. v. Worth, Inc., 239 F.3d 1314, 1324, 57 USPQ2d 1889, 1894 (Fed. Cir. 2001).

The written description must be examined in every case, because it is relevant not only to aid in the claim construction analysis, but also to determine if the presumption of ordinary and customary meaning is rebutted. See Renishaw PLC v. Marposs Societa per Azioni, 158 F.3d 1243, 1250, 48 USPQ2d 1117, 1122 (Fed. Cir. 1998). The presumption will be over come where the patentee, acting as his or her own lexicographer, has clearly set forth a definition of the term different from its ordinary and customary meaning. See In re Paulsen, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994); Intelicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387-88, 21 USPQ2d 1383, 1386 (Fed. Cir. 1992). The presumption also will be rebutted if the inventor has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope. See Teleflex, 299 F.3d at 1324, 63 USPQ2d at 1380.

II

At the outset, we note that although the disputed claim language is characterized by both the parties and the district court as "remote location," these words find context in the surrounding phrase "remote location beyond a range of direct manual contact." While certain terms may be at the center of the claim construction debate, the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms. See Hockerson-Halberstadt, Inc. v. Converse Inc., 183 F.3d 1369, 1374, 51 USPQ2d 1518, 1522 (Fed. Cir. 1999).

Brookhill argues that the ordinary and customary meaning of the expression "remote location" can be clearly understood from the language of the claims themselves. Brookhill contends that "a remote location beyond a range of direct manual contact" means any location beyond the arm's length of a human. Brookhill further asserts that the written description is consistent with the construction that a remote location simply means beyond arm's reach. Brookhill also argues that the district court, in reaching a narrower construction, erroneously imported limitations from the written description into the claims, both by reading in limitations from the recited advantages and by misapplying this court's precedents with respect to preferred embodiments. Finally, Brookhill asserts that the district court misapplied the prosecution history as limiting the scope of the claims.

Intuitive contends that the district court's analysis was correct and that the written description and prosecution history of the '003 patent require that the construction of the term "remote location" be limited to "a location outside the operating room where the patient undergoing surgery is located."

III

In considering the ordinary and customary meaning of the disputed terms, the district court consulted a contemporaneous dictionary, which defined "remote" as "separated by intervals greater than usual; far apart . . . far removed; not near; far; distant." Webster's Third New International Dictionary 1921 (Merriam-Webster 1993) ("Webster's"). The district court also
consulted a number of unrelated and non-contemporaneous authorities, such as "What is Remote Sensing" at http://www.geog.nau.edu/RemoteSensing (last modified Apr. 8, 1998) and Remote Oregon - City Guide at http://www.scod.com/cities/remote (last modified June 25, 2001). These references are dated well after the '003 patent, which was filed in March 1991 and issued in June 1993. They are not contemporaneous with the patent, do not reflect the meanings that would have been attributed to the words in dispute by persons of ordinary skill in the art as of the grant of the '003 patent, and for those reasons are not considered in our de novo claim construction analysis.

The dictionary entry for "remote," cited by the district court and argued before us by the parties, has several definitions that all have facial relevance to the claimed invention. Webster's at 1921. Brookhill relies on the first definition--"separated by intervals greater than usual." It argues that a surgeon located at any distance beyond arm's length is at an "interval greater than usual," because surgery is traditionally performed by direct manual contact with the patient. Intuitive, on the other hand, relies on the remaining cited definitions--"far apart . . . far removed; not near; far; distant." Intuitive argues that these definitions connote long distances, well beyond the arm's length separation asserted by Brookhill. Intuitive thus argues that a "remote" location is at least as far as to be outside of the operating room.

Both Brookhill's and Intuitive's proposed constructions are in some measure supported by the various definitions provided. While dictionaries and treatises are useful resources in determining the ordinary and customary meaning or meanings of disputed claim terms, the correct meaning of a word or phrase is informed only by considering the surrounding text. This is why consulting dictionary definitions is simply a first step in the claim construction analysis and is another reason why resort must always be made to the surrounding text of the claims in question, the other claims, the written description, and the prosecution history. Our precedent referencing the use of dictionaries should not be read to suggest that abstract dictionary definitions are alone determinative. In construing claim terms, the general meanings gleaned from reference sources, such as dictionaries, must always be compared against the use of the terms in context, and the intrinsic record must always be consulted to identify which of the different possible dictionary meanings is most consistent with the use of the words by the inventor. "Where there are several common meanings for a claim term, the patent disclosure serves to point away from the improper meanings and toward the proper meanings." Renishaw PLC, 158 F.3d at 1250, 48 USPQ2d at 1122; see also Tex. Digital, 308 F.3d at 1203, 64 USPQ2d at 1819. If more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all consistent meanings. Tex. Digital, 308 F.3d at 1203, 64 USPQ2d at 1819. Because multiple, potentially consistent, dictionary definitions exist for the claim terms in question, we turn now to the rest of the intrinsic record for further context and guidance.

IV

The written description explains that in accordance with the invention an endoscopic instrument and a surgical instrument may each be placed within hollow tubes fed through a small incision in the abdominal wall of a patient to the surgical site. '003 patent, col. 2, ll. 37-47. The endoscope transmits a video image to a transmitter that transmits the image over a telecommunications link to a remote receiver. The receiver relays the image to another computer that generates an image of the internal body tissues of the patient on a monitor. Id. at col. 3, ll. 7-18. The surgeon then remotely controls the surgical instrument and the endoscope. Id. at col. 3, ll. 25-34. The written description sets forth no specific parameters as to the distance between the surgeon and patient, but teaches generally that a surgeon using the disclosed assembly may operate without directly touching the patient, the surgical instruments, or the endoscope--regardless of the extent of the physical separation between the surgeon and the patient.

Intuitive argues that the scope of the claims is limited based on statements made in the Objects of the Invention and Background sections of the patent, and on the single embodiment disclosed. The Objects of the Invention section of the written description describes the invention as "reducing surgical costs" and "facilitating the performance of operations by surgeons from all over the world." Id. at col. 1, ll. 39-48. The Background section states that in traditional settings, "the surgeon is always present in the operating room to manipulate the surgical instruments." Id. at col. 1, ll. 29-32. The patent, however, does not disavow the use of the invention within an operating room, nor does it specify that the invention is useful only where the surgeon is located at a great distance from the operating room.

The patent certainly contemplates that a principal use of the invention is to allow a surgeon to operate at some distance, possibly across the world, from the operating room in which the patient is located. The written description states the advantage of the invention in this context, and the description of the preferred embodiment contemplates a surgeon located outside of the operating room:
It is to be understood, of course, that surgeons and other personnel are present in the operating room at the time of surgery to oversee and supervise the proper operation of the equipment. These personnel may communicate with the remote surgeon via computers and telecommunications links and/or through other telecommunications or electromagnetic signaling linkages such as the telephone network.

Id. at col. 3, ll. 41-48 (internal references omitted). No statement in the written description, however, constitutes a limitation on the scope of the invention. The objective described is merely one of several objectives that can be achieved through the use of the invention; the written description does not suggest that the invention must be used only in a manner to attain that objective. "Advantages described in the body of the specification, if not included in the claims, are not per se limitations to the claimed invention." Vehicular Techs. Corp. v. Titan Wheel Int'l, Inc., 141 F.3d 1084, 1096, 46 USPQ2d 1257, 1266 (Fed. Cir. 1998) (Newman, J., dissenting) (citing Applied Materials, Inc. v. Advanced Semiconductor Materials Am., Inc., 98 F.3d 1563, 1574, 40 USPQ2d 1481, 1489 (Fed. Cir. 1996); E.I. DuPont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1432-34, 7 USPQ2d 1129, 1131-32 (Fed. Cir. 1988)). The Background merely states the apparent--that traditional surgery is performed by direct manipulation of surgical instruments on patients within the operating room. Stating that the surgeon would always be in the operating room when performing traditional surgery does not foreclose the presence of the surgeon within the operating room when performing remote surgery. The statements from the description of the preferred embodiment are simply that--descriptions of a preferred embodiment that permits surgeons to operate from across the world. Those statements do not indicate that the invention can only be used in such a manner. Absent a clear disclaimer of particular subject matter, the fact that the inventor anticipated that the invention may be used in a particular manner does not limit the scope to that narrow context. See, e.g., Teleflex, 299 F.3d at 1328, 63 USPQ2d at 1382-83; Catalina Mkttg. Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 809, 62 USPQ2d 1781, 1785 (Fed. Cir. 2002). Where, as here, the written description and prosecution history fail to express a manifest exclusion or restriction limiting the claim term, and where the written description otherwise supports the broader interpretation, "we are constrained to follow the language of the claims," Teleflex, 299 F.3d at 1328, 63 USPQ2d at 1382-83, and to give the claim term its full breadth of ordinary meaning as understood by persons skilled in the relevant art. See Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342, 60 USPQ2d 1851, 1854 (Fed. Cir. 2001). As such, we construe the term "remote location" to encompass not just locations that are "far apart" or "distant," but also those locations that are merely "separated by intervals greater than usual." Webster's at 1921. These locations need not be outside the operating room.

V

The prosecution history also supports our construction. Nothing in the prosecution history attributes patentability to the location of the surgeon outside of the operating room.

To the extent Intuitive relies on the amendment during prosecution in which Brookhill changed the phrase "remote location beyond a range of direct visual contact" to "remote location beyond a range of direct manual contact," and argues that this amendment somehow requires us to construe the claims narrowly to preserve their validity, we reject that argument for the following reasons.

As originally filed, the application for the '003 patent used the phrase "remote location beyond a range of direct visual contact." The patent examiner found this phrase to be indefinite because "the range of direct visual contact may be different for certain operators of the system and this cannot be given weight in the claims." To overcome the indefiniteness rejection, Brookhill replaced the word "visual" with the word "manual," resulting in the issued claims. In support of this change, Brookhill stated that the amended text "means that the remote location is beyond the arm's reach of the patient. Inasmuch as an arm's length is a well understood difference, it is believed that the remote location is sufficiently defined for purposes of the Patent Statute." Brookhill further stated that "this amendment clarifies that a remote operator who is generating actuator control signals... is so far from the patient and the endoscopic instrument as to be unable to manipulate the instrument at the patient's side." The examiner subsequently allowed the claims and the patent issued following an examiner's amendment in which references to the "range of direct visual contact" in the specification were revised to recite "range of direct manual contact."

Intuitive asserts that because the original claim scope required that the surgeon be "beyond a range of direct visual contact," the only appropriate scope for the claim is for the surgeon to be outside of the operating room. Intuitive argues that if the surgeon is in the operating room, the surgeon can shift his gaze to see the patient and, thus, would be within the range of
Intuitive's argument is not persuasive. As discussed above, there is nothing in the written description or original claims that limits the location of the surgeon to a position outside the operating room. In giving the originally filed claims their full breadth, as we must, the location of the surgeon within or outside the operating room is not relevant. Because the scope of the originally filed claims is not as narrow as Intuitive argues, the argument that the scope of the claims as issued should somehow be limited by those claims to exclude locating the surgeon within the operating room is of no avail.

Intuitive also argues that to adopt Brookhill's construction--that the term "remote location" simply places the surgeon beyond an arm's length from the patient--impermissibly broadens the scope of claim coverage beyond the scope of the originally filed application, citing Schering Corp. v. Amgen, 222 F.3d 1347, 55 USPQ2d 1650 (Fed. Cir. 2000). The district court declined to address this argument, accepting for purposes of summary judgment Brookhill's contention that the amendment did not add new matter.

Intuitive's reliance on the Schering case is misplaced. In Schering, the patent application as originally filed included a claim limitation "leukocyte interferon." During the pendency of the patent, the scientific community coined the phrase "IFN-alpha" to refer to a class of compounds encompassing both leukocyte interferons and other compounds. The specific compound identified in the original application--the leukocyte interferon--was designated by those skilled in the art as "IFN-alpha-1." During prosecution, the patentee amended the claims and specification to replace the term "leukocyte interferon" with "IFN-alpha." Id. at 1352, 55 USPQ2d at 1654. The patent subsequently issued and was asserted against an infringer. The accused infringer argued that the claim term "IFN-alpha" could not be construed to cover all compounds of this type, but rather, only the "leukocyte interferon"/"IFN-alpha-1" compound disclosed in the originally filed application. The district court concluded that the change of text in the specification constituted new matter in violation of 35 U.S.C. § 132. Id. at 1352, 55 USPQ2d at 1653.

This court agreed that the patentee was not entitled to assert broad claim coverage of all types of IFN-alpha. But rather than finding a new matter violation, we construed the scope of claim coverage to be consistent with the scope of the term originally used:

"This court does not discern a new matter violation in the substitution of the term "IFN-alpha" for "leukocyte interferon." This court interprets the claim term "IFN-alpha" in light of the patent's written description . . . [which] clarifies that [the inventor] may not attempt to broaden his invention to cover polypeptides not discovered at the time of his patent application . . . . The written description accompanying his new claim language specifies that the amendment merely renames his invention--whatever its scope may have been at the time of application . . . . The amendment merely substitutes terminology. . . . As already noted, this court interprets the claim at issue to cover no more than what the specification supported at the time of filing."

Id. at 1352-53, 55 USPQ2d at 1654.

Unlike Schering, Brookhill was not attempting to capture, by amendment, something that was not supported by the original specification. Instead, Brookhill was merely clarifying, at the examiner's insistence, a supported limitation of the claim. The issue in Schering, therefore, is not present in this case. Brookhill, in changing the claim language from beyond visual contact to beyond manual contact provided a definition for the term "remote location" that applied to both contexts--"it means that the remote location is beyond the arm's reach of the patient." This definition, provided outside the context of litigation, and supported by the written description and original claims, is entirely consistent with the construction now
urged by Brookhill.

As discussed above, the written description sets forth no specific parameters as to the distance between the surgeon and patient, but teaches generally that a surgeon using the disclosed assembly may operate without directly touching the patient, the surgical instruments, or the endoscope—regardless of the extent of the physical separation between the surgeon and the patient. The term "remote location" thus must be given the full breadth of its ordinary and customary meaning, and includes all locations that are "far apart," "distant," or "greater than usual." The overall limitation "remote location beyond a range of direct manual contact" as used in the claims must be construed to encompass all locations where the surgeon is beyond direct physical contact with a patient, including locations within the operating room. The expression "beyond a range of direct manual contact" is no broader than and adds little more than emphasis to the fully supported term "remote location." The court thus "interprets the claim at issue to cover no more than what the specification supported at the time of filing." Id. This does not present a new matter issue for consideration on remand.

VI

The plain language of the claims themselves, the written description, and the prosecution history fully support the determined meaning of "a remote location beyond a range of direct manual contact." Accordingly, we need not and do not consider the extrinsic evidence present in the record. See Vitronics, 90 F.3d at 1582, 39 USPQ2d at 1577 ("[I]f an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term . . . it is improper to rely on extrinsic evidence.").

CONCLUSION

Because the district court's construction of "remote location" was erroneous and because the district court's grant of summary judgment in favor of Intuitive was predicated entirely on this erroneous construction, we reverse the judgment and remand the case to the district court for further proceedings consistent with this opinion.

b. "Remotely controllable surgical device"

Claims 1, 13, 18, 23, and 27 disclose a "remotely controllable surgical device." See generally '539 Pat. cols.9-13. The Parties dispute both what a "surgical device" is, and the location from which such devices are controlled. KSEA contends that this term should be construed as "a device for use during a surgical procedure that can be controlled from a remote location." (Proposed Constructions Chart 9.) S&N urges the Court to construe the term as "a device for operating on a patient that can be controlled from a sterile field of an operating room using a touchscreen." (Id.)

The Court rejects S&N's proposed construction as to both disputed aspects of this term. With regard to "surgical devices," KSEA's expert explained that there are devices, such as image capture devices, that are commonly used in endoscopic surgery but that are not understood as directly operating on the patient. (See KSEA Opening Claim Construction Br. Ex. G (Gunday Decl.) 101.) S&N has not disputed that one skilled in the art would read "surgical devices" in this manner, and S&N is incorrect to read aspects of the preferred embodiment as limiting the claim language. Courts may not "import limitations into the claims from the specification . . . unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest execution or restriction." Trading Techs. Int'l, Inc. v. eSpeed, Inc., 595 F.3d 1340, 1352 (Fed. Cir. 2010) (citations and internal quotation marks omitted).

With regard to the location from which the "surgical devices" are controlled, S&N's proposed construction again reads limitations from the specification into the claims. The claims teach that the surgical devices are controllable using the touchscreen. See, e.g., '539 Pat. col.10 ll.4-5; id. at col.11 ll.4-10. The specification describes the touchscreen as being located in the sterile field, but neither the specification nor the claims "manifest[ly]" require that the touchscreen be located there. Trading Techs. Int'l, 595 F.3d at 1352; see also Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 905 (Fed. Cir. 2004) (explaining that courts must be particularly cautious about importing limitations from the specification where the "written description of the invention is narrow, but the claim language is" broad).
The Court construes a "remotely controllable surgical device" as a "device for use during a surgical procedure that can be controlled from a remote location."

3301

3. "A remotely located refrigeration unit"

Foodie contends this term should be construed to mean "a structure, for storing at least one source liquid below room temperature, which is located outside of the customer service station and connected to it through at least one refrigerated source liquid conduit line," while Jamba Juice offers as their proposed construction "a structure for storing substances at temperatures below room temperature displaced from the customer service station." The dispute here is identical to the parties' dispute regarding "refrigerated source liquid conduit line," namely whether or not the patent mandates that the "remotely located refrigeration unit" must be connected to the customer service station via a "refrigerated source liquid conduit line." The parties agree on the remainder of the construction.

The Court's analysis on this issue is identical to its analysis in construing "refrigerated source liquid conduit line." While the specification does discuss pumping refrigerated source liquids via the conduit lines from the remotely located refrigeration unit, that is not what the patent claims, and there is no clear support in the specification for Foodie's attempt to construe the claim in such a manner. Accordingly, the Court adopts Jamba Juice's proposal as the construction of the Court: "a structure for storing substances at temperatures below room temperature displaced from the customer service station."

3302

5. removable (claims 1, 8); removably mounted (claim 5); removing and replacing (claim 4); replaceable (claims 1, 2)

Fargo
- removable: capable of being removed
- removably mounted: mounted so as to be capable of being removed
- removing and replacing: taking away from a position and placing into a position
- replaceable: capable of being replaced

Iris
- these terms are not amenable to construction and therefore render the claims indefinite

These terms refer to the metal pins placed in the apertures in the hub of the printer roll core. According to the prosecution history and the specification, the pins are removable so that they can be positioned to obtain the desired code for identifying the type of ribbon.

Iris argues that the word "removable" is insolubly ambiguous and renders the claims in which it appears invalid as indefinite under 35 U.S.C. § 112, P 2. Iris argues that a quantitative measurement is necessary to render these terms amenable to construction, but nothing in the intrinsic evidence helps define the terms precisely. Rather, according to Iris, the prosecution history renders the terms more ambiguous, because it refers to the ease of removing and replacing the pins. Given enough force, Iris argues, anything is removable, and thus this term lacks any determinate meaning.

In the recent case of Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342 (Fed. Cir. 2005), the Federal Circuit set forth the standards for determining whether a claim is indefinite. Only when a claim term cannot be given any reasonable meaning can it be considered insolubly ambiguous or not amenable to construction. Id. at 1347. If the meaning is discernable, the term will not be found indefinite, even though the task of construction may be difficult and the conclusion may be one over which reasonable persons will disagree. Id. In light of these principles, the Court simply cannot agree with Iris that the term "removable" renders indefinite any claim in which it appears. While it is true that the specification and the prosecution history do not enable the Court to assign a precise measurement of the amount of force needed to remove the...
pins, the Court does not agree that this lack of a quantitative measurement renders the terms indefinite. Id. ("The definiteness requirement, however, does not compel absolute clarity.").

Unfortunately, Fargo's proposed definition for this term does not overcome Iris's complaints, because it relies on the same root word, "remove." Because the use of this term throughout the patent indicates that the structure in which the pins are mounted is still usable after the pins are removed, it is clear in the context that to be removable within the meaning of the claims, the act of removing must not cause any damage to that structure. Accordingly, the Court will adopt the following construction: "capable of being taken away from a position without damaging the surrounding structure."

The parties do not dispute that "removable" and like terms have the same meaning throughout the patent. Accordingly, the Court will adopt Fargo's proposed definitions of "removably mounted," "removing and replacing," and "replaceable," n4 with the understanding that the root word "remove" carries the meaning of "taking away from a position without damaging the surrounding structure."

--- Footnotes ---

n4 Because Iris focuses specifically on the meaning of the word "removable," the Court believes that its construction of that word renders it unnecessary to construct the term "replaceable."

--- End Footnotes ---

5. removable collar

3M   (a) no definition necessary
(b) a removable ring-like device

ITW   a removable ring-shaped device used to hold the removable lid to the periphery of the reservoir opening

3M contends that its definition more accurately encompasses the definition of removable collar as that term is used in the patent and that the latter half of the definition proposed by ITW is unnecessary in any event because it merely restates the next line in the claim. ITW argues that 3M's proposed definition is vague and inaccurately defines removable collar.

The first claim in the patent describes a "removable collar which secures the lid to the reservoir at the periphery of the opening." Based on this claim language, the Court agrees with 3M that the latter half of ITW's definition is unnecessary and confusing. 3M's proposal to use the term "ring-like" is troubling, however, because that term itself is ambiguous and capable of various meanings. The Court therefore finds that the "ring-shaped" portion of the definition proposed by ITW more accurately describes the collar, but the Court also incorporates into the definition the word removable to clarify the description. The Court, then, adopts the following definition of removable collar: a removable ring-shaped device.

2. Removable Pressure-Sensitive Adhesive Material

The parties agree that a removable pressure-sensitive adhesive material must be able to stick to a layer but also be removable. Avery succinctly defines this material as: "An adhesive that can stick to a layer, yet is removable." Whitlam would define this material as: "An adhesive that can stick to an underlying layer and be removed without damaging the underlying or a carrier sheet upon which the adhesive is adhered." Claims must be interpreted according to their ordinary meaning. Viewed in this light, a removable-pressure sensitive adhesive must be just that, an adhesive that is also removable, but the definition doesn't extend to any effect that adhesive might have on appurtenant surfaces. For this reason, the Court
adopts the following definition of removable pressure-sensitive adhesive layer: "An adhesive that can stick to a layer, yet is removable."

3305

The critical issue presented by this motion is the meaning of the word "removably" as it is used in describing the Allure hamper's supporting rods and how those rods function. The term "removably" is used as follows in the disputed claims: (1) "removably secured" (claims 1, 6, 7, and 17); (2) "removably securing" (claims 6, 7, and 17); and (3) "removably fitting" (claim 14). As noted, four of the five claims use the term "removably" twice within the claim.

LaMont contends that the term is clear and unambiguous and, consistent with other language in the patents, the term refers to rods that are completely detachable from the hamper. Although neither party suggests that the inventor attributed any special meaning to the term "removably secured" or "removably fitting," Allure argues that the term is ambiguous and that therefore extrinsic evidence should be considered.

Allure contends that interpreting "removably" to mean detachable or completely removable from the hamper is not consistent with the inventor's intent and understanding of his invention. (Pl. Opp. at 8). In addition, Allure maintains that the term "removably" refers to "the ability to remove the supporting rods from their cavities, thereby removing the secured rods from their vertical position, rendering a fully collapsible hamper." (Id.). Allure argues that the plain dictionary meaning of the word "removable" means "capable of changing location" and thus supports its claim that "removably" does not mean what LaMont claims it does. (See Pl. Letter dated 5/29/98 & Ex. B to Letter).

After carefully considering plaintiff's arguments, I hold that the term "removably" as it repeatedly appears in the contested claims is unambiguous. Moreover, to the extent the term is arguably ambiguous, other intrinsic evidence in the patents dispels any doubt. As used in the claims in issue, "removably" means detachable, i.e., detachable from the hamper. I reach this conclusion for four reasons.

First, "removably" plainly means detachable. If the inventor had intended to claim a device that used rods that were movable but permanently attached on one end, he would have used words like "hingeably attached," "movably attached," "removable at one end," or words of similar import. The inventor did not describe the rods in such a manner. Not only did the inventor fail to say that the rods could or should be attached to the apparatus, he consistently and repeatedly chose to describe the rods with the term "removably."

Second, other language in the claims at issue demonstrates that "removably" means detachable. The claims describe side walls or other hamper components that are "secured" to the apparatus as well as a lid that is "hingeably" or "movably" fixed to it. (See Pl. Opp. Exs. 5 & 6, claim 6 (lid "hingably [sic] fixed"); claim 17 (lid "moveably [sic] fixed"); claim 1 ("secured" top and bottom); claim 7 (hamper components that are "secured"); and claim 14 (hamper "assembled" and hamper "not assembled", rods that "matingly" and "removably" fit into certain cavities -- meaning they can be fitted in and pulled out)). This language speaks for itself.

Third, the figures included in both patents show that the rods are completely removed and placed underneath the hamper when the hamper is in its collapsed state.

Finally, other language in the patents outside the disputed claims demonstrates that "removably" means detachable. For instance, the abstracts of both patents describe a hamper that has "removably secured" supporting rods that "define a three dimensional internal storage space . . . that is attractive to the eye when said hamper is assembled for use and which can be easily disassembled and collapsed for convenient storage."

Accordingly, I find as a matter of law that the term "removably" as it is used in each of the five disputed claims means detachable from the apparatus and not simply "capable of changing location" as Allure urges.
Upon granting Graco's motion for summary judgment of noninfringement, Summary Judgment at 1, the district court first interpreted the terms "removably attached" and "removably secured," id. at 5-6. Neither party argued that a specialized meaning of the terms existed in the art of juvenile car seat design. The district court thus attributed to the terms their ordinary meaning and concluded that they require that the seat and base in the claimed invention "will be detached or unsecured on some occasion during the lifetime of the product." Id. at 5. In other words, the district court determined that the claimed product is designed to come apart. The district court concluded, however, that the claim language does not require that the seat and base come apart during normal usage. Ease of separation is not a limitation on claim scope, as the district court opined, because the claim language does not recite "easily" removable or removable "relatively easily." Id. at 6. Indeed, the district court expressly and emphatically rejected any notion that the claims require "ease of separation" of the seat from the base. "Removably attached" and "removably secured" mean only that the seat and base "are designed at some time or another to come apart." Id. at 5.

The district court further opined that the claim terms "removably attached" and "removably secured" "carry with them an implication that the detach mentor unsecuring process not do violence to the seat." Id. The seat must therefore be usable as a seat upon separation from the base. In sum, the district court held that the claims cover a structure that includes a seat and base "affixed together in a manner that contemplates that the seat may be removed from the base such that the seat remains functional." Id. at 6.

Turning next to the claim term "base" and to the surrounding claim language, the district court determined that the base is "the structure that props up the seat." Id. Finally, the district court interpreted the claim term "seat" as "the structure intended to be sat in or on," id., a structure the district court thought necessarily to be separate from the base.

The district court applied this construction to the accused Graco products and found no literal infringement because the accused products were found not to have a seat separate from the base, as claimed in the asserted patents, and because the two parts of the accused products were found to be an integrated unit. Id. at 7. In short, the district court held that Graco's two-part structure is integral, meaning that it lacks a seat and base as separate, stand-alone structures.

We review issues of claim interpretation independently, Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc), and test the scope of claim language with primary reference to the specification, of which the claims are a part, Phillips v. AWH Corp., 415 F.3d 1303, 1315-17 (Fed. Cir. 2005) (en banc).

The district court correctly interpreted "removably attached" and "removably secured." The specifications of the patents in suit are mainly directed to the claimed cupholder feature of the inventions, and there is little reference to the concept of the removability of the seat from the base. See '862 patent, Abstract ("A juvenile vehicle seat is provided including a cup holder. The cup holder is movable between a retracted position adjacent the seat and an extended position spaced from the seat."); '649 patent, Abstract (same). The specifications speak of "means for coupling" the seat bottom to the base, but expressly state that such means are not shown in the drawings. '862 patent, col. 2, ll. 52-53; '649 patent, col. 2, ll. 55-56. Further, the "seat base is configured to releasably couple to the seat bottom." '862 patent, col. 1, ll. 27-29; '649 patent, col. 1, ll. 31-33.

To impart "ease of separation" to the claims would require adding the words "easily" or "relatively easily" to the "removable" limitations, as the district court noted. Nothing in the patent's specification suggests "ease of separation." If anything, the specification teaches the meaning given to the "removable" limitations by the district court. This is so, because the only reference to what might be placed in the patented cup holder is shown in Figure 4 as a "COLA." Given the configuration of the cup holder and the seat's base, spilled cola would surely invade the bottom portion, where it could attract bees, hornets and other unwelcome insects. The occasional need to unscrew the top portion from the bottom portion to clean away spilled cola, or other matter that could find its way from the cup holder into the bottom portion, comports with the district court's holding that the seat and base merely be capable of separation.
As the district court was no doubt aware, "ease of separation" is a common trait of many iterations of modern infant car seats. Simple observation on the public streets of parents removing children from cars reveals two-part infant car seats, whereby the base portion remains in the car while the seat portion is removed with the child still strapped in. This seat portion can then be easily secured into an infant stroller and later removed from the stroller to be reattached to the base portion that had remained in the car. While this may be the preferable two-part car seat for use with infants, the patents in suit do not require that the seat be "easily removable" from the base. There simply is no reference whatsoever in the specifications to "ease of release" or "ease of separation," no indication that the patent is directed to a product comprising a base that, during everyday usage, remains in the automobile while the user removes the seat and the child.

In short, the "removable" limitations, as understood through the plain meaning of the claim language and as tested by information in the specification, per Phillips, are just as the district court held. The seat and base can be separated "in a manner that contemplates that the seat may be removed from the base such that the seat remains functional." Summary Judgment at 6.

The district court also correctly construed the terms "seat" and "base" to require two separate structures- "the structure intended to be sat in or on" and "the structure that props up the seat," respectively. Id. The drawings in the patents certainly confirm the district court's understanding that the seat and the base are two separate structures held together by some means. See '862 patent, Figs. 1-4; '649 patent, Figs. 1-4. We thus discern no error in the district court's interpretation of the key claim terms.

3307

DISSENT BY: NEWMAN

DISSENT

NEWMAN, Circuit Judge, dissenting.

I respectfully dissent. The district court correctly construed the term "removably attached/secured" to mean "removably," not its opposite, as the panel majority holds. The Graco carseat is a permanent assembly whose molded parts are permanently screwed together with six "one-way" screws. Upon unscrewing and disassembly, the Graco seat becomes a collection of loose parts, the cup holder incapable of its function of supporting a cup. The Graco carseat is clearly not a base and seat assembly as in the Dorel patents, whereby the seat can be reversibly slipped from its mooring to carry its infant passenger. Removal of the top part of the Graco carseat (for example, to carry the infant into grandma's house), would require removing the upholstery, upending the carseat (requiring removal of the entire assembly from its crash-proof installation), and removing the six unremovable screws with the special tool needed for removing unremovable screws -- and then repeating the operation in reverse upon returning to the car with the top part and its infant cargo. The panel majority's redefinition of the patented invention to cover such a carseat is devoid of support.

The Dorel patents include drawings of the patented carseat, showing the separate base carrying the cup holders:

The specifications show that the seat and base are distinct structures that are designed to be manually released and reattached, as the district court found. The seat 12, which includes a "seat bottom" and a "seat back," is described as "releasably coupled" to the base 16, which includes a "front," a "rear," a "pair of side walls," and a "cupholder receptor 38." The term "releasably" is also used to describe the manually adjustable cupholder 18, as "releasably held" and "releasably locked" by tabs 22.

In striking contrast, the Graco carseat is a unitary structure without a removable seat portion:

The panel majority has misperceived the Dorel structure, perhaps because the seat of the Turbo Booster is molded in two segments, whose engineering drawings are shown in the record as follows:

"Seat Top" "Seat Bottom"
These molded parts are not "removably attached"; they are permanently assembled, using six permanent screws set in recessed indentations. Graco's "one-way" screws can be unscrewed only with a special tool called the "Un-Do-It" tool. Although the majority states that the tool "can be purchased in hardware stores," that is not the general experience, and Dorel's expert testified that he could locate such a tool only after searching the internet for the term "one-way screw."

The panel majority errs in construing the Dorel claims to a removably attached seat and base, to encompass a unitary structure that does not have a separable and separable seat and base. The Dorel prosecution history itself negates such a construction. The original claims, broadly referring to any "juvenile vehicle seat" with a retractable cup holder, were rejected as anticipated by O'Brien U.S. Patent No. 3,637,184, which describes a unitary seat with a retractable cup holder. In response, the claims were amended to "further comprise" a "seat" that is "removably secured" or "removably attached" to a "base." The district court correctly construed the claims as requiring a removable seat and separate base. See Phillips v. AWH Corp., 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc) ("the prosecution history can [make] the claim scope narrower than it would otherwise be"). Indeed, Dorel in its motion for summary judgment observed that the O'Brien patent "discloses a single, indistinct piece, in which no seat could be identified separately from a base, much less a seat removably attached or removable secured to a base." Neither Dorel nor the panel majority can recapture what Dorel surrendered during prosecution: a single indistinct piece without an identifiable, removable seat portion.

The district court, referring to the prior art, correctly rejected "the one piece, stand alone base/seat" that is adopted by the panel majority as covered by the Dorel claims. The district court construed "base" to mean a structure that not only "props up the seat" and "upon which the seat sits," but also is "separate from the seat." The district court correctly construed "seat" to mean not only a structure "intended to be sat in or on, "but also used "in conjunction with but not as part of the base." The district court further construed "removably attached/secured" to require that the base and seat be "designed at some time or another to come apart." On these definitions and the undisputed structure of Graco's carseat, the district court correctly recognized that no reasonable jury could find that the Graco seat device has a seat that is removably attached to a separate base. As the district court observed, the bottom piece of the Graco assembly "is an integral part of the seat," not removably attached or secured to the seat.

The panel majority ignores this central issue and remands for findings on a non-issue: whether "the top structure is capable of functioning as a 'seat' upon being removed from the bottom structure." Maj. op. at 7. That aspect is irrelevant. The question is not whether the top structure is "capable" of being sat upon; the question is whether there is a seat removably attached to a separate and distinct base.

The panel majority also holds as a matter of law that the "removably attached" and "removably secured" limitations are met, based on its construction requiring only that the seat and base "be capable of separation." Maj. op. at 5. That is not the description of the invention. Of course even "one-way" screws can be laboriously removed and the structure disassembled; indeed, it is difficult to imagine any assembly not capable of being disassembled. The district court correctly required that the seat and base be "affixed in a manner that contemplates" removal; that is, the parts must be "designed at some time or another to come apart." Summary Judgment at 6-7. The record contains no suggestion that Graco's carseat is designed to come apart. The user manual for Graco's product negates disassembly, admonishing the user not to modify the seat or use the seat without all of its parts, warning that failure to properly use the seat "increases the risk of serious injury or death." Even on the panel majority's speculation that the Graco structure might be disassembled for cleaning, the "removably attached/secured" requirement of the Dorel claims is not met. The specification describes the base as being "releasably coupled" to the seat; this is not compatible with the need to purchase and use a special tool to unscrew one-way screws covered by upholstery.

The panel majority complains that the patent does not discuss the advantage of separating the Dorel seat from its base, stating that "there is no indication that the patent is directed to a product comprising a base that, during everyday usage, remains in the automobile while the user removes the seat and the child." Maj. op. at 5-6. However, such separable carseats were in the prior art at the time the Dorel applications were filed; the patents are directed primarily to the cup holders, not the seat and base structure. See '862 patent, col. 1, ll. 9-10 (describing the invention as a retractable cup holder in a "conventional juvenile vehicle seat" that is "generally known" and in "widespread use"); see also Figures 1 and 2 of Dorel's patents, supra. The record contains other patents by the inventor of the Dorel patents, such as U.S. Patent No. 6,554,358, which is directed to a seat removably attached to a base, and which cites eleven references to seat and base combinations that are manually separable. In addition, Graco points to Department of Transportation regulations, with which all carseats must conform, that describe carseat components that "can only be removed by use of a tool" as "permanently attached."
C.F.R. §§ 571.213 S5.9 , 571.225 S15.1.2.1(f). The panel majority's interpretation of "removably attached" and "removably secured" as requiring only that the structure be "capable" of disassembly, however laborious the mechanics, is contrary to the prior art, contrary to usage in the field, and contrary to federal regulation.

The majority's approach to claim construction strains this court's attempts to restore consistency of analysis to patent claims by placing the claims in the context of the specification. See Phillips, 415 F.3d at 1321 ("The risk of systematic over breadth is greatly reduced if the court instead focuses at the outset on how the patentee used the claim term in the claims, specification, and prosecution history, rather than starting with a broad definition and whittling it down"). The panel majority construes the Dorel claims as encompassing a different invention from that described and prosecuted. From this incorrect claim construction, leading the court to an incorrect decision, I must, respectfully, dissent.

The first term in dispute are the phrases "removably attached" and "removably secured." The construction is to be made without reference to the accused product. The construction begins with an examination of the terms used and a recognition that "the terms used in the claim bear a heavy presumption' that they mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art." Texas Digital Sys., Inc., v. Telegenix. Inc., 308 F.3d 1193, 1202 (Fed. Cir. 2002).

Neither party suggests to the Court the identity of the person skilled in the relevant art in this case. This omission can more than likely be explained by the rather obvious inference that the person skilled in the relevant art is a person who designs juvenile car seats and by the lack of an assertion by either side that these words have a specialized meaning understood only by such a person. Thus the analysis begins with an attempt to determine the ordinary meaning of these phrases.

The phrases "removably attached" and "removably secured" carry with them the inference that whatever is to be removably attached or removably secured will be detached or unsecured on occasion during the lifetime of the product. In other words the product is designed to come apart. Whether it comes apart in normal usage or not would be dictated by other language. By themselves the words imply only that the items "removably attached" or "removably secured" are designed at some time or another to come apart.

The terms also carry with them an implication that the detachment or unsecuring process not do violence to the seat. This conclusion is bolstered by the remaining language in the claim. The base, by the language of the claim, is to support the seat arranged as a base. Without the base there still exists a seat. In other words the base is not a part of the seat. Thus, the removal of the base from the seat, or the coming apart of the seat and base, will not render the seat unusable as a seat.

The parties discuss the notion that ease of separation is inherent in the terms "removably attached" or "removably secured." The Court finds no comfort in this concept because adding the ease of separation into the construction of "removably attached" would add the word "easily" or the words "relatively easily" where they do not exist.

Having looked just at the plain meaning of the words to be construed, as a first step in the Markman claim construction process, this Court concludes that as used in the claims at issue "removably attached" or "removably secured" means affixed together in a manner that contemplates that the seat may be removed from the base such that the seat remains functional.
First, Zyliss counters by arguing that the Zyliss spinner does not literally infringe the '883 patent as it does not have a cover that is "removably connected" to the bowl. With regards to the meaning of the phrase "removably connected," we are not convinced that the phrase means something that "essentially rests on the top edge of the bowl and covers the opening of the bowl," as OXO contends.

While OXO points out that the Federal Circuit recently interpreted the meaning of the phrase "operatively connected" in Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111, 1117-18 (Fed. Cir. 2004), this does not aid in our determination of the meaning of the phrase "removably connected," as the two phrases are inherently different. In Innova/Pure Water, Inc., the patent in question, involving a water bottle filter assembly, required that the tube be "operatively connected" to the cap. Id. at 1119-21. The court construed this phrase to mean that only that the cap and the tube had to be arranged in a manner capable of performing the filtering function, thus comporting with the meaning of the term "operative." Id. The components did not need "to be affixed in type of tenacious physical engagement shown in the preferred embodiment." Id. However, the ordinary meaning of the phrase "operatively connected" can substantially differ from "removably connected." The use of the term "removably" before the term "connected" implies a more permanent connection than a cover that simply rests on a bowl and is removable as is the case with the Zyliss spinner. Use of the term "removably" also implies a more permanent connection than one arranged in a manner capable of performing the product's function, as in the Innova/Pure Water, Inc. decision. The ordinary meaning of the term "connected" is "joined or linked together." See e.g., WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 480 (1993). OXO, through its expert Mr. Olson, attempts to equate the term "connected" with different unclaimed terms such as "engages," "surrounds," and "nests." (Olson Dep. pp. 129, 132 (Zyliss Exhibit 28)). The '883 patent makes a clear distinction between the terms "engaged" and "connected." It appears that the word "engaged" in the '883 patent is used to mean mere contact. OXO could have used the term "engaged" in the claim embodiment rather than the word "connected," if OXO intended that the cover solely to make contact with the bowl. By using the term "connected" however, some type of contact more than that of mere contact seems inferred, particularly when predicated by the term "removable."

Analysis of the intrinsic evidence further confirms the conclusion that the ordinary meaning of "removably connected" requires a tighter interface than simply laying one thing on top of another. The specification expressly discloses a "friction fit" between the cover and the bowl of the preferred embodiment, or, put another way, a connection between the cover and the bowl. There is no "friction fit" between the cover and the bowl of the Zyliss spinner. OXO makes mention of the fact that a frication fit or a tight fit is not present in the OXO spinner, but this is irrelevant to our analysis. Our analysis must focus upon the comparison between elements of the patent claim and corresponding elements of the allegedly infringing device. Thus, the Zyliss spinner does not have a cover that is "removably connected" to the bowl.

7. Claim 17 ("removably fastened") Claim 17 of the '286 Patent provides for "an ultrasonic instrument according to claim 7, wherein the clamp member includes a tissue contact surface removably fastened to the clamp member." '286 Patent, Claim 17 (emphasis added). Plaintiff would construct "removably fastened" as "designed so as to be capable of being held secure to something else and designed so as also to be capable of being unsecured and taken away from." Defendant proposes, "designed so as to be capable of being held secure to something else and also adapted to be unsecured and taken away from." The dispute between the parties as to this claim term is whether to use the phrase "and designed so as also to be capable . . . " (plaintiff's construction), or "and also adapted to be . . . " (defendant's construction). At the Markman hearing, plaintiff argued that use of the word "adapted" suggests that "a user might have reason to, or could, if he or she so wished, remove that tissue contact surface, but that doesn't happen. It's designed such that if you wish to pull it out you could, but it wouldn't actually ever be pulled out in actual use." Markman Tr. at 36. In contrast, defendant argued that "it's designed so [it] can [be] taken on and off, and what they disclose in the patent for these tissue contact surfaces is a simple tongue-and-groove mechanism so that the tissue contact surface can be applied to the clamp member and then removed again." Id. at 130. n12

n12 In fact, the specifications provide that the "tongue and groove fastening assembly" is the preferred method, "although other fastening assemblies are envisioned." '544 Patent, 4.2-6.

While the Court is dubious about the distinction drawn between "designed" and "adapted" as having a meaningful
difference, the Court nonetheless sees no basis in the claim language or specification for the differentiation defendant proposes. The patent simply provides no indication that the term "removably" should be construed using the word "adapted" while the term "fastened" is construed using the word "designed." Additionally, the words "capable of being" more closely track the dictionary definition, than does defendant's "adapted" language. See Webster's Third New Int'l Dictionary (plaintiff's Ex. G) at 1921 ("Capable of being removed, displaced, transferred, dismissed, or eradicated."). Accordingly, the Court will construe the term "removably fastened," as "designed so as to be capable of being held secure to something else and designed so as also to be capable of being unsecured and taken away from."

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c. "removably securing"

Toro argues that both the air inlet cover component and the "baffle" component of the White cover have attachment means for "removably securing" the air inlet cover to the housing as claimed in element v of claim 16. Toro contends that these facts were admitted by David Haupt, an engineer employed by White. See (Beattie Aff. Ex. D, Haupt Dep. at 233-34, 244-45). White argues that although the air inlet "baffle" is removably secured from the housing, the outer lid portion of the air inlet cover is not removably secured because it is attached to the housing by a hinge. See (Def. Mem. at 25); (Mattson Decl. at PP 15-19); (Haupt Decl. at P 20). White further asserts that Toro claimed an air inlet cover that is completely detachable from the vacuum-blower housing. (Def. Mem. at 24).

6 It is well established Eighth Circuit law that a statement in a declaration contradicting earlier sworn deposition testimony cannot create a fact issue. As such, the court will rely on Haupt's deposition testimony. White also argues that the reasoning of another court on this same issue is compelling. See The Toro Company v. McCulloch Corp., 1994 U.S. Dist. LEXIS 20904, Civil No. 3-94-664 (D. Minn., Oct. 21, 1994) ("McCulloch"). That decision does not relieve this court of its obligation to make findings of fact and conclusions of law in this matter, however.

The adjective "removable" is defined as: "capable of being removed, displaced, transferred, dismissed or eradicated." Webster's Third New Int'l Dictionary, 1921 (1981). "Secure" is defined as "4b: to make fast: tie down: SEAL." Id. at 2053. Another dictionary defines secure as "12. to make firm or fast: as by attaching." The Random House College Dictionary 1190 (Revised ed. 1980).

Claim 16 does not state that the cover is removable or secured; claim 16 states that the cover is removably secured. Removably is an adverb which modifies the verb securing. Thus, a cover which is not removably secured to the housing will either be attached to the housing and therefore not removable, or not secured at all. According to the common meaning of its terms, a removable secured cover as described by the '528 patent could take many forms, including hinged covers, tethered covers, covers rotated about a pivot and covers that are completely detachable from the blower housing such as the Toro model.

White bases its entire argument concerning the definition of "removably securing" on the McCulloch case. In that case, the pressure ring was attached to the cover lid. See (Sipiora Supplemental Decl. Ex. C at 5). Thus, although the one-piece cover in McCulloch was the same as the design at issue in Toro I, it is not the same design as the two-piece cover at issue in this case. Because the facts in this case are different from those in McCulloch, the McCulloch court's legal conclusions have limited applicability to the instant matter.

The court's prior definition of the term "cover" aids its interpretation of the terms "removably securing." There is no dispute that the "baffle" piece of the White cover is removable from the air inlet and the housing. White contends that the outer lid piece of the cover is not removably secured, however, because it is attached to the housing by a hinge. This argument fails for two reasons. First, Haupt, White's own witness, testified in his deposition that the outer lid was removably secured. See (Beattie Aff. Ex. D., Haupt Dep. at 233-34). Second, the '528 patent claims both one-piece and two-piece air inlet covers, not simply cover components. See supra p.17. White's "cover" is comprised of the air inlet lid and the "baffle." Although
White concedes that the "baffle" is removably secured from the housing, both cover components must be removed from the air inlet for vacuuming operation. White cannot avoid literal infringement by arguing that its two-piece "cover" does not literally infringe element v of claim 16 because something less than the "cover", the outer lid component, is not removably secured to the housing.

Additionally, the specifications of the '528 patent provide that a hinged cover is removable. Column 1, line 18 states:

During use as a vacuum, the apparatus is converted by removing the apertured cover and placing a vacuum nozzle in communication with the air inlet, and substituting a debris bag for the blower nozzle at the air outlet. U.S. Pat. No. 4,325,163 issued on Apr. 20, 1982 to Mattson et al is one such prior art apparatus.

The Mattson patent shows a hinged cover. See (Beattie Aff. Ex. I). Thus, the '528 patent provides a cover lid that is "removably secured" must be capable of moving away from the air inlet to permit insertion of the vacuum tubes, but does not necessarily need to be completely detachable from the blower housing.

The court has considered the meaning of the language used in the '528 patent and compared this language to the accused device. After making this analysis, the court concludes that White's cover on its latest vacuum-blowers literally infringes the '528 patent because every limitation in claim 16 is present in the accused device. Based this finding, the court does not reach the issue of infringement under the doctrine of equivalents.

Footnotes:

7 Without deciding the issue, the court notes that, based on the record before it, Toro also has a reasonable likelihood of success on the merits at trial on the issue of infringement under the doctrine of equivalents.

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In the main, the parties do not dispute the meaning of the term "removably supported." Both parties agree that the court should construe "removably supported" to mean "supported by and being removable from". Compare Defendant's Motion at 6 with Plaintiff's Response and Brief in Opposition to Defendant's Motion for Summary Judgment at 12 [hereinafter cited as "Plaintiff's Response"]. Where the parties diverge is defendant's contention that "removably supported" necessarily excludes all permanent means of attachment, including the use of rivets. Plaintiff counters that the claims of the '326 patent do not specify the type of fasteners to be used and, in any event, rivets are not permanent fasteners because they can be removed. In support of its contention that rivets are removable, plaintiff offers the affidavit of its Vice President of Engineering, Lawrence J. Cammuso. Mr. Cammuso asserts that "rivets may be removed by using a drill with a drill bit, a rivet removal tool and other tools" and that the rivets used in the accused device "could readily be removed and replaced both during manufacturing and in the field." Exhibit 2 to Plaintiff's Response at P 19. Once removed, however, the rivets are not reusable; the pump assembly must therefore be reattached using new rivets or bolts and nuts. Id. at P 21.

Like the Court in K-2 Corp. v. Salomon S.A., 191 F.3d 1356 (Fed. Cir. 1999), this court need not confront the existential question of whether any fastener can truly be considered permanent. As the Court noted, and the parties in this case agree, a "rivet-made permanent connection is of course not 'infinitely' permanent, because a rivet can be broken." Id. at 1365. The common, ordinary meaning of removable or removably, however, does not include breaking what is meant to be a permanent connection. The court's understanding that rivets are considered permanent connections is reinforced by the extrinsic evidence. See Exhibit 2(A) to Defendant's Motion at 318 ("rivets are permanent shear fasteners"); Exhibit 2(B) to Defendant's Motion at 824 ("The most common method of permanent or semipermanent mechanical joining is by riveting.") (emphasis in original). The intrinsic difference between removable fasteners, such as screws and nuts and bolt assemblies, and rivets, which are meant to form a permanent bond, was likewise recognized by the Court in K-2 Corp.

Screws, unlike rivets and laminates, are meant to be unscrewed, that is, to be removed. A rivet or laminate, to the contrary, is meant to remain permanent, unremovable unless one is bent on breaking the permanent structure apart.
K-2 Corp., 191 F.3d at 1365. A component cannot be "removably supported" if it is attached using fasteners that are meant to be permanent and not removed. As the accused pump is attached to its support plate by rivets, it cannot meet the "removably supported" claim limitation. Thus, as a matter of law, defendant's pump assembly does not literally infringe the '326 patent.

(d) "Removing" In general usage, to "remove" means "to move by lifting, pushing aside, or taking away or off," Merriam-Webster's Collegiate Dictionary 990 (10th ed. 1993), or "to move or shift from a place or position," Webster's College Dictionary 1139 (Random House 1992). "Removing" an object thus means the purposeful application of motive force to change the location of the object, under circumstances where, without the application of such motive force, the object would tend to stay in its original place.

1. "Removing"

The parties disagree as to the meaning of the term "removing contaminate vapors from contaminated underground areas" as used in paragraph 1 of the '407 Patent. Plaintiff argues the term means an operation or use of the claimed process for an extended period of time for the purpose of eliminating all or substantially all the contaminants from a contaminated site. Defendants, on the other hand, argue that the term means the removal of any amount of contaminant vapors rather than all or substantially all of such vapors.

The Court begins its analysis with the ordinary meaning of the word "remove." When a general descriptive term is used in a claim, the dictionary definition generally constitutes the ordinary and accustomed meaning of the term. Casler v. U.S., 15 Cl. Ct. 717, 9 U.S.P.Q.2D (BNA) 1753, 1772 (Cl. Ct. 1988). The dictionary definition of "remove" is: ". . . 1: to change or shift the location, position, station, or residence of . . . 4: to get rid of as though by moving . . . " WEBSTER'S THIRD NEW INTERNATIONAL UNABRIDGED DICTIONARY ((c) 1961, 1993) at 1921. This definition does not modify the word "remove" with terms like "completely" or "substantially all." Accordingly, the Court concludes that as soon as the process disclosed in the '407 Patent is commenced, one is engaged in practicing the invention. It is not necessary to complete the process before one is said to be practicing the invention.

In addition, the specification does not support Plaintiff's interpretation of "removal". For the Court to read a limitation from the written description into the claim, the inventor must indicate clearly in the specification that the limitation must be imported into the claim to give meaning to the disputed term. Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1249 (Fed. Cir. 1998). Plaintiff does not indicate clearly in the specification that he would like to add the limitations "completely" or "substantially all" while interpreting the term "removing." Further, Plaintiff has not provided an explicit definition for the term.

6. ev3's Patents

The phrase "removing restraint on balloon filter" appears in both the '019 and '375 Patents. Boston Scientific argues that the phrase should be construed as "moving the restraining element so as to uncover the filter at the desired location." ev3 suggests that the phrase need not be construed, but to the extent it is to be construed, it should mean nothing more "than that the filter element be outside the lumen of the sheath and permitted to expand to its expanded configuration." The Court declines to construe "removing restraint on filter element" because the phrase is easily understood.
5. "Repeating said injecting process until all of the plurality of openings have been filled" ('682 Patent, Claims 18 and 20) (Claim Element 5)

a. The Parties' Positions

ATI proposes that the plain meaning of this claim element be adopted. Dkt. No. 81 at 13. Specifically, ATI proposes the following construction: "Repeating said injecting process until all of the plurality of openings have been filled." Id. However, Defendants propose the following construction: "Using a nozzle or other point source injecting mechanism to force light influencing material influencing material into each hole in the opaque material is repeated until all holes in the substantially opaque material are filled." 11

11 Sharp provides no briefing on this issue. Dkt. No. 83. Instead, in the Chart, Sharp states that it "agrees with DNP." Dkt. No. 113 at 3.

b. Construction

The differences between ATI and Defendants' proposed constructions are as follows: (1) whether to include the "use of a nozzle or other point source injecting mechanism to force" and (2) whether "each hole" must be included. Both of these issues have been addressed previously in this claim construction. See Discussion, supra. Accordingly, these issues will not be addressed again. As noted above, this Court will not adopt either of Defendants' two proposed changes to the plain meaning of these terms. Therefore, the Court's construction for Claim Element 5 is as follows: "Repeating said injecting process until all of the plurality of openings have been filled."

2. "Replaceable"

Claim 1 of the '909 patent provides for an under-eye light absorbing device comprising a "replaceable pliable sheet material patch." The parties agree that "replaceable" in this context means repositionable but debate whether there is an implied time limitation. (At the preliminary injunction hearing, I rejected plaintiff's argument that the replaceable limitation is satisfied simply because a user can remove and dispose of defendant's product and then put on a new one. Such an interpretation would render the term meaningless; anything of a generic quality can be "replaced" with a second item. Plaintiff does not revive this argument at summary judgment.) Defendant presumes that there is no specific time limitation and relies on its president's demonstration at the preliminary injunction hearing. Plaintiff also relies on its demonstration at the preliminary injunction hearing but argues that claim 1 should be construed to require only that the product be repositionable during initial application.

According to plaintiff, initial application is the only time an athlete would reposition an eye black; thus, this limitation is implied as a matter of logic. In support of this markedly narrow limitation, plaintiff cites the affidavits of two athletic trainers, whom plaintiff characterizes as experts. In their affidavits, the trainers state that the only time they are aware of athletes repositioning eye blacks is during initial application. Plaintiff's argument is unavailing for a number of reasons. First, it reads in a narrow limitation not from the claim language, patent specification or prosecution history but from extrinsic evidence. Extrinsic evidence is an interpretive resource of last resort. Vitriconics, 90 F.3d at 1583. It may not be used to impose limitations that are in no way found in the intrinsic record. Dow Chemical Co. v. Sumitomo Chemical Co., Ltd., 257 F.3d 1364, 1373 (Fed. Cir. 2001) ("extrinsic evidence may be used only to assist in the proper understanding of the disputed limitation; it may not be used to vary, contradict, expand, or limit the claim language from how it is defined, even
Second, these two trainers do not qualify as experts or persons skilled in the act of eye black repositioning. Defendant's product is a mass market consumer good sold to athletes at all levels of competition; when a consumer might reposition the product is not a matter of scientific, technical or otherwise specialized knowledge. Fed. R. Evid. 702. Even more problematic than simply not qualifying as "experts" of eye black repositioning, neither trainer explained why he would have known whether an athlete had repositioned an eye black at some time after initial application. Without such a showing, very little can be drawn from the fact that the trainers were not aware of any post-application repositioning.

Nothing in the claim language, specification or portions of the prosecution history suggests an implied limitation that the patch need be replaceable only during initial application. To the contrary, the prefix "re" indicates that the patch must be placed somewhere before it can be "replaced." Merriam Webster's Collegiate Dictionary 971 (10th ed. 1997) (defining "re" as "again [or] anew"). Ordinarily, "placed" means put in a particular position or set. Id. at 888. Thus, the claim language indicates that the product must be moveable at some point after it has been set in a particular position. Further, the claim specification anticipates that the patches are to be used in connection with "athletic activity such as football, baseball, basketball, tennis, golf and the like." '909 Pat., col. 3, Ins. 17-19. Without any indication to the contrary, a natural reading of this passage would suggest that the qualities attributed to the product would endure at least as long as it would ordinarily take an athlete to participate in one of these listed sports.

As for plaintiff's suggestion that initial application is the only time that an athlete would reposition an eye black, there are any number of reasons to think that a person would be equally if not more likely to reposition an eye patch at some later point. An athlete might apply an eye black patch indoor under artificial light and not notice that the patch is not in the best place to block reflection until going outside in full sunlight. Further, a person might readjust the product's position if the angle at which light is hitting his face changes; this might occur as the sun changes position over time or when teams trade sides of the field or court. Finally, skin irritations might prompt an athlete to readjust the position of an eye black patch during the course of an athletic event. Absent any indication in the intrinsic record suggesting a more limited time frame, I conclude that the claim requires that the product be repositionable for the duration of an average game of football, baseball, basketball, tennis or golf.

II. Claim 4: "replacing said specific link"

Claim 4 of the '423 Patent provides:

selecting a specific link of a sequence of links to be formed into a loop of saw chain . . . [and] providing a replacement link that is different in appearance from the appearance of the selected link . . . .

(disputed term emphasized).

Defendants construe "a replacement link that is different in appearance from the appearance of the selected link" to mean "permanent coloration or shape of the replacement link differs from all remaining links in the chain performing the same function." Thus, in effect, Defendant proposes the same definition for this term as it did for the term in Claim 1 for almost identical reasons. Plaintiffs, however, contend the disputed language is clear on its face and, therefore, can be understood by its ordinary meaning. Again, the Court agrees.

The "replacement link" need only be "different in appearance" from the "selected link," and the specification and other claims make clear that the patentee contemplated more than mere color or shape as the means by which to differentiate the replacement link. Accordingly, the term "a replacement link that is different in appearance from the appearance of the selected link" does not require further construction and is understood by its ordinary meaning alone.
A. Valve Disc Replica

Our claim construction opinion interpreted "valve disc replica" as "a close copy of the valve disc." Claim Construction Order, July 12, 2004 at 8-9. Nothing in Phillips changes that conclusion. NIBCO seeks to have the Court define the term almost purely based on the function that it plays in the 347 patent. NIBCO wants a valve disc replica to be construed as "a structure or assembly of structures that create [sic] a circular disc with an outer periphery shaped to form the valve seat during molding and having aligned valve stem receiving openings on one of its faces." 1 NIBCO's Motion for Reconsideration at 8. But the functions inherent in this definition, and the functions described in the specification, are consistent with a valve disc replica being "a close copy of the valve disc."

--- Footnotes ---

1 As we mentioned in our claim construction order, NIBCO first suggested that we construe the phrase "valve disc replica" to mean "a structure or combination of structures that shapes the central portion or valve seat during the molding process and thus simulates the finished fluid passageway within which the valve disc will be mounted when the valve is assembled." In its Supplemental Brief, NIBCO changed its position of the meaning of "valve disc replica" to the proposed definition quoted above. Claim Construction Order at 8.

--- End Footnotes ---

Although we did refer to a dictionary in arriving at our claim construction for valve disc replica, nothing in Phillips prevents us from doing so. As mentioned above, the Phillips court noted that "in some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claims construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words. . . . In such circumstances, general purpose dictionaries may be helpful." Phillips, 415 F.3d at 1314. The Court believes that to be the case here. It is for this reason that we stated in our claim construction order that "referencing dictionaries is probably not even necessary in this instance, since common usage of the term" valve disc replica is plain on its face. See Claim Construction Order at 9.

We continue to believe that the ordinary and customary meaning of the term "replica" as understood by someone skilled in the art would be a "close copy," and therefore a "valve disc replica" is a "close copy of a valve disc." NIBCO has presented us with no evidence that someone of skill in the art of making valves would view this term differently. NIBCO instead argues that it never said or suggested in the specifications that the valve disc replica "looks like" or is a "close copy" of the actual valve disc. NIBCO's Motion for Reconsideration at 7-8. But this argument ignores the obvious point that by repeatedly using the term "replica" in the claims, nothing more needed to be said because a replica is a close copy.

Moreover, the intrinsic record supports the construction given by the Court. The figures depicting the valve disc replica show an object that is very similar in appearance to the valve disc, although it is not an exact copy of the valve disc. Compare Figs. 1 and 3 with Figs. 11 and 12. For example, both the valve disc and the valve disc replica are thin circular plates. Id. In addition, both the disc and the disc replica contain holes through which the valve stem (or valve stem replica, respectively) is inserted. Id. Although there are some variations between the valve disc replica and the valve disc -- for example, the replica has inclined walls making it recessed on one of its faces so it can be held in place during the molding process, see 347 Patent, col. 4 lines 10-13 -- this merely confirms the point that the disc replica is a close copy of the disc, not an exact copy of the disc.

The prosecution history of the 347 patent further supports the construction that a "valve disc replica" is a close copy, not an exact copy, of a valve disc. During the prosecution of the 347 patent, the applicants stated that the valve disc replica would not be an exact copy of the valve disc because there would be "dimensional variations" between the two to optimize the configuration of the final valve. As the applicants stated: "the replica valve disc and the replica valve stem are not exact duplicates of the corresponding finished valve disc and valve stem. Their dimensional variations permit the formation of a channel 46 and thickened bosses 59 and 59a." Tyco's Summary Judgment Exhibit B-15 at 2. The prosecution history thus supports the construction that, although the disc replica is not an exact copy of the valve disc, it is a close copy of it.
Furthermore, nothing in the specifications indicates that NIBCO acted as its own lexicographer as to the term "replica," or that it used the term idiosyncratically. See Phillips, 415 F.3d at 1316. NIBCO draws the Court's attention to lines 7-14 of column 4 of the 347 patent, which reads as follows:

The central or valve seating portion of the seat is shaped by a disc replica 43 which is seated in the fluid passageway and is clamped between the mold halves 40a and 40b (FIG. 10). The disc replica 43 is recessed in one face (FIG. 16) creating a cavity 44 into which a mating boss 45 on mold half 40b seats to hold the valve replica properly located within the valve body 11 (FIGS. 10 and 12). The cavity and boss have inclined walls to accurately center the replica.

See NIBCO's Motion for Reconsideration at 7. This part of the specification, which indicates that the function of the valve disc replica is to shape the valve seat and to simulate the valve disc replica, is compatible with the ordinary meaning of the term "valve disc replica," that is, "a close copy of a valve disc." In the Court's view, nothing in this passage suggests that the patentee intended to define the term "valve disc replica" as "a structure or assembly of structures that create [sic] a circular disc with an outer periphery shaped to form the valve seat during molding and having aligned valve stem receiving openings on one of its face" -- the definition NIBCO now asks the Court to adopt. NIBCO's Motion for Reconsideration at 8.

In sum, the Court found that the term "valve disc replica" means "a close copy of the valve disc" and it did so with full awareness of its functions. While the dictionary played a modest role in our conclusion, for the reasons stated above, we are of the firm belief that rather than undermining our earlier ruling, Phillips actually supports it.

1. Valve Stem Replica

In the patent at issue in this case, the fourth step of Claims 1, 4 and 11 involves "inserting a valve stem replica through the stem openings in the valve disc replica and both bushings and into the socket." Claim 6 requires "inserting a valve stem replica through both bushings and the valve disc replica." In our claim construction order, we held that a "valve stem replica" means "a close copy of a valve stem." As we will discuss below, because Tyco's method does not use "a close copy" of the finished valve stem, it does not infringe Claims 1, 4, 6 and 11.

3. Reset Portion

Leviton argues, citing Dr. De La Ere's declaration, that the term "reset portion" is clear on its face to one of ordinary skill in the art. See Leviton's Memo at 20; De La Ere Declaration P 24, at 12-13. Leviton also contends that "reset portion" is a structural limitation and not a means-plus-function clause subject to § 112, P 6. See id. In support of its position, Leviton cites Col. 3, ll. 5-8 of the '766 patent, which states: "A reset portion is disposed at least partially within the housing and is configured to reestablish electrical continuity in the open conductive paths." The '766 Patent at Col. 3, ll. 5-8; Leviton's Memo at 20. Leviton, in maintaining its position, also asserts that the "reset portion" claim element does not use the word "means." See Leviton's Memo at 20-21. In further support of its position that the "reset portion" claim element is clear on its face and not subject to § 112, P 6, Leviton states that "reset portion" has, over the years, acquired a reasonably well understood meaning in the art that is reasonably associated with a particular structure. See id.

The Court does not agree with Leviton's position that "reset portion" is clear on its face to one of ordinary skill in the art and that it is not a means-plus-function clause. While "means" is not used in the "reset portion" claim element, the presumption that a claim element not containing the word "means" is not subject to § 112, P 6 can be overcome. See Cole v. Kimberly-Clark Corp., 102 F.3d at 531 ("Merely because an element does not include the word 'means' does not automatically prevent that element from being construed as a means-plus-function element."); Personalized Media Comm'n's, LLC v. Int'l Trade Comm'n, 161 F.3d at 704. The Court, agreeing with the Defendants, believes that presumption is overcome here; the relevant claim element does not provide sufficient structure. See Defendants' Memo at 34-35; Defendants' Response at 15-
The Defendants, citing Massachusetts Institute of Technology and Electronics for Imaging, Inc. v. Abacus Software, 462 F.3d 1344 (2006), contend that the presumption that a claim element lacking the word "means" is not a means-plus-function element is overcome here, because the claim does not contain sufficient structure and the words "reset" and "portion," when assessed either independently or in conjunction, do not connote sufficient structure. See id. at 1353 ("[A] limitation lacking the term 'means' may overcome the presumption against means-plus-function treatment if it is shown that 'the claim term fails to 'recite sufficiently definite structure' or else recites 'function without reciting sufficient structure for performing that function.'"). The Defendants note that pertinent dictionaries either do not define those terms or do not define them in a manner that connotes structure. See Transcript at 58:14-60:13 (Fry); Defendants' Markman Hearing Presentation at tabs 31-34, 36-40. The Defendants also point out that Dr. De La Ere testified that "reset portion" did not refer to any specific structure. See Transcript at 60:21-62:17 (Fry); Defendants' Response at 16-17 (citing August 31 De La Ere Deposition at 78:17-79:5). Further, the Defendants note that the Court previously, in its construction of the '558 patent's claims, determined that the "reset means" claim element was subject to § 112, P 6, and that, in the '558 patent, Leviton uses the terms "reset means" and "reset portion" interchangeably. See Transcript at 59:12-21 (Fry); Defendants' Memo at 34-45.

The Court finds the Defendants' position concerning "reset portion" persuasive. The Court believes that the language of the "reset portion" claim element cannot be said to impart sufficient structure. See The '766 Patent, Claim 1. The Court also believes that it is noteworthy that the Defendants' search did not reveal, nor did Leviton present, evidence that the term "reset portion" or the individual terms "reset" and "portion" impart sufficient structure within the art. See Mass. Inst. of Tech. & Elec. for Imaging, Inc. v. Abacus Software, 462 F.3d at 1354 (analyzing disputed claim element terms together and independently, and finding that § 112, P 6 applied where those terms did not impart sufficient structure and none was otherwise included within the claim). The Court, moreover, acknowledges that Dr. De La Ere conceded that the term "reset portion" does not connote any specific structure, see August 31 De La Ere Deposition at 78:17-79:5, and that Leviton does appear to use "reset means" and "reset portion" interchangeably in Claims 3 and 4 of the '558 patent, see The '558 Patent, Claims 3 & 4, Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d at 1334 ("We presume, unless otherwise compelled, that the same claim term in the same patent or related patents carries the same construed meaning."). Considering the foregoing, the Court concludes that the Defendants have overcome the presumption that § 112, P 6 is not applicable, and that the "reset portion" claim element is a means-plus-function element.

Citing Ventana Med. Sys. v. Biogenix Labs, Inc., Leviton contends that the "reset" language used in Claim 1 of the '766 patent and Claim 3 of the '558 patent is different, and that, therefore the Court's construction of Claim 3 of the '558 patent is irrelevant and the Court should not find that "reset portion" is a means-plus-function element. See Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d at 1334 (stating that, while a parent patent's prosecution history may inform the claim construction of its descendant, the parent patent's prosecution history is irrelevant to the meaning of a descendant's limitation if the two patents do not share the same claim language); Transcript at 14:10-15:17 (Magidoff). The Court notes, however, that the "reset portion" claim element's lack of accompanying structure, and not its language's similarity to that of Claim 3 of the '558 patent, drives the Court's conclusion here.

Because the Court concludes that "reset portion" is a means-plus-function element, it must determine its function. See Linear Tech. Corp. v. Impala Linear Corp., 379 F.3d at 1322. The Court concurs with the function that the Defendants put forth. The language of the "reset portion" claim element is largely identical to that of the "circuit interrupting portion" claim element, for which the Court adopts the Defendants' proposed construction. See The '766 Patent, Claim 1. Moreover, the word "said" indicates that the term "predetermined condition," as used in the "reset portion" claim element, should be construed as it was with respect to the "circuit interrupting portion" element. Phillips v. AWH Corp., 415 F.3d at 1316-17 (stating that use of the term "said" indicates that the term in question has previously been used within the claim and that the earlier understood meaning should be maintained). Given the use of "said," given that the Court adopts the Defendants' construction of the "circuit interrupting portion" construing identical language, given that it is presumed that the same claim term in the same patent or related patents carries the same construed meaning, see Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d at 1334, and given that, while Leviton states that the Defendants' proposed § 112, P 6 function is incorrect, Leviton
does not present the Court with an alternative, see Leviton's Response at 15-17, the Court will adopt the Defendants' proposed construction of the "reset portion" claim element. The Defendants' proposed construction provides:

This claim element is a means-plus-function element in accordance with 35 U.S.C. § 112, P 6. The function to be performed by the "reset portion" is reestablishing electrical continuity between the first and second electrical conductors and between the first and third electrical conductors after the occurrence of a current imbalance (in this case an artificially induced electrical fault) that activates the circuit interrupting portion.

Defendants' Presentation at 88.

Because the Court concludes that "reset portion" is a means-plus-function element, it must also identify the structure that corresponds to the function. See Linear Tech. Corp. v. Impala Linear Corp., 379 F.3d at 1322. The Court finds that the pertinent specification language contained within the '766 patent for completing the function assigned to the "reset portion" is the same structural language contained within the '558 patent for completing the function that was assigned there to "reset means." See The '766 Patent, Col. 8, ll 25-56; The '558 Patent, Col. 8, ll 25-56. Given that the language the Court used to describe the function of the "reset means" in the '558 patent is nearly identical to the language it adopts to describe the function of the "reset portion" of the '766 patent, and given that the relevant specification language is the same in both the '558 and '766 patents, the Court will apply its finding with regard to the structure of "reset means" from the '558 patent to the "reset portion" claim element appearing in the '766 patent. Thus, the necessary structures corresponding to the function ascribed to the "reset portion" are: return spring 120; latch number 100; latching finger 102; movable contract arms 50 and 70; reset contacts 104, 106, 52, 62, 56, 66, 72, 82, 76, and 86; coil assembly 90, plunger 92, banger 94, banger dogs 96 and 98; operable ends 116 and 118; and a circuit that senses the "predetermined condition" and causes coil assembly 90 to actuate plunger 92. See The '766 Patent at Col. 8, ll 25-56.

At the February hearing in this case, I construed "resile," a term appearing solely in claim two, as follows: “Resile" means to return to or tend to return to a prior or original position in a manner that contributes, at least in part, to the lodging of the member in the hole. Completely returning to a prior or original position, though included, is not required. Though occurring after Judge Hubel's claim construction, my construction necessarily relates to his. Thus, the issue concerns the proper relationship or relative meanings of "resile" and "resilient."

Given the context, "resile" as used in claim two clearly refers to the act of resiling or a device resiling in use. Judge Hubel's intended meaning of "resilience" is less clear, but it appears there are two possible meanings. First, it is used as a synonym for "resile," requiring that the device actually perform in a resilient manner in order to meet the definition of "member." This is a resilient-in-use interpretation. The second possibility is that Judge Hubel meant that the device must simply have the capacity to resile, not that it actually resile in use. Both options are supported by the common definition of "resilient." See Merriam-Webster's Collegiate Dictionary (11th 3d. 2005) 1060 (defining "resilience" as "capable of withstanding shock without permanent deformation or rupture" and "tending to recover from or adjust easily to . . . change").

Claim two reads in relevant part, "[a] method for anchoring in bone a member and attached suture, comprising the steps of: . . . deforming the member in a manner such that the member resiles against the portion of the bone that defines the hole. Legaard Decl. in Supp. Pl.'s Markman & Summ. J. Br., Ex. 1 at 10 (emphasis added).

Though Judge Hubel did not explain what he meant, his opinion indicates that he intended the resilience-in-use interpretation. Referencing the patent specification, he stated "the [invention] would be inoperable as described if it was not formed of a resilient material." See Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1378 (Fed. Cir. 2006)
("the specification is the single best guide to the meaning of a claim term"). Logically, if resilient material is required for the device to operate as described, then that material must actually perform its distinct function--resiling. It is inconceivable that the capacity for resilience alone is the difference between an effective and ineffective device as described in the patent.

There is also support for the resilience-in-use interpretation in the Federal Circuit's Ethicon opinion. Upon review of the district court's various rulings, the Circuit concluded the '557 patent "is directed to an anchor with resilient legs that open and resile after the anchor is pushed into the cancellous bone, lodging the anchor against the cortical layer." Smith & Nephew, Inc. v. Ethicon, Inc., 276 F.3d 1304, 1312 (Fed. Cir. 2001). The Circuit also referenced a statement made by Dr. Hayhurst during the prosecution of '557 where he distinguished his invention from prior art on the basis that '557 encompasses devices that attach to bone through resilience. Id. at 1309.

Though framed differently, in its briefing Smith & Nephew raises the doctrine of claim differentiation in opposition to a resilient-in-use interpretation. As between independent claims, the doctrine of claim differentiation acts as a "presumption that each claim in a patent has a different scope." Curtiss-Wright Flow Control Corp., 438 F.3d at 1380 (quoting Versa Corp. v. Ag-Bag Int'l Ltd., 392 F.3d 1325, 1330. In this context, it is a "guide, not a rigid rule." Id. at 1381 (internal quotation marks and citation omitted). As a general matter, this doctrine is relevant where a proposed construction renders "additional, or different, language in another independent claim superfluous." Id. (internal quotation marks and citation omitted). However, it cannot be used to "broaden claims beyond their correct scope." Id. (internal quotation marks and citation omitted).

Smith & Nephew argues the doctrine of claim differentiation is triggered here because interpreting "member" as an anchor that is resilient-in-use renders claim two's specific reference to resiling and claim six and seven's reference to a "deformable member" superfluous. I disagree. As the Federal Circuit explained in Curtiss-Wright, "a patentee may define the same subject matter with claims having different terminology." Id. at 1381. Thus, even though the resilient-in-use interpretation may diminish the differences between the claims, that fact does not mean the interpretation is wrong.

Further, I find that the words used in the latter set of claims are not rendered completely superfluous because, when read as a whole, those claims more specifically define the manner in which the resiling must occur than do the more general claims, like claim one. For example, unlike any other claim, claim two specifies "the member [must] resile[] against the portion of the bone that defines the hole." Interpreting "member" as a device that "return[s] to or tend[s] to return to a prior or original position in a manner that contributes, at least in part, to the lodging of the member in the hole" does not render claim two's specific method of resiling meaningless. Likewise, when read as a whole, claims six and seven describe a unique method for accomplishing resiling. And to the extent there is some overlap between "deformable member" and "member" defined as a device that is resilient in use, I conclude this is necessitated by the patentee's formulation of his claims.

Additionally, as Judge Hubel said, it is clear from the patent specification that the distinguishing characteristic of Dr. Hayhurst's invention is that it is a device that resiles in bone. Thus, Smith & Nephew's argument that "member" includes both resilient and non-resilient devices based on the different language used in the various claims would inappropriately broaden the scope of the invention as contemplated by the specification. Whatever Dr. Hayhurst's motivation in including the term "deformable member" in claims six and seven, the claim language cannot be read in a manner that is inconsistent with the overall purpose and function of the invention. See id. at 1381 (vacating district court's construction that was inconsistent with "the overall context of th[e] invention and th[e] field of art as described in the specification"). Thus, to conclude, I find the proper interpretation of "resilience," as that term was incorporated into the definition of "member" by Judge Hubel, is that the device must resile in use.

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In Smith & Nephew v. Ethicon, No. CV 98-76-MA, (D. Or. June 11, 1999), 2 Magistrate Judge Hubel construed "member" as "the anchor itself." He further held this term requires "that the entire member is resilient." As set out in an earlier opinion, Judge Hubel's construction applies here under principles of claim preclusion. Judge Hubel did not, however, define "resilient," and the parties now dispute the import of this term.
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2 Hereafter, Judge Hubel's opinion in Ethicon is referred to as "Hubel's Am. F&R."

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2) the word "resilient" means that "the information tab is made of material which recoils back to its original shape;"

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7. "Resilient and compressible material." Used in Claim 9 and 42.

Nike proposes "material for the support element that can be reduced in height when a force is applied by the foot (compressible), but substantially returns to the original height when the force is removed (resilient)." In their brief, Adidas proposes only a slight modification to the definition of "resilient"? "substantially returns to the original shape when the force is removed." 6 As to the term "compressible," adidas suggests "materials that can be squeezed under the loads typically experienced in use of footwear to occupy substantially less volume to provide cushioning."

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6 Nike argues that adidas has waived the right to propose any construction for the term "resilient" because they failed to comply with P.R. 4-1 and P.R. 4-2. These rules require each party to list the claim terms, phrases, or clauses which that party contends should be construed by the court and to exchange a preliminary proposed construction of each claim term, phrase, or clause identified with the opposing party. See P.R. 4-1 and P.R. 4-2. Adidas denies that it has not complied with the rules. There is no evidence before the court to suggest that either party has not complied with the patent rules. A defendant is not required to guess what claim terms may be in dispute, and may respond to a proposal from a plaintiff. This does not mean that a defendant would have an absolute right to propose, after the deadline, terms not identified by the plaintiff.

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The parties admit, and the court agrees, that there is little difference between "returns to the original shape" and "returns to the original height." Other language in the claim already indicates the support elements are "vertically-projecting" between the sole and upper. The force of the foot is directed downward, toward the sole, so the other claim language already denotes
the direction of the change during compression. Accordingly, the court will use "substantially returns to the original shape."

Nike asserts that "compressible" means the material can be reduced in height. Adidas argues that it must mean the material can be substantially reduced in volume. The ’796 patent incorporates U.S. Patent No. 5,343,639 ("Kilgore"). See 796 patent, col. 2, 11. 37-40. The Kilgore patent discusses the use of compressible materials, such as foams, and compressible structures, such as a gas or fluid filled bladder. See 639 patent, col. 4, 11. 53-68; ’639 patent, col. 11, 11. 45-57. But "resilient and compressible" in Claims 9 and 42 of the ’796 patent modify "material." There is no indication in either claim or in the specification that the term refers to a compressible structure, made up of material which itself would not be compressed by the force applied by a foot (such as a spring made of steel). On the other hand, there is no indication that the volume of the material must be substantially decreased.

Adidas points to passages in the specification indicating a preference for foam type materials which are reduced in volume under compression. But a preference for one material over another in a specification is not necessarily a limit to a claim. When some materials are compressed by a force along one axis (in this case reduced along the vertical axis from the upper to the sole by pressure of the foot) they expand on other axes (for example in this case toward the medial and lateral sides of the shoe) without much reduction in total volume. There is no indication in the patent or the file that compression, as used in this patent, refers only to total volume compression. Therefore this term is defined as follows:

"Resilient and compressible material" means "a material that will change shape as force is applied by a foot, and which will return to substantially the same shape when the force is removed."

2. "Resilient"

Plaintiff argues that a "cantilevered resilient arm" is one that "is elastic enough to be pressed without being force fit downward toward the rail web and under the rail head during installation, and has a tendency to spring back to its original shape after being pressed into position." (Plf. Brief at 10). Defendants generally agree with this definition. However, they object to the proposed limitation of "without being force fit." (Def. Reply at 5). The Court agrees that this limitation should not be part of the claim.

Resilience is a physical property or characteristic. See WEBSTER'S II NEW COLLEGE DICTIONARY at 943 (defining "resilience" to mean "the property of a material that enables it to regain its original shape or position after being bent, stretched, or compressed"). It has nothing to do with any particular method of installation. The claim is silent as to how the flangeway filler device is to be installed. Indeed, there is a separate patent covering the installation process.

Plaintiff also contends that the cantilevered leg is less resilient than the cantilevered arm and is rigid enough to support the gauge insert. (Plf. Proposed Claim Constructions at 1-2). This argument is based on the fact that the claim uses the term "resilient" to describe the arm but not the leg. Of course, the entire insert is made out of resilient material. (Plf. Brief, Exh. 1, col. 1, ln. 43). The leg must therefore have some resiliency. On the other hand, the claim cannot be construed to mean that the leg is just as resilient as the arm. This would render the limitation meaningless. See Exxon Chemical Patents, Inc., 64 F.3d at 1557. It is not logical to suggest that the arm might be resilient in a different manner than the leg, since both components are made of the same material. Nor is there any basis to imply that the leg might be more resilient than the arm. This leads to only one possible conclusion—the arm is more resilient than the leg. The Court therefore construes the term "cantilevered resilient arm" to mean that the arm is elastic enough to be pressed beneath the rail head and regain its original shape and is more elastic than the cantilevered leg.

However, the Court is not convinced that the leg must be rigid enough to support the insert. The construction advocated by plaintiff is belied by the specification:

"... the leg 540 also includes a lobe 545 extending below the leg 540. It is preferred that the lobe 545 extend below the leg 540 with sufficient length to rest on the rail base 142 of the rail 140, or abut against the rail anchor 150, or both. In this manner, the leg 545 will support the gauge insert 500, or prevent the gauge insert 500 rotating, or both."

(Id., Exh. 1, col. 5, ln. 52-58). The "cantilevered leg" and the "lobe" are two different components of the gauge insert. It is
clear from the specification that the "lobe" supports the insert, not the "cantilevered leg." 3 The Court declines to incorporate this limitation into the claim construction statement.

3 Although the quoted portion of the specification states that "the leg 545 will support the gauge insert," this structure is not the "cantilevered leg" at issue in this case. The "cantilevered leg" is labeled as 540 in Figure 5 of the '662 Patent. The "lobe" is labeled as 545. (Plf. Brief, Exh. 1, Fig. 5).

BACKGROUND

Transclean is the assignee of the '080 patent, which is directed to an automatic transmission fluid changing apparatus. The fluid circulates from an automobile's automatic transmission case to a radiator and back via circulation lines. '080 patent at col. 1, ll. 6-12. The invention of the patent is designed to tap into a fluid circulation line and become part of the circulation system for the duration of the fluid changing procedure. Id. at col. 3, ll. 8-19. In that configuration, the invention collects used fluid as it circulates around and into the machine, while supplying new fluid into the circulation system. Id. Prior to the invention, such machines were not capable of matching the supply rate of new fluid to the outflow rate of used fluid. Id. at col. 2, ll. 56-68. As a result, one of two problems was likely to occur. First, if the supply rate was less than the outflow rate, the transmission could become starved of fluid, which could lead to excessive heating and damage to the transmission. Id. Second, if the supply rate exceeded the outflow rate, a buildup of internal fluid pressure could stress and damage seals in the transmission. Id. The invention aimed to solve these problems by balancing the supply rate to the outflow rate. Id. at col. 3, ll. 8-19. Claim 1, the only independent claim, reads as follows:

1. In a fluid replacing apparatus for an automatic transmission an improvement having fluid circulation inlet and outlet ports comprising:
   a fluid receiver adapted to be connected to the fluid circulation output port on said automatic transmission;
   a source of fresh transmission fluid adapted to be connected to the fluid circulation inlet port on said automatic transmission so that fluid circulates therethrough; and
   means connected to said fluid receiver and said source of fresh fluid, for equalizing the fluid flow into said fluid receiver and out of said source of fluid.

Id. at col. 8, ll. 10-23 (emphases added).

As can be seen, the claims recite a "means . . . for equalizing the fluid flow" in the manner authorized by 35 U.S.C. § 112, P 6. The specification discloses several structures corresponding to the claimed "means." According to one structure, the fluid receiver and source of fresh transmission fluid are segregated portions of the same tank, and the means for equalizing is a flexible diaphragm that defines the boundary dividing the tank into two segregated portions. Id. at figure 3. A structure with those characteristics is the subject of claim 13, which reads as follows:

13. The apparatus of claim 1 in which the means for equalizing the flow is comprised of means disposed intermediate the fluid receiver and source, said means exhibiting resilient characteristics for exerting a force, related to the pressure existing in the fluid circulation circuit of said transmission and said receiver, upon the fluid in said source.

Id. at col. 8, ll. 55-61 (emphasis added). Another structure corresponding to the means for equalizing in claim 1 is a pair of tanks, one for used fluid and one for fresh fluid charged by pressurized air. Id. at figs. 4, 6.

* * *
As for the second alleged abuse of discretion, denial of Bridgewood's motion for summary judgment of noninfringement of claim 13, Bridgewood argues that the court misconstrued the phrase "exhibiting resilient characteristics" to mean "returning to an original shape after being deformed" or "returning to its original position after being compressed." Summary Judgment Opinion 77 F. Supp. at 1087. Bridgewood contends that initial deformation of shape is inherent in the meaning of the expression and cites technical dictionary definitions in support of that contention. Under the correct construction of that expression, according to Bridgewood, the free-floating piston in its device does not "exhibit[] resilient characteristics." Moreover, Bridgewood contends that prosecution history estoppel and the all-limitations rule bar Transclean from asserting infringement under the doctrine of equivalents for that claim limitation because claim 13, in which it appears, was added during prosecution, whereas the originally submitted claims did not contain that limitation, and because vitiation of the "exhibiting resilient characteristics" limitation would result. Transclean responds that claim 13 requires only that "said means exhibit[] resilient characteristics," not that the means itself be "resilient." Transclean also cites common dictionary definitions and expert testimony in support of its view that the term "resilient" does not require initial deformation. Moreover, Transclean contends that claim 13 itself was never narrowed during prosecution and that Bridgewood's prosecution history estoppel argument was not raised in the district court and has therefore been waived.

Because we affirm the judgment of infringement of claims 1-4 and 12, we need not review the court's ultimate conclusion regarding infringement of claim 13. Bridgewood has already been held to be an infringer, and infringement of another claim does not increase its liability. See Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1220, 36 USPQ2d 1225, 1231 (Fed. Cir. 1995). However, to put to rest any doubts regarding the proper construction of claim 13, because the patent has not been shown to be invalid and the issue has been fully ventilated by the parties, we will address that issue. We agree with Bridgewood that the court misconstrued the term "resilient." Dictionaries, both general and technical, define the adjective "resilient" or its noun form "resilience" as encompassing that which returns to its original shape following a deformation in shape. See, e.g., McGraw-Hill Dictionary of Scientific and Technical Terms 1693 (5th ed. 1994) (defining the term "resilience" as the "ability of a strained body, by virtue of high yield strength and low elastic modulus, to recover its size and form following deformation"); American Heritage Dictionary 1535 (3rd ed. 1992) (defining the term "resilient" as "returning to an original shape or position, as after having been compressed"). The dissent, as did the district court, focuses on the word "or" in the preceding definition to support its view that the term "resilient" encompasses the returning to a position alone, without any shape deformation. We do not think that the use of the word "or" in that definition can overcome the meaning attributed to the term "resilient" by the patent's disclosure of only a flexible diaphragm dividing a tank into two chambers. See '080 patent; fig. 3; col. 4, ll. 54-55 (depicting and describing "a flexible rubber-like diaphragm").

Furthermore, to the extent there is a difference between the common and technical meanings of the terms, the term "resilient" is used in the '080 patent in a technical context to describe a component of a mechanical apparatus, and a technical dictionary is therefore a better source to inform the meaning of the term to a skilled artisan in this case. Moreover, we do not share the dissent's view that the phrase "exhibiting resilient characteristics" describes a function in a means-plus-function limitation. On the contrary, the means-plus-function limitation further defined in claim 13 is the "means for equalizing the flow" previously set forth in claim 1. Id. at col. 8, ll. 20-23, ll. 55-61. According to the claim language, the only function performed by that "means" is "equalizing the flow." The phrase "exhibiting resilient characteristics" is not a second function performed by that "means"; rather, the phrase further defines characteristics of that "means." It is therefore, appropriate, indeed mandatory under 35 U.S.C. § 112, P 6, to look to the corresponding structure in the specification to ascertain the meaning of the phrase. As already noted, that corresponding structure, "a flexible rubber-like diaphragm," '080 patent, col. 4, ll. 54-55, is "resilient" in the sense that it tends to return to its original shape, not just its original position. We therefore conclude that the phrase "exhibiting resilient characteristics" in the '080 patent requires initial shape deformation. Because the jury's finding of infringement of claim 13 was premised on a construction of that phrase at odds with ours, we vacate the judgment of infringement of claim 13.
I agree with the majority's resolution of the validity, damages, and attorney fees issues as well as its determination that the district court did not abuse its discretion in precluding Bridgewood from asserting noninfringement of claims 1-4 and 12 as a sanction for various discovery abuses. Furthermore, I agree with the majority that the district court properly granted summary judgment to Bridgewood on Transclean's trademark infringement claim. However, in my view the majority's construction of the term "resilient" in claim 13 is unduly narrow and departs from the term's ordinary meaning. Therefore, I respectfully dissent from that portion of the majority's opinion vacating the district court's claim construction and the jury's finding of infringement as to that claim.

This case asks us to decide the meaning of the word "resilient." That word is not defined in the specification. Indeed, "resilient" appears in the patent exactly once—in claim 13:

The apparatus of claim 1 in which the means for equalizing the flow is comprised of means disposed intermediate the fluid receiver and source, said means exhibiting resilient characteristics for exerting a force, related to the pressure existing in the fluid circulation circuit of said transmission and said receiver, upon the fluid in said source.

U.S. Patent No. 5,318,080, col. 8, lines 55-61 (emphasis added). Because the patentee has not chosen to be his own lexicographer in this instance, "resilient" should carry its ordinary meaning in the art. Transclean asserts that "resilient" encompasses the ability to return to an original shape or position after being compressed, while Bridgewood argues that a resilient means must be capable of returning to an original shape and position after being compressed—in other words, that it must be inherently elastic.

To help us divine the meaning of "resilient," Transclean has provided dictionary definitions of "resilient" as well as expert testimony regarding what one of skill in the art would understand the term to mean. In contrast, Bridgewood proffers definitions of "resilience" from technical dictionaries. The district court properly rejected Bridgwood's definitions of "resilience" and adopted instead the ordinary meaning of the actual claim term, resilient. The majority, based on the supposed superiority of technical dictionaries over ordinary dictionaries, prefers Bridgwood's definition.

The district court gave the word "resilient" its ordinary dictionary meaning, possessing "the capability of returning to an original shape or position, as after having been compressed." Transclean Corp. v. Bridgewood Services, Inc., 77 F. Supp. 2d 1045, 1087 (D. Minn. 1999) (quoting American Heritage Dictionary 1535 (3d ed. 1992) (emphasis added)). In other words, the broad term "resilient characteristics" can include a variety of different properties such as the ability to return to an original position after being exposed to a force, or the ability to return to an original shape after having been deformed. This meaning is in accord with the definition found in other common dictionaries. See, e.g., Websters Third New International Dictionary (unabridged) 1932 (defining resilient as "returning freely to a previous position, shape or condition: as a: moving swiftly back...b: capable of withstanding shock without permanent deformation or rupture...c: SPRINGY...") (first emphasis added); Oxford English Dictionary 714 (2d Ed. 1989) (defining resilient as "1. Returning to the original position; springing back, recoiling, etc." and "2. Resuming the original shape or position after being bent, compressed, or stretched"); Random House Webster's Unabridged Dictionary 1638 (2d ed. 1993) (defining resilient as "1. springing back; rebounding" and "2. returning to the original form or position after being bent, compressed, or stretched") (emphasis added). This meaning is in accord with the expert testimony proffered by Transclean, which explained that the patent uses the term resilient to mean "returning to the, some earlier position...or shape."

To support its proposed definition, Bridgewood cites various technical dictionaries that, supposedly, define "'resilient' or 'resilience.'" A closer examination of these sources reveals, however, that the technical definitions provided by Bridgewood in fact relate the definition of "resilience" and not "resilient." And, unlike "resilient," "resilience" generally refers to the stored energy of a strained—and typically elastic—material. For example, Van Nostrand's Scientific Encyclopedia 2673 (8th ed. 1995) defines resilience as follows: "resilience of a body measures the extent to which energy may be stored in it by elastic deformation." The Dictionary of Mechanical Engineering 314 (4th ed. 1996) defines resilience as "the stored energy of a strained or elastic material, such as in a compressed spring or in rubber dampers, which have inherent damping properties." See also Chambers Dictionary of Science and Technology 980 (1999) (defining resilience as the "stored energy of a strained material, or the work done per unit volume of an elastic material by a bending moment, force, torque or shear force, in producing strain").

The majority chooses to rely upon Bridgewood's proffered definitions of "resilience" rather than the ordinary meaning of the actual claim term, "resilient," for two reasons. First, the majority finds that technical dictionaries are generally superior to
common dictionaries. While dicta in Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1267, 59 USPQ2d 1865, 1870 (Fed. Cir. 2001), states the view that technical dictionaries are preferred to common dictionaries, neither that case nor the case upon which it relied, Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 45 USPQ2d 1429 (Fed. Cir. 1998), involved a conflict between a common dictionary definition and that found in a scientific treatise—and neither does this case. The technical definitions are simply inapt because they define the wrong word—resilience instead of resilient. Indeed, the "common dictionaries" rejected by the majority are the only sources before the court that define both resilient and resilience, and notably, they define resilience in the same way as the supposedly superior technical dictionaries. For example, Webster's Third New International Dictionary 1932 (1993) defines resilience as follows:

1a: an act of springing back: REBOUND, RECOIL, ELASTICITY b: capability of a strained body to recover its size and shape after deformation, esp. when the strain is caused by compressive stresses--called also elastic resilience

2: the recoverable potential energy of an elastic solid body or structure due to its having been subjected to stress not exceeding the elastic limit.

(Second emphasis added.) While it may often be preferable to look to a technical dictionary or treatise to provide the technical definition of a term as understood by practitioners of a particular art, I think that preference must fade when the technical dictionary does not provide a definition of the precise term used in the claim language. Therefore, I would hold that the trial court properly adopted the common dictionary definition of "resilient" as proffered by Transclean.

The majority shores up its view of the correct meaning for "resilient" by holding that the phrase "exhibiting resilient characteristics for exerting a force" does not describe part of the function of the "means for equalizing the flow" limitation. I disagree with that holding, for it is clear to me that the "exhibiting resilient characteristics" phrase does define function. If I am correct on this point, then of course it is impermissible to define the function by reference to structure disclosed in the written description. Function must be defined by reference to ordinary principles of claim interpretation, before proceeding to determine corresponding structure. See Kemco Sales, Inc. v. Control Papers Co., 208 F.3d 1352, 1361, 54 USPQ2d 1308, 1313 (Fed. Cir. 2000). The majority does not disagree with me on this point: if the phrase in question defines function, then resort to the specification to find structure to define the function is simply wrong, and ordinary tools of claim interpretation apply.

Instead, the majority holds that the phrase in question is actually part of the means for equalizing the flow, and that resort to the specification is required to find the structure corresponding to the means limitation. Thus, from the specification the majority fetches the flexible rubber-like diaphragm, and thereupon concludes that "exhibiting resilient characteristics" must require initial shape deformation because that is the characteristic of the diaphragm.

The majority's rationale is self-destructive. If the diaphragm is indeed the structure that corresponds to the "means for equalizing the flow" limitation--as both parties and all the judges on the case agree--then the majority must come to grips with the stark fact that the jury found that the piston structure in Bridgewood's device is structurally equivalent, for § 112 f infringement purposes, to the diaphragm disclosed in Figure 3. Indeed, the case was submitted to the jury precisely to resolve disputed issues of fact on the structural equivalence of the accused piston and the diaphragm structure. No question has been raised that substantial evidence does not support the jury's verdict. Consequently, if, as the majority holds, "exhibiting resilient characteristics for exerting a force" must be understood as merely "further defining the structure of [the] means," ante at 16, there is no possible basis for disturbing the jury's verdict of infringement.

In short, the majority is wrong on any interpretation of the disputed phrase. If the phrase describes function, it must be interpreted by ordinary interpretative canons, as did the district court. If the phrase is to be interpreted as part of the means limitation, as the majority holds, then the jury verdict of infringement must stand. Either way, the jury verdict of infringement cannot properly be upset, and I respectfully dissent from the majority on this point.

3330

G. Resilient Member

The parties do not seem to disagree as to the meaning of the words "resilient member" in Claim 4. Even if they do disagree,
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

the issue is not a difficult one. Quite obviously, the term "resilient member" means a member that is resilient. The word "resilient" should be defined as capable of returning to its original shape when deformed. The controller holders disclosed in the patent are examples of resilient members.

It may be that Plaintiff seeks to have the foregoing definition of the term "resilient member" somehow eliminate the remaining limitation in the claim. Of course, that position -- if that is what Plaintiff is arguing -- is rejected. **Claim 4 is construed to require that the accessory of Claim 1 include a "resilient member" (that is, a member capable of returning to its original shape when deformed) that is "forceable to a position which allows said receiving means to receive a video game controller, upon release of pressure on said resilient member resiliently returning to lock the video game controller in place."**

3331

2. "Resilient Portion" (422 Patent, Claim 9)

"A resilient portion" is construed as "an elastic or springy portion of the hinged money clip."

3332

1. "Resilient Retaining Member" (422 Patent, Claim 1) 2

- - - - - - - - - - - - Footnotes - - - - - - - - - - - -

2 For each disputed term, the Court has identified the independent claim(s) in which such term is found.

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - -

"A resilient retaining member" is construed as "an elastic or springy holding and securing member." 3

- - - - - - - - - - - - Footnotes - - - - - - - - - - - -

3 The Court finds "resilient retaining member" is not subject to construction under 35 U.S.C. § 121 P 6.

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - -

3333

C. Resilient Seal/ Resilient Seal Elements

<table>
<thead>
<tr>
<th>ICU's Construction</th>
<th>RyMed's Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resilient Seal</td>
<td>Resilient Seal</td>
</tr>
<tr>
<td>A seal capable of returning to its original position after being bent, compressed or stretched</td>
<td>Wherein, upon compression, the structure changes shape and, upon removal of the compression, the structure returns to its original shape</td>
</tr>
</tbody>
</table>

Presilient Seal Element

<table>
<thead>
<tr>
<th>ICU's Construction</th>
<th>RyMed's Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resilient Seal Element</td>
<td>Resilient Seal Element</td>
</tr>
<tr>
<td>A sealing portion capable of returning to its original position after being bent, compressed, or stretched</td>
<td>A single sealing structure wherein, upon compression, the structure changes shape and, upon removal of the</td>
</tr>
</tbody>
</table>
1. What Does "Resilient" Mean?

ICU contends that their construction is closely tied to the language of the patent, and is consistent with the ordinary meaning of the term "resilient." (D.I. 118, at 15.) RyMed contends their construction is supported by the Common Specification, and asserts that ICU's construction improperly allows the seal to be considered "resilient" if, "outside of its use in the invention, it could be bent or stretched and return to its original form." (D.I. 116, at 24-25.)

In the Court's view, RyMed's proposed construction is more persuasive because it mirrors the language used in the Common Specification. In contrast, ICU's proposed construction adds terms, such as "bent" or "stretched," which do not appear anywhere in the intrinsic record of the patents-in-suit. Further, ICU proposes the construction of the Braun court, which relied on the dictionary meaning of "resilient." See Braun, 344 F. Supp. at 668. Currently, dictionary definitions are not favored as a source of ordinary meaning. See Phillips, 415 F.3d 1303, 1320-23 (discussing problems with approach of Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193 (Fed. Cir. 2002)). Rather, the ordinary meaning of claim terms is to be determined by reference to the context provided by the intrinsic record. Id. at 1313.

When read in the context of the intrinsic record, the Court concludes RyMed's construction is fully supported. The Common Specification states, "[u]pon removal of the syringe from spike. . . the seal 36 is free to return to its original shape," and "[t]he ability of the seal 36 to return to its original shape is determined by the resiliency of the material used to prepare the seal." ('866 Patent, col. 9:14-18.) Therefore, if a seal is made of resilient material, it is able to return to its original shape. The seal is free to return to its original shape when the syringe is removed, or in other words, when the source of compression is removed.

2. Does the Claim Language Indicate the Limitation of a "Single Sealing Structure"?

ICU contends that RyMed's proposed limitation of a "single sealing structure" is neither inherent in the claim language, nor supported by the intrinsic record. (D.I. 118, at 16.) ICU asserts that RyMed's emphasis on the article "a" in the claim language is ineffective, and that the Common Specification contemplates multi-component sealing structures. (D.I. 172, at 14.) RyMed contends there is no disclosure in the patents that two or more seals can be used to perform the specifically claimed functions, and accordingly, a single resilient seal must perform the functions. (D.I. 116, at 24.) Further, RyMed contends that this single sealing structure is disclosed as "the invention" in the preferred embodiment, and that the claims cannot have a broader scope than the embodiment. (Id. at 23.)

The Court concludes that ICU’s construction is more appropriate for two reasons. First, the claim language and Common Specification appear to contemplate multi-component sealing structures. In general, the indefinite article "a" or "an" in a patent claim means "one or more." Baldwin Graphic Sys., Inc. v. Siebert, 512 F.3d 1338, 1342-43 (Fed. Cir. 2008). "[T]his is particularly true when those words are used in combination with the open-ended antecedent 'comprising.'" TiVo, Inc. v. Echostar Commc'n Corp., 516 F.3d 1290, 1303 (Fed. Cir. 2008). When the articles "the" and "said" refer back to the same claim terms, the general non-singular meaning still applies. Baldwin, 512 F.3d at 1342. However "a" or "an" can mean "only one" when the context dictates a singular meaning. Id. at 1342-43. RyMed notes that neither the patent claims nor the Common Specification discloses more than one sealing structure. This reading is accurate, but RyMed fails to cite any context from the claims or Common Specification that supports deviating from the general meaning of the article "a." Additionally, the claim language "a resilient seal" is preceded by the open-ended term "comprising" in the '866, '862 and '592 Patent claims, thus providing further support to use the general meaning of the article "a."

Second, the contention that a "single sealing element" is the invention itself is not convincing. "Where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent." SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1341 (Fed. Cir. 2001). As discussed above, the Common Specification does not make clear that the invention does not include multi-component...
sealing structures, and accordingly, a multi-component sealing structure should not be deemed to be a feature outside the reach of the claims. Thus, the Court concludes that "resilient seal" means "wherein, upon compression, the structure changes shape and, upon removal of the compression, the structure returns to its original shape." The Court concludes that "resilient seal element" means "a sealing structure wherein, upon compression, the structure changes shape and, upon removal of the compression, the structure returns to its original shape."

At issue in plaintiff's '648 patent is the meaning of particular phrases in a number of claims, including 16, 17, 18, 22, 29, 31, 36 and 37. The first phrase for the court to construe is found in Claim 16, as well as dependent Claims 17, 18 and 22, and reads as follows: "resilient sealing means, carried by said housing overlying said channel, for sealing said first end…" While it is clear that this is a means-plus-function claim, with the function being sealing said first end, an interpretation of "resilient sealing means" is required.

Aided by the testimony of Sheehan and Vaillancourt, the court has concluded, based upon the language in this claim and the specification (the prosecution history sheds no light on this issue), that the resilient sealing means is the septum under enough radial compression to reseal the slit therein. Support for this conclusion is as follows: First, a means-plus-function claim can only be interpreted in light of the function. The claim states that the function of the resilient sealing means is to reseal the first end of the housing. The specification teaches that radially directed forces acting upon the septum are what cause the slit to reseal. For example, column 2, lines 27-30 read as follows: "The sealing member is subjected to radially directed forces by a tapered interior surface of the first end of the housing. These forces tend to reseal the opening in the sealing member." (See also Column 1, lines 50-62). The septum by itself would not reseal the slit, or, therefore, seal the first end. Thus, the resilient sealing means must be the septum under radial compression.

This is further illustrated by Vaillancourt's testimony. Vaillancourt interpreted the phrase "resilient sealing means" as referring to the septum only. However, in later testimony, when discussing Claim 18 (a dependent claim of Claim 16), Vaillancourt interpreted the phrase "cylindrically shaped resilient member" as referring to a round septum. Taking both of Vaillancourt's definitions, Claim 18, which reads "An injection site as in Claim 16 with said sealing means including a cylindrically shaped resilient member" would mean: An injection site as in Claim 16 with said septum including a round septum. Under this interpretation of the separate phrases, Claim 18 would not make sense.

However, in interpreting the resilient sealing means to mean a septum under radial compression, Claim 18 would make sense: An injection site as in Claim 16 with said septum under radial compression including a round septum."

Plaintiff uses the phrase "resilient sealing means" inconsistently throughout the '648 patent, and it is often not clear what is actually meant by "resilient sealing means." For example, Sheehan pointed to other claims in the patent, not in dispute in this litigation, which use this phrase in a similar vein to Claim 16. Claim 1 uses "resilient sealing means," and includes the language "said sealing means including a generally cylindrical sealing member positioned in said first end…" Again, interpreting the disputed phrase as comprising the septum only would render this sentence nonsensical.

On the other hand, Claim 29 uses the phrase in a way that indicates it refers to the septum by itself. Claim 29 details the position of the sealing means, stating "means for retaining said sealing means adjacent said lip including force-applying means for urging said resealable opening to a sealed condition…" If sealing means in this claim were to indicate a septum under radial resealing compression, the sentence mentioned above would be redundant, i.e., a means for retaining the septum which is under radial compression adjacent said lip including force-applying means for resealing the slit.

Therefore, the court has looked only to the specification and specific use of the phrase in Claim 16 and its dependent claims. For the reasons stated above, "resilient sealing means" in this claim is construed to mean the septum under radial resealing compression.

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Claims 3 and 4 refer to "resilient support members (which) support said deck member on said frame structure so as to permit at least a portion of said deck to move downwardly with respect to said frame in response to the impact force of the user's feet on said exercise surface thereby resulting in lower impact loads on the user's feet." Precor argues that this claim element is supported only by the treadmill embodiment 630 of figures 21-23. Precor argues in support of its proposed construction that the meaning of the disputed claim element "is unclear and it cannot be determined whether the claim language is supported in the specification" as required by 35 U.S.C. § 112, P 1. The Court declines to address compliance with 35 U.S.C. § 112, P 1 in the context of a Markman hearing. Life Fitness' Motion to Strike Precor's proposed construction of this disputed claim element is GRANTED.

Life Fitness in turn asks the Court to construe the phrase "resilient support members" as having its ordinary meaning. Specifically, the ordinary meaning proposed by Life Fitness is as follows: "a partly elastic and rubber-like substance that returns freely to its previous position, shape or condition, and where the elastic rubber-like portion has the characteristic of a variable change in load per unit deflection." Life Fitness' Opening Claim Construction Memorandum, p. 20.

The Court adopts Life Fitness' proposed construction, and finds that the intrinsic and extrinsic evidence is consistent with this construction. The specification of the '951 patent makes clear that the "resilient support members" at issue can be composed of a variety of materials and can appear in a variety of forms. '951 patent at col 9, line 52 - col. 10, line 3. Moreover, dictionaries and treatises available at the time of the filing date of the '951 patent provide definitions consistent with those proposed by Life Fitness. See Rodriguez Dec., Exs. S, T, U.

Regarding the resiliently biased spring means, claim 1 provides in pertinent part:

"first and second resiliently biased spring means carried on said coupling and disposed within said first and second pockets, respectively, and directed to urge an element wall against a wall of said coupling upon insertion of said element wall between said outer and inner walls ...."

The '243 patent, claim 1.

The use of the word "means" creates the presumption that § 112, P 6 applies once again. The language "directed to urge an element wall against a wall of said coupling upon insertion of said element wall between said outer and inner walls" recites the function of the spring means. The remainder of the claim does not describe a structure, but explains the relationship between the spring means and other claim elements. The language in claim 1 recites insufficient structure to rebut the presumption that § 112, P 6 applies. See Unidynamics, 157 F.3d at 1319.

The language of claim 1 requires that the spring means be "resiliently biased." The phrase "resiliently biased spring" indicates that a spring is being held in a stressed state, as distinct from a relaxed state. The claim also states that the spring is "directed to urge" the trough wall against the wall of the coupling, indicating that the spring is already under stress. ADC argues that the term should be construed as "a flexibly slanted spring." ADC's proposed interpretation renders the words "resiliently biased" meaningless and removes the qualification from the claim. The proper construction of "resiliently biased spring" is a spring that is under stress even before the trough wall is inserted into the coupler.

This construction is supported by the figures and specifications of the '243 patent. The specification describes springs "biased toward the internal walls" of the coupler. The '243 patent, at col. 3: 66. Upon insertion of the trough end into the coupling, the trough walls "force the springs away from" the internal walls. Id. at col. 4: 1-3. Figures 5-7 illustrate a leaf spring that is in contact with the opposite wall of the coupler prior to insertion of the trough wall. A sufficient amount of spring bias is required to provide adequate clamping strength to hold the trough wall.
a. "resiliently deformable sealing caps removably attached to said tubes"

"Resilient" is defined as "bouncing or springing back into shape, position, etc. after being stretched, bent, or, esp., compressed," Webster's New World Dictionary of the American Language 1210 (2d college ed. 1984), and "deformable" as "[capable of being acted on so as] to change the shape of by pressure or stress," id. at 371. Thus, centering on the language of the claim in the first instance, the ordinary meaning is a sealing cap that can be compressed by pressure or stress and still bounce or spring back into shape after the pressure is removed. Further, nothing in the specification demonstrates that the patentee acted as his or her own lexicographer so as to alter the ordinary meaning of the phrase. To the contrary, the specification's description of the "resiliently deformable sealing caps" is consistent with the phrase's ordinary meaning. See '610 Patent, col. 6, ll. 55-56, col. 34, ll. 47-63, col. 36, ll. 58-67.

Defendants' proposal to import precise numerical limitations from the preferred embodiments of the claimed invention is inappropriate. Reading numerical precision into imprecise claim terms is usually incorrect. See Modine Mfg. Co. v. U.S. Int'l Trade Comm'n, 75 F.3d 1545, 1551-54 (Fed. Cir. 1996)(importing precise numerical range from written specification into claim term "relatively small" only where patentee removed a greater range in successive patent applications and in the process explicitly informed the examiner that the smaller range represented the invention's peak range). Here, defendants' citations to the prosecution history demonstrate merely that the patentee distinguished prior art on the basis of the existence of resiliently deformable sealing caps in the claimed invention, see Defs. Markman Vol. 3 [Doc. # 645] Ex. 29 at 20, not on the basis of the precise deformable characteristics of the preferred embodiments. See Kopykake Enters., Inc. v. Lucks Co., 264 F.3d 1377, 1382 (Fed. Cir. 2001)(distinguishing prior art on the basis that it did not disclose "screen printing" demonstrated no disclaimer of claim scope with respect to any particular construction of the term "screen printing").

C. "A Resiliently Lined Yoke"

Claim 1 contains the claim term "a resiliently lined yoke." The yoke is a clamp that connects the leg support to the shoe platform. The Court construes the term "resiliently lined yoke" to mean "a yoke or clamp lined with a material that is capable of being elastically or reversibly deformed." The term requires a lining that is distinct from the yoke itself, but does not require that the lining and the yoke be of different materials.

1. The term "resiliency lined yoke"

The Court construes this term to mean:

A yoke or clamp lined with a material that is capable of being elastically or reversibly deformed. The lining must be distinct from the yoke or clamp itself, but need not be made of a different material.

This construction is essentially identical to the construction adopted in Forest Group, 2007 U.S. Dist. LEXIS 10487, at *10-11 ("The Court construes the term 'resiliency lined yoke' to mean 'a yoke or clamp lined with a material that is capable of being elastically or reversibly deformed.' The term requires a lining that is distinct from the yoke itself, but does not require that the lining and the yoke be of different materials.").

Based on the parties' briefs, it appeared to the Court that they agreed on the meaning of "resiliency." Def. Reply Br. at 10 ("There . . . is no real dispute as to the definition or meaning of 'resiliency.'"). At the Markman hearing, however, Warner asked the Court to distinguish between three types of resiliency -- resiliency with respect to stretching, bending, and compression -- and to construe the patent to cover only resiliency with respect to compression. The Court sees no reason to
limit the term "resiliency" in this way. The claim language is not so limited, and while compressible foam rubber is the only material identified specifically in the patent, '515 Pat. col. 3:16, that is not sufficient reason to construe "resiliency" narrowly.

The key dispute as to this term is over the word "lined." Forest argues that "resiliently lined" should be broadly construed to cover any yoke with an interior surface that is resilient when compared to the support member clamped within the yoke. The patent could have been drafted this way. It could have said, for instance, "a yoke that is resilient in comparison to the leg-support member." Instead, the patent describes the yoke as "resiliently lined," and nowhere in the patent is the word "lined" given the unusual meaning that Forest advocates.

In short, the patentee did not act as his own lexicographer by defining "lined" either explicitly or implicitly. See Phillips, 415 F.3d at 1316 (observing that if the specification "reveal[s] a special definition given to a claim term by the patentee . . . the inventor's lexicography governs"). The Court therefore interprets the word "lined" in light of its ordinary meaning, which is the only meaning supported by the patent's specification. In particular, the written description says that the yoke's inner surfaces "are lined with a resilient padding material 70, such as foam rubber." '515 Pat. col. 3:14-15. Moreover, Figure 4 identifies the yoke's lining as a material (item number 70 in Figure 4) separate from the body of the yoke itself.

The Court is conscious of its duty to avoid "one of the cardinal sins of patent law -- reading a limitation from the written description into the claims." SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1340 (Fed. Cir. 2001). Accordingly, the Court does not construe "resiliently lined" to mean "lined with foam rubber." But a "lining" is ordinarily distinct from the thing lined; one would hardly call the interior (or exterior) surface of a t-shirt its "lining." In adopting its construction of "resiliently lined," the Court believes that it has stayed on the correct side of the "fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification." Comark Communs. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998).

B. "resin coating"

Two aspects of this term are in dispute. The disputes require the Court to resolve the following issues: (1) whether claim 1, read in light of the specification and prosecution history, should be construed as requiring the coating to be any particular thickness and; (2) whether the resin coating must be a two-part mixture.

1. Coating Thickness

Defendants argue that this term should be construed to include a limitation requiring the thickness of the coating to be at least three times the maximum glitter particle dimension (the "3x thickness"). They acknowledge that no such limitation is included in the language of the claim. However, they contend that Nichols surrendered coatings less than the 3x thickness during prosecution and, therefore, Nichols should not now be allowed to reclaim those smaller thicknesses in order to pursue infringement claims.

Nichols presents three arguments in response. First, it argues that it is improper for the Court to read limitations from the specification and prosecution history into the claims. Second, it argues that the doctrine of claim differentiation creates a presumption against reading claim 1 so as to render it identical to claim 2. Third, it argues that the Defendants have taken the prosecution history out of context and that any thickness limitation derived from the prosecution history does not apply to claim 1.

Before addressing Nichols' arguments, the Court will first review the specification and the prosecution history. The purpose of the invention is to produce a fishing lure whose surface has a three-dimensional appearance, which is believed to make the lure more attractive to fish. ( '160 Patent, col. 2, lines 14-20.) As conceded in the patent, the application of glitter to fishing lures is not a new idea. ( '160 Patent, col. 1, lines 46-55.) Previous patents taught that glitter could be applied by dusting, sprinkling, or spraying the glitter onto the surface of a lure which had been covered with wet glue. ( '160 Patent, col. 1, lines 46-55.) According to the ‘160 patent, the problem with previously known methods of applying glitter is that the glitter particles all lay on the surface and were easily scratched off. ( '160 Patent, col. 1, lines 56-59.) Furthermore, most of
the glitter applied by this method lay flat on the surface thereby reflecting light only outwardly from the surface of the lure. ('160 Patent, col. 1, lines 59-64.)

The '160 patent purports an improvement over the prior art with its method for dispersing small glitter particles throughout a resin coating which is then applied to the lure. This method is claimed to be superior to the prior art for many reasons, but primarily because it creates the three-dimensional appearance that was lacking in previous lures.

The three-dimensional appearance is achieved by applying to the surface of the lure a resin coating that contains glitter particles which face--and thus reflect light--in many different directions. This feature is what distinguishes the '160 patent from the prior art. In other words, a lure with a coating applied in accordance with the '160 patent will not have its glitter particles facing--and thus reflecting light--primarily outward; instead, the glitter particles will face--and thus reflect light--"in a very large plurality of directions" thus imparting a three-dimensional appearance to the surface. ('160 Patent, col. 2, line 13.)

The specification further states, in the preferred embodiment, that the coating should be applied to a thickness that is at least three times the size of the glitter particles. ('160 Patent, col. 4, lines 44-46.) The specification explains why the coating must be three times the size of the glitter particles:

By the thickness of the coating being three times the maximum size of the glitter particles, the glitter particles can be oriented in all directions within the coating. Since the glitter particles are literally flat flakes, if the thickness is not three times the size of the glitter particles, the glitter particles will tend to lay flat. If the glitter particles lay flat, then the reflective effect would be two dimensional rather than three dimensional and, again, it would not give the appearance of live bait. ('160 Patent, col. 4, lines 46-54.)

What is clear from this language is that the 3x thickness is not merely an optional feature of the preferred embodiment, but a requirement crucial to achieving the object of the invention--a three-dimensional appearance. Therefore, in order to be consistent with the specification and the preferred embodiment, the term "resin coating" must be construed to mean that the coating thickness has to be at least three times the maximum glitter particle dimension. As the specification states, if the thickness is less than the 3x thickness, then the primary innovation of the invention will not be achieved.

That this construction is the correct one is also clear from the prosecution history. The language of claims 1-4 as presented in Nichols' original application is identical in all relevant aspects to the language in the final patent, including dependent claims 2 and 4 which specify that the coating thickness must be at least three times the glitter size. However, claims 1-4 were initially rejected in their entirety by the patent examiner who determined that any innovation as to coating thickness and glitter particle size was obvious from the prior art. (Examiner's Action, Jan. 17, 1992, at Strike King's Br. filed July 17, 2000 App. p. 60.) In response to the patent examiner's objection, Nichols inserted into the specification the passage quoted above to explain why the 3x thickness is not merely an obvious design choice, but is instead a patentable improvement upon the prior art:

With the [above] amendment to the specification...the particular problem being solved and the stated purpose is now clearly spelled out in the specification. If the metallic flakes are too large, they will migrate to one end of the lure body upon rotation of the lure body. Further, the thickness of the coating must be approximately three times the size of the reflective particles or otherwise the particles, which are basically flat flakes of material will have a tendency to lay flat. If the reflective particles lay flat, they do not have the three dimensional effect and will not appear as live bait.

(First Amendment, Mar. 23, 1992, at Strike King's Br. filed July 17, 2000 App. p. 68.)

Nichols points out that this response to the patent examiner's objection addresses two elements: glitter particle size and coating thickness. It argues that the glitter particle size discussion is directed at the allowance of claim 1 and the thickness discussion is directed at allowance of claim 2; therefore, the 3x thickness is applicable only to claim 2 and should not be construed as a limitation on claim 1.

The Court finds this an unconvincing attempt to parse the language of the amendment. Nichols' characterization of the prosecution history avoids the very construction that was offered in order to overcome the examiner's objections. The word "further" linking the two elements is used in the conjunctive sense and not, as Nichols suggests, in the disjunctive sense.
Thus, the language of the amendment makes clear that the 3x thickness, in combination with glitter size, is necessary to achieve a three-dimensional appearance. This point is emphasized again later in the amendment:

"Because the proposed small size of the glitter particles] solves a particular problem that exists in present lures that do not reflect and disperse light in all directions, it is submitted that claims 1-6 now patently distinguish over [the prior art]. Further, none of the [prior art] references suggest the thickness of the coating would be three times the maximum dimension of the glitter particles. Again, a thickness of three times is necessary so that the glitter particles will be oriented in all directions to give a three-dimensional effect. (First Amendment, Mar. 23, 1992, at Strike King's Br. filed July 17, 2000 App. p. 69.)"

The Court concludes that the specification and prosecution history indicate that Nichols relinquished coverage of thicknesses less than the 3x thickness in response to the patent examiner's objections. The patent cannot now be construed to recapture this subject matter.

Nichols argues that imposing the 3x thickness limitation improperly reads limitations from the specifications and prosecution into the claim. This argument conflicts with established case law and the basic principles of claim construction which indicate that the specification is "always highly relevant" and that the court must reject interpretations that were disclaimed during prosecution. See, e.g., Vitronics, 90 F.3d at 1582-83; Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995). The cases cited by Nichols do not support its position. None of them stand for the proposition, as Nichols' argument implies, that the Court should ignore the clear meaning of the specification. Indeed, they all indicate that proper analysis of a disputed term includes a review of the specification. For example, in both Burke, Inc. v. Bruno Indep. Living Aids, Inc. and Johnson Worldwide Associates, Inc. v. Zebo Corp., the court did not limit the claim language because it determined, after thorough review of the specification, that the specification did not support a limited construction. See Burke, Inc. v. Bruno Indep. Living Aids, Inc., 183 F.3d 1334, 1340-41 (Fed. Cir. 1999); Johnson Worldwide Associates, Inc. v. Zebo Corp., 175 F.3d 985, 990-91 (Fed. Cir. 1999). In this case, the Court is not reading an extraneous limitation from the specification into the language of the claim; to the contrary, the Court is construing claim 1 consistently with the essential purpose of the invention and with what the patentee has unambiguously represented to the public is the proper scope of the patent.

Finally, Nichols argues that under the doctrine of claim differentiation, it is improper to read into a broader claim limitations that are present in a narrower claim. In this case, dependent claim 2 expressly includes the 3x thickness limitation, and as such, is narrower than claim 1. Thus, Nichols argues, the doctrine of claim differentiation prevents the Court from reading the same limitation into claim 1.

However, "the doctrine of claim differentiation cannot broaden claims beyond their correct scope, determined in light of the specification and the prosecution history." Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1480 (Fed. Cir. 1998). Accepting Nichols' argument would require the Court to ignore the unambiguous implication of the specification and prosecution history: that coating thicknesses less than the 3x thickness are not covered by the patent. Nothing in the cases cited by Nichols supporting the doctrine of claim differentiation permits any other conclusion. In Modine Mfg. Co. v. United States Int'l Trade Comm'n, cited by Nichols, the court in fact read into a broader claim a numerical limitation from a narrower claim, the doctrine of claim differentiation notwithstanding, because any other construction would have been inconsistent with the specification and prosecution history. See Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551-54 (Fed. Cir. 1996). And in D.M.I., Inc. v. Deere & Co., the court, while acknowledging the importance of claim differentiation nevertheless confirmed that a patentee may not recapture ground relinquished during prosecution. See D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1574 (Fed. Cir. 1985).

In sum, the term "resin coating" is construed to mean that the coating thickness must be at least three times the maximum glitter particle dimension.

2. Two-Part Mixture

Defendants argue that "resin coating" should include the additional limitation that the resin consists of a "two-part mixture." In support of their argument, Defendants point to several places in the specification where the resin coating is described as a two-part mixture of a liquid resin and a hardener. Plaintiffs do not address this argument except to summarily state that the limitation is not permissible because it is not present in the claim language.
The Court concludes that the resin coating claimed by the patent must be a two-part mixture. The Abstract, which is a succinct description introducing the invention, states that the glitter particles are inserted in a liquid mixture of 1) a resin and 2) a hardener. The Summary of the Invention also indicates that the resin coating is "produced by mixing a liquid resin with a hardener." ('160 Patent, col. 2, line 33.) Furthermore, the mixture apparently serves a distinct purpose important to achieving the object of the invention: the combination of the two ingredients initially produces a highly viscous liquid which facilitates the uniform distribution of the glitter particles. ('160 Patent, col. 2, lines 50-53.) After the resin coating containing the glitter particles is applied to the surface of the lure, by brushing or dipping, it eventually hardens into a solid. ('160 Patent, col. 2, lines 53-61.) The lure must be rotated during the drying period so that the glitter particles maintain their even distribution and do not migrate to one side of the lure under the force of gravity. ('160 Patent, col. 2, lines 61-65.)

The preferred embodiment describes how the coating is produced:

To produce such coating, a liquid epoxy resin and a hardener for such resin are mixed to produce a chemical reaction resulting in converting the liquid mixture into a solid by passing through a highly viscous liquid stage. ('160 Patent, col. 4, lines 5-10.)

The preferred embodiment goes so far as to suggest specific commercially-available liquid resins and hardeners.

The Court recognizes that a patent is not necessarily limited to the preferred embodiment. However, "whether an invention is fairly claimed more broadly than the 'preferred embodiment' in the specification is a question specific to the content of the specification [and] the context in which the embodiment is described." Wang Laboratories, Inc. v. America Online, Inc., 197 F.3d 1377, 1383 (Fed. Cir. 1999). In this case, the preferred embodiment describes the invention itself, at least with respect to the composition of the coating. Accordingly, Nichols is not entitled to a broader interpretation than is described in the preferred embodiment. The Court concludes that the term "resin coating" is properly interpreted as meaning a two-part mixture.

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2. resistance assembly

Free Motion broadly defines the "resistance assembly" as "a set of parts put together to make a completed product that tends to oppose or retard motion." (Pl. Reply I at 14.) Cybex, on the other hand, narrowly defines the resistance assembly as just the weight stack and nothing else, that when assembled is capable of providing selected degrees of beneficial resistance. (Cybex Brief at xiii.) Nautilus argues that the "resistance assembly" is properly defined in specification as "a support frame 34 with vertical support members 36 aligned to support the stack of weight plates 32." (Nautilus Reply at 6 (quoting '061 Patent, col. 3, lines 31-33; and citing Bell Atlantic Network Services, Inc., v. Covad Communications Group, Inc., 262 F.3d 1258, 1269-70 (Fed. Cir. 2001) (specification properly consulted when ordinary meaning is too broad to determine scope of claim)).) 2

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2 Nautilus argues that "resistance assembly" cannot be properly construed in light of subsequent dependent claims 6 and 7, but that if claims 6 and 7 are ignored, then alternatively, the specification definition is how the term should be defined. See (Transcript of Hearing, dated November 19, 2003, at 32, lines 17-24.)
a stack of weight plates;

one or more upright supports that align the weight plates for vertical movement;

a system of cables and pulleys, wherein engagement of the first end and/or second end of the cable, which links the first and second extension arms to the weight stack, by a user results in vertical movement of the weight plates.

('061 Patent, col. 8, lines 38-49.) Free Motion argues that under the doctrine of claim differentiation, each claim in a patent is presumptively different in scope and because Claim 6 is a dependent claim, that Claim 6 is narrower than Claim 1. (Pl. Reply II, at 4 (citing RF Delaware, Inc. v. Pac. Keystone Techs., Inc., 326 F.3d 1255, 1263 (Fed. Cir. 2003); and Slater Elec., Inc. v. Thyssen-Bornemisza, Inc. 650 F. Supp. 444, 456 (S.D.N.Y. 1986)).) The Court agrees that it is settled rule of law that narrower, dependent claims cannot be read into broader, independent claims so as to limit the scope of the latter. See DMI Inc. v. Deere & Co. 755 F.2d 1570, 1574 (Fed. Cir. 1985).

Therefore, to avoid using dependent claims to define independent Claim One, the court properly consults the specification in the brief description of the preferred embodiment of the '061 Patent to define the resistance assembly as the assembly of parts that make up the weight stack:

[A] support frame 34 with vertical support members 36 aligned to support the stack of weight plates 32.

('061 Patent, col. 3, lines 25-31.)

--- Footnotes ---

3 Referring to Figure 2 of the '061 Patent.

--- End Footnotes ---

The Court further notes that during argument, Free Motion appeared to agree with consulting the specification: "They (Nautilus) say the resistance assembly is properly construed as the weight stack meaning weight stack 124 or weight stack 12 defined in the specification as support frame 34 with vertical support members 36 aligned to support the weight stack plates, so it looks like we've basically come into agreement with respect to resistance assembly interpretation." (Transcript of Hearing, dated November 19, 2003, at 9, lines 1-6.)

8. "said protective barrier device is resistant to ultra violet, biological, and chemical degradation"

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Plaintiff's Proposed Construction</th>
<th>Defendants' Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>said protective barrier device is resistant to ultra violet, biological, and chemical degradation</td>
<td>No construction necessary -- ordinary meaning.</td>
<td>The protective barrier device comprises at least a modicum of resistance to ultraviolet, biological, and chemical degradation.</td>
</tr>
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In support of their proposed construction, Defendants stated in their rebuttal statement and again at the hearing that the term "resistant" is unclear and requires definition as to the degree or amount of resistance. In this Court's view, to insert the phrase "at least a modicum of resistance" would be contrary to the way the instant claim term is used in the patent and inconsistent with the manner in which a person of ordinary skill in the art would understand the term. Indeed, nothing in the claims themselves or in the specification supports Defendants' proffered construction. The claim very plainly states that the
protective barrier device "is resistant to ultra violet, biological, and chemical degradation." The specification explains that "the material of the fabric preferably would be resistant to the ultra violet radiation, and to biological, and chemical degradation such as are ordinarily found outdoors" and that "[t]his invention contemplates either coating the material or utilizing material with inherent resistance to withstand these elements." Id. col. 3, Ins. 56-61. The specification goes on to set forth specific types of materials "found to be acceptable" and "sufficiently resistant." Patent '852, col. 3, Ins. 61 - col. 4, In. 3.

Were this Court to adopt Defendants' proposal, it would be impermissibly rewriting the claim by adding a term that extends beyond the words of the claims and the specification. This Court's role is to interpret, not to rewrite or redraft, the claim. Chef America, 358 F.3d at 1374. This Court concludes that a person of ordinary skill in the art would understand "said protective barrier device is resistant to ultra violet, biological, and chemical degradation." The words themselves are clear and any additional construction by the Court is unnecessary and unsupported by intrinsic evidence.

### 3343

(4) "operating in said washing tub to cause a resonance phenomena in said multi-phase washing medium"

The parties also dispute the term "operating in said washing tub to cause a resonance phenomena in said multi-phase washing medium." LG proposes construing the term to mean "operating [the vibrating disc] to cause a resonance phenomena [i.e., an increase in amplitude of oscillation due to low frequency vibration of the vibrating disc] in a multi-phase washing medium." (Chart at 16.) Whirlpool proposes instead that the term be construed to mean "vibrating a disc at a characteristic frequency to cause an observable wave pattern in the multiphase washing medium." (Id.) The Court notes, as an initial matter, that the parties agree that the term "operating" refers to the vibrating disc.

The summary of the patent states that "a low frequency vibration type washing machine in accordance with an embodiment of the present invention comprises . . . a vibrating disc placed in the washing tub for causing resonance phenomena in the multi-phase washing medium . . . ." (886 Patent, col. 2, ll. 1-6.) The background of the patent states that "[i]n order to wash clothes in a conventional automatic washing machine using low frequency vibration, a low frequency vibrating disc placed in a washing tub generates a specified low frequency vibration which causes resonance phenomena in a multi-phase washing medium in the washing tub." (Id., col. 1, ll. 16-21.) "The level of low frequency is specified in accordance with the shape of the washing tub, the shape of the vibrating disc and the mixing ratio of the multi-phase washing medium." (Id., col. 1, ll. 23-25.)

Whirlpool argues that the prosecution history supports its construction of the term "resonance phenomena" to mean "characteristic frequency" that causes "an observable wave pattern." (Def.'s Br. at 32-33.) According to Whirlpool, "the Examiner found that the German patent anticipated claim 1," and that "[t]he German patent discloses an 'oscillating element . . . which strongly vibrates the washing liquid' resulting in 'standing waves in the washing liquid.'" (Id. at 34.) LG, meanwhile, fails to identify any intrinsic evidence supporting its proposed construction of the term "resonance phenomena." The Court will therefore construe the term "operating in said washing tub to cause a resonance phenomena in said multi-phase washing medium" to mean "operating the vibrating disc at a characteristic frequency to cause an observable wave pattern in the multi-phase washing medium."

### 3344

1. '776 Patent

In the '776 patent, the last element of each of claims 1, 3, and 24 is construed to be a step or means that energizes, or turns on, a compressor in response to an increase capacity signal and deenergizes, or turns off, a compressor in response to a decrease capacity signal. The claims do not allow for energizing a compressor in response to a decrease capacity signal or deenergizing a compressor in response to an increase capacity signal.

The word "respective" in the context of the claim means "in the order given." The order given in the claim is to energize and
deenergize in response to increase capacity signals and decrease capacity signals. "Respective" links the energizing steps to the increase capacity signals and links the deenergizing steps to the decrease capacity signals. The Court adopts Dr. Rhyne's testimony that a person of ordinary skill in the art would give this interpretation to the word "respective."

In the specification, where "respective" is used many times, it also means "in the order given." See, e.g., Column 4, line 66 through Column 5, line 4. The prosecution history further supports this interpretation. See JX-776, Response, Bates Nos. 144-45, example showing that a compressor was energized only in response to an increase capacity signal and that a compressor was deenergized only in response to a decrease capacity signal.

The language in claim 1 is exemplary and states that the last step comprises "selectively energizing and deenergizing compressors in response to respective increase capacity signals and the decrease capacity signals." To understand why "compressors" and "signals" are plural, the Court examined other portions of the claims, the specification, and the prosecution history. The next to last element in each of claims 1, 3, and 24 indicates that a single increase capacity signal is generated when more compressor capacity is needed and that a single decrease capacity signal is generated when lesser compressor capacity is needed. The use of the plural "signals" in the last element of claims 1, 3, and 24 reflects a history of operation, i.e., a result of controller operation over a time interval. The Court accepts and adopts Dr. Rhyne's testimony that a person of ordinary skill at the relevant time would have so understood and interpreted the use of plural "signals" and "compressors" in the claims. Because there is no indication from other portions of claims 1, 3, and 24 whether the use of the plural in "compressors" is also a result of the same time interval or history of operation, the Court looked to the specification and discovered that the specification and disclosure indicate that a single compressor is turned on in response to an increase capacity signal and a single compressor is turned off in response to a decrease capacity signal. See, e.g., Column 4, line 66 to Column 5, line 4 states that "one of the multiple compressors" is energized in response to an increase capacity signal. The prosecution history at pp. 28-29, JX-776, Response, Bates Nos. 144-45, reflects that only one compressor is turned on in response to an increase capacity signal and one compressor is turned off in response to a decrease capacity signal. On page 30 of the same Response, JX-776, Bates No. 146, the applicant argued,

It is the independent control of each compressor of the present invention without regard to the energized or deenergized state of the other compressors in the system which makes the number of combinations of compressors available greater than the number of available compressors.

Thus the last element of claims 1, 3, and 24 of the '776 patent recites a step or means for energizing a single compressor in response to an increase capacity signal and deenergizing a single compressor in response to a decrease capacity signal.

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23 The specific languages is

providing an increase capacity signal when said operating suction pressure exceeds said upper limit and a decrease capacity signal when said operation suction pressure is below said lower limit.

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Furthermore, this last element of claims 1, 3, and 24 of the '776 patent is construed to be a step or means for energizing or deenergizing a single compressor at a time and in such a manner that compressors are turned on and off in sequence until the appropriate compressor combination to meet the load demand is eventually achieved. Thus this last element of claims 1, 3, and 24 is not so broad as to cover the situation where a specific capacity signal is generated, the controller analyzes the signal, and in response turns on the specific combination of compressors that matches the load demand without cycling through a sequence of compressors.

The claim further needs interpretation in light of the collective limitations of the words and phrases, "selectively," "in respective response," and "to provide a greater combination of compressors." In combination with other limitations of "respectively" and "to provide a combination of compressors . . .," "selectively" means energizing or deenergizing compressors according to some particular logic or criteria. Thus the claim element takes on the construction indicated supra. Support is found in the specification, Column 7, 11. 45-51, DX-119:
As described above, it will be evidence that controller circuit 10 will "cut-in" or "cut-out" the next compressor or compressor stage as above described until the combination of stages has an operating capacity closest to matching the system load, i.e., causing the system suction pressure to return to the previously established . . . range as hereinabove described and shown in FIG. 4 [emphasis added].

Similarly, the prosecution history also supports this construction. On page 30, Response, JX-776, Bates Nos. 146), the applicant was commenting upon the example provided on the prior pages which compared the operation of "the invention" to the prior art (in which the example clearly cycled through compressors until the correct capacity match was made) and explained

Successive reiterations of the FIFO strategy enables [sic] the present invention to more efficiently match the system load with the expanded set of compressor combinations available than previous systems, such as in Golber, having only a limited number of combinations available [emphasis added].

The Court accepts and adopts Dr. Rhyne's testimony that a person of ordinary skill in the art at the time would have understood and interpreted the use of "selectively" and "respective" in the claims in the '776 patent as limited with respect to choosing the optimal combination without the cycling through individual compressors until the proper combination for the needed capacity was achieved.

Aspex argues that "magnetic members respectively secured in the free ends of said arms" means "each magnetic member is connected directly or indirectly within the unattached end of an auxiliary frame arm, in a manner such that the connection is not likely to fail or give way." Ps. Br. 17. E'Lite construes this limitation to mean "magnets horizontally secured in the respective end portions of the arms." D. Br. 23.

The court's discussion of the previous claim limitations is adequate to resolve the construction of this limitation. First, for the reasons already explained, see supra at § III (D)(1), the court refrains from construing "magnetic member." For the reasons stated supra at § IV(C), the court adopts Aspex's definition of "secure," with the exception of the phrase "directly or indirectly." Also, based on the rationale of the previous section, the court construes "free end" to mean "end portion."

Last, the parties disagree over whether this disputed limitation limits the orientation of the magnetic members. As with claim 18, E'Lite contends that claim 23 requires the magnetic members to possess horizontal orientation when they are engaged. Aspex argues that limiting the magnetic members' orientation in claim 23 is improper. The parties rely on their arguments proffered with respect to the disputed limitation "first magnetic member secure thereto" of claim 18. While the court could resolve this construction dispute on the basis of its reasoning in § III(D)(4), it need not do so. In § III(D)(4) the court construes the magnetic members of claim 18 to have horizontal orientation, even though the claim language does not support this construction. The court relies on intrinsic evidence to overcome the presumption created by the doctrine of claim differentiation. Regarding claim 23, however, the doctrine of claim differentiation is inapposite. The last phrase of claim 23 states: "so that said pair of magnetic members can vertically engage corresponding magnetic members on a primary spectacle frame." D. App. 10. As discussed above, a requirement that the magnetic members engage vertically (along a vertical axis) means that the magnetic members are horizontally oriented (i.e., their surfaces form a horizontal plane when engaged). Thus in construing this limitation of claim 23 as limiting the orientation of the magnetic members to a horizontal plane, the court need not refer to other intrinsic evidence, because the language of claim 23 itself calls for this construction.

The court construes "magnetic members respectively secured in the free ends of said arms" to mean "horizontally oriented magnetic members connected in the respective end portions of the auxiliary arms, in a manner such that the connection is not likely to fail or give way." 18

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18 For the reasons set forth supra at note 12, the court does not adopt E'Lite's proposed language of "horizontally secured" but instead employs the phrase "horizontally oriented."
In five independent claims in the '346 patent (Claims 1, 2, 6, 11 and 13), the key phrase that the parties' dispute is the scope of the term "responsive to exhaust pressure." 3 The Court starts its analysis with a review of dictionary definitions publicly available at the time the patent was issued. Intellectual Property Development, Inc. v. UA-Columbia Cablevision of Westchester, Inc., 336 F.3d 1308, 1315 (Fed.Cir. 2003); Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 2003 WL 21920278, *5-*6 (Fed. Cir. 2003); E-Pass Techs., Inc. v. 3COM Corp., 343 F.3d 1364, 2003 WL 21976381, *3 (Fed.Cir. 2003). The dictionary definition of "responsive" gives no indication that something that is responsive to exhaust pressure must be exclusively responsive to exhaust pressure. Rather, "responsive" is defined as "giving response," "answering," "quick to respond or react appropriately" and "sensitive." See Merriam-Webster's Collegiate Dictionary 998 (10th ed. 1996). "Response" is defined as "the activity or inhibition of previous activity of an organism or any of its parts resulting from stimulation" or "the output of a transducer or detecting device resulting from a given input." Id.

3 The phrase is used in different forms in the five independent claims: "responsive to the absence of said exhaust pressure" (Claims 1 and 13); "in response to said exhaust pressure" (Claims 2 and 11); and "responsive to said predetermined exhaust pressure" (Claim 6). See '346 patent at col. 6-8.

Defendants argue that the '346 patent was initially rejected by the PTO. They point out that the patent was subsequently approved only after the phrases "responsive to exhaust pressure" and its variants were added to the claims. As a result, Defendants contend that the claims of the '346 patent must read to include "only" as a limitation to "responsive to exhaust pressure." See Exhibit D to Defendant's Brief at pages ATT014813-14. Defendants also argue that the Peters patent (the prior art which Plaintiff had to overcome to obtain the '346 patent) used intake pressure to shut down the braking mechanism. Therefore, Defendants argue that Plaintiff has disclaimed the use of intake pressure to initiate the braking mechanism. The '346 patent, in Defendants' view, must be limited to braking mechanisms that are "only responsive to exhaust pressure." Plaintiff disagrees with this interpretation, and urges the Court to reject adding the limitation "only" before the relevant "responsive to exhaust pressure" phrases used in its patent.

The Federal Circuit Court of Appeals has recently explained the standard to be applied to Defendant's prosecution disclaimer argument. In Omega Engineering, Inc. v. Raytek Corp., 334 F.3d 1314, 1325 (Fed.Cir. 2003), the Court stated: "we have required the alleged disavowing statements to be both so clear as to show reasonable clarity and deliberateness… and so unmistakable as to be unambiguous evidence of disclaimer." The Federal Circuit reversed the district court in Omega Engineering for including a "novel negative limitation" in its claim construction. The patent at issue in that case involved laser beams used to measure infrared temperature. The patent referred to beams which Plaintiff had to overcome to obtain the '346 patent) used intake pressure to shut down the braking mechanism. Therefore, Defendants argue that Plaintiff has disclaimed the use of intake pressure to initiate the braking mechanism. The '346 patent, in Defendants' view, must be limited to braking mechanisms that are "only responsive to exhaust pressure." Plaintiff disagrees with this interpretation, and urges the Court to reject adding the limitation "only" before the relevant "responsive to exhaust pressure" phrases used in its patent.

The Federal Circuit Court of Appeals has recently explained the standard to be applied to Defendant's prosecution disclaimer argument. In Omega Engineering, Inc. v. Raytek Corp., 334 F.3d 1314, 1325 (Fed.Cir. 2003), the Court stated: "we have required the alleged disavowing statements to be both so clear as to show reasonable clarity and deliberateness… and so unmistakable as to be unambiguous evidence of disclaimer." The Federal Circuit reversed the district court in Omega Engineering for including a "novel negative limitation" in its claim construction. The patent at issue in that case involved laser beams used to measure infrared temperature. The patent referred to beams which Plaintiff had to overcome to obtain the '346 patent) used intake pressure to shut down the braking mechanism. Therefore, Defendants argue that Plaintiff has disclaimed the use of intake pressure to initiate the braking mechanism. The '346 patent, in Defendants' view, must be limited to braking mechanisms that are "only responsive to exhaust pressure." Plaintiff disagrees with this interpretation, and urges the Court to reject adding the limitation "only" before the relevant "responsive to exhaust pressure" phrases used in its patent.

The Court concludes that the plain words of the patent control. A device that has a braking mechanism responsive to exhaust pressure falls within the '346 patent, whether or not such braking mechanism is responsive to something else at the same
As mentioned above, the parties also dispute the construction of two other phrases used in element (c) of Claim 1. First, Defendants argue that the phrase "responsive to the motion of said mass" is limited by the corresponding structure for initiating the OPA. Under Defendants' view, the only corresponding structure for initiating an OPA is a bi-state mechanical switch. As such, they assert that the phrase "responsive to the motion of said mass" means "that the means for initiating operates in direct response to the movement of the mass to the position required for initiation." (Joint Mem. at 1.) As discussed above, the court is not persuaded that the claim construction of the means for initiating the OPA is limited to a bi-state mechanical switch. Therefore, Defendants' proposed construction of "initiating in direct response to the movement of the mass" is not required. Using such language would contradict the ordinary meaning of the claimed language by limiting the means for initiation to only those means of initiation that respond "in direct response" to the movement of the mass. The court finds no reason for such a limitation on the language. The ordinary meaning of "responsive" is not equivalent to "in direct response."

Second, Defendants' proposed construction of the phrase "in excess of a predetermined threshold value" stems from its argument that Claim 1 is limited to bi-state electro-mechanical sensors only. (Defs.' Br. at 18.) Defendants' proposed construction would limit the phrase to mean "a predetermined amount of acceleration [that] is needed to overcome biasing force applied to the mass." (Joint Mem. at 1.) This narrow construction is not required. The ordinary meaning, as understood by a person having ordinary skill in the art, of the phrase "in excess of a predetermined threshold value" is not limited as Defendants suggest.

The second term in dispute is "rest position." The '079 Patent teaches that the proper configuration in which to determine whether the distal ends are substantially parallel to the longitudinal axis of the catheter is "in at least one rest position of the catheter." (Col. 3, lines 19-20.) Defendants argue that the term "rest position" should be construed as "a position where the catheter is motionless." (Def. Mem. at 18) Defendants go on, however, to argue that this elusive "rest position" can "only occur when the catheter is outside of the patient's body," and is limited to the time period prior to insertion because after it is removed, "the catheter has no medical significance and it is discarded." (Def. Mem. at 18, 21.) Plaintiffs argue that the proper construction of "rest position" is "a position assumed by the catheter when it is not being used to circulate fluids." (Pl. Mem. at 18.) Both proposed constructions are flawed.

The plain meaning of "rest," as defined in the dictionary, is the "freedom from, cessation of, or absence of labour, exertion, or activity … Absence, loss, or cessation of motion." Shorter Oxford English Dictionary 2552 (5th ed. 2002); accord The American Heritage Dictionary 1486 (4th ed. 2000) (defining "rest" as the "cessation of work, exertion, or activity …. Termination or absence of motion"). Again, upon a cursory review defendants' proposed construction -- absent the proposed requirement that the catheter be outside a patient's body prior to insertion -- more closely tracks the plain meaning of the term "rest."

Once again, plaintiffs' proposed construction improperly attempts to import limitations from the specification into the claim. See Ecolab, 264 F.3d at 1367; Transmatic, 53 F.3d at 1277-78. Plaintiffs' argument that the catheter is in a rest position at all times other than when it is "being used to circulate fluids" attempts to import from the specification the explanation that the "invention … [is] used for the circulation of at least one fluid between a cavity of a patient's body and a means for circulating this fluid such as a fluid perfusing and/or extracting means." (Col. 1, lines 7-10.) This and similar language found elsewhere in the specification is not found in the claim with respect to the "rest position" of the catheter. In fact, the claim speaks about the catheter's proximal end being "adapted to be connected to a means (9) for circulating fluid" (Col. 3,
However, it is proper to impose the limitation that rest position must be determined prior to the time the device is removed from the body (not represented)" (emphasis added).

For example, at Col. 1, lines 19-20, it states that the catheter is "intended to be placed in a cavity of a patient's body outside the body, prior to insertion." (Tr. at 47.) The Court has no evidence to dispute this contention, and therefore there is no reason to impose an additional limitation on "rest position" at this time.

Further, even when read in light of the specification, plaintiffs' proposed construction is improper. The specification of the '079 Patent teaches that the distal ends of the catheter move "like a sail parallel to the wind" when "placed on the axis of fluid flow" (Col. 2, line 48), and that the "agitation and flexion of these end portions considerably reduces the risk of clogging substances being deposited on the surfaces of the perfusing and/or extracting channels with which these end portions are equipped." (Col. 2, lines 52-55.) Plaintiffs admit that this "agitation and flexion" is the "essential function that makes [the catheter] inventive, that's important about it and solves the problems of the prior art … it is the essence of the invention" (Tr. at 34), and it is this constant "agitation and flexion" when placed on the axis of fluid flow that is antithetical to the plain meaning of the word "rest" as the absence of motion or labor.

Plaintiffs argue that the "agitation and flexion" of the distal ends caused by fluid flow is simply "passive" movement, and therefore not labor or work. (Pl. Mem. at 3-4.) Since the plain meaning of "rest" encompasses both the absence of motion and the absence of work, plaintiffs argue, their proposed construction is not contrary to the plain meaning of "rest." See Texas Digital, 308 F.3d at 1203 ("If more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all such consistent meanings."); see also Brookhill-Wilk, 2003 U.S. App. LEXIS 6960, 2003 WL 1868650, at *5 (same). Plaintiffs' argument, however, is premised on too narrow a view of "work."

Reading the claim in light of the specification, it is clear that the catheter protected by the '079 Patent is not only working when it is actively exchanging fluid, but is also working to prevent obstruction when it undergoes the "agitation and flexion" that is the self-proclaimed "essence of the invention." (Tr. at 34-37.) See Webster's Third New International Dictionary Of The English Language 2634 (Unabr. 1993) (defining "work" as "sustained physical or mental effort valued as it overcomes obstacles and achieves an objective or result"). In this case, the sustained effort is the "agitation and flexion" of the distal ends, the obstacle is the "risk of clogging substances being deposited on the surfaces of the perfusing and/or extracting channels," and the objective or result is that the catheter is "practically not subject to obstruction." (Col. 2, lines 57-55; see also Col. 1, lines 29-31 ("One object of the invention is to obtain a catheter having a risk of obstruction by clogging that is substantially reduced relative to the known catheters."); Tr. at 31 ("The object of the invention … is to make sure that this catheter doesn't clog up.").) Plaintiffs' artificial distinction between self-locomotion and "passive" movement is not supported in the claim or the specification. Moreover, it is inconsistent with plaintiffs' own proposed construction, as any "work" done by the catheter when it is "circulating fluid" is caused by an external force, i.e. "a means for circulating this fluid such as a fluid perfusing and/or extracting means." (Col. 1, lines 8-9.) Therefore, in this case, "work" and "motion" are synonymous, and plaintiffs' proposed construction of "rest position" as limited to those times when the catheter is "being used to circulate fluids" is improper.

Defendants' proposed construction is also mistaken when it seeks to limit the catheter's rest position to one where the catheter is "outside of the patient's body" and prior to insertion. While there appears to be some evidence in the specification that "rest position" should be construed as a position outside of the body, there are no temporal or functional limitations expressed in the claim itself. See Ecolab, 264 F.3d at 1367; Transmatic, 53 F.3d at 1277-78. At the Markman hearing, plaintiffs claimed that "there is no factual basis to assume that the [catheter] is never motionless for a particular moment in the body." (Tr. at 47.) The Court has no evidence to dispute this contention, and therefore there is no reason to impose an additional limitation on "rest position" at this time.

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7 For example, at Col. 1, lines 19-20, it states that the catheter is "intended to be placed in a cavity of a patient's body" (emphasis added), and at Col. 1, lines 66-67 it states that the catheter is "intended to be placed inside a cavity of a patient's body (not represented)" (emphasis added).

--- End Footnotes ---

However, it is proper to impose the limitation that rest position must be determined prior to the time the device is removed.
from a patient. The claim itself states that the invention is a "multilumen catheter." (Col. 2, line 65.) Once the catheter is removed from a patient's body, it is no longer a "multilumen catheter," or any other viable medical device. Rather, it is medical waste, as the following colloquy at the Markman hearing demonstrates:

Court: Isn't it essentially medical waste and useless after it's taken out of the body?

Plaintiffs: Well, no, I don't think so.

Court: Could you reuse it?

Plaintiffs: Well, you can reuse almost any medical device, your Honor. I don't think that any of the companies would sell them for that purpose ….

(Tr. at 48-49.) Therefore, this Court construes "rest position" as "a position in which the catheter is motionless prior to being removed from a patient."
to indicate position in close proximity with," and "used as a function word to indicate a source of attachment or support," and do not require the "in contact with" language on which Defendants rely. Id. (emphasis added).

The plain language of the claim states that the burner must be "resting on" the base, not "in contact" with the base, as Defendant suggests. Further, each embodiment of the invention disclosed in the '061 patent includes a burner (Fig. 2) held in a support (Fig. 3). The support and the burner are placed within the base (Fig. 4) of a flask. The patent discloses that the burner is resting on the base because it is supported by the base. To require a construction that the burner be in contact with the base is unsupported and inconsistent with the disclosure of the patent.

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3. "Peripheral portions of the plate being restrained from movement relative to an interior portion of the plate in a direction substantially perpendicular to a major axis of the shoe"

This claim term has been referred to as "relative restraint," and it causes the deflection feature discussed below. Both parties agree that the first part of this claim term is properly defined according to its plain and ordinary-meaning. Akeva proposes a construction for "restrained from movement relative to an interior portion of the plate" as "a plate portion is restrained from movement as compared to a portion that is closer to the center of the plate." (Akeva's Markman Br. at 13.) adidas proposes separate constructions of various components of this phrase: (1) "restrained" should mean "prevented from doing something"; (2) "movement" should mean "change of place or position"; and (3) movement "relative to" should mean movement "of one body or point with respect to another body or point that is regarded as fixed." (adidas' Markman Br. at 14.) There is no substantive difference between the parties' definitions thus far. The parties also agree that "a major axis of the shoe" is the heel-to-toe axis.

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6 The restraint and deflection terms are connected by the phrase "so that" and should be understood together to mean that the restraint feature functions in a certain manner "so that" the deflection can occur in a certain manner.

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The dispute centers on the phrase "in a direction substantially perpendicular." The crux of the disagreement is whether this includes the vertical direction. Akeva argues that this should be construed as "either the horizontal (medial-to-lateral) or vertical directions," while adidas argues it should be construed as only the "medial-to-lateral direction." 7 adidas contends that the term should be limited by the prosecution history because the patent examiner defined the term as the lateral-to-medial direction to distinguish it from a prior art reference and allow the claims.

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7 In summary, Akeva proposes that this term, in its entirety, be construed to mean "a plate portion is restrained from movement as compared to a portion that is close to the center of the plate in either the horizontal (medial-to-lateral) or vertical directions." adidas proposes that the term mean "the peripheral portions of the flexible plate are prevented from changing their place or position in the medial to lateral direction with respect to an interior portion of the plate."

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The court must begin its construction with the plain and ordinary meaning. The dictionary definition of "perpendicular" used as an adjective in this context of a physical direction 8 is "being or set at right angles to a given line or plane." Webster's Third New Int'l Dictionary 1684 (1986). adidas points out that the '300 Patent's specification discusses relative restraint only twice. The first statement teaches that "housing 580 acts as a reinforcement for limiting or eliminating lateral movement of the flexible member 560 during use." '300 Patent, col. 11, 11. 20-23. The second statement teaches that "each of the above-described flexible members may be made integral with the rear sole support, which . . . limits the lateral displacement of the periphery of the flexible member upon deflection." Id., col. 12, 11. 47-52. These statements reference only lateral movement, but they do not redefine the restraint term nor do they disclaim or disavow any coverage of other
types of movement of the flexible member. Thus, the specification contains no evidence to show the plain and ordinary meaning should be rebutted.

8 The dictionary contains an additional definition of a physical direction related to the horizon and outdoor observation. This definition is inappropriate in the context of a patent over an athletic shoe where a given line is explicitly referenced.

The only portion of the prosecution history before the court is the examiner's Notice of Allowability. In this notice, the examiner stated:

This language has been interpreted as the restrained direction being the direction perpendicular to the major axis, i.e., the major axis is that axis which runs from the toe of the shoe to the heel of the shoe and the direction perpendicular to such is the direction medial to lateral direction and allows the interior portion of the plate to deflect relative to the peripheral portions in the perpendicular/vertical directions, i.e., a direction perpendicular to the major axis.

(adidas' Markman Br. Ex. G. at 2 (emphasis added).) She continued that a prior art reference by Tong did not include this feature, and, in fact, the Tong shoe did not include any restraint of the peripheral portions in the medial-to-lateral direction. (Id. at 2-3.) Also, it provided "no guidance as to how the interior of the plate reacted in reference to the periphery of the plate." (Id.) The examiner concluded that the Tong reference must feature a plate that moved as a single element, functioned as "a supporting element, not a flexible deflective member," and did not feature any concave or convex sections on its upper surface. (Id. at 3.). She also described the Tong reference as having a wave shape that "allowed the plate to expand horizontally/in a direction along the major axis of the shoe, instead of vertically, i.e., in a direction substantially perpendicular to a major axis of the shoe' as claimed [in the '300 Patent]." (Id.) For these reasons, the '300 Patent overcame the Tong reference.

The doctrine of prosecution history estoppel may limit a claim term where the prosecution history (or "file wrapper") shows the patentee made "express representations . . . to the examiner to induce a patent grant." Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985). "Such representations include amendments to the claims and arguments made to convince the examiner that the claimed invention meets the statutory requirements of novelty, utility, and nonobviousness." Id. Statements like this would exclude from the definition of claim terms any subject matter that was "disclaimed or disavowed during prosecution in order to obtain claim allowance." Id. Estoppel also results when "arguments made during prosecution . . . show a clear and unmistakable surrender of subject matter." Bayer AG v. Elan Pharm. Research Corp., 212 F.3d 1241, 1251 (Fed. Cir. 2000) (internal quotations omitted). However, not all changes will result in estoppel. Changes are often made during a patent's prosecution, and "[a] non-substantive change or a change that did not in fact determine patentability does not create an estoppel." Pall Corp. v. Micron Separations. Inc., 66 F.3d 1211, 1219 (Fed. Cir. 1995). If the examiner relies on a concession or argument to establish patentability over prior art, this "is a substantive position on the technology for which a patent is sought, and will generally generate an estoppel." Id. at 1220. On the other hand, "when claim changes or arguments are made in order to more particularly point out the applicant's invention, the purpose is to impart precision, not to overcome prior art." Id. In the latter case, no estoppel is presumed and the issue must be examined on its facts. Id.

In this case, it does not appear that estoppel is warranted because the examiner was clarifying an aspect of the invention without intending to limit it. She merely describes the features of the Akeva patent that distinguish it from the Tong reference. Whether or not the examiner was relying on an argument made by the patentee to overcome this prior art reference, there is no indication that she amended the claims to conform to a limited interpretation of the direction of relative restraint. Also, there was no need to limit the direction of relative restraint to only the medial-to-lateral direction in order to establish patentability. If the Tong reference discloses an interior plate that does not feature any relative restraint, as the Notice of Allowability concludes, then the '300 Patent could disclose a plate wherein the periphery and interior moved separately in any direction, so long as separate movement was claimed. This would be enough to overcome the Tong reference. Moreover, if the examiner had excluded the vertical direction in regard to relative, restraint, this would create a problem for one of the allowed claims of the '300 Patent. Claim 192 includes a relative restraint feature wherein the plate portion is "restrained from movement in a substantially vertical direction. " '300 Patent, col. 28, 11. 45-47 (emphasis added).
Excluding the vertical direction would render this claim invalid.

Finally, the language of this notice is not clear enough to effect an estoppel. The first reference to the perpendicular direction discusses relative restraint and states "the direction perpendicular to such is the . . . medial to lateral direction." (adidas' Markman Br. Ex. G. at 2.) When the examiner discusses the deflection feature, however, she talks about the vertical direction. For instance, she concludes that the Tong reference's shape "allowed the plate to expand horizontally . . ., instead of vertically, i.e. [. ]' in a direction substantially perpendicular to a major axis of the shoe." (Id. at 3 (emphasis added).)

Akeva argued at the Markman hearing that "a. major axis of the shoe" is used in regard to the direction of relative restraint, while "the major axis of the shoe" is used in regard to the direction of deflection. This would mean that the latter comment about the vertical direction is made in reference to relative restraint, even though it appears to discuss deflection. Whether or not Akeva is correct about the examiner's reference, the court is unwilling to find estoppel based on this language.

Prosecution history estoppel is generally only found based on express statements or an unmistakable surrender of subject matter. Without a more direct statement by the examiner or the patentee regarding the meaning of this perpendicular direction, the court cannot find the scope of the term "perpendicular" in reference to the relative restraint term to be limited to the medial-to-lateral direction.

Thus, the term "peripheral portions of the plate being restrained from movement relative to an interior portion of the plate in a direction substantially perpendicular to a major axis of the shoe" should be construed as "the peripheral portions of the flexible plate are prevented from changing their place or position as compared to a portion that is close to the center of the plate in any direction that is substantially at a right angle to a heel-to-toe axis of the shoe, including the medial-to-lateral and vertical directions." 9

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9 This definition does not include restraint in a direction along a heel-to-toe axis of the shoe, or parallel to such axis.

--- End Footnotes ---

3352

3. "Restraining means" "Restraining member" and "Restraint"

With respect to these terms, the parties dispute (1) whether they should be construed to include the location at which the restraining means is positioned, and (2) whether the construction should include an isothermal limitation. For the reasons previously set forth, the Court rejects Gore's proposed construction to the extent it includes the isothermal limitation.

With respect to the position of the restraining means, the asserted claims generally are silent on this point. (See, e.g., '957 Patent, claims 1-3, 5-7.) In other claims, Jervis expressly provides for a specific position. Furthermore, as Medtronic notes, one such claim expressly contradicts Gore's proposed construction. (Compare '957 Patent, claim 10 (memory alloy element is within restraining member) with '957 Patent, claim 14 (restraining means is within hollow memory alloy element).) Similarly, where Jervis required that the temperature be above the austenite start temperature, he expressly included such a requirement in the claims. (See, e.g., '957 Patent, claims 10, 18.) Medtronic thus argues that the presumption of claim differentiation should apply to these claims.

In general, the doctrine of claim differentiation recognizes "that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope." Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361, 1369 (Fed. Cir. 2007) (quoting Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999)). Thus, there is a presumption that "[t]o the extent the absence of such difference in meaning and scope would make a claim superfluous, … the difference between claims is significant." Id. (quoting Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987)). That presumption may be overcome, however, by the written description of the patent or its prosecution history. Id. Here, Gore has offered no argument in opposition to Medtronic's claim differentiation argument. Furthermore, although the position of the restraining means and the austenite start temperature are not the only differences in the claims, the Court has examined the claims in light of the specification, and finds no reason why the presumption of claim differentiation should not apply.
The Court also has reconsidered its tentative construction of these terms, as they are used in the '141 Patent, and concludes that Medtronic's proposed construction should be adopted as to all patents in which the terms are used.

Accordingly, the Court construes the terms "restraining means," "restraining member," and "restraint" to mean: "a device that prevents the transformation of the shape memory alloy element back into its original shape."

The court adopts CVE's construction. First, GK's construction, which is not offered as the "ordinary meaning" given to this term, reads out the word "resultant" and does not account adequately for the word "vibratory." (R.56, Ex. A, DeEuilius Reb. Decl. P6.) See Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1119 (Fed. Cir. 2004) ("all claim terms are presumed to have meaning in a claim.") Rather, as DiEuliis testified, a person of ordinary skill in the art would understand GK's proposed language--"force having direction and magnitude"--to define a vector force, and nothing more. (R.67, Ex. 2, Markman Tr. 32.) CVE's construction, on the other hand, accounts for those direction and magnitude components by using the term "vector force," while also giving meaning to the words "resultant" and "vibratory." See Merck & Co. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.") And its inclusion of the object upon which the force acts--the vibratory trough of a conveyor--is consistent with claim 5 itself, which recites that the "resultant vibratory force [is] supplied to said conveyor trough." ('763 patent col. 7 lin. 57-58.) Indeed, even the portion of the specification that GK cites to support its definition refers to "the resultant force acting on the conveyor." ('763 patent col. 3 lin. 67-col.4 lin 2.) Finally, DiEuliis's testimony, which is entitled to some weight, supports CVE's construction based on how a person of ordinary skill in the art would understand the term.

At the Markman hearing, GK's only challenge to CVE's construction was its use of the phrase "in three dimensional space." (Markman Tr. 46-51.) Relying on the drawings in the specification, GK contended that the forces acted only in two dimensions. But DiEuiliis clarified that in an actual machine some residual forces would apply to the trough in all three dimensions, (id. at 69), and GK does not challenge that contention in its post-hearing brief. Accordingly, because CVE's construction is derived from and consistent with the claim language and the specification, and because it reflects DiEuiliis's understanding of the term, the court adopts CVE's construction.

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A. Relevant Claim Language

The final portion of Claim 1 consists of the following language: "retain at least 2.0% and no more than 3.0% phosphorous by weight of fabric." ('545 Patent, col. 8, Ins. 42-44).

B. Parties' Positions

Defendants argue that element (c)(ii) means: "after uniform treatment, the fabrics have at least 2.0% and no more than 3.0% phosphorous by weight of fabric and continue to have at least 2.0% and no more than 3.0% phosphorous by weight of fabric after exposure to the 5 Wash/24 Hour Boil." (Defs.' Construction at 27). Defendants support this argument by explaining that the ordinary meaning of "retain" is to "keep" or "hold," which therefore must mean that the fabric "keeps" or "holds" the relevant level of phosphorous "both before and after the 5 Wash/24 Hour Boil procedure." (Defs.' Construction at 28-29). Notably, in order to explain their construction, Defendants needed to use the phrase "both before and after," whereas the language in the claim only uses the word "after." Defendants go on to argue that the specification emphasizes the need for the fabric to be comfortable and flexible, and that a user's concern would be how the garment feels throughout its useful life, not just at the end of its useful life. (Defs.' Construction at 29-30). However, broader ideas such as a customer's primary concerns need not be considered when the claim language is clear. In the claim language itself as well as in the specification, the 2.0% to 3.0% quantity of phosphorous is always described as existing "after" the wash and boil process.

Plaintiffs object to Defendants' insertion of the word "before" when the inventors "specifically elected to use only the term 'after' in the claim." (Pls.' Rebuttal at 19). According to Plaintiffs, this portion of the claim means: "whatever the level of phosphorous is before the wash and boil procedure, at least 2.0% and no more than 3.0% phosphorous by weight must be in the fabric after the wash and boil procedure." (Pls.' Rebuttal at 24).

C. Court's Construction

Plaintiffs concluded in their rebuttal, "The claim language cannot be any clearer that the only relevant phosphorous level is that after the wash and boil procedure." (Pl.'s Rebuttal at 20). We agree. The requirement that the fabric retain a certain amount of phosphorous refers solely to the state of the fabric after the wash and boil procedure, without any reference to the level of phosphorous existing before the procedure.

6. "retainably removing"

In construing this term, the defendants suggest that the claims at issue, claims 35 and 145 of the '930 patent and claims 20 and 26 of the '180 patent, use "retainably removing" to disclose only the "robotic arm" embodiment. Accordingly, they argue that the court should define the term in accordance with the "robotic arm" discussion in the specification. '930 Patent, col. 14, 1. 33. Crane asserts that this is not the case, and that imposing such a limitation would unduly read out the "cup embodiment."

The court agrees with Crane. Although each claim is not required to claim every embodiment, the structure of claims 35 and 57 in the '930 patent suggests that the claims are broader than the defendants contend. Claim 35 is an independent claim and requires "retainably removing." Claim 57, which depends from claim 35 (and therefore requires "retainably removing" as well), reads as follows:

57. The vending machine of claim 35, including release means cooperatively connected with said container holding means and activatable by said beverage container capture means for releasing by gravity a selected container from said container holding means to said beverage container capture means. (emphasis added).

The language of claim 57 requires "releasing by gravity," an action whose compatibility with "grasping and lifting" is not
apparent. Accordingly, the court is unwilling to construe the term in the limiting manner proposed by the defendants..

The court, however, does not find Crane's construction helpful. Crane's construction simply rearranges the terms. As suggested by Crane's recent statements made during reexamination of the '930 patent, "retainably removing" involves a level of control not disclosed by the prior art reference to the '930 patent. See Ex. 4 to SVA's Resp. at 77.

For these reasons, the court defines "retainably removing" as "removing the container from the container holder into the carriage frame assembly in a controlled manner."

2. retained within

P&M construes "retained within" to mean "holding at least a portion of." (Pls. Opening Mem. at 14-15.) Rose Art maintains that this term should be construed to describe "a reservoir pen formed with a nib of absorbent material being held in place or position inside of the 'housing' (i.e., the cylindrical structure that covers the pen)." (Def. Pre-Markman Hr'g Br. at 18.) Rose Art contends that "retained within" should not be construed so as not to require that the entire pen is encased by the tubular housing. (Def. Pre-Markman Hr'g Br. at 19.)

As discussed in detail above, the claim language of the '886 patent cannot be construed to exclude the fig. 8 embodiment. Accordingly, the Court cannot adopt a construction of "retained within" which requires that the reservoir pen be entirely encased within the housing. Vitronics, 90 F.3d at 1583-84. That being said, there is nothing particularly ambiguous about the term "retained within." An examination of the clear language of the claim makes it readily apparent that the term "retained within" describes a reservoir pen which is at least partially held inside of the housing. There is nothing in the specification which would require the Court to deviate from that construction. Consequently, the term "retained within" is construed to mean "holding at least a portion of." Since the entirety of the intrinsic evidence with regard to this term is not ambiguous, the Court did not consider the extrinsic evidence submitted by the parties with respect to this term.

1. Construction of "Retainer"

The parties dispute the meaning of the term "retainer". Plaintiff Lisle seeks to construe "retainer" to mean "any of various devices used for holding something." Defendant A.J.'s proposed construction is much narrower: "a collar or ring rotatably affixed over the surface of the hollow tube for locking the tabs of the c-shaped wrench disc into position." (Pl. Ex. D) Lisle's proposed construction comes from Webster's Ninth New Collegiate Dictionary; A.J.'s proposed construction is derived from the drawings and references in the patent, specification, and prosecution history. Plaintiff's proposed construction benefits from a "heavy presumption" in that claim terms carry their ordinary meaning to a person of ordinary skill in the relevant art.

The critical distinction between the two parties' positions is whether the retainer described in the claim must be separate from the tube. Under Lisle's construction, the claim would permit the retainer to be either a separate piece or a permanent fixture. A.J.'s construction of the claim would limit the patent to devices that contain a separate piece as a retainer.

The claim itself does not specify whether the retainer must be separate, although the preferred embodiment of the claim does demonstrate a separate retainer. The Federal Circuit consistently warns that "claim terms are [not] limited to the embodiment disclosed." Teleflex, 299 F.3d at 1326. In some cases, though, "the preferred embodiment is … the invention itself." See Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551 (Fed. Cir. 1996). For a variety of reasons, this is not such a case.

In the '776 patent, the preferred embodiment contains a separate retainer that is invariably referred to as a "retainer ring", "retainer collar", or just "ring" throughout the description of the invention. From a review of the specification and the
prosecution history, though, it is apparent that the invention covers both a separate retaining ring and a permanent retainer built into the tool.

From the manifest language of the claim, it is clear that the invention consists of at least two component parts: (1) a C-shaped insert with outwardly projecting tabs; and (2) a hollow tube with a retainer for engaging the C-shaped insert at one end and "means for cooperation with tube rotation means at the opposite end." (Pl. Ex. A at col. 4, lines 16-28). In prosecution of the patent, the application was rejected twice on the grounds of obviousness in light of two French patents. One of these, the Gross patent, combined inserts with both hexagonal and tubular wrenches to make the wrench have broader applicability. The other, the Koralek patent, revealed a wrench with a single tab to hold the insert in place. To overcome these patents, Lisle represented to the Patent and Trademark Office (PTO) that it was the retaining structure, not merely the insert or the tabs, that differentiated the '776 patent invention from the prior art.

Defendant A.J. asserts that Lisle's representation that "one cannot simply combine a C-shaped insert with a tubular wrench" (Pl. Ex. F at LIS 000870) must mean that their invention requires a retainer to be separate from the C-shaped insert and the tubular wrench. A.J. removes this language from the context of the prosecution history, however. In the paragraph containing the above quoted language, Lisle continues "It takes structure to make it work … The teaching of Gross does not disclose or suggest structure that enables use of a C-shaped inserts with a tubular wrench." (Pl. Ex. F at LIS 000870). From this language, it is clearly not the separateness of the retaining structure that differentiates the '776 patent from the prior art. Rather it is a retaining structure that accommodates a C-shaped insert with a tubular wrench that differentiates it from the prior art. This is the clearest statement in the prosecution history regarding the differentiation of the '776 patent from the prior art that the PTO believed was most relevant to the present claim, and it does not specify the separateness of the retaining structure.

Although A.J. insists it is not trying to limit the '776 patent to the preferred embodiment, that would be the precise result of adopting their proposed construction. A.J.'s proposed construction of the term "retainer" is much too narrow. A.J. asserts that the consistent reference to "retainer collar" or "retainer ring" must mean that the retainer is a collar or ring separate from the hollow tube. There is no reason to so limit the claim language. A collar or a ring could either be separate or permanently affixed. Indeed, men's shirt collars were once always separate and now they are nearly always affixed. A.J.'s proposed construction would needlessly cabin the '776 patent into a three separate piece invention consisting of a tube, a C-shaped disc, and a retainer.

The Court finds that Lisle's proposed construction of the term "retainer" is consistent with the language, specification, and prosecution history of the '776 patent. The term "retainer" in the '776 patent is construed to mean: any of various devices used for holding something.

According to A.J., the district court erred by giving the term "retainer" its ordinary and accustomed meaning, arguing that the '776 patent specification repeatedly refers to a "retainer" as a rotatably-affixed collar or ring, and thus limits the scope of that claim term. A.J. asserts that the term "retainer" should have been construed to mean a "collar or ring rotatably affixed over the surface of the hollow tube." On the other hand, A.J. contends that the district court erred by not applying the ordinary and accustomed meaning to the limitation "said retainer being detachably cooperative with the tabs to rotate the disk and a tie rod engaged therewith." For that limitation, A.J. proposes the alternative construction that the "retainer and tabs work together to disengage to rotate the disc and a tie rod interlocked therewith," which it believes more accurately reflects the grammatical structure of the claim language.

We affirm the district court's construction of the term "retainer." There is no basis for limiting the scope of the term "retainer" to the rotatably-affixed retainer ring shown in figure 7 of the '776 patent, as advocated by A.J. An object of the patented invention is to provide a single tool that can be used on many different tie rod configurations, '776 patent, col. 1, ll. 56-68, and it is clear from the context of the patent that the retainer facilitates that objective by permitting the body of the tool to engage and disengage wrench discs, e.g., id. at col. 3, l. 39-col. 4, l. 6. Tellingly, the patent does not place any significance on using a separately-affixed rotating-retainer component as shown in figure 7, but, instead, broadly states that the retainer's configuration and shape may be varied. E.g., id. at col. 4, ll. 8-9. Thus, we will not give the term "retainer" the narrower claim construction that A.J. proposes.
{a. "Retainer Assembly"

Claims 31-32 and 37-41 require a "retainer assembly having a retainer mechanism configured to overlap each of said holes and slots and retain said bone engaging fastener[s] extending through said holes and slots." Claim 86 requires "a retainer assembly for retaining said heads of said number of bone engaging fasteners within said at least one first opening and said at least one second opening."

The parties dispute whether "retainer assembly" has an ordinary meaning understood by persons skilled in the art. A general dictionary defines "assembly" as the parts to be fitted together to make a whole. Webster's New World Dictionary Third College Edition 82 (1988). "Retainer" is defined as a device that keeps an object in a fixed state or condition. Id. at 1145. "Retainer assembly" is not defined, but combining the two definitions yields "parts to be fitted together to make a whole device that keeps an object in a fixed state or condition."

--- Footnotes ---

1 The Court finds it appropriate to consult a general dictionary because expert testimony cited by Plaintiff does not show experts in the field would attach a specialized meaning to the term "retainer assembly," or that they would attach "no meaning at all" to the term. Irdeto Access, Inc. v. Echostar Satellite Corp., 383 F.3d 1295, 1300 (Fed. Cir. 2004). The testimony shows experts believe the term is generic and is not commonly understood, but they attach some meaning to it.

Federal Circuit precedent is unclear whether it is appropriate to consider expert testimony, which is extrinsic evidence, at this stage. The court has often repeated the principle that extrinsic evidence may not be used to alter a claim construction dictated by intrinsic evidence. See, e.g., On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH, 386 F.3d 1133, 1139 (Fed. Cir. 2004). However, Irdeto Access apparently permits extrinsic evidence to determine if a term has an "accepted meaning in the art." 383 F.3d at 1300.

The Court does not rely on extrinsic evidence here, but considers only the claim language, the specification, and a general dictionary. "A dictionary is not prohibited extrinsic evidence, and is an available resource of claim construction." Vanguard Prods. Corp. v. Parker Hannifin Corp., 234 F.3d 1370, 1372 (Fed. Cir. 2000).

--- End Footnotes ---

The specification reveals "retainer assembly" is intended to encompass an elongated washer extending along the length of the plate. The specification states, "[t]he retainer assembly includes a washer having at least one tapered aperture." (Litovsky Decl. Ex. A at col. 3 Ins. 48-49 (emphasis added).) Also, the specification shows the retainer assembly is "for an elongated plate." (Litovsky Decl. Ex. A at col. 3 ln. 47.) Finally, the specification describes "a retainer assembly 33 positioned along axis L." (Litovsky Decl. Ex. A at col. 6 Ins. 36-37 (emphasis added).) The number "33" corresponds to figure 1 of the 786 Patent, which shows item 33 is a washer extending lengthwise from one end of the plate to the other.

To limit the definition of "retainer assembly" only to a washer, however, would conflict with the ordinary meaning of "assembly," which requires more than one part. Reading the claim language in light of the specification, "retainer assembly" refers to (1) a device that retains all of the bone engaging fasteners and (2) a separate device that attaches the retaining device to the plate.

In the specification, the retaining assembly is embodied as (1) a washer with apertures and (2) locking screws extending through the apertures to attach the washer to the plate. This embodiment is consistent with the Court's definition, but it would be improper to read the aperture and locking screw limitations into the claim language. See Liebel-Flarsheim, 358 F.3d at 904.

GO BACK}
C. "and retainer means comprising at least one protrusion molded into the surface of the central portion of the lid opposite said access strip"

Claim 1 of the '015 patent recites a "retainer means comprising at least one protrusion molded into the surface of the central portion of the lid opposite said access strip." The parties have raised the issue of whether this element should be construed as a means-plus-function element under 35 U.S.C. § 112 P 6. The Federal Circuit has examined § 112 P 6 in several cases and has established guidelines for determining its applicability. In deciding whether a claim limitation is a means-plus-function limitation, the "use of the word 'means' creates a presumption that § 112, P 6 applies." Personalized Media, 161 F.3d at 703. However, a limitation that uses the word "means," but does not recite a function that corresponds to the means, does not invoke § 112, P 6. See Rodime PLC, 174 F.3d at 1302. Likewise, even when a limitation does recite a function, if it also recites sufficiently definite structure for performing that function, then § 112, P 6 does not apply. See id.

Here, the "retainer means" limitation uses the word "means" and therefore is presumed to invoke § 112, P 6. Moreover, the claim language recites the corresponding function of "being shaped and located to capture and releasably maintain said access strip in the open position." However, the claim does recite some structure for performing the claimed function. Claim 1 states that the "retainer means" comprises "at least one protrusion molded into the surface of the central portion of the lid opposite said access strip." The magistrate judge concluded that one skilled in the art would understand the term "at least one protrusion molded into the surface of the central portion of the lid opposite said access strip" to connote sufficiently definite structure to rebut the presumption that § 112, P 6 applies. See Bailey I, 980 F. Supp. at 572-73. The question now raised is whether my acceptance and adoption of the magistrate judge's decision to depart from the presumption that § 112, P 6 applies was clearly erroneous.

I look to the case law for guidance. In Cole v. Kimberly-Clark Corp., the Federal Circuit interpreted the following claim phrase involving removable training pants for toilet training toddlers: "perforation means extending from the leg band means to the waist band means through the outer impermeable layer means for tearing the outer impermeable layer means for removing the training brief in case of an accident by the user." 102 F.3d 524, 531 (Fed. Cir. 1996). The Federal Circuit held that the quoted clause failed to satisfy § 112, P 6 because it described the structure supporting the tearing function (i.e. perforations) and because it describes the location (extending from the leg band to the waist band) and extent (extending through the outer impermeable layer) of the structure Id. The Federal Circuit concluded that "an element with such a detailed recitation of its structure, as opposed to its function, cannot meet the requirements of the statute." Id. Similarly, in Rodime PLC, the court held that the claim element "positioning means for moving said transducer means between the concentrically adjacent tracks on said micro hard-disk" fell outside of the means-plus-function format because the claim went on to provided a detailed description of the structure, its location and its interconnection with the structural sub-elements. 174 F.3d at 1303-04. Likewise, in Enviro Corp. v. Clestra Cleanroom, Inc., the Federal Circuit held that because the term "baffle" in the "baffle means" element connotes some degree of structure and the claim provided additional details as to the location and formation of the structure, the § 112, P 6 presumption was overcome. 209 F.3d 1360, 1365 (Fed. Cir. 2000). See also AMP, Inc. v. Fujitsu Microelectronics, Inc., 853 F. Supp. 808, 820 (M.D. Pa. 1994) (interpreting "bus solder tail means" to fall outside means-plus-function format because the words "bus solder tail" described a specific structure).

Not every recitation of structure, however, removes the claim element from the means-plus-function format. For example, the Federal Circuit held that the claim phrase "spring means tending to keep the door closed" is insufficient structural language to take the limitation out of the ambit of the construction dictate of § 112, P 6. See Unidynamics Corp. v. Automatic Products International, Ltd., 157 F.3d 1311, 1319 (Fed. Cir. 1998). The court held that the word "spring" was the only recitation of structure in the claim and alone could not rebut the presumption created by the word "means." See also Nilssen v. Motorola, Inc., 80 F. Supp. 2d 921, 928 (N.D. Ill. 2000) (term "source means having AC terminals and being operative to provide AC voltage thereat" did not recite sufficient structure to remove claim from the presumed ambit of § 112, P 6); Loral Fairchild Corp. v. Victor Company of Japan, Ltd., 906 F. Supp. 798, 808 (E.D.N.Y. 1995) (holding the term "sink charge means" and additional claim language identifying the location of the sink charge means do not provide sufficient structure to overcome the presumption). Moreover, when the recited structure sets forth only what the recited means does, rather than what it is structurally, the claim is properly interpreted under § 112, P 6. See Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1536 (Fed. Cir. 1991) ("The recitation of some structure in a means plus function element does not preclude the applicability of section 112(6) [when it] merely serves to further specify the function of that means").
Upon consideration of the case law, I determine that "retainer means" element recites sufficient structure to overcome the presumption that § 112, P 6 applies. The words of the claim, "comprising at least one protrusion molded into the surface of the central portion of the lid opposite said access strip," state with sufficient specificity the structure (at least one protrusion molded into the surface) as well as the location of the structure (central portion of the lid opposite said access strip). Based on the Federal Circuit's decisions in Cole and Enviro Corp., I conclude "an element with such a detailed recitation of its structure, as opposed to its function, cannot meet the requirements of the statute." Cole, 102 F.3d at 531.

Because the "retainer means" element does not qualify for § 112, P 6 treatment, it is not limited to the structure corresponding to the claimed function as "described in the specification and equivalents thereof." 35 U.S.C. § 112, P 6. Instead, I will construe the claims pursuant to standard claim construction rules.

The thrust of the dispute between the parties is the construction of the claim element "at least one protrusion." Bailey contends that "at least one protrusion," to one skilled in the art, simply means what it says, specifically one or more structures that protrude. Dart, on the other hand, contends that the term "at least one protrusion," when properly construed, means at least one protrusion, excluding a vent cap, and some other structure.

At first blush, the term "at least one protrusion" would appear to have a plain and straightforward meaning. "The common and ordinary meaning of the word protrusion to one skilled in the art . . . is something which protrudes. The verb protrude means to project or 'to jut out from the surrounding surface. Furthermore, the common and ordinary meaning of the words 'at least one' includes a retainer means comprised of only one protrusion." Bailey I, 980 F. Supp. at 575. The magistrate judge found no indication that Bailey intended to accord any special meaning to the claim element. After reviewing the matter again, I withdraw my previous acceptance of the magistrate judge's conclusion on this point.

The claims and specifications of the patent indicate that the term "protrusion" has a more narrow meaning than the meaning assigned to it by the magistrate judge. See Vitronics, 90 F.3d at 1582 ("It is always necessary to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning"). The magistrate judge determined that the term "protrusion" includes all structures that "jut out from the surrounding surface." Bailey I, 980 F. Supp. at 575. Such a definition would also include "vent caps." However, the use of the word "protrusion" throughout the patent claims and specifications demonstrates that a "protrusion" is a distinct structure from a "vent cap."

First, the word "protrusion" is used in contradistinction to the term "vent cap" in the claims of the '015 patent. It is axiomatic that "[a] word or phrase used consistently throughout a patent claim should be interpreted consistently." See CAE Screenplates Inc., 224 F.3d at 1317 (quoting Phonometrics, Inc. v. Northern Telecom, Inc., 133 F.3d 1459, 1465 (Fed. Cir.1998)). In addition to claim 1, the word "protrusion" appears in dependent claims 9 and 10. Claim 9 states:

The container lid of claim 1 wherein said retainer means comprises a pair of spaced apart protrusions molded into the surface of the central portion of the lid opposite said access strip; said protrusions being spaced and shaped to capture and releasably maintain said access strip in the open position therebetween.

'015 patent, col. 6 (emphasis added). Claim 10 states:

The container lid of claim 1 wherein said retainer means comprises the combination of a vent cap and at least one protrusion molded into the surface of the central portion of the lid, each said protrusion being spaced from the said vent cap to define a trough therebetween, each said trough being located and being of a size and shape to capture and releasably maintain said access strip in the open position.

'015 patent, col. 6 (emphasis added). While claim 9 does not mention the term "vent cap," claim 10 does. The latter describes a retainer means comprising "at least one protrusion" and a "vent cap." Here, in context, it seems plain that a "protrusion" is a distinct structure from a "vent cap." If a "vent cap" were merely a structure included in the more generic category of "protrusions," then such a relationship would be best expressed by denoting a "vent cap" and "at least one other protrusion." Put simply, the interpretation of "protrusion" advanced by Bailey in claim 1, in which a "vent cap" is a type of "protrusion," when applied to claim 10 would render that claim superfluous with respect to claim 9. See Mycogen Plant Science v. Monsanto Co., 243 F.3d 1316, 1329 (Fed. Cir. 2001) ("To the extent that the absence of [a] difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference
between claims is significant") (quoting Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir.1987)).

Similarly, the specifications consistently distinguish between a "protrusion" and a "vent cap." The first embodiment of the retainer means is disclosed in figures 1 and 2 of the '015 patent. The specification recites that in those embodiments the "retainer means (30) comprises the combination of molded-in vent cap (33) and a protrusion (32), each rising above the surface of the central portion (12)." '015 patent, col. 4, l. 13-16. While this confirms the distinction between the structures "molded-in vent cap (33)" and "protrusion (32)," it also emphasizes that "each rises above the surface of the central portion" (emphasis added). In other words, the '015 patent recognizes that not all structures that rise above the central portion are "protrusions." Thus, one skilled in the art would construe the '015 patent to create two distinct structures, namely a "vent cap" and a "protrusion," even if they share the feature of rising above the surface of the container lid.

Having determined that "at least one protrusion" does not include a "vent cap," I next turn to the question of whether the term "at least one" means that Bailey has claimed a retainer means comprising only one protrusion, or whether the retainer means element, in fact, requires "at least one protrusion" and some other structure in addition. Again, the term standing alone suggests that a retainer means consisting of only one protrusion is claimed by the '015 patent. See Bailey I, 980 F. Supp. at 575 ("The common and ordinary meaning of the words 'at least one' includes a retainer means comprised of only one protrusion"). However, at the hearing on this matter the parties presented experts who offered vastly different opinions concerning the manner in which this element would be interpreted by one skilled in the art. Interestingly, however, both experts relied on much of the same prosecution history in reaching their opposite conclusions. After re-examining the matter, including a more probing examination of the prosecution history of the '015 patent, I conclude that one skilled in the art would understand the retainer means of claim 1 to require "at least one protrusion," and some additional structure.


--- Footnotes ---

7 Claim 1 of the '535 application mentions a "vent hold." After reviewing all the evidence presented, I conclude that one of the ordinary skill in the art would understand the word "hold" to be a typographical error, and that the intended term was "vent hole." The specification of the '535 application discuss a "vent hole," and the figures depict the "hole."

--- End Footnotes ---

On January 7, 1976, Bailey filed the '212 application, which was a continuation-in-part application of the '535 application. Exhibit 5, p. D1. The purpose of a continuation-in-part is to permit an applicant to add new information and data to his/her application, while retaining the benefit of the earlier filing date for what was in the original application. See Waldemar Link, GmbH & Co. v. Osteonics Corp., 32 F.3d 556, 558 (Fed. Cir.1994) ("A [continuation-in-part] application can be entitled to different priority dates for different claims. Claims containing any matter introduced in the [continuation-in-part] are accorded the filing date of the [continuation-in-part] application. However, matter disclosed in the parent application is entitled to the benefit of the filing date of the parent application"). See also Manual of Patent Examining Procedure § 201.08 (6th Ed., Rev. 3, 1997) ("A continuation-in-part is an application filed during the lifetime of an earlier nonprovisional application by the same applicant, repeating some substantial portion or all of the earlier nonprovisional application and adding matter not disclosed in the said earlier nonprovisional application") (emphasis in the original). Comparison of the '535 application with the '212 application reveals the new matter that Bailey added in the '212 application consisted of descriptions and drawings of a retainer means. Claims 9 through 12 related to the new retainer means disclosure of the '212 application. Exhibit 5, p. D17-D18. Those claims state:

9. The container lid of Claim 1 including retainer means to capture and releasably maintain said tear strip in the open position.

10. The container lid of Claim 9 wherein said retainer means in integral therewith.
11. The container lid of Claim 9 wherein said retainer means comprises a pair of spaced apart protrusions molded into the surface of the central portion of the lid opposite aid tear strip; said protrusions being spaced and shaped to capture and releasably maintain said tear strip in the open position therebetween.

12. The container lid of Claim 9 wherein said retainer means comprises the combination of a vent cap and at least one protrusion molded into the surface of the central portion of the lid, each said protrusion being spaced from said vent cap to define a trough therebetween, each said trough being located and being of a size and shape to capture and releasably maintain said tear strip in the open position.

Id. Claim 9 recites a generic retainer means in means-plus-function format. Claim 10 adds that the retainer means is "integral therewith." Claim 11 recites a retainer means with a "pair of spaced apart protrusions." Claim 12 discloses a retainer means comprising a "vent cap and at least one protrusion." The '212 application does not disclose a retainer means comprising only one protrusion. The patent examiner rejected claims 1 through 10 for lack of novelty. Exhibit 5, p. D31. The only claims not rejected by the examiner were claims 11 and 12. Although the examiner did not reject claims 11 and 12, he did not allow them as stated either. Rather, the examiner objected to claims 11 and 12 and explained that they "would be allowed if rewritten in independent form containing all the limitations of the parent claims." Exhibit 5, p. D31. In other words, claims 11 and 12, which recited retainer means comprising at least one protrusion and either another protrusion or a vent cap, were allowable if written as independent claims and not dependent from rejected claim 9. On or about August 10, 1977, Bailey filed an amendment to the '212 application following its final rejection. Exhibit 5, p. D50. He amended claims 1 and 7 (neither pertain to a retainer means), although he argued that all of claims of the '212 were valid. On September 9, 1977, the patent examiner rejected Bailey's amended application. Exhibit 5, p. D60.

On October 5, 1977, Bailey filed his '445 application, which was a continuation of the '212 application. Exhibit 6, p. E1. Although there may be some variation in the scope of the claimed subject matter, a continuation application is based solely on the disclosure of a parent application. See Manual of Patent Examining Procedure § 201.07 (6th Ed., Rev. 3, 1997) ("The disclosure presented in the continuation must be the same as that of the original application; i.e., the continuation should not include anything which would constitute new matter if inserted in the original application"). By definition, a continuation application adds no new matter. More specifically, the '445 application did not recite any additional retainer means element. Indeed, comparison of the '212 application to the '445 application reveals that Bailey did not add any material to the '445 application. On August 9, 1978, the examiner rejected all the claims in the '445 application, except claims 11 and 12, the same retainer means claims to which the examiner objected in the '212 application. Exhibit 6, p. E49-E50. Again, neither claim 11 nor 12 recited a retainer means with only one protrusion. On or about September 15, 1978, Bailey appealed the final rejection of the '445 application to the Patent Board of Appeals (the "Board"). Exhibit 6, p. E52. The Board, however, sustained the examiner's position. Exhibit 6, p. E87. With respect to the rejected claims 9 and 10, which recited a retainer means in means-plus-function format, the Board wrote:

Claims 9 and 10 recite broadly retainer means to capture and releasably maintain the closure in open position. The examiner has relied on the Nicholson disclosure for its protrusion 50 as a teaching of such expedient. As broadly claimed, we see no error in such position.

Exhibit 6, p E89. On October 9, 1981, in response to the decision of the Board, Bailey filed an amendment to his '445 application. Exhibit 6, p. E92. In his amendment, Bailey cancelled claims 13, 9, and 10 of the '445 application. In their stead, Bailey wrote a new claim 15, which eventually became claim 1 of the '015 patent. It is of particular significance that, in remarks to the Patent and Trademark Office, Bailey described claim 15 of the '445 application as follows:

Claim 15, presented herein, represents a careful compositing of the subject matter of Claims 13, 9, 11 and 12 in such manner as to, at once: (1) avoid new matter; (2) provide a single independent claim which is generic to allowable dependent Claims 11 and 12; and (3) teach that subject matter of Claims 11 and 12 which the Examiner has previously held to patentably define over the prior art. Specifically, allowable dependent Claims 11 and 12 teach the retainer means as comprising at least one molded protrusion located on the central portion of the lid opposite the access strip. Each of the foregoing features and associations is explicitly recited in new independent Claim 15. Accordingly, Claims 11 and 12 have also been retained as species claims depending from said Claim 15.

Exhibit 6, E94 (emphasis in the original). On March 30, 1982, the '015 patent issued based on the amended '435 application.
Bailey now asserts that the new claim 15 in his amendment to the '445 application claims a retainer means with only one protrusion. For support, he relies upon the language of the claim, which allows for a retainer means comprising "at least one protrusion." In light of the prosecution history, however, Bailey's position is wholly unsupported. First, Bailey represented to the Patent and Trademark Office that in compositing claims 13, 9, 11 and 12 of the '445 application, he "avoided new matter." See also 35 U.S.C. § 132 ("No amendment shall introduce new matter into the disclosure of the invention"). "New matter" is matter that is a departure from or an addition to the original disclosure. See Manual of Patent Examining Procedure § 706.00(o) (6th Ed., Rev. 3, 1997); Stearn v. Superior Distributing Co., 674 F.2d 539, 544 (6th Cir. 1982). As noted several times above, none of the claims composited in claim 15 (claims 13, 9, 11 and 12) disclose a retainer means with only one protrusion. Claim 13 recites no retainer means element at all. Claim 9 recites a generic retainer means in means-plus-function format (i.e. no structure recited). Claim 11 recites a retainer means with a "pair of spaced apart protrusions." Claim 12 discloses a retainer means comprising a "vent cap and at least one protrusion." Indeed, Bailey never disclosed a retainer means with only one protrusion in any of his patent applications leading up to the issuance of the '015 patent. Therefore, a retainer means element consisting of only one protrusion would be new matter in the disclosure of the '445 application. Because Bailey represented to the examiner that he was avoiding new matter, Bailey's claim 15 could not have included a retainer means with only one protrusion. So what did Bailey mean when he wrote "at least one protrusion" if he did not mean "one or more protrusions?" For the answer, I venture further into the thicket.

Bailey also asserted to the examiner that claim 15 was "generic" to claims 11 and 12. It is well-established that a claim may be broadened by generalizing the description of structure. See Manual of Patent Examining Procedure § 806.04(d) (6th ed., Rev. 3, 1997). While a generic claim bears some resemblance to a means-plus-function claim, in that they both allow a patentee to assert broad claims, the two are not equivalent. See Enercon GmbH v. International Trade Comm'n, 151 F.3d 1376, 1384-85 (Fed. Cir. 1998) (generic claim terms should not be limited to the example disclosed in the specification absent clear redefinition of the claim term by patentee). Instead, generic claims allow all claims of species that meet the limitations of the generic claim. See Manual of Patent Examining Procedure § 806.04(d) (6th ed., Rev. 3, 1997). One common way of expressing a generic claim is to identify an element common to the several species claims. See id. ("[Generic claim] may define only an element . . . common to the several species"). Here, when Bailey represented that claim 15 was "generic" to claims 11 and 12, he was attempting to find a way of expressing those claims in a form common to both. The sole feature common to both claims 11 and 12 is one protrusion. The feature that claim 11 and 12 do not share is the structure used in combination with one protrusion to form a retainer means. Claim 11 uses another protrusion, while claim 12 uses a vent cap. However, neither of the species claims contain only one protrusion. A generic claim, therefore, cannot recite a retainer means consisting of only one protrusion. Thus, the only possible conclusion is that Bailey did not claim only one protrusion, but instead generically claimed retainer means comprising "at least one protrusion" and some other structure. 8 By asserting that his claim 15 was generic to claims for retainer means comprising at least two structures, Bailey cannot now disavow that "at least one protrusion" means a retainer means with "at least one protrusion" and some additional structure. See Southwall Techs., 54 F.3d at 1576 ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation of claim terms that was disclaimed during prosecution").

8 Moreover, Bailey represented to the Patent and Trademark Office that claim 15 teaches the subject matter of claims 11 and 12. Again, claim 15 teaches the subject matter of claims 11 and 12 only if the claim is construed to exclude a single protrusion retainer means.

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D. Retainer Means and Structure Described Thereafter

Dart initially assumes, without explanation, that the language "retainer means" in claim 1 of the '015 patent is expressed in a means plus function format and therefore subject to the confines of the sixth paragraph of 35 U.S.C. § 112 ("section 112, P 6"). Dart also argues that the term "at least one protrusion [emphasis added]," when properly construed, does not include a vent cap and, in particular, does not cover the vent caps in Dart's lids. In addition, Dart submits that the words "opposite [emphasis added] said access strip" ( '015 patent, col. 5, l. 32) which describe one or more protrusions, when properly
construed, do not describe or extend to cover centrally located vent caps which lie adjacent to the access strip. (Docket Entry # 46).

In reply, Bailey similarly fails to address in detail the issue of the applicability of section 112, P 6 to the claimed retainer means. Instead, Bailey generally assumes that section 112, P 6 does not apply to the retainer means language and therefore discusses the construction of the words in a manner different from Dart's construction. 15 (Docket Entry # # 49 & 78).

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15 It is, of course, to Bailey's advantage to forego application of section 112, P 6 to the retainer means language. Because a section 112, P 6 construction operates to limit the words in a claim to the stated and equivalent structures disclosed in the specification which perform the identical function, see In re Bond, 910 F.2d 831, 833 (Fed.Cir. 1990) ("'section 112 P 6 operates to cut back on the types of means which could literally satisfy the claim language"), Bailey's construction achieves a broader reach for the retainer means language.

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1. Applicability of Section 112, P 6

The last subparagraph of claim 1 of the '015 patent claims the following:

retainer means comprising at least one protrusion molded into the surface of the central portion of the lid opposite said access strip, said retainer means being shaped and located to capture and releasably maintain said access strip in the open position.


Section 112, P 6 allows an inventor to express an element in a claim as a means for performing a function without reciting the structure of the claimed element in the claim. 16 The doctrine operates as a kind of reverse doctrine of equivalents inasmuch as the structures or equivalent structures disclosed in the specification will be read into the claimed means. See Johnston v. IVAC Corporation, 885 F.2d 1574, 1580 (Fed.Cir. 1989). In order for infringement to exist when a claim contains means plus function language, "an accused device must (1) perform the identical function recited in the means limitation and (2) perform that function using the structure disclosed in the specification or an equivalent structure." Carroll Touch, Inc. v. Electro Mechanical Systems, Inc., 15 F.3d 1573, 1578 (Fed.Cir. 1993); accord King Instruments Corporation v. Perego, 65 F.3d 941, 945-946 (Fed.Cir. 1995) (setting forth similar analysis and citing Valmont Industries, Inc. v. Reinke Manufacturing Company, 983 F.2d at 1042), petition for cert. filed, 64 U.S.L.W. 3625 (U.S. March 4, 1996) (No. 95-1418).

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16 The statute reads as follows:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.


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The recitation of a function together with the word "means" in a claim does not necessarily require the application of section

In the case at bar, the structural language following the words retainer means is in and of itself structural in nature. The words "protrusion [emphasis added] molded into the surface of the central portion of the lid" ( '015 patent, col. 5, l. 30-33) exist independently and apart from the described function of the retainer means. Cf. Fairchild Semiconductor Corporation v. Nintendo Company, Ltd., 1994 U.S. Dist. LEXIS 3853, 1994 WL 560607 at *4 (W.D.Wash. Feb. 14, 1994) (finding means plus function language with the term "connector means," in part, because "the structure is not known without understanding its function"). The aforementioned words do not merely "further specify the function of [the] means," Laitram Corporation v. Rexnord, Inc., 939 F.2d at 1536, which in this instance is "to capture and releasably maintain said access strip." ( '015 patent, col. 5, l. 33-35). Instead, they describe a structure, i.e., a protrusion and its location opposite said access strip. See, e.g., ZMI Corporation v. Cardiac Resuscitator Corporation, 844 F.2d 1576, 1581 (Fed.Cir. 1988).

To the extent there is any doubt, the prosecution history confirms that one skilled in the art would interpret the claims in this manner notwithstanding the language in the specification intimating the application of section 112, P 6. ( '015 patent, col. 4, l. 4-20). 17 In October 1977 Bailey filed a continuation in part application which eventually issued as the '015 patent. The original application recited four application claims involving a retainer means, application claims 9 through 12. 18 Application claims 9 and 10 incorporated prior claims and simply included added language describing a retainer means albeit without the insertion of structural language. 19 Application claims 11 and 12, however, included a more specific and more structural description of the retainer means. 20

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17 The referenced language describes alternative means to capture and releasably maintain the access strip in its open position.

18 The original language in the specification remained essentially unchanged throughout the application process with respect to the description of the retainer means except for the substitution of "access strip" for the words "tear strip."

19 Application claim 9 claimed, "The container lid of Claim 1 including retainer means to capture and releasably maintain said tear strip in the open position."

Application claim 10 recited, "The container lid of Claim 9 wherein said retainer means is integral therewith." (Docket Entry # 60, Ex. 8).

20 Application claim 11 claimed, "The container lid of Claim 9 wherein said retainer means comprises a pair of spaced apart protrusions molded into the surface of the central portion of the lid opposite said tear strip: said protrusions being spaced apart and shaped to capture and releasably (sic) maintain said tear strip in the open position therebetween."

Application claim 12 recited, "The container lid of Claim 9 wherein said retainer means comprises the combination of a vent cap and at least one protrusion molded into the surface of the central portion of the lid, each said protrusion being spaced from said vent cap to define a trough therebetween, each said trough being located and being of a size and shape to capture and releasably (sic) maintain said tear strip in the open position." (Docket Entry # 60, Ex. 8).

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The examiner rejected application claims 9 and 10 because it would have been obvious to employ the retainer teachings shown in a 1969 patent issued to John B. Nicholson ("Nicholson") (Docket Entry # 48, Ex. E) in the coffee cup lid claimed in a 1974 patent issued to James J. Serritella ("Serritella") (Docket Entry # 48, Ex. C) as modified by a 1968 patent issued to Henry M. Chang ("Chang") (Docket Entry # 48, Ex. D). The examiner did not, however, reject application claims 11 and 12 which, as previously noted, included the more specific, structural language describing the retainer means. Rather, the examiner objected to these application claims because they depended on previously rejected claims. He further stated that application claims 11 and 12 would be allowable if rewritten in independent form with the limitations of the parent claims.
In lieu of following the examiner's suggestion to rewrite application claims 11 and 12 in independent form, Bailey submitted a response. With respect to the issue of the retainer means, Bailey argued that Nicholson disclosed a retainer means for can tops with metallic tear strips which was inoperable in Bailey's resilient thin polymeric wares. Thereafter, however, the examiner reaffirmed his earlier decision to reject application claims 9 and 10 as unpatentable. 21

21 This court has considered that, in issuing a final rejection of application claims 13, 3 and 5, the examiner also explained that, "It would be obvious to employ the non-converging or non-intersecting tearing of Chang with the impressions of Serritella . . . The score lines of Serritella are 'substantially through' the sheet." (Docket Entry # 60, Ex. 8).

Bailey appealed the rejection and, with respect to the retainer means language, repeated his argument that Nicholson only disclosed a retainer means operable for metallic tear strips. The examiner's answer asserted, in part, that the teaching of the Nicholson retainer applied to plastic as well as to metal. The Board of Appeals of the United States Patent and Trademark Office affirmed the examiner's rejection of application claims 9 and 10. In so doing, the board noted the following:

Claims 9 and 10 recite broadly means to capture and releasably maintain the closure in open position. The examiner has relied on the Nicholson disclosure for its protrusion 50 as a teaching of such expedient. As broadly claimed [emphasis added], we see no error in such position.

(Docket Entry # 60, Ex. 8).

After losing the appeal, Bailey canceled application claims 9 and 10 and added a new, independent claim denominated as application claim 15. In addition to claiming other matter, the retainer means described in application claim 15 read as follows:

retainer means comprising at least one protrusion molded into the surface of the central portion of the lid opposite said access strip, said retainer means being shaped and located to capture and releasably maintain said access strip in the open position.

(Docket Entry # 60, Ex. 8). Application claims 11 and 12 containing the more specific, structural description of the retainer means, were made to depend from new application claim 15. 22

22 Application claims 15, 11 and 12 eventually issued respectively as claims 1, 9 and 10 in the '015 patent.

It is significant that in remarks to the United States Patent and Trademark Office ("PTO"), Bailey described application claim 15 as a generic claim which avoided new matter but nevertheless taught the subject matter of application claims 11 and 12. Bailey's remarks read, in part, as follows:

Claim 15, presented herein, represents a careful compositing of the subject matter of Claims 13, 9, 11 and 12 in such manner as to, at once: (1) avoid new matter; (2) provide a single independent claim which is generic to allowable dependent Claims 11 and 12 [emphasis added]; and (3) teach that the subject matter of Claims 11 and 12 which the Examiner has previously held to patently define over the prior art. Specifically, allowable dependent Claims 11 and 12 teach the retainer means as comprising at least one molded [emphasis in original] protrusion located on the central [emphasis in original] portion of the lid opposite [emphasis in original] the access strip. Each of the foregoing features and associations is explicitly recited in new independent Claim 15. Accordingly, Claims 11 and 12 have also been retained as species [emphasis added] claims depending from said Claim 15.
In other words, Bailey again decided not to limit the new claims to independent versions of application claims 11 and 12, as earlier suggested by the examiner. Instead, Bailey decided to add a new claim, application claim 15, which he described as "generic" to application claims 11 and 12. He also characterized application claims 11 and 12 as "species claims" depending from application claim 15.

In patent nomenclature, a generic claim and claims restricted to species are terms of art:

Claims may be restricted to a single disclosed embodiment (i.e., a single species, and thus be designated a specific species claim), or a claim may include two or more of the disclosed embodiments within the breadth and scope of definition (and thus be designated a generic or genus claim) . . . In general, a generic claim should include no material element additional to those recited in the species claims, and must comprehend within its confines the organization covered in each of the species.

Manual of Patent Examining Procedure, §§ 806.04(d) & 806.04(e) (5th ed., Rev. 15, 1994); see also In re Kroekel, 803 F.2d 705, 707 (Fed.Cir. 1986) (in separate patents, one patent may have "a broad or 'generic' claim which 'reads on' an invention defined by a narrower or more specific claim in another patent").

Consequently, in light of the rejection of the retainer means application claims which lacked the structural language (application claims 9 and 10) "as broadly claimed," Bailey framed an independent generic claim. In so doing, he imported three features from the nonobjectionable, retainer means application claims which had included structural language (application claims 11 and 12) and underlined the imported features for emphasis, to wit, "at least one molded protrusion located on the central portion of the lid opposite the access strip." Bailey then characterized application claims 11 and 12 as species claims emanating from new application claim 15. By emphasizing the structural components of the retainer means and the location of the retainer means opposite the access strip in the newly formed independent, generic claim, Bailey removed any doubt that the retainer means element in claim 1 of the '015 patent is not a means plus function clause.

The PTO issued a notice of allowance with respect to the applications claims as amended after appeal. Thereafter, on March 30, 1982, the '015 patent issued.

As previously noted, Dart argues that the term "at least one protrusion [emphasis added]," when properly construed, does not include a vent cap. The common and ordinary meaning of the word protrusion to one skilled in the art, however, is something which protrudes. The verb protrude means to project or "to jut out from the surrounding surface." (Docket Entry # 60, Ex. 13). Furthermore, the common and ordinary meaning of the words "at least one" includes a retainer means comprised of only one protrusion. One skilled in the art would also understand that the term protrusion conceivably includes a structure which juts out from the surface of the container lid including the structure identified as a vent cap in Dart's lids.

The specification fails to demonstrate any special definition accorded the term protrusion. In other words, there is no indication in the specification that Bailey intended to attach an uncommon meaning to the term protrusion. See Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1388 (Fed.Cir. 1992) (when "inventor chooses to be his own lexicographer and to give terms uncommon meanings, he must set out his uncommon definition in some manner in the patent disclosure"). The specification language cited by Dart ( '015 patent, col. 4, l. 15-16) does not explicitly define the term protrusion to exclude a vent cap. Rather, the sentence simply describes one of several embodiments of the retainer means wherein the retainer means is comprised of "the combination of molded-in vent cap (33) and a protrusion (32), each rising above the surface of central portion (12)." Claim 10 claims this more specific version of the retainer means. 23 Accordingly, Dart's construction of the terms "at least one protrusion" does not mandate partial summary judgment.

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23 The fact that claim 10 separates the term vent cap from the term protrusion does not, absent more specific language in the patent, inevitably require that a protrusion can never constitute a vent cap. Furthermore, the fact that Dart's lids may not infringe the retainer means in claim 10 does not lead to a conclusion that Dart's lids do not infringe the retainer means in claim 1.
Dart also asserts that the words "opposite [emphasis added] said access strip" ( '015 patent, col. 5, l. 32) do not describe or extend to cover centrally located vent caps which lie adjacent to the access strip. Claim 1 uses the words "opposite said access strip" to refer to the location of the one or more protrusions on the container lid which operate to releasably maintain the access strip in its open position. The more complete phrase claims "at least one protrusion molded into the central [emphasis added] portion of the lid opposite said access strip." The claimed protrusion is therefore located in the central portion of the container lid which lies opposite the access strip. Given the described location of Dart's vent cap as opposite the access strip by Bailey's expert (Docket Entry # 59, PP 24 & 69) and as adjacent to the access strip by Dart's expert (Docket Entry # 49, P 9), there is a material issue of fact as to whether the so called vent cap in Dart's lids literally infringes the limitation in claim 1 that the centrally located protrusion[s] be "opposite said access strip." 24

24 For purposes of resolving the motion for partial summary judgment, therefore, this court need not further interpret the language "opposite said access strip" at this time. As noted in Markman, the court is obligated to pronounce the meaning of disputed language within a claim. However, "This ordinarily can be accomplished by the court in framing its charge to the jury." Markman v. Westview Instruments, Inc., 52 F.3d at 981.

Dart also contends that because Bailey acquiesced to the rejection of application claim 9, he cannot now assert a broad scope to the retainer means disclosed in claim 1. The prosecution history, however, reflects that although Bailey canceled application claim 9, he also applied for a new claim, application claim 15, which he described as a composite of the subject matter taught in application claim 9 as well as three other application claims. Moreover, Bailey is not attempting to define the term retainer means as broadly as the language used in application claim 9.

Due to the different descriptions of the location of the vent cap and the way in which Dart's lids maintain the access strip in an open position, partial summary judgment is also improper with respect to whether the differences between Dart's lids and the retainer means in claim 1 are substantial. 25

25 In making this finding this court has considered Dart's arguments about the prior art, its construction of Bailey's statements to the examiner describing new application claim 15 and the reasons for Bailey's insertion of the words "opposite said access strip" into application claim 15. (Docket Entry # 46).
RTI contends that BD's construction would not only limit the patent to a preferred embodiment, but would also limit the patent to RTI's particular commercial product, the VanishPoint(R)-syringe. Dkt. No. 111 at 8-10. The construction proposed by BD would read a frictional holding force limitation into the term. RTI believes this improper because some claims do not require any engagement or holding force, much less some kind of frictional force. Id. at 10 (citing '224, 20:46-54 (claim 43)). Moreover, RTI contends that the patentee explicitly stated in some claims that frictional forces were required, raising the implication that claims without such explicit statements are not limited to friction. Id. (comparing '733, 14:32-37 (claim 1) with 17:18-21 (claim 24) and 18:38-41 (claim 36)). RTI also contends that the specification expressly contemplates embodiments that operate using something other than friction to hold the retainer member in place. Id. at 11-13. Specifically, the patents teach that the holding force used in the invention, while preferably frictional, may instead rely on tack welding, sonic welding, adhesive, or clamping forces. Id. at 12-13 (citing '733, 9:50-53, 10:4-8, 6:47-55, and 11:49-52).

RTI also believes that BD's proposed construction is improper in another regard, it requires that the retainer member and needle holder be separate parts. Id. at 16-18. While one preferred embodiment teaches that the two components are separate parts, RTI argues that there is nothing in either the claims or the specification that requires such. Id. To the contrary, an alternative embodiment suggests that the two are welded together to form a single structure. Id. at 17 (citing '733, 9:7-27). Therefore, RTI contends that--despite being two components--the patents contemplate that the retainer member and needle holder may be formed into a single structure. Id.

In response, BD contends that the specification repeatedly describes the invention as a retracting syringe in which the needle holder is engaged and released by sliding surfaces, and therefore, friction. Dkt. No. 112 at 17. BD identifies numerous points in the specification where the holding force used in the invention is identified as a frictional force. Id. at 17-18 (citing '733, 2:67-3:6, 3:11-13, and 3:61). BD also contends that the specification uses the terms 'holding force' and 'frictional holding force' interchangeably, thus demonstrating that they are intended to have the same meaning. Id. (citing Tate Access Floors, Inc. v. Maxcess Techs., Inc., 222 F.3d 958, 968 (Fed. Cir. 2000)). Moreover, BD argues that the specification criticizes syringes in the prior art that operate without friction and rely instead on flexing, breaking, or penetration. Id. at 18 (citing '733, 1:48-54, 2:18-35). Specifically, BD contends the specification asserts that the invention was new and different because it "relies entirely on clamping force or friction . . . ." Id. (quoting '733, 2:20-21).

In connection with the second issue regarding this term, that is whether the needle holder and retainer member must be separate parts, BD argues that the '733 claims suggest that the two components are inherently separate parts. Id. at 25. BD argues that a single, unitary structure cannot couple with itself or surround itself. Id. In addition, BD contends that the patent specification, specifically the Summary of the Invention, explains that the retraction mechanism has a "two part head." Id. (citing '733, 3:25-26). Finally, BD argues that melting or tacking two parts together do not make them a single part; instead, such coupling is further evidence that they are indeed two separate parts. Id. at 25-26.

b. Court's Construction

First, this Court finds that nothing in the specification requires the needle holder and retainer member be two separate parts. The specification states that in "one embodiment, the head of the holder is a two part head comprising an inner head surrounded by a separable retainer . . . ." '733, 3:19-22 (emphasis added). This statement is explicitly limited to a single, preferred embodiment, thus suggesting that other embodiments of the invention may utilize a unitary structure. Such a structure is contemplated in an alternative embodiment in which the two components are initially welded together and later "ruptured or separated." Id. at 9:7-13.

Second, this Court finds that the invention operates through the use of a frictional or clamping force, and that the retainer member must utilize these forces. Although the claims by themselves may seem broad enough to encompass other methods of operation, the patent as a whole disavows such methods and limits itself to frictional or clamping forces. The Federal Circuit has stated that where "the general summary or description of the invention describes a feature of the invention . . . and criticizes other products . . . that lack the same feature, this operates as a clear disavowal of these other products . . . ." Astrazeneca AB v. Mutual Pharm. Co., 384 F.3d 1333, 1340 (Fed. Cir. 2004), see also SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1341 (Fed. Cir. 2001) ("Where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims . . . even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the
RTI is correct in asserting that some claims of the '733 Patent are explicitly limited to a frictional force while others do not. Claim differentiation would ordinarily require that all claims not be so limited. The specification, however, makes clear that the invention does not include the use flexing, breaking, or penetration as methods of operation. It does so by expressly criticizing other methods used in retractable syringes:

Other problems with the prior art are dependence on flexing or breaking of internal parts by the plunger in order to release the retraction mechanism and use of a diaphragm at the end of the plunger which must be penetrated by a needle holding member and spring. These structures present serious quality control and assembly problems.

'733, 1:48-54. In contrast to these less preferable methods, the specification asserts that the present invention is superior because it relies entirely on clamping or frictional forces: "The prior art has not recognized a retraction mechanism with separable parts that relies entirely on clamping force or friction . . . ." '733, 2:18-20. By distinguishing itself from the prior art in such absolute terms, the patent has limited itself to a certain type of holding force--clamping or friction.

Finally, the varied embodiments in the invention demonstrate that this holding force may be utilized in different manners within the syringe. In one embodiment, a pair of frictional holding forces function to retain the needle in the projecting position: a frictional force between the wall of the syringe and the retainer member, and another between the retainer member and the needle holder. See '733, 6:56-67, 3:8-24. In another embodiment, the needle holder and retainer member are welded or tack molded together as discussed above. See '733, 9:50-53, 10:4-8, and 11:49-52. Although this weld or tack mold holds the needle holder and retainer member together, there is still a clamping or frictional force between the wall of the syringe and the retainer member. Without this force between the wall of the syringe and the retainer member, the syringe would be inoperable--it would be unable to retain the needle in a projecting position. Thus, the retainer member can only function through the use of a frictional or clamping force.

Accordingly, this Court finds that the term "retainer member" means "a non-retractable part of the retraction mechanism that uses some clamping or frictional force to keep the needle in the projecting position until released."

The parties agree that this limitation requires one portion to keep in a particular position and further moves or pushes a second part of the cover against a portion of the separated tissue that lies over it. The disagreement comes with respect to the interpretation of "retaining."

The parties agree that "retain" means to keep in a particular position. Defendants claim, however, that this term should be construed so that it precludes any further expansion of the limited expansion portion. In this vein, defendants again seize on the word "only" at the end of the limitation ("retaining a first portion of the cover in the expanded position and further forcing a second portion of the cover against the overlying portion of the separated tissue layer to further expand such overlying portion only"). The structure of the sentence, however, is even more clear in its indication that the word "only" applies only to the overlying tissue portion. Plaintiff, asserts that the "retaining" language is meant to convey the idea that the limited expansion portion must be kept in an expanded condition. Read in context of the specification, this language again is relative, and not absolute. Therefore, the proper construction is that the limited expansion portion must be retained in the expanded condition.

The court finds this limitation to mean "keeping the first portion of the cover in the expanded position and further pushing a second portion of the cover against the portion of the separated tissue that lies over it to further expand only such overlying tissue."

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"Retaining Assembly Including a Cross Brace Member"

The parties' proposed definitions of "retaining assembly including a cross brace member" are set forth in Table 2.

Table 2 - Parties' Claim Constructions for Claim 92 of the '092 Patent

<table>
<thead>
<tr>
<th>Term, Patent, and Ind. Claim</th>
<th>Pl.'s Interp.</th>
<th>Def.'s Interp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>retaining assembly including a cross brace member 6 member</td>
<td>Lifetime's interpretation: a &quot;retaining assembly including a cross brace member&quot; can be comprised of just a cross brace member, without more. (Lifetime's Cons. Rep. in Supp. (30) at 5.)</td>
<td>Correll's interpretation: &quot;a retaining assembly exists which has as part of its make up the cross brace member but the cross brace member by itself does not constitute the retaining assembly.&quot; (Correll's Mem. in Opp. (22) at 16-17.)</td>
</tr>
</tbody>
</table>

The only disagreement in the above proposed constructions is whether a cross brace member by itself meets this term or whether use of the words "assembly" and "including" require that the retaining assembly have other parts with the cross brace member.

The ordinary meaning of "assembly" is "a group of machine parts, especially one forming a self-contained, independently mounted unit." Webster's at 125. "Include" means "to contain, as a whole does parts or any part or element" and "to contain as a subordinate element; involve as a factor." Id. at 967.

The specification teaches that for the preferred embodiment, the retaining assembly is the cross brace member:

In one presently preferred embodiment, each of the retaining assemblies 36a, 36b comprise a cross-brace member having opposing ends and an intermediate body portion formed there between.”

(Sears Decl., Ex. A, '092 Patent at col. 13, Ins. 29-32.) This suggests that the retaining assembly can be the cross brace member alone, with nothing more.

Correll argues that allowing the preferred embodiment to apply to claim 92 is contrary to the claim language. Correll points out that the claim language uses the word "including" while, as noted above, the specification uses the word "comprise." According to Correll, because Lifetime used the word "including" and not "comprising" in the claim, the term must be construed to include structure other than the cross brace member.

A recent Federal Circuit decision is instructive on the parties' arguments because that court addressed the meaning of the terms including and comprising:

Comprising is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim. The word include means the same thing. Thus, a claim reciting "a widget comprising A and B," for example, would be infringed by any widget containing A and B, no matter
that C, D, or E might be present.

Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1344-45 (Fed. Cir. 2003) (internal quotations and citations omitted) (emphasis added). This view of the meanings of including and comprising is also held by the United States Patent and Trademark Office. Manual of Patent Examining Procedure § 2111.03 (8th Ed. 2003) ("including" and "comprising" are synonyms that do not exclude additional unrecited elements, but do not require them, while "consisting of" has a different meaning that excludes additional unrecited elements.)

In the present case, using the above-underlined language from Amgen--the "widget comprising A"--the "widget" is a retaining assembly and "A" is a cross brace member. Again, following Amgen, a product need only have "A" to infringe. This leads to the conclusion that the term including is synonymous with comprising, and specifies what the element must contain, at a minimum, to read on the patent. Contrary to Correll's assertion, the claim language retaining assembly including a cross brace member means that components other than the cross brace member may be added, but are not required. Id.; see also Hewlett-Packard Co. v. Repeat-O-Type Stencil Mfg. Corp., Inc., 123 F.3d 1445, 1451 (Fed. Cir. 1997) ("including' is synonymous with 'comprising,' and other "unnamed components" are "permitted" but not required).

The specification, as discussed above, supports this conclusion. When the inventor defined the preferred embodiment of the retaining assembly as a cross brace member, the inventor was emphasizing that nothing more was needed.

Correll also argues that the prosecution history of this claim element demonstrates that, contrary to the specification and Amgen, the retaining assembly including a cross brace member must include more than just the cross brace member. Correll's view of the prosecution history, however, is mistaken. Correll is correct that the Examiner rejected this element as originally claimed--retention member--in original claim 1 because it was anticipated by a 1959 Australian Patent to Sebels. After the applicant submitted new claims, the examiner also rejected the applicant's new term for this element--retaining member--in original claims 92 and 103. Significantly, original claims 1, 92, and 103 did not contain a requirement that the table be made of blow molded plastic.

When the applicant again submitted new claims in response to the rejection, the applicant added limitations requiring: (1) a blow molded table top; and (2) that the retaining assembly include a cross brace member. The claims were subsequently allowed, and as a result, Lifetime argues the addition of the blow molded plastic element was the reason for allowance.

The treatment of another claim in the prosecution history confirm's Lifetime's argument. Original claim 72 (allowed claim 58) contains all the same elements as original claim 92, but also contains the broader term retaining assembly without requiring a cross brace member. Original claim 72 also required that the table top be made of blow molded plastic. Although original claim 72 contained the same, or broader, retaining assembly that was present in original claims 1, 92, and 103 (which did not have the blow molded plastic requirement), the examiner did not reject claim 72. This leads to the conclusion that the requirement that the table top be made of blow molded plastic was the reason for allowance for original claim 72.

Accordingly, the court concludes that the addition of cross brace member to the retaining assembly element of claim 92 was not the reason for allowance.

Based on the above, the court's construction of retaining assembly including a cross brace member is: A machine part (or parts) that acts as a whole to retain the table legs, and that may consist of only a cross brace member, or there may be other parts in addition to the cross brace member.

5. Retainer Device

As an initial matter, Aqua-Lung maintains that the term "retainer device" invokes means-plus-function analysis. 35 U.S.C. § 112(6). To determine whether a term should be so construed, the first step is to determine if the word "means" is used as its presence creates a presumption that 35 U.S.C. § 112(6) applies. Mass. Inst. of Tech. v. Abacus Software, 462 F.3d 1344, 1353 (Fed. Cir. 2006). When a claim does not use the term "means," as is the case here, treatment as a means-plus-function claim element generally is not appropriate. Id. Means-plus-function claims only go to purely functional limitations that do
not provide the underlying structure performing the function. Phillips, 415 F.3d at 1311. For example, in Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996), the court construed "detent mechanism" to refer to particular structure, even though the term had functional connotations.

That said, "a limitation lacking the term 'means' may overcome the presumption against means-plus-function treatment if it is shown that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function." Mass. Inst. of Tech., 462 F.3d at 1353 (quotation omitted). Generic terms such as "mechanism," "means," "element," and "device," typically do not connote sufficiently definite structure. Id. at 1354. In Personalized Media Commc'n's, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 704 (Fed. Cir. 1998), for instance, the Federal Circuit contrasted the term "digital detector" as a whole, which recited sufficient structure to avoid 35 U.S.C. § 112(6) with "detector" by itself and other generic structural terms such as "means," "element," and "device," which did not.

Under this framework, Aqua-Lung submits that the use of the term "device" in "retainer device" is generic and invokes mean-plus-function analysis. Two Forty contends that adding the term "retainer" recites adequate structure and thereby does not implicate 35 U.S.C. § 112(6). While the term "device" standing alone connotes no more structure than the term "means," the addition of "retainer" takes this claim outside the means-plus-function realm because claim language that further defines a generic term like "device" can add sufficient structure to avoid Section 112(6). Mass. Inst. of Tech., 462 F.3d at 1354.

Use of the term in the '130 application and the '609 patent characterizes "retainer device" as something that secures the filter within the housing, thereby importing sufficient structure. See '130 application claim 12 at 37 ("said filter element is disposed between said bias exerting mechanism and said retainer device proximate said outlet opening"); '609 patent claim 15 at 20:65-67 ("a retainer device disposed within said passageway and configured to removably secure said filter within said passageway"); see also '130 application claim 1 at 35, claim 13 at 38, claim 21 at 40. The specifications likewise make clear that the term "retainer" refers to a particular device (a c-clip) and is not simply a general description of any structure that will perform a particular function. See id. at 26 ("A c-clip 86 is utilized to maintain the position of all the aforementioned components within the bore 210."); '609 patent at 7:42 ("A C-clip 44 is utilized to hold the filter 42 in the opening 38.").

Lest there by any doubt that 35 U.S.C. § 112(6) does not apply, the Federal Circuit has presented numerous examples that are similar to the term "retainer device" where claim language further defining a generic term added sufficient structure to avoid the confines of Section 112(6). Compare Greenberg, 91 F.3d at 1583 (holding that Section 112(6) did not apply to the term "detent mechanism" because "detent" denoted a type of device with sufficient structure), with Mass. Inst. of Tech., 462 F.3d at 1354 (determining that the term "colorant selection" modifying "mechanism" did not connote sufficient structure as it was not defined in the specification). "Retainer device," therefore is outside the purview of the means-plus-function analysis, and will be construed in accordance with the standard rules of claim construction noted in Phillips above.

The term "retainer device" appears in three claims of the '130 application, two claims of the '609 patent, one claim of the '958 patent, and four claims of the '674 patent. See '130 application claim 1 at 35 ("a retainer device for removably securing said filter element within said passageway"); '609 patent claim 15 at 20:65-67 ("a retainer device disposed within said passageway and configured to removably secure said filter within said passageway"); '958 patent claim 1 at 18:17-21 ("a retainer device disposed within said passageway and configured to removably secure said filter within said passageway, and said filter is disposed between said bias exerting mechanism and said retainer device proximate said outlet opening"); '674 patent claim 9 at 27:11-13 ("the retainer device securing the filter within the passageway is located between the filter and the exit opening"); see also '130 application claim 12 at 37, claim 29 at 43; '609 patent claim 27 at 22:43-45; '674 patent claim 1 at 26:53, claim 13 at 27:38-39, 28:3-4, claim 14 at 28:5-8.

Aqua-Lung proposes that a "retainer device" be defined as: "a c-clip mounted in an annular internal groove provided within the tubular duct proximate the lower or bottom end portion of the housing and sized to mount a removable c-clip therein, the c-clip being sized, shaped and positioned so that the spring provides sufficient bias force to close the gas inlet aperture with the gas flow control element, and so that the c-clip holds all of the internal components of the valve in place within the tubular duct." Two Forty proposes that it be construed as "a mechanism for holding one or more parts in place."

Aqua-Lung's proposed definition operates from the assumption that 35 U.S.C. § 112(6) applies. As a result, Aqua-Lung maintains that the term "retainer device" should be limited to the c-clip disclosed in the embodiments. See, e.g., '130 application at 21 ("the c-clip 86 holding all the internal components of the valve 132 in place within the bore 78"); see also id. at 18, 26, 28-29, 31. The patents-in-suit similarly use "c-clip" in their specifications to describe a "retainer device."
The Federal Circuit expressly has rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment. Phillips, 415 F.3d at 1323 (citing Gemstar-TV Guide Int'l, Inc. v. Int'l Trade Comm'n, 383 F.3d 1352, 1366 (Fed. Cir. 2004)). This is because persons of ordinary skill in the art rarely would confine their definitions of terms to the exact representations depicted in the embodiments. Id. One of the best ways to teach a person of ordinary skill in the art how to make and use the invention is to provide an example of how to practice the invention in a particular case. Id. Here, therefore, the fact that the specifications disclose only a single c-clip embodiment as a "retainer device" does not, by itself, compel limiting claim scope to a c-clip embodiment.

That said, the fact that only a single embodiment is shown is a fact that, when taken into consideration with the patentee's description of the invention, may show that the inventor only intended to claim a particular feature as his invention. Honeywell Int'l, v. ITT Indus., Inc., 452 F.3d 1312, 1318 (Fed. Cir. 2006). To do so, there must be additional evidence beyond the disclosure of a single embodiment to justify narrowing a construction to that embodiment. Agfa Corp. v. Creo Prods. Inc., 451 F.3d 1366, 1376-77 (Fed. Cir. 2006) ("Without any indication beyond the necessary depiction to suggest limiting the invention to this single embodiment, the broader language of the claims cannot carry that unexpressed and unintended (at the time of patent drafting) limitation.").

In Honeywell, for example, the court limited the scope of "fuel injection system component" to a "fuel filter" for two overriding reasons. 452 F.3d at 1318. First, because the specification repeatedly described the fuel filter as "this invention" and "the present invention," the "public was entitled to take the patentee at his word and the word was that the invention [was] a fuel filter." Id. Second, the written description's detailed discussion of the problem with the prior art that the patented invention addressed supported the conclusion that the fuel filter used in the specification was not a preferred embodiment, but the only embodiment. Id. Similarly, in Inpro II Licensing, S.A.R.L. v. T-Mobile USA, Inc., 450 F.3d 1350, 1354-55 (Fed. Cir. 2006), the court affirmed the narrow construction of "host interface" as "direct parallel bus interface" because the only embodiment disclosed was a direct parallel bus interface with the specification emphasizing the importance of a parallel connection in solving the problems identified.

The specifications here, by contrast, neither repeatedly used a c-clip as "this invention" nor indicated any particular importance of using a c-clip as a retainer device in solving the problem of keeping water out of a scuba regulator when the diver forgets to replace the dust cap after use. In any event, in the end, the manner in which the patentee uses a term within the specification and claims will demonstrate whether the example is limiting or to be read just as an example of the invention. Phillips, 415 F.3d at 1323. A review of the entire intrinsic record reveals that while certain embodiments may disclose the particular structure of a c-clip for the retainer device, there is no limitation restricting the claims to such a structure. The patentee knew the term "c-clip" and had he intended to limit the patent to such an embodiment, he could have done so in the claims. Instead, the abstracts, the summaries, and the claims in the '130 application and all three patents-insuit use the broader term "retainer device." See, e.g., '609 patent summary at 4:12-14 ("a retainer device is positioned for removably securing the filter element within the passageway"). Only when describing the representative non-binding embodiments did the patentee use the term "c-clip."

Aqua-Lung's preferred construction reads numerous limitations from the embodiments into its proposed definition. In contrast, Two Forty's proposed construction ignores the intrinsic record; that is, it does not take into the account the actual claim language and other parts of the intrinsic record outlined above. The Court, therefore, construes "retaining device" as "a mechanism configured removably to secure the filter and other parts within the passageway."

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dd. "Retaining Element" (Claim 31)

149. This element is described in terms of its function: "for holding the lever out of engagement with said cam during rotation of said dial until after said combination has been entered". This claim limitation is distinguishable from the first element of Claim 1 only because the phrase "a retaining element for" has been substituted for "lever retaining means for". Further, the word "element" is the equivalent of the word "means", as described earlier. For the reasons previously described, this claim language is to be construed as a means-plus-function element and subject to § 112 P6. The "element" is described solely by what it does: holding the lever out of engagement with the cam during rotation of the dial -- rather than
what it is.

150. There is no evidence that a "retaining element" has any commonly understood meaning in this art. Cf., Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996) ("detent mechanism" had well-understood meaning in the field).

151. The phrase "retaining element" is neither defined nor used in the description of the '656 patent specification. This terminology appears for the first time in Claim 31 where it is expressly defined in terms of functional terms, rather than its mechanical structure. The term "retaining" modifying "element" further reflects an intent to claim the limitation functionally -- that is, that the "element" retains or holds the lever out of engagement. Thus, the claim limitation is essentially devoid of mechanical structure, but is defined principally in terms of its functional characteristics.

152. The phrases "retaining means" and "retaining element" are also used interchangeably in other claims, also manifesting an intent for "element" and "means" to be equivalent. See Claims 1, 17, 19, 28 ("retaining means"); Claim 31 ("retaining element"). Other claims of the patent may be used to determine the scope of the claim at issue. McGill, Inc. v. John Zink Co., 736 F.2d 666, 674 (Fed. Cir. 1984). These are all the same mechanical structure, described in equivalent functional language, and therefore should be interpreted the same.

153. In the '656 patent specification, for the part identified as the "retaining element", the lever is held up out of contact with the dial cam by a cantilever arm which is an integral part of the lever and which includes a movable spring-loaded pin contained within a bore which operates to create a force when released rotating the lever about its pivot axis to bring the lock lever out of engagement with the dial cam.

ii. Retaining mechanisms

Plaintiffs argue that the term "retaining mechanisms" should be construed as any structure that keeps the lenses in a fixed place or position, whether rims, pins, screws or other mechanisms securing the lenses. The Defendant contends that the term should be restricted to the structure disclosed in the patent's specification--rims--and their equivalents that perform the identical function of "supporting" and "defining." 10

10 To the extent Plaintiffs dispute that the structure disclosed in the specification includes rims, the court disagrees. The court finds, based on its reading of the specification and every figure or drawing contained therein, that the retaining mechanisms disclosed in the specification clearly includes rims.

Under U.S. Patent law, "means-plus-function" claims must be construed in a way that is consistent with the structure disclosed in the patent's specification, see 35 U.S.C. § 112, P6, and, in this case, the specifications for each of the Patents-in-Suit depict the retaining mechanisms in the form of rims. 11 Defendant argues that "retaining mechanism" is a means-plus-function claim limitation because there is no common meaning of the phrase in the industry, and because the claim limitation is described only in terms of its function and not its mechanical structure (i.e. supporting lenses and defining a plane). See Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1215 (Fed. Cir. 1998) (construing a term as a "means-plus-function" claim limitation in light of "subsequent functional language"). Plaintiffs disagree that "retaining mechanism" is a means-plus-function claim limitation for the purposes of § 112 P6.

11 As well as to any equivalents, but the issue of equivalents is not before the court at this time.
As Plaintiffs correctly point out, there is presumption against construing "retaining mechanism" as a means-plus-function claim, because the relevant term at issue here does not include the word "means." See Phillips, 415 F.3d at 1311 (citing Personalized Media Communns., LLC v. ITC, 161 F.3d 696, 703-04 (Fed. Cir. 1998)). That said, the presumption is rebuttable, see Phillips, 415 F.3d at 1311, and this court finds that the presumption has been rebutted in this case.

Means-plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function. See Watts v. XL Sys., Inc., 232 F.3d 877, 880-81 (Fed. Cir. 2000). In this case, the term "retaining mechanism" is a purely functional limitation that provides no indication as to the nature of its structure, if any. Rather, the relevant claim language refers to "two retaining mechanisms for supporting a pair of lenses, and defining a frontal plane"—language which describes only what the retaining mechanisms do, namely supporting a pair of lenses and defining a frontal plane. As such, "retaining mechanism" is a means-plus-function claim within the meaning of § 112 P6.

Plaintiffs argue that the Federal Circuit's analysis in Phillips compels a contrary result but, in fact, Phillips is consistent with this court's decision. In Phillips, the Federal Circuit considered whether the term "baffles" 12 was a means-plus-function claim, and ultimately found that it was "not a purely functional placeholder in which structure is filled in by the specification" and, thus, not within the parameters of § 112 P6. See 415 F.3d at 1311. The court based its conclusion on the fact that the claim characterized the baffles as made up of "steel" and "extending inwardly" from the steel shell walls, "which plainly implied that the baffles are structures." Id. In this case, in contrast, the relevant claim language contains no language analogous to "extending inwardly" that in any way describes the retaining mechanism's physical structure. As such, the claim language in this case compels a different result than that at issue in Phillips. 13

12 The relevant claim language in Phillips at issue was as follows:

"Building modules adapted to fit together for construction of fire, sound and impact resistant security barriers and rooms for use in securing records and persons, comprising in combination, an outer shell . . ., sealant means . . . and further means disposed inside the shell for increasing its load bearing capacity comprising internal steel baffles extending inwardly from the steel shell walls."

13 Once again, the parties relied in part on the testimony of outside experts and other sources in support of their interpretations of "retaining mechanism." Plaintiffs cited testimony from Richard Chao and Defendant pointed to the testimony of Mr. Leck. The court finds that this evidence is no more helpful in construing "retaining mechanism" than it is in construing "frame" and, as such, declines to reach any motions to exclude any and all of this evidence.

Therefore, the court finds that "retaining mechanism" means "a structure that keeps the lenses in place using rims."
Essentially Freedman argues the retaining member must be two pieces while ASC says that the retaining member need not be a separate structure, and can be part of the overall structure of the female fastener. As explained below, Freedman has the better of the argument when the teachings of the specification are examined together with the claim language and in light of the file history.

2. Evidence from the Patent

a.

The specification requires access to both sides of the seat shell in order to engage the legs of the female fastener, col. 9, ll 19-30:

Also, although reference has been made throughout the text to the "insert" being fastened to the "seat shell," it is to be understood that the fastener of the present invention is not limited to use in any one particular application, but rather is truly a general purpose type fastener and, accordingly can be used, for example, for fastening a decorative panel to a wall divider frame (as shown in FIG. 11), a seat cushion to seat a frame (as shown in FIG. 12) or in any other application where a first member must be fastened to a second member, wherein the second member is accessible from both sides.

The specification requires the fastener to accommodate varying thicknesses of a seat shell, col. 1, ll 48-52:

It is also desirable, in some applications, to have a fastener which possesses a plurality of locking positions. Such a fastener may be used in applications where the thickness of material located between the two fastener halves is uncertain or subject to wide variation.

The specification calls for separate fastening components to avoid the need to remove the entire fastener and discard it before a new one is installed, col. 1, ll 53-61:

[I]t is often desirable to have a fastener with replaceable parts, especially those parts which tend to wear quickly. In such a case, if the wear prone parts are field replaceable, they can be serviced in the field. In cases where the fastener is not constructed with serviceable parts, the entire fastener, or perhaps the fastener and associated members, must be removed and discarded and new ones installed.

In other words, the fastener must have field replaceable components, col. 2, ll 1-3:

It is yet an additional object of this invention to provide a fastener which has field replaceable components, especially those components which are prone to wear.

The specification states that the retaining member gives the female fastener realignment capability, col. 3, ll 42-54:

the retaining member allowing the female fastener to move along the first axis, whereby when the seat insert is placed adjacent the seat shell and the stud fastener is passed through the female fastener aperture and between the resilient legs, and whereby any substantial imbalance along the first axis between the resilient forces of the legs against the stud body will cause the female fastener to move along the first axis in the direction which substantially balances the resilient forces exerted by the legs on the stud body, thereby aligning the female fastener with the male fastener, and whereby the engagement of the legs and the stud body acts to fasten the seat insert to the seat shell.

Claim 6 also states this, col. 11, ll 30-31:

said retaining member allowing said female fastener to move along said first axis.

Only a retaining structure separate from the structure of the female fastener including its legs can meet all of the above requirements.

b.
Additionally, the functioning of the retaining member calls for a separate structure. The retaining member when it engages (or comes into contact) with the legs keeps the female fastener in place, col. 2, ll 39-45, by preventing it from being pulled out:

the retaining washer engaging end of each leg passes completely through the retaining washer aperture thereby being released from their compressed position and causing the retaining washer engaging end of each leg to engage the second side of the retaining washer thereby retaining the female fastener in the aperture of the second member…

while at the same time allowing for some movement, col. 3, ll 34-42:

such that the female fastener is permitted to move within the seat shell aperture along a first axis parallel to the engaging surface of the seat shell, a retaining member adapted to reside in the inner portion of the seat shell and engage the legs of the female fastener thereby preventing the female fastener from being pulled out of the seat shell aperture…

and col. 7, ll 47-59:

While retaining female portion 46 in this position, aperture 51 of retaining clip 50 is placed around resilient legs 76, 78 and pushed thereon. This pushing force compresses legs 76, 78 towards one another until aperture 51 of retaining clips 50 passes over spurs 54 wherein the legs 76, 78 resiliently spring outwardly assuming their normal position and spurs 84 engage outer surface 90 of retaining clip 50 thereby preventing female fastener 46 from pulling out 88 of shell apertures 38. While washer 50 is retained by spurs 84, it can be seen that female fastener 46 will remain within shell aperture 38. The final step is to insert studs 26 over apertures 102 of their respective female fasteners 46.

c.

There are additional reasons from a reading of the specifications for construing a retaining member to call for a structure separate from the female fastener including the legs. This is made clear by the manner in which the ‘582 patent uses the phrases retaining member, retaining washer and retaining clip interchangeably.

The Abstract describes "a clip on the opposite side of the panel for retaining the female fastener in the aperture.*

The Summary of the Invention describes "a stud engaging end and a retaining washer engaging end, col. 2, ll 21-22 and "a retaining washer having first and second sides, col. 2, ll 25-26 and retaining washer, col. 2, ll 23-36.

The Summary of the Invention describes the invention "provid[ing] a self-insert fastening system," col. 3, 17-8. The phrase retaining member is described as the structure which allows movement of the female fastener in the aperture as well as prevents the female fastener from being pulled out of the shell aperture, see col. 3, ll 38-41. This is clearly the same structure as the referenced washer earlier described.

In the Detailed Description of the Preferred Embodiment, we find the phrases "retaining clips (or washers) 48, 50," col. 5, ll 11-12; "washer 50 (or retainer)," col. 6, l 29; "retaining clip 50," col. 7, ll 48, 51, 54; "washer (or retainer) which has previously been described," col. 8, ll 39-40, used interchangeably.

Clearly, this variable use calls for the washer as a separate structure; and therefore the retainer, which is a synonymous structure, must also be a separate structure.

d.

Lastly, it is clear from a reading of Claim 6 and in light of Claim 1 that a two piece structure is called:

Claim 1 which describes the invention of the ‘582 patent as a

  self-aligning fastener system for attaching a first member to a second member

 calls for a "retaining washer" throughout.
Claim 6 which describes the invention in a more limited way

a seat insert fastening system, for fastening an insert to a seating portion of a seat shell
calls for a "retaining member."

The two structures have identical functions. Claim 6 is more narrowly directed than Claim 1. The structure of the retaining member of Claim 6 is no broader or different than the retaining member of Claim 1.

Arguing claim differential is of no moment. Two claims with different terminologies can (and here do) define the same subject matter. Hormone Research Found. v. Genentech, Inc., 904 F.2d 1558, 1567, n.15 (Fed. Cir. 1990).

2. Evidence from the File History

Up to now in construing the phrase retaining element, the Court has considered only the language from the patent, with particular emphasis on the specification. Consideration of the file history of the '582 patent is in order because it was the applicant's response to the examiner's rejection which conclusively establishes a finding that the applicant expressly disclaimed coverage of the retaining member being an integral part of the female fastener.

In the Office Action of January 7, 1992, Claim 6 in its present form was rejected with the examiner stating in part:

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have substituted a resilient retaining washer for the work piece b of Tinnerman '148 as taught by Carr to allow some flexing between the attached members a and c.

The applicant responded in part as follows:

. . . The Examiner further states that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have substituted a resilient retaining washer for the work piece b of Tinnerman '148 as taught by Carr to allow some flexing between the attachment members a and c.

Two purposes are served by use of washer 9 in the Carr reference. First, it is used to hold nut member 3 in assembly with Metzel part 1 (page 1, lines 23-66) and secondly it is used to grip the walls surrounding the aperture 2 within supporting part 1 (lines 79-83). However, both of the above-referenced functions of washer 9 are served by retaining elements 16 in Tinnerman. Retaining elements 16 function to maintain work pieces a, b in proper assembled relation while also locking the clip in its position prior to attachment (see page 2, lines 7-17). Thus, there would be no motivation to add the washer of Carr '367 to the fastener of Tinnerman '148 in that it merely duplicates a function which is already present in the fastener. In the present invention, washer 90 serves the purpose of allowing female fastener portion 46 to float within aperture 38 thereby giving the fastener of the present invention its self-aligning attributes. Accordingly, there is no motivation to combine the washer as taught by Carr with the fastener as taught by Tinnerman. Carr does not teach the use of a washer in a way which allows the fastener to float within an aperture. There is no motivation to combine the washer of Carr to the fastener of Tinnerman to produce a self-aligning fastener inasmuch as neither Carr nor Tinnerman teaches the advantages of a self-aligning fastener.

Tinnerman, U.S. Patent No. 2,303,148, describes a nut fastened installation. It calls for a unitary restraining structure integral with a female fastener. All of this is described in col. 2, ll 34-57 which need not be recited here because all this is shown in Fig. 1 and particularly Fig. 4 of Tinnerman.

Carr, U.S. Patent No. 1,646,367, covers a nut and screw fastener and shows a dish-shaped washer 9 which is "snapped over the head of the nut to hold it in the assembly," col. 2, ll 56-58.

To combine Tinnerman with Carr as suggested by the examiner would result in non-integrated two pieces functioning to retain the fastener and integrated legs in place.
The applicant argued against the two pieces retainer resulting from a combination of Tinnerman and Carr because these were all really the two pieces called for by Claim 6. This is what was meant by the statement in the response:

Thus, there would be no motivation to add the washer of Carr '367 to the fastener of Tinnerman '148 in that it merely duplicates a function which is already present in the fastener.

ASC cannot reclaim subject matter which was disclaimed. See Rhodia Chimie v. PPG Ind., Inc., 402 F.3d 1371, 1384 (Fed. Cir. 2005). As stated in Freedman Seating's Revised Responsive Claim Construction Brief at p. 25:

Clearly, ASC argued during prosecution that the structure taught by the prior art Tinnerman patent -- namely, a one-piece female fastener having an integral structure which first "locks" the fastener into position within an aperture from one, not two sides of access, by "gripping" the walls surrounding the aperture, and which secondly carried its own, integrated, stud-receiver (a threaded nut) -- was patentably distinct fro the two-piece structure claimed by ASC, including claim 6, which requires a separate "retaining washer" to maintain the fastener in position within the aperture. Simply put, ASC argued that its invention did not encompass a female fastener that was maintained within an aperture without the use of a separate "retaining member."

3. Construction

The phrase "retaining member" is construed as follows:

A structural element separate and distinct from the female fastener adapted to come into physical contact with the legs of the female fastener to restrain the position of the head portion on the outer portion of the seat shell.

L. Claim 25

The method of claim 24 including the steps of retaining one edge of the tissue flap connected to surrounding tissue, moving the flap away from the edge so that it overlies an adjacent recipient area and applying the flap to such area.

The court finds this limitation to mean "keeping in position one line of intersection between the tissue flap and tissue that extends on all sides of and joins to the tissue flap, moving the flap in a direction other than towards the intact border so that it covers a receiving area near to the differentially expanded tissue flap and applying the flap to such area."

1(b) "Retaining said stand portions in face-to-face engagement with the underside of said platform and permitting limited displacement of said bearing members in a horizontal direction" as used in claim 1,

and

"Retaining said bearing means in sliding engagement with the underside of said platform and permitting limited displacement of said bearing members in a horizontal plane" as used in claim 8

Plaintiff's proposed construction:

Linking the stand portions to the underside of the platform and allowing limited horizontal movement of the bearing member." (claim 1)

and
Slots on the stand portions and tabs on the underside of the platform and equivalents (i.e. the tabs can come from the bearing and it can be inserted into the platform via slots and bent over, the slots being substantially larger than the tabs)" (claim 8)

Defendant's proposed construction:

Holding the bearing members against the underside of the platform so as to permit horizontal movement of the bearing members, but prevent non-horizontal movement.

Court's construction:

These terms do not contain a limitation that the bearing member cannot move in a non-horizontal direction.

In its claims construction brief, defendant identifies "retaining said stand portions in face-to-face engagement with the underside of said platform and permitting limited displacement of said bearing members in a horizontal direction" (claim 1) and "retaining said bearing means in sliding engagement with the underside of said platform and permitting limited displacement of said bearing members in a horizontal plane" (claim 8) as functions of the "assembly means."

As discussed above, these are not functions of the "assembly means" but the effect of how the bearing member or stand portion are connected to the platform. Nonetheless, the parties dispute whether these two phrases contain a limitation that disclaims any non-horizontal movement between the bearing member and the platform. Because neither the language of claims 1 and 8 nor the specification specifically disclaim non-horizontal movement, I conclude that the non-horizontal limitation should not be read in to these claims terms.

Defendant argues that because both claims 1 and 8 discusses limits on the bearing member's horizontal movement in relation to the platform, these claims specifically disclaim non-horizontal movement. In addition, the specification of the '420 patent also state that there should be "sufficient clearance so that the bearings may move horizontally with respect to the platform." '420 Pat., col 4., lns. 30-39. Despite defendant's contention that these lines constitute an express disavowal of non-horizontal movement, there is no language that expressly denies non-horizontal movement. Also because the invention transfers vertical force through the bearing members, it would appear that a certain amount of vertical movement would occur between the bearing member and the platform. However, it is the patent's total silence on whether the bearings could move in a limited vertical manner that leads me to conclude that neither claim term requires a limitation of "non-horizontal movement." Finally, as plaintiff observes, for the claimed horizontal movement to occur, there has to be some vertical movement, however minuscule; the scale would not work at all if it completely disclaimed vertical movement.

4. Reticle Image or Pattern

The final disputed claim term is "reticle image" or "reticle pattern," which appears in claims 1-14, 17-19, and 22 either expressly or by reference. As used in the '908 Patent, the term "reticle image" or "reticle pattern" means one of a series of lines, dots or crosshairs, capable of serving as a reference for centering or otherwise adjusting an optical element in a telescope.

The parties' dispute over this term concerned Glatter's assertion that the reticle image was required to be "axially symmetric," (Def.'s Opp. Br. at 3.) It was initially unclear what Glatter meant by "axially symmetric," whether he meant symmetric about one axis n8 or two, and if it were two whether those reference axes had to be at right angles to one another. It appears that Glatter meant the last possibility, the sort of two-dimensional crosshair images that appear in Figures 6-8 and 12-15: two lines lying at right angles to one another, or a shape that is symmetric about each of those lines. (Markman Tr. at 35:10-14.) Such images, especially when they contain spaced gradations, function well as a reference tool for (1) determining the center of an optical element, (2) determining whether an optical element's angular orientation is perpendicular with the laser beam's path, and (3) measuring the difference made by a particular adjustment. However, there is an issue as to whether or not "reticle image," as used in the patent, is limited to such a specific image.
Looking first to the claims, claim 1(a) provides "a reticle image having one of a series of lines, dots, or crosshairs." '908 Patent at 6:31-32. Glatter's brief cites an online dictionary definition for "reticle" as "a network of fine lines, dots, cross hairs, or wires in the focal plane of the eyepiece of an optical instrument." (Def. Opp. Br. at 3)(citing http://www.hyperdictionary.com.) Glatter comments that in light of his definition of the word reticle, the phrase "reticle image having one of a series of lines, dots, or crosshairs" in claim 1 is redundant. (Id.) The Court agrees with Glatter's comment, which indicates that claim 1 contains the definition of "reticle image," as used in the patent. Therefore, the patent contains a clear definition of the term in claim 1, which contains no limitation of "axial symmetry."

Next, the term "axially symmetric" does not appear anywhere in the '908 Patent. However, figures 6-8 and 12-15 in the '908 Patent contain reticle images that happen to be "axially symmetric" by Glatter's definition. Additionally, the only references to specifically shaped reticle images are to images that happen to be axially symmetric. '908 Patent at 2:21-27, 3:13-6:27. Nonetheless, the figures and descriptions are limited to the preferred embodiment, and courts should "avoid the danger of reading limitations from the specification into the claim[s]." Phillips, 2005 U.S. App. LEXIS 13954, 2005 WL 1620331, at *15. There are examples of common geometric images, "composed of one of a series of lines, dots, or crosshairs" that are not "axially symmetric," according to Glatter's definition. n9 Therefore, the problem with imposing "axially symmetric" on the term "reticle image" is the danger that it unduly limits the scope of the patent by "confining the claims to [the preferred] embodiments." Id. There is nothing in the patent's specification that limits term "reticle image" to "axially symmetric" images.

n9 The most glaring example would be a triangular pattern or crosshair with three lines, equally spaced from one another in a two-dimensional plane, coming from a center point. Such an image would not be "axially symmetric" - having lines spaced at ninety degrees from one another, or shapes symmetric about such lines - but could serve the same function according to the patent. (The same would be true of any crosshair with an odd number of equally spaced lines stemming from its center.) Other examples of common patterns that are not "axially symmetric," or symmetric about any line, are those that only exhibit point symmetry - shapes wherein all of the components can be reflected through a center point and form the same image. These can include shapes that are not axially symmetric, like the letters "Z" and "S," and any geometric shape with a single diagonal line (that does not run along an axis of symmetry existing in the shape alone) passing through it, e.g., a rectangle with a diagonal passing from one corner to he opposite corner through its center.

Nonetheless, Glatter argues that a person of ordinary skill in the art would interpret the term "reticle image" to be limited to "axially symmetric" images. (Id. at 1-2.) It is clear that a person of ordinary skill in the art would be familiar with the term reticle. In fact, some definitions of the term reticle reference telescopes. The Oxford English Dictionary (2d ed. 1989), for example, defines "reticle" as "[a] set of parallel wires, threads, etc., with others intersecting them at right angles, or of lines similarly ruled upon a sheet of glass, placed in the object-glass of a telescope, in order to facilitate accurate observations." However, Webster's Third New Int'l Dictionary 1938 (1986), similar to Glatter's proffered dictionary definition, supra, defines "reticle" as "a system of lines, dots, cross hairs or wires in the focus of the eyepiece of an optical instrument (as a gunsight, microscope, telescope, or transit) used typically for estimating speed or distance, for measuring or counting, or as a centering or aiming device." The issue is whether one of ordinary skill in the art would understand the term reticle to be limited to "axially symmetric" patterns or images. The above dictionary definitions of "reticle" differ on the issue, because one presents examples that are "axially symmetric," as Glatter uses the term, while the other is silent as to that limitation. Thus, there is no clear indication that one of ordinary skill in the art would presume that limitation. Since there is no limitation in the claims, no limitation in the specification, and no mention of axial symmetry in the patent or the dictionary definition, this Court will not impose that limitation on the term "reticle."
III. Discussion

Kastner argues the Court erred at the stage of claim construction by defining the term "retract" narrowly. He also presents new evidence which, he contends, shows a genuine issue of material fact as to whether the studs in the Accused Products "retract," and he argues it was therefore error for the Court to grant summary judgment to Chet's Shoes. Because the parties have presented significant arguments and evidence, the Court grants reconsideration. The Court reaffirms its conclusions, however, on reconsideration.

A. Claim Construction of the Term "Retract"

Kastner accurately observes "the Court has limited the claims of the '283 patent to a stud that retracts until the tip of the stud is flush with the immediately surrounding surface of the sole or cleat." Doc. 65 at 3. Arguing this claim construction was error, Kastner points to the language of the '283 patent, which only requires the tip of the stud to be "substantially at the plane of said bottom surface of said sole," rather than flush with the immediately surrounding bottom surface. Doc. 45-4 at 6 ('283 Patent). He then asserts no prior art existed to require a narrower definition of "retract" than that contained in the patent itself. Kastner maintains he was the first to invent a stud capable of moving inward, so it was not necessary to limit the type of movement covered by his patents to true retraction (i.e., actually sliding or pulling up into the immediately surrounding rubber). See Doc. 60-1 at 3-5.

Despite Kastner's arguments, the Court declines to alter its conclusion as to the proper claim construction of "retract." As explained in the ruling on summary judgment, the narrower definition of "retract" is necessary to avoid prior art and invalidation on obviousness grounds. See Doc. 56 at 19-21. Common sense and a trip to the local outdoor outfitters will reveal that studded shoes with flexible rubber bottoms have long existed — a fact which Kastner admitted in his patent application. See Doc 24-2 at 18 (Response to Official Action at 4) (acknowledging various prior art, including Olsson's patent for studs embedded in a resilient sole). For many of these studded shoes, the resilient material of the sole allows the sole to deform when weight is distributed unevenly, when the terrain underfoot is uneven, or when the sole treads have irregular high-relief features. Due to the sole's deformation in these situations, one or more studs may end up vertically displaced (along with the surrounding area of sole) such that the stud tip is momentarily level with the rubber surface elsewhere on the sole. This kind of stud movement, due to asymmetrical pressure and flexing of the sole material, is nothing unusual, and is inherent in having a resilient sole. Cf. Doc. 24-9 (patent describing Olsson's method of fixing studs into a rubber or plastic sole, in which the sole itself remains free to flex or deform under pressure).

Kastner would have the Court interpret the term "retract" in his patents very broadly. In his view, a stud embedded in a flexible sole "retracts" if the sole can be deformed in any way such that the stud moves upward and its tip comes into line with the rubber surface somewhere — anywhere — on the sole. See, e.g., Doc. 60-1 at 4. This claim construction is too broad because, as noted above, it would encompass existing studded shoes with resilient soles and would place Kastner's patents in danger of invalidity for obviousness. See 35 U.S.C. § 103. For this reason, in ruling on summary judgment the Court construed the term "retract" in Kastner's patents more narrowly. See Doc. 56 at 20; Modine Mfg. Co. v. U.S. Int'l Trade Comm'n, 75 F.3d 1545, 1557 (Fed. Cir. 1996) (noting claims "should when reasonably possible be interpreted so as to preserve their validity"), overruled on other grounds,Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558, 574 (Fed. Cir. 2000) (en banc). This was explained in the previous ruling and remains true.

Although Kastner now contends about the Court limiting his patents to studs that truly "retract," during the course of prosecuting his patent he explicitly acknowledged the narrower meaning of the term. In particular, he distinguished prior art by clarifying the term "retract" in his patent meant depressing the stud within the surrounding rubber of the sole: "While Olsson does disclose a metal stud the anchoring portion of which appears to be surrounded by a material that may be resilient, there is no disclosure whatsoever in Olsson that the stud is depressed within the body of the sole during wear of the shoe." Doc. 24-2 at 18 (Response to Official Action at 4) (emphasis added). This shows Kastner himself distinguishing true retraction, where the stud actually slides or presses up into the surrounding sole material, from mere sole deformation, where the stud moves upward along with a surrounding area of sole rubber. Thus, in ruling on summary judgment, this Court was simply reading the term "retract" in the way Kastner conceded it must be read. The Court required studs to actually slide or press up into the surrounding sole material, such that the tip of the stud becomes flush with the immediately
surrounding bottom surface of the sole — which is nothing more than a detailed way of saying the studs must pull up into a position completely "within the body of the sole."

Kastner further confirmed this interpretation of "retract" in the course of distinguishing other prior art in his patent application. The Tomuro patent describes a resilient sole with spikes that are completely retracted until the wearer places weight on the sole. See Doc. 24-11. In their retracted position, the spikes are wholly within the rubber sole, such that the spike tips are flush with the immediately surrounding bottom surface of the sole. See id. at 2 (illustrations). Noting the type of stud movement in the Tomuro shoes — from this fully withdrawn position to a protruding position — Kastner wrote, "Tomuro, it is submitted, performs in precisely the opposite way from . . . [my] invention." Paper 24-2 at 16 (Response to Official Action at 2). Kastner thus envisioned his own studs retracting to an end-point similar to Tomuro's starting point — where the stud tips would be flush with the immediately surrounding rubber surface. He cannot complain, then, when the Court construes "retract" in precisely this way and requires a retracted position similar to that of Tomuro's retracted spikes.

For the above reasons, as well as those contained in the March 30, 2010 ruling on summary judgment, the Court's claim construction of the word "retract" was correct, and is not altered on reconsideration.
a support bracket that supports the table top support surface adjacent and in line with to [sic] the conveyor surface and in a position for receiving a horizontal stack of folded from [sic] the conveyor,
said support bracket including a pivot mechanism positioned along the table top and having a pivot axis substantially transverse to the downstream direction so that said table pivots from a substantially horizontal position to a substantially vertical position to likewise move the stack from a horizontal to a vertical stack position,
at least one retractable backing surface substantially transverse to a plane defined by the table top that supports a bottom of the stack when the table is pivoted to a substantially vertical position,
and a cart movable to a position adjacent said tilted table for receiving from said table said vertical stack, wherein the retractable backing surface is retracted to allow the vertical stack located thereon to be received from said table.

Wallace defends its narrow interpretation in several ways, contending that claim 1's "retractable" language is narrowed by the specification, the patent's other claims, and the prosecution history of the '516 patent, to require retraction into the table top. Specifically, Wallace points out that (1) the patent's specification and commercial embodiment contain a sliding door which retracts into the table to transfer the paper stack to the wheeled cart, (2) three other independent claims of the patent, claims 21, 27 and 34, require a retractable backing surface which, in a retracted position, allows the paper forms to pass from the conveyor to the table top free of obstruction (suggesting retraction into the table), (3) Roll's original patent application included a specification that described a sliding door, and (4) Roll's original patent claims, which did not require a retractable backing at all, were rejected as unpatentable.

From these facts, which are undisputed, Wallace concludes that the retractable backing surface in claim 1 must be interpreted to require a backing that draws into the table, like the one contained in Roll's specification and commercial embodiment.

The Federal Circuit has made it clear that the words of a claim are to be given their ordinary meaning unless it appears that the inventor used them differently. Hoganas AB v. Dresser Industries, Inc., 9 F.3d 948, 951 (Fed. Cir. 1993). Webster's New World Dictionary (3rd ed. 1988) defines "retract" as "to draw back or in," or "to withdraw or disavow." The word "retract," then, is not ordinarily limited to mean "draw in." Wallace argues, however, that the term has been restricted to this definition by Roll's intent, as evidenced elsewhere in the '516 patent and its prosecution history.

When the meaning of a word contained in a patent claim is disputed, specification and prosecution history can provide relevant information about the scope and meaning of the claim. Read, 970 F.2d at 823. Wallace correctly notes that "though inventors may be their own lexicographers, they must use words in the same way in the claims and in the specification." Fonar Corp. v. Johnson & Johnson, 821 F.2d 627, 632 (Fed. Cir. 1987), cert. denied, 484 U.S. 1027, 98 L. Ed. 2d 764, 108 S. Ct. 751 (1988). But this tenet of patent interpretation must be considered alongside another important principle of claim construction: "that interpreting what is meant by a word in a claim 'is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.'" Intervet America, Inc. v. Kee-Vet Laboratories, Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989) (quoting E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir.), cert. denied, 488 U.S. 986, 102 L. Ed. 2d 572, 109 S. Ct. 542 (1988))(emphasis in original). 3 Wallace has failed to heed the Intervet Court's warning -- it confuses precisely these ideas. Fonar provides a good illustration of the proper use of a specification in interpreting the language of a patent claim. In that case, the patent at issue described an imaging system which used nuclear magnetic resonance to detect cancerous cells. One claim limitation required a comparison of "the values obtained in [step] (b) against the standards obtained in [step] (a)." The plaintiff contended that, within the meaning of its
patent claims, the term "standard" was broad enough to signify a "baseline" of "images" stored in a doctor's memory. The Court disagreed, holding that because the specification used "standard" only to refer to numerical data, it contained no evidence supporting the plaintiff's "images' theory. Put another way, the specification implied a meaning other than the one urged by the plaintiff. Here, in contrast, Roll's specification supports its contention that "retractable backing surface" is one that can be withdrawn from the stack to transfer it. The device described by the specification, a sliding door, is one mechanism by which this transfer may be accomplished. The fact that the sliding door retracts into the table does not imply, however, that other forms of retractable backings are not contemplated by the inventor. See Specialty Composites v. Cabot Corp., 845 F.2d 981, 987 (Fed Cir. 1988) ("Where a specification does not require a limitation, that limitation should not be read from the specification into the claims." (emphasis in original)). In Specialty Composites, the defendant contended that the term "plasticizer," as it was used in plaintiff's patent, referred only to "external" plasticizers. Its evidence was the fact that the specification provided three examples of plasticizers, all external. The Court rejected this limited definition, noting that "what is patented is not restricted to the examples, but is defined by the words in the claims . . . . The emphasis is on the suitability of any plasticizer that will achieve the specified properties, not on the particular class of plasticizer." Id. at 987. Here, Wallace attempts to narrow claim 1 in exactly the way Specialty Composites forbids: Wallace contends that because the "retractable backing surface" described in Roll's specification also retracts into the table top, each claim of the patent requires a backing that retracts into the table. In fact, claim 1 requires only a retractable backing surface, transverse to the table top, which can be retracted "to allow the vertical stack thereon to be received from the table." The sliding door, like the external plasticizer, is merely one way of satisfying a requirement that could perhaps be performed in various ways.

Footnotes

3 The Federal Circuit has recently reconfirmed this principle in Electro Medical Systems, 34 F.3d 1048, 1054 (Fed. Cir. 1994) (patent claims are not to be interpreted by adding limitations appearing only in a specification -- although specifications may well indicate that certain embodiments are preferred, particular embodiments appearing in specification will not be read into claims when claim language is broader than such embodiments).

End Footnotes

Wallace's argument with respect to other, more limited claims of the patent is unpersuasive for the same reason. For example, independent claim 27 requires two backing surfaces, one at the "downstreammost" end of the tilting table, and:

a second backing surface positioned at an upstream most end of the table, the second backing surface extending substantially transversely to the table surface and being movable between an extended position and a retracted position, the second backing surface being constructed and arranged so that, in a retracted position, the folded [paper] web passes thereover from the conveyor free of obstruction by the second backing surface, the second backing surface being constructed and arranged to support the folded web in a vertical stack, with the second backing surface positioned at a bottom of the stack when the table is pivoted to a substantially vertical position; and a cart having a base and a vertical wall, the cart further including wheels so that it is portable, the base being located at a height from the ground that is approximately equal to the height from the ground of the second backing surface when the table is pivoted to a substantially vertical position so that the stacks supported thereby can be moved from the backing surface to the cart by positioning the cart base beneath the backing surface and moving the backing surface to a retracted position wherein the stack drops onto the cart base and supported thereby [sic].

U.S. Patent No. 5,273,516 at column 8, lines 50-68 and column 9, lines 1-7. Wallace contends that, in light of claim 27 and two other independent claims like it, 4 the "retractable backing surface" required by claim 1 must be interpreted as one that withdraws into the table top. Again, Wallace mistakes an improper construction for a proper one: The fact that claim 27 requires a backing surface which, in a "retracted" position, allows the paper forms to pass over the backing surface does not suggest that the word retracted, standing alone, implies such an arrangement. Rather, the claim includes an additional limitation -- that the backing may be drawn beneath the flow of moving paper forms. However, this limitation does not appear in, and is not required by, claim 1.

Footnotes

4 Claims 21 and 34 also require backing surfaces, in a retracted position, allow the paper to pass from the conveyor to the table free of obstruction.
Nor does the prosecution history of the '516 patent support Wallace's interpretation of claim 1. Although prosecution history may limit claims to exclude any interpretation disavowed during prosecution, Roll's original patent application did not include the word "retractable" at all. Therefore, there was no discussion during prosecution as to the meaning of the word, and no meanings were disclaimed by Roll Systems. Accordingly, the prosecution history of the '516 patent is not evidence that Roll intended to use the word in the limited sense urged by Wallace.

The specification, as originally submitted, does describe a sliding door. However, as set forth above, elements of a specification are not to be interpreted as claim requirements. Moreover, even if a sliding door was required by the original claims, to read this limitation into claim 1 would be to ignore what the Intervet Court calls "the impropriety of injecting into claims limitations from the prosecution history. Ambiguity, undue breadth, vagueness, and triviality are matters which go to claim validity . . . not to interpretation or construction." Id.

Furthermore, while it is true that Roll's claims were not deemed patentable until they were amended to require a retractable backing surface, this fact does not suggest that the backing surface required must withdraw into the tilting table. The original claims required no transfer mechanism at all. An examination of the prosecution history reveals that the patent office examiner amended claim 1 in the following way (examiner's omissions shown with a line through them, additions in italics):

at least one retractable backing surface substantially transverse to a plane defined by the table top that supports a bottom of the stack when the table is pivoted to a substantially vertical position,

and a cart movable to a position adjacent said tilted table for receiving from said

table said vertical stack [O>for support of said vertical stack on said cart.<O] wherein the retractable backing surface is retracted to allow the vertical stack located thereon to be received from said table.

Wallace's Exhibit B at 60. The unamended claim required no transfer mechanism whatsoever. The amendments merely limited the claim to describe a system which transfers the vertical stack by retracting the surface on which the stack rests. The examiner did not distinguish between retractable backings that retract into the table top and those which do not.

There is, therefore, a lack of evidence supporting Wallace's interpretation of claim 1. There are also several principles of construction which, when applied to the facts at hand, suggest that the term "retractable" must be broadly defined.

First, "narrow claim limitations cannot be read into broad [claims] whether to avoid invalidity or to escape infringement." Marsh-McBirney, Inc. v. Montedoro-Whitney Corp., 882 F.2d 498, 504 (Fed. Cir. 1989) 5 (quoting Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1054 (Fed. Cir. 1988)). Here, claims 4, 5 and 6, each of which is dependent upon claim 1, recite "sliding door" requirements:

4. A system as set forth in claim 1 wherein said table has a sliding door at one end thereof.

5. A system as set forth in claim 4 wherein said sliding door is disposed at an end of said table adjacent said conveyor.

6. A system as set forth in claim 5 wherein said sliding door has a first position in which it is disposed under said table top support surface and a second position in which it extends over the table top support surface for holding an end of a stack of folded material disposed on the table.


5 The Court's opinion was vacated on other grounds in 1991. 498 U.S. 1061. Subsequently, however, the Federal Circuit reinstated the sections of the opinion relied upon here. Marsh-McBirney, Inc. v. Montedoro-Whitney Corp., 939 F.2d 969
These dependent claims describe the sliding door which Wallace contends is required by claim 1. Under Marsh-McBirney, however, Wallace proposes an impermissible inference: that these dependent claims require no more than the independent claim on which they rely. See also Specialty Composites, 845 F.2d at 987-88. (holding that the "plasticizer" required by the independent claims at issue did not refer solely to an external plasticizer: "Since the dependent claims 8 and 16 add an external plasticizer as a limitation, the broader independent claims 1 and 11 do not have this limitation.").

Further evidence that claim 1 does not require a backing surface which withdraws into the table is found in the use of the word "retract" in dependent claims 30 and 31 of Roll’s patent. Those claims require a "pivotable flap" which bridges the space between the conveyor belt and tiltable table to prevent forms from falling between the two as they are passed onto the table top. The claims describe a flap which is movable between two positions: an extended position (in which it bridges the gap) and a retracted position (in which it disengages from the tiltable table like a drawbridge and rises until it stands up at the end of the conveyor belt to prevent the folded forms from falling to the ground while the tiltable table transfers a stack to the cart (see the flap marked 50, figure 3). In this context, the word "retract" is used to mean "withdraw" or draw back, rather than "withdraw into."

In sum, no evidence supports Wallace's theory that claim 1’s "retractable backing surface" must withdraw into the table top. In the absence of proof that such a restricted meaning was intended, the ordinary meaning of "retract" -- to draw back or in, or to withdraw -- is assumed. Hoganas AB v. Dresser Industries, Inc., 9 F.3d 948 (Fed. Cir. 1993). Claim 1, therefore, requires a backing surface transverse to the table top which supports the stack of paper and withdraws, or draws back or in, to transfer the stack to the cart.

9. Retractable Filter Cover

The term "retractable filter cover" only appears in the claims of the '609 patent. The phrase was not present in the '130 application specification as filed, but was added by amendment during prosecution. The term first appears in claim five of the '609 patent, which reads in pertinent part:

A filter assembly for use with a regulator device, said filter assembly comprising:

   a housing . . . ;

   a retractable filter cover disposed within said passageway, said filter cover having a range of motion between (i) a closed position in which said filter cover blocks said gas inlet opening and prevents fluid flow therethrough and (ii) an open position in which said filter cover permits fluid flow through said gas inlet opening, said filter cover being biased toward said closed position, said filter cover intercepting a plane defined by an upstream end of said first attachment portion when in said closed position; and

   a filter disposed in said passageway downstream of said filter cover.

'609 patent claim 5 at 20:6-27 (emphasis added).

Because "retractable filter cover" was added by amendment, Aqua-Lung claims that the term merely is a new name for an element already identified within the specification, namely the "pressure responsive element." Aqua-Lung, therefore, offers the same construction for both terms: "A gas pressure-responsive valve closure element that covers the filter and has a rounded or tapered head to seal the gas inlet opening from inside in the absence of applied gas pressure, and which is displaced axially against the action of a spring to open the gas inlet opening in the presence of applied gas pressure." Two Forty's proposed construction is: "A portion of the device which can be moved from a first position where it prevents flow into the device, to a second position, where it allows flow into the device." Two Forty asserts that their proposed claim
construction is based on claim language and context, use of the term in the specification, and the meaning understood by those skilled in the art.

Since the term appears only in the claims, understanding the claim term in light of the specification relies less on specific usage of the term and more upon the overall context of its use. In other words, the construction depends upon how one skilled in the art would understand "retractable filter cover" based on the invention disclosed in the patent. As stated in the priority '130 application, the patents-in-suit disclose an invention solving a problem in the sport of scuba diving. That is, the invention prevents inadvertent entry of water and other contaminants into the regulator when not connected to a pressurized fluid. As described in the background of the invention, the dust cap or dust cover is the prior art method for preventing such contamination.

In light of the object of the invention and use of the term within the claims, one skilled in the art would understand that the "retractable filter cover" is the element that solves the problem of contamination by blocking fluid flow when it is in a closed position. Aqua-Lung argues that the filter cover must operate to cover the filter entirely, but that reading has no basis in the specification. In the disclosed embodiments, and claim five of the '609 patent, the filter is a downstream element from the retractable filter cover. As long as the "retractable filter cover" prevents fluid flow when it is in the closed position, it serves the intended function within the invention. In this manner, the "retractable filter cover" serves the same function as the prior art dust cover, which does not cover the filter in the sense argued by Aqua-Lung.

Additionally, Aqua-Lung's proposed construction imports structural limitations into the definition by requiring that the "retractable filter cover" possess a rounded or tapered head. As Aqua-Lung contends that "retractable filter cover" means the same thing as "pressure responsive element," it refers to the description of the latter in the specification. Specifically, Aqua-Lung argues that all ten of the embodiments of the "pressure responsive element" in the priority specification disclose a curved head. The specification, however, also states that while curved upper surfaces are preferred, "other surfaces shapes and arrangements may be used to plug or seal the opening 80." '609 patent at 9:24-29. Two Forty also notes that the patent specification expressly maintains that the invention should not be limited by the specific embodiments. Id. at 8:44-46. Because one skilled in the art at the time would read the specification as encompassing additional surface shapes, adding a rounded or tapered head to the definition of "retractable filter cover" is not warranted. Furthermore, because one skilled in the art would recognize the spring as a separate element of the patentee's device, reference to a spring within the construction of "retractable filter cover" is likewise unnecessary. For the foregoing reasons, the Court construes "retractable filter cover" to mean "an element of a device which can move from a first position where it prevents fluid flow into the device, to a second position, where it allows fluid flow into the device."

Retraction Mechanism

The parties also ask the Court to construe the term "retraction mechanism" in Claim 22 of the 011 Patent and Claims 25, 36, and 41 of the 077 Patent. With little argument, NMT asserts that "retraction mechanism" means "the needle holder and spring." In contrast, RTI proposes that "retraction mechanism" means "a mechanism comprising, at least, a needle holder and biasing element." The Court notes that the parties have asked the Court to interpret only the two words "retraction mechanism."

Again, the Court begins with the ordinary meaning of "retraction mechanism." "Mechanism" means "a piece of machinery," and "retract" means "to draw back in." MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 719, 997 (10th ed. 2001). Machine is further defined as "a mechanically, electrically, or electronically operated device for performing a task." Id. at 695. Thus the Court begins with a heavy presumption that "retraction mechanism" means "a device which draws back in." The parties do not direct the Court to evidence from the specification which would limit "retraction mechanism" to a needle holder and biasing element, but rather take those limitations from claim language.

Claim 22 of the 011 Patent and Claim 36 of the 077 Patent limit "retraction mechanism." In relevant part, Claim 22 of the 011 Patent declares:

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needle holder and needle frictionally held by the wall of the syringe body with the needle extended from the nose portion, a biasing element applying a retraction force to the needle holder and a fluid path traversing the needle and needle holder.

Claim 36 of the 077 Patent, which is dependent on Claim 25 of the 077 Patent, declares that "the retraction mechanism comprises a needle holder held in an unretracted position by a removable ring member." Claims 25 and 41 of the 077 Patent use "retraction mechanism" without any definition. Thus, the "needle holder" and "biasing element" limitations come from definitions provided in Claim 22 of the 011 Patent and Claim 36 of the 077 Patent.

Claim 36 of the 077 Patent does not limit Claim 25 of the 077 Patent. Under the theory of claim differentiation, "there is a rebuttable presumption that different claims are of different scope." Sunrace Roots Enter. Co., LTD v. SRAM Corp., 336 F.3d 1298, 1303 (Fed. Cir. 2003). That presumption is "especially strong" where the limitation under consideration is the only meaningful difference between the independent and dependent claim and a party argues that the limitation in the dependent claim should be read into the independent claim. Id. Here, Claim 36 is dependent on Claim 25 via Claim 35. 3 The only meaningful difference between Claim 35 and 36 is Claim 36's limitation on the "retraction mechanism." Thus, there is an "especially strong" presumption that "retraction mechanism" as used in Claim 35 does not include Claim 36's limitations. Because Claim 35 does not change the definition of "retraction mechanism" from Claim 25, the Court must read those definitions consistently and find that Claim 36 also does not limit Claim 25.

Furthermore, if "retraction mechanism" as used in Claim 25 does not contain Claim 36's limitations, then "retraction mechanism" as a term should not contain Claim 36's limitations. The Court sees no reason to apply dependent Claim 36's limitations to wholly unrelated claims like Claim 22 of the 011 Patent and Claim 41 of the 077 Patent. Also, to apply Claim 36's limitations to other claims but not to Claim 25 would create competing definitions of "retraction mechanism" without reason. Therefore, reading all claims consistently, "retraction mechanism" in Claim 22 of the 011 Patent and in Claim 41 of the 077 Patent also do not contain Claim 36's limitations.

The Court also finds that NMT's proposed definition is inappropriate for Claims 25 and 41 of the 077 Patent. As noted above, Claims 25 and 41 do not restrict the term "retraction mechanism," and Claim 36's limitations should not be read into the other claims. Thus, any restrictions on "retraction mechanism" in Claims 25 and 41 of the 077 Patent must come from Claim 22 of the 011 Patent. 4 Furthermore, both parties's proposed definitions implicitly agree that Claim 22 of the 011 Patent must limit "retraction mechanism" as used in the remaining claims. The Court rejects NMT's proposed construction because there is no basis to limit the "retraction mechanism" to something that employs a spring. Claim 22 uses the term "biasing element" rather than spring. The parties have not asked the court to construe "biasing element," but it is presumably a broader term than "spring."

In conclusion, the Court defines "retraction mechanism" as a "device which draws back in comprising, at least, a needle holder and biasing element." As discussed above, the term "a device which draws back in" directly reflects the term's plain and ordinary meaning. Also, the language "comprising, at least, a needle holder and biasing element" reflects limitations from Claim 22 of the 077 Patent which the parties have agreed should exist in this term. The parties have agreed to those limitations by including them in their proposed constructions. The Court does not adopt NMT's construction because it finds no basis to limit the device to a spring. The Court expands RTI's construction with the phrase "a device designed to draw back in" to more accurately describe the "retraction mechanism's" purpose. Finally, as discussed supra, the Court does not read Claim 36's limitations into the other claims.
Return duct from said intercooler

Rice believes that this term need not be construed in that the ordinary and customary meaning of the term is clear. However, to the extent the Court finds construction necessary, Rice proposes that this term should be construed to read, "air duct through which air from the intercooler passes toward the high pressure compressor." While Rolls-Royce agrees the term need not be construed, Rolls-Royce asserts its construction, "conduit for conveying air back from the externally mounted intercooler (defined)." The specification notes that "air is compressed in a low-pressure compressor 24 which is driven coaxially by turbine 28. Said air is diffused and then ducted to intercoolers 38 and 40 where said air is cooled before being ducted back to be further compressed by high-pressure compressor 44 driven by turbine 46." See col. 16, lines 11-16 (emphasis added). The specification is more precise that the air is not just passing through, but is being ducted back or returned.

Therefore, the Court construes "return duct from said intercooler" as "conduit for conveying air back from the externally mounted intercooler (defined)."

A. The Pocrass '317 Patent

Claim 1 of the Pocrass '317 patent is set forth below. The parties dispute the meaning of the underlined language:

1. An RJ type modular connector for receiving a plug to form an electrical connection in data communication or telecommunication applications comprising:

   a housing formed by front, rear, top and bottom wall and having a plug receiving opening formed with the front wall thereof;

   at least one light emitting source integrally secured within said housing adjacent the plug receiving opening thereof to provide visual verification of the status of the electrical connection;

   a plurality of conductor wires, including conductor wires from said light emitting source, extending through one of said housing walls arranged in a predetermined spaced-apart array, adapted for insertion within a corresponding array of spaced holes in a printed circuit board.


1. Whether the claim is limited to "RJ type modular connectors"

The parties dispute whether the specification indicates that the invention is directed to RJ type modular connectors in particular or electrical connectors in general. While "RJ type modular connectors" are mentioned in the preamble, Maxconn asserts that the language does not function as a limitation, and that the claims themselves describe the particular connector of the invention. Conversely, Plaintiffs argue that the claim should be read as limited to RJ type modular connectors. 1

--------------- Footnotes ------------------

1 An RJ modular connector is a specific type of electrical connector which receives a plug containing several conductor wires to form an electrical connection with each wire.

--------------- End Footnotes  ---------------

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The determination of whether preamble recitations are structural limitations or mere statements of purpose or use "can be resolved only on review of the entirety of the patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim." Corning Glass Works v. Sumitomo Electric U.S.A., 868 F.2d 1251, 1257 (Fed. Cir. 1989). Where a patentee uses the claim preamble to recite structural limitations of his claimed invention, the PTO and courts give effect to that usage. See id. On the other hand, where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation. See Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed. Cir. 1995); Kropa v. Robie, 38 C.C.P.A. 858, 187 F.2d 150, 152 (C.C.P.A. 1951). To determine whether the preamble provides a limitation to the invention claimed, the court should assess whether the claim preamble gives "life and meaning" to the claims. See Kropa, 187 F.2d at 152. The court may look to the patent specification to determine whether the claimed invention includes preamble recitations. See Bell Communications, 55 F.3d at 621; Vaupel Textilmaschinen KG v. Meccanica Euro Italia SPA, 944 F.2d 870, 880 (Fed. Cir. 1991); Corning Glass Works, 868 F.2d at 1257.

In the Pocrass '317 patent, the patentee uses the claim preamble to recite structural limitations of the claimed invention. The specification makes it clear that the invention of the '317 patent is limited to electrical connectors known as RJ type modular connectors. As background to the invention, the inventor repeatedly states that his invention relates to RJ connectors. Pocrass '317 patent, col. 1:12-25. The inventor also states that he has "invented an RJ connector with at least one LED integrated into the module," Pocrass '317 patent, col. 1:26-27, and that "it is the object of the present invention to provide an RJ connector including an LED formed integral therewith," Pocrass '317 patent, col. 1:45-47. In addition, in the prosecution history, the term RJ type connector was specifically relied upon in arguments to distinguish the claims over the prior art.

Accordingly, the claim should be construed such that "RJ type modular connectors" serves as a limitation to the claim. The Court adopts Plaintiffs' interpretation as follows: "a connector for receiving a plug to form an electrical connection of the type referred to as an RJ modular connector." At oral argument, Maxconn did not dispute this interpretation.

The Court finds that in the context of the '075 patent, "rib" means an elongated structural element, running radially along the flange that axially extends to a height sufficient to engage a second flange's annular rim. The Court must start with the language of the claim itself. See Pitney Bowes, 182 F.3d at 1305; Comark, 156 F.3d at 1186. Claim 31 reads, in pertinent part:

A flange . . . comprising:

an annulus having at least one annular rim, said annular rim extending axially from a first side of the annulus;

* * *

a plurality of ribs disposed on said first side of the annulus, said plurality of ribs having an axial height sufficient to engage a second flange's annular rim that axially extends from a first side of a second flange to facilitate registration of a reel assembly including the flange with a second reel assembly including the second flange and to retain the reel assembly in registration with the second reel assembly.

'075 Patent, col. 12, ll. 62-67 to col. 13, ll. 1-8. Starting with the plain meaning of the word, "rib" connotes an elongated piece that runs along the "length" of something else. Webster's Dictionary defines rib as "an elongated elevation running the length of an object." Webster's Third New Int'l Dictionary 1950 (Merriam-Webster, Inc. 1981). In the context of a flange with an annulus, the length would be the radius of the flange. Furthermore, the claim language itself requires that a rib axially extend to a height sufficient to engage a second flange's annular rim. This latter requirement is particularly pertinent to the purpose of the rib, "to facilitate registration of a reel assembly . . . with a second reel assembly . . . ." '075 Patent, col. 13, ll. 4-7. Based on this analysis, the claim language seems to support the following definition of rib: an elongated structural element, running radially along the flange that axially extends to a height sufficient to engage a second flange's annular rim.

The patent specification seems to support such a construction. In one segment discussing ribs, the patent teaches:
The first flange 14 also includes a plurality of ribs 54 that may extend axially above the annular rims 24 and 26. The plurality of ribs 54 are preferably disposed such that at least a portion of each of the plurality of ribs extends to the inner extreme of the outer annular rim 26. The plurality of ribs 54 may suitably comprise an axial extension of one or more of the radial support ridges 52. As will be discussed further below, the plurality of ribs 54 facilitates the stacking reels by holding the first flange 14 in registration with a flange of another reel, not shown, that is stacked on top of the reel 10.

The second segment discussing ribs in the preferred embodiment confirms this implication. The patent reads:

In the exemplary embodiment described herein, the plurality of ribs 54 are disposed such that they extend radially to, but inside of, the outer annular rim 26. The plurality of ribs 54 have a height that exceeds the height of the inner annular rim 24 and the outer annular rim 26.

Vandor argues that the specification merely suggests that the ribs may be extensions of the radial support ridges, but a "'rib' may be any axially extending structure, preferably one that extends to the inner extreme of the outer annular rim of the flange." Pl.'s Br. in Opp'n, at 16. But Vandor's construction ignores the language of the claims and the specification that imply that the geometry of a rib has a length in the radial direction of the flange. Vandor's construction makes extension in the radial direction a preference; however, the plain meaning of rib and the patent specification point toward a structure that necessarily extends in the radial direction as well as the axial direction. Furthermore, claim 31 is specific that the structure is a "rib;" the patentees did not use the broader term "protrusion" or even "any structure" in writing the claim. Therefore, the Court finds that the plain meaning of "rib," or an elongated structure, is the best starting point for construction of the claim.

In summary, the Court finds that the plain meaning of "rib" in the context of the '075 patent means an elongated structural element, running radially along the flange that axially extends to a height sufficient to engage a second flange's annular rim.
Because the specifications for the patents-in-suit are essentially the same, the Court will simply refer to the '689 patent. The numerical references are to the column (e.g., column 1) and lines (e.g., lines 32-33) where the referenced text appears.

FieldTurf accuses SCG of improperly reading the preferred embodiment of the specification into the claim. Indeed, the text cited by SCG explicitly refers to a "preferred" method of processing the ribbon. SCG responds by citing Watts v. XL Sys., Inc., 232 F.3d 877, 883 (Fed. Cir. 2000), for the proposition that "[w]here '[t]he specification only describes one method' of achieving an element of the claim, 'the specification actually limits the invention to structures that utilize [that method], even if a person of ordinary skill in the art would be aware of other methods for achieving the claim element." Doc. 59, pp. 49-50.

SCG's selective quotation misstates the holding of Watts. It is true that the Watts court noted that "[t]he specification only describes one method" for achieving a desired sealing connection through misaligned taper angles. Watts, 232 F.3d at 883. But that was not why the Watts Court found that the specification limited the invention to structures that utilize the method, as SCG contends. Rather, the Watts court pointed to other text of the specification as follows: "Moreover, the specification actually limits the invention to structures that utilize misaligned taper angles, stating that 'the present invention utilizes [the varying taper angle] feature.'" Watts, 232 F.3d at 883 (emphasis added, brackets in original). In other words, in addition to describing a single embodiment, the Watts patentee also stated that the embodiment was the invention. SCG points to no such text in the FieldTurf patents, and in fact, the patents state that the "ribbons can be manufactured" in a certain manner in a "preferred" embodiment. 7 '689 patent, 8:22-23.

This analysis is entirely consistent with the Court's earlier discussion of the issue of reading an embodiment from the specification into the claims. In Watts, it was clear from the specification that the preferred embodiment was intended to be strictly coextensive with the claims. Phillips, 415 F.3d at 1323. As explained in C.R. Bard and Wang, the Watts patentee also described the preferred embodiment as the invention as a whole. C.R. Bard, 388 F.3d at 864; Wang, 197 F.3d at 1383.

Accordingly, the Court generally agrees with FieldTurf's proposed claim construction of a ribbon. However, instead of using the word ribbon in the claim construction of ribbon, the Court will simply use the generic term structure as follows: "A synthetic structure representing a grass blade." The Court also notes that this is a generic definition of the term ribbon. As in claim 1 of the '689 patent, "a synthetic structure representing a grass blade" may be further defined within the claim as being "longitudinally intermittently slit in a predetermined pattern of slits" and other limitations stated within the particular claim.

In its reply, FieldTurf points to the doctrine of claim differentiation, by which courts generally avoid claim construction of an independent claim that would render a dependent claim superfluous. LG Elecs., Inc. v. Bizcom Elecs., Inc., 453 F.3d 1364, 1372 (Fed. Cir. 2006); Comark Commun's. v. Harris Corp., 156 F.3d 1182 (Fed. Cir. 1998). Although it is not entirely clear how this doctrine would apply to claims without a dependency relationship—i.e, claim 1 of the '689 patent and claim 1 of the '752 patent—as FieldTurf contends, the general point is well taken. Claim 1 of the '689 patent actually does provide specific structure (intermittent slits" that are "laterrally linked", etc.) while the '752 patent does not. Other related claims may always be considered during claim construction and it would make sense that one patent of a divisional would claim a specific ribbon structure while the other has the generic ribbon and is focused on the details of the infill layers.
Defendant's first argument concerns the term "ribbon stock," found in each of the 12 claims of the '919 patent. See claims 1-7 (describing a "metallic ribbon stock folding apparatus"), claims 8-11 ("method of folding metallic ribbon stock") and claim 12 (a "system for folding metallic ribbon stock"). Ken argues that ribbon stock constitutes a limitation on each patent claim. Ken Br. at 5. Should the court disagree, Ken nevertheless advances in the alternative that the term must be understood to construct the patent claims. It concludes: "The term 'ribbon stock' does not have an understandable meaning, and as such, all of the claims of the '919 patent must be held invalid for indefiniteness." Ken Br. at 5 (emphasis in original).

In its related motion for claim construction, SDS remarks that while the apparatus described in the '919 patent is novel, "there is no suggestion that ribbon stock per se is novel. On the contrary, the '919 patent makes clear that at least one form of ribbon stock (i.e., cutting blade) existed in the prior art, as did other devices for folding ribbon stock." SDS Markman Br. at 20. SDS relies on dictionary definitions of the terms "ribbon" and "stock"; descriptions of "steel rule stock," "stock," "metal ribbon" and "metal ribbon stock" in purported prior art patents; and the patent examiner's references to "ribbon" in the prosecution history. Plaintiff concludes: "The only reasonable and appropriate construction of 'ribbon stock' is to include within its scope a supply of continuous metallic material, such as flat cutting blade or even wire . . ." SDS Br. at 27.

--- Footnotes ---

1 "The dictionary definition of 'ribbon stock' would simply be a narrow strip or band of material as the raw material for something being made." SDS Br. at 23.

--- End Footnotes ---

Ken counters that the term "ribbon stock" is not defined by the '919 patent claims, and that the '919 specification nowhere uses that phrase. It concludes that the phrase is not defined by the intrinsic evidence. It also insists that SDS' proffered "ordinary meaning" of the phrase is unsupported: Ken claims that "ribbon stock" has no plain meaning within the diecutting and diemaking industry, 2 referring to testimony of SDS' President Simon Song, a glossary published by the International Association of Diecutting and Diemaking (I.A.D.D.), and its own reading of the purported prior art patents. Ken further objects that, according to the dictionary cited by SDS, "ribbon" is first defined as "[a] narrow strip or band of fine fabric, such as satin or velvet, finished at the edges and used for trimming or tying." Ken Br. at 13. 3 "Thus, SDS is apparently implying that the invention could also cover a unit that folds and cuts clothing, gift wrapping, etc. Such a result is absurd . . . [and] well beyond what the '919 patent was intended to cover." Id. Next, Ken cites the I.A.D.D. definition of "stock": "Paper or other material to be die cut or printed." Warshavsky Decl. Exh. N. "Thus, when someone in the diecutting and diemaking industry uses the term 'stock,' [she is] referring to the product which will eventually be made by the diecutter." Ken Br. at 14. Finally, defendant distinguishes plaintiff's proffered prior art patents as either irrelevant to the precise term "ribbon stock," or describing a field other than diecutting or diemaking. Id. at 15. Defendant concludes that a person with skill in the art could not determine the bounds of the claims using the words "ribbon stock" and that the claims must be invalidated as indefinite.

--- Footnotes ---

2 SDS seeks to define the relevant field more broadly as that of "metal forming art, in the context of diemaking." SDS Statement of Disputed Facts P 3.

3 Though SDS did rely upon the American Heritage Dictionary definition of the term "ribbon," it quoted a different dictionary definition as "most appropriate": "Anything resembling a ribbon, as a measuring tape." SDS Markman Br. at 23.

--- End Footnotes ---

In reply, SDS submits the declaration of Dr. Tricamo:

I am familiar with the level of knowledge of one of ordinary skill in the metal forming arts, including within the diemaking field, at least as early as June 1995 and to the present. (P 4).

The claims of the '919 patent use the words "metallic ribbon stock" and "ribbon stock" to describe the metal material
being worked upon by the apparatus and method stated in the claims. In my opinion, Claim 1 uses the words "ribbon stock" as a shorthand expression for "metallic ribbon stock," which identifies a material intended to be acted upon by the components of the claimed apparatus. (P 6).

When I reviewed the claims of the '919 patent, I had no trouble understanding what was referred to by the terms "metallic ribbon stock" and "ribbon stock" even without the benefit of the specification of the '919 patent, and I do not believe that one skilled in the art would have any trouble understanding them. . . . "Ribbon stock" is a common term used and understood not only by engineers and other technical individuals in the metal forming arts, but is also, in my opinion, one used and understood by non-technical people. In essence, "ribbon stock" defines a flat strip of metal having edges that are generally parallel, as exemplified by a ribbon. "Ribbon stock" can be of any length. The use of "metallic" ribbon stock makes it clear that the material must be metallic, as contrasted with, for example, decorative fabric ribbon. (P 7) (Emphasis added).

I understand that terms commonly used in the diemaking industry include "rule," "steel rule," "metal rule," "cutting rule" and "knife." In my opinion, the term "metallic ribbon stock" is consistent with the above terms. (P 15).

Finally, SDS argues that as a matter of law, the use of the phrase "ribbon stock" in the claims, though not in the specification, does not defeat definiteness. SDS Br. at 25.

Ken's argument lacks merit. Beginning with the specification, see Miles Laboratories, Inc., 997 F.2d at 875, and Exxon, 46 Fed. Cl. at 283, the court notes that the abstract describes the invention as a "unified folding system for processing in one work line all working processes needed in cutting and folding a cutting blade in a shape suitable to sheet material molding." The specification is replete with references to said "cutting blade," which is used to "press[] a folding or a cutting line on plate matters such as paper, canvas, leather, plastic, etc." See '919 Patent, col. 1, Ins. 21-23; Figure 2 (showing cutting blade 500 in preferred embodiment). It is clear from the specification that such "cutting blade," initially "wound in a roll shape," see col. 4, ln. 61, is fed through the claimed invention, which folds the blade "in [a] shape suitable to a molding of the sheet material," see col. 5, Ins. 25-27. In turn, a representative claim describes a "metallic ribbon stock folding apparatus" comprising a transferring unit, a rotary assembly, at least one retractable elongate member, "said rotary assembly configured for arcuate motion . . . to fold a portion of said ribbon stock by said elongate member." See Claim 1 (emphasis added).

The court finds from this review that the disputed "ribbon stock" described in the claims refers to the material from which the preferred-embodiment "cutting blade" is constructed. 4 According to the specification, the preferred embodiment uses a supply of metal rule, which it calls a "cutting blade" once it enters the machine, cuts and folds it to produce a die later used to cut predetermined shapes into sheet material such as cardboard. The specification, by its distinction between the terms "cutting blade," and "plate matters,"/"sheet material," refutes the defendant's argument that the claimed "ribbon stock" refers to cardboard or other sheet material which will eventually be stamped out in the diecutting process. And the claims themselves, referring to "metallic ribbon stock," refute Ken's assertion that the invention concerns fabric, clothing, or gift wrap.

4 Though not dispositive, defendant's repeated references to "steel rule" and "rule" provide some guidance to the court as well. See, e.g., Ken Br. at 13 n.3 ("The common term used in the industry for the material used to make cutting blades is 'steel rule' or 'rule.'"); Kengott Decl. P 28 ("From reading and reviewing the '919 patent, I understand the '919 patent to cover a device that processes steel rule such that the end product can be effectively used by a diecutter.").
whether the language is reasonably clear in its meaning.

Pennwalt Corp. v. Durand-Wayland, Inc., 1984 U.S. Dist. LEXIS 18354, 225 U.S.P.Q. 558, 565 (N.D. Ga. 1984), aff'd in part and vacated in part, 833 F.2d 931 (Fed. Cir. 1987) (addressing only infringement). See also Aqua-Aerobic Systems Inc. v. Richards of Rockford Inc., 1986 U.S. Dist. LEXIS 16031, 1 U.S.P.Q.2d (BNA) 1945, 1954 (N.D. Ill. 1986) (rejecting definiteness challenge based on patentee's failure to use the word "member") in both patent claims and specification: "While the patent may not be perfectly drafted, it is clear from an overall reading of the patent that the 'member' referred to in claim 8 is the casting.")], aff'd in part and vacated in part, 835 F.2d 871 (Fed. Cir. 1987). Finally, though expert testimony proffered by litigants tends to differ as to the understanding of a person with ordinary skill in the art, and despite this court's ruling that Dr. Tricamo may not testify as to the niche field of diecutting and diemaking, the court finds Dr. Tricamo's declaration to be useful guidance as to the background technology and terminology in the metal forming arts. See Exxon, 46 Fed. Cl. at 282, 284.

This court's determination is enforced by contrast to Morton Intern., Inc. v. Cardinal Chemical Co., in which the Federal Circuit approved a district court's determination of indefiniteness because the claimed chemical compounds could not be proved to exist even with the use of "sophisticated analytical instrumentation and . . . model systems." 5 F.3d 1464, 1469-70 (Fed. Cir. 1993). The level of imprecision here, even as alleged by defendant, does not rise to that level; plaintiff survives summary judgment of indefiniteness on the "ribbon stock" terminology.

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As set forth above, plaintiff does not specifically dispute, nor even address the propriety of, defendant's asserted definition of the word "having." Instead, plaintiff's arguments relating to claim construction appear to focus on the word "ridge" as that term appears in claim 4. More specifically, plaintiff contends that "the correct limitations to the term 'ridge' are: (1) that it extends outwardly opposite the rear surface of the tongue, (2) that it extends across the tongue, and (3) that it is generally parallel to and in a spaced relation to the tooth." Pl. Mem. in Opp. at 10.

Defendant does not dispute plaintiff's assertion that the ridge is subject to the above three limitations, and instead explains that, whatever the qualifying characteristics of the "ridge" of the latch mechanism, the ridge must be contained by, i.e., be a part of, the tongue structure itself. To the extent that defendant does not object and in light of the fact that his proposed construction of the characteristics of the "ridge" is supported by the language of claim 4, the court adopts plaintiff's proposed construction with respect to the qualifying attributes of that term. Thus, the "ridge" must (1) extend outwardly opposite the rear surface of the tongue, (2) extend across the tongue, and (3) be generally parallel to and in a spaced relation to the tooth. Contrary to plaintiff's apparent understanding of the issue, however, this construction of the ridge's features does not in any way change the court's conclusion that the ridge must be a part of the tongue structure. 1 In fact, and as defendant asserts, the "extending outwardly" and "across said tongue" language of claim 4, as it relates to the characteristics of the ridge, supports the conclusion that the ridge must be a part of the tongue structure.

1 The court notes that a construction of the word "ridge" also supports defendant's assertion that claim 4 of the '041 patent requires the lower ridge to be a part of the tongue structure. Although the remainder of claim 4 sets forth the attributes of the particular ridge which "extend[s] outwardly opposite [the] rear surface of the tongue across [the] tongue," it does not specifically define the term "ridge." According to Webster's, a "ridge" is "a small raised line on the surface of metal, cloth, or bone." Webster's Third New Int'l Dictionary 1953; accord Webster's Collegiate Dictionary (10th ed. 1999) (defining "ridge" as "a raised strip (as of plowed ground)"). Neither party has requested the court to interpret the actual meaning of the term "ridge." Even so, were the court to consider that term in light of its plain and ordinary meaning, it would likely conclude that the term "ridge" also compels the conclusion that the lower "ridge" structure must arise from, or otherwise be a part of, the tongue of the latch mechanism. Indeed, the definition of ridge appears to describe a raised portion of a foundational structure, i.e., the "tongue" in this case. Thus, to be considered a "ridge," it appears that a structure must be an elevated or raised portion of the tongue. The alternative meanings accorded the word "ridge" each support the conclusion that a "ridge" arises from, or erupts out of, a base surface such as the ground. See Webster's Third New Int'l Dictionary 1953 (further defining "ridge" as "an elevated body part projecting from a surface . . . a range of hills or mountains. . . a top or upper part . . . a raised line or strip (as of ground thrown up by a plow between furrows)"). Read in the context of claim 4, the
"ridge" language connotes a structure arising out of base surface, in this case, the tongue.

A. Disputed Term 1: "riding mower"

The Court construes the term "riding mower" in Claims 1 and 9 of the '325 patent to be a claim limitation that means:

A mower on which a person can ride.

Toro and Textron disagree over whether the term "riding mower" is a claim limitation at all. Textron argues that because the term appears in the preamble of both Claims 1 and 9 -- that is, it appears before the transition word "comprises" and the subsequent series of limitations -- it is not a claim limitation. Textron Opening Br. at 12-15. Toro counters that the term "riding mower" is a limitation because it defines the invention and was added during prosecution in response to an election requirement imposed by the U.S. Patent and Trademark Office ("PTO"). Toro Opening Br. at 16-19.

As a general rule, preamble language that merely states an invention's purpose or intended use is not limiting. See Bicon, Inc. v. Straumann Co., 441 F.3d 945, 952 (Fed. Cir. 2006). The general rule gives way, though, when the body of the claim does not describe a complete invention, id. at 952, or when the preamble language "is necessary to give life, meaning, and vitality to the claim." Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 808 (Fed. Cir. 2002) (quotations omitted). In addition, under the Federal Circuit's opinion in Bass Pro Trademarks, L.L.C. v. Cabela's, Inc., the general rule also gives way when preamble language describes an essential feature of the invention and was added during prosecution to overcome rejection by the PTO. No. 2006-1276, 485 F.3d 1364, 2007 U.S. App. LEXIS 7990, 2007 WL 1029586 (Fed. Cir. Apr. 6, 2007).

Bass Pro involved a patent on a vest that incorporated a seat that could be folded down out of the vest. The original patent application claimed a "garment" with a foldable seat. The patent examiner rejected the application as unpatentable over the prior art, and the patentee responded by changing the phrase "a garment having a seat member" to "a combination vest and pivotable seat member." 2007 U.S. App. LEXIS 7990, at *8-9. Although the word "vest" occurred in the preamble of the issued claims, 2007 U.S. App. LEXIS 7990 at *7-8, the Federal Circuit held that "vest" was a claim limitation in light of the prosecution history, 2007 U.S. App. LEXIS 7990 at *10.

This case is controlled by Bass Pro. The term "riding mower" was added by Toro in response to the PTO's requirement that the application be split into a first application including claims directed to "a riding mower," and a second including claims directed to "an all wheel drive vehicle." JA 0058-59 (letter from PTO requiring election); JA 0065-74 (amendment by patentee of application that issued as '325 patent). This case differs from Bass Pro in that the claims were amended in this case in response to an election requirement, whereas in Bass Pro the claims were amended to overcome a rejection based on the prior art. But nothing in Bass Pro suggests that these two types of amendments -- amendments made in response to an election requirement, and amendments made to overcome prior art -- should be treated differently. Accordingly, the term "riding mower" is a limitation of Claims 1 and 9 of the '325 patent.

Having determined that the term "riding mower" is a claim limitation, the Court must next determine how to construe this limitation. Textron argues that, in light of the '325 patent's specification, "riding mower" should be construed (assuming that it must be construed at all) to mean "a vehicle that carries one or more cutting units." Textron Opening Br. at 15. Toro argues that the term need not be construed at all. Toro Opening Br. at 19. Alternatively, Toro argues that "riding mower" means "a motor driven device capable of mowing on which an operator rides." Id.

The Court rejects Textron's proposed construction because it is narrower than the claim language requires. The word "mower" is easily understood, and nothing in the intrinsic evidence suggests that it should be given the narrow meaning proposed by Textron. The Court agrees with Toro that the term "riding mower" should be given its ordinary meaning, and the Court's construction simply makes plain that ordinary meaning.
As to the claim construction issue, Bionx argues that the district court adopted too restrictive a construction of the term "rigid," which is used in each of the asserted claims. The district court construed the term to require that the claimed suture be sufficiently rigid to be pushed through meniscus tissue without a pre-cut channel for the suture to follow. Bionx disagrees and argues that the term "rigid" should be construed to apply to any shaft that is capable of being pushed through tissue, regardless of whether the tissue is pre-channeled. Thus, in Bionx's view, the term "rigid" is used to distinguish the claimed suture from ordinary flexible sutures that are wholly lacking in rigidity and cannot be pushed through any kind of tissue, whether pre-channeled or not.

Claims 1 and 19 of the '976 patent are representative. They provide as follows (emphasis added):

1. A single unit suture for body tissue repair comprising:
   a solid base member for seating against an exterior surface of said tissue;
   a single rigid shaft portion upstanding from and integrally connected to said base member adapted for insertion into said tissue; and barb means integrally connected to said portion to aid in insertion of said shaft portion into said tissue and to lock said shaft portion into said tissue.

19. A method for repairing a tear in a meniscus which comprises the steps of:
   providing a single unit suture having a solid base member, a single, rigid shaft portion upstanding from and integrally connected to said base member, and barb means located on and integrally connected to said shaft portion;
   preparing the medial surface of said meniscus for insertion of said suture; and inserting said suture into said meniscus, through said prepared surface and through said tear to join together opposing edges of said tear for repairing said tear and leaving said base member external to said meniscus.

The claim language itself offers no real guidance as to the proper construction of the term "rigid," so the district court turned to the specification and prosecution history of the patent. As the district court noted, the relevant portion of the written description states that "sutures, in accordance with the invention, . . . are formed of a material having sufficient rigidity to allow the sutures to be pushed through the tissue to be repaired." '976 patent, col. 2, l. 66, to col. 3, l. 1. Bionx, however, reads "tissue to be repaired" to refer not only to uncut tissue, but also to tissue that has been pre-channeled with a cutting device such as the needle used with Linvatec's BioStinger. Bionx reaches that conclusion based on the statement at the end of the written description that one embodiment of a suture insertion device may be equipped with a "blade end . . . for creating or initiating a channel in the tissue for the suture to pass through." Id., col. 4, ll. 7-9. In Bionx's view, that statement requires the "tissue to be repaired" language at column 3, line 1 to be construed to mean "either uncut or pre-cut tissue to be repaired."

The district court correctly observed that the brief reference to the possible use of a suture in a device that uses a blade to cut a channel in tissue does not bear on the definition of the term "rigid." The portion of the written description on which Bionx relies merely explains that a suture rigid enough to be pushed through uncut tissue may also be used in a pre-cut channel; it does not suggest that a suture would be "rigid" if it could be pushed through a pre-cut channel but could not be pushed through uncut tissue.

The written description makes clear that, to be "rigid" within the meaning of the claims of the '976 patent, a suture must be sturdy enough to be "pushed through the tissue to be repaired." The use of the term "pushed" implies that the "tissue to be repaired" is uncut, for in referring to tissue that is pre-channeled, the patent describes the suture as "passing through" the tissue rather than being "pushed" through it. Thus, the primary passage on which Bionx relies actually supports the district court's construction of the claim language.
The prosecution history of the '976 patent confirms that the district court's interpretation is correct. In attempting to
distinguish his claims over a prior art patent to Kronenthal, the inventor submitted an affidavit stating that the Kronenthal
device "is not a rigid type of suture as I have disclosed and claimed in my above noted patent application, but is a flexible
type of filament which cannot by itself be pushed into a body tissue without the use of a needle." Bionx argues that the
inventor's statement stands only for a limited proposition: that the "flexible" Kronenthal device is distinguishable from the
more rigid device of the Bionx invention. Linvatec, on the other hand, contends that the inventor was making the point that
a suture is not "rigid" if it is designed to be inserted with the use of a needle.

Both parties are incorrect. Linvatec reads the prosecution history too broadly. The inventor did not assert that a suture is
"non-rigid" simply because it is inserted using a needle. By the same token, Bionx's reading of the prosecution history is too
narrow. The significance of the inventor's statement is not the fact that he distinguished his device from the dissimilar
Kronenthal device, but the reason he gave for drawing that distinction. In stating that the "flexible" Kronenthal device,
unlike the "rigid" claimed suture, "cannot by itself be pushed into body tissue without the use of a needle," the inventor was
making clear that he was using the term "rigid" to refer to a suture that was rigid enough to be pushed into uncut tissue, i.e.,
"without the use of a needle." The district court's claim construction was therefore correct.

B.

Dunhall also argues that, even if it is proper to construe the term "substantially liquid tight" as including a "rigid" custom-
fitted appliance, the district court erred in determining that "rigid" means that the appliance must be "as firm as possible." In
support of this argument, Dunhall notes the following: (1) the use of the court's definition for the disputed term represents a
radical departure from the actual language of the allowed claims; (2) the requirement of a "rigid" tray contradicts the
preferred embodiment of a "resilient" tray, which strongly motivates against such a construction; and, (3) that the definition
by the court that "rigid" means that the device be as firm as possible, while still being sufficiently resilient to allow the
device to be removed and replaced around the teeth and gingival, likely renders the claims indefinite.

We do not find any of these arguments to be persuasive. First, we discern no contradiction between the district court's
definition and the preferred embodiment. The '196 patent discloses that the appliance must be resilient to allow the user to
remove and replace the splint around the tooth. The definition of "rigid" by the district court specifically notes "that the
device must be as firm as possible, while still being sufficiently resilient to allow the device to be removed and replaced
around the teeth and gingival." Thus, the district court's definition expressly encompasses the resiliency aspect of the
preferred embodiment.

Secondly, and most importantly, as we noted above, the prosecution history clearly reveals that in order to get its claims
allowed at the PTO, Dunhall asserted additional limitations to the claimed "mechanical barrier" or "splint" that were not
specifically set forth in the claim, i.e., that these were "rigid" appliances. These assertions cannot now be disavowed by

At oral argument, Dunhall contended that if this court deems it proper to include a rigidity aspect to the term "substantially
liquid tight," the only requirement of the term "rigid" should be that the appliance is structurally sound enough to perform
the functions of: (a) minimizing saliva from impacting the teeth/tooth enclosed within the splint, (b) restraining physically
the cleaning/brightening solution from evaporating or migrating away from the teeth, and (c) preventing the destruction of
the oxygenation properties of the peroxide, i.e., those functions identified in the definition of "substantially liquid tight" set
forth in the specification. However, as we noted above, in order to get its claims allowed, Dunhall distinguished the
"rigidity" of the claimed appliances over prior art appliances. In so doing, it clearly indicated to the PTO that the term
"rigid" required something more than being structurally sound enough to perform the foregoing functions (a) - (c); namely,
that the appliances had to be more rigid than the resiliently flexible trays of Greenberg and Riddell, and more rigid than
polyurethane foam or polyethylene foam fluoride tray liners.

It is our conclusion that the definition of the term "rigid" applied by the district court, i.e., that the device be as firm as
possible while still being sufficiently resilient to allow the device to be removed and replaced around the teeth and gingival,
does not change the scope of the claims as asserted by Dunhall to the PTO to secure allowance. Moreover, we do not find
this construction of the term "rigid" to be indefinite. The district court simply elaborated the terse claim language in order to understand and explain the scope of the claims. Thus, we conclude that the district court's definition of "rigid" was not in error.

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1. Claim Construction

48. In order to determine infringement, the Court must perform a two-step analysis. First, the Court must interpret the language of the claim to determine its scope and meaning. Second, the Court must compare the properly construed claim language to the accused device. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996); Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454 (Fed. Cir. 1998).

49. Claim 1 of the '598 Patent in its entirety reads as follows:

1. Self-adjusting utility pliers for automatically gripping workpieces of different sizes, comprising:

first and second rigid elongated members each having a jaw end, a handle end and an intermediate neck portion;

slideable and pivotable fastening means connecting the members between their neck portions and permitting the jaw ends to move toward each other in a sliding action in response to an initial manual force being applied to close the handle ends toward each other to grasp a workpiece between the jaw ends;

biasing means coacting between the members and normally urging the jaw ends to slide away from each other to a fully opened disposition; and

the fastening means adapted to halt further sliding action of the members in response to the jaw ends contacting the workpiece and to then translate the manual force on the handle members into a pivoting gripping action of the jaw ends against the workpiece.

See Ex. P-1 ('598 Patent) at col. 5, 1.61 -- col. 6, 1.13. The words of the claim are to be interpreted according to their ordinary and customary meaning unless a special definition is stated in the specification or prosecution history. See Vitronics Corp. v. Conceptronic Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996).

50. The Turbopliers literally satisfy the preamble of claim 1, for the Turbopliers are unquestionably "self-adjusting utility pliers for automatically gripping workpieces of different sizes." See Ex. P-17; 2 Tr. at 54:19-24 (Cagan); 3 Tr. at 32:6-12 (Gierer).

51. The Turbopliers literally include a first rigid elongated member having a jaw end, a handle end and an intermediate neck portion as recited in claim 1. See 2 Tr. at 54:25 - 55:7 (Cagan) (confirming that the Turbopliers "do include a first rigid elongated member having a jaw end, an intermediate neck portion, and a handle end"); 3 Tr. at 32:13-25 (Gierer).

52. This first rigid elongated member in the Turbopliers is the member defining the upper jaw of the Turbopliers and is identified in the photograph below (Ex. P-43) by the label "first rigid elongated member." The jaw end, intermediate neck portion and handle end of this first rigid elongated member are also labeled in the photograph.

[SEE PHOTOGRAPH IN ORIGINAL]

53. The Turbopliers include a second rigid elongated member having a jaw end and an intermediate neck portion, where the neck portion of this second elongated member is connected to the intermediate neck portion of the first rigid elongated member in the Turbopliers. See 2 Tr. at 55:11 - 56:15 (Cagan); 3 Tr. at 33:6-13, 35:10-19 (Gierer). This second rigid elongated member, its jaw end and its intermediate neck portion are labeled in the photograph above.

54. The parties dispute whether the non-jaw end of the second rigid elongated member in the Turbopliers identified above
literally meets the language in claim 1 requiring the second rigid elongated member to have a "handle end." ACI contends that the language in the claim requires a rigid elongated member that has one end (the "jaw end") that grasps a workpiece and an opposite end (referred to as the "handle end") that receives a manual force to cause the jaw end to move in the manner recited in claim 1. See 3 Tr. at 33-34 (Gierer). Olympia contends that the language in the claim referring to a handle end requires a rigid elongated member having an end that is specially configured to be comfortable to hold in the human hand and to receive force from flesh contact during operation of the tool containing the member. See 2 Tr. at 62-63 (Cagan). The Court finds that ACI's construction of the disputed language is the legally correct construction.

55. First, the language of claim 1 supports the construction advanced by ACI. Specifically, the element recited in claim 1 is a "second rigid elongated member." The references to the "jaw end" and the "handle end" in the claim simply are labels used to identify the end of the member that is used to grip a workpiece (the "jaw end") and the end that receives force to cause movement of the jaw end (the "handle end"). In particular, the only purpose of the "handle ends" of the recited rigid elongated members as recited in claim 1 is to receive force to cause the jaws to move in a particular way. Ex. P-1 ('598 Patent), claim 1; 3 Tr. at 33:20 - 34:6 (Gierer). Olympia's expert, Dr. Cagan, confirmed this point. 2 Tr. at 56:16 - 57:3 (Cagan). Accordingly, the claim language supports the claim construction advanced by ACI.

56. Further, there is nothing in the language of claim 1 that suggests or indicates that the "handle end" of the rigid elongated members must have some specific construction or meet some specific comfort criteria. Accordingly, the claim language does not support the construction advanced by Olympia.

57. The specification of the '598 Patent and its prosecution history also support the literal construction of "handle end" advanced by ACI. As described in the '598 Patent specification, the purpose and function of the handle end of the first and second rigid elongated members is to receive a force causing the members to move together to effect the sliding and pivoting of the jaws with respect to one another in the manner described in claim 1. Ex. P-1 ('598 Patent), cols. 3-4.

58. The construction of "handle end" advanced by ACI is clear and definite and allows one to easily determine whether a structure is a "second rigid elongated member" as recited in claim 1. The construction of "handle end" advanced by Olympia relies on vague notions of comfort that Olympia's own witness could not quantify in any meaningful way.

59. For the reasons set forth above, the Court adopts the claim construction advanced by ACI and concludes that the language of claim 1 requiring a "second rigid elongated member[] having a jaw end, a handle end, and an intermediate neck portion" requires a rigid member having two ends: one end ("the jaw end") that grasps a workpiece and another end ("the handle end") that receives a force to cause the jaw end to move in the manner specified in the claim.

1. "[A] deep rigid heel seat to cup the calcaneus"

Plaintiffs' patent claims "an orthotic device … comprising a deep rigid heel seat to cup the calcaneus…" 052 Patent at 6:30-31. Plaintiffs acknowledge that defendants' inserts do not meet the standard definition of the term "rigid" (viz., inflexible). (Docket # 60, Ex. 36 at 8). They nonetheless insist that defendants' shoes infringe upon plaintiffs' patent. To this end, they advance two arguments: First, plaintiffs contend that the term "rigid" includes "semi-rigid" and that the latter term captures the accused products. Second, plaintiffs maintain that, no matter how "rigid" is defined, defendants' inserts so qualify once they are buttressed by other features of the accused shoes.

Defendants object to plaintiffs' revision of the meaning of the term "rigid" such that it would include "semi-rigid." Defendants are correct: While a patentee may act as her own lexicographer, her definitions will supplant those that ordinary practitioners in her field generally associate with a term's meaning only where she has "clearly set forth a different definition." 3M Innovative Props. Co. v. Avery Dennison Corp., 350 F.3d 1365, 1371 (Fed. Cir. 2003); see also Vitrionics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) ("A patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history."). Plaintiffs' specification does make use of the term "semi-rigid," 052 Patent at 4:68-5:4, 3 but it does so in the course of describing a preferred embodiment of the invention; nowhere does the patent explicitly and clearly provide an alternate definition of "rigid." Moreover, descriptions of preferred embodiments of an invention are less
probative of its scope than are descriptions that are not so designated, as the latter "describe an embodiment as being the invention itself, and not only one way of utilizing it." Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 398 (U.S. Ct. of Cl. 1967). Thus, the fact that the term "semi-rigid" appears only in a description of a preferred embodiment of the invention entails that this feature is not essential to the invention itself.

3 "In a preferred embodiment of the invention, an insert of the present invention is formed by molding semi-rigid material to the approximate shape as shown. This semi-rigid molding preferably has a varying rigidity, being more rigid and stiff at the heel cup and having somewhat less stiffness and rigidity towards the forefoot." '052 Patent at 4:68-5:4.

Indeed, the prosecution history of plaintiffs' patent supports a finding that the patent covers only rigid orthotic devices. As a condition of granting plaintiffs' patent, the Patent and Trademark Office required that plaintiffs add the term "rigid" to the description of their invention. (Docket # 45, Ex. 8). While the patent's specification includes a description of a semi-rigid embodiment of the invention, see '052 Patent at 4:68-5:4, the fact that the patent was granted only when it described the invention as rigid is dispositive here. As the court explained in Unique Concepts, Inc. v. Brown, 939 F.2d 1558 (Fed. Cir. 1991), where a claim insists upon a feature (here, the rigidity of the heel cup of the orthotic device), but the specification includes a description of an alternative lacking that feature, plaintiff cannot turn around and maintain that a defendant infringes upon his patent where defendant's product is like the alternative but lacks the element upon which the patent's claim insists. Id. at 1562. Otherwise, inventors could "escape examination of a more broadly-claimed invention by filing narrow claims and then, after grant, assert[] a broader scope of the claims based on a statement in the specification of an alternative never presented in the claims for examination." Id. In short, the term "rigid" in plaintiffs' claim should be construed as plain language requires - namely, as signifying a state of stiffness, or substantial inflexibility, that would not include "semi-rigid." Plaintiffs acknowledge that defendants' inserts do not meet that standard of rigidity.

4 See supra note 3.

Plaintiffs nonetheless argue that, when defendants' inserts are buttressed by the stiff shoe counter (i.e., the portion of the upper surrounding the back of the heel) of defendants' shoes, the resulting ensemble is rigid and, as a result, satisfies the rigidity requirement of plaintiffs' claimed invention. Plaintiffs' argument is unavailing. The patent specifically claims an "orthotic device … comprising a deep rigid heel seat…." U.S. Patent No. 5,174,052 (Issued Dec. 29, 1992) at 6:29-30. Thus, it is the heel seat itself that must be rigid, and not the heel seat in conjunction with some other part(s) of the shoe. 5 Because plaintiffs have not established that defendants' heel seat alone is rigid, plaintiffs have not succeeded in countering defendants' claim of non-infringement with respect to this patent limitation. Accordingly, the accused products cannot be said to infringe plaintiffs' patent.

5 It is worth noting that this conclusion does not turn on the result of a dispute between plaintiffs and defendants regarding the object of the patent. That dispute has defendants arguing that the patented invention is only a shoe insert, and plaintiffs countering that their invention covers shoes whose body and insert (or insole) together incorporate all of the invention's features. Even if plaintiffs are correct, however, a footwear product would infringe upon plaintiffs' patent only if, as the claim language states, the orthotic device contained in that footwear product "comprised a deep rigid heel seat." That is not the case here.
L. Rigid Member

The only dispute with respect to the construction of this term is the definition of the word "rigid." See RJCCPS at 5. ICU argues that "rigid" means "stiff," while Braun proposes that it be construed as "stiff or unyielding, not pliant or flexible." Id. In the Court's view, neither definition adds clarity to the scope of the term and therefore both are rejected. The term is unambiguous and therefore no construction is necessary.

1. "Rigid mooring arm"

SBM argues for the following construction of the term "rigid mooring arm" in Claim 1: "the non-flexible portion of the turntable that branches, extends, or projects out from the symmetrical portion (located at the bearings) of the turntable." APL seeks to limit this definition to "a separate, moveable, hinged arm." SBM argues that reading the limitations of "separate" and "hinged" into Claim 1 to modify the term "arm" is improper because the limitations are not supported by the intrinsic evidence.

The term "arm" is everywhere understood as the human upper limb. Its metaphorical use as applied to machinery and other inanimate objects is therefore well understood. For examples of the latter usage, WEBSTER’S NINTH NEW COLLEGIATE DICTIONARY (1991) defines "arm" as "2d. a slender part of a structure, machine, or an instrument projecting from a main part, axis, or fulcrum." WEBSTER'S NEW WORLD DICTIONARY OF THE AMERICAN LANGUAGE (1982) defines "arm" as "anything thought as armlike, esp. in being attached or connected to something larger." THE OXFORD DICTIONARY (2d ed. 1989) defines "arm" as "[a] narrower portion or part of anything projecting from the main body . . . of a machine or other object." WEBSTER'S II NEW RIVERSIDE UNIVERSITY DICTIONARY (1994) defines "arm" as "[s]omething branching out from a large mass." READER'S DIGEST ILLUSTRATED ENCYCLOPEDIC DICTIONARY defines "arm" as "[a] [ ] part projecting from a support in a machine." The term "arm" as used in Claim 1 requires no construction. 2 The argument here is whether, as APL contends, the intrinsic evidence of the '183 Patent requires that the "arm" of the turntable be "separate" and "hinged."

2 The term also is not uncommon to the offshore mooring industry. SBM has used the term "arm" in prior patents relevant to the offshore mooring industry to refer to a broad range of structures, all of which are or become narrower or slenderer than the structure to which they are attached as they extend or project outward. See, e.g., United States Patent No. 5,041,038 (Polder-vaart, Aug. 20, 1991), Figs. 3 and 4, at 3; United States Patent No. 4,568,295 (Poldervaart, Feb. 4, 1986), Fig. 7, at 37; United States Patent No. 4,534,740 (Poldervaart, Aug. 13, 1985), Figs. 3 and 4, at 18; United States Patent No. 4,527,501 (Poldervaart, July 9, 1985), Figs. 1 and 2, at 1. Other patentees employ the same understanding. See United States Patent No. 6,503,112 B1 (Chadwick, Jan. 7, 2003), Fig. 1, at 29; United States Patent No. 4,417,537 (Di Tella, Nov. 29, 1983), Figs. 1 and 2., at 13.
turntable is not supported in the claim or prosecution history. The rigid mooring arm is therefore not limited to a feature that is "separate" from the turntable.

APL argues further that the intrinsic evidence requires that the "rigid mooring arm" be "hinged." SBM responds that under the doctrine of "claim differentiation," there is a presumption that the limitations of dependent Claim 5, which provide, among other things, that the mooring arm have a "pivotal connection," cannot be read into independent Claim 1. Hence, SBM contends, Claim 1 does not require that the "rigid mooring arm" be hinged because such construction would be superfluous to Claim 5 and would therefore be presumptively unreasonable. SBM maintains, moreover, that there is no "clear and unmistakable" limitation of claim scope in the prosecution history that would overcome the presumption and support the reading of the "hinge" limitation into the "rigid mooring arm" phrase of Claim 1.

Claim 1 describes the rigid mooring arm as "having a relatively short length such that when in an essentially upright position from the buoyant body toward sea level, the mooring arm extends no further than just below or just above the sea level." Because the above-quoted "when" clause modifies the phrase "rigid mooring arm," APL argues that proper construction of the "when" language means that the rigid mooring arm must be moveable from the buoyant body to an upright position toward sea level. "When" refers to the variable positions of the rigid mooring arm 6 and 6', as shown in Figures 1 and 2 of the '183 Patent. Therefore, APL argues, the rigid arm must be hinged, so as to be moveable between an oblique position from the buoyant body, as represented by mooring arm 6, and the position "when in an essentially upright position from the buoyant body," as represented by mooring arm 6'.

The fact that the embodiment shown in Figures 1 and 2 of the '183 Patent depicts a buoy with a pivotal arm does not restrict the scope of the claim phrase "rigid mooring arm" necessarily to include a hinged arm. Indeed, the inventor described the embodiment shown in Figures 1-3 as the "most preferred at the time being," and added, "it will be immediately clear that a lot of amendments can be introduced without leaving the scope of protection." See Teleflex, 299 F.3d at 1327 ("[T]he number of embodiments disclosed in the specification is not determinative of the meaning of disputed claim terms."); CCS Fitness, 288 F.3d at 1366 (noting that an accused infringer cannot overcome the "heavy presumption" that a claim term takes on its ordinary meaning "simply by pointing to the preferred embodiment or other structures or steps disclosed in the specification or prosecution history.").

In determining the meaning of "when," in the phrase, "when in an essentially upright position from the buoyant body toward sea level," it is appropriate to consider the "broad range" of consistent dictionary definitions because the language has no specialized meaning. See Texas Digital, 308 F.3d at 1203. Both parties agree that included in the full range of meanings for the word "when" is this definition: "in the event that; IF." MERRIAM-WEBSTER ONLINE DICTIONARY, id. ex. G-34. See also THE OXFORD DICTIONARY (2d ed. 1989). Therefore, in the absence of any evidence of clear disavowal of claim scope, the claim phrase "said mooring arm having a relatively short length such that when in an essentially upright position from the buoyant body toward sea level, the mooring arm extends no further than to just below or just above sea level" covers both an arm that is movable by pivot or hinge to different angles with respect to the buoyant body and an arm that is not so pivoted or hinged. See Teleflex, 229 F.3d at 1327 ("[C]laim terms take on their ordinary and accustomed meanings unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.").

Contrary to APL's contention, the prosecution history of the '183 Patent does not indicate a clear intent by SBM to disavow any construction of "arm" other than one that requires a hinge. APL, in support of its argument, relies on this single excerpt from the Remarks in support of the November 1997 Amendment:

By means of the hinging arm 6 and the anchor line 14 in the present invention, the anchor line 14 can always maintain an optimum alignment with a catenary anchor line 4 for optimum force transmission.

Amendment, Document No. 55 ex. B, at SBM 00279 (emphasis added). This sentence is found in that segment of the Remarks that distinguishes the German reference 27,52,266 (the "German patent"). In these Remarks, the applicant devotes at least two or three pages to a series of distinctions between the German Patent, which had been identified as prior art in the rejection of original claims 1-6. In the course of making several distinctions between the '183 Patent and the German Patent, the applicant refers no fewer than six times to "arm 6" of the '183 Patent but only once--in the sentence quoted above--is "arm 6" modified by the word, "hinging." After having reviewed the Remarks and this portion of the prosecution history, it
is evident that no "clear and unmistakable disavowing statements" are contained in the prosecution history that limit the scope of Claim 1's "arm" only to a "hinging arm." Instead, this segment of the prosecution history is amenable to several reasonable interpretations and to some extent is ambiguous.

Courts regularly decline to apply the doctrine of prosecution disclaimer where, as here, "the alleged disavowal of claim scope is ambiguous." Omega Engineering, 334 F.3d at 1324. See also Rexnord, 274 F.3d at 1347; Northern Telecom Ltd. v. Samsung Elecs. Co., 215 F.3d 1281, 1293-95 (Fed. Cir. 2000); Kothmann & Kothmann, Inc. v. Trinity Indus., Inc., 287 F. Supp. 2d 673, 687 (S.D. Tex. 2003) (Rosenthal, J.). Therefore, the doctrine of prosecution disclaimer does not operate in this case to limit the scope of Claim 1.

The doctrine of "claim differentiation" lends further support to SBM's proposed construction. There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. See Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998). To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation embodies the presumption that the difference between claims is significant. See Tandon Corp. v. U.S. Int'l Trade Com'n., 831 F.2d 1017, 1023 (Fed. Cir. 1987). Under the doctrine of claim differentiation, absent "clear and persuasive" indications to the contrary, Claim 1's "rigid mooring arm" is not limited to having a "pivotal connection," the limitation of the narrower dependent Claim 5. See Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551 (Fed. Cir. 1996) ("Such a presumption [of claim differentiation] can be overcome, but the evidence must be clear and persuasive.").

Dependent Claim 5 reads: "Catenary anchor leg mooring buoy according to claim 4, wherein the mooring arm has a buoyant end and a second end, a pivotal connection connecting the buoyant end to the buoy, and a means for connecting a mooring hawser to the second end." This limitation of "a pivotal connection" is not found in Claim 1 or any prior dependent claims. Moreover, it is recited as "a pivotal connection"--not "the pivotal connection." As has been seen, the intrinsic evidence does not favor limiting the scope of Claim 1's "arm" only to an "arm having a pivotal connection" or a "hinging arm." The presumption of claim differentiation between independent Claim 1 and dependent Claim 5 has therefore not been rebutted with clear and persuasive evidence.

Accordingly, the Court finds that the term "rigid mooring arm" is a clear and descriptive term that requires no further definition to one of ordinary skill in the relevant art. Moreover, the Court concludes that the term as used in Claim 1 is not limited to being "separate" and "hinged."

II. Count II Noninfringement

In Count II of their Complaint, Plaintiffs allege infringement of claim 3 of the '251 patent, which was a continuation of the '715 patent and relates to a driver's side module incorporating the inflator of the '715 patent. Specifically, the claim relates to the structure for attaching an air bag to the driver's side inflator and for mounting the assembled module in a steering wheel. The Magistrate Judge recommends that the Court grant Defendants summary judgment as to claim 3 of the '251 patent. Plaintiffs have objected to the R&R and Defendants have responded. Specifically, Plaintiffs object to the Magistrate Judge's claim interpretation.

Plaintiffs allege only that Defendants have infringed claim 3 of the '251 patent. In moving for summary judgment, Defendants argued that the "rigid rim" element which appears throughout the following limitations of claim 3 precludes a finding of infringement:

- a pyrotechnic gas generator subassembly including means for generating a sufficient volume of gas for inflating a restraint bag, and an annular sealing surface on a peripheral portion of the gas generator;

- a separate inflatable bag subassembly including a folded inflatable bag, and a rigid rim connected to the mouth of the bag including a second annular sealing surface;

- means for assembling the two subassemblies into a unitary structure by connecting the rigid rim to the gas generator with
the annular sealing surface in opposition; and

adapter plate means for mounting the assembled unitary structure on an automobile steering wheel; and wherein

the annular sealing surfaces are recessed below the face of the gas generator through which gas is released so that the rigid portions of the inflatable bag subassembly do not extend substantially beyond the face of the gas generator; and

the rigid rim comprises an inwardly directed flange within the recessed region of the gas generator and including the annular sealing surface thereunder, and an outwardly extending flange-like portion for connection to the gas generator.

(emphasis added).

Further, as the R&R explains: The '251 patent specification teaches two embodiments of the claimed invention, illustrated by Figures 1 and 2. In Figure 1, the "rigid rim" is Z-shaped, with the upper portion consisting of an inwardly-directed flange that is connected to a bag attachment ring in the mouth of the bag by rivets or bolts, thereby clamping the edge of the air bag between the rigid rim and the bag attachment ring. The lower portion of the rigid rim consists of an outwardly-directed flange that is connected by a series of bolts to a mounting or adaptor plate for mounting the entire assembly on the steering wheel and to tabs welded on the side of the gas generator. When the rigid rim is attached to the generator the sealing surface of the inwardly-directed flange presses down against an annular sealing surface running around the circumference of the generator, thereby sealing the air bag to the generator.

In Figure 2, reproduced below, the mouth of the bag is sandwiched between the retaining ring in the mouth of the bag and the mounting plate that connects to the steering wheel. A series of bolts connects the bag and the retaining ring to the top of the mounting plate and also connects a flange on the gas generator to the bottom of the mounting plate. Thus, Figure 2 does not employ the Z-shaped rigid rim shown in Figure 1.

[SEE FIGURE 2 IN ORIGINAL].

Significantly, it is uncontested that the accused devices read on Figure 2. However, the parties dispute whether claim 3 reads on Figure 2. Defendants argue that the rigid rim element is completely lacking in Figure 2. Plaintiffs argue that the flat mounting plate in Figure 2 constitutes both the adapter plate and the rigid rim, including the flanges.

Defendants' argument for summary judgment is aptly summarized by the following statement:

Due to the obvious difficulty in finding the equivalent of its "rigid rim" anywhere in Figure 2, HBB is forced to contend that the mounting plate in the Figure 2 embodiment serves not only as the mounting plate, but also as the rigid rim, even though claim 3 expressly calls for the adapter mounting plate and the rigid rim as separate elements, and despite the fact that such an argument was explicitly rejected by the PTO in connection with application claim 5 . . . . Even more implausibly, HBB contends that arbitrary portions of the flat mounting plate somehow can be termed the "inwardly-directed flange" and "outwardly extending flange-like portion" of the Z-shaped rigid rim described in claim 3.


A. Claim Interpretation

The Magistrate Judge interpreted the rigid rim element of claim 3 to require that each "flange be a separately identifiable 'rib or rim' that is used to attach the overall object to a separate object." (R&R at 31). In contrast, Plaintiffs argue that where "the generator's connecting tabs are an extension of the annular sealing surface of the gas generator, . . . the inwardly-directed flange and the outwardly-directed flange-like portion of the rigid rim will be at the same level and the rigid rim will be a flat plate." (Pl.'s Obj. at 13). In support, Plaintiffs contend that "claim 3 does not include any directional orientation for the flanges other than that they are inwardly and outwardly directed. Therefore, imputing a vertical displacement into this claim language is improper." Id.

In rejecting Plaintiffs' proposed claim interpretation, the Magistrate Judge concluded that it "is clearly contrary to the plain and common meaning of the claim language." (R&R at 31). In support, the Magistrate Judge quoted Webster's New
Claim 5 read as follows:

Examiner explicitly rejected Lynch's attempt to read a claim on both the Figure 1 and 2 embodiments. Amended application claims relating to Figure 1, but rejected application claims relating to Figure 2. However, this argument begs the question, as the issue is whether a claim with the rigid rim language reads on Figure 2. The rejection of amended application claim 5 is significant to the interpretation of issued claim 3. Defendants argue that the bag be sandwiched between a bag retaining ring and the mounting plate, which was connected to a flange on the generator. The Examiner then rejected amended application claims 1, 2, 5, 9, and 10 did not require the "rigid rim" with the inward outward flange language, whereas amended application claims 5, 9, and 10 did not require the "rigid rim" with the inward outward flange language, but rather specified that the bag be sandwiched between a bag retaining ring and the mounting plate, which was connected to a flange on the generator. The Examiner then rejected amended application claims 1, 2, 5, 9, and 10 as obvious in light of the prior art, allowed claims 6 and 8, and objected to amended application claims 3 and 4, but indicated that they would be allowable if revised as directed. Thus, emphasize Defendants, the Examiner allowed application claims relating to Figure 1, but rejected application claims relating to Figure 2. However, this argument begs the question, as the issue is whether a claim with the rigid rim language reads on Figure 2.

The rejection of amended application claim 5 is significant to the interpretation of issued claim 3. Defendants argue that the Examiner explicitly rejected Lynch's attempt to read a claim on both the Figure 1 and 2 embodiments. Amended application claim 5 read as follows:
An inflatable bag restraint system as defined in Claim 2 [which depends on claim 1] wherein the rigid rim comprises a ring within the bag and a mounting plate outside the bag and connected to the ring and the annular sealing surface on the gas generator comprises a peripheral flange engaging the mounting plate.

In rejecting claim 5, the Examiner remarked that

The recitations of claim 5 are not in agreement with those of parent claim 1 (it is contended that claim 1 is not readable on applicant's species of Fig. 2, whereas the recitations of claim 5 attempt to describe this species). As for instance, claim 1 recites one sealing surface on the "gas generator" and one sealing surface on the "rim", the claim further including a "plate means", whereas claim 5 includes one sealing surface on the "gas generator" (on "a peripheral flange") which surface engages the mounting plate, and that the "rim" is "within the bag". It is therefore contended that claim 5 does not define an arrangement in which the rim and generator have sealing surfaces connected in opposition as claimed in claim 1. Claim 5 is therefore vague in maintaining claim continuity in defining the sealing surfaces.

Additionally, in rejecting application claims 1, 2, 5, 9, and 10 as unpatentable, the Examiner explained that, regarding claim 1, "a rigid rim connected to the mouth of the bag including a second annular sealing surface' is broadly readable on" the prior art. Thus, although claim 1 attempted to read on Figure 1, it still was not patentable because it lacked the flange language contained in the allowed claims. Indeed, the Examiner allowed amended application claim 3, which was identical to application claim 1 except that it included application claim 2 and the flange language as additional limitations. Thus, the rigid-rim-with-flanges language was instrumental in obtaining allowance.

In response, Lynch filed another amendment, modifying application claims 3 and 4 as directed, canceling claim 5, and rewriting it as claim 11, but still eliminating the "rigid rim" with flanges element and using the mounting plate in its stead, thus reading on Figure 2. The Examiner stated that application claims 3, 4, 6, and 8 were allowable if some amendments were made, but rejected application claims 1, 2, and 9-12 on the grounds that they would have been obvious in light of the prior art. Finally, Lynch cancelled all application claims other than 6, 8, 3, and 4, which became claims 1-4 of the '251 patent, respectively. Thus, the allowed claims included only those with the rigid-rim-with-flanges element.

--- Footnotes ---
1 The Examiner refused to enter Lynch's second amendment because it was filed after the "final rejection," however, he issued an Advisory Action indicating that claims 3, 4, 6, and 8 would be allowable. Eventually, Lynch filed a continuation application in favor of his original application and later a preliminary amendment that incorporated all of the previous amendments made to the earlier application, including the final amendment that the Examiner refused to consider. In addition, Lynch added application claim 12.
--- End Footnotes ---

This prosecution history presents the Court with the situation where the patentee limits the claims in order to obtain allowance over the prior art and then asserts a broad interpretation for litigation purposes that renders the claim invalid. Accordingly, the Court must reject Plaintiffs' proposed claim interpretation. As the Federal Circuit explained in Lemelson, a patentee "cannot acquiesce to a rejection and to an agreed alternative, and now years later shift his stance 180 degrees to argue for a second bite at the abandoned apple." 968 F.2d at 1208.

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4. "rigidly attached" means connected in a non-flexible, non-resilient manner (not necessarily entailing a continuous 360-degree weld or entire enclosure of the top and bottom portion of the axle);

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1. "means for rigidly connecting said axle to said beam"
a) "rigidly" means inflexibly, not resiliently, and

b) "connecting" is joining or fastening together.

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1 A "means plus function" limitation, under 35 U.S.C. § 112 P6, must "be construed to cover the corresponding structure, material, or described in the specification and equivalents thereof."

2 A beam is "a structural member (as an iron girder) usually supported at the two ends that is laid horizontally to bear a load and brace a frame" (Webster's Third Int'l Dictionary 190 (1981 ed.). The beam in the '237 device is rigid, not flexible.

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19. Ring

Synventive proposes

part of the valve pin assembly that couples the valve pin to the piston while facilitating side-to-side (radial) movement between the valve pin assembly and piston; the ring also enables decoupling of the valve pin assembly from the piston such that the valve pin assembly remains aligned with the piston and secured to the manifold when the ring is decoupled.

Husky proposes "circular band."

The patent and its specification provide no indication that the word is used in any manner inconsistent with the ordinary meaning of the word. There is no express definition of "ring" set out in the specification, nor is any alternative definition implied. See, e.g., Phillips, 415 F.3d at 1320-21 ("[T]he specification 'acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication.'" (quoting Vitronics, 90 F.3d at 1582)). That the ring is an integral part of the innovative valve pin assembly that secures it to the piston does not alter its ordinary meaning. The term is construed as "circular band."

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4. "Ring." Consistent with the specification, 12 the court construes "ring" to mean "a stent."

- - - - - - - - - - - - Footnotes - - - - - - - - - - - -

12 See supra note 9.

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - -

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A. Rigidity of Ring Means

The parties' motions are essentially mirror images of another, all disputing essentially the same issues. 2 The keystone of
this dispute is the term "ring means," which appears in each independent claim and impacts the other disputed terms. Sassy contends that "ring means" should be construed to mean "that a rigid or semi-rigid ring is mounted at the open end of the food receiving container". (Doc. 77 at 17). 3 Sassy also argues that a "rigid ring" should be construed to mean a ring which is stiff and not flexible, and that a "semi-rigid ring" should be construed to mean a ring which is substantially rigid, and thus substantially stiff and not flexible. (Doc. 77 at 17-18). Berry responds that the "ring means" is simply a ring, of no particular rigidity, except where (as in the dependent claims) that rigidity is specified as either rigid or semi-rigid. (Doc. 88 at 8). Berry also contends that "rigid" should be construed as "able to maintain shape without external force" and "semi-rigid" as "partially able to maintain shape without external force". (Doc. 88 at 8).

2 The Court notes that one of these issues has been resolved. Sassy originally sought construction of the term "elongate food receiving container of mesh material," but at the hearing it accepted Berry's construction.

3 More specifically, Sassy contends that what it describes as "element (ii)" of the '357 Patent claims should be construed in this way. (Doc. 77 at 17). However, Sassy points to a different phrase as "element (ii)" in each independent claim, ranging from the phrase "one end of said container having an aperture in which ring means is mounted" in claim 1 to "ring means serving to hold said aperture of said elongate container in an open position to simplify the placement of food in said container" in claim 17. Sassy acknowledges what it calls "minor differences" in the wording of each phrase it designates as element (ii) in the independent claims, but contends that each phrase defines identical subject matter. (Doc. 77 at 16). It is true that "two claims with different terminology can define the exact same subject matter." Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380 (2006). But Sassy offers no explanation as to why the Court should find that these claims -- or, more particularly, the differing phrases Sassy points to as element (ii) within these claims -- define identical subject matter. The fact that some of the phrases (such as the one in claim 17) include functions that the ring means is to perform, while others (such as the phrase in claim 1) do not, leads to a conclusion that the phrases are not defining identical subject matter.

Sassy offers two arguments in support of its favored construction of "ring means". First, Sassy argues that Berry's use of the word "means" gives rise to a presumption that Berry set forth a means-plus-function limitation as set forth in 35 U.S.C. § 112, P.6. (Doc. 77 at 18). That paragraph provides that

[a]n element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112, P.6. Sassy correctly points out that claims 9, 13, and 17 associate the "ring means" with the function of holding the mesh bag open to make it easier to insert food. The specification recites (at Col. 5, lines 30-33) that one purpose of the ring means 36 "is to hold the aperture 34 of the elongate container in an open position to simplify the placement of food in the container" and (at Col. 5, lines 18-20) that the ring means 36 "may be of rigid or semi-rigid construction." Sassy therefore declares that the structure corresponding to the "ring means" is only a rigid or semi-rigid ring. (Doc. 17 at 18).

However, Sassy has misstated the requirements of the Section 112, paragraph 6 presumption. To invoke this presumption requires not merely the use of the word "means" in a claim element but its use in association with a function. See, e.g., Micro Chemical, Inc. v. Great Plains Chemical Co., Inc., 194 F.3d 1250, (Fed. Cir. 1999). Claim 1 and claim 5 do not associate the "ring means" with a function, and therefore the Section 112, paragraph 6 presumption is not invoked in regard to them. The fact that a patent asserts that an invention achieves several objectives does not require that each of the claims be construed as limited to structures that are capable of achieving all of the objectives. Phillips v. AWH Corp., 415 F.3d 1303, 1327 (Fed. Cir. 2005). Thus the "ring means" in claim 1 and claim 5 need not be able to hold the mesh bag open. As such, even assuming that the specification requires a rigid or semi-rigid ring structure to perform that function, 4 that structure would not be required of the "ring means" in claim 1 or claim 5.
4 As Berry points out, the pertinent portion of the specification says the ring means "may be of rigid or semi-rigid construction," not that it must fall into one of those two categories. (Doc. 88 at 11).

Sassy next argues that Berry expressly limited the scope of the "ring means" to a ring that is at least substantially rigid, by way of the following passage in the Detailed Description:

The central aperture 17 of the closure ring 16 is of a size to receive the elongate container 14 in which soft, readily dissolvable food has been placed. Around the aperture 17 is disposed the previously mentioned inner shoulder or internal shoulder 20, which is of a diameter to closely receive the ring means 36. However, the aperture 17 of the closure ring 16 is sufficiently smaller than the ring means or ring component 36 as to prevent the ring means passing through the aperture of the closure ring. In all instances the ring means 36 is sufficiently rigid or sturdy as to prevent it being pulled through the aperture 17 of the closure member 16, even if the caregiver fails to properly tighten the closure member upon the handle member.

(Col. 5, lines 47-59) (emphasis added).

Sassy contends that this "in all instances" language shows that Berry disavowed any invention in which the ring means was not at least substantially rigid. (Doc. 77 at 19). But such a disavowal requires a statement much more explicit than this one. See, e.g., SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc. (Fed. Cir. 2001) (finding disavowal where specification defined particular structure for "all embodiments of the present invention contemplated and disclosed herein"). The phrase "in all instances" as used here is insufficiently broad and unequivocal to accomplish the complete disavowal that Sassy advocates, and instead refers to all instances of Berry's preferred embodiment.

As for the particular terms "ring means," "rigid," and "semi-rigid," the Court agrees with Berry's contention that "ring means" is nothing more than a ring, and that the remaining terms should simply be given their ordinary meanings. (Doc. 88 at 11-12). However, Berry offers no support for the "ordinary meanings" it proposes for those terms, and the Court finds that Sassy's proposed constructions are closer to the mark. In ordinary experience, "rigid" is taken to mean "stiff" or "not flexible". Similarly, "semi-rigid" is regarded to mean "partly rigid" or "somewhat flexible" (not "substantially rigid," as Sassy would have it).

A. Claim Construction

The disputed language of claim one of the '251 patent relates to the activator mechanism for opening the umbrella -- "a latch slidably received in said barrel for selectively disengaging said catch from said barrel to release said barrel from said tube; . . . said latch being ring-shaped and being slidably received in said channel of said barrel for slidably receiving said tube therein." 56 Windbrella suggests that the most appropriate claim construction of the term 'ring-shaped latch' is "a curved component for receiving the tube of the umbrella." 57 This construction would essentially read the words "ring-shaped" out of the claim and replace them with "curved." Taylor Made suggests that the claim requires "a latch which is continuously curved securing the latch to the umbrella against the tube." 58

56 '251 patent, col. 4, ll. 22-31 (emphasis added).

57 Pl. Mem. at 11.


Neither party asserts that the disputed claim language has a particular meaning to persons skilled in the art of designing umbrellas. The Tenth Edition of Merriam-Webster's Collegiate Dictionary was the contemporary edition available at the time the patent was filed, and it defines "ring" as follows:

1) a circular band for holding, connecting, hanging, pulling, packing, or sealing <<a key ring> <<a towel ring>
2) a circlet usually of precious metal worn on the finger
3 a) a circular line, figure, or object <<smoke ring> b) an encircling arrangement <<a ring of suburbs> c) a circular or spiral course -- often used in plural in the phrase run rings around. 59

The repetition of the word "circular" supports the initial inference that a ring-shaped object has an enclosed, continuously curved shape.

59 Webster's Collegiate Dictionary, Tenth Edition (Merriam-Webster Inc. 1996), available at www.m-w.com. While this dictionary lists dozens of definitions of "ring," these are the first three definitions of the noun form of the word, and the most relevant to the term "ring-shaped" in the '251 patent.

Windbrella submitted a dictionary definition of ring that says "a circular or curved band (as of metal, wood, fabric, or plastic) used for holding, connecting, hanging, or pulling." 60 This selection of a broad definition from an unabridged 1986 dictionary calls to mind the Federal Circuit's recent reminder that "general dictionaries, in particular, strive to collect all uses of particular words, from the common to the obscure." 61 Due to this and other factors, the Federal Circuit warned courts about the "risk of systematic overbreadth" if the utility of dictionary definitions for claim constructions is over-emphasized. 62

Even taking Windbrella's carefully-chosen definition at face value, it does not indicate that "ring-shaped" and "curved" are synonymous. The definition includes the word "band," which limits the subcategory of curved items that would qualify as a ring. For example, an object shaped like the letter "S" would not fall under the dictionary definition proffered by Windbrella -- although it is curved, it is not a "circular or curved band" and it clearly cannot function in the same way as a ring.

Turning to the contextual clues, there is a second claim term that assists in the interpretation of "ring-shaped latch." 63 The latch must "slidably receive said tube therein." 64 The word "therein" is significant, because if the inventor contemplated a pronged device, the tube would likely be received "between" the prongs rather than "in" the ring-shaped latch. So in addition to being "curved," the latch must be capable of encircling the umbrella's tube, as a ring encircles a finger so that the finger is received therein.

63 Cf. Mars, 377 F.3d at 1374 (construing claim term "ingredients" in light of the use of the term "mixture" in the same claim phrase).

64 '251 patent, col. 4, l. 31 (emphasis added).

There is additional guidance to be found in the specification of the '251 patent. The word "ring" is used to describe two other components of the patented umbrella. 65 The drawing of the preferred embodiment in Figure 2 of the '251 patent pictures both of these other "rings" as geometrically perfect circles -- see numbers twenty and thirty-one below.

65 See '251 patent, col. 2, ll. 36-38 ("ring 20 [which] includes a sleeve 21 provided or disposed or extended downward therefrom and is slidably engaged on the tube 10"); id., col. 2, ll. 45-46 (describing "ring 31" on the barrel of the umbrella). See also Phillips, 415 F.3d at 1314 (citing Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001)) ("Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims.").
Nonetheless, the image of the "ring-shaped latch" itself -- number seven above -- shows that the inventor did not intend "ring-shaped" to mean "circular." The latch pictured in the patent specification is attached to a button -- number seventy in the figure above. Extending outward from this button at right angles are the two sides of the U-shaped latch. So viewed from the side, the latch would look like an upper-case "D," with the button on the left side of the piece. Because the latch pictured in Figure 2 of the patent is not in the shape of a geometric circle, the inventor and claim examiner must not have intended to define "ring-shaped" in a way that includes only perfectly circular objects. However, the latch in the preferred embodiment is still a curved, enclosed band that would encircle the tube as a ring encircles a finger.

66 "In the course of construing the disputed claim terms, a court should not ordinarily rely on the preferred embodiments alone as representing the entire scope of the claimed invention." CCS Fitness v. Brunswick Corp., 288 F.3d 1359, 1370 (Fed. Cir. 2002). Here, Figure 2 of the '251 patent is not used to limit the claim. It is only used to examine whether the inventor and claim examiner could have intended to define ring-shaped as circular, given that meaning of ring-shaped must be at least broad enough to include the preferred embodiment.

Finally, the prosecution history of the '251 patent also offers insight relevant to claim construction. While it does not clarify the exact meaning of "ring-shaped," the prosecution history does demonstrate that the "ring-shaped" and "slidably receiving said tube therein" language was added to the independent claim precisely in order to overcome a rejection based on the existence of prior art. This is of great importance given that "the purpose of consulting the prosecution history in construing a claim is to 'exclude any interpretation that was disclaimed during prosecution.'" 67 The prosecution history in this case counsels against reading any of the disputed terms out of the claim with broad definitions, absent convincing evidence that such meanings were intended by the inventor and accepted by the claim examiner.

67 Chimie, 402 F.3d at 1384 (quoting ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580 (Fed. Cir. 1988)).

Taking all of the intrinsic evidence considered above into account, I now return to the '251 patent, which claims a latch, "said latch being ring-shaped and being slidably received in said channel of said barrel for slidably receiving said tube therein." 68 Because Windbrella has not been able to proffer evidence supporting its suggestion to replace the word "ring-shaped" with "curved" and disregard the word "therein," this suggestion fails as a matter of law. The language of the claim, the patent's specification, and the prosecution history require that the latch described by the '251 patent be construed as a curved band that encircles the tube.

68 '251 patent, col. 4, ll. 29-31 (emphasis added).
F. Ring Shaped Support

ICU argues that the term "ring shaped support" should be construed as "a circular-shaped structure that serves as a foundation, prop, brace or stay." Braun seeks a much narrower construction, limiting the term to "an annular cuff into which the flexible element fits." Braun cites as support for its limitation a portion of the preferred embodiment labeled the "annular cuff 28." Col. 7:29-38. However, in doing so Braun seeks to impermissibly import a limitation contained in the preferred embodiment onto the claim language. See Teleflex, Inc. v. Ficosa North America Corp., 299 F.3d 1313, 1328 (Fed. Cir. 2002) (cautioning against "limiting the claimed invention to preferred embodiments or specific examples in the specification" (citations omitted)). The term "ring shaped support" uses plain words and the phrase has an ordinary meaning based on the constituent terms' general usage. Braun's attempt to inject ambiguity where there is none is rejected.

ICU's interpretation, on the other hand, simply redefines the term "ring shaped support" using dictionary definitions that in no way clarifies the scope of the term. This Court finds little use in doing so and instead agrees with ICU's alternative interpretation that the term is unambiguous and construction is unnecessary. RJCCPS at 4.

B. Riser card

1. Parties' positions

The parties are in substantial agreement as to the meaning of the disputed term "riser card." Tulip has suggested a number meanings for the term, proposing in its final Markman brief the definition: "[a] printed circuit board that provides electrical connectors for expansion boards and plugs into a mating connector on the motherboard." 62 Dell contends that "the term requires a printed circuit board extending perpendicular to a motherboard, the printed circuit board including at least one expansion board connector mounted thereon, and wherein the printed circuit board is electrically connected to the motherboard." 63

--- Footnotes ---

62 D.I. 368 at 5. In the parties' joint submission of disputed terms, Tulip suggested "riser card" be defined as: "[a] printed circuit board that is mounted on the motherboard planar and provides electrical connections for expansion boards." D.I. 308 at 5. In its initial Markman brief, Tulip defines "riser card" as: "[a] printed circuit board that is mounted on the motherboard and that provides electrical connectors for expansion boards." D.I. 326 at 11.

63 D.I. 308 at 10.

--- End Footnotes ---

Both parties cite the definition of riser board contained in the specification of the '621 patent. The specification states, "the motherboard then comprises a connector for a plug-on or so-called riser card. This is a printed board with printed circuitry on which, in a row parallel above each other, a number of connectors are arranged." 64 Additionally, Dell notes that the claims also call for "a mating connector for [the] riser card." 65 The mating connector is claimed as having "an opening adapted to receive a riser card, said mating connector being oriented on the motherboard such that the opening extends in a direction perpendicularly upward from a horizontal surface of the motherboard." 66 From this, Dell argues the term "riser card" must include the requirement that the riser card extend perpendicularly from the motherboard.

--- Footnotes ---

64 '621 at 1:56-59.
2. Court's construction

The parties agree that the term "riser card" concerns a printed circuit board with connectors into which a plurality of expansion boards may be inserted. 67 At oral argument, Tulip agreed that the mating connector described in the claims at issue necessarily results in the riser card extending perpendicularly from the motherboard when the riser card is inserted into the mating connector. Likewise, Dell acknowledged at oral argument that the "electrical connectors," which Tulip described as "contact strips" (i.e., metal fingers on the edge of the riser card) that mate with the connector on the motherboard," 68 would satisfy Dell's proposed construction that the riser card be "electronically connected to the motherboard." Therefore, the court construes "riser card" to mean a printed circuit board extending perpendicularly from, and being electronically connected to, the motherboard and having a plurality of expansion connectors into which expansion boards may be inserted.

67 Although the proposed construction suggested by Dell in the joint submission on disputed claim terms includes a requirement that at least one expansion board be inserted into the riser card, neither party addressed that requirement in their Markman briefing or at oral argument with respect to the definition of riser card. Because that purported requirement is separately addressed, below, whether or not the riser card has at least one expansion board inserted is not considered in the court's construction of the term "riser card."

68 D.I. 368 at 5.
The parties first dispute whether the inventor's use of the term "road" in claim 5 was intended to encompass the cutting of grooves on the shoulder of a road. Defendant asserts that it was intended as such and plaintiff asserts that it was not. The patent does not particularly define the term road and the term's general definition is simply "an open way for the passage of vehicles, persons, and animals." Webster's Third New International Dictionary, 1963 (2002). However, considering the language of the entire patent, including the specification, the court concludes the term road should not be read to include a shoulder.

The primary purpose of the patent is to drain water from the road surface onto the shoulder by cutting grooves on or near the "edge" of the road. See "Background of the Invention," P1; "Summary of the Invention," Column 2, lines 2-4. The grooves secondarily serve as rumble strips to alert a driver to the edge of the road. See "Detailed Description of the Invention," P 8, lines 25-28. For purposes of both, the patent refers to the edge and surface of the road distinct from the shoulder. In addition, the figures representing the embodiment of the invention indicate that the grooves are cut into the road surface not the shoulder. See, e.g., Figs. 2 & 4:

Accordingly, the court construes the term "road" in claim 5 of the patent to mean that portion of the roadway designed or ordinarily used for travel which does not include the shoulder.

Plaintiff has submitted extrinsic evidence on this subject in the form of the deposition testimony of Inventor Whitney. While the court affords little weight to such after-the-fact testimony, it notes the inventor's recent statement of his former intentions is consistent with the court's construction.

With respect to this term, the parties dispute whether the patent expressly defines the term. The relevant portion of the specification appears in the description of the preferred embodiment and reads as follows:

The robotic beverage capture and transport assembly generally includes a pair of horizontally mounted rail/rack assemblies, a vertically oriented shuttle bar that rides along the horizontal rails in the X-direction, a carrier frame that moves in the Y- (vertical) direction along the shuttle bar, and a pick-up or transfer mechanism that is mounted to and moves with the carrier frame and operates in the Z-direction to remove a beverage container from a selected tray. '930 Patent, col. 11, ll.
This citation is, generally, the construction proposed by the defendants.

Crane asserts a broader construction, citing a number of references in the specification in support, as well as a few extrinsic sources. One of the citations in the specification alludes to the ability of a controller to contain robotic path files. See '930 Patent, col. 19, 1. 59 -- col. 20, 1. 4. A second reference in the specification discusses the use of "robotic principles to acquire a product to be vend..." '930 Patent, col. 2, 1. 56 -- col. 3, 1. 4. Despite these statements, the Summary of the Invention states that "[t]he invention uses an efficient, cost-effective, highly accurate, reliable and easily programmable robotic beverage capture assembly for capturing that beverage container selected by the customer. . . ." '930 Patent, col. 3, ll. 17-20. This passage of the portion of the specification appears to be referring to the robotic assembly more particularly described in the specification quoted by the defendants. In short, the court is persuaded that the robotic assembly of the invention is one that includes a pair of horizontally mounted rails, a vertically oriented shuttle bar that travels along the rails, and a carrier frame that moves vertically along the shuttle bar. Likewise, the robotic assembly must have a transfer mechanism to retrieve the selected product. Given the description of the robotic assembly in the specification, the court adopts a construction similar to what the defendants have proposed.

The court defines "robotic assembly" as a "machine consisting of a pair of horizontally mounted rail/rack assemblies, a vertically oriented shuttle bar that rides along the horizontal rails in a horizontal direction, a carrier frame that moves in the vertical direction along the shuttle bar, and a transfer mechanism that is mounted to and moves with the carrier frame and operates to retrieve a selected product."

**3403**

d. Rod and Crankshaft

Plaintiff asserts that the term "rod" in Claim 1 of the '662 Patent should be construed to mean "a rigid member for connecting and transferring mechanical force from one portion of a device to another portion of a device." Further, Plaintiff contends that "the term would include a connecting rod which is any rigid member for connecting and transferring mechanical force to other portions of a device, including a member that transmits power from one rotating portion of a machine to another in reciprocating motion." Defendant asserts that "rod" should be construed merely as "a one-piece member having a first end and a second end." Furthermore, Defendant argues that the first end of the rod should be construed to be pivotally connected to the crankshaft and the second end of the rod should be construed to be pivotally connected to the diaphragm.

First, the Court notes that it has already construed the term "operably connected" to mean that one component is connected to another component in such a manner that the components may interact with each other. Thus, the Court need not address Defendant's argument that a pivotal connection be read into the "operably connected" language in Claim 1 of the '662 Patent. Claim 1 states, generally, that one end of the rod is operably connected with the diaphragm, the second end of the rod is operably connected to the crankshaft, and the crankshaft is operably connected to the first motor. Consistent with the Court's previous discussion of the term "operably connected," the Court construes these terms to mean that these components are connected in such a manner that the components may interact with each other.

Second, the Court finds that Plaintiff is correct in asserting that the term "rod," as used in the '662 Patent, means "connecting rod." "Connecting rod" is commonly defined as "a rod that transmits motion from a reciprocating part of a machine (as a piston) to a rotating part or vice versa." Merriam Webster's Collegiate Dictionary 245 (10th ed. 1998). The McGraw-Hill Encyclopedia of Science and Technology defines a connecting rod as, among other things, "a link in several kinds of mechanisms . . . any straight link that transmits motion or power from one linkage to another within a mechanism." McGraw-Hill Encyclopedia of Science and Technology, vol. 4 at 625 (9th ed. 2002). As described in the specification of the '662 Patent, the term "rod" is used to describe the diaphragm's mechanical connection to the crankshaft. (See '662, c. 4, ll. 9-13 ("Diaphragm 19 is mechanically connected through rod 33 to a crankshaft 34, which is driven by a motor 35").) As noted by Plaintiff, the prosecution history also supports the definition of a rod as a connecting rod. Specifically, in the Response to the First Office Action for the '797 Patent, the applicant stated as follows:
Additionally, in the claimed invention, the crankshaft moves the diaphragm through a cycle that is sinusoidal with respect to time. Consequently, the sinusoidal pulses are generated at an oscillation frequency between about 5 and 25 Hz, which is generally below the human audible range. These sinusoidal pulses contain no undesirable high frequency components which would act on the walls of a bladder as a sounding board, creating undesirable noise. Also, the crankshaft is counterbalanced, which offsets the dynamic vibration forces of the reciprocating motion of the diaphragm and connecting rod. The benefits of offsetting these dynamic vibration forces include less noise, less vibration, and increased reliability.

See Response to First Office Action for ’797 Patent at 5. Thus, in the context of the ’662 Patent, a rod performs the function of transmitting power from the crankshaft to the motor within the mechanism.

Consistent with this definition, the specification, and the prosecution history, the Court construes the term "rod" to mean any straight link that transmits motion or power from one linkage to another within a mechanism.

3404

A. This Court Must Interpret "A First Rod Receiving Area and a Second Rod Receiving Area Formed in Said Hanger Member"

Bonneau asserts that the claim construction dispute relates to the last two clauses of Claim 5. The first clause which is in dispute ("Clause # 1") provides as follows:

- a first rod receiving area and a second rod receiving area formed in said hanger member below the upper edge thereof, said first and second rod receiving areas spaced apart from each other by the distance between said two rods, said first rod receiving area and said second rod receiving area configured to allow a first of said rods to extend through said first rod receiving area and the second of said rods to extend through said second rod receiving area so that said hanger member is supported by said two rods, said hanger member slidable along said two rods when said first rod extends through said first rod receiving area and said second rod extends through said second rod receiving area to secure a horizontal for said eyeglasses when said hanger member is supported on said two rods

(Col. 8, lns. 9-25 of the ’345 Patent.)

Overall, Bonneau asserts that the disputed elements - "a first rod receiving area and a second rod receiving area formed in said hanger" - only cover an enclosed elongated aperture or hole capable of being selectively usable with either a single-rod or a double-rod cantilevered support and not the Bonneau Slide Hook's opposed open-ended slots capable of being used with only a double-rod cantilevered support. Magnivision claims that although Figure 1 of the ’345 Patent demonstrates a rod receiving area which is one winged hole, the rod receiving areas are any areas on the hanger through which the duel rod cantilevered extends. It states that nothing in the claim indicates that the two rod receiving areas must be contiguous but only that the hanger should include a first and second rod receiving area. Magnivision asserts the following claim construction for Clause # 1:

The hanger includes a first and second rod receiving area. A rod receiving area is merely an area through which a rod extends. The first and second rod receiving areas are spaced apart from each other by the distance between the two rods. The first rod extends through the first rod receiving area and the second rod extends through the second rod receiving area. This (i) supports the hanger so that the hanger can slide along the rods, and (ii) maintains a horizontal orientation for the eyeglasses.

Bonneau asserts initially that the term "rod receiving area" is ambiguous because the term does not impart any clear, definite meaning to anyone skilled in the art of mechanical design. It supports this assertion with the declaration of Professor Siegel who states that "rod receiving area" has no common, settled, conventional meaning in the art of mechanical design. (Siegel Decl., PP 25-26.) Magnivision argues that this Court has already construed the term "rod receiving area" in its July 28, 1998 Order ("July Order") and therefore, this Court's previous construction is the law of the case. In addition, it submits the declaration of Professor Anders who states that the term is understandable to anyone with expertise in the field of point of purchase displays. (Anders Decl., PP 18-19.)
Contrary to Magnivision's assertions, this Court did not engage in any claim construction in its July Order. Rather, in the context of determining whether Claim 5 was invalid for indefiniteness, this Court found that the term "rod receiving area" was not indefinite. Presently, this Court is faced with the task of construing Claim 5 of which this term is a part. This does not mean, though, that this Court disregards its previous statements. In the July Order, this Court concluded that a rod receiving area is an area through which a rod extends. This Court arrived at this conclusion after making the following observation:

When Claim 5 of the '345 Patent is read in context, it is clear that Claim 5's reference to 'two rod receiving areas' on the eyeglass hanger member, in conjunction with the reference to a 'cantilever support' including 'two rods' on the eyeglass display member, describe an interface between two rods on the display and two rod receiving areas on the hanger.

(Order, p. 17.) In essence, this "interface" is now the focus of this claim construction issue. Specifically, the meaning of the words of Clause # 1 - "a first rod receiving area and a second rod receiving area formed in said hanger member" - are the subject of this dispute and require construction by this Court. While Magnivision urges this Court to end its construction of Claim 5 because the term "rod receiving area" is not ambiguous, it ignores the principle that this Court "must give meaning to all the words in [the] claims." Exxon Chemical Patents, Inc. v. Lubrizol Corp., 64 F.3d 1553, 1559 (Fed. Cir. 1995), cert. denied, 518 U.S. 1020, 135 L. Ed. 2d 1073, 116 S. Ct. 2554 (1996). In addition, the parties present conflicting testimony of their experts whether one of ordinary skill in the art would understand the terminology "rod receiving area."

As guided by the Federal Circuit, then, this Court must look to the patent specification. This Court is cognizant that patents are construed primarily by reference to the public patent record so that the public need not guess at unforeseen future claim interpretations that might be based upon unforeseen, litigation-induced, extrinsic testimony. Southwall Techs. v. Cardinal IG Co., 54 F.3d 1570, 1578 (Fed. Cir. 1995). "Claims are not interpreted in a vacuum, but are part of and are read in light of the specification." Fromson v. Anitec Printing Plates, Inc., 132 F.3d 1437, 1442 (Fed. Cir. 1997) (citation omitted).

The specification does not use the words "rod receiving area." However, it references areas through which rods extend:

The hanger is constructed with an aperture that receives a cantilevered bar projecting horizontally from a wall of the display, which bar may be of the single or double arm type . . . .

(Col.1, Ins. 48-55 of the '345 Patent.)

Now referring particularly to FIGS. 1, 2 and 3. Hanger 10, constructed in accordance with a first embodiment of the instant invention, includes main element 11 (FIG.3) which is a single sheet of relatively stiff resilient plastic material, typically a polythene. Element 11 consists of rectangular relatively wide main section or body 12 and relatively narrow extension 14. It is intended that front surface 29 of body 12 bear identifying indicia 28. Body 12 is provided with elongated aperture section 16 that is substantially longer than the width of extension 14, and is disposed in the vicinity of and extends parallel to edge 17. Centered between the ends of aperture section 16 and extending therefrom toward edge 17 is notch-like aperture section 18. Elongated section 16 is adapted to receive a cantilevered support comprising spaced parallel arms 19. 19, which project horizontally from wall 20, while notch section 18 is adapted to receive a cantilevered support consisting of single horizontal arm 21.

(Col. 2, Ins. 47-65 of the '345 Patent.)

The specification references an "aperture that receives a cantilevered bar." It states that the bar may be of the single or double arm type. It also states that the hanger is provided with "aperture section 16" which is formed to receive "a cantilevered support comprising spaced parallel arms." In the middle of "elongated" aperture section 16 is a "notch-like aperture section 18" which is formed to receive "a cantilevered support consisting of [a] single horizontal arm." When these words are viewed in conjunction with the Figures which are referenced, it is clear that the words of Claim 5 - "a first rod receiving area and a second rod receiving area formed in said hanger member" - mean that the area through which a rod extends is enclosed within the hanger so that the hanger can receive either a single arm or a double arm bar. Contrary to Magnivision's interpretation, the words of Claim 5, "formed in," do not equate with "includes." The hanger encloses and gives form to the rod receiving areas.

The prosecution history of the patent supports this conclusion as well. In the file history of the '345 Patent, Magnivision
states that "an opening means is formed in the hanger member below the upper edge thereof and receives the cantilever support …." (Cobrin Reply Decl., Exh. 1, p.7.) (Emphasis added.) Clearly, there can only be an "opening" in the hanger if the hanger fully surrounds such opening.

In addition, included in an analysis of the prosecution history is an examination of the prior art cited therein, which may help identify what the claims do not cover. Vitronics, 90 F.3d at 1583. During the prosecution of the '532 Patent, which is the '345 Patent parent, the Examiner repeatedly rejected the pending claims on the basis of, inter alia, lack of novelty and obviousness in view of what is disclosed in Patent No. 3,710,996 ("Smilow"). (Reilly Decl., Exh. 16, p. 132 and pp. 142-43 and Exh. 17, pp. 142 and 150.) The Smilow patent discloses a display hanger which has an open-ended slot by which the Smilow hanger is mounted on a support. (Reilly Decl., Exh. 21, p. 227.) In its response to the Examiner's rejection of the claims in the parent application, Magnivision stated that the Smilow reference does not teach an "aperture means." (Reilly Decl., Exh. 16, pp. 136 and 142.) During the prosecution of the patent, Magnivision emphasized that "with the Applicant's claimed invention, a plurality of eyeglasses can be conveniently and securely supported on either a single or double-arm-type cantilevered bar." (Reilly Decl., Exh. 16, p. 140.)

In Al-Site Corp. v. The Bonneau Co., 1994 U.S. App. LEXIS 6188, 33 U.S.P.Q.2D (BNA) 1136, 1139 (Fed. Cir. 1994), the Court looked to the prosecution history and parent application to support the district court's construction that the aperture means of the disputed claim was limited to an enclosed hole. The comments by the Federal Circuit are equally applicable here:

The fact that Al-Site expressly stated that the open-ended slot of Smilow et al. did not teach its claimed aperture means lends credence to the interpretation that 'aperture means' is limited to an enclosed hole and structural equivalents thereof. (citations omitted) (emphasis in original).

Magnivision claims that because the term "rod receiving area" was never discussed or used in the '532 Patent, the questions raised on the issue of patentability are different. It states that the '345 Patent was filed as a continuation of the '532 Patent to obtain broader protection. It argues that contrary to Bonneau's assertion that the claims are limited to exactly what was disclosed in the '532 Patent, the patent examiner did not limit or reject Claim 5 based on the earlier '532 Patent.

This Court does not look to the prosecution history, including the parent application, of the '345 Patent to address whether Claim 5 is limited by the disclosures in the '532 Patent. Rather, this Court looks to these references for aid in construing Clause # 1 of the '345 Patent. In addition, while this Court agrees in general with Magnivision that rejection of a portion of a claim in one patent does not limit the patentability of a similar portion of a new claim, this principle has no application here.

Magnivision also emphasizes that it is error to incorporate non-recited functional and/or structural limitations from the specification into the claims. Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277 (Fed. Cir. 1995). "Although the specification may aid the court in interpreting the meaning of disputed language in the claims, particular embodiments and examples appearing in the specification will not generally be read into the claims." Constant v. Advanced Micro-Devices Inc., 848 F.2d 1560, 1571 (Fed. Cir. 1988). Based on previous hearings in this Court, Magnivision states that this is the "canon of importance" because it appears to believe that this Court is not cognizant of this principle.

In this instance, a reading of the specification provides evidence to indicate that the limitations found above must be imported into the claims to give meaning to the disputed terms. See id. In other words, the limitation that the rod receiving areas must be closed within the hanger is imported into Clause # 1 to give meaning to the disputed terms.

Bonneau further contends that permissible extrinsic evidence supports its construction. Specifically, it cites to statements by the inventor, Michael Nyman, wherein Nyman admitted that he contemplated a hanger that was usable with either a single-arm or a double-arm "U"-shaped cantilever and that all of the prototypes that he made of his claimed hanger card during the development of his invention included an enclosed opening. (Reilly Decl., Exh. 13, pp. 94-97.) This Court finds that reliance on this extrinsic evidence would be improper. Although this evidence does not vary or contradict the claim language, only if there were still some genuine ambiguity in the claims, after consideration of all available intrinsic evidence, should this Court resort to extrinsic evidence. Vitronics Corp., 90 F.3d at 1584. 3
Reference to dictionary definitions is permissible. "Judges are free to consult such resources at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found or ascertained by a reading of the patent documents." Vitronics Corp., 90 F.3d at 1584, n. 6. The Webster's Ninth New Collegiate Dictionary (1990) defines (i) "form" as "to give form or shape to" and "shape or mold into a certain state or after a particular model" and (ii) "in" as "a function word to indicate inclusion, location, or position within limits." Thus, even assuming that this Court accepted Magivision's proposition that the disputed language should be given its "ordinary" and "plain" meaning, this Court's construction as discussed above would still be proper. "A first rod receiving area and a second rod receiving area formed in said hanger member" would mean two areas through which a rod extends shaped within limits of the hanger member.

This Court finds that the rod receiving areas must be within, or enclosed by, the hanger card. Nothing in the specification or the prosecution history supports Magivision's broad construction that a first and second rod receiving area can be anywhere in the hanger. See Abtox, Inc. v. Exitron Corp., 122 F.3d 1019, 1024 (Fed. Cir. 1997)(adopting narrow interpretation because "nothing in the written description suggested" patentee's interpretation), op. amended, 131 F.3d 1009 (Fed. Cir. 1997); O.I. Corp. v. Tekmar Co., Inc., 115 F.3d 1576, 1581 (Fed. Cir. 1997) (affirming summary judgment of non-infringement - adopting narrow construction limited to the structures disclosed in the specification, in part because "[none] of the structures contemplated by the written description" encompassed a feature possessed by the accused device).

B. "Rod Receiving Areas" Is Not A Means-Plus-Function Element

Bonneau alternatively contends that "rod receiving areas" is a means-plus-function element under 35 U.S.C. § 112, P 6 and is therefore limited to the centrally-located elongated aperture disclosed in the specification. Magivision disputes this.

35 U.S.C. § 112, P 6 provides as follows:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

To invoke this statute, the alleged means-plus-function claim element must not recite a definite structure which performs the described function. Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed. Cir. 1996).

Because of this latter requirement, this Court agrees with Magivision and finds that "rod receiving areas" is not a means-plus-function element. In other words, Clause # 1 recites a definite structure which performs a described function:

a first rod receiving area and a second rod receiving area formed in said hanger member below the upper edge thereof, said first and second rod receiving areas spaced apart from each other by the distance between said two rods, said first rod receiving area and said second rod receiving area configured to allow a first of said rods to extend through said first rod receiving area and the second of said rods to extend through said second rod receiving area so that said hanger member is supported by said two rods, said hanger member slideable along said two rods when said first rod extends through said first rod receiving area and said second rod extends through said second rod receiving area to secure a horizontal for said eyeglasses when said hanger member is supported on said two rods.

The bolded words describe the structure allowing the hanger and cantilevers to interact. "An element with such a detailed recitation of its structure, as opposed to its function, cannot meet the requirements of the statute." Id.
conception do not impose limitations, the claim drafter is free to claim broadly. See Ethicon v. United States Surgical, 93 F.3d 1572, 1582, 40 U.S.P.Q.2D (BNA) 1019, 1026 (Fed. Cir. 1996) (“[Because the inventor] did not consider the precise location of the lockout to be an element of his invention, he was free to draft . . . broadly . . . to exclude the lockout's exact location as a limitation.”).

The '345 applicant claimed the rod receiving areas in broad terms. Those claim terms receive their ordinary and customary meaning unless the applicant assigns them a narrower or special meaning. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996). The language of claim 5, read alone, does not require enclosed receiving areas.

The district court concluded that the applicant had assigned the words "rod receiving area" a narrower meaning in the specification and prosecution history. When presented with relatively unrestricted claim language, however, a trial court must use care in checking the specification for a special meaning. Unless the applicant unambiguously narrowed the scope of broad claim terms in the rest of the patent, the construing court runs the risk of importing unintended limitations from the specification. See Transmatic, Inc. v. Gulton Indus. Inc., 53 F.3d 1270, 1277, 35 U.S.P.Q.2D (BNA) 1035, 1041 (Fed. Cir. 1995). Indeed this court has cautioned against limiting broad claim language to the preferred embodiments or specific examples in the specification. See Texas Instruments, Inc. v. United States Int'l Trade Comm'n, 805 F.2d 1558, 1563, 231 U.S.P.Q. (BNA) 833, 835 (Fed. Cir. 1986).

In this case, the district court's narrow reading of the specification to confine "rod receiving area" to holes "closed within the hanger," Magnivision I, 33 F. Supp. 2d at 1230, was reached by reference to the preferred embodiment in the patent's figures. In addition, the specification refers to the receiving rods in the preferred embodiment with the word "aperture." However, the claim language, the standard for measuring the scope of the invention, does not similarly limit the receiving areas. Moreover, the full context of the prosecution history shows that the applicant did not limit the meaning of "rod receiving areas." The prosecution history of the '345 patent carefully avoided limiting the receiving areas in claim 5 to holes. Rather the applicant used limiting terms only with reference to claims already limited by their language to an "opening" or "aperture." During prosecution, the applicant stated: "An opening means is formed in the hanger member . . . and receives the cantilever support." This statement referred to claims 1-3 of the '345 patent, which, unlike the asserted claim 5, recite "opening means." The trial court, however, relied on these portions of the prosecution history that do not relate to claim 5 of the '345 patent.

The district court also relied upon language related to the '532 patent in this court's 1994 decision in Al-Site Corp. v. The Bonneau Co., 22 F.3d 1107 (table), 33 U.S.P.Q.2D (BNA) 1136, 1994 WL 108966 (Fed. Cir. 1994). Magnivision I, 33 F. Supp. 2d at 1230. As noted, the claims of the '532 patent differ from those of the '345 patent by their use of the phrase "aperture means" or "aperture." The '532 specification (which is identical to the '345 specification) uses the term "aperture" to describe the structures shown in the figures, which are enclosed holes. See, e.g., '532 patent, col. 2, l. 62. In Al-Site, this court read the term "aperture" in the claims of the '532 patent to mean "an enclosed hole and structural equivalents thereof." Al-Site, 1994 WL 108966, at 4. Due to the different claim language, however, this court's analysis in Al-Site does not apply to the '345 patent.

In sum, claim 5 of the '345 patent does not require enclosure of the "rod receiving area." Thus, read without limitations imported from the specification, these areas may encompass slots. Because the Bonneau Slide Hook incorporates two slots, it literally infringes claim 5 of the '345 patent. Therefore, this court vacates the summary judgment granted in favor of Bonneau on this issue, and reverses the denial of summary judgment to Magnivision.
The term "roller" is used in various claims for the '274 Patent; the '698 Patent, the '917 Patent, and the '433 Patent. The parties dispute two aspects of this term: (1) whether the roller must revolve independent of the channel and (2) whether it must have a hole through it. 7 Innovative urges the court to construe the term roller as "an elongated body with a central portion between the sidewalls of the channel and the ends which extend outward of the sidewalls of the channel." Defendants argue for a much narrower definition and assert that the roller must revolve or rotate and have a hole therethrough.

7 Defendants do not dispute that the roller is an elongated body that extends between and beyond the sidewalls of the channel and that extends upward from the bottom wall of the channel for the distance spanning between the sidewalls of the channel. Defs' List Claim Terms, Mar. 9, 2007.

In support of its construction, Innovative points to the claim language from the '274 Patent indicating that the roller is integrally cast as part of the upper channel and is configured to be pivotally attached to the first end cap. Pl's Markman Br. Ex. A. col.15 ll. 13-38. Additionally, the specification to the '274 Patent states that the rollers are "rigidly attached to the upper channel...by welding" and "integraisly cast." Id. at col.2 ll. 34-41, 57-63; col. 5 ll. 55-60, 62-65. Since the roller is physically connected to the channel through a casting or welding process, the roller can only rotate or move relative to the end cap when it pivots as part of the channel.

Defendants unsuccessfully attempt to defeat the language of the patent specification with reference to extrinsic evidence. Defendants argue that roller derives from a Latin term for wheel and, by extension, the roller must revolve or rotate based on the ordinary dictionary meaning of the term. Construing roller to require a piece that revolves like a wheel would exclude the preferred embodiment described in the patent claim and specification that the rollers are integrally cast as part of the channel. The defendants' claim construction would offend the claim construction principle that it is improper to construe claims to exclude the preferred embodiments of the patent specification. Sandisk Corp. v. Memorex Prods., 415 F.3d 1278, 1285 (Fed. Cir. 2005), cert. denied, 546 U.S. 1076, 126 S. Ct. 829, 163 L. Ed. 2d 707 (2005) (citing Vitronics, 90 F.3d at 1583); Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1581 (Fed. Cir. 1996). The Phillips decision also supports Innovative's claim construction by emphasizing that a court should give extrinsic evidence, such as dictionary definitions, a less prominent role than the patent specification and prosecution history.

Defendants further argue, in support of their claim construction, that Innovative acted inequitably because Innovative did not assert that its rollers were non-rotatable until a November 2003 amendment to the '698 Patent that Innovative filed one year after defendants' allegedly infringing product appeared on the market. Defendants' inequitable conduct argument is erroneous because the prior art for the '274 Patent, filed on May 10, 1999, states that the rollers are rigid and attached by welding. Pl's Resp. Markman Br. Ex. K. at pp. 3, 10-13, 17.

Defendants also attempt to limit the patent by requiring that the roller have a "hole therethrough" by referencing the specification to the '274 Patent. Pl's Markman Br. Ex. A col. 8 ll. 30-34. Innovative argues that it is inappropriate to read the claim language so narrowly. Instead, the claims should be construed to permit any means of pivotal attachment to the end cap. According to the Federal Circuit in Phillips, a court should give claim specifications "the broadest reasonable construction in light of the specification as it would be interpreted by one of ordinary skill in the art." 415 F.3d at 1316-17. The court will follow this mandate.

The court will adopt Innovative's definition and find that "roller" means "an elongated body with a central portion between the sidewalls of the channel and ends which extend outward of the sidewalls of the channel."
Without a doubt "rolling" is the most hotly contested claim term. Tenneco has argued that rolling simply means bottom to top closing and top to bottom opening. SCJ argues that rolling requires that the elements "pinwheel"; that is, the bottoms of the elements rotate in one direction while the tops of the elements rotate in the opposite direction. The Court finds that the proper definition lies in the middle.

In its specification, the '143 Patent discloses "a rolling action zipper profile which closes most easily by pressing it together first at the bottom and then rolling it closed toward the top." U.S. Patent No. 5,007,143 at col. 1, lines 9-11 (emphasis added). Similarly, claims 1, 6 and 7 disclose "male and female [sometimes referred to as rib and groove] elements having complimentary cross sectional shapes such that they are closed by pressing the bottom of the elements together first and then rolling the elements to a closed position toward the top thereof." Id. at col. 6, lines 60-64; col. 7, lines 45-49; col. 8, lines 15-19 (emphasis added). SCJ cites this language to support its argument that "rolling" must mean something more than simply bottom to top closing or the use of the term "rolling" in the specification and the claims would be redundant. The Court agrees. Tenneco's construction of this language reads the term "rolling" out of the claim limitations, and we are unwilling to adopt such a construction. See Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572, 1582-83 (Fed. Cir. 1996). Moreover, the plain language of the claims states that the "rolling" occurs after the bottoms of the elements are closed; the "rolling" occurs only in connection with closing (and opening) the tops of the elements. Although it is true that the '143 Patent's profile unquestionably closes from bottom to top (and opens from top to bottom), that order of movement is not part of the definition of "rolling." "Rolling" describes the nature of the motion, not the direction of the motion.

Words in a claim are given their ordinary and customary meaning unless the patentee chooses, and plainly states in the patent, a special definition. Vitronics, 90 F.3d at 1582. Fox Herrington, the patentee in this case, did not define rolling in the '143 Patent, which means we apply the word's ordinary and customary meaning. One scientific dictionary defines "rolling" to mean "motion of a body across a surface combined with rotational motion of the body so that the point on the body in contact with the surface is instantaneously at rest." McGraw-Hill Dictionary of Scientific and Technical Terms 1275 (1976). Merriam-Webster is in agreement, defining "rolling" to mean "rotating on or as if on an axis or moving along a surface by rotation." Webster's Third New International Dictionary of the English Language Unabridged 1969 (1993). The Court could find no dictionary that defines "rolling" to mean "bottom to top closing/top to bottom opening"; nor could the Court find a dictionary that used the term "pinwheeling" to define "rolling." Nor did the parties demonstrate that persons skilled in the art of plastic reclosable fasteners would give the term a particular meaning, a meaning other than the ordinary and customary meaning found in dictionaries. Accordingly, the Court will construe "rolling" consistent with the ordinary and customary meaning given that word, as set forth in the dictionary definitions. Thus, "rolling" as used in the patent requires something more than simply bottom to top closing and top to bottom opening. But the definition is not as strict and specific as SCJ suggests. SCJ even concedes that the elements disclosed in the '143 Patent's claims would not roll, as SCJ has defined the term, and we have no intention of adopting a definition that would exclude the disclosed preferred embodiment.

The specification describes how the tops of the elements are closed in the preferred embodiment as follows:

The shoulder 21a also has a non-uniform width and projects inwardly in FIG. 5 a greater distance than in FIG. 4 but is beneath the hook-shaped projection 17a of the groove element 17. This permits the groove elements 17 to be rolled outwardly under the action of the finger 23 so that the rib 16 can enter the groove 17 the spacing between the side walls 21 and 22 is less than in FIG. 5 and the finger 23 has a narrower cross-section which permits the tracks 18 and 19 to move toward each other this causing the rib 16 to be rolled into the groove 17 between the projections 17a and 17b.

[SEE FIGURE 4 IN ORIGINAL]

[SEE FIGURE 5 IN ORIGINAL]

The specification uses "rolled" consistent with the dictionary definitions discussed above, and this evidence, together with the claim language and the dictionary definitions, lead the Court to define "rolling" as used in the patent to mean a rotational motion. Thus the '143 Patent's profile is closed by first pressing the bottoms of the elements together and then rolling (a rotational motion which is achieved because of the shape of the elements and because of the materials from which the elements are made, i.e., flexible plastic) the tops of the elements together.

GO BACK
Another significant dispute between the parties is the meaning of the term "rotatable joint." The rotatable joint permits the user of the miter saw to change the orientation of the handle when the blade of the saw is operated on a tilt (to cut beveled edges, for example.) Rexon argues that the rotatable joint disclosed in the claim must be a separate component of the miter saw, while One World argues that the joint may be either a separate component or simply a space or place where the D-shaped handle and central portion join. The claim language reads, "said D-shaped portion [of the handle] being connected to said central region via a rotatable joint to permit rotation of said handle." (’976 Patent, Col. 2, ll. 59-62.)

The salient issue is whether the other claim terms, the specification or the prosecution history limit the rotatable joint of the claim only to joints that are a separate component of the miter saw. The claim language and the specification consistently use the phrase "rotatable joint." The term "rotatable" clearly modifies the term "joint," and thus it is the "joint" that must be capable of rotation. See Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1553 (Fed. Cir. 1997), (the court must employ "normal rules of syntax"), overruled on other grounds by Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc); In re Hyatt, 708 F.2d 712, 714 (Fed. Cir. 1983) ("[a] claim must be read in accordance with the precepts of English grammar"). Rexon finds this syntax to be persuasive evidence that the inventor claimed a joint that is a separate component and not merely the space where the handle and the central region of the miter saw arm assembly meet.

The fact that the joint must be capable of rotation does not mean that it must be a separate component. A joint comprised of a space or place where two components meet could also be capable of rotation. Consider the traditional ball and socket joint. The ball and socket form a joint notwithstanding the absence of a separate "joint" component, yet the joint is capable of--and in fact is designed to permit-rotation. The references to the rotatable joint throughout the patent description are not, on their face, references to a separate structural element (as Rexon suggests) any more than they constitute references to a place where the handle and central portion join.

Both parties point to Webster's dictionary to support their proposed constructions of the term. Webster's defines a joint as "a part or space included between two articulations." Merriam-Webster's Collegiate Dictionary 630 (10th ed. 2000). Rexon emphasizes the part of the definition that reads "a part... between the two articulations." However, the definition clearly contemplates that a joint may be either a separate part (component) or simply a space. 4

4 One World notes that space is synonymous with place. See Merriam-Webster's Collegiate Dictionary 885 (10th ed. 2000). Furthermore, the same definition cited by Rexon also defines joint as "a place where two things or parts are joined." Id.

One World's proposed construction is consistent with the ordinary meaning of the term joint, as modified by the word rotatable. It is also consistent with the term as it is used in the specification and prosecution history, neither of which limit the joint to a separate component rather than simply a place where the handle and central region join. Construing the joint as a place where the D-shaped handle and central region of the arm assembly are joined is also consistent with other specification language teaching that the rotatable joint enables the handle to be rotated generally about the handle axis. Nothing in the specification indicates that this could only be accomplished if the joint is comprised of a separate component. 5

5 For these reasons I construe "rotatable joint" as a place where the D-shaped portion of the handle and central region are joined and are capable of rotation. 6

5 Rexon also argues that the word "via" implies that the joint is comprised of a separate component rather than simply a place where two parts of the saw join. Yet the two components may be joined by, or by means of, a place that is capable of rotation just as they may be joined by, or by means of, a separate component.

6 This conclusion is consistent with the claim construction analysis outlined in Phillips v. AWH Corp., 415 F.3d 1303 (Fed.
(Cir. 2005). Rather than starting with the dictionary definition and "whittling it down" based on the specification, id. at 1321, the claim terms must be construed in light of their ordinary meaning, with the dictionary serving as one tool "that can assist the court in determining the meaning of particular terminology to those of skill in the art of the invention," id. at 1308.

--- End Footnotes ---

3409

2. "Rotatable Output Member", "Rotating Member", and "Rotating Output Member"

and

3. "Cam Assembly"

Claim 1 recites, in part,

An electrically powered mover adapted to be activated by the output of the microcontroller in response to the sensed speed difference, the electrically powered mover including a rotatable output member and at least one cam assembly adapted to move the clutch plates into driving engagement.

Claims 15 and 23 recite similar limitations, such as "a rotating member" and "rotating output member." Claim 30 recites a "bi-directionally rotating output member." These claim terms are collectively referred to as a "rotatable output member."

BorgWarner:

"Rotatable output member" is a shaft, cam, sprocket, or gear that rotates. A "rotatable output member" that rotates in two directions is a "bi-directionally rotating output member." (Plaintiff's Markman Brief, at 39).

NVG:

A ball and ramp device, comprising two opposing members each have[ sic] a ramped surface, and at least one ball inserted in between the two ramped surfaces. (Markman Brief of NVG, at 44).

Claims 15, 23, and 30, also all contain similar claim limitations that include a "cam assembly" limitation.

BorgWarner:

"Cam assembly" is a cam and a cam follower. A cam is a moving piece of machinery shaped to cause an eccentric or alternating motion and a cam follower is a component designed to follow a surface of the cam. (Plaintiff's Markman Brief, at 41).

NVG:

A ball and ramp device, comprising two opposing members each have[ sic] a ramped surface, and at least one ball inserted in between the two ramped surfaces. (Markman Brief of NVG, at 44).

This dispute begins with the fact that the parties disagree as to whether "rotatable output member" and "cam assembly" can be interpreted together. According to NVG, the "rotatable output member" and "cam assembly" together form the "ball and ramp device." BorgWarner interprets the two items separately but, as noted above, indicates that a "rotatable output member" could be a "cam." The remainder of the dispute relates back to the previous issue over the term "electric operator" and the involvement of the dog clutch as opposed to the torque transferring clutch. The parties' arguments, in this regard, are much the same as those advanced regrading the previous interpretation issue.

BorgWarner submits that the claim language itself explains that the term "rotatable output member" is a drive output,
relying on several claims:

For example, claim 1 states that an electrically powered mover, which is an electric actuator and a drive, includes an output member that rotates. (Patent '330, col. 28, ls. 52-57). Likewise, claim 15 states that an electric operator, which is an electric actuator and a drive, includes a member that rotates to drive a cam assembly. (Patent '330, col. 30, ls. 51-54). In addition, claim 23 states that an electric operator, which is an electric actuator and a drive, includes an output member that rotates. Accordingly, these terms mean a drive output. (Patent '330, col. 31, ls. 37-40). Claim 30 states that an electric operator, which is an electric actuator and a drive, includes an output member that bi-directionally rotates. (Patent '330, col. 32, ls. 41-44.)

( Plaintiff's Markman Brief, at 40). Turning to the specification, BorgWarner returns to the "dog clutch" portion of the text upon which it relied in regard to its interpretation of the "electric operator" issue. It argues that the specification:

explicitly states that an output portion of an actuator (drive members 126, 134) rotates. (Patent '330, col. 7, lines 41-65). The specification also describes a rotatable drive shaft that is an output of an electric motor. (Patent '330, col. 6, line 66--col. 7, line 6). Cams and gears are also described as rotatable outputs. (Patent '330, col. 6, line 66 -- col. 7, line 6; col. 7, lines 26-41.) Further, the specification makes clear that a rotatable output member, such as a shaft, that rotates in both directions is a "bi-directionally rotating output member." (Patent '330, col. 7, lines 26-41.)

(Plaintiff's Markman Brief, at 40-41).

According to BorgWarner, "cam assembly" is a cam and a cam follower. Citing Webster's Ninth Collegiate Dictionary, BorgWarner notes that a cam is defined as "a rotating or sliding piece that imparts motion to a roller moving against its edge or to a pin free to move in a groove on its face or that receives motion from such a roller or pin." (Plaintiff's Markman brief, at 42; Ex. 17). It further explains that "[a] cam is a moving piece of machinery shaped to cause an eccentric or alternating motion and a cam follower is a component designed to follow a surface of the cam." (Plaintiff's Markman Brief, at 41). Claims 1 and 15 of the patent state that the "cam assembly" is driven by a rotating member to engage the clutch plates of the clutch assembly.

BorgWarner also relies on the specification to support its interpretation of "cam assembly." It points out that the specification:

describes a ball-ramp "cam" that is used to actuate a clutch. (Patent '330, col. 7, lines 55-58). The specification also describes a cylindrical cam and a cam follower that is used for engaging and disengaging a dog clutch. (Patent '330, col. 7, lines 26-34).

(Plaintiff's Markman Brief, at 42). Thus, again, we have the involvement of a clutch assembly other than the one transferring torque. As already noted, however, the "dog clutch" does not transfer torque.

NVG points out, however, that the claims require that the "rotatable output member" and the "cam assembly" be part of the "electrically powered mover" which transfers torque to the drives. And, as before, there is one description of such a mechanism, capable of transferring torque, in the specifications: a ball and ramp device. More specifically, the patent discloses:

The oblique side walls of the recesses 130A and 130B function as ramps or cams and cooperate with the balls 132 to drive the circular members 126 and 134 apart in response to relative rotation there between[sic].

(Patent '330, col. 7, l. 66-col. 8, l.2). We were unwilling to allow BorgWarner's exchange between the torque transferring clutch and the dog clutch in the previous claim dispute and, toward an end of internal consistency, we remain unwilling to do so here. Thus, the only possible interpretation of the 'rotatable output member" and "cam assembly must be: a ball and ramp device, comprising two opposing members each having a ramped surface, and at least one ball inserted in between the two ramped ramped surfaces.
The second and third claims of the '976 Patent relate to the miter saw user's rotation of the handle during operation of the saw. Claim 2 reads: "the miter saw of claim 1 wherein the handle is rotatably adjustable between at least 0 [degree] and 30 [degrees] from horizontal measured when the arm is lowered and the rotary spindle is horizontal." 8 ('976 Patent, Col. 5, ll. 3-6.) These claims address only the rotation of the handle within a certain range: they do not claim the ability to maintain, or fix, the handle at a particular position within that same range. Rexon argues that because claims 2 and 3 are dependent on claim 1 they must also incorporate claim 1's limitation of maintaining, or fixing, the position of the handle within that range. Although the limitation Rexon proposes--that claims 2 and 3 be construed to require that the handle is also "fixed" within the delineated range--would be consistent with claim 1, it is not required by claim 1. Claims 2 and 3 address the narrower issue of rotating the handle within a particular range. Construing those claims to include the further limitation of "fixing" the handle at any point within that range is beyond the scope of the claim language and is not expressly required by either the specification or the prosecution history. The specification states that the handle orientation can be varied and then fixed in a position; however, there is no indication in the specification that the handle must be capable of being fixed within any defined range of rotation. Nor do references in the prosecution history to the ability of the handle to be fixed when rotated compel a construction of claims 2 and 3 in which the handle must be fixed within the defined ranges of 0 [degree] to 30 [degrees] or 0 [degree] to 40 [degrees]. The prosecution history merely reveals that the orientation of the handle can be fixed at a position selected by the user. Therefore, the claims are construed as "the handle can be rotated at least 0 [degree] to 30 [degrees] [0 [degree] to 40 [degrees]], measured from horizontal. 9

Although the limitation Rexon proposes--that claims 2 and 3 be construed to require that the handle is also "fixed" within the delineated range--would be consistent with claim 1, it is not required by claim 1. Claims 2 and 3 address the narrower issue of rotating the handle within a particular range. Construing those claims to include the further limitation of "fixing" the handle at any point within that range is beyond the scope of the claim language and is not expressly required by either the specification or the prosecution history. The specification states that the handle orientation can be varied and then fixed in a position; however, there is no indication in the specification that the handle must be capable of being fixed within any defined range of rotation. Nor do references in the prosecution history to the ability of the handle to be fixed when rotated compel a construction of claims 2 and 3 in which the handle must be fixed within the defined ranges of 0 [degree] to 30 [degrees] or 0 [degree] to 40 [degrees]. The prosecution history merely reveals that the orientation of the handle can be fixed at a position selected by the user. Therefore, the claims are construed as "the handle can be rotated at least 0 [degree] to 30 [degrees] [0 [degree] to 40 [degrees]], measured from horizontal. 9

In this case, the parties dispute the meaning of "rotatably engaging," "proximate" and "commensurate." It is obvious from the patent that the term "rotatably engaging" describes the relationship between the first end of the nut and the second end of the tubular post, which are locked together in a way that allows the nut to rotate around the post, without allowing the post to move through the nut. At this stage of the proceedings, I construe "rotatably engaging" as used in plaintiff's claim 1 to mean "holding the tubular post fast in place, while allowing the tube to rotate."
fast in place, while allowing the tube to rotate." Plaintiff agrees with this definition. It is not clear whether defendant agrees or disagrees. Defendant does not argue that the court's initial construction was incorrect; it does not even acknowledge that I construed this term in the July 25 opinion and order. Also, in its reply brief, defendant identifies the terms "engage" and "engaging" as ones on which the parties agree. Nevertheless, in its opening claim construction brief, defendant offers a definition of "engaging" as meaning "to come into gear with; as, the teeth of one cogwheel engage those of another, or one part engages another part." This definition appears to conflict with the court's initial construction because it would require the two objects to come into physical contact with each other. Plaintiff offered no argument to support its definition, either in its brief or during the claim construction hearing, even though I asked defendant to clarify its position on this term. Thus, it appears that defendant has conceded that the court's initial construction is correct or it has waived any argument that the construction was incorrect because it failed to develop the point. Either way, I adhere to the initial construction of "rotatably engaging" to mean "holding the tubular post fast in place, while allowing the tube to rotate."

B. "a rotatable member rotatably mounted on said base, said elongate member being releasably secured to said rotatable member"

The parties stipulate that "rotatable member" means "a shaft that rotates for connection to the elongate member." The Court shall construe it as such. The Court also deems it necessary to construe the term "rotatably mounted" as that term is not one often found in common parlance. As "rotatably" is an adverb form of the word "rotate," the Court shall construe "rotatably mounted" to mean, "mounted in a way such that it is capable of being rotated."

2. "bottom guide roller rotatably mounted in the bottom guide" -- Amesbury argues that this phrase should be construed as meaning "a roller, mounted so as to permit rotation, in the portion of the bottom guide that is sized or configured to be received in and to slide in the jamb pocket, when installed." Caldwell has construed the phrase as requiring "the bottom guide roller to be mounted to the bottom guide and be located entirely within the bottom guide" and "external to the channel". This definition is both more limiting and more general than Amesbury's construction.

The parties do not appear to dispute the meaning of the term "bottom guide roller", rather they argue over the placement requirements implicitly included in Claim 1. In this case, the ordinary meaning of the claim language as understood by a person of skill in the art is not readily apparent. Consequently, I consider the Claim terms, the specification, and the prosecution history as to each of the disputed proposed elements of the definition.

a) "Mounted in" or "Mounted to": Claim 1 specifically uses the preposition "in" and Caldwell has not pointed to anything in the specification that requires the bottom guide roller to be mounted to the bottom guide. The focus of the specification is on where the roller is to be mounted, not on what. For instance, in the Summary of the Invention the patentee describes how the bottom roller "mounted proximate to the second end of the channel." [264 Patent, col. 2, 11. 5-6, 14-15.] But, the use of "proximate" in the Summary does not impose the limitation suggested by Caldwell that the roller must be mounted to the bottom guide. It is possible that the bottom roller could be "in", even entirely within, the bottom guide, yet be mounted to the channel via some link rather than being mounted to the bottom guide itself.

In addition, Claim 1 was initially rejected as being anticipated by Fitzgibbon's "Sash balances and components thereof", U.S. Patent No. 4,089,085, which disclosed a block and tackle window balance device comprising "a bottom guide roller rotatably mounted to the bottom guide". To read "mounted in" as "mounted to" would not distinguish 264 Patent from Fitzgibbon's patent and would ignore the distinguishing feature of the invention, namely the location of the roller as discussed more thoroughly in the next sub-section.

b) "in the Bottom Guide" or "entirely within the bottom guide and external to the channel": The ordinary meaning of being mounted "in" an area could encompass the idea that the object may be both partially inside and outside the area. For example, a trash bag is "in" a trashcan even though a portion of it is hanging outside of the trashcan. Thus, the ordinary
meaning of the roller being mounted in the bottom guide could encompass the idea that the roller is "in" the bottom guide, yet not necessarily mounted directly to the bottom guide, with part of the roller sticking out of the bottom guide and/or part of it within the overlapping section of the channel. This interpretation makes sense when one compares Claims 1 and 23, which describes a window balance device comprising a bottom guide including "a bottom guide axle mounted within the bottom guide, the bottom guide axle located outside the window balance channel; and a bottom guide roller rotatably mounted on the bottom guide axle." [264 Patent, col. 8, ll. 40-44.] Nonetheless, Caldwell argues that "in the bottom guide" should be construed more narrowly as "entirely within the bottom guide and external to the channel" based on the specification and alleged disclaimers in the prosecution history.

13 In Amesbury's Post Markman Hearing Brief filed on January 6, 2006, counsel for Amesbury brought the unreported and non-precedential opinion of Cannon Rubber Ltd. v. First Years, Inc., 163 Fed. Appx. 870, 2005 U.S. App. LEXIS 28879, No. 05-1063, 2005 WL 3542910 (Fed. Cir. December 28, 2005) to this Court's attention. Under Fed. Cir. R. 47.6, this order is not citable as precedent. Consequently, I do not consider this case as precedent. Nonetheless, I incorporate the trashcan example and acknowledge that I have thought about the arguments considered in the case.

With respect to the prosecution history, Caldwell argues that the patentee disclaimed the idea of being mounted partially in and partially out of the bottom guide, and partially in the channel. I disagree.

Prosecution history "can inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." Phillips, 415 F.3d at 1317. Here, as mentioned above, it appears that Claim 1 was initially rejected as being anticipated by Fitzgibbon's "Sash balances and components thereof", S. Patent No. 4,089,085, which disclosed a block and tackle window balance device comprising a bottom guide roller rotatably mounted to the bottom guide", by which the Patent Examiner meant that "the bottom guide roller 239 is rotatably mounted to bottom guide 215 in that roller 239 is rotatably mounted within fixed pulley unit 235, which is fixed to channel 205, which is fixed to bottom guide 215; thus, bottom guide roller 239 is rotatably mounted to' bottom guide 215." See Figures 2A and 2B of the Prior Art below. [Smalley Declaration, Exhibit J, at 000630, 000639.]

As Caldwell discusses in its Brief, dependent Claim 2 of the Patent, which claims "the device of claim 1 wherein the bottom guide roller is located external to the channel", was also initially rejected because the Fitzgibbon's patent showed that the "bottom guide roller 239 is located external to channel 205 in that a portion of roller 239, the portion that strikes mounting hook 245 when lower sash 104 is raised, is located outside of channel 205, see Figures 2A and 7A." [Smalley Declaration, Exhibit J, at 000631, 000640.] However, the Examiner accepted Claim 2 after the patentee amended Claim 1. As an aside, this comment also shows that the Examiner and the patentee had in their minds during the prosecution that at least the phrase "located external to the channel" includes the manifestation where only a portion of the object is external to the channel.

During a telephone interview, the Examiner also called attention to Fig. 4 in Biro, U.S. Patent No. 3,449,862 as anticipating the present invention. The patentee distinguished his invention from Biro, claiming that:

Biro is silent with respect to the location and mounting details of the bottom guide roller' (unnumbered) relative to the support slide; however as shown in FIG. 4, the roller appears to be mounted to the counterbalance housing above the lower support slide, not in the lower support slide. The lower support slide is held in place by rivets and appears to terminate below the axis of the roller. See also, for example, FIGS. 2A and 2B of Applicant's specification. Accordingly, Biro fails to disclose or suggest a bottom guide roller rotatably mounted in the bottom guide.' 14 [Smalley Declaration, Exhibit J, at 000656]

The patentee then amended "Claims 1, 12, 14, and 19 . . . to more clearly define the subject matter of Applicant's invention. Specifically, the claims are amended to clarify that the bottom guide roller is rotatably mounted in the bottom guide." [Smalley Declaration, Exhibit J, at 000656]

14 In the Biro Patent, the "support slide" is equivalent to the "bottom guide" in the 264 Patent, and the "counterbalance" is equivalent to the "U-shaped channel".
Given this prosecution history, it appears that the Examiner approved Claim 1 of the patent after the patentee explained that the subject matter of his invention was the relocation of the roller into the bottom guide, rather than mounting it in the channel above the bottom guide as in the prior art. From this response, it is not possible to conclude that the patentee explicitly disclaimed the ordinary meaning of "in" or limited his invention to configurations where the roller is entirely within the bottom guide roller and completely below the channel. Thus, this is not the case where the claim was narrowed in the way suggested by Caldwell in order for the patentee to obtain issuance over the prior art. Elekta Instrument S.A. v. O.U.R. Scientific Intern., Inc., 214 F.3d 1302, 1308 (Fed. Cir. 2000). Nonetheless, I turn to the specification to determine whether the written description shows an "express intent to impart a novel meaning" to the commonly understood word "in", and whether the written description "clearly redefine[s] [the] claim term so as to put a reasonable competitor or one reasonably skilled in the art on notice that the patentee intended to so redefine that claim term." Id. at 1307 quoting Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1357 (Fed. Cir. 1999).

As I understand Caldwell's argument, Claim 1 should be construed in the narrow sense suggested because of the repeated references in the patent supporting the idea that the invention allows the sash to travel a greater distance "because the bottom guide roller is located as in the bottom guide, instead of within the rigid U-shaped channel as in prior art balances." [264 Patent, col. 5, 11. 64-66.] In particular, Caldwell points to the repeated references in the specification to the instruction that the bottom guide roller is to be located "within the bottom guide." [264 Patent, Abstract, col. 1, 1. 51, col. 2, 1. 52, col. 5, 1. 42, col. 6, 1. 18.] The use of "within" is significant, according to Caldwell, because of the Federal Circuit's reasoning in TI Group, 375 F.3d at 1136, with respect to the claim term "[the pumping] means being located within the reservoir". In that pre-Phillips case, the Federal Circuit affirmed the district court's construction of the term "within" as meaning "inside", because "certainly, in ordinary and customary usage, what is not outside is on the inside." Id. The Federal Circuit drew this conclusion because the dictionary definition proposed by the alleged infringer ("on the inside") and the one adopted by the district court ("inside") "are not so different as the definition" proposed by the patentee ("within the limits of, not outside or beyond.").

Here, it is true that the patent specifically describes the roller as mounted within the bottom guide four times. [The 264 Patent, Abstract, col. 1, 1. 51, col. 2, 1. 52, col. 5, 1. 42, col. 6, 1. 18.] However, I do not think it is appropriate to simply adopt the conclusion in TI Group, where both parties were essentially proposing the same limitation and where the claim itself used the words "located within". Looking further, then, I note that the 264 Patent also states that the bottom guide serves as "a frame for housing the bottom guide roller", [264 Patent, col. 4, 11. 44-45], that it "is located in the bottom guide, instead of within the rigid U-shaped channel as in prior art balances" [264 Patent, col. 5, 11. 64-66], and that it "is located outside of the rigid U-shaped channel." [264 Patent, col. 4, 11. 46-48.] Thus, in my opinion, the issue is whether or not these expressions in the specification show that the patentee intended to assign a more narrow definition to the phrase "mounted in the bottom guide". As explained above in Section I, Phillips warned of "the danger of reading limitations from the specification into the claim." Id. at 1323. Specific embodiments of the invention described for teaching purposes should not be imported into the claim as a limitation. Id. The distinction between proper claim construction and improper limitation turns on "whether a person of skill in the art would understand the embodiments to define the outer limits of the claim term or merely to be exemplary in nature." Id. at 1323.

[SEE FIGURE 4A IN ORIGINAL]

Given these principles, I will not import the limitation of "external to the channel", despite the parts of the written description cited above. Although the roller in Figures 4A and 4B shown above is certainly not "within" the channel in the way the rollers in Figures 2A and 2B are, it would be perfectly consistent with the patent for the roller to be within the section of the bottom guide that is itself fastened to the overlapping section of the channel also shown in Figures 4A and 4B. In such a configuration, the roller would not be "external" to the channel. In addition, Claim 2 specifically provides that "the bottom guide roller is located external to the channel." [264 Patent, col. 6, 11. 57-58; see also Claims 14 and 19.] Given the possibility that a portion of the roller might actually be located inside the part of the bottom guide that overlaps with the channel, I will apply the doctrine of claim differentiation, which "is at its strongest where the limitation sought to be read into an independent claim already appears in a dependent claim," Seachange Int'l, Inc. v. C-Cor, Inc., 413 F.3d 1361, 1362-69 (Fed. Cir. 2005) quoting Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004), with respect to this aspect of Claims 1 and 2. Thus, I exclude the proposed addition of "external to the channel" from the definition.

With respect to the idea of limiting "in" in Claim 1 to "entirely within", I also disagree with Caldwell. The focus of this patent is the relocation of the roller from the channel above the bottom guide, as in the prior art, to the bottom guide. This relocation "provides an increased range of travel within a window frame", [264 Patent, col. 1, 11. 9-10], because it is the roller hitting the jamb mounting hook that limits the travel distance in these kinds of window balance assemblies. [264 Patent, Abstract, col. 1, 1. 51, col. 2, 1. 52, col. 5, 1. 42, col. 6, 1. 18.]

[SEE FIGURE 4B IN ORIGINAL]
Patent, col. 6, 11. 11-12.] Thus, by moving the roller down into the bottom guide instead of above it, the "sash can travel a greater distance before the bottom guide roller 239/350 hits the jamb mounting hook 245/345, resulting in a greater travel distance." [264 Patent, col. 6, 11. 20-22.] Compare Figures 7B and 8B below.

[SEE FIGURE 7B IN ORIGINAL]
[SEE FIGURE 8B IN ORIGINAL]

Relocating the roller "in" the bottom guide with either the portion that strikes the jamb mounting hook when the sash is raised extending partially outside the bottom guide, or even with a portion of the roller extending slightly above or below the bottom guide, would still allow one skilled in the art to make use of the invention and take advantage of the greater travel distance. In these configurations, one could not say that the roller would be "entirely within" the bottom guide.

Consequently, while the specification describes or depicts an embodiment where the roller is "within" or framed by the bottom guide and while there is nothing in the specification describing or depicting the roller as partially outside the bottom guide, I am not convinced that "a person of skill in the art would understand the embodiments to define the outer limits of the claim term" rather than merely being "exemplary in nature." Phillips, 415 F.3d at 1323. Thus, I adopt the common meaning of the term "mounted in", namely that mounting the roller in the bottom guide does not exclude the possibility that the roller may not be entirely within the piece of the apparatus called a bottom guide.

c) "so as to permit rotation": Caldwell does not contest the addition of this phrase in the definition.

d) "in the portion of the bottom guide that is sized or configured to be received in and to slide in the jamb pocket when installed": There is nothing in the Claims, the specification, or the prosecution history that limits the location of the roller within the bottom guide. Claims 13 and 18 do describe a window balance device comprising "a bottom guide adapted to be connected to an end of a window balance channel and adapted to slide in a jamb pocket when installed in a window frame; and a bottom guide roller rotatably mounted in the bottom guide." [264 Patent, col. 7, 11. 43-45; col. 8, 11. 1-2, 19-23; See also Claim 23, col. 8, 11. 36-38.] However, the specific references in these Claims, undermine Amesbury's attempt to include this additional limitation in Claim 1.

Construction -- A roller mounted in the bottom guide in a way that permits its rotation.

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a. "rotatably therewith"

The parties dispute whether the term "rotatably therewith" should be construed to encompass a cam that rotates independently of the cam shaft and a cam that rotates together with the cam shaft. Thus, Honda proposes that the term be construed to mean "supported by the cam shaft and turns on or with the cam shaft," while Coast argues that the term should mean "fixed to the cam shaft to rotate with the cam shaft."

The Court begins with the claim language. Coast argues that the term should be construed to mean that the valve operating cam is "fixed" to the cam shaft. This construction is based, in part, on the fact that the valve operating cam is "mounted" on the cam shaft. In general, "claim terms are presumed to be used consistently throughout the patent, such that the usage of a term in one claim can often illuminate the meaning of the same term in other claims." Research Plastics, Inc. v. Federal Packaging Corp., 421 F.3d 1290, 1296 (Fed. Cir. 2005) (citing Phillips, 415 F.3d at 1313-14). The term "mounted" is used in other several other elements of Claim 1, and the inventors use of the term in those claim elements does not suggest that the inventors intended the term to mean "fixed," in the sense that one component is immutably fixed to another component of the engine. Accordingly, the Court rejects Coast's proposed construction to the extent it includes this limitation.

"Claim language generally carries the ordinary meaning of the words in their normal usage in the field of the invention." Invitrogen Corp., 327 F.3d at 1367 (emphasis added). Neither party suggests that the term "therewith" has any particular meaning in the field of single, cylinder four-stroke engines. Rather, in support of its position that the term "therewith" can mean "with" or "on," Honda relies on dictionary definitions of the word, which include both "with that" and "thereupon, forthwith." (Declaration of Behrooz Shariati ("Shariati Decl."), Exs. H, I.). The latter definitions are noted to be "archaic" and also refer to a temporal, rather than spatial, relationship. Because the Court finds that the claim language does not clearly illuminate the meaning of this term, the Court looks to the specification for guidance.

The patent specification discloses two preferred embodiments. Honda argues that a person of ordinary skill in the art would understand "therewith" to encompass both embodiments. In the first preferred embodiment, "a single valve operating cam is
rotatably carried on the cam shaft." ("769 Patent at 3:63-66 (emphasis added.) In the second preferred embodiment, the "valve operating cam 36 and the cam shaft 35 may be formed integrally with each other and in this case, the cam shaft 35 is rotatably carried in the cylinder head 2." (Id. at 4:11-13.) Honda asserts that the first preferred embodiment discloses that the valve operating cam is mounted on the cam shaft in such a fashion as to permit "the cam to rotate or turn on the cam shaft, relative to the cam shaft," and in the second preferred embodiment the cam and the cam shaft are one moving piece, such that they rotate with one another. In general, a court should not interpret a term to exclude a preferred embodiment. See, e.g., Primos, Inc. v. Hunter's Specialties, Inc., 451 F.3d 841, 848 (Fed. Cir. 2006); Vitronics, 90 F.3d at 1583. In both of the preferred embodiments, the cam and the cam shaft are positioned so that they are able to move together, whether that is because the cam is "on" the cam shaft or because they have been formed into one piece. The specification, therefore, demonstrates that the claim term "therewith" can be construed broadly to permit the cam to turn on the cam shaft.

Coast argues that, although the specification discloses two embodiments, the inventor chose to claim the second preferred embodiment and, therefore, dedicated the first preferred embodiment to the public. In support of this argument, Coast relies on Johnson & Johnston Assocs. v. R.E. Serv. Co., 285 F.3d 1046 (Fed. Cir. 2002), in which the court applied the "discussion-dedication" rule to determine whether the district court erred in denying a motion for summary judgment based upon the doctrine of equivalents. Coast's argument, however, depends upon the conclusion that the term "therewith" must be limited to mean "with" rather than "on or with." For the reasons set forth above, the Court rejects this limiting construction and, therefore, concludes that the "discussion-dedication" rule would not operate to preclude Honda from claiming both preferred embodiments.

Accordingly, the Court construes the term "rotatably therewith" to mean: "supported by the cam shaft and turns on or with the cam shaft."
Only in the preferred embodiment is the more specific "rotational transformation" procedure described as a method to rotate the waveform. The remainder of the specification uses the words "rotate" and "shift" interchangeably. As the ITC noted, NWP's chief technology officer also used the words "rotate" and "shift" interchangeably in describing the operation of the patented device. Even Enercon's own expert admitted that he had heard the terms used interchangeably.

We have also considered Enercon's extrinsic evidence purportedly demonstrating what the term "rotate" means to one of skill in the art and find it to be unhelpful at best and misleading at worst. Submitted as part of Enercon's claim construction argument, the Mohan, Ooi and Thorburg references make no mention of the disputed claim term. Not only does the text of the references not purport to aid in determining the meaning of the term "rotating," but the argument accompanying the citation of these references in Enercon's brief apparently attempts to show that several of the limitations of claim 131 can be found in the prior art. Because the validity of the '039 patent was not appealed to this court, these references may not be considered for that purpose.

As we have stated above, the specification clearly uses the terms "rotate" and "shift" interchangeably. In addition, all parties agreed that the phrase "rotating the reference waveform" indicates a shift in phase of the desired waveform. Because we see no evidence to indicate that the term "rotate" was intended to refer to the specialized method of performing a phase shift known as a "rotational transformation," we hold that the term "rotating" is to be given its ordinary meaning. We therefore hold that the ITC was correct in interpreting the term "rotating" to mean merely a phase shift in the desired waveform.

The court first interprets the claims of the '014 patent. When construing claims, the court looks to the language of the claims, the specification, the prior art and the prosecution history. SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1118 (Fed. Cir. 1985). In interpreting the claims, the court first looks to the words of the claims. The words in a claim are "given their ordinary and accustomed meaning unless it appears that the inventors used them differently." Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759 (Fed. Cir. 1984) (quoting Universal Oil Prods. Co. v. Globe Oil & Ref. Co., 137 F.2d 3, 6 (7th Cir. 1943), aff'd, 322 U.S. 471, 88 L. Ed. 1399, 64 S. Ct. 1110 (1944)).

Claim 5 of the '014 patent reads as follows:

5. A method for finishing a surface of a workpiece, the method comprising:

(a) contacting the surface of the workpiece with a circumferential portion of at least one sanding member in the form of a body of revolution having a longitudinal axis;

(b) revolving the sanding member in a circle of revolution over the surface of the workpiece; and

(c) rotating each sanding member about its longitudinal axis in a preselected first direction during a first portion of each circle of revolution and rotating each sanding member in a second direction, opposite to the first direction, during a second portion of each circle of revolution.

In construing this claim, the court finds that the only portion of the claim which is the subject of any material dispute is subsection (c). The court finds that this claim language requires a finishing method whereby a sanding member must change direction twice when it is rotated through a circle of revolution, i.e., 360 degrees. Further, the court finds that the language of claim 6 merely requires the same method as claim five, with the exception that the method involve two or more sanding members.
This term is used in claims 44, 49, and 50 of the '988 Patent. Innovative argues that according to its ordinary and customary meaning this term should be construed to mean a plate which rotates. Defendants advance a more specific definition that rotating plate means "a generally square plate which has a rivet hole at the center, a recessed portion, and four mounting holes disposed at the corners" based on one of the patent specifications. See Pl's Markman Br. Ex. E. col. 5 ll. 52-60. Since defendants' construction unnecessarily and improperly imports features from the specification, the court will adopt Innovative's construction and find that "rotating plate" is "a plate which rotates."

3. Rotor Rotation Sensor

"Rotor rotation sensor" appears in Claims 1 and 38 of the '529 Patent. Plaintiffs assert that the term "rotor rotation sensor" should be construed as "a device that provides a signal, related to particulate matter being released, that the controller uses to determine when a desired amount of particulate matter has been released." Defendants, on the other hand, propose that "rotor rotation sensor" should be construed as "a device that detects the value or change in a physical quantity, here the rotation of a rotor."

The underlined portion of the following text shows the amendment made during the prosecution of the '529 Patent to include the rotor rotation sensor:

a rotor rotation sensor;

a controller adapted to automatically stop releasing the particulate matter when a desired amount of particulate matter has been released from the bin, the controller adapted to monitor a signal from the rotation sensor, determine, based upon said signal, when a desired amount of particulate matter has been released, and then to stop applying power to the drive motor;

(Declaration of Chad A. Hanson, P2, Ex. F (emphasis in original).) The signal of the rotor rotation sensor is based on the counted rotations of the rotor. As described in the claim language, the controller uses this signal to determine when a desired amount of particulate matter has been released and thus to stop the power that is sent to the drive motor and ultimately to stop the rotor from turning. Within this context, the Court construes the term "rotor rotation sensor" to mean a device that detects the rotation of the rotor and provides a signal that the controller uses to determine when a desired amount of particulate matter has been released.

III. The '026 Patent

Concerning the '026 patent, the parties dispute the correctness of the district court's construction of "rotational indexing means" as a means-plus-function claim limitation within the meaning of 35 U.S.C. § 112, paragraph 6. The district court reached this conclusion after noting that the claim language omitted a retainer sleeve structure needed to perform the indexing function. Summary Judgment Order, slip op. at 16. Robinson argues that "rotational indexing means" is not a means-plus-function limitation because the claim recites the structure that performs the recited function, thus overcoming the presumption arising from the use of the word "means." Cannondale responds that the district court's construction of "rotational indexing means" was proper because the district court correctly recognized that the bearing retainer structure was needed to perform the recited function and was omitted from the claim language.

Determining whether a claim limitation is a means-plus-function limitation subject to 35 U.S.C. § 112, paragraph 6, is a matter of claim construction we review de novo. Personalized Media Communications v. Int'l Trade Comm'n, 161 F.3d 696, 702 (Fed. Cir. 1998). Claim limitations that use the word "means" create a presumption that § 112, paragraph 6, applies. Id. at 703. However, the presumption of means-plus-function treatment is rebutted "where a claim recites a function, but then
In this case, the "rotational indexing means" is not a means-plus-function limitation. Rotational indexing refers to the function of having the bicycle's head tube suspension (and hence the front wheel of the bicycle) synchronously rotate with the front handlebars. Claim 1 of the '026 patent recites "a longitudinal bearing track" and "a plurality of rolling surface bearings in rolling reception in said bearing track" to accomplish this function. '026 patent, col. 5, ll. 44-47. This recitation of a bearing track and rolling surface bearings in rolling reception in the claim language provides sufficient structure to perform the function of rotational indexing and overcomes the presumption that "rotational indexing means" is a means-plus-function claim limitation. Because this inquiry focuses on the claim language, Cannondale's arguments regarding alleged admissions in the prosecution history that the bearing retainer was required are immaterial in evaluating whether the means-plus-function presumption is rebutted. Moreover, the alleged admissions in the prosecution history did not pertain to claim 1 of the '026 patent, but instead related to a claim in the parent application that recited all three structural elements, including the bearing retainer. There was no basis for granting summary judgment of non-infringement as a matter of law on the "longitudinal bearing track" limitation of element (c) or on element (d) of claim 1 of the '026 patent. At a minimum, there are disputes of material fact of infringement of these limitations.

Robinson argues that if "rotational indexing means" is not a means-plus-function claim limitation, we should find that Cannondale infringes elements (c) and (d) of claim 1 of the '026 patent as a matter of law. Robinson acknowledges that if we conclude that elements (c) and (d) were not infringed as a matter of law, the entire infringement issue should be remanded. Because it is not clear from the parties' arguments that no dispute of material fact of infringement remains under our construction of "rotational indexing means," we decline to enter judgment of infringement of elements (c) and (d) of claim 1 of the '026 patent as a matter of law. Instead, now that we have held that there is no basis for summary judgment of non-infringement as a matter of law for the "longitudinal bearing track" limitation of element (c) and for element (d), the district court may consider the parties' arguments regarding infringement of claim 1 of the '026 patent on remand.

Cannondale responds that the district court's finding of non-infringement should be affirmed on the alternate ground that it does not meet the "resilient compressive means" limitation of claim 1(e) of the '026 patent. Because the district court declined to construe "resilient compressive means" in the first instance in light of its conclusion that Cannondale did not infringe the "rotational indexing means" limitation, Summary Judgment Order, slip op. at 19 n.7, and because the issue has not been fully briefed by the parties, we decline to do so now. The district court may decide the issue in the first instance on remand.

Based on our construction that "rotational indexing means" is not a means-plus-function limitation, we vacate the district court's summary judgment of non-infringement and remand for further consideration of literal infringement and infringement under the doctrine of equivalents.

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2. Rotor

The term "rotor" appears in Claims 1 and 38 of the '529 Patent. Plaintiffs assert that "rotor" should be construed as "a component or assembly that rotates about an axis." Defendants contend that "rotor" should be construed as "a rotating assembly of vanes forming discrete pockets."

The ordinary meaning of the term "rotor" is "a part that revolves in a stationary part." Webster's Third New International Dictionary 1977 (1993); Merriam-Webster's Collegiate Dictionary 1019 (10th ed. 1998). Defendants have given the Court no reason to depart from a definition consistent with this ordinary meaning. In the independent claims of the '529 Patent, the rotor has a broad construction. Defendants propose that the meaning should be limited to that of the preferred embodiment of the rotor, or to the dependent claim language of Claim 2. But limitations in dependent claims are not to be read into the independent claims from which they depend. See Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 972 (Fed. Cir. 1999). It would be inappropriate for the Court to limit the construction of the term to a specific rotor type when the language of the independent Claims 1 and 38 is broad enough to cover many different types of rotors. Thus, the Court construes the term "rotor" in the context of the '529 Patent to mean a component that rotates about an axis.
p. "rough bark like texture" Claim 5

Figure 1 in the '514 Patent illustrates an example of a rough bark like texture. The Patent describes said texture as a surface with "numerous ridges and valleys of differing heights and depths." (‘514 Patent, col. 3, lns. 58-59) The Court finds that this definition adequately construes the phrase "rough bark like texture."

E. "roughened surface"

All parties contend that "roughened surface" should be construed to mean "a non-slip finish or surface." The term appears in dependent Claim 2 and independent Claim 19. The proposed construction is in keeping with the ordinary and customary meaning of the words of the term, and the claim language does not suggest any need for recourse to other sources of evidence. I therefore conclude that the term "roughened surface" should be construed as the parties propose.

II. "a rounded bottom in said gullets"

Claim 1 of the '783 Patent provides:

said sprocket teeth having adjoining root portions cooperatively configured to define a rounded bottom in said gullets . . . .

(disputed term emphasized).

The parties agree the "sprocket" in question is a nose sprocket that has several teeth as described by the '783 Patent. Between these teeth is a space called a "gullet." The parties also agree the disputed term "a rounded bottom in said gullets" refers to the bottom region that exists between adjacent sprocket teeth. The only apparent difference between the competing constructions of the parties is the meaning of the term "rounded" when used to characterize the shape of the bottom of the gullet.

At the outset, the Court notes both parties have offered competing definitions from common English language dictionaries, particularly for the word "rounded." As noted, however, the Court's task in claim construction must begin with intrinsic evidence. If construction is resolved on that basis, the Court may not look to extrinsic evidence such as dictionary definitions. See Vitronics, 90 F.3d at 1583. In other words, the Court should not consider extrinsic evidence unless it cannot resolve the matter with intrinsic evidence.

Defendants contend "a rounded bottom in said gullets" should be construed to mean "[t]he bottom region of the gullets between adjacent sprocket teeth has a radiused (semicircular) shape." Defendants note the '783 Patent refers to a sprocket design with a semicircular shape:

According to a preferred embodiment of the invention, the drive tang is closely received within semi-circular nose sprocket gullet formations whereby operational forces imposed upon the nose sprocket arrive substantially as compressive forces, as opposed to the substantially tensile forces found in conventional chain saw design.

The Court notes this text is part of the '783 Patent's specification and is not necessarily binding on the claim itself. See Phillips, 415 F.3d at 1315 (a patent claim is part of a "fully integrated written instrument, consisting principally of a specification that concludes with the claims.") (internal citations omitted). Moreover, this text merely describes the invention in its preferred embodiment. The Federal Circuit has frequently cautioned against impermissibly limiting a claim by importing specific features from a preferred embodiment into the claim. See Acumed, 483 F.3d at 805. See also Phillips, 415 F.3d at 1323 (even though "the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments."). Thus, this reference to a semi-circular shape in the preferred embodiment is not dispositive. In any event, the Federal Circuit also has warned that an illustrated embodiment, rather than limiting an invention, can indicate the patentee intends the illustration to be one embodiment but not necessarily the ideal embodiment of the invention. See Acumed, 483 F.3d at 807.

Defendants also contend Figure 1 of the '783 Patent's illustrations shows gullet formations on a nose sprocket that are semicircular at bottom and formed to match the radius of corresponding tang portions on a saw chain. In particular, Defendants rely on the following text from the specification:

In the illustrated embodiment, the symmetry results from a similar radius of curvature for gullets 70 and tang portions 42 yielding a semicircular shape for each. Gullet formations 70 thereby possess the same symmetric relationship to the axis 72 when the corresponding tang formation 42 rests within the gullet formation 70.

'783 Patent col.4 ll.30-36. This text constitutes a description of the illustrated embodiment of the '783 Patent. Thus, it too is not dispositive.

Moreover, the language of the specification demonstrates Defendants' interpretation is too narrow. The specification provides the gullet formations "closely receive the tang portions" of a saw chain, and "the tang portions 42 of center links 40 are substantially symmetric with respect to an axis 72 bisecting the center links 40 and the distance between rivets 44." '783 Patent col.4 ll.26-30. The specification then continues: "In the illustrated embodiment, the symmetry results from a similar radius of curvature for gullets 70 and tang portions 42 yielding a semicircular shape for each." '783 Patent col.4 ll.30-33. Although semicircular shape is one way that a gullet portion can be configured to be "closely received" with a saw-chain tang, it does not necessarily follow that Claim 1 of Plaintiffs' '783 Patent requires a semicircular or radiused shape in every case. Adopting Defendants' construction would impermissibly read into Claim 1 a limitation from the preferred or illustrated embodiment.

The final lines of the specification also demonstrate the overbreadth of Defendants' construction:

It will be appreciated that the present invention is not restricted to the particular embodiment or application that has been described and illustrated and that variations may be made therein without departing from the scope of the invention as found in the appended claims and equivalents thereof . . . . Furthermore, while the present invention has been shown and described with respect to a semi-circular drive tang portion, it will be understood that the present invention encompasses other drive tang and nose sprocket configurations wherein operational forces are desirably received substantially as compressive forces at the gullet formation of the nose sprocket.

'783 Patent col.5 ll.29-45.

Here the patentee stressed a semicircular gullet formation is not necessary to the invention. The heart of the invention is a drive tang and nose sprocket configuration in which operational forces are received as compressive forces in the gullet formation of the nose sprocket. Such a configuration could embrace a semicircular/radiused gullet formation or merely a "curved" gullet formation properly configured to receive the described operational forces substantially as compressive forces.

Thus, Plaintiffs contend "a rounded bottom in said gullets" should be construed to mean "[a] curved bottom region between adjacent sprocket teeth." The Court agrees. This more generic description of the gullet bottom accords with the text of Claim 1 and the specification as discussed above. Moreover, it does not read into Claim 1 the limitation of a specific geometric shape (i.e., radiused or semicircular) when the intrinsic evidence demonstrates that such limitation is not required or intended. Interpreting this term to require no more than a "curved" gullet bottom encompasses not only the semicircular preferred embodiment but also other embodiments, which the patentee appears to have intended. See '783 Patent col.5 ll.29-
45. See also Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004)("Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope . . . .") (internal citations omitted).

Accordingly, the "a rounded bottom in said gullets" is construed to mean "[a] curved bottom region between adjacent sprocket teeth."

Next, the parties dispute the construction of "rounded dimple" found in claims 1, 15, 22, and 25 of the 183 Patent.

Claims 1, 15, 22, and 25 of the 183 Patent include, in pertinent part, a "rounded dimple".

The term "rounded dimple" is not explicitly defined in the specification. "Rounded" is defined as "convex, curving, or round in shape". Webster's Third International Dictionary 1979 (3d ed 1986). "Dimple" is generally defined as "a slight natural indentation … a depression or indentation…." Webster's Third International Dictionary 634 (3d ed 1986). The parties agree that the "dimple" in the 183 Patent is not an indentation as the term is commonly defined; instead, it is a protrusion or a bump. The drawings of the 183 Patent show support of such a definition as does the claim itself -- "a protrusion that is a rounded dimple".

The parties disagree on the construction of the term "rounded", which modifies the protrusion or bump. Plaintiff argues that the correct definition for "rounded dimple" is "a protrusion with a rounded surface". Defendant argues that the term should be defined as "a hemisphere-shaped bump".

The 183 Patent recites that the dimple has a curved surface to allow "guided pivoting" of the disc-shaped element relative to the housing and that the dimple has a curved surface to allow "universal pivoting" of the mounting disc. Figure 5 of the 183 Patent illustrates the dimple as half of a sphere.

While Figure 5 supports Defendant's proffered definition, such definition is more restrictive than the ordinary definition of rounded. The Patent does not demonstrate that such a restrictive definition is required. On the other hand, Plaintiff's proffered definition does not include a term or terms defining rounded but simply uses rounded. Therefore, Plaintiff's construction leaves the construction of the term to further interpretation.

The proper construction of the term "rounded dimple" is "a convex or curved shape protrusion" in light of the plain and ordinary definition of the term rounded, the agreed to definition for dimple as to this Patent, and the Patent drawings and description.


CooperVision contends that the term "contact lens having a rounded edge" means "a contact lens having a posterior surface in a general shape of an insert tool that includes a first posterior surface portion and a convexly curved second posterior surface portion that circumscribes the first posterior surface portion." (All italics added.) CIBA, on the other hand, proposes a construction of "an edge that is shaped like a portion of a circle in which every part of the surface or the circumference is equidistant from a center point." CooperVision's proposed construction refers exclusively to the posterior lens surface edge and the tool that shapes the back section of the mold used to create the lens. CIBA's proposed definition contains no reference to the mold tool and does not distinguish between anterior and posterior edge surfaces.

CooperVision's interpretation has initial appeal. When considered in overall context, the raison d'etre or core element of the edge design patents is a back surface mold insert tool with a convexly curved outer peripheral edge. The tool produces the back section of a mold which eventually forms a lens with a convexly curved outer peripheral edge on its back or posterior
surface. Common sense suggests that the rounded edge of the invention refers to the convexly curved outer peripheral edge of the posterior surface of the lens.

This proposed construction finds some support in certain language in the patents. Claim 4 states: "The method of claim 3 which further comprises demolding the contact lens member and hydrating the contact lens member to form a hydrogel contact lens having a rounded edge." '706 patent, col. 8, ll. 31-34 (italics added). Claim 3 refers the reader to claim 1, which provides that the contact lens product is produced with a back surface tool. The court must look at the claim language first, and ascribe the plain and ordinary meaning to the phrase. Hockerson-Halberstadt, 222 F.3d 951, 955 (Fed. Cir. 2000).

Second, the specification explains in some instances that "to form the rounded edge contact lens, the back surface tool having a convex curve along the outer radius thereof" is used to create a back surface mold, which is then assembled with another mold half to form a lens. '706 patent, col. 2, ll. 55-60. Elsewhere, the specification defines a lens with a rounded edge solely with reference to its back surface tool:

"[T]he convex curve of the tool, when used to form a back surface mold section, provides a contact lens having the desired rounded edge form . . . . "706 patent, col. 2, ll. 31-54.

To form the rounded edge surface of the final lens product, the surface of the [back surface] tool includes . . . a second surface portion defining a convex curved outer peripheral edge surface . . . . "706 patent, col. 3, ll. 40-45.

This language suggests that a contact lens with a rounded edge is a contact lens formed from a back surface tool with a convexly curved peripheral edge surface.

Despite its initial appeal, however, CooperVision's proposed construction does not fully survive further analysis. First, there is no evidence in the claim language itself supporting CooperVision's proposed limitation of a certain insert tool. The claim simply states that the contact lens is demolded and hydrated to form a hydrogel "contact lens having a rounded edge." '706 patent, col. 2, ll. 21-23; col. 8, ll. 31-34. This straightforward terminology of the invention and the understandable claim language give that meaning to this term. See Phillips, 415 F.3d at 1314 ("In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words"). "Contact lens with a rounded edge" means what it says, i.e., substantially smooth. '706 patent, col. 2, ll. 21-22, '706 patent, col. 5, ll. 30-32; '706 patent, col. 7, ll. 55-57. No claim language implies a departure from that meaning.

Similarly, the specification does not compel the court to deviate from the ordinary and customary meaning by importing added dimensions to the term. The specification consistently refers to an embodiment of the contact lens as having a "rounded edge." '706 patent, col. 3, ll. 51-52. However, nowhere does the patentee disclaim or disavow any other tool that can be used to form the rounded edge surface. Rather, when mentioning formation of a rounded edge lens, the specification states only that the tool is "preferably, a back surface tool," suggesting that the back surface tool, while preferred, is not the only tool that will create a rounded edge. '706 patent, col. 3, ll. 32-33. Simply put, when the specifications allude to "contact lens with a rounded edge," they do not reference the back surface tool in most instances.

Finally, and most importantly, even if a back surface tool is necessary to create a "contact lens with a rounded edge," it is improper to construe the claim term with such a tool when the tool is absent from the claim language. See Phillips, 415 F.3d at 1323 ("although the specification often describes very specific embodiments of the invention, [the Federal Circuit has] repeatedly warned against confining the claims to those embodiments . . . . In particular, [the Federal Circuit has] expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment").

Turning to the competing proposal, CIBA argues that the ordinary meaning of "round" is "having every part of the surface or circumference equidistant from the center." CIBA's Claim Construction Brief, p. 4. CIBA wholly relies on the definition in the Merriam-Webster's Collegiate Dictionary and The American Heritage Dictionary of the English Language. MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY (10th ed., 1999); THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (4th ed., 2000). Dictionaries may be helpful but are "less significant than the intrinsic record in determining the legally operative meaning of claim language." MBO Laboratories, Inc. v. Becton, Dickson & Co., 474 F.3d 1323, 1329 (Fed. Cir. 2007).
CIBA's proposal requires a "rounded edge" lens to be one in which the edge must have a circular, or approximately circular shape. The specification, however, contemplates that lenses covered by the invention can have different levels of peripheral edge roundness. See '706 patent, col. 7, ll. 34-47 (increasing the size of the angle at which the front and back surface molds meet, the "angle of interface," can increase the roundness of a lens edge). Accordingly, CIBA's proposed construction also is deficient.

Ultimately, the court partially adopts each side's construction. CooperVision correctly advocates that this claim term refers to the posterior surface edge of a contact lens, and that dictionary definitions do not trump the intrinsic record. CIBA correctly argues that this claim does not explicitly ascribe a specific tool that must be used to form the rounded edge surface.

Having considered all relevant factors, the court finds that:

"[C]ontact lens having a rounded edge" means: contact lens whose posterior surface has a substantially smooth, curved outer peripheral edge.

2) "runner filler"

Plaintiff proposes that "runner filler" be defined as "an element that volumetrically shapes the intake runner cavity to form an intake passageway." Defendant proposes the definition, "a component that is positioned within, and fully defines at least part of, the intake passageway." I conclude that a "runner filler" is a component that partially fills the intake runner, thereby forming at least a portion of the intake passageway.

Defendant's proposal would make a runner filler of any object placed within the intake runner. This is a broader construction of the term than the patent itself claims. The '502 patent's written description states: "The present invention solves some of the problems of redesigning engines to fit existing [original] [equipment] [manufacturer's] devices by forming an intake runner cavity that is relatively large and then filling at least some of the cavity space with a runner filler to form and position the intake passageway as desired." The '502 invention relies on the ability of the runner filler to fill portions of the intake runner cavity to form the intake passageway.

Although plaintiff's proposal comes closer to defining the term as claimed in the '502 patent, it states that the runner filler shapes the intake runner cavity, rather than the intake passageway. According to the '502 patent specification, the intake runner cavity does not change its shape. It is oversized and remains so without regard to the shape or size of the inserted runner filler. It is the intake passageway that is shaped by the runner filler, either partially (in the case of "open" runner fillers) or fully (in the case of "closed" runner fillers). Therefore, I will construe "runner filler" to be a component that partially fills the intake runner, thereby forming at least a portion of the intake passageway.

2. Rupturable

The defendant argues that the term "rupturable" in the '550 Patent should be construed to mean permanently deformable. The defendant argues that the process described in the '550 Patent involves an irreversible breaking of the membrane. The defendant also cites evidence that this construction accords with the ordinary meaning of the term "rupture" to those skilled in the art of injection molded plastics. (Belcher Decl. P 9.) The Court also notes that this construction is consistent with the ordinary lay meaning of the term.
1. Rupturable Web

SDP argues that the term "rupturable web" means "a thin sheet of material, such as is located on the end of a plunger for a syringe, that can be more readily broken or burst open in order to separate that portion from the rest of the plunger." Pls.' Br. in Supp. of Summ. J. on Defs.' Liability for Patent Infringement, at 17 ("Pls.' Br. in Supp. of Summ. J."). It is important, SDP argues, that the definition for rupturable web "include the notion that one portion of the web must be weaker in order to effectuate the tearing required." Pls.' Reply in Supp. of Summ. J., at 21 ("Pls.' Reply"). SDP uses dictionary definitions of web and rupture as well as expert averment to support its construction.

In contrast, NMT argues that the term "rupturable web" means "a thin portion of a boot which covers the open end of the plunger and tears to allow the needle to pass." Defs.' Br. in Opp'n, at 15. This definition, NMT argues, is the only definition clearly supported by the intrinsic evidence. Moreover, NMT avers that SDP's definition overreaches the bounds of the claim terms by incorporating the word "break," a term distinguished by SDP during patent prosecution. Id. at 16-17.

After reviewing the claim terms in light of the specification and the prosecution history, the Court finds that the term "rupturable web" means a material of a certain thickness that will tear or puncture when an out-of-plane force is applied against it. Starting with the claim language, the phrase "rupturable web" is used in two of the claims at issue. Specifically, claim 26 of the '952 patent reads:

A syringe comprising:

- a barrel having a first end and an opposite second end;
- a plunger having a forward end and movable within said barrel from said second end of the barrel towards said first end, the plunger having a hollow interior communicating with said forward end;
- a deformable base within said barrel intermediate said [sic] first and second end;
- a hollow needle having a pointed front, said needle extending through said first end of said barrel and a rear end received within and supported by said deformable base;
- energy storage means positioned in said barrel between said first end said deformable base and in engagement with said needle; and
- a rupturable web on said forward end of the plunger;

wherein a fluid can move from within said barrel through said needle as said plunger moves through said barrel to said deformable base, and when said rupturable web contacts said deformable base, continued movement of said plunger moves said deformable base toward said first end, said rear end of said needle thereby tearing said web wherein said rear end loses contact with said deformable base to allow said energy storage means to eject said needle into said interior of said plunger.

'952 Patent, col. 14, ll. 49-67, to col. 15, ll. 1-7 (emphasis added). Similarly, claim 38 of the '952 patent reads:

A syringe apparatus comprising:

- a barrel;
- a plunger movable within said barrel;
- a needle assembly attached to an end of said barrel and defining a passageway therethrough;
- a deformable base positioned within said barrel adjacent said [sic] needle assembly and defining a passage therethrough;

energy storage means within said passageway;
a hollow needle passing through said passageway;

an enlarged head on said needle engaged within said passage of deformable base; and

a rupturable web on an end of said plunger for moving a fluid within said barrel through the hollow of said needle when said plunger is moved through said barrel toward said needle assembly;

whereby when said plunger moves through said barrel toward said needle assembly, a fluid can be moved from said barrel through the hollow of said needle, and continued movement of said plunger moves said deformable base downwardly until such time as sufficient force is imparted to said rupturable web by said enlarged heard of said needle to tear said rupturable web, said deformable base then releasing said needle with said enlarged head due to force applied thereto by said energy storage means to project said needle with said enlarged head into the interior of said plunger.

Id. col. 16, ll. 16-45 (emphasis added). The purpose for the rupturable web in both of these claims is the same: it forms a seal on the end of the hollow syringe plunger during medication draw-up and injection, it moves the deformable base toward the outlet end of the syringe assembly and it tears when the enlarged needle head exerts enough force against it.

The '952 patent specification confirms that these functions are performed by the rupturable web. The patent teaches:

The plunger has a thin, rupturable web on an end thereof which is part of a boot covering the end of the plunger, the boot, including the web, being liquid impermeable for forcing liquid from the barrel upon movement of the plunger. Upon completion of an injection, the boot-covered plunger contacts the deformable base, and upon application of force at the plunger, moves such base downward. Continued application of force causes the flexible supports to flex and move over the needle assembly, permitting the deformable base to move the enlarged head of the needle downward until further movement of the enlarged head is blocked by the needle assembly. With the enlarged needle head blocked by the needle assembly, continued force at the plunger causes the deformable base to move around the enlarged needle head. As the deformable base moves around the needle assembly, the enlarged needle head begins to protrude from the deformable base and come into contact with the web on the boot of the plunger. Continued force causes the enlarged needle head to tear the web of the boot, positioning the enlarged needle head just inside the hollow portion of the plunger. The torn portion of the web creates a flap just inside the hollow plunger. As the plunger moves the deformable base still further, the enlarged needle head looses [sic] contact with the deformable base, which triggers a release of energy from the energy storage means in the passageway, projecting the needle with its enlarged needle head into the hollow portion of the plunger.

Id. col. 2, ll. 12-34 (emphasis added).

Similarly, in the alternative embodiment,

as the deformable base moves forward, the enlarged needle head begins to protrude from the deformable base and come into contact with a thin rupturable web on the boot of the plunger. Continued force causes the enlarged needle head to penetrate the web of the boot, positioning the enlarged needle head just inside a hollow portion of the plunger.

Id. col. 2, ll. 66-67, to col. 3, ll. 1-5 (emphasis added). Moreover, the detailed description of the rupturable web reads:

Plunger 7 has a hollow 41 therein and has a boot 43 covering an end thereof which is fluid impermeable for forced movement of a fluid in barrel 5 during ordinary injection. A portion of boot 43 is illustrated as having been torn by the needle head in FIG. 2, with boot web 79 laying over in the front of plunger 7.

Id. col. 5, ll. 39-44 (emphasis added). In addition,

To aid in the rupturing process of the web, tear groove 26 and tear groove 28, shown in figure 9B, are provided. The thickness of web 79 and the tear grooves are selected to withstand normal operating pressures within syringe 1, as shown in FIG. 1, but to allow relative ease in the puncturing of web 79 by enlarged needle head 13, shown in FIG. 6. The preferred material for boot 43 is an elastomer.

Id. col. 7, ll. 3-10 (emphasis added).
It is clear from these passages and the claims themselves that the rupturable web is a material of a certain thickness that will tear or puncture when an out-of-plane force is applied against it. SDP avers that the specification uses the terms "rupture" and "tear" interchangeably, therefore the definition for "rupture" should be used to define "rupturable web." SDP argues that the dictionary definition of the word rupture is break or burst, therefore, the rupturable web is a material that may be broken or burst when an out-of-plane force is exerted against it. However, the specification only uses the word "rupture" once to describe what happens to the "rupturable web" when the enlarged needle head comes in contact with it: "Plunger 107 has a hollow 141 therein and is terminated by a boot 143 having a rupturable web 179, the boot being fluid impermeable for movement of a fluid in the barrel during ordinary injection. Web 179 of boot 143 is illustrated as having been ruptured in FIG. 30." Id. col. 10, ll. 45-49. Although the word "rupture" may be used interchangeably with the word "tear" in the specification, this single reference to "rupturing" cannot overcome the repeated references to the "tearing" of the web in the claims and the remainder of the specification. In addition, although the dictionary definition of "rupture" may be helpful, the claims and the specification clearly connote that the rupturable web is torn or punctured rather than broken or burst.

Moreover, a definition for "rupturable web" that references "tear" instead of "break" or "burst" is more consistent with the prosecution history of the '952 patent. During prosecution of the patent's predecessor applications, the '007 continuation application filed January 4, 1993 and the '001 application filed December 16, 1994, the patent examiner rejected claims similar to the '952 patent's claim 30 and claim 26. Defs.' Exh. 7, File Wrapper, App. No. 08/000,007, Jan. 4, 1993, at 58, 66 ("App. No. '007"); id., File Wrapper, Continuation App. No. 08/359,001, Dec. 16, 1994, at 82 ("App. No. '001"). Those claims used the words "rupture" and "penetrate" to describe the action of the enlarged needle head pushing through the rupturable web, when those words meant "to break." See id.

Specifically, the claims at issue read in pertinent part:

13. (Amended) A process for retracting a needle at the completion of subcutaneous [sic] injection with a hypodermic syringe, comprising the steps of:

   forcing a plunger of said syringe downwardly to force a needle support deformable base downwardly and sever sacrificial supports;

   forcing an end portion of said needle to [penetrate] rupture a base portion of the [syringe and] plunger; and

   propelling said needle into the hollow of said plunger.

* * *

14. A syringe comprising:

* * *

   a rupturable boot on the forward end of the plunger;

   whereby a fluid is moved from within the barrel through the needle as the plunger moves through the barrel to the deformable base, and when the rupturable boot contacts the deformable base, continued movement of the plunger moves the deformable base toward the first end, the rear end of the needle thereby rupturing the boot and loosing [sic] contact with the deformable base to allow the energy storage means to eject the needle into the interior of the plunger.


The patent examiner rejected both claims citing 35 U.S.C. § 103, which forms the basis for obviousness rejections. Id. at 58. The examiner stated:

Claims 13 and 14 are rejected under 35 U.S.C. § 103 as being unpatentable over Batlle in view of Botich et al or WIPO 90/06146.
It is considered obvious and well within the skill of the art to provide the retractable needle syringe of Batlle with a hollow plunger of sufficient length to fully contain the retracted needle as taught by Botich et al or WIPO if so needed or desired.

Id. In response, SDP distinguished its claims explaining:

. . . Batlle teaches a disposable syringe utilizing as its closing device on the end of the piston (plunger) a discoid button 14 with its edge pressure-fitted into a ring-shaped groove 15 made around the mouth of the piston's cavity. During operation of the needle of Batlle, the button 14 is forced completely out of the groove 15 and forced back up into the piston.

The pertinent portion of Applicant's [sic] independent claim 13 claims "forcing an end portion of said needle to rupture a base portion of the plunger" (emphasis added). A pertinent part of the specification as amended herein states as follows:

As deformable base 11 moves forward, enlarged needle head 13 begins to protrude from base 11 and come into contact with web 79 of rupturable boot 43 on plunger 7. Continued force causes further translation of base 11 and enlarged needle head 13 to tear and penetrate web 79 of rupturable boot 43 . . . (page 12, lines 21 through 25) (emphasis added)[.]

By the above amendment, the specification has been amended to more particularly describe rupturing as used herein. As clearly illustrated in figure 2 and 19 through 23, a portion of the rupturable boot 43 is torn or ruptured in order for the needle to penetrate the rupturable boot 43. According to Webster's Dictionary, the verb rupture (or rupturing) means "to part by violence: break, burst". The meaning of rupture as used herein and supported by the specification and the drawings clearly illustrates that the rupturable boot 43 is torn to be parted for the needle to penetrate. This rupturing or tearing differs significantly from the closing device and the end of the piston in Battle [sic] wherein the discoid button 14 is merely dislodged from its pressure-fitted position within the ring-shaped groove 15. There is clearly no rupturing as taught by applicant in this process of Battle [sic]. As such, no combination of Battle [sic] with Botich et al or WIPO 90/06146 renders applicant's [sic] process obvious.

Id. at 60-62. In this passage, the inventors appear to argue that although the definition of rupture is to break or burst, their device uses a tearing action rather than a dislodging as taught by Batlle. But, even in light of the explanation here, the examiner again rejected the claims:

In view of applicant's [sic] cited definition of rupture which includes "to break", [sic] it is the Examiner's position that the dislodging in Battle is equivalent to a breaking and therefore readable on the claims. If the claims were amended to recite that the boot is "torn" or is caused to "tear" such language would render the claims allowable over the cited prior art[, Batlle in view of Botich et al or WIPO].

Id. at 66. Accordingly, the inventors amended the claims to read:

13. (Thrice Amended) A process for retracting a needle at the completion of subcontaneous [sic] injection with a hypodermic syringe, comprising the steps of:

forcing a plunger of said syringe downwardly to force a needle support deformable base downwardly and sever sacrificial supports;

forcing an end portion of said needle to [rupture] cause a base portion of the plunger to tear; and

propelling said needle into a hollow of said plunger such that said needle is contained entirely within said plunger.

14. (Amended) A syringe comprising:

* * *

a rupturable boot on the forward end of the plunger;

whereby a fluid is moved from within the barrel through the needle as the plunger moves through the barrel to the
deformable base, and when the rupturable boot contacts the deformable base, continued movement of the plunger moves the deformable base toward the first end, the rear end of the needle thereby [rupturing] causing the boot to tear and loosing [sic] contact with the deformable base to allow the energy storing means to eject the needle into the interior of the plunger.

Id. at 69-70. Further, the inventors stated, "In view of applicant's [sic] cited definition of "rupture", the examiner suggests to amend the claims to recite that the boot is "torn" or is caused to "tear" as such suggested language would render the claims allowable over the cited art. Such amendments have been submitted by this Amendment B." Id. at 71. The examiner allowed the claims so amended. Id. at 72.

But, the inventors did not stop there; they continued the '007 application and added additional claims in the '001 application. Defs.' Exh. 7, App. No. '001, at 75, 78-79. The new claims read:

15. (New) A process for retracting a needle at the completion of substaneous [sic] injection with a hypodermic syringe, comprising the steps of:

forcing a plunger of said syringe downwardly to force a needle support deformable base downwardly and sever sacrificial supports;

forcing an end portion of said needle to penetrate a base portion of said plunger; and

propelling said needle into a hollow of said plunger.

16. (New) The process according to claim 15 wherein said end portion of said needle penetrates said base portion of the plunger by rupturing.

Id. at 78-79.

Again, the patent examiner rejected the additional claims. He wrote: "Claims 15 and 16 are rejected under 35 U.S.C. § 102 (a or e) as being anticipated by Batlle. The broad recitation and meaning of 'penetrate' and 'rupture' is considered to be fully met by the breaking action disclosed by Batlle." Id. at 82. The inventors abandoned this application without amendment after it filed application Serial No. 08/481,093 (the "'093 application"), a continuation-in-part application of the '001 application; the '093 application later matured into the '952 patent. Id. at 85; Defs.' Exh. 9, File Wrapper, App. No. 08/481,093, Patent No. 5,613,952, June 7, 1995, at 4 ("'093 App."). The Court notes that all of the claims in the '952 patent state that the rupturable web or the end of the syringe plunger tears or is torn rather than ruptures or breaks. See '952 Patent, col. 13, ll. 15-18; id. col. 15, ll. 3-5; id. col. 15, ll. 29-30; id. col. 16, ll. 37-41.

It is clear to the Court that the patent examiner understood there to be a difference between the word "rupture," meaning "to break," and the word "tear." Where the Batlle patented device made obvious and anticipated a breaking action, according to the patent examiner Batlle did not make obvious or anticipate a tearing action. Moreover, in distinguishing their device from that in Batlle, the inventors describe the action as a tearing, and quoting from the patent specification, stated:

The pertinent portion of Applicant's [sic] independent claim 13 claims “forcing an end portion of said needle to rupture a base portion of the plunger” (emphasis added). A pertinent part of the specification as amended herein states as follows:

As deformable base 11 moves forward, enlarged needle head 13 begins to protrude from base 11 and come into contact with web 79 of rupturable boot 43 on plunger 7. Continued force causes further translation of base 11 and enlarged needle head 13 to tear and penetrate web 79 of rupturable boot 43 . . . (page 12, lines 21 through 25) (emphasis added)[.]

By the above amendment, the specification has been amended to more particularly describe rupturing as used herein. As clearly illustrated in figures 2 and 19 through 23, a portion of the rupturable boot 43 is torn or ruptured in order for the needle to penetrate the rupturable boot 43. According to Webster's Dictionary, the verb rupture (or rupturing) means "to part by violence: break, burst". The meaning of rupture as used herein and supported by the specification and the drawings clearly illustrates that the rupturable boot 43 is torn to be parted for the needle to penetrate. This rupturing or tearing differs significantly from the closing device and the end of the piston in Battle [sic] wherein the discoid button 14 is merely dislodged from its pressure-fitted position within the ring-shaped groove 15. There is clearly no rupturing as taught by
applicant in the process of Battle [sic]. As such, no combination of Battle [sic] with Botich et al or WIPO 90/06146 renders applicant's [sic] process obvious.

Defs.' Exh. 7, App. No. '007, at 61-62. In describing the changes to the specification, the inventors seem to equate rupture, with its "break; burst" definition, with tear. But, they also appear to distinguish Battle by stating that "a portion of the rupturable boot 43 is torn or ruptured in order for the needle to penetrate the rupturable boot 43." Id. at 61. This would be different from the Battle invention where the entire "boot" is dislodged. See id. at 62. Apparently, the patent examiner found this latter part of the inventors' reasoning persuasive because he allowed claims that referenced either "torn" or caused to "tear." Clearly, however, the patent examiner did not accept the inventors' definition of rupture that included "to break" because the examiner found "to break" equivalent to the dislodging taught by the Battle invention.

As a result of these findings, a definition for "rupturable web" that includes the phrase "to break" would be inconsistent with the patent examiner's rejection of a definition of rupture that included that phrase. In light of the claims, the specification and the prosecution history, the Court finds that the phrase "rupturable web" means a material of a certain thickness that will tear or puncture when an out-of-plane force is applied against it.

5. "Safety Edge"

The parties propose starkly different constructions of the term "safety edge." Jennmar proposes: "Edge positioned over one of the major surfaces and spaced from the perimeter." Excel proposes: "Smooth edge or end with no sharp edges accessible to touch." Jennmar argues that Excel's definition reads limitations into the claims that are not in the Patent. The Court agrees with Jennmar's proposed construction. The '933 Patent explains that the "safety edge" configurations, which involve ends that have been doubled over upon themselves, provide three benefits: (1) they "help to prevent injury from sharp edges"; (2) they "add additional strength to the outer periphery of the plates"; and (3) they "also aid in the stacking and destacking of the plates." Column 3. The proposed definition of Excel is both over-inclusive and under-inclusive. It expands the "sharp edge" condition by adding a reference to "accessible to touch" that is totally absent from the Patent. Moreover, Excel's proposed construction completely ignores the "peripheral strength" and "stackability" benefits that are expressly articulated in the Patent. Thus, the Court rejects Excel's effort to equate "safety edge" with "no sharp edges accessible to touch."

Claim 1 of the '674 Patent reads as follows:

A scooter, comprising: a scooter body; a pair of rear wheels rotatably supported at a rear portion of said scooter body; a transmission unit having an upper control portion positioned above said scooter body and a lower connecting portion extended underneath said scooter body; a steering means affixed to said control portion of said transmission unit for driving said connecting portion thereof to rotate in clockwise and anti-clockwise directions; a twister member having a driven portion connected to said connecting portion of said transmission unit; a pair of driving wheels spacedly and rotatably mounted to said twister member wherein said driving wheels are spaced apart from said driven portion of said twister member; and a safety driving equipment, comprising: a supporting arm frontwardly extended from said driven portion of said twister member; and a safety wheel which is rotatably mounted to a free end of said supporting arm to support a front portion of said scooter body and prevent said scooter from being flipped over.

Counsel in this case have agreed upon interpretations of most of the claim language or have agreed that the ordinary meaning is so clear that no interpretation is necessary. The disputed language is discussed below.

a safety wheel which is rotatably mounted to a free end of said supporting arm to support a front portion of said scooter body and prevent said scooter from being flipped over
The parties have asked the Court to construe the phrase, "a safety wheel which is rotatably mounted to a free end of said supporting arm to support a front portion of said scooter body and prevent said scooter from being flipped over." The parties were able to reach an agreement at the claim construction hearing that the words, "to support a front portion of said scooter body and prevent said scooter from being flipped over," mean exactly what they say--that the safety wheel functions to (1) support the front part of the scooter and (2) prevent the scooter from flipping over.

The parties' disagreement over construction is limited to the first seven words of the phrase, i.e., "a safety wheel which is rotatably mounted." Plaintiff, citing to the specification of the patent, contends that "a safety wheel which is rotatably mounted" is a wheel "which is 'capable of universal rolling.'" (Parties' Revised Joint Claim Charts 3 (citing, '674 Patent at col. 2, ln. 33-35.)) The parties agree that a wheel which is "capable of universal rolling" is a caster wheel. Defendants' view is that a caster wheel is only one of numerous possible embodiments of the invention and thus, should not be read as a limitation of the scope of claim 1. Defendants urge that "a safety wheel which is rotatably mounted" encompasses any wheel that can turn on its axis and can perform the safety functions that are delineated in the claim.

Defendants' argument, which focuses on the language of the claim itself, is more faithful to the principles of claim construction outlined in Phillips, and is more persuasive to this Court. As the Federal Circuit instructed district courts to do at the outset of their claim construction analyses, I have considered the words, "a safety wheel which is rotatably mounted," in the context of the entire patent.

Plaintiff asks the Court to construe the term "rotatably mounted," in this context, as, in effect, describing a wheel of the universal rolling or caster-type. In view of the plain meaning of the phrase and the way it and similar terms are used in claim 1 and in other claims in the patent, I reject plaintiff's proposed construction.

The Federal Circuit has advised that the context in which a term is used in a claim can be "highly instructive." Phillips, 415 F.3d at 1314 (citing examples of Federal Circuit cases in which "the use of a term within the claim provides a firm basis for construing the term"). The parties agree, as set forth in the Revised Joint Claim Charts, that "rotatably mounted," as used elsewhere in claim 1, refers to "wheels that are mounted . . . and serve to propel the vehicle." (Revised Joint Claim Charts 2 (construing "a pair of driving wheels spacedly and rotatably mounted . . .").) The parties also reached an agreement at the claim construction hearing that the phrase "rotatably supported," as used in claim 1, describes wheels that are able to rotate about their axles.

Further, the phrase "rotatably mounted" and similar phrases are used in other claims of the patent to describe wheel attachments that enable wheels to rotate, not specifically caster wheels. See, e.g., '674 Patent, claim 4 ("rotatably connecting") ("rotatably mounting"), claim 5 ("rotatably affixed"), claim 13 ("rotatably connecting"), ("rotatably mounting"), claim 14 ("rotatably supported"), ("rotatably mounted"). hi Phillips, the Court noted that "[h]ecause claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims." 415 F.3d at 1314. I find that, consistent with its usage throughout the claims, the phrase "rotatably mounted," as it relates to the safety wheel, means mounted in a manner that allows for rotation.

Plaintiff shifted focus during the claim construction hearing to the term "safety wheel," as used in claim 1, urging the Court to construe the term to mean a wheel of the universal rolling or caster-type. Plaintiff relies primarily on the "Summary of the Present Invention," wherein the safety wheel is referred to as "capable of making universal rolling mounted lively at the end of the wheel arm." ('674 Patent, col. 2, ln. 33-35.)

The Federal Circuit has repeatedly cautioned courts not to import limitations from the specification into the claims. See Phillips, 415 F.3d at 1323; Teleflex, 299 F.3d at 1326 ("The claims must be read in view of the specification, but limitations from the specification are not to be read into the claims.") (citations omitted); Collegenet, Inc. v. Applyyourself, Inc., 418 F.3d 1225, 1231 (Fed. Cir. 2005) ("In examining the specification for proper context, . . . this court will not at any time import limitations from the specification into the claims." (citation omitted)). In order to avoid improperly limiting the claim terms, it is important to bear in mind that claim construction analysis must begin with the words of the claim. See Teleflex, 299 F.3d at 1324. The Federal Circuit, in Teleflex, held,

[claim terms take on their ordinary and accustomed meanings unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the

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The Federal Circuit has noted that "[i]n some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." Phillips, 415 F.3d at 1314; see also, Acumed LLC v. Stryker Corp., 483 F.3d 800, 805 (Fed. Cir. 2007) (applying widely accepted meaning of the word 'curved'), petition for cert. filed, 76 U.S.L.W. 3094 (U.S. Sep. 4, 2007) (No. 07-304). The term "safety wheel," as it is used in the '674 patent, is not a term that has a particular meaning in a field of art. I find that the ordinary, lay meaning, of "safety wheel" is a free-rotating wheel that performs safety functions. There is nothing in the claim language to suggest that the safety wheel is limited to a wheel of the universal rolling or caster-type.

In addition to the claims, there are other indications in the specification that the caster wheel is only one example of an acceptable safety wheel. The term "safety wheel" appears in several places throughout the patent exactly as it appears in claim 1, i.e., without any reference to universal rotation. (See, e.g., '674 Patent col. 3, ln. 41; col. 4, Ins. 27, 55-56, 60.) The specification describes one of the features of the invention as "a safety wheel rotatably connected" to the supporting arm. (Id. at col. 3, ln. 41.) At column 4, line 30, the term "safety wheel" is described not as a universal wheel, but as a "free rotating wheel." When the specification does refer to the "universal rolling" feature, it is within the description of the preferred embodiments--"[a]ccording to the preferred embodiment, . . . [t]he safety wheel is capable of making universal rolling." (Id. at col. 3, Ins. 45-53.) At column 4, lines 25-44, again within the purview of the phrase, "according to the preferred embodiment . . . ." the specification provides further details about the qualities of a safety wheel of one particular type, i.e., the caster-type. In describing the second preferred embodiment, the specification describes the added benefits of a "universal" safety wheel. (Id. at col. 5, Ins. 11-15 ("Furthermore, the safety wheel is a universal wheel, so either because of automatic movement, under force or wobbling operation, the safety wheel will move along to any direction without encountering the obstacle caused by the angle of proceeding.").)

Turning to the prosecution history, I find that it, too, suggests that the safety wheel is not limited to one of the universal rolling or caster-type. Claim 1 was initially rejected on obviousness grounds because of prior art which teaches "wheel elements" on a scooter. (Office Action 2-5, citing U.S. Patent No. 4,323,258.) In connection with other claims, the PTO acknowledged that the cited prior art does not teach a "safety wheel adapted to rotate 360 degrees." (Office Action 6, 7.) In response to the Office Action, the inventors did not amend the "safety wheel" language or raise objections urging that the safety wheel of claim 1 has different rolling capabilities than the "wheel elements" of the prior art. (See Nov. 7, 2003 Response to the Office Action at 2, 7.) One would expect that if the inventors meant for the "safety wheel" in claim 1 to mean a wheel of a universal rolling or caster-type, they would have brought this to the PTO's attention because it would
have cured the obviousness problem.

Plaintiff argues that the Federal Circuit's decision in Verizon Services Corp. v. Vonage Holdings Corp., Nos. 2007-1240, 2007-1251, 2007-1274, 2007 U.S. App. LEXIS 22737, 2007 WL 2781869 (Fed. Cir. Sept. 26, 2007), a case decided just weeks before the claim construction hearing in this case, is dispositive of the questions before this Court. In Verizon, the court concluded that the district court had erred in its interpretation of the term "localized wireless gateway system." because it failed to require that the system is limited to one that can perform the functions described in the specification. See 2007 U.S. App. LEXIS 22727, [WL] at *10.-*11.

The Court, in Verizon, looked to the specification to guide its interpretation of the claim language. See 2007 U.S. App. LEXIS 22737, [WL] at * 10. The summary of the invention included a description of functions that were critical to the invention. See id. The Court read the claim term at issue to include the functional limitations outlined in the specification, even though those limitations were not included in the claim. See id. The Court explained that when "a patent thus describes the 'features' of the 'present invention' as a whole, this description limits the scope of the invention." Id. As discussed above, reading the patent as a whole, the ability of the wheel to roll universally is not a "feature of the present invention," but rather one preferred embodiment. While I agree with plaintiff that the reference to the "safety wheel, capable of making universal rolling" as "the invention herein" may be some evidence that the inventors intended to narrow the scope of claim 1, there is stronger conflicting evidence indicating that the ability of the safety wheel to roll universally is but one preferred embodiment. I do not read Verizon to 'mean that, when presented with magic words such as "present invention" or "the invention herein," district courts should disregard contrary indications in the language of the claims, as well as other language of the specifications. The Verizon court gave no indication that it was announcing such a new watershed rule.

The Court finds Honeywell Int'l. Inc. v. ITT Indus., 452 F.3d 1312 (Fed. Cir. 2006) and Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361 (Fed. Cir. 2007), two post-Phillips cases relied upon by the Court in Verizon, to be instructive. In Honeywell, the Federal Circuit affirmed the district court's ruling that the "fuel injection system component" described in the patent was limited to a "fuel filter." Id. at 1317-20. The written description of the invention referred to the fuel filter as "this invention" or "the present invention" at least four times. Id. at 1318. Furthermore, unlike the patent here, there was nothing in the specification to indicate that the fuel filter was merely a preferred embodiment of the invention. Id. The only fuel component disclosed and claimed in the patent was a fuel filter. Id. The specification's description of the prior art further supported the conclusion that the patentee limited the scope of the patent claims to a fuel filter. Id. In Andersen, the patentee challenged the district court's construction of the terms "composite composition" and "composite structural member." 474 F.3d at 1365. The Court affirmed the district court's finding that the term "composite composition" was limited to "a solid pellet or a solid linear extrudate, which may subsequently be remelted and extruded to make a structural member," Id. at 1366, and vacated the district court's conclusion that the term "composite structural member" was not similarly limited, Id. at 1371-73. In its opinion, the Federal Circuit reiterated its "warn[ing] against importing limitations from the specification into the claims absent a clear disclaimer of claim scope" and its "recogni[tion of] the difficulty faced by district courts in trying to walk that tightrope." Id. at 1373. The Federal Circuit observed that the patentee intended to narrow the claim scope, because it was clear from the specification that the steps of linear extrusion or pelletization are "required," "essential" and "critical" features of the "composite composition" and "composite structural member." Id. at 1367. Unlike the limitations at issue in Verizon, Honeywell and Andersen, the limitation urged by plaintiff here does not apply to the invention as a whole, but rather to one preferred embodiment. Furthermore, the patentee here has not made clear statements of intent to narrow the scope of claim 1. Absent such clear statements, I adopt the plain meaning of the claim language.

I conclude that "safety wheel" in claim 1 of the '674 patent is not limited to a wheel of the universal rolling or caster-type. Neither claim 1 nor any of the other claims contain language that would so limit the claim. Additionally, neither the specification nor the prosecution history includes an "expression of manifest exclusion or restriction demonstrating an intent to limit" the safety wheel to a universal rolling or caster-type. Teleflex, 299 F.3d at 1327. The term "safety wheel" is not redefined in the specification and there are no clear statements of scope limiting the term. The "capable of making universal rolling" language of the specification merely describes one preferred embodiment of the invention. I therefore construe the phrase "a safety wheel which is rotatably mounted to a free end of said supporting arm to support a front portion of said scooter body and prevent said scooter from being flipped over" as, a wheel, which is mounted to said supporting arm in a manner that allows the wheel to rotate, to support a front portion of said scooter body and prevent said scooter from being
18. Where subsequent uses of a claim term within a claim make reference to the first usage as an antecedent (through the use of introductory definite articles such as "said" or "the"), the claim term must be interpreted consistently across all such uses. See Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1356-57 (Fed. Cir. 1999).

The '322 Patent contains two independent claims that are the subject of this lawsuit: Claim 1 and Claim 14. The claims and the corresponding theories of liability will be addressed separately below.

A. Claim 1

1 Claim 1, in its entirety, reads as follows:

1. a box shaped fireplace having six walls comprising four substantially vertical walls, a top wall, and a bottom wall,

2. at least one of said four vertical walls having a glass access door and one of said remaining walls having a horizontal exhaust pipe connected thereto for insertion through said outside wall of the space to be heated,

3. a combustion chamber in said box shaped fireplace located within said six walls,

4. said bottom wall comprising an inner, and an outer bottom plenum below said combustion chamber,

5. the wall having said horizontal exhaust pipe connected thereto comprising an inner plenum, a middle plenum and an outer plenum,

6. said outer plenums being connected to form an air passage for interior space air being circulated around the outside of said fireplace combustion chamber to provide primary combustion air, and

7. Said horizontal exhaust pipe being connected to said inner plenum of said wall having said horizontal exhaust pipe connected thereto, said inner plenum being connected to said combustion chamber for receiving and exhausting exhaust gases from said combustion chamber.

(1) Claim Construction

The contentious element of Claim 1 provides: "said bottom wall comprising an inner, and an outer bottom plenum below said combustion chamber." FMI asserts that proper construction of this element requires that an infringing fireplace contain two plenums located below the bottom plate of the "combustion chamber." FMI further contends that its DVF fireplace has only one plenum below the bottom plate of the combustion chamber and, consequently, does not infringe the '322 patent. Hearth maintains that the DVF does in fact have two plenums below the combustion chamber. Hearth contends that the trapezoidal burner pan in the DVF forms the inner bottom plenum below the combustion chamber.

To resolve these issues, the Court must first determine the proper construction of this limitation in Claim 1. In determining the proper construction of a claim, the first source for guidance is the claim language itself. Vitrronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). "Although words in a claim are generally given their ordinary and customary
meaning, a patentee may choose to [her] own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification." Id. Other sources of guidance in claim construction include the specification, the prosecution history, and, if necessary, extrinsic evidence. Lockwood, 107 F.3d at 1572-73.

To determine what is meant by "below said combustion chamber" in the present case, it is necessary to first determine the proper construction of the term "combustion chamber." FMI argues that a combustion chamber, by definition, has four walls, a top, and a bottom. In contrast, Hearth maintains that a combustion chamber does not require six sides but is merely the area in which combustion occurs. The distinction is critical because it impacts the existence or non-existence of an inner bottom plenum in the DVF series.

Although Hearth is correct that the combustion chamber is generally the area in which combustion occurs, the ordinary and customary use of the word "chamber" connotes a space that is enclosed or compartmentalized. The claim language must also be analyzed in the context of the specification, or the textual description of the patented product or process. Vitronics, 90 F.3d at 1582. "The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." Id. (quoting Markman, 52 F.3d 967, 979). Claims, however, must not be interpreted by adding limitations which appear only in the specification. Electro Medical Systems, S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994).

The specification of the '322 patent does not explicitly define the term "combustion chamber." In several instances, however, the specification implies that the combustion chamber is an enclosed or substantially enclosed space, meaning that it has a bottom of some sort. In its description of the preferred embodiment, the patentee described the bottom of the combustion chamber as follows: "Bottom plates 45 and 46 are shown spaced apart from each other in the manner in which they are connected to the sidewalls of the combustion chamber…." Gross Aff., Ex. 1 at Col. 4, lines 40-43. Similarly, the patentee refers to "sheet metal plates which are shaped to form the plenums and the combustion chamber." Id. at lines 30-32. Although the "particular embodiment appearing in a specification will not be read into the claims when the claim language is broader than such embodiments," 2 the specification in this case merely bolsters the Court's construction of the limitation in Claim 1, which is based on the ordinary meaning of the term "combustion chamber." This is consistent with a "common theme" of claim construction which advises that "words of the claim are generally given their ordinary and accustomed meaning, unless it appears from the specification … that they were used differently by the inventor." CHISUM ON PATENTS, 1997 Supplement, at 64 (citing In re Paulsen, 30 F.3d 1475, 1480 (Fed. Cir. 1994)). In the present case, the specification confirms rather than refutes the interpretation of a "combustion chamber" as an enclosed space wherein combustion occurs.

--- Footnotes ---

2 See Electro Medical, 34 F.3d at 1054.

--- End Footnotes ---

In addition to the claim language and the specification, the prosecution history of a patent may inform the court's construction of the claims. See e.g., Lockwood, 107 F.3d at 1573. In the present case, FMI asserts that Hearth's representations to the patent examiner during the prosecution of the patent are inconsistent with Hearth's recently proffered interpretation. According to the prosecution history, the patent examiner initially rejected Hearth's patent on the basis that it was obvious in light of the prior art. Hearth maintained that the unique inner and outer plenums below the combustion chamber distinguished the '322 patent from the prior art, specifically the Herron patent. The examiner accepted Hearth's distinction. FMI asserts that Hearth's current interpretation stands in contradistinction to its earlier representations to the Patent and Trademark Office ("PTO").

FMI's prosecution history argument, however, is unpersuasive. It was the Herron patentee, not Hearth, who clearly demarcated the bottom of the Herron combustion chamber as "bottom panel 14." Gross Aff., Ex. 6, column 2, lines 21, 42-52. FMI's argument would be more convincing if Hearth had attempted to manipulate or reinterpret the location of the bottom panel of the Herron combustion chamber in its subsequent patent application. Hearth, however, clarified to the patent examiner that the Herron patentee's own description of the bottom of the combustion chamber left room for only one plenum. There is nothing internally inconsistent in Hearth's representations to the PTO and its subsequent representations to
this Court. As a result, the prosecution history neither helps nor hinders FMI's interpretation of the limitation in Claim 1.

In light of the Court's finding that the "combustion chamber" is an enclosed space which necessarily includes a plate-like bottom of some sort, the meaning of the limitation "below said combustion chamber" is more clear. FMI further contends that the bottom of the combustion chamber must be "a thing separate from and below the burner and logs." In support of this contention, FMI offers extrinsic evidence in the form of prior art.

Where a genuine ambiguity remains in the claim language after consideration of all available intrinsic evidence, a court may resort to extrinsic evidence. Vitronics, 90 F.3d at 1584 ("No doubt there will be instances in which intrinsic evidence is insufficient to enable the court to determine the meaning of the asserted claims, and in those instances, extrinsic evidence, such as that relied on by the district court, may also properly be relied on to understand the technology and to construe the claims"). Extrinsic evidence, such as prior art, however, may not be used to contradict the claim language. Id.

A court may, in its discretion, rely on prior art proffered by one of the parties "whether or not cited in the specification." Id. Prior art often indicates how certain terminology is used and understood by those skilled in the art. Id. "As compared to expert testimony, which often only indicates what a particular expert believes a term means, prior art references may also be more indicative of what all those skilled in the art generally believe a term means." Id.

The prior art supports FMI's contention that the bottom plate of the combustion chamber must be separate from and below the burner and logs. FMI cites six examples of prior art in which the bottom plate of the combustion chamber is distinct from and located below the burner. Common sense dictates that, for combustion to occur in the combustion chamber, the burner or combustion mechanism must be located within the chamber. This requires that the burner and logs be distinct from the bottom of the combustion chamber.

As construed by this Court, therefore, the limitation requires: a combustion chamber with a plate-like bottom of some sort that forms the boundary between the combustion chamber and the inner plenum, where the bottom plate is a thing separate from and below the burner and logs; an inner bottom plenum below the combustion chamber, and an outer bottom plenum below the combustion chamber.

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B. THE 525 PATENT

The 525 Patent describes an improvement on a gas burner used to heat and dry grain. The improvement is a cone that diverts the flame and causes more efficient consumption of the fuel. The parties only dispute one term in the claims in this Patent. The disputed term states:

said diverter having a plurality of spaced openings therein for permitting of air moved by said blower to pass therethrough.

Joint Statement, Table Y, at 87. The language is clear and does not need construction. Sukup argues that the language should be construed to require triangular openings between the slots. Sukup argues that the openings in the drawings are triangular. This proposal would improperly import a limitation from the specifications into the claim. Furthermore, the openings in the detailed drawings are not triangular. They are closer to the shape of a trapezoid.

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5. said feed wheel

Lastly, Whirlpool argues that the term "said feed wheel" as used in claim 11 has no antecedent, and that therefore, claim 11 is invalid as indefinite. Maytag disagrees, claiming that one of ordinary skill in the art would interpret the term "feed section" as equivalent to the term "feed wheel." See, e.g., Omega Eng'g Inc. v. Raytek Corp., 334 F.3d 1314, 1320-21 (Fed.
Accordingly, the district court did not clearly err in finding that Canon made a strong showing of infringement.

Avoid infringement merely by adding elements if each element recited in the claims is found in the accused device.”)

Burroughs Corp., 713 F.2d 700, 703, 218 U.S.P.Q. (BNA) 965, 967-68 (Fed. Cir. 1983) (“It is fundamental that one cannot define the first chamber as being bounded by the grooved partition and the back wall. . . .”)

whether one skilled in the art would understand the bounds of the claim when read in light of the specification.”) (quoting Miles Lab., Inc. v. Shandon Inc., 997 F.2d 870, 875 (Fed. Cir. 1993)). Specifically, Maytag contends the term "feed section," "feed wheel" and "lift wheel" which prevent a finding that the terms are completely interchangeable. For example, the first two references cited by Maytag equate "feed section" with "lift wheel!" --not "feed wheel." See '688 patent, col. 1, l. 21; col. 1, ll.65-66. Secondly, the "feed section" is identified in the drawings as part 44, whereas the "lift wheel" or "feed wheel" is identified as part 66. See '688 patent, Figs. 1-2. In fact, in the description of the preferred embodiments describes the "feed wheel" as a part of the "feed section." See '688 patent, col. 5, ll. 15-16 ("feed section 44 further includes a plastic molded lift wheel 66 or feed wheel").

Nevertheless, the Manual of Patent Examining Procedure clarifies that "[t]here is no requirement that the words in the claim must match those used in the specification disclosure.” Manual of Patent Examining Procedure § 2173.05(e) (8th Ed. 2001). Furthermore:

[T]he failure to provide explicit antecedent basis for terms does not always render a claim indefinite. If the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite. Ex parte Porter, 25 USPQ2d 1144, 1145 (Bd. Pat. App. & Inter. 1992) ("controlled stream of fluid" provided reasonable antecedent basis for "the controlled fluid"). Inherent components of elements recited have antecedent basis in the recitation of the components themselves. For example, the limitation "the outer surface of said sphere" would not require an antecedent recitation that the sphere has an outer surface. Id. When read in context, "said feed wheel" as used in claim 11 clearly is meant to be an inherent component of the "feed section."

A district court is authorized to correct certain minor errors in a patent only if "(1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification and (2) the prosecution history does not suggest a different interpretation of the claims." Novo Indus., L.P. v. Micro Molds Corp., 350 F.3d 1348, 1357 (Fed. Cir. 2003). The Court believes the substitution of "feed section" for "feed wheel" in claim 11 is not subject to reasonable debate. Lacking prosecution history to the contrary, the Court constructs the term "said feed wheel" to mean "said feed section."

Nu-Kote's second attack on the district court's likelihood-of-infringement finding turns on claim construction. Nu-Kote asserts that claim 1 cannot read on cartridges that contain more than one ink reservoir chamber, given the claim's precise definition of the first chamber: "said first chamber being defined by said partition [containing the groove] and said back wall . . . ." Nu-Kote argues that the claim does not read on a cartridge with more than one ink reservoir chamber because such a cartridge would not have an identifiable chamber bounded by both the partition and the back wall. Canon responds that the claimed "first chamber" distinguishes the portion of the cartridge containing the reservoir of liquid ink from that portion of the cartridge that contains the sponge-like material, which resides in the "second chamber."

We agree with Canon that the claimed "first chamber" may be subdivided into multiple ink chambers. The claim itself defines the first chamber as being bounded by the grooved partition and the back wall. It does not define the "first chamber" as being bounded by the grooved partition and the nearest opposite partition. Describing one embodiment of the invention, the specification states that "the ink chamber is separated into four chambers." Thus, multiple interconnected ink chambers between the grooved partition and the back wall can collectively comprise the "first chamber" of claim 1. Whether called a stiffening rib or a partition, the piece of plastic in Nu-Kote's cartridge is simply an additional component added inside the "first chamber" that does not prevent the cartridge from falling within the scope of the claim. See A.B. Dick Co. v. Burroughs Corp., 713 F.2d 700, 703, 218 U.S.P.Q. (BNA) 965, 967-68 (Fed. Cir. 1983) ("It is fundamental that one cannot avoid infringement merely by adding elements if each element recited in the claims is found in the accused device."). Accordingly, the district court did not clearly err in finding that Canon made a strong showing of infringement.

Claim 16, with the disputed term in bold states:

The article of footwear of claim 9, wherein said heel plate underlies at least a portion of an arch of the foot and substantially all of the heel.

Adidas argues that the dependent Claim 16 is invalid in violation of 35 U.S.C. § 112, P4. This section requires a dependent claim to "specify a further limitation of the subject matter claim." Because Claim 9, the independent claim, does not recite "heel plate," adidas asserts that Claim 16, as written, does not further limit Claim 9 and, therefore, is invalid. See Pfizer v. Ranbaxy Laboratories Ltd., 457 F.3d 1284, 1292 (Fed. Cir. 2005).

Nike argues that the use of "said" was an error that should be corrected in claim construction to mean "a." Construing a term in accordance with the principles of claim construction is different from correcting terms because of a typographical or clerical error. The court can correct such an error only if: (1) the correction is not subject to reasonable debate based on consideration of the claim language and the specification; and (2) the prosecution history does not suggest a different interpretation of the claims. Novo Industries, L.P. v. Micro Molds Corp., 350 F.3d 1348, 1357 (Fed. Cir. 2003).

Nike asserts that the specification and claims make ample references to "heel plate" so a substitution of "a" for "said" is not subject to reasonable debate. But the same argument could be made for substituting "claim 8" for "claim 9" in Claim 16, at Column 13, line 1. Then Claim 16 would impose a further limitation on the heel plate described in Claim 8. See Hoffer v. Microsoft Corp., 405 F.3d 1326, 1331 (Fed. Cir. 2005). If changing "9" to "8" makes as much sense as replacing "said" with "a," then Nike's proposed correction is "subject to reasonable debate." Claim 16 cannot be corrected in claim construction.

Next, appellant contends that the district court erred in granting summary judgment of non-infringement of claims 5 and 33-36 under the doctrine of equivalents. Foster alleges the district court made two separate errors in granting summary judgment. Appellant's first argument again centers on an issue of claim interpretation. Foster contends that the district court erred in interpreting the claim language "said linear hydraulic drive units transmitting downward forces from the transverse drive beams to the mounting frame members" as requiring all claimed parts of the drive units to participate in the transmission of forces. Second, Foster contends that there is a genuine issue of material fact, even under the district court's claim interpretation, as to whether all parts of the Hallco drive unit do in fact transmit downward forces.

Turning first to the claim interpretation issue, the district court held:

The linear hydraulic units . . . are defined to be comprised of piston head members, cylinder head members, piston rod end portions, and cylinder sidewall portions. If only a subset of those components were required to transmit downward forces, the limitation in the last paragraph would have expressly stated so. It did not. Accordingly, I conclude that all components of the hydraulic drive units, and not just a subset, must transmit downward forces.

In making this determination, the district court again unnecessarily limited the claim language. The claim language requires
that each linear hydraulic drive unit transmit downward forces. This language requires no more than that the drive unit, taken as a whole, transmit the downward force English syntax simply does not require that all the components, or even more than one of the specified components, contribute to the transmission of forces. As long as the downward forces flow from the drive units (or any portion of the drive units) downward, the claim language requires nothing more. Contrary to the opinion of the district court, the claims would need to have specified that all of the components of the hydraulic drive unit must participate in the transmittal of forces, if that was the meaning of the language. See In re Hyatt, 708 F.2d 712, 714, 218 U.S.P.Q. (BNA) 195, 197 (Fed. Cir. 1983) ("A claim must be read in accordance with the precepts of English grammar."). Merely specifying the drive unit, rather than any particular component or all of the components, does not limit the portion of the drive unit which may transmit or participate in the transmission of the downward forces. The district court thus read in an additional limitation not required by the language of the claim. Accordingly, this court vacates the district court's grant of summary judgment of non-infringement under the doctrine of equivalents of claims 5 and 33-36, and remands for a determination on the merits. Having decided this issue, this court need not reach the issue of whether there was a genuine issue of material fact under the district court's erroneous claim interpretation.

Amarr's proposed construction of this claim term is: "the lower joint member configured with the upper joint member establishes a clearance along the entire length of the adjacent panels of the door while the adjacent panels are moving at an angle to one another." Amarr's Opening Claims Construction Brief ("Amarr's Opening Brief") (Doc. 89) at 6.

Amarr identified three areas at issue in this term: first, the use of the word "clearance;" second, whether the clearance is across the entire length of the panel interface; and third, the construction of the phrase "angular articulation." Transcript of Markman Hearing ("Transcript") at 35.

Amarr stated at the Markman hearing that its first issue -- the replacement of the word "clearance" with the word "gap" -- was moot; Amarr agreed to the use of the word "clearance." Id.

With respect to the placement of the clearance -- whether the patent requires clearance across the entire length of the interface between the two panels -- Amarr was more insistent. Amarr's contention is that there must be clearance, a space of some dimension, between each panel of the sectional door; otherwise, Amarr contends, there will be binding, which is one of the evils the patent was intended to address. Wayne-Dalton argues that Amarr is attempting to read into the claim language a concept that is not only not found within the claim, it is also not found in the specifications or anywhere else in the patent -- Amarr's "no-touch" rule would be impossible to enforce as a practical matter, and it is not the scenario the patent was intended to create. Wayne-Dalton's Response to Amarr's Opening Claims Construction Brief ("Wayne-Dalton's Response Brief") at 7.

Contact between the panels of the sectional door, without more, is not an evil addressed by the patent, nor is it necessarily an evil at all. The claims at issue reference establishing a clearance and offsetting the center hinge such that "a portion of said clearance is maintained" in moving between the vertical (closed) and the horizontal (open) positions. See 872 Patent, col. 9, 11. 36-37; col. 12, 1. 2. The amount of the clearance that must be maintained is never identified; it is not clear that there is any specific minimal clearance. Further, the patent simply does not support an interpretation that any such specific minimal clearance must be maintained along the entire length of the adjacent panels. In its brief, Amarr conflates the notion of "gap" and "clearance," as those terms are used in connection with the notion of a "pinch resistant configuration," with the notion of "clearance," as that term is used in connection with the patent's object keeping adjacent door panels from rubbing and binding. 3 One example will suffice. Amarr declares: "the specification states that 'it is the object of the present invention to provide a sectional door wherein the panel interface maintain a minimal gap during movement . . . which eliminates rubbing and possible binding . . . .'" Amarr's Opening Brief at 8. When the language denoted by the ellipses is included, the patent actually says:

Accordingly, it is an object of the present invention to provide a sectional door wherein the panel interfaces maintain a
minimal gap during movement between a closed vertical position and an open horizontal position satisfying pinch resistant specifications. Another object of the present invention is to provide such a sectional door which eliminates rubbing and possible binding between interfaces of adjacent panels even during moving through the curved transition track section between the vertical track section and the horizontal track section.

872 Patent, col. 2, 11. 48-57. The minimal gap on which Amarr relies relates to "satisfying pinch resistant specifications," not to "rubbing and possible binding."

In fact, nowhere in the subject patent has this Court found language tending to indicate that any specific space, gap or clearance must be maintained along the entire length of the joint between panels, as Amarr suggests, in order to achieve the goals of the invention, which include avoiding rubbing and binding between adjacent panels. 4 Contact between the door panels is not listed as something to be avoided, except in conjunction with rubbing or binding, which is not a necessary adjunct to contact. See 872 Patent, col. 1, 11. 13-18 ("More specifically, the present invention relates to a door and method for locating the hinges between panels of such sectional doors to [sic] whereby the adjacent panels do not contact and bind when moving on tracks between the closed vertical position and the open horizontal position."). Amarr's proposed construction on this point does not help to "define the patented invention's scope." Orion IP, 406 F. Supp. 2d at 722. As such, it is not a proper construction and this Court will not adopt it.

Amarr offers the alternative language, "while the adjacent panels are moving at an angle to one another," to take the place of the patent's language, "during angular articulation." Amarr's Opening Brief at 9. Amarr offers no very persuasive explanation for why its language is better, clearer or more easily understood than the original claim language. Indeed, Wayne-Dalton contends that Amarr's construction is not merely unnecessary, it is wrong. Wayne-Dalton's Response Brief at 7. Amarr has not even attempted to overcome the "heavy presumption" in favor of the claim language carrying its ordinary and customary meaning, which to this Court seems reasonably clear. See CCS Fitness, 288 F.3d at 1366. No construction of this element of the claim term is required.

The language of the claim term at issue requires no construction. It will be accorded its ordinary and customary meaning.

2. Said Napkin Edges

This disputed term arises in the context of the flaps, or edges, that fold upwards to form the "occlusive volume" where fluids are pooled. Tyco claims the term "edge" refers only to the outermost edge of the napkin, whereas K-C believes it includes a
much broader area. Both claim 1 and claim 4 speak of the napkin edges folding upward at the embossed channels; in claim 4 the "upward folded edges are absorbent," and the "absorbent edges ... fold upwards to form said occlusive volume." (6:36-41.) Tyco argues that the term "edge" must be construed consistently throughout the claims, and that in other instances, the term "edge" means the outermost edge (which K-C concedes). Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1345 (Fed. Cir. 1998) ("whatever interpretation we assign should encompass both uses because the same word appearing in the same claim should be interpreted consistently.") Tyco also notes that if the inventors had wanted "edge" to mean flaps or sides of the pad, they could easily have used those terms -- as they did in the specification -- in place of "edge."

K-C, however, wants "edge" to mean not merely the outermost edge of the absorbent but to include the "portion between the embossed channels and the outermost edges of the absorbent, alternatively referred to in the patent as the 'sides of the pad.'" Throughout the specification and claims, it asserts, the inventors repeatedly refer to the these portions of the napkin as the only ones that fold upwards. Thus, when the claims speak of the napkin edges folding upwards, they are referring not just to the outermost edges -- which presumably are unable to "fold" at all -- but to the area K-C describes as the "sides of the pad" which "flip up" when squeezed by the upper thighs of the wearer. (5:24-26.)

Although K-C conceded that the claims were not a model of clarity, and while Tyco is generally correct that terms should be construed consistently throughout a patent, I conclude that K-C's reading of "edge" is truest to the practical understanding of the invention claimed. Epcon Gas Systems, Inc. v. Bauer Compressors, Inc., 279 F.3d 1022, 1031 (Fed. Cir. 2002) (noting that context can sometimes call for multiple definitions of the same term). First, within the claims themselves the "edges" in question are referred to as "upward folded" (6:36), and they are allowed to "turn upward" (6:34) or "fold upward" (6:14; 41) to form the occlusive volume described therein. At argument Tyco attempted to demonstrate how the outermost edge of the absorbent would be able to "fold" upwards because the edge, in Tyco's sense of the word, is not merely an end line but a three-dimensional planar cut. Even I accepted that an edge could fold, however, it is doubtful that such an edge could somehow form any kind of occlusive volume. That is, the edge must form some kind of wall and be possessed of some dimension of verticality if it is to form an occlusive volume, and once that occurs the "outermost edge" is no longer a line or even a planar cut.

More importantly, however, the claims themselves give a substantial clue about the nature of the "edges" in question. Claim 1 teaches, for instance, that the channels allow "said napkin edges to fold upward at said embossed channels." (6:14-15.) This phrase specifically teaches that the "edge," in that context, begins at the embossed channels. The edge is that part of the napkin that folds upward beginning at the embossed channel; it is, in other words, the side or flap of the napkin that is "hinged" to the rest of the napkin via the fold-line channels.

Thus, I conclude that while clearer drafting was no doubt feasible, K-C's reading of "edges" is the only construction that makes sense of the invention claimed.

* * *

2. "Said napkin edges" and other "edges" (as applicable) means "the portion between the embossed channels and the outermost edges of the absorbent, alternatively referred to in the patent as the 'sides of the pad.'"

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The next portion of Claim 1 for construction is as follows:

[S]aid operator signal requesting said engine control determine a zero torque parameter value for said engine output shaft that approximates a zero torque load on the connection between said engine and said transmission, and said engine control being operable to control said engine to achieve said zero torque parameter value.

Exhibit A, col.7 II.52-58 (emphasis added).

According to the Board, "[t]he significance of the zero torque parameter value is that when it is achieved, the transmission of the motor vehicle is free to be shifted to neutral without engagement of a clutch." Exhibit D, supra, at 3.

The parties do not dispute that the zero torque referred to in the [claim] is the engine's flywheel or net torque rather than
gross torque. Flywheel or net torque does not include torque necessary to overcome an engine's own internal friction or to drive the vehicle's accessories such as water pump, oil pump, air conditioning, lights, etc.

If actual zero torque at the flywheel is achieved, a driver may shift a manually operated transmission from an engaged gear into neutral without need to activate a clutch. . . . [T]he intended purpose of the invention . . . is to enable the driver of a manual transmission vehicle to shift an engaged gear into neutral without need to use the clutch. In the context of determining the zero torque parameter value and then achieving the determined value, . . . the determination is a prediction, something done before the condition has been caused to occur.

Id. at 5-6. These phrases mean that "the engine control actually determined a zero torque parameter value and also that the engine achieved the determined zero torque parameter value, assuming that there had been an operator signal to begin the process." Id. at 9. This claim does not require "that the condition of actual zero flywheel torque be achieved, but that the determined zero torque parameter value be reached." Id. at 23. That is, "a zero torque parameter value was first determined and then the engine was controlled and actually reached the 'determined' zero torque value." Id. The claim "specifically requires that the engine control be operable to achieve 'said' zero torque parameter value, which refers back to the determined zero torque parameter value, and not that the engine shall reach the condition of actual zero flywheel torque." Id. at 30. "Performance of the [claim] feature at issue requires the engine to meet the determined zero torque parameter value, not that the engine be made to provide zero flywheel torque. This difference cannot be ignored." Id. at 36. Moreover, the entire purpose of the invention is that no use of the clutch is required. Id. at 36-37. The Court construes this claim language in the same manner as the Board.
placing said parts in a pressurizable chamber,

applying a pressure in an amount below the capillary pressure imposed on molten binder in a direction away from the part voids and above the pressure necessary to physically collapse the part structure inwardly to said parts for a predetermined period of time while maintaining said parts above said liquid phase temperature, said applying step comprising the step of introducing a sufficient amount of gas to said chamber to create said pressure.

Statement of Facts # 163, Exh. E. 4

4 AVS notes that "in amendment practice, insertions to claims are underlined and deletions are placed in brackets. See 37 C.F.R. § 1.121(b)." ( # 163 P7) In this instance it appears that deletions were indicated by striking over.

In the Remarks by Ultra-Temp's attorney that accompanied this amendment, it was noted that

The present invention relates to a method for densifying previously sintered parts having internal voids and which are constructed from powdered metals, ceramics or the like. The method comprises the steps of placing the parts in a pressurizable chamber and heating the parts above their liquid base temperature.

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Claim 1 in the instant application essentially incorporates the limitations of previous claim 5 except that the gas is not limited to an inert gas.

Supplemental Exhibits, Exh. L at AVS1558-9.

"Previous claim 5" that was rejected by the patent examiner read:

The method as defined in claim 1 wherein said pressure applying step comprises the steps of:

placing said parts in a pressurizable chamber; and

introducing a sufficient amount of an inert gas to said chamber to create said pressure.

Supplemental Exhibits, Exh. L at AVS1535 (emphasis added).

In other words, the act of placing said parts in a pressurizable chamber was viewed by the inventor as a limitation to the original claim 1.

As defined in the specification of the patent, "previously sintered parts mean parts that have been raised to liquid phase temperature regardless of whether the parts are cooled following sinter." (Plaintiff's Brief, # 169, Exh. C, col. 3, lines 22 - 26) In construing claim 1 of the '449 patent, the first question is the meaning of the term "said parts" in step 1 of the claim. AVS argues that "said parts" must refer back to "previously sintered parts" in the preamble to the claim or the claim would be rendered indefinite. In support of its position, the defendant cites to a treatise, Robert C. Farber, Landis On Mechanics Of Patent Claim Drafting, third edition, 50-53 (1990), wherein the author explains that "the word "said" is used by many practitioners rather than "the" to refer back to previously recited elements, sometimes to a previously recited anything." ( # 163, Exh. F) Section 706.03(d) of The Manual Of Patent Examination incorporates a similar view. ( # 163, Exh.G) Further, such a construction gives ordinary meaning to the phrase "said parts", harking back to the more complete antecedent description of "previously sintered parts".

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Although not dispositive of the issue, the defendant notes that in an earlier Report and Recommendation Magistrate Judge Bowler construed the term "said parts" in the claim 1 of the '449 patent to mean "previously sintered parts." ( # 163, Exh. H at 25)

Additional support for this interpretation has been proffered. A review of the specification of the '449 patent reveals that in the section "Summary Of The Present Invention", it is written that "in brief, the method of the present invention comprises placing previously sintered parts within a pressurizable chamber." ( # 163, Exh. A, col. 2, lines 36-38) Again in the "Detailed Description Of A Preferred Embodiment Of The Present Invention", the patent reads "in brief, in the method of the present invention the sinter parts are placed within a pressurizable chamber." ( # 163, Exh. A, col. 3, lines 35-37)

There is also case law which supports AVS' view. The Federal Circuit has had occasion to note that "when the claim drafter chooses to use both the preamble and the body to define the subject matter of the claimed invention, the invention so defined, and not some other, is the one the patent protects." Bell Communications Research, Inc. v. Vitalink Communications Corporation, 55 F.3d 615, 620 (Fed. Cir., 1995). Thereafter analyzing a patent claim, the Court wrote:

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Claim 6 of the '080 patent recites a "method for transmitting a packet over a system comprising a plurality of networks… said packet including a source address and destination address," as its preamble indicates. It then recites, inter alia, the steps "assigning, by said source devices, one of said trees to broadcast said packet and associating with said packet an identifier indicative of said one of said trees." (Emphasis added). These two steps of the claimed method, by referring to "said packet," expressly incorporate by reference the preamble phrase "said packet including a source address and a destination address." As a result, only a method for transmitting packets that have both source and destination addresses can literally infringe Claim 6.

Vitalink, 55 F.3d at 621.
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The analogy to the instant case is obvious: according to AVS, step one of claim 1 of the '449 patent requires the placement of previously sintered parts ("said parts") into a pressurizable chamber, that General Carbide undeniably does not perform that step and, therefore, that there can be no literal infringement.

According to Ultra-Temp, the '449 patent

is directed to a method for densifying previously sintered parts but, as defined in the patent specification, it does not matter if the parts were previously sintered a year before the densification or one second before the densification.

Plaintiff's Brief # 169 at 10.

The plaintiff points to the "Summary Of The Present Invention" in the patent specification where it provides:

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The parts may be either vacuum or hydrogen sintered and, similarly, may be cooled following the sintering step.

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For previously sintered parts the presure (sic) vessel can be heated first and then pressurized, pressurized first and then heated or simultaneously pressurized and heated. In the event that sintering is performed in the same vessel, pressure is applied immediately after sintering is completed.


Ultra-Temp cites to other parts of the '449 patent as, for example, Examples 2 and 3, "which represent a preferred embodiment of the invention, describing the preferred method in which the parts are maintained at a liquid phase temperature following the sintering operation and then pressurized." ( # 169 at 9 and Exh C, col. 4) The plaintiff argues that under controlling law, it is improper to construe the claim as the defendant would have it because under such an interpretation, preferred embodiments of the patent would not be covered. As the Federal Circuit has held:
Thus, second, it is always necessary to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning. The specification acts as a dictionary when it expressly defines terms by implication. As we have repeatedly stated, "claims must be read in view of the specifications, of which they are a part." The specification contains a written description of the invention which must be clear and complete enough to enable those of ordinary skill in the art to make and use it. Thus, the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.

Vitronics Corp. v. Conceptronic, 90 F.3d 1576, 1582 (Fed. Cir., 1996)(citations omitted).

Thereafter applying this reasoning to the patent being considered in Vitronics, the Court concluded:

"Indeed, if "solder reflow temperature" were defined to mean liquidus temperature, a preferred (and indeed only) embodiment in the specification would not fall within the scope of the patent claim. Such an interpretation is rarely, if ever, correct and would require highly persuasive evidentiary support, which is wholly absent in this case."

Vitronics, 90 F.3d at 1583 (citations omitted).

It is Ultra-Temp's position that a construction of claim 1 of the '449 patent that does not cover the method employed by General Carbide would be incorrect as a matter of law.

AVS does not dispute that there are other methods or embodiments disclosed in the '449 patent, indeed ones where a preform is initially placed in a furnace with a pressurizable chamber. ( # 162 at 9) However, so too is a method where previously sintered parts are placed in a pressurizable chamber disclosed. In other words, the defendant's proposed claim construction plainly reads on a preferred embodiment set forth in the patent specification. Because there is more than one preferred embodiment set forth in the '449 patent, AVS contends that this case can be distinguished factually from the Vitronics case.

6 Ultra-Temp does not disagree with this statement.

In addition, it is noted that in the Vitronics decision the Federal Circuit also wrote that in undertaking the claim construction analysis:

"Third, the court may consider the prosecution history of the patent, if in evidence. This history contains the complete record of all the proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claims. As such, the record before the Patent and Trademark Office is often of critical significance in determining the meaning of the claims. ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution.")."

Vitronics, 90 F.3d at 1582-3 (citations omitted).

In the present case, the patent history reveals that Ultra-Temp amended claim 1 of the '449 patent to overcome a rejection by the patent examiner by, inter alia, adding the self-described limitation which was previously in claim 5. Originally claim 1 was broader, providing no limitation as to the condition of the parts when they were loaded into the pressurizable chamber. In other words, presumably both preforms and previously sintered parts would be included. Given the breadth of the original claim 1, it likely covered the disclosed embodiments advocated by both the plaintiff and the defendant in support of their respective positions. While the scope of claim 1 was circumscribed by the amendment, the embodiments remained consistent in the specification from the initial application to the final patent. In these circumstances it is not surprising that with the scope of the sole independent claim having been narrowed, some of the embodiments may not longer fall within its purview. This is a critical distinction from the situation in the Vitronics case where there was no issue of claims being limited before the patent was issued; the problem in Vitronics was that the Court construed the claim in such a way that it
did not cover the sole embodiment of the invention listed in the patent. Vitronics, 90 F.3d at 1583.

The amendment to claim 1 of the '449 patent added the step of "placing said parts in a pressurizable chamber." Ultra-Temp has proffered no explanation whatsoever for the amendment despite bearing the burden of establishing the reason the change was required. See Warner-Jenkinson Co. v. Hilton Davis Chemical Co., 520 U.S. 17, 117 S. Ct. 1040, 1051, 137 L. Ed. 2d 146 (1997). In the absence of any contrary evidence, the only logical and reasonable explanation is that the amendment was made to overcome the patent examiner's rejection. The result of the amendment is that the scope of claim 1 of the '449 patent is limited to methods wherein previously sintered parts are placed in a pressurizable chamber. While different embodiments are disclosed in the specification, it is the claim that defines the patent holder's right to exclude. Environmental Instruments, Inc. v. Sutron Corporation, 877 F.2d 1561, 1564 (Fed. Cir., 1989) ("The disclosure of a patent is in the public domain save as the claims forbid. The claims alone delimit the right to exclude; only they may be infringed.") To read claim 1 more expansively would be to render the amendment meaningless, and to give back to Ultra-Temp something it gave up to get the patent during the prosecution.

As a matter of law, step one of claim 1 of the '449 patent as properly construed requires the placement of previously sintered parts in a pressurizable chamber. As a matter of fact, there is no dispute that General Carbide does not perform this step in its process. Ultra Temp's expert asserts that "it appears clear that General Carbide loads its preforms or 'green bodies' [neither of which are 'previously sintered parts' 7] into the furnace and then vacuum sinters the parts above liquidus." (Defendant's Memorandum # 162 at 7; Statement of Facts # 163, Exh. I at 9) Consequently, AVS cannot be held liable for contributory infringement or inducement to infringe the '449 patent since its customer does not literally infringe claim 1, and all other claims of the patent are dependent upon claim 1. See Wahpeton Canvas Co. v. Frontier, Inc., 870 F.2d 1546, 1552, n.9 (Fed. Cir., 1989).

--- Footnotes ---

--- End Footnotes ---

B. The '481 Patent

According to the '481 patent,

The present invention provides a method for densifying and removing porosity in previously sintered carbide or other liquid phase sintered part which overcomes all the disadvantages of the various proposed processes discussed above.

Statement of Facts # 163, Exh. B, "Summary Of The Present Invention". Claim 1 of the '481 patent reads as follows:

1. A method for densifying previously liquid phase sintered parts which may contain voids or porosity and constructed of cemented carbides, powdered metals, ceramics or the like comprising of the steps:

   heating said parts in a vacuum to a temperature such that they are substantially in the two phase field of hard phase plus liquid and that an equilibrium or nearly equilibrium amount of hard phase has dissolved in the liquid phase, and

   applying a pressure in an amount below that which overcomes the capillary forces imposed on the molten binder in a direction away from the part voids and above the pressure necessary to physically collapse the part structure inwardly to said parts for a predetermined period of time while maintaining said parts above said temperature.

Statement of Facts # 163, Exh. B, col. 12, lines 28-68.

The prior discussion regarding the general principles of construction to be applied to the meaning of "said parts" in the context of claim 1 of the '449 patent is fully applicable here. Put another way, claim 1 of the '481 patent requires heating previously liquid phase sintered parts in a vacuum. This construction is supported by at least one embodiment in specification of the '481 patent.
If the material has been previously hydrogen sintered, the parts should be treated under a vacuum to a temperature such that they are nearly in the WC+Liq region of their phase diagram before pressurization. This will help any hydrogen which may be trapped in the pores to dissolve in order to trap any gas in such pores.

Statement of Facts # 162, Exh. B, col. 6, lines 22-29; see also col. 8, lines 45-50. Ultra Temp's expert concedes that General Carbide does not heat previously liquid phase sintered parts in a vacuum, but rather, the previously sintered parts are immediately pressurized. 8

Other than noting that there are preferred embodiments in the specification of the ‘481 patent that would cover General Carbide's process ( # 169, Exh. E, col. 6, lines 45-50; col. 8, line 51 - col. 9, line 14), Ultra-Temp adopts its arguments advanced with respect to the ‘449 patent. The plaintiff does not address the defendant's specific position that claim 1 of the ‘481 patent requires heating previously liquid phase sintered parts in a vacuum before pressurization, not pressurizing immediately after the sintering step.

As a matter of law, properly construed claim 1 of the ‘481 patent mandates heating previously liquid phase sintered parts in a vacuum before pressurizing. As a matter of fact, there is no dispute that General Carbide does not heat previously liquid phase sintered parts in a vacuum. Consequently, AVS cannot be held liable for contributory infringement or inducement to infringe the ‘481 patent since its customer does not literally infringe claim 1 of the patent, and all other claims are dependent. Wahpeton, 870 F.2d at 1552, n.9.

Claim 14, Parts [10]-[13]

The eleventh through fourteenth disputed claim language sections are all consecutive parts of the same sentence. The Court addresses them all together. The language states:

said pins are each comprised of a threaded bolt passing through a hole in said storage structure and a pin member positioned around said bolt such that said pin member is tightly engaged with a portion of the inside surface of said storage structure; said pin member having a generally cylindrical body portion and an inwardly extending tapered nose portion; the diameter of said cylindrical body portion being only slightly less than the diameter of a respective one of said bores to provide a snug fit between said body portion and said respective one of said bores; and the diameter of said bolt being less than the diameter of said hole in said storage structure to help relieve said bolt from shear forces exerted between said storage structure and said cover member.

Joint Statement, Table X, at 80-83. The language is clear and does not need construction. The language describes how the pins or protuberances are attached to the storage structure, and the fact that they are only slightly smaller in diameter than the bores on the cover members to provide a snug fit. Sukup argues that the phrase must be interpreted under the means plus function method. The Court disagrees. The word "means" is not used so there is no presumption. The language also describes objects, pins. The means plus function analysis therefore does not apply.
HDI's motion for summary judgment of noninfringement was concentrated on claim 1, as representative of the '487 claims:

1. A method of causing an analytical measurement to be made in a reflectance-reading device at the end of a predetermined time period after an analyte reacts with a reagent in a porous, reflectance-reading matrix located in said device, which comprises:

   taking a first reflectance reading from a dry first surface of said porous matrix prior to application of a sample of body fluid suspected of containing said analyte to a second surface of said porous matrix from which said sample can travel to said first surface by capillary action and react with said reagent in said porous matrix if said analyte is present in said sample;

   applying said sample to said second surface of said porous matrix;

   taking an additional reflectance reading from said first surface after said sample is applied to said porous matrix;

   comparing said additional reflectance reading to said first reflectance reading;

   initiating said predetermined time period upon a predetermined drop in reflectance sufficient to indicate that said sample has reached said first surface; and

   taking a measurement reflectance reading at the end of said predetermined time period without having determined the time at which said sample was initially applied to said porous matrix.

The district court construed the claims as limited to a method wherein the initial measurement of the dry reflectance is taken on the same test strip just before the blood is applied, and not on a sample test strip whose reflectance is taken at the factory. The court held that although the HDI method functions in the same way as the claimed invention, the HDI device differs in that it "compare[s] the reflectance readings of the test strips, whether they are wet or dry, to a threshold reflectance reading which is programmed into the meter at the factory."

Lifescan states that there is no material difference between comparing two reflectance readings to each other, and comparing both readings to a third (threshold) reading that was previously taken at the factory. Thus Lifescan states that the district court erred in construing the claims, arguing that neither the '487 specification nor its prosecution history supports the district court's interpretation of the claims to exclude the possibility of infringement. Lifescan states that the reflectance reading taken at the factory constitutes "taking a first reflectance reading" as called for by claim 1, and that when this reading is compared with the additional reflectance reading taken by the HDI device after the blood sample has been applied, this literally constitutes "comparing said additional reflectance reading to said first reflectance reading," as the patent requires. Lifescan argues that direct comparison is not the only way of comparing values, and that HDI's method of comparing both reflectance readings to a factory-determined "standard" is the same as or equivalent to comparing them to the initial reading by the Lifescan meter. In both devices it is the amount of drop in reflectance that is measured, but in the HDI device both the initial "wet" reflectance after the plasma penetrates to the far side of the matrix, and the reflectance after the incubation period, are compared to the "standard" instead of directly to each other.

Lifescan argues that neither the specification nor the claims of the '487 patent requires that the reflectance readings be compared directly to each other, and that the district court erred in finding the claims to be so limited. Lifescan states that the district court improperly read into the claims the details of its preferred embodiment, although these details are not required by the specification, are not included in the claims, and are not required to preserve the validity of the claims. See E.I. DuPont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433, 7 U.S.P.Q.2D (BNA) 1129, 1131 (Fed. Cir.) (prohibiting reading limitations from the specification into the claims "wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim"), cert. denied, 488 U.S. 986, 102 L. Ed. 2d 572, 109 S. Ct. 542 (1988); Loctite Corp. v. Ultraseal Ltd., 781 F.2d 861, 867, 228 U.S.P.Q. (BNA) 90, 93 (Fed. Cir. 1985) ("Generally, particular limitations or embodiments appearing in the specification will not be read into the claims.").

Literal Infringement

Lifescan is correct that the claims do not include a limitation to how the reflectance readings are compared. Nor do the claims require that the reflectance readings be compared directly to each other instead of comparing each to a "standard"
reflectance. However, the claims state that the dry and wet reflectances are taken from the same strip. Claim 1 states: "taking a first reflectance reading from a dry first surface of said porous matrix."

The district court held that the claims can not be literally infringed when the dry reflectance reading is not taken from the same test strip that is used in the test, but is measured in advance at the factory. We conclude that the district court correctly interpreted the claims. Thus by programming its reflectance meter with a predetermined dry reflectance, HDI did not literally infringe the '478 patent. We affirm the summary judgment that the claims are not literally infringed.

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D. Said Scanning Head

The parties dispute whether the scanning head that samples the output signals must also produce or generate the characteristic signal samples that it uses for comparison. The relevant portion of claim 1 states: "a memory for storing characteristic signal samples produced by scanning said preselected segments of bills of different denominations with said scanning head." '196 Patent, Col. 32, ll.5-8. Glory argues that the characteristic signal samples must be produced and stored by the specific scanning head that is present in the device. Cummins argues that such a construction is improperly narrow, and that the scanning head need only have a memory for storing the signal samples.

The Court agrees with Glory's proposed construction. The use of "said scanning head" is a reference to a term of art in patent law in which the court must identify the antecedent basis for an element preceded by "said." See Gemstar-TV Guide Int'l, Inc. v. ITC, 383 F.3d 1352, 1379 (Fed. Cir. 2004). The "scanning head" is a specific, defined element in Claim 1; therefore, the plain language of the claim requires the characteristic signal samples to be produced and stored by that particular scanning head. Cummins could have drafted this claim differently so as to allow the scanning head to receive pre-programmed characteristic signal samples, but Cummins did not draft the claim in such a way. Courts may not redraft the plain language of a claim. Chef Am., Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1374 (Fed. Cir. 2004). The language of the claim requires the patented device to produce and store the master characteristic patterns.

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3. "said side walls curving downwardly and inwardly towards said conveyor means such that said dump body defines a substantially semi-circular cross sectional configuration for guiding and evenly deflecting all of the materials within said body towards said conveyor means"

The next clause of claim 1 that the parties ask the court to construe is:

said side walls curving downwardly and inwardly towards said conveyor means such that said dump body defines a substantially semi-circular cross sectional configuration for guiding and evenly deflecting all of the materials within said body towards said conveyor means

'389 patent, col.7, ll.61-67. HECO contends that this clause should be construed as follows:

This claim element requires that the side walls are curved, and that they curve downwardly and inwardly toward the center of the dump body. The dump body cross-section, viewed from either end, is in the shape of a semi-circle (i.e., one half of a geometric shape having every point equidistant from a fixed center). The side walls cannot have flat or straight portions that are not inclined downwardly and inwardly so as to not approximate a part of a circle, or not form any curve that is not downward and inward. Thus, as one travels inward along each side wall, each point along the curved wall becomes closer to the conveyor means and is lower (closer to the ground) than the points that are farther away from the conveyor means.

"Deflecting" in its ordinary meaning, means the sidewalls turn the material from the vertical path caused by gravity.
This claim element requires that the side walls are curved, and that they curve downwardly and inwardly toward the conveyor of the dump body. The requirement that the "dump body defines a substantially semi-circular cross-sectional configuration" means that the dump body, viewed from either end, is approximately in the shape of a semi-circle.

"Substantially" is used to mean "approximately." Thus, the cross section of the dump body must be approximately in the shape of a semi-circle.

"Deflect," in its ordinary meaning, means to change course.

The court construes the clause in accordance with the proposal that Cives and Monroe offer. The plain and ordinary language of the claim requires that the side walls are curved, and that they curve downwardly and inwardly toward the conveyor of the dump body. "[S]ubstantially" means "approximately." See, e.g., Epcon Gas Sys., Inc. v. Bauer Compressors, Inc., 279 F.3d 1022, 1030 (Fed. Cir. 2002) (equating "substantially" with "to a considerable degree"); LNP Eng'g Plastics, Inc. v. Miller Waste Mills, Inc., 275 F.3d 1347, 1354 (Fed Cir. 2001) ("substantially" means "to a considerable degree" or "largely but not wholly that which is specified" (citing, in part, Webster's Ninth New Collegiate Dictionary 1176 (9th ed. 1983))); Ecolab, Inc. v. Envirochem, Inc., 264 F.3d 1358, 1369 (Fed. Cir. 2001) ("substantially uniform" means "largely, but not wholly in the same form"). Therefore, the requirement that the "dump body defines a substantially semi-circular cross-sectional configuration" must be construed as "the dump body, viewed from either end, is approximately in the shape of a semicircle."

The court rejects HECO's proposed construction, insofar as it states that the side walls "cannot have flat or straight portions that are not inclined downwardly and inwardly so as to not approximate a part of a circle, or not form any curve that is not downward and inward." The claims themselves do not contain any such restrictions. The only requirement is that the side walls, when viewed cross-sectionally, approximate a semicircle. Conceivably, such walls could approximate a semi-circle yet consist of one or more straight, non-curved portions.

Indeed, Figure 4 of the '389 Patent depicts a straight, non-curved portion at the top of the bin walls yet purports to be substantially semi-circular:

GET DRAWING SHEET 2 OF 4

'389 Patent, fig.4. Although HECO baldly asserts that such vertical portion is not part of the side wall, it offers the court no reason for such assertion. Again, the court declines to interpret the claim so restrictively as to exclude a preferred embodiment. See, e.g., MBO Labs, Inc., 474 F.3d at , 2007 WL 163068, at *8 (quoting On-Line Techs., Inc., 386 F.3d at 1138). 12

-- Footnotes --

12 HECO also argues that, under such construction, the patent is indefinite. Again, the court need not consider this argument at this time.

-- End Footnotes --

The court agrees that "deflect" should be construed as "to change course." HECO's construction, namely, that "[d]eflecting" means "the sidewalks turn the material from the vertical path caused by gravity" is only partially correct. As Cives and Monroe point out, conceivably material could bounce around the dump body and move in a horizontal direction yet be "deflected" toward the conveyor means.

Accordingly, the court adopts the construction proposed by Cives and Monroe, as set forth above. Because Cives and Monroe do not resist HECO's construction of a semicircle, however, the court shall also adopt such construction. A semicircle is "one half of a geometric shape having every point equidistant from a fixed center."
D. "Whereby a Substantially Tasteless Super-Purified Smoke Is Created; and "Treating Meat Having Freezing Point with Said Tasteless Super-Purified Smoke."

Finally, HISI and TPI dispute the meaning and use of "said tasteless" in relation to "substantially tasteless" in Claim 1. TPI argues that the simultaneous use of "substantially tasteless" and "said tasteless" is "an improper double inclusion of the element." (TPI Response 22.) TPI believes that a person of reasonable skill in the art would not be able to distinguish between "substantially tasteless" and "said tasteless." On this basis, TPI argues, Claim 1 should be ruled indefinite. HISI, on the other hand, that "substantially tasteless smoke" is not a limitation, but a label for what results at the end of the process, and that "said tasteless smoke" is merely an obvious shorthand reference for that product.

The Court agrees with HISI's analysis, and finds neither ambiguity nor indefiniteness in this portion of Claim 1. The use of "said" makes it clear that "said tasteless super-purified smoke" refers to the "substantially tasteless super-purified smoke" that is a result of the processes previously described in the Kowalski Patent.

The Commission held the claim invalid because the term "said zinc anode" lacked an antecedent basis, and because of the claim's imprecise statement of the role of the test parameters. EBC argues that these flaws do not render the claim "insolubly ambiguous," in the words of Marley Mouldings, Ltd. v Mikron Industries, 417 F.3d 1356, 1361 (Fed. Cir. 2005), which held that when a claim "is not insolubly ambiguous, it is not invalid for indefiniteness." See also Bancorp Servs., L.L.C. v Hartford Life Ins. Co., 359 F.3d 1367, 1371 (Fed. Cir. 2004) ("We have held that a claim is not indefinite merely because it poses a difficult issue of claim construction; if the claim is subject to construction, i.e., it is not insolubly ambiguous, it is not invalid for indefiniteness.").

EBC argues that a person of ordinary skill in this field would readily understand the claim despite imperfect drafting, for the specification makes clear that the test parameters included in the claim do not mean that every cell must be discharged for 161 minutes. EBC points out that the '709 patent is directed to a standard electrolytic alkaline cell, and that the specification clearly states that the purpose of the test is to identify zinc anode material used in the invention.

Claim definiteness is analyzed "not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art." In re Moore, 58 C.C.P.A. 1042, 439 F.2d 1232, 1235 (CCPA 1971). The definiteness inquiry "focuses on whether those skilled in the art would understand the scope of the claim when the claim is read in light of the rest of the specification." Union Pac. Res. Co. v. Chesapeake Energy Corp., 236 F.3d 684, 692 (Fed. Cir. 2001). Although neither the Commission nor the courts can rewrite claims to correct material errors, the issue here is not correction of error, but understanding of what the claim covers. When the meaning of the claim would reasonably be understood by persons of ordinary skill when read in light of the specification, the claim is not subject to invalidity upon departure from the protocol of "antecedent basis."

The requirement of antecedent basis is a rule of patent drafting, administered during patent examination. The Manual of Patent Examining Procedure states that "obviously, however, the failure to provide explicit antecedent basis for terms does not always render a claim indefinite." MPEP § 2173.05(e) (8th ed. Rev. 2, May, 2004). In Slimfold Manufacturing Co. v. Kinked Industries, Inc., 810 F.2d 1113, 1117 (Fed. Cir. 1987) the court held that "the missing antecedent clause, the absence of which was not observed by the examiner of the original patent or by Kinked in its reissue protest documents, did not fail to inform the public during the life of the [274] patent of the limits of the monopoly asserted." The Slimfold court held that addition of the missing antecedent basis during reissue was not a substantive change.

Whether this claim, despite lack of explicit antecedent basis for "said zinc anode," nonetheless has a reasonably ascertainable meaning must be decided in context. In prosecuting the '709 patent, the examiner made several objections to the claims, but the claims were not rejected or objected to on the ground of lack of antecedent basis. In Bose Corp. v. JBL,
Inc., 274 F.3d 1354, 1359 (Fed. Cir. 2001) the court held that despite the absence of explicit antecedent basis, "If the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite." Moreover, we noted in Slimfold that an antecedent basis can be present by implication. Slimfold, 810 F.2d at 1116. See Cross Medical Products v. Medtronic Sofamor Danek, 424 F.3d 1293, 1319 (Fed. Cir. 2005).

Neither the Commission nor the Intervenors argued that they did not understand the intended scope because of the absence of an antecedent. The Commission erred in holding that the need to construe a claim, or the proffer of alternative constructions, renders the claim indefinite. A claim that is amenable to construction is not invalid on the ground of indefiniteness. In Exxon Research & Engineering, 265 F.3d at 1375, the court stated that "if the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds." See also Novo Indus., L.P. v. Micro Molds Corp., 350 F.3d 1348, 1353 (Fed. Cir. 2003) (determining whether claim is "amenable to construction"); Honeywell Int'l, Inc. v. ITC, 341 F.3d 1332, 1338 (Fed. Cir. 2003) (a claim is not indefinite because it is hard to construe). Here, it is apparent that the claim can be construed. In that regard, we conclude that "anode gel" is by implication the antecedent basis for "said zinc anode." The Commission's holding of invalidity on the ground of indefiniteness is reversed.

D. Interpretation and Infringement Analysis of the Drive Element Contained in the '048 Patent.

The language of the drive element contained in the '048 patent reads: "a drive for rotating the plate cylinder and the blanket cylinder at the same speed." ( '048 patent, col. 13, lns. 1-2). The controversy surrounding this phrase revolves around the proper interpretation of the words "same speed." Some definition has already been given to these words as a result of this Court's January 9, 1996 opinion wherein we concluded that:

Considering the plain language of the claim in conjunction with the specifications, the Court finds that this element of Claim 1 requires the use of a conventional drive, as opposed to a harmonic drive, which rotates the cylinders such that the surface speed at the nip is the same.

Heidelberg Harris, 1996 WL 189398 at *12.

While Harris is content to leave the definition reiterated above in place, 7 Mitsubishi seeks an interpretation of the claim's "same speed" element which requires the described drive to rotate the plate cylinder and the blanket cylinder at precisely the same surface speed, a term which Mitsubishi defines as the measure of distance traveled per unit of time, as, for example, feet per minute.

7 Harris contends that the Court has already adequately defined the disputed element of the claims through the above holding in so much as a conventional drive operates to rotate the cylinders at the same surface speed while a harmonic drive rotates the cylinders different surface speeds. Thus, Harris contends that the term "conventional drive" is synonymous with the term "same speed" as it relates to the drive element of the patent.

In arguing that the speeds of the plate cylinder and blanket cylinder must be identical rather than substantially the same, Mitsubishi points to the prosecution history of the '048 patent, wherein Harris added the "same speed" limitation to allegedly overcome a prior art objection based on Harris' previous use of the phrase "substantially the same speed." 8 Pointing to the maxim that aspects of an invention specifically disclaimed during prosecution in order to obtain a patent over a prior art objection cannot be reclaimed when suing for infringement, Mitsubishi contends that Harris cannot now argue that the "same speed" language means substantially the same speed. Thus, Mitsubishi seeks the finding that a drive only rotates the cylinders at the same surface speed if the cylinders both move precisely the same distance per unit of time.

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8 Mitsubishi contends that the PTO initially rejected the '048 application as obvious in light of the Gaffney '461 patent on the grounds that the '461 patent had the same combination of elements (namely, a gapless blanket cylinder and gapped plate cylinder) that Harris claimed as its patentable invention. Mitsubishi asserts that, in response to this rejection, Harris distinguished its invention over the '461 patent on the grounds that the surface speeds of the plate cylinder and blanket cylinder differed from each other by as much as .0004 inches per revolution, thereby causing slippage, while the Harris invention drove the plate cylinder and blanket cylinder at "substantially the same speeds" with a resulting decrease in slippage. The PTO rejected Harris' attempt to use the phrase "substantially the same" in describing the speeds of the two cylinders as having no support in the specification, wherein Harris deleted the word "substantially" and relied instead on the phrase "same speed."

Applying the above interpretation to its invention, Mitsubishi asserts that, even though its presses admittedly use a conventional drive, they do not satisfy the '048 patent's "same speed" requirement. Specifically, Mitsubishi contends that, rather than driving the plate and blanket cylinder at the same surface speed as taught by '048 patent, the drive in its press is intentionally designed to rotate the plate cylinder and blanket cylinder at different surface speeds -- a difference that arises from Mitsubishi's intentional use of plate cylinders and blanket cylinders whose circumferences differ. 9 Thus, Mitsubishi contends that its presses do not have a "drive for rotating the plate cylinder and blanket cylinder at the same speed" and consequently, do not infringe the '048 patent.

9 Physics dictates that two cylinders differing in circumference which are geared together, as in a conventional drive, to make the same number of revolutions per unit of time, must rotate at different surface speeds. This is so because a point on the surface of the cylinder with the greater circumference must travel a greater linear distance per revolution than a point on the cylinder of lesser circumference, and therefore, must travel farther in the same amount of time which may only occur if the point on the cylinder of greater circumference travels faster than that on the smaller cylinder.

In fully defining the contours of the phrase "same speed," we look to the intrinsic evidence before us, including the patent's claims, specifications and prosecution history. Vitronics Corp., 90 F.3d at 1582. Review of the patent claims and specification reveals multiple reference to the phrase "same speed" or "same surface speed," but no clear definition of what was intended by this phrase. Some of this confusion arises from the fact that the phrase "same speed" seems to be used in connection with two aspects of the press. In the first instance, it is used to describe the drive element of the '048 patent. Thus, the specification provides "a drive assembly . . . is operable to rotate the blanket cylinders [] and plate cylinders [] at the same surface speed." ( '048 patent, col. 5, Ins. 22-25). In the second instance, the phrase is used to describe the absence of a speed differential attributable to the use of incompressible material in the manufacture of the printing blanket in its entirety. In this regard, the specification provides:

The present invention further provides that the printing blanket is at least partially formed of a compressible material which is compressed by the plate cylinder at a nip formed between the printing cylinder and the blanket cylinder. By compressing the compressible material at the nip, the outer surface of the printing blanket has a surface speed which is substantially the same at locations immediately before the nip, at the nip and immediately after the nip. This prevents slippage between the surfaces of the printing plate and printing blanket before, at, and after the nip to prevent smearing of the ink pattern.

( '048 patent, col. 3, Ins. 62-68; col. 4, Ins. 1-5).

As resort to the patent does not provide a ready definition for the phrase at issue, the Court looks to the '048 patent's prosecution history. It is undisputed that the "same speed" language was added to the claims to overcome a prior art objection by the PTO based on the Gaffney patent. "Positions taken in order to obtain an allowance of an applicant's claims are pertinent to an understanding and interpretation of the claims that are granted by the PTO." Advance Transformer Co. v. Levinson, 837 F.2d 1081, 1082 (Fed. Cir. 1988) (citing Loctite Corp. v. Ultraseal Ltd., 781 F.2d 861, 870-71 (Fed. Cir.}

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Thus, in construing the disputed phrase, the Court examines the manner in which the patent applicants used the "same speed" language to distinguish their invention over Gaffney.

The drive in the Gaffney patent is expressly stated to be a drive for "rotating the blanket cylinder and plate cylinder at different surface speeds." (461 patent, col. 4, lns. 59-62). The Gaffney patent refers to a drive which rotates the cylinders in this fashion as a "harmonic" or "differential" drive. (461 patent, col. 5, lns. 10-18). The purpose of the Gaffney harmonic drive is to cause an "area on the blanket cylinder which engages a given portion of the surface on a plate cylinder [to] change on each revolution of the blanket cylinder." (461 patent, col. 1, lns. 47-51). Thus, in order for a drive to rotate the cylinders at different surface speeds within the meaning of the Gaffney patent, the area of the blanket which a given point on the plate strikes must continuously move or migrate along the blanket's surface on each cylinder rotation. This is often referred to as "image migration."

In distinguishing the '048 patent over the Gaffney patent, the Harris inventors specifically pointed to the fact that '048 drive rotates the cylinders at the same surface speed. 10 In light of the Gaffney patent, this distinction only has meaning if the term "same speed" is read to mean that the '048 drive does not cause the image migration which arises from the speed differential present in the Gaffney patent. In other words, the critical attribute of the '048 drive's "same speed" limitation is that a given point on the plate will hit the same spot on the blanket during each revolution.

In light of the above, we find that the "same speed" element of the claim requires the use of a conventional, rather than harmonic drive which rotates the cylinders such that the surface speed at the nip is the same and which consequently does not produce any image migration.

III. Construction of "Same Speed" Limitation

The asserted claims of the '048 patent require "a drive for rotating the plate cylinder and the blanket cylinder at the same speed." (emphasis added). The magistrate judge noted that the patentees had used the phrase "same speed" in referring to two aspects of the claimed press, i.e., its drive assembly and its absence of slippage at the nip. Consequently, the magistrate judge resorted to the prosecution history to construe the "same speed" limitation, and ultimately concluded that:

The critical attribute of the '048 drive's "same speed" limitation is that a given point on the plate will hit the same spot on the blanket during each revolution.

In light of the above, we find that the "same speed" element of the claim requires the use of a conventional, rather than harmonic drive which rotates the cylinders such that the surface speed at the nip is the same and which consequently does not produce any image migration.

Because Mitsubishi did not contest that the drive in its accused presses was a conventional drive that did not exhibit any image migration, at trial the magistrate judge granted Heidelberg's motion for JMOL that the accused presses satisfied the
"drive" limitation.

Mitsubishi offers a plethora of arguments against the magistrate judge's claim construction of the "drive" limitation. Mitsubishi contends that the phrase "same speed" in the "drive" limitation must mean "same surface speed," and nothing more. In support, Mitsubishi notes that the written description expressly refers to a "drive assembly . . . operable to rotate the blanket cylinders . . . and plate cylinders . . . at the same surface speed." '048 patent, col. 5, ll. 22-25. (emphasis added). Mitsubishi emphasizes that the applicants relied on this very statement in the written description to support their addition of the "drive" limitation.

Mitsubishi also emphasizes that the entire purpose of the '048 patent was to avoid slippage at the nip. The written description notes:

Smearing of the ink pattern is also promoted by slippage between the surfaces at the nip where the ink pattern is transferred to the printing blanket. Thus, if the speed of the printing blanket surface is either greater or less than the speed of the surface transferring the ink pattern to the printing blanket the surfaces will slip relative to each other which smears the pattern.

Id., col. 2, ll. 19-25. Because running the blanket and plate cylinders at different surface speeds creates slippage, Mitsubishi contends that "same speed" must mean "same surface speed."

Finally, Mitsubishi notes that, during the prosecution of the '048 patent, the applicants distinguished the prior art Gaffney patent by arguing:

Gaffney et al. also discloses a harmonic drive which rotates the plate cylinder and the blanket cylinder at different surface speeds to create slippage. The slippage causes the image being transferred from the printing plate to the printing blanket to appear in a different location on the printing blanket for each revolution of the blanket cylinder.

(emphasis added). Because the Gaffney patent discloses a surface speed difference between the blanket and plate cylinders of 0.0001 - 0.0004 inches per revolution of the blanket cylinder, see Gaffney patent, col. 4, ll. 36-44, Mitsubishi argues that an accused device cannot infringe if the difference between the surface speeds of its blanket and plate cylinders exceeds 0.0004 inches per revolution of the blanket cylinder.

Heidelberg responds that the drive rotates the cylinders at the "same speed" in the sense that points or images on the printing plate are transferred to the same position on the blanket on each rotation (i.e., no image migration). Heidelberg contends that one of ordinary skill in the art in the offset printing industry would construe the "drive" limitation in this manner.

More particularly, Heidelberg alleges that one of ordinary skill in the art would recognize that a conventional drive avoiding image migration rotates the cylinders at the "same surface speed," even if the linear speeds of the cylinders are different. Citing the same excerpt from the prosecution history as Mitsubishi, Heidelberg further argues that the prosecution history supports its interpretation of "same speed" as relating to the absence of image migration.

We begin by noting the parties' agreement that the phrase "same speed" in the "drive" limitation refers to "same surface speed." The critical question is whether "same surface speed" also requires the absence of image migration, as Heidelberg argues and the magistrate judge held. We conclude that it does not. The plain language of the "drive" limitation says absolutely nothing about preventing image migration through use of a conventional drive. It refers only to "rotating the plate cylinder and the blanket cylinder at the same speed." Had the applicants intended the "drive" limitation to simply refer to a conventional drive, they could simply have so stated. See Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 951, 28 U.S.P.Q.2D (BNA) 1936, 1939 (Fed. Cir. 1993).

The written description also fails to support Heidelberg's construction. It offers no special definition of "same surface speed" that would justify a departure from its plain meaning of same "linear speed," i.e., the distance a point on the surface of each cylinder travels per unit time. See Markman v. Westview Instruments, 52 F.3d 967, 980, 34 U.S.P.Q.2D (BNA) 1321, 1330 (Fed. Cir. 1995) ("Any special definition given to a word must be clearly defined in the specification."). We note that the written description does not even mention the terms "conventional drive" and "image migration."
Finally, Heidelberg's appeal to the prosecution history also fails. The clear import of the applicants' remarks is that they were distinguishing the Gaffney patent based on its disclosure of a surface speed variance between the plate and blanket cylinders. While the applicants emphasized that the Gaffney patent promoted a drive employing image migration, this image migration was itself a consequence of the fact that the blanket and plate cylinders were of the same diameter, but were intentionally rotated at different surface speeds. See Gaffney patent, col. 1, ll. 44-46; col. 2, ll. 52-54.

The magistrate judge's grant of JMOL that the accused Mitsubishi presses satisfied the "same speed" limitation improperly focused on the presses' avoidance of image migration arising from their use of a conventional drive. The magistrate judge erroneously deduced that such absence of image migration resulted from the "same speeds" of the printing and blanket cylinders, as required by the asserted claims. We note that Heidelberg does not even dispute that the blanket and plate cylinders in the accused presses run at a surface speed difference of 0.0177 inches per revolution of the blanket cylinder (i.e., over 40 times greater than that disclosed in the Gaffney patent). Because the accused presses do not satisfy the "same speed" limitation of the asserted claims of the '048 patent, we reverse the jury's finding that Mitsubishi literally infringes the '048 patent.

6. "Sample Gating Means"

The term "sample gating means" appears in Claim 1 of the '477 Patent. See id. col. 8 ll. 39-43 ("sample gating means for individually opening and closing any of said plurality of shafts to enable the flow of liquid, said sample gating means comprising a plurality of rigid elongate members positioned within the plurality of shafts."). Gore argues that the term "sample gating means" should be construed as a means-plus-function limitation pursuant to 35 U.S.C. § 112 ¶ 6 to the extent that the claims are themselves construed to cover any form of movement, i.e., both linear and rotational, between the "open" and "closed" positions. Specifically, Gore contends that, if the claims are so construed, Claim 1 does not recite sufficient structure to perform the function of enabling the flow of liquid. Millipore counters that the term "sample gating means" is not a means-plus-function limitation under 35 U.S.C. § 112 ¶ 6 because the claim itself does recite sufficient structure to perform the recited function.

6 Because I construe the "open" and "closed" clauses contained in Claims 1 and 5 of the '477 Patent to include both linear and rotational movement, see Section II.B.3. supra, I will assume that Gore contends that the term "sample gating means" should be construed as a means-plus-function limitation pursuant to 35 U.S.C. § 112 ¶ 6.

Section 112, paragraph 6, of title 35 provides that:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.


As a general proposition, the "[u]se of the word 'means' in claim language creates a presumption that § 112 ¶ 6 applies." TriMed, Inc. v. Stryker Corp., 514 F.3d 1256, 1259 (Fed. Cir. 2008). This presumption is rebutted, however, "[i]f, in addition to the word 'means' and the functional language, the claim recites sufficient structure for performing the described functions in their entirety." Id.; see also Phillips, 415 F.3d at 1311 ("Means-plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function."). "Sufficient structure exists when the claim language specifies the exact structure that performs the functions in question without need to resort to other portions of the specification or extrinsic evidence for an adequate understanding of the structure." TriMed, 514 F.3d at 1259-60. "Claim construction of a means-plus-function limitation includes two steps. First, the court must determine the claimed function. Second, the court must identify the corresponding structure in the written description of the patent that performs

In this case, it is clear that the claimed function is "to enable the flow of liquid." See id. col. 8 l. 41. Contrary to Gore's contentions, I find that, regardless of whether I construe the claim to include any form of movement, i.e. either or both linear and rotational, the structure recited in Claim 1 is sufficient to perform the claimed function. Claim 1 provides that "the elongate members being displaceable between 'open' and 'closed' positions such that fluid can flow into the opening behind the cap and through said passage in each member when in said 'open' position, but not in said 'closed' position." Id. at col. 8 ll. 48-52. Under these circumstances, I find that the language in Claim 1 specifies the structure that enables the flow of liquid without need to resort to other portions of the specification or extrinsic evidence for an adequate understanding of the structure. Consequently, I conclude that the term "sample gating means" is not a means-plus-function limitation under 35 U.S.C. § 112 ¶ 6.
The parties dispute the meaning of the term "sample transfer path" which appears in claim 11 of the '890 patent. The claim reads as follows:

11. An electrode strip for use in an electrochemical sensor for measuring a compound in a sample, comprising an elongated electrode support defining a sample transfer path for directional flow of the sample from an application point along said electrode support…

Plaintiffs contend that the proper construction of the term is "the route along which a sample moves", whereas Defendant proposes that term means "an area of mesh layer not covered by screen printing ink in which the sample travels from the application point to the electrodes."

In support of their construction, Defendant cites the prosecution history. In a September 26, 1996 letter from the United States Patent and Trademark Office (PTO) entitled "Notice of Allowability", the patent examiner stated:

The following is an Examiner's Statement of Reasons for Allowance: The prior art of record fails to teach the key to the applicant's instant invention which is (1) a plurality of mesh layers interposed in an enclosed space between the cover layer and electrodes and (2) a sample transfer path where the electrodes are in the sample path. Applicant shows that the sample path is the area of the mesh layer that is not covered by the screen printing ink, as shown…

(Mehta Decl., Exh. C) (emphasis added).

Defendant argues that this statement indicates a mutual understanding between Plaintiffs and the examiner that the term "sample transfer path" meant "the area of the mesh layer that is not covered by the screen printing ink" and that the grant of the amendment was contingent on such an understanding. Defendant further contends that Plaintiffs failure to object to the examiner's statements amounts an adoption of these limitations. The Court does not agree. The meaning of Plaintiffs' failure to object is clearly ambiguous and does not constitute a "manifest exclusion or restriction" of the scope of the patent. Phillips at 1318.

Furthermore, it is not clear that the cited comments even apply to Claim 11. The '890 patent contains 21 claims in total. Several of the other claims of the '890 patent contain explicit "mesh layer" limitations, whereas Claim 11 does not. Although the examiner did not specify which claims were the subject of his comments, based upon his use of the term "mesh layer", it seems likely that the examiner was referring to one of the claims which explicitly included a "mesh layer" limitation. For example, Claim 1 asserts "… [a] covering layer having an aperture for receiving a sample into said enclosed space; and a plurality of mesh layers interposed in said enclosed space between said covering layer and said electrodes." ('890 Patent, Claim 1). Claim 3, which is dependent on Claim 1, adds "[t]he strip of claim 1 wherein said mesh layers define a path for directional flow of sample from said aperture through said enclosed space towards said working and reference electrodes, and said reference electrode is downstream from said working electrode in the direction of said flow." (890 Patent, Claim 3). By contrast, Claim 11 does not even use the term "mesh." Moreover, Claim 13, which is dependent on Claim 11, explicitly adds the following limitation: "a plurality of superimposed mesh layers disposed along said sample transfer path." The fact that a dependent claim explicitly adds a "mesh layer" limitation implies that Claim 11 contains no such restriction. See Tandon Corp. v. U.S. Intern. Trade Com'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987). The Court finds that Defendant has not demonstrated that Plaintiffs conceded a "mesh layer" limitation in Claim 11 during the prosecution of the patent; the Court declines to read in such a restriction now. 2

2 Defendant also cites the preferred embodiment portion of the specification in support of their argument. Defendant points to language which states that "the periphery of the mesh… surrounds and defines a suitable sample transfer path" and that "the mesh layers preferably define a path for directional flow of the sample." Again, the Court is unpersuaded that these citations establish the presence of a mesh layer limitation in Claim 11. It is more likely that this language applies to the claims described above which include explicit mesh layer elements. Moreover, it is improper to read in a limitation from the preferred embodiment where, as here, there are no "words or expressions of manifest exclusion or restriction." Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 905 (Fed. Cir. 2004).
The Court next turns to Plaintiffs' proposed reading. Plaintiffs' construction employs the ordinary and customary meaning of the term "path" and is supported by the context of the words following the contested phrase. Immediately following the disputed term, Claim 11 states that the "sample transfer path" is for "directional flow of the sample from an application point along said electrode support." In other words, the path is the route upon which the sample travels as it moves from the application point to the electrodes. Accordingly, the Court construes "sample transfer path" as "route along which the sample moves."

3 The American Heritage Dictionary defines "path" as "the route or course along which something moves." (Plaintiffs Initial Markman Brief, Exh. 3, American Heritage Dictionary, 1991).

A. "SAMPLE WELL"

Roche contends that "sample well" means: "the reaction zone, i.e., a reservoir, or other structure or area, that receives a sample fluid." The crux of Roche's argument that the "sample well" is simply the reaction zone is because that is how "sample well" is referred to in the specification of the 609 patent. The patent states in the Background of the Invention section: "Biosensing instruments used for the detection of analyte levels in blood (such as glucose and cholesterol) often employ disposable sample strips that include a well or reaction zone for receiving a blood sample." Id. col. 1, ll. 13-16. Moreover, the patent teaches: "Sample strip 18 contains a well 20 (i.e., a reaction zone). . . ." Id. col. 4, ll. 31-32.

Although Apex Defendants take no position on this term, HDI contends that "sample well" means: "a well, i.e., an open-topped container or reservoir into which an analyte-containing fluid is emplaced." HDI finds support for the "sample well" to have an open top in Figure 3, and in the following passage from the specification: "[A] glucose determination is made by initially emplacing in well 20, a sample of blood." Id. col. 5, ll. 48-50. Figure 3 shows an example of a sample strip inserted into a meter. HDI also supports its construction for the term "sample well" with the testimony of its expert, Professor Anthony P.F. Turner ("Dr. Turner"), who opines about the difference between a "well," which requires only one opening, and "contemporary capillary-fill devices," which require a second aperture to allow air to escape. Turner Rep. P 36. Dr. Bruce K. Gale ("Dr. Gale"), also testified that he would not describe a "microfluidic channel" as a "well," apparently to distinguish one of the allegedly infringing devices. Gale Dep. at 148.

Similarly to HDI, Biosite contends that "sample well" means: "a chamber or other discrete space in a device defining a container or reservoir into which an analyte-containing fluid sample is emplaced." Biosite also wants to include other parameters in this definition: "In claim 1 of the 609 patent, the sample well is required to contain an analyte reactant, and further required to be the location in which reactions occur between the analyte-containing fluid sample and the analyte reactant." In other words, Biosite contends that the proper construction for "sample well" includes the specification that the "sample well" "must contain an analyte reactant and be the location where reactions occur." Biosite Br. at 35 n. 13. The Court finds that the later requirements are unnecessary given the recitation of these elements in claim 1 itself. In other words, "sample well" need not be further defined by what occurs there or what is contained there, because the remainder of claim 1 has elements that explicitly state what is required. Moreover, other claims also use the term and also clearly state the requirements of the "sample cell." See 609 Patent, claims 4 & 6.

The Court finds that the proper definition for "sample well" is "a container or reservoir for the sample," which best comports with the plain meaning of the term in the 609 patent. Beginning with the claims of the 609 patent the term "sample well" appears in four independent claims of the patent, claims 1, 4, 6, and 12. The plain meaning of the term in the context of those claims is a reservoir or container for a sample. There is no reason to interpret the term "sample well" to include limitations that appear otherwise in the claims. All of the independent claims particularly describe the contents of or the purpose for the "sample well" of that claim. For example, claim 4 states, that the sample strip "includes a sample well with
an analyte reactant therein" and that a current output occurs at a second electrode on the sample strip "when an analyte containing fluid is present in said sample well. . . ." 609 Patent, col. 9, ll. And, claim 6 requires that the sample strip include "excitation and sense electrodes and a sample well bridging thereacross [sic], said sample well including an analyte reactant. . . ." Id. col. 10, ll. 7-9. See also, col. 11, l. 23 to col. 12, l. 6 (claim 12). In other words, adding to the plain meaning of "well" what must also be included therein or what must happen therein is redundant.

The specification also supports a plain meaning definition for "sample well." The 609 patent teaches that the invention includes a meter that "is enabled to receive a sample strip that includes a sample well. . . ." 609 Patent, Abstract. Further, in the abstract the 609 patent teaches that the meter senses a current from the sample strip "when an analyte-containing fluid is present in the strip's sample well." Id. Both usages are repeated in the Summary of the Invention section of the patent. See id. col. 3, ll. 36-45. Neither one of these usages require that the sample well have an open top nor do they require that the sample be "emplaced" therein. Both merely require that the well exist and that the meter sense when fluid or a sample is present in the well.

Another section of the 609 patent that describes the "sample well" states: "Sample strip 18 contains a well 20 (i.e. reaction zone) that encompasses a pair of conductive electrodes 24 and 26. A layer (not shown) of enzymatic reactants overlays electrodes 24 and 26 in well 20 and provides a substrate on which an analyte-containing fluid sample may be emplaced." Id. col. 4, ll. 31-36. The 609 patent also teaches that "a glucose determination is made by initially emplacing in well 20, a sample of blood." Id. col. 5, ll. 48-50. A similar description is also found later in another section of the Detailed Description of the Invention. That description states, in relevant part:

If the leakage current (sensed by sense amplifier 50 and fed to microprocessor 59 via A/D converter 52) is found to be less than a threshold (key), microprocessor 59 indicates via display 12, that the user may apply a drop of blood to well 20. . . .

. . . . Time delay d enables the drop of blood to entirely wet the enzyme layer within well 20. If the voltage senses at time 70 is below a sample size threshold 72 (key), the test is aborted as the volume of blood is determined to be insufficient to assure complete hydration of enzymatic reactants within well 20.

'609 Patent, col. 6, ll. 41-68 to col. 7, l. 1. These descriptions also use the term "well" to mean a container or reservoir for the sample.

In the first description, the patent provides an example description of the well -- "a reaction zone" -- however, this is just an example, as indicated by the "i.e." before the term "a reaction zone." Id. col. 4, l. 32. Moreover, there is no indication in the claims or elsewhere in the patent that the construction of the term "sample well" should be narrowed to "reaction zone." The same section also uses the word "emplaced," which both HDI and Biosite contend limits the term "sample well," similarly to the requirement at column 5 where the process of measurement requires emplacing blood into the well. There is nothing in these descriptions, however, that limit the term "well" to require what is put inside the well. In other words, adding a phrase defining what is emplaced in the well to the definition of well unnecessary imports a requirement from the specification into the claim.

Moreover, a close reading of the specification teaches that the sample may be emplaced on a substrate in the well, id. col. 4, ll. 35-36, not that the sample is emplaced in the well. In other words, it is possible for the sample to be carried to the well, container, or reservoir, through a substrate or other means that wicks the fluid to the well. Furthermore, the patent clearly teaches that the emplacement is not mandatory by using "may" rather than "shall." Similarly, in the last passage quoted above, it is clear that the sample reaches some reactant layer within the well, however, there is no language that would limit the plain meaning of the term well either to have an open top or to have the sample emplaced therein.

For these reasons, there is nothing in these passages that convinces the Court that the inventors intended to limit the plain meaning of the term "sample well." The Court finds that the term "sample well" means: a container or reservoir for the sample.

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III. Construction of "Sandwich Panel"
The Defendants' next objection is to the construction of the term "sandwich panel" as set forth in the SM's Report. Defendants' Obj., pp. 19-25. The Defendants argue that the meaning of the term "sandwich panel" does not include the understanding that such a structure can be formed as one piece, but only formed from the unification of different components. Defendants' Obj., pp. 21-23. The Defendants argue that the SM's report on this issue violates the precedent of Phillips by using a "whittling down" approach through requiring the Defendants to prove the pultrusion process was not included as a method forming the "sandwich panel" as one piece rather than assembly of separate components. Defendants' Obj., p. 23. The Defendants would construe the '118 patent's term "sandwich panel" to be a panel formed by the attaching of facesheets to a "pre-existing core." Defendants' Obj., p. 25.

While the SM's discussion of "sandwich panel" in the '378 patent, as it is understood in the ordinary meaning of the term within the relevant art (see SM's report, page 84-88), may not ordinarily include the idea of pultruding a "sandwich panel" as one piece, the language of the specification clearly contemplates the idea of this process in the formation of both patents. See '378 patent, col. 10, lines 11-14, 67, col. 11, lines 1-3; '118 patent col. 11, lines 53-56, col. 12, lines 48-52. The Defendants interpret the claim language of both patents contrary to the findings of the SM, and now of this Court, and argue that because such patents are overbroadly interpreted the Defendants are forced to whittle down such constructions of this Court and are burdened to prove the proper construction of the patents. This is an incorrect interpretation as the specification language for the '118 and '378 patents clearly contemplate the inclusion of the idea of forming "sandwich panels" as a "unitary structural component" and being "fabricated as a single component such as by pultruding a single sandwich panel" and the Defendants have failed to prove its proposed construction from the language of the claim, specification, prosecution history and other evidence. '378 patent, col. 10, lines 11-14, 67, col. 11, lines 1-3; '118 patent col. 11, lines 53-56, col. 12, lines 48-52. Moreover, the language of both patents refer to "pultrusion or other suitable forming methods" as the manner to form the unitary structural component thereby leaving open the possibility of using other formation processes that fabricate the invention as one piece rather than through the assembly of distinct pieces. '118 patent col. 11, lines 55-56, '378 patent col. 12, lines 13-14. Thus, the SM correctly concludes that the formation of the "sandwich panel" is not restricted to formation using either "distinct" or "indistinct" pieces. SM's Report p. 97. The Court also agrees with the SM that the patents-in-suit do not concern product-by-process claims, but are apparatus claims. See SM's Report, pp. 76, 93, 96, 150-153. Most importantly, the language explaining the alternative avenues of forming the "sandwich panel" contemplates that that term in the patents is different from what the Defendants would construe such term as being based upon the understanding of the ordinary meaning of a "sandwich panel" in the relevant art at the time of the patent. See SM's Report, pp. 84-88. The guidance of the specification provides the most weight and the basis for the SM's conclusion. It is clear that the specification language contemplates the assembly of distinct parts to create a "sandwich panel" or the formation of a "sandwich panel" as one modular piece which can be fabricated as a single component such as by pultruding a single sandwich panel..." '378 patent col. 11, lines 1-2; '118 patent col. 12, lines 48-52. The Defendants' argument for ignoring the specification language to this effect and arguing for construing the claim based upon ordinary meaning within the industry without reference to the specification language is contrary to Phillips and contrary to their previous reliance on Phillips in their objections by arguing that the SM violated its holding when he proceeded to ignore the patents' specification language and concentrated on the plain meaning thereby placing the burden upon the Defendants. The Court finds that the specification language is dispositive on this matter. See Phillips at 1315. The Defendants' choice to focus upon either the specification language or the plain meaning of the word when it suits their proposed construction is unavailing. The Defendants' objection is denied.

ix. Sandwiched between

Plaintiffs interpret the phrase "sandwiched between" to mean "placed snugly in between the arms of the u-shaped bridge." Defendant, referring to a figure in the specification of the '811 Patent, insists that the bridge of the first frame need not be completely enclosed by the bridge. Rather, the arms of the U-shaped structure must simply extend over (and under) part of the bridge. Plaintiffs do not disagree that the U-shaped structure may extend over only part of the bridge, but disagrees to the extent Defendant is claiming that the U-shaped structure must extend over only part of the bridge.

The court agrees with Plaintiffs. Although the drawing Defendant cites does indicate that the U-shaped structure extends over only part of the bridge, the court finds no reason to limit the claim language to the specific embodiment discussed by
Defendant. As such, the court construes "sandwiched between" to mean that the U-shaped structure "extends at least partially 'over' (and 'under') the bridge."

A. The "sandwiched" claims

Claim 11 of the '496 patent is representative of the "sandwiched" claims at issue in this case:

An exterior finishing system for a building comprising an underlying structural support element . . . said support element including gypsum board comprising a set gypsum core sandwiched between two sheets of porous glass fiber mat, the gypsum core including one or more additives which are effective in improving the water-resistant properties of the board. . . .

(Emphasis added.)

The jury found that USG infringed Claim 11 of the '496 patent, which uses the term "sandwiched," but the district court granted USG a new trial on the issue of whether this claim was infringed. The district court held that Claim 11 does not claim a board where the gypsum core may penetrate through and onto the outside of the mat.

The district court found that the word "sandwiched" had not been given a special definition in the patents and that it did not have a special meaning in the gypsum board manufacturing context. The court therefore gave the word its ordinary meaning - viz, to insert or place between - and instructed the jury that "sandwich means between two things and not through and outside one of the two things." After the jury returned a verdict of infringement in favor of Georgia-Pacific with respect to the claims of the '989 patent, the district court ruled on USG's JMOL motion that the construction of "sandwiched" did not constrain it from finding that the claims could cover a board with gypsum core between two porous glass mats with gypsum bleeding through the outer surface of one porous mat. The court ruled that because these claims specifically required only one side to be gypsum free, by implication the other side need not be gypsum free.

Georgia-Pacific argues that it is clear from the patent that it contemplates that gypsum might come through the glass mat on one side. There would be no reason to specify that one surface is to be gypsum-free if "sandwiched" means that the gypsum could not go through either surface. Georgia-Pacific contends that "sandwiched" cannot mean that the gypsum must stay between both of the glass mats.

We agree with Georgia-Pacific.

There would be no need to specify a gypsum free surface if the "sandwiched" term meant that the gypsum could not go through one of the glass mats. Further, other dependent claims, such as claim 8 of the '496 patent, specifically claim one of the fiberglass mats has an outer surface with "portions thereof coated with set gypsum."

As we have discussed, the district court interpreted the "sandwiched" claim limitations in the patents as not precluding the gypsum core from flowing through one of the glass mats. In the case of Claim 11, however, the district court interpreted "sandwiched" differently - i.e., that the gypsum core must remain between the mats.

Unless the patent otherwise provides, a claim term cannot be given a different meaning in the various claims of the same patent. See Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579, 34 U.S.P.Q.2D (BNA) 1673, 1679 (Fed. Cir. 1995) (holding that claim term found in different claims must be interpreted consistently); see also Fonar Corp. v. Johnson & Johnson, 821 F.2d 627, 632, 3 U.S.P.Q.2D (BNA) 1109, 1113 (Fed. Cir. 1987.) (holding that a term used in one claim had the same meaning in another claim). Interpretation of a disputed claim term requires reference to the other claims. See Southwall, 54 F.3d at 1579, 34 U.S.P.Q.2D (BNA) at 1679. We are convinced that the district court's interpretation of "sandwiched" as not precluding the flow through of the gypsum core on one of the fiberglass mats should have been applied to that term in claim 11 absent any indication that a different meaning was contemplated. The evidence demonstrates that USG infringed claim 11 of the '496 patent when it is so interpreted. We therefore reverse the district court's grant of a new trial and reinstate the jury's finding of infringement with respect to claim 11 of the '496 patent.
The parties agree that the term "scalloped" means that there are portions of material that have been cut out of the fabric or plastic. The primary dispute between Plaintiffs and Cook is whether the phrase must be limited such that the "scalloping" occurs only "between," i.e. in the space that separates, each wire apice, as depicted in figures 6-7 of the patents-in-suit, or whether the fabric may also contain scalloping underneath the wire apices.

The specification states that "[i]t is preferred" that the edge of the material is "scooped out or scalloped between each projecting crest." ('458 Patent, col. 2, ll. 56-58 (emphasis added).) If the Court looked only to the claim language, Cook's argument might have some force. However, because the specification makes clear that the scallops "between" the projecting crests are preferred but not required, the Court declines to construe this phrase to limit it to a preferred embodiment. See, e.g., Primos, Inc., 451 F.3d at 848 (court should not import limitations from preferred embodiments into claims).

Plaintiffs and Gore also disagree about whether the wires always extend beyond the edge of the material. For the reasons set forth above in Section B.5, the Court concludes that they do not.

Accordingly, the Court construes the term "edge which is scalloped between projecting apices of the wire member/structure" to mean: "The edge of the material may be scooped out or removed between or underneath each projecting crest of the wire."

The parties disagree as to whether "scan," "scanner," and "scan a surface of the workpiece" need be construed, given the magistrate judge's proposed construction of the phrase "scanning the surface of the workpiece" as found in the '525 patent claims. (See D.I. 575, 619 Dec. 27, 2002 Joint Claim Construction Submission For U.S. Patent No. 6,292,259.) Because the Court has not previously ruled on the objection made to the magistrate judge's proposed construction (D.I. 531), those terms are interpreted herein. The Court's decision regarding those terms is also informed by a de novo review of the phrase "scanning the surface of the workpiece" as found in the '525 patent claims and serves as the Court's ruling on the objection to the magistrate judge's proposed construction of that phrase.

23 The magistrate judge construed "scanning the surface of the workpiece" as used in the '525 patent to mean that "the entire surface of the workpiece is inspected through relative motion of the incident beam of P-polarized light and/or the
workpiece being inspected. The phrase is broad enough to encompass rotation and translation of the workpiece during scanning." ADE Corp., 220 F. Supp. 2d at 312-13.

24 Hereinafter the parties' December 27, 2002 Joint Claim Construction Submission For U.S. Patent No. 6,292,259 B1 will be cited to as JCCS. The JCCS is a document setting forth each party's proposed construction for each term in dispute and, importantly, a compilation of each party's evidence from the intrinsic record in support of their proposed constructions. The record citations and quotations are arranged term by term, thus providing easier access for the Court, in a single document, to the parties' positions and the record support for those positions. The parties' submission of the JCCS in this case has proven helpful and is appreciated by the Court.

1. ADE's Position

ADE argues that "scanner" should be construed to mean "components that together allow the entire workpiece to be scanned; where 'scanned' means 'inspected through relative motion of the incident beam of P-polarized light and/or the workpiece being inspected.'" (D.I. 595 at 28; D.I. 613 at 3-4 (quoting D.I. 318 at 52); JCCS at 2.) ADE also proposes that the phrase "scan a surface of the workpiece" should be construed consistently with the magistrate judge's previous construction of the phrase "scanning the surface of the workpiece." (Id.) ADE does not set forth a proposed construction of the word "scan," detached from the entire phrase "scan a surface of the workpiece." (See D.I. 595; D.I. 613; JCCS.)

In support of its proposed construction of the word "scanner," ADE points to the magistrate judge's proposed construction of the '525 patent and to the '259 and '525 intrinsic record. (JCCS at 2-3.) ADE then argues that the magistrate judge properly construed the phrase "scanning the surface of the workpiece" in relation to the '525 patent and that the magistrate judge's construction of "scanning" is equally applicable to the "permutations" of that word, "scan" and "scanner," as used in the '259 patent. (D.I. 595 at 28.) ADE supports its argument by asserting that "nothing in the intrinsic record compels an interpretation for either of these related set of terms that is clearly inconsistent with their plain and ordinary meanings." (Id.) Moreover, asserts ADE, the magistrate judge already rejected KLA's attempts to narrow the scope of the word "scanning." (D.I. 613 at 4-6.) The magistrate judge's reasoning, argues ADE, applies with equal force to the words "scan" and "scanner" and the phrase "scan a surface of the workpiece" as found in the claims of the '259 patent. (Id.) To conclude its argument, ADE quotes definitions of "scan" and "scanner" as found in several dictionaries. (Id. at 7-8.)

2. KLA's Position

KLA, in contrast, proposes that the Court construe the words "scanner" and "scan" as opposed to the phrase "scan a surface of the workpiece." (D.I. 594 at 11-12; D.I. 615 at 13-14; JCCS at 2.) KLA suggests that "scanner" be construed to "include a 'beam deflector' such as an acousto-optical deflector" and "scan" should be construed to mean "deflect the beam along a relatively narrow scan path." (Id.) In support, KLA directs the Court to numerous intrinsic citations, including the prosecution history of the '701 patent. (Id.) KLA asserts that the "scanner" taught in the '259 specification includes "a component or components for deflecting the incident beam[,] ... [and a scan is performed] by imparting a relatively narrow scan path." (D.I. 594 at 12.) KLA then points to figures of the '259 patent and argues that those figures indicate that the "scanner" is closely associated with the incident beam of p-polarized light. (Id. at 12-13.)

KLA also asserts that the description of the '259 invention in the specification of the patent makes it clear that the "scan" performed by the "scanner" is "along a relatively narrow scan path." (Id. at 14.) Moreover, asserts KLA, the magistrate judge's construction of "scanning" in relation to the '525 patent does not impart a plain and ordinary meaning to the words "scan" and "scanner" in the '259 patent, as ADE suggests. (D.I. 615 at 13 (citing D.I. 594 at 14-17).) This, argues KLA, is clear from the '259 specification and prosecution history of the '701 patent, 25 which clarify that the inventors "clearly and unequivocally distinguished their invention from the prior art cited by the examiner on the grounds that their invention employed 'narrow angle scans.'" (Id.)
3. Analysis

The parties advance essentially the same arguments that they did before the magistrate judge when contesting the claim language of the '525 patent. See ADE Corp., 220 F. Supp. 2d at 312-13. The magistrate judge, in sifting those arguments and reviewing the record, observed that "scanning" is a broad term. Id. at 312. The magistrate judge then turned to a review of the '525 written description and drawings, stating:

The '525 disclosure teaches several ways to perform a surface scan of a workpiece. During some of these scans, the workpiece is translated and rotated along its material path as it is inspected ….

Claim 1 of the '525 patent does not limit "scanning" to any particular type of scan; instead, the claim plainly states that one step in the disclosed inspection method is to scan the surface of the workpiece at the inspection station. In contrast, KLA would have this court read a non-existent limitation into the phrase 'scanning the surface of the workpiece' from dependent claim 21 ….

… Some movement must exist between the light beam and the surface to inspect the entire surface "scanned" and effectuate the inventors' invention. Claim 1 of the '525 patent ensnares all such movement whereas dependent claim 21 specifies that the movement is translation and rotation. Any other construction is simply illogical and inconsistent with the invention taught in the '525 patent.

Id. at 312-13 (citations omitted).

The '259 patent teaches the same invention as does the '525 patent but it claims the invention differently, and both the '259 and '525 patents descend from the application that led to the '701 patent. Accordingly, the inventors' statements with regard to the words "scan" and "scanner" during the prosecution of the '701 patent, and the use of similar language in the '525 and '259 patent claims, are of significance.

In the '701, 525, and '259 patent specifications, the word "scanner" refers to a component or combination of components for deflecting the incident beam along a "scan" path to "scan a surface of the workpiece" being inspected. During prosecution of the '701 patent, the inventors distinguished their invention from the prior art in an attempt to traverse an earlier rejection by the examiner under Section 103(a). (D.I. 627 at '701 Patent Prosecution File History, Applicants' Response to Office Action mailed Mar. 4, 1996 at 1-4.) The inventors argued that their invention uses an "acousto-optical deflector" to provide "a narrow subscan" and "teaches a single scan over each area of the wafer" to maximize "high spatial resolution, complete coverage of the workpiece surface, and high throughput …." (Id.)

The examiner was not persuaded by these arguments and again rejected the applicants' claims under Section 103(a), stating that "the rejected claims call for scanning systems with a main scan and a smaller subscan; this is taught by Yoshii et al." (Id. at '701 Patent Prosecution File History, Final Office Action mailed Oct. 23, 1996 at 3-4, PP 4-5.) The examiner then restated that the prior art does not teach adjusting the speed of the scanning system and does not teach the use of a plurality of collectors to collect both forwardly and backwardly scattered light. (Id. at 3-5, PP 4, 6.) Subsequently, the applicants amended their application consistent with the examiner's remarks to include, in claim 1, a light channel detector and a dark channel collector, and in claim 22 a "means for varying the speed of rotating the workpiece … during a scan" to maintain a constant scan speed. (Id. at '701 Patent Prosecution File History, Amendment After Final dated Jan. 20, 1997 at 1-2.) The applicants' did not readdress the examiner's remark that their invention employs a main scan and a smaller subscan. (Id.)

Having defined "scanner" in the specification of the '701, '525, and '259 patents and having evidenced a clear disavowal of
claim scope through argument in attempt to traverse the prior art during prosecution of the '701 patent, the applicants have limited the possible construction of "scan," and "scanner," and the permutation "scanning," as found in the claims of the '525 patent. See Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 979-80 (holding that arguments made during prosecution of an earlier patent application are accorded the same weight as amendments and, therefore, applicant's arguments to distinguish prior art relinquished a proposed construction of the claim). Accordingly, the Court construes (1) "scan" to mean deflecting the beam of P-polarized light along a relatively narrow scan path, (2) "scanner" to mean a component or combination of components employing a deflector such as an acousto-optical deflector for directing the beam of P-polarized light along a relatively narrow scan path, and (3) "scan a surface of the workpiece" to mean the surface of the workpiece is inspected by deflecting the beam of P-polarized light along a relatively narrow scan path. The phrase is broad enough to encompass relative motion of the workpiece during a scan.

The magistrate judge had construed the phrase "scanning the surface of the workpiece," as used in the '525 patent, to mean that "the entire surface of the workpiece is inspected through relative motion of the incident beam of P-polarized light and/or the workpiece being inspected. The phrase is broad enough to encompass rotation and translation of the workpiece during scanning." ADE Corp., 220 F. Supp. 2d at 312-13.

Pursuant to the Court's de novo review of this phrase, the magistrate judge's construction of "scanning the surface of the workpiece," is modified to be consistent with the foregoing analysis of "scan," "scanner," and "scan a surface of the workpiece." As used in the '525 patent, "scanning the surface of the workpiece" means the entire surface of the workpiece is inspected along a relatively narrow scan path through relative motion of the incident beam of P-polarized light and/or the workpiece being inspected. As the magistrate concluded, the phrase is broad enough to encompass rotation and translation of the workpiece during scanning.

B. "Scanning Head"

"Scanning head" is found in claims 1 and 3 of the '486 patent and claims 1, 3, 4, 7, 8, 9, 11, 12, 13, and 14 in the '677 patent. Hysitron asserts that "scanning head" means "an assembly configured to cause the probe and sample to move relative to one another in three dimensions, including a back-and-forth scan in two dimensions." Joint Claim Construction Statement at 1. Hysitron's claim construction incorporates all actuator configurations known at the time of the invention. Hysitron's Markman Brief [Docket No. 145] at 28. MTS asserts that "scanning head" means "an actuator with a probe mounted thereon which moves in the x, y, and z directions to engage the surface of a sample during scanning, or a sample holder which incorporates an actuator which moves the sample in the x, y, and z directions during scanning." Joint Claim Construction Statement at 7. MTS's claim construction requires a scanning head to be a unitary device able to scan in the x, y, and z directions. MTS's Markman Brief [Docket No. 148] at 14.

MTS argues that the claims and specification make clear that "scanning head" is a single unit because the claim language consistently refers to "scanning head" in the singular. In the disputed claims, "scanning head" is preceded by the singular articles "a" and "the." '486 patent, col. 15:27; '677 patent, cols. 15:23, 15:41, 15:56, 16:5, 16:8, 16:19, 16:21, 16:23, 16:26. "A" and "the" also precede "scanning head" throughout the specification. See '486 patent, cols. 12:23-28, 14:42-50. Additionally, MTS emphasizes that the "patentee's remarks about the heart of the invention underscore this reading: 'the key to operation of patentee's invention is that a scanned probe microscope apparatus incorporates a probe in a scanning head arranged for operative engagement of a surface of a sample or measuring a surface topography thereof.'" MTS's Markman Br. at 17 (quoting '486 patent, col. 14:47-51). MCTS contends that these references demonstrate unambiguously that a "scanning head" is a unitary device.

The Court disagrees that the use of "a" and "the" remove ambiguity from the definition. If, as Hysitron contends, a "scanning head" is an assembly of parts the assembly is a collective noun making appropriate the use of the singular article. Additionally, the language MTS cites from the specification implies multiple parts to a scanning head. If an SPM "incorporates a probe in a scanning head arranged for operative engagement," it necessarily requires multiple parts to be "arranged." While the arrangement could exist between a probe and a unitary scanning head, the arrangement also could exist between a probe and multiple elements of a scanning head. For these reasons, the patentee's use of "a" and "the" is not dispositive of the issue.
MTS also argues that none of the figures in the specification show or suggest that a "scanning head" could be composed of multiple components. Because each of the figures contains a box, or single device, labeled "scanning head," MTS asserts a "scanning head" is a unitary device. This interpretation ignores the limiting language in the specification that: "[a] scanning head (a piezo actuated head in the illustrated embodiment). . . . " '486 patent, col. 12:24-25 (emphasis added). This qualifying language clearly implies that the patent anticipates other types of scanning heads and that the figures in the specification were not intended to represent the only type of scanning head that could be employed. Moreover, a patentee "is not required to describe in the specification every conceivable and possible future embodiment of his invention." Rexnord Corp., 274 F.3d at 1344. The figures in the specification do not limit the term "scanning head" in the patent to a unitary device.

Hysitron argues that the independent claims that define "scanning head" are in Jepson form. Jepson form is used when a claim covers an improvement to the known art and requires:

(1) A preamble comprising a general description of all the elements or steps of the claimed combination which are conventional or known,

(2) a phrase such as "wherein the improvement comprises," and

(3) those elements, steps and/or relationships which constitute that portion of the claimed combination which the applicant considers as the new or improved portion.

37 C.F.R. § 1.75(e); see also Dow Chem. Co. v. Sumitomo Chem. Co., 257 F.3d 1364, 1368 (Fed. Cir. 2001). The parties agree that the claims are in Jepson form, but disagree whether elements recited in the preamble encompass all known embodiments of prior art or merely well-known embodiments.

In support of its argument that elements recited in the preamble encompass all known embodiments of the prior art, Hysitron cites Zoran Corp. v. Mediatek, Inc., No. 04-04609, 2005 U.S. Dist. LEXIS 34454, at *32-35 (N.D. Cal. Sept. 9, 2005). Zoran involved patents dealing with an improved CD-ROM drive. Id. at *4. The defendants advanced a claim construction based on the contention that only one type of circuitry was known in the art. Id. at *32. The court rejected the argument for multiple reasons but central to its analysis was the plaintiffs' presentation of evidence that other types of circuitry were known by one skilled in the art at the time of the patent's filing. Id. at *33. While not binding on this Court, Zoran is persuasive support for Hysitron's construction.

MTS counters that Jepson format limits the scope of an invention to "well known" embodiments of the prior art and, in support, cites Dow Chemical. There, the court stated that "the claimed process is written in Jepson format, and describes certain conditions as an improvement over a well known process." 257 F.3d at 1381. MTS's position is that limiting the scope to well known embodiments is the logical corollary to the requirement that claims be construed according to their "ordinary and accustomed meaning as understood by one of ordinary skill in the art." See id. at 1373. MTS submits the testimony of an expert, Dr. Dawn Bonnell who opines that the standard and well known configuration of a scanning head at the time of the patent application consisted of a unitary device. Pearson Aff. [Docket No. 150], Ex. 7 (Bonnell Decl.) P 11. Dr. Bonnell also admits that at the time of the patent application devices existed that had separate x-y and z controls but states that they were not commonly used. Id. PP 24, 25. One such device is disclosed in the declaration of Hysitron's expert, Dr. Richard J. Colton. Graham Decl. Ex. 3 (Colton Decl.) P 21 (citing D. Sarid, D. Iams, V. Weissenberger & L.S. Bell, "Compact scanning-force microscope using laser diode," Optical Letters 13(12) at 1057-59 (1988)).

The Court finds that when the Jepson form is used, the scope of an invention includes all known embodiments of the art. Thirty-seven C.F.R. § 1.75(e)(1) requires that an independent claim contain a preamble that sets forth a general description of "all the elements or steps of the claimed combination which are conventional or known." The regulation establishes clear that prior art is not confined only to those elements that are "conventional" or well-known but rather extends to "all" elements. This interpretation best effectuates the purpose of the Jepson form, which is to provide a clear and consistent vehicle for an improvement on prior art. For this reason, the Jepson form of the patents supports Hysitron's definition of "scanning head." 4
Even under the "well-known" standard suggested by MTS, Hysitron's interpretation could hold force. There has been little analysis of what constitutes "well-known" among people of ordinary skill in the art. Dr. Bonnell's opinion that the existence of a few "one-off" devices that used a multiple actuator scanning head did not rise to the level of well-known is merely that—one opinion. And that opinion is contradicted by the opinion of Dr. Colton. When, exactly, scientific knowledge and use has adequately entered the Zeitgeist of the scientific community to rise to the level of "well-known" is not a question this Court can answer.

Finally, the prosecution history supports Hysitron's claim construction. The Patent and Trademark Office ("PTO") rejected the initial application, serial number 327,979 (the '979 application"), for this patent. The Examiner initially found uncertainty as to whether the "3-D piezo actuator" in the '979 application was the same device as the "scanning head." Graham Decl., Ex. 11 ('979 application) at 15. The patentee changed the specification to the current form to address that "other types of scanning heads are contemplated while still remaining within the scope of the present invention." Id. This amendment clearly indicates the patentee intended that multiple types of scanning heads be included within the scope of the patent. Therefore, based on the intrinsic evidence and the prosecution history, the Court construes "scanning head" to mean "an assembly configured to cause the probe and sample to move relative to one another in three dimensions, including a back-and-forth scan in two dimensions."

D. "scattered from the surface of the workpiece" 27

27 The phrase "scattered from the surface of the workpiece" is used in claims 1, 21, 25, 29, and 30 of the '259 patent.

1. ADE's Position

ADE argues that "this simply-worded term requires no further interpretation. The phrase simply means what it says: 'light scattered from the surface of the workpiece.'" (D.I. 613 at 17.) ADE goes on to assert that KLA's proposed construction is in error for importing awkward limitations into the phrase "concerning (1) the placement of the workpiece; (2) the relative timing of when light is collected vis-a-vis when the workpiece is present; and (3) the placement of collectors as set forth in the preferred embodiment." (Id.)

2. KLA's Position

KLA argues that the phrase "scattered from the surface of the workpiece" should be construed to mean that "the workpiece is present in the inspection system, with light scattered therefrom while the collectors are configured in the manner recited." (D.I. 594 at 17.) KLA asserts that when the specification is read in its entirety, the workpiece must be present in the inspection system during a scan and there is no basis "for collecting light while the workpiece is not in the inspection station." (Id. at 18.)

3. Analysis

The Court agrees with ADE. The phrase does not naturally carry such limitations nor are such limitations mandated by the intrinsic record. The Court, therefore, will not read limitations into the construction of this claim language. See Tate Access Floors, Inc. v. Maxcess Techs, 222 F.3d 958, 966 ("It is improper to read limitation [explicit or implicit] from the written description into a claim."). The Court construes "scattered" to mean diffused or dispersed and the phrase "scattered from the surface of the workpiece" to mean diffused or dispersed from the surface of the workpiece. MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 1042 (10th ed. 2002).
III.

During trial, the district court defined "score line"—the corresponding structure of the means-plus-function limitation in claim 1 of the '904 patent. The district court defined the term largely in response to Enpath's cross-examination of Pressure Products' witnesses. Enpath's cross examination strategy revealed a dispute over the trial court's definition of the term "score line" in its Markman order. While recognizing the potential for surprise and prejudice in a late adjustment to the meaning of claim terms, this court also acknowledges that the trial court is in the best position to prevent gamesmanship and unfair advantage during trial. Moreover, this court understands that a trial judge may learn more about the technology during the trial that necessitates some clarification of claim terms before the jury deliberates. Indeed, before the district court defined "score line," it acknowledged that it was in a better position than the magistrate judge at the Markman hearing to understand the operation of the sheath due to extensive expert testimony from both parties.

Enpath posits that the trial judge's late adjustment prejudiced its defense and compromised its ability to respond. While somewhat sympathetic to those concerns in general, this court is not prepared to substitute its judgment for that of the district judge, who understood the entire context far beyond the limitations of the written record on review in this proceeding. Moreover, the district court made the adjustment early enough in the trial to give Enpath an opportunity to consider the new construction and adjust its arguments to account for the change. Thus, this court does not consider the trial court's supplemental definition of a claim term during trial to present a fundamental procedural flaw that jeopardizes the jury's verdict. As this court has recognized, "District courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves." Pfizer, Inc. v. Teva Pharms., USA, Inc., 429 F.3d 1364, 1377 (Fed. Cir. 2005); see also Utah Med. Prods., Inc. v. Graphic Controls Corp., 350 F.3d 1376, 1381-82 (Fed. Cir. 2003) (holding that the district court did not err in amending its claim construction during oral arguments for pretrial motions nearly two years after the original construction). Moreover, "w when the parties raise an actual dispute regarding the proper scope of these claims, the court, not the jury, must resolve that dispute." O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., 521 F.3d 1351, 1360 (Fed. Cir. 2008).

Although originally agreeing with the district court's decision to supplement its definition of "score line," Enpath now contends that the district court erred by relying on O2 Micro for its decision. According to Enpath, "the district court was in no way faced with the jury interpreting the 'means for permitting removal' or 'score line' limitations because the magistrate judge had already construed those terms." Enpath cites to a non-binding district court decision distinguishing O2 Micro, as well as Broadcom Corp. v. Qualcomm Inc., 543 F.3d 683, 694 (Fed. Cir. 2008). In both cases, the district court declined to supplement the definition of claim terms that had already been construed in earlier claim construction orders.

In this case, the magistrate judge defined "score line" as "one or more line(s) defined in the hemostatic valve and introducer sheath" in the context of dependent claims 4 through 8 of the '904 patent. The words "score line" do not appear in independent claim 1 of the Lee patents. Instead, that independent claim includes a means-plus-function limitation "means for permitting removal" (i.e., "score lines defined in the hemostatic valve and introducer sheath, and equivalents thereof")). The magistrate judge then determined that the structure in the specification that corresponded to this functional limitation was a score line. The magistrate judge did not define "score line" in the context of the structure corresponding to independent claim 1 of the Lee patents. Without a definition of "score line" in the Markman order for that corresponding structure, the trial judge observed that the trial proceedings invited the jury to define this term on its own in a manner this court has questioned in O2 Micro, 521 F.3d at 1360, and Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996) (holding that claim construction is a matter of law for the court). Therefore, the trial court undertook to supplement the Markman order by clarifying the meaning of "score line."
The trial court erroneously used structures from the prior art references listed in the patent to provide a definition for "score line." In the context of the corresponding structure to independent claim 1 of the Lee patents, the trial court erred in expanding the definition of "score line" to include structures not disclosed in the specifications of the Lee patents. Section 112 requires that the corresponding structure must be "described in the specification." The Lee patents give a laundry list of prior art references. See '904 patent col.1 ll.41-61; '355 patent col.1 ll.45-63. The trial court included the structures disclosed within that list of prior art references as corresponding structures for claim 1 by including them in its definition of "score line." In doing so, the trial court impermissibly expanded the corresponding structure of claim 1 to include structures not described in the specification.

Trial courts cannot look to the prior art, identified by nothing more than its title and citation in a patent, to provide corresponding structure for a means-plus-function limitation. In this case, these references provide alternatives to scoring. Although many of the disclosed alternatives may well be determined to be structural equivalents permitted by section 112, paragraph 6--a question of fact for the jury--these alternative methods of splitting or peeling cannot be treated as the disclosed structures for the removal means. Simply mentioning prior art references in a patent does not suffice as a specification description to give the patentee outright claim to all of the structures disclosed in those references.

In Atmel Corp. v. Info. Storage Devices, Inc., 198 F.3d 1374, 1381 (Fed. Cir. 1999), this court refused to utilize the concept of incorporation by reference to include a structure in the prior art as a corresponding structure for a means-plus-function claim element. In Atmel, this court held that the title of a prior art reference could provide the structure for a mean-plus-function element because "Atmel's expert, Callahan, testified that this title alone was sufficient to indicate to one skilled in the art the precise structure of the means recited in the specification." Id. at 1382. His testimony was essentially unrebutted. Id. If, on the other hand, the title did not disclose the prior art structure, the structures in the prior art reference could not be a corresponding structure to the means-plus-function claim element. Id. (holding that "the district court properly held that the Dickson article [prior art cited in the patent] may not take the place of structure that does not appear in the specification").

The magistrate judge construed "score line" consistent with the specification as "one or more lines defined in the hemostatic valve and introducer sheath." The magistrate judge, citing a dictionary, explained that "'score' has been defined to mean 'any scratch, line or groove' that is formed by the scoring process." The trial court went on to supplement the magistrate's construction and defined "score lines," the structure for permitting removal, as "linear perforation; slit; slot; tab; line; severing; weakening; or tear that can be partial or complete."

Pressure Products argues that the trial court correctly construed the term "score lines" according to the doctrine of claim differentiation. Claim 1 claims "means for permitting removal of said hemostatic valve and introducer sheath." Claims 4 through 8 of the '904 patent claim "a score line defined in said hemostatic valve and introduce sheath" as the means for permitting removal. As such, Pressure Products argues that the means-plus-function element of claim 1 must encompass structures other than score lines, namely, those structures disclosed in the prior art references mentioned in the patent. This argument fails, however, because a means-plus-function claim element already includes structures other than the corresponding structure explicitly described in the specification, namely, equivalents of the corresponding structure. See 35 U.S.C. § 112, P 6. Therefore, as the means-plus-function claim element of claim 1 includes the equivalents of score lines, the magistrate judge's claim construction does not violate the doctrine of claim differentiation.

The specification does not expressly describe use of a cut or a slit or a tear for removal. The specification explains, "[t]he score line comprises a pair of lines defined in the hemostatic valve and introducer sheath. The pair of score lines are diametrically opposed from each other on the hemostatic valve and introducer sheath." '904 patent col.3 ll.14-18. The patent further explains, "score lines 34 and 36 are shown as having a V-shaped cross section but have such a shape and depth as to permit the entire length of introducer sheath 10 to be manually separated." Id. col.6 ll.7-10. The specification recognizes a difference between score lines and slots. Id. col.6 ll.28-32 ("However, it is entirely possible that score lines 34 and 36 will be continued through flanges 38 and 40 to provide deep scores instead of open slots 44 and 46." (emphasis added)).

The trial court erroneously used structures from the prior art references listed in the patent to provide a definition for score
lines encompassing structures not disclosed expressly in the patent specification. As such, this court detects error in the trial
court's definition. Score lines are "one or more lines defined in the hemostatic valve and introducer sheath" as supported by
the specification. This court remands for further proceedings in light of the proper construction of the term "score lines."
Those further proceedings will allow appropriate measures to also ascertain the structural equivalents of the express structure
in the specification corresponding to the claimed function.

3463

D. "Scraping Edges" as used in Claims 730:6 and 416:1, 5, 6, 8, 10, 16, and 22

Alden's asserted construction is "the edges formed at the tip of a bit by the longitudinal scraping surfaces and relief surfaces,
which edges dig into and engage the damaged screw upon rotation in the extracting direction so that there is a unitary
rotation of the bit and screw in the extraction direction." Alden Br. at 6. Eazypower agrees with the first phrase ending in
"relief surfaces," but would omit the remainder of Alden's construction.

1. Claim Language

a. Claim 730:6

This claim reads exactly the same as claim 416:6, set forth above, except that claim 730:6 refers to "a pair of longitudinal
recesses," as opposed to "a plurality of longitudinal recesses." DX A, col 4, lns 37-54. The relevant language is "having a
scraping edge" and "the scraping edges engaging the end surface of the fastener at the margin of the cross slot." DX A, col
4, lns 49, 52-54. This claim language supports including in the claim construction a reference to "engaging" the fastener, but
no more.

b. Claim 416:1

The full text of this claim is set forth above. The relevant language is "scraping edge." DX B, col 3, lns 57, 50, 61-62. This
claim does not describe the function of the scraping edges.

c. Claim 416:5

The full text of this claim is set forth above. The relevant language is "scraping edge," but the claim also describes
"engaging the head [of the damaged fastener] with the tip end with the scraping edges engaging the end surface of the
fastener" and "rotating the bit in a counter-clockwise direction." The language of the claim supports Alden's construction.

d. Claim 416:6

The full text of this claim is set forth above. It reads the same in all material respects as claim 730:6.

e. Claim 416:8

The full text of this claim is set forth above. The relevant language is "scraping edge," but the claim also states that it is a
"tool for removing damaged screws." DX B, col 4; lns 58, 65-66; col 5, lns 2-3. This claim language provides some support
to Alden's construction in that it makes clear that the tool is to be used to remove a damaged screw, but does not specify the
function of the scraping edges explicitly.

f. Claim 416:10

This claim states, in full:

A tool for removing damaged screws comprising: a bit having an axis of rotation extending between a tip end and rear
end, the rear end being formed with a cross-section adapted for installation in and rotation by a chuck of a reversible drill,
the tip end having a plurality of longitudinal recesses uniformly disposed about the tip end, each recess bordered by a
scraping surface facing in the counter-clockwise direction of rotation, the scraping surface being formed with a distal
scraping edge, each of the scraping edges being disposed at a scraping edge acute angle relative to the axis of the bit, and a
support portion behind each scraping edge, the support portions each defined by a relief surface leading away form the
scraping edge to a rearward edge bordering one of the longitudinal recesses, the rearward edge being disposed at an angle
relative to the axis of the bit more acute than the scraping edge acute angle.

DX B, col 5, lns 8-23. There are no material differences between this claim and claim 416:8.

g. Claim 416:16

The full text of the claim is:

A tool for removing damaged screws comprising:

a. a bit having an axis of rotation extending between a tip end and a rear end,

b. the rear end being formed with a cross-section adapted for installation in and rotation by a chuck of a reversible drill,

c. the tip end having a plurality of longitudinal recesses uniformly disposed about the tip end, each recess bordered by a
scraping surface facing in the counter-clockwise direction of rotation,

d. the scraping surface being formed with an associated scraping edge at the tip end of the bit,

e. the associated scraping edge when viewed perpendicular to the axis being disposed at a first acute angle relative to the
axis,

f. a support portion being located behind the associated scraping edge in the direction of rotation, the support portion
being defined by a relief surface loading away from the associated scraping edge to a rearward edge,

g. the rearward edge when viewed perpendicular to the axis being disposed at a second acute angle relative to the axis, the
second acute angle being more acute than the first acute angle.

DX B, col 5, lns 36-57; col 6, lns 1-2. There are no material differences between this claim and claim 416:8.

h. Claim 416:22

This claim is nearly identical to claim 416:16. The differences are not material to the term "scraping edge."

2. Specification

The Abstract to the '416 patent states that the scraping edge "dig[s] into the metal of a deformed screw at points removed
from the axis to get a good purchase on the screw." DX B (cover page). Identical language is found in the Abstract to the
'730 patent. DX A (cover page).

The Detailed Description of Embodiments in the '730 patent states that the edges perform a "digging function," "engage and
effectively scrape . . and rotate the screw out of its hole," and are structured to assure "a firm purchase of the fastener by the
Similar language is found in the '416 patent. See, e.g., DX B col 2, lns 45-50.

3. Construction

Alden argues that the function-related language is necessary to distinguish the cutting edges used in the Richards patent.
Eazypower points the Court to Schwing GMBH v. Putzmeister, which held: "Where a claim uses clear structural language,
it is generally improper to interpret it as having functional requirements." 305 F.3d 1318, 1324 (Fed. Cir. 2002). See also
Toro Co. v. White Consol. Indus., 266 F.3d 1367, 1371 (Fed. Cir. 2001) ("An invention claimed in purely structural terms
generally resists functional limitation.").

In Schwing, the Federal Circuit noted, in reaching its decision, that nothing in the claim language or the specification
required the structural component at issue to serve any particular function. 305 F.3d at 1323. Here, several claims explicitly state that the scraping edges engage the head of the damaged fastener. The Abstract section of the specification says the same, notes digging, and implies rotation, as does the Detailed Description of Embodiments. Therefore, the Court accepts Alden's proposed construction in part, and construes "scraping edges" to mean "the edges formed at the tip of a bit by the longitudinal scraping surfaces and relief surfaces, which edges dig into and engage the damaged fastener upon rotation." This construction is consistent with the claim language and alleviates Alden's concern that the scraping edges could be confused with cutting edges.

**3464**

1. "Screen Plate" is an Assembly of a Screening Medium and a Backing Plate

The Court shall first construe "screen plate," which is found in independent claim 10, and dependent claims 11, 13-17, 32-36, 39. 6 J&L proposes that the term "screen plate" (as well as "screen cylinder," which it asserts is synonymous within the patent) should be construed to mean "an assembly of a screening medium and a backing plate." J&L's Mem. in Supp. of Mot. for Claim Construction (Dkt. No. 45-2) ("J&L's Construction Mem.") at 21. AFT proposes that "screen plate" should be construed to mean "a perforated plate utilized on many designs of pulp screening equipment that impedes pulp flow and is instrumental in causing a separation between suspended particles on the basis of their size, shape, and/or flexibility." Opp'n Construction Mot. at 11. AFT, moreover, seeks to construe "screen plate" as synonymous with "screening plate" and "screen cylinder" as synonymous with "screening cylinder." Tr. (Dkt. No. 106) at 49. As to this term, the Court adopts J&L's construction, which is consistent with the claim terms and specification of the '940 patent and has not been disavowed; additionally, the Court rejects AFT's contention that "screen plate" and "screening plate" are synonymous terms and adopts J&L's construction which equates "screening plate" with "screening medium," see Tr. (Dkt. No. 106) at 21.

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6 A claim in dependent form incorporates by reference all limitations of the claim to which it refers but must recite a further limitation of the subject matter claimed. 35 U.S.C. § 112.

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - - -

a. A "Screen Plate" is an Assembly

The claims and specification leave no uncertainty that the term "screen plate" describes an assembly comprising a "screening medium" and a "backing plate." Any construction that does not include this essential feature is contrary to the intrinsic evidence and must be rejected.

Claim 10 describes "[a] screen plate . . . comprising: a screening medium . . . and a structural backing plate . . . ." '940 patent, col. 14, Lns. 13-19 (emphasis in original). The specification also requires a construction of "screen plate" that defines this term by reference to its assemblage character: "Screen plate 10 may be formed as a flat screen plate or a screen cylinder as illustrated and is comprised of two different layers, namely a screening layer/plate 12 and a backing layer plate 14." Id., Col. 7, Lns. 61-64. Each preferred embodiment of the present invention similarly notes the "screen plate" as comprising a screening medium and a backing plate. Finally, the specification explicitly identifies "the present invention" as "formed of two separate layers. The first layer comprises a screening plate . . . and the second layer comprises a backing plate." Id., Col. 2, Lns. 22-25.

The consistent description of "the present invention" as a screen plate comprising two layers, a screening layer and a backing plate makes clear that a "screen plate" must have these two layers. See, e.g., SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337, 1343 (Fed. Cir. 2001) (construing term to include feature characterized as "the present invention"); Honeywell Int'l, Inc. v. ITT Indus., Inc., 452 F.3d 1312, 1318 (Fed. Cir. 2006) (construing claim term to include a fuel filter because of multiple mentions in the written description of a fuel filter as "the present invention"). AFT's proposed construction leaves out this essential feature, focusing instead upon factors such as the type of equipment in which "screen plates" are used and the role they play in that equipment. AFT's construction does not comport with the intrinsic evidence. Thus, a "screen plate" is an assembly of a screening medium and a backing plate.
b. "Screen Plate" and "Screening Plate" are not Synonymous

The Court rejects AFT's assertion that the terms "screen plate" and "screening plate" are synonymous. Tr. (Dkt. No. 106) at 49. AFT's position is inconsistent with the language of the claims themselves and is contrary to the specification. The claims and specification require construing "screening plate" and "screening medium" as equivalents, and as a component part of a "screen plate."

The claim terms indicate that a "screen plate" (used in claim 10 and its dependent claims) is not equivalent to a "screening plate" (used in claim 18 and its dependent claims). Claim 10 describes a "screen plate . . . comprising: a screening medium . . . and a structural backing plate . . . ." '940 patent, Col. 14, Lns. 13-19 (emphasis in original). Claim 18 describes "a method of manufacturing a screen . . . said screen being formed of a screening plate and a backing plate . . . ." Id., Col. 15, Lns.13-15. To construe the terms consistently, the "screen plate" referred to in claim 10 must be equivalent to the "screen" that is the object of the method of manufacture described in claim 18. Claim 10's "screen plate" cannot be synonymous with claim 18's "screening plate," as this would mean that claim 18 describes a method of manufacturing a screen comprising a screening medium, a structural backing plate, and a backing plate. To avoid that construction, the Court finds that "screening plate" is not equivalent to "screen plate" but is equivalent to "screening medium."

The correctness of this construction is confirmed by reference to the specification and extrinsic evidence. Contrary to AFT's assertion that "screen plate" and "screening plate" are synonymous, the specification notes repeatedly that "according to the present invention, there is provided a method of manufacturing a screening plate for use in a screen plate . . . the screen plate being formed of a screening plate and a backing plate." See, e.g., id., Col. 6, Lns. 12-14, 24-26 (emphasis added). A "screening plate" is clearly a component part that, along with a backing plate, comprise a "screen plate." The term "screening plate" serves the same role and should be construed to describe the same object denoted by the term "screening medium" in the apparatus claims and described in the specification's preferred embodiments. See, e.g., id., Col. 5, Lns. 42-50; 58-65.

Plaintiff's own description of the '940 patent confirms this construction. In his Declaration, Robert Gooding, AFT's Vice President, states that the patent "is directed to screen plates and screen cylinders." Gooding Decl. (Dkt. No. 33-2) ¶ 8. AFT asserts that screen cylinders are a particular (cylindrically curved) type of the broader category of screen plates. See AFT's Mem. In Opp'n to J&L's Post-Claim Construction Hearing Brief (Dkt. No. 113) ("AFT's Post-Hearing Brief") at 18. Gooding states that the patent includes a screen cylinder, a type of screen plate, "formed of at least two pieces: a screening plate . . . and a backing plate." Gooding Decl. (Dkt. No. 33-2) ¶ 16. This description dovetails with claim 1, which claims a "screen cylinder comprising: a generally cylindrical screening medium . . . [and] backing plate." (Emphasis added). Gooding, in describing depictions of the '940 patent, refers to "screening medium" and "screening plate" as denoted by the same reference number (12). Id. ¶ 17. Finally, AFT's Opposition to J&L's Construction Motion acknowledges that "the recited claims provide additional structure for a 'screen plate.'" Dkt. No. 60 at 11. Based on the foregoing, the inescapable construction of "screen plate" as well as "screen cylinder" as used in the '940 patent is an assembly comprising a "screening medium," also referred to as a "screening plate" and a backing plate.

Lucks admits that the term "screen printing" has a well-known meaning in the art -- printing by silk screening. Lucks correctly points out, however, that the specification of the '394 patent sets forth a different meaning for "screen printing," and that the claim must be construed in accordance with the meaning set forth in the specification. See Vitronics Corp., 90 F.3d at 1582 ("Although words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history."). We conclude that the district court was correct in construing the claim not to be limited to conventional screen printing, but as including other conventional processes for printing on foodstuffs.

However, Kopykake argues that the prosecution history shows that Lucks disclaimed ink jet printing from coverage by the claims. Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2D (BNA) 1673, 1676 (Fed. Cir. 1995) ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed

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during prosecution.") (citations omitted). During prosecution of the '394 patent, the applicants distinguished several prior art references cited by the examiner by emphasizing that the references do not disclose "screen printing" pictorial images on foodstuffs. The prosecution history, however, was not concerned with the question of whether "screen printing" as used in claim 1 included ink jet methods of printing. For example, a prior art Swiss patent to Aschinger was distinguished because it involved the application of an image with a foil transfer process. From this, we conclude only that "screen printing" does not encompass a foil transfer process.

The applicants distinguished U.S. Patent No. 3,503,345 to Abrams because it allegedly did "not even disclose what his 'decorating means' are; much less disclosing [sic] that his decorating means are used for 'screen printing' . . . as claimed by applicants." (internal citations omitted). With regard to other cited references, U.S. Patent No. 919,736 to Loesch and U.S. Patent No. 2,895,832 to Bersey, the applicant argued that "neither . . . makes any disclosure of 'screen printing' . . . at all." From these statements we cannot conclude that the applicants disclaimed any particular claim construction.

Finally, the applicants' statements in the prosecution history distinguished the Abrams patent, U.S. Patent 3,537,406 to Ort, and U.S. Patent 3,198,109 to Dwyer by asserting that none of them "discloses or suggests the successive method steps of first screen printing a very thin, flexible free standing edible image and then using screen printing to print onto it an edible pictorial image." This statement, however, neither defined "screen printing" nor excluded a particular printing process from the definition of screen printing. As we said in York Products, Inc. v. Central Tractor Farm & Family Center, 99 F.3d 1568, 1575, 40 U.S.P.Q.2D (BNA) 1619, 1624 (Fed. Cir. 1996), "unless altering claim language to escape an examiner rejection, a patent applicant only limits claims during prosecution by clearly disavowing claim coverage."

Thus we conclude that "screen printing" includes, in the words of the specification, "any other conventional printing process and any other conventional means and methods" for applying pictorial images to foodstuffs. The question here is what were the "conventional printing processes" that were claimed as part of the invention. To discern the ordinary and customary meaning of "conventional" we may look to dictionary definitions of the word. Dictionaries, although a form of extrinsic evidence, may always be relied on by the court to determine the meaning of the claim terms "so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." Vitronics, 90 F.3d at 1584 n.6; see also Interactive Gift Express v. Compuserve, Inc., 231 F.3d 859, 866 n.1, 56 U.S.P.Q.2D (BNA) 1647, 1653 n.1 (Fed. Cir. 2000). Dictionary definitions of "conventional" include "according with, sanctioned by, conforming to, or based on convention, custom, or traditional usages or attitudes; established and sanctioned by general agreement and usage; lacking spontaneity, originality or individuality." Webster's Third New International Dictionary 498 (1968).

We must next determine which processes were conventional at the time of the invention. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 968, 34 U.S.P.Q.2D (BNA) 1321, 1335 (Fed. Cir. 1995) (en banc) ("The focus in construing disputed terms in claim language is not the subjective intent of the parties to the patent contract when they used a particular term. Rather the focus is on the objective test of what one of ordinary skill in the art at the time of the invention would have understood the term to mean."); aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996); Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1555, 42 U.S.P.Q.2D (BNA) 1737, 1742 (Fed. Cir. 1998) ("As a general rule, the construing court interprets words in a claim as one of skill in the art at the time of invention would understand them.") (abrogated on other grounds in Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 U.S.P.Q.2D (BNA) 1169, 1174 (Fed. Cir. 1998) (en banc)). While Lucks may be able to prove an earlier invention date than the date of its patent application, since it did not, we consider the meaning of the claim as of the date the invention was constructively reduced to practice -- the date the patent application was filed. Mahurkar v. C.R. Bard, Inc., 79 F.3d 1572, 1576-77, 38 U.S.P.Q.2D (BNA) 1288, 1290 (Fed. Cir. 1996). As we explained in Schering Corp. v. Amgen Inc., 222 F.3d 1347, 1352-54, 55 U.S.P.Q.2D (BNA) 1650, 1653-55 (Fed. Cir. 2000), when a claim term understood to have a narrow meaning when the application is filed later acquires a broader definition, the literal scope of the term is limited to what it was understood to mean at the time of filing.

Lucks, citing Hoechst Celanese Corp. v. BP Chemicals Ltd., 78 F.3d 1575, 1580-81, 38 U.S.P.Q.2D (BNA) 1126, 1130 (Fed. Cir.), cert. denied, 519 U.S. 911, 136 L. Ed. 2d 198, 117 S. Ct. 275 (1996), claims that screen printing itself was not a conventional process for printing on foodstuffs in 1986 and argues that a claim construction limiting "conventional printing processes" to processes for applying images to foodstuffs therefore is erroneous because it allegedly excludes the preferred embodiment of conventional screen printing. Lucks, however, cites no evidence to support its premise that screen printing was not conventional for printing on foodstuffs in 1986. Moreover, the patent specification states that "screen printing as used herein encompasses . . . conventional screen printing," ('394 patent, col. 1, l. 68 - col. 2, l. 1) thus clearly showing that conventional screen printing is covered.
The claims and the specification of the patent itself do not indicate what other printing processes one of ordinary skill in the art considered to be conventional for applying images to foodstuffs in October 1986. Although Lucks presented evidence that hundreds of thousands of ink jet printers were sold in 1985 and 1986, the evidence does not show that a single ink jet printer was used to print images on food at that time.

Lucks argues that the examiner's citation of U.S. Patent No. 4,548,825 (the "'825 patent"), which issued on October 22, 1985 and describes the use of ink jet printing to print letters on uncoated pharmaceutical tablets, demonstrates that the examiner understood step (d) of claim 1 to encompass ink jet printing. We disagree. The '825 patent was cited by the examiner as "art of interest." There is no discussion of the '825 patent in the prosecution history, and nothing in the record reveals why the examiner believed the '825 patent to be "of interest."

The '825 patent on its face does not indicate that ink jet printing was a conventional printing process for applying pictorial images to very thin, flat, flexible, edible, free standing base shapes in October 1986. The '825 patent states that "ink-jet systems are well known in the field of paper printing," '825 patent, col. 1, ll. 65-66, but the use of ink-jet printing for applying letters to tablets was considered novel and non-obvious. See 35 U.S.C. §§ 102, 103. Lucks presented no evidence that the invention described in the '825 patent was ever actually reduced to practice, commercially introduced, or became a commonly-used, well-known, or generally accepted method for printing images onto foodstuffs prior to October 1986. 1

--- Footnotes ---

1 Lucks also cites U.S. Patent No. 4,168,662 (the "'662 patent"), entitled "Videojet Ink for Printing of Food Products," which issued on September 25, 1979. The '662 patent claims an ink for use in ink jet printing on citrus fruits and other foodstuffs. As with the '825 patent, the '662 patent does not on its face show that ink jet printing was a commonly used printing process for printing on food in October 1986.

--- End Footnotes ---

Because the appellant has not shown that, from the point of view of one of ordinary skill in the art, ink jet printing was a conventional method of printing images on foodstuffs at the time the application for the '394 patent was filed, "screen printing" may not be construed to cover ink jet printing.

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Window screens, which allow air to move while barring insects, are not new inventions. And since there have been window screens, manufacturers have had a continuing interest in making them less visible. Andersen, a window screen manufacturer, assembled a team to design reduced visibility insect screens. During their search for the right material, the team members scoured the internet and came upon the TWP, Inc., website. TWP manufactures a variety of screen/mesh products, some of which it actually advertises as window screens.

Relevant to this case, TWP's website displayed a fine, highly transparent stainless steel mesh (referred to as "TWP"), offered for use as electromagnetic shielding. Members of the Andersen team obtained some of this material, and after painting it black, found it appeared nearly invisible when used as window screening. The idea of putting this fine screen mesh into a fenestration unit - a window or door frame - is the essence of the patent in suit.

Andersen attempted to patent its reduced visibility insect screen, but the Patent Examiner initially denied its application. The Examiner considered Andersen's claims obvious in light of the pre-existing TWP material, in combination with a Japanese patent disclosing darkening to make screening less visible. Andersen, thereafter, amended its application to include the limitation "in a fenestration unit that permits ventilation therethrough." With this modification, the U.S. Patent and Trademark Office issued Andersen U.S. Patent No. 6,880,612 ("'612 patent").

Andersen now seeks to prevent Pella and Gore from producing and marketing Pella's Vivid View insect screen, claiming it infringes the '612 patent. In particular, Andersen contends defendants' reduced visibility screen infringes independent claims 22 and 76, and dependant claims 12, 23-29, 55, 59, and 65. Exemplary independent Claim 76 recites:
An insect screening material in a frame removably attached to a fenestration unit that permits ventilation therethrough, having a reduced visibility, comprising a plurality of screen elements having a diameter of 0.007 inch or less, the screen elements having a tensile strength greater than 5500 psi, wherein the screening has a transmittance of light of at least .75 and a reflectance of light of .04 or less. 1

(Def's Ex. 1 at 34.) The Court has construed the term "insect screening" in accord with Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996), to mean "a mesh of thin linear elements permitting ventilation while excluding insects." (Claim Construction Order 3, July 7, 2006).

1 Independant claim 22 is nearly identical to claim 76, without the limitation "in a frame removably attached to" a fenestration unit.

The term "screening medium" appears in claims 1, 2-8, 10, 11, 13-16, 27-32, 36-37, and 39. J&L proposes that the term be construed in a non-industry specific manner as "a filtering medium for liquid-solid separation." Alternatively, if the Court finds that the '940 patent is limited to the pulp and paper industry, J&L proposes the construction: "a screening element made of a perforated metal plate." J&L Construction Mem. at 22. AFT proposes an industry-specific construction for "screening medium," where that industry is paper and pulp: "a barrier with openings or perforations for passing stock therethrough, which removes oversized, troublesome and unwanted particles from good fiber." Opp'n Construction Mot. at 12-14. The Court largely adopts AFT's construction.

The claims and the specification do not limit the terms of the patent in an industry-specific manner. AFT, however, unambiguously limited the patent's scope during its prosecution of the reissue. The claim terms do not limit the '940 patent to the paper and pulp industry. For example, while independent claim 10 asserts "[a] screen plate for screening pulp," '940 patent, Col. 14, Ln. 13 (emphasis added), no such limitation appears in independent claim 1. See also claim 18 (applying the limitation "for use in screening for pulp"). The fact that the limitation, "for screening pulp" appears in many claims but is absent in others, leads the Court to conclude that the claims themselves do not limit the invention to use in the paper and pulp industry. This conclusion is bolstered by the specification, which begins: "The present invention relates to screen plates, e.g. screen cylinders and flat screen plates, for use, for example, in the pulp and paper industry . . . ." '940 patent, Col. 1, Lns. 11-13 (emphasis added). As with the claims, the preferred embodiments described in the specification at times explicitly note that the embodiment is for use in screening pulp, see, e.g., id., Col., Lns. 35-37; id., Col. 4, Lns. 63-64; id., Col. 5, Lns. 58-60, and at other times express no such limitation, see, e.g., id., Col. 5, Lns. 42-48; id., Col. 6, Lns. 41-53. Giving the claims "their broadest reasonable construction" in light of the specification, see Phillips, 415 F.3d at 1316, the '940 patent does not appear limited to use in the paper and pulp industry.

As noted, however, prosecution disclaimer attaches where a patent applicant makes statements that unequivocally disavow the scope of the claims during the prosecution history providing competitors with notice of a narrowed scope of subject matter covered by the invention. Schwing, 305 F.3d at 1324-25. AFT made unmistakable statements during its prosecution of the '940 patent, specifically in response to the Patent Examiner's rejection of the patent as anticipated by the Gillespie. See O'Brien Decl., Ex. B, Parts 25, 29 (Dkt. No. 60-5). The Patent Examiner rejected the application despite his finding that "applicant's claimed invention is merely intended for use in a pulp process." O'Brien Decl., Ex. B, Part 25 (Dkt. No. 60-5). AFT's response to the rejection highlighted that finding, unmistakably denying that the scope of the claimed invention extended beyond pulp and paper. O'Brien Decl., Ex. B, Part 29 (Dkt. No. 60-5) at 20-24. AFT, for example, argued to the Examiner that "[c]learly, the invention recited in claim 1 [which does not explicitly note for use for screening pulp] is a screen cylinder used in the treatment of pulp." Id. at 21. In fact, AFT's entire argument distinguishing the claimed invention
as not anticipated by Gillespie emphasizes the former's limited application in the pulp treatment art and insists that the
Gillespie is neither directed toward, nor appropriate for, pulp fiber sorting. Id. The prosecution history, thus, evidences a
clear and unequivocal disavowal of coverage beyond the pulp treatment industry.

J&L's proposed construction of "screening medium" as "a filtering medium for liquid solid separation" is rejected. The
problem with this construction is that once the industry-specific context is embraced, "screening" takes on a specific
meaning, namely the separation of solid from solid, and is distinguished from "filtering," which involves liquid-solid
separation. J&L's own experts' testimony, a valuable source of extrinsic evidence, confirms this. See, e.g., Hutton Decl., Ex.
AFT never explicitly distinguished the '940 patent as not being a filter, nor distinguished the Gillespie as a filter, rather
than a screen. Nevertheless, while the Court is to construe the claim terms in the broadest way reasonable in the context of the
specification, the scope of that construction is always constrained by the meaning such terms would be given by one of
ordinary skill in the art. Phillips, 415 F.3d at 1316 (citing In re Am. Acad. of Sci. Tech. Ctr., 367 F.3d 1359, 1364 (Fed. Cir.
2004)). Here, the scope is constrained by the ordinary meaning the term "screening medium" is given in the pulp industry,
which, as noted by experts, is distinct from what is meant by "filtering." J&L's construction is, therefore, rejected.

In arguing to the Patent Examiner, AFT asserted that the claim terms have particular meanings in the pulp treatment art and
articulated those meanings by way of definitions supplied by the Handbook of Pulp and Paper Technology. O'Brien Decl.,
Ex. B, Part 29 (Dkt. No. 60-5). Using the Handbook, AFT adopted the following definitions:

SCREEN: Separation device utilizing some type of perforated barrier for removing unwanted material from stock[*] stream.

SCREENING: Process step involving passage of stock[*] through some form of perforated barrier to remove oversize, troubleshooting and unwanted particles from good fiber.

SCREEN PLATE: Perforated metal plate utilized on many designs of pulp screening equipment that impedes pulp flow and is instrumental in causing separation between suspended particles on the basis of their size, shape, and/or flexibility.

STOCK: A mixture of pulp and water with or without non-fibrous additives.

Id. at 21-22. AFT then "submit[ted] that this meaning of the term 'screen plate' in claim 1 is consistent with this meaning in
the art." Id. at 22. Curiously, in view of that statement, claim 1, in fact, does not contain the term "screen plate." Rather,
claim 1 refers to a screen cylinder, which, as noted, is a cylindrically shaped screen plate. The "screen cylinder" in claim 1,
as with all mentioned screen cylinders and screen plates in the '940 patent, is described as an assembly of a "screening
medium"— which the Court finds is synonymous with "screening plate"— and a "backing plate." The Court is thus left with
two options as to what AFT is referring to when it argues that the term "screen plate" in claim 1 is consistent with the
definition it argued to the Examiner: 1) "screen plate" in this argument may refer to the "screen cylinder" claimed in claim
one; or 2) "screen plate" in this argument may refer to the "screening medium" that is one of the two components of the
assembly that comprises the "screen cylinder."

The first option cannot be correct. A screen cylinder is a type of screen plate. '940 patent, Col. 1, Lns. 12-13. However, if the
screen cylinder referred to in claim 1 is construed as a "perforated metal plate . . . that impedes pulp flow and is instrumental
in causing separation between suspended particles on the basis of their size, shape, and/or flexibility" then that claim
actually results in an assembly of three elements, rather than the two that are clearly required by the claims and the
specification. That is, if the screen cylinder in claim 1 is defined as a "perforated metal plate . . . that impedes pulp flow and
is instrumental in causing separation between suspended particles on the basis of their size, shape, and/or flexibility," which
is itself comprised of a "barrier with openings or perforations for passing stock therethrough which removes oversized . . .
particles from good fiber" 7 and a backing plate, then this claim describes a three-part assembly that is unlike the two-part
assembly consistently and repeatedly described in the specification. See, e.g., '940 patent, Col. 2, Lns. 22-23 ("the present
invention provides a screen of two separate layers"). The resulting incongruence between claim 1, so construed, and the
specification would render claim 1 invalid under 35 U.S.C. § 112. See 35 U.S.C. § 112 (requiring a specification that "shall
contain a written description of the invention"). The same difficulty emerges if these constructions are applied to
independent claim 10.
7 AFT's construction of "screening medium." Opp'n Construction Mot. at 14.

If, however, the definition of "screen plate" argued by AFT to the Patent Examiner and submitted to the Examiner as being consistent with its (non)use in claim 1 are applied to the term "screening medium," a more coherent result obtains. This option assumes that, in this instance, AFT mistakenly refers to "screen plate" when in fact it means "screening plate," which is equivalent to screening medium. While applying this assumption results in a coherent claim construction, it does not evidence a clear intent to deviate from the ordinary meaning of screening medium nor rest upon "words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Teleflex, 299 F.3d at 1324. Relying upon such unclear prosecution history to define the term "screening medium" as metal perforated plate to that term, as J&L proposes, is inappropriate. See id.; Omega Eng'g, 334 F.3d at 1324.

A third option for construction of "screening medium" is available by reference to extrinsic material, namely the Handbook of Pulp and Paper Technology used by AFT during prosecution of the patent. It defines "screening" as a "process step involving passage of stock[*] through some form of perforated barrier to remove oversize, troublesome and unwanted particles from good fiber." Thus, "screening medium" is properly construed as the medium employed in this "process step," which is identified in the definition as a "perforated barrier." Unlike AFT's proposed construction, the Handbook does not provide for "openings" as well as "perforations" and the Court sees no reason to adopt this additional characteristic. Similarly, the definition does not limit the medium to metal, nor do the claim terms and specification, see, e.g., '940 patent, claim 21 (allowing for a ceramic screening medium); id., Col. 11, Lns. 63-65. Hence, J&L's construction, which requires the medium be metal is contrary to the description. Accordingly, a "screening medium" is a perforated barrier through which stock is passed to remove oversized, troublesome, and unwanted particles from good fiber.

A. "Blunt-nosed screw" and "screw"

The parties' primary claim construction dispute concerns the meaning of the terms "screw" and "blunt-nosed screw" as used in both the '248 and '588 patent. The parties agree that the term "screw" as used in these patents means a "blunt-nosed screw."

Claim 1 of the '248 patent is representative of the manner in which the disputed terms are used in the asserted patents. It reads, with the disputed terms in italics:

1. An apparatus for controlling movement of ice and/or snow along a predetermined area of a sloping surface, said surface including a plurality of spaced, longitudinal raised portions, said raised portions extending from an elevated portion of said surface to a lower portion thereof and each being laterally separated by a base portion, wherein said raised portions are positioned a greater distance above a reference plane than said base portions, said apparatus comprising:

   clamp means for detachably engaging one of said raised portions, said clamp means including a body having a longitudinal cavity for receiving said one raised portion and means for frictionally engaging an external surface of said one raised portion, said means for frictionally engaging comprising at least one blunt-nosed screw threadably interconnected to said body, said screw being extendable into said cavity to deform said external surface of said one raised portion, wherein a first of said clamp means is positionable on a first of said raised portions and a second of said clamp means is positionable on a second of said raised portions; and

   a cross-member interconnectable with said clamp means, wherein a first said cross-member extends between and is interconnected with said first and second clamp means above at least one of said base portions.

The parties agree that the ordinary and customary meaning of "blunt-nosed screw" to one skilled in the art at the time of the invention is a device with a blunted forward end, a shaft or cylinder with a continuous, spirally grooved thread and a tool.
member connection, such as a slot to accept a driving device. The parties also agree that a unitary structure having these elements is a "blunt-nosed screw." They do not agree, however, whether a "blunt-nosed screw" is limited to a unitary structure or whether, as CFE asserts and Contek disputes, it may also be comprised of several parts.

Neither party points to any intrinsic evidence that defines or addresses, directly or indirectly, whether the ordinary and customary meaning of a "blunt-nosed screw" to one skilled in the art of metal roofing encompasses a multi-piece device. Both parties instead rely on extrinsic evidence to support their arguments.

Webster's Third New International Dictionary provides several definitions of "screw" that are potentially relevant here. The first, relied upon in part by Contek, defines a "screw" as "a simple machine of the inclined plane type consisting of a spirally grooved solid cylinder and a correspondingly grooved hollow cylinder of equal dimensions in which the applied force acts in a spiral path along the grooves while the resisting force acts along the axis of the cylinder." Webster's Third New Int'l Dictionary of the English Language Unabridged 2040 (1993); see Merriam Webster's Collegiate Dictionary 1049 (10th ed. 1995) (reciting a similar definition relied upon by Contek). Other, related definitions describe a "screw" as "a cylinder with a helical cut groove on the outer surface . . . used variously (as to fasten, apply pressure, transmit motion, or make adjustments)," and "a cylindrical fastener that is usu. pointed, that has a head with a slot or recess, that is helically or spirally threaded, and that is designed for insertion into material by rotating." Webster's Third New Int'l Dictionary at 2040. While these definitions can be read as suggesting that a "screw" is a unitary structure consisting of a spirally grooved solid cylinder, none definitively addresses this issue.

Webster's Third New International Dictionary offers an alternate definition that more closely addresses this question. This definition states that the term "screw" includes "any of several devices consisting wholly or partly of a screw." Id. (emphasis added). Under this definition, therefore, the ordinary meaning of the term "screw" includes devices that encompass both a spirally grooved solid cylinder and shaft or additional features or components.

The only evidence in the record regarding the ordinary and customary meaning of the term "screw" in the field of metal roofing is found in the declaration of Robert M. Haddock, the inventor of the '248 and '588 patents. Mr. Haddock testifies there that he has 30 years of experience in the steel and metal construction trades, including more than 15 years in the field of metal roof design and fabrication. Pls.' Markman Br., Ex. 1 [hereinafter "Haddock Decl."] P 2. Based on this experience, Mr. Haddock declares that it is well-known in the field of metal roofing that fasteners such as screws come in many different shapes, sizes and configurations, including "threaded shaft-type fasteners that are comprised of multiple components, but are designed to function as a single unit." Id. P 8. Mr. Haddock states that such threaded shaft-type, multi-component fasteners are known as "screws" and gives several examples of such devices that are common in the metal building trade. Id.

Mr. Haddock's testimony is unrebuted. Contek contends it nonetheless should be disregarded based on Federal Circuit authority holding that inventor testimony regarding the meaning of patent claims is not entitled to special deference, see Markman, 52 F.3d at 983, and that inventor testimony is entitled to little or no consideration when it is "a self-service, after the fact attempt to state what should have been part of his or her patent application." Bell & Howell Document Mgmt. Prods. Co. v. Altek Sys., 132 F.3d 701, 706 (Fed. Cir. 1997). The testimony by Mr. Haddock relied on here does not fall within this authority because it describes the state of knowledge in the field of metal roofing at the time of the invention, rather than Mr. Haddock's intent and meaning in using the term "screw" in the asserted patents. In its most recent and comprehensive statement of evidence that district courts may properly rely upon in claim construction, the Federal Circuit specifically authorized consideration of extrinsic evidence, "including expert and inventor testimony," for the purpose of "establish[ing] that a particular term in the patent or prior art has a particular meaning in the pertinent field." Phillips, 415 F.3d at 1317, 1318. That is precisely the purpose of the inventor testimony cited here and thus it may be considered.

Contek also argues "screw" as used in the asserted patents must be construed to be a unitary structure because this construction is most consistent with the most common English usage of the term. This may be true, but the dictionary definition recited above as well as Mr. Haddock's testimony indicates that "screw" as used in the metal roofing field can also encompass multi-part fasteners that include a spirally grooved cylinder or shaft.

"[U]nless compelled otherwise, a court must give a claim term the full range of its ordinary meaning as understood by persons skilled in the relevant art." Riverwood Int'l, 324 F.3d at 1357; Rexnord, 274 F.3d at 1342. Before adopting the broadest definition of a term based on a dictionary definition or other extrinsic evidence, however, I must scrutinize the
Having reviewed the language of the claims, the specification of the asserted patents and relevant prosecutorial history, I find no indication that the term "screw" must be limited to the narrower definition of a unitary structure. The intrinsic record suggests that "blunt-nosed screw" simply means a fastener with spirally grooved shaft and rounded end that frictionally engages the roof seam. Nothing in this record indicates a concern with whether this fastener is made up of one or multiple parts. Based on this and the extrinsic evidence cited above, I hold that the term "blunt-nosed screw" and "screw" as used in the asserted patents is not limited to a unitary structure.

My reasoning and result here is similar to that of the Federal Circuit in Free Motion Fitness, Inc. v. Cybex International, Inc., 423 F.3d 1343 (Fed. Cir. 2005), an infringement action concerning a patent for an exercise apparatus comprising a resistance assembly, two adjustable extension arms that pivot on an axis substantially parallel to the axis of rotation of a pulley at the end of each arm, and a cable linking the resistance assembly to the arms. Id. at 1345. One of the issues on appeal was the proper construction of the term "adjacent" as used in claims describing the location of the resistance assembly of the exercise machine relative to the pivot point on each of its extension arms. Id. at 1345, 1349. The court observed that the intrinsic evidence did not define the term and that it had no specialized meaning in the relevant art. Id. at 1348. It next identified two definitions of "adjacent" in Webster's Third New International Dictionary that might apply, the first being "not distant" and the second being "relatively near and having nothing of the same kind intervening." n4 Id. at 1349. The court then returned to the intrinsic record and determined that nothing in it suggested a concern with intervening pivot points or excluding any intervening pivot points. Id. Accordingly, the court adopted the broader definition of "not distant" in construing the term "adjacent." Similarly, I find no concern in the asserted patents for a unitary as opposed to a multi-part screw and therefore also adopt the broader of the possible dictionary definitions of "screw" in finding that the term is not limited to a unitary structure. n5

--- Footnotes ---
n4 The choice between these definitions was material because the accused device had intervening pivot points. See id. at 1346, 1348-49.

n5 I am also guided by the Federal Circuit's decision in Riverwood International Corp. v. R.A. Jones & Co., 324 F.3d 1346 (Fed. Cir. 2003), in which the court considered whether the term "flight bars" was limited to a unitary structure or could include a plurality of pieces. The court found that the term, which was not defined in either the intrinsic or external evidence, was not limited to a unitary structure because "[n]othing in the claim language, specification, or prosecution history suggests that flight bars must be of unitary structure. The district court, consistent with our guidance that a claim term is to be given 'the full range of its ordinary meaning as understood by an artisan of ordinary skill' instructed the jury not to limit the term to the unitary structure found in the specification. We agree with that conclusion." Id. at 1358 (quoting Rexnord, 274 F.3d at 342).

--- End Footnotes ---

I caution the parties that this decision goes only to the construction of the disputed term "blunt-nosed screw" and in no way finds or suggests that Contek's accused device constitutes a multi-part "blunt-nosed screw" that infringes on CFE's patents. The question of infringement is for the finder of fact, which may well find that one or more of Contek's combinations of a spirally grooved cylinder and blunt-ended ball bearing, "circle-lok" and/or "sure grip pad" does not constitute a "blunt-nosed screw" because it has other functionality or perhaps for other reasons.

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A. Whether the TFN Helical Blade Is a Screw

Synthes contends that the TFN product does not practice claim 1, and other dependent claims, of the '663 patent because the Helical Blade inserted into the femoral head is not a "first screw for insertion." Synthes contends that the TFN does not practice claim 1 of the '406 patent, and other dependent claims, for the same reason. At the Markman hearing, Synthes
argued that the patent term "screw" should be confined only to those devices that are inserted into the object medium by a
torsional, or twisting, force. This definition would not apply to the Helical Blade, which is driven, or hammered, into place
in the femoral head. The court rejected that argument, however, concluding that it is the physical structure, rather than the
method of insertion, of a device that determines whether it is a "screw" claimed by the patents in suit. The patent phrase
"first screw" was interpreted to mean "a generally cylindrically-shaped simple machine of the inclined plane type, at least a
portion of which is threaded."

The Helical Blade of the TFN serves the function of engagement and support of the femoral head, which is also served by
the "first screw for insertion" in the asserted patents. It extends through the oblique opening in the proximal portion of the
intramedullary rod and up into the femoral head. (TX 1-4, 12). Rather than traditional screw threads that wind a nearly
horizontal spiral up the shaft of the screw, the Helical Blade possesses four threads, each of which is uniquely structured and
has a more vertical (steeper) pitch.

The top thread of the Helical Blade starts with no height at the tip of the device and gradually increases in height as it moves
from the tip to the distal end of the shaft. The taper of the top thread reduces the potential for cut-out because there is no
sharp edge directed toward the top of the femoral head. (TX 12, 91; Tr. 1205:7-17, 1604:3-6, 1477:10-1478:4). The two side
threads provide a horizontal, paddle-like surface to carry loading and resist cut-out. These two threads increase in thickness
as they approach the shaft of the device to aid in transferring loads to the shaft of the Helical Blade. (TX 12, 91; Tr. 1478:5-
24, 1604:6-17). The bottom thread of the Helical Blade has a uniform thickness and height along its length. It provides
additional surface area for engagement of bone in the head of the femur and contributes to the overall bending strength and
rotational stability of the Helical Blade. (TX 12-13, 91; Tr. 1478:25-1479:17, 1604:18-22). Unlike a traditional lag screw,
the zero-height top thread and the two side threads form a flat plane to receive loading, such that there are no sharp edges
against the loading force. This characteristic helps to prevent the device from cutting out of the femoral head in patients

Although Synthes has submitted credible evidence that the TFN Helical Blade constitutes an improvement over the
traditional lag screw included in the inventions sold under the patents in suit, the issue before the court is whether the TFN
Helical Blade qualifies categorically as a "screw" as claimed by the patents in suit. The physical structure of devices
actually sold under the patents does not limit the meaning of the claim language. See Uniroyal, Inc. v. Rudkin-Wiley Corp.,
837 F.2d 1044, 1057-58 (Fed. Cir. 1988) ("Adding features to an accused device will not result in noninfringement if all the
limitations in the claims, or equivalents thereof, are present in the accused device"). After careful consideration of all of the
evidence admitted at trial, the court concludes that the TFN Helical Blade is "a generally cylindrically-shaped simple
machine of the inclined plane type, at least a portion of which is threaded."

Synthes's primary argument directed at the claim language is that the Helical Blade is not a "simple machine of the inclined
plane type" because the pitch of the threads is such that it requires less force to drive the Helical Blade into the femoral head
than it would to rotate or twist it into the femoral head. Because a simple machine is a device used to make work easier by
providing a mechanical advantage, Synthes contends that the threads, or blades, are not configured so as to allow the Helical
Blade to function as a simple machine of the inclined plane type. (Tr. 1440:209).

Dr. Eric Gozna testified on behalf of Synthes that an inclined plane makes work easier by allowing an object to be moved a
given vertical distance using less force than would otherwise be necessary. (TX 85; Tr. 1440:10-1441:25). A screw is a
simple machine of the inclined plane type because the thread of a screw is an inclined plane wrapped around a cylindrical
shaft. (TX 85; Tr. 1442:17-1443:9). The pitch of a screw is the distance between the tips of the screw thread. The greater the
pitch, the steeper the inclined plane, and the less efficiently the device will work as a simple machine of the inclined plane
type. (TX 85; Tr. 1443:5-23). As a screw is inserted into a material (in this case, bone), the object material "rides up" the
inclined plane, e.g., the screw thread. The shape of the inclined plane (screw thread) is capable of converting a torsional (or
"horizontal") input force into an axial (or "vertical") force advancing the screw into the material. (TX 85; Tr. 1441:1-22). As
the thread pitch is increased (i.e., as the inclined plane gets steeper), the mechanical advantage of applying a torsional force
diminishes, until it requires less force to advance the screw using a vertical ("driving") force than using a horizontal
("twisting") force. (TX 85; Tr. 1444:23-1446:7).

Synthes's foregoing description of the manner in which a screw functions as a simple machine of the inclined plane type is
 accurate. The court cannot accept, however, the argument or testimony that a screw ceases to be a "simple machine of the
inclined plane type" when the screw threads obtain a steepness at which it is easier to drive the screw than to twist the
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

screw. Using the description offered by Synthes and accepted by the court, an inclined plane does not cease to be an inclined plane because its steepness results in a failure to achieve some predetermined level of efficiency. Offering a distinction between the respective forces required in driving and twisting a screw is a sophisticated way of making the argument that was rejected in the Markman hearing: that a "screw" is twisted into place and a "nail" is driven into place. The mechanical advantage provided by an inclined plane is measured by comparing the force parallel to the inclined plane with the purely vertical force required to overcome gravity. (See TX 85, Demo. 3-4) (emphasis added). Mechanical advantage is not measured, as Synthes contends, only by comparing a purely horizontal, or in the case of a screw, torsional, force to a purely vertical force.

The patent's definition of the term "screw" imposes no limitations on the manner or ease with which the screw must be inserted. (Markman Order at 14; Tr. 2984:7-2985:2, 2995:16-2996:19). Two of Synthes's experts conceded that they were unaware of any scientific literature, reference, or treatise to support their opinions that the fundamental point of distinction between a nail and a screw is whether the pitch of the threads makes it easier to hammer or twist into the object material. (Tr. 1231:3-14, 1510:25-1512:1). More importantly, the patents in suit appear to make no attempt to distinguish a "nail" from a "screw." 11 See, e.g., Phillips v. AWH Corp., 415 F.3d 1303, 1320 (Fed. Cir. 2005) (rejecting the "presumption" in favor of dictionary definitions announced in Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193 (Fed. Cir. 2002), as giving inadequate weight to the role of the specification in interpreting claim language). 12 If the term "screw" were meant specifically to disclaim similar prior art that employed a nail for insertion into the femoral head, Synthesis proffered distinction would be more persuasive. The evidence introduced at trial pertaining to "spiral nails" and "drive screws" shows, if anything, that the terms "screw" and "nail" may overlap, that they are not mutually exclusive. (See TX 42-43; Tr. 2996:20-2997:8, 3124:8-14). The question before the court is only whether the Helical Blade qualifies as a screw as defined in the '406 and '663 patents.

The Helical Blade qualifies as a "screw" as defined by the court and claimed by the patents in suit. An examination of the device clearly shows that it is "generally cylindrically shaped." (TX 12). The helical threads ease the insertion of the Helical Blade into the head of the femur and provide a mechanical advantage in retaining engagement of the femoral head when bone fragments are squeezed together. (Tr. 1239:25-1240:13, 1418:25-1419:5, 1498:13, 1498:25-1499:13). Thus, the TFN Helical Blade qualifies as "a generally cylindrically-shaped simple machine of the inclined plane type, at least a portion of which is threaded."

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a. Definition of Screw Holes

DePuy argues that the "plurality of screw holes" limitation of the 36 Patent can only mean "those holes that are capable of fixing or locking the head of a corresponding screw into the bone plate". Therefore, a plurality of such screw holes must mean more than one of these screws.

In the actual claims of the 36 Patent, the screw holes are defined as being "conical and transverse said plate between said
upper and lower surfaces such that the narrow end of the cone is towards the lower surface and said holes adapted to receive screws having conical heads of a predetermined cone angle, such that the plate will not slide down the heads of the screws." (Claim 2). Claim 9 describes a plurality of bone screws for attaching the plate of Claim 7 to the bone, and screw holes capable of receiving such screws. Finally, Claim 13 adds a bone plate assembly according to # 9 wherein said screws are of a length that permits engagement of the screw with only one side of the bone cortex. The Court can find no distinct meaning of the "plurality of screw holes" limitation from the language of the claims alone.

Since the claims themselves do not give a complete answer to the term "plurality of screw holes", the Court must now look to the written specifications of the 36 Patent. Synthes uses the terms "screw holes" in different ways throughout the specification. For example, it uses that term to describe prior art screw holes (Pl. Mem. in Opp., Ex. A, 36 Patent 3:40) 1. When discussing the proposed reduced contact plate, Synthes uses "screw holes" to define both locking screw holes and self-compressing screw holes. See (Pl. Mem. in Opp., Ex. C, Burstein Dep. Tr. 124:12-20) (Def. expert stated that he did not know of and could not imagine a compressing screw hole that is also a locking screw hole.) The varied use of the term throughout the specification suggests a broad definition of screw hole consistent with a meaning that encompasses all types of openings through which screws can be passed to attach the plate to the bone. See Johnson v. Worldwide Assoc., Inc. v. Zebo Corp., 175 F.3d 985, 991 (Fed. Cir. 1999) (Varied use of a disputed term in the written description demonstrates the breadth of the term rather than providing a limited definition).

The Defendant argues that it is only through the use of locking screw holes that the Synthes can accomplish its goal of reducing contact between the plate and bone. Synthes does in fact describe a locking screw hole as one manner by which contact can be reduced because it allows the use of short screws that only reach the front cortex of the bone. (Pl. Mem., Ex. A, 3:5-35). However, this is not the only embodiment of the invention that Synthes claims will achieve reduced contact. Alternative methods include the use of a long screw with a spherical or conical insert, and the use of self-compressing screw holes. (Pl. Mem, Ex. A, 3:59-4:15).

The prosecution history of the patent also favors a broad definition of the plurality of screw holes limitation. Synthes points out that during prosecution of the 36 Patent, the examiners rejected several claims related to the plurality of screw holes limitation as being anticipated by earlier patents. Pl. Mem., Ex. D, page 2. (Treace and Kummer patents disclose plurality of screw holes). The Kummer patent discloses a plurality of 'conventional metallic bone' screws that secure the bone plate to the bone. Pl. Mem., Ex. E, 3:10-15. This Court agrees with Synthes's position that examiner did not view the "plurality of bone screws" as referring only to locking screw holes, an interpretation that DePuy encourages.

The Court concludes that a "plurality of screw holes" as disclosed in the 36 Patent is entitled to a broad interpretation, a meaning that encompasses all types of openings through which screws can be passed to attach a plate to the bone. In Claim 2, the screw holes are further defined as to be locking and conical. In Claim 4, at least one screw hole has the additional limitation of being self-compressing. Therefore, the Court can not accept a definition of screws holes that refers only to locking screws.

Sunon asserts that the use of the word "means" creates a presumption that section 112, ¶6 applies, and that the function of the "scroll plate means" is "to surround the impeller means." (R. 96-1, Defs.' Claim Constr. Br. at 12.) The word "surrounding," however, does not specify a function. Rather, the word "surrounding" refers to a structural relationship between the fan housing, the fan blades, and the hub. Further, the term "scroll plate means" recites structure, i.e., the scroll...
plate (the fan housing). Cole, 102 F.3d at 531; Pirelli Cable, 988 F. Supp. at 434. Because there is no corresponding function for the "means," section 112, P6 does not apply to the "scroll plate means" term. Rodime, 174 F.3d at 1302; Sage Prods., 126 F.3d at 1427; York Prods., 99 F.3d at 1574.

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Defendants also seek to add an air tight limitation, which the Court agrees has support. In Claim 10, the invention adds the step of "drawing out at least a portion of the ambient atmosphere from said area involved in fire after it has been sealed." If the seal had no air tight characteristics, this step could not be completed; whatever air that was drawn out would simply be replaced by air outside of the seal. However, given the irregular surfaces of the walls of a mine, the Court can comfortably conclude that one of ordinary skill in the art would not understand the seal to be perfectly air tight. The Court construes "seal" to mean "a fire proof barrier that is substantially air tight."

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D. "To Seal" and "A Seal"

1. The claim terms and proposed constructions

Claims 1 and 16 recite in relevant parts:

1. . . . wherein said shield's forward side abuts the frame's rearward side and said shield's rearward side contacts the face of the wearer of the frame to seal with the wearer's face. . . .

'688 patent at 10:6-9 (emphasis added).

16. . . . wherein the shield structure is resilient and extends rearwardly to form a seal with the wearer's face.

Id. at 11:7-9 (emphasis added).

Preventive proposes the verb "to seal" should be construed as "to fit snugly or mold with another surface so as to hinder the passage of liquids and solids," and the noun "seal" should be "a means of hindering the passage of liquids and solids." Panoptx contends that the terms should instead mean "to create a tight and impenetrable barrier or closure preventing entry," and "a tight and impenetrable barrier or closure preventing entry," respectively. Again, Preventive seeks a construction with "hinder" as the operative term connoting less than a perfect seal, whereas Panoptx offers the absolute terminology of "impenetrable barrier."

2. Plain meaning of the claim

The ordinary meaning of the verb "to seal" is to: make tight, secure against leakage, close, or close hermetically. Even though this word admits of less of a range in the degree of closure, a range is nonetheless discernable. It is undisputable that "to close," and "to close hermetically" carry different connotations. Thus, it is reasonable to question whether the claim term should be restricted to the more stringent interpretation offered by Panoptx, or whether it carries a broader, less absolute meaning.

The ordinary meaning of the noun "a seal" is: a device that prevents leakage, or an airtight or watertight closure. Again, a range of meaning is present. The shield material itself is air permeable, although there is no indication that it need be watertight. Whether either or both of these conditions apply to the interface between the shield and the face, where "the seal" in question is formed, is not apparent from the language of the claims.

The rest of each claim limitation provides the context for what is making the seal. Again, it is the shield's rearward side, where it contacts the face of the wearer, that is forming the seal. Note that it is this same contact between the rearward side of the shield and the face that is said to "prevent the passage of liquids and solids." See supra Part C. The terms "seal" and
"prevent" do not appear within the same claim, however, and thus are entitled to the presumption of a difference in meaning and scope. Power Mosfet Technologies, L.L.C. v. Siemens AG, 378 F.3d 1396, 1409-10 (Fed. Cir. 2004). Nonetheless, because the claim language itself does not resolve the ambiguity regarding the degree to which the shield seals to, or forms a seal with, the face, the specification is again consulted for the context of the invention.

3. Specification

The key question is whether by the term "seal" the patentee was claiming an eye shield system that is "leakproof" at the point of contact between shield and face as the invention. In the specification the phrase "seal or fit snugly" appears numerous times. '688 patent at 1:22, 2:12, 20, 41. A duo of terms given in the alternative normally implies that each word or phrase carries a distinct meaning. See Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111, 1119 (Fed. Cir. 2004). Within this pair, "seal" would carry a more stringent meaning than "fit snugly." However, any distinction between these two is blurred by the passage in the specification teaching that the shield "must fit snugly to both the face and the frame of the eyeglasses or goggles, thus creating a seal." '688 patent at 2:50-52 (emphasis added). A "snug fit" does not necessarily connote a leakproof seal, but an object that "fits snugly" does at least amount to a "close contact with another surface" that can be described as a seal. Other uses in the specification of the term "seal," as either a noun or a verb, also fail to specify the degree to which a leakproof fit is required.

The discussion above for the term "prevents" is also relevant to this construction. The specification interrelates the two terms, for example, "a seal preventing entry," '688 patent at 3:16, and nowhere does it indicate they carry distinguishable connotations. "Where neither the plain meaning nor the patent itself commands a difference in scope between two terms, they may be construed identically." Power Mosfet, 378 F.3d at 1410 (citation omitted).

Again, viewing the invention as a whole, the eye shield system is not intended to be restricted to perfect systems. "Seal" generally implies a tight, secure contact that does not permit leakage. In the context of this invention, however, nothing in specification explains that the terms "to seal" has any different meaning than "to prevent" as these terms relate to the interface between the shield and face. As with the teaching relating to the term "prevents," the allowance of a mechanism for wearing the glasses that does not ensure a positive, secure fit against the face also would lead one of skill in the art to understand that the "seal" at the interface need not be absolute. Nowhere is it explained that "a seal" does anything more than "prevent" the passage of liquids to the degree construed above. Furthermore, although the condition of a "leakproof seal" may be established periodically, or even nearly continuously, the language of the claims and the specification does not establish that an "absolute seal" must be created and maintained by the shield system.

4. Conclusion

The term "to seal," as used in claim 1 means "to make contact with another surface so as to substantially stop the passage of solids and liquids." See Playtex Products, 400 F.3d at 907. The related term "a seal," as used in claim 16 is "a means for substantially stopping the passage of liquids." See id. The rearward edge contacts the face to seal, or form a seal, that largely stops, although not to the degree of absolutely stopping, the passage of liquids and solids at the point of contact. The specification does not require the term to carry only the most restrictive meaning that the contact between the shield and face "not allow" the passage of liquids or solids.

3. Seal

The ordinary meaning of "seal" is a device that joins two parts so as to prevent leakage. Figure 2 of the '562 Patent specification is consistent with this meaning of a seal. It displays a seal extending from the side wall to the piston. The prosecution history does not contain a definition contrary to the ordinary meaning. Accordingly, the Court construes "seal" as a device that joins two parts so as to prevent leakage.
Finally, Moore has asked this court to construe the term "seal" in Claims 1 and 2. Central States asserts that the limitation in claim 1 must be read: "when activated the strips of adhesive will tightly or completely close or secure its respective edge from one end to the other." Relying on a dictionary definition of the term "seal," Moore argues that the seal need only satisfy the form's users and postal authorities.

The Court has no reason to doubt the definition for seal used by Central States. Nonetheless, the wide spectrum of definitions of seal warrants an examination of intrinsic evidence. Examination of the term "seal" within the claims gives no indication of the type of seal claimed. However, the specifications indicate that the seal desired is such that it will be adequate to "satisfy users and postal authorities." This statement indicates that a tight, continuous seal is not necessary to satisfy the meaning of the term "seal" in the claims. Nothing further is mentioned in the prosecution history concerning the meaning of the term. Therefore, the term "seal," as used in Claims 1 and 2, means attached together to satisfy users and postal authorities.


II. Claim Construction

Claims 15 and 33 of the '134 patent present two issues of claim construction. Claim 15, an apparatus claim, recites in pertinent part: "means operable upon completion of a filling cycle for moving said plate toward said filling machine for causing an internal wall of the container to engage about and seal off said aperture to exclude entry of foreign matter until the aperture is closed by a cap." '134 patent, col. 13, ll. 34-39 (emphasis added). Claim 33, a method claim, recites in pertinent part: "moving an internal wall of the bag into overlying relationship relative to the inner end of the spout to seal off the spout and exclude entry of foreign matter . . . ." Id. at col. 16, ll. 18-20 (emphasis added).

A. Physical Contact

The district court correctly held that the claims require a "bag-to-spout seal" during the time after filling and before capping. The claim language requires a sealing mechanism or method that creates a seal in which the bag contacts the spout. For example, claim 15 specifically states that the plate is moved toward the filling means, i.e., the spout, for causing an internal wall of the container to engage about and seal off the aperture, i.e., the spout. The recitation of "engage about and seal off said aperture" requires contact. Claim 33 requires the same, albeit in different terminology, reciting "moving an internal wall of the bag into overlying relationship relative to the inner end of the spout to seal off the spout and exclude entry of foreign matter . . . ." Therefore, we conclude that the district court was correct in construing claims 15 and 33 to require physical contact between the inner wall of the flexible bag and the bottom of the spout when the filler is in the uppermost position. In the context of this case, this requires some physical contact between the inner wall of the flexible bag and the bottom of the spout.

B. Substantial Seal

The second issue of claim construction is that of the "airtight seal" requirement. The district court held that the patent required the seal to be "airtight," i.e., allowing only negligible amounts of air to enter the bag, and not a "substantial" seal as urged by Scholle. In this respect the district court erred. We find that the claims only require a "substantial" seal resulting in - 4084 -
In construing a claim, "the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996). We begin with an analysis of the claim language itself. Id. "The general rule is, of course, that terms in the claim are to be given their ordinary and accustomed meaning." Johnson Worldwide Assocs., Inc. v. Zebeo Corp., 175 F.3d 985, 989, 50 U.S.P.Q.2D (BNA) 1607, 1610 (Fed. Cir. 1999). "It is always necessary to review the specification to determine whether the inventor used any terms in a manner inconsistent with their ordinary meaning." Vitronics, 90 F.3d at 1582; 39 U.S.P.Q.2D (BNA) at 1577. Finally, the court may consider the last piece of intrinsic evidence -- the prosecution history. Id. If however, a claim limitation is still not clear after examining the intrinsic evidence, we may look to extrinsic evidence to help resolve the lack of clarity. Interactive Gift Express, Inc. v. CompuServe, Inc., 231 F.3d 859, 866, 56 U.S.P.Q.2D (BNA) 1647, 1653 (Fed. Cir. 2000). Dictionaries, although a form of extrinsic evidence, may always be relied on by the court to determine the meaning of the claim terms "so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." Vitronics, 90 F.3d at 1584 n.6, 39 U.S.P.Q.2D (BNA) at 1578 n.3; see also Interactive Gift Express, 231 F.3d at 866 n.1; 56 U.S.P.Q.2D (BNA) at 1653 n.1.

Packaging Systems argues that "the plain language of both claims requires that the machine create an airtight seal." We disagree. An airtight seal is only one of many possible seals. Resort to the dictionary does not provide a clear and unambiguous definition as to the type of seal that is required either. The dictionary has a number of definitions of seal, only one of which requires "a tight and perfect closure (as in the passage of air and water)." Webster's Third New International Dictionary 2046 (1968). Whatever the dictionary definition of seal is, here the definition of seal in the specification makes clear that only a "substantial" seal is required.

The specification of the '134 patent states: "Desirably, substantially all of any such atmosphere should be removed and excluded from the head space of the bag prior to recapping both to minimize the overall volume of the bag and, more importantly, to prevent oxidation and/or contamination of the product in the bag." '134 patent, col. 9, ll. 1-6 (emphasis added). Packaging Systems argues the above quoted phrase is directed toward the quantity of the air that is removed from the bag after the filling process, not the ability of the device to exclude air from the head space. This argument is unpersuasive. The term "substantially" as used in this passage from the specification, modifies both "removed" and "excluded," and thus the specification must be read to require only substantial exclusion or sealing of the spout.

"Substantial seal" should be defined by the industry standard for the quantity of air allowed into the head space of a bag in the flexible bag industry.

II. The requirement for a "sealed" lamp cavity or socket enclosure

A. Literal Infringement

1. Interpretation

All of the claims of both Plaintiff's patents, with the exception of claims 5 and 20 of the '709 reissue patent, require the "lamp cavity" to be sealed. See, e.g., the '709 reissue patent, col. 7, line 11 et seq.; '397 patent, col. 5, line 47 et seq. Claim 7 of the '709 reissue patent is representative in pertinent part: "A lighting system comprising ... a lamp assembly having a socket enclosure and a lens, said socket enclosure with said lens defining a lamp cavity separately sealed from said housing; ..." '709 reissue patent, col. 7, lines 9; 12-14. Claim 21 of the '709 reissue patent is representative in pertinent part of claims 25 of the '709 reissue patent and claims 2 through 7 of the '397 patent: "A lighting system comprising ... a lighting assembly having a socket enclosure and a lens, said socket enclosure with said lens defining a lamp cavity, said lamp cavity being sealed against moisture; ..." Id., col. 8, lines 66-68 - col. 9, lines 1-2.

Defendant contends that the requirement in each of the claims of the '709 reissue patent and the '397 patent for a lamp assembly having a "sealed" lamp cavity or socket enclosure means that the socket enclosure and the lens of the lamp assembly must be in sealed engagement. According to Defendant, all of the claims state that the socket enclosure with the
lamp lens defines the "lamp cavity." It is this assembly of the socket enclosure and lamp lens that must be in sealing engagement in order to have a sealed lamp cavity. 7

7 All of the claims of both Plaintiff's patents, with the exception of claims 5 and 20 of the '709 reissue patent, require the "lamp cavity" to be sealed. Claims 5 and 20 do not recite that the lamp assembly includes a lens. Therefore, on their face, these claims only require the socket enclosure to be sealed, separately from the housing. Defendant argues that as there is no discussion in the patents as to how the socket enclosure could be separately sealed from the housing without being sealed by a lens, the omission of the word "lens" in these claims is a technicality without any practical significance.

Plaintiff appears to misconstrue Defendant's interpretation of the claims in question as requiring that the lamp cavity or socket enclosure be sealed "separate and apart from the housing." See Pl. Opp., p.10. Plaintiff then argues that some of the claims 8 do not include any such limitation that the lamp cavity be "separately sealed from the housing." Rather, these claims only require that the lamp cavity be "sealed against moisture." The Court believes that Plaintiff avoids interpreting the "sealed" lamp cavity and ignores the issue raised by Defendant of what constitutes the lamp cavity or socket enclosure and hence what exactly has to be "sealed. The issue of whether or not the lamp cavity is "separately sealed" from the housing is a different question not challenged by Defendant in this instant motion.

8 Plaintiff asserts that claims 21 and 25 of the '709 reissue patent and claims 2-5 of the '397 patent do not require that the lamp cavity be separately sealed from the housing. As Defendant points out, claims 2-7 of the '397 patent do not require separate sealing.

The Court finds that the requirement in all of the claims of both patents that the lamp assembly have a "sealed" lamp cavity or socket enclosure means that the socket enclosure and the lens that together form the lamp assembly must themselves be in sealed engagement. This interpretation is consistent with the language of the claims as well as the basic principle of Plaintiff's invention that the individual components of the lighting fixture be sealed to allow the fixture to remain open to enable use of air and water for cooling. 9

9 For example, Plaintiff cites as one of the problems its invention was meant to address: "Field repairs can trap humidity in the lamp, which eventually condenses inside the lamp and has the potential to short out and/or corrode the electrical system. " '709 reissue patent, col. 1, lines 52-55. Interpreting the claim to require separate sealing of the lamp assembly is consistent with addressing this problem so that the lamp assembly could be serviced and sealed in an controlled environment.
in the opening at its distal end. Claim 33 includes a limitation requiring such a seal: "said second lumen being sealed at a distal end thereof to prevent fluid communication between [chamber 1] and said second lumen." Utah Medical argues that this limitation should be interpreted to require only a seal sufficient to prevent fluid communication between the second lumen and the first chamber that would interfere with the pressure measurement function of the first chamber. The unambiguous language of this limitation, however, is not limited to the definition urged by Utah Medical. The district court correctly concluded that this limitation requires an element that "completely seals off the area between the chamber holding the amniotic fluid and the second lumen." Utah Medical, 79 F. Supp. 2d at 1306.

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First, we look to the reissue patent. Plaintiff alleges that defendant infringed claim 32 of this patent, which defines the invention as:

A pre-packaged, pre-soaked cleaning system for use to clean the cylinder of printing machines comprising in combination:

(1) a pre-soaked fabric roll saturated to equilibrium with cleaning solvent disposed around a core, said fabric roll having a sealed sleeve which can be opened or removed from said fabric roll for use of said fabric roll, disposed there around, and said system including

(2) means for locating said fabric roll adjacent to and operatively associated with a cylinder to be cleaned.

Defendant argues that its product does not meet two elements in this claim: "a pre-soaked fabric roll" and a "sealed sleeve." Defendant construes "a pre-soaked fabric roll" to be a single fabric roll, and "sealed sleeve" to mean a heat-sealed sleeve. Plaintiff contends that "a pre-soaked fabric roll" in the context of this claim means one or more fabric rolls, and that "sealed sleeve" is not limited to heat-sealed sleeves.

The question of whether claim 32 applies to a cleaning system that has more than one fabric roll is not simply answered by the singular article "a," modifying "pre-soaked fabric roll." As defendant recognizes, "a" can mean "one or more" when in a claim with the transitional phrase "comprising." See Scanner Technologies Corp. v. Icos Vision Systems Corp., N.V., 365 F.3d 1299, 1304 (Fed. Cir. 2004); KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed. Cir. 2000). Unless the patentee "evinces a clear intent" to limit the article "a" to a singular interpretation, it is properly construed as one or more. KCJ Corp., 223 F.3d at 1356. To determine if there is clear intent to limit "a" to one, the court looks to claim language and context, and to the patent specification and prosecution. Id.; Scanner Technologies, 365 F.3d at 1304-05; see Phillips, 2005 U.S. App. LEXIS 13954, 2005 WL 1620331 at *9 ("It is therefore entirely appropriate for a court, when conducting claim construction, to rely heavily on the written description for guidance as to the meaning of the claim.").

Defendant contends that the claim's repeated reference to "said fabric roll" indicates that the patentee contemplated only one roll. In Abtox, the Federal Circuit addressed the significance of the word "said," while analyzing whether the phrase "a metallic gas-confining chamber" limited the claim to relevant devices with a single chamber. The court found that the claim's repeated reference to "said chamber," instead of "a chamber," reinforced "the singular nature of the chamber." Abtox, 122 F.3d at 1024. Similar to the patent in Abtox, claim 32 of the reissue patent repeatedly employs the term "said fabric roll" to refer back to the antecedent, "a pre-soaked fabric roll." But the court found that the claim's repeated reference to "said fabric roll," instead of "a fabric roll," reinforced "the singular nature of the fabric roll." Abtox, 122 F.3d at 1024.

Plaintiff cites the Manual of Patent Examining Procedure (MPEP) to support the contention that "said" does not per se connote "single," but rather is an accepted term used to refer back to a previously cited object. While we agree that "said" does not per se connote single, plaintiff's citation to MPEP § 2173.05(e) only strengthens defendant's contention that the use of "said" in claim 32 evidences a limitation to a single fabric roll. Section 2173.05(e) discusses the confusion that can arise when a claim lacks a proper antecedent basis for a term. For example, a claim is unclear if it mentions "the lever," without first identifying an element of the claim to which this could refer, or references "said aluminum lever," even though the only prior reference to a similar element was the less specific, "a lever." Id. The section also explains, "if two different levers are recited earlier in the claim, the recitation of 'said lever' in the same or subsequent claim would be unclear where it is uncertain which of the two levers was intended." Id. Therefore, the use of "said fabric roll" implies that the prior reference to "a fabric roll" should be read as a single roll, not one or more rolls, in order to avoid confusion. As the Abtox court found,
use of the word "said" evidences an intention that the modified term be singular. 122 F.3d at 1024.

The Federal Circuit faced the same issue in Insituform Technologies, Inc. v. Cat Contracting, Inc., 99 F.3d 1098, 1105 (Fed. Cir. 1996), as well. In that case the patent concerned a method of repairing underground pipes in which a vacuum drew heat-setting resin through a tube inserted in the pipe. The court considered whether the claim's reference to "a [vacuum] cup" and "the cup" limited the claim to a repair method that involved only one vacuum cup. Id. at 1105. It found that the claim's repeated reference to "the cup," as well as to a singular region of vacuum application, was inconsistent with a construction of the claim that covered methods involving more than one vacuum cup. Id. In Scanner Technologies, in which the court construed "an illumination apparatus" to mean one or more apparatuses, the Federal Circuit distinguished the outcome in Insituform Technologies, by emphasizing the claim's reference to "the cup." 365 F.3d at 1304. Like with "the cup," "said fabric roll" emphasizes the singularity of the term.

The Scanner Technologies opinion highlighted other reasons why the Insituform court properly limited the claim to a single cup, including that "neither the specification nor the drawings disclose[d] the use of more than one cup." Scanner Technologies, 365 F.3d at 1304. Similar circumstances compel us to construe "a pre-soaked fabric roll" to mean a single fabric roll. Not only does the specification not disclose a system involving more than one fabric roll, it indicates only one roll was intended. The patent specification states that the sleeve is "disposed around and in intimate contact with the fabric roll," which would not be fully possible with more than one roll in the sleeve. While plaintiff is correct that courts do not import limitations from the specification into a claim, see Comark Commun., Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998), the Federal Circuit regularly turns to the specification for context when weighing whether the patentee evinced an intent to limit the meaning of the article "a." See Scanner Technologies, 365 F.3d at 1305; KCI Corp., 223 F.3d at 1357; Abtox, 122 F.3d at 1024; Insituform, 99 F.3d at 1106. As with the patent specifications in Abtox and Insituform, the reissue patent specification repeatedly modifies the relevant claim term, in this case fabric roll, with "the." Furthermore, Figures 1,2 and 3 of the reissue patent all depict a single roll, just as the figure in Abtox depicted a single chamber and the figures in Insituform depicted a single vacuum cup. Abtox, 122 F.3d at 1024; Insituform, 99 F.3d at 1106. Thus, we construe the term "a pre-soaked fabric roll" in claim 32 of the reissue patent to mean a single pre-soaked fabric roll. Given that defendant never sold single pre-soaked fabric rolls, but only rolls in sets of three or in quantities between six and nine, it has not infringed the reissue patent.

Even if "a pre-soaked fabric roll" is properly construed to mean one or more fabric rolls, summary judgment for non-infringement of this claim would still be appropriate because the term "sealed sleeve" in claim 32 is properly limited to heat-sealed sleeves and it is an undisputed fact that defendant never sold pre-soaked fabric rolls in heat-sealed sleeves. As discussed above, there is a heavy presumption that a term means what it says, and thus, when a court construes a claim, it should give the disputed term the full range of its ordinary meaning, as understood by persons skilled in the relevant art. Of course, even a heavy presumption can be overcome. Though the plain meaning of the term "sealed" is much broader than "heat-sealed," intrinsic evidence reveals that the patentee disavowed the broader meaning of the term.

All references in the reissue patent specification to a sealed sleeve are to a "heat-sealed" or a "heat-shrunken and heat-sealed" sleeve, as are all references in the 28 claims that appeared in the original '157 patent. Given that limitations from the patent specification or other claims are not imported to apply to terms in separate claims, this alone would not justify construing "sealed sleeve" in claim 32 to mean "heat-sealed sleeve." However, a review of the prosecution history for the reissue patent makes clear that in this context a person skilled in the art would understand this term to carry the narrower meaning.

In Gasparrini and Cano's application for the reissue patent, they sought, among other things, to replace the terms "heat-sealed" and "heat-sealable," which modified "sleeve" in the specification and abstract, to "sealed" and "sealable." The patent examiner rejected the changes requested in the reissue application. He explained that "the changes sought to be made to the disclosure constitute new matter, because they add to the invention originally disclosed, as opposed to merely broadening the scope of the claims." (Reissue Patent Prosecution, PTO Official Action 12/5/1995 at 4). To illustrate his point, he used the requested change from "heat-sealed" to "sealed":

The amendments to the specification in the reissue application now indicate that the invention encompasses other means of sealing the sleeve, when in the original disclosure, the sleeve was described as being a heat sealed or a heat-shrunken and heat sealed sleeve, whenever the method of sealing was referred to. The applicant has not shown where in the original disclosure, other than a heat-sealed or a heat-shrunken and heat sealed sleeve was contemplated, and if so, what those other
kinds of sealing and/or sleeve might be.

Id. In their response to the PTO's rejection of the substitution of terms, the patentees contended that the revisions do not introduce new matter, "but merely explain in more detailed language subject matter which is already disclosed therein." (Reissue Patent Prosecution, Amendment 3/6/1996 at 9). They argued that since the '157 patent specification included more specific aspects of the patented method, such as using a vacuum to draw the heat-sealable plastic sleeve into intimate contact with the fabric roll, the specification "clearly teaches that broadly the sleeve could be a sleeve which need not be plastic and/or which is not heat sealable by actually requiring application of heat from an external source." Id. at 10.

Once again the patent examiner rejected the proposed changes. He soundly dismissed the patentees' contention that the more specific aspect of the method involving the use of a vacuum with the heat-sealable plastic sleeve taught that the sleeve did not need to be plastic nor heat-sealable. He writes, "It is inconceivable that the applicants can find such a teaching in the above quoted language of the original specification, which by its own terms refers to the sleeve as a heat sealable plastic sleeve. Why would one of ordinary skill in the art upon being informed that a sleeve was a heat sealable plastic sleeve, infer that what was really intended was that the sleeve need not be plastic and/or need not be heat sealable?" (Reissue Patent Prosecution, PTO Official Action 5/16/1996 at 5).

After this final rejection by the PTO, the patentees withdrew their proposed amendments substituting "heat-sealed" and "heat-sealable" for the broad term "sealed." In their Amendment After Final Rejection, filed September 18, 1997, the patentees still sought various changes concerning issues unrelated to the heat-sealed sleeve, as well as the approval of new claims 44, 45, 46, and 57 (which when accepted was renumbered as claim 32). Arguing for the acceptance of these changes, the patentees stated, "Moreover, with the cancellation of the material submitted in the Preliminary Amendment of April 10, 1995, also renders moot the objection to the Specification on grounds of new matter, under 35 U.S.C., Section 132, with the cancellation of such Amendment." In other words, the patentees argue that the patent examiner's objection on the grounds of new matter concerning the term "sealed sleeve" is no longer valid because their revised amendments do not seek to broaden the term "heat-sealed sleeve" to "sealed sleeve." Under such circumstances, the term "sealed sleeve" in the proposed claims can only be read as the more limited term, "heat-sealed sleeve." A broader reading would be wholly incongruous with the patent prosecution, the patent examiner's blunt rejection of the contention that the patent specification supports the broader term, and the patentees' own acknowledgment that their revised amendments no longer sought to broaden this terminology.

Plaintiff argues that, to the contrary, the patent examiner has established that the specification supports the claim term "sealed sleeve." Plaintiff contends that despite the patent examiner's initial objections to the claims on the basis of new matter, he ultimately concluded that the broader term was supported in the specification, as evidenced by the withdrawal of his objection and the approval of four claims that contained the term "sealed sleeve" in the reissue patent. Plaintiff quotes the examiner's Official Action dated June 20, 1997, as evidence that he did not intend for this term to be narrowly defined: "In view of the latest amendments to the specification and the applicant's arguments, the previous rejections and objections on grounds of New Matter are hereby withdrawn or have been rendered moot." However, the examiner opened that same Official Action by stating it was intended to respond to the current requested changes, and that "it would appear that the only remaining substantial changes to the original specification (the patent specification) are those having to do with the thickness of the fabric roll and with the specific types of organic compound solvent which may be employed in carrying out the practice of the invention." Thus, the examiner was not addressing the term "sealed sleeve." This official action provides no indication that the examiner re-evaluated his prior objections concerning the term "sealed sleeve," nor his opinion that it is inconceivable that the specification teaches that the sleeve need not be plastic and/or need not be heat-sealable. As he points out, his objections were merely rendered moot because the patentees made such significant changes in the amendments they were seeking, including dropping all requests that the terms "heat-sealed" and "heat-sealable" in the '157 patent be replaced by "sealed" or "sealable" in the reissue patent. Based on this patent history, "sealed sleeve" in claim 32 must be construed to mean "heat-sealed sleeve."

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d. Sealing Means

The term "sealing means" is used in the '884 Patent in independent Claims 1 and 10, dependent Claims 2 and 9, which depend from Claim 1, and dependent 11, which depends from Claim 10. See '884 Patent at 7:9, 7:34, 7:36, 7:56, 8:16, 8:21-
24. Plaintiffs contend that the term invokes the means-plus-function provision of 35 U.S.C. § 112, P 6:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

"Whether certain claim language invokes 35 U.S.C. § 112, P 6 is an exercise in claim construction and . . . a question of law." Personalized Media Comm'n, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 702 (Fed. Cir. 1998). "Use of the term 'means' in a claim limitation creates a presumption that section 112, paragraph 6 has been invoked." Kemco Sales, Inc. v. Control Papers Co., Inc., 208 F.3d 1352, 1361 (Fed. Cir. 2000). However, "[t]his presumption may be overcome in two ways. First, a claim element that uses the word 'means' but recites no function corresponding to the means does not invoke § 112, P 6. Second, even if the claim element specifies a function, if it also recites sufficient structure or material for performing that function, § 112, P 6 does not apply." Allen Eng'g Corp. v. Bartell Indus., 299 F.3d 1336, 1347 (Fed. Cir. 2002) (quotations marks and citations omitted). In determining whether a term in a claim limitation recites sufficient structure, the court inquires into whether the "term, as the name for structure, has a reasonably well understood meaning in the art." Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996).

Here, Claim 10 recites a "sealing means," invoking the means plus function presumption. '884 Patent at 8:16. Plaintiffs contend that the function of the "sealing means" in Claim 10 is "sealing." Pls.' Mem. in Opp'n to Mot. for Summ. J. at 29. At oral argument, Defendants argued that Claim 10 does not state a function. Claim 10 recites in relevant part a "coupler presenting a plurality of mating surfaces for sealingly mating to the manifold, the plurality of mating surfaces being substantially continuous and free of sealing means." '884 Patent at 8:13-8:16. The Court finds that Claim 10 adequately recites a function--the function of a "sealing means" is "sealing."

Plaintiffs contend that "sealing means" does not recite sufficient structure for sealing. Defendants argue, however, that the term "sealing means" invokes sufficient structure and detail to rebut the presumption that 35 U.S.C. § 112, P 6 applies. Defendants rely on Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed. Cir. 1996), where the Federal Circuit held that the term "perforation means" in the patent claim at issue did not trigger 35 U.S.C. § 112, P 6 because the claim "describes the structure supporting the tearing function (i.e., perforations). The claim describes not only the structure that supports the tearing function, but also its location (extending from the leg band to the waist band) and extent (extending through the outer impermeable layer)." Defendants also cite Envirco Corp. v. Clestra Cleanroom, Inc., 209 F.3d 1360, 1365 (Fed. Cir. 2000), where the Federal Circuit held that the term "baffle means" recited sufficient structure to rebut the presumption that § 112, P 6 applied. Cole and Envirco Corp. are distinguishable from the instant case, however, because the term "seal" does not recite as much structure as the terms "perforation" and "baffle" did in Cole and Envirco Corp. respectively. Therefore, the Court finds that "sealing means" invokes the means-plus-function provision of 35 U.S.C. § 112, P 6.

"After a court establishes that a means-plus-function limitation is at issue, it must then construe the function recited in that claim and determine what structures have been disclosed that correspond to the means for performing that function." Kemco Sales, 208 F.3d 1352, 1361 (Fed. Cir. 2000). Consistent with the construction of "fluid seals," the Court construes "sealing" as "operating as a tight or complete closure, as against the passage of a fluid." The parties agree that the corresponding structure disclosed in the '884 Patent's specification is an o-ring. Pls.' Mem. in Opp'n to Mot. for Summ. J. at 29; Defs.' Reply Mem. at 8.

Located in Sealing Relation With

Claim 12 describes a "separate annular end piece located in sealing relation with the first end cap. . ." Plaintiffs offer the construction of the above term as "located tightly or securely against." Defendants argue the appropriate construction should be "forming a fluid-tight seal against the inside surface of." Plaintiffs contend the contested term merely describes the closeness of the fit between the annular end piece with another object. According to Plaintiffs, the specifications clearly discuss the option of permanently affixing the end piece with an adhesive or merely holding the end cap by means of friction or interaction of locking members. It does not require the members fit be fluid tight as Defendants construe nor does the specification limit the fit to the inside surface.
Defendants contend Plaintiffs' interpretation reads out "sealing". The sealing out of fluids and preventing the passage of contaminants and debris is a critical feature of the filter. Also, the specification provides the separate annular end piece fits against the inside surface of the cap. Therefore, the intrinsic evidence supports Defendants' proposed construction that the placement is limited to the inside surface of the end cap.

Court's Construction

The Court holds that the patent specification states specifically "fluid-tight" when it wanted to indicate such a limitation. Claim 12 places no such limitation and the Court will not read one into the patent. As Plaintiffs point out, the specification at Col. 10 ln 20-30 describes the sealing relation contemplated.

The end piece 160 can be permanently fixed to the end cap, such as with an adhesive, or can merely be located against the end cap and held in place by friction fit, or by the interaction with the locking member 76.

This description supports Plaintiff's contention that a sealing relation refers to the manner in which the component is joined to another object.

Therefore, the Court holds "located in sealing relation with" to mean "located tightly or securely against."

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d. "sealing trough"

The term "sealing trough" appears in claim 7 of the '712 Patent. Donaldson asserts that the term should be construed as a "depression or recess which cooperates with corresponding raised structure to inhibit migration of water or debris from one side of the structure to the other." Baldwin initially contended that the term should be construed as "a recess in the outer surface of the second end cap that forms a seal with the housing to prevent the passage of water and other contaminants." In its post-Markman brief, Baldwin proposed the following construction:

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9 At the Markman hearing, Donaldson agreed to Baldwin's proposed construction provided the word "prevent" was replaced with "inhibit."

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

Nothing in the claim language or the patent specification indicates that the purpose of the "sealing trough" is to prevent the passage of water or contaminants. Instead, the specification describes the purpose of the "secondary seal" as to inhibit movement of debris and water. For example, the specification reads: "The secondary seal 80 is generally provided to inhibit movement of debris or water into region 81, between element 21 and base 63, rather than to necessarily prevent flow of air therebetween." '712 Patent, col. 7, ll. 9-14. The specification also provides that the "secondary seal 80 will inhibit the likelihood of debris or moisture moving from pan 71 into surface 69, or region 77." Id., col. 8, ll. 27-29. Therefore, the Court determines that the purpose of the "sealing trough" is to inhibit the passage of water and other contaminants.

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10 The "sealing trough" of the second end cap and a housing sealing bead form the "secondary seal."

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Baldwin also asks that the "sealing trough" be required to maintain a pressure differential of up to about 2 inches (and typically only up to about 2-4 inches) of H\(_2\)O. The Court notes that the specification indicates that the "secondary seal" will "generally be sufficient if it can maintain at pressure differential thereacross of up to about 2 inches (and typically only up to about 2-4 inches) of H\(_2\)O." Id., col. 7, ll. 16-19. That portion of the specification, however, appears to offer a comparison between the outer primary seal that "prevents" the flow of unfiltered air from reaching the clean air path to the engine, and the secondary seal that is "generally provided to inhibit movement of debris or water into region 81." The Court declines to import the specification's general description of effectiveness of the secondary seal into the claim language.

Consistent with the claim language and the specification, the Court construes "sealing trough" as "a recess in the outer surface of the second end cap that forms a seal with a housing to inhibit the passage of water and other contaminants."

Sealingly Bonded

Claim 12 also describes "a first flat annular end cap sealingly bonded to the first end of the filtration media..." Plaintiffs suggest the following construction, "located tightly or securely against by bonding." Defendants argue for the following construction "bonded so as to form a fluid tight seal." The parties argue on the same basis as the previous term; Plaintiffs against a limitation that it be fluid tight; Defendants for such a limitation.

Court's Construction

Again, for the foregoing reasons, the Court finds no such fluid tight limitation is placed on the described claim and holds that "sealingly bonded" means "held together tightly or securely by bonding."

8. "Seam"

The term "seam" is found in both the method and product claims of the patents-in-suit. For example, in Claim 1 of the 779 Patent, a method claim, step (a) of the seam manufacturing process requires "placing the first garment component in an adjacent relationship to the second garment component so as to define a seam." 779 Patent at 6:30-32 (emphasis added). In Claim 20 of the 779 Patent, a product claim, the "smooth seam" is defined as comprising "a bonding element," "a first garment component," "a second garment component," "a first set stitch," "a second stitch" and "the bonding element of the seam having been subjected to a sufficient amount of heat. . . ." 779 Patent at 8:7-43 (emphasis added). The 615 Patent similarly uses the term in Claims 1 and 19, method and product claims, respectively. 615 Patent at 6:28-36, 8:1-33.

Taltech asks the Court to construe "seam" to mean "two or more plies of fabric material joined together by sewing along a line." Taltech relies on the opinion of Taltech's expert, Mr. Nienke, and on specialized dictionary definitions of "seam." Esquel asks the Court to construe "seam" to mean "the place where at least two pieces of fabric are joined by stitches, the width of the seam being defined by the distance between two stitches." Esquel relies on the claims, on the specifications, and on the opinion of Esquel's expert, Mr. Haddock. The parties' differences on the construction of "seam" centers on the minimum number of rows of stitches required. Esquel asserts that at least two rows of stitches are required for a seam, whereas Taltech asserts that no particular number of rows of stitches is required.

The Court finds Esquel's proposed construction more persuasive. The claims define a seam as bounded by two stitches that create two "sides" of a seam: "a first set stitch running along a first side of the seam . . . a second stitch running along a second side of the seam. . . ." 779 Patent at 8:25, 8:31;615 Patent at 8:17, 8:23 (emphasis added); see also 615 Patent at 6:44, 6:56. The different sides of the seams are bounded by two different stitches. The specifications also define the "seam width" as the distance (labeled 46 in Fig. 3c) between two stitches (labeled 38 and 40 in Fig. 3c) and note the importance of having the bonding element flow over the entire surface of the seam width for maximum prevention of pucker. Fig. 3c; 779
Patent at 4:53-59; 615 Patent at 4:54-60. This definition of "seam width" indicates that more than one row of stitches must define the seam. See Phillips, 415 F.3d at 1321 ("[T]he specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." (internal quotation marks omitted)). The Court does not rely on extrinsic evidence to interpret "seam" because the intrinsic evidence is sufficient to enable the Court to construe the term. See Pitney Bowes, 182 F.3d at 1308-09.

Accordingly, the Court adopts Esquel's proposed construction, with modification, and construes the term "seam" to mean "the place where at least two pieces of fabric are joined by at least two rows of stitches."

The court adopts Crown's proposed construction.

Claim 13 of the '826 patent recites a "can end comprising: a peripheral cover hook, said peripheral cover hook comprising a seaming panel adapted to be formed into a portion of said double seam during said seaming operation." 27 Therefore, the seaming panel is part of the peripheral cover hook. Describing a preferred embodiment of the claimed invention in figure 4, the common specification identifies "a peripheral cover hook 23." 28 That figure illustrates radii r[1] and r[2] which are described as "seaming panel/chuck wall radius" and "seaming panel radius," respectively. 29

"Seaming panel" is recited in each of the above-referenced claims and the parties' proposed constructions are the same for each claim. Claim 13 of the '826 patent recites "a peripheral cover hook, said cover hook comprising a seaming panel adapted to be formed into a portion of said double seam during said seaming operation" and "a wall extending inwardly and downwardly from said cover hook." 30 Claim 32 of the '875 patent recites "a circumferentially extending peripheral cover hook, said peripheral cover hook comprising a seaming panel to be formed into a portion of said double seam during a seaming operation" and "a circumferentially extending wall comprising first and second portion[s] . . . said first wall portion extending from said seaming panel to a first location on said wall and comprising a radiused portion extending from said seaming panel." 31 Claim 50 of the '875 patent recites "a circumferentially extending peripheral cover hook, said peripheral cover hook comprising a seaming panel to be formed into a portion of said double seam during said seaming operation" and "a circumferentially extending wall comprising first and second portion[s] . . . said first wall portion extending from said seaming panel to a first location on said wall and comprising a radiused portion extending from said seaming panel."
cover hook comprising a seaming panel to be formed into a portion of said double seam during a seaming operation" and "a circumferentially extending wall extending from said seaming panel to said reinforcing bead." 32

At the Markman hearing, Rexam argued that the seaming panel is not the innermost part of the peripheral cover hook, as proposed by Crown, but that the seaming panel is "a section of the cover hook that is separated from a chuck wall because . . . the innermost portion of the cover hook joins the chuck wall." 33 According to Rexam, "there is a section of cover hook that . . . extends from the chuck wall to the seaming panel that is not the seaming panel." 34 The court finds that argument unavailing.

First, Rexam's position is contradicted by the language of claims 32 and 50 of the '875 patent reciting a can end wall extending "from said seaming panel." This unambiguously demonstrates that there is not a part of the peripheral cover hook located between the can end wall and the seaming panel as Rexam argues. Crown's proposed construction is consistent with the language of the relevant claims of the '875 patent. Claim 13 of the '826 patent recites that the can end wall extends "from said cover hook" but because the seaming panel is a part of the cover hook, Crown's proposed construction is not inconsistent with that claim language. This is particularly true since the parties have proposed the same construction for "seaming panel" for both the '826 patent and the '875 patent. Further support for Crown's construction is found in the common specification's identification of radius r[1] as the "seaming panel/chuck wall radius," 35 rather than the "seaming panel/peripheral cover hook radius." Also, the common specification indicates the seaming panel does not necessarily have a constant radius (as required by Rexam's proposed construction) by its identification of r[2] as the "seaming panel radius" and r[1] as the "seaming panel/chuck wall radius."

Consequently, the court adopts Crown's proposed construction: "curved innermost portion of the peripheral cover hook."
"seat" should also be construed to mean "to rest on." (P Mem. 14). Limited contends that the term "seat" necessarily requires "some level of engagement or fit -- in this case between the holder and the cover," rather than also meaning to rest. (D Mem. 9).

The Federal Circuit has stated that "it is axiomatic that a claim construction that excludes a preferred embodiment . . . is rarely, if ever correct and would require highly persuasive evidentiary support." Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1308 (Fed. Cir. 2003)(quoting Vitronics, 90 F.3d at 1583). In the '969 Patent, the embodiment shown in Figures 1B and 1C clearly show the holder's protruding feet merely resting on the cover, as opposed to Figure 5B, in which the protruding feet are fit into the cover. Limited argues that "virtually all of the Figures show the candle tin seated on the cover such that there is some engagement . . . ." (D Mem. 9). However, virtually all is not the same as all of the embodiment figures. Accordingly, Limited's argument further supports U.S. Can's construction of the term "seat."

In addition, "the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." Phillips, 415 F.3d at 1315. In the '969 Patent, Claim 2, which is a dependant claim, states that "the closed end of the cover has a recess formed therein for seating the protrusions . . . ." ( '969 Patent Col 5, Ln. 57-58). The reference to a recess in which the protrusions can be seated is not present in independent Claims 1 and 5 and, therefore, the requirement that the term "seat" necessarily involves engagement between the holder and the cover should not be read into Claims 1 and 5. Accordingly, we agree with U.S. Can and find that the term "seat" in Claims 1 and 5 means to either rest on or fit into the cover.

The Court is further asked to construe the word "seat." Within the context of these patents the plain meaning of the word seat is the structure intended to be sat in or on. In addition, as explained above, the "seat" is intended to be thought of and used in conjunction with but not as a part of the base. To construe otherwise would run afoil of the prior art and the rejection by the patent examiner of the one piece, stand alone base/seat.

1. Claim Construction

As a preliminary matter, we first determine whether the district court properly construed the term "to seat" to mean "to either rest on or fit into the cover," thus not requiring any engagement between the candle holder and the cover. Claim Construction Opinion, 2006 U.S. Dist. LEXIS 21010, 2006 WL 1049581, at *2. We review claim construction de novo. Phillips v. AWH Corp., 415 F.3d 1303, 1328 (Fed. Cir. 2005) (en banc).

Limited argues that the district court's construction is inconsistent with the text, context, and history of claims 1 and 5. Limited asserts that every figure in the '969 patent shows an engagement between the candle holder and the cover. In response, BASC states that the ordinary and customary meaning of "to seat" is "to rest on." BASC contends that there was no clear disavowal in the '969 patent or its prosecution history of the embodiment shown in figure 1C, which shows the feet merely resting upon the cover. BASC also argues that the principle of claim differentiation dictates the construction given by the district court because claim 2, which is dependent on claim 1, expressly requires engagement with the cover.

We agree with BASC that the district court did not err in construing the term "to seat" as not requiring an engagement between the feet and the cover. The relevant portions of claims 1 and 5 are identical: "protrusions formed on the closed end of the holder and extending therefrom, the protrusions resting upon the closed end of the cover to seat the holder on the cover." '969 patent col.5 ll.54-56; id. col.6 ll.27-30. This language makes clear that the protrusions, or feet, are what cause the candle holder to be "seated" on the cover. Thus, Limited's argument that every figure in the '969 patent shows an engagement between the candle holder and the cover misses the point because even if engagement were required, the claim language dictates that the engagement would be between the feet and the cover. Similarly, Limited's argument regarding the prosecution history of the '969 patent is unpersuasive. The language regarding the protrusions was added to claims 1 and 5
to overcome a rejection based on prior art that depicted a candle holder that could lock together with its cover when the cover was used as a base. Nothing in the language added concerning the protrusions indicates that BASC intended the feet to lock into the cover; rather, the language indicates an intent to distinguish BASC’s claimed invention from the prior art by the presence of feet on the bottom of the candle holder.

Furthermore, "claims must be read in view of the specification, of which they are a part." Phillips, 415 F.3d at 1315 (internal quotation marks and citation omitted). Figure 1C clearly depicts the feet merely resting atop the cover, in contrast to figure 5B, which depicts the feet locking into recesses in the cover. In addition, claim 2 specifically requires some engagement between the feet and a recess in the cover. See '969 patent col.5 l.57-col.6 l.2 ("The candle tin of claim 1 in which the closed end of the cover has a recess formed therein for seating the protrusions, there being a gap formed between the cover and holder when the holder is seated on the cover."). Thus, because the specification illustrates feet both resting on the cover and locking into recesses in the cover, and also in light of the prosecution history, we conclude that the correct construction of the term "to seat" does not require an engagement between the feet and the cover.

a. Claim 15

In claim 15 of the '405 patent, the patentee claimed:

   c) a seat assembly mounted to said carriage unit, said seat assembly comprising:

      
      ...

      ii) a swivel tube fixed to the bottom of said seat bracket proximate to said front edge of said bracket;

      iii) a swivel mounting bracket fixed to the top of said carriage unit and mounted to said carriage unit proximate to the front of said carriage unit;

      ...

      wherein said swivel tube coaxially fits within said swivel mounting bracket and further wherein said swivel tube is free to rotate axially within said swivel mounting bracket.

   [SEE FIG. 3B IN ORIGINAL]

'405 Patent, at 11:30-12:15. Because claim 15 defines "seat assembly" expressly, it is unnecessary to turn to the patent specification to interpret its meaning. In claim 15, "seat assembly" includes a "swivel mounting bracket," which plaintiff construes as including both swivel housing 254 and bracket 242. Because the claim provides further that "said swivel tube [266] is free to rotate axially within said swivel mounting bracket," it is logical that the "swivel mounting bracket" is made up of both swivel housing 254 and bracket 242. Accordingly, in claim 15, "seat assembly" includes a "swivel mounting bracket," which, in turn, includes swivel housing 254 and bracket 242. (At the claims construction hearing, defendants appeared to concede that swivel housing 254 and bracket 242 are part of the seat assembly as to claim 15.)

   [SEE FIG. 3A IN ORIGINAL]

b. Claims 5, 9 and 10.

Plaintiff contends that "the most complete definition of 'seat assembly,' to which [plaintiff] is entitled for all claims construction, is set forth in Claim 15." Plt.'s Br., dkt. # 17, at 12. In other words, plaintiff argues that "seat assembly" in claim 5, 9 and 10 means the same as it does in claim 15. In support of its contention, plaintiff cites In re Baker Hughes, Inc., 215 F.3d 1297, 1301 (Fed. Cir. 2000). In that case, however, the court did not discuss how a defined term of art in one claim controls an undefined use of that same term in other claims. In fact, it is unclear how Baker Hughes relates to plaintiff's contention. In any event, at the claims construction hearing, plaintiff conceded that a patentee cannot use limitations in one
claim to limit another claim. This was a wise concession. It is settled law that the "scope of each individual claim must be examined on its own merits, apart from that of other claims, even in same patent." Lemelson v. TRW, Inc., 760 F.2d 1254, 1267 (Fed. Cir. 1985); see also Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1326 (Fed. Cir. 2003) ("when a patent claim does not contain a certain limitation and another claim does, that limitation cannot be read into the former claim in determining either validity or infringement") (internal quotation omitted).

It is well established that "the language of the claim defines the scope of the protected invention." Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 619 (Fed. Cir. 1995) (citing Yale Lock Mfg. Co. v. Greenleaf, 117 U.S. 554, 559, 29 L. Ed. 952, 6 S. Ct. 846, 1886 Dec. Comm'r Pat. 169 (1886) and Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 396 (Ct. Cl. 1967) ("Courts can neither broaden nor narrow the claims to give the patentee something different than what he set forth [in the claim]."). Accordingly, "resort must be had in the first instance to the words of the claim," words to which we ascribe their ordinary meaning unless it appears the inventor used them otherwise." Vitalink, 55 F.3d at 619 (quoting Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759 (Fed. Cir. 1984)). Second, it is equally "fundamental that claims are to be construed in the light of the specifications and both are to be read with a view to ascertaining the invention." United States v. Adams, 383 U.S. 39, 49, 15 L. Ed. 2d 572, 86 S. Ct. 708, 174 Ct. Cl. 1293 (1966); see also Markman, 52 F.3d at 979 ("Claims must be read in view of the specification, of which they are a part. . . . For claim construction purposes, the [specification's] description may act as a sort of dictionary, which explains the invention and may define terms used in the claims.").

Plaintiff contends that "the limitations of the specification cannot be used to limit the express terms of the claim." Plt.'s Br., dkt. # 17, at 13 (citing Intervet America, Inc. v. Kee-Vet Laboratories, Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989)). This is true. However, claims 5, 9 and 10 do not define "seat assembly" expressly. Instead, these claims merely refer generally to the "seat assembly." Thus, the specification is "necessary to give life, meaning, and vitality" to the term in these three claims. Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1306 (Fed. Cir. 1999) (quoting Kropa v. Robie, 38 C.C.P.A. 858, 187 F.2d 150, 152, 1951 Dec. Comm'r Pat. 177 (C.C.P.A. 1951)); see also Intervet, 887 F.2d at 1053 ("this court has consistently adhered to the proposition that courts cannot alter what the patentee has chosen to claim as his invention, that limitations appearing in the specification will not be read into claims, and that interpreting what is meant by a word in a claim 'is not to be confused with adding an extraneous limitation appearing in the specification, which is improper'") (emphasis in original; internal citation omitted). In other words, persons reading "seat assembly" in claims 5, 9 and 10 can understand the term only in the context of the specification. Therefore, I will turn to the specification to determine what the patentee meant by the term "seat assembly" in these claims.

Defendants assert that swivel housing 254 and bracket 242 are not part of the "seat assembly" because (1) Figure 3A and 3B, which are described as views of the "carriage unit," each show swivel housing 254 and bracket 242; and (2) the carriage unit section of the specification provides that:

A control box 236 is fixedly mounted to the top of arm 204. . . . Bracket 242 provides the base for a swivel housing 254. Housing 254 is a piece of steel tube welded to bracket 242. As shown in FIG. 4A, housing 254 extends upwardly through cover 246. A hole is provided in bracket 242 to permit wires from control circuit 252 to pass through to the seat assembly 106.


[SEE FIG. 3A IN ORIGINAL]

[SEE FIG. 3B IN ORIGINAL]

[SEE FIG. 4A IN ORIGINAL]

In response to defendants' argument, plaintiff argues that swivel housing 254 is also found in the "seat assembly" section of the specification, as follows:

The seat assembly 106 is mounted to the carriage unit 104 by using the swivel housing 254. . . . A swivel tube 266 is welded to the underside of bracket 262. Tube 266 fits coaxially into housing 254 to permit rotation of seat assembly 106.
 Plaintiff's argument is unpersuasive for several reasons. First, the reference to swivel housing 254 in the seat assembly section of the preferred embodiment appears to be nothing more than an aside to demonstrate how the seat assembly couples with the carriage unit. In contrast, the specification for the carriage section of the preferred embodiment describes swivel housing 254 and bracket 242 in detail rather than merely referring to the way the seat assembly and carriage unit mate. Second, although the carriage section refers to both swivel housing 254 and bracket 242, the seat assembly section never mentions bracket 242. Therefore, it is unclear how bracket 242 fits into plaintiff's argument. Third, the carriage section provides that "[a] hole is provided in bracket 242 to permit wires from control circuit 252 to pass through to the seat assembly 106." Because the wires pass through bracket 242 to seat assembly 106, bracket 242 could not be part of the seat assembly. Fourth, the seat assembly section provides that "tube 266 fits coaxially into housing 254 to permit rotation of seat assembly 106." However, swivel housing 254 and bracket 242 do not rotate, indicating that these two components are not part of the rotatable seat assembly. Finally, swivel housing 254 and bracket 242 are parts of Figure 3A, described in the specification as the "front view of the carriage unit," and Figure 3B, described in the specification as the "cross-sectional view of the carriage unit."

The correct claim construction is the one that "stays true to the claim language and most naturally aligns with the patent's description of the invention." Renishaw PLC v. Marposs Societa per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998). Moreover, the carriage unit section, seat assembly section, and Figures 3A and 3B describe the preferred embodiment. Thus, adopting plaintiff's construction of "seat assembly" for claims 5, 9 and 10 would necessarily exclude the preferred embodiment; such a construction "is rarely, if ever, correct." Vitronics, 90 F.3d at 1583; see also Hoechst Celanese Corp. v. BP Chemicals, Ltd., 78 F.3d 1575, 1581 (Fed. Cir. 1996) (unlikely that inventor would define invention in way that excludes preferred embodiment or that those skilled in the art would read it that way); Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1477 (Fed. Cir. 1998) (same). Accordingly, "seat assembly" as used in claims 5, 9 and 10 exclude swivel housing 254 and bracket 242.

J. Seated Within the Cavity

ICU's Construction  RyMed's Construction
Situated, positioned or Sitting in a seat [the annular
located within the cavity cuff] of housing walls forming
the cavity

The claim term "seated within the cavity" appears in claim 1 of the '866 Patent. RyMed contends that construction of this term is not necessary. (D.I. 116, at 34.) ICU apparently concurs, but has submitted a proposed construction to the Court because RyMed allegedly claims that this element is not present in the accused device. (D.I. 118, at 29.) ICU contends that "in this way RyMed will be forced to provide some hint about why construction of this term matters." (Id.) ICU contends their construction is consistent with the plain meaning of "seated," and is supported by the Common Specification. (Id. at 30.) In response, RyMed contends that ICU's construction is unsupported by intrinsic or extrinsic evidence, and that RyMed's construction is actually supported by the Common Specification. (D.I. 165, at 35.)

In the Court's view, it is not entirely clear that this term needs to be construed, as both parties seem to indicate that construction is only necessary because of the other party. (See D.I. 118, at 29-30 and D.I. 165, at 36.) To the extent that construction is necessary, the Court is persuaded that ICU's construction is more appropriate because it does not limit the claim language to a preferred embodiment in the Common Specification. Admittedly, none of ICU's citations to the Common Specification directly support the construction of "seated" as "situated, positioned, or located." However, RyMed's construction principally relies on a sentence in the Detailed Description of the Preferred Embodiments in the Common Specification which reads, "the spike 24, with contiguous inner conduit 18, is affixed to the housing 12 through the association of the external portion of annular cuff 28 and the internal portion of annular ring 14." '866 Patent, col. 8: 13-17. Broader claim language should generally not be limited to a preferred embodiment in the patent specification. See Phillips, 415 F.3d at 1323 ("although the specification often describes the very embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments")(citations omitted). Thus, the Court concludes, if a construction
is necessary, the term "seated within the cavity" means "situated, positioned or located within the cavity."

"First and second seating discrete surfaces" is defined as two seats that are distinct from other areas within the cockpit area, with each seat accommodating a paddler or occupant.

Finally, the addition of the word "discrete" in the '912 patent actually does not act in the same way that the additional "contoured" requirement functions in claim 13 of the '177 patent. There is not really a separate limitation included because of the word "discrete," rather the word makes explicit the limitation that the court construed is implicit in the other four claims in the very terms "seating surfaces" as a result of the prosecution history. The word "discrete" as a modifier is consistent with this court's construction of "seating surfaces" as a seat structurally distinct from the deck surface.

"Seating Surfaces" ( '177 Patent):
Aft, middle and forward locations in the cockpit area that are contoured to provide comfortable seating areas and on which passengers are intended to sit, with the footwells associated with the aft seating surface straddling transversely the middle seating surface, and the footwell portions of the footwell associated with the middle seating surface straddling transversely the forward seating surface.

"Seating Surfaces" ( '063 Patent):
Locations in the cockpit area on which passengers are intended to sit, and separated longitudinally by a spacing surface, with any seat that is located behind another seat having footwells straddling transversely the forward seating surface.

B.

Next we turn to the construction of "seating surfaces" in all three patents. The term appears in all five claims at issue in this suit. In claim 13 of the '177 patent, a separate element of the claim asserts that the claimed seating surfaces must be contoured. In claim 1 of the '912 patent the phrasing is also modified to read "seating discrete surfaces" instead of simply "seating surfaces."

The trial court construed "seating surfaces" in the '177 patent and the '063 patent as areas or locations "on which passengers are intended to sit." Old Town, 2001 U.S. Dist. LEXIS 19680, slip op. at 10. Glenwa argues that this definition is overly broad in view of the prosecution history. We agree. Niemier avoided an anticipation rejection under French Pat. No. 2,686,055 ("Philippe") by distinguishing the seating surfaces on the invention as discrete seats unlike the bench-style seating deck of Philippe on which passengers can sit anywhere. Clarifications by inventors that are made to avoid prior art prohibit contrary interpretations, whether by argument or narrowing amendment. Alpex Computer Corp. v. Nintendo Co., 102 F.3d 1214, 1220, 40 USPQ2d 1667, 1671 (Fed. Cir. 1996). The references to "seating surfaces" in all three patents must be construed as clearly delineated areas on which passengers are intended to sit. The delineation must be through shape, material, or other differentiation from the surrounding deck such that the "seating surfaces" are clearly different from the other surfaces on the top deck of the craft. In traversing the rejection of the claims, for example, the patentee argued that a "hatch surface" is described as "separating each of the seating surfaces," implying that a "hatch surface" is distinct from a
4. "Second Free End"

Plaintiff argues that the term "second free end" in claim 3 of the '685 patent means "[t]he latter of two relatively unrestricted extremities." (Doc. # 51, at 33). Plaintiff relies on dictionary definitions to support its proposed construction. (Doc. # 51, at 33-34). Plaintiff admits that "the patentee's description of one embodiment states that 'the second free end 51 engages the housing 11 and intermediate connector 39[']" (Doc. # 55, at 37) (emphasis in original). However, plaintiff contends that the other embodiment that defendant relies on states "the second free end 148 engages the housing 111 under plateau 117." (Doc. # 55, at 37; # 51-2, '685 patent, col. 9, lines 50-51). As such, plaintiff asserts that "[t]he mere fact that the specification discloses an embodiment in which the second free end of a spring engages a housing and an intermediate connector does not mean that the second free end of the spring must engage a housing and intermediate connector in every possible embodiment of the invention." (Doc. # 55, at 37-38) (emphasis in original).

Defendant proposes that the Court construe "second free end" as "a second free end engageable with the housing and intermidiator connector." (Doc. # 51, at 33). Defendant relies on the two embodiments mentioned above. Defendant contends that the Court should adopt its proposed construction "to clarify the term and the scope of claim 1." (Doc. # 51, at 35). Finally, defendant asserts that, because "[t]he '685 patent only discloses a 'second free end' that 'engages the housing and the intermediate connector[,]" . . . it is therefore proper to include this limitation in claim 3." (Doc. # 51, at 35) (internal citation omitted) (emphasis added).

The claim language, specification, and prosecution history do not make clear the definition of "second free end." Accordingly, the Court will consult a dictionary to determine the ordinary and customary meaning of "second free end." The word "second" is defined as "being one of two parts," "free" is defined as "not joined to or in contact with something else, and "end" is defined as "the extremity of anything longer than it is wide or broad . . . " RANDOM HOUSE COLLEGE DICTIONARY (1980). The extrinsic evidence supports plaintiff's proposed construction. Therefore, the Court finds that "second free end" in the '685 patent means "the latter of two relatively unrestricted extremities."

C. "Second Opening"

Comaper's proposed construction of "second opening" is "a passage in the case that is exposed to the drive bay region." (Pl.'s Constr. Mem. at 7; Pl.'s Reply Mem. at 9.) Again, Plaintiff points to the intrinsic record for support. Comaper submits that the specification does not ascribe a special meaning to the term "second opening", and makes it clear that it may take on different embodiments as long as it is internal to the computer enclosure. (Pl.'s Constr. Mem. at 8.)

Antec wishes the Court to interpret "second opening" as "a separate opening in the case located so as to pull or exhaust air from the central area of the drive bay region." (Defs.' Constr. Mem. at 11.) In its response, Antec submits that Comaper's construction is overbroad because it covers intention in the prior art. (Defs.' Reply Mem. at 13.) Antec reasons that its definition is more appropriate because the specifications instruct that the openings are separate. Id. at 12.

The Court interprets the term "second opening" to mean "a separate opening in the case that is exposed to the drive bay region." This term is construed consistent with the specifications. As stated above, claims must be read in view of the specification, of which they are a part. Markman, 52 F.3d at 979. The specifications make it clear that the second opening "may be located on the sides or top providing they cooperate adequately with the air movement means." '955 Patent col. 3, In. 50-52. In other words, the second opening may take on different embodiments, as long as it is internal to the computer enclosure.
Finally, Antec challenges the district court's construction of the term "second opening." The court determined that the term meant "a separate opening that is exposed to the drive bay region." Claim Construction Order, 2006 U.S. Dist. LEXIS 67363, 2006 WL 2709382, at *6. Antec contends that "second opening" must mean "a separate opening in the case located so as to pull or exhaust air from the central area of the drive bay region." See 2006 U.S. Dist. LEXIS 67363, [WL] at *5. But this construction confuses the term "second opening" with the configuration limitation present in the claims, which requires that the air from the drive bay region be exhausted through either the first or second opening. See '955 patent col.5 ll.47-54. Antec further argues that the second opening must be more than the back side of the first opening. The district court's construction is in fact faithful to this requirement because the district court's construction requires that the second opening be a "separate opening" from the first.

Thus, the district court's construction faithfully tracks the ordinary and customary meaning of the term in light of the intrinsic evidence. **We discern no error in the district court's construction of "second opening."**

**B. "Second Predetermined Pressure"**

Elements (e)-(f) of Claim 12 disclose a two-step pressurization method designed to "conform the liner substantially precisely to the interior wall surface contours of the pipe." (D.I. 17. Ex. 2, col. 11, lns. 33-35) Specifically, the '196 patent teaches

pressurizing the interior of said liner to a first predetermined pressure above atmospheric pressure by means of said heated fluid and (3) reheating said liner to a predetermined temperature by heat transfer from said heated fluid to said liner, whereby, the liner returns substantially to its remembered cylindrical cross-section; and

(f) then increasing the pressure in said liner to a **second predetermined pressure above said first predetermined pressure**. . . .

(D.I. 17. Ex. 2, col. 11, lns. 23-33) (emphasis added). Both parties agree that the claim calls for a two stage pressurization process. The first stage of pressurizing the interior of the liner must return the liner to its remembered cylindrical cross-section. The second stage of pressurization must "be above said first predetermined pressure to conform the liner substantially precisely to the interior wall surface contours of the pipe." (D.I. 17, Ex. 2, col. 11, lns. 33-35) In the preferred embodiment, the pressure rises to about seven bars during the first pressurization stage and to about fifteen bars during the second pressurization stage. (D.I. 17, Ex. 2, col. 3, lns. 31-32, 40) The claims and the specification reveal that both the first and second pressures must be "predetermined." Although the patent does not specifically define "predetermined," the court shall construe it, according to its ordinary meaning, as "determined beforehand." Webster's Third New International Dictionary 1786 (unabridged ed. 1993). That is, the exact pressurization of the liner must be known before the pressurization process begins. Based on the plain meaning of the claim language, the second predetermined pressurization stage begins after the liner has returned "substantially to its remembered cylindrical cross-section." The court notes, however, that there is no limitation on how long the first predetermined pressure must be maintained after the rerounding of the liner and before the commencement of the second pressurization stage.

**The court, therefore, shall construe the term "second predetermined pressure" to mean a pressure, determined before the second pressurization stage begins, which is above the first predetermined pressure and which conforms the liner substantially precisely to the interior of the host pipe.**
2. "a second screw receiving opening in said head having its axis within the femoral neck, and a third screw receiving opening in said head having an axis generally transverse to the axis of the femoral neck and crossing the axis of the second opening."

a. The Parties' Proposed Construction

Smith & Nephew's proposed constructions is as follows:

The "second screw receiving opening in said head having its axis within the femoral neck" and the "third screw receiving opening in said head having an axis generally transverse to the axis of the femoral neck and crossing the axis of the second opening" means that the head of the intramedullary nail includes two passageways capable of receiving a screw, the "second" passageway being aligned along the femoral neck when the nail is inserted into the medullary canal of a femur and the "third" passageway extending across the "second" passageway. The second and third passageways cross one another within the axial opening of the nail at an angle such that the same nail can position a screw along a femoral neck or in a direction transverse to a femoral neck of a left or a right femur.

(Pl.'s Opening Markman Br. 16; D.E. # 57.) In other words, Smith & Nephew assert that:

The plain language of claim 1 clearly requires that each of the second and third screw receiving openings be formed in the head of the nail (the screw receiving openings are "in said head"), that one of those openings align with the "axis of the femoral neck," and that those openings extend across one another in the head of the nail (the third screw receiving opening "cross[es] the axis of the second opening."). As discussed below, in the context of the entire '959 Patent, it is clear that the screw receiving openings must cross in the axial opening of the nail's head.

(Id. at 17.) Specifically, Smith & Nephew asserts that the patent specification's disclosure of certain angle ranges for positioning the screws along the passageways throughout the femoral neck demonstrate that the passageways could not extend to angles significantly outside the disclosed range, nor could the passageways cross each other anywhere but in the axial bore of the nail's head. (Id.) As such, Plaintiff contends that within the context of the Patent's written description and drawings, the "second" and "third screw receiving openings" must cross one another within the axial opening of the nail at an angle such that the same nail can position a screw along a femoral neck or in a direction transverse to a femoral neck of a left or right femur. (Id. at 18.) They state that reading the claims in any other fashion would be too broad, and thus, violate the tenet that claims should not be construed to cover more than what the patentee considers the invention. (Pl.'s Resp. to Def.'s Opening Markman Br. 12; D.E. # 12.)

Zimmer on the other hand asserts that the claim term "a second screw receiving opening in said head having its axis within the femoral neck" is very straightforward, and merely means "the nail includes a second opening for a screw in the head of the nail that has an axis which in use can align with the femoral neck." (Def.'s Opening Markman Br. 15; D.E. # 56.) They go on to state that "a third screw receiving opening in said head having an axis generally transverse to the axis of the femoral neck and crossing the axis of the second opening" also is straight forward and means "the nail includes a third opening for a screw in the head of the nail that has an axis that is angled with respect to the axis of the femoral neck, and crosses with the axis of the second screw opening." (Id. at 16.)

Defendant asserts that interpreting this to mean that the screw receiving opening must occur such that the same nail can be used in the left or right femur is contrary to the claim language, which merely describes "just 'an axis' of the third screw receiving opening that crosses with 'an axis' of the second screw receiving opening." (Id.) Specifically they state: "The claim limitation does not require that passageways of the openings for the second and third screws necessarily extend across one another; nor does the limitation require that the openings be in a configuration such that the nail can be positioned within a left or right femur." (Id.) Zimmer also states that Smith & Nephew has misrepresented the recited term "screw receiving opening" as a "passageway." (Def.'s Resp. to Pl.'s Opening Markman Br. 16; D.E. # 59.) They point to the language of the patent to demonstrate that the term "passageway" is never used, and thus, should not be interchangeable with the term "screw receiving opening." (Id.)
Finally, Zimmer contends that a required screw receiving opening configuration is not affirmatively stated in the patent until Claim 9, which depends from Claim 1. (Id.) Thus, according to Zimmer construing the claims as Smith & Nephew does would violate the doctrine of claim differentiation, which requires that an independent claim should not be construed as requiring a limitation added by a dependent claim. (Def.'s Opening Markman Br. 16-17; D.E. # 56.) Although dependent Claim 9 does recite a nailing configuration that requires the receiving openings in the head to have their axes in a common plain, which are symmetrical about a plane normal to said common plain, which in term enables usage in both the left and right femur, Zimmer states nothing of such a configuration can be found in Claim 1. (Id.) Zimmer asserts that Smith & Nephew's construction again violates the tenet that limitations found within the specifications generally should not be read into the claims. (Def.'s Resp. to Pl.'s Opening Markman Br. 16; D.E. # 59.)

b. Claim Construction Analysis

As the previous construction analysis set forth, nothing from the claims, specifications, or prosecution history indicate that the configuration of screw receiving openings should be limited to a configuration that enables the nail to be insertable into both the left and right femur. 61 To the extent that the specifications discloses an embodiment of a nail with a specific screw receiving opening configuration, it would be improper to import these additional limitations into the broader scope of claim 1. 62 Additionally under the doctrine of claim differentiation, it is not until dependent claim 9, which does disclose a specific screw receiving opening configuration that a limitation such as the one suggested by Plaintiff is revealed. 63 As such the Court construes this portion of claim 1 to mean:

The nail includes a second opening for a screw in the head of the nail that has an axis, which in use can align with the femoral neck. The nail includes a third opening for a screw in the head of the nail that has an axis that is angled with respect to the axis of the femoral neck, and crosses with the axis of the second screw opening.

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61 See Phillips, 415 F.3d at 1315; see also Computer Docking Station Corp., 519 F.3d at 1374; Saunders Group, Inc., 492 F.3d at 1331; Intamin Ltd., 483 F.3d at 1335 (citing Phillips, 415 F.3d at 1323); Liebel-Flarsheim Co., 358 F.3d at 907.

62 See Phillips, 415 F.3d at 1315 (stating that although the specifications are the single best guide to the meaning of disputed terms, it remains a bedrock principle of patent law that the claims of the patent define the invention to which the patented is entitled the right to exclude); see also Computer Docking Station Corp., 519 F.3d at 1374; Saunders Group, Inc., 492 F.3d at 1331; Intamin Ltd., 483 F.3d at 1335 (citing Phillips, 415 F.3d at 1323); Liebel-Flarsheim Co., 358 F.3d at 907.

63 See Intamin Ltd., 483 F.3d at 1335; Phillips, 415 F.3d at 1314-15; Liebel-Flarsheim Co., 358 F.3d at 904; Wenger Mfg., Inc., 239 F.3d at 1233.

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3500

A. "second transmission"

Claim 1 of the '490 patent contains the term "second transmission": "said mobile repair unit comprising: . . . a second transmission coupled to said engine; a variable speed hoist coupled to said second transmission." The claim describes the first transmission being coupled to the wheels and the second transmission being coupled to the hoist. Key contends that no construction of this term is necessary. The defendants' proposed construction of "second transmission" is "a second compact, enclosed unit of gears or the like for the purpose of transference of force between machines or mechanisms, often with changes of torque and speed, that is separate and independent from a first such assembly."

The defendants argue that the second transmission must be "separate and independent" from the first transmission. Forbes and Petron point to portions of the specification and the prosecution history that describe multiple transmissions, e.g., "[a]pplicant's claimed engine and multiple transmissions do not appear to be disclosed" by the prior art references, (Dkt. No. 91, Ex. 4, at 12), and Figure 1, which depicts the first transmission 32 and the second transmission 34 as two separate and
independent components. Key responds that nothing in the patent requires the transmissions to be "separate and independent." Key points out that the applicant did not argue to the PTO that the transmissions had to be separate and independent; he distinguished his invention from the prior art based on multiple transmissions. The plaintiff further contends that the figures and specification passages cited by Forbes and Petron describe preferred embodiments that should not restrict the breadth of the claims.

The Federal Circuit has addressed the issue of whether recited claim elements must be separate and distinct. In Linear Technology Corp. v. International Trade Commission, the court construed the terms "second circuit" and "third circuit." 566 F.3d 1049, 1054-55 (Fed. Cir. 2009). Linear Technologies rejected the argument that the two circuits must be "entirely separate and distinct." Id. at 1055. "Rather, the 'second' and 'third' circuits must only perform their stated functions" and "can contain overlapping components." Id. at 1055-56. Although the '490 patent's preferred embodiment discloses separate and independent transmissions, nothing in the patent disclaims two transmissions that share overlapping components. And, even though the specification in Linear Technology disclosed the circuits as having overlapping components, the rule announced by the Federal Circuit was that the patentee was entitled to the full scope of the claim term, absent a clear disavowal or a contrary definition. Id. at 1055 (citing Home Diagnostics, Inc. v. LifeScan, Inc., 381 F.3d 1352, 1358 (Fed. Cir. 2004)). Based on Linear Technology and a reading of the '490 patent as a whole, the court will not impose a "separate and independent" limitation. Therefore, "second transmission" is construed to mean "a second compact, enclosed unit of gears or the like for the purpose of transference of force between machines or mechanisms, often with changes of torque and speed."

"Second Wall" in Claim 1

Claim 1 includes this element (emphasis added to identify the terms disputed by the parties):

a second wall disposed outwardly of said first upstanding annular wall and defining therebetween a guide chamber.

That language must be read in light of the specification's representation (1) of the first wall as serving as both the outer wall of the pump chamber and the inner wall of the guide chamber and (2) of the second wall as the outer wall of the guide chamber and inner wall of the soil container. W. Mem. 13-14 asserts that because the specification uses the term "wall" in an array of ways, this Court should construe "second wall" broadly as "a structure for holding back pressure that may be of any shape, size, orientation or formed of any number of individual parts" (id. at 14). 8 But such wishful thinking runs contrary to the words of the claim because to form a guide chamber "therebetween," the outwardly disposed second wall must be "upstanding" 9 and must surround the annular first wall.

8 W. Mem. 13 alternatively contends that a "'wall' is a structure that serves to hold back pressure" and that because that "meaning…is plain upon a simple reading of the claim…no further inquiry into the specification is necessary." But in the present context the term "wall" has no definitive content without reference to the specification.

9 That does not however mean that the second wall must be a straight vertical wall as viewed from the side. As the ensuing discussion highlights, it must simply be "upstanding" to the extent that its radially outward placement from the first wall forms a guide chamber "therebetween." As used in this opinion, "radially outward" connotes a structure on the same horizontal plane--that is, sharing space along a vertical axis--but farther away from the center of the pump chamber.

W. R. Mem. 11 (footnotes omitted) attempts to avoid such a construction:

The inventor has testified that the '433 invention could readily be implemented using a non-annular guide chamber. One of the inventor's first prototypes…[used] a "hole" directly from the pump chamber to the soil container chamber. In the inventor's mind, the guide chamber of the '433 invention is merely a "conduit," "pipe" or "path."
Not only is that testimony unacceptable as extrinsic evidence, but it is also impermissible revisionist history that directly contravenes the words of the claim. Whirlpool drafted that claim language, and it is Whirlpool's fault if it did not properly reflect what was supposedly in the "inventor's mind."

As for the shape of that second wall, 10 the specification embodies only an annular wall that encircles the first concededly annular wall. W. Mem. 15 nonetheless argues that the omission of the term "annular" in the claim language as to the second wall, while that term is expressly used as to the first wall, marks "a clear intent" to avoid that limitation. It is also true that construing the second wall in claim 1 as necessarily annular makes that claim nearly identical to claim 2 (W. Mem. 15). 11 Because that argument has some logical force (though any nonannular alternative would surely seem to be a less likely candidate 12), this Court holds that the second wall does not have to be "annular." Instead it may be square, or in the shape of a pentagon, or in any other shape that fulfills the in-all-events requirements that it must be upstanding and must completely surround the first upstanding annular wall.

10 "Shape" as used in this opinion refers to how the second wall appears from an overhead view.

11 Claim 2 states in relevant part: "said second wall comprises an annular wall disposed substantially circumjacent said first annular wall."

12 Given fluid dynamics and the forces of friction, it is obvious that the optimum shape for an upstanding wall that surrounds an upstanding annular wall to guide fluid therebetween is also annular.

In still another effort to reshape the English language, W. Mem. 14 would like to define "outwardly" as "away from a center point in any direction." To the contrary, M. Mem. 15 is right in saying that the term "outwardly" must mean, by definition, radially outward and sharing at least some position along a vertical axis." Hence the second wall is positioned circumjacent to the first annular wall. Buttressing that normal meaning of the claim language, the specification describes how centrifugal force is central to the design by forcing water over the first wall and into the guide chamber 13--and to position the second wall in any direction other than radially outward would negate that effect. Moreover, the specification says "outwardly and upwardly" to describe the flow of wash liquid in the soil collection chamber (col. 2, l. 38)--a usage that torpedoed Whirlpool's current suggestion that "up" is the same as "out."

13 Except where otherwise indicated, this opinion's column and line references are to the patent whose claims are being construed. Here col. 6, l. 40 says that "the "wash liquid [in the pump chamber] contains a heavy concentration of entrained soil particles…which tend to be forced outwardly by centrifugal force."

It is useful to sum up the end result of the analysis of ordinary English language usage--and not of Whirlpool's attempted convolutions--to this point. As used in claim 1, a "guide chamber" is a space formed between the second upstanding wall and the first annular upstanding wall that it surrounds, with that second wall being located radially outward from that first wall. 14

14 Both parties agree that "guide chamber," as the term implies, is a compartmented space (see W. Mem. 14, M. Mem. 15).

To round out the analysis (perhaps a bad pun), this opinion should eliminate any potential misunderstanding of two other
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terms--"annular" and "subjacent" 15--that are relevant to the claim element under consideration and that this opinion has already used, but without formal definition. W. Mem. 19-20 suggests that "annular" means "at least part of a circle, but not necessarily a full circle," and that "circumjacent" means "lying adjacent to at least a portion of an object, generally in a curved manner, but again, not restricted to a full 360 [degrees] surrounding." Again those purported definitions are seriously warped--not only are they contrary to the terms' dictionary meanings, but nothing in the '433 Patent suggests any usage different from those dictionary meanings.

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15 Maytag and Whirlpool directly dispute the meaning of those terms in the context of claims 2 and 4 in the '433 Patent. Because this opinion addresses those terms at this point, no later discussion as to those other claim elements is needed.

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"Annular" means, in the words of the first listed definition in Webster's Third New International Dictionary (unabridged 1986)("Webster's") "of or relating to a ring: forming a ring: shaped like a ring." 16 To escape that really tautological usage, W. Mem. 19 points to a reference in the '599 Patent to the "annular flow" of water and to soil "flow that follows an approximately 270 [degrees] path within the soil container." But an "annular flow" merely describes the circular (ringlike) orientation of the liquid's flow. Although a patentee may choose to use the same word in different ways in different patents (part of the conventional wisdom that a patentee may be his or her own lexicographer), it is worth noting that the '100 Patent used the term "substantially annular" to describe a structure that was greater than 270 [degrees] in circumference but was not completely enclosed ( '100 Patent, col. 6, l. 25)--something that surely renders it more likely that the closely related '433 Patent employs "annular" to mean a full 360 [degrees] ring. 17

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16 That is scarcely surprising, given the word's derivation from the Latin "annulus"--a ring.

17 And of course the specifications in both the '433 Patent and the '100 Patent use the term "annular" to describe a complete ring.

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As for "circumjacent," Whirlpool offers nothing persuasive to suggest that the term is understood in the art as indicating a location in relation to only "at least a portion" of another object (W. R. Mem. 17). 18 Hence the term is given its ordinary Webster's listed meaning of "lying adjacent on all sides: surrounding" (emphasis added). 19

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18 W. R. Mem. 17 n.22 cites a single patent "relating to a dishwasher construction" that uses "circumjacent" in a context where a structure does not completely surround another structure. Despite the already-referred-to notion that any patentee (in this instance, someone else) may serve as his or her own lexicographer, potentially giving a myriad of meanings to the same term in different patents, Whirlpool's own patent plainly uses the term in its ordinary sense to describe a structure that completely surrounds another.

19 Once again a language buff hardly requires schooling in classical Latin to couple "circum" with "jacent" (the latter as in "adjacent").

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3502

Secondary display
The Court construes "secondary display" to mean "a second display in a multi-display system."

MASS proposes that "secondary display" means "the subsidiary, subsequent flat panel electronic display that is not physically interchangeable with the primary display, and that supplements the display area of the primary display by increasing the total overall display area." MASS attempts to limit the secondary display by stating it is "not physically interchangeable" with the primary display. However, the claim language contradicts such a limitation.

In claim 15, the secondary display is described as a "flat panel display." '170 patent, Col. 6:19–29. Dependent claim 18 requires the primary display to be a "flat panel display." See id., Col. 6:38–39. The intrinsic evidence does not suggest that the primary flat panel display of claim 18 cannot be interchangeable with the secondary flat panel display of claim 15. Thus, MASS’s limitation is improper.

As with “primary display,” “secondary display” is not given a special meaning. In the claim language, the inventor uses the term “secondary” and “second” interchangeably. See id., Col. 6:54–55 (referring to the system of claim 20, dependent claim 21 states “in said secondary position” when it previously refers to that position as the “second position”). Also, MASS’s extrinsic evidence defines “secondary” as “of second rank” or “of, relating to, or being the second order or stage in a series.” See MASS’s Response Brief, Ex. 4. Dell’s proposed construction encapsulates the plain and ordinary meaning of “secondary,” as shown by the claim language and MASS’s extrinsic evidence. Accordingly, the Court construes “secondary” as “a second display in a multi-display system.”

3. "Central circulation section"

A further stage in the above-described internal structure is the disputed "central circulation section." (Doc. 68, Ex. 2, cl. 1g). The dispute, in this regard, is not its location; it is centrally located beneath the horizontal rack structure and between juxtaposed pallets. Rather, the parties dispute whether the "central circulation section" has a functional attribute, i.e., a high-pressure state in operation. Thermal contends that the central circulation section is a high pressure plenum. (Doc. 69 at 7). Dade counters that this is not necessarily so. (Doc. 67 at 8-9). In regard to this dispute, the 158 Patent's prosecution history dictates what the foregoing analysis clearly implies, to wit, that the central circulation section is a high pressure plenum.

In the course of the 158 Patent's prosecution, the Patent Applicant filed with the U.S. Patent Office a document containing the following statement:

Applicant elects Group I for examination which is represented by drawing figures 1-4, which group is distinguished by the inclusion of a central high pressure plenum 25, 11 and covered by claims 1 (generic), 2, 3, 4, 5, 6, 17, 18, 19, 20, 21, 22, 23, 24, 27, 28 and 29.

11 This numeric reference as well as the reference to drawing figures 1-4 refer to figures 1-4 ultimately contained in the 158 Patent.

Applicant makes this election with traverse as Applicant has noted that the central high pressure plenum is contained in all embodiments and any additional items are merely minor improvements or modifications and thus, all claims should be kept in the same application for examination.

(Doc. 68, Ex. 3, at 69-70).

Thermal claims that the foregoing statement is a prosecution disclaimer, which prevents Dade from recapturing through claim construction a meaning foreclosed by unambiguous representations the Applicant made in prosecuting the patent application. See Omega Eng’g., Inc. v. Raytek Corp, 334 F.3d 1314, 1324 (Fed. Cir. 2003). The Court agrees. Although
Dade argues that the statement refers to fewer than all possible embodiments of the invention, (see Doc 67 at 8-9), that argument is incorrect. The statement unambiguously refers to all embodiments and was made to pursue all claims -- not simply those claims enumerated in the statement, but all claims from 1 through 29. (Doc. 68, Ex. 3, at 69-70). Specifically, the statement was made in response to a U.S. Patent Office action requiring the Applicant to elect from Claims 1 through 29, or restrict all those claims to, one patentable species of invention. (Id. at 64-65, 69). The Applicant's response, in part, restricted all embodiments of Claims 1 through 29 to embodiments containing a central high pressure plenum. 12 (Id. at 69-70). Accordingly, Dade is estopped from claiming that the central circulation section is not a high pressure plenum.

--- Footnotes ---

12 The U.S. Patent Office thereafter issued the 158 Patent on Claims 1 through 28, which include claims not specifically enumerated (elected) in the Applicant's above-quoted statement. Only Claim 29 was denied, and it was denied as being anticipated by the prior art. (Id. at 72-74).

--- End Footnotes ---

Even if this patent history disclaimer had not occurred, the context of Claim 1 reveals that the central circulation is a high pressure plenum. As previously discussed, Claim 1's horizontal rack structure, top horizontal baffle, and pressurizer(s) are centrally suspended above a "central circulation section," and located between the pressurizer(s) and the "central circulation section" is a "pressurization conveyance," which Dade describes as a duct. From these limitations, the pressurizer(s) can conceivably operate in only two ways, either to drive fluid (gas) into the central circulation section or to draw it out. In an area beneath a pressurizer, the latter operation would create a vacuum that would extend through the "pressurization conveyance" into the central circulation section, and thereby improperly render the "pressurization conveyance" a "vacuum conveyance." 13 In its immediate context, the term "pressurization conveyance" carries with it the unambiguous connotation that it conveys fluid (gas) at high pressure from a pressurizer into a central circulation section. In this way, the central circulation section becomes a high pressure plenum relative, for instance, to the area above the pressurizer(s). Accordingly, the term "central circulation section" means a central high-pressure plenum.

--- Footnotes ---

13 The Court readily accepts Dade's characterization of the "pressurization conveyance" as a duct because such structures fulfill a containment function that the Court recognizes as essential to conveying gases. Ducts convey gas at low or high pressure relative to their exterior. If it were not sealed in some manner, the conveyance would serve no operative function in regard to the Claim's other recited limitations. To interpret the conveyance as conveying gas at low pressure (vacuum), would read the word "pressurization" out of the relevant limitation.

--- End Footnotes ---

**3504**

G. "upper section including an interface for receiving and retaining a firearm accessory"

The court will construe "upper section including an interface for receiving and retaining a firearm accessory" as "part or portion of the accessory clamp that includes an interface for receiving and retaining a firearm accessory and which is higher in physical position than the lower section of the accessory clamp."

Claim 1 describes "an accessory clamp having an upper section and a lower section, said upper section including an interface for receiving and retaining a firearm accessory." Defendant argues that the claim's use of the term "section" (as opposed to the word "portion") implies that the upper and lower parts of the clamp must be physically separable. For "upper section including an interface," Defendant therefore proposes "a physically separable component of the accessory clamp that cooperates with the lower section of the accessory clamp to retain a firearm accessory, that resides above the lower section when the mount is in the latched position."

Severability is not implicit in the word "section," either as a matter of common English usage or as a matter of internal

The central issue of this appeal is the meaning of the term "secured" as it is used in the '300 and '471 patents. Claim 93 of the '300 patent, for example, claims:

A shoe comprising:

an upper having a heel region;

a rear sole secured below the heel region of the upper; and

a flexible plate having upper and lower surfaces and positioned between at least a portion of the heel region of the upper. . .

't300 patent, col. 20 ll.29-43 (emphasis added).

The '471 patent also uses the term "secured." For example, claim 1 states:

A shoe comprising:

an upper, and

a rear sole secured below a portion of the upper, the rear sole comprising:

a member having a top wall with a lower surface . . . the member having a bottom wall . . . the forward regions of the top and bottom walls being connected at a close end by a curved wall. . .

't471 patent, col. 13 ll.6-50 (emphasis added).

Akeva argues that the ordinary meaning of the claim should be given to the term and that the ordinary meaning would encompass permanent, removable, and rotatable soles to athletic shoes. adidas argues that the specifications of the '300 and '471 patents disavow rear soles that are not detachable or rotatable.

This court construes claims in accordance with the principles set forth in Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Claim language governs claim interpretation. Id. at 1312. Claim terms, however, are construed in light of the specification. Id. at 1315. The ordinary meaning of a term may be narrowed when interpreted in light of the specification. Id. at 1316.

A. The '471 Patent

The '471 patent is directed to athletic soles with interchangeable soles which "provide extended and more versatile life and better performance in terms of cushioning and spring." Col. 1 ll.13-17. The '471 patent states that "an athletic shoe can be changed dramatically if it is simply given interchangeable rear soles." Id. at col. 2 ll.54-55. In particular, the specification describes shoes with "interchangeable/detachable rear soles" to address problems with uneven wear patterns. Id. at ll.14-15, 26-27. While Akeva argues that the invention of the '471 patent is the flexible membrane, the language of the '471
specification specifically states that the invention of the '471 patent is an athletic shoe with a detachable heel: "However, in a radical departure from conventional shoes, the shoe of the present invention incorporates a heel structure, including a detachable rear sole, that significantly alleviates heel wear problems associated with conventional soles and provides enhanced cushioning and/or spring." Id. at col. 4 ll.56-61 (emphasis added).

Akeva argues that the catch-all phrase at the end of the '471 patent specification, which states "[t]hus, it is intended that the present invention cover all possible combinations of the features shown in the different embodiments, as well as modifications and variations of this invention, provided they come within the scope of the claims and their equivalents," precludes a claim construction which comprises only detachable heels. Col. 13 ll.1-5. No embodiments, however, of the '471 patent include permanently attached heels. Of course, the absence of an embodiment does not necessarily exclude that embodiment from the scope of the invention. Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004). But here, the specification when read as a whole clearly demonstrates that the scope of the invention is athletic shoes with detachable heels which may include an optional flexible plate. See '471 patent, col. 4 ll.62-col. 5 ll.4 ("An embodiment of the heel structure . . . includes . . . a rear sole detachable secured to the rear sole support. . . . In addition, the heel structure may include a flexible plate for providing spring to the heel of the user and reducing wear caused by midsole compression."). Akeva cites Golight, Inc. v. Wal-Mart Stores, Inc., 355 F.3d 1327, 1331 (Fed. Cir. 2004), in which the court found no disclaimer where the specification states the invention "includes" some feature where it is only one of several features described as significant or important. However, this case is distinguishable because the detachable sole of the '471 patent is not one of several features, it is the primary feature of the invention.

Indeed, when the '471 patent uses the term "secured," it uses it to describe a rear sole which is "detachably secured." Col. 3 ll.14-17. Finding that the term "secured" applies only to shoes with detachable heels does not take the term outside its ordinary meaning. Rather, the term is interpreted as it is used in accordance with the specification; "secured" does allow for removability. As this court has stated in Phillips, "[t]he construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." 415 F.3d at 1316. In other words, an inventor cannot get more than he or she invents. On Demand Mach. Corp. v. Ingram Indus. Inc., 442 F.3d 1331, 1344 (Fed. Cir. 2006) (citing Phillips, 415 F.3d at 1316 and Autogiro Co. of Am. v. United States, 384 F.2d 391, 397-98, 181 Ct. Cl. 55(1967)) ("[w]hile each term standing alone can be construed as having varying degrees of breadth, each term must be construed to implement the invention described in the specification"). The district court construed this term as used in the '471 patent to mean "a rear sole detachably secured below a portion of the upper." Claim Construction Decision 2005 U.S. Dist. LEXIS 11213 at 35, [slip op] at 28. As such, this court will not disturb the district court's claim construction that the '471 patent covers shoes with detachable heels.

B. The '300 Patent

The '300 patent specification also discloses athletic shoes with extended life by improving the rear sole such that the rear sole is rotatable, detachable, or both. The '300 patent notes that the soles of prior art athletic shoes tend to wear out faster than the shoe itself. Col. 1 ll.2-42. Further, athletic shoe performance cushioning also tends to wear out faster than the shoe itself. Id. at ll. 44-46. In order to solve this problem, the '300 patent specification discloses shoes that can be rotated into different positions to allow for more even wear to the sole of the athletic shoe. Col. 6 ll.56-59. Or, in a preferred embodiment, the rear sole can be detached, allowing the athletic shoe owner to change the sole depending on the cushioning and other features desired for a particular activity. Col. 4 ll.42-46.

The district court construed the term "secured" in the '300 patent to mean "selectively or permanently fastened, but not permanently-fixed into position." Claim Construction Decision 2005 U.S. Dist. LEXIS 11213 at 32, [slip op] at 25. Akeva argues on appeal that the invention of the '300 patent is a flexible plate that can be used in shoes with rotatable, detachable, or permanently fixed heels. To support its argument for this claim interpretation here, Akeva points to language in the '300 patent specification which states "[t]he flexible region also need not be used only in conjunction with a detachable rear sole, but can be used with permanently attached rear soles as well." Col. 10 ll.12-16. Akeva also argues that a related patent, U.S. Patent 5,560,126 (the '126 patent), claims a "detachably secured" rear sole and a rear sole that allows for "selective rotation" and that this supports its claim that such soles are not the claimed invention of the '300 patent. Thus, Akeva argues, the asserted claims of the '300 patent cover permanently-fixed soles that will or will not rotate and which contains a flexible plate.

In SciMed Life Systems Inc. v. Advanced Cardiovascular Systems Inc., 242 F.3d 1337, 1341 (Fed. Cir. 2001), this court
stated "[w]here the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question." In SciMed, the language of the specification contained a "broad and unequivocal" disclaimer of dual lumens in catheters. 242 F.3d at 1344. The language of the '300 patent specification is less equivocal than that in SciMed. Here, the '300 patent states contains the "all embodiments" language discussed in SciMed: "[i]n all embodiments, the invention includes mechanical means for selectively locking the rear sole relative to the rear sole support and upper of the shoe." Col 7 ll.17-20. The "all embodiments" language of the '300 patent specification however, appears at first blush to conflict with the "permanently attached rear soles" language, creating a less equivocal disclaimer than that of SciMed. Col. 7 ll.17-20; col. 10 ll.12-16.

Nevertheless, the "permanently attached" language, when read in the context of the specification, supports a finding that the '300 patent specification disclaims permanently attached rear soles that do not at least rotate. Phillips, 415 F.3d at 1316. The "permanently attached" language in the specification contemplates shoes with heels that are permanently fixed (cannot be interchanged) but are rotatable. For example, the '300 patent specification states that "the rear sole may not be removable but only rotatably positionable." Col. 7 ll.42-43, see also col 6:58-63, col. 7 ll.35-44; Fig. 3 of the '300 patent. In addition, the '300 patent specification discusses as a problem of prior art shoes with heels the shoe owner is "stuck" with. Col. 2 ll.2-3. In order to solve this problem and other problems, the '300 patent contemplates athletic shoes with rear soles that can be rotated or replaced. Col. 6 ll.33-45.

As the district court noted: "Akeva has cited no statement in the '300 Patent's specification, and this court has found none, that would contemplate a rear sole that is permanently locked into position." Claim Construction Decision 2005 U.S. Dist. LEXIS 11213 at 31, [slip op] at 25. Accordingly, one skilled in the art reading the specification of the '300 patent specification would understand the term "secured" as used in the '300 patent to mean shoes with rear soles that are secured to the shoe, but not permanently fixed.

Further, while this court has considered prosecution of earlier patents in the construction of claim terms used in later issued patents, see Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1349-50 (Fed. Cir. 2004), in those cases, the patents had the same specification. Here, the '126 patent on which Akeva relies has a different disclosure than the '300 patent. Accordingly, this court construes the term "secured" in accordance with the district court.

B. "SECURED" TAKES ON ITS ORDINARY AND ACCUSTOMED MEANING

Eazypower and VA differ as to what is the meaning of the word "secured" used in claims 1 and 7 of the '929 patent. Eazypower proffers that the word "secured" takes on the meaning "to be made fast or firm, as by attaching," whereas VA states "secured" means "a tight and non-rotating attachment." (Pl.'s Mem. in Supp. of its Proposed Claim Const. at 1), (Def.'s Mem. in Supp. of its Proposed Claim Const. at 2). Claims 1 and 7 first use the word "secured" as follows:

...said flexible extension shaft including a plurality of concentric coil springs in tightly wound adjacent relation extending between and secured to generally cylindrical body portions at said first and second ends of said shaft to accommodate universal deflection of said shaft relative to said access of chuck...

(The '929 patent, col. 5, lines 3-9, col. 6, lines 37-44) (emphasis added). Claims 1 and 7 then use the word "secured" as follows:

...a flexible sleeve disposed about said concentric coil springs, said flexible sleeve having cylindrical fittings secured thereto at opposite ends thereof so as to define a shoulder internally of each of said fittings...

(Id. at col. 5, lines 9-13, col. 6, lines 44-47) (emphasis added).

VA argues that "secured" must take on the meaning "a tight and non-rotating attachment," because the invention will not work if the cylindrical bodies 20a and 22a are allowed to rotate with respect to the concentric coils, 30, 32, 34. (Def.'s Mem.
in Supp. of its Proposed Claim Const. at 4-5). It claims that if the cylindrical body portions 20a or 22a could spin freely, then "rotary motion of the screwdriver could not be transferred to the tool held at the opposite end, and the tool would not rotate." (Id. at 4).

VA argues that because "secured" must mean "a tight and non-rotating attachment" as it is used in reference to the securing of the concentric coils, 30, 32, 34 to the cylindrical body portions 20a or 22a, it must take on that same meaning when used in reference to the flexible sleeve 36 having cylindrical fittings 38 and 40 secured thereto at opposite ends 42 and 44 thereof. (Id. at 5). VA argues this because when an inventor uses words in the patent they must take on the same meaning when used multiple times throughout the claim and specification, citing Fonar Corp. v Johnson & Johnson, 821 F.2d 627, 632 (Fed. Cir. 1987). (Id.).

In support of VA's proffered definition of the word "secured," VA also offers extrinsic evidence in the form of expert testimony and the prosecution history of the European counterpart to the '929 patent. (Def.'s Mem. in Supp. of its Proposed Claim Const. at 6-8). It also submits dictionary definitions of the word "secured" to mean "to make fast: tie down," and of the word "fast" to mean "firmly, fixed, immovable or moved only with the greatest difficulty." (Id. at 6) (quoting Webster's Third New International Dictionary (1993)).

Eazypower disputes VA's proffered meaning of the word "secured" and offers its own: "to be made fast or firm, as by attaching." (Pl.'s Mem. in Supp. of its Proposed Claim Const. at 1). It states that because the patentee never acted as his own lexicographer, since he set forth no explicit definition of the word "secured," he intended for it to have its ordinary and accustomed meaning. (Id. at 11-12). Therefore, it alleges that the word "secured" is used simply "to explain that the cylindrical bodies are functionally 'secured' to the concentric coil springs and that the cylindrical fittings are functionally 'secured' to the flexible sleeve." (Id. at 9-10).

Eazypower states that the phrase "tight and non-rotating," and the words "tight," and "non-rotating" are not used in the patent itself nor in the prosecution history. (Id. at 12). Therefore, it argues, because such limitations cannot be read into the claim, the use of extrinsic evidence is prohibited. (Id. at 12).

Furthermore, Eazypower argues that many articles are "secured" without being constrained against relative motion. (Pl.'s Reply Mem. in Supp. of its Proposed Claim Const. at 5). As an example, it states that an automobile tire is "secured" to a vehicle, yet it can rotate relative to the automobile. (Id.).

Eazypower rejects VA's assertion that the tool will not work unless "secured" is construed to take VA's proffered definition because such a determination is based on VA's own personal speculation. (Id. at 3). It argues that even if VA's proposed workings of the invention are correct, that it is still consistent with its definition of the word "secured" because "the cylindrical bodies 20a, 22a are also made fast or firm against relative motion since they are attached to the concentric coil springs 30, 32, 34 such that they are constrained against axial motion along the shaft. Therefore, because the cylindrical bodies 20a, 22a are held firm in at least one direction of relative motion, the common and ordinary meaning of secured is consistent with this embodiment of the invention." (Id at 7).

In support of Eazypower's proffered meaning of the word "secured": "to be made fast or firm, as by attaching," it offers dictionary evidence. Such evidence provides that the word "secured" is defined as "to be made firm or fast, as by attaching," The Random House Dictionary of the English Language, Unabridged Edition (1966), "to make firm, fast, tight, etc.," Webster's New World College Dictionary (XXXX), "to take (a person) into custody: hold fast," Merriam-Webster's Ninth New Collegiate Dictionary (XXX), (Pl.'s Mem. in Supp. of its Proposed Claim Const. at 10).

VA has not overcome the presumption that "secured" takes on its ordinary meaning. Thus, the Court construes the word "secured" to take on its accustomed and ordinary meaning: "to be made fast or firm, as by attaching." The Random House Dictionary of the English Language, Unabridged Edition (1966).

VA has failed to show any of the exceptions to the rule that a word used in a patent claim takes on its accustomed and ordinary meaning. First, it has offered no evidence that the patentee of the '929 patent set forth an explicit definition of the word "secured."

Second, VA has shown no evidence that the word "secured" describes a particular embodiment that is important to the
invention. VA alleges that the invention will not work without the word "secured" taking on its proposed definition, however, it has done so through the use of an expert which is extrinsic evidence. There is nothing on the face of the patent itself or through other intrinsic evidence that suggests that the securing of the concentric coils, 30, 32, 34 to the cylindrical body portions 20a or 22a must mean "a tight and non-rotating attachment." The patentee does not use the word "tight" or "non-rotating" anywhere in the patent. He does not make reference to any requirement that the concentric coils, 30, 32, 34 must be non-rotating to body portions 20a or 22a; VA is inferring this to be the case. The "preferred embodiment itself does not limit claim terms," and "mere inferences drawn from the description of an embodiment of the invention cannot serve to limit claim terms." Johnson, 175 F.3d at 992.

Even if it is true that the tool requires concentric coils 30, 32, 34 to be tight and non-rotating to body portions 20a and 22a, that does not mean that the ordinary meaning of the word secured is not used. In this situation, the concentric coils, 30, 32, 34 are still "attached" to the body portions 20a and 22a regardless of whether there is any rotation allowed. They are "attached" and "made fast or firm" because there is no axial motion along the shaft. Thus, the ordinary and accustomed meaning of the word "secured" is maintained.

Third, VA failed to show that the word "secured" deprived the claim of clarity so that there was no means by which the scope of the claim could ascertained. Based on the claims description, that "said flexible extension shaft including a plurality of concentric coil springs … secured to generally cylindrical body portions at said first and second ends of said shaft…" as well as by looking at Figures 2 and 3 of the '929, it is understandable that the plurality of concentric coils are "attached" to the cylindrical body portions. (The '929 patent, col. 5, lines 3-9, col. 6, lines 37 - 44, Fig. 2, Fig. 3) (emphasis added). Thus, "secured" takes on its accustomed and ordinary meaning.

Fourth, there is no allegation that Eazypower is attempting to broaden the meaning of the word "secured" to cover more than that disclosed in the specification. "To be made fast or firm, as by attaching," is the ordinary meaning of the word "secured." The Random House Dictionary of the English Language Unabridged Edition (1966). On the other hand, VA is changing the meaning of the word "secured" to be that of "tight and non-rotating."

In construing the word "secured," extrinsic evidence need not be considered by the Court because the intrinsic evidence was capable of making its meaning clear. Therefore, because VA was not able to overcome the presumption that the word takes on its accustomed and ordinary meaning, the Court construes the word "secured" to mean "to be made fast or firm, as by attaching." Id.

1. Secured

In its brief, Fiala argues that the term "secured" should be interpreted broadly to mean "held fast." 7 In support of its position, Plaintiff relies on Webster's dictionary, as well as the patent prosecution history. Pl.'s Brief at 23-24. See also CCS Fitness, 288 F.3d at 1366 (explaining that although dictionary definitions do not form a part of the integrated patent document, they are relevant in helping to establish a term's ordinary meaning). Interestingly, Card USA also predicates its argument on the prosecution history. However, Card USA uses the same evidence to propose a narrower construction of the term "secured". According to Card USA, "secured" ought to be construed as meaning more than just holding fast, but actually providing a security aspect. 8 Def.'s Brief at 15-19.

7 Fiala advanced the same argument during the Markman hearing. See Tr. at 14-15.

8 During the hearing, Card USA articulated this argument more precisely. Defendant urged this Court to construe the term "secured" as a synonym for "retaining"; using the meaning for retaining that Defendant believes Fiala set forth in the specifications and during the prosecution process. Tr. at 47. According to Card USA, "retaining", does not relate only to a mechanism for attaching the card, such as a rivet, but actually includes "everything that the rivet [would do] in terms of [showing evidence of tampering] and/or [obscuring the PIN].
The Court's analysis begins, as it must, with the language of Claim 12. Teleflex, 299 F.3d at 1324-25. Words in a claim are generally given their ordinary and customary meaning, unless the patentee has chosen to be his/her own lexicographer and explicitly defined the terms in the specifications. Vitronics, 90 F.3d at 1582; Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578 (Fed. Cir. 1996) ("A technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention . . . ").

Because Mr. Fiala did not define the term "secured", the Court must ascertain whether the this word must be given its ordinary meaning or discern a specific meaning for the term. Although Fiala correctly notes that one of the ordinary meanings of the word secure is to "hold fast", the same source that Fiala urges the Court to rely on includes an alternative meaning which supports Card USA's position. Pl.'s Brief at 13. Specifically, the version of Webster's Dictionary Fiala introduced during the hearing also defines the word "secured" as relieving exposure from danger or making safe. See Webster's Ninth New Collegiate Dictionary at 1062 (1990). This definition is in line with Card USA's argument that the means for securing were intended to protect the customer from purchasing a card that had been tampered with. Def.'s Brief at 15. Given the inconclusive nature of this source, the Court turns its attention to the other sources of intrinsic evidence in search of guidance. CCS Fitness, 288 F.3d at 1366 (explaining that a court may restrict a claim terms ordinary meaning when the intrinsic evidence shows that the "the patentee distinguished the term from prior art on the basis of the particular embodiment").

The Court first considers the specifications, which are the written description of the invention, as well as the instructions on how to practice the '909 patent and the drawings depicting the preferred embodiments. Vitronics, 90 F.3d at 1582. Here, the specifications indicate that Fiala conceived of the invention as incorporating a security aspect. For instance, in the brief summary of the invention, Fiala identifies the security aspect as one of the objectives of the '909 patent. 11 Similarly, the Detailed Description of the Invention, repeatedly describes embodiments of the '909 patent in which the retaining means incorporate tamper evident mechanisms that allow consumers to detect when the PIN number has been surreptitiously viewed. See, e.g., U.S. Patent, Column 6: 14-40 (explaining that preferably the rivets "comprises tamper evident means for indicating that a surreptitious attempt has been made to view the PIN number"); U.S. Patent Column 7:7-22 (noting that the preferred means for the embodiment include tamper evident means); Column 8:45-52 (describing a retaining mechanism that protects customers from buying cards that have been tampered with); Column 9:48-52 (explaining that the embodiment includes a tamper evident mechanism); Column 10:26-32 (describing the particular embodiment as "also providing tamper-evident means"); Column 12: 46-58 (explaining that the sixth embodiment, which uses glue, instead of rivets also "provides clear evidence of tampering with the package").
attempted to view the PIN number on the card." U.S. Patent; Column 3:7-12.

Fiala acknowledges including a security element in its description of the invention. Rather, in its Corrected Response Brief Fiala urges the Court to consider the retaining means (i.e., rivets, glue, etc.) as merely articulating possible embodiments of the invention. 12 Pl.'s Corrected Resp. at 2-4. To this end, Fiala relies on CCS Fitness v. Brunswick Corp, 288 F.3d at 1366.

In this case, the Court of Appeals for the Federal Circuit considered the appropriate role the specifications and the prosecution history should play in claim construction. Id. at 1367-68. Although as Fiala correctly points out, the Federal Circuit found that the infringer cannot narrow a term's ordinary meaning by simply pointing to the preferred embodiment, Fiala overlooks the fact that the Federal Circuit explicitly noted that a "claim will not carry its ordinary meaning if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment . . . or described a particular embodiment as important to the invention." Id. at 1366. See also Scimed., 242 F.3d at 1343-44 (holding that "where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question"); O. I. Corp. v. Tekmar Co., 115 F.3d 1576, 1581 (Fed. Cir. 1997) (refusing to give the word "passage" its ordinary meaning and using the specifications to narrowly construe the term).

In this case, the specifications make evident that Fiala identified the safety aspect as an important element of the invention. The fact that every embodiment incorporates a safety aspect cannot be dismissed as a mere coincidence. The safety aspect of the retaining means is essential to the invention. The prosecution history lends further support to this interpretation.

The record shows that the PTO Examiner originally rejected Claim 12 "under 35 U.S.C. 102(b) as being anticipated by [two prior patents, the] McIntire et al. and Hill et al. [inventions]." 13 Pl.'s Ex. B at 142. In response to this communication from the PTO, Fiala submitted two subsequent amendments to Claim 12. The first amendment altered other language in the Claim, but left intact the term "retaining means." Id. at 147. The examiner once again rejected Claim 12 forcing Fiala to submit a subsequent amendment. Id. at 150-52. It was in this second amendment filed in January of 1999 that Fiala amended the language of Claim 12 to include the term secure. Id. at 155.

The Hill and McIntire patents showed a carrier panel holding an information card with a magnetic stripe, in which the information card sat atop of and wholly within the perimeter of the carrier panel so that the magnetic stripe could be encoded with data, such as happens with well-known credit card mailing carriers and the like. In the Hill and the McIntire references, the card and its magnetic stripe, sitting atop the carrier panel, were displaced an infinitesimal distance above the carrier panel in a direction substantially perpendicular to the plane of the card. Pl.'s Brief at 15. See U.S. Patent 5,494,544 (Feb. 27, 1996); U.S. Patent 5,281,799 (Jan. 25, 1994).
a package including a first panel, said first panel having an outer perimeter; and retaining means securing said first card to said first panel . . . .

to read

a package including a first panel, said first panel having an outer perimeter; said first card being secured to said first panel . . . .

Pl.'s Ex. B at 172; 186-87(emphasis added).

Fiala asserts that the amendment was intended to broaden the scope of the patent, such that Claim 12 would not be limited to the particular modes of securing the card to the package disclosed in the specification of the patent (e.g., rivets, glue), but would instead cover all available methods for holding the card to the panel. 14 Pl.'s Brief at 23; Tr. at 13-15; 65-67. Fiala, however, fails to provide any cites to the record that would support its characterization of the amendment. In fact, the remarks following the amended Claim undermine Fiala's contention. The prosecution history indicates that Fiala characterized the amendment to the Examiner as helping to distinguish the invention from the prior art. Specifically, Fiala noted that: "Claim 12 . . . [had] been amended to recite that the first card is secured to the first panel rather than having retaining means securing the first card to the first panel. . . . Thus distinguishing Claim 12 from the prior art with greater clarity and particularity. . . ." Id. at 167-68.

14 As Plaintiff correctly noted during the hearing, "in the world of patent law, . . . the word "means" in a claim . . . coupled with some language like retaining, it's a signal that that particular limitation or element in the claim is to be interpreted in accordance with[P 6] of [§ ] 112 of the Patent Act. That is the section of the Patent Act that says an element in a claim for a combination that recites means for carrying out a given function . . . ." Tr. at 14. See also Ethicon, Inc. v. United States Surgical Corp., 135 F.3d 1456, 1463 (Fed. Cir. 1998) (explaining that means language indicates that the inventor is announcing the means for achieving a certain function).

According to Fiala, Plaintiff changed the "means" language to "signal to the public that secured to is broader than the retaining means [language]." Tr. at 14:25-15:2. Fiala argues that the purpose of the amendment was to indicate that Claim 12 did not require the card to be attached only by the retaining means listed in the specifications (e.g., rivets, glue and stickers), but had a broader general meaning that encompassed other means outside the ones listed in the embodiment. While the Court recognizes that it is possible that Fiala may have strategically eliminated the phrase "retaining means" to overcome this limitation, the Court does not believe that this change compels Fiala's proposed construction of the term "secured". The intrinsic evidence suggests that Fiala purposefully chose the term secure to convey that a security element was part of the invention.

These remarks confirm Card USA's position. The only possible manner in which this textual change could distinguish the '909 patent from the prior art is by adding a safety component, as the other Hill and McIntire patents already covered a method for holding a card to a package. In other words, the amendment was used to distinguish the '909 patent from the two existing patents by showing that the Fiala patent offered more than a means for attaching the card to the package; it secured the card such that it would protect customers from purchasing tampered products. Tr. at 48; Def.'s Brief at 15, 18-19.

For this reason, the Court adopts Card USA's proposed construction of the term "secured." The Court holds that one skilled in the art reading the language of Claim 12, the specifications, and the prosecution history, would conclude that the term "secured" encompasses more than a mechanism for holding together, but actually includes a security element. The Court construes the term as meaning "to make safe."

Sandt argues that the district court erred in construing the term "secured across" to refer to the placement or positioning of
the plate, rather than to the position of the fasteners used to secure the plate to the housing. According to Sandt, because the Resco cover is secured to the telephone housing by welds at the peripheries of the cover and the housing, it is not "secured across" the housing front face as required by the claim. A plate welded to the periphery, Sandt argues, extends across the housing face, but it is not secured across the housing face.

The district court correctly construed the term "secured across" in claim 1. There is nothing in the specification which indicates that the term "secured across" requires a specific securing structure between the first and the second plate. Indeed, the specification states that the upper housing is "removed along with a double-face plate which may be bolted or welded to it . . . ." '057 patent, col. 3, ll. 60-63. The patent's teaching that the cover could be mounted to the housing by bolting or welding supports a broad interpretation of the term "secured across." The Resco cover is fastened to the housing, and is therefore secured across the face of the housing within the meaning of claim 1. Thus, it contains this limitation of claim 1.

Aspex posits that the phrase "a rear side with a first magnetic member secured thereto" means "a first magnetic member is connected directly or indirectly to a portion of the corresponding extension facing inward toward the wearer when the primary spectacle frame is worn, in a manner such that the connection is not likely to fail or give way." Ps. Br. 11. Aspex also posits that "magnetic member" means "either a permanent magnet or a ferromagnetic member, but at least either the first or second magnetic members must be a permanent magnet." Ps. Br. 10. E'Lite argues that the entire limitation should be construed to mean "with a first magnet horizontally secured to the rearwardly facing side of the extension," D. Br. 6, 14, and that the phrase "magnetic member" need not be construed, D. Resp. Br. 3.

Aspex argues that its proposed construction is consistent with the ordinary meaning of the words "rear" and "secure" and with the specification, including FIG. 3, which shows "first magnetic members" secured in housings called "projections" that are connected to portions of the extensions that would face inward toward the wearer's head when the primary spectacle frame is worn. Aspex also contends that its construction of "magnetic member" is consistent with the ordinary meaning of the phrase and is supported by the Sadler patent, to which the '545 patent refers as prior art.

E'Lite does not dispute that "magnetic member" means at least "magnet," and it concedes "that it has two pairs of magnetic members in its frames." D. Resp. Br. 3. E'Lite thus argues that the term need not be construed. 9 E'Lite also defers to Aspex's construction of "secured" with the exception of "or indirectly," contending that this addition is nonsensical, vague, and indefinite. E'Lite maintains that horizontal orientation of the magnetic members is implied from the intrinsic evidence. It also posits that "thereto" is a confusing term in this limitation and should be construed as "to the rearwardly facing side of the extension." D. Br. 6. By eliminating "thereto" from its proposed construction, Aspex implicitly agrees with E'Lite that "thereto" should be eliminated when construing claim 18.

9 Because the court holds for the reasons described below that "magnetic member" need not be construed, it need not address E'Lite's additional argument challenging Aspex's proposed construction of this phrase.

The court holds that the term "magnetic member" need not be construed. Because the parties agree that the term at least includes "magnet," and E'Lite concedes that magnets are present in its accused products, the court need not now construe this limitation. See, e.g., Pall Corp. v. Hemasure Inc., 181 F.3d 1305, 1308 (Fed. Cir. 1999) ("Although the construction of the claim is independent of the device charged with infringement, it is convenient for the court to concentrate on those aspects of the claim whose relation to the accused device is in dispute." (emphasis added)); see also Scripps Clinic & Research Found. v. Genentech, Inc., 927 F.2d 1565, 1580 (Fed. Cir. 1991) ("In 'claim construction' the words of the claims are construed independent of the accused product . . . . Of course the particular accused product (or process) is kept in mind, for it is efficient to focus on the construction of only the disputed elements or limitations of the claims.").
The parties disagree concerning the term "rear side." E'Lite contends that "rear side" means "rearwardly facing' from the viewpoint of the wearer." D. Br. 6. Aspex maintains that "rear side" means "facing inward toward the wearer when the primary spectacle frame is worn." The court adopts Aspex's construction as the clearer of the two. See U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997) ("Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary explain what the patentee covered by the claims[,]" (emphasis added)); Hyperion Solutions Corp. v. Outlooksoft Corp., 422 F.Supp.2d 760, 772-73 (E.D. Tex. 2006) (modifying the parties' proposed constructions to provide greater clarity); Precor Inc. v. Fitness Quest, Inc., 2006 U.S. Dist. LEXIS 63244, 2006 WL 2469123, at *7 (W.D. Wash. Aug. 23, 2006) (adopter clearer of two proposed constructions in light of fact that court's construction would ultimately be used by jury).

The parties agree that "secured" means "connected in a manner such that the connection is not likely to fail or give way." D. Resp. Br. 4; Ps. Br. 11. They only dispute whether "or indirectly" should be added after "connected." Aspx provides no basis for construing "secured" with the addition of "directly or indirectly." The court concludes that this addition does not provide any greater clarity to the claim. Thus the court construes "secured" as "connected in such manner that the connection is not likely to fail or give way."

The principal remaining dispute is whether horizontal orientation of the magnetic members is implied in this limitation. The court holds that the '545 patent's specification, its references to magnetic orientation in claims other than claim 18, and its prosecution history support the construction that claim 18 is limited to magnetic members with horizontal orientation.

As a threshold matter, the court explains its meaning of magnetic members having horizontal orientation. When magnets with flat surfaces are engaged, the juncture of the magnetic members' surfaces forms a plane. When the magnetic members are oriented horizontally, this plane, if extended, intersects perpendicularly with the plane of the lens spectacles, which form a vertical plane when the eyeglasses are worn. When magnets are engaged so that they are oriented horizontally, the action of becoming engaged (the movement of engagement) occurs along an axis that is perpendicular to the plane of the magnetic members' orientation. Horizontally oriented magnets therefore engage vertically. For a fuller explanation for the basis of this terminology, see infra § IV(F), where the court construes the phrase "vertically engage."

The '545 patent's description of the preferred embodiment contains the only general statement in the specification regarding the particular orientation of the invention's magnetic members. This statement specifies the magnetic members as possessing horizontal orientation. "As shown in FIGS. 3-7, the engaging surfaces between magnetic members 14 in primary spectacle frame 10 and the magnetic members 22 in the auxiliary spectacle frame from 20 lie in a plane that is substantially horizontal when the eyeglass device is worn." D. App. 7 (italics omitted except where court emphasis added). The '545 patent discloses only one preferred embodiment. All of the figures that illustrate this preferred embodiment perfectly fit this general description of magnetic members that possess horizontal orientation. When magnetic member 22 engages magnetic member 14, the magnetic members are clearly horizontally oriented.

Only three of the '545 patent's claims (claims 4, 6, and 23) specify the particular orientation of the invention's magnetic members. Each claim describes the magnetic members as possessing horizontal orientation. Claim 4 states: "a first magnet having a horizontal surface . . . including two side magnets, each secured to one of the auxiliary side portions for respectively engaging the horizontal surface for coupling a corresponding horizontal surface of one of the first magnets so as to secure the auxiliary spectacle frame to the primary spectacle frame." D. App. 8 (italics omitted except where court emphasis added). Claim 6 states, in relevant part: "including two first magnetic members respectively having a horizontal surface . . . including two auxiliary side portions, wherein the auxiliary spectacle frame further includes two second magnetic members each secured to one of the auxiliary side portions and having a horizontal surface of one of the first magnetic members so as to secure the auxiliary spectacle frame to the primary spectacle frame." Id. (italics omitted except where court emphasis added). Claim 23 reads, in pertinent part: "said arms and said pair of magnetic members adapted to extend across respective side portions of a primary spectacle frame so that said pair of magnetic members can vertically engage corresponding magnetic members on a primary spectacle frame." Id. at 10 (italics omitted except where court emphasis added).
In interpreting claim 23, Aspex confuses orientation with engagement. Claim 23 refers to the magnetic members as "vertically engaging," meaning that, when engaged, they are oriented horizontally (with the flat surfaces of the magnets forming a horizontal plane). Conversely, claims 4 and 6 refer to the "horizontal surface" of the magnets. This requires that the magnets engage vertically. Thus every reference to the specific orientation of the magnetic members in the claims of the '545 patent specifies the magnetic members as possessing horizontal orientation.

The '545 patent's prosecution history also supports construing the disputed limitation of claim 18 so that it restricts the orientation of the magnetic members to a horizontal plane, meaning that the magnetic members engage vertically. In the process of obtaining what eventually became the reissue '545 patent, the patentee filed an information disclosure statement ("IDS") in October 1998 in which he attempted to distinguish his reissue patent from the prior art. The patentee began the IDS by stating that the principal difference between his reissue patent and the ten patents discussed in the IDS is the positioning of the magnets with respect to the lenses. The patentee pointed out to the patent examiner that eight of the ten similar patents "describe magnetic coupling at the plane of the lenses." D. App. 12. The patentee thus apparently sought to differentiate the proposed patent on the ground that, when engaged, the magnets do not form a plane parallel with the lenses, but instead form a plane perpendicular to the lenses. The patentee then briefly described the principal differences between the ten similar patents and the proposed reissue patent. The last sentence for seven of these excerpts highlights that the prior art employs magnets that possess vertical orientation.

10 These sentences include the phrase "with magnetic coupling seeming to occur on the plane of the lenses," "magnetic coupling again seems to occur on the plane of the lenses," or "again, magnetic coupling seems to occur on the plane of the lenses." D. App. 12-13.

One patent that the applicant attempted to distinguish was U.S. Patent No. 5,642,177 ("Nishioka"), on which the patent examiner later relied to reject some of the proposed claims. Nishioka requires the magnets to engage horizontally so that, when engaged, their surfaces form a vertical plane. The IDS reflects the patentee's attempt to limit the application to an eyeglasses device that employs magnetic members that engage vertically to form a horizontal plane when engaged.

After the patent examiner rejected some of the proposed claims on the basis of Nishioka, the patentee submitted a response. In distinguishing Nishioka from claims 12 and 24, the patentee stated:

"[i]n the Nishioka Patent, the magnets 3 in the auxiliary frame 1 engage vertically with the magnets 7 in the primary frame. The engagement surfaces are parallel to the plane of the lenses. In Claims 12 and 34[,] the amendment should have removed any possibility of ambiguity. The engagement is on a horizontal position, as opposed to the vertical plane defined by the lenses in the primary frame."

D. App. 44. On this basis, the patentee contended that its claims could not have been anticipated by Nishioka. Similarly, the patentee submitted another response to the patent examiner with the same statement. The patentee later returned an amendment and interview summary to the Patent and Trademark Office in which it responded to rejection. It stated, in relevant part:

"The Nishioka patent, as previously argued in the November 27, 2000 Amendment, shows magnetic engagement along a vertical plane, which is not being recited in Claim 12. Further, a clarifying amendment to claim 12 has been made to more clearly distinguish the horizontal attraction between the first and second magnets."

Id. at 130. The patentee repeated this objection almost verbatim in a later submission.

11 The patentee misapplied the phrase "engage vertically" in the first sentence of this quoted paragraph, because the
Nishioka magnets clearly engage horizontally and form a vertical plane when engaged. The patentee acknowledged that, when engaged, the Nishioka magnets form a plane "parallel to the plane of the lenses." D. App. 44. This statement contradicts the previous sentence concerning vertical engagement. The patentee is clearly attempting to juxtapose the positioning of the Nishioka magnets with his own.

The notice of allowability that the patent examiner issued also supports construing claim 18 as limiting the position of the magnetic members to a horizontal orientation. The examiner concluded:

Nishioka fails to disclose the limitations "the primary spectacle frame including two side portion extensions extended therefrom for pivotally coupling a leg thereto and a first magnet having a horizontal surface and secured to said side portion extension of the primary spectacle frame" and "the auxiliary spectacle frame including two auxiliary side portions, the auxiliary spectacle frame including two second magnets, each secured to one of the auxiliary side portions for respectively engaging the horizontal surface of one of the first magnets so as to secure the auxiliary spectacle frame to the primary spectacle frame" in combination with claimed subject matter as claimed in claim 12 . . . . Therefore claims 1-3, 12, 28, 36-41, 67-89 are allowable over the prior art of record.

Id. at 148-49 (emphasis added). Although the examiner specifically pointed to proposed claim 12 in this statement, the difference in orientation of the magnetic members in the patentee's reissue application and Nishioka served as a basis to approve more claims than claim 12.

The starting point for construing a claim is the words of the claim, but claim terms are not to be read in isolation. See, e.g., Phillips, 415 F.3d at 1314. Rather, the terms of each claim must comport with the language of the entire patent, including its specification and the patent's prosecution history. Id. The court concludes that an ordinary person of skill in the art, having read the terms of claim 18 in the context of the specification, the other claims that refer to magnetic orientation, and the patent's prosecution history, would understand the phrase "magnetic members" to be limited to horizontal orientation.

Aspex first opposes this construction on the ground that it contradicts the court's opinion in Aspex Eyewear, Inc. v. E'Lite Optik, Inc., 2001 U.S. Dist. LEXIS 2088, 2001 WL 204775, at *1 (N.D. Tex. Feb. 27, 2001) (Fitzwater, J.). E'Lite urged the court to construe the claims of the '545 patent's predecessor to contain the limitation that they did not cover a back-mounted design, but claimed solely a top-mounted design (referring to direction in which magnetic members came together). Id. 2001 U.S. Dist. LEXIS 2088, [WL] at *3. This is essentially the same construction argument that E'Lite now makes concerning horizontal and vertical engagements of the magnetic members. In Aspex the court rejected E'Lite's claim construction as being limited to a top-mounted design (i.e., magnetic members that engaged vertically and possessed horizontal orientation). Id. 2001 U.S. Dist. LEXIS 2088, [WL] at *4.

Aspex's reliance on Aspex is misplaced. First, in Aspex the court construed U.S. Patent No. 5,568,207 ("the '207 patent"), the predecessor patent of the '545 patent. The '207 patent does not contain any of the specific language concerning the orientation of the invention's magnetic members that is included in the '545 patent. Moreover, the '207 patent and the '545 patent have unique prosecution histories. As is evident from Aspex, the two statements on which E'Lite relied to support its construction were extrinsic evidence of negligible value. See id. 2001 U.S. Dist. LEXIS 2088, [WL] at *4. By contrast, there is stronger intrinsic evidence from the specification and prosecution history of the '545 patent that indicates that the claims are restricted to vertical magnetic engagement (and thus possess horizontal orientation).

In arguing against the court's construction, Aspex invokes the doctrine of claim differentiation. Under this doctrine, when a patent claim specifically limits one of its terms and another claim employs the same term but without the limiting language, it is presumed that the limitation of the narrower claim is not present in the claim that does not contain the explicit limitation. See Phillips, 415 F.3d at 1314-15. This presumption may be rebutted, however, by intrinsic evidence. Inpro II Licensing v. T-Mobile USA, Inc., 450 F.3d 1350, 1354 (Fed. Cir. 2006). Because some of the '545 patent claims specifically limit the orientation of the magnetic members and the language of claim 18 does not likewise limit the magnetic members' orientation, Aspex contends that the court should not import this orientation restriction from the other claims into claim 18.
The proper starting place for analyzing this argument is the presumption that each claim of the '545 patent has an independent scope. Because the language of claim 18 cannot itself support a construction limiting the orientation of the magnetic members, the court begins by presuming that the claim does not contain this limitation.

In Inpro the Federal Circuit affirmed the district court's construction of the claim term "host interface" to mean a particular kind of interface—a "parallel bus interface"—despite claim language that did not support this restriction. Inpro, 450 F.3d at 1352-53. Some of the patent's claims referred to a "parallel bus interface," while other claims, including the one the court construed, used the more general term "host interface." Id. at 1353. The court specifically rejected Inpro's claim differentiation argument and construed "host interface" to be limited to a "parallel bus interface." Id. at 1354, 1357. The court noted that "the only host interface described in the specification is a direct parallel bus interface." Id. at 1354. The specification also contained a statement emphasizing the importance of the parallel bus interface in solving the problems of the prior art. Id. The court considered specific statements in the description and the summary of the invention to support its conclusion that host interface meant a parallel bus interface. Id. at 1355-56 ("Claims are construed in light of the specification of which they are a part"). Additionally, the court found that the prosecution history of the patent supported a construction limiting the general terms "host interfaces" to mean "parallel bus interface." Id. at 1356.

The reasoning and result of Inpro support a construction of claim 18 that requires magnetic members with horizontal orientation. As in Inpro, in each instance in which the '545 patent specifies the particular orientation of the magnetic members, it describes them as having horizontal orientation. Although some claims restrict the orientation of the magnets, others do not. The '545 patent's description of the preferred embodiment and its accompanying figures specifically limit the orientation of the magnetic members to be horizontal. The prosecution history strongly suggests that the patentee intended to distinguish its invention from the prior art based on the horizontal orientation of the magnetic members. Although the Inpro court had additional support for its limiting construction from statements in the summary of the invention that are not present in the '545 patent, the Federal Circuit did not suggest that this statement was the decisive factor.

Aspex cites C.R. Bard Inc. v. United States Surgical Corp., 388 F.3d 858 (Fed. Cir. 2004), to support the contention that it is improper to import restrictions into the claims that are contained in the preferred embodiment. While preferred embodiments are not dispositive of claim constructions, Bard indicates that they provide a useful interpretive guide. Id. at 865. "Under our precedent, a patentee's choice of embodiments can shed light on the intended scope of the claim, but a patent claim term is not limited merely because the embodiments in the specification all contain a particular feature." Id. (citing Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 907-08 (Fed. Cir. 2004). "On the other hand, a construction that excludes a preferred embodiment is rarely if ever correct." Id. (quoting Vtronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996) (internal quotation marks omitted)).

Aspex urges a construction of claim 18 that would permit horizontal as well as vertical orientation for the magnetic members. This construction clearly excludes the '545 patent's preferred embodiment, which specifically describes the magnetic members as "substantially horizontal when the eyeglass device is worn." D. App. 7. Based on the description of the preferred embodiment alone, Bard suggests that Aspex's proposed construction is likely incorrect. Moreover, the Inpro court undoubtedly relied on statements in the description of the preferred embodiment as well as other intrinsic evidence to support its limiting construction of the claim at issue. Inpro, 450 F.3d at 1355.

Bard cuts against Aspex's construction of claim 18. In Bard the Federal Circuit affirmed a construction limiting the invention's texture to having "pleats," even though the claim language itself did not specify the invention's texture. Bard, 388 F.3d at 860. The court held that the patent's specification and prosecution history provided independent bases to uphold the district court's narrowing construction. Id. at 866, 869. The court began its analysis by concluding: "A long line of cases indicate that the intrinsic record is the primary source for determining claim meaning." Id. at 861. The court noted that the statements in the specification concerning the texture of the invention consistently describe it as having pleats. Id. at 860. In two places the specification described the patent in global terms, and, in each instance, the specification defined the invention as having pleats. Id. at 863-64.

Regarding the prosecution history, the court noted, "[p]leating is implicated in each of [Bard's] responses to the examiner's rejections." Id. at 867. Aspex focuses on the next statement: "limiting claim 20 to requiring pleating based solely upon [Bard's] amendments and arguments made during the initial examination would likely be improper." Id. Nevertheless, the court concluded that the statements made in the initial examination alone "suggest a close connection between pleating and claim 20." Id. 867. Therefore, in combination with other intrinsic evidence, these statements during the initial examination
could serve as a proper basis for the narrower construction of claim 20. The court recognizes that Bard had more evidence supporting the limiting construction than that which supports the limiting construction of the '545 patent. But the Bard court held that the specification and prosecution history provided independent bases for upholding its narrow construction. Conversely, the limiting construction in this case, as in Inpro, is based on the intrinsic evidence as a whole. Bard's discussion of the role of the prosecution history and other intrinsic evidence in interpreting claims counsels in favor of limiting the orientation of claim 18's magnetic members.

Aspex challenges the court's reading of the prosecution history. First, it questions the interpretation of the patentee's statements in the IDS distinguishing the prior art from his proposed invention. Aspex contends that the meaning of "seems to occur on the plane of the lenses" is that the prior art consists of front-mounted eyewear. It argues that the patentee did not intend to distinguish the invention from back-mounted eyewear, even if the magnetic members of such eyewear, when engaged, form a plane parallel to that of the lenses. Aspex's interpretation of the IDS is unpersuasive, because the limitation "on the plane of the lenses" encompasses both front- and back-mounted magnets, provided that when the magnets are engaged, they form a vertical plane. If the patentee had intended to distinguish the proposed patent from the prior art based on front- and back-sided magnetic mounting, he would have said so. Because at least eight times in the IDS the patentee used the phrase "on the plane of the lenses," the court presumes that he meant what he said.

Aspex points out that some of the patentee's statements to the patent examiner attempting to distinguish Nishioka referred to proposed claims 12 and 34, neither of which became claim 18 of the '545 patent. Moreover, although the reason for allowance mentions the magnetic coupling on a horizontal surface as a principal basis for approving the '545 patent, it appears to limit this basis to proposed claim 12. These arguments, however, do not undercut the conclusion that the prosecution history supports a narrower construction of claim 18.

First, the patentee's initial statements in the IDS distinguishing the proposed patent from the prior art were not limited to any particular claim. The patentee made global statements about his patent. He specifically distinguished the patent from Nishioka based on the orientation of the magnetic members, without referring to any particular claim. In the patentee's responses to the patent examiner's rejections of claims 12 and 34, he distinguished the proposed patent from Nishioka based on the orientation of the magnetic members. Although the distinctive feature of these communications with the patent examiner appears to be limited to claims 12 and 34, these statements have a broader application in light of the IDS. Similarly, although the patent examiner's reasons for allowance identify horizontal orientation of the magnetic members as a principal basis for approving the patent, the reasons appear to limit this difference to proposed claim 12.

Aspex points out that in a later sentence in the same paragraph that reflects that there are other differences between the '545 patent and Nishioka. See D. App. 149 ("Nishioka also fails to disclose the limitations as claimed in claims 36, 67-78, 81, 86-89."). But the last sentence of the paragraph, which lists more claims than claims 36, 67-78, 81, 86-89, suggests that the horizontal surface distinction served as the basis to approve more claims than simply claim 12. Id. ("Therefore claims 1-3, 12, 28, 36-41, 67-89 are allowed over the prior art of record.").

But even assuming that this is an incorrect reading of these latter statements of the prosecution history, the clear, global statements in the IDS and the evidence in the '545 patent itself provide sufficient support for the court's construction of claim 18 as being limited to horizontally oriented magnetic members.

For the foregoing reasons, the court construes "a rear side with a first magnetic member secured thereto" to mean "a first magnetic member with horizontal orientation is connected in a manner such that the connection is not likely to fail or give way to the side of the extension facing inward toward the wearer when the primary spectacle frame is worn." 12

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12 Although the court is persuaded by E'Lite's arguments concerning the magnetic members' orientation, it is not adopting E'Lite's proposed construction, i.e., "with a first magnet horizontally secured to the rearwardly facing side of the extensions." D. Br. 6, 14. Requiring that the magnetic members be "horizontally secured" to the primary frame's extensions does not address how these magnetic members engage the magnetic members of the auxiliary frame arms. In other words, under E'Lite's proposed construction, the magnetic members could be "horizontally secured" to the primary frame while engaging horizontally with the magnetic members of the auxiliary frame's arms. When engaged, the magnetic members would form a vertical plane. Therefore, the court adopts a construction that eliminates the ambiguity that remains in E'Lite's
Mead Johnson contends that this claim limitation, "said bottom surface having a filter secured thereto" requires the filter be secured directly to the bottom surface without any filter housing or other similar intervening support structure in a manner that eliminates the need for a filter housing. Mead Johnson further claims that securing the filter to the bottom surface obviates the need for the ball and housing of the conventional filter means. Mead Johnson bases its reasoning on the patent specifications. The specifications clearly state that the closure "eliminates the need for the housing associated with filter means 30." The specifications further state under the "Best Mode" that "the closure of this invention may be fabricated by molding the actual cap and then fusing the heat staked material of the filter to the bottom surface of this closure thereby obviating the need for the ball and the housing of the conventional filter means."

Abbott contends that Mead Johnson reads limitations into the claim which do not exist. Abbott asserts the claim requires that the filter must somehow be fastened or attached to the bottom surface of the closure, but that the filter need not be directly attached to the bottom surface without any intervening support structure. Abbott's argument is based on a plain language reading of the term "secure."

I reject Mead Johnson's interpretation of the claim. Mead Johnson urges this Court to read into the claim, limitations found only in the specifications.

First, Mead Johnson asks this Court to interpret all of the claims of the patent to require the filter be secured directly to the bottom surface without an intervening structure. Neither the claims nor the specifications place this limitation. Claim two of the '545 Patent, which is not claimed to be infringed, does specify how the filter is to be secured to the bottom surface. It reads: "said filter is heat staked material which is fused to said bottom surface." However, the limitation in claim two is a dependent claim 2 and is not contained in any other claim. Therefore, it cannot be read or implied into any other claim. C & F Packing Co., Inc. v. IBP, Inc., 916 F. Supp. 735, 742-43 (N.D. Ill. 1995), citing, D.M.I., Inc., v. Deere & Co., 755 F.2d 1570 (Fed. Cir. 1985). The "Best Mode" of the specifications also indicates a method to secure the filter. It reads: "this invention may be fabricated by molding the actual cap and then fusing the heat staked material of the filter to the bottom surface of this closure thereby obviating the need for the ball and the housing of the conventional filter means." However, the specifications clearly state that the invention "may" be constructed this way, but that "the invention is not limited to this precise form of apparatus or method." Furthermore, it is clear that the "Best Mode" embodiment of the invention does not restrict the claim. SRI, 775 F.2d at 1122.

2 There are two types of claims in a patent: independent and dependent claims. An independent claim stands on its own and does not refer to any other claim in the patent, thus it must be read separately from the other claims when determining its scope. A dependent claim includes a reference to at least one other claim in the patent and incorporates all of the elements of the claim to which it refers. C & F Packing Co., Inc. v. IBP, Inc., 916 F. Supp. 735, 742-43 (N.D. Ill. 1995), citing, D.M.I., Inc., v. Deere & Co., 755 F.2d 1570 (Fed. Cir. 1985). The additional limitations of a dependent claim must not be read or implied into an independent claim if said independent claim does not contain the same limitation. C & F Packing Co., 916 F. Supp. at 743 (N.D. Ill. 1995), D.M.I., 755 F.2d 1570.

Next, Mead Johnson asks this Court to find that the claims preclude the use of a filter housing unit. Again, neither the claims nor the specifications place this limitation. To the extent the specifications describe the claimed invention as eliminating or obviating the need for a filter housing, they clearly state the invention closure "eliminates the need for the housing associated with filter means 30" with the possible exception of aesthetic purposes. Filter means 30 is an "external filter" as
described in the specifications. Thus, assuming the specification language can be read to limit the claims, the ‘545 Patent would be read to eliminate the external filter, not an internal filter secured to the inside of the closure as in the patented and accused products.

Finally, the specifications describe the "Best Mode" of the invention as eliminating the need for the filter housing. However, since the invention is not limited to the precise form described in the specifications and the claims themselves do not limit the invention in this way, the ‘545 Patent cannot be read to eliminate the filter housing.

The claim limitation "said bottom surface having a filter secured thereto" turns on the meaning of the word "secure." The words of a claim are generally given their ordinary and accustomed meaning, unless it appears from the specification or the prosecution history that they were used differently by the inventor. Carroll Touch, 15 F.3d at 1577. According to Webster's dictionary, the word "secure" means "well-fastened," "to make tight or firm: fasten," "not likely to fail or give way: stable." Webster's II New Riverside University Dictionary pp. 1055. The Oxford English Dictionary defines "secure" as "firmly fastened." The Oxford English Dictionary, 2nd Edition, XIV, pp. 853. The word "fasten" means "to attach firmly to: join," to close, as by fixing firmly in place," "to cling fast," Webster's at pp. 466. "to attach together," Oxford, V, pp. 750. I read this claim to mean that the filter must be firmly attached to the bottom surface in some way, but does not require direct contact between the filter and the bottom surface, nor does it require the elimination of the filter housing.

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A. Intrinsic Record of the ‘653 Patent

1. Claim language

The claims themselves can "provide substantial guidance as to the meaning of particular claim terms." Phillips, 415 F.3d at 1314. Indeed, the Federal Circuit has noted that the context in which a term is used in the asserted claim can be highly instructive. Id. Further, other "claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment as to the meaning of a claim term." Id. Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims. Id.

The parties dispute the meaning of the claim term "secured to." According to Plaintiff, the term "secured to" in independent claim 10 is consistent with both a unitary and two-piece product. (See R. 51, Pl.'s Reply at 7-8.) For Defendant, the term's presence in claim 10 precludes a construction permitting a unitary product. (R. 47, Def.'s Mem. at 14.) Based on its reading of the relevant term, both in independent claim 10 and in other claims in the ‘653 Patent, the Court finds that its usage suggests that Defendant's proposed construction is proper.

Aside from its presence in limitation (c) and comparable usage in independent claims 1 and 21, 10 the term "secure" or "secured" is used four times throughout the ‘653 patent claims. See ‘653 Patent col. 18, ll. 2, 13; col. 19, ll. 4, 15. In each of those instances, the term is used to refer to the physical attachment of two separate pieces. For example, claims 7 and 20 use the term to note the physical attachment of two pieces: claim 7 describes "a seat cushion having an attachment means secured to the lower portion of the foundation"; in claim 20, a "pillow has an attachment means to secure it near the top of the generally wedge shaped foundation." Id. at col. 18, l. 2; col. 19, l. 4. Thus, when used in other portions of the claims, the term "secure" or "secured" indicates a relationship whereby one piece is physically attached to another piece of the product. Because "[a] claim term should be construed consistently with its appearance in other places in the same claim or in other claims of the same patent," Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001), the Court finds that an examination of the claim language points in favor of Defendant's proposed construction of the term "secured to." 11

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10 Limitation (b) in independent claim 1 provides for "a softer top cushion having an upper and lower portion secured to the face." '653 Patent col. 17, l. 35. Limitation (b) in independent claim 21 provides for a "a top cushion having an upper and lower portion secured to the face of said generally wedge shaped foundation." Id. at col. 20, l. 21.11 The Court notes that the parties did not provide any discussion regarding the meaning of the preposition "to" in the term "secured to."

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Plaintiff provides one discernible claim-language based argument in support of his proposed construction. In his briefs, he contends that independent claim 10 includes a unitary product wherein a "top cushion is integral and continuous with the generally wedge shaped foundation" because "limitations in a dependent claim 'are implicitly permitted . . . by extension' in the independent claims from which they depend." (R. 45, Pl.'s Mem. at 6-8.) The Court finds this argument unpersuasive as it is unclear whether dependent claim 11 is a limitation or an extension of independent claim 10. 12

12 Plaintiff also invokes the doctrine of claim differentiation in support of his position. (R. 51, Pl.'s Reply at 7-9.) Under this doctrine, "the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." Enzo Biochem, Inc. v. Appliera Corp., No. 2009-1281, 2010 WL 1135563, at *14 (Fed. Cir. Mar. 26, 2010). This argument fails because it is unclear whether dependent claim 11 is indeed a limitation on independent claim 10.

2. Specification

The specification contains a "written description of the invention which must be clear and complete enough to enable those of ordinary skill in the art to make and use it." Vitronics, 90 F.3d at 1582. Thus, the Federal Circuit has noted that the specification is always highly relevant to the claim construction analysis. Id. Indeed, it is usually dispositive and is considered the single best guide to the meaning of a disputed term. Id.

Portions of the '653 Patent specification also support Defendant's proposed construction of the term "secured to," In the specification, the term "secure" or "secured" is used at various points. See '653 Patent col. 6, l. 50; col. 8, ll. 34, 36-39, 58; col. 10, ll. 60, 63, 67; col. 12, l. 27. Consistent with its usage in the claims, the use of the term in the specification indicates a relationship between two or more pieces. (See id.) Specifically, it suggests the physical attachment of two pieces. For example, the specification describes: a seat cushion designed to prevent the user from sliding down which must be "secured" directly or indirectly to the foundation "so that the user won't slide down and move the seat cushion while he or she slides down"; a head pillow attached to straps which are "secured to the support foundation"; and a piece of upholstery "secured around the support foundation and . . . around the main cushion." Id. at col 8, ll. 32-39; col. 10, ll. 59-61; col. 12, ll. 26-28.

Further, other portions of the specification also shed some light upon the meaning of the term "secured to." In describing the convex lumbar support in an embodiment depicted by figure 1A, the specification notes that it "can be integral and continuous with the foundation, or can be secured to the top of the lower portion of the foundation." Id. at col. 6, ll. 48-51 (emphasis added). The use of the term "or," which the Federal Circuit has noted indicates the presentation of alternatives unless given a different meaning, Kustom Signals, Inc. v. Applied Concepts, Inc., 264 F.3d 1326, 1330 (Fed. Cir. 2001), strongly suggests that the term "secured to" in independent claim 10 cannot also mean "integral and continuous." As a result, this portion of the intrinsic record indicates that limitation (c) is satisfied not by a unitary "integral and continuous" product, but by a product whose separate pieces are attached, or "secured to," one another. Thus, the term's use in the specification—along with its usage in the claim language—leads the Court to adopt the following construction of the term "secured to": "attached using attachment means, such as an adhesive or mechanical type fasteners that might be used with material that is selected for the top cushion and foundation."
"the top 4" of material on the face of the foundation or the cushioning material on 'the face of the foundation.'" (R. 45, Pl.'s Mem. at 4.)

While the parties contest the meaning of the terms "top cushion" and "secured to," they fail to properly address the construction of another term they ask the Court to construe: "the face of the generally wedge shaped foundation." (See R. 45, Pl.'s Mem. at 14-15; R. 47, Def.'s Mem.) Based on its reading of the claims and specification, the Court construes "the face of the generally wedge shaped foundation" as meaning the "top surface of the wedge shaped foundation."

3. Prosecution history

The prosecution history consists of the complete record of the proceedings before the USPTO and includes the prior art cited during the examination of the patent. Phillips, 415 F.3d at 1317. Like the specification, the prosecution history provides evidence of how the USPTO and the inventor understood the patent. Id. The prosecution history can often inform the meaning of the claim language by "demonstrating how the inventor understood the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." Id. When considering the prosecution history, a court may also look to reexamination proceedings for guidance. See C.R. Bard, Inc. v. U.S. Surgical Corp., 388 F.3d 858, 861 (Fed. Cir. 2004).

The prosecution history of the '653 patent supports the conclusion that limitation (c) is not satisfied by a unitary product with a top cushion that is integral and continuous with the foundation. In response to Plaintiff's election of species for prosecution on the merits, the Office Action rejected what would become claim 10 on obviousness grounds. 13 (R. 47, Def.'s Mem., Ex. B-1 at 79-80.) While noting that the prior art did not show an "overlying cushion member," the Office found that to have included such a member for support "would have been an obvious modification to one with ordinary skill in the art." (Id. at 80.) Thus, in its comparison of the '653 application to the prior art, it is evident that the USPTO considered the proposed invention as consisting of a foundation with an "overlying cushion member." In his subsequent communications with the Office, Plaintiff did nothing to suggest that the cushion could have been alternatively "overlying" and "integral and continuous." The Court finds that the USPTO's apparent understanding of the '653 application is inconsistent with a reading of independent claim 10 which would claim a unitary product.

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13 The communication from the Office indicates that claim 11 was unpatentable over the prior art. (R. 47, Def.'s Mem., Ex. B-1 at 79-80.) Claim 11 became independent claim 10 once claim 4 was cancelled.

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Similarly, the reexamination proceedings also suggest that the USPTO understood the '653 patent as a two-piece product. In the proceedings, the USPTO made clear that the prior art failed to anticipate or render obvious the claims in the '653 patent because, among other things, the prior art failed to teach a "top cushion secured to the face of the foundation." (R. 47, Def.'s Mem., Ex. G at 4.) While standing alone this statement is unhelpful, its meaning is clarified when understood in its context. Specifically, the USPTO found that the "top cushion" limitation allowed the '653 patent to overcome two references that only teach: (1) "a pillow with a cover"; and (2) "a single pillow structure." (Id. at 5-6.) Thus, in the reexamination proceedings, the USPTO compared the '653 patent to unitary "pillow" structures and found that it overcame prior art because it contained "a top cushion secured to the face of the foundation." (Id. at 4.) Based on its reading of the reexamination statement, the Court finds that the USPTO understood the '653 Patent as claiming a two-piece product.

Plaintiff argues that an interpretation of limitation (c) which would exclude disclosed embodiments describing a unitary product would run afoul of claim construction principles. (R. 51, Pl.'s Reply at 13.) Indeed, the Federal Circuit has noted that courts should avoid interpreting "claim terms in a way that excludes embodiments disclosed in the specification." Oatey Co. v. IPS Corp., 514 F.3d 1271, 1276 (Fed. Cir. 2008). Interpretations of claim terms which exclude disclosed embodiments are acceptable, however, "where those disclosed embodiments are clearly disclaimed in the specification or prosecution history." Id. at 1277.

In this case, the Court's interpretation of limitation (c) would exclude the embodiment disclosed in figure 1E, which describes a unitary product wherein the top cushion is integral and continuous with the generally wedge shaped foundation.

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The Court's interpretation of the relevant claim terms is acceptable, however, because the excluded disclosed embodiments were subject to a restriction requirement by the USPTO, and thus not claimed by Plaintiff. In his response to the initial Examiner Action setting forth the restriction requirement, Plaintiff unambiguously elected the species shown in figures 1A-C--and not figure 1E--for prosecution on the merits. (R. 47, Def.'s Mem., Ex. B-1 at 74.) Because these disclosed embodiments were not elected by Plaintiff in proceeding with his application, the Court finds that its interpretation of limitation (c) does not impermissibly exclude disclosed embodiments. 14

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14 Plaintiff argues that the embodiment in figure 1E was not subject to a restriction requirement because independent claims 10 and 21 were generic. (R. 45, Pl.'s Mem. at 10.) While the presence of a generic claim would have rendered the election of any disclosed species unnecessary, there is nothing in the record indicating that the USPTO believed that independent claims 10 and 21 were generic. The record does indicate that Plaintiff believed independent claims 10 and 21 were generic, but it does not indicate that the USPTO believed that they were. (R. 47, Def.'s Mem. at 74.) In fact, the record indicates that the examiner believed that no claim was generic. (Id. at 72.) Plaintiff points to no portion of the record suggesting that the USPTO found that the independent claims 10 and 21 were generic.

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Accordingly, the Court finds that the prosecution history in this case supports the aforementioned constructions of the terms in limitation (c).

B. Extrinsic evidence

While extrinsic evidence can shed useful light on the relevant art, it is less significant than the intrinsic record in determining the legally operative meaning of claim language. Phillips, 415 F.3d at 1317. Where the intrinsic record suffices to resolve any ambiguity in the disputed claim term, it is improper to rely on extrinsic evidence. Vitronics Corp., 90 F.3d at 1583. Here, Plaintiff uses extrinsic evidence in the form of unrelated patents to support his proposed construction of the term "secured to." (See R. 45, Pl.'s Mem. at 12-14; R. 51, Pl.'s Reply at 5-6.) Because the intrinsic evidence in this case resolves any ambiguity surrounding the disputed claim terms, the Court finds an examination of extrinsic evidence unnecessary.

The primary issue is whether claim 12 will be interpreted to require "tamper evident means" of securing the card to its packaging. Neither party's interpretation is facially inconsistent with the ordinary meaning of "secured." Fiala's construction focuses on the term's use in describing the attachment of one item to another. SVS's interpretation incorporates this definition, but would also add an element of safety (as in "secured" against/from fraud, theft, etc.). When read against the full phrase "secured to," however, SVS's interpretation is an impermissible narrowing of the ordinary meaning of the claim language. SVS has argued that the "ordinary meaning of 'secured' is incomplete in light of the intrinsic evidence that the invention requires that the card be secured to the package in a manner that would reveal evidence of tampering." (Def. Slide 79.) The court will, therefore, determine whether the specification or prosecution history dictates a deviation from the ordinary meaning of "secured to."
Unlike "in combination" or "package," the phrase "secured to" was specifically added to claim 12 in the process of gaining acceptance by the patent examiner. (See Def. Brief Ex. H.) The previous phrase used by the applicants was "retaining means securing." 1 (Id.) SVS argues that "retaining means securing" described any possible method of attaching the card to a panel, whereas the new phrase "secured to" narrowed that definition by adding a requirement that the method of attachment reveal evidence of tampering by third parties. SVS argues that this more specific definition distinguished the claimed invention from those in previous patents. (Def. Brief at 11.)

1 The previous version of claim 12 read "a package including a first panel and retaining means securing said first card to said first panel..." The amended version reads "a package including a first panel, said first panel having an outer perimeter; said first card being secured to said first panel..." U.S. Patent No. 5,918,909, Column 22:43-45.

The prosecution history, however, does not establish that SVS's proposed construction was offered to, or relied upon by, the patent examiner. Unlike the amendments to claim 12 referring to the data-encoded strip as "displaced externally remote from a portion of said outer perimeter of said first panel," the "secured to" language was not explicitly invoked by the applicants in distinguishing the '909 patent. The remarks attached to the (re)application mention only that, unlike those in claim 12 of the '909 patent, the magnetic strips claimed in the Hill and McIntire patents are contained wholly within the outer perimeter of the first panel. Notably, the applicants did not state that the Hill and McIntire inventions have "retaining means securing" the card to the panel, rather than cards "secured to" the panel. 2 (See Pl. Brief Ex. B. FH 186.) The prosecution history, therefore, indicates that the amended language at issue here was not a direct response to the examiner's earlier rejection of claim 12. If anything, the revision supports Fiala's contention that "secured to" should be given a broader interpretation, because it appears that the intention was to avoid a means-plus-function reading of the claim. (See Pl. Brief at 26-27.)

2 The applicants' description of claim 12 reads: "In contrast, as now claimed in claims 1, 12, and 24, at least a portion of the data-encoded strip of the retained card of the present invention is required to be exposed and displaced externally remote from a portion of the outer perimeter of the first panel of the package when the first card is secured to the first panel (citations omitted). Additionally, claims 12 and 24 have been amended to recite that the first card is secured to the first panel rather than having retaining means securing the first card to the first panel." (Pl. Brief Ex. B at GH 186.) Although it is grammatically plausible that the "secured to" amendment is meant to refer "in contrast" back to the description of the Hill and McIntire inventions, the applicants mentioned nothing about the Hill or McIntire patents with which to contrast this language. Therefore, it is more likely that this amendment was offered to the examiner as a linguistic change not directly related to traversing the Hill and McIntire inventions.

Therefore, it is desirable to provide means for detecting when the PIN number P has been surreptitiously viewed. . .


The rivet 26 thus preferably comprises tamper evident means 38 for indicating that a surreptituous attempt has been made to view the PIN number P...

Id. at Column 6:29-32 (emphasis added).
The second preferred embodiment may also comprise tamper evident means as heretofore described.

Id. at Column 7:10-11 (emphasis added).

The rivet 3.36 is preferably constructed integral, one-piece with the pane 3.47, as, for example, by being heatedly and deformably formed in the PVC pane 3.47, and preferably includes tamper evident means …

Id. at Column 8:45-48 (emphasis added). The specification shows that the preferred embodiments of the '909 invention preferably included tamper evident means of securing the card to the panel. It does not require that the card must be secured to the panel using tamper evident means.

In claim 16, the patentees specifically assert ownership of:

The combination as recited in claim 12 in which said first card has a personal identification number thereon and said first card is secured to said first panel so that said personal identification number is obscured from view, and in which said package comprises tamper evident means for indicating that an attempt has been made to view said personal identification number.


Claim 16 is dependent on claim 12. Normally, a limitation contained in a dependent claim will not be read into an independent claim, because such a reading would render the dependent claim superfluous. See United States v. Telectronics, Inc., 857 F.2d 778, 783-84 (Fed. Cir. 1988.) The doctrine of claim differentiation does not apply directly to this case, however, because the "tamper evident means" limitation is not the only meaningful difference between claim 12 and claim 16. See Wenger Manufacturing, Inc. v. Coating Machinery Systems, Inc., 239 F.3d 1225, 1233 (Fed. Cir. 2001). Even so, given that neither the plain language, specifications, nor prosecution history supports a reading that the "secured to" phrase requires a tamper-evident-means limitation, the fact that this precise limitation is contained in a narrower claim is further evidence that it is not a part of claim 12.

Having considered the claim language, specification, and prosecution history, the court construes "secured to" to mean "held fast." This meaning is consistent with the ordinary and customary meaning of the word. The evidence before the court also indicates that a person of ordinary skill in the art would have so defined "secured to" at the time the patent was prosecuted.

C. Secured To

Webster's defines secure as "(1) (a) to relieve from exposure to danger: act to make safe against adverse contingencies … (b) to put beyond hazard of losing or of not receiving: guarantee … (2) (a) to take (a person) into custody: hold fast: pinion (b) to make fast: seal … (3) (a) to get secure usually lasting possession or control of … (b) bring about, effect (4) to release (naval personnel) from work or duty …." WEBSTER'S at 1062. Blank proposes that "secured to" should be construed to mean "attaching two or more separate items together." (Def.'s Markman Memo. at 12.) Fiala would interpret "secured to" to mean "held in any manner whatsoever." (Pl.'s Markman Brief at 24).

The claim language itself offers minimal assistance in construing the term. Either interpretation is plausible. However, because the claim language cannot be read to require two separate pieces, it would be inappropriate to read Blank's proposed limitation into the claim language. See Cordis Corp. v. Medtronic Ave, Inc., 339 F.3d 1352, 1356-57 (Fed. Cir. 2003).

The specification presents some support for Blank's position. Several times while discussing preferred embodiments, the specification indicates that the manufacturer "secure[s] the first card C to the package." U.S. Patent No. 5,918,909, Column 19:9-10, 20: 46-48. This usage necessarily indicates that the parts were distinct at one time. Other language from the preferred embodiments further supports this interpretation. See id. at Column 19:18-19 ("Once the first card C is secured to
the package … "). The claim, language, however, is broader than any of the preferred embodiments. In such circumstances, claim limitations should not be read from the preferred embodiments into the claim language itself. See Envirco Corp. v. Clestra Cleanroom, Inc., 209 F.3d 1360, 1366 (Fed. Cir. 2000). "Being secured" does not necessarily indicate that two separate things were joined. Although language from the preferred embodiments indicates the presence of two separate things joined together, that indication is not sufficient to establish that Fiala claimed only card package combinations where the card and package originally were separate.

The prosecution history adds little to the discussion. The claim originally read "retaining means securing said first card to said first panel," rather than "said first card being secured to said first panel." Pros. Hist. at FH155. Fiala's attorney described this revision as slight. Id. at FH153. Although the patent examiner previously had disallowed claim 12, this revision was not a response to that rejection. See id. at FH142 (stating reasons claim 12 was rejected); FH147 (detailing Fiala's changes to claim language in order to attain allowance of claim 12). If anything, the revision supports Fiala's contention that "secured to" should be given a broader interpretation, because it appears that the intention was to avoid a means plus function reading of the claim.

Having considered the claim language, specification, and prosecution history, the court construes "secured to" to mean "held fast." This meaning is consistent with the ordinary and customary meaning of the word. The evidence before the court also indicates that a person of ordinary skill in the art would have so defined "secured to" at the time the patent was prosecuted.

"Secured to Said Golf Bag"

The parties dispute the meaning of this phrase, although the nature of disagreement was not originally clear from their submissions. However, counsel clarified their respective positions during oral argument. (See, Oral Argument Transcript at pp. 34-39, 68-72). In that regard, plaintiff's counsel contends that the term "secured to said golf bag" means that the strap may be secured to the bag indirectly, via a securing means, such as a strap or loop. Plaintiff distinguishes this from the terminology used in Claim 14, referring to attachment points on the "sidewall" of the golf bag, which according to plaintiff, means to be secured directly to the sidewall of the golf bag. Defendant's counsel, on the other hand, does not appear concerned with the golf bag/sidewall distinction. (Oral Argument Transcript at 68-72) Rather, he emphasizes that "attached to said golf bag" means that the attachment point must actually be the point where a strap or section of strap attaches to the bag's outer surface, by some securing means:

[W]e look for a point on the golf bag . . . where the strap ends are secured to the golf bag. I am saying we find those locations . . . attached to the wall of the bag. We don't find it in the middle of the strap and say, oh-ho, if you follow th strap far enough, it's attached to the golf bag. The points of attachment mean points of attachment; it does not mean attachment in the larger sense.

(Oral Argument Transcript at pp. 70-71) Consequently, the parties' expressed concerns regarding the term "attached to said golf bag" do not really appear to be in conflict. In any event, the Court finds that the term "secured to said golf bag" means that a strap end is attached to the outer surface of the golf bag by a securing means. The point at which the strap is "secured to said golf bag" is the point at which a particular section of strap ends at the securing means.

(5) "secured to said rear side" (claims 12 and 16):

Plaintiffs contend that the phrase "secured to said rear side" in claims 12 and 16 "means that each first magnetic member is connected to the rear side of the corresponding extension in a manner such that the connection is not likely to fail or give away. The first magnetic member may also be secured to other portions of the primary spectacle frame (e.g., the lens rims) in addition to the extension." JS, Exh. B at 11.
Conversely, Defendant argues that the phrase in question "should be interpreted to require that each of the two first magnetic members of the primary frame are secured or attached to the back side of the extension, but not attached to the lens rim." Def. Opposition at 8:12-14; see also JS, Exh. D at 4.

Defendant contends that the prosecution history of the '545 Patent mandates their construction of the phrase in question. See Def. Opposition at 8:17. Specifically, Defendant states that "[i]n the original reissue application, proposed claims 12, 16, 20, 34 and 35 included limitations where projections or first magnetic members were attached to the side portions of the primary frame." Id. at 8:17-20. Defendant goes on to say that "the Examiner rejected these claims, indicating: Regarding claims 12, 16, 18, 20, 34, 35, the subject matter of securing the magnetic members to the side portions of the primary spectacle frame and of the auxiliary frame is not supported in the original specification. Therefore, it is new matter." Id. at 8:20-9:2 citing the prosecution history of the '545 Patent, Koo Decl., Exh. E at 167-169.

Defendant's characterization of the prosecution history of the '545 Patent is incomplete. Subsequent to the Examiner's rejection cited by Defendant, an interview with the Examiner was conducted on April 4, 2001, wherein the Examiner expressly withdrew his rejection. See Koo Decl., Exh. E, 476-77. Additionally, the Court notes that one of the preferred embodiments of the invention shown in Figure 3 illustrates magnetic members 14 secured to the extensions and to the edges of the lens rims. See Koo Decl., Exh. B at 11.

Based on the above, the Court construes the phrase "secured to said rear side" in claims 12 and 16 of the '545 Patent to mean that each first magnetic member is connected to the rear side of the corresponding extension or to other portions of the primary spectacle frame in a manner such that the connection is not likely to fail or give away. See Webster's, Nicodema Decl., Exh. 5 at 150 (defining "secure" as "not likely to fail or give away").

First, the district court construed the meaning of the claim language "fixed opposite end portions which are secured to the mounting frame members." With respect to this issue, the court held:

Although I agree with Foster that the cylinder does not have to "touch" the mounting frame member, I believe that the indirect connection relied on by Foster is too circuitous for the cylinder to be considered secured to the undercarriage channel member. The two are connected to portions of the conveyor frame that are at right angles to each other. All parts of the conveyor are welded or bolted to another part. Foster's argument would have them all "secured to" each other. I disagree. The trial judge apparently interpreted the claim language with an eye to the accused device, a practice this court eschews. See SRI Int'l. v. Matsushita Elec. Corp., 775 F.2d 1107, 1118, 227 U.S.P.Q. (BNA) 577, 583 (Fed. Cir 1985) The district court concluded that the two components need not be in direct contact and that the connection may be indirect, but then looked to the accused device to declare the meaning of indirect.

As the district court correctly noted, the claim does not require "secured" to mean a direct connection. Rather, the term "secured" means "to make tight or firm: FASTEN." Webster's II New Riverside University Dictionary 1055 (2d ed. 1988). Neither the specification nor the prosecution history discloses a more specialized or different meaning. Thus, the claim envisions and includes an installation which connects the opposite end portions of the drive units to the end portions of the conveyor frame, and which connects the end portions of the conveyor frame to the channel members. Although the connection is indirect, the claim requires no more than a secure fastening of the fixed opposite end portions to the mounting frame members. The district court unnecessarily restricted the meaning of this claim language.
Callicrate urges that the phrase "securely fastening said ligature material" means "securely fastening the ligature material." On the other hand, NAIC proposes the following construction: "being crimped in a manner sufficient to hold two bands together so as to retain the loop in a tensive condition." The claim language, however, provides only that the grommet securely fasten the ligature material.

Specification

Even though the claim language does not require that the loop be held in a tensed condition, NAIC argues that "the specification and the entire background from which the invention claimed springs" demonstrate that such a limitation is proper. The specification states:

The grommet 32 must be capable of being properly crimped in a manner sufficient to hold two bands together so as to form a loop 20 of ligature material. The grommet 32 must retain the loop 20 in a tensive condition during the atrophy process which may take several weeks. Further the grommet 32 is designed so as to securely fasten the ligature material without significantly damaging the material. 62

The specification in this case explains that to be securely fastened, the grommet must retain the loop in a "tensive condition." This is crucial for the proper function of the endless loop, which must remain in place for several weeks during the atrophy process. Indeed, Callicrate identified a problem in the prior art with bands that are difficult to attach such that they are sufficiently tight. Callicrate's endless loop invention with an attached deformable grommet claims to solve this problem by allowing the ligature band to be "tightly attached to an animal body part." Thus, the Court concludes that the phrase "securely fastening said ligature material" means that the loop must be secured so as to retain the endless loop in a tensive condition.

3. "securing"

The parties agree that the claim language covers various means of "securing" and that the object to be secured is "at least a portion of the distal end portion of the catheter." 8 '198 patent, col. 11, 11. 32-33. They also agree that "securing" should be given its ordinary meaning. Spire proposes that "securing" be construed as "fastening the distal end portion to the patient." Arrow opposes the use of the word "fastening," but offers no alternative definition.

I agree that "securing" should be construed as it is commonly understood, which in this context, is to "hold fast," "to make fast," or "tie down." See Webster's Third New International Dictionary (1986). To hold or make "fast" and "tie down" suggests that the objects are fixed firmly in place. Consequently, I find that "securing" means "firmly fixing the distal end portion to the patient."

Spire proposes the term "fastening," a close, but not perfect synonym of "securing." Although "fastening" accurately captures this concept of fixing one object firmly to another, it can also imply that the two objects are attached to each other. "Securing" does not carry this same connotation. Cf. Int'l Rectifier Corp. v. IXYS Corp., 361 F.3d 1363, 1374 (Fed. Cir.)
2004) (["The district court's adoption of . . . a synonym of the claim term, disregards entirely the distinction between the two terms set forth in the usage note. Had the inventor meant [the synonym], he could have used that word. However, we must consider the word that the inventor actually chose and use the definitions of that term that are consistent with the written description.").

The specification devotes only two sentences to describing how the distal end is to be "secured," but it is clear from this brief explanation that "firmly fixing" is more accurate than "fastening." The first sentence states that the distal end is "secured by sutures or any other suitable means." '198 Patent at col. 5, 11. 44-46. The second indicates that the tubes can be "secured" by placing a stabilizing cuff in a dilated portion of the subcutaneous tunnel. Id. at col. 5, 11. 52-54. Sutures firmly fix the tubes in place by holding them tightly to the patient's skin. This appears also to fit the definition of "fasten." But the same cannot necessarily be said of the stabilizer cuff, which is held in place, not by any attachment mechanism, but by pressure from the walls of the subcutaneous tunnel. This is "securing" as "firmly fixing" but it does not import the concept of "fastening." At the risk of tautology, I will provide a construction of "securing" as "firmly fixing" that I believe comprehends both circumstances.

According to Smith & Nephew, in the 330 patent, "securing" means "holding" tissue. See Ex. Y, col. 1, 1. 12 ("a device . . . for holding and manipulating . . . tissue"); col. 1, 1. 20 ("Conventional medical clamps have serious disadvantages when used for securing and manipulating" tissue); col. 1, 1. 66 (none of the prior art disclose "apparatus suitable for holding and manipulating cartilage during arthroscopic surgery"); col. 3, 1. 7-8 (during surgery, once the anchor member is deposited, the cartilage can be "secured with the use of tension on the suture").

In contrast, according to Smith & Nephew, in the 691 patent, "anchoring" tissue means "to permanently reattach" tissue. Ex. A, col. 1, 1. 47-51 ("the present invention provides a relatively compact and easy to use apparatus for manipulating cartilage and other fibrous tissue, and for anchoring the tissue to other tissue or to bone"). Therefore, according to Smith & Nephew, claim 7 in the 330 patent describes a device for holding the tissue while the surgeon cuts and removes it, while the relevant claims in the 691 patent are directed to a device for anchoring tissue to tissue so a tear can heal.

"Differences among claims can . . . be a useful guide in understanding the meaning of particular claim terms." Phillips, 415 F.3d at 1314. Claim 7 is the only claim in the 330 patent directed solely to "securing" tissue, while all of the other claims in the 330 patent describe a device for use in "anchoring and manipulating" tissue. In addition, all of the claims except claim 7 limit the claimed invention to one that includes a retainer to keep the anchor member in place. The retainer is described in the specification as a means of "holding tissue permanently in place." Ex. Y, Abstract, col. 3, 1. 22-34, col. 8, 1. 32-38. Therefore, "anchoring and manipulating" contemplates a claimed invention that permanently holds the tissue. "Securing," on the other hand, must mean something different from "anchoring and manipulating," as those terms are used in the 330 patent. Differentiating claim 7 from the other claims in the 330 patent, and referring to the specification referenced by Smith & Nephew, I find that "securing" in claim 7 means temporarily holding.

As for the 691 patent, claims 15 and 18 describe a method for "manipulating" tissue. Absent a definition for manipulating in the specification, the term carries its ordinary and customary meaning. Manipulating is generally understood to mean handling. Accordingly, claims 15 and 18 describe a method for handling tissue, while claim 7 describes a device for holding tissue.

A device that is capable of holding tissue can also handle tissue. Indeed, the 330 specification recognizes that a device that can secure tissue can also manipulate tissue. See Ex. Y, col. 1, 1. 12 ("a device . . . for holding and manipulating . . . tissue"); col. 1, 1. 20 ("Conventional medical clamps have serious disadvantages when used for securing and manipulating" tissue); col. 1, 1. 66 (none of the prior art disclose "apparatus suitable for holding and manipulating cartilage during arthroscopic surgery"). Similarly, the 691 patent specification confirms that a device that secures tissue is implied in a device that manipulates tissue. See Ex. A, col. 1, 1. 15 ("an apparatus and method for manipulating . . . tissue"); col. 1, 1. 20 ("Conventional medical clamps have serious disadvantages when used for manipulating" tissue); col. 1, 1. 56 (none of the prior art disclose "apparatus suitable for manipulating fibrous tissue during arthroscopic surgery").

Although claim 7 of the 330 patent and claims 15 and 18 of the 691 patent use different terminology, the claims are so alike
as to render the 691 claims obvious in view of the 330 claim. As a result, I find that Smith & Nephew has not demonstrated that Biomet's claim of double patenting with respect to claims 15 and 18 lacks substantial merit.

In this case, plaintiffs contends that the term "securing mechanism" as stated in a number of claims in the patent, means a "conventional mechanical locking device." Defendants, on the other hand, argue that "securing mechanism" means "latching mechanism." If defendants' view is accepted, the patent extends only to a clothes hanging device as described above that uses any kind of a latch to lock the arms of the device in place. By contrast, plaintiffs' interpretation would broaden the scope of the patent to cover similar clothes hanging devices that use any mechanical system to lock the arms in place. For the reasons stated below, the court agrees with plaintiffs that "securing mechanism," as used in the claims of the " '888 patent," means "conventional mechanical locking device."

In support of their argument, plaintiffs point to claims 13, 14, and 21. Claims 13 and 14 state, in part:

A hanger, comprising:

a hanger body having an attached hanging structure; a plurality of arms attached to the body; and at least one securing mechanism for securing the plurality of arms in a first position relative to the hanger body;

Pls.' Ex. 1, col. 8, lines 24-28, 39-43 (emphasis added). Claim 21 contains the same language as the quoted portions of claims 13 and 14, supra, and further states:

wherein the plurality of arms are each movable from the first position to a second position, such that the arms are fixably stopped in the second position, wherein each of the plurality of arms includes a plurality of hang locations for fixedly holding conventional hangers, wherein each securing mechanism comprises a latch, and wherein the plurality of arms include a plurality of hang locations, the plurality of hang locations comprising holes in the plurality of arms.

Pls.' Ex. 1, col. 9, lines 50-59 (emphasis added). Defendants, in turn, rely on a number of claims that refer to a "latch." For example, claims 28 and 29 notes that "wherein each latch has a latched position and an unlatched position, [and] wherein each latch is biased on the latched position." Pls.' Ex. 1, col. 11, lines 8-10, 26-28; see also Pls.' Ex. 1, claims 2, 5, 21-27, 57-59.

"In construing the claims, a court "first . . . looks to the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Within the claims, there is support for both parties' positions. Defendants' asserted claims demonstrate that the claims contemplate that the securing mechanism will contain some kind of latch system. The multiple references to latches, however, does not conclusively answer the question before the court of what the term "securing mechanism" means.

"The 'varied use of a disputed term in the written description demonstrates the breadth of the term rather than providing a limited definition.'" Northern Telecom Ltd. v. Samsung Elec. Co., Ltd., 215 F.3d 1281, 1291 (Fed. Cir. 2000) (quoting Johnson Worldwide Assoc. Inc. v. Zebco, Corp., 175 F.3d 985, 991 (Fed. Cir. 1999)). Therefore, the various references within the claims to "latches" that describe the term "securing mechanism" do not limit the scope of the term. In addition, the mere use of the term "securing mechanism," rather than simply "latching mechanism" or "latch system," suggests that the claims encompass systems "for securing the plurality of arms in a first position relative to the hanger body," Pls.' Ex. 1, col. 8, lines 28-29, 43-44, that do not include latches. This reading supports plaintiffs' position that "securing mechanism" encompasses all types of conventional mechanical locking devices, not merely those that use latches.

Footnotes

2 Plaintiffs point out that the language in claim 21 relied upon by both parties, "wherein each securing mechanism comprises a latch," would reduce that language to a redundancy, reading "each latching mechanism comprises a latch." The fact that defendants' reading renders a portion of claim 21 superfluous further supports the court's conclusion.
The Federal Circuit directs that the second step in claim construction analysis is to look at the specification, and read the claims in view of the specification. See Vitronics, 90 F.3d at 1582 ("As we have repeatedly stated, 'claims must be read in view of the specification, of which they are a part.'" (quoting Markman, 52 F.3d 967, 979 (Fed. Cir. 1995), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996)). The court in Vitronics describes the specification as "the single best guide to the meaning of a disputed term." Vitronics, 90 F.3d at 1582.

The specification contains two references to the means of holding the arms of the device in a locked position that strongly support plaintiff's position. First, in the "Summary of the Invention," the patent describes "an embodiment of the present invention [which] comprises a device, method, and system for clothing organization that includes . . . a securing or latching system to hold the arms in place." Pls.' Ex. 1, col. 2 lines 53-54 (emphasis added). Second, the "Detailed Description" provides that "in an embodiment of the present invention, as shown in FIG. 1, two securing mechanisms 3, 4, such as latches, are incorporated near the top of the body 1a." 3 Pls.' Ex. 1, col. 4 lines 37-39 (emphasis added). The latter passage in particular demonstrates that the term "securing mechanism," at least as used in the specification, encompasses systems that rely on latching mechanisms and those that use some alternative means of holding the arms of the device in a fixed position. Because the specification is the "single best guide," for determining the meaning of the disputed claim term, see Vitronics, 90 F.3d at 1582, the court concludes that the term "securing mechanism" has the same meaning in the claims section of the '888 patent as it has in the specification section. Accordingly, the court finds that defendants' contention that "securing mechanism" merely means "latching mechanism" is not supported by the '888 patent.

Having shown that defendants' definition of "securing mechanism" is not supported by the '888 patent, the court must determine the proper construction of the term. Plaintiffs contend that "securing mechanism" means "conventional mechanical locking device." The court concludes that this definition is accurate because, one, it recognizes that a securing mechanism need not be limited to a latching system, and, two, it does not unduly expand the scope of the patent.

The court reaches this conclusion by first examining "the context of this patent is all about." Design by U.S. Company v. Best Foods, Inc., 2000 U.S. Dist. LEXIS 10669, No.CIV.A. 98-736, 2000 WL 1056454 (E.D. Pa. Aug. 1, 2000). The Federal Circuit has endorsed this approach, stating that "a claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent." Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998). In this case, the context of the patent concerns protecting the concept of a clothes hanging device that, through movable arms that contain holes through which conventional hangars can fit, decreases the amount of space taken up by the clothes when the arms are locked in a certain position. The means by which the arms are locked is of minimal importance, and requires nothing more than rudimentary engineering. Had the plaintiffs attempted to patent the latching system which is contained on the product they market to the public based on the '888 patent, such an attempt would have been summarily rejected, because the latch system found on the product is so basic and obvious. This is clear to the average person, let alone someone "skilled in the art." Therefore, in order to provide adequate protection for the primary concept articulated in the '888 patent, it is necessary to construe the claims as to features of the invention of secondary importance, such as the securing mechanisms, in a manner broad enough to prevent a patent holder's competitors from evading the reach of the patent laws by altering a single relatively unimportant component of the invention. This conclusion is also supported by plaintiffs' expert, Dr. Thomas Haas, 4 who testified that, in his opinion, "a securing mechanism is a conventional mechanical locking device." Hr'g Tr. (10/13/00) at 61.

4 Dr. Haas is a professor of chemical engineering at Virginia Commonwealth University, see Hr'g Tr. (10/13/00) at 51, and is a past president of the Society of Plastic Engineers, see id. at 54. At the hearing, Dr. Haas was qualified as an expert in the fields of mechanical design and polymer engineering. See Hr'g Tr. (10/13/00) at 59. Defendants objected to the proffer of
this opinion because Dr. Haas's testimony is extrinsic evidence. They argue that the court may not consider such extrinsic evidence because, in their view, the claims clearly establish that the term "securing mechanism" means "latching mechanism." It follows from the court's rejection of that view, however, that the claims are ambiguous. Consideration of extrinsic evidence is thus appropriate. See Victronics, 90 F.3d at 1583 ("In those cases where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper.").

Finally, defendants' means-plus-function argument under 35 U.S.C. § 112(b) is equally unavailing. Section 112(b) provides that an element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material or acts described in the specification and equivalents thereof.

35 U.S.C. § 112(b). The claims asserted by defendants do not contain the "means for" language that is generally used by claims drafters to trigger application of § 112(b). The absence of the "means for" language creates a presumption that § 112(b) does not apply. See Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584 (Fed. Cir. 1996). In this case, defendants has pointed to nothing in the claim language of the '888 patent which overcomes the presumption created by the absence of the "means for" language.

For the reasons stated above, the court finds that, the term "securing mechanism" as used in the '888 patent means "conventional mechanical locking device."

3521

6. "securing said protective barrier to said structure"

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<th>Claim Term</th>
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<th>Defendants' Proposed Construction</th>
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<td>securing said protective</td>
<td>Connecting at least one edge of</td>
<td>Attaching a plurality of anchoring</td>
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Plaintiff asserts in its rebuttal statement that the claim requires securing the protective barrier "to said structure," not the ground, and that Defendants' proposal improperly narrows the claim by importing limitations from embodiments disclosed in the specification. In rebuttal, Defendants argue that construing this claim term within the context of the entire patent, the protective barrier is required to protect the entire structure and "does not require physical attachment to the structure." Defendants contend that "numerous of the embodiment[s] illustrated in [Patent '852] show connecting the single protective barrier device to the ground around the perimeter of the structure so as to achieve the securement of the barrier device to the structure." At the hearing, Plaintiff argued that the claim language itself says nothing about securing the barrier to the ground. Defendants' countered by referencing illustrated figures 1, 2, 4, and 8, which show the device anchored to the ground or at or above a structure's cave. While conceding that the protective barrier can also be secured to the structure, Defendants argue that such securing must be at or above the eave.

The Court finds Defendants' argument to be counter-intuitive and inconsistent with the claim's plain language. The claim language clearly and plainly states "securing said protective barrier to said structure" and says nothing about securing the
barrier to the ground, as urged by Defendants. Defendants' reliance upon specific figures in the specification is misplaced. As has been stated consistently throughout this Report and Recommendation, the Federal Circuit clearly prohibits courts from improperly importing limitations from the specification into a claim. Varco, 436 F.3d at 1373. More specifically, courts are not to confine claims to embodiments described in a specification. Phillips, 415 F.3d at 1323. Here, Defendants primarily rely on specific figures and their corresponding written descriptions. Because this Court is not permitted to narrowly confine the instant claim term to these specific embodiments, this Court rejects Defendants' proposal.

Moreover, as noted by Plaintiff in its rebuttal statement, claim 10 of Patent '085 includes the claim term "securing said textile material to said structure." Since Patent '852 is a continuation-in-part of Patent '085, the common claim term "securing" in both patents should be construed consistently. See NTP, Inc. v. Research In Motion, Ltd., 418 F.3d 1282, 1293 (Fed. Cir. 2005) (holding that because the patents at issue "all derive from the same parent application and share many common terms, we must interpret the claims consistently across all asserted patents"). This Court construes "securing said textile material to said structure" in claim 10 of Patent '085 to mean "securing or connecting the textile material to the structure." Similarly, the instant claim language means "securing or connecting the protective barrier device to the structure."

The parties agree that protective barrier device means "one or more panels of a flexible textile material." The parties also agree that the protective barrier device can be secured to the structure, except that Defendants argue that the device can also be secured to the ground in a manner that holds the device onto the structure and, if it is secured to the structure, such securing must be at or above the cave. Although the specification reveals an embodiment in which part of the protective device is indeed anchored to the ground and secured at or above the cave, there is no evidence to support a construction narrowing the claim to only these two methods of securement. Instead, the Court reads the instant claim language in view of the specification, which specifically incorporates prior art and predecessor patents, to mean that the device is in some manner secured or connected to some portion of the structure itself. The Court finds Plaintiff's proffered construction to be consistent with this reading and hereby adopts it as the proper construction of this claim term.

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G. "Securing"

Mitek argues that "securing by advancing" should be construed as "to make fast by impacting." Mitek asserts that the patents warn against securing the graft by rotating a screw-in type implant because the graft could become wrapped around the implant. Mitek cites to the Background of the Invention portion of the patent. (Doc. 140, Exh. 1, 1:60-62). Mitek also cites to the language in the patents which includes the implant is "driven into the femur" and later "the implant easily can be impact driven into the repair site," and a "mallet is used to drive the implant into the femur." (Doc. 140, Exh. 1, 3:5-6, 7-8, 6:11-12). Mitek argues that the patents do not propose any other method of securing the graft other than impaction.

Arthrex argues that the transverse implant can be advanced by impaction into the bone, however the claim is not limited to this suggested manner of advancing. Arthrex asserts that there is nothing in the claim language or the specification to limit how the "advancing" is to occur.

In the System for Loading Tendons into the Knee, the patent provides that "[a] threaded portion of the implant screws into the bone as the implant is advanced with rotation into the repair site. The technique is disadvantageous, however, because the graft can become wrapped around the implant as it is rotated. An improved bone implant is the subject of the U.S. Pat. No. 5,895,425." (Doc. 140, Exh. 1, 1:58-64). In the Summary of the Invention, the patent provides that the "implant is placed over the wire and driven into the femur. The implant preferably is formed with back-biting threads. Accordingly, the implant easily can be impact driven into the repair site, and yet can be removed if necessary by rotation." (Doc. 140, Exh. 1, 3:5-9). In the Detailed Description of the Preferred Embodiments, the patent provides for the implant being "driven by impaction into bone, and then, if necessary can be subsequently removed by screw rotation as discussed below." (Doc. 140, Exh. 1 4:59-61). Later in the Detailed Description of the Preferred Embodiments, the patent provides that "a mallet is used to drive the implant into the femur." (Doc. 140, Exh. 1, 6:11-12).

The specific claim language does leave open the method of "advancing an implant transversely into the opening." (Doc. 140, Exh. 1, 6:55-56). However, considering the specification as a whole and in conjunction with the claim language, the
terms "securing the graft by advancing an implant transversely" should be construed as by impaction and not by securing the graft by rotating a screw-in type implant. In the System for Loading Tendons Into the Knee, the language disavows the use of the screw-in type implant as possibly causing the graft to become wrapped around the implant when rotated. (Doc. 140, Exh. 1, 1:62-63). Relying on the language of the claim and the language in the specification, the Court determines that a "person of ordinary skill in the art" would construe the "ordinary and customary meaning" of the terms "securing the graft into the opening by advancing an implant transversely into the opening and under the graft," to mean to secure the graft by impacting and not by rotating a screw-in type implant.
can affect dead band within the invention at issue and points to several instances within the specification where the term "select starting position" specifically refers to the start position of the piston. However, the use of the terms "select start position," "start position," or "starting position" within the specification is not restricted to discussions of the piston; rather, these terms are used numerous times throughout the specification in connection with various components of the brake system. As a result, it is difficult to extrapolate the constant association of this term with a specific component that Formula urges. Instead, this type of use demonstrates that the term is not independently definable but instead relies upon other associated language to convey its full meaning. It also indicates that the inventor knew how to use, and the PTO knew how to approve or disapprove of, different terms to specifically call to mind when specific scenarios were being described. In other words, to know the object whose start position has been selected, we must look at the language surrounding this term.

The term "select starting position" is used twice in claim 21. The first appearance occurs in the context of a description of the positioning of the seal as it moves from its initial position, selected by the rider according to his or her preference, toward the opening of the timing port. The second instance, by contrast, appears in a discussion of the lever and the effect on the piston when the lever pivots. The latter use pertains to the starting position of the piston; the former, to that of the leading edge of the seal. Thus, we cannot agree with the construction advanced by Formula that "select starting position" always pertains to the starting position of the piston. Rather, the component at issue will differ and must be determined through the context in which it is used. Consequently, we construe this term to mean the position of a particular component, as chosen by the rider.

5) "selectable"

Plaintiff proposes that "selectable" be defined as "a design choice." Defendant proposes the definition, "capable of being altered." I conclude that selectable means capable of being altered.

Claims 15 and 22 both use the term selectable. Claim 15 requires the "position of said intake passageway [to be] selectable based upon at least one of the position and the configuration of said runner filler," while claim 22 requires the "position of the inlet [to be] selectable." Plaintiff emphasizes the invention of the '502 patent, which is a cylinder head that can be used in a variety of engine configurations. The '502 patent teaches altering the size or position of the intake passageway by changing the size or shape of the runner filler. Therefore, plaintiff argues, "selectable" means the ability to make different design choices.

Defendant does not deny that the '502 patent teaches changing the runner filler to alter the shape or size of the intake passageway. However, defendant contends that plaintiff's proposed construction is so broad as to render the term "selectable" meaningless. After all, equipment designers necessarily make "design choices" at some point in the production of any cylinder head. Defendant contends that an intake passageway and inlet are not "selectable" within the meaning of claims 15 and 22 unless those components can be altered without undermining the functioning of the cylinder head.

The patent does not define selectable. The ordinary meaning of the term is "capable of being chosen." Webster's New World Dictionary 3, 1299 (4th ed. 2001). Like plaintiff's original proposal, this definition is inadequate to give any meaning to the term as it is used in claims 15 and 22. All designs are "chosen," but not all designs infringe the '502 patent. I conclude that "selectable" as used in claims 15 and 22 refers to intake passageway positions and inlets that can be altered without disturbing the function of the cylinder head.

B. Claim Construction

The parties dispute the construction of Claim 27's phrase "selected and combined such that the storage tank is able to withstand an environment of at least 2000 degrees F. for a period of time of at least two hours." Specifically, they disagree as to the significance and construction of the terms "selected and combined." U-Fuel argues that these terms distinguish
Claim 27 from prior art in that they necessarily entail an intent to build a tank that is "fire-resistant." Defendants dispute plaintiff's construction, asserting that there is no such intent limitation attached to these terms.

The "first step" of an invalidity analysis based on anticipation in view of prior art is determining the claim's meaning and scope. See Lemelson v. Gen. Mills, Inc., 968 F.2d 1202, 1206 ("It is elementary in patent law that, in determining whether a patent is valid and, if valid, infringed, the first step is to determine the meaning and scope of each claim in suit."). "A claim must be construed before determining its validity just as it is first construed before deciding infringement." Markman v. Westview Instruments, Inc., 52 F.3d 967, 996 n. 7 (Fed. Cir. 1995), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). "Only when a claim is properly understood can a determination be made whether ... the prior art anticipates and/ or renders obvious the claimed invention." Amazon.com, 239 F.3d at 1351.

In construing the meaning and scope of a claim, the Court can consider two types of evidence: intrinsic and extrinsic. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). There are three sources of intrinsic evidence: (a) the words of the claims themselves; (b) the specification, which is the written description of the claims including a description of the preferred embodiment of the protected invention; and (c) the prosecution (or file) history of the patent, if it is in evidence. Id. "Extrinsic evidence is that evidence which is external to the patent and file history," such as expert testimony and prior art. Id. at 1584. It is only to be considered if the analysis of intrinsic evidence alone will not resolve any ambiguity in a disputed claim term. Id. at 1583.

In considering intrinsic evidence, the Court must look first to the claim language itself to define the scope of the protected invention. Bell Atlantic Network Servs., Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1267 (Fed. Cir. 2001). Claim terms are to be given their plain and ordinary meaning unless it is apparent from the patent specification that the inventor intended a different meaning. Nat'l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc., 166 F.3d 1190, 1195 (Fed. Cir. 1999).

U-Fuel contends that the language "selected and combined" instructs one skilled in the art to select and combine materials with the intent of manufacturing a non-insulated AST that can withstand a 2000 degree Fahrenheit environment for two hours. U-Fuel argues that the words "selected and combined" necessarily incorporates an "intent" limitation -- a limitation that U-Fuel notes is neither in the UL 142 standard nor the F921 specifications -- thereby distinguishing its claim from prior art. Defendants dispute this construction and assert that there is no intent element in Claim 27 that makes this process claim new.

To support its interpretation that the terms "selected and combined" embody an "intent-to-achieve-fire-resistance" limitation, U-Fuel cites two cases, Nat'l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc., 166 F.3d 1190 (Fed. Cir. 1999), and Optical Coating Laboratory, Inc. v. Applied Vision, Ltd., 1996 U.S. Dist. LEXIS 1476, 1996 WL 53631, No. C-92-4689 MHP (N.D. Cal. January 19, 1996). The Court concludes that these decisions are inapposite to the construction of plaintiff's method claim at issue in this case, Claim 27.

Although Nat'l Recovery and Optical Coating both involved the disputed construction of the term "select" in method claims, that is where the similarity to the present case ends. Those cases never addressed the issue of whether the plain and ordinary meaning of the term "select" to one of ordinary skill in the art includes the intent of achieving an objective for the purpose of distinguishing a claim from prior art. In other words, the courts in these cases were not faced with the question of whether an intent limitation is attached to the term "select" to prevent prior art anticipation, nor did they in fact conclude that this term incorporates such an intent element.

The dispute in Nat'l Recovery centered around whether the term "select" merely stated a preference for certain radiation signals that did not pass through plastic containers or required "perfect isolation" between those signals that passed and those that did not pass. That case did not address the question presented in this case -- whether the term "select" incorporated an intent limitation. In Optical Coating, the crux of the controversy was whether two distinct processes of applying protective films to optical lenses was incorporated in the term "select," not whether this term included an intent limitation.

Moreover, an argument of claim construction similar to that made by U-Fuel was rejected in In re Cruciferous Sprout Patent Litigation, 168 F. Supp. 2d 534 (D. Md. 2001), aff'd, 301 F.3d 1343, 2002 WL 1917373, No. 02-1031, (Fed. Cir. 2002). Plaintiffs in that case discovered that certain cruciferous sprouts, such as broccoli and cauliflower, contained higher levels of
cancer-prevention properties than other cruciferous seeds, such as cabbage or radish. Id. at 538. Plaintiffs patented a method of preparing food products by "identifying" those seeds which produce cruciferous sprouts high in cancer-prevention properties, germinating said seeds, and harvesting them for consumption. Id. at 536. Defendants argued that the claim described nothing more than germinating sprouts from certain cruciferous seeds and harvesting those sprouts as a food product, a process known long before the application of the plaintiff's patent. Id. at 537. The court agreed with the defendants and rejected plaintiff's argument that the claim language "identifying seeds which produce cruciferous sprouts … containing [the desired anti-cancer properties]" introduced a new 'selection' step that was not part of the prior art." Id. at 540. It held that this "selection" step merely entailed "choosing to do one thing over another [-] choosing to grow broccoli or cauliflower sprouts instead of [other sprouts]"-- and concluded that "any process could be prefaced by a similar 'selection' step" and that being the first to "perform a particular process cannot be enough to make the process 'new'." Id.

In construing a claim, the "claim terms are to be given their ordinary meaning unless it is apparent that the inventor intended to use them differently." Nat'l Recovery, 166 F.3d at 1195. In this case, there is nothing in the '144 patent's specification or prosecution history which tracks the "selected and combined" language of Claim 27 and which provides any indication that these terms necessarily entail an intent-to-achieve-fire-resistance limitation. Furthermore, in giving the term "selected and combined" its ordinary meaning to one of ordinary skill in the art, there is no such intent limitation. Thus, U-Fuel's argument that there is an intent element inherent in the term "selected and combined" must be rejected. The Court concludes that in construing the claim at issue on the present state of the record, there is no intent limitation on the term "selected and combined;" U-Fuel's method claim, as construed by the Court, describes nothing more than building a non-insulated AST that has fire-resistant properties for the use of storing combustible and flammable materials such as gasoline.

The Court notes that for purposes of plaintiff's motion, its construction of Claim 27, in particular the terms "selected and combined," is a tentative one. The Court is not required to interpret Claim 27 "conclusively and finally" when deciding a motion for preliminary injunction. Sofámov Danek Group, Inc. v. DePuy-Motech, Inc., 74 F.3d 1216, 1221 (Fed. Cir. 1996) (stating that a trial court is "not obligated … to conclusively interpret claims at an early stage in a case" and "may exercise its discretion to interpret the claims at a time when the parties have presented a full picture of the claimed invention and prior art"). Furthermore, findings and conclusions as to claim construction at the preliminary injunction stage are not binding at trial. See Int'l Communication Materials, Inc. v. Ricoh Co., 108 F.3d 316, 318-19 (Fed. Cir. 1997) (holding that a district court did not abuse its discretion in denying a preliminary injunction based on a "tentative claim construction," given that there were "substantial open issues and questions that must be litigated before a finding of infringement can be made, including claim construction …"); Illinois Tool Works, Inc. v. Grip-Pak, Inc., 906 F.2d 679, 681 (Fed. Cir. 1990) (affirming a district court's denial of a preliminary injunction "after a hearing in which neither party was required to prove his case in full and in light of findings and conclusions not binding at trial") (emphasis in original).

Maytag and Whirlpool dispute the construction of the element 5 language emphasized here:

said shelf spaced laterally inward from said one side wall and forming a front-to-rear gap therebetween in one position of said shelf for supporting selected articles to be washed

W. Mem. 20 contends those three phrases must be read together to "properly interpret this limitation." According to Whirlpool, "the 'front-to-rear gap' must be sufficiently large to receive the 'selected articles' and the 'laterally inward' spacing must also be sufficiently large so as to provide the appropriate sized gap" (W. Mem. 21). Whirlpool emphasizes that the specification describes the gap as "allowing large articles such as cookie sheets and pizza pans to be placed between the pivotal shelf 80 and the side wall 72" ( '419 Patent col. 5, ll. 54-56).

Maytag's position (M. Mem. 26) is that the gap need not be either a long single gap or a quite wide single gap (or both) and that Whirlpool's arguments on that score lead to importing "several limitations that appear nowhere in the claims and are nowhere suggested by the specification." In particular, M. R. Mem. 14 (emphasis in original) charges Whirlpool with overreaching by claiming "that because the specification references certain large items in the gap, the gap must extend all the way from the front of the rack" and "that for 'front-to-rear' to mean orientation rather than longitudinal extent would
create a 'superfluous' claim requirement." Maytag is right.

In that respect Whirlpool has glossed over (or, more accurately, has omitted entirely) the fact that the claim specifies the gap's orientation by its reference to "a front-to-rear gap therebetween." That emphasized word is not a reference back to designate the distance between the front and rear walls--terms that are regularly used throughout the patent claims, and that specifically appear in element 2 of the claim now under consideration (claim 3). Instead "therebetween" plainly refers to the space between the higher side wall and the pivotal shelf in one position of the shelf--and that being so, "front-to-rear" simply characterizes that gap in longitudinal rather than lateral terms, without in any way specifying or indicating the longitudinal dimension.

If Maytag's patent counsel, whose total work product in drafting the claims has demonstrated the typical patent lawyer's fondness for detail in drafting (and of course the typical prolific use of the adverbial form), had wished to limit the claim as Whirlpool urges, it would have been the easiest thing in the world to say "a front-to-rear gap between the front and back walls of said basic rack" (note the comparable usage in element 2) rather than the very different meaning of "a front-to-rear gap therebetween." And similarly, if Maytag's counsel had wished to limit the claim (as Whirlpool also urges) by restricting the use of the gap to such large articles as those referred to in the specification by way of illustration, it would likewise have been the easiest thing in the world to say something along the lines of the gap's "supporting particularly large articles to be washed" 27 rather than simply referring to "selected articles." Nothing supports Whirlpool's attempted redrafting of element 5 to convert it from indicating a user's choice (of "selected articles," perhaps--but not necessarily--selected from among "large articles") into a limitation that is restricted to extraordinarily large articles or the like.

--- Footnotes ---

27 Note that element 3 already refers to the function of the one substantially higher side wall as providing support for the racking and washing of "large articles."

--- End Footnotes ---

In much the same way, in turning from the length of the gap to its width, W. Mem. 22-23 offers up the unpersuasive contention that the pivotal shelf must be "spaced laterally inward" sufficiently to make the gap wide enough to accommodate cookie sheets and pizza pans. But again nothing in the claim language calls for such a restrictive construction. While W. Mem. 23 would have this Court measuring the width of cookie sheets and pizza pans to determine exactly how far "laterally inward" the shelf is placed, doing that would obviously import limitations from the specification into the claim language. Standing alone, the claim language is plain enough: It merely requires the shelf to be laterally inward so as to form the previously described front-to-rear gap. In other words, the spacing between the shelf and the side wall does not have to meet some particular measure, but must merely be located "laterally inward." 28

--- Footnotes ---

28 W. Mem. 23-24 contends that the term "selected articles" must have a meaning related to the cookie sheet and pizza pan cited in the specification and cannot "mean any possible article." But while the specification may be a useful aid in claim construction, limitations in the specification are not to be imported in the claim. Instead the term "selected articles" in element 5 merely means, as the normal meaning of those words connotes, some articles that can fit into a front-to-rear gap created by placing the shelf laterally inward from the side wall.

--- End Footnotes ---

3. "selected color variations"

This claim term appears in all of the asserted claims in both the '726 and '068 patents. Travis proposes the following construction: "colors of a natural fire, including shades of orange." Hearth contends that this term is indefinite and not capable of construction. Based on the intrinsic evidence, the Court construes "selected color variations" to mean "the portion
of the color spectrum that simulates a natural wood-burning fire."

Claims 1 and 13 of the '726 patent and claims 1 and 15 of the '068 patent all read, in part: "material that glows at selected color variations in the simulated coal members to simulate a burning and glowing coal ember bed in the base of a fire when the fuel gas is ignited . . . " (The '726 patent, 11:48-51. 12:42-45; the '068 patent, 11:53-57, 12:67-13:3 (emphasis added)). Claim 20 of the '726 patent and claim 23 of the '068 patent contain similar language: "material that glows at selected color variations when the fuel gas is ignited . . . " (The '726 patent, 13:52-53; the '068 patent, 14:9-11 (emphasis added)).

Hearth argues that this term is indefinite because the term is not found in any dictionaries. However, each of these individual words have ordinary and plain meaning defined in dictionaries. The combination is not so unusual as to render the term incomprehensible.

The surrounding claim language makes clear that selected color variations refers to the various colors that simulate a burning a glowing coal ember bed in the base of a fire. While it is true that fires emit a wide range of colors, the term itself is not so ambiguous that one skilled in the art cannot understand that the term refers to a range and combination of colors that mimic a natural fire.

The specification provides further support. It states "the ceramic-based ember members glow an orange-ish color very similar to the color of burning embers in a natural wood-burning fire," (the '726 patent, 6:21-24; the '068 patent, 6:25-28); "distribute the fuel gas at selected rates and volumes over the burner assembly's upper surface 17 and around the simulated logs 16 to provide a flame having a generally orange coloration that flickers and 'dances' around the simulated logs similar to the flames of a natural wood-burning fire," (the '726 patent, 3:57-61; the '068 patent, 3:61-65). This language makes clear that the "selected color variations" are the range of colors that simulate a natural wood burning fire.

Based on this specification language, Travis seeks to include in the construction a reference to "shades of orange." The Court is not persuaded that such language is appropriate. First, the specification's use of the term "orange-ish" is not persuasive because it is not a word found in the dictionary. Second, when asked at oral argument if Travis would accept a construction that referred to the precise meaning of orange -- "wavelengths of approximately 590 to 630 nanometers" (The American Heritage Dictionary, 4th ed. 2000) -- Travis responded that it was not seeking such a construction. Third, the colors of a natural wood-burning fire include shades of orange but also include other colors. Therefore, the Court sees no reason why the construction should specify shades of orange when it does not refer to other specific colors.

Lastly, the Court finds that this term is not so ambiguous that it is not capable of construction. As shown above, the surrounding claim language as well as the specification provide sufficient context to give meaning to this claim term.
are preferably selected from the group consisting of waste rubber buffings and ground tires."

The language of Claims 2 and 6 reads, "said rubber particles with said rubber particles having an outer surface designed and dimensioned to look like natural mulch selected from the group consisting of natural polymers and synthetic high polymers." Claim 1(a) also contains the language "with the rubber selected from the group consisting of natural polymers and synthetic high polymers." Claim 1(a) also contains the language "with said rubber particles having an outer surface designed and dimensioned to look like natural mulch selected from the group consisting of pea gravel, wood chips, and tree bark . . ." The language of Claims 2 and 6 reads, "said rubber particles are preferably selected from the group consisting of waste rubber buffings and ground tires." (Pl. Exh. 1) (emphasis added).
Like the patent in Abbott Labs., "the claims do not clearly embrace more than one member of the Markush group." Abbott Labs., 334 F.3d at 1281. Therefore, the plain meaning of the claims asserted in 1, 2, 6 and 8 "limits them to a single [alternative] selected from the recited Markush group." Id.

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1. At Selected Higher and Lower Pressure Magnitudes

This phrase is found in Claims 3 and 24 of the '802 Patent and Claims 9, 44, and 53 of the '193 Patent.

Phrase: At selected higher and lower pressure magnitudes

Construction: at a higher pressure magnitude and a lower pressure magnitude that have been chosen prior to operation of the computer circuitry that is used to determine whether the patient is inhaling or exhaling.

Reasoning: The dispute between the parties focuses on when, and how, the two pressures must be selected. Plaintiffs contend that they can be selected in any manner and at any time prior to their being applied. In fact, at the hearing, plaintiffs contended that the lower pressure could fluctuate breath by breath while the device is in operation. Defendant contends that the pressures must be selected manually prior to operation.

In construing the term "selected" it is of primary importance to understand the overall context of the patents themselves. These patents disclose bi-level treatment devices. The claims disclose a treatment method that senses the occurrence of the exhalation or inhalation phase of the breathing cycle, even in the presence of system leakage, based on the spontaneous breathing of the patient, so that the system knows when to apply a higher pressure magnitude (i.e., during inhalation), or a lower pressure magnitude (i.e., during exhalation).

With that said, in arriving at the proper construction of the term "selected", we must look at the entirety of the claims. By way of example, the word "select" appears in Claim 3 of the '802 Patent twice. It is the first occurrence of the term that we are being asked to construe. The first time, "select" is used it appears in the past tense as part of the first step of the claim (i.e., ". . . for delivery to the airway of such a patient at selected higher and lower pressure magnitudes . . ."). The second time, "select" appears it is used in the present tense as part of the final "utilizing" step of the claim (i.e., "utilizing said instantaneous flow rate and said reference indicia to select one of said higher and said lower pressure magnitudes"). When the claim is read in its entirety, it is clear that the "selected" higher and lower pressure magnitudes of the first step are pre-selected, before the computer circuitry does its detecting, processing, and utilizing, so that once the circuitry has completed these tasks, it can pick which of the two pressures to apply. Apart from the structure of the claim itself, this is supported by the fact that in the final "utilizing" step, the higher and lower pressures are referred back to as "said", or previously mentioned/referenced, pressures (i.e., "utilizing said instantaneous flow rate and said reference indicia to select one of said higher and said lower pressure magnitudes").

This reading of the claim language is consistent with the remaining intrinsic evidence. The specifications, figures, and prosecution history all presuppose that the two pressures are chosen before the device starts detecting, processing, and utilizing. See e.g., Prosecution History, '802 Patent, Amendment and Remarks (June 11, 1990) at 19-20; '802 Patent, Fig. 4; cl. 2, Ins. 59-63; cl. 3, Ins. 24-28; cl. 6, Ins. 43-46, 55-59, 61-66; cl. 8, Ins. 53-55; cl. 11-12, Ins. 62-22; cl. 13, Ins. 24-32, 40-42. There is no indication in the patents that the lower pressure magnitude can somehow be changed breath by breath, as was asserted at the hearing. While a person of ordinary skill in the art might be able to modify the invention so as to "select" the pressures via computer screen, rather than dial, there is nothing to suggest that the "selected" step is nearly as broad as plaintiffs contend.

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13. Selected minimum distance
FieldTurf's Proposed Construction: "Space determined not to exceed a specific amount of space"

SCG's Proposed Construction: "Space determined not to exceed a specific amount of space that is predictable and reproducible and not densely packed together"

The Court's Claim Construction: "Space determined not to exceed a specific amount of space"

The "selected minimum distance" language appears in claim 10 of the '689 patent, which reads as follows: "A synthetic grass assembly according to claim 1, wherein the synthetic' ribbons are disposed in rows spaced apart a selected minimum distance." The only dispute is whether the distance must be "predictable and reproducible and not densely packed together." SCG pulls this language from the following excerpt from the "Background of the Art" portion of the specification:

Therefore the combined structure of upstanding ribbons and loose particulate infill must be balanced or optimized to provide a desirable playing surface. When the ribbons are densely packed together, the cleats cannot release properly, but when the ribbons are spaced too far apart, adequate traction and stability is not available. Due to the high cost of artificial grass installations, and risk of injury to highly skilled an highly paid athletes, a predictable and reproducible artificial grass performance is required.

'689 patent, 4:27-35.

The portion of the specification that refers to a "selected minimum distance" reads as follows:

The synthetic ribbons are preferably disposed in rows spaced apart a selected minimum distance "W". Depending on the firmness desired and the degree of freedom required for cleats to rotate for various sports, the spacing "W" can vary between 2.25 inches and 0.625 inches. A closer spacing provides firmer support for the infill 3 whereas a wider spacing permits easier rotation of embedded cleats.

'689 patent, 12:6-12.

The Court agrees with FieldTurf that SCG is attempting to improperly import statements from the specification into the claims. First, the "predictable and reproducible" language has little or no relation to the "selected minimum distance" claim limitation. Whatever the purpose of the "selected minimum distance," that purpose is met so long as the ribbons are spaced apart more than that minimum. Second, it is clear from the specification that "not densely" depends on the end use of the turf. Adding this to the claim construction would not serve to help the jury but would instead cause confusion. Third, even if "not densely" were appropriate claim language it is also clear from the specification that it is not a correct limitation for selected minimum distance. There are some applications where firmness will be desired and thus the "selected minimum distance" will be densely packed together.

Accordingly, the Court construes "selected minimum distance" as a "space determined not to exceed a specific amount of space."

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4. selected ones of the supports (claim 5)

Fargo more than one of the supports

Iris there must be more supports than pins so as to facilitate the ability to choose one combination of pin placements instead of some other combination of pin placements

Iris contends that the phrase "selected ones of the supports" requires that there be more supports than pins. Otherwise, according to Iris, the word "selected" has no meaning. The flaw in Iris's argument is that Iris ignores that the discussion of "selected" occurs in the context of identifying different ribbon types. The manufacturer therefore "selects" not only amongst supports on each spool, but amongst different configurations of pins on different spools. Reading the claim language, there
is no reason why one of the configurations could not be to fill all of the supports with pins. This interpretation is consistent with the word "ones," meaning, obviously, more than one.

Iris's reliance on Hewlett-Packard Co. v. Mustek Sys., Inc., 340 F.3d 1314 (Fed. Cir. 2003), is misplaced. The issue in that case was whether the end user of an optical scanning device selected a scan speed where there was no mechanism for selecting a speed, but merely a mechanism for selecting a resolution, which was related to scan speed but did not have a one-to-one correlation. That issue bears little resemblance to the issue here, which is whether the word "selected" necessarily means that some of the possible selections be left unselected. Here, where more than one of the supports can be selected at one time, there is no reason why all of them cannot be selected.

Iris argues that in the single disclosed embodiment of the patent, four of the apertures must be left open in order to facilitate identifying the "home position." As a general rule, however, limitations are not to be imported from the specification into the claims. Phillips, 415 F.3d at 1323. As Fargo points out, claim 2 language referring to a "selected plurality of combinations" explicitly requires that the assembly has more supports than pins, whereas claim 5 contains no such explicit language. Under the doctrine of claim differentiation, courts presume that each claim in a patent has a different scope. Versa Corp. v. Ag-Bag Int'l Ltd., 392 F.3d 1325, 1330 (Fed. Cir. 2004). Although this doctrine is at its strongest when a party seeks to read a limitation into an independent claim that already appears in one of its dependent claims (which is not the case here), Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004), it is nevertheless instructive that the patentee specifically chose to require that there be more supports than pins in one claim and not in another. The Court therefore adopts Fargo's proposed construction.

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IV.

The district court found that "selected orientation" in claims 1-3 of the '911 patent meant "the specific orientation set forth in the '911 patent, which is horizontal." Magnivision I, 33 F. Supp. 2d at 1234. In this instance again, the claim language is quite broad, suggesting any orientation selected for a particular purpose. The phrase "selected orientation," therefore, requires consultation of the specification and prosecution history to determine whether the applicant confined the invention to a particular purpose and thus a particular orientation. After all, the applicant would not have specified a "selected" orientation if it meant to claim every orientation.

Indeed, the prosecution history reveals the reason for inclusion of the term "selected." During prosecution of the '532 patent, the applicant had to overcome prior art of Smilow, U.S. Patent No. 3,710,996. In so doing the inventor clarified the meaning of the claim phrase "selected orientation." Smilow had claimed a hanger that displayed belts vertically. The applicant asserted that his horizontal display was "more desirable" than Smilow's vertical display invention, stating: "The fact that the eyeglasses are hung . . . in a horizontal manner forms part of the essence of the present invention." See Magnivision I, 33 F. Supp. 2d at 1218, 1236. Statements in the '345 prosecution history also emphasize a horizontal orientation as essential to the invention: "If the hanging card is hung from a central point . . . the card may shift . . . whereby the eyeglasses would not be oriented in a horizontal position, contrary to the aforementioned essential aspect of the present invention." And, "if the [prior art] system of Govang is used, the hanging card could easily tip . . . contrary to the objects of the present invention."

These statements to overcome prior art during prosecution inform the meaning of the claims. See Zenith Lab., Inc. v. Bristol-Myers Squibb Co., 19 F.3d 1418, 1424, 30 U.S.P.Q.2D (BNA) 1285, 1290 (Fed. Cir. 1994). Because a competitor may reasonably rely on prosecution history to explain the meaning of claim terms, see Mark I Marketing Corp. v. R. R. Donnelley & Sons Co., 66 F.3d 285, 291, 36 U.S.P.Q.2D (BNA) 1095, 1100 (Fed. Cir. 1995), this court agrees with the district court that the applicant in this case limited itself to a horizontal orientation. To distinguish the Smilow prior art, the inventor explained that his "selected orientation" limitation meant a horizontal orientation. Thus, the inventor selected that meaning for his claim.

In reaching this meaning, this court has considered that the claims of the '911 patent describe a different combination than those of the '532 and '345 patents. As with the "receiving area" limitation above, the inventor prosecuted many different claims at the same time. Thus, this court must take care to avoid attributing statements about one set of claims to a different claimed combination. The claims of the '911 patent do not mention "horizontal" as do those of the '532 and '345 patents.
However, unlike the "receiving area" limitation above, the inventor during prosecution of these patents did not distinguish between "selected orientation" and "horizontal." To the contrary, Smilow's prior art was a threat to each of the '911, '532, and '345 inventions. To overcome Smilow, the applicant invoked a horizontal display feature for each of his claimed inventions. These unequivocal statements to obtain the patents limited each of the inventions. Therefore, this court concludes that the district court properly interpreted "selected orientation" to mean horizontal.

Defendant contends that "selected shape" means those shapes shown in the drawings found in the patent specification, and provided by Mr. Shelton. See Playtex Products, Inc. v. Procter & Gamble Co., 400 F.3d 901, 909 (Fed. Cir. 2005) (finding that, in some circumstances, patent illustrations can support the construction of a claim term). It is correct that the term "selected" may have a specific meaning. See Innova/Pure Water, Inc. v. Safari Water Filtration Sys., 381 F.3d 1111, 1119 (Fed. Cir. 2004) ("While not an absolute rule, all claim terms are presumed to have meaning in a claim."). But the Court is not persuaded that "selected" refers to those shapes provided in the drawings in the specification. Defendant correctly notes that "the specification is the single best guide to the meaning of a disputed term." Phillips v. AWH Coro., 415 F.3d 1303, 1321 (Fed. Cir. 2005). Here, the specification provides that the drawings are only "representations"; it does not provide that they are the selected shapes, nor are the claims limited to the shapes provided in the drawings. Therefore, the Court concludes that Plaintiff's construction, i.e., "selected shape" is any shape selected by a person skilled in the art who is practicing the patent. The '184 patent states that the drawings "are representative of fishing bait shapes." '184 patent at col. 11.

Defendant contends that "selected shape" means those shapes shown in the drawings found in the patent specification, and provided by Mr. Shelton. See Playtex Products, Inc. v. Procter & Gamble Co., 400 F.3d 901, 909 (Fed. Cir. 2005) (finding that, in some circumstances, patent illustrations can support the construction of a claim term). It is correct that the term "selected" may have a specific meaning. See Innova/Pure Water, Inc. v. Safari Water Filtration Sys., 381 F.3d 1111, 1119 (Fed. Cir. 2004) ("While not an absolute rule, all claim terms are presumed to have meaning in a claim."). But the Court is not persuaded that "selected" refers to those shapes provided in the drawings in the specification. Defendant correctly notes that "the specification is the single best guide to the meaning of a disputed term." Phillips v. AWH Coro., 415 F.3d 1303, 1321 (Fed. Cir. 2005). Here, the specification provides that the drawings are only "representations"; it does not provide that they are the selected shapes, nor are the claims limited to the shapes provided in the drawings. Therefore, the Court concludes that Plaintiff's construction, i.e., "selected shape" is any shape selected by a person skilled in the art who is practicing the patent, is the proper construction.

Mr. Shelton claims that two contributions he made, in addition to the "selected shapes," concerned incorporating food particles into fishing lures and the characteristics of buoyancy, tear resistance, set-to-catch ratio, elongation and softness. These contributions to the inventions do not constitute the conception necessary to establish co-inventorship. Mr. Shelton contributed only "well-known principles." He acknowledges that the idea of adding scents to fishing lures was "very common knowledge to anybody in the fishing industry." Graber Dec., Ex. A at 133:25-34:1. Further, it is not disputed that Mr. Chen could have learned about the desirability of buoyancy, tear resistance, high set-to-catch ration, elongation and softness "by just talking to someone in the fishing industry." Graber Supp. Dec., Ex. 1 at 70:12-25. As noted above, an inventor does not lose his right to a patent merely by using the service, ideas and aid of others in the process of perfecting his invention. Shatterproof Glass Corp., 758 F.2d at 624.

Defendant also fails to provide corroborating evidence for Mr. Shelton's testimony that he assisted in the conception of other claims of AEI fishing lure patents. The only evidence Defendant presents to corroborate its co-inventorship claim is the declaration of Ms. Wahoup. She states only that, at various times, including during 2002, she "witnessed conversations between Mike Shelton and John Chen," including "communications from Mr. Shelton describing and explaining essential characteristics of soft fishing lures of the types utilized by Z-Man." Creason Dec., Ex. L. She does not identify the claims to which Mr. Shelton allegedly contributed. Defendant argues that, at this point in the litigation, it is not required to present all of the factual evidence of corroborating that it will present at trial. While this may be true, Defendant is required to present enough evidence to show that there is a material dispute of fact concerning whether it can show by clear and convincing corroborated evidence that Mr. Shelton is a co-inventor of AEI fishing lure patents. It does not.
The Court's Claim Construction: "a selected width narrower than the ribbon"

FieldTurf argues that selected width need not be construed, but if it is, that "each of the grass blades having a preselected width" is appropriate. In its brief, SCG does not appear to quarrel with the preselected aspect of FieldTurf's construction, but rather it seeks to make clear that the selected width must be narrower than the "ribbon." FieldTurf objects to SCG's definition on several bases, including that it improperly attempts to invoke process steps and that there is no basis for bringing "narrower" into the claim. The Court agrees with FieldTurf on the former objection. Even if the concept of "narrower" is to be included, it should be included in a structural definition, such as a "width narrower than the ribbon." Whether to include the "narrower" concept in the claim definition is a more difficult issue. On the one hand, the claim states "selected width." On the other hand, the selected width is necessarily no greater than a ribbon width, since the strands are "split" portions of the ribbon that sit above the infill. Thus, from the claim language itself it is clear that the "selected width" of the "strands" would have to be narrower than the ribbon. This construction is not imported from the specification, but inherent in the claimed structure. This construction is also supported by the specification, which explains that the "ribbons are longitudinally split . . . along the slits into several individual free-standing strands of a thinner width resembling grass blades." '689 patent, 5:28-31 (emphasis added). That "selected" is used instead of "thinner" cannot change the fact that a strand split from a slit ribbon is necessarily thinner than that ribbon. Although it is clear from the claim language, because the matter is obviously in dispute the Court finds it appropriate to explain that the selected width must be thinner than the ribbon. Finally, neither "determined" or "preselected" appear to impart any more meaning than "selected." Accordingly, the Court construes a selected width as "a selected width narrower than the ribbon."

III.

The claim language itself suggests a broader reading of claim 14. In the selecting step, the relevant language reads:

14. A method for automatically regulating the release of the drill string of a drilling rig drill, comprising the steps of:

selecting any one of said first signal, said second signal, and both said first and said second signals to control the release of said drill string;

'142 patent, col. 28, ll. 34-35 (emphasis added).

The preamble recites that the method steps are to be performed automatically by the drilling rig. This language suggests that the selecting step is not limited to manual operation of valve selectors and/or manual calibration of regulators as construed by the district court. See Catalina Mktg. Int'l v. Coolsavings.com, Inc., 289 F.3d 801, 808 (Fed. Cir. 2002) (quoting Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999)) ("In general, a preamble limits the invention if it recites essential structure or steps, or if it is 'necessary to give life, meaning, and vitality' to the claim."); Innova/Pure Water, 381 F.3d at 1118 ("Language in a preamble limits a claim where it breathes life and meaning into the claim but not where it merely recites a purpose or intended use of the invention.") (internal citations omitted). Hence, the language of claim 14 (particularly the preamble) does not support the district court's construction of this step.

In addition, the specification does not limit the selecting step to the manual operation of valve selectors or the manual calibration of regulators. Rather, the specification discloses an initial setup procedure in which an operator, using valve
selectors 232-235, manually chooses the regulators 200-203 that will control the drilling operation once underway. See '142 patent, col. 7, l. 49-col. 8, l. 6; col. 23, ll. 6-12. The specification also discloses a manual calibration process, a subset of the initial setup procedure, for those regulators 200-203 selected using valve selectors 232-235. See '142 patent, col. 8, l. 51-col. 10, l. 3; col. 23, ll. 12-23. To clarify this setup procedure, the specification explicitly states that this initial setup occurs "before the [selected] regulator will automatically regulate" the release of the drill string. '142 patent, col. 8, ll. 57-61 (emphasis added). The district court relied on this portion of the specification to support its requirement of manual operation. To the contrary, this portion of the specification sets forth an initial setup or calibration step that precedes the claimed selecting step. In effect, the district court erred by reading the initial setup or calibration step into the claimed selecting step.

Notably, the specification also describes a conflict resolution process automatically performed by the drilling rig after the initial setup or calibration; i.e., once the drilling rig is up and running. See '142 patent, col. 24, ll. 4-26. Because the valves 236-239 are connected in series, see '142 patent, Figure 2, the valve 236-239 with the largest signal generally provides the signal conveyed to the air motor 204, which ultimately controls the brake 32. With two or more parameters in use (i.e., when the drill rig operator "selects" two or more parameters, such as bit weight and drilling pressure), conflicts will occur between the controlling parameters (e.g., a first parameter may suggest the drill string should be released whereas a second parameter may suggest the drill string should be held steady).

This conflict resolution process led to the 35 U.S.C. § 112, P1 rejection during prosecution, because the Examiner did not understand the drilling system's method for resolving conflicts between the "primary" and "secondary" controls. The Examiner questioned the conflict resolution method:

It is the examiner's view that at the least, applicant has failed to provide a logical explanation with respect to how such conflicts can be resolved. Because it is well known in the art that among other things, the relationship between rate of penetration and the drilling parameters one can not simply isolate one parameter from the others. Specifically the operational procedures illustrated in [the specification] fail to teach how and when the secondary control overrides the primary control. Examiner also could not understand why among the four control parameters, the rpm and the torque regulators can be switched off, since as best understood, all these four parameters need to be taken into consideration and should be properly balanced.

In response, the applicant explained to the Examiner that an operator, as part of the initial setup procedure, can adjust the level for override of the primary control, thus ensuring that only undesirable conditions will trigger intervention. With this initial adjustment in place, the drilling system then automatically selects between the primary and secondary controls during operation. Thus, the prosecution history confirms that selecting in claim 14 does not encompass the initial setup or calibration of the drilling system, but rather the conflict resolution process between primary and secondary controls during operation.

Finally, one potential reading of dependent claim 15 implicitly suggests "selecting" in the context of the initial setup or calibration of the automatic driller differs from "selecting" in the context of claim 14. See '142 patent, col. 2, ll. 20-24 ("relay selectors which permit an operator to select which one of or which combination of the regulators are to control the drilling operation."). Specifically, claim 15 provides two signals, a signal representing drill string torque and a signal representing drill string RMP, in addition to the two signals required by claim 14. Compare '142 patent, col. 28, ll. 34-38, with col. 28, ll. 39-57. Because claim 15 adds signals to the control process and the addition/subtraction process is described in the specification as occurring during the initial setup/calibration of the automatic driller, "selecting" in claim 14 must refer to the conflict resolution process that occurs between controlling parameters. Otherwise, the provision of additional signals in claim 15 would be subsumed within the "selecting" step already recited in the claims.

In sum, claim 14 does not suggest that the selecting step requires a two-part manual process as interpreted by the district court. Moreover, the specification and prosecution history confirm that the two-part manual process relied upon by the district court is distinct from the claimed selecting step. Thus, the district court's interpretation of the selecting step was unduly narrow.
B. Claims 40 and 67

Here, I must construe the following elements of the following claims: 19

Claim 40--the "means . . . for selecting a set of parameters to be compounded."

Claim 67--"means for . . . selecting a set to be compounded based on the particular base solution and amount required by a set to minimize the quantity of containers of base solution required."

Footnotes
19 See supra note 12.

The issue is the meaning of the function "selecting." See 35 U.S.C. § 112, P 6 (claim element expressed in means-plus-function terms). Baxa contends that "selecting" is synonymous with "sorting" appearing in claims 1, 19, 87, and 93, i.e., sorting a set of parameters to be compounded such as to minimize the quantity of containers of base solutions. Clintec counters that "selecting" means [merely] to pick or choose a set of parameters (i.e. formula) out of a sequence of formulas entered into the system by preference, such as for an emergency. 21 (Pl.’s 12(M) Statement P 37.)

Footnotes
20 The parties agree that Clintec has expressed these elements in the means-plus-function terms, subject to § 112, P 6.
21 The record does not support Clintec's argument that Baxa should not be allowed to offer its definition of "selecting" because it refused to do so throughout discovery.

"It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record, i.e. the patent itself, including the claims, the specification and, if in evidence, the prosecution history." Vitronics, 90 F.3d at 1582 (citing Markman, 52 F.3d at 979).

1. Patent/Claims

The terms of the claims are given "their ordinary and accustomed meaning, unless it appears that the inventor used them differently." Jonsson v. Stanley Works, 903 F.2d 812, 820 (Fed. Cir. 1990) (quoting Envirotech Corp. V. Al George, Inc., 730 F.2d 753, 759 (Fed. Cir. 1984)). To sort is to choose, allot, classify. See WEBSTER'S THIRD NEW INT'L DICTIONARY at 2175 (1981). To select is to choose. Id. at 2058. Thus, the two words are synonyms.

Additionally, the terms of a claim must be interpreted in light of the other claims. Jonsson, 903 F.2d at 819. Claim 67 includes the "means for . . . selecting a set to be compounded based on the particular base solution and amount required by a set to minimize the quantity of containers of base solution required." Claims 1, 19, 87, and 93 all include a step or a means of sorting a set of parameters to be compounded, in accordance with the particular base solutions and their amounts to be included in each set of parameters, such as to minimize the quantity of containers of base solutions. Since the context in which the term "sorting" appears in claims 1, 19, 87, and 93 is identical to that in which "selecting" appears in claim 67, the two terms have identical meanings.

2. Specification

The specification can act as a dictionary when it defines terms by implication. Markman, 52 F.3d at 979. The specification provides that

in accordance with the present invention a system and a method are provided for compounding a plurality of selected
mixtures from one or more base solutions. The system includes a storage device for storing sets of parameters for a group of mixtures which are to be compounded from the base solutions. A compounding is electrically connected to the storage device, and in combination with the storage device, compounds a selected mixture on receiving a set of parameters which define the base solutions to be used and the amounts thereof.

( '010 patent, col. 3, lines 3-13) (emphasis added). The above is the first paragraph of the Summary of the Invention. Nowhere else in the specification do the words "select," "selecting," or "selected" appear. Given the importance and the prominence of the sorting feature to the Clintec's invention, it is unlikely that the first paragraph of the Summary of the Invention would refer merely to "picking or choosing a set of parameters" out of sequence in which they were entered into the computer, (Pl.'s 12(M) Statement P 37), without sorting. A more logical interpretation is that the mixtures (or sets of parameters) are "selected" for compounding (or transmitted to the compounder) in the order in which the host computer has previously sorted them to minimize the quantity of containers of base solutions out of which the mixtures will be compounded.

3. Prosecution History 22

22 Neither party explores the prosecution history of claim 67 in any detail and I do not find it necessary to do so. Vitronics, 90 F.3d at 1582 ("The court may also consider the prosecution history of the patent, if in evidence.") (emphasis added).

"The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution. . . . Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers." Southwall Techs., 54 F.3d at 1576.

Claim 40 (numbered 37 in the patent applications 23) originally read as follows:

A system for compounding a plurality of selected mixtures comprising:

means for storing sets of parameters for a plurality of mixtures to be compounded from a group of base solutions;

means for compounding a selected mixture corresponding to a selected set of parameters; and

means for coupling said storing means to said compounding means.

(Ex. D at 2-3. 24) The Patent Office Examiner ("Examiner") rejected claim 37(40) for two reasons. First, she said that the claim was indefinite, 35 U.S.C. § 112, P 2:

In claim 37, line 3, again it is unclear what the "sets of parameters" are and how they are inputted into the system. It is also unclear what the "base solutions" are. In lines 5-6, how is the "selected set of parameters" selected


Axelson et al discloses an apparatus for compounding substances which includes a programmable controller for receiving the ratio, and or volume parameters to be used in the compounding apparatus. Axelson et al also teach a control means for selecting which of the substances is to be compounded. These substances have been presorted and placed in a container to facilitate ease when compounding the final mixture. Instead of presorting the substances as disclosed in Axelson et al. it would be obvious to one of ordinary skill in the art to use a programmable sorting routine, as in the instant invention, within the programmable controller of Axelson et al.

(Ex. A P 18) (emphasis added).
23 In discussing prosecution history, I will refer to claim 40 as claim 37(40) and amended claim 37(40).

24 The exhibits cited in the following subsection are attached to Baxa's Statement of Undisputed Facts filed as a response to Clintec's partial summary judgment motion and in support of its own cross-summary judgment motion viz-a-viz claim 40.

25 The statute states, in relevant part, that

[a] patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.


Clintec responded to the Examiner's two objections. In an Amendment letter dated May 12, 1986, Clintec first amended claim 37(40) to address the vagueness concern:

(Amended) A system for compounding a plurality of selected mixtures to produce individual doses of mixture comprising:

means for receiving sets of parameters for a plurality of mixtures to be compounded from a group of base solutions, one set for each dose:

means for storing said sets and for selecting a set of parameters to be compounded [of parameters for a plurality of mixtures to be compounded from a group of base solutions];

means for compounding a selected mixture corresponding to a selected set of parameters to produce individual doses; and

means for coupling said storing means to said compounding means.

(Ex. D at 2-3) (new text underlined and old text bracketed in the original).

Second, Clintec did not dispute that Axelson was prior art. Rather, implicitly acknowledging that it was prior art, Clintec stated that

all of the claims have been rejected under 35 U.S.C. § 103 as being unpatentable over Axelson, Jr. et al. in view of Hawes, Jr. et al. The scope and content of the Axelson, Jr. et al. reference includes the teaching that a plurality of commodities such as various types of feed grains can be blended together to produce a final product which consists of a selected percentage of each of the commodities used to make the blend. The percentage of commodity used to make the blend is controlled by a computer which selectively opens various gates a desired amount to allow a selected amount of each commodity to flow through a chute into a grain bin.

(Id. at 6.) 26

26 Axelson includes "means for selecting the containers whose commodities are to be blended together" and "means for selecting the relative percentages of the commodities to be blended." (Ex. B, col. 1, lines 58-62.)
Clintec next distinguished the amended claim 37(40) from Axelson in the following manner:

the claimed invention, as claimed in Claims 1, 19, 37[, which issued as claim 40], 67, 87, and 93, requires that a plurality
of sets of parameters of mixtures be provided and that these parameters are sorted in accordance with the particular base
solutions used to make each mixture and the amount of each base solution included in each set of parameters in order
to minimize the number of containers of base solution required to make a plurality of individual doses[.]

(Emphasis added). This was the only fashion in which claim 37(40) was distinguished from Axelson. Clintec also stated
that other groups of claims were different from Axelson because they required time intervals, or queuing, or printing labels,
or other features not found in Axelson. (Id. at 6-7.) Clintec concluded that since "none of the differences discussed above are
either taught or even suggested by the Axelson, Jr. et al. reference, even given the claims their broadest interpretation
suggested by the Examiner," the '010 patent claims "contain allowable subject matter over the Axelson . . . reference." (Id. at
7.)

The Examiner allowed the '010 patent after Clintec amended claim 37(40) and distinguished it, among others, from
Axelson. The Notice of Allowability was "responsive to the Amendment filed May 12, 1986." (Ex. E.) The record shows
that the May 12, 1986 Amendment was the only occurrence between the rejection and the allowability. The distinction
drawn between Axelson and claims 1, 19, 37(40), 67, 87, and 93 in the Amendment is consistent with the repeated
description of the invention in the specification as sorting mixtures to be compounded so as to minimize the number of
source solution containers. (See '010 patent, col. 2, lines 64-68; col. 3, lines 44-51; col. 8, lines 45-49; col. 8, lines 64-68.)

The prosecution history is part of the "public record of the patentee's claim . . . on which the public is entitled to rely . . . [in
order to] ascertain the scope of the patentee's claimed invention and [to] design around" it. Vitronics, 90 F.3d at 1583. In this
case, based on the prosecution history, a reasonable competitor would be entitled to conclude the following: (1) the
Examiner rejected claim 37(40) as unpatentable over prior art because the Axelson patent taught use of a computer to select
which substances to compound; 27 (2) Clintec acknowledged that Axelson was prior art; 28 (3) Clintec distinguished
Axelson from the amended claim 37(40) on the basis that the latter required sorting to minimize the number of containers of
base solutions; (4) the Examiner allowed the amended claim 37(40) based on Clintec's amendment and explanation; and (5)
the term "selecting" in claim 37(40), therefore, means the same as the term "sorting" in claims 1, 19, 87, and 93.

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27 Clintec points out that the Examiner also found other differences between Clintec's various claims and Axelson. This is
correct. However, this fact is irrelevant.

28 Clintec argues that Axelson is not prior art because it pertains to grains, not pharmaceuticals. Clintec cannot make this
argument now. First, he did not make it in response to the Examiner's rejection. Second, in a Preliminary Amendment, dated
February 14, 1985, Clintec cited numerous references to the Examiner in its Preliminary Amendment and Information
Disclosure Statement ("IDS"), (Ex. C), that did not involve pharmaceutical compounding. In the IDS, Clintec said that
"each of the above-identified systems is believed to be pertinent to the pending application in that each discloses a form of
multicomponent mixing system." See Eckhian v. Home Depot, Inc., 104 F.3d 1299, 1304 (Fed. Cir. 1997) ("holding that
statements made in an IDS can be the basis for a court to interpret the scope of the claims").

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - -

Clintec's Arguments

Clintec maintains that "selecting" is not the same as "sorting," but "means to pick or choose a set of parameters (i.e.
formula) out of a sequence of formulas entered into the system by preference, such as for an emergency." (Pl.'s 12(M)
Statement P 37.) Relying on their dictionary definitions, Clintec argues that "sorting" and "selecting" have different
meanings. However, as discussed above, the words are synonymous. The portion of the specification which describes the
kind of "selecting" to which Clintec refers, (Pl.'s 12(M) Statement P 37); ('010 patent, col. 4, lines 18-21; col. 10, lines 31-
58), does not use the word "selecting." Indeed, the context of the only place in the specification in which "selecting" does
appear suggests the meaning attributed to it by Baxa, i.e., sorting to minimize the number of source solution containers. See
Relying on Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017 (Fed. Cir. 1987), Clintec says that different words in claims are presumed to have different meanings. Although Tandon does make this statement, id. at 1023, it immediately follows with another: "practice has long recognized that claims may be multiplied . . . to define the metes and bounds of the invention in a variety of different ways. (cites omitted) Thus two claims which read differently can cover the same subject matter." Id.

Clintec also relies on the doctrine of claim differentiation. Under this doctrine, "interpretation of a claim should be avoided if it would make the claim read like another one." Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 404 (Fed. Cir. 1967). Clintec points out that claim 62, which depends upon claim 40, includes "means for sorting authorized parameter sets." Thus, the plaintiff says that claim 40 cannot likewise include a "sorting" limitation. However, "although the doctrine of claim differentiation may at times be controlling," it is trumped if

the "definition [at issue] . . . is otherwise clear from the claim language [the specification], and [the] prosecution

O.I. Corp. v. Tekmar Co. Inc., 115 F.3d 1576, 1582 (Fed. Cir. 1997); see also Autogiro Co. of Am., 384 F.2d at 404 ("Claim differentiation is a guide, not a rigid rule. If a claim will bear only one interpretation, similarity will have to be tolerated."). Such is the case here.

Clintec attempts to invoke the testimony of its expert, Mr. Uhen. However, in cases such as this one, "where the public record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence[, such as expert testimony,] is improper" because the public is entitled to rely on the public record. Vitronics, 90 F.3d at 1583.

Clintec insists that what Baxa is doing is improperly injecting into claim 40 a "sorting" element appearing in the prosecution history. Clintec says that Kay Hannafan, the attorney prosecuting the patent application, simply made a mistake when she stated that claim 37(40) required sorting. Clintec relies on Intervet Am., Inc. v. Kee-Vet Laboratories, Inc., 887 F.2d 1050 (Fed. Cir. 1989), this court's opinion in Viskase Corp. v. American Nat'l Can Co., 947 F. Supp. 1200 (N.D. Ill. 1996), and International Rectifier Corp. v. SGS-Thomson Microelecs. Inc., 38 U.S.P.Q.2d (BNA) 1083 (C.D. Cal. 1994).

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The court held that

when it comes to the question of which should control, an erroneous remark by an attorney in the course of prosecution of an application or the claims of the patent as finally worded and issued by the Patent and Trademark Office as an official grant, we think the law allows for no choice. The claims themselves control.

Id. at 1054.

The court acknowledged that

there are . . . situations in which what an attorney says or does during prosecution may be held against a patentee . . . . For example, when a patentee attempts to expand the literal meaning of a claim . . . and the prosecution history shows that the expanded scope would be inclusive of subject matter the attorney had represented to the examiner was not intended to be included in order to get the claim allowed, the patentee may be estopped to contend otherwise.

Id. (emphasis in the original). The court concluded that the instant case was different because "the patentee was granted broad claims in spite of the statement by the attorney that he was amending them, though he never did so." Id. (emphasis
The court pointed out that "the examiner was not misled or deceived[ because] the erroneous remark was not the end of the prosecution." Id. There were two telephone interviews between the attorney and the examiner, the examiner made two "examiner's amendments," and the absence of the "single vaccination" limitation in all but three claims "may very well have been discussed." Id.

The present case is different. In Intervet three claims were expressly limited to one vaccination, while the others were not. The Intervet court did not have to interpret an existing term. The Intervet court itself acknowledged the difference between "interpreting what is meant by a word in a claim[, which is proper via reliance on the prosecution history,] . . . and [adding] an extraneous limitation appearing in the [prosecution history], which is improper." Id. at 1053 (emphasis in the original); Vitravonics, 90 F.3d at 1582 (in interpreting claim, "the court may also consider the prosecution history of the patent, if in evidence"). In addition, unlike the Intervet attorney, Ms. Hannafan amended claim 37(40) in response to the Examiner's vagueness, not patentability, concern. Then, in response to the Examiner's patentability objection, she explained how the amended claim 37(40) differed from the prior art, thereby defining "selecting." Unlike in Intervet there is no evidence of further contact between the Examiner and Ms. Hannafan, during which the Examiner could have acquired a different understanding than that conveyed by the May 12, 1986 Amendment. Unlike Intervet, the only logical conclusion is that the Examiner allowed claim 37(40) because of Ms. Hannafan's explanation, not in spite of it. See Intervet, 887 F.2d at 1054.

Clintec insists that the Examiner knew that "selecting" and "sorting" had different meanings, see id. ("The examiner was fully aware of what claims he was allowing."). and that Ms. Hannafan's error would be obvious to anyone perusing the prosecution history, see Southwall Techs., 54 F.3d at 1578 (competitors "must be able to rely on the patent documents[, including prosecution history, . . . in ascertaining the scope of a patentee's right to exclude")., because (1) neither the original nor the amended claim 37(40) contained the term "sorting;" (2) prior to the May 12, 1986 Amendment, the Examiner demonstrated that she knew the difference between "selecting" and "sorting;" (3) Clintec amended the original claim 37(40) to add a "selecting," not a "sorting," function, and (4) the Examiner did not require Clintec to further amend claim 37(40) to include a "sorting" limitation. However, these statements are unresponsive to Baxa's argument, i.e., that in the one and only response by Clintec to the rejection of its patent, Clintec (through Ms. Hannafan) effectively defined "selecting" as "sorting," thereby shaping the Examiner's and the public's understanding of the meaning of that word. 29

29 Clintec relies on the fact that, prior to the May 12, 1986 Amendment, regarding claim 37(40), the Examiner asked "how is the selected set of parameters' selected," while with respect to claim 87, she asked "how is the sorting accomplished?" (Ex. A at PP 12, 13.) However, the unamended claim 37(40) recited "means for compounding a selected mixture corresponding to a selected set of parameters," while the unamended claim 87 recited "sorting the sets of parameters in accordance with the types of base solutions included in each said set." (Ex. D at 2-3, 4) (emphasis added). The Examiner rejected the above claims, among others, for vagueness. Obviously, in seeking clarification of vague terms, she would have posed the question using the words whose meaning was unclear. One cannot surmise from this that the Examiner knew that "selecting" and "sorting" meant different functions.

In Viskase v. American Nat'l Can Co., also relied upon by Clintec, the issue was the meaning of the term "about" as used in the phrase "a density below about 0.91 g/cm<3>," The plaintiff argued that it meant a number between 0.905 and 0.914. The defendant argued that it meant 0.910. 947 F. Supp. at 1202. One of the defendant's reasons was that in a letter sent to the Patent Office after the plaintiff's patent had been allowed, the plaintiff's attorney stated that the patent "does not have a density below about 0.910 g/cm<3>," Id. (emphasis added). Following Intervet, this court disregarded the attorney's statement because "in no other place in the prosecution history did Viskase use a third decimal point," id., the attorney used the word "about," suggesting numbers "slightly above and slightly below," id. at 1201, "the Examiner certainly knew that the claims themselves included broader language than the limitation of 0.910," 30 and "the Examiner "did not require an amendment." Id. at 1202.

30 This statement was based on the court's earlier observation that the Examiner said that the plaintiff "clearly . . . intended to claim below 0.91," and that the plaintiff's claims included "density of from about 0.86 to about 0.91." Viskase, 947 F.3d.
The present case is different. By limiting "about 0.91" to "0.910," the defendant was advocating a construction contrary to the term's "ordinary dictionary definition" and to its understanding by "persons skilled in the art." Id. The Examiner in the present case did not indicate that she differentiated between "sorting" and "selecting." See supra. The term "sorting" appears more than once in the prosecution history because Clintec's Ms. Hannafan used it to distinguish claims 1, 19, 37(40), 67, 87, and 93 from Axelson. See supra. In addition, the specification abounds with the term "sorting," in contrast to "selecting." See supra. Finally, it is not surprising that the Examiner in this case did not require a further amendment of claim 37(40) since she had been provided with the definition of "selecting" by the May 12, 1986 Amendment.

In the third case relied on by Clintec, International Rectifier, the attorney "plainly wrongly" distinguished prior art. The court concluded that the Patent Office must have "found other grounds on which to distinguish [prior art] and did not rely on the erroneous statement made by counsel." 38 U.S.P.Q. at 1091. Clintec cites this case in support of its contention that the Examiner must have distinguished claim 37(40) from Axelson on grounds other than those represented by Ms. Hannafan. However, Ms. Hannafan's explanation that "selecting" in claim 37(40) required sorting to minimize the number of source solution containers would not have appeared "plainly wrong," see id., to the Examiner who herself rejected claim 37(40) as unpatentable over Axelson.

I conclude, therefore, that the meaning of "selecting" in claims 40 and 67 is identical to that of "sorting" in claims 1, 19, 87, and 93. Since there is no genuine issue of material fact that Baxa's compounders employ the identical or equivalent structure for "sorting" as that disclosed in the '010 patent, see supra, there can be no literal infringement of claims 40 and 67. Carroll Touch, 15 F.3d at 1578 (literal infringement of means-plus-function element requires that accused device (1) perform identical function and (2) do so with identical or equivalent structure). Accordingly, Baxa's summary judgment motion on literal infringement and cross-summary judgment motion viz-a-viz claim 40 are granted. Clintec's summary judgment viz-a-viz claim 40 is denied.

C. Selectively Adjusted

The parties agree on what the term excludes but have not reached agreement on what the term includes.

Brike contends that the term "selectively adjusted to any horizontal or vertical position within a range of movement as permitted by the pair of arm segments" means a hand crank position adjustable within a restricted plane, and excluding a device in which the hand crank position is adjustable only on an axis linearly coincident with the axis of two telescoping sections. Brike contends that the movement can occur in two axes at once but since the up/down and forward/rearward movements are independent, the movement is not limited to occurring in two axes.

Invacare contends that the term "selectively adjusted to any horizontal or vertical position within a range of movement as permitted by the pair of arm segments" means a hand crank position that is adjustable along at least two axes anywhere within a restricted plane, excluding a device in which the hand crank position is adjustable only linearly, coincident with the axis of two telescoping sections. According to Invacare, it is impossible to move the hand crank up and down independently of forward and rearward and both vertically and horizontally simultaneously unless adjustability is permitted along at least two axes.

The specification states:

Whereas in the prior vehicles different rider size and riding style was difficult to adjust for or the adjustments were always limited in someway [sic] the present invention offers the rider almost unlimited adjustability. The handcranks are mounted to a structure that includes a combination of telescoping sections, linkage arms and pivot points that form an approximate triangular shape. This shape allows the cranks to be moved about both up and down independently of the forward and rearward adjustment, forward and rearward independently of the up and down adjustment or both vertically and
horizontally simultaneously for differing arm lengths and/or rider height and then be locked rigidly into place once the desired position is located. In previous hand powered vehicles the adjustment of the location of the cranks for rider use was limited to telescoping the frame in and out or telescoping the cranks in and out of a fixed inner and outer cylinder arrangement that limited the crank arm adjustment to linear movement only.


The parties are close in their constructions and appear to agree on the movement allowed by the adjustment, namely that the movement can be horizontally only or vertically only or both together, as stated in the specification. They cannot agree over the use of axes but I do not think the term is necessary. The construction can borrow language from the specification to make the meaning clearer.

I construe the term "selectively adjusted to any horizontal or vertical position within a range of movement as permitted by the pair of arm segments" to mean a hand crank position adjustable anywhere within a restricted plane and allowing movement either up and down independently, or forward and rearward independently, or both up/down and forward/rearward simultaneously, and excluding a device in which the hand crank position is adjustable only on an axis linearly coincident with the axis of two telescoping sections.

The word "respective" in the context of the claim means "in the order given." The order given in the claim is to energize and deenergize in response to increase capacity signals and decrease capacity signals. "Respective" links the energizing steps to the increase capacity signals and links the deenergizing steps to the decrease capacity signals. The Court adopts Dr. Rhyne's testimony that a person of ordinary skill in the art would give this interpretation to the word "respective."

In the specification, where "respective" is used many times, it also means "in the order given." See, e.g., Column 4, line 66 through Column 5, line 4. The prosecution history further supports this interpretation. See JX-776, Response, Bates Nos. 144-45, example showing that a compressor was energized only in response to an increase capacity signal and that a compressor was deenergized only in response to a decrease capacity signal.

The language in claim 1 is exemplary and states that the last step comprises "selectively energizing and deenergizing compressors in response to respective increase capacity signals and the decrease capacity signals." To understand why "compressors" and "signals" are plural, the Court examined other portions of the claims, the specification, and the prosecution history. The next to last element in each of claims 1, 3, and 24 indicates that a single increase capacity signal is generated when more compressor capacity is needed and that a single decrease capacity signal is generated when lesser compressor capacity is needed. The use of the plural "signals" in the last element of claims 1, 3, and 24 reflects a history of operation, i.e., a result of controller operation over a time interval. The Court accepts and adopts Dr. Rhyne's testimony that a person of ordinary skill at the relevant time would have so understood and interpreted the use of plural "signals" and "compressors" in the claims. Because there is no indication from other portions of claims 1, 3, and 24 whether the use of the plural in "compressors" is also a result of the same time interval or history of operation, the Court looked to the specification and discovered that the specification and disclosure indicate that a single compressor is turned on in response to an increase capacity signal and a single compressor is turned off in response to a decrease capacity signal. See, e.g., Column 4, line 66 to Column 5, line 4 states that "one of the multiple compressors" is energized in response to an increase capacity signal. The prosecution history at pp. 28-29, JX-776, Response, Bates Nos. 144-45, reflects that only one compressor is turned on in response to an increase capacity signal and one compressor is turned off in response to a decrease capacity signal. On page 30 of the same Response, JX-776, Bates No. 146, the applicant argued,
It is the independent control of each compressor of the present invention without regard to the energized or deenergized state of the other compressors in the system which makes the number of combinations of compressors available greater than the number of available compressors.

Thus the last element of claims 1, 3, and 24 of the '776 patent recites a step or means for energizing a single compressor in response to an increase capacity signal and deenergizing a single compressor in response to a decrease capacity signal.

Furthermore, this last element of claims 1, 3, and 24 of the '776 patent is construed to be a step or means for energizing or deenergizing a single compressor at a time and in such a manner that compressors are turned on and off in sequence until the appropriate compressor combination to meet the load demand is eventually achieved. Thus this last element of claims 1, 3, and 24 is not so broad as to cover the situation where a specific capacity signal is generated, the controller analyzes the signal, and in response turns on the specific combination of compressors that matches the load demand without cycling through a sequence of compressors.

The claim further needs interpretation in light of the collective limitations of the words and phrases, "selectively," "in respective response," and "to provide a greater combination of compressors." In combination with other limitations of "respectively" and "to provide a combination of compressors . . .," "selectively" means energizing or deenergizing compressors according to some particular logic or criteria. Thus the claim element takes on the construction indicated supra. Support is found in the specification, Column 7, line 45-51, DX-119:

As described above, it will be evidence that controller circuit 10 will "cut-in" or "cut-out" the next compressor or compressor stage as above described until the combination of stages has an operating capacity closest to matching the system load, i.e., causing the system suction pressure to return to the previously established . . . range as hereinabove described and shown in FIG. 4 [emphasis added].

Similarly, the prosecution history also supports this construction. On page 30, Response, JX-776, Bates Nos. 146), the applicant was commenting upon the example provided on the prior pages which compared the operation of "the invention" to the prior art (in which the example clearly cycled through compressors until the correct capacity match was made) and explained:

Successive reiterations of the FIFO strategy enables [sic] the present invention to more efficiently match the system load with the expanded set of compressor combinations available than previous systems, such as in Golber, having only a limited number of combinations available [emphasis added].

The Court accepts and adopts Dr. Rhyne's testimony that a person of ordinary skill in the art at the time would have understood and interpreted the use of "selectively" and "respective" in the claims in the '776 patent as limited with respect to choosing the optimal combination without the cycling through individual compressors until the proper combination for the needed capacity was achieved.

As discussed above, the Court finds that the specification at Column 7, line 58 through Column 8, line 10 does not disclose a binary sequence as an alternate logic to the FIFO sequence of operation for controlling compressors. 24 Instead, based upon the prosecution history, the Court interprets the claims as limited to the structure or an act for achieving a FIFO sequence. While the example of the invention given by the applicant was specifically directed at application claims 7, 8, and 10, among others, and did not explicitly limit the sequence to FIFO, the example is clearly a FIFO sequence. See, e.g., the statement at page 29 of the Response, JX-776, Bates No. 145:
By contrast, the second system [in accordance with the present invention] faced with the same five horsepower requirement will energize Compressor Number 3, being the compressor deenergized for the longest period of time, in addition to maintaining Compressor Number 2 in an energized state. This will establish a capacity of six horsepower which, being greater than that required, will initiate a cut-out signal for the compressor which is energized for the longest period of time, i.e., Compressor No. 2. This leaves a total capacity of four horsepower. In the final stage of matching the system capacity to the instantaneous load, the second system will then initial a cut-in signal and increase the capacity of the system by energizing the compressor which has been deenergized the longest period of time (i.e., Compressor Number 1) [emphasis added].

On the following page, the applicant states that "successive reiterations of the FIFO strategy" enabled the present invention to match more efficiently the system load.

24 The '602 patent makes clear that both the binary and the FIFO sequences cycle through a set sequence of turning compressors on and off until they arrive at the optimal combination to satisfy the load demand.

On page 2 of a Supplemental Response (JX-776, Bates No. 162) mailed to the PTO on November 10, 1982, moreover, the applicant asserted that the arrangement claimed by applicant provides an operation that has several subtle advantages over the art which may not be readily apparent, and therefore, the claimed structural and functional operations do not really do justice to the many advantages of applicant's system, except by comparison with operation in accordance with the prior art [emphasis added].

The only comparison of the operation of the present invention against the prior art in the prosecution history is found at pages 28-29, Response (JX-776, Bates No. 144-45). Moreover also on page 2 of the Supplemental Response, the applicant states,

Expressed in shorthand terms, an applicant's claims are directed to a cooling system using a FIFO control strategy applied in tandem to a plurality of commonly piped compressors to enable independent compressor control.

Furthermore, the Court observes that the FIFO sequence is mentioned five more times in the following page and a half. In addition, Dr. Rhyne, whose expertise is greater than one of ordinary skill in the art in 1979, testified that in five readings of the prosecution history, he never construed the "shorthand terms" comment as limited to certain claims.

The statements in the Supplemental Response are not limited to any particular claims, as evidenced by the last quoted statement, which is not restricted to any particular claims. Moreover, the applicant stated in the first paragraph about the description of "THE INVENTION" (JX-776, Bates No. 208),

The claimed invention concerns a novel control system for controlling the capacity of a preselected number of commonly piped compressors, as typically employed in a cooling system. Expressed in shorthand terms, applicant's claims are directed to a FIFO control strategy applied in tandem to a plurality of commonly piped compressors to enable independent compressor control.

In sum, the Court concludes from these arguments and statements made during the prosecution history that all the claims of the '776 patent, regardless of the application of 35 U.S.C. § 112 par. 6, are limited to the structure and acts for achieving a FIFO sequence of operation.

The Court concludes that the last element in each of claims 1, 3, and 24 of the '776 patent invokes application of § 112 par. 6 and satisfies the three requirements indicated supra.

Specifically Claim 1 of the '776 patent is a method claim that recites a series of "steps." The preamble ends with the phrase "steps of," indicating that each of the following elements is a step. (DX-109). Thus the element "selectively energizing" is a
step. Moreover the step of "selectively energizing and deenergizing" has a specified function, following the step and linked to the step, "to provide a combination of energized unequal capacity compressors that exceeds in number the preselected number of compressors in the system . . . ." Finally, the step does not recite structure, material or acts for achieving the designated function.

The last elements in claims 3 and 24 are also subject to § 112 par. 6. These claim elements are expressed as "means for," signaling an intention to invoke § 112 par. 6 and raising the presumption that it applies. The elements in claims 3 and 24 have the specified function "to provide . . . ." following the recited "means" and linked to that means. There is no recitation of structure, material or acts in those respective elements for achieving the specified function. Dr. Rhyne, testifying that § 122 par. 6 applied, maintained that "selection" or "selection means" had no commonly understood meaning in the art at the time to define a particular structure.

Since claims 1, 3, and 24 are subject to § 112 par. 6, they are limited to the corresponding structure or acts disclosed in the specification for performing the recited function, and their equivalents. As noted supra, the only disclosure for such a means or step to achieve the recited function is a capacity controller circuit that implements a FIFO logic or sequence. Thus the last elements of claims 1, 3, and 24 are limited to a FIFO sequence of operation and structure.

The decision in Altech Controls Corp. v. The Larkin Group, Inc., No. 1:88-CV-499-MHS at *6, 56-61 (N.D. Ga. September 18, 1990), holding that some claims were directed specifically to the FIFO control strategy and others to more combinations, is not binding on this Court. Moreover because E.I.L. was not a party, the doctrine of res judicata does not apply. Substantial questions have been raised about the order, adopted from the plaintiffs' proposed findings of fact and conclusions of law after a settlement was communicated to the court. Furthermore, it was issued prior to Vitronics, which clarified the need to focus on intrinsic evidence, and recent Federal Circuit cases dealing with § 112 par. 6, including Greenberg, York Products, Cole, and Fonar.

C. Infringement

Because laches bars any claim with respect to the RC-48 controller, 2 the only issue we must address is infringement of the RC-1000 controller. After holding a Markman hearing to construe the '776 patent's claims, the district court granted summary judgment that the RC-1000 controller did not infringe claims 1, 2, 3, 7, and 24 of the '776 patent literally. 3 The court thereafter issued a second order that granted summary judgment that prosecution history estoppel barred an assertion of infringement of the '776 patent by the RC-1000 under the doctrine of equivalents. The district court concluded that the patent claims were limited to FIFO selection. There is little dispute that the RC-1000 does not utilize FIFO selection as described by the '776 patent, and instead uses a single signal to both de-energize some compressors and at the same time energize others to obtain the desired capacity. In contrast, FIFO selection uses a decrease signal only to de-energize compressors, and it uses an increase signal only to energize compressors. The district court therefore held that the RC-1000 did not infringe the '776 patent.

2 Laches is a defense to a continuing tort up until the time of suit and can only bar recovery until that time. Aukerman, 960 F.2d at 1031, 22 U.S.P.Q.2D (BNA) at 1327. In this case, E.I.L. stopped manufacturing the RC-48 controller before suit was filed. Therefore, laches bars recovery for all acts of potential infringement by the RC-48 controller.

3 Claims 1, 3 and 24 are independent claims. Claims 2 and 7 are dependent claims.
selectively energizing and deenergizing compressors in response to the respective increase capacity signals and the
decrease capacity signals to provide a combination of energized unequal capacity compressors that exceeds in number the
preselected number of compressors in the system so that the capacity of the system matches the common pressure load.

The '776 patent, col. 9, ll. 19-26. Altech argued that, while other claims in the '776 patent were directed to a FIFO invention,
claim 1, as well as claims 2, 3, 7, and 24, were broad enough to encompass the RC-1000 selection process. However, both
the language of the claims and the prosecution history indicate that the claims are limited to a FIFO system. During
prosecution of the patent Altech made express representations that the claims were limited to a FIFO system. In addition,
Altech repeatedly referred to its invention as utilizing FIFO selection, without any reference to specific claims.

Furthermore, application claim 7, which issued as claim 1 of the '776 patent, was originally written broadly enough to
encompass the technology of the RC-1000 controller. However, the claim was rejected over the prior art. Altech amended
the claim to include the words "selectively energizing" and "respective." The word "respective" effectively limits the claims
by aligning an "increase" signal with an increase capacity response, and a "decrease" signal with a decrease capacity
response. This interpretation is reinforced by the term "selectively energizing." The amended claims do not allow for a
construction where each signal generates a response that turns on the specific combination of compressors that matches the
load of demand, the selection process of the RC-1000. Given that the amendments narrowed the claims and were for
reasons related to patentability, Altech is barred from asserting infringement of claim 1 and dependent claim 2 under the
doctrine of equivalents. See Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd., 234 F.3d 558, 574-75, 56
U.S.P.Q.2d (BNA) 1865, 1872 (Fed. Cir. 2000) (en banc). Similarly, because the parallel language of claims 3, 7, and 24
was likewise amended, Altech is barred from asserting infringement of those claims under the doctrine of equivalents.

4 For example, in FIFO selection, if a system has three compressors of 4, 2 and 1 horsepower and is running the first two
compressors, the system will be running at six horsepower. If the pressure indicates that the system requires only five
horsepower, a de-energize signal will cause the controller that has been running the longest to turn off. In our example, that
would be the 4 horsepower compressor. The system will be running at only 2 horsepower and an energize signal will
indicate that more power is needed. In response, the 1 horsepower compressor will turn on, because that has been off the
longest. Now the system is running at 3 horsepower. Another energize signal will indicate that more power is needed, and
the 4 horsepower compressor will turn on, for a total of seven. Now, the de-energize signal will cause the 2 horsepower
compressor to turn off, because that compressor has been on the longest and finally, the system will be running at the
necessary five horsepower. In contrast, the RC-1000 controllers do not utilize FIFO selection. Instead, in our example where
the system is running the 4 and 2 horsepower compressors, but needs only five horsepower, the RC-1000 controller will
respond to the de-energize signal by turning off the 2 compressor and turning on the 1 compressor, for a total of five
horsepower. The RC-1000 responds to de-energize and energize signals without regard for which compressors have been on
or off for the longest period of time.

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III. ANALYSIS

The parties have resolved all matters of claim construction, save for one. Claim 23 of the '995 Patent specifies in pertinent
part:

A roll bending die for being used with a roll bending machine for producing rib reinforced rolled material, the roll
bending die comprising . . . a pair of clamp members selectively engaging an end face of each of said opposing ends of said
body member, each of said clamp members being adapted for engaging the roll tube of the roll bending machine such that
said clamp members are for securing said body member to the roll tube of the roll bending machine.

'995 Patent.
Plaintiffs request that the Court construe this portion of Claim 23 as follows:

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Plaintiffs' Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;[a] pair of clamp members&quot;</td>
<td>&quot;two clamps&quot;</td>
</tr>
<tr>
<td>&quot;selectively engaging an end face of each of the opposing ends of said body member&quot;</td>
<td>&quot;able to engage an end face of each of the opposing ends of said body member&quot;</td>
</tr>
<tr>
<td>&quot;each of said clamp members being adapted for engaging the roll tube of the roll bending machine&quot;</td>
<td>&quot;the clamps are designed to be able to engage the roll tube of the roll bending machine&quot;</td>
</tr>
<tr>
<td>&quot;such that said clamp members are for securing said body member to the roll tube of the roll bending machine&quot;</td>
<td>&quot;the clamps are for securing the body member to the roll tube of the roll bending machine&quot;</td>
</tr>
</tbody>
</table>

Defendant, on the other hand, requests that the Court construe Claim 23 in the following manner:

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Defendant's Proposed Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;[a] pair of clamp members&quot;</td>
<td>&quot;two clamps&quot;</td>
</tr>
<tr>
<td>&quot;selectively engaging an end face of each of the opposing ends of said body member&quot;</td>
<td>&quot;the clamps can be secured and removed to interlock with the end faces of the body member&quot;</td>
</tr>
<tr>
<td>&quot;each of said clamp members being adapted for engaging the roll tube of the roll bending machine&quot;</td>
<td>&quot;each clamp can be interlocked to the roll tube of the roll bending machine&quot;</td>
</tr>
<tr>
<td>&quot;such that said clamp members are for securing said body member to the roll tube of the roll bending machine&quot;</td>
<td>&quot;each clamp member functions to rigidly hold the body member both radially and laterally with respect to the roll tube&quot;</td>
</tr>
</tbody>
</table>

1. Claim language.

In any claim construction analysis, "[t]he appropriate starting point . . . is always with the language of the asserted claim itself." Phonometrics, Inc. v. Northern Telecom Inc., 133 F.3d 1459, 1464 (Fed. Cir. 1998) (citation omitted).

As the Supreme Court stated in White v. Dunbar, 119 U.S. 47, 52, 30 L. Ed. 303, 7 S. Ct. 72, 1886 Dec. Comm'r Pat. 494 (1886): "The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is; and it is unjust to the public, as well as an invasion of the law to construe it in a manner different from the plain import of its terms."

Kimberly-Clark Corp. v. Johnson & Johnson, 745 F.2d 1437, 1458 (Fed. Cir. 1984). The words used in a patent claim are examined from the perspective of a person of ordinary skill in the art. Tegal Corp. v. Tokyo Electron America, Inc., 257 F.3d 1331, 1342 (Fed. Cir. 2001).

The parties are in agreement that the first clause of the claim, ",[a] pair of clamp members," references "two clamps." As to the second clause of the claim, "selectively engaging an end face of each of the opposing ends of said body member," the
parties' interpretations diverge significantly.

In determining the ordinary and customary meaning of the phrase "selectively engaging," the parties have both referenced dictionary definitions for the individual terms. Dictionaries, while technically extrinsic evidence, are permissible sources of information for use during claim construction. See Vanguard Prods. Corp. v. Parker Hannifin Corp., 234 F.3d 1370, 1372 (Fed. Cir. 2000) ("A dictionary is not prohibited extrinsic evidence, and is an available resource of claim construction"). Indeed, the Federal Circuit has stressed that dictionaries "are particularly useful resources to assist the court in determining the ordinary and customary meanings of claim terms." Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202 (Fed. Cir. 2002); see also Vitronics Corp., 90 F.3d at 1584 n.6 ("Judges are free to consult [dictionaries] at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents.").

Having read the dictionary definitions proffered by the parties, the Court finds little, if any, support for Buckaroos' proposed reading of the term "selectively" within the context of the phrase "selectively engagable." Buckaroos cites Webster's Ninth New Collegiate Dictionary ("Webster's") for its assertion that "the term 'selectively' means that the clamp members are removable at the choice of the operator, as opposed to permanently attached." Pl.'s Br. at 23. While Webster's does not directly define the term "selectively," it does define related terms:

select . . . to take by preference from a number or group: pick out: CHOOSE . . . to make a choice . . .

selection . . . 1: the act or process of selecting: the state of being selected 2: one that is selected: CHOICE; . . .

selective . . . 1: of, relating to, or characterized by selection: selecting or tending to select . . . selectively

Buckaroos' App. at 11-3. The word "removable" neither appears in nor can be fairly inferred from the Webster's definitions. Indeed, the Webster's definition more fairly accords with Plaintiffs' contention that the term "selectively," merely implies "that the user of the invention may, or may not, choose to 'engage' the clamps with the dies, as demonstrated by the definition of 'selection'" in Merriam-Webster's Collegiate Dictionary, which defines "selection" as meaning "one that is selected: choice." 3 Pls.' Reply at 7 (quoting Merriam-Webster's Collegiate Dictionary (10th ed. 2002)). Likewise, Oxford English Dictionary defines the term "selectively" as "[i]n a selective manner; by selection," and further defines the term "selection" as "[a] particular choice; choice of a particular individual or individuals." Oxford English Dictionary (2d ed. 1989).

3 Buckaroos counters that "the proposition that a user 'may or may not' engage the clamps at the user's choice logically means that the clamps are removable at the user's choice." The Court disagrees and fails to see how imposing a requirement that the clamps be removable "logically" follows from the use of the term "selectively."

Buckaroos argues that reading the term "selectively" as Plaintiffs propose ignores the context of the term and the fact that it is used in conjunction with the term "engaging." Buckaroos argues that the term "engaging" should be interpreted with reference to Webster's definition of the root term "engage": "to come together and interlock (as of machinery parts)." Id. Webster's also, however, defines "engage" as "to cause (mechanical parts) to mesh," and "to bring together or interlock (weapons)." In the context of "engaging and disengaging machinery," Oxford English Dictionary defines "engaging" as: "that in which one part is alternately united to, or separated from another part, as occasion may require." Oxford English Dictionary (2d ed. 2002).

Even reading "selectively" and "engaging" together, as recited in Claim 23, Buckaroos' request for a construction that employs a requirement that the clamps be removable reads a limitation into the claim that is unsupported by any intrinsic evidence in the case. This is not to say, however, that Plaintiff's proposed construction, "able to engage an end face," is wholly adequate. In fact, after careful consideration of the parties' arguments and the language of the Claim itself, the Court finds that adopting Plaintiff's construction would fail to adequately give meaning to the word "selectively." Accordingly,
after careful consideration of all the evidence in the case, the Court concludes that the term "selectively" requires that the clamps be able to engage the end face, "at the operator's discretion." This construction gives due weight to the "choice" aspect of the term, rather than rendering it superfluous. As to whether the claim should be read to require a construction that "engaging" be synonymous with "interlock," the question is a closer one. The "engaging" requirement of the second disputed clause is also relevant to the third disputed clause of Claim 23, that "each of said clamp members being adapted for engaging the roll tube of the roll bending machine." Accordingly, the Court looks to other intrinsic evidence in the case, namely the patent specification, to aid in determining the construction of the second and third clauses, as well as to evaluate the fourth clause of Claim 23, for which Buckaroos requests that the Court impose additional limitations on the Claim language. 4

4 While the prosecution history is often a useful source of intrinsic evidence, it provides no guidance in the present case. In regards to Claim 23, the Examiner merely stated that "New claim [23] has been added to vary the scope of the claims and clarify the present invention. All limitations are supported by the original disclosure including the specification, drawings and original claims. . . . Therefore, no new matter has been added. The new claim is believed to be allowable." Clerk's No. 99-4 at 34.

2. The specification.

"The importance of the specification in claim construction derives from its statutory role." Phillips, 415 F.3d at 1316. The patent statutes require that a specification "shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same. . . ." 35 U.S.C. § 112; see Lizardtech, Inc. v. Earth Resource Mapping, Inc., 433 F.3d 1373, 1374 (Fed. Cir. 2006) (per curiam) (stating that the specification statute contains two separate requirements, a written description and an enablement requirement); Capon v. Eshhar, 418 F.3d 1349, 1360 (Fed. Cir. 2005) ("[A]lthough the legal criteria of enablement and written description are related and are often met by the same disclosure, they serve discrete legal requirements."). "In light of the statutory directive . . . the specification necessarily informs the proper construction of the claims." Phillips, 415 F.3d at 1316 (citing Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998) ("Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction."). Accordingly, where a patentee reveals in the specification a "special definition given to a claim term . . . that differs from the meaning it would otherwise possess . . . the inventor's lexicography governs." Id. (citing CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002)). Likewise, if the specification reveals "an intentional disclaimer, or disavowal, of claim scope by the inventor . . . the inventor has dictated the correct claim scope, and the inventor's intention, as expressed in the specification, is regarded as dispositive." Id. (citing SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1343-44 (Fed. Cir. 2001)). If neither a unique lexicography nor a disavowal of claim scope appear in the specification, the "ordinary meaning, to one skilled in the art, of the claim language controls." Digital Biometrics, Inc. v. Identiix, Inc., 149 F.3d 1335, 1344 (Fed. Cir. 1998).

Buckaroos contends that its interpretation that Claim 23 requires "interlocking" is supported by the specification in this case. Specifically, Buckaroos points to the "Description of the Preferred Embodiment," which provides:

A pair of clamp members 22 5 selectively engage an end face 23 of each of the opposing ends 15 of the body member 11. Each of the clamp members 22 is designed for engaging the roll tube 56 of the roll bending machine 50 whereby the clamp members 22 are for securing the body member 11 to the roll tube 56 of the roll bending machine 50.

Each of the clamp members 22 comprises a pair of clamp portions 24. One of the clamp portions 24 is selectively coupled to the other of the clamp portions 24 whereby each of the clamp portions 24 is designed for being positioned around the roll tube 56 of the roll bending machine 50 when the clamp portions 24 are coupled to together [sic]. Each of the clamp portions 24 comprises an arcuate interior face 25 20 whereby the arcuate interior face 25 20 of each of the clamp portions
24 is designed for frictionally engaging the roll tube 56 for inhibiting rotation of the clamp portions 24 with respect to the roll tube 56 when the clamp portions 24 are coupled together around the roll tube 56.

Each of the clamp members 22 comprises a lip portion 29. The lip portion 29 outwardly extends from an engagement face 30 the associated one the clamp members 22. The lip portion 29 of each of the clamp members 22 selectively extends into one of the alignment grooves 28 of the body member 11 when the engagement face 30 of each of the clamp member 22 abuts against the end face 23 of the association one of the opposing ends 15 of the body member 11 for maintaining alignment of the body member 11 with respect to the roll tube 56.

'995 Patent, col. 4, lines 10-53. 6 A plain reading of the specification as articulated in the preferred embodiment indicates that the clamp members are designed to have a protuberance that will extend into prefabricated alignment grooves on the body member, that is, the lip of the clamp member is designed to engage the body member in order to keep the body member in proper alignment with the roll tube. The engagement between the lip and the body member, as described in the embodiment, clearly implies something more than "some contact between the clamps and the dies," as suggested in Plaintiffs' Reply. Pls.' Reply at 6.

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5 The numbers interspersed throughout the Description of the Preferred Embodiment reference the drawings including in the '995 Patent.

6 The language from the preferred embodiment is essentially duplicated in Claims 11-13 of the '995 Patent. Claims 11-13, however, are dependent claims of Claim 1. The doctrine of claim differentiation "create[s] a presumption that each claim in a patent has a different scope." Comark Comm., Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998). The doctrine would not support reading a limitation from Claims 11-13 into Claim 23, because "when a patent claim 'does not contain a certain limitation and another claim does, that limitation cannot be read into the former claim . . . ." Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1326 (Fed. Cir. 2003) (quoting SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1122 (Fed. Cir. 1985)). Furthermore, the Court notes that Buckaroos has referenced only the description in the "Preferred Embodiment," and has not referenced Claims 11-13 in support of its proposed claim construction.

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Plaintiffs contend that because the specification only teaches a preferred embodiment, it does not act to limit the claims. Pls.' Reply at 100. Plaintiffs cite Rexnord Corp. v. Laitram Corp., 274 F.3d 1313 (Fed. Cir. 2001) in support of this proposition. In Rexnord, the Federal Circuit stated: "Our case law is clear that an applicant is not required to describe in the specification every conceivable and possible future embodiment of his invention." 274 F.3d at 1344. The Court agrees that as a general rule, the Federal Circuit has found it improper to import limitations from an embodiment, even a preferred embodiment, into a claim. Phillips, 415 F.3d at 1323 ("[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments. . . . In particular, we have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.") Id. (citations omitted); Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1327 (Fed. Cir. 2002) ("We hold that claim terms take on their ordinary and accustomed meanings unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.").

In the present case, the Court can find no words of manifest exclusion or restriction in the language Buckaroos quotes from the Preferred Embodiment portion of the patent. The applicability of the Federal Circuit's general rule on importing limitations from the specification, however, is made somewhat more difficult by the fact that the only descriptions sufficient to satisfy the enablement requirement of the specification statute appears in the "Description of the Preferred Embodiment." 7 See 35 U.S.C. § 112 (stating that a patent "shall" contain a description of the invention and how to make it sufficient "to enable any person skilled in the art . . . to make and use the same"). The Court's concern in this regard is highlighted by a statement the Federal Circuit made in Lizardtech: "Claims are not necessarily limited to preferred embodiments, but, if there are no other embodiments, and no other disclosure, then they may be so limited. One does not receive entitlement to a period of exclusivity for what one has not disclosed to the public . . . merely calling an embodiment 'preferred,' when there
are no others, does not entitle one to claims broader than the disclosure." Lizardtech, 433 F.3d at 1375. The quoted Lizardtech decision was a per curiam denial of a petition for rehearing en banc. In the underlying case, however, the three judge panel actually construed the disputed claim as not being limited by the specification. While on the one hand, this may give rise to a conclusion that the Lizardtech quotation is dicta; on the other, it may be consistent with the Federal Circuit's statement that when a preferred embodiment is the only written description sufficient to enable the patent, that a court "may," but is not required to, limit the claims of the patent to the written description in the preferred embodiment, despite the general rule to the contrary.

7 The '995 Patent specification contains a brief "Background of the Invention," a broad and nonspecific "Summary of the Invention," and a "Brief Description of the Drawings." '995 Patent, cols. 1-2. Other than these items, the '995 Patent comprises nothing more than the drawings, the "Description of the Preferred Embodiment," and the Claims themselves.

In this case, the Court finds it appropriate to abide by the typical rule of the Federal Circuit that claims should not be limited by embodiments. While certainly Plaintiffs' stated embodiment foresees a lip portion of the clamps that "interlock" with precut grooves in the body member, this is not the only reasonably conceivable method of "engaging" the body member. Indeed, the Court finds that the term "engaging" has a readily apparent meaning that requires more than mere touching, though not necessarily interlocking. See Oxford English Dictionary (2d ed. 2002) (defining "engaging" as encompassing mechanical situations where "one part is alternately united to, or separated from another part, as occasion may require"). Where, as here, Plaintiffs have not disclaimed or intentionally disavowed the use of clamps that do not interlock, per se, the Court declines to read such a limitation into the patent claim. Given the Court's determination that the term "engaging" does not necessarily require interlocking and that the term "selectively" cannot be read to require that the clamps be removable, the Court adopts Plaintiffs' proposed construction, with one modification, of the second and third phrases of the disputed portion of Claim 23.

With regard to the fourth phrase of the disputed portion of Claim 23, "such that said clamp members are for securing said body member to the roll tube of the roll bending machine," the Court also declines to import Buckaroos' requested limitations into the Claim language. Specifically, Buckaroos' request to read the Claim as requiring that "each clamp member functions to rigidly hold the body member both radially and laterally with respect to the roll tube" is simply not supported by the ordinary meaning of the claim terms or by any other limitation apparent from the intrinsic evidence in the case. Indeed, the Claim language itself is clear and the Court does not believe it requires further construction.

IV. CONCLUSION

For the reasons stated herein, the final paragraph of Claim 23 shall be read as follows: "two clamps, which are able, at the operator's discretion, to engage an end face of each of the opposing ends of said body member, each of the clamps is designed to engage the roll tube of the roll bending machine, such that the clamp members function to secure the body member to the roll tube of the roll bending machine."
a locking reinforcement support member having a mating means for selectively engaging said connector body at said open-end body cavity . . .

Claim 6 calls for

a locking reinforcement support member slidably fit within said open end of said body cavity defined in said multiple contact connector, said open end of the body cavity having a configuration to selectively receive said locking support member while preserving the integrity of said connector body after attachment of said angulate contact elements to said second external article . . .

Under Claim 1, the reinforcement support member has a mating means for "selectively engaging" the connector body. Under Claim 6, the body cavity is configured to "selectively receive" the reinforcement support member while preserving the integrity of the connector body. Claim 1 itself defines the element "connector body" as "having a body interior and having a front mating surface and an open-end body cavity." Maxconn '017 patent, col. 5, ll 1-13. The claim does not define "connector body" as including the contact elements, a separate element of the Claim. Maxconn '017 patent, col. 5, ll. 4-13.

Regarding Claim 6, it is the open end of the "body cavity" which selectively receives the reinforcement support member. Claim 6 describes the "body cavity" as just one part of the multiple contact connector: the "contact elements" are described as lying within the interior of the connector, Maxconn '017 patent, col. 6:7-9, while the connector itself is described as having various parts, including "a front mating surface, opposed lateral surfaces, a cover surface, a base surface and an open-end body cavity" Maxconn '017 patent, col. 6:9-11. The plain language of the itself indicates that the term "body cavity" does not include the contact elements.

The term "selectively" is used only in reference to the connector body or body cavity. It is not used in reference to the contact elements. Accordingly, Maxconn's interpretation involving the mechanism by which the support member mates with particular contact elements cannot be correct. 4 There is no need to consult the specification, prosecution history, or extrinsic evidence for further enlightenment, except to say that Amphenol's interpretation is entirely consistent with the arguments made by the applicant in the course of the prosecution of the patent.

4 In addition, later portions of both Claims 1 and 6 contain extensive descriptions of how the teeth of the member interlock with the wires of the connector, further supporting the Court's conclusion that the term "selectively" does not operate to define how the teeth meet with the wires. The extensive descriptions would render the term "selectively" superfluous.

b. Construction

The term "selectively" serves to emphasize that, as the Court concluded in part (B)(1)(e), above, the support member can be removed from the connector body so as to allow access to the interior of the connector, facilitating inspection or repair of the contacts without destroying the integrity of the connector in general or the contact elements in particular.
occlusive devices, such as embolic coils that comprises three distinct components: a pusher, a coupling, and an implant

"pusher"

"any device or structure intended to push another device or structure"

"selectively operable coupling"

"a connecting device that connects the implant to the pusher and that can be selectively operated by the user"

"coupling"

"a connecting device that connects the implant to the pusher and that can be selectively operated by the user"

"said coupling operable by fluid pressure so that when a sufficient amount of fluid pressure is applied to the coupling, the fluid pressure a user causes the occlusive implant to separate from the pusher"

"delivering fluid pressure through the pusher such that the implant detaches from the pusher by the fluid pressure"

Plain and ordinary meaning applies, no specific construction by the Court

(The Markman Order at 22-29, Docket Item No. 177.)

3544

A. Claim 35

In their Joint Statement the parties identified six disputed terms within Claim 35. By the time of oral argument the sole term in dispute was "selectively operating" within the context of the phrases "selectively operating the sputter cathode device to deposit a layer of the selected material on the substrate" and "selectively operating the ion source device in sequence with the sputter cathode device . . . ."

Avidly adversarial, the parties make this determination harder than it needs to be by consistently exaggerating the position of the other side and obscuring the actual point of disagreement. As this court sees it, the crux of the debate is whether "selectively operating" refers to how a device is operated to control conditions or whether a device operates at all at any given moment in the process.

AVL contends that "selectively" modifies "operating" such that the term requires that both the sputter cathode device and the ion source device be capable of either operating or not operating. Joint Statement at 4, 5. In addition, AVL urges that since the patentees did not specifically define the term, it should be given its accustomed meaning. To support that proposed reading AVL looks to Webster's Dictionary to define "select" as "to pick or choose," and to the patent specification and prosecution history which discloses how to achieve the desired reaction by "selectively opening the shutters." '095 Patent at col. 13, line 62. At oral argument, AVL suggested that the term requires turning the stations on and off; its putative expert Albert Smith goes farther, implying that it requires shutters or baffles to prevent poisoning. See Declaration of Albert Smith, P 16.

OCLI contends that it would be more accurate to interpret "selectively operating" to mean that the device "is operated
selectively through allowing for selection of process conditions" necessary to create the desired reaction. Joint Statement at 5, 6. OCLI emphasizes a number of places in the patent to support their reading. For example, it enumerates the many instances in which a reaction is governed by the thickness of a coating or the power applied to the sputter sources to argue that those decisions require selective operation. OCLI opp. at 12, n.13. In other words, what one picks and chooses is not mere functionality but the myriad process conditions which dictate the end result. During oral argument, OCLI elaborated on this claim by referring to the invention's parameters--citing a list of process conditions in column twelve of the patent--which they contend are all controlled by selectively operating the sputter cathode and ion source devices. In fact, OCLI proposes that selective operation encompasses almost the entire array of operating conditions necessary to achieve the desired reaction, including the regulation of pressure, power flow, oxygen flow, and target material in addition to sequentially turning the devices on and off as contemplated by AVL. Selective operation according to OCLI is expansive enough to embrace continuous operation as well. OCLI opp. at 12, n.13.

OCLI further relies on its putative experts to support its proposed reading of "selectively operating." Charles K. Carniglia, for example, attests that to one with ordinary skill in the art, the '095 patent "teaches selection of 'materials,' 'thickness of materials,' 'power,' 'pressure,' 'gas flow rates' and other process conditions for selective operation of the claimed magnetron-enhanced sputter device(s) and ion source(s)." Declaration of Charles K. Carniglia, P 30. Finally, OCLI insists that selective operation does not necessitate shutters, baffles, or the ability to turn a device on and off.

First, with respect to separation of the sputter device and ion source device through the use of sputters or baffles, OCLI is correct that nothing in the patent requires these although the various embodiments make use of them. However, AVL is also right that physical separation is envisioned and incorporated into the '095 patent. See '095 Patent at col. 3, line 36. It appears that all the embodiments contemplate that "the sputter device and the ion source device are enclosed in distinct partial pressure regimes or chamber regions between which the substrate is alternated by the continuously rotating drum." '095 Patent at col. 8, lines 4-7. Furthermore, the '095 patent discloses one of the "essential differences" between it and the prior art is that the '095 "technique employs distinct separate non-contiguous zones for deposition and reaction." '095 patent at col. 18, lines 1-2.

Second, while the meaning of "selectively operating" as used in the patent is far from clear and both parties interpretations seem reasonable, this court's reading of the term tends toward that proposed by AVL in which the term refers to the choice of whether or when to operate or activate either a given sputter cathode device or the ion source device during a particular pass of the carrier. 5

Footnotes

5 It should be noted that the court does not concur with other readings of the phrase proffered by AVL. For example, AVL also understands selectively operating to mean a device must be turned on or off, or functionally removed from the system. Joint Statement at 6. This court reads the term to mean only that the device's ability to operate can be controlled or activated.

End Footnotes

The interpretation proposed by OCLI is so expansive that it imports a great many functions into otherwise simple claim language. Without a doubt the invention requires both the selection of the process conditions and the selective operation of sputter cathode devices and the ion source device to achieve the conditioned result. However, the patent language appears to make a fine distinction between "selected" materials and conditions and "selective" operation. The patent documents use "selected" and "selectively" throughout and though they do not appear to be terms of art, they are used in different contexts within the patent specification and claims and seem to have slightly different meanings.

The meaning of "selectively operating" suggested by OCLI is better understood as the selection of "materials" and "reactions" rather than the selection of the sequence in which the devices should operate. Admittedly both types of selection occur and are correlated, but contrary to OCLI's contention, they appear as distinct processes within the context of the '095 patent and are not both embodied in the term "selective operation." For example, one selects metal 1 and metal 2 for the sputter cathodes and selects a particular sequence for depositing and oxidizing them, then one selectively operates the sputter and ion source devices to conform to the desired sequence. This distinction is best exemplified in the patent language in the summary of the rotary system operation:
With the sputter cathodes and ion source cathodes established at stable operating conditions, that is, at stable selected power, gas flow and pressure and with the drum operating at the specified rotational speed to provide selected deposition and oxidation rates, the desired deposition and oxidation sequence is effected by selectively opening the shutters.

'095 Patent at col. 13, lines 56-62 (emphasis added). As this language demonstrates, the process conditions are already selected; the sputter cathode and ion source devices are then selectively activated in a given sequence to produce the contemplated result. Nor is this reading a limitation from the specification on the claims, as this distinction between selected conditions and selective operation appears not only in the specification, but in claim 35 itself as well as in claim 46. This use of "selectively" is also consistent with a number of other dependent claims, in particular claims 22, 23 and 40.

OCLI posited at oral argument that selective operation must mean to tailor the process conditions because those of ordinary skill in the art refer to activating the sputter cathode and ion source devices in sequence as "sequencing." OCLI cites an article on the ARx10 by AVL expert J. Michael Walls in support of this interpretation. Declaration of Larry R. Laycock, Exh. I at 388. However, the Walls article does not appear to use "sequencing" as a term of art; rather it discusses how the process is controlled by "activating each of the magnetrons in sequence." Id. This sequential activation is distinguished from the control of the other parameters of the ARX10 machine. Walls' description is also consistent with this court's construction of "selectively operating" in the context of the '095 patent in which selection of the process conditions or parameters occurs apart from the selective activation of the sputter cathode and ion source devices. In the '095 patent "selectively operating" therefore means selective activation or operation of the device regardless of the method used to achieve activation.

4. Claim 17:

Claim 17 is dependent upon claim 1 and claims:

The system of claim 1 wherein the stem mounting means is selectively positionable in a plurality of orientations with respect to the base mounting means so that the second axis can be selectively oriented in a plurality of positions with respect to the first axis and with respect to the base portion.

313 patent, col. 6, 11. 43-48.

Zimmer asserts that this term, "selectively positionable" should be construed as "capable of being oriented and made fast in more than one location with respect to the base mounting means, where the location is chosen prior to the stem extension's insertion into the bone." Zimmer asserts that the term "mounting" in claim 17 requires that the stem extension and base portion be fastened or attached together such that they are not free to move relative to one another. 04/06/05 Zimmer Mem. at 17. Zimmer points to the specification and abstract, which state: "The stem extension can be attached in a selected orientation with respect to the base portion, thus enabling the main body of the stem to be positioned in any one of a plurality of orientations with respect to the base portion." 313 patent, Abstract. The specification goes on to state that the conical shape of the Morse taper "enables the stem extension 1 to be attached in any selected radial orientations." 313 patent, Abstract, col. 3 11. 50-52. And in the prosecution application, the applicant stated, "this feature is different from a system in which only a single orientation is provided." 313 patent Prosecution History, June 14, 1993, Amendment at 3. Finally, Zimmer rests its argument on Dr. Crowninshield's declaration, in which he stated, "it is clear that orientation requires that the stem mounting means be positioned or placed in a location with respect to the base mounting means, and that it then remains there." Crowninshield Decl. P 88.

In contrast, Howmedica asserts that claim 17 does not require that the stem be oriented and subsequently fixed without movement, but only that the stem mounting means be positionable. 05/06/05 Howmedica Mem. at 21. Howmedica then construes each term, "selectively" and "positionable," separately. Howmedica proposes that "selectively" should be construed as "the orientation of the components is selected prior to the components being secured in the bone." Howmedica argues that the ordinary meaning of the term "positionable" should be adopted as consistent with the embodiments described in the 313 patent. Id. As such, Howmedica alleges that "positionable" should be construed as "capable of orienting the stem in a plurality of radial orientations." Thus, according to Howmedica, "selectively positionable" requires only "that the stem
be capable of being positioned or arranged in any desired orientation." Id. at 22.

Howmedica's construction of this claim term is correct and, as such, adopted by this Court. As discussed in relation to claims 1 and 3, this Court is not of the view that mounting requires fixing or fastening without movement relative to each other. Rather, in this context, selectively positionable refers to being put in position for use. Here, we are dealing with a component that must be positioned or arranged in any variety of orientations prior to insertion into the bone. Thus, for the same reasons employed in the analysis above, this Court adopts Homedica's proposed construction of "selectively positionable, which requires "that the stem be capable of being positioned or arranged in any desired orientation."
disclosed in the disclosure of the 628 Patent. Synthes states clearly that the claim should be read in light of that specification. In other words, Synthes specifically defined a term within one of its claims by adopting a definition found in the 628 Patent's specification. Since a patentee may not proffer an interpretation for the purposes of litigation that would alter the public record, the Court construes self-compressing hole in the manner encouraged by DePuy. See Southwall Techs., 54 F.3d at 1578.

On the other hand, it is not clear that Claim 4 must include "one and only one" self compressing hole. Since the claim is unclear, the Court looks to the specification of the 36 Patent. That specification contemplates the use of one or more self compressing screw holes of the type described in Patent No. 31,628. (36 Patent, 4:13-15). This same specification helps to define the term "self compressing screw hole" and can also be used to determine the number of holes claimed. Reading this specification, the Court concludes that Claim 4 is not limited to just one self compressing screw hole.

Lockwood argues that the district court misconstrued all four elements of the '115 patent claims cited by the district court. First, Lockwood contends that, properly construed, the term "self-contained" means an "apparatus or collection of components which includes the materials necessary for the apparatus to function on its own" and that the language "easily transported" includes a collection of components of comparable size and weight to those disclosed.

American argues that Lockwood's interpretation of these terms is flatly inconsistent with his interpretation before the Patent and Trademark Office (PTO). We agree. The limitation "self-contained apparatus dimensioned to be easily transported" was added after the PTO rejected Lockwood's claims as obvious in light of a business transaction computer system disclosed in U.S. Patent 3,705,384. In response to the rejection, Lockwood distinguished the prior art system, which was composed of multiple cabinets that filled a room, stating, "applicant's device, on the other hand, is a free-standing self contained unit which can be moved from location to location." During the prosecution of the patent, Lockwood thus differentiated his device from the prior art because of its compact physical dimensions, not because of its ability to "function on its own." In fact, the interpretation of the words "self-contained" that Lockwood now advances is insufficient to distinguish his invention from the prior art because the prior art patent also discloses a system that can function independently. Lockwood cannot now argue for an interpretation inconsistent with this earlier representation. "Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers." Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2D (BNA) 1673, 1677 (Fed. Cir.), cert. denied, 133 L. Ed. 2d 424, 116 S. Ct. 515 (1995); see Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1562, 19 U.S.P.Q.2D (BNA) 1500, 1504 (Fed. Cir. 1991).

II.


The primary issue of claim interpretation is the meaning of "self-erecting." Discharging its duty to give meaning to the claims, the district court instructed the jury that the term "self-erecting" required "that the device form a curved or arched structure which stands off the patient." Augustine Medical argues that "self-erecting" requires only that the blanket form an "environment" about the patient in which warm air can circulate. Under its proposed claim interpretation, Augustine Medical argues that the accused blankets literally "self-erect" because they create an environment of circulating warm air about a patient.
This court finds no support for Augustine Medical's claim construction. The patents themselves define what the claims mean by "self-erecting." As noted above, the '188 patent describes its structure as "a self-supporting structure having a generally rounded or elliptical cross-sectional shape which contacts the patient only at the tubes which are immediately adjacent the keystone tube." Col. 4, ll. 12-16. The other patents all explain that a blanket which "self-erects" "erects itself into a Quonset hut-like structure" when inflated. The '102 patent, col. 3, ll. 31-35; the '320 patent, col. 3, ll. 11-12, 20-22; the '371 patent, col. 4, ll. 10, 17-19. Thus, the district court correctly construed the term "self-erecting" to require that the accused blankets "form a curved or arched structure which stands off the patient." Following this interpretation, the jury found that the accused blankets did not literally infringe. The jury did, however, find infringement under the doctrine of equivalents.

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D. Term 5: "a self-expanding structure exhibiting a spring-like behavioural component for moving the member between a compressed orientation . . . and an expanded orientation"

The Court construes the term "a self-expanding structure exhibiting a spring-like behavioural component for moving the member between a compressed orientation . . . and an expanded orientation" in claim 1 of the '281 patent to be a means-plus-function limitation subject to 35 U.S.C. § 112, P 6. The claimed function and the structure that corresponds to this function are as follows:

The claimed function is moving the member from a compressed orientation to an expanded orientation. The structure that performs this function must be either: (1) a flexible, elastically deformable frame carried around the periphery of the member; or (2) a frameless membrane made of a thin piece of a superelastic material.

The disputed language is not written in means-plus-function format, and the University denies that it is a means-plus-function limitation. Am. JCCS Sched. B. at 14; Univ. Opening Br. at 27-31. Because the claim does not use the term "means," the Court must presume as an initial matter that the University is correct and that § 112, P 6 does not apply. See Apex Inc. v. Raritan Computer, Inc., 325 F.3d 1364, 1371-72 (Fed. Cir. 2003). For the Court to construe the disputed language as a means-plus-function limitation, AGA must show, by a preponderance of the evidence, that the claim does not recite sufficiently definite structure for performing the claimed function. See id. at 1372. AGA has made this showing.

To begin with, the patent claims a "structure" that has certain properties. The word "structure" is entirely generic. According to the University, however, "structure" as used in claim 1 of the '281 patent is made definite by the surrounding words that modify "structure." Univ Opening Br. at 30-31. Specifically, the University calls the Court's attention to the word "self-expanding" and the phrase "exhibiting a spring-like behavioral component." Id. at 31.

The University has not, however, made any attempt to establish that "a self-expanding structure exhibiting a spring-like behavioural component" is something with an understood meaning in the art. Instead, the University has told the Court what this disputed language does not do -- it "does not call out a specific separate spring or tension spring . . . ." Univ. Opening Br. at 30. This is true, but unhelpful. The question before the Court is not what the term does not mean. Rather, the question is whether the disputed language, "as the name for the structure, has a reasonably well understood meaning in the art . . . ." Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996); see also Apex Inc., 325 F.3d at 1372 (quoting Greenberg). The Court finds that it does not.

To call a generic structure "self-expanding" is to describe what it does, not what it is. The word "self-expanding" thus does not make the claimed "structure" less generic. Similarly, to describe the structure as "exhibiting a spring-like behavioural component" is to describe -- oddly and awkwardly, but plainly enough -- how the structure behaves, not what it is.

The word "component" is no more particular than the word "structure." And to call a component "behavioural" is bizarre, since "components" are generally physical things, and "behavioural" typically modifies abstract nouns (as in "behavioral psychology"). The phrase "behavioural component" thus cannot be interpreted to cover any structure with a meaning in the art (particularly since the University has offered neither evidence nor argument that "behavioural component" denotes any identifiable structure). Rather, the phrase "exhibiting a spring-like behavioural component" can be interpreted only one way: to mean something like "behaving like a spring." A "self-expanding structure that behaves like a spring" is thus a generic
structure with spring-like properties, not a specific structure with a well-understood meaning.

Having determined that the disputed language is a means-plus-function limitation, the Court must next determine what function is claimed, and what particular structures are disclosed in the written description and linked to that function. See Asyst Techs., Inc. v. Empak, Inc., 268 F.3d 1364, 1369 (Fed. Cir. 2001). It is obvious from the patent's written description that the claimed device expands by virtue of its spring-like properties but must be compressed by some external force. The Court therefore finds that the claimed function is moving the device "from" a compressed orientation to an expanded orientation, rather than moving the device "between" the two orientations. AGA agrees with this characterization of the claimed function. AGA Opening Br. at 28-29 & 28 n. 11. And although the University proposed, in the amended JCCS, that the Court construe the claimed function to be "moving the structure between" the two orientations, Am. JCCS Sched. B at 14, the Court does not believe that the University actually objects to characterizing the function as involving movement only from a compressed orientation to an expanded one.

Having identified the claimed function, the Court must next "identify the corresponding structure set forth in the written description that performs the particular function set forth in the claim." Asyst Techs., 268 F.3d at 1369. The "corresponding structure" must be clearly linked or associated, in the specification or prosecution history, with the claimed function. B. Braun Med., Inc. v. Abbott Labs., 124 F.3d 1419, 1424 (Fed. Cir.1997).

The Court agrees with the University that the written description discloses two structures that can fulfill the claimed function of moving the member from a compressed orientation to an expanded orientation. There is no dispute that the written description discloses a device featuring a peripheral frame. Univ. Opening Br. at 33-34; AGA Opening Br. at 33-34. The only question is whether the written description also adequately discloses a frameless structure capable of moving the member from a compressed to an expanded orientation. The Court finds that it does.

In describing a preferred embodiment of the claimed invention, the patent describes a closure device with two disks, each featuring a membrane. '281 patent col. 4:58-61. The patent notes that the membrane "may be formed of a thin piece of superelastic material, such as a thin sheet of [nickel-titanium] alloy or a superelastic polymeric composite." Id. col. 5:3-6. The patent then describes a membrane with an attached peripheral frame that "in its natural, non-deformed state . . . serves to hold the membrane . . . taut." Id. col. 5:9-10. And the patent explains that the frame can "be deformed sufficiently for insertion into and passage through a small-diameter catheter yet automatically elastically return to its initial shape upon exiting the catheter." Id. col. 7:9-11. Crucially, after describing a membrane-plus-frame combination, the patent says: "[I]f the membranes are themselves formed of a superelastic material, they will tend to return to their original shape without a frame, so the frame may be omitted if so desired." Id. col. 5:32-35 (emphasis added).

In short, the peripheral frame is linked to the function of moving the disk (or, more generally, member) from a compressed to an expanded orientation. The patent unambiguously says that the frame may be omitted if the membranes are made of superelastic materials. And such superelastic membranes are described as "tend[ing] to return to their original shape" -- that is, tending to return to an expanded orientation from a compressed orientation. This suffices to link a frameless, superelastic membrane to the claimed function.

13 Further, if the specification left any doubt that a frameless, superelastic membrane could move itself from a compressed to an expanded orientation, that doubt would be dispelled by the prosecution history of the '291 patent. During prosecution of that patent, the patentee responded to a rejection by the PTO by saying: "The omission of a frame is clearly contemplated in the specification of this application as originally filed." JA 414. The PTO subsequently allowed claims of the '291 patent that do not include the limitation of a peripheral frame. Cf. '291 patent claim 1 (no frame mentioned), with claim 7 ("The closure device of claim 1 wherein each of the first and second disks has a periphery, each disk further comprising an elastically deformable frame . . . ”).

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B. "self-tensioning membrane digitizer" (claims 6, 10, and 20)

PolyVision's proposed construction

Smart's proposed construction

No construction required. Alt.: An apparatus having a membrane that
digital form (or digitizer) where the
tension on the membrane to keep it

This phrase is the preamble. PolyVision contends that no construction is required because the phrase is self-explanatory and because it would be improper to construe the preamble as a limitation in these circumstances. Whether the preamble should be considered a limitation on the claim language depends on its nature. A preamble can be considered a claim limitation when it is "necessary to give life, meaning and vitality" to the claim." Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999). In other words, if the preamble recites structure that is important to the invention or necessary to give the claim meaning, it will be regarded as limiting. See Bicon, Inc. v. Straumann Co., 441 F.3d 945, 952 (Fed. Cir. 2006). On the other hand, the preamble is not limiting where the "patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention." Rowe v. Dror, 112 F.3d 473, 478 (Fed. Cir. 1997). In the latter circumstance, "the preamble is of no significance to claim construction because it cannot be said to constitute or explain a claim limitation." Pitney Bowes, Inc., 182 F.3d at 1305. Smart contends that construction is required because the self-tensioning aspect is the primary focus of the invention and that term was coined by the inventors, thus, there is no accepted meaning.

In this case the claim language discloses all of the structure necessary for the invention. The preamble does not provide further structure but is merely descriptive of the purpose of the invention -- a digitizer that has a self-tensioning membrane. While it may arguably be desirable to further define "self-tensioning," as noted above, the pretensioning aspect of the invention in the claim language provides sufficient context to the meaning of "self-tensioning." Thus no construction is necessary.

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Semipermeable Membrane

Claim 1 requires the gas sample chamber include "a sheet of a semipermeable membrane covering each of said plurality of filtering apertures, said semipermeable membrane permitting gases to diffuse through it under ambient pressure into and out of the space within said tube and preventing airborne particles larger than a predetermined size from entering said space." '332 Patent, col. 6, ll. 15-21. The district court interpreted this limitation to be "limited to [a] semipermeable membrane[] which deflects particles larger than 0.1 micron" and which "is properly described as a thin, soft pliable membrane with a thickness on the order of 25 to 50 microns thick." Finding and Recommendation, slip op. at 19, 21. Thus, the court found two numerical limitations on the semipermeable membrane: 1) the "predetermined size" of the particles prevented from entering the tube had to be 0.1 micron; and 2) the thickness of the membrane had to be "on the order of 25 to 50 microns."

We turn first to the "predetermined size" limitation. Edwards asserts the court improperly limited the claim term "predetermined size" to "particles larger than 0.1 micron," arguing that such a construction violates fundamental principles of claim construction and the doctrine of claim differentiation. Specifically, Edwards contends that the term "predetermined size," on its face, is broader than any one numerical limitation and that the specification and prosecution history provide no basis for a specific numerical limitation. Further, Edwards argues that because dependent claim 4 recites "said predetermined size is 0.1 micron," '332 Patent, col. 6, ll. 29-30, "0.1 micron" cannot be synonymous with the "predetermined size" language of claim 1 under the doctrine of claim differentiation. Edwards also asserts that the original application, the substitute specification, and the prosecution history do not support the court's narrowing of the claim limitation.

In response, Digital Control points out that the application as filed contained no mention of the phrase "predetermined size" and argues that the phrase "predetermined size" in the substitute specification must find support in the original disclosure if
the claim is to be valid. Digital Control contends that the only way this occurs is if the phrase is read to mean 0.1 micron, because that is all the original application supports. Digital Control also contends that in the prosecution history of the ’332 patent 0.1 micron was relied on to distinguish the semipermeable membrane from that of the prior art. Therefore, semipermeable membrane should be limited to a membrane that screens out particles greater than 0.1 micron.

When interpreting the phrase "predetermined size" of the particles screened out by the semipermeable membrane, we first look to the ordinary meaning of the words. The phrase "predetermined size" is clearly broader on its face than any one numerical limitation, whether it be 0.1 micron or any other.

We next turn to the specification -- or in this case, the specifications -- to determine whether "predetermined size" should be given another meaning. Here, the substitute specification was substituted for the original prior to examination. The phrase "predetermined size" does not appear in the original specification, and references to 0.1 micron as a numerical limitation do occur in the original specification. However, in explaining what has been "described" in the application, the detailed description does not mention a numerical limitation for the size of particles the semipermeable membrane must prevent from entering the chamber. Rather, the application simply states "dust and smoke particles are kept out of the sample chamber by a sheet of semi-permeable membrane that spans apertures that extend through the tubular wall of the sample chamber." This description demonstrates that the purpose of the membrane is to keep dust and smoke particles out of the chamber. Thus, it teaches one of ordinary skill in the art that the membrane need only be of a porosity that keeps out dust and smoke particles. As such, the application as filed does not support limiting the invention to only screening out particles greater than 0.1 micron. Accordingly, the original specification would not limit "predetermined size" to 0.1 micron. 2

2 This is further supported by the fact that the examiner did not issue a new matter rejection in response to the filing of the substitute specification. As such, the examiner did not view the addition of the broad phrase "predetermined size" in the specification to be outside the scope of the original specification. See TurboCare Div. of Demag Delaval Turbomachinery Corp. v. GE, 264 F.3d 1111, 1118 (Fed. Cir. 2001) ("The fundamental inquiry is whether the material added by amendment was inherently contained in the original application.") (citations omitted). This lack of a new matter rejection "carries an especially weighty presumption of correctness." Brooktree Corp. v. Advanced Micro Devices, Inc., 977 F.2d 1555, 1574-75 (Fed. Cir. 1992).

We now turn to whether the substitute specification sheds any light on the construction of the claim term "predetermined size." We conclude that the substitute specification supports a construction of the claim term that does not place a numerical limitation on the particle size. For example, the specification states

"A second objective of the diffusion type gas sample chamber is to restrict access of unwanted contaminants, by size, so that they will not cause error in the measurement of the concentration of a particular gas, while at the same time permitting molecules of particular gas [sic] to freely enter and leave the sample chamber by diffusion only, through one or more filtering apertures."

"’332 patent, col. 3, ll. 28-34. The substitute specification also contains the statement from the original specification: "dust and smoke particles are kept out of the sample chamber by a sheet of semi-permeable membrane that spans apertures that extend through the tubular wall of the sample chamber." This demonstrates that the substitute specification supports a construction of "semipermeable membrane" that does not place a numerical limitation on the particle size, even though the preferred embodiment of the invention suggests that the predetermined size be 0.1 micron. See Electro Med. Sys. v. Cooper Life Scis., Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994) (stating "claims are not to be interpreted by adding limitations appearing only in the specification" and "particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments").

Next, we look to the prosecution history of the ’332 patent to determine whether "any interpretation . . . may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." Intellectual Prop. Dev., Inc. v. UA-Columbia Cablevision of Westchester, Inc., 336 F.3d 1308, 1316 (Fed. Cir. 2003); see also Inverness Med. Switz. GmbH v. Princeton Biomedical Tech Corp, 309 F.3d 1365, 1372 (statements made during prosecution were not a "clear and
unambiguous" disclaimer of a claim scope). We hold that there was no such disclaimer or disavowal.

Two prior art references referred to in the prosecution history are relevant to this issue: Miyazaki and Fujimura. The Miyazaki reference discloses an infrared gas analyzer that comprises a sample cell and a reference cell, both of which have the form of a spiraled cylindrical tube to achieve a long optical path. Gas is forced into the sample cell through a gas inlet and exits through a gas outlet. The Fujimura reference is an air pollution detector unit which is designed to allow a car's air conditioning system to automatically switch between inside and outside air in response to a build-up of pollutants in the car. The device is characterized by a tube with two open ends in which air is forced by the movement of the vehicle into one end of the tube and exits through the other end of the tube. The concentration of pollutants in the air is measured by beaming light from an element in the side of the tube across the diameter of the tube and back again to the detectors located on each side of the light-emitting element. The intake end of the tube is covered by a dust filter which excludes relatively large airborne particles -- it being necessary to pass smaller dust particles through so that their concentration in the air can be measured.

In the First Office Action on the Merits, the examiner rejected claim 1 over Miyazaki in view of Fujimura, explaining that Miyazaki does not use a filter for the aperture, but Fujimura teaches a filter and it would have been obvious to use Fujimura's filter in Miyazaki's device in order to keep dust out of the sampling tube. In response, the applicant stated

Neither Miyazaki nor Fujimura teach or suggest "a sheet of semipermeable membrane" as recited in Claim 1. The dust filter 2 of Fujimura is for presenting [sic] the entry of particles much larger than 0.1 micron; otherwise it would screen out the very particles that, by scattering the light, are essential for the operation of the instrument.

While the applicant did refer to 0.1 micron as the size of particles entering the chamber, he simply explained how the "membranes" would not work the same. The filter in Fujimura needed larger particles to enter the chamber such that pollution levels could be measured. In the claimed invention, however, particles of the size of those Fujimura was designed to let in were to be kept out, as they could affect the device's readings. Thus, the applicant argued that the proposed Miyazaki-Fujimura combination would not work as the claimed invention was intended, because it would let in particles that were too large. Nothing in the inventor's statement suggests a "clear and unambiguous disclaimer" of all membranes that do not screen out particles down to 0.1 micron in size.

Finally, Edwards argues that the doctrine of claim differentiation suggests that the term "predetermined size" cannot be synonymous with the limitation "0.1 micron" in claim 4. The doctrine of claim differentiation presumes that separate claims do not have the same scope. Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999). The doctrine is particularly applicable in situations in which a claim limitation stated in general terms is asserted to be limited to a numerical range in the specification and the same numerical range appears in a dependent claim. Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551 (Fed. Cir. 1996). In our analysis of the original and substitute specifications, it is apparent that "predetermined size" in claim 1 does not mean the same thing as 0.1 micron in claim 4.

Accordingly, the claim language itself, the specifications, the prosecution history, and the doctrine of claim differentiation all support a construction of the term semipermeable membrane in which "predetermined size" is not limited to 0.1 micron; rather, the limitation simply requires that the particles kept out of the chamber by the semipermeable membrane are of a predetermined size such as the size of dust and smoke particles.

As explained above, the district court also construed "semipermeable membrane" to contain an implicit thickness limitation: that it be a thin, soft pliable membrane with a thickness on the order of 25 to 50 microns.

Edwards argues that the court erred by importing the numerical range directly from the prior art discussion in the '332 patent's written disclosure because these were merely general descriptive words in the background section of the patent. Edwards further asserts that there is nothing in the remaining portion of the specification or the prosecution history which suggests such a limitation was intended by the applicant.

Digital Control counters that both the specification and the prosecution history support the district court's imposition of a thickness limitation. Specifically, Digital Control relies on the applicant's statement during the prosecution of the '332 patent that "Burough et al. [a prior art reference] make no use whatsoever of any semipermeable membrane." The theory is that because the applicant explained in the specification that the membrane is to be of the order 25-50 microns and then further
identified the thickness as a point of difference between his invention and Burough et al., the applicant intended to limit the thickness of his membrane to 25-50 microns and took the position that Burough et al.'s "several hundreds of microns thick" media was not a membrane.

Again, we start with the plain meaning of the claim terms. There is no suggestion in the specifications or the prosecution history that "semipermeable membrane" has anything other than its ordinary meaning. The term "semipermeable" means "partially permeable" or "allowing passage of certain, esp. small molecules or ions but barring others." The American Heritage College Dictionary 1240 (1997). "Membrane" is defined as "a thin soft pliable sheet or layer esp. of animal or vegetable origin," Webster's Third New International Dictionary 1408 (1986).

The substitute specification 3 explains that the semipermeable membrane must be "quite thin." '332 Patent, col. 2, ll. 63-64. The only mention of a suggested thickness of the semipermeable membrane occurs in the patent's discussion of the prior art. There the specification is comparing the claimed invention to the Burough et al. reference. Burough et al. discloses a device for measuring gas that includes a porous tube surrounding an enclosed column of air through which infrared radiation is beamed to measure its absorption by gas in the chamber. The specification explains that the porous material in Burough et al. is "several hundreds of microns thick," and contrasts that to the relatively thin semipermeable membrane of the claimed invention, which the specification says "is on the order of 25 to 50 microns thick." '332 Patent, col. 2, ll. 27-28.

Numerical ranges in the specification cannot, without more, be imported into the claims as limitations. See Modine Mfg. Co., 75 F.3d at 1551 ("Ordinarily a claim element that is claimed in general descriptive words, when a numerical range appears in the specification and in other claims, is not limited to the numbers in the specification or the other claims.") Here, there is nothing "more" suggesting a particular thickness range. In fact, there is no other mention of a numerical thickness limitation contained in the patent. Rather, the specification only suggests that the semipermeable membrane be "quite thin." Of course, because the applicant has distinguished his semipermeable membrane from the several hundreds of microns thick porous material of Borough et al., the claim limitation cannot be construed to cover a semipermeable "membrane" that is several hundreds of microns thick. The specification does not show that Edwards disavowed claim scope and limited the thickness of the membrane to a numerical range including "on the order of 25 to 50 microns." From the plain meaning of the term in view of the specification the semipermeable membrane is "thin" and has a thickness less than several hundred microns.

Nothing in the prosecution history changes this interpretation. In responding to a rejection directed at the 0.1 micron limitation in view of Burough et al., the applicant argued "Burough et al. make no use whatsoever of any semipermeable membrane." At most, the applicant is asserting that the semipermeable material used in Burough et al. is not a "membrane." Even interpreting the statement in this light does nothing to suggest that the applicant intended to disclaim membranes that had a thickness other than "on the order of 25 to 50 microns." Rather, the applicant is simply disclaiming calling something several hundreds of microns thick a "membrane."

Thus, we construe "semipermeable membrane" to be a "thin" or "quite thin" layer but with a thickness of less than several hundred microns and allowing the passage of airborne particles through it while preventing airborne particles larger than a predetermined size, including the size of dust and smoke particles.
shaft of the washer due to an impact [i.e., contact] from the clothes." (Chart at 6.) Whirlpool proposes instead that the term be construed to mean "sensing a torque occurring at a drive shaft of the washer due to a collision from the clothes." (Id.) For reasons already discussed, the Court will adopt Whirlpool's proposed construction. The term "sensing a torque occurring at a drive shaft of the washer due to an impact from the clothes" is therefore construed to mean "sensing a torque occurring at a drive shaft of the washer due to a collision from the clothes."

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(2) "sensing a torque occurring at a drive shaft of said washer due to the twist of clothes, to sense the distribution of impact applied to an agitator of the washer by said clothes"

The parties also dispute the term "sensing a torque occurring at a drive shaft of said washer due to the twist of clothes, to sense the distribution of impact applied to an agitator of the washer by said clothes," which appears in Claim 1. LG proposes that the term be construed to mean "sensing torque occurring at a drive shaft of the washer due to the bundling [i.e., uneven distribution] of clothes, to sense the distribution of impact [i.e., contact] applied to an agitator of the washer by the clothes." (Chart at 5.) Whirlpool proposes instead that the term be construed to mean "sensing a torque occurring at a drive shaft of the washer due to clothes that are entwined together, to sense the distribution of collisions between the clothes and the agitator of the washer." (Id.)

Comparing the parties' proposed constructions, the main issue is whether the term "impact" should be construed to mean "contact" or "collision[]." Figure 3 is an illustration of a washer to which the invention was applied. (474 Patent, col. 3, ll. 21-23.) The written description of Figure 3 states that "[i]n accordance with the present invention, the clothes twist determining apparatus comprises a clothes twist sensing unit 10 for sensing a torque occurring at the drive shaft 6 due to the distribution of impact applied to the agitator 8 and generating a clothes twist signal according to the sensed torque." (Id., col. 3, ll. 42-47.) The use of the word "applied" favors Whirlpool's argument that the term "impact" means "collision" rather than "contact." The written description also states that "[b]y the normal and reverse rotations of the agitator 8, the clothes 1 are agitated normally and reversely. The clothes 1 being agitated strike against the agitator 8, so that the agitator is subjected to an impact." (Id., col. 5, ll. 18-21.) The use of the word "strike" in describing how the "impact" is applied to the agitator further supports Whirlpool's proposed construction.

The claimed invention seeks to distinguish twisted and untwisted clothes based on the "distribution of impact applied to the agitator . . . ." (Id., col. 3, ll. 42-47.) LG, however, fails to explain how determining the distribution of "contact" -- for example, differences in the amount of surface area in contact with the agitator -- would affect the torque occurring at the drive shaft.

The Court will therefore construe the term "sensing a torque occurring at a drive shaft of said washer due to the twist of clothes, to sense the distribution of impact applied to an agitator of the washer by said clothes" to mean "sensing a torque occurring at a drive shaft of the washer due to clothes that are entwined together, to sense the distribution of collisions between the clothes and the agitator of the washer."

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8. Sensing

The meaning of the term "sensing" is in dispute. It appears in the following context: "sensing an amount of concentrated detergent being released from said tumbling fabric." (370 patent, claims 8, 15.)

Whirlpool argues for the following construction: "This claim step means that the washer detects the level or amount of detergent solution in the washer, and perceives a particular level or amount of detergent solution as an indication that the fabric is (or is not) fully saturated with detergent solution. Sensing may occur regardless of whether there is pooling of detergent solution in the wash chamber."
LG argues for the following construction: "Sensing an amount of concentrated detergent solution that is released from the tumbling fabric (i.e., not sensing the level of a pool of detergent solution in the wash chamber as the fabric tumbles)."

The dispute is not about the meaning of the term "sensing," but rather what is being sensed. According to LG, the word "sensing" must be understood in its context in the claim, which discusses "sensing an amount of concentrated solution being released from said tumbling fabric." (emphasis added) In LG's device, the detergent solution is located in a pool that reaches above the lower portion of the spin drum containing the clothes. Thus, the fabric never "releases" solution, making it impossible to "sense" the "amount of...solution being released." This system, LG argues, contrasts with Whirlpool's disclosed systems which keep the water level below the wash chamber and enable the machine to "sense" the amount of solution that drips down (i.e., is "released") from the clothes into the pool.

Whirlpool argues that LG is attempting to read a negative limitation into the claim based upon how a Whirlpool machine may work, when no such limitation arises from the claim itself. See RF Delaware, Inc. v. Pacific Keystone Techs., Inc., 326 F.3d 1255, 1263 (Fed. Cir. 2002) (a basic claim construction canon is that one may not read an unstated limitation into a claim).

The Court disagrees with Whirlpool because regardless of the specification, prosecution history, or how Whirlpool's machines may operate, the claim language supports only LG's construction. The claim does not, as Whirlpool would now have it, describe sensing an amount of solution in the wash chamber. Rather, it requires sensing the amount of solution released from the fabric. It defies both the ordinary meaning of "release" and common sense to suggest that clothes sitting in a pool of solution can at the same time "release" an amount of solution that can then be "sensed." The only logical view of the claim is that it requires a method whereby the clothes are elevated above the pool of solution, the level of which can be measured (i.e., "sensed") to determine how much solution drips down from (i.e., is "released" from) the clothes. Whirlpool's proposed construction would impermissibly read the phrase "released from said tumbling fabric" out of the claim. See Apple Computer, Inc. v. Articulate Sys., Inc., 234 F.3d 14, 25 (Fed. Cir. 2000) (rejecting interpretation of language in a claim so broadly as to read the limitation out of the claim).

Accordingly, the Court adopts LG's proposed construction of the phrase "sensing an amount of concentrated detergent being released from said tumbling fabric."

10. sensing system

The term "sensing system" appears in claims 25 - 53 of the '213 patent and in claims 10 - 12 of the '283 patent. The plaintiff proposes a construction of "a system for transmitting an output signal in response to the causing of contact on the work platform." The defendant counters with "system that senses location and identification information for a block." The specification fails to support the defendant's requirement that the sensing system sense both object location information and identification information. Additionally, the specification fails to support the plaintiff's proposed requirement that the sensing system transmit an output signal. Therefore, the court concludes this term means "a system that senses the location and/or identification information of objects."

11. sensors

The term "sensors" appears in claims 1 - 24 of the '874 patent and in claims 1 - 20 of the '786 patent. The plaintiff proposes a construction of "one or more elements that cooperate to transmit an output signal in response to the placement of an object on the work platform." The defendant counters with "system that senses location and identification information for a block." In accordance with the above construction for "sensing system," the court concludes the term "sensors" means "one or more devices for sensing the location and/or identification information of objects."
a. "sensing the weight of an occupying item of a seat of the vehicle"

Plaintiff states that the court need not construe the claim because the ordinary meaning is sufficient, whereas Defendant maintains that the court should construe the claim to mean "measuring the weight of an item occupying a vehicle seat. Weight is the calculation of the force gravity exerts on the item." (Chart at 26.) Plaintiff and Defendant both raise arguments similar to previous claims regarding the interpretation of "weight," "measuring," and "sensing."

Plaintiff cites the specification for the proposition:

The system can also include a weight sensing system coupled to a seat in the vehicle for sensing the weight of an occupying item in the seat. The weight sensing system is coupled to the processor whereby the processor controls deployment or actuation of the occupant restraint or protection device based on the state of the vehicle and the weight of the occupying item of the seat sensed by the weight sensing system.

'080 Patent col. 7 l.14-21. As with claims regarding similar language from other patents, Plaintiff argues that the precise, numerical value of weight is never calculated and to adopt Defendant's proposed construction would be to limit Plaintiff's claim. (Pl.'s Br. At 45-46.) Plaintiff further argues that "sensing" is not the same as "measuring."

In response, Defendant argues that not only does the ordinary meaning of the claim support Defendant's proposed construction, so does the patent specification, stating, for example: "By combining the outputs of the accelerometers and the strain gages and appropriately processing the same, the mass and weight of the object occupying the seat can be determined." '080 Patent col. 24:50-53.

The court finds that the language is substantially similar to that of Claim 18 of the '516 Patent and will construe this claim in a similar manner for the reasons stated above. Therefore, the court will construe "sensing the weight of an occupying item of a seat of the vehicle" as "sensing or measuring the weight of an item occupying a seat of the vehicle." See '516 Patent Claim 18.

IV. Interpretation of the Term "Sensor"

The parties dispute the meaning of the term "the sensor" in claim 107 of the 855 Patent and claims 12, 20, and 47 of the 480 Patent. Hunter Douglas argues that these claims are indefinite under 35 U.S.C. § 112, P 2 because they refer to a non-existent element called "the sensor" in preceding claims from which they depend.

Under 35 U.S.C. § 282, a patent is presumed valid. See 35 U.S.C. § 282. The defendant has the burden of proving facts by clear and convincing evidence establishing that the patent is invalid. See North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1579 (1993). Indefiniteness is a question of law. See id. The determination of whether a claim is invalid as indefinite "depends on whether those skilled in the art would understand the scope of the claim when the claim is read in light of the specification." Id. While claims may be rendered indefinite for lack of antecedent basis, such claims may nevertheless remain definite when read in light of the specifications. See Slimfold Mfg. Co. v. Kinkead Indus., Inc., 810 F.2d 1113, 1116-17 (Fed. Cir. 1987); Messerschmidt v. United States, 29 Fed. Cl. 1, 42 (1993).

The language of the disputed claims refers to "the electronic circuit [that includes] a switch electrically connected to the sensor for receiving the control signal." Neither the disputed claims nor the claims from which they depend refer to or define a sensor element. The independent claims, however, do refer to a "control signal generator for generating a control signal." Hunter Douglas argues that it is unclear whether the term "the sensor" refers to "the sensor for receiving the control signal" from the control signal generator of the independent claims or whether "the sensor" is part of the control signal generator itself. Hunter Douglas argues further that the specifications do not resolve the ambiguity because they refer to two sets of sensors, one that generates signals and one that receives those signals.

Contrary to Hunter Douglas' argument, the specifications of the patents at issue do resolve the ambiguity. The specifications refer to "[a] control signal generator, preferably a daylight sensor 28 . . . [that is] electrically connected to electronic
components within the actuator 10 to send a control signal to the components." 480 Patent, col. 9, lines 30-38; 855 Patent, col. 8, lines 22-30. The specifications also refer to "another control signal generator, preferably a signal sensor 29 . . . [that is] electrically connected to the electronic components within the actuator 10 [and] that can generate an electrical control signal to activate the actuator 10." 480 Patent, col. 9, lines 43-58; 855 Patent, col. 8, lines 34-49. Thus, it appears that the term "the sensor" in the disputed claims refers to the control signal generator in the independent claims.

Hunter Douglas is correct that the specifications refer to a second set of sensors, namely the "first and second stages 144, 146 of a type 4538 activity sensor." 480 Patent, col. 13, lines 39-40; 855 Patent, col. 12, lines 26-27. But the specifications also make clear that these devices receive the signals produced by the signal sensor 29 through the means of an electrically connected "switch." Thus, it appears clear that the "switch" in the disputed claims is the device that "receives" the control signal generated by "the sensor."

Because the specifications resolve the ambiguity of the claim language, the Court is inclined to find that the claims are not invalid as indefinite. Furthermore, the Court is also inclined to find that one of ordinary skill in the art would understand the term "sensor" to mean a "device designed to respond to a physical stimulus (as heat or cold, light, a particular motion) and transmit a resulting impulse for interpretation or measurement or for operating a control." Webster's Third New International Dictionary (unabridged edition) (1986), p. 2068.

v. Claims 7 and 8

Claim 7 requires "sensor means for providing an output signal when said article feeder element is in a predetermined position." Magistrate Judge Valdez previously concluded that the term recited sufficient structure to avoid mean-plus-function treatment and left the term to its ordinary meaning of "a sensor." (R. 191 at 21-23.) The parties did not object to that decision and it was adopted by Judge Manning. Nevertheless, Special Master Harmon disagreed with the prior decision to not construe the term, found that there was insufficient structure to rebut the presumption, and recommended that this Court construe the limitation to include only those sensor structures provided in the specification. (R. 471 at 27-29.) Goss objects to this new construction. Claim 8 depends upon claim 7, so the construction of this clause is applicable to claim 8.

As discussed above, whether there is sufficient structure to avoid means-plus-function treatment depends on what structure is included in the claim language. See Enviro Corp. v. Clestra Cleanroom, Inc., 209 F.3d 1360, 1365 (Fed. Cir. 2000) ("baffle means" recited sufficient structure in the term "baffle" to rebut the § 112, ¶6 presumption); Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531-32 (Fed. Cir. 1996) (limitation of "perforation means for tearing" was not a means-plus-function claim because the word "perforation" constituted sufficient structure); but see Biomedino, 490 F.3d at 950 (concluding that "control means" did not rebut § 112, ¶6 presumption because it could not be implied that "control" meant "controller"). Moreover, a structural term used in the claim language is sufficient even if the claim term used to designate structure covers a broad class of structures by their function. Lighting World, 382 F.3d at 1359-60.

Here, "sensor" provides sufficient structure for performing the recited function. While it may cover a broad class of structure, as was Special Master Harmon's concern, it is still a definite structure. See Lighting World, 382 F.3d at 1359-60. Thus, the Court sustains Goss's objection and rejects Special Master Harmon's recommendation that the Court give "sensor means" means-plus-function treatment.

2. "two or more sensors"

KLA maintains that "two or more sensors" as used in the '325 patent means two or more PMT type detectors. D.I. 338 at 14-18. ADE argues that the phrase should mean two or more groups of sensors. D.I. 316 at 20-25.

This court holds that "two or more sensors" as used in claims 26 and 43 of the '325 patent means two or more PMT type
detectors. Referring to Figure 4, reproduced below, of the '325 patent, the written description provides that:

"Each collector channel 10a-b and 11a-b includes a lens system 113 that collects scattered light. A series of mirrors 114a-c reflect the light so that it is imaged onto a photomultiplier tube (PMT) 115." The PMT 115 converts the light impinging thereon into an electrical signal having a voltage level that is proportional to the light intensity."

'325 at 6:39-49.

This construction is also supported by statements made by the inventors during patent prosecution. Originally, claims 36 and 43 (numbered claims 39 and 45 during prosecution) contained the phrase "a two-dimensional array of sensors." D.I. 338 at 16. The examiner rejected these claims seeking clarification of the meaning of "a two-dimensional array of sensors." Id. The applicants amended the claims replacing the phrase "a two-dimensional array of sensors" with the phrase "two or more sensors" and clarified that these sensors referred to Figures 1, 2, and 10 of the '325 patent. Id. Figures 1, 2, and 10 depict PMT type detectors (See Figure 4 and '325 7:39-45 describing collector channels 10a-b and 11a-b). '325 at 6:39-45. Clear support for KLA's claim construction is found in the intrinsic record of the '325 patent. Accordingly, this court holds that "two or more sensors" as used in the '325 patent means two or more PMT type detectors.

Independent claim 1 of the '857 patent is the only independent claim. It provides:

1. A method of trimming the width of venetian blinds of the type having a head rail, a plurality of slats and a bottom rail, each of said head rail, said slats and said bottom rail having first and second opposed ends, said method comprising the steps of:

   placing a first end of said head rail of said venetian blind through a corresponding head rail opening in a support body and placing a first end of said bottom rail and a first end of said slats through respective openings in said support body, whereby respective first ends of said head rails said bottom rail and said slats extend through said openings;

   moving said first ends of said head rails said bottom rail and said blind slats through said openings in said support body and into respective aligned further openings in a cutting means, said cutting means including a first cutter for cutting said head rail and a separate second cutter for cutting at least said slats; and,

   moving said first and second cutters to cut at least said head rail, and said slats.

'857 patent, col. 12, l. 66, to col. 13, l. 18 (emphasis added). One of the embodiments illustrated in the specification uses a die plate that slides diagonally to cut the head rail and a blade mounting frame that moves horizontally to cut the slats. See '857 patent, figures 1-7.

On July 16, 2001, Springs filed suit charging Novo with infringing claims 1, 2, 8, and 10 of the '857 patent through the manufacture and sale of cut-down machines that employ the claimed methods. In Novo's accused device, a single plate with multiple blades cuts the head rail, bottom rail, and slats. The plate has a series of openings for the rails and slats, and it has blades that correspond to the openings. When the plate is moved, the blades cut the rails and slats. Novo moved for summary judgment, arguing that its device did not employ "separate" cutters within the meaning of the asserted claims. The district court granted Novo's motion. The court construed the term "separate" to mean capable of independent movement. The court rejected Springs's contention that "separate" means simply different cutting surfaces. Springs's construction, according to the district court, would render the term "separate" superfluous in the phrase "separate second cutter" in light of the presence of the word "second." Instead, the court looked to dictionary definitions of the term "separate," including "detached, disconnected or disjoined," to conclude that the cutters must "have the potential for independent movement." The court further held that the specification and prosecution history of the '857 patent confirmed that the inventor intended to limit the claimed invention to detached and independently moveable cutters.
In light of that claim construction, the district court held that there was no genuine issue of material fact as to whether Novo's machines infringed, because Novo's device did not have two cutters that were moveable independently of one another. Instead, the blades in the Novo machine were all attached to the same plate, and when that plate moved so did all the blades.

II

Springs argues that the district court erred in its claim construction and therefore erred in granting summary judgment to Novo. According to Springs, the term "separate" does not require the cutters to be independently movable, but only requires that the machine have distinct cutting edges. Thus, in Springs's view, the term "separate" distinguishes the claimed cutting means from a single, unbroken cutting edge that cuts the head rail and then the slats.

While the claim language and specification may only allow, rather than dictate, the court's construction of the term "separate," the prosecution history of the '857 patent confirms that the district court's interpretation is correct. In the first official action, the examiner rejected all of the original claims on several grounds, including that they were either anticipated by or obvious in light of U.S. Patent No. 5,816,126 to Pluber. The Pluber patent claims a device in which three blades are mounted on one sliding support plate, which is moved by a lever. The head rail, slats, and the bottom rail are cut by these three blades simultaneously as part of a single motion. The examiner explained that

Pluber discloses the same invention [as applicant], a method of trimming the width of Venetian blinds, as claimed including the steps of: placing a selected end of the head rail, bottom rail and the blind slats through corresponding . . . slat openings in a support body . . . ; placing the selected ends of the head rail, bottom rail and the blind slats through aligned corresponding openings in a cutting means . . . ; moving the cutting means to cut the head rail, bottom rail, and blind slats.

The applicant submitted an amendment modifying the claims, distinguishing Pluber from the claimed invention, and arguing that Pluber was not prior art because it postdated the grandparent application. The applicant's accompanying remarks noted that extra effort is required to cut the head rail because of its steel construction. The applicant stated: "It is for this reason that the Applicant provides two entirely separate movement means, one for cutting the head rail and the other for cutting the bottom rail and the blind slats." In amending claim 1, the applicant replaced the language "a cutting means" with "a cutting means, said cutting means including a first cutter for cutting said head rail and a separate second cutter for cutting at least said slats." The applicant also modified the specification to include the language "with the cutting stroke of the bottom rail and the blind slats being performed independently of the cutting stroke of the headrail cutting means."

In distinguishing the '857 claims from the Pluber patent, the applicant stated: Pluber discloses a somewhat simplistic form of guillotine cutter. All of the blades are mounted on a single plate . . . operated by a single arm 55. The single plate 22 carries three blades, one for cutting the head rail, one for cutting the blind slats and one for cutting the bottom rail. Pluber does not provide two separate cutters for cutting (1) the blind slats and bottom rail, and (2) the head rail. Operation of Pluber would require a very considerable manual effort. He shows only one movement arm. This has to move all three cutting blades. . . . The present invention has been devised to avoid this problem by providing one cutter for the head rail and a separate cutter for the bottom rail and slats.

In the second official action, the examiner continued to reject claim 1 and the other claims as anticipated by the Pluber patent or obvious in light of it. The examiner rejected the applicant's contention that Pluber lacked two separate cutters, noting that "each of the cutters . . . are separably mounted to the plate 22 and separately cut a portion of the blinds. Therefore, the phrase 'a first cutter . . . and a separate second cutter' does not distinguish the instant application from the Pluber reference even though the cutters . . . are all mounted to the single plate 22."

In response to that office action, the applicant argued that Pluber was not a prior art reference. In addition, the applicant adhered to his argument distinguishing his invention from Pluber:

Applicant maintains the arguments set forth in the prior Amendment concerning distinguishing of Pluber from the claims previously presented, on the merits. However, in light of the Examiner's concession that Claim 1 finds full support in the application filed September 11, 1995, it is not believed necessary to go any further than to point out that fact and request a Notice of Allowance.
The examiner issued a notice of allowance without further comment.

It is well established that "the prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Pall Corp. v. PTI Techs. Inc., 259 F.3d 1383, 1392, 59 USPQ2d 1763, 1769 (Fed. Cir. 2001); Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1676 (Fed. Cir. 1995); see also Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1304, 41 USPQ2d 1364, 1368 (Fed. Cir. 1997) ("By distinguishing the claimed invention over prior art, an applicant is indicating what the claims do not cover, he is by implication surrendering such protection."). The disclaimer, however, must be effected with "reasonable clarity and deliberateness." N. Telecom Ltd. v. Samsung Elecs. Co., 215 F.3d 1281, 1294, 55 USPQ2d 1065, 1075 (Fed. Cir. 2000).

Springs concedes that the applicant amended the claims to include the word "separate" in an effort to distinguish the invention from Pluber. We agree with the district court that, in distinguishing Pluber, the applicant disclaimed a single plate with multiple blades or cutting edges on that single plate. The applicant specifically noted that the claimed method provided "separate movement means," thus restricting "separate" cutters to those cutters capable of independent movement.

The district court correctly stated that Novo's single plate with attached blades is "similar to the blade configuration of the preferred embodiment in Pluber." Given that the Pluber reference and Novo's device are nearly identical with respect to the arrangement of their cutting edges, it is clear that the applicant disclaimed coverage of Novo's device.

Springs contends that the examiner did not agree that the amended claims distinguished over Pluber and that the claims therefore should not be limited based on the applicant's argument that they did. Springs argues that the examiner allowed the claims based on an entirely distinct rationale: that Pluber was not prior art. In fact, it is not clear from the record why the examiner allowed the claims. While the examiner expressed doubt in the second office action that the amended language of the claims was sufficient to distinguish over Pluber, it is not clear that the examiner adhered to that position at the time of allowance. The notice of allowance offers no explanation of the examiner's reasoning.

In any event, the examiner's remarks do not negate the effect of the applicant's disclaimer. In Desper Products, Inc. v. QSound Labs, Inc., 157 F.3d 1325, 1336, 48 USPQ2d 1088, 1096 (Fed. Cir. 1998), when the applicant amended the claims and made accompanying remarks to overcome a rejection based on another patent, we stated that the fact that "the prosecution shifted to a different focus does not blunt the impact of those remarks made to overcome the prior rejection." See also Laitram Corp. v. Morehouse Indus., Inc., 143 F.3d 1456, 1462, 46 USPQ2d 1609, 1614 (Fed. Cir. 1998) ("Regardless of the examiner's motives, arguments made during prosecution shed light on what the applicant meant by its various terms. . . . The fact that an examiner placed no reliance on an applicant's statement distinguishing prior art does not mean that the statement is inconsequential for purposes of claim construction."). Because an examiner has the duty to police claim language by giving it the broadest reasonable interpretation, see In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000), it is not surprising that an examiner would not be satisfied with the applicant's insistence that particular claim language distinguishes a prior art reference, but that a court would later hold the patentee to the distinction he pressed during prosecution.

The public notice function of a patent and its prosecution history requires that a patentee be held to what he declares during the prosecution of his patent. A patentee may not state during prosecution that the claims do not cover a particular device and then change position and later sue a party who makes that same device for infringement. "The prosecution history constitutes a public record of the patentee's representations concerning the scope and the meaning of the claims, and competitors are entitled to rely on those representations when ascertaining the degree of lawful conduct. . . . Were we to accept [the patentee's] position, we would undercut the public's reliance on a statement that was in the public record and upon which reasonable competitors formed their business strategies." Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc., 222 F.3d 951, 957, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000). See also Vitrronics Corp. v. Conceptron, Inc., 90 F.3d 1576, 1583, 39 USPQ2d 1573, 1577 (Fed. Cir. 1996) ("the claims, specification, and file history . . . constitute the public record of the patentee's claim, a record on which the public is entitled to rely"). In this case, a reasonable competitor, reviewing the amendments and statements made by the applicant to distinguish the claimed invention from Pluber, would conclude that the claimed invention did not cover a device like Pluber's. If the applicant mistakenly disclaimed coverage of the claimed invention, then the applicant should have amended the file to reflect the error, as the applicant is the party in the best position to do so. The applicant, however, never retracted any of his statements distinguishing Pluber nor did he acquiesce in the examiner's comments regarding the overlapping scope of Pluber. Springs therefore must be held to the restrictive
We are also unpersuaded by Springs's argument that the statements made during prosecution should be disregarded because the distinguishing features "were not and are not reflected in the claims" and thus the statements simply constituted an error by the prosecuting attorney that should not be binding on the applicant. Here, as in Hockerson-Halberstadt, there is no indication that the detailed distinction of Pluber was simply an inadvertent misstatement by the prosecuting attorney for which the applicant should be given a mulligan. The statements distinguishing Pluber were detailed, consistent, and repeated. A reasonable competitor would have believed that the applicant's disclaiming statements were not a mere mistake. This case is thus distinguishable from Biotec Biologische Naturverpackungen GmbH & Co. KG v. Biocorp, Inc., 249 F.3d 1341, 1348, 58 USPQ2d 1737, 1741-42 (Fed. Cir. 2001), in which the court held that "a person of reasonable intelligence would not be misled into relying on [an] erroneous statement" made during prosecution because the statement was contrary to the plain language of the claims and specification as well as other statements in the same document. As in Desper Products, we are interpreting claim language, not importing limitations into the claim. There is nothing in the prosecuting attorney's remarks that is at odds with anything in the specification or the claims.

Lastly, Springs contends that the district court's claim construction had the effect of excluding one of the embodiments in the '857 patent, illustrated in Figures 8 through 10, and thus cannot be correct. The district court, however, concluded that the embodiment was consistent with its construction requiring capacity for independent movement. The court stated that the use of the word "synchronism" in the specification to describe this embodiment "implies a capacity for independent movement since that term is generally applied only to independently movable members that are compelled to move coincidentally." The court thus determined that the embodiment in Figures 8 through 10 discloses "independently movable cutters, though they are configured to move sequentially in response to a single manual control."

We reject Springs's argument that Figures 8 through 10 require a claim construction different from that employed by the district court. First, we have adopted claim constructions excluding an embodiment when the prosecution history requires the claim construction because of disclaimer. See Rheox, Inc. v. Entact, Inc., 276 F.3d 1319, 1327, 61 USPQ2d 1368, 1373-74 (Fed. Cir. 2002). Second, we agree with the district court that the construction of the term "separate" to mean independently moveable does not exclude the embodiment in Figures 8 through 10. The lost motion linkage in that embodiment causes the two cutters to move sequentially: the head rail is first cut and then after the arm rotates further the slats are cut, thus providing a mechanical advantage. One could move the handle some distance to cause the die plate to move and cut the head rail, stop pushing the handle, and thus not move the blade and not cut the slats. In each of the remaining embodiments the cutters are unconnected and independently moveable.

Because the patentee explicitly stated during prosecution that his claims differed from a single plate with multiple cutting edges, we construe the disputed claims to exclude the disclaimed single plate device. Based on that construction, we uphold the district court's grant of summary judgment of noninfringement and denial of summary judgment of infringement.

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C. Claim Construction of "separate from but adjacent to"

Claims 3, 4, 7, and 8 of the '511 Patent refer to "said second visual display being separate from but adjacent to said first visual display." Plaintiff argues that this term means that the visual displays need only be near, or not far from, each other but need not be shown on two separate monitors, and that the images themselves must be distinct and not integrated. Defendants argue that the term requires that the visual displays are shown on separate monitors or displays that are physically separate from but adjacent to each other.

Both a person of ordinary skill in the art and a lay person would understand that there are two visual displays, which must be detached but near each other. However, nothing in the language of the claim suggests that the images cannot be "integrated," or that they must be shown on separate monitors. Furthermore, neither the specification nor the prosecution history provides any guidance on this term. Aside from the language of the claim itself, the intrinsic evidence is not particularly helpful for claim construction. Thus, the Court finds it appropriate to consult the dictionary to define the term "separate from but adjacent to." Merriam-Webster dictionary defines "separate" as "set or kept apart; detached; existing by itself" and "adjacent" as "not distant; nearby." Accordingly, the Court FINDS that the term "separate from but adjacent to" as
defined in the '511 Patent means that the two visual displays must be near, or not far from, each other.

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E. "separate switch(es)"

Minerva proposes the following definition for the terms "separate switch" and "separate switches": "two or more controls for making, breaking, or changing connections in an electric circuit." The defendants assert that "separate switch" should be construed as "a plurality of independent, mechanically actuated device(s) for making, breaking, or changing connections in an electric circuit." The term "separate switches" appears in several claims in the following manner: "separate switches for separately operating said microphone for capturing sounds and said camera for capturing said still or continuing images." (E.g., '783 Patent, Claim 28). The terms "switch" or "separate switch" appear nowhere in the specification. The parties dispute whether "separate switches" must be "mechanically actuated."

According to the defendants, the plain and ordinary meaning of "switch" is "a manual or mechanically actuated device for making, breaking or changing connections in an electrical circuit." McGraw-Hill Dictionary of Scientific and Technical Terms 1968 (5th ed. 1994). In addition, the Federal Circuit has previously construed the term "a plurality of discrete switches" to mean "two or more distinct and separate manual or mechanically actuated devices for making, breaking, or changing the connections in an electric circuit." NCR Corp. v. Palm, Inc., 120 F. App'x 328, 331-32 (Fed. Cir. 2005). Finally, the defendants argue that the specification discloses only mechanically actuated push buttons, and the term should not be construed more broadly than what the patentee disclosed.

Minerva responds that the plain and ordinary meaning of "switch" does not require a mechanical limitation. The plaintiff cites a dictionary definition of "switch," which states, "a device for turning on or off or directing an electric current, or making or breaking a circuit." The Random House College Dictionary (revised ed. 1988). Minerva also reiterates that it is improper to limit a claim to the disclosed embodiment. Liebel-Flarsheim, 358 F.3d at 906.

"[T]he context in which a term is used in the asserted claim can be highly instructive." Phillips, 415 F.3d at 1314. In the patents at issue, the separate switches are used to operate the device's microphone and camera. It is implied that the human user is who operates the separate switches. Thus, the switches in this context are not circuit elements but mechanical devices, such as the disclosed push buttons, for humans to operate. Therefore, "the court construes the term "separate switches" to mean "a plurality of distinct, mechanically actuated device(s) for making, breaking, or changing connections in an electric circuit.""

GO BACK

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A. Claim 1: "separated apart and disconnected from each other"

The first dispute concerns a phrase in paragraph three of claim one of the '180 patent, which states that "the diffuser plate" is comprised of, inter alia:

- a plurality of curvilinear walls extending from said second side to define air chambers therebetween which are open to corresponding said air inlet apertures, each said curvilinear wall extending from a corresponding curved wall toward, but terminating prior to reaching said shaft aperture, and wherein said curvilinear walls are separated apart and disconnected from each other.

'180 patent, Cl.6, L.54-60 (emphasis added). See Exhibit 1: '180 patent. The phrase in dispute is "separated apart and disconnected from each other."

Johnson argues that "separated apart and disconnected from each other" means "not joined to one another by virtue of a corner or other structural feature that extends from the second side of the main body portion." Johnson supports this definition with two arguments. First, Johnson argues that the prosecution history reveals that Ametek acted as its own

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lexicographer and clearly set forth this explicit definition for the disputed claim language. Specifically, Johnson argues that its proposed definition is "the exact one given by" Ametek "and their counsel during the prosecution of the '180 patent." Second, Johnson argues that Ametek disavowed the ordinary scope of the disputed claim language "by amending the claim and expressly distinguishing it from the Havens patent . . ."

Ametek responds, first, that Johnson's proposed definition is an attempt to "improperly read an extraneous limitation into the claim with reference to the accused product in a veiled attempt to avoid infringement." Second, Ametek responds that Johnson's definition has "no basis in the claim . . . specification or drawing."

Instead, Ametek argues that the court should give "separated apart and disconnected from each other" its dictionary definition which is, according to Ametek, "set at a distance in place or position and individually divided."

For the reasons set forth below, the court concludes Ametek used the disputed phrase, "separated apart and disconnected from each other", in the prosecution history and claims 8 of the '180 patent to mean "not joined to one another at their ends by any structural feature."

--- Footnotes ---

8 The specification does not use the disputed phrase. Accordingly, the court will not use the specification to define the disputed phrase.

--- End Footnotes ---

A. Prosecution History

1. Acting As One's Own Lexicographer

Johnson first argues that the prosecution history reveals that Ametek acted as its own lexicographer by defining the disputed claim language to mean "not joined to one another by virtue of a corner or other structural feature that extends from the second side of the main body portion." Ametek responds that it did not act as its own lexicographer. The court agrees with Ametek.

A patent applicant can act as its own lexicographer by giving a claim term "a meaning 'inconsistent with its ordinary meaning'". Merck & Co. v. Teva Pharm., USA, Inc., 395 F.3d 1364, 1378 (Fed.Cir. 2005). However an applicant seeking to give a claim term a meaning other than its ordinary meaning must do so "with reasonable clarity, deliberateness, and precision . . . so as to give one of ordinary skill in the art notice of the change." In re Paulsen, 30 F.3d 1475, 1480 (Fed.Cir. 1994)(concluding the "patent does not clearly redefine the term 'computer' such that one of ordinary skill in the art would deem it to be different from its common meaning"). See also Merck & Co., Inc. v. Teva Pharm., USA, Inc., 395 F.3d 1364, 1370 (Fed. Cir. 2005)(noting "the Federal Circuit has repeatedly emphasized that the statement in the specification must have sufficient clarity to put one reasonably skilled in the art on notice that the inventor intended to redefine the claim term").

For example, in Merck & Co., Inc. v. Teva Pharm., USA, Inc., 395 F.3d 1364 (Fed.Cir. 2005), the Federal Circuit concluded that a district court had erred when it concluded that a patentee had acted as its own lexicographer. Specifically, the Federal Circuit reasoned that the "passage" that the district court had relied on was "ambiguous" and "amenable to a second (and more reasonable) interpretation". Id. at 1370-71. As such, the patentee's statement did not amount to the patentee "clearly setting out its own definition with 'reasonable clarity, deliberateness, and precision.'" Id. at 1371.

Johnson argues that Ametek acted as its own lexicographer when it wrote to the USPTO and distinguished the Havens patent from the '180 patent. Specifically, Ametek requested an amendment to the '180 patent,

which sets forth that the curvilinear walls [in the '180 patent] are separated apart and disconnected from each other. In other words, the curvilinear walls are not joined to one another by virtue of a corner or other structural feature that extends from the second side of the main body portion.
(emphasis added). Ametek argues that in the second sentence of this excerpt, Ametek was simply describing the differences between the prior art and the '180 patent. Ametek argues that it was not providing a new definition for the phrase "separated apart and disconnected from each other."

The court concludes that at the very least the excerpt is ambiguous. To act as one's own lexicographer, the patent applicant must provide a new definition of the disputed phrase with deliberateness, precision, and clarity. The prosecution history of the '180 patent lacks such a deliberate, precise or clear attempt by Ametek to invoke its power to act as its own lexicographer. Accordingly, the court concludes that Ametek did not act as its own lexicographer with respect to the phrase "separated apart and disconnected from each other."

2. Disavowal of Claim Scope

Johnson next argues that during the prosecution of the '180 patent, Ametek disavowed the full scope of meaning that the disputed claim language would otherwise have. Ametek argues that it did not disavow any claim scope. The court concludes that Ametek partially disavowed the scope that the disputed phrase would otherwise have.

A patent's prosecution history "may demonstrate that the patentee intended to deviate from a term's ordinary and accustomed meaning" by showing that "the applicant characterized the invention using words or expressions of manifest exclusion or restriction" before the USPTO. Teleflex, Inc. v. Ficosa N. Amer. Corp., 299 F.3d 1313, 1326 (Fed.Cir. 2002). Examination of a prosecution history will "limit[] the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed.Cir. 1995). In other words, "claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers." Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed.Cir. 1995).

The prosecution history of the '180 patent reveals that Ametek added the phrase "separated apart and disconnected from each other" to claim one of the '180 patent in an apparent attempt to distinguish the '180 patent from the Havens patent. Ametek described the Havens patent to the USPTO examiner as having "adjacent vanes [which] are connected to one another near the center of air guide 25 at the corners 41. As such, the air flowing between the adjacent vanes is sharply re-directed by the corners 41"(emphasis added). See Exhibit 2: Havens patent. In other words, Ametek pointed out to the USPTO that in the Havens patent the ends of the curvilinear walls were "connected to one another" so that when the air flowed between the curvilinear walls inward the air stopped at the connected ends of the curvilinear walls. Therefore, the air in Havens never reached the opening that ran axially through the center of the diffuser plate.

After pointing out the problems with the Havens patent, Ametek requested an amendment that would clarify the differences between the '180 patent application and the Havens patent. Specifically, Ametek proposed an amendment to proposed claim six (issued claim one) that

sets forth that the curvilinear walls [in the '180 patent] are separated apart and disconnected from each other. In other words, the curvilinear walls are not joined to one another by virtue of a corner or other structural feature that extends from the second side of the main body portion. This feature is clearly not taught or suggested by the Havens reference nor does any of the prior art made of record provide such a feature with all the other claimed elements

(emphasis added).

Ametek emphasized to the examiner that one distinguishing feature of the '180 patent application was that because the curvilinear walls were "separated apart and disconnected from each other" air could flow between the curvilinear walls radially inward, and then into the air chamber running axially through the diffuser. The examiner accepted the amendment, added the phrase in dispute to claim one, and issued the '180 patent.

The court concludes that Ametek's statements to the USPTO constituted a partial disavowal of claim scope. Ametek used the phrase "separated apart and disconnected from each other" in writing to the examiner to emphasize that in contrast to the Havens patent, the '180 patent had no structural feature blocking the air from flowing inward between the curvilinear walls and into the axial chamber.

The court has not fully adopted the definition of the phrase that Johnson urges. Johnson argues that the meaning of the
disputed phrase is "not joined to one another by virtue of a corner or other structural feature that extends from the second side of the main body portion" (emphasis added). Johnson derives this definition from the sentence in the prosecution history in which Ametek states: "In other words, the curvilinear walls are not joined to one another by virtue of a corner or other structural feature that extends from the second side of the main body portion."

The court, however, concludes that reading the full prosecution history reveals that Ametek focused during the prosecution on the fact that the '180 patent's curvilinear walls are not joined at their ends at all; the prosecution history does not focus on the '180 patent's curvilinear walls not being joined by specific "structural feature[s] that extend[] from the second side of the main body portion." Rather, the court concludes Ametek used the words "structural feature[s] that extend[] from the second side of the main body portion" in writing to the examiner to specifically describe the Havens patent. Ametek's statements to the examiner did not limit the '180 patent's scope to a diffuser plate with curvilinear walls that are not joined by a particular kind of structural feature. The statements limited the '180 patent's scope to a diffuser plate with curvilinear walls that are not joined at all. Therefore, the court construes the disputed claim language to mean "not joined to one another at their ends by any structural feature."

B. Claim Language

The court's construction of the disputed phrase is consistent with how Ametek used the phrase in the claim itself. Desper Prods. v. Qsound Lab., 157 F.3d 1325, 1334 (Fed.Cir. 1998). The Federal Circuit has held that "while certain claim terms may be at the center of the claim construction debate, the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms." ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1088 (Fed.Cir. 2003). Here, the context of the words surrounding the disputed phrase shows that the disputed phrase means "not joined to one another at their ends by any structural feature."

The relevant paragraph of claim one of the '180 patent states that "the diffuser plate" is comprised of, inter alia:

a plurality of curvilinear walls extending from said second side to define air chambers therebetween which are open to corresponding said air inlet apertures, each said curvilinear wall extending from a corresponding curved wall toward, but terminating prior to reaching said shaft aperture, and wherein said curvilinear walls are separated apart and disconnected from each other.

Overall, this claim language describes that the curvilinear walls extend from the second side of the diffuser plate and create "air chambers," or "boundaries of space or cavities of air," 9 between the curvilinear walls. Each curvilinear wall "ends before arriving at" 10 the "shaft aperture", or opening, that runs through the center of the diffuser. Construing the disputed claim language "separated apart and disconnected from each other" to mean "not joined to one another at their ends by any structural feature" fits within the context of the claim because it describes a feature of the vanes that allows the air to flow freely into the axial chamber.

9 The parties have agreed to this definition of "air chambers" in their joint claim construction statement.

10 The parties have agreed that "terminating prior to reaching" means "ending before arriving at" in their joint claim construction statement.

C. Drawings

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11 Because the court has concluded that it can determine the meaning of the disputed terms through examination of the intrinsic evidence, the court need not turn to extrinsic evidence. See Phillips Petroleum Co. v. Huntsman Polymers Corp.,
157 F.3d 866, 870 (Fed.Cir. 1998) (noting if "intrinsic evidence unambiguously delineates the scope of the patent, resort to extrinsic evidence . . . is unnecessary").

The drawings confirm that Ametek's use of the disputed terms was consistent with the meaning that the court has given the terms. In the drawings, the vanes are "not joined to one another at their ends by any structural feature" thereby allowing air to flow between the vanes and directly into the central axial chamber. See Exhibit 1: '180 patent.

For purposes of the current Rule 56 motions, the parties contest the interpretation of only one element of one claim in the '513 Patent. That disputed element of Claim 20 reads:

. . . said ramp members being separated by a distance of substantially about 3.5 inches from inside to inside whereby said base member can accommodate the movement thereover of a snowplow blade straddling the ramps and disposed at an angle not in excess of 50 [degrees] measured perpendicularly to the longitudinal axis of the base member before any part of the plow blade may impact an associated reflector mounted on the base member.

NightLine argues that the measurement of "substantially about 3.5 inches" refers to the distance between the ramps at their distal ends, where they begin to rise above the road surface. Stimsonite, on the other hand, maintains that the measurement refers to a point considerably higher up the ramps, at or near the reflector entrance.

As an examination of the claim language demonstrates and as the parties' disagreement further confirms (though the fact of such disagreement does not necessarily betoken ambiguity), the claim element at issue is ambiguous: Where is the "inside to inside" measurement to be taken? Because the inside edges of the ramp members of the '513 Patent (and therefore the Stimsonite 101 and 101LP markers) are shown as parallel ('513 Patent Fig. 2, Ex. 2 to this opinion), they measure 3.54 inches apart at every point. But the inside edges of NightLine's accused markers measure roughly 3.75 inches at the reflector entrance and stay parallel for a short distance down the ramps, then taper out to a little more than 4 inches at the distal ends of the ramps (S. 12(M) P94, N. 12(M) PP29-30, 35, Ex. 3 to this opinion). This Court must determine, then, at what point along the ramps Stimsonite's '513 Patent claims the approximate 3.5 inch distance as an essential element. Keeping in mind the canons of claim construction set out by the Federal Circuit, this Court turns to the written description and the prosecution history for help.

Stimsonite's written description is an appropriate resource for use in clarifying the ambiguous claim reference. That written description discusses the 3.5 inch measurement several times. Each of those times the measurement is mentioned in comparison to a 4.9 inch measurement drawn from the prior art as embodied in the Stimsonite 96 and 96LP. Although the references are somewhat lengthy, their virtually dispositive influence on the interpretation of Claim 20 suggests it is appropriate to recite two critical references here: 12

1. At '513 Patent col. 3 lines 42-48:

It is another feature of the present invention that the distance between the inside edges of the inclined ramps is reduced to lower the chance of plowblade contact with the reflector during snowplowing. Preferably, this distance is reduced from
about 4.9 inches in the prior Model 96 and 96LP versions, to approximately 3.54 inches, allowing for increased plow blade angle.

2. At '513 Patent col. 4 lines 63-68:

The base member has two inclined upper ramp surfaces, the inside edges of which are laterally spaced apart a distance of about 3.54 inches (compared with the 4.9 inch spacing of the prior "96" and "96LP" markers) to reduce the probability of plowblade contact with the retroreflector carried by the base member.

Thank you for your patience. I hope this is helpful. Let me know if you need anything else.
Upon reviewing that distinction, the PTO allowed Claim 20 as originally drafted (id. P19). Once again, Stimsonite placed reliance on the more narrow 3.5 inch distance between the ramps in order to gain a new extended monopoly.

Having distinguished the prior art in order to meet patentability requirements, Stimsonite cannot now broaden its patent claim by arguing that Claim 20 referred to the distance between the ramps at the reflector entrance, or even slightly forward of the reflector entrance. Because Model 96LP (embodying the prior art) itself measures only about 3.75 inches at the reflector entrance, any construction of Claim 20 to refer to the distance between the ramps at the reflector entrance would torpedo it as an advance over that prior art. Stimsonite seeks to urge that one skilled in the art would know that the distance between the ramps at the reflector entrance--not at the distal ends--affects the blade angle that the marker can accommodate, so that such a person would read Claim 20 to refer to the distance at the reflector entrance. But that is an unsupported ipse dixit assertion--to the contrary, S. Mem. 8 argues that its own 96 and 96LP models (which Lowe used as the basis for his 3.75 inch ramp spacing at the reflector entrance) do not come within the new patent because that narrow reflector entrance measurement does not extend far enough along the ramps to affect the blade angle. That undercuts any contention that it is the distance between the ramps at the reflector entrance that allows for greater blade angles.

--- Footnotes ---
15 There is no dispute between the parties that 3.75 inches is "substantially about 3.5 inches," which is the magic (and purportedly differentiating) language in Claim 20.

--- End Footnotes ---
Hence when Claim 20 states "said ramp members being separated by a distance of substantially about 3.5 inches from inside to inside," which the specifications contrast to the former 4.9 inch dimension, it must refer either to the distal end of the ramps or, at most, to roughly the last inch of the ramps nearer to the distal end before they go below the road surface. Because the intrinsic evidence unambiguously compels that conclusion, this Court need not turn to extrinsic evidence to construe the claim.

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E. "separated by a wall" and "interchamber orifice"

Claim 1(a) describes "first and second vacuum chambers separated by a wall." Claim 1(d) then requires "an interchamber orifice located in said wall and aligned with said first and second spaces so that ions may travel through." Similarly, the preamble in claim 14 describes "first and second spaces . . . separated by an interchamber orifice so that an ion may travel through said first space, said interchamber orifice and said second space . . ." Thus, while claim 14 does not identify the wall discussed in claim 1, it does identify the interchamber orifice separating the first and second spaces.

Micromass's proposes a construction of "separated by a wall" and "interchamber orifice" that would require the wall and interchamber orifice to join or link the two vacuum chambers and spaces. In support of this construction, Micromass points to Figures 1 and 12 and notes that in both there is only a solitary wall and interchamber orifice dividing the two vacuum chambers and spaces. Micromass also notes that the description of Figure 1, which states, in part, "the vacuum chamber 30 is connected by an interchamber orifice 34 to a second vacuum chamber 38 pumped by a vacuum pump 39." Noting the specification's use of the term "connected" to describe the interchamber orifice, Micromass maintains that wall and interchamber orifice must "join or link together" the two structures.

AB/Sciex contends that "separated by a wall" should be construed to mean only that "there is at least a wall between the first and second vacuum chambers" and that "interchamber orifice" should be construed to mean "an orifice in a wall that is between the first and second vacuum chambers." It criticizes Micromass's proposed construction because by requiring that the wall and interchamber orifice to join or link the two vacuum chambers or spaces, Micromass would be creating a requirement that no other structure, such as the multiple walls between vacuum chambers in the Quattro Ultima, be between the "first vacuum chamber" and the "second vacuum chamber."

AB/Sciex's proposed construction is well-founded. Claim 1 requires only that the first and second vacuum chambers be
separated by a wall with an interchamber orifice. Because the claim uses the term "comprising," other structures may be present between the two vacuum chambers at well. See Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501 (Fed. Cir. 1997) ("Comprising is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim."). Similarly, claim 14 requires only that an interchamber orifice separate the first and second spaces and it does not preclude other structures separating those spaces. Micromass's proposed construction ignores this ordinary reading of the claims and relies on the embodiments shown in the specification. The court will not import limitations existing only in the patent specification into the claims themselves. See Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998) ("limitations from the specification are not to be read into the claims"). Thus, the court will adopt AB/Sciex's proposed construction of "interchamber orifice" and "separated by a wall."

2. Surface indicia have substantially uniform widths defining width of information tracks

The discrete surface indicia on the disc-shaped member is also limited by the language in claim 1 to discrete surface indicia that have "substantially uniform widths defining the width of" the substantially parallel "information tracks." (Col. 5, lines 33-4, 43-5) As construed by this court's prior memorandum order, this claim language allows for minor variations in the width of the discrete surface indicia and, by definition, the widths of the information tracks. (D.I. 558 at 11)

Further claim construction, however, is required to resolve the parties' dispute concerning this claim limitation. The language in claim 1 describes the term "information track" as the sequential arrangement of discrete surface indicia. (Col. 5, lines 33-34) The claim language further describes the "information tracks" as being "substantially parallel" and "separated by intertrack portions" of the planar surface. (Col. 5, lines 34, 39) (emphasis added). The claim language describes "planar surface" as being defined by the "intertrack portions" and "interval portions." (Col. 5, lines 41-2)

As stated above, the information tracks on the disc-shaped member are separated by intertrack portions. Accordingly, an information track as described in claim 1 does not include any intertrack portion. Additionally, since only the discrete surface indicia are described as representing the stored information (col. 5, lines 44-5), the term "intertrack portion" cannot represent any stored information.

This construction is supported by the written description, which discloses a transmissive disc. In the description of the transmissive disc, the information tracks share the same boundaries (edges) as the surface indicia since light must be shined through the surface indicia. The stored information in a transmissive disc is only represented by the physical features and no information is represented by the intertrack portions.

2. Separated

The fifth clause of claim 1 recites that the cavity of the catalytic burner comprises an upper part and opening at the lower end of the burner, the cavity "being separated from the upper surface (10) of the burner (3, 30) by a wall." Plaintiffs propose that the clause should be construed by its plain and ordinary meaning, i.e., that "the cavity is separated from the upper surface by a wall." Defendants, on the other hand, propose an added limitation that "the cavity is completely separated from the burner's upper surface by a wall." In addition, Defendants propose the limitation that "[t]his term may not be construed to encompass a cavity that is only partially separated from the burner's upper surface by a partial wall."

Defendants base their construction on the fact that, consistent with the doctrine of claim differentiation, claim 1 literally requires "a wall," while claim 13 only requires a structure which "shuts off, at least in part, the upper part of the cavity." Claim 13 (an unasserted claim) recites, among other things, that "a central zone shuts off, at least in part, the upper part of the cavity." See '061 patent, claim 13 (emphasis added). According to Defendants, the Applicants knew how to claim a "partial" wall, which, in part, shuts off the upper part of the cavity, as recited in claim 13. Thus, because different words and
phrases are used in claims 1 and 13, Defendants urge, there is presumed to be a difference between "wall," as used in claim 1, and the "shuts off, at least in part" language of claim 13, supporting a construction that the wall completely separates the cavity from the burner's upper surface.

Indeed, claim 1 requires that the cavity communicates with the atmosphere by the presence of at least one open channel (8, 33) being situated in the upper part (3b, 30b) of the burner (3, 30). See '061 patent, 5:48-51. Claim 2 adds the limitation that the invention is characterized in that "said channel (8) is substantially axial." Id., 5:52-53. Claim 13, as cited by Defendants, requires the open channel communicating between the cavity and the atmosphere to extend radially. Id., 6:38-43. However, selected terms in two claims may appear different but have the same scope. This does not violate the doctrine of claim differentiation because it is the claims as a whole that are presumed to differ in scope, not merely selected terms of the respective claims. See Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987) (citations omitted). In other words, though claims 1 and 13 may vary in scope, the term "wall" can have the same meaning.

As Defendants acknowledge, Fig. 2 of the specification shows that the annular groove 9 extends axially over a greater distance than the thickness of the wall separating the cavity 6 from the upper surface 10 of the burner. '061 patent, 3:25-28. As illustrated in Fig. 2, the open passage 8 of the invention passes through the wall that separates cavity 6 from upper surface 10. Thus, Defendants' assertion that the wall must completely separate the upper surface from the cavity is contrary to the plain language of the patent.

Defendants' argument that the prosecution history shows a complete separation is also not persuasive. Defendants claim that claim 1, as originally filed with the USPTO, did not contain any language which in any way referred to any structure which separated the cavity and the upper surface of the burner. Doc. No. 58, Ex. 3, at PB0333. Defendants argue that in order to make the claims "conform" with the specification and the application, originally filed claim 1 was cancelled and "new claim 12" was added, which added that "the upper surface was shut off from the cavity, at least in part." Id. at PB0270. In response to a rejection, the Applicants submitted "amended claim 12," which required "a wall" separating the upper surface of the burner from the cavity," which Defendants assert is the same as claim 1 in the '061 patent. Defendants claim the progression of this limitation in claim 1 of the '061 patent shows the Applicants have surrendered any coverage of a partial wall. Defs.' Br., at 19-20.

The Court disagrees with Defendants' reliance on the prosecution history. In the response to the office action dated May 3, 2002, the Applicants distinguished the present invention on the basis of the presence of at least one open channel located in the upper part of the burner. Doc. No. 58, Ex. 3, at PB0238-39. Nowhere in the response did the Applicants submit that the prior art was distinguished by the presence of a full or partial wall. This does not amount to an express or unequivocal disclaimer as Defendants suggest. Middleton, Inc. v. Minn. Mining & Mfg. Co., 311 F.3d 1384, 1388 (Fed. Cir. 2002). Because the Court concludes that the prosecution history does not change the plain meaning of the term, the Court finds that no construction is necessary. As plainly set forth in the claim, the Court construes the term separated to mean that the cavity is separated from the upper surface by a wall and will add no further limitation.

Limitation (a) in claim 24 reads:

(a) Separating a layer of skin and subcutaneous soft tissue connected to surrounding skin and soft tissue from underlying support tissue to form a pocket

The parties agree that "separating" is interpreted as "spacing apart." The parties disagree whether "a layer of skin" means "a single thickness." In construing open-ended claims, "a" has been found to mean "one or more." KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed. Cir. 2000). Therefore, "a layer of skin" is not limited to "a single layer of skin." This court finds this limitation means "spacing apart the skin and loose connective tissue located just beneath the skin connected to surrounding skin and soft tissue from the support tissue lying beneath to create a pocket."
2. SiGen contends that the district court erred as a matter of law in construing the disputed claim term "a separation" found in independent claim 1. The court construed "separation" based upon its ordinary meaning to be a "gap or intervening space." SiGen argues that this interpretation ignores intrinsic and extrinsic evidence that "a separation" requires "splitting into two parts." SiGen believes that "separate" necessarily means that the thin film and the stiffener are "split into two pieces" because the stiffener has been dissolved and no "self-supporting" membrane exists if still attached to the stiffener. Therefore, according to SiGen's logic, "a separation" must mean complete splitting or cleaving of the thin film and the substrate.

We agree with the district court that the proper interpretation of "a separation" is "an intervening space or gap" between the thin film and the majority of the substrate. The specification of the '564 patent describes "a separation" created during the thermal treatment "by a crystalline rearrangement effect in the wafer and a pressure effect in the microbubbles." The separation results from the thermally induced "crystalline rearrangement" and "coalescence of the bubbles." The specification does not require the "coalescence of the bubbles" to form a perfect cleavage between the top of the film and the bottom substrate. "Splitting or cleaving" the whole layer uniformly is a limitation not found in the '564 patent.

SiGen says that figure 4 depicts a complete cleavage. Drawings aid in the interpretation of claims, but a simple depiction of a single embodiment does not create such a limitation when the words of the specification and claims are broader and more descriptive. See Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 398 (Ct. Cl. 1967) ("In those instances where a visual representation can flesh out words, drawings may be used in the same manner and with the same limitations as the specification.") (citations omitted).

2. Language in Dispute: "An integral septum."

Does "septum" mean (1) a dividing wall or (2) a flat divider?

Answer: "Septum" means a dividing wall.

a). Claim Language

The issue is whether the septum is limited to being flat. The Court holds the septum extending along the tube and dividing the tube into first and second lumens is not limited to a flat divider. The claim language provides that there must be a septum which is integral with the tube which divides the interior of the tube into the "first lumen" and the "second lumen." The claim language does not specify the type of septum, only that it must be integral. Therefore, the Court will not read another adjective into the claim language but will instead construe "septum" in accordance with its ordinary usage and accustomed meaning. The ordinary meaning of "septum" is divider.

b). Written Description

The specification supports the construction that a "septum" is a divider:

The tube 11 is circular in cross section... And has an internal divider 12 defining a return lumen 13 and an inlet lumen 14 within the interior of the hollow tube. ('968 patent col. 3, lines 17-20).

This language does not specify what type of divider must divide the tube into two lumens. Furthermore, the specification does not limit the "septum" of claim 19 to a planar septum, it merely discloses one preferred embodiment.

That Dr. Mahurkar intended for claim 19 to cover catheters with a non-planar septum is made particularly clear by comparing claim 19 to the other independent claims of the '968 patent: claims 1, 12, and 25. Claims 1 and 25, unlike claim...
19, both explicitly recite a "planar septum," and claim 12 recites a "planar axial divider." The patentee's use of the limiting adjective "planar" in some claims, but not others, must be given meaning. See Karlin, 177 F.3d at 972 ("different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope").

c). Dictionary Definition

The dictionary defines "septum" as "a dividing wall or membrane." (Webster's Collegiate Dictionary 1068 (10th ed. 1996)). The dictionary definition supports Dr. Mahurkar's construction of "septum" as a divider that separates the interior of the tube into two lumens. Additionally, a medical dictionary definition of "septum" also supports the Plaintiffs' proposed construction. In Stedman's Medical Dictionary, "septum" is defined as "A thin wall dividing two cavities or masses of softer tissue." (Stedman's Medical Dictionary 1599 (26th ed.1995)). For example, the septum of the nasal passage divides the nose into two cavities. (Id).

d). Prior Litigation

Arrow contends Judge Easterbrook's decision in In re Mahurkar judicially estops Plaintiffs from asserting claim 19 is not limited to a planar septum. This Court disagrees. In In re Mahurkar, Judge Easterbrook wrote, "the essential question concerning infringement came down to a disagreement about the meaning of language in the '968 patent concerning the septum." In re Mahurkar, 831 F. Supp. at 1358. However, Judge Easterbrook was never required to construe the meaning of septum in claim 19 because he found IMPRA infringed without having to do so. IMPRA argued its catheter did not infringe claims 1 and 19 because the septum in its device was not continuous through the tip. Id. at 1358. Judge Easterbrook noted that, "[a] 'septum' is something dividing two lumens; because at the tip IMPRA's device has only one lumen, it has no septum there." Id. However, Judge Easterbrook determined that Dr. Mahurkar's invention also had its septum "moved out of the way at the tip." Id. Thus, "the invention claimed and described in the patent has exactly the deflection that IMPRA's device does…IMPRA's device literally infringes." Id. Therefore, this Court's holding that the septum in claim 19 should be construed as a divider which is not limited to being flat is not inconsistent with Judge Easterbrook's decision in In re Mahurkar, because Judge Easterbrook never decided this issue.

Arrow argues Dr. Mahurkar limited all his claims to a flat septum in In re Mahurkar, in order to claim priority from a design application. This is simply not what happened. The priority issue turned on whether the claims of the '968 patent, including those requiring a planar septum, were supported by the drawings presented in the design application. Judge Easterbrook's decision was based on his finding that the drawings in the design application satisfied the written description requirement of § 112. Id. at 1362. Judge Easterbrook found the claims of the '968 patent were supported by the drawings in the design application. Id. He did not limit the patent to only that which was shown in the drawings.

Similarly, Arrow quotes a portion of the In re Mahurkar opinion relating to an inequitable conduct defense:

But only a dunderhead looking at figures 6 and 7 of the original design application would have supposed that the septum is discontinuous, or curved in places not depicted…The design drawings alone therefore imply a unitary, planar, full-length septum. In re Mahurkar, 831 F. Supp. at 1381-82. (Emphasis in original).

When Judge Easterbrook rejected the inequitable conduct defense, he was not limiting claim 19 to a flat septum as shown in the drawings. This passage does not discuss whether all the claims of the patent, including claim 19 are limited to a flat septum, only that the drawings in the embodiment illustrate a flat septum. Claim 19 is certainly not limited to the drawings in the specification. See Karlin Technology Inc., 177 F.3d at 972.

Arrow also cites passages from Judge Easterbrook's opinion and a Federal Circuit opinion that describe Dr. Mahurkar's commercial embodiment and his preferred design. These passages were introductory to describe Dr. Mahurkar's advance over other catheters, and do not concern the specific claim presented in claim 19.

Finally, Arrow argues that a planar septum was crucial to the court's finding that the '968 patent was valid over the prior art regarding the Blake balloon catheter. Judge Easterbrook did hold that the '968 patent was valid over Blake's prior art, but not because of a planar septum. The reason Judge Easterbrook held the '968 patent was valid over the prior art was because he found Blake's catheter to be an "utterly different beast" from Dr. Mahurkar's. Id. at 1376. He also stated that in Blake, the "lumens are not of equal size, are not D-shaped, there is no axial separation to improve flow (Blake was uninterested in
A. Support by the Written Description

The jury found claims 15 and 16 "not supported by the description contained in the specification." M3 Systems explains that the issue was the meaning of the claim terms "sequential energizing" and "energizing means." The district court had permitted the jury to resolve this disputed issue of claim construction. On this appeal we give de novo review to the issues relevant to the construction and interpretation of the claims. See Cybor, 138 F.3d at 1454-56, 46 U.S.P.Q.2D (BNA) at 1172-75.

M3 Systems states that "sequential" should be construed, and was construed by the jury, to permit no overlap of needle movement during the energizing step. M3 states that since the patent shows that the second needle can start to move before the first needle has completed its movement, the written description does not support the claims. M3 states, as it did at trial, that since the specification does not describe how to obtain elimination of all overlap of needle movement, the claims are not supported by the written description and are invalid.

Bard agrees that the specification shows a slight overlap in the movement of the needles, whereby the second needle starts to move just before the first needle has completed its movement and the first spring latches. Thus, Bard contends, correct interpretation of the claims allows for this slight overlap in needle movement. Bard states that it is incorrect to construe the claims contrary to the specification, and then to hold the claims invalid because they are contrary to the specification. Bard is of course correct; the claims are construed in accordance with the rest of the specification of which they are a part, and not contrary to it. See Slimfold Mfg., 810 F.2d at 1116, 1 U.S.P.Q.2D (BNA) at 1566; SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1125, 227 U.S.P.Q. (BNA) 577, 585 (Fed. Cir. 1985) (in banc).

The specification illustrates the sequential energizing of the needles as having some overlap in movement of the needles. The term "sequential" in the claims is in accordance with this description in the specification; no usage or exemplification of the sequential movement requires eliminating all overlap. It is incorrect to construe the claims as barring all overlap, as urged by M3 Systems. On the correct claim construction, no reasonable jury could have found that the claims are not supported by the description in the specification. It is thus apparent that the jury either adopted M3's erroneous claim construction, or incorrectly applied the law governing claim construction to the undisputed facts of the structure described in the specification.

On the correct claim construction the written description is in accordance with and in support of the claims. The judgment of invalidity on this ground is reversed.
"a series of gussets disposed along each of said edges, said gussets along each of said edges being fitted together"

i. "a series of"

It does not appear that the parties dispute the construction of the claim phrase, "a series of." Perouse construed "series" in its opening brief to mean that the "gussets" "come one after another in spatial succession." (Perouse Opening Br. 29.) However, Gore did not construe this term either in its briefs or during the Markman hearing. Therefore, the Court will assume that this term is not in dispute. If the term should require construction, the Court adopts Perouse's proposed construction.

ii. "gussets"

The parties dispute the construction of "gussets." Perouse's proposed construction is "housing part portions through which something passes." Gore's proposed construction is "several sequential, cylindrical structures that protrude from opposing edges of the housing part."

The parties agree that: the ordinary meaning of "gussets" is not applicable in the context of this invention. Therefore, "gussets" is a term coined for use in the '787 patent and has no ordinary meaning to a person of skill in the art. In this circumstance, the construction is determined by the disclosure in the specification. My Mail, Ltd. v. Am. Online, Inc., 476 F.3d 1372, 1376 (Fed. Cir. 2007) ("Both parties agree that the term NSP is a coined term, without a meaning apart from the patent. . . . We therefore look to the specification to determine what the NSP must do. . . ."); J.T. Eaton & Co., Inc. v. Atl. Paste & Glue Co., 106 F.3d 1563, 1570 (Fed. Cir. 1997) ("In this case, the dispositive claim limitation is a term unknown to those of ordinary skill in the art at the time the patent application was filed. It thus fell to the applicants, as a duty, to provide a precise definition. . . ."); Honeywell Int'l Inc. v. Universal Avionics Sys. Corp., 488 F.3d 982, 991 (Fed. Cir. 2007) ("Without a customary meaning of a term within the art, the specification usually supplies the best context for deciphering claim meaning."); Irdeto Access, Inc. v. Echostar Satellite Corp., 383 F.3d 1295, 1300 (Fed. Cir. 2004) ("[If a disputed term has "no previous meaning of a term within the prior art[], its meaning, then, must be found [elsewhere] in the patent. . . . absent such an accepted meaning, we construe a claim term only as broadly as provided for by the patent itself. The duty thus falls on the patent applicant to provide a precise definition for the disputed term.").

21 Gore's expert cites the following dictionary definitions for "gusset": "I: A usu. diamond-shaped or triangular insert in a seam (as of a sleeve, pocketbook, or shoe upper) to provide expansion or reinforcement 2: A plate or bracket for strengthening an angle in framework (as in a building or bridge). (Matsumura Decl. Ex. E at 543.)

The intrinsic evidence provides very little guidance regarding the structure of the gussets. The second embodiment is described as having "a series of projecting, cylindrical gussets" that "interpenetrate" when the housing part is in its closed state. (787 patent col.3 11.62–66.) In this embodiment, a "cord . . . passes through all the gussets, holding the housing part together. (787 patent col.3 1.67–col.4 1.1.) Figure 8, which represents this embodiment "diagrammatically," depicts the "gussets" as cylindrical structures lining the edges of the slitted housing part. (787 patent Fig. 8.)

Gore asserts that its construction is supported by the reference in the specification to the second embodiment's "projecting, cylindrical gussets" and by Figure 8. (787 patent col.3 11.62–63, Fig. 8.) In fact, the patentee's choice of language refutes Gore's construction. If "gussets" were inherently projecting (or "protrud[ing]"), cylindrical structures, it would be unnecessary to specify that the gussets of the second embodiment had these qualities. See, e.g., Acumed LLC v. Stryker Corp., 483 F.3d 800, 807 (Fed. Cir. 2007) (stating that where specification describes "a plurality of transverse holes, each of which is . . . perpendicular to the . . . nail axis. . . . [t]his implies that a 'transverse' hole need not be 'perpendicular.'"); Phillips, 415 F.3d at 1314 ("The claim in this case refers to 'steel baffles,' which strongly implies that the term 'baffles' does not inherently mean objects made of steel."). Also, the depiction of the gussets in Figure 8 is a representation of the second
embodiment. Therefore, the specific features of this representation are not to be imported as a limitation on the claims. See Phillips, 415 F.3d at 1323.

In fact, the only limitation imposed by the specification is that the gussets must have a structure such that a cord can be passed through them. Given this lack of detail regarding this term, it would be clear to a person of ordinary skill that "gussets" is used to refer to any structure through which a cord can pass.

Therefore, the Court construes "a series of gussets" to mean "a series of structures through which a cord can pass."

Claims 1, 3, and 4, which Karlin alleges are infringed by the Ray TFC implant, read as follows (emphasis on the disputed limitation added):

1. A fusion implant comprising a cylindrical member having an outside diameter larger than the space between the two adjacent vertebrae to be fused and a series of threads on the exterior of the cylindrical member for engaging said vertebrae to maintain said implant in place, a plurality of openings in the cylindrical surface of said member, said outside diameter of said cylindrical member being substantially uniform over the entire length of the implant.

3. The implant of claim 1 in which said implant has a hollow portion for receiving autogenous bone for promoting bone ingrowth.

4. The implant of claim 3 in which said implant has a removable cap for covering said hollow portion.

The district court interpreted the "series of threads" limitation in claim 1 to require threads that are "highly specialized in that they are periodically interrupted, such that the tail ends of each of the tabs so formed are blunted and twisted so as to resist accidental unscrewing." The court held that, given this construction, there was no genuine issue of material fact and SDI was entitled to a summary judgment that the Ray TFC spinal implant did not infringe the asserted claims of the '247 patent, either literally or under the doctrine of equivalents. The court did not rule on SDI's motion for a summary judgment of invalidity. Karlin appeals the grant of summary judgment of noninfringement in favor of SDI.

DISCUSSION

Our review of a grant of summary judgment of patent infringement or noninfringement is plenary. See Cole v. Kimberly-Clark Corp., 102 F.3d 524, 528, 41 U.S.P.Q.2d (BNA) 1001, 1004 (Fed. Cir. 1996). We first determine whether "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Unidynamics Corp. v. Automatic Prod. Int'l, Ltd., 157 F.3d 1311, 1316, 48 U.S.P.Q.2d (BNA) 1099, 1102 (Fed. Cir. 1998) (quoting Fed. R. Civ. P. 56(c)). "In determining whether there is a genuine issue of material fact, the evidence must be viewed in the light most favorable to the party opposing the motion, with doubts resolved in favor of the opponent." Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1307, 46 U.S.P.Q.2d (BNA) 1752, 1755 (Fed. Cir. 1998).

An infringement analysis entails two steps. The first step is determining the meaning and scope of the patent claims asserted to be infringed. The second step is comparing the properly construed claims to the device accused of infringing." Markman v. Westview Instruments, Inc., 52 F.3d 967, 976, 34 U.S.P.Q.2d (BNA) 1321, 1326 (Fed. Cir. 1995) (en banc) (internal citation omitted), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). In this case, the claim construction issue centers on the phrase "series of threads" contained in claim 1. We first discuss the proper construction of that phrase and then compare the properly construed claims to the accused Ray TFC spinal implant. Because we conclude that the Ray TFC implant literally infringes the asserted claims, we do not consider whether the device infringes under the doctrine of equivalents.

I. Claim Construction
Claim construction is a question of law, which we review de novo. See Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 U.S.P.Q.2d (BNA) 1169, 1174 (Fed. Cir. 1998) (en banc). When construing a claim, a court should first look to the intrinsic evidence, i.e., the patent itself, its claims, written description, and, if in evidence, the prosecution history. See Vitronics Corp. v. Conceptronics, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2d (BNA) 1573, 1576 (Fed. Cir. 1996). The court may receive extrinsic evidence to educate itself about the invention and the relevant technology, but the court may not use extrinsic evidence to arrive at a claim construction that is clearly at odds with the construction mandated by the intrinsic evidence. See Key Pharm. v. Hercon Lab. Corp., 161 F.3d 709, 716, 48 U.S.P.Q.2d (BNA) 1911, 1917 (Fed. Cir. 1998).

The district court here construed "series of threads" to be limited to "highly specialized . . . periodically interrupted [threads], such that the tail ends of each of the tabs so formed are blunted and twisted so as to resist accidental unscrewing." This was error. As we discuss below, this limitation is properly construed as referring to continuous threading with a plurality of turns, as found on an ordinary screw or bolt.

A. The Claim Language

Claim construction begins with the words of the claim. See Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 619-20, 34 U.S.P.Q.2d (BNA) 1816, 1819 (Fed. Cir. 1995). Where "series of threads" has no specialized meaning to persons of skill in the art (as the parties here agree), the ordinary meaning of those words to those skilled in the art controls, unless the evidence indicates that the inventor used them differently. See Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 1580, 36 U.S.P.Q.2d (BNA) 1162, 1165 (Fed. Cir. 1995).

The relevant definition of "series" is "a number of things or events of the same class coming one after the other in spatial or temporal succession." WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY 1160 (1986). That is what the threads on screws do. "Thread" is defined as a "continuous helical rib, as on a screw or pipe." MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS 2024-25 (5th ed. 1994) (emphasis added). At the same time, it is common to speak of each turn as "a thread," as when referring to the number of threads per inch. See A. PARRISH, MECHANICAL ENGINEER'S REFERENCE BOOK § 4-2 to 4-63 (11th ed. 1973). We therefore conclude that the ordinary meaning of "series of threads" to one of skill in the art, or even according to common knowledge, is continuous threading with a plurality of turns, as found on an ordinary screw or bolt.

B. Claim Differentiation

The doctrine of claim differentiation also supports a construction of "series of threads" that is not limited to the preferred embodiment's highly specialized interrupted threads. This doctrine, which is ultimately based on the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope, see Comark Communications Inc. v. Harris Corp., 156 F.3d 1182, 1187, 48 U.S.P.Q.2d (BNA) 1001, 1005 (Fed. Cir. 1998), normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend, see Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277, 35 U.S.P.Q.2d (BNA) 1035, 1041 (Fed. Cir. 1995). Here, claims 8 and 9, which were included in the original application as dependent on claim 1, recite additional structure related to the threads:

8. The implant of claim 1 in which said threads are locking threads.

9. The implant of claim 1 in which said threads are interrupted.

While the canon of claim differentiation is not a rigid rule, see Comark, 156 F.3d at 1187, 48 U.S.P.Q.2d (BNA) at 1005, we conclude that, in this case, that doctrine supports the broad construction of "series of threads" that is based on the ordinary meaning of that phrase.

C. The Written Description

We conclude that the '247 patent's written description does not specifically define "series of threads." SDI argues the contrary, based on language discussing the "present invention" as having highly specialized threads. Karlin argues that this language describes the inventor's preferred embodiment, and that "series of threads" should not be construed as limited to the preferred embodiment. An example of the disputed language in the written description follows:

BRIEF DESCRIPTION OF THE DRAWINGS

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FIG. 4 is a perspective view of a cylindrical implant and vertebra structure.

FIG. 4A is a perspective view of one preferred embodiment of the implant.

FIG. 4B is a cross sectional view of the implant of FIG. 4A.

DETAILED DESCRIPTION OF THE DRAWINGS

Referring to FIG. 4, a cylindrical embodiment of the present invention is shown.

A series of external threads 53 are formed on the circumference of the cylindrical implant 50. The threads 53 are locking threads having a series of interjections, the ends of which are blunted and twisted so as to resist unscrewing.

Although Figure 4 is expressly stated to show the "present invention," and Figures 4A and 4B refer to "one preferred embodiment," the same spinal implant is shown in each of the figures. The remainder of the written description has similarly mixed references to "present invention" and "preferred embodiment." We therefore conclude that the written description uses the terms "present invention" and "preferred embodiment" interchangeably. Given this, it is clear that only the preferred embodiment is described as having highly specialized threads. The general rule, of course, is that the claims of a patent are not limited to the preferred embodiment, unless by their own language. See, e.g., Virginia Panel Corp. v. Mac Panel Co., 133 F.3d 860, 866, 45 U.S.P.Q.2D (BNA) 1225, 1229 (Fed. Cir. 1997) ("It is well settled that device claims are not limited to devices which operate precisely as the embodiments described in detail in the patent."). There is nothing in this case that warrants departing from the general rule. Thus, the written description does not narrow the ordinary meaning of "series of threads."

D. The Prosecution History

All of the claims in the original application for the '247 patent were initially rejected by the Patent Office examiner as being obvious in view of U.S. Patent No. 4,501,269 to Bagby (Bagby), in further view of U.S. Patent No. 4,328,593 to Sutter (Sutter). Bagby discloses a nonthreaded, hollow, cylindrical bone fusion implant with holes through the cylindrical surface, and taught that the implant was to be hammered into an undersized drilled hole in the bones to be fused. Sutter discloses a surgical implant with a plurality of interrupted and locking threads. The examiner stated that it would have been obvious that a fusion implant as taught by Bagby could be constructed with threads on the outside of the cylindrical member as taught by Sutter.

In traversing the rejection of claim 1, the applicant argued that the force fit of the Bagby device was required for the unthreaded device to work, and that there was no suggestion in Bagby "that a thread on the exterior of [the Bagby device] would be sufficient to retain the device in a cervical spine." With respect to the rejection of claims 8 and 9, which were worded identically to the issued claims, the applicant stated that those claims "recite the particular threaded structure that is employed on the present implant. The use of threads [is] not obvious for the Bagby device, and accordingly, these claims drawn dependent on claim 1 are also nonobvious and allowable."

Karlin argues that the unqualified use of "thread" in the portion of the response directed to claim 1, when viewed in context with the description of claims 8 and 9 as reciting the "particular threaded structure [of the] present implant," shows that "series of threads" in claim 1 is not highly specialized. SDI argues that, because the examiner rejected all of the claims,
including claim 1, on the basis of Sutter's disclosure of the use of a plurality of interrupted and locking threads, the examiner apparently considered that claim 1's "series of threads" limitation referred to a specialized thread design. The district court concluded that the prosecution history did not favor either side.

It is clear that the scope of "series of threads" in claim 1 was not limited by this office action response. In addition, the differences in the responses concerning claim 1 and claims 8 and 9 indicate that the applicant considered the claims to have a different scope. We are therefore persuaded that the prosecution history further supports the broad ordinary meaning of "series of threads" in claim 1.

E. Conclusion

The foregoing discussion shows that, when viewed as a whole, the claim language, the written description, and the prosecution history support a construction of the phrase "series of threads" as meaning continuous threading with a plurality of turns, as found on an ordinary screw or bolt. We next discuss the second step of the infringement analysis.

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4. "Said support mat and central reduced diameter portion serve as the sole support means for the substrate. 30 Consistent with the claim language and its ordinary meaning, 31 the specification, 32 and the prosecution history, 33 the court construes "said support mat and central reduced diameter portion serve as the sole support means for the substrate" to mean "the central reduced diameter portion and the mat are the only structures that hold the substrate in place in the cylindrical body."

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30 "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112, P 6. Use of the term "means" in a claim limitation creates a presumption that § 112, P 6 has been invoked, but that presumption may be rebutted if the properly construed claim itself recites sufficiently definite structure to perform the claimed function. TI Group Auto. Sys. (N. Am.), Inc. v. VDO N. Am., L.L.C., 375 F.3d 1126, 1135 (Fed. Cir. 2004); Personalized Media Communns., L.L.C. v. ITC, 161 F.3d 696, 703-04 (Fed. Cir. 1998).

Claim 1 of the '476 patent uses the term "means". However, the limitation in which "means" is used also recites sufficiently definite structure, namely the central reduced diameter of the tube and the support mat, to perform the claimed function. As a result, the limitation is not governed by 35 U.S.C. § 112, P 6.

31 D.I. 151, ex. E at 1122 (defining "sole" as "being the only one" and "functioning independently and without assistance or interference"), 1186 (defining "support" as "to hold up or serve as a foundation or prop for").

32 '476 patent, col. 2, ll. 35-48; col. 3, ll. 7-12, 60-63; figs. 1, 3, 9, 10.


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I. Focusing lens servo

The servo mechanism means includes a focusing lens servo. See '981 patent, claim 3. The parties dispute the meaning of the phrase "focusing lens servo to modulate the position of a focusing lens." The court construes the word "servo" in accordance
with its ordinary meaning to mean "the motor part of the servomechanism controlled by the feedback circuit that produces the final mechanical output." The court defines the term "modulate" to mean "regulate." The court is persuaded that the terms "focusing" and "lens" require no construction.

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3. Wherein a Shape of Said Predetermined Pressure Profile . . .

This phrase is found in Claims 21 and 43 of the '575 Patent.

Phrase: Wherein a shape of said predetermined pressure profile is set independently of any monitored respiratory characteristics of such a patient

Construction: Wherein the magnitude and duration of the predetermined pressure profile are set without reference to or consideration of any monitored breathing characteristics of such a patient.

Reasoning: The dispute between the parties is whether the shape of the Predetermined Pressure Profile is synonymous with its magnitude and duration, or is a wholly different characteristic. After close review of the intrinsic record, we find that the shape of the profile is made up of its duration and magnitude.

The predetermined pressure profile is used in the less complex, and more cost effective version, of the invention. The predetermined pressure profile is applied to reduce the constant pressure of CPAP or the reduced EPAP pressure of bi-level therapy once the device detects the expiratory breathing phase. According to the teachings of the patent, the predetermined pressure profile has two parts: a magnitude, that represents the drop in pressure from the higher pressure value; and a duration that is ideally based on an average expiration period of the patient. These pre-set or pre-programmed magnitude and duration values approximate the values that would be generated by the proportional version of the invention. '575 Patent, cl. 20, lns. 44-65. Read in context of the language of the patent, the predetermined pressure profile is programmed into the computer with a magnitude value and a duration value so that the device can reduce the pressure during expiration independently of the patient's breath (other than sensing when exhalation begins). '575 Patent, cl. 20, lns. 66-67 and cl. 21, lns. 1-8.

The term shape appears in the '575 Patent four times, apart from being included in Claims 21 and 43. The first three times it appears, it does not refer to the shape of the predetermined pressure profile. '575 Patent, cl. 16, lns. 21, 55; cl. 18, lns. 43-44. The last time the word appears, it does refer to the predetermined pressure profile. '575 Patent, cl. 20, ln. 25. In describing a preferred embodiment of the invention, the patent states that the defined pressure profile has a shape that generally corresponds to a patient's normal flow. Because, in the proportional version of the invention, the patient's normal flow is used to determine the magnitude and duration of the pressure, this reference to the term "shape" indicates that the shape of a profile is comprised of its magnitude and its duration. This reading is further supported by the overall context of the patent, wherein pressure profiles, sometimes called waveforms, are consistently comprised of magnitudes and durations. '575 Patent, cl. 20, lns. 54-58.

This construction is also supported by the prosecution history. The limitation that the shape be set independently of any patient monitored characteristic was added to these claims to differentiate them from prior art. The prior art generated an expiratory model waveform based on the inspiratory waveform, which was set by monitoring patient flow. Prosecution History, '575 Patent, Response to Office Action (Nov. 24, 1999) at 13. At the time, plaintiff distinguished the prior art by explaining that the shape of its predetermined profile is not based on any monitored respiratory characteristics. Id. In the context of these inventions, the pressure profiles are defined by how large a drop in pressure there will be, and for how long. In that context, the argument that the profile is independent of the respiration of the patient, indicates that these factors, i.e., magnitude and duration, will be set without reference to the patient.

Our construction is also in accord with the dictionary definition of the applicable term. In discussing this issue in the office action response, plaintiffs used the terms waveform profile, waveform, model waveform, and shape of the expiratory waveform model interchangeably. The dictionary definition of a waveform is a graphic representation of the shape of a wave that indicates its characteristics (as frequency and amplitude), called also waveshape. Merriam-Webster's Medical
We do not accept plaintiffs' argument that the "shape" of the profile is separate and apart from the characteristics that define the profile. According to plaintiffs, the pressure profile's shape is "a bathtub." There is no support in the patent for such a construction. The only time that the patent describes how the waveform or profile might look it speaks to the pressure dropping off quickly at the start of expiration and then rising slowly toward the baseline pressure, which actually describes more of an off-center U, or rounded checkmark, shape, rather than a "bathtub" shape. '575 Patent, cl. 20, lns. 61-65. Regardless, in so describing this form, the patent labels it the "contour", not the shape, of the profile. Id.

Based on the patent language and the prosecution history, and buttressed by the dictionary definition of the relevant term, the shape of the pressure profile is its magnitude and duration. And, according to the plain language of the patent, these values must be set independently of any respiratory characteristic of the patient.

Finally, there is no support for plaintiff's argument that the magnitude and duration are not set in Claim 21 because Claim 22 recites the act of setting the magnitude or duration. Claim 22 claims an apparatus "comprising the means for setting" these values. A claim for the means for doing an act does not mean that Claim 21 does not claim the act itself.

Claim construction is a question of law, Markman v. Westview Instruments, Inc., 517 U.S. 370, 388, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996), which should begin by analyzing the words of the claim. Int'l Rectifier Corp. v. IXYS Corp., 361 F.3d 1363, 1369 (Fed. Cir. 2004). "Absent an express intent to impart a novel meaning to a claim term, the words take on the
ordinary and customary meanings attributed to them by those of ordinary skill in the art." Id. at 1370; Texas Digital Sys., Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202 (Fed. Cir. 2002) ("The terms used in the claims bear a 'heavy presumption' that they mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art.") (internal citations omitted). Courts may consult dictionaries, encyclopedias and treatises to determine the ordinary and customary meanings of claim terms, Texas Digital, 308 F.3d at 1202; Intellectual Property Devel., Inc. v. UAColumbia Cablevision of Westchester, Inc., 336 F.3d 1308, 1314 (Fed. Cir. 2003), in addition to other "intrinsic evidence," namely, the claims themselves, the written description, 1 known as specifications, and prosecution history. 2 Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1346-1347 (Fed. Cir. 2004). The intrinsic record must be consulted "in every case to determine which of the possible dictionary meanings is consistent with the use of the claim term in the context of the claims and the written description[,] and to determine if the presumption of ordinary and customary meaning is rebutted," IXYS Corp., 361 F.3d at 1370, and whether the claim term encompasses more than one consistent dictionary definition. See Texas Digital, 308 F.3d at 1203 ("By examining relevant dictionaries . . . to ascertain possible meanings that would have been attributed to the words of the claims . . . the full breadth of the limitations intended by the inventor will be more accurately determined and the improper importation of unintended limitations from the written description into the claims will be more easily avoided."). While the specification cannot be used to limit the scope of a claim, it can "define a term already in a claim limitation, for a claim must be read in view of the specification of which it is part." Mueller Sports Med., Inc. v. Core Prods. Int'l, Inc., No. 02-445, 2003 U.S. Dist. LEXIS 24617, 2003 WL 23200261, at *1 (W.D. Wis. Mar. 3, 2003) (quoting Renishaw, PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998)); see also IXYS Corp., 361 F.3d at 1371 (noting that the court looked to "the written description for context and guidance as to the meanings attributed by those of ordinary skill in the art").

--- Footnotes ---

1 Specifications are written descriptions which describe the invention "in such clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the same." 35 U.S.C. § 112 (2000).

2 The Federal Circuit has agreed to re-examine the use of dictionaries in claim construction. See Phillips v. AWH Corp., 376 F.3d 1382, 2004 WL 1627271 (Fed. Cir. 2004). Because an independent review of the specification and patent claim language here supports the instant claim construction, as is described fully below, and because the dictionary definition wholly supports the construction as well, the outcome of Phillips v. AWH Corp. should have no effect here.

--- End Footnotes ---

An inventor can rebut the presumption that an ordinary and customary meaning for a claim term is appropriate by showing that he "has chosen to be his own lexicographer by clearly setting forth an explicit definition of the term" in the specification, Prima Tek II, LLC v. Polyplast, S.A.R.L., 318 F.3d 1143, 1148 (Fed. Cir. 2002); see also Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) ("Usually [the specification] is dispositive; it is the single best guide to the meaning of a disputed term."). or by clearly limiting the scope of a claim with "words of manifest exclusion or restriction." IXYS Corp., 361 F.3d at 1370. The language must make clear "that the invention does not include a particular feature, [and] the feature is deemed to be outside the reach of the claims of the patent . . . ." Microsoft Corp., 357 F.3d at 1347.

The prosecution history, if in evidence, should then be examined to determine whether the doctrine of prosecution disclaimer has narrowed the ordinary meaning of the claim. Liquid Dynamics Corp. v. Vaughan Co., Inc., 355 F.3d 1361, 1368 (Fed. Cir. 2004). Here, the parties have not introduced prosecution history. (See Pl.'s Br. at 5 ("[N]o portion of the prosecution history is relevant to interpretation of the disputed terms.").) Finally, if the intrinsic evidence does not clarify ambiguities, extrinsic evidence "may also be considered, if needed to assist in determining the meaning or scope of technical terms in the claims." Vitronics Corp., 90 F.3d at 1583 (emphasis in original) (internal citations omitted).

I. SET 3

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3 The parties do not dispute the definition of "reference" as used in the claims. (See Pl.'s Response Br. at 4.) Both the Oxford English Dictionary and the Webster's Third New International Dictionary, cited by defendant and plaintiff.
respectively, define "reference" as some basis for calibration or standardization. That construction comports with the
ordinary meaning that would be attributed to the term. Nothing in the written specification indicates an intent to ascribe
a different definition for the term either. Given the purpose of the patent and the ordinary meaning associated with the term
"reference," it will be defined as a "basis for comparative measurement or standardization." Although plaintiff defines the
term "reference" as a "means used or usable as a standard for calibrating data," that definition is less consistent with the
function of the reference set of colors as used in the patent than the formulation found in the Oxford English Dictionary. The
reference set of colors is not the standard for calibrating data; the absolute set of colors is the standard. The reference set
provides a basis for calibration or standardization as against the absolute set. Therefore, to the extent that the ordinary and
customey usage of the term "reference" denotes the standard for measurement, the claims make clear that the meaning of
"reference" deviates somewhat from that usage. The parties are in agreement however, in principle, that "reference" here
means a "basis for comparative measurement or standardization" as against the absolute set of colors, and for calculating a
compensation factor for the article to be color matched.

The parties dispute whether "set of colors" should be interpreted to require a "group of two or more colors, not a single
color" as plaintiff contends (Pl.'s Br. at 7), or any number of colors, including a single color, as the defendant argues. (Def.'s
Br. at 11.) The Webster's Third New International Dictionary defines a set as a "group of articles of uniform design."
Webster's Third Int'l Dictionary 2078, def. 39a (1993). The Oxford English Dictionary defines a set as a "number of things
grouped together according to a system of classification or conceived as forming a whole." Oxford English Dictionary 53,
def. 10a (Vol. XV 1989). Neither dictionary definition makes clear whether a set requires more than one article or thing.
Neither party seems to contest linguistically the definition for "set" established in either dictionary as the ordinary and
customey definition of the term. The disagreement centers, instead, in how each definition is interpreted. 4

4 Plaintiff also argues that using the plural form of "colours" in the disputed language indicates defendant's intent that a set
should be defined to require more than one color. Plaintiff asserts that defendant could have used a parenthetical plural, "of
colour(s)," to indicate that the set could include a single color. Because the defendant used parenthetical plurals, "colour(s),"
in other parts of the claims, plaintiff argues that defendant knew how to and did indicate when a single color was
permissible in drafting the claim. (Pl.'s Br. at 6.)

It is evident, however, that the patent language is not consistent or clear in indicating the plural or singular forms of the
terms. Claim 1, for instance, sets forth that the method is designed to color match "a first article with one or more articles."
('694 Patent, col. 6, l. 20) (emphasis added.) In the very next line, however, the claim speaks of "placing a strip displaying a
reference set of colours adjacent the associated articles." (Id. (emphasis added.) Although the inventor clearly expresses in
the first line that the scope of the patent includes color matching one or more associated articles, the second line reads only
in the plural, without the qualifying "one or more" language. (See also claim 3 (shifting from possible singular to plural in
the same line with language that the method enables "comparison of the colour(s) of the associated articles . . . with the
enhanced colours of the associated articles").) Of course, this example is not direct evidence that the inventors were simply
sloppy in their drafting of "reference set of colours" since they at least expressed once that a single associated article was
covered by the patent, but the example shows that the inventors' intent to require more than one color is not unequivocally
clear from their failure to use the parenthetical plural in "reference set of colours."

The Webster's Third New International Dictionary defines a "set" as a "group of things," and the term "group" is defined as
"two or more figures (as in sculptures or paintings) forming a distinctive unit complete in itself or forming part of a larger
of group -- expressly requires two or more constituent elements. Another definition of "group" that is not specific to
compositions of sculptures or artwork supports an understanding of "set" to require more than one constituent article as
well. A "group" is also an "assemblage of objects regarded as a unit because of their comparative segregation from others
<<a [approximately] of buildings>>." Id. at 1004, def. 2b. An "assemblage," in turn, is a "collection of . . . particular things:
aggregation," id. at 131, def. 1a, and a "collection" is defined as a "number of objects that has been collected . . . according
to some unifying principle or orderly arrangement." Id. at 444, def. 2. To "collect" is to "bring together into a . . . group . . . :
Regarding Claim Interpretation ("Def.'s Suppl.") at 1.) The parties' agreement is consistent with the general rule that a term consistently in the phrase "reference set of colors" and "absolute set of colors." (Pl.'s Suppl. at 1; Def.'s Supplemental Mem. of the disputed claim language") (internal citations omitted). Here, the parties agree that "set of colors" should be interpreted 1313 (Fed. Cir. 2004) (noting also that "the patent itself . . . is the most significant source of the legally operative meaning patent and in their technological and temporal context. See Smithkline Beecham Corp. v. Apotex, Corp., 365 F.3d 1306, purpose of the patented method do not bear out such a definition of "set." Claims must be read in light of the purpose of the or that the inventors intended the special mathematical understanding of "set" to control, the claims themselves and the relationship" or to "cause (as two or more things or ideas) to mix together: mingle, blend." Id. at 452, def. 2. Although hardly an unequivocal requirement that a set contain two or more things, the implication -- and common understanding -- of "grouping" requires more than one thing. 5 See also Paymaster Techs., Inc. v. United States, 54 Fed. Cl. 579, 585 (2002) (agreeing "with defendant's proffered definition of 'set' as that which connotes 'more than one thing of the same kind,'" pointing to definition in Webster's Ninth New Collegiate Dictionary 1077 (9th ed. 1985) and American Heritage Dictionary 1122 (2d ed. 1982), both of which define a set as "more than one thing of the same kind").

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5 The Federal Circuit recently used a similar methodology -- defining the terms within a definition -- to construe a disputed claim. See Novartis Pharmaceuticals Corp. v. Eon Labs Mfg., Inc., 363 F.3d 1306, 1308-1310 (Fed. Cir. 2004) (looking at dictionary definition of "hydrosol" and then the terms used to define it -- "sol," "solution" and "medicinal" -- to construe claim).

--- End Footnotes ---

Defendant argues that the common understanding of a "set" includes sets which contain a single element and that the canons of claim construction prohibit unnecessarily narrow interpretations of the term. (Def.'s Br. at 2, 9.) Defendant offers the term "singleton" -- defined as "the only one of its kind or class; a set having only one member" -- as evidence that its interpretation, permitting a set with a single element, is the customary one. (Id. at 9 (quoting Oxford English Dictionary Vol XV, p. 524 (2d ed. 1989)).) That same argument was proffered and rejected by a court construing the phrase "set of lace eyelets." Mueller Sports, 2003 U.S. Dist. LEXIS 24617, 2003 WL 23200261, at *2-3. In Mueller Sports, the plaintiff sued for infringement of its patent for an adjustable ankle brace that included a set of lace eyelets on an eyelet strip which tied two ends of the brace together. Id. The central question in that case was whether a "set of lace eyelets" could "include a single eyelet . . . or whether a [person skilled in the field of the invention] would read 'set' as requiring two or more eyelets." 2003 U.S. Dist. LEXIS 24617, [WL] at *2. After examining the dictionary definition of set, the court rejected the plaintiff's contention that a set ordinarily denoted a group of one or more elements and noted that "[a]lthough in the field of mathematics it is possible to have a set of one or even zero ('null set') there is no - 15 - indication that a person skilled in the field of designing ankle braces is a mathematician or would understand the ordinary meaning of the word 'set' to be mathematical in nature." 2003 U.S. Dist. LEXIS 24617, [WL] at *3. Accordingly, the court defined "set" by what it considered a "common-sense definition": a group with two or more elements.

Id.

Similarly, here, there is no indication that an ordinary person skilled in the field of color-matching would import a special mathematical concept of set to define a reference set of colors. Although the patented computerized color-matching system arguably may require one versed in more rigorously analytic processes than one skilled in the field of designing ankle braces, defendant here points to no claim language that would indicate that the mathematical interpretation was the intended one. Instead, defendant invokes the common, everyday, "accepted usage" of the term "set" (Def.'s Response Br. at 1), which defendant contends may contain one or more elements. As described in Mueller and as defined in the dictionaries, however, the ordinary understanding of "set" requires two or more constituent elements.

Even if defendant were correct in stating that the ordinary definition of set encompasses sets containing only one element, or that the inventors intended the special mathematical understanding of "set" to control, the claims themselves and the purpose of the patented method do not bear out such a definition of "set." Claims must be read in light of the purpose of the patent and in their technological and temporal context. See Smithkline Beecham Corp. v. Apotex, Corp., 365 F.3d 1306, 1313 (Fed. Cir. 2004) (noting also that "the patent itself . . . is the most significant source of the legally operative meaning of the disputed claim language") (internal citations omitted). Here, the parties agree that "set of colors" should be interpreted consistently in the phrase "reference set of colors" and "absolute set of colors." (Pl.'s Suppl. at 1; Def.'s Supplemental Mem. Regarding Claim Interpretation ("Def.'s Suppl.") at 1.) The parties' agreement is consistent with the general rule that a term
will be interpreted uniformly throughout claims, and that "modifiers will not be added" to change the meaning of an unmodified term. Johnson Worldwide Assoc., Inc. v. Zeboco, Corp., 175 F.3d 985, 989 (Fed. Cir. 1999).

As is recited in Claim 1 of the '694 Patent, the end goal of the color-matching system is to generate a "colour map and/or enhanced photograph identifying the colour(s) of the associated articles relative to an absolute set of colours" so that an objective color-match can be made. ('694 Patent, col. 6, ll. 30-32; see Def.'s Suppl. at 6-7.) Assuming that an accurate compensation factor may be calculated by comparing the values for a reference set of colors and an absolute set of colors comprised of a single color, 6 that compensation factor would not do much to effect a preferred object of the patent: "to provide a method which can incorporate compensation factors to relate all colours against set standards." (See also Def.'s Br. at 5 ("[T]he significance of 'a reference set of colours' is that color data of the displayed light can be captured, analyzed, and used in identifying the colors of the article being color-matched relative to some 'absolute' or known set of colors (i.e., certain color data stored in computer memory).") If the patent meant for the absolute set of colors only to be a means to calculate a compensation factor, the language in the claim disclosing a method of generating a "colour map identifying colors of the associated articles relative to an absolute set of colors" would lose all meaning. ('694 Patent, col. 2, ll. 15-16; Pl.'s Suppl. at 3 ("Logically, if the absolute set included only one color, then the colors of the associated articles could be identified only as that one color. There would be no other colors to choose from for the color match.").) The matching colors are identified in the patent claim by printing the enhanced picture/color map "to enable comparison of the colour(s) of the associated articles as photographed with the enhanced colours of the associated articles against the absolute reference set." (Id. at col. 6, ll. 45-48 (emphasis added).) Comparing an article's colors against that of an absolute reference set with a single color would result in a binary match or no-match result, 7 effectively eviscerating the purpose of the patent. Because an absolute set of colors containing only a single color would render the color-matching system ineffective (or useless), the ordinary definition of set encompassing more than one element is the proper one.

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6 Defendant states in its Supplemental Brief that a compensation factor may be calculated by comparing the value measured in a reference set of colors of one color against the value stored in the absolute set of colors. (See Def.'s Suppl. at 6.) Defendant illustrates that a compensation factor of one would follow from a reference set of colors "represented by a single value which is ... measured to be 76, and ... the stored 'absolute set of colours' (what the value for the light reflected from the reference strip would be expected to be under some defined conditions) is 77 ... ". (Id.) An article, like a tooth, which is photographed and the colors analyzed as 65, 59 and 62, could be calibrated by adding one, to "produce a color map with adjusted colors corresponding to values of 66, 60, and 63." (Id.)

7 Defendant's illustration in its Supplemental Brief described in note 5 supra shows why an absolute set of colors with a single color would not effect the purpose of the patented method. Despite being able to generate a color coded map having applied the compensation factor to the article's colors, creating a "map" showing that the values 66, 60 and 63 corresponded to the colors on the article, one could not compare those values effectively for the colors "against the absolute reference set" as claimed in Claim 3 if the absolute set contained only one color. The values of 66, 60 and 63 would have no meaning independent of some absolute set of values that corresponded to some known colors.

--- End Footnotes ---

The specification does not define set of colors with "reasonable clarity, deliberateness, and precision" as to render inappropriate the ordinary meaning or to show an intent that the inventors intended to act as their own lexicographers. Prima Tek, 318 F.3d at 1150. The specification is consistent with a definition of set that requires two or more colors. The patent discloses that a reference strip "may comprise samples of the reference porcelain shades" of teeth -- the plural "shades" and "samples" indicating that the reference set of colors may contain more than one color. (694 Patent, col. 3-4, ll. 68, 1.) In addition, the specification describes how the "coded map has been produced relative to a fixed set of standards[,]" or absolute set of colors, from which a dentist may "accurately match the colour of the cap or prosthetic tooth to the patient's teeth ...." (Id. at col. 5, ll. 53-56.) Although the specification does not require two or more colors in a set, it certainly does not state with clarity that a single color may comprise a set as well.

Accordingly, set will be defined by its ordinary dictionary definition as a group of two or more articles grouped together according to a system of classification.
II. COLOR

Plaintiff defines color as "the quality or attribute in virtue of which objects present different appearances to the eye, when considered with regard only to the kind of light reflected from their surfaces." Oxford's English Dictionary Vol. III, p. 499, def. 1 (2d ed. 1989); Pl.'s Response Br. at 3. Plaintiff claims that "color" should be defined with respect to the "appearance of an object to the eye" given the purpose of the patent to color-match articles and the specification, which describes shades, "not light or wavelengths." (Pl.'s Response at 3 (noting also that "[t]here is no suggestion that the dental technician mixes 'light' or lights of 'certain wavelengths' as [defendant's] argument would imply").) Defendant defines color as "a particular hue or tint, being one of the constituents into which white or 'colourless' light can be decomposed, the series of which constitutes the spectrum; also any mixture of these." Oxford's English Dictionary Vol. III, p. 499, def. 2a; Def.'s Br. at 9. 8

Because the color-matching system measures the color of an article by instrumentation, and not by human perception of the article, the defendant argues that the term "color" should be defined by its physical characteristics and not as a quality presented to the human eye. (Def.'s Br. at 5.) Defendant asserts that if "the quality [or appearance] of the reference strip were being measured, it would always be the same. It could be stored in the computer without any need to measure it under the same illumination as the article being color-matched." (Def.'s Reply at 4.)

8 In the Webster's Third New International Dictionary, the first definition of color relies on the physical "phenomena of light" that allow differentiation of objects; the second defines color based on the perception of one viewing an object; and the third combines aspects of the first and second definitions by defining color as "the characteristic of light by means of which two areas of identical size and shape that are juxtaposed, structure free, and steadily and uniformly illuminated may be distinguished by a human observer and which is commonly identified for spectral colors by complementary wavelength, luminance, and purity -- used in this sense as the psychophysical basis for measuring color which in turn makes it possible to define the limits for each color definition . . . ." Id. at 447, def. 1c.

In choosing among the dictionary definitions, "the intrinsic record must always be consulted to identify which of the different possible dictionary meanings of the claim terms in issue is most consistent with the use of the words by the inventor. If more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all such consistent meanings." Texas Digital Systems, 308 F.3d at 1203. The purpose of the patented method is to mitigate the color mismatches which occur "in many industries, including automobile repair; paint and dye manufacture; printing; and fabric dyeing. Tooth colour matching is a major problem . . . ." (694 Patent, col. 1, ll. 9-14.) The goal of color-matching therefore is to present a uniform perception of color to observers of, for example, an automobile repair job, paint, printing, fabrics and repaired teeth. It is "the quality or attribute in virtue of which objects present different appearances to the eye, when considered with regard only to the kind of light reflected from their surfaces" that the method seeks to homogenize by calibrating for different light conditions and matching colors accordingly.

However, it is also evident that the patented method requires a computer to "analyze[c] colour data[,]" and "compare[] the reference set of colours against the absolute reference set of colours to determine the compensation factor." The computer cannot analyze the quality or attribute of an object as presented to a human eye or compare the qualities or attributes of an object; rather, it must analyze the physical characteristics of the reference set of colors and compare them to the absolute set of colors. In addition, a compensation factor could not be applied to the colors of an article as provided in the patent if color simply defined a quality or attribute as perceived by the eye. Instead, the compensation factor applies to the physical measurements taken from the object. (See Def.'s Reply at 2-3 ("[T]he claimed invention concerns measuring and analyzing physical characteristics of light by instrumentation. The significance of a 'reference set of colours' is that color data of the displayed light can be captured, analyzed, and compared with some 'absolute' or known color data stored in computer memory. The color data of the displayed light is representative of the spectral nature of that light -- that is, its colors.").)

The specification describes a "colour reference strip" with "samples of different porcelain shades . . . on the front thereof." (694 Patent, col. 4, ll. 47-49.) Plaintiff argues that the description of "shades" requires a construction of color that is focused on the quality of the object, and that no portion of the specification describes color in terms of the wavelengths of light or its physical characteristics. (Pl.'s Response at 3-4.) To the contrary, the specification does describe how a computer "compares the colour reference strip as photographed with an absolute reference strip to bring the two into conformity. This correction
factor is applied to the photograph data to create a corrected photograph . . . ." ('694 Patent, col. 5, ll. 30-34.) As mentioned above, if color were defined to relate simply to the perceived quality of an object, the computer would have nothing to compare, and could not apply a compensation factor to correct a color. Only if color is described also as a physical characteristic do the specification and patented claims have utility. The inventor did not patent a subjective color-matching system, but a "computerised colour matching" one. (Id. at col. 1, l. 7.)

In any case, the specification does not clearly -- and with unequivocal language -- disavow a construction of color encompassing defendant's proposed definition of color. The language does not make clear "that the invention does not include a particular feature, [and] the feature is deemed to be outside the reach of the claims of the patent . . . ." Microsoft Corp., 357 F.3d at 1347. Accordingly, color will be defined as a "particular hue or tint being one of the constituents into which white or 'colourless' light can be decomposed, the series of which constitutes the spectrum; also any mixture of these" as well as "the quality or attribute in virtue of which objects present different appearances to the eye."

CONCLUSION AND ORDER

Based on the ordinary and customary definition of the terms reference, set, and color, and consistent with the purpose of the patented claims and the specification, the Court construes the disputed claim language "reference set of colors" as a "group of two or more hues or tints, the quality or attribute in virtue of which objects present different appearances to the eye, that serves as a basis for comparative measurement or standardization." With the claim construction process completed, it is hereby

ORDERED that the parties confer and file a joint report proposing a schedule for the remainder of the case by September 3, 2004.

Vitronics, 90 F.3d at 1584 n.6. Plaintiff notes that a "set" is defined as "a collection of articles designed for use together: a set of china; a chess set." Random House Unabridged Dictionary 1752 (2d ed. 1993). Plaintiff contends that because "a chess set" is "a single object," a set does not require "any specific number of objects within the 'collection'" and therefore may contain only one item. Plt.'s Markman Br., dkt. # 13, at 8-9. The dictionary definition does not help plaintiff's cause. It makes clear that a set is a "collection of articles." A "collection" by definition involves more than one item. A collection is "[a] group of objects or works to be seen, studied or kept together," The American Heritage Dictionary of the English Language 362 (4th ed. 2000), or "a group of things or people." The New Oxford American Dictionary 335 (2001). Collection traces its origin to the Latin verb colligere, to "gather together." Id. One does not gather together a single item. Although in the field of mathematics it is possible to have a set of one or even zero (a "null set"), there is no indication that a person skilled in the field of designing ankle braces is a mathematician or would understand the ordinary meaning of the word "set" to be mathematical in nature. Moreover, although a chess set can be described as a single item, it is composed of multiple chess pieces and a board designed for use together. Just as a single pawn does not make a chess set, a single eyelet does not make a set of lace eyelets.

This common-sense definition is not "contradicted by any definition found in or ascertained by a reading of the patent documents.
Moreover, other courts have indicated that the term "set" requires two or more objects. In Karsten Mfg. Corp. v. Cleveland Golf Co., 242 F.3d 1376, 1379-80 (Fed. Cir. 2001), the Court of Appeals for the Federal Circuit affirmed the district court's holding that a "correlated set" of golf clubs "comprises two or more clubs which contain the same design characteristics [and are sold together as a set]." In an effort to distinguish Karsten, plaintiff argued at the Markman hearing that the "two or more clubs" limitation in that case hinged on the word "correlated," rather than the word "set." Not so. The term "correlated" was read by the court to impose the limitation that each club in the set contain the same design structure. See id. (noting that "term 'correlated set' . . . precluded infringement if the set of iron-type clubs is not completely correlated, that is, if any club does not have the claimed structure."). The "two or more clubs" limitation resulted from the claim term "set." Similarly, in Paymaster Technologies, Inc. v. United States, 54 Fed. Cl. 579 (2002), the Court of Federal Claims construed the claim term "form set" in the context of money order forms. The court concluded that the "definition of 'set' . . . connotes 'more than one thing of the same kind.'" Id. at 585. In that case, the court ultimately held that the term "form set" could include sets containing only one form, but only because the intrinsic evidence displaced the ordinary meaning of the term set. The patent applicant had acted as a lexicographer, both in the claim itself and in the specification, by defining a "form set" to include "at least one negotiable instrument sheet." Id. at 583 (emphasis added). Because the intrinsic evidence "clearly redefined the claim term," the ordinary meaning of "set" did not determine the term's meaning. Id. at 584-85. By contrast, plaintiff in this case does not argue that the patent applicant endowed the term "set" with any special meaning. Therefore, the ordinary meaning of the term controls, that is, that set connotes a group containing more than one item.

Plaintiff's best argument relies on the doctrine of claim differentiation. "Under the doctrine of claim differentiation, 'each claim in a patent is presumptively different in scope.'" Ecolab, Inc. v. Paracilpe Inc., 285 F.3d 1362, 1375 (Fed. Cir. 2002) (citation omitted). Plaintiff points out that claim 1 recites an eyelet strip "having a set of lace eyelets" and that claim 10 recites an eyelet strip "having a plurality of lace eyelets." The parties agree that "plurality" means "two or more." Thus, plaintiff argues, "the patentee's use of 'set' in claim 1, and 'plurality' in claim 10, was intended to convey different meanings: 'set' referred to 'one or more' lace eyelets, while 'plurality' referred to 'more than one' (or 'two or more') lace eyelets." Plt.'s Markman Br., dkt. # 13, at 9. However, the doctrine of "claim differentiation only creates a presumption that each claim in a patent has a different scope; it 'is not a hard and fast rule of construction.'" Kraft Foods, Inc. v. International Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000) (citation omitted). This is because "'claim differentiation can not broaden claims beyond their correct scope.'" Id. (citing Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1480 (Fed. Cir. 1998)). Although this formulation borders on the tautological (what could expand a claim beyond its correct scope?), the idea underlying this formulation makes sense. When the intrinsic evidence provides no support for construing two very similar words as having very different meanings, the doctrine of claim differentiation drops out of the equation, as it does in this case. The written description and the drawings indicate uniformly that the invention's eyelet carrier strips each carry multiple eyelets. The summary of the invention (not the description of the preferred embodiment) describes "a carrier strip that carries lace eyelets." There is no support in the intrinsic evidence for construing the phrase "set of lace eyelets" as including a single eyelet. Moreover, the idea that "claims are presumed to differ in scope does not mean that every limitation must be distinguished from its counterpart in another claim, but only that at least one limitation must differ." Id. Claims 1 and 10 differ in a number of respects in addition to the use of the word "set" in the former and "plurality" in the latter. Plaintiff does not argue that the only difference between the two claims lies in the supposed distinction between "set" and "plurality." Accordingly, I am not persuaded by plaintiff's claim differentiation argument. I conclude that the phrase "eyelet strip having a set of lace eyelets" means an "eyelet strip" having two or more eyelets.
the claim language by arguing that set screw is "a machine screw designed to be screwed through a metal part (as a collar) and to jam tightly upon another part (as a shaft) so as to prevent relative movement." Once again, defendants seek to improperly limit the definition to the specification by arguing that set screw is "a screw that is threaded into an object to interfere with the rotation of another object." See Pl's Markman Br. Ex. E. col. 5 ll. 42-44. For the reasons described above, the court will adopt Innovative's definition and find that "set screw" means "a machine screw designed to be screwed through a metal part (as a collar) and to jam tightly upon another part (as a shaft) so as to prevent relative movement."

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2. "Set Stitch"

The term "set stitch" is found in both the method and product claims of the patents-in-suit. For example, in Claim 1 of the 779 Patent, a method claim, step (c) of the seam manufacturing process requires "sewing the first and second garment components and the bonding element together by a first set stitch running along the seam." 779 Patent at 6:37-39 (emphasis added). In Claim 20 of the 779 Patent, a product claim, the seam is defined as comprising "a first set stitch running along a first side of the seam and traversing through the bonding element . . . the first garment component . . . and . . . the second garment component. . . ." 779 Patent at 8:25-30 (emphasis added). The 615 Patent similarly uses the term in Claims 1 and 19, method and product claims, respectively. 615 Patent at 6:44-47, 8:17-22.

Taltech asks the Court to construe "set stitch" to mean "a stitch that sets' or firmly joins at least the bonding element and two layers of garment material to define their relationship in the garment seam but does not pass through the outer layer of garment material in the finished seam." Taltech relies on the claims, on the specifications, on the prosecution history of the patents-in-suit, and on the opinion of Taltech's expert, Mr. Nienke. Esquel asks the Court to construe "set stitch" to mean "a stitch used to hold two or more components together and is not visible in the final product." Esquel relies on the specifications, on the prosecution history of the 615 Patent, on a dictionary definition of "set," and on the opinion of Esquel's expert, Mr. Larry Haddock.

The parties agree that the "set stitch" "sets or joins." The parties disagree on whether the bonding element needs to be included in what is set or joined. Taltech also refers to "two layers of garment material," whereas Esquel refers to "two or more components" as being set by the stitch. Lastly, Taltech and Esquel use different language to convey that a set stitch does not pass through the outer layer of garment material and thus is not visible in the final product.

The first issue is whether the bonding element needs to be included in what is set or joined by a "set stitch." Every term found in a claim is presumed to have meaning and purpose. See RF Delaware, Inc. v. Pac. Keystone Techs., Inc., 326 F.3d 1255, 1264 (Fed. Cir. 2003). Taltech argues that the term "set" distinguishes a stitch that joins at least a bonding element and two layers of garment material from a stitch that merely joins two layers of garment material. Claims 1 and 20 of the 779 Patent and Claims 1 and 19 of the 615 Patent describe the "first set stitch" as traversing through the bonding element and the first and second garment components. 779 Patent at 6:37-39, 8:25-30; 615 Patent at 6:44-47, 8:17-22. In contrast, the "second stitch," in which the word "set" is notably missing, is described in Claims 1 and 19 of the 615 Patent as traversing through the first and second garment components and not the bonding element. 615 Patent at 6:56-60, 8:23-26; see ACTV, 346 F.3d at 1088 (considering the context of surrounding words of the claim). This distinction between "first set stitch" and "second stitch" lends support to Taltech's proposed construction. However, in Claims 1 and 20 of the 779 Patent, the "second stitch" traverses through the bonding element in addition to the first and second garment components. 779 Patent at 6:47-49, 8:31-37. As a result, the claims do not consistently use "set" to distinguish a stitch that joins a bonding element to other components from one that does not.

Taltech argues that the specifications show that a set stitch joins a bonding element to other components. 779 Patent at 4:4-9, 5:31-38; 615 Patent at 4:5-10, 5:32-39. While this may be true, the Court refuses to import a limitation from the specifications into the claims. See Teleflex, 299 F.3d at 1328.

The expert testimony relied upon by Taltech does not require a set stitch to join a bonding element to other components. Although Mr. Nienke recites Taltech's proposed construction (Nienke Decl., docket no. 96, P 22), he discusses how the term is used in the industry to describe a stitch where a seam is being constructed just using fabrics (i.e., not including a bonding element). See Nienke Decl. P 23.
Taltech argues that the prosecution history of the 779 Patent supports its proposed construction. See 779 Prosecution History, March 11, 1996, Amendment Filed Under 37 C.F.R. § 1.115, docket no. 85, Ex. D (part 2) at 13. Except for showing that the term "set" was added to the "first stitch" claim language, this evidence does not explain why the word "set" was added, other than "to clarify" and "to improve readability." Id. These proclaimed reasons are not particularly useful in assisting the Court's construction of "set stitch." What is clear is that nothing in the prosecution history of the 779 Patent indicates an intent to require the presence of a bonding element in the materials fixed by a "set stitch."

For all these reasons, the Court does not require that a bonding element be included in what is set or joined by a "set stitch." Next the Court must address Taltech's reference to "two layers of garment material" versus Esquel's reference to "two or more components." At the Markman hearing, Taltech emphasized that stitch 48 in Figure 4a is a set stitch and that it joins a bonding element to two layers of garment material (i.e., a folded over portion of a single garment component, the second garment component) and does not join a bonding element to two garment components. 779 Patent at 4:7-9 (describing first set stitch 38 in Figure 3a as "set sleeve stitch") and 5:34-42 (describing stitch 48 in Figure 4a as "needle set sleeve"). Although this is an accurate description of stitch 48 in Figure 4a, the Court hesitates to introduce a new term, "layers of garment material," into the definition of set stitch, when "garment component" is one of the disputed terms that the Court has been asked to construe. On a related note, at the Markman hearing, Esquel pointed out that although it advocates a construction in which a bonding element is not required to be joined by a set stitch, it does not urge the adoption of a construction that precludes the joining of a bonding element to a garment component by a set stitch. The Court modifies the first part of Taltech's proposed construction to read: "A stitch that sets or joins at least a garment component and a bonding element together, or at least two garment components together, to define their relationship in the garment seam. . . ."

Regarding the second part of the parties' proposed constructions of "set stitch," the prosecution history of the 615 Patent supports Taltech's construction that a "set stitch" "does not pass through the outer layer of garment material in the finished seam." 615 Prosecution History, March 11, 1996, Preliminary Amendment Filed Under 37 C.F.R. § 1.115, docket no. 85, Ex. E at 10. The Preliminary Amendment discusses how the "Benstock stitches" are deficient because they "fail[] to show a first set stitch' . . . and a second stitch' as claimed" in that they "protrude through the top fabric ply." Id. Esquel's proposed construction states that a set stitch "is not visible in the final product." Esquel's proposed construction does not appear to conflict with Taltech's proposed construction, but merely states it a different way. Taltech's proposed construction is more aligned with the wording in the prosecution history of the 615 Patent and will be adopted; however, for the same reason outlined above, the Court will use the construed term "garment component" in place of "layer of garment material."

Accordingly, the Court adopts Taltech's proposed construction, with modification, and construes the term "set stitch" to mean "a stitch that sets' or joins at least a garment component and a bonding element together, or at least two garment components together, to define their relationship in the garment seam, but does not pass through the outer garment component in the finished seam."

H. Settling modulation

The third limitation of the claim requires "settling modulation of servomechanism means dependent upon the optical disk standard data which corresponds with the processed optical signal." The plaintiffs contend that this term means "establishing the operational parameters of an electromechanical device." The defendants contend that the term means "permanently resolving and setting the regulation of an automatic feedback control system for mechanical motion."

Reading the patent as a whole, the court is persuaded that the patentee used the term "settling" to connote the meaning of "establish." The court is not persuaded, however, that the patentee used the term "modulation" in the narrow, and special, manner urged by the plaintiffs. It appears from the specification that after the type of disk has been identified, the regulation of the servomechanism is "settled" depending on the type of disk in the drive. The ordinary meaning of the term "modulate" suggests a "regulation" of the servomechanism, and the court is bound to give that term some effect. Finally, the term "servomechanism" as used in this claim limitation, refers to a device for mechanical motion controlled by some type of feedback system. Sybil P. Parker, McGraw-Hill Dictionary of Scientific and Technical Terms 1801 (5th Ed. 1994). The court therefore construes the phrase "settling modulation of servomechanism means dependent upon the optical disk standard data which corresponds with the processed optical signal" to mean "establishing the regulation of an automatic feedback control system for mechanical motion."
system for mechanical motion dependent upon the recognized arrangement of depressions for an optical storage medium which corresponds to the processed optical signal."

One of the patents' stated goals is to overcome deficiencies of the prior art and to alleviate its associated problems, for example, "ruptured containers," "explosive or overflow effervescence," "damage to containers," and "product leakage." '930 Patent, col. 1, ll. 12-17; col. 2, ll. 12-45. To convey to one of ordinary skill in the art the claimed solutions to the above problems, the patentee chose to use descriptive terms like "severe," "sharp," "accurately," "jarring," "smoothly," and "rapidly."

The defendants' primary complaint is that one of ordinary skill in the art would never know whether a particular vending machine infringed the patents-in-suit because, according to the defendants, the vending machine may infringe under certain circumstances, but may not infringe under others. According to the argument, one cannot measure the severity of an impact by reference to the amount of resulting effervescence because the amount of effervescence depends in part on variables such as geography and atmospheric pressure. Although this concern is not without some force, the court is persuaded that the claims are nonetheless amenable to construction, given the language in the specification and the nature of the art. In short, one of skill in the art would understand the boundaries of the claim.

The claims of the patents-in-suit need not be measurable by an entirely objective standard. Intertrust Techs. Corp. v. Microsoft Corp., 275 F. Supp. 2d 1031, 1046 (N.D. Cal. 2003); but cf. Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1350 (Fed. Cir. 2005) ("The scope of claim language cannot depend solely on the unrestrained, subjective opinion of a particular individual purportedly practicing the invention.") and Application of Musgrave, 431 F.2d 882, 893, 57 C.C.P.A. 1352 (1970) (noting that "[a] step requiring the exercise of subjective judgment without restriction might be objectionable as rendering a claim indefinite."). To one of ordinary skill in the art, a construction may allow for both a subjective and objective determination of claim scope. See Datamize, 417 F.3d at 1350; Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576 (Fed. Cir. 1986). Furthermore, even assuming that the patents did suggest an entirely objective test for measuring any of the above solutions to the prior art, under the defendants' argument, the results of such tests would likely vary based on relative geographical locations and meteorological conditions. This would require a boundless amount of objective criteria and data in support of the claims. See Orthokinetics, 806 F.2d at 1576; Datamize, 417 F.3d at 1350. 3

--- Footnotes ---

3 In Datamize, the court distinguished Orthokinetics, stating as follows:

The fact that the claims were intended to cover the use of the invention with various types of automobiles made no difference; we concluded that the phrase "so dimensioned" is as accurate as the subject matter permits since automobiles are of various sizes. Thus, in Orthokinetics we recognized that an objective definition encompassed by the claim term "so dimensioned" could be applied to innumerable specific automobiles. Although the patentee's choice of terminology relies in part on the subjective opinion of one of ordinary skill in the art, the court finds that the specification and prosecution history provide enough context and support to allow the term to be construed. Id. (internal citation omitted).

--- End Footnotes ---

In light of the language of the specification and the objects of the invention, the court defines "severe impact forces" as "impact forces such as jarring, rolling, dropping, or tipping having a magnitude sufficient to cause immediate effervescence and overflowing of carbonated beverages upon opening, or damage to a container/product such that the container or product is no longer suitable for consumption or sale."
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Limitation (f) of claim 24 reads:

(f) Severing edges of the expanded layer from surrounding soft tissue to form a differentially expanded tissue flap; and

The parties agree that the flap is separated from the surrounding soft tissue during this step. The main dispute is whether this step limits the creation of a flap to one separated at all but one edge. The court disagrees with defendants that this claim requires all but one edge of the flap to be severed, as there is no such limitation in the claim language. Particularly, after considering the principles of claim differentiation, it is notable that claim 25 requires "retaining one edge of the tissue flap connected to surrounding tissue." In light of this language, to maintain all claims as relevant, it is assumed that claim 24 is broader than claim 25 and can apply to situations where more than one edge remains connected to the surround tissue.

The court finds this limitation to mean "separating dividing lines of the expanded layer from the soft tissue along the outer points of the expanded tissue layer to render it capable of being used to cover an area greater than its original area."

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3. Element 1

With regard to element 1, Defendants argue that the term "shaft" typically represents a cylindrical, rectangular structure that extends from the ground surface downwardly. Thus, Defendants argue that Plaintiff is wrong when he interprets "shaft" to encompass any hole in the ground, no matter the size or shape. A horizontal trench is not a shaft. Defendants refer the Court to Figure 1 of the patent which shows the conduit as a single pipe, placed vertically in a shaft. To this, Plaintiff responds that Figure 1 depicts only the "preferred embodiment", but that the language contained in the claim does not limit the patent to the preferred embodiment.

Defendants further argue that this element provides that the shaft is excavated to a point within the contaminated area. Defendants argue that digging a hole to a point requires a specific geometry - which is a cylindrical hole in the ground.

Finally, Defendants argue element 1 limits the claim to a single shaft, not multiple shafts. Plaintiff responds that the claim language does not define the word shaft in any particular way. Relying on the definition in Webster's Third New International Unabridged Dictionary, shaft is simply an opening that extends from the ground surface downwardly to a location below the surface. No particular geometry is required. Nor does the language in element 1 limit the number of shafts in any way.

The dictionary definition of "shaft" is ". . . 4: any of various long hollow structures: as a (1): a vertical or inclined opening of uniform and limited cross section made for . . . ventilating underground workings (2) a passage resembling a mine shaft in structure or function (as in a cave or a pyramid). . . ." WEBSTER'S THIRD NEW INTERNATIONAL UNABRIDGED DICTIONARY ((c) 1961, 1993) at 2804. The dictionary definition thus suggests that the ordinary meaning of "shaft" is generally a long hollow structure. The claim adds the limitation to the term "shaft" as requiring this structure to extend from the ground surface to a point within the contaminated area. Thus, combining the ordinary meaning and the claim limitation, the Court concludes that the term "shaft" means a vertical or inclined hollow opening, of uniform and limited cross section, from the ground surface to a point in the contaminated area. Finally, the claim language does refer to a single shaft, not multiple shafts. The claim is thus limited to a single shaft.

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4. prior to adding a fluid to the liner, has a shape corresponding to, and is a close fit within, the interior of the reservoir

(a) no definition necessary
(b) the liner has a shape as the interior of the reservoir before fluid is added to the liner so that the liner fits within the reservoir with little space between the exterior of the liner and the interior of the reservoir. ITW maintains that the exterior of the liner is formed to have the same geometrical shape and size as the interior walls and base of the reservoir before fluid is added to the liner so that the exterior of the empty liner is in contact with the interior side walls and base of the reservoir when the liner is inserted into the reservoir.

The crux of the dispute over this term is whether the liner must be in contact with and have the same "geometrical shape" as the reservoir. ITW maintains that the patent specification makes clear that such requirements exist, pointing to examples in the specification wherein the liner is described as being an "accurate" or "exact" fit inside the reservoir. Even assuming the terms in the specification dictate that the liner be in contact with the reservoir or have the same geometrical shape, the terms of the claim only direct that the liner be a "close fit." The Court is to avoid using elements of the specification to limit claim terms, see Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1325 (Fed. Cir. 2003), and it declines to do so in this case because any such construction would contradict the ordinary meanings of the terms. The Court again disagrees with the position of 3M that a definition is unnecessary but adopts its definition.

III. Shape Memory Alloy

Medtronic defines an SMA as "an alloy capable of undergoing a reversible transformation from an austenitic state to a martensitic state with a change of temperature and capable of displaying stress-induced martensite." (Medtronic's Proposed Order.) While BSC defines it as an alloy capable of transforming from austenite to thermal-induced martensite by being cooled, and if subsequently deformed, capable of regaining ("remembering") its original shape by being heated, the heat causing the thermal-induced martensite to transform back to austenite; the alloy is also capable of transforming from austenite to stress-induced martensite by being subjected to a deforming stress (without cooling), and transforming back from stress-induced martensite to austenite upon release of the stress.

(BSC's Proposed Order.) The Court adopts Medtronic's definition of SMA. BSC, again, adds the limiting language of "without cooling" to the formation of stress-induced martensite. What BSC omits in its more detailed discussion of SMA is that in order for thermal-induced martensite to form, the temperature of the alloy must be below its Ms - temperature. Any martensite formed above Ms resulted from the application of stress. Accordingly, the Court concludes that SMA is defined as an alloy capable of undergoing a reversible transformation from an austenitic state to a martensitic state either by cooling the alloy below its Ms temperature at zero stress or by applying sufficient stress to the austenite above its Ms temperature at zero stress.

2. "Shape memory alloy element" and "Memory alloy element"

The primary dispute between the parties is whether these terms must be construed to require that the "shape memory alloy element" be placed in a deformed shape, i.e. its martensitic state, solely by the application of stress. For the reasons set forth above, the Court rejects Gore's arguments on this point.

Accordingly, the Court construes the term "shape memory alloy element" to mean: "a device or device component made of an alloy that can be caused to revert, or to attempt to revert, from its unstable deformed shape to its stable, original state."
Claim 27 of the '433 Patent contains one disputed term. Claim 27, with the disputed term underlined, reads:

A tension member according to claim 25 wherein said engagement surface is shaped by an outer contour of said plurality of cords.

Schindler proposes construing the highlighted term as "an outermost layer or surface of the tension member wherein the entire outermost layer or surface comes into contact with a corresponding surface of the sheave and wherein the outermost layer or surface has a shape which is the same as the shape of a portion of each of the cords." The first portion of the phrase, "engagement surface," has already been defined in regard to Claim 25. The Court, therefore, must only construe the "is shaped by an outer contour of said plurality of cords" language.

Schindler asserts that the term "is shaped by an outer contour of said plurality of cords" should mean "has a shape which is the same as the shape of a portion of each of the cords." Otis asserts that the term does not require construction. The Court agrees with Otis. See O2 Micro, 521 F.3d at 1362.

The Court need not define the term "is shaped by an outer contour of said plurality of cords."

Claim 7 discloses:

A medical appliance comprising an inflatable bag shaped for active engagement solely with the human foot and substantially only in the region between the ball and heel of the foot, and cyclically operable automatic means for delivering pressure within said bag in accordance with the following criteria:

(a) a pressure rise to a predetermined maximum of 220 mm Hg or less within less than two seconds:

(b) holding said maximum for a period of up to five seconds before dropping the pressure;

(c) repeating pressure delivery pursuant to criteria (a) and (b) at a periodic interval which is in the range of 20 to 60 seconds.

The Board concluded that Dreiser and Rastgeldi establish the level of ordinary skill in the art 2 and that claims 7-14 of the 101 patent are obvious over Dreiser in view of Rastgeldi and Gaskell/Parrott. The Board found that it "would have been obvious to modify the inflation means taught by . . . Dreiser with the inflation criteria and holding period taught by Rastgeldi." Ex parte Novamedix, No. 97-2776 (PTO Bd. Patent App. & Interference Dec. 4, 1998) (Def.'s Ex. 1) at 2413. That finding assumed that the novelty of the 101 patent was only the "inventors' departure from normal ambulatory conditions involving the application of forces to the foot for a holding period of time which is not present in normal ambulation." (Def.'s Ex. 1 at 2400). It did not contemplate the different, and more narrow, construction that this Court has given to the term "active engagement" in the phrase. A medical appliance comprising an inflatable bag shaped for active engagement solely with the foot and substantially only in the region between the ball and heel of the foot. That term is now construed to "preclude[] additional inflatable bags activated in time-coincidence with the bag(s) directed to the plantar arch." Cl. Constr. Mem. at 5 (Jan. 12, 2001). The novelty of the patent thus involves, not only variable holding periods longer than those present in normal ambulation, but also the absence of any other pump involvements. "The fact of no other pump involvements means that foot-pump driven venous-return flow can be substantially unimpeded in its direct delivery."
c. "Shaped Substantially As Right Triangles"

The definition of this claim element appears to be undisputed. Defendant proffers the following construction: "shaped as a triangle in which one of the interior angles is substantially ninety degrees." (Def.'s Mot. for Summ. J. Ex. H (Webster's Third New International Dictionary 1956 (4th ed. 1976))). Plaintiff does not appear to dispute this construction. The use of the term "substantially" suggests that the objects in question are "approximately" right triangles. See Anchor Wall Sys. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1311-12 (Fed. Cir. 2003) (noting that "words of approximation, such as generally' and substantially,' are descriptive terms commonly used in patent claims to avoid a strict numerical boundary to the specified parameter" (internal quotations omitted; citations omitted)). Therefore, the court concludes that the claim language "shaped substantially as a right triangle" should be construed as follows: "shaped as a triangle in which one of the interior angles is approximately ninety degrees."

C. A Surface Shaped to Contact Said Skin Region (Claim 14)

Defendant seeks to add a parenthetical explaining that "shaped" means "not flat." This is contrary to the patent. The language of the claim, far from being "boundless" (Def.'s Preliminary Br. 18, Docket # 29), would exclude shapes that are, for example, sufficiently concave such that they contact the skin only at the outer edge. The specification specifically states that the contact surface "can be either convex or substantially flat." 568 Patent col.2 ll.23-24.

Principles of claim differentiation also counsel against such a construction. See, e.g., Comark Commc'ns, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998). Claim 15 is dependant on claim 14 and adds only the limitation that the "surface is convex." Plaintiff's suggested construction excluding a flat surface from claim 14 would render claim 15 superfluous, as "convex or substantially flat" are the only shapes contemplated in this patent. This claim language needs no further construction.

5. "Shaped to Fit Substantially Water-Tight Within"

The term "shaped to fit substantially water-tight within" appears twice in Claim 5 of the '477 Patent. See '477 Patent col. 9 ll. 12-13 ("said body shaped to fit substantially water-tight within said port"); id. col. 9 ll. 15-17 ("elongate members . . . shaped to fit substantially water-tight within said one or more shafts"). Millipore initially sought to have this term construed
as "object A is shaped to fit substantially water-tight within object B if object A, alone or in combination with additional parts, when disposed within object B, causes a water-tight seal." (emphasis added).

Nothing in Claim 5 of the '477 Patent suggests that parts other than the elongate members and the body are required to be shaped to cause a water-tight seal. Millipore's addition of other parts is unsupported by intrinsic evidence. Consequently, I construe the term "shaped to fit substantially water-tight within the body," as Millipore now concedes, to mean that "the elongate member, when disposed within the body, causes a water-tight seal."

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1. Construction

I have construed "insertable into and through the tissue" above, and that construction applies to this claim as well. However, I have not yet construed the portion of the claim calling for an anchor member "shaped to normally assume a substantially straight configuration." Smith & Nephew asserts that "shaped to normally assume a substantially straight configuration" means that the "anchor member -- which can be either rigid or deformable -- is sufficiently straight to be inserted into a needle, and cannot include an angle of 135 [degrees] or less." Smith & Nephew's Reply at 14.

Biomet argues that the only references in the specification to a "normal" shape are in the context of describing the change in shape a resilient, deformable anchor makes from its bent position to its extended position. Biomet highlights the following from the specification: "The anchor member is located within the tip of the hollow needle in either a deformed U shape, or in its normal, substantially straight shape," Ex. A, col. 2, 1. 19-21 (emphasis added); "FIG. 6 is an enlarged perspective view of the anchor member and suture, showing the normal and deformed configuration of the anchor member," id., col. 3, 1. 49-51 (emphasis added); "Once expelled between the cartilage 18 and bone 38, the anchor member resiliently resumes its normal shape, as shown in FIG. 5," id., col. 4, 1. 42-45 (emphasis added); "As the anchor member 10 is pushed from the needle tip 26, it resumes its normal elongated shape," id., col. 6, 1. 43-45 (emphasis added); "Once the anchor member 10 has generally resumed its normal elongate shape behind the cartilage 18, the needle 14 and the tube 16 may be withdrawn from the joint, allowing the cartilage 18 to partially collapse around the anchor member 10 and suture 12 as shown in FIG. 5," id., col. 6, 1. 50-55 (emphasis added).

In addition, according to Biomet, the only drawings in the 691 patent are of deformable anchors. Therefore, the claim limitation that call for an anchor member that normally assumes a straight configuration must be limited to deformable anchors, as opposed to rigid anchors.

Smith & Nephew replies that the 691 patent expressly states that the anchor member "may be formed of a substantially rigid material." Id., col. 7, 1. 45-47. Furthermore, claim 14, which is dependent on claim 13, adds a limitation requiring the anchor member to be formed of resilient material. According to Smith & Nephew, since claim 14 expressly requires that the anchor be resilient, claim 13 cannot be construed to also require that the anchor member be made of resilient material. See Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc) ("the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim").

In addition, Smith & Nephew provides prosecution history of the 691 patent. The phrase "shaped to normally assume a substantially straight configuration" was added to the claim in an amendment filed on June 19, 1992. The amendment contained an explanation that "the normally substantially straight configuration of the applicant's anchor member permits insertion of the member into a tubular delivery member, such as needle 54 (Fig. 8) . . . " Appendix "A" to Smith & Nephew's Corrected Reply Brief ("Appendix A"), Ex. V at 14 of 44. The applicant also distinguished a prior art reference which was not substantially straight, but had feet arranged at a 135 [degrees] angle. Id.

Biomet contends that Smith & Nephew cannot adequately distinguish claim 14 from claim 13. Claim 14 in its entirety reads, "The apparatus of claim 13 further characterized in that the anchor member is formed of resilient material that is absorbable by the tissue." Ex. A, col. 13, 1. 41-43 (emphasis added). Biomet argues that Smith & Nephew is attempting to replace the word "that" with the word "and." In fact, according to Biomet, claim 14 confirms that claim 13 describes a deformable, resilient anchor. According to Biomet, "resilient" means deformable because the two words are almost always used together in the specification, and convertible from one shape to another. Claim 14 simply adds the limitation that this resilient anchor
be absorbable by tissue.

I am not persuaded by Biomet's arguments. Much of the specification cited by Biomet also supports Smith & Nephew's argument, and demonstrates that the anchor member can be either rigid or deformable. See Ex. A, col. 2, l. 19-21 (anchor member may be in the needle either in its deformed shape or its straight shape) (emphasis added); Ex. A, col. 3, l. 49-51 (Figure 6 showing both an anchor member that is deformed and an anchor member that is straight). The other portions of the specification simply calls for an anchor member that, if deformed, will resume a straight shape.

In addition, I read claim 14 as adding two additional elements to claim 13—not only that the anchor member be made of resilient material, but also that the resilient material be absorbable by tissue. It is clear that the specification considers these to be separate characteristics. Ex. A, col. 11, l. 19-23 ("The anchor members may be formed of non-absorbable material (e.g. stainless steel of suitable resilience) that remains in the bone indefinitely). In addition, relying on Phillips, which permits me to consider unasserted claim terms used consistently throughout the patent in construing a meaning for a term in dispute, I consider claim 10. See Phillips, 415 F.3d at 1314. Claim 10 contains the disputed phrase "shaped to normally assume a substantially straight configuration," but also calls for an anchor member that is "formed of resilient material and deformable into the deformed position within the needle tip[,]" Ex. A, col. 12, l. 62-63. It is clear that claim 10 requires a resilient anchor member, while claim 13 makes no mention of the material from which the anchor member must be formed. Claim 10 would not need to add the limitation for a resilient and deformable anchor if that limitation were equivalent to "shaped to normally assume a substantially straight configuration."

Additionally, given that the specification expressly states that the anchor member may be formed of rigid material, and that the prosecution history supports Smith & Nephew's interpretation, I find that "shaped to normally assume a substantially straight configuration" means the anchor member must be sufficiently straight to be inserted into a needle.

"Shaped Throughout the Length Thereof"

Claim 1 discloses:

- a separator finger depending from said back between said side walls and inserted between said tracks, said separator finger being shaped throughout the length thereof for first holding the top of the male and female elements open while the slider first presses the bottom of the elements together and then permitting the slider to press the top of the elements together while the slider moves in a closing direction, said slider having shoulders projecting inwardly from said depending side walls and shaped throughout the length thereof for cooperation with said depending separator finger in creating the rolling action in opening and closing said reclosable interlocking male and female profile elements. U.S. Patent No. 5,007,143, col. 7, lines 4-17 (emphasis added).

SCJ argues that the phrase "shaped throughout the length thereof" means that the separator finger must be very wide on one end and then taper down to a thinner shape moving horizontally toward the opposite end of the zipper profile. Tenneco argues that the separator finger does not have to be any particular shape; rather, all the patent requires is that the separator finger is shaped such that it accomplishes its intended purpose. The Court agrees with Tenneco. Nothing in the patent specifies any particular shape for the separator finger. Instead, the patent equates the shape of the separator finger with the function that structure plays in the operation of the device. The claims do the same with respect to the slider. Thus the separator finger must be shaped to "first hold[] the top of the male and female elements open while the slider first presses the bottom of the elements together and then permit[s] the slider to press the top of the elements together while the slider moves in a closing direction." See U.S. Patent No. 5,007,143 at col. 7, lines 7-12, 60-65; col. 8, lines 47-51. The slider must be shaped "for cooperation with said depending separator finger in creating the rolling action . . . ." See id. at col. 7, lines 14-17; col. 7, line 67 - col. 8, line 2; col. 8, lines 53-56. If a separator finger shaped other than as SCJ described and if a slider shaped other than that disclosed in the figures of the '143 Patent can serve these specified functions, such shapes would fall within the scope of the '143 Patent's claims.
B. Effect of Prior Litigation

As stated above, SunTiger prevailed in a prior patent infringement suit against Scientific Research Funding Group (SRFG) on the same patents now in question. Both SunTiger and Sunglass Products have stipulated that the claim construction in the prior suit will control here:

The patents-in-suit have already been construed by the U.S. District Court for the Eastern District of Virginia [and that] construction . . . is binding on the parties in this case. To the extent that the terms in the asserted claims were not construed in the said prior litigation, the parties are asking the Court to make a claim construction based on the arguments submitted in the summary judgment motions.

Stipulation at 1-2. "In a patent litigation action, where the parties do not dispute any relevant facts regarding the accused product but disagree over possible claim interpretations, the question of literal infringement collapses into claim construction and is amenable to summary judgment." Rheox, Inc. v. Entact, Inc., 276 F.3d 1319, 1324 (Fed. Cir. 2002).

The relevant terms and their stipulated construction are as follows:

<table>
<thead>
<tr>
<th>Term</th>
<th>Stipulated Construction</th>
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<tbody>
<tr>
<td>&quot;substantially block&quot;</td>
<td>&quot;... in reference to wavelengths, it is defined as blocking over 99% of the incident radiation at each and every wavelength&quot; and &quot;[in] reference to polarization, it is defined as blocking 80% or more of the horizontally polarized incident radiation at each and every wavelength&quot;</td>
</tr>
<tr>
<td>&quot;substantially transmit&quot;</td>
<td>&quot;... in reference to wavelengths, [it] is defined as transmitting more than 1% of the incident radiation at each and every wavelength&quot; and &quot;[in] reference to polarization, it is defined as transmitting more than 20% of the horizontally polarized incident radiation at each and every wavelength&quot;</td>
</tr>
<tr>
<td>&quot;sharp cut-on&quot;</td>
<td>&quot;... sharp cut-on is defined in the context of a dye or filter, having a cut-on slope that at some concentration or dye density rises more than one half percent (0.5%) change in transmission for every one nanometer of increasing wavelength change. The cut-on slope is that portion of the transmission spectra of a cut-on dye that represents the transition between [the] substantially blocking and the substantially transmitting region.&quot;</td>
</tr>
<tr>
<td>&quot;cut-on filter&quot;</td>
<td>&quot;... an optical filter that substantially blocks all wavelengths shorter than the cut-on wavelength and substantially transmits all wavelengths that are longer than the cut-on wavelength. The cut-on wavelength is that wavelength in the transition zone at which the transmission is 1%.&quot;</td>
</tr>
<tr>
<td>&quot;portion&quot;</td>
<td>&quot;... part or share of something&quot;</td>
</tr>
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</table>

Plaintiff SunTiger contends that this Court cannot apply the stipulated construction in a way that would contradict the finding of the Eastern District of Virginia that YE-82 infringed SunTiger's patents. Pl.'s Mot. at 1 ("[T]he YE-82 lens material must literally infringe whatever claim construction the Court adopts in this case."). In essence, SunTiger argues the following: (1) the parties have stipulated to the prior construction, (2) the decision in the prior suit does not bind this Court, but (3) any ruling that this Court issues must not be inconsistent with the fact that YE-82 was found to infringe its patents.

I disagree with this assessment. My decision is not foreordained by the result in SunTiger, Inc. v. Scientific Research Funding Group. SunTiger attempts to elevate the prior claim construction to the level of a decision. Despite the parties' agreement that the prior claim construction would be binding, that prior court's decision applying its own construction is only persuasive. Although the parties have agreed to be bound to the use of the prior construction, they have not agreed that this Court's application of that construction must be consistent with prior decisions involving a different defendant and different lenses. Indeed, were consistency with prior results necessary, that would be tantamount to an improper form of collateral estoppel against a current party, i.e., Sunglass Products, which was not a party (nor a party in privity) to SunTiger v. Scientific Research Funding Group. Cf. MCA Records, Inc. v. Charly Records, Ltd., 865 F.Supp. 649, 654 (C.D. Cal. 1994) ("[D]ue process requires that the party to be estopped must have had an identity or community of interest with, and adequate representation by, the losing party in the first action as well as that the circumstances must have been such that the party to be estopped should reasonably have expected to be bound by the prior adjudication.").

I. CLAIM CONSTRUCTION.

Claim 54 of the 009 patent reads, in relevant part, as follows:

54. A cutting blade assembly . . . , said . . . assembly comprising:

a) a cutting blade having:

i) a front portion, said front portion including a sharp, forward cutting edge;

ii) a rear, trailing portion including a rear edge;

iii) a pair of side edges interconnecting said front portion and said rear trailing portion;

iv) at least one of said side edges being at least partially tapered; and

b) a blade holder [.]

Oasis contends that its replacement blade, the rear portion of which terminates in a triangular point, cannot infringe claim 54, which requires that rear trailing portion include a "rear edge." 1 According to Oasis' very brief memorandum, Oasis relies exclusively on what it believes will be the conclusion of the Court: that the rear point of the accused blade is not, either literally or by equivalents, a "rear edge" as properly construed.

--- Footnotes ---

1 Although Oasis did not mention the doctrine of equivalents until its Reply, Oasis has sufficiently set out its noninfringement contentions that the Court will consider, if necessary, noninfringement under the doctrine of equivalents as well.

--- End Footnotes ---

In its two paragraph claim construction argument, Oasis only cites to Webster's dictionary, urging a construction of "edge" as "a line or line segment that is the intersection of two plane faces (as of a pyramid), or of two planes." Oasis contends that this is the ordinary English meaning for the term. B&L counters that the term must be looked at through the eyes of one of
The claim element "rear, trailing portion including a rear edge" means the non-cutting face on the rear of the blade and a portion of the blade adjacent to this face. The rear edge can be, but is not required to be, generally parallel to the forward cutting edge of the front portion of the blade. The rear trailing portion can be generally trapezoidal or have other shapes.

The Court rejects both parties' proposals. While the meaning of "edge" in the claim is not as simple as Oasis suggests, it is not particularly esoteric. Looking to the intrinsic evidence and relying on common understanding and usage, the Court finds that the proper construction lies somewhere between the facile and the abstruse.

Part of the parties' difficulty in properly construing "rear edge" is caused by the fact that the limitation "edge" can itself have different meanings depending upon the context in which it is used. While in some instances, "edge" may describe the actual physical margin of intersection between two surfaces (e.g., "she cut herself on the sharp edge of the blade"), "edge" can also simply define the surface boundary created by that margin of intersection (e.g., "the quarter rolled off the edge of the table"). In the context of the relevant claim (Claim 54), "edge" is used in both senses.

Claim 54 specifies that the blade has three types of "edge": "cutting edge," "side edge," and "rear edge." While each type of "edge" must be interpreted individually, the nuances are clear from the context in which each type is used.

The "cutting edge" in claim 54 is described in both physical and relational boundary terms. It is a structure "included" in the "front portion" of the blade and is described physically as "sharp". It is also, however, described relationally: with respect to the rest of the blade it is "forward." Thus, not only is the "cutting edge" a physical structure, but it is a relational boundary that, by defining what will be considered the forward part of the blade, establishes the orientation for all of the other parts.

Likewise, the "rear edge" of the blade has dual meaning. In claim 54, the "rear edge" is physical, and is described as being "included" in the "rear portion" of the blade. In the 009 patent specification, it is also described in relational terms. The specification explains that in the preferred embodiment, the rear edge is "generally parallel to the forward cutting edge." Col. 11, Ins. 26-28. This statement would be meaningless unless the drafter meant to describe the two dimensional relationship between the front and rear surface borders. It must be noted that, in the relational, "border" sense, neither the specification nor claim 54 appear to place any shape limitations on the "rear edge." See col. 11, Ins. 49-51. Thus, the surface border defined by the rear margin may be any shape (e.g., linear, curved, triangular, scalloped, jagged) so long as at least some part of the surface border defined by the rear margin is at the rearmost point of the blade. 2

2 Note as well that while the specification leaves the "rear edge" open to not being parallel to the forward edge at all, the fact that all edges are defined in reference to the forward border supports a construction in which the forward cutting edge must by definition be perpendicular to what is considered to be the forward direction.

In contrast to the "cutting edge" or the "rear edge," the "side edges" of the blade are only ever described in relational terms. Both in the specification and the claims, the description of the "side edges" only makes sense if "edge" is interpreted as the border created by the margin of intersection, and not the margin itself. In claim 54, the "side edges" are described to be "at least partially tapered." In the context of the claims, the written description, the drawings and the prosecution history, it is clear that "tapered" only has meaning in describing the surface border of the blade as one looks from the forward portion to the rear portion of the blade. The drafter clearly meant to describe the shape of the blade's surface, not the shape of the margin of intersection. Another example of this kind of use is col. 11, Ins. 36-39, in which a preferred embodiment is described as having "rounded" side edges. The figure to which this passage refers (Fig. 7) confirms that the drafter meant "border," not "margin of intersection" (See Fig. 7, showing that rounded side edges are ones in which the side borders of the blade surface lack sharp corners).

While it might be argued that the drafter could have better described the invention by using separate words for either "border" or "margin of intersection," the Court finds that the differing meanings for "edge" in claim 54 can nonetheless be properly interpreted from context of the intrinsic evidence.
Thus, having considered the Motions, the papers filed in support of and in opposition to the Motions, the other pleadings and papers on file, as well as the evidence presented and the arguments of counsel at hearing, the Court arrives at this preliminary construction:

1. **INCLUDING A SHARP, FORWARD CUTTING EDGE** means "having a sharp margin of intersection between the top and bottom surfaces of the blade, in which the surface border defined by that margin also defines the forward most point of the blade."

2. **A PAIR OF SIDE EDGES INTERCONNECTING SAID FRONT PORTION AND SAID REAR TRAILING PORTION** means "the two surface borders, on each side of the blade, that are defined by the margin of intersection between the top and bottom surfaces of the blade and are adjacent to and/or continuous with the front and rear trailing portions of the blade."

3. **INCLUDING A REAR EDGE** means "having a margin of intersection between the top and bottom surfaces of the blade in which at least some part of the surface border defined by that margin is at the rearmost point of the blade. There is no limitation on the shape of the surface border defined by the margin of intersection."

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b. "sharp impact forces"

The court also agrees with Crane regarding the construction of "sharp impact forces." The phrase "sharp impact force" connotes an abrupt or sudden impact force sufficient to cause the undesirable result of an overflowing beverage or a damaged product. See '930 Patent, col. 3, ll. 12-17; col. 24, ll. 46-56. The court therefore defines "sharp impact forces" as "abrupt and sudden impact forces such as jarring, rolling, dropping, or tipping sufficient to cause immediate effervescence and overflowing of carbonated beverages upon opening, or damage to a container/product such that the container or product is no longer suitable for consumption or sale."

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1. **Sheath**

The district court framed the dispute surrounding the "sheath" limitation as "whether the sheath described has a particular size range," ultimately concluding that it did not. Summary Judgment Decision, 345 F. Supp. 2d 466. It thus construed the term to mean "any tubular member of any size that can be used for accessing the vascular system through the skin and through which other devices and elements can be passed." Id. Grayzel asserts that the district court erroneously relied on a dictionary definition to trump both the intrinsic and extrinsic record in rendering its construction. He contends that the correct construction for the "sheath" limitation, based upon the intrinsic record, is "a SDH sheath for use in the SDH technique." For support, he relies on the "Summary and Objects of the Invention" section, which he argues describes the introducing catheter and sheath as an assembly used in the SDH technique at least sixteen times. He also relies on the prosecution history, in particular a statement Grayzel made in response to an office action disclosing that "basically, the present invention sets forth an introducing catheter and/or sheath having a beveled end."

We disagree with Grayzel. The '960 patent uses the term "sheath" in the ordinary sense of the word. First, as the district court noted, claim 13 recites that the "sheath" is "of a size for use in the vascular system for assisting in the insertion of other devices in blood vessels through the wall of the blood vessel." Second, as St. Jude points out, the specification expressly defines the term "sheath" as "[a] thin-walled outer tubular member" through which an operational catheter is inserted into the blood vessel. '960 patent, col. 1, ll. 58-59, 67-68. While that definition is disclosed in the "Background of the Invention" section of the specification in the context of describing the prior art, Grayzel does not depart from it when describing his invention. For example, the specification states in the context of describing figures 12, 13, and 14: "Once the sheath is in place, with entry to the lumen of the blood vessel properly dilated and the opening is secured, the introducing catheter 506 and the guide wire 514 can be removed leaving the sheath in place to allow for entry of the various devices that
will then be placed into the blood vessel." '960 patent, col. 10, ll. 17-22. Third, logically, it is unlikely that Grayzel would have defined the term "sheath" distinct from the prior art because his invention did not radically depart from the modified Seldinger technique. Rather his invention involved an improvement over the prior art wherein he simply terminated the tip of the prior art sheath at an angle to facilitate entry through the puncture site.

Given that the term "SDH sheath" does not appear anywhere in the '960 patent or its prosecution history, we suspect that Grayzel likely coined the term for purposes of this appeal. Indeed, the statements in the specification and prosecution history relied upon by Grayzel do not actually support his proffered construction. Instead, we read those statements to be consistent with an ordinary definition for the term as accorded by the district court. Additionally, we note that before the district court Grayzel argued only in favor of limiting the definition of "sheath" to a particular size range, numerical limits which the district court correctly found are not present in the intrinsic record. Grayzel did not advocate below that the term "sheath" means "SDH sheath." Accordingly, we agree with the district court's construction of the term "sheath" to mean "any tubular member of any size that can be used for accessing the vascular system through the skin and through which other devices and elements can be passed."

HEN contends that the term "sheathing" does not require any construction as anyone would understand the plain and ordinary meaning of this word. (HEN CC Br. at 25.) Minco proposes to construe "sheathing" to mean "the sheathing is attached to the outside of the conductive tube; it is not physically attached to the inside of the tube, and it is capable of being slide [sic] over, telescoped onto, the conductive tube." (Minco CC Br. at 34.) We agree with HEN that the term "sheathing" does not require any construction and we reject Minco's proposed construction because it would add limitations that have no basis in the claim, the specification, or the prosecution history.

First, the portion of Minco's proposed construction that states that the sheathing is attached to the outside of the conductive tube is unnecessary as it is apparent to us that this would be understood to be required by a person of ordinary skill in the art. See Phillips, 415 F.3d at 1314 (stating that the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges). Second, with respect to the proposed construction that the sheathing is not physically attached to the inside of the tube, Minco's argument in support of this proposed construction is merely that the claim does not specify that the sheath is attached to the tube's interior, and that it would go against common sense for a sheath to be attached to the inside of the tube. We find that this is an insufficient basis to import a limitation into the claim that the sheath cannot be attached to the inside of the tube.

Finally, Minco argues that the specification and the prosecution history illustrate that the patent applicants understood the sheath to be a separate pre-formed unit, that is later "telescoped," "joined to," or "bonded to" the outside of the conductive tube. According to Minco, the specification states that one of the principal advantages of the invention is the ability to "preassemble the probe on a production line basis." (Minco Ex. A, col. 3, l. 21.) Then the specification describes the sheathing as being "telescoped" over the major length of the tube. Minco asserts that "telescoped" commonly means to slide or pass one within another like the cylindrical sections of a hand telescope. Minco also points to the portion of the specification that states "tube 1 performs the dual function of providing support for elements there within [sic] which may be preassembled as a unit and then joined to the sheath 2 and support 16 in an economical manner." (Minco Ex. A, col. 3, ll. 23-28.) Therefore, Minco concludes based on specification that the sheathing must be a separate pre-formed unit, so that it can be later "telescoped," "joined to," or "bonded to" the outside of the conductive tube. Minco also contends that the figure contained in the specification supports its argument that the sheathing is a separate unit, capable of being slid over the tube.

We find that these arguments by Minco are meritless. Minco essentially asks us to construe a word, "telescoped," contained in the specification and then import this limitation from the specification into the claim. Additionally, the specification does not fully support Minco's proposed construction as it also states "[t]he sheath . . . is bonded [to the tube] in any convenient manner." It seems impossible that the sheathing could be bonded to the tube, as described in the specification, but also a separate unit capable of being slid over the tube, as Minco proposes in its construction. Contrary to Minco's proposed
construction, the claim only requires that the sheathing be attached to the exterior of the tube. See Minco Ex. A., col. 4, ll. 50-53.

Turning to Minco's prosecution history argument, it claims that HEN distinguished the prior art disclosed in Norburn (U.S. Patent No. 3,353,808) ("Norburn") and made other statements to the PTO thereby narrowing the construction of sheathing so that it does not include a molded-on refractory coating and that it must be a separate and distinct entity from the rest of the probe, capable of being slid on or telescoped over the tube. HEN made the following representation to the PTO concerning Norburn:

The Norburn patent has been cited as teaching the use of a sheath forming a shoulder, to which hollow support means abuts when receiving the probe. It is again submitted that the Examiner's reliance upon the Norburn patent for this teaching is misplaced. The Norburn patent discloses a refractory coated oxygen lance which includes a generally central section of tubing (14) which is press-fitted onto a portion of a surrounding tubing called the "rear section" (11) formed of relatively thick, black iron pipe. The two tubes are press-fitted together by heating both tubes and then installing a portion of tube 14 into the end of tube 11. Because the tubes are of differing outer diameters, a shoulder is formed. Thereafter, a heat-resistant refractory coating (15) is applied over the entire length of tubing (14) and over a portion of tube (11). Preferably, the coating is molded onto the tubes. Thus, the protective coating (15) cannot be said to be a "sheath" in the same manner as applicant's sheath. In addition, the coating does not initially contain a shoulder which abuts against a hollow support tube in the manner of applicants' claimed invention. Instead, to the extent the coating includes a shoulder, the shoulder is formed only when the coating is applied to conform to the fitted-together tubes. . . . Thus, none of the references cited by the Examiner teaches the applicants' claimed concept of employing such an abutting shoulder arrangement.

(Minco App. 4J at HEN000144-145) (emphasis omitted). Minco only points to a portion of this quote in its argument. However, after examining HEN's entire statement regarding Norburn, we conclude that HEN distinguished the sheathing in its claim from the Norburn sheathing based on the formation of a shoulder, and not based on whether the sheathing was molded or not molded onto the probe's electrically conductive tube. Minco's other references to the prosecution history are similarly unavailing. Consequently, we find that HEN has not made a clear disavowal of claim coverage regarding whether the sheathing can or cannot be molded onto the conductive tube, or whether it must be a separate unit that is capable of being slid on and off the probe.

1. "Sheet" and "Sheet-like"

The parties contend that the proper construction of claim terms "members of conductive sheet material" (claim 1) and "electrically conductive sheet-like members" (claim 6) is critical to this appeal. We agree. The pertinent portion of the district court's "claim meanings" reads as follows (emphasis added):

"Sheet" or "sheet-like" mean conductive material that can be shaped to furnish electrical contact between the resistor and the outside contact in the steering column and can be shaped into contacts with a long dimension along the axis of the key. The use of the sheet in the claims merely shows the advantages of that method and is not a part of the claim.

The district court erred when it instructed the jury that the use of the term "sheet" is "not a part of the claim." The claimed "members of conductive sheet material" (claim 1) and "electrically conductive sheet-like members" (claim 6) are clearly limitations of the claims. Although the claims themselves do not define the terms "sheet" and "sheet-like," the specification variously refers to "sheet metal," "flat sheet metal," "conductive sheet metal," and "electronically conductive sheet metal." In addition, the applicants added the references to "sheet" and "sheet-like" to the independent claims in their response to the first examiner's action. This is apparent from the following example, which is the result of our comparison between originally filed claim 1 and issued claim 1 (text that is present in the issued claim but absent from the original claim is underlined and text that is absent from the issued claim but present in the original claim is bracketed):

A packaged electronic component includes an insulating body, [completely enclosing] an electronic chip disposed within the insulating body and having a pair of terminals, and two members of conductive sheet material which connect to opposite terminals, the two members extending laterally from said terminals to the outside of the insulating body and forming a pair
of runner-like leads that terminate said laterally extending members [which are electrically connected to the terminals of the chip and which extend outwardly from said body, said leads being particularly adapted for making and breaking sliding electrical contact with stationary contacts in an electronic circuit].

As may be seen, the added limitations more particularly define how the terminals of the electronic chip are electrically connected to the runner-like leads. In their amended claim, the applicants made it clear that conductive sheet material connects to the terminals of the electronic chip and forms the runner-like leads. Similar limitations were added in the other independent claim that eventually issued as independent claim 6. Importantly, the applicants also specifically relied on these new limitations in the remarks portion of their first amendment. They distinguished the teachings of U.S. Patent No. 3,808,506, which describes wire leads electrically connecting circuit elements to button contact pads, by arguing that in their claimed invention the electrical connection between the electronic chip and the runner-like leads is provided by members of conductive sheet material, as opposed to wire leads, extending laterally from the terminals of the electronic chip to the outside of the insulating body.

A review of the '482 patent and its prosecution history reveals that the terms "sheet" and "sheet-like" do not have any special meanings in the art and that the '482 inventors used these terms in their ordinary, everyday sense, i.e., to describe something flat with a fairly broad surface relative to its thickness. The claims thus include within their literal scope only devices with conductive material that comprises a fairly broad surface relative to its thickness.

A. "Sheet"

Claim 1 of the '418 patent describes "an implantable sheet for implantation in a body . . . ." Plaintiffs propose that "sheet" means "a relatively thin structure, such as a layer or covering." Gore contends that the term refers to "a piece of material having a length, width and thickness."

Plaintiffs rely upon the dictionary definition of "sheet." See Pl. Claim Constr. Mem., Ex. H, Random House Dictionary of the English Language Second Edition, at 1762 (1987). While a court may rely on a dictionary to construe ordinary and customary claim terms, it may only do so when it considers the definition in the context of intrinsic evidence and only then to the extent that the "definition does not contradict any definition found in or ascertained by a reading of the patent documents." Phillips, 415 F.3d at 1318-19, 1322-23. Gore claims that Plaintiffs' proposed construction is contrary to the preferred embodiments of the expander identified within the '418 patent's Abstract, Summary of the Invention and Detailed Description. However, Gore fails to specify how the phrase "a relatively thin structure, such as a layer or covering" necessarily precludes expandable structures. Considering the proposed definitions in the context of the intrinsic evidence presented, the Court concludes that Plaintiffs' proposed construction comports with the specification and language of the claim. In contrast, Gore's proposed construction of "sheet" is overbroad and would include nearly every conceivable tangible object, regardless of the object's thickness. Accordingly, the Court determines that the term "sheet" means "a relatively thin structure, such as a layer or covering."

The parties argue extensively over what constitutes a "sheet of flexible material." Ludlow contends that a sheet consists of a single layer of material, while ConMed posits that a "sheet," as used in the '511 patent, can consist of one or more layers. The distinction is important because, whereas the '511 patent contemplates the conductive paint, conductive adhesive and patient adhesive all applied directly to one side of the flexible backer, the 210 has a small layer of polyester between the flexible backer and the conductive paint and conductive adhesive. If, as ConMed contends, a "sheet of flexible material" includes both the flexible backer and the smaller, polyester layer affixed thereto, then the 210 is substantially similar to the '511 patent such that, provided all the other elements of the claim are present in the 210, it infringes upon the '511 patent's monopoly. If, on the other hand, a "sheet of flexible material" cannot be so defined, then the 210 does not contain all the elements of the '511 patent, and therefore, does not infringe upon it.
The '511 patent itself does not explicitly define the term "sheet." The use of the term within the patent suggests that it refers to a thin, continuous, flat layer of material. Nowhere within the claims or the specification of the '511 patent does the term "sheet" refer to multiple layers of different materials or elements or multiple layers of dimensionally different materials. For example, that portion of the specification discussing Figures 17 and 18 provides, in part, as follows:

Reference number 212 identifies a substrate such as a paper tape substrate and the reference number 214 identifies a pressure sensitive patient adhesive adhered to and entirely covering one surface of the substrate 212. The substrate 212 is … a relatively narrow strip having an indefinite length. Adhered centrally to the exposed surface of the patient adhesive and extending longitudinally the entire length of the substrate 212 is a thin carrier sheet 216 of flexible and dimensionally stable material such as polyethylene terephthalate. The width of the sheet 216 is less than the width of the substrate 212 so as to leave to each side of the sheet 216 a margin 218 comprising the more aggressive patient adhesive. Applied longitudinally and centrally to the lower face of the sheet 216 is a stripe 220 of a conductive paint. The stripe 220 is narrower than the sheet 216 so that margins 222 remain on the sheet 216 for receiving a layer 224 of conductive adhesive which fully covers the conductive stripe 220 and also shields the side edges of such stripes.

(See Griem Aff. Ex. C, Col. 13 at line 64.) The specification references item 216 as a "thin carrier sheet of a flexible and dimensionally stable material such as polyethylene terephthalate." (See Powers Aff., Ex. A at col. 14.) Item 216 is a single layer element (plastic) that attaches to the substrate. (Id.) This portion of the application never refers to the substrate together with the flexible material (i.e. multiple layers) as a sheet as ConMed now argues. Rather, the specification refers solely to the flexible material 216 (which is dimensionally different than the underlying substrate) as the sheet. As another example, the specification states that "in a tenth embodiment … each of the electrodes comprises a substrate having the jigsaw puzzle shape and coated on one face by a patient adhesive to which is mounted a relatively narrow sheet of dimensionally stable plastic material." (Id. at col. 2.) Again, this does not contemplate multiple layers or different materials. Similarly, when discussing the fifth embodiment, the specification states that "a medical electrode is formed from a conductor comprising a suitably formed plastic sheet having a thin layer of electrically conductive, paintable material adhered to one face thereof ...." (See id. at col. 2.) 10

10 See also id. ("In an eighth embodiment, a substrate is covered on one face thereof … to which is centrally adhered a sheet of dimensionally stable nonconductive materials, such as plastic …."); id. at col XXX ("Conductive adhesives available in sheet form can be applied directly to the surface of the substrate 132 over the conductive layer 134 or the conductive adhesive could be applied by spraying, silk screen, casting, or other processes.")

This use of the term "sheet" throughout the specification and the claims accords with the ordinary dictionary definition, which provides that a "sheet" is

2. a broad, relatively thin, surface, layer, or covering. 3. a relatively thin, usually rectangular form, piece, plate, or slab …. 4. material, as metal or glass, in the form of broad relatively thin pieces.

The Random House Dict. of the English Language at 1313 (Random House 1979); see also Oxford English Dict., at http://dictionary.oed.com (Oxford Univ. Press 2002) ("A broad expanse or stretch of something lying out flat … forming a relatively thin covering or layer."); Webster's II New Riverside Univ. Dict. at 1073 (Riverside Publ. 1994) ("a broad, thin, usually rectangular piece of material, as paper, metal, glass or wood."); The Am. Heritage Dict. of the English Language, at http://www.bartleby.com (4th ed. 2000) ("A broad, flat, continuous surface or expanse.").

Nothing in the patent itself or the ordinary use of the term defines the term "sheet" to include multiple layers or a piece of material with a dimensionally different (i.e. smaller) type of material affixed to it. Of course, the materials comprising the sheet may be composites made up of different elements. For example, sheets of plywood, paper or plastic may be composites of different elements. A sheet of plywood is made up of thin layers of wood that are glued together. A sheet of plastic is comprised of the various elements that make up the plastic. This, however, should be distinguished from multiple layers of different materials and multiple layers of dimensionally different materials. Thus, a sheet of plywood with a smaller piece of plywood attached to it is no longer referred to as a sheet of plywood. Similarly, a sheet of plywood with a
smaller piece of plastic adhered thereto is not ordinarily referred to as a sheet. 11 To summarize, the term "sheet" may include material made up of different elements and may even include multiple layers of material that are dimensionally the same. When various layers are pressed together, however, to retain the characteristics of a "sheet," the material must have a continuous, flat surface (e.g. a bed sheet, a sheet of wood, a sheet of paper, or a sheet of ice). By placing a dimensionally different (e.g. a smaller) material on top of a sheet of flexible material, it loses its sheet-like characteristics because it loses its continuous, flat shape. Thus, as used in the '511 patent's claims, the term "sheet of flexible material" does not include dimensionally different materials affixed to the flexible backer.

11 ConMed's reference to the use of the term "sheet" in prior art in the field of invention is unavailing and may work against its argument. ConMed cites to patent no. 3,989,035 ("the '035 patent") which has a "disposable pre-gelled medical electrode … wherein said carrier sheet is formed of a multiply sheet of polypropylene." (ConMed Mem. of Law at 8 (emphasis added).) According to ConMed, "this reference for a disposable medical electrode expressly identifies a single 'sheet' as having multiple layers." (Id.) This argument is unpersuasive because, in the '035 patent, the patentee expressly defined the term sheet to be "multi-ply." The term "ply" means "one thickness or layer." Random House Dict. at 1108. The prefix "multi" means "many." Id. at 939. Thus, the '035 patentee ensured that his use of the term "sheet" included multiple layers. The converse of this is that the term "sheet" does not ordinarily encompass multiple layers. Cartmell made no effort to define the term sheet to include multiple layers.

As ConMed points out, there is a rule of patent construction that "an indefinite article 'a' or 'an' in patent parlance carries the meaning of 'one or more' in open-ended claims containing the transitional phrase 'comprising.'" KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed. Cir. 2000). Applying this rule of claim construction, ConMed's patent can be interpreted as follows: one or more sheets of flexible material and one or more conductive paints adhered to one face of said sheet … wherein said electrode further comprises one or more layers of adhesive means on said one face of said sheet. (See Powers Aff., Ex. A, col. 16.) The problem with applying this rule here is that the claim requires, among other things, that "a conductive paint [be] adhered to one face of said sheet" and that a "layer of adhesive means [be applied] on said one face of said sheet." (Id. (emphasis added).) This part of the claim does not contemplate the plural form of sheet, but, rather, refers only to the singular form. Thus, the parts of the claim limiting application of the adhesive and conductive paint to "one face of said sheet" suggest only one sheet. Even if the claim contemplates multiple layers of flexible material as comprising the sheet, the claim still requires that both the conductive paint and the patient adhesive be applied to "one face of said sheet." (Id.)

Confortex contends that a "sheet" exists only if there is a continuous expanse of material. The "Shangri-La", therefore, does not include a "sheet" because the front and back fabric panels of its product are actually composite strips. In effect, neither a "first" nor a "second" "sheet of relatively translucent material" exists on the "Shangri-La."

Hunter Douglas, however, asserts that the method used to produce the "Shangri-La" product is irrelevant here because the claims at issue are product claims. Instead, the important consideration is that in its final state, the front and rear fabric panels of the "Shangri-La" are in fact "sheets" rather than composite strips much like woven thread is a sheet of fabric rather than composite threads. Hunter Douglas cites to Exxon Chemical Patents, Inc. v. Lubrizol Corp., 64 F.3d 1553 (Fed. Cir. 1995) for the proposition that "a product claim is infringed by any product containing every claim limitation, regardless of how the product is made." Id. at 1557 n.4. (citing Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1535 (Fed. Cir. 1991)). This principle of patent law, however, ultimately sheds no light on the present action. 6

6 In Exxon, plaintiff claimed defendant infringed on its patent for a lubricating oil composition. Plaintiff proffered an interpretation of the claim at issue which would allow a finder of fact to find infringement if defendant used all of the ingredients of plaintiff's composition regardless of the relative proportion of each ingredient. 64 F.3d at 1557. Defendant, on
the other hand, argued that infringement could be found only if the ingredients of plaintiff's composition were found in defendant's final product. Id. at 1558. The court, however, found no "temporal limitation to the term 'composition'" either in the specification or the patent's prosecution history. Id. Accordingly, the court held that defendant could be found to infringe if defendant's product "at some time contained each of the claimed recipe ingredients in the amounts specifically claimed." Id.

Similarly, here, there is no temporal limitation on the term "sheet". As a result, given the teaching of Exxon, whether one has a "first" and "second" "sheet" in the final stage of the product or at some other point in the manufacturing process is irrelevant. The critical inquiry is whether first and second "sheets" are present. Thus, we are left with the same problem - are Comfortex's "composite strips" or "composite facings" the same as Hunter Douglas's first and second "sheets"?

More important is the fact that neither the specifications nor the prosecution history clearly set forth the definition of "sheet" as it is used in the '999 patent. The specifications use terms such as "first and second parallel sheer fabric sides", col. 2, l. 55, "first sheer fabric sheet [and] a second sheer fabric sheet", col. 3, ll. 40-41, see also col.3, ll. 55-56, "first sheer fabric", col. 4, l. 23, and "second sheer fabric", col. 4, ll. 25-26. The prosecution history is similarly varied. See Comfortex Book Exs., Ex. 6, p.2, l. 24 ("first and second parallel sheer fabric sides"); id. at p.6 ll. 18-19 ("a first sheer fabric sheet"); id. at p.8, line 21 ("sheer fabrics"); id. at p. 30, l.14 ("first and second sheer fabrics"); id. at p.41, ll. 24 ("first wide sheet material"); id. at claim 50, p. 60, l.21 ("first sheet of material"); id. at claim 76 ("a first sheet of material, a second sheet of material"); id. at claim 237 ("first sheet of relatively translucent material"). Indeed, during the final stages of the application process, Colson requested that a reference to "sides" be changed to "sheets of differing texture, weave and openness." Id. at Ex. 6H, 2/9/1994 Supplemental Amendment. The PTO rejected the amendment on March 15, 1994 because such a change would "necessitate consideration of new matter." One possible inference from the rejected amendment is that both Colson and the PTO recognized a difference between "sides" and "sheets". This is, however, far from conclusive pronouncement.

In the final analysis, the Court is left with two reasonable interpretations of a malleable term. If only the law permitted declarations of a tie much difficulty could be avoided. However, "when a claim term can reasonably be given two meanings and neither the specification nor the file history provide a clear basis for selecting one, the court will adopt the narrower one, which tends to show noninfringement, on the ground that the patentee is ultimately responsible for the drafting of the claim language," Chisum, supra at 18:03[1] (1997 Supp.) (citing Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572, 1581 (Fed. Cir. 1996) (limiting interpretation to narrower of two alternatives); Athletic Alternatives, Inc. v. Prince Manufacturing, Inc., 73 F.3d 1573, 1581 (Fed. Cir. 1996) (holding notice function requires that a claim be interpreted only as broadly as its unambiguous scope). Here, the narrower construction of the term "sheet" favors Comfortex. As a result, Comfortex's "composite strip" or "composite facing" escapes the reach of Hunter Douglas's "sheet.

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Although the Weber patent contains 27 Claims, only Claim 1 is relevant to this litigation. The other 26 Claims contain all of the limitations described in Claim 1, the exact language of which is as follows:

A machine for accumulating folded sheets into brochures and like products, comprising:

(a) a sheet transporting device arranged to advance sheets having folded backs in a predetermined direction along a predetermined path and including:

1. at least two elongated parallel carriers and
2. discrete conveyor means for each of said carriers,
3. each of said conveyor means having means for advancing sheets along the respective carrier; and

(b) means for feeding sheets to said carriers so that the backs of the sheets straddle the respective carriers, comprising
1. a first feeding unit having means for depositing first sheets onto successive carriers in a first portion of said path and

2. at least one additional feeding unit having means for depositing second sheets over successive first sheets in a second portion of said path downstream of the first portion so that the backs of the second sheets straddle the backs of the respective first sheets and form therewith accumulations of first and second sheets wherein the backs of the second sheets are accessible.

(emphasis added)

In memoranda filed in this Court and in oral argument, the parties agree that whether the Meier '755 patent anticipates the Weber patent depends upon the meaning of "sheets" and upon the meaning of "discrete conveyor means for each of said carriers." Because plaintiffs must show that every element of the Weber patent is anticipated by the asserted anticipating reference in order to obtain the declaratory judgment they seek, if either the first or the second point of dispute is found against the plaintiffs, then the plaintiffs' invalidity contention cannot prevail. For this reason, only the "sheets" issue is discussed here, as it is dispositive of this motion.

A.

Whether the term "sheets" is a claim limitation which must be met to prove anticipation is itself a point of contention between the parties. Plaintiffs maintain that the form of paper used is irrelevant. "The sheets (are not) part of the machine. It's a machine that's working on sheets." Hearing Transcript at 30. Plaintiffs argue that even if "sheets" did specifically 'call for discrete or separate sheets, it would not be limited as a matter of law because the limitation does nothing to 'define the invention', i.e., patentably distinguish it from the prior art." Plaintiffs' Memorandum in Response to Defendant's Post-Hearing Memorandum and Proposed Findings of Fact at 7. Defendant disagrees, noting that the term "sheets" is set forth in the preamble of Weber Claim 1 and is repeated eight times in the body of the claim, and contending that the term "sheets" is "necessary to give meaning to the claim and properly define properly the invention," and is thus an affirmative limitation of the claim. Gerber Garment Technology v. Lectra Sys., Inc., 916 F.2d 683, 688 (Fed. Cir. 1990).

The importance of a term, be it a word used in the claim preamble or in the claim itself, depends upon the "entirety of the patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim." Corning Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257 (Fed. Cir. 1989); see also In re Stencel, 828 F.2d 751, 754 (Fed. Cir. 1987). In certain circumstances, terms used in a claim preamble and repeated throughout the body of the claim (such as "sheets" in the Weber patent) become claim limitations, and these claim limitations must be taken into account in construing the patent. For example, the term "cutting blade" was interpreted to be a claim limitation because, inter alia, it "is referenced repeatedly in the body of the claim. It is integral to the claim itself." Gerber Garment, 916 F.2d at 689.

The focus on "sheets" may appear to be inappropriate; as plaintiffs observe, the Weber patent concerns a binding machine, and not the paper on which it operates. Nevertheless, even a brief inquiry toward an understanding of the bindery industry reveals that the role of "sheets" is crucial. Because paper tends to tear or flutter when moved too quickly, the speed of the binding process has always lagged behind that of the printing press, which prints on rolls of paper. Consequently, inventions in bindery appropriately address the problem of how best to handle sheets of paper.

Meier improved the art of bindery by designing a machine with a rotary drum and capable of handling interconnected folded sections in web form. Prior art devices operated only on separate individual sheets. Placing "individual sheets in the correct position upon one another . . . required a corresponding great expenditure in machinery and control equipment," however. Meier '755, col. 1, ll. 22-26. By taking a continuous web of paper from the printing press and folding it in zig-zag or fan fashion (rather than cutting it), Meier was able to increase productivity without requiring greater expenditures in machinery and control equipment.

Indeed, the Meier '755 patent is exclusive as to the use of sheets in web form:

Since the individual sheets, which in each case form a zig-zag folded web, are interconnected with one another, the mutual position of the sheets of a web is always defined. Meier '755, col. 2, ll. 4-7 (emphasis added).
Now in order to implement these and still further objects of the invention . . . the method for the formation of multi-sheet printed products, especially newspapers and magazines, is manifested by the features that at least two zigzag shaped, folded webs, each of which is formed by sheets interconnected with one another at fold locations or fold lines extending transverse to the web lengthwise direction, are deposited in aligned condition upon one another, and these webs are supported at spaced locations at the fold locations, preferably at each second fold location. Meier '755, col. 1, ll. 47-59 (emphasis added).

The language plainly indicates that in order to implement the "object" of the invention, "in each case" and "at least" "two Zigzag shaped, folded webs" must be used. Although it was and continues to be industry practice to bind paper together in separate sheet form, the very point of Meier's invention was to avoid the problem of individual, separate sheets by using paper in folded web form. See also Weber, cols. 1, 2 (addressing the problem of sheets).

To refute this argument, plaintiffs point out that the Meier '755 patent states that "it is already known in this technology to withdraw individually printed sheets from stacks and to place them upon one another." Meier '755, Col. 1, ll. 20-22. From this, plaintiffs argue that only "for the sake of simplicity and cost alone" did Meier '755 choose to feed sheets interconnected in web form.

The Federal Circuit has observed that "the problem confronted by the inventor must be considered in determining whether it would have been obvious to combine references in order to solve that problem." Diversitech Corp. v. Century Steps, Inc., 850 F.2d 675, 679 (Fed. Cir. 1988). The problem confronted by Meier was the problem of sheets. It is illogical for plaintiffs to assert that it is "obvious" that individual sheets could have been used in the Meier '755 and it was only for the "sake of simplicity and cost alone" that sheets in web form were utilized, when, as the plaintiffs' own expert witness has observed, "It is the feeding sections interconnected in a web which Meier considered to be an improvement in the art." Al Jeske Decl. P 20. Moreover, plaintiffs' assertion contravenes the language of the Meier '755 patent itself, which states that only paper in folded web form is able to "implement the object . . . of the invention."

For these reasons, the Court finds that "sheets" is a claim limitation in the Weber patent.

If even a single element or limitation required by the claim is missing from the disclosure of the reference, there can be no anticipation. See Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 1548 (Fed. Cir. 1983). In order to discern whether "sheets" is missing from the disclosure of Meier '755, it is necessary as an initial matter to define "sheets" as used in the Weber patent.

The meaning of "sheets" is a question of proper claim interpretation. Words in a claim are to be given their ordinary and everyday meaning unless the specification indicates otherwise with respect to a particular term. See Jonsson v. Stanley Works, 903 F.2d 812, 820-21 (Fed. Cir. 1990). The dictionary defines a "sheet" as a "piece of paper of a size suitable for printing esp. of books or other matter of which the page is a subdivision of a larger area -- often distinguished from reel or web." Webster's Third New International Dictionary (1971) (emphasis in original). There is no indication in the Weber patent that any meaning other than the ordinary meaning of sheets was intended.

Plaintiffs argue that "Weber Claim 1 is not, in law or fact, limited to coverage of a machine for individually handling separate sheets," because defendant's use of "sheets" in Claim 1 does not specifically exclude any mention of individual or discrete sheets and because defendant never suggested that "it was critical for his machine to operate on separate sheets." Plaintiffs' Memorandum in Response to Defendant's Post-Hearing Memorandum and Proposed Findings of Fact at 2, 8. Plaintiffs' arguments are unpersuasive.

Defendant did not need to state either that "sheets" means only sheets in individual form or that it is critical for the Weber device to operate on single sheets for the simple reasons that, first, "sheets" and "web" are not synonymous in common usage, and in fact, their meanings are distinct from each other; and second, the usual industry practice was and is to bind paper in individual sheet form. Hence, it was unnecessary for defendant to state that it was "critical for the machine to operate on separate sheets" because it was already presumed -- which is precisely why the Meier '755 patent makes clear it was departing from this practice by referring repeatedly and exclusively to "webs." Plaintiffs challenge Webster's Third by noting that "webs comprise 'sheets', nevertheless, and folded 'sheets' at that, as Meier '755 points out"; but the fact that many sheets connected together make a web does not mean that a "sheet" is a "web." Plaintiffs' Memorandum of Law Including Proposed Findings of Fact and Conclusions of Law in Support of its Motion for Summary Judgment at 24.
Independent claim 1 reads (emphasis added):

1. A static-dissipating, synthetic, surface-covering sheet material which comprises:

   a) an electrically nonconducting, synthetic sheet laminate material having a hard thermoset resin top surface suitable for use as a surface covering; and

   b) an electrically conductive layer of a polymeric, film-forming, particulate binder material secured to the bottom surface of the synthetic sheet material, the polymeric material containing uniformly dispersed therein a static-reducing amount of electrically conductive particulate material wherein the particulate material comprises from about 2 to 40% by weight of the polymeric binder material, whereby static charges, accumulating on the top surface of the synthetic sheet material, are dissipated through the electrically conductive layer.

On Nevamar's motion for summary judgment and Charleswater's motion for partial summary judgment on claim construction, the district court held that Nevamar's products do not infringe the '040 patent as a matter of law and granted summary judgment of noninfringement in favor of Nevamar.

In its infringement analysis, the district court held that the accused Nevamar products did not infringe claim 1 either literally or under the doctrine of equivalents. Specifically, the district court held that none of the accused Nevamar products met the "secured to the bottom surface of the synthetic sheet" limitation, the "containing uniformly dispersed therein . . . conductive particulate material" limitation, or the "polymeric, film-forming, particulate binder material" limitation. The district court also held as a matter of law that the "electrically conductive" limitation does not read on the accused products that contain a melamine polymer resin, but found a genuine issue of material fact as to whether that limitation reads on the accused products that contain a phenolic polymer resin.

DISCUSSION

*   *   *

1. The "secured to the bottom surface of the synthetic sheet material" limitation

The accused Nevamar static-dissipating products have a multilayer construction. The layer that Charleswater alleges to be electrically conductive in the Nevamar products is an interior layer which is attached to the underside of the nonconductive "surface" layer.

The district court construed the "synthetic sheet material" in subpart (b) of the claim to refer to the static-dissipating product as a whole. Based on this construction, the court interpreted the "secured to the bottom surface of the synthetic sheet material" limitation to read only on a static-dissipating product where the electrically conductive layer is at the bottom of the finished material. The district court then held that this limitation does not read on the accused Nevamar products because their alleged conductive layers are not on the bottom of the products. This analysis is incorrect.

In this case, the phrase "the synthetic sheet material" in subpart (b) of the claim refers to previously described synthetic sheet material. The first description of the term, found in subpart (a), reads "an electrically nonconducting, synthetic sheet laminate material." Thus, the conductive layer described in subpart (b) of the claim must be secured to the bottom surface of the nonconductive layer described in subpart (a) of the claim, not the bottom surface of the complete static-dissipating material.

The district court properly noted that the use of the word "comprising" in the claim preamble makes this an "open" claim, i.e., the claim is infringed if the accused material embodies all of the claim limitations even if the article contains additional elements not described in the claim. In this case, so long as the accused static-dissipating material has an electrically nonconducting layer that embodies all of the limitations described in subpart (a) and an electrically conductive layer that embodies all of the limitations described in subpart (b), the material literally infringes the claim even if it has additional...
layers below the conductive layer.

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B.

Claim 1 of the Weber patent discloses a "sheet transporting device arranged to advance sheets having folded backs in a predetermined direction along a predetermined path and including at least two elongated parallel carriers and discrete conveyor means for each of said carriers, each of said conveyors having means for advancing sheets along the respective carrier. …" Ferag contends that the "sheet transporting device" should be construed as having six elements: a shaft, a hub, carriers, plate-like guides, chain conveyors, and pushers. These are the elements numbered 1 to 6 in figure 1 of the patent. Ferag states that this construction finds support in the Weber patent specification, which in the "description of the preferred embodiments" refers to "sheet transporting device" as follows: "The guides 4, chain conveyors and pushers (not specifically shown) are identical with or analogous to the parts 4, 5 and 6 of the sheet transporting device 1-6 in the machine of FIG. 1." See Weber patent, col. 7, ll. 13-15 (emphasis added). To buttress this interpretation, Ferag refers to the prosecution history of the Weber patent, in which the attorney prosecuting the Weber patent application before the U.S. Patent and Trademark Office referred to the sheet transporting device "as the device 1-6 of Fig. 1." Pl.'s Ex. 2 at 77.

In construing the specific language of a claim, "words … will be given their ordinary … meaning, unless it appears that the inventor used them differently." Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759 (Fed. Cir. 1984). "Claims are not to be interpreted by adding limitations appearing only in the specification. . . . Although the specification may well indicate that certain embodiments are preferred, particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments." Electro Medical Systems, S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994).

Ferag's proposed interpretation of "sheet transporting device" fails to overcome the clear language in the claim as to the meaning of the term. The language in the specification and the reference in the prosecution history describing the sheet transporting device as including elements "1-6" simply describe two embodiments of the claimed invention, i.e., that shown in figure 1, and that shown in figures 2 to 4. These references do not control the meaning of "sheet transporting device," which is defined in the claim: it covers a drum and "includes at least two elongated parallel carriers, each carrier having discrete conveyor means." Ferag's proposed interpretation would violate the rule that particular embodiments appearing in a specification should not be read into the claims when the claim language is broader than such embodiments, and it would also violate the rule of claim construction prohibiting "double inclusion." Ex parte Kristensen, 10 U.S.P.Q.2D (BNA) 1701, 1703 (Bd. Pat. Appeals 1989). If "sheet transporting device" is interpreted as proposed by Ferag, that is, as including elements 1 to 6 described in the specification -- shaft, hub, carriers guides, endless chain conveyors, and pushers -- then the subsequent language in claim 1 defining the elements of the sheet transporting device as including carriers, conveyors, and advancing means would be "doubly included" and superfluous.

As interpreted, the "sheet transporting device" element of claim 1 literally reads onto Ferag's IPEX machine because Ferag's IPEX machine has a drum and "at least two elongated parallel carriers, each carrier having discrete conveyor means."

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II

SRAM argues that the district court erred in its construction of the term "shift actuator" in claim 16 of the reexamined '291 patent, and that the appropriate construction of the term is "a mechanism that controls the changing of gears." SRAM contends that the district court did not give enough weight to the ordinary meaning of the term, that it disregarded the claim differentiation doctrine, that it improperly read limitations from the specification into the claim, and that it ignored the distinction between the apparatus and method claims of the patent.
We next look to the specification to determine whether SunRace has satisfied its burden of showing that SRAM meant to
from that course of events that both SRAM and the examiner regarded claim 24 as adding something--the cam means--to
If, as SunRace contends, the shift actuators in claim 16, and thus in claim 27, were already limited to those containing a
cam, there would have been no difference between claim 24 and claim 27. Yet the patent examiner deemed both claim 24
and claim 27 to be patentable. Had SRAM understood the term "shift actuator" to be limited to devices containing a cam,
one would assume that SRAM would have requested that claim 24 be cancelled (as it did in the case of claims 27 and 28
once claim 16 was amended). Instead, SRAM continued to prosecute claim 24, and the examiner found it patentable, even
after claim 16 was amended to include the structural mounting limitation of the shift actuator on the handlebar. We infer
from that course of events that both SRAM and the examiner regarded claim 24 as adding something--the cam means--to
the limitations found in claim 16 as amended in reexamination.

B

We next look to the specification to determine whether SunRace has satisfied its burden of showing that SRAM meant to
define the term "shift actuator" more restrictively than is suggested by its ordinary meaning and by the doctrine of claim
differentiation. A "claim term will not receive its ordinary meaning if the patentee acted as his own lexicographer and clearly set forth a definition of the disputed claim term" in the specification. CCS Fitness, 288 F.3d at 1366. See also Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1249 (Fed. Cir. 1998) ("The patentee's lexicography must, of course, appear 'with reasonable clarity, deliberateness, and precision' before it can affect the claim."). We have recently held that "claim terms take on their ordinary and accustomed meanings unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1327 (Fed. Cir. 2002).

We believe the district court erred in relying on various statements in the written description to conclude that the term shift actuator should be limited to a device containing the cam structure of the preferred embodiment. The district court focused on the following statements in the written description: (1) One of the objects of the invention is "to provide a bicycle derailleur shifting system having a handgrip shift actuator embodying a generally helical cam which defines the derailleur mechanism movements," '291 patent, col. 3, ll. 32-36; (2) "Another important part of the invention is . . . the programming of the cam operating face of the handgrip shift actuators of the invention to accurately achieve such shifting limits for each available derailleur system," id., col. 6, ll. 20-26; (3) "Each handgrip shift actuator contains a generally cylindrical cam member having a generally helical operating face configured with a plurality of spaced detents or valleys with a cam peak or lobe between each pair of adjacent detents," id., col. 4, ll. 49-53; and (4) "A rotary cam member 74 having a generally helical operating face is the heart of the rear handgrip shift actuator," id., col. 9, ll. 64-66. The district court determined that those statements, in connection with the absence of any disclosure of a shift actuator other than one using a cam mechanism, had the effect of limiting the definition of shift actuator to a device that includes a cam.

The quoted statements do not sufficiently evidence an intention to depart from the ordinary meaning of "shift actuator." The first two statements simply detail some of the goals of the invention that are achieved by some of the apparatus claims. Those are not the only goals of the invention, however. Some of the recited goals relate to compensating for lost motion and providing automatic overshift capabilities and do not specifically address the use of cams. The third and fourth statements are more problematic for SRAM, but they still do not define the term shift actuator, nor do they constitute expressions of clear exclusion. While SunRace would characterize the statement that every handgrip shift actuator contains a cam member as definitional, we believe it is more properly characterized as descriptive of the preferred embodiments and the structure recited in the apparatus claims. We note that original claim 16, unlike claim 1, was not limited to handgrip shift actuators, but simply recited a shift actuator as the structural element. It seems that the applicant contemplated a broad class of shift actuators containing a subcategory of handgrip shift actuators, which in turn contained a subcategory of handgrip shift actuators employing a cam mechanism. Accordingly, the statements from the written description do not narrow the ordinary definition of the term "shift actuator."

The district court regarded this case as analogous to ATD Corp. v. Lydall, Inc., 159 F.3d 534 (Fed. Cir. 1998), and SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337 (Fed. Cir. 2001), in which claim language was limited based on a feature that was described as essential to the invention. It is true that this court has narrowly construed claim terms in light of the preferred embodiment when the patent has described the preferred embodiment as the invention itself. See, e.g., Wang Labs., Inc. v. Am. Online, Inc., 197 F.3d 1377 (Fed. Cir. 1999). The written description of the '291 patent, however, does not state that the cam is the actual invention itself. Instead, it recites that, in the context of the preferred embodiments of the shifting system apparatus, the cam is the heart of the handgrip shift actuator. Moreover, this is not a case in which a feature was described in the written description as critical but was never explicitly listed in the claim language, suggesting that the relevant structure in the claims should be narrowly construed as having that feature. Rather, in this case, the cam feature was explicitly included as an element in numerous claims, but not in the claim in suit. Because many of the claims of the '291 patent are explicitly directed to a shift actuator with a cam, we need not construe the term "shift actuator" to be limited to one consisting of a cam in order to give effect to the language in the specification extolling the significance of the cam.

We recognize that the written description does not explicitly address the claimed methods. In fact, the written description focuses exclusively on the gear shifting systems themselves. The complete absence of any discussion of the claimed method weakens SRAM's argument that the statements in the written description regarding the cam appear only in the context of the description of the apparatuses. Yet nothing in the written description indicates that the invention is exclusively directed toward cams or suggests that systems not employing cams are outside the scope of the invention. Thus, while it is clear that the patentee was primarily focused on an embodiment of his invention using a cam, nothing in the patent limits the claims to
that embodiment.

Other cases in which we have found that the specification limited the scope of the claims have elements that are absent here. For example, the SciMed patent distinguished prior art on the basis that it did not have the relevant features. 242 F.3d at 1343-44. In O.I. Corp. v. Tekmar Co., 115 F.3d 1576 (Fed. Cir. 1997), the court narrowed a term to a particular structural element when all the disclosed embodiments contained that element. As in SciMed, the written description expressly distinguished the prior art on the ground that the prior art did not incorporate that element. O.I. Corp., 115 F.3d at 1581-82. As noted, there is no such language of exclusion in the specification of the '291 patent.

Our case law makes clear that while "an accused infringer may overcome the 'heavy presumption' [of ordinary meaning] and narrow a claim term's ordinary meaning[,] he cannot do so simply by pointing to the preferred embodiment or other structures or steps disclosed in the specification or prosecution history." CCS Fitness, 288 F.3d at 1366. "An applicant is not required to describe in the specification every conceivable and possible future embodiment of his invention." Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1344 (Fed. Cir. 2001). "Whether an invention is fairly claimed more broadly than the 'preferred embodiment' in the specification is a question specific to the content of the specification, the context in which the embodiment is described, the prosecution history, and if appropriate the prior art." Teleflex, 299 F.3d at 1327 (quoting Wang Labs., 197 F.3d at 1383). In this case, those considerations lead us to conclude that the term "shift actuator" is not limited to a device with a cam.

C

We next examine the prosecution history to assess whether it confirms that the term "shift actuator" should be construed in a manner consistent with its ordinary meaning. "Although [it] is correct that the prosecution history is always relevant to claim construction, it is also true that the prosecution history may not be used to infer the intentional narrowing of a claim absent the applicant's clear disavowal of claim coverage." Amgen, 314 F.3d at 1327. To be given effect, such a disclaimer must be "clear and unmistakable." Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 2003 U.S. App. LEXIS 13570, Nos. 01-1546, 02-1478, slip. op. at 17 (Fed. Cir. July 7, 2003).

The district court cited several instances in which it regarded SRAM or the examiner as having characterized claim 16 as encompassing a cam structure. The instances relied upon by the district court, however, are not clear statements of disclaimer. First, the court alluded to SRAM's request for reexamination, which describes the '291 patent as "involving an actuator comprising a cylindric cam member 74 rotary on the outside of the handlebar and axially slidable relative to the handlebar" and refers to "actuator 66," which contains a cam structure. The cited statement, however, was not specific to method claim 16 and in fact appears from its context to relate to the apparatus claims. A later paragraph in the request for reexamination addresses the method of operation of the gear-shifting system; that paragraph does not refer to a cam in the discussion of the claimed method.

Second, the court pointed to the examiner's June 20, 1997, office action. The examiner stated that claims 5 through 26 were allowable over the prior art because "these claims comprise what the examiner considers to be 'fine tuning' features wherein specific embodiments are 'configured' so as to provide a more absolute control of the derailleur gear shifting system for a bicycle existing thentofore." The district court considered that statement to be "plainly inconsistent with SRAM's view that claim 16 embraces broadly a method of shifting gears unconstrained by any structural limitations requiring the use of a cam." We disagree. That statement is merely the examiner's general reason for allowance of 21 of the claims in the patent, including both apparatus claims and method claims. Various aspects of the 21 claims, including taking up cumulative motion and providing for overshifting, would likely allow for more control of the shifting system and would not necessarily be limited to a cam mechanism. The examiner's remarks thus do not indicate that the examiner believed the term "shift actuator" was limited to a device having a cam mechanism. To the contrary, as we have noted, the fact that the examiner confirmed dependent claim 24, which added the cam means to independent claim 16, supports the contrary conclusion.

Third, the court relied on SRAM's statements addressing the patentability of claims 27 and 28. As previously explained, prior to the reexamination amendment of claim 16 SRAM submitted an amendment in which it sought to add two claims dependent on claim 16--claims 27 and 28--that specified the structural mounting limitations now found in amended claim 16. According to the court, "in asserting the patentability of these claims, SRAM directed the examiner to portions of the patent specification describing the cam structure."
SRAM pointed to the discussion of the cam means of the preferred embodiment, however, not to define the term shift actuator nor to distinguish the shift actuators in the claims from prior art shift actuators that lacked cams. Rather, SRAM did so to show that the written description requirement was satisfied and that no new matter was being introduced with the amendment that added claims 27 and 28. SRAM stated that "for disclosure of these limitations, the Examiner is referred to the description of the 'Inboard Handgrip Shift Actuators' starting in line 15 of column 30 of the '291 patent, particularly including the following statements." The discussion of the preferred embodiment incorporates the limitations that SRAM sought to include through the addition of claims 27 and 28, such as having the shift actuator mounted inboard on the fixed handgrip of a handlebar and rotatably mounted to take up cumulative lost motion in the derailleur mechanism. However, the disclosure of these features in an embodiment employing a cam does not limit those claims to a cam. It appears that the features may also be present in actuators lacking a cam mechanism.

We agree with the district court that SRAM's statements addressing the Huret reference and responding to Shimano's arguments against patentability do not provide the requisite disclaimer. In fact, other portions of the prosecution history confirm that SRAM did not argue for the patentability of claim 16 based on the absence of a cam means from the prior art, even though it made that argument for several apparatus claims. For example, SRAM's submission to the PTO in response to Shimano's request for reexamination never mentions a cam, but explains that the method of claim 16 was not previously disclosed because the prior art references only "mention[] slack take-up in or during the first climb or first downshift." In the May 17, 1999, amendment and response to the PTO, SRAM argued that other prior art references did not "show[] a shift actuator mounted inboard of a fixed handgrip on the handlebar." Moreover, SRAM concurred with Shimano's statement in its request for reexamination that the shift actuator of original claim 16 "does not require a handlebar mounted or twist-shifter." If SRAM was not even arguing to limit the shift actuator to a handlebar mounted shifter or twist-grip shifter, it was not putting the public on notice that the shift actuators were limited to those employing a cam mechanism to effect the twist shift.

SunRace points to extrinsic evidence to support the district court's construction, including the deposition testimony of the inventor in previous litigation with Shimano involving the '291 patent. In this case, however, the intrinsic evidence resolves any ambiguity about the appropriate construction of "shift actuator," and therefore consideration of extrinsic evidence is inappropriate. Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1344 (Fed. Cir. 1998).

In sum, while we commend the district court for its thorough analysis of the difficult claim construction issue presented by this case, we conclude that the court's claim construction was unduly restrictive. Although this is a close case, we conclude that the ordinary meaning of the term "shift actuator" controls because neither the specification nor the prosecution history clearly defines the shift actuator as including a cam or disclaims a shift actuator that does not include a cam. Because the intrinsic evidence does not clearly narrow the term "shift actuator" to a device containing a cam, the district court erred by construing the term in that manner. Accordingly, we reverse the district court's claim construction of the term "shift actuator" in claim 16 and remand the case to the district court for further proceedings consistent with this opinion.

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Short distance

Claim 24 of patent 851 states:

"said at least one protrusion permanently fixed to said first end cap and projecting axially inward from said first end cap a short distance toward second end cap."

Parker proposes the construction of short distance as "a small distance relative to the overall length of the filter element." Baldwin contends the term is indefinite as the claim lacks a point of reference and lacks any specification of the length of a short distance. Furthermore, Baldwin contends the specifications and prosecution history gives no indicator of the length of the distance. Baldwin points to the case of Halliburton Energy Services, Inc., v. M-I LLC, 514 F.3d 1244, 1256 (Fed. Cir. 2008) for the proposition that vague, undefined terms are indefinite.
Parker contends a point of reference is provided in the claim itself in that the protrusion must be shorter than the full distance between the first and second end caps since the plain language of the claim states the protrusion "project axially inward from said first end cap a short distance toward said second end cap." Also, since the protrusion must engage the head of a locking member as illustrated in Figures 6 & 7 of the 851 patent, a person of ordinary skill in the art is informed as to the short distance.

Court's Construction

The Court agrees with Parker that the term is not indefinite as it must be smaller than the distance between the first and second end caps and engage the locking member. Therefore, the Court adopts Parker's construction.

1. Language of The Claim

"A claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using, or selling the protected invention." Corning Glass Works v. Sumitomo Elect., 868 F.2d 1251, 1257 (Fed. Cir. 1989). The claim is described "by a series of limiting words or phrases (limitations)." Id. at 1258. The words used in the claim must be given their common meanings unless the inventor used them differently. Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759 (Fed. Cir. 1984). The "ordinary" meaning is the meaning the claim would have had to one of ordinary skill in the art. McGill v. John Zink Co., 736 F.2d 666 (Fed. Cir. 1984).

Applying these principles to the instant case, the court concludes that as Tenneco submits, the term "shoulder", as used in Claim 1 of the '659 patent, is consistent with the relevant, common dictionary meaning of the word "shoulder", that is, any "projection for keeping something in place, or preventing movement past the projection." See Funk and Wagnall, Standard College Dictionary, (1963). Claim 1 provides that the male "shoulder structures" are "outwardly extending" from the opposite ends of the latch. The female "shoulder structures" are "inwardly extending" from the opposite ends of the latch and are "adapted to mate with said male rib..." when the male rib "snap[s] into position beneath" the female shoulder structure. The shoulder structure of the male rib is designed to "deflect" with the female shoulder structure as the male rib enters the female recess. During closure of the container, the shoulders must deflect and snap into position. This action latches the container lid against its base. Both the male and female shoulder structures "keep [the lid and base] in place", that is, closed, and, "prevent movement." Accordingly, the meaning of the term "shoulder" in the '659 patent is consistent with the above stated common dictionary definition of "shoulder."

2. The Specification

Inline argues, however, that "the specification suggests that the term 'shoulder structure' is limited to that which is shown in [Exhibit 3, Figures 3 and 3A]." Specifically, Inline argues that the only place throughout the specification where the term "shoulder structure" is defined in any way, is in connection with the specification drawings. Accordingly, "the only way to interpret the term "shoulder structure" is in view of what is shown in the drawings, that is, "[a structure] with definite breaks or sharp edges serving as boundaries of a linear or planar surface."

Tenneco responds that "the specification provides additional information, illuminating the fact that a 'shoulder' is merely a projection from the opposite ends of the-latch, for keeping something in place or preventing movement past the projection."

The court concludes that the term shoulder structure, as used in both the specification and claim 1, means a "projection for keeping something in place", but "requiring definite breaks or sharp edges." Patent claims must be construed in light of the other parts of the patent document, (including diagrams or figures), which collectively are referred to as the "specification." Markman v. Westview Instruments, Inc., 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384, 1387-88 (1996); see also Al-Site Corp. v. Bonneau Co., 22 F.3d 1107 (Fed. Cir. 1994). "The specification contains a written description of the invention that must enable one of ordinary skill in the art to make and use the invention. For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims." Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (internal citations omitted). "The caveat is that any special definition given to a word must be clearly defined in the specification." Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384,
The specification in the instant case provides, inter alia,

As may be seen in FIGS.3 and 3A the substantially rectangular male rib 20 has at its opposite ends outwardly extending shoulder structure 20a. Also as shown in FIG.3A the opposite ends of the female recess 21 have inwardly extending shoulder structure 21a adapted to mate with the outwardly extending shoulder structure 20a on the male rib 20 when the container 10 is in closed condition. . . When the lid 11 of the container moves from the open position shown in FIG.3A to the closed condition of FIG.3 the latching structure including the rib 20 moves from the position in FIG.3A to the closed or latched position shown in FIG.3. During this movement the cam surfaces 20c on the male rib 20 engage the inclined cam surfaces 21d on the female recess 21 causing the cam surfaces 21d to move outwardly and permit the shoulders 20a on the male rib 20 to move beneath the shoulders 21a on the female recess 21 thus bringing the surfaces 20a and 21a into engagement. Likewise, the mating surfaces 20d and 21d move into engagement and similarly the surfaces 20c and 21c move into engagement. This is clearly illustrated in FIG.3.

See United States Patent No. 5,046,659 to Warburton, at Col.3 (Sept. 10, 1991) (emphasis added). The specification uses identical terms as those used in claim 1, such as "outwardly extending shoulder structure", and "inwardly extending shoulder structure." Further, Exhibit 3, Figures 3 and 3A show that the shoulder structure on the male rib (marked as 20a) projects outward from the ends and that the shoulder structure in the female recess projects inward from the ends to prevent movement past each other when the '659 patent latch is in the locked position. Accordingly, the specification term "shoulder structure" may be read to mean a "projection for keeping something in place, or preventing movement past the projection." Moreover, the shoulder structure cam surfaces depicted in Exhibit 3, Figure 3A at 20c, increase in diameter until the point of the shoulder structure at 20a. There is, accordingly, an increase in diameter or projection at the opposite ends of the latch element, consistent with the common meaning of "shoulder" as described in claim 1.

However, the specification drawings, or figures, explain by illustration that the claimed subject matter is something less than generally a "projection for keeping something in place or preventing movement past the projection." The shoulder structure, as illustrated, is explained as requiring sharp edges that serve as boundaries of a linear or planar surface, i.e., the latch element. Since words defined in the specification must be given the same meaning as used in the claim, the court concludes that the term shoulder structure, as used in both the specification and claim 1, means a "projection for keeping something in place", but "requiring definite breaks or sharp edges."

3. The Prosecution History

Inline further argues that under the doctrine of file history estoppel, Tenneco cannot recapture what is shown in the prior art and disclaimed by Mobil during the reexamination proceedings. Specifically, Inline asserts that Mobil, during the reexamination proceedings, distinguished its '659 invention from Arnolds, by arguing that the scope of the term "shoulder structure" in the '659 patent does not include a latching structure that passes smoothly from one surface to another surface. Since Inline asserts that its "LineLock" latch utilizes the smooth surface transition as found in the Arnolds' invention, the "LineLock" latch is outside the legally permissible scope of the '659 patent claims.

Tenneco responds that the prosecution history of the '659 patent removes any doubt that a "shoulder" is a projection located at the end surfaces of the latch elements for keeping something in place or preventing movement past the projection, and that Inline's "LineLock" latch includes "shoulders".

For the reasons that hereinafter follow, the court concludes that the file history of the '659 patent demonstrates that a "shoulder" is a projection for keeping something in place or preventing movement past a projection, located at the ends of the male rib and female recess, that does not offer a smooth transition when the male rib is pressed into the female recess during latching.

The undisputed public record of the proceedings in the Patent and Trademark Office is of primary significance in understanding the claims. Markman v. Westview Instruments, Inc., 52 F.3d 967, 980-981 (Fed. Cir. 1995). File history limits the permitted construction of claim terminology so as to exclude any interpretation that was disclaimed during prosecution.
On December 12, 1993, the PTO issued a Notice of Intent to Issue Reexamination Certificate (“PTO Reexamination Certificate”) which is not the same as “shoulders” described in the ‘659 patent.

Because there was no projection out of the surface of the ends to hold something in place. Rather, Arnolds merely had flat, uninterrupted ends. He accepted Mobil’s position that the flat, uninterrupted ends of the Arnolds' latch could not be considered “shoulders” located at the ends. See Exhibit 3, Figure 4. Accordingly, the smooth surface (17) on the ends of the protuberance (10) did not extend or project out from the end surfaces. See Exhibit 3, Figure 4. In order to be considered “outwardly extending shoulder structures”, the projections would have to extend outward from the ends. Arnolds did not further, Mobil argued that, unlike the ‘659 patent, the protuberances (10) of Arnolds' latch have flat surfaces (17) which pass over smoothly into the flat ends (24) of the female protuberance (9), and do not have any projections extending out of the surface of the plane to hold the cooperating part in place. See Exhibit 3, Figure 4. Accordingly, the smooth surface (17) on the ends of the protuberance (10) do not fall within the meaning of the terms "outwardly extending shoulder structure" as used in the ‘659 patent or within the ordinary definition of the term "shoulder" 6.

On November 9, 1993, Mobil submitted arguments in response to the August 16, 1993 office action, distinguishing the ‘659 patent over Arnolds on the basis of the meaning of the term "shoulder structure". 5 Specifically, Mobil pointed out that the projections in Arnolds were located at the "corners" formed by the top and the sides of the latch and did not extend or project out from the end surfaces. See Exhibit 3, Figure 4. In order to be considered "outwardly extending shoulder structures", the projections would have to extend outward from the ends. Arnolds did not further. Mobil argued that, unlike the ‘659 patent, the protuberances (10) of Arnolds latch have flat surfaces (17) which pass over smoothly into the flat ends (24) of the female protuberance (9), and do not have any projections extending out of the surface of the plane to hold the cooperating part in place. See Exhibit 3, Figure 4. Accordingly, the smooth surface (17) on the ends of the protuberance (10) do not fall within the meaning of the terms "outwardly extending shoulder structure" as used in the ‘659 patent or within the ordinary definition of the term "shoulder" 6.

Under the doctrine of equivalents, a product that does not literally infringe a claim may nevertheless act as an infringing product if it performs substantially the same function in substantially the same way to obtain the same result. Graver Tank & Mfg. Co. v. Linde Air Products Co., 339 U.S. 605, 608, 94 L. Ed. 1097, 70 S. Ct. 854 (1950). However, the doctrine of file history estoppel limits the range of equivalents available to the patentee by preventing the recapture of subject matter surrendered during the prosecution of the patent. Southwall Technologies, Inc. v. Cardinal IG Company, 54 F.3d 1570 (Fed. Cir. 1995).

The relevant, undisputed file history reveals that, in the initial action in reexamination, dated August 16, 1993, the examiner stated that the invention of the ‘659 patent was unpatentable in view of U.S. Patent No. 3,565,146 to Arnolds. The examiner concluded utilized outwardly extending shoulder structures.

On November 9, 1993, Mobil submitted arguments in response to the August 16, 1993 office action, distinguishing the ‘659 patent over Arnolds on the basis of the meaning of the term "shoulder structure". 5 Specifically, Mobil pointed out that the projections in Arnolds were located at the "corners" formed by the top and the sides of the latch and did not extend or project out from the end surfaces. See Exhibit 3, Figure 4. In order to be considered "outwardly extending shoulder structures", the projections would have to extend outward from the ends. Arnolds did not further. Mobil argued that, unlike the ‘659 patent, the protuberances (10) of Arnolds' latch have flat surfaces (17) which pass over smoothly into the flat ends (24) of the female protuberance (9), and do not have any projections extending out of the surface of the plane to hold the cooperating part in place. See Exhibit 3, Figure 4. Accordingly, the smooth surface (17) on the ends of the protuberance (10) do not fall within the meaning of the terms "outwardly extending shoulder structure" as used in the ‘659 patent or within the ordinary definition of the term "shoulder" 6.

--- Footnotes ---


6 Specifically, "it is submitted that [the] definition of shoulder is not applicable to the transition of the Arnolds surface 16 to the 17 or the transition of the surface 27 to the surface 19. In Webster's Third New International Dictionary. . .the definition of a shoulder with respect to a roadway is "either edge of a roadway; specifically: the part of a roadway outside of the traveled way on which the vehicles may be parked in an emergency." It is recognized that with a shoulder on a road or highway the shoulder is something in addition to the hard surface road on which the automobile rides. In the Warburton patent [‘659] the shoulder on the ends of the ribs and recess is something in addition on the ends of these items. It is not a corner of either the rib or recess. [Washburn, Mobil's representative] has made additional research into definitions of the term "shoulder". In McGraw-Hill Dictionary of Scientific and Technical Terms-Third Edition, the engineering definition for "shoulder" is "a projection made on a piece of shaped wood, metal, or stone, where its width or thickness is suddenly changed." The design engineering definition for the word "shoulder" is "the portion of a shaft, stepped object, or a flanged object that shows an increase in diameter." None of these definitions correspond with a corner such as the transition from surface 24 to the surface 19 in Arnolds.

--- End Footnotes ---
Notice"), holding that,

the reference to Arnolds shows a container with a series of protuberances and recesses namely, [each male and female latch action]. The ends of the protuberances (17) and the recesses (24) are straight and cannot be considered to be shoulder structures. . . Moreover, the female shoulder structure [of Arnolds] as thus interpreted would neither deflect with respect to the male shoulder structure or have the male shoulder structure "snap into position beneath" it.

See Notice of Intent To Issue Reexamination Certificate (December 12, 1993).

The file history therefore indicates that the term "shoulder structure" generally refers to a projection located at the ends of the latch elements for keeping something in place or preventing movement past the projection. However, by the doctrine of file history estoppel, the scope of the term "shoulder" is limited to a protuberance located at the ends of the male rib and female recess, that does not offer a smooth transition when the male rib is pressed into the female recess during latching, but instead deflects in the latching process, causing the male shoulder to snap into position beneath the female shoulder structure.

II

Extrinsic Evidence

The court concludes that use of the extrinsic evidence is unnecessary in this case. "The court may, in its discretion, receive extrinsic evidence in order to 'aid the court in coming to a correct conclusion' as to the 'true meaning of the language employed' in the patent." Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed. Cir. 1995)(internal citations omitted). "[It] may be used only to help the court come to the proper understanding of the claims; it may not be used to vary or contradict the claim language." Vitronics Corp v. Conceptronic, Inc., 90 F.3d 1576, 1584 (Fed. Cir. 1996). "Reliance on such evidence is unnecessary, and indeed improper, when the disputed terms can be understood from a careful reading of the public record [that is, the claims, specification, and file history]." Id. at 1584.

In this case, the court is satisfied that the definition of the term "shoulder structure" as used in the '659 patent can be understood from a careful reading of the public record. Accordingly, the extrinsic evidence is unnecessary.

CONCLUSION

For the foregoing reasons, the court concludes that the term "shoulders" or "shoulder" as used in the '659 patent means an enlargement or projection for keeping something in place or preventing movement past a projection, located at the ends of the male rib and female recess, consisting of definite breaks or sharp edges, that does not offer a smooth transition when the male rib is pressed into the female recess during latching.

B. Shoulder Guard

Plaintiff urges a broad construction of "shoulder guard": "a component that protects the shoulder." (Pl.'s Br., at 13.) Plaintiff maintains that the term is made up of two commonly understood words, and arrives at this construction by noting that one dictionary definition of the verb "guard" is "protect." (Id. (citing WEBSTER'S ENCYCLOPEDIC UNABRIDGED DICTIONARY 847 (1996)).) Plaintiff further contends that no limitation of this broad definition is appropriate because the intrinsic evidence does not limit the scope of the term; according to Plaintiff, nothing in the specification of the '226 Patent provides any other definition or an intentional disavowal of the term's scope, and the prosecution history does not refer to the term at all. (Id.)

TAG urges a significantly narrower construction: "a U or J shaped plastic or sufficiently rigid, but flexible, material that maintains a U or J shape and that rests on the shoulder of the wearer." (Def.'s Br., at 21.) TAG is forthright in acknowledging that this construction relies on the description of the preferred embodiment in the '226 Patent. (Id. at 18.) Indeed, the claim itself does not mention from what material the shoulder guards are made, nor their shape; the guards are merely "flexible"--a term the court addresses below--and "extend[] . . . over the shoulder of a wearer . . . ." (226 Patent, col. 4, ll. 6-7.) Plaintiff thus argues that TAG is improperly attempting to limit the scope of a claim term to the preferred
embodiment. TAG acknowledges that the scope of a patent cannot be limited to a preferred embodiment, but maintains that where only one embodiment is disclosed in the specification, the claims can--and should--be limited in accordance with that embodiment. (Def's Br. at 12, 18.) As noted in Phillips, however, the Federal Circuit has consistently rejected that proposition. See Phillips, 415 F.3d at 1323. Indeed, the Federal Circuit has explicitly rejected an argument strikingly similar to the one TAG advances here: in Teleflex, where the alleged infringer asserted that "where only one embodiment is disclosed in the specification, claim terms are limited to the embodiment disclosed," the court found "no such rule" in its precedent. 299 F.3d at 1326.

TAG relies primarily on Toro Co. v. White Consolidated Industries, Inc., 199 F.3d 1295 (Fed. Cir. 1999). In Toro and similar cases TAG cites, the Federal Circuit approved importing limitations from a disclosed embodiment not because only one such embodiment was disclosed, but because it was clear from the specification and/or the prosecution history that the patentee intended the invention to be thus limited. The Toro court considered whether a claim that recited a cover "including" a restriction ring should be construed to require attachment of the ring to the cover. 199 F.3d at 1300. The only embodiment disclosed in the specification showed the ring permanently attached to the cover. Id. The court adopted this limitation because the specification contained "clear statements of scope": the embodiment listed several advantages of permanent attachment, and the specification described the "unitary structure" between the cover and the ring as "important to the invention." Id. at 1301, 1302. Moreover, the Federal Circuit has since explicitly distinguished Toro as applying only where the proposed limitation was clearly designated in the specification as "important to the invention." See, e.g., Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1373 (Fed. Cir. 2003) ("Toro is not dispositive here because . . . there is no such statement of importance present in the specification").

The patent in General American Transp. Corp. v. Cryo-Trans, Inc., 93 F.3d 766, 767 (Fed. Cir. 1996), also cited by TAG, concerned a "cryogenic" railcar for transporting frozen foods. The invention utilized carbon dioxide "snow" in an overhead compartment; chilled gas flowed down into the car through a series of holes in the ceiling of the railcar. The claims recited holes "adjacent each of [the railcar's] side walls and end walls." Id. at 768. The holes in the allegedly infringing railcar were located along the side walls, but not the end walls, and the endmost hole along each side wall was three feet from the nearest end wall. Id. at 768-69. The district court, following a bench trial, nonetheless found infringement by construing "adjacent" broadly enough so that the endmost holes in the infringing railcar were "adjacent" to the end walls. Id. at 769. The Federal Circuit disagreed, holding that the invention was limited to railcars with holes along both the side walls and the end walls. Id. at 769-70. In doing so, the court noted the claim language itself, which required openings adjacent to "each of" the side walls and the end walls, and the specification, which disclosed only one embodiment--a railcar with holes along both the side and end walls. Id. at 770 (emphasis in original). The court did not limit the claims simply because only one embodiment was disclosed, however, nor did the court simply use the embodiment to narrow an otherwise broad claim term. Rather, the claim language itself incorporated the limitation, through the use of the term "each of"; and the embodiment was consistent with that limitation in that no other embodiment was possible in light of the restrictive claim language.

Similarly, in Honeywell International, Inc. v. ITT Industries, Inc., 452 F.3d 1312, 1318 (Fed. Cir. 2006), the Federal Circuit in a post-Phillips decision affirmed the district court's construction of the term "fuel injection system component" as limited to a "fuel filter." Again, the mere fact that only one embodiment was disclosed was not dispositive; rather, the specification repeatedly used language describing a fuel filter as "this invention," and the prior art problem discussed by the patentees in the specification related to leaking fuel filters. Id. Thus, the patentees used particular limiting language that led the court to conclude that a fuel filter was "not merely discussed as a preferred embodiment," but that the patentees had explicitly limited the scope of the claims to a fuel filter. Id.

This court finds no support in Defendant's cited cases for the proposition that the existence of a single embodiment in itself necessarily limits the scope of claim terms; rather, there must be some other indication that the invention was intended to be limited to a particular embodiment. See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 907-08 (Fed. Cir. 2004) (distinguishing cases including Toro and General American Transportation because "there were specific reasons dictating a narrow claim construction beyond the mere fact that the specification disclosed only a single embodiment or a particular structure"); to wit, "the specification, claim, or prosecution history made clear that the invention was limited to a particular structure"); see also Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1351-52 (Fed. Cir. 2004) (district court improperly construed claim feature based on references to certain limitations in the specification that were "nothing more than disclosures of a preferred embodiment," where "nowhere did the specification indicate that [those limitations were] necessary" to the claimed function). This approach is consistent with the Federal Circuit's discussion of this issue in Phillips,
which directed courts to consider the purpose behind the disclosed embodiment. There, the court explained that a patent's written specification is aimed at teaching those skilled in the art to make and use the invention; to that end, the preferred embodiment merely serves as an example of how to practice the invention in a particular case. Phillips, 415 F.3d at 1323. In light of that goal, a court should avoid importing limitations from an embodiment into the claims, unless it is clear that the patentee intended for the claims and the embodiments "to be strictly coextensive." Id. In other words, an embodiment limits a claim only where a person of ordinary skill in the art would understand the embodiment not to be "merely exemplary in nature," but would view an embodiment as intended to "define the outer limits of the claim . . . ." Id.; see also Ormco Corp. v. Align Tech., Inc., 463 F.3d 1299, 1306-07 (Fed. Cir. 2006) (citing Phillips in rejecting alleged infringer's argument that the scope of a claim term should be limited in accordance with disclosed embodiments, absent any indication that the term was otherwise explicitly defined in the specification). This concept, in turn, is consistent with the broader role of the specification in general: as noted, it is improper for the specification to impose limitations on the claims absent "a clear disclosure that the patentee intended the claims to be limited," MBO Laboratories, 474 F.3d at 1334, through "words or expressions of manifest exclusion or restriction." Teleflex, 299 F.3d at 1327.

Here, there is no indication in the specification that the patentees intended the term "shoulder guard" to be limited only to the shoulder guard described in the preferred embodiment, that is, one that is "made of plastic or any other material that is sufficiently rigid to maintain a 'U' or 'J' shape but that is flexible enough for comfort." ('226 Patent, col. 2, ll. 36-38.) Nowhere is the particular material used for the shoulder guards, or its ability to form and maintain a particular shape, characterized as "important to the invention." Cf. Toro, 199 F.3d at 1301; see Altiris, 318 F.3d at 1373. Nor does the specification contain any language suggesting that the patentees intended for the preferred embodiment to be "strictly coextensive" with the claim, or for that embodiment to "define the outer limits of the claim." Phillips, 415 F.3d at 1323. Indeed, the specification hints at the opposite: in summarizing the invention, the patentees stated that the shoulder guards "are of lightweight material, such as the material used for other portions of the chest protector," ('226 Patent, col. 1, ll. 30-32 (emphasis added)), whereas in the preferred embodiment, the shoulder guards are "preferably made of plastic" or other sufficiently rigid, yet flexible material. (Id. col. 2, ll. 34-35 (emphasis added).) This language suggests that the "plastic" or similar material referred to in the preferred embodiment is indeed provided merely as an example of the shoulder guards' construction.

12 Not only does the preferred embodiment section of the specification contain no language suggesting that it is intended to define the invention, but it concludes with the following:

The invention has been described in an illustrative manner and it is to be understood that terminology which has been used is intended to be in the nature of description rather than that of limitation. . . . It is therefore understood that within the scope of the appended claim, the invention may be practiced otherwise than as specifically described.

('226 Patent, col. 3, ll.6-15.)

TAG further argues that the claim should be limited to the preferred embodiment here because only one embodiment of the '226 invention is possible in order to accomplish what TAG asserts as the "goal of the invention": "to keep the chest protector in the correct location to protect the wearer." (Def.'s Sur-reply, at 4-5.) Citing to the patentees' description of the background and summary of the invention, TAG contends that the sole purpose of the '226 chest protector is "to properly position the protector to protect the wearer's shoulders even when the straps are not properly adjusted." (Id. at 7 (citing '226 Patent, col. 1, ll. 20-22, 39-41.) U-or J-shaped shoulder guards, according to TAG, are the key to serving this purpose and are thus so necessary to the invention that no other embodiment is conceivable. (Id.) This argument, however, ignores the other purpose explicitly identified by the patentees: the need to protect the top of the shoulder. Existing chest protectors, the patentees explained, left the top of the shoulder exposed even when "properly fitted." (226 Patent, col. 1, ll.15-17 (emphasis added.).) Indeed, the patentees identify this exposure as the primary problem with existing chest protectors; the fact that the existing protectors might sag and expose an even larger portion of the shoulder and chest area, if the straps are not properly adjusted, is an "addition[al]" problem. (Id. col. 1, ll. 20-24.) Thus, even if TAG is correct that a U- or J-shaped shoulder guard is necessary to accomplish the goal of proper positioning of the chest protector, the other, and more important, goal of protecting the shoulder--which existing chest protectors did not accomplish even when properly positioned--does not appear
to require shoulder guards that have the ability to "maintain" any particular shape. Because other embodiments of the invention--chest protectors whose shoulder guards do not necessarily "maintain a 'U' or 'J' shape"--are therefore conceivable to serve that purpose, TAG's assertion that only one embodiment of the '226 Patent is possible is incorrect. Moreover, where a patent specification "sets forth multiple objectives," claim terms are not required to be construed "as limited to structures that are capable of achieving all the objectives." Phillips, 415 F.3d at 1326-27 (quoting Liebel-Flarsheim, 358 F.3d at 908).

In sum, TAG has identified nothing in the specification that warrants a departure from the general rule, repeatedly articulated by the Federal Circuit, that claim terms are not to be limited in accordance with the preferred embodiment. TAG's proposed limitations of the claim term "shoulder guard" to plastic or similar construction and the ability to maintain a "U" or "J" shape, are based on language that does not appear "throughout the entire '226 patent specification," as TAG incorrectly asserts, (Def.'s Sur-reply, at 7), but is disclosed only once, and only in the preferred embodiment. There is simply no indication in the preferred embodiment, or elsewhere in the specification, that the patentees intended their invention to be limited to the chest protector described in the preferred embodiment; nor, in the court's view, would the specification suggest to a person of ordinary skill in the art that a chest protector with a plastic U- or J-shaped shoulder guard is the only possible embodiment of the claimed invention. The court thus declines to adopt Defendant's proposed narrow construction of "shoulder guard," which relies entirely on the description found in the preferred embodiment.

The court thus turns to Plaintiff's proposed construction of the term--"a component that protects the shoulder." Plaintiff is correct that "shoulder" and "guard" are both words with commonly understood meanings, for which general purpose dictionary definitions are helpful. See Phillips, 415 F.3d at 1314; see also Ormco, 463 F.3d at 1306-07 & nn.5 & 6 (Fed. Cir. 2006) (noting the Phillips court's approval of the use of general purpose dictionaries for determining the ordinary meaning of commonly understood words, and looking to such a dictionary in arriving at the meaning of the claim term "geometry"). Used as a verb, a common definition of "guard" indeed is "protect"; and the court further notes that as a noun, a relevant definition includes "a device, appliance, or attachment that prevents injury, loss, etc." WEBSTER'S UNABRIDGED DICTIONARY 847. An interpretation of "shoulder guard" as a device, or "component," that "protects the shoulder" is thus consistent with the meaning of commonly understood words. The court is nevertheless not persuaded that the combination of the two words into the claim term "shoulder guard" creates a term whose meaning to a person of ordinary skill in the art is so "readily apparent" that the court can construe the term merely by applying "the widely accepted meaning of commonly understood words" without any further examination of the intrinsic evidence. Cf. Phillips, 415 F.3d at 1314. Instead, in accordance with the methodology articulated in Phillips, the court looks to the claims, the specification, and the prosecution history, if any, as well as to relevant extrinsic evidence, for any indication that the term "shoulder guard" has a particular meaning in the art, or that the patentees intended a particular meaning inconsistent with Plaintiff's proposed construction. See id. at 1316.

As noted, no explicit definition of "shoulder guard" appears in the claim. Other portions of the claim limit the shoulder guard to one that is "flexible," that "extend[s] from the [] shoulder portion of the main pad over the shoulder of a wearer," and that has "a front portion adjacent to the main pad, a top portion, and a back portion." (226 Patent, col. 4, ll. 6-10.) Other than in the preferred embodiment, which, as discussed above, does not limit the claims, the specification states, in summarizing the invention, that the shoulder guards "are of lightweight material, such as the material used for the other portions of the chest protector," and further that "each shoulder guard should extend just slightly outward of the wearer's shoulder, such that the shoulder is protected but the guard does not interfere with the wearer's throwing motion." (Id. col. 1, ll. 30-38.) This language does suggest that the patentees' conception of the term is somewhat limited with respect to the general type of material from which shoulder guards should be made, and with respect to how wide the shoulder guards should be. In the court's view, however, the language does not amount to a "special definition" of the term, nor an "intentional disclaimer, or disavowal, or claim scope" that establishes that the patentees clearly intended to thus limit their claim. See Phillips, 415 F.3d at 1316; see also MBO Laboratories, 474 F.3d at 1334. In any event, these potential limitations--"lightweight material" and "extend[ing] just slightly outward of the wearer's shoulder"--are not inconsistent with Plaintiff's proposed construction, and TAG has not argued for such limitations here.

Plaintiff likewise is correct that the prosecution history does not reveal any limitation of the term "shoulder guard." In their argument distinguishing their invention from the Siemens hockey goalie equipment, the patentees explained that Siemens had a "rigid frame," whereas their invention was "flexible enough for comfort." (Amendment, Ex. 11 to Def.'s Br.) In their sole reference to shoulder guards, the patentees noted only that the shoulder guards "may be made of a different material" from the main pad, but should also be "flexible enough for comfort." (Id.) There is, therefore, no indication that the patentees limited the scope of the term "shoulder guard" in the course of prosecution, beyond explaining that it should
be "flexible"; and the patentees added that term to the claim itself. 13

13 In its effort to limit the scope of the term "shoulder guard" to a plastic U- or J-shaped component, TAG also points to the fact that the shoulder guards on Serewicz's prototype chest protector were made of plastic. (Def.'s Sur-reply, at 2-3.) TAG cites no authority holding that an inventor's prototype necessarily limits the scope of a claim term, however, and the court is aware of none.

The court thus finds nothing in the intrinsic evidence of the '226 Patent that would support TAG's proposed construction, nor any narrower construction than that advanced by Plaintiff. Furthermore, the extrinsic evidence appears to favor Plaintiff's position rather than TAG's. As noted above, Plaintiff's construction is consistent with the commonly understood meaning of the words "shoulder" and "guard." Significantly, Swangard, TAG's president, believed that Mizuno's Tsunami chest protector was covered by the '226 Patent, and Mizuno apparently agreed, as it obtained a sublicense from TAG and paid royalties. But there is no evidence that the shoulder guards on the Tsunami are made from plastic U- or J-shaped pieces, and TAG does not so assert; indeed, the shoulder guards appear to be made from the same material as the main pad. The fact that Swangard and Mizuno both believed that the Tsunami was covered by the '226 Patent suggests that persons of ordinary skill in the art would view a chest protector that lacked plastic U- or J-shaped shoulder guards as nonetheless within the scope of the claim. 14

14 Although TAG maintains that any reference to licensed products such as the Tsunami is irrelevant to claim construction, TAG cites only the well-recognized rule that a court may not tailor its claim construction to accommodate allegedly infringing products. See Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1322, 1331 (Fed. Cir. 2006). Plaintiff's reference to licensed products, as evidence of how persons skilled in the art understood the '226 Patent, thus does not implicate this rule and indeed serves as competent extrinsic evidence of how others understood the invention. See Phillips, 415 F.3d at 1318.

Finally, citing the chest protectors disclosed by the older '851 and '861 patents, TAG contends that Plaintiff's proposed construction--"a component that protects the shoulder"--is impermissibly broad because it "would read the asserted claim directly on the prior art." (Def.'s Br., at 20.) As explained above, however, the court is not required at this stage to ascertain the scope of prior art and construe the present claims in light of that art. Indeed, TAG's argument is more properly directed to issues of validity such as obviousness and anticipation; it is premature here. See Rhine v. Casio, Inc., 183 F.3d 1342, 1346 (Fed. Cir. 1999) (labeling "premature" defendant's effort to "raise[] the specter of invalidity during the claim construction phase"); BorgWarner, Inc. v. New Venture Gear, Inc., 237 F. Supp. 2d 919, 949 (N.D. Ill. 2002) (citing Rhine and rejecting defendant's argument that the claim must be interpreted so as to avoid invalidity). Moreover, Plaintiff's proposed construction, when read in light of the rest of the claim, is not as broad as TAG insists: as noted, the "component that protects the shoulder" must also be "flexible," it must "extend[] from the[] shoulder portion of the main pad over the shoulder of a wearer," and it must have "a front portion adjacent to the main pad, a top portion, and a back portion." ('226 Patent, col. 4, ll. 6-10.) Thus, even if TAG is correct that the '851 and '861 patents also disclose a "component that protects the shoulder"--and the court expresses no opinion on that issue at this time--that fact alone would not necessarily result in the claim of the '226 Patent reading directly on the prior art, rendering the patent invalid.

The court thus accepts Plaintiff's proposed construction of "shoulder guard": "a component that protects the shoulder."
Claims in the '249, '715, and '631 Patents contain the terms "cone" or "cone region," "nose" or "nose region," "flank" or "flank region," and "shoulder region." The parties dispute whether these regions extend around the circumference of the drill bit face or are limited to the blades of the drill bit face. The parties further dispute the construction of these regions with respect to each other.

Whether the Regions Extend Around the Circumference of the Drill Bit Face

Baker Hughes contends "cone," or "cone region," means "the area or region extending around the entire circumference on the drill bit face and which is located radially closest to the centerline or longitudinal axis of the drill bit body (and which is shaped more or less like an inverted cone)." Baker Hughes proposes similar constructions for the other claim terms and contends these regions extend around the entire circumference of the bit face.

ReedHycalog contends "cone," or "cone region," means the "region, defined by the blades of the bit, radially between the nose and the center longitudinal axis of the bit." ReedHycalog proposes similar constructions for the other claim terms and claims these regions are limited to the drill bit blades.

The specifications of the '249, '715, and '631 Patents support a construction that limits the "cone," "nose," "flank," and "shoulder" regions to the blades. The '249 and '715 Patents refer to the "cone," "nose," "flank," and "shoulder" regions as being regions within the bit profile. '249 Patent col. 5:66-col. 6:1; '715 Patent col. 9:34-39. As the blades define the bit profile, and each of these regions are located in the bit profile, the blades likewise define the "cone," "nose," "flank," and "shoulder" regions.

Second, figures in the '249, '715, and '631 Patents confirm that these regions are limited to the area defined by the drill bit blades. Fig. 10 of the '249 and '715 Patents, displayed in Appendix C and annotated, shows the "cone," "nose," "flank," and "shoulder" regions along the bit profile. Fig. 13 of the '715 Patent, a quarter-sectional side view of the three-region embodiment of the claimed drill bit, similarly shows the disputed regions along the bit profile. '715 Patent Fig. 13. Figs. 14A and 14B of the '631 Patent, reproduced in Appendix C and annotated, show the "cone," "nose," "flank," and "shoulder" regions on the blades of the drill bit. While Fig. 14C of the '631 Patent, annotated and shown in Appendix C, tends to support Baker Hughes's contention that the "cone region" extends circumferentially around the drill bit, the above intrinsic evidence more clearly shows that this region, in addition to the "nose," "flank," and "shoulder" regions, is limited to the drill bit blades. Thus, the Court construes these terms to only extend on the blades of the drill bit.

Radial Location of Each Region With Regard to Other Regions

Baker Hughes and ReedHycalog additionally dispute the definition of each region on the drill bit in relation to the other regions. In short, Baker Hughes defines "cone" as "... located radially closest to the centerline or longitudinal axis of the drill bit body..." and subsequently defines "nose" as the area or region radially between the cone and the "flank," which includes the leading most point on the drill bit body. Similarly, Baker Hughes defines "flank" as the area or region radially between the "nose" and the "shoulder" or "gage," and "shoulder region" as the area or region radially between the "flank" and the "gage," although in a given drill bit, the "flank" and "shoulder" regions may be the same part of the bit.

ReedHycalog's constructions are similar, except that ReedHycalog starts with the "nose," which it construes as "extending radially and proximately about the leading-most point." ReedHycalog defines "cone" as the region radially between the "nose" and the longitudinal axis of the drill bit body, "flank" as the area or region radially between the "nose" and the "shoulder region," and the "shoulder region" as radially proximate the "gage."

* * *

Shoulder Region

The '631 Patent claims a "shoulder region." Baker Hughes contends this region is the region "radially more distant from the centerline or longitudinal axis of the drill bit body than the flank region, but which is radially less distant from that centerline than the gage region." Further, Baker Hughes states "[i]n a given drill bit, the flank and shoulder regions may be the same." ReedHycalog contends the "shoulder region" is "radially proximate the gage."

As discussed above, the "shoulder region" may incorporate the "flank region." In this configuration, the "shoulder region" is radially between the "nose" and "gage" regions. If the "shoulder region" does not incorporate the "flank region," the
"shoulder region" is radially between the "flank" and "gage" regions. '249 Patent Fig. 10, col. 5:59--col. 6:2; '715 Patent, Figs. 10, 13, col. 9:35-39, col. 12:55-63; '631 Patent, Figs. 14A, 15A, 15C, 16, 17, col. 19:60-65. Therefore, the construction of "shoulder region" must comport with both embodiments.

The Court agrees with Baker Hughes but modifies its construction. "Shoulder region" means "region defined by the blades of the bit, located radially between the nose and gage regions if the shoulder region is incorporated with the flank region, and located radially between the flank and gage regions if the flank region exists separately, labeled 316 in Fig. 16 of the '631 Patent." 9

--- Footnotes ---

9 Ref. No. 9 of Appendix B contains the disputed term "shoulder region" and its construction.

--- End Footnotes ---

3614

1. "shredding" and "shredded Claims 4 and 5

With regard to these terms, Green Edge simply states that the Court should give the terms their plain and ordinary meaning. According to the patent, the rubber particles are "cut . . . to resemble tree bark . . ., wood chips, pea gravel . . ., and a variety of other natural mulches, as the rubber particles can be textured in a variety of ways." ('514 Patent, col. 3, Ins. 50-54) According to the Merriam-Webster Online Dictionary, "shredded" or "shredding" means, "to cut or tear into shreds." Merriam-Webster Online Dictionary (visited May 15, 2007) <http://www.m-w.com/dictionary/shred>. Therefore, the Court finds that the terms "shredded" or "shredding" are defined in the '514 Patent as, "to cut or tear into pieces to resemble tree bark, wood chips, pea gravel and other natural mulches."

--- End Footnotes ---

3615

1. "A Shredder" and "A Shredding Mechanism"

Fellowes and Michelin propose that "a shredder," element 1(a), is "a well known device used for shredding documents, CDs, floppy disks, or other information-carrying media." Intek construes "a shredder" to mean "a well known device used for shredding items, such as documents, CDs, floppy disks and other articles." Fellowes and Michelin both define "a shredder mechanism," element 1(d), as "a device that shreds documents, CDs, floppy disks, or other information-carrying media." Intek construes the term "shredding mechanism" to mean "a device that shreds items, such as documents, CDs, floppy disks and other articles."

--- Footnotes ---

3 This order's references to "elements" such as "1(a)" is based upon the "elements" used to refer to particular claim terms that the parties have adopted in their claim charts and briefs.

--- End Footnotes ---

The only identifiable issue with respect to elements 1(a) and 1(d) is the difference, if any, between "other information carrying media" and "other articles." Fellowes contends that the term "other articles" is overly broad and that "information-carrying media" is consistent with the specifications and the purpose of shredders, that is, to destroy confidential information. Fellowes' Resp. to Intek's Br. 11 [Doc. No. 88]. None of the claims in the '559 Patent specify, however, that the "shredder" or "shredder mechanism" shreds solely "information carrying media." Indeed, Claim 1 refers to "articles" being shredded. See '559 Patent, col. 6, lines 39-45 ("[The] shredder mechanism enabling articles to be shredded to be fed into the cutter elements and the motor being operable to drive the cutter elements so that the cutter elements shred the articles fed..."

--- End Footnotes ---

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therein [and] a throat opening provided on the housing for enabling articles to be fed into the shredder mechanism.

(emphasis added). The specifications refer to "shredders" as "well known devices used for shredding items, such as documents, CDs, floppy disks, etc." Id. at col. 1, lines 11-12. The Court agrees with Intek that the specifications do not limit the "shredder" or "shredder mechanism" to any particular media, and finds it unnecessary to address the parties' arguments over the significance of "etc." in this phrase. See id. at col. 2, lines 49-52 ("[T]he shredder 10 may have any suitable construction or configuration"); id. at col. 2, lines 58-61 (the cutter elements generally "shred articles fed therein"); id. at col. 2, lines 66-67 ("Generally, any suitable shredder mechanism 16 known in the art or developed hereafter may be used."). The Court FINDS that a "shredder," element 1(a), is "a well known device used for shredding items, such as documents, CDs, floppy disks and other articles" and a "shredder mechanism," element 1(d), is "a device that shreds items, such as documents, CDs, floppy disks and other articles."

3616

b. "Shrink fit"

Claim 25 names a "shrink-fit" as a "means for releasably connecting" as used in claim 2. No claim recites a "heat-fit." As seen in the specification language previously quoted, "shrink-fitting" may alone, or in combination with another means, secure the backing and screening plates. The backing plate may be "heat-shrunk" onto the screening plate. Neither "a heat-shrink," "a heat-fit," nor "a shrink-fit," that is, the noun form of heat-shrinking, heat-fitting, or shrink-fitting is mentioned in the specification. J&L asserts that the terms heat-shrinking and shrink-fitting are equivalent for purposes of the patent, and that neither, even when conjugated as a noun, actually describe a structure; rather, these terms describe processes and are thus invalid under 35 U.S.C. 112 ¶ 4. 13 J&L's Construction Mem. at 6, 9-13. AFT asserts the two terms are distinct, with shrink fitting being broader, and that both are valid. Opp'n Construction Mot. at 21-23.

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13 35 U.S.C. § 112, ¶ 4 provides, "a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed." Were a "shrink-fit" not a structure, claim 25 would not further limit the claimed subject matter. See infra see. III.C.3.

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(I) "Shrink-fit" and "Heat fit" are Equivalent

Shrink-fitting and heat-fitting or heat-shrinking are used equivalently in the specification. AFT asserts that heat-fitting describes a thermal process and shrink fitting need not occur through such process, but may rather result from press-fitting or interference fitting. Opp'n Construction Mot. at 22. This position is belied by the specification as well as by compelling extrinsic evidence.

AFT asserts first that J&L's objection to a shrink-fit is an invalidity argument, rather than a claim construction issue. This is incorrect. The construction of the structures covered by the limitation, "means for releasably connecting" is an issue of claim construction. Chiuminatta, 145 F.3d at 1308. That fact is not changed because the result of the construction eventually given to one disputed structure may affect later invalidity analysis. AFT next argues that "a shrink-fit includes structure." Opp'n to Construction Mot. at 21. AFT supports this argument on the fact that claim 25 recites "a shrink-fit," that is, a noun; on the prosecution history; on separate definitions for "shrink" and "fit" pulled from a general use dictionary; and expert testimony. Id. at 21-23. In making these arguments, AFT, citing the specification and expert testimony, further asserts that "a shrink-fit" does not require heating or cooling and is, therefore, not equivalent to a "heat-fit" or "heat-shrink." Id.

Beginning first with the issue of whether shrink-fitting is a thermal process, the specification indicates that it is. See, e.g., 940 patent, Col. 3, Lns. 24-31. So too does extrinsic evidence in the form of a technical dictionary definition supplied by J&L. See Cross Decl., Exs. B, C (Dkt. No. 45-7) (citing the McGraw Hill Dictionary of Scientific and Technical Terms defining "shrink fit" as: "A tight interference fit between mating parts made by shrinking-on, that is, by heating the outer member to expand . . . for easy assembly, then cooling so that the outer member contracts" and distinguishing "interference fit" from "press fit"). AFT correctly notes that the specification uses the both "shrink-fit" and "heat-shrink." Æpp'n to
Construction Mot. at 23. The specification's use of "heat-shrink," however, is descriptive of the process of shrink-fitting. See 940 patent, Col. 3, Lns. 24-31; Col. 9, Lns. 6-23. Moreover, to the extent that AFT's statement that "the '940 patent refers to a 'heat-shrink'" suggests that the patent refers to heat-shrink as anything other than a verb, it is untrue. Opp'n to Construction Mot. at 23. Finally, insofar as AFT bases its argument on the testimony of its expert, Dr. Gary Scott, Ph.D., see Opp'n to Construction Mot. at 22-23; O'Brien Decl., Ex. O (Dkt. No. 20) (associating one version of "shrink fit" with the sort of fit described in J&L's dictionary as a "press fit"), the Court finds that other extrinsic evidence such as the technical dictionary definition supplied by J&L is more compelling, particularly in light of Dr. Scott's admission that he is not an expert in mechanical devices or shrink-fitting, see Cross Reply Decl., Ex. E (Dkt. No. 84-6) at 67-69, and the fact that Dr. Scott's report was "generated at the time of and for the purpose of litigation." Phillips, 415 F.3d at 1318. Therefore, the Court construes "shrink fit" as: A tight interference fit between mating parts made by heating the outer part to expand it or cooling the inner part to contract it so that the outer part fits into the inner part.

(ii) "Shrink fit" Describes a Process not a Structure

Claims 2, 15, and 32 employ the phrase "means for releasably connecting" but do not specify a corresponding structure. The parties dispute whether a shrink-fit is a structure covered under the limitation, or, for that matter, a structure at all. AFT argues that "a shrink-fit includes structure" and supports this argument by reference to dictionary definitions of "fit" and "shrink" to arrive at its construction: "an assembly of parts where one part is made smaller relative to the other part." Opp'n to Construction Mot. at 21-22. AFT also cites to the prosecution history, in which the Examiner found that "a shrink-fit" is a structure. These arguments are unavailing.

First, to the extent that AFT's construction relies upon the definition of "fit" as the "degree of closeness," it fails to recite a structure. AFT's proposed construction recites a process, one in which "one part is made smaller relative to another part." Further, insofar AFT seeks to define "a shrink-fit" by combining individual definitions from a general use dictionary of "fit" and "shrink," the Court views the resulting construction with some suspicion. See Network Commerce, Inc. v. Microsoft Corp., 422 F.3d 1353, 1359-60 (finding that while the term "download component" is nowhere defined as a singular term, a construction resting upon separate dictionary definitions for "download" and "component" was untenable, particularly in light of the resulting breadth of that construction). That suspicion is heightened where, as here, the hyphenated term at issue is defined in a single definition available in a technical dictionary, and that definition better comports with the specification. Finally, the Court does not find that the prosecution history clearly evidences that "a shrink-fit" is a structure, and certainly does not evidence that AFT's construction is correct. Accordingly, the Court construes "shrink-fit" to mean: A tight interference fit between mating inner and outer parts made by heating the outer member to expand it or cooling the inner part to contract it so that the outer part can fit into the inner part. Additionally, because the above construction does not describe a structure, "shrink-fit" is not a "means for releasably connecting."

15 35 U.S.C. § 112, ¶ 6 provides that "[a]n element in a claim for a combination may be expressed as a . . . step for performing a specified function without the recital of . . . acts in support thereof, and such claim shall be construed to cover the corresponding . . . acts described in the specification and equivalents thereof." While such "step-plus-function" claims are allowable, the claim must take the form of a "step-plus-function" claim, rather than, as here, a "means-plus-function" claim. See, e.g., O.I. Corp. v. Tekmar Co., Inc., 115 F.3d 1576, 1582-83 (Fed. Cir. 1997).
The parties also dispute the term "shrinkable shielding." LG proposes construing the term to mean "flexible device to shield clothes from entering a gap." (Chart at 20.) Whirlpool proposes instead that the term be construed to mean "a shielding structure that is capable of being reduced in size by a vibration stroke of the vibrating disc." (Id.)

Claim 1 describes a "shrinkable shielding means disposed in the gap to prevent clothes from becoming jammed in the gap during a clothes washing operation." ('886 Patent, col. 4, ll. 10-12.) Claims 4 through 8 describe the different limitations applicable to the shrinkable shielding means. Those limitations include being "made of rubber or sponge," "a tube type shielder," "a spring type shielder," or "a flexible thin film annularly placed in said gap . . ." (Id., col. 4, ll. 21-37.) The background section of the patent states that "[t]he present invention relates . . . to an improved structure in [low frequency vibration type] washing machines for prevention of jamming of clothes in a gap between a low frequency vibrating disc and the inner bottom of a washing tub." (Id., col. 1, ll. 9-14.) Given these limitations, and the use of the proposed invention in washing machines with vibrating discs, the Court agrees with LG that the term "shrinkable" means "flexible." Moreover, insofar as the patent itself refers to the invention as relating to "an improved structure," the Court will construe the term "shielding" as "structure" for shielding clothes from entering a gap. (Id., col. 1, l. 11.)

In arguing that "shrinkable" should be construed to mean "capable of being reduced in size by a vibration stroke of the vibrating disc," Whirlpool refers to the written description for Figure 2, which states that "the shrinkable shielder 4 should be designed such that it can be elastically shrunk and extended in the vibration stroke h[1]-h[2] of the vibrating disc 2." (Id., col. 2, ll. 52-55.) As the Court has already explained, however, the written description concerns only one of the preferred embodiments described in the patent. Nothing in the descriptions of the other preferred embodiments refers to a similar vibrating stroke. (See id., col. 3, ll. 5-25.)

For these reasons, the Court construes the term "shrinkable shielding" to mean "flexible structure to shield clothes from entering a gap."

GO BACK

3618

A. "Locking Shutter"

The first term from claim 1 that is in dispute is "locking shutter." The term appears in the second element of claim 1 which reads, "a slidable locking shutter movable between open and closed positions . . ." See '715 patent, Col. 16, ll. 59-60 (emphasis added). It also appears in the third element of claim 1, which reads, "whereby the locking shutter allows placement and removal of the archwire when in the open position and prevents the displacement of the archwire from the bracket member when in the closed position." Id. at Col. 17, ll. 5-8 (emphasis added).

Plaintiff proposes that the term "locking shutter" be construed as the "portion of [the] bracket that is capable of shutting, closing, making secure, or preventing displacement." Pl.'s Ex. 3 at 4. Defendants' proposed construction reads as follows:

Locking: fastening, fixing, engaging;

Shutter: A sliding cover that moves between open and closed positions that has a bar that is set into the occlusal-gingival opening and which is capable of locking into place; portion of the bracket that is capable of locking, as defined above.

Id. at 7.

Claim Construction of "Locking Shutter"

The term "locking shutter" is described in the Summary of the Invention at Col. 2, ll. 27-31 as the portion of the bracket which "in the closed position . . . prevents the archwire from being displaced." A similar description of the "locking shutter" is provided at Col. 4, ll. 55-61, where the "locking shutter" is said to be "movable" between an "open position for receiving an archwire and closed position for locking an archwire to the bracket." The "locking shutter" is depicted in various embodiments throughout the '715 patent. In the embodiment shown in Figs. 2 and 3, it is depicted as item 24 (in open and
closed positions, respectively). In other embodiments, the locking shutter is depicted as a "closure member" or "shutter" (item 132) (Col. 12, ll. 26-28) in Figs. 28-29, and "closure member" or "shutter" (item 162) (Col. 14, ll. 46-50) in Figs. 35-39. In all such depictions, the "locking shutter" is shown as a portion of the bracket that is either open to permit placement of the archwire in the slot, or closed to prevent the archwire from becoming displaced.

One aspect of the claimed invention that is important for providing proper treatment is the locking shutter's ability to secure the archwire within the archwire slot, preventing it from becoming displaced, but still permitting it to move to correct the alignment of the teeth, as described in the specification. See Col. 5, ll. 49-52 ("When the locking shutter 24 is in the closed position the shutter prevents the archwire from being displaced from the archwire slot 40 while allowing limited labiolingual movement depending on archwire size."); see also Col. 7, ll. 4-15 (providing that use of a "relatively small archwire . . . allows for some labial movement of the archwire . . . while maintaining the archwire in the archwire slot."). OrthoArm's proposed construction captures this aspect of the invention.

By contrast, Defendants' proposal is inconsistent with the claims and the specification. Defendants' terms "fastening" and "fixing" imply that the locking shutter prevents all movement of the archwire and the shutter. However, the claims and the specification reveal that the locking shutter need only "close" the archwire slot and prevent displacement of the archwire from the bracket when in closed position, not fix the shutter or the archwire in one place. See Col. 17, ll. 2-8.

Moreover, as noted above, the invention's functionality requires some movement by the archwire when restrained by the locking shutter, and there is no requirement that the shutter itself be locked into place and immovable. In fact, the specification describes the locking shutter as having a "dual flexibility," which "allows easy movement of the locking shutter between open and closed position and which reacts on the archwire to maintain the archwire in the archwire slot." Col. 6, ll. 52-56; see also Col. 10, ll. 52-67 (discussing movement of the locking shutter within the recess). Thus, Defendants' contention that the concepts of "fastening" and "fixing" are at the very core of Dr. Voudouris' claimed invention,” (Defendants' Opening Brief on Claim Construction, "Defendants' Memo," filed February 12, 2007, at 16) is not supported by the intrinsic evidence.

Defendants' emphasis on the concept of "locking" as "the very heart of the invention for which Dr. Voudouris sought a patent," (Defendants' Memo, at 12, 14), is misplaced. It is not supported by the intrinsic evidence and nothing in the file history supports Defendants' position. Moreover, it is incorrect to emphasize one part of a patent as the "heart" of the patent; all claimed aspects must be taken into account. See Fuji Photo Film Co., Ltd. v. Int'l Trade Comm'n, 474 F.3d 1281, 1297 (Fed. Cir. 2007) ("[T]here is no legally recognizable or protected 'essential element,' 'gist,' or 'heart' of the invention in a combination patent."). The Supreme Court long ago rejected the contention Defendants now advance--that courts should focus on the purported "gist" or "heart" of the invention and ignore other aspects of a claim. See Aro Mfg. Co. v. Convertible Top Replacement Co., 365 U.S. 336, 344-45, 81 S. Ct. 599, 5 L. Ed. 2d 592, 1961 Dec. Comm'r Pat. 635 (1961).

Defendants attempt to support their proposal by improperly limiting the disputed term to functional embodiments disclosed in the specification. Defendants' Memo at 15. While claim 1 includes a means-plus-function limitation, the phrase "locking shutter" is not part of that limitation. It is therefore incorrect to limit the construction of that phrase to the structures disclosed in the specification. See Interactive Gift Express, Inc. v. Compuserve Inc., 231 F.3d 859, 865 (Fed. Cir. 2000); Northern Telecom Ltd. v. Samsung Electronics Co., 215 F.3d 1281 (Fed. Cir. 2000); Rhine v. Casio, 183 F.3d 1342, 1346 (Fed. Cir. 1999).

Finally, the Court notes that the extrinsic evidence supports OrthoArm's position. The dictionary definitions of the terms "lock" and "shutter" support construction of the term "locking shutter" as the portion of the bracket that is capable of shutting, closing, making secure, or preventing displacement. To "lock" is "to shut or make secure by or as if by locking." See Pl.'s Ex. 4 at 739, The American Heritage Dictionary: Second College Edition; see also Pl.'s Ex. 5 at 786, The Random House College Dictionary: Revised Edition. A "shutter" is a thing that "shuts," or "closes." See Pl.'s Ex. 5. at 1220, Random House College Dictionary.

Plaintiff's expert witness, Dr. Jerrold, and the inventor, Dr. Voudouris, have submitted Declarations which confirm that Plaintiff's proposed construction is consistent with the understanding of the term in the relevant art. They agree that, based on their review of the patent, the specification, and the file history, the term "locking shutter" is understood in the art of design and use of orthodontic brackets as a device that shuts, closes, makes secure, or prevents displacement of the archwire.
from the slot. See Voudouris Decl. at P 11; Jerrold Decl. at PP 10-12. Dr. Jerrold also notes that the locking shutter is designed to allow some movement of the archwire in the slot and not to fasten or fix the archwire in one position. Jerrold Decl. at P 10. Defendants have submitted no evidence to refute the testimony in these Declarations, and it is appropriate to consider these Declarations to confirm the constructions proposed by OrthoArm.

Accordingly, the Court construes the term "locking shutter" as the "portion of bracket that is capable of shutting, closing, making secure, or preventing displacement of the archwire."

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10. The '219 patent, claim 16: "shutter means"

Claim 16 of the '219 patent describes a "shutter means operably associated with said lens." The parties dispute whether this phrase is in means-plus-function form. St. Clair contends that a shutter is a structure. St. Clair further contends that the disputed phrase does not recite a function corresponding to this structure, rebutting the presumption that Section 112, P 6 applies to the disputed term. Canon contends that "shutter means" does not recite a definite structure and is a means-plus-function term.

After reviewing the claim language in light of the parties' respective positions, the Court concludes that the disputed phrase is not in means-plus-function form. A shutter is reasonably understood as a structure and "shutter means operably associated with said lens" describes such a structure and does not recite a function. Therefore, the presumption that "shutter means" is in means-plus-function form is rebutted and Section 112, P 6 does not apply. Accordingly, the Court concludes that the term "shutter" should be construed consistently with its ordinary meaning as "a shutter" such that further construction by the Court is not required.

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6. "side-by-side"

Claim one recites "a plurality of cords arranged side-by-side." Schindler asserts that "side-by-side" should be construed as "each one immediately next to and directly touching an adjacent one." Schindler bases this interpretation on the fact that the specification instructs that "it is desirable to minimize the spacing . . . between the cords." Otis responds that "side-by-side" should simply mean "arranged linearly along the width dimension." Otis' definition, then, does not require that the cords be in contact with each other.

The Court will adopt Otis' construction. Schindler's proposed construction misconstrues the above-quoted portion of the patent specification. Although according to the specification spacing between cords should be "minimize[d]" if possible, it does not follow that the invention requires there to be no spacing at all. In fact, all of the embodiments depicted in the patent contain some spacing. See Verizon Servs. Corp. v. Vonage Holdings Corp., 503 F.3d 1295,1305 (Fed. Cir. 2007) (construing terms in a manner that does not exclude examples in the specification); Oatey Co. v. IPS Corp., 514 F.3d 1271, 1277 (Fed. Cir. 2008) (same). Furthermore, the specification explicitly recognizes that completely eliminating separation between the cords may not be possible. Schindler's proposed construction would, therefore, potentially lead to Otis' claim covering an invention that is impossible to achieve. See Cross Atl. Capital Partners, Inc. v. Facebook, Inc., 2008 U.S. Dist. LEXIS 15862, at *24 (E.D. Pa. Feb. 29, 2008) (rejecting a proposed term construction that would make it impossible for the invention to function properly). Otis' definition more accurately reflects the claim language, and properly encompasses for the examples contained in the patent.

The Court will construe "side-by-side" to mean "arranged linearly along the width dimension."

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The defendants concede "side-by-side" means "one beside the other." Defendants' Objections at 4, 6. However, the defendants argue that the R&R ignored the dispute as to whether there can be "side-by-side" ribs that have an additional rib in between them. Id. at 4. The defendants contend that the magistrate judge erred by not construing the term and request that the court construct "side-by-side" to mean that nothing can be in between the generally V-shaped ribs. Id. at 4, 6. The R&R states that both parties agree "side-by-side" means "one beside the other." R&R at 18. Therefore, the magistrate judge determined that there is nothing about the term requiring interpretation as a matter of law. Id.

Claim 6, at issue here, states that: "The molded bucket according to claim 5 wherein said ribs are arranged in a diagonal orientation forming side-by-side generally V-shaped ribs." The defendants assert essentially that the magistrate judge should have construed the term "side-by-side" in Claim 6 to mean that the ribs must abut with nothing in between. But, as noted above, there is no dispute as to the ordinary meaning of the phrase "side-by-side" and the court does not fail to discharge its duty under Markman when a term does not require construction or does not depart from its ordinary meaning. Biotec, 249 F.3d at 1349. Thus, the court agrees with the magistrate judge's conclusion not to construe the term as asserted by the defendants.

This is particularly true because to impose the construction that "side-by-side" ribs cannot have intervening radial ribs would be imposing a limitation on the claims not supported in the specification. The Federal Circuit has held:

A fundamental rule of claim construction is that terms in a patent document are construed with the meaning with which they are presented in the patent document. Thus claims must be construed so as to be consistent with the specification, of which they are a part…[I]t is axiomatic that claims, not the specification embodiments, define the scope of protection.

Playtex Prods., Inc. v. Procter & Gamble Co., 400 F.3d 901, 906 (Fed. Cir. 2005)(internal citations omitted). The claims and the specification support additional embodiments of side-by-side generally V-shaped ribs next to radial ribs. 1 '493 patent Cols. 7:12-19, 5:1-5; KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed. Cir. 2000)("[A]lthough the specifications may well indicate that certain embodiments are preferred, particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments.").

Construing "side-by-side" to mean that nothing can come between generally V-shaped ribs would be construing the terms in reference to an accused device, which is a question of fact not within the scope of a Markman hearing. Miken Composites, L.L.C. v. Wilson Sporting Goods Co., 515 F.3d 1331, 1336 (Fed. Cir. 2008) (stating that the issue of infringement, whether literal or by the doctrine of equivalents, is a question of fact). Therefore, the court concludes that "side-by-side" means "one beside the other" and requires no further construction.

C. Side Grate Tables

The term "side grate tables" is recited two times in Claim 1. The Court has already construed terms "table" and "grate." The term "side" is what remains. Plaintiff proposes "grate tables positioned at opposing ends of a middle member." Defendant proposes "a side grate table is not located in the middle of the portable modular kitchen." (Def. Claim Constr. Brief at 13-14.)

Figures 1 and 2 of the '270 patent describe the possible positioning of the side grate tables 214 and 216. The parties do not
refer the Court to, nor has the Court found any, information in the specification that more fully describes the location of the side grate tables. Defendant objects to Plaintiff’s use of the phrase "opposing ends" because this imposes more of a limitation on the patent than is required by the term "side." The Court agrees. The two side tables, for example, could be placed at any of the four sides of the middle member resulting in an "L" shape.

Notwithstanding the Court's construction of "table" and "grate," the Court construes the term "side grate tables" as:

A "side grate table" is not located in the middle of the portable modular field kitchen.

1. "Side Impact Crash Sensor"

Defendants would have the court construe the words "side impact crash sensor" to mean "a crash sensor for use in detecting an impact to the side of a vehicle or an impact having a significant component of lateral force." (Defs.' Markman Br. at 13.) On the other hand, Plaintiff contends that the ordinary meaning of the language is self-evident and no construction is required. (See Joint Mem. at 1.) The court agrees that no construction of this phrase is required. The ordinary meaning of "side impact" already includes Defendants' proposed construction. Ordinarily understood, a side impact sensor senses not only the actual "striking" of the vehicle at one of its sides, but also the "[side] force or impetus transmitted by a collision." See Webster's New College Dictionary 353 (2d ed. 1995). The court fails to see how the claim limitation language would be clarified by adopting Defendants' proposed construction. The ordinary meaning of "side impact sensor," as understood by a person having ordinary skill in the relevant art, includes a sensor capable of sensing both the actual striking of a vehicle at its side and the side force transmitted by the striking of the vehicle at a position other than its side.

4. Language in Dispute: "Same Side" and "Opposite Side."

Does "same side of said cylindrical tube" refer to (1) the position on the cylindrical tube relative to the axial divider (i.e., the holes are on the portions of the tube on the same side of the axial divider) or (2) to the position on the cylindrical tube relative to the circumference of the cylindrical tube (i.e., the holes are aligned on the portions of the tube along the length of the tube)?

Answer: "Same side of said cylindrical tube" refers to the position on the cylindrical tube relative to the axial divider.

Does "opposite side of said cylindrical tube" refer to (1) the position on the cylindrical tube relative to the axial divider (i.e., the holes are on the portions of the tube on different sides of the axial divider) or (2) the position on the cylindrical tube relative to the circumference of the cylindrical tube (i.e., the holes are aligned on the portions of the tube along the length of the tube)?

Answer: "Opposite side of said cylindrical tube" refers to the position on the cylindrical tube relative to the axial divider.

a). Claim Language

These claim limitations concern additional side holes exposing the two lumens of the catheter to the blood stream. The dispute involves the meaning of the phrases "opposite side" and "same side." The Court holds "opposite side" to mean on the other side of the axial divider of the cylindrical tube without reference to any particular point and "same side" to mean on the same side of the axial divider of the tube without reference to any particular point.

The Court's construction is based largely upon the common usage and meaning of the terms "opposite" and "same" as they relate to the term "side." For example, during a tennis match, one player is on one side of the court and his opponent is on the opposite side of the net which divides the court in half. The opponent need not be directly opposite the player to be on
the opposite side, he must just be on the other side of the net. Similarly, in a doubles tennis match teammates are considered to play on the same side when they are on the same side of the court as divided by the net. They need not be in the same service box, but just on the same side of the court.

b). Written Description

The illustrations in figs. 1 and 2 of the '968 patent illustrate one embodiment of the claimed side holes. Opening 19, the primary inlet opening for the second lumen, is "said second opening." Multiple holes 21 constitute "at least one side hole circumferentially disposed on the opposite side" of the tube as opening 19, and multiple holes 22 make up "at least one side hole circumferentially disposed on the same side" of the tube as opening 19.

The specification supports Dr. Mahurkar's construction of this claim:

The return holes 21 and the inlet holes 22 are further disposed circumferentially on opposite sides of the divider 12. Thus, there is axial as well as circumferential separation of the inlets and outlets for fluid circulation. ('968 patent, col. 4, lines 10-14).

Holes 21 and 22 are not lined up 180 degrees from each other. In fact holes 22 are much further away from the tip than holes 21. Thus they are on opposite sides of the divider, but not directly across from one another. In this specification there is not a requirement for the outlet hole to be 180 degrees (halfway) from the second opening to be "opposite." There must be holes on the opposite sides of the divider and also some on the same side.

c). Dictionary Definition

The construction of the words "opposite side" and "same side" is simple. The ordinary and accustomed meaning of the words provide their construction. The parties agree the cylindrical tube is divided in half by the axial divider. Therefore, the "opposite side" is simply the opposite side of the divider, and "same side" means the same side of the divider. This does not mean the holes must be exactly 180 degrees apart to be on "opposite sides" nor does it mean the holes must be axially aligned to be on the "same side." Webster's Dictionary defines "side" as "a place, space, or direction with respect to a center or to a line of division (as of an aisle, river, or street)." (Webster's Collegiate Dictionary 1089 (10th ed. 1996)).

Common usage of the words here, leads the Court to construct "opposite side" as on the opposite side of the tube as determined by a center line, which in this case is the axial divider. Similarly, "same side" is on the same side of the tube as determined again by the axial divider.

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B. "Side Rail Positioning Mechanism"

The claim term "side rail positioning mechanism," as used in Claims 1, 10, and 18 of the '855 Patent, is the most hotly contested and heatedly debated issue by the parties, who argue for widely divergent interpretations of this claim limitation. The term "side rail positioning mechanism" is nowhere explicitly defined in the '855 Patent, but it is used throughout the patent as part of the primary independent claims. In Claim 1, a "side rail positioning mechanism" is claimed as part of the overall apparatus, "each of said at least one positioning mechanism being coupled to a respective one of said at least one side rail, each of said at least one positioning mechanism being operable to position said respective one of said at least one side rail in an uppermost position [above the bed surface] . . . and in a lowermost position [substantially at or below the bed surface]." '855 Patent, Col. 7, Claim 1. In Claims 10 and 18, "side rail positioning mechanism" is given a more specific structure, to include: (a) a handle component mounted to at least one side rail; (b) "a vertical lock spindle rotatably attached to said respective one of said at least one side rail and having a plurality of lock pins spaced vertically thereon, said lock spindle being operable to rotate between a lock position and a release position;" and ©) "a locking component slidably receiving said vertical lock spindle, said locking component being fixed to said frame." '855 Patent, Col. 9, Claim 10; Col. 10, Claim 18.

Pedicraft submits that the claim limitation "side rail positioning mechanism" does have an ordinary meaning to one skilled
in the art of hospital beds and cribs, when read in the context of the claims in the '855 Patent. Pedicraft urges this Court to adopt an ordinary and known meaning of "side rail positioning mechanism" that "covers any number of constrained kinematic chains arranged to lock and unlock a side rail and various up and down positions with respect to the bed surface and the patient." Dkt. 65, pg. 6. It urges the Court to reject Stryker's proposed construction, which limits the term "side rail positioning mechanism" to the combination described in Claims 10 and 18 of the '855 Patent, namely a combination of a handle component mounted to a side rail, a vertical lock spindle rotatably attached to the side rail and having several vertically spaced lock pins along its length, and a locking component which slidably receives the vertical lock spindle. See id. Pedicraft claims that Stryker's proposed narrow claim construction does not comport with the ordinary meaning that should be given to the term "side rail positioning mechanism," as shown through both intrinsic and extrinsic evidence.

Pedicraft asserts that the meaning of "side rail positioning mechanism" to one of ordinary skill in the art is reflected in the testimony of Mr. Lockwood, who has education and experience in the design and development of hospital beds and equipment. See Dkt. 62, pp. 20-22. Mr. Lockwood testified that one skilled in the art would understand the term based on the person's understanding of the word "mechanism," along with a working knowledge of the functioning and design of hospital beds and cribs. See id. at pp. 28-30. According to Pedicraft's interpretation of the term "side rail positioning mechanism" as reflected by Mr. Lockwood's testimony, an ordinarily skilled person would understand the term as signifying a "mechanical linkage that is arranged to provide controlled motion transfer." See id.; Dkt. 65, pp. 7-8. Admittedly, this construction of the term was discussed through a "highly technical" definition of "mechanism" as a "constrained kinematic chain." Dkt. 65, pp. 7-8. Such a "constrained kinematic chain" would purportedly be arranged on a crib so as to move the side rail to lock and unlock the rail in up and down positions, and Pedicraft contends that this structure and function is made clear through the language in Claim 1 of the '855 Patent. Dkt. 62, pp. 28-30.

As "corroboration" for this technical definition of "mechanism," Pedicraft points to Mr. Lockwood's discussion of a 1969 college mechanical engineering textbook, which allegedly indicates how the term is defined by mechanical engineers -- and would continue to be defined to the present day. Dkt. 62, pp. 32-34. Furthermore, Pedicraft claims that Stryker's own expert who testified at the Markman hearing, Dr. Joseph F. Dyro, a biomedical engineer who specializes in clinical engineering, also corroborated this definition of "mechanism" as a "constrained kinematic chain." According to Pedicraft, Dr. Dyro formed his opinion on the construction of this term without any consultation with colleagues or literature in the art, and he subsequently conformed with Mr. Lockwood's understanding of the meaning of "side rail positioning mechanism" by concluding that it would be a mechanical structure for moving the side rails up and down. Dkt. 63, pp. 32-24. In short, "other than semantical differences in their expressions," Pedicraft argues that both Dr. Dyro and Mr. Lockwood have the same understanding of the proper construction of the term "side rail positioning mechanism" from the perspective of one skilled in the art. Dkt. 65, pp. 8-9.

Pedicraft also disputes Stryker's attempt to use a general dictionary definition to construe the term "side rail positioning mechanism" as "a piece of machinery: a structure of working parts functioning together to produce an effect," which Stryker then argues is vague and must be limited by using the specific disclosures throughout the '855 Patent. Dkt. 65, pp. 9-10. Pedicraft argues that general dictionary definitions cannot control over how a claim would be interpreted by one specifically skilled in the art of hospital beds and cribs, and as such the claim term must be viewed in the entire context of the patent and the "world of hospital beds and cribs." In this world, Pedicraft contends, skilled individuals would understand a "side rail positioning mechanism" to mean a "constrained kinematic chain" used to position the side rails between the uppermost and lowermost positions on the crib.

Although Stryker contends that 35 U.S.C. §112, P6 applies to the term "side rail positioning mechanism" because it is a "means-plus-function" claim, Pedicraft disputes this argument because the term "means" is nowhere used in the claim, and therefore Section 112, P6 is presumed not to apply to this case. Pedicraft asserts that Stryker has not overcome this presumption of inapplicability of the "means-plus-function" section because "side rail positioning mechanism" does invoke sufficient structure to one skilled in the art when viewed in context of the entire '855 Patent and one's knowledge of hospital beds and cribs. Dkt. 65, pp. 11-12. Allegedly, the term "mechanism" would be understood by those skilled in the art (as demonstrated by the experts during the Markman hearing), and as such one would understand the meaning behind a mechanical structure used to position the side rails of hospital beds or cribs. Id. Pedicraft points to Stryker's own expert as demonstrating that those skilled in the art of hospital bed design and structure understand "side rail positioning mechanism" to mean a constrained mechanical linkage used to raise and lower side rails, without the need for dictionaries, treatises or other resources. Id. at pp. 12-13.
Stryker has therefore purportedly failed to overcome the presumption against application of Section 112, P6. Instead, Pedicraft contends that "side rail positioning mechanism," as used in Claim 1, states sufficient structural, operational and positional limitations to describe the "metes and bounds" of the claim limitation and thus take it out of the ambit of the "means-plus-function" section. It argues extensively that the disputed claim limitation "inherently has structure in the form of a mechanical linkage for motion transfer . . . a side rail lock . . . coupled to the side rail . . . operable to position the side rail between an uppermost position and a lowermost position." Id. at 13. In short, in view of the "inherent structure" contained in the term "side rail positioning mechanism," Pedicraft urges the Court not to analyze the term in light of Section 112, P6. Instead, the claim limitation should be interpreted in light of the meaning accorded to it by those of ordinary skill in the art (including both experts presented at the Markman hearing) -- i.e., "a constrained kinematic chain, or in other words, a mechanical linkage coupled to the side rail and arranged to provide a controlled or predictable movement up and down of the side rail." Id. at 14.

Lastly, Pedicraft argues against the construction of "side rail positioning mechanism" as limited to the terms of the '855 Patent specifications, or in other words, the specific limitations evidenced in Claims 10 and 18. None of the descriptions in the patent claims that specify the purported limitations of a "side rail positioning mechanism" are presented in a "definition format" that would be readily understood by one skilled in the art, and according to Pedicraft, "[m]ost of the references to side rail positioning mechanism and the specific embodiment disclosing the specification are made in the context of the detail description section and with reference to the specific embodiment in the figures." Dkt. 65, pg. 15. As such, these descriptions and the single embodiment should not be read as limitations to the term "side rail positioning mechanism," as one skilled in the art would not perceive such limitations upon interpreting the term in Claim 1 of the '855 Patent.

Stryker vehemently disputes what it considers Pedicraft's "strained" interpretation of the term "side rail positioning mechanism." Instead, Stryker contends that the claim limitation should be interpreted to include the combination of "(1) a handle mounted to a side rail, (2) a vertical lock spindle which is rotatably attached to the same side rail and has several lock pins spaced vertically along its length, and (3) a specially designed locking component for receiving the lock spindle." Dkt. 66, pg. 7. According to Stryker, this interpretation of "side rail positioning mechanism" is supported by the '855 Patent's abstract, summary of the invention, and detailed description of the invention (shown in Figure 3). Id. at pp. 7-8. In other words, the term "side rail positioning mechanism" is defined in accordance with Stryker's construction consistently throughout the '855 Patent.

In fact, Stryker argues that its interpretation of "side rail positioning mechanism" is not simply the preferred embodiment expressed in the patent, it is the only embodiment described in the '855 Patent. Moreover, the patent repeatedly refers to the positioning mechanism "of the present invention," including in the written description or summary of the invention where the mechanism to position the side rails is described as comprised of a handle, vertical lock spindle, and a locking component. '855 Patent, Col. 2, lines 50-65. Accordingly, because the phrase "of the present invention" is affirmatively used and followed by a description of "side rail positioning mechanism" that is consistently in concert with Stryker's specific construction, Stryker urges the Court to define the claim term using the three consistently required elements. Stryker highlights the testimony of Dr. Dyro at the Markman hearing, during which the expert testified that use of the phrase "present invention" in the '855 Patent is a signal regarding the meaning of the unfamiliar terminology "side rail positioning mechanism." Dkt. 63, pp. 23-24. In addition, it is evident that Pedicraft considered the "side rail positioning mechanism" to be an essential part of the invention, including the claim term in the title of the '855 Patent. Stryker also urges this Court to carefully consider the specification of the invention in this case, as it is important to look to the specification as either an express definition of a claim or a definition by implication. Furthermore, other intrinsic evidence is allegedly consistent with Stryker's construction, including the prosecution history of the patent, wherein the Patent Office only allowed the '855 Patent to issue based on the specific attributes of the "side rail positioning mechanism." Dkt. 66, pp. 11-12. In fact, nowhere in the prosecution history did Pedicraft object to the Patent Officer's issuance of the patent with the claim "side rail positioning mechanism" including the required components named in the specification.

Contrary to Pedicraft's analysis, Stryker also asserts that 35 U.S.C. §112, P6 is applicable to the claim term "side rail positioning mechanism." In effect, it argues that "side rail positioning mechanism" recites a means for performing a specified function, without reciting specific structure, material or acts in the limitation. The Court must therefore look to the specification and its equivalent of the '855 Patent (i.e., the "side rail positioning mechanism" as specifically defined by Stryker and Claims 10 and 18 of the patent) for the proper construction of this "means-plus-function" element. Although the claim element "side rail positioning mechanism" does not specifically include the "means" phrasing that would
presumptively trigger Section 112, P6, Stryker points out that the claim language nonetheless fails to provide sufficient structure to remove the limitation from the "means-plus-function" analysis. This analysis, Stryker contends, is supported by Dr. Dyro, who testified that the term "side rail positioning mechanism" in Claim 1 of the '855 Patent is specifically described in terms of a function for positioning the side rail, without any described structure to perform the function. Dkt. 66, pp. 16-17. Dr. Dyro further testified that the term "mechanism" itself does not help in construing the claim limitation, as "mechanism" does not connote some identifiable structure. Id. In short, Stryker argues that the claim element "positioning mechanism being operable to position the side rail" in fact should be construed as if it were worded "means for positioning the side rail." Dkt. 66. Pg. 17.

Under Section 112, P6, Stryker asserts that the '855 Patent describes the claimed function of a "side rail positioning mechanism" as positioning the side rails between an uppermost and lowermost position, but the claim itself (i.e., Claim 1) does not disclose sufficient structure to correspond with this function. Accordingly, the only structure disclosed in the patent for accomplishing the function of positioning side rails include the combination of (1) a handle component mounted to a side rail; (2) a rotatable lock spindle with several vertically spaced lock pins operable to rotate between lock and release positions; and (3) a locking component attached to the frame of the bed which slidably receives the lock spindle. See '855 Patent, Abstract; Col. 2, Summary of the Invention; Detailed Description of the Invention, Col. 5, lines 20-40; Figures 3, 7 and 8; Claim 10, Col. 9; Claim 18, Col. 10. All of the claims in the patent -- including Claim 1 -- therefore recite a "side rail positioning mechanism" that includes this combination of elements, as reflected in the patent's abstract, specification, figures, and later, Claims 10 and 18. As such, since nothing within the intrinsic evidence ever reflects a more expansive definition of "side rail positioning mechanism" that would not be limited to these required elements, Stryker argues that the Court should construe this claim as limited to the only disclosed structure in the '855 Patent. It claims this is required because Pedicraft cannot broaden Claim 1 by differentiating the patent's other claims, given the fact that functional language is used and the patent's specifications consistently describe a "side rail positioning mechanism" through the use of its required elements.

Stryker also points to the evidence presented at the Markman hearing as reflecting the clear fact that prior to the issuance of the '855 Patent, the term "side rail positioning mechanism" had no clear meaning to a person of ordinary skill in the art of hospital bed and crib design and manufacture. Instead, it is the patent itself which defines the claim term, solely by reference to the specific limitations described above. Stryker highlights Mr. Lockwood's testimony as reflecting his understanding that a "side rail positioning mechanism" as used in the '855 Patent would be understood to include a handle component, a vertical lock spindle, and a locking component. Dkt. 62, pp. 93-95. Additionally, there is no dictionary or treatise which includes a specific definition of "side rail positioning mechanism," nor is there any evidence that the phrase was ever used prior to its use by Pedicraft's counsel during patent prosecution. Dkt. 66, pg. 22. Both experts at the Markman hearing apparently agreed that prior to the '855 Patent, the term "side rail positioning mechanism" had never been used in any patent or publication. See Dkt. 62, pp. 99-100; Dkt. 63, pp. 16-17.

Stryker's own expert, Dr. Dyro, testified that the word "mechanism" does not connote a specific structure, but instead brings to mind an understanding of some "assemblage of parts that, when working together, perform some function." Dkt. 63, pg. 17. He also testified that he has never seen the definition of "mechanism" as a "constrained kinematic chain" in any document, textbook or dictionary, prior to hearing this definition presented by Pedicraft. Id. at 17-19. Moreover, although pieces of prior art presented during the '855 Patent prosecution do contain potential "mechanisms" for moving bed railings, Dr. Dyro did not acknowledge that the prior art at any time expressly used the term "side rail positioning mechanism." Id. at 17, 40-41, 49-52. Dr. Dyro therefore testified that one must look to the disclosures of the '855 Patent itself to determine the meaning of this newly-used claim term.

Lastly, Stryker urges this Court to adopt its construction of "side rail positioning mechanism," as reflected in the '855 Patent itself and in the intrinsic evidence, over the strained and contradictory construction presented by Pedicraft and its expert, Mr. Lockwood. This testimony, along with a 1969 college textbook, cannot be used to contradict the meaning of the previously undefined term that is reflected in the language of the patent, its prosecution history, and in the testimony of the experts. See Dkt. 66, pp. 26-27. Such documents and prosecution history purportedly establish the meaning of this vague term without the need for reference to extrinsic evidence, such that one skilled in the art would understand a "side rail positioning mechanism" as requiring the three components highlighted above in the context of the '855 Patent. Stryker claims any evidence to the contrary is entitled to little or no weight by this Court, such that the intrinsic evidence provides the required public notice of what is included within the claims of the '855 Patent.
The Court agrees that Pedicraft's attempts to define "side rail positioning mechanism" through the use of strained and convoluted phrases such as a "constrained kinematic chain" do not properly give clear notice to the public as to what would be covered under the terms of the '855 Patent. Instead, the description of "side rail positioning mechanism" to include (1) a handle component mounted to a side rail; (2) a rotatable lock spindle with several vertically spaced lock pins operable to rotate between lock and release positions; and (3) a locking component attached to the frame of the bed which slidably receives the lock spindle, is the only embodiment that is reflected throughout the '855 Patent, its prosecution history, and any additional intrinsic evidence. See '855 Patent, Abstract; Col. 2, Summary of the Invention; Detailed Description of the Invention, Col. 5, lines 20-40; Figures 3, 7 and 8; Claim 10, Col. 9; Claim 18, Col. 10. This claim term was previously undefined, and even when looking at the extrinsic evidence, it becomes clear that both experts believe the term would be understood by one of ordinary skill in the art of crib design and manufacture as it is reflected throughout the '855 Patent. The Court therefore believes Stryker's construction of the claim term "side rail positioning mechanism" is the correct one.

Additionally, the '855 Patent consistently defines the "positioning mechanism" of the present invention as including a handle, vertical lock spindle, and locking component. The Court agrees that the use of the phrase "of the present invention" is particularly indicative of the appropriate construction, because that language indicates the limitations of the structure Pedicraft intended to patent. See, e.g., SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1343 (Fed. Cir. 2001) (discussing use of phrase "present invention" to describe a particular structure); Bell Atlantic Network Servs., Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1277 (Fed. Cir. 2001) (same). Stryker's expert affirmed this legal proposition by stating that "of the present invention" would be taken as a signal as to the meaning of the heretofore undefined term "side rail positioning mechanism." Dkt. 63, pg. 23 ("[W]hen a specification refers to the term 'the present invention,' it's talking about the present invention and not some possible embodiment or some possible configuration. It is, this is the invention."). Moreover, Pedicraft indicates in the title of the '855 Patent that the "side rail positioning mechanism" effectively is a vital component of the invention, if not the heart of the invention itself. Therefore, it is proper to refer to the specification and descriptions of this feature, consistent throughout the '855 Patent, as the implied definition of the term "side rail positioning mechanism." See Vitronics, 90 F.3d at 1582; Bell Atlantic, 262 F.3d at 1268; SciMed, 242 F.3d at 1344.

The Court also finds that the prosecution history, a recognized piece of the puzzle in construing a disputed claim term, supports the interpretation of "side rail positioning mechanism" put forth by Stryker. See Zenith Lab, Inc. v. Bristol-Myers Squibb Co., 19 F.3d 1418, 1425 (Fed. Cir. 1994). In the Notice of Allowance, Stryker correctly points out that the Patent Examiner described the features of the positioning mechanism to be patented, which included a rotatable lock spindle and a locking component to slidably receive the lock spindle. Notice of Allowance, June 25, 2001, pg. 2. It is also noteworthy that there are no notes or commentary from Pedicraft in the prosecution history clarifying the scope of its invention, providing further intrinsic support for Stryker's proffered construction. See, e.g., Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1578 (Fed. Cir. 1995) (holding that patentee cannot later contradict an indisputable public record regarding the allowance of the patent claims).

The claim term "side rail positioning mechanism" should also be construed with reference to the patent specification because it is a "means-plus-function" element as defined under 35 U.S.C. § 112, P6. While it is true that this element does not include the requisite "means for" language that would result in the presumptive application of Section 112, P6, the fact remains that "side rail positioning mechanism" connotes a function -- i.e., positioning side rails of the crib - without connoting sufficient structure for performing that function. As such, Stryker has overcome the presumption that Section 112, P6 does not apply to this term such that it must be construed with reference to the specification in the '855 Patent. See Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1213 (Fed. Cir. 1998); Watts v. XL Systems, Inc., 232 F.3d 877, 880-81 (Fed. Cir. 2000) (discussing application of Section 112, P6 when the claim term, a name for a structure, does not connote a reasonably well-understood meaning to one skilled in the art).

As discussed above, both Dr. Dyro and Mr. Lockwood appeared to agree at the Markman hearing that the term "side rail positioning mechanism" did not have a reasonably well-understood meaning prior to the issuance of the '855 Patent. Moreover, the word "mechanism" itself is vague and could connote a wide variety of structures, all to be used to perform some specified function -- here, positioning the side rails of the crib. See, e.g., Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1303-04 (Fed. Cir. 1999); Dkt. 63, pg. 17. The Court does not find Pedicraft's proffered "constrained kinematic chain" definition the least bit helpful in defining this vague term by narrowing its structure to a concrete "mechanism." Rather, to allow Pedicraft to widen the scope of its claim terms through such broad and ambiguous definitions would defeat the purpose of giving the public adequate notice of the limitations of the patented invention. See Markman, 517 U.S. at 390;
Vitronics, 90 F.3d at 1583; Mas-Hamilton, 156 F.3d at 1214 (stating that claims cannot be construed too broadly to cover every conceivable structure that would serve as a means for performing a certain function). Because the term "mechanism" as used in the claim limitation "side rail positioning mechanism" does not connote a sufficiently known structure for performing the function, the Court finds that Section 112, P6 is applicable, and as such the claim term should be defined through referral to the specification and description of the invention in the '855 Patent. See also Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed. Cir. 1996); Mas-Hamilton, 156 F.3d at 1213-15 (discussing application of Section 112, P6 to claim term even without traditional "means for" language); Raytheon Co. v. Roper Corp., 724 F.2d 951, 957 (Fed. Cir. 1983).

The Court agrees with Stryker that the Federal Circuit opinion in CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359 (Fed. Cir. 2002), is inapposite to this case. In CCS Fitness, the traditional "means for" language was not used, and therefore it was presumed that Section 112, P6 did not apply. However, unlike this case, the Defendant in CCS Fitness did not present sufficient evidence to overcome the presumption, and in any event, the claims in the CCS Fitness patent provided sufficient structural description to take the disputed term outside of the requirements of Section 112, P6. See id. at 1364, 1369. Here, the Court finds that "side rail positioning mechanism" is a functional term, and there is not sufficient structure disclosed in Claim 1 of the '855 Patent. Nor does the term "side rail positioning mechanism" possess an ordinary meaning to one skilled in the art. Thus, the "means-plus-function" requirements apply.

In applying Section 112, P6, it therefore becomes clear that Stryker's identified construction comports with the disclosures in the '855 Patent. Because Claim 1 itself does not disclose a specific structure, the specification provides the required construction of the disputed claim term "side rail positioning mechanism." See Kemco Sales, Inc. v. Control Papers Co., 208 F.3d 1352, 1361 (Fed. Cir. 2000). Here, that means the only structure disclosed in the entire '855 Patent must be construed as the meaning of "side rail positioning mechanism": a device that includes a handle component mounted to a side rail, a rotatable lock spindle with several vertically spaced lock pins operable to rotate between lock and release positions, and a locking component attached to the frame of the bed which slidably receives the lock spindle. Stryker's construction of this term is therefore the correct one under Section 112, P6.

Pedicraft also cannot invoke the doctrine of claim differentiation to separate the "side rail positioning mechanism" disclosed in Claims 10 and 18 from the undisclosed structure in Claim 1. It argues that by virtue of the detailed description of a "side rail positioning mechanism" in independent Claims 10 and 18, the term should have an excessively broad scope in Claim 1 because it is not defined specifically as in the independent claims. Stryker's assertion is correct, however, that the only description of "side rail positioning mechanism" throughout the '855 Patent claims and specification includes the three required components. As such, claim differentiation "cannot broaden claims beyond their correct scope, determined in light of the specification and the prosecution history and any relevant extrinsic evidence." Wang Lab, Inc. v. America Online, Inc., 197 F.3d 1377, 1384 (Fed. Cir. 1999). Here, due to the functional language of Claim 1 and the only structural disclosure in the specification and remaining claims of the '855 Patent, the term "side rail positioning mechanism" should properly be construed as requiring a handle, vertical lock spindle, and locking component. See also Laitram, 939 F.2d at 1358.

Lastly, the Court agrees with Stryker's contention that the term "side rail positioning mechanism" does not have an ordinary meaning to one skilled in the art of hospital beds and cribs, considering the fact that the term was not coined until the '855 Patent. Accordingly, the Court must look first to the intrinsic evidence in this case (i.e., the patent itself and the prosecution history), and then, if needed, to the extrinsic evidence (i.e., the expert testimony and exhibits provided at the Markman hearing). In this case, as discussed above, the '855 Patent and prosecution history give clear indication that a "side rail positioning mechanism," in conjunction with Pedicraft's product, must embody a handle component, vertical lock spindle, and a locking component. This embodiment was further supported by Dr. Dyro and Mr. Lockwood, who acknowledged that under the '855 Patent, a "side rail positioning mechanism" would include the required three elements. Dkt. 62, pp. 93-95.

Pedicraft has presented no evidence to demonstrate to the Court that prior to the '855 Patent, "side rail positioning mechanism" had any recognized meaning to one skilled in the art. In fact, there is no evidence to show that the term has ever been used in a dictionary or treatise, nor has it previously been used in any of the patents disclosed as prior art during
prosecution of the '855 Patent. See, e.g., Texas Digital, 308 F.3d at 1202; Optical Disc Corp. v. Del Mar Avionics, 208 F.3d 1324, 1334-35 (Fed. Cir. 2000); Dkt. 62, pg. 99. Pedicraft's own expert even acknowledged his unfamiliarity with the term prior to this litigation, and it is patently evident that the term had never been used prior to the prosecution of the '855 Patent. Dkt. 62, pp. 80-81, 110. Stryker's expert, Dr. Dyro, also testified that the term "mechanism" does not signal a clear structural meaning, and that he had never seen the term "side rail positioning mechanism" prior to review of the '855 Patent. Dkt. 63, pp. 17-18.

The Court must accordingly look to the intrinsic evidence in this case to determine the meaning of the heretofore unused term. As explained above, the intrinsic patent documents (including the specification and file history) signal a clear meaning of "side rail positioning mechanism" without the need for reference to Mr. Lockwood's strained and unsupported (save for a 1969 textbook) definition of "mechanism." See Vitronics, 90 F.3d at 1584-85; Southwall, 54 F.3d at 1578; Texas Digital, 308 F.3d at 1204; Middleton, Inc. v. Minnesota Mining and Mfg. Co., 311 F.3d 1384, 1387 (Fed. Cir. 2002). The Court will therefore adopt Stryker's construction of the term based on the intrinsic documents that would give the public proper notice of what constitutes a "side rail positioning mechanism."

Accordingly, the Court construes the term "side rail positioning mechanism," as used in Claim 1 and throughout the '855 Patent, to include the combination of (1) a handle mounted to a side rail; (2) a vertical lock spindle which is rotatably attached to the same side rail and has several lock pins spaced vertically along its length; and (3) a specially designed locking component for receiving the lock spindle.

1. "Side wall"

The second patent at issue in this case is United States Patent No. 5,961,231 (the '231 patent), entitled "Keyboard Positioning System" and issued on October 5, 1999. The '231 patent also describes "a device for mounting a keyboard to a base and for positioning the keyboard in a backward tilted position." The device claimed in claim 1 is comprised in part of (c) a support tray comprising:

- a support surface and
- a keyboard stop member comprising a stop wall, said support surface comprising a front position, a rear portion, a first sidewall, and a second sidewall, such that said stop wall extends from said first side wall to said second side wall and wherein said stop wall is disposed in said rear portion of said support surface.

'231 patent claim 1(c), col. 9, 11. 47-54.

Plaintiffs contend "side wall" should be given its ordinary and accustomed meaning: "a wall forming the side of something." Merriam-Webster Unabridged Dictionary (2002) (online version). As such, plaintiffs contend the term is broad enough to include side walls of the support tray support surface that extend either upwardly or downwardly from the sides of the support surface. Defendants maintain that a side wall is ordinarily understood to be "a vertical structure or member forming an enclosure or defining a space." McGraw-Hill Dictionary of Scientific and Technical Terms, Fifth Edition (1994). Defendants argue that a downwardly extending side wall would not serve to enclose the space of the keyboard support surface.

Although the parties argue matters of prosecution history and extrinsic evidence in support of their respective positions, this dispute is properly resolved with reference to the patent language and specification. Each "side wall" is part of a support surface, a surface of a support tray, designed to support a keyboard. The keyboard rests on the top of the support surface. Whether the side wall is deemed to partly "form the enclosure of the support surface," or "define the space of the support surface," or "form the side of the support surface," it is clearly the top, and not the bottom, of the support surface that is relevant. A side wall must be a wall in relation to the top of the support surface. It follows, applying even plaintiffs' proposed definition, that a side wall must project upward from the side of the support tray to form the side of the support surface. A structure or surface which projected only downward from the support surface could be considered part of the
edge of the support tray, but would not form the side or define the space of the "support surface" for purposes of this claim.

This construction is consistent with the plain and ordinary meaning of side wall, consistent with the claim language and specification disclosures, and consistent with plaintiffs' own initial proposal, recognizing that "wall" includes a structure having a slightly upward projection or enclosing part. See Markman Charts, docket # 88, p. 3. Accordingly, the Court holds:

"Side wall" shall be construed to mean a structure projecting or extending upward, i.e., above the plane of the support surface, from either side of the support tray.

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8. "side wall" is a substantially vertical component of a beam. 2 The side wall of the beams in the '237 device is continuous (and rigid) although not necessarily constructed of one piece. At the same time, the side wall is not of "piecemeal construction" as would permit alteration of the cross-sectional configuration of the axle; rather it permits insertion of an orifice in the side walls which orifice substantially surrounds the axle. (See ARV000616);

9. . . . "whereby said axle cross-sectional configuration is prevented from assuming a cross-sectional configuration substantially different from an unaltered configuration when said torsional forces are imposed upon said axle" is inherent in the process rather than a claim limitation. See Texas Instruments Inc. v. United States ITC, 988 F.2d 1165, 1172 (1993) (A "whereby" clause that merely states the result of the limitations in the claim adds nothing to the patentability or substance of the claim).

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1 A "means plus function" limitation, under 35 U.S.C. § 112 P6, must "be construed to cover the corresponding structure, material, or described in the specification and equivalents thereof."

2 A beam is "a structural member (as an iron girder) usually supported at the two ends that is laid horizontally to bear a load and brace a frame" (Webster's Third Int'l Dictionary 190 (1981 ed.). The beam in the '237 device is rigid, not flexible.

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1. Claim 1 -- "side walls"

Bradford proposes that "side walls" means "structural elements partially defining the body that join a top and a bottom." Defendants contend that "side walls" means "opposing vertical constructions resembling an upright continuous surface, and each serving to enclose, divide, or protect the opposing areas of the body and that join a top and a bottom." The basic dispute over this term is whether "side walls" requires a continuous surface.

In contending that it does not, at oral argument, Bradford pointed to Figures 4 and 5 of the '119 Patent. Figures 4 and 5 show one of the preferred embodiments of the invention in which folding legs are utilized to collapse the top of the container onto the bottom of the container. The embodiment in Figures 4 and 5 is essentially a frame-like structure 1 which does not create an enclosure around the dunnage structures. In contrast, the embodiment in Figures 1, 2, and 3 demonstrates a container that is more box-like than the container in Figures 4 and 5. In this embodiment, the sides of the container are continuous surfaces. The sides are hinged where they connect to the bottom and fold over one another to collapse the container.

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1 Noting that the term "frame" is a term which also requires construction, the Court clarifies that here it uses the term "frame-like" in a descriptive rather than definitional sense.
In arguing for their definition, Defendants note this distinction. They argue that the specification of the ‘119 Patent always uses the term "side walls" when referring to embodiments with continuous surfaces and that it uses "side" but not "wall" when it refers to embodiments, such as the frame-like structure in Figures 4 and 5, that do not include substantially continuous surfaces. Defendants also observe that dependent claims 18 and 19 of the ‘119 Patent use the term "sides" but not "side walls". Thus, they argue, there clearly is a distinction between "side walls" and "sides" which in turn requires "side walls" to have substantially continuous surfaces. Finally, Defendants point out that during the prosecution of the corresponding patent application before the European Patent Office, Bradford argued that "side walls" did not include the frame structure disclosed in Janus (U.S. Patent 5,211,290).

The Court concludes that Defendants' proposed construction of "side walls" is correct. As they correctly observe, the specification consistently uses "side walls" in reference to embodiments with substantially continuous surfaces and "sides" in reference to embodiments without substantially continuous surfaces. See Phillips, 415 F.3d at 1315 (stating that the specification is usually dispositive and that "it is the single best guide to the meaning of a disputed term.") (quoting Vitronics Corp. v. Conception Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Additionally, dependent claims 18, 19, 21, and 22 use the term "sides". Dependent claims 25 through 30 revert to use of the term "side walls". Clearly, then, there is a distinction between "side walls" and "sides" which should be maintained. Power Mosfet Techs., L.L.C. v. Siemens AG, 378 F.3d 1396, 1409 (Fed. Cir. 2004) (stating that although not an inflexible rule, "interpretations that render some portion of the claim language superfluous are disfavored.").

Moreover, the Court observes that in Claim 1, the "side walls" are "coupled to the bottom[.]") '119 Patent, col. 17 ll. 28-29. By contrast, according to the specification, the embodiment shown in Figures 4 and 5 has "sides". The "sides" are not "coupled to" anything. Instead, the "sides" form a part of the top member. Then, folding or collapsible legs are "hingedly coupled" to top and bottom members. Id. col. 12, ll. 15-24. Thus, according to Figures 4 and 5, the "coupling" occurs between the top and bottom members and the folding legs, and not between a "side wall" and a "bottom." To conclude that "side walls" includes the "sides" disclosed in Figures 4 and 5, the Court would also have to ignore that in Claim 1, the sides walls are only "coupled to" a single component, the "bottom", and not to a top member and a bottom member, as shown in Figures 4 and 5, which would be coupling to two elements. These figures further demonstrate that "side walls" and "sides" are different concepts which require different definitions.

Arguably, an interpretation of "side walls" which requires substantially continuous surfaces results in a construction which excludes the preferred embodiment disclosed in Figures 4 and 5 because they do not show "side walls". Dow Chem. Co. v. Sumitomo Chem. Co., Ltd., 257 F.3d 1364, 1378 (Fed. Cir. 2001) ("[A] claim construction that excludes a preferred embodiment is rarely, if ever, correct.") (quoting Vitronics, 90 F.3d at 1583). This contradiction, however, can be reconciled if Figures 4 and 5 are understood as a preferred embodiment of independent claim 17, and not as a preferred embodiment of independent claim 1.

As indicated, independent claim 1 in pertinent part claims a "returnable and reusable container for holding product therein during shipment . . . comprising . . . a body having a bottom and at least two side walls coupled to the bottom[,]" '119 Patent col. 17 ll. 24-29. In contrast, independent claim 17 discloses a collapsible container body but there is no limitation concerning either "sides" or "side walls". The "sides" limitation is introduced in dependent claim 18. "Side walls" resurfaces in dependent claim 25. Thus, independent claim 17 is broad enough to encompass both containers with "sides" and containers with "side walls". See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004) ("[T]he presence of a dependent claim that adds a particular limitation raises a presumption that the limitation is not found in the independent claim."). Therefore, requiring "side walls" to have a substantially continuous surface does not improperly exclude a preferred embodiment.

Accordingly, the Court holds that "side walls" means "opposing vertical constructions resembling an upright continuous surface, and each serving to enclose, divide, or protect the opposing areas of the body and that join a top to a bottom."
B. Side View

The dispute over the term "side view" in claim 1 raises two issues: first, whether the side view image created by the second camera must be crescent shaped; and second, what range of angles generates a side view image. As to the first issue, Scanner asserts that a side view image is not limited to only a crescent shape; ICOS contends that a side view image must be a crescent shape. As to the second issue, Scanner asserts that with no crescent shape limitation, a side view image is not limited to one taken at a low angle; ICOS contends that a side view image must be taken from an angle between 14 and 25 degrees. I first address whether the term "side view" is limited such that a side view image must be crescent shaped.

The plain language of the patents and the doctrine of claim differentiation show that while the preferred embodiment may include a crescent shaped side view image, a side view image is not limited to only crescent shapes. In analyzing the language of the patents, the Court first looks to the claim language; here, the language of claim 1, the independent claim, does not expressly include such a limitation. (See, e.g., Col. 18, ll. 46-47).

Next, the Court looks to the language of the specification for aid in construing the claims. Kraft Foods, 203 F.3d at 1368. See also Ethicon Endo-Surgery, 93 F.3d at 1578. Here, in the specification, side view is described as producing a crescent shape. (See e.g., Col. 4, l. 16 & Col. 12, l. 41). Nowhere in the specification, however, are side view images limited only to crescent shapes. The specification, instead, demonstrates that the preferred embodiment includes a crescent shaped side image. But "there is no basis for reading a limitation from the preferred embodiment into the language of the claim." TurboCare Div. of Demag Delaval Turbomachinery Corp. v. Gen. Elec. Co., 264 F.3d 1111, 1123 (Fed. Cir. 2001) (citing Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988)) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations.").

ICOS argues that the limitation written in the specification may be read into the claim, and ICOS relies on the recent Federal Circuit decision in Kraft Foods for that proposition. Kraft Foods, 203 F.3d at 1368 (adopting written description of rigidity of back panel where claim lacks language of rigidity). While the Federal Circuit decision in Kraft Foods does support this argument, the same court held otherwise in another recent decision. See Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1343, 2001 U.S. App. LEXIS 24810, 60 U.S.P.Q.2D (BNA) 1851 (Fed. Cir. 2001) (reversing the district court's decision because the district court "relied solely on the preferred embodiment in the written description and its drawings (which admittedly reads on the narrower meaning of the key word) and . . . the prosecution history").

The two Federal Circuit cases, however, are not contradictory because the facts differ. After careful analysis it is apparent that Rexnord is applicable here. Specifically, the language of the written description in Kraft Foods -- that "any of the back panels would be constructed of a relatively stiff material[,]" Kraft Foods, 203 F.3d at 1367 (emphasis in original, internal quotation omitted) -- indicates that there is only one embodiment, i.e., one with relatively stiff material. Here, the language of the specification does not limit the side view image to only crescent shapes. Instead, the mere fact that the specification refers to the side view image as crescent shaped suggests that the preferred embodiment is one that creates a crescent shaped image. Accordingly, the plain language of the patents does not limit a side view image to a crescent shaped image.

Under the doctrine of claim differentiation, independent claim 1 and dependent claim 2 must be read to have different limitations. Because claim 2 expressly defines the second image as a crescent shape, and because claims 1 and 2 are presumptively different in scope, the doctrine would suggest that a crescent shape limitation cannot be read into claim 1. Wenger Mfg., Inc. v. Coating Mach. Sys., Inc., 239 F.3d 1225, 1233 (Fed. Cir. 2001). See also 35 U.S.C. § 112. The only different limitation added by claim 2 is that the second image is a crescent shape; the requirement of a crescent shape therefore cannot be found in claim 1.

Although "claim differentiation only creates a presumption that each claim in a patent has a different scope[,] . . . at least one limitation must differ." Kraft Foods, 203 F.3d at 1368 (citation omitted). Here, if a crescent shape limitation were read into claim 1, claim 2 would be superfluous. Moreover, the doctrine applies here because "claim differentiation . . . is clearly applicable when there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims." Wenger Mfg., 239 F.3d at 1233.

Hence, I conclude that the term "side view" in claim 1 is not limited to a view that produces only crescent shapes.

I turn next to the issue of the position of the second camera such that the camera produces a side view image. As an initial
note, it is uncontested that a side view image cannot be one taken from a 90 degree angle or a top angle view, and it must differ from one taken by the first camera. (See Scanner Br. at 14-15; ICOS Post-Hr. Br. at 19).

Scanner asserts that there are no limits to the viewing angle other than those that are uncontested. ICOS argues that to produce a side view image, the viewing angle must be a low angle, specifically between 14 and 25 degrees. ICOS's argument to limit the viewing range is based on the presumption that the side view image is crescent shaped. Specifically, ICOS argues that it is this range of angles that will produce the crescent shaped image. Because the Court has concluded that there is no crescent shape limitation, and because the patents contain no language limiting the viewing angle to 14 to 25 degrees, ICOS's argument to limit the viewing angle to 14 to 25 degrees is rejected.

ICOS's argument that the viewing angle must be a low angle fails under the doctrine of claim differentiation. Because claim 7 is dependent on claim 1, and because claim 7 expressly states that the second image is obtained at a low angle, a low angle limitation cannot be read into the term "side view." See 35 U.S.C. § 112. If a "low angle" limitation were read into claim 1, then claim 7 would have no limitations separate from claim 1. Wenger Mfg., 239 F.3d at 1233.

In sum, as to the term "side view": the side view image is not limited to crescent shaped; the viewing angle may not be a 90 degree angle, a top view angle, or identical to the angle created by the first camera; and the viewing angle is not limited to a "low angle."

GO BACK

 Turning first to the issue of literal infringement, we find that Brand Management's charge of literal infringement falls with the proper interpretation of the claim term "sides." 1 Camden asserts that the inventors' statement during prosecution that the patent was directed only at the embodiments depicted in Figures 1-12 divested any claim to the embodiments in Figures 13 through 15 of the issued patent. Figure 1, illustrative of Figures 1-12, and Figure 13, representative of Figures 13-15, are reproduced below.

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1 Because we resolve the issue of literal infringement based on our interpretation of the term "sides," we do not address the district court's holding that "construction device" is a structural limitation of the claim. We affirm the district court's judgment, not its decision. Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 1997 U.S. App. LEXIS 11831, Nos. 95-1511, 95-1533, 95-1512, 95-1532, 1997 WL 261364, at *8, 42 U.S.P.Q.2D (BNA) 1737 (Fed. Cir. May 20, 1997) (noting that "this court need not agree with the trial court's reasoning in order to affirm its judgment").

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[SEE FIGURES IN ORIGINAL].

Figure 1. Figure 1 of the '642 Patent.

Figure 2. Figure 13 of the '642 Patent.

Camden argues that in limiting the invention to the embodiments in Figures 1-12, and in specifically excluding Figures 13-15 from the scope of the claim, the inventors cannot now claim a concrete block whose internal sides meet the claim limitations, but whose external sides do not. For its part, Brand Management does not argue that claim 1 reads on the embodiments seen in Figures 13-15. Rather, it takes the position that those embodiments fail to meet the "four-way recess" limitation of the claim. 2 Brand Management notes that, read in light of the prior art the inventors were attempting to overcome, the statement in the prosecution history upon which Camden relies should not be read to define the claim term "sides," but instead should be interpreted as clarifying the point that the claim is directed only at four-way recesses, and not the two-way recesses shown in Figures 13-15. We disagree.

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2 Brand Management uses the term "four-way recess" to refer to the "pair of recesses extending at right angles to one another" which appears in the third clause of claim 1.

On November 3, 1986, the inventors filed a Patent and Trademark Office (PTO) form 1449, Statement of Prior Disclosure. Addressing the prior art recorded on the form, the inventors stated that "although these publications may be of general interest, they do not appear to be anticipatory in any manner of the embodiment of Figures 1 to 12 to which the claims are now directed." We find that a person skilled in the art could reasonably interpret the inventors' statement as limiting the scope of the claim to external zig-zagged walls.

We have, on a number of occasions, expressed our inclination to interpret narrowly claims that are otherwise ambiguous. In Athletic Alternatives Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 37 U.S.P.Q.2D (BNA) 1365 (Fed. Cir. 1996), we stated:

Were we to allow AAI successfully to assert the broader of the two senses of "between" against Prince, we would undermine the fair notice function of the requirement that the patentee distinctly claim the subject matter disclosed in the patent from which he can exclude others temporarily. Where there is an equal choice between a broader and a narrower meaning of a claim, and there is an enabling disclosure that indicates that the applicant is at least entitled to a claim having the narrower meaning, we consider the notice function of the claim to be best served by adopting the narrower meaning. Id. at 1581, 37 U.S.P.Q.2D (BNA) at 1372.

The term "sides" is ambiguous to the extent that it could be interpreted to refer to either internal sides or both internal and external sides. Therefore, we rely upon the specification and the prosecution history to provide the meaning the inventors ascribed to the term. See Markman, 52 F.3d at 979-80, 34 U.S.P.Q.2D (BNA) at 1329-30 ("To ascertain the meaning of claims, we consider three sources: the claims, the specification, and the prosecution history." (quoting Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1561, 19 U.S.P.Q.2D (BNA) 1500, 1503 (Fed. Cir. 1991))).

The statement in the prosecution history that the claims are directed only at Figures 1-12 could convey to one of ordinary skill in the art that the patentee considers his invention to cover only devices with zig-zagged outer sides. This reading is supported by the fact that Figures 13-15 differ from Figures 1-12 in two major respects: (1) Figures 13-15 contain two-way as opposed to four-way recesses and, importantly, (2) Figures 13-15 do not contain zig-zagged outer sides. It is also supported by the fact that former claim 11, which was deleted after the first rejection, was directed at a construction member that "comprised a concrete block." Although the claims were also amended such that the broadest claim, which originally did not limit the invention to devices with four-way recesses, now contains a four-way recess limitation, it is not clear that one of ordinary skill would interpret the statement in the prosecution history as speaking only to the recess limitation. Faced with two competing interpretations that are equally tenable, we choose to reinforce the notice requirement by construing claim 1 narrowly. Thus, we hold "sides" to mean both internal and external sides. The Camden molds do not literally infringe because they do not contain zig-zagged outer sides.

Turning to the patent infringement issue, Brand and Pro Shop allege that Menard infringed claims 1-4 of the '642 patent. Those claims are directed to a construction device for connecting lumber building elements, such as 2x4's and 4x4's, to a base in the construction of a deck. The claimed device includes a plurality of wall portions disposed in a zig-zag pattern for receiving a vertical post as well as a number of horizontal supports. Claim 1 is the only independent claim; claims 2 through 4 depend from it. Claim 1 provides as follows:

1. A construction device for anchoring or connecting construction elements to a base comprising:

   a body member having upper and lower ends and defining sides,

   said lower end serving as a support of the member on a base,
and recess means in the upper end of said body member forming an anchor seat for a construction element,

said recess means comprising a pair of recesses extending at right angles to each other and fully from respective sides of said body member to the other whereby one or more construction elements can be laid therein in edge relation,

said recess means also including a rectangular socket disposed in a central portion of said body member and arranged to receive the bottom end of an upright construction element in support engagement,

said defining sides comprising a plurality of connected wall portions

leading in a zig zag pattern forming said full width recesses and said rectangular central socket.

(Emphasis added.)

The district court held that the accused concrete pier blocks do not infringe claim 1 either literally or under the doctrine of equivalents. The dispute in the district court centered on the meaning of the term "sides" in the last clause of claim 1. The court interpreted the term "sides" to mean both the external and internal sides. Brand Management, Inc. v. Menard, Inc., No. 94-623, slip op. at 24 (D. Minn. Apr. 7, 1997). According to the district court, "both the internal and external surface of the 'sides' [of the accused device] must necessarily zig-zag" for a finding of infringement. Id. It is undisputed that the concrete pier blocks sold by Menard do not contain zig-zagged external sides.

Brand and Pro Shop argue that the district court misconstrued the claims of the '642 patent and thus erred in granting summary judgment of noninfringement. We disagree. The district court properly construed the claims of the '642 patent to preclude literal infringement and did not err in determining that there could be no infringement under the doctrine of equivalents.

V.

A patent infringement analysis involves two steps: first, the claim meaning and scope is determined, and second, the properly construed claim is compared with the accused device to determine whether each claim limitation is present, either literally or by an equivalent. See Carroll Touch, Inc. v. Electro Mechanical Sys., 15 F.3d 1573, 1576, 27 U.S.P.Q.2D (BNA) 1836, 1839 (Fed. Cir. 1993). Claim construction is a question of law properly decided on summary judgment. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2D (BNA) 1321, 1329 (Fed. Cir. 1995) (in banc), aff'd, 517 U.S. 370, 116 S. Ct. 1384, 27 U.S.P.Q.2D (BNA) 1461, 134 L. Ed. 2d 577 (1996). The second step of the inquiry, comparing the properly construed claim with the accused product, is a question of fact. See CVI/Beta Ventures, Inc., v. Tura LP, 112 F.3d 1146, 1152, 42 U.S.P.Q.2D (BNA) 1577, 1581 (Fed. Cir. 1997). In the absence of a factual dispute, the issue may be decided on summary judgment. Here, there are no disputed facts. We focus on the zig-zagged sides limitation because if that limitation cannot be found in the concrete blocks sold by Menard, either literally or by equivalence, there can be no infringement as a matter of law. See Pennwalt Corp. v. Durand-Wayland Inc., 833 F.2d 931, 935, 4 U.S.P.Q.2D (BNA) 1737, 1739 (Fed. Cir. 1987) (in banc).

Turning to the issue of literal infringement, we construed claim 1 of the '642 patent in Brand Management, Inc. v. Sutherland Lumber Southwest, Inc., 116 F.3d 1497, 1997 WL 351268 at *2-3 (Fed. Cir. 1997) (unpublished table decision).

We held "sides" to mean both external and internal sides. 3

Id. at *3. In so doing, we looked to the claims, the specification and the prosecution history. See id.; see also Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996). We noted that, during prosecution, the inventors stated that the claims are only directed to the embodiments depicted in Figures 1-12 of the specification and that they disclaimed the concrete pier blocks depicted in Figures 13-15. See Sutherland Lumber, 1997 WL 351268 at *2. Figure 1, representative of Figures 1-12, and Figure 13, representative of Figures 13-15, are reproduced below.
Although our discussion of claim construction differs from the district court's, the district court properly construed "sides" to mean both internal and external surfaces.

Brand and Pro Shop concede that, under our claim construction in Sutherland, as a matter of law Menard's sale of the concrete pier blocks cannot infringe the '642 patent.

In Sutherland, we noted that the concrete pier blocks depicted in Figures 13-15 differ from the connecting elements depicted in Figures 1-12 in two respects: (1) Figures 13-15 do not include zig-zagged outer sides; and (2) Figures 13-15 contain two-way as opposed to four-way recesses. On the other hand, we also stated that "it is not clear that one of ordinary skill would interpret the statement in the prosecution history as speaking only to the recess limitation." Relying on Athletic Alternatives, Inc. v. Prince Manufacturing, Inc., 73 F.3d 1573, 1581, 37 U.S.P.Q.2D (BNA) 1365, 1372 (Fed. Cir. 1996), we stated: "Faced with two competing interpretations that are equally tenable, we choose to reinforce the notice requirement by construing claim 1 narrowly." Sutherland Lumber, 1997 WL 351268 at *3.

Therefore, we adopt the narrower meaning of the term "sides" and interpret claim 1 to require both internal and external zig-zagged sides. In order for there to be literal infringement, each and every limitation set forth in a patent claim must be found in the accused product. See CVI/Beta Ventures, 112 F.3d at 1161, 42 U.S.P.Q.2D (BNA) at 1588. Because the concrete pier blocks sold by Menard did not contain zig-zagged external sides, Menard did not literally infringe claims 1-4 of the '642 patent.

The district court construed the "sidewall" limitation to mean "a structure projecting or extending upward, i.e., above the plane of the support surface, from either side of the support tray."

Flex-Rest argues that "sidewall" does not include a directional limitation and can therefore be met by a projection extending downwards. Flex-Rest characterizes the sidewall term as "minor," "inconsequential," and "unimportant," and asserts that there is no basis in the intrinsic evidence for importing a directional limitation. Steelcase counters that the specification and prosecution history make clear that "sidewall" is part of the "support surface" and can only serve its function if it extends upward from the "support surface."

In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence. See Phillips, 415 F.3d at 1312-17. Here, the language of claim 1 recites a support surface "comprising a front position, a rear position, a first sidewall, and a second sidewall, such that the said stop walls extend from said first side wall to said second side wall." The claim language makes clear that in order for a "sidewall" structure to support the keyboard, it must extend upwardly; if "sidewalls" extend downwardly, they would not interact with or play any role in supporting the keyboard. Indeed, downwardly extending "sidewalls" would be entirely superfluous. Such a requirement does not improperly read a limitation from the specification into the claim. Rather, the written description and the drawings make clear that when the claim refers to "sidewalls" of a support surface, the claim language refers to upward-extending walls. Phillips, 415 F.3d at 1316 ("The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." (citation omitted)). The prosecution history is consistent with this interpretation and provides no further guidance. Flex-Rest's attempt to avoid the sidewall
limitation by characterizing it as "inconsequential" disregards the basic patent law doctrine that every limitation of a claim is material. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 29, 117 S. Ct. 1040, 137 L. Ed. 2d 146 (1997) ("Each element contained in a patent claim is deemed material to defining the scope of the patented invention . . . ."). We therefore agree with the district court's construction that "sidewalls" must extend upwardly.

Because there is no dispute that the accused devices do not meet the "sidewall" limitation under this construction, summary judgment of non-infringement of the '231 patent was appropriate.

2. Sidewalls Comprising First and Second Parts

The parties also dispute whether the accused blocks possess two-part sidewalls. Claim 1 of the '168 Patent, like the other claims asserted with respect to this element, directs that the block must have "first and second sidewall surfaces, each of said sidewall comprising a first and second part." CP submits that this limitation requires two distinct sidewall elements, separated by some clear demarcation, as seen in the figures contained in the specifications. Anchor offers no construction of two part sidewall, stating that there is no disagreement as to the meaning of this element, only as to infringement.

The logical, plain meaning of "first and second part" is that the item described must have two components: a first and a second. The figure drawings in Anchor's Patents, which identify numerically two separate block surfaces making up the sidewall first and second parts, affirm this common sense and undisputed interpretation. See, e.g., '015, Figs. 1-6. 1 Accordingly, "sidewall comprising a first and second part" is a sidewall with two distinct sidewall surfaces.

--- Footnotes ---

1 All of the Patents at issue share the same figure references.

--- End Footnotes ---

Sidewardly Arranged Area of Tissue (Claim 35)

Coagulating an Area of the Tissue Sidewardly of the Extended Longitudinal Axis (Claim 35)

The next disputed claim terms set forth above all deal with the term "sidewardly." As such, the parties propose the following definition for all four phrases found in Claims 1 and 35.

Erbe's Proposed Definition: Positioned such that the longitudinal axis of the flexible tube is not substantially perpendicular to the surface area of the tissue to be coagulated.

Canady's Proposed Definition: The longitudinal axis of the tube being parallel to and spaced a distance from the tissue to be coagulated.

(Docket No. 42, p. 13, 17-19). After a review of the plain claim language, I find that one of ordinary skill in the art would construe the term "sidewardly" simply to mean to the side of. This is supported by the figures of the specification. See, Docket No. 42, Ex. 1, Figs. 4, 15 and 20. Consequently, I will construe the term "sidewardly" to mean to the side of.

No particular or special meaning is claimed to have been given to any of the words or terms. They are given the ordinary and common meaning by which they would be understood by a person skilled in the art. Intellicall, Inc. v. Phonometrics,
Inc., 952 F.2d 1384, 1387 (Fed. Cir. 1992). There are basically two phrases in Claims 1 and 17 as to which the proper construction is disputed. The first reads as follows:

"a projecting portion extended from the rear pad surface, and a recessed portion extended from the pad surface by a second distance that is significantly less than the first distance." (Emphasis supplied.)

Defendant urges that the Court conclude that a difference of less than one-quarter inch is not "significantly less" within the meaning of this claim. It notes that the specification gives an example of 1/4 inch, and that Claim 3 requires a difference of "more than about 0.64 centimeters (0.25 inch)." Rather than support Defendant's point of view, these references imply a different construction. Under the doctrine of claim differentiation, Claim 3 is necessarily narrower than Claim 1, not identical to it. Moreover, patent claims are not limited to the preferred embodiment. Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865-66 (Fed. Cir. 1988), cert. denied, 490 U.S. 1068, 104 L. Ed. 2d 634, 109 S. Ct. 2069 (1989); SRI Intl. v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1121-22 (Fed. Cir. 1985).

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B. "Similar Radii"

The parties seek construction of the phrase "wherein the groove about the lid has an inner surface, and the rim of the main body has an outer surface, that each define semi-circular arcs of similar radii." Their proposed constructions are:

- Plaintiff: The semi-circular arcs defined by the upper, inner surface of the groove about the lid and the upper, outer surface of the rim of the main body correspond such that the first and second lips produce a nominal radial interference as the lid and main body are engaged.

- Defendant: The inner surface of the groove and the rim of the main body are curved at respective radii so that the inner surface and the rim remain in close contact with each other throughout their extent of curvature when assembled.

1. The parties' disputes

As plaintiff puts it, "there is no common ground shared between the parties' proposed definitions" for this term. Dkt. # 31, at 21. This may explain why, from the court's perspective, neither construction is satisfactory. Plaintiff's construction would require only that the "semi-circular arcs" be capable of "correspond[ing]" in a way that allows the first and second lips to produce nominal radial interference as the lid and main body are engaged. This proposal is problematic because the claim already requires that the first and second lips produce nominal radial interference as they are engaged, suggesting that "similar radii" is devoid of independent meaning.

On the other hand, defendant's construction suggests that "similar" should mean "identical"; how else could the respective surfaces remain in contact throughout the extent of curvature? To the extent defendant uses the phrase "close contact" to suggest that there can be some variation, the word is unclear and unhelpful in explaining how "close" to identical the radii must be to comply with defendant's construction. Such a construction is bound to create another round of arguments about the meaning of the claim terms at the summary judgment stage.

Plaintiff points out that its construction would not render the claim term entirely redundant because it adds that the semi-circular arcs must help create the nominal radial interference disclosed in claim 1, a requirement supported by the specification. The specification describes the semi-circular arcs as playing a part in "provid[ing] the slight snap fit of the lid onto the cup body," explaining that the semi-circular arcs form part of the "inner contour of the groove 36 and outer contour of the cup body rim 38" that serve to create the snap fit. '784 pat., col. 3, ins. 40-45.

However, plaintiff's point does not explain why the patent applicants described the radii of the arcs as similar. The claim language does not say "capable of creating nominal radial interference"; it says "of similar radii." Plaintiff's construction suggests that radii that are not "similar" in any sense of the term could still be infringing so long as they nonetheless assist in creating a nominal radial interference. Plaintiff cannot eviscerate specific limiting terms in the claim language by focusing on the larger purpose of the patent; if the patent applicants chose "similar radii," plaintiff is stuck with that limitation, even if
it turns out that similar radii were not necessary to create the snap fit that is the focus of the patent.

The next question is, how different can the radii of the arcs be and still be considered "similar"? As I explained above, defendant's proposed construction requiring the arcs to remain in "close contact" is unhelpful. More helpful is the description of "similar" radii that defendant uses in its brief: "nearly continuous contact over the extent of the semi-circular arcs" when the cup and lid are assembled. Dkt. # 29, at 25. This description involves two important points: the arcs contact each other when assembled in "nearly" all places and the contact is made over the entire semi-circular arc (as opposed to all on one side).

I am persuaded that this description captures the requirement that the radii be "similar" and will construe the term accordingly. The ordinary meaning of "similar" and the specification support a reading of "similar" that requires "nearly continuous contact over the extent of the" arcs. First, as plaintiff points out, common dictionary definitions of "similar" include having a likeness or resemblance and being alike in substance or essentials. The only way that two radii of semi-circular arcs could be "similar" is for the size of each radius to be "alike." (What other feature of a radius could be similar or different?) Moreover, the only apparent rationale for having the size of one of the radii approximate the other is that provided by defendant's expert: when the arc of one radius is slightly smaller than the other, the smaller arc will fit "snugly" with the larger arc throughout the extent of their curvatures. Dkt. # 22, P 17. (Although plaintiff may argue that the ability to create nominal radial interference is the proper "rationale" for similar radii, this "rationale" does not explain why the sizes of the radii should be similar, as I explained above.)

That said, defendants must accept the possibility that some spaces may exist between the semi-circular arcs of "similar radii," which is the position they argued in the original lawsuit. First Years, 07-cv-558-bbc, dkt. # 59, at 108-09, 114. However, the phrase "nearly continuous" encompasses that notion. It also emphasizes the important point that any gaps are not created by major size differences between the radii, but rather by either minor size differences (such that the smaller arc would not fit snugly on both ends, for example) or by acceptable imperfections in the "semi-circular" arc.

2. The court's construction

Because I conclude that defendant's view better describes "similar radii," I will adopt its proposed construction, with modifications: "The inner surface of the groove and the rim of the main body are curved at respective radii so that the inner surface and the rim remain in nearly continuous contact over the extent of the semi-circular arcs when the lid and body are assembled."

5. The Proper Claim Construction of the Phrase "The Improvement Comprising a Simplified Set of Instruments, Including:" as Used in Claim 1 of the '885 Patent.


The claiming format of Claim 1 of the '203 patent is not in dispute and illustrates the typical three parts of a claim.

1. A method for making triplanar bone resections for total knee replacement, including the steps of:

   resecting the proximal tibia such that it is perpendicular to an imaginary axis extending through the ankle joint, knee joint, and hip joint;

   * * *; and
resecting the distal femur in reference to said slot while the knee is in flexion.

Plaintiff submits the following for the proper construction of the phase "the improvement comprising a simplified set of instruments, including:." The phrase is in the transition part of the claim and is merely a short-hand collective reference to two limitations that follow in the body of the claim. Therefore, the phrase places no limitation on scope of the '885 patent. The guide member and L-shaped guide rod are the two limitations which appear in the body of claim 1. Plaintiff makes the alternative argument that the phrase "the improvement comprising a simplified set of instruments," is in the Jepson format and is located in the preamble. 4 Similarly, plaintiff asserts that the phrase places no limitation on scope of the '885 patent.

Defendants submit that the phrase "simplified set of instruments" is located in the body of the claim and acts as a limitation on the invention. Defendants also argue that this phrase requires that a single guide member must be used for all of the triplanar bone resections.

The parties' briefs pose two questions in analyzing this issue: 1) is the phrase, "simplified set of instruments" part of the transition phrase or part of the body of the claim; and 2) during the prosecution of the '203 method patent did plaintiff use the guide member's structure to distinguish his invention over the prior art?

However, even if the court accepted either one of plaintiff's arguments, what controls in the present case is whether plaintiff used that phrase in the prosecution history to patentably distinguish his invention over the prior art. If any interpretation was disclaimed during the prosecution, that prosecution history excludes that interpretation from the claim construction. Vitronics, 90 F.3d at 1583.

The Prosecution History Concerning "Simplified Set of Instruments."

Defendants argue that in plaintiff's Amendment to overcome the examiner's 35 U.S.C. § 103 rejection, plaintiff unequivocally stated that the set of instruments referred to a single guide member which establishes the appropriate points of resection in the tibia and femur. Defendants further assert that the phrase "a simplified set of instruments," was a principle feature of the invention in distinguishing plaintiff's patent over the prior art. Defendants support their argument by quoting the plaintiff's Amendment:

In contrast to this [the prior art of the Richards reference] * * * The technique of Richards requires the use of two wholly independent cutting guides. One [a guide member] for use on the distal femur and the proximal tibia and another for use on the distal femoral condyles. As reflected in claim 3 5, all resections made in accordance with the method of Applicant's invention may be made in reference to a single guide member which is appropriately positioned for each cut by one of two guide rods. (Emphasis added).

5 Claim 3 of the '203 patent that the plaintiff refers to adds two additional slots to the guide member to make the distal femoral condyles resections.

In the Amendment, plaintiff describes the intangible method of inserting the L-shaped guide rod into the medullary canal. However, plaintiff gave notice to the examiner and the public that a principle distinction between his invention and the prior art was his invention's ability to employ a single guide member to make all the necessary resections. Plaintiff distinguished
the method of performing his invention by disavowing techniques, such as Richards, which require the use of two wholly independent cutting guides. The examiner accepted this limitation from the phrase "simplified set of instruments" to distinguish plaintiff's invention from the cited art.

The Specification's Use of "Simplified Set of Instruments."

In the specification, the patent contrasts the prior art knee replacement systems, which required numerous components, and the present invention which includes a single guide member for use in making the proper bone resections. ('885 patent, Col. 1 Line 65 to Col. 2 Line 7.) The specification goes on to state that, "The guide member eliminates the necessity for a different type of guide component for each triplanar resection." ('885, Col. 8, Lines 30-35.)

Additional Arguments Made by Plaintiff.

Plaintiff argues an infringement principle: if a written claim uses the transition phase of "including:" or "comprising:" then the named elements are an essential component but other elements may be added and still form a construct within the literal scope of the claim." Genentech Inc. v. Chiron Corp., 112 F.3d 495, 500 (Fed. Cir. 1997). Plaintiff concludes that even if a single guide member is construed as a limitation on the scope of the '885 claims, the law requires that the claims can not be limited solely to a single guide member because of this infringement principle. Plaintiff is incorrect. First, because this litigation is at the stage of claim construction and not at an infringement analysis, that principle does not apply. Second, the application of that principle to the instant case would be incorrect under the doctrine of file wrapper estoppel.

What controls how many guide members may be used in employing plaintiff's invention is the prosecution history doctrine. During the prosecution of the '203 patent, plaintiff disavowed any interpretation that more than one guide member must be used to make all the cuts. Plaintiff distinguished his invention by stating, "As reflected in claim 3, all resections made in accordance with the method of Applicant's invention may be made in reference to a single guide member." The plaintiff's modifying language of "may be" is precatory language. Accordingly, the court finds that at least one of the guide members used in performing this surgery must be capable of making all the resections.

CONCLUSION ON THE MEANING OF "THE IMPROVEMENT COMPRISING A SIMPLIFIED SET OF INSTRUMENTS, INCLUDING:"

The court finds that plaintiff disavowed structures in which a single guide member may not make all the resections in the knee replacement. The court construes the phrase of "the improvement comprising a simplified set of instruments, including" to possess the following meaning: "A set of instruments used in resecting the bones that form a patient's knee. The set of instruments comprises: at least one guide member capable of making all the necessary tibia and femur bone resections; and at least one L-shaped guide rod that cooperates with the guide member."
The parties agreed that the issue of whether the Print '91 machine literally infringes claim 4 of the Weber patent turned on how "simultaneously stapling" was defined. The legal framework under 35 U.S.C. § 112 requires that (1) the claim at issue be interpreted to determine its proper scope and meaning; and (2) it be determined whether the accused device is within the scope of the properly interpreted claim. Moreover, 35 U.S.C. § 112 further directs that the claim language be construed to "cover the corresponding structure."

Accordingly, I decided that "simultaneously stapling" means "exactly same," because that is how defendant used it to mean: the inventor is his own lexicographer. Defendant argued for a looser construction of "simultaneously stapling." But its own Weber patent states that "Weber shows two staple applicators simultaneously applying staples to two different accumulations at the exact same instant in time." I therefore concluded that defendant was bound by its own usage: "simultaneously stapling" means "exactly same or coincident." Memorandum at 20.

It is undisputed that 1/10 of a second separates the timing of the two competing machines; that is, 1/10 of a second prevents the stapling on the Print '91 machine from being "simultaneous." Defendant noted this difference, but complained it was insubstantial. Nevertheless, whether or not a difference is "insubstantial" matters little under Section 112: literal equivalence means exactly that. I also went further -- and this elaboration forms the basis of defendant's request to reconsider -- and explained that although only 1/10 of a second separates the timing of the two machines,

in the binding industry, even 1/10 of a second may be significant. . . . the 1/10 of a second difference may be a significant advance in the art. Defendant does not explain why or why not 1/10 of a second is unimportant. Because the patentee has the burden of proof in an infringement action, defendant's failure to explain why the difference is negligible leads to the conclusion that the Print '91 device does not" infringe the Weber patent.

Memorandum at 20-21.

Defendant argues that this paragraph is erroneous as a matter of law because on summary judgment motion, the burden of proof is on the moving party, the plaintiffs. The paragraph recited above mentions that "patentee [defendant] has the burden of proof in an infringement action . . . ." Defendant therefore argues that "it is clear that it was Ferag's burden to show that no fact material to this issue is in dispute." As a matter of law, then, "this Court must find that the issue remains in dispute." Defendant's Request at 3.

Defendant is correct in noting that the reference to burden of proof in my Memorandum was not sufficiently precise. In Celotex Corp.v. Catrett, the Supreme Court ruled that:

the plain language of Rule 56(c) mandates the entry of summary judgment . . . against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial.

477 U.S. 317, 322, 91 L. Ed. 2d 265, 106 S. Ct. 2548 (1986). That the Memorandum states that the "patentee has the burden of proof in an infringement action . . . ." Defendant therefore argues that "it is clear that it was Ferag's burden to show that no fact material to this issue is in dispute." As a matter of law, then, "this Court must find that the issue remains in dispute." Defendant's Request at 3.

Defendant is correct in noting that the reference to burden of proof in my Memorandum was not sufficiently precise. In Celotex Corp.v. Catrett, the Supreme Court ruled that:

the plain language of Rule 56(c) mandates the entry of summary judgment . . . against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial.

Defendant did not say, in support of its motion, "why or why not" the 1/10 of a second difference was important. This failure to "establish the existence of an element essential" to defendant's case coupled with defendant's burden of proof on this issue at trial mandate the entry of summary judgment on the authority of Celotex.

Defendant's request for reconsideration of this court's decision as to literal infringement cannot be honored. Defendant has conceded that "in the event this Court adopts Ferag's position and determines that 'simultaneous stapling' means two stapling operations that occur exactly coincidentally, claim 4 would not be literally infringed." Defendant's Post-Hearing Memorandum in Opposition to Plaintiffs' Summary Judgment Motion at 40. I determined as a matter of law that "simultaneous stapling" did, in fact, mean "exactly coincidentally." I therefore concluded, as defendant had conceded, that claim 4 "would not be literally infringed."
### III. Simultaneously

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Davis-Lynch's Proposal</th>
<th>Weatherford's Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;simultaneously&quot;</td>
<td>During the same time period within the same operation.</td>
<td>At the same time.</td>
</tr>
<tr>
<td><strong>Claims 33, 34, 35, 37</strong></td>
<td><strong>Davis-Lynch contends this term does not need to be defined. A part or component for closing or shutting a flapper valve mounted to the second flapper valve body so as turn on, or as if on, a pivot for movement on, or as if on, a pivot between an open position and a closed position.</strong></td>
<td><strong>A second flapper-type part or component for closing or shutting mounted to the second flapper valve body to turn on, or as if on, a pivot to move between an open position and a closed position, wherein the second flapper closure element moves at the same time as the first flapper closure element.</strong></td>
</tr>
<tr>
<td>&quot;a second flapper closure element pivotally mounted to said second flapper valve body for pivotal movement between an open position and a closed position&quot;</td>
<td><strong>Davis-Lynch contends this term does not need to be defined. To thereby release the part or component for closing or shutting the flapper valve that is closest to the surface or starting position of the wellbore . . . and also to release the part of component for closing or shutting the flapper valve that is furthest away from the surface or starting position of the wellbore for operation in the mode of operation wherein the flapper valves are closed by and obstruct the flow of wellbore fluid toward the surface or starting position of the wellbore.</strong></td>
<td><strong>Releasing the first and second flapper closure elements at the same time for operation in the back pressure mode.</strong></td>
</tr>
<tr>
<td>Claims 33, 34, 35, 37</td>
<td><strong>Removing the inner part or component shaped like a tube from said plurality of flapper valves.</strong></td>
<td><strong>Removing the inner tubular from the flapper valves at the same time.</strong></td>
</tr>
<tr>
<td>&quot;to thereby release said first flapper closure element . . . and also to release said second flapper closure element for operation in said back pressure mode&quot;</td>
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<tr>
<td>Claim 51</td>
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<td><strong>Removing the inner tubular from the flapper valves at the same time.</strong></td>
</tr>
</tbody>
</table>
The word "simultaneously" appears once in the '336 patent. Claim 33 states that the inner tubular secures both flapper valves "simultaneously." As explained above, the '336 patent teaches that both flapper valves are held open by the inner tubular during auto-fill mode, and both flapper valves are able to close during back pressure mode after the inner tubular is released.

Weatherford argues that claim 33 requires the flapper valves to open and close at the exact same instant. It points out that, during prosecution, the patentee distinguished prior art by stating that the flapper valves operate "simultaneously," and that they are converted from auto-fill mode to back pressure mode "simultaneously." '336 patent Pet. to Make Special 12/13/2001 at 10 (Doc. No. 113-5). In addition, Weatherford notes that the specification states that once the inner tubular is released, the inner tubular blocks off downward angled jets and uncovers upward angled jets "at the same time." 10:59-64. It argues that because the patentee relied on these statements to distinguish prior art, the Court must construe the claims at issue to require the flapper valves to open or close at the exact same instant. 8 See Phillips, 415 F.3d at 1323 (explaining the doctrine of prosecution disclaimer).

8 At the hearing, Weatherford presented the Court with diagrams of other devices which Weatherford claimed were distinguished during prosecution by arguing that the flapper valves close at the exact same instant. Weatherford included at least one of these diagrams as exhibit T to its claim construction brief, but it never cited or explained the exhibit in its brief. Regardless, Weatherford has not cited any statement to support its claim that, during prosecution, Davis-Lynch argued that the flapper valves close at the exact same instant.

Davis-Lynch argues that Weatherford's proposal would exclude every disclosed embodiment in the '336 patent because Weatherford's proposal describes a situation that is not physically possible. It points out that, when the inner tubular drops, the higher flapper valve will close slightly more quickly than the lower flapper valve because it will be released sooner. Similarly, when wellbore fluid or cement is pumped down the tubular string, the higher flapper valve will open more quickly because the wellbore fluid or cement will reach it first. Furthermore, the mere fact that the patentee used the word "simultaneously" during prosecution does not support Weatherford's proposal because that is precisely the term to be construed.

Weatherford responds that, although its proposal may render the claims impossible or nonsensical, the Court may not redraft the claims at issue. See Process Control Corp. v. HydReclaim Corp., 190 F.3d 1350, 1357 (Fed. Cir. 1999) ("a nonsensical result does not require the court to redraft the claims" of a patent, where the "claims are susceptible to only one reasonable interpretation"). For example, in Chef America, Inc. v. Lamb-Weston, Inc., the patent at issue claimed a method for producing flaky, crispy dough products in a microwave. 358 F.3d 1371, 1372 (Fed. Cir. 2004). One claim step required "heating the resulting batter-coated dough to a temperature in the range of about 400[degrees]F to 800[degrees]F." The plaintiff argued that this step should be construed to require that the oven be heated to 400[degrees]F to 800[degrees]F because, if interpreted literally, the claim would require the dough to be burned to a crisp. Id. The Federal Circuit construed the claim literally to require that the dough be heated to 400[degrees]F to 800[degrees]F, even though this led to a nonsensical result, because the claim was susceptible to only one reasonable interpretation. Id. at 1374.

The Court agrees with Davis-Lynch, and finds the cases cited by Weatherford to be distinguishable. Whereas the cases cited by Weatherford construed the claims at issue literally, Weatherford is attempting to import limitations not literally present in the claims. See Chef America, Inc., 358 F.3d at 1374; Process Control Corp., 190 F.3d at 1357. Furthermore, unlike the plaintiff in Chef America, Davis-Lynch has not proposed a construction that is inconsistent with the unambiguous language of the claim at issue. See Chef America, Inc., 358 F.3d at 1374. The word "simultaneously" may mean at the exact same instant, or it may mean, as Davis-Lynch correctly contends, at approximately the same time. For example, while the House and Senate may be "simultaneously" working on a bill, the two legislative bodies need not always work on their respective bills at the exact same moments. Because a person having ordinary skill in the art would understand that the inner tubular is affected by gravity and fluid pressure, that person would not expect the inner tubular to be in two places at once, or expect the flapper valves to open or close at the exact same instant. Thus, the Court rejects Weatherford's proposed construction.

The Court also rejects Davis-Lynch's proposed construction because it would be confusing for a jury.
construe the term "simultaneously" as "at the same time or almost the same time," e.g., the inner tubular holds both flapper valves open at the same time during auto-fill mode, and the flapper valves close at almost the same time during conversion and back pressure mode. This construction best captures the plain and ordinary meaning of the term "simultaneously."

The disputes regarding the related terms above simply revolve around whether or not Weatherford's construction of "simultaneously" should be imported into other claim terms. See E.I. du Pont de Nemours & Co., 849 F.2d at 1433; In re Paulsen, 30 F.3d at 1480. Having rejected Weatherford's construction, the Court will not construe these terms. See O2 Micro Int'l Ltd., 521 F.3d at 1362; Fenner Inv. Ltd., 2008 U.S. Dist. LEXIS 65686, 2008 WL 3981838 at *3.

B. Said Weight Member Consisting Essentially of 7 a Single Back Bar Mass (Claim 1)

The parties agree that the term "consisting essentially of" as used in the subject phrase means that the back bar mass does not have any elements that would substantially affect the characteristics of the claimed invention in addition to those elements set forth in the claim.

The Defendants seek to read into the foregoing language the additional limitations that the back bar mass have planar surfaces with uniform width. However, the Court does not find it appropriate to read these limitations into the words "back bar mass." Indeed, Claims 14, 15, and 16 (which depend from Claim 1) add limitations including planar sides and, to a degree, uniform width. It may be, as Defendants contend, that these dependent claims add more limitations than just a requirement for planar surfaces and uniform width. Nevertheless, in context, the dependent claims are written consistent with the conclusion that independent Claim 1 lacks limitations of planar surfaces and uniform width. The Court, therefore, construes the subject language to mean what it says or, more precisely, not to mean what it does not say. The term "back bar mass" in Claim 1 is not limited to masses having planar surfaces and uniform width.

The Court, therefore, construes the subject language to mean what it says or, more precisely, not to mean what it does not say. The term "back bar mass" in Claim 1 is not limited to masses having planar surfaces and uniform width.

8 Claim 14 refers to the bar as "generally rectangular in shape."


12 This term is found in independent claim 1 of the '073 Patent. The parties ask the Court to construe this term and the following terms in the same manner: (1) "to define a continuous flow passage through said first graft body inlet end, said first graft body outlet end, said second graft body inlet end, and said second graft body outlet end," found in independent claim 1 of the '736 Patent; (2) "to define a continuous flow passage between said inlet end and said outlet end of said first graft body and said inlet end and said outlet end of said second graft body," found in claims 20 and 22 of the '736 Patent; and (3) "to define a continuous flow passage through said first flow passage and said second flow passage," found in claim 21 of the '736 Patent.
Cook argues that this phrase must be construed to require only one flow lumen, i.e. that the phrase cannot encompass a bifurcated or "y-shaped" graft. It appears that Gore also suggests that the disputed phrase cannot encompass a bifurcated device, because its proposed construction focuses on the creation of a single flow lumen. (See Gore Br. at 17.)

The Court starts with the claim language. With respect to the '073 Patent, the claim language could be read to encompass a bifurcated device, if one assumes that branches or legs of a bifurcated device are the "second portion" of the primary graft body. This argument, however, is less convincing with respect to the claims of the '736 Patent, because those claims refer to a first graft body having an "inlet end" and an "outlet end," rather than outlet ends. Because the claim language is ambiguous, the Court looks to the specification. The specification discloses "trouser" or "bifurcated" grafts, which can be used when the device is to be placed in or near a bifurcated vessel. Thus, the specification provides support for Plaintiffs' assertion that the term "single flow lumen" need not be restricted to a lumen within a tubular graft.

Defendants find support for their argument in the prosecution history of the '073 Patent, and the inventors' efforts to distinguish over U.S. Patent 5,316,023 (Palmaz). Defendants cite to an Examiner Interview, which the inventors summarized and noted that the Examiner determined that "the claims could be amended to clearly distinguish over Palmaz based upon the fact that this application discloses forming a single lumen to carry substantially all blood flow in a vessel, whereas, what Palmaz '023 discloses is two adjacent lumens inside a stent or a stent graft, inside a vessel, and that the two adjacent lumens in the vessel split the flow of blood in the vessel between them." (See Edwards Ex. 28, '073 Response dated 11/28/01 at 53-54 (emphasis added).) The Court finds that this reference supports Plaintiffs' argument. The inventors' statement focuses on the fact that their device forms a single lumen in a vessel. They contrasted their invention to the invention taught by Palmaz, which formed two lumens inside a vessel. (See also id. at 52 ("Palmaz does not disclose connecting flow lumens of two graft bodies to define a single flow lumen which transfers substantially all flow between the engaged lumens.").) There is nothing in these statements that suggests the inventors intended to limit their invention to a device that could be used only in non-bifurcated vessels.

Accordingly, the Court construes the term "to define a single flow lumen which transfers substantially all flow between said primary graft flow lumen and said secondary graft flow lumen" to mean: "When the primary graft body is connected to the secondary graft body a single, rather than a bilateral, lumen is formed and substantially all fluid flows from the primary graft body to the secondary graft body through that single flow lumen."

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The Court will define "single joint of boneless meat" as "one of the portions into which an animal carcass is divided." United States Patent No. 4,545,177 (the '177 Patent), which was issued on October 8, 1985, includes the following language in its Description of the Preferred Embodiments section, "part of the carcass of an animal e.g. a joint of meat." (Pl.'s Markman Binder at 48). The Oxford English Dictionary Online defines "joint" as "one of the portions into which a carcass is divided by the butcher, consisting of one or more bones (e.g. that of the leg or shoulder) with the meat thereon; esp. as cooked and served at table." Oxford English Dictionary Online, http://www.oed.com/ (definition from the 2d ed. 1989) (last visited Sept. 4, 2008). While the plaintiff and defendants agree that a joint of meat includes both boned and boneless products, the defendant wishes to define "a single joint of boneless meat" as "a product produced from the whole or intact muscles of a single cut from a single animal, rather than from multiple chunks from the same or different animals" based on the expert declaration of Dr. Edward William Mills (Dr. Mills). The plaintiff, however, contends that the defendant's definition would exclude from it various boneless products because "all boneless meats, by virtue of their description . . . are manufactured either by removing muscle tissue . . . from the bone or vice versa . . . and then reforming the muscles with pressure . . . into a single, solid piece of meat marketed as a boneless product." (Doc. 95 at 3). For example, as Logan sets forth in his declaration,

A boneless turkey breast product (or any other fowl) is generally made by the removal of the uncooked breast meat (a breast includes a left and right lobe of breast-meat) of one or more whole turkeys. Multiple lobes of turkey breast meat are then either netted/bound or placed in a mold with or without a binder and then cooked. The lobes of breast-meat are thus held together to form a unitary piece of boneless meat that is generally marketed as a 3-4 pound boneless, turkey breast which generally consisting of 2-3 lobes of breast-meat. This type of product was shown and described during the prosecution of the '374 Patent.
(Logan Decl., Doc. 95 Ex A at P 9). Viewing the extrinsic evidence in the context of the intrinsic evidence, the Court defines a "single joint of boneless meat" as "one of the portions into which an animal carcass is divided."

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J. Claim 12: "single layer web"

Finally, the parties dispute the meaning of "single layer web." Pliant defines single layer web as a "single sheet of plastic film," and more specifically, one that is comprised of one or more discrete polymer layers. Atlantis argues that "single layer" refers to the layers of polymers within the film itself, rather than the resulting web, or sheet, of plastic film. At issue is not the meaning of "single layer" so much as a determination of what the word "single" modifies.

The inventor did not attempt to define "single layer web;" in fact, in an earlier version of the patent application the Examiner found that claim to lack support in the specification. However, in the final version, the word "layer" appears three times in the specification. In the first two instances, it appears in discussions of a prior art reference that teaches a double-layer plastic film used to stretch-wrap goods. Pliant suggests that the term "layer," as used in the prior art reference, refer to the sheets (or web) of plastic film, not the polymer layers comprising the film. 6 I cannot agree with Pliant without construing the meaning of the claims of the '706 patent, which is not before me. The third reference to "layer" in the '393 patent appears in a description of the benefits of a pulley adjusting mechanism, which allows the operator to control the speed of the invention's rollers. The specification concludes: "in other words, the amount of air that is trapped in the layer of the wrapped film may be controlled." ('393 Patent, Col. 7, ll. 42-44.) Here, "layer" clearly refers to the sheet of film without addressing the polymer layer or layers that comprise the film.

6 The '393 Patent states:

Finally, U.S. Pat. NO. 4,499,706 teaches a double layer thermal plastic film which is used in pass through stretch wrapping of goods. The double layer improves the tear resistance and puncture resistance of the film.

('393 Patent, Col. 1., ll. 58-61.)

Atlantis complains that Pliant is relying on a term that was removed after it was subject to challenge by the Patent Examiner. Nonetheless, the term was subsequently added to the claim and approved by the patent examiner. The patent prosecution offers no other insight into the meaning of the term. Atlantis suggests relying on the term's plain meaning, which it construes as a web of film comprised of a single polymer layer. However, I find no support in the claims, specification or prosecution history for Atlantis's proposed construction, which would require that the sheet of film consist of only one discrete polymer layer. Therefore, I construe the term "single layer web" to mean "a single sheet of film consisting of one or more polymer layers."

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A. Defendants' S-Machines Do Not Infringe Claims 7-8 and 10-11.

Claims 7-8 and 10-11 of the '067 patent are dependent upon Claim 1. Accordingly, if there is no infringement of Claim 1, there can be no infringement of Claims 7-8 and 10-11. Independent Claim 1 of the '067 patent is an apparatus claim that includes the limitation "a single output receptacle."

Notwithstanding the plain language of Claim 1, Cummins asserts that Claim 1 is broad enough to include a device with more than one output pocket. Cummins' position was raised during Markman briefing. The Court found that Cummin's position was incorrect then and it is incorrect now.

As detailed in this Court's Markman ruling, the plain language of Claim 1, and relevant prosecution history, mandates that any device with more than one output pocket would not infringe Claim 1. It is undisputed that the S-Machines manufactured and sold by Defendants include more than one output receptacle. Accordingly, Claims 7-8 and 10-11 that depend on Claim 1 are not infringed and a finding of summary judgment of non-infringement is proper. 1
1 Infringement under DOE is equally inappropriate for at least two reasons: (1) prosecution history estoppel and (2) such a result would ignore the single output pocket limitation of the claims. See K-2 Corp. v. Salomon S.A., 191 F.3d 1356, 1367 (Fed. Cir. 1999).

We also disagree with the district court's construction of claim 1 in one other respect. We reject the district court's conclusion that the "single package" limitation of claim 1 of the '611 patent merely requires that devices be "capable of" being provided to the patient in a single package. Here, the claims are written to require that the devices actually be in a single "package." In similar contexts, our cases have rejected claim constructions that would merely require that infringing devices be capable of being modified to conform to a specified claim limitation. 7 With these constructions of claim 1's limitations, we turn to the question of whether the Truax devices rendered claim 1 obvious.

The first clause of claim one refers to a caliper body in which the hub-side and wheel-side elements and connecting bridges "constitute a single part." Brembo contends the term "a single part" means "one piece." Alcon argues that the term denotes "a single monolithic or assembled piece." The Court agrees with Brembo.

The first step in construing a claim is to determine the ordinary and customary meaning understood by those skilled in the relevant technology. Alcon provides no definition for the word "single," from which the Court infers that Alcon does not dispute Brembo's proposed definition. Indeed, the dictionary defines the adjective "single" as "consisting of only one in number." Webster's Third New Int'l Dictionary at 2123 (3rd unabr. ed. 1993).

The parties do, however, dispute the definition of the term "part." Because this term has several alternative meanings, the Court must determine which meaning is most "consistent with the use of the word[] in the intrinsic record." Texas Digital, 308 F.3d at 1203. The most relevant dictionary definition for "part" is "piece." Webster's Third New Int'l Dictionary at 1641. This is consistent with the usage of the term in the context of the claim language, which makes it clear that the patentee was referring to the hub-side and wheel-side elongate elements and the connecting bridges as a single piece. It is also consistent with the usage of the term in the specification. See, e.g., '766 patent, col. 2, lines 14-26 (describing the caliper body as being
"formed as a single piece of aluminum" and being "completed by three connecting bridges … formed integrally with the
elongate elements ….").

Alcon argues that the definition of "part" that is most consistent with the use of the word in the claim language is "a
monolithic or assembled piece." The Court is not quite sure why Alcon makes this argument or Brembo opposes it.
Ordinarily an alleged infringer seeks a narrower construction of the claims. One could argue that defining "a single part" as
"one monolithic or assembled piece" is a broader definition that the "one piece" proposed by Brembo. Nonetheless, Alcon
has made the argument, so the Court will address it. Nothing in the ordinary meaning of the term, the context, or the
specification precludes the "single piece" from being either a monolithic piece or an assembled piece. But it is equally true
that nothing in those sources necessarily limits the term to those two alternatives (though the Court is not entirely clear what
the other possibilities might be). The Court therefore rejects Alcon's argument.

In sum "a single part," as used in the claim, means "one piece."

Beginning with the language of the Claim itself, the Hall patent in Claim 1 states that it is:

A hydraulically efficient underground pipe of single piece construction for use in buried storm drains, said pipe consisting
essentially of a cylindrical metal wall having an 18-12 gauge thickness and defining a pipe diameter within the range of 24-
120 inches, a rigid lock seam extending helically about and along the length of said wall and a plurality of outwardly
projecting walled- structural supporting ribs extending helically about and along the length of said wall and being integrally
formed therewith, said ribs defining a corresponding plurality of open channels formed interiorly thereof, the width and
depth of said open channels being within the range of 0.5 to 1.5 inches and the spacing between said ribs being within the
range of 6 to 12 inches to render the pipe substantially rigid and possess sufficient structural strength to withstand the
stresses of being buried underground, means to increase the hydraulic efficiency of fluid flowing through the pipe consisting
of substantial portions of said wall extending between said open channels being of constant radius, and said lock seam being
disposed in said portions of constant radius to provide a substantially uninterrupted smooth flow.

Though it is not disputed by Defendant that its pipe conforms to much of the above claim. Defendant asserts that its pipe
is neither a pipe of "single piece construction" nor is it comprised of "open channels." Defendant contends that its pipe
channels are not open as they are filled with inserts, and that its pipe is not made of a single piece as it includes several
pieces, namely the pipe wall and the multiple inserts.

Plaintiff contends, however, that "single piece construction" refers to the single piece of outer pipe wall which is formed
with very specific dimensioned ribs and lockseams that eliminate the need for any additional reinforcing elements. Plaintiff
contends that Defendant's pipe is in fact of "single piece construction"because due to its rib spacing it does not need the
inserts to be sufficiently strong. Similarly, Plaintiff contends that "open channels" means channels that need no further
reinforcement, regardless of whether the channel is actually open or filled with an insert. According to this definition,
Plaintiff contends that though Defendant's pipe ribs are filled with inserts they are functionally hollow or open as the inserts
are not needed for support.

There is nothing to indicate that the patentee chose to be his own lexicographer in using the terms "open channel" and
"single piece construction" as no special definition of these terms is stated in the patent or its prosecution history. As such
the Court will first consider the ordinary and customary meaning of the terms. In doing so the Court cannot find that the
term "open channel" as is limited as Plaintiff suggests. It is difficult to fathom how Plaintiff can argue that the term "open channel" does not exclude channels which are closed by metal inserts. Likewise it is difficult to conceive how "single piece construction" can include pipe made of multiple pieces. Considering the ordinary meaning of the words, single piece construction is something made of one piece, not something which necessitates only one piece.

In reviewing the patent prosecution history it appears that by "single piece construction" Plaintiff meant a pipe without inserts, not a pipe that does not require inserts to be sufficiently strong. Throughout the prosecution of the patent, applicant referred to the benefits of a pipe without inserts. For instance, in addressing the Nyssen pipe and its reinforcing inserts applicant stated "...they are very susceptible to corrosion at the points where the metal liners or inserts abut the pipe walls." Stetina Declaration, Ex. C, pg. 7. In referring to the Hall patent applicant stated that "applicant's single piece construction eliminates the need for additional metal to metal junctures, such as those found in … Nyssen … which are highly prone corrosion." Id. at 15. In addition to the corrosion problems caused by the inserts, applicant argued that its pipe of "single piece construction" was less expensive to manufacture due to its lower material costs. "Because of its single piece construction, applicant's pipe employs less material … It is therefore far more economical to manufacture that those taught by Lombardi and Nyssen ..." Id. at 15. If single piece construction were to include pipe using inserts not necessary for reinforcement this statement would not be accurate.

In addition the Court notes that though Plaintiff argues that Defendant's inserts have no functional purpose, even assuming that the inserts add no strength to the pipe, Plaintiff stated during the prosecution of the patent that such inserts improve hydraulic efficiency. See Stetina Declaration, Ex. C. pg.16 ("[Nyssen] teaches away from applicant's concept of particularly configured open ribs to obtain both strength and hydraulic efficiency by closing the channels defined by the rib with additional reinforcing elements he provides a totally different solution to the hydraulic and structural problems ...") (emphasis added).

It becomes clearer that "single piece construction" means a single piece of pipe wall without inserts when looking at the development of the term "single piece construction." Initially in the patent prosecution process, Plaintiff described its pipe as a pipe of "unitary construction." However the Examiner found that the term unitary did not "preclude that the pipe cannot have additional elements such as the reenforcements ..." See Stetina Declaration. Ex. D, pg. 4. This was discussed in an office interview regarding the claims. In the applicant's summary of the interview it states:

The examiner expressed concern over the meaning of the word 'unitary' which is used in the claims to describe the pipe, and stated that the Nyssen pipe was of unitary construction. Mr. Lyon stated that the word 'unitary' was used to describe the pipe as being of single piece construction as opposed to dual or multi piece construction, such as the pipes taught by the Nyssen and Lombardi patents. Mr. Lyon acknowledged that the word 'unitary' in the claims should be changed to 'of single piece construction' to avoid any ambiguity. Stetina Declaration. Ex. E, pg. 7.

Because of the above arguments made by the applicant distinguishing Nyssen's dual or multi piece construction from the applicant's single piece construction, and the arguments made regarding hydraulic efficiency, corrosion, and manufacturing costs, "single piece construction" cannot mean pipe which does not require inserts, but instead means pipe which in fact does not have inserts. This is the definition that was presented to the examiners during the patent prosecution and the term cannot now be argued to mean something else.

Even if "single piece construction" were to include pipe made from a single pipe wall and additional unnecessary structural elements, the term "open channels" refers to channels which are not closed by inserts, not channels which do not require inserts as Plaintiff asserts. "[Nyssen] teaches away from applicant's concept of particularly configured open ribs to obtain both strength and hydraulic efficiency by closing the channels defined by the rib with additional reinforcing elements." See Stetina Declaration, Ex. C, pg. 16. Applicant further stated "due to its closed ribs, [Nyssen pipe] would not be suitable for use with an interior liner ..." Id. At 18. The interior liner refers to material, often concrete, which coats the inside of the pipe in an effort to make the pipe more resistant to abrasion. Because of Nyssen's closed ribs there is no means of anchoring the liner as referenced above. The Hall patent states that "it is a further object of the present invention to provide metal ribbed pipe which includes means integral therewith for anchoring a smooth liner of inert material to the interior of the pipe wall." Hall Patent, Summary of Invention. It also states that "the channels formed in the pipe wall interiorly of the supporting ribs are opened along the interior surface of the pipe to define an anchor throughout the length of the pipe for securing thereto a smooth interior lining of a suitable corrosion resistant protective material." Id. Again, this evidences that "open channels" refers to channels which are in fact open. Open channels cannot encompass channels closed with inserts, even if they are
unnecessary, because like the Nyssen pipe, there would be no means of anchoring an interior liner.

Because Defendant's pipe is made from a single pipe wall with multiple inserts closing its ribs it is neither of "single piece construction" nor is it comprised of "open channels." Because Defendant's product does not contain each structural element of the Hall patent there is no genuine issue of material fact as to infringement.

The Court will briefly address the arguments asserted by Plaintiff. First Plaintiff asserts that Defendant cannot escape infringement by merely adding an additional feature when it has adopted the basic features of the patent. AmStar Corp. v. Envirotech Corp., 730 F.2d 1476, 1482 (Fed.Cir. 1984). What Plaintiff overlooks is that the basic feature of the Hall patent is a pipe with open helical ribs and without reinforcing inserts. A pipe with inserts does not have the purported benefits of Plaintiff's pipe without inserts, namely corrosion resistance, reduced material costs, and means to anchor an interior liner.

Plaintiff also argues that by using the phrase "consisting essentially of" the examiners left open the inclusion of unlisted materials to the pipe that do not materially affect the basic and novel properties of the invention, such as Defendant's inserts. Assuming the truth of this argument, it still does not advance Plaintiff's position. The inclusion of inserts does materially affect the basic properties of the Hall patent, as according to the prosecution history it becomes an uneconomical, hydraulically efficient underground pipe susceptible to corrosion unable to anchor an interior liner. This is in direct contradiction to applicant's description of its pipe, that is an economical hydraulically efficient pipe which is readily susceptible of being rendered corrosion resistant.

The last argument that Plaintiff asserts is that the terms "single piece construction" and "open channel" should be understood not in absolutes, but in relation to their associated performance or functional characteristics. See Pall Corp. V. Micron Separations, Inc., 66 F.3d 1211 (Fed.Cir. 1995). Or in other words, that the terms should be understood to reference their function in making up a pipe that can withstand burial forces and stand alone without the need for supporting inserts. The problem with this argument is that it ignores that the "single piece construction" of the Hall patent and its "open channels" have several functions or performance characteristics. One such function is to withstand burial forces, other functions are to serve as an anchor for an interior liner, to resist corrosion, and to be economical. The latter three functions are eliminated when a pipe is made of multiple pieces and its channels are closed with metal inserts.

For the above stated reasons, Defendant's Motion for Summary Judgment [# 23-1] is GRANTED.

3. Wherein Each of the Components of the Health Tracker is Part of a Single, Unified Portable Unit

The defendants propose that the court construe the phrase "wherein each of the components of the health tracker is part of a single unified portable unit" to mean "the data logger, time base, data storage unit and data transmission device are all included within a single, unified portable unit." The defendants contend that they have construed the phrase in accordance with its plain and ordinary meaning because "for the components of the health tracker to be 'part of' a single unit, they must be physically included within the unit." (D.I. 40, at 20.) The defendants further contend that during prosecution the patent applicants excluded from claim 22 devices using a component that is not physically included within the unit, such as an external modem. (Id.) According to the defendants, the applicants added the claim limitation at issue "as a key distinguishing feature over the prior art." (Id. at 21.)

PHT proposes that the court construe the phrase to mean "wherein the health tracker's components are combined into a unit which is capable of being carried by a patient." PHT asserts that, as with the "capable of connecting directly" limitation, the defendants' construction seeks to exclude the preferred embodiment of the invention, or an external modem combined with a telecommunications driver. (D.I. 39, at 13.) PHT further asserts a health tracker combined with an external modem is a single, unified, portable unit that is capable of being carried by a patient. (Id.)

The parties do not disagree that the data logger, time base, data storage unit, and data transmission device are the components of the health tracker. Thus, the court need not construe the phrase "wherein each of the components of the health tracker." The parties' dispute concerns whether the phrase "part of a single, unified portable unit" means that the components must be "included" within a single, unified portable unit or that the components can be "combined" into a
single, unified portable unit. As previously stated, the defendants’ maintain that a construction in which all of the components are "physically included" within the unit is compelled, relying on the "part of a single unit" language of the phrase. (D.I. 40, at 20.) The court disagrees, based on the plain and ordinary meaning of the term "unified." The plain and ordinary meaning of the term "unified" is "made into a coherent group or whole." Webster's Third New International Dictionary 2499 (1993). The meaning of "unified" is broad, in that a component not physically included within the unit can be combined with components that are physically included within the unit to form "a coherent group or whole." The '985 patent specification also supports a broad construction. For example, in the preferred embodiment of the invention "the monitor connects directly to a modem (when used without a data logger), or can be connected to a serial data port on the subjective data logger which, in turn, connects to a modem. In the preferred embodiment an external modem is used. . . ." (Col. 5, 11. 4-9.)

The defendants also contend that the prosecution history compels the court to construe the phrase so that the data transmission device "is included within the portable unit." (D.I. 40, at 21.) The defendants maintain that the applicants disclaimed a data transmission device that is not within the portable unit when they described the handheld unit as being "a single, unified handheld unit that includes an on-board communication device, such as a modem." (Id. at 20.) The court is not persuaded. As previously discussed, the court will not find a disclaimer unless the applicants have "used words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Texas Digital, 308 F.3d at 1204. The court cannot agree that the word "includes," in the statement that the defendants cite, represents a clear disavowal of the applicants' preferred embodiment.

Lastly, the plain and ordinary meaning of "portable" is "capable of being carried." Webster's Third New International Dictionary 1768. The court, therefore, will construe the phrase "wherein each of the components of the health tracker is part of a single, unified portable unit" as "wherein each of the components of the health tracker is a part of a coherent group or whole that is capable of being carried."

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b. "single unit"

Next, Defendant proposes that the term "single unit" may consist not only of spokes and cross-bars, but also additional structures. Defendant claims that the use of the word "includes" in subsection (b) of Claim 1 allows for an non-exhaustive list, which contains, but is not limited to, the enumerated spokes and cross-bars. (Defs.' Br. at 17-18.) Plaintiff appears not to disagree. 6 Defendant's proposed construction is supported by the claim language, and the court will therefore adopt it.

6 Although Plaintiff initially proposed a different construction in the Joint Claim Chart, Plaintiff appears to have abandoned that argument, and fails to mention this claim in its briefs.

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2. "Single Unitary Part"

Claim 1 provides, in part, as follows:

An elongated impact protection component in the form of a single unitary part having a top, a base, a peripheral side wall having a rear portion configured to mate with the structural support so as to seat said component in an installed position adjoining the structural support;

Similarly, claim 10 states:
Each of said components being a single unitary part having a peripheral side with a rear portion configured to mate with the structural support upon movement of the component transversely into its installed position;

In ruling on Plaintiffs' motion for preliminary injunction, the court concluded that the phrase, "single unitary part" should be construed in accordance with its ordinary meaning based on the dictionary definitions of these terms. In particular, the word "part" is defined as a "division or segment of a whole." The word "unitary" is defined as "of or pertaining to a unit or units; having the character of a unit; whole." "Single" is defined as "unaccompanied by another or others." Based on these definitions, the court construed the phrase to mean "a division or segment of an apparatus for protecting an elongated structural support from impact that is comprised of a unit or units having the character of a whole." (See Prelim. Inj. Order at p. 12). Sentry maintains that this construction is appropriate and should be used to compare its device to the accused product.

Eagle argues that the proper construction of this phrase should be that "the impact protection component is a single part, which is complete by itself without additional pieces." Eagle bases its construction on the examiner's initial rejection of the '781 patent based on U.S. Patent No. 3,831,941 (the "Pease" patent). The Pease patent discloses a "protective shock absorbing device for goal posts." Its specification states:

Since the inner tube 11 and the outer shell 12 are preferably secured together, they are not separable, . . . but remain together and will be removed from and placed on the post as a single unit so that they maintain their relative positions when the inner tube is deflated and when the inner tube in [sic] inflated.

(Pease patent, col. 2 at lines 67-68 - col. 3 at lines 1-5). After the examiner's rejection, the applicant filed an amendment, stating that the applicant and the examiner had "agreed that the rejection [for obviousness] based on the prior art . . . Pease could be overcome by use of 'unitary' claim language." (See December 4, 2000 Amendment at p. 6). Based on this amendment, the applicant added the term "unitary" to "distinguish[] the present invention from the multi-component impact protection assembly disclosed by Pease." Id. (emphasis added). According to Eagle, this amendment establishes that the applicant added single unitary part to distinguish its claims from Pease and therefore any construction of this phrase that would cover Pease, such as the court's construction, is necessarily improper.

The court finds that the term single unitary part must be construed to reflect the fact that the impact protection component is comprised of one piece. The Pease specification language indicates that the apparatus is comprised of two parts, an inner tube and an outer shell, that are not separable but remain together as a single unit. Based on this description of multiple components, the examiner rejected the claim and in response, the applicant filed an amendment modifying its device to a single unitary part. The court's earlier construction, "comprised of a unit or units having the character of a whole," does not account for this amendment. 6 Because a claim term will not carry its ordinary meaning "if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention," the earlier construction must be rejected. CCS Fitness, Inc., 288 F.3d at 1366-67. Thus, the court concludes that the phrase single unitary part must be construed to mean that the impact protection component is a single part, which is complete by itself without additional pieces.

6 The court notes that it is considering Eagle's arguments as they relate to a rejection based on Pease for the first time, as Eagle did not raise them in opposing Sentry's Motion for a Preliminary Injunction.

As to infringement, the court finds it a close question. One could argue that the accused device, including the openings with molded inserts is not analogous to the device in Pease consisting of an inner tube and an outer shell; therefore, the accused device is not a multi-component device within the teachings of Pease. On close reading, the court does not find Pease is so limited. Eagle's device has three parts, including the cushion itself and two molded inserts that are fitted into the openings to seal the unit. Like Pease, it is comprised of multiple components that are "secured together [and] are not separable." Conversely, Sentry's device is one piece that expressly disclaimed the use of multiple components to overcome a rejection. Because the accused device does not meet this element, it does not literally infringe claims 1 and 10.
1. Claim Construction

Courts look to the prosecution history as intrinsic evidence of the meaning of claim terms. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). The prosecution history modifies the scope of a claim term if "the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention." CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366-67 (Fed. Cir. 2002). The district court in this case determined that Sentry "expressly disclaimed the use of multiple components to overcome a rejection."

The district court's analysis of the prosecution history disclaimer is sound. Pease has an impact protection component made of multiple parts: a soft inner tube and a protective outer shell, as shown below in Figures 2 and 3. Both of these parts are involved in impact protection; together, they form the impact protection component. By amending their claims to include the limitation "single unitary part" and arguing that this amendment "distinguishes the present invention from the multi-component impact protection assembly disclosed by Pease[,]" the patentees gave up coverage of multipart impact protection components. For this reason, we affirm the district court's interpretation of this term as meaning "that the impact protection component is a single part, which is complete by itself without additional pieces."

This construction is correct even if, as Sentry asserts, the disclaimed Pease impact protection component can be separable. Pease discloses both separable and inseparable embodiments. For example, in the preferred embodiment, the shell and tube are "glued together." In another embodiment, they are connected by "snap fasteners" and thus are separable. By distinguishing their invention from Pease, the patentees disclaimed coverage of both separable and inseparable impact protection components, so long as the components include multiple parts. The district court's construction accounts for this disclaimer.

Sentry's quarrel seems to be with the way the court applied its construction. The court held that Eagle's device did not infringe because, "like Pease, it is comprised of multiple components that are 'secured together [and] not separable.'" As mentioned supra, we have elected to dispose of this appeal without considering infringement issues. But, to the extent that this statement by the district court represents a corollary to the court's claim construction, the statement nonetheless reiterates the key point: that impact protection components consisting of "multiple" parts are not covered. Properly, the court's overriding concern was that "the term single unitary part must be construed to reflect the fact that the impact protection component is comprised of [only] one piece."

1. "Sinusoidal"

I previously held that "first meander" means "a periodic sinusoidal pattern about a center line." 75 In including the term "sinusoidal," I relied on the written description of the patents-in-suit, which "clearly provides that the first meander is sinusoidal about a center line." 76 After the close of expert discovery, the parties disputed the meaning of "sinusoidal." 77


76 Id. Specifically, "the written description states that 'meander pattern 11 is a vertical sinusoid having a vertical center line 9.'" Id. (quoting '303 Patent, col. 2, ll. 63-64 (referencing Figs. 1-4). All patents-in-suit share this written description. See '120 Patent, col. 3, ll. 1-3; '381 Patent, col. 3, ll. 3-4; '982 Patent, col. 3, ll. 7-8.

77 Medinol had argued at claim construction that the definition of first meander should not include the term "sinusoidal" at all. See, e.g., 9/2/04 Markman Hearing Transcript ("Markman Tr."), at 44-45 (statement of Dorothy Auth, counsel for
Medinol) (“Guidant would like to see meanders [] required to be uniformly distributed. They would like to see first meanders, they must be sinusoids . . . [but] there is just no disclaimer for that in our specification or in our file history.”).

As an initial matter, "sinusoidal" in the context of the patents-in-suit must mean something different than the plain meaning of the term, which according to the relevant dictionary is "of, relating to, shaped like, or varying according to a sine curve or sine wave." 78 This conclusion is mandated because the first meanders pictured in Figure 2 of the patents-in-suit (identified explicitly as a "vertical sinusoid") are not sine waves at all, but are squared off at the top of each repeating pattern. 79 Thus, the plain meaning of "sinusoidal" would impermissibly exclude a preferred embodiment from the claim construction. 80 Accordingly, both parties agree that sinusoidal must have a different meaning. 81


79 See '120 Patent, Fig. 2; id. col. 3, ll. 1-2.

80 See, e.g., Anchor Wall Sys., Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1308 (Fed. Cir. 2003) (claim construction excluding a preferred embodiment is "rarely, if ever, correct").

81 See 6/14/05 Alan Snyder Deposition Transcript ("Snyder Dep. Tr.") at 96, Ex. 44 to 10/28/05 Declaration of Fabian Gonell ("10/28/05 Gonell Decl.") (Medinol's expert stating that "conformance with a mathematical sine wave is not what's meant by sinusoidal."); see also Markman Tr. at 107-08 (statement of J. Michael Jakes, counsel for Guidant) (stating that "sinusoidal" as used by the patents-in-suit is not strictly a mathematical sine wave, because the edges of Figure 2 are squared off; "I think [sinusoidal] means it goes up and down in a regular pattern on both sides."). I note that the Snyder transcript has been designated "highly confidential," but the portions of that transcript quoted in this Opinion do not reveal any sensitive information.

Medinol contends that "a person of ordinary skill in the art would understand 'sinusoidal,' in the context of the Patents-in-Suit, to refer [to] alternating turns." 82 Guidant argues for a narrower meaning, hewing as closely as possible to the dictionary definition quoted above and contending that "sinusoidal" in the context of the patents-in-suit means a pattern exhibiting "(1) constant amplitude, (2) equal distances from one curve [of the meander pattern] to the next, and (3) a single repeating pattern of one up-or-down curve." 83 To arrive at this definition, Guidant determined "which characteristics of a sine wave are consistent with the disclosure in Medinol's patents," and then constructed its three-part test. 84 Not surprisingly, the accused products fall within Medinol's proposed definition for sinusoidal.

82 Pl. Infringement 56.1 P61. Accord Pl. Mem. at 7 (in the stent art, sinusoidal is "well understood to mean a ring with alternating turns."). Medinol contends that Guidant's counsel conceded that Medinol's definition is correct during the Markman hearing, when he stated that "sinusoidal" is "not strictly a mathematical sinusoidal wave," and that such a wave "goes up and down in a regular pattern on both sides." Id. at 7-8 (quotation omitted). This statement, however, is fully consistent with Guidant's current position, and for that matter with the dictionary definition of sinusoidal, which merely requires that a sinusoidal wave "relate to" a sine wave.

83 Def. Reply at 3. In a pre-motion letter to the Court, Guidant also argued that because the Penta and Vision stents "double back on themselves," they cannot be sinusoidal. See 6/14/05 Letter from J. Michael Jakes to the Court at 3 (citing Medtronic v. Advanced Cardiovascular Sys. Inc., 182 F. Supp. 2d 810, 822-23 (D. Minn. 2000), where the Court: (1) adopted parties' agreed construction of "generally sinusoidal in shape" to mean "[a] further description of the zig-zag shape. The shape does not come to sharp angles, but is more the shape of the mathematical sine wave"; and (2) found that Multi-Link stents did not literally infringe because the ring patterns doubled back on themselves). However, Guidant did not pursue this argument in its motion. See Def. Reply at 3 n.3.

84 Def. Reply at 2.

The intrinsic evidence regarding the meaning of sinusoidal is sparse, as the word "sinusoid" is used only once in the patents-in-suit, in the written description of Figure 2. Indeed, Medinol's expert derived his definition of sinusoidal from a review of the Figures included in the patents-in-suit. 85 Accordingly, the text of the claims, specification and written description is inconclusive.

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85 See Snyder Dep. Tr. at 74-75:

Q. What is the basis for your opinion that sinusoidal means alternating loops facing in opposite directions?
A. . . . I start with the Court's definition that the first meander is a periodic sinusoidal pattern about a center line, and I start out by saying periodic means the pattern . . . must repeat, and sinusoidal is, from the dictionary, means of or relating to or shaped like of varying [sic] according to a sine curve or sine wave. Then from the examples in the patent we learn that . . . sinusoidal here can't mean a mathematical sine wave, you can't take the mathematical, it has to be a sine, a pure sine function, because the examples in the patent which are square waves . . . but what's common in all cases is a series of alternating loops with no intervening material, basically a pattern that wiggles back and forth . . . from periodic, I get the additional requirement that as the pattern wiggles back and forth, whatever wiggles, you have whatever alternating loops you have going down, whatever the shapes of those loops are needs to repeat with regularity.

The only item of prosecution history bearing on the proper construction of "sinusoidal" is a representation made by Medinol that:

The text [of the related '303 Patent] defines a "meander pattern" as a periodic pattern . . . According to the American Heritage Dictionary of the English Language (1975), the term "meander" means "circuitous windings or sinuosities (of a stream or path) or a circuitous journey or excursion; a ramble' . . . . Thus, when the specification mentions . . . that the term "meander pattern" is a periodic pattern, it means that a meander pattern is a periodic pattern about a center line. 86

86 Preliminary Amendment filed with the PTO by Medinol on May 31, 1995 ("Medinol PTO Statement") at 4, Ex. 7 to Shaffer Decl.

Guidant asserts that this statement is a concession by Medinol that a first meander must be shaped like a sinusoid, which in turn should be defined as a pattern exhibiting characteristics of a sine wave consistent with the disclosures of the patents-in-suit. But Guidant places far more weight on this statement than it can bear. In fact, this statement supports Medinol's position, because it indicates the patentee's understanding that "sinuosity" in this context means something more expansive than simply a pattern resembling a sine wave. In particular, this definition of meander reveals that Medinol took it to mean "circuitous windings or sinuosities," indicating that the definition is not limited to sinuosities. 87 The statement further explains that a meander can "ramble" which is far from a mathematical sinusoidal structure. 88

87 Id. at 4 (emphasis added).

88 See id.

More generally, while Guidant's definition is elegant and better grounded in the dictionary definition of "sinusoidal," 89 it does not account for the fact that Medinol's patents are not limited, by the prosecution history or any other intrinsic evidence, to rings exhibiting the particular characteristics of sine waves selected by Guidant. 90 Moreover, Guidant's proposed definition for "sinusoidal" would render superfluous the terms "periodic pattern" and "about a center line" in the Court's construction of first meanders. Any ring structure meeting Guidant's three criteria would necessarily be a periodic pattern about a center line. At the same time, Guidant is incorrect when it argues that Medinol's definition of sinusoidal fails to take account of the difference between the construction of "first meander" and "second meander." 91 It is entirely possible for there to be a "periodic pattern about a center line" that does not also have "alternating turns." 92 For example, the second meanders disclosed in Figure 5 of the Lau Patent, 93 exhibit a repeating pattern, but also include straight elements (the straight connectors of Lau), and therefore those second meanders do not consist of alternating turns.

89 I do note, however, that Guidant's definition, relying as it does on first meander patterns being "curved," runs the risk of excluding the preferred embodiment depicted in Figure 2 of the patents-in-suit, given that "curved" means "to have or take a turn, change, or deviation from a straight line or plane surface without sharp breaks or angularity." Merriam-Webster Dictionary.

90 See, e.g., Irdeto Access, Inc. v. Echostar Satellite Corp., 383 F.3d 1295, 1302 (Fed. Cir. 2004) (citing Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 905-07 (Fed. Cir. 2004)) (claim terms not restricted to scope of preferred embodiments unless the patent's written description expressly or by clear implication restricts the scope of the invention to the preferred
Guidant attempts to demonstrate the all-encompassing nature of Medinol's proposed definition by presenting a seemingly random, squiggly pattern that is, according to Medinol's expert, technically a periodic sinusoidal pattern about a center line. See Def. Mem. at 12 (citing Snyder Dep. Ex. 7). But Medinol is correct that claim terms must be considered in context of the claim as a whole, See Pl. Reply at 8 (citing Phillips, 415 F.3d at 1314). Similarly, even if Guidant's hypothetical pattern qualified as a first meander, every asserted meander claim contains additional limitations, which means that a broad definition of first meander, by itself, would not mean that the patentee had violated its duty to inform the public as to the scope of its invention.

Def. Mem. at 11.

The exclusion of the word "sinusoidal" from the definition of second meanders means only that second meanders can, but need not, be sinusoidal. See Pl. Reply at 8 n.5 ("thus, 'periodic' requires that the meander have a repeating pattern and 'sinusoidal' requires that the repeating pattern be of alternating turns").


I note, however, that Medinol's contention that Guidant's definition of sinusoidal would exclude a preferred embodiment of the patents-in-suit is meritless. Medinol relies on an alleged small deviation in the distance between loops in Figure 2 of the '120 Patent to argue that the patents-in-suit do not display "equal distances from one curve to the next," as required by Guidant's proposed definition of sinusoidal. 94 This reliance is misplaced. There is no indication in the specification of the patents-in-suit that the alleged variations in Figure 2 result from any intent that the loops of the design be spaced unevenly. 95 Indeed, Figure 5A of the patents-in-suit, illustrating a close-up diagram of the same first meander pattern, clearly discloses that the distances between each loop in the pattern are meant to be equal. 96

See Pl. Mem. at 9; Pl. Reply at 4-5 (citation omitted).

95 "'Patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue.'" Nystrom v. TREX Co., 424 F.3d 1136, 1149 (Fed. Cir. 2005) (quoting Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Ltd., 222 F.3d 951, 956 (Fed. Cir. 2000)).

96 See '120 Patent, Fig. 5. The patents-in-suit specifically state that Figures 1-5 are meant to depict the same stent. See, e.g., id. col. 2, ll. 28-39.

Given the intrinsic evidence, there is no real need to examine the extrinsic evidence cited by the parties. 97 Nonetheless, I note that Medinol's extrinsic evidence in support of its definition misses the mark. Medinol points to usage of the terms "sinusoidal" or "sinusoid-like" by Guidant in relation to other products, as well as in third-party patents, that Medinol asserts is consistent with Medinol's definition of the term. Because this evidence post-dates 1994, the relevant date for purposes of determining the meaning of sinusoidal, it is irrelevant for the purpose of claim construction. 98

See, e.g., Storage Tech. Corp. v. Cisco Sys., Inc., 329 F.3d 823, 832 (Fed. Cir. 2003) (extrinsic evidence need not be considered when intrinsic evidence is sufficient to construe a claim term).

See, e.g., Pl. Infringement 56.1 P58 (discussing a patent with an application filing date of September 3, 1999); id. P59 (discussing patents with filing dates of 1998 and 2000); id. P60 (discussing a patent with filing date of July 31, 2002).

In sum, Medinol's proposed definition is more consistent with the prosecution history and my previous Opinion.

Accordingly, "sinusoidal" is defined as a "series of alternating turns with no intervening material."
4. Sinusoidal shape

Habasit contends that "sinusoidal shape" means "having a regular amplitude and frequency." (D.I. 55 at 25.) The disputed phrase, it argues, must be considered in the context of the claim. Habasit contends that all of the intrinsic evidence of the '941 patent supports its construction. For example, Habasit points out that the specification states, the "corrugated portion forms a series of ridges and valleys in a sinusoidal manner," not a sinusoidal wave. (941 patent, col. 3, l. 49-51.) Additionally, Habasit contends that Figures 2, 5, and 9 depict a sinusoidal shape that is not strictly limited to a sine curve or a sinusoid. Finally, Habasit contends that Rexnord's proposed construction reads the preferred embodiment out of the claims at issue.

Habasit also contends that Webster's dictionary supports its construction. That is, an object has a sinusoidal "shape" if it is shaped "like or similar to" a sine wave. (D.I. 55 at 25.) Habasit argues that Rexnord avoids this problem by reading "shape" out of the phrase "sinusoidal shape."

Habasit cites the Court to Medtronic, Inc. v. Advanced Cardiovascular Sys., 182 F. Supp. 2d 810 (D. Minn. 2000), which it argues supports, rather than undermines, its construction. The court in Medtronic, Habasit contends, construed "generally sinusoidal" as "a further description of the zig-zag shape" that "does not come to sharp angles." (D.I. 62 at 23.) Habasit argues that Figures 1-8 from the Medtronic patent, which the court found to be "generally sinusoidal," did not possess the strict shape of a sine wave. Finally, Habasit contends that the '941 patent has the two mathematical characteristics necessary, according to the Medtronic court, for constituting a sine wave: (1) it has only one defined value at each point along the horizontal X-axis (it cannot "double back" on itself) and (2) it can have its mathematical derivative take'h at every point along its curve. (D.I. 62 at 24, citing Medtronic, 182 F. Supp.2d at 823.)

Rexnord contends that "sinusoidal shape" means "a shape defined by a curve having a magnitude that varies as the sine of an independent variable such that \( y = \sin x \)." (D.I. 57 at 3.) It argues that, since the term has neither an explicit definition in the text of the '941 patent nor a special meaning to one skilled in the art of conveyor belts, the Court should apply the common, mathematical definition. (Id. at 13.) Rexnord contends that Habasit instead proposes a construction far beyond how sinusoidal is defined by persons skilled in the art.

With regard to Medtronic, Rexnord contends that Habasit's E construction lacks both of the aforementioned requirements for sine wave. It argues that the patent's preferred embodiment both doubles back on itself and has vertical lines that do not have a derivative. Furthermore, Rexnord contends that Habasit's construction lacks other common characteristics of sine waves, such as having no straight sections and no sections of constant radius curvature.

After reviewing the claim language, specification, and prosecution history of the *941 patent in light of the parties' respective positions, the Court agrees with Habasit's proposed interpretation. The Court concludes that Rexnord's narrow interpretation of sinusoidal shape does not comport with the intrinsic evidence. First, the claim itself provides that "the corrugated portion has a sinusoidal shape." Furthermore, the specification states, the "corrugated portion forms a series of ridges and valleys in a sinusoidal manner." Nowhere in the specification does the patent claim to use an exact sine wave. Second, the figures of the patent's preferred embodiment clearly indicate that sinusoidal manner did not mean a sine wave in the strict sense. The claim construction propounded by Rexford excludes the preferred embodiment and "is rarely, if ever, correct and would require highly persuasive evidentiary support." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 1996

In addition, the Court finds Rexford's arguments regarding Medtronic unpersuasive. Rexnord's proposed construction of sinusoidal shape far exceeds Medtronic's two requirements for a "sine wave." Rexnord's proposed construction would render Figures 1-8 of the Medtronic patent, which the Medtronic court considered "generally sinusoidal," to be non-sinusoidal. Moreover, the rings that the Medtronic court found non-sinusoidal deviated much more from a strict sine wave than the *941 patent embodiment. Thus, the Court finds that Medtronic's holding therefore does not deal with the type of shape at issue in the instant case. In sum, the Court concludes that "sinusoidal shape" means "having a regular amplitude and frequency."

The final relevant clause in this claim construction is found in limitation part '(d),' which provides for "siphoning treated
water from the drainage space under gravity into the treated water outlet conduit.” Contech argues that the specification of the '527 patent describes that “when a siphon effect is induced, in accordance with the invention, by purging air from the drainage space, a negative pressure develops inside the drainage space. This results in suctioning of water through the bed into the drainage space, and thence into the conduit.” (Pl.'s Opp. Mem. at 17-18 (quoting the '527 patent, col. 7, In. 64 - col. 8, In. 2.)) Contech further asserts that the definition of "siphoning" in the '527 patent does not exclude water that travels over an intermediate elevation as a result of the siphon effect. (Id. at 19.) BaySaver and AccuBid, however, assert that the '527 patent does not define "siphoning" according to its meaning as understood by a person of ordinary skill in the art since, according to the patent, the treated storm water is not induced to flow upwards over an intermediate elevation before it drains. (Def.'s Reply Mem. at 4.) "Instead of a conventional siphon," the defendants argue, "the patent requires a valve" that fully opens once the basket has filled with water, thereby displacing air and creating a suctioning flow of water through the outlet conduit. (Id. at 6.)

As Judge Mosman noted in the Oregon litigation when attempting to define "siphoning," “technical sources . . . appear to show that a person of ordinary skill in the art of hydraulics would understand the ordinary meaning of 'siphoning' to contemplate, among other limitations, a conduit that rises above the hydraulic grade line.” Stormwater Management, Inc. v. CDS Techs., Inc. (Case No. CV 04-414) (citing HYDRAULICS FOR PUBLIC HEALTH ENGINEERS 279 (1967). Stated differently, "siphoning" is technically defined as inducing water to flow upwards over an intermediate elevation before it ultimately drains. Because Judge Mosman properly found that “artisans attach special meaning to the term 'siphoning,'” the court relied on technical, rather than general usage dictionaries. Id.; see also Vanderlande Indus. Nederland BV v. ITC, 366 F.3d 1311, 1321 (Fed. Cir. 2004) (finding that a general-usage dictionary can be useful to aid a claim construction when an artisan would understand a claim term to have the same meaning in the art as that term has in common, but that technical dictionaries should be used when an artisan "would attach a special meaning to a claim term"). Judge Mosman recognized, however, that a technical definition of "siphoning" that requires a conduit that rises above an intermediate elevation would "exclude the patent's sole disclosed embodiment." Id. As the Federal Circuit stated in Vitronics Corp., 90 F.3d at 1583, it "is rarely, if ever, correct" to define a claim term in a manner that would exclude the preferred embodiment described in the specification.

Because the '527 patent specification and preferred embodiment do not teach of an induced hydraulic flow over an intermediate elevation, and would thus be excluded by such a definition, it would be improper to adopt this construction of the term "siphoning." Instead, the court recognizes that "a patentee is free to be his or her own lexicographer," assigning whatever meaning he or she likes to the terms in the claims. Hormone Research Found., Inc., 904 F.2d at 1563. The intrinsic evidence in this case, which includes the claim language and the specification, makes it clear that the patentee is defining "siphoning" to describe a process by which water is emptied from a drainage space by traveling through a tube or pipe running from the liquid in the drainage space to a lower level outside the vessel so that atmospheric pressure forces the liquid through the tube. This adopted language is wholly consistent with the definition offered by Contech's predecessor in the Oregon litigation. (See Def.'s Mem. at Ex. L, Stormwater Mem. at 10.) Furthermore, this definition is confirmed by the claim language, which describes the "siphoning process" as draining water into the water outlet conduit under the force of "gravity."

Whether this "siphoning effect" requires a siphon valve that allows the drainage space to fill with water before opening does not need to be determined by the court in construing this claim for the purposes of this litigation. The essential finding here is that the '527 patent does not define "siphoning" to include the ordinary meaning of the term as understood by a person of skill in the art. Quite simply, the '527 patent does not teach a true siphon. To define "siphoning" in the '527 patent to include the hydraulic process by which water is induced to flow against gravity and over an intermediate elevation would grant the '527 patent an overbroad scope that exceeds the clear intent of the patent's claim language and specification. It is of note, however, that the intrinsic evidence does appear to indicate that a valve may be required to create the "siphoning effect" stated in the patent since no other possible method for inducing the effect is offered. First, the specification consistently describes the siphoning effect only in the context of some kind of siphon valve. For example, the specification states that:

[I]n certain preferred embodiments, the apparatus includes an outlet siphon priming valve that allows a siphoning effect to occur . . . the outlet valve is optionally a water level actuated siphon priming valve that is able to at least partially cover the opening of the outlet and thereby restrict flow of treated storm water through the duct . . . When the storm water runoff rate is above a threshold level, so that the basket becomes completely submerged and the inner drainage space fills with treated water, then the outlet siphon priming valve opens completely and a continuous fluid communication is established between the inner drainage space and the outlet conduit [under this siphon effect].

- 4294 -
The terms "sit-on-top kayak" appears in the "preamble" to each of the claims at issue, and plaintiff argues the phrase should be construed as a limitation. A patent claim typically has three parts: 1) the preamble; 2) the transition; and 3) the body. (Def.'s Mem. at Ex. B.) Accordingly, a claim preamble recites claim limitations only if "the claim cannot be read independently of the preamble and is essential to point out the invention." Marston v. J.C. Penney Co., 353 F.2d 976, 986 (4th Cir. 1965), cert. denied, 385 U.S. 974, 17 L. Ed. 2d 437, 87 S. Ct. 515 (1966) (citing Kropa).

This court concludes that the preamble provides essential meaning to the claims that follow, and that the patents intended to, and must, include "sit-on-top kayak" as a structural limitation. The preamble includes repeated references to "sit-on-top kayak," such as: "Conventional kayaks comprise a hollow shell. . . . [A] new type of kayak is referred to. . . as a sit-on-top kayak [where] the user. . . sits in an open cockpit on the top of the kayak hull. The sit-on-top kayak is somewhat similar to a surfboard in overall shape, but normally has a generally V-shaped hull portion and a deeper draft to allow better tracking." The need . . . exists for a sit-on-top kayak design that provides three seating surfaces and footwells associated therewith, but does not result in a boat that is inconveniently long." Background of the Invention, Col. 1 of Patent 177. The use of the term "sit-on-top kayak" goes beyond merely describing certain advantages of the invention, and "breathes life into the claims that follow. Accordingly, the term sit-on-top kayak amounts to a limitation and, therefore, must be construed by the court.

Plaintiff proposes construing "sit-on-top kayak" as a "human-propelled, water displacement vessel used as a conveyance for carrying people and cargo on flat water surfaces for long periods of time, and has a keel, hull, prow, and chines [ridges on the hull to stabilize and channel water]." Defendant argues that the extrinsic evidence, including plaintiff's catalogues and Internet website, suggests a much broader scope for "sit-on-top kayak" vessels (including surfing), with portrayals of several sit-on-top kayaks that have no keel and/or a flat-bottomed hull.

Since the preamble uses plain language to describe a sit-on-top kayak as "somewhat similar to a surfboard in overall shape," but normally having "a generally V-shaped hull portion and a deeper draft to allow better tracking," this court relies upon the terms' ordinary meaning, as well as the insights provided by the patents' specifications, in construing "sit-on-top kayak" as a small decked watercraft propelled by a human or by humans using a double-ended paddle or paddles, narrow in shape.
with a generally V-shaped hull portion and a deeper draft than a surfboard to allow better tracking, on top of which the passenger or passengers sit horizontally aligned.

The trial court correctly discerned that the preamble "sit-on-top kayak" should be understood to limit all of the claims to a category of watercrafts and "in general, a preamble limits the invention if it recites essential structure or steps, or if it is 'necessary to give life, meaning, and vitality' to the claim." Catalina Marketing Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 808, 62 USPQ2d 1781, 1784 (Fed. Cir. 2002) (quoting Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir. 1999)). However, the trial court's explanation of what this limitation is, namely that a sit-on-top kayak has "a generally V-shaped hull portion and a deeper draft than a surfboard to allow better tracking," is not consistent with the plain meaning of the term as used in the patents. Old Town, 2001 U.S. Dist. LEXIS 19680, slip op. at 8 (quoting the '177 patent, col. 1, ll. 25-28).

There are two flaws in the trial court's reliance on this statement. First, the plain meaning of "hull" does not include a particular shape (V) because otherwise the phrase "V-shaped hull portion" would be redundant. Second, the contextual meaning of "hull" also cannot include a limitation on its shape because the qualifier "normally" precludes the term from always requiring a V-shape. In the claims, "hull" appears to be a generally descriptive term and as such the appellant is correct that it should be given its full meaning and no modifiers should be added. See York Prods., Inc. v. Central Tractor Farm & Family Cent., 99 F.3d 1568, 1572, 40 USPQ2d 1619, 1622 (Fed. Cir. 1999) ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning.").

Moreover, the interpretation of "sit-on-top kayak" in the preamble as having a particular hull shape and of "hull" in the claims to be "generally V-shaped to create a deeper draft than a surfboard to obtain better tracking" is directly contradicted by statements in the written description of the '912 patent describing particular embodiments. One such example is for the description of the fourth embodiment:

The bottom portion 418 of the kayak hull 412 may be any size, shape, and/or configuration as appropriate to provide a stable and efficient platform for movement of the kayak 410 through the water.

'912 patent, at col. 9, ll. 17-20 (emphasis added). As the appellant asserts, this is incompatible with the idea that the terms "sit-on-top kayak" and "hull" in the '912 patent require a particular shape. Our broader interpretation of "sit-on-top kayak" and "hull" is not solely for the '912 patent. The terms should be construed similarly in the '177 patent and the '063 patent because they use the same claim terms and, in fact, the preamble and the first line of the claims (referring to a "hull") are identical in all three patents. Also, all three arise from the same original patent application. The terms must be construed in the same way in all three patents. See Jonsson v. Stanley Works, 903 F.2d 812, 818, 14 USPQ2d 1863, 1869 (Fed. Cir. 1990) (holding that when two patents use the same claim terms the prosecution histories of both are relevant).

We, therefore, adopt the district court's construction of "sit-on-top kayak" and its function as a limitation of the claims with the exception of the clause "with a generally V-shaped hull portion and a deeper draft than a surfboard to allow better tracking." That we reject. Old Town, 2001 U.S. Dist. LEXIS 19680, slip op. at 9. The proper definition includes crafts with both displacement and planing hulls.
Green Edge again requests that the Court give this phrase its plain and ordinary meaning. However, the specification that Green Edge relies upon provides for “round rubber particles [that] have a length ranging between about 1/16 inches and about eight (8) inches and a width ranging between about 1/16 inches and about two (2) inches.” (‘514 Patent, col. 4, lns. 7-10) The patent continues to state that “[a] variety of sizes can be used, however, dependent upon the specific natural mulch it is desired to imitate.” (‘514 Patent, col. 4, lns. 10-11) The term “size” is defined as “physical magnitude, extent, or bulk; relative or proportionate dimensions.” Merriam-Webster Online Dictionary (visited May 15, 2007) <http://www.m-w.com/dictionary/size>. Therefore, the Court interprets “size between about a quarter inch and about four inches” to mean rubber particles ranging in “proportionate dimensions reasonably close to a quarter of an inch to reasonably close to four inches.”

4. "Lip portion sized larger than the first opening" and "the peripheral lip portion projecting beyond the first opening thereof"

A "lip portion sized larger than the first opening" means a portion of the suction cup sized to project beyond the first opening of the housing; and "the peripheral lip portion projecting beyond the first opening thereof" means the peripheral lip portion of the suction cup extending beyond the first opening of the housing.

For both terms, Palmetto contends that "sized larger" and "projecting beyond" should be limited to mean that the outer lip of the suction cup is obviously larger to a "non-expert observer."

There is no intrinsic evidence to support Palmetto's proposed limitation on these two terms. The specification teaches that the purpose of sizing the outer lip larger than the opening is so that the suction cup can properly come into contact with the surface to which it attaches. 420 Patent, col. 6, lines 60-65 (“the lip portion . . . of the elastically resilient material [is] structured to . . . keep[] the peripheral lip from being drawn into the concavity”). There is no basis for limiting how much larger the suction cup lip must be, just that it is sized in such a way that it does not get drawn into the housing. Palmetto attempts a common sense argument that "as a matter of simple physics" the lip portion of the suction cup must be obviously larger than the housing to perform its job. Palmetto's Resp. at 8. Nothing in the intrinsic evidence supports this limitation of an "obvious" size differential; indeed, common sense just as easily suggests that a person practicing the invention could fashion the lip portion behind another structure or so finely calibrate the cooperating or integrated elements such that sizing is not at all obvious to the observer. The court rejects Palmetto's proposed limitation and adopts NPI's construction, which tracks the claim language.

D. Term 5: An antenna, sized to fit within an area defined by a faceplate for an outwardly facing opening of said wallbox (as used in claims 1 and 23).

Lutron contends that Term 5 means "An antenna that is small enough and designed to fit within an area defined by the outer edges of a faceplate designed for use with an electrical wallbox." Control4's original claim construction stated the term means "An antenna, able to fit entirely behind the faceplate for an outwardly facing opening of said wallbox." During this lawsuit, Control4 redesigned its antenna. After doing so, it modified its claim construction to require that the antenna must be incapable of extending beyond the faceplate. Thus, Control4 contends now it means "An antenna designed so that it cannot extend outside the area defined by the outer edges of the faceplate."

As the term itself states, the control device's antenna is "sized" to fit within an area defined by a faceplate for an outwardly
facing opening of said wallbox. Control4 designed its antenna to fit behind the faceplate, but it is capable of being uncoiled to extend beyond the faceplate if needed for better reception.

Originally, Control4's antenna was not a "whip" antenna. Although Control4 contends its original antenna did not infringe Lutron's patent, Control4 states it redesigned its antenna after this lawsuit was commenced to move its antenna even further away from Lutron's patent. In redesigning its antenna, Control4 looked to prior art and incorporated an antenna similar to the one used in the Heath Zenith patent.

The Heath Zenith patent is different from Lutron's because it provides only one-way communication, with no status feedback. Nevertheless, Lutron does refer to this prior art in the background section of its '103 patent. Specifically, Lutron discusses how an antenna that dangles outside the wall is aesthetically displeasing and may be hazardous if it dangles inside of the wall. 52 Control4 argues that by criticizing this antenna configuration, Lutron relinquished the right to claim infringement on any antenna that is capable of dangling below the faceplate. Lutron claims it only criticized antennas that actually dangle, not those that are capable of dangling after modification. Additionally, it argues its reference "was useful to highlight the benefits of" its antenna invention, but Heath Zenith's patent did not need to be distinguished on the basis of an antenna configuration. Consequently, it did not limit the scope of its patent when it criticized Heath Zenith's configuration.

--- Footnotes ---


Notably, the Heath Zenith configuration also had a wire whip antenna that could be unwound to extend beyond the faceplate. 53 By referring to the Heath Zenith patent, Control4 contends that Lutron necessarily included the patent's entire antenna configuration, not just the extended configuration.

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53 Decl. of Kevin W. Bates, Instructions for the Installation of a Heath Zenith Reflex Switch, at Ex. 7, at 12 (docket no. 123).

This disputed issue revolves around disclaimer and notice. Whatever Lutron disclaimed in its patent cannot be reclaimed now due to notice issues. The case law supports the proposition that when the specification of a patent criticizes a prior art, the art that is criticized is excluded from the patent. "Specification" has been used broadly in other cases to include the "Background of the Invention" section. 54

--- Footnotes ---


Here, in the background section, Lutron criticizes the Heath Zenith patent because it allows an antenna to dangle below the faceplate. Consequently, antennas that dangle below the faceplate are not included within the scope of Lutron's patent. Lutron, however, only criticized one aspect of Heath Zenith's patent. It did not criticize its antenna configuration when coiled. Cases cited by Control4 to support its position do not appear to address the particular issue of whether a narrower, disclaimed configuration sweeps within it the broader configuration of a prior art.

In contrast, prosecution disclaimer cases show that disclaimers apply only when "the patentee clearly and unambiguously disclaimed or disavowed the proposed interpretation during the patent's prosecution to obtain claim allowance." 55 In this case, the prosecution history is silent regarding whether Lutron's disclaimer was necessary to obtain claim allowance. Because the Heath Zenith patent is distinguishable on other grounds, it is unlikely that claim allowance was solely
dependent on the disclaimer. Moreover, even if it were a factor, Lutron did not clearly and unambiguously disclaim the entire Heath Zenith configuration. Indeed, nothing in the patent indicates the antenna must be incapable of being modified to extend beyond the faceplate. The Court therefore concludes the term means "An antenna developed so it fits within the outer edges of a faceplate that covers the opening of an electrical wallbox."

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--- End Footnotes ---

3660

D. Back Bar Mass Being Sized to Provide a Significant Mass at its Point of Location to Enhance the Energy Transfer of a Golf Ball Being Struck During the Execution of a Golf Stroke (Claim 1)

The Defendants contend that the subject language should be interpreted to require that the mass be located at the center of percussion. Tr. at 345. This argument is then tied to the argument that "center of gravity" and "center of percussion" are at the same place. The end result would be that the claim would be internally inconsistent. That is, the claim would expressly call for the mass being "offset . . . from . . . the club's center of gravity" yet also require that the mass be placed at the center of percussion, which, per the Defendants' argument, is the same place as the center of gravity. The Defendants' position would render the claims incomprehensible.

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10 Transcript references herein refer to the claim construction hearing held on March 26-27 and April 2 of this year.

--- End Footnotes ---

The Court does not find a locational limitation in the subject phrase that would require the mass to be at the center of gravity.

3661

sized to receive a finger of the user

Again, Plaintiff argues that this term is unambiguous and is readily comprehensible to a finder of fact. Defendants propose the term be defined as: "[O]f a size such that the entire finger of the user is capable of making contact. The entire finger is understood to include the distal, middle, and proximal phalanx."

Defendants cite the prosecution history of the patent in which the patentee claimed that the invention "accommodates the entire finger of the user, allowing for greater leverage and easier opening of the binder." (Plf. Ex. A at 57.) The patentee distinguished the Trussell patent which, according to the patentee, "does not disclose a finger plate that is sized to receive a finger of the user." (Id.)

As discussed above, the patent specifications teach that the release lever includes a thumb or finger plate. ("729 patent at col. 3, ll. 36-37.) The claim itself provides that the finger plate is sized to receive a finger of the user to actuate the release levers. (Id. at col. 5, ll. 2-4.) The only place in which the advantage of this design is discussed is in the prosecution history cited above. The Court agrees that the patent teaches that an advantage to the "729 patent design is a reduction in the size of the ring binder. (See id. at col. 2, ll. 4-7.) On the other hand, the prosecution history emphasizes the leverage advantage in the extended size of the finger plate. However, to define the instant term as proposed by Defendants adds too much detail
and complexity, which are not taught in the specifications or the claim language of the patent.

For the foregoing reasons, the Court construes "sized to receive a finger of the user" as follows:

**Of such a size to allow greater leverage for easier opening of the binder when applying the finger of the user.**

**3662**

Nylon 66 Membranes

A representative product claim of the Pall patent is:

34. A hydrophilic skinless alcohol-insoluble polyamide resin membrane sheet of alcohol-insoluble hydrophobic polyamide resin selected from the group consisting of polyhexamethylene adipamide, polyhexamethylene sebacate, and poly--caprolactam, and capable when completely immersed in water of being wetted through within no more than one second, and reverting when heated to a temperature just below the softening temperature of the membrane to a hydrophobic material which is no longer wetted by water.

Nylon 66 is polyhexamethylene adipamide, named in claim 34. It was not disputed that all of the limitations of claim 34 were met by MSI's nylon 66 membranes, except for the term "skinless," the meaning of which received extensive attention at trial. MSI argued that the plain meaning of "skinless" eliminated the MSI products from infringement, because a photomicrograph showed a "skin" on the MSI membranes. Pall's position was that "skinless" as used in the specification and claims should be understood as a performance characteristic, for a skin is a nonporous layer that impedes filtration.

Claim interpretation is a question of law. Markman v. Westview Instruments, Inc., 52 F.3d 967, 34 U.S.P.Q.2D (BNA) 1321 (Fed. Cir. 1995) (en banc). We review the construction of the claims without deference to that of the district court. Id. at 979, 34 U.S.P.Q.2D (BNA) at 1329 ("Because claim construction is a matter of law, the construction given the claims is reviewed de novo on appeal.") In construing the claims we look to the language of the claims, the specification, and the prosecution history. Id. Extrinsic evidence may also be considered, if needed to assist in determining the meaning or scope of technical terms in the claims. Id. at 980, 34 U.S.P.Q.2D (BNA) at 1330.

At trial both sides presented support for their conflicting positions concerning the term "skinless." Pall presented data showing "bubble point," "flow time," and "KL curve" measurements of the membranes in suit. These measurements were described in the Pall patent specification as tests for determining the presence or absence of a skin on a membrane. The bubble point test measures the pressure applied to a membrane whose pores are filled with water in order to force the water through the pores; the larger the bubble point value, the smaller the pores in the membrane. Flow time is the time required for a certain amount of water to pass through a given area of membrane; the smaller the pores the longer the flow time. The KL curve depicts the flow of water through a membrane at constant pressure; skinless membranes characteristically show an initially level KL curve followed by a sharp rise in the curve as flow commences, whereas KL curves for skinned membranes show a gradual upward-sloping curve. These are generally accepted tests of whether a membrane is skinned or skinless, for a non-porous skin impedes the passage of water through the membrane, and is detected by all three tests. The district court defined "skinless" as a performance characteristic in accordance with the parameters of these tests. We too conclude, based on the specification and the data in evidence, that "skinless" is properly construed as a performance characteristic, and that a surface that does not impede flow is "skinless" as that term is used in the art of filtration membranes.

The district court then applied the construed claims to MSI's membranes. The court found that the MSI membranes had bubble points, flow times, and KL curves characteristic of skinless membranes. The court also observed that MSI's product literature described its membranes as of uniform pore size or having precise porosity, which the court found were necessary characteristics of skinless membranes. The court thus found, on the totality of the evidence, that the MSI membranes did not have a barrier layer that blocked fluid flow, and that the MSI membranes were skinless as the Pall patent used that term. We discern no clear error in this finding.

Literal infringement is found when every limitation of a claim is met in the accused structure. Applying its interpretation of
the term "skinless," which we have confirmed, the district court found that the MSI nylon 66 membranes literally infringed the Pall patent. The judgment of infringement by MSI's nylon 66 membranes is affirmed.

1. "Skull Facial Features"

Hoodlums defines "skull facial features" as "[t]he bones of the face including but not limited to the skull facial features shown in Figures 5 through 9 of the '972 patent." (Doc. 37, Ex. B at 2.) Redtail defines "skull facial features" as the "[p]rominent and distinctive characteristics of the bones underlying the face." (Id.)

The term "skull facial feature" is found in each of the four claims of the '972 patent. In claim 1, the patent language declares that animal skull facial features "include a nose feature and a mouth feature and in which there is an area for receiving a welding helmet lens in the area that would otherwise contain eye facial features." (Doc. 44, Ex. B at 8) (emphasis added). In claims 2, 3, and 4, respectively, the patent language notes that animal skull facial features "include mammalian facial features," "include human facial features," and "include non-human facial features." (Id.) (emphasis added).

The word "include" means the same thing as the word "comprise" or "comprising." Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1344-45 (Fed. Cir. 2003). And when a claim uses an open transition phrase, such as "comprising," the claim's scope may cover additional, unlisted elements. AFG Indus., Inc. v. Cardinal IG Co., 239 F.3d 1239, 1245 (Fed. Cir. 2001). "The claim term 'including' is synonymous with 'comprising,' thereby permitting the inclusion of unnamed components." Hewlett-Packard Co. v. Repeat-O-Type Stencil Mfg. Corp., 123 F.3d 1445, 1451 (Fed. Cir. 1997). In contrast, when a claim uses a closed transition phrase, such as "consisting of," the claim's scope does not include any elements, steps, or traits that were not listed in the claim. AFG Indus., 239 F.3d at 1245.

In the specification, the patent points to Figures 5, 8, and 9, as showing "one embodiment having a human skull shape 34." (Doc. 44, Ex. B at 7.) The language in the specification highlights the "jaw portion" of the skull found in this embodiment. (Id.) When a specification describes a preferred embodiment, the court should construe the patent claims to include that embodiment. See On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH, 386 F.3d 1133, 1138 (Fed. Cir. 2004) ("[A] claim interpretation that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct."). Beyond the embodiments already illustrated in the patent, the specification notes "that modifications and variations may readily occur to those skilled in the art . . ." (Doc. 44, Ex. B at 8.)

Taken together, the term "skull facial features" is inclusive, with references to a nose feature, a mouth feature, and a jaw portion. The specification's reference to the jaw portion indicates any definition should not include a requirement that the characteristics be prominent or distinctive. Under Federal Circuit law, any construction must also allow for the claim to "cover additional, unlisted elements." Finally, the court finds "bones of the face" to be an ordinary and customary meaning of skull, and "pertaining to the face" to be an ordinary and customary meaning of facial. See New Webster's Dictionary and Thesaurus, 144, 356 (1991). "Feature" is defined in the dictionary as "any part of the face," and as "a part of the face." Id. at 147; Shorter Oxford English Dictionary, 935 (5th ed. 2002).

Looking to the claims, the specification, Federal Circuit law, and the dictionary, the court defines "skull facial features," as "pertaining to the bones of the face, including, but not limited to, a mouth feature and a nose feature, as shown in Figures 5 through 9 of the '972 patent."

2. sleeve (claims 1, 17)

Fargo — a substantially cylindrical object that is dimensioned to fit into or attach to the roll core of the print ribbon supply roll
Iris cites a technical dictionary definition of the term "sleeve." Reading the claims and the specification, however, it is clear that Iris's definition is too constricting. The specification states that "the sleeve is preferably substantially cylindrical and includes a tapered end, wherein the sleeve is dimensioned to fit into the roll core of the print ribbon supply roll." (Fink Aff., Ex. B.) Claim 11 includes almost identical language. (Id.) The Court therefore adopts Fargo's definition of this term.

C. Sleeve

Federal's proposed interpretation of the term "sleeve" is that a sleeve is:

"A part, such as a grommet or rubber collar, that fits over the non-pointed end of the spike such that (a) both the spike and the sleeve fit into the hole so that (b) the sleeve is capable of reducing the forces between the spike and the frame. This design reduces potential damage to, or distortion of, the frame as the spike pierces a tire and is removed from the frame during deployment."


Plaintiff PMG does not appear to contest this construction but, rather, argues that Federal has failed to develop evidence that "the sleeve in the Roadspike TM device is used to resist distortion to the shaft, or of any other part of the device (whether a 'frame' or not)." Mem. of Law in Supp. of PMG's Renewed Mot. for Summ. J. at 37. Federal points out that this is an issue pertaining to infringement, the application of the claim language to the Roadspike TM, which is a question of fact. This Court agrees. Therefore, this Court has reviewed the term "sleeve" under the Markman standards and finds that Federal's interpretation is supported by the evidence presented. Therefore, this Court interprets the term "sleeve" as being a part, such as a grommet or rubber collar, that fits over the non-pointed end of the spike such that (a) both the spike and the sleeve fit into the hole so that (b) the sleeve is capable of reducing the forces between the spike and the frame. This design reduces potential damage to, or distortion of, the frame as the spike pierces a tire and is removed from the frame during deployment.

(c) "Sleeve"

Cordis argues that the term "sleeve" should be construed to cover an impervious liner, i.e., one without holes or openings, suitable for isolating the wall of a body vessel from materials that otherwise could come into contact with it. Cordis cites to Alloc, Inc. v. U.S. Int'l Trade Comm'n, 342 F.3d 1361 (Fed. Cir.). The patent claims in Alloc did not mention a "play" or space between the components of the claimed locking joint, and "play" was not part of the dictionary definition of any claim term. Nonetheless, the Federal Circuit construed the claims as requiring "play" because the specification described "the invention" -- not merely a preferred embodiment, but rather, the invention itself -- as a locking joint with "play." Id. at 1368. Moreover, the specification did "not show or suggest any systems without play." Id. at 1370. Under these circumstances, the Federal Circuit construed the claims as requiring "play," even though "play" was not mentioned in the claims. As the Federal Circuit explained (id. at 1370-71):

[The] Court looks to whether the specification refers to a limitation only as a part of less than all possible embodiments or whether the specification read as a whole suggests that the very character of the invention requires the limitation be a part of every embodiment. . . [W]here the specification makes clear at various points that the claimed invention is narrower than the claim language might imply, it is entirely permissible and proper to limit the claims.

See also SciMed Life Ins., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1345 (Fed. Cir. 2001) (discussed with
Throughout the '1,653 Patent specification, Dr. Rockey's invention -- not merely a preferred embodiment, but the invention itself -- is described as a sleeve that isolates a body vessel from material normally flowing into it. This theme starts on the first page of the Patent, when the Patent Abstract summarizes the '1,653 invention as "comprising a sleeve unit . . . to isolate material flowing into the vessel from direct contact with the interior surface of the vessel." (emphasis added). The section of the '1,653 specification entitled "Summary of the Invention" goes on to describe Dr. Rockey's "invention" (again, not merely a preferred embodiment, but the invention itself) in the same fashion: "The invention provides a method and means for isolating the internal walls of hollow viscera or other body vessels from contact with materials, both fluids and solids, occurring naturally, ingested or otherwise introduced into a body vessel." (Summary of the Invention, 1:54-58) (emphasis added). The "Summary of the Invention" further states that the "tissue isolating function of the disclosed sleeve," in addition to control of the mechanism of digestion, has numerous other applications . . ." (Summary of the Invention, 2:33-36). These include using the "sleeve . . . to chemically and/or physically protect tissue which has been ulcerated, herniated, fissured, or the like from natural body fluids," id. at 2:37-40, which can be done by "isolating the effect of normal blood pressure from the vessel by containing it within the sleeve." Id. at 2:42-44. The Summary of the Invention also provides (id. at 1:58-64): "Isolation of a body vessel according to the invention, is achieved by positioning and anchoring a sleeve, impervious to materials sought to be isolated within the vessel . . ." (emphasis added).

Every embodiment described in the Patent is capable of serving this "isolating" function. For example, the "sleeve unit" of the embodiment in Fig. 1, for use in the digestive system, is described as being "implanted in a body vessel in order to isolate the walls of such vessel from fluids normally flowing into it." (Description of the Preferred Embodiment, 4:1-3) (emphasis added). Figure 4 illustrates "a manner of use of the sleeve unit 10 to isolate the internal surface area or lumen, designated 31, of a human stomach 32 and its secretions from food substances passing through it." (Id. at 4:3-7) (emphasis added). The specification further states as to Figure 4 that the sleeve reduces the digestive efficiency of the stomach "by isolating the walls 31 of the stomach 32 from ingested food passing through it . . . ." (Id. at 5:6-8).

The other embodiments of the '1,653 Patent are described in similar terms. For example, an embodiment of the sleeve shown in Figure 8 and intended for use in the aorta, is described as having "a construction essentially the same as the earlier described in sleeve 10." (Ex. 3 at 5:31-32). According to the specification, this permits "blood flowing through the sleeve to be effectively isolated from the vessel." (Id. at 5:55-56) (emphasis added). The remaining embodiment, shown in Figure 9, is described as suitable for use in a body vessel requiring "isolation or like treatment." (Id. at 5:59-61) (emphasis added). The sleeve of this third embodiment has inner and outer walls that are capable of isolating the vessel wall because they are "imperforate" (id. at 6:10-11), and these imperforate walls are "joined in a fluidtight manner . . . ." (Id. at 6:12).

Each of the figures of the '1,653 Patent, and the only sleeves described in the Patent, show a sleeve that can isolate the vessel wall from materials with which it would otherwise come into contact. Indeed, the Patent does not disclose or suggest any embodiment of the sleeve that could not perform this "isolating" function. The term "sleeve" means the type of sleeve that Dr. Rockey described as his invention, i.e., a part that can perform this tissue-isolating function.

AGR's experts take the position that the term "sleeve" should be defined as "a tubular part (such as a hollow axle or bushing) designed to fit over another part." (Webster's Ninth). This definition, however, does not comport with Dr. Rockey's description of his "medical sleeve" in the '1,653 Patent. The definition of "sleeve" that the inventor adopted, implicitly or explicitly, is the one that should be given effect. As the Federal Circuit has held:

[A] claim term may be clearly redefined [in the specification] without an explicit statement of redefinition. Indeed, we have specifically held that the written description of the preferred embodiments 'can provide guidance as to the meaning of the claims, thereby dictating the manner in which the claims are to be construed, even if the guidance is not provided in explicit definitional format.'

Bell Atlantic, 262 F.3d at 1268 (quoting SciMed Life Sys., 242 F.3d at 1344). "In other words, the specification may define claim terms 'by implication' such that the meaning may be 'found in or ascertained by a reading of the patent documents.'" Id. (quoting Vitronics, 90 F.3d at 1584 n.6). See also Invitrogen Corp. v. Biocrest Mfg., L.P., 327 F.3d 1364, 1367 (Fed. Cir. 2003) ("The applicant may also act as his own lexicographer and use the specification to implicitly or explicitly supply new meanings for terms.") (emphasis added); Moba, B.V. v. Diamond Automation, Inc., 325 F.3d 1306, 1313 (Fed. Cir. 2003) (same); Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1374-75 (Fed. Cir. 2003) (basing construction of the term
"automation code" on the use of that term in the specification where dictionary definitions did not provide meaningful guidance on the usage of that term in the patent).

In Bell Atlantic, 262 F.3d 1258, for example, the Federal Circuit held that the patentee implicitly defined the term "mode" so that it had a narrower definition than the ordinary dictionary definition. Although the word "mode" had an ordinary meaning, the Federal Circuit did not end its analysis there. Instead, it went on to examine the specification:

It may be true that the ordinary meaning of the word 'mode' supports a broader meaning than the construction ascertained by the district court. However, we must look at the intrinsic evidence to determine whether the patentee has given the term an unconventional meaning.

Id. at 1269. In construing the claims, the Federal Circuit relied extensively on the patentee's repeated references to the purpose of the invention, including those in the summary of the invention. Id. at 1269-73. Based on the implicit definitions in the specification, the court construed the term "mode" to be limited to the embodiments actually disclosed in the specification and not to the broader ordinary meaning (id. at 1273):

We acknowledge that it is generally impermissible to limit claim terms by a preferred embodiment or inferences drawn from the description of a preferred embodiment. However, that is not the case here. We note that '[t]he usage 'preferred' does not of itself broaden the claims beyond their support in the specification.' Moreover, unlike Johnson Worldwide, this case does not involve the '[v]aried use of a disputed term.' Instead, the patentees defined the term 'mode' by implication, through the term's consistent use throughout the '786 patent specification. Given this definition, the three modes described in the Detailed Description of the Preferred Embodiments describe the three possible modes of the invention, and the claims are not entitled to any broader scope.

The '1,653 specification as a whole is replete with descriptions of Dr. Rockey's "sleeve" as capable of isolating the vessel wall from contact with materials. That definition is one that Dr. Rockey implicitly or explicitly adopted, and it governs. See Bingo Brain, Inc. v. Cal. Concepts, Inc., 2002 U.S. Dist. LEXIS 1209, 2002 WL 99272, at *3-5 (N.D. Ill. 2002), aff'd 53 Fed. Appx. 75 (Fed. Cir. 2002) (court relies on implicit definition in specification to limit claim term "bingo cards" to physical bingo cards and not to include virtual bingo cards); Wang Lab, Inc. v. America Online, Inc., 197 F.3d 1295 (Fed. Cir. 1999) (claim term interpreted more narrowly than its ordinary meaning and limited in accordance with the specification, which described a particular feature as part of the invention); Toro Co. v. White Consol. Indus., Inc., 199 F.3d 1295 (Fed. Cir. 1999) (claim term interpreted in accordance with specification and drawings, which showed a particular structure, did not illustrate or describe any other structure, and described the advantages of the featured structure as important to the invention); Chiron Corp. v. Genentech, Inc., 266 F.Supp.2d 1172, 1198 (E.D. Cal. 2002) (inventor acted as his own lexicographer of "immunoassay" based on the purposes of the patent)

Nevertheless, and contrary to the position adopted by Cordis, Dr. Rockey did not require that the sleeve be completely "impervious." Although he makes several references to the "sleeve" as an "impervious" liner, he does not describe it in such a way in the Abstract section of the Patent specification. As previously mentioned, he does specify in the Abstract that the sleeve unit must isolate material flowing into the vessel from direct contact with the interior surface of the vessel. Although an impervious material would accomplish the "isolating" function, it is conceivable that a device that is not completely impervious could nonetheless isolate some materials from the vessel. Moreover, the term "impervious" is not used to describe all of the preferred embodiments. The critical aspect of Dr. Rockey's invention is the "tissue isolating function," as it is described as the only feasible design in the disclosure. As far as the "shape" of the "sleeve," Dr. Rockey provides that it may be cylindrical, tubular, or "it may take other configurations, such as a frustrum or a sphere truncated adjacent opposite poles, or a tubular elbow of constant and varying diameter." (Description of the Preferred Embodiment, 3:39-44).

AGR relies on the section of the Patent specification that provides that "the sleeve can include a weave or mesh outer layer (not shown) which will lie against and adhere to the wall to the blood vessel." (Description of the Preferred Embodiment, 6:17-21). In this sentence, Dr. Rockey refers to the "outer layer" of the sleeve, which may be made of weave or mesh. Dr. Rockey also writes, however, that "[t]he inner wall 61 may be formed of Teflon so that cells will not readily adhere to this area." (Id.). Accordingly, the sleeve's inner layer performs the isolating function in this embodiment.

AGR does not deny that the specification of the '1,653 Patent describes Dr. Rockey's invention as a sleeve that can isolate the wall of a body vessel from material that otherwise would come into contact with it. Nor does it deny that every
The embodiment in the Patent is capable of performing that isolating function. And AGR cannot point to any different use of the term "sleeve" in the '1,653 Patent. The term "sleeve" accordingly should be given the meaning it has in the specification of Dr. Rockey's Patent.

Because the specification of the '1,653 Patent describes Dr. Rockey's "invention" -- not just a preferred embodiment, but the invention itself, as a sleeve that can isolate the wall of a body vessel from material that otherwise would come into contact with it, the Court will adopt the meaning attributed by Dr. Rockey to his invention. Thus, a "sleeve" refers to a cylinder, tube, frustum or sphere insertable into a body vessel and capable of isolating material normally flowing into the vessel from direct contact with the interior surface of the vessel.

A. "a sleeve"

Recovery asserts that the term "sleeve," based on its generally understood definition, connotes several important limitations. Recovery first argues that a "sleeve" must have two open ends, and that something with only one open end is not a "sleeve" as that term is commonly understood. Specifically, Recovery asserts that the ordinary definition of a sleeve is a tangible object - like a shirt sleeve (the first example given in Webster's Collegiate Dictionary) - that fits over something else. Recovery also notes that the McGraw-Hill Dictionary of Scientific and Technical Terms defines a "sleeve" as a "cylindrical part," with a "cylindrical surface" in turn defined as a shape with no closed ends. Thus, Recovery argues that the ordinary usage of the word "sleeve" refers only to objects with two open ends.

Brita, being the plaintiff in this action, understandably seeks a broader construction of the term "sleeve." Although acknowledging that sleeves may have two open ends, Brita asserts that an object with only one open end can also constitute a sleeve. As examples of sleeves having one closed end, Brita alludes to phonograph or book sleeves, Webster's also defines a "sleeve" as "a tube or tubelike part fitting over or around another part." Taking this a step further, Brita notes that certain forms of tubes - for example, tube socks or test tubes - can also be closed on one end. Thus, Brita contends that the ordinary usage of the word "sleeve" is not limited to objects having two open ends.

Recovery disputes whether the examples cited by Brita are, in fact, ordinary usages of the term "sleeve." For example, Recovery notes that phonograph records are on their way to obsolescence, arguing that usage of the term "sleeve" in this context is no longer ordinary. Similarly, Recovery points out that the term "sleeve" is never used to refer to test tubes or tube socks, and that therefore these purported analogs are also unavailing. Though conceding that the word "sleeve" may be used for objects with a closed end, Recovery contends that these are extraordinary usages of the word which should not color our construction in this case.

As evidenced by the competing definitions cited by Recovery and Brita, it is debatable whether the plain meaning of the word "sleeve" dictates an object with two open ends. The term "sleeve" would seem to primarily apply to objects that have two open ends, but Brita has cited some relatively common examples where it is used to apply to something with only one open end. In such a case, where two competing definitions are arguably plausible for a claim element, the patent's specification should be used to determine how the inventor intended the disputed term to be used. Vitronics, 90 F.3d at 1582. In addition, the Court may also look to the patent's file history for guidance as to the intended meaning of this term.

In this case, the specification clearly contemplates a "sleeve" to be something that is open at both ends; in fact, Brita concedes that there is nothing in the patent showing a close-ended sleeve. Though Brita attempts to argue that the patent's requirement that the sleeve "open downwardly" does not necessarily imply it be open on both ends, the Court is unpersuaded by this distinction. As disclosed in the patent, the sleeve has water flowing in one end and out the other. Furthermore, there are references in the prosecution history - notably to the Zika reference - in which the patentee indicated that his usage of the term "sleeve" implied an object open at both ends. Thus, as used in the '996 patent, the term "sleeve" is something which is open at both ends.

The parties also fight over whether a "sleeve" can be two separate parts or must be a singular structure. This question is an easy one, and thus only a brief analysis is necessary. It is apparently Brita's position that a combination of parts can constitute a "sleeve." This Court, however, finds no support for this position either from the plain meaning of the word or
the patent specification. A "sleeve" is a singular object - that is how Webster's conceives of the term, and that is how the '996 patent uses the term. Brita's position is therefore nothing more than a figment of its imagination, having no basis in the evidence before this Court.

Though the Court finds there to be competing definitions for the term "sleeve," the specification and the prosecution history make clear the inventor intended it to refer to an object with two open ends. Furthermore, the term "sleeve" refers only to singular structures, as no evidence has been presented demonstrating that a sleeve can be a multi-part object. The Court will therefore adopt Recovery's proposed definition of "a sleeve": "a single continuous structure with two open ends that fits over something else."

2. "sleeve . . . having an opening formed therein"

Brita also takes issue with the district court's holding that the term "sleeve" requires a single continuous structure. In particular, Brita asserts that "sleeve" can encompass a structure in which the sleeve is made up of two parts that are not connected to one another. We see no error in the district court's claim construction.

As commonly understood, a sleeve is a continuous structure that fits over and around another structure. This understanding is reflected in various dictionary definitions of the term. See, e.g., Oxford English Dictionary, Vol. XV, 684 (1989 2d ed.) (defining sleeve, inter alia, as "[a] close fitting protective case or cover"). While this structure may be made up of several pieces, these pieces must be affixed to one another to form a single continuous sleeve.

Brita's proffered construction differs from this ordinary understanding of the term "sleeve." Our case law recognizes two situations in which a claim term may be given a meaning other than its ordinary meaning--where the patentee has explicitly defined the claim term differently and where the term chosen deprives the claim of clarity so that the scope of the claim cannot be ascertained. See Johnson Worldwide Assoc., Inc. v. Zebco Corp., 175 F.3d 985, 990, 50 U.S.P.Q.2D (BNA) 1607, 1610 (Fed. Cir. 1999). In this case, the patentees have not defined sleeve differently from its ordinary meaning. To the contrary, throughout the patent, the sleeve is shown as a single continuous structure. See '996 patent, col. 6, ll. 3-7; Figure 4. Furthermore, the term "sleeve" does not render the scope of the claim ambiguous. Thus, the ordinary meaning of "sleeve" controls.

2. Sleeve

As with the cavity element, both parties rest on the arguments in their summary judgment papers. According to Centricut, the 425 patent claims a sleeve, which necessarily separates the emissive insert from the holder at all possible points of contact. 10 Esab counters that: (1) the claimed sleeve need not enclose the emissive insert on all sides to separate it from the holder; and (2) Centricut impermissibly incorporates a "complete encirclement" limitation into the claims from language elsewhere in the specification describing one of the preferred embodiments.

10 Centricut contrasts the sleeve claimed in the 425 patent, which it likens to a top hat, with the analogous feature in the accused electrodes, which it characterizes as a washer and likens to the brim of a top hat. (In the 425 patent, the "brim" of the top hat is called the "annular flange," 425 patent, col. 3, l. 52, and the "stovepipe" portion of the hat is called the "peripheral wall," 425 patent, col. 3, l. 49.)
The electrodes disclosed in claims 1 and 2 have

\[
\text{a sleeve surrounding said emissive insert so as to separate said emissive insert from contact with said holder, said sleeve having a radial thickness of at least about 0.01 inches at said front end} \ldots \text{whereby said sleeve acts to resist movement of the arc attachment point from said insert to said holder.}
\]

425 patent, col. 7, ll. 32-33, 44-46. The electrode disclosed in claim 8 has

\[
\text{a sleeve positioned in said cavity coaxially about said emissive insert, said sleeve having a radial thickness of at least about 0.01 inches at said front end} \ldots \text{whereby said sleeve acts to resist movement of the arc attachment point from said insert to said holder.}
\]

425 patent, col. 8, ll. 47-50, ll. 59-61.

--- Footnotes ---

11 "Encircled" may not be the most apt term to describe a three-dimensional object that is surrounded on all sides, to the extent a circle (as opposed to a sphere) is a two-dimensional geometric figure. Nevertheless, when the court refers to the emissive insert as being "encircled," the intent is to refer to all three dimensions.

--- End Footnotes ---

Nowhere do claims 1, 2, or 8 limit the patented invention to a sleeve that fully surrounds the emissive insert. Rather, the sleeve surrounds the emissive insert (or is positioned about it) by virtue of separating the emissive insert from the holder, for the purpose of resisting movement of the arc from the emissive insert to the holder. Because the arc attachment point is necessarily on the front end of the emissive insert (or, in the case of electrode failure, on the front end of the holder), and because the only dimensions in claims 1, 2, or 8 that pertain to the sleeve specify its radial thickness at the front end, it necessarily follows that the emissive insert is surrounded, within the meaning of the 425 patent, when the sleeve (or other analogous element) has a radial thickness of at least about 0.01 inches and as much depth as is necessary to allow the sleeve to resist the movement of the arc attachment point from the emissive insert to the holder. In other words, the term "sleeve," as used in the 425 patent, includes both long sleeves that run the full length of the emissive insert and short sleeves that run only part of the length of the emissive insert.

The trial court construed "slidably enclosing" in claim 1 of the '311 patent:

1. A guard slidably enclosing a sliding assembly comprising a needle and a winged needle hub . . . .

'311 patent, col. 15, ll. 46-47 (emphasis added). The trial court concluded that this term in claim 1 "requires that the guard substantially contain the needle-assembly at all times." Claim Construction Order, slip op. at 9. Because the Platypus is a "stand-alone guard" without a needle, the trial court granted summary judgment of non-infringement to the defendants on multiple claims. 1 Id., slip op. at 15-19.

--- Footnotes ---

1 The trial court granted a summary judgment of non-infringement on claims 1, 4-9, 12, 19, 20, 22-23 of the '311 patent, and on claims 1, 6, and 7 of the '072 patent.

--- End Footnotes ---

The language and context of the claims support the trial court's construction of "slidably enclosing a sliding assembly."
Again, the trial court read the claim to require that the guard substantially contain the needle-assembly at all times. Claim Construction Order, slip op. at 9. In the first place, claim 1 expressly recites the presence of a needle as part of the sliding assembly. Thus, the claimed "assembly" would not be complete without a needle. The claim also uses the term "enclosing." In the context of an invention "for locking a needle in a shielded position as the needle is removed from a patient," that language suggests constant shielding or covering of the sharp. '311 patent, col. 2, ll. 8-9. The specification reinforces that suggestion:

[T]he guard is folded about its hinge position and locked . . . into a generally cylindrical, folded configuration. Alternatively, the guard may be molded . . . to enclose a sliding hub/needle assembly that has been positioned between the two pieces.

'311 patent, col. 2, ll. 53-58. By emphasizing that the guard is locked in a protective configuration, or molded to enclose the needle assembly, the specification conveys the concept of a permanent cover for the needle. Indeed, the figures in the specification show a completely enclosed, and thus guarded, needle. Figures 15-19 also show the needle hub as permanently housed in the guard. '311 patent, figures 15-19. The trial court also methodically considered and rejected each of DSU's arguments that the term means only generally surrounding the needle and hub. Claim Construction Order, slip. op. 8-15. This court concurs in the district court's analysis.

II

A.1 The issue before us can best be explained by reference to the following diagrams. Figure A is a simplified version of Figure 1 of the '302 patent, which the patent describes as a preferred embodiment. Figure B is a drawing included in Foremost's opening brief, and not challenged by Cold Chain, of the latter's insulated cooler ("the Kool Temp GTS") that Foremost contends infringes the '302 patent.

The district court construed this limitation to require that the cover block be inserted into the coolant cavity in order to "slidably engage" it. See Foremost in Packaging Sys., Inc. v. Cold Chain Techs., Inc., No. SACV 05-24-JVS(MLGx), slip op. at 8-9 (C.D. Cal. June 15, 2006).

II

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[SEE FIGURE A IN ORIGINAL]

Fig. A--Simplified Version of Figure 1 of '302 Patent Fig.

[SEE FIGURE B IN ORIGINAL]

B--Drawing of KoolTemp GTS

The square insulated block in the cover of Figure A contains four horizontal extensions consisting of rectangular blocks. When the cover is placed on the container, these four blocks descend into the four coolant cavities. The question is whether
Claims 9 and 13 require that they so extend.

We agree with the district court that the claims so require. The claims state that when the insulated block "slidably engage[s]" the coolant cavity, the result is that "the coolant and the insulated block together substantially fill [] the coolant cavity." Focusing primarily on the patent words "slidably engage the coolant cavity," Foremost contends that even though the insulated block does not extend down into the coolant cavities, this limitation of the claim is satisfied as long as the insulated block "slidably engages" the coolant cavity.

If the insulated block does not extend down into the coolant cavities, the coolant and the insulated block cannot "together" substantially fill the cavity. In that situation the only way the coolant cavity would be substantially filled would be if the coolant itself performs that function. The insulated block would have no role in that process. The claims, however, require that the two elements of the container perform that filling function "together," not that one of them do so separately.

Our interpretation of these claims rests upon their language. It does not import into the language, as Foremost contends, the preferred embodiment shown in Figure 1 of the patent.

E. Slidably engages (claim 14)/ slidably engaging (claim 21)

Both claims 14 and 21 refer to slidably engages or engaging in describing the connection between the L-shaped connector at the free end of the screen and the movable glass insert. Defendants argue the claims are limited to coupling these parts together in the manner depicted in Figures 8 and 9 of the '998 patent, i.e., sliding them together lengthwise in continuous contact as shown by the directional arrow in Figure 8. Thus, Defendants' argument is that slidably engages/engaging should be defined as "smoothly moving a piece lengthwise in continuous contact with and along the surface of another piece until the pieces interlock." They recognize the specification describes several alternate ways of coupling the free end of the screen to the window insert, but they argue that none of these alternates are described as being "slidably" engaged. Rather, they argue, the specification offers alternatives to slideable engagement, such as using a spline, clamps or adhesives to couple the screen insert to the window insert. Because none of these alternatives are defined as "slidably" engaging the screen insert to the window insert, Defendants argue none of these alternatives is included in the claim language at issue.

Plaintiff, however, contends that Figures 8 and 9 demonstrate how the screen module can be removed and replaced, not how the connecting member on the screen came to be engaged with the retaining feature on the window insert. Plaintiff contends these figures do not require that the screen insert be coupled to the window with a horizontal movement. As to Figures 11A-F, Plaintiff asserts the six different alternative connectors do not suggest any advantage to sliding in a particular direction and there is no mention of any requirement that the engagement be smooth and continuous. The last use of the term "slidably engage" is in the description of Figure 12, which is an alternate door that incorporates a screen module attached to the door as an accessory or add-on. In describing how the free end of the screen can be attached to the sash or window insert, the specification states "[attachment can be effected by any of the previously discussed methods, including using a spline, adhesive, providing attachment clips which slidably engage a portion of the sash of the insert." (‘998 Patent, Col. 7, ll. 6-13.) This reference to "slidably engage" does not require only lengthwise or horizontal sliding.

The Court has reviewed the specification and prosecution history, including the reexamination proceedings, and does not find that the language in claim 14 of "slidably engages" or in claim 21 of "slidably engaging" is limited to "lengthwise" or "horizontal" sliding. The Court recognizes the directional arrow in Figure 8 demonstrates a lengthwise or horizontal sliding movement. And, although the alternatives in the description of Figure 8 could be construed to be excluded from the meaning of "slidably" engaging, the later use of the phrase "slidably engage" in the specification to describe Figure 12 and in reference to using attachment clips does not restrict the word slidably to lengthwise or horizontal sliding.

The Court consulted the Webster's Third New International Dictionary (1981) for the definition of slidably, which is an adverb defined as "capable of sliding or being slid." The Court will adopt Plaintiff's construction of the term "slidably engages" (claim 14) and "slidably engaging" (claim 21), which is "to engage by sliding," because it adds clarity to the unusual term "slidably," and it is consistent with the claim language, specification and prosecution history, which do not restrict sliding to any specific direction.
Both claims 14 and 21 refer to slidably engages or engaging in describing the connection between the L-shaped connector at the free end of the screen and the movable glass insert. Defendants' proposed construction is:

[T]he "elongated engagement feature" slides into and thereby engages the "elongated connection region" by sliding in the direction of their respective elongations, i.e., lengthwise from one end to the other. In embodiments where the roll of screen is disposed horizontally adjacent the door header, the direction of the sliding is from side-to-side.

Plaintiff's proposed construction is: to engage by sliding. Defendants contend the Court should reject Plaintiff's proposed construction for "slidably engage" for at least four reasons: (1) Plaintiff's arguments based upon the prosecution history of the reexamination proceeding is refuted by Examiner Johnson in the '039 Continuation Application; (2) it is inconsistent with the teachings in the specification of the '998 Patent; (3) it relies heavily on extrinsic expert testimony that should be discounted by the Court; and (4) it is inconsistent with the doctrine of claim differentiation.

The Court does not find the prosecution history of the '998 Patent, including the reexamination, to be instructive regarding the construction that should be given to the term slidably engages or engaging in claims 14 and 21. The focus during the reexamination proceeding was on whether U.S. Patent No. 3,244,222 to Johnson ("the Johnson Patent") taught the edge frame extended into the fabric track between facing weather stripping, not on how the free end of the screen was coupled to the window insert.

As to the specification, Defendants argue the claims are limited to coupling the free end of the screen to the window sash or insert in the manner depicted in Figures 8 and 9 of the '998 patent, i.e., sliding them together lengthwise in continuous contact until engaged as shown by the directional arrow in Figure 8 and as stated in Column 6 explaining Figures 8 and 11. They recognize the specification describes several alternate ways of coupling the free end of the screen to the window insert, but they argue that none of these alternates are described as being "slidably" engaged. Rather, they argue, the specification offers alternatives to slidable engagement, such as using a spline, clamps or adhesives to couple the screen insert to the window insert. Because none of these alternatives are defined as "slidably" engaging the screen insert to the window insert, Defendants argue none of these alternatives is included in the claim language at issue.

Plaintiff, however, contends that Figures 8 and 9 demonstrate how the screen module can be removed and replaced, not how the connecting member on the screen came to be engaged with the retaining feature on the window insert. Plaintiff contends these figures do not require that the screen insert be coupled to the window with a horizontal movement. As to Figures 11A-F, Plaintiff asserts the six different alternative connectors do not suggest any advantage to sliding in a particular direction. The last use of the term "slidably engage" in the written description is in the description of Figure 12, which is an alternate door that incorporates a screen module attached to the door as an accessory or add-on. In describing how the free end of the screen can be attached to the sash or window insert, the specification states "[a]ttachment can be effected by any of the previously discussed methods, including using a spline, adhesive, providing attachment clips which slidably engage a portion of the sash of the insert." (‘998 Patent, Col. 7, ll. 6-13.) This reference to "slidably engage" does not require only lengthwise or lateral sliding.

The Court has reviewed the specification and prosecution history, including the reexamination proceedings, and does not find that the language in claim 14 of "slidably engages" or in claim 21 of "slidably engaging" is limited to "lengthwise" or "lateral" sliding. The Court recognizes the directional arrow in Figure 8 demonstrates a lengthwise or lateral sliding movement. And, although the alternatives in the description of Figure 8 could be construed to be excluded from the meaning of "slidably" engaging, the later use of the phrase "slidably engage" in the specification to describe Figure 12 and in reference to using attachment clips does not restrict the word slidably to lengthwise or lateral sliding.

The Court has not relied on Plaintiff's expert's testimony, but the Court consulted the Webster's Third New International Dictionary (1981) for the definition of slidably, which is an adverb defined as "capable of sliding or being slid."
Defendants argue that under the doctrine of claim differentiation, Plaintiff has always intended that "slidably engages" should be limited to what is illustrated in Figure 8 of the '998 Patent. They assert that throughout the prosecution history Plaintiff started with a broad term in the independent claims, such as "coupled" or "removably coupled," to describe the connection between the free end of the screen and the window insert, and then included the narrowing limitation of "slidably engages" in the dependent claims to describe this connection.

Claim differentiation in its most specific sense, "refers to the presumption that an independent claim should not be construed as requiring a limitation added by a dependent claim." Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380 (Fed.Cir. 2006) (citing Nazomi Commc'ns, Inc. v. Arm Holdings, PLC., 403 F.3d 1364, 1370 (Fed.Cir. 2005) ("[C]laim differentiation 'normally means that limitations stated in dependent claims are not to be read into the independent claim from which they depend.'"). In a more general sense, the Federal Circuit has characterized claim differentiation as the "'presumption that each claim in a patent has a different scope.'" Id. (quoting Versa Corp. v. Ag-Bag Int'l Ltd., 392 F.3d 1325, 1330 (Fed.Cir. 2004)).

In this case, both of the independent claims at issue refer to "slidably" engages or engaging and there is no relevant limitation to that claim language added by a dependent claim. Thus, claim differentiation does not assist the Court in its most specific sense in construing the claims in the '998 Patent. Even if claim differentiation applies in this case in the more general sense, the Court does not find that the two independent claims at issue have a different scope regarding "slidably" engages or engaging. Neither of the claims require the sliding to be in any particular direction. Moreover, as discussed above, the Court does not find that the specification or prosecution history restricts the term "slidably" to any specific direction in either claim 14 or 21.

For the reasons set forth above, the Court rejects Defendants' strained and narrow construction of the phrase slidably engages or engaging. The Court will adopt Plaintiff's construction of the term "slidably engages" (claim 14) and "slidably engaging" (claim 21), which is "to engage by sliding," because it adds clarity to the unusual term "slidably," and it is consistent with the claim language, specification and prosecution history, which do not restrict sliding to any specific direction.

5. nib slidably located in said passageway

The term "nib slidably located in said passageway" appears in claim 1 and claim 12. Chip-Mender argues that this term means "slideable nib located in said channel." Sherwin-Williams argues that it means "a rod-shaped structure that moves longitudinally and not rotationally, which may or may not operate in conjunction with a valve and which may or may not be a unitary part."

Chip-Mender asserts that the term should be construed using the ordinary meaning of the words. Chip-Mender contends that its proposed construction is consistent with the claims, the specification, and the prosecution history of the '299 patent.

Sherwin-Williams claims that Chip-Mender is attempting to narrow the scope of the claims by excluding any passageway that operates in conjunction with, or as, a valve. Sherwin-Williams contends that the claims do not exclude a valve in the passageway, and furthermore, that the specification shows that the nib located in the passageway operates as a "flow-restricting valve."

Sherwin-Williams also argues that figure 2 from the '299 patent is "essentially a copy" of figure 8 from U.S. Patent No. 4,812,071 ("the '071 patent" or "Batra"--a patent for a "Correction Fluid Pen," cited by Russo in the '299 patent as prior art). He notes that the '071 patent explains that the pressing of the applicator against the page to be corrected "helps constrict any additional flow of fluid through orifice 133 to avoid the discharge of too much fluid." Citing Kumar, 351 F.3d at 1368, Sherwin-Williams contends that the '071 patent is intrinsic evidence. Sherwin-Williams suggests that since '071 patent specification applies to the functioning of a "valve," and since it is similar to the description of the functioning of the invention disclosed in the '299 patent, a person skilled in the art would not read the claim language to exclude a valve structure in the passageway of the '299 patent.
Sherwin-Williams also argues that "slidably located" excludes spherical nibs. Sherwin-Williams asserts that Chip-Mender's '663 patent—the continuation-in-part patent—removed the term "slidably" to broaden the claim language, added new disclosure describing a nib that may be "cylindrical, conical, spherical, or any suitable shape." Sherwin-Williams argues that the effect of this broadening only after describing a spherical nib proves that "slidably located" in the '299 patent excludes such spherical nibs.

The court finds that "nib slidably located in said passageway" means "slidable nib located in said channel." "Slidably located" in the passageway means that the nib is located or positioned in the passageway or channel, and that it moves, or "slides," within the passageway. The court finds no indication in the claims, the specification, or the prosecution history that any meaning other than the ordinary meaning should apply.

Although Sherwin-Williams previously argued that a nib is "a small projecting point," it now attempts to add limitations ("rod-shaped structure that moves longitudinally and not rotationally" and "which may or may not operate in conjunction with a valve," and "which may or may not be a unitary part"). As discussed above, the usage of "nib" and "passageway" in the claims and specification shows that those terms require no construction beyond their ordinary dictionary definitions. The specification indicates that the nib operates as "a regulator of the flow rate of paint composition." '299 patent, col. 2, ll. 10-12. However, apart from Russo's mention of the '071 patent as prior art (one of three "fluid pen devices using nibs"), there is no other support in the claims, the specification, or the prosecution history for the addition of limitations regarding the nib operating "in conjunction with a valve," or possibly being a "unitary part."

Finally, with regard to the '071 patent reference, the court is not persuaded by Sherwin-Williams' argument. As noted above, Kumar found a prior art reference cited during the prosecution history of the patent at issue to be controlling, on the grounds that the applicant and the examiner considered the reference to be highly pertinent, and that the reference was discussed extensively and distinguished during the prosecution of the patent. See 351 F.3d at 1368. As with the Hori, Suzuki, and Bishop references, there is no indication in the prosecution history that Russo discussed the Batra reference extensively during the prosecution of the '299 patent or that Russo embraced that reference as applying specifically to the claims at issue.

MBO contends that the term "slidably receiving," which is part of the claim limitation "providing a body slidably receiving the needle," should be interpreted according to its plain meaning, i.e., a body which fits around and slides along the needle. MBO calls my attention to the following language of the specification: "The safety and guard assembly 80 in FIGS. 3 and 4 carrying needle 40 . . . includes a needle shielding or guide body 82 having an opening shown as a bore extending from port means in its front surface or distal end 84 to proximal end 86 within which needle 40 is slidably received." 885 patent, col. 5, ll. 31-37. MBO recites several dictionary definitions of the terms "slide" and "receive," and concludes that nothing in these definitions mandates withdrawal or retraction of the needle into the body. According to MBO, the "slidably receiving" claim limitation encompasses any movement of the body sliding over the needle in any direction.

MBO further insists that nowhere in the specification of the 885 patent is the needle retraction emphasized or referred to as the critical feature of the invention. MBO maintains that the specification never disclaims or disavows forward motion of the body to cover the tip of the needle. MBO emphasizes that its use of the terms "retraction" and "rearwardly," in describing the preferred embodiment for the invention, is not enough to read the "retraction" limitation into all the claims, especially into the reissue claims 27, 28, 32, and 33. MBO contends that its statements during prosecution of the 699 patent did not limit the scope of its claims to retraction.

Becton explains that, the claim language, the specification, and MBO's statements to the patent examiner during the prosecution of the 699 patent support the proposition that the term "slidably receiving" should be interpreted to mean the retraction of the needle into the body. Tr. 1:72:17 -- 1:76:18. Specifically, Becton argues that MBO's original patent application, relied on for the benefit of priority, as well as the specification of the 885 patent, clearly indicated that the following three elements are crucial to the invention: (1) immediate blocking of the needle tip (2) by an imperforate flange adjacent to the front surface of the body (3) on retraction of the needle into the body. Accordingly, Becton insists that claims
The disputed term is part of the following clause: "providing a body slidably receiving the needle and having a front surface through which the needle extends for use and is retracted into the body after use." It is clear from the context, that the term "slidably receiving," connotes a stationary body through which a movable needle extended for use and retracted after use.

That interpretation is confirmed by the specification. The preferred embodiment set forth in the specification contemplates the retraction of the needle into the body. The specification explains, in relevant part:

As similarly taught in [the 655 patent,] safe needle withdrawal from the donor's . . . blood vessel is effected by holding the needly shielding body 82 stationary adjacent the needle skin entry point and with wings 88 relaxed to remove lugs 102 outwardly from behind lug 104. Thereupon, as shown in FIG. 6A, the base section 44 (or the tubing 48 thereat) is pulled in a proximal direction while needle guide body 82 is stationary thereby causing needle 40 to slide rearwardly in the proximal direction through the guideway thereof in body 82.

885 patent, col. 6, ll. 46-55. While generally the preferred embodiment does not limit a claim, in this case, it is clear that MBO "intended for the claims and the embodiments in the specification to be strictly coextensive." Phillips, 415 F.3d 1303, 2005 WL 1620331, at * 16.

This case is similar to Alloc, Inc. v. ITC, 342 F.3d 1361 (Fed. Cir. 2003). In Alloc, after the patentee's claims were allowed, it added new claims that were substantially identical to the allowed claims, except without a particular limitation (the term "play"), to the final application. 342 F.3d at 1372 (explaining that the applicant never "retracted or modified the representations that secured allowance of the original claims"). In construing the claims narrowly to include the "play limitation," the court considered the specification and the prosecution history of the entire line of patent applications. Alloc, 342 F.3d at 1368 (noting that the court must "immerse[] itself in the specification, the prior art, and other evidence, such as the understanding of skilled artisans at the time of invention, to discern the context and normal usage of the words in the patent claim").

The Alloc court read into all the claims the limitations contained in the descriptions of the invention found in the section titled "Technical Problems and Objects of the Invention," which is substantially equivalent to the "Summary of the Invention" section of the 885 patent. Id. at 1369 (concluding that the specification taught that the invention as a whole, not merely a preferred embodiment, provided for "play" in the positioning of floor panels); see also 37 C.F.R. § 1.73 (mandating that the summary of the invention, "be commensurate with the invention as claimed"). The Alloc court further emphasized that "all the figures and embodiments disclosed in the asserted patents impl[ied the existence of the play limitation] or expressly disclosed [the limitation]." 342 F.3d at 1370. The court also noted that the applicants criticized prior art that did not contain the limitation, represented to the PTO that the limitation is important to the invention, and sought to distinguish the invention from the prior art based on the existence of the limitation. Alloc, 342 F.3d at 1371. In light of all the factors set forth above, the court incorporated the "play" limitation into all the claims of the patent. Id. at 1371-72 (explaining that "because the applicant invoked play to overcome the prior art, [it] cannot now contend that the [patent-in-suit] claims [the invention] without play").

In this case, the language of the specification and MBO's assertions throughout the prosecution history make clear that MBO intended that the preferred embodiment be coextensive with the claims. Phillips, 415 F.3d 1303, 2005 WL 1620331, at * 16. The abstract of the invention, the drawings of the 885 patent, and the written description portion of the specification are all directed to retraction. 885 patent, abstract; col. 3, ll. 4-5; col. 6, ll. 46-67; col. 8, ll. 13-16. In addition, as explained more fully above, during the prosecution of the 699 patent, MBO repeatedly represented that its device encompassed a needle that retracted into the guard. MBO contended that its invention would significantly decrease or eliminate the possibility of accidental needlestick injury by retracting the needle into the guard simultaneously with the needle's withdrawal from the patient. MBO also sought to distinguish its invention from Bayless and Smith by pointing out, inter alia, that both Bayless and Smith disclosed stationary needles and movable safety means, whereas its invention disclosed a movable needle. Becton Exh. 13 p.4; Exh. 19, p. 5. See Tr. 1:72:17 -- 1:76:18. MBO, thus, effectively disclaimed any device that has a stationary needle with a guard extending forward over the needle. Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1304 (Fed. Cir. 1997) (explaining that statements made by the applicant "to induce a patent grant" limit the interpretation of the disputed claims "so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in
order to obtain claim allowance” [internal citations omitted]; emphasizing that, by “distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover, [and, accordingly] he is by implication surrendering such protection”). It would be improper therefore to construe the disputed claim language to encompass what MBO had "expressly disclaimed" during the prosecution of the 699 patent. SciMedLife Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1341-43 (Fed. Cir. 2001) (emphasizing that, where the applicants "discussed the disadvantages of certain prior art structures," the court should not read the claims "so broadly as to encompass the distinguished prior art").

I conclude that, in light of the language of the claim, the specification, and MBO's assertions during the prosecution of the 669 patent, the term "slidably receiving" (as well as the terms "relative movement" and "relatively moved" found in other claims) should be construed to refer to a stationary body into which the movable needle retracts. See, e.g., Alloc, 342 F.3d at 1368-72.

The phrase "slideably supported on the truck trailer" means "the bows are adapted for smooth and continuous movement along a surface on the truck trailer, which supports the bows."

Sliding Interface

The parties dispute whether "sliding interface" as used in Claims 1 and 23 of the 551 Patent is limited to things "axially aligned" and "laterally contacting." Claims 1 and 23 do not define "sliding interface," but the dictionary defines "slide" as "to move smoothly along a surface" and "interface" as "a surface forming a common boundary of two bodies, spaces, or phases." MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 609, 1101 (10th ed. 2001). Thus, RTI's proposed definition, "a common boundary between two surfaces that can move along in smooth, continuous contact," appears to match the plain and ordinary meaning of "sliding interface." However, NMT argues that RTI's proposed definition is too expansive and that based on intrinsic evidence "sliding interface" properly means "the axially aligned, frictional contact area between laterally contacting surfaces of the needle holding member and the release element." To overcome "sliding interface's" ordinary and plain meaning, NMT must direct the court to "words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." Teleflex, Inc. v. Ficosa North America Corp., 299 F.3d 1313, 1327 (Fed. Cir. 2002).

NMT argues that the specification explicitly "defines" the term "sliding interface" as having "laterally facing" surfaces. NMT cites the Summary of the Invention stating "the needle holding member … has … a head portion with laterally facing surface which frictionally engages a cooperating surface on the coupled retainer member which defines the sliding interface." Defs' Markman Brief on U.S. Patent No. 5,385,551, p.10-11 (citing 551 Patent, col. 4, Ins. 56-61). NMT claims that the patentee manifestly limited "sliding interface" to something with a "laterally facing surface" by using the word "defines" in the specification.

The Court disagrees with NMT's reading of the 551 Patent specification because NMT's quoted language describes only a preferred embodiment. NMT's ellipses omit the word "preferably" from the quoted sentence. The Summary of the Invention actually declares "the needle holding member is preferably cylindrically T-shaped, having a stem portion serving as a guide for the biasing spring, and a head portion with laterally facing surface which frictionally engages a cooperating surface on the coupled retainer member which defines the sliding interface." 551 Patent, col. 4, Ins. 56-61 (emphasis added). The language following the word "having" in the previously cited sentence describes the preferred "cylindrically T-shaped" embodiment. Thus, NMT improperly asks this Court to limit the 551 Patent to a preferred embodiment. Teleflex, Inc., 299 F.3d at 1327.

NMT also argues that language from dependent Claims 5 and 8 require the "sliding interface" to have "laterally contacting surfaces." Claims 5 and 8 are both dependent on disputed Claim 1 of the 551 Patent. Claim 5 claims in relevant part "the
medical device of claim 4 [dependent on Claim 1] characterized in that the needle holding member has a head portion … having a laterally facing surface which frictionally engages the coupled retainer member and defines said sliding interface."

551 Patent, Col. 16, Ins. 5-10. Claim 8 claims in relevant part "the medical device of claim 7 [dependent on Claim 1] characterized in that … said needle holder is smaller than said internal opening such that a portion of said retainer member extends laterally inwardly, below said stop member, to the sliding interface where it is coupled to the needle member to expose a generally transverse surface." Because these two dependent claims describe a "laterally facing surface." NMT argues that the patentee limited the "sliding interface" in all claims to something with a laterally facing surface."

The Court rejects NMT's attempt to import limitations from dependent claims into independent claims. The doctrine of claim differentiation creates a presumption that different claims have different scopes. Sunrace Roots Enter. Co., LTD v. SRAM Corp., 336 F.3d 1298, 1303 (Fed. Cir. 2003); Kraft Foods, Inc. v. Inter Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000). Although the presumption applies to all claims, it is particularly strong where the limitation under consideration is the only meaningful difference between the independent and dependent claim and a party argues that the limitation in the dependent claim should be read into the independent claim. See Sunrace Roots Enter. Co., LTD, 336 F.3d at 1303. Although the "laterally facing surface" limitation is not the only difference between Claim 1 and Claims 5 and 8, claim differentiation does create a presumption that the patentee chose to not include the "laterally facing surface" limitation in Claim 1 (and Claim 23) for a reason. Against this presumption, NMT points only to one preferred embodiment. As discussed supra, that preferred embodiment does not express a manifest intent to limit claim scope. Thus, the Court will not limit "sliding interface" to only things with "laterally facing surface[s]."

The Court further finds no need to import NMT's "axially aligned" limitation into the term "sliding interface." Compared with the somewhat ambiguous term "axially aligned," 8 disputed Claims 1 and 23 plainly describe the direction in which the "sliding interface" is oriented. For instance, Claim 1's description of "a sliding interface oriented in the direction of retraction" unambiguously tells the reader that the interface will slide in the "direction of retraction." Furthermore, the term "axial" already exists in Claim 23. Claim 23 declares that "the needle holder is selectively released by gradual reduction of the sliding interface caused by sliding axial movement of the retainer member ." 551 Patent, col. 18, Ins. 42-45. Thus, any limitation on the direction the "sliding interface" moves is included in the term "sliding axial movement." The Court interprets "sliding axial movement" infra, and finds that incorporating an "axial" limitation into "sliding interface" in Claim 23 would be redundant. Simply stated, because disputed Claims 1 and 23 describe the direction in which the "sliding interface" moves, incorporating the term "axially aligned" into "sliding interface" would be redundant and unnecessarily confusing. See United States Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997) ("Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in determination of infringement. It is not an obligatory exercise in redundancy.").

8 The Court describes "axially aligned" as ambiguous because NMT never informs the Court exactly what it intends that term to mean. The Court can envision different circumstances where "axially aligned" would either mean "oriented exactly parallel with an axis" or "oriented generally in the direction of an axis." Thus, adopting NMT's proposed definition would place unclear limitations on the claim scope. Furthermore, a proposed claim construction that is unclear to the Court after briefing cannot be a construction that would assist the jury in determining claim infringement.9 551 Patent, col. 15, Ins. 40-42.

In sum, the Court adopts RTI's proposed construction and finds that "sliding interface" means "a common boundary between two surfaces that can move along in smooth, continuous contact." RTI's definition parallels the term's plain and ordinary meaning. Moreover, NMT's proposed definition incorporates limitations that the claims and specification do not required and which would be unnecessarily confusing and redundant.
Initially, the Special Master notes that consistent with the parties' briefing and the Preliminary Markman, the term "slight misalignment" is shorthand for the wherein clause of Claim 3:

wherein at least one of said first and second lens arrays is rotated about an axis perpendicular to said liquid crystal panel in order to provide a slight misalignment between said lenslets and said liquid crystal panel.

In the Preliminary Markman, the Court construed "slight misalignment" as:

a misalignment of typically 2-16 degrees between an axis of the lens array and an axis of the pixel arrangement causing moire effects.

(D.I. 500 at 37). The dispute between the parties regarding the Court's construction centers on to the scope of "typically 2-16 degrees."

1. Hard Limits Should Not Be Part of the Construction of "Slight Misalignment"

The Special Master concludes that hard limits should not be part of the construction of "slight misalignment."

A claim element claimed in general descriptive words, like "slight," is not ordinarily limited to the specific numerical range described in the specification. Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551 (Fed. Cir. 1996) (citing Specialty Composites v. Cabot Corp., 845 F.2d 981, 987 (Fed. Cir. 1988)) ("Particular embodiments appearing in the specification will not generally be read into the claims. What is patented is not restricted to the examples, but is defined by the words in the claims."). To include the hard limit of not less than 2 degrees and not more than 16 degrees would, in the Special Master's view, impermissibly read the preferred embodiment of the invention into the construction of "slight misalignment". Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004) ("Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction."). See also, Brassica Protection Products LLC v. Sunrise Farms (In re Cruciferous Sprout Litig.), 301 F.3d 1343, 1348 (Fed. Cir. 2002) (declining to construe a claim term with specific numerical limits when, among other reasons, the patent included no indication that the claim term should be so limited); Conoco, Inc. v. Energy & Envtl. Int'l, L.C., 460 F.3d 1349, 1358 (Fed. Cir. 2006) (declining to limit the term to a specific numerical limit when the language was only in the preferred embodiment and not used to limit the claim); Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1249 (Fed. Cir. 1998) ("when a claim term is expressed in general descriptive words, a court will not ordinarily limit the term to a numerical range that may appear in the written description in other claims."). It follows, a fortiori, that reading the phrase "a few degrees" into the construction is likewise improper because this language incorporates into the claim a limitation related to the preferred embodiment taught in the specification ("[t]his rotation of the lens array by a few degrees (Typically 2 to 16 degrees) from the horizontal axis…."). '371 Patent, Col. 5, ll. 23-25 (emphasis added).

The Special Master recognizes that in some cases the preferred embodiment may describe the invention itself such that the claims are not entitled to a scope broader than that embodiment. Modine 75 F.3d at 1551. In the Special Master's view, this is not the case in the patent at issue because there is nothing in the specification or drawings that demonstrates the inventors' intent to restrict the rotation to specifically 2 to 16 degrees. In point of fact, the description of the rotation as "[t]ypically 2 to 16 degrees," and the illustration as approximately 2 to 16 degrees ("[theta] [approximately equal to] 2[degrees] TO 16[degrees]") in Figure 12, demonstrates that the rotation is broader than the range of not less than 2 and not more than 16 degrees. The use of the word "typically" and the symbol for "approximately," in the Special Master's view, confirms that the inventors contemplated a range outside of not less than 2 and not more than 16 degrees. Furthermore, the Customer Defendants have pointed to nothing in the prosecution history suggesting that the inventors intended to limit the invention to strictly 2 to 16 degrees of rotation. Accordingly, the Special Master declines to adopt the Customer Defendants' proposed construction that the rotation must be limited to not less than 2 and not more than 16 degrees, or other words to that effect.

The terms "small" and "about," advanced by the Customer Defendants at the Hearing, are, in the Special Master's view, no less problematic. 8 (4/27/2009 Tr. at 86:13-17). The Special Master agrees with Honeywell that the term "small" simply replaces one relative term for another. Additionally, the term "about" is synonymous with the term "approximately" in that they both mean "close to." 9 See, e.g., American Heritage Dictionary. Thus, the use of the term "about" in the construction would effectively impermissibly read in the preferred embodiment of [theta] [approximately equal to] (approximately)
2[degrees] TO 16[degrees].

--- Footnotes ---

8 The Customer Defendants' specific proposal is "a small misalignment of about 2-16 degrees between an axis of the lens array and an axis of the pixel arrangement causing moire effects due to the structure of the display." (4/27/2009 Tr. at 86:13-17).

9 The Special Master expects the same conclusion is applicable by replacing the term "typically" with "approximately" or "about.

--- End Footnotes ---

Similarly, the Special Master agrees with the Customer Defendants that the use of the term "typically," with the hard limit of between 2 to 16 degrees, creates uncertainty regarding atypical scenarios. Further, the Special Master is mindful that the term "typically" is a term of frequency and not measurement and therefore does complement the term "misalignment." Furthermore, "typically 2-6 degrees" provides no numerical limit on the construction of "slight misalignment," thus, in the Special Master's view, rendering it superfluous. Accordingly, because "typically 2-16 degrees" does not bind the construction and is potentially confusing, the Special Master concludes it should not be part of the construction.

2. "Slight Misalignment" Should be Construed Functionally

The Special Master concludes that "slight misalignment" should be read functionally.

The Special Master considers the Federal Circuit's opinion in Innovad as being particularly instructive. Innovad, Inc. v. Microsoft Corp., 260 F.3d 1326 (Fed. Cir. 2001). In Innovad, the relevant claim related to a telephone dialer system that included "a case having at least one surface for substantially enclosing a small volume." Id. at 1329. The lower court construed "small volume" as smaller than the prior art dialer unit which had a 4.4 cubic inch volume. Id. at 1330. The Federal Circuit rejected the lower court's construction and focused instead on the fact that the specification equated the dialer's size with its function: "[t]he dialer unit has no keypad, it is much smaller than existing repertory dialers and thus more portable and suitable for specialty advertising purposes." Id. at 1332-1333. Because the specification did not provide a specialized meaning for the term "small volume," the Federal Circuit construed the term functionally -- that is with respect to the dialer's function of being "comfortably portable," concluding that "'small volume' does not limit the dialer to a particular size as long as it performs its function." Id.

Interpreting "slight misalignment" in terms of the function of the rotation is, in the Special Master's view, consistent with both the claim language and the specification. Claim 3 recites a relationship between the rotation and the slight misalignment ("rotated … in order to provide a slight misalignment"). '371 Patent Col. 5 ll. 39-42. The specification explains a similar relationship between rotation and moire effect, that is the rotation of the lens array with respect to the LCD panel results in the elimination of residual moire. '371 Patent, Col. 5, ll. 24-25. Thus, the claim language read in the context of the specification per Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005), links "slight misalignment" in the claim to the elimination of residual moire in the specification.

The Special Master rejects the Customer Defendants' argument that the claim must specifically recite a functional limitation related to eliminating the residual moire effect, whether as a means-plus-function or otherwise, in order to interpret the claim functionally. In the Special Master's view, such a requirement is contrary to Innovad, in which no such functional limitations were recited in the relevant claims. Innovad, 260 F.3d at 1332-33.

In reaching these conclusions, the Special Master also rejects the Customer Defendants' reliance on Sinorgchem Co. v. United States Int'l Trade Comm'n, 511 F.3d 1132 (Fed. Cir. 2007), for the dual proposition that "slight misalignment" should (i) not be construed functionally; and (ii) should be construed by using a numerically precise range. In Sinorgchem, the Federal Circuit construed "controlled amount" using a numerical limitation, specifically, processes that use "up to about 4% H[2]O." Id. at 1140. This construction was based on a special definition of "controlled amount" found in the specification, indicating the patentee was its own lexicographer. Id. at 1136. It is clear that the Federal Circuit was also influenced by the fact that the phrase "controlled amount" was set off by quotation marks in the specification indicating that what followed
was a definition. Id. Concluding that because the definition of "controlled amount" only encompassed processes using at most 4% water, the Federal Circuit ruled that the Sinorgchem's process, which always used more than 10% water, did not literally infringe. Id. at 1140-1141.

Unlike Sinorgchem, the term "slight misalignment" appears nowhere in the specification of the '371 patent. The Customer Defendants are, therefore, unable to point to a special definition for "slight misalignment" in the specification. Instead, the Customer Defendants argue that the rotation is defined as a "few degrees (typically 2 to 6 degrees)." (D.I. 618 at 2). While the Special Master agrees that there is an obvious relationship between the rotation of the lens array and the slight misalignment as described in the specification and claimed, that relationship, in the Special Master's view, does not amount to a special definition demonstrating that the inventors were acting as their own lexicographer in defining "slight misalignment." Therefore, in the Special Master's view, Sinorgchem is inapposite.

The only alternative to reading "slight misalignment" functionally is to accept the Customer Defendants' argument advanced at the Hearing, to construe the term structurally. The Special Master concludes that a structural construction would have the same problems as incorporating a hard limit. Indeed, a structural construction would necessarily require interpreting "slight" as a numerical range rather than as a function of eliminating residual moire. And as discussed at section 1 supra, incorporation of a numerical range into the construction is generally disfavored and would improperly include the preferred embodiment.

3. The Reference Axis is Relative to the Edges of the LCD Panel

The Special Master concludes that the '371 patent is not limited to only vertical luminance tailoring, and therefore, the rotation of the lens arrays should likewise not be limited to measurements from only the horizontal axis. (D.I. 500 at 36).

In the Preliminary Markman, the Court cited language from the specification, which was illustrative that the lens arrays are not limited to the vertical viewing angle. (D.I. 500 at 13). Accordingly, the Court concluded that the lens arrays may be oriented either vertically or horizontally, depending on the preferred viewing angle. Although Figure 12 depicts a rotation as measured from the horizontal axis of the LCD panel, in the Special Master's view, Figure 12 is only an example demonstrating the general concept of rotation to eliminate moire. Astra Aktiebolag v. Andrx Pharms., Inc. (In re Omeprazole Patent Litig.), 483 F.3d 1364, 1372 (Fed. Cir. 2007) ("Absent some clear intent to the contrary, this court does not import examples from the specification into the claims.") Given the lens arrays may be vertically or horizontally oriented, the Special Master concludes the rotation of a lens array can be measured from either the horizontal and/or vertical axes of the LCD panel, that is from the edges of the LCD panel.

The patent does not, however, teach rotating the lens arrays with respect to a diagonal axis of the LCD panel. Indeed, Honeywell's own expert has never seen a diagonal axis of an LCD panel that caused moire. (Deposition of Ian Lewin, March 5, 2008 51:16 - 52:21 and 55:4-8 (attached as Exhibit 18 to D.I. 1017 in C.A. 04-1338)). The presentation by Honeywell at the hearing showing a diagonal axis of the LCD panel was, in the Special Master's view, merely theoretical and not taught by the patent. Without support in the intrinsic record and only speculation from Honeywell, the Special Master declines to adopt Honeywell's view that the rotation can be measured from not only the horizontal and vertical axes of the display but a diagonal axis as well.

4. Rotation is Just Enough to Eliminate Residual Moire

As discussed above, the Special Master concludes it is inappropriate to incorporate the hard limit of not less than 2 degrees and not more than 16 degrees or even incorporate a few degrees into the construction of "slight misalignment" because doing so would read into the claim the preferred embodiment. Accordingly, "slight misalignment" should be construed in conjunction with its moire eliminating function. In the context of what the '371 patent teaches, however, it is clear to the Special Master that "slight misalignment" cannot be the result of any rotation, particularly a rotation beyond what is absolutely necessary to eliminate residual moire. Phillips, 415 F.3d at 1315 (holding that the specification is a critical source for understanding the claims because it must describe the manner and process of making and using the invention).

The Special Master concludes that this interpretation of the '371 Patent is supported by its specification which teaches that what is important is that the rotation results in a small change in the effective spatial frequency difference between the rotated lens array and the LCD panel. '371 Patent, Col. 5, ll. 23-28. Therefore, in the Special Master's view, the patent contemplates a small or just enough change in the effective spatial frequency difference to eliminate any residual moire.
Thus, the Special Master agrees with Honeywell that the rotation could extend outside of the 2-16 degree range where necessary to create that small change. The patent does not, however, teach rotating the lens array beyond what is needed to eliminate residual moire. Such an interpretation risks reading out of the claim the term "slight."

Also, during the Hearing, both parties agreed that once the lens array is rotated with respect to the LCD to eliminate residual moire, moire will not be reintroduced if rotation of the lens array was continued (that is an "overrotation"). (4/27/2009 Tr. at 32:11-33:1; 75:1-3). Consequently, the invention did not contemplate an "overrotation" of the lens array because an "overrotation" would not be necessary or anticipated given no possibility of moire being reintroduced. Accordingly, in the Special Master's view, the patent teaches rotating the lens array just enough, and not more, with respect to the LCD panel, to eliminate residual moire. 10

--- Footnotes ---

10 Because 2 to 16 degrees is the preferred embodiment of the invention, "just enough" rotation necessarily includes the range of the preferred embodiment, that is 2 to 16 degrees. Indeed, all of the parties agree, including the Customer Defendants, that a rotation of between 2 to 16 degrees is a slight misalignment. 4/27/2009 Tr. at 19:15-18 (KOPSIDAS: "I think you have to give them 2 to 16 in that case").

--- End Footnotes ---

CONCLUSION

Having stated the above, the Special Master concludes that "slight misalignment" means a misalignment resulting from a rotation of the lenslets of the lens array relative to an edge of the LCD panel by just enough number of degrees to eliminate residual moire.

On reviewing the supplemental claim construction record, the Court agrees with the Special Master that the Court's tentative claim construction does not give adequate meaning to the word "slight." Specifically, the Court acknowledges that because the term "typically" is only a word of frequency, it does not genuinely bind the construction. In this regard, during the supplemental claim construction hearing, the following exchange took place between the Special Master and counsel for Honeywell:

SPECIAL MASTER POPPITI: If moire is eliminated at 14 degrees, and if it is not reintroduced, if a product is rotated to 44 degrees and the moire could have been eliminated between 2 and 16, is that 44-degree product, is that a design-around?

MR. WOODS: I think the answer to your question, your Honor, would depend upon the facts of why it was, in this case, "over-rotated."

I hesitated because over-rotation is a term which has been used in different fashions over the course of the history of the case. But in that scenario, if someone has the patent in hand and thinks that they can design around by eliminating moire and it happens to work out at 15, but then just happens to rotate more, I would argue, we would argue, it is not a design-around.

(D.I. 665, Exh. H at 48:15-49:4 (emphasis added).) Thus, according to Honeywell, rotations of just about any angle would, under the Court's tentative claim construction, fall within the scope of the claims so long as they accomplished the objective of reducing moire. The problem with this theory is that, although it is appropriate to understand the claim limitation in light of its moire-reducing purpose, the claims specifically require that the misalignment be only "slight." The word "slight" limits the claim mainly in a structural way, indicating that misalignments within the scope of the claims are of limited magnitude. Certainly, the word "slight" does not contemplate superfluous excess rotations. In addition, to the extent Honeywell contends that an over-rotation may infringe depending "upon the facts of why it was . . . 'over-rotated,'" 2 the Court will not look into the question of "why" a particular rotation was included in an accused product. See Amazon.com, Inc. v. Barnesandnoble.com, Inc., 239 F.3d 1343, 1353 (Fed. Cir. 2001) (refusing to "inject subjective notions into the
infringement analysis" and explaining that "[w]e are not prepared to assign a meaning to a patent claim that depends on the state of mind of the accused infringer").

2 In this regard, the Court further notes that Honeywell argues "[f]or any degree of rotation, including those beyond 2 to 16 degrees, the question will be why that amount of rotation was implemented, and whether it is misaligned to be 'slight' as limited by this Court's construction (i.e., misaligned to reduce moire)." (D.I. 675 at 6 (emphasis in original.).)

Helpful here is the Federal Circuit decision Innovad, Inc. v. Microsoft Corp., 260 F.3d 1326, 1332-33 (Fed. Cir. 2001), a case that both Honeywell and the Special Master find particularly instructive. In Innovad, the Federal Circuit construed the term "small volume," which described the size of a case that enclosed a claimed telephone dialer system, to mean "comfortably portable" because the specification related "small volume" to a portability function. Id. Though the Federal Circuit explained that "the term 'small volume' does not limit the dialer to a particular size as long as it performs its function," the portability function did, as a practical matter, restrict the dialer from being too large. Id. In this regard, the Federal Circuit concluded that a "keypad" could not be part of the claimed telephone dialer because it would inhibit portability. Id. Here too, a functional understanding of the claim term is appropriate. Indeed, as in Innovad, the specification relates the rotation to a function, explaining that the "rotation of the lens array by a few degrees (Typically 2 to 16 degrees) from the horizontal axis causes a small change in the effective spatial frequency difference of the two arrays and thereby eliminates the residual moire." '371 patent at 5:21-28. Likewise, the claim itself explicitly states that the lens arrays are rotated "in order to provide a slight misalignment between said lenslets and said liquid crystal panel." Id. at 6:38-42.

However, it is not enough to, as Honeywell requests, simply state that a "slight misalignment" is one that reduces moire because, unlike Innovad, where a construction of "comfortably portable" limited the term "small volume," this alone would place no genuine limit on the magnitude of the misalignment. Here, such a limitation must be present because the patentee claimed not merely a "misalignment" but a "slight misalignment." In the Court's view, the Special Master's proposal to limit the magnitude of the rotation to only what is necessary to eliminate moire vindicates the functional teaching of the specification, yet at the same time gives proper meaning to the claim term "slight," which clarifies and constrains the functional teachings of the specification.

3 The Special Master stated that because 2 to 16 degrees is the preferred embodiment of the invention, his proposed construction "necessarily includes the [2 to 16 degree] range of the preferred embodiment." (D.I. 656 at 17 n.10.) Honeywell contends that the Court should reject the Special Master's construction because it includes nothing to indicate that his proposed construction "necessarily" includes the 2 to 16 degree range. However, during the supplemental claim construction hearing, Honeywell explained that the preferred 2 to 16 degree embodiment had a very specific geometric requirement, including 172 pixels per inch on the LCD and 142 lenslets per inch on the lens array. (See D.I. 665, Exh. H at 40:25-41:3.) In this respect, the "typical" 2 to 16 degree rotation described in the specification appears to correspond only to an embodiment with certain LCD and lens array spatial frequencies. The Court sees no reason to require that the term "slight misalignment" be understood to encompass a rotation of 2 to 16 degrees even when the LCD and lens array spatial frequencies are chosen such that rotations within the "typical" 2 to 16 degree range are not particularly effective at reducing moire. Indeed, as the Special Master observed, the term "typically" is merely a term of frequency that does not genuinely indicate a universal limitation on the size of moire-eliminating rotations. Thus, under the Court's construction, it would in fact be possible for a trier of fact to conclude that a rotation within the 2 to 16 degree range does not infringe if it is, for instance, far beyond what is necessary to eliminate moire.

To the extent Honeywell objects to the Special Master's construction as referring to the "elimination" of moire, the Court notes that the parties acknowledge that moire cannot be completely "eliminated" within the strictest sense of the term "eliminate." Put another way, the parties acknowledge that, within the context of the patent, the "elimination" of moire does not refer to the total elimination of any and all moire effects. Rather, in the context of the patent, those of skill in the art understand that the word "eliminate" is used in a looser sense to refer to the reduction of moire to visually acceptable levels.
(D.I. 665, Exh. H at 32:12-17.) In these circumstances, the Court concludes that the use of the word "eliminate" in the Special Master's proposed construction is not problematic. However, the Court will not adopt the Special Master's Proposed Construction to the extent it refers to the elimination of "residual" moire. The Court agrees with Honeywell that this limitation improperly implies that the pitch selection method of reducing moire, which is set forth in Claim 1, is a requirement of Claim 3.

As to the reference axis for the measurement of the rotation, the Court will also not adopt the Special Master's proposal that rotations be measured relative to an edge of the liquid crystal panel. In recommending this aspect of his proposed construction, the Special Master noted that the specification does not explicitly mention diagonal axes of the LCD panel and that Honeywell's expert had never observed diagonal axes of an LCD panel giving rise to moire. However, in its Memorandum Opinion on claim construction, this Court chose not to, as the Manufacturer Defendants requested, limit the claims to luminance tailoring along a particular axis. Rather, the Court explained that although the specification discussed the tailoring of luminance along a particular axis, this was merely an example that was used to illustrate a broader concept. Accordingly, to the extent some diagonal axis of the LCD panel genuinely leads to moire effects, the Court concludes that the patent teaches methods of reducing those effects. Furthermore, although Honeywell's expert may have never observed a diagonal axis causing moire effects, this is not, in the Court's view, an adequate basis to limit the claims. Furthermore, this aspect of the Special Master's claim construction appears to encompass a factual finding that is best reserved for proceedings other than claim construction.

However, during the supplemental claim construction hearing, the Customer Defendants proposed that the Court's claim construction be modified to reflect that the axes causing moire are those associated with the structure of the LCD panel. (See D.I. 665, Exh. H at 84-88.) The claims themselves explain that rotation is carried out to provide a "slight misalignment between said lenslets and said liquid crystal panel." ('371 patent at 6:40-42 (emphasis added).) Likewise, the specification explains that the "spatial frequency" of the display panel refers to the number of "dots or pixels per inch" and that the rotation brings about a small difference in the spatial frequency of lens array relative to the spatial frequency of the LCD panel. (See '371 patent at 4:20-25, 5:16-27.) Thus, the claim and specification confirm that moire arises from the liquid crystal panel itself and its attendant structural features, such as its spatial frequency. (See also id. at 4:59-5:5 (explaining that the lens arrays and panel spatial frequencies should be chosen to avoid integral multiples of one another); id. at Fig. 12 (depicting rotation relative to the pixel structure of the LCD); id. at 4:17-25 (explaining that moire arises from "interference between the lens array and the display panel" (emphasis added)).) Accordingly, the Court agrees with the Customer Defendants that it is appropriate to clarify that the moire arises from the structure of the LCD panel.

In light of the above, the Court will construe the term "slight misalignment" to mean "a slight misalignment resulting from a rotation of the lenslets of the lens array, relative to an axis of the LCD panel causing moire, by just enough, and not more, number of degrees to eliminate moire effects due to the structure of the display." The parties will no doubt take differing and nuanced views as to whether the levels of precision offered by the various aspects of this claim construction are adequate. However, the Federal Circuit has explained that "[a]fter the court has defined the claim with whatever specificity and precision is warranted by the language of the claim and the evidence bearing on the proper construction, the task of determining whether the construed claim reads on the accused product is for the finder of fact." PPG Indus. v. Guardian Indus. Corp., 156 F.3d 1351, 1355 (Fed. Cir. 1998). Likewise, the Federal Circuit has explained that "a sound claim construction need not always purge every shred of ambiguity. The resolution of some line-drawing problems . . . is properly left to the trier of fact." Acumed LLC v. Stryker Corp., 483 F.3d 800, 806 (Fed. Cir. 2007). In the Court's view, in remaining true to the intrinsic record, the current claim construction leaves some appropriate "line-drawing problems" to the trier of fact. Specifically, the claim construction leaves for the trier of fact at least the issues of (1) whether a particular rotation "eliminates" moire, (2) whether a particular rotation is larger than necessary to eliminate moire and is thus not a "slight" misalignment, and (3) whether a particular reference axis is both causing moire and associated with the structure of the display. Thus, although the Court has narrowed its original claim construction, the question of infringement remains.

6. "Slightly Larger in Diameter Than Said Male End"

- 4321 -
"... a second enlarged interior diameter being larger than said first enlarged interior diameter and terminating said PVC pipe at said female end, said second enlarged interior diameter being (a) slightly larger in diameter than said male end of said similar adjacent PVC pipe to receive said male end therethrough ..."

b. Parties' Contentions

CertainTeed's proposed construction of "slightly larger in diameter than said male end" is "the second enlarged interior diameter is approximately 21-25% larger than the exterior diameter of the male end." CertainTeed contends that the claim gives no direction as to what "slightly" means. Thus, the Court must look to the specification for some standard for measuring that degree. The specification states that the "first cylinder section 109 [i.e. the second enlarged diameter section] is wider in diameter than second end 107 [i.e. the male end] by approximately 1/2 inch to allow for ease of insertion of second end 107 into first cylinder section 109." Pl's Markman Brief at 13 (citing Specification of '480 patent, col.3, lines 34-37). CertainTeed interprets the specification to state that if the male end is two inches in exterior diameter, then the interior diameter of the female end with a 1/2 inch oversize is 2.5 inches, or 25% larger. And even assuming that the pipe referenced in the specification means a pipe with a two inch interior diameter and an exterior diameter of 2.375 inches, the interior diameter of the female end would have to be 2.875 inches, or approximately 21% larger.

Modern Products' proposed construction of "slightly larger in diameter than said male end" is "the second enlarged interior diameter is slightly larger than the exterior diameter of the male end." Modern Products argues for a simple and straightforward construction. The term "slightly" is not quantitatively defined in the claim, and CertainTeed cannot argue that "slightly" is ordinarily defined in quantitative terms, much less that it specifically means "approximately 21-25%." See THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE (4th ed. 2000). CertainTeed's proposed construction seeks to graft a limitation into the claim that has no basis in the claim language, the specification, or the prosecution history. On the other hand, Modern Products' proposed construction is consistent with the plain and ordinary meaning of the terms and the specification.

c. Court's Construction

The Court concludes that "slightly larger in diameter than said male end" means "the second enlarged interior diameter is slightly larger than the exterior diameter of the male end." Limitations from the specification may not be read into the claim. Liquid Dynamics Corp. v. Vaughan Co., 355 F.3d 1361, 1368 (Fed. Cir. 2004) (citing Comark Communications v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998)). In this case, the limitation that CertainTeed attempts to read into the claim is tenuous at best. Further, words of approximation, such as "slightly," are descriptive terms commonly used in patent claims to avoid a strict numerical boundary to the specified parameter. Anchor Wall Sys. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1311 (Fed. Cir. 2003). As such, the Court will construe this term using its plain and ordinary meaning.

3681

B. Claim Limitation 7(f): "a slit through a planar section of said thin membrane"

Claim limitation 7(f) claims a "a slit through a planar section of said thin membrane, said slit functioning to provide an opening through said thin membrane when an external negative pressure exists and remain closed when internal and external pressures are equal." The court construed the phrase "a slit through a planar section of said thin membrane" to mean "a slit through the section of the thin membrane that has a flat, two-dimensional quality." Jury Instructions (doc. # 232), at 19.

3682

2. The Properly Construed Meaning of "Sloping Upwardly and Inwardly":

Cleveland argues that when the sole of the club heads of the claimed correlated set lay horizontal, the "lower portion of said back surface," labeled 60, "adjacent said indented trailing edge," labeled 54, slopes "upwardly" and "inwardly" creating an
acute angle, of which the legs are defined by the sole and the adjacent surface said trailing edge which slopes upwardly and inwardly, surfaces 52 and 60 respectively. The hypotenuse is defined by the club face hitting surface, labeled 45.

Again, Karsten points to extrinsic evidence in an effort to argue that the "upwardly and inwardly" sloping surface, labeled 60, need only be within the adjacent area relative to the indented trailing edge. Relying on SRI International v. Matsushita Electric Corp. of America, 775 F.2d 1107 (Fed. Cir. 1985) (en banc), Karsten argues "that the scope of the claims is not limited to the specific structures illustrated in the patent drawings, nor to the specific structures described in the written description." (Response, p. 15.)

This Court is mindful of the Federal Circuit's cautionary statement that "claims are interpreted in light of the specification does not mean that everything expressed in the specification must be read into all of the claims," SRI Int. v. Matsushita Elec. Corp of America, 775 F.2d at 1114. Rather, Karsten has sufficiently described the role of the patent's specifications in Karsten's brief. (See Response, p. 5.) Paraphrased, a patent's written description and drawings function as a dictionary when they expressly define terms used in the claims or when they define terms by implication. Thus, a patent's written description and drawings are always highly relevant to the claim construction analysis. (Response, p. 5.) "The patent itself is the single best guide to the meaning of a disputed claim term." (Id.)

It is undisputed that the '813 patent provides the best evidence of the meaning of limitations found within the claims. Once the adjacent surface is defined, it must slope "upwardly and inwardly" relative to the trailing edge and the hitting face of the club. Rather than rely on the language of the patent itself, Karsten has attempted to expand the scope of its patent by illustrating various possible configurations that might result from the claim language. Karsten's attempts to rely on extrinsic evidence are premature. As noted above, the Karsten patent requires that the surface adjacent said indented trailing edge slope upward and inward. While this Court finds that the '813 patent specifications help define the term adjacent by labeling the surface as 60 in Figures 5 and 11, even if a broader relative proximity is allowed than that depicted as surface labeled 60, the surface must slope upward and inward.

The Adjacent Back Surface

Karsten states that the district court erroneously identified the "back surface" as used in claim 1, and that this error led the court to misconstrue the meaning of "sloping upwardly and inwardly," resulting in an erroneous construction of these terms that excluded the Cleveland clubs. Karsten argues that "the lower portion of said back surface adjacent said indented trailing edge" is the encircled area 60, indicated by dashed line 59 in Figure 4 of the '813 patent:

[SEE FIGURE 4 IN ORIGINAL]

The district court construed the "back surface adjacent said indented trailing edge" as excluding the surfaces of the cavity. This construction is in accordance with the description in the specification that the "back surface" that is adjacent to the indented trailing edge circumscribes but does not include the cavity surfaces. The court was correct in rejecting Karsten's proposed construction, which departs from this description.

The district court also required that "the surface adjacent said indented trailing edge [must] slope upward and inward" relative to the trailing edge and the face of the club. Karsten states that it was incorrect to interpret "sloping inwardly" as relative to the trailing edge and the club face, instead of relative to the ground when the sole of the club is placed horizontally on the ground. However, the specification describes the lower back surface area as sloping inwardly and upwardly from the trailing edge as shown in Figures 5, 7, and 9, which illustrate these parameters relative to the trailing edge and the hitting face, not the ground. The district court's claim construction correctly reflected the description in the specification, and is confirmed.
1. "Slot"

This term is an element of claim 1 of the '053 patent, wherein its states "a holder slidably arranged in the housing and comprising a slot defined therein." ('053 patent, col. 8, lines 36-37.)

Both Security Door and Rutherford propose dictionary definitions. Rutherford urges the Court to adopt the construction of "narrow opening." Security Door suggests "narrow or elongated opening, and not a circular hole." Neither Vanguard nor Harco offered a proposed definition.

While the proposed definitions appear to be similar at first glance, the plaintiff contends that a slot is distinct from a hole. Careful examination of the claims and specifications yields no indication that the inventor intended to give the term "slot" any special meaning. In support of its proposed construction, Security Door points out that throughout the specification, the inventor referred to a specific type of structure when using the term "slot" and referred to a very different configuration when employing the term "hole." Security Door asserts that "the notion that a slot is the same thing as a hole contravenes the common and universally recognized meanings of these terms." (Security Door's Am. Reply Claim Const. Br. p.15.)


The Court therefore concludes that the ordinary and customary meaning of the claim term "slot" to a person of ordinary skill in the art at the time of the invention would be "narrow opening." This definition is consistent with all dictionaries consulted, the specifications, and the preferred embodiment.

The court also construed "slot," as used in claims 1, 46, and 52. Claim Construction Order, slip op. at 19-24. The relevant portion of claim 46 is:

46. A guard for slidably enclosing a sliding assembly . . . said guard comprising . . .

   a hollow member proportioned for receiving said needle and winged needle hub, said hollow member defining at least one longitudinal slot proportioned to receive a wing of said needle hub projecting outwardly through the slot when the needle hub resides within the hollow member in sliding relation thereto, and means, associated with the hollow member, for engaging said wing projecting through said slot when the needle and hub are in a slidingly retracted position in which the needle is enclosed by the hollow member for locking said needle hub and needle in said retracted position.

'311 patent, col. 20, II. 20-39 (emphases added). Claim 52 is:

52. The guard of claim 46 in which said slot extends in a longitudinal direction through one end of said hollow member, to provide sliding access to said wing.

'311 patent, col. 20, II. 63-65 (emphasis added). The trial court held that the term did not require "a defined width." Claim Construction Order, slip op. at 19. Later the district court, at the request of defendants, clarified that "'[s]lot' shall mean 'an opening in the guard capable of receiving a wing that projects through the opening and having both an upper edge and a lower edge that are defined by the sidewall of the guard.'" DSU Med. Corp. v. JMS Co., JMS Co., JMS N. Am. Corp., & ITL Corp. PTY, Nos. C-00-1826-DLJ, C-99-2690-DLJ (N.D. Cal. Apr. 30, 2001) (Construction Clarification Order I). In claim 46, because "proportioned to receive" modifies "slot," the trial court explained that "slot" "shall mean 'sized relative to the wing so that the wing extends through the slot when the hub is within the hollow member and so said slot can accommodate the wing's movement as it translates the length of the slot."' Id.; see also DSU Med. Corp. v. JMS Co., JMS N. Am. Corp., & ITL Corp. PTY, Nos. C-00-1826-DLJ, C-99-2690-DLJ, slip op. at 29 (N.D. Cal. Jan 16, 2002)
The trial court identified the crux of the dispute over "slot" as "whether . . . the slots for the wings should have defined widths closely approximating the wings' thickness." Construction Clarification Order I, slip op. at 19. If "slot" limits the size of the opening to accommodate the "minor" thickness of the '311 patent's wings, the Platypus would not infringe because its jaws accommodate any thickness. Claim Construction Order, slip op. at 19. On the other hand, if "slot" contains no thickness limitation, the Platypus would infringe because it opens to receive a wing of any size. Id., at 19.

The claim language recites only "slot." Thus, the claim itself does not incorporate any thickness limitation. Moreover, the specification provided no size limitation on the opening. In a tribute to its complete analysis, the trial court went beyond those primary sources to also consult the prosecution history. Phillips, 415 F.3d at 1317 (a court "should also consider the patent's prosecution history, if it is in evidence"). The record before the Patent Office shows that the patentees amended the claims of Application Serial Number 252,564, which is the application from which the '311 patent (and '072 patent) derived, to avoid U.S. Patent No. 4,840,619 (Hughes Patent).

In amending the claims to avoid the Hughes Patent, however, the applicant did not limit the size of the slot, as argued by JMS and ITL. The amendments concerned only the orientation of the needle wings that moved back and forth through the slot. To distinguish the Hughes Patent, the patentee did not have to, and did not actually, limit the width of the slot. Thus, the trial court correctly construed "slot" as not requiring a defined width, as long as it was capable of receiving a wing. Construction Clarification Order I, slip op. at 14.

2. Construction of "slot"

The question in claim construction of "slot" is easily defined: is a slot limited to an opening in the retaining portion that is less than the full length of it? Medtronic contends that the "plain and commonly used meaning" is a partial vertical opening. (Defs.' Br. 20.) In support, Medtronic points to three examples in prior art patents which, it claims, show partial vertical openings. Whether or not this is accurate, this does not establish that one of ordinary skill in the art would understand a slot to be limited to a partial vertical opening.

Medtronic next argues that the specification is consistent with this meaning. It points to the fact that in the preferred embodiment, the slots in the retaining portion do not extend the full length. As established, this Court rejects the argument that the claims are limited by the preferred embodiment. Medtronic has not pointed to anything in the specification which constitutes a clear redefinition by implication.

Medtronic next argues that its construction is supported by the prosecution history of the '665 patent. As discussed above, Medtronic points to an explanation given by the examiner as to the rejection of certain claims. Medtronic refers to the office action of April 29, 2003, in which the examiner stated:

Claims 44 and 47 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art . . . to make and/or use the invention. The specification contains no disclosure or illustration of a locking collar with a slot extending the entire length of the collar and thus forming an incomplete circle as recited. Therefore, such an embodiment is not enabled by the disclosure.

(Gleason Dec. Ex. 10 at 4.) In its initial brief, Medtronic points to this but does not articulate any argument about what it means.

In its responsive brief, Medtronic attempts to fill in the gaps in its argument, as it were, explaining that the cited prosecution history shows that the applicant acquiesced to the examiner's interpretation of the word "slot." This is an argument with quite a few serious problems. First, it asks this Court to divine the examiner's interpretation of the word "slot," but the quoted statement from the examiner is very ambiguous. Was the problem encountered by the examiner that the specification disclosed no locking collar, or no slot, or neither? Thus, even if there was some legal basis for this Court to consider the examiner's interpretation of "slot," it is unclear what it was. Certainly the language cited above does not leave the reader
with a clear impression that the examiner understood slots to be only partial vertical openings. In fact, the examiner's reference to "a slot extending the entire length of the collar" suggests that, in his view, a slot could extend for the full length of the collar. The only clear statement that can be made here is that construction based on the examiner's interpretation of "slot" is entirely speculative.

Moreover, even if this Court agreed with Medtronic's view of the examiner's interpretation of "slot," the applicant's subsequent non-response to the examiner's interpretation does not meet the Federal Circuit requirement for importing a claim limitation from the prosecution history: a clear and unambiguous disclaimer. Nor does this appear to be the kind of binding acquiescence discussed above in TorPharm. There is no legal basis to find a claim limitation in this piece of prosecution history.

Medtronic tries to find support for its position in Lemelson v. General Mills, Inc., 968 F.2d 1202, 1207 (Fed. Cir. 1992), relying on that Court's use of the word "acquiesce." Lemelson is noteworthy because, in that case, the applicant "cancelled the [] claim in face of the Examiner's rejection, and submitted for allowance the claim with the additional clauses, as suggested by the Examiner." Id. Thus, in Lemelson, the applicant did not merely acquiesce and remain silent in response to the examiner's interpretation; he actively adopted the claim language suggested by the examiner. Id. Although the Lemelson Court did not apply the current "clear and unambiguous disclaimer" standard, the applicant's conduct in that case seems likely to have satisfied it.

Medtronic concedes that the evidence offered by Fastenetix "[a]t best . . . shows that there is no commonly accepted meaning of the word 'slot' outside of the context in which it is used. Sometimes it is used to refer to a complete break, and sometimes it refers to a partial opening." (Defs.' Resp. Br. 13.) Medtronic thus has conceded that the ordinary meaning of "slot" does not limit it to a partial vertical opening, and has failed to persuade this Court that the specification or prosecution history present clear evidence that might justify importing such a limitation into the language of the claims. This Court determines that a "slot" is not limited to a partial vertical opening.

The parties dispute the meaning of the word "slot" as it appears in the claim. The '308 patent claims "a base having an interior support surface and a bottom exterior surface with a slot therein, said base attached to said frame with said raised surface fitting substantially within the slot."

Truth argues that "slot" should be defined as single uninterrupted channel or groove that is bounded by the exterior surface of the bottom of the base that may engage a raised surface in a manner that internalizes it. Ashland argues that the "slot" need not be continuously bounded.

A "slot" is generally defined as "a long and narrow opening or groove[;] slit." Webster's Third International Dictionary 2146 (3d ed. 1986). This definition does not state that a "slot" is continuously bounded.

Nothing in the claim language itself requires the "slot" to be a single, uninterrupted channel. The '308 patent teaches the prevention of air and water infiltration through "a raised wall of rectangular cross-section extending along a sill of a frame that fits substantially within the slot when the operator is secured to the frame. The wall prevents the unobstructed flow of air and water along the bottom of the base and the sill." '308 Patent, Col. 6, ll. 4-8. The specification does not state that the "slot" must be continuously bounded. Rather, the specification states that a raised wall must be able to fit substantially within the "slot". A raised wall or window sill could substantially fit within a "slot" that was not continuously bounded. Furthermore, as Truth now concedes, the fact that a "base" may be composed of more than one piece is further evidence that a "slot" need not be continuously bounded. Finally, the specification of the '308 patent teaches that "still other aspects, objects and advantages can be obtained from a study of the specification, the drawings and the appended claims." '308 Patent, Col. 7, ll. 32-34. This language indicates that Truth's definition of "slot" would impose a limitation on the term that is not warranted by the '308 patent's specifications or claims or by the ordinary meaning of "slot".

Therefore, based on the foregoing, a "slot" is construed as "a groove or opening in the bottom exterior surface of a window operator's bottom support that accommodates a raised surface of a window frame."
2. Claims 2 and 3 ("slot for receiving the camming member of the clamp / pair of slots")

Claims 2 and 3 of the '544 Patent use the claim term "slot for receiving the camming member of the clamp / pair of slots" as "an ultrasonic instrument according to claim 1, wherein the actuation member includes a slot for receiving the camming member of the clamp," '544 Patent, Claim 2 (emphasis added), and "an ultrasonic instrument according to claim 2, wherein the clamp includes a pair of camming members and the actuation member includes a pair of slots, each one of the pair of slots being positioned to receive one of the pair of camming members," '544 Patent, Claim 3 (emphasis added). Plaintiff's proposed construction of the term is: "Opening or groove that imparts motion to the camming member," while defendant's proposal is: "Narrow opening or groove that receives and controls the motion of the camming member."

The Court incorporates its discussion infra of similar claim terms in the '050 and '286 Patents construes the term as: "Opening or groove (or a pair of openings or grooves) that imparts motion to and guides the motion of the camming member." See Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1334 (Fed. Cir. 2003) (the Court will "presume, unless otherwise compelled, that the same claim term in the same patent or related patents carries the same construed meaning.") Additionally, with respect to this claim term, the claim language itself contradicts defendant's proposed use of the word "control," because the claims explicitly use the word "receive," where "control" could have been included if the patentees had so desired. Similarly, and as discussed above, it would be inappropriate to import defendant's notion of "control" where there is no basis for it in either the claim language or specification and the words "impart" and "guide" more accurately reflect the interaction between the slots and the camming member.

Turning to the plain language of the claims, the Court concludes, and the parties agree, that it is appropriate to consult dictionary definitions to construe the meaning of the claim limitation in dispute. The language to be construed is "a housing having [or including] a slot therein for receiving the pedal shaft [therein]." The ordinary meaning of the term "slot" as used in the Asserted Claims is "a narrow opening or groove" or "a narrow passage, enclosure, or space." See Webster's Third New Int'l Dictionary 2146 (1993). The ordinary meaning of the term "therein", as used in the Asserted Claims, is "in or into that place, or, in or into that thing." Id. at 2372. Therefore, the plain language of the Asserted Claims requires that the device have a "narrow opening or groove" or a "narrow passage, enclosure, or space" (a slot), and that this slot be located in the housing of the device.

4 Winner concedes that the Accused Product has a housing, and the meaning of the term was not disputed by the parties. Therefore, the Court need not construe the meaning of the term "housing." See Vivid Techs., Inc. v. American Sci. & Eng'g, Inc., 200 F.3d 795, 803 (Fed. Cir. 1999) ("only those terms need be construed that are in controversy").

Nothing in the file history or the specification discloses a different meaning to be given to the language of the claims at issue. Although the specification illustrates a preferred embodiment of the claimed invention that is similar to the commercial Lawman Product, with an inverted U-shaped housing and a slot between two legs of the housing, this description should not be read to narrow the definition of the language used in the relevant patent claims. See Interactive Gift Express, 256 F.3d at 1331-32. When considering whether the specification discloses any special or alternative meaning to be given to the claim terms, the Court cannot import into the claims limitations or features found in the specification, but not in the claims themselves. Id.

This prohibition exists because the claims, not the particular detailed examples or preferred embodiments disclosed in the specification, define the scope of the invention. Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1366 (Fed. Cir. 2000); American Permahedge, Inc. v. Barcana, Inc., 105 F.3d 1441, 1444 (Fed. Cir. 1997). Therefore, when the claim language is
broader than the particular embodiments appearing in the specification, those more narrow embodiments will not limit the
claims. See Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994); see also Al-Site
Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1323 (Fed. Cir. 1999); SRI Int'l v. Matsushita Elec. Corp. of America, 775 F.2d 1107,
1121 (Fed. Cir. 1985) (en banc). Nothing in the language of the claims requires the device to have a U-shaped housing, and
the Court will not read that requirement into the language based on the preferred embodiment discussed in the specification.

Because the Court concludes, and the parties agree, that neither the specification nor the file history discloses any special or
alternative meaning to be given to the terms used in the Asserted Claims, the Court will accord the terms their ordinary
meaning. Therefore, the Court construes claims 1, 7, 14 and 19 of the 696 Patent to require that the device contain a narrow
opening, groove, passage, enclosure or space, and that this narrow opening, groove, passage, enclosure or space be located
in the housing of the device. Because the meaning of this language is plain, and no ambiguity remains, the Court will not
rely on any extrinsic evidence to further define these terms. 5

5 The main extrinsic evidence introduced was the testimony of Winner's expert, Mr. Marotto. Mr. Marotto testified that the
accused product had a "narrow path" for the pedal shaft. Hr'g Tr. II, at 11-12 (Marotto). Although Mr. Marotto also testified
that a "slot" requires structural members on opposing sides, no objective evidence in the form of literature or technical
dictionaries were introduced that supports such a narrow definition of the term. For that reason, and because the meaning of
the term is clear after reviewing the intrinsic evidence, the Court will afford the term "slot" the full scope of its common and
ordinary meaning. See Rexnord Corp., 274 F.3d 1336, 1342. In addition, the Court finds that Mr. Marotto's testimony is of
limited value. Although he had many years of experience with door locks, he had none with automotive locks such as those
at issue here. The only similarity between the products at issue and those with which he worked is the key cylinder, which is
not at issue here. Hr'g Tr. I, at 177 & II, at 10 (Marotto).

3. "The slots being disposed substantially parallel to the longitudinal axis of the tubular member."

Consistent with the claim language and its ordinary meaning 22 and this court's previous construction, 23 this court
construes this limitation to mean that "a 'slot' is a long and narrow opening or groove, an opening whose length is
substantially greater than its width. The claim requires slots in the tubular members that run largely or approximately
parallel to the longitudinal axis."

22 Cordis Corp., 339 F.3d at 1360 ("substantially' as used in this context, denotes approximation.")

23 In 97-550-SLR the court construed "plurality of slots" in such a way as to include the "substantially parallel" limitation.
(97-550-SLR, D.I. 1127) The court includes this previous construction to make it clear what the limitation as a whole is
construed to mean.
clamp member." '050 Patent, Claim 12 (emphasis added). Plaintiff proposes construing the term as: "Openings or grooves that impart motion to the camming members" and defendant proposes: "Narrow openings or grooves that engage and control the motion of the camming members."

The Court construes the disputed term as "openings or grooves that impart motion to and guide the motion of the camming members." It is clear from a review of the claim language, the other intrinsic evidence, and the parties' discussions in the briefing, that the ordinary meaning of "slots" is "openings or grooves." See Pl. Claim Construction Br. at 30; Def. Claim Construction Br. at 28-29. There is no basis for importing defendant's limitation of the "slots" as being "narrow." The issue of the use of the word "control" is the same as that discussed above with respect to the term "camming members" and, for the same reasons, the Court concludes that use of that word is improper. Defendant also proposes using the word "engage" to describe the relationship between the "camming members" and the "slots," but this qualification similarly appears to be without basis in either the claim language or specifications, particularly where the use of the words "impart" and "guide" more accurately describes the interaction between camming members and slots.

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4. Construction of Retainer Includes Slots

The final disputed phrase is "retainer includes slots" in the fourth claim of the '776 patent. Based on the plain meaning of the term "include", A.J. urges this construction: "the slots are a component part of a larger whole, which is the retainer." (Def. Br. at 20.) Lisle, meanwhile, urges the following construction based on the plain meaning of the term "slots": "the retainer includes slits." (Pl. Br. at 14). The fuller passage surrounding the disputed phrase is: "The tool of claim 1 wherein the retainer includes slots for receipt of the tabs." (Pl. Ex. A at Col. 4, lines 34-35).

Retainer has been constructed above, so the only remaining terms in dispute are "includes" and "slots". "Include" will be given its plain and ordinary meaning, which is "being part of a whole." (Def. Br. at 20). "Slots" in the context of the '776 patent refer to opening with which to receive the tabs of the C-shaped wrench disc. They are described thusly in claim 1: "at least two slots for cooperatively engaging the tabs of the wrench disc." (Pl. Ex. A at col. 4, lines 22-24). In claim 1, the tools describe the tube as having slots at the same end as the retainer. In claim 4, the retainer, rather than the tube itself, would contain the slots.

The Court finds that the phrase "retainer includes slots" does not need further construction in light of the language that immediately follows. Lest there be any dispute, the fuller phrase, "the retainer includes slots therein for receipt of the tabs", is constructed to mean: "the retainer contains slots for receipt of the tabs on the c-shaped wrench disc."

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3. "Slotted head"

Claim 6 of the '053 patent recites, "[t]he electric strike of claim 1, wherein the means for selecting further comprises a slotted head projecting through an aperture defined in the housing and accessible from outside the housing to be operable therefrom." (Col. 9, lines 4-7.) This term also appears in several other claims of the '053 patent.

Rutherford suggests that this term be defined as "a head containing one or more slots." Security Door proposes the construction, "a head that is manipulated by a single blade, standard screwdriver." Harco and Vanguard offer no suggested definition.

The term "slotted head" is not defined in the specification or described in the claims. Furthermore, nothing within the patent or the testimony adduced at the evidentiary hearing would suggest the limitation advanced by Security Door. As Rutherford aptly observes, "a slotted head could be manipulated by any number of implements or tools." (Rutherford's Rebuttal Claim Const. Br. pp. 14-15) The term "slotted head" is neither a term of art nor a concept intrinsic to the '053 patent. It will therefore be given its ordinary and customary meaning, namely "a head containing one or more slots."
Claim 1(a)(I) - "a slotted plate"

Plaintiff proposes that claim 1(a)(I) means, "a plate attached to a case that includes a slot." (Pl. Mem. Claim Chart at 7.) Defendant proposes the following: "A flat piece of metal with a slot that is stably fastened to a container." (Def. Brief Addendum B.) The court agrees with defendant that plaintiff's interpretation indicates that the slot is in the "case" rather than in the "plate" as stated in the claim. The court recommends the following construction of claim 1(a)(I): "a plate with a slot that is stably attached to a case."

The starting point from which to evaluate Excel's inoperability defense is the parties' claim construction briefs. The parties disagree as to the proper construction of two portions of Claims 1 and 6 of the '681 patent. The relevant language refers to the upper head bushing. The relevant language in Claim 1 refers to the function of the bushing, and describes that it will "slow the rotation of said head during said no-load operational mode." (Joint Claim Construction Statement, [Dkt. # 62] Ex. A, at 1). The relevant language in Claim 6 also refers to the bushing, which it describes as an "anti-spin apparatus." (Id. at 4). The parties proffered constructions are as follows:

<table>
<thead>
<tr>
<th>Metso's Construction</th>
<th>Excel's Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>slow the rotation of said head during said no-load</td>
<td>slow the rotation of said head during said</td>
</tr>
<tr>
<td>operational mode means adequately</td>
<td>no-load operational mode means adequately</td>
</tr>
<tr>
<td>slow the rotation of the head when no material is</td>
<td>slow the rotation of the head when no material is</td>
</tr>
<tr>
<td>being crushed.</td>
<td>being crushed.</td>
</tr>
<tr>
<td>&quot;anti-spin apparatus&quot; means device that slows the</td>
<td>&quot;anti-spin apparatus&quot; means device that</td>
</tr>
<tr>
<td>rotation of the head</td>
<td>adequately slows the rotation of the head.</td>
</tr>
</tbody>
</table>

Thus, Metso contends that the claim language should be construed to mean exactly what it says it means (i.e., giving the words their ordinary plain meaning), and Excel advocates that the modifier "adequately" should be read into the claims.

In construing the language of a patent's claims, a court's "claim construction analysis must begin and remain centered on the claim language itself, for that is the language the patentee has chosen to particularly point out and distinctly claim the subject matter which the patentee regards as his invention." Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111, 1116 (Fed. Cir. 2004) (quoting Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001)) (quoting 35 U.S.C. § 112 P 2). The court must "accord a claim the meaning it would have to a person of ordinary skill in the art at the time of the invention." Innova/Pure Water, 381 F.3d at 1116.  

Metso argues that one of ordinary skill in the art would understand "slow the rotation of said head during said no-load operational mode" to mean slowing the rotation of the head when no material is being crushed. Excel argues that "slow" has no generally understood meaning, but Excel points to no particular evidence to support this contention. The court finds that the term "slow" should be given its plain ordinary meaning, which in the context of a conical crusher would be "to reduce the rate at which the head is rotating."

Metso does not offer argument as to what one of ordinary skill in the art would understand "anti-spin apparatus" to mean. Excel argues that there is no consensus among those of ordinary skill in the art as to what "anti-spin apparatus" means. As support, Excel offers the testimony of two of its own employees, both of whom have worked in the crusher industry for many years. One of the Excel employees, Mr. Christopher Wade, testified that he understood an anti-spin device to be a mechanism that brings the head to a complete stop, not something that merely reduces the rate at which the head rotates.
(Excel Claim Construction Br. [Dkt. # 80] at 9). Mr. Wade testified that he had no knowledge as to whether his understanding of an anti-spin device was consistent with the widely held understanding of what anti-spin means in the business. (Id.) The other employee, Mr. Kurt O'Bryan, testified that an anti-spin device is not one that stops the spinning of the head completely, but rather is a device that would "significantly reduce 80-90 percent of the spin." (Id. at 10). Mr. O'Bryan stated that this definition of anti-spin was his own definition; his testimony gives no indication as to whether anyone else would agree with this definition. (Id.).

Excel argues that Mr. Wade's and Mr. O'Bryan's testimony shows that there is not a generally understood meaning of the term "anti-spin apparatus" among those of ordinary skill in the art. Excel further argues that the court should thus construe the term, based on language in the patent's specifications, to mean a "device that adequately slows the rotation of the head." Excel's argument is that the specifications make it clear that the whole point of the anti-spin apparatus was to prevent the violent ejection of rocks when they are poured into a crusher that is running "no load". Excel, therefore, argues that the modifier "adequately" should thus be inserted into the claim construction in order to clarify the amount of spin reduction claimed. 5

4 There is no reason for the court to recite the language of the specifications, because, for the purposes of this analysis, the court is drawing all inferences in favor of Excel, the non-moving party, and thus will assume that Excel's conception of the '681 patent's specifications is correct.

5 Excel does not explain what amount of slowing is necessary to be considered "adequate." Under Mr. Wade's conception, only a full stop is adequate. Under Mr. O'Bryan's conception, only an 80-90 percent reduction would be adequate. Under a more reasonable conception, only the amount of reduction necessary to either eliminate or at least reduce the occurrence of rocks being violently ejected is adequate. Were the latter definition of adequate accepted, one would then have to determine how forceful of an ejection is necessary to be considered "violent" and how much do such occurrences have to be reduced by in order to be sufficient to say that the amount of slowing was "adequate." This inquiry demonstrates two things. First, "adequate" means different things to different people and in different circumstances. Second, adding the modifier "adequately" would only create confusion; it would not offer clarity.

Excel correctly states that courts "must always read the claims in view of the full specification." SanDisk Corp. v. Memorex Products, Inc., 415 F.3d 1278, 1285 (Fed. Cir. 2005). This is to prevent the court from adopting a claim construction that "enlarge[s] what is patented beyond what the inventor has described as the invention." Netword, LLC v. Centraal Corp., 242 F.3d 1347, 1352 (Fed. Cir. 2001). However, a finding by this court that "anti-spin apparatus" means "device that slows the rotation of the head" (as opposed to "adequately slows the rotation of the head") does not enlarge the '681 patent beyond that described in the specifications. This is true even if the court adopts Excel's view that the specifications disclose claims directed solely at addressing the problem of rocks being violently flung upon introduction to a crusher operating "no load." This is because a reduction in the rate at which the head rotates when operating "no load" -- even if that rate reduction is not what Excel would consider "adequate" -- does address the problem of rocks being violently flung from the crusher. To the extent that Excel would argue that a less than "adequate" reduction of rotation does not solve the problem of rocks being violently ejected, this court rejects the notion that for an invention to warrant patent protection it must entirely and optimally resolve the problems it is designed to address.

It is important to recognize that the SanDisk court, in directing that claims be construed in light of the specifications, was addressing the issue of whether a construction that excluded preferred embodiments of the invention could be a correct construction. SanDisk, 415 F.3d at 1285. This court's refusal to incorporate the term "adequately" into the proffered constructions of the disputed claim terms does not exclude any of the preferred embodiments of the '681 claim. Nor is the court's construction of the disputed claim terms inconsistent with Excel's conception of the specifications. See On Demand Machine Corp. v. Ingram Industries, Inc., 442 F.3d 1331, 1339-41 (rejecting construction of the term "customer" to include non-retail customers, when the specifications clearly showed that the invention was geared only to retail customers). For even if the specifications do clearly show that the purpose of the upper head bushing is to prevent the violent expulsion of rocks, to the extent that the bushing does reduce the rate of rotation during "no load" operation, it does clearly address the problem that Excel maintains the specifications evidence it was designed to address.
It is also important to recognize that a basic rule of claim construction is that terms will ordinarily be given their full meaning, and modifiers should not be added to limit the scope of broad terms. Virginia Panel Corp. v. MAC Panel Co., 133 F.3d 860, 865-66 (Fed. Cir.1997) (unmodified term "reciprocating" not limited to linear reciprocation); Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 621-22 (Fed. Cir. 1995) (unmodified term "associating" not limited to explicit association); Specialty Composites v. Cabot Corp., 845 F.2d 981, 987, 6 U.S.P.Q.2d 1601, 1606 (Fed. Cir. 1988) (unmodified term "plasticizer" given full range of ordinary and accustomed meaning). For example, in Acumed LLC v. Stryker Corp., 483 F.3d 800 (Fed. Cir. 2007) the court, in construing the term "sharp," refused to incorporate a numerical angular limit required for "sharpness" into the term construction. Id. at 806. The Acumed court explained that "a sound claim construction need not always purge every shred of ambiguity." Id.

As the court has already pointed out, inserting the modifier "adequately" would only increase the ambiguity of the disputed terms. Ultimately, there is no basis for adding the modifier "adequately" to the definitions of the disputed terms. Metso's proffered definitions are consistent with the ordinary meaning of the terms, and are consistent with the purposes of the invention set out in the specifications, even when the court adopts Excel's conception of the specifications. Additionally, the court's refusal to incorporate the term "adequately" into the definitions does not create a claim construction that excludes any preferred embodiment of the '681 patent.

Because the court has not adopted Excel's proffered definition of the disputed terms found in Claims 1 and 6 of the '681 patent, the court is, therefore, obliged to grant Metso summary judgment on Excel's "inoperability" defense. The entirety of that defense hinged on the court inserting the modifier "adequately" into the definitions. As the court declined to do so, there is no basis for the inoperability defense.

However, even if the court had construed the disputed terms in Claims 1 and 6 in the manner sought by Excel, the court would nonetheless be obliged to grant summary judgment to Metso on Excel's "inoperability" defense. To prove its inoperability defense, Excel would have to establish at trial that "each disclosed embodiment in the patents was impossible." EMI Group North America, Inc. v. Cypress Semiconductor Corp., 268 F.3d 1342, 1349 (Fed. Cir. 2001). Simply put, Excel has not proffered any evidence capable of proving (especially clearly and convincingly) that it is impossible for the upper head bushing to "adequately" reduce the rate of rotation of the head of a conical crusher during "no load" operation.

Excel's evidence as to the inoperability of the bushing consists of the testimony of one of Metso's engineers, Mr. Walter Marks, who testified that the upper head bushing "would seem to leave a lot to be desired." (Joint Ex. 65, Marks Dep., 158: 7-13). Mr. Marks said: "Compared to the eccentric speed, the crusher operational speed when it's spinning, it's still moving very fast." (Id.). The only other piece of evidence Excel points to is the fact that Metso eventually added additional anti-spin devices to its MP800 crusher line. (Excel Br. Opp. Mot. S.J. [Dkt. # 299] at 6-8).

The above evidence, drawing all inferences in favor of Excel, would only allow Excel to, at best, prove clearly and convincingly that the upper head bushing is incapable of adequately slowing head rotation during "no load" operation in the MP800, and perhaps in Metso's other commercial embodiments of the '681 patent. However, such a finding would not warrant a finding that Claims 1 and 6 of the '681 patent are inoperable, or that it is impossible for a crusher built according to the '681 patent to utilize an upper head bushing that adequately slows head rotation.

The degree to which the bushing is effective as an anti-spin device undoubtedly depends to some degree on the size and power of the machine in which it is utilized. The fact that the particular commercial embodiments of the '681 patent built by Metso are such that the bushing does not adequately slow head rotation does not mean that the patent itself is inoperable. Patents are held inoperable when the challenged claim is shown to be demonstrably impossible. For example, in EMI Group, the claims recited a "vapor-induced explosion mechanism" which utilized vapor pressure in order to cause a fuse to blow. 268 F.3d at 1349. At trial, an expert testified that, through exhaustive studies, he had determined that "a fuse simply cannot explode due to vapor pressure." Id. The court of appeals thus upheld the trial court's finding that the patent was inoperable. Similarly, in Process Control, the court of appeals found a patent inoperable because a claim in the patent embodied a method that was scientifically unsound because it violated the principle of the conservation of mass. 190 F.3d at 1359. These cases stand in stark contrast to the facts presented in the case before the court.

Excel has not produced any evidence to justify that a reasonable jury could find, by clear and convincing evidence, that the anti-spin apparatus disclosed in the '681 patent is incapable of adequately slowing head rotation during "no load" operation.
Therefore, the court is obliged to find that, even if the disputed terms regarding upper head bushing were construed in the manner advanced by Excel, Excel could still not succeed on its inoperability defense. The court, therefore, awards summary judgment to Metso as to Excel's inoperability defense.

B. Slurry

80. The term "slurry" appears numerous times in the patent claims. During trial, MCI's witnesses testified that this term should be interpreted as being restricted to a "homogeneous slurry." The Court finds no support for such a limitation in the specification, the file history, or the claims of the patent. The patent disclosure calls for mixing feed additives in a liquid carrier to "dilute, disperse and suspend" them. See Col. 1, lines 54-60; Col. 3, lines 44-47. This would seem to disclose to a person of skill in the art that a mixture of additives and carrier is required, not necessarily a uniform or homogeneous mixture.

15. Small Play

The next term for construction is "small play" as used in claims 2 and 11 of the '579 patent. The Plaintiffs contend it would be error to include any specific dimensional requirement in small play. Pergo maintains that small play means an intentional space of at least 0.2 millimeters allowing for free movement, displacement or sliding of joined panels relative to each other along joined edges. (Unilin's Open. Br. 37-38.)

Claim 2 of the '579 patent claims:

The mechanical locking system as claimed in claim 1, wherein when the first and second edges are joined together with the locking device, the first and second panels can be arranged such that a small play exists between the first and second edges.

('579 patent, 11:5-9.) (Emphasis added).

In advocating the inclusion of the minimum space of 0.2 millimeters in the definition of "small play," Pergo relies upon the specification which states:

In order to permit taking up previously laid, joined floor panels in a simple way, a preferred embodiment of the invention is characterised [sic] in that when the groove panel is pressed against the strip panel in the second direction and is turned angularly [sic] away from the strip, the maximum distance between the axis of rotation of the groove panel and the locking surface of the locking groove closest to the joint edges is such that the locking element can leave the locking groove without contacting the locking surface of the locking groove. Such a disassembly can be achieved even if the aforementioned play between the locking groove and the locking surface is not greater than 0.2 mm.

('579 patent, 5:22-33.) (Emphasis added.)

Pergo's interpretation of small play is drawn from the specification. However, the quoted portion of the specification does not include the phrase "small play." When a claim term is expressed in general descriptive words, the term typically will not be limited to a numerical range that may appear in the written description as referring to a preferred embodiment or in other narrower claims.

Mathematical precision should not be imposed for its own sake; a patentee has the right to claim the invention in terms that would be understood by persons of skill in the field of the invention." Modine Mfg. Co. v. U. S. Int'l Trade Comm'n, 75 F.3d 1545, 1551 (Fed. Cir. 1996), abrogated on other grounds, Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd., 234
F.3d 558 (Fed. Cir.) (en banc) rev'd 535 U.S. 722, 122 S. Ct. 1831, 152 L. Ed. 2d 944 (2002). Because 0.2 millimeters is discussed in the specification and it is not discussed in conjunction with "small play," the Court declines to impute a numerical limitation to the term. See Modine Mfg., 75 F.3d at 1551.

"Small" is defined as "having a relatively little size or slight dimension." See Webster's II New Riverside University Dictionary 1097. The Court defines "small play" by pairing its construction of "play" with the ordinary meaning of "small." Thus, "small play" is construed to mean "a relatively little space between the locking surfaces of interlocking panels such that the locking surfaces can be displaced relative to one another in the direction of their joined edges."

B.

The district court construed the term "small volume" to mean a device smaller than the prior art portable telephone dialers. These prior art dialers have a 4.4 cubic inch volume. Innovad, slip op. at 10-11. The specification of the '750 patent does not expressly define "small volume," but does refer to the word "small" in the general sense, i.e., not large. See, e.g., col. 3, l. 8 ("small rectangular case"); col. 2, ll. 20-21 ("two small rectangular sound ports"); col. 5, ll. 41-42 ("small quantities of portable dialer units"). The specification reiterates that the dialer's size affects its function: "The dialer unit has no keypad, it is much smaller than existing repertory dialers and thus more portable and suitable for specialty advertising purposes." Col. 2., ll. 28-31. In other words, the specification provides no specialized meaning for the term "small volume," but relates the term to the dialer's function. Specifically, "small volume" means that the dialer should be comfortably portable. Neither the words of the claim nor its context, however, limit the claimed dialer within the system to a particular volume. Thus, the term "small volume" does not limit the dialer to a particular size as long as it performs its function. The claim term "small volume" does reemphasize, however, that the portable dialer unit does not include a keypad. The specification itself notes that a keypad would inhibit the portability of the hand-held item. Id.

4. "Smooth"

Bridgeport next argues that the steps of the intermediate portion of its connectors preclude a finding that the intermediate portion is "smooth," as required by claims 5 and 9 of Patent '164:

The quick connect fitting of claim 1 wherein said connector has a flange and shoulder with smooth 14 intermediate portion there between with said adaptor carried on said intermediate portion and held in position by said flange and shoulder.

(Doc. 83, Exs. A, B (emphasis added)). "Smooth," according to Webster's Third New International Dictionary, means "having a continuously even surface" or "being without roughness, points, bumps, or ridges." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 2152. Under this definition, the intermediate portion must have an even surface area, without threading or ridges of any type. This definition is not contradicted elsewhere in the patent documents. To the contrary, the specifications repeatedly illustrate a figure with an intermediate portion that is a perfect cylinder. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc) ("Claims must be read in view of the specification ...."), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996).

---- Footnotes ----

14 In claims 4, 5, and 7 of Patent '050 and in claim 8 of Patent '164, the word "smooth" is either deleted or replaced with "an." (Doc. 83, Exs. A, B).

---- End Footnotes ----
As an alternative to this ordinary meaning, Arlington contends that the patentee expressly defined, in the specifications sections of the patent, "smooth" as merely "unthreaded"—not necessarily completely even. The "operation" passage of the specifications section explains that the purpose of requiring a "smooth central section" is to ensure "good contact" between the adapter and connector. It states that one "embodiment" of the invention "is designed to be used with a number of existing threaded connectors" in "common use in the electrical industry today." (Doc. 83, Exs. A, B). While this language clearly describes a potential embodiment of the invention with an uneven intermediate portion, it does not disavow or disclaim the scope of the claims 5 and 9 of Patent '164, as required to rebut the ordinary and customary meaning of the terms. E-Pass Techs., 343 F.3d at 1368-69.

Design alternatives exist for every invention, and the fact that the inventor chose to illustrate the embodiment of certain claims but not others does not alter the scope of the unillustrated claims. Id. As stated previously, the court should refrain from importing limitations from the specifications into the claims themselves unless the patent clearly expresses such an intent. Id. While several claims of Patent '164 provide for a variation that includes a threaded adapter, these claims refer to a separate embodiment of claim 1, independent from the elements outlined in claims 5 and 9. The limiting adjective "smooth" of claims 5 and 9 neither affects nor is affected by the provisions for a threaded connector in the other claims. The statements on which Arlington bases its arguments, which plainly describe only one possible "embodiment" of the invention, are insufficient to defeat the plain meaning of "smooth." See id. The court will construe "smooth" to mean an even surface area without threading or ridges of any type.

On the basis of this construction, Bridgeport's device, as a matter of law, cannot infringe on claims 5 and 9 of Patent '164. The intermediate portion of the Bridgeport design includes two steps, meaning that the entire portion is not "smooth," as contemplated by the claims of Arlington's patent. Because these steps place Bridgeport's device outside of the language used in the patent claims, Arlington cannot establish literal infringement.

In further defense against summary judgment, Arlington argues that the doctrine of equivalents applies because the steps in Bridgeport's design serve the same function as the completely "smooth" intermediate portion of the Arlington model—i.e., ensuring a satisfactory electrical connection. As discussed previously, although the doctrine of equivalents may permit a finding of infringement by a design otherwise outside the claim language, the doctrine cannot apply if the "theory of equivalence would vitiate a claim limitation." Tronzo, 156 F.3d at 1160 (citing Warner-Jenkinson, 520 U.S. at 29). Regardless of Arlington's assertion of equivalent effect, application of the doctrine in this case would effectively eliminate the term "smooth" from the claim. Indeed, it would permit any series of threading or ridges to be employed in the intermediate portion so long as a good electrical connection was maintained. In fact, other claims of the Arlington patents do omit the term "smooth" to allow for the inclusion of threading on the connectors, suggesting that the inclusion of the term in claims 5 and 9 of Patent '164 was intended to exclude the very types of designs that Arlington now seeks to cover. The doctrine of equivalents cannot be used to vary the ordinary meaning of the claims of a patent, and, as such, has no application here. The court will grant Bridgeport's motion for summary judgment for non-infringement as to claims 5 and 9 of Patent '164.

The court will construe "smoothly" to mean "in a controlled manner."
Snap

The Defendant also seeks a hearing to offer expert testimony regarding the meaning of the term "snap." As an initial matter, the Court notes that nowhere in the Markman decision does the Supreme Court state that courts must hold a pre-trial, or pre-summary judgment, hearing on the issue of claim construction. However, since the Markman decision was handed down, a number of district courts faced with claim construction disputes have held some sort of hearing. See Comark Communications, Inc. v. Harris Corp., 1997 U.S. Dist. LEXIS 2067, 1997 WL 87260 (E.D.Pa., Feb. 24, 1997); Revlon Consumer Prods. Corp. v. L'Oreal S.A., 170 F.R.D. 391 (D.Del., Feb. 12, 1997); Lee's Aquarium and Pet Prods., Inc. v. Snap Edge Corp., 951 F. Supp. 1469 (S.D.Cal. 1997); P.A.T., Co. v. Ultrak, Inc., 948 F. Supp. 1506 (D. Kan. 1996).

A Markman hearing to define the term "snap" would only be necessary if the Court needed expert testimony to interpret the term. Absent a special definition set forth in the patent, terms in a patent are generally interpreted as having their ordinary and customary meaning to persons experienced in the field of invention. Hoechst Celanese Corp. v. BP Chemicals, Ltd., 78 F.3d 1575, 1578 (Fed. Cir.), cert. denied, 136 L. Ed. 2d 198, 117 S. Ct. 275 (1996). When construing terms of a patent, courts must first look to "intrinsic" evidence, which includes the claim itself, the specification, and the prosecution history. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996). If the meaning of a term remains ambiguous after considering the intrinsic evidence in the case then, and only then, the court may consider extrinsic evidence of meaning, such as prior art documents, dictionaries, and expert testimony. Id.

As stated, the parties in this case dispute the meaning of the term "snap" in Plaintiff's '246 patent. Claim one of Plaintiff's '246 patent provides, in its entirety:

What is claimed is:

1. A snap-n-seal connector for mechanically and electrically interconnecting a coaxial cable to an electronic device having a threaded interface connector, the coaxial cable including a center conductor, a dielectric insulator encasing the center conductor, at least one braided shield disposed about the dielectric insulator and a jacket covering the at least one braided shield, comprising:

   connector body means for coaxially receiving the coaxial cable, said connector body means including means for forming a moisture-proof seal between elements of said connector body means, nut member means adapted for rotably engaging the threaded interface connector of the electronic device, and means for mechanically and electrically engaging the at least one braided shield of the coaxial cable; and

   compression sleeve means for snap engaging into said connector body means to mechanically connect the coaxial cable to said connector body means, said compression sleeve means in combination with said connector body means forming a 360 degree uniform compressive moisture-proof seal between said compression sleeve means and the jacket of the coaxial cable, said compression sleeve means including means for forming a 360 degree uniform compressive moisture-proof seal between said compression sleeve means and said connector body means.

Nowhere in this claim, or anywhere else in the '246 patent, is the term "snap" explicitly defined. Rather, the term is used repeatedly to describe the way in which the compression sleeve engages the connector body. For example, the specification states that the "compression sleeve is configured to snap fit into the collar member," and regarding installation the specification states that "insertion force is applied to snap the compression sleeve into final engagement with the connector
body." Also, the record does not reveal any representations to the Patent and Trademark Office regarding the snap feature of this invention during the prosecution of the '246 patent.

Despite its rather common usage, after carefully considering the intrinsic evidence in this case, the Court finds that the exact meaning of the term "snap" is somewhat ambiguous.

However, rather than turning immediately to expert testimony, which the Federal Circuit has stated should be treated with "utmost caution for it is no better than opinion testimony on the meaning of statutory terms," the Court turns first to a dictionary, a source the Federal Circuit considers a more objective and reliable guide than expert testimony. Vitronics Corp., 90 F.3d at 1576, 1585.

When used as a noun, a "snap" is defined as "a catch or fastening that closes or locks with a click," and when used as an adjective, "snap" is defined as "shutting, fastening or otherwise coming together with a click or by means of a device that snaps." Webster's Third New International Dictionary 2155 (1971) ("Webster's Dictionary"). After carefully considering the language used in claim one, the specification, and Webster's Dictionary, the Court finds that the meaning of the term "snap" is the one stated in Webster's Dictionary. Thus, the Court finds that no expert testimony, and hence no Markman hearing, is needed in the instant case, and the Defendant's motion is denied.

The parties seek construction of the phrase "the lid defining a groove about its edge sized to receive and snap over the rim of the main body and form a seal" and have offered the following constructions:

. Plaintiff: The groove defined about the edge of the lid fits over the rim of the main body so that as the rim is received in the groove a portion of at least one of the lid and rim deflects to overcome an interference between them and then rebounds toward its position before deflection to form a closure to resist leakage.

. Defendant: The groove of the lid and the rim of the main body interact in a snap fit having an insertion, deflection and recovery action during assembly, which produces a clicking sound. (Defendant does not attempt to construe the last part of the phrase, "and form a seal.")

1. The parties' disputes

Although the parties seek construction of the entire phrase, their three disagreements focus on the meaning of "snap": (1) whether the "snap" feature described in the claim must create a sound; (2) whether the required snap feature prevents the lid from also having screw-on features; and (3) whether the claim's requirement that the lid form a seal is related to the snap feature.

a. Audible feedback

The parties' primary dispute is whether the "snap" feature described in the claim must create a sound. The parties agree that the snap feature must involve a deflection and recovery action (plaintiff calls it a "rebound") that occurs as the groove of the lid and the rim of the cup first interfere with each other and then pass by the interference as the lid is placed on the cup. According to plaintiff, the recovery that occurs as the interference is passed may occur slowly, while defendant contends that the recovery must occur quickly enough to produce a "clicking sound." I agree with plaintiff on this point.

Defendant can point to no intrinsic evidence that supports its contention that there must be a "clicking sound" as the lid and body are engaged. Where the patent specification refers to the "snap" feature, it does so without elaboration. '784 pat., col.3, Ins. 40-43 ("As shown in the enlarged views of FIGS. 4 and 5, the inner contour of groove 36 and outer contour of cup body rim 38 are selected to provide a slight snap fit of the lid onto the cup body, to provide a secure seal."); id., col. 6, Ins. 66-67 ("As lid 12 is snapped into place . . ."). Nowhere does the specification suggest that the feature must create a noise or even that there is any advantage to creating an audible sound.
Although defendant points to some extrinsic evidence that could support its theory, the weight of the extrinsic evidence suggests otherwise. First, defendant cites several dictionary definitions describing the term "snap" in terms of a sound created when objects make contact, but those definitions relate only to the lay meaning of the term. In some cases, this meaning might be the one that applies to a claim term, but "snap" is not a lay term in this context. As defendant acknowledges, the "snap" described in the term relates to a "snap fit," 784 pat., col. 3, lns. 40-43, and the phrase "snap fit" is one that is given a special, technical meaning, as evidenced by the various technical publications both parties cite describing "snap fit" assemblies.

Regarding the technical meaning of "snap fit," defendant cites two publications purportedly in support of its position, but only one of these suggests that a "snap fit" requires sound feedback. Dominick V. Rosato, The Plastics Engineering, Manufacturing & Data Handbook 864 (2001) (included as exhibit 1 to dkt. # 22) ("In the assembly process, a snap fit undergoes an energy exchange with a click sound."). The other technical reference defendant cites defines a snap fit as "an insertion, deflection and recovery action during assembly." Tim A. Osswald, International Plastics Handbook 500 (2006) (included as exhibit 2 to dkt. # 22). (Defendant suggests that now Osswald has provided deposition testimony supporting defendant's theory. However, Osswald stated only that "typically . . . you hear the snap" during snap fit assembly, not that audible feedback was a necessary feature.)

Moreover, as plaintiff points out, other engineering literature supports the conclusion that audible feedback is an "enhancement" that is not required for a snap fit. Paul R. Bonenberger, The First Snap-Fit Handbook 95-96, 104-105 (2000) (included as exhibit 3 to dkt. # 26) (stating that some sort of feedback is "required" in all snap fit applications, but that such feedback may be tactile, audible or visible); Robert W. Messler Jr., "Integral attachment using snap-fit features," Assembly Automation, Vol. 17, No. 2, 146 (1997) (included as exhibit 4 to dkt. # 32) (describing enhancement features, including audible feedback, as features that "are not essential" to a snap fit).

In sum, no intrinsic evidence suggests that audible feedback is required for the invention, and the extrinsic evidence weighs against reading "snap" as requiring audible feedback. Therefore, I will not read such a limitation into the claim.

b. Screw-on lid

This dispute involves the more general question whether the snap feature required in claim 1 is "incompatible" with a screw-on lid in the sense that no such lid could satisfy the "snap over" requirement. On its face, the claim's requirement that the groove of the lid be "sized to receive and snap over the rim of the main body" seems directed at snap-on lids, as opposed to screw-on lids. However, as I explained above, the phrase requires only that there be a snap fit between the lid and the body, which means the lid and body include features that cause deflection and recovery as the lid is being engaged to the body. Thus, the question must be whether such deflection and recovery assembly features inherent in a "snap fit" are incompatible with screw-on assembly features.

As to that question, defendant cites technical literature stating that "threaded fasteners" are a separate category of fastener from "snap-fit interfaces" and that "experience with threaded fasteners, the most common method of mechanical attachment, is not transferable to designing snap-fit interfaces." Paul R. Bonenberger, The First Snap-Fit Handbook 5. Although this literature suggests that threaded and snap-fit fasteners are different, it does not suggest that they are incompatible. The literature defendant cites is just as silent as the patent specification and claims on the question whether threaded attachments could be used in conjunction with the "snap" assembly described in the claim.

Defendant points out that, although the claims and specification are now silent on "threaded" connections, it was not always so. The prosecution history shows that, as it was filed originally, the specification referred to a separate "threaded connection" embodiment. In particular, it stated that, aside from the "snap connection" it described, "other methods of securing the lid to the body are envisioned. For example, a threaded connection may be provided about the cup rim." File History, dkt. # 23, exh. 4, at 82. The applicants filed an amendment withdrawing several canceled claims and redacting certain language from the specification, including the reference to the "threaded connection." In a remarks section of the amendment, the applicants stated that, aside from withdrawing the claims, they "have also redacted the specification to remove discussion of aspects of the invention not relevant to the claims as now pending."

Defendant suggests that the applicants disclaimed any cup having thread attachments. Far from it. Disclaimer occurs only
when the applicant makes "clear and unmistakable" disavowal of claim coverage during the prosecution of the patent, such as when the applicant characterizes the invention in a certain way to try to overcome rejections based on prior art. Computer Docking Station Corp. v. Dell, Inc., 519 F.3d 1366, 1374 (Fed. Cir. 2008) (citations omitted). No such disavowal occurred here. The applicants' statement that the redacted language was not "relevant" is not an express statement that cups having threaded connections (in addition to a snap feature) are not compatible with the invention covered by the claim language; at most, it was a statement that threaded connections are not necessary for any claim described in the patent, a natural result of the withdrawal of the dependent claim or claims requiring a threaded connection.

Because nothing in the intrinsic or extrinsic evidence supports defendant's contention that the snap feature described in claim 1 is incompatible with threaded connections, I conclude that no such limitation exists.

c. Relationship to sealing requirement

The third disagreement involving the "snap" feature is whether it is related to the "sealing" feature. Plaintiff contends that "it is the snap fit that forms a seal in the claimed cup," dkt. # 31, at 2 n.2, and defendant argues that "these are actually different limitations that are directed to different, unrelated functions," dkt. # 21, at 9. The language to be construed describes a lid sized to do two things ("snap over the rim . . . and form a seal"), but does not specify whether the lid is sized to snap over the rim and thereby form a seal or just sized so that it happens to do two separate things: snap over the rim and form a seal.

The specification answers this question, explaining in the context of describing an embodiment that "the inner contour of the groove 36 and outer contour of cup body rim 38 are selected to provide a slight snap fit of the lid onto the cup body, to provide a secure seal." '784 pat., col. 3, lns. 40-43 (emphasis added). Although defendant may be correct that the general function of a "snap" fit does not necessarily include a requirement that the fit also seal the lid to the body, in this case the intrinsic evidence shows that the "snap" fit in this invention is intended to form the seal disclosed in claim 1. Therefore, I agree with plaintiff that a proper construction should include language that makes it clear that the snap fit serves to seal the lid and body.

2. The court's construction

Having resolved the parties' three discrete disputes, the final question is what to do with the specific language proposed. As to this term, I have decided all three in favor of plaintiff. Defendant identifies no other problem with plaintiff's proposed construction and plaintiff's construction adequately reflects the parties' agreements about the nature of a "snap fit" and the court's conclusions with respect to their disagreements. Therefore, I will adopt plaintiff's proposed construction: "The groove defined about the edge of the lid fits over the rim of the main body so that as the rim is received in the groove a portion of at least one of the lid and rim deflects to overcome an interference between them and then rebounds toward its position before deflection to form a closure to resist leakage."

3 704

13. Snap-Together Coupling -- Snap Action Shifting Them Laterally

The parties also requested that, due to their disagreement, the Court interpret the terms "snap-together coupling" and "snap-action shifting them laterally" in claims 10, 23, and 27 of the '836 patent. Unilin maintains that "snap-together coupling" and "snap-action shifting them laterally" is "a device that serves to connect the ends of adjacent parts or objects by snap-action, which is characterized by a rapid resilient movement towards a geometry, immediately precipitated by the reduction of a resisting force, when the panels are joined by shifting them laterally in a substantially co-planar fashion." (Unilin Open. Br. 26-27.)

Alloc initially proposed its own definition. However, in its response brief, Alloc states that it has no substantial disagreement with Unilin's proposed definition. (Alloc Resp. Mem. 13.)

Claim 10 of the '836 patent uses the term in a representative fashion as follows: "the locking elements of said second pair of opposite side edges provide a snap-together coupling providing a snap-action during the coupling of two panels by shifting them laterally towards each other, said snap action being delivered substantially by said core material." ('836 patent, 17:36-
Unilin's proposed definition is consistent with the use of the terms in the claims and specification. Therefore, the Court defines "snap-together coupling" and "snap-action shifting them laterally" as "a device that serves to connect the ends of adjacent parts or objects by snap-action, which is characterized by a rapid resilient movement towards a geometry, immediately precipitated by the reduction of a resisting force, when the panels are joined by shifting them laterally in a substantially co-planar fashion."

The phrase "snap type elements" is used in claim 31 of the '486 patent as follows: "A floor covering panel according to claim 1, wherein the locking elements are snap type elements that are configured so as to snap together when cooperative locking elements of two identical ones of said panel are coupled together." ('486 patent, 16:42-46.)

Unilin's definition makes the most sense in context of the patent claims and specification. The patent specification focuses on physical action of coupling panels not on sound. The "background of the invention" portion of the patent specification, states:

"couplings are known which allow coupling parts to snap fit into each other, e.g., from the documents WO 94/1628, WO 96/27719 and WO 96/27721. The snapping-together effect obtained with these forms of embodiment, however, does not guarantee a 100-percent optimum counteraction against the development of gaps between the floor panels, more particularly, because in fact well-defined plays have to be provided in order to be sure that the snapping-together is possible." ('486 patent, 1:48-56)(emphasis added.)

A feature of the second preferred embodiment is "the coupling parts have such a shape that two subsequent floor panels can be engaged into each other exclusively by snapping together and/or turning, whereby each subsequent floor panel can be inserted laterally into the previous." ('486 patent, 2:45-49)(emphasis added.) Likewise, the detailed description states: "the coupling parts 4-5 have such a shape that two subsequent floor panels 1 can be engaged into each other solely by snapping-together and/or turning after the coupling parts are partially engaged, whereby each subsequent floor panel 1 can be laterally inserted into the previous." ('486 patent, 5:35-40.)

The foregoing excerpts from the patent specification indicate that snap action relates to the physical assembly of the panels -- not to any sound generated by such assembly. Additionally, inclusion of a statement "when coupling of the panels is competed by lateral, in-plane shifting," in the definition, as suggested by Alloc, is not supported by the specification. Therefore, the Court defines "snap type elements" as "elements that are capable of exhibiting snap action."

The next terms for construction are "snap" and "snaps up" as used in claims 1, 2, 10, 11, 19, 20, 23, 24, 27, 28, 31, 32, 35, 36, 39, and 40 of the '267 patent; in claims 1, 13, 14, 26, 39, and 50 of the '410 patent; and in claim 9 of the '907 patent. Relying on the commonly understood meaning of the words, the Plaintiffs assert that "snaps up" means "fastening or closing with a click in an upward direction." (Pls.' Open. Br. 36.)
Pergo states that "snap" and "snaps up" means that the locking strip first bends downwardly and then returns back fully to its original position. (Unilin's Open. Br. 46.) Pergo relies upon the specification which states: "Laying can also be performed by first placing both the strip panel and the groove panel flat on the subfloor and then joining the panels parallel to their principal planes while bending the strip downwards until the locking element snaps up into the locking groove." ('579 patent 6:1-5.)

Pergo also relies upon a description of a preferred embodiment as follows:

FIGS. 3a-3b show another joining method for mechanically joining together the floor panels of FIGS. 2a-c. The method illustrated in FIGS. 3a-c relies on the fact that the strip 6 is resilient and is especially useful for joining together the short sides of floor panels which have already been joined along one long side as illustrated in FIGS. 2a-c. The method of FIGS. 3a-c is performed by first placing the two panels 1 and 2 flat on the subfloor 12 and then moving them horizontally towards each other according to FIG. 3b. The inclined portion 36 of the locking element 8 then serves as a guide surface which guides the joint edge 4 of the groove panel 2 up on to the upper side 22 of the strip 6. The strip 6 will then be urged downwards while the locking element 8 is sliding on the equalising [sic] surface 42. When the joint edges 3, 4 have been brought into complete engagement with each other horizontally, the locking element 8 will snap into the locking groove 14 (FIG. 3c), thereby providing the same locking as in FIG. 2c.

('579 patent, 9:15-33.) (Emphasis added).

The construction of claim terms begins with the claims. See Phillips, 415 F.3d at 1312. Claim 1(d) of the '267 patent states:

displacing the new one of the panels in its longitudinal direction relative to the first panel towards a final longitudinal position wherein the locking element of one of the short edges of the new one of the panels and the second panel snaps up into the locking groove of the other one of the short edges, whereby the new one of the panels and the second panel are mechanically connected with each other in both in the first direction and in the second direction with respect to the thus-[sic] connected short edges.

('267 patent, 11:24-33.) (Emphasis added).

Claim 39 of the '410 patent states in relevant part:

the first and the second mechanical connections are so constructed as to allow mutual displacement of the panels in the direction of the long edges, the second mechanical connection along the long edges is so constructed as to allow the locking element to leave the locking groove if the panel associated with the locking groove is turned about its long edge angularly away from the strip, and each locking strip at the short edges is flexible and resilient such that two of the floor panels, having already been mechanically joined to a common long edge of a third of the floor panels, can be mechanically joined together at their adjacent short edges by displacing said two panels horizontally towards each other, while resiliently urging the flexible strip at one of said short edges downwards, until said adjacent short edges of the two panels have been brought into complete engagement with each other horizontally and the locking element at said one short edge thereby snaps into the locking groove at the adjacent short edge.

('410 patent, 14:40-59.) (Emphasis added). Snap means "to open or close with a click." Webster's II New Riverside University Dictionary 1100. "Up" means "moving upward." Id. at 1267. These ordinary definitions of the terms in the context of the claims well define the terms. Pergo's proposed definition of the terms as including a "full" return to an original position, is rejected because it adds limitations that are not consistent with the ordinary meaning of the claim terms and the specification. The Court defines "snaps" as "closes with a click" and "snaps up" as "closes with a click in an upward direction."

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(11) "Disposed … so as to substantially lessen the foreshortening of said stent upon its expansion." This limitation encompasses an increase in the distance between the longitudinal positions of the ends of the flexible compensating...
members or flexible links that is caused by expansion of the stent by a balloon or other mechanical means.

3708

4. So Dimensioned As to Be Installable Within the Exit Station of the Processing Machine (Claim 1)

Plaintiff argues "so dimensioned as to be installable within the exit station of the processing machine" should be construed as "designed for use in the exit station." Defendant argues "so dimensioned as to be installable within the exit station of the processing machine" should be construed as "specifically designed for use in a claimed exit station."

The Court, for the reasons stated by plaintiff, finds "so dimensioned as to be installable within the exit station of the processing machine" is properly construed as "designed for use in the exit station."

3709

In claim 21, the limitation "providing an implantable prosthesis including a plug formed of a surgical mesh fabric which is compressible from a first configuration which is larger than the defect into a second configuration which approximates the shape of the defect so that the plug securely fits therein and occludes the defect" shall be construed to mean "using a plug formed of surgical mesh that can be compressed from a configuration that is larger than the defect or hole into a second configuration that approximates the shape of the hole, so that the plug fits into and plugs up the hole."

3710

LL. "SOCKET" AND "THE HANDLE PORTION HAVING A SOCKET"

The next claims to construe are "socket" and "the handle portion having a socket," both of which appear in claim 14. These claim terms are clearly related and dependent upon one another, so the Court will construe them together. Plaintiff argues that "socket" means "a cavity," and that having defined "socket," the claim term "the handle portion having a socket" requires no construction. Plaintiff states that its proposed construction of "socket" is based on the ordinary meaning of the claim term. Defendants argue that "socket" means "a receptive space," and "the handle portion having a socket" means "the handle portion having a receptive space." Like Plaintiff, Defendants state that their proposed constructions are based on the claim terms' ordinary meanings. Defendants also assert that their constructions are consistent with inventor testimony.

Both Parties have given the term "socket" what they assert is its "ordinary and customary meaning." Phillips, 415 F.3d at 1312 (internal quotations omitted). The Court agrees that this is a term that has a readily apparent meaning and, therefore, that further examination of intrinsic and extrinsic evidence is not necessary. While either definition would be appropriate, the Court has concluded that Defendants' proposed construction is more helpful than Plaintiff's proposal. Accordingly, the Court will construe the claim term "socket" to mean "a receptive space," and the claim term "the handle portion having a socket" to mean "the handle portion having a receptive space."

3711

4) Having a low effective elastic modulus giving a soft springy feel.

The fourth element of Claim 1 of the '955 patent requires that the frame have a "low effective elastic modulus giving a soft springy feel." Defendants argue that this expression is "non-quantifiable and highly subjective," not otherwise defined in the specification or prosecution history. They contend that since there is no legally acceptable method for interpreting this element, Plaintiffs have failed to show that Defendants' frames satisfy the element. Plaintiffs' expert Professor Beshers testified, however, that effective modulus of elasticity can be determined from stress-strain curves of material determined...
through tensile tests of the sort he in fact conducted upon Defendants' frames. From those tests, he concluded that "the effective elastic modulus [of Defendants' frames] are an order of magnitude that is roughly 10 times smaller than the ordinary elastic modula for metals." He also testified that the low effective elastic modulus is consistent with the "soft, springy feel" of Defendants' frame components. Contrary to Defendants' claim, therefore, the claimed limitation is objective insofar as the low effective elastic modulus is quantifiable.

While it may well be subjective to say that the frame components must feel soft and springy, contrary to Defendants' assertion, courts have in fact interpreted and upheld comparably subjective terms in light of the purpose of the claimed invention. In Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., for example, the Federal Circuit rejected the district court's holding that defendant's contact lenses were not "smooth." 796 F.2d 443, 450 (Fed. Cir. 1986), cert. denied, 484 U.S. 823, 108 S. Ct. 85, 98 L. Ed. 2d 47 (1987). The district court had relied on electron microscope photographs showing roughness on the lens surface in reaching its conclusion. The Circuit Court reversed, stating "we hold that 'smooth' means smooth enough to serve the inventor's purposes, i.e. not to inflame or irritate the eyelid of the wearer or be perceived by him at all when in place." 796 F.2d at 450; see also Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 858 (Fed. Cir. 1988), cert. denied, 490 U.S. 1068, 104 L. Ed. 2d 634, 109 S. Ct. 2069 (1989) ("The district court properly interpreted the claim in light of the prosecution history in the first trial, defining 'slightly greater' spacing in terms of its purpose . . . .'"). "Soft and springy" is no more elusive a term than those interpreted in Bausch & Lomb and Laitram.

Defendants also argue that "soft springy feel," as understood from Plaintiffs' advertisements and demonstrations, implies that the frame is easily wrapped around one's index finger. Since, according to Defendants, their expert testified it was impossible to wrap the temple of Defendants' frame without damaging one's finger, Defendants maintain their frames do not satisfy the "soft springy feel" element. The purpose of the '955 patent, however, is comfort and durability in a pair of eyeglass frames that exceeds that of conventional frames. Interpreting the "soft springy feel" limitation in light of that purpose and comparing Defendants' frames with conventional metal frames, it is abundantly clear that the NiTi SMA components of Defendants' frames have a much softer and springier feel than the conventional frames and thus possess the characteristics covered by this element of Claim 1.

The plaintiff proposes "the contact lens when hydrated has flexibility, which permits the lens to contour itself to the shape of an eye." The defendants propose "having a Shore D hardness of less than 1." The defendants contend that the patentee defined the term in the prosecution history. In response to a rejection, the applicant stated that "'hard' and 'soft' are not relative terms but are real different words as illustrated below." Patent Appl. 07/132,174, Response to Office Action, March 4, 1989, at 1. In the illustration, the applicant shows that, on a Hardness Scale (Shore D), hard contact lenses are greater than 80 and soft contact lenses are less than 5. Id. It also shows that the range between 5 and 80 is "useless" for both hard and soft lenses. Id. In another response to a rejection, the applicant again illustrated the difference between hard and soft contact lenses, where hard contact lenses had a Hardness (Shore D) of greater than 80 and soft contact lenses were less than 1. Patent Appl. 07/545,205, Response to Office Action, March 21, 1992, at 1.

The plaintiff, on the other hand, argues that these statements were not intended to define "softness," but were used as examples to educate the examiner. See Patent Appl. 07/551,156, Response to Office Action, April 20, 1992, at 13. The plaintiff also argues that there was no clear intent to redefine the ordinary meaning of the terms.

The terms "soft" and "softness" as used in claim 1 convey two different meanings. The Court will first address the construction of "soft." Specifically, the Court will construe the entire phrase "soft gas permeable contact lens." The invention of the '327 patent focuses on improving existing soft contact lenses. '327 patent, 1:14-17. The applicant distinguished prior art related to hard contact lenses by stating that, in the contact lens industry, soft contact lenses have a Hardness (Shore D) of less than five. Patent Appl. 07/132,174, Response to Office Action, March 4, 1989, at 1. The applicant also stated that a major difference between hard and soft contact lenses is that soft contact lenses (including soft gas permeable lenses) have a Hardness (Shore D) of less than one. Patent Appl. 07/545,205, Response to Office Action, March 21, 1992, at 1. One of ordinary skill in the art, therefore, would understand that a soft contact lens has a Hardness (Shore D) no greater than five. There was, however, no clear intent by the applicant to limit soft contact lenses to a Hardness
(Shore D) of less than one. Accordingly, the Court construes "soft gas permeable contact lens" to mean "a contact lens having a Hardness (Shore D) of less than five."

The Court will now address the term "softness." As stated in claim 1, the contact lens is "characterized by . . . softness . . . ." The prior art referenced in the specification characterizes soft contact lenses as those contact lenses that are flexible enough to shape to the contours of the eye. See 4,486,577 patent, 1:36-37; 4,711,943 patent, 3:10-25. The Court construes the term "softness" to mean "having flexibility when hydrated to shape to the contours of the eye."

III. "sufficient temperature to soften," "softened wear layer," and "a softened state"

The phrase "sufficient temperature to soften" is used in claim 1 of the '903 patent to describe the temperature at which the wear layer is reheated prior to being mechanically embossed. '903 12:4-6. Claim 1 of the '903 patent employs the phrase "softened wear layer" and claims 1 and 9 of the '008 patent employ the phrase "a softened state" to describe the state in which the wear layer is in when it is mechanically embossed. This claim language is in dispute and discussed here because it is related.

Mannington argues that the claim language "a sufficient temperature to soften" "means an exposure to a heating source capable of causing the cured wear layer to achieve a sufficient degree of softening to allow it to be mechanically embossed." D.I. 326 at 24-25. Again, Armstrong makes no argument with respect to this phrase since it is found only in the '903 patent. Domco, on the other hand, argues that the phrase "mean[s] that the material of the wear layer is moldable [as a result of heating], i.e., the material would be displaced to take on the pattern and shape of the texture to be imprinted, during a mechanical embossing step." D.I. 142 at 18.

Mannington argues that both "softened wear layer" and "a softened state" should be construed to "mean that the wear layer is in a cured and softened condition . . . before the wear layer is mechanically embossed." D.I. 326 at 25 (emphasis in original). In support, Mannington makes a contextual argument to assert that "those skilled in the art would understand the claims to require the cured wear layer to be in a 'softened state' prior to, rather than during, mechanical embossing." Id. at 26 (emphasis in original). Armstrong argues that the process limitation "a softened state" should not be construed and, in the alternative, asserts that "softened state" means the wear layer is at a temperature range from 240 [degrees] F to 470 [degrees] F. D.I. 324 at 25. Domco argues that "softened wear layer" and "softened state" mean that "the material of the wear layer is moldable, i.e., the material would be displaced to take on the pattern and shape of the texture to be imprinted, during a mechanical embossing step." 1 D.I. 142 at 18.

1 In its Markman brief, Domco groups the phrase "a sufficient temperature to soften" in claim 1 of the '903 patent and the phrase "a softened state" in claims 1 and 9 of the '008 patent into the same passage and makes the same argument as to each expression.

1 - - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

Clearly, the parties' arguments as to the proper construction of the phrase "a sufficient temperature to soften" are similar. This court, therefore, construes the phrase consistent with these arguments to mean that the vinyl surface covering is softened by heating such that it is receptive of embossment by mechanical means. The more poignant question, however, is temporal and relates to the proper construction of the phrases "softened wear layer" and "a softened state." In other words, do these phrases as found in the contested claims mean that the surface covering reaches a softened state as a result of heating prior to reaching the mechanical embossing tool, or are these phrases put forth in the claims such that heating to a softened state can occur nearly simultaneously with mechanical embossing? To answer this question, one must look to the context in which the phrases are used in the claims and then to the remainder of the intrinsic evidence to determine whether the inventors limited the construction of these phrases in any manner.

The expression "softened wear layer" is used generally in claims 1 of the '903 patent to describe the state the cooled and
cured surface covering is in when a "mechanically embossed … surface texture selected from the group consisting of a natural wood, stone, marble, granite, and brick [is embossed] onto said softened wear layer …." As this language reads in the claim, it is not restricted temporally. That is, as the phrase is used in the claim, the surface covering must be in a softened state at least at a finite point in time prior to being imprinted with a surface texture by mechanical means. The '903 specification does not change this reading of the claim and, in fact, supports this understanding by providing that "the wear layer is … subjected to a sufficient temperature for a sufficient time in order to soften the wear layer to a sufficient degree to allow it to be mechanically embossed." '903 at 5:63-66. As it appears in claim 1 of the '903 patent and as this court so construes, therefore, the phrase "softened wear layer" means that the claimed surface covering is in a softened condition after being cured and cooled no later than a finite point in time prior to being imprinted with a surface texture by mechanical means.

--- Footnotes ---

2 Claim 1 of the '903 patent specifies that the surface covering is placed in a softened condition because it is subject to "a sufficient temperature to soften …." '903 at 12:5-6. It follows, therefore, that as used in claim 1 of the '903 patent the surface covering is softened by the application of heat and not by some other mechanism.

--- End Footnotes ---

Claims 1 and 9 of the '008 patent make use of the similar phrase "a softened state," however, absent from the claims is definitive reference to the surface covering being both cured and cooled prior to being softened by the application of heat and then mechanically embossed. Claim 9, though, uses the word "curing" to clarify that the wear layer is applied to the foam layer before it is cured, but use of this word carries no other significance in the claim. '008 12: 13-22. This being so, this broad phrase must be construed to mean that the surface covering is in a soft condition such that it is receptive to imprinting by mechanical means. This court will not conjecture as to whether the inventors intended to draft claims 1 and 9 of the '008 patent such that imprinting by mechanical means occurred after the surface covering was cured and cooled. Had the inventors intended to write their claims accordingly, they could have easily done so. Having failed, however, to specify that the surface covering was cured and cooled before mechanical imprinting, this court will not read a cured and cooled limitation into the phrase "a softened state" as found in claims 1 and 9 of the '008 patent.

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Claim 1 of the '502 patent, the only claim at issue in this appeal, reads as follows (with added emphasis on the disputed terms):

1. A method for reflow soldering of surface mounted devices to a printed circuit board comprising:

   moving a printed circuit board having solder and devices disposed on a surface thereof through a first zone and in close proximity to a first emitting surface of at least one nonfocused infrared panel emitter, said first emitting surface being at a first panel temperature;

   moving said board through a second zone and in close proximity to a second emitting surface of at least one nonfocused infrared panel emitter, said second emitting surface being at a second panel temperature lower than said first panel temperature; and

   moving said board through a third zone and in close proximity to a third emitting surface of at least one nonfocused infrared panel emitter, said third emitting surface being at a third panel temperature higher than said second panel temperature, said third emitting surface heating said board and said solder to a solder reflow temperature for a period of time sufficient to cause said solder to reflow and solder said devices to said board while maintaining the temperature of said devices below said solder reflow temperature.

Proceedings Before the District Court

This action was brought on November 26, 1991 by Vitronics against Conceptronic for infringement of both the '502 patent
and U.S. Patent No. 4,833,301 ("the '301 patent"). At the time the suit was filed, Conceptronic was selling the "Mark series" line of ovens. Conceptronic later discontinued the Mark series and began selling the "HVC series" line of ovens. Prior to trial, the parties stipulated that every limitation of claim 1 of the '502 patent was met by the HVC series of ovens, except the limitation requiring the utilization of "nonfocused infrared panel emitters" and the limitation that the temperature of the devices must be maintained below the "solder reflow temperature." 2

--- Footnotes ---

1 A jury returned a verdict of non-infringement of the '301 patent. Vitronics does not appeal that verdict.

2 Whether the Conceptronic ovens utilize nonfocused infrared panel emitters is not before this court.

--- End Footnotes ---

Vitronics, by way of a request for a jury instruction, asked the court to construe the meaning of the "solder reflow temperature" limitation. The specific instruction sought by Vitronics was as follows:

In considering the question of whether the '502 method patent has been infringed by the Mark and HVC Series ovens, you have to decide whether, in use, those ovens maintain the temperature of the devices below the solder reflow temperature. The phrase "solder reflow temperature" in the '502 patent means the temperature reached by the solder during the period it is reflowing during the final stages of the soldering process, sometimes referred to as the "peak solder reflow temperature." It does not mean the "liquidus temperature," the temperature at which the solder first begins to melt. Thus, if the temperature of the devices stays below that of the solder, the '502 method patent is infringed by the Mark and HVC Series ovens.

Thus, Vitronics contended that, as used in the claim, solder reflow temperature means peak reflow temperature, i.e., a temperature approximately 20 degrees C above the liquidus temperature, at which the solder is completely melted and moves freely. Conceptronic, on the other hand, contended that solder reflow temperature means 183 degrees C, i.e., the liquidus temperature of a particular type of solder known as 63/37 (Sn/Pb) solder. 3

--- Footnotes ---

3 The specification of the '502 patent describes three exemplary types of solder which can be used in the solder reflow process -- 60/40 (Sn/Pb), 63/37 (Sn/Pb) and 62/36/2 (Sn/Pb/Ag) -- each of which, it indicates, has a liquidus temperature of about 190 degrees C and a peak reflow temperature of about 210 degrees to 218 degrees C. At trial, the parties appear to have discussed only 63/37 (Sn/Pb) solder, which has a liquidus temperature of 183 degrees C. However, the claims are not limited to that particular solder or a solder with that particular liquidus temperature.

--- End Footnotes ---

The district court delayed construing the disputed language until the close of testimony, at which time it ruled in favor of Conceptronic and concluded that the term "solder reflow temperature" as used in claim 1 refers to 183 degrees C. Vitronics then conceded that the court was required to grant judgment as a matter of law in favor of Conceptronic, as Vitronics had not presented any evidence of infringement under the court's interpretation of solder reflow temperature. This appeal followed.

Claim Construction Aids Before the District Court

In spite of Vitronics' early request for a jury instruction on the proper claim construction, the district court delayed announcing its claim construction until hearing all the evidence put forth at trial. During trial, and in their briefs to the district court in support of their respective claim constructions, the parties discussed the patent specification, expert testimony, prior testimony and writings of Vitronics and its employees, and technical references. The most pertinent materials are discussed below.

The Patent Specification
Vitronics relied heavily upon the patent itself to support its asserted claim construction. Although Vitronics conceded that the term "solder reflow temperature" may be ambiguous when considered in isolation, it argued that the specification clearly shows that, as used in the claim, solder reflow temperature means peak reflow temperature rather than the liquidus temperature. In particular, Vitronics pointed to that part of the specification that describes a preferred embodiment:

A preferred embodiment of the invention for reflow soldering of surface mounted devices to printed circuit boards will now be described. The printed circuit boards are typically made of epoxy-glass, such as fire retardant 4(FR-4), or polyamide glass. These boards typically degrade above temperatures of 225 degrees C. The solder may be, for example, 60/40 (Sn/Pb), 63/37 (Sn/Pb), or 62/36/2 (Sn/Pb/Ag), all of which have a liquidus temperature (i.e. begin to melt) of about 190 degrees C. and a peak reflow temperature of about 210 degrees -218 degrees C. Thus, to effect reflow soldering without damaging the board, the solder must be allowed to reach a temperature of at least 210 degrees C., but the board cannot reach a temperature of 225 degrees C.

Vitronics pointed out that, in the example described as the preferred embodiment, the temperature of the solder is raised to 210 degrees C, the peak reflow temperature, and the temperature of the devices is raised to 195 degrees C, 5 degrees above the 190 degrees C liquidus temperature. Thus, as argued by Vitronics, the term "solder reflow temperature" must be construed so that it refers to the peak reflow temperature because the claim requires that the temperature of the devices be maintained below "said solder reflow temperature"; if solder reflow temperature were construed to refer to liquidus temperature, the preferred embodiment would not be covered by the patent claims.

Expert Testimony

Conceptronic relied heavily on the expert testimony of Dr. Rothe. Dr. Rothe testified that the meaning of the term "solder reflow temperature" in claim 1 is synonymous with liquidus temperature. Dr. Rothe further testified that the solder reflow temperature for 63/37 (Sn/Pb) is 183 degrees C. Dr. Rothe likewise testified at trial that several technical articles written by those skilled in the art supported his view that solder reflow temperature refers to liquidus temperature.

The Testimony of Mr. Hall

Conceptronic also relied on the testimony of Mr. Hall, the Chief Engineer at Vitronics. At trial, Mr. Hall confirmed that during his deposition he had testified that the reflow temperature of solder was 183 degrees C. Mr. Hall also testified that, during his deposition, he had used solder reflow temperature to refer to liquidus temperature. However, at another point in his trial testimony, Hall explained that, while in his earlier deposition testimony he had used solder reflow temperature to refer to liquidus temperature, he did not suggest that was how the term was used in the patent. Rather, Hall testified the patent uses the term to refer to the peak reflow temperature.

Paper Written By Former Vitronics Employee

Conceptronic also introduced into evidence a paper written by Phillip Zarrow, a former employee of Vitronics, defining solder reflow temperature in the following manner: "As the temperature of the solder paste on the interconnect passes the solder alloy's melting point and the solder enters a molten state, the assembly enters the reflow region of the process. For 63 Sn/37 Pb, a eutectic solder and the most common SMT alloy, reflow occurs at 183 degrees C." Phillip Zarrow, Convection/Infrared and Convection Dominant Reflow Soldering of Fine Pitch SMT Devices, § 10.3.3 (1994). However, that same paper later describes the solder reflow process as taking the temperature of the solder above liquidus: "Most solder manufacturers recommend bringing the interconnection temperature approximately 15 to 25 degrees C above the alloy melting point to achieve full liquidus and assure good solder flow and aid fillet formation." Id.
Memorandum of Plaintiff Vitronics Corporation in Opposition to Motion for Summary Judgment of Defendant Conceptronic Corporation and In Support of Plaintiff's Cross-Motion for Summary Judgment of Patent Validity and Infringement

In its brief supporting its proposed construction of claim 1, both at the trial court level and here on appeal, Conceptronic similarly relied on a memorandum written by Vitronics which contains the following language: "Tin/lead solders commonly used by the electronic products industry have a 'liquidus' or 'reflow' temperature in the order of 183 degrees C, or about 361 degrees F." However, this phrase is in the background section of the memorandum and later in the same memorandum, Vitronics discussed the issue of infringement as being whether the temperature of the devices was maintained below "the temperatures of the leads at which the solder is reflowing."

Without indicating which evidence it relied upon, the district court simply ruled that solder reflow temperature meant 183 degrees C.

ANALYSIS
The Use of Intrinsic and Extrinsic Evidence in Claim Construction

A literal patent infringement analysis involves two steps: the proper construction of the asserted claim and a determination as to whether the accused method or product infringes the asserted claim as properly construed. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976, 34 USPQ2d 1321, 1326 (Fed. Cir. 1995) (in banc), aff'd, U.S., 116 S. Ct. 1384, 1393 (1996); Hormone Research Found., Inc. v. Genentech, Inc., 904 F.2d 1558, 1562, 15 USPQ2d 1039, 1042 (Fed. Cir. 1990), cert. dismissed, 499 U.S. 955 (1991). The first step, claim construction, is a matter of law, which we review de novo. Markman, 52 F.3d at 979, 34 USPQ2d at 1329. Claim construction is the only step in the infringement analysis at issue in this appeal. 4

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4 No assertion was made that defendant infringed under the doctrine of equivalents.

- - - - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - - -

In determining the proper construction of a claim, the court has numerous sources that it may properly utilize for guidance. These sources have been detailed in our previous opinions, as discussed below, and include both intrinsic evidence (e.g., the patent specification and file history) and extrinsic evidence (e.g., expert testimony).

It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history. See Markman, 52 F.3d at 979, 34 USPQ2d at 1329. Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language.

First, we look to the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention. See Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620, 34 USPQ2d 1816, 1819 (Fed. Cir. 1995). Although words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history. Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578, 38 USPQ2d 1126, 1129 (Fed. Cir. 1996) ("A technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent and the prosecution history that the inventor used the term with a different meaning.") (citations omitted); Hormone, 904 F.2d at 1563, 15 USPQ2d at 1043 ("It is a well-established axiom in patent law that a patentee is free to be his or her own lexicographer and thus may use terms in a manner contrary to or inconsistent with one or more of their ordinary meanings.") (citations omitted).

Thus, second, it is always necessary to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning. The specification acts as a dictionary when it expressly defines terms used
The District Court's Reliance on Extrinsic Evidence

The proper construction of the claim term "solder reflow temperature" as set forth above, the meaning of the disputed term "solder reflow temperature" in claim 1 of the '502 patent is clear from a reading of the claim itself and the patent specification. The "peak reflow temperature" and "liquidus temperature" are clearly defined in the specification as having distinctly different meanings. Specifically, for the solders described in the specification, liquidus temperature is about 190 degrees C and the peak reflow temperature is about 210 degrees to 218 degrees C. Moreover, in the preferred embodiment described in the patent, the solder is heated to a temperature of 210 degrees C but the temperature of the devices is maintained at approximately 195 degrees C, i.e., below the peak reflow temperature (210 degrees C) but above the liquidus temperature (190 degrees C). Therefore, in order to be consistent with the specification and preferred embodiment described therein, claim 1 must be construed such that the term "solder reflow temperature" means the peak reflow temperature, rather than the liquidus temperature. Indeed, if "solder reflow temperature" were defined to mean liquidus temperature, a preferred (and indeed only) embodiment in the specification would not fall within the scope of the patent claim. Such an interpretation is rarely, if ever, correct and would require highly persuasive evidentiary support, which is wholly absent in this case. See Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1550, 37 USPQ2d 1609, 1612 (Fed. Cir. 1996); see also Hoechst, 78 F.3d at 1581, 38 USPQ2d at 1130 ("We share the district court's view that it is unlikely that an inventor would define the invention in a way that excluded the preferred embodiment, or that persons of skill in this field would read the specification in such a way.").
Since the claim, read in light of the patent specification, clearly uses the term "solder reflow temperature" to mean the peak reflow temperature, rather than the liquidus temperature, that should have been the end of the trial court's analysis. 5 Only if there were still some genuine ambiguity in the claims, after consideration of all available intrinsic evidence, should the trial court have resorted to extrinsic evidence, such as expert testimony, in order to construe claim 1. Moreover, even if the judge permissibly decided to hear all the possible evidence before construing the claim, the expert testimony, which was inconsistent with the specification and file history, should have been accorded no weight. Southwall, 54 F.3d at 1578, 34 USPQ2d at 1678; Markman, 52 F.3d at 983, 34 USPQ2d at 1333.

The file history was apparently not put into evidence.

5 Although technical treatises and dictionaries fall within the category of extrinsic evidence, as they do not form a part of an integrated patent document, they are worthy of special note. Judges are free to consult such resources at any time in order to better understand the underlying technology and to construe the claims. See Markman, 52 F.3d at 979, 34 USPQ2d at 1329. Extrinsic evidence is that evidence which is external to the patent and file history, such as expert testimony, inventor testimony, dictionaries, and technical treatises and articles. 6 Id. at 980, 34 USPQ2d at 1330. However, as we have recently re-emphasized, extrinsic evidence in general, and expert testimony in particular, may be used only to help the court come to the proper understanding of the claims; it may not be used to vary or contradict the claim language. Id. at 981, 34 USPQ2d at 1331. Nor may it contradict the import of other parts of the specification. Indeed, where the patent documents are unambiguous, expert testimony regarding the meaning of a claim is entitled to no weight. Southwall, 54 F.3d at 1578, 34 USPQ2d at 1678. "Any other rule would be unfair to competitors who must be able to rely on the patent documents themselves, without consideration of expert opinion that then does not even exist, in ascertaining the scope of a patentee's right to exclude." Id. at 1578, 34 USPQ2d at 1678-79. Nor may the inventor's subjective intent as to claim scope, when unexpressed in the patent documents, have any effect. Such testimony cannot guide the court to a proper interpretation when the patent documents themselves do so clearly.

In addition, a court in its discretion may admit and rely on prior art proffered by one of the parties, whether or not cited in the specification or the file history. This prior art can often help to demonstrate how a disputed term is used by those skilled in the art. Such art may make it unnecessary to rely on expert testimony and may save much trial time. As compared to expert testimony, which often only indicates what a particular expert believes a term means, prior art references may also be more indicative of what all those skilled in the art generally believe a certain term means. Once again, however, reliance on such evidence is unnecessary, and indeed improper, when the disputed terms can be understood from a careful reading of the public record. See Kearns v. Chrysler Corp., 32 F.3d 1541, 1547, 31 USPQ2d 1746, 1750 (Fed. Cir. 1994). Nor may it be used to vary claim terms from how they are defined, even implicitly, in the specification or file history.

Unfortunately, here the trial judge did use the extrinsic evidence to vary or contradict the manifest meaning of the claims. The trial judge was presented with expert testimony and other evidence that some of those skilled in the relevant art, including certain Vitronics employees, sometimes used the term "solder reflow temperature" and "liquidus temperature" interchangeably. He apparently relied on this testimony in reaching his conclusion that, as used in claim 1, solder reflow temperature meant 183 degrees C. However, regardless of how those skilled in the art would interpret a term in other
situations, where those of ordinary skill, on a reading of the patent documents, would conclude that the documents preclude
the term being given the meaning propounded by the expert witnesses, we must give it the meaning indicated by the
patentee in the patent claim, specification and file history. Thus, expert testimony tending to show that those skilled in the
art would, in certain circumstances, understand "solder reflow temperature" to mean the solder liquidus temperature is
entitled to no weight in light of the clear contrary meaning shown in the specification. See Southwall, 54 F.3d at 1578, 34
USPQ2d at 1678 ("Even if Southwall could show that 'sputter-deposited dielectric' has a meaning to one skilled in the art
different from the definition in the '745 specification and file history, the definition in the patent documents controls the
claim interpretation."). Because the specification clearly and unambiguously defined the disputed term in the claim, reliance
on this extrinsic evidence was unnecessary and, hence, legally incorrect.

7 Although the trial judge's reasoning does not appear in the record, he must have relied on the testimony presented by
Conceptronic that "solder reflow temperature" and "liquidus temperature" were synonymous and the undisputed testimony
that the liquidus temperature of 63/37 (Sn/Pb) solder is 183 degrees C.

Had the district court relied on the expert testimony and other extrinsic evidence solely to help it understand the underlying
technology, we could not say the district court was in error. But testimony on the technology is far different from other
expert testimony, whether it be of an attorney, a technical expert, or the inventor, on the proper construction of a disputed
claim term, relied on by the district court in this case. The latter kind of testimony may only be relied upon if the patent
documents, taken as a whole, are insufficient to enable the court to construe disputed claim terms. Such instances will
rarely, if ever, occur. Indeed, this case did not present such an instance. Even in those rare instances, prior art documents and
dictionaries, although to a lesser extent, are more objective and reliable guides. Unlike expert testimony, these sources are
accessible to the public in advance of litigation. They are to be preferred over opinion testimony, whether by an attorney or
artisan in the field of technology to which the patent is directed. Indeed, opinion testimony on claim construction should be
treated with the utmost caution, for it is no better than opinion testimony on the meaning of statutory terms. See Markman,
52 F.3d at 983, 34 USPQ2d at 1332-33 ("First, the testimony of Markman and his patent attorney on the proper construction
of the claims is entitled to no deference. . . . This testimony about construction, however, amounts to no more than legal
opinion -- it is precisely the process of construction that the court must undertake.").

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1. "Sole"

The definition of "sole," as used in the'446 and '026 patents is material for two reasons. First, Nike alleges that it could not
have infringed Plaintiff's patents because the CPR Wood does not meet the "sole width" limitation in each patent. Secondly,
and relatedly, Nike maintains that the CPR Wood does not meet the "ratio of the sole plate to the sole" limitation in the
patents. To address these issues, the Court must construe the meaning of "sole."

The American Heritage Dictionary of the English Language gives the following relevant definitions for the word "sole:"

1. The part on which something else rests while in a vertical position, especially:

a. The bottom surface of a plow.

b. The bottom surface of the head of a golf club.

American Heritage Dictionary of the English Language 1654 (4th ed. 2000). Possibly helpful is one of the definitions of the
verb "soling," which is "To put the sole of (a golf club) on the ground, as in preparing to make a stroke." (Id.) Therefore,
contact between the ground and a bottom surface of a club head appears to be a fundamental aspect of a "sole." Nike's
suggests that the proper construction of "sole" is that the "golf club must have distinguishable portion on the bottom of the
club head that is designed to contact the ground as the club lies at rest and that has a width between .48 and 1.52." (D.E. 23
at 6 (emphases added).) Nike argues that the "designed to" language is present in the patent itself, under the description of Wedgewood's preferred embodiment of the invention. (Id. at 6 (citing D.E. 20, Ex. A, Col. 4:29-31 ("The sole is the portion of the sole plate which is designed to contact the ground as the club lies at rest.").) Nike further claims the "designed to" language is necessary to provide predictability and certainty to the definition, since without that language, what constitutes the sole would change depending on how the club was held and upon which surface it rested. (Id. at 9.) Nike's added "distinguishable" language is designed to provide additional certainty by separating the sole from the sole plate. (Id. at 6.)

Wedgewood's proposed construction is that "sole" should be interpreted to mean "the portion of the sole plate which contacts the ground as the club head lies at rest." (D.E. 26 at 3.) Wedgewood rejects the significance of any difference between what a claim is designed to do and what it actually does and what type of "ground" the club is resting on (since "ground," in Wedgewood's view, means a "flat, planar surface"). (Id. at 4.) Moreover, Wedgewood argues that the "designed to" language in its specification, as highlighted by Nike, should be read as simply another way to write "contacts the ground," since other portions of the specification state that the sole "contacts the ground," without inclusion of the "designed to" language. (Id. at 6.) Wedgewood also responds that because "distinguishable" is not in any claim, its inclusion would amount to a wrongfully-added limitation. (Id.)

a. Intrinsic Evidence

i. Words of the Claims

The relevant claims in the '446 and '026 patents do not expressly define the term "sole," other than to state, in relevant part, that it "rests on ground as the club head lies at rest." (D.E. 20, Ex. A, Cot. 7:24-25.) Neither the claims' actual language nor the ordinary definition of the word "sole" makes any mention of the sole being distinguishable or designed to contact the ground (as opposed to merely actually touching the ground). It remains to be seen if the patentee's use of the term is consistent with the general meaning, or if Plaintiff limited the meaning in the specification or prosecution history.

ii. Specification

The specification is often the "single best guide to the meaning of a disputed term." Vitronics, Corp., 90 F.3d at 1582. It acts as a sort-of dictionary, explaining the definition and often defining terms used in the claim. See Markman, 517 U.S. at 373. However, limitations may not appear in the specification only, since "interpreting what is meant by a word in a claim is not to be confused with adding an extraneous limitation appearing in the specification, which is improper." Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989); see also Oakwood Labs., L.L.C., 2003 U.S. Dist. LEXIS 7476, 2003 WL 2101 1785, at * 5. Rather, a specification "using words or expressions of manifest exclusion or restriction" must represent a "clear disavowal of the claim scope" to be effective. Teleflex, Inc. v. Ficosa North America Corp., 299 F.3d 1313, 1327 (Fed. Cir. 2002). To avoid a situation where the specification "trumps" the claim language in construing the claim, the Federal Circuit has cautioned the courts:

Consulting the written description and prosecution history as a threshold step in the claim construction process, before any effort is made to discern the ordinary and customary meanings attributed to the words themselves, invites a violation of our precedent counseling against importing limitations into the claims. For example, if an invention is disclosed in the written description in only one exemplary form or in only one embodiment, the risk of starting with the intrinsic record is that the claim terms be limited to that single form or embodiment. Indeed, one can easily be misled to believe that this is precisely what our precedent requires when it informs that disputed claim terms should be construed in light of the intrinsic record. But if the meaning of the words themselves would not have been understood to persons of skill in the art to be limited only to the examples or embodiments described in the specification, reading the words in such a confined way would mandate the wrong result and would violate our proscription of not reading limitations from the specification into the claims.

Texas Digital Sys., Inc., 308 F.3d at 1204-05 (emphasis added).

At one point the specification states that the "sole is the portion of the sole plate which is designed to contact the ground as the club lies at rest." (D.E. 20, Ex. A, Col. 4:29-32.) At another, however, the "designed to" language is not present, (e.g. Id., Ex. A, Col. 1:29-31.) In fact, there is no other place in the entire patent where Wedgewood uses "designed to" in terms of its discussion of the club head and contact with the ground. Thus, the Texas Digital Systems warning might be apt. However,
the concern underlying the Texas Digital Systems decision is not in place in the instant case. It is apparent that the absence of the "designed to" language in much of the patent is not the result of a conscious decision to avoid the language. Instead, the "designed to" language is implicit in the parts of the intrinsic record that leave it out due to its obviousness. It goes without saying that the club must be designed to, or intended to, contact the ground as the club lies at rest--if, as is the case, the club ordinarily "contacts" the ground as the club lies at rest when it is properly held and handled for striking a golf ball. The patent itself says as much by virtue of the fact that the patent includes claims about the sole contacting the ground. Patents, by definition, are based on what that invention is designed to do, not for any conceivable use (or misuse) of that particular invention. Wedgewood itself recognizes as much, when it maintains that there is no difference between what a club is designed to do, and what it actually does. (D.E. 26 at 4.)

Thus, the Court rejects Wedgewood's contention that it is inappropriate to include the concept "designed to" when interpreting the Wedgewood patents at issue. As Nike explains, if one fails to incorporate some notion of "designed to" into the definition of the patent, there would be grave potential for indeterminacy in the patent, both as to what constitutes the "sole," but also as to what constitutes the ratio of the "sole plate" to the "sole," which is another critical aspect of the patent.

If the "designed to" concept were not included, analysis of what it means to "contact" the ground and what part(s) of the club head contact the ground would vary wildly and could be manipulated so as to affect the patent infringement analysis. For example, if the "sole" was just the portion of the club that actually touched the ground--irrespective of club design and whether the golf club is properly held and aligned to strike a golf ball--one could manipulate the "sole," for example, by simply pushing downward excessively on the club shaft so as to create an enlarged "sole." One could also manipulate the size of the "sole" by holding the club at improper angles to the ground, so that the "sole" would shrink as the club was artificially brought towards or pushed away from the golfer's body. The same result would be achieved by allowing a golfer who was too short for the club, or too tall to properly use the club, to attempt to square off to hit a shot.

One cannot have a construction that could be manipulated through the simple expedient of pressing harder on a club (and thus creating a greater "sole" and smaller "soleplate-to-sole" ratio). Nor can one have a claim construction that will vary depending on the particular angle at which any given golfer (or competing inventor) uses (or purposefully misuses) a club. To have an accurate measurement of the sole, that measurement must be consistent and identifiable. Since the sole must be "designed to" contact the ground while at rest, lest the measurements be inconsistent and the soleplate-to-sole ratio limitation be meaningless (since the sole width would be indeterminate), the "designed to" language cannot be a limitation, but rather is a mere clarification. Therefore, it is proper to hold that the sole is that part of the club that is designed to contact the ground.

The Court also agrees with Nike that the sole must be a "distinguishable portion" of the sole plate. It is clear from the specification that the bottom of the club head is comprised of a sole plate and a sole. (Id. at 8.) To be able to calculate a ratio between the width of the sole plate and the width of the sole, the two must be able to be separately calculated.

The specification indicates that the sole is contained within the sole plate and is only a portion of the sole plate. (D.E. 20, Ex. A, Col. 4:29.) The specification goes on to point out that while the sole rests on the ground, that part of the sole plate attached to the heel and toe of the club remains off the ground, such that it is the sole portion of the sole plate that generally creates a divot (by contacting the ground) during a golf swing. (Id., Ex. A, Col. 4:40-45.) In fact, the drawings attached to the patent indicate that the sole (numbered 32) is identifiable and separate from the sole plate (numbered 30). (Id., Ex. A at 4 (Fig. 5).) Even the abstract notes that "the sole plate comprises the sole which contacts the ground as the club head lies at rest..." (Id., Ex. A at 1.) By this statement, Plaintiff's patent seems to indicate that while the rest of the sole plate does not touch the ground, the sole is markedly different in that it does contact the ground.

Plaintiff maintains that requiring the sole to be a "distinguishable portion" of the sole plate would amount to importing a limitation into the claims. However, given the discussion of ratios in a variety of claims and the various distinctions in the intrinsic record between the sole and the rest of the sole plate, the Court does not see how the "distinguishable" language is a limitation. In the absence of an ability to distinguish what is the "sole" from the rest of the "sole plate," one could not coherently discuss the ratio of the soleplate to the sole as the patent specifically contemplates and incorporates. In this respect, the "distinguishable" language dovetails nicely with the "designed to" language.

Nonetheless, as explained further below, the Court finds that Nike's proposed method of ascertaining that "distinguishable portion" of the sole plate--which approach appears to require a separately delineated or demarcated subsurface either on the
sole plate or extending from it in order to qualify as the "sole" 8--is not the approach that is most consistent with the terms of the patent as they would be understood to those in the industry. Although neither party fully explores the "distinguishable portion" concept in its briefs, both Nike and Wedgewood appear to understand Nike's position as one requiring that the sole be an "extension from the bottom of the club" (D.E. 26 at 6), or at least to be some separately engineered and demarcated subsurface on the bottom of the sole. As Wedgewood explains, there is nothing in the text of the patent's language that requires or suggests such a limitation. In addition, Figures 5 through 9, included within the '446 and '026 patents, do not appear to suggest, much less require, a separately demarcated section on the sole plate face. (D.E. 20, Ex. A, at 4-6.) Moreover, although the problems of indeterminacy that Nike identifies would be intractable if there were no way to determine what distinguishable portion of the "sole plate" is actually the "sole," there is a manner of addressing that concern suggested by the arguments of the parties that does not require introducing the idea that the "sole" is a separate demarcated subcomponent of the sole plate or is an extension thereto.

8 See generally D.E. 23 at 10 (Nike asserting that "the 'sole' on the NIKE CPR Wood golf club . . . is the ornamental portion of the NIKE CPR WOOD golf club with the NIKE logo and border around it."); id. at 11 (Nike photo); D.E. 26 at 6 (discussing Nike interrogatory answer describing the "distinguishable portion" as an "extension from the bottom of the club . . . .").

Instead, as one of Nike's own exhibits states, the sole is "the bottom of a wood or iron head that would normally touch the ground." (D.E. 20, DXL, at 225 (emphasis added).) This notion of "normalcy" suggested by Nike's exhibit is more consistent with a recognition that a golf club will, if used properly, be held at a particular angle and rest in a particular manner against the ground. Such an approach also appears to comport with the understanding of both parties' experts. Plaintiff's expert spoke of "the appropriate lie angle" for testing the club and its resting point on the ground (D.E. 27 (Pl. Resp. to Def.'s SF), Ex. A (Aldrich Decl.) P 13), which angle Dr. Aldrich calculated to be 63 degrees for the Nike CPR wood. (Id. PP 13-16) Dr. Aldrich, Plaintiff's expert, also explained that he determined the "proper playing of angle of 63 degrees" with a "Mitchell Angle Machine" (id. P 14), which Wedgewood acknowledges to be a "standard piece of equipment in the club-making industry." (D.E. 38 at 6; see also D.E. 31 (Def. Resp. to Pl.'s SF) P 25 (parties agree that the "correct lie angle for the 26 degree CPR Wood is 62 degrees, +/- 1 degree"); P 26 (parties agree that the lie angle of a golf club "is a standard industry measurement"); P 18 (Defendant not disputing Plaintiff's factual assertion that the "lie angle refers to the natural position of a golf club where the club is not rocked forward on its toe or rearward on its heel").) Dr. Long, Nike's expert, similarly acknowledged the determinacy of the notion of the "standard lie angle" of a golf club. See D.E. 27, Pl. Ex. B (Long. Dep.) at 59 (Q: "So a standard lie angle --or a lie angle is a standard measurement in the club making industry, correct?" A: "That's correct."); id. at 60 (Q: "The lie angle refers to a natural position where the club is not up on its toe or on its heel, correct?" A: "That's correct."). Given that the intrinsic record does not support the idea that a "sole" must be a separately delineated or demarcated subsurface either on the sole plate or extending from it to qualify as a "sole," and given that the parties and their experts agree that a "standard lie angle" can be ascertained in the golf club industry within a specificity of plus or minus a single degree, employing the concept of "standard lie angle" seems much more reasonable and consistent with the intrinsic record and the expert testimony than importing in an entirely new limitation.

The only remaining aspect to the determinacy problem is, as Nike points out, whether the standard lie angle approach is rendered meaningless because of the fact that sometimes on a golf course there are different types of terrain. (See D.E. 23 at 9.) To be sure, this is a non-frivolous issue. However, the Court finds persuasive the solution suggested by Wedgewood--namely, that one should interpret the term "ground" in the patent's language to mean a "flat, planar surface." (See, e.g., D.E. 26 at 4.) Such an approach is also consistent with Nike's Exhibit L (the book, "Golf Club Design, Fitting, Alteration and Repair" by Ralph Maltby (4th Ed. 1995), at 225), which discusses the sole in terms of the portion of the bottom of a club that "would normally touch the ground." (Id.) Given the choice between: (1) importing a concept into the patent's meaning that appears nowhere in the text of the intrinsic record or in the accompanying drawings (namely, as Nike suggests, the notion that there must be a separately delineated or demarcated subsurface either on the sole plate or extending from it in order to qualify as the "sole"), or (2) requiring that measurements about the "sole" be made in relation to the "ground" being a "flat, planar surface" (an orthodox understanding of the term that comports with the idea of a "normal" situation in striking a golf ball), the Court considers the second course to be the one most consistent with the intrinsic record in this case and the
testimony of the parties' experts. Wedgewood, through its proffered evidence in the form of the Aldrich analyses, would not appear to be in any position to object to such a definition for "ground" in the patent. (See D.E. 27, Pl. Ex. A (Aldrich Decl.) at 3, PP 11 ("In order to make accurate measurements on the sole portion of the club at rest, the term ground is taken to be a rigid, flat surface. Any other interpretation of 'ground' would lead to erroneous measurements that could not be widely practiced by those skilled in the art.").) The approach also is consistent with the manner in which Nike's expert conducted at least some of his own testing (see, e.g., D.E. 27, Pl. Ex. B (Long Dep.) at 51 (Q. "Well, if you were talking about measurements, would you assume ground means a hard surface?" A. "I think, generally, if I were measuring a club in the laboratory, I would be using a hard, flat plate."); id. at 51 (Q. "So is it fair to say when you use 'ground' in that figure, you're using it synonymously with a flat plate?" A. "Yes.").)--although to be entirely fair to Nike, it and its expert have always raised the issue about how there is tall grass and sand on a golf course and not only flat surfaces. 9 Furthermore, when Wedgewood chose to discuss terrain that was not flat, such as in the Summary of the Invention, it did not use the term "ground" but instead specifically described the terrain's consistency and characteristics. (See, e.g., D.E. 20, Ex. 1, Col. 1:38-42 ("The golf club of the present invention is also especially useful in certain situations, including, for example, hitting a golf ball out of a difficult lie (such as from the rough or from a fairway bunker) . . . ."), Col. 4:45-47 (discussing "longer grass"), 4:54-57 (same); accord id., Ex. C, Col. 1:43-47; id., Col. 4:48-50; id., Col. 4:56-59.)

9 Nike also suggests, through its expert, for example, (see D.E. 27, Pl. Ex. B (Long Dep.), at 51), that one must consider the fact that a club often is designed with the intent that the club create a divot when it is used, and that this precludes use of a definition of the ground as a flat, planar surface. But even if a club is intended to often create a divot, indeterminacy is not lessened by viewing the meaning of "ground" in the patent as anything other than a flat, planar surface. For example, regardless of how a club is engineered, if a golf ball is lying on an incline adjacent to a fairway, the golfer likely will be standing on that flat surface and will strike the ball such that an unorthodox fraction of the normal sole actually will be creating any divot. Similarly, if a golf ball is resting in a steep sand trap, the golfer may purposefully swing behind the ball and swing much if not all of the club head under the sand. In that instance, far more of the club will pass through the sand. Unless one analyzes the "sole" in terms of an understanding of "ground" in the patent as a flat, planar surface, the fact that a club may be designed to often create a divot or contact the sand does not add determinacy to the analysis of the "sole" or the "sole plate to sole" ratio. The only way to avoid those sorts of indeterminacy issues—which otherwise can be solved by viewing "ground" as a flat planar surface and requiring the "sole" measurements to proceed with the club resting at a "standard lie angle"—is to import the notion into the patent that the "sole" must be a detectible area otherwise demarcated on the face of the sole plate or extending from the sole plate. But, as explained above, nothing in the language of the patent or the relevant drawings included with the patent application supports the latter approach.

In sum, the Court believes that the manner of solving the indeterminacy problem identified by Nike (which cannot be ignored, given that the patent expressly requires that one be able to calculate a "sole plate to sole" ratio), while remaining consistent with the intrinsic record, is to view "ground" as a flat, planar surface. That limitation, combined with the requirement that the "sole" must be measured in conformity with the "standard lie angle" recognized in the golf industry, will allow for an ascertainable "sole." The "sole," under this analysis, will be a portion of the sole plate that is "distinguishable" (and thus able to be used to calculate the "sole plate to sole" ratio) and "intended to" contact the ground. In fact, the "distinguishable" and "intended to" requirements compliment each other, in that the "sole" can be measured and distinguished as being that portion of the sole plate that is intended to and does contact the "ground" when the club is held at its proper angle, as recognized by golf professionals.

iii. Prosecution History

The Court turns to the prosecution history of the patents to inquire whether any statements made during the prosecution about the meaning of "sole" affect the term's scope. The Court notes at the outset that neither party has brought to the Court's attention any portions of the prosecution history that shed additional light on the meaning and scope of the term "sole." And after independent investigation, the Court can detect none. There is no indication in the prosecution history, for example, that Plaintiff intended to limit the definition of "sole" to any separately delineated or demarcated subsurface either on the sole plate or extending from it. And there is no suggestion that "ground" means anything other than a flat, planar surface. Nor is there any suggestion that the sole was indistinguishable from the sole plate; in fact, the intent of the
prosecution history runs parallel with the that of the specification--that the sole plate and the sole were intended to be
distinguishable.

Therefore, the Court construes the word sole to mean "the distinguishable portion of the sole plate designed to contact the
ground (i.e., a flat, planar surface) and contacting the ground as the club lies at rest, with the club contacting the ground at
the standard lie angle for the club at issue."

10 Nike generally contended that the term "about" in the patent should be construed to mean +/- .02 of an inch. This
definition would produce a specific measurement for the sole as between .48 of an inch and 1.52 inch. Although the Court
would be inclined to adopt this definition (Wedgewood does not meaningfully object to Nike's proposal), in light of the fact
that the briefing largely proceeded within the context of Nike's proposed claim construction, and the fact that the Court has
not wholesale adopted the positions of either Nike or Wedgewood, the Court will not pass definitively on the "about" issue
pending further briefing as appropriate in light of further developments in this case.

154. As previously noted, the words of a claim will be given their ordinary meaning unless it appears that the inventor used
them differently. Hoganas AB v. Dresser Industries, Inc., 9 F.3d 948, 951 (Fed. Cir. 1993). The '656 patent uses the word
"solenoid" in its normal sense to describe a conventional, electrically-operated member which linearly pulls an iron core
into a coil. Col. 1, line 30; Col. 1, line 36; Col. 6, lines 43-46. In the '656 patent specification, the solenoid is consistently
described in terms of a plunger 98 contained within a spool supporting a coil 108 which actuates the solenoid plunger to
move it linearly, with a solenoid housing which can move linearly independently of the solenoid plunger. Col. 2, lines 47,
51, 55, 61; Col. 4, lines 37-38, 46; Col. 5, lines 43, 62, 67; Col. 6, lines 9-57; Col. 7, lines 5, 8, 11, 13-16, 26; Col. 8, line 7;
Figs. 3, 5, 6, 7, 9, 10. There is no suggestion in the '656 patent that the patentee intended the term "solenoid" to include
anything other than the conventionally described mechanism.

155. Other claims of the '656 patent also define a "solenoid" in terms of a solenoid housing enclosing a plunger. See, e.g.,
Claims 9, 16. Other claims of the patent may be used to determine the scope of the claim at issue. McGill, Inc. v. John Zink
Co., 736 F.2d 666, 674 (Fed. Cir. 1984).

156. The '656 patent thus defines the "solenoid" as a structural element where (1) the solenoid is actuated only as long as
power is supplied, then returning automatically to its original position; (2) the motion of the solenoid plunger is linear; and
(3) the solenoid housing is movable.

1. Solid

Many of the claims at issue recite a top surface that is solid. See, e.g., '015, claim 1(c) ("The top surface and the sidewall
surfaces are generally solid and continuous across their entire extents."). Both parties cite the same dictionary, which defines
"solid" as "being without an internal cavity" or "not interrupted by a break or opening." Merriam-Webster's Collegiate
Dictionary 1118 (10th ed. 1997). CP focuses on the latter definition, while Anchor asserts the former, urging that "solid"
is generally understood to mean "no holes." The American Heritage Dictionary of the English Language provides that "solid"
means "not hollowed out" or "without gaps or breaks; continuous." American Heritage Dictionary of the English Language
1229 (1975).
CP additionally relies on the prosecution history of the '015 Patent in which Anchor emphasized the "elegant simplicity" of its "one block" system, stating that the solid top surface provided a smooth finish that negated the need for a top cap block. See Amendment and Verified Response at 18-22 (Ali Decl. Ex. D). After the examiner rejected various claims of the '015 Patent, Anchor submitted numerous amendments and additions to the application, as well as remarks encouraging reconsideration and explaining the invention. See generally id. Specifically, CP references Anchor's comment that "because the top and side surfaces of the block are solid (planar or finished), without recesses, cores, or protrusions, no cap blocks are required to finish a wall," arguing that this statement reflects the appropriate meaning of solid: without recesses, cores, or protrusions. Id. at 22.

Though Anchor focused in the prosecution history on promoting the benefits of its single block system, repeating multiple times the advantage of eliminating the need for a cap or top block, this cited statement does not explicitly define "solid." Id. at 18-22. Rather, it expresses a description of the surface of the block that may be read either conjunctively or disjunctively, and therefore does not purport to offer a precise definition. Other discussions in this same Amendment and Verified Response support Anchor's contention that it was arguing the solidity of its block surfaces distinguished its product from prior art with large, open holes in the block faces, indicating the varying uses of the term in the prosecution history. Id. at 52-53 (arguing that rejection in light of the Swiss Patent was incorrect because the Swiss Patent teaches large open core hole through sides of block and therefore lacked "sidewall surfaces that are solid and substantially continuous"). However, the "no holes" definition advocated by Anchor is overly narrow and use of "solid" is not so limited in the Patent record or in ordinary parlance.

Pursuant to customary usage and the context of the '015, '713 and '197 Patents, "solid" is properly understood as "without breaks or openings." This construction is consistent with the prosecution history cited by both parties, which draws a distinction between the solid top surface of the '015 Patent claims and prior art that included large open spaces within the top surface area and therefore necessitated the use of a cap block. Id. at 20, 40.

The Source of Light Element: This element of claim 2 reads:

"Solid radiation source"

The parties' primary dispute here is whether "radiation source" encompasses more than radionuclides, which the court addressed above to limit "radiation source" to radionuclides. Cytyc presents a dictionary definition of "solid," namely, "of definite shape and volume; not liquid or gaseous," from the AMERICAN HERITAGE COLLEGE DICTIONARY, 1295 (3d ed. 1997). The court will therefore define "solid radiation source" as "a radionuclide of definite shape and volume; not liquid or gaseous."
reflected light on particulates in the air which reflected light is visible from in front of and behind the vehicle.

The interpretation of the "source of light" phrase of this element is disputed. Krippelz alleges that there is no special significance to the specific type of device that is used to make the beam of light and that "source of light" can thus include an incandescent bulb and reflector combination that produces a beam. Ford objects to this interpretation for two reasons, both of which I reject. First, Ford asserts that Krippelz's construction is "contrary to the plain meaning of a 'source' because the reflector is not part of the device that generates the light." The problem with this argument is that a source -- or any device -- can have multiple component parts. It is a reasonable interpretation of "source of light" to allow it to include a device comprised of two or more component parts, such as a bulb and a reflector, producing a beam of light. Ford's second objection is that in the prosecution history, Krippelz disclaimed incandescent bulbs as the source of light, and thus incandescent bulbs cannot be the source of light. I reject this objection because when Krippelz disclaimed incandescent bulbs as a "source of light" in the prosecution history, he did so only to the extent that he rejected them or any other device that did not generate beams of light. In other words, his disclaimer was premised on their inability to generate beams of light. However, if incandescent bulbs in combination with another component part, such as a reflector, form a device which can produce beams of light, then that device can be a "source of light."

B. Term 4: "source of pressurized fluid"

The Court finds that it need not construe the claim term "source of pressurized fluid," which appears in claims 1, 9, 15, and 24 of the '325 patent and claims 1, 9, 11, and 14 of the '664 patent.

Textron argues that "source of pressurized fluid" means a pump/flow-control valve combination disclosed in the '325 patent's written description. 2 Textron Opening Br. at 16. In effect, Textron asks the Court to limit the claim language to a preferred embodiment -- that is, to read a limitation from the specification into the claims. This the Court cannot do. See SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1340 (Fed. Cir. 2001) (describing "one of the cardinal sins of patent law -- reading a limitation from the written description into the claims").

--- Footnotes ---

2 Because the written descriptions of the '325 patent and the '664 patent are identical, the Court will refer only to the '325 patent's written description.

--- End Footnotes ---

Toro argues that "source of pressurized fluid" need not be construed. Toro Opening Br. at 21. The Court agrees. The phrase "source of pressurized fluid" is comprehensible to a lay person and necessarily encompasses the pump/flow-control valve system described in the '325 patent. '325 patent Col. 5:8-10. Accordingly, the Court will not construe this term.

2. "space" or "spaces"

<table>
<thead>
<tr>
<th>Plaintiff's Construction</th>
<th>Defendants' Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>A location on a game board that can be occupied by a game piece</td>
<td>Grid-like areas, laid out in rows and columns, on the upper, playing surface of the game board where playing pieces, not lasers, are moved in turn.</td>
</tr>
</tbody>
</table>

a. Innovation's Proposed Construction
Innovention urges the Court to reject the defendants' proposed construction as improperly attempting to read in features of the '242 patent's preferred embodiments into the claim language.

b. Defendants' Proposed Construction

The defendants appear to concede in their briefs that "every time the inventors used the word "spaces", they used it to mean a location on the game board where the pieces may be located during game play.

c. The Court's Construction

Based on the claim language, and the ordinary meaning of what is clearly a structural feature that inherently defines a location, the Court finds that "space" or "spaces" are simply "[a location or] locations on the playing surface of the game board that can be occupied by one of the game pieces." The Court declines, as it did in construing "game board", to read in limitations not inherent in the ordinary meaning of the term "space." This is most consistent with the understanding of how an ordinary person skilled in the art would understand "spaces" as they relate to board games. Indeed, the Court finds that the claims themselves sufficiently define the term "space" (Claim 15, for example, teaches ")...the playing surface being segmented into a plurality of spaces, each defining a location that can be occupied by one of the game pieces"). Accordingly, a "space" or "spaces" are defined as; "A location [or locations] that can be occupied by one of the game pieces."

2. Space

Habasit contends that "space" means "the opening bounded by the web and interlinked link ends when the opening is at its maximum." (D.I. 55 at 39.) First, Habasit argues that the spaces must be open. In support of its construction, Habasit contends that, since the *941 patent was primarily designed for the food-handling industry, its belt required holes for both easy cleaning (drainage and airflow) and the flash-freezing of food. Therefore, Habasit contends, the spaces described in the '941 patent had to be opened. Because the '680 patent is a continuation-in-part of the '941 patent, Habasit concludes that the spaces of the '680 patent must also be open.

Second, Habasit argues that the space must be measured at its maximum width, regardless of whether the belt is running in a straight or curved path. Habasit observes that the '680 patent adds to its predecessor by ensuring that the maximum width of the holes remains less than ten inches. Therefore, Habasit reasons, to ensure that the space never opens large enough to endanger the fingers of an operator, the space must be measured when the hole is at its maximum width, regardless of whether the belt is running in a straight or curved path.

Rexnord contends that Habasit's proposed construction is erroneous. Rexnord argues that Habasit's construction impermissibly adds an additional limitation to "space" by requiring that the space be open. Rexnord asserts that Habasit never mentions the flash-freezing and cleaning purposes of the belt in the '680 patent, and therefore cannot add them at this point to buttress its position. The space, Rexnord contends, can be opened or closed. Rexnord next argues that "space" only occurs when the belt is running straight. Rexnord contends that, since at a curve the inside of the belt collapses, the belt is only at its maximum extension when it is running straight. Since the claim language states that the opening only occurs at the belt's "maximum extension," such extension can only occur when the belt is running straight, not at a curve.

After considering the claim language, specification, and prosecution history of the '680 patent and the parties' respective positions, the Court agrees with Habasit's interpretation of the disputed language. First, the Court concludes that a "space" can occur at both a straight or curved portion of the belt. Claim 1 states that the belt is "capable of following a curved path" and "when the belt is at its maximum extension … a space bounded by the web … has a diameter less than 10mm." ('680 patent, col. 6.) Thus, the belt is essentially designed to round curves and protect fingers. If the 10mm limitation only applied to the belt when it traveled straight, the belt would fail its objective. Second, the space is designed to be open. The '680 patent is a continuation-in-part of the '941 patent, and accordingly contains its relevant disclosures. The '941 patent disclosed that the design pertained to "light weight" and "easy to clean" plastic belt modules used "especially in conveying
food products." ('941 patent, col. 1, 1. 11-13). Thus, the '680 patent shares the '941 patent's food-handling purpose. For these reasons, the Court concludes that space means "the opening bounded by the web and interlinked link ends when the opening is at its maximum."

2. "Spaced Apart"

The term "spaced apart" in Claim 1 describes the juxtaposition of the "cutting disks." '780 Patent, col. 3, lines 46-48. Fellowes defines "spaced apart," element 1(f), to mean "there is a space between two cutting disks." Michilin reads it to mean "there is a space between the two cutting disks such that the two cutting disks do not touch." Intek proposes that it means "there is a space between the two cutting disks such that no part of the two cutting disks touch, including the central portions thereof."

Intek correctly points out that the "cutting disks" depicted in Figure 1 "do not touch each other" and that the specification describes the "spacers" as being located between each disk, from which one would infer that the disks do not touch. See '780 Patent, col. 2, lines 57-58 ("Disposed between adjacent disks 14 is a spacer 20 located adjacent to each disk."). There is nothing in the claim or the specification, however, to the effect that "spaced apart" means the "cutting disks" "do not touch." The defendants again turn to the prosecution history in an effort to limit the construction of "spaced apart." As noted above, the '780 Patent's applicants, in urging that the USPTO withdraw its rejection of Claim 1, described the Henreckson patent as teaching "the abutment of two cutting disks against each other to form a single cutting unit . . . ." Id. at FE 000453. The defendants' argument appears to be that the patentees' remarks to the USPTO, by implication, meant that the '780 Patent's "cutting disks" do not abut against each other. Two "cutting disks," however, could be spaced apart at the shaft and touch at one point or another at the cutting edge. The Court refuses to add "do not touch" onto its construction of "spaced apart" and accordingly FINDS that "spaced apart" means "there is a space between two cutting disks."

3. CONSTRUCTION OF CLAIM 3 OF THE '221 PATENT

Independent claim three of the '221 Patent teaches "[a] passive, lenticular optical device" that comprises, in pertinent part:

a sheet of transparent material having at least one side composed of a plurality of parallel, elongated, lenticular, and convex claim elements,

a message carrier spaced apart from said sheet of transparent material, by a distance substantially equal to the focal length of said convex lens elements such that the included angle of converging light rays at the focal point of each convex lens element does not exceed 30 [degrees],

the surface of said message carrier facing said sheet of transparent material having a plurality of markings patterned graphically or mechanically into a series of segments …

(Col. 8, Ins. 7-20) (emphasis added). Thus, the invention disclosed in claim three consists of (1) a sheet of transparent material and (2) a message carrier "spaced apart" from the transparent sheet (3) containing image patterns. The main element at issue in this litigation is the requirement that the message carrier be "spaced apart" from the transparent sheet. 3 4360

The parties also dispute the construction of the "included angle" limitation. The court need not address this argument since construction of the "spaced apart" limitation conclusively resolves the issue of literal infringement.

- 4360 -
Defendant insists that two articles cannot be "spaced apart" from each other if they are physically touching. (See Defs.' Mem. P. & A. Supp. Mot. Summ. J. at 16:12-13). Relying on the ordinary English definition of the terms "spaced" and "apart," Defendant argues that the "spaced apart" limitation requires "that there must be some space between the message carrier and the sheet of lenticular material." (Id. at 16:16-17) (emphasis added).

Plaintiff counters that the '221 Patent's "spaced apart" limitation does not require a physical space between the lens sheet and the message carrier. According to Plaintiff, "spaced apart" simply "means that the distance between the message carrier and the curved surface of the convex lens elements is substantially equal to the focal length of the convex lens elements." (See Pls.' Mem. P. & A. Supp. Mot. Summ. J. at 11:2-4). Plaintiff further contends that the message carrier and transparent material "can 'touch' each other yet still be 'spaced apart.'" (Id. at 8:20-23). Plaintiff asserts that this construction is warranted by the specification and the overall construction of claim three.

Having carefully considered both positions, the court agrees with Defendant and finds Plaintiff's proffered construction of claim three completely unreasonable. The first paragraph of claim three requires "a sheet of transparent material having at least one side composed of a plurality of … convex lens elements," (see Col. 8, Ins. 8-10), in other words, a lenticular sheet. Paragraph two affirmatively requires the message carrier to be "spaced apart from said sheet of transparent material." Taken together, paragraph one and two require the message carrier to be "spaced apart" from the entire lenticular sheet, not merely the convex lens elements. Had Plaintiff truly intended the "spaced apart" limitation to merely describe the physical orientation between the lens elements and the image carrier, he would have drafted the second paragraph to read, "a message carrier spaced apart from the convex lens elements of said sheet of transparent material" rather than, as it reads now, "a message carrier spaced apart from said sheet of transparent material."

This construction is supported not only by the plain language of the claims, but the '221 Patent specification. The section entitled "Summary of the Invention" includes the following discussion of the prior art:

The current state of the art subscribes to a lenticular lens array laminated to, or placed in direct juxtaposition with, an underlying message carrier sheet. This thin, laminated methodology works extremely well for non-reflectorized, hand-held novelty devices and other closely viewed articles.

(See Col. 2, Ins. 35-40). In the above-quoted passage, the inventor affirmatively acknowledged that the prior art included lenticular devices with message carriers laminated directly to the lenticular sheet, such as Defendant's accused products. Directly laminating the lenticular sheet to the message carrier and positioning the lens array towards the light source, the inventor continued, created two significant shortcomings: absorption of light rays and surface glare.

Absorption occurs: at the surface of reflective materials; in the inks used in the printed message; and, additionally, with light refraction when an adhesive is used to bond a reflective material or message to a lenticular surface.

(Col. 2, Ins. 60-64, 43-44). Although the effects of light loss can be "minimized through proper fabrication and selection of the form of materials employed," (col. 2, Ins. 65-69), the inventor next asserted that:

by turning the lenticular lens array inside the sign, facing the message carrier sheet, and by spacing the lens array apart from the carrier sheet, the spherical aberration or surface glare of the curved lens elements is substantially minimized.

(Col. 3, Ins. 1-5). Reversing the lens array and spacing the lenticular sheet apart from the message carrier, according to the specification, solved the light loss and glare problems inherent in prior art lenticular products. Although claim three does not require the lens array to face the message carrier, it indisputably requires the lens array and message carrier to be "spaced apart." The above-quoted passages and the figures in the specification confirm that "spaced apart" means what it says—there must be some space separating the message carrier from the lenticular sheet. The specification affirmatively reveals that "spacing apart" is achieved by physically separating the lens sheet from the message carrier.

Plaintiff's opposition to Defendant's motion for summary judgment, and Plaintiff's opening brief, make one recurring counter-argument: Plaintiff repeatedly asserts that Kodak's construction of the "spaced apart" limitation requires the court to read into claim three limitations found in the specification and preferred embodiment.
It is well-established that "references to a preferred embodiment, such as those often present in a specification, are not claim limitations." Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988). As a matter of claim construction, "the specification may aid the court in interpreting the meaning of disputed claim language," but "particular embodiments and examples appearing in the specification will not generally be read into the claims." Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998). This doctrine, however, has no application to this case. The plain language of claims three and nine require the message carrier and transparent lenticular sheet to be "spaced apart" from one another. The "spaced apart" language, therefore, does not merely recite a characteristic of the preferred embodiment; it describes a limitation explicit in claims three and nine. 4

4 The court has considered Plaintiff's remaining arguments and finds them too insubstantial to warrant further discussion.

C. "Spaced Apart" or "Longitudinally Spaced From"

"Spaced apart" or "longitudinally spaced from" is used in claims: 27 and 28 of the '120 Patent; and 1, 2-15, and 17 of the '982 Patent. 83 Medinol defines "spaced apart" as "separated" and "longitudinally spaced from" as "separated along the longitudinal axis." 84 Guidant, by contrast, submits that the terms mean "the apices of adjacent cells along the longitudinal axis are separated from one another in space by a flexible connector." 85

The words "spaced apart" and "longitudinally spaced from" are used in the asserted claims consistently with their accustomed meaning. In other words, "spaced apart" means "separated" and "longitudinally spaced from" means "separated along the longitudinal axis." 86 For instance, claim 21 of the '120 Patent, upon which asserted claims 27 and 28 depend, discloses:

A stent formed of a tube having a patterned shape, the patterned shape comprising:

a. first meander patterns having axes extending in a first direction;

b. second meander patterns having axes extending in a second direction, different than said first direction, wherein said second meander patterns intersect with said first meander patterns;

c. wherein said first meander patterns have loops;

d. wherein said first meander patterns are spaced apart to leave a portion of said second meander patterns between each pair of adjacent first meander patterns;

e. wherein each of said second meander patterns has at least one loop between at least one pair of adjacent first meander patterns. 87
The claim language makes clear that the term "spaced apart" means separated - i.e., that the first meanders are placed at some distance from one another. That part of the second meander pattern (a loop) is positioned in the space between first meanders is an additional limitation, independent from the words "spaced apart."

86 See Webster's New World Dictionary 1363 (2d Coll. ed. 1974 ("New World Dictionary"), Ex. I to the 8/20/04 Declaration of Fabian D. Gonell, counsel for Medinol ("Gonell Decl.") (defining "spaced" as "to arrange with space or spaces in between"), cited in Medinol's Markman Hearing Slide Presentation ("Pl. Sl.") at 47; see also id. at 63 (defining "apart" as "separately or away in place or time), cited in Pl. Sl. at 47.

87 '120 Patent, col. 8, ll. 6-20.

The prosecution history cited by Guidant fails to contradict this conclusion. Medinol argued to the PTO that "the claims have been amended to make clear that the first meander patterns are spaced from each other and that the loop is in the space between meander patterns, a limitation discussed at the interview as better defining the relationship." 88 It follows from this statement that "spaced apart" is used to describe only the relative position of the first meander patterns, not the entire structure of the stent. Accordingly, there is no basis for requiring a loop of the second meander to fill the space between first meanders. Thus, Guidant has failed to demonstrate that Medinol intended for these terms to be used in a manner contrary to their plain and ordinary meaning and "spaced apart" and "longitudinally spaced from" are thus respectively defined as "separated" and "separated along the longitudinal axis."


The disputed phrase is located in Claims 2 and 10. The dispute centers on whether the patent has a directional component such that the connectors located at the end of the bag and liner with the discharge opening must be located at the bottom of the bag. Plaintiff proposes this claim should be interpreted as "the connectors are located so that they do not touch one another and so that they are near both the end of the bag through which the contents of the bag are emptied and the sides of the bag." Defendant proposes this claim should be interpreted as "the connectors being spaced far apart from each other and being located adjacent the side wall portion of the bag and the connectors being adjacent the bottom end of the bag having the discharge opening therethrough and adjacent the bottom end of the liner having the discharge opening therethrough."

The arguments advanced in support of the competing interpretations of this phrase are, in large part, the same as the arguments advanced in support of the first disputed phrase. The conclusion is the same. The patent does not contain a directional requirement. Accordingly, Plaintiff's construction of the claim is persuasive and supported by the intrinsic evidence. The claim at issue is interpreted to mean "the connectors are located so that they do not touch one another and so that they are near both the end of the bag through which the contents of the bag are emptied and the sides of the bag."
Claim 15:
1. "two spaced-apart-and-parallel implement-support plates"

Plaintiff proposes a construction of two sides of the knife body that are parallel to each other and held spaced-apart from each other by a member, such as a post, and the attachment plate. Since they are parallel, they are spaced apart for their entire length so that they do not touch each other. Each support plate is a discrete member, and not just a portion of another member.

Defendant proposes a construction of "two implement support plates that are spaced apart and parallel. Defendant argues that under this patent it would be possible for the support plates to touch one another at some point. However, the language "spaced apart" and "parallel" indicate that the support plates cannot touch each other. The specification also establishes that the support plates do not touch:

In the preferred approach, there are two implement-support plates 72 that serve as the sides (also sometimes termed "bolsters") of the knife body 22. In this preferred approach, the two implement-support plates 72 are parallel and spaced apart by support posts in the form of rivets. In an alternative embodiment, there are separate side plates and the implement-support plate 72 is positioned between them, but that design adds unnecessary bulk and weight to the knife body.

"906 patent, Col. 5, lines 2-10.

As set out in the specification, when there are two implement support plates, they are separated by support posts, and when there are two side plates they are separated by the implement support plate. The two plates do not touch or intersect. Defendant's expert offered an alternative embodiment in which the two side plates are separated for the length of the implement support plate and then bend at one end and touch one another. This embodiment is not supported by the language of the patent, as the plates are not spaced apart and parallel if they touch at one end.

The court concludes the proper construction of this term is "two implement support plates that are spaced apart and parallel and do not touch or intersect."

2. Claim 14

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

3 In its entirety, Claim 14 includes the following elements:

. a box shaped fireplace having four substantially vertical walls,

. at least one of said walls having a glass access door,

. a rear wall comprising one of said remaining vertical walls having a horizontal exhaust pipe connected thereto for insertion through said outside wall of said space to be heated,

. a top wall having an outer plenum,

. a bottom wall having an outer plenum,

. a combustion chamber in said box shaped fireplace inside said vertical walls,

. said rear wall further comprising an intermediate plenum outside said combustion chamber connected to said horizontal exhaust pipe,
said rear wall further comprising an outer plenum connected to said bottom outer plenum and to said outer plenum forming a U-shaped heat exchanger for circulating interior space air around the outside of said combustion chamber of said fireplace and for exhausting heated air into said interior space to be heated,

said rear wall comprising a vertical baffle spaced apart from the rear of said combustion chamber for directing combustion gases first in a vertically downward direction and then in a vertically upward direction and into said horizontal exhaust pipe.

The contentious element of Claim 14 provides:

said rear wall further comprising a vertical baffle spaced apart from the rear of said combustion chamber for directing combustion gases first in a vertically downward direction and then in a vertically upward direction and into said horizontal exhaust pipe.

Gross Aff., Ex. 1, col. 9, line 22 to col. 10, line 22.

A. Claim Construction

Hearth offers several definitions of "baffle" including "an object placed in an appliance to change the direction or retard airflow." Shimek Aff., Ex. 9, 002410. The Court will adopt Hearth's definition of baffle for the purposes of construing this limitation.

Moreover, Claim 14 requires a vertical baffle "spaced apart from the rear of said combustion chamber." The prosecution history reveals that the original language was modified, because the patentee had identified the baffle as the rear wall of the combustion chamber. The examiner objected on the grounds that the baffle could not simultaneously be the rear wall of the combustion chamber and be outside the rear of the chamber. As a result, the patentee changed the limitation to read "a vertical baffle spaced apart from the rear of said combustion chamber." The clear implication is that there must be some distance between the baffle and the rear of the chamber.

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d. "spaced apart opposing pivot flanges"

The term "spaced apart opposing pivot flanges" refers to projecting rims or ribs with flat inner surfaces placed a fixed distance from each other on opposite sides of the center flange that support the shift lever pivot structure and attach it to the support via a pivot pin for turnable or rotational motion. These projections are distinct from and supported by pairs of webs that serve to connect opposite ends of each pivot flange to the center flange.

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5. Spaced Axially Downwardly, Spaced Axially Below, Spaced Apart

These terms are used throughout the reexamined 097 patent and are sufficiently related that the court finds it appropriate to address them jointly. Specifically, the patentee uses "spaced axially downwardly" in asserted claims 11, 27, 32, 34, and 35; "spaced axially below" in asserted claim 42, and "spaced apart" in asserted claims 19 and 28.

In the patent's claims the patentee uses each of these phrases in the same way to describe the positioning of the first and second flanges. That is, in each of the independent claims, the patentee describes the "second flange spaced axially downwardly from said first flange" or "spaced axially below said first flange." Reexamined 097 patent, Stant Ex. 2, col. 1, 11. 55-56; col. 2, 11. 59-60; col. 3, 11. 22-23; col. 3, 11. 42-43; col., 11. 60-61; col. 4, 1. 39. The patentee uses "spaced..."
Apart" in two of the dependent claims to further describe the position of the two flanges.

Again the court begins with the dictionary definitions of the words of the phrases. "Axial" means "or, pertaining to, characterized by or forming an axis." Webster's Universal, Stant Ex. 103, p. 145. "Downward," when used to indicate a relation, means "from a higher to a lower place or condition." The parties seem to agree that "below" has a similar meaning in scope to "downward." The meanings of these terms do not appear to be in dispute.

The resolution of the parties' dispute appears to turn on the word "spaced." In relevant part, "spaced" means "to place at intervals" or "to arrange with spaces between" Webster's Third, Gerdes Ex. 239. The court finds nothing in the text of the specification to indicate the patentee's intention that this word be given an alternate meaning. Based on this definition, Gerdes argues that the two flanges must be "arranged with spaces between" and "not be directly attached, i.e., directly firmly fixed, to each other." Gerdes Br., p. 14. Stant argues that the definition of "spaced axially downwardly" and "spaced axially below" does not provide any limitation on the space between the flanges, rather the phrase "spaced apart" is the only term that requires actual physical separation of the flanges and under the doctrine of claim differentiation "spaced apart" cannot have the same meaning as the other phrases.

Both parties point to Judge Dillin's Markman Entry in Stant Manufacturing, Inc. v. Tesma International, Inc., IP 96-1325-C-D/F, to support their positions. Entry Stant Mfg, Inc. v. Tesma Intl Inc., Gerdes Ex. 204 ("Tesma Entry"). Although that case involved the 097 patent and not the reexamined 097 patent, Tesma advocated a position similar to that taken by Gerdes here while Stant advanced similar arguments to those it makes in this case. The court found,

This Court does not find their positions to be in complete conflict. Clearly, the claims require two flanges, each attached to the housing at a different location. Furthermore, the two flanges must function independently of one another. However, the flanges could be abutting and still remain separately functioning structures. Such an interpretation is consistent with the claim language and specification, and it would preserve claim differentiation. Claim 1 requires two flanges, while claim 7 requires the two flanges to be spaced apart. Therefore, we conclude that a "second flange spaced axially downwardly from said first flange" and "a second flange spaced axially below said first flanges" of claims 1, 9, and 10 require the fuel cap to have two flanges, both of which are attached to the housing but not attached to each other. The second flange must be located axially below or downwardly from the first flange, but there is no limitation on the amount of space between the flanges.

Tesma Entry, pp. 20-21. The same reasoning applies in this case. First, the specification clearly indicates that the invention consists of two flanges, rather than the compound flange that appeared in the prior art. See e.g., 097 patent, col. 1, 11. 25-31. And, as Judge Dillin found, these two flanges must act independently of one another in order to achieve the desired result -- that is, the first flange breaking during an impact with the second flange remaining intact to seal the filler neck. Id.; Tesma Entry, p. 20. Further, as Judge Dillin discussed with respect to Claims 1 and 7 of the 097 patent, Claim 11 of the reexamined 097 patent requires only two flanges, while Claim 19 requires that they be spaced apart. Therefore, the court must interpret "spaced axially below" and "spaced apart" to have meanings so as not to render Claim 19 meaningless and therefore violate the doctrine of claim differentiation.

With this reasoning and the ordinary meaning of the words at issue in mind, the court agrees with the definition set forth by Judge Dillin in the Tesma Entry. Specifically, "spaced axially downwardly" and "spaced axially below" require that the invention have "two flanges, both of which are attached to the housing but not attached to each other. The second flange must be located axially [situated along the same axis] below or downwardly from the first flange, but there is no limitation on the amount of space between the flanges." Tesma Entry, p. 21. As Judge Dillin stated, this means that the flanges could be abutting -- that is, touching or bordering -- so long as they remain independently function and not attached -- that is, joined, connected, or bonded -- to one another. Spaced apart, however, requires at least some physical space between the flanges.
said shelf spaced laterally inward from said one side wall and forming a front-to-rear gap therebetween in one position of said shelf for supporting selected articles to be washed

W. Mem. 20 contends those three phrases must be read together to "properly interpret this limitation." According to Whirlpool, "the 'front-to-rear gap' must be sufficiently large to receive the 'selected articles' and the 'laterally inward' spacing must also be sufficiently large so as to provide the appropriate sized gap" (W. Mem. 21). Whirlpool emphasizes that the specification describes the gap as "allowing large articles such as cookie sheets and pizza pans to be placed between the pivotal shelf 80 and the side wall 72" ( '419 Patent col. 5, ll. 54-56).

Maytag's position (M. Mem. 26) is that the gap need not be either a long single gap or a quite wide single gap (or both) and that Whirlpool's arguments on that score lead to importing "several limitations that appear nowhere in the claims and are nowhere suggested by the specification." In particular, M. R. Mem. 14 (emphasis in original) charges Whirlpool with overreaching by claiming "that because the specification references certain large items in the gap, the gap must extend all the way from the front of the rack" and "that for 'front-to-rear' to mean orientation rather than longitudinal extent would create a 'superfluous' claim requirement." Maytag is right.

In that respect Whirlpool has glossed over (or, more accurately, has omitted entirely) the fact that the claim specifies the gap's orientation by its reference to "a front-to-rear gap therebetween." That emphasized word is not a reference back to designate the distance between the front and rear walls--terms that are regularly used throughout the patent claims, and that specifically appear in element 2 of the claim now under consideration (claim 3). Instead "therebetween" plainly refers to the space between the higher side wall and the pivotal shelf in one position of the shelf--and that being so, "front-to-rear" simply characterizes that gap in longitudinal rather than lateral terms, without in any way specifying or indicating the longitudinal dimension.

If Maytag's patent counsel, whose total work product in drafting the claims has demonstrated the typical patent lawyer's fondness for detail in drafting (and of course the typical prolific use of the adverbial form), had wished to limit the claim as Whirlpool urges, it would have been the easiest thing in the world to say "a front-to-rear gap between the front and back walls of said basic rack" (note the comparable usage in element 2) rather than the very different meaning of "a front-to-rear gap therebetween." And similarly, if Maytag's counsel had wished to limit the claim (as Whirlpool also urges) by restricting the use of the gap to such large articles as those referred to in the specification by way of illustration, it would likewise have been the easiest thing in the world to say something along the lines of the gap's "supporting particularly large articles to be washed" rather than simply referring to "selected articles." Nothing supports Whirlpool's attempted redrafting of element 5 to convert it from indicating a user's choice (of "selected articles," perhaps--but not necessarily--selected from among "large articles") into a limitation that is restricted to extraordinarily large articles or the like.

27 Note that element 3 already refers to the function of the one substantially higher side wall as providing support for the racking and washing of "large articles."

In much the same way, in turning from the length of the gap to its width, W. Mem. 22-23 offers up the unpersuasive contention that the pivotal shelf must be "spaced laterally inward" sufficiently to make the gap wide enough to accommodate cookie sheets and pizza pans. But again nothing in the claim language calls for such a restrictive construction. While W. Mem. 23 would have this Court measuring the width of cookie sheets and pizza pans to determine exactly how far "laterally inward" the shelf is placed, doing that would obviously import limitations from the specification into the claim language. Standing alone, the claim language is plain enough: It merely requires the shelf to be laterally inward so as to form the previously described front-to-rear gap. In other words, the spacing between the shelf and the side wall does not have to meet some particular measure, but must merely be located "laterally inward." 28

28 W. Mem. 23-24 contends that the term "selected articles" must have a meaning related to the cookie sheet and pizza pan
cited in the specification and cannot "mean any possible article." But while the specification may be a useful aid in claim construction, limitations in the specification are not to be imported in the claim. Instead the term "selected articles" in element 5 merely means, as the normal meaning of those words connotes, some articles that can fit into a front-to-rear gap created by placing the shelf laterally inward from the side wall.

D. Spaced Parallel Axes

The final element of Claim 1 provides:

and wherein the arms are rotatably driven in synchronism in opposite directions about spaced parallel axes extending generally transverse of the direction of movement of said bag material so that prior to sealing said bag material said sealing and stripping means are moved along said bag material to strip same.

This element is not described in means-plus-function format, because it identifies particular structure rather than the means for accomplishing a certain function.

Ishida contends that the phrase "spaced parallel axes" means two axes which are parallel and separated by a fixed distance such that the axes do not oscillate back and forth toward each other. Taylor contends that there is no requirement that the axes be fixed.

After examining the claims, the specification and the prosecution history, the Court concludes that the disputed phrase requires that the axes be "spaced" by some distance such that they do not touch, but that there is no requirement that the axes be fixed. The word "spaced" does not commonly mean "spaced and fixed." There is no indication in the specification that Taylor intended the word "spaced" to have anything other than its common meaning. Ishida points out that the specification shows fixed axes in both disclosed embodiments. However, unless a claim is written in means-plus-function format, it is improper to limit the scope of a claim to examples used in the specification. See Electro Medical Systems v. Cooper Life Sciences, 34 F.3d 1048, 1054 (Fed. Cir. 1994); Atmel Corp. v. Information Storage Devices, Inc., 997 F. Supp. 1210, 1215 (N.D. Cal. 1998). Accordingly, the Court declines to read into this element of claim 1 a requirement that the axes be fixed. Moreover, the Court concludes that the prosecution history does not, as Ishida argues, disclose that Taylor surrendered moveable axes in order to obtain the '917 patent. Lastly, the Court declines to consider materials from the European Patent Office, as these materials constitute extrinsic evidence and the Court is able to construe the patent based solely on the intrinsic evidence.

2 At the hearing, counsel for Ishida made the additional argument that it would be a physical impossibility to construct a bagmaking machine possessing the structures corresponding to the means-plus-function elements and also possessing moveable axes. The Court is not in a position to assess the validity of this argument. However, if Ishida is correct, then the Court's ruling as to this element of claim 1 will have no adverse impact on Ishida, because every machine meeting the other limitations of claim 1 necessarily will possess fixed axes.

A. The Parties' Proposed Construction

Plaintiff proposes the following terms construction:
1. Spaced relation to the uppermost portion of the first quantity of explosive material: There is an air-gap in the borehole between the top of the lower-most explosive material and the bag-like device above it.

2. First relatively large quantity of explosive material: The larger quantity of explosive material placed within the borehole.

3. Second relatively small quantity of explosive material: The smaller quantity of explosive material placed in the borehole.

4. Disposed or disposing: Placed, placing, or causing to be placed.

5. Bag-like device: An item similar to, or characteristic of, an inflatable body of flexible material that is made, or adapted, to perform a function. 4

4 See plaintiff's memorandum, footnote 2. Plaintiff proposed this definition anticipating that the court would decline to separately define the term "bag."

In contrast, defendants propose the following:

1. Spaced relation to the uppermost portion of the first quantity of explosive material: The bag-like device is sufficiently spaced within a borehole above the top of the explosive material to form an air gap in the borehole between the bag-like device and the explosive material, with the air gap being approximately 8% to 16.7% of the borehole.

2. First relatively large quantity of explosive material: The major charge or quantity of total explosive material within the borehole.

3. Second relatively small quantity of explosive material: The minor charge or quantity of explosive material within the borehole, with the major charge being 3-5 times the quantity of the minor charge.

4. Disposed or disposing: The bag-like device while in a flat and uninflated state is placed in a particular order or place to accomplish the special effect or purpose of the device.

5. Bag-like device: A device comprised of multiple polymeric sheets sealed along the edges thereof and capable of being closed at one end which lies flat when uninflated. 5

5 Defendants modified their proposed definition at the Markman hearing on July 29, 2005, after the release of Phillips by the Federal Circuit. Defendants' initial proposed construction was "a flexible device capable of being closed at one end comprised of at least one polymeric sheet sealed along the edges thereof which lies flat when uninflated, of disc-like, square, tubular, or doughnut conformation."

B. "Spaced relation to the uppermost portion of the first quantity of explosive material"; "first relatively large quantity of explosive material"; and "second relatively small quantity of explosive material"

Defendants state that plaintiff's proposed construction should be modified because it has "no limits at all," but they recognize that the parties' "proposed definitions [for these three terms] . . . are not that divergent, and consequently the
Though defendants argue that they do "not seek to limit the definition of the specific examples set forth in the '233 patent, but rather merely state[] the context of the '233 patent in a way that is not limitless" (Def. Resp. at 15), it appears that defendants have indeed suggested limitations based on the examples. Defendants' proposed constructions would not allow "the air gap" to fall below approximately 8% of the borehole, or to rise above approximately 16.7%, nor would they allow the ratio of the major charge to minor charge of explosive material fall outside the 3 to 5 range.

At the hearing conducted on July 29, 2005, defense counsel, apparently referring to Figure 10, stated that the ratio proposed with respect to the minor and major charges of explosive material was formulated using an example described in columns 11 and 12 of the '233 patent. Using the numbers provided in the example, he said, the ratio of the major charge to the minor charge appears to be 3.56. Indeed, the example at one point refers to the approximate weight of the explosive material (ammonium nitrate/fuel oil) as being 634 pounds for the major charge and 178 pounds for the minor charge, which would yield a ratio of 3.5618. Defendants suggest, to avoid unduly limiting the patent, that the ratio should fall in a range between 3 and 5. Defendants offer no basis for that selected range.

The arbitrary nature of the ratio range chosen by the defendants is illustrated by the further reference in the example to the use of still other charges:

More than two of the inflatable devices 44 can be used, additional devices 44 being used to support additional charges of explosive material at different locations within the borehole 50.

Correspondingly, additional charges result in additional air gaps and, so, the air gaps may not be squeezed into an arbitrary range of 8% to 16.7% of the borehole. 6

6 Presumably, the 16.7% figure is based on the reference in the example at column 12, lines 6 through 10, to a borehole of a length of as much as 60 feet and to two air gaps, each five feet in length, so that the ten feet of air gaps is 1/6 of a 60-foot borehole or 16.67%. The source of the 8% figure may possibly be one air gap of five feet in a 60-foot borehole which would constitute 1/12 of the borehole or 8.33%.

Similarly, according to defendants' responsive brief, they propose limiting the space relationship between the explosive material and the bag-like device based on "the context" of the disclosure of the '233 patent and to distinguish the '233 patent from an earlier one, U.S. Patent No. 4,846,278. Defendants do not elaborate on the context which they suggest supports their proposed limitation, nor do they explain how the '233 patent can be distinct from the prior patent only by the application of a limited space relation. Furthermore, defendants propose their suggested restrictions based on calculations which appear to have been generated from numbers provided in a single illustrative context.

It seems that defendants have proposed limitations arbitrarily, with no sufficient basis in the claims themselves or the specifications. Inasmuch as defendants derived the figures on which their calculations are made from selected portions of examples appearing in the '233 description of preferred embodiments, the suggested limitations are not within the broader meanings of the terms at issue.

The court adopts the construction placed on all of the terms in this category as offered by the plaintiff and set forth in items numbered 1, 2 and 3 on page 6, supra.

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Construction of the elements must include elements with open space between them to function optimally. Although the specification and figures 1 and 3 of the '325 patent indicate the presence of space which creates a hollow channel between the elements in the completed product, the '325 patent only claims the method for creating the flexible material. It does not claim the flexible material. Therefore, the final product may have specific dimensions of open space between the elements, as the specification states ('325 patent, col. 2:64-67), but this unoccupied open space need not be present at all times during the patented process.
In construing the patent claim term "spaced separate elements," Nike also asks the court to look to extrinsic evidence, including the statements of Mr. Taylor (the inventor) (Taylor Dep. 78:3-6, 78:14-79:3, June 2, 2009, attached as Ex. C to Hill Decl.), Mr. Beall (an expert for McDavid) (Beall Dep. 30:1-4, June 9, 2009, attached as Ex. M to Hill Decl.) and Dr. Brookstein (an expert for Nike) (Brookstein Decl. at P 16). Even though extrinsic evidence should not be relied upon to determine the meaning of a disputed claim term when the patent's claims, specification, and prosecution history resolve the ambiguity, Vitronics, 90 F.3d at 1583, as is the circumstance here, the inventor's and the expert's statements which Nike presents refer to the finished product, not the patented manufacturing method protected by the '325 patent.

As a result, the court construes "spaced separate elements" to mean "distinct components that do not come in contact with each other, once they are formed in the patented manufacturing process."

4. "Spacer"

Closely related to "spaced apart" is the term "spacer" as it appears in Claims 1 and 12. Fellowes defines a "spacer," elements 1(i) and 12(g), as "a device that creates a space between two cutting disks on the cutting cylinder, the space having a width just slightly greater than an interleaving cutting disk from a mating cutting cylinder. The spacer may be separate from or integral with the cutting disk(s)." Michilin argues that "spacer" means "an element that fills a space between two adjacent cutting disks on the cutting cylinder, the space having a width that is constant circumferentially and just slightly greater than an interleaving cutting disk from a mating cutting cylinder" and further that the "spacer" is "separate from the two cutting disks." Intek argues that the "spacer" in Claim 1 is "an element that creates a space between two adjacent cutting disks on the cutting cylinder, the space having a width that is constant circumferentially, wherein the spacer is separate from the two cutting disks, and each spacer has at least two different circumferences." 9

9 For reasons that are unclear, Intek's definition of the word "spacer" in element 12(g) in the Claim Construction Chart appearing in its brief differs from its definition of "spacer" in Claim 1(i), the former having the italicized language as follows: "An element that creates a space between two adjacent cutting disks on the cutting cylinder, the space having a width that is constant circumferentially and just slightly greater than an interleaving cutting disk from a mating cutting cylinder wherein the spacer is separate from the two cutting disks, and each spacer has at least two different circumferences." Intek Br., Ex. 1. The italicized language appears in the chart but does not appear in either of the definitions of "spacer" in Intek's brief. In any event, this difference poses no challenge because Fellowes and Michilin have, appropriately in the Court's view, included the italicized language in their definitions of elements 1(i) and 12(g).

A comparison of these competing constructions reveals that the issues are whether the "spacer" must be separate from the "cutting disks," whether its width is "constant circumferentially," and whether "each spacer has at least two different circumferences." As to the first issue, Michilin and Intek both argue that the prosecution history requires the Court to construe the "spacer" as being "separate from the two cutting disks." As noted above, during the prosecution of the '780 Patent, the USPTO rejected Claim 1 on grounds that it was anticipated by Henreckson and Patent No. 1,825,223 ("the Deck patent" or "Deck"). '780 Patent, FE 000424-429; id. at FE 000394. The patentee urged that the rejection be withdrawn on grounds that, inter alia, the Henreckson patent did "not disclose a separate spacer between cutting disks where the linear measure of the spacer along its surface is greater than the distance between two adjacent disks." Id. at FE 000507. The patentees further argued that "Henreckson et al. teach the abutment of two cutting disks against each other to form a single cutting unit separated from other cutting units by spacers 30 and 36." Id. Intek and Michilin argue that in making these remarks, the patentee relinquished the interpretation that Fellowes now proposes, i.e. that the "spacer" may be either separate from, or integral to, the "cutting disk." The patentee's statement that Henreckson taught "a single cutting unit separated from other cutting units," while implying that the patentee's patent does not teach a "single cutting unit separated from other cutting units," is too vague to lead one to conclude that the patentees were necessarily disclaiming a "spacer" that is integral with the "cutting disk." The Court does not find the patentee's remarks to be sufficiently "clear and unmistakable" for prosecution disclaimer to arise. See Omega, Eng'g, 334 F.3d at 1325-26; Purdue Pharma L.P., 438 F.3d at 1136. In
The heart of the parties' dispute is whether the spacer is a device or piece, distinct from the burner body and burner pan, that holds the burner body a given distance from the burner pan base, but not a gasket or seal. The doctrine of claim differentiation is inapplicable, however, because an interpretation of the "spacer" in Claims 1 and 12 as having "at least two different circumferences" in connection with the "spacer" in the prosecution history. In its July 21, 2000, response to the USPTO's rejection of Claim 1 and other claims, the patentee argued to the USPTO that Deck, among other things, "does not disclose a cross-cut shredder having displaced cutting disks separated by [a] spacer where the linear measure of the spacer along its surface is greater than the distance between two adjacent disks and where each spacer has at least two different circumferences." Id. at col. 4, lines 2-4. The same logic applies to Claim 12, which requires that the "surface of the spacer has a linear measure greater than the distance between each adjacent disk." Id. at col. 4, lines 44-47. Moreover, as Intek points out, the drawings show a "cutting cylinder" in which each spacer has at least two different circumferences, Intek Br. 15, and the specifications refer to the "spacer" as having more than one circumference. See id., col. 3, lines 13-15 ("It will be appreciated that the circumference of the spacer 20 at least one point a is greater than the circumference of the spacer 20 at least another different point b."). Additionally, the patentee used the phrase "at least two different circumferences" in connection with the "spacer" in the prosecution history. It logically follows from Claim 1's requirement that the "surface of the spacer has a linear measure greater than the distance between the two adjacent disks" that the "spacer" has "at least two different circumferences." Id. at col. 4, lines 2-4. The same logic applies to Claim 12, which requires that the "surface of the spacer has a linear measure greater than the distance between each adjacent disk." Id. at col. 4, lines 44-47. Moreover, as Intek points out, the drawings show a "cutting cylinder" in which each spacer has at least two different circumferences, Intek Br. 15, and the specifications refer to the "spacer" as having more than one circumference. See id., col. 3, lines 13-15 ("It will be appreciated that the circumference of the spacer 20 at least one point a is greater than the circumference of the spacer 20 at least another different point b."). Additionally, the patentee used the phrase "at least two different circumferences" in connection with the "spacer" in the prosecution history. In its July 21, 2000, response to the USPTO's rejection of Claim 1 and other claims, the patentee argued to the USPTO that Deck, among other things, "does not disclose a cross-cut shredder having displaced cutting disks separated by [a] spacer where the linear measure of the spacer along its surface is greater than the distance between two adjacent disks and where each spacer has at least two different circumferences." Id. at FE 000507 (emphasis added). Fellowes contends that the defendants' construction runs afoul of the doctrine of claim differentiation. Fellowes Br. 29 (citing Clearstream Wastewater Sys., Inc. v. Hydro-Action, Inc., 206 F.3d 1440, 1446 (Fed. Cir. 2000) ("Under the doctrine of claim differentiation, it is presumed that different words used in different claims result in a difference in meaning and scope for each of the claims. This doctrine cannot be used to make a claim broader than what is contained in the written description . . . but it prevents the narrowing of broad claims by reading into them the limitations of narrower claims."). Fellowes urges the Court to reject Intek's proposed "at least two different circumferences" language on grounds that doing so is necessary to differentiate Claim 1 from dependent Claim 5, which refers to the "circumference of the spacer at at least one point" as being "greater than the circumference of the spacer at at least one other point." '780 Patent, col. 4, lines 17-19. The doctrine of claim differentiation is inapplicable, however, because an interpretation of the "spacer" in Claims 1 and 12 as having "at least two different circumferences" is supported by the plain language of Claims 1 and 12 and is not narrowed in any material way.

The Court FINDS that "spacer" as used in Claims 1 and 12 means "a device that creates a space between two cutting disks on the cutting cylinder, the space having a width just slightly greater than an interleaving cutting disk from a mating cutting cylinder," and "each spacer has at least two different circumferences," and the "spacer" "may be separate from or integral with the cutting disk(s)."

2. "spacer"

This claim term appears in claims 1 and 15 in the '068 patent (it does not appear in the '726 patent). Travis proposes the following construction: "structure(s) that space(s) the burner pan apart from the burner body to form a gas distribution chamber." It became clear at oral argument that under Travis' construction, a "spacer" could be either integrated into the burner body or burner pan, a fence, a gasket, or a gasket combined with either of the first two. Heath proposes the following construction: "a device or piece, distinct from the burner body and burner pan, that holds the burner body a given distance from the burner pan base, but not a gasket or seal." The heart of the parties' dispute is whether the spacer is
considered distinct 1) from the burner pan and burner body, and 2) from a gasket or seal (Hearth's position), or silent as to both of these particular questions (Travis' position). Based on the intrinsic evidence, the Court agrees with Hearth's proposed construction and therefore construes the term "spacer" to mean "a device or piece, distinct from the burner body and the burner pan, that holds the burner body a given distance from the burner pan base, but not a gasket." The parties should note that this construction allows the gasket to be a component of the spacer; what it does is prohibits the spacer from being only the gasket.

In the '068 patent, the term appears in claim 1 as follows:

a burner assembly for burning a fuel gas from a gas source, comprising:

a burner pan . . . ;

a spacer extending away from the burner pan;

a burner body[,] . . . the lower portion of the burner body being sealably connected to the spacer and being supported apart from the burner pan by the spacer forming an interior gas distribution chamber between the burner pan and the burner body . . . .

(The '068 patent, 11:38-42 (emphasis added)).

Claim 15 has similar language:

a burner assembly . . . comprising;

a burner pan[,] . . . the burner pan having a base;

a spacer extending away from the base of the burner pan;

a burner body[,] . . . the burner body being coupled to the spacer with the lower portion of the burner body being spaced apart from the base of the burner pan by the spacer to form an interior gas distribution chamber therebetween . . . .

(Id., 12:46-49 (emphasis added)).

Lastly, claim 3, which is dependent on claim 1, reads in part: "The burner assembly of claim 1 wherein the burner pan includes a base spaced apart from the burner body and the spacer is a distribution fence projecting from the base . . . ." (The '068 patent, 11:62-64 (emphasis added)).

The ordinary and plain meaning of the term "spacer" supports the Court's construction. "Spacer" is defined as "a device or piece for holding two members at a given distance from each other." (Zeuli Decl., Ex. B-1 (Merriam-Webster's, 3d ed. 1981)). 1 Because the term is not defined anywhere else in the '068 patent such that it would have a different meaning from its ordinary and plain dictionary meaning, the dictionary definition has significant weight. Travis maintains that this definition does not specify whether the spacer is part of any other structure. While that is technically true, the Court concludes that it is reasonable to infer from this definition that the device or piece holding the two members is distinct from those two members.

--- Footnotes ---

1 In the joint claim chart, Travis cites a definition for "space," but not for "spacer."

--- End Footnotes ---

The claim language further supports the Court's construction. At its simplest, claims 1 and 15 refer to three distinct components of the burner assembly: 1) burner pan, 2) spacer, and 3) burner body. This plain language implies that the spacer is a distinct piece from the burner body and/or burner pan. Further, the claims state that the spacer connects to or is
coupled with the body, extends away from the pan, and holds the pan and the body apart from each other. Connecting or coupling two things (i.e. the spacer and the burner body) unequivocally connotes two distinct objects. Travis contends that "extending away from" does not necessarily require two distinct structures; rather, it refers to a configuration. However, even if "extending away from the burner pan" describes only a configuration, the claim language makes clear that the spacer keeps the burner body apart from the burner pan. If the spacer could be considered part of the burner pan, then this language would not make any sense because the burner pan, of which the spacer is a part, would directly touch the burner body. This would contradict the plain language of the claim. Therefore, the spacer cannot be integrated into the body or pan. However, the spacer can be a fence. Claim 3 makes clear that the spacer can be a distribution fence.

The prosecution history neither compels nor prohibits this construction. Claims 1 and 15 of the '068 patent, as originally filed, did not include this term. (Ex. 4 at 101-02 (claim 15 was originally number as claim 16)). As discussed above, these claims were rejected as anticipated by the prior art in the Shimek '743 patent. When Travis amended the claim language to make it patentable over the Shimek '743 patent, Travis inserted the spacer language quoted above. (Id.). The accompanying remarks stated that this claim was amended:

> to clarify that the burner body includes a spacer extending away from the burner pan . . . . The burner body's lower portion is sealably connected to the spacer and is supported apart from the burner pan by the spacer forming an interior gas distribution chamber between the burner pan and the burner body. Shimek '743 does not disclose, teach, or suggest a burner assembly having a burner pan, a spacer extending away from the burner pan, and a burner body with the lower portion as recited in the claim 1 as amended. Shimek '743 is silent with respect to a spacer. Further, the underside of [the] ceramic-fiber top of Shimek '743 is highly contoured so that a spacer is unnecessary. Accordingly, Shimek '743 teaches away from the spacer.

( Id. at 97).

Based on this language, Hearth argues that Travis told the patent examiner that Shimek '743 did not have a spacer and that the "legs" on the Shimek '743 that extended downward from the burner body to the base or plate, thereby forming a gas chamber between the body and plate, were not spacers. Hearth asserts that because Travis distinguished its spacer from Shimek '743's "legs" in this way, Travis cannot now argue that the spacer could be attached to the burner body since that would effectively negate the distinction it made during the prosecution history. Travis counters that it did not disclaim a spacer that is part of the body or pan. Contrary to Heath's contention, Travis maintains that it did not tell the patent examiner that Shimek '743 did not have a spacer or that the legs in Shimek '743 were used in place of a spacer. Therefore, according to Travis, its spacer may or may not be attached to the body or pan.

Hearth's argument is unpersuasive because the premise is faulty. Hearth refers to "legs" on the burner body. However, based on this Court's review of the Shimek '743 patent, the specification does not identify legs on the burner body. The specification refers only to the burner body, which is number 12 in the specification figures, and does not identify legs as a separate part of that burner body. Because there is not a clear identification of burner body legs in Shimek '743, Travis cannot be said to have clearly and unambiguously distinguished its spacer from the "legs" on the Shimek '743 burner body. Similarly, the statement that the Shimek '743 is silent with respect to a spacer does not constitute a clear and unambiguous disavowal of a spacer that is part of the burner body or pan. At the same time however, even if the Shimek '743 did not explicitly identify the downward extensions on the burner body as "legs," the fact that they were represented in the drawing and served to space the underside of the burner body apart from the burner base or plate, together with the fact that Travis maintained that the Shimek '743 was silent with respect to a spacer, imply that Travis was disclaiming a spacer that was part of the burner body. However, it is doubtful that this is a sufficiently clear and explicit disclaimer as required by 3M Innovative Properties Co.,

Similarly, the statement in the prosecution history that Shimek '743 did not disclose a spacer must be read in the full context of the sentence in which the statement appears. As discussed above, this full statement asserts that the combination of elements was not present in the Shimek '743. Therefore, this statement cannot be interpreted as a disclaimer of a spacer that is part of a burner body or pan.

As to whether the spacer is distinct from a gasket or seal, the doctrine of claim differentiation favors construing the term "spacer" as not a gasket or seal. However, this does not mean that a gasket or seal could not be a part of the "spacer." Claims 10 and 20 of the '068 patent (which are dependent on claims 1 and 15 respectively), both state "[t]he burner assembly of
claim 1 [or claim 15] further comprising a gasket sandwiched between the burner pan and the burner body." (The '068 patent, 12:26-28 and 13:22-24). Both claim 1 and claim 15 require a spacer. Therefore, if a spacer could be the exact same thing as a gasket, as Travis contends, then the gasket required by dependent claim 10 and claim 20 would be superfluous and redundant. See Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998) ("There is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims. To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant.") (quotations and citation omitted).

At oral argument, Travis argued that the gasket requirement of claims 10 and 20 is not redundant because either there would be two gaskets (i.e. the spacer, which could be a gasket, and the gasket referred to in claims 10 and 20) or the spacer is a fence or integrated into the burner body or burner pan and claims 10 and 20 merely add a gasket such that the spacer is the fence or integrated into the burner body or burner pan plus the gasket. The first argument does not make much sense and is contrary to the principle that different claim terms are presumed to have different meanings. The second argument, however, is persuasive. While the spacer cannot be the exact same thing as a gasket, the spacer can be a fence plus a gasket. Nothing in the specification limits "spacer" to only the fence. Indeed, the fact that both "spacer" and "fence" are used in the claims disfavors construing these terms as absolutely interchangeable.

The prosecution history does not include any reference to a gasket or seal. Shimek '743 included a "silicon adhesive," assigned number 25 in the figures, to seal the burner body to the burner base or plate. Therefore, nothing in the prosecution history speaks to this particular question.

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E. "spacer means" (claims 6, 10, and 20)
PolyVision's proposed construction
Smart's proposed construction
An element that maintains a space between the membrane and the conductive eleme...
A suitable insulator such as plastic in the form of a peripheral spacer rail establi...

Initially, the Court must determine whether this term is a means-plus-function limitation under 35 U.S.C. § 112 P 6, which provides: "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." This type of "claiming applies only to purely functional limitations that do not provide the structure that performs the recited function." Phillips, 415 F.2d at 1311. A claim limitation that actually uses the word "means" gives rise to a rebuttable presumption that § 112, P 6 applies. Personalized Media Commc'n, LLC v. Intel Trade Comm'n, 161 F.3d 696, 703-04 (Fed. Cir. 1998). The presumption is rebutted where the claim, in addition to the functional language, recites structure sufficient to perform the claimed function in its entirety. See Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1375 (Fed. Cir. 2003). PolyVision contends that although the limitation invokes a § 112, P 6 claim element, it identifies sufficient structure to rebut the presumption. This argument fails because "spacer" or "spacer means" is not definite structure. See Unidynamics Corp. v. Automatic Products International, Ltd., 157 F.3d 1311, 1319 (Fed. Cir. 1998) (holding that the recitation of "spring means" did not disclose sufficient structure to take the claim element out of the ambit of § 112, P 6). The claim is thus limited to the structure disclosed in the specification for performing the "spacing" function and its equivalents.

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2 The Court further notes that no evidence, whether intrinsic or extrinsic, indicates that the term "spacer" has an established meaning in the art for performing a specified function. See Watts v. XL Sys., Inc., 232 F.3d 877, 880-81 (Fed. Cir. 2000) ("As an aid in determining whether sufficient structure is in fact recited by a term used in a claim limitation, this court has inquired into whether the term, as the name for structure, has a reasonably well understood meaning in the art.") (internal quotations omitted).
The specification identifies the structure as "peripheral rail 20," that is "a suitable insulator such as plastic." (Col. 3, ll. 20-23; Col. 3, ll. 46-47 (stating that "[s]ubstrate 16 rests on base4, and supports peripheral spacer rail 20").) Smart's proposed construction corresponds to the structure disclosed in the patent, and the Court will adopt it, with an amendment to include "structural equivalents thereof."

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"Spacing Surface" (‘177 Patent):

A generally planar surface that is distinct from, and located between, the kayak’s seating surfaces, providing at least enough separation between seating surfaces to enable a paddler seated on one seating surface to paddle without interfering with a paddler or passenger occupying another seating surface.

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d. spacings between the internal surface of the casing and the pen periphery defining one or more passageways for the flow of air blown into the casing

P&M construes this phrase as describing "open areas bounded by the inner wall of the casing and the outside of the pen through which air can pass." (Pls. Opening Mem. at 26.) Rose Art maintains that this phrase should be construed as "open areas through which air can flow through the mouthpiece, through the casing, through the passageways, and over the nib of the pen." (Def. Reply at 9.) The specification describes the spacings as the open area between the outside of the reservoir pen and the inside of the casing: "In use, air is blown by the user through the mouthpiece 3 and the annular passageways defined between the opposed surfaces of the pen body 2 and the internal surfaces of the casing 1." (‘300 patent, col. 3, ll. 26-29.) Adoption of the construction suggested by Rose Art would impermissibly add additional functional limitations to the claim concerning the passage of air through the casing which are not required by the plain language of the claim. Electro Med. Sys., 34 F.3d at 1054. Accordingly, this phrase will be construed to describe "open areas bounded by the inner wall of the casing and the outside of the pen through which air can pass."

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6. Claim 1 - "spanning between said side walls"

Bradford proposes that "spanning between said side walls" means "extending from one of the two 'side walls' to the other one of the two 'side walls'." Defendants propose that "spanning between said side walls" means "reaching, at least in combination with an additional component(s), completely from one of the two 'side walls' to the other, opposing one of the two 'side walls'." This term is a further limitation on "dunnage structure" and "upper edge" in that the upper edge of the dunnage structure must have a longitudinal axis which spans between the side walls. The basic dispute between the parties over this term is Defendants' inclusion of the additional limitation regarding "at least in combination with other components."

In support of their definition, Defendants argue that in the preferred embodiments, the dunnage structure usually does not span from one side wall to the other without utilizing other elements, such as rails and cables. The Court notes, however, that the specification, specifically in regard to Figure 1D, contemplates that the dunnage structure may be attached directly to the side walls:

FIG. 1D illustrates another version of the container of the invention wherein the various support structures are eliminated. Therein, the dunnage structures, such as pouches 40, are directly coupled to the side walls without cables 32. For example, the pouches 40 have ends 45 which extend through openings 47 formed in the side walls. The pouch ends 45 are secured to
the side walls 14 by mounting collars 51 or other appropriate devices.

'T19 Patent, col. 10, ll. 37-44. Thus, except for mounting collars or other devices, the invention can be practiced without the limitation of "at least in combination with additional components." Technically, mounting collars would constitute "additional component," but the dunnage structures cannot suspend themselves in mid-air inside of the container. One skilled in the art would certainly realize that the dunnage structures need some support within the interior of the container, whether it be through rails and cables, which are then attached to the side walls, or by directly coupling the dunnage structure to the side walls. Thus, the additional limitation Defendants seeks to impose on this term is not necessary. Therefore, Defendants' definition is rejected.

Accordingly, the Court holds that "spanning between said side walls" means "extending from one of the two 'side walls' to the other one of the two 'side walls'."

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6. "SPECIAL PROCEDURE"

The term "special procedure" appears in claims 1, 9, 14, and 18 of the 537 patent and claims 1 and 10 of the 728 patent. Claim 1 of the 537 patent has the relevant term at issue. It claims, in relevant part:

a method for improving airline luggage inspection by a luggage screening entity, comprising: making available to customers a special lock having a combination lock portion and a master key lock portion, the master key lock portion for receiving a master key that can open the master key lock portion of this special lock, the special lock designed to be applied to an individual piece of airline luggage, the special lock also having an identification structure previously provided to the luggage screening entity, which special lock the luggage screening entity has agreed to process in accordance with a special procedure.

537 patent, col. 6, 11. 6-18. Claim 1 also addresses "marketing the special lock to the consumers in a manner that conveys to the consumers that the special lock will be subjected by the luggage screening entity to the special procedure. As with the other terms, claims 9, 14, and 18, as relating to "special procedure", largely track the language in claim 1, and similarly, claims 1 and 10 of the 728 patent do so as well.

Travel Sentry's proposed construction of "special procedure" is "[a] procedure whereby a baggage screening entity has instructed baggage screeners to look for indicia on luggage locks and, upon finding the indicia, the baggage screener would, if necessary to inspect a piece of luggage, use a single master key provided to the luggage screening entity to open the luggage lock and then relock it after inspecting the bag." Tropp proposes that "special procedure" be construed as "[a] procedure for processing 'special locks,' as recited in respective claims, in which the luggage or baggage screening entity has agreed to act pursuant to a prior agreement to look for the identification structure while screening luggage or baggage, and, upon finding said identification structure on an individual piece of luggage or baggage, to, e.g., use the master key previously provided to the luggage or baggage screening entity to, if necessary, open the individual piece of luggage or baggage."

While both proposed constructions are long in verbiage, there is about a penny's worth of difference between them, if that much. Travel Sentry, in fact, concedes that its construction is not materially different from Tropp's. (Markman Hr'g Tr. 10). Tropp, for his part, repeats his objection to adding the word "single" before "master key", and disagrees with interpreting "special procedure" with the unsupported limitation that a screener must relock the bag after inspecting it.

Again, the Court agrees with Tropp that the claims do not support a requirement that the special procedure involves "a single master key" only (emphasis added). With respect to the additional step of relocking the lock after inspecting a bag--while a reasonable expectation and (presumably) desired result at the conclusion of a baggage screening process, it is, ultimately, an limitation unsupported in the claims. See Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1249 (Fed. Cir. 1998)("If we need not rely on a limitation to interpret what the patentee meant by a particular term or phrase in a claim, that limitation is 'extraneous' and cannot constrain the claim"). In both the 728 and 537 patents, the relocking of a bag is not addressed in the claims themselves nor is it mentioned in the specification of either patent. The written descriptions, in
highlighting the important objectives and advantages of the invention, focuses on allowing luggage screeners to avoid damaging travelers' luggage and avoiding the hassle, labor, expense, and resulting injuries that arise from clipping locks. The "special procedure" in the patents' claims, read in light of the specifications, appears to focus on the opening of luggage as opposed to the relocking of it.

Therefore, while Travel Sentry's position is reasonable, the Court declines to read a limitation into the term "special procedure" requiring screeners to relock the bag after an inspection. To that end, the Court, with modification, adopts the following proposed construction (particularly where Travel Sentry has acknowledged no significant difference in the two constructions) and construes "special procedure" as a procedure for processing special locks, as recited in the respective claims, in which the screening entity has agreed to act pursuant to a prior agreement, to look for the identification structure while screening luggage, and, upon finding that identification structure on an individual piece of luggage, to, use the master key previously provided to the screening entity to, if necessary, open the luggage.

Specularly-Reflective Surface

Claim 1 includes the limitation that the sample chamber include "an elongated hollow tube . . . having a specularly-reflective surface on its inner walls for transmitting radiation introduced at one end of the tube to the other end of said tube by means of multiple reflections from said specularly-reflective surface." '332 Patent, col. 6, ll. 6-11. The district court construed "specularly-reflective surface" to be "a surface that will transmit radiation down the length of the tube by means of multiple reflections from such surface."

Digital Control argues that this construction is incorrect, asserting that the claim limitation requires a surface with a polished or mirror-like surface finish. Specifically, Digital Control points to optical dictionaries which imply such a limitation and the repeated reference in the specification that the sample chamber acts as a "light pipe." Edwards contends that "specularly-reflective" does not require a mirror-like smoothness on the surface. In fact, Edwards concedes that if "mirror-like" describes the behavior of light incident on the surface, "there may be no quarrel [with the definitions of specularly reflective offered by Digital Control]."

Nothing in the '332 patent's specification suggests the applicant intended the term specularly reflective to have a meaning different from its plain meaning. Indeed, the specification makes no attempt to define the term. The same can be said of the prosecution history. "Specular reflection" is defined as "pertaining to the manner in which light is reflected, as by a mirror or speculum" and a "specular reflector" is "a reflector that exhibits specular reflectance, producing a direct image of its source." The Photonics Dictionary (2000). Naturally, whether a surface is specularly reflective depends on the type of light that is being reflected. Accordingly, we construe "specularly-reflective surface" to be a surface that reflects light as by a mirror or speculum and note that the district court's construction appears to read the term "specular" out of the phrase "specular reflection."

The parties dispute the meaning of the words "spherical mass" as used in the preamble to claim 1 of the '731 patent:

A bowling ball having a spherical mass of preselected density and a spherical surface equidistant from a center of the spherical mass....

In construing claim 1, the court should look first to the intrinsic evidence of record: the '731 patent itself, including the claims and the specification. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Brunswick asserts a "spherical mass" necessarily includes the core of the sphere, especially where reference is made to the "center" of the spherical mass. Plaintiffs respond that the center of a spherical mass is a geometric position, not a tangible, physical object. Thus, a hollow sphere still has a geometric center at the point where the radii (extending in from the surface of the sphere) converge. Moreover, plaintiffs argue that the '731 patent elsewhere identifies the spherical mass as "mass 12" and the weight...
The term "spike" appears in the claims recited in the ‘592, ‘862 and ‘866 patents, and throughout the Common Specification. Alaris proposes that the term "spike" be defined as: "An elongated structure having a pointed tip for piercing the seal. The pointed tip may be sharp or slightly rounded." ICU proposes the broader definition, "an upward projection."

In terms of its focus on a pointed tip and the purpose of piercing, the definition proposed by Alaris comports more closely with the ordinary meaning of the word. "spike." However, as Phillips instructs, in construing a disputed term the court must look to the specification to see whether a different or more specific meaning is given to the term therein. In fact, the specification repeatedly and uniformly describes the spike as a pointed instrument for the purpose of piercing a seal inside the valve. For example, under the section entitled "Background of the Invention," the Common Specification states that "[t]his invention relates … [a] two-way valve … which includes a seal which, upon being compressed by the medical implement, is pierced to open the valve." ‘862 Patent at 1:18-25. 1 Under, the section entitled, "Summary of the Invention," the Common Specification states that "[a] two-way valve is employed utilizing a reusable seal that may be repeatedly pierced by an enclosed, protected, non-metallic spike rather than an exposed needle." Id. at 2:40-43. Under the section entitled "Operation," the Common Specification states that the "nose of the medical implement is inserted into the valve …, pushing the nose against the seal to compress the seal sufficiently to allow the tip of the spike to pierce the seal …" Id. at 14:67-71. Furthermore, all of the figures in the Common Specification that depict a spike portray it as elongated and pointed, and the two figures that show an activated valve show the spike piercing the seal. Nowhere in the Common Specification is piercing described as optional, or is any non-piercing item described as a spike. The Summary of the Invention also states that the "tip [of the spike] may be sharp or slightly rounded." Id. at 3:10.

1 Except where otherwise noted, all references herein to the Common Specification shall be to the ‘862 patent.

Nevertheless, ICU contends that the Common Specification discloses a wider array of possible spikes, of which the pointed piercing version is only one, albeit the preferred, embodiment. However, ICU's position finds little support in the Common Specification. ICU argues, for example, that claim 1 of the ‘866 patent, which recites "a spike having a tip, at least one hole located at or near said tip," describes a spike that is flat on top instead of being pointed. ‘866 Patent at 15:36-37. But Alaris's definition, which includes the sharp or slightly rounded' language from the Common Specification, does allow for the possibility of a hole at the tip of the spike. Moreover, as Alaris notes, spikes featuring an angled tip allowing for a hole at the end while still having an acute tip were well-known at the time the original patents were filed in the early 1990's.

ICU devotes considerable attention to a single instance in the Common Specification in which the preferable distance from the spike tip to the lip of the housing is said to be approximately from 0.525" to 0.1". ‘862 Patent at 8:28-29. According to ICU, focusing on the longer end of this range, the Common Specification discloses a short, "stubby" spike that would be incapable of piercing or even reaching the seal. This argument fails for three reasons. First, in the context of a patent that repeatedly and consistently describes and portrays the operation of the patented device in terms of the piercing function of the spike, it is not reasonable to expect that even a person skilled in the art would be able to extrapolate from a single reference to a particular dimensional range a spike of a completely different purpose than that otherwise disclosed throughout the patent. Second, even if one were able to extrapolate the short, non-piercing spike from the reference to this dimensional range, it is not at all clear how such a spikes would operate or function in the context of the device disclosed. Finally, ICU's extrapolation of a short, non-piercing spike from the 0.525" to 0.1" range conflicts with another statement in the Common Specification, only two sentences later: "The spike tip is thus embedded in the seal cap prior to use or may be
approximately 0.025" distal the seal cap when the valve is in the closed position." Id. at 8:21-24. As Alaris correctly points out, the only way to reconcile the so-called short spike with the 0.025" distal requirement would be for the seal cap itself to be at the longer end of its range disclosed in the Common Specification, thereby closing the gap between the spike and the seal and preserving the critical piercing function of the spike. The Common Specification does not disclose an unpointed and/or non-piercing spike.,

ICU also draws attention to dependent claim 13 of the '592 patent, which recites, in relevant part, that the end of the spike 'is pointed so that it can pierce [the] seal." '592 Patent at 16:44-45. It argues that because this dependent claim recites the concepts of pointed and piercing, those concepts cannot be part of the proper construction of the term "spike" under the doctrine of claim differentiation. However, these concepts are not the only limitations contained in claim 13, which also requires that the end of the spike "enter into a portion of [the] medical implement when said medical implement is connected to [the] valve." Id. at 16:45-47. Because "pointed" and "piercing" are not the only differences distinguishing dependent claim 13, the claim would not be rendered superfluous by including these concepts in the construction of "spike." See, e.g., Kraft Foods Inc. v. Int'l Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000)("[T]hat the claims are presumed to differ in scope does not mean that every limitation must be distinguished from its counterpart in another claim, but only that at least one limitation must differ."). Moreover, dependent claim 13 was only added to the '592 patent in 2001, years after the filing date of the original patents, the issuance of the '866 and '862 patents, and the introduction of the allegedly infringing Alaris products.

The Common Specification clearly and uniformly describes a spike as having a pointed tip and being for the purpose of piercing the seal. Accordingly, the court finds that the proper construction for the term "spike" is "an elongated structure having a pointed tip for piercing the seal, which tip maybe sharp or slightly rounded."

B. Spike

Federal's proposed interpretation of the term "spike" is that a spike is "an elongated, pointed object, one end of which is sharp and strong enough to pierce a tire to allow air to escape and an opposite end of which is small enough to be inserted into the hole of the frame." In its briefs dealing with the renewed summary judgment motion, PMG does not appear to offer any contrary interpretation of that term. Nevertheless, this Court has reviewed that term under the Markman standards set forth above and finds that Federal's interpretation is supported by the evidence presented. Therefore, this Court interprets the term "spike" as being an elongated, pointed object, one end of which is sharp and strong enough to pierce a tire to allow air to escape and an opposite end of which is small enough to be inserted into the hole of the frame.

8. Claim 9, Element [c]: "an anchor spindle."

Preliminarily, the defendants correctly note that the claims use the terms "anchor spindle" and "locking spindle" in a manner different from the specification. The specification describes the anchor spindle 200 as the spindle that includes a head portion 230. Misaligning head portion 230 with slot 15 engages head portion 230 with inner surface of wall 10, thereby inhibiting removal of lock interface 55 from computer 5. '557 Patent, Col. 5 11.1-26. The specification further describes the "locking spindle" as the spindle that includes a locking pin 265. Subsequent insertion of locking pin 265 into slot 15 inhibits realignment of head portion 230 with slot 15.

The claim language describes the two spindles in precisely the opposite manner. Claim 9 recites a "locking spindle having a body portion and a head portion, said head portion having a peripheral profile complementary to said security slot, said head portion adapted for insertion into and withdrawal from said slot when in a first position and for engagement with an interior surface of said wall when in a second position such that said head portion is associated with said portable device while in said second position." '557 Patent, Claim 9, Element [b] (emphasis added). Likewise, claim 9 includes "an anchor spindle having a body portion and an anchor portion, said anchor portion adapted for insertion into and withdrawal from said slot..."
when said head portion of the locking spindle is in said second position, said anchor portion inhibiting transition of said head portion from said second position to said first position, and said anchor spindle body portion adapted for association with said locking spindle body portion." '557 Patent, Claim 9, Element [c] (emphasis added).

Notwithstanding the transposition of the terms "anchor" and "locking," the court defines "spindle" according to its ordinary meaning. The term "spindle" is defined as "any shaft, rod or pin that turns around or on which something turns, as an axle, arbor, or mandrel." The balance of the language of the claim limitation sufficiently defines the anchor spindle such that the claim terms need no further definition.

3. "Spiral installation drive surface"

"Spiral" means a three-dimensional curve that turns around an axis at a fixed or varying distance.

The parties do not dispute the meaning of "installation drive surface." The dispute is whether the term "spiral," found in Claim 1, means rounded or helical.

The court concludes that spiral is used according to its ordinary definition, cited above. The term helical is impermissibly narrow; a helix describes a type of spiral that turns around an axis at a constant diameter, whereas the term spiral can also encompass a three-dimensional curve that turns around an axis at a varying distance. Palmetto attempts to narrow the definition by citing what appear to be helical drive surfaces depicted in Figure 4. There is no indication that the patentee intended the claims and the embodiments to be strictly coextensive; rather, Figure 4 is exemplary in nature. 420 Patent, col. 7, lines 19 (illustrating "one embodiment"). As such, the court declines to depart from the ordinary meaning of "spiral" and impose a limitation on the term based on one figure disclosed in the specification. Gart, 254 F.3d at 1342; Phillips, 415 F.3d at 1323. As to NPI's proposed definition, the court finds no support in the intrinsic evidence that the patentee intended to act as his own lexicographer in defining "spiral" to mean round.

a. "elongated spokes"

The parties first ask the court to construe the following terms: "spoke," "spokes" and "elongated spokes." Plaintiff defines "spoke" as "any of the braces or bars extending between the hub and the rim of a wheel," and "spokes" to mean "more than one spoke." (Pl.'s Br. at 5.) Plaintiff also proposes construing the term "elongated spokes" as "separate, individual spokes that are spaced apart to inherently define a radially extending opening between the spokes." (Id.) Plaintiff further contends that these elongated spokes are indirectly connected to the rim by a separate connecting member and, therefore, do not extend all the way to the rim. (Id.)

Defendants disagree, and contend that "spokes" are defined as "rods or braces that carry forces between the rim and the hub and extend from the rim to the hub." (Defs.' Br. at 8.) Defendants also assert that the "spokes" of Claim 1 need not have a particular shape." (Id. at 13-14.) Furthermore, Defendants claim that "the '194 Patent does not require removing the material [webbing] between the spokes." (Id. at 14.)

As an initial matter, "spokes" and "elongated spokes" have the same meaning. After reviewing the '194 Patent specification, the court notes that "elongated spokes" and "spokes" are used interchangeably by the patentee. Accordingly, the court interprets "spokes" and "elongated spokes" as having the same meaning.

As for the construction of "spoke," the court finds persuasive Defendant's contention that "spokes" are most properly defined as "rods or braces that carry forces between the rim and the hub." 3 Defendants' proposed construction of the definition and function of "spokes" is supported by the '194 Patent specification, which states in relevant part:
Spokes displaced from a radial line carry wheel torque loads as tensile stress. This is beneficial because the spokes are very strong in tension. If spokes were located on a radius, torque loads would be carried as bending stress on the spokes. The spokes are very weak bending in the circumferential (wheel torque) direction.

('194 Patent, col. 3, lns. 64-67; col. 4, lns. 1-2.) This paragraph, when read in conjunction with Figures 2, 3, 4 and 5 regarding both embodiments in the '194 Patent specification, shows that the spokes' specific function is carrying forces (wheel torque loads) between the hub and the rim of the wheel. The court therefore agrees with Defendants' proposed construction of "spokes."

--- Footnotes ---
3 Spokes, however, are not the only structures that carry forces between the rim and the hub. The flanges, though not a part of the spoke arrangement, also provide a force-carrying function between the rim and the hub of the wheel.

--- End Footnotes ---

The court also agrees with Defendants' claim that the spokes need not have a particular shape; in that the spokes need not "have a long and narrow shape." Indeed, the patent specification itself clearly states that "the present invention is not limited to . . . spokes that are substantially longer than they are wide." ('194 Patent, col. 5, ln. 51-53.)

--- Footnotes ---
4 In the joint claim chart, Plaintiff proposes such a construction, though Plaintiff appears to abandon this argument in its brief.

--- End Footnotes ---

The court does find, however, that the two elongated spokes of each spoke arrangement must be spaced apart by a radially extending opening. Both Figures 2 and 3 of the '194 Patent show an extended opening between two elongated spokes of the spoke arrangement. The extent of the opening is determined by the width of the cross-bar that connects the inner ends of spokes, which can be seen in both Figures 2 and 3. The specification itself frequently refers to the spokes as "two spokes," ('194 Patent, col. 3, lns. 15, 18), "spoke pairs," (id. at col. 5, lns. 11-12, 18-19, 33, 52), and "individual spokes," (id. at col. 5, lns. 42-43).

Moreover, the '194 Patent emphasizes the importance of having the spokes straddle the radius:

[I]t should be noted that the spokes 32a, 32b of each pair[] extend inward from rim 26 on either side but not along a radius of rim 26. Rather they straddle a common radius, preferably in approximate parallel relationship with the latter and, at the same time, they straddle the axis of rotation of the rim. This is important for the following reasons. Spokes displaced from a radial line carry wheel torque loads as tensile stress. This is beneficial because the spokes are very strong in tension. If spokes were located on a radius, torque loads would be carried as pending stress on the spokes. The spokes are very weak in bending in the circumferential (wheel torque) direction.

('194 Patent, col. 3, lns. 58 - col. 4, lns. 2.) As Plaintiff argues, if the two spokes were connected by webbing, instead of being spaced apart by a radially extended opening, that webbing would sit on the radius of the rim and frustrate this important goal.

The patent specification also implies an opening between the spoke pairs by referring to the cross-bar as connecting the inner ends of the two spokes. ('194 Patent col. 3, lns. 15-18 ("[E]ach spoke arrangement is an integrally formed unit which includes two spokes . . . joined together at their radially inner ends by a cross bar . . . "); id. at col. 5, lns. 11-14 ("[E]ach arrangement includes two spokes . . . having inner ends joined to one another by a cross-bar . . . "). Plaintiff submits that "[i]f the two elongated spokes were already connected by full webbing, there would be no need to connect their ends with a cross-bar." (Pl.'s Br. at 8.) The court finds these arguments persuasive, and will construe the spokes as being spaced apart by a radially extending opening.
Finally, the parties contest whether the spokes must extend from the hub to the rim. Defendants claim that "[t]he spokes must extend from the rim to the hub," (Defs.' Br. at 8), while Plaintiff contends that "[n]othing in the '194 Patent explicitly or implicitly requires that the . . . elongated spokes must extend all the way to the rim," (Pl.'s Br. at 8). Defendants rest their argument on Figure 5, which depicts a spoke with length "l" extending the full length between the hub and the rim, and on subsection (c) of Claim 1, which calls for a "means for connecting the outer ends of said spokes to said rim." (Defs.' Br. at 8; '194 Patent col. 6, lns. 13-14.) Defendants argue that if a spoke does not extend all the way to the rim, that spoke could not be "connected" to the rim. Defendant's position is not supported by the patent specification.

The '194 Patent does not require, by implication or otherwise, that a spoke must come into direct contact with the rim. While it is true that the spokes must be connected to the rim, subsection (c) of Claim 1, construed below, provides the means to do so. The means may simply be a bolt, weld or similar fixed connection, if the spoke itself extends to the rim, but it may also be a flange to which the spoke is attached, combined with a bolt, weld or similar fixed connection, allowing the spoke to come into contact with the rim indirectly. Figures 5 and 3 illustrate this point. In Figure 5, the spoke is defined with a length "l" that extends from the hub to the rim. In that case, the only connecting means required would be a bolt, weld or similar fixed connection affixing the spoke to the rim directly. Figure 3, however, shows a spoke with length "l" that extends less than the full distance to the rim, i.e., only to the flange. In this illustration, it is the flange that provides a means to connect spoke to rim.

Defendant's proposed construction would exclude the preferred embodiment shown in Figure 3. 5 "A claim interpretation that excludes a preferred embodiment from the scope of the claim 'is rarely, if ever, correct.'" Globetrotter Software, Inc. v. Elan Computer Group, Inc., 362 F.3d 1367, 1381 (Fed. Cir. 2004) (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996)). Accordingly, the court rejects Defendants' proposed construction, and finds that "spokes" need not extend from the hub to the rim.

--- Footnotes ---

5 The court rejects Defendants' unsupported conclusion that Figure 3 "is not an embodiment claimed by the '194 Patent." (Defs.' Reply at 8 n.3.)

--- End Footnotes ---

2. Claim 9

The parties have submitted the following phrase in Claim 9 of the '596 Patent for construction by the court (phrase for construction is underlined; phrases already construed in Claim 1 are italicized):

A wheel support assembly adapted to bolt to a vehicle axle for supporting a tire, said assembly comprising: a) an outer annular rim having an outer annular surface configured to support a tire and inner annular surface; b) a hub adapted to mount to the end plate of a vehicular axle, said hub having a plurality of bars which have outwardly-most extending ends, each end of which displays a predetermined curvature, said bars being connected to one another to form a hub body defining (1) a common center point and (2) an overall contact face defined in part by said bars; the contact face including outwardly-most extending ends corresponding to the ends of said bars and displaying predetermined curvatures corresponding to the outwardly-most extending ends of said bars, the predetermined curvatures of the ends of said contact face displaying the radii of curvature smaller than the distance from said center point of the contact surface to the outwardly-most extending ends of said bars; each of said bars having a through hole (1) which is adapted to receive an axle bolt and (2) which extends in a direction perpendicular to said contact face such that, when the wheel structure is mounted to said vehicular axle, said contact surface is contiguous with the axle end plate; and c) a plurality of spoke arrangements each having an outer end and an inner end[,] said outer end adapted to connect to said rim, and said inner end adapted to connect to said hub.

The parties agree that "spoke arrangements" are "rods or braces extending between the rim and the hub of the wheel." ('596 Patent JCC at 6.) The parties disagree, however, on whether "spoke arrangements" must contain multiple spokes.
Defendants contend that "[t]he '596 Patent, by incorporation of the '194 Patent, defines 'spoke arrangements' to require multiple spokes." (Defs.' Mot. at 25.) Defendants support their argument by submitting that "[t]he patentees chose to employ the term 'spoke arrangements' rather than the term 'spokes,'" (id.), and that Plaintiff "improperly attempts to convert that claim limitation into a 'plurality of spokes,'" (Defs.' Reply at 12). Furthermore, Defendants argue that, by definition, "one needs more than one spoke in order to 'arrange' those spokes." (Defs.' Mot. at 25.) Defendants therefore submit the following proposed construction: "a number of arrangements each of which is comprised of at least two spokes where the spokes of the arrangement reach from the hub to the rim." (Id.)

Plaintiff, however, argues that "[e]ach 'spoke arrangement' does not require 'at least two spokes where the spokes of the arrangement reach from the hub to the rim.'" (Pl.'s Br. at 31.) Plaintiff points out that "[n]owhere in the intrinsic evidence, including the specification of the '596 Patent, is the phrase 'at least two spokes' found." (Id. at 33.) While Plaintiff concedes that the '596 Patent incorporates the '194 Patent by reference, Plaintiff claims that the '596 Patent "did not limit the claims in the '596 Patent to any specific wheel assembly structure." (Id.)

The '596 Patent specification does incorporate the '194 Patent by reference: "[t]he present invention relates generally to wheel support assemblies for vehicular tires and more particularly to the center hub portion thereof, especially one of the design disclosed in Assignee's Fitz et al U.S. Pat. No. 6,042,194 which is incorporated herein by reference." ('596 Patent, col. 1, Ins. 6-10.) The '596 Patent incorporates the '194 Patent both as an example of a wheel that would benefit from the '596 Patent, and to emphasize that the '596 Patent hubs can be made of stamped sheet metal according to the '194 Patent. ('596 Patent, col. 3, Ins. 41-46.)

Although the '596 Patent incorporates the '194 Patent, it does not do so to define the term "spoke arrangements." in the '596 Patent. 10 No language in the '596 Patent specification supports this contention, and the term, "spoke arrangements" has not been specifically defined in the '596 Patent. Advanced Display Sys. v. Kent State Univ., 212 F.3d 1272, 1282 (Fed. Cir. 2000) (indicating that to incorporate material by reference, the host document must identify with detailed particularity the specific material it is incorporating and clearly indicate where that material is found in the documents); see also In re Seversky, 474 F.2d 671, 674 (C.C.P.A. 1973).

Absent an express patent definition, terms expressed in general descriptive words in a claim are to be given their ordinary meaning. Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1249 (Fed. Cir. 1998); CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1367 (Fed. Cir. 2002). Dictionary definitions may be used to establish a claim term's ordinary meaning. Renishaw PLC, 158 F.3d at 1249; Rexnord Corp., 274 F.3d at 1344. The construction must be true to the claim language and naturally align with the patent's description. Renishaw PLC, 158 F.3d at 1250; see also Young Dental Mfg. Co., Inc., v. Q3 Special Prods., Inc., 112 F.3d 1137, 1142 (Fed. Cir. 1997).

The parties agree that spokes are "rods or braces extending between the rim and the hub of the wheel." ('596 Patent JCC at 6.) The ordinary definitions of the word "arrangement" are "the act or process of arranging or being arranged," "the condition of being arranged," and "the manner in which a thing is arranged." The Oxford Dictionary and Thesaurus 1470 (Am. ed. 1996). The word "arrange" is ordinarily defined as "put into the required or suitable order." Id. Accordingly, the term "spoke arrangements" can be construed as the "proper order of each of the bars running from the hub to the rim of a wheel." Nothing in either this ordinary dictionary definition or the intrinsic evidence precludes Plaintiff's construction, in which each "spoke arrangement" can consist of either a single spoke or a set of multiple spokes in between the hub and the rim of a wheel. Accordingly, the court finds that each "spoke arrangement" need not contain multiple spokes, and rejects Defendants' proposed construction.

GO BACK
In the underlying patent litigation, this Court construed the term "spool tree" to mean "a tree having no internal valves." In the License Agreement, the parties agreed that the scope of the patent claims "shall be governed by the claim construction decision of Judge Atlas dated May 9, 2002." See License Agreement, P 10.7. Kvaerner argues that the arbitrator's decision that its Side Valve Trees infringe the '119 Patent was in manifest disregard of the Court's claim construction.

Kvaerner argued during the arbitration that its Side Valve Trees included an "internal valve" and, therefore, did not infringe Cooper Cameron's '119 Patent. The arbitrator clearly recognized that this Court's claim construction was binding. See Hearing Transcript, Exh. K to Motion to Vacate, pp. 157, 169. Kvaerner argued that this Court's claim construction of "spool tree" limited infringement to those devices that contained no valves anywhere within the entire tree body. The arbitrator, noting that this Court in its full claim construction decision stressed that the '119 Patent features a horizontal tree design with no valves in the vertical bore, 3 rejected Kvaerner's argument and determined that "internal" valves for purposes of the Court's claim construction of "spool tree" were valves that are located inside the vertical bore. The arbitrator then, after receiving and considering evidence from both parties, made the factual finding that Kvaerner's Side Valve Tree did not contain internal valves because it does not have valves inside the vertical bore.

--- Footnotes ---
3 See, e.g., Memorandum and Order, [Doc. # 311] in Civil Action No. H-97-0155, p. 29 n. 38; p. 34.
--- End Footnotes ---

The arbitrator recognized and complied with his obligation to follow this Court's claim construction. The arbitrator, based on the Court's claim construction as set forth in the entire claim construction decision, understood that a "spool tree" for purposes of the '119 Patent was a horizontal tree design with no valves in the vertical bore. Based on the evidence in the record, the arbitrator found that Kvaerner's Side Valve Tree did not include a valve in the vertical bore and, therefore, was a "Licensed Product" for which Kvaerner owed royalties under the License Agreement. Kvaerner has not shown that this finding was based on a manifest disregard for the law.

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"The construction of a patent, including the terms of art within its claim, is exclusively within the province of the court." Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 1386, 134 L. Ed. 2d 577 (1996). In determining the meaning of a claim, the court first examines the intrinsic evidence of the record, including the claims, specification, and the prosecution history. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Intrinsic evidence is "the most significant source of the legally operative meaning of the disputed claim language." Id. at 1582. If the intrinsic evidence does not sufficiently resolve ambiguities, then the court may consider extrinsic evidence, including expert and inventor testimony, in order to arrive at a "proper understanding of the claims." Id. at 1583.

1. Intrinsic Evidence

a. Language of the Claims

HP first argues that the meaning of the phrase "spots of different sizes" as used in the claims of the '272 patent is ambiguous. They contend that the term "spot" can mean either a light spot generated by the laser beam or a discharged region on the
PB responds that the claim language clearly indicates the term "spots" means "discharged regions on the photoreceptor which attract toner." They argue that the claims reveal that "spots of different sizes" give rise to "generated shapes" which have the appearance of "smoothed edges." They contend that since "a single laser beam projected spot . . . will not result in generated shapes having the appearance of smoothed edges," the word "spot" must refer to discharged areas on the photoreceptor.

Interpreting the claim language is of primary importance. The "language of the claims frames and ultimately resolves all issues of claim interpretation." Abtox, Inc. v. Exitron Corp, 122 F.3d 1019, 1023 (Fed. Cir. 1997). Claim terms are to be given their ordinary and customary meaning, unless it is apparent that the inventor expressly intended a different meaning. Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578 (Fed. Cir.), cert denied, 519 U.S. 911, 117 S. Ct. 275, 136 L. Ed. 2d 198 (1996). When reviewing claim language, a court must apply the "normal rules of syntax" and consider the context of the claim. Eastman Kodak Co. v. The Goodyear Tire and Rubber Co., 114 F.3d 1547, 1553 (Fed. Cir. 1997).

In the instant case, the plain language of the claims does not unambiguously support either proposed definition of the phrase "spots of different sizes." As used in the claims of the '272 patent, the term "spot" could mean either light spots or discharged areas on the photoreceptor. The relevant dictionary definition for the word "spot" is "any small portion of a surface differing from the rest." See Funk and Wagnall, Standard College Dictionary (1963). This definition alone does not differentiate between the two proposed definitions. Additionally, applying the normal rules of syntax to the claims do not clearly delineate the meaning of the word. For example, the phrases "each beam of light generating a spot" and "controlling a parameter of the light beams to produce spots of different sizes" could be construed to mean either spots of light or discharged areas on the photoreceptor.

Further, PB's assertion that shapes with smoothed edges can not be generated by light spots is not determinative of the meaning of the terms "spots." The claims are not directed toward the generated shapes themselves, but rather a method of making those shapes (Claims 1 and 2) or an apparatus for generating those shapes (Claim 3). The formation of different sized light spots is the first step in the process which gives rise to the shapes. Thus, the shapes are generated by the formation of light spots.

The claim language does not plainly reveal whether the term "spot" means a light spot or a discharged area on a photoreceptor. Since the language of the claims is ambiguous, we turn to an analysis of the specification, "which is the single best guide to the meaning of a disputed term." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996).

b. The Specification

HP next argues that the specification of the '272 patent "clearly uses the word spot to refer to a light spot." They point to numerous instances where the specification "refer[s] to [the] motion of a spot, a property . . . certainly not possessed by an exposed region on a photoreceptor."

PB replies that the word spot has two different meanings in the specification. They claim that "up to column 5, line 62, the terms 'spots' is used in the specification to refer to the laser light beam spot." However, PB argues that "there is a clear transition in the context and usage of spots" after that point. They argue that after column 5, line 62, the term spots is used to refer to discharged areas on the photoreceptor, and this definition should be applied when interpreting the claim language.

After reviewing the claim language, the court must review other parts of the patent document, including diagrams or figures, which are collectively referred to as the specification. Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 1387-88, 134 L. Ed. 2d 577 (1996); see also Al-Site Corp. v. Bonneau Co., 22 F.3d 1107 (Fed. Cir. 1994). "The specification contains a written description of the invention that must enable one of ordinary skill in the art to make and use the invention. For claim construction purposes, the description may act as sort of a dictionary, which explains the invention and may define terms used in the claims." Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (internal citations omitted). Although "inventors may be their own lexicographers, they must use words in the same way in the claims and in the specification." Fonar Corp., v. Johnson and Johnson, 821 F.2d 627, 632 (Fed. Cir. 1987). When a patentee uses "words which were defined in the specification," they "must be given the same meaning when used in the
claims.” McGill Inc. v. John Zink Co., 736 F.2d 666, 673 (Fed. Cir. 1984). A court reviews the patent specification to
determine whether the patentee "used any terms in a manner inconsistent with their ordinary meaning." Vitronics Corp. v.
Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996).

In the instant case, the specification of the '272 patent indicates that the word "spot" means a spot of laser light. The word
"spot" is used 44 times in the specification. PB concedes that 42 of the 44 times the word "spot" is used it refers to the light
spot created by the laser beam. Their assertion that the remaining two uses of the word "spot" require a different definition
is incorrect. Specifically, they refer the court to the following section:

The use of different spot sizes can effectively be employed as letters or numbers are created so as to avoid roughened
dges and improve character formation. The system of this invention can also employ two power sources using parallel laser
beams with each of the beams being of a different diameter and corresponding spot size. This will provide a matrix of dots
having different sizes for forming a single generated character. The different dot size will intermesh to create letters and
numerals having smoother appearance.

When read in light of the entire specification, this section is consistent with the word spot meaning a spot of laser light. PB's
invention does employ light spots to form generated characters. The characters are not formed directly by the light spots
themselves, but by the discharged areas on the photoreceptor subsequently created by the light spots. The discussion in the
cited section above is fully consistent with this interpretation. It discusses how the laser beams create spots which "in turn
provide a matrix of dots." These "different size dots intermesh to create letters and numeral having a smoother appearance."

Read in its entirety, the specification of the '272 patent indicates that the word "spot" means a light spot. Since inventors
"must use words in the same way in the claims and in the specification," it is logical to conclude that the word spot also
means a light spot when used in the claims of the '272 patent. Fonar Corp. v. Johnson and Johnson, 821 F.2d 627, 632 (Fed.
Cir. 1987); see also McGill Inc., v. John Zink Co., 736 F.2d 666, 673 (Fed. Cir. 1984) (holding that words defined in the
specification must be given the same meaning when used in the claims). 2 Allowing PB to employ two different definitions
for the same word in a single specification would undermine the requirement that the claims clearly "demarcate the

2 PB also argues that interpreting the word spot to mean light spot would exclude the preferred embodiment from being
covered by the claims of the '272 patent. Specifically, they contend that varying the intensity of the laser beam, which is the
preferred embodiment as recited in claim 2, "does not change the size of the diameter of the projecting laser beam light
spot." However, the court's determination that "spot" means "light spot" does not invalidate or exclude any claim of the '272
patent. One common convention in the digital printing field is to define the size of a light spot as the area of light where the
intensity exceeds a fixed threshold. Under this definition, the size of a projected light spot would change when the intensity
of a light beam is varied. Thus, the preferred embodiment as recited in claim 2 is encompassed by the court's claim
construction and no new limitations have been introduced. See Eastman Kodak Co. v. The Goodyear Tire & Rubber Co.,
114 F.3d 1547, 1556 (Fed. Cir. 1997) (courts should seek to interpret claims to preserve, rather than defeat, their validity).

c. The Prosecution History

HP further argues that the prosecution history of the '272 patent supports the assertion that the word spot means a light spot.
Specifically, they point to the fact that the examiner amended the title to include the term "Light Spots." They contend that
this fact provides further support for the conclusion that the word spot in the '272 patent means a light spot.

PB responds that a change of title does "not cast doubt on the meaning of the claim language." They argue that there "is no
requirement that the title describe all embodiments an invention."

The undisputed public record of the proceedings in the PTO is of primary importance in understanding the claims. Markman
v. Westview Instruments, Inc., 52 F.3d 967, 980-81 (Fed. Cir. 1995). The file history can function to limit claim construction
so as to exclude any interpretation which was disclaimed during prosecution. Southwall Technologies, Inc. v. Cardinal IG

In the instant case, the prosecution history is consistent with the conclusion that the word "spots" means "light spots" in the '272 patent. According to Patent Office procedure, "where the title is not descriptive of the invention claimed, the examiner should require the substitution of a new title that is clearly indicative of the invention." M.P.E.P. § 606.01 (1979). After evaluating the application, the examiner was in the best position to fully understand the nature of the invention and the meaning of the terms used in the patent. It is relevant that he chose to modify the noun "spots" with the adjective "light." This is reflective of his understanding that the word "spots" means "light spots" in the '272 patent.

2. Extrinsic Evidence

The court concludes that the use of extrinsic evidence is unnecessary in this case. Extrinsic evidence may be evaluated "in order to aid the court in coming to a correct conclusion as to the true meaning of the language employed in the patent." Markman v. Westview Instruments, Inc., 52 F.3d 967, 981 (Fed. Cir. 1995) (internal citations omitted). However, "reliance on such evidence is unnecessary, and indeed improper, when the disputed terms can be understood from a careful reading of the public record." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 (Fed. Cir. 1996).

In this case, the meaning of the phrase "spots of different sizes" can be understood from a careful reading of the claims, the specification, and the prosecution history. Accordingly, consideration of extrinsic evidence is unnecessary and improper.

* * *

CONCLUSION

For the foregoing reasons, the court concludes that the phrase "spots of different sizes" as used in the '272 patent means light spots of various sizes. Since it is undisputed that the accused devices do not employ light spots of different sizes, the defendant's motion for summary judgment (document no. 178) is GRANTED.

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A. Spots of Different Sizes

The term "spots of different sizes" is used in both Claim 1 and Claim 3 of the 272 patent. Hewlett argues that the term "spots of different sizes" must be construed by the court because, although the Federal Circuit specifically construed this phrase, it did not address how the specific size of a single spot is determined in order to determine if the spots are of different sizes. Pitney responds that the Federal Circuit has already defined "spots of different sizes" and that its definition should be adopted.

In 1997, Hewlett filed a motion for summary judgment in which it argued that the accused Hewlett products do not meet the "spots of different sizes" limitation because "spots" should be interpreted to be "light spots" rather than areas of discharge on the photoreceptor. Judge Covello granted the motion, agreeing that "spots" should be limited to "light spots." Pitney II, 69 F. Supp. 2d at 328-31. The Federal Circuit vacated Judge Covello's ruling, finding that he had misconstrued the claim term "spots of different sizes." Pitney III, 182 F.3d at 1313. "The dispute centered on whether the term spots of different sizes ' refers to the spots of light generated by the light beam on the photoreceptor . . . or describes the spots of discharged area on the photoreceptor that result from contact with the light beam . . . " Id. at 1303.

In construing the term, the Federal Circuit found that the term "spot" was used in several portions of the patent and the meaning varied depending on its use."Where the language of the written description is sufficient to put a reader on notice of the different uses of a term, and where those uses are further apparent from publicly-available documents referenced in the patent file, it is appropriate to depart from the normal rule of construing seemingly identical terms in the same manner." Id. at 1311. The Federal Circuit found that, in the context of the prosecution history, a reader was on notice that the term "spot" has different meanings in the written description depending on its context. Id. Turning to the disputed part of the written
description, the Federal Circuit found that "spot size" means "the area of discharge on the photoreceptor." Id. The court held "that the 'spots' that can be of different sizes' are the spots of discharged area on the photoreceptor, not the spots of light produced by the laser beam." Id. at 1313.

Hewlett argues that the Federal Circuit's definition does not assist the fact finder in determining whether a given method or apparatus produces 'spots of different sizes' because it does not address how to determine the size of a spot. According to Hewlett, most laser printers do not print with discrete, circular spots—they print with line segments. Hewlett argues that if Pitney's definition is adopted, the fact finder will not know, for example, whether each line segment is a single spot or each line segment is comprised of a number of spots.

Pitney responds that, although the Federal Circuit did not expressly address the actual size of the claimed "spots of different sizes," its definition is sufficient to define the term. Pitney thus proposes that "spots of different sizes" are "spots of discharged area on the photoreceptor that make up the generated shapes, which have the appearance of smoothed edges." According to Pitney, the 272 patent teaches how to combat the problem of "jaggies," which results from using similarly sized toner spots. In order to combat the problem of "jaggies," a printer must be able to produce spots that are smaller than the nominal spot size for that printer. The nominal spot size is based on the number of spots the printer prints per inch. For example, a 300 dpi printer prints a 300 spots per inch. To smooth "jaggies," such a printer must be able to print spots smaller than the spot necessary for a 300-spots-per-inch spot. Thus, according to Pitney, the meaning of "spots of different sizes" is clear from the Federal Circuit's definition.

In both Claim 1 and Claim 3, "spots of different sizes" are produced by the method or apparatus for the purpose of providing the appearance of smoothed edges. Neither of the claims limit how the size of the spot is determined. Thus, the ordinary meaning of "spots of different sizes" is simply spots that differ in size, regardless of the method used to determine that the sizes are different.

Neither the specification nor the prosecution history of the 272 patent limit how the size of the spot is determined. However, Pitney did limit the determination to some extent during the prosecution history of the 021 patent. It is appropriate to consider the prosecution of related applications in construing terms common to both the patent under consideration and the related application. Jonsson v. The Stanley Works, 903 F.2d 812, 818 (Fed. Cir. 1990). The disclosure about "spots of different sizes" in the specification of the 272 patent was carried forward into the specification of the 021 patent. Therefore, the prosecution history of the 021 patent and any construction of the term "spots of different sizes" contained in the 021 patent are appropriately considered in construing this claim.

The PTO granted a request for reexamination of the 021 patent based, at least in part, on the existence of IBM's Sharp patent. Declaration of Perry M. Goldberg in Support of Hewlett-Packard Company's Opening Mem. Regarding Claim Const. Issues, Dkt. No. 267 [hereinafter HP Ex.], Ex. M at 2. The Sharp patent discloses a method and apparatus for increasing the resolution of an image by using fiber optics to direct beams of light to a film photoreceptor. U.S. Patent No. 3,573,789 ("Sharp patent"), HP Ex. C. Through a "Resolution Expander," data bits, or pixels, are expanded into several data bits, or sub-pixels. Sharp pat., col. 5, 11. 60 - col. 6, ll. 2. Thus, the printer is no longer only limited to filling all or none of an original pixel. A fraction of the area of the original pixel can be filled, resulting in improved resolution.

In the reexamination of the 021 patent, Pitney argued that the Sharp patent did not disclose the use of "dots of different sizes." According to Pitney, the term "dots" means the basic, unitary elements comprising the printed characters or image and the basic, unitary element disclosed in the Sharp patent is a sub-pixel that is 1/4 an original pixel. Pitney argued that groups of sub-pixels could not be considered "dots of different sizes" because they were merely groupings of the same sized dots.

The examiner found that Sharp does use dots of different sizes because, when compared with the size of the original pixel, the sub-pixels were a range of four different sizes: 1/4 dot, 1/2 dot, 3/4 dot, and full dot. Pitney appealed and the Board of Patent Appeals and Interferences found that Sharp could not be considered to have dots of different sizes because the term "dots" is used with regard to the different sizes of the basic printing units. Pitney thus admitted, and the Board of Patent Appeals agreed, that the 021 patent is devoid of any suggestion that different groups of same-sized dots are to be considered dots of different sizes. The court concludes that a grouping of same sized spots that creates a larger spot is not a spot of a different size for purposes of the 272 patent.
Beyond this limitation, Hewlett argues that the size of each spot should be defined by reference to the basic, unitary elements in the on-off signal that make up each image. However, because the 272 patent discloses a method and apparatus for varying spot sizes by varying the intensity, time, or beam diameter of the individual light beams that create the spots, Hewlett's proposed definition for determining whether spots differ in size is too limited. Other than the limit Pitney admitted in distinguishing the Sharp patent, nothing in the claims, the specification, or the prosecution history indicates that Pitney intended to limit the way the size of the spots is determined.

The court concludes that "spots of different sizes" are single spots, or areas of discharge on the photoreceptor, that differ in size. Such a difference in size is not caused by grouping together the same sized spots.

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ii. "A spring" is not limited to an elongated flexion spring

Claim 9 also recites that the contactor has "a spring." Perimeter, looking to the patent's Description, argues that the spring must be an elongated flexion spring. See '900 Patent col.6 1.39-42 ("The contactor . . . includes . . . an elongated flexion spring. . . ."); figs. 3, 8, 10. Claim 9, however, cannot be limited based solely on the preferred embodiment. See Ekchian, 104 F.3d at 1303; Intervet American, Inc., 887 F.2d at 1053. Indeed, the Summary indicates that the spring is not necessarily limited to an elongated flexion spring at all, remarking only that "the spring may be in the form of an elongated flexion spring. . .." '900 Patent col.11.64-65 (emphasis added).

The broader interpretation of "a spring" is further supported by the doctrine of claim differentiation. Here, claim 20, which is ultimately dependent on claim 9, reads as follows: "The device in accordance with claim 13 or 16 wherein the spring is an elongated flexion spring. . .." '900 Patent col. 12; 60-61. Claim differentiation is at its strongest "where the limitation sought to be 'read into' an independent claim already appears in a dependant claim." Seachange Int'l, Inc., 413 F.3d at 1368-69 (citing Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004)). Through the doctrine of claim differentiation, the term "a spring" as used in claim 9 is broad enough to cover various types of springs, while the spring recited in claim 20 is specifically an elongated flexion spring.

Claim 21, which includes "a contactor having an elongated flexion spring . . ." '900 Patent col. 13 1.5, provides additional evidence that claim 9 should not be limited to an elongated flexion spring. Although claim 21 is an independent claim, under the doctrine of claim differentiation "there is still a presumption that two independent claims have different scope when different words or phrases are used in those claims." Id. at 1369.

In addition to Perimeter's proposed construction with the spring and contact arm forming a unit, each party also provides an independent construction for "a spring." Invisible Fence proposes "[a] spring for biasing the battery toward the opening, or equivalent thereof," while Perimeter proposes "[a] spring for biasing the battery toward the opening and that spans between and connects with the ends of the contact arms at the base of the battery holder." (Joint Statement 4.)

Since both parties ostensibly agree that the spring is "for biasing the battery toward the opening," a point we discussed earlier, we include the limitation "for biasing the battery toward the opening" in our construction of "a spring."

Furthermore, Invisible Fence once again includes the phrase "or equivalent thereof" in its proposed construction of "a spring." We addressed this issue in regards to the construction of "a contactor," and for the reasons stated above, we decline to add "or equivalent thereof" to our construction of "a spring" as well.

Perimeter proposes that the spring "spans between and connects with the ends of the contact arms at the base of the battery holder." (Joint Statement 4.) Since we earlier concluded that the spring is not required to connect with the contact arms, we decline to include any reference to such a connection in our construction of "a spring." The language of claim 9, however, supports the inclusion of "at the base of the battery," as it provides that the spring is "located inside the battery holder between the base of the battery holder and the battery. . .." '900 Patent col. 11 1.37-38.
Insofar as Perimeter proposes in its construction of "a spring" that claim 9 requires a pair of contact arms, we decline to include this limitation for the reasons to be discussed infra.

(iii) Claim 15

Independent claim 15 contains the limitations: (1) at least one "clamping member," (2) "pivotally mounted," and (3) urged by a "spring" in a direction towards the opposing wall means and aperture to fixedly support a piece of string. (PX 3, col. 8). The parties appear to disagree as to the interpretation of "spring." Defendants argue that the word "spring" is ambiguous because it is so broad, encompassing any "elastic body or device that recovers its original shape when released after being distorted." (Def. PFFCL at 37 (quoting Webster's Third New International Dictionary (1993)). Hence, defendants argue, reference must be made to sources other than the claim itself, including the specification, and that the word "spring" in claim 15 refers to an extension or torsion spring, not to any kind of spring. (Id. at 37-38). In contrast, Kwik argues that the word "spring" is not to be limited by the specification, and contends that "'spring' certainly calls to mind a reasonably well defined structure, used in common parlance and by persons skilled in the art to designate structure." Hence, Kwik argues, "spring" refers to any spring, functioning in any way. (Pl. Reply to Def. PFFCL at 8-9).

I agree with defendants' proposed construction. The word "spring," by itself, is so broad as to be ambiguous. I do not believe that as used here it calls to mind a "reasonably well defined structure." Rather, many structures could serve as a spring, including structures made not from wire but from plastic. (See 10/21/04 Tr. at 81-84). Moreover, I accept defendants' expert's testimony that the rotational movement required of a pivotally mounted clamping member could only be accomplished with certain springs. Hence, I conclude that the reference to "spring" in claim 15 is to an extension or torsion spring.

E. "Spring-Biased Mechanism"

The term "spring-biased mechanism" is used in the independent claims, 1 and 32. Insight contends that the important meaning is that the spring is forcing or biasing another part or mechanism. Glock contends that the term means a system of parts that includes a spring "which exerts force on at least one of the other parts." SureFire contends that the term does not need to be construed because it is clear to one skilled in the art. Based on the interpretations proposed by Insight and Glock, they appear to agree that a spring-biased mechanism means the mechanism is in its forced state. Consonant with the terminology used in construing "positioning mechanism," "spring-biased mechanism" is a structure that includes a spring which is exerting force on at least one other part of the structure.

A. "Said Vertical Supports Spring-Biased So As To Maintain Said Vertical Supports and Said Platforms in a Parallelogram Configuration"

The two vertical supports, the floor platform, and the shoe platform form a parallelogram. There is a spring between the two vertical supports that causes the vertical supports to return more readily to a "neutral" or vertical position, in which the parallelogram is a rectangle. The Court construes the claim term "said vertical supports spring-biased so as to maintain said vertical supports and said platforms in a parallelogram configuration" to mean "a spring biased against the vertical supports that causes the vertical supports and the platforms to be maintained in a parallelogram configuration."
DISSENT

GAJARSA, Circuit Judge, dissenting.

The majority avoids the critical issue upon which this decision turns; i.e., whether 35 U.S.C. § 112, P 6 governs the claim construction of the "spring means" limitation. In a brief footnote, the majority sweeps and brushes aside the means-plus-function analysis as unnecessary in light of the "plain language of the claims." Maj. Op. 8 n.3. Without having analyzed the scope of the claims, the majority somehow concludes that the claim language covers only devices having separate "spring means" and "hinged arm" structures. Then applying this simplistic claim construction to analyze the sufficiency of the evidence, the majority improperly overturns the jury's verdict finding infringement. For these reasons, I respectfully dissent.

Although the majority ignores the issue completely, the parties have vigorously contested the claim construction of the "spring means" limitation and have made this issue the focal point of their legal position before the district court and this court. The limitation reads: "a spring means connected to said hinged arm for urging said guard along said needle cannula toward said second position." '544 patent, col.7 ll.33-35. The parties disagree over whether the "spring means" language should be construed as a means-plus-function limitation pursuant to § 112, P 6. The majority, however, dismisses the means-plus-function analysis entirely in a single footnote, asserting that the language of the claims is "unambiguous":

Tyco . . . contends that a separate spring is required because the spring means limitation is in means-plus-function format, see 35 U.S.C. § 112, P 6 . . . We need not reach this argument, however, because we conclude that--regardless of whether the asserted claims invoke section 112, paragraph 6--an added spring element is required by the plain language of the claims.

Maj. Op. 8 n.3. First, it is unclear what the majority means by "an added spring element." An "added spring element" does not appear in the "plain language of the claims," specification, or prosecution history of the patent. Second, claim construction is necessary to determine the scope of the claims. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996). The majority opinion injects ambiguity into the claims and fails to construe the claims as required by our case law. See, e.g., Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) (en banc); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 (Fed. Cir. 1996). It is impossible for the majority to determine the scope of the claims without undertaking a means-plus-function analysis. Accordingly, the majority's claim construction is premised upon an inadequate foundation.

If a claim element "contains the word means' and recites a function," there is a presumption that the claim is in means-plus-function format. Envirco Corp. v. Clestra Cleanroom, Inc., 209 F.3d 1360, 1364 (Fed. Cir. 2000). That presumption can be rebutted, however, if the claim also "recites sufficient structure to perform the claimed function." Id. If the claim term "is one that is understood to describe structure . . . [i]t is simply a substitute for the term means for." Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1360 (Fed. Cir. 2004).

To determine whether the claim term should be construed as a means-plus-function limitation, we begin by evaluating how the term "spring" is used in the specification and the intrinsic record. Phillips, 415 F.3d at 1315 ("[T]he specification is always highly relevant" and is "the single best guide to the meaning of a disputed term"). Next, the court should consider whether the "spring means" limitation contains additional structure to rebut the means-plus-function presumption. See Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427 (Fed. Cir. 1997) (holding that where a claim recites a function, but goes on to elaborate sufficient structure, the claim is not in means-plus-function format).

In this case, the written description defines the term "spring means" as a type of device that imparts a function of urging the safety guard toward the needle tip. A "spring" as defined in the written description denotes a type of device with a generally understood meaning in the mechanical arts. See Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996). Each embodiment described in the patent employs a type of spring; e.g., coil springs, plastic springs, hinged springs, and over-centered springs. '544 patent, col.3 ll.5-7; id. at col. 4 ll. 40-42; id. at col. 5 ll.9-16; id. at col.6 ll. 38-42. None of the embodiments employ any structure other than springs. Indeed, the patent contains no suggestion that the claims include urging mechanisms other than springs. Accordingly, the intrinsic evidence demonstrates that the '544 patent defines "spring
means" as a particular structure—a spring.

Next, the court in a proper claim analysis should consider whether the claims elaborate sufficient structure to rebut the means-plus-function presumption. The '544 patent claims state that the function of the "spring means" is for "urging the guard along said needle cannula." Id. at col. 7 ll.34-35. The claims go on to recite additional structure to achieve that function. Claim 1 recites "spring means connected to said hinged arm," id. at col.7 ll.34-35 (emphasis added), and claim 24 recites "spring means extending between said mounting means and said hinged arm," id. at col.10 ll.17-20 (emphasis added). Thus, the claim language demonstrates that the combination of the "spring means" and "hinged arm" perform the "urging" function. Accordingly, the claims include additional structural limitations to rebut the means-plus-function presumption.

Tyco obviously disagrees with this conclusion; however, its reliance on Unidynamics Corporation v. Automatic Products International, 157 F.3d 1311, 1314 (Fed. Cir. 1998) is unavailing. This court in Unidynamics applied § 112, P 6 to the claim limitation "spring means tending to keep the door closed." In that case, the patent's written description stated that "[t]he spring . . . is an example of spring means tending to keep the door closed." Id. at 1319 (emphasis added). Accordingly, the "spring means" was not defined solely as a spring structure, but as any type of structure to perform the function. Furthermore, the Unidynamics court noted that the claim language did not provide additional structure following the "spring means" language. Id. It merely recited a function of "tending to keep the door closed." Id. Therefore, the court there properly concluded that "spring means" was a means-plus-function limitation because neither the claim language nor the written description provided sufficient structure to rebut the § 112, P 6 presumption. Id.

In this case, however, the written description defines "spring means" as a spring structure. For example, each embodiment employs a spring structure; e.g., coil springs, plastic springs, hinged springs, and over-centered springs. Unlike Unidynamics, the spring is not just an example of a spring means to perform the function; it is the only type of structure disclosed in the written description. Moreover, the claim language itself provides additional structure following the "spring means" language. For example, claim 1 recites "spring means connected to said hinged arm," '544 patent, col.7 ll.34-35 (emphasis added), and claim 24 recites "spring means extending between said mounting means and said hinged arm," id. at col.10 ll.17-20 (emphasis added). Unlike Unidynamics, the claim language itself includes additional structure; e.g., the hinged arm and mounting means—to perform the function of urging the guard along the needle cannula. Here, the means-plus-function presumption is rebutted and the claims should not be construed according to § 112, P 6. Therefore, the district court correctly construed the "spring means" limitation according to its ordinary meaning: "[t]he hinged arm is connected to a spring that moves the guard along the cannula toward the second position." Becton, Dickinson & Co. v. Tyco Healthcare Group, Tyco Healthcare Group, LP, No. 02-1694-GMS, 2004 U.S. Dist. LEXIS 18637, 2004 WL 2075413, at *4 (D. Del. Sept. 16, 2004).

The majority first approves of the district court's claim construction, see Maj. Op. 8-9, but then proceeds to improperly import an extraneous limitation into the claims, which is contrary to our case law. See Comark Commc'ns, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998). The majority asserts that "the unequivocal language of the asserted claims of the '544 patent requires a spring means that is separate from the hinged arm" because they are written as separate limitations in the claim language. Maj. Op. 9. However, the unequivocal language articulates no requirement for separate structures. It merely recites "a spring means connected to said hinged arm for urging said guard along said needle cannula toward said second position." The majority's limitation requiring two separate structures is not supported anywhere in the intrinsic or extrinsic record. Such a claim interpretation violates our established tenants of claim construction prohibiting the court from reading extraneous limitations into the claims. E.I. du Pont de Nemours & Co. v. Phillips Petroleum, 849 F.2d 1430, 1433 (Fed. Cir. 1998) ("It is entirely proper to use the specification to interpret what the patentee meant by a word or phrase in the claim . . . . But this is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.") (citation omitted).

The majority relies on CAE Screenplates, Inc. v. Heinrich Fiedler GmbH & Co., 224 F.3d 1308, 1317 (Fed. Cir. 2000), which states that "we must presume that the use of . . . different terms in the claims connotes different meanings." (emphasis added). While this is correct, the majority fails to recognize that "the use of two terms in a claim requires that they connote different meanings, not that they necessarily refer to two different structures." Applied Med. Res. Corp. v. U.S. Surgical Corp., 448 F.3d 1324, 1333 n.3 (Fed. Cir. 2006) (emphasis added); see also Intellectual Prop. Dev., Inc. v. UA-Columbia Cablevision of Westchester, Inc., 336 F.3d 1308, 1320 (Fed. Cir. 2003). Indeed, it is well established that a single structure in an accused device may satisfy two different claim limitations. Intellectual Prop., 336 F.3d at 1320 n.9 ("[W]e
see no reason why, as a matter of law, one claim limitation may not be responsive to another merely because they are located in the same physical structure”); In re Kelley, 305 F.2d 909, 915-16, 49 C.C.P.A. 1359, 1962 Dec. Comm'r Pat. 681 (CCPA 1962) (stating that two claim terms may read upon the same physical structure). In the absence of evidence requiring two structures, the claim language must be interpreted broadly to read upon an accused product containing the two claim terms, regardless of whether those elements are encompassed in one or two structures.

In the '544 patent, nothing in the claim language, written description or prosecution history requires that the "spring means" and "hinged arm" be separate structures. The plain language of the claims includes no such "separate structures" limitation. To the contrary, the written description contemplates that the "spring means" and "hinged arm" be included as part of the same "hinged arm assembly." See, e.g., '544 patent, col.4 ll.40-44 (stating that a spring may be encompassed "between" the joints of the hinged arm assembly); id. at col.5 ll.66-68 ("proximal and distal segments . . . of [the] hinged arm assembly . . . can be articulated about [the] hinges."). In other words, the "hinged arm assembly" is described as a structure with the "spring means" and "hinged arm" as components of that structure. There is no support in the written description requiring that the "spring means" and "hinged arm" be separate structures themselves. Accordingly, a proper claim construction does not require two separate structures for the "spring means" and "hinged arm." The majority's ruling improperly imports an extraneous limitation into the claims and fails to give the claim language its full, literal scope. By injecting this additional and extraneous limitation, the majority sidesteps the required analysis of whether the "spring means" limitations are prescribed by § 112, P 6.

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4. "Spring means for yieldably biasing the handle means to the first position"

This phrase also appears in asserted Claim 10. Gerdes argues that it is written in means-plus-function format and therefore § 112, P 6 applies. Stant, on the other hand, argues that because the term "spring" connotes sufficient structure to perform the function of biasing the handle means to the first position, it has overcome the presumption that the "means for" language requires the application of § 112, P 6. This phrase requires that the court begin by presuming that the patentee intended § 112, P 6 to apply. Greenberg, 91 F.3d at 1584. Stant may only overcome this presumption by demonstrating that Claim 10 recites a sufficient structure to perform the function required of "spring means" in the claim -- that is, biasing the handle means to the first position. See Envirco Corp, 209 F.3d at 1365. The court finds that Stant has not met this burden.

The term "spring" is clearly a structural term. See Unidynamics Corp. v. Automatic Products Intern., Ltd., 157 F.3d 1311, 1319 (Fed. Cir. 1998). As the court found in Unidynamics, however, the simple inclusion of a structural term is not sufficient to take this phrase outside the coverage of § 112, P 6. Id. In Claim 10, the patentee specifically claims that the "spring means" must function to "bias[] the handle means to the first position." 055 patent, col. 15, 11. 14-15. The patentee does not, however, provide any recitation of the structure required to perform this function other than the word "spring" itself. Nothing in the claim further describes the location or extent of the structure, the claim simply recites the function of the element "spring." See Unidynamics Corp., 157 F.3d at 1319. In addition, in contrast to the "closure means" discussed in Section B(4), nothing in the specification provides evidence that the term "spring" alone connotes a sufficient structure to enable one with skill in the art to determine the exact element required to perform the stated function. Further, while not conclusive, the court finds persuasive the fact that the court in Tesma found this particular element to be a means-plus-function element. Tesma Entry, p. 19.

Thus, the court finds that "spring means" for "biasing the handle means to the first position" is a means-plus-function element and must be limited to the corresponding structure set forth in the specification of the 055 patent. 35 U.S.C. § 112, P 6. Specifically, this "spring means" consists of a torsion spring connected to the top spring mount on the handle cover and the bottom spring mount on the core as is described in the specification and pictured in Figure 9. See 055 patent, col. 7, 11. 26-28, Fig. 9.

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2. ANALYSIS
The first claim construction issue is whether the limitation "spring means tending to keep the door closed" is a means-plus-function expression, governed by § 112, P 6, which reads (emphasis is ours):

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

We agree with the district court that the phrase "tending to keep the door closed" is functional language modifying "spring means." We disagree with the district court, however, that the recitation of "spring," which is structural language, takes the limitation out of the ambit of the construction dictate of § 112, P 6.

The use of the term "means" generally (but not always) shows that the patent applicant has chosen the option of means-plus-function format invoking § 112, P 6 construction. See Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584, 39 U.S.P.Q.2d (BNA) 1783, 1786-87 (Fed. Cir. 1996). The written description also supports this choice by stating that "the spring 46 is an example of spring means tending to keep the door closed." '750 patent, col. 3, ll. 31-32. The recitation of the word "spring" does not vitiate the patentee's choice. See Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1536, 19 U.S.P.Q.2d (BNA) 1367, 1369 (Fed. Cir. 1991) ("The recitation of some structure in a means-plus-function element does not preclude the applicability of section 112, P 6 [when it] merely serves to further specify the function of the means."). But see Data Line Corp. v. Micro Techs., Inc., 813 F.2d 1196, 1201, 1 U.S.P.Q.2d (BNA) 2052, 2055 (Fed. Cir. 1987) (proper means-plus-function format sets forth a means for performing a specific function without reciting any specific structure for performing that function). Our decision in Cole v. Kimberly-Clark Corp. also is not in conflict with our decision here.

In Cole, we interpreted the following claim phrase involving easily removable training pants for toilet training of toddlers: "perforation means extending from the leg band means to the waist band means through the outer impermeable layer means for tearing the outer impermeable layer means for removing the training brief in case of an accident by the user." We held that the perforation means did not meet the requirement of § 112, P 6 because it not only described definite structure, perforations, that supported the described function, tearing, but also described the location and extent of the structure. Cole, 102 F.3d at 531, 41 U.S.P.Q.2d (BNA) at 1006. Here, spring is the only recitation of structure with the remainder pertaining solely to the function of the means limitation.

We hold, however, that the district court's failure to apply § 112, P 6 was merely harmless error because we reach the same result of noninfringement. The proper construction of a means-plus-function limitation requires interpreting the limitation in light of the corresponding structure, material, or acts described in the written description, and equivalents thereof, to the extent that the written description provides such disclosure. In re Donaldson Co., 16 F.3d 1189, 1193, 29 U.S.P.Q.2d (BNA) 1845, 1848 (Fed. Cir. 1994) (in banc). Structure disclosed in the specification, however, is only "corresponding" structure to the claimed means under § 112, P 6 if the structure is clearly linked by the specification or the prosecution history to the function recited in the claim. B. Braun Med., Inc. v. Abbott Lab., 124 F.3d 1419, 1424, 43 U.S.P.Q.2d (BNA) 1896, 1900 (Fed. Cir. 1997); see also Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc., 145 F.3d 1303, 1308, 46 U.S.P.Q.2d (BNA) 1752, 1755-56 (Fed. Cir. 1998); Pennwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931, 934, 4 U.S.P.Q.2d (BNA) 1737, 1739 (Fed. Cir. 1987) (in banc) ("To determine whether a claim limitation is met literally where expressed as a means for performing a stated function, the court must compare the accused structure with the disclosed structure, and must find equivalent structure as well as identity of claimed function for that structure."). cert. denied, 485 U.S. 961, 99 L. Ed. 2d 426, 108 S. Ct. 1226 and 1009 (1988). To determine the specific function associated with the means limitation requires construction of the claim language, which is a question of law that we review de novo. Chuiinattia, 145 F.3d at 1308, 46 U.S.P.Q.2d (BNA) at 1755.

The function of the spring means as specified in the claims is "tending to keep the door closed." The structure associated with this function is described in the written description as follows (emphasis ours):

As may best be seen in FIGS. 3, 4, and 5, the door 37 is attached to a generally rectangularly shaped housing 48 for enclosing the storage and dispensing area 7. The door 37 is mounted on a strip hinge 47 with spring 46 which tends to keep the door 37 in a vertical or closed position. The spring 46 is an example of spring means tending to keep the door closed. . . . The door 37 tends to be pressed against gaskets 53 and 55 by the spring 46 to seal the storage and dispensing area 7.
Figure 5, reproduced below, shows the only disclosed example of the spring means. We agree with the district court that this function, when read in light of the written description, "tending to keep the door closed" requires a closing action in addition to keeping the door closed once it is in a closed position. The written description indicates that the word "tends" requires that the spring work to keep the door in a vertical or closed position to press it against gaskets to seal the storage and dispensing area. The structure described in the written description to carry out this function is a spring in a strip hinge. Section 112, P 6 requires that the LCM4 vending machines have a spring, or equivalent structure, to carry out the identical function of tending to keep the door closed, but it need not be in a strip hinge. The district court correctly determined that, as a matter of law, neither the padded bracket nor the magnet perform that function. No reasonable jury could determine that either structure "tends to keep the door closed" as that function is properly interpreted because neither "tends" to close the door. Gravity performs the action of closing the door in both LCM4 versions. Therefore, neither version of the LCM4 machine literally infringes any claim of the '750 patent.

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Spring Pin

Every claim of the '664 patent calls for a "spring pin." Zettl suggests that the spring pin is a resilient, elastic or flexible elongated part for fastening the two earring components together. Defendants agree with Zettl's definition for the most part except to insist that the spring pin must also be curved. In doing so, Defendants seek to read the limitation of Claims 11, 14, 16, 17, 20, 21, and 22 - which call for a spring pin "curved to form an arc" - into the remaining claims which merely call for a spring pin.

The Court rejects Defendants' caveat that a spring pin must necessarily be curved. The descriptive part of the specification is generally considered the best means of determining a disputed term. Vitronics, 90 F.3d at 1582. In the '664 patent, the specification describes one embodiment of the invention, a ring-shaped earring, that makes use of a curved spring pin. (‘664 patent, Col. 2, ln. 31-33). The specification, however, does not require that the spring pin always be curved. In fact, the specification explicitly describes another embodiment that does not make use of a curved spring pin. (Id., Col. 2, ln. 59-61; Fig. 4). Therefore, the "spring pin," as disclosed in the 664 patent, is any resilient, elastic or flexible elongated part for fastening the two earring components together.

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A. The District Court's Claim Construction

The district court looked to the prosecution history of the '745 patent to interpret the claim term "sputter-deposited dielectric." The district court concluded the prosecution history requires that a "sputter-deposited dielectric" be formed by a one-step reactive sputtering process and specifically not by a two-step process in which a metal layer is first deposited and then later oxidized. 6 Because Cardinal's titanium oxide layer is formed by a two-step process in which the titanium is first deposited as a metal layer and then later oxidized, the district court concluded Cardinal's titanium oxide layer could not be a "sputter-deposited dielectric." Because Cardinal's product does not have a "sputter-deposited dielectric" layer "directly contiguous" with the silver layer, the district court further held that, as a matter of law, Cardinal's product could not literally infringe the '745 patent.

6 Although the district court erred in assuming that the entirety of Cardinal's dielectric layer, rather than only the titanium oxide layer, was formed by a two-step process, this error did not undermine the court's analysis because claim 14 requires that the "sputter-deposited dielectric" layer be "directly contiguous" with the silver layer. Thus, if the titanium oxide layer, which is "directly contiguous" with the silver layer, cannot be described as a "sputter-deposited dielectric," Cardinal cannot
literally infringe that claim even though its zinc oxide layer can be described in this manner.

We agree with this analysis. Arguments and amendments made during the prosecution of a patent application and other aspects of the prosecution history, as well as the specification and other claims, must be examined to determine the meaning of terms in the claims. E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1438, 7 U.S.P.Q.2D (BNA) 1129, 1135 (Fed. Cir.), cert. denied, 488 U.S. 986, 102 L. Ed. 2d 572, 109 S. Ct. 542 (1988). The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution. ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1580, 6 U.S.P.Q.2D (BNA) 1557, 1561 (Fed. Cir. 1988); Senmed, Inc., 888 F.2d at 818-20, 12 U.S.P.Q.2D (BNA) at 1511-13 (rejecting patentee's interpretation of claim term "on" as inconsistent with position taken during prosecution of patent application). Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers. Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1562, 19 U.S.P.Q.2D (BNA) 1500, 1504 (Fed. Cir. 1991).

In the office action, dated July 5, 1988, the examiner made only one rejection based on prior art, rejecting all the pending claims as anticipated by, or alternatively, as obvious in view of Franz, U.S. Patent No. 3,846,152:

Franz teaches employing alternate layers of metal/metal oxide to a transparent substrate such as glass or plastic and the use of a protective layer to make a transparent heat reflecting window . . . . The metal layer is sputter deposited and the metal oxide layer is sputter deposited as a metal and then oxidized, see col. 4, lines 25-28. It is unclear whether the "metal oxide is sputter-deposited" limitation is meant to encompass the situation where the metal oxide is sputter deposited as a metal and later oxidized. Until clarification the examiner most [sic, must] interpret the claims broadly.

In response, Southwall amended an independent claim to describe the dielectric as a "sputter-deposited inorganic metal oxide, compound or salt." 7 Southwall explained the amendment:

7 Earlier versions of some original '745 claims had also used the narrower limitation "inorganic metal oxide, compound or salt" rather than "dielectric," which was used later. Although Southwall attempts to make much of this difference, it does not affect our analysis because in both instances the key phrase the meaning of which is at issue, "sputter-deposited," is used in exactly the same manner, to modify the general class of dielectric materials as the list of specific dielectric materials. The arguments regarding the "sputter-deposited inorganic oxide, compound or salt" made during prosecution are thus relevant to our interpretation of "sputter-deposited dielectric" for purposes of literal infringement as well as to the application of prosecution history estoppel to limit the range of equivalents accorded that term.

It is believed that the claims as last presented distinguished patentably over the Franz and Yatabe disclosures but to provide yet additional clear bases for distinction the claims have been amended to specify that the dielectric layer is laid down as a sputter-deposited inorganic metal oxide, compound or salt[]. As pointed out in the specification such layers can be laid down directly by reactive sputtering processes in which the metal is sputtered off of a metal target and directly converted to the oxide, compound or salt by the presence of a suitable gaseous reactant.

(Emphasis added.) In this response Southwall necessarily disclaimed the examiner's interpretation of "sputter-deposited" metal oxides as encompassing a two-step process in which metal is first deposited as a metal and then oxidized. In contrast to the examiner's interpretation in his office action being responded to, Southwall explained that its sputter-deposited dielectric is laid down in a one-step reactive sputtering process. Thus, the prosecution history limits the interpretation of "sputter-deposited dielectric" layer to exclude any dielectric layer formed by the two-step process. Because Cardinal's titanium oxide layer is formed in this manner it cannot be a "sputter-deposited dielectric."

Southwall argues, however, that Cardinal's two-step process is an indirect method of forming a "sputter-deposited dielectric," but is still a sputter-deposition process because Cardinal's titanium dioxide layer exists only by virtue of sputter-deposition. The titanium metal is sputter-deposited and converted to the oxide during sputter-deposition of zinc oxide.
According to Southwall, the statement in the prosecution history, "such layers can be laid down directly" implies that the layers can also be laid down indirectly. However, Cardinal's titanium oxide layer is not laid down by sputter deposition as defined in the '745 patent, only the titanium metal layer is. The titanium oxide is formed by treating deposited titanium metal with oxygen. Although this occurs while a different material, zinc oxide, is being sputter-deposited, the reason for the presence of the oxygen does not change the post-deposition oxidation process by which the titanium oxide is formed and does not convert that process into a sputter deposition, i.e., a one-step process.

Because we conclude that a "sputter-deposited dielectric," as that term is used in claim 14, cannot be formed by a two-step process in which a metal layer is first sputter-deposited and then oxidized, we can only conclude that Cardinal's product does not have a "sputter-deposited dielectric" layer "directly contiguous" with the silver layer. Therefore, like the district court, we hold that as a matter of law Cardinal's product cannot literally infringe the '745 patent.

B. Southwall's Arguments

Southwall argues that "sputter-deposited dielectric" must be interpreted to also include a dielectric layer formed by the two-step deposition process oxidizing it because Southwall presented evidence that persons of ordinary skill in the art construe the expression to include any dielectric that results from materials laid down by sputtering. Southwall's evidence is affidavit testimony by its two experts describing Cardinal's titanium oxide layer as a "sputter-deposited dielectric." Alternatively, Southwall argues that any conflict between its experts and the prosecution history as to the meaning of "sputter-deposited dielectric" creates a genuine fact issue which makes summary judgment inappropriate.

Southwall imposes a contorted and incorrect analytical framework on the issues of claim interpretation and literal infringement when it argues:

2. The uncontroverted testimony of the experts below establishes that those skilled in the art consider a dielectric layer formed either by reactive sputter-deposition or by sputter up-oxidation [the two-step process] of a sacrificial layer to constitute a "sputter-deposited dielectric." Thus, the term "sputter-deposited dielectric" is literally met by the accused Cardinal structure;

3. Therefore, since the claim as written literally describes the Cardinal structure, the arguments made with respect to that term in the file history must be reviewed to determine whether that expression was given a special meaning in Southwall's arguments which excludes the Cardinal structure. If the phrase was accorded a special meaning in the file history, a determination must be made as to whether the file history should be used merely to "interpret" the claims, or whether a file history estoppel by argument exists as to one or more of the claims.

Appellant's Brief at 35.

Southwall's framework fails in several respects. First, the evidence offered by Southwall does not establish the ordinary meaning of "sputtered-deposited dielectric" to one skilled in the art. In his declaration Dr. Stephen F. Meyer merely stated "it seems to me that [Cardinal's] dielectric layer as a whole (including both the titanium dioxide [sic, oxide] and the zinc oxide) could quite fairly be characterized as a 'sputter-deposited dielectric'." Similarly, Robert L. Cormia's declaration states, "it is my opinion that the 'titanium' barrier layer that Cardinal deposits immediately after each of the silver layers is a 'sputter-deposited dielectric' in the LOE2 coatings, as that phrase is used in the '745 Patent." Neither Meyer nor Cormia testified as to how one skilled in the art would interpret the term "sputter-deposited" when viewed in light of the claims, specification and prosecution history. This testimony provides only conclusory legal opinions as to whether Cardinal's titanium oxide is a "sputter-deposited dielectric" rather than evidence of how that term is commonly used and understood in the art. See Becton Dickinson & Co., 922 F.2d at 797, 17 U.S.P.Q.2D (BNA) at 1100 (affidavit of expert on what constitutes an "extension" in the context of the asserted claim was only legal opinion which did not create a material fact issue).

Second, Southwall assumes that a claim term is only interpreted by first looking to its meaning in the art and then limiting that meaning in accordance with any relevant prosecution history, by either interpretation or prosecution history estoppel. The terms in a claim, however, are not given their ordinary meaning to one of skill in the art when it appears from the patent and file history that the terms were used differently by the applicant. Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1387, 21 U.S.P.Q.2D (BNA) 1383, 1386 (Fed. Cir. 1992). A patentee may not proffer an interpretation for the purposes of litigation that would alter the indisputable public record consisting of the claims, the specification and the prosecution
history, and treat the claims as a "nose of wax." Senmed, Inc., 888 F.2d at 819 n.8, 12 U.S.P.Q.2d (BNA) at 1512 n.8. In other words, evidence extrinsic to the patent and prosecution history, such as expert testimony, cannot be relied on to change the meaning of the claims when that meaning is made clear by those documents.

Because the meaning of "sputter-deposited dielectric" as used in claim 14 is clear from the prosecution history of the '745 patent, Southwall's expert affidavits cannot alter that meaning. Even if Southwall could show that "sputter-deposited dielectric" has a meaning to one skilled in the art different from the definition in the '745 specification and file history, the definition in the patent documents controls the claim interpretation. See Markman, slip op. at 21. Thus, we may not consider Southwall's opinion expert testimony as we interpret claim 14 as a matter of law. Because the expert testimony is entitled to no weight, it cannot create a genuine issue of material fact precluding summary judgment. Claim interpretation, as a question of pure law, is amenable to summary judgment and disagreement over the meaning of a term within a claim does not necessarily create a genuine issue of material fact. See id. at 18; Intellicall, Inc., 952 F.2d at 1387, 21 U.S.P.Q.2d (BNA) at 1386. Any other rule would be unfair to competitors who must be able to rely on the patent documents themselves, without consideration of expert opinion that then does not even exist, in ascertaining the scope of a patentee's right to exclude.

Southwall further argues that the district court erred by failing "to recognize that in some claim combinations, the two-step process would not be literally covered by the claims, while in other claim combinations, the claim may be patentable for other reasons and literally cover a two-step dielectric process." Appellant's Brief at 44. Southwall then presents extended discussion tracing the development of claim 14 from the application through the prosecution to show that the cited arguments it made during prosecution did not apply to any earlier version of claim 14.

Whether claim 14 derived from any application claim discussed in the prosecution history is irrelevant to our interpretation of claim 14 in light of that history. "Sputter-deposited dielectric" cannot be interpreted differently in different claims because claim terms must be interpreted consistently. See Fonar Corp. v. Johnson & Johnson, 821 F.2d 627, 632, 3 U.S.P.Q.2d (BNA) 1109, 1113 (Fed. Cir. 1987), cert. denied, 484 U.S. 1027, 98 L. Ed. 2d 764, 108 S. Ct. 751 (1988). Interpretation of a disputed claim term requires reference not only to the specification and prosecution history, but also to other claims. Id. at 631, 3 U.S.P.Q.2d (BNA) at 1112. The fact that we must look to other claims using the same term when interpreting a term in an asserted claim mandates that the term be interpreted consistently in all claims. Id. at 632, 3 U.S.P.Q.2d (BNA) at 1113 (examining use of term "standard" in nonasserted claims to interpret same term in asserted claims). Accordingly, arguments made during prosecution regarding the meaning of a claim term are relevant to the interpretation of that term in every claim of the patent absent a clear indication to the contrary.

II. Infringement Under The Doctrine of Equivalents


The issue presented by this appeal is whether, because of the manner of its manufacture, Cardinal's titanium oxide layer is excluded, as a matter of law, from the range of equivalents that can be accorded the limitation "sputter-deposited dielectric." 8 The district court applied prosecution history estoppel in holding that the range of equivalents could not extend to Cardinal's dielectric layer because, "the Examiner specifically rejected any process where the 'metal oxide is sputter-deposited as a metal and later oxidized.' The Cardinal process is such a process." Slip op. at 20. Having concluded that the range of equivalents accorded this limitation in claim 14 could not encompass Cardinal's titanium oxide layer, the district court correctly held that as a matter of law Cardinal's product could not infringe the '745 patent under the doctrine of equivalents.

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8 Cardinal does not contest for purposes of this appeal that "but for" the titanium oxide sacrificial barrier layer, factual issues exist as to whether its product infringes claim 14 under the doctrine of equivalents. Because claim 14 recites a "sputter-deposited dielectric" layer which is "directly contiguous" with a silver layer, additional layers in Cardinal's product intervening between its own "sputter-deposited dielectric" and silver layers would prevent infringement because a limitation would be entirely lacking from the accused device. Southwall suggests no way in which Cardinal's product can satisfy the "directly contiguous" limitation, even equivalently, if the titanium oxide layer is not a "sputter-deposited dielectric."

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B. Construction of "squeezing extruder throat"

The proper construction of "squeezing extruder throat" is a passageway or channel that 1) has an inlet opening wider than a W-beam guardrail so that the guardrail fits inside the opening; and 2) flattens a W-beam guardrail by using the energy of an impacting vehicle to force the guardrail through the throat, where the flattening is caused by passing through a width of the throat that is narrower, in at least one dimension, than the width of an unflattened guardrail. This construction does not require that the beam be flattened into a relatively flat plate; rather, it only requires that the beam be flattened some as it passes through the throat. This construction also does not require the flattening accomplished by the squeezing extruder throat to be the primary or exclusive energy absorbing mechanism of the terminal. It merely requires that the flattening of the beam dissipate some energy.

The parties' proposed constructions and briefs in support raised four relevant issues regarding the construction of this limitation. The court will address these individually.

1. Must "squeezing extruder throat" mean a tapered, narrowing, funnel-shaped structure?

Defendants assert that the claim language, specification and prosecution history of the patent each require the conclusion that a squeezing extruder throat claims only a narrowing, tapered, funnel-shaped structure. Defendants argue that the word "squeezing" in the claim language requires that conclusion, because "squeezing" incorporates the concept of narrowing described in the specification and the prosecution history. Defendants specifically point to language in the specification describing a terminal that flattens a guardrail by squeezing it between narrowing walls. The summary of the invention describes "an extruder throat that is narrower in width than the feeder chute." '928 patent, col. 2, lines 48-50. The summary goes on to say "this reduction in width flattens a W-beam guardrail." Id. The preferred embodiment and the referenced drawings include an "extruder chute [that] is funnel shaped and narrows down to an extruder throat." '928 patent, col. 4, lines 44-45; FIG. 3. Defendants also point out that during prosecution, the patent examiner only granted the patent after an interview with the applicants where it was agreed that the "applicant will file an amendment further distinguishing the extrusion terminal having a narrowing channel which flattens the W-beam." Examiner Interview Summary Record, dated November 7, 1989, Exhibit D, Tab 12, Defendants' Written Submission Regarding Claim Construction Under Markman
Plaintiffs argue that there is no need to look to the specification or the prosecution history to interpret the "squeezing extruder throat" limitation because the ordinary meaning of the terms "squeezing," "extruder," and "throat" are known to persons of ordinary skill in the relevant art. Plaintiffs point out that these terms can have various meanings depending on the context and urge that these terms must be given "all [their] correlative meanings." Plaintiffs' Reply to Defendants' Written Submission for Claim Construction Under Markman (Dkt. # 34), filed July 22, 1999, at 2. Despite Plaintiffs' urging against consideration of the specification to narrow the scope of this limitation, Plaintiffs rely heavily on one paragraph of the specification to support a broad construction. That paragraph states:

> It should be understood, however, that the extruder terminal can be designed to bend the W-beam guardrail without first flattening it. This can be accomplished by the elimination of the extruder throat and designing the extruder chute without a reduction in width so that flattening does not occur. With these changes, the unflattened W-beam guardrail is fed directly into the bending chute.

The court agrees that the claim language itself, which is the ultimate focus in claim construction, indicates that a squeezing extruder throat must narrow. Claim 1 speaks of a "squeezing extruder throat for telescoping over said guardrail and flattening the guardrail." For the squeezing extruder throat to "telescope" over the guardrail, as Claim 1 expressly requires, it must be wider than the guardrail, and for the squeezing extruder throat to flatten the guardrail merely by the forcing of the guardrail through the throat, it must contain a portion that is narrower than an unflattened guardrail. Hence, by physical necessity, there must be a narrowing between the wider and the narrower portion. Furthermore, while, the inconsistent terminology used in the claims and the specification requires a careful reading of the patent to ascertain its meaning, it is clear that the squeezing extruder throat described in the claims performs the same functions as the structures in the specification that are described as narrowing or funnel-shaped, and thus, incorporates the concept of narrowing.

Plaintiffs contend that "squeezing" does not imply narrowing and that it is improper to limit the scope of the language "squeezing extruder throat" based on the specification or the prosecution history because the terms "squeezing," "extruder," and "throat" each have an ordinary meaning that is known to persons skilled in the art relevant to this patent. But Plaintiffs acknowledge that these are broad terms subject to multiple meanings, depending on the context, and yet, in the same breath, urge the court to ignore their context, namely, the specification and the prosecution history. Such an approach would be at odds with the rule that "where there are several common meanings for a claim term, the patent disclosure serves to point away from the improper meanings and toward the proper meaning." Renishaw, 158 F.3d at 1250. Plaintiffs would have the court read this limitation word by word so that "squeezing extruder throat" does not claim anything less than every possible meaning of the individual words. This approach ignores the fact that the words are used together to convey the idea of a specific thing. "Extruder" modifies "throat"; "squeezing" modifies "extruder" and "throat." Thus, the limitation "squeezing extruder throat" is a combination of the individual terms that does not have a recognizable ordinary meaning, but instead, takes on a specific technical meaning that can only be properly understood in relation to the description of the operation of this device in the patent specification. Ignoring this would broaden the claims beyond what is patentable, i.e., what is described by the patent in sufficient detail to enable a person of ordinary skill to make the invention. An applicant for a patent bears the burden of particularly pointing out and distinctly claiming the invention he seeks to patent; therefore, when a "claim is susceptible to a broader and a narrower meaning, and the narrower one is clearly supported by the intrinsic evidence while the broader one raises questions of enablement," a court must adopt the narrower meaning. Digital
Biometrics, 149 F.3d at 1344. That is exactly the situation presented in the instant case. A squeezing extruder throat could be given a broad meaning to include all the ordinary meanings of the individual terms in the phrase, but there is clearly support in the claims, specification, and prosecution history for limiting the meaning to require narrowing. And choosing a broader construction that does not require a narrowing throat does raise questions of enablement. It is conceded by both sides in this litigation that a squeezing extruder throat must flatten a guardrail by squeezing it. A narrowing throat is the only disclosed structure for accomplishing that squeezing and flattening. Since there is nothing in the specification that would teach a person of ordinary skill in the art to make a squeezing extruder throat that does not include narrowing, a construction that does not include narrowing would raise a serious question of enablement.

Plaintiffs assert that a broader construction of "squeezing extruder throat" is consistent with the specification and does not raise questions of enablement because one paragraph of the specification states that "the extruder terminal can be designed to bend the W-beam guardrail without first flattening it . . . by elimination of the extruder throat and designing the extruder chute without a reduction in width." '928 patent, col. 6, lines 21-25. But this paragraph does not enable one to make a squeezing extruder throat without narrowing; rather, it eliminates the squeezing extruder throat entirely. The specification cannot be used in this way to broaden the claims by eliminating one of the express claim limitations. A patentee may not state throughout the specification and claims that an invention includes a particular limitation and then be allowed to avoid that limitation in a later infringement suit by reference to one paragraph in the specification that describes an alternative lacking that limitation. See Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1562 (Fed. Cir. 1991).

Plaintiffs further assert that, since Claim 1 requires "flattening and bending," the claim should be construed broadly enough to read on a device that "flattens in the bending process." Transcript of Markman Hearing, July 22, 1999, at 35, lines 4-6. In other words, Plaintiffs assert that the patent would read on a device that achieves some incidental flattening when it bends the guardrail by forcing it through an arc-shaped structure that does not narrow. Following this logic would effectively delete the "squeezing extruder throat" limitation from the claim. Such reasoning ignores the fact that Claim 1 describes one limitation for bending - a "bending means"- and another limitation for flattening- a "squeezing extruder throat." Flattening caused by bending does not satisfy the claim language, which clearly requires the flattening to be accomplished by squeezing.

The prosecution history is also consistent with requiring a squeezing extruder throat to narrow. It is proper to consider the interview summary in claim construction as it is part of the prosecution history. See Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1576 (Fed. Cir. 1996). At the conclusion of his November 7, 1989 interview with the '928 patent applicants, the examiner intended for the applicants to amend their claims to include the concept of "narrowing," as evinced by his statement to that effect in the interview summary. Although the applicants did not add the word "narrowing" to the claims, they did insert the limitation "squeezing extruder throat" after the interview. See Amendment, filed December 5, 1989, at 2, Exhibit D, Tab 13, Defendants' Written Submission Regarding Claim Construction Under Markman (Dkt. # 32), filed July 12, 1999. The exclusion of the words "narrow" or "narrowing" from the approved claim appears likely to indicate that the examiner was satisfied that the insertion of the words "squeezing" and "extruder" incorporated the narrowing concept, not that he had relaxed or eliminated the requirement.

That conclusion is further supported by the ordinary meaning of the individual terms "squeezing" and "extruder," without reference to the specification or prosecution history. The most common dictionary meaning of "extruder" is a device that "shape[s] by forcing through a die." Merriam Webster's Collegiate Dictionary (10th ed. 1997); see also McGraw Hill Dictionary of Scientific and Technical Terms (5th ed. 1994) ("a device that forces ductile or semisoft solids through die openings of appropriate shape to produce a continuous film, strip, or tubing"); Academic Press Dictionary of Science and Technology (1992) ("a device used to push a semisoft or ductile solid material through a die so that it is molded into a continuous form such as a strip or tubing"). A "die," in this context, is "a perforated block through which metal or plastic is drawn or extruded for shaping." Merriam Webster's Collegiate Dictionary (10th ed. 1997). The "die" is a necessary component of an extruder, and to impart shape to ductile or semisoft solids the die must be narrower, at least in one dimension, than the width of the mass of solids being forced through it. If the die were wider in all dimensions than the mass of solids being forced through it, the extruded material would not be shaped by the die because the mass would not come into contact with any opposed shaping edges of the die. "Extruder" thus implies the inclusion of a downstream width that is narrower than the upstream width. To accomplish the extrusion, an extruder must have an outlet (equivalent to a die) that contains a width that is narrower than its inlet. Therefore, the ordinary meaning of "extruder" in "squeezing extruder throat" implies forcing the guardrail through a structure that is narrower than the portion that telescopes over the guardrail. The most common meaning of "squeeze" is "to exert pressure, esp. on opposite sides of." Merriam Webster's Collegiate
Dictionary (10th ed. 1997). Thus, the ordinary meaning of "squeezing" is consistent with requiring a structure that uses narrowing walls to exert pressure on opposite sides of a guardrail, particularly in the context of this patent where "squeezing" is used in conjunction with the word "extruder."

Although a squeezing extruder throat must narrow, it is improper to read the limitations "funnel-shaped" "or "tapered" into this limitation. It is proper to construe words in the claim using the specification, but not to add limitations to the claims when no words in the claim require such a limitation. See Johnson Worldwide, 175 F.3d at 989-90. Neither of these limitations is expressly included or implied by the ordinary language of the claims. The term "funnel-shaped" connotes a conical shape, see Merriam Webster's Collegiate Dictionary (10th Ed. 1997) ("usu. a hollow cone"), and while a conical shape may be the best mode to accomplish the narrowing from the inlet to the flattening width of the throat, other shapes that would be apparent to a person of ordinary skill in the art could be employed to accomplish the reduction in width. There is no word in the claims that can reasonably be interpreted as requiring a conical shape, in contrast to, for example, the presence of the words "squeezing" and "extruder," which provide a basis in the claims for a narrowing requirement. The word "tapered" is not even used in the specification and connotes a gradual decrease in size that is not claimed as a limitation. See Merriam Webster's Collegiate Dictionary (10th ed. 1997) ("to diminish gradually"). While a gradual decrease in size may be in the structure of the preferred embodiment, it is not an inherent limitation of a "squeezing extruder throat," which could just as easily narrow abruptly so long as the guardrail can be forced through it and squeezed in the process.

2. Must a squeezing extruder throat flatten the guardrail into a relatively flat plate?

Defendants contend that a squeezing extruder throat must flatten the guardrail into a "relatively flat plate," relying on that language in the "summary of the invention" portion of the specification. '928 patent, col. 2, lines 22-23. That construction improperly imports a limitation from the specification that does not exist in the claims. Claim 1 says that the squeezing extruder throat is for "flattening the guardrail," '928 patent, col. 6, lines 48-49, with no mention of the degree to which it must flatten. This is analogous to the situation that was presented in Ekchan v. Home Depot where the accused infringer sought to limit the construction of "conducting" liquids to a specific range of conductivity disclosed in the specification. 104 F.3d 1299 (Fed. Cir. 1997). The Ekchan court held that the liquid must merely be sufficiently conductive to perform its function, i.e., to act as a capacitor. See id. at 1303. In the instant case, the function of the squeezing extruder throat is to employ flattening to dissipate some of the energy of an impacting vehicle. As will be discussed in greater detail later, the patent language acknowledges that some energy will necessarily be dissipated by bending as well as flattening. Therefore, in this context, "flattening" means a degree of flattening sufficient to dissipate some of the energy of an impacting vehicle.

Additionally, Defendants' proposed construction would mean that there would be no literal infringement of the '928 patent by a device that exactly copies the '928 patent but merely changes the width of the squeezing extruder throat to flatten the guardrail less than "relatively flat." A patentee should not have to resort to the doctrine of equivalents, under which the patentee would surely succeed, to show that a mere change in the dimensions of a device, without any change in the function, way, or result, infringes the patent.

3. Must the flattening of the guardrail occur prior to any bending?

Defendants assert that flattening must occur before bending so that the squeezing extruder throat must be located upstream of the bending means in any device that infringes the '928 patent. Defendants point to the syntax of the specification language, which speaks of "flattening and bending," '928 patent, col. 2, line 35, and the claim language, which describes a bending means that bends and remotes "the flattened guardrail," '928 patent, col. 6, lines 53-54. Defendants also rely on the description and drawings contained in the preferred embodiment that depict a flattening-before-bending structure. Plaintiffs counter that it is merely in the preferred embodiment that flattening occurs before bending, and that such a requirement is expressly disclaimed by the following language in the specification: "It should be understood, however, that the extruder terminal can be designed to bend the W-beam guardrail without first flattening it." '928 patent, col. 6, lines 20-22.

The court agrees with Defendants that the language cited by Plaintiffs does not support Plaintiffs' position because that language describes an embodiment in which a flattening device, a necessary limitation of Claim 1, is eliminated altogether. Nonetheless, the court concludes that flattening before bending is not a limitation of the claims. As discussed earlier, the squeezing extruder throat and bending means are separate limitations. If these and all other claim limitations are found in an accused device, infringement will not be precluded merely because they are found in different locations. See Corning Glass Works, 868 F.2d at 1259-60.
Defendants urge the court to adopt a construction of "squeezing extruder throat" that dissipates the energy of an impacting vehicle "by flattening, . . . not by shredding or kinking." Defendants' Submission of Joint Proposed Order Regarding Claim Construction Under Markman (Dkt. # 45), Exhibit A, at 2. This narrow construction implies that flattening must be the exclusive means of energy dissipation and is not supported by the claims, the specification or the prosecution history. To begin with, a construction that precludes the patent from encompassing devices that shred or kink is inconsistent with the law of infringement. Infringement occurs if all the elements of the claimed device are present in the accused device, regardless of whether additional features are incorporated in the accused device. See Amstar Corp. v. Envirotech Corp., 730 F.2d 1476, 1483-84 (Fed. Cir. 1984).

It is true that the patent examiner only approved the patent after the patentee distinguished the extrusion terminal as having a narrowing channel that flattens the W-beam. But nothing in the prosecution history indicates that such a device could not also shred or kink the guardrail. Certainly, the terminal in the '928 patent would not be anticipated by, or obvious in view of, devices that dissipated energy by shredding or kinking. The addition of a narrowing channel sufficiently demonstrated the novelty of the invention and distinguished the invention from prior art to overcome the "anticipation" and "obviousness" objections of the examiner, 3 regardless of other similarities to prior art retained by the invention. This is evidenced by the repeated references to dissipating energy by "flattening and bending" in the applicants' arguments that were eventually accepted by the examiner. See Patentee's Request for Reconsideration, filed February 16, 1989, at 2-3, Exhibit D, Tab 7, Defendants' Written Submission Regarding Claim Construction Under Markman (Dkt. # 32), filed July 12, 1999. The squeezing extruder throat must flatten by squeezing, i.e., by forcing the guardrail through a structure that is narrower than the width of the guardrail, but nothing precludes a squeezing extruder throat from incorporating a design that also shreds, bends or kinks the guardrail.

3 One patent anticipates another if each and every element of the claimed invention is disclosed in a single prior art reference or is embodied in a single prior art device or practice. Minnesota Mining and Mfg. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559, 1565 (Fed. Cir. 1992). Anticipation requires identity. See id. An invention is obvious in view of prior art when the invention combines known components to achieve a new system and the prior art contains some suggestion, motivation, or teaching whereby a person of ordinary skill would have selected the components that the inventor selected and used them to make the new device. See C.R. Bard, Inc. v. M3 Systems, Inc., 157 F.3d 1340, 1351 (Fed. Cir. 1998). Thus, to overcome the examiner's anticipation and obviousness objections, the applicants for the '928 patent did not need to expunge all similarities to prior art. They merely needed to either introduce a single element that was not included in the prior art, and/or combine known elements in a way that was not suggested or taught by the prior art.

Utilization of other methods for dissipating energy in addition to flattening is also consistent with the patent specification which includes numerous references to "flattening and bending," for example: "A still further object of the present invention is to provide a new and improved method for dissipating the impact energy of a vehicle colliding with an end of a guardrail by flattening and bending the guardrail." '928 patent, col. 4, lines 31-34. An even more explicit reference to dissipation of energy by a means in addition to flattening is: "The radius of the bending chute can be selected to bend the W-beam guardrail, in a circular path, an elliptical path, a spiral or any other configuration desired. It has been determined that different path result [sic] in different rates of dissipation of energy." '928 patent, col. 4, line 65-col. 5, line 1.
Court's previous claim construction was based on an incomplete understanding of the physics of guardrail end terminals as understood by those skilled in the art.” Pls.’ Mot. for Recons. at 8. Defendants argue that the new evidence is merely a new wording of a previously rejected theory. Defs.’ Resp. to Pls.’ Mot. for Recons. at 4. Defendants further argue that Dr. Bligh's declaration is extrinsic evidence by an interested witness, and therefore, should not be considered. Id. at 7-10.

The new evidence proffered by Plaintiffs' is undoubtedly extrinsic. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 (Fed. Cir. 1996) ("Extrinsic evidence is that evidence which is external to the patent and file history, such as expert testimony, inventor testimony, dictionaries, and technical treatises and articles."). "In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances it is improper to rely on extrinsic evidence." Id. at 1583. That was exactly the situation in the instant case. The court found, after extensive analysis, that only intrinsic evidence was needed.

However, even considering Plaintiffs' new extrinsic evidence in the form of the declaration of Dr. Bligh, the court is of the opinion that its construction of the term "squeezing extruder throat" on page 19 of its memorandum opinion and order dated September 20, 2000, is correct. See 121 F. Supp. 2d at 1041. That is, the "squeezing extruder throat" is "a passageway or channel that … flattens a W-beam guardrail by using the energy of an impacting vehicle to force the guardrail through the throat, where the flattening is caused by passing through a width of the throat that is narrower, in at least one dimension, than the width of the unflattened guardrail." Id. (emphasis added).

The Plaintiffs request the court to "modify" its construction of the term "squeezing extruder throat" to be "a passageway or channel which, when a guardrail is forced through it, causes the guardrail to flatten by the guardrail bearing against the walls of the passageway or channel." Pls.’ Mot. for Recons. at 8 (emphasis added). This language proposed by the Plaintiffs is not inconsistent with the court's construction of the term except that this language omits the statement that the throat narrows to a width narrower than the unflattened guardrail. Obviously, in order for the guardrail to flatten by "bearing against the walls of the passageway or channel", the passageway or channel must at some point become narrower than the unflattened guardrail so that "bearing" takes place. The court's original construction makes explicit what must be implicit in the Plaintiff's proposed modification. Therefore, the court declines to adopt the Plaintiffs' proposed modification.

9. squeezing said housing

The term "squeezing said housing" appears only in element (f) of claim 12. Chip-Mender argues that the term means "squeezing said housing"--that no independent construction is required. Sherwin-Williams contends that "squeezing said housing" means "providing sufficient force by a person's hand to deform the housing and force paint out of the applicator."

Chip-Mender argues that the meaning of the term "squeezing said housing" is clear when the term is viewed in the context of the specification. Chip-Mender notes that the specification states that "[t]he housing may be formed of a flexible material such that squeezing or applying pressure to the same also applies pressure to the paint composition found within the reservoir" (citing '299 patent, col. 1, II. 62 - col. 2, II. 2). Chip-Mender also cites the description of the preferred embodiment shown in Fig. 1, (citing id., col. 3, II. 41-46 and Fig. 1). Chip-Mender asserts that even Sherwin-Williams' '548 patent uses the terms "squeezing" and "housing" in the ordinary way (referring to claim 20 of that patent, "the housing comprises a resilient material capable of being squeezed to apply pressure to paint composition positioned in said reservoir and thereby increase a rate of flow of the paint composition").

In opposition, Sherwin-Williams asserts that Chip-Mender does not dispute that "squeezing said housing" should be construed to involve a force no greater than a person's hand. Thus, Sherwin-Williams argues, Chip-Mender essentially agrees with Sherwin-Williams' proposed construction.

The court finds that "squeezing said housing" means "squeezing said housing." No construction is necessary, as both sides agree that "squeezing" means "squeezing" or "applying pressure." Sherwin-Williams' proposed limitation—that the squeezing force be applied by a person's hand—is unnecessary. Moreover, there is nothing in the intrinsic record that would require that "squeezing" be limited in this manner.
The '299 patent discloses a small paint-applicator system, designed to touch up small chips or scratches on vehicles such as automobiles. The specification describes the invention as "utilizing a housing that is preferably of a size and proportion to be hand held." '299 patent, col. 1, ll. 64-65. Despite the use of the word "preferably," there is no indication anywhere in the patent that the applicator is not intended to be hand-held. Nevertheless, Chip-Mender is also correct that the "squeezing by hand" limitation does not appear anywhere in the patent.

In addition, the additional language that Sherwin-Williams proposes--sufficient force… to deform the applicator and force paint out of the applicator--is simply a paraphrase of the limitations that follow "squeezing said housing" in claim 12. That subsection of the claim states, "squeezing said housing to increase flow of said paint from said reservoir through said passageway to said nib and transferring to the painted surface of the vehicle." Id., col. 6, ll. 30-33. Logically, the flow will not increase when the housing is squeezed unless the squeezing "deforms" the housing. If the housing were rigid, the "squeezing" would not have the effect of "increasing the flow" of the paint or forcing the paint out of the applicator. It is unnecessary to add the additional language proposed by Sherwin-Williams, as that meaning is contained in the limitations that follow "squeezing said housing" in claim 12.

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The only term in dispute is "stabilizing supports," which appears in three independent claims (Claims 1, 24, and 41) and in eleven dependent claims (Claims 12, 17-19, 34, 38, 46, 49, 50, and 51.) The independent claims are set out below with the disputed terms in bold.

1. A device for dispensing an amount of fluid from a stoppered container to a target surface, comprising:

   a dispenser body having a passageway formed therein, one end of said dispenser body including a surface for engaging said stoppered container and another end of said dispenser body including stabilizing supports for engaging said target surface, and said passageway including means for passing through said stoppered container to interior portions of said stoppered container, for accessing the fluid in said stoppered container and for dispensing said fluid from said passageway and to said target surface responsive to forces applied relative to said dispenser body.

24. A device for dispensing an amount of fluid from a stoppered container, in combination with a stoppered container and a target surface in operative association with said dispensing device, wherein said dispensing device includes a dispenser body having a passageway formed therein, one end of said dispenser body including a surface in contact with said stoppered container and another end of said dispenser body including stabilizing supports in contact with said target surface, and wherein said passageway includes means for passing through said stoppered container to interior portions of said stoppered container, for accessing the fluid in said stoppered container and for dispensing said fluid from said passageway, to said target surface, responsive to forces applied to said stoppered container and developed between said dispensing device and said target surface.

41. A method for dispensing an amount of fluid from a stoppered container to a target surface utilizing a dispensing device including a body having a passageway for communicating fluid through said dispensing device, a surface for engaging said stoppered container and stabilizing supports for engaging said target surface, an entry tip in communication with said passageway and extending from the surface for engaging said stoppered container, and a dispensing tip formed in said passageway, said method comprising the steps of:

   introducing said entry tip into said stoppered container and bringing said engaging surface into contact with said stoppered container;

   placing said stoppered container and said dispensing device on said target surface so that said dispensing device is in contact with and is positioned over said target surface;

   applying a force against said stoppered container, relative to said target surface, compressing said stoppered container relative to said dispensing device; and

   releasing said force applied against said stoppered container, dispensing said amount of fluid from said dispensing tip and
to said target surface.

Helena proposes to define "stabilizing supports" as follows:

At least two elements, neither of which is part of the dispensing tip, and expressly excluding the dispensing tip, with the physical elements simultaneously contacting the target during fluid dispensing and which, independent of manual assistance, bear the weight of the device plus the stoppered container in a manner which is resistant to change and which maintain the dispensing tip a distance above and not in contact with the target during fluid dispensing.

Alpha suggests:

A solid member or portion thereof extending from or constituting a part of the dispenser body, located at an end of a dispenser body other than the end that includes a surface for engaging a stoppered container, that provides a point of contact at which the dispenser body can engage with a target surface when liquid is dispensed from the stoppered container.

Claims Require More Than One Stabilizing Support

The parties agree that the term "stabilizing supports" must include at least two elements. Helena points to the fact that throughout the patent, the term used is the plural form, "stabilizing supports" (emphasis added). The same is true of all references in the prosecution history. The invention is a "dispenser" identified as item 20 in the figures. The "stabilizing supports" portion is labeled as item 26 in figure 2. All of the figures show a dispenser with the "stabilizing supports" portion (whether actually labeled "26" or not) having two or more surfaces that engage the target. All references in the specification to item 26 use the plural form, "stabilizing supports."

While Alpha's proposed definition is in the singular - "stabilizing support," Alpha admits that "the dispenser of the claimed invention includes at least two such stabilizing supports as defined above (in Alpha's proposed definition)." Alpha's Opening Claim Construction Brief [Doc. # 35, p. 13], statements by Alpha's counsel at Markman hearing.

However, the term does not require more than two elements or points of contact which can engage the target. Claim 12 describes a dispenser "wherein said stabilizing supports define a plane spaced from said dispensing tip by a defined gap." An engineer would know that three points define a plane. Since this limitation is in a dependent claim, it implies that the same limitation is not included in the independent claim, Claim 1.

Stabilizing Supports Must Touch Target Surface

The stabilizing supports are designed to come into contact with the target surface. Claims 1 and 41 use the language "stabilizing supports for engaging said target surface." Claim 24 states: "stabilizing supports in contact with said target surface." The parties agreed at the Markman hearing that both terms mean that the stabilizing supports must touch the target surface.

In case there was any doubt, every description in the specification has the supports touching the target surface. And, in a response to a rejection of all claims by the Examiner, the patentee distinguished an earlier patent for dispensing carpet adhesive, (U.S. Patent No. 3,589,820 - Ward) by noting that in Ward the supporting structure did not come into contact with the surface on which the adhesive was placed. Amendment by Patentee, December 7, 1993, pp. 4-5, Bates stamped A00086-87, Exhibit 3 part 4 of Helena's Opening Claim Construction Brief, [Doc. # 32, Attachment # 9, p. 11-12]. This is a clear attempt by the patentee to differentiate the present invention from prior art in which the support does not touch the target surface.

Alpha now insists that no more than one stabilizing support need to touch the target surface at any one time. This argument, which is opposed by Helena, is without support in the specification or prosecution history, and directly contradicts statements made to the patent examiner after all claims were rejected. The patentee had the power to choose the words of the patent, and nowhere modified "stabilizing supports for engaging said target surface" as used in Claims 1 and 41 with a phrase such as "only one of which need to actually touch said target." Likewise, the patentee never attempted to expand "stabilizing supports in contact with said target surface" as used in Claim 21, with a phrase such as "although only one support has to really be in contact with the target."
While this issue may be important in a later argument about equivalents, it is not crucial to the court's claim construction. The term "supports" can be construed without describing how many touch the target surface at any one time. The Stabilizing Supports Transfer Pressure to the Stopper So Fluid is Dispensed

The inventor chose not to define "stabilizing supports" in the patent. Claim 21 states that the supports must be "in contact with said target surface." Claims 1 and 41 state that the supports are "for engaging the target surface." However we must look to the rest of the patent to determine what the stabilizing supports are or do. The Abstract concisely states their function: "The supports also transmit reactive force from the target surface to compress the rubber stopper of the closed specimen tube." This is apparent from figures 1, 2, 4, & 5, and is described in detail at Col. 4, L. 9-55. In other words, as the user pushes the stoppered container, to which the invention is attached, against the target surface, the stabilizing supports transfer the force of the resistance from the target (or more precisely the supporting surface underneath the target) against the flexible rubber stopper so that it distends into the container, thus reducing the volume of the container.

The Dispensing End is Not a Stabilizing Support

Helena argues that the opening of the passage way out of which fluid is dispensed (the dispensing tip") 2 can not be one of the supports. Claims 1 and 41 state the the stabilizing supports are "for engaging" the "target surface." Claim 1, Col. 5, L. 60-61; Claim 41, Col 8, L. 8. Claim 24 describes "stabilizing supports in contact with said target surface." The "target surface" is the object on which the fluid is to be deposited, such as a microscope slide. This is described in the specification, and shown in the diagrams. Col. 4, L. 46-52; Col. 5, L. 4-12; Fig. 4; Fig. 5.

2 Alpha objected to describing the end of the passageway out of which fluid is dispensed as the "dispensing tip," even though it was consistently so described in the specification. Therefore, unless otherwise noted, "dispensing end" shall be used herein to refer that end of the "passageway" described in Claims 1, 24, and 41, out of which fluid is dispensed.

While Claim 17 describes an adjustable gap Col. 6, L. 48-51, there is no description of an embodiment in the patent or the prosecution history, which has the dispensing end coming into contact with the target surface. The specification describe numerous problems if the dispensing end comes into contact with the target surface. A seal may be formed against the target surface, which would prevent fluid from exiting or would damage cells due to the pressure." Col. 1, L. 47-5. Contact between the dispensing end and the target could also result in fluid being sucked back into the device. Col. 1, L. 50-54. Contamination can occur if the dispensed fluid comes in contact with a stabilizing support. See Col. 2, L. 39-44.

Nevertheless, at the Markman hearing Alpha argued that Claim 1 could be read to include a dispensing end which might touch the target surface, if that surface was a blotting material, gauze, or other soft absorbent material. Alpha does not explain why the court should ignore the numerous and consistent references in the specification and prosecution history to the stabilizing supports extending a "predetermined distance" beyond the dispensing end, which determines the amount of fluid released. Instead Alpha relies solely upon the canon of construction that claim language should be interpreted broadly, and that limitations in the specification should not be imported into the claim language.

Regardless of the requirement to give the claim language a broad reading, and to avoid importing limitations, the specification makes clear that the dispensing end does not engage the target surface to provide the reactive force that compresses the stopper, like a support does. If it did, it would block the flow of fluid from the passageway (especially if soft blotter material or gauze was forced up into the passageway), and possibly contaminate the specimen or crush cells in the specimen.

By the end of the hearing Alpha agreed that the stabilizing supports had to prevent the dispensing end from being pressed or forced into the target surface so as to block the opening or drive surface material or fluid back into the opening or passageway. Therefore, while a very broad reading of the claim language might allow the dispensing end to touch the target surface, the dispensing end can not be a stabilizing support, which, the parties agree, transmits reactive force to the stopper. The Stabilizing Supports Help Keep The Dispensing End In Position on the Target

Helena argues that the definition of the term should state that "independent of manual assistance," the stabilizing supports...
"bear the weight of the device plus the stoppered container in a manner which is resistant to change." This is an overly complicated limitation which is likely to lead the jury to believe that the invention must be able to stand erect on its own, "without manual assistance." Nothing in the patent or patent history indicate that device must be able to bear weight without manual assistance. In fact it is very unlikely that a device of about the same diameter of a long narrow test tube is going to stand up or "bear weight" without manual assistance, except in the most carefully controlled conditions. It is even more unlikely that one skilled in the art would read "stabilizing supports" to mean that the device is designed to encourage technicians to leave a glass tube of biologically hazardous fluid standing on its end, outside of a rack or holder, supported only by a dispenser of about the same diameter as the tube.

One skilled in the art would realize that when the container is not safely in its rack or holder, it will be in the hand of a user. It will not be standing on end waiting for the slightest breath of air to knock it to the floor, thus releasing infectious fluids. The dispenser does not have to support or "bear the weight" of the device or the container.

As discussed above the stabilizing supports have to be stiff enough, and strong enough, to keep the dispensing tip from being forced into the target surface when the user is pushing on the "stoppered container." Additionally the specification describes the need for the device to "stabilize itself against a target surface" if "off-perpendicular forces are applied" to prevent the dispensing end from wandering from the location where the liquid is to be applied. Col. 1, L. 54-58. See also Col. 2, L. 44-47, which describes "stabilizing supports which are adequately spaced apart to also stabilize against the target surface if force is applied at a non-perpendicular angle." Col. 2, L. 44-47 (emphasis added).

As Alpha agreed at the Markman, the stabilizing supports tend to keep the dispensing end in the same position relative to the target surface each time pressure is applied and a drop of fluid is dispensed. This is true even if the direction of force applied to the container by the user is not exactly in line with the stoppered container or the dispensing tip. In other words, if a user happens to push on the container at an angle, the device will not simply lay down or lean over, but will tend to remain on same line relative to the target surface, which will tend to keep the dispensing end in the same position relative to the target. This comports with the common definition of "stabilize" - to make stable, steadfast, or firm, to hold steady. THE MERRIAM-WEBSTER THIRD NEW INTERNATIONAL DICTIONARY, UNABRIDGED (2005).

Therefore the court will define this terms as follows:

"Stabilizing supports" means: two or more parts or projecting surfaces at the end of the dispenser from which fluid is dispensed, other than the end of the passageway out of which fluid is dispensed, which: make contact with the target surface; keep said passageway opening from being forced into the target surface; tend to keep the end of the passageway out of which fluid is dispensed in the same position relative to the target surface; and which transfer back to the stopper, the force applied by the user on the container and/or dispenser for the purpose of dispensing fluid.

The Parties agree that "stabilizing the cardiac rate" means "establishing a steady ventricular cardiac rate." The ordinary meaning of stabilize is "to hold steady: as . . . to limit fluctuations of." Webster's Ninth New Collegiate Dictionary 1146 (1990). However, Medtronic goes on to argue that this term also means that the steady ventricular rate must be "impervious to perturbations." At the Markman hearing, Medtronic argued that its interpretation of "stablizing" was consistent with Guidant's interpretation. Tr. at 178:18-19. However, Medtronic's proffered construction would require that fluctuations be totally eliminated. "Eliminate" is not the same as "limit." Guidant's interpretation better reflects the true meaning of this element. Thus, the element requires that fluctuations are limited, not that they are eliminated.

D. "stably positioned upon the staple cartridge and/or anvil components of the stapler instrument," "adapted to assist in positioning and/or retaining the buttress material," and "adapted to position and/or retain the materials in place"
The Court discusses the above terms together because the parties' proposed constructions are essentially the same for each term and the construction of the first term will apply to the construction of the second and third. Claim 37 and 45 of the '748 Patent refer to "buttress material adapted to be [] stably positioned upon the staple cartridge and/or anvil components of the stapler instrument." 14 Synovis contends that no construction is necessary, but if the Court decides to construe the term, it should construe it as "located so as to avoid becoming dislodged, during the course of its normal use, from the staple cartridge and/or anvil components." (Joint Statement at 13.) Gore, on the other hand, asserts that the Court should construe the phrase as "positioned in a secure fashion upon the staple cartridge and/or anvil components of the stapler by virtue of its physical structure without the need for adhesives or ties." (Id.)

14 Claims 37, 41, and 45 refer to a region of buttress material that is "adapted to assist in positioning and/or retaining the buttress material." Claims 37, 41, 44, 45, and 48 all reference a structure "adapted to position and/or retain the materials in place."

Synovis claims that its proposed construction is consistent with the language of the claim terms and with the intrinsic evidence. Specifically, Synovis asserts that the claim terms all discuss positioning and retaining the buttress material on the stapler components. Synovis points to language in the Summary of the Invention that explains that the buttress material is designed so as "to avoid being dislodged or delaminated from its position in the course of positioning." (748 Patent c. 2, 11: 62-63.) Synovis asserts that Gore's inclusion of the requirement that the positioning occur "by virtue of its physical structure without the need of adhesives or ties" is unjustified. Synovis asserts that the specification repeatedly refers to adhesives, ties, and gels as optional features for further enhancing the positioning of the buttress material.

Gore asserts that Synovis' proposed substitution of the word "located" for "positioned" would not be helpful to the jury and that the concept of "normal use" is not supported by the claims and would add ambiguity. In addition, Gore asserts that Synovis' construction does not capture a critical aspect of the invention--that the stable positioning of the buttress materials is attributed to its physical structure. Gore also cites to portions of the specification that it argues describe the invention in a way that requires that the buttress material be capable of being stably positioned by virtue of its physical structure.

It is apparent that the parties' dispute centers on the inclusion of the language "by virtue of its physical structure without the need for adhesives or ties." With the exception of this language, there is no significant difference between the parties' proposed constructions. The Court concludes that the intrinsic evidence does not support the additional language proposed by Gore. First, the Summary of the Invention reads in part:

The preformed tissue portions permit the placement and retention of the portions upon respective stapler components, preferably without the need for adhesives, ties, and the like. The preformed tissue portions can be treated (e.g., chemically treated) and/or manipulated (e.g., sewn) to retain suitable three dimensional structure and topographic features (e.g., raised/indented portions, ridges) that permit them to be positioned in a secure fashion upon a respective stapler component, e.g., by press or friction fit onto the corresponding grooves, apertures, ridges and edges of the stapler device component.

(748 Patent c. 3, 11: 25-35.) The phrase "preferably without the need for adhesives, ties, and the like" suggests that the specification describes a desirable, but not mandatory, embodiment of the patent. See Cordis Corp. v. Medtronic AVE, Inc., 339 F.3d 1352, 1357 (Fed. Cir. 2003). The Summary of the Invention also reads: "By virtue of its physical structure, optionally aided with ancillary materials described herein, the material retains sufficient properties, including shear resistance, to avoid being dislodged or delaminated from its position in the court of positioning." (748 Patent c. 2, 11: 59-64.) In addition, there are several references in the patent specification to the potential use of adhesives. (748 Patent c. 3, 11: 16-20 ("Also optionally, positioning of the material upon a respective component can be accomplished or facilitated by the use of ancillary materials, such as gels or ties."); id., c. 10, 11: 33-40 (example 1); id., c. 11, 11: 58-64 (example 2.).)

The Court concludes that the specification does not support the addition of the language "without the need for adhesives or ties" to the otherwise clear and understandable claim language. In addition, the Court determines that the structure of the buttress material to be "stably positioned" is described in the claim language and declines to construe the claim term so as to
add the language "by virtue of its physical structure." Instead, the Court determines that the meaning of the "stably positioned" terms are readily understandable and no construction is necessary.

To reach inequitable conduct, the trial court necessarily construed the claims. According to Agfa, the trial court misconstrued the term "stack," common to all asserted claims. As a representative example of the asserted claims, claim 1 of the '452 patent recites:

1. A method for automatically selecting a plate for imaging in an automated plate handler, comprising the steps of:
   a. automatically positioning a plurality of stacks of plates stored in the plate handler and placing a stack of the plate size required for an imaging job in an access position;
   b. automatically separating and removing a single plate from the stack of plates in the access position and transferring the single plate out of the plate handler for imaging; and
   c. automatically removing a slip sheet from on top of the stack of plates in the access position.

'452 patent, col. 11, l. 66-col. 12, l. 11 (emphasis added). Agfa argues that the term "stack" covers only a horizontal arrangement of plates, like those shown in figure 1 of the '452 patent, reproduced above. The trial court disagreed, construing stack as "encompassing a number of plates arranged together in an orderly fashion, regardless of the orientation (horizontal or vertical) of the collection as a whole." Decision, slip op. at 22. This court perceives that the trial court's construction, and its reasoning leading to that construction, is sound.

The trial court first consulted the ordinary meaning of "stack," for which it cited a dictionary definition. As this court explained in Phillips v. AWH Corp., the ordinary meaning of some claim terms "may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of widely accepted meaning of commonly understood words." 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc) (citation omitted). "In such cases, general purpose dictionaries may be helpful." Id. This case falls squarely within those guidelines from Phillips. The customary meaning within this field of art does not limit the term "stack."

The meaning of the claim language does not limit "stack" to plates arranged one on top of another. Accordingly, when a stack is tilted more than 45 degrees, it remains a stack because the plates are still arranged in a top-to-bottom fashion. After all, the top of a plate remains its top even when that plate tilts beyond 45 degrees. In other words, the relationship of plates in a stack depends on the orientation of those plates relative to one another. The orientation of the resulting stack from the vantage point of elements outside the stack is irrelevant.

Moreover, nothing in the disclosures of the asserted patents suggests that "stack" has any meaning in the art that would limit its scope to horizontal stacks. The trial court buttressed its construction with the observation that three of the asserted patents include dependent claims that further specify a horizontal (or other particular) arrangement of the claimed stacks. See, e.g., '250 patent, col. 12, II. 16-18 (claim 2) ("The method according to claim 1, wherein the stacks of plates stored in the plate handler are positioned substantially horizontally."). Properly applying the claim differentiation guideline in the context of dependent claims, the trial court correctly found support for the proposition that those dependent claims suggest that the "stack" standing alone is not limited to horizontally positioned stacks. See Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380 (Fed. Cir. 2006) (explaining the presumption that independent claims do not include the limitations added by their dependent claims).

Similar to this court in Phillips itself, the trial court declined to limit these patent claims to their preferred embodiment. The asserted patents indeed depict a horizontal arrangement of stacks as the preferred embodiment. See, e.g., '452 patent, figure 1 (reproduced above; elements 26 are the stacks). As noted, this court has repeatedly rejected the contention that depiction of a single embodiment in a patent necessarily limits the claims to that depicted scope. See Phillips, 415 F.3d at 1323. This case illustrates again the reason for this court's refusal to limit broader claim language to a preferred embodiment in the patent specification. Of necessity, any depiction of any stack will necessarily show that stack arranged in a particular
manner. Nothing beyond that depiction, however, limits the claim language--the defining portion of the patent document--to some particular orientation. Without any indication beyond the necessary depiction to suggest limiting the invention to this single embodiment, the broader language of the claims cannot carry that unexpressed and unintended (at the time of patent drafting) limitation.

As indicated in the "Background of the Invention" section of the patent, the laser engraving process is intended "for marking and engraving brick or other like ceramic material which can produce a distinctive, long lasting image in a manner that is efficient, safe, and environmentally sound." '335 Patent, Col. 1, ll. 29-32. Claim 1, an independent claim of the patent, sets out a description of the laser engraving process as a whole. The parties dispute the second section of claim 1, which articulates the three stages of the laser engraving process:

- a first stage in which said laser removes a portion of said ceramic material to form said depth for said marking within and below said ceramic surface;
- a second stage in which said laser continues to deliver energy to melt and vitrify said ceramic material whereby it is fused into surrounding unmelted ceramic material within said depth; and
- a third stage in which said laser removes residue from said ceramic surface to effect said adherent, contrasting marking.

'335 Patent, Col. 4, ll. 25-34.

Plaintiff asserts the following construction of claim 1:

The term "stage" as used in claim 1 and the specification means a physical effect caused by the laser [and] should not be confused with the term "pass" which means a separate and distinct movement of the laser beam over the area to be marked. . . . The three stages are not required to take place in distinctive, separate laser passes, and can all occur in one pass of the laser.

Jt. Motion, p.3. Defendant urges a construction that "the term 'stage' refers to [discrete] elements of the process in Claim 1"; that "each stage is described in the patent as having a different result on the brick or substrate"; that the first two stages cannot "take place simultaneously, with one laser pass"; and that "there is no disclosure to be found anywhere in the patent to indicate that the process can be accomplished in a single step, nor is there any disclosure that any two of the stages can be combined." Jt. Motion, pp. 2, 4, 14.

As a threshold matter, the Court finds that the parties do not dispute that the patented engraving process involves three ordered, progressive changes in the ceramic material. Plaintiff states that the patent "describes the three stages of claim 1 as comprising progressive physical effects arising during the laser engraving process in creating a vitrified mark in a brick." Jt. Motion, p.6 (emphasis added). Defendant contends that the intrinsic evidence "conclusively establishes that each stage constitutes a discrete, sequential step in the process." Jt. Motion, p.11 (emphasis added). See Jt. Motion, pp. 13-14 (defendant asserting that the changes to the ceramic material must occur in set order). The issue before the Court is whether, under claim 1's construction, the three stages comprised of progressive changes in the ceramic material can be achieved in fewer than three discrete passes of the laser.

A number of general principles of claim construction have been enunciated in the case law, many of which are helpfully articulated by the Federal Circuit Court of Appeals in Vitrronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 (Fed.Cir. 1996). The scope of potential consideration includes intrinsic evidence, namely "the patent itself, including the claims, the specification and, if in evidence, the prosecution history," and extrinsic evidence, such as technical treatises, dictionaries, and prior art. Id. at 1582. "It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record," which "is the most significant source of the legally operative meaning of disputed claim language." Id. The claim language itself is examined, and "words in a claim are generally given their ordinary and customary meaning." Id. Exegesis of the specification is said usually to be "dispositive," as "it is the single best guide to the meaning of a disputed term." Id.
The Court thus begins its analysis with an examination of the plain language of claim 1. Claim 1 does not reference how many laser passes are necessary to achieve the sought after effects. In fact, the term "pass" does not appear in claim 1. Moreover, while three stages are referenced, claim 1 does not define the term "stage." Claim 1 does describe "a second stage in which said laser continues to deliver energy..." '335 Patent, Col. 4, ll. 28-29 (emphasis added). Defendant asserts that "the specification... shows that the laser is operated robotically using computer software" and "the word 'continues' merely expresses a timing sequence." Jt. Motion, p.15. The Court finds that "continues" is ambiguous regarding whether in the second stage the laser operator continues the same laser pass or continues with a new pass of the laser.

There is nothing inherent in the language of claim 1 that necessitates three separate laser passes, which militates in favor of plaintiff's position. Examination of the other claims further bolsters plaintiff's position. See Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1274 (Fed.Cir. 2001)("It is true that limitations stated in dependent claims are normally not to be read into the independent claim from which they depend.") (citation omitted). The Court notes that while the term "pass" is not used at all in independent claim 1, "pass" is used throughout dependent claim 2:

The process of claim 1 in which said laser hatches over said engraving area, said laser being programmed to direct light beams in hatching passes of parallel orientation, each subsequent adjacent beam pass overlapping a prior pass by one half of a diameter of said beam, whereby a heating efficiency is enhanced.

'335 Patent, Col. 4, ll. 35-40 (emphases added). The multiple uses of "pass" in claim 2 and the term's total omission in the description of the stages in claim 1 appear to be purposeful. Consideration of the particular language conveys this, as well as the general common sense principle of claim differentiation, which is the presumption that the use of different words or phrases in separate claims conveys a difference in meaning and scope. Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed.Cir. 1998).

Furthermore, dependent claims 5-8 set out the three different beam frequencies and writing speeds comprising the three passes of the laser that match those of the preferred embodiment, which is described in the patent specification. Plaintiff makes a persuasive argument that claim 1 does not encompass the preferred embodiment because the parameters for the preferred embodiment are set out separately in claims 5-8:

Claims 5-8 cite as limitations the specific parameters described in each pass covered in the respective stages of the preferred embodiment. In those claims, each stage encompasses a distinct pass of the laser and a different set of laser parameters for achieving the physical effect of that stage. If the three stages of claim 1 were to be construed as being limited to comprising three different passes of the laser with the laser parameters of the preferred embodiment, claims 5-8 would be rendered superfluous.

Jt. Motion, p.9. Under the doctrine of claim differentiation, broader construction is given to the independent claim to avoid rendering the dependent claim redundant. Dow Chemical Co. v. United States, 226 F.3d 1334, 1341-42 (Fed.Cir. 2000). The construction of claim 1 compared to the other claims strongly supports a determination that claim 1’s construction is not limited to three laser passes.

Looking beyond the claims, the specification does not expressly define or modify "stage." 1 The term "pass" is used in the specification only for the preferred embodiment, which specifically utilizes three passes of the laser. The "Use" section of the specification states that the "preferred mode of carrying out the inventive process" involves "[a] red clay paving brick having a relatively smooth surface" and "an appropriate lens" with "laser peak power... sufficient to vaporize and melt the brick material." '335 Patent, Col. 3, ll. 35-42. This preferred mode involves three passes of the laser using three different laser beam frequencies and writing speeds. After describing the preferred embodiment, the specification states, "Various changes and modifications may be made within this invention as will be apparent to those skilled in the art. Such changes and modifications are within the scope and teaching of this invention as defined in the claims appended hereto." '335 Patent, Col. 4, ll. 9-13.

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1 Defendant attaches as exhibits certain dictionary definitions of "stage" and "engrave." "Judges... may... rely on
dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." Vitronics, 90 F.3d at 1584 n.6. The Court does not rely upon either definition, finding that either party's position could be supported by the definitions.

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The Federal Circuit Court of Appeals "consistently declines to construe claim terms according to the preferred embodiment." Northern Telecom Limited v. Samsung Electronics Co., 215 F.3d 1281, 1293 (Fed.Cir. 2000)(citations omitted). "Although the specification[] may well indicate that certain embodiments are preferred, particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments." Electro Medical Systems v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed.Cir. 1994)(citation omitted). See also Texas Instruments, Inc. v. United States Int'l Trade Comm'n, 805 F.2d 1558, 1563 (Fed.Cir. 1986)("This court has cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.") (citation omitted).

Plaintiff contends that the preferred embodiment cannot limit claim 1, stating that claim 1 includes both thermal ablation, which does not require laser setting reconfiguration for each stage, as well as mechanical ablation, which requires laser setting reconfiguration for each stage and which is used for the preferred embodiment. See Jt. Motion, pp. 6-9. Plaintiff also explains that:

the specification does not limit the laser settings in carrying out the three stages, and need not, because a person having skill in the art would know the capabilities of the laser in bringing about the specific effects. . . . Because the three stages represent progressive physical effects that occur through continual application of the laser beam to the brick surface, the laser settings may be the same for each stage. Alternatively, the laser settings may be different for each stage to emphasize the effect of that respective stage.

Jt. Motion, p.7. Defendant does not specifically address the issue of whether claim 1 includes both thermal and mechanical ablation.

While defendant states on page 15 of the joint motion that it "does not seek to read into the claim term the preferred embodiment provided in the patent," it relies on the preferred embodiment when arguing its position. On pages 19-20 of the motion, defendant cites specifically to the description of the "preferred mode" laser settings in order to support its argument that the stages in claim 1 cannot occur in one pass.

Defendant also cites to the figure descriptions found in the specification. See, e.g., Jt. Motion, pp. 18-19. Defendant asserts that the figures of the patent demonstrate that the three stages of claim 1 require three passes of the laser, stating, "FIGS. 1-3 of the patent[] show the same starting location, on the brick, for the laser beam depicted in each figure, for each stage. The figures, therefore, show that the laser returns to the start point after each stage is finished in order to begin the next stage." Jt. Motion, p.4.

However, while the Court does not disagree that the figures represent three passes of the laser, it notes that the patent specification states, "For purpose of illustration of this invention a preferred embodiment is shown and described hereinbelow in the accompanying drawing [sic]. It is to be understood that this is for the purpose of example only and that the invention is not limited thereto." '335 Patent, Col. 1, l. 65 - Col. 2, l. 2 (emphases added). Furthermore, even a consistent feature of the patent's drawings cannot, without more, be construed as a limitation on a claim which contains no language indicating incorporation of that feature. See Advanced Cardiovascular Systems, Inc. v. Scimed Life Systems, Inc., 261 F.3d 1329, 1339 (Fed.Cir. 2001)(citing Johnson Worldwide Associates, Inc. v. Zebraco Corp., 175 F.3d 985, 992 (Fed.Cir. 1999)).

Other than the parts of the specification relating to the preferred embodiment, the term "pass" (or any variation thereof) is not used in the specification. The patent holder is not obligated to include all embodiments in the specification. See, e.g., Smith v. Snow, 294 U.S. 1, 11, 79 L. Ed. 721, 55 S. Ct. 279, 1935 Dec. Comm'r Pat. 757 (1935)("It is not necessary to embrace in the claims or describe in the specification[] all possible forms in which the claimed principle may be reduced to practice."). See also SRI Int'l v. Matsushita Electric Corp., 775 F.2d 1107, 1121-22 (Fed.Cir. 1985). The Court finds unpersuasive defendant's arguments that would import to claim 1 the limitation of the preferred embodiment described in the specification.
The prosecution history of the patent may provide information relevant to claim interpretation, such as "any express representations made by the applicant regarding the scope of the claims." Vitronics, 90 F.3d at 1582. There exists a potential overlap with the extrinsic evidence, in that "included within an analysis of the file history may be an examination of the prior art cited therein." Id. at 1583. Plaintiff asserts that the prosecution file history is not helpful, while defendant contends that "the examiner clearly understood the applicant's invention as a sequential three step process for laser engraving, and allowed claim 2, as amended, for that reason." Jt. Motion, p.18. Upon an examination of the file history, the Court does not find it instructive on the instant issue.

The original claim 1, which comprises the first paragraph of the '335 patent's claim 1 with minor modification, was rejected in the patent examiner's office action dated January 20, 1996. The patent examiner rejected the original claim 1 pursuant to 35 U.S.C. § 102(b):

[The claim is rejected] as being anticipated by either of Noda et al or the article to Vol'ter and Sviridov. Either applied reference teaches the instant process for engraving ceramic surfaces using a laser involving a removal step and a melting and solidifying step in which melted material is fused into a surrounding, apparently unmelted area (ie, the unmelted bearing base of Noda et al and the walls of the grooves in Vol'ter et al). It is submitted inherent that an adherent, contrasting marking occurs in the process of each applied reference.

Exh. A4 of Jt. Motion, p.3, P3. The original claim 2, which comprises the remaining portion of the '335 patent's claim 1 with minor modification, was initially rejected because of indefiniteness. However, the patent examiner stated that the original claim 2, and original claims 3-9 rejected on the same grounds, "would be allowable if rewritten to overcome the rejection under 35 U.S.C. § 112 and to include all of the limitations of the base claim and any intervening claims." Exh. A4 of Jt. Motion, p.3, P4. The applicants filed a claim amendment in March 1996 in response to the rejections, merging the original claims 1 and 2 and changing, inter alia, "melting and fusing" in the original claim 2 to "engraving," calling the amended version "claim 1." The amended claim 1 was allowed in May 1996. Exh. A6 of Jt. Motion.

According to defendant, "Stage one . . . establishes the patentably distinct subject matter allowed by the examiner. . . ." Jt. Motion, p.13. Defendant states the following:

The prosecution history clearly demonstrates that the examiner thus allowed original claim 2, as amended, to claim an engraving process taking place in three stages, and that the first stage 'does not involve any melting or fusing, but . . . evaporation.' Stage one of the amended claim (present claim 1) is critical because it applied a new digging, or depth formation, step to distinguish it over the prior art. Because the applicant amended then claim 2 exactly as suggested by the examiner, without any argument whatsoever, it is clear that the applicant acquiesced in the examiner's view of the invention.

Jt. Motion, p.17. Defendant continues that "because the Defendant's accused process for laser marking bricks reads only on the Plaintiff's original claim 1 . . . [plaintiff] attempts to now broaden the permissible scope of present claim 1," resulting in "a broad construction [that] defies the clear prosecution history." Jt. Motion, p.18. Defendant's argument and the file history do not reflect on the number of laser passes used in the laser engraving process of the '335 patent. Whether the first stage is the critical component of claim 1 necessary to distinguish the invention from the prior art is not a question for determination at this time.

Consideration of extrinsic evidence is resorted to "only if there [is] still some genuine ambiguity in the claims, after consideration of all available intrinsic evidence." Vitronics, 90 F.3d at 1584. Opinion testimony from an expert or an inventor is not properly relied upon if inconsistent with the specification and file history, and may not be considered unless "the patent documents, taken as a whole, are insufficient to enable the court to construe disputed claim terms" - an instance which "will rarely, if ever, occur." Id. at 1585. The patent documents themselves are sufficient to determine the claim construction at issue here, and the Court does not rely on extrinsic evidence in making its decision.

Based on the rationale set forth above, the Court concludes that claim 1 is properly construed as describing three progressive physical effects that may be obtained in fewer than three laser passes.
3. The "Staggered to the Right" Element

In its third and final argument pertaining to literal non-infringement, Microsoft asserts that the Microsoft keyboards do not, as a matter of law, infringe upon claims 1 through 4 of the '484 patent. (Micro. Memo. ISO MSJ, p. 8.) Microsoft notes that claims 1-4 of the '484 patent require the "B" key to be staggered to the right of the "G" key, and require the "G" key to be staggered to the right of the "T" key. According to Microsoft, however, the B, G, and T keys of the Microsoft keyboards slope in just the opposite direction. That is, Microsoft contends that the B key of the Microsoft keyboards slopes gently to the left of the G key, and that the G key slopes gently to the left of the T key. Thus, Microsoft contends that, as matter of law, the Microsoft keyboards indisputably do not literally infringe upon the '484 patent.

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15 The '484 patent, in describing the right end group of keys in the left hand group, states:

said column of the right end group of keys being staggered rightwardly to further help facilitate using the conventional QWERTY left hand digit touch typing keystroke technique wherein the QWERTY key means bearing the letter B is staggered substantially rightwardly of the QWERTY key means bearing the letter G and wherein the QWERTY key means bearing the letter G is staggered substantially rightwardly of the QWERTY key means bearing the letter T.

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Microsoft's "stagger to the right" argument arises from Judge Keep's Markman construction of the term "key." Judge Keep construed the term "key" to mean "a part of the keyboard that, if pressed, causes the computer to take some action." Under this construction, the "keys" of the Microsoft keyboards include the blank, unraised areas that are appended as the right halves of the T and G keys. Reading Judge Keep's Markman order faithfully, these blank areas are part of the T and G keys because, if pressed, the computer will perform some function.

Turning to the Microsoft keyboards with a faithful reading of Judge Keep's definition of "key" in mind, the Court notes that the right-hand edge of the B key does indeed slope gently to the left of the G key's right-hand edge, and the right-hand edge of the G key does indeed slope gently to the left of the T key's right-hand edge. For two reasons, however, this observation does not entitle Microsoft to summary judgment of non-infringement.

First, while Microsoft focuses intently on the design of the right-hand edges of the T, G, and B keys (as defined in the Markman order) the Court notes that, with regard to the left-hand edges of the T, G, and B keys, the keys do in fact stagger in a pronounced rightward fashion. That is, with regard to their left-hand edges, the B key is staggered to the right of G key, and the G key is staggered to the right of the T key. Although Microsoft chooses to focus on the right-hand edges of the three keys in concluding that the keys slope gently leftward, the Court notes that a reasonable juror could just as easily focus on the left-hand edges. Thus, the Court finds that reasonable jurors could disagree, depending upon which edges of the keys the jurors focus upon, as to whether the T, G, and B keys stagger leftward or slope rightward.

Second, the Court notes that, with regard to the Microsoft keyboards, the gentle "sloping" of the T, G, and B keys is just that: sloping. The only "staggered" portions of the Microsoft keys include (1) the left-hand edges of the keys, as discussed above; and (2) the right-hand edge of the B key, along with the raised, central ridges of the G and T keys. A cursory visual examination of the "staggered" portions of the T, G, and B keys quickly reveals that all of these "staggered" portions stagger rightward, with the G key to the right of the T key, and the B key to the right of the G key. Consequently, the Court finds that a reasonable juror could find that the three keys "stagger" to the right yet, at the same time, "slope" to the left.

At oral argument, Microsoft attempted to refute the above two points by suggesting that a key is not "staggered to the right" unless the entire key -- meaning each side of the key -- is staggered rightward. Thus, according to Microsoft, summary judgment of non-infringement is warranted because the T, G, and B keys of the Microsoft keyboards are "staggered to the right" only with regard to one side of the three keys, rather than with regard to both sides of the keys.
Because Microsoft's argument raises a question pertaining to the definition of claim language, the Court must once again engage in Markman claim construction. Bayer AG v. Biovail Corp., 279 F.3d 1340, 1349 (Fed. Cir. 2002)(adjudication of summary judgment of non-infringement not possible without proper claim construction of relevant claim limitation). Specifically, the Court must determine, with regard to the '484 patent, whether the claim term "staggered" encompasses objects, such as the T, G, and B keys on the Microsoft keyboards, that stagger on one side, yet that form a sloping or straight line on the other.

Webster's Dictionary defines "staggered" as "marked by an alternating or overlapping arrangement." (Webster's Third New Int'l Dict., p. 2220.) The Court finds no evidence to suggest that this definition does not comport with the ordinary meaning of "staggered" as it would be understood by persons of ordinary skill in the keyboard art. However, the definition is not especially helpful for purposes of this motion, as it does not indicate whether objects are "marked by an alternating or overlapping arrangement" if the objects overlap solely along one side.

The '484 patent refers to the term "stagger" or "staggered" at least 21 times. The majority of these references fail to shed light on the particular question before the Court. However, on the basis of several specific references, the Court finds that the '484 patent sets forth a lexicography of the term "staggered" that includes objects which "overlap" or stagger along one side, yet which form a straight or sloping line along another side.

In the disclosure section of the '484 patent, the patentee refers to Figure 1 of the patent, which discloses four rows: "A," "B," "C," and "D." (Emrich Decla., Exhibit 1, p. 11, column 9, ll. 12-18 and Figure 1.) These four rows refer to the basic left-hand QWERTY keys that all touch-typists memorize and master. With regard to rows A through D, the patent discloses a straight or moderately sloping "transverse" line along which all four rows are aligned. (Id., ll. 5-7 and Figure 1.) The patent further discloses that, in each of the four rows, the left-most key is smaller than the left-most key directly below it. (Id., ll. 12-16 and Figure 1.) That is, the "--" key is smaller than the "tab" key, the "tab" key is smaller than the "caps lock" key, and the "caps lock" key is smaller than the "shift" key. 16 (Id.) The patent further discloses that, "due to the increasing size difference between [the] character keys …, the character rows A, B, C and D are staggered from one another." (Id., ll. 16-18.)

The '484 patent ascribes numbers, rather than functions, to the disclosed keys. The Court refers to the keys by their functions or characters for ease of reference.

The Court finds it significant that the patent describes rows A, B, C and D as "staggered" immediately after disclosing that the rows are situated in a straight, or "transverse," line along their left edges. By using the term "staggered" in this manner, the Court finds that the patentee adopted a lexicography of the term "staggered" that encompasses objects which overlap or "step" along one side, yet that form a straight or sloping line along a different side. This finding is further supported by the patentee's reference, in at least three other places in the specifications, to "staggered rows," as opposed to "staggered keys." (Id., columns 8:65, 9:49, 11:53.) By repeatedly referring to these rows, all of which form a straight line along one edge, as "staggered," the patentee indicated that, for purposes of the '484 patent, the scope of the "staggered" element includes those objects which "overlap" or "step" along one side, yet which form a straight or sloping line along another side.

<table>
<thead>
<tr>
<th>Disputed Claim Language</th>
<th>ASM's construction</th>
<th>Genus's construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. stagnation point flow</td>
<td>Stagnation point flow is flow toward a solid surface in which the gas or fluid approaching the surface divides into streams proceeding away</td>
<td>As used in the claim the phrase is not subject to any reasonably definite meaning which would allow one skilled in the art to determine with reasonable</td>
</tr>
</tbody>
</table>
Genus's expert, Oldham, agrees with ASM's expert, Peltzer, that "stagnation point flow" is a well-known theoretical concept in fluid dynamics that is "generally understood to refer to flow toward a solid surface in which the gas or fluid approaching the surface divides into streams proceeding away from the point at which the central streamline intersects the surface." (Oldham Rebuttal Report at 4.) The parties' experts also agree that to create a stagnation point flow, the gas need not flow at a uniform speed. (Oldham Expert Report at 3 ("Said [stagnation point flow] need not be perpendicular, of uniform velocity, or from a source of a particular size."); Peltzer Rebuttal Report at 4-5 ("The flow need not be uniform in magnitude for stagnation point flow to occur.").)

3 The parties' arguments do not distinguish between "stagnation point flow" (claim 1) and "stagnation flow point" (claim 6). "There is no dispute, therefore, that a 'stagnation flow point' is a characteristic of stagnation point flow." (Genus Opp. Brief at 11.)

The parties disagree whether stagnation point flow requires that the gas flow be directed perpendicular to a surface. Oldham states that the flow "need not be perpendicular.[.]" (Oldham Expert Report at 3.) In the previous paragraph, however, he states that "basic texts describe the classic stagnation point flow at the center of a flow as resulting from a flow field starting at infinity and striking an infinite plane orthogonally." Id. (citing F. Rosenberger, Fundamentals of Crystal Growth I.) The Oxford English Dictionary defines "orthogonally" as "at right angles." In fact, Rosenberger contains a diagram, very similar to Figure 3 of the '165 patent, which shows a gas flow which is initially perpendicular to a surface and then all but the centermost point of the flow curves away as it approaches the surface. (Oldham Expert Report, Ex. C, Rosenberger at 258, fig. 5.8.) Rosenberger states that "Stagnation flow, as depicted in two dimensions in Fig. 5.8 occurs when a fluid stream impinges on a wall at right angles to it and flows away radially in all directions." Id. Oldham provides no support for his contention that stagnation point flow can also occur when the gas flow is not directed perpendicular to a surface. The Court agrees with ASM that "the fact that stagnation point flow requires an initially perpendicular flow is clear from the Rosenberger text cited by Dr. Oldham." (Peltzer Rebuttal Report at 5.) Peltzer states that if the flow is not perpendicular, it "would not divide into streams proceeding away from the point where the central streamline intersects with the surface, as they do in stagnation point flow." (Id.) Instead, "all of the streamlines would flow either to the left or to the right." (Id.) Accordingly, the Court finds that the ordinary meaning of "stagnation point flow" is a flow toward a solid surface in which the gas or fluid approaching the surface divides into streams proceeding away from the point at which the central streamline intersects the surface. In order to achieve a stagnation point flow, the direction of the flow initially must be perpendicular to the surface.

Genus argues that the patent specification and prosecution history taken together demonstrate that the term "stagnation point flow" is not being used in the patent claims in its ordinary sense. Genus contends, that as used in the '165 patent, the term "stagnation point flow" is not subject to any reasonably definite meaning.

The patent specification itself provides two definitions of "stagnation point flow." First, it provides:

Referring next to FIG. 3, a cross-sectional view in a plane containing the axis of symmetry of the flow of the gas 11 as it approaches the substrate 10 is shown. The gas 11 initially has a generally uniform velocity directed perpendicular to the entire surface of substrate 10. The solid substrate, as the gas 11 approaches the substrate, causes the velocity vector to become parallel to the surface of substrate 20 and flow away from the axis of symmetry. At one point 21 on the axis of symmetry, generally referred to as the stagnation point, there is theoretically no flow of gas. The axially symmetric gas flow resulting from uniform gas flow toward a surface is generally referred to as stagnation point flow.

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As described by the present application, creation and maintenance of the stagnation point flow can only be achieved by and radial gas flow vectors establishes a point of no gas flow, or a stagnation point flow, at the center of the susceptor. The uniform velocity of the horizontal lines of the specification explain that "a stagnation point flow is achieved only where the velocity vector of the gas flow is uniformly directed perpendicular to the substrate." ('165 Prosecution History at 53-54.)

Thus, the definitions of "stagnation point flow" found in the specification, read in context, are essentially identical to the ordinary definition of "stagnation point flow."

Genus' argument largely rests on statements found in the prosecution history, which it contends demonstrates that the inventors did not use "stagnation point flow" in its ordinary sense. Genus contends that these statements demonstrate that the inventors were concerned with uniform speed of the gas flow, as well as uniform direction of the gas flow, in creating a stagnation flow point. Because the parties agree that uniform speed of gas flow is not necessary to create a stagnation point, Genus contends that the inventors used the term "stagnation point" in a non-standard manner.

The original claims in the patent application that led to the '165 patent made no mention of stagnation point flow. The relevant portion of claim 1, as originally filed, claimed only an "apparatus for directing a flow of gas carrying the deposition material perpendicular to the semicircular substrate, said flow of gas generally having an axial symmetry with respect to a center of said substrate." ('165 Prosecution History at 0014.)

The relevant portion of original claim 11, which became claim 6 of the '165 patent, claimed a "gas flow means for producing a flow of gas having axial symmetry across said circular substrate." (Id.)

The patent examiner rejected those claims as obvious in light of two prior art patents (Brunner and Bergfelt), which the patent examiner believed disclose apparatuses for chemical vapor deposition of a material on a substrate comprising a device for directing a flow of gas carrying the deposition material perpendicular to the surface. (Id. at 35-36.)

The inventor also rejected those claims as obvious in light of another patent (Huffman), without explaining precisely why the claims of the '165 patent were obvious in light of that patent. (Id. at 36.)

In response, the inventors amended claim 1 by adding a requirement that the apparatus have a "means for varying a distance between said apparatus and said substrate and maintaining said flow of gas perpendicular to said substrate." (Id. at 0040.)

The inventors amended claim 11 (the current claim 6) by adding a requirement that the gas flow have "a substantially uniform magnitude of velocity directed perpendicular to" the substrate. (Id.)

The inventors attempted to amend claims 1 and 11 again. (Id. at 0051-52.)

A stagnation point flow is achieved only where the velocity vector of the gas flow is uniformly directed perpendicular to the surface of the substrate. Upon reaching the substrate surface, the perpendicular velocity vector is re-directed horizontally and radially outward from the central point of the susceptor with uniform velocity. The uniform velocity of the horizontal and radial gas flow vectors establishes a point of no gas flow, or a stagnation point flow, at the center of the susceptor.

As described by the present application, creation and maintenance of the stagnation point flow can only be achieved by
having and maintaining a uniform gas flow velocity vector perpendicular to the surface of the susceptor. The resulting radial
gas flow vector is horizontal and passes across the substrate surface permitting uniform deposition of the chemical vapor
deposition materials onto the substrate surface.

(‘165 Prosecution History at 53-54.)

The inventors also stated that:

While Brunner and Bergfelt appear to disclose a substrate orientation which is in direct opposition to the gas flow source,
there is no disclosure of an apparatus, as in the present invention, to insure that the gas flow velocity is uniform and
perpendicular to the substrate surface, thereby creating a stagnation point gas flow at the center of the substrate. At no point
in Brunner or Bergfelt is there disclosed a similar apparatus, as in the present invention, having a plurality of gas flow
apertures which impart uniformity to the gas flow velocity and insure a perpendicular flow vector relative to the substrate
surface. The pertinent sections of the Brunner and Bergfelt disclosures cited by the Examiner merely teach a general
orientation of the substrate relative to the gas flow.

(Id. at 0054-55.) As Peltzer points out, the Brunner patent discloses fixtures for imparting complex motion to the substrate
during coating operations, so that the substrate can be pivoted to any angle in relation to the gas flow. (Peltzer Rebuttal
Report at 6, and Ex. A (Brunner patent No. 3,889,632) 2:11-12, 3:33-35, 4:28-32.) In the Bergfelt patent, the gas flow is
distributed to multiple substrates at a variety of angles that appear never to be perpendicular to the substrate. (Id., and Ex. B
(Bergfelt patent No. 4,222,345) Fig. 1.)

The inventors also sought to distinguish Huffman:

It is crucial, according to the present invention, that the gas flow have a substantially uniform velocity vector directed
perpendicular to the substrate surface. According to the express teaching of Huffman et al. the gas flow cannot be directed
perpendicularly to the substrate with the offset nozzle arrangement disclosed therein.

(‘165 Prosecution History at 57.) Huffman discloses an offset gas flow nozzle that distributes gas to an offcenter portion of a
rotating substrate. (Peltzer Rebuttal Report, Ex. C (Huffman patent No. 3,745,969) at Fig. 3, 1:62-2:6, and 4:29-60.) Peltzer
agrees with the inventors that the Huffman invention does not flow gas perpendicularly toward the substrate, and instead
discloses a gas flow nozzle that distributes gas in an angle corresponding to the angle of the nozzle, which is 40 degrees in
the preferred embodiment. (Peltzer Rebuttal Report at 6, and Ex. C. (Huffman patent No. 3,745,969) at Fig. 3 and 4:44-48,
5:64-67.)

The inventors thus attempted to distinguish Brunner, Bergfelt, and Huffman by arguing that those inventions, unlike the
invention of the ‘165 patent, did not require a perpendicular flow of gas towards the substrate. Genus instead focuses on the
inventors' use, in this portion of the prosecution history, of phrases such as "the gas flow velocity is uniform and
perpendicular to the substrate surface" and "apertures which impart uniformity to the gas flow velocity and insure a
perpendicular flow vector relative to the substrate surface." Genus contends that these phrases demonstrate that the
inventors were concerned with uniform speed of the gas flow, as well as uniform direction of the gas flow, in creating a
stagnation flow point.

The Court agrees that there is some ambiguity in the language used by the inventors. The key point of the inventors' argument
to the patent examiner in this section of the prosecution history, however, is that the prior art (Brunner, Bergfelt
and Huffman) does not disclose an apparatus that requires perpendicular flow so that a stagnation flow point occurs. Any
other statements by the inventors in this section of the prosecution history that arguably might be interpreted as suggesting
that uniform speed of gas flow is also necessary are not clear enough to demonstrate that the inventors were using an
unusual definition of "stagnation point flow." See CCS Fitness, 288 F.3d at 1366 (noting that a claim term will not be
construed in accordance with its ordinary meaning if the patentee acted as his own lexicographer and clearly set forth a
definition of the disputed claim term in either the specification or prosecution history).

Genus also argues that later statements in the prosecution history again demonstrate that the inventors used a non-standard
definition of "stagnation point flow." After the amendment just discussed, the patent examiner again rejected claims 1 and
11 for the same reasons, and also because the amendment to add the "stagnation point flow" limitation raised new issues.

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(‘165 Prosecution History at 60-61.) The inventors ultimately filed a continuation of the prior patent application, apparently with the new amendments to claims 1 and 11. (Id. at 78; see id. at 95-96.) Claims 1 and 11 were rejected again, this time primarily in light of a European patent, PCT 85/03460. (‘165 Prosecution History at 89-90, and 93.) Oldham refers to the European patent as the Schmidt ‘460 PCT Application. The patent examiner rejected claims 1 and 11 as obvious "over the European patent in view of Nishizawa, Robinson or Brandolf." (Id. at 89.) The patent examiner also rejected claims 1 and 11 as obvious over Brunner and Bergfelt "in view of the European patent in combination with Nishizawa, Robinson or Brandolf." Id.

The patent examiner finally allowed the claims after the inventors proposed additional amendments, which added the limitation that the apertures be in a generally circular configuration with a radius substantially equal to that of the substrate, and that the apertures be coaxially aligned with the substrate. Id. at 96, 101. These changes in alignment appear to be designed to influence the direction of the gas flow, rather than its speed. The inventors successfully argued that these amendments distinguished their invention from the prior art:

Independent claims 1 and 11 [now claim 6] have been amended to positively recite and claim the that [sic] the apertures in the gas injector are arranged in a circular configuration which has radius equal to the radius of the circular substrate and coaxially aligned with the center of the substrate. As disclosed in the Specification at Page 6, lines 1-12, 4 a stagnation point flow is achieved only where the velocity vector of the gas flow is uniformly directed perpendicular to the surface of the substrate. Upon reaching the substrate surface, the perpendicular velocity vector is re-directed horizontally and radially outward from the central point of the susceptor with uniform velocity. This flow profile establishes isotherms at the substrate surface and an axially symmetric flow away from the center of the substrate. The uniform velocity of the horizontal and radial gas flow vectors establishes a point of no gas flow, or a stagnation point flow, at the center of the susceptor.

(Id. at 97.) From this language, it appears that the inventors of the ‘165 patent are describing how a stagnation point flow can be achieved using the apparatus of the invention, but are not disagreeing with the common meaning of the term.

--- Footnotes ---

4 Page 6, lines 1 through 12, of the specification, as originally filed, corresponds to column 3, lines 43 through 55, of the issued patent.

--- End Footnotes ---

Genus argues that the inventors of the ‘165 patent also used a non-standard meaning of "stagnation point flow" in attempting to overcome the patent examiners' rejection of certain claims as obvious in light of four prior art patents (the European patent, Nishizawa, Robinson, and Brandolf). The inventors argued the following:

As described by the present application, creation and maintenance of the stagnation point gas flow can only be achieved by having and maintaining a uniform gas flow velocity vector perpendicular to the entire surface of the susceptor. This is accomplished by the present invention by providing the gas injector with apertures having a circular configuration corresponding to the circular configuration of the substrate. The pending claims have been amended to further clarify and point out this important distinction.

Even a cursory review of the European Patent discloses that the gas injector 1-3 in Fig. 1, is a nozzle shape which does not have an opening corresponding in radius to the radius of the substrate 1-10. Indeed, the flow of reactant material 1-3 forms a jet 1-7 which impinges on the substrate and transports the depositing species. As described on Page 19 of the European patent at line 7, the "flow geometry, flow speed and the carrier gas pressure can be arranged so that the synthesis of the depositing saturated vapor species occurs near the center of the forming jet and does not allow time for diffusion of this species to the walls of the apparatus . . . ." By its own terms, the European patent is designed and intended to permit variable velocity gas flows by providing a jet flow. This is completely contrary to the present invention where the gas flow velocity is substantially uniform across the entire substrate surface.

Similarly, a review of Nishizawa, Brandolf, Robinson, and McNeilly, reveals no hint that it is known to provide gas inlet apertures in a circular configuration corresponding to that of the substrate and coaxially aligned therewith.
Accordingly, none of the references cited discloses the additional features, as presently claimed, whereby the gas injection apparatus is formed with a plurality of apertures arranged in a circular configuration having a radius substantially equivalent to that of the circular substrate and coaxially aligned with the center thereof. The stagnation point flow established with these features is not replicated nor disclosed by any of the art cited and relied upon by the Examiner.

(‘165 Prosecution History at 98-99 (emphases added).) Oldham construes this language as stating that none of the prior art references disclose creation of a stagnation point flow, and states that the European patent "describes an opposing flow which would fit a real world definition of stagnation point flow." (Oldham Expert Report at 4.) Although the language could certainly be more clear, the Court does not agree that the inventors were claiming that the prior art failed to disclose stagnation point flow. Rather, it appears that the inventors were arguing that none of the prior art inventions created a stagnation point flow in the same manner as the ’165 invention, i.e., by using gas flow apertures in a circular configuration coaxially aligned with the substrate, with the radius of the substrate and the gas flow apertures being substantially equivalent, or made that method obvious. (See Peltzer Rebuttal Report at 8.)

The European Patent does not use a circular pattern of gas flow apertures covering substantially the entire area of the substrate, but instead introduces the gas to the substrate through a narrow nozzle that, while aimed perpendicular to the substrate, is much narrower in circumference than the substrate. (Oldham Expert Report, Ex. D at Fig. 1.) Although the European Patent does claim to create a stagnation point (id. at 8:24-9:3, 41:15-18, and Fig. 8), nothing in the European Patent discloses that it can be accomplished by injecting the gas through a circular pattern of gas flow apertures that have essentially the same radius as the radius of the substrate. In fact, the European patent expressly assumes that the nozzle will be smaller than the substrate. Id. at 4:23-26 ("The nozzle 1-1 and the substrate 1-10 may move relative to one another in order to change the area of the substrate's 1-10 surface which is directly under the nozzle 1-1 and thereby coat a larger portion of that surface.") In essence, the European patent uses a narrow jet, in contrast to the broad showerhead of the ’165 patent. The Court also agrees with the inventors and the patent examiner that Nishizawa, Robinson, and Brandolf reveal "no hint that it is known to provide gas inlet apertures in a circular configuration corresponding to that of the substrate and coaxially aligned therewith." (’165 Prosecution History at 99; see also Reines Decl., Exs. M (Nishizawa patent No. 4,540,466), N (Robinson patent No. 3,916,822), and O (Brandolf patent No. 4,511,593.).)

The Court agrees with Genus, however, that the inventors' statement that "as described by the present application, creation and maintenance of the stagnation point gas flow can only be achieved by having and maintaining a uniform gas flow velocity vector perpendicular to the entire surface of the susceptor" is odd. Read in context with the remainder of the inventors' statements in this section of the prosecution history, the Court interprets this statement as requiring that the initial direction of the gas flow be perpendicular to the entire surface of the substrate, and that the width of the gas flow must be wide enough to cover the entire surface of the substrate. It is apparently undisputed that the European patent creates stagnation point flow with a narrow gas flow that is not as wide as the substrate. One of the ways to overcome the heavy presumption that a claim term carries its ordinary and customary meaning is to show that the patentee distinguished that term from prior art on the basis of a particular embodiment. CCS Fitness, 288 F.3d at 1366-67. Here, the inventors appear to have distinguished the European patent on the ground that the stagnation point flow achieved there was not achieved by arranging the gas flow apertures in a generally circular configuration axially aligned with the substrate, with the radius of the substrate substantially equivalent to that of the configuration of the gas flow apertures. One could legitimately argue that the definition of "stagnation point flow" in the context of the ’165 patent should be limited to the stagnation point flow that is created by that configuration of gas flow apertures. It is meaningless to do so, however, because each of the independent claims specifically recites that configuration of gas flow apertures.

More troublesome, however, is the inventors' statement that:

By its own terms, the European patent is designed and intended to permit variable velocity gas flows by providing a jet flow. This is completely contrary to the present invention where the gas flow velocity is substantially uniform across the entire substrate surface.

(’165 Patent Prosecution History at 98.) At deposition, Peltzer strongly suggested that this portion of the prosecution history addressed the speed of the flow:

Q: Okay. And they're explaining that the gas flow velocity must be substantially uniform across the entire substrate
surface, correct?

A: Yes. This refers to specific location.

Q: So one of the reasons that a jet flow as described in the European patent is different from the gas flow described in the '165 patent is that in the jet flow there's a much larger magnitude of velocity at the center of the wafer and a much smaller magnitude of velocity at the edges, correct? That's what they're explaining here?

A: Yes.

(Peltzer Dep. 183:14-25.) Later in the deposition, however, Peltzer retracted this statement somewhat:

Q: So one of the things he's saying is that the European patent doesn't -- it may show stagnation point flow, but it doesn't show stagnation point flow where the magnitude of the velocity is -- the stagnation point flow is different because the magnitude of velocity in the middle is different than the magnitude at the edges, correct, that's one of the reasons it's different?

A: Well, the term "stagnation point flow," there is a concept of stagnation point flow, which is well known. In the '165 what is described is an apparatus that produces stagnation point flow with particular characteristics, that is, of axial symmetry and all of the attributes that we described in column 4 of the '165. 5

(Id. 184:17-185:6.) The topic was then abandoned at the deposition.

5 Column 4 of the '165 patent does not discuss uniformity of the speed of the gas flow, and column 3 states only that "because of the relatively small size of the apertures 74, the magnitude of the gas velocity will generally be uniform among all of the apertures 74 as the gas passes through toward the plane of substrate 10." ('165 patent 3:65-69.)

The Court has no reason to doubt Peltzer's statement that in a jet flow there is a much larger magnitude of velocity at the center of the wafer and a much smaller magnitude of velocity at the edges. The inventors' discussion of the jet flow of the European patent at page 99 of the prosecution history, however, is in the context of explaining how the gas flow in that invention is not directed to the entire surface of the substrate, unlike the gas flow in the present invention:

Even a cursory review of the European Patent discloses that the gas injector 1-3 in Fig. 1, is a nozzle shape which does not have an opening corresponding in radius to the radius of the substrate 1-10. . . . This is completely contrary to the present invention where the gas flow velocity is substantially uniform across the entire substrate surface.

('165 Patent Prosecution History at 99.) The Court interprets this language consistently with the inventors' other statements that a key distinguishing feature of the '165 invention is the configuration of gas flow apertures that correspond to the size of the substrate, and thus produce a uniformly directed gas flow perpendicular to the substrate. The Court is not convinced that this language demonstrates that the inventors used "stagnation point flow" in a nonstandard way.

Indeed, at the claim construction hearing, Peltzer clarified his prior statements and testified that the particular stagnation point flow of the '165 patent does not require uniform magnitude of velocity, and that the European patent "is distinguished by requiring that the apertures be disposed in a generally circular configuration over the entire surface of the substrate." (Transcript 92:24-93:14.) Although Peltzer later testified that the speed of the gas flow is "uniform across a horizontal plane," (id. 99:5-100:17), he was not then attempting to explain how the inventors distinguished the European patent or to define the concept of stagnation point flow.

ASM has consistently argued that only claim 6 requires that the speed of the gas flow be uniform, because only claim 6 requires "a flow of gas having a substantially uniform magnitude of velocity." ('165 patent 6:26-27.) Claim 1, on the other hand, contains no such limitation, as Peltzer testified at the claim construction hearing. (Transcript 102:4-20.)
Genus also argues that ASM has admitted in previous litigation that "stagnation point flow" has a non-standard meaning in the context of the '165 patent. In answers to interrogatories propounded in 1993 in Advanced Semiconductor Materials America, Inc. v. Applied Materials, Inc., C-95-20169 RMW ("ASM v. Applied Materials"), ASM was asked to define the term "stagnation point flow" as used in the '165 patent claims. ASM ultimately answered the interrogatory by pointing to the language from the patent specification and prosecution history that has already been quoted above, stating that "this definition is consistent with the way in which the term is used in the relevant art," and pointing to a definition from F. Rosenberg, Fundamentals of Crystal Growth I: Macroscopic Equilibrium and Transport Concepts. (Reines Decl., Ex. G at 085810-11.) According to ASM's interrogatory responses, that treatise provides that stagnation point flow "occurs when a fluid stream impinges on a wall at right angles to it and flows away radially in all directions." (Id. at 085811-12.) Contrary to Genus' argument, the definition ASM proposed in that litigation is consistent with the definition it proposes now, and with the ordinary meaning of the term. 6

--- Footnotes ---

6 Genus also argues that there is no way to measure whether a "stagnation point flow" actually exists in a CVD reactor, but that is an issue of indefiniteness or enablement, not an issue for claim construction.

--- End Footnotes ---

Accordingly, the Court concludes that "stagnation point flow" should be construed in accordance with its ordinary meaning:

Stagnation point flow is achieved when a flow toward a solid surface in which the gas or fluid approaching the surface divides into streams proceeding away from the point at which the central streamline intersects the surface. This point is called the "stagnation flow point." In order to achieve a stagnation point flow, the direction of the flow initially must be perpendicular to the surface.

3772

1. "Stainless steel"

The term "stainless steel" is used in claims 1, 7, 13, and 15 of the '668 patent. The parties have offered the following constructions of this term:

| THE '668 PATENT |
|-----------------|------------------|------------------|
| Claim Term      | Rivard's Proposed Definition (if any definition required) | Ideal's Alternative Definition |
| a. Stainless steel (In claims 1, 7, 13, and 15) | A large group of corrosion resistant steels that contain 10% or more of chromium and may contain other elements. | Corrosion resistant steel |

Rivard contends that "stainless steel" is ambiguous, in part, because "stainless steel" is sometimes specified in the patent as comprising, inter alia, 4-25% by weight of chromium, but Rivard asserts that an alloy containing as little as 4% chromium is not "stainless steel" within the ordinary meaning of the term or within the meaning disclosed by the specification. Rivard points out that the specification states that "[t]he stainless steel alloy can comprise any corrosion-resistant magnetic material with an elemental composition within the range set forth in" certain specified patents. See the '668 patent, Co. 5, II. 24-28. Rivard asserts that the patents referred to specify that chromium in excess of 8% is required to obtain the corrosion resistance desired, not as little as 4% as elsewhere stated in the claims and specification of the '668 patent, and those patents suggest other conflicts with the percentages of other components expressly stated in the '668 patent. Rivard acknowledges that the patent states that, in case of conflict between the specification and patents incorporated therein by reference, "the
present description, including definitions, will control," see the '668 patent, Col. 3, ll. 44-48, but apparently contends that this statement does not dispel the ambiguity. Rivard also notes that one of the patents for "stainless steel" incorporated by reference in the Detailed Description, U.S. Patent No. 4,969,963 to Honkura, is described contrariwise in the prosecution history to the '668 patent as "completely unsuitable for the needle of the method claimed in the ["668 patent."] Joint Exhibit 1002, Joint Appendix at 492. Rivard also points out that the prosecution history reveals that the patentee confirmed that the properties of stainless steel are dependant upon the constituents of the steel. Finally, Rivard cites extrinsic evidence in the form of ordinary and technical dictionary definitions defining "stainless steel" as having at least 10 percent chromium. Consequently, Rivard argues that the ordinary meaning of "stainless steel" is "a large group of corrosion resistant steels that contain 10% or more of chromium and may contain other elements." In the alternative, Rivard argues that the patents sufficiently redefine "stainless steel" to mean alloys limited to the compositions disclosed in the patents. Indeed, in its rebuttal brief, Rivard argues that the use of "stainless steel" in the specifications and claims of the patents-in-suit results in defining five particular formulations of stainless steel. Rivard then contends that only one of those formulations is explicitly claimed in independent claims 1, 7, 13, and 15 of the '668 patent and claims 5 and 12 of the '196 patent, while any of the five formulations could apply to references to "stainless steel" without specification of a chemical composition in claims 1-4, 7-11, and 14 of the '196 patent.

Ideal, on the other hand, contends that the meaning of "stainless steel" is well known to one of ordinary skill in the art. Ideal also asserts that Rivard's attempt to narrow the definition is improper, because it lacks even an iota of support in the intrinsic evidence, and the extrinsic evidence that Rivard cites is irrelevant. More specifically, Ideal argues that both the patentee and the examiner recognized that "stainless steel needles" were well known in the prior art, but that nowhere in the prosecution history was there any reference to or unmistakable limitation of "stainless steel" to an alloy comprised of 10% or more of chromium. Ideal contends that the extrinsic evidence on which Rivard relies is irrelevant, because resort to such evidence cannot overcome the ordinary and customary meaning of the term in the context of the claim term and the embodiments described in the patents-in-suit. In the alternative, Ideal asserts that "corrosion-resistant steel" is an appropriate construction of "stainless steel" that is found in, and well-supported by, the intrinsic evidence, stays true to the claim language, and naturally aligns with the description of the invention.

b. Analysis

The appropriate place to begin construction of claim terms is with the words of the claims. Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"); see also Playtex Prods., Inc., 400 F.3d at 906 ("It is axiomatic that claims, not the specification embodiments, define the scope of protection."). The court notes that the term "stainless steel" is never used in the claims of the '668 patent without specification of its chemical composition. See the '668 patent, Claim 1 ("stainless steel which comprises" certain elements in ranges of percentages by weight); Claim 7 ("stainless steel comprises" certain elements in ranges of percentages by weight); Claim 13 ("stainless steel comprising" certain elements in ranges of percentages by weight); Claim 15 ("stainless steel tubular injection needle, wherein the injection needle . . . comprises" certain elements in ranges of percentages by weight). Consequently, the court concludes that it is unnecessary to construe the term "stainless steel" in isolation.

More specifically, "comprising" is an "open-ended" term, which raises a presumption that the list of elements is nonexclusive. Dippin' Dots, Inc. v. Mosey, 476 F.3d 1337, 1343 (Fed. Cir. 2007). Nevertheless, it "is not a weasel word with which to abrogate claim limitations." Id. (quoting Spectrum Int'l, Inc. v. Sterilite Corp., 164 F.3d 1372, 1380 (Fed. Cir. 1998)). As the Federal Circuit Court of Appeals has explained,

"Comprising" appears at the beginning of the claim--"comprising the steps of"--and indicates here that an infringing process could practice other steps in addition to the ones mentioned. Those six enumerated steps must, however, all be practiced as recited in the claim for a process to infringe. The presumption raised by the term "comprising" does not reach into each of the six steps to render every word and phrase therein open-ended--especially where, as here, the patentee has narrowly defined the claim term it now seeks to have broadened.

Dippin' Dots, Inc., 476 F.3d at 1343.

Similarly, here, "comprising" is "open-ended" only to the extent that it indicates that the alloy may be comprised of other elements not specified. Cf. id. Indeed, the Detailed Description demonstrates the correctness of such an interpretation, because it specifies, first, that the alloy comprises several elements in specified weight percentage ranges, then adds that preferred embodiments may include additional elements in specified weight percentage ranges. See the '668 patent, Col. 5,
II. 23-44. On the other hand, "comprising" cannot be used as a "weasel word" to abrogate the express claim limitations requiring that the "stainless steel" be comprised of specific elements. Cf. Dippin' Dots, Inc., 476 F.3d at 1343 ("[Comprising] 'is not a weasel word with which to abrogate claim limitations.'") (quoting Spectrum Int'l, Inc., 164 F.3d at 1380). Thus, from the plain language of the claim term, whatever the term "stainless steel" might mean, standing alone, in other contexts, in the context of the '668 patent claims, "stainless steel" necessarily "comprises" specified elements. That being so, the court declines to construe the term "stainless steel" in isolation. Instead, the court will pass on to the question of the proper construction of "stainless steel comprising" specified elements, which is the second term in the '668 patent for which the parties dispute the proper construction.

III. Disputed Patent Claim Term "Making One Side of the Plurality of Spaced Separate Elements to Stand Proud of the Surface of a Jig"

McDavid argues that the contested phrase means "making one side of each of the elements to stick out from the surrounding surface of a jig." (Dkt. No. 67, Pl. Claim Construction Mem. 8.) Nike, however, suggests that "causing one side of each of the spaced separate elements to be raised above the surface of the jig during bonding" is the appropriate construction. (Dkt. No. 94, Def. Resp. Claim Construction Br. 11-12.) The key disputes involve (1) whether the terms "making" or "causing" should be used and (2) whether "during bonding" should be added to the end of the construed claim-term phrase. 2

2 The parties originally seemed to dispute the meaning of "stand proud." Nike's original construction stated that the elements must "raise above" the surface of the jig, whereas McDavid contended that the orientation did not matter and that each element must simply stand out from the surface of the jig. In its responsive brief Nike admitted that McDavid's construction was almost correct, except that it did not include the phrase "during bonding." (Dkt. No. 95, Def. Resp. Claim Construction Br. 11.) As a result, this court construes "stand proud" to mean "each element stands out from the surrounding surface of the jig."

First, the court finds that the term "making" is a common, non-technical word. At least one of the common meanings of the term "making" is "the act or process of . . . causing." Merriam-Webster's Collegiate Dictionary 751 (11th ed. 2005). The parties have not argued that "making" has a specialized meaning nor does the court believe that it has one. Additionally, other than indicating that the words "making" and "causing" are synonyms in the context of the '325 patent, Nike has not explained why the court should construe "making" as "causing." Accordingly, "making" is used without modification in the court's construction of the disputed claim language.

Additionally, the parties dispute whether "during bonding" should be included in the construction. Nike argues that the plain language of the claims, the written description, the prosecution history, and the extrinsic evidence all establish that the elements stand proud during bonding because these sources demonstrate that the purpose of the "stand proud" step is to facilitate bonding. However, the court finds that it would be improper to add "during bonding" to the disputed claim language because the plain language of the '325 patent indicates that the spaced separate elements may begin standing proud before the bonding step occurs. For example, in one embodiment the patent provides:

The foam is then placed onto a cutter and pressed down with a press so that the cutter cuts through the foam to form a plurality of separate cubes. The press is then removed whereupon owing to its resilient nature, the foam will tend to spring back slightly so that the exposed surface of each cube stands proud to lie above the surface of the cutter. Excess material from between the elements is then removed.

Next, a layer of fabric is placed over the foam and cutter and a heated platen is brought into contact with the fabric. Heat is conducted through the fabric to the foam and activates the adhesive, bonding the fabric to the foam.

('325 patent, col. 5:39-52) (internal references to the drawings omitted). The use of "[n]ext" demarcates the standing proud
step from the bonding step in the '325 patent's claims, thereby illustrating that the spaced separate elements may stand proud prior to the commencement of bonding. For that reason, requiring that "making one side of the plurality of spaced separate elements to stand proud of the surface of a jig" occur "during bonding" would contradict the express language of the patent.

Nike's reliance on, Gemtron Corp. v. Saint-Gobain Corp., 572 F.3d 1371 (Fed. Cir. 2009), in its supplemental brief does not support a different result. In Gemtron, the patent at issue claimed a refrigerator shelf which was made by inserting a piece of glass into a plastic frame while the plastic frame was temporarily flexible. Gemtron, 572 F.3d at 1375. The Federal Circuit affirmed the inclusion of the language, "when glass is being inserted in the frame" in construing a disputed claim term. Id. at 1373. This language added an explicit limitation regarding when the plastic frame would be flexible, even though the original claim language included no such restriction. See id. at 1377. Nike argues that based on Gemtron, the court should include the temporal limitation of "during bonding." However, based on the court's determination that adding the phrase "during bonding" in defining the disputed claim language would contradict the express language of the '325 patent, the court finds that Gemtron is inapposite.

For the foregoing reasons, the court construes the claim term "making one side of the plurality of spaced separate elements to stand proud of the surface of a jig" to mean "making one side of each element stand out from the surrounding surface of a jig."

III. Analysis

GSK. argues that summary judgment is appropriate because the proper interpretation of "stand-up toothpaste container," as used in the '706 patent, excludes devices, such as the Floss 'N' Cap, which do not retain their shape when the toothpaste is discharged. Grussmark counters that "stand-up toothpaste container" is not so limited, and the Floss 'N' Cap, as a toothpaste container which physically stands up on a counter, infringes the '706 patent. Because, as explained below, the Court construes the claim term "stand-up toothpaste container" to specifically exclude a toothpaste container that does not retain its shape, and the undisputed evidence before the Court demonstrates that the Floss 'N' Cap does not retain its shape after discharge of its contents (see Def. SF P 12), the Court finds that summary judgment of non-infringement is proper.

A. Claim Interpretation

As precedent instructs, the Court begins its interpretation of the claims in the '706 patent by looking to the language of the patent itself. See Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc., 222 F.3d 951, 955 (Fed. Cir. 2000); Desper Prods., 157 F.3d at 1333. "As a starting point, the court gives claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art." Hockerson-Halberstadt, 222 F.3d at 955. Here the relevant claim language recites a "stand-up toothpaste container comprising flexible tube means for storing toothpaste." ('706 patent, col. 7, lines 22-23; id., col. 7, lines 57-58.) The analysis focuses on the term "stand-up toothpaste container." 5 The ordinary and accoustomed meaning of a "stand-up toothpaste container" is simply a toothpaste container that stands upright on a flat surface. (See, eg., Pl.SF PP 21.22.)

5 Grussmark argues at length in his response brief about the meaning of "flexible" in the '706 patent. If, however, the Floss 'N' Cap is not a "stand-up toothpaste container" as recited by the patent, whether the product contains a "flexible tube means" is irrelevant.

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

While the ordinary and accustomed meaning of a term "initially serves as a default meaning" in the patent, a "patentee may act as a lexicographer and ascribe a different, or modified, meaning to the term." Hockerson-Halberstadt, 222 F.3d at 955 (citing, inter alia, Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477 (Fed. Cir. 1998). The Court, thus, "must examine a patent's specification and prosecution history to determine whether the patentee has given the term an unconventional meaning." Id. (citing, inter alia, Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). "The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed
during prosecution." Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (7th Cir. 1995). The Court must assess the totality of the prosecution history, including arguments made to overcome or distinguish references, to determine whether a patentee relinquished a particular claim construction. See Rheox, Inc. v. Entact, Inc., 276 F.3d 1319, 1326 (Fed. Cir. 2002). A disclaimer in the prosecution history will be held to narrow a claim only where the disclaimer was both clear and unmistakable. See Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1325 (Fed. Cir 2003).

In analyzing the prosecution history of the '706 patent, the Court finds that Grussmark used the term "stand-up toothpaste container" to mean something more than merely a toothpaste container which is capable of standing up. In response to Grussmark's continuation application for the '706 patent, the patent examiner rejected proposed claim 21, stating, "In Fig. 5, Chari shows a combination dental floss dispenser and stand-up toothpaste container according to claim 21." (Def. Ex. F at 3.) In Grussmark's attempt to overcome the rejection of this claim, Grussmark specifically distinguished his "stand-up toothpaste container" from the Chari container which has walls that "may be rolled up . . . for the purpose of forcing toothpaste from the container" because that kind of container "will be unstable due to the offset weight of the rolled portion [which will] prohibit the container and dispenser from standing up on end." (Def. Ex. K at 10.) In contrast, the "stand-up toothpaste container" of the '706 patent is one which "will retain its shape even after discharging any part of the contents of the container." (Id. (emphasis added).) 6

6 The Court rejects Grussmark's argument that these statements are inapplicable because proposed claim 21 asserts a "stand-up squeezable toothpaste container," which requirement is not present in claims 1 through 3 at issue. (See D.E. 49 at 2-3.) First, when the patent examiner first rejected claim 21 as being anticipated by Chari, the claim recited a "stand-up toothpaste container." (See P1. Ex. 3 at Bates GSK 003653.) Grussmark amended the claim to add "squeezable," but the claim was nonetheless rejected. Second, Grussmark apparently used the terms "stand-up squeezable toothpaste container" and "stand-up toothpaste container" interchangeably (see, e.g., Def. Ex. K at 10-11; '706 patent, col. 7, lines 20-22 ("A combination of a dental floss dispenser and a stand-up squeezable toothpaste container, said stand-up toothpaste container comprising . . ..")), and the Court finds no reason to believe that Grussmark's disclaimers do not apply to "stand-up toothpaste container" throughout the patent.

Grussmark made other statements during prosecution consistent with his disclaimer related to proposed claim 21. Grussmark appealed to the PTO's Board of Patent Appeals and Interferences the rejection of several claims in the application. (See Def. Ex. M.) In Grussmark's Summary of the Invention in that appeal, Grussmark specifically described what he called "a 'stand-up' type squeezable toothpaste container having either a flip-open cap or a screw-on cap." (Id. at 3.) According to Grussmark, "The stand-up container is different from previous containers because it is made from a flexible plastic material which retains its shape after discharging any part of the contents of the container and because the container is suitably balanced to stand in an upright position on the base of the flip-open or screw-on cap without easily tipping over." (Id. (emphasis added).) These statements are unambiguous and are amenable to a single interpretation: Grussmark's invention is different because it retains its shape. Compare Cordis Corp. v. Medtronic AVE Inc., 339 F.3d 1352, 1360 (Fed. Cir. 2003) (no clear and unmistakable surrender where purported disclaimer by patentee was "amenable to multiple reasonable interpretations").

The Court finds that Grussmark's statements constitute a clear and unmistakable disclaimer as to what type of container is not a "stand-up toothpaste container." Specifically, Grussmark clearly and unmistakably disclaimed from the definition of "stand-up toothpaste container" a toothpaste container, like the container pictured in Chari Figure 5, which has walls that do not retain their shape when the toothpaste is discharged. See generally SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., 242 F.3d 1337, 1341-42 (Fed. Cir. 2001) ("Claims are not correctly construed to cover what was expressly disclaimed." (internal quotation and citation omitted)) (disclaimer in specification). Thus, the Court finds that a "reasonable competitor, reviewing . . . the statements made by the applicant to distinguish the claimed invention from [Chari], would conclude that the claimed invention did not cover a device like [Chari's]." Springs Window Fashions LP v. Novo Indus.. LP, 323 F.3d 989, 995 (Fed. Cir. 2003)–or, put differently, that the claim term "stand-up toothpaste container" excludes a toothpaste tube that does not retain its shape after discharging the contents of the container.
As explained in Part II.B below, the evidence is undisputed that GSK’s Floss ‘N’ Cap, while capable of standing up, does not retain its shape after toothpaste is discharged. (Def. SF P 12.) Thus, there is no dispute in the case that would require the Court to interpret the claim term "stand-up toothpaste container" beyond determining that this type of container has been disclaimed.

GSK also argues that the claim should be limited to stand-up toothpaste containers made solely of plastic because that is the only embodiment expressed in the specification. The Federal Circuit, however, has "expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment." Liebel-Flarsheim Co. v. Medrad. Inc., 358 F.3d 898, 906 (Fed. Cir. 2004). Thus, even though the '706 patent specification describes a "stand-up toothpaste container" as one made of plastic (see, e.g., '706 patent, col. 1, line 38; id., col. 3, lines 26-27), the Court does not read that limitation into the claim, as there is no "clear indication in the intrinsic record that the patentee intended the claims to be so limited." Liebel-Flarsheim Co., 358 F.3d at 913. The claim language itself does not limit "stand-up toothpaste container" to ones made solely of plastic. Instead, the claim describes generally the characteristics of the container, i.e. flexible, rather than its chemical (or other) composition. Nor does the prosecution history indicate that a stand-up toothpaste container is made of plastic only. Unlike the language in the prosecution history regarding the physical characteristics of the claimed container, i.e. that it does not roll down or lose its shape when toothpaste is squeezed out of it, nothing in the prosecution history indicates that Grussmark needed to distinguish all plastic containers in order to overcome rejection. See Ekchian v. Home Depot, Inc., 104 F.3d 1299, 1303 (Fed. Cir. 1997). Thus, the Court finds that the term "stand-up toothpaste container" as used in the '706 patent is not limited to containers made solely of plastic.

D. Pit configuration standard of the optical disk

The plaintiffs note that there is no known definition for the phrase "pit configuration standard." They therefore use dictionary definitions of "standard" and their definitions of optical disk and pit and propose that the term mean "a recognized arrangement of depressions formed in an optical storage medium." The defendants contend that the phrase means, "the set of rules and procedures governing the track pitch, as well as the arrangement, form, figure, and shape of the pits on a particular optical disk." After reviewing the briefs and the arguments of the parties, the court is persuaded that the plaintiffs' construction of this phrase is correct. The court defines "pit configuration standard" to mean "a recognized arrangement of depressions formed in an optical disk."

1. Standard Insulin Needle Fitting/Standard Mounting

Novo argues that the terms standard insulin needle fitting and standard mounting in the claim language "[a] standard insulin needle fitting for removably mounting said needle assembly on a pen-type syringe having a standard mounting" 1 are unambiguous.
Novo argues that the term "standard" is defined as "regulatory and widely used, available, or supplied." Merriam-Webster's College Dictionary, 1145 (10th ed. 1998). According to Novo "standard insulin needle fitting" plainly refers to needle fittings which are commonly used on pen-type insulin delivery devices.

Further, it argues that the significance of the term "standard" is evident when the claim is construed as a whole. Novo contends that in claim 1 of the '323 patent, the structure of the needle hub is defined with reference to an unclaimed object, namely, a pen syringe. In its view, without the term "standard," a person skilled in the art would be unable to ascertain the structure of the needle hub, and thus the claim would be vague, because a pen syringe could potentially be designed to accommodate any needle hub. The word "standard" allows persons skilled in the art to understand the scope of the claim with reasonable clarity, because a person skilled in the art would know what needle hubs are standard at any given time.

Becton submits that the limitations "standard insulin needle fitting" and "standard mounting" had no discernible meaning for one of ordinary skill in the art when Novo's Danish application was filed in 1991. At that time, it contends, there was neither a de facto standard needle nor an industry-accepted standard for pen needles. To support its contention, Becton cites statements of Frits Bonnichsen, Novo's co-inventor in charge of the development of the 30 gauge pen needle. See (Sharrott Decl., Exh. 13, at 125-126.) In addition, Becton argues that there is no basis whatsoever for construing the terms "standard" fitting and "standard" mounting. In its view, there is no description of a standard fitting or mounting that at the time of the alleged invention would convey with reasonable clarity to one skilled in the art that the inventors were in possession of the claimed needle assembly inventions.

At the Court's Markman hearing, Novo argued the following: (1) that the "standard" limitations first appeared in July 1996 when Claims 1-4 were added to Novo's '323 patent application by amendment; (2) that "standard" does not reflect an industry or government standard; 2 (3) that there could be more than one "standard"; and (4) that while the drawings submitted in support of Novo's patent application are examples of a "standard," the standard can change over time. See March 6, 2000 Tr. at 5-11.

It is quite clear that after examining the intrinsic evidence--the claim language and the prosecution history--and the extrinsic evidence, 3 this Court cannot determine what "[a] standard insulin needle fitting for removably mounting said needle assembly on a pen-type syringe having a standard mounting," was at the time of the patent. The Court can and does construe the word standard in accordance with the dictionary definition of standard to mean: "regularly and widely used, available, or supplied." Again, as to what needle fittings and mountings were "regularly and widely used, available, or supplied," at the time of the patent, this Court assumes that the parties will adduce proof on this point at trial on the issue of infringement.

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The parties dispute the construction of a term in claims 1 and 8 of the '196 patent comparing the dimension of the claimed needle cannula with "the standard needle cannula," of various gauges. Ideal asserts that no construction of this unambiguous

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**Footnotes**

2 Becton does concede that by 1996 there was a standard "insulin needle fitting" and "mounting" for insulin pen syringes in the U.S. market.

3 This Court notes that Novo has not submitted any extrinsic evidence relevant to the question of what was "standard" either in 1991, 1994 or 1996 -- the key time periods for purposes of the patents.
term is required, even as an alternative to Rivard's proposed construction. Therefore, the chart that follows shows only the claim term and Rivard's proposed construction.

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Rivard's Proposed Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>d. The outer diameter [of the needle cannula] is greater than an outer</td>
<td>A needle represented to be a gauge between 14 and 27 has an inside diameter (I.D.) within</td>
</tr>
<tr>
<td>diameter of a standard needle cannula and the lumen diameter is identical</td>
<td>the I.D. range of the corresponding gauge on Exhibit A* and an outside diameter (O.D.) greater</td>
</tr>
<tr>
<td>to a lumen diameter of the standard needle cannula between 14 and 27</td>
<td>than the O.D. range on Exhibit A for the corresponding gauge. (*Exhibit A to Amendment under 37</td>
</tr>
<tr>
<td>gauge (In claims 1 and 8)</td>
<td>C.F.R. § 1.111, page 17, mailed April 17, 2003.)</td>
</tr>
<tr>
<td></td>
<td>For example, a 16 gauge needle has an inside diameter identical to the inside diameter of the</td>
</tr>
<tr>
<td></td>
<td>16 gauge needle listed on Exhibit A and an outer diameter greater than the outer diameter of</td>
</tr>
<tr>
<td></td>
<td>the 16 gauge needle listed on Exhibit A.</td>
</tr>
</tbody>
</table>

i. Arguments of the parties. Rivard contends that the word "standard" was added to the patent by amendment to distinguish prior art and that, to make this amendment, the patentee represented that the dimensions listed in an exhibit, found in the Joint Appendix at 787-88, were "standard" dimensions of needles of various gauges. Rivard contends that Ideal is now bound by this exhibit as defining "standard" gauges for "standard" needles. Notwithstanding its prior argument that "gauge" is determined only by reference to outer diameter, Rivard now argues that the claimed needle must be compared to the outside and inside diameters of a single gauge size "standard" needle, so that the claimed needle is not compared to the outside diameter of one gauge size and the lumen diameter of a different gauge size. Rivard also notes that, while the specification refers to "prior art needles," the specification references "standard" dimensions only once, as follows: "The standard 16 gauge needle used for injecting animal health products into an animal is about 19.0 mm in length." The '196 patent, Col. 8, ll. 16-18. Rivard points out that the specification compares prior art needles of a certain gauge with the represented gauge size number of the claimed needle, not the actual gauge size number of the claimed needle based on outer diameter. Rivard also points out that the prosecution history reveals that the patentee represented the dimensions in the exhibit provided to the examiner as "the" standardized dimensions, rather than as 'a' set of dimensions among possible alternatives, and then compared the "standard" dimensions of a prior art needle of a certain gauge to the dimensions of the claimed needle of a represented gauge, arguing that the inventive aspect was thicker sidewalls. Absent the exhibit of "standardized" dimensions, Rivard argues that the claims would have been rejected as providing insufficient description, definiteness, or enablement.

Ideal counters that, notwithstanding the amendment of the claims to refer to "standard" needles of certain gauges, the claim term in question requires no construction, because it is unambiguous. Ideal contends that the patentee used the exhibit of needle dimensions to which Rivard claims the patent must now be restricted to illustrate the patentee's contention that needle dimensions for various gauges are standardized, but did not thereby restrict itself to the dimensions in the exhibit as constituting "the" standard dimensions. Instead, Ideal argues that, within the context of the '196 patent and its prosecution history, a person of ordinary skill in the art would understand the embodiments and the dimensions for syringe needles stated in the exhibit to be merely exemplary in nature. Ideal also contends that Rivard's references to the "represented" gauge of the claimed needle are not supported by any evidence, intrinsic or extrinsic. Likewise, Ideal argues that Rivard's use of "corresponding gauge" is improper, because the patentee amended out the phrase "of identical gauge." Ideal also contends that the plain language of the patent claims and the prosecution history belie Rivard's construction, because they make clear that what Rivard relies on is an illustration, not a disavowal of any claim scope.

In its rebuttal brief, Rivard focuses again on the meaning of "standard" needle gauges, asserting that Chimie v. PPG Industries, Inc., 402 F.3d 1371 (Fed. Cir. 2005), demonstrates that the sole evidence upon which Ideal relied to show
"standard" needle gauge dimensions, the exhibit of dimensions submitted to the examiner, limits the claims of the '196 patent to the dimensions in that exhibit. In its rebuttal brief, Ideal, likewise, focuses on this contention, reiterating that the prosecution history demonstrates that the patentee did not restrict the scope of this patent claim term to the exhibit on which Rivard relies, but that exhibit only to illustrate the fact that standardized needles are generally known in the art. Ideal also reiterates in its rebuttal brief that there is no basis on which to assert that the comparison at issue is between a claimed needle "represented to be a gauge" and "standard" needles illustrated in the exhibit on which Rivard relies.

ii. Analysis. The court has already construed the term "gauge" in the same claims of the '196 patent to mean the following: "A size measurement of needles determined by the outer diameter and the inner or lumen diameter." The parties' arguments concerning the claim term now at issue suggest the parties' recognition that, at least for purposes of the '196 patent, "gauge" is determined by both the outer diameter and the inner or lumen diameter. Moreover, looking first at the words of the patent claims, see Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"), it is apparent that the comparisons being made between the claimed needle and "the standard needle cannula" are, likewise, between the outer diameter (claimed to be "greater" for the claimed needle) and the inner or lumen diameter (claimed to be "identical to a lumen diameter of the standard needle cannula"), and hence, the claimed needle has a thicker sidewall. See also '196 patent, claim 1, Col. 9, ll. 4-12 (explaining that the claimed needle cannula has a sidewall thickness that increases detectability over standard needle cannulas). The claim language reveals that this comparison applies to "standard needle cannula between 14 and 27 gauge," so that the embodiment of the claimed needle in each gauge would have the same lumen diameter as a "standard needle cannula" in that gauge, but a greater outer diameter. The question is whether the points of reference, "the standard needle cannulas" of certain gauges, against which the claimed needle cannulas are compared, have been specifically limited to the dimensions stated in the exhibit that accompanied the patentee's assertion that dimensions of needle gauges are "standardized." Nothing in the claim language answers that specific question.

Therefore, the court turns to the specification for guidance. See Aquatax, 419 F.3d at 1380 ("Where . . . the disputed claim term is technical or a term of art, [t]he best source for understanding [it] is the specification from which it arose, informed, as needed, by the prosecution history.") (quoting Phillips, 415 F.3d at 1315); Phillips, 415 F.3d at 1314 (the specification is not only "highly relevant" to claim construction, "[u]sually, it is dispositive," and "is the single best guide to the meaning of a disputed term"). The first portion of the Detailed Description that is pertinent to interpretation of the claim term presently before the court is the following:

"In the case of the 16 gauge embodiment of the needle of the present invention, the sidewalls 17 flanking (opposite each other) the lumen 18 have a combined thickness which is greater than 0.46 mm (0.018 inch), preferably a combined thickness of 0.64 mm (0.025 inch) and the diameter of lumen 18 is about 1.19 mm (0.047 inch). Thus, the outer diameter of needle 12 is about 1.8 mm (0.072 inch). Preferably, the needle cannula of the present invention has a circular cross-section. In contrast, a 16 gauge prior art needle has an outside diameter of about 1.65 mm (0.065 inch) and a lumen diameter of about 1.19 mm (0.047 inch). Therefore, the combined thickness of the sidewalls flanking (opposite each other) the lumen of the prior art needle is about 0.46 mm (0.018 inch), which is somewhat more likely to break. . . ."

While the 16 gauge embodiment is shown herein, the needle cannula of the present invention includes needle cannulas of other gauges and needle assemblies comprising needle cannulas of other gauges. For example, needle cannulas that are useful for medical and veterinarian purposes generally include those gauges within the range 14 to 26. Thus, the needle cannula of the present invention includes, but is not limited to, gauges between 14 and 27. It should be understood that because the sidewall of the needle cannula of the present invention is thicker than the sidewall of prior art needle cannulas and the outer diameter of the needle cannula determines the gauge, a 16 gauge needle cannula of the present invention has an outer diameter similar to the outer diameter of a 15 gauge needle cannula.

The '196 patent, Col. 4, l. 55, to Col. 5, l. 26. This portion of the Detailed Description confirms not only that the points of comparison for an embodiment of the claimed needle of a certain gauge and "prior art" needle cannulas of the same gauge are the outside diameter and the inside or lumen diameter, but that the outside diameter of the embodiment of the claimed needle of that gauge is greater. This portion of the specification also clarifies that the claimed needle is not "represented to be" of a certain gauge; rather, an "embodiment" of the claimed needle of a certain gauge has a greater outer diameter than the "prior art" needle cannula of the same gauge, but the same inner or lumen diameter. Finally, this portion of the specification strongly suggests that a 16 gauge "standard needle cannula" has an outside diameter of about 1.65 mm (0.065 inch) and a lumen diameter of about 1.19 mm (0.047 inch), although the Description is cast in terms of "a 16 gauge prior art needle," rather than "a 16 gauge standard needle." A person of ordinary skill in the art is likely to understand that "prior art
The paragraph bridging pages 8-9, illustrates the difference in wall thickness between the applicant's 16 gauge needle in the exhibit as representing "standardized" dimensions. This is so, because the patentee asserted the following:

illustrate that gauges for syringe needles are standardized, not to disclaim any dimensions of gauges other than those shown
Joint Appendix at 772 (emphasis added). The prosecution history also reveals that the patentee used the exhibit at issue to
standard needle of the prior art has an outside diameter of about 0.065 inches and a lumen diameter of about 0.047 inches."

is so, because the patentee's Reply To Office Action of February 3, 2003, expressly states, "For example, the 16 gauge
with "prior art needle," as stated in the first portion of the Detailed Description discussing needle gauge quoted above. This

Thus, in order to detect a length of a stainless steel 16 gauge prior art needle cannula, which has a diameter of about 1.65
mm, the length of the needle that is embedded in the flesh of the animal must be at least about 8 mm to be detected free of
orientation effects at a sensitivity of 1.5 mm or at least about 24 mm to be detected free of orientation effects at a sensitivity
of 2.0 mm. The standard 16 gauge needle used for injecting animal health products into an animal is about 19.0 mm in
length.

In contrast, the length of the magnetized heavy duty stainless steel needle cannula of the present invention that can be
detected free of orientation effects at a sensitivity of 1.5 mm and 2.0 is about 7.0 mm. and 21.0 mm, respectively.

The '196 patent, Col. 8, ll. 10-23. This portion of the Detailed Description refers to both a "16 gauge prior art needle
cannula" and a "standard 16 gauge needle," suggesting that the two terms are synonymous.

At best, however, the Detailed Description suggests the "standard" dimensions of only a 16 gauge "standard needle
cannula." Thus, the court turns to the prosecution history to see what it reveals. See Nystrom, 424 F.3d at 1142 ("In addition
to the written description, the prosecution history can often inform the meaning of the claim language by demonstrating
how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution,
making the claim scope narrower than it would otherwise be.") (quoting Phillips, 415 F.3d at 1317); Research Plastics, 421
F.3d at 1296 ("The purpose of consulting the prosecution history in construing a claim is to "exclude any interpretation that
was disclaimed during prosecution.") (quoting Rhodia Chimie, 402 F.3d at 1384, in turn quoting ZMI Corp., 844 F.2d at
1580). The prosecution history reveals that, in the exhibit provided by the patentee showing "Syringe Needle Dimensions,"
Joint Appendix at 787-88, the outside diameter of a 16 gauge needle is, indeed, shown as 1.651 mm (0.0650 inch), or "about
1.65 mm (0.065 inch)," as stated in the Detailed Description, and the inner or lumen diameter is shown as 1.194 mm (0.047
inch), or "about 1.19 mm (0.047 inch)," as stated in the Detailed Description. 18 Thus, there is a correlation between the
dimensions of a 16 gauge needle, as shown in the exhibit, and the 16 gauge "prior art needle" described in the Detailed
Description. This is a long way, however, from evidence that the patentee intended to or did exclude any interpretation of
"standard" needle dimensions during prosecution other than an interpretation based on the exhibit simply by offering the
exhibit in the course of prosecuting the patent. See Research Plastics, 421 F.3d at 1296 ("The purpose of consulting the
prosecution history in construing a claim is to "exclude any interpretation that was disclaimed during prosecution.")
(quoting Rhodia Chimie, 402 F.3d at 1384, in turn quoting ZMI Corp., 844 F.2d at 1580).

18 Again, to be precise, the exhibit shows the nominal inside diameter of a 16 gauge syringe needle to be 0.470 inch, but
that is clearly a misprint, based on the conversion of the stated nominal inside diameter of a 16 gauge needle from
millimeters (stated as 1.194) to inches (0.047 inch), and the stated nominal inside diameters for 15 and 17 gauge needles
(0.0540 inch and 0.0420 inch, respectively). See Joint Appendix at 787.

Other portions of the prosecution history shed more light on what was meant by "standard needle cannulas" and the role that
the exhibit played in the prosecution history. The prosecution history demonstrates clearly that the patentee meant "standard
needle" to mean "standard needle of the prior art," i.e., to equate "standard needle cannula," as stated in the patent claim,
with "prior art needle," as stated in the first portion of the Detailed Description discussing needle gauge quoted above. This
is so, because the patentee's Reply To Office Action of February 3, 2003, expressly states, "For example, the 16 gauge
standard needle of the prior art has an outside diameter of about 0.065 inches and a lumen diameter of about 0.047 inches."
Joint Appendix at 772 (emphasis added). The prosecution history also reveals that the patentee used the exhibit at issue to
illustrate that gauges for syringe needles are standardized, not to disclaim any dimensions of gauges other than those shown
in the exhibit as representing "standardized" dimensions. This is so, because the patentee asserted the following:

The paragraph bridging pages 8-9, illustrates the difference in wall thickness between the applicant's 16 gauge needle
compared to a 16 gauge needle of the prior art. Support for the term "standard" with respect to prior art needle cannulas can be found on page 15, lines 28-30, which discusses the length of a "standard" 16 gauge needle for injecting animal health products into an animal. It is generally known in the art that the gauges for syringe needles are standardized. This is illustrated in the attached Exhibit A which shows the outer diameter, inner diameter, and sidewall thickness for syringe needles ranging from gauge 10 to gauge 33.

Joint Appendix at 774 (emphasis added). The examiner allowed the claim, as amended, thus indicating acceptance of the patentee's contention that needle gauges are "standardized," but not thereby binding the patentee to the exhibit illustrating standardized dimensions for needles of various gauges.

Although Rivard argues that Chimie v. PPG Industries, Inc., 402 F.3d 1371 (Fed. Cir. 2005), is on point and requires the court to construe "standard" needles of various gauges to have the dimensions set out in the exhibit submitted by the patentee, the court does not agree. In Chimie, the court reviewed claim construction for a patent for essentially spheroidal precipitated silica particles and the process for manufacturing them. Chimie, 402 F.3d at 1374. The specification of the patent contained examples of silica products and the results of several tests making comparisons among those products, including "flowability" and "dusting properties." Id. The specification described a test of the level of dust formed by the various silica particulates, including a test using the DIN 53 583 standard, based on a German standard to measure certain physical properties of carbon black by determining the fines (dust) and weight loss by abrasion according to a defined procedure. Id. at 1374-75. The court construed the claim term "dust-free and non-dusting" to mean "a level of dust formation associated with the silica particulates of the [patent in suit], as measured in percentage weight according to DIN 53 583, that has a fines content value less than or equal to 13 and weight loss by abrasion value less than or equal to 0.5." Id. at 1375. In doing so, the court concluded that the term was ambiguous, because it could not be read literally to mean that the invention creates no dust at all, but the patentee's proffered definition, "very low dust," was a relative phrase that would not meet the standards of 35 U.S.C. § 112 P 2 that a patent claim must "particularly point out and distinctly claim the subject matter which the applicant claims as his invention." Id. Therefore, "[i]n order to resolve the perceived ambiguity of the claim term in a manner that preserved the term's validity, the court adopted 'a construction based upon the only meaningful guidance provided in the patent,' namely the DIN test." Id. (quoting the decision below).

On appeal, the Federal Circuit Court of Appeals found that, of the ten examples of silica products referenced in the written description, Example 5 was repeatedly described as the invention itself. Id. at 1378. The appellate court also found that the only measurement of the dust produced by Example 5 was articulated in terms of the DIN 53 583 standard, so that the district court properly incorporated that articulation into its construction of the term "dust-free and non-dusting." Id. The appellate court concluded that the reference to the DIN test results for Example 5, as provided in the written description of the patent, reconciled the ambiguous claim language with the inventor's disclosure and, as such, did not contravene the basic teaching that limitations from the specification should not be imported to the claims. Id. The court also concluded that this construction was consistent with the proposition that, when the preferred embodiment is described in the specification as the invention itself, the claims are not necessarily entitled to a scope broader than that embodiment. Id. at 1379 (citing Modine Mfg., 75 F.3d at 1551. Although the patentee identified alternative means for assessing the dust production of a product, the appellate court found that the only articulation of the dustiness of the claimed invention was made with reference to the DIN 53 583 standard. Id. at 1379-80. Therefore, the court concluded as follows:

[The patentee] chose to define the term "dust-free and non-dusting" solely by reference to characteristics of the prior art and the only comparison of those characteristics was explained according to the DIN 53 583 standard. It was not improper for the district court to limit the scope of this relative term to the only disclosure on the subject made in the patent.

Chimie, 402 F.3d at 1380.

The circumstances here are distinguishable. First, unlike the patent at issue in Chimie, the claims and the specification of the '196 patent do not make any reference to the exhibit illustrating "standard" needle dimensions on which Rivard relies. See id. at 1374-75 & 1378. Instead, the exhibit is only found in the prosecution history of the '196 patent where the court found, above, that it only illustrates the patentee's contention that "[i]t is generally known in the art that the gauges for syringe needles are standardized." Joint Appendix at 774. Second, while the claim term at issue here may be "relative," as was the disputed claim term in Chimie, the "relative" term in the '196 patent is not ambiguous for lack of a comparator, as was the case in Chimie, where the dimensions of the claimed needle are expressly compared to the dimensions of "standard" needles of the same gauge. Compare id. at 1375 & 1380. The comparator in the '196 patent, a "standard" needle, is not itself
embodiment of a 22s gauge needle, because only as an embodiment of a 25s gauge needle would it satisfy the claim diameter of 0.0055 inch, while a 25s gauge needle has an outer diameter of 0.0200 inch and an inner diameter of 0.0055 inch as compared to the exhibit showing a 22s gauge needle has an outer diameter of 0.0280 inch and an inner diameter of 0.0055 inch. 20 Rivard makes a similar argument concerning a needle with an outer diameter of 0.0280 inch and an inner diameter of 0.0095 inch as compared to the exhibit showing a 25 gauge needle has an outer diameter of 0.0200 inch and an inner diameter of 0.0095 inch, which would result in a lumen diameter of approximately 0.047 inch (0.065 - 0.009 = 0.047, where the thickness of the sidewall on both sides of the lumen must be subtracted), which is also consistent with the patentee's exhibit. Thus, there is absolutely no evidence in the record to rebut the patentee's contention in the prosecution history that "[i]t is generally known in the art that the gauges for syringe needles are standardized." Joint Appendix at 774.

Thus, in light of the intrinsic evidence, the court tentatively construed the term in question to mean the following: "For an embodiment of the claimed needle cannula between 14 and 27 gauge, the outer diameter is greater than the outer diameter of the standard needle cannula of the prior art of the same gauge and the lumen diameter is identical to the lumen diameter of the standard needle cannula of the prior art of the same gauge."

At the Markman hearing, Rivard took issue with this construction on two grounds. First, Rivard contended that the claimed needle must be construed to be "represented to be" of a certain gauge, not simply to be "an embodiment" of a certain gauge. Rivard argues, for example, that a needle with outer diameter of 0.0200 inch and inner diameter of 0.0095 inch may not meet the court's tentative construction if called a "25 gauge," but might meet the court's tentative construction if called a "26 gauge," where the exhibit offered by the patentee as illustrating standardized needle dimensions, Joint Appendix 787, indicates that a 25 gauge needle has an outer diameter of 0.0200 inch and an inner diameter of 0.0095 inch, but a 26 gauge needle has an outer diameter of 0.0180 inch and an inner diameter of 0.0095 inch. Perhaps the court simply misses Rivard's point, but a claimed needle with an outer diameter of 0.0200 inch and an inner diameter of 0.0095 inch presumably would not be an embodiment of a 25 gauge needle for the simple reason that not only is the inner or lumen diameter of such a needle identical to the inner or lumen diameter of a 25 gauge "standard" needle, at least as illustrated in Joint Appendix 787, but the outer diameter of such a needle is also identical to the outer diameter of a 25 gauge "standard" needle, rather than greater than the outer diameter of a 25 gauge "standard" needle, as claimed in the patent. Such a claimed needle could, however, be an embodiment of a 26 gauge needle, because it has a greater outer diameter than an outer diameter of a "standard" needle and an inner or lumen diameter that is identical to an inner or lumen diameter of a "standard" needle, as claimed in the patent. In other words, Rivard's perceived problem is simply resolved by reference to the claim language, and the court's construction of the pertinent claim term as an "embodiment" of the claimed needle of a certain gauge rather than a claimed needle "represented to be" of a certain gauge "stays true to the claim language and most naturally aligns with the patent's description of the invention."

Nystrom, 424 F.3d at 1142 (quoting Phillips, 415 F. 3d at 1316, in turn quoting Renishaw PLC, 158 F.3d at 1250). 20

20 Rivard makes a similar argument concerning a needle with an outer diameter of 0.0280 inch and an inner diameter of 0.0055 inch as compared to the exhibit showing a 22s gauge needle has an outer diameter of 0.0280 inch and an inner diameter of 0.0055 inch, while a 25s gauge needle has an outer diameter of 0.0200 inch and an inner diameter of 0.0055 inch. The answer is also the same: The needle in question could be an embodiment of a 25s gauge needle, but not an embodiment of a 22s gauge needle, because only as an embodiment of a 25s gauge needle would it satisfy the claim.
requirement that it have a greater outer diameter than a "standard" needle of the same gauge.

Next, Rivard reiterated at the Markman hearing its contention that the dimensions set forth in the exhibit at Joint Appendix 787-88 must be construed to be "the" standard dimensions of "standard" needles. Rivard contended that, otherwise, the public does not receive adequate notice of the "standards." Rivard is correct that in Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335 (Fed. Cir. 1998), the Federal Circuit Court of Appeals explained that "[n]otice is an important function of the patent prosecution process, as reflected by the statute itself." Digital Biometrics, Inc., 149 F.3d at 1347 (citing 35 U.S.C. § 112, P 2, and Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 117 S. Ct. 1040, 137 L. Ed. 2d 146 (1997)). Nevertheless, the court reiterates its tentative conclusion, above, that the exhibit at Joint Appendix 787-88 was offered by the patentee to illustrate its contention that "[i]t is generally known in the art that the gauges for syringe needles are standardized," Joint Appendix at 774, not to indicate "the" standards for needle dimensions. The court also reiterates its tentative conclusion, above, that the reference to dimensions of "standard" needle gauges is the "meaningful guidance" for the comparison in the '196 patent that was lacking in Chimie in the absence of the reference to the DIN 58 583 standard in the patent at issue in that case. Chimie, 402 F.3d at 1375. Rivard apparently contends that the only "meaningful guidance" for what is meant by "standard" needles--and, hence, the only way that the public has adequate notice of those "standards"--is the patentee's exhibit. The court does not agree, in the absence of any evidence that the dimensions of "standard" needles are not actually "standardized," so that the "standard" is unknown or subject to genuine dispute, and Rivard still has not presented any evidence generating such a genuine dispute. To the contrary, Rivard's own evidence from the American Society of Testing Materials (ASTM), Defendants' Appendix at 38 (Defendants' Exhibit E), suggests that dimensions for needle gauges are, indeed, "standardized," as explained supra in note 19. To put it another way, the reference to "standard" needles is sufficient public notice of the comparator in the absence of any evidence that the dimensions of "standard" needles are not actually "standardized," are unknown, or are subject to genuine dispute.

iii. The court's construction. In light of the intrinsic evidence, the court construes the term in question to mean the following: "For an embodiment of the claimed needle cannula between 14 and 27 gauge, the outer diameter is greater than the outer diameter of the standard needle cannula of the prior art of the same gauge, and the lumen diameter is identical to the lumen diameter of the standard needle cannula of the prior art of the same gauge."

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4. "staple line buttress itself"

Synovis contends that no construction is necessary, but if the Court decides to construe "staple line buttress itself," the term should be construed as "portion of a first region of buttress material that is within the reinforced seal, and is the only material that remains in the body." (Joint Statement at 8; Tr. at 64.) Gore, on the other hand, asserts that the Court should construe this term as "the portion of the buttress material that is stapled between abutting terminal sections of tissue and remains in position within the body and forms the staple line buttress seal." (Id.)

Synovis contends that its construction accurately captures the meaning of the term while keeping the term in context of the claims, which refer to a region "adapted to serve as the staple line buttress itself." Synovis asserts that Gore's proposed construction adds unnecessary language and unsupported limitations. In particular, Synovis asserts that Gore's construction would require that the entirety of the first region stay in the body and that the buttress material be positioned between abutting terminal sections of tissue.

Gore asserts that staple line buttress is the portion of the buttress material that is stapled between abutting terminal sections of tissue and remains within the body to form the staple line buttress seal. In support, Gore cites to the specification. (See '748 Patent c. 3, 11: 40-42 ("including a first region adapted to remain in position within the body in order to serve as the staple line buttress itself"); c. 4, 11: 53-58 ("a circumferential flat, disc-like portion adapted . . . to ultimately be positioned between the abutted tissue sections . . . to serve as a staple line buttress"); c. 5, 11: 37-41 ("The buttress materials comprise a generally planar circumferential exterior region . . . to be positioned between the abutting sections of tissue in order for form a seal therebetween.").) Gore asserts that Synovis' proposed construction is incorrect by stating that only a "portion" of the first region remains in the body and that the specification indicates that portions other than the first region may remain in the
body.

For the reasons discussed above with respect to the "staple line buttress seal between joined tissue sections" term, the Court does not construe the term "staple line buttress itself" to require that the portion of buttress material be "stapled between abutting terminal sections of tissue." Consistent with the ordinary meaning of the claim terms and the specification, the Court construes the term as "portion of the buttress material that is within the reinforced seal."

2. "staple line buttress seal between joined tissue sections"

Synovis contends that no construction is necessary, but if the Court decides to construe the term, the term should be construed as "a reinforced seal between two joined sections of tissue, having both tissue and buttress material." (Joint Statement at 6.) Gore, on the other hand, asserts that the Court should construe this term as "seal formed by buttress material positioned between abutting terminal sections of the first and second tissue portions." (Id.)

Gore contends that its proposed construction captures the notion of reinforcement inherent in the term "staple line buttress" and reflects the concept of a buttress seal, which Synovis maintains is necessarily composed of both buttress and tissue. Gore argues that its proposed construction is based upon the plain language of the term, making clear that the seal specifically includes buttress material that is positioned between abutting sections of tissue.

Both parties' constructions provide for a seal between two sections of tissue. The parties' dispute centers on where the buttress material and tissue are located after the seal is formed. Synovis asserts that the tissue ends up between the two sections of the buttress material. (Tr. at 66.) Gore maintains that the asserted claims require the buttress material to be between the abutting terminal portions of the first and second tissue portions.

Gore contends that the specification demonstrates that the buttress material ends up between portions of tissue. For example, Gore relies on a portion of the Detailed Description, which explains that in an embodiment, the staple cartridge buttress has "a circumferential flat disc-like portion (26) adapted to be positioned upon the open face (34) of the staple cartridge component (12), and to ultimately be positioned between the abutted tissue sections (and adjacent to the anvil buttress disc-like portion (32)) in order to serve as a staple line buttress." (748 Patent c. 4, 11: 54-65.) The specification further explains that ":[t]he buttress materials comprise a generally planar circumferential exterior region . . . to be positioned between the abutting sections of tissue in order to form a seal therebetween." (Id., c. 5, 11: 37-41). In addition, Gore points to the portions of the specification describing the staple cartridge component "being adapted to retain and position a terminal section of the first tissue portion," (id., c. 5, 11: 7-8), and the stapler anvil component as "adapted to retain and position a terminal section of the second tissue portion." (Id., c. 5, 11: 17-20.) Gore maintains that the specification describes the terminal sections of the tissue portions as being positioned directly on the cartridge and anvil and, further, that the buttress material is positioned between the abutting sections of tissue.

Synovis contends that Gore's construction would improperly exclude all embodiments in the '748 Patent and render the claims inoperable. Synovis asserts that the buttress material in the '748 Patent is always depicted as abutting the staple and anvil components. (748 Patent FIGS. 1-3.) In addition, Synovis asserts that the tissue is always shown over the buttress material. (Id., FIGS. 4a-d.) Synovis further asserts that the buttress seal is between the sections of tissue to be joined (for example two sections of intestine), and not between abutting terminal ends of that tissue.

Synovis asserts that the portions of the Detail Description (primarily Column 4 of the '748 Patent) cited by Gore in support of the notion that the buttress material is in between the tissue refer only to FIG. 2 of the '748 Patent and that FIG. 2 represents an embodiment of the buttress material before the tissue is involved. (Tr. at 67.) Synovis asserts that Column 4 of the '748 Patent therefore describes the orientation of the components prior to the tissue becoming involved. Synovis argues that the portion of the specification that refers to the overall process of creating a seal, including the process when the tissue is involved, demonstrates that the terminal ends of the tissue portions become sandwiched between the buttress material. For example, Synovis points to the language of Column 6 of the '748 Patent, which refers to Figures 4a-4d. Figures 4a-4d illustrate the process for creating a seam. (Id., c. 6, 11: 11-14) "FIG. 4 shows a cross-section view of the overall process of creating a reinforced stapled connection for tubular tissue in four steps, from top to bottom, using a preferred embodiment.
of this invention.). Figures 4a-4c all show that the buttress material lies on the open face of both the stapler and the anvil components and that the tissue being sealed ends up in between portions of buttress material. 13

13 Gore asserts that the Court should not rely on Figure 4 because 4d is incorrect. Gore asserts that Figure 4d must be inaccurate because it depicts buttress material being removed that is not near the joined tissue sections. The portion of buttress material being removed, however, is specifically labeled "severed material." (748 Patent c. 6, 11: 44.) That there is not a label for the remaining buttress material does not mean that there is none or that the "severed material" is meant to encompass all of the buttress material.

The language of the claim term "staple line buttress seal between joined tissue sections," provides that the seal is between joined tissue sections. This is consistent with the specification, which explains that buttress material along with joined tissue sections make up the seal. For example, the Abstract of the '748 Patent explains that "[t]he buttress material is retained and provides an improved seal between the joined tissue sections." The Summary of the Invention reads in part: "to provide a first region of buttress material as a staple line buttress seal retained between joined tissue sections." (748 Patent c. 2, 11: 48-51.) According to the claim language and the specification, it is the seal that remains between the joined tissue sections (i.e., two sections of intestine).

The Court next looks to the specification. It is evident that the language in Column 6 of the '748 Patent and the illustrations of Figure 4 are most relevant to the construction of this term. As detailed above, this section of the specification demonstrates an embodiment where the buttress material lies on the open face of both the stapler and the anvil and that the tissue being sealed ends up between portions of buttress material. Gore's proposed construction--"seal formed by buttress material positioned between abutting terminal sections of the first and second tissue portions"--is at odds with this embodiment. Gore's proposed construction would require not only that portions of buttress material lie on the open face of the stapler and anvil components, but also that the portions of buttress material touch each other when the seal is formed. If this configuration were required by the claim language, there would be no way for the tissue to be involved with the seal. Therefore, the Court declines to adopt Gore's proposed construction. Instead, the Court construes the term as "a reinforced seal between two sections of tissue."

1. "staple seam"

Synovis contends that no construction is necessary, but if the Court decides to construe "staple seam," it should be construed as "a seam between two joined sections of tissue." (Joint Statement at 9.) 12 Gore, on the other hand, asserts that the Court should construe this term as "seam formed when tissue sections are joined with staples." (Id.) The Court concludes that the term "staple seam" is properly construed as a "seam formed when tissue sections are joined with staples."

12 Synovis originally proposed using the word "joint" instead of "seam," but abandoned that proposal during the Markman hearing. (Tr. at 64.)

a. "Surgeon's operating station"
Claim 1 of the '688 Patent discloses a "surgeon's operating station at which a surgical procedure is performed with a plurality of self-contained independently and simultaneously operable pieces of surgical equipment." '688 Pat. col.19 ll.41-43. Claim 10 also discloses a "surgeon's operating station at which a surgical procedure is performed." Id. at col.20 ll.47-48. The Parties treat these terms as having the same meaning. The Court will construe the terms accordingly.

The critical difference between the Parties' proposed constructions is the location of the "surgeon's operating station" within the operating environment. KSEA argues that it is "one or more locations within an operating environment at which a member of the surgeon's team controls surgical equipment." (Joint Sub. for Technical Demonstration H'g & Claim Construction H'g (D.E. 90) Ex. A, Joint Submission Regarding Proposed Constructions ("Proposed Constructions Chart") 1.) S&N argues that it is the "place within the sterile area of the operating environment where the surgeon and the surgical instruments are located during a surgical procedure." (Id.)

The Court rejects KSEA's proposed construction. KSEA essentially argues that the "surgeon's operating station" is any part of the operating environment at which any member of the surgical team controls surgical equipment. This proposed construction ignores the language the applicant used. Although a surgical team may be comprised of surgeons and other individuals, the claim uses the word "surgeon" to modify "operating station," and KSEA has not demonstrated why "surgeon" would be understood by one skilled in the art to also include a nurse or surgical technician.

Further, Claim 1 expressly states that the control heads, which are used to control the surgical equipment, are "located at a non-sterile area remote from the surgeon's operating station." '688 Pat. col.19 ll.43-44 (emphasis added). This language forecloses the possibility that the "surgeon's operating station" is any place from which a member of the surgical team controls the surgical equipment.

The Court also rejects KSEA's argument that Claim 1 expressly defines the "surgeon's operating station" as an "endoscopic operating environment." This aspect of Claim 1 is difficult to construe, but the Court declines to read it as saying that an "endoscopic operating environment" is a "surgeon's operating station." Cf. Edward Lifesciences LLC v. Cook Inc., 582 F.3d 1322, 1330 (Fed. Cir. 2009) (noting that different words should typically be given different meanings). The best reading of this language is that an "endoscopic operation environment" includes both the "surgeon's operation station" and the surgical equipment and control heads located away from the "surgeon's operating environment." See '688 Pat. col.19 ll.39-48.

The Court also rejects KSEA's argument based on the claim's teaching that a surgical procedure is performed at the "surgeon's operating station" "with" surgical equipment. See '688 Pat. col.19 ll.40-41. This does not mean that the surgical equipment is necessarily located at the "surgeon's operating station." In context, the claim teaches that the surgical procedure is performed "with" surgical equipment in the sense that the surgical equipment drives the surgical instruments that are located at the "surgeon's operating station" and used on the patient. See id. at col.19 ll.42-48.

S&N's proposed construction comports with the claims' language. Claims 1 and 10 disclose that the surgical procedure is performed at the "surgeon's operating station," "with" surgical equipment. See '688 Pat. col.19 ll.40-41; id. at col.20 ll.48-49, and that the surgical instruments are located at the "surgeon's operating station," id. at col.19 ll.47-48; id. at col.20 ll.55-56. The natural reading of the patent is that the surgeon would be located where the surgical procedure is performed with surgical instruments.

The specification strongly supports the conclusion that the surgeon uses the surgical instruments to perform the surgical procedure within the sterile area.1 See '688 Pat. at 1 (showing the surgeon operating on the patient within the sterile area); id. at 2 (same); id. at col.1 ll.9-13 (describing how the system provides direct control from within the "sterile operating environment"); id. at col.4 ll.40-44 (describing how "sterile control located at the surgeon's operating station allow[s] the surgeon and assistant to make equipment adjustments without breaking sterile procedure").

--- Footnotes ---

1 Although the claims note where objects are not located in the sterile area, at least some of the time, the Court finds that in view of the whole patent this does not exclude objects from being within the sterile field where they are not expressly so designated.

--- End Footnotes ---

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KSEA contends that the "surgeon's operating station" cannot be located in the sterile area because the heads-up display ("HUD") is described as being located at the "surgical operating station," id. at col.4 ll.31-32, and is depicted as outside the sterile area in the diagrams, id. at 1-2. KSEA over-reads the significance of the HUD's placement outside the sterile area in the diagram. The diagram shows that the HUD is "at" the "surgeon's operating station" in the sense that the surgeon may easily observe the HUD from his position within the sterile field. See id. at 1-2; id. at col.4 ll.56-59 (describing how the surgeon may monitor the surgical equipment by viewing the HUD monitor).

KSEA also argues that construing the "surgeon's operating station" as being located within the sterile field ignores the specification's teaching that members of the surgical team, in addition to just the surgeon, may use the control panel located at the "surgeon's operation station." This argument fails because members of the surgical team who are properly scrubbed may clearly use the control panel without breaching the sterile nature of that field.

The Court construes "surgeon's operating station" as the "place within the sterile area of the operating environment where the surgeon and the surgical instruments are located during a surgical procedure."

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c. "Stationary"

The term "stationary" in step (1) is not explicitly defined in the specification, and both parties submit several pages debating its meaning. When the patentee does not choose to act as his own lexicographer in the specification, a claim term is to be given its "ordinary and customary meaning." Vitronics, 90 F.3d at 1582.

i. Dictionary Definition of "Stationary"

To determine the ordinary meaning of claim terms, the court may reference dictionaries. Tex. Digital, 308 F.3d at 1202. According to the Random House Dictionary of the English Language 1283 (College ed. 1968), "stationary" means: "1. standing still; not moving. 2. having a fixed position; not movable." Plaintiffs contend both the first and the second definitions apply, asserting that "stationary" means "not movable." Under this interpretation, "stationary" would describe any sort of permanent de/anti-icing fixture at an airport but would distinguish mobile units such as trucks in the Thornton-Trump patent. However, defendants argue only the first definition should apply, contending that "stationary" as "not moving" means fixed or with no moving parts. Under this narrower interpretation, the term "stationary" would only include fixed gantry systems and exclude permanent fixtures with moving parts, such as defendants' product.

When the ordinary meaning of a word comprises "two relevant alternatives," the term "may be construed to encompass both alternatives." Inverness Med. Switz. GmbH v. Warner Lambert Co., 309 F.3d 1373, 1379 (Fed. Cir. 2002); accord Tex. Digital, 308 F.3d at 1203; see also Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001) ("In addition, unless compelled to do otherwise, a court will give a claim term the full range of its ordinary meaning as understood by an artisan of ordinary skill."). Therefore, "stationary" as used in step (1) could comprise a fixed-location permanent installation with moving parts or without moving parts. However, before this interpretation is applied, the court must examine the intrinsic evidence to determine if it "clearly demonstrates" that only one of the definitions was intended. Inverness, 309 F.3d at 1379; see, e.g., Globetrotter Software, Inc. v. Elan Computer Group, Inc., 362 F.3d 1367, 1380 (Fed. Cir. 2004) (looking to intrinsic evidence to decide between two dictionary definitions for the claim term "prevent"); see also Renishaw, 158 F.3d at 1250 ("However, a common meaning, such as one expressed in a relevant dictionary, that flies in the face of the patent disclosure is undeserving of fealty.").

ii. "Stationary" in the Specification

When a term has multiple dictionary definitions, the court must examine the intrinsic evidence to decide which of the possible dictionary definitions apply. Tehrani v. Hamilton Med., Inc., 331 F.3d 1355, 1361 (Fed. Cir. 2003); accord Tex. Digital, 308 F.3d at 1203 (holding that "the intrinsic record must always be consulted to identify which of the different possible dictionary meanings of the claim terms in issue is most consistent with the use of the words by the inventor."); cf. Renishaw, 158 F.3d at 1249 (holding that when "a patent applicant has elected to be a lexicographer by providing an explicit definition in the specification for a claim term . . . the definition selected by the patent applicant controls."). The word
"stationary" appears in only one other place in the specification. In that instance, the term "stationary" is used to reference a boom with articulating arms in contrast to a "truck-mounted boom." '068 patent, col. 17, ll. 29-30. The example from the specification uses the word "stationary" to describe something with moving parts (similar to the articulating boom of defendants' apparatus), thus supporting plaintiffs' definition which allows for moving parts. See, e.g., Ex. 3 to Pls.' Opp'n (Dempsey Dep. at 15) (defendant's description of apparatus having articulating booms). In addition, contrasting the term "stationary" with the term "truck mounted" further supports plaintiffs' interpretation that a stationary apparatus is anything other than a mobile facility such as a de-icing truck. The only explicit reference to the term "stationary" in the specification supports a broad interpretation of the claim term.

11 Column 17, lines 26 through 30 of the '068 patent state:

Examples of such pumps (for the high pressure de-icing (and/or cleaning) operations) are the high-pressure centrifugal type pumps commonly utilized in the chemical industry with stationary and/or truck mounted booms with multiple-section articulating arms.

To support their interpretation of "stationary," defendants point out "more than 100 references" in the specification to the fact that the aircraft travels through the apparatus. 12 Defs.' Reply at 15-16. However, "references to a preferred embodiment, such as those often present in a specification, are not claim limitations." Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988), cited with approval in Inverness, 309 F.3d at 1379; accord Super Prods. Corp. v. D P Way Corp., 546 F.2d 748, 756 (7th Cir. 1976) ("While the language of the claim must be read in light of the specification and the file wrapper . . . the claim alone is the measure of the invention.") (footnotes omitted); see also 3M Innovative Props. Co. v. Avery Dennison Corp., 350 F.3d 1365, 1367 (Fed. Cir. 2003) (noting that "a patentee need not describe all embodiments of his invention"); Laitram Corp. v. NEC Corp., 163 F.3d 1342, 1347 (Fed. Cir. 1998) ("[A] court may not import limitations from the written description into the claims."); Electro Med. Sys., S.A. v. Cooper Life Scis., Inc., 34 F.3d 1048, 1054 (Fed. Cir. 1994) ("Although the specifications may well indicate that certain embodiments are preferred, particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments."). The specification describes one embodiment, a fixed gantry system, capable of performing the process described in claim 25. However, the disclosure of one embodiment does not import the limitations of that embodiment into the claim. See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 ("Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using 'words or expressions of manifest exclusion or restriction.'") (quoting Teleflex, 299 F.3d at 1327). Because the references in the specification pointed out by the defendants simply describe one particular embodiment, they do not limit claim 25 only to processes performed by fixed gantry systems.

12 Defendants also cite marketing materials that state Whisper Wash is a "drive-thru" apparatus. Defs.' Reply at 15-16. "In considering the claims of a patent, we are constrained to look at the claims in the patent and not the claims of advertising material designed for the purpose of selling a product." Reese v. Elkhart Welding & Boiler Works, Inc., 447 F.2d 517, 523 (7th Cir. 1971). Therefore, because the marketing materials are for advertising purposes, this court cannot consider them in construing the claim.

iii. Prosecution History Regarding "Stationary"

In addition to the claim language and specification, the court may examine the prosecution history, 13 which is "often of critical significance in determining the meaning of the claims." Vitronics, 90 F.3d at 1582. "Where the patentee in the course of his application in the patent office has, by amendment, cancelled or surrendered claims, those which are allowed are to be read in the light of those abandoned and an abandoned claim cannot be revived and restored to the patent by reading it by construction into the claims which are allowed." Schriber-Schroth Co. v. Cleveland Trust Co., 311 U.S. 211, 218, 85 L. Ed.
The file wrapper reveals that the added claim language "providing a stationary apparatus through which the aircraft moves, the apparatus including respective nozzle means" was added in an amendment directly before approval, at the same time as the "one pass" clause. Ex. 3 to Pls.' Mot. for Summ. J. on Non-Unenforceability ('068 File Wrapper at 210). Before the amendment, there was no apparatus requirement; therefore, the claim would have been construed to include processes effected by truck-mounted booms, fixed booms, fixed gantry systems or any effective apparatus. Defendants contend that in making the "stationary" amendment the patentee not only abandoned the truck-mounted means for effecting the process but that patentee also abandoned all fixed-installation articulating-boom means (including defendants' apparatus). However, there is nothing in the prosecution history to suggest that interpretation. In fact, examination of the prior art leads to the opposite conclusion.

"The prior art cited in the file wrapper gives clues as to what the claims do not cover." Autogiro, 384 F.2d at 399. The patent office cited the Thornton-Trump patent both times as the reason for rejecting claim 25 without the "stationary" language. Ex. 3 to Pls.' Mot. for Summ. J. on Non-Unenforceability ('068 File Wrapper at 163, 203). Thornton-Trump provides a preferred embodiment of its process claims as being performed by trucks. See Ex. 3 to Pls.' Mot. for Summ. J. on Non-Unenforceability at (Thornton-Trump patent, col. 2, ll. 61-64) ("It is contemplated that the operation be accomplished with a mobile vehicle. . ."). This suggests that the "stationary" language was added by patentee to avoid the prior art of Thornton-Trump and therefore only the use of trucks or other mobile vehicles for achieving the method was abandoned by the amendment. Compare id. (Thornton-Trump patent, col. 2, ll. 64-68) ("An example of such a [mobile vehicle] unit . . . comprises a truck having articulated booms. . . .") (emphasis added) with '068 patent, col. 7, l. 67 to col. 8, l. 1 ("The present invention defines a central location at an airport for de-icing and anti-icing an aircraft just prior to the flight of the aircraft.") (emphasis added). Because the prosecution history supports the broader interpretation of the claim term "stationary," the interpretation that encompasses both alternate definitions, this court must reject defendants' overly narrow interpretation. Therefore, the court concludes that the claim term "stationary apparatus" describes any fixed-location installation for de/anti-icing an aircraft, containing either articulating booms or a fixed gantry.

"Statue"

Ivoclar asks the Court to construe the claimed term "statue" consistent with the Yukiyo court's construction:

Statue means the positive, substantially entire version of the tooth formed by the investment material when formed within the impression. A synonym for statue is model or die.

Def. 56.1 Ex. 13. PSN believes that the term "statue" should have a modified construction from that provided by the Yukiyo court:

Statue means the positive, substantially entire version of the tooth having at least portions of three sides of the tooth formed by the investment material from the impression.

Def. 56.1 Ex. 14:

When construing a claim, "the context in which a term is used in the asserted claim can be highly instructive." Phillips, 415 F.3d at 1314. In claim 1 of the '530 Patent, the claim describes forming a statue "from said impression" of the tooth. '530
Patent, col. 6, ll. 40-42. It does not extend the definition to forming the statue "within the impression" as in the Yukiyo court's construction. Although the preferred embodiment describes a statue that is "cured and removed from the mold," there is nothing in the patent specification that suggests that the creation of the statue must be limited to that method. "From the impression," as explicitly stated in Claim 1, is sufficient to define the formation of the claimed "statue."

During the course of claims construction briefing, Ivoclar amended its proposed claim construction to remove the phrase "having at least three sides of the tooth" in order to conform to the Yukiyo court's construction that contained no such language. PSN proposes a modified version of Ivoclar's initial proposal by defining a statue as having "at least portions of three sides of the tooth." On the basis of the '530 Patent specification and McLaughlin's statements during the prosecution history, PSN's proposed language better defines "statue" than Ivoclar's revised proposal containing no such language. As Ivoclar itself noted in its reply brief, McLaughlin distinguished the '530 Patent from prior art by noting that his patent taught a "full statue of the tooth" rather than only a single surface and that "the present invention relies upon the use of a tooth statue which inherently involves the use of three sides of the tooth." Def. 56.1 Ex. 10 at 22; Def. Reply Mem. at 6. Because Ivoclar's evidence directly supports the construction proposed by PSN and the specification of the Patent comports with the construction, the Court accepts this portion of PSN's proposed construction.

PSN disputes the use of the terms "model" and "die" as synonyms for "statue" because they may create confusion due to their other uses in the dental veneer field. Pltf. Resp. at 7. While this may be the case for the word "die," which may have other meanings to those skilled in the art and may therefore cause confusion, the synonym "model" is used both in ordinary language as a synonym for statue, and in this case has been used by the inventor himself in the specification as a synonym for the claimed term "statue." See col. 3 ll. 45 ("A model or statue of the tooth or teeth is then produced from the mold."). "The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." Nystrom v. Trex Co., Inc., 424 F.3d 1136, 1142 (Fed. Cir. 2005) quoting Phillips, 415 F.3d at 1316. Since the term model assists a reader in understanding the use of the term "statue" in the context of dental work, that term is retained from the Yukiyo court's construction.

"Statue" means the positive, substantially entire version of the tooth, having at least portions of three sides of the tooth, formed by the investment material from the impression. A synonym for a statue is a model.

I. Background

Both the plaintiffs and New Holland manufacture and sell in the United States hay harvesting machines known as mechanical drive, center pivot mower conditioners. Plaintiffs began selling their machines in 1992. New Holland entered the market in the fall of 1996. The plaintiffs' machine is manufactured and sold pursuant to the '859 patent.

Of primary importance in this case is a new feature the '859 patent added to the prior art of hay harvesting machines. This new feature was a "steering structure" interposed between the directional pulling mechanism (called the "tongue") and the cutting-power transfer mechanism (called the "gearbox") to transmit the swinging motion of the tongue to the gearbox. The parties only dispute in this Markman proceeding is the meaning and scope of this "steering structure" as disclosed in claims 1 and 10 of the '859 patent.

Claim 1 of the '859 patent is as follows:

[We claim,] in a pull-type crop harvesting machine, the improvement comprising:

a mobile frame;

a pull-tongue pivotally coupled with the frame for horizontal adjusting movement about a first upright axis between a number of angular positions relative to the path of travel of the machine for varying the lateral position of the machine relative to a towing vehicle;

a harvesting header supported by the frame in a position for performing harvesting operations on a crop as the machine
is towed across a field,

said header having driveable operating components associated therewith;

a mechanical drive line extending along and rotatably supported by the tongue for supplying driving power to said operating components in said angular positions of the tongue;

a junction box on the header having an input shaft and an output shaft rotatably supported by the box and operably intercoupled in fixed angular relation to one another within the box,

said input shaft being operably connected with said drive line for receiving driving power therefrom and said output shaft being operably connected to said operating components for driving the same,

said box being pivotally mounted on the header for swinging movement about a second upright axis spaced horizontally from the first axis; and

steering structure connected between the junction box and the tongue for causing the junction box to swing responsively when the latter is pivoted about said first axis between its various angular positions.

(emphasis added). Claim 10 of the '859 patent is as follows:

In a pull type harvesting machine as claimed in [claims 1-9],

said steering structure including telescoping linkage having a front pivotal connection with the tongue at a point which is at least approximately equidistant from said opposite ends of the telescopic section.

The defendants contend that the proper construction of the "steering structure connected between the junction box and the tongue" clause of claim 1 is as follows:

a direct fastening of a steering structure to the tongue at one end and the pivoting gearbox housing or extension thereof at the other end, such as by bolting, which permits some relative movement, such as a telescoping action, to occur between those two connection points as the tongue is swung laterally.

The plaintiffs disagree. The plaintiffs believe that the proper construction of the steering structure clause is as follows:

a mechanical steering structure separate from the drive line that begins at the tongue and ends at the gearbox and that transmits the swinging motion of the tongue to the gearbox during swinging of the tongue.

II. Discussion

When construing claims in a patent, the court must focus on how the claim would be interpreted by one of ordinary skill in the art at the time the patent was issued. Markman, 52 F.3d at 986. The court must look first to the claims, the specification, and the prosecution history of the patent. Markman, 52 F.3d at 979. Referring to claims in a patent may assist the court in determining the intended meaning of a disputed claim, but the court may not read limitations from other claims into an independent claim. See Environmental Designs, Ltd. v. Union Oil, Inc., 713 F.2d 693, 699 (Fed. Cir. 1983); Kustom Signals, Inc. v. Applied Concepts, Inc., 995 F. Supp. 1229, 1234, 1998 U.S. Dist. LEXIS 2695, at *12, 1998 WL 94903, at *4 (D. Kan. 1998). Claims must be interpreted in light of the patent specification, of which they are a part. Markman, 52 F.3d at 979. The specification contains a written description of the invention and includes a best mode or preferred embodiment of the invention. See Environmental Designs, Ltd. v. Union Oil, Inc., 713 F.2d 693, 699 (Fed. Cir. 1983); Kustom Signals, Inc. v. Applied Concepts, Inc., 995 F. Supp. 1229, 1234, 1998 U.S. Dist. LEXIS 2695, at *12, 1998 WL 94903, at *4 (D. Kan. 1998). Claims must be interpreted in light of the patent specification, of which they are a part. Markman, 52 F.3d at 979. The specification contains a written description of the invention and includes a best mode or preferred embodiment of the invention. Kustom Signals, Inc., 995 F. Supp. at 1231, 1998 U.S. Dist. LEXIS 2695, at *3, 1998 WL 94903, at *5 (citing Markman, 52 F.3d at 979). Not everything expressed in the specification must be read into the claims, however. Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989) ("Limitations appearing in the specification will not [normally] be read into claims . . . interpreting what is meant by a word in a claim is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.") (citation and internal quotation marks omitted). Thus, the specification normally identifies only the best mode of practicing an invention, not the scope of the invention. See Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1276 (Fed. Cir. 1995); Kustom Signals, Inc., 995 F. Supp. at 1231,
1998 WL 94903, at *5. The court should also consider, within its proper context, the patent's prosecution history. Markman, 52 F.3d at 980 ("Although the prosecution history can and should be used to understand the language used in the claims, it too cannot enlarge, diminish, or vary the limitations in the claims.") (citations and internal quotation marks omitted).

If necessary, the court may also, in its discretion, consider extrinsic evidence such as expert and inventor testimony, dictionaries, and learned treatises. Markman, 52 F.3d at 980. Extrinsic evidence, however, "is to be used for the court's understanding of the patent, not for the purpose of varying or contradicting the terms of the claims." Id. at 981. Once the court arrives at an understanding of the claim language, the court must pronounce the meaning of that language as a matter of law. Id.

A. Claim 1


Congress has allowed patentees the ability to express their claims in functional, rather than structural, language, but the exercise of that ability comes at a price. "An element in a claim for a combination may be expressed as a means or step for performing a specified function, without the recital of structure, material or acts in support thereof; and such claim shall be construed to cover the corresponding structure, materials, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112 P 6 (1994) (emphasis added) (sometimes referred to as the "means-plus-function" formulation). Defendant contends that claim 1 of the '859 patent falls within the reach of section 112(6). Plaintiffs contend claim 1 does not fall within the statute's reach. If defendant is correct, the court must "limit the breadth of [the] claim language by restricting its scope to the structure disclosed in the specification and equivalents thereof." Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1582 (Fed. Cir. 1996).

Ordinarily, the question whether a claim element triggers section 112(6) is not difficult. Id. "Claim drafters conventionally use the preface 'means for' (or 'step for') when they intend to invoke section 112(6), and there is therefore seldom any confusion about whether section 112(6) applies to a particular element." Id. It would be improper to conclude, however, that section 112(6) is triggered only if the claim uses the word "means." Id. at 1584; Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed. Cir. 1996), cert. denied, 139 L. Ed. 2d 20, 118 S. Ct. 56 (1997). Nonetheless,

the use of the term 'means' has come to be so closely associated with 'means-plus-function' claiming that it is fair to say that the use of the term 'means' (particularly as used in the phrase 'means for') generally invokes section 112(6) and that the use of a different formulation generally does not.

Greenberg, 91 F.3d at 1584.

Under section 112(6), patentees are "afforded the option" of using the means-plus-function format. Id. The question in discerning whether section 112(6) applies, then, is "whether, in the selection of claim language, the patentee must be taken to have exercised that option." Id. The court must decide this question on an element-by-element basis, based upon the patent and the prosecution history. Cole, 102 F.3d at 531. A claim falls outside the ambit of section 112(6) if it recites a "definite structure which performs the described function." Id. Thus, the mere fact that a particular mechanism or structure is defined in functional terms "is not sufficient to convert a claim element containing that term into a 'means for performing a specified function' within the meaning of section 112(6)." Greenberg, 91 F.3d at 1583.

The court, after careful consideration, has determined that the steering structure clause of claim 1 does not fall within the meaning of section 112(6). The clause "steering structure connected between the junction box and the tongue for causing the junction box to swing responsively when the latter is pivoted about said first axis . . ." clearly has some structural language and some functional language. Nonetheless, like the claim element at issue in Greenberg,

the element in question did not use conventional "means-plus-function" language, no other element of the claim was in means-plus-function form, and nothing cited to [the court] from the prosecution history or elsewhere suggests that the patentee intended to claim in that fashion. There is therefore no reason to read the claim language in this case as reciting a means for performing a function, within the meaning of section 112(6).

Id. at 1584.
The steering structure clause at issue here discloses structure sufficient to avoid the means-plus-function limitation. "Steering structure," as used in claim 1, is used in the same manner as the other structural components of claim 1. Thus, the claim would give one skilled in the art no reason to believe that a "steering structure" is any less a "definite structure," see Cole, 102 F.3d at 531, than a "mobile frame," "pull tongue," "harvesting header," "mechanical drive line," "junction box," "input shaft," or "output shaft." Moreover, the language following "steering structure," when read in conjunction with the rest of the claim 1 language, provides further detail sufficient to enable one skilled in the art to understand the meaning of the term. The steering structure disclosed in claim 1 is not just an abstract means for performing a specified function, it is a specific device "connected between the junction box and the tongue." See Cole, 102 F.3d at 531 ("The claim describes not only the structure . . . but also its location . . . . An element with such a detailed recitation of its structure, as opposed to its function, cannot meet the requirements of the statute."). The plaintiffs have provided the court with an extensive list of patents using the term "steering structure" as a noun (not a means for accomplishing a function) in the mechanical arts. This list further convinces the court that an artisan of ordinary skill would understand the disputed term to have structure sufficient to avoid application of section 112(6). See Greenberg, 91 F.3d at 1583 ("What is important is not simply that [the element at issue] is defined in terms of what it does, but that the term, as the name for a structure, has a reasonably well understood meaning in the art.")

2 Defendant filed a motion in limine seeking to exclude these patents as hearsay, as not properly authenticated, as improper extrinsic evidence, and as untimely presented. The court reserved ruling on this motion but now rejects these arguments and denies defendant's motion. The court rejects defendant's hearsay argument because the documents offered are not hearsay. See Fed. R. Evid. 801(c) (hearsay is a statement offered to prove the truth of the matter asserted). Plaintiff offers these documents not to prove the truth of any of the matters which they assert, but rather to prove that various patents use the term steering structure as a noun in a variety of contexts. In any event, even if the patents were hearsay, they would be subject to the public records exception to the hearsay rule. See Fed. R. Evid. 803(8)(B) (providing hearsay exception for records of public agencies setting forth matters observed pursuant to duty imposed by law as to which there is a duty to report).

The court rejects defendant's authentication argument because the court has opted to take judicial notice of the contents of the proffered patents. See Fed. R. Evid. 201(b)(2), (c) (court has discretion to take judicial notice of facts that are capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned); Thomas & Betts Corp v. Panduit Corp., 65 F.3d 654, 664 n.12 (7th Cir. 1995) (taking judicial notice of patent in a trade dress infringement case); Vitek Sys., Inc. v. Abbott Labs., 675 F.2d 190, 192 n.4 (8th Cir. 1982) (court may take judicial notice of Patent & Trademark Office Documents); Coinstar, Inc. v. Coinbank Automated Sys, Inc., 998 F. Supp. 1109, 1998 WL 111648, at *3 (N.D. Cal. 1998) (taking judicial notice of patent in a patent infringement case). The contents of a patent are capable of accurate and ready determination by resort to widely used legal online research services.

The court rejects defendant's relevancy argument because it is within the court's discretion to hear extrinsic evidence "to understand the language used in the claims." Markman, 52 F.3d at 980 (citations omitted).

The court rejects defendant's timeliness argument because the defendant was not prejudiced by the plaintiffs' ability to present evidence of other patents. There is no evidence that plaintiff deliberately withheld the contents of these patents until such time as the defendants were unable to reply. Plaintiff presented the patents in direct response to defendant's argument that the term steering structure was merely a recitation of an indefinite steering means by which various functions are performed. Defendant had every opportunity to request an opportunity to reply to plaintiff's response. Defendant did not do so. Moreover, the existence of these patents could not have been a surprise to the defendant. Anyone, including the court, has access to these patents through widely used legal online research services. To the extent defendant's motion in limine seeks to exclude other evidence proffered by plaintiff, the motion is also denied. The court has not considered this evidence. Accordingly, there is no need to exclude it.

Defendant argues that the prosecution history reveals that the Patent and Trademark Office ("PTO") must have interpreted the steering structure clause in claim 1 as a means-plus-function clause. This argument is without merit because the PTO did not begin interpreting claims under section 112(6) until February 14, 1994. See In re Donaldson, 16 F.3d 1189, 1193-94
The court believes that a person of ordinary skill in the art of agricultural engineering would understand the "steering structure" clause in claim 1 to have a plain meaning in light of the claims in the '859 patent, the '859 specification, and the '859 prosecution history. The court believes the clause "steering structure connected between the junction box and the tongue for causing the junction box to swing responsively when the latter is pivoted about said first axis between its various angular positions" means "a steering structure separate from the drive line that operatively interacts with the tongue at one end and operatively interacts with the junction box at the other end and that transmits the swinging motion of the tongue to the junction box during swinging of the tongue." The steering structure must be "separate from the drive line" because it is mentioned separately from the drive line clause in claim 1, thus signifying that a person of ordinary skill in the art would consider the drive line and the steering structure to be two separate items. The steering structure must "operatively interact with the tongue at one end and operatively interact with the junction box at the other end" because the claim reveals that the steering structure must be "connected between the junction box and the tongue." The steering structure must "transmit the swinging motion of the tongue to the junction box during swinging of the tongue" because the claim reveals that the steering structure must "cause[] the junction box to swing responsively... when the [tongue] is pivoted."

a. Construction in Light of Claims

Defendant advocates a construction different from the court's. 3 Defendant argues that the clause "connected between the junction box and the tongue" contemplates a fixed attachment of the steering structure at each terminus, such as by a bolt or a pivot pin. Defendant argues first that the term "connected" connotes a junction that is "joined or fastened together." See American Heritage Dictionary of the English Language, (3d ed. 1992); see also Webster's Third International Dictionary, 480 (1986) ("joined or linked together"); Kustom Signals, Inc., 995 F. Supp. 1229, 1998 U.S. Dist. LEXIS 2695, at *1, 1998 WL 94903, at * (term should be given its ordinary and accustomed meaning when there is no indication in the specification that the inventor intended otherwise) (citing Hoechst Celanese Corp. v. BP Chems, Ltd., 78 F.3d 1575, 1578 (Fed. Cir. 1996)). Two objects joined or fastened together, argues the defendant, cannot move freely relative to one another. Thus, the connected between clause in claim 1 must contemplate a fixed attachment not allowing for any relative movement.

3 The court's construction of claim 1 is nearly identical to the plaintiffs' proposed construction.

The court rejects defendant's argument because the language of the claim is not as narrow as defendant advocates. The court agrees with the defendant that two objects that are connected, under the ordinary meaning of that term, cannot move entirely freely relative to one another. The court is not convinced, however, that an artisan of ordinary skill would understand the term connected to require a rigid attachment that does not allow for relative motion. The claim itself clearly contemplates some pivotal movement between the tongue and the steering structure. 4 The definition of connected as "joined or fastened together," then, surely cannot preclude all relative movement. Moreover, the modification of the term connected by the term "between" supports the court's interpretation. For example, an object that is "connected between" two other objects is likely to be joined to the other objects in a manner less rigid than an object that is "connected to" the other objects. See Webster's Third International Dictionary, 209 (1986) (between defined as, inter alia, "filling the space limited by two objects"). This interpretation is further supported by other claims in the '859 patent. Dependent claim 11 of the '859 patent sets forth specific details concerning the connections at each end of the steering structure. The claim describes "a front connection of the [steering structure telescoping] linkage including a universal pivot." The difference in specificity between the description of the steering structure in claims 1 and 11 supports a broad reading of claim 1 and a narrow reading of claim 11. See Transmatic, Inc. v. Gulton Indus., 53 F.3d 1270, 1277-78 (Fed. Cir. 1995) (district court erred when it read claim limitations from narrow claims onto broader claims). The Federal Circuit has acknowledged that, in a proper case, the term "connected to" can be construed broadly enough to encompass two distant elements which are connected by intervening elements. See Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 93 F.3d 1572, 1578 (Fed. Cir. 1996). This court's
interpretation of the '859 patent does not stretch the concept of connection nearly so far. The court believes that the term connected, properly construed in claim 1 of the '859 patent, means that the tongue and the steering structure "operatively interact," see id. (noting that the term "connection" had no meaning, in the context of the patent there at issue, unless the two connected objects "operatively interacted with one another), with one another allowing for some relative movement but not allowing for complete freedom of movement.

4 Defendant does not argue that the claim should be construed to allow no pivotal movement between the tongue and the steering structure.

b. Construction in Light of Specification

Defendant next contends that the specification of the '859 patent, which discloses a steering structure linked to the tongue by a bolted, pivotal connection, compels the court to construe the steering structure clause in claim 1 to require such a connection. The court disagrees. Although claims must be read in light of the patent specification, see Markman, 52 F.3d at 979, limitations appearing in the specification may not be read into claims. Intervet Am., Inc., 887 F.2d at 1053. Unless the means plus function limitation of section 112 paragraph 6 applies, the specification identifies only the best mode of practicing an invention, not the scope of the invention. See 35 U.S.C. § 112 P 6; Greenberg, 91 F.3d at 1582; Transmatic, 53 F.3d at 1276. It is the claims which measure the scope of the invention. See SRI Int'l v. Matsushita Elec. Corp., 775 F.2d 1107, 1121 (Fed. Cir. 1985).

The court rejects defendant's argument because it seeks a construction that would improperly read limitations in the specification onto claim 1. Even though the preferred embodiment of the '859 patent is a machine in which the steering structure is connected to the tongue by a bolted, pivotal connection, the language of claim 1 is broader than this embodiment. No usage of the terms connected or connected between in the specification suggests otherwise, other than in the context of explaining the preferred embodiment. See E.I. Du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir. 1988) (using specification to interpret what the patentee meant by a word or phrase in a claim is "not to be confused with adding an extraneous limitation appearing in the specification, which is improper. By 'extraneous,' we mean a limitation read into a claim from the specification wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim. 'Where a specification does not require a limitation, that limitation should not be read from the specification into the claims."') (citations omitted).

Far from supporting defendant's proposed interpretation of the steering structure clause, the court believes the '859 patent specification supports the court's interpretation. The second sentence of the '859 patent abstract describes a telescoping steering linkage "between the swing tongue and the gearbox" without reference to any particular connection. This reference serves further to convince the court that the steering structure clause of claim 1 does not require a bolted, pivotal connection, as urged by the defendants.

c. Construction in Light of Prosecution History

Defendant contends that the prosecution history of the '859 patent supports a construction of the steering structure clause to require a bolted, pivotal connection. Defendant points to U.S. Patent No. 4,858,418 ("'418 patent"), which was part of the '859 patent's prosecution history. Defendant argues that the '418 patent anticipated claim 1 of the '859 patent if the '859 patent's steering structure clause is not construed to require a bolted, pivotal connection between the steering structure and the tongue. If defendant is correct that the '418 patent anticipated claim 1 as the court has construed it, then the court's construction would be incorrect because the patent examiner could not have approved the '859 patent under such construction. See Lockwood v. American Airlines, Inc., 107 F.3d 1565, 1573 (Fed. Cir. 1997) ("Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers.").

The court rejects defendant's argument concerning the '418 patent because it is convinced that the '418 patent did not anticipate claim 1. The '418 patent discloses a hay harvesting machine in which the drive line and the steering mechanism are one and the same. This concept does not anticipate claim 1 of the '859 patent because claim 1 discloses a steering
structure separate from the drive line.

d. Construction in Light of Expert Testimony

Finally, defendant relies on expert testimony to support its proposed construction. Defendant argues that the testimony of its expert, Mr. Willis R. Campbell, supports a finding that a person of ordinary skill in the art would understand the claim language to require a fixed, bolted connection. Defendant also argues that the Niemeyer RO 301-GK machine, which defendant alleges is prior art to the '859 patent, anticipates claim 1 of the '859 patent. The court rejects these arguments.

In construing claims, the court must look to the language of the claims, the specification, and the prosecution history. Markman, 52 F.3d at 979. Extrinsic evidence, while appropriate for use in the court's understanding of the terms of a patent, may not be used for the purpose of varying or contradicting the terms of the claims. Id. at 981; Bell & Howell Document Management Prods. Co. v. Altek Sys., 132 F.3d 701, 705-06 (Fed. Cir. 1997) ("When the intrinsic evidence is unambiguous, it is improper for the court to rely on extrinsic evidence such as expert testimony for purposes of claim construction."). If the court wishes to refer to extrinsic evidence as a help in understanding technology and terminology, documentary evidence, particularly prior art, technical treatises, and dictionaries, is preferred over expert testimony. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 n.6 (Fed. Cir. 1996).

The court rejects Mr. Campbell's testimony concerning how an artisan of ordinary skill would construe claim 1 of the '859 patent because it does not believe there is any genuine ambiguity in the text of claim 1. See Vitronics Corp., 90 F.3d at 1584 ("Only if there were still some genuine ambiguity in the claims, after construction of all available intrinsic evidence, should the trial court . . . resort to . . . expert testimony."). Mr. Campbell's testimony, although it generally was helpful to the court's concrete understanding of the workings of the plaintiffs' machine and the disputes surrounding claim 1 of the patent, is simply inconsistent with the court's reading of the words of claim 1, the patent specification, and the little prosecution history with which the court has been provided. See Bell & Howell Document Management Prods. Co., 132 F.3d at 706 ("Patents should be interpreted on the basis of their intrinsic record, not on the testimony of such after-the-fact 'experts' that played no part in the creation and prosecution of the patent . . . . Any expert testimony that is inconsistent with unambiguous intrinsic evidence should be accorded no weight."). Accordingly, the court gives no weight to Mr. Campbell's testimony concerning how an ordinary artisan would construe claim 1.

Similarly, the court rejects Mr. Campbell's testimony concerning the Niemeyer machine. Evidence related to the Niemeyer machine, which was not part of the patent's prosecution history, is exactly the kind of extrinsic evidence the Federal Circuit has prohibited the court from considering because the defendant's evidence (consisting primarily of expert testimony) and arguments related to the machine are "for the purpose of varying . . . the terms of the claims." Id. Defendant has offered this evidence not in an attempt to assist the court in understanding how an artisan of ordinary skill would interpret the disputed claims, see Markman, 52 F.3d at 981 (citing Advanced Cardiovascular Sys., Inc. v. Scimed Life Sys., Inc., 887 F.2d 1070, 1076 (Fed. Cir. 1989) (Newman, J., dissenting)), but rather in an attempt to convince the court that the words of claim 1 mean something other than their plain language would dictate. In any event, there are factual disputes concerning whether the Niemeyer machine is prior art or anticipatory at all. Cf. In re Schreiber, 128 F.3d 1473, 1477 (Fed. Cir. 1998) ("The question whether a claim limitation is inherent in a prior art reference is a factual issue."). Accordingly, the court exercises its discretion to reject the evidence and arguments concerning the Niemeyer machine. See Markman, 52 F.3d at 981 (citing Seattle Box Co. v. Industrial Crating & Packaging, Inc., 731 F.2d 818, 826 (Fed. Cir. 1984) ("A trial judge has sole discretion to decide whether or not [it] needs, or even just desires, an expert's assistance to understand a patent. We will not disturb that discretionary decision except in the clearest case.").

5 Defendant's arguments that the Niemeyer machine is anticipatory rest largely on ex parte measurements taken by Mr. Campbell. Mr. Campbell's testimony in this regard is subject to "the established doctrine that evidence of experiments conducted by an interested party, in the absence of his adversary, is always received with suspicion and given only negligible probative value." In re Newman, 782 F.2d 971, 974 (Fed. Cir. 1986) (citation omitted).

6 Plaintiff moved to strike the testimony of Mr. Campbell and certain other evidence related to the Niemeyer machine. The court denies this motion but, as set forth above, has not credited the evidence.
Claim construction is a question of law that we review de novo. Vitronics Corp v. Conception, Inc., 90 F.3d 1576, 1578 (Fed. Cir. 1996). We construe claim language in accordance with its ordinary meaning, as defined by a person having ordinary skill in the art. See Phillips v. AWH Corp., 415 F.3d 1303, 1311-19 (Fed. Cir. 2005) (en banc). This inquiry is informed by the context of the entire patent, including the specification and the other claims, and, where relevant, the prosecution history. Id. The trial court construed "stent" as "a device implanted to maintain the patency of a vessel." Claim Construction Order, slip op. at 2. Medtronic argues that it erred by improperly incorporating a functional limitation into the construction, i.e., maintaining patency of a vessel. We disagree. The invention is described as an "endovascular support device." E.g., '331 patent, col. 3, l. 21 (emphasis added). In addition, the specification explicitly states that stents are devices "for mechanically keeping the affected vessel open." Id. at col. 2, ll. 17-18. Because the trial court's claim construction is consistent with the specification and the ordinary meaning of the term "stent," we find it to be correct.

1. "Stent." Consistent with the ordinary meaning, 1 the independent asserted claims, 2 the written description 3 and the background of the art, 4 the court construes "stent" to mean "a device implanted to maintain the patency of a vessel." 5


2 Claim 1, '331 patent, col. 7, l. 1; claim 1, '278 patent, col. 6, ll. 55-56; claim 1, '053 patent, col. 6, l. 41; claim 8, '053 patent, col. 7, l. 9; claim 16, '053 patent, col. 7, l. 46; claim 24, '053 patent, col. 8, l. 14; claim 27, '053 patent, col. 8, l. 37.

3 '331 patent, col. 4, ll. 29-30; '278 patent, col. 4, ll. 24-25; '053 patent, col. 4, ll. 22-23.

4 '331 patent, col. 2, ll. 16-22; '278 patent, col. 2, ll. 16-22; '053 patent, col. 2, ll. 18-24.

5 Defendants argue that "stent" should be limited to a stand alone device, but the intrinsic evidence does not support such a construction. The written description clearly indicates that "multiple stents may be used in the treatment of a single lesion." ('331 patent, col. 6, ll. 26-31) Medtronic did not disclaim multiple stents during the prosecution of the '331 patent because its arguments were directed at connections between parts of the stent and not at the use of multiple stents to treat a single lesion. (D.I. 240 at 101, 151, 226) Nevertheless, even when used in multiples, each stent must be a functional stent.
6. "Stent"

The term "stent" is used in both the '141 Patent and each of the Wiktor Patents. Medtronic argues for a construction of this term that would be applied uniformly to each of the patents. Gore contends that the term "stent" in the Jervis '141 Patent should be construed differently from the term "stent" in the Wiktor Patents. The Court concurs with Gore that the terms have different meanings in the '141 Patent and the Wiktor Patents. The Court, however, is not persuaded by many of the limitations Gore seeks to include in the construction of the term.

a. The '141 Patent.

Gore argues that the term "stent" in the '141 Patent means "a wire, typically in the shape of a tubular coil, used to keep a body vessel open." To the extent Gore is seeking a construction that includes a reference to the material from which the stent is made, the claims expressly note that the stent is composed of a memory alloy or a shape memory alloy. (See '141 Patent, 11:22-23 ("The device of claim 1 wherein the memory alloy element is a stent."); id., col. 11:32-36 ("… the stent comprising a shape memory alloy …").) Furthermore, independent claim 18 specifically claims a "wire stent," and dependent claim 22 specifically claims "[t]he device of claim 1, 11, 15 or 18 wherein the stent is a coil stent. (Id., 13:22, 14:22-23 (emphasis added).)

As previously noted, the doctrine of claim differentiation recognizes "that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope." Andersen Corp., 474 F.3d at 1369 (quoting Karlin Tech. Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-72 (Fed. Cir. 1999)); see also Acumed LLC v. Stryker Corp., 483 F.3d 800, 806 (Fed. Cir. 2007) (quoting Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004)) ("[T]he presence of a dependent claim that adds a particular limitation raises a presumption that the limitation in question is not found in the independent claim.") The presumption of claim differentiation "is especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim, and one party is urging that the limitation in the dependent claim should be read into the independent claim." SunRace Roots Enter. Co. v. SRAM Corp., 336 F.3d 1298, 1303 (Fed. Cir. 2003). The Court has considered Gore's arguments but finds that the specification and prosecution history submitted do not overcome the presumption that the dependent claims differ in scope from the independent claims.

Accordingly, the Court construes the term "stent," as used in the '141 Patent, to mean: "a supporting device."

b. The Wiktor Patents.

With respect to the Wiktor Patents, Gore argues that the term "stent," should be construed to mean "a bare low memory metal wire stent without any attached fabric or graft material that would be obstructive to any supportive vessels." Gore relies on language in the specification that refers to "[t]he stent of this invention is characterized by the low memory level of the relatively easily deformable metal used for the wire." ('062 Patent, 2:51-54.)

Medtronic again relies on the principles of claim differentiation in support of its proposed construction. For example, Medtronic notes that dependent claim 2 of the '828 Patent claims "[t]he intravascular stent of claim 1, wherein said helically coiled wire is a low memory metal." (Bianrosa Decl., Ex. 7 (828 Patent, 7:53-54); see also id., 8:57-59.) The "low memory metal" limitation is the only meaningful difference between that claim and independent claim 1 of the '828 Patent. It also is the only meaningful difference between independent claim 14 and dependent claim 17 of the '062 Patent. Thus, the presumption of claim differentiation is especially strong. SunRace Roots, 336 F.3d at 1303.

Gore also relies on cases such as Honeywell Int'l Inc. v. ITT Indus., Inc., 452 F.3d 1312 (Fed. Cir. 2006), Inpro II Licensing
Accordingly, the Court construes the term "stent," as used in the Wiktor Patents to mean: "a supporting device, without any attached fabric or graft material."
ORDER ON MOTION TO RECONSIDER CLAIM CONSTRUCTION OF "STENT"

INTRODUCTION

This matter comes before the Court upon consideration of the motion for reconsideration filed by Plaintiffs, Medtronic, Inc., Medtronic, U.S.A., Inc., and Medtronic Vascular, Inc. (collectively "Medtronic"). The matter is fully briefed, and the Court finds the matter suitable for disposition without oral argument. The Court HEREBY GRANTS Medtronic's motion for reconsideration.

Also before the Court is Medtronic's request for leave to file the Expert Declaration of Dr. Dimitris Lagoudas in support of its motion for reconsideration, which responds further to the Cragg article that fueled, in part, Medtronic's request for reconsideration. The Court has not considered the Cragg article to which the declaration responds in reconsidering the construction of the term "stent." Accordingly, the Court DENIES AS MOOT this latter motion.

DISCUSSION

1

Footnotes

1 The Court shall not repeat the standards applicable to claim construction, which are set forth in full in its Order construing the claims, and which have been applied in this Order. (See Claim Construction Order at 4:4-7:5.)

On October 19, 2007, this Court issued its Claim Construction Order. In that Order, the Court construed the term "stent," as it is used in U.S. Patent Nos. 4,886,062 ("the '062 Patent"), 6,656,219 ("the '219 Patent"), and 6,923,828 ("the '828 Patent") (collectively, "the Wiktor Patents") to mean: a supporting device, without any attached fabric or graft material. (Docket No. 91.)

On October 29, 2007, Medtronic filed a motion for clarification of the Court's construction of this term to determine if the Court had intended an "open-ended" or a "closed-ended" construction. (Docket No. 93.) On October 30, 2007, the Court clarified that, in Medtronic's terms, it intended a "closed-ended" construction, and granted Medtronic leave to file the instant motion addressing whether the Court's construction was correct or whether the term stent should be construed to mean "a supporting device."

Having considered the parties' arguments, relevant legal authority, and the record in this case, the Court concludes that its prior construction was incorrect and GRANTS Medtronic's motion. When the term stent is used in the preamble of the claims, it is followed by the open-ended transitional term "comprising." This term supports Medtronic's position that the claims may incorporate additional, unrecited elements. See, e.g., CollegeNet, Inc. v. Apply Yourself, Inc., 418 F.3d 1225, 1235 (Fed. Cir. 2005); Vehicular Techs. Corp. v. Titan Wheel Int'l, Inc., 212 F.3d 1377, 1383-84 (Fed. Cir. 2004) ("A drafter uses the term 'comprising' to mean 'I claim at least what follows and potentially more."). Moreover, upon further review of the claims and the specification, the Court cannot say Wiktor clearly disavowed or disclaimed the broad construction of "stent" that Medtronic seeks. Accordingly, the Court cannot say that the term "stent" should be limited to a bare stent, reconsideres and reverses its previous construction, and concludes that the term "stent" as used in the Wiktor Patents should be construed to mean "a supporting device."

GO BACK

(1) "Stent." A device, made of a body-compatible material, used to widen a blood vessel or other body opening (also called a "lumen"), and to maintain the resultant size of the blood vessel or lumen.
d. "stent-deployment catheter"

The term "stent-deployment catheter" appears in claims 1, 2, and 4. ev3 proposes that this term be construed as "a catheter for supporting and delivering a stent. The catheter may or may not include a balloon and the catheter may or may not include a stent." Boston Scientific has not proposed an alternative construction. There is no intrinsic evidence supporting the second part of ev3's proposed construction. The Court therefore construes "stent-deployment catheter" as "a catheter for supporting and delivering a stent." 3

3 This construction also applies to the term "stent-deployment catheter" in the '987 Patent.

3. "Stent member." Consistent with claim 1 of the '382 patent and the written description, the court construes "stent member" to mean "a stent."

10 '382 patent, col. 6, ll. 44-57.
11 See supra note 9.
(Fed. Cir. 1999). Essentially the dispute revolves around whether the claimed "step section" can be limited to the particular three-dimensional depiction shown as a preferred embodiment. CTS, of course, says it is not and that the common and ordinary meaning of step includes a planar, i.e., two-dimensional configuration, as well as three-dimensional configuration, because the stated purpose of the step section, namely force concentration, can be achieved by either configuration. Indeed, evidence that a "step section" can be a planar or a three-dimensional offset according to the ordinary meaning of the word "step" as used by those skilled in the mechanical arts is amply demonstrated in dictionaries. A "step" is merely an offset portion. See e.g., Knight's American Mechanical Dictionary (1876), page 2375. See also Oxford English Dictionary, 3d ed. (2004).

TK's proposed interpretation, "a portion of the substrate that extends downwardly from the center section to an outer section of the substrate" is too narrow. The "extends downwardly" language is imported from the preferred embodiment of the specification. See '013 pat., col. 3, II. 11-12. As noted above, it is improper to read a limitation from the specification into the claims. Even when the specification describes a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction. TK has not identified any such words or expressions of manifest exclusion or restriction. There is none.

In the section "Detailed Description of the Preferred Embodiments" the step sections are described as "extend[ing] downwardly generally perpendicularly on both sides of center section," Id. at col. 3, II. 11-12. However, this restriction does not appear in the Summary of the Invention, nor does it appear in the paradigm claim. Rather, it only appears in the preferred embodiment. Both the Summary of the Invention and the claims more broadly characterize the "step section" as the portion of the substrate that concentrates the weight (force) onto the center section. Id. at col. 2, II. 22-24 and col. 3, II. 17-18. There is no indication, clear or otherwise, that the patentee intended to exclude a two-dimensional step section or limit the invention to a three-dimensional step. Absent a clear disavowal or contrary definition in the specification or the prosecution history, the patentee is entitled to the full scope of the claim language. Home Diagnostics, Inc. v. LifeScan, Inc., 381 F.3d 1352, 1358 (Fed. Cir. 2004).

CTS' interpretation is also supported by the intrinsic evidence. Figure 1 shows that the step section (16) is located between the center section (14) and the outer section (18). The specification further teaches that the purpose of the "step section" is to concentrate a force onto the center section. Id. at col. 2, II. 22-24. Claim 1 states as such. This force concentration can occur if the "step section" is either a planar or three-dimensional offset. Thus, contrary to TK's position, the specification does not require that the "step section" extends downwardly from the center section. Id. at col. 2, II. 17-32; and col. 3, II. 10-19. Instead, such a configuration is merely a preferred embodiment.

Finally, CTS' interpretation of the term "step section" is further supported by the doctrine of claim differentiation. Claim differentiation stands for the "presumption that each claim in a patent has a different scope." See Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374, 1380 (Fed. Cir. 2006). Independent claim 8 of the '013 patent characterizes the weight sensor substrate as being "gull wing shaped." Id. at col. 5, II. 5-9. This gull wing shape is found as a preferred embodiment, and is directed to a three-dimensional type of step section. As such, claim 1 of the '013 Patent (as well as claim 5 of the '361 Patent) is presumed to be of different scope from claim 8 of the '013 Patent (and Claim 11 in the '361 Patent), and cannot be limited to the three-dimensional step embodiment. The term "step section" means what it says. TK has not overcome this heavy presumption.

Accordingly, the Court adopts CTS' interpretation of "step section" to mean "the offset portion of the substrate between the center section and the outer section and the outer section of the substrate."

6. Stepper Motor

The ordinary meaning of "stepper motor" is a motor that rotates in short and essentially uniform angular movements rather than continuously. Neither the patent specification nor the prosecution history reveals a different definition. The Court therefore construes stepper motor in accordance with its ordinary meaning.
"Stepping Motor"

Claim 29 is a dependent claim that follows the independent claim 23. As discussed above, claim 23 describes a "memory device." Id. at 10:25. This "memory device" is further defined in claim 29 as comprising, among other things, "an actuator coupled to the sensor head for positioning the sensor head" and "a stepping motor coupled to the actuator for linearly driving the actuator." Id. at 10:62-66 (emphasis added). The parties' disagreement as to the construction of the term "stepping motor" is minor. Plaintiffs suggest that a "stepping motor" is "a motor that moves in small steps," whereas defendants suggest that it is a motor "that can only position the actuator in discrete steps." Because the definition of "stepping motor" is not discussed in the claims, specification, or anywhere else in the patent, 12 we turn to extrinsic evidenceto aid construction. Phillips, 415 F.3d at 1317.

During the Markman hearing, the parties provided the court with a technology tutorial to explain the relevant scientific terms and principles involved in this dispute. A portion of this presentation was dedicated to stepping motors and the means by which they operate. According to that presentation, stepping motors contain a rotor, the circumference of which is fitted with a series of uniformly sized and spaced teeth, similar to a gear. Each tooth is magnetized. The rotor is connected to a shaft, and is surrounded by a circular housing on which are located a series of electromagnets. Electromagnetic pulses are sent sequentially from each of the electromagnets surrounding the rotor, thereby advancing the rotor tooth-by-tooth.

In the Modern Dictionary of Electronics, a stepping motor is defined in a number of ways, including: "[a] motor whose normal operation consists of discrete angular motions of essentially uniform magnitude, rather than continuous rotation"; "a bidirectional permanent-magnet motor that turns through one angular increment for each pulse applied to it"; and "an electric motor that moves incrementally." Modern Dictionary of Electronics, 735 (7th ed. 1999).

Based on the extrinsic evidence before the court, we find that a person of ordinary skill in the art would understand a "stepping motor" to be an electric motor that is capable of moving only in small, discrete increments. We reject plaintiffs' proposed construction, because it fails to acknowledge that such motors are inherently limited to moving in discrete, incremental steps. Although defendants properly defined the motor as only moving in discrete steps, we disagree with defendants' construction insofar as we find it unnecessary to refer to an actuator when defining the term "stepping motor."

The parties seek construction of the following highlighted term of Claim 4: "Apparatus as claimed in claim 3 where the stop means comprises steps formed in the fins." (‘300 patent, col. 4, ll. 50-51.) P&M construes the term as "a surface or surfaces cut into the fins against which part of the pen may abut" and explains that the steps abut the surface of the pen, thereby preventing it from sliding into the casing and keeping it in position. (Pls. Opening Mem. at 30.) Rose Art construes the word "steps" as protrusions that are as high as they are long. (Def. Pre-Markman Hr'g Br. at 43.) Rose Art has supplied no basis for requiring the steps to be as high as they are long. Consequently, the term is construed as "a surface or surfaces cut into the fins against which part of the pen may abut."
I.

Caterpillar Inc. filed this suit against Detroit Diesel Corporation alleging that Detroit Diesel’s "CruisePower" feature infringes its United States Patent No. 4,914,597 ("’597 patent"). The patent relates to a system providing variable engine power while using vehicle cruise control; the claim at issue--Claim 1--involves a method of operating a vehicle engine with cruise control by use of a fuel delivery system that controls the rate of fuel delivery by responding to a command signal generated through the retrieval of sets of data from memory, the set retrieved depending on whether the cruise control is "engaged."

Claim 1 of the ‘597 patent provides the following:

1. A method of operating a vehicle engine (12) equipped with a cruise control (44) which is engageable to control the speed of the vehicle (38) in response to a set speed wherein the engine includes a fuel delivery system (14) which is responsive to a command signal to in turn control the rate of fuel delivery to the engine, comprising the steps of:

   providing a memory (86) having stored therein two sets of data representing two different fuel delivery limit curves wherein each fuel delivery limit curve defines predetermined fuel delivery limits as a function of engine speed;

   determining when the cruise control (44) is engaged;

   retrieving one of the sets data from the memory (86) representing one of the fuel deliver limit curves when the cruise control (44) is engaged;

   retrieving the other set of data from the memory (86) representing the other fuel delivery limit curve when the cruise control (44) is not engaged; and

   using the retrieved data to develop the command signal.

The parties agree that under the Markman decision, the court must determine the meaning of Claim 1 as a matter of law before the issue of infringement may be resolved with reference to the claim's meaning. In construing a patent as a matter of law, the court considers the claim itself, the specification, and the prosecution history ("file wrapper"). Markman v. Westview Instruments, 52 F.3d 967, 979 (Fed. Cir. 1995) (citing Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1561 (Fed. Cir. 1991)). The court is to construe the claim's language; the court cannot narrow or broaden the scope of a claim to give the patent owner something different than what is set forth. E.I. DuPont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir. 1988); Autogiro Co. of America v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 396 (Ct. Cl. 1967). The court may also consider extrinsic evidence as an aid in understanding the meaning of the claims' language, Markman v. Westview Instruments, 52 F.3d at 980, though extrinsic evidence may not be used "for the purpose of varying or contradicting the terms of the claims." Id. 52 F.3d at 981.

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Extrinsic evidence consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises. This evidence may be helpful to explain scientific principles, the meaning of technical terms, and terms of art that appear in the patent and prosecution history. Extrinsic evidence may demonstrate the state of the prior art at the time of the invention. It is useful to show what was then old, to distinguish what was new, and to aid the court in the construction of the patent.

… The court may, in its discretion, receive extrinsic evidence in order to aid the court in coming to a correct conclusion as to the true meaning of the language employed in the patent.

52 F.3d at 979 (internal quotation omitted).
A claim must be read in light of the entire specification, which contains an explanation of the invention that must enable one of ordinary skill in the art to make and use the invention. "The description may act as a sort of dictionary, which explains the invention and may define terms used in the claims." 52 F.3d at 979. Although the patentee is granted license to define his terms, 2 any special definition assigned to a word must be clearly defined in the specification. Id. (citing Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1388 (Fed. Cir. 1992)); see Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 1580 (Fed. Cir. 1995) ("The words of a claim will be given their ordinary meaning to one of skill in the art unless the inventor appeared to use them differently."), cert. denied, 134 L. Ed. 2d 666, 116 S. Ct. 1567 (1996). The claim defines the scope of the invention, SRI Int'l v. Matsushita Elec. Corp. of Am., 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc), and although the specification may aid in divining the true meaning of the claim, the court cannot read into a claim a limitation that appears in the specification but not the claim. Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, 976 F.2d 1559, 1566 (Fed. Cir. 1992); E.I. DuPont de Nemours, 849 F.2d at 1433. References to a preferred embodiment, such as those in the specifications or drawings, are not claim limitations. Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988); Raytheon Co. v. Roper Corp., 724 F.2d 951, 957 (Fed. Cir. 1983). And although the patent's prosecution history is relevant to determining claims' meaning, 52 F.3d at 980 (citing Graham v. John Deere Co., 383 U.S. 1, 33, 15 L. Ed. 2d 545, 86 S. Ct. 684 (1966)), it similarly cannot change the scope of the claims, 52 F.3d at 980.

2 The Court of Claims described the reasoning for this in Autogiro Co. of America v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 397 (Cl. Ct. 1967):

An invention exists most importantly as a tangible structure or a series of drawings. A verbal portrayal is usually an afterthought written to satisfy the requirements of patent law. This conversion of machine to words allows for unintended idea gaps which cannot be satisfactorily filled. Often the invention is novel and words do not exist to describe it. The dictionary does not always keep abreast of the inventor. It cannot. Things are not made for the sake of words, but words for things. To overcome this lag, patent law allows the inventor to be his own lexicographer ….
A patent specification contains a description of the invention, a description of how to make and use the invention that would allow one reasonably skilled in the art to make and use it, and a description of the "best mode" contemplated by the inventor for carrying out the invention. 35 U.S.C. § 112(1). The specification must conclude with "one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112(2). Patent claims may be drafted in "functional" language, which "describes an invention in terms of what it accomplishes rather than in terms of what it is." 2 Chisum, Patents, § 8.04 at 8-53. Functional language is by its nature broad, and may run afoul of the Patent Act's requirement that a patent claim "particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, P 2 (based on 35 U.S.C., 1946 ed., § 33).

Just such a situation occurred in Halliburton Oil Well Cementing Co. v. Walker, 329 U.S. 1, 91 L. Ed. 3, 67 S. Ct. 6 (1946), in which the Supreme Court held that a claim drafted as a "means-plus-function" was invalid. The functional language of the patent at issue in Halliburton 4 described a resonator in relation to the rest of the apparatus as "means associated with said pressure responsive device for tuning said receiving means to the frequency of echoes from the tubing collars of said tubing section to clearly distinguish the echoes of said couplings from each other." 329 U.S. at 8-9. "The language of the claim," the Supreme Court explained, "thus describes this most crucial element in the 'new' combination in terms of what it will do rather than in terms of its own physical characteristics or its arrangement in the new combination apparatus." Id. at 9. It was this "broadness, ambiguity, and overhanging threat of the function claim" that troubled the Supreme Court:

What he claimed in the court below and what he claims here is that his patent bars anyone from using in an oil well any device heretofore or hereafter invented which combined with the Lehr and Wyatt machine [(the prior art)] performs the function of clearly and distinctly catching and recording echoes from tubing joints with regularity. Just how many different devices there are of various kinds and characters which would serve to emphasize these echoes, we do not know. The Halliburton device, alleged to infringe, employs an electric filter for this purpose. In this age of technological development there may be many other devices beyond our present information or indeed our imagination which will perform that function and yet fit these claims. And unless frightened from the course of experimentation by broad functional claims like these, inventive genius may evolve many more devices to accomplish the same purpose. Yet if Walker's blanket claims be valid, no device to clarify echo waves, now known or hereafter invented, whether the device be an actual equivalent of Walker's ingredient or not, could be used in a combination such as this, during the life of Walker's patent.

329 U.S. at 12 (citations omitted).

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4 The patent in suit in Halliburton involved "an apparatus designed to facilitate the pumping of oil out of wells which do not have sufficient natural pressure to force the oil to gush." 329 U.S. at 3. The patent at issue improved over the prior art by adding a mechanical acoustical resonator to make an accurate measure of the distance from the well top to the fluid surface. Id. at 4.

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In 1952 Congress reacted to the Halliburton decision by enacting paragraph six of § 112 (then paragraph 3), which provides that "an element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112(6). As explained in Greenberg v. Ethicon Endo-Surgery, Inc.,:

The record is clear on why paragraph six was enacted. In Halliburton Oil Well Cementing Co. v. Walker, 329 U.S. 1, 91 L. Ed. 3, 67 S. Ct. 6 (1946), the Supreme Court held invalid a claim that was drafted in means-plus-function fashion. Congress enacted paragraph six, originally paragraph three, to overrule that holding. In place of the Halliburton rule, Congress adopted a compromise solution, one that had support in the pre-Halliburton case law: Congress permitted the use of purely functional language in claims, but it limited the breadth of such claim language by restricting its scope to the structure disclosed in the specification and equivalents thereof.

91 F.3d 1580, 1582 (Fed. Cir. 1996) (citations omitted); see also 2 Chisum, Patents, § 8.04[1] at 8-62 - 8-63. 5 The court in
Motorola, Inc. v. Interdigital Technology Corp., 930 F. Supp. 952, 963 (D. Del. 1996), described this simple example regarding the effect of paragraph 6: "If a patent contains a means-plus-function limitation claiming a 'means for fastening' and the specification discloses a 'button' as a possible fastening means, under Markman a court must resolve any disputes regarding both the 1) function of the fastening means, and 2) the meaning of the word 'button,' as a matter of law."

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5 Halliburton Oil Well Cementing Co. v. Walker appeared to set an unreasonably high standard of definiteness for patent claims. Claim language in a means-plus-function style had been common prior to Halliburton and had received the apparent approval of the Supreme Court in Continental Paper Bag [, 210 U.S. 405, 52 L. Ed. 1122, 28 S. Ct. 748 (1908)]. Halliburton also seemed to run contrary to the prevailing notions that a patentee need not describe in his specification every possible embodiment of the invention and that a patent would include later specific improvements if those improvements "stood on the shoulders" of the first patent. It is not surprising therefore that Congress inserted the third [(now, sixth)] paragraph of Section 112 in the Patent Act of 1952 to dispel some of the implication of the Halliburton case.


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B. Paragraph Six Applies to Methods Claims

Though Caterpillar is correct in its observation that case law directly on point is sparse, the court concludes that, contrary to Caterpillar's assertion, paragraph six of § 112 applies to method claims, and not only to apparatus claims. The court's conclusion is based on the statute's plain language, commentary of one of its drafters, case law at the time of enactment of paragraph six and since then, and on Patent and Trademark Office guidelines.

Contrary to Caterpillar's expert's interpretation, paragraph six of § 112 does not define a new and distinct variety of patent claim. Rather, the plain language of paragraph six makes clear that the method it prescribes applies on an element-by-element basis and that it applies to both apparatus and methods claims: "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof …" (emphasis added). From the statute courts derive the terms "means-plus-function" and "step-plus-function" for functional language contained in apparatus and methods claims respectively.

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6 Caterpillar's expert, James M. Amend, asserts in his affidavit that, "depending on the type of patent (e.g. method, means-plus-function, apparatus, etc.), certain statutory and/or common law rules will govern the manner in which the claims of the patent should be construed," and that "because Claim 1 of the 597 patent is a method claim, P6 of 35 U.S.C. § 112 does not apply to the construction of that claim." Amend Aff. (exh. B to Caterpillar's response), P 15.

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Commentary by one of paragraph six's drafters supports its application to method/process claims. The Reviser's Notes regarding paragraph six included the following comment by P.J. Federico, then Examiner-in-Chief of the Patent Office:

The last paragraph of section 112 relating to so-called functional claims is new. It provides that an element of a claim for a combination (and a combination may be not only a combination of mechanical elements, but also a combination of substances in a composition claim, or steps in a process claim) may be expressed as a means or step for performing a specified function, without the recital of structure, material or acts in support thereof.

112, 6th Paragraph, 47 Pat. Trademark & Copyright J. (BNA) 571, 571 (1994); see also Practising Law Institute, The Winning Mechanical Claim, 426 PLI/Pat 231, 331 (1995); Paul M. Janicke, The Crisis in Patent Coverage: Defining Scope of an Invention by Function, 8 Har. J.L. & Tech. 155, 192 n.14 (1994). In Donaldson the court held that paragraph six of § 112 applies not only to courts, but also to the PTO's patent examination process. The guidelines (which were "distributed to patent examiners for guidance on examining practice and procedure" and "incorporated into the Manual of Patent Examining Procedure") begin by setting forth six examples of elements of claims that are written in functional language that invokes paragraph six of § 112. 47 Pat. Trademark & Copyright J. (BNA) at 571. The guidelines' last two examples are elements of process claims from In re Roberts, 470 F.2d 1399 (C.C.P.A 1973), and Ex parte Zimmerley, 153 U.S.P.Q. 367 (Bd. App. 1966), respectively:

(5) reducing the coefficient of friction of the resulting film [step plus function; "step" unnecessary], and

(6) raising the Ph [sic] of the resultant pulp to about 5.0 to precipitate …

The guidelines also provide that "step" and "act" are related in the same way as "means" and "structure." 47 Pat Trademark & Copyright J. (BNA) at 573.

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7 The court is mindful of the Federal Circuit's warning in In re Donaldson, Inc., 16 F.3d 1189, 1193 n.3 (Fed. Cir. 1994), that Mr. Federico's comments do not constitute legislative history per se because Mr. Federico, though a textual author of the 1952 Patent Act's provisions, was not a legal author, and so was "merely stating his personal views." Lawrence Kass, Comment, Computer Software Patentability and the Role of Means-Plus-Function Format in Computer Software Claims, 15 Pace L. Rev. 787, 852-853 (1995). The Donaldson court's warning, however, was made in the context of a different issue (whether application of paragraph six of § 112 is appropriate during patent examination). With respect to the application of paragraph six, the United States Court of Customs and Patent Appeals expressed its agreement with Mr. Federico's interpretation of paragraph six as applying to "not only a combination of mechanical elements, but also a combination of substances in a composition claim, or steps in a process claim." Application of Fuetterer, 50 C.C.P.A. 1453, 319 F.2d 259, 264 (C.C.P.A. 1963).

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In Roberts the Court of Customs and Patent Appeals reversed the examiner's rejection of four method claims. 470 F.2d at 1403. The examiner's rejection was based on the claims' functional language; the examiner thought the step of "reducing the coefficient of friction--to below about 0.40' defined a result but failed to identify the specific act or acts required to produce the result claimed." Id. at 1402. The court disagreed with the examiner's conclusion because "the [sixth] paragraph of [section 112] specifically allows the use of functional language to define claim limitations." Id. at 1402. "The absence in the claim of specific steps which would bring about the desired friction property is no defect. The claims define the limits of the claimed invention, and it is the function of the specification to detail how this invention is to be practiced." Id. at 1403. In Zimmerley, the Patent Office Board of Appeals reversed a rejection of a method claim for failing to particularly point out and distinctly claim the invention; specifically, the examiner thought that the claim element of "raising the pH level of the resultant pulp to about 5.0 to precipitate dissolved molybdenum as molybdenum trihydroxide" should have recited a specific way of raising the pH level. 153 U.S.P.Q. at 369. The court found the examiner's rejection improper because paragraph six of § 112 "sanctions functionally defined steps in claims drawn to a combination of steps." Id. at 369.

In In re Cohn, 58 C.C.P.A. 996, 438 F.2d 989 (C.C.P.A. 1971), the court noted that paragraph six of § 112 applies to functional language in a method claim, though it went on to find inexplicable inconsistencies within the claims at issue and affirmed the examiner's rejection of the patent as indefinite under the second paragraph of § 112. 438 F.2d at 991 ("It is true that claim language which expresses performing particular steps until a given result or state is reached, or a given condition obtained, may be proper under § 112, [sixth] paragraph.").

From Roberts, Zimmerley, and Cohn, the court concludes that § 112 applies to functional methods claims where the element at issue sets forth a step for reaching a particular result, but not the specific technique or procedure used to achieve the result. Such an interpretation is consistent with the statute's plain language, which exempts from the purview of § 112(6) an element in a claim for a combination that is expressed as a means or step for performing a function with the recital of
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supporting acts. 8

8 Indeed, the Federal Circuit has found § 112(6) inapplicable in situations where an element's language is functional, but
some recitation of structure exists and the "means" is not tied to the function. York Products, Inc. v. Central Tractor Farm &
Family Center, 99 F.3d 1568, 1574 (Fed. Cir. 1996).

The Federal Circuit's treatment of means-plus-function language reveals that paragraph six's application is not triggered
simply by the use of functional language or the magic words "means for ..." or "step for ...." 9 In Greenberg v. Ethicon
Endo-Surgery, Inc., 91 F.3d 1580 (Fed. Cir. 1996), the Federal Circuit found that the district court erred in applying § 112(6)
9 For a broader view of the application of § 112(6) to method claims, see Kenneth R. Adamo, Drafter's Dilemma: Means
Plus Function and Guidelines and Hilton Davis. 78 J. Pat & Trademark Off. Soc'y 367, 389 (1996) ("It is fundamental that
nearly all steps recited in process claims fall within this provision [§ 112, para. 6] of the Patent Statute," (citations omitted)).
Though the Federal Circuit has not directly addressed the issue, the Federal Circuit has clearly not adopted such an
expansive view of the application of § 112(6) to method claims.

9 For a broader view of the application of § 112(6) to method claims, see Kenneth R. Adamo, Drafter's Dilemma: Means
Plus Function and Guidelines and Hilton Davis. 78 J. Pat & Trademark Off. Soc'y 367, 389 (1996) ("It is fundamental that
nearly all steps recited in process claims fall within this provision [§ 112, para. 6] of the Patent Statute," (citations omitted)).
Though the Federal Circuit has not directly addressed the issue, the Federal Circuit has clearly not adopted such an
expansive view of the application of § 112(6) to method claims.

Greenberg thus teaches that an element's language is not dispositive of whether § 112(6) applies, see York Products, Inc. v.
Central Tractor Farm & Family Center, 99 F.3d 1568, 1574 (Fed. Cir. 1996) ("Mere incantation of the word 'means' in a
clause reciting predominantly structure cannot evoke section 112, P 6."), and that the court should consider whether the
functional term has a "reasonably well understood meaning in the art," and the drafter's intent, as may be evidenced by the
language, reference to other elements or claims, and the prosecution history.

C. Section 112(6) Does Not Apply to the Elements of Claim 1 of the '597 Patent

Applying the factors discussed above to the elements of Claim 1, the court concludes that § 112(6) is not applicable. The
elements of Claim 1 of the '597 patent are written as steps-plus-functions, which support an intent to invoke § 112(6): "steps
of: providing a memory ... determining when the cruise control is engaged; ... retrieving one of the sets [of] data ...;
retrieving the other set of ...; and using the retrieved data..." That factor; however, is not determinative, and the remainder
of the factors counsel the court not to apply § 112(6). Nothing in the prosecution history suggests an intent to invoke §
112(6), see ex. D to Caterpillar's response, and the elements at issue in Claim 1 are not result-oriented, as were those in
Roberts, Zimmerley, and Cohn, in which the Federal Circuit discussed the application of § 112(6) to method or process

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The elements of Claim 1 involve the actions of "providing," "determining," "retrieving," and "using," which do not merely describe an achieved result, but are specific acts in themselves. The acts set forth in Claim 1's elements are "functional" only in the manner in which all acts are functional, and nothing before the court suggests that the acts set forth in the claim lack a "reasonably well understood meaning in the art." See Greenberg, 91 F.3d at 1583.

1. a balloon

This term appears in the '364 patent, but not in the '939 patent. The plaintiffs propose that this term carry its plain meaning. The defendants propose "a balloon sterilized by the sterilization process disclosed at 10:66-11:9 of the '364 patent, which consists of (1) a preconditioning step at a temperature about 35 to about 45 [degree] C and a relative humidity of about 55% for about 15 hours, (2) then an ethylene oxide treatment step at a temperature of about 35 to about 45 [degree] C and a relative humidity of about 55% with ethylene oxide for about 6 hours, and (3) then an aeration step at a temperature of about 35 to about 45 [degree] C for about 22 hours in order to permit the ethylene oxide to dissipate."

The plaintiffs argue that the defendants seek to improperly import two limitations into the claim: (1) that the balloon must be sterilized, and (2) that the sterilization must occur by the sterilization method described in the specification.

According to the defendants, the proper claim construction for "balloon" (as well as "sterilized balloon" in the '939 patent, discussed infra) should include the sterilization process described in the specification ("the Anderson Process"). Defendant's Response Brief at 15-21. Numerous citations in the specification support the defendants' position that the "Anderson Process is critical." Id. at 15 (citing the '364 patent at 11:14-17 (the Anderson Process is "an important factor in determining the final physical characteristics of the balloons and balloon catheters of this invention"); 10:51-54 ("[i]n order to preserve a balloon's distensibility, elastic stress response, [and] wall tensile strength..., the balloon formed must [] be subject to" the sterilization process disclosed); and 11:17-22 (the sterilization disclosed is "necessary to ensure a clinically useful and sale[sic] finished balloon and balloon catheter with an overall advantageous combination of physical properties..."))).

The defendants also point to statements made during the prosecution of the '939 patent that further express the importance of the sterilization process. For example, in remarks made to distinguish prior art the applicants stated that the balloons in the prior art "are not prepared by substantially the same process disclosed in Applicants' specification, namely the sterilization steps of the present invention, which give rise to the novel and unobvious properties of the claimed invention...." Wu Decl. Ex. 11 ['939 file history] at MEQBC00004242-43.

The defendants further support their construction by pointing to a recently decided Federal Circuit case, Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361 (Fed. Cir. 2007) (reading a process limitation into a claim for a product formed by the process). In Andersen, the court noted that the "specification [] indicates that the claimed physical properties of the composite structural members are attributable to the process that is used to make them." Id. at 1372. Since the '364 specification describes the use of the sterilization process as a requirement rather than a preference, the defendants argue that the term "balloon" should be limited to the process that created its properties. Id. at 1372-73.

The defendant further argues that the prosecution history is analogous to that in the Andersen case. As in this case, the applicant of the patent at issue in Andersen "clearly disclaimed structural members made through a direct extrusion process." Id. at 1373-74. Here, the applicants clearly distinguished their invention from those balloons that underwent traditional sterilization.

At oral argument the plaintiffs argued that the term "balloon" alone is insufficient to provide a textual reference in the claim to associate the sterilization process. See MBO Laboratories, Inc. v. Becton, Dickson & Co., 474 F.3d 1323, 1330-31 (Fed. Cir. 2007). The MBO Labs court stated that "[n]one of the disputed terms... can be reasonably be construed to impose the simultaneously-safety requirement." Id. at 1330. The court, however, recognized that the "patentee [in MBO Labs] has clearly indicated via the specification and the prosecution history that the invention provides, as an essential feature, immediate needle safety upon removal from the patient." Id.

The court agrees that the term "balloon" does not provide sufficient textual reference to include the sterilization process.
Accordingly, the term "balloon" does not need to be construed.

2. **a sterilized balloon**

This term appears in the '939 patent, but not in the '364 patent. The plaintiffs propose that this term carry its plain meaning. The defendants propose the same construction they advance for the term "balloon," above. The parties present nearly identical arguments for this limitation as they did for the term "balloon."

As an initial matter, the distinction between the groupings in the Anderson case does not apply to the distinction between "balloon" and "sterilized balloon." In Anderson, two groups of claims were at issue. The first group, or Group I, claimed "an intermediate composite capable of being extruded into structural members." Anderson, 474 F.3d at 1371. The second group, or Group II, claimed "the extruded structural members themselves." Id. The Federal Circuit held that the district court had properly limited the term "composite composition" in Group I to be in the form of either pellets or linear extrudate. The district court reasoned that because the Group II claims are directed to finished products they should not be limited to the characteristics of an intermediate material. The Federal Circuit, however, found that the district court erred by not also construing the term "composite structural member" in Group II to include "an intermediate step of pelletization or linear extrusion" given the intrinsic evidence. Id. at 1375. In this case, both the "balloon" claims and "sterilized balloon" claims are directed to finished products.

Rather, the issue before this court is whether there is sufficient "textual reference in the actual language of the claim with which to associate a proffered claim construction." Johnson Worldwide Assocs., Inc. v. Zebeco Corp., 175 F.3d 985, 990 (Fed. Cir. 1999). Unlike the term "balloon," the term "sterilized balloon" provides a clear association with the sterilization process described in the specification. With the addition of the term "sterilized," the claim explicitly recites a term in need of definition. See MBO Labs, 474 F.3d at 1300-31 (citations omitted). The specification unequivocally teaches the necessity of the Anderson Process of sterilization. See, e.g., '364 patent at 11:17-22 (the sterilization disclosed is "necessary to ensure a clinically useful and sale[sic] finished balloon and balloon catheter with an overall advantageous combination of physical properties").

For these reasons, the court adopts the defendants' construction for "sterilized balloon." 3

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3 The court draws this distinction between the terms "balloon" and "sterilized balloon" after careful study of, and reliance on, both MBO Laboratories, Inc. v. Becton, Dickson & Co., 474 F.3d 1323 (Fed. Cir. 2007) and Andersen Corp. v. Fiber Composites, LLC, 474 F.3d 1361 (Fed. Cir. 2007). The Federal Circuit issued these opinions within two days of each other, and the panels included a common judge.

--- End Footnotes ---

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H. Disputed word: "stitches"

The disputed term is located in Claim 12. The parties disagreement turnson the specificity required of the term "stitches." Plaintiff proposes this claim should be interpreted as "material that repeatedly pierces through at least two things and, in doing so, ties the two things together." Defendant proposes this claim should be interpreted as "a length of thread that repeatedly pierces through the loop of tape and the bag to tie them together."

Plaintiff argues the patent claim language justifies a broad definition. Plaintiff argues the patent never identifies or specifies the material used for stitching. Plaintiff argues the word is "material-independent," as opposed to other places in the patent where the material is identified, such as "fiber reinforced filament tape." Defendant states the patent identifies stitches in Figure 3 as reference number 56 and in Figure 6 as reference number 98. Defendant argues Figure 3 specifically shows the stitches as a length of thread. Defendant argues the patent examiner, in rejecting Claim 8, states that the sewing would include fiber. (Def. Ex. C. at 10.)
Both parties agree the stitches must pierce through materials to tie the materials together. The point of contention is what material must be used to make the stitches. The patent does not identify the material that must be used to make the stitches. No limitation on the material used for the stitches should be imported from the prosecution history. The patent examiner did not reject Claim 8 because of the material used to make the stitches. Accordingly, Plaintiff's construction of the claim is persuasive and supported by the intrinsic evidence. The claim at issue is interpreted to mean "material that repeatedly pierces through at least two things and, in doing so, ties the two things together."

The plaintiff proposes "an elongated thin metal structure other than the guide wire that is positioned within the catheter shaft and imparts stiffness." The defendant proposes "a solid, continuous metal that imparts stiffness to at least the proximal portion of the outer catheter body."

The plaintiff argues that one of ordinary skill in the art would understand that a "stiffening wire" means "an elongated thin metal structure." The plaintiff also argues that nothing in the patent requires that the stiffness be specific to "the proximal portion of the outer catheter." Specifically, the plaintiff points to the specification which states that the stiffness is imparted "to the catheter" and that stiffness can also be provided to the "distal portion of the catheter." ‘358 patent 2:37-41, 5:1-3.

The defendant argues that the stiffening wire must extend through the proximal portion of the catheter to be effective. According to the defendant, its proposed construction, and not the plaintiff's proposal, would meet the requirement that the stiffening provide "strength to the proximal portion of the catheter." ‘358 patent, 2:37-41. The defendant also argues that the stiffening wire needs to be solid metal because hollow tubes were not contemplated as part of the invention.

The Court agrees with the plaintiff that there is no need to include a limitation regarding stiffness at the proximal portion of the outer catheter body. The plaintiff, however, does not appear to dispute the defendant's proposal that the "stiffening wire" must be solid. Accordingly, the Court construes "stiffening wire" to mean "a thin and elongated solid metal structure that imparts stiffness to the catheter." The Court declines to construe the remainder of the phrase.

The plaintiffs propose "a thin and elongated metal structure that imparts stiffness to the catheter." The defendants propose "a thin and elongated solid metal structure that imparts stiffness to the catheter."

After carefully considering the arguments raised by the parties in this case, the court is not persuaded to alter its construction from the Cordis case. See Cordis Order at 8-10. Accordingly, "stiffening wire" means "a thin and elongated solid metal structure that imparts stiffness to the catheter."

Plaintiffs' proposed construction of "stockinette member" is "a closely knit tubular member formed of closely knit threads." Defendants would modify plaintiffs' construction to include: "closely knit threads forming rows of regular loops and having a closer knit and smaller opening than the netting arrangement."

Plaintiffs contend that defendants "agree that the proposed definition offered by the plaintiffs is found in the claims"
(Plaintiff's response to defendants' opening brief at 7) but by inserting additional language in their construction, defendants are attempting to impermissibly narrow the construction and interject language used exclusively in a prior art, the '057 Lombardi patent. The dispute surrounding the construction is the "terminology of forming rows of regular loops, having a closer knit and smaller openings than the netting arrangement." (Markman Tr. at 66. (emphasis added)) Plaintiffs argue that the only limitations contained within the claim are that the stockinette member be (1) knit, (2) closely knit, and (3) have a first-stretch, i.e., greater stretch capacity, than the netting arrangement. (Markman Tr. at 30.) The Court agrees. The unambiguous language of the claim does not require "regular loops" or any particular stitch be used in the stockinette member.

But defendants contend that the term "rows of regular knit" is necessary for the proper construction of the term "stockinette member" based on the prosecution history wherein plaintiffs distinguished their invention over the prior art of Lombardi. Plaintiffs' Office Action Response, dated August 9, 1994, states with reference to Figure 4 that "the top of the long loop of yarn 42 in wale 3, row 25, being separated from the special yarn [the netting arrangement] in row 27 by one row 26 of regular loops (i.e., loops of the regular yarn)." (Defendants' Exh. B 151.) Based on this language, defendants contend that the stockinette member must be made of regular loops of regular yarn in order to differentiate the stockinette member from the netting arrangement.

Defendants are attempting to impermissibly narrow the plain and ordinary meaning of the claim term. Plaintiffs have not explicitly disclaimed the plain meaning of "stockinette member" in the specification or prosecution history. See Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004) (requiring "words or expressions of manifest exclusion or restriction" before broad terms in a claim will be read narrowly in light of a narrow specification (quoting Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1327 (Fed. Cir. 2002)).

With respect to the phrase "closer knit and smaller openings than the netting arrangement," defendants note that in order for the stockinette member to have a greater stretch capacity and to form a shield as set forth in the "whereby" portion of Claim 1, the stockinette must have a closer knit and smaller openings than the netting arrangement. The claim language requires that the stockinette member be "closely knit" - a term that is not ambiguous. Further, there is nothing in the claim language or specifications to suggest that smaller openings are necessary for the stockinette member to function as intended.

The Court construes "stockinette member" as "a closely knit tube."

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A. "A stop"

The parties disagree as to the proper construction of "a stop" as that term is used in all the claims of the '191 patent. Fujinon contends that "a stop" should be construed as "an element with a hole or opening that blocks or limits light." Motorola contends, by contrast, that "a stop" is "the aperture stop." I recommend that the Court adopt Fujinon's construction, though I reach that conclusion through a different process than Fujinon proposes.

I start with the language of the claim itself. Most important is the fact that nowhere do any of the claims of the '191 patent use the term "aperture stop." Instead, claim I (on which all of the other claims depend) states that the invention has "a stop."

This is crucial because, as both parties agree, in the field of optical design the term "a stop" applies to multiple types of stops and is not limited just to "aperture stops." That is, one of ordinary skill in the art of optical design would understand that "stop" denotes a genus, whereas "aperture stop" is a particular species within this broader genus. Other types of "stops" that are pertinent to this art include "glare stops" and "field stops." 3

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - - -

3 See, e.g., D.I. 66 Ex. 5, Warren J. Smith, Modern Optical Engineering 141 (3d ed. 2000)(hereinafter "MOE")("In every optical system, there are apertures (or stops) which limit the passage of energy through the system.... One of these apertures will determine the diameter of the cone of energy which the system will accept from an axial point on the object. This is termed the aperture stop .... Another stop may limit the size or angular extent of the object which the system will image.

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Turning next to the specification, 4 I conclude that the specification confirms that the inventor claimed the genus of "a stop" in the claims and did not narrow his claim to just "aperture stops." It is true, as Motorola emphasizes, that the inventor used "the stop" to refer to an "aperture stop" when describing prior art, see '191 patent, col. 1 lines 29-38 (JCCC at M00425); see also Markman Hearing Transcript (D.I. 81 and hereinafter "Tr.") at 29-33; and when describing a preferred embodiment of the patent, '191 patent, col. 5 lines 36-38 (JCCC at M00427). But the inventor did not carry this limitation into the claim itself. In other words, in the portions of the specification on which Motorola relies, the inventor is describing prior art or he is disclosing a preferred embodiment of his invention - but he is not there limiting his claim to only those embodiments in which the claimed "stop" is "the aperture stop." Even if the only "stop" in such prior art or preferred embodiment was an "aperture stop," it does not follow that when the inventor turned to the different task of drafting his claims he likewise used "a stop" to refer narrowly to "the aperture stop."

As Fujinon acknowledges, "There is no dispute that the preferred embodiment of the '191 patent discloses an aperture stop." (D.I. 72 at 27) However, the Federal Circuit has "repeatedly warned against confining the claims to those [specific] embodiments" disclosed in the specification. Phillips, 415 F.3d at 1323; see also MBO Labs., Inc. v. Becton, Dickinson & Co., 474 F.3d 1323, 1333-34 (Fed. Cir. 2007) ("[P]atent coverage is not necessarily limited to inventions that look like the ones in the figures. To hold otherwise would be to import limitations onto the claim from the specification, which is fraught with danger.") (internal citation omitted); Liebel-Flarsheim, 358 F.3d at 906 ("Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction.") (internal quotation marks omitted). To take the discussion of the "stop" in the prior art and preferred embodiment from the specification and import it as a restriction in the claims would run afoul of this principle of claim construction.

In this regard, it is particularly noteworthy that the specification also uses the term "aperture stop." The one (and only one) use of this term appears in the "Detailed Description," at the end of a paragraph that begins ",[a] general description of preferred embodiments of the single focus lens of the present invention will now be described." '191 patent, col. 2 lines 46-65 (JCCC at M00425) The patent states: "The single focus lens further includes a diaphragm stop St between the first lens element G1 and the second lens element G2 that operates as an aperture stop." Id. col. 2 lines 63-65 (JCCC at M00425) Clearly, the inventor knew how to say "aperture stop" when he meant "aperture stop." That he chose in his claim instead to claim "a stop" indicates that he meant to claim something broader than the "aperture stop" that is part of the preferred embodiment. As Fujinon persuasively argues, if the inventor had wanted to limit his patent to the preferred embodiment, which says "aperture stop," "he could easily have done so, but he did not. All he had to say in the claim was aperture stop.... [Y]ou don't use these words lightly in the patent claims. By making a broader term, you expose yourself to prior art.... When you change 'an aperture stop' in the second element to 'stop,' that can have significance." Tr. at 53.
5 Motorola elsewhere recognizes the power of this reasoning. In connection with the '253 patent, in arguing that the disputed term "center" means "geometric center," and not "center region," Motorola observes that the inventor three times said "center" and one time said "center region." (D.I. 71 at 25) From this Motorola concluded: "The inventor knew to say 'center' when he meant 'center.' . . . The inventor knew to say 'central region' when he meant 'central region.'" Id.

This same sole reference to an "aperture stop" is enlightening for another reason as well. In this sentence - "The single focus lens further includes a diaphragm stop St between the first lens element G1 and the second lens element G2 that operates as an aperture stop." - the inventor makes reference to two types of stops: a diaphragm stop and an "aperture stop." The patentee's use of both terms in one sentence shows his awareness of the genus-species relationship between "stop" and "aperture stop," revealing, again, the significance of his choice to use "a stop" in the claim.

As Motorola rightly points out, the process by which Fujinon reaches its proposed construction is flawed. Fujinon begins by selecting a non-technical dictionary (Webster's Third New International Dictionary(2002)), takes one of that dictionary's twelve definitions of "stop," and then modifies this dictionary definition by, among other things, excising the definition's reference to an "aperture stop." D.I. 66 Ex. 1 at 2251 (showing Webster's definition number 3(b)(1) of "stop" is "an opaque barrier for preventing the passage of light through certain portions of an optical system (as at the margin, in the axial zone, or in radial sectors); specif: the aperture of a camera lens"). Fujinon's approach - with its suggestion that a single general dictionary is more probative of the proper construction than the patent's specification - is inconsistent with Phillips. See 415 F.3d at 1321 ("[H]eavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification."). 6

6 Motorola correctly observes that, for purposes of construing, the claims now before the Court, there is no significance to claim 1's use of the term "a stop" as opposed to "the stop." "The first time an element or part is mentioned, it should not be preceded by a definite article ('the') or by 'said.' Instead the indefinite article ('a' or 'an') should be used . . ." (D.I. 71 Ex. B at M2294939 (Robert C. Faber, Landis on Mechanics of Patent Claim Drafting § 23 (4th ed 2002))) Fujinon's U.S. patent counsel admitted that claim 1 would have been rejected by the PTO if it had been written as "the stop." (D.I. 71 Ex. D at 156)

However, Motorola's support for its proposed construction is unpersuasive, procedurally as well as substantively. Motorola contends that the inventor was his own lexicographer, arguing that in the specification the inventor "explicitly define[d]" "a stop" as "an aperture stop." (D.I. 67 at 6) Motorola relies for its contention on the same sentence already quoted above, which contains the specification's only use of the term "aperture stop": "The single focus lens further includes a diaphragm stop St between the first lens element G1 and the second lens element G2 that operates as an aperture stop." 191 patent, col. 2 lines 63-65 (JCCC at M00425) But this sentence does not state a definition of "a stop" with "reasonable clarity, deliberateness, and precision," as is necessary when an inventor wishes to be his own lexicographer. In re Paulsen, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Two other flaws plague Motorola's lexicographer argument. First, as noted above, the sentence on which Motorola relies appears at the end of a paragraph that begins: "[a] general description of preferred embodiments of the single focus lens of the present invention will now be described." 191 patent, col. 2 lines 47-49 (JCCC at M00425) Hence, the statement on which Motorola relies is a statement about the preferred embodiment, not a definition that extends to the claims. Second, and more importantly, the paragraph immediately after the sentence on which Motorola relies does clearly, deliberately, and precisely define other terms. Indeed, the sentence that begins that next paragraph states: "Definitions of the terms 'lens element' and 'lens component' that relate to this detailed description will now be given." Id. col. 2 lines 66-67 to col. 3 line 1 (JCCC at M00425-26) That paragraph continues by providing several express definitions: "The term 'lens element' is herein defined as . . ." Id. col. 3 lines 1-18; see also id. col. 3 lines 46-48 ("The term 'near the optical axis' is herein defined as . . .") JCCC at M00426). Plainly, the sentence on which Motorola relies is not written in the manner this inventor used to define terms in this patent.

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Motorola also seeks to rely on the post-patent comments of the inventor, from which Motorola divines that the inventor intended "a stop" in claim 1 to mean "the aperture stop." See D.I. 67 at 18 ("[T]here cannot be any better extrinsic evidence on how the skilled artisan would construe the '191 Patent than the inventor's own unbiased words that describe his invention."); see also Tr. at 42 ("[W]e believe the most telling piece of extrinsic evidence is the inventor's own words in later patents."); D.I. 67 at 17-19 (discussing patents issued to '191 inventor, Kenichio Sato, subsequent to his '191 patent, in which Mr. Sato described his '191 patent). However, as Phillips explains, in construing claims "the court looks to those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean." 415 F.3d at 1314 (emphasis added; internal quotation marks omitted). The undisclosed, subjective intent of an inventor is not, by definition, available to the public, and would not (and could not) be relied on by one of skill in the art. 7

Motorola also contends that it is common for persons of ordinary skill in the art of optical design to use "stop" to refer to "aperture stop." See Tr. at 44; D.I. 77 Ex. J (Warren J. Smith, Practical Optical System Layout 49 (1997)) ("Often the aperture stop is referred to simply as 'the stop.'"). However, this extrinsic evidence is not enough to overcome the persuasive intrinsic evidence, cited above, which convinces me that, in the specific context of the '191 patent's claims, "a stop" refers to the genus of optical "stops" and is not limited to the species of "aperture stops."

Finally, Motorola argues that the disclosed invention cannot work unless the "stop" claimed in claim 1 is an aperture stop. According to Motorola, "The location of the aperture stop is critical in designing a lens system that has the telecentric properties touted by the inventor of the '191 patent." D.I. 67 at 16; see also '191 Patent, col. 4 lines 53-57 (noting "the requirements of orthogonality and telecentricity") (JCCC at M00426); id col. 8 lines 24-54 (claim 1 requiring condition 1 to be satisfied) (JCCC at M00428); '191 Patent Notice of Allowability (examiner referring to "telecentric state") (JCCC at M00426); id col. 8 lines 24-54 (claim 1 requiring condition 1 to be satisfied) (JCCC at M00428); '191 Patent Notice of Allowability (examiner referring to "telecentric state") (JCCC at M00497). Whether or not this is correct as a matter of scientific reality, the relevant legal fact is that the invention claimed in claim 1 need not fulfill every - or even the central - purpose of the inventor's invention. See Acumed LLC v. Stryker Corp., 483 F.3d 800, 805 (Fed. Cir. 2007) ("[Defendant's] argument is essentially an assertion that since the patent says broaching is desirable, the term 'curved' must be construed to cover only embodiments whose curvature allows them to be inserted into a broached hole .... That assertion is flawed: it is an attempt to import a feature from a preferred embodiment into the claims."). However, this extrinsic evidence is not enough to overcome the persuasive intrinsic evidence, cited above, which convinces me that, in the specific context of the '191 patent's claims, "a stop" refers to the genus of optical "stops" and is not limited to the species of "aperture stops."

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8 See also Tr. at 14-15 (Fujinon arguing: "When you are defining a claim in the patent law, you don't have to ... claim a functioning structure. In fact, the '253 patent, which is very similar, doesn't even claim a stop until the dependent claims.... The claim does not have to meet all the features or all the objectives that are set forth in the specification. All it has to do is claim what the inventor claims is his elements and then determine whether or not that claim is clear.").
Motorola concedes that if the Court concludes, as I have, that the patentee claimed the entire genus of optical stops, then Fujinon's construction is appropriate. See Tr. at 26 (Motorola's counsel stating, "if the Court decides it's going to construe 'stop' to be the broad universe of all possible elements that are disclosed with 'stop' in their title anywhere in the art, then we do not have a problem with the definition that has been proposed by Fujinon"). Accordingly, I recommend that the Court construe "a stop" as "an element with a hole or opening that blocks or limits [CORRECTED] light."

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3. "Stop" (422 Patent, Claims 1, 9, 12)

"Stop" is construed as "an impediment or obstacle that blocks forward movement of the cards."

3806

2. Claim 2

Both parties seek construction of the following highlighted term of Claim 2: "Apparatus of claim 1 further comprising stop means within the casing against which a surface of a pen can abut to position the nib of the pen at least partially within the nozzle orifice." ('300 patent, col. 4, ll. 43-46.) This is not a means plus function claim, even though the word "means" is used in the term because the claim element does not recite a function. Envirco Corp. v. Clestra Cleanroom, Inc., 209 F.3d 1360, 1364 (Fed. Cir. 2000) ("If a claim element contains the word 'means' and recites a function, this court presumes that element is a means-plus-function element under § 112, P 6.") (citation omitted). P&M construes "stop means" as "a surface or surfaces within the casing against which the pen abuts." (Pls. Opening Mem. at 29.) Rose Art argues that this claim term should be limited to a structure comprising three fins because that is the structure described in the specification and because prosecution history estoppel prevents the patent from claiming another stop means. (Def. Pre-Markman Hr'g Br. at 42-43.)

The specification states that "the pen is supported centrally within the casing 1 by the fins 12 with a shoulder 15 of the pen body abutting against projecting stops 16 of the fins 12." ('300 patent, col. 3, ll. 21-23.) In the prosecution history of the '300 patent, in order to distinguish claim 1 of the '300 patent from the '886 patent, Bolton informed the patent examiner that:

The invention as defined by claim 1 requires the internal cross-section of the apparatus to be formed "with a plurality of lengthwise-extending locating surfaces between which is retained the pen". In a preferred embodiment, these lengthwise-extending locating surfaces are provided by the fins 12 shown in Fig. 1. As indicated in the Specification at page 6, line 7-8, the fins 12 centralize the pen within the casing for air flow around the pen. The "lengthwise-extending locating surfaces" limitation is not disclosed or suggested by the '886 patent, wherein the pen 9 is retained between end wall 10 (shown in Fig. 6 of the '886 patent) and end wall 17 (shown in Fig. 7 of the '886 patent)."

(Def. Exh. L at 5.) Although Rose Art has correctly noted that the specification describes the stop means in a preferred embodiment as comprising projecting stops on the fins, the Court cannot adopt the construction recommended by Rose Art because that would impermissibly limit the claim to one preferred embodiment described in the specification. Electro Med. Sys., 34 F.3d at 1054. Moreover, prosecution history estoppel does not limit the composition of the stop means to three fins. Bolton mentioned the three fins only as a preferred embodiment of the "lengthwise-extending locating surfaces," not as the only possible form of the stop means. Consequently, the term "stop means" is construed as "a surface or surfaces within the casing against which the pen abuts."

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A. The Stop Member

As used in the '290 patent, Toro argues that the "stop member" should be construed as "a physical element that prevents the
swing arm from rotating to a position where it will not return to its median position." The most I can discern from Deere's pre-hearing memorandum is that it is a structure that only allows the swing arm to move in two directions away from the swing arm's median position before being forced back to that position. Deere takes a different approach in its reply memorandum. There it argues that "stop member" should be given its plain and ordinary meaning as being "a member which, in combination with other elements, performs a function of limiting the movement of the swingman (sic)." Deere rightly reasons that since the phrase "stop member" is not a means plus function format, there is no cause to limit its meaning or to define it by reference to functions described in the specification that it may also perform. The Court agrees with Deere's suggestion: "stop member" means a physical structure, which in combination with other elements, performs the function of limiting the movement of the swing arm.

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4. "Stopper." The court construes the term "stopper" as a structural limitation to mean "a part of a substrate that may be used to stop the flow of resin to the center hole." Claim 1 recites "wherein the optical information medium further comprises a stopper," thereby implying that the stopper exists as part of the substrate. ('684 patent, col. 22, ll. 20-21) Various dependent claims disclose specific stopper embodiments. Dependent claims 2 through 5 recite "concave/convex portions" and a "ring-shaped groove," and claim 10 recites a "sealant layer." These embodiments, by their very nature, are formed from the substrate. Moreover, claim 18 substantiates this interpretation by reciting the method for fabricating an optical information medium which includes "the step of forming a pair of substrates [that] includes the step of forming a stopper." ('684 patent, col. 24, ll. 1-4) Additionally, the plain language of both the claims and the specification preclude a construction where the stopper must perform the function of preventing resin from protruding into the center hole of the substrates. Claim 6 allows resin to spread to the position of the stopper. Since claim 6 depends on claim 1, claim 1 must be broader than claim 6. As such, claim 1 is not limited to filling the stopper with resin. Likewise, the specification states that resin does not necessarily fill the stopper. (See '634 patent, col. 11, ll. 52-56)

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81. The court construes the first additional limitation of claim 24, "a compressed [nitrox] storage assembly," as follows: the assembly contains as many conventional storage vessels (such as a nitrox storage cylinder or a scuba tank) as the operator of the system desires, and it contains an identical number of branch lines, one branch line for each storage vessel. (See '845 patent, col. 6, lines 20-28.)

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I. "storm survival kit"

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<thead>
<tr>
<th>Claim Term</th>
<th>Plaintiff's Proposed</th>
<th>Defendants' Proposed</th>
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<tr>
<td>storm survival kit</td>
<td>A protective barrier device configured to be quickly</td>
<td>A protective element configured to be quickly deployed</td>
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<tr>
<td></td>
<td>deployed on or within a portion of a structure for protecting</td>
<td>to protect a life.</td>
</tr>
<tr>
<td></td>
<td>an interior portion of the structure from the force of the wind and objects carried thereby.</td>
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Defendants argue that the ordinary meaning of the term "survival" is "the continuation of life or existence" and not the protection of manmade structures. 2 Plaintiff counters that such construction "ignores and improperly limits the claim language" because the patentee unequivocally explains in the specification that the invention relates to a protective barrier device to secure not only occupants, but also property.

- - - - - - - - Footnotes - - - - - - - - -

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2 Defendants also rely on (1) the applicant's September 5, 2003 amendment in successor Patent '852's prosecution history stating that claim 10 "recites a kit for use in the interior of a building," and (2) a PTO examiner's August 27, 2001 Notice of Allowability statement in Patent '085's prosecution history, to support their argument that claim 10 should be construed as meaning the device must be deployed in the interior of a building. Defendants cite these two prosecution statements, which represent a consistent point of argument, in their rebuttal statement of other claim terms. The Court concludes that Defendants' arguments based on these prosecution statements are more appropriately reserved for discussion in the next and final claim term sections. Accordingly, the Court addresses these arguments in those sections.

The Court concludes that Plaintiff's construction of this claim term is accurate. A review of the surrounding words of claim 10 itself reveals that the phrase "storm survival kit" contemplates a device for use in "protecting a portion of the interior of a structure" from wind and windborne objects. Patent '085, col.7, Ins. 24-26. Moreover, the specification expressly describes the claimed invention as relating to the "protection of property against high winds" and distinguishes prior art as lacking an inexpensive protective barrier for use in "protecting the occupants and the property." Patent '085, col. 1, Ins. 13-14; col. 1, Ins. 60-63 (emphasis added). The summary of the invention section of the specification again describes the invention as contemplating the provision of "continuous protection for the occupants and the property." Patent '085, col. 2, Ins. 1-4 (emphasis added). Thus, an examination of "storm survival kit" within the context of claim 10's own language, as well as the patent specification, leads to the conclusion that it would be improper to limit this claim to meaning a device to protect a life as urged by Defendants. Instead, viewing the claim language in light of the specification shows that "storm survival kit" encompasses the protection of the interior portion of the structure, including but not limited to persons and property contained therein. Accordingly, the Court adopts Plaintiff's proposed construction of "storm survival kit."

3811

Similarly, the meaning of the terms "stowed" and "retracted position substantially within said housing" is unambiguous and may be determined from the intrinsic evidence of record, including the claim language, specification and prosecution history. American Seating understands the term "stowed" to mean that the anchoring mechanism is put completely out of the way of passengers, such as by use of a bulkhead, when not deployed. Transportation Seating understands the term "stowed" to mean that the anchoring mechanism is put sufficiently out of the way of passengers to prevent usual tripping. The A.R.M. products manufactured by American Seating do not completely stow their anchoring mechanisms as indicated in the Adelsperger Declarations and the drawings depicting the products. The specification language of the patent states that the anchor and belt assemblies are to be stowed "clearly out of a position in which a regular passenger may trip over the structure." ( '325 patent, at col. 5, lines 10-12.) Given also the prosecution history, which tends to show that the application was modified to make clear that the bulkhead feature posed less of a tripping hazard then the prior art in that the relevant assemblies were completely stowed, the Court determines as a matter of law that the patent language means that the anchoring mechanism is completely stowed within the bulkhead and is completely out of the way of passengers.

3812

The parties also dispute the meaning of the claim terms "stowed" and "substantially within." With respect to the term "stowed," TSI argues that the term does not require that the anchor member be completely contained by the bulkhead. Rather, the anchor member can be partially contained and still be considered "stowed." While the term is therefore somewhat ambiguous, the specification makes clear the meaning of "stowed" in the context of the invention. See Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325, 63 USPQ2d 1374, 1381 (Fed. Cir. 2002) ("The specification may assist in resolving ambiguity where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone."). When the anchor member, including the strap assembly, is in the "stowed position" it is "stored away clearly out of a position in which a regular passenger may trip over the structure." '325 Patent, col. 5, ll. 8-12. The figures further show that when the anchor member is stowed, it is completely contained within the bulkhead D. We conclude that claim 24 requires the bulkhead to stow the anchor member by containing it at least enough to prevent a passenger from tripping over it, if not altogether containing the anchor member.
Like wise, "substantially within" as used in claim 31 is ambiguous to the extent it is unclear how much of the anchor member must be contained within the bulkhead housing to be considered "substantially within" the housing. See, e.g., LNP Eng'g Plastics, Inc. v. Miller Waste Mills, Inc., 275 F.3d 1347, 1354, 61 USPQ2d 1193, 1198-99 (Fed. Cir. 2001) (construing the phrase "substantially completely wetted"); York Prods. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1572-73, 40 USPQ2d 1619, 1622-23 (Fed. Cir. 1996) (construing the phrase "a substantial part of the entire height"). The natural meaning of this claim language would be that most, but not necessarily all, of the anchor member must be contained within the housing. See York Prods., 99 F.3d at 1573, 40 USPQ2d at 1622 (stating that "the modifier 'substantially' conveys that the ridge members extend over most of the 'entire height'"); LNP Eng'g, 275 F.3d at 1354, 61 USPQ2d at 1199 (stating that "substantially completely wetted" means "largely, but not necessarily wholly, surrounded by resin"). The specification further explains that the reason why the anchor member should be contained within the housing is to prevent tripping. We therefore conclude that claim 31 requires the bulkhead housing to contain most of the anchor member and to such an extent as to prevent a passenger from tripping over the anchor member.

**C. "Straight" as used in Claims 416:1, 5, and 8**

Alden argues that "straight" means "like a straight line, not curved." Alden Br. at 7. Eazypower would construe the term as "a single, uninterrupted, and continuous straight line." Eazypower Br. at 15. The real issue seems to be whether a serrated scraping edge is "straight."

1. Claim Language

The language of claims 416:1, 5, and 8 are set forth above in the Court's discussion of the term "point." Claim 416:1 refers to "a distal straight scraping edge." DX B, col 3, Ins 56-57. Claim 416:8 uses the same phrase. Id. col 4, ln 65. Claim 416:5 describes "a straight scraping edge." Id. col 4, ln 20. Nothing about the claim language compels the Court to accept either proposed construction.

2. Specification

Alden points to the "Detailed Description of Embodiments" in the '416 patent, which states that the scraping edge is "preferably a straight line from periphery to axis." DX B, col 2, Ins 18-19. The rearward edge is described in similar fashion, but without the term "preferably." Id. col 2, Ins 24-25. This adds nothing to the Court's analysis.

Eazypower argues that all of the embodiments in the '416 patent show a continuous, uninterrupted line representing the scraping and rearward edges. DX B, figs 4, 6, and 8. The Court agrees that the figures show straight lines, but will not limit the claims to the specific embodiments shown. Further, for the reasons the Court refused to interpret the Richards patent based solely on its drawings in the context of the Court's construction of "point," the Court will not rely on these patent drawings to construe "straight."

3. Prosecution History

Alden argues that a piece of prior art cited by the examiner against the '730 patent, patent number 5,570,978 ("Rees patent") shows serrations, and therefore the term "straight," as used in the '730 and '416 patents, includes serrated edges. Like the '416 patent, the '730 patent describes a "distal straight scraping edge" and "straight scraping edge," so the Court considers the prosecution history of the "730 patent in construing the same terms in the '416 patent.

It is clear from the face of the '730 patent that the examiner cited the Rees patent, but not the reasons. DX A (cover sheet). Alden has not explained why Rees was cited nor pointed the Court to any portion of the extensive file history in which Rees was discussed. At oral argument, Alden admitted that Rees was not specifically applied by the examiner. Further, Alden has failed to point out what in the Rees patent shows serrations. Therefore, the Court gives no weight to the Rees patent.

4. Extrinsic Evidence

Eazypower cites the Merriam Webster Online Dictionary definition of "straight" in support of its construction: "free from
curves, bends, angles, or irregularities, straight hair, straight timber"; "generated by a point moving continuously in the same
direction and expressed by a linear equation, a straight line, the straight segment of a curve." Merriam Webster Online
among other inapplicable definitions, as: "free from curves, bends, or angles: having no irregularities in course"; "of,
relating to, or constituting a one-dimensional continuum that is determined throughout its length by any two points included
in it: taking a course like that of a taut uninterrupted cord made fast at opposite ends: progressing or projected in an
unvarying direction." Webster's Third New International Dictionary at 2254 (1981). These definitions support Eazypower's
position that a "straight" edge is uninterrupted and continuous, which would not include a serrated edge.
5. Construction

Neither the claims nor the specification clearly define the term "straight." The prior art that Alden cites is unconvincing.
Therefore, the Court is left with only a dictionary definition, which supports Eazypower's construction. "Straight," as used
in claims 416:1, 5, and 8, means "a single, continuous, uninterrupted straight line."

4. Strand

Plaintiffs' proposed construction of "strand" is "a yarn or yarns used in forming the lateral and longitudinal structures of the
netting arrangement." Defendants' construction of "strand" is "elasticized or non-elasticized materials including yarn that is
heavier than the yarn used to form the stockinette member and having a longitudinal member and a lateral member."

Plaintiff asserts that there is nothing in the claim language or specifications that suggests that the yarn used to form the
netting arrangement must be heavier than the thread found in the stockinette member. According to plaintiffs the term
"strand" refers to the location of the yarn only, i.e., "strand" relates solely to the netting arrangement rather than the
stockinette member.

By adding defendants' proposed language of "heavier than the yarn used to form the stockinette member," plaintiffs properly
contend defendants are limiting the claim to a preferred embodiment while ignoring the second preferred embodiment that
actually demonstrates the composition of the yarn used to form the netting arrangement and the stockinette can be the same
material, i.e., yarn of the same weight instead of heavier for the netting arrangement and lighter for the stockinette member.

The Court adopts plaintiffs' construction of the term "strand": "a yarn or yarns used in forming the lateral and longitudinal
structures of the netting arrangement."

"Strap Opening"

Finally, while the parties also dispute this term, the patent is straightforward. A strap opening is an opening for the arm of a
user, formed by a section of strap as it extends from one securing point to another. There are two strap openings as part of
the subject invention, one formed by the first strap section, and one formed by the second strap section.

Claim Construction

Chesapeake, as cross-appellant, contends that the district court erred in its construction of the claims of the '951 patent.
Claim construction is a matter of law which this court reviews without deference. Cybor Corp. v. FAS Techs., Inc., 138 F.3d
1448, 1456, 46 U.S.P.Q.2d (BNA) 1169, 1174 (Fed. Cir. 1998) (en bane). In its Markman ruling, the district court correctly
interpreted "strata in the earth" and "said strata" to mean identifiable and distinguishable layers of material (e.g., rock)
beneath the surface of the earth. Union Pac. Res. Co. v. Chesapeake, 4:96-CV-726-Y, slip op. at 7 (N.D. Tex. Nov. 30, 1998, Order Granting In Part Defendants' Motion for Claim Interpretation Based on Intrinsic Evidence) (Markman Motion). The court also correctly interpreted "information characterizes said strata," "characterizing information of said strata," and "characterizing information" to mean data produced by logging methods conventional in the industry. These conventional methods permit identification of distinguishing characteristics between layers of rock beneath the surface of the earth. Markman Motion at 7-8. In particular, these phrases can refer to information such as: (1) an X offset (east/west coordinate); (2) a Y offset (north/south coordinate); (3) a true vertical depth (TVD) or Z offset; and (4) a value from a gamma ray log. '951 patent, col. 2, ll. 5-8; col. 5, ll. 47-56.

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1. "streamer positioning device(s)"; "the positioning device"

This phrase is used throughout the Bittleston Patents. WG seeks to construe the term as "a device that controls the position of a streamer as it is towed (e.g. a "bird")." Ion seeks to construe the term as "device(s) used to steer/position the streamer both vertically and horizontally." WG argues that Ion's construction improperly attempts to limit the scope of the terms according to the preferred embodiments, and that it would render meaningless certain language within the patent claims. Ion responds that the inventor's use of the term "the present control system" when describing this invention in the specification necessarily limits the claimed invention according to the provided description.

Turning first to the claims themselves, claim 1 of the '017 Patent teaches a method for controlling the positions of marine seismic streamers with "each streamer positioning device having a wing and wing motor for changing the orientation of the wing so as to steer the streamer positioning device laterally." ('017 Patent, Pl. Br. Ex. 1, Doc. No. 61, col. 10 ll. 37-40.) This claim language, therefore, demonstrates that each positioning device should have a wing motor such that it is capable of steering a streamer horizontally. The Court agrees with Ion in this respect.

Turning then to the invention specification, it also states that "each streamer positioning device has a wing and a wing motor for changing the orientation of the wing so as to steer the streamer positioning device laterally." ('017 Patent, col. 2 ll. 51-54.) Therefore, Ion is correct that both the claim language as well as the specification support its argument that each streamer positioning device must be capable of steering horizontally.

However, nothing in either the claim language or the specification requires that each positioning device be must be capable of controlling the vertical position of the streamer. While it is true that, as Ion suggests, the description of the inventive system as a whole provided in the specification makes clear that vertical control of the streamers is possible, this speaks only to the fact that at least one of the streamer positioning devices on each streamer would necessarily have to be responsible for vertical positioning. However, this does not mean that the each and every positioning device must be capable of vertical steering. Indeed, claim 1 of the '967 Patent specifically teaches that each streamer must have a "plurality of streamer positioning devices," making it possible under the claim terms that not every streamer positioning devices actually controls vertical positioning, although such positioning is possible as to each streamer. ('967 Patent, Pl. Br. Ex. 2, Doc. No. 61, col. 11 ll. 16-19.) Moreover, the specification makes clear that it is only a preferred embodiment of the invention that each streamer positioning device is both laterally and horizontally steerable, stating that "[p]referably, the birds are both horizontally and laterally steerable." ('017 Patent, col. 3 ll. 29-30). See Halliburton Energy Services Inc. v. M-I LLC, 514 F.3d 1244, 1251 (Fed. Cir. 2008) (noting that the use of the word "preferably" in a specification indicates that the description is only a preferred embodiment); DSW, Inc v. Shoe Pavilion, Inc., 537 F.3d 1342, 1348 (Fed. Cir. 2008) (noting that it is well-settled that claims are not to be confined to a preferred embodiment). Therefore, the Court cannot accept Ion's argument that the claim language or the specification require that this claim term be construed so as to require that each streamer positioning device be capable of vertical steering.

Furthermore, even if the Court were to accept that each and every streamer positioning device must be capable of lateral and vertical steering, the Court notes that Ion's construction limits the claim term even further, so that each streamer positioning must be actually used for both kinds of steering. This distinction is an important one, and warrants reiteration. Not only does Ion seek to construe the term "streamer positioning device" so that each device is capable of vertical and horizontal steering, but Ion's construction would also require that each streamer positioning device in fact be used for both kinds of positioning. There is certainly nothing in the specification or in the claim language which requires that the term "streamer
positioning device" be so narrowly construed. Indeed, the specification discloses examples of birds that are used for vertical steering, lateral steering, and both. (See Pl. Br., Doc. No. 61, at 11 (citing to the '017 Patent).)

Finally, as WG points out, the patent claims themselves consistently reference whether the positioning devices within the scope of each claim are being used for horizontal steering, vertical steering, or both. Thus, to construe the term "streamer positioning device" with reference to its horizontal or vertical capabilities would, as WG argues, render certain language provided within the claims redundant. An example of this provided by WG is claim 1 of the '017 patent, which recites a "streamer positioning device having a wing . . . to steer the streamer device laterally." (017 Patent, col. 10 ll. 37-40.) Thus, throughout these patents, the claims consistently "call out," whether lateral or vertical steering is envisioned within the scope of the claim. As such, it is not necessary to construe the term "streamer positioning device" with reference to the way it is used for purposes of steering, as this is often what is described within the claim itself. Accordingly, the Court must reject Ion's proposed construction. WG's proposed construction, by contrast, reflects the ordinary meaning of the term "streamer positioning device." This construction applies the "widely accepted meaning of commonly understood words." Phillips, 415 F.3d at 1314. The Court will therefore construe the term "streamer positioning device" as "a device that controls the position of a streamer as it is towed (e.g. a 'bird')."

1. "active streamer positioning device"

This term is used throughout the Zajac Patent. WG seeks to construe this term as "a device for controlling the horizontal and/or vertical position of a seismic streamer." Ion seeks to construe this term as "device used to control the vertical and horizontal positioning of a streamer."

The Court first notes that the Zajac Patent, as compared to the Bittleston Patents, makes more explicit the requirement that each active streamer positioning device ("ASPD") should be capable of horizontal and vertical positioning of the streamers. Claim 1 of the '038 Patent states that "the master controller" issues positioning commands to each ASPD to adjust a horizontal and vertical position of a first streamer relative to a second streamer. ('038 Patent, Pl. Br. Ex. 5, col. 11 ll. 23-26.) As Ion points out, because the controller issues horizontal and vertical positioning commands, such commands would be futile unless each ASPD was capable of receiving both horizontal and vertical positioning signals. Claim 19 of this Patent goes on to describe a seismic streamer array positioning system wherein an ASPD "is attached to each seismic streamer for vertically and horizontally positioning each seismic streamer." ('038 Patent, col. 12 ll. 63-65.) Thus, this claim also indicates that an ASPD is attached to a streamer for both vertically and horizontally positioning the streamer. In addition, the specification uses "present invention" language and states that "one or more ASPD is employed on each seismic array" ('038 Patent, col. 3 ll. 1-6.) As Ion argues, because the invention only requires that at least one positioning device be located on each streamer, this device would, in order to effectuate the patented technology, necessarily have to control both vertical and horizontal steering. Therefore, unlike with the Bittleston Patents, the Court can conclude that the ASPD described in the Zajac Patent must be capable of both vertical and horizontal positioning.

Nonetheless, that each ASPD must be capable of both types of steering need not be equated with use of each of the devices for vertical and horizontal positioning. Indeed, Ion appears to admit this when it states that "Ion does not dispute that an ASPD can be operated in only a horizontal positioning mode." (Def. Resp. Br., Doc. No 73, at 15.) The Court's construction of the disputed term must, therefore, reflect this distinction between capability and use, because neither the patent claims nor the specification disavow the possibility that the ASPDs might be used for either vertical or horizontal positioning, although they are capable of both. As WG argued during the hearing, the summary of the invention says only that the streamer must be controlled both vertically and horizontally, but not that every single ASPD must perform both functions. While WG's construction reflects that the ASPD may be used for either vertical or horizontal positioning, however, the construction that it offers does not make clear that the ASPD must be capable of both types of the positioning. As such, this Court will not adopt the construction offered by either party, and instead construes this claim term as "a device capable of controlling the vertical and horizontal position of the seismic streamer."
8. "streamer separation mode"

This phrase is used in claim 8 of the '017 and '607 Patents, claim 9 of the '967 Patent, and claims 1, 13, 18, and 30 of the '520 Patent. WG seeks to construe this term as "a control mode that attempts to set and maintain the spacing between adjacent streamers." Ion seeks to construe this term as a "mode wherein the global control system attempts to maximize the distance between adjacent streamers." The primary dispute between the parties, therefore, is whether this control mode should be construed so as to require that the global control system act to maximize the distance between streamers.

Ion once again points out that its construction of the term tracks the language used in the patent specification, or the description of the "inventive system." Once again, however, the Court declines to use the specification language to limit the scope of this term. As to the necessity of the global control system, as stated above, the Court must recognize that certain claims within the '520 Patent describe the implementation of the streamer separation mode with no reference to a global control system. Therefore, although the specification makes clear that use of the global control system to implement this mode is a preferred embodiment of the invention, the Court declines to construe this term such that it requires a global control system. Innova/Pure Water Inc., 381 F.3d at 1117 (stating that "[p]articular embodiments appearing in the written description will not be used to limit claim language that has a broader effect").

Furthermore, as WG points out, claim 8 of the '017 Patent describes the streamer separation mode as one where the global control system attempts to direct the streamer positioning device "to maintain a minimum separation between adjacent streamers." ('017 Patent, col. 11 ll. 12-16.) Construing the streamer separation mode as an attempt to maximize the distance between the streamers would, therefore, directly conflict with this claim language, which calls for only a minimum separation distance between adjacent streamers. In addition, claim 14 of the '520 Patent, which is dependent on claim 13, specifically cites a limitation wherein the control system is "attempting to maximize the distance between adjacent streamers." ('520 Patent, col. 11 ll. 57-59.) Because this is a dependent claim, it is presumably narrower than the preceding independent claim, which describes the streamer separation mode as one where "the control system is attempting to minimize the risk of entanglement of the streamers." ('520 Patent, col. 11 ll. 54-56.) Accordingly, the Court declines to construe this term as requiring either a global control system or distance maximization. Instead, the Court will adopt WG's construction, and holds that streamer separation mode should be construed as "a control mode that attempts to set and maintain the spacing between adjacent streamers."

1. "Stress-induced martensite"

The parties agree that "stress-induced martensite," is martensite that is formed from austenite by the application of stress. The crux of the dispute is whether martensite must form by the application of stress alone or whether temperature also is a factor in the process. Gore urges the former, and the Court shall refer to Gore's proposed inclusion of this requirement as the "isothermal limitation."

Medtronic correctly notes that the disputed claim term does not contain an "isothermal limitation." When the Court looks at all the claims in which the term is used, it appears that when Jervis included an "isothermal" limitation, he either did so expressly or did so in connection with the reversion of the stress-induced martensite to austenite. (See, e.g., '957 Patent, 11:26-36, 12:14-25; '546 Patent, 11:62-66, 13:10-13; '141 Patent, 11:12-20) 3

3 The '546 and '141 Patents are attached as Exhibits 2 and 3, respectively, to the Bianrosa Declaration.
The Court also considers the claim language in light of the specification of which it is a part. See Markman, 52 F.3d at 979. In the Background of the Invention section of the specification, Jervis states:

Many [SMAs] are known to display stress-induced martensite (SIM). When an SMA sample exhibiting stress-induced martensite is stressed at a temperature above M[s] (so that the austenitic state is initially stable), but below M[d] (the maximum temperature at which martensite formation can occur even under stress) it first deforms elastically and then, at a critical stress, begins to transform by the formation of stress-induced martensite. Depending on whether the temperature is above or below A[s], the behavior when the deforming stress is released differs. If the temperature is below A[s], the stress-induced martensite is stable; but if the temperature is above A[s], the martensite is unstable and transforms back to austenite, with the sample returning (or attempting to return) to its original shape. This effect is seen in almost all alloys which exhibit a thermoelastic martensitic transformation, along with the shape memory effect. However, the extent of the temperature range over which SIM is seen and the stress and strain ranges for the effect vary greatly with the alloy.

('957 Patent. 1:50-2:2.) This portion of the specification supports Medtronic's assertion that temperature will be a factor in the formation of stress-induced martensite. Similarly, there are references in the specification that suggests the "isothermal" limitation referred to the reversion process. (See, e.g., id., 4:1-2 ("the alloy reverts to austenite without requiring a change in temperature").)

Gore contends that the prosecution history of the Jervis Patents demonstrates that Jervis "repeatedly disclaimed use of temperature change as part of his invention." (Opp. Br. at 7:13-14.) For example, Gore refers to a Response to Office Action, dated January 27, 1996, in which Jervis states, "[s]trictly speaking the Applicant is taking advantage of the shape memory effect [t]he difference is that the material transforms isothermally instead of over a temperature range." (Bianrosa Decl., Ex. 8 at p. 3.) 4 The paragraph immediately preceding this statement demonstrates that Jervis was responding to the Examiner's concern that "while Applicant is claiming a device and method whereby a shape memory alloy is utilized it appears that the shape memory effect is not utilized." It also directed to the Examiner's request for clarification of the invention. (Id.) Jervis responds by noting that he was, in fact, taking advantage of the shape memory effect, albeit through the use of an alloy that displays stress-induced martensite at body-temperatures. (Id. at pp. 3-6.)

4 This response was submitted to the USPTO during the prosecution of an application, subsequently abandoned, that was a predecessor to the application that issued as the '957 Patent.

Similarly, when Jervis distinguished the Shreck reference, he noted that martensite can be formed by cooling or by the application of stress. However, the discussion does not suggest that temperature plays no factor in the formation of stress-induced martensite. Other references cited actually support Plaintiff's position that the "isothermal" reference pertains to the reversion of martensite to austenite, rather than to its formation from austenite in the first instance. (See, e.g., Bianrosa Decl., Ex. 12 at p. 4.) Having considered the references in the prosecution history upon which Gore relies, the Court finds that they do not support a conclusion that, in order to distinguish his invention over prior art, Jervis limited the term "stress-induced martensite" to martensite that is formed solely by the application of stress.

Accordingly, the Court construes the term "stress-induced martensite" to mean: "martensite that forms from austenite due to stress."

I. Ms Temperature at Zero Stress

Medtronic argues that the patents-in-suit teach that Ms must be determined at zero stress, because with the addition of stress Ms shifts and is no longer a constant temperature. BSC contends that this is too broad a reading as it includes austenite that is stressed, raising the temperature of Ms, and then cooled to below the new temperature. Therefore, according to BSC, the martensite that formed was thermally, not stress, induced. BSC would have the Court read into the term stress-induced...
martensite the words "without cooling" or, as later argued by BSC, isothermal.

Jervis taught in the '957 patent that "when an SMA sample exhibiting stress-induced martensite is stressed at a temperature above Ms (so that the austenitic state is initially stable), but below Md . . . it first deforms elastically and then at a critical stress, begins to transform by the formation of stress-induced martensite." (the '957 patent, col. 1, Ins. 51-58.) An SMA's Ms temperature is constant only at zero stress because with the application of stress the Ms temperature rises. Thus, in order for a person skilled in the art to know what the Ms temperature is, if it is not at zero stress, the patent would have to disclose the amount of stress that is being applied to the SMA—which it does not. Moreover, in the '378 patent, Jervis lists a number of alloys and gives one Ms temperature for each alloy, without addressing the issue of stress. Accordingly, the Court concludes that the Ms temperature referred to in the patents-in-suit represents the temperature at which martensite will begin to form at zero stress.

II. Without Cooling

BSC relies on the following language from the patents themselves and their file histories in support of its reading "without cooling" into the term stress-induced martensite:

If a [stress-induced martensite] pseudoelastic wire is used to form the coil, which is then isothermally deformed by loading into a catheter, then the need for temperature control is avoided. The wire remains straight when in the catheter, but re-forms the coil spontaneously when it is extruded from the catheter. Accurate placement is thus readily obtainable, since there is no urgency as might be required with a conventional shape memory effect element.

(Robbennolt Aff. Ex. 1 (the '957 patent, col. 9, Ins. 39-47) (emphasis added).) "If an [stress-induced martensite] pseudoelastic wire is used, it can exert a relatively constant force . . . . The load may be applied mechanically, and is thus more readily established, and no precise temperature control of the alloy is needed as would be required for the shape memory effect." (II at col. 9, Ins. 10-17 (emphasis added).) Both of these statements are taken from examples of uses for stress-induced martensite under the preferred embodiment section of the '957 patent. It is unclear how the use of the word isothermal in one of eight examples limits the definition of stress-induced martensite. Moreover, the statement "no precise temperature control of the alloy is needed" does not lead to a finding that temperature control of an SMA prevents any resulting martensite from being termed stress-induced.

In addition, Jervis argued to the PTO, in order to overcome prior art, that "strictly speaking, the Applicant is taking advantage of the shape memory effect since there is a - transformation between austenite and martensite when the material acts pseudoelastically. The difference is that the material transforms isothermally instead of over a temperature range" (Lehmann Aff. Ex. E (Jervis '852 Appl. filed October 14, 1983; Jan. 13, 1986 Response to Office Action, p. 3)(emphasis added).) 3 Again, the Court is not persuaded that an isolated statement made to the PTO distinguishing stress-induced martensite from martensite that forms over a temperature range, that is cooling below Ms, limits stress induced martensite to martensite created without any temperature variation.

-------- Footnotes --------

3 The '957 patent is a continuation of co-pending commonly assigned application No. 047,824, filed May 8, 1987, which is a continuation of application No. 865,703, filed May 21, 1986, now United States patent No. 4,665,906, which is a continuation of application serial No. 541,852, filed October 14, 1983. (Lehmann Aff Ex. A, the '957 patent file history.)

-------- End Footnotes --------

BSC also claims that Jervis should be bound by the term "without cooling" because this is how he was able to distinguish his patents from the prior art. In support of this argument BSC quotes portions of the following language from the prosecution history of the '378 patent:

By way of background, there are two techniques available for transforming an appropriate alloy into the martensitic state. The first technique . . . is cooling the material so that martensite forms at Ms under no stress. By the second technique . . . the same material, martensite can form above Ms if stress is applied, thereby forming stress-induced martensite. The present invention is directed to use of the unique properties of stress-induced martensite, not martensite formed by cooling.
The underlined language was omitted by BSC. BSC argues that the last sentence supports its addition of "without cooling" to the definition of stress-induced martensite. The Court disagrees. Instead of using the terms stress-induced martensite and thermal-induced martensite, Jervis referred to the two techniques as one that required cooling below Ms at zero stress and one that will form above the Ms temperature at zero stress if stress is applied. Accordingly, he distinguishes the two techniques by calling thermal-induced martensite, the first technique, martensite formed by cooling. This does not translate into a finding that stress-induced martensite must form without cooling.

The narrowing of the term stress-induced martensite by BSC is not supported by the plain meaning of the claim language, and the Court will not read extraneous terms from the prosecution history or the claim specification into the claim under the guise of term interpretation. See Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989) ("This court has consistently adhered to the proposition that courts cannot alter what the patentee has chosen to claim as his invention, that limitations appearing in the specification will not be read into claims, and that interpreting what is meant by a word in a claim 'is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.") (quoting E.I. duPont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir. 1988)).

Medtronic's definition of stress-induced martensite represents the plain meaning of that term. Accordingly, the Court construes the term stress-induced martensite to mean: Martensite that forms from austenite due to the presence of stress, applied while the alloy is above its Ms temperature, where Ms is determined at zero stress.

C. Claims 1 & 9: "A roll of stretched plastic film for wrapping a pallet load"

Pliant asks me to construe the "roll of stretched plastic film" as a roll of "previously stretched (i.e., mechanically elongated) plastic film." Defendants object to the use of the term "previously," arguing that the inventor disclaimed the term during the patent's prosecution. The prosecution history reveals that the inventor's proposed claims were rejected several times before approval. Until the final set of claims was proposed in 1995, the inventor consistently used the term "prestretched." The inventor used the term to convey the idea that the stretching occurred before the plastic was rolled. In October 1995, the patent examiner proposed a new claim to "correct[] ambiguities in the claim." The proposed claim substituted the word "stretched" for "prestretched." The inventor adopted this language, uniformly substituting "stretched" for "prestretched" when proposing his final amendments. Nonetheless, the revised claim continues to teach that the film is first stretched, then rolled. Those amendments were approved by the patent examiner.

On the basis of this prosecution history, Defendants ask me to find that the patentee explicitly disclaimed the concept of prestretching.

The purpose of consulting the prosecution history in construing a claim is to "exclude any interpretation that was disclaimed during prosecution." Accordingly, "where the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim congruent with the scope of the surrender." Such a use of the prosecution history ensures that claims are not construed one way in order to obtain their allowance and in a different way against accused infringers.

Chimie v. PPG Indus. Inc., 402 F.3d 1371, 1384 (Fed. Cir. 2005) (citations omitted). The substitution of "stretched" for "prestretched" in response to the patent examiner's concerns about ambiguity was not a clear disavowal of the concept that the film is stretched before it is rolled. However, Pliant's proposed insertion of the word "previously" into its proposed construction of the claim is unnecessary. (See '393 Patent, Claims 1 and 9) ("the stretched film then being rolled"). If anything, it adds an element of ambiguity into a claim amended to remove unnecessary confusion. Therefore, I construe the term "a roll of stretched plastic film" to mean "a roll of stretched (i.e., mechanically elongated) plastic film."
At the threshold, the parties disagree on the proper function performed by the "means for causing" in claims 1 and 3 of the '880 patent. According to the text of claim 1, on which claim 3 is dependent, the "means" causes "at least one laser beam to strike the periphery of the energy zone for visibly outlining said entire energy zone." '880 patent, col. 9, ll. 39-41 (emphases added). The district court construed the phrase "strike the periphery . . . for visibly outlining" in the claims' function as encompassing the "projection of the laser light toward the surface, but does not encompass light striking the center or interior portion of the energy zone." In reaching that interpretation, the trial court reasoned that the language of claims 1 and 3 requires the laser beam to only strike the periphery of the energy zone. To buttress that decision, the district court indicated that permitting the laser beam to strike the center of the energy zone would be contrary to the claim's purpose of visibly outlining the energy zone and contradict an express element of the claim. However, neither the reasons provided by the district court nor our plenary review of the intrinsic evidence support that claim interpretation.

"When construing the functional statement in a means-plus-function limitation, we must take great care not to impermissibly limit the function by adopting a function different from that explicitly recited in the claim." Generation II Orthotics, Inc. v. Med. Tech., Inc., 2001 U.S. App. LEXIS 18420, 263 F.3d 1356, 1364-65, 59 USPQ2d 1919, 1926 (Fed. Cir. 2001). Despite that admonition, the trial court's ruling incorporated into the claim language a novel negative limitation, precluding the laser beam affected by the "means for causing" from striking the center or the interior of the energy zone. As construed by the district court, claims 1 and 3 now encompass a "means for causing said at least one laser beam to strike the periphery of the energy zone, but not strike the center or interior portion of the energy zone, for visibly outlining said entire energy zone."

This additional negative limitation finds no anchor in the explicit claim language. The express text of the claims does not prohibit the laser beam from striking inside the energy zone. The claims' wording only calls for the laser beam to "strike the periphery of the energy zone for visibly outlining said entire energy zone." '880 patent, col. 9, ll. 39-41. The phrase added by the district court finds no support in the text of the claims.

Nor is that negative limitation inherent in the term "periphery," as believed by the district court and argued by Raytek. The term's ordinary and customary meaning as discernible from dictionary evidence, see Schumer v. Lab. Computer Sys., Inc., 308 F.3d 1304, 1311, 64 USPQ2d 1832, 1838 (Fed. Cir. 2002) ("The proper approach is to construe the claim language using standard dictionary definitions, because here, the claims have no specialized meaning.")., is "the perimeter of a circle, ellipse, or other closed curvilinear figure." Webster's Third New Int'l Dictionary 1681 (1993). That definition does not necessitate the addition of a negative limitation, since nothing in the term's denotation precludes the laser beam from striking inside the energy zone's perimeter. The plain words of the claims merely require that the laser beam strike the periphery of that zone.

In the same vein, we do not agree with the trial court that directing light inside the energy zone would contradict the claim's stated purpose of "visibly outlining said entire energy zone." The inherent contradiction identified by the district court exists only because it assumed that a laser beam directed inside the energy zone cannot at the same time outline that zone. That assumption, in turn, supposes two facts: (1) the claimed invention only has one laser beam, and (2) the sole laser beam is incapable of outlining while striking the inside of the energy zone at the same moment. The plain words of the claims belie the first supposition, since the claims permissively call for "at least one laser beam." '880 patent, col. 9, l. 39 (emphasis added). The phrase "at least one" indicates that the "means for causing" does not necessarily act on only one laser beam. See Rhine v. Casio, Inc., 183 F.3d 1342, 1345, 51 USPQ2d 1377, 1379 (Fed. Cir. 1999) ("Use of the phrase 'at least one' means that there could be only one or more than one."). The second supposition is equally flawed, because the claims only require that the laser beam strike the periphery to outline the energy zone. In other words, striking the inside of the energy zone is not a requirement of the plain claim language, avoiding the necessity of the laser beam being both outside and inside the energy zone at the same time. Consequently, with both suppositions put to rest, the assumption made by the district court can no longer stand, exposing the alleged contradiction as a mere illusion.

Beyond the words of the claim, neither the district court nor Raytek has identified any express disclaimer or independent lexicography in the written description that would justify adding that negative limitation. See CCS Fitness, Inc. v.
Brunswick Corp., 288 F.3d 1359, 1366-67, 62 USPQ2d 1658, 1662-63 (Fed. Cir. 2002). Our independent review of the patent document, see Bell Atl. Network Servs., Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1266, 59 USPQ2d 1865, 1869 (Fed. Cir. 2001), reveals no express intent to confer on the claim language the novel meaning imparted by this negative limitation. Accordingly, we must conclude that there is no basis in the patent specification for adding the negative limitation.

17. Strip

The next term for construction is "strip" in all claims. 20 The Plaintiffs maintain that strip means "a relatively long narrow piece of something." (Pls.' Open Br. 36.) Pergo states that "strip" means "a component integrated with the floor panel which after joining, is flat and situated either flush with or slightly below the underside of the panel." (Unilin's Open. Br. 48-49.)

20 Pergo has requested construction of the term "strip" in a more limited group of claims. (See Unilin's Open. Br. 48.) One of the claims for which a construction of strip is requested is claim 1 of the '579 patent.

Claim 1 of the '579 patent states:

A mechanical locking system for locking a first edge of a first panel to a second edge of an identical second panel that are arranged on a subfloor, the mechanical locking system comprising: means on the first edge and the second edge for forming a first mechanical connection locking the first and second edges to each other in a first direction at right angles to a principal plane of the panels; a locking device arranged on an underside of the first and the second edges, the locking device forming a second mechanical connection locking the first and the second edges to each other in a second direction parallel to the principal plane and at right angles to the edges; the locking device including a locking groove which extends parallel to and spaced from the second edge, the locking groove being open at the underside of the second edge and including an internal surface; the locking device further including a strip extending from the first edge, the strip extending throughout substantially an entire length of the first edge and being provided with a locking element projecting from the strip; the strip, the locking element, and the locking groove being configured such that when the second edge is pressed against an upper part of the first edge and is then angled down against the subfloor, the locking element can enter the locking groove; the locking element has a locking surface which faces the first edge and is configured so that it can contact the internal surface of the locking groove when the first and second edges are joined together to prevent substantial separation of the joined first and second edges; and the locking element further including an outer portion which is most distant to the joined edges and is not in contact with the locking groove when the first and second edges are joined together. ('579 patent, 10:35-67; 11:1-4.) (Emphasis added).

The starting place for construction of a claim term is the claims. The Court does not interpret claim terms in a vacuum, devoid of the context of the claim as a whole. See Hockerson-Halberstadt, Inc. v. Converse Inc., 183 F.3d 1369, 1374 (Fed. Cir. 1999) ("proper claim construction . . . demands interpretation of the entire claim in context, not a single element in isolation."); ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1088 (Fed. Cir. 2003) ("While certain terms may be at the center of the claim construction debate, the context of the surrounding words of the claim also must be considered.")

Review of claim 1 of the '579 patent indicates that "strip" is used in a variety of contexts. The Plaintiffs' simple broad definition fits into different contexts. However, the inclusion of the phrase "of something" does not add to the definition. "Piece" suggests that the strip is tangible, see Webster's II New Riverside University Dictionary 890 ("a thing regarded as a unit or element of a larger quantity or class"), as does "of something." So, the Court has omitted "of something" from its definition of strip. Pergo's proposed definition adds an unwarranted temporal limitation on the term by incorporating the position of the strip after joining. The Court defines "strip" as a "relatively long narrow piece."
B. Analysis

The first disputed term is "strips of adhesive." It is undisputed that the accused form uses adhesive. The parties dispute what constitutes a "strip" of adhesive.

A "strip" is "a narrow piece of about even width." Webster's Third New International Dictionary 2264 (1993) ("Webster's"). This definition shall serve as the default because nothing in the specification suggests that the patentee chose to be his own lexicographer. See Multiform Desiccants, Inc. v. Medzam Ltd., 133 F.3d 1473, 1477 (Fed. Cir. 1998). The prosecution history shows that the applicant originally used the word "strips" throughout the specification interchangeably with "strips of adhesive" or "adhesive strips." (D.I. 138, Ex. D at D18-D26) The examiner objected to the disclosure because of the inconsistent use of that terminology (id. at D41), and the applicant amended the specification accordingly. (Id. at D53) The prosecution history does not, however, shed any light on what constitutes a "strip."

Neither party submitted extrinsic evidence to show what one of ordinary skill in the art would understand "strips of adhesive" to encompass. Since both parties' proposed definitions were drafted with an eye toward the accused product, the court will use the dictionary definition. Thus, based on the current record, a "strip of adhesive" is a narrow piece of glue of about even width. 1

1 At oral argument counsel referred the court to, inter alia, the '798 patent specification which was filed less than six months after the application for the '464 patent was filed. That patent describes "patterns of adhesive" as "discontinuous strips." ( '798 patent, col. 4, lns. 14-45) The patent also uses the terms "adhesive patterns/strips" and "longitudinal strips/patterns" in the specification. (Id., col. 5, lns. 3-5) The court also notes that the specification of another Moore mailer patent involved in a pending case before the court provides:

It will be understood that the strips of adhesive adjacent the respective side edges may be placed anywhere along the edges so long as there will be adequate adhesive to properly seal the mailer 10 when completed to satisfy users and postal authorities. In other words, the adhesive may be intermittent, such as dots. When "strip" of adhesive is used in the appended claims such intermittent coverage is included.

(U.S. Pat. No. 4,928,875, col. 2, lns. 17-24) ("the '875 patent") The application for that patent was filed more than two years before the application for the '464 patent. Absent evidence that the above explanations were understood by persons of ordinary skill in the art, the court is left with the conclusion that the inventors of the '798 and '875 patents chose to be their own lexicographers; the inventor of the '464 patent did not.

The accused device uses a series of triangle-shaped spots of glue. The court cannot conclude that the series of triangles satisfies the "first and second longitudinal strips of adhesive" element of claim 1. To be liable for literal infringement under section 35 U.S.C. § 271(a), the accused device must be shown to include every element of the claim. See Builders Concrete, Inc. v. Bremerton Concrete Prods. Co., 757 F.2d 255, 257 (Fed. Cir. 1985). Because plaintiff failed to show one element, the court cannot find that the accused form literally infringes claim 1. Moreover, since plaintiff failed to show that one claim element read on the accused form, there is no need to discuss the other disputed claim elements.
Defendant's construction: A "strip of material" does not include an object that disintegrates or dissolves in the mouth during use. A "strip of material" is a piece of material that has structural integrity separate and apart from the layer of a tooth whitening substance of composition recited in the claims, and that has the following mandatory characteristics: it is conformable to the contoured surfaces of the teeth (and, in the case of the '579 patent, is conformable without permanent deformation); it serves as a substantially water impermeable barrier during use; it has low flexural stiffness; and it is easily removable and intact after use. In addition, the term 'strip of material' is indefinite as to the shapes that fall inside or outside the scope of the claim term.

Defendant dispute the meaning of "strip of material" on two alternate theories. First, defendant argues that a "strip of material" is insolubly ambiguous because the patents do not indicate what shapes fall within and outside the scope of the term. Second, defendant contends that a strip of material cannot "dissolve" and that it must include five mandatory limitations found in the specification. I agree with plaintiff that these two positions taken by defendant appear to be in tension with each other; regardless, I conclude that the patents disclose a range of possible shapes for a "strip of material" and therefore, the term is not insolubly ambiguous. Further, I find that neither the claim language nor the specification requires that the claim be construed to include defendant's asserted limitations except the "flexural stiffness" limitation in both patents and the "substantially water impermeable limitation" in the '579 patent.

a. Indefiniteness: shape of "strip of material"

The standard for indefiniteness is high. "If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree," the claim is sufficiently clear to avoid indefiniteness. Exxon Research and Engineering Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001). A claim is indefinite only if the "claim is insolubly ambiguous, and no narrowing construction can properly be adopted." Id.

In the '240 patent, the inventors described a strip of material as "sized to cover the front surface of one or more teeth and soft tissue adjacent said front surface of the one or more teeth." '240 Pat., col. 17, Ins. 20-23. In the '579 patent, they described a strip of material as "sized to cover a front surface of a plurality of teeth." '579 Pat., col. 14, Ins. 34-36. Both patents disclose the shape of strip of material as one that could cover either one or more teeth. From this description, one knows what the general metes and bounds are and what shapes would not work, such as circles, cubes, pyramids or disks. Thus, contrary to defendant's contention, it is possible to narrow the possible universe of shapes that could be a "strip of material" claimed in both the '240 and '579 patent. It follows that a "strip of material" is not indefinite.

b. Limitations

Although plaintiff is correct that courts should be cautious about reading limitations from preferred embodiments into the claim language, a court cannot disregard the specification altogether. It is an essential tool in discerning the meaning of claim terms when there is a lack of accepted meaning in the art. Irdeto Access, Inc. v. Echostar Satellite Corp., 383 F.3d 1295, 1300 (Fed. Cir. 2004) (when no accepted meaning, "[t]he duty . . . falls on the patent applicant to provide a precise definition for the disputed term."). In this case, the parties dispute what qualities a "strip of material" must have in order to practice either the '240 or '579 patent. Most of the limitations that defendant proposes are merely qualities found in preferred embodiments or unfounded extrapolations defendant draws from the specification. The only limitations implicitly required are that the "strip of material" in the '240 and '579 patents have a "low flexural stiffness" and that the "strip of material" in the '579 patent be "substantially water impermeable."

1) limitations found in the specification: "flexural stiffness" and "substantially water impermeable"

It is clear in both the '240 and '579 patent when the inventors are discussing "preferred embodiments" in the specification. In certain instances, however, the specification describes the claim terms generally.

a) limitations in the '240 patent

The specification states that "the strip of materials 12 should have a relatively low flexural stiffness so as to enable it to drape over the contoured surfaces of the teeth with very little force being exerted. . . ." '240 Pat., col. 11, Ins. 10-13 (emphasis added). In this instance, the patent is referring to the "strip of material" generally and not merely to a preferred embodiment.
of the invention, as it clearly does in other instances. E.g., '240 Pat., col. 3, Ins. 13-18 (detailed description of preferred embodiments); col. 5, Ins. 17-18 ("Referring again to FIG. 9 and while not intending to be bound by any theory"); col. 6, Ins. 19, 41, 66 (indicating descriptions of particular embodiments). Therefore, I agree with defendant that this quality of the strip of material is not an optional but a mandatory feature. However, I do not agree with defendant that the strip of material must always be "water impermeable." Defendant identifies no language in the specification that explicitly describes the "strip of material" as being "water impermeable." Accordingly, I will not import this limitation into the term "strip of material" as used in the '240 patent.

b) limitations in the '579 patent

The specification of the '579 patent provides that "[i]n the present invention, the strip of material has a flexural stiffness of less than about 5 grams/cm . . . ". '579 Pat., col 4, 34-35. The patent also describes the importance of the "strip of material" having a "low flexural stiffness." '579 Pat., col 4, ln. 22 - col. 5, ln. 20. "When a patent thus describes the features of the "present invention" as a whole, this description limits the scope of the invention." Verizon Services Corp. v. Vonage Holdings Corp., 503 F. 3d 1295, 1308 (Fed Cir. 2007). Therefore, I agree with defendant that as in the '240 patent, this is not an optional but a mandatory feature of the '579 patent.

The specification also discloses possible materials that might compose the "strip of material" and whether it may contain multiple layers of the material. However, the specification states that "regardless of the number of layers, the strip of material is substantially water impermeable." '579 Pat., col 3, 51-52. This section also refers to the "strip of material" generally and not as a preferred embodiment. The use of the word "regardless" in this instance suggests that no matter what substance constitutes the "strip of material," it must be "substantially water impermeable." Therefore, I conclude that this feature is a mandatory feature of the '579 patent.

2) limitations not found in specification

Although the parties dispute a number of issues related to the term "strip of material," their core dispute focuses on whether plaintiff's patents disclose a strip of material that can dissolve in the user's mouth. Defendant asserts that the main difference between its whitening product and plaintiff's is that the Listerine Whitening (R) Quick Dissolving Strips dissolve in the user's mouth. Defendant believes that plaintiff's patent discloses a product that does not dissolve because the patents nowhere mention that the "strip of material" dissolves. In addition, as defendant points out in support of its non-dissolution argument, the '579 patent requires that (1) the strip of material must be removed intact from the mouth; (2) it must be conformable to the contoured surfaces of the teeth without permanent deformation; and (3) it must have structural integrity. Defendant is partially correct. It is correct in saying that the patents do not mention whether the strip of material dissolves but it does not acknowledge that the patents do not require that the strip be non-dissolving or require expressly or implicitly that the strip of material must retain any of the other limitations defendant would assign it.

With respect to the argument regarding dissolution, defendant suggests that because the strip of material "serves as a protective barrier . . . to prevent saliva from contacting the tooth whitening composition [or substance]," '240 Pat., col. 3, Ins. 27-31; '579 Pat., col. 3, Ins. 35-37, the strip cannot dissolve in the mouth. Defendant assumes that because the strip must be a protective barrier it cannot later dissolve, but it points to no language in the specification and offers no evidence or expert testimony to support its assumption that a protective barrier cannot dissolve at some point. I conclude that the requirement that the "strip" function as a "protective barrier" includes no requirement that a strip of material not dissolve.

In arguing that the "strip of material" must be removable and therefore non-dissolvable, defendant identifies a number of passages in the specification that it believes indicate that the strip of material must be removed from the mouth. One of the passages states that "the strip of material [can be] easily removed by the wearer by simply peeling off the strip of material using ones [sic] finger, fingernail or rubbing with a soft implement such as a [sic] cotton balls and swabs or gauze pads." '579 Pat., col. 4, ln. 64 - col. 5., ln. 2. A second passage states that "The delivery system is easily removable from the oral surfaces without the use of an instrument, a chemical solvent or agent or excessive friction." '579 Pat., col. 5, Ins. 2-4. Contrary to defendant's proposed construction requiring non-dissolution, the specification says nothing about the strip's being removed from the mouth or that it be removed intact; it requires only that the strip of material be removable from the oral surface, which is the user's teeth. Therefore, this proposed limitation will not be read into the '579 patent.

Defendant cites the requirement in the specification of the '579 patent that the strip of material be "easily conformable to

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Molten's construction expands the term itself to include a larger portion of the claim. Molten's proposed construction of "strips of seam material", or a narrow piece of material that constitutes a seam.

C. Strips of seam material

The parties dispute the meaning of the term "strips of seam material." This term is found in claim numbers 1, 3, and 5. Baden argues that "strips of seam material" should be construed as "strips of seam material." Molten suggests that "strips of seam material" should be construed as "raised seams having a raised portion which is filled with an underlying foam layer" or "a seam having an outer surface formed by thin rubber strips and an inner portion of foam attached to the strips." Molten is arguing that Baden's patent is limited to a design with strips of seam material with a raised portion that is not solid underneath, but rather, has foam underneath and within the raised portion of the seam. The Court does not agree that Baden's patent is limited in this way.

The Court agrees with Baden that the ordinary and plain meaning of the words "strips of seam material" is "strips of seam material". Stated differently, in isolation, this term means a narrow piece of material that constitutes a seam. This interpretation is supported by the claims themselves. The term is used throughout the claims. For example, in Claim 1, "each strip of seam material comprises: a raised portion positioned between spaced, outer edges of the skin panels on opposite sides of the raised portion; and flange portions extending away from opposite sides of the raised portion." And Claim 1 states "a plurality of raised seams defined by strips of a seam material, wherein the sponge layer underlies the raised seams." Claim 3 states "a plurality of raised seams defined by strips of a seam material, wherein the strips of seam material are bonded directly to the cellular sponge layer and the sponge layer underlies the strips of seam material . . . ." Claim 5 states "a plurality of raised seams defined by strips of a seam material attached to the cellular sponge layer . . . and, wherein, each strip of seam material includes a raised portion positioned between spaced, outer edges of the skin panels on opposite sides of the raised portion . . . ." In all of these contexts, 'the most straightforward meaning of "strips of seam material" is "strips of seam material", or a narrow piece of material that constitutes a seam.

Molten's construction expands the term itself to include a larger portion of the claim. Molten's proposed construction of
"strips of seam material" is really a proposed construction of "strips of a seam material, wherein the sponge layer underlies the raised seams." (Claim 1). But even considering that phrase as one term, the Court is not convinced that the term means "raised seams having a raised portion which is filled with an underlying foam layer." Molten's construction is not supported by the claim language. None of the claim language discusses the raised portion of the seam being "filled" with foam; instead, it discusses the sponge or foam layer underlying the seam strip.

Molten's construction does find support in Figure 3 of the '835 patent. That figure shows a seam with a raised portion, and within that raised portion is foam. But the claims themselves do not contain language that limits the design to that particular graphic representation. The Court will therefore not limit the claims to the graphic representation in Figure 3. See Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 1571 (Fed. Cir. 1988) ("Although the specification may aid the court in interpreting the meaning of disputed language in the claims, particular embodiments and examples appearing in the specification will not generally be read into the claims.").

Molten also makes arguments regarding the prosecution of the '283 patent. But the Court is not considering the '283 prosecution history because Baden has amended its complaint to eliminate its cause of action based on that patent. And even if the Court were to consider the prosecution history of the '283 patent, the Court does not agree with Molten that the '283 prosecution history limits the patent to Molten's proposed construction. The prosecution history makes clear that Baden's '835 patent is limited to a design with a sponge layer under both the exterior panels and the rubber seams. The prosecution history presented by Molten does not suggest that Baden's '835 patent is limited to seams filled with foam.

CONCLUSION

Because Baden's proposed construction of both of the disputed claim terms is supported by intrinsic evidence, the Court adopts Baden's proposed construction of "raised seams" and "strips of seam material." "Raised seams" means "a piece of material that is at a higher position than the sponge layer of the basketball." "Strips of seam material" means "strips of seam material."

Home Depot further argues that the Industriaplex device does not include a "dust collection structure for collecting sawdust," a limitation found in each claim of the '039 patent. Home Depot argues that this limitation is a "means-plus-function" limitation within the meaning of 35 U.S.C. § 112 P 6, which provides that a claim limitation "may be expressed as a means or step for performing a specified function with the recital of structure, material, or acts in support thereof." The significance of classifying this limitation as a means-plus-function limitation is that it would restrict the scope of the limitation to structures that collect sawdust by the particular means described in the patent, rather than through simply any "dust collection structure." "Literal infringement of a means-plus-function claim limitation requires that the relevant structure in the accused device perform the identical function recited in the claim and be identical or equivalent to the corresponding structure in the specification." Applied Medical Resources Corp. v. U.S. Surgical Corp., 448 F.3d 1324, 1333 (Fed. Cir. 2006).

However, claims 1 and 4 do not use the term "means." When a claim element does not use the term "means," there is a rebuttable presumption that the element is not a "means-plus-function" limitation. See TIP Systems, LLC v. Phillips & Brooks/Gladwin, Inc., 529 F.3d 1364, 1373 (Fed. Cir. 2008). The presumption "is a strong one that is not readily overcome." See Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004). The presumption is rebutted only if the claim recites sufficiently definite structure to make the function understood by one reasonably skilled in the art. See DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc., 469 F.3d 1005, 1023 (Fed. Cir. 2006); CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1369 (Fed. Cir. 2002).

Here, it appears that the patent recites sufficient structure corresponding to the dust-collection function to rebut the presumption. The patent specification describes the dust-collection structure as containing two ports through which sawdust exits the cutting box, and a dust-collection tray. See '039 patent 7:40-56. The ports and tray are also depicted in Figure 4 of the '039 patent. Based on these detailed descriptions, the court concludes that the patent recites sufficiently definite structure corresponding to the dust-collection function referenced in the claim that the limitation is properly considered a "means-plus-function" limitation within the meaning of 35 U.S.C. § 112 P 6.
a. "strut"

The term "strut" appears in the '682 Patent. Boston Scientific proposes that the term "strut" be construed as "a component that braces the filter." At the Markman hearing, ev3 indicated that it would be content to bring a summary judgment motion for invalidity if the Court were inclined to accept Boston's proposed construction. The Court construes "strut" as "a component that braces the filter."

b. "strut disposed in a radially asymmetric pattern"

The term "strut disposed in a radially asymmetric pattern" appears in the '682 Patent. The Court construes this phrase as "strut positioned on the guidewire in a manner that is not symmetric about the guidewire."

(6) "two sides, each having a stud, each stud including a magnetic material"

Plaintiffs define "two sides" to mean "those portions of the primary spectacle frame beginning at the point where a line drawn through the midpoints of the lenses and lens rims (if supplied) would intersect the top and bottom of the primary spectacle frame, and terminating at the pivot point where the legs are attached to the studs." JS, Exh. A at 13. Further, Plaintiffs construe "stud" to mean "those portions of the primary spectacle frame which include a magnetic material and extend outwardly and rearwardly of the lenses or lens rims (if provided). The studs pivotally connect to the legs or temple pieces," Id. at 14. Additionally, Plaintiffs contend that the phrase "including a magnetic material" means "(respecting the studs), . . . that at least a portion or segment of each stud is a magnetically attractive substance, such as, for example, a magnet. The magnetic material may be embedded in or secured to the remaining portions of each stud." JS, Exh. C at 108.
In this case, the terms in question are described in the specification as follows: "an eyeglass combination . . . comprises a primary frame 10 for supporting primary lenses 90 and including a bridge 11 formed in the middle and including two studs 12 formed in the side portions. The bridge 11 and the studs 12 each includes a magnet 14 disposed laterally. . . ." Koo Decl, Exh. C at 20, Col. 2, 11. 41-46. Based on the specification and the drawings, the Court construes the phrase "two sides" as those portions of the primary spectacle frame extending outward and rearward from the outer edges of the primary frame. The Court construes "stud" to mean those portions of the two sides of each primary spectacle frame which include a magnetic material and project outwardly and rearwardly of the lenses or lens rims (if provided). See also Webster's, Nicodema Decl., Exh. 5 at 154, defining "stud" as "[a] small knob, nail head, or rivet fixed in and slightly projecting from a surface." As already discussed, the Court construes magnetic material to be a permanent magnet or ferromagnetic material.

Defendant's request that the Court construe studs as "a structure projecting from the undersurface of the plate at the side edge for contact between the plate and bone, such that the area of this contact is reduced to the minimum practicable, and in any case not more than 5% of the total area of the lower surface of the plate". (Def. Mem. at 14). DePuy argues that there is no evidence establishing that any of its Accused Products contain such a limitation or a substantial equivalent thereof, so that it is entitled to summary judgment. Synthes, on the other hand, argues that "studs" means the portion of the lower surface of the plate which provide the reduced contact areas after the plate is screwed down. The term has no requirement that the stud be pointed or that it provide the minimal practicable area of contact with the bone.

Once again, the Court must first look to the claims of the 36 Patent. Studs are mentioned in Claim 1 as the open sections with the concave lower surface of the plate which provide for contact with the bone. The Plaintiff summarizes this description of studs as being downwardly-descending portions of the lower surface of the plate which provide the bone contact areas when in use. Claim 5, dependent on Claim 1, adds the additional limitation of the contact elements (studs) being less than 5% of the lower surface of the plates. A term from an independent claim can not be read differently than that term is read in a dependent claim, unless the dependent term also includes further limitations. In this instance, it would be illogical for Synthes to add this further limitation to the definition of studs in Claim 5 if the term already included a 5% or "minimum practicable" limitation (as defined in Claim 1).

The prosecution history also supports Synthes' interpretation of Studs. The patent examiner rejected earlier versions of Synthes' claims based on the Kummer patent. The examiner considered what Kummer calls 'washers and spacers' to be resorbable studs. These "studs" have large, flat areas of contact with the bone, and certainly not the "minimum practicable" area of contact. It seems probable, then, that the examiner understood studs to be a broader term than does DePuy. Therefore, because the claims of the 36 Patent and its prosecution history favor an interpretation more consistent with that offered by Synthes, studs will be construed as meaning projections that do not mandatorily have the minimum practicable or less than 5% limitation.

Additionally, claim 1(e) requires a "stuffer means." CTC contends that stuffing only means "feeding," and that a machine which uses a loading paddle and scraper blade where the loading paddle raises the dough above the horizontal axis of rotation and drops the dough into the chamber, as does Popeil's pasta maker, still infringes the '575 patent because there is no language in claim 1(e) that limits dough from falling into the entry zone of the extruding chamber by gravity. Because claim 1 is expressed as a series of means plus function limitations, we are statutorily required to look to the specification to understand the structure claimed. 35 U.S.C. § 112, P 6. The specification in referring to "stuffer means" speaks in terms of the "stuffing element" "uniformly packing" the mixed dough "to facilitate uniform entry of the packed dough into the extruding chamber without undesirable air pockets or lumpy accumulations of dough." Given the explicit references in the specification to "packing," "packed dough," and dough without undesirable air pockets or lumps, further indicating that the invention "packs" the dough, we cannot conclude that the term "stuffer means" merely teaches a means for feeding dough.
Rather, we conclude that "stuff" in "stuffer means" has its ordinary meaning of "packing" or stuffing the dough through compression. Appropriate structures were also shown in the specification to perform the dough packing or compression.

3835
7. Claim 8 - Stylus

The term "stylus" in Claim 8 refers to an object generally shaped like a pencil with a tip that is narrower than the body. (Tr. 72).

3836
9. "sub-area of an area" and "at least two substrate alignment marks located on the substrate outside said area"

Both of these claim terms permit straightforward construction. In important part, claim 1 discusses the presence of "at least two substrate alignment marks located on the substrate outside said area." '832 Patent at 32:60-61 (emphasis added). That is, claim 1 expressly contemplates a region "on the substrate" "outside" of and distinct from the "area." Were "area" to include the entire substrate (as ASML contends), claim 1's language would be self-contradictory and self-defeating; for "at least two substrate alignment marks" to be located "on the substrate" but "outside said area" demands that the "substrate" and the "area" be less than fully coextensive. The parties agree that a "sub-area" is a portion of a substrate on which a mask pattern is exposed, and consistent with this logical and linguistic truism, the court construes "sub-area of an area" to mean "a distinct portion of a larger portion of a substrate, which is to be imaged with a pattern."

For like reasons, the court construes "at least two substrate alignment marks located on the substrate outside said area" to mean "two or more 'substrate alignment marks' positioned on a substrate outside the substrate portion on which a pattern is to be exposed." Specification language supports this conception of "area" and "sub-area," see id. at 2:20-25 (placing the marks "outside the substrate area which must be repetitively illuminated with the mask pattern"), as do relevant figures. Id. at fig. 1.

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Snap Edge's second argument concerns the term "substantial" as used in Claim 144 to describe the "horizontal forces" experienced at the lateral edges of the "paving surface means." According to Claim 144, these forces are initially received by the "edge restraint means" and subsequently transferred by the "force converting means" and the "anchoring means" to the base surface. 7 It is undisputed that the term "substantial" is only used in Claim 144 and its dependent Claim 155.

7 Footnotes

7 Claim 144 provides in relevant part:

A paving installation, comprising: (i) paving surface means for accommodating traffic which is [sic] use experiences substantial horizontal forces at its lateral edges and which is located on top of a substantially level base surface, and (ii) edge restraint means for receiving said horizontal forces and maintaining the paving means in position, said edge restraint means being at least partially disposed below ground level and including:

* * *

(c) force converting means operatively arranged between the upright member and the extension member for transferring the substantial horizontal forces imparted to the first surface of the upright member via the paving surface means to the base surface, said edge restraint means including anchoring means engaged into the base surface.
Snap Edge suggests that, because "substantial" is nowhere defined in the '550 Reissue Patent or the file wrapper and because its meaning is so indefinite and ambiguous, Claim 144 is invalid pursuant to 35 U.S.C. § 112(2). Pave Tech counters that "substantial" as used in Claim 144 would sufficiently inform one skilled in the art of paving installations about the claim.

Section 112(2) requires that:

The specification; shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The Federal Circuit has consistently held that when evaluating a claim for particularity and distinctness, its terms must be understandable to one skilled in the art. Markman, 52 F.3d at 986; see also Amgen, Inc. v. Chugai Pharmaceutical Co., Ltd., 927 F.2d 1200 (Fed. Cir. 1991). In Amgen, the Federal Circuit held that the term "about" as used in the phrase "at least about 160,000" was indefinite and rendered the claims invalid. Amgen, 927 F.2d at 1217. However, the amgen court was quick to caution that its holding applied only to the facts of that case and that the term "about" "may be acceptable in appropriate fact situations." Amgen, 927 F.2d at 1217.

Snap Edge urges the same result here, arguing that the term "substantial" renders the meaning of Claim 144 in doubt. In support of its position, Snap Edge argues that Pave Tech's own technical expert, Dr. Matthew W. Witczak ("Dr. Witczak") has provided inconsistent opinions in his 1993 deposition and recent affidavit as to the meaning of the term "substantial." Further, Snap Edge suggests that Pave Tech's reliance for this motion on the very general dictionary definition of "substantial" improperly negates the meaning of the word it modifies: "Forces." Ultimately, Snap Edge suggests that "substantial" cannot be sufficiently defined and that, therefore, Claim 144 must be invalid.

In light of Markman, Snap Edge urges this Court to revisit its motion for summary judgment on the issue of invalidity which was denied by Judge Wayne Andersen (adopting the Report and Recommendation of Magistrate Judge Joan B. Gottschall) in 1994. The Court finds that it has neither the authority nor the inclination to do so since such a "revisitation" would amount to a "reconsideration" of circumstances not properly before this court. The Court will therefore confine its analysis to claim interpretation as directed under Markman.

In support of this motion, Pave Tech has provided the following definition as extrinsic evidence for claim construction purposes: substantial (adjective) is defined as "consisting of, relating to, sharing the nature of, or constituting substance; not seeming or imaginary; not illusive." (Exh. 5, p. 7) citing Webster's Third New international Dictionary (1986) p. 1986.

The Court disagrees with Snap Edge's conclusions and finds that the term "substantial" as used in the context of paving installations described in the '550 Reissue Patent is sufficiently precise to inform one skilled in the art. Dr. Witczak, as one with "extraordinary" 10 skill in the art of pavements, has testified that in the context of paving installations like those described in the '550 Reissue Patent which can be subjected to a wide variety of loads, it is understood that no explicit quantification can be made for such forces. Thus, the term "substantial" cannot be interpreted to mean a specific quantity; rather it describes a range of loads from pedestrian to vehicular to occasional heavy truck. (Witczak Dep. at 135-146; Witczak Aff., PP 32-34). 11 Dr. Witczak further testified that while tractor-trailers and commercial aircraft would certainly produce "substantial" forces, it is understood from the patent that this invention would not be applied in installation subject to such forces. (Witczak Aff., P 35). 12 In addition, the Court finds that Pave Tech's reference to a dictionary definition of "substantial" does not violate claim interpretation rules. The definition is consistent with Dr. Witczak's interpretation and helps to explain that Claim 144 relates to a range of forces and distinguishes this invention from other restraints used strictly in landscaping as discussed in the specification.
10 See Witczak Dep. at 242.

32. A properly constructed paving installation as described about is capable of withstanding substantial horizontal forces that may be generated under traffic loadings on the paving installation. A strong restraint is necessary to maintain the paving stones in their horizontal direction and is provided for in the reissue patent. (Col. 10, lns. 28-29).

33. The "load dynamics" operating over the paving installation determine the extent of the horizontal forces. The precise magnitude of the horizontal force that will be transmitted to the edge restraint is a complex function due to many variables, e.g., vehicle gear configuration, tire loads and contact pressures, traffic speeds, mode of operation (standing, turning, accelerating, braking) as well as the cross-section of the paving installation and the distance from the edge restraint to the geometric center of the load. A properly constructed paving installation as described above, will function properly in accordance with the reissue patent specification when loaded with anything from pedestrian traffic up to heavy truck traffic which would produce substantial horizontal forces. (Col. 5, lns. 46-51).

34. Being one of ordinary skill in the art, I understand from reading the reissue patent-in-suit; that a paving installation, properly constructed in accordance with the reissue patent, can experience substantial horizontal forces in use without failure. Such substantial horizontal forces can be generated as described in the patent by loads up to heavy trucks travelling over the paving installation. (Col. 5, lns. 46-51).

12 35. One skilled in the art would understand the limits to which the paving installation described in the reissue patent would be applicable for any given installation. Clearly, for example, the paving installation using the edge restraint described in the reissue patent would not be applicable for typical heavy interstate tracto-trailer [sic] vehicles nor for heavy commercial aircraft such as a Boeing 747.

The Court finds that the term "substantial," when considered in the light of the entire claimed invention, is as accurate as the subject matter permits and provides sufficient guidance to one skilled in the art of paving stone installations. See Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576 (Fed. Cir. 1986) (finding that the term "so dimensioned" to be sufficiently accurate given the various types of automobiles to which the invention applied). Given that pedestrians and vehicles come in a myriad of shapes and sizes, it would be impossible to set forth every possible specific force. Thus, the use of the term "substantial forces" adequately explains that walkways and driveways which incorporate this interlocking paving installation can be subjected to a limited range of forces - from pedestrians up to heavy trucks.
zygomatic arch along the lower side of the orbit of a user, said patch being of sufficient extent to substantially cover the skin area on the zygomatic arch when applied to said skin area.

The second area of controversy is contained in the third sub-paragraph of claim 1, which recites

a light absorbing surface on a second face of the patch for absorbing incident light rays directed toward said skin area; said light absorbing surface being dark in color to reduce glare by substantially preventing light from reflecting from said skin area of the zygomatic arch toward the eyes of the wearer, said light absorbing surface being resistant to running caused by perspiration.

Defendant contends that the first section must be construed to cover the entire zygomatic arch, which is the arch of bone extending from the cheekbone to the side of the skull just in front of the ear, in other words, the whole of the cheekbone, including not only the under-the-orbit portion shown in Fig. 1 of the patent specifications, but also the portion of the cheekbone on the side of the face. Alternatively, defendant contends, the section must be found indefinite as a matter of law because the term "substantially cover" is not sufficiently precise to tell the person of ordinary skill in the art what he must do to avoid infringement.

Defendant's suggested construction makes no sense. Although defendant argues that the court should look to the dictionary definition of zygomatic arch, which would lead to the conclusion it proposes, the claim language, the specifications and common sense militate against doing so. The inventors claim an "under-eye" device; a patch extending beyond the eye would not be an under-eye device. The claim itself specifies that the patch is to be applied to the skin area on the zygomatic arch "along the lower side of the orbit of the user." '909 Pat., col. 3, Ins. 54-55. Also, the device is designed to prevent light from reflecting from the skin area to the wearer's eye; a side patch would be unlikely to fulfill this purpose.

The specifications start with Fig. 1, which shows a small kidney bean-shaped device located right under each eye of the wearer. Although defendant argues that "a figure cannot be relied upon for the precise dimensions of a claim limitation," Dft.'s Br., dkt. # 39, at 2, and cites Hockerson-Halberstadt, Inc. v. Avia Group Int'l, 222 F.3d 951, 956 (Fed. Cir. 2000), in support of its argument, Hockerson-Halberstadt is easily distinguishable. In that case, the court held that the patent drawings could not be used to determine measurements where the claims referred to quantitative relationships among the components of a particular device and the specifications were silent on the same relationships. "It is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue." Id. The court noted that "figures in a patent are not drawn to scale unless otherwise indicated." Id. In other cases, however, the Federal Circuit has approved the use of patent drawings in understanding the claims of a patent. See, e.g., CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1153 (Fed. Cir. 1997) (holding patent drawings highly relevant to understanding claims). See also Phillips v. AWH Corp. 415 F.3d 1303, 1315 (Fed. Cir. 2005) (holding specification highly relevant to claim construction analysis). Even if the claims left any doubt about where the patch is to be placed, the specifications would eliminate the doubt.

Finally, common sense and experience dictate construction of the claimed patch as one that is applied to the bony (zygomatic) arch immediately below the eye. The reason that athletes use using charcoal and other materials to black out that section is because it is the area from which light can reflect back into the athlete's eyes.

As to the second area of controversy, relating to the glare reduction requirement, defendant argues that the claim should be construed as requiring a black patch and one that is intended to be used primarily for the purpose of reducing glare to improve sight. Plaintiff counters by pointing out that nothing in claim 1 or the specifications requires an entirely black patch or even one that is mostly black. The claim provides for a surface that is "dark in color." Col. 3, In. 68. It does not specify black as the "dark color." Dependent claim 7 adds the limitation: "wherein said light absorbing surface is black." If independent claim 1 were interpreted as requiring a black patch, claim 7 would be superfluous and would not have been approved by the examiner.

Plaintiff denies that the patent requires patches that improve the user's eyesight. Plaintiff is correct. The patent claims a patch that substantially prevents light from reflecting from the zygomatic arch toward the wearer's eyes; it says nothing about improving sight. One would expect that sight would improve if protected from glare, but this is not a claim requirement.
Accordingly, for claim construction purposes, "substantial coverage" means a patch large enough to cover the skin area on the zygomatic arch when applied to said skin area; "substantial" means "largely, but not necessarily wholly, that which is specified," LNP Engineering Plastics, Inc. v. Miller Waste Mills, Inc., 275 F.3d 1347, 1354 (Fed. Cir. 2001), or approximately the same size as the patch shown in the patent drawings. In the third section of claim 1, "said skin area of the zygomatic arch" is the area under the eye; "substantially" preventing reflected light means, again, "largely, but not necessarily wholly, that which is specified." "Wherein said light absorbing surface is black" is construed to mean a patch that includes a black light-absorbing surface.

Having construed the claims, I find no problem of indefiniteness. The substantial coverage limitation is definite enough to give clear warning of what constitutes infringement; the reference to the zygomatic arch along the lower side of the orbit of a user is clear; the patent gives sufficient guidance for determining how much coverage is "substantial" as I have explained and the patent makes it clear that preventing light from reflecting into the eyes of the user will follow if the patch is about the same size as the one pictured in the specifications, dark in color and have a non-reflective surface to reduce glare.

In contrast to the claim phrases construed above, in some instances the Applicant did claim a parts washer configuration where the biodegradation is claimed to occur at or near the surface of the fluid. For example, dependent claim 2 of the '110 patent recites a system for cleaning hydrocarbons from a part "wherein the fluid defines a fluid surface in the tank, and wherein [a] substantial portion of the microorganisms live in the fluid proximate to said fluid surface." '110 patent, col. 8, ll. 42-44. Similarly, claim 3 recites "[t]he combination of claim 2, wherein a substantial portion of the microorganisms and hydrocarbons accumulate proximate to said fluid surface such that a substantial amount of biodegradation takes place proximate to said fluid surface." Id., col. 8, ll. 45-49. In these claims, the parties dispute the meaning of "substantial."

Plaintiff ChemFree argues that the term "substantial" as used in these claims should mean "a part of the whole that is considerable in extent relative to the whole" or "a quantity that is considerable in extent." J. Walter argues that "substantial" should mean a majority, or more than 50%. (E.g., Def.'s Opening Brief at 35 ("Although the term 'substantial portion' has more than one ordinary meaning, it should be construed to mean 'majority' because it is used throughout the entire intrinsic record in a manner consistent with this ordinary meaning.").)

The intrinsic record is unhelpful in discerning a precise meaning of the term. For instance, the specification notes that "a large percentage of the microorganisms and organic contaminants will tend to accumulate proximate to the surface of the cleaning fluid 72 such that a large portion of the biodegradation takes place proximate to the surface of the cleaning fluid 72." '110 patent, col. 6, l. 66 - col. 7, l. 3 (emphases added). Notably, this discussion of biodegradation is made with respect to a preferred embodiment of the invention, which militates against its use in limiting the term. Moreover, these relative terms do little to inform what "substantial" or "large" mean in context with the whole.

Nor does the prosecution history enlighten the meaning of "substantial." In a Preliminary Amendment, made prior to any action by the PTO in that particular application, Applicant added new claims and made the following remarks:

As recited in claims 23 and 31-37, as now amended, the fluid defines a fluid surface in the tank and a substantial portion of the microorganisms and hydrocarbons washed from the part tend to accumulate proximate to the fluid surface so that a substantial amount of the biodegradation takes place proximate to the fluid surface. Such a feature is not taught by the cited references.

'110 Patent File History, Applicant's Preliminary Amendment at 7. The amendment also states that

[b]y having the biodegradation occur primarily at the fluid surface within the tank, a vapor barrier is created within the tank to minimize evaporation of the cleaning fluid and thus minimize the amount of cleaning fluid that must be replenished.

Id. While these remarks certainly make clear that the Applicant intends the systems in these claims to have a "substantial" amount of biodegradation take place proximate to the fluid surface, they do little to inform the meaning of what a
"substantial" amount of microorganisms or biodegradation is. Despite the words "large" and "primarily" in the specification and prosecution history, nowhere does the intrinsic record of the '110 patent indicate that "substantial" as used therein should have anything other than its plain and ordinary meaning. Certainly, the record does not evidence an intent to redefine the term to mean an amount more than 50%. Cf. Phillips 415 F.3d at 1316 ("[O]ur cases recognize that the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs."). If Applicant had intended for substantial to have such meaning, it could have said so, or it could have used an equivalent term -- for example, "most" or "almost all."

"Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning." York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1572 (Fed. Cir. 1996); see also Phillips 415 F.3d at 1312 ("[T]he words of a claim are generally given their ordinary and customary meaning.") (citation omitted). Dictionaries are often consulted to determine a term's plain and ordinary meaning. Phillips, 415 F.3d at 1314. The plain and ordinary meaning of "substantial" is a portion or amount that is considerable in quantity. See Merriam-Webster's Collegiate Dictionary 1170 (10th ed. 2001) ("considerable in quantity: significantly great").

The Court accords "substantial" its plain and ordinary meaning: "a portion or amount that is considerable in quantity." While this definition does not lend itself to numerical exactitude, it is faithful to the term's plain meaning. It will be a question for the factfinder to further delimit the scope of the phrase in determining whether the claim reads upon the accused device or whether a prior art reference invalidates the claim. This analysis may also require expert testimony.

**3840**

B. "in substantial alignment with"

The court finds that the term "in substantial alignment with" means "at least largely parallel to."

Claim 1 provides that the "longitudinal axis of said mounting base is in substantial alignment with a barrel of said firearm." For the term, "in substantial alignment with," Plaintiff proposes the construction, "at least largely parallel to." Defendant contends that the term "in substantial alignment with" should be construed as simply "parallel with." Because the term "substantial" is commonly used to import a sense of approximation, the court is unwilling to interpret the term "substantially parallel" as simply "parallel." Accordingly, the court will adopt Plaintiff's proposed construction.

**3841**

B. "Substantial Angular Length"

The term "substantial angular length" appears in Claims 1 and 9 of the '028 patent. In its summary judgment ruling, the Court concluded that the term "substantial angular length" should be construed using a functional definition. In light of that ruling, Rotron argues that the Court should adopt the following construction, which it phrases in functional terms: "The phrase 'substantial angular length' includes unmagnetized sectors of field portions of the rotor magnets that are wide enough to be substantially effective. There is no numerical limitation on this width in Claims 1-11." Rotron again argues that it is improper to read a numerical limitation into a claim that lacks such precision. See Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551.

Nidec argues that "substantial angular length" should be construed as "large unmagnetized sectors of field portions of the rotor magnets which occupy an average angular extent throughout the axial length of the field portion which is greater than the 'relatively narrow' 10 to 20 degrees 'pole clearances' disclosed in the prior art." Nidec again maintains that a narrow definition and numerical specificity are necessary to distinguish the substantially unmagnetized segments of substantial angular length in the '028 patent from pole gaps or clearances disclosed in the prior art, such as Doemen '005, the patent from which the 10 to 20 degree requirement is derived. 3 Nidec also argues that Rotron's proposed functional definition...
improperly looks to the prosecution history to provide a disclosure-specially, the purpose of the substantially unmagnetized sectors-that is not apparent from the specification itself. 4

3 Claim 12 of the '028 patent states the following: "The magnet according to claim 9, wherein each null sector has an effective arcuate extent greater than 20 degrees mechanical." As Nidec indicates, under the rule of claim differentiation, narrow claim limitations cannot be read into broad ones. See Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277 (Fed. Cir. 1995). Nidec explains that it has abandoned its position, rejected by the Court in its summary judgment ruling, that the limitation contained in Claim 12 should be read into Claim 1. Instead, it maintains that its present argument that the term "substantial angular length" should be construed as meaning sectors that are "greater than the 'relatively narrow' 10 to 20 degrees 'pole clearances'" in the prior art does not violate the doctrine of claim differentiation because it is less restrictive than the requirement of Claim 12.

4 35 U.S.C. § 112 P6 provides that "an element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof; and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." See 35 U.S.C. § 112, P6. "Without the term 'means,' a claim element is presumed to fall outside means-plus-function strictures . . . However, that presumption can collapse when an element lacking the term 'means' nonetheless relies on functional terms rather than structure or material to describe performance of the claimed function." Micro Chemical, Inc. v. Great Plains Chemical Co., 194 F.3d 1250, 1257 (Fed. Cir. 1999); see also Al-Site Corp. v. VSI Int'l, Inc., 174 F.3d 1308, 1318 (Fed. Cir. 1999). Nevertheless, if the claim contains functional language, but also discloses the structure within the language of the claim, § 112, P6 is not applicable. See Personalized Media Communications, LLC v. International Trade Comm'n, 161 F.3d 696, 704 (Fed. Cir. 1998).

Here, Nidec suggests that Rotron's proposed meaning for the term "substantial angular length" fails to adhere to the requirements of § 112, P6 because it includes some functional language, as it states that the length of the segments must be great enough to render them "substantially effective." However, the word "means" does not appear in the claim, and the claim clearly defines its elements in structural terms. Nor is there other evidence that the patentee intended to assert a means-plus-function claim. See, e.g., Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584 (Fed. Cir. 1996) ("In this case . . . the element in question did not use conventional "means-plus-function" language, no other element of the claim was in means-plus-function form, and nothing cited to us from the prosecution history or elsewhere suggests that the patentee intended to claim in that fashion."). Further, a patent applicant is free to define features of an apparatus functionally. See In re Schreiber, 128 F.3d 1473, 1478 (Fed. Cir. 1997); In re Swinehart, 58 C.C.P.A. 1027, 439 F.2d 210, 212 (C.C.P.A. 1971). Therefore, the Court concludes that the term "substantial angular length" should not be construed as a means-plus-function claim.

As stated above, Claims 1 and 9 both are independent claims. Neither defines "substantial angular length" and the ordinary meaning of the term is not apparent from the claims. When the claims do not provide a definition, the specification is generally "the single best guide to the meaning of a disputed term." Vitronics, 90 F.3d at 1582. "The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." Id. Here, however, the specification provides no express definition of the term. Nevertheless, as Rotron points out, the specification does indicate that the size of the substantially unmagnetized segments of substantial angular length-like all the magnetized segments-differ based on the purpose for which they are used. It states, "the number and lengths of the unmagnetized and magnetized segments of the field portion, and the number and relative sizes of the commutation segments will differ with the number of poles of a particular brushless DC motor and the particular commutation circuit, for example," '028 pat., col. 4, ll. 38-43. The specification further indicates that the permanently magnetized segments of the integral magnet are "each of the required size, angular extent and polarity for its particular purpose." '028 pat., col. 1, ll. 48-51. This statement implies that the length of the unmagnetized segments of the field magnet varies.

The fact that the substantially unmagnetized segments of substantial angular length "occupy about 45 degrees of circular arc" in the preferred embodiment is of no moment. "It is usually incorrect to read numerical precision into a claim from which it is absent, particularly when other claims contain the numerical limitation" Modine v. United States Int'l Trade
Comm'n, 75 F.3d 1545, 1551 (Fed. Cir. 1996). Moreover, "it is well established that the preferred embodiment does not limit broader claims that are supported by the written description." Toro Co. v. White Consol. Indus. Inc., 199 F.3d 1295, 1301 (Fed. Cir. 1999); see also Burke, Inc. v. Bruno Indep. Living Aids, Inc., 183 F.3d 1334, 1341 (Fed. Cir. 1999) ("An attribute of the preferred embodiment cannot be read into the claim as a limitation."). While this rule does not apply when the preferred embodiment is described as the specification as the invention itself, rather than one way of utilizing it, see Modine, 75 F.3d at 1551, here the preferred embodiment states that it "is not to be construed as limiting the scope of this invention," thus making it clear that the preferred embodiment is simply one example of how the invention may be utilized. '028 pat., col. 5, ll. 48-49.

The court next turns to the prosecution history to construe this term. As explained above, Nidec argues that the proper construction of "substantial angular length" should be limited based upon the prior art, again referring to Doemen '005. However, as explained above, the patent applicant's submission to the patent examiner indicates that the substantially unmagnetized sectors in the '028 patent are distinguished from the pole gaps or clearances in Doemen '005 and '104 Muller based upon the nature of the magnetization pattern. Thus, Rotron's contention that null and pole clearance size should not be compared appears to be supported by the prosecution history—they indeed appear to be two different phenomena. While it is necessary to construe amount of the magnetization of the sectors with some specificity to distinguish the sectors from the prior art, doing so obviates the need to read the same specificity into the length of the substantially unmagnetized sectors. The Court therefore declines to construe the term "substantial angular length" with any precise numerical limitations derived from Doemen '005. The prosecution history does not indicate that this sort of specificity was intended by the patentee. 5 Modine, 75 F.3d at 1551.

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5 Given that the Court will not adopt Nidec's proposed construction, it will not determine whether "average angular extent" is the proper measure of the size of the substantially unmagnetized sectors.

--- End Footnotes ---

Rotron's proposed functional definition reflects some statements in the prosecution history, which suggests that the "large null sectors of the field magnet portion can be provided as best suits the stator lamination geometry for improved starting, least torque ripple, and maximum torque," Defs.' Ex. 6, at 7, and that purpose of the substantially unmagnetized sectors is to "create a substantial effective angular null." Id. at 12 (emphasis added). Similarly, extrinsic evidence in the form of the inventor's response during a deposition indicates that substantial angular length should be determined based upon "whether or not the fan operates properly." 6 Defs.' Ex. 13, at 146. However, Rotron's proposed meaning—that the substantially unmagnetized sectors are "wide enough to be substantially effective"—should not be adopted because it improperly broadens the disputed term. See Markman I, 52 F.3d at 980. Conversely, while it may be possible to further define the function of the substantially unmagnetized sectors of substantial angular length based on the purpose set forth in the prosecution history (the prevention of cogging and related problems), "limitations cannot be read into the claims from the specification or prosecution history" Burke, 183 F.3d at 1340. Instead, the Court concludes that the term "substantial angular length" needs no further construction, particularly given the fact that the magnetization of the sectors has been defined with some specificity, and the fact that the claims and the other portions of the specification provide no guidance for the proper definition of "substantial angular length." No further specificity or precision is warranted by the language of the claim and other evidence. See PPG Indus. v. Guardian Indus. Corp., 156 F.3d 1351, 1355 (Fed. Cir. 1998).

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6 The exchange was as follows:

Q: Is what determines whether a null is of substantial angular length whether or not the fan operates properly?

...  

A: I believe I've used that term on several past depositions. That is correct.

Def's.' Ex. 13, at 146.
With trial set to begin on Monday, September 12, the parties have filed a number of motions. Plaintiff has asked the court to exclude evidence or argument that the claims of the '909 patent are indefinite; defendant has asked for judgment as a matter of law on the issue of indefiniteness under 35 U.S.C. § 112, P 2 and for a judicial construction of the claims 1, 3 and 7 of the patent. Although the motions are not thoroughly briefed, the briefs that have been filed are sufficient to allow a ruling on the pending motions. (Plaintiff's brief in support of its motion to exclude evidence on the alleged indefiniteness of the '909 patent addresses the same legal issues as defendant's brief in support of its motion for a judicial determination that the '909 patent is indefinite as a matter of law and the opposing briefs on claim construction address the indefiniteness arguments.) Plaintiff opposes defendant's late filed request to move for judgment on indefiniteness, arguing that it is far too late to be raising an issue that should have been raised before the time for filing motions for summary judgment had expired. Plaintiff makes a good point, but the issue is a straightforward one and its resolution will simplify the task for trial. Because I am resolving it in plaintiff's favor, plaintiff is not prejudiced by the late filing.

The language at issue is contained in independent claim 1 and dependent claims 3 and 7. The first section in dispute provides:

a replaceable pliable sheet material patch having a first face for generally conformable application to the skin area on the zygomatic arch along the lower side of the orbit of a user, said patch being of sufficient extent to substantially cover the skin area on the zygomatic arch when applied to said skin area.

The second area of controversy is contained in the third sub-paragraph of claim 1, which recites

a light absorbing surface on a second face of the patch for absorbing incident light rays directed toward said skin area; said light absorbing surface being dark in color to reduce glare by substantially preventing light from reflecting from said skin area of the zygomatic arch toward the eyes of the wearer, said light absorbing surface being resistant to running caused by perspiration.

Defendant contends that the first section must be construed to cover the entire zygomatic arch, which is the arch of bone extending from the cheekbone to the side of the skull just in front of the ear, in other words, the whole of the cheekbone, including not only the under-the-orbit portion shown in Fig. 1 of the patent specifications, but also the portion of the cheekbone on the side of the face. Alternatively, defendant contends, the section must be found indefinite as a matter of law because the term "substantially cover" is not sufficiently precise to tell the person of ordinary skill in the art what he must do to avoid infringement.

Defendant's suggested construction makes no sense. Although defendant argues that the court should look to the dictionary definition of zygomatic arch, which would lead to the conclusion it proposes, the claim language, the specifications and common sense militate against doing so. The inventors claim an "under-eye" device; a patch extending beyond the eye would not be an under-eye device. The claim itself specifies that the patch is to be applied to the skin area on the zygomatic arch "along the lower side of the orbit of the user." '909 Pat., col. 3, Ins. 54-55. Also, the device is designed to prevent light from reflecting from the skin area to the wearer's eye; a side patch would be unlikely to fulfill this purpose.

Defendant's suggested construction makes no sense. Although defendant argues that the court should look to the dictionary definition of zygomatic arch, which would lead to the conclusion it proposes, the claim language, the specifications and common sense militate against doing so. The inventors claim an "under-eye" device; a patch extending beyond the eye would not be an under-eye device. The claim itself specifies that the patch is to be applied to the skin area on the zygomatic arch "along the lower side of the orbit of the user." '909 Pat., col. 3, Ins. 54-55. Also, the device is designed to prevent light from reflecting from the skin area to the wearer's eye; a side patch would be unlikely to fulfill this purpose.

The specifications start with Fig. 1, which shows a small kidney bean-shaped device located right under each eye of the wearer. Although defendant argues that "a figure cannot be relied upon for the precise dimensions of a claim limitation," Dft.'s Br., dkt. # 39, at 2, and cites Hockerson-Halberstadt, Inc. v. Avia Group Intl, 222 F.3d 951, 956 (Fed. Cir. 2000), in support of its argument, Hockerson-Halberstadt is easily distinguishable. In that case, the court held that the patent drawings could not be used to determine measurements where the claims referred to quantitative relationships among the components of a particular device and the specifications were silent on the same relationships. "It is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue." Id. The court noted that "figures in a patent are not drawn to scale unless otherwise indicated." Id. In other cases, however, the Federal Circuit has approved the use of patent drawings in understanding the
claims of a patent. See, e.g., CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1153 (Fed. Cir. 1997) (holding patent
drawings highly relevant to understanding claims). See also Phillips v. AWH Corp. 415 F.3d 1303, 1315 (Fed. Cir. 2005)
(holding specification highly relevant to claim construction analysis). Even if the claims left any doubt about where the
patch is to be placed, the specifications would eliminate the doubt.

Finally, common sense and experience dictate construction of the claimed patch as one that is applied to the bony
(zygomatic) arch immediately below the eye. The reason that athletes use using charcoal and other materials to black out
that section is because it is the area from which light can reflect back into the athlete's eyes.

As to the second area of controversy, relating to the glare reduction requirement, defendant argues that the claim should be
construed as requiring a black patch and one that is intended to be used primarily for the purpose of reducing glare to
improve sight. Plaintiff counters by pointing out that nothing in claim 1 or the specifications requires an entirely black patch
or even one that is mostly black. The claim provides for a surface that is "dark in color." Col. 3, In. 68. It does not specify
black as the "dark color." Dependent claim 7 adds the limitation: "wherein said light absorbing surface is black." If
independent claim 1 were interpreted as requiring a black patch, claim 7 would be superfluous and would not have been
approved by the examiner.

Plaintiff denies that the patent requires patches that improve the user's eyesight. Plaintiff is correct. The patent claims a
patch that substantially prevents light from reflecting from the zygomatic arch toward the wearer's eyes; it says nothing
about improving sight. One would expect that sight would improve if protected from glare, but this is not a claim
requirement.

Accordingly, for claim construction purposes, "substantial coverage" means a patch large enough to cover the skin area on
the zygomatic arch when applied to said skin area; "substantial" means "largely, but not necessarily wholly, that which is
specified," LNP Engineering Plastics, Inc. v. Miller Waste Mills, Inc., 275 F.3d 1347, 1354 (Fed. Cir. 2001), or
approximately the same size as the patch shown in the patent drawings. In the third section of claim 1, "said skin area of the
zygomatic arch" is the area under the eye; "substantially" preventing reflected light means, again, "largely, but not
necessarily wholly, that which is specified." "Wherein said light absorbing surface is black" is construed to mean a patch
that includes a black light-absorbing surface.

Having construed the claims, I find no problem of indefiniteness. The substantial coverage limitation is definite enough to
give clear warning of what constitutes infringement; the reference to the zygomatic arch along the lower side of the orbit of
a user is clear; the patent gives sufficient guidance for determining how much coverage is "substantial" as I have explained
and the patent makes it clear that preventing light from reflecting into the eyes of the user will follow if the patch is about
the same size as the one pictured in the specifications, dark in color and have a non-reflective surface to reduce glare.

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6. "Substantial dissection" is dissection sufficient to create a space large enough for the performance of a surgical procedure.

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A. The Claimed Invention

This case involves the structure of slurry tanks. Slurry tanks are used to store and process chemicals and organic waste
products (e.g., manure) that retain value as useful inputs (e.g., fertilizer) into other processes. Large storage tanks house
these waste compounds in liquid or semisolid form between their production and their subsequent use. The liquid and solid
components of these waste compounds tend to separate when stored, with solid particles either forming a crust on the top of
the tank and/or falling to the bottom of the tank. Productive use of the stored compound requires remixing both to suspend
the heavy solid particles within the liquid and to ensure that the resulting suspension is uniform. One standard approach has
been to stir the mix continuously to avoid settling. Because continuous mixing can be expensive, however, tank designers
sought ways to store the mixtures in a still tank, to allow the settling to occur, and to remix only when necessary for use.
The '414 patent addressed these concerns.

The '414 patent has a total of 11 claims. Claims 1 and 8 are independent; the remaining nine claims are dependent. The invention is a method and apparatus for handling wastewater slurries: a storage tank equipped with submerged agitators capable of generating a flow of liquid throughout the tank. The disagreement between the parties turns on the interpretation of four phrases contained in Claim 1, and identical phrases in independent Claim 8. Claim 1 claims:

Apparatus for storing a slurry having solid and liquid components, comprising:

a storage tank defining a volume for holding a body of liquid and solid slurry components, including a floor of generally circular configuration and having a center; said storage tank further including an outer surrounding wall positioned generally at a radial distance from the center;

at least two flow generating means positioned to be submerged within the liquid and solid slurry components for generating flow of at least one of the slurry components along a rotational direction, each of said flow generating means being disposed at distances from the center ranging between approximately 30 percent and 70 percent of said radial distance;

each of said first and second flow generating devices pointed in the direction for generating flows of the liquid and solid components from the respective flow generating means directed in the same rotational sense,

[1] said first and second flow generating means being directed at an angle to the radius to generate flows with tangential components of flow to impart a rotational movement of the entire body of liquid and solid components;

each of said first and second flow generating means being pointed toward the outer surrounding wall for generating

[2] a substantial helical flow path of the liquid and solid components therein

[3] with the liquid and solid components traveling outwardly, across the tank floor from the center portion of the tank toward the tank wall and then upwardly along the tank outer surrounding wall to a first point and then inwardly along an upper portion of the body toward the center of the tank and then downwardly toward the tank floor, and then outwardly to a second point spaced circumferentially in the direction of rotation of the entire body of liquid, the liquid and solid components continuing to travel in the helical path as the entire body of liquid and solid components continues to rotate;

a pressure source coupled to the first and second flow generating means to generate directed streams from the flow generating means to rotate the body of liquid and solid components and to cause the flow in the helical path; and

[4] said flow generating means creating a substantially volume filling flow of at least one of the slurry components within said storage tank which mixes the liquid and solid slurry components to form a substantially homogeneous slurry suitable for unloading from said storage tank using liquid handling devices.

'414 patent, cols. 8-9 (emphases added). 1

--- Footnotes ---
1 The patent claim language does not contain the phrase numbering. The district court introduced the enumeration of phrases 1 through 4 in Claim 1 for reference purposes.

--- End Footnotes ---

B. The Prosecution History

Original Claim 1, filed with the application that matured into the '414 patent with the United States Patent and Trademark Office ("PTO"), contained phrase 4 but did not contain phrases 1, 2, or 3. Specifically, original Claim 1 read:
Apparatus for storing a slurry having solid and liquid components, comprising:

a storage tank defining a volume for holding the liquid and solid slurry components, including a floor of generally circular configuration and having a center portion, said storage tank further including an outer surrounding wall positioned generally at a preselected radial distance from the center portion; and

at least two flow generating means positioned to be submerged within the liquid and solid slurry components for generating flow of at least one of the slurry components along a preselected direction, said flow generating means being disposed only at distances from the center ranging between approximately 30 percent and 70 percent of said preselected radial distance;

[4] said flow generating means creating a substantially volume filling flow of at least one of the slurry components within said storage tank which mixes the liquid and solid slurry components to form a substantially homogeneous slurry suitable for unloading from said storage tank using liquid handling devices. 2

--- Footnotes ---

2 We maintained the labeling of phrase 4 in original Claim 1 to parallel the district court's labeling in Claim 1 of the '414 patent.

--- End Footnotes ---

The patent examiner rejected the original Claim 1 as obvious in light of the prior art. The examiner also indicated that the original Claim 1 was "generic" and required the applicant to "elect a single disclosed species for prosecution" under 35 U.S.C. § 121. Amended Claim 1 added phrases 1, 2, and 3, and introduced other minor changes not at issue here.

Amended Claim 1 introduced new limitations on the claimed flow. Whereas original Claim 1 referred only to a "flow," amended Claim 1 required "a substantial helical flow path" (phrase 2) traveling "outwardly, across the tank floor from the center portion of the tank toward the tank wall and then upwardly along the tank outer surrounding wall to a first point and then inwardly along an upper portion of the body toward the center of the tank and then downwardly toward the tank floor, and then outwardly to a second point spaced circumferentially in the direction of rotation of the entire body of liquid" (phrase 3). The PTO accepted Claim 1 as amended and issued the patent. Amended Claim 1 issued as Claim 1 of the '414 patent.

C. Pre-Filing Conduct

The '414 patent was assigned to Liquid Dynamics' predecessor, Great Lakes Aqua Sales and Service, Inc. ("Great Lakes"). To support its counterclaims of invalidity and inequitable conduct, Vaughan alleged that Great Lakes made, used, and sold three mixing systems having the characteristics originally claimed in the '414 patent more than a year before filing the original application--and submitted documentary evidence to support these allegations.

D. The District Court Decision

Liquid Dynamics claimed that 47 of Vaughan's customized slurry tank systems infringe the '414 patent. Vaughan denied the allegations and counterclaimed for summary judgment on grounds of non-infringement, invalidity, and inequitable conduct. Vaughan subsequently moved for summary judgment on grounds of non-infringement, invalidity, and inequitable conduct. The district court disposed of all issues in a single ruling. See generally, Liquid Dynamics.

On the matter of claim construction, the trial judge noted that "phrases 1 and 4 are unambiguous and claim construction is unnecessary," Liquid Dynamics at *20, but that phrases 2 and 3 required, "proper claim interpretation [by] examination of the claim language, the patent specification, and the prosecution history." Id. at *10.

Both parties suggested interpretations that treated phrases 2 and 3 as a single limitation. Vaughan suggested that phrases 2 and 3 require:
a helical flow path consisting of the bottom segment of the path extending essentially radially from the center of the tank to the peripheral wall, with the bottom segment being immediately adjacent to the floor of the tank; an outer segment extending essentially vertically upward along the outer wall; an upper segment extending essentially radially along the upper portion of the body of slurry in the tank from the outer wall to the center of the tank; and an inner segment extending essentially vertically downward at the center; all segments no more than a negligible radial distance from the center.

Id.

Liquid Dynamics, on the other hand,

advanced a broader definition of substantial helical flow: a largely or generally spiral-like flow path; a perfect helical path is not required; components of the slurry follow a path generally looping away from the center portion of the tank toward the tank's wall, upwardly toward the upper portion of the tank, then toward the center portion, and then downwardly.

Id.

The district court accepted Vaughan's proffered claim construction primarily because "the claim's plain language describes a flow path that emanates from the tank center and returns to the center after one rotation," id. at *10, and because two of the patent's figures, Figures 5 and 6, illustrate a perfectly helical flow. Id. at *12-*14. The district court further noted that the narrowing amendments introduced to Claim 1 during prosecution to limit what had been a generalized flow pattern to the substantially helical one following the specific directional outlines of phrase 3 not only supported Vaughan's interpretation of the claim language, id. at *15, but also narrowed the range of infringing equivalents that Liquid Dynamics could assert. Id. at *28 (citing Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 29-30, 137 L. Ed. 2d 146, 117 S. Ct. 1040 (1997); Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573 (Fed. Cir. 1996)).

Having thus construed the claims, the district court compared the claims to Vaughan's allegedly infringing products, following Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), aff'd 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). Liquid Dynamics submitted evidence of infringement primarily through the testimony of its expert, Dr. Richard Lueptow. Dr. Lueptow had simulated a series of computational flow dynamics to illustrate both the path of a single particle (the "particle plots") and the velocity of that particle (the "vector plots") in each of Vaughan's tanks. Liquid Dynamics at *23. The district court noted that all of Dr. Lueptow's exhibits, as well as his testimony, had been based on Liquid Dynamics' construction of the claim, which the court had rejected. The district court ruled that no reasonable person considering the particle plots could conclude that Vaughan's tanks infringed the '414 patent given the district court's construction of the claim.

The district court did not comment on Dr. Lueptow's submitted vector plots. Dr. Lueptow had explained that:

In velocity vector plots, the many vectors in a specified plane (or slice) of the flow indicate the direction of flow (orientation of the vector) and the magnitude of the velocity in the plane of the slice (length of the vector).

The vector plots in vertical planes through the axis of the tank that I analyzed showed circulation of the fluid outward in the lower portion of the tank, upward in the outer portion, inward in the top portion of the tank, and downward near the center portion of the tank for each of the categories of Vaughan tanks.

Decl. of Dr. Richard M. Lueptow, PP 27-28. The court did not discuss the relationship between the flow pattern that Dr. Lueptow attributed to his vector plots and the flow pattern required under the court's claim construction.

The district court granted summary judgment in favor of Vaughan and mooted Vaughan's counterclaims for invalidity and inequitable conduct. Both parties timely appealed. We have jurisdiction of this appeal pursuant to 28 U.S.C. § 1295(a)(1).

DISCUSSION

A. Standard of Review

This court reviews the grant of summary judgment de novo. Genzyme Corp. v. Transkaryotic Therapies, Inc., 346 F.3d - 4503 -
A determination of patent infringement requires a two-step analysis. The court must first interpret the claim and determine the scope and the meaning of the asserted patent claims, and then compare the properly construed claims to the allegedly infringing device. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454 (Fed. Cir. 1998). The first step, claim construction, is a matter of law that we review de novo. Id. at 1451. The second step is a factual question that we review following a trial for clear error. Bai v. L & L Wings, Inc., 160 F.3d 1350, 1353 (Fed. Cir. 1998). When conducting a de novo review of a district court's grant of summary judgment, however, we construe the facts in the light most favorable to the non-movant. Mazzari v. Rogan, 323 F.3d 1000, 1005 (Fed. Cir. 2003). To prove infringement, the patentee must show that the accused device meets each claim limitation, either literally or under the doctrine of equivalents. Deering Precision Instruments, L.L.C. v. Vector Distrib. Sys., Inc., 347 F.3d 1314, 1324 (Fed. Cir. 2003).

We review the district court's decision to moot Vaughan's counterclaims for abuse of discretion. Phonometrics, Inc. v. N. Telecom, Inc., 133 F.3d 1459, 1468 (Fed. Cir. 1998).

B. Claim Construction

Courts construe claims by considering the evidence necessary to resolve disputes about claim terms and to assign a fixed, unambiguous, legally operative meaning to the claim. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996).

It is well-settled that, in interpreting an asserted claim, the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history. Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language.

We examine this intrinsic evidence seriatim. "We look first to the claim language itself, to define the scope of the patented invention. As a starting point, we give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art." Dow Chem. Co. v. Sumitomo Chem. Co., 257 F.3d 1364, 1372 (Fed. Cir. 2001). We look to the written description for guidance "when the claim language itself lacks sufficient clarity to ascertain the scope of the claims." Deering, 347 F.3d at 1322. We also look at the written description "to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning. The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." Vitronics, 90 F.3d at 1582. "The specification contains a written description of the invention which must be clear and complete enough to enable those of ordinary skill in the art to make and use it. Thus, the specification is always highly relevant to the claim construction analysis." Id.

We look next to the prosecution history. When we use the prosecution history as source material, the prior art cited and the applicant's acquiescence with regard to that prior art indicate the scope of the claims, or in other words, what the claims do not cover. Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 65, 384 F.2d 391 (1967). Furthermore, "where the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim congruent with the scope of the surrender." Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1324 (Fed. Cir. 2003).

The district court identified the four disputed phrases in Claim 1 and determined that the claim language of phrases 1 and 4 was clear and needed no interpretation. The district court, however, was unable to interpret the helical flow pattern described in phrases 2 and 3 by reference to the claim language alone and considered the written description, the figures of the patent, and the prosecution history. The district court noted that two of the patent's figures, Figures 5 and 6, illustrate a perfect helical flow. In the prosecution history, the district court noted that Claim 1 as originally filed did not include language related to a helix--or to any other particular flow pattern--and that the amendments submitted to distinguish the claim from the prior art first introduced the "substantial helical" limitation. Based on these findings, the district court adopted Vaughan's suggested construction.
The district court's analysis was erroneous because Claim 1 was not ambiguous, and its plain meaning was not contradicted by the written description. The plain language of phrase 2 requires a "substantial helical flow." The term "substantial" is a meaningful modifier implying "approximate," rather than "perfect." In Cordis Corp. v. Medtronic AVE, Inc., 339 F.3d 1352, 1361 (Fed. Cir. 2003), the district court imposed a precise numeric constraint on the term "substantially uniform thickness." We noted that the proper interpretation of this term was "of largely or approximately uniform thickness" unless something in the prosecution history imposed the "clear and unmistakable disclaimer" needed for narrowing beyond this simple-language interpretation. Id. In Anchor Wall Systems v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1311 (Fed. Cir. 2003), we noted that: "nothing in the prosecution history . . . clearly limits the scope of 'generally parallel' such that the adverb 'generally' does not broaden the meaning of parallel. Accordingly, we hold that the phrase 'generally parallel' envisions some amount of deviation from exactly parallel," and that "words of approximation, such as 'generally' and 'substantially,' are descriptive terms 'commonly used in patent claims 'to avoid a strict numerical boundary to the specified parameter.'” Id. at 1311.

Similarly, the plain language of Claim 1 requires neither a perfectly helical flow nor a flow that returns precisely to the center after one rotation (a limitation that arises only as a logical consequence of requiring a perfectly helical flow). Because the plain language of the claim was clear and uncontradicted by anything in the written description or the figures, the district court should not have relied upon the written description, the figures, or the prosecution history to add limitations to the claim. Under such circumstances, relying on the written description and prosecution history to reject the ordinary and customary meanings of the words themselves is impermissible. Tex. Digital Sys. v. Telegenix, Inc., 308 F.3d 1193, 1204 (Fed. Cir. 2002). Courts construing claims must also remember that:

While . . . claims are to be interpreted in light of the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims. We recognize that there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification.

Comark Communications v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998) (citations omitted).

The district court relied on the written description of Figures 5 and 6 to import the limitation of a perfectly helical flow. There is no language in the claim requiring such a perfectly helical flow. We have consistently warned against this approach to claim construction. See Amgen, Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1325 (Fed. Cir. 2003) (“Because the claims are best understood in light of the specification of which they are a part . . . courts must take extreme care when ascertaining the proper scope of the claims, lest they simultaneously import into the claims limitations that were unintended by the patentee.”); CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002) (explaining that the presumption of ordinary meaning cannot be rebutted "simply by pointing to the preferred embodiment or other structures or steps disclosed in the specification or prosecution history"). Claim 1, properly construed, does not require a perfectly helical flow.

The district court here failed to differentiate between "helical" and "substantial helical." Claim 1, as properly construed, claims all flow patterns that are generally, though not necessarily perfectly, spiral, and that fill much, though not necessarily all, of the tank’s volume. This construction of the claim follows from the words "substantial helical flow" in phrase 2, the directional outline of phrase 3, and the words "substantially volume filling" in phrase 4.

In its claim interpretation, the district court defined the limitation "at least a substantial part of the entire height thereof" to mean "the ridge member must protrude from each of the sidewalls of the bed liner and must extend from near the bottom to near the top of the liner sidewall." In addition, the district court stated:

"Substantially the entire height thereof" simply means that the ridges must cover nearly the entire length of the sidewall. This limitation in the Claim was added by the patent applicant during prosecution of the patent, as was the case for the words: "vertically extending." A projection in the sidewall that does not span nearly the entire distance from the top to the bottom of the sidewall does not meet this limitation.
The claim language itself shows the accuracy of the district court's interpretation. Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning. Hoganas AB v. Dresser Indus., Inc., 9 F.3d 948, 951, 28 U.S.P.Q.2D (BNA) 1936, 1938 (Fed. Cir. 1993); Smithkline Diagnostics, Inc. v. Helena Lab. Corp., 859 F.2d 878, 882, 8 U.S.P.Q.2D (BNA) 1468, 1471 (Fed. Cir. 1988); ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1579, 6 U.S.P.Q.2D (BNA) 1557, 1560 (Fed. Cir. 1988). In this case, the patent discloses no novel uses of claim words. Ordinarily, therefore, "substantially" means "considerable in . . . extent," American Heritage Dictionary Second College Edition 1213 (2d ed. 1982), or "largely but not wholly that which is specified," Webster's Ninth New Collegiate Dictionary 1176 (9th ed. 1983). Thus, the modifier "substantially" conveys that the ridge members extend over most of the "entire height" of the sidewall portions. The district court's language captured well this meaning: "The ridge member . . . must extend from near the bottom to near the top of the liner sidewall."

"Substantial" in this context does not mean ample extension to accomplish the purpose of locking loads. The language "substantial part" expressly modifies the term "entire height." "Entire height," in turn, refers (via the antecedent marker "thereof") to "liner sidewall portions." Therefore, the claim language explicitly ties "substantial part" to the height of the sidewalls, not to the overall function of the invention. The language and syntax of the claim preclude a functional definition of "substantial part." In other words, if "substantial part" meant only ample height to accomplish a purpose, the claim would need to read "only so much height as necessary to affix a structure against movement." This redraft would essentially strip many words in the claim of their meaning.

The claim term "portions" also does not limit the "entire height" limitation to something less that the full height of the sidewalls. The context of the claim shows that the inventor used the term "liner sidewall portions" to distinguish the sidewalls from other portions of the overall invention such as the "liner floor portion" or "the liner frontwall portion." In context, the word "portion" does not refer to a part of the liner sidewall, but to the sidewall itself as a portion of the entire bed liner.

The specification also supports the district court's reading of this claim language. The embodiments disclosed in the '876 patent and its drawings show ridge members extending nearly the entire height of the sidewall. At no point does the specification suggest that "at least a substantial part of the entire height [of the sidewall]" means less than the entire height of the sidewall. Moreover, the specification uniformly uses the term "portion" to distinguish features of the invention from each other, not to refer to less than the entire feature. Even the reference at column 4, line 52, ("Sidewall portions 20 and 22 further contain rail overlay portions 27 containing notched parts 27A.") (emphasis added), identifies a feature, rather than limiting the feature's reach. Although the scope of the claims is not necessarily limited to the specific embodiments described in the specification, Amhil Enters., Ltd. v. Wawa, Inc., 81 F.3d 1554, 1559, 38 U.S.P.Q.2D (BNA) 1471, 1474 (Fed. Cir. 1996), the specification of the '876 patent does not provide any indication that the claim terms should be given anything other than their ordinary meaning. See North Am. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1576, 28 U.S.P.Q.2D (BNA) 1333, 1337 (Fed. Cir. 1993).

In sum, the district court correctly construed the phrase "a substantial part of the entire height thereof." The limitation requires that the ridges must cover nearly the entire height of the sidewall portion of the invention.

The district court construed the "open for a substantial portion" limitation to require that the drain groove be "largely but not wholly open along the top." Construction Order at 9. The district court arrived at this construction based on events occurring during prosecution of the '350 patent. During prosecution, the applicant amended claim 1 by removing the term "upwardly open" and adding the "substantially open" limitation. Id. at 8. This amendment narrowed the claim by requiring the drain grooves to be open for a "substantial portion" of their lengths, thereby excluding from the scope of the claim drain grooves open for less than a substantial portion of their lengths. Thus, this court finds that the "substantially open" limitation calls for drain grooves that are "largely but not necessarily wholly open."
Claim 24

The process according to claim 1, wherein the process further comprises adding the recycled ladle metallurgy additive to the molten steel in granular form in at least two separate steps wherein a substantial portion of the granular recycled ladle metallurgy furnace slag is added before the raw materials.

The parties agree that Claim 24 has all the limitations of Claim 1. Defendant argues, and the Court agrees, that this claim calls for a "further" process which consists of at least two separate steps requiring "a substantial portion" of the slag to be added before the raw materials. The parties dispute whether a mixture is required as an additive. Defendant argues there is no way the claim can be performed in two steps without having a mixture in at least one of the steps (Tr. 61).

The key phrase here is "substantial portion" (Tr. 58). Plaintiff says this means up to 100% and Defendant says it must be less than 100%. Plaintiff's position is that neither Claim 1 nor Claim 24 mention a mixture of LMF slag and raw material and that Claim 24 calls for at least two steps in the process. Defendant's position is that Claim 1 is limited to a mixture and Claim 24 is limited to at least one step which is the addition of a mixture of recycled LMF slag and raw materials as described in Claim 1.

The Court agrees with the common sense reading that "a substantial portion" could be up to and including 100%, depending on the number of steps. As described by Plaintiff's counsel (Tr. 63):

If you want to do it in two steps, you keep them [recycled slag and raw materials] separate; you put them in separately. The substantial portion there is 100 percent. But the claim is drafted to accommodate 75 percent, and then all of the raw material, then 25 percent, . . . The claim is drafted to cover all of those possibilities. And it clearly does.

The Court's reading of Claim 24 is consistent with its reading of Claim 1.
plain meaning of "substantial" is appropriate. Each agree that the roller paths in the embodiments illustrated in the patent "are completely aligned in the radial direction with the corresponding jig or lower can support" and that claim 17 requires "substantial radial alignment, not complete radial alignment." 152 In support of their respective positions each cites the fourth definition of "substantial" contained in Webster's Third International Dictionary: "4 a: being that specified to a large degree or in the main . . . b: of or relating to the main part of something," 153 with Crown emphasizing "in the main," i.e., more than half. 154 The court finds these definitions less than helpful.

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152 D.I. 241 at 43; D.I. 294 at 41.
154 D.I. 241 at 44; D.I. 280 at 35.
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Rexam points out that the Federal Circuit has stated that "[t]he term 'substantial' is a meaningful modifier implying 'approximate,' rather than 'perfect.'" 155 Because the parties agree that the specification provides no helpful guidance, that the figures illustrate complete (or absolute) alignment, and that the claim requires something less than absolute alignment—"substantial alignment"—the court determines that Rexam's proposed construction more closely defines the "approximate," rather than "perfect" alignment to which the claim is limited.

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155 D.I. 294 at 41 (quoting Playtex Prods., Inc. v. Procter & Gamble Co., 400 F.3d 901, 907 (Fed. Cir. 2005)).
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Consequently, the court adopts Rexam's proposed construction: "at or almost absolute radial alignment with said radial inward support."

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B. Refractive Index Match (Claim 17)

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<th>Term</th>
<th>Court's Construction</th>
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<tr>
<td>providing a substantial refractive index</td>
<td>providing a substantial refractive index match between the portion of the applicator in contact with the skin and the skin surface itself (refractive index value 1.55); this may be done by constructing the portion of the applicator contacting the skin out of a material with a refractive index similar to that of the skin (for example, 1.5 or 1.7) and/or placing a substance between the applicator and the skin which has a refractive index similar to that of skin.</td>
</tr>
<tr>
<td>match between the applicator and the skin</td>
<td></td>
</tr>
<tr>
<td>surface</td>
<td></td>
</tr>
</tbody>
</table>

The parties dispute what, exactly, has to have a refractive index match with the skin and what is meant by "substantial."
Plaintiff suggests this court adopt a construction used by the Northern District of California in litigation to which defendant was not a party. Lumenis, Inc. v. Palomar Med. Techs., Inc., No. C-02-5176, slip op. at 5-7 (N.D. Cal. April 19, 2004) (Docket # 28 Ex. H). The parties in that litigation focused exclusively on the meaning of "substantial" in the context of a definiteness challenge to the patent. I am fully persuaded by the Northern District of California's use of examples from the specification to illustrate the meaning of "substantial" and decline to follow defendant's suggestion of the term "approximately equal" because it adds no clarity to the claim language.

It is clear in the claim language that there must be a substantial refractive index match between the portion of the applicator "in contact with the skin surface" and the skin. '844 Patent col.17 ll.21-25. The claim does not specify how this should be accomplished. However, the specification discusses constructing the relevant part of the applicator out of material with a substantial match and/or placing a substance with a substantial match between the applicator and the skin. '844 Patent col.2 ll.59-67, col.7 ll.23-27, col.7 l.66 to col.8 l.5.

On its face, claim 1 requires "a flexible dielectric substrate having a [susceptor] thereon residing in a close proximal relation to a substantial surface portion of said food item." To construe the terms "close proximal relation" and "substantial surface portion," we look to the intrinsic evidence.

The specification discloses food items, i.e., a fish stick, potatoes, and onion rings, wrapped in a manner such that the susceptor, which coats dielectric wrapping material, remains adjacent to the surface of the food item throughout the cooking process. Consequently, "residing in a close proximal relation to … said food item," as utilized in claim 1, refers to a positional relationship between the susceptor and food item in which the susceptor remains closely adjacent to the food item throughout the cooking process.

The food item depicted in the specification, a fish stick, is completely wrapped with dielectric material. The susceptor, as disclosed and represented in the drawings, coats the entire inner surface of the dielectric material and envelopes the entire surface of the food item. Consequently, "a substantial surface portion of said food item" refers to a positional relationship between the susceptor and the food item in which the susceptor envelops a very large portion of the surface of the food item. The prosecution history also leads us to such an interpretation. While prosecuting claims 1 and 7 to allowance, General Mills distinguished its invention over a rigid dish containing a susceptor disposed thereon by maintaining that its invention can be wrapped for direct heat transfer in a manner previously unattainable due to the inflexibility of prior art susceptors.

Evenflo raises two defenses for non-infringement relative to claim 12. First, it contends that its liner does not "contact[ ] substantially all" of the support surface of the support tray. Second, it argues that its tray sets do not meet the "substantially the same configuration" limitation. Both of these defenses are discussed below, ad seriatim.
In the context of claim construction, "expressions such as 'substantially' are used in patent documents when warranted by the nature of the invention, in order to accommodate the minor variations that may be appropriate to secure the invention" and "indeed may be necessary in order to provide the inventor with the benefit of his invention." Verve LLC v. Crane Cams, Inc., 311 F.3d 1116, 1120 (Fed. Cir. 2002) [emphasis supplied]. "Words of approximation, such as 'generally' and 'substantially,' are descriptive terms commonly used in patent claims to avoid a strict numerical boundary to the specified parameter." Anchor Wall Sys. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1311 (Fed. Cir. 2003) (citations and internal quotation marks omitted).

Here, both parties submitted expert reports in support of their respective claim construction arguments, and Fisher-Price's expert also testified at the preliminary injunction hearing. With regard to the "contacting substantially all" limitation, Evenflo's expert, Dr. Mollendorf, states in his expert report that Evenflo's accused tray inserts "do not even contact 30% of the tray support surface" and therefore cannot be said to infringe claim 12. Def. Memo, p. 9; Mollendorf Decl., Ex. A, pp. 6, 12-13 ("the Evenflo tray insert rides on highpoints and ridges that comprise a small portion of the contacting support surface and that preclude substantial contact").

13 Dr. Mollendorf reached this conclusion by inserting paper strips between the insert and support trays of the accused products. He concluded that contact existed only in those areas where a strip of paper could not be fed between the tray's surfaces. He then computed the portion of the total possible contact area for each tray set at which contact actually occurs.

Fisher-Price counters that the general nature of this tray product is such that manufacturing tolerances for smoothness and fit cannot be expected to be particularly tight and further, that the drawings (e.g., '830 patent, Fig. 15) indicate that "contacting substantially all" does not necessarily mean surface-to-surface contact between the majority of points on the tray insert and support. What is important is that the tray insert "covers substantially all of the cavity." Pl. Reply, pp. 6-7; Col. 4, lines 17-18. Alternatively, Fisher-Price offered the expert testimony of Professor Visser, who identified irregularities in the lower surface of the Evenflo insert trays as pin marks created by the injection molding process. Tr. at 147:20-148:6. His opinion is that, assuming an unidentified number of these pin points are distributed in a way that provides support, the "contacting substantially all" limitation is met. Tr. 148:6-151:13.

In construing the phrase at issue here, "the question is not whether the word 'substantially' has a fixed meaning as applied to [the challenged term or phrase], but how the phrase would be understood by persons experienced in the field ... upon reading the patent documents." Verve LLC at 1119-20.

Upon reviewing the patent documents, the Court rejects Fisher-Price's contention that persons experienced in the field would view the terms "covering substantially all" and "contacting substantially all" as interchangeable. Under the doctrine of claim differentiation, "different claims are presumed to be different in scope." Inpro II Licensing S.A.R.L. v. T-Mobile USA, Inc., 450 F.3d 1350, 2006 U.S. App. LEXIS 11675, at *7 (Fed. Cir. May 11, 2006); see also, Intermatic Inc. v. Lamson & Sessions Co., 273 F.3d 1355, 1364 (Fed. Cir. 2001). Construing the claim term as Fisher-Price suggests would violate that doctrine.

Specifically, claim 20, which is also in dispute here, describes a tray kit. Two of its dependent claims, 23 and 25, use the terms "contacting substantially all" and "covering substantially all," respectively, to describe limitations on the interface between the insert tray and the support. Were one to replace the word "contacting" in claim 23 with "covering," as Fisher-Price suggests is appropriate, this Court is of the opinion that there would be no limitation in claim 25 not already present in claim 23.

Similarly, independent claims 12 and 27 both call for tray sets. Though both include some identical language and phrases, claim 12 employs the term "contacting substantially all" while claim 27 employs the term "covering substantially all." Compare, col. 6, lines 16-26 and col. 7, line 18 - col. 8, line 11. In this Court's view, upon reading the patent documents as a whole, persons experienced in the field at the time of the invention would view this as a conscious differentiation, rather than the same limitation described with different terminology.
Keeping in mind the Federal Circuit's characterization of the word "substantially" as one of approximation, this Court finds nevertheless that the term is commonly understood as meaning "largely" or "most"—i.e., at minimum, some figure greater than 50 percent. Even avoiding the imposition of a stringent numerical cutoff, this Court has no trouble rejecting Professor Visser's construction of "contacting substantially all" as meaning discrete points of contact distributed in such a way as to provide support. 14 The Court also finds unpersuasive Professor Visser's suggestion that, by the act of inserting paper strips between the Evenflo insert and base trays, it may be possible to lift the insert away from points of contact. Tr. 143:16-144:16. 15

--- Footnotes ---

14 Accepting Professor Visser's logic would again render meaningless the distinction between "contacting substantially all" and "covering substantially all"—e.g., an umbrella can cover substantially all of something it has little or no contact with.

15 Professor Visser took care in his discussion to state that he was speaking of this possibility generally and "didn't say that of [Mollendorf's] test."

--- End Footnotes ---

b. The construction of "substantially"

It is a convention of patent law that terms must be interpreted consistently in all their appearances in a patent. Fonar Corp. v. Johnson & Johnson, 821 F.2d 627 (Fed. Cir. 1987). Plaintiff contends that the term "substantially" must be interpreted to mean "essentially." Thus, in the first case, plaintiff would have this court interpret the above quoted phrase to mean that the gas pressure in the mold may be increased, decreased or held essentially constant. In the second case, plaintiff interprets the phrase "control means are operative to inject gas to fill out the mold cavity at a pressure that is at all times during the gas injection cycle substantially below the pressure of the stored gas supply", to mean that the pressure of the gas injected into the mold cavity is "essentially" below the pressure of the stored.

This reading of the term is incorrect. It appears to this court that the meaning of the second phrase quoted is changed considerably by this interpretation. Plaintiff's proposed interpretation does not comport with the commonly understood meaning of the word "substantially." Another convention of patent law holds that terms used in a patent claim should be understood to have their ordinary and common meaning unless the inventor specifically defines it to have some other meaning. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996).

The reading proposed by plaintiffs results in the term having almost no meaning in the second phrase. To read it in the manner asserted by plaintiffs results in the sentence having an almost nonsensical meaning.

It appears to the court that the inventor did not specify any meaning for "substantially", other than its common, ordinary meaning. Accordingly, the court must determine the proper meaning for the term "substantially" in the context of the 455 Patent. First, this court notes that it is a term of comparison. If it is to have any meaning, it must modify the term following in some way. This court finds the term to mean "to a considerable degree." In the case of the first phrase quoted above; the gas pressure is held substantially constant is held to mean "the gas pressure is held constant to a considerable degree." In the case of the second phrase, that stating that the pressure of the gas injected into the mold is substantially below that of the stored gas supply, it will be read to mean that the pressure of gas injected into the mold is below that of the stored gas supply to a considerable degree. This reading of the term appears to the court to come the closest to reconciling the two contexts in which the term substantially was used by the drafters of 455 Patent.

In an effort to forestall any future dispute about the meaning of "considerable", this court understands that term to mean large. This court does not attach specific values to the respective pressures, that in the supply of stored gas and the pressure of the gas injected into the mold. The court notes, however, that the drafters of the 455 Patent include examples of the pressures at which various elements of the claimed invention are to operate at several points in the specification of the 455 Patent. These values disclose pressure differences on the order of 6-11,000 psi, with the pressure of the stored gas supply...
always being the higher of the quoted pressures. Accordingly, the court finds that pressure differentials of 6-11,000 psi are "substantial" for purposes of the interpretation of the disputed claims of the 455 Patent, with the pressure of the gas injected into the mold always being the lower of the two values. The court believes that a pressure differential of, say, 8,000 psi would commonly be understood by one skilled in the art to be "substantial". This is not to be taken to mean that other pressure differentials could not be understood to be "substantial" for these purposes.

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B. "Substantially"

The district court construed the term "substantially" in the claimed phrase "substantially below" to mean "to a considerable degree," and further construed "considerable" to mean "large." The district court did not attach specific values to the pressures compared in the claims using the phrase "substantially below," but did find that pressure differentials between 6-11,000 psi, including 8,000 psi, are "substantial" for purposes of the 455 patent.

Epcon argues that the district court erroneously imputed a quantitative meaning to the phrase "substantially below." Epcon argues that the phrase should instead be interpreted to mean "essentially below." Bauer argues that the phrase was added to distinguish over the prior art during prosecution, and the district court's construction was correct.

The term "substantially" is used in claims 2 and 16 in two slightly different contexts, i.e., "substantially below," and "substantially constant." As noted by both parties, the same term or phrase should be interpreted consistently where it appears in claims of common ancestry. Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 980, 52 U.S.P.Q.2D (BNA) 1109, 1114 (Fed. Cir. 1999); Abtox, Inc. v. Extron Corp., 131 F.3d 1009, 1010, 46 U.S.P.Q.2D (BNA) 1735, 1735-36 (Fed. Cir. 1997); Fonar Corp. v. Johnson & Johnson, 821 F.2d 627, 632, 3 U.S.P.Q.2D (BNA) 1109, 1113 (Fed. Cir. 1987). However, this case implicates the more precise statement of the axiom, i.e., "[a] word or phrase used consistently throughout a claim should be interpreted consistently." Phonometrics, Inc. v. Northern Telecom Inc., 133 F.3d 1459, 1465, 45 U.S.P.Q.2D (BNA) 1421, 1426 (Fed. Cir. 1998) (emphasis added).

In this case, the term "substantially" was used in two contexts with a subtle but significant difference. The phrase "substantially constant" denotes language of approximation, while the phrase "substantially below" signifies language of magnitude, i.e., not insubstantial. Because the same term was used in a different manner in these two phrases, the word "substantially" should not necessarily be interpreted to have the same meaning in both phrases.

The district court correctly construed the phrase, "substantially below," in light of relevant portions of the prosecution history. The prosecution history shows that the phrase was added to the claims during prosecution to distinguish the claimed invention over the prior art Baxi reference. It is unclear that "substantially below," as opposed to merely "below," was required to distinguish the prior art. But in any event, Bauer is correct that this limitation was added to distinguish the prior art, and Epcon should be held to the phrase it chose. Also, Epcon's proposed construction "essentially below" would make little sense in context, where "essentially" could connote "above or below," and the prior art would appear to disallow such an interpretation. The district court did not err in construing the phrase "substantially below," as used in the context of the claims.

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3. Claim Construction of the Term "Substantially a Lumbar Region"

Both parties dispute the construction of the term "at substantially a lumbar region" as it is used in claim 1 of the '741 patent. The claim recite "each of said upper sections extends from one of said respective lower sections so as to form a pair of first bowed sections at substantially a lumbar region of said backrest . . . ." Id., col. 22, ll. 45-48 (emphasis added). Defendants argue that this limitation requires the bowed section to be at the lumbar region of the backrest, which is between six and ten inches above the seat of the chair. According to defendants, a person having ordinary skill in the art would recognize the lumbar region to be a specific region of the human spine, which the seating industry standards locate as being between six
and ten inches above the seat. Defendants further contend that the claim drafter's implementation of the term "substantially" mandates that a majority of the bowed section rest within the six to ten inch range. Defendants base this argument on their belief that when the term "substantially" modifies a location or position, it is language of magnitude.

In contrast, plaintiff argues that the specification and claims make clear the term "at substantially a lumbar region" means the portion of the backrest that supports the lumbar region of a user's spine. In particular, plaintiff contends that defendants are reading an industry standard into the claims which, according to plaintiff, is both improper and unnecessary because the intrinsic evidence provides enough insight into the meaning of the term. Further, plaintiff asserts that the term "substantially" is a term of approximation--at least as used in the claim--and that defendants are incorrect in understanding "substantially" to require the bowed sections to be "mostly in, or within" the lumbar region. Rather, plaintiff argues, the term means "at or near" and as a result, the first bowed sections are located at or near a region of the backrest that will support the lumbar region of a user's spine.

The court agrees with plaintiff's construction. The language of the claims--in light of the specification--provides the proper construction of "at substantially a lumbar region of said backrest," which is approximately the portion of the backrest where the lumbar section of a user's back would be supported by the backrest. The specification simply calls for the first and second bowed sections to act in unison "[t]o support the lumbar region of a user's back . . . ." Id., col. 12, ll. 65-67. The court finds it unnecessary to resort to industry standards to define what the term "lumbar region" means. The term is not indefinite because one of ordinary skill in the art would readily understand the meaning of "lumbar region."

Moreover, even if the court were to entertain defendants' insistence on using the standard to illuminate the meaning of the claim term, the court notes that the standard was misinterpreted by defendants. Defendants cite an industry standard--one from the American National Standards Institute ("ANSI")--to define what exactly the "lumbar region" is. The Federal Circuit has acknowledged that "regulations issued by regulatory agencies can be helpful to a claim construction analysis if they are probative of an industry-specific meaning for a disputed claim term." Mars, Inc. v. H.J. Heinz Co., L.P., 377 F.3d 1369, 1374 n.3 (Fed. Cir. 2004). Defendants argue that the standard demands that the lumbar region be 6.0 to 10.0 inches above the seat. This interpretation of the standard, however, is incorrect. The industry standard cited states:

Current practices and information suggest that, for upright or near-upright posture chairs, a lumbar support area of at least 15.2 to 22.9 cm (6.0 to 9.0 inches) high and 30.5 cm (12.0 inches) wide with a vertically convex and horizontally concave radius is acceptable (Farrell and Booth, 1984). A vertical height to the center of the lumbar support, either fixed or adjustable, within the range of 15.2 to 25.4 cm (6.0 to 10.0 inches) above the Seat Reference Point (SRP) is generally acceptable (Branton, 1984).


First, the use of the terms "suggest" and "acceptable" indicate that the standard falls within the species of a guideline rather than a hard and fast rule. Second, defendants have misread the terms of this standard. It does not require a four inch high range for the lumbar region. Rather, as plaintiff correctly points out, the suggested height-range, or span, of the lumbar support region is 6.0 to 9.0 inches. As a result, because the standard suggests that the vertical height to the center of this support region--as measured from the seat--should be within the range of 6.0 to 10.0 inches, the lumbar support region can begin with the bottom portion of the region at 1.5 inches above the seat and extend to where the top portion of the support region is at 14.5 inches above the seat (depending on whether one is using the 6.0 inch height range or the 9.0 inch height range). Therefore, the suggested lumbar region is much larger in area than that urged by defendants.

Again, however, the standard is not dispositive of the claim construction, because without it one of ordinary skill would nonetheless readily understand the meaning of the term. ANSI standards were only briefly recited in the Background of the Invention section of the specification, to provide background information relating to seat height--not lumbar region ranges.

Furthermore, this court agrees with plaintiff's interpretation of the term "substantially" as used in the claims. "Expressions such as 'substantially' are used in patent documents when warranted by the nature of the invention, in order to accommodate the minor variations that may be appropriate to secure the invention." Verve v. Crane Cams, Inc., 311 F.3d 1116, 1120 (Fed. Cir. 2002). Further, "like the term 'about,' the term 'substantially' is a descriptive term commonly used in patent claims to 'avoid a strict numerical boundary to the specified parameter.'" Ecolab, Inc. v. Envirochem, Inc., 264 F.3d 1358, 1367 (Fed. Cir. 2002).
A plain reading of the claims compels the court to interpret "substantially" to mean "approximately" or "about" as opposed to a term of magnitude. The straightforward language of the claim itself provides support for this conclusion. The claim recites in relevant part, "so as to form a pair of first bowed sections at substantially a lumbar region of said backrest." '741 Patent, col. 22, ll. 46-48. The claim tells a person having skill in the art where the bow is formed at; it is expressing that the bowed-shaped section is formed not "perfectly" or "precisely" at the portion of the backrest where the lumbar region of the user will be located, but rather, at "substantially," or in other words "approximately" the portion of the backrest where the lumbar region of the user will be located. See Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1322, 1329 (Fed. Cir. 2006) ("The term 'substantial' implies 'approximate,' rather than 'perfect'.").

The court notes that the term "substantially" appears numerous times throughout the specification--albeit not when describing the bowed-shaped section. For instance, in the Summary of the Invention, the patentee states "the linkage assembly is adapted to allow the seat and back to tilt downwardly and rearwardly such that the seat pivots about an effective pivot point at substantially the ankle of a user having feet resting on a floor." '741 Patent, col. 2, 58-62 (emphasis added). In another portion of the Summary of the Invention, the patentee again uses the term, stating "The piston rod is extensible [sic] between a collapsed position in which the cylinder and inner tube are substantially within the intermediate tube and the intermediate tube is substantially within the outer guide tube . . ." Id., col. 3, ll. 7-12 (emphasis added).

If the patentee had desired to convey to persons having skill in the art that the bulk of the bowed section be located within the lumbar region of the backrest, he certainly could have done so by adopting the phrase "substantially within" as he did in the Summary of the Invention when discussing the piston rod. As the claim currently stands, however, the court declines to engage in the type of word stretching needed to bend the term "substantially" around defendants' asserted construction. Therefore, the court finds the term "substantially" to mean "approximately" or "about." Thus, the term "at substantially a lumbar region" means approximately the portion of the backrest where the lumbar section of a user's back would be supported by the backrest.

D. Claim 1(e) - "At Substantially a Right Angle"

Claim 1(e) provides that the handle grip must include

a graspable arm attached to the outer end of said handle grip and extending generally laterally upwardly in a direction away from the floor when in use and at substantially a right angle with respect to the longitudinal axis of said handle during use and being graspable by the hand of a standing operator.

'315 Patent at 4:33-38. Dyson asserts that this limitation requires that the graspable arm of the device be at an angle at or near 90 degrees to the longitudinal axis of the handle. See Joint Claim Constr. Statement at A-2. Oreck proposes a functional construction and states that "a substantial right angle will exist where the graspable arm is above the handle and the user can grasp it in such a way that he or she will have a strong wrist position, that is, one in which the forearm, hand, and fingers are aligned in a strong position." Id.

It is beyond dispute that the plain and ordinary meaning of the term "right angle" is an angle of 90 degrees. The term "right angle" in claim 1(e) is modified, however, by the term "substantially." In the context in which it is employed here, "substantially" is a term of approximation. See Anchor Wall Sys., 340 F.3d at 1310-11; Cordis Corp. v. Medtronic AVE, Inc., 339 F.3d 1352, 1360 (Fed. Cir. 2003); see also Deering, 347 F.3d at 1323 (noting that "substantially" can be either a term of approximation or a term of magnitude). Terms of approximation such as "substantially" are frequently included in patent claims and are generally used to "avoid a strict numerical boundary to the specified parameter." Ecolab, Inc. v.
Envirochem, Inc., 264 F.3d 1358, 1367 (Fed. Cir. 2001) (quoting Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1217 (Fed. Cir. 1995)); Playtex, 400 F.3d at 907 (noting that "substantial" should not be interpreted to incorporate a "strict numerical limitation"); see also Verve, LLC v. Crane Cams, Inc., 311 F.3d 1116, 1120 (Fed. Cir. 2002) ("Expressions such as 'substantially' are used in patent documents . . . in order to accommodate the minor variations that may be appropriate to secure the invention."). Thus, the phrase "at substantially a right angle" in claim 1(e) should be construed to mean that the graspable arm of the handle grip must extend at an angle of at or near 90 degrees to the longitudinal axis of the handle. See Cordis, 339 F.3d at 1360 ("substantially uniform thickness" interpreted to mean "of largely or approximately uniform thickness"); York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1573 (Fed. Cir. 1996) ("substantial part of the entire height" construed to mean "nearly the entire height"); AmhIl Enters. Ltd. v. Wawa, Inc., 81 F.3d 1554, 1562 (Fed. Cir. 1996) ("substantially vertical" construed to permit deviation "only slightly, if at all, from the vertical").

Oreck interprets the phrase "at substantially a right angle" as a wholly functional limitation that can be defined only by reference to the "strong wrist position" of the user while he or she operates the device. This construction fails for at least two reasons. First, the requirement that the graspable arm extend "at substantially a right angle" is a clear structural limitation on the claim. Oreck's proposed construction would impermissibly read this structural limitation out of the claim and render the claim language essentially meaningless. See K-2 Corp. v. Salomon S.A., 191 F.3d 1356, 1363 (Fed. Cir. 1999) (rejecting functional interpretation that would "effectively expunge" specific claim limitation); York Prods., 99 F.3d at 1573 (rejecting functional argument when "the claim language explicitly ties 'substantial part' to the height of the sidewalls, not to the overall function of the invention"). Second, claim 1(f) already contains the limitation that the graspable arm be such that it "provide a strong wrist position for the operator." '315 Patent at 4:46-47. It would make little sense to redefine an unambiguous structural limitation to simply duplicate a functional limitation that also appears in the claim language. See K-2, 191 F.3d at 1363.

Oreck also argues that the graspable arm need not extend its entire length "at substantially a right angle," but rather that only some initial portion of the arm must be at a substantially a right angle to the longitudinal axis of the handle. Oreck argues that a construction of claim 1(e) that required that the graspable arm extend its full length at an angle at or near 90 degrees would exclude claim 7, which describes a cleaner with a graspable arm that "curves forwardly slightly" toward the base unit as it proceeds away from the longitudinal axis of the handle. '315 Patent at 6:3-6.

Dyson responds that Oreck's proposed construction would effectively read the "at substantially a right angle" limitation out of claim 1(e), because it would permit the limitation to be satisfied by a device in which only some tiny fraction of the graspable arm is at or near a 90-degree angle to the elongated handle.

The Court is not persuaded that only the initial portion of the arm must be at or near a 90-degree angle to the longitudinal axis of the handle. First, nothing intrinsic to the claim language compels Oreck's proposed construction, and if the inventors had intended to require only that the graspable arm initially extend, or begin to extend, at substantially a right angle to the handle, they certainly could have included such language in the patent claims. But they did not. Instead, claim 1(e) simply requires "a graspable arm . . . extending . . . at substantially a right angle with respect to the longitudinal axis" of the handle, which would appear to contemplate, at the very least, that the "graspable" portion of the arm be at or near a 90-degree angle to the elongated handle.

This construction is confirmed when claims 1(e) and 1(f) are read together. Claim 1(e) describes the orientation of the graspable arm in relation to the elongated handle. It requires that the graspable arm extend "generally laterally upwardly" from the handle. '315 Patent at 4:35. This otherwise vaguely-defined limitation is narrowed and made precise by the language that immediately follows it. That language, which was added to claim 1(e) as part of an examiner's amendment shortly before the '315 patent was approved, 5 clarifies that the graspable arm must extend "in a direction away from the floor when in use and at substantially a right angle with respect to the longitudinal axis of [the elongated] handle." '315 Patent at 4:35-38. Claim 1(f) then describes the distance for which the graspable arm must extend from the handle in this generally lateral upward direction. It states that the graspable arm must be "sufficiently long in a direction generally laterally and upwardly away from said handle so that it will accommodate the width of a user's hand grasping said arm." Id. at 4:40-43. Read together, these requirements establish two, complementary limitations: (i) that the graspable arm must extend from the elongated handle in a specific direction (i.e., "away from the floor when in use and at substantially a right angle with respect to the longitudinal axis of [the elongated] handle"); and (ii) that it must do so for at least a specified distance (i.e., "sufficiently long . . . that it will accommodate the width of a user's hand grasping said arm").
5 See Brebner Decl. Ex. BB(21).

6 The slight difference in phrasing ("generally laterally upwardly" in claim 1(e), and "generally laterally and upwardly" in claim 1(f)) does not alter this construction. In this context, a person of reasonable skill in the art would interpret the phrase "generally laterally and upwardly" in claim 1(f) in light of the specific narrowing language that applies to "generally laterally upwardly" in the immediately preceding claim 1(e).

Nor is Oreck's proposed construction necessary to give meaning to claim 7, which permits the graspable arm to "curve[] forwardly slightly towards said base unit as it proceeds upwardly away from said longitudinal axis of said handle." '315 Patent at 6:4-6. Oreck's argument incorrectly assumes that there is some fundamental inconsistency between a graspable arm that curves "slightly," i.e., a small amount, 7 and one that extends "at or near" a right angle. There is not. An object can both curve slightly and still be at or near a 90-degree angle relative to another object.

Accordingly, the Court finds that the graspable arm of a device that meets the limitations of the ‘315 patent must be at or near a 90-degree angle with respect to the longitudinal axis of the cleaner's elongated handle for a distance sufficient to accommodate the width of a user's hand.

Finally, Oreck argues that, based on the figures depicted in the patent documents, the phrase "at substantially a right angle" must be construed to include, at a minimum, all angles between 60 degrees and 110 degrees. To arrive at these numbers, Oreck points to figure 2 of the ‘315 patent, which portrays a graspable arm that "is bowed or curved from its point of anchorage with the first grip portion to its opposite end." '315 Patent at 1:62-64. Oreck has measured the angles relative to the longitudinal axis of the handle created by tangents to the curved outer surface of the graspable arm at its near and far ends, and it calculates those angles to be 110 degrees and 60 degrees, respectively. See Fig. 3 (Aghazadeh Aff. Ex. B). Oreck then asserts, invoking the principle that claim limitations should not be construed in a way that would exclude the depicted embodiment of the invention, that these angles necessarily constitute "substantially" right angles within the meaning of claim 1(e). Oreck further asserts that it is appropriate to measure the angle of the graspable arm by reference to the outer edge of the arm because the angle at which a user grasps the arm is dictated by the angle of the arm's outer edge. See Oreck Supp. Mem. at 7 n.7.

This argument misses the mark. First, the language of claim 1(e) requires only that the "graspable arm" extend outward from the longitudinal axis of the handle "at substantially a right angle." ‘315 Patent at 4:33-37. The claim makes no reference to whether the outer edge of the arm is straight, bowed or otherwise. The most natural reading of claim 1(e) is that the limitation should be read with reference to the angle of the arm itself, and not its edges, at the point or points at which it is likely to be grasped by a user's hand. In any event, even were it appropriate to measure the angle of the graspable arm with reference to its outside edge, Oreck's proffered measurements would still be irrelevant to the proper construction of the claim. The 60-degree and 110-degree angles that Oreck refers to are measured from points at the ends of the graspable arm depicted in figure 2, points at which it is unlikely that a user would actually grasp the arm.
4. What is the Proper Construction for the Phrase "substantially above the softening temperature" in the '311 Patent?

Claims 1 and 94 of the '311 patent contain the phrase: "substantially above the softening temperature of said binder material but to a temperature less than the softening temperature of said primary material." KXI contends that the phrase "substantially above . . ." means the temperature is sufficiently above the softening temperature of the binder to allow conversion of the binder to a continuous web matrix or forced point-bonds. KXI contends no specific temperature is required. Culligan contends the phrase "substantially above . . ." means the temperature exceeds the binder's softening temperature by at least approximately 20 degrees Celsius.

KXI argues that this phrase is similar in meaning to the same phrase used in the '092 and '948 patents. KXI argues that the plain meaning of the words defines the meaning of the claims. According to KXI, no specific temperature is required under the claims, and setting out such a requirement would not even be feasible because the temperature needed to convert the binder varies based upon the size and shape of the object being produced and the binder selected. KXI cites in support column 14, lines 56-59 of the '311 patent. This reads in relevant part: "The process disclosed in the Degen '683 patent and distinguishes it from the present invention. The passage reads in relevant part:

Degen et al. . . . describes a process using a temperature of approximately 275 degrees F (135 degrees C), which is generally below the temperatures required in the subject invention to achieve the desired novel structures. Formation of a novel continuous polymer phase or forced point-bonding, according to the present invention, even with the lowest melting point resin available, ethylene-vinyl acetate copolymer (EVA), usually occurs at 145 degrees Celsius . . . and is optimal in the range of 165-210 degrees Celsius. The temperatures required by the process of the subject invention are therefore substantially higher than required for diffusion bonding processes such as that described by Degen et al., even for the binder resin having the lowest melting point. Degen et al. teach the use of temperatures only sufficient to produce a softening of the binder because they are seeking a point bond and are not seeking a more dramatic conversion of the thermoplastic binder into a different physical form. (Emphasis added).

Culligan also argues that the patentee disclaimed processing temperatures used in the Degen '683 patent in distinguishing it. Culligan cites the '311 patent's specification at column 2, line 52 to column 3, line 2. This passage describes the prior art process disclosed in the Degen '683 patent and distinguishes it from the present invention. The passage reads in relevant part:

Culligan contends the manufacturer's specification sheet specifies that the EVA binder used in the Degen '683 process (532 EVA) has a softening temperature of approximately 75 degrees Celsius and a melting point of approximately 96 degrees Celsius. U.S. Patent No. 4,664,683, col. 6, lines 31-34; col. 14, line 66 to col. 15, line 1. The Degen '683 patent uses a processing temperature of 135 degrees Celsius, which is 60 degrees Celsius higher than the softening point of the 532 EVA binder. The '311 patent distinguishes the Degen '683 patent's prior art based upon the temperatures required for the respective processes. The '311 patent characterized the temperatures disclosed by the Degen '683 patent as "generally below" the temperatures needed to produce the "continuous web matrix" and "forced point-bonding" structures disclosed in the '311 patent.

Culligan also cites examples 17 and 18 from the '311 patent's specification. These examples disclose that pellets produced by compression molding mixtures of stainless steel powder, 532 EVA binder and powdered ion exchange resin crumbled when heated to temperatures at and below 170 degrees Celsius, which is 95 degrees Celsius above the 532 EVA's softening temperature. Culligan also cites a passage from the '311 patent's specification characterizing temperatures necessary to process activated carbon and 532 EVA as 190 to 210 degrees Celsius, or 125 to 155 degrees Celsius above the 532 EVA binder's softening temperature. KXI argues in response that the Degen '683 patent talks about process temperature, and not the mixture temperature, and that example 17 of the '311 patent talks about the mold's temperature.

The court agrees with KXI that the temperature needed to convert the binder varies based upon the size and shape of the
object being produced and the binder selected. Accordingly, the court construes the phrase "substantially above the softening temperature" to mean sufficiently above the softening temperature of the binder to allow conversion of the binder to a continuous web matrix or forced point-bonds.

6. What is the Proper Construction for the Phrase "substantially above the softening temperature of said binder material" in the '092 and '948 Patents?

Claim 1 of the '092 patent includes the phrase "heating said substantially uniform mixture within said die to a temperature substantially above the softening temperature of said binder material . . . ." Claim 1 of the '948 patent includes the phrase "means in said die adjacent to the inlet end thereof for heating said particulate mixture within said die cavity to a temperature substantially above the softening temperature of said binder material . . . ." KXI contends the phrase "substantially above" means the minimum heat required by the claims. This is a temperature which is sufficiently high both to form a composite and to keep the mixture from solidifying in the extruder. Culligan contends the phrase "substantially above" means that the temperature exceeds the softening temperature of the binder by approximately 25 degrees Celsius.

Culligan relies on statements in the specifications of the '092 and '948 patents that the heat applied to the mixture be "generally about 25 degrees Celsius above" the softening temperature of the binder. See U.S. Patent No. 5,189,092, column 2, lines 12-15; '092 patent, column 9, lines 9-10; U.S. Patent No. 5,249,948, column 2, lines 16-19. KXI argues that "generally about 25 degrees Celsius above" the softening temperature of the binder is a preferred example, but does not define the term "substantially above." According to KXI, the specification sections relied on by Culligan are "neither attempts to define the claim terms nor are they expressed as requirements in order to practice the claimed invention." Therefore, KXI argues, the court should not read them as defining the claim.

KXI argues that Culligan's interpretation violates the doctrine of claim differentiation with respect to the '092 patent. Claim 5 of the '092 patent, which is dependent upon claim 1, includes the limitation "at least about 25 degrees Celsius above the softening temperature of said binder material."

KXI also argues that a set temperature increase would fail to account for the variety of different binders that may be used, each of which may have different temperature requirements. According to KXI, the specifications set out an operating window within which the temperature must fall. This operating window necessarily varies based upon the specific binder material used. The parameters are set by column 5, lines 31-36 of the '092 patent, and column 5, lines 37-41 of the '948 patent. These passages read: "There is a minimum heat and a maximum heat--if a substance is heated insufficiently, it will not solidify and will be very prone to 'locking' within the extruder die. If overheated, it will have a strong tendency to lock up within the die." According to KXI, defining the phrase "substantially above" to mean 25 degree Celsius is contrary to the teaching of the invention that the parameter for the heating temperature be set according to the qualities of the binder used.

KXI recognizes that the "minimum heat and . . . maximum heat" requirement is "intended to teach that there is a limited range of temperatures that can be used in plaintiff's process." But, KXI argues, this requirement does not provide a definition of "substantially above" as used in both claims.

Claim 5 of the '092 patent is dependent upon claim 1. If the court were to construe "substantially above" to mean the temperature exceeds the softening temperature of the binder by approximately 25 degrees Celsius, claim 5 would be superfluous. See, e.g., Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987) ("To the extent that the absence of such difference in meaning and scope would make a claim superfluous, the doctrine of claim differentiation states the presumption that the difference between claims is significant.") The court notes "there is presumed to be a difference in meaning and scope when different words or phrases are used in separate claims." Id.

The specification has stated that "substantially above" is "generally at least about 25 degrees Celsius" and is "preferably at least about 25 degrees Celsius above the softening point of the binder. . . ." The court finds, however, the specification does not define the term "substantially above" to mean "about 25 degrees Celsius." The court finds a lower temperature difference might satisfy the "minimum heat and . . . maximum heat" requirement, depending upon the binder used. Accordingly, the court construes the phrase "substantially above" to mean a temperature which is sufficiently high both to
form a composite and to keep the mixture from solidifying in the extruder.

2. "substantially all"

Claim 1 requires that "substantially all of said bolster [be] disposed exteriorly about at least a portion of the perimeter of the bottom portion." 502 patent at col. 3, ll. 43-44 (emphasis added). The parties appear to agree that this means that some of the bolster is located along the perimeter, as opposed to the top, of the bottom cushion. The dispute centers around exactly how much of the bolster must be alongside the bottom cushion in order to satisfy the "substantially all" limitation. Defendants argue that "substantially all" should be construed as "largely, but not wholly, the totality of the bolster." Flexi-Mat argues that the amount should not be expressly quantified, but that the entire bolster is not required to be located alongside the perimeter.

The term "substantially all" in this context is neither technical nor complex. If the term "all" were unmodified, the entirety of the bolster would rest alongside the perimeter of the bottom cushion, and no part of it could lie on top of the cushion. See Webster's Third New International Dictionary (1986) (defining "all" as "the whole amount or quantity of"). The adjective "substantially" suggests that not just a small portion, but some significant amount, of the bolster must be located along the perimeter of the bottom cushion. See id. (defining "substantial" as "of or relating to the main part of something").

This language is simple and clear, and according to Phillips, 415 F.3d at 1313, I need go no further than applying the widely accepted meaning of these commonly used words. Nevertheless, I note that the drawings in the specification and the prosecution history support the construction of "substantially all" as requiring the main portion of the bolster to be positioned along the outside edge of the bottom cushion.

Figures 1-5 each depict a circular base cushion with a semi-circular bolster positioned around its perimeter. The edge of the bolster appears to rest slightly on top of the bottom cushion, and in Figure 2, a small portion of the bolster seems to touch the ground. But the main portion of the bolster is clearly located along the outside edge of the bottom cushion. The remainder of the written description is not clear as to what portion of the bolster must be located along the edge of the bottom cushion. The specification states that the bolster is "disposed about at least a portion of the perimeter of the cushioned bottom portion of the pet bed," but offers no further detail. 502 patent at col. 2, ll. 52-54.

The prosecution history sheds some light on the question. At the recommendation of the examiner, the patentee added the words "substantially all of said bolster" and "exteriorly" to distinguish the position of the bolster over the Henry patent. The Henry patent primarily described top cushions that rested entirely on top of the bottom cushion, but it explicitly identified an alternative embodiment in which the top cushions extend beyond the edges of the base cushion. 843 patent at col. 3, ll. 18-19. To avoid anticipation by Henry, the patentee made clear that the bolster in the 502 pet bed was not situated primarily on top of the bottom cushion, but along its outside edge.

I agree with Flexi-Mat that expressly quantifying a percentage of the bolster that must be located along the outside edge of the bottom cushion is unnecessary. However, merely stating that the entire bolster need not be exterior ignores the modifier "substantially." In contrast, Defendant's proposed definition -- "largely, but not wholly, the totality of the bolster" -- accurately reflects the requirement that a main part of the bolster be disposed exteriorly while allowing for a small portion of the bolster to make contact with the floor or the top of the cushion. Thus, I construe "substantially all" to mean "largely, but not wholly, the totality of the bolster."

G. "substantially all light"

This term describes how much of the light that hits the coating is reflected. The parties offer differing constructions. The Defendants propose to substitute the phrase "essentially all light"; Nichols proposes to substitute "a large portion of but not
all of the light which falls on the body of the lure."

The Court concludes that the term is not ambiguous, thus the ordinary meaning should prevail. The ordinary meaning of the term is "all but an insignificant amount." Atmel Corp. v. Information Storage Devices, Inc., 997 F. Supp. 1210, 1229 (N.D.Cal. 1998), rev'd on other grounds by 198 F.3d 1374 (Fed. Cir. 1999).

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3. A display covering "substantially all of said panel."

The claim limitations "panel" and "substantially all of said panel" appear in claims 1 and 16 of the '845 patent and claim 11 of the '478 patent. All the claims require that the claimed device have a "panel." The "substantially all" language describes the relationship between different claim elements and the panel. Claim 1 of the '845 patent and claim 11 of the '478 patent both require that the display elements are small enough to enable the user instructions and key information to be presented over "substantially all of said panel." Claim 16 of the '845 patent requires the displaying means and data entering means to be in an overlapping relationship with the panel and to extend over "substantially all of said panel."

Palm argues that it also does not infringe claims 1 and 16 of the '845 patent and claim 11 of the '478 patent, because Palm's handheld computers do not include a display covering "substantially all of said panel." This position is based on Palm's proposed definition for the "panel" as meaning "the entire face or upper surface of the device, i.e., the face or surface where the controls are located." In opposition, NCR contends that the term panel should be defined as a smaller area, "that portion of the surface of the claimed device which functions as both a display and a keyboard," and should not be defined as encompassing the entire surface of the claimed device.

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11 The court focuses its analysis on the dispute as to the construction of "panel" and not on the dispute regarding "substantially all." Palm urges the court to place a percentage value (more than x percent) on "substantially all." The court declines this invitation. "Substantially all of the said panel" simply means "largely or essentially all" of the panel. Resolving the dispute about what constitutes the "panel" will be determinative in resolving the parties' dispute about this claim limitation.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

As both parties reference Fig. 3 of the Hale patents (identifying "panel 24" and "display 26") to support their claim construction argument, the court will reproduce that figure below: FIG. 3

[SEE FIGURE IN ORIGINAL]

a. Palm's Position

Palm draws support for its proposed construction from the ordinary meaning of the term "panel" and from the specification of the patents.

First, it notes that the ordinary meaning of "panel" is the face or surface where the controls are located, as evidenced by both technical and general purpose dictionary definitions. The McGraw-Hill Dictionary of Science and Engineering (1984) defines the term "panel" as "the face of the console, which is normally equipped with lights, switches, and buttons to control the machine . . . ." or as "a metallic or nonmetallic sheet on which operating controls and dials of an electronic unit or other equipment are mounted." McGraw-Hill Dictionary of Science and Engineering 690, 691 (1984). Webster's New Universal Unabridged Dictionary (2d. ed. 1983) defines "panel" as "an insulated board, or flat surface, for instruments or controls . . . ." Webster's New Universal Unabridged Dictionary 1293 (2d. ed. 1983).

Palm goes on to argue that, consistent with this ordinary meaning, the patent specification uses the term "panel" to refer to the entire face or upper surface of the device, "top panel 24," which is where the controls -- the plurality of switches 30 --
are located. Col. 5, II. 50-57; col. 5, II. 36-43. Moreover, it notes that Figs. 3-6 of the patents identify the "top panel 24" as the entire face or upper surface of P Terminal 12. The arrow for the "panel 24" is drawn to indicate the entire face of the device, including the display 26 and the area where the transmitting area 20 and sensor 22 are located.

Last, Palm argues that under NCR's definition, "panel" is synonymous with "display." Palm asserts that this "would lead to the self-fulfilling and nonsensical construction that the display covers substantially all of the display." Palm asserts this definition is improper because the reference arrow on Figs. 3-6 makes clear that the "panel 24" covers the entire face of the P Terminal, including the display 26 and the optical coupling area.

For these reasons, Palm contends that the term panel refers to the entire face or upper surface of the device.

b. NCR's Position

NCR asserts that a thorough review of the specification indicates that Palm's definition of "panel" as "the entire face or upper surface of the device" is not consistent with the manner in which the term "panel" is used in the specification or the claims of the Hale patents. See Vitronics, 90 F.3d at 1584 n.6 ("Judges . . . may rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents."). NCR contends that the specification clearly shows that the "panel" occupies less space than the entire surface of the claimed device.

First, NCR points out that the specification makes clear that the hard frame of the device is not included in the definition of panel. Instead, the specification refers to the "panel" as "a semi-flexible top panel 24 which functions as both a display and a keyboard." '845 patent, col. 4, II. 19-21. The specification goes on to state that:

when viewing the top panel 24 as a display, there are display elements or pixels which are distributed over the panel 24 in a pattern that is appropriate to display information to the user. The panel can be viewed as having nine line displays 26-1 through 26-9 which will be collectively referred to as display 26.

Id., col. 4, II. 21-26. Under Palm's definition of "panel," which includes the hard frame itself, that portion of the panel cannot function as a display or a keyboard.

Second, the specification also makes clear that the panel, which functions as a display and keyboard, is distinct from and does not include the frame on the front surface of the handheld device, e.g., the Bezel frame 48 shown in Figs. 3 and 7. See Id., Fig. 3, Fig. 7, col. 6, II. 17-18. The specification explains that the frame retains the display elements and the plurality of switches (the data entry mechanism) in the upper compartment. Id., col. 6, II. 8-24. This language clearly limits the panel to that portion of the surface of the device that functions as both a display and a keyboard and excludes the portion of the surface of the device covered by the Bezel frame in the preferred embodiment.

NCR argues that this is further confirmed by reference to the claim language. In both claims 12 and 16, the language used in connection with the "substantially all" limitation does not concern the frame of the device, but is directed expressly at the display and keyboard section of the device. Claim 12 states that "the plurality of discrete switches . . . [must be] arranged in a matrix of switches which . . . extends over substantially all of said panel." Similarly, claim 16 requires the "said displaying means and said entering means" to be in "overlapping relationship relative to said panel and extending over substantially all of said panel."

As for Palm's argument that the arrows on Fig. 3-6 delineate the entire surface as the "panel," NCR contends that Palm reads too much into the arrows on the Figure. NCR contends that, when viewed in accordance with patent drafting rules for the use of arrows and lead lines in figures, it becomes clear that the arrow labeled "panel 24" is not pointing to the entire surface of the device, but is only pointing to that portion of the device that functions as a display and keyboard. The patent drafting rules indicate that arrows are to be used as opposed to lead lines -- when the location of the structure is indicated, but not touched. See MPEP § 608.02 ("Lead lines . . . extend to the feature indicated." "Arrows . . . indicate the entire section towards which it points"). NCR argues that if "panel 24" were pointing to the surface of the device (including the frame), a lead line would have been used.

Last, NCR argues that it is not, as Palm asserts, equating the "panel" with the "display." Under NCR's definition, the panel
simply overlays the display. As the specification describes the various elements as overlaying each other, such a definition is wholly consistent with the Hale patents. This is demonstrated by Fig. 7 of the Hale patents, which is "an exploded view, in perspective, of the components of the terminal shown in Fig. 1." '845 patent, col. 2, ll. 31-32. The Bezel frame 48 is not shown in that drawing, but NCR contends that reference to Fig. 3 confirms that its would be placed over the top layer shown on the Fig. 7. Under that, lies the plurality of switches and the display elements, which are covered with a "top, transparent, flexible, plastic-film layer 50 such as Mylar . . . ". The specification adds that "the top transparent layer 50 (Fig. 7) protects the areas 20 and 22. '845 patent, col. 10, ll. 57-62. This, NCR argues, and not Bezel frame 48, comprises the claimed "panel" that the display elements are to extend to cover "substantially all of."

--- Footnotes ---

12 The "overlapping relationship" between the display and the panel is also confirmed by the language of claim 16 of the '845 patent and claim 6 of the '478 patent.

--- End Footnotes ---

To illustrate NCR's argument, the court reproduces Fig. 7 and an altered version of Fig. 7 with the Bezel frame 48 overlaying the device below.

Figure 7

[SEE FIGURE IN ORIGINAL]
Figure 7 with Bezel Frame 48 Shown

[SEE FIGURE IN ORIGINAL]

c. The Court's Construction

The court finds NCR's position to be more persuasive and will adopt its proposed construction of the term "panel." The claim language and specification, including the cited Figures, indicate that the panel occupies a portion of the surface of the claimed device and that it is the semi-flexible part of the transparent terminal which overlaps the display elements and the switches so that the terminal functions as a display and a keyboard. Palm's construction would encompass even the plastic frame, which cannot function as a keyboard and display.

Further, the court does not agree that the arrow pointing to "display 24" on Fig. 3-6 includes the frame of the device. Rather, the panel is simply indicated as the viewable area of the device. As the specification makes clear that the display, data entry, and panel elements are arranged in a layered fashion, it is more instructive to look to Fig. 7. In light of Fig. 7, the court does not believe that NCR's definition simply equates the "panel" with the "display area," instead the panel overlays the display area. Figs. 3-6 show a flat view of the device, where the Bezel frame 48 has been placed over the rest of the components identified in Fig. 7. This frame is not a part of the panel; it is laid over the panel.

NCR's proposed construction best comports with the specification, claims, and figures of the Hale patents. Accordingly, the court accepts NCR's proposed construction and construes "panel" to mean "that portion of the surface of the claimed device which functions as both a display and a keyboard."

GO BACK

Disputed Claim Language

Substantially all of said reactants remaining in said reaction space and adsorbed on inner walls of said reaction space are removed to a level of less than 1% prior to the inflow of a second pulse

ASM's construction

The gas volume of the reaction space containing reactive gas, as well as the unreacted reactants adsorbed on the inner walls of the reactant space, are removed essentially entirely between two successive vapor-phase pulses,
that is, to a level of less than one percent, so that reactant pulses of different starting materials remain isolated from each other and no substantial mixing of the reactants can occur within the reaction space, thereby substantially avoiding conventional CVD reactions within the reaction space.

Disputed Claim Language
Substantially all of said reactants remaining in said reaction space and adsorbed on inner walls of said reaction space are removed to a level of less than 1% prior to the inflow of a second pulse.

Genus has not proposed a claim construction of this claim language, instead arguing that the Court should find it indefinite as a matter of law and thus invalid under 35 U.S.C. § 112 P 2. ASM argues that invalidity is a separate issue from claim construction and thus the Court should defer a finding on invalidity for indefiniteness until a later date.

"The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112 P2. The definiteness requirement of 35 U.S.C. § 112 P 2 "is essentially a requirement for precision and definiteness of claim language." PPG Industries, Inc. v. Guardian Industries Corp., 75 F.3d 1558, 1562 (Fed. Cir. 1996) (quoting In re Borkowski, 57 C.C.P.A. 946, 422 F.2d 904, 909 (C.C.P.A. 1970)). The language of the claims must make it clear what subject matter they encompass. Id. (quoting In re Hammack, 57 C.C.P.A. 1225, 427 F.2d 1378, 1382 (C.C.P.A. 1970)). Indefiniteness is a matter of law. Personalized Media Communications v. International Trade Commission, 161 F.3d 696, 702 (Fed. Cir. 1998). Determining whether a claim is definite requires an analysis of whether a person of ordinary skill in the art would understand the bounds of the claim when read in light of the specification. Id. at 705 (quoting Miles Lab., Inc. v. Shandon, Inc., 997 F.2d 870, 875 (Fed. Cir. 1993)). "If the claims read in light of the specification reasonably apprise those skilled in the art of the scope of the invention § 112 demands no more." Id.

There is some ambiguity in the case law as to whether a finding of indefiniteness should occur during claim construction, or whether it should occur at a later step. In Intervet America, Inc. v. Kee-Vet Laboratories, 887 F.2d 1050, 1053 (Fed. Cir. 1989), the Federal Circuit, in discussing claim construction, stated that "ambiguity, undue breadth, vagueness, and triviality are matters which go to claim validity for failure to comply with 35 U.S.C. § 112-P 2, not to interpretation or construction." The Markman decision itself quoted this precise language, albeit in a passage explaining why extrinsic evidence should not be routinely considered in construing claims. Markman, 52 F.3d at 986.

More recent cases, however, have held that a determination of indefiniteness is intertwined with claim construction. "The question of whether claims meet the statutory requirements of § 112 P 2 is a matter of construction of the claims, and receives plenary review on appeal." S3 Inc. v. Nvidia Corp., 259 F.3d 1364, 1367 (Fed. Cir. 2001). See also Atmel Corp. v. Information Storage Devices, Inc., 198 F.3d 1374 (Fed. Cir. 1999) ("An analysis under § 112, P 2 is inextricably intertwined with claim construction[.]"); Personalized Media Communications, 161 F.3d at 705 ("A determination of claim indefiniteness is a legal conclusion that is drawn from the court's performance of its duty as the construer of patent claims."). In two of these cases, however, indefiniteness was considered in the context of a motion for summary judgment; in the third, it was considered after a full factual investigation by the United States International Trade Commission. The Court concludes that the Federal Circuit's statements that indefiniteness is intertwined with claim construction mean only that the Court must attempt to determine what a claim means before it can determine whether the claim is invalid for indefiniteness, and not that the Court must determine indefiniteness during the claim construction proceedings.

In addition, a party seeking to invalidate a claim for indefiniteness has the burden of proving invalidity by clear and convincing evidence. North American Vaccine, inc. v. American Cyanamid Co., 7 F.3d 1571, 1579 (Fed. Cir. 1993).
has not even filed a motion seeking to invalidate any of the claims of the '590 patent on the basis of indefiniteness, but simply asserts its arguments in its opposition claim construction brief. This is not a preferable procedure.

Genus' arguments about indefiniteness are also somewhat entangled in issues relating to lack of enablement under § 112 P 1. Genus' first argument is that it is technologically impossible for one of ordinary skill in the art to determine if more than 99% of the reactant residues are removed from the reaction space. In essence, Genus is arguing that the '590 patent does not, and cannot, teach how to measure whether the reactant residues are removed to a level of less than 1%. "Although not explicitly stated in section 112, to be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without 'undue experimentation'." In re Wright, 999 F.2d 1557, 1561 (Fed. Cir. 1993) (citations omitted). "Even if the written description does not enable the claims, the claim language itself may still be definite." Union Pacific Resources Co. v. Chesapeake Energy Corp., 236 F.3d 684, 692 (Fed. Cir. 2001). Thus, if a person of ordinary skill in the art can determine what the claim language means, but the specification does not show how to perform the invention, the claim may be invalid for lack of enablement, not for indefiniteness. Because analysis of enablement focuses on the adequacy of the specification in teaching a person of ordinary skill in the art how to make and use the invention, it cannot be considered to be part of claim construction.

For these reasons, the Court will not consider Genus' arguments about invalidity of the claims for indefiniteness in this claim construction proceeding. Genus may raise these arguments in a summary judgment motion at a later date.

Turning back to claim construction, the Court first notes one area of agreement between the parties. Although the parties once disagreed on the meaning of "adsorbed," they now agree that "adsorbed" means "adhered to the surface." At the claim construction hearing, some potential disputes arose as to whether this included both chemisorbed and physisorbed material. As this issue was not briefed, the Court declines to resolve it at this time. The Court notes, however, that the patent does not make any explicit distinction between chemisorbed and physisorbed material.

The parties' area of disagreement is over the meaning of the phrase "removed to a level of less than 1%." Genus argues that this language can be measured in two different ways, depending on whether or not the gas reactants are considered together with the adsorbed reactants, and that there is nothing to indicate which way is actually meant. The two methods Genus identifies are:

1. The total amount of reactants present either adsorbed on the inner walls or in the gas phase in the reaction space when the evacuation step ends is less than 1% of the total amount present when the evacuation began; or

2. The amount of reactants adsorbed on inner walls when the evacuation step ends is less than 1% of the amount of reactants adsorbed on inner walls when the evacuation step begins, and the amount of reactants in the gas phase in the reaction space when the evacuation step ends is less than 1% of the amount of reactants in the gas phase in the reaction space when the evacuation step begins.

ASM argues that the person of ordinary skill in the art would recognize that the first method of calculation is the appropriate one. ASM is correct. The specification notes that one of the problems the patent seeks to address is preventing the premature mutual reactions of the reactant gases, which can cause unwanted chemical vapor deposition ("CVD") film formation and dust. ( '590 patent 7:57-64.) Simply keeping the gases separate is not enough "because mixing may also occur due to adherence of molecules from a starting material pulse on the apparatus walls or discontinuities thereof, wherefrom the molecules may then gain access with the molecules of the successive starting material pulse." (Id. 3:13-19.) Therefore, before introducing the next reactant gas, it is important to try to remove not only the reactant gas vapors, but also the molecules that are adsorbed on the walls. Both the gaseous molecules and the adsorbed molecules can react with the next reactant gas. Thus, there is no reason to differentiate between and separately measure the amount of gaseous molecules removed from the reaction space from the amount of adsorbed molecules removed from the reaction space; the point is to try to remove substantially all of them.

The Court generally agrees with ASM about the appropriate construction of this claim language, although it finds that ASM's proposed construction is unnecessarily verbose. Instead, the Court adopts the following construction: "More than 99% of the combined total amount of the unreacted reactants remaining in the reaction space and those adsorbed on the inner walls of the reaction space are removed before the inflow of a second pulse."
Claim 5

Claim 5 depends from claim 1 and includes all of the limitations of claim 1. Similar to Phrase 6 from claim 1 discussed above, this claim further recites that the invention comprises "a substantially axial annular groove" which separates "the annular peripheral zone from the central zone." The parties' dispute centers once more on the word "annular." Plaintiffs argue that annular has its ordinary meaning, referring to "a thing in the form of a ring." Defendants assert, more particularly, that claim 5 requires a circular groove.

There is nothing in the claim or the disclosure of the patent that indicates that the annular groove must be circular. As discussed with regard to phrase 6 from claim 1, although the exemplary embodiment is round or circular, see Fig. 2; 1:8-10; 3:1-5; Fig. 8; 5:6, it is inappropriate to limit the claim by imposing a limitation found, not in the claim, but only in the specification or drawing, or only in a preferred embodiment. See Phillips v. AWH Corp., 415 F.3d 1303, 1320 (Fed. Cir. 2005). Accordingly, the Court finds no basis for limiting the claim.

B. Effect of Prior Litigation

As stated above, SunTiger prevailed in a prior patent infringement suit against Scientific Research Funding Group (SRFG) on the same patents now in question. Both SunTiger and Sunglass Products have stipulated that the claim construction in the prior suit will control here:

The patents-in-suit have already been construed by the U.S. District Court for the Eastern District of Virginia [and that] construction is binding on the parties in this case. To the extent that the terms in the asserted claims were not construed in the said prior litigation, the parties are asking the Court to make a claim construction based on the arguments submitted in the summary judgment motions.

Stipulation at 1-2. "In a patent litigation action, where the parties do not dispute any relevant facts regarding the accused product but disagree over possible claim interpretations, the question of literal infringement collapses into claim construction and is amenable to summary judgment." Rheox, Inc. v. Entact, Inc., 276 F.3d 1319, 1324 (Fed. Cir. 2002).

The relevant terms and their stipulated construction are as follows:

<table>
<thead>
<tr>
<th>Term</th>
<th>Stipulated Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;substantially block&quot;</td>
<td>&quot;... in reference to wavelengths, it is defined as blocking over 99% of the incident radiation at each and every wavelength&quot; and &quot;[in] reference to polarization, it is defined as blocking 80% or more of the horizontally polarized incident radiation at each and every wavelength&quot;</td>
</tr>
<tr>
<td>&quot;substantially transmit&quot;</td>
<td>&quot;... in reference to wavelengths, [it] is defined as transmitting more than 1% of the incident radiation at each and every wavelength&quot; and &quot;[in] reference to polarization, it is defined as transmitting more than 20% of the horizontally polarized incident radiation at each and every wavelength&quot;</td>
</tr>
<tr>
<td>&quot;sharp cut-on&quot;</td>
<td>&quot;... sharp cut-on is defined in the context of a dye or filter, having a cut-on slope that at some concentration or dye density rises more than one half percent (0.5%) change in transmission for every one nanometer of...&quot;</td>
</tr>
</tbody>
</table>
increasing wavelength change. The cut-on slope is that portion of the transmission spectra of a cut-on dye that represents the transition between [the] substantially blocking and the substantially transmitting region."

"cut-on filter" . . . an optical filter that substantially blocks all wavelengths shorter than the cut-on wavelength and substantially transmits all wavelengths that are longer than the cut-on wavelength. The cut-on wavelength is that wavelength in the transition zone at which the transmission is 1%."

"portion" . . . part or share of something


Plaintiff SunTiger contends that this Court cannot apply the stipulated construction in a way that would contradict the finding of the Eastern District of Virginia that YE-82 infringed SunTiger's patents. Pl.'s Mot. at 1 ("[T]he YE-82 lens material must literally infringe whatever claim construction the Court adopts in this case."). In essence, SunTiger argues the following: (1) the parties have stipulated to the prior construction, (2) the decision in the prior suit does not bind this Court, but (3) any ruling that this Court issues must not be inconsistent with the fact that YE-82 was found to infringe its patents.

I disagree with this assessment. My decision is not foreordained by the result in SunTiger, Inc. v. Scientific Research Funding Group. SunTiger attempts to elevate the prior claim construction to the level of a decision. Despite the parties' agreement that the prior claim construction would be binding, that prior court's decision applying its own construction is only persuasive. Although the parties have agreed to be bound to the use of the prior claim construction, they have not agreed that this Court's application of that construction must be consistent with prior decisions involving a different defendant and different lenses. Indeed, were consistency with prior results necessary, that would be tantamount to an improper form of collateral estoppel against a current party, i.e., Sunglass Products, which was not a party (nor a party in privity) to SunTiger v. Scientific Research Funding Group. Cf. MCA Records, Inc. v. Charly Records, Ltd., 865 F.Supp. 649, 654 (C.D. Cal. 1994) ("[D]ue process requires that the party to be estopped must have had an identity or community of interest with, and adequate representation by, the losing party in the first action as well as that the circumstances must have been such that the party to be estopped should reasonably have expected to be bound by the prior adjudication.").

We next turn to Polypap's contention that the district court erred in concluding that the limitation calling for overlapping folds of the assembly of the asserted patents to be "substantially bonded" to mean that the bonding called for in the claims could be done with "a band or bonding material." Polypap argues that the relevant definition of "substantially bonded" means "composed of two or more layers or the same or different fabrics held together by an adhesive." Webster's Ninth New Collegiate Dictionary 166 (1986). Thus, Polypap concludes that there is an independent basis that the claims at issue are not literally infringed, "because no adhesives or heat seals are used or suggested for use as part of the making of the Bouquett'O."

We conclude that the district court did not err in construing the "substantially bonded" limitation. A reading of the claims leads to the conclusion that the overlapping folds be "substantially bonded via the means for forming the crimped portion." '856 patent, col. 8, ll. 38-39 (emphasis added). An example of "forming the crimped portion" is the placement of a band. Id. at col. 4, ll. 33-35 ("As shown in FIG. 2, the crimped portion 32 is formed by placing a band 34 about a portion of the sheet of material 10 . . . ."). The written description defines "band" as follows:

The term "band" as used herein, means any material which may be secured about an object such as the flower pot 16 such
bands commonly being referred to as elastic bands or rubber bands and also includes any other type of material such as a string or elastic piece of material, a ribbon, a piece of paper strip, a piece of plastic strip, a piece of wire, a tie, wrap or twist tie or combination thereof or any other device capable of gathering the sheet of material 10 to removably or substantially permanently form the crimped portion 32 and secure the crimped portion 32 formed in the sheet of material 10.

Id. at col. 4, ll. 40-53. Thus, "substantially bonded" does not require that the overlapping fold in the sheet of material be substantially bonded by an adhesive. Rather, the "substantially bonded" limitation requires that the overlapping fold in the sheet of material be gathered or crimped about the upper end of the floral holding material by a band or bonding material.

Polytap also argues that, under our construction of the "substantially bonded" limitation, claims 1, 15, 29, and 39 of the '856 patent are invalid as anticipated or obvious. This argument is premature and is not before us on appeal. Contrary to Polytap's contention, we need not invalidate the '856 patent because the invalidity argument was raised only as an affirmative defense by Polytap, not in the form of a counterclaim, and the district court denied as moot Prima Tek's motion for summary judgment regarding Polytap's affirmative defenses. See, e.g., Cardinal Chem. Co. v. Morton Int'l, Inc., 508 U.S. 83, 93-94, 124 L. Ed. 2d 1, 113 S. Ct. 1967 (1993) (distinguishing between asserting an affirmative defense of invalidity and filing a patent counterclaim for declaratory judgment of invalidity). The district court judgment contained no reference to the issue of invalidity of the '856 or '532 patent, and the district court's resolution of the issue of invalidity as an affirmative defense was not necessary to judgment. For that reason, nothing in this opinion or the district court's judgment regarding Polytap's affirmative defense of invalidity should have any preclusive effect on Polytap's ability to argue invalidity on remand. Parklane Hosiery Corp. v. Shore, 439 U.S. 322, 326 n.5, 58 L. Ed. 2d 552, 99 S. Ct. 645 (1979) (stating for collateral estoppel to apply, first court's resolution of the issue in question must have been "necessary to the outcome of the first action"); Restatement (Second) of Judgments § 27 cmt. h, illus. 14 (1982) (explaining that in suit for trademark infringement, a finding that the trademark is valid but not infringed does not preclude the same defendant from asserting the defense of invalidity in subsequent litigation between the parties).

In sum, we conclude that, when viewed as a whole, the claim language, the written description, and the prosecution history require that the "floral holding material" have an upper end, a lower end, an outer peripheral surface, and be constructed of a substance capable of receiving and supporting a floral grouping without any pot means. Moreover, the "substantially bonded" limitation requires that the overlapping folds in the sheet of material be gathered or crimped about the upper end of the floral holding material by a band or bonding material.

The parties dispute the meaning of the phrase "substantially close off contact between combustible material involved in fire and ambient atmosphere," each party offering two different constructions for this term. Defendants argue that "substantially close off contact" means the same thing as seal. Claim 4 of the '965 patent teaches that the expanded foam fire suppressant is what "substantially closes off contact" between the atmosphere and the burning material. '965 patent, claim 4. There is no support for Defendants' proposal that the foam creates a seal. The foam creates a barrier to prevent air, or other gaseous fuel, from feeding the fire. The Court construes "substantially close off contact between combustible material involved in fire and ambient atmosphere" to mean "create a barrier between combustible material involved in fire and ambient atmosphere."
D. The Diameter of the Liner

Claim 12(a) provides "an elongate hollow liner . . . having an original outer diameter substantially comparable to the inside diameter of the pipe to be lined . . . ." (D.I. 17, Ex. 3, col. 10, lns. 63-68) The parties dispute the scope of the term "substantially comparable to." Defendant contends in its claim construction briefs that "substantially comparable to" means the liner must be equal to or larger in diameter than the host pipe. (D.I. 121 at 22) Plaintiffs argue that "substantially comparable to" encompasses pipe liners "slightly less than, equal to, or slightly greater than the host pipes into which they are being installed." (D.I. 127 at 15)

The ordinary meaning of "substantially comparable to" the inside diameter of the pipe includes diameters slightly less than, equal to, or slightly greater than the host pipe diameter. "Substantial" is defined as "being that specified to a large degree or in the main." Webster's at 2280. A liner diameter that is "to a large degree" comparable to the diameter of a host pipe includes liner diameters that approximate the diameter of the host pipe. Thus, pipe liners with diameters that "substantially compare to" the diameters of their host pipes include diameters slightly smaller than, equal to, or slightly greater than the host pipe diameter.

Defendant, however, contends that the ordinary meaning of "substantially comparable to" does not control because the intrinsic evidence of the '196 patent is inconsistent with this meaning. Only two situations provide sufficient justification for defining a claim term in a manner other than its ordinary and accustomed meaning. See Johnson Worldwide Assocs., Inc. v. Zecco Corp., 175 F.3d 985, 990 (Fed. Cir. 1999). The first of those situations occurs when a patentee has chosen to be his or her own lexicographer by clearly setting forth an explicit definition for a claim term. See id. This is not the case here. The other situation occurs when the term or terms chosen by the patentee so deprive the claim of clarity that there is no means by which the scope of the claim may be ascertained from the language used. See id.

Defendant urges that the intrinsic evidence of the '196 patent deprives the term "substantially comparable to" of its ordinary meaning. Defendant specifically points to the '365 patent specification, which explains that,

> in practice, the liner configuration has an outside diameter equal to or slightly greater than the inside diameter of the pipe to be protected, whereby the said liner is either unstressed or under slight circumferential compression . . . .

(D.I. 65, Tab 1, Ex. C., col. 1, lns. 40-47) (emphasis added). Defendant also notes that the '196 patent specification describes the preferred embodiment as having "a diameter slightly larger than the interior diameter of the pipe to be lined." (D.I. 17, Ex. 3, col. 1, lns. 65-69) (emphasis added). Each of these specifications, however, describes the preferred embodiment, and a description of the preferred embodiment cannot limit a claim term. See, e.g., Johnson Worldwide Assocs., 175 F.3d at 992. Moreover, defendant admitted in its reply brief in support of summary judgment that claim 12 "is broad and necessarily covers diameters that are smaller than the pipe to be lined." (D.I. 71 at 19) Accordingly, there is no compelling reason to deprive the term "substantially comparable to" of its ordinary meaning. The court shall construe the term "substantially comparable to" as encompassing pipe liners slightly less than, equal to, or slightly greater than the host pipes into which they are being installed.

With these constructions of the disputed claims in mind, the court now turns to defendant's motion for summary judgment.
test. LNP's proposed construction, which was largely adopted by the court, stated that "substantially completely wetted" meant that the filaments be "largely, but not necessarily wholly, surrounded by resin." As a measure to quantify the degree of wetting, LNP's proposed construction, as is recited in the claim language, recites use of the dispersal/length test.

RTP, on the other hand, sought to construe the term "substantially completely wetted" in reference to the flexural modulus test. RTP noted that the specification and the prosecution history of the patents in suit used the flexural modulus test to characterize the claimed plastics, and to distinguish them from products in the prior art. As such, RTP advocated incorporating language from the specification into the construction of the claims, and asserted that "substantially completely wetted" means the product must attain at least 90% of the theoretically attainable flexural modulus.

The court rejected RTP's proposed construction. The court reasoned that the flexural modulus test was only an indirect test that did not directly measure the characteristics of the claimed wetted strand and pellets. Moreover, the court found that the prosecution history of the patents did not compel a finding that the term "substantially completely wetted" is tied to the flexural modulus test. Thus, the court concluded that the term "substantially completely wetted" should be defined in terms of the dispersal/length test, as follows:

Largely, but not necessarily wholly, surrounded by resin. In the context of LFRT pellets, it is surrounding the individual filaments by resin to the extent that in articles injection molded from such pellets, the individual filaments are randomly dispersed and at least 50% by weight of the filaments retain a length of 2 millimeters or greater.


A. Reconsideration of Claim Construction

RTP has moved for the court to reconsider its construction of the claim term "substantially completely wetted." RTP seeks reconsideration in two contexts. First, it asserts that the court should define the claim term in relation to the flexural modulus test for determining wettedness. RTP notes that the court's present construction, which defines wettedness in relation to the dispersal/length test, creates "an ever-changing definition of infringement." RTP argues that improvements in injection molding technology will permit LFRT pellets of poorer quality to yield molded products with sufficiently long and dispersed filaments. It is improper, RTP argues, to establish infringement criteria in relation to technology outside the scope of the patent claims.

RTP's second argument is that the court should reconstrue the claims of the '450 patent, as reexamined, and the '889 patent, as reexamined, and find that the claim term "substantially completely wetted" is a distinct claim limitation.

As a procedural matter, the court may reconsider a prior ruling in three circumstances: 1) where the court has patently misunderstood a party; 2) where the court has made a decision outside the adversarial issues presented to the court by the parties; or 3) where the court has made an error not of reasoning but of apprehension. Stairmaster Sports/Medical Products, Inc. v. Groupe Procycle, Inc., 25 F. Supp. 2d 270, 292 (D. Del. 1998). The issues presented to the court for reconsideration were directly addressed by the court in its Markman opinion. Because the court therein apprehended the arguments, and resolved them, there are no procedural grounds for reconsidering these issues in the present posture. For the benefit of the record, the court will consider the motion on its merits.

The challenged claims relate to LFRTs wherein the reinforcement filaments are "substantially completely wetted." To measure the degree of wettedness, the claims, as construed by the court, call for a determination of whether the filaments in the molded sample are randomly dispersed and sufficiently long. While this method may present complications by tying the threshold of infringement to the state of the art in injection molding technology, the same difficulties would be present if "substantially completely wetted" were measured in terms of the flexural modulus test. It was undisputed at trial that the flexural modulus test cannot be performed on a pellet. RTP's proposed construction thus requires that the strand or pellets be injection molded prior to analysis by the flexural modulus test. This measure of infringement would suffer from the same alleged deficiencies as the dispersal/length test.

Second, RTP asserts that the term "substantially completely wetted," as it appears in claim 1 of the '450 patent, as
reexamined, and claim 1 of the '889 patent, as reexamined, should be a distinct claim limitation. RTP notes that both these patents, prior to being reexamined, recited the dispersal/length test as a means to determine the strength of the plastic, but that neither of the patents contained the claim term "substantially completely wetted." This term, RTP recognizes, was introduced into the claims during reexamination, with neither the '450 patent nor the '889 patent originally reciting this language. RTP reasons that the introduction of the term "substantially completely wetted" constitutes a further limitation upon the claims, and that this limitation serves to restrict the range of plastics covered by the claims. See Laitram Corporation v. NEC Corporation, 163 F.3d 1342, 1347 (Fed. Cir. 1998).

--- Footnotes ---

3 Claim 1 of the '450 patent, as originally issued, reads:

1. Pellets of reinforced thermoplastics material containing at least 30% by volume of parallel, aligned reinforcing filaments between 2 and 100 mm in length, the filaments extending through the length of the pellets, the pellets having been cut from a continuous reinforced product prepared by melt protrusion and which pellets can be injection moulded into an article in which the fibres are present in the form of randomly dispersed individual filaments at least 50% by weight of the filaments of the pellets retaining a length of greater than 2 mm in the moulded article.

4 Claim 1 of the '889 patent, as originally issued, reads:

A molded article formed from a fibre reinforced thermoplastic composition in a process which includes the step of melting and homogenizing a composition containing at least 30% by weight of fiber reinforced pellets between 2 mm and 100 mm long which pelts have filaments extending the length of the pellet, characterized in that the molded article contains reinforcing filaments in the form of individual filaments and at least 50% by weight of the filaments in the pellets being present in the molded article at a length of greater than 2 mm, the pellets having been cut from a structure of continuous, parallel, aligned, reinforcing filaments which have been wetted by a molten

--- End Footnotes ---

The history of the reexamination of the patents indicates that the court's construction of the claims in question need not be amended. The file history of the '450 patent shows that the term "substantially completely wetted" was introduced into claim 1 not to distinguish the claim from the prior art, but to provide an antecedent basis for terms recited in claim 6 of the patent.

For the '889 patent, the file history indicates that the term "substantially completely wetted" was introduced to distinguish the claims from the prior art. The examiner found that the British GB-849 reference, and the JP-653 reference, anticipated claim 1, as originally issued. The applicant indicated that these references disclosed that the plastic products claimed therein suffered from a lack of adequate wetting of the reinforcement filaments. The applicant thus introduced the language "substantially completely" to modify the term "wetting" as originally recited. The added language serves to limit the scope of the claims to those plastics where the filaments are substantially completely wetted, and where the filaments are not bundled and loose, as characterized the referenced prior art products. The court's claim construction, which states that the filaments must be "largely, but not necessarily wholly, surrounded by resin," adequately reflects this structural limitation, and does not require reconstruction.

For these reasons, RTP's motion for reconsideration of the court's claim construction is denied.

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The district court in the present case construed the term "substantially completely wetted" of claim 1 of both the 450 and 889 patents to mean:

Largely, but not necessarily wholly, surrounded by resin. In the context of LFRT pellets, it is surrounding the individual filaments by resin to the extent that in articles injection molded from such pellets, the individual filaments are randomly dispersed and at least 50% by weight of the filaments retain a length of 2 millimeters or greater.
LNP, No. 96-462-RRM, slip op. at 17 (D. Del. Dec. 17, 1999). Thus, the court defined this claim term according to the dispersal and length test, and not by the flexural modulus test.

The meaning of the word "substantially" is "largely but not wholly that which is specified." Webster's Ninth New Collegiate Dictionary 1176 (9th ed. 1983). According to both parties' explanations of the technology, "completely wetted" means "wholly surrounded by resin." Therefore, the claim language supports the correctness of the district court's interpretation of "substantially completely wetted" as "largely, but not necessarily wholly, surrounded by resin." See Ecolab, Inc. v. Envirochem, Inc., 264 F.3d 1358, 1369, 60 U.S.P.Q.2D (BNA) 1173, -- (Fed. Cir. 2001) ("substantially uniform" means "largely, but not wholly" the same in form).

Neither claim at issue mentions the flexural modulus test nor refers even obliquely to that test as a limitation. Claim 6 of the 450 patent, which depends from claim 1, however, recites:

6. Pellets according to claim 1 which have been cut from a continuous reinforced product in which the individual filaments of the product have been wetted to the extent that the longitudinal flexural modulus of the product as determined by ASTM D790-80 is at least 70% of the theoretically attainable flexural modulus.

United States Patent No. B1 5,019,450, col. 2, ll. 9-14 (indications of change removed and emphasis added). Thus, dependent claim 6, presumptively narrower than claim 1, adds a specific flexural modulus limitation of at least 70%. This narrower claim at least opens the possibility that the broader "substantially completely wetted" language of claim 1 of the 450 patent embraces more than a flexural modulus of at least 70%.

Moreover, claim 3 of the 262 patent recites:

A thermoformable fibre reinforced structure comprising a thermoplastic polymer and at least 30% by volume of parallel, aligned reinforcing filaments . . . said filaments being substantially completely wetted by thermoplastic polymer characterized in that when the structure is chopped into moulding pellets between 2 mm and 100 mm in length and formed into a shaped article by a process which includes the step of subjecting the pellets to a melt homogenisation process to produce a random distribution of individual filaments in molten polymer, the fibre length is retained to the extent that at least 50% by weight of the filaments are at least 2 mm long.

col. 28, ll. 31-43 (emphasis added). Thus, the parent patent to both the 450 and 889 patents defines "substantially completely wetted" according to length and dispersal and does not incorporate any flexural modulus requirement. Again this evidence suggests that "substantially completely wetted" is not limited to a specific flexural modulus result.

As mentioned above, the term "substantially completely wetted" is neither recited nor specifically defined anywhere in the written description of the patents. The written description does explain the flexural modulus test and recites it throughout as a measure of LFRT strength. The trial record as well as the written description shows that flexural modulus is a typical way to measure LFRT strength and, therefore, degree of wettedness. The written description also explains good wetting results in terms of fiber length and fiber dispersal. See, e.g., 450 Patent, col. 9, ll. 24-26, ll. 29-37, col. 10, ll. 6-17, col. 16, ll. 19-24, col. 21, ll. 28-31. Again, the written description does not limit claim 1 by any flexural modulus test result.

The prosecution history also does not indicate that the claim terms require flexural modulus testing. 1 The patent owner added the terms "substantially completely" to claim 1 of the 889 patent during the reexamination proceeding. As originally filed, claim 1 only recited "wetted." In the 450 patent, the patent owner added the entire term "substantially completely wetted" to claim 1 during reexamination. Because the claims recited filament length and dispersal before reexamination, RTP argues that the district court's construction writes the term "substantially completely wetted" out of the claim by defining it in terms of length and dispersal.

1 RTP argues also that during prosecution of the 262 patent, LNP defined "substantially completely wetted" to require a flexural modulus of at least 90%. However, it is clear, when the prosecution history is viewed in context, that LNP referred to the 90% flexural modulus with respect to a preferred embodiment of its invention rather than as a limitation upon the scope of the invention. Gart v. Logitech, Inc., 254 F.3d 1334, 1343, 59 U.S.P.Q.2D (BNA) 1290, -- (Fed. Cir. 2001) (noting
that "it is well established that broad claims supported by the written description should not be limited in their interpretation to a preferred embodiment"). Dependent claim 6 of the 450 patent reinforces this understanding by including an explicit limitation that the flexural modulus be at least 70%.

During the reexamination proceedings, LNP amended claim 1 of the 889 patent to add "substantially completely" as a modifier for "wetted" explaining:

Claim 1 has . . . been amended to clarify the melt pulltrusion process which results in the individual filaments in the molded article and to avoid a possible trivial and unintended interpretation of the claim which might be read to cover molded articles with substantial unwetted filament bundles and a small amount of individual filaments.

(emphasis added). LNP amended claim 1 of the 450 patent to add "substantially completely wetted" explaining: "Claim 1 has been amended . . . to clarify the melt protrusion process which results in individual filaments in the molded article, and to provide antecedent basis for 'wetted' in claim 6." (emphasis added). As support for these amendments, LNP cited to sections of the written description that disclose wetting the surface of individual filaments to obtain high levels of flexural modulus (450 Patent, col. 3, ll. 42-58), retention of fiber length by virtue of good wetting (450 Patent, col. 9, ll. 32-38), and a percent weight comparison between completely wetted product with product of an unknown extent of wetting (450 Patent, col. 11, Example 1).

During reexamination, the PTO examiner made prior art rejections for both patents based on the GB-849 reference, the British counterpart of United States Patent No. 4,037,011 to Hattori. As part of its response, LNP explained:

When there is substantial complete wetting of the filaments in the pellets, the pellets can be injection molded into an article in which the filaments are present in the form of individual filaments having excellent filament length retention and which has an excellent cosmetic appearance without visible bundling of filaments.

LNP further explained: "GB-849 does not anticipate the claimed invention as it does not inherently teach or suggest a molded articles [sic] in which the filaments are found as individual filaments due to a high degree of wetting." The reexamination history of both patents thus supports that "substantially completely" and "substantially completely wetted" were added to the claims as clarifications, not as additional limitations.

In sum, this court has reviewed the claim language, specification language, and prosecution history, and finds that the record supports the district court's interpretation. The district court thus correctly concluded that "substantially completely wetted" means "largely, but not necessarily wholly, surrounded by resin." Moreover the district court correctly determined that a flexural modulus test result does not limit claim 1 of both patents.

76. Elements [a], [b], and [c] of Claim 9 are virtually identical to the same elements of Claim 1, so the discussion with respect to them is the same.

77. Element [d] of Claim 9 is identical to element [e] of Claim 1. There is no limitation at all with respect to the locking means in this claim. Instead, this claim includes element [e], which describes the first portion as comprising "a substantially conical base portion" and a second portion which "comprises a substantially conical portion."

78. The word "comprise" means "include." RANDOM HOUSE DICTIONARY OF THE ENGLISH Language, page 303. Thus, the phrase, "comprises a substantially conical base portion," means that the first portion includes a base portion mostly but not necessarily perfectly conical in any cross section. Similarly, "comprises a substantially conical upper portion" means that the second portion includes an upper portion that is mostly but not necessarily perfectly conical in any cross section.

79. The word "conical" is defined in THE RANDOM HOUSE DICTIONARY OF THE ENGLISH LANGUAGE as
Con-ic (kon' ik), adj. 1. Also con'-i-cal. Having the form of, resembling, or pertaining to a cone. . . .

Thus, the word conical does not require that the form be exactly in the shape of a cone.

D. Dependent Claim 13: "substantially conjugated" 21

A method according to claim 12, wherein: said area is substantially conjugated with one of said first and second of the increased intensity portions.

Id. at 20:4-6.

The parties seem to agree that "substantially conjugated" possesses meaning customary to those of ordinary skilled in the art, viz., the near-complete mapping of the points of one plane in an optical system to a second plane. As the court reads their proposed constructions, moreover, the parties generally agree that, in the context of claim 13, "substantially conjugated" denotes the relation of a given plane to the first or second portion of increased light intensity. All that remains, then, is semantics, with ASML asserting that "substantially conjugated" should be read in one detailed manner, Nikon arguing that the term should be read in another, equally detailed manner.

Despite the parties' attempts to fill "substantially conjugated" with overflowing detail, neither party offers a construction that readily fits the context in which the term is used. In the relevant claim context, "substantially" denotes the degree to which two locations or positions are conjugated; that is, as claim 13 uses the term, to be "substantially conjugated" is to be conjugated to a significant degree. Cf. Cordis Corp. v. Medtronic Ave, Inc., 339 F.3d 1352, 1360 (Fed. Cir. 2003) (discussing the meaning of "substantially"); Epcon Gas Sys., Inc. v. Bauer Compressors, Inc., 279 F.3d 1022, 1031 (Fed. Cir. 2002) (same). In the relevant claim context, in turn, "conjugated" describes any pair of locations positioned such that points of the first map--or are amenable to mapping or imaging--to the neighboring points of the second. The teachings of the specification language are in accord. See '041 Patent at 11:60-12:11. Under the terms of claim 13, it is an "area" that to be "substantially conjugated," so "conjugated" denotes an "area" positioned such that its points map the neighboring points of "one of . . . the increased in intensity portions." Taking the definitions of "substantially" and "conjugated" together, the term "substantially conjugated" means "positioned such that the area's points map or image to a significant degree to the corresponding points of another area or plane." 22 Nikon's proposed appendix concerning "all light rays" is simply extraneous to the relevant term.

22 Fit into the terms of claim 13, then, an "area" is "substantially conjugated" when it is positioned such that the area's points map substantially the corresponding points of another area or plane.

2. The Definition of "Substantially Constant Wall Thickness"
As the Federal Circuit's opinion in this case indicated, the phrase "substantially constant wall thickness" must be construed according to "how the phrase would be understood by persons experienced in this field of mechanics, upon reading the patent documents." Verve, 311 F.3d at 1120. In this case, the parties have presented testimony from two expert witnesses as to the meaning of the phrase "substantially constant wall thickness."

Plaintiff's expert witness, Dr. David Bourell, testified by declaration as follows:

Claim 1 also requires that the tube have a "substantially constant wall thickness" throughout its length and the tips thereon. This term also has its ordinary meaning. I understand the term substantially to mean to a large or considerable degree. Thus, wall thickness throughout the length of the tube must be largely or considerably constant. Based on my review of the push rods, and based on my understanding in engineering principles (sic), the starting stock from which push rods are formed has relatively large tolerances or large variations in the wall thickness prior to any processing. Thus, at a minimum, if the wall thickness of the tube after formation is still within the accepted industry tolerances for the tube prior to formation, then the wall thickness can be considered substantially constant.

Bourell Declaration, § 9.

Defendant's expert, Dr. Lee Swanger, testified at the Markman hearing on March 23, 2004 as to his understanding of the term "substantially constant wall thickness," stating that the term is as the Court has held in its claim construction. That it is a measure between the thickest and thinnest part of the wall of the push rod. And up until I saw a piece of paper with a blank in it, that difference had been 20 percent.

Markman Hearing Tran., 3/23/04, 37.

Dr. Swanger also testified as to other bases for his definition of the term "substantially constant wall thickness." First, Dr. Swanger stated he arrived at the 20 percent figure by relying on Plaintiff's statement on appeal in the Federal Circuit. Markman Hearing Tran., 3/23/04, 45. Second, Dr. Swanger testified that a General Motors push rod design from the 1960's, when analyzed according to the Court's current claim construction, would result in "a backing up of the 20 percent as being an extreme example of the kind of variation that one familiar with push rods would call substantially uniform." Markman Hearing Tran., 3/23/04, 45-6.

Dr. Swanger's reference to the General Motors blueprint provides some context for how persons in the field might interpret the claim term. However, the basis for his reading of the GM blueprint is this Court's claim construction and Plaintiff's statement on appeal, which are not probative of the term's meaning to persons of ordinary skill in the art. Therefore, Dr. Swanger's testimony is not helpful to the Court in performing the task at hand, which is to determine "how the phrase would be understood by persons experienced in this field of mechanics, upon reading the patent documents." See Verve, 311 F.3d at 1120.

Dr. Swanger also testified that "for some reasons" he would agree with Dr. Bourell's definition of "substantially constant wall thickness." Markman Hearing Tran., 3/23/04, 47.

Most importantly, Dr. Swanger testified that the "thickest-to-thinnest" methodology is not specified anywhere in the '315 patent, that this methodology is not specified anywhere in the prosecution history of the '315 patent, that the '315 patent does not set forth any percentages for what would constitute "substantially constant wall thickness," and that the prosecution history for the '315 patent does not set forth any percentages for what would constitute "substantially constant wall thickness." Markman Hearing Tran., 3/23/04, 37-8.

While Dr. Swanger's testimony supports Defendants' contention that the '315 patent is indefinite, it also supports Plaintiff's argument that the '315 patent does not require a particular measurement methodology for ascertaining wall thickness variation. Therefore, the Court finds that persons experienced in the field would not decide upon a numerical construction of the phrase "substantially constant wall thickness" upon reading that phrase in the patent documents.

Applying the law of the Federal Circuit as stated in Cordis, supra and Playtex, supra, the Court concludes that its current
claim construction is improper because it impermissibly introduces a numerical value to the definition of "substantially constant wall thickness." The Court is persuaded by Dr. Swanger's testimony at the Markman hearing that neither the terms of the patent, nor its prosecution history, specify a method or percentage for gauging wall thickness variation. Therefore, the prosecution history of the '315 patent cannot be said to include the type of "clear and unmistakable disclaimer" necessary to abandon the limitation imposed by the plain language of the claim. See Cordis, 339 F.3d at 1361.

Based on the foregoing, the Court hereby amends its claim construction to state that the term "substantially constant wall thickness" shall be construed as "wall thickness that is to a large or considerable degree constant." In future proceedings before the Court, the parties may present evidence as to competing methodologies for measuring wall thickness variation. However, the Court finds that the question of which methodology should be used is a fact question for the jury. The Court will not settle upon one particular method for measuring wall thickness as a matter of claim construction because such a decision is not required by the claim language.

2) "Substantially continuously deformable"

Defendant argues that Plaintiff has impermissibly broadened the Patent in Suit during reexamination by substituting "substantially continuously deformable" in Claims 15 and 16 for "continuously deformable" in Claim 1. Defendant relies upon the Quantum decision--and that case's approval of Ex parte Neuwirth--for the proposition that Plaintiff has thereby necessarily broadened the scope of the claims.

Plaintiff, in response, maintains that the phrase "substantially continuously deformable" is identical in meaning to "continuously deformable." In the "real world" of the manufacture of sunshades, Plaintiff argues, there is no such thing as a perfectly "continuously deformable" material. Thus, goes the argument, all materials are at most substantially continuously deformable, and the revised language of the claims only makes clear what was always "implicit and inherent in the operation of the sunshade."

Defendant is clearly correct that the addition of the seemingly innocuous adverb "substantially" can serve to broaden the scope of the claim. In Ex parte Neuwirth, 229 U.S.P.Q. 71 (1985), the PTO Board of Patent Appeals invalidated a claim added during reexamination on this very ground. The Federal Circuit expressly approved this holding in Quantum, 65 F.3d at 1581, and In re Freeman, 30 F.3d at 1464. The Federal Circuit has not, however, laid down a per se rule that "substantially" always broadens the scope of a claim. Ex parte Neuwirth, upon which Defendant relies, is readily distinguishable. That case concerned two claims that were absolutely identical, except for the addition during reexamination of new claim differing by only a single word--"substantially." "'Substantially rounded,'" the PTO Board held, "must mean something different than 'rounded' to preclude an identity between" the two claims. The addition of the "substantially rounded" claim, therefore, necessarily broadened the scope of the original claim. The Board upheld the Examiner's decision rejecting the second, new claim. Ex parte Neuwirth, 229 U.S.P.Q. at 72-73.

Here, by contrast, the Examiner canceled the original Claim 1 and replaced it with Claims 15 and 16, which are identical with respect to the "substantially continuously deformable" language. The court finds this difference decisive. Although in some contexts the addition of a qualifier like "substantially" can be important, the court finds that within the context of the real world art of sunshade design and manufacture, there is no "perfectly continuously deformable" material. Accordingly, Claim 1, sensibly read, never required such an interpretation. A deformable material, within the context of auto sunshades, could be at most "substantially" deformable. The addition of the adverb "substantially," therefore, does not serve to broaden the claim but merely clarifies the language of the earlier claim in accordance with what one skilled in the art of sunshades would always have understood by the term.

3) "Substantially continuously deformable to a predetermined contour of said vehicle window"
This phrase means that the perimeter of the sunshade is capable of bending ("deformable") so as to fit a predetermined contour of a vehicle window. The sunshade is deformable throughout the perimeter. However, it is not "perfectly deformable" but only "substantially" deformable. The phrase does not mean that in operation the sunshade necessarily conforms to the entire periphery of the vehicle window.

Representative claim 1 of the '525 patent reads in pertinent part as follows:

An intraocular lens comprising:

a lens body;

at least two spaced flexible positioning and supporting elements integrally formed with said lens body as a one-piece construction and extending radially, outwardly from the periphery of said lens body;

said elements terminating in a free end spaced from said periphery; and snag-resistant means integrally formed on the free end of each of said elements for smoothly guiding and positioning the lens across contacted eye tissue when implanting the lens . . . said snag resistant elements and said positioning and supporting elements being substantially coplanar.

On January 29, 1993, Pannu sued Iolab, alleging that four types of intraocular lenses manufactured by Iolab infringed the '525 patent. Iolab answered by asserting that the patent was invalid for lack of an enabling description, failure to disclose the best mode, and improper inventorship. Regarding improper inventorship, Iolab argued that the patent was invalid because the '525 patent does not list Link as an inventor. Iolab in fact argued that Link was not only a co-inventor, but the sole inventor, because Pannu, by sending non-confidential letters to lens manufacturers in early 1980, had already placed his contribution to the invention, the snag-resistant loop, in the prior art.

Following a "Markman" hearing, the court construed the terms "snag-resistant means" and "substantially coplanar." Regarding the former limitation, the court determined that the claim recited sufficient structure such that 35 U.S.C. § 112, P 6 (1994) did not apply. The court rejected Iolab's contention that the snag-resistant limitation must prevent any damage to the eye, finding no support for such a construction in the specification or the prosecution history. Instead, the court ruled that the snag-resistant means must be curved so as to minimize snagging, but not necessarily to eliminate it.

Regarding the "substantially coplanar" limitation, Iolab argued that the two supporting elements and the two snag-resistant elements all had to be within the same plane, relying on its expert's testimony that the limitation "describes a flat lens where the elements may deviate from the plane only as the result of manufacturing tolerances or natural flexibility." In contrast, Pannu argued that the term "substantially coplanar" permitted some small angle to exist between the supporting elements and the snag resistant elements. The court, after considering the prosecution history, including drawings submitted by Pannu showing lenses with angles up to ten degrees, agreed with Pannu and construed the limitation as requiring an angle of no more than ten degrees between the snag-resistant elements and the supporting elements. 1

--- Footnotes ---

1 The court further construed the limitation as requiring no more than a ten degree angle between any of the four elements and the lens body. We can find no support for this additional constraint. This error, which was not addressed by the parties, does not affect the outcome of this appeal and is thus harmless.

--- End Footnotes ---

B. Infringement

Iolab also argues that the district court misconstrued two limitations in the claims, and that under the correct claim...
construction, infringement is precluded as a matter of law. First, Iolab argues that the claim limitation "substantially coplanar" must refer to "non-vaulted" lenses, which are flat. Iolab asserts that no other interpretation is supported by the specification or the prosecution history. We disagree.

Claim construction is a question of law, which we review de novo. Cybor Corp., 138 F.3d at 1454, 46 U.S.P.Q.2D (BNA) at 1173. When construing a claim, a court principally consults the intrinsic record, consisting of the claims themselves, the written description portion of the specification, and the prosecution history. See Vitronics Corp. v. Conclip, Inc., 90 F.3d 1576, 1582-83, 39 U.S.P.Q.2D (BNA) 1573, 1576-77 (Fed. Cir. 1996). The claim term "coplanar" is modified by the term "substantially." The district court properly examined the specification and prosecution history to determine the meaning of the term "substantially coplanar" and construed the term to cover the two examples submitted to the examiner during prosecution of the patent. We discern no error in the court's construction of this term. Iolab's argument that the specification only discloses flat lenses is plainly incorrect. Regarding one embodiment of the invention, the specification states that the rings "lie in a plane sufficiently close to the plane of the lens." This statement clearly contemplates that the rings and the lens lie in different, although close, planes. Additionally, Iolab has not drawn our attention to any portion of the prosecution history that precludes angles as small as ten degrees from being considered substantially coplanar; nor has it suggested a more appropriate angle. Furthermore, there is no support in the patent or prosecution history for Iolab's proposed claim construction. The patent draws no distinction between vaulted and non-vaulted lens; these terms are not even found in the intrinsic documents.

extending substantially coplanar

Plaintiff proposes the following definition: "[S]aid finger plate extending substantially in the same plane as said shield allowing sheets of paper to lie flat atop the ring metal assembly."

Defendants propose the following definition: "The housing having a surface and the finger plate lying entirely within the longitudinal projection of that surface or within standard manufacturing tolerances thereof."

The parties agree that this term is the second of the two most significant terms to be defined in this case. 5

--- Footnotes ---

5 The other is the term "a release lever" in Claim 1, see pages 8-10, supra.

--- End Footnotes ---

Plaintiff refers the Court to the patent specifications which teach that the difference between this invention and other ring binders can be discerned by looking at figures 5 and 6 in the patent.

Because of the construction of a conventional release lever L, the thumb or finger portion of the release lever must extend beyond the end of the sheet of paper by a distance D. [See figure 6.] This is not so with the release mechanism of the lower profile ring metal 20. Now, the end of the ring metal and sheet of paper coincide. . . . Because each release lever 44, 46 [see figure 3] has a, [sic] contour generally corresponding to that of the release lever, the sheets of paper lie flat atop the ring metal assembly.

("729 patent at col. 4, ll. 12-22.) This advantage of the '729 patent is also generally discussed in the background section of the patent. (See id. at col. 1, ll. 26-48.) Plaintiff's definition is consistent with the teachings of the patent specifications. Defendants' proposed definition is not.

Because of the clear language of the teaching of the above-cited specification language, there is no need for extrinsic evidence to define this term. Additionally, there is nothing in the dictionary definition of these two words that is inconsistent with Plaintiff's proposed definition.
For the foregoing reasons, the Court construes the term "extending substantially coplanar" as:

Extending substantially coplanar means said finger plate extends substantially in the same plane as said shield allowing sheets of paper to lie flat atop the ring metal assembly.

4. Substantially cover (claims 22, 37)

Plaintiff contends that "substantially cover" does not need to be construed, while Defendants contend that it should be construed to mean "cover nearly all of." In support, Defendants argue that the resistors illustrated in Figs. 5a and 5b "cover nearly all of" the surface and that a jury would be aided by their proposed construction. Defendants' construction, however, merely replaces the language as drafted with language of no greater clarity. Moreover, "cover nearly all of" is potentially more stringent than "substantially," which would alter the scope of the claim as drafted, and is based solely on a preferred embodiment illustrated in the figures of the '663 patent. See SuperGuide, 358 F.3d at 875.

Because Defendants' proposed construction potentially alters the scope of the term "substantially," and because it does not add clarity to the claim language as drafted, the court declines to construe this term.

2 See U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997) ("Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims . . . .").

D. Substantially Cure

Claims 1 and 10 both describe the level of energy emitted by the cold UV assembly as being effective to "substantially cure the ink." The parties dispute the level of cure that the term "substantially" requires. According to L&P, "substantially cure" must be given its plain and ordinary meaning, "to a great extent or almost completely cured." Vutek, on the other hand, claims that "substantially cure" should be interpreted broadly to mean "at least partially cure so as to freeze dots of ink" as well as greater levels of curing.

The claims themselves offer some insight into the appropriate interpretation of the phrase "substantially cure." First, the use of "substantially cure" in conjunction with the term "freeze" in claims 1 and 10 indicates that "substantially cure" refers to a level of curing above and beyond that which is required to "freeze" dots of ink. Claim 1, which is very similar to claim 10, reads as follows:

A method of ink jet printing …

providing at least one cold UV curing assembly on the carriage, adjacent to and moveable with the printhead, and oriented to direct UV energy onto the surface of the substrate at the printing station sufficiently close to where the ink is being jetted onto the surface to freeze dots of the jetted ink on the surface; and

the cold UV assembly being effective to impinge sufficient UV light on the ink to substantially cure the ink without impinging radiation that would heat the substrate so as to deform it, even temporarily, while at the printing station.
The use of the word "freeze" alongside "substantially cure" implies that the two terms do not mean the same thing. If "substantially cure" simply referred to a level of cure sufficient to "freeze" dots of ink, the phrase would be redundant. Instead, as Codos testified, the words "freeze" and "substantially cure" in claims 1 and 10 describe what is essentially a two-step printing process: first the dot of ink is frozen, then it is substantially cured. According to Whittle, this initial "freezing" step can be accomplished with as little as a one to five-percent cure. Codos explained that depending on the thickness of the ink drop and print speed, among other factors, the two steps can occur instantaneously in a single pass of the printhead. More typically, however, the printhead (and attached UV curing assembly) makes multiple passes over each drop of ink. On each additional pass, the curing, or polymerization, process progresses with the increased exposure to the UV light.

While I recognize that a court should be cautious when considering an inventor's post hoc interpretation of his own patent, the Federal Circuit has held that "[a]n inventor is a competent witness to explain the invention and what was intended to be conveyed by the specification and covered by the claims." Voice Technologies Group, Inc. v. VMC Systems, Inc., 164 F.3d 605, 615 (Fed. Cir. 1999) (citation omitted). This is especially true where, as here, the inventor's interpretation is consistent with the Patent Examiner's interpretation of the Patent. In this case, the Patent Examiner specifically recognized the two-step, freeze-then-substantially-cure, printing process as a basis for allowing the '518 Patent:

The primary reason for the allowance of claims 1-8 and 20 is the inclusion of the limitation of a method of an ink jet printing UV curable ink comprising the combination of two cold UV curing assemblies on the carriage, adjacent to the printhead and movable with the print head, oriented to direct UV energy onto the surface of the substrate at the printing station close to where ink is being jetted onto the surface to freeze dots of the jetted ink on the surface and being effective to impinge sufficient UV light to substantially cure the ink without impinging radiation that would heat the substrate so as to deform it. It is limitation found in each claims, as it is claimed in the combination, that has not been found, taught, or suggested by the prior art of record which makes these claims allowable over the prior art.

(Emphasis added). In sum, I find that a person of ordinary skill in the art would interpret "substantially cure" to refer to a greater level of curing than that which is required to "freeze" dots of ink.

The specification and prosecution history offer little, if any, guidance as to how much more curing "substantially cure" requires above the "freezing" level. The phrase "substantially cure" only appears in claims 1 and 10. There is no mention of the word "substantially" in the specification, nor does the prosecution history use the phrase outside of quotations to the claim language. Thus, I agree with Whittle's observation that a person of ordinary skill in the art would not be able to review the intrinsic evidence of the '518 Patent and identify a specific percentage of monomers that must be polymerized in order to be "substantially cured."

Nevertheless, I do find that the term "substantially" carries an ordinary and customary meaning that would be readily apparent to a person of ordinary skill in the art. "Substantially" is "a term of approximation or a term of magnitude." Deering Precision Instruments, L.L.C. v. Vector Distrib. Sys., 347 F.3d 1314, 1322-23 (Fed. Cir. 2003) (citation omitted). Common definitions of "substantially" include "considerably," "significantly," "largely," or "essentially." Id. at 1323 (citations omitted). L&P's proposed construction, "to a great extent or almost completely cured" captures this ordinary and customary meaning. 4

4 In this case, the term "substantially" could be considered both a term of approximation or a term of magnitude. On one hand, "substantially cure" could refer to the physical state of being fully cured. If this were the case, "substantially" functions as a term of approximation. On the other hand, "substantially cure" could refer to the number of ink monomers that have polymerized. "Substantially" would then serve as a term connoting magnitude. The difference between these two interpretations is immaterial in the present case, in contrast to the facts of Deering.

Vutek contends that the use of "at least partially cure" in claim 5 indicates that "substantially cure" in the '518 Patent covers a broader range of cure levels than the ordinary and customary meaning that the word "substantially" implies. Vutek relies on the doctrine of claim differentiation, which creates a "rebuttable presumption that each claim in a patent has a different scope." Dow, 226 F.3d at 1341. Thus, limitations stated in a dependent claim ordinarily should not be read into the related...
independent claim. Id. Put another way, the inclusion of a specific limitation on a term in a dependent claim "makes it likely that the patentee did not contemplate the term … already contained that limitation." Phillips, 415 F.3d at 1324.

Applying this doctrine to the '518 Patent claims, Vutek argues that the use of "substantially cure" in claim 1 and "at least partially cure" in dependent claim 5 indicates that "substantially cure" must include "at least partially cure." While this may be true, I do not find that the phrase "at least partially cure," as it is used in the '518 Patent, alters the ordinary and customary meaning of "substantially cure."

Claim 5 reads as follows:

The method of claim 1 further comprising:

at least partially curing the ink jetted onto the surface by exposing the jetted ink to ultraviolet light and then heating the surface having the at least partially cured ink thereon to reduce the content of unpolymerized monomers of the ink on the substrate.

This claim refers to the use of a drying station to further cure the ink when printing on certain substrates, particularly fabrics. Although claim 5 does not explicitly reference fabric substrates, a person of ordinary skill in the art would recognize that the claim derives from Codos' own prior art, U.S. Patent No. 6,312,123 (the '123 Patent).

The '123 Patent, which is expressly incorporated into the '518 Patent, covers a method and apparatus for printing UV curable ink on fabrics such as mattress covers, comforters, and bedspreads. As the '123 Patent specification explains, due to the textured surface of fabric substrates, "UV light proceeds to cure only about 90%, or 97%, and can be even up to about 99% of the ink when deposited on fabric. However, if more than an order of magnitude of approximately 100 parts per million (PPM) (0.01%) of the total volume of jetted ink remains uncured, persons sensitive to the uncured monomers can suffer reactions." Thus, the '123 Patent, like claim 5 of the '518 Patent, teaches the use of a drying station to further cure ink on a fabric substrate before it is ready for its intended use. 5

--- Footnotes ---

5 In fact, the '518 Patent copies, almost verbatim, the paragraph from the '123 Patent specification discussing the use of the drying station. Compare '123 Patent, Col. 5:21-34 with '518 Patent, Col 8:51-65.

--- End Footnotes ---

Throughout the '123 Patent, "partially cured jetted ink" is defined as ink which is 90 to 97% cured, or polymerized. The '518 Patent incorporates this understanding of "partial cure" into its specification where it states, "[w]ith a 97% cure, the ink will be sufficiently colorfast so as to permit the drying station to be off-line." Thus, based on the specifications of the '123 and '518 Patents, I find that the phrase "at least partially cure" in claim 5 refers to a high level of cure that would fall within the scope of the ordinary and customary meaning of "substantially cure." In sum, even if "substantially cure" includes "at least partially cure," this fact does not indicate that the drafters of the '518 Patent used "substantially cure" in a manner inconsistent with the phrase's ordinary and customary meaning.

For foregoing reasons, I conclude that a person of ordinary skill in the art would interpret the phrase "substantially cure" to mean "to a great extent or almost completely cured." This level of cure includes the 90 to 97% "partial cure" discussed in the '123 and '518 Patent specifications that must be subjected to additional curing, as well as other levels of cure that render a substrate fully usable for its intended purpose.

3879

2. Defining an inner and outer portion

The next disputed term requires me to define "define," a term which arises throughout the patent. As Tyco noted at argument, the term is strongly linked to the nature of the channel itself, i.e., whether it must be a unitary channel or whether
the invention comprises a multi-channel embodiment. As already noted, claim 1 teaches

An absorbent article comprising:

a. an absorbent; and

b. a channel positioned inward from and along at least a portion of an edge of such absorbent, said channel substantially defining in said absorbent an inner portion and an outer portion, wherein the density of said absorbent in said inner portion is greater than the density of said absorbent in said outer portion.

(6:32-40.)

K-C argues that "defines" means "distinguishes," such that we would say the channel distinguishes one portion of the absorbent from the other. Tyco prefers a narrower construction, arguing that when the channel "defines" an inner and outer portion it means it separates the two portions by completely encircling the napkin, as shown in the figure on the first page of the patent, as well as in Figure 1. (Figures 2 and 3 are cross-sections presumably reflecting the same.) Tyco argues that this is the only interpretation that makes sense if the invention is designed (as the specification states) to wick fluid along the channel to "desorb" into unsaturated portions of the inner absorbent. (5:36-40.) That is, in Tyco's view if the channel does not form a complete circle, the intended distribution of fluid will not occur.

There is no support, however, for Tyco's attempt to limit the patent's claims in this fashion. In fact, its effort seems a classic attempt to import a limitation from the specification into the claims themselves, a maneuver the Federal Circuit universally rejects unless the specification evinces a clear intent to limit a claim or to specially define the meaning of the term. Phillips, 415 F.3d at 1316. This is especially true when the proposed limitation comes from a single embodiment of the invention; here, the specification merely states, "[d]esirably, the channel 22 is positioned inward . . . and completely encircles the inner portion of the absorbent 14." (4:55-58.) The specification makes clear that this is just one (albeit desirable) way in which the invention may be implemented, and nowhere else does the specification or claims indicate that complete encirclement is a required limitation. In fact, review of the claims themselves makes this clear. Claim 1, for instance, describes a "channel positioned inward from and along at least a portion of an edge of said absorbent," which suggests that some portion of the edge could not be accompanied by any channel. Had the claim said "along the entire edge" or even just "along the edge," it might be inferred that the channel must completely encircle the napkin. Because it does not, the claim itself suggests complete encirclement is not an intended limitation.

In addition, the claim states that the channel "substantially define[s]" an inner and outer portion. In other words, it serves as the distinguishing line of demarcation between the two portions of the napkin, and this can be accomplished whether the channel completely encircles the napkin or whether it merely "substantially" or mostly encircles it. As the Federal Circuit has noted, "the term 'substantially' is a descriptive term commonly used in patent claims to "avoid a strict numerical boundary to the specified parameter." Ecolab, 264 F.3d at 1367 (quoting Pall Corp. v. Micron Seps., 66 F.3d 1211, 1217 (Fed. Cir. 1995)). "In this case," the Ecolab court concluded, "'substantially' avoids the strict 100% nonuniformity boundary." To now conclude that the channel must completely encircle the napkin would be to allow one embodiment mentioned in the specification to trump the plain language of the claim itself. Tyco posits that the term "substantially" actually applies not to the horizontal definition of the inner and outer portions but to the vertical nature of the channel. In other words, it believes K-C used the term "substantially" to differentiate its invention from prior art whose grooves were not as deep and/or wide as its own invention; in that sense, "substantially" modifies the depth of the channels and not their level of horizontal encirclement. Yet there is little basis to accept this level of nuance in favor of the plain claim terms. The term "substantially defines" arises in the context of defining an inner and outer portion of the napkin, and these are horizontal concepts largely unrelated to the depth of the channel. Accordingly, in my view "substantially defines" means that the channel(s) serve to distinguish between the inner and outer portions, and in order to do so the channel(s) need not connect or constitute a single channel unit.

Tyco protests that this construction would create definitional problems because of the difficulty in determining when a channel would substantially define an inner and outer portion. Although a completely encircling channel would clearly define the two portions, it asserts, the same is not true with respect to a "J" or omega-shaped channel. Tyco believes such designs could conceivably define two portions of a napkin, but when would one portion begin and the other end? It is true that my construction could lend itself to less clarity in application than the one Tyco prefers. But it is equally true that such
an issue is more appropriately handled at the infringement stage. If there are gaps in a multi-channel napkin, a jury may be asked to determine whether the channels substantially define the two portions or not. The fact that the result might differ case-to-case does not mean that the construction of the claim terms must bend to accommodate only the most easily-applied definition.

Aptar is the assignee of the '067 patent, entitled "Mounting Cup" and issued December 20, 1988. The patent is generally directed to the mounting cup portion of the valve assembly, designed to be crimped onto the top of an aerosol can. The claimed invention of the '067 patent provides an improved seal between the cup and the can by using a cup rim shape that is "substantially different" from the contour of the annular bead, but that conforms to the shape of the annular bead when crimped. Figures 5 and 8 are representative of the claimed invention. Figure 5 shows the mounting cup before it is placed on the aerosol can.

The improved inner region contour (41A) of the mounting cup is flattened so that the interior space (43A) has a substantially different shape than the annular bead (not shown in Figure 5). When the mounting cup is placed over the annular bead, the flattened inner region contour (41A) inhibits the complete reception of the annular bead into the interior space (43A).

Figure 8 shows a completed aerosol device, a fragment of the can being shown at 40 with an annular bead (44) to which the mounting cup is crimped.

The six claims at issue on appeal are 1, 4, 7, 10, 15, and 17. Claim 1 is representative:

1. An improved mounting cup for sealing with a container of an aerosol dispensing device, the container having an annular bead extending about an opening in the container with the annular bead having an inner surface contour, comprising in combination:

   a metallic mounting cup comprising a central area, a sidewall and a peripheral rim with said sidewall interconnecting said central area and said peripheral rim;

   said peripheral rim having an inner region contour being substantially different from the inner surface contour of the annular bead of the container for allowing only a portion of said inner region contour of said peripheral rim to contact the inner surface contour of the annular bead when said mounting cup is disposed upon the container;

   said inner region contour of said peripheral rim being deformed when said mounting cup is crimped to the annular bead of the container to reform said inner region contour of said peripheral rim to be substantially the same as the inner surface contour of the annular bead to provide a seal engagement between said mounting cup and the container, and said crimping of said mounting cup to the annular bead of the container being accomplished solely by an outward radial expansion of said sidewall of said mounting cup to reform said inner region contour of said peripheral rim to be substantially the same as the inner surface contour of the annular bead to provide said sealing engagement between said mounting cup and the container.

Aptar filed an action against Summit alleging patent infringement. A jury trial ensued. The jury failed to reach a verdict on the '067 patent infringement liability issues. The parties submitted the liability issues to the court on the existing record. The court heard evidence relating to damages. The court found damages based on royalty damages of $ 0.75 per thousand devices ($ 3.9 million). It found willfulness and doubled damages to approximately $ 7.8 million. It later awarded pre-judgment interest of approximately $ 762,000. The court declined to award attorney fees or lost profits to Aptar. This appeal and cross-appeal followed.

ANALYSIS

I. Infringement

A literal infringement determination involves two steps. First, we determine the scope of the right to exclude by determining
the metes and bounds of the claim and, second, the properly construed claim is compared with the accused device to determine whether all of the claim limitations are present. Young Dental Mfg. Co. v. Q3 Special Prods., Inc., 112 F.3d 1137, 1141, 42 U.S.P.Q.2D (BNA) 1589, 1592 (Fed. Cir. 1997).

We review a district court's judgment for errors of law and clearly erroneous findings of fact. Fed. R. Civ. P. 52(a). Claim construction is a question of law, which we review de novo. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976, 34 U.S.P.Q.2D (BNA) 1321, 1326 (Fed. Cir. 1995) (in banc), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996); Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456, 46 U.S.P.Q.2D (BNA) 1169, 1174 (Fed. Cir. 1998) (in banc) ("We review claim construction de novo on appeal including any allegedly fact-based questions relating to claim construction."). Whether a properly construed claim reads on an accused device is a question of fact.

A. Claim Construction

When construing a claim, a court should first look to the plain language of the claims and then consult the evidence intrinsic to the patent, namely the written description and the prosecution history. See Vitronics Corp. v. Conceptronics, Inc., 90 F.3d 1576, 1582-83, 39 U.S.P.Q.2D (BNA) 1573, 1576-77 (Fed. Cir. 1996). At issue in this case is the construction of the phrases "annular bead" and "substantially different."

The district court concluded that the claims were "plain and unambiguous, in light of the specification, drawings, and prosecution history of the patent", and, further, that "the parties did not submit evidence to dispute the meaning of any claim terms." The court also stated that "further claim construction beyond that stated in this court's summary judgment opinion is not required." In the summary judgment opinion, the court stated that:

The key feature of the '067 patent is that the inner region contour of the mounting cup peripheral rim is different in shape from the annular bead of the aerosol container. During crimpling, the peripheral rim's inner contour is deformed and reformed to match the shape of the annular bead of the container. . . . The parties agree that the inner region contour is defined as "the region of the curl of the mounting cup between the apex and the 'three o'clock' position of the uncrimped cup."

Contrary to Summit's position, the court did not overlook claim construction, it merely focused in on the characteristics relevant to infringement; the two determinations are inextricably intertwined.

We conclude that the district court properly determined, based on the claim language, the written description, and the prosecution history, that the claims require a mounting cup that "exhibits a flattening in the inner region contour, an area depicted as between 12 o'clock and 3 o'clock in Figures 4-11 of the '067 patent," wherein the "flattening extends substantially into the semi-circular region defined by the peripheral rim of conventional prior art mounting cups illustrated in Figures 1-3 of the '067 patent." The district court also concluded that the claimed cup must "not match the bead in that location before crimping . . . [and that the cup] when placed on can beads, does not fully seat on the can bead before crimping, but rather rests on the can bead in a manner resulting in a gap between the apex of the mounting cup and the apex of the can bead." In sum, the district court interpreted the claim to require a "flattening" sufficient to prevent the rim from properly seating on the annular bead, and creating a gap between the rim apex and the bead apex.

Not surprisingly, Aptar advocates this interpretation. Summit argues that this interpretation is in error because it fails to construe the requirement that the inner region contour be "substantially different" from the can beads, and instead relies solely on a "gap test", i.e., a gap existing between the apex of the mounting cup and the apex of the can bead. According to Summit, a proper interpretation must identify "how different a mounting cup inner region contour must be from a bead contour to meet the requirement that it be 'substantially different.'" We disagree. The district court determined this issue when it deemed that the flattening must merely be sufficient to prevent the rim from properly seating.

Summit further contends that the written description acknowledges that prior art mounting cups and can beads have "nominal variations" which are within quality control limits. Therefore, Summit contends that the term "substantially" should be limited to gaps that are much greater than the differences attributable to nominal manufacturing variations. However, the claims require that the shape of the inner surface contour be substantially different at a particular point (the inner region of the rim), intentionally creating a gap at a particular point (between the bead apex and the rim apex). That the prior art occasionally exhibited deviations at different places along the rim due to uncontrollable manufacturing effects does not require that the claims be limited to an intentional deviation at a particular point that extends further than any prior art
unintentional deviation.

Further, none of the prior art "tolerance ranges" pointed to by Summit concern the size of gaps between the apex of the annular bead and the apex of the peripheral rim as required by the claims. Summit's data merely addresses variations in the inside and outside diameters of the beads and, according to Summit, "bead height." Summit's argument requires drawing numerous inferences from this data, such as the size of gaps between the bead apex and peripheral rim apex in the prior art. There is no evidence that the prior art exhibited deviations only at the "inner contour region" of the peripheral rim sufficient to cause a gap between the apex of the bead and the apex of the rim.

AITH sued Hageman for infringement of its '417 patent asserting the following claims:

1. An advertising device for a golf cup comprising:
   a) a golf cup;
   b) a substantially doughnut-shaped annular ring member having a center opening and having an external peripheral portion dimensioned to co-axially fit into said golf cup; and advertising display means coupled to said ring member for displaying an advertisement visible to a golfer when adjacent to said golf cup.

9. A method for displaying an advertisement in a golf cup comprising the steps of:
   a) providing a substantially doughnut-shaped ring member which coaxially fits into a conventional golf cup;
   b) providing an advertisement on said ring member; and inserting said ring member into a golf cup.

In construing these two claims, the district court found that the critical claim limitation involved in the dispute was "substantially doughnut shaped." The district court concluded that "substantially doughnut-shaped" means a toroidal object, which is defined as a surface generated by a plane closed curve rotated about a line lying in the same plane as the curve but not intersecting it. The district court found that the accused Hageman device is a flat piece of light rectangular flexible plastic that, when rolled into a cylinder, snaps into the side of a modified golf cup to provide an advertising surface.

Because the district court found that the Hageman device is cylindrical and not doughnut-shaped or toroidal, it concluded that no reasonable jury could find that the Hageman device literally infringes either asserted claim of the '417 patent. Under a doctrine of equivalents analysis, the district court concluded that although both devices performed substantially the same function with substantially the same result, no jury could reasonably find that Hageman's device performed in substantially the same way as the claimed invention of the '417 patent. The district court found no infringement under the doctrine of equivalents despite the assertion by Mr. Enlow, AITH's patent expert, that the '417 patent was a pioneering invention deserving a greater range of equivalents.
AITH first suggests that the term "substantially doughnut-shaped" is unnecessary surplusage when the claims are read in light of the specification. At most, AITH argues, when reviewing the specification, this claim limitation should be defined more liberally to include simply a ring-shaped or circular object. Under this definition, AITH asserts, Hageman's cylindrical device would infringe claims 1 and 9 of the '417 patent. We agree with the district court, however, that a more limited definition of "substantially doughnut-shaped" is required.

We review the district court's claim interpretation de novo. See Markman v. Westview Instruments Inc., 134 L. Ed. 2d 577, 116 S. Ct. 1384, 1387, 38 U.S.P.Q.2D (BNA) 1461, 1463 (1996) (claim construction is exclusively within the province of the court). Both claims at issue specifically call for a substantially doughnut-shaped ring member. In construing a claim, we cannot ignore a limitation of the claim. See Warner-Jenkinson Co. v. Hilton Davis Chemical Co., 137 L. Ed. 2d 146, 65 U.S.L.W. 4162, 4165 (1997) (each element in a patent claim is material to defining the scope of the patented invention); United States v. Adams, 383 U.S. 39, 48-49, 15 L. Ed. 2d 572, 86 S. Ct. 708 (1966) (claims limit an invention and the specification cannot be utilized to expand the patent monopoly). Although the district court did not need to introduce the term toroidal to define "substantially doughnut-shaped," we agree with the district court that the accused Hageman device does not literally meet this claim limitation.

The Court construes "conduit" in its ordinary and customary sense, thus signifying a tube or channel for carrying or taking materials from one place to another. Random House Webster's College Dictionary at 275. In addition, the Court construes "guide" in its ordinary meaning, thus signifying something that helps to direct an object's travel or its progressive motion.

Turn-Key argues that this part of Element (d) must be construed to require that the process described above "form[s] a substantially enclosed guide conduit by the configuration or shaping of the mold parts." Joint Statement at 8. Defendants argue that this portion of Element (d) requires that "the motion of the two mold parts brings into existence a substantially enclosed guide conduit, which does not exist when the mold is closed." Joint Statement at 29; Crest's Responsive Brief at 11; KM, MC, & Concord's Brief at 6. The Court construes this portion of the claim language to signify that the result of the process of bringing apart the molds in the fashion described in the previously discussed claim language is a substantially enclosed conduit. The separation of the mold parts thus results in something-the conduit—that was not there when the mold parts were in the process of being brought together.

Turn-Key argues that the phrase "substantially enclosed guide conduit" must be construed as "a passageway through which the molded product is guided and transported that is formed within and substantially enclosed by the surfaces of the two mold parts." Joint Statement at 9. Defendants argue that this phrase must be construed as "a duct or channel for conveying material" and that the insertion of the term "guide" means that the conduit "directs the motion of material that passes through it, including molded plastic products as set forth below, thus determining, at least in part, the path of such material." Joint Statement at 29.

The Court construes "conduit" in its ordinary and customary sense, thus signifying a tube or channel for carrying or taking materials from one place to another. Random House Webster's College Dictionary at 275. In addition, the Court construes "guide" in its ordinary meaning, thus signifying something that helps to direct an object's travel or its progressive motion. Id. at 577. The Court consequently construes the "guide conduit" to be a tube or channel that carries materials from one place to another and that helps to direct the materials' progressive motion. The Court rejects Turn-Key's argument that the construction of the "guide conduit" as helping to direct the travel of the molded plastic product here in Claim 1 renders Claim 2 which specifically requires the orientation of the molded plastic product to be directed by the contours of the "guide conduit" superfluous. Claim 1 is an independent claim which merely introduces the guide conduit and Claim 2, a dependent claim, describes the guide conduit's role in one of the steps of the patented process. It is inconsistent for Turn-Key to concede that the guide conduit plays a role in directing the molded plastic product's orientation on the one hand and then to reject a definition of the conduit taking that role into consideration on the other hand.

--- Footnotes ---

5 During oral argument, counsel for Crest requested that the Court construe "guide conduit" to be a tube or channel that carries materials from one place to another and that solely helps to direct the materials' progressive motion. The Court, however, rejects this position because it is ultimately based upon Defendants' mistaken belief that the '998 patent cannot be used with the auxiliary parts that Sorensen criticized in the abstract and Objects of the Invention sections of his patent. This
The primary dispute in this case focuses on the construction of the term "guide conduit" found in limitation (d) of claim 1. In such cases, "where the parties do not dispute any relevant facts regarding the accused product . . . but disagree over possible claim interpretations, the question of literal infringement collapses into claim construction and is amenable to summary judgment." General Mills, Inc. v. Hunt-Wesson, Inc., 103 F.3d 978, 983 (Fed. Cir. 1997) (citing Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1578 (Fed. Cir. 1996)). In its claim construction ruling, the district held that the "substantially enclosed guide conduit" is "a tube or channel that is almost entirely closed in from the outside environment, and that carries materials from one place to another and that helps to direct the materials' progressive motion." The district court later clarified its claim construction, holding that "the guide conduit itself nevertheless must help to carry and direct the molded product's progressive motion." Based on that modified construction, the district court granted defendants' motions for summary judgment of non-infringement, concluding that the guide rails, kicker plate, and discharge chute of the CD-94 mold do not comprise a guide conduit as construed by the court.

We hold that the district court erred in its interpretation of guide conduit. A review of the claim language, written description, and prosecution history show that a guide conduit is simply a passageway through which a plastic product is moved. The plain language of the claims describes the guide conduit as an area within the mold. The district court's definition attributes a function to the guide conduit, namely that it direct the material's motion. That is an added limitation.
C. Claim Construction

1. The "Substantially Enclosed" Limitation

Semitool argues that the phrase "substantially enclosed" simply refers to the ability to contain processing fluids within the head and the bowl depending upon the processing fluid used, and that it distinguished the prior art (i.e., the Aigo reference) on that ground during prosecution. Semitool contends that the district court erred by requiring that the head and the bowl form a "seal," as the specification of the '708 demonstrates that a seal is required only in a preferred embodiment of the invention.

Novellus responds that the only embodiment of the claimed wafer processing tool set forth in both patents has a processing chamber that is sufficiently sealed to allow pressurization and to prevent ambient air flow into the chamber, and that the phrase "substantially enclosed processing space" must therefore be limited to that embodiment. Novellus also argues that Semitool limited its claims during prosecution to require that the wafer processing tool be sufficiently "sealed" to enable effective gas processing. Finally, Novellus contends that Semitool's process-dependent interpretation of the "substantially enclosed" limitation relies entirely on extrinsic evidence and has no support in the intrinsic record.

In interpreting claims, a court "should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification, and, if in evidence, the prosecution history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2d (BNA) 1573, 1577 (Fed. Cir. 1996). When the meaning of a term used in a claim is sufficiently clear from its definition in the patent specification, that meaning shall apply. Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477, 45 U.S.P.Q.2d (BNA) 1429, 1432 (Fed. Cir. 1998); Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1388, 21 U.S.P.Q.2d (BNA) 1383, 1387 (Fed. Cir. 1992). Furthermore, "the prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2D (BNA) 1673, 1676 (Fed. Cir. 1995) (citations omitted).

We agree with Novellus that the district court properly construed the "substantially enclosed processing space" limitation to require a "seal" created by the head and the bowl that is sufficiently closed to permit the effective gas processing of a wafer using the gas phase of a processing fluid. Nothing in the plain language of the claims sheds any light on the meaning of the phrase "substantially enclosed." However, during the prosecution of the '310 patent, Semitool explained the significance of the "substantially enclosed" limitation when it distinguished the Aigo prior art reference, stating that:

[Claim 1] has been amended to recite that the complementary processing head and processing base define a substantially enclosed processing space when in the closed relative position. This allows the processing space to contain the gaseous or liquid processing chemicals. The Aigo reference has no ability to enclose the wafer and cannot process effectively using gases."  

'310 patent file history, Paper No. 8 at 5 (emphasis added). Although Semitool argues that it only disclaimed coverage for wafer processing tools that process wafers outside of the region defined by the head and the bowl, that interpretation would require us to ignore its statement requiring the tool to be capable of effective gas processing -- a statement that is divorced from any concept of "containing" the wafer and processing chemical in any particular processing space. We therefore find that Semitool expressly disclaimed coverage under the '308 patent of any wafer processing tool that cannot effectively utilize the gas phase of a processing chemical. See Southwall, 54 F.3d at 1576, 34 U.S.P.Q.2D (BNA) at 1676.

We reach the same conclusion with respect to the "substantially enclosed" limitation in the '708 patent. "When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation." Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 980, 52 U.S.P.Q.2d (BNA) 1109, 1114 (Fed. Cir. 1999) (citing Jonsson v. The Stanley Works, 903 F.2d 812, 817-18, 14 U.S.P.Q.2d (BNA) 1863, 1863-69 (Fed. Cir. 1990)). Thus, Semitool's relinquishment of subject matter during prosecution of the '310 patent applies with equal force to the '708 patent.
Moreover, the specification of the '708 patent expressly defines the "substantially enclosed" limitation as follows:

    The head 12 is loaded with wafer 20 which is held in position by the wafer holder. The head is positioned in sealing relationship with the bowl 14 or otherwise suitably adjusted to confine the processing chamber against drafts and other substantial leakages which might affect the homogeneous vapor phase which is being presented for contacting and etching the processed surface of the wafer 20.

'708 patent, col. 9, ll. 32-39 (emphasis added). We have repeatedly stated that "claims must be read in view of the specification . . . . Usually, it is dispositive; it is the single best guide to the meaning of a claim term." Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2D (BNA) at 1577. Thus, although the claims of the '708 patent do not require an air-tight seal, the specification makes clear that they require a "seal" that is sufficient to prevent "drafts and substantial leakages" that might affect the ability of the processing chemical to operate in the gas phase. We therefore conclude that the district court correctly interpreted the "substantially enclosed" limitation in the '310 and '708 patents to require a "seal" created by the head and the bowl that is sufficiently closed to permit the effective gas processing of a wafer using the gas phase of a processing fluid, regardless whether the chemical to be used is in a gas or liquid state.

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Moreover, the specification of the '708 patent expressly defines the "substantially enclosed" limitation as follows:

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13. "said unscrambling means is substantially entirely on a user replaceable card"

The plaintiff contends this term needs no construction. Defendant EchoStar argues that the term is indefinite under 35 U.S.C. § 112, P 2 because it provides that some undefined amount of circuitry or degree of functionality of the unscrambling means is located on a card replaceable by the user. The DIRECTV defendants argue that the term means the entire unscrambling means is located on the user exchangeable unscrambling card.

As discussed in Part III.B.12 above, the specification makes clear that in certain embodiments it is the user card and the decoding box acting together which accomplish the task of unscrambling. '066 Patent, col. 4, lines 14-24. Consequently, I reject the construction proposed by the DIRECTV defendants.

Nor do I find that the term "substantially entirely" is indefinite to one skilled in the art when read in the context of the rest of the specification. The specification makes clear that in some embodiments the entire circuitry for the unscrambling circuit would be on the user card, '066 Patent, col. 3, lines 62-68, while in other embodiments the decoding box and the user card would each contain various parts of electronic circuits which would act together to provide the unscrambling. Id. at col. 4, lines 14-19. And as I previously have explained, the unscrambling means works in such a way that when one user card is activated, that card's circuitry replaces the circuitry of any other user card for use in the unscrambling means. In this context, I agree with the plaintiff that the term "substantially entirely" is not indefinite and needs no further construction.
With respect to the "substantially entirely and flushly" limitation of claim 1, although defendant asserts that its product has no corresponding structure matching those limitations, it does not suggest a construction of that phrase. As with the majority of the patent terms interpreted here, plaintiff has not offered a proposed construction, and nothing in the patent indicates that plaintiff intended to assign to those terms definitions other than those by which they are customarily understood. Thus, the court construes those terms in light of their plain and ordinary meaning.

Webster's defines "substantially," the adverbial form of "substantial," as "being largely but not wholly that which is specified." Webster's Collegiate Dictionary 1174 (10th ed. 1999). "Entirely" is defined as "to the full or entire extent: completely." Id. at 387. "Flushly," the adverbial form of "flush," is defined as "having or forming a continuous plane or unbroken surface." Id. at 449. Thus, the court construes the phrase "substantially entirely and flushly" as requiring the lid's latch bar to fit within the recess formed across the tongue in a manner that creates an almost completely continuous plane with the outer, front side of the container.

8. "substantially envelopes"

In accordance with the Court's construction of "coating layer" as "a layer of material that substantially surrounds, encases or encapsulates the cords, and defines an engagement surface for engaging a sheave," it follows that "substantially envelopes" means "substantially surrounds, encases or encapsulates." 6

6 Schindler argues that "substantially enveloping" should mean "fully encasing or encapsulating; completely surrounding at least around the circumference [of the cords]." Although the preferred embodiments show fully encased cords, the patent's scope need not be so limited. See Kara Technologies Inc. v. Stamps.com Inc., 582 F.3d 1341, 2009 U.S. App. LEXIS 21120, at *13 (Fed. Cir. Sept 24, 2009). The term "substantially" is not equivalent to "completely." The plain meaning of "substantially enveloping," then, does not indicate that the cords must be completely encased by the coating layer in every possible embodiment of the invention.

2. '669 Patent: "Substantially Equal"

Claim 1 of the '669 patent includes the limitation that "the change in exhaust temperature . . . is substantially equal to the change in temperature rise of a typical one of said heat-generating elements over said range of air flow rates." '669 patent, col.6, ll.28-33. Delta argued that "substantially equal" simply means "nearly the same." Markman Hr'g Tr. at 23:7-8. Control again adopted a more functional approach. Both in its papers and at oral argument, Control asserted that "substantially equal" is not limited to a specific value or an exact equality of temperature changes. Pl.'s Opp'n at 17; Markman Hr'g Tr. at 25:1-5. Instead, Control asserted that "substantially equal" refers to the difference in temperature rise necessary to maintain a semiconductor junction at a nearly constant temperature.

There is nothing in the claim or written description, however, that suggests that "substantially equal" should be given anything other than its ordinary meaning. The goal of the patent is to maintain the heat-generating elements at a nearly constant temperature. The patent teaches that to achieve this, the difference in temperature rise exhibited by a typical semiconductor is nearly the same as the difference in exhaust temperature. '669 patent, col.5, ll.6-12. Indeed, the example provided in the patent uses the numerical quantity of three degrees to describe the "match" in temperature changes. Id. col.5,
ll.8-9. According to the prosecution history, this "critical matching . . . is at the heart of [the] invention." Katz Decl. Ex. D at C00124. Control's claim construction essentially wipes out the "substantially equal" language in favor of a functional test that simply asks whether the heat-generating elements are maintained at a nearly constant temperature, regardless of the means employed to achieve that goal.

Ultimately the Court construed "substantially equal" as "nearly the same." Markman Hr'g Tr. at 31:18. The Court then contextualized its definition in the form of a proposed address to the jury:

But you have to keep in mind what we are comparing here. That means, that substantially equal means nearly the same and what it requires, what it claims here is a relationship between the difference in temperature rise of a typical semiconductor and the temperature range of the exhaust air.

Id. at 31:18-23.

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4. "[T]he thickness is substantially equal on the left side region of the second zone and the right side region of the second zone." Used in '753 patent, claim 15.

CooperVision proposes "the second zone includes a series of cross-sections that each has a substantially uniform thickness not varying by more than about 30 gm or 20% of the minimum thickness within the cross-section. The area of the second zone to the left of the vertical meridian has a thickness topography that is symmetric with a thickness topography of the area of the second zone to the right of the vertical meridian." CIBA contends "at any given horizontal cross-section, the thickness is approximately the same across the entire horizontal cross-section on the left side region of the second zone and the right side region of the second zone."

In their briefing to the court, the parties agreed that the relevant area of analysis is the entire inner or second zone, which excludes the optic and peripheral zone. The parties also agreed that substantial uniformity means no more than about 30 pm or 20%. See '903 patent, col. 7, ll. 22-30; col. 6, ll. 55-58. At the hearing, moreover, CooperVision agreed that in the horizontal direction, cross-sections must be substantially uniform. The remaining dispute, therefore, is whether the cross-sections must also be symmetrical so that every point on the left side is a mirror image of a point on the right side.

Claim 3 of the '753 patent shows that the patentee knew how to claim vertical symmetry and chose not to do so in claim 15. See '753 patent, claim 3 (requiring a lens thickness profile that "is symmetrical with respect to the vertical meridian"). Unlike claim 3, claim 15 requires only that regions of the left and right sides be "substantially equal." There is no reason to conclude that "substantially equal" in claim 15 is actually two limitations in one, and that it actually includes a symmetry requirement. CooperVision's construction inaccurately requires the thickness topography to be symmetrical.

The court defines this term as follows:

"[T]he thickness is substantially equal on the left side region of the second zone and the right side region of the second zone" means: the second zone includes a series of horizontal cross-sections each having substantially uniform thickness not varying by more than about 30 jm or 20% of the minimum thickness on the left side region and the right side region.

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2. The '236 Patent

Claims 1 and 16 of the '236 Patent read as follows:

1. A method of creating a construction block adapted to form retaining walls or the like, comprising the steps of:
(a) forming a member having a major upper surface and a major lower surface and a plurality of edges, said upper major surface having a ridge extending laterally across a midsection thereof between an opposed pair of said edges with said ridges extending upwardly and away from said upper major surface by a predetermined first dimension, said lower major surface having a notch extending laterally across a midsection thereof between said opposed pair of edges with said notch extending upwardly from said lower major surface by a dimension substantially equal to said predetermined first dimension, wherein said laterally extending ridge is parallel to and disposed vertically above said laterally extending notch; and

(b) splitting said member along a center of both said ridge and said notch to define a pair of said construction blocks, wherein each said construction block has rough textured front surface defined by splitting the member in half, a recess extending laterally thereunder, and a lip extending laterally thereover wherein the height of said lip is substantially equal to the depth of said recess.

16. The method of creating a construction block adapted to form retaining walls or the like comprising the steps of:

(a) preparing a mold box for receiving raw concrete with the mold box having opposed front and rear walls and opposed side walls and with the opposed lateral side walls having parallelly disposed horizontally aligned rectangular core bar receiving openings formed along the lower edges thereof;

(b) inserting an elongated rectangular core bar within said mold box extending between said parallelly disposed horizontally aligned openings for forming a notch;

(c) loading raw concrete within said mold box while forming cores within said raw concrete along a vertical axis normal to the axis of said core bar to form a member having a major upper surface and major lower surface and a plurality of edges, said major upper surface formed with a ridge; and

(d) splitting said member along a center of both said ridge and said notch to define a pair of said construction blocks, wherein each said construction block has rough textured front surface defined by splitting the member in half, a recess extending laterally thereunder, and a lip extending laterally thereover wherein the height of said lip is substantially equal to the depth of said recess.

The phrase "wherein the height of said lip is substantially equal to the depth of said recess" appears in claims 1(b) and 16(d) of the '236 Patent. Allan Block asserts that "substantially equal" is a commonly understood term and needs no further construction. To the extent that construction is warranted, Allan Block urges the following meaning: "The height of the block's lip must be equal to, or within some amount of deviation from, the depth of the block's recess. This limitation does not impose a strict numerical boundary on the relationship between the lip height and the recess depth." Allan Block further argues that whether the height of the block's lip is "within some deviation from" the depth of the block's recess presents a question of fact. County Materials contends that the phrase means that "the height of the lip must be substantially equal to the depth of the recess," wherein "substantially equal" means "equal to one another within 1/16th of an inch."

Claims 1 and 16 of the '236 Patent require, in part, that the block be created so that the dimensions of the lip and the recess are such that "the height of said lip is substantially equal to the depth of said recess." The parties agree that the term "substantially" is a word of approximation, commonly used in patent claims to avoid a strict numerical boundary to a specified parameter. See Anchor Wall Sys., Inc. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1310-11 (Fed. Cir. 2003) ("[T]he ordinary meaning of the phrase 'generally parallel' envisions some amount of deviation from exactly parallel."); see also Playtex Prods., Inc. v. Procter & Gamble Co., 400 F.3d 901, 907 (Fed. Cir. 2005). Here, "substantially" modifies the term "equal," thus allowing some amount of deviation from exactly equal. Nothing in the claim language requires a numerical limitation on the amount of deviation allowed.

The specification does not provide a special definition for the term "substantially" or the phrase "substantially equal." Nor does the specification place a strict numerical boundary on the relationship between the lip height and the recess depth. Instead, the specification provides a more general description of the relationship between, and the function of, the lip and the recess:

The back surface 52 of each lip 34 is smooth and vertical with respect to the upper major surface of block 40. Similarly, the vertical surface 54 of recess 48 is smooth as well and in combination with surface 52 provides for a tight fitting wall
system and fast installation.

'236 Patent, col. 5, ll. 56-61.

The width "W" of core bar 20 directly corresponds to this setback "A" defined when the blocks 40 are stacked, where front surface 54 of each recess 48 is securely abutted against the back surface 52 of the corresponding lip 34 of the block disposed thereunder.

Id. at col. 6, ll. 40-45.

When the blocks 70 are stacked such as shown in FIGS. 5 and 6, the tapered surfaces 74 and 78 of the corresponding recesses 76 and ridges 72, respectively, are conforming and abut one another.

Id. at col. 6, ll. 57-60.

The preferred method invention disclosed realizes retaining wall blocks with an upper forward lip and a lower front recess which provides creating a sound structure which is not susceptible to shifting once embedded in an embankment. Thus, shifting of the retaining wall blocks once integrated into a retaining wall is inhibited.

Id. at col. 7, ll. 19-24.

The Court looks next to the prosecution history. County Materials argues that because the "substantially equal" limitation was added during the prosecution of the '236 Patent, it should allow for no more than some very minimal deviation from "perfectly or exactly equal" and that it should be construed as "equal to one another within 1/16th of an inch." The Court disagrees. Although the "substantially equal" limitation was added during the patent's prosecution, nothing in the '236 Patent or statements made during its prosecution specifies a numerical limitation on the permissible deviation between the lip height and the recess depth. County Materials offers no evidence from the prosecution history supporting the imposition of the strict plus-or-minus 1/16th inch limitation. Instead, County Materials relies on extrinsic evidence, such as industry standards, expert testimony, and Allan Block's production standards to support its argument that the lip height and the recess depth must be "equal to one another within 1/16th of an inch." The Court declines to consider this evidence, however, because the intrinsic evidence does not support construing "substantially equal" to require a strict numerical limitation on the relationship between the lip height and the recess depth. 3 See Playtex, 400 F.3d at 909.

--- Footnotes ---

3 Even if the Court were to consider County Materials' extrinsic evidence, the Court would reach the same result. The ASTM Industry Standards relied on allow for a permissible deviation of 1/8th inch for a block's overall dimensions for width, height, and length. Moreover, while Allan Block's production control standards require that each block used in a particular project vary by no more than 1/16th inch, it refers to a block's overall height. There is no evidence that either of these standards apply to the height of the lip or the depth of the recess.

--- End Footnotes ---

Consistent with the claim language, the specification, and the prosecution history, the Court determines that the claim language creates no ambiguity and has a readily understood meaning. Accordingly, the Court declines to construe the phrase "wherein the height of said lip is substantially equal to the depth of said recess." GO BACK

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7. Substantially exclusively

FieldTurf's Proposed Construction: "almost entirely"

SCG's Proposed Construction: "entirely"
The Court's Claim Construction: "almost entirely"

"Substantially exclusively" is used in claim 1 to describe the composition of resilient particles in the top course. Fieldturf points out that the same language is used in the specification, '689 patent, 10:20-21, and cites authority to the effect that "substantially" is a common term of approximation used in patent claims. E.g., Verve, LLC v. Crane Cams, Inc., 311 F.3d 1116, 1120 (Fed. Cir. 2002).

SCG does not point to anything in the specification that would support a definition of entirely, and instead acknowledges that substantially exclusively is used in the specification. '689 patent, 10:20-21. It then points to two dependent claims in each patent 16 which state that "particle sizes of 80% by weight of hard granules and resilient granules in the bottom course are distributed in a range spanning a particular screen mesh standard. '689 patent, cl. 8-9; '752 patent, cl. 9-10. It then posits that "[s]ince the top course is 'substantially exclusively of resilient rubber granules' it must contain at least greater than 80 percent resilient rubber granules." However, the quoted claim language has nothing to do with a particular percentage of resilient granules being in the bottom course, but rather the percentage by weight of both hard and resilient granules being distributed in a particular size range in the bottom course. The cited claims are simply not relevant to the amount of resilient granules in the top course.

--- Footnotes ---

16 SCG draws the court's attention to claims 7 and 8, but neither patent has the described limitation in claims 7 and 8. Rather the described limitation is in claims 8 and 9 of the '689 patent and claim 9 and 10 of the '752 patent.

--- End Footnotes ---

SCG next argues that "[n]o jury would be assisted by FieldTurf's proposed claim construction(s)" and that "[i]t is beyond the ken of reason to understand how a jury would use FieldTurf's definitions of 'predominantly' or 'almost entirely' to measure whether a layer includes a certain type of granules." However, as the Court noted above, FieldTurf correctly points out that the Court of Appeals for the Federal Circuit allows language of approximation. Accordingly, this latter argument is without merit.

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I. Term 10: "substantially fill the defect"

The Court construes the term "substantially fill the defect" in claim 17 of the '291 patent as follows:

A joining segment "substantially fills a defect" if the perimeter of the joining segment is substantially the same size as the perimeter of the defect.

Put simply, the parties' dispute over this term amounts to a disagreement over whether a hollow plug can fill a hole in the heart. AGA contends that claim 17 of the '291 patent requires a "joining segment" that "substantially fills" a defect by virtue of the segment's having "a physical cross-sectional area substantially equal to the cross-sectional area of the defect in order to stop the flow of blood through the defect." Am. JCCS Sched. B at 31-32. The University contends that this construction is too narrow. Univ. Opening Br. at 44.

The Court agrees with the University. The specification of the '291 patent discloses two very different embodiments of the patented device. In one embodiment, two flat disks are attached at their centers, and the resulting "conjoint disk" fills the defect to be closed. See '291 patent figs. 3-11. This device would be covered by claim 17 if the Court adopted AGA's proposed construction of the term "substantially fill the defect." The conjoint disk in this embodiment is flat and solid -- that is, it has a "cross-sectional area" roughly equal in size to the defect in which the conjoint disk is located.

In a second embodiment, however, the "joining segment" is hollow and results from the concentric assembly of two cylindrical projections at the center of the two disks. See '291 patent fig. 12; see also id. claim 9 (claiming "[t]he closure
device of claim 1 wherein the conjoint disk comprises a tubular segment"). Further, in this embodiment -- which the Court will call the "balloon-type" embodiment -- blood flow through the defect is not necessarily stopped by the joining segment alone (as would be required by AGA's proposed construction), but rather could be stopped because the hollow joining segment is attached on either side to membranes, and the membranes block the flow of blood. '291 patent col. 9:42-49. The joining segment and the attached membranes can also be filled with a liquid that then hardens to block blood flow. Id. col. 9:35-41. But in the balloon-type embodiment, the joining segment itself -- whether or not later filled with liquid -- is hollow. The joining segment does not have a "cross-sectional area" equal to the area of the defect, nor does the joining segment itself "stop the flow of blood through the defect."

The '291 patent clearly discloses the balloon-type embodiment, and clearly identifies the hollow segment at the center of that embodiment as a "tubular segment" that "is desirably sized to substantially fill the defect being blocked . . . ." '291 patent col. 9:16-19. In effect, in the balloon-type embodiment, the joining segment is like a hollow plug. And there is nothing unusual about saying that a hollow plug "fills" a hole. Under the circumstances, the Court construes the phrase "substantially fill the defect" to cover both preferred embodiments disclosed in the specification. See, e.g., Primos, Inc. v. Hunter's Specialties, Inc., 451 F.3d 841, 848 (Fed. Cir. 2006) ("[W]e . . . should not normally interpret a claim term to exclude a preferred embodiment.").

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4. "[S]ubstantially flat:" 6 "Thin and substantially uniform in thickness." This construction is consistent with the claims as well as the specification. The parties' disagreement concerns plaintiffs' proposed additional limiting language "having an overall profile that is substantially straight." Considering plaintiffs' proposed construction in the context of claim 27 of the '095 patent, which describes taking a substantially flat configurable dielectric separator and arranging it to form at least two grooves, would lead to the illogical result that the separator have "an overall profile that is substantially straight" after arranging it. The specification explicitly counsels against the result of plaintiffs' proposal, describing the pair separator in figure 6 as a "flat configurable tape used as a core filler, that is shaped to have the illustrated profile . . . ." (col. 6:12-15)

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6 '095 and '537 patents.

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H. Substantially Flat and Substantially Flush

The Court finds that the terms "substantially flat" and "substantially flush" are unambiguous and therefore require no construction.

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3. "An upper surface which is substantially flat across the bottle retaining pockets"

Claims 1, 3, 19, 21, 23, 33, 39 and 56 of the '874 patent and Claim 7 of the '176 patent use the language for a case bottom that includes "an upper surface which is substantially flat across the bottle retaining pockets."

a. Norseman's Position

Norseman construes this limitation to require the upper surface of the case bottom to be continuously and substantially horizontal across the bottle retaining pocket. Motion, at 20-21.
b. Rehrig's Position

Rehrig argues that construction of the term "substantially flat" must be made in light of the patent's specification and drawings which show the surfaces to have multiple openings and recesses and are not relatively smooth and even. Rehrig also contends that the degree to which the surfaces may deviate from absolute flatness is indicated by the function of the surfaces as described in the specification. Namely, the bottle retaining pockets are meant to perform the functions of allowing retention of bottles without base indentations and permitting bottle rotation. Ex. 1, col. 3:61-64. Rehrig therefore argues for a construction of "substantially flat" that would allow any deviation from absolutely horizontal such that the surface was still able to perform these two functions.

Rehrig's construction is therefore:

"A pocket bottom with a relatively smooth or even surface at the bottle contact area, which may include small deviations from an even surface provided the bottle intended for the case may be easily rotated."

Opposition, at 23.

c. Court's Construction

As each of the parties point out in their briefs, the dictionary definitions of flat include: "having a continuous horizontal surface," "having a relatively smooth or even surface," and "having or marked by a continuous surface that is horizontal or nearly so, without significant curvature, without noteworthy elevations or depressions." Opposition, Ex. F; Websters Third New International Dictionary (1969). In light of the patent's specification, drawings, and the plain meaning ordinarily giving to the terms "substantially" and "flat," the Court declines to accept Rehrig's invitation to interpret this language to mean any pocket bottom with small deviations so long as the surface still performs the functions of retaining bottles without base indentations and rotation of bottles.

Such an interpretation merely shifts the construction question from the term "substantial" to the term "small deviations." In either event, the crucial question is the degrees of freedom away from horizontal afforded in this instance by the modifying term "substantial." The Court construes the language to allow deviations such as imperfections and inconsistencies on an otherwise continuous and horizontal surface. Therefore the Court construes this term to require a pocket bottom with a relatively smooth or even surface at the bottle contact area without significant curvature or noteworthy deviations from horizontal.

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The "Substantially Flat, Horizontally Disposed Bottom Wall" Limitation in Claim 1

Independent claim 1 of the '214 patent includes as a limitation a "substantially flat, horizontally disposed bottom wall." (filing no. 62, Ex. 1, claim 1) The parties dispute the meaning of the phrase "substantially flat." Trail King asserts that the court should construe the "substantially flat" limitation to mean "entirely flat." Circle R suggests that the court should construe the "substantially flat" limitation to mean "largely, but not wholly, flat." Circle R claims that the term "substantially flat" bottom wall should, therefore, include bottom walls having a slight curvature.

After examining the '214 patent's claim language, the patent specification, and the patent's prosecution history, the court holds that the "substantially flat" limitation in claim 1 should be construed to mean "entirely flat." This construction is supported by the fact that nowhere in the '214 patent is the bottom wall depicted as anything but completely flat. (See filing no. 62, Ex. 1) One skilled in the art on the application date would interpret the "substantially flat" wording to mean "entirely flat," rather than "slightly curvilinear." Indeed, a definition of "substantial" found in Webster's Third New International Dictionary is "being that specified to a large degree or in the main." Circle R's construction of the "substantially flat" language would seem to exclude those bottom walls that are completely flat and include only those bottom walls that have a slight curvature. However, if this was what the inventor meant when drafting the patent language, the language would have actually read "slightly curved, horizontally disposed bottom wall." This would have been a more direct way to describe a
bottom wall having a slight curvature. The prosecution history of the '214 patent supports this construction.

As noted above, the district court construed the claim term "substantially flat" to require that the bottom wall or bed of the trailer be "entirely flat" largely because the specification showed only embodiments that were, in the district court's view, entirely flat.

The district court's "entirely flat" claim construction was erroneous. We recognize that "claims must be read in view of the specification, of which they are a part." Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2d (BNA) 1321, 1329 (Fed. Cir. 1995), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996); but it is also well-established that, as a general rule, "words in a claim will be given their ordinary and accustomed meaning, unless it appears that the inventor used them differently." Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759, 221 U.S.P.Q. (BNA) 473, 477 (Fed. Cir. 1984) (internal quotations omitted). Here the "ordinary and accustomed meaning" of the word "substantially," as reflected in dictionary definitions, 3 as "considerable in . . . extent," American Heritage Dictionary Second College Edition 1213 (2d ed. 1982), or "largely but not wholly that which is specified," Webster's Ninth New Collegiate Dictionary 1176 (9th ed. 1983)." See also York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1572-73, 40 U.S.P.Q.2d (BNA) 1619, 1622 (Fed. Cir. 1996) (construing "substantially the entire height" as "most of the entire height"); Amhil Enters., Ltd. v. Wawa, Inc., 81 F.3d 1554, 1562, 38 U.S.P.Q.2d (BNA) 1471, 1476 (Fed. Cir. 1996) (construing "substantially vertical" faces to mean "well-defined faces that deviate only slightly, if at all, from the vertical") (emphasis added). In other words, a claim term is not limited to the preferred embodiments, and "the specification here does not define any of the disputed claim language in a manner inconsistent with its ordinary meaning." Pall Corp., 259 F.3d at 1391. Thus, the district court erred when it concluded that the specification required the phrase "substantially flat" be construed to mean "entirely flat."

However, during the prosecution of the 214 patent the patentee confronted a rejection of claim 1 by the examiner because the prior art of U.S. Patent No. 4,494,798 (the "Bailey patent") showed a similar side dumping trailer body. The Bailey patent, among other things, specified a side dumping trailer body having a bottom wall that "comprises a section of an ellipse." Circle R I, slip op. at 5. The examiner accordingly rejected a number of Circle R's claims "as being anticipated by Bailey."

In response to that rejection, Circle R informed the examiner that "although applicant sincerely believes that claim 1, as originally presented, did define patentable subject matter, claim 1 has been rewritten as claim 6 with certain limitations added thereto to clearly distinguish Bailey." Circle R stated in pertinent part that:

Claim 6 now describes that the body of applicant's structure includes a substantially flat, horizontally disposed bottom wall . . . . The relationship which has been now described in claim 6 clearly distinguishes Bailey.

(emphasis added). The claim thus amended was allowed, and issued as claim 1 of the 214 patent.

Under these circumstances we conclude that "substantially flat" must mean that the bottom wall is flatter than Bailey. See Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2d (BNA) 1673, 1676 (Fed. Cir. 1995) ("Arguments and amendments made during the prosecution of a patent application and other aspects of the prosecution history . . . must be examined to determine the meaning of terms in the claims.") Bailey shows the bottom wall as indicated
by reference number 11 in Figure 4 as follows:

[SEE FIGURE 4 IN ORIGINAL]

The engineering drawing depicting the accused device clearly shows that the bottom wall of the allegedly infringing device is more curved than the bottom wall in the Bailey patent. Therefore, under our claim construction that "substantially flat" means flatter than the bottom wall in the Bailey patent, Circle R cannot establish literal infringement. So too the prosecution history forecloses Circle R's reliance on the doctrine of equivalents. Having narrowed the scope of the claim during prosecution for reasons related to patentability, Circle R cannot attempt to recapture the surrendered subject matter through the doctrine of equivalents. Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 234 F.3d 558, 574 56 U.S.P.Q.2D (BNA) 1865, 1877 (Fed. Cir. 2000) (en banc), cert. granted, 150 L. Ed. 2d 692, 121 S. Ct. 2519 (2001) (No. 00-1543).

Under these circumstances we conclude that the grant of summary judgment, though based on an erroneous claim construction, was correct in result. 4

4 We note that neither Circle R's complaint, nor the district court's order, specified which claims of the 214 patent were alleged to be infringed. However, because the accused products concededly do not fall within the limitations of independent claim 1, the products also cannot infringe any of the other claims, which all depend from claim 1.

4. substantially flat surface

The term "substantially flat" appears in claims 1 - 24 of the '874 patent and claims 1 - 20 of the '786 patent. The plaintiff apparently proposes that the above term be construed in accordance with its plain and ordinary meaning. The defendant proposes a construction that excludes the presence of defined cavities within the surface. The defendant bases its construction on an amendment made by the patentees with respect to claims 2 and 3 of the '437 application. As stated by the patentees in their amendment,

[Opening Brief of the Plaintiff, Exhibit 8 at 7 (emphasis added).

"When multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently issued patents that contain the same claim limitation." Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 980 (Fed. Cir. 1999) (citing Jonsson v. The Stanley Works, 903 F.2d 812, 817-18 (Fed. Cir. 1990). Although the '437 application was abandoned before issuance, claims 2 and 3 of the '437 application issued as claims 2 and 3 of U.S. Patent No. 5,823,782, which issued from a continuation application that was based on the '437 application. Therefore, the above portion of the prosecution history is relevant to the construction of this claim term. The court concludes, however, that the limitation "substantially flat" inherently excludes the defined cavities of Lee and that this term needs no further construction.

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1. Claim 1: "substantially flattened surfaces"

The district court determined that there was ambiguity in claim 1 which could not be resolved by the intrinsic evidence to warrant using extrinsic evidence in construing "substantially flattened surfaces." It concluded that the claim term "substantially flattened surfaces" had a plain meaning: "two opposing surfaces with a curvature less than either the barrel or the transitional portion of the prior art." However, with the evidentiary submissions by various experts relating to potential constructions of the disputed term, the district court concluded that if the term "substantially flattened surfaces" were construed to include curved surfaces, it would require exclusion of flat surfaces. The district court noted that the various figures representing the preferred embodiment contained in the specification only illustrated flat surfaces with protruding ribs for use in the finger grip area.

Playtex assigns legal error to the district court's construction of "substantially flattened surfaces" in claim 1. First, Playtex argues it is improper to use expert testimony that contradicts the intrinsic evidence to construe a claim term. Second, it argues that the term "substantial," a term of degree, should not be interpreted as having a strict numerical limitation. We agree.

The district court mistakenly assumed that a surface having less curvature than another surface is necessarily curved, and cannot be flat. This is a false premise in the context of this claim. When we "flatten" a curved surface, we can either make it completely flat, or merely make it flatter than it was originally. Either way, the newly flattened surface would be less curved than the original. Thus, the district court found ambiguity where there is none. "Substantially flattened surfaces" has unambiguous meaning that is resolved solely on the intrinsic record. There was no need for the district court to resort to Dr. Moller's testimony to interpret the disputed term.

The plain language of claim 1, i.e., "substantially flattened," requires neither a perfectly flat surface, nor one that is flat within a manufacturing tolerance. The construction adopted by the district court is erroneous because the '178 patent, on its face, does not describe the tampon applicator at the level of a manufacturing specification. The term "substantially flattened surfaces" is therefore not ambiguous, and its meaning is within the parameters of the written description.

"The term 'substantial' is a meaningful modifier implying 'approximate', rather than 'perfect.'" Liquid Dynamics, 355 F.3d at 1368. But the definition of "substantially flattened surfaces" adopted by the district court introduces a numerical tolerance to the flatness of the gripping area surfaces of the claimed applicator. That reading contradicts the recent precedent of this court, interpreting such terms of degree. In Cordis Corp. v. Medtronic AVE, Inc., 339 F.3d 1352, 1361 (Fed. Cir. 2003), we refused to impose a precise numeric constraint on the term "substantially uniform thickness," noting that the proper interpretation of this term was "of largely or approximately uniform thickness" unless something in the prosecution history imposed the "clear and unmistakable disclaimer" needed for narrowing beyond this plain-language interpretation. Id. Moreover, in Anchor Wall Sys. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298 (Fed. Cir. 2003), we held that "the phrase 'generally parallel' envisions some amount of deviation from exactly parallel," and that "words of approximation, such as 'generally' and 'substantially,' are descriptive terms 'commonly used in patent claims 'to avoid a strict numerical boundary to the specified parameter.'" Id. at 1311. In support of this holding, we noted that "nothing in the prosecution history [of the Anchor Wall patent]. . . clearly limited the scope of 'generally parallel' such that the adverb 'generally' does not broaden the meaning of parallel." Id. Similarly, in this case we find that in claiming "substantially flattened surfaces," Playtex claimed more than flat surfaces.

The drawings do not compel a contrary result. By its reliance on the figures, the district court improperly limited claim 1 to a preferred embodiment. We have consistently advised against this approach to claim construction. See Liquid Dynamics, 355 F.3d at 1369; see also Amgen, Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1325 (Fed. Cir. 2003) ("Because the claims are best understood in light of the specification of which they are a part. . . courts must take extreme care when ascertaining the proper scope of the claims, lest they simultaneously import into the claims limitations that were unintended by the patentee."); Comark, 156 F.3d at 1186-1187 (Fed. Cir. 1998) (advising that in navigating the fine line between reading claims in light of the specification and importing claim limitations, it is appropriate to look to the written description when doing so aids in the interpretation of claim language as opposed to merely detailing the workings of a single embodiment); CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002) (explaining that the
presumption of ordinary meaning cannot be rebutted "simply by pointing to the preferred embodiment or other structures or steps disclosed in the specification or prosecution history"). Claims of a patent may only be limited to a preferred embodiment by the express declaration of the patentee, Karlin Technology, Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 973 (Fed. Cir. 1999), and there is no such declaration here. Claim 1, properly construed, is not limited to the flat surfaces depicted in the drawings.

The prosecution history likewise does not compel a different result. The district court and P&G make much of the fact that, in this case, the patentee distinguished his invention from prior art having "generally cylindrical" finger grips. "Generally," like "substantially," is a term of approximation. See, e.g., Anchor Wall Sys., 340 F.3d at 1311 (Fed. Cir. 2003). The point at which the gripping area curvature ceases to be substantially flattened and becomes generally cylindrical is a question of fact. The need to make a difficult factual determination does not allow the court to surrender material that the patentee clearly and rightfully claimed.

As "substantially flattened surface" has unambiguous meaning in view of the intrinsic record, the district court erred in relying upon extrinsic evidence that directly contradicted that meaning. Vitronics, 90 F.3d at 1583. Dr. Moller's testimony that "substantially flattened surfaces" means "flat within a geometric manufacturing tolerance" effectively defines "substantially flattened" as "flat." With that view, the manufacturing tolerance means any departure from a purely flat surface is bounded within a set range. Dr. Moller further testified that no plastic surface is entirely flat; all surfaces are merely flat within a specified manufacturing tolerance. We think this view reads out the essence of the claim limitation "substantially flattened" as it equates "flattened" with "flat." Such an interpretation contradicts the unambiguous meaning of the term and cannot obtain here. 1

1 Notwithstanding the fact that the district court erred in adopting the construction advocated by Dr. Moller, the district court did not abuse its discretion in admitting the testimony of Dr. Moller into evidence. It is appropriate for courts engaged in claim construction to consider expert testimony. Markman, 52 F.3d at 981 (finding that the trial court did not abuse its discretion when it admitted expert testimony on the issue of claim construction). However, while a trial court may use extrinsic evidence to educate itself about the invention and the relevant technology, it may not use extrinsic evidence to arrive at a claim construction that is at odds with the intrinsic evidence. Elkay Mfg. Co., 192 F.3d at 977.

The disputed claim term is clearly a comparative term. Comparison requires a reference point. Therefore, to flatten something, one must flatten it with respect to either itself or some other object. In the context of the claim, the term "flattened" requires a comparison between the diametrically opposed surfaces and something else. The only antecedent basis in the claim is the tubular barrel. '178 patent, col. 6, ll. 3-9. Playtex, therefore, claimed something flatter than a tubular barrel, but not necessarily something flat.

The issue is whether the patentee properly claimed an oval as a "substantially flattened" circle, or more specifically, an elliptical cylinder as a "substantially flattened" cylinder. In construing the term "substantially flattened surfaces" as something flat in practice the district court erred in going beyond the intrinsic evidence. That evidence clearly indicated that the patent contemplated curved surfaces. Thus, we reverse the district court's claim construction and conclude that "substantially flattened surfaces" means surfaces, including flat surfaces, materially flatter than the cylindrical front portion of the applicator.

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3902

d. "substantially flush with adjacent portions"

This disputed language appears in the "whereby" step of claim 1:

whereby said positioning step locates said thin solid formed ornamental panel so as to be substantially flush with adjacent portions of said wheel face outer surface of said wheel such that said decorative layer readily blends with said axial
peripheral lip circumscribing said peripheral rim portion so as to provide a visual impression that said decorative layer is substantially flush with said adjacent portions of said wheel face outer surface and thereby appears to constitute an integral portion of said wheel.

'809 patent, col. 12, lines 1-11. On the issue of indefiniteness, defendants argue that this passage suffers from an internal contradiction. In particular, they contend that the decorative layer cannot both readily blend with the axial peripheral lip and, at the same time, be substantially flush with adjacent portions of the wheel face outer surface. Defendants' contention is premised on "substantially flush with adjacent portions" meaning that the cladding is substantially on the same unbroken level with a horizontally surrounding portion of the wheel face outer surface. Lacks counters by arguing that "substantially flush" as used here means to closely abut and conform to the underlying wheel face outer surface. Both proposed constructions can fit within the plain meaning of the disputed phrase; according to Webster's, "flush" can mean "having or forming a continuous plane or unbroken surface" or "directly abutting on or immediately adjacent to."

--- Footnotes ---

8 This is, in fact, defendants' only construction argument for this claim language.

--- End Footnotes ---

From my preceding interpretations, I have determined that a person of ordinary skill would understand that the wheel face outer surface and the axial peripheral lip are separate but bordering surfaces; that the cladding panel, which covers the entire wheel face outer surface, abuts the axial peripheral lip and thus leaves no exposed wheel face outer surface between it and the lip; and that the decorative layer on top of the panel runs into the axial peripheral lip in such a way as to readily blend. Given these explicit and implicit limitations, I find Lacks' construction of "substantially flush with adjacent portions" to be the meaning an individual of ordinary skill in the art would choose after reading claim 1.

The specification favors this conclusion. In discussing the prior art, it observes that an overlay is needed that "would be capable of closely conforming to the contours of the entire wheel surface." '809 patent, col. 6, lines 3-5 (emphasis added). Accordingly, the specification states that an objective of the '809 patent is "to provide an ornamental overlay for a cast aluminum wheel in which the overlay closely conforms to the contours of the wheel." '809 patent, col. 6, 6-9. Figures 3 and 5 of the preferred embodiments are the clearest statement in the specification of what is actually meant by "substantially flush with adjacent portions." These figures show panels that cover the entire wheel face outer surface and closely abut, or conform to, the styling features of that underlying surface. These figures also show that no wheel face outer surface is left uncovered; the panel and its decorative layer necessarily border the inner shoulder of the axial peripheral lip in order to comply with the "entire wheel face outer surface" and "readily blends" limitations.

I conclude therefore that a person of ordinary skill in the art of cladded wheels, after reading claim 1 and the specification, would understand the phrase "substantially flush with adjacent portions" to mean that the cladding closely abuts or conforms to the underlying contours of the entire wheel face outer surface. Neither party has suggested that the prosecution history might alter this conclusion. Because the intrinsic evidence on "substantially flush with adjacent portions" is adequate for purposes of claim construction, I find it unnecessary to consider extrinsic evidence on the meaning of the phrase (once again, with the exception of Webster's). See id.

3903

Substantially free

Baker Hughes offers the construction "nearly all." ReedHycalog proposes "substantially devoid of catalyzing material, except that many, if not all, the surfaces of the adjacent diamond crystals may still have a coating of catalyzing material." At the hearing, ReedHycalog argued that its construction would "clarify for the jury they are not looking necessarily for something that is essentially clean; but that, in fact, many, if not all—as the phrase says—of the diamond crystals could, in fact, still have a coating on them." Hearing Transcript, 95:23-96:1. The parties then agreed that "substantially free" means "many, if not all." However, replacing "substantially free" in the claim language with "many, if not all" does make sense. Therefore, since the parties agreed during the hearing that the area that is substantially free of the catalyzing material may
still contain some catalyzing material, the Court construes "substantially free" to mean "free of most, but not all, of the catalyzing material."

6. "Density Substantially Greater Than"

a. Construction

This limitation must be construed according to its ordinary meaning. Hallmark contends that because the '496 patent claim requires the compression of three layers of paperboard into a thickness less than the bottom wall, the density must be three times as great in the densified regions. This argument is based on an unstated and unfounded assumption about pleat structure: that the three layers in the unpressed pleat have no gaps or spaces between them. This assumption is probably false in the absence of any evidence that the layers are packed together as closely as possible.

By contrast, James River cites the '500 patent's specification, which states that "since the folded-over areas (pleats) contain substantially more solid fibrous material than the rest of the paperboard; perhaps 40 to 100% more, the density of the folded areas is substantially greater than the remainder of the paperboard." PX-1, col. 12, lines 51-56. Photomicrographs of the pleats show that these regions are substantially free of voids or disruptions. PX-1, col 5, l. 67. Thus, the author has acted as his own lexicographer and provided a definition of this limitation. The density of the pleats must be 40 to 100% greater than the rest of the paperboard.

3905

Side Wall "Extending Substantially Higher" in Element 2

Also in dispute between the litigants is the phrase "extending substantially higher than said front, rear and second side walls to define a protective barrier." M. Mem. 13 states that "substantially higher" plainly means what it says, so its ordinary meaning should apply. But W. Mem. 9 seeks to include the wall's functional purpose--defining a protective barrier--as part of that definition. Under that view, a high wall that did not act as a protective barrier would not conform to element 2.

That position is persuasive, because the functional purpose plainly set forth in the quoted phrase cannot fairly be separated from the structure itself. It would be entirely possible for a side wall to be structurally similar to but functionally different from a wall described in that phrase. Because the claim language expressly states the purpose of the side wall is to act as a protective barrier, a side wall that is "substantially higher" than the other walls but does not serve that function does not come within that element.

19 For example, the added height of a side wall could (1) provide some utility other than acting as a protective barrier or (2) be intended for purely aesthetic purposes.

W. Mem. 11 further argues that such a protective barrier requires "oversize, large or tall articles to directly engage the side wall so that they are prevented from leaning over to engage the side panel of the washing chamber." But nothing in the claim language requires such a further narrowing of the element's terms, and it is not implausible that a side wall can act as a protective barrier without being in direct contact with items in the washer.

In sum, while the term "substantially higher" is construed according to its plain meaning, the higher wall must act as a protective barrier. Whether the side wall of Whirlpool's accused device does in fact act as a protective barrier is a factual question for trial. 20
20 While M. R. Mem. 7-8 wants to debate whether the side wall attachment in Whirlpool's washer acts as a protective barrier, this Court declines to depart from the Markman role of construing the patent's claims by engaging, in essence, in a factual determination of whether the accused device functions in that fashion.

7. "Substantially Homogenous Paperboard Blank"

a. Construction

Hallmark's position is that the limitation means "a paperboard blank that has a uniform composition throughout (i.e. no constituent layers) except for a possible clay coating on one side." It relies on the .499 specification's use of the term "substantially homogenous" in reference to the reformed pleats' fibrous structures. PX-10. Amendment, August 5, 1987, at 6. However, this refers not to the makeup of the paperboard blank, but to the reformation of the pleat layers into a "substantially homogeneous fibrous structure."

James River's position is that the limitation means "a blank that has not had additional layers of paperboard or other non-uniformly dispersed reinforcing material added to its periphery for purpose of increasing the strength of the resulting plate." To support this position, it refers to the '496 specification, which states that 'the blank is a unitary, flat piece of paperboard stock conventionally produced by a wet laid papermaking process...." PX-3. col. 5. lines 56-58. Both the specification and Dr. Page's affidavit indicate the paperboard has a basis weight of 100-400 pounds per ream. PX-003 at 5, lines 60-66; Page Aff. P 11. In addition, the thickness should be about 0.008 inch to 0.050 inch. PX-003 at 5, lines 62-63. More importantly, the specification states what would make the blank non-homogenous. In distinguishing the prior art, the specification discloses that earlier processes strengthened the plate by adding layers of paperboard around the blank's edge. PX-3. at 2, lines 30-31.

Finally, James River contends that the specification makes clear that cosmetic layers may be present in the blank. These are added for reasons other than adding strength. Specifically, the specification provides that liquid proof coating or ink may be added. PX-3. col. 6, lines 13-24. Hallmark contends that the laminated paperboard's additional layers are not entirely cosmetic, but that they add strength.

The specification reveals that the meaning of the claim limitation: in addition to having the basis weight and thickness outlined in the specification, the blank must have not had additional layers of paperboard or other non-uniformly dispersed reinforcing material added to its periphery for the purpose of increasing the plate's strength. This allows for less than perfect homogeneity or uniformity in the paperboard blank. It also makes clear that the invention's achievement of adding strength is due to the process used, not to the materials in the blank. In addition, it allows the patent-holder protection of its invention against those who would make minor, cosmetic changes to the paperboard yet gain the benefit of using the invention.

In this case, the claim limitations at issue in Claim 10 consist of an exercise and play apparatus comprising:

(1) "an inflatable, substantially horizontally oriented bottom wall having an upper surface, a lower surface and a perimeter";

(2) the upper and lower surfaces [of the bottom wall] being spaced apart throughout the bottom wall by a distance sufficient to generate a trampoline effect based on air pressure between the upper and lower surfaces";
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

(3) "an inflatable, substantially vertically oriented sidewall extending upwardly from and continuously along the upper surface of the bottom wall";

(4) "said sidewall defining a continuous perimeter of an enclosed, upwardly open central play area on said bottom wall around said play area"; and

(5) "[said sidewall] extending upwardly from said bottom wall to provide a cushioned perimeter wall around said play area, the sidewall having a height and thickness selected to retain, as well as cushion the impact of users jumping on the upper surface of the bottom wall."

[Second] Decl. of David N. Makous, Exh. E at 63-64.

The Court has already determined that the term "substantially horizontally oriented" is something that "lies relatively flat." September 19, 1997 Order at 18. The Court has also determined that the phrase "upwardly open central play area" is properly interpreted to define the area where "one or more users can . . . enter the play area and jump, bounce, or crawl on the bottom wall." September 19, 1997 Order at 18. The Court has further noted that the perimeter of the play area in the '738 patent is explicitly defined by the sidewall, which "extend[s] upwardly from the outermost bottom wall compartment or section 20." September 19, 1997 Order at 19. Finally, the Court has held that the bottom wall and the sidewall of the '738 patent cooperate to define the play area. September 19, 1997 Order at 19.

3908

16. Substantially identical size distribution

FieldTurf's Proposed Construction: "The sizes of the particles of hard and resilient granules in the intermixed bottom course having a range spanning a numerical difference of 40 screen mesh standard"

SCG's Proposed Construction: "An arrangement of particles such that the graphic line for hard particles and the graphic line for resilient particles are superimposed on each other on a conventional soil laboratory sieve analysis"

SCG's Proposed Construction of "Size distribution": "Frequency of occurrence of particles having a given physical magnitude"

The Court's Claim Construction: "80% by weight of hard and resilient granules in the bottom course distributed in a range spanning a numerical difference of no more than 40 screen mesh standard."

The only appearance of "substantially identical size distribution" in the claims of the patents-in-suit is in the'752 patent. Claim 1 of the '752 patent includes the following claim language related to the bottom course: "a bottom course of intermixed hard and resilient granules of substantially identical size distribution, disposed upon the top surface of the backing . . . ." FieldTurf first claims that "substantially identical size distribution" should be submitted to the jury without further explanation because it can be understood according to its ordinary meaning. As an alternative, it states that it would find "the sizes of the particles of hard and resilient granules in the intermixed bottom course having a range spanning a numerical difference of 40 screen mesh standard" to be acceptable.

SCG responds by seeking separate definitions for "size distribution" and "substantially identical size distribution." It points to a portion of the specification that generally discusses the "size distribution" as supporting its definition of "frequency of occurrence of particles having a given physical magnitude." '752 patent, 6:9-19. SCG also defines the full phrase "substantially identical size distribution" as "[a]n arrangement of particles such that the graphic line for hard particles and the graphic line for resilient particles are superimposed on each other on a conventional soil laboratory sieve analysis." '752 patent, 6:13-23.

As a first point, the Court finds it appropriate to define "substantially identical size distribution" and to do so for the whole claim term. As the Court noted earlier, a patentee may be his own lexicographer. Here the specification states the following:
By "substantially identical" size distribution it is meant that when the bottom infill layer is analysed through conventional soil laboratory sieve analysis, and graphically presented on a standard sieve analysis semi-logarithmic graph (y-axis showing 0-100 percent passing the sieve size or smaller by weight and x-axis showing sieve/particle size logarithmically) the line for hard particles and the line for resilient particles are ideally superimposed on each other to a substantial extent. Therefore the hard and resilient particles have substantially equal particle sizes and the distribution of sizes is substantially the same.

'752 patent, 6:13-23. Shortly thereafter, the '752 specification states that:

Applying this practice to the invention, numerically or scientifically defined, where the particle sizes of 80% by weight of hard and resilient granules in the bottom course are distributed in a range spanning a numerical difference of 40 screen mesh standard, the particle size distribution is considered substantially identical or very well sorted.

'752 patent, 6:34-39.

Considering the specification as a whole, the Court finds that the proper construction of "substantially identical size distribution" is "80% by weight of hard and resilient granules in the bottom course distributed in a range spanning a numerical difference of no more than 40 screen mesh standard." The Court prefers this over a construction based on comparison of the "graphic lines" of the particles because it provides certainty. It is difficult to objectively ascertain whether lines are "ideally superimposed" and thus, as the specification acknowledges, such a measurement is "by nature an imprecise 'rough and ready' measure . . . ." '752 patent, 6:24-25. This is the reason why the 80% by weight, 40 screen mesh standard is proposed in the specification. '752 patent, 6:24-33. Finally, the Court's definition clarifies that the 40 screen mesh standard is a maximum, as is clear from the specification language that lower screen mesh distributions such as 20 are preferred. '752 patent, 6:40-52.

2. Construction of Additional Term

Defendant notes that the term "substantially identically shaped" was not addressed in the court's March 30, 2006, Order, and requests the court construe the term. (Def.'s Mot. for Summ. J. of Noninfringement 11.) Defendant argues that this term should mean that the teeth are "approximately identical in characteristics such as size and shape." (Id. 12.)

Most of the time, as here, the words or terms which the parties ask the court to construe are the best words or terms that could have been chosen. However, to say that "substantially" means "substantially" undoubtedly would not pass appellant scrutiny. The use of the term "substantially" suggests that the objects in question are "approximately" or "almost" identically shaped. See Anchor Wall Sys. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1311-12 (Fed. Cir. 2003) (noting that "words of approximation, such as 'generally' and 'substantially,' are descriptive terms commonly used in patent claims to avoid a strict numerical boundary to the specified parameter" (internal quotations omitted; citations omitted)).

Defendant argues that the ordinary meaning of the word "identical" means "being exactly equal and alike." (Def.'s Mot. for Summ. J. of Noninfringement 11-12.) Construing this with the ordinary meaning of shape, defendant argues that the phrase requires uniformity of size and shape. (Id. 12.) That construction would substantially (i.e. just about or almost) read the word "substantially" out of the description. Even accepting defendant's definition of shape--having or fashioned to a particular form--the court cannot accept defendant's construction of this phrase. The definition of shape makes no reference to size. Instead the court will construe "substantially identically shaped" to mean "having a particular form that is approximately exactly alike." A high degree of similarity in shape, but not mathematical exactness, is required. Liquid Dynamics Corp. v. Vaughan Co., 355 F.3d 1361, 1368 (Fed. Cir. 2004) ("The term 'substantial' is a meaningful modifier implying 'approximate,' rather than 'perfect.").
Claim Construction

For purposes of this motion for summary judgment, Vector has conceded that its scale has all of the elements of the patent claims with the exception of the element of the sliding weight "when in its zero position having a portion thereof disposed substantially in an imaginary plane containing the fulcrum of the beam." For convenience, the court will refer to this element as the "zero position" element.

The principal objective of this patent is "to provide a lightweight, miniaturized, portable scale which can easily and comfortably be transported in a person's shirt or coat pocket." 428 Patent at 2:32-35. Thus, the goals are to reduce the size and weight of the scale and to be able to manufacture the scale easily and inexpensively. The scale is composed of a carrying case and a weighing mechanism that comprises a balance beam mounted for pivotal movement on a fulcrum provided by a pair of fulcrum posts. In order to weigh amounts up to the desired capacity, the scale must either have a long balance beam or use a heavy coarse sliding weight, which would increase both the size and the weight of the scale. Id. at 1:57-61. In the patent, the length of the balance mechanism of the scale is kept to a minimum by using a sliding weight that has a metallic insert to add to its mass, which allows the scale portion to be shortened but still have the higher weighing capacity. Id. at 1:43-48. The specification explains that in order to hold down the mass of the scale, the sliding weight is constructed in such a manner that the metallic insert therein rests essentially in the plane of the fulcrum for the balance beam when the sliding weight is in its zero position. In this position the metallic insert is essentially neutral so far as the balance of the mechanism is concerned." Id. at 1:51-56. In the best mode section, the specification further explains, referring to the drawings,

the coarse weight 35 is constructed in such a manner that the heavy metallic insert therein is offset from the pointer 37 of the weight in the direction of the fulcrum 19 for the balance beam 18. Indeed, the metallic insert 44 is offset to an extent that when the coarse sliding weight 35 is in its zero position, adjacent the cross-bar portion 27 of balance beam 18, the metallic insert is disposed substantially in the plane of fulcrum 19, i.e., the imaginary vertical plane containing the center lines of fulcrum posts 21 and 22. With the center of insert 44 alligned [sic] precisely in the plane of fulcrum 19 the insert becomes essentially neutral so far as balance of the balance beam 18 and the holder 28 are concerned when the weight 35 is in its zero position and the holder 28 is empty.

Id. at 5:12-27. When the coarse weight is moved away from the zero position and "moved away from the plane of [the] fulcrum" the full mass of the metallic insert can be used to offset and measure the weight of substances. Id. at 5:31. Thus, Claims 1 and 4 specifically define this feature of the invention: "said sliding weight when in its zero position having a portion thereof disposed in an imaginary plane containing the fulcrum of the beam, whereby to minimize the weight of the substance holder required to balance the beam when the sliding weight is in its zero position." Id. at 6:25-30, 57-62.

Vector argues that its scale does not literally infringe Claims 1, 2, 4, and 5 of the 428 Patent because it does not have a sliding weight that, when in the zero position, is in the imaginary plane of the fulcrum. Vector argues that the court should construe the claim limitation "substantially in the plane of the fulcrum" to mean that a substantial portion of the weight has penetrated and rests in the imaginary plane. Vector argues that no portion whatsoever of the sliding weight in its scale extends into the plane of the fulcrum or even any plane containing any part of the fulcrum post, and, in fact, it is physically impossible for the sliding weight of the vector scale to enter the imaginary plane of the fulcrum.

Deering, of course, argues for a broader construction of this element. Deering argues that Vector's claim interpretation reads out the term "substantially" from the claim language. Deering proposes that the court construe the claim language, "disposed substantially in the plane of the fulcrum," as meaning that the weight is either at or "close to" the plane of the fulcrum so as to minimize the weight of the beam. (Deering's Mem., at 6.) Under Deering's proposed construction, the weight need not enter the imaginary plane but need only be close to the plane. Thus, Deering argues that the weight in Vector's scale, which its expert asserts is only 1/10 inch away from the fulcrum, is "substantially in the plane of the fulcrum."

After reviewing the intrinsic evidence, the court finds that Vector's claim construction is correct and supported by the claim language and the specification. The claims require that the weight be "disposed substantially in an imaginary plane
containing the fulcrum." (Emphasis added.) The patent covers a scale where the weight is "substantially in" the plane, not a weight that is outside but close to the plane. In common usage, "substantially" means significantly or considerably. In the claims at issue, the word "substantially" describes how the weight is "disposed" in the "imaginary plane." The specification sheds further light on the proper construction when, in reference to the relationship between the weight and the imaginary plane, it states that the metallic insert "rests essentially in the plane of the fulcrum for the balance beam." Id. at 1:51-56. When describing the best mode for carrying out the invention, the specification states that "with the center of insert 44 aligned [sic] precisely in the plane of fulcrum the insert becomes essentially neutral." Id. at 5:22-24. While this describes the best mode for carrying out the invention, it indicates that the intent is to have the weight "in" the "imaginary plane," and in the best mode it would be "precisely in the plane." Thus, the court construes the element requiring the sliding weight to be "disposed substantially in an imaginary plane containing the fulcrum" to mean that the weight must enter and penetrate the imaginary plane containing the fulcrum of the beam.

In the present appeal, Deering contests the district court's construction of the Zero Position Limitation: "said sliding weight when in its zero position having a portion thereof disposed substantially in an imaginary plane containing the fulcrum of the beam." The Zero Position Limitation is present in every claim at issue in this action. In particular, Deering objects to the construction of the terms "substantially in an imaginary plane." It specifically contends that the term "substantially" means "at or near."

This court is asked, once again, to construe the meaning of the term "substantially" in a patent claim. See, e.g., Epcon Gas Sys., Inc. v. Bauer Compressors, Inc., 279 F.3d 1022 (Fed. Cir. 2002) (construing the terms "substantially constant" and "substantially below"); Zodiac Pool Care, Inc. v. Hoffinger Indus., Inc., 206 F.3d 1408 (Fed. Cir. 2000) (construing the term "substantially inward"); York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568 (Fed. Cir. 1996) (construing the term "substantially the entire height thereof"); Tex. Instruments Inc. v. Cypress Semiconductor Corp., 90 F.3d 1558 (Fed. Cir. 1996) (construing the term "substantially in the common plane"). In conducting this analysis, we begin with the ordinary meaning of the claim terms to one of ordinary skill in the art. Prima Tek, 318 F.3d at 1148. Reference to dictionaries and our cases indicates that the term "substantially" has numerous ordinary meanings. As the district court stated, "substantially" can mean "significantly" or "considerably." The term "substantially" can also mean "largely" or "essentially." Webster's New 20th Century Dictionary 1817 (1983). Indeed, our cases recognize the dual ordinary meaning of this term as connoting a term of approximation or a term of magnitude. See Epcon, 279 F.3d at 1031 ("The phrase 'substantially constant' denotes language of approximation, while the phrase 'substantially below' signifies language of magnitude, i.e., not insubstantial.").

Since the term "substantially" is capable of multiple interpretations, we turn to the intrinsic evidence to determine which interpretation should be adopted. Ecolab, 264 F.3d at 1366; Gart, 254 F.3d at 1339-40.

As is often the case, the written description does not explicitly identify the meaning of the term "substantially." The specification does, however, provide the public with a significant explanation of the criticality of the location of the sliding weight in conjunction with the plane created by the fulcrum so as to support a finding that the term "substantially" is a term of magnitude as opposed to approximation. First, the stated object of the '428 patent is to provide a lightweight, portable scale. The written description plainly states:

To hold down on the mass of the substance holder portion of the mechanism required to achieve equilibrium of the mechanism the sliding weight is constructed in such a manner that the metallic insert therein rests essentially in the plane of the fulcrum for the balance beam when the sliding weight is in its zero position.

1428 patent, col. 1, ll. 48-54 (emphasis added). Figure 5, supra, shows an example of the position of the sliding weight that meets the limitation. In Figure 5, the metal insert of the sliding weight is precisely in the plane, as the written description states:

With the center of insert 44 aligned precisely in the plane of fulcrum 19 the insert becomes essentially neutral so far as balance of the balance beam 18 and the holder 28 are concerned when the weight 35 is in its zero position and the holder 28 is empty. This greatly minimizes the amount of mass that must be incorporated into the holder 28 portion of the weighing
mechanism 17.

Id. at col. 5, ll. 12-29 (emphasis added). The placement of a portion of the weight in the plane of the fulcrum is the stated structural orientation that provides the benefits of minimization of weight and portability. The preferred embodiment places the center of the insert--clearly the major contributor to the total mass of the weight--precisely in the plane. We, however, do not generally limit claims to the preferred embodiment. Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998). This is particularly significant because the claim language does not contain the explicit requirement that the metal insert of the weight be "essentially in the plane" containing the fulcrum.

It is proper, however, to construe the term "substantially in the plane" in light of the specification. Apex Inc. v. Raritan Computer, Inc., 325 F.3d 1364, 1373 (Fed. Cir. 2003) ("Claims are interpreted in light of the specification and with the knowledge of one of ordinary skill in the art."); Vitronics, 90 F.3d at 1582. The written description, as a whole, clearly requires that a portion of the metal insert of the weight penetrate the imaginary plane containing the fulcrum of the beam to minimize the weight of the scale and facilitate portability. There is no disclosure suggesting that a portion of the weight need only be located at or near the plane as Deering suggests. For this reason, we agree in part with the district court's construction of the Zero Position Limitation as requiring at least a portion of the weight to intersect the plane containing the fulcrum. We agree with the district court's claim construction only in part because the district court's construction effectively reads the term "substantially" out of the claims by construing the claim to read on any slight penetration of the plane. This error, however, is harmless because, as discussed above, the term "substantially" is a term of magnitude requiring a "not insubstantial" portion of the weight to intersect the plane containing the fulcrum. Wepon, 279 F.3d at 1031. Because this construction is actually narrower than the district court's construction, it does not affect the district court's ultimate finding of noninfringement with respect to the VX-10. Accordingly, in light of the ordinary meaning of the term "substantially" and in view of the written description, we construe the Zero Position Limitation as requiring a not insubstantial portion of the weight to intersect the plane containing the fulcrum.

On appeal, Deering argues that the term "substantially in" means "at or near the imaginary plane." Deering argues that any other interpretation reads the term "substantially," one of approximation, out of the claim. As discussed above, the term "substantially" in this context is used as a term of magnitude, describing the extent of the portion of the weight in the plane defined by the fulcrum, not as a term of approximation.

9. What is the Proper Construction for the Phrase "substantially incapable of fibrillation under normal conditions" in the '722 Patent?

Claim 1 of the '722 patent contains the phrase "said binder particles being substantially incapable of fibrillation under normal conditions into microfibers of less than 10 micrometers diameter at room temperature. . . ." KXI contends this phrase means that prior to any type of processing, the binder particles are substantially incapable of forming fibers of less than 10 micrometers diameter by shear and pulling alone without heating or substantial compression. Culligan contends this phrase means that the binder particles are substantially incapable of forming fibers of less than 10 micrometers when mechanically worked at room temperature. According to KXI, "the only real area of dispute between the parties is the requirement that the test for fibrillation occur prior to any processing of the binder, i.e., prior to any heating or substantial compression."

KXI argues that the '722 patent's specification only mentions fibrillation of binder particles when it discusses prior art processes utilizing a polytetrafluoroethylene ("PTFE") binder. This is at column 3, lines 53-55, which reads: "PTFE is unique in that it fibrillates without heating or applying substantial compression but by shear and mixing." KXI contends this sentence from the specification defines the phrase "normal condition" to mean applying shear and pulling alone without heating or substantial compression prior to processing.

In support of its "mechanically worked" definition, Culligan cites column 3, lines 58-61 of the '722 patent specification. This section reads: "the foregoing process using PTFE is complex and time consuming and involves the evolution of fine fibers by mechanically working and shearing a mixture of PTFE and particles."
According to Culligan, the '722 patent's specification is silent as to the meaning of the phrase "substantially incapable of fibrillation." Culligan asserts that the prosecution history of the Australian counterpart to the '722 patent states that this language "was employed to exclude PTFE." The patentee apparently argued in prosecuting the Australian patent, "this is because the PTFE fibrillates by shear and pulling alone at room temperature, i.e., without the necessity for heating or applying substantial compression."

Culligan argues KXI's definition is incorrect because KXI appears to contend that no compression at all may be applied during the test to determine fibrillation, as opposed to no "substantial compression." Also, Culligan objects to the phrase "prior to processing" if it means something other than "prior to processing the binder in accordance with the method disclosed in the '722 patents. . . ."

KXI argues the court need not decide which party is correct because, as a matter of law, this claim limitation must include the crystalline thermoplastic polymers, including polyolefin, listed in claim 33 of the '722 patent. Claim 33 depends from claim 1. It reads: "the composition of claim 1 wherein the binder material forming the matrix is a crystalline thermoplastic polymer selected from the group consisting of . . . polyolefins. . . ." KXI argues that, as a matter of law, the independent claim must be interpreted broadly enough to include the dependent claim, citing Wright Medical Tech., Inc. v. Osteonics Corp., 122 F.3d 1440, 1445 (Fed. Cir. 1997) ("We must not interpret an independent claim in a way that is inconsistent with a claim which depends from it."). KXI contends that, as a matter of claim interpretation, polyolefin is "substantially incapable of fibrillation under normal conditions into microfibers of less than 10 micrometers diameter at room temperature" as that phrase is used in claim 1 of the '722 patent.

Culligan argues that KXI has inverted the law of claim interpretation concerning dependent claims. Instead of reading the dependent claim (claim 33) as a further limitation on the independent claim (claim 1), KXI reads the independent claim as a limitation on the dependent claim. Instead, KXI argues dependent claim 33 must meet the conditions of independent claim 1.

Without further evidence, the court declines to construe claim 33 to mean that polyolefin is "substantially incapable of fibrillation under normal conditions into microfibers of less than 10 micrometers diameter at room temperature" as that phrase is used in claim 1 of the '722 patent. The court declines to add a "prior to processing" requirement to claim 1, as the court finds this is not supported by the evidence. Otherwise, the court agrees with KXI that the phrase "said binder particles being substantially incapable of fibrillation under normal conditions into microfibers of less than 10 micrometers diameter at room temperature. . . ." means that the binder particles are substantially incapable of forming fibers of less than 10 micrometers diameter by shear and pulling alone without heating or substantial compression.
intersecting lines. According to Euclid, even a 90 degree corner is an incline. However, the "[Euclid] concept is . . . broader than our modern concept of angle." Supp. Shen Dec. Ex. O. Most importantly, the patentee did not define "substantially inclined" anywhere in the specification or in the patent claims themselves. So, while the patentee can act as his own lexicographer, Mardikian did not do so. For that reason, the Court adopts the ordinary meaning of the term "substantially inclined" rather than the ancient understanding from Euclid.

Next, the Court interprets the prosecution history, as it may serve to limit a claim and exclude any interpretation of language in a claim that was surrendered during prosecution. See Spectrum Int'l, 164 F.3d at 1378 (finding that "explicit statements made by a patent applicant during prosecution to distinguish a claimed invention over prior art may serve to narrow the scope of a claim"). In fact, the prosecution history confirms that Plaintiff intended the meaning of "substantially inclined" to exclude vertical shock absorbers. During the patent prosecution, after his claims had been rejected, Mardikian told the Patent Examiner that his "substantially inclined" shock absorbers are "markedly different" than the shock absorbers in the prior art, all of which were in vertical or substantially vertical positions. Specifically, Plaintiff stated that: "the present wording of the claims [substantially inclined] structurally distinguishes from the cited references [Frank, Hill and Wann] . . . All of these features are markedly different from the spring mounted seats of the prior art record." Antonsson Dec; Shen Dec Ex H, 6/17/93 Amend. at 7-8 (emphasis added). Plaintiff distinguished himself from the prior art, which had vertical shock absorbers, and cannot now include geometric positions that he surrendered. Thus, the Court interprets the meaning of "substantially inclined" in independent claims one, six and nine as the dictionary defines it and such that vertical or substantially vertical angles are not "substantially inclined."

The next issue of claim construction for the Court is where the shock absorbing means is substantially inclined from; in other words, what is the point of reference from which to measure the angle with a protractor. Defendant Bombardier argues that the point of reference is the hull line of the jet ski. According to Claude Gagnon, the Project Manager of Advanced Concept for the Ski-Doo Division, the hull line is the customary reference frame for geometric positioning of various components in the field of personal watercraft or boat design. See Supp. Shen Dec Ex M, Gagnon Dep. Indeed, Plaintiff's former counsel, in pre-suit correspondence, stated that "the term 'substantially inclined longitudinal axis' is that the shock absorber is substantially inclined relative to the longitudinal axis of the hull or the hull line." Supp. Shen Dec, Ex N.

Plaintiff argues that the point of reference is either the horizon or a plane through the seat of the jet ski. Under the horizon as the reference point theory, the shock absorber, which Plaintiff admits would be vertical to the horizon when the jet ski is motionless, becomes inclined when the jet ski pitches forward and backward while in use. The Court rejects this argument, as analysis of what is infringing cannot fluctuate depending on whether the allegedly infringing product is in use or not. Under this theory, and under the Court's construction of "substantially inclined," infringement would be a random occurrence. The horizon as a reference point theory is rejected by this Court because it conflicts with the general purpose of patents, which is to set out the specific metes and bounds of an invention so that other inventors can avoid infringement. See Athletic Alternatives, Inc. v. Prince Mfg. Inc., 73 F.3d 1573, 1581 (Fed. Cir. 1996). Plaintiff's other suggested reference point, an arbitrary plane through the seat of the jet ski, is also rejected by the Court. Plaintiff argues that a plane through the seat of Defendant's HX and XP watercraft forms an 80 to 90 degree angle with the shock absorber. Although even under Plaintiff's plane through the seat theory Defendant's products are still not "substantially inclined," as this Court interprets the terms to exclude vertical or nearly vertical angles such as 80 to 90 degrees, the Court still rejects both of Plaintiff's theories regarding the reference point. The Court agrees with Defendant and adopts the hull line as the reference point because the evidence shows that this is the customary reference point. 1

1 The Court does not address Plaintiff's arguments regarding the alleged requirement that the shock absorber must be substantially aligned with the direction of movement of the seat because this alleged requirement is not part of the claims and therefore not relevant to claim construction. See Comark, 156 F.3d at 1186-87 (finding that limitations that appear only in the specifications and not in the claims themselves, may not be read as limitations of the claim).
2. "Substantially Integrated Fibrous Structures Generally Inseparable Into Their Constituent Layers"

a. Construction

The parties strongly dispute this key claim limitation. Though the wording among the four patents varies as to this limitation, the parties agree that they should be similarly construed.

James River's position is that this limitation must focus on the elimination of voids or disruptions between the layers of the pleat after compression. According to this view, the substantially integrated fibrous structures are compressed pleats in which tightly compacted fibers are compressed and bonded together substantially without voids or disruptions therein. PX-9, Amendment and Response, 12/16/83, at 4. Moreover, James River argues that Hallmark's error is in importing the description of the preferred embodiment of the invention into the construction of the claim. This would require the elimination of virtually all voids and disruptions so as to obliterate the distinctions between the layers.

Hallmark's position is that this limitation means that "almost all, if not all, of the fibers of the three thicknesses of paperboard that form the pleat, have been broken down and reformed from their original structure to a homogeneous new structure such as those shown in Figures 9 and 10 of the patent." In addition, "any voids or disruptions in the rim area are compressed out and new bonds are formed between the tightly compacted fibers." Furthermore, "once the required three layers of paperboard are reformed, they are inseparable back into the three layers of paperboard" so that the "identity of the three layers of paperboard used to make the pleats must have been eliminated or obliterated." Hallmark bases its position on the changes the applicants made in their claim during the course of the prosecution while narrowing the claims to overcome the PTO's prior art rejections.

In view of the claim language and the prosecution history, the meaning of the claim limitation is clear. As observable in specifications' photomicrographs, the layers must be compressed so as to substantially eliminate the voids and gaps that are present in prior art plates. The specification and the prosecution history teach the proper comparisons to use in determining whether the voids and disruptions have been adequately reduced. The two proper comparisons are between the prior art plates' pleats and those in the invention's plates, and between the center and the pleats of the invention plates. 1 '140 patent at 11-12, lines 31-43; PX-9 at 62-63, Amendment and Response of December 16, 1983 at 3. A small portion of the densified regions may not be entirely reformed in this way, but the substantial portion of the pleat has been reformed. PX-6 at 71.

--- Footnotes ---

1 It is also true that the specification and the prosecution history teach that the density of the compressed pleats is higher than that of the bottom of the plates as shown in Fig. 8 of the '140 patent. However, density is not a part of this claim limitation. Moreover, while the existence of gaps and voids would affect a region's density, it might be counteracted by the existence of areas of extremely compacted fibers. Thus, density is considered only as a part of claim limitation 6, below.

--- End Footnotes ---

However, the layers cannot be simply compressed; they must be reformed, as shown by the loss of individual identity. This loss of the layers' individual identity occurs because the former layers are bonded together at the fiber level. Thus, the loss of layer identity is manifested by the pleats being "generally inseparable into their constituent layers." This key aspect was added just before the allowance of claims in both the '140 and '496 patents. PX-7, Preliminary Amendment at 1; PX-6, Amendment at 10-11. The prior art's pleat structures constituted "areas of weakness because of the ease with which they could separate into their constituent layers permitting the container to flatten to its previous planar state." PX-6, Amendment at 10. Moreover, the phrase "in which the constituent layers generally lack individual identity" was added to the '499 and '500 claims just before their allowance. PX-10 at 72-74; PX-11 at 65-66. This is consistent with the applicant's remark in the prosecution history of the '496 patent that the "fibrous structures of the densified regions no longer retain the individual identity of the layers which constitute the structures." Thus, if force is applied to the pleats, the pleats should not unfold. If they unfold, the pleats would by definition be composed of layers that retain an aspect of their individual identity.

The plain language of the claim is not inconsistent with the definition suggested by the prosecution history. Loss of individual identity at the level of individual layers and fibers is manifested as a tendency not to separate into constituent layers. For this reason, methods other than photomicrographs may be useful in determining whether the densified regions
are generally inseparable into constituent layers.

As to the meaning of "substantially integrated." Hallmark contends that "the term 'substantially' is an imprecise word of degree that renders the claim invalid under 35 U.S.C. § 112 (indefinite) unless the specification provides some standard for specifically defining that term." Seattle Box Co. v. Indus. Crating & Packing, Inc., 731 F.2d 818, 826 (Fed. Cir. 1984). An imprecise claim limitation does not impart invalidity to the claims but rather must be considered in determining infringement. Andrew Corp. v. Gabriel Electronics, Inc., 847 F.2d 819, 822 (Fed. Cir. 1988) (citing W.L. Gore & Associates, Inc. v. Garlock, Inc., 842 F.2d 1275, 1280 (Fed. Cir.), cert. denied. 488 U.S. 927, 109 S. Ct. 312, 102 L. Ed. 2d 330 (1988)). The test is that "if the claims, read in the light of the specification, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the courts can demand no more." Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 624 (Fed. Cir.) (cites omitted), cert. dismissed, 474 U.S. 976, 106 S. Ct. 340, 88 L. Ed. 2d 326 (1985).

The fact that the specification teaches the comparison of prior art and invention photomicrographs of the rim pleats gives sufficient definition to the term "substantially." One skilled in the art could recognize the difference between prior art pleats and the invention plate's pleats. It is permissible for there to be a range between the prior art and the preferred embodiment that is still included in the claim. In this context, "substantially" allows for something short of absolute elimination of gaps and voids. It does require that comparison of photomicrographs reveal to one skilled in the art that the gaps and voids are distinctly reduced as compared to the prior art.

The district court's entry of judgment of non-infringement of the '068 patent. Therefore, this appeal is limited to the issues relating to the '382 patent. The '382 patent discloses a vacuum system for cleaning swimming pools. The pool cleaner system comprises four elements, as set forth in Claim 1 of the patent:

(a) a forwardly inclined body having a flow passage therethrough;
(b) an inlet foot having a water inlet, the inlet foot being attached to the body and connected to the flow passage and when in use, is proximate to a surface to be cleaned;
(c) a flexible disc surrounding the water inlet and rotably connected to the inlet foot, and having a peripheral edge; and
(d) a stop for preventing upward flexing of the peripheral edge beyond a predetermined amount located forward of the body and above and substantially inward of the peripheral edge.

A drawing of the system as claimed by the '382 patent is provided in the single figure of the patent, and is set forth below:

--- Footnotes ---
1 Although Zodiac's Enumeration of Errors includes the district court's rulings on the '068 patent, Zodiac represents in its Reply Brief that it no longer challenges these rulings in this appeal.

--- End Footnotes ---

As described in the '382 patent, pool cleaners of the type claimed move in a step-wise manner automatically and in random fashion over submerged surfaces to be cleaned. As the cleaner moves, it traverses from horizontal surfaces to vertical surfaces, as well as the reverse. Unfortunately, the cleaner often becomes unbalanced as it moves around the pool, leaving the cleaner oriented away from the surface and the cleaner inlet away from the target surface. This reduces the cleaner's effectiveness, unless one attaches a cumbersome weight to one side of the cleaner and a float to the other side. While the
weight and float solve the problem of orientation, they render the cleaner more burdensome to use. In addition, the disc of the typical cleaner resists and hinders the movement of the cleaner from horizontal to vertical surfaces and can cause damage to pools with vinyl sheet liners.

The invention of the '382 patent offers an alternative for keeping the cleaner properly oriented and the inlet close to the target surface. Instead of a weight and float, the invention uses an attached stop (13) for preventing the disc (6) from flexing upward as it moves across the surface. The stop is located upward and above the disc, and is attached to the body of the cleaner. Because the disc remains flat, the cleaner maintains a proper orientation. Properly oriented, the inlet remains close to the surface.


The district court granted Hoffinger's motion for summary judgment that it did not literally infringe either of the asserted patents. See Baracuda Int'l Corp. v. Hoffinger Indus., Inc., 4 F. Supp. 2d 1188, 1198 (N.D. Ga. 1998). The court also held as a matter of law that Hoffinger did not infringe the '068 patent under the DOE. Concomitantly, the district court granted Zodiac summary judgment on the issue of the validity of the '382 patent, and held that genuine issues of material fact precluded summary judgment on the issue of infringement of the '382 patent under the DOE. See id. The district court further held that fact issues precluded summary judgment on the issue of willfulness. See id.

Thereafter, the district court held a five-day jury trial on all outstanding issues. At issue were four claims of the '382 patent: independent claim 1 and dependent claims 2, 3 and 10. During the trial, Zodiac presented evidence that Hoffinger's accused devices included each of the four limitations of claim 1. In particular, the jury heard testimony from ten witnesses, received 55 exhibits and viewed a demonstration both live and on videotape of the Hoffinger devices in operation. The jury also heard testimony and reviewed other evidence on the specific issue of whether Hoffinger's weight arm was equivalent to the stop set forth in limitation (d).

Hoffinger effectively conceded that its accused devices included the first three limitations of independent claim 1. It vigorously denied, however, that its devices included the fourth limitation, (d): "a stop for preventing upward flexing of the peripheral edge [of the flexible disc] beyond a predetermined amount located forward of the body and above and substantially inward of the peripheral edge." Hoffinger produced evidence that its weight arm could not function as the stop in limitation (d), because its arm extended at least to the peripheral edge of the disk, and thus was not located "substantially inward" thereof. As a result, argued Hoffinger, its devices did not infringe the '382 patent at all. If anything, Hoffinger continued, its devices practiced the prior art disclosed in United States Patent No. 4,023,227 (the "'227 patent"), which is owned by Kreepy Krauly U.S.A., Inc. ("KK") and has since expired. Hoffinger also argued that its devices practiced aspects of other KK patents that it has licensed.

At the close of evidence, both parties moved for JMOL. Both motions were denied, and the court submitted the case to the jury. The jury found that Hoffinger not only infringed the '382 patent under the DOE, but did so willfully. It then awarded Zodiac damages in the amount of $1.976 million.

After the verdict, both parties renewed their motions for JMOL. Citing this court's decision in Sage Products, Inc. v. Devon Industries, Inc., 126 F.3d 1420, 44 U.S.P.Q.2D (BNA) 1103 (Fed. Cir. 1997), Hoffinger argued that the asserted claims included specific structural limitations, and "the doctrine of equivalents cannot be used to expand those claims to cover foreseeable alterations, such as Hoffinger's weight arm, that were not specifically claimed by the patentee." Zodiac responded that Hoffinger had waived its right to renew its JMOL motion on the issue of infringement because it did not expressly renew the motion with specificity during its argument after the close of evidence. Zodiac also asserted that Sage Products did not limit the jury's authority to find infringement under the DOE.

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The district court granted Hoffinger JMOL on the issue of infringement of the '382 patent under the DOE. The district court initially held that under Fed. R. Civ. P. 50, Hoffinger had preserved its right to renew its JMOL motion during its argument to the court after the close of evidence when it specifically addressed the issue of Zodiac's claim for lost profits. The court stated that it "understood the Defendant to be renewing its Rule 50 motion in its entirety, but only rearguing the point relating to the issue of lost profits." Moving to the merits of Hoffinger's motion, the district court noted our holding in Sage Products that "because [an] issued patent contains clear structural limitations, the public has a right to rely on those limits in conducting its business activities." Id. at 1424. 44 U.S.P.Q.2D (BNA) at 1108. The court then concluded that "the analysis in Sage Products casts grave doubt over the validity of the analysis and conclusion of this Court in its Summary Judgment Order." The district court further noted this court's decision in Ethicon Endo-Surgery, Inc. v. United States Surgical Corp., 149 F.3d 1309, 1321, 47 U.S.P.Q.2D (BNA) 1272, 1280 (Fed. Cir. 1998), in which we held that a "subtle difference in degree, not a clear substantial difference or difference in kind" precluded summary judgment on the issue of DOE. As a result, the district court found that it had erred in submitting the issue of DOE infringement to the jury.

The district court also conditionally granted a new trial on damages and a new trial on infringement in the event this court finds that Hoffinger had waived its right to seek JMOL. Exercising its discretion under Rule 50, the court found that "the award [amount] of damages is so large in light of the evidence of record that the verdict does 'shock the conscience of the court.'" The court specifically noted that the jury had erroneously awarded Zodiac lost profits in an amount equal to that of the three alternative lost profits calculations offered, as well the total of the three alternative prejudgment interest calculations and the total of the three alternative reasonable royalty calculations.

On the issue of attorney's fees, the court found that "the Plaintiff and its expert had a good faith argument that the structure of Defendant's cleaners infringed based upon their analysis of the water flow in the accused cleaners." Accordingly, the district court denied Hoffinger's request for a fee award.

Zodiac now appeals the district court's summary judgment on literal infringement of the '382 patent, the court's grant of JMOL on the issue of infringement of the '382 patent under the DOE and the court's conditional new trial rulings. Hoffinger cross-appeals the district court's refusal to award it attorney's fees as to the claims surrounding the '068 patent. This court has jurisdiction over the appeals under 28 U.S.C. § 1295(a) (1994).

II.

To establish whether an accused device infringes a patent, this court performs a two-step analysis. "First, the claims must be correctly construed to determine the scope of the claims. Second, the claims must be compared to the accused device." Kahn v. General Motors Corp., 135 F.3d 1472, 1476, 45 U.S.P.Q.2D (BNA) 1608, 1610 (Fed. Cir. 1998) (citations omitted). Claim construction is a question of law, which we perform without deference to the trial court. See Cybor Corp. v. FAS Techns., Inc., 138 F.3d 1448, 1454-56, 46 U.S.P.Q.2D (BNA) 1169, 1172-75 (Fed. Cir. 1998); Markman v. Westview Instruments, Inc., 52 F.3d 967, 979-81, 34 U.S.P.Q.2D (BNA) 1321, 1329-31 (Fed. Cir. 1995), aff'd 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). As for the second step, we must affirm a jury's determination that the accused device or process contains each limitation of the claim if that determination is supported by substantial evidence. See Seal-Flex, Inc. v. Athletic Track & Court Constr., 172 F.3d 836, 842, 50 U.S.P.Q.2D (BNA) 1225, 1228 (Fed. Cir. 1999).

We begin with the issue of claim construction. The meaning of the claims at issue in this case is largely undisputed. The parties agree that the claims include four separate limitations, and that the first three of these are included in Hoffinger's devices. What is disputed is the meaning of the fourth limitation, limitation (d), and whether this limitation reads on a corresponding element in either the "Cruiser" or the "Glider." As noted earlier, limitation (d) reads as follows: "a stop for preventing upward flexing of the peripheral edge beyond a predetermined amount located forward of the body and above and substantially inward of the peripheral edge." The parties disagree as to whether this limitation includes a stop that extends at least to the peripheral edge of the flexible disc, and perhaps beyond.

When construing the meaning of a claim, the court may consider both intrinsic and extrinsic evidence. Intrinsic evidence consists of the claim itself, the specification, and any prosecution history. Extrinsic evidence includes expert testimony, inventor testimony, dictionaries, treatises, and prior art not cited in the prosecution history. The court turns to extrinsic evidence only when the intrinsic evidence is insufficient to establish the clear meaning of the asserted claim. See generally Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-84, 39 U.S.P.Q.2D (BNA) 1573, 1576-78 (Fed. Cir. 1996).
Zodiac argues that when the district court construed limitation (d), it ignored the intrinsic evidence surrounding the patent. According to Zodiac, limitation (d) recites a stop that is sufficiently rigid to prevent the leading edge of a cleaner's disc from flexing upward. The stop may take the form of any mechanical structure capable of stopping the disc, and must be located on the front or leading side of the body. Most importantly, continues Zodiac, only some of the structure must be inside the peripheral edge of the disc in order to prevent the flexing of the disc. Thus, **Zodiac contends that the district court erred when it found that all of the structure must be "substantially inward of" the disc's periphery.**

We disagree. First, the language of the limitation itself provides for a "stop . . . located . . . substantially inward of the peripheral edge." It defies common usage to suggest that a stop which is "substantially inward" of an edge could at the same time extend at least to that same edge. Zodiac contends that as long a substantial portion of the stop is in fact inward of the edge, both conditions could be satisfied. This contention, however, ignores that the limitation recites a relationship between the edge and the stop, not a relationship between the edge and a portion of the stop.

Second, the prosecution history confirms this interpretation. As originally claimed, element "d" recited only a "a stop located forward and above the body and inward of the periphery of the flexible disc." The Examiner rejected the limitation under 35 U.S.C. § 102(b) (1994), in light of the KK '227 patent, which included a flange that could act as a "stop." In response to the Examiner's suggestion, the applicant initially tried to distinguish the KK '227 patent without changing the claim. The Examiner, however, rejected the distinction, and made the rejection final after noting that "the upper flange of [the Kreepy Krauly '227 patent] could well function as a stop. Nothing in the claims defines a stop-flange periphery relationship as argued by applicant."

Thereafter, the applicant amended the claim to include not only a stop capable of performing the function, but also a stop located "substantially inward" of the disc's peripheral edge. After the amendment, the Examiner allowed the claim. Thus, the applicant obtained the patent only after he disclaimed a relationship between the stop and the disk's edge that permitted the stop to extend up to and beyond the edge. As the applicant himself noted, he made the disclaimer "to more distinctly define the subject matter applicant regards as the invention and to claim the structure of the invention with greater specificity. Applicant submits that the claims now define a stop/disk periphery relationship not disclosed in [the Kreepy Krauly '227 patent]."

I respectfully dissent from the portions of this court's judgment upholding the district court's summary judgment of no literal infringement and overturning the jury's verdict of infringement under the doctrine of equivalents. I concur with the court's disposition of the other issues in the case.

This court's rulings on both infringement issues are based mainly on the court's interpretation of the phrase "substantially inward of the peripheral edge [of the flexible disc]" in claim 1 of the '382 patent. According to the court, the word "substantially" must be interpreted to mean "very much" or "far," so that the quoted phrase means "very much inward, or far inward of the peripheral edge of the flexible disc." The word "substantially," however, has another meaning: it can, and often does, mean "largely," "essentially, or "in the main." See Webster's New 20th Century Dictionary 1817 (1983); Webster's New World Dictionary of the American Language 1454 (1962); see also Black's Law Dictionary 1428 (6th ed. 1990) ("essentially, without material qualification, in the main"); Webster's Ninth New Collegiate Dictionary 1176 (1983) ("largely but not wholly that which is specified"); 1176 (1983) ("largely but not wholly that which is specified"); York Prods. Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1573, 40 U.S.P.Q.2D (BNA) 1619, 1622 (Fed. Cir. 1996). Under that interpretation of the term "substantially," the phrase "substantially inward of the peripheral edge of the flexible disc" would mean "mostly or mainly inward of the peripheral edge of the flexible disc."

Because the term "substantially" can have either meaning, we must look elsewhere to determine which meaning should be adopted in this instance. When we do, we find that the claim language, the written description, and the prosecution history all point the same way: the term "substantially" should be interpreted, as Zodiac proposes, to mean "largely," "mostly," or "in the main," rather than "far."

1. The claim. The stop would not serve the function that the patent envisages if it were positioned far inward of the edge of
the flexible disc. The stop needs to be near the edge of the disc in order to perform the claimed function of "preventing upward flexing of the peripheral edge beyond a predetermined amount." If the stop is located far inward of the periphery of the disc, the edge of the disk will flex upward without restriction, creating many of the very problems that the patent was intended to overcome. Therefore, the language of the claim supports Zodiac's interpretation of the term "substantially."

2. The written description. The written description explains that the "retainer," which forms the stop, "is located a short distance above and adjacent the edge of the disc," and the stop "prevents the disc . . . from flexing upwardly relative to the foot by more that a predetermined amount." Col. 3, ll. 37-39. Thus, the patent makes clear that the stop is not located far inward of the peripheral edge of the disc, but is "adjacent" to the edge of the disc. For that reason, the written description is consistent with Zodiac's interpretation of the pertinent claim language.

3. The prosecution history. As originally drafted, claim 1 of the application contained language that read: "a stop is located forwardly of the body, a short distance above, and inwardly of, the periphery of the flexible disc." The examiner rejected that claim, in part on the ground that it was anticipated by U.S. Patent No. 4,023,227 to Chauvier. The examiner took the position that a flange that protruded slightly from the body of the cleaner in Chauvier was a "stop." The applicant rewrote the claim, including the following as limitation (d): "a stop located forward and above the body and inward of the periphery of the flexible disc." The applicant argued that the new claim was not anticipated by the Chauvier patent, as the flange recited in Chauvier "does not act to prevent the disc from flexing a predetermined amount . . . . [It] cannot prevent the periphery of sealing flange 34 [i.e., the flexible disc] from upward flexing." By contrast, the applicant continued, the stop recited in limitation (d) of the new claim "is suspended above and not connected to [the flexible disc] and thus prevents the periphery of [the flexible disc] from flexing upward more than a predetermined amount."

The examiner persisted in his rejection on several grounds, including that the claim as drafted was anticipated by Chauvier, that "the utility of said stop has not been developed in the claims," and that "nothing in the claims defines a stop-flange periphery relationship as argued by applicant." After a telephone interview, the applicant amended the language of limitation (d) by including the functional language "for preventing upward flexing of the peripheral edge beyond a predetermined amount," and by making the location of the stop more specific by reciting that it was "located forward of the body and above and substantially inward of the peripheral edge." The applicant explained that "the claims now define a stop/disk periphery relationship not disclosed in Chauvier." In that amended form, the claim was allowed.

Both the examiner's rejection in light of Chauvier and the amendment made by the applicant support Zodiac's interpretation of the pertinent claim language. If the term "substantially inward" is interpreted to mean "far inward," the claim language necessarily reads on the flange recited in Chauvier, since that flange is located far inward of the peripheral edge of Chauvier's flexible disc. Moreover, the function recited in the functional clause of the amended limitation was performed by the structure recited in the rest of the limitation. That is, the stop was located "substantially inward of the peripheral edge" of the flexible disc in order to prevent the upward flexing of the peripheral edge of the disc. But that congruence between structure and function obtains only if the word "substantially" is understood in this context to mean "mostly" rather than "far," because a stop located far inward of the peripheral edge would not prevent the upward flexing of the peripheral edge of the disc. Thus, Zodiac's interpretation of the claim is entirely consistent with, and indeed compelled by, the applicant's position before the Patent and Trademark Office. I would therefore construe claim 1 of the '382 patent to require that the stop be located mainly inward of the peripheral edge of the flexible disc, but not far inward of the edge of the disc.

3917

Exhibit Substantially Larger Effective Cutting Face Backrake Angles

Claims in the '249 and '715 Patents require the drill bit to exhibit "substantially larger," "substantially more negative," or "substantially less aggressive" effective cutting face backrake angles. '249 Patent col. 8:60-61; '715 Patent col. 20:25-27, col. 25:4-6. Baker Hughes argues these terms mean "that each effective cutting face backrake angle is to a great extent larger as measured backward from a line placed perpendicular (at a ninety degree angle) to the formation to be cut by the cutter in the intended direction of drill bit rotation." ReedHycalog contends these terms do not require construction.

The dispute centers on the construction of "substantially." A lay jury will understand what "substantially" means, and therefore the term does not require construction.
The mere use of a term like "substantially" to modify a term in a claim does not render a claim indefinite. In Andrew Corp. v. Gabriel Elec., Inc., 847 F.2d 819, 821 (Fed. Cir. 1988), the Federal Circuit explained that terms like "approach each other," "close to," "substantially equal," and "closely approximate" are "ubiquitous in patent claims. Such usages, when serving reasonably to describe the claimed subject matter to those of skill in the field of the invention, and to distinguish the claimed subject matter from the prior art, have been accepted in patent examination and upheld by the courts." SciMed argues, however, that the term "substantially larger" is fatally indefinite because it is a comparative term that fails to identify with any precision how much larger the first transverse dimension of the distal section must be. It states that even ACS' definitions of the term have varied, with ACS stating that the term requires a difference of about twenty percent and Mr. Corso stating that the difference would be "on the order of 15 percent or bigger." Flannery Dec., Ex. 17 at 494:25-26.

SciMed's arguments are unavailing. As the Court previously observed, figure three, which depicts a cross-sectional dimension that is about twenty percent larger than a perpendicular cross-sectional dimension, provides an indication of the scope of the term "substantially larger." See December 24, 1998 Order at 18; Hansen Dec., Ex. 38 at 20 ("As depicted in Figure 3, the embodiment of Figures 1-5 has a cross-sectional dimension that is approximately 23% larger than a perpendicular cross-sectional dimension."). Figure nine also depicts a cross-sectional dimension that is approximately twenty percent larger than a perpendicular cross-sectional dimension. 6 See Hansen Dec., Ex. 28 at 21. In addition, as the Court also previously noted, the specification clearly states that the purpose of reducing the catheter profile, which results in one transverse dimension substantially larger than the perpendicular direction, is to increase flexibility substantially. Thus, the specification makes clear that the difference between the first transverse direction and the perpendicular direction must be such as to result in a substantial increase in flexibility. The Court concludes that this requirement, in connection with figures three and nine, allows a person skilled in the art to ascertain the scope of the Sirhan '275 patent.

6 The Federal Circuit has held that "drawings alone may provide a written description of an invention as required by § 112." Wang Labs., Inc. v. Toshiba Corp., 993 F.2d 858, 866 (Fed. Cir. 1993) (internal quotation marks omitted).
"Substantially less," thus, means considerably less in extent. The patentee has characterized differences of 10% as "slightly less." See col. 6, ins. 26-29.

D. "Substantially Linear Body Portion"

"Substantially linear body portion" is used in several claims at issue. (Doc. 29, Ex. A). Dentsply argues that "body portion" refers only to a part of the overall "tip." (Docs. 34, 55). Hu-Friedy contends that the phrase should be construed as synonymous with "tip." (Docs. 52, 55).

The claim language clearly supports Hu-Friedy's position. The claims describe the "body portion" as "having a fluid inlet end[and] a subgingival outlet end." (Doc. 29, Ex. A). "Fluid inlet end" refers to the region extending from the discharge orifice to the proximal point of the tip. 4 "Subgingival outlet end" means the region of the tip extending from the discharge orifice to the distal point of the tip. 5 These two "ends" encompass the entire "tip." By describing "body portion" as also encompassing both of these ends, the claims link the phrases "body portion" and "tip."

4 See supra Part II.C.
5 The parties agree on this construction. (Doc. 50).

Other claims confirm that "body portion" and "tip" are equivalent. Several claims instruct that the tip should be bent to form an angle with the "longitudinal center axis" of the "body portion." Other claims describing the same process provide that the tip should be bent to form an angle with the "longitudinal center axis" of the "tip." These claims clearly equate "body portion" and "tip," and others similarly match "body portion" with "tip body." The claims use these phrases interchangeably and they should receive a similar construction.

This interpretation is further bolstered by the specifications section. The patent does not differentiate between "tip," "tip body," and "body portion" in describing the preferred embodiments of the device. Instead, the specifications repeatedly use the terms "tip" and "body" to refer to the same metal piece, which is bent and drilled to form the finished invention.

This construction also finds support in dictionaries. "Tip," "body," and "portion" all refer to an object that encompasses a certain spatial region. 6 AMERICAN HERITAGE COLLEGE DICTIONARY 1443 (4th ed. 2002); MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY 1233 (10th ed. 2002). Interpreting them synonymously fits with the patentee's language and reference definitions. The court will construe "substantially linear body portion" as "a tip extending in a substantially straight line."

6 See also supra Part II.A.

The claims of the '196 patent which are at issue are directed to methods and a device for bleaching teeth. After the '196 patent issued, Dunhall filed complaints against Discus Dental, Inc. ("Discus") and its president, Robert Hayman, as well as Interdent, Inc. ("Interdent") and its president, Kenneth Rosenblood, in the United States District Court for the District of
Colorado alleging infringement of all fifty-nine claims of the '196 patent. The cases were consolidated and transferred pursuant to motion to the United States District Court for the Central District of California (the "district court"). After some discovery, Dunhall filed a third complaint alleging infringement of claims of the '196 patent against Westside Packaging, Inc. ("Westside"), Laclede Professional Products, Inc. ("Laclede"), the corporate dental practice of William M. Dorfman, and William M. Dorfman himself. The district court consolidated these three lawsuits.

Discus and Interdent market take-home teeth whitening kits containing compositions used for bleaching teeth surfaces and materials for making bleaching trays that fit over a patient's teeth. The material used by the alleged infringers in making dental bleaching trays is 0.04 inch thick ethylene vinyl acetate ("EVA"). This material is a relatively more pliable plastic as compared to vinyls, polycarbons, styrenes, and polyvinyl chlorides. Discus sells its kits to dentists and Interdent sells its kits to distributors, who in turn market the products to dentists. Laclede manufactures the compositions used in the take-home bleaching kits of Discus and Interdent. Westside assembles and packages all of Discus's and Interdent's tooth whitener kits.

Dr. Dorfman uses the tooth whitening products on patients in his corporate practice.

The '196 patent is a reissue of U.S. Patent No. 4,990,089 (the "'089 patent"). Within one month of the issuance of the '089 patent, two separate declaratory judgment actions ("DJs") seeking invalidity and non-infringement were filed against Dunhall. As a consequence of these actions, Dunhall filed the '196 reissue application on August 7, 1991. In view of the filing of the reissue application, the DJs were dismissed.

The prosecution history of the '196 patent includes deposition transcripts from the DJs, three prior art statements, the original reissue declaration and fourteen supplemental reissue declarations. In other words, the prosecution history is quite voluminous. During the reissue proceeding, the claims were amended and subsequently allowed. 1

--- Footnotes ---

1 Claims 33 and 34 are dependent on claim 30, which provides:

30. The use of a composition capable of sustained nascent oxygen release to brighten teeth, wherein the use comprises:

bringing said composition into physical contact with a sufficient portion of the surface of each tooth to be brightened for a sufficient amount of time to effect substantial brightening of said tooth; and

retaining said composition by a mechanical barrier around said composition, said mechanical barrier being substantially liquid tight.

Claim 37 is dependent on claim 36, which provides in pertinent part:

36. The use of a thin plastic splint in a process to accomplish substantial brightening of a tooth or teeth, comprising:

(a) placing within a custom fitted and trimmed, thin plastic splint . . . said thin plastic splint custom-formed and adapted to said tooth or teeth so as to be in substantially liquid tight engagement when in engagement with said tooth or teeth . . ."

--- End Footnotes ---

After conducting a Markman hearing, the district court entered an Order on September 4, 1998, construing among other terms "substantially liquid tight," and "mechanical barrier." The court stated:

Where a device is described as being "substantially liquid tight" in the '196 patent, that description shall be interpreted as meaning a rigid, custom fitted appliance which fits over a patient's teeth and extends onto and forms a seal with the patient's gingiva.

The term "rigid" shall be interpreted as meaning that the device must be as firm as possible, while still being sufficiently resilient to allow the device to be removed and replaced around the teeth and gingiva . . . .

The term "substantially liquid tight mechanical barrier" shall have the same meaning, and contemplate the same device,
as the term "substantially liquid tight splint."


Subsequent to that Order, Dunhall limited its claim of infringement to claims 33, 34, 37, 47, and 48 of the '196 patent. The parties also stipulated to the dismissal of Laclede from the case. The remaining Defendants moved for summary judgment of non-infringement contending that: (1) the custom formed trays used in their kits do not possess a sufficient degree of rigidity to fall within the scope of the term "substantially liquid tight splint" and "mechanical barrier," as construed by the district court; and, (2) their trays do not engage patients' gingiva.

The district court did not decide the summary judgment motion on the basis of the gingival engagement, specifically noting that there was a material question of fact as to whether or not the Defendants' tray engaged the gingiva. 2 Instead, the district court granted Defendants' motion that they do not literally infringe based on its conclusion that each of the asserted claims of the '196 patent requires a "rigid" splint and the Defendants' trays do not fall within its definition of "rigid." As for infringement under the doctrine of equivalents, the court found that the Defendants' trays were soft, flexible trays. The court also determined that prosecution history estoppel prevented Dunhall from recapturing a claim scope that would encompass soft, flexible trays through the doctrine of equivalents. Thus, the district court determined that there could be no infringement by the Defendants' trays under the doctrine of equivalents.

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -

2 In view of this determination by the district court, we do not address the parties' comments or arguments regarding gingival engagement of the Defendants' trays.

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

Following the entry of Final Judgment, Defendants moved for an award of attorneys' fees. The district court denied that motion finding that the case was not exceptional under 35 U.S.C. § 285.

Dunhall appeals from the Final Judgment entered by the district court in favor of Defendants and Defendants cross-appeal from the district court's denial of their motion for attorneys' fees. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

Standard of Review

In considering a motion for summary judgment, a district court must decide "if the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c); see also Celotex Corp. v. Catrett, 477 U.S. 317, 322, 91 L. Ed. 2d 265, 106 S. Ct. 2548 (1986). On appeal, we apply this standard anew, without any deference to the determination of the district court. See Zodiac Pool Care, Inc. v. Hoffinger Indus., Inc., 206 F.3d 1408, 1416, 54 U.S.P.Q.2D (BNA) 1141, 1146 (Fed. Cir. 2000). In addition, we draw all reasonable inferences in favor of the non-movant. See Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 255, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986). In view of the foregoing, when we review a district court's grant of summary judgment of non-infringement, we must determine whether the district court correctly concluded that no reasonable jury could find infringement. See IMS Tech. Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1429, 54 U.S.P.Q.2D (BNA) 1129, 1133 (Fed. Cir. 2000).

When reviewing whether an accused device infringes a patent claim, we perform a two-step analysis. "First, the claims must be correctly construed to determine the scope of the claims. Second, the claims must be compared to the accused device." Kahn v. General Motors Corp., 135 F.3d 1472, 1476, 45 U.S.P.Q.2D (BNA) 1608, 1610 (Fed. Cir. 1998).

Analysis

I. Claim Construction

"The construction of claims is simply a way of elaborating the normally terse claim language in order to understand and
explain, but not to change, the scope of the claims." Embrex, Inc. v. Service Eng'g Corp., 216 F.3d 1343, 1347, 55 U.S.P.Q.2d (BNA) 1161, 1163 (Fed. Cir. June 28, 2000) (internal quotations and citation omitted). Interpreting the asserted claims begins with a review of the intrinsic evidence, which consists of the claim language, the specification, and the prosecution history. See id.; see also Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2d (BNA) 1573, 1576 (Fed. Cir. 1996). If the intrinsic evidence resolves any ambiguity in a disputed claim, extrinsic evidence cannot be used to contradict the established meaning of the claim language. See Mantech Envtl. Servs., Inc. v. Hudson Envtl. Serv., Inc., 152 F.3d 1368, 1373, 47 U.S.P.Q.2d (BNA) 1732, 1736 (Fed. Cir. 1998). Extrinsic evidence may, however, be accepted by the court to enhance its understanding of the technology. See EMI Group N. Am., Inc. v. Intel Corp., 157 F.3d 887, 892, 48 U.S.P.Q.2d (BNA) 1181, 1184 (Fed. Cir. 1998).

As to the review of the intrinsic evidence, the specification is reviewed to determine whether the patentee used terms in a manner inconsistent with their ordinary meaning. See Vitronics, 90 F.3d at 1582, 39 U.S.P.Q.2d (BNA) at 1577. The prosecution history is considered to determine whether or not there were any express representations made in obtaining the patent regarding the scope and meaning of the claims. See id.; see also Southwall Techs., Inc. v. Cardinal IG, Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2d (BNA) 1673, 1676 (Fed. Cir. 1995) ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution.")

As set forth above, the district court noted that the term "'substantially liquid tight mechanical barrier' shall have the same meaning, and contemplate the same device, as the term 'substantially liquid tight splint.'" Moreover, the district court construed the term "substantially liquid tight" as meaning "a rigid, custom fitted appliance which fits over a patient's teeth and extends onto and forms a seal with the patient's gingiva." Additionally, the court defined "rigid" as "meaning that the device must be as firm as possible, while still being sufficiently resilient to allow the device to be removed and replaced around the teeth and gingiva."

A.

Dunhall contends that the district court's claim construction is erroneous because, in the first instance, it interpreted the term "substantially liquid tight" to require a "rigid" appliance. Dunhall notes that the term "substantially liquid tight" is defined in the '196 patent specification as:

engagement between a custom-made splint and the teeth/tooth effectively tight to (a) minimize saliva from impacting the teeth/tooth enclosed within the splint, (b) restrain physically the cleaning/brightening solution from evaporating or migrating away from the teeth, and (c) prevent the destruction of the oxygenation properties of the peroxide.

'196 patent, col. 3, ll. 39-46. Dunhall also notes that the term "rigid" does not appear in that definition or anywhere else in the specification, and therefore, cannot be applied to limit the definition of the term "substantially liquid tight." In view of the foregoing, Dunhall concludes that it was error for the district court to apply any other definition to the term "substantially liquid tight" than that which is set forth in the specification.

These arguments are not persuasive. The mere fact that a specific definition of a claim term is set forth in the specification does not mean that the prosecution history should be ignored in construing the claims. The exchange between the patentee and the patent examiner often reveals representations made in obtaining the patent from the Patent and Trademark Office ("PTO") regarding the scope and meaning of claim terms, even those with definitions provided for in the specification. In other words, whether or not a specific definition of a term is present in the specification, "the prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452, 227 U.S.P.Q. (BNA) 293, 296 (Fed. Cir.1985). Therefore, interpreting claims requires a review of all of the intrinsic evidence: the claim language, the specification, and the prosecution history.

Dunhall contends that even considering the prosecution history, limiting the interpretation of "substantially liquid tight" to "rigid" custom-fitted appliances is erroneous, because the prosecution history does not evidence a deliberate and unequivocal surrender of non-rigid custom-fitted appliances. In support of this position, Dunhall notes that the Examiner did not require the term rigid to be added to the claim language and that the Examiner's reasons for allowance did not include any rigidity aspect to the "splint." Therefore, Dunhall concludes that a reasonable competitor would not understand the claims to be restricted to a "rigid" appliance. As additional support for this position, Dunhall also asserts that the defendant
Discus' patent attorney, after a thorough review of the '196 file history, did not read any "rigidity" requirement into the splint, but rather, stated that the term "substantially liquid tight" should be construed according to the express definition set forth in the '196 patent specification.

We do not find any of these arguments to be persuasive. First of all, Dunhall's last contention is simply untrue. In an opinion letter dated April 27, 1994, Discus' attorney noted that the first step in an infringement analysis is to interpret the claims. In so doing, the attorney noted that "during prosecution of the application which issued as the '196 Munro patent, attorneys for Dunhall differentiated what they considered to be their 'splint' from the prior art 'trays' or 'mouthguards' by taking the position that prior art devices were rubbery or soft and that the splint defined by the claims of the application was rigid." (emphasis added.) Accordingly, the record reveals that Discus' attorney in fact understood the claims to be limited to a "rigid" splint, contrary to the representation made to the court by Dunhall's counsel. 3

3 The court notes its strong disapproval of counsel's careless, and in this case inaccurate, representations of the facts surrounding this issue to the court. Counsel does not serve the best interests of his client in presenting to this court arguments that reflect less than rigorous respect for the truth and accuracy of the record before us.

As to Dunhall's contentions regarding the Examiner's reasons for allowance, and his not requiring that the limitation "rigid" be added to the claims, while such information facilitates evaluation of the scope of the claim, it is not dispositive of what the specific terms of the claims mean. The prosecution history is not limited merely to the Examiner's remarks; it includes the entirety of the interchange between the Examiner and the applicant in the course of prosecuting the application to allowance.

Our review of the prosecution history reveals that the '196 patent file history contains several representations regarding the support structure that engages the tooth/teeth in a "substantially liquid tight" manner, i.e., the "splint" (claims 34, 37, 47, 48) or "mechanical barrier" (claim 33). In the Statement of Prior Art and Other Information received by the PTO on August 7, 1991, Dunhall specifically stated that the " '089 specification teaches a rigid, individually molded, close-fitting support structure around one or more teeth. Similar vacuum-formed acrylic splints are described in detail in THE COLOR ATLAS OF PERIODONTOLOGY by Raitetschack et al. in their chapter on 'Splinting,' at pp. 291-296. The concept of 'splinting' was developed to form close-fitting rigid individually formed supports for stabilizing mobile teeth." (emphasis added). In this same document, Dunhall also stated that "splinting . . . by definition requires 'rigidity,' [and such rigidity] is inconsistent with the 'resiliently flexible trays of Greenberg '219 . . . or the 'spoon like core' of Riddell '935 . . . " And, "it is clear that the teaching of Munro '089 is utterly inconsistent with the soft trays of Riddell '935 . . . and Greenberg '219 . . . ." Finally, in a supplemental amendment filed by Dunhall with the PTO, Dunhall distinguished the claimed splint from a 1982 Dutch patent application disclosing a "rigid" polyurethane foam or polyethylene foam fluoride tray liner, saying that such liners would be "too soft and pliable and non-durable for extended uses."

The foregoing clearly evinces that, in order to obtain allowance of its application, Dunhall distinguished the claimed "splint" or "mechanical barrier" that engages the tooth/teeth in a "substantially liquid tight" manner as a "rigid" custom-made appliance. In view of this prosecution history, we therefore, conclude that the district court did not err in its conclusion that where a device is described as being "substantially liquid tight" in the '196 patent, that description should be interpreted as meaning "a rigid, custom fitted appliance . . . ."

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CLAIM 2

Claim 2 depends from claim 1 and reads as follows, with the disputed language italicized:

"2. A fuel delivery system as set forth in claim 1, wherein said filter media is a paper filter presenting substantially no openings therethrough having a greater dimension than 25 microns."
Plaintiffs assert that the language is not ambiguous and should be construed in accordance with its ordinary meaning. It is unclear whether Defendants are claiming the language is ambiguous or unambiguous; they claim the language is unambiguous - subject to the definition of the filter media proffered by Defendants in claim 1. Based on the prosecution history, which at one place 6 defines the filter media as "having substantially no openings of a greater dimension than about 25 microns for preventing the passage of air," Defendants assert that the language should be construed to mean "a filter media which allows fuel to pass but not undesired gas."

6 Prosecution history of the '860 patent, Amendment, 12/13/93, p. 7, first paragraph.

The Court finds, however, that the language of the claim is unambiguous as written. Consistent with Plaintiffs' proposed construction, one of ordinary skill in the art would understand this term to mean as follows: "the filter media is a paper filter that has substantially no openings through it with dimensions greater than 25 microns." This language is wholly consistent with its use in the specification. See col. 2, lines 21-35; col. 4, lines 25-33; col. 5, lines 26-49; col. 6, lines 21-24. And the Court finds nothing in the specification suggesting a meaning other than the ordinary meaning. Nor does the Court find, from a careful review of the prosecution history, that the definition proposed by Defendants was either offered or necessary to distinguish this claim from the prior art. Indeed, the construction proffered by Defendants is inconsistent with the specification and drawings, which make clear that "substantially" all, but not necessarily "all" the air is separated. See e.g., col. 2, lines 33-34; col. 5, lines 9-10; fig. 3. Moreover, the Court has difficulty imagining, from a technical standpoint, how a paper filter could be porous enough to permit "fuel to pass, but not air," and neither the claims nor the specification suggest the paper filter possesses such a characteristic. Rather, as set forth above, it filters entrained air bubbles.

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ff. "Substantially Non-resilient Lever Moving Element" (Claim 3)

157. While this claim element does not use the term "means", it defines an "element" for performing specified functions. Thus, under the principles described above, "element for" is equivalent of "means for".

158. During prosecution of the '656 patent, the applicants amended the language "means for moving the lever" to "a substantially non-resilient lever moving element for moving the lever". PX 45, p. 129. The applicants argued that this change was made "to more clearly define the invention" and "to exclude the force of gravity operating on the lever to constitute the means for moving the lever". PX 45, p. 141. This shows that either the applicants considered "means" to be equivalent to "element", or that they considered "element" to define a narrower scope than "means". However, regardless of the change in terminology, the means-plus-function form of the claim was retained.

159. The terminology "substantially non-resilient lever moving element", "lever moving element", or "moving element" has not been shown to have a generally understood meaning in the art. Cf., Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996) ("detent mechanism" had well-understood meaning in the field). This "moving element" is described in terms of what it does, i.e. its function ("for moving the lever from its disengaged position"), not in terms of its mechanical structure. Even if the element retains minimal structure, this does not prevent it from being interpreted under § 112 P6. Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1536 (Fed. Cir. 1991).

160. The phrase "lever moving" which modifies "element" is itself functional, i.e., it defines the "element" in terms of functionally moving a lever.

161. The modifying term "non-resilient" is also functional in nature since it defines the element in terms of its capability. The term "non-resilient" is not used or defined in the '656 patent specification, but appears for the first time in the claims. This language was added to distinguish from prior art which showed resilient, non-rigid element (i.e. springs) which operated to bias the lever into engagement with the cam wheel. PX 45, p. 113, 130, 155, 173-4, 198-9. The applicants
further argued that their "invention" was different from the prior art because the prior art did not show a lever moved by a rigid element separate from the lever. PX 45, p. 113. Consequently, as used in the '656 patent claims, a "non-resilient lever moving element" is one which does not utilize a spring.

162. The "element" in this claim is also principally defined in terms of three functions: (1) moving the lever from its disengaged position; (2) for engaging the protrusion of the lever with the cam surface on the cam wheel; and (3) so that the rotation of the cam wheel thereafter in the given direction changes the locked mechanism from the locked condition to the unlocked condition.

163. Other claims in the '656 patent show the patentees' intent to use "means" and "element" interchangeably and therefore equivalently to describe the same parts of the lock. Claims 1, 17, 19, 28, ("lever operating means"); Claim 5 ("lever moving means"); Claims 2, 8, 20, 24, 31 ("lever moving element"); Claims 12, 25 ("lever controlling element"). Other claims of the patent may be used to determine the scope of the claim at issue. McGill, Inc. v. John Zink Co., 736 F.2d 666, 674 (Fed. Cir. 1984). These are all the same mechanical structure, described in equivalent functional language, whether using the equivalent terms "means" or "element".

164. In the '656 patent specification, the substantially non-resilient lever moving element includes a cantilever arm which is an integral part of the lever and contains at its lower end a movable spring-loaded detent pin contained within a bore. The lower end of the pin engages a ramped recess in the solenoid housing. Upon entry of the proper combination and upon activation of the solenoid, the solenoid housing translates linearly to release the detent pin from the recess. This action causes the detent pin to move to a second position which pushes the lever into engagement with the dial cam. As the dial is rotated to withdraw the bolt, the lever and associated lower end of the detent pin slides along the upper surface of the solenoid housing. The lower end of the detent pin stays out of engagement with the recess when the solenoid is de-energized. Once the lever is engaged with the cam, the bolt and related assembly move independently of the solenoid housing. By this time, the solenoid housing has been released and returned to its normal position.

D. "points substantially on a geometric extension"

Claim 8 discloses a valve in which the closure member is shaped as a section of a sphere ("a closure member having a regular spherical section curved exterior surface"). Within that claim, the parties dispute the meaning of "points substantially on a geometric extension" in the context of the following limitation:

Each [plate] extends to points substantially on a geometric extension of said regular spherical section curved exterior surface to engage [the] sealing means to provide that fluid flowing in [the] flow passage past [the] closure member, in a partially open position thereof, flows through said plates . . . .

'510 Patent at col. 9, 11. 28-33. If one imagines the surface of the closure member described in claim 8 expanded to create a complete sphere, that imaginary sphere is the "geometric extension" referred to in the claim. This Court must 1) identify the points "substantially" on the geometric extension to which the plates must extend and 2) construe the word "substantially."

1. "points"

Neles argues that the only relevant "points" on that imaginary sphere are the points where edges of the plates "engage [the] sealing means" as the closure member rotates between open and closed positions. Neles contends that

a) claim 8 discloses valves with a single sealing means;

b) a valve with a single sealing means is a "quarter turn valve" and, thus, only rotates 90 degrees;

c) the only relevant points on the imaginary sphere span that 90 degrees; and therefore

d) only one end of each plate must extend "substantially" to the surface of that imaginary sphere.
Fisher argues that the relevant "points" on that sphere comprise complete circles formed by the edges of the plates so that almost all fluid "flowing in [the] flow passage . . . flows through said plates" and not around them. Fisher also points out that

a) the '510 Patent is not limited to quarter-turn valves because the specification describes valves that operate in both directions;

b) in bi-directional valves, the closure member's rotation is 360 degrees; and therefore

c) even plates which trace the pattern of rotation must extend "substantially" to the surface of the imaginary sphere on both ends.

The claim itself states both that 1) the edges of the plates must engage the sealing means and 2) the fluid must flow through the plates. First, in order to engage the sealing means, as both parties agree, the plates must extend close to the surface of the imaginary sphere on at least one end. Second, expert witnesses for both parties confirm that, to the extent the plates do not meet the geometric extension, fluid will leak around the plates. The farther the edges of the plates are from the geometric extension, the greater the leakage.

Describing the "geometric extension," the specification states:

In the embodiments in FIGS 1-12, the barrier means . . . extend[ed] outwardly from either side of the bore to points substantially one [sic] a geometric extension of the curved exterior surface of the closure member. Such a geometric extension is illustrated most clearly in FIGS. 3, 7, and 9. With the barrier means arranged in such a manner, . . . the clearance is small enough that the barrier means very effectively performs its attenuating function in its variable control range.

'510 Patent at col. 3, 11. 63-68 & col. 4, 11. 5-14. Given the expert testimony, in order for the barrier means to "very effectively attenuate" the flow, the plates comprising those barrier means must extend "substantially" to the geometric extension on both ends. The drawings in Figures 1-12 corroborate this interpretation because they depict plates that extend equally on both ends. This Court, therefore construes "points . . . on a geometric extension" to include points at both ends of the plates.

2. "substantially"

Claim 8 is clear that, if plates must extend "substantially" to points in the imaginary sphere which is the "geometric extension," they must extend very close to the surface of that sphere. Expert testimony presented by both parties demonstrated that a person skilled in the art of valve mechanics would understand that some clearance is necessary so that the plates do not scrape the valve casing as they rotate and as temperature fluctuates in the pipe. The undisputed testimony of both Roger Bey, the inventor, and Cullen Langford, NJI's expert, establishes that a person skilled in valve mechanics, would not understand the term "substantially" to require plates to extend as close as humanly possible to the surface of that imaginary sphere because such precision would not be cost-effective.

Based upon the words of the claims and the testimony of the expert and the inventor, this Court construes "substantially" to mean as close as economically efficient allowing for mechanical clearance to avoid contact between the plates and the valve body either through rotation or thermal expansion.

IV. Conclusion

This Court, therefore, concludes with respect to terms as they are used in the '510 Patent that:

1) a "plate" is a structure that is thinner than it is wide or long and that may be flat, curved or twisted and perforated such as a screen or net but that is not a tube;

2) a "barrier means" is any structure, other than the closure member, that attenuates the flow of fluid;
3) "attenuating effect . . . is immediately called into play when said closure member is first opened" means that there is no temporal delay between the opening of the valve and the attenuation of flow;

4) "attenuating effect thereof is great during initial opening" means that over time, while the closure member rotates from a closed to an open position, the attenuation is greater earlier and less later; and

5) "points substantially on a geometric extension" means that attenuator plates must extend on both ends as close to the surface of the imaginary sphere formed by expanding the curved surface of the closure member as economically efficient, allowing for mechanical clearance to avoid contact between the plates and the valve body either through rotation or thermal expansion.

3) "attenuating effect . . . is immediately called into play when said closure member is first opened" means that there is no temporal delay between the opening of the valve and the attenuation of flow;

4) "attenuating effect thereof is great during initial opening" means that over time, while the closure member rotates from a closed to an open position, the attenuation is greater earlier and less later; and

5) "points substantially on a geometric extension" means that attenuator plates must extend on both ends as close to the surface of the imaginary sphere formed by expanding the curved surface of the closure member as economically efficient, allowing for mechanical clearance to avoid contact between the plates and the valve body either through rotation or thermal expansion.

F. "substantially only backscattered light" 30

30 The phrase "substantially only backscattered light" is used in claim 6 of the '259 patent.

1. ADE's Position

ADE argues that "substantially only backscattered light" should be construed to mean "light generally scattered in the backward direction." (D.I. 613 at 19.) ADE offers little supporting its proposed construction of this phrase other than a plain-and-ordinary-meaning argument. (Id.)

2. KLA's Position

Consistent with its argument as to the phrase "oblique zone" and the magistrate judge's prior construction of that phrase, KLA suggests that the phrase "substantially only backscattered light" should "be construed to mean 'only backscattered light.'" (D.I. 594 at 21.) Alternatively, KLA proposes that if the Court cannot "reconcile the recited claim language with the clear teaching of the specification and prosecution history" the Court can invalidate the dependent claim in which the phrase appears under 35 U.S.C. § 112, P 4. 31

3. Analysis

Given this Court's construction of the phrase "oblique zone," supra at 23-37, the Court is compelled to construe the phrase "substantially only backscattered light" to mean that only backscattered light is collected.
5. Claim 1(b.2): Lamp Support Surfaces

5.1 The Claim Language of Claim 1(b.2)

(b.2) said lamp support means including at least two lamp support surfaces on said lamp support means on opposite sides thereof and angled toward the base end of said reflector means for causing compact fluorescent lamps supported thereby to extend outwardly at an angle from said center line toward the light-emitting end of said reflector means to substantially parallel said reflector means; and

5.2 Claim Interpretation Analysis: Applicability of § 112, P6

The "lamp support means" includes two or more "lamp support surfaces" which form a part of the lamp support means itself as indicated by the statement that they are mounted "on said lamp support means."

The description that each "lamp support surface" is "angled toward the base end of said reflector means" means that the "surface" is angled upward relative to a horizontal plane relative to the "side" of the "lamp support means" to which the "lamp support surface" is connected.

The phrase "for causing compact fluorescent lamps supported thereby to extend outwardly at an angle from said center line toward the light-emitting end of said reflector means" means that the compact fluorescent lamps supported by each angled lamp support surface extend outwardly at an angle spaced apart from the reflector centerline as the lamps extend in a downward direction away from the lamp support surface toward the light emitting end of the reflector means. This is precisely the type of angular deflection of the compact fluorescent lamps relative to the reflector centerline as illustrated in the cross sectional views shown in Figs. 3 and 15. The lamp support means mounts the compact fluorescent lamps at locations both laterally spaced away from the reflector centerline and angled away from the reflector centerline.

Interpretation of the Claim 1(b.2) phrase "to substantially parallel said reflector means" limitation requires careful consideration of the Federal Circuit's Vitronics guideline that a claim be interpreted to encompass the preferred embodiments disclosed in the patent in the absence of convincing evidence to the contrary.

The intrinsic evidence, which is far more significant than one might initially realize, dictates in a very subtle way how this claim limitation should be interpreted.

First, as to the written description, very little guidance as to the interpretation of this "substantially parallel" claim limitation is provided. In the Abstract, Tickner states that his inventive design functions to orient the compact fluorescent lamps such that they "follow the outwardly-flared inside surface of the reflector." At Column 5, lines 28-33, Tickner states the following:

As illustrated in FIGS. 3, 4 and 5, the plate 26 is octagonal in shape, and includes, on each of its outer edges, an extension tab or lamp mounting surface 28 onto which a conventional socket 40 is attached for receiving a commercially available push-in compact fluorescent lamp 45. As illustrated most clearly in FIG. 3, the tabs 28 are bent upwardly (as viewed in FIG. 3) approximately 20 degrees to 30 degrees from the plane of the plate 26 to cause the lamps 45 to extend along a line generally following the curvature of the inside of the reflector portion 14B.

At Column 8, lines 57-63, Tickner describes the intended relationship as follows:

As illustrated in FIGS. 3, 4 and 5, the plate 26 is octagonal in shape, and includes, on each of its outer edges, an extension tab or lamp mounting surface 28 onto which a conventional socket 40 is attached for receiving a commercially available push-in compact fluorescent lamp 45. As illustrated most clearly in FIG. 3, the tabs 28 are bent upwardly (as viewed in FIG. 3) approximately 20 degrees to 30 degrees from the plane of the plate 26 to cause the lamps 45 to extend along a line generally following the curvature of the inside of the reflector portion 14B.

At Column 10, lines 56-60, Tickner describes the intended relationship as follows:
The off-center location of the lamps and their orientation substantially parallel to the interior of the reflectors produces light emanating from the reflectors at significantly greater angles than is possible from a single lamp centered in the reflector.

Federal Circuit authority provides some additional claim interpretation guidelines relevant to this claim limitation. In Anchor Wall Systems, Inc. v. Rockwood Retaining Walls, Inc., et al., 340 F.3d 1298, 1311 (Fed. Cir. 2003), the Court commented on the interpretation of a claim limitation expressed as "generally parallel." After noting that the claim language "generally parallel" was mathematically imprecise, the Court explained that

words of approximation, such as "generally" and "substantially," are descriptive 3 terms "commonly used in patent claims to avoid a strict numerical boundary to the specified parameter."

The Federal Circuit cited Andrew Corp v. Gabriel Elecs. Inc., 847 F.2d 819, 821-22 (Fed. Cir. 1988) for the proposition that terms such as "approach each other," "close to," "substantially equal," and "closely approximate" are "ubiquitously used in patent claims and that such usages? when serving reasonably to describe the claimed subject matter to those of skill in the field of the invention and to distinguish the claimed subject matter from the prior art, have been accepted in patent examination and upheld by the courts).

The Federal Circuit stated that in the world of patents and patent law, "while ideally, all terms in a disputed claim would be definitively bounded and clear, such is rarely the case in the art of claim drafting." 847 F.2d 1311.

It is clear from the examination of the Tickner '414 patent written description that not a great deal of specific information was said about the generalized "substantially parallel" relationship between the linear compact fluorescent lamps elements and the obviously curved reflector. In fact, as illustrated in the Fig. 3 cross sectional view of Tickner's first preferred embodiment, the relative angle between the upper or higher level set of compact fluorescent lights and the reflector appears to be fairly parallel to the reflector while the second or lower second set of compact fluorescent lights may be considered to be parallel with a small portion of the upper part of the reflector, but certainly not parallel to the lower portion of the reflector. As to Tickner's second preferred embodiment illustrated in the Fig. 15 cross sectional view, most of the length of the linear compact fluorescent lights is not parallel to any portion of the reflector except potentially the lower extremity of the lamp itself. So how is this apparent claim interpretation dilemma to be resolved?

An historical evaluation of how the intrinsic evidence was created by the patent attorney and then subsequently reviewed by the patent examiner answers this initially puzzling claim interpretation question with great clarity. When the patent attorney wrote the patent application text and drafted the "substantially parallel said reflector means" claim limitation, he would have already received his preliminary version of the patent drawings from his patent draftsman and would have been looking at the pictures of the invention, specifically at the Fig. 3 and Fig 15 cross sectional views -- the only views showing the relationship between the compact linear fluorescent lamps and two different reflector configurations. The patent attorney chose to define the relationship that he observed in those two cross sectional views as defining a special and distinct relationship between the linear compact fluorescent lamps and the illustrated reflector configurations. He defined that visual relationship as representing a lamp-relative-to-reflector orientation which is "substantially parallel to the interior of the reflectors" as plainly stated in the written description and as set forth in the claims. In a sense, the inventor acting through his patent attorney thereby functioned as a lexicographer by defining that "substantially parallel" claim language to generally represent the relationship illustrated in the patent drawing Figs. 3 and 15 which illustrate at least three different examples of that angular relationship. Phillips v. AWH Corp., 415 F.3d 1303, at p. 1319 (an inventor may function as his own lexicographer to specially define his own terms). In other words, this particular claim limitation was defined originally by the patent attorney and the inventor based on a general relationship observed in the patent drawings.

When the Patent Examiner subsequently evaluated the claims for patentability, the Examiner reviewed the same drawings, reviewed the same written description and understood how this "generally parallel" claim limitation had been defined by the patent attorney and the inventor. Based on his understanding and approval, the Examiner passed the claims to issuance.

The most important intrinsic evidence in the Tickner patent takes the form of the Fig. 3 and Fig. 15 drawings, supplemented only slightly by the written description. The appropriate interpretation of "substantially parallel" neither rests on concepts of
geometry nor concepts of parallelism, nor the application of a ruler to a scaled drawing. Instead, the "generally parallel" relationship between a linear compact fluorescent lamp and a curved reflector represents a visual relationship which is both defined in terms of what the language means as well as what is illustrated in the drawings. That specified visual relationship may be applied to an accused structure by viewing a cross sectional view of an accused structure in the form illustrated in Figs. 3 and 15, which presents a scaled relationship between specific compact fluorescent lamps and a vertical section of the reflector lying in a plane defined by two lines: 1) the reflector center line, and 2) the linear axis of the compact fluorescent lamp being evaluated. This is exactly the relationship illustrated Tickner's Fig. 3 and Fig. 15 sectional views.

So, in the context of the present case, because Tickner's patent attorney assisted Tickner to act as his own lexicographer to define almost solely by visual means (rather than by words) the meaning of the "substantially parallel" relationship between the compact fluorescent lamp and an adjacent section of the reflector, the "substantially parallel" relationship represents an "eyeball" definition rather than a textual definition.

This conclusion is both fair and appropriate because, after the Tickner patent issued, the public had access to precisely the same intrinsic evidence originally created by Tickner and his patent attorney. That same intrinsic evidence was subsequently reviewed and understood by the Patent Examiner. After patent issuance, the accused infringer and the public in general was provided access to the same intrinsic evidence. The answer to the claim interpretation puzzle thus lies not in the dictionary, but in the Fig. 3 and Fig. 15 drawings. The resulting visual interpretation fully meets the Federal Circuit's Vitronics dictates that a claim limitation be interpreted to encompass disclosed the preferred embodiments.

That visual or "eyeball" interpretation can be expressed in words as follows:

The "substantially parallel" claim limitation describes the orientation of the compact fluorescent lamp relative to a nearby portion of the reflector.

The portion of the reflector to compare the relative alignment between the reflector and the compact fluorescent lamp can best be visualized by mentally slicing the reflector in half in a slicing direction in alignment with the compact fluorescent lamp.

Fig. 15 of the Tickner patent is referred to as a "cross-sectional view" and illustrates how the appropriate slicing and angular comparing process should be visualized.

A compact fluorescent lamp (such as lamp 45 shown in Fig. 15 of the Tickner patent) is a linear or straight line device that defines one of the two lines to be compared to evaluate whether the compact fluorescent lamp is substantially parallel to the sliced reflector.

The curved exposed edge of the sliced reflector (as illustrated in Fig. 15) from the top of the slice to the bottom of the slice can be thought of as many short, straight reflector segments joined end to end.

If any one of those numerous straight reflector segments located anywhere between the top of the bottom of the reflector slice is "more or less," or "about" or "generally" parallel to the compact fluorescent lamp, then you may find that the compact fluorescent lamp is substantially parallel to the reflector.

The functional limitation for the "at least two lamp support means" relating to "causing compact fluorescent lamps supported thereby to extend outwardly at an angle from said center line toward the light-emitting end of the reflector means to substantially parallel said reflector means" means that, in addition to the various other limitations of the lamp support means previously defined above, a lighting apparatus should include at least two compact fluorescent lamps supported by at least two lamp support surfaces where the compact fluorescent lamps are both 1) laterally spaced away from the reflector center line, and 2) outwardly angled as illustrated in Tickner's patent drawing such that the linear light emitting portion of the at least two compact fluorescent lamps are "substantially parallel" to an adjacent section of the reflector where that "substantially parallel" relationship is defined by Tickner's Fig. 3 and Fig. 15 cross sectional views. The utilization of the modifier "substantially" contemplates meaningful variations from the specific angular relationships illustrated in Tickner's patent drawings as long as the overall "eyeball" impression is one of "general parallelism" as articulated by Tickner's Figs. 3 and 15. Again, that "substantially parallel" relationship can be expressed in words as set forth above.
This relative angular relationship cannot be, as suggested by Sportlite, based on any concept of uniformity of light intensity since Claim 1 no where utilizes that term or invokes that concept.

A. "Substantially Parallel"

The first disputed term of the '079 Patent is "substantially parallel." The '079 Patent teaches that the distal ends of the catheter must "extend substantially parallel to a longitudinal axis of said catheter." (Col. 3, lines 19-20.) Defendants argue that "substantially parallel" means "the same as or very close to parallel." (Def. Mem. at 10.) Plaintiffs argue that defendants' proposed construction is "completely abstract" and "vague," and that "substantially parallel" must be construed in light of functional and exemplary language contained in the specification. (Plaintiffs' Claim Construction Memorandum ("Pl. Mem."), at 10-11.) Plaintiffs argue that the proper construction of "substantially parallel" in the '079 Patent is "that the two end portions, or tips, when disposed within a vascular channel of the body, are sufficiently close to parallel, such that, when the catheter is placed within a body lumen or cavity, the end portions essentially conform to the direction of fluid flow ('like a sail parallel to the wind')." (Pl. Mem. at 18.)

As there is no clearly manifested intent by the patentee to act as his own lexicographer, this Court must look to the plain meaning of the phrase "substantially parallel." Johnson Worldwide, 175 F.3d at 989. In examining that term, plaintiffs' proposed construction violates the plain meaning principle. Further, on a closer review of the intrinsic evidence, it is clear that defendants' proposed construction is appropriate.

"Substantially" is defined as "largely but not wholly that which is specified." Webster's Ninth New Collegiate Dictionary 1176 (9th ed. 1983); accord Shorter Oxford English Dictionary 3091 (5th ed. 2002) ("essentially, intrinsically … actually, really"). It is clear that defendants' proposed construction of "substantially parallel" comports much more closely with the dictionary definition of "substantially" than does plaintiffs' proposal.

Further, the patentee's use of the terms "parallel" and "substantially parallel" interchangeably bolsters the conclusion that the patentee intended the phrase to mean "the same as or very close to parallel." The Abstract, which appears on the first page of the '079 Patent, reads "wherein said end portions, in a rest position of the catheter, extend parallel to the longitudinal axis thereof." When read in conjunction with the corresponding language in the specification and the claim, the patentee's failure to include the modifier "substantially" in front of "parallel" in the Abstract is probative of an intent to use the terms interchangeably. See Amhil Enters. Ltd. v. Wawa, Inc., 81 F.3d 1554, 1559, 1562 (Fed. Cir. 1996) (patentee's use of phrases "substantially vertical" and "vertical" interchangeably in the specification and during prosecution of patent left the "reader with the impression that 'substantially vertical' and 'vertical' mean essentially the same thing"). Plaintiffs' suggestion that it would be error to consider language in the Abstract when construing a claim term (Transcript of Markman hearing, dated April 16, 2003 ("Tr.") at 52) is incorrect as a matter of law. See Hill-Rom Co., Inc. v. Kinetic Concepts. Inc., 209 F.3d 1337, 1341 n.1 (Fed. Cir. 2000) (abstract is part of the intrinsic evidence of a patent, and courts "frequently look[] to the abstract to determine the scope of the invention"). Accordingly, the '079 Patent's use of the phrases "parallel" and "substantially parallel" interchangeably in materially identical contexts militates in favor of construing the term as defendants have proposed, namely "the same as or very close to parallel."

In contrast, plaintiffs' proposed construction of "substantially parallel" impermissibly attempts to import limitations from the specification into the claim, and is undermined by the language of the claim itself. The description in the specification of the distal ends behaving "like a sail set parallel to the wind" is merely a trope, and such examples or representations may not
be read to limit a claim. See Transmatic, 53 F.3d at 1277; Constant, 848 F.2d at 1572; Specialty Composites, 845 F.2d at 987. In addition, plaintiffs' proposed construction of "substantially parallel" seeks to import functional limitations from the specification that do not appear in the claim, such as "when the catheter is placed within a body lumen or cavity, the end portions essentially conform to the direction of fluid flow." 4 (Pl. Mem. at 18.) This is not permissible. See Ecolab, 264 F.3d at 1367; Advanced Cardiovascular Sys., 261 F.3d at 1338-39; Transmatic, 53 F.3d at 1278.

4 In fact, one of the functional limitations that plaintiffs seek to impose on the "substantially parallel" claim -- the requirement that the catheter be "disposed within a vascular channel of the body" -- not only does not appear in the claim, but is nowhere in the '079 Patent.

Finally, plaintiffs' proposed construction is undermined by the language of the claim itself with respect to the proper reference point by which to determine whether the distal ends are parallel. Plaintiffs' proposed construction advocates determining the parallelism of the distal ends in relation to the "direction of fluid flow." 5 The claim itself, however, teaches that a determination of whether the distal ends are parallel must be made in relation to the longitudinal axis of the catheter, and makes no mention of fluid flow. 6 Thus, plaintiffs' proposed construction of "substantially parallel" is improper, and cannot be accepted by this Court.

5 In addition, the Court notes that the "direction of fluid flow" language in the specification does not relate to a determination of whether the distal ends are "substantially parallel" in at least one rest position, but instead refers to the catheter's anti-clogging characteristics. (Compare Col. 2, lines 48-49 with, e.g., Col. 2, lines 36-37.)

6 In addressing this issue during the Markman hearing, plaintiffs again resorted to importing functional limitations into the claim in order to rescue their construction of "substantially parallel." To define the term, plaintiffs suggested that "when the catheter is then implanted in the body cavity that's referred to in the patent, it will be implanted in the direction of that cavity along that axis. So the axis of the catheter is going to match up with the axis of the fluid flow." (Tr. at 32.)

Contrary to plaintiffs' contentions, nothing in Fig. 1 of the '079 Patent, depicting the invention, or in the prosecution history is inconsistent with defendants' proposed construction. (Pl. Mem. at 12-14.) The construction of "substantially parallel" as "the same as or very close to parallel" clearly contemplates the slight deviation from strict parallelism necessitated by the "physical separation" of the distal ends at the "fixed dividing point." (Def. Mem. Ex. B at Arrow 80.) The same analysis applies to the embodiment of the invention depicted in Fig. 1, which shows a slight deviation from parallel at the dividing point, represented at 12 in Fig. 1, with a return to almost strict parallelism as the figure approaches the tips of the distal ends of the catheter, represented at 13A and 14A in Fig. 1. (Col. 3, lines 23-25; Fig. 1). The construction "the same as or very close to parallel," therefore, is not inconsistent with either the prosecution history or the sole embodiment of the invention contained in the '079 Patent. Cf. Johns Hopkins Univ. v. CellPro, Inc., 152 F.3d 1342, 1355 (Fed. Cir. 1998) ("A patent claim should be construed to encompass at least one disclosed embodiment in the written description portion of the patent specification."); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577 (Fed. Cir. 1984) ("Claims should be so construed, if possible, as to sustain their validity.").

Finally, this Court rejects plaintiffs' contention that defendants' proposed construction of "substantially parallel" is too vague and abstract to provide meaningful guidance. (Pl. Mem. at 10-11; Tr. at 60-61 (describing defendants' proposed construction as an "Olympian abstraction").) Courts need not construe claims to be objectively verifiable in order for a construction to be valid, especially when the claim incorporates the term "substantially." See Ecolab, 264 F.3d at 1367 ("The term 'substantially' is a descriptive term commonly used in patent claims to 'avoid a strict numerical boundary to the specified parameter.'") (quoting Pall Corp. v. Micron Sep., 66 F.3d 1211, 1217 (Fed. Cir. 1995)); Mickowski v. Visi-Trak Corp., 36 F. Supp. 2d 171, 178 (S.D.N.Y. 1999) ("The term 'substantially' has been included merely to bridge the gap between the abstract description of a method and its practical application in the real world.") (vacated, appeal reinstated by 247 B.R. 236...
(Bankr. N.D. Ohio 2000)). Contrary to plaintiffs' contention during the Markman hearing that defendants' citations are "all over the map and quite inconsistent in terms of how close to parallel something is supposed to be" (Tr. at 40), this Court notes that other courts construing "substantially" in similar contexts have reached nearly identical results. See, e.g., Ecolab, 264 F.3d at 1367-69 (holding that "substantially uniform" should be construed as "largely but not wholly in the same form"); LNP Eng'g Plastics, Inc. v. Miller Waste Mills, Inc., 275 F.3d 1347, 1354 (Fed. Cir. 2002) (en banc) ("The claim language supports the correctness of the district court's interpretation of 'substantially completely wetted' as 'largely, but not necessarily wholly, surrounded by resin."); Amhil Enter. 81 F.3d at 1562 (construing "substantially vertical face" as "the same as or very close to 'vertical face'"). Accordingly, this Court construes "substantially parallel" as "the same as or very close to parallel."

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Courts must construe disputed claim terms, as a matter of law, based on the claims, the specification, and the prosecution history. Markman v. Westview Instruments, Inc., 52 F.3d 967, 986 (Fed. Cir. 1995) (in banc), aff'd, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). In reaching its decision, the district court focused on two aspects of the parties' competing drying sections. First, the district court examined Valmet's "drying cylinder group" with "two, substantially parallel, rows of drying cylinders," and compared it to Beloit's "single tier drying section" with "two consecutive pluralities of drying cylinders." The court found that Soininen taught a "stacked arrangement" of the two rows of cylinders, while Beloit's patents claimed a "single horizontally disposed plane of dryer cylinders" (emphasis in original). Essentially, the court read Soininen to teach only a sideways U-shaped (i.e., ) arrangement. Meanwhile, the court construed Beloit's asserted claims to refer to a machine that dries one side in the first plurality, then moves the web forward in a single plane into a second plurality to dry the other side. The court concluded that "single tier" means single plane, and that unfolding Soininen's two rows into a single plane would not have been obvious.

Although the figures in Valmet's Soininen patent depict various stacked arrangements, nothing in the patent requires a stacked arrangement of the two rows of drying cylinders. On the contrary, the phrase "substantially parallel" explicitly encompasses parallel configurations in one plane or in two different planes. At the same time, nothing in Beloit's '758 or '372 patents requires an arrangement of the two pluralities of drying cylinders horizontally disposed in a single plane. Furthermore, Beloit's specifications and prosecution histories make it clear that the phrase "single tier" primarily serves to distinguish prior art "two tier" sections where the web traveled alternately around cylinders in two different tiers on two different planes. Thus, we hold that the district court incorrectly limited the teachings of Soininen, misconstrued Beloit's patents, and erroneously overstated the differences between the two inventions.

b) Meaning of the Term "Parallel Coplanar, Horizontally Disposed"

Claim 4 of the '317 patent is limited by the requirement that the hot air flow channels be "parallel coplanar, horizontally disposed," (R. 36, Exhibit 1, column 6, ll. 11-12), and claim 1 by the requirement that the channels be "substantially parallel coplanar, horizontally disposed." (Id. at ll. 36-37). These words are to be given their ordinary and customary meaning, unless the '317 patent specifically defines the terms. 8

8 See Vitronics, 90 F.3d at 1582 ("Although words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history."

CP argues that the word "substantially" "provides a non-absolute connotation" to the terms "parallel," " coplanar," and "horizontally disposed" such that " coplanar" is "better defined as the greater majority of the surface area within the channels
are in the same plane" and that "horizontally disposed" "is better defined as being 'substantially … horizontally disposed.'" (R. 39, p. 4). CP neglects the fact that the term "substantially" appears only in claim 1. "Although different claims should be presumed to cover different inventions, 'if a claim will bear only one interpretation, similarity [with another claim] will have to be tolerated." Laitram Corp., 143 F.3d at 1463 (citations omitted). A review of the entire patent, including the specification, reveals that claims 1 and 4 describe the same invention and will bear only one interpretation. Thus the word "substantially," which appears only in claim 1 of the '317 patent does not broaden the scope of the patent as CP contends.

This interpretation is particularly supported by the meaning of the term "parallel." This term is used to describe the spacial relationship between the two "hot air flow channel" structures that comprise the "heating means" of the Satisfyer. The '317 patent specifically defines the term "parallel" to mean "in spaced apart parallel relation," (R. 36, Exhibit 1, column 1, ll. 65-66), or "in parallel spaced apart relation." (Id. at column 4, ll. 12-13). In addition, the artwork to which the written description of "parallel" refers clearly demonstrates the hot air flow channels being "parallel" and not "substantially parallel," See (Id. at Figures 2, 4 and 5). Further, the "Detailed Description" of the invention explains that each hot air flow channel is configured in a series of "right angle turn[s]." (Id. at column 4, l. 45). 9 "Right angle" is not defined within the '317 patent; therefore it must be given its ordinary and customary meaning. Vitrronics, 90 F.3d at 1582; Sage Products, Inc. v. Devon Industries, Inc., 126 F.3d 1420, 1423 (Fed. Cir. 1997). Webster's Collegiate Dictionary (10th ed. 1993) defines "right angle" as "the angle bounded by two lines perpendicular to each other; an angle of 90 [degrees] …” Because each hot air flow channel is configured in a series of such angles, it is impossible for them to be anything but "in parallel spaced apart relation." Finally, Figures 2, 4 and 5 of the specification depict the hot air flow channels as being "in parallel spaced apart relation." The word "substantially" does not expand the coverage of the term "parallel" as used in claim 1.

9 In fact, at several instances within the patent specification, the hot air flow channels are said to make "right" or "left" angle turns. See (R. 36, Exhibit 1, column 4, ll. 15-16, 18-29, 45).

The same can be said for the terms "coplanar" and "horizontally disposed." Unlike "parallel," neither of these claim terms are defined in the specification. Consequently, they must be given their ordinary meaning. Vitrronics, 90 F.3d at 1582; Sage Products, 126 F.3d at 1423. Webster's Collegiate Dictionary (10th ed. 1983) defines "coplanar" as "lying or acting in the same plane" and "horizontal" as "parallel to, in the plane of, or operating in a plane parallel to the horizon or to a base line." Figures 4 and 5 within the specification illustrate the "coplanar, horizontally disposed" configuration of the hot air channels. They confirm that each hot air flow channel lies within the same plane and is parallel to the horizon. 10 See (R. 36, Exhibit 1, Figures 4 & 5).

10 As with the Court's discussion of the term "parallel," Figures 2, 4 and 5 of the specification reveal that the "hot air flow channels" of the Satisfyer can only be arranged in the same plane and parallel to the horizon. Thus, the word "substantially" in claim 1 cannot be construed to broaden the definition of either "coplanar" or "horizontally disposed."

The prosecution history of the '317 patent lends further support to this interpretation of the terms "coplanar" and "horizontally disposed." "Arguments and amendments made during the prosecution of a patent application and other aspects of the prosecution history … must be examined to determine the meaning of terms in the claims." Southwall, 54 F.3d at 1576. Prudhomme filed his initial patent application on May 26, 1987. (R. 36, Exhibit 2, p. A1124). The application described the "heating means" as either "comprising a hot air flow channel in a non-straight line configuration," or "comprising a pair of parallel hot air flow channels in a modified 'S' configuration." (Id. at pp. A1139-40). The initial application did not include the terms "coplanar" and "horizontally disposed." (Id.). Prudhomme abandoned his initial application after it was twice rejected by the PTO. (Id. at pp. A1153-55, A1177-79). Following a meeting between Prudhomme's attorney and a PTO representative, see (Id. at p. A1182), Prudhomme filed a "continuation" application. (R. 36, Exhibit 3). The "Remarks" section of the second application explains: "This Streamline Continuation is being filed pursuant to Claim amendments which were reviewed on August 19, 1988, but which could not be entered after final. The
Claim amendments are being filed as a result of the interview and to overcome the art cited by the Examiner, namely the patent to Kells, Childs, and Keating.” (Id. at p. A1232) (emphasis added).

In his continuation application, Prudhomme added the limitation that the hot air flow channels described in his independent claims be “coplanar” and “horizontally disposed.” (Id. at A1228-30). As recognized by the "Remarks" to the application, these terms were added to distinguish Prudhomme's invention from prior patents. Specifically, the Childs patent describes a deep fryer with a heating means comprised of several "combustion chambers … arranged vertically." (R. 36, Exhibit 13, column 3, ll. 40-45) (emphasis added); see also (Id. at Figures 1 & 3). In addition, the "combustion chambers" of the Childs deep fryer are not "coplanar." 11 (Id. at Figure 1). This review of the Childs patent reveals that the terms "coplanar" and "horizontally disposed" distinguish Prudhomme's invention from Child's in that the heating means in Prudhomme's invention run horizontally 12 through the frying chamber and are situated in the same plane, while the heating means within Child's fryer are vertical and non-coplanar.

--- Footnotes ---

11 The Court reaches this conclusion by comparing the planes that run through the centerlines of each "combustion chamber" of the Childs deep fryer. Because the combustion chambers are arranged vertically, these planes are parallel and not "coplanar." In contrast, a single plane runs through the centerlines of each hot air flow channel of Prudhomme's Satisfryer, and thus the Satisfryer's hot air flow channels "lie … in the same plane." Webster's Collegiate Dictionary (10th ed. 1993).

12 That is, the hot air flow channels of the Satisfryer are parallel to the horizon, see supra pp. 14-15, rather than vertical to the horizon, as in Child's invention. (R. 36, Exhibit 13, Figure 1).

--- End Footnotes ---

(1) "Substantially Parallel Said Reflector"

Defendants object to the Special Master's recommended construction of "substantially parallel said reflector" appearing in claims one and thirty-seven of the '414 Patent. Originally, when construing these terms the Parties proposed similar interpretations. For instance, Plaintiff proposed "[t]he lamps are close enough to parallel or generally parallel to the reflector such that the uniformity of lighting as generally described in the patent is achieved." Defendants proposed that the "[t]he lamps largely, but not wholly, follow the contour of (i.e. parallel) the reflector." Even though these proposed constructions were not substantially different, the Special Master proposed a much different construction which appears to encompass both a "visual" and "textual" construction. For example, with respect to the "visual" definition, the Special Master concluded in pertinent part:

The appropriate interpretation of "substantially parallel" neither rests on concepts of geometry nor concepts of parallelism, nor the application of a rule to a scaled drawing. Instead, the "generally parallel" relationship between a linear compact fluorescent lamp and a curved reflector represents a visual relationship which is both defined in terms of what the language means as well as what is illustrated in the drawings. So, in the context of the present case the "substantially parallel relationship represents an "eyeball" definition rather than a textual definition."


Perhaps what is most troubling about this visual construction is that it does not appear to be a construction of the claim terms. In fact, if the Court were to adopt such a "visual" or "eyeball" definition, the construction would ultimately be left to the jury as a finding of fact rather than a determination of law made prior to the trial by the Court. Importantly, as noted above and by the Defendants, claim construction is a matter of law that is to be determined by the Court. Markman, 52 F.3d at 983-84. Based upon the Special Master's proposal the jury would have to identify certain points on Plaintiffs patented lighting apparatus and compare with certain points on the accused device. Such a possibility is not consistent with the purpose of the claim construction portion of this litigation.
Similar to the Special Master's "visual" or "eyeball" definition, the Special Master's textual definition of "substantially parallel said reflector" appears to run contrary to settled claim construction principles. Specifically, the textual definition recommends in pertinent part:

A compact fluorescent lamp (such as lamp 45 shown in Fig. 15 of the Tickner patent) is a linear or straight line device that defines one of the two lines to be compared to evaluate whether the compact fluorescent lamp is substantially parallel to the sliced reflector.

The curved exposed edge of the sliced reflector (as illustrated in Fig. 15) from the top of the slice to the bottom of the slice can be thought of as many short, straight reflector segments joined end to end.

If any one of those numerous straight reflector segments located anywhere between the top of (sic) the bottom of the reflector slice is "more or less" or "about" or "generally" parallel to the compact fluorescent lamp, then you may find that the compact fluorescent lamp is substantially parallel to the reflector.

(Report and Recommendation, p.15).

As argued by the Defendants, the Special Master's textual definition appears to change or broaden the scope claim. The Special Master takes the original claim language and broadens it to be "substantially parallel any one of those numerous straight reflector segments located anywhere between the top [or] the bottom of the reflector slice." As evidenced by the prosecution history of the '414 Patent, the Special Master's textual definition appears to run contrary to the inventor's intent. For instance, in response to an office action, regarding the relationship between the instant '414 Patent and the relevant prior art, the Schmidt and McNair patents, Mr. Tickner, in describing the relationship between the reflector and fluorescent lamps stated the "lamps extend outwardly at an angle along a line generally parallel to the surface of said reflector means."

(Defendants' Objections, Exhibit E, p.2). At no point does the prosecution history of the '414 Patent evidence some type of relationship where only a point on the reflector is parallel or generally parallel the fluorescent lamps. Thus, given the Special Master's apparent rejection or failure to consider the relevant prosecution history and the Special Master's proposal that may change the scope of the claim, the Court will not adopt the Special Master's proposed construction. Rather, given the Parties close proposals that appear generally to be in line with the intrinsic evidence regarding the construction of "substantially parallel said reflector" the Court, upon Defendants' recommendation, adopts Plaintiff's proposed construction. Thus, "substantially parallel said reflector" will be construed to mean "[t]he lamps are close enough to parallel or generally parallel to the reflector." 1

1 Notably, at the oral argument hearing on February 28, 2007, Plaintiff's counsel indicated that Plaintiff would not object to adopting Plaintiff's proposed version, but urged the Court to adopt the Special Master's proposal.

D. "substantially parallel to"

The court finds that the phrase "substantially parallel to" means "largely extending in the same direction as."

Claim 1 provides for a "mounting shaft having a central axis that is substantially parallel to said longitudinal axis." Plaintiff would construe "substantially parallel to" as "largely extending in the same direction." Defendant argues that Plaintiff's construction is too broad, that it would admit devices not aligned well enough to position a sighting device with the necessary precision. Defendant therefore proposes "extending in the same direction as the longitudinal axis of the mounting base to a degree sufficient to permit a scope mounted to the firearm by means of the pivoting scope mount to maintain and return to zero."

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Defendant's proposed language would require all embodiments of the '152 Patent to be capable of mounting a precision scope. However, Claim 1 merely describes a clamping device; it does not specify the degree of precision with which a mounted accessory should function when attached to that device. Defendant's proposed language is therefore rejected as inappropriately limiting, and the court will adopt Plaintiff's proposed construction.

b. Element 1

"An outer shell of substantially parallelepiped shaped …"

The parties have stipulated that a parallelepiped shape is a polyhedron, all of whose faces are a parallelograms. (McGraw Hill Dictionary of Scientific and Technical Terms.) In this context, a parallelepiped structure would be a six-sided box where each opposing pair of sides are parallel. The parties disagree as to the meaning of the word "substantially".

The Plaintiff contends that the term "substantially" has the meaning that those skilled in the art already know or could ascertain with the use of a dictionary. Thus, the Plaintiff contends that the word "substantially" means "considerable in extent" or "largely, but not wholly that which is specified." York Products Inc. v. Central Tractor Farm & Family Cntr, Inc., 99 F.3d 1568 (Fed. Cir. 1995) (from American Heritage Dictionary, Second College Edition, 2d Edition 1982 and Webster's Ninth New Collegiate Dictionary, Ninth Edition, 1983, respectively). The Plaintiff explains that "substantially parallelepiped" therefore means a shape that is almost, but not quite a parallelogram. The Defendants argue that the phrase "substantially parallelepiped" is ambiguous and therefore must be limited by Figures 6 and 7 of the Specification.

The difficulty in giving meaning to the phrase "substantially parallelepiped" is not in the meaning of the word "substantially". It is, instead, that the word "substantially" negates the characterization of "parallelepiped" to some degree. The issue is in what way and to what degree a "substantially parallelepiped" shape differs from a parallelogram. Simply stated, an object that is "substantially parallelepiped" is an object which is not a parallelogram because not all of its opposing sides are parallel with each other. This meaning is clear, but describing a structure as "substantially parallelepiped" does not reveal which sides of the parallelogram are and are not parallel. To that extent, the phrase is ambiguous.

Where claim language is ambiguous and therefore cannot be understood, it is appropriate to refer to the written description in the Specification. Bell Atlantic Network Svs., 262 F.3d at 1270-71. Reference to the Specification is helpful in this context because it clarifies which sides of the module are not parallel. Figures 2, 3, 6 and 7 reveal that it is the end panels of each module that are not parallel to each other.

Modules of a size that may be manually processed are abutted together end to end in registration and welded together along two weld lines to form walls for the detention structure. The ends are indented so that the two weld lines at the wall section surfaces are the sole lines of registered contact. Exhibit 1, column 2, Ins 5-10. As best seen from Fig. 3, the module ends are not perpendicular to the front and back panel facings 11 and 12. Thus the apex 49 of the right angle triangular panel section 21 is displaced inwardly toward the center of the module .... The end plate 40 thus is at an angle 48 of a few degrees. As a result there is only line contact between adjacent modules along the apex 25 and the apex 50 when the modules are assembled in registration.
Thus, the Court concludes that for purposes of Claim 1, the phrase "substantially parallelepiped" means a six-sided parallelogram in which the end panels are neither parallel to each other nor perpendicular to the face walls.

a. Scope of Plaintiff's claim 3

Defendant argues that the scope of Plaintiff's claim does not encompass its socket because the angle of the terminal ends in its lamp socket is 120 degrees, and "120 degrees is not very close to perpendicular or 90 degrees at all." [Response, p. 10]. Defendant relies on Amhil Enters. v. Wawa, Inc., 81 F.3d 1554 (Fed. Cir. 1996), where the court held the phrase "substantially vertical" to pertain to items that deviated only slightly, if at all, from the vertical.

In Amhil, the patentee used the phrase "substantially vertical" interchangeably with "vertical" in both the specification, and within the claim. The court also noted that the patentee also used the language interchangeably during patent prosecution. Further, the court noted that based on prior art, if the claim was not construed as nearly vertical, the patent would be invalid for obviousness. Id. at 1560. Accordingly, the court held that "substantially vertical" meant "deviate only slightly, if at all, from the vertical…any other construction of claim 1 would render it invalid." Id. at 1562.

In Playtex Products, Inc. v. Procter & Gamble Company, 400 F.3d 901 (Fed. Cir. 2005), the court held that the phrase "substantially flattened surfaces" did not refer only to a flat surface, but could include curved surfaces, depending on the comparative reference point. The court noted that "the term substantial is a meaningful modifier implying approximate rather than perfect." Id. at 907. The court reiterated the holdings in recent cases involving interpretation of terms of degree. See Cordis Corporation v. Medtronic AVE, Inc., 339 F.3d 1352, 1361 (Fed. Cir. 2003) (refusing to impose a precise numeric constraint on the term "substantially uniform thickness" instead construing it to mean "of largely or approximately uniform thickness"); and, Anchor Wall Systems v. Rockwood Retaining Walls, Inc., 340 F.3d 1298 (Fed. Cir. 2003) (holding that the phrase "generally parallel" envisions some amount of deviation from exactly parallel and that such words of approximation, such as "generally," and "substantially," are descriptive terms commonly used in patent claims to avoid a strict numerical boundary to the specified parameter).

Here, Plaintiff gives two preferred embodiments in the specification. In the first embodiment, it states that "the blade axis is preferably at about a right angle from the cradle axis…the terminal is thus a one-piece right angle terminal…alternatively, the cradle axis can be at an obtuse angle 1 relative to the blade axis…" [Motion, Exhibit A]. In the second embodiment, Plaintiff discloses that "similar to the first embodiment, the terminals have a cradle axis and a blade axis that are substantially perpendicular…" Id. Plaintiff uses the phrase "at about a right angle" interchangeably with "substantially perpendicular." It does not use the word perpendicular interchangeably with any other phrase. Accordingly, the Amhil, supra, holding is not read by this Court as limiting the phrase "substantially perpendicular" to mean perpendicular.

--- Footnotes ---

1 An obtuse angle is an angle greater than 90 degrees, but less than 180 degrees.

--- End Footnotes ---

The explicit language of claim 3, "lead receiving end having an axis that is substantially perpendicular to an axis of said lamp receiving end," clearly envisions something more than strictly perpendicular; otherwise, the word "substantially" would have no meaning.

"Generally, there is a 'heavy presumption' in favor of the ordinary meaning of claim language as understood by one of ordinary skill in the art. ' Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001) (citation omitted). But, the presumption in favor of the ordinary meaning can be overcome where the patentee chose to be his own lexicographer, by using terms in a manner other than their ordinary meaning. Id. "The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by
implication." Id.

Based on the language in the specification, the Court finds that Plaintiff intended to limit the phrase "substantially perpendicular" to "about a right angle," or 90 degrees. This is further evidenced by Plaintiff's characterization of its socket as a "right angle terminal."

The Court finds as a matter of law, based on the intrinsic evidence, that the phrase "substantially perpendicular" as used in claim 3, means an angle that is 90 degrees or approximately 90 degrees.

JVI proposes the following construction of this phrase: "each embedded leg is positioned in a plane sufficiently perpendicular to the faceplate and parallel to the longitudinal axis of the faceplate to permit significant flexing under vertical shear and tension forces." Universal proposes, "the terms 'substantially perpendicular' and 'substantially parallel' mean that the legs need not be exactly perpendicular and parallel; a slight degree of leeway is allowed. These terms are not defined in terms of serving a function, i.e., permitting significant flexing under vertical and shear tension forces."

The parties agree that "substantially perpendicular" and "substantially parallel" do not require the legs to be exactly perpendicular and parallel. The parties disagree, however, as to how much leeway is permitted. JVI argues that the amount of leeway permitted is enough to permit significant flexing under vertical shear and tension forces.

Universal disagrees with JVI's definition to the extent that JVI defines the phrase in terms of a function. Universal argues that the functional language of Claim 1 is directed at the flattening bends not the legs. It contends that the bends are angled to meet two functions: (1) to enable the embedded legs to be positioned in a plane; and (2) to allow said flange connector to flex under shear and tension forces. It is the angling of the flattening bend that allows for the flexing of the flange connector, not the perpendicularity or parallel relationship of the embedded legs. Universal argues that throughout the specification, the inventor describes the flexing functionality as related to the flattening bends.

The summary of the invention states that "the principal object of the present invention is to provide a flange connector that absorbs the shear force occurring in both the upward and downward directions and allow the flange connector to flex such that any failure in the connection is a ductile failure that can detected through an inspection of the joint." '897 Patent, Col. 2, 11. 41-48. The summary of the invention goes on to describe the design of the present invention that is used to "[t]o achieve these objectives . . ." '897 Patent, Col. 2, 11. 55-; Col. 3, 11. 10. Contrary to Universal's assertion, the functional language is not limited to the design of the flattening bends, but includes the design of the embedded legs. Thus, the Court accepts JVI's interpretation of this phrase.

Hynix argues that the phrase "substantially perpendicular" is indefinite because "it is unclear what degree of taper, if any, may be present" in the side walls of the embedded insulators. Hynix Br at 24. In particular, Hynix argues this phrase embraces only the minor, one or two degree variations in perpendicularity incidentally formed by the reactive ion etching process.
(RIE) techniques used in this invention. According to Hynix, "substantially perpendicular" cannot encompass deliberate attempts to taper the side walls of the embedded insulators through "RIE techniques under taper etching conditions."

But Hynix's arguments ring hollow. First, Hynix's contentions regarding "RIE techniques under taper etching conditions" have no bearing on the degree of taper in the side walls of the embedded insulators. The patent discusses this fabrication technique only once with respect to creating tapered side walls for the etch masks, not the embedded isolators. '715 patent at 25:9-12, FIG 37.

More importantly, the specification depicts numerous embodiments in which the side walls of the embedded insulator are slanted by more than one or two degrees. See '715 patent FIGS 15A, 15B, 18, 19, 20A, 20B, 21, 22, 23A, 23B, 24A, 24B, 25A, 25B, 29, 30, 31, 32, 33, 35, 36, 37, 38, 40. Indeed, the court's measurements of the embodiments in these figures indicate that these side walls deviate by at least seven (7) degrees. Hynix's construction would exclude these embodiments and is therefore disfavored. See C R Bard, 388 F3d at 865 ("[A] construction that excludes a preferred embodiment 'is rarely, if ever, correct.'").

Although the patent does not provide a numerical limitation for the term "substantially," the disclosed embodiments and the ordinary and plain meaning of "substantially" should be sufficient to guide a jury in performing its duties. If necessary, and if the parties marshal any new intrinsic evidence, the court would consider revisiting this issue at a later date. But for present purposes, the court rejects Hynix's construction and declines to construe this term.

Claim 6:
1. "wherein the spring is a substantially planar bent wire spring"

Plaintiff proposes the construction of "a spring having one or more bends in the same plane, thereby providing a substantially planar bent wire spring. It is not required that the spring be formed of a flat wire, but rather, that the shape of the spring be substantially flat or planar."

Defendant proposes the construction of "wherein the spring is a substantially flat bent wire spring."

The language of the term establishes that "bent wire" modifies "spring," indicating that the spring is composed of wire that is bent. The specification also supports this interpretation, stating that the spring or bias element may include a simple bend of 90 or 120 degrees, or a coiled bend of 360 degrees or greater. 476 Patent, Col. 4, lines 5-13. There is no limitation in the patent that the wire itself be flat. The specification notes that the preferred element is music wire, which is a round wire. 476 Patent, Col. 4, lines 14-15.

The court concludes that the proper construction is "a spring having one or more bends in the same plane, thereby providing a substantially flat shape. The spring may be composed wire that is not flat."

B. Claim Element 7(a): "a substantially planar cover portion conforming in shape to the opened end of said container"

The parties agree that this claim limitation describes the portion of the lid surrounding the spout. Playtex contends that the adjectives "substantially planar" should be construed to mean "substantially flat," rather than "substantially planar. " In response, plaintiffs argue that the term "planar" requires no further construction and, alternatively, that if the court defines the term planar, it should be construed to mean "thin in comparison to length and width."

The ordinary meaning of planar is "of or relating to a plane; lying in one plane . . . having a flat two-dimensional quality." Webster's, supra, at 1730. The relevant definition of "plane," in turn, is "a surface such that the straight line that joins any two of its points lies wholly in that surface: a two-dimensional extent of zero curvature: a surface any intersection of which by a like surface is a straight line." Id. The written description is not illuminating. The only reference to the substantially planar cover portion merely states that "the closure 10 is circular in shape, having a substantially planar cover portion and may vary in size depending upon the size of the beverage container 11."

The drawings reflect that the portion of the lid surrounding the spout is essentially flat and corresponds in shape to the beverage container.
Ultimately, the court believes that the parties have focused too narrowly on the term "planar." "Planar" does not stand alone in claim element 7(a). Rather, claim element 7(a) refers to "a substantially planar cover portion conforming in shape to the opened end of said container." (Emphasis added.) The meaning of the term "plane" can fairly be characterized as a flat, two-dimensional surface. But the meaning of this term is tempered by transformation of the root word "plane" into its adjective form, planar, which the court construes, according to its ordinary meaning, to mean having a flat, two-dimensional quality.

3 Plaintiffs argue the two-dimensional dictionary definition applies only to surfaces or other two-dimensional structures, not three-dimensional structures like lids and membranes. The dictionary, however, does not state that a planar structure is perfectly flat and two-dimensional. The dictionary uses the term "surface" and "two-dimensional" in defining "plane," but it defines "planar" as "of or relating to a plane . . . having a flat two-dimensional quality." Thus, by definition, a "planar" structure need not be perfectly two-dimensional. Rather, it must simply relate to or have a two-dimensional quality about it.

The patent further modifies the term "planar" with the adverb "substantially." "Substantially" is defined as "in a substantial manner: so as to be substantial." Webster's, supra, at 2280. "Substantial," in turn, is defined as "consisting of, relating to, sharing the nature of, or constituting substance: existing as or in substance." Id. And "substance" is defined as "essential nature . . . a fundamental part, quality, or aspect: essential quality or import: the characteristic and essential part." Id. at 2279. It is somewhat difficult to draw an ordinary meaning from these definitions because the definition of the adverb "substantially" is two steps away from the definition of the root word "substance." The thesaurus lists the following synonyms for the adverb "substantially": palpably, materially, structurally, largely, thick, in truth, in essence, and on the whole. Bartlett's Roget's Thesaurus 1321 (1996). The common thread between the dictionary definition and the synonyms listed in the thesaurus is various derivatives of the word "essence" such as "essential" and "essentially." Thus, if the court were to construe the term "substantially," it would likely construe it to mean something such as "a manner that constitutes the essential nature," "essentially," or "in essence." Ultimately, these definitions are no more helpful than the term "substantially," and therefore the court finds that the term "substantially" requires no further construction.


The court further notes that the "substantially planar cover portion" is relevant to an understanding of other claim elements. Claim element 7(b) claims attachable means, which the court construes infra to be a friction fit between the lid and the beverage container. Claim element 7(c) claims an elongated passageway extending upwardly and outwardly from the "said cover portion," meaning the "substantially planar cover portion" claimed in element 7(a). Given the language of the entire claim which is consistent with the intrinsic record, then, the court construes the phrase "substantially planar cover portion" to mean a cover portion having a substantially flat, two-dimensional quality.
This relative motion creates concomitant variations in the light transmission from source to sensor and thus grossly distorts the measurement of light extinction. When this motion occurs, variances of light transmission are erroneous indicators of light extinction. These extinction errors ultimately cause corresponding errors in oxygen saturation measurement, all as a result of discontinuous contact and other causes of relative motion between the light source, the photo-sensor, and tissue.

(PX 7, col. 2, lines 54-66) (emphasis added). The claimed invention addresses the problem of motion artifact as follows:

A further object of this invention is to disclose a process for making the apparatus. In the assembly of this invention, the light source and the photosensor are mounted to substrates and are constructed of such small dimensions that both independently conform with a low aspect ratio to the flexible adhesive strip.

(PX 7, col. 6, lines 9-14) (emphasis added). Thus,

when the sensor is adhesively fastened, the effect of the light source and photo-sensor being integrated into the adhesive fastener is that they become, in effect, a part of the skin. The resulting device is resistant to accidental removal and avoids constriction of blood vessels both internal and external. Most importantly, the low mass of the sensor itself and its conformance to the skin prevents motion, localized force, and the resulting contact interruption among the light source, photo-sensor and flesh.

(PX 7, col. 4, lines 59-68) (emphasis added). In the more detailed description of the preferred embodiment of the invention, both the light-emitting diodes and the photo-sensitive portion of the sensor are given very small dimensions "which give the apparatus low profile and aspect ratios." (PX 7, col. 9, lines 2-3) Moreover, once the photo-active elements are attached to their respective substrates, they are "captured " between two "opaque vinyl strips," one of which is apertured, thus "conforming the thickness of the photo-active substrates to the overall thickness of the flexible adhesive strip to which attachment occurs. The photo-active substrates as thus captured are ideally indistinguishable in the tactile sense from the flexible adhesive strip itself." (PX 7, col. 9, lines 41-45)

Mr. Corenman, one of the inventors and a qualified expert, explained that "substantially planar" means "mostly flat. In other words, a relatively flat shape for the initial shape of the structure. … No significant bumps." (D.I. 122 at 1065-66)

Given the problem addressed by the invention and the specification language describing the inventors' solution to the problem, the court finds the phrase "substantially planar … support structure" to mean a structure having substantially flat or flush surfaces.

b. "blood is substantially prevented from entering the proximal portion of the guide wire lumen"

The plaintiff proposes "blood from outside the catheter is substantially prevented from traveling through the distal portion of the guide wire tube into the proximal portion of the guide wire tube." The defendant proposes "to prevent nearly all of the blood from entering the proximal portion." The are two main disputes between the parties.

The first dispute is whether blood is substantially prevented from entering the proximal portion of the guide wire lumen, regardless of how the blood entered the guide wire lumen, or if only the blood that enters through the distal portion of the guide wire lumen is substantially prevented from entering the proximal portion. The plaintiff argues that this feature of the invention refers to the decrease in the diameter of the distal portion of the guide wire lumen and, therefore, the limitation only prevents blood from the distal portion of the guide wire lumen from entering the proximal portion. '358 patent, 2:45-50. In response, the defendant argues that the claim language nor the specification limits the term based upon where the blood originally enters guide wire lumen.

The second dispute is over the use of "nearly all" in the defendant's proposed construction. The plaintiff argues that
"substantially" may be understood according to its plain and ordinary meaning, and that "nearly all" would be inconsistent with the disclosed embodiment which recognizes that some blood will enter the proximal portion of the guide wire lumen. The defendant, on the other hand, argues that "nearly all" is supported in the prosecution history because the applicant, in distinguishing prior art, states that the guide wire lumen was "sized to prevent blood from entering the proximal portion of the guide wire lumen . . . ." Amendment, Feb. 8, 1999, at 4. The defendant also points to the inventor's notebook, which was used to demonstrate an earlier date of invention, stating that "the tip prevents blood flowing into the guide wire lumen" while acknowledging that "a small portion of blood will enter the guide wire lumen . . . ." Declaration, Jan. 10, 2000. Finally, the defendant supports its proposed construction based on the dictionary definition and how "substantially" has been defined in previous cases. See, e.g., LNP Engineering Plastics, Inc. v. Miller Waste Mills, Inc., 275 F.3d 1347, 1354 (Fed. Cir. 2002) ("substantially" means "largely, but not necessarily wholly"); Ecolab, Inc. v. Envirochem, Inc., 264 F.3d 1358, 1366-69 (Fed. Cir. 2001) ("substantially" means "largely, but not wholly"); York Products, Inc. v. Central Tractor Farm & Family Center, 99 F.3d 1568, 1572 (Fed. Cir. 1996) ("substantially the entire" means "nearly the entire"); Chemical Separation Technology, Inc. v. United States, 51 Fed. Cl. 771, 790 (Fed. Cl. 2002) ("substantially" means "nearly").

The Court agrees with the defendant that the patent does not limit the term based on where the blood enters the guide wire lumen. The Court, however, agrees with the plaintiff that "substantially" can be understood according to its plain and ordinary meaning. The cases cited by the defendant in support of its proposed construction are distinguishable. In the context of the patents involved in those cases, it was necessary for the courts to define "substantially." See LNP Engineering Plastics, 275 F.3d at 1354 (the term"substantially completely wetted" required construction in order to specify proper composition); Ecolab, 264 F.3d at 1366-69 (the term "substantially uniform" required construction in order to clarify the uniformity of the material); York Products, 99 F.3d at 1572-73 (the term "substantially the entire height thereof" required construction indicating how high ridges must cover a side wall). The term "substantially" as used in the '358 patent and the '057 patent does not have a technical meaning nor does it require construction beyond its plain and ordinary meaning.

5. "blood is substantially prevented from entering the proximal portion of the guide wire lumen"

The plaintiffs propose "blood from outside the catheter is substantially prevented from traveling through the distal portion of the guide wire tube into the proximal portion of the guide wire tube." The defendants do not offer any construction with respect to this term.

The plaintiffs request that the court revisit its decision in the Cordis case not to construe this term. No new arguments are presented in support. Rather, the plaintiffs reiterate that the "claims, specification, and logic do not suggest any correlation between the reduced diameter tip and any flow of blood into the catheter through the side or exit port." Plaintiffs' Opening Brief at 12. The defendants' response is silent.

After carefully considering the arguments raised, the court is not persuaded to alter its construction from the Cordis case. Accordingly, the Court concludes that this term does not requires construction.

B. "Substantially quadrilaterally shaped"

Plaintiff argues that the claim language "the enclosure along its major longitudinal axis being substantially quadrilaterally shaped" requires only that the sides of the pad cover "have an approximate four-sided shape - not necessarily a perfect four-sided shape - and/or a sum of internal angles of about 360 degrees." Plaintiff's Opening Claim Construction Brief at 10. Defendant argues that the term "substantially" allows some deviation from an exact mathematical quadrilateral, but cannot eliminate the requirement that the overall shape of the pad's sides still must be a quadrilateral.

The claim language, specification, and prosecution history do not make clear the meaning of "quadrilateral," and the Court will consult a dictionary and other extrinsic evidence to determine the term's ordinary and customary meaning.
"Quadrilateral" is defined as "a plane figure having four sides and four angles." Random House College Dictionary (1973). The parties note that basic principles of geometry hold that the sum of the interior angles of a quadrilateral must equal 360 degrees. See Exhibit E. Thus, if the sum of the interior angles of a polygon is not 360 degrees, the shape is not a quadrilateral. By definition, a quadrilateral has four planar sides, meaning that the sides are flat or level and are bounded by four straight lines.

Footnotes

1 A polygon is "a figure, esp. a closed plane figure, having three or more usually straight sides." Random House College Dictionary (1973). According to geometric principles, if the sum of the interior angles of a polygon is 180 degrees, the shape is a three-sided polygon (a triangle), which has three sides; if the sum of the interior angles is 360 degrees, the shape is a four-sided polygon (a quadrilateral); if the sum of the interior angles is 540 degrees, the shape is a five-sided polygon (a pentagon). See Exhibit E; Random House College Dictionary (1973).

For the reasons explained in the preceding section, the construction of claim terms relating to the pad structure's enclosure is with reference to the enclosure in a substantially filled state. The Court finds that the phrase "substantially quadrilaterally shaped" means that the enclosure along its major longitudinal axis has an overall quadrilateral shape with four sides which are overall flat or level and are composed of overall straight lines, and the shape's internal angles reach the sum of approximately 360 degrees.

Background

Akron filed the suit at bar against Excel in March 1992, seeking a declaratory judgment that its non-aerosol dispenser product does not infringe Claim 39 of the '829 patent. The '829 patent, entitled "Apparatus for Containing and Dispensing Fluids Under Pressure and Method of Manufacturing Same," is directed to a non-aerosol container assembly for dispensing fluids under pressure. Claim 39, with the language central to the infringement allegation emphasized, is as follows:

39. An apparatus for containing and dispensing a liquid under pressure comprising:

(a) a container housing having an opening at one end thereof;

(b) a flexible cylindrical container integrally formed of a blow molded generally homogeneous elastic plastic composition and having a central longitudinal axis, said blow molded container having a neck portion and a plurality of longitudinally extending creases disposed below said neck portion generally equidistantly from said central longitudinal axis, said blow molded container defining an inner region for containing the liquid under pressure and being folded inwardly along said creases only about said central longitudinal axis in its empty condition and expanded only in substantially radially outward directions when filled with the liquid under pressure, said blow molded container being substantially chemically and physically inert with respect to the liquid contained therein, said configuration and structure of said blow molded container being such that said blow molded container is expanded only in substantially radial directions when said blow molded container is filled with the liquid under pressure;

(c) a resilient generally tubular member positioned radially outwardly of said blow molded container, said resilient tubular member extending at least over the length of said blow molded container and being expandable in radial directions when said blow molded container is filled with the liquid under pressure, said resilient tubular member frictionally interacting with said blow molded container when said blow molded container is filled with the liquid under pressure such that said resilient tubular member and said flexible cylindrical container each expands generally uniformly only in directions substantially radially outwardly of said longitudinal axis along its length; and

(d) valve means connected solely to said neck portion and extending into said inner region no further than said neck portion of said blow molded container, said valve means further being secured to one end of said container housing at the
opening thereof when said blow molded container and resilient tubular member are assembled and positioned therein, said valve means being adapted to substantially prevent evacuation of said blow molded container under normal conditions and capable of selectively providing communication between said inner region of said blow molded container and the outside atmosphere thereby to permit selective amounts of said pressurized liquid to become dispersed and to exit said blow molded container due to the generally radially inward forces provided by said resilient tubular member in its generally expanded condition.

Exxel responded by filing an infringement counterclaim. Acting on the parties' cross-motions for summary judgment on the question of infringement, the district court concluded that Claim 39 reads on the Akron dispenser.

At the same time that it held in favor of Exxel on the question of infringement, the district court granted Akron's motion for leave to amend its complaint to include the allegation of unenforceability of the '829 patent due to inequitable conduct before the PTO. Specifically, Akron alleged that Exxel's predecessor-in-interest, Container Industries, Inc. ("Container"), the '829 patent's named assignee, intentionally failed to inform the examiner of the existence of a co-pending application, also assigned to Container, claiming quite similar subject matter. According to Akron, the co-pending application, though it was filed after the application that became the '829 patent, was prior art to the '829 patent and should have been disclosed during its co-pendency, and certainly no later than the date it issued as U.S. Patent No. 4,387,833 (the '833 patent).

The district court analyzed Akron's allegation of inequitable conduct in two ways. First, after noting that undisclosed information must be material to support a holding of inequitable conduct, the district court approached the question of materiality from the perspective of an interference proceeding, framing the central question as "whether the invention disclosed by [the] Venus [application 2] was patently distinct from that disclosed by [the] Katz [application 3]." After comparing two pairs of claims from the patents for purposes of illustration, the district court concluded that "the invention disclosed in the Venus '833 Patent was an improvement of the invention disclosed in the Katz '829 Patent . . . and therefore, there was no bar to the issuance of the Katz '829 Patent, and the Venus '833 Patent, although issued first, was not prior art to the Katz Patent." The district court then reframed the central question as "whether, at the time of the prosecutions, Attorney Catanzaro thought [the] Venus [application] was prior art to [the] Katz [application] and if so, whether he thought it was material and nonetheless chose not to disclose it to the Katz [application] examiner." Finding no evidence to suggest what "Catanzaro's thoughts were in this regard," the district court concluded that the reference was not material. The trial court also proceeded, despite what it viewed to be a lack of materiality, to conclude that there was also insufficient evidence of culpable intent to deem the patent unenforceable due to inequitable conduct.

--- Footnotes ---

2 The '833 patent derived from U.S. Patent Application No. 216,191, entitled "Apparatus for Containing and Dispensing Fluids Under Pressure and Method of Producing Same," naming Frank Venus as the inventor.

3 The '829 patent derived from U.S. Patent Application No. 182,155, naming Hyman Katz as the inventor.

--- End Footnotes ---

Finally, after finding that Akron's infringement of the '829 patent was not willful and noting that both parties' litigation conduct had been "troublesome" and "certainly annoying," the district court found that the case was not an "exceptional" one and thus denied Exxel's motion for attorney fees under 35 U.S.C. § 285.

Infringement

Patent infringement analysis involves two steps: the threshold construction of the meaning and scope of the asserted claim, followed by the determination whether the accused product infringes the properly construed claim. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976, 34 U.S.P.Q.2D (BNA) 1321, 1326 (Fed. Cir. 1995) (in banc), petition for cert. filed, 64 U.S.L.W. 3068 (U.S. July 3, 1995) (No. 95-26). Where, as here, the parties do not dispute any relevant facts regarding the accused product but disagree only as to the proper construction of the asserted claim, the question of literal infringement collapses to one of claim construction, a question of law that we review de novo. Id. at 979, 34 U.S.P.Q.2D (BNA) at 1329.

Paragraph c of Claim 39 recites a "blow molded container" placed within a "resilient tubular member" such that, when the container is "filled with liquid under pressure," "each expands generally uniformly only in directions substantially radially
Akron moved for summary judgment of noninfringement on the ground that Claim 39, which, according to its construction, precludes all longitudinal expansion in the resilient tubular member, does not read on its dispenser, the resilient tubular member of which expands both radially outwardly and longitudinally. The district court rejected this construction of Claim 39 after reviewing the claim language, the specification, and the prosecution history, concluding that Claim 39 recites "an outer resilient rubber sleeve which is slid tightly over the plastic liner and which, upon inflation of the liner, expands mostly radially, but also minimally longitudinally."

Akron contends on appeal that the district court erred in so construing the claim, renewing its assertion that a construction that permits longitudinal expansion is "precluded by the prosecution history and the plain meaning of Claim 39 terms." We disagree. The language of the claim itself, far from precluding longitudinal expansion, recites "substantially radially outward[ ]" expansion—i.e., expansion that, while "substantially" radial, is not exclusively radial. In other words, the claim plainly accommodates a degree of longitudinal expansion. The specification supports this view. For example, in discussing the best mode for practicing the claimed invention, the specification indicates that "the expansion of the energy sleeve . . . is regulated . . . so as to expand substantially in a radial direction with negligible, if any, longitudinal variation." Finally, nothing in the prosecution history of the '829 patent is contraindicative: the prior art references cited by the examiner, and the amendments made in light of them, were directed to the longitudinal expansion of the blow molded container rather than of the resilient tubular member. Thus Katz did not, as Akron insists, disclaim all longitudinal expansion in the resilient tubular member in order to overcome the prior art rejections.

Akron raises a host of additional contentions, insisting, for example, that the judgment should be reversed in light of the court's purported comparison of the accused device with an embodiment produced by the patentee; all are unavailing. As we have often observed, with woefully little effect on the bar, "we review judgments, not opinions, and we need not close our eyes to the record where, as in this case, there is a way clearly open to affirm the trial court's action." Super Sack Mfg. v. Chase Packaging Corp., 57 F.3d 1054, 1057 n.2, 35 U.S.P.Q.2D (BNA) 1139, 1142 n.2 (Fed. Cir. 1995) (internal quotations and citation omitted).

Discerning no reversible error in either the district court's construction of Claim 39 or its application of the claim to the Akron dispenser, we affirm the judgment of infringement in Exxel's favor.

2. "said side walls curving downwardly and inwardly towards said conveyor means such that said dump body defines a substantially semi-elliptical cross-sectional configuration for guiding and evenly deflecting all of the materials within said body towards said conveyor means"

The clause "said side walls curving downwardly and inwardly towards said conveyor means such that said dump body defines a substantially semi-elliptical cross-sectional configuration for guiding and evenly deflecting all of the materials within said body towards said conveyor means" is nearly identical to the same language found in claim 1 of the '389 Patent. The only difference is that the instant clause refers to "a substantially semi-elliptical cross-sectional configuration" and claim 1 of the '389 Patent refers to "a substantially semi-circular cross-sectional configuration." Accordingly, HECO and Cives and Monroe offer similar constructions to the constructions that the court has already discussed in Part V. A.3 of the instant Order. The only difference is that HECO urges the court to construe "semi-elliptical" as "one-half of a geometric shape where the sum of the distance of each point on the curve from two fixed points remains constant." JCCC at 12-13.

The court construes this claim consistently with its construction of the nearly identical clause in claim 1 of the '389 Patent. The court notes that Figure 6 of the '786 Patent, like Figure 4 of the '389 Patent, contains a straight, non-curved portion at the top of the bin walls. Accordingly, the court construes the instant clause as follows:

This claim element requires that the side walls are curved, and that they curve downwardly and inwardly toward the conveyor of the dump body. The requirement that the "dump body defines a substantially semi-elliptical cross-sectional configuration" means that the dump body, viewed from either end, is approximately in the shape of a semi-ellipse.

"Substantially" is used to mean "approximately." Thus, the cross section of the dump body must be approximately in the shape of a semi-ellipse.
"Deflect," in its ordinary meaning, means to change course.

Id. The court also agrees that some construction of "substantially semi-elliptical" is warranted. It means "approximately a shape of a semi-ellipse, i.e., one half of a geometric shape where the sum of the distance of each point of the curve from two points remains constant."

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3. Substantially Similar

The modification of the claim term "counterbalanced weights" with "substantially similar" also betrays the Momentus interpretation of "counterbalanced weights" as being equal. "Substantially similar" certainly allows for some difference between the weights. On the other hand, it would certainly seem that this modifier does constrain the claim in that the weights cannot differ too much. Thus, the Court is left to shed light on the question of how similar is substantially similar. Momentus offers that "similar" is typically defined as likeness or resemblance or having the same shape. It seems reasonable to this Court that the modifier "substantially similar" would require the weights to have shapes and sizes that are alike, but not necessarily identical. In particular, if the weights are not equal, they may, by necessity, be different sizes. In that instance, the weights could still be "similar" in the geometric sense of the term by sharing the same shape.

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2. Three-dimensional Isodose Profile

Claim 1 of the '204 patent requires a "radiation source disposed in the inner spatial volume and generating a three-dimensional isodose profile that is substantially similar in shape to the expandable surface element." Claim 17 of the '204 patent recites "[t]he apparatus of claim 1, wherein the radiation source is a plurality of solid radiation sources arranged to provide an isodose profile having a shape substantially similar to the shape of the outer spatial volume." The parties propose the following constructions:

*   *   *

SenoRx seeks a construction requiring that: (1) the isodose profile referred to must be the final isodose profile delivered to the tissue; and (2) the isodose profile must be substantially the same shape as, and concentric with, the outer surface.

According to SenoRx the "absorbed dose" is the final, total dose resulting from the delivery of radiation and absorbed by the tissue at the end of radiation therapy. SenoRx states that the focus of the invention is on achieving a "predetermined dose range" in the target tissue, defined as the dose "between a minimum prescribed absorbed dose for delivering therapeutic effects to tissue that may include cancer cells, and a maximum prescribed absorbed dose above which healthy tissue necrosis may result." '204 patent 2:46-55. Thus, according to SenoRx, the "isodose profile" must be the final, cumulative dose.

Hologic disagrees, arguing that SenoRx is mischaracterizing the purpose of the invention in order to improperly limit the claim. According to Hologic, the '204 patent describes two primary purposes of the invention: to provide a uniform radiation dose to the targeted tissue and to ensure a predetermined dose range so that only cancerous tissue is destroyed by the radiation. Neither of these purposes requires that the isodose profile refer to the accumulated final dose. Indeed, as Hologic contends, one skilled in the art would understand and expect that the desired therapeutic result may call for the dose profile to be modified or adjusted. The Court agrees with Hologic that as used here, it is not appropriate to interpret the isodose profile as limited to a final, cumulative absorbed dose.

SenoRx also contends that the claim language requiring that the isodose profile be substantially the same shape as the outer expandable surface requires that the two be concentric. SenoRx points out that the specification describes the dose profile as
"within the target tissue at points equidistant from the surface of the outer spatial volume should be substantially uniform in substantially every direction." '204 Patent 5:13-19. Further, in distinguishing the '204 patent over the prior art, the applicants stated that the prior art did not have balloons that were equally spaced apart and therefore could not create an isodose profile that had substantially the same shape as the outer element. See Ex. 9, Dec. 20, 2000 Am., '204 Prosecution History. The prior art showed a figure that had two balloons but the inner balloon was positioned off center from the outer balloon.

Hologic contends that the specification language and prior art distinction do not require that the expandable surface be concentric with the isodose profile. It is possible, Hologic argues, to have an isodose profile that is substantially similar in shape as, but not concentric with, the expandable surface. Hologic suggests that a single radiation source enclosed in an expandable spherical outer surface and distributed off center but on the longitudinal axis would have a such a dose profile. This arrangement is shown in Hologic’s claim construction presentation diagram below:

The dotted line in the above diagram is meant to represent the shape of the isodose profile. But the isodose profile refers to levels of equal dose delivered to tissue, and in the above diagram the radiation would be subject to the attenuating material in different degrees. Because the source is positioned off center, the radiation at the distal end would be attenuated less than that at the proximal end. In the above diagram, the dotted line on the right of the diagram would be closer to the wall of the inner chamber. Hologic's diagram is thus not an example of a similarly shaped but non-concentric isodose profile. Indeed, any isodose profile that is non-concentric with the expandable surface would be asymmetrically attenuated in the same way. Thus, the requirement that the isodose profile be the same shape as the expandable outer surface also requires that the two be concentric.

Accordingly, the Court finds construes the term "three-dimensional isodose profile that is substantially similar in shape to the expandable surface element" to mean "three-dimensional isodose profile that is substantially the same shape as the outer spatial volume expandable surface and is concentric with the outer spatial volume expandable surface."

4. "Said deforming step substantially simultaneously applying uniform inward radial pressure on said mat." Consistent with the claim language and its ordinary meaning, the court construes "said deforming step substantially simultaneously applying uniform inward radial pressure on said mat" to mean "unvarying inward radial pressure is applied to the mat at essentially the same time the tubular body is deformed."

8 Random House Dictionary of the English Language 1784, 1897 (2d ed. 1987) (defining "simultaneous" as "existing, occurring, or operating at the same time; concurrent" and defining "substantial" as "basic or essential; fundamental" and "of or pertaining to the essence of a thing; essential, material, or important"); D.I. 151, ex. E at 1290 (defining "uniform" as "having always the same form, manner, or degree: not varying or variable").

9 '264 patent, col. 2, ll. 34-42; col. 3, ll. 2-5, 58-61.
engaging fastener can be pivoted within said recess portion of said at least one hole so that said first bone engaging fastener can assume a plurality of angles relative to said bottom surface of said plate.

The parties dispute the proper construction of the phrase "substantially smaller."


The specification does not contain a definition of "substantially," "smaller," or "substantially smaller" requiring departure from the ordinary meaning of the phrase. The parties have not pointed the Court to any representations made during prosecution that would limit the claim beyond its ordinary meaning. The Court construes "substantially smaller" to mean a considerable degree of difference between the relative diameters.

There is no basis for imputing a numerical limitation into the claim, as Plaintiff proposes. "[T]he term substantially' is a descriptive term commonly used in patent claims to avoid a strict numerical boundary to the specified parameter." Ecolab, Inc. v. Envirochem, Inc., 264 F.3d 1358, 1367 (Fed. Cir. 2001) (internal quotation omitted). See also Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551 (Fed. Cir. 1996) ("Ordinarily a claim element that is claimed in general descriptive words, when a numerical range appears in the specification and in other claims, is not limited to the numbers in the specification or the other claims."); Epcon, 279 F.3d at 1030-31 (declining to attach specific values to construe the term "substantially below").

There also is no basis for construing the claim according to the purpose of the invention. "Nonnumerically limited descriptive claim terms are construed using the same rules of construction as any other claim term." Ecolab, 264 F.3d at 1366. The claim states "a third diameter that is substantially smaller than said second diameter." (Emphasis added.) This language relates "substantially smaller" to the third diameter, not to the function of the invention. See id. at 1366-67. Defining "substantially smaller" in terms of the function would not be proper.


"The mere use of a term like substantially' to modify a term in a claim does not render a claim indefinite. " Id. at 1020. To determine whether one skilled in the art would understand the claim, courts look to disclosures in the patent specification such as measurements and the purpose of the invention. See, e.g., Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1377-81 (Fed. Cir. 2001); Advanced Cardiovascular, 96 F. Supp. 2d at 1020.
Here, the 927 Patent discloses figure 19, showing the relative diameters of the intermediate portion of the variable bone engaging fasteners and the opening on the bottom surface of the plate. Although not accompanied by dimensions, the figure enables one skilled in the art to understand that the claimed invention enables the fasteners to move when they are inserted into the holes. This understanding is strengthened by the statement in claim 1 that the head of the fastener "can be pivoted" within the recess portion of the hole "so that said first bone engaging fastener can assume a plurality of angles relative to said bottom surface of said plate." The specification and purpose of the claimed invention show the claim limitation "substantially smaller" is not invalid for indefiniteness.

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The anticipation of Claims 1 and 2 rests on whether the '769 patent discloses a side wall that is "substantially smooth but for an internal annular projection." The '769 patent shows a vessel side wall that contains an internal annular shoulder projecting inwardly from a position near the top of the vessel side wall. Above the internal annular shoulder is a thickened area that receives a fastening bolt. Morgan points to this thickened portion of the side wall as evidence that the side wall is not substantially smooth. The Board properly rejected Morgan's constricted definition of "substantially smooth." Claims subject to reexamination are to be given their broadest reasonable interpretation consistent with the specification. In re Yamanoto, 740 F.2d 1569, 1571 (Fed. Cir. 1984). The '271 specification does not define the claim element "substantially smooth," therefore the Board correctly gave the term its broadest reasonable construction by requiring a mostly, but not wholly, smooth side vessel wall. The vessel side wall disclosed by the '769 patent is primarily uniform, i.e., substantially smooth, even with the presence of the thickened portion at the top end of the side wall. The Board's finding of anticipation of Claims 1 and 2 of the '271 patent is thus supported by substantial evidence.

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The district court's grant of summary judgment of noninfringement as to claim 1 of the '143 patent was premised on the court's claim construction. On-Line contends that the district court erred in construing the claim and therefore erred in entering summary judgment.

Claim 1 of the '143 patent recites as follows (emphasis added):

A folded-path radiation absorption gas cell comprising: an enclosure having first and second ends, and defining a substantially closed chamber therewithin; spaced input radiation and output radiation windows formed through said first end of said enclosure and aligned on a first axis; a concave reflective field surface extending at least partially between said windows at said first end of said enclosure; a pair of substantially spherical, concave reflective objective surfaces at said second end of said enclosure disposed in confronting relationship to said field surface, said objective surfaces being aligned side-by-side on an axis parallel to said first axis and in optical registry with said windows, at least one of said objective surfaces having a cylindrical component added thereto to increase coincidence of foci in two orthogonal planes, thereby to maximize the energy throughput characteristic of said cell; and means for the introduction and withdrawal of gas into and from said chamber of said enclosure.

The invention to which claim 1 is directed is an improvement on a type of gas cell known as a "White cell." A White cell uses several mirrors that are aligned to make the light follow a long path as it passes through the test chamber. In the invention, two mirrors are placed side by side at the opposite end of the main chamber from a third mirror. A beam of light enters the chamber and is repeatedly reflected off the three mirrors until it reaches an exit point. Because the mirrors reflect the light beam back and forth across the chamber multiple times, the path of the beam is much longer than the distance from one end of the chamber to the other.

The '143 patent sought to address the problem of astigmatic diffusion of the light beam passing through the cell. The solution proposed by the '143 patent was to shape the secondary mirrors in a manner that would counteract the astigmatism induced by reflections from the spherical mirrors used in White cells and thus keep the beam of light focused during its

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passage through the cell. ‘143 patent, col. 4, ll. 52-62. To achieve that purpose, each claim of the ‘143 patent required the mirrors to have "substantially spherical, concave reflective objective surfaces . . . at least one of said objective surfaces having a cylindrical component added thereto to increase coincidence of focii in two orthogonal planes . . . " Id., col. 5, ll. 44-52; col. 6, ll. 14-22, 40-48.

On-Line asserted that Perkin-Elmer's commercial long-path gas cells infringed claim 1 of the ‘143 patent. In particular, On-Line contended that Perkin-Elmer's cells used objective mirrors of the sort recited in the claim to correct for astigmatism. In the district court, Perkin-Elmer did not dispute that its accused gas cells used objective mirrors shaped to correct for astigmatism. Perkin-Elmer argued, however, that its objective mirrors had toroidal surfaces, not "substantially spherical" surfaces "having a cylindrical component added thereto," as required by claim 1 of the ‘143 patent. For that reason, Perkin-Elmer argued, its gas cells were not within the scope of the patent, either literally or under the doctrine of equivalents. In essence, Perkin-Elmer's argument was that a toroidal surface is different from a substantially spherical surface with a cylindrical component added to it. Because On-Line not only did not claim toroidal mirror surfaces but specifically omitted them from its claims, Perkin-Elmer contends that On-Line had dedicated surfaces of that shape to the public. The district court agreed with Perkin-Elmer and held that Perkin-Elmer's toroidal surface was not covered by the ‘143 patent.

In explaining its claim construction ruling, the district court noted that the specification described the contour of the spherical objective mirrors as "approaching toroidal." ‘143 patent, col. 4, ll. 8-12. The court stated that "because mirrors with a contour which only 'approaches toroidal' cannot be said to be actual toroidal mirrors, toroidal objective mirrors are not spherical objective mirrors with cylindrical corrections." In support of that conclusion, the court cited extrinsic evidence, including testimony from the inventors, which the court characterized as establishing that "spherical objective mirrors with cylindrical corrections are not the same as toroidal objective mirrors." Because the court concluded that the claim language excluded toroidal surfaces, the court held that Perkin-Elmer's gas cells did not literally infringe claim 1 of the ‘143 patent. Moreover, because the court concluded that toroidal surfaces were disclosed but not claimed in the ‘143 patent, the court invoked the principle that a patentee's disclosure of unclaimed subject matter bars application of the doctrine of equivalents to that subject matter and held that On-Line could not rely on the doctrine of equivalents to reach toroidal mirrors such as Perkin-Elmer's.

On appeal, On-Line contends that the district court erred in ruling that objective mirrors having a toroidal surface are not within the scope of claim 1 of the ‘143 patent. We agree with On-Line that, properly construed, the reference to a "substantially spherical, concave reflective surface . . . having a cylindrical component added thereto to increase coincidence of focii in two orthogonal planes" defines a set of curved surfaces that includes a toroidal surface. We reach that conclusion because the specification makes clear that the claim language referring to spherical surfaces with cylindrical components includes toroidal surfaces.

A toroidal (or toric) surface is defined as a surface that is "generated if an arc is rotated about an axis which lies in the same plane as the arc, but which does not pass through its centre of curvature." M. Jolie, The Principles of Ophthalmic Lenses 31 (3d ed. 1977). The classic example of a toroid is the shape generated when a circle is rotated about a line that does not intersect the circle, which describes a torus, a figure resembling a doughnut or tire. A toroidal surface is the shape of a segment of the surface of a toroid. Id.

Although the parties agree that the term "toroidal" has a well-understood definition, neither party suggests that the term "substantially spherical, concave reflective surface . . . having a cylindrical component added thereto," used in the claims of the ‘143 patent, has a precise and well-established meaning in the art. Rather, the evidence before the trial court indicates that the reference to spheres and cylinders is borrowed from thin lens theory, and that a lens characterized as spherical with a cylindrical component is one with an optical function achieved by "stacking" spherical and cylindrical lenses. The evidence shows that the same nomenclature is sometimes used, albeit with some lack of precision, to refer to reflective surfaces having similar optical properties to such stacked lenses, even though reflective surfaces cannot be stacked in the same manner as lenses.

Because the phrase "substantially spherical . . . having a cylindrical component added thereto" has no precise and generally understood meaning in the art as applied to reflective surfaces, we look to the intrinsic evidence, in this case the specification, for guidance as to the meaning of that language as used in the patent. See Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1324-25 (Fed. Cir. 2002) ("The words used in the claim are interpreted in light of the intrinsic evidence of record . . . . The intrinsic evidence may provide context and clarification about the meaning of claim terms.

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'Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language.' (citations omitted); Genentech, Inc. v. Wellcome Found. Ltd., 29 F.3d 1555, 1563 (Fed. Cir. 1994) ("Since a definition of [the critical claim] phrase cannot be extracted from the claims themselves, we look to the specification for guidance."); see also United States v. Adams, 383 U.S. 39, 49, 15 L. Ed. 2d 572, 86 S. Ct. 708, 174 Ct. Cl. 1293 (1966) ("Claims are to be construed in the light of the specifications and both are to be read with a view to ascertaining the invention.").

Although in this case, as in others, "the guidance [in the specification] is not provided in explicit definitional format," Irdeto Access, Inc. v. EchoStar Satellite Corp., 383 F.3d 1295, 2004 U.S. App. LEXIS 19235 at *12, No. 04-1154, slip op. at 8 (Fed. Cir. Sept. 14, 2004), the specification of the '143 patent nonetheless demonstrates that the claim language encompasses toroidal surfaces. First, the specification refers to the curved surfaces in the preferred embodiment of the invention as toroidal surfaces ("the toroids of the surfaces 62, 64," '143 patent, col. 4, line 16), and in doing so it describes those surfaces by using the same language that is used in claim 1 ("generally spherical reflective surfaces," each of which "has a cylindrical component superimposed thereupon," id., col. 4, ll. 7-10). Accordingly, the specification makes it clear that, for purposes of the '143 patent, a toroidal surface is a substantially spherical reflective surface that has a cylindrical component superimposed thereupon.

Second, even if the specification were less explicit in equating the term "toroid" with a generally spherical surface having a cylindrical component added thereto, the reference to the preferred embodiment as having mirrors with toroidal surfaces would give rise to a very strong inference that the claim should be construed to include such surfaces. As this court has explained before, "a claim interpretation that excludes a preferred embodiment from the scope of the claim 'is rarely, if ever, correct.'" Globetrotter Software, Inc. v. Elan Computer Group, Inc., 362 F.3d 1367, 1381 (Fed. Cir. 2004), quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996); see also Int'l Rectifier Corp. v. IXYS Corp., 361 F.3d 1363, 1371 (Fed. Cir. 2004); Modine Mfg. Co. v. U.S. Int'l Trade Comm'n, 75 F.3d 1545, 1550 (Fed. Cir. 1999).

The district court interpreted the reference in the specification to a "contour that approaches toroidal," '143 patent, col. 4, line 12, as indicating that the recited surface could include a surface that approximates a toroidal shape, but could not include the toroidal shape itself. We disagree with that interpretation. From the description of the mirror surfaces of the preferred embodiment in "toroids" four lines later in the specification, we think it clear that the words "approaching toroidal" were not meant to exclude curves designed to be toroidal in shape, but simply to indicate that the surfaces recited in the invention were intended to include all curves that closely approximate toroidal, including a toroidal surface itself. Indeed, as a matter of manufacturing tolerances, it is impossible to make a real-world device with a reflecting surface that is perfectly toroidal, just as it is impossible to make a reflecting surface that is a perfect spheroid or a perfect paraboloid. For that reason, even mirrors that are designed to be toroidal, such as the mirrors in Perkin-Elmer's device, will necessarily merely "approach" the ideal toroidal shape, although they may come very close. Accordingly, we do not agree with the district court that the reference in the specification to a surface that "approaches toroidal" was meant to exclude a device having a surface that is characterized in the art of optical engineering as "toroidal."

Finally, the patent describes the effect of adding a cylindrical component to a generally spherical mirror as being "to reduce the effective radius of curvature in one plane, thus enabling light incident on the reflective surface to better approach the focus in the orthogonal plane," '143 patent, col. 4, ll. 60-62, and "to increase coincidence of foci in two orthogonal planes," id., col. 5, ll. 51-52. A toroidal surface "has two principal radii of curvature corresponding to its two principal curves," M. Jolie, supra, at 31; see also Jurgen R. Meyer-Arendt, Introduction to Classical & Modern Optics 120 (3d ed. 1989) ("A toric surface has two radii of curvature (different in the two principal meridians"); Daniel Malacara, Optical Shop Testing 754 (2d ed. 1992). That characteristic makes toroidal surfaces useful in counteracting astigmatism. See Eugene Hecht, Optics 211-12 (3d ed. 1998). Thus, while the claim language in the '143 patent does not either expressly include a toroidal surface or exclude other similar surfaces, the characteristics and function of the surface described in the specification and the claims are consistent with the characteristics and function of a toroidal surface.

The district court relied on extrinsic evidence that the court interpreted as supporting its claim construction. Extrinsic evidence, however, cannot be used to alter a claim construction dictated by a proper analysis of the intrinsic evidence. See Intel Corp. v. VIA Techs., Inc., 319 F.3d 1357, 1367 (Fed. Cir. 2003) ("When an analysis of intrinsic evidence resolves any ambiguity in a disputed claim term, it is improper to rely on extrinsic evidence to contradict the meaning so ascertained."); Frank's Casing Crew & Rental Tools, Inc. v. PMR Techs., Ltd., 292 F.3d 1363, 1374 (Fed. Cir. 2002); Bell & Howell Document Mgmt. Prods. Co. v. Altek Sys., 132 F.3d 701, 706 (Fed. Cir. 1997). In any event, we do not agree with the district court's analysis of the extrinsic evidence.
Although the evidence showed, and On-Line's witnesses acknowledged, that the mathematical description of a toroid differs from that of a spherocylinder, On-Line offered evidence that a person of skill in fabricating optics would understand the expression "sphere with cylindrical correction" or a sphere "having a cylindrical component" to refer not to a mathematical concept but to the type of optical correction obtained by stacking thin lenses, one having a spherically curved surface and another having a cylindrically curved surface. According to On-Line's expert, a person of ordinary skill in the art would understand the term "sphere with cylindrical correction," as a way of describing the curved surfaces used in On-Line and Perkin-Elmer's commercial products, i.e., toroidal surfaces. The evidence in the summary judgment record therefore provides further support for On-Line's contention that the surface of the objective mirrors recited in claim 1 of the '143 patent includes toroidal surfaces, as that term is understood by persons of skill in the pertinent art, as opposed to the manner in which it is used by mathematicians.

To be sure, On-Line's inventors acknowledged that as a mathematical concept a toroidal surface is not the same thing as a spherical surface with a cylindrical component added to it. That is not to say, however, that the inventors regarded toroidal surfaces as falling outside the broader claim language, which referred to "substantially spherical" surfaces "having a cylindrical component added thereto." As On-Line's expert explained, "the sphere/cylinder convention does not specify the exact mathematical surface . . . . A person of ordinary skill in the art would understand the term 'sphere with cylindrical correction' as a terse and natural way to describe the modestly curved surfaces of the objective mirrors in On-Line's or Perkin-Elmer's gas cell [both of which are toroidal]." Moreover, while acknowledging that the mathematical definition of a toroid differs from that of a spherical cylinder, co-inventor Robert Carangelo testified that the claim language "substantially spherical . . . having a cylindrical component added" includes a toroidal surface. The other co-inventor, David Wright, testified to similar effect, stating that the claim language was intended to cover a range of conic sections, including ellipsoids and toroids, all of which would have the same shape near the axis "to within the order of machining tolerance."

Finally, even the technical article on which Perkin-Elmer relies to demonstrate that there is a mathematical distinction between toroidal and spherocylindrical surfaces points out that the distinction is extremely subtle for most applications and that toroidal surfaces "are sometimes also [referred to] as spherocylindrical surfaces." Carmen Menchaca & Daniel Malacara, Toroidal and Spherocylindrical Surfaces, 25 Applied Optics 3008 (1986).

Because of the lack of precision in the language used to define the claimed surfaces of the objective mirrors, this case was made more difficult than it needed to be, and the district court was required to invest considerable effort in trying to ascertain the meaning of the critical claim language. While the district court conducted a careful analysis of the claim language in light of the specification and the extrinsic evidence, we are nonetheless persuaded, particularly in light of the specification, that the district court's claim construction was too restrictive and that a surface designed to be toroidal is within the scope of claim 1 of the '143 patent. Accordingly, because the summary judgment of noninfringement was based on an erroneous claim construction, we vacate the judgment of noninfringement and remand the case for further proceedings on the remaining issues pertinent to On-Line's claim of infringement.

4. "Substantially Straight Compartments"

Finally, the Special Master observed that "[e]ach independent claim of the '668 Patent requires the formation of "substantially straight" cells or compartments." (R&R at 73.) This Court has construed the term "substantially straight" to mean "straight along nearly the entire length of the joint forming the compartment." (8/4/04 Order accepting and adopting Special Master's R&R, as supplemented by 7/15/04 R&R.)

The Special Master further observed that "[a]ll but one of the asserted claims of the '668 Patent employs the 'comprising' transition phrase. In accordance with fundamental patent law principles, each of the compartments of an accused airbag[] need not be 'substantially straight' in order to infringe claims of the '668 Patent. Rather, only 'at least two' of these compartments need be substantially straight." (R&R at 73, citing ResQNet.com, Inc. v. Lansa, Inc., 346 F.3d 1374, 1382 (Fed. Cir. 2003).) Considering TRW's and ATI's arguments and supporting evidence, as well as his own review of the images of inflated airbags, the Special Master concluded that "a genuine issue of material fact exists as to whether the accused airbags incorporate at least two 'substantially straight' compartments or not." (R&R at 74.) Drawing all inferences in favor of ATI, the Special Master concluded that "each of the inflated airbags appears to have an upper or lower
compartment, running parallel to the top or bottom of the vehicle door, that could fairly be described as rectangular in shape", and "[a] rectangular compartment is necessarily bounded by 'substantially straight' seams." (R&R at 74.) He further concluded that "each of the airbags incorporates at least one other compartment that, while not rectangular in shape, could arguably be described as defined by 'substantially straight' seams." (R&R at 74-75.) Finding a genuine issue of material fact exists on the issue whether the accused airbags include at least two "substantially straight" compartments, the Special Master recommended that TRW's motion for summary judgment of non-infringement based on the "substantially straight" limitation in claims 1-2, 4-6, 9-13, 15, 17-18, 20-33, and 35-44 be denied.

As to claim 45, which is the sole '668 Patent claim that incorporates the transition phrase "consisting of," the Special Master observed that the phrase "amounts to 'a term of patent convention meaning that the claimed invention contains only what is expressly set forth in the claim.'" (R&R at 75, quoting Norian Corp. v. Stryker Corp., 363 F.3d 1321, 1331 (Fed. Cir. 2004).) He further observed that TRW did not account for the implications of the use of that transition phrase in claim 45, and thus he had "no basis to determine the propriety of TRW's non-infringement argument beyond its assertions for those claims drafted using the open, 'comprising' phrase." (R&R at 75-76.) Accordingly, the Special Master recommended that TRW's motion for summary judgment of non-infringement based on the "substantially straight" limitation found in claim 45 be denied.

This Court accepts and adopts the Special Master's recommendation that TRW's motion for summary judgment of non-infringement be denied as to these claims and overrules TRW's objections. The Special Master properly concluded that only two of the compartments need to be substantially straight to satisfy this limitation. Moreover, viewing the one example provided by TRW, a reasonable jury could find two substantially straight chambers and thus find infringement either literally or equivalently.

8. "Substantially straight segments." Consistent with its ordinary meaning 20 and the written description, 21 the court construes "substantially straight segments" to mean "portions of the stent that are straight or nearly straight and extend the length of the stent.'

20 See American Heritage Dictionary 1213 (2d ed. 1984) (defining "substantial" to mean "considerable in importance, value, degree, amount or extent").


16. "Substantially straight, non-overlapping segments." Consistent with its ordinary meaning, 37 the court construes this phrase to mean "portions of a stent that are straight or nearly straight and do not extend over or cover part of any other segment."
2. The term "substantially surrounded laterally by infrared elements" in claim 12 is construed as: "substantially surrounded latitudinally by infrared elements." Cooper's proposed construction is "substantially surrounded on all sides." Dkt. # 61-2, at 28. Unitherm argues that this term does not require construction or, in the alternative, proposes "substantially surrounded from side to side by infrared elements." Dkt. # 60, at 23.

Cooper's suggestion that "surrounded laterally" means "surrounded on all sides" is impracticable. If a food product were surrounded on all sides by infrared elements its exit from a continuous oven would be blocked. At the Markman hearing, the parties agreed that "latitudinally" was an appropriate synonym for "laterally" in this case. From the nature of the inventive process and the drawing sheets, it is clear that the term is meant to refer to heating elements that are oriented along planes perpendicular to the food product's direction of travel.

11 Further, Cooper's proposed construction is at odds with its own proffered dictionary definition of the word "laterally," which is "of, relating to, or situated at or on the side." Dkt. # 61, at 25 (emphasis added).

The Court further finds that the term "infrared elements" does not require construction.

3. "Substantially surrounds" encloses completely or largely, at least sufficiently (in combination with other limitations) to prevent alteration of the cross-sectional configuration of the axle as referenced at col 5, ll. 28-30, col. 12, ll. 8-11; and col. 13, ll. 18-20. Turning to the phrase in claim 1 describing an inner chamber "being substantially symmetrical with said center of gravity," the term "symmetrical" as used in claim 1 can be defined by first looking at the term "said center of gravity." Claim 15 and the specification both define the "center of gravity" as a vertical plane transverse to the longitudinal direction of movement of the machine, between the wheel axle and the scrub brush. The center of gravity is to the rear of the wheel axis and substantially forward of the vacuum nozzles. The '891 patent, col. 4, lines 40-46 and col. 6, lines 31-36. The center of gravity in this case would describe a plane that divides the machine into halves of equal weight. A claim term "cannot be interpreted differently in different claims because the claim terms must be interpreted consistently." Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1571, 1579 (Fed. Cir.), cert. denied, 133 L. Ed. 2d 424, U.S. , 116 S. Ct. 515 (1995). Accordingly, "center of gravity" in claim 1 refers to a vertical plane transverse to the longitudinal direction of movement of the machine that divides the machine into halves of equal weight.

8 Webster's Ninth New Collegiate Dictionary (1985) defines the term "center of gravity" as "center of mass," "the point at which the entire weight of a body may be considered as concentrated so that if supported at this point the body would remain in equilibrium in any position," or "a point, area, person, or thing that is most important or pivotal in relation to an indicated activity, interest, or condition." It is clear from the '891 patent that the term here refers to mass.
and the inner chamber full of clean water, or the inner chamber empty and the outer chamber full of spent water, or at any stage therebetween when both chambers contain water. As clean water is progressively depleted from the inner chamber, and spent dirty water fills the outer chamber, the hydrodynamic pressure of the dirty water causes the flexible walls of the inner chamber to collapse, while the center of gravity of the water remains substantially the same at the center of the inner chamber.

It is clear from the specification that there is only one center of gravity for the machine itself as well as the two chambers. The specification states that the centers of gravity of the two chambers coincide (occupy the same space) and lie centrally of the inner chamber. The '891 patent, col. 3, lines 64-66. Further, this center of gravity is a vertical plane. Claim 1 states that the inner chamber is substantially symmetrical with "said center of gravity," referring to the center of gravity of the machine. The inner chamber must therefore be symmetrical on either side of the vertical plane that divides the machine into halves of equal weight.

The patent does not define "symmetrical," and there is no indication that the term is meant to have any special meaning. Webster's Dictionary defines "symmetrical" as "capable of division by a longitudinal plane into similar halves." Therefore, each half of the inner chamber on either side of the center of gravity must be of a similar shape.

9 Webster's Ninth New Collegiate Dictionary (1985). The full definition is:

symmetrical or symmetric adj. 1: having, involving, or exhibiting symmetry 2: having corresponding points whose connecting lines are bisected by a given point or perpendicularly bisected by a given line or plane ([approximately] curves) 3: symmetric: being such that the terms or variables may be interchanged without altering the value, character, or truth (symmetric equations) 4 a: capable of division by a longitudinal plane into similar halves ([approximately] plant parts) b: having the same number of members in each whorl of floral leaves ([approximately] flowers) 5: affecting corresponding parts simultaneously and similarly ([approximately] rash) 6: exhibiting symmetry in a structural formula; esp.: being a derivative with groups substituted symmetrically in the molecule.

10 Plaintiff asserts that the definition of "symmetrical" determined by the court in Micro Motion, Inc. v. Exac Corp., 741 F. Supp. 1426, 16 U.S.P.Q.2d 1001 (N.D. Cal. 1990) should be applied to the present case. In Micro Motion the court defined "symmetrical" as referring to symmetry about an axis or line, rather than planar (mirror image) symmetry. However, Micro Motion dealt with a flowmeter patent, and the plaintiff here has given no evidence that a term used in the context of flowmeters would have the same meaning in the context of floor cleaners. Accordingly, this is extrinsic evidence that will not be considered by the court.

The patent teaches a floor cleaning machine with a center of gravity that remains substantially constant during operation. The method it teaches for keeping the center of gravity substantially constant employs a clean water chamber and a dirty water chamber which both share the same center of gravity. The center of gravity for the load as a whole remains balanced about the center of gravity during operation because the centers of gravity for both chambers, which share the same center of gravity with the machine, remain constant during operation. In other words, if the centers of gravity for the individual chambers do not shift, the center of gravity for the load as a whole will not shift either.

The preferred embodiment of the invention employs an inner chamber that appears from the side to be "generally spherical." The drawing also employs a spherical inner chamber, with the center of gravity running vertically through its center. While limitations in the specification are not to be read into the claims, Markman, 52 F.3d at 980, reference to the specification and drawings to interpret specific claim language is proper. General Amer. Transp. Corp. v. Cryo-Trans, Inc., 93 F.3d 766, 770 (Fed. Cir. 1996), cert. denied, U.S. , 117 S. Ct. 1334 (1997). Although the reservoir does not have to be spherical, it is apparent from the specification that the term "symmetrical" refers to the shape of the reservoir. 11 Even if the term referred to weight balance rather than shape, the requirement that the inner chamber balance its load of water on either side of the center of gravity would dictate a symmetrical shape. This is the most logical interpretation when reading the patent as a whole. Also, dependent claim 5 of the '891 patent describes an inner chamber of partial spherical configuration. Dependent claims can aid in interpreting the scope of claims from which they depend, but they are only an aid to interpretation and are

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not conclusive. North Amer. Vaccine, Inc. v. American Cyanamid Co., 7 F.3d 1571, 1577 (Fed. Cir. 1993), cert. denied, 511 U.S. 1069, 114 S. Ct. 1645, 128 L. Ed. 2d 365 (1994). The use of a spherical inner chamber in claim 5 supports a determination that the inner chamber in claim 1 must be symmetrical about the center of gravity, but not necessarily spherical. Interpreting "said inner chamber being substantially symmetrical with said center of gravity" as referring to shape would be a logical interpretation in light of the specification and claim 5.

11 The sphere is not the only symmetrical shape. The spherical inner chamber is merely the preferred embodiment.

Defendant argues that the term "symmetrical" refers to the fact that the clean water chamber located within the dirty water chamber positions the clean and dirty water, respectively, in substantially balanced proportion about the center of gravity of the machine in use. In other words, the defendant argues that the patent's description of a substantially constant center of gravity is limited to only the entire load of water, and does not focus on the center of gravity of either of the individual chambers. However, defendant's argument is unavailing. A court can neither broaden nor narrow a claim to give the patentee something different than what the claims set forth. Texas Instruments Inc. v. U.S. Int'l Trade Comm'n, 988 F.2d 1165, 1171 (Fed. Cir. 1993). In a cleaner where the two chambers do not share the same center of gravity, if the center of gravity of one chamber were to shift during operation, the center of gravity of the other chamber would also have to shift in the opposite direction in order to compensate if the center of gravity for the entire load is to remain substantially constant. This sort of configuration is beyond what is taught by the '891 patent, which clearly defines a machine where the two chambers share the same center of gravity. Indeed, the patent gives no hint as to how one could create a machine where the center of gravity for the machine remains substantially constant without inner and outer chambers that share the same center of gravity. Defendant argues that it makes no sense to focus on movement of the centers of gravity of the separate chambers. However, it is the centers of gravity in the separate chambers that enable one reading the patent to recreate it. If defendant's argument were accepted, it would impossibly broaden claim 1 beyond what is set forth. The patent cannot merely describe a floor cleaning machine that has a substantially constant center of gravity, but must also teach how to make it. 35 U.S.C. § 112. This the patent does, by teaching the use of inner and outer chambers that have centers of gravity that coincide. This is the only method taught--it does not teach at all how to make a machine with a substantially constant center of gravity where the centers of gravity of the inner and outer chambers shift. "A patent applicant cannot disclose and claim an invention narrowly and then, in the course of an infringement suit, argue effectively that the claims should be construed to cover that which is neither described nor enabled in the patent." North Amer. Vaccine, 7 F.3d at 1577. The patent simply does not contain enough information to enable the scope of the claims as argued by defendant. See In re Goodman, 11 F.3d 1046, 1050 (Fed. Cir. 1993).

This construction is consistent with the teachings of the patent and this claim is not invalid for indefiniteness. Plaintiff's motion for summary judgment on this contention is denied.

This opinion construes the term "said outlet being oriented relative to the liquid passageway so that the liquid being pumped passes through the outlet substantially tangentially relative to the longitudinal axis of the pump housing," which is found in U.S. Patent No. 5,833,437 ("the '437 Patent"). At the pre-trial hearing on August 31, 2010, the parties raised a claim construction issue regarding this phrase. The claim language reads:

1. A pump for pumping liquid comprising: a pump housing having opposing first and second end regions, a longitudinal axis and a plurality of ribs extending inwardly and located near the first end region, and defining a chamber; an inlet in said pump housing at said first end region; an outlet in said pump housing at said second end region; a motor housing extending into said chamber defined by said pump housing; a motor located in said motor housing; an impeller assembly operatively coupled to said motor for pumping liquid which enters said chamber through said inlet; and

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an impeller assembly operatively coupled to said motor for pumping liquid which enters said chamber through said inlet; and said pump housing, said motor housing and said impeller assembly together forming a liquid passageway from said inlet to said outlet, said outlet being oriented relative to the liquid passageway so that the liquid being pumped passes through the outlet substantially tangentially relative to the longitudinal axis of the pump housing.

Claim 1, Col. 8, L. 54-Col. 9, L. 7.

Shurflo argues that in reviewing the terms of Claim 1 in connection with the specifications and preferred embodiments, it is clear that the patentee intended for the liquid being pumped through the pump to pass through an outlet on the side of the housing (i.e. perpendicular to the pump housing). Shurflo contends that each of the figures in the '437 patent depict a perpendicular outlet essentially identical to the livewell pumps at issue in this case. Plntf's Br. At 3. Thus, the term cannot be read in strict mathematical terms, as doing so would exclude all of the preferred embodiments. Shurflo proposes the following construction:

the outlet being oriented substantially tangent to the liquid passageway so that the liquid being pumped passes through the outlet moving away from the longitudinal axis of the pump housing.

ITT contends "substantially tangentially" has a plain and ordinary meaning, and since that phrase is not otherwise defined in the patent, the plain meaning should apply. ITT argues that the plain meaning of "tangentially" is "aligned with the axis." Resp. Br. At 1. Therefore, using the plain meaning of "substantially tangentially," ITT contends the liquid being pumped through the pump must pass through an outlet extending upward from the pump housing and directly toward or away from an end of the pump. ITT proposes the following construction:

said outlet being oriented relative to the liquid passageway so that the liquid exits the pump through the outlet that extends upward from the longitudinal axis of the pump housing.

ITT argues that Shurflo ignores the claim language in favor of the specification. It is true that the claims of a patent are what define the invention. Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc., 381 F.3d 1111, 1115 (Fed. Cir. 2004)). However, the "claims 'must be read in view of the specification, of which they are a part.'" Phillips, 415 F.3d at 1312-15 (quoting Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)). "[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" Id. (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)); Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002).

The heart of the parties' dispute regards what the patentee intended by describing the outlet direction as tangential to the longitudinal axis. Claim 1 and claim 11 (which depends from 1) recite three different orientations with respect to the claimed longitudinal axis: tangential, parallel, and perpendicular. Claim 1 requires "said outlet being oriented relative to the liquid passageway so that the liquid being pumped passes through the outlet substantially tangentially relative to the longitudinal axis of the pump housing." '437, claim 1. The patentee uses both "parallel" and "perpendicular" orientations in claim 11:

The pump of claim 1 which further comprises a dual inlet assembly secured to said pump housing, said pump housing having a longitudinal axis, said dual inlet assembly having a first port oriented parallel to the longitudinal axis so that liquid from said first port passes through said inlet and a second port oriented perpendicular to the longitudinal axis so that liquid from said second port passes through said inlet.

Col. 9, L.64-Col. 10, L. 4. Clearly, the patentee understands the difference between the words "parallel," "perpendicular," and "tangentially." Figures 2 and 4 in the patent are helpful in evaluating the particular meaning for these three orientations.

Both claim 11 and the specification refer to port 104 as parallel to the longitudinal axis 266. '437, 8:34-36 ("[d]ual inlet assembly 102 allows liquid to be passed through inlet opening 252 from a port 104 parallel to the longitudinal axis 266 of pump housing 212;" see also, Fig. 4). Both claim 11 and the specification refer to port 106 as perpendicular to the longitudinal access 266. Id. at 8:35-38 ("Port 106, which is perpendicular to longitudinal axis 266, is used for the inlet of a washdown pump (not shown) which is used periodically, when needed."). Finally, in describing the outlet port (54 in figure
2 and 254 in figure 4), the specification states that "opening 54 is situated so that the pumped liquid in liquid passageway 60 leaves or exits liquid passageway 60 substantially tangentially to the longitudinal axis 66 of the pump housing 12. This provides reduced resistance to the pumped fluid leaving the liquid passageway 60 and enhances pump efficiency." '437, 4:55-60.

In view of this guidance from the specification and claims, the Court finds that the parallel and perpendicular orientations are easily ascertained with respect to the two dimensional aspects of figure 4. The patentee used the term parallel to refer to a line or direction that is the same as the direction as the longitudinal axis. Further, the patentee used the term perpendicular to refer to a line or direction that is rotated 90 degrees from the direction of the longitudinal axis. However, when referring to the tangential orientation of opening 54 (or 254), the third dimension of figure 2 and figure 4-represented by the dotted-line nature of item 52 (or 254)-is important to note.

Obviously, port 54 (or 254) was not intended as literally depicted - a hole in the pump motor 20. Rather, the dotted line indicates that the opening extends from the fluid passage, back behind the pump motor in a direction that is generally tangential to an imaginary circle centered at the longitudinal access. In other words, if the longitudinal axis were a longitudinal cylinder, the opening 54 (or 254) would be generally tangential to an arc of that cylinder. For example, as shown in figures 2 and 4, the opening 54 (or 254) appears generally tangential to an arch formed by the outer surface of the cylindrical motor housing 18. Thus, the claim words "substantially tangentially relative to the longitudinal axis" are generally referring to a tangent of any arc of any cylinder centered on the horizontal axis. The Court finds that a line or direction is substantially tangential to the longitudinal access if that line or direction is: on one side of the longitudinal axis (thus a tangent to a axis-centered cylinder, where the cylinder has a positive radius of any value); and is not directly toward or away from the claimed end region of the pump (which would be parallel to the longitudinal axis).

Neither the patent's embodiments nor the claim words can support ITT's suggestion that the outlet must guide the fluid "upward from the longitudinal axis of the pump housing." ITT's proposed construction would require the pump outlet to guide fluid in a direction that is at least generally parallel to the claimed longitudinal axis. The claimed tangential direction is not parallel and not even necessarily generally parallel to the longitudinal axis. Further, Shurflo's proposal would include a strictly perpendicular orientation with respect to the longitudinal axis. As the Court indicated above, in order to be substantially tangential to the longitudinal axis, the fluid direction must be substantially on one side of the axis (i.e. a simple line perpendicular to the axis line is not a tangent to the axis) In addition, Shurflo's proposal does not resolve the dispute between the parties because it leaves the disputed word "tangent" within the construction.

Based on the Court's review of the claim language, the specification, and the parties' arguments, the Court construes the term "said outlet being oriented relative to the liquid passageway so that the liquid being pumped passes through the outlet substantially tangentially relative to the longitudinal axis of the pump housing" as follows: "the outlet is designed and positioned so that liquid passing though the outlet is moving in a direction that is both (i) substantially on one side of the longitudinal axis; and (ii) not directly toward or away from either end region of the pump housing."

1. Claim Construction

In construing claims, a Court examines how a person of ordinary skill in the art would have understood the claim terms at the time of the invention. Pfizer, 429 F.3d at 1372-73.

The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation. Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.

Id. at 1373 (quotation and citation omitted). The Court looks initially only at intrinsic evidence, including the claims themselves, the specification, and the prosecution history, if it is presented. Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005). "[T]he claims are of primary importance, in the effort to ascertain precisely what it is that is patented." Id. at 1312 (quoting Merrill v. Yeomans, 94 U.S. 568, 570, 24 L. Ed. 235, 1877 Dec. Comm'r Pat. 279 (1876)). "[I]t is unjust to the public, as well as an evasion of the law, to construe [a claim] in a manner different from the plain import of its terms." Id.
Defendants that the taper angle needed to be 30 degrees or greater to be "substantial," was perplexing. As the Court has often inconsistent with the intrinsic evidence. The testimony of Mr. Tarr, who ultimately discredited the position taken by McKinney and Mr. Parkes, on behalf of Plaintiff, and Mr. Tarr, on behalf of Defendants, all sought to provide testimony that was not helpful in interpreting the claim and only marginally helpful in understanding the systems generally. Both Mr. Moreover, the Court found the testimony the experts presented to be confusing, incomplete and unpersuasive. In short, it appeared at the hearing, the Court concludes it is unnecessary and impermissible to do so. Phillips, 415 F.3d at 1316.

4 To the extent either party urges the Court to rely on extrinsic evidence, including the testimony of the experts who appeared at the hearing, the Court concludes it is unnecessary and impermissible to do so. Phillips, 415 F.3d 1303; Zodiac Pool Care, Inc., 206 F.3d at 1414. The intrinsic evidence provides an adequate and compelling basis to interpret the claim. The Court has reviewed the patent as a whole, including the specification and particularly the usage of "substantially" in the eight (8) instances it occurs in Claim One. The Court found the testimony the experts presented to be confusing, incomplete and unpersuasive. In short, it was not helpful in interpreting the claim and only marginally helpful in understanding the systems generally. Both Mr. McKinney and Mr. Parkes, on behalf of Plaintiff, and Mr. Tarr, on behalf of Defendants, all sought to provide testimony that essentially was their construction of the claim. To the extent they provided other expert opinion or factual evidence, it was often inconsistent with the intrinsic evidence. The testimony of Mr. Tarr, who ultimately discredited the position taken by Defendants that the taper angle needed to be 30 degrees or greater to be "substantial," was perplexing. As the Court has

"Words of a claim are generally give their ordinary and customary meaning." Id. (citing Vitronics Corp., 90 F.3d at 1582). "Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelope with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." Phillips, 415 F.3d at 1316.

"Claims must be construed so as to be consistent with the specification, of which they are a part." Merck & Co., Inc. v. Teva Pharms. USA, Inc., 347 F.3d 1367, 1370 (Fed. Cir. 2003)."[I]t is necessary to consider the specification as a whole, and to read all portions of this written description, if possible, in a manner that renders the patent internally consistent." Pfizer, 429 F.3d at 1373. The principal of internal consistency is particularly acute here where the term at issue -- "substantially" -- is used eight (8) times within Claim One. Indeed, "[a] word or phrase used consistently throughout a claim should be interpreted consistently." Phonometrics, Inc. v. Northern Telecom, Inc., 133 F.3d 1459, 1465 (Fed. Cir. 1998). Our examination of the term then must begin with its use in the claim itself, because the usage in these eight (8) instances likely will be instructive, and maybe even controlling, in interpreting the term consistently. The eight (8) usages are:

1. "a substantially planar upper surface of the first slab" ("760 Patent, Col. 6, 11. 66-67.)
2. "substantially perpendicularly to the inner surface of the edge form" (Id., Col. 6, 1. 67 -- Col. 7, 1. 1.)
3. "a load plate including a substantially tapered end" (Id., Col. 7, 1. 5.)
4. "a load applied to either slab directed substantially perpendicularly to the upper surface of the first slab" (Id. Col. 7, 11. 8-10.)
5. "restricts relative movement between the first and second slabs in a direction substantially perpendicular to the upper surface of the first slab" (Id. Col. 7, 11. 11-14.)
6. "allowing the first and second slabs to move away from each other in a direction substantially perpendicular to the inner surface of the edge form" (Id. Col. 7, 11. 15-17.)
7. "width of the load plate being: substantially greater than or equal to the length of the load plate" (Id. Col. 7, 11. 21-23.)
8. "Increasingly greater relative movement of the first and second slabs in a direction substantially parallel to the longitudinal axis of the joint" (Id., Col. 7,11. 26-28.)

The parties agree that the claim construction issue here concerns that portion of Claim One relating to the dowel plate. The claim reads: "a load plate including a substantially tapered end. . . ." ("760 Patent, Col. 7, 1. 5.) Plaintiff argues this portion of the claim should be construed as: "The end of the load plate has a gradual diminishing width that is not insubstantial, i.e. the diminishing width is large enough to allow relative movement of two concrete slabs." (LPR 6.3 Joint Claim Construction Statement [105] at 2.) Defendants submit the construction should be: "An end that is tapered to a large or considerable degree; greatly tapered." (Id. at 3.) Defendants have quantified the taper arguing that what is required is a taper of 30 degrees or greater. (Defs.' Supplemental Opp'n to Pl.'s Mot. for Prelim. Inj. at 7-8.)

The Court has reviewed the patent as a whole, including the specification and particularly the usage of "substantially" in the eight (8) instances it occurs in Claim One. This usage of the word in Claim One alone strongly supports the conclusion that the term "substantially" means "essentially, having the principal characteristic of." This construction permits the term to be defined uniformly within the claim and the patent as a whole, and this construction otherwise makes legal and functional sense. 4
noted, a numerical limit here is not appropriate in light of the intrinsic evidence and the language of the patent as a whole. That Defendants presented inconsistent constructions to this Court persuades the Court that its reliance on intrinsic evidence and its decision not to rely on extrinsic testimony is sound.

The term "substantially" is not uncommon in patents. "Words of approximation, such as generally' and substantially' are descriptive terms commonly used in patent claims to avoid a strict numerical boundary to the specified parameter." Anchor Wall Sys. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1310-11 (Fed. Cir. 2003) (quotation and citation omitted). To the extent the term "substantially" has been interpreted to have more than one meaning, the "cases recognize the dual ordinary meaning of this term as connoting a term of approximation or a term of magnitude." Deering, 347 F.3d at 1323. Choosing between these two descriptive definitions is not difficult here. The intrinsic evidence urges interpreting the term "substantially" as a term of approximation because this usage makes practical common sense and allows the term to be defined consistently in each instance it is used in Claim One and elsewhere in the patent, including the specification. Simply substituting the approximation definition proves this definition fits:

1. [essentially, having the principal characteristic of having a] planar upper surface ('760 Patent, Col. 6, 11.66-67.)
2. [essentially, having the principal characteristic of being] perpendicular to the inner surface of the edge form (Id., Col. 6, 1. 67 -- Col. 7, 1. 1.)
3. [essentially, having the principal characteristic of having a] tapered end (Id., Col. 7, 1. 5.)
4. [essentially, having the principal characteristic of being] parallel to the longitudinal axis of the joint (Id., Col. 7, 11. 26-28.)

5 This construction simply makes logical, legal and linguistic sense. 6

5 While the Court has not used extrinsic evidence, it notes that the Court's definition is consistent with the prevailing dictionary definition of the word "substantial." See Blacks Law Dictionary 1428 (6th ed. 1990) ("essentially, without material qualification, in the main."); Webster's Collegiate Dictionary (10th ed. 1999) ("consisting of or relating to substance; important, essential").

6 The Federal Circuit has stated that "like the term about,' the term substantially' is a descriptive term commonly used in patent claims to avoid a strict numerical boundary to the specified parameter." Ecolab, Inc. v. Envirotech, Inc., 264 F.3d 1358, 1367 (Fed. Cir. 2001); Playtex Prods., Inc. v. Procter & Gamble Co., 400 F.3d 901, 904-05 (Fed. Cir. 2005) ("substantially" should not be interpreted as having a strict numerical limitation). A definition based on magnitude cannot be uniformly or consistently applied in this particular patent.

Thus, using intrinsic evidence, this Court construes the term "substantially tapered end" in Claim One to mean an end which essentially, has the principal characteristic of being tapered. This definition also is consistent with the function of the Plate. The 760 Patent provides that the purpose of the system and the fundamental role played by the Plate is to avoid binding and to allow load transfer by a void being created around the plate so to permit movement parallel to the longitudinal axis. Both parties agree the taper allows this transfer to occur and also avoids binding. Having construed this claim term based on intrinsic evidence, and having tested the construction in its application throughout the 760 Patent, the Court concludes PNA has a substantial likelihood of success in proving Defendants' Plate is substantially tapered and thus literally infringes the 760 Patent. 7 8

7 To the extent Defendants contend the Court should limit its construction to the preferred embodiment described in this patent, the Court declines to do so. "Claims of a patent may only be limited to a preferred embodiment by the express declaration of the patentee." Playtex, 400 F.3d at 908.

8 Defendants' argument that the Court should adopt a "greater than 30 degrees taper" is inconsistent with the language of this patent. When the patent seeks to impose a numerical limit, it does so. (See Claim 2 ("less than one-eighth of a largest width"); Claim 23 ("no less than twice a depth."); Claim 26 ("an angle of approximately 45 degrees").)
All claims call for two ornamental components of "substantially the same size and configuration." Parties differ as to what implication the phrase has for the location of the hinge that joins the two components together. Citing the prosecution history, Defendants claim that the hinge must be located exactly at the "6'o clock" position on the earring. Zettl insists that while the hinge must be "centrally" located, the term allows for some leeway and does not prescribe a precise or exact location.

The appropriate starting point in interpreting a claim is always the language of the asserted claim itself. Comark Comm., Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir. 1998). In this case, there is no need to divine the location of the hinge through an interpretation of the phrase "substantially the same size and configuration" because the claims themselves go on to inform the reader exactly where the hinge must be. Claim 1 reads:

An ear ornamentation for wearing on and removable from a perforated ear lobe comprising two ornamental components of substantially the same size and configuration linked by means of a hinge at one end and having engageable fastening means at the other end of each said ornamental component.

(emphasis added). Therefore, according to the patent itself, the hinge must be located at the ends of both similarly sized ornamental components, opposite the end supporting the fastening means, joining the two pieces together. Since the terms of the claims are clear, the Court rejects the parties proffered definitions relying on positional terms such as "6'o clock" or "central" that, frankly, has little meaning in this context without clear reference points.

1. "Cylindrical wall portions radially spaced from the end portions of the substrate projecting beyond said mat for a distance substantially the same as that of the projecting ends of the substrate." Consistent with the claim language and its ordinary meaning, 43 and the specification, 44 the court construes "cylindrical wall portions radially spaced from the end portions of the substrate projecting beyond said mat for a distance substantially the same as that of the projecting ends of the substrate" to mean "the distance between the inner wall of the enlarged diameter tubular body and the catalyst substrate is largely, though not exactly, the same distance the substrate extends beyond the mat."

--- Footnotes ---

43 D.I. 151, ex. E at 1176 (defining "substantial" as "being largely but not wholly that which is specified").

44 '476 patent, col. 2, ll. 54-57; col. 3, ll. 15-18; col. 4, ll. 16-20.

--- End Footnotes ---

"The prescribed absorbed dose is delivered to the target tissue in substantially three dimensions"

Cytsc's proposed construction Xoft's proposed construction
The prescribed absorbed dose is delivered to the target tissue such that all points at a given outward distance from the tissue wall will receive the same dose.

(indefinite)
Xoft contends that "prescribed absorbed dose" and "in substantially three dimensions" render "the prescribed absorbed dose is delivered to the target tissue in substantially three dimensions" fatally indefinite. The court has already rejected Xoft's argument regarding "prescribed absorbed dose."

Xoft points to Cytyc's expert's testimony that "there's no such thing as substantially three dimensions" because something is either three dimensional or not. Mulville Decl. (dkt. # 51), Ex. L (Verhey Decl.) at 153. Cytyc points to Xoft's expert's testimony that he could envision a brachytherapy apparatus that delivered 99 percent of its radiation in a plane; Cytyc claims such a flat radiation field would not be in substantially three dimensions. Though a closer question than some of Xoft's other indefiniteness contentions, the court nonetheless finds that Xoft has not shown by clear and convincing evidence that one skilled in the art would not understand "in substantially three dimensions" in the manner put forth by Cytyc.

The court therefore adopts Cytyc's proposed construction for "the prescribed absorbed dose is delivered to the target tissue in substantially three dimensions," namely, "the prescribed absorbed dose is delivered to the target tissue such that all points at a given outward distance from the tissue wall will receive the same dose."

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5. "transferred substantially to the reaction frame"

It is clear from the specification language that the central aim of the '500 patent invention is the prevention of reaction forces reaching--and thereby negatively impacting--the precision components of the photolithographic projection system. See '500 Patent at Abstract. Claim 1's language captures this aim, noting that reaction force is to be "transferred substantially to the reaction frame." The court has already construed the term "reaction frame," reading the phrase to mean "a physical structure, separate and distinct from the structure supporting the precision components, that transfers reaction forces, caused by the movement of a stage drive, away from the precision components." Thus, it remains only to construe "transferred substantially."

Simple etymology suggests that "transferred" connotes the direction to, passage from, or exposure of one item to another. "Substantially," in turn, "means what it says[--]largely, but not" entirely. See Ecolab, Inc. v. Envirochem, Inc., 264 F.3d 1358, 1369 (Fed. Cir. 2001) (construing the term "substantially uniform"). Taken together, "transferred substantially" denotes precisely what the phrase would mean in common parlance: "the movement or direction of most, but not necessarily all, of a particular entity to another." The court need not venture from this plain meaning here, and the court thus construes "transferred substantially to the reaction frame" to mean "the movement or direction of most, but not necessarily all, of the reaction force to a physical structure, separate and distinct from the structure supporting the precision components, that transfers reaction forces caused by the movement of a stage drive away from the precision components."

---

A. Substantially Toroidal Flow Path

Starting with the claim language, the element in dispute does not describe the "flow path" as circular or curved, but as "substantially toroidal." The specification is replete with references to "toroidal" in terms of the "housing" and the resulting "flow path," but refers as well to a "curved" flow path:

The doughnut-like curvature provides a toroidal channel or tunnel through which entering fluid is guided. The toroidal
housing cover forms a coil-like tunnel which is enlarged approximately 180 [degrees] from a blood inlet port provided at one end of the toroid-shaped housing cover. This enlarged area defines the highest point on the housing cover. A gas vent is located at the highest point on the toroidal tunnel, at the periphery of the housing cover.

Fluid enters the tangential blood inlet and circulates through the toroidal channel. As the fluid flows about the toroidal channel, gaseous matter is drawn upward by buoyant forces and is allowed to escape through the peripheral gas vent, while the fluid seeps down into a reservoir formed between the inner wall of the housing cover and the outer perimeter of the cylindrical filter element. The gentle swirling action of the entering fluid through the toroidal channel is sufficient to cause the fluid to flow completely about the housing cover and seep down around the sides of the filter element.

(Col. 2, Ins. 47-65) (emphasis added).

The toroidal configuration provides a smooth, curved flow path of maximum radius to minimize or reduce aggressive agitation of the fluid during its flow. Due to the central indentation 22 defined by the toroid-shaped housing cover 14, the curved fluid flow path is radially spaced from the central axis of the housing 12. This allows the radius of curvature of the fluid flow path (and, thus, the length of the path) to be maximized, while containing the path within the housing cover. Maximizing the length of the fluid flow path tends to maximize the time period in which a given volume of fluid flows through the length of the path (for a given flow velocity) and, therefore, maximizes the amount of time in which gas bubbles may be drawn from the fluid.

The curved fluid flow path also tends to gently guide the fluid around the upper periphery of the underlying filter element 16, such that the fluid can flow downward around substantially the entire outer peripheral surface of the filter element and then pass through the filter element to all radial directions with minimal agitation and turbulence. Consequently, the undesired generation of air bubbles is also minimized. This allows the entire filter element to be efficiently used and maximizes the rate at which a given volume of fluid may be passed through the filter element.

Referring to FIGS. 1, 2 and 4, the toroid-shaped housing cover 14 is configured to guide fluid (not shown) in a curved path over the filter housing 12 as it enters the arterial filter 10 . . . .

The housing cover 14 has a toroidal, doughnut-like shape. The height of the toroid 34 forming the housing cover 14 rises as it curves about the perimeter of the housing cover 14. As shown in FIGS. 2-4, the highest point of the housing cover 14 is located midway around the toroid curvature, approximately 180 [degrees] from the tangential inlet port 18.

A gas vent cap 20 is located at the perimeter of the housing cover 14, at the highest point on the cover, opposite the inlet port 18. The side view of the arterial filter 10 depicted in FIGS. 2 and 4 show a preferred arrangement of the gas vent 20 disposed on the highest point on the toroidal channel, at the periphery of the housing cover 14. In the preferred embodiment, the gas vent 20 is a one-way valve, such as a female Luer cap, which allows gas to escape but does not permit air or particulate matter to enter.

Because the gas vent 20 is located at the highest point on the toroid-shaped housing cover 14, approximately 180 [degrees] opposite the tangential inlet port 18, as the inlet liquid is caused to swirl through the toroidal channel 34, gaseous matter rises, by buoyant forces, to the highest point of the filter and exits through the gas vent 20. Yet, due to the swirling action, the inlet fluid still retains sufficient momentum to flow through the remaining half of the downwardly sloping toroidal channel to flow steadily and evenly around the perimeter of the toroidal channel of the housing cover 14, before seeping downward into the housing reservoir 32. This feature is discussed in more detail below.

FIG. 4 also illustrates an indentation 22 formed in the center of the toroid-shaped housing cover 14. As discussed in more detail below the indentation 22 serves to stabilize and support the filter element 16 as well as provide clear visibility of the filtered fluid after it passes through the filter element 16 into the central cavity 36 of the filter element 16. The configuration of the housing cover 12 and the indentation 22 comprises an inverted dome cap which, in preferred embodiments, defines a toroidal-shaped fluid flow path.

(Col. 4, Ins. 20-67; col. 5, Ins 1-23) (emphasis added).

In operation, the toroid-shaped housing cover 14 acts as an air separation chamber. When a fluid, e.g., a priming fluid or
blood, enters the tangential inlet port 18 via a tube or other fitting, it flows tangential to the wall of the toroidal channel 34 and through the curved path defined by the channel. The flowing motion creates a gentle swirling action which causes air and other gaseous matter to be separated from the fluid inside the toroidal channel 34. Consequently, in accordance with the principles of buoyancy, the gaseous matter rises and escapes through the peripheral vent cap 20 which is located on the highest point about the toroidal channel 34. As the gaseous matter is separated from the fluid, the swirling debubbled fluid seeps downward from the periphery of the toroidal tunnel 34, over the potting 30 and the filter element 16, and into the reservoir 32 formed between the inner wall of the housing 12 and the outer perimeter of the filter material 16, as shown in FIG. 4 . . . . (Col. 7, lns 25-42) (emphasis added).

The prosecution history of the '474 patent was included in the record as well. The claims at issue were initially rejected by the Examiner under 35 U.S.C. § 102 and § 103 by reason of a certain prior art reference (the "Siposs '135 patent") which showed, according to the Examiner, a "toroidal flow path" evidenced by the fact that Siposs repeatedly refers to a rotating fluid flow path created in the filter device. . . . (D.I. 71, Ex. D at 3; Ex. F at 3) Bard responded to such rejection as follows:

Siposs does not appear to have expressly recognized a "toroidal flow path" occurring within the "circular" chamber 54, much less any benefit of enhancing such "toroidal flow path." (Siposs does not appear to mention the term "toroidal.") Siposs teaches a conical cap interior with a central apex defining the highest elevation for channeling gas to the central vent 48. A central indentation in the cap would destroy Siposs' intended operation of congregating gas in the center of the chamber. . . . Thus, Siposs provides no suggestion of (and teaches away from) a central indentation and a laterally offset gas vent as claimed. . . .

According to Siposs, fluid enters a circular chamber tangentially so as to create a rotation of the fluid about the circular chamber to separate gas therefrom. As the fluid rotates around the circular chamber, the lighter gas bubbles purportedly "congregate in the center of the chamber" . . . . Thus, Siposs' device purportedly operates under principles of centrifugal force, wherein the rotation of the fluid within the circular chamber causes the heavier fluid to flow near the peripheral wall of the chamber, while lighter gas bubbles congregate toward the center of the chamber.

(D.I. 71, Ex. E at 13, 16) (emphasis in original).

The '474 claims eventually were allowed as presently written after an unrecorded telephone interview. The Examiner apparently concluded that the independent claims would be distinguished from the art of record if amended to include limitations of various dependent claims. For example, claim 25 (now claim 1) was amended as follows (underlined language indicates added language):


1. [O>25.<O] (TWICE AMENDED) A filter for filtering fluids, comprising:

a housing defining a substantially toroidal flow path and a filter element chamber;

a fluid inlet in fluid flow communication with the substantially toroidal flow path and directed substantially tangential to the fluid flow path; wherein the height of the substantially toroidal flow path rises from the location of the inlet, around the periphery of the housing to a highest point located approximately 180 [degrees] opposite the fluid inlet;

a gas outlet aperture located at the highest point on the substantially toroidal flow path; and in gas flow communication with the substantially toroidal flow path and located approximately 180 [degrees] from the fluid inlet with respect to the substantially toroidal flow path;

a filter element supported within the filter element chamber of the housing; [and]

a filter element support located within the housing and centrally disposed with respect to the toroidal flow path; and
a fluid outlet in fluid flow communication with the filter element chamber.

(D.I. 71, Ex. I at 1-2) Consistent with Bard's summary reproduced below, it appears as though the focus of the review process was on the location of the gas outlet, not on the significance of a "toroidal flow path."

It is respectfully submitted that a filter having the combination of a toroidal flow path, a fluid inlet tangentially directed with respect to the toroidal flow path, and a gas outlet as defined in the above-noted claims is neither described nor suggested by the prior art of record. Siposs describes a filter having a centrally located gas outlet and provides no disclosure or suggestion of the above-referenced combination of features, including a gas outlet located 180 [degrees] from the fluid inlet . . . directly above the toroidal flow path . . . or laterally offset with respect to a central portion of the housing cap. . . .

(D.I. 71, Ex. I at 10)

As far as the court can discern from the record, the phrase "substantially toroidal flow path" means either a circular flow path (as asserted by Bard) or a flow path defined by a toroidal structure (as asserted by Medtronic). 2 Based on the principle that every word in a claim should be given its ordinary meaning, and fully cognizant of the proscription against limiting claims by what is disclosed in a preferred embodiment, the court concludes that Medtronic's construction is the proper one. The definition of a toroid encompasses two features: (1) a closed curve; (2) rotating about, but not intersecting or containing, an axis in its own plane. Webster's Third New Int'l Dictionary 2412 (1971). Accord Adelphon, Inc. v. DiRico, 1992 U.S. Dist. LEXIS 15298, *1-2, No. CA 3-91-2551- T, 1992 WL 281395, at 3 n.1 (M.D. Tex. Mar. 26, 1992) Bard's contention that the phrase "substantially toroidal" means only "circular" essentially allows a nontechnical word ("substantially") to negate the meaning of a technical word ("toroidal"). The court considers such an interpretation to be inappropriate.

2 It appears from the specification and, particularly, from figures 1, 2, and 4, that the "toroidal channel" of the preferred embodiment is not a closed curve (it is flat at the bottom) and, therefore, is a "substantially toroidal" structure.

The above construction is supported by and consistent with the intrinsic evidence of record. Looking at the claim language in light of the specification and the prosecution history, the '474 patent is distinguished from the prior art because its housing "define[s] 3 a substantially toroidal flow path." As recognized in the prosecution history, prior art devices which employed a tangential entry into a cylindrical chamber achieved, to some extent, a circular flow path. Such a flow path, albeit circular, is not bounded by a "closed curve" but, rather, by a cylindrical wall. Neither does such a flow path rotate about, but not intersect, a discernable axis. (See, for instance, D.I. 71, Ex. E at 13, 16) Accordingly, the claim language - "substantially toroidal flow path" - is construed to mean a fluid path defined by a toroidal (or substantially toroidal) structure.

3 To define means: "to mark the limits of: determine with precision or exhibit clearly the boundaries of." Webster's Third New Int'l Dictionary 592 (1971).
evidence, the prosecution history. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83, 39 U.S.P.Q.2d (BNA) 1573, 1576-77 (Fed. Cir. 1996). If intrinsic evidence resolves all ambiguities, extrinsic evidence is not considered. See id.

The district court initially construed "a housing defining a substantially toroidal flow path" as meaning "a fluid path defined by a toroidal (or substantially toroidal) structure." C.R. Bard, Inc. v. Medtronic, Inc., 1998 U.S. Dist. LEXIS 23197, at *18, C.A. No. 96-589-SLR, slip op. at 15 (May 7, 1998) (Memorandum Order). The court reconsidered and revised this claim construction, however, after considering Bard's arguments that the recited "flow path" was not a structural path, but was the path followed by the fluid. The court tentatively accepted Bard's assertion that a substantially toroidal flow can occur in a non-toroidal housing, and construed the phrase as requiring "that the housing (although not necessarily toroidal in shape) must determine with precision a fluid flow path having the shape of a substantially closed curve which rotates about, but does not intersect or contain, an axis in its own plane." C.R. Bard, Inc. v. Medtronic, Inc., 1999 U.S. Dist. LEXIS 9875, C.A. No. 96-589-SLR, slip op. at 3-4 (June 15, 1999) (Memorandum Order).

Medtronic argues that the district court's construction is erroneous because a flow path can only exist as a consequence of defined boundaries; accordingly, to define a toroidal flow path, the housing must be toroidally shaped. Medtronic also argues that the specification of the '474 patent describes the housing as having a toroidal structure, and does not describe a housing having any other shape.

Bard replies that the '474 patent makes clear that it is the flow path, not the housing, that must be toroidally shaped. Bard points to column 4, lines 18-20, of the patent, which state that "shapes other than a toroid may be used." Bard also contends that interpreting the "housing" limitation as requiring a toroidally shaped housing would violate the doctrine of claim differentiation because claim 2 specifically recites that "the housing further defines a central indentation, centrally located with respect to the substantially toroidal flow path."

The '474 patent consistently describes the housing as being "doughnut or toroid-shaped." See, e.g., '474 pat., col. 2., ll. 37-38, col. 4, l. 3, col. 4, ll. 45-48, col. 4, l. 55, col. 5, l. 16, col. 7, l. 6, col. 7, l. 26, col. 8, ll. 9-12. The patent describes the advantage of the toroid shape as follows:

The toroidal configuration provides a smooth, curved flow path of maximum radius to minimize or reduce aggressive agitation of the fluid during its flow. Due to the central indentation 22 defined by the toroid-shaped housing cover 14, the curved fluid flow path is radially spaced from the central axis of the housing 12. This allows the radius of curvature of the fluid flow path (and, thus, the length of the path) to be maximized, while containing the path within the housing cover. Maximizing the length of the fluid flow path tends to maximize the time period in which a given volume of fluid flows through the length of the path (for a given flow velocity) and, therefore, maximizes the amount of time in which gas bubbles may be drawn from the fluid.

Id. at col. 4, ll. 20-34. See also id. at col. 5, ll.8-14, col. 7, ll. 25-42.

In view of these teachings, we disagree with the district court's determination that the housing itself need not be toroidally shaped. Although the patent states that "shapes other than a toroid may be used for further embodiments," id. at col. 4, ll. 18-19, it does not indicate that a housing of any other shape would "define a substantially toroidal flow path," as recited in the claims. The only structure described in the patent as providing a toroidally shaped flow path is a toroidally shaped housing. We therefore construe the "housing" limitation as requiring that the housing itself be toroidally shaped.

This interpretation does not make claim 2 redundant, as Bard argues, because a toroidally shaped housing need not necessarily have a central indentation, as recited in claim 2. Moreover, this interpretation is consistent with the '474 patent's use of the word "define" to describe structural features of the housing. For example, claim 2 uses the phrase "the housing . . . defines a central indentation" to recite a housing having an indentation in its lid. This interpretation also is consistent with the claims' use of the term "toroidal flow path" to refer to a structural feature of the housing, not merely a path taken by fluid inside the housing. For example, claim 1 refers to "the height of the substantially toroidal flow path," and a "gas outlet located at the highest point on the substantially toroidal flow path."
B. Effect of Prior Litigation

As stated above, SunTiger prevailed in a prior patent infringement suit against Scientific Research Funding Group (SRFG) on the same patents now in question. Both SunTiger and Sunglass Products have stipulated that the claim construction in the prior suit will control here:

The patents-in-suit have already been construed by the U.S. District Court for the Eastern District of Virginia [and that] construction . . . is binding on the parties in this case. To the extent that the terms in the asserted claims were not construed in the said prior litigation, the parties are asking the Court to make a claim construction based on the arguments submitted in the summary judgment motions.

Stipulation at 1-2. "In a patent litigation action, where the parties do not dispute any relevant facts regarding the accused product but disagree over possible claim interpretations, the question of literal infringement collapses into claim construction and is amenable to summary judgment." Rheox, Inc. v. Entact, Inc., 276 F.3d 1319, 1324 (Fed. Cir. 2002).

The relevant terms and their stipulated construction are as follows:

<table>
<thead>
<tr>
<th>Term</th>
<th>Stipulated Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;substantially block&quot;</td>
<td>&quot;... in reference to wavelengths, it is defined as blocking over 99% of the incident radiation at each and every wavelength&quot; and &quot;[in] reference to polarization, it is defined as blocking 80% or more of the horizontally polarized incident radiation at each and every wavelength&quot;</td>
</tr>
<tr>
<td>&quot;substantially transmit&quot;</td>
<td>&quot;... in reference to wavelengths, [it] is defined as transmitting more than 1% of the incident radiation at each and every wavelength&quot; and &quot;[in] reference to polarization, it is defined as transmitting more than 20% of the horizontally polarized incident radiation at each and every wavelength&quot;</td>
</tr>
<tr>
<td>&quot;sharp cut-on&quot;</td>
<td>&quot;... sharp cut-on is defined in the context of a dye or filter, having a cut-on slope that at some concentration or dye density rises more than one half percent (0.5%) change in transmission for every one nanometer of increasing wavelength change. The cut-on slope is that portion of the transmission spectra of a cut-on dye that represents the transition between [the] substantially blocking and the substantially transmitting region.&quot;</td>
</tr>
<tr>
<td>&quot;cut-on filter&quot;</td>
<td>&quot;... an optical filter that substantially blocks all wavelengths shorter than the cut-on wavelength and substantially transmits all wavelengths that are longer than the cut-on wavelength. The cut-on wavelength is that wavelength in the transition zone at which the transmission is 1%.&quot;</td>
</tr>
<tr>
<td>&quot;portion&quot;</td>
<td>&quot;... part or share of something&quot;</td>
</tr>
</tbody>
</table>

Plaintiff SunTiger contends that this Court cannot apply the stipulated construction in a way that would contradict the finding of the Eastern District of Virginia that YE-82 infringed SunTiger's patents. Pl.'s Mot. at 1 ("[T]he YE-82 lens material must literally infringe whatever claim construction the Court adopts in this case."). In essence, SunTiger argues the following: (1) the parties have stipulated to the prior construction, (2) the decision in the prior suit does not bind this Court,
but (3) any ruling that this Court issues must not be inconsistent with the fact that YE-82 was found to infringe its patents.

I disagree with this assessment. My decision is not foreordained by the result in SunTiger, Inc. v. Scientific Research Funding Group. SunTiger attempts to elevate the prior claim construction to the level of a decision. Despite the parties' agreement that the prior claim construction would be binding, that prior court's decision applying its own construction is only persuasive. Although the parties have agreed to be bound to the use of the prior construction, they have not agreed that this Court's application of that construction must be consistent with prior decisions involving a different defendant and different lenses. Indeed, were consistency with prior results necessary, that would be tantamount to an improper form of collateral estoppel against a current party, i.e., Sunglass Products, which was not a party (nor a party in privity) to SunTiger v. Scientific Research Funding Group, Cf. MCA Records, Inc. v. Charly Records, Ltd., 865 F.Supp. 649, 654 (C.D. Cal. 1994) ("[D]ue process requires that the party to be estopped must have had an identity or community of interest with, and adequate representation by, the losing party in the first action as well as that the circumstances must have been such that the party to be estopped should reasonably have expected to be bound by the prior adjudication.").

3965

5. "substantially transparent to visible light"

This term appears in claim 1 of the '529 and '660 patents. According to the Chart that was submitted with the claim construction briefing, this claim term is undisputed. However, at the Markman hearing the parties indicated that, in fact, the construction of this phrase is disputed. The parties dispute the construction of the term for essentially the same reason in each patent. Plaintiff's proffered construction is as follows: "light in the visible range of the spectrum can transmit through the dispersion when applied in use." Chart at 5, 21. Kobo's proposed construction is fairly similar: "light in the visible range of the spectrum substantially passes through a sample of the dispersion." Chart at 5. The difference between the two constructions boils down to whether the dispersion must be substantially transparent when the product is in use (e.g., when applied to the skin as a sunscreen) or substantially transparent when it is, for example, in a jar.

7 Kobo offers this construction only for the term as it appears in the '660 patent. The Chart does not contain a proposed construction by Kobo for this term in the '529 patent. Chart at 21.

The Court finds that, when read in light of the specification, the phrase "substantially transparent to visible light" should be construed consistent with Plaintiff's proffered construction. The specification notes that the "products of the present invention have the ability to transmit visible light but are partially or completely impermeable to UV light." '660 patent, col. 2, lines 46-48. The specification goes on to explain that "[t]his means that the products can find use in a variety of applications wherein it is important to maintain transparency to visible light while substantially preventing transmission of UV light to a surface." Id., col. 2, lines 48-52. Examples given include "[c]osmetics, sun-creams, plastic films and wood coating and other coating compositions." Id., col. 2, lines 52-54. It is clear that the transparency during use, not necessarily transparency in the jar, is a significant feature the invention.

Indeed, Defendant's own briefing supports the Court's conclusion. In the section of its opening claim construction brief that is titled "Background of the Technology," Kobo notes that modern sunscreen dispersions have the characteristic of being "transparent to visible light, and thus invisible on the skin." Def. Brf. at 4. Kobo goes on to explain that "[t]ransparent to visible light means that when the sunscreen is applied to the skin, it appears clear and thus does not whiten the skin." Id. at 5 (emphasis added). In describing the development of smaller and more transparent grades of titanium dioxide and zinc oxide used in sunscreens, Kobo notes that "these smaller sunscreen pigments are transparent to visible light, which means that when they are applied to the skin, they appear to be transparent to the human eye and thus do not alter the appearance of the skin." Id. (emphasis added).

Consequently, the Court shall construe the phrase "substantially transparent to visible light" in both patents to mean "light in the visible range of the spectrum can transmit through the dispersion when applied in use."
1. Claim Construction

The first step in the analysis is to determine, as a matter of law, the meaning and scope of the patent claims. As described above, Defendant Sashco's '458 patent is directed to a substantially transparent combination of a cartridge and compound. The only independent claim in the patent emphasizes that this combination "is substantially transparent in the transverse direction so as to allow a user to see completely through... from one side of the cartridge to the other." This Court must now determine whether this claim, when properly construed, is limited to situations wherein a user can see through the center of the cartridge, as argued by the Plaintiff, or whether it encompasses situations in which a user can see completely through any other portion of the cartridge's sidewall, which is the construction urged by the Defendant. 

7 For example, Defendant attached pictures to its Motion for Partial Summary Judgment which showed that one can view through the Plaintiff's product and see a colored line which is taped to the wall behind the cartridge (Doc. # 61, Exh. J). One cannot, however, view the colored line through the center of the cartridge; instead, the line can only be seen through less than half of the right side of the cartridge.

Before turning to extrinsic evidence and the prosecution history of the patent, this Court must first address a problematic aspect of the above-quoted language. This claim describes a cylindrical cartridge 8 that is substantially transparent in the transverse direction so that a user may see from one "side" of the cartridge to the other. Since this description apparently refers to a "circular cylinder"--that is, to a cylinder whose bases are circles, Webster's New World Dictionary of Mathematics 31 (1989)--it is most helpful to think about this description in terms of circles.

Unfortunately, however, a circle has no "sides." Unlike other geometrical figures which are defined in terms of the number of sides they possess 9 and their relation to each other, 10 a circle is defined as "a plane curve consisting of all points at a given distance from a given point." Webster's New World Dictionary of Mathematics 30 (1989). Moreover, the term "side" is defined as "the bounding line of a geometrical figure," Webster's Third New International Dictionary 2111 (unabridged 1976), and in ordinary Euclidean geometry a "line" is conceived of as being straight and of unlimited extent. Webster's New World Dictionary of Mathematics, 156-57 (1989). Therefore, the claim's reference to seeing "from one side of the cartridge to the other" is less helpful than might initially be supposed. 11 Accordingly, this Court's analysis will focus instead upon the meaning of the phrase "substantially transparent in the transverse direction."

9 A polygon is defined as "a closed path of connecting line segments AB, BC,... [which are termed] the sides of the polygon." Webster's New World Dictionary of Mathematics 200 (1989). Polygons are named according to the number of their sides: a triangle has three sides; a quadrilateral, four; a pentagon, five, and so on. Id.

10 For example, quadrilaterals, which are four-sided polygons, are classified by the parallelism of their sides: "the figure is a trapezium, trapezoid, or parallelogram depending upon whether no, one, or two pairs of opposite sides are parallel, respectively. A rectangle is a parallelogram with all angles equal, and a square is a rectangle with all sides equal." Webster's
Having demonstrated that the term "side" is a misnomer when used in reference to a circular cylinder, this Court will nevertheless observe that the expression "from one side to the other" clearly describes a point opposite the point of origin. Therefore, had this Court relied upon this expression to construe the claim, it would have concluded that this phrase indicates that a user must be able to see through the center of the cartridge to the opposite point of the cartridge, as opposed to merely being able to view a point which is an infinitesimal distance away.

Relying upon its authority to look to extrinsic evidence for assistance in construing the meaning of this claim, this Court will turn first to the dictionary. The definition of "transverse" is "extended or lying across or in a crosswise direction." Webster's Third New International Dictionary 2431 (unabridged 1976). The term "across" is defined as "to or on the opposite side." Id. at 20. Although this might appear merely to bring this Court to its earlier observation that a cylindrical cartridge does not have sides, the term "opposite" is a useful addition, suggesting that a user must see through the central longitudinal axis of the cartridge in order to view the opposite point (rather than side) of the cartridge, exactly one hundred and eighty degrees on the circle from the initial point.

The term "central longitudinal axis" is arguably a redundancy, as the term "axis" refers to "a straight line about which a body or three-dimensional figure rotates or may be supposed to rotate." Webster's Third New International Dictionary 153 (unabridged 1976). Presumably, therefore, the Defendant's cylindrical cartridge has only one longitudinal axis, located in the center of the cartridge. However, given that the parties have disputed this point, this Court will employ the term "central longitudinal axis" for purposes of clarity.

Of course, given that the object discussed here is a three-dimensional cylinder rather than a two-dimensional circle, the user need not confine himself to looking directly across the cartridge in order to view "in the transverse direction," but may also look toward any point directly above or below the opposite point on the cartridge. The common denominator is that the user must look through the central longitudinal axis in order to view any of these points.

This initial conclusion is buttressed by a further observation. Given that a circle (and thus a cylindrical cartridge) has no sides, there are only two possible ways to construe the phrase "in the transverse direction": either it describes a direction extending toward the opposite point of the cartridge, exactly one hundred and eighty degrees on the circle from the initial point, or it describes a direction extending toward any point of the cartridge, including a point just an infinitesimal distance away. The first construction appears to be the most logical choice, for two reasons.

First, the phrase "in the transverse direction" appears to refer to a particular, measurable direction, as opposed to any of numerous possible directions which would intersect any point of the cartridge, including points just an infinitesimal distance away. If this were not the case, the patent could have simply used the term "in any direction and for any distance."

Second, the latter construction, somewhat incongruously, would allow the Defendant's patent to encompass any cartridge which is substantially non-transparent, but which has a viewing window large enough to permit the user to see "through" the cartridge to any other point on the cartridge. This construction is belied by both the prosecution history and the claim itself. As discussed earlier, the Patent Examiner initially rejected Claim 1 for obviousness but later indicated that it "may be allowable if the motivation and the advantage of placing transparent caulk in a transparent container is set forth in the claim other than for viewing contents purposes." Defendant Sashco amended its claim accordingly to reflect the following advantages realized by its product:

the substrate may be viewed through the combination of the housing and the caulking material placed therein so that the appearance of the substrate as affected by the caulking material may be seen prior to application of the caulking material and [] the position of the piston member may be viewed as the caulking material is dispensed from the housing.
'458 patent, Claim 1. These advantages--allowing the substrate, as it will be affected by the caulking material, to be viewed prior to applying that caulking material, and viewing the piston as the material is applied--would appear to require more transparency than that which can be provided by a viewing window, which may or may not allow one to directly "line up" the cartridge with the surface of the item to which the caulking compound is to be applied, so as to enable one to see how that surface will look once that compound is so applied. In any event, given the prosecution history described above, there must be some appreciable difference between Defendant Sashco's product and a product which merely allows the user to view the contents. Accordingly, this Court will not construe this Claim as encompassing all substantially non-transparent cartridges which have a large viewing window.

For the foregoing reasons, this Court will interpret the phrase "in the transverse direction" to mean toward the opposite point of the cartridge (i.e. one-hundred and eighty degrees from the initial point), and toward all points which are directly above and below that point. This construction necessarily limits the patent to situations wherein the user may view directly through the central longitudinal axis of the cartridge.

--- Footnotes ---

14 This Court notes here that it has reviewed the deposition testimony of Plaintiff's expert, Richard Killworth, which was cited by the Defendant in its Motion (Doc. # 61) and which discusses the interpretation of both of the patents at issue here. This Court concludes that this testimony does not refute or undermine the Plaintiff's arguments.

--- End Footnotes ---

There is another reason why this construction of the patent's claim must be the correct one. The claim emphasizes that the "substrate may be viewed through the combination of the housing and the caulking material placed therein so that the appearance of the substrate as affected by the caulking material may be seen prior to application of the caulking material." This result can only be achieved if a user is able to see the area directly beneath and below the nozzle (which extends from the very center of the top of the cartridge), away from the piston, because this is the area to which the caulking material will be applied. As a practical matter, therefore, a user who wishes to view the substrate through the cartridge (as opposed to looking directly at the substrate surface by angling his or her head), will position himself or herself at the opposite end of the cartridge, so that he or she is "lined up" with the nozzle. From this position, he or she must look through the central longitudinal axis of the cartridge so as to view the substrate to which the caulking material will be applied. Importantly, a mere ability to see through any other portion of the cartridge--which, of necessity, would put the viewer's line of sight at an angle with the substrate and the piston--would not allow one to view the area directly below the nozzle, which is the area of the substrate to which the caulking material will be applied. Thus, the claim's asserted function can only be realized if the user is able to view directly through the central longitudinal axis of the cartridge.

As a final matter, this Court notes that the claim's requirement that the "position of the piston member may be viewed as the caulking material is dispensed from the housing" can be fairly interpreted as supporting its construction of the patent's claim. In regard to this function, the crucial issue is whether a partial view of the edge of the piston (as is provided by the Plaintiff's cartridge, due to the existence of an opaque mask which obscures 58% of the cylinder) is sufficient to fulfill this function, or whether a view of more than fifty percent of the piston member--which necessarily is only achievable if any existing mask obscures less than 50% of the cylinder, so that a user can view directly through the central longitudinal axis of the cartridge--is required.

The answer to this issue would appear to depend upon the physical configuration of the piston member. For example, if the piston member is merely a flat base, a failure to exert pressure directly in the center of the piston might cause the piston member to slide unevenly, thus requiring a view of more than half of the piston member in order to determine the precise extent of the unevenness and the resulting position of the piston member. If, however, the piston member is "cup-shaped in configuration so that it has a flat base plate [] which bears against caulking material," as is described in the Defendant's preferred embodiment, then the piston member should slide evenly, thereby allowing a user to be certain of the precise position of the entire piston member even if he or she has only a partial view of said piston.

Accordingly, this Court must inquire as to whether the Defendant's patent is necessarily limited to piston members which have cup-shaped configurations. In this regard, the Court notes that the only part of the patent which describes the piston member as having a "cup-shaped configuration" is the patent's description of the preferred embodiment. However, language
in the patent which immediately precedes the claim clearly reflects the Defendant's intent not to limit its patent to the description of its preferred embodiment:

The present invention has been described with some degree of particularity directed to the preferred embodiment of the present invention. It should be appreciated, though, that the present invention is defined by the following claims construed in light of the prior art so that modifications or changes may be made to the preferred embodiment of the present invention without departing from the inventive concepts contained herein.

Moreover, the Federal Circuit has "cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification." Texas Instr. v. United States Int'l Trade Comm'n, 805 F.2d 1558, 1563 (Fed. Cir. 1986); accord Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations"), cert. denied, 490 U.S. 1068, 104 L. Ed. 2d 634, 109 S. Ct. 2069 (1989). Therefore, this Court will not construe the Defendant's patent as being limited to piston members with cup-shaped configurations. Instead, this Court will construe the patent as encompassing other possible configurations of the piston member, including a flat base which may slide unevenly if pressure is not applied to the direct center of the piston member. In such a case, the user's need to view more than half of the piston member in order to determine the precise extent of the unevenness and the resulting position of the piston member, supports this Court's construction of the Defendant's claim to be limited to situations wherein the user may view directly through the central longitudinal axis of the cartridge.

B. Construction of Clauses (b) and (d):

Clause (b): "said upper wall portion being constructed for substantially uniform airflow therethrough over substantially the entire plan surface area of said upper wall portion." Clause (d): "said secondary wall means being constructed for substantially uniform passage of air therethrough over substantially the entire plan surface area of said secondary wall means."

The '767 patent claims an air flotation, ventilated mattress apparatus comprising, among other things, an upper wall portion and a secondary wall means that are "constructed for substantially uniform passage of air therethrough over substantially the entire plan surface area of said secondary wall means." The parties agree that when the claim language refers to "substantially uniform passage of air," it means airflow which is substantially steady, constant or continuous, as opposed to fluctuating, intermittent or alternating over time. See Plaintiff's Ex. 1; Defendants' Ex. 408 ("person of ordinary skill in the art would read 'uniform airflow' to mean air flows at essentially the same rate. . . ."). They disagree about where the patent claims the substantially steady air flow will occur. Plaintiff alleges that although the patent claims "substantially uniform airflow . . . over substantially the entire plan surface area," the claim does not specify the spatial location through or at which air will flow. Rather, according to plaintiff, it means that air flow will be constant "wherever air flows." According to defendants, the requirement for "substantially uniform airflow . . . over substantially the entire plan surface area" means that at substantially all locations on the plan surface, air flows at essentially the same rate.

Footnotes:

4 The patent claims for the upper wall portion and the secondary wall means are substantially identical, except that the upper wall portion claims "substantially uniform airflow" and the claim regarding the secondary wall means is for "substantially uniform passage of air." The difference is not material to any issue before the Court.

5 Among other problems with plaintiff's argument, it is hopelessly circular. As noted, plaintiff alleges that the claim language ("over substantially the entire plan surface area") does not specify the spatial location through or at which air will flow, but merely means that air flow will be constant "wherever air flows," and that "this is true" over substantially the entire plan surface. What plaintiff really argues, though it is less than candid in framing the issue, is that the Court should altogether ignore the claim requirement that air flow at a substantially uniform rate "over substantially the entire plan surface area."

6 Although defendants' motion refers to "are" flow, it is clear from defendants' supporting memorandum that the intended word is "air."
Plaintiff argues that if the Court were to adopt defendants' proffered construction, the invention would be impossible to make because when a patient lays on the mattress, air cannot flow at the points of contact. Plaintiff's interpretation ignores the fact that the "uniform air flow" clauses continue with "therethrough over substantially the entire plan surface area of [said secondary wall means and upper wall portion]. The claim demands that air flow through all locations on the surfaces. Defendants' construction would seem to give the proper meaning in context. Further, as defendants point out, the claim sets out a mattress with an "air permeable wall." Because the patent does not suggest that this permeability varies substantially from place to place, it is logical to conclude that the patent intended air flow which is uniform in space. This conclusion is supported by the fact that in distinguishing Schild, plaintiff mentioned that Schild included a non-permeable upper wall means. Further, the patent specification mentions many times the need to ventilate the patient's skin at all adjacent areas.

The Court finds that the phrase "substantially uniform airflow therethrough over substantially the entire plan surface area" has a plain meaning in light of the '767 claims, the '767 specification, and the '767 prosecution history. A person of ordinary skill in the art of air bed engineering would read "substantially uniform airflow" to mean airflow that does not substantially fluctuate over time. When added to the words "over substantially the entire plan surface," the claim requires that air flow at substantially the same rate at substantially all locations on the surface.

The district court construed clause (b) - an "upper wall portion being constructed for substantially uniform airflow therethrough over substantially the entire plan surface area of said upper wall portion" - and clause (d) - "secondary wall means being constructed for substantially uniform passage of air therethrough over substantially the entire plan surface area of said secondary wall means" - to require "air flow at substantially the same rate at substantially all locations on the surface." KCJ I, 30 F. Supp. 2d at 1326. The district court thus required uniformity of airflow both temporally and spatially.

This court thus examines whether clauses (b) and (d) require an airflow uniform both in time and space. During the trial court's proceedings, "the parties agreed that when the claim language refers to 'substantially uniform passage of air,' it means airflow which is substantially steady, constant or continuous, as opposed to fluctuating intermittent or alternating over time. . . . [However,] they disagreed about where the patent claims the substantially steady air flow will occur." Id. at 1325-26. On appeal, KCJ maintains that the "continuous passage of air" requires uniform airflow only in a temporal sense. Specifically, KCJ asserts: "As used in clauses (b) and (d) of claim 1 of the '767 patent, 'substantially uniform airflow over substantially the entire plan surface area' means that wherever air comes through anywhere over the surface area, it will flow at a substantially uniform or constant rate over time." This court, however, agrees with the district court that claim 1 requires uniformity in space as well as time.

First, the claim language itself requires spatial uniformity. Clause (b) requires "uniform airflow therethrough over substantially the entire plan surface area." "767 patent, col. 6, ll. 12-13 (emphasis added). Similarly, clause (d) requires "uniform passage of air therethrough over substantially the entire plan surface area." Id. at col. 6, ll. 19-20 (emphasis added). As the district court aptly noted, "the claim demands that air flow through all locations on the surfaces." KCJ I, 30 F. Supp. 2d at 1326. To limit uniformity to temporal aspects would render these limitations meaningless.

The written description of the '767 patent reinforces the essential nature of spatial uniformity. The present invention is an
"air flotation mattress . . . supporting a recumbent patient entirely by means of a throttled flow of pressurized air which also ventilates and cools all adjacent areas of the patient's skin." '767 patent, col. 2, ll. 41-45. To enable the mattress to "continuously ventilate all areas of the skin adjacent the mattress," there must be airflow over the entire plan surface area as the claim recites. Id. at col. 3, ll. 4-5. In fact, the written description explains:

Pressurized air passes evenly through virtually the entire plan surface area of the top wall 26. As a consequence, such air also serves to inflate the upper compartment 40 between top wall 26 and secondary wall 36. Such pressurized air then flows evenly through the suede or leather secondary wall 36; here again, this airflow is substantially even over substantially the entire plan surface area of the wall 36.

Id. at col. 5, ll. 18-25 (emphasis added). Unless the air mattress has uniform airflow over substantially the entire plan surface area, a patient lying on the secondary wall would not be "supported entirely by the inflatable compartment and chamber without the necessity of spines or other internal, non-inflatable solid support structure within or forming a part of the mattress apparatus." Id. at col. 2, ll. 63-66 (emphasis added).

The record of the administrative proceedings before the PTO supports this interpretation of claim 1. In seeking allowance of the pending claims, the patentee added clauses (b) and (d) to claim 1 and remarked:

In no way does the alternating pad of the Schild et al. reference supply positive pressure air throughout the entirety of the chamber during all operations of the mattress. . . . Moreover, Gammons et al. does not provide means for continuously maintaining positive air pressure conditions throughout the entirety of the lower chamber during the entirety of the operation of the mattress apparatus.

J.A. at 138-39 (emphasis added). The express statements of the patentee clarify that the airflow limitations require both a temporal and spatial uniformity. In sum, the prosecution history also supports the district court's interpretation of clauses (b) and (d). To read the claim otherwise would ignore express language of the claim requiring airflow "over substantially the entire plan surface area." '767 patent, col. 6, ll. 14-15.

The district court determined that clauses (b) and (d), when properly construed, do not read on Kinetic's accused mattresses. Literal infringement of a claim occurs when every limitation recited in the claim appears in the accused device, i.e., when "the properly construed claim reads on the accused device exactly." Amhil Enters., Ltd. v. Wawa, Inc., 81 F.3d 1554, 1562, 38 U.S.P.Q.2D (BNA) 1471, 1476 (Fed. Cir. 1996). The district court construed clauses (b) and (d) to require uniform airflow in time and over the entire plan surface area. KCJ conceded that under the district court's construction, which this court upholds, "limitations of . . . Clause (b) are not met by any of the accused devices." KCJ II, 39 F. Supp. 2d at 1289 n.2. Accordingly, this court affirms the district court's grant of summary judgment of no literal infringement.

3. What is the Proper Construction of the Phrase "substantially uniform cross-section" in the '092 and '948 Patents?

Claim 1 of the '092 patent and claim 1 of the '948 patent contain the phrase "a die of substantially uniform cross-section." KXI contends the term "substantially" means "at least a 10% change in size." KXI contends that as applied to the claim, the phrase "substantially uniform cross-section" means "the die should not change in diameter by more than 10%." Culligan contends the phrase "substantially uniform cross-section" in the '092 and '948 patents means the internal cross-section of the die must vary less than about 0.010 inch along the length of the die.

The contested phrase reads: "a substantially uniform cross-section, which cross-section is not substantially smaller than the cross-section of an inside diameter of the extruder barrel[]." KXI contends the word "substantially" in the phrase "substantially uniform cross-section" should be defined consistently with the term "substantially" in the phrase "not substantially smaller than the cross-section of an inside diameter of the extruder barrel[]."

KXI contends the phrase "not substantially smaller" is defined in the '092 and '948 patents' specifications. The relevant parts of the specifications read:
There are distinct limitations on the ability to compress the material into a die smaller than the extruder. However, it has been discovered that, if that is to be attempted . . . the ratio of the cross-sectional area of the die mouth to the extruder output are not should be less than approximately 0.9.

KXI interprets this to mean that the cross-section of the die can be 10% smaller than the size of the cross-section of the barrel. KXI contends the term "substantially" used both in "substantially smaller" and "substantially uniform cross-section" means up to a 10% change in size. Accordingly, KXI argues "a substantially uniform cross-section" means the die's diameter should not change by 10%. KXI cites a recent federal district court case in support of the proposition that "since the term 'substantially' is used twice in the claim, it cannot have more than one meaning." Atmel v. Information Storage Devices, Inc., 997 F. Supp. 1210, 1215 (N.D. Cal. 1997).

Culligan responds that there is no reason to give the term "substantially" the same meaning in both phrases, as the term "substantially" is used fourteen times in claim 1 of the '092 patent and claim 1 of the '948 patent. Culligan also argues that Atmel does not support KXI's legal proposition. Instead, Culligan contends that Atmel holds that "identical or 'indisputably interchangeable' claim terms in patents that share a common ancestry should be construed consistently." Id. at 1215.

The court agrees with Culligan that there is no reason to construe "substantially" as having the same meaning in both phrases. The court finds the term "substantially" is used throughout claim 1 of both patents, and there is no indication that the patentee gave the term a uniform meaning.

Culligan contends the term "substantially uniform" was defined during the prosecution of the '948 patent to mean less than 0.010 inch. In both the October 2, 1992 Amendment and Request for Reconsideration and the March 10, 1993 Amendment and Request for Reconsideration, the '948 patentee distinguished the extruder disclosed in the Zavasnik patent based upon the "increasing cross-sectional area" of the forming die. The patentee stated: "the forming die in Zavasnik must be of increasing cross-sectional area--see column 2, line 59-65 and column 4, lines 22-24. In contrast, the extrusion die of the claimed invention is of substantially uniform cross-section."

The Zavasnik patent at column 2, lines 59-65 reads:

The cross-sectional dimensions of the forming die 26 at its entrance . . . should be somewhat larger than that of the extruder crosshead die opening indicated at 52, e.g., about 0.01 to about 0.02 inch larger. The increase in die opening size will accommodate any expansion on the part of the plasticized thermoplastic material.

Culligan argues that when the patentee cited this section of the Zavasnik specification, he told the examiner that the Zavasnik extruder did not have a "substantially uniform" die because there is a variance of at least 0.010 inch. Culligan contends "by the time the patentee got its claims allowed, because this overcame the examiner's rejection, the patentee obviously believed that something which varied by 0.010 inch was not 'substantially uniform' in cross-section."

KXI responds that this Zavasnik reference is irrelevant because it does not describe a die which increases in cross-section over its length. KXI contends there are two dies disclosed in the Zavasnik patent; an extrusion die (11) and a forming die (26), and that these two dies are separated by an air gap. According to KXI, the Zavasnik patent at column 2, lines 59-64 requires that the opening of the forming die (26) be larger than the opening of extrusion die (11), to "receive' the extrudate after it crosses the air gap . . . ." Therefore, KXI argues, 0.010 inch is not applicable to the change in diameter across the die.

The court agrees with KXI that the Zavasnik patent does not refer to an increasing cross-sectional diameter along the forming die, but to increase in the diameter of the opening of forming die (26) with respect to the extruder die (11). The court finds, however, that the patentee presented the 0.010 inch figure by reference during the prosecution of the '948 patent to distinguish the Zavasnik patent's prior art, and to represent the rate of variance in the die's cross section that is not "substantially uniform." Accordingly, the court construes the phrase "substantially uniform cross-section" in the '948 patent to mean less than a 0.010 inch variance in diameter along the length of the die.

The court also relies on the '948 patent's prosecution history as extrinsic evidence of the meaning of the phrase "substantially uniform cross-section" in the '092 patent. The court finds the term "substantially uniform cross-section" should be defined consistently in both patents as both patents use the exact same phrase to describe the same structure, and
the '948 patent was originally filed as a continuation-in-part application of the application which led to the '092 patent. Accordingly, the court also construes the phrase "substantially uniform cross-section" in the '092 patent to mean less than a 0.010 inch variance in diameter along the length of the die.

3970

3) "substantially uniform cross-sectional area"

Plaintiff argues that the court should decide whether an intake passageway has a "substantially uniform cross-sectional area" by reference to its cross-sectional area size and its cross-sectional area shape. Defendant suggests that an intake passageway has a substantially uniform cross-sectional area if it has largely or approximately the same cross-sectional area across its length. I conclude that an intake passageway has a substantially uniform cross-sectional area if it has approximately the same cross-sectional area across its length.

The '502 patent does not distinguish between the cross-sectional area "size" and "shape," either explicitly or implicitly. The ordinary meaning of the word cross-section is "a surface or shape that is or would be exposed by making a straight cut through something, especially at right angles to the axis." New Oxford American Dictionary 409 (2001). The ordinary meaning of "area" is "a measure of the size of a two-dimensional surface, or of a region on such a surface." McGraw-Hill Dictionary of Scientific and Technical Terms 113 (6th ed. 2003). Thus, the cross-sectional area of an intake passageway is the measurement of the surface that would be exposed by making a straight cut through the intake passageway. Therefore, an intake passageway has a substantially uniform cross-sectional area if it has approximately the same cross-sectional area across its length.

3971

1. What is the Proper Construction of the Phrase "substantially uniform mixture" in the '092 patent and "substantially uniform particulate mixture" in the '948 patent?

Claim 1 of the '092 patent contains the phrase "particles in a substantially uniform mixture" to describe the feed mixture composed of primary particles and binder particles. Claim 1 of the '948 patent contains the phrase "substantially uniform particulate mixture" to describe the feed mixture composed of primary particles and binder particles. KXI contends the words should be given their ordinary meaning, and that these phrases refer to a largely--but not necessarily wholly--even distribution of particles. KXI contends there are no other mixing requirements and no special methods of mixing required. The test for proper mixing, according to KXI, is stated in the '092 patent's specification at column 8, lines 7-14 and the '948 patent's specification at column 8, lines 13-19:

An experienced operator can also readily notice a reduction in the flow characteristics of the powder mixture that indicates the formation of the desired bonds between particles. Samples smeared on a black surface show no residual binder aggregates which would be indicated by the presence of small white streaks.

Culligan argues that the specifications of the '092 and '948 patents define the terms "substantially uniform mixture" and "substantially uniform particulate mixture" in a special way. According to Culligan, "substantially uniform" is a limitation requiring the formation of stable attachments between the primary particles and binder particles. Culligan argues that the claim requires vigorous mixing until stable "prebonds" or "microaggregates" are formed between the primary particles and binder particles throughout the mixture. Culligan points to provisions of the specifications reading:

Correct methods of mixing produce a material composed of microaggregates of primary particles and binder particles . . . . Poorly mixed materials, or use of binder or primary particles lacking the ability to form stable "prebonds" results in mixtures where binder and primary particles separate, or where primary particles of widely varying density or morphology separate because stable aggregates have not been formed. It is these stable aggregates, formed during mixing that allow this process to bond particles that cannot normally be maintained in a stable mixture. It appears that, as a rule, the process is generally not workable with poorly mixed materials or with materials in which the binder particles have not
become attached to the primary particles during the mixing step.

Culligan argues that here the '092 and '948 patents' specifications tell a person knowledgeable in the art that they must mix the primary and binder particles in a certain way to practice the invention; so as to create stable "prebonds" or "microaggregates."

The Federal Circuit has held that "the specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Culligan argues that the specifications of the '948 and '092 patents expressly defines the phrase "substantially uniform." KXI argues in response that it is only appropriate to give a term a special meaning where "the special definition of the term is clearly stated in the patent specification or file history." Id. at 1582.

The court agrees with KXI that the patentee did not give special meaning to the phrase "substantially uniform mixture" or "substantially uniform particulate mixture" in the '092 and '948 patent's specifications. The court construes the words "substantially uniform particulate mixture" and "substantially uniform mixture" according to their ordinary meaning. Accordingly, the court construes the phrases "substantially uniform mixture" and "substantially uniform particulate mixture" as meaning a largely—but not wholly—even distribution of particles.

H. "Substantially Uniform Structure of Flexible Cells"

The words "substantially uniform structure of flexible cells" are used in claim 28 of the '303 Patent. Medinol argues that this term refers to "a stent structure that has a largely repeating distribution of flexible cells that have nearly the same structure." Guidant contends it means "all of the cells of the stent have substantially the same structure." The phrase "uniform structure of flexible cells" was construed by the Cordis court for purposes of claim 12 of the '303 Patent. That court determined that the phrase means "the flexible connected cells of claim 6 have the same structure." This construction draws from the patent specification, where the patentee states, with respect to Figure 8, that "all spaces are of the same size, i.e., the stent is comprised of a plurality of spaces or cells 50 defining a uniform cellular structure." The parties agree that this definition is the foundation upon which the meaning of the word "substantially," denoting approximation, must be built. Given that "uniform structure of flexible cells" means "the flexible connected cells have the same structure," it is clear that the word "uniform" is taken to modify the structure, rather than the overall arrangement, of the flexible connected cells. The word "substantial," then, also modifies the structure of the cells - i.e., as Guidant indicates, the phrase "substantially uniform structure of flexible cells" means that all of the flexible connected cells have approximately the same structure.
context, denotes approximation.

120 Medinol's primary objection to Guidant's proposed construction of this term relates to the use of the word "including" in the claim language. Specifically, the claim reads, in relevant part: "An expandable stent, including: a plurality of connected cells having a longitudinal axis defining a substantially uniform structure of flexible cells having a longitudinal axis and a circumferential axis substantially perpendicular to said longitudinal axis . . . ." '303 Patent, col. 10, ll. 14-19 (emphasis added). Defining the word "including" to mean less than all, Medinol asserts that, according to the specification, not all of the cells can have substantially the same structure. But Medinol has explicitly made statements to the contrary, arguing that notwithstanding the patentee's use of the word "including" in claim 12 of the '303 Patent, the term "uniform structure of flexible cells," refers to "all cells of the stent." See Medinol's Brief in Support of Its Appeal in the Cordis Action (filed under seal), Ex. 48 to 9/9/04 Affirmation of Robert F. Shaffer, counsel for Guidant, at 37-39. Accordingly, Medinol's argument for a restrictive reading of "including" fails.

The district court construed the "substantially uniform thickness" limitation to require that the thickness of the stent's wall surface not vary by 0.001 inch or more. Cordis contends that the district court erred by imposing the numerical restriction of 0.001 inch with respect to that limitation.

The patents do not set out any numerical standard by which to determine whether the thickness of the wall surface is "substantially uniform." The term "substantially," as used in this context, denotes approximation. See Epcon Gas Sys., Inc. v. Bauer Compressors, Inc., 279 F.3d 1022, 1031 (Fed. Cir. 2002). Thus, the walls must be of largely or approximately uniform thickness. Moreover, the written descriptions of the two patents state only that the expansion of the tubular member is uniform "along the length of tubular member 71" in part because of the uniform thickness of the wall surface, specifically pointing to the "same uniform thickness" of the connecting members 77, the elongate members 75, and members 78 and 79. '762 patent, col. 7, ll. 21-33; '984 patent, col. 6, ll. 47-54. Accordingly, the "substantially uniform" limitation also requires that the thickness of the wall surface be sufficiently uniform along its length and between members to allow uniform expansion of the stent. The question presented here is whether there is anything in the prosecution history of either patent that justifies giving the "substantially uniform thickness" limitation an even narrower construction.

In its discussion of the Ersek patent during reexamination of the '762 patent, Cordis argued that, according to the Antonsson affidavit, the Ersek device is not smooth and that "the wall thickness [of an Ersek model] varied at different points" and "ranged from a minimum thickness of 0.0035 inches to a maximum thickness of 0.0045 inches." Cordis noted that the Antonsson affidavit addresses a model of an Ersek device in its expanded configuration, but that the thickness of the Ersek device is not substantially uniform in either its unexpanded or expanded configuration. Based on those statements, the district court construed the "substantially uniform thickness" limitation to require variations in wall surface thickness of less than 0.001 inch.

The commentary on Dr. Antonsson's measurement of a model, however, does not constitute a "clear and unmistakable" disclaimer, see Omega Eng'g, slip. op. at 17, excluding stents that vary in thickness by 0.001 inch or more. Cordis did not suggest that the variation of 0.001 inch was the basis for distinguishing its invention from Ersek or that Cordis's claimed stents vary by less than 0.001 inch in thickness. Rather, Cordis's basis for distinguishing Ersek appears to have been that Ersek's walls were at least twice as thick at the intersections of strands as along the strands themselves. The alleged disclaimer based on Dr. Antonsson's measurements in the reexamination proceedings was at best ambiguous. See IMS
Tech., Inc. v. Haas Automation, Inc., 206 F.3d 1422, 1439 (Fed. Cir. 2000) ("In light of the ambiguity of the patentee's statements and the subject matter actually disclosed in the references, we cannot say that the patentee clearly disavowed coverage of [the contested subject matter].").

In addressing Ersek, Cordis focused on the double thickness of the bridge portions of Ersek's walls. For example, in its response to the examiner's reexamination rejection of claims in light of Ersek, Cordis stated:

As shown . . . in Ersek Figure 5 . . . the wall of [the Ersek device] is of varying thickness because the strands of the sleeve have twisted out of the plane of the starting material. Moreover, the bonds or bridges at the junctions of the strands protrude inwardly and outwardly of the plane of the starting material, and as a result the Ersek sleeve 16 has a non-uniform wall of varying thickness.

Since the bonds or bridges extend generally radially outwardly of the sleeve 16, the sleeve has 100% variance in thickness as compared to the thickness of the starting material in the areas of the bonds or bridges.

Figure 5 of the Ersek patent is shown herein:

[CENTER]

Cordis reiterated its contention that Ersek did not have a wall surface with a substantially uniform thickness in that submission:

Clearly, the Ersek sleeve cannot be fairly said to have a wall surface with "a substantially uniform thickness". The expanded metal Ersek sleeve has bridge portions that are several times as thick as the strands. . . . The strands extending between the bridge portions are twisted to have inwardly and outwardly projecting edges. This irregular and variable configuration is rough and is the antithesis of "substantially uniform thickness". The use of the term "substantially uniform" does not exclude some variations in dimension between the inner and outer surfaces of the wall. Even so, it is clear that Ersek's rough and irregular wall does not have substantially uniform thickness. Antonsson Affidavit, paragraph 10.

At Cordis's request, Dr. George Andros submitted a declaration to the PTO as a part of the reexamination of the '762 patent. Dr. Andros stated that "the Ersek fixation sleeve does not have a substantially uniform wall thickness, nor is it thin walled. The expanded metal sleeve is twice as thick in some areas as in others, and the thickness of the wall varies throughout." Cordis thus focused on the double thickness of the bridge portions of the Ersek device, not on Dr. Antonsson's assertion that the thickness of the Ersek device varied by up to 0.001 inch along the strands.

Based on our review of the prosecution history, we conclude that a reasonable reading of the patentee's statements would not lead one to conclude that variations greater than 0.001 inch fall outside the scope of the '762 patent. Because there is no clear and unmistakable disclaimer of any variation in thickness of 0.001 inch or more, the district court erred in imposing that numerical restriction on the "substantially uniform thickness" limitation. The discussion of the Ersek patent does, however, support the conclusion that the owner of the '762 patent disclaimed coverage of any device with a variation of at least 100 percent. In any event, quite apart from any disclaimer, a wall that varies in thickness by as much as 100 percent cannot be said to be of "substantially uniform thickness" either literally or by equivalents.

3. "Substantially uniform thickness."

Consistent with this court's previous construction 27 and the Federal Circuit's review of that construction, 28 "substantially uniform thickness" is construed to mean "the wall of the tubular member must be of largely or approximately uniform thickness. A wall that varies in thickness by as much as 100 percent cannot be said to be of substantially uniform thickness."
This court does not view the Federal Circuit's 2003 opinion as reversing its original construction of "substantially uniform thickness," but instead clarifying the scope of that construction. Cordis Corp. v. Medtronic, Inc., 339 F.3d 1352, 1360-62 (Fed. Cir. 2003). Thus, this court does not agree with BSC that the Federal Circuit's opinion added to the limitation that the stent must allow for "uniform expansion."

The second claim limitation upon which the parties focus is that the forward wall must have a "substantially uniform thickness inside the perimeter wall." Interpretation of this claim phrase turns on the meaning of the modifying term "substantially." The term "substantially" does not mean "essentially" or "exactly" but is a relative term which the Court interprets in context. See, e.g., John Blue Co. v. Dempster Mill Mfg., Co., 172 F. Supp. 23, 27 (D. Neb. 1958). In the context of machine-tooled metal, "where tolerances are measured in by a micrometer, "substantially uniform thickness" . . . would call for differentials of no more than perhaps 0.001 [inches]. But in dealing with (say) the topography of mountain ranges, 'substantially uniform' height . . . could permit differences of hundreds of feet or more." O'Hara Mfg. Ltd. v. Eli Lilly, 1986 U.S. Dist. LEXIS 22546, at *40 n.8, No. 85 C 3979 (N.D. Ill. July 18, 1986). In the production of ice cream, by further contrast, a claim term requiring production temperatures "substantially" in a certain range is still satisfied by temperatures falling a degree or two outside of that range. See Dippin' Dots v. Mosey, 1997 U.S. Dist. LEXIS 20896, at *13-14, No. 3:96-CV-1969-X (N.D. Tex. Mar. 31, 1997). Implicit in these contrasting examples is the principle that the function of the thing at issue is an important consideration in defining this term. See John Blue Co., 172 F. Supp. at 27. Thus, "a thing is substantially the same as another if it performs the substantially the same function in substantially the same way to obtain the same result." Id.

The context of the term "substantially" in this case is investment cast metal. It is undisputed on the summary judgment record, that the standard tolerance for investment casting is +/-0.005 inches or +/-0.5%. Also instructive (present in Claim 12 but absent from Claim 15) is the phrase immediately following the claim phrase "substantially uniform thickness." In Claim 12, the subsequent phrase explains that the purpose of the uniform wall is to "reduce club head weight." Col. 11, lines 21-2. Reduced club head weight allows larger a club face and increases the radius of gyration, which are both focuses of the '941 Patent. This purpose supports the conclusion that substantially uniform in this context allows thickness deviations at or near the standard commercial tolerance.

Although this construction of "substantially uniform thickness" excludes some of the preferred embodiments from claims that contain this limitation, it does not exclude these embodiments from every claim in the '941 patent. In fact, the claims that specifically discuss the reinforcing matrix covered by a plastic face wall do not contain the "substantially uniform thickness" limitation. See, e.g., Claim 1, Col. 9, lines 12-25. Thus, despite some of the drawings, exceptionally wide variances in wall thickness cannot be encompassed within this limitation. Such an interpretation would impermissibly allow a drawing to contradict the plain language of the claim and render the phrase nonsensical. See, e.g., Raleigh v. Tandy Corp., 1997 U.S. Dist. LEXIS 22130, *20, No C-95-2332-MHP (N.D. Cal. Jan. 9, 1997) ("the specification may help define the terms of the claims, but the claim language is not to be contradicted by the drawings or the description of the preferred embodiments").
Here, we agree with Dana that the district court erred in construing the limitation "substantially uniform wall thickness" to mean a "wall thickness that does not vary more than the wall variation in the tube wall before swaging." We hold that "substantially uniform wall thickness" is properly construed to mean that the wall of the tube is largely or approximately uniform in thickness, but may vary at least as much as the wall thickness varied prior to swaging plus the variation in wall thickness that necessarily results from swaging the tube in accordance with the claimed invention of the '093 and '042 patents.

Looking first to the claim language itself, we are persuaded by Dana's argument that the limitation "substantially uniform wall thickness" must allow for variation in wall thickness greater than the pre-swaging variation in order to give meaning to the term "substantially." The pre-swaging manufacturing tolerance is a manufacturing reality that would have to be encompassed within the claim even if the modifier "substantially" was not used; otherwise, no real-world embodiment, including the patentee's own embodiment, could fall within the scope of the claim. The use of the modifier "substantially" signals that the claim drafter intended the scope of the claims of the patents-in-suit to allow for some variation greater than that variation that necessarily exists in any driveshaft claims due to simple manufacturing realities.

The term "substantially" is commonly used by claim drafters to indicate approximation. See Cordis Corp. v. Medtronic AVE Inc., 339 F.3d 1352, 1360 (Fed. Cir. 2003) ("The patents do not set out any numerical standard by which to determine whether the thickness of the wall surface is 'substantially uniform.' The term 'substantially,' as used in this context, denotes approximation. Thus, the walls must be of largely or approximately uniform thickness."); see also Deering Precision Instruments, LLC v. Vector Distribution Sys., Inc., 347 F.3d 1314, 1322 (Fed. Cir. 2003) ("Indeed, our cases recognize the dual ordinary meaning of this term as connoting a term of approximation or a term of magnitude."); Epcon Gas Sys., Inc. v. Bauer Compressors, Inc., 279 F.3d 1022, 1031 (Fed. Cir. 2002). We find that the term "substantially" was used in just such a manner in the claims of the patents-in-suit: "substantially uniform wall thickness" denotes a wall thickness with approximate uniformity.

Nothing in the specification confirms or conflicts with this construction. Indeed, the district court found, and the parties agree, that the written descriptions of the '093 and '042 patent are not helpful in construction of the disputed limitation because neither written description addresses wall thickness of the driveshaft tube, and the '042 patent's written description does not even describe the swaging process. We agree. With regard to the drawings in the patents-in-suit, we are persuaded by Dana's argument that the district court erred in relying on these drawings to limit the scope of the claims to only pre-swaging wall thickness variations. That the drawings of the patents delineate walls with parallel lines does not require that the claims be limited to tubes with wall thicknesses that are perfectly uniform except for pre-swaging manufacturing tolerances: the reduced size of the drawings (which are not drawn to scale to begin with) makes variation in wall thickness imperceptible. Moreover, even if the drawings were a reliable indicator of wall thickness variations in particular embodiments, that alone would not warrant limiting the claims to the wall thickness variation depicted therein.

We next turn to the prosecution histories of the patents-in-suit for guidance as to the construction of the limitation "substantially uniform wall thickness." As noted above, the district court found that, in the Petition to Make Special for the '093 patent, Dana characterized the prior art where a tube is swaged on a mandrel to control the inner diameter as having substantially uniform wall thickness, in contrast to an uncontrolled inner diameter produced by normal swaging, which was a non-uniform wall thickness. Order Regarding Claim Interpretation, 2003 U.S. Dist. LEXIS 25844 at *3-*4. Accordingly, the district court found that the "substantially uniform wall thickness" limitation was added to the claims to overcome prior art rejections based on normally swaged shafts (i.e., shafts swaged without an inner mandrel). Id. We disagree with the district court's interpretation of the prosecution history.

In the Petition to Make Special, the patentee argued:

U.S. Patent No. 3,854,316 to Wilson discloses a method of forming a hollow aluminum baseball bat having a substantially uniform thickness. Initially, a hollow cylindrical tube blank is extruded or drawn so as to have a constant diameter and thickness. Then, a longitudinal portion of the tube is placed on a mandrel having a constant outer diameter which corresponds to the inner diameter of the handle portion of the bat to be formed. Next, the handle portion of the tube is reduced, such as by swaging, to provide reduced outer and inner diameters and a substantially uniform thickness. During
this reduction step, the longitudinal relationship between the tube and the mandrel is maintained. . . . U.S. Patent No. 3,479,030 to Merola discloses a similar method. These patents clearly relate to a non-analogous field of art (baseball bats) relative to the claimed invention (driveshaft tubes for vehicles) and would not have been considered by a person having ordinary skill in the art.

We do not agree with the district court that this language constitutes a distinction between a shaft swaged with an inner mandrel (substantially uniform) and a shaft swaged without an inner mandrel (non-uniform). Indeed, the patentee characterized the entire bat as having a substantially uniform wall thickness. This is fully consistent with the Wilson reference itself, which teaches "[a] method of making a hollow metal ball bat having a wall thickness along the length thereof that is substantially uniform," regardless of whether the longitudinal portion was swaged with an inner mandrel. See U.S. Patent No. 3,854,316, Abstract (emphasis added). In addition, the remarks accompanying the patentee's amendment to the claims adding the disputed limitation indicate that the patentee sought to distinguish the patented invention on the grounds that the Shinohara reference cited by the examiner did "not disclose a driveshaft tube having a substantially uniform wall thickness throughout the central portion and the end portion." Thus, we cannot agree with the district court that the "substantially uniform wall thickness" limitation was added to distinguish normally-swaged shafts from shafts swaged with a mandrel.

Because the patent specification and prosecution history provide no specific numerical guidance as to the range encompassed by the term "substantially," and because we do not find convincing the scant expert testimony cited by the parties, we do not construe the limitation "substantially uniform wall thickness" as having any specific numerical range. Instead, we hold that "substantially uniform wall thickness" is properly construed to mean that the wall of the tube is largely or approximately uniform in thickness, but may vary at least as much as the wall thickness varied prior to swaging plus the variation in wall thickness that necessarily results from swaging a portion of the tube in accordance with the claimed invention of the '093 and '042 patents.

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I. "Substantially Uniformly Flexible (with Respect to Its Longitudinal Axis)"

"Substantially uniformly flexible (with respect to its longitudinal axis)" is referenced in claim 51 of the '018 Patent. 121 Medinol interprets this phrase to mean "the stent's flexibility is nearly the same as one moves along the longitudinal axis of the stent." 122 Guidant defines it as follows: "The structural elements of the cells provide longitudinal flexibility, such that the flexibility of the stent is substantially uniform only prior to expansion, as one moves along the longitudinal axis of the stent." 123

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121 See '018 Patent, col. 13, ll. 4-6 ("A generally longitudinally extending tubular stent which is substantially uniformly flexible with respect to its longitudinal axis, said stent consisting essentially of . . . .").

122 Pl. Mem. at 28.

123 Def. Mem. at 26.

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The Cordis court construed two phrases similar to the term disputed here. First, "stent which is substantially uniformly flexible with respect to its longitudinal axis by the flexibility of its cells with respect to said axis," 124 was defined as: "The structural elements of the cells provide longitudinal flexibility such that the flexibility of the stent is substantially uniform as one moves along the longitudinal axis of the stent." 125 Second, "said loops adapted so that said stent prior to expansion is substantially uniformly flexible along its longitudinal axis," 126 was construed as: "The first loops and second loops must be oriented in different directions, one a generally vertical direction and one a generally horizontal or longitudinal direction, to provide substantially uniform flexibility to the unexpanded stent as one moves longitudinally along the stent." 127
The parties concur that the primary difference between their respective proposals is Guidant's assertion that the stent is substantially uniformly flexible only prior to expansion. 128 But inclusion of the phrase "only prior to expansion" in the construction is needlessly repetitive. When used elsewhere in the patent, the phrase "substantially uniformly flexible" is coupled with the words "prior to expansion of the stent," suggesting that including "prior to expansion of the stent" in the definition of "substantially uniformly flexible" would be unnecessarily duplicative. 129 Accordingly, the term is defined to mean: the flexibility of the stent is substantially uniform as one moves along the longitudinal axis of the stent.

The claims require the connector device to have a shallow guide member that extends along the inner side of at least one of the sidewalls of the housing and defines the upper and lower storage spaces of the housing. The claims further require that the storage spaces of the housing be "substantially uninterrupted by said shallow guide member.

We conclude that the district court's interpretation was correct. Berg's argument, that "storage space substantially uninterrupted" means that the guide member does not so interrupt the storage spaces as to prevent a hard disk drive package from fitting into both storage spaces, is not persuasive. The plain language of "substantially uninterrupted" means the lack of some type of structurally defined interruption; there is nothing in the claim itself which requires Berg's functional limitation.

The prosecution history also leads us to this construction. The Examiner required the addition of the whereby clause, "whereby said connector device is capable of accepting . . . a hard disk drive package that may occupy both storage spaces." 1204 Col. 8, Ins. 38-42. If the "substantially uninterrupted" language had the functional meaning ascribed by Berg, then the whereby clause would be superfluous.

Further, during prosecution Berg distinguished the Lai prior art reference on the basis of the complete interruption of storage
space by the Lai device's guide wall. Berg stated that Lai has a "common guide wall 34 [that] completely interrupts the area between consecutive storage spaces" and that "Lai does not teach or suggest Applicant's claimed use of 'shallow guide member' to define upper and lower storage spaces without substantially interrupting the overall storage space of the housing."

The only part of the Lai wall that completely interrupts the storage space is the part of the wall (34) that extends from the left side completely over to the right side of the storage space as the following figure shows:

[SEE FIGURE IN ORIGINAL]

Thus, during prosecution Berg defined a structure that extends completely from one side wall to the other side wall as completely interrupting the storage space. As a structure which completely interrupts must also substantially interrupt, a structure that extends completely from one side wall to the other side wall through the storage space must substantially interrupt the storage space.

We therefore conclude that the claims require a shallow guide member that extends longitudinally along the inner side of at least one of the sidewalls of said housing and defines the upper and lower storage spaces. The guide member cannot completely or substantially interrupt the storage space of the housing.

Summary judgment of no literal infringement is proper when no reasonable jury could find that every limitation recited in a properly construed claim is found in an accused device. See Cole. v. Kimberly-Clark Corp., 102 F.3d 524, 532, 41 U.S.P.Q.2D (BNA) 1001, 1007 (Fed. Cir. 1996).

As described above, all of the independent claims require that the storage space be substantially uninterrupted by a guide member. Inspection of the metal plate in the accused device shows that it constitutes a guide member as the arms of the metal plate form part of the guide member that extends longitudinally along the inner side of the guide walls and define the upper and lower storage spaces of the housing. The metal plate extends through the storage space from one side wall to the other thereby substantially interrupting the storage space.

Thus, because the Foxconn device contains a guide member which extends completely from one side wall to the other side wall and substantially interrupts the storage space of the housing, the device fails to meet the claim limitation "storage space substantially uninterrupted by [a] shallow guide member." Accordingly, no reasonable jury could find that Foxconn's device meets all of the claim limitations and Foxconn's device cannot literally infringe the asserted claims as a matter of law. As Berg has not asserted that Foxconn's device infringes under the doctrine of equivalents, we do not reach this issue.

A. "Substantially Unmagnetized"

The term "substantially unmagnetized" is contained in Claims 1 and 9 of the '028 patent, which are independent claims, and Claim 3 of the '028 patent, which is a dependent claim. Rotron contends that the term "substantially unmagnetized" need not be construed in a way that distinguishes the substantially unmagnetized sectors from the prior art, such as U.S. Patent No. 4,030,005 to Doemen ("Doemen '005"), because those sectors are inherently different than the change-over areas and pole gaps or clearances disclosed in the prior art. Accordingly, Rotron argues that the Court should adopt the following construction for this term: "The phrase 'substantially magnetized' includes sectors of field portions of the rotor magnets that have relatively weak magnetization relative to the adjacent magnetic poles of the permanently magnetized sectors. There is no numerical limitation on the amount of magnetization."

In contrast, Nidec argues the substantially unmagnetized sectors must be distinguished from the change-over areas disclosed in the prior art, particularly Doemen '005. It contends that the phrase should be construed as "a sector of a field portion of the rotor magnet wherein the magnetizable material has zero magnetization or as close to zero magnetization as possible in contrast to a 'change-over area' between the poles as disclosed in the prior art where the magnetization of one pole diminishes to zero and the magnetization of the next pole builds up to full strength." Nidec maintains that this construction is supported by the claims and the other portions of the specification, and argues that Rotron's proposed meaning would
improperly broaden its claims to cover the prior art.

Claims 1 and 9 do not define the term "substantially unmagnetized." However, Claim 1 provides some guidance, stating that the unmagnetized sectors of the field magnet portion are "substantially unmagnetized portions of the magnetic material." This language indicates that the patentee sought to distinguish "substantially unmagnetized" from simply "unmagnetized" sectors, and thus suggests that the substantially unmagnetized sectors need not have zero magnetization. Unfortunately, Claim 1 does not explain the extent to which the magnetization may vary from zero, and the ordinary meaning of the word "substantially"-"in a substantial manner" or "so as to be substantial"-also is practically useless as a guide for claim construction in this context. Thorn EMI North America Inc. v. Intel Corp., 936 F. Supp. 1186, 1199 (D. Del. 1996), aff'd, 157 F.3d 887 (Fed. Cir. 1998), cert. denied, 526 U.S. 1112, 119 S. Ct. 1756, 143 L. Ed. 2d 788 (1999). In other parts of the specification, however, including Claim 3 and the preferred embodiment, the patentee uses "unmagnetized" and "substantially magnetized" interchangeably, indicating that the terms may be defined similarly. See Amhil Enters. Ltd. v. Wawa, Inc., 81 F.3d 1554, 1559 (Fed. Cir. 1996) (noting that in a similar situation, "the entire specification . . . leaves its reader with the impression that 'substantially vertical' and 'vertical' mean essentially the same thing"). Similarly, the substantially unmagnetized sectors are also referred to as "null sectors." 028 pat. col. 6, ll. 63 & 68. This interpretation is further supported by the description of the method and apparatus for making the magnet contained in the preferred embodiment. Describing the features of the apparatus, the patentee states, "Relatively no magnetic field exists in the V-shaped cut-outs . . . and the corresponding sections of the ring . . . remain unmagnetized." 028 pat., col. 5, ll. 25-27.

The court next reviews the prosecution history to ascertain the meaning of the term "substantially unmagnetized," keeping in mind that the prosecution history should be used to understand the language used in the claims, but not to enlarge, diminish, or vary the limitations in the claims. See Markman I, 52 F.3d at 980. First, in explaining the difference in the creation of substantially unmagnetized sectors in the '028 patent and the prior art, the applicant referred to nulls as "the absence of magnetic fields." Defs.' Ex. 5, at 7.

Further, as stated above, Nidec contends that the prosecution history indicates that the nulls in the '028 patent must be distinguished from the prior art, particularly the pole clearances of Doemen '005. The prosecution history shows that the patent examiner twice rejected the patentee's claims as unpatentable, at least in part because the patentee's definitions of the unmagnetized portions of the field magnet did not sufficiently distinguish those structures from those contained in the prior art such as U.S. Patent No. 4,311,933 to Riggs ("Riggs '933"). As the examiner explained, "Magnetization between poles must always become zero at some point, because there can be no discontinuity in the magnetization vector." Defs.' Ex. 9, at 3-4; Ex. 10, at 2. His statement seemed to imply that prior art such as Riggs '933, which also claimed magnets with different poles, necessarily included areas of zero magnetization that could not be distinguished from the patentee's description of the null areas in the '028 patent. 1

--- Footnotes ---

1 The patent examiner indicated that it appeared obvious that the fabrication and assembly of Riggs '933 could have been used with the teachings of other patents, including Nakamura, Inariba, and U.S. Patent No. 3,299,355 to Wessels ("Wessels '355"), which all suggested unitary arrays of different magnetization systems.

--- End Footnotes ---

The patent applicant eventually amended his application to include new language in Claim 1, including the term "substantially unmagnetized," and new language in Claim 25 (which was eventually renumbered to become Claim 9) that used the phrase "substantially unmagnetized sectors of substantial angular length." In making this change, the applicant apparently attempted to distinguish these sectors from those claimed in other patents. He explained,

The unmagnetized sectors of substantial angular length differ, for example, from those locations where adjacent oppositely polarized field magnet sections convert from one polarization to another forming pole gaps or pole clearances as in the attached Muller patent No. 3,374,104 2 or Doemen Patent No. 4,030,005. There the field of one pole diminishes to the center of the gap where the field of the next pole begins to build up. There appears to be no unmagnetized area of any substantial extent, and even where Doemen extends this change-over area in the commutation section, it is for the purpose of gradually decreasing the field (to taper off the Hall generator response) and not to create a substantial effective angular null where there is insufficient magnetization to have an effect. It is believed that this is the kind of gradual change from one
polarity of magnetic field to another that the Examiner had in mind with respect to his last sentence on page 2 of the outstanding Official Action.

Defs.’ Ex. 6, at 12.

Footnotes

2 The applicant apparently intended to refer to U.S. Patent No. 4,099,104 to Muller (”Muller ’104”), which contains pole gaps.

Thus, the patent applicant explained that the nature of a pole gap or clearance and a null sector are two different things—the former is an area where "the field of one pole diminishes to the center of the gap where the field of the next pole begins to builds up," while the latter is an area that is unmagnetized. Therefore, Rotron's proposed meaning—that "substantially unmagnetized" should be construed as meaning relatively weak magnetization compared with the magnetized segments—appears not to sufficiently distinguish the prior art, and in particular, the pole clearances or extended change-over areas of Doemen '005. At the same time, the specification suggests that the term "substantially unmagnetized" should not be understood to be limited to areas with no magnetization at all. Accordingly, the Court finds that the specification and prosecution history supports a construction more similar to Nidec's proposed meaning, which allows for some variation from zero magnetization without improperly broadening the disputed term. The Court thus adopts the following construction of "substantially unmagnetized": "having zero magnetization or as close to zero magnetization as possible."
would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. To modify Zabner et al by providing portion 44 as discontinuous portions with a substantially vertical face, side edges and side walls would be obvious in view of Davis.

Defendant's Exhibit 8, p. 33. Claim 1 of the Zabner patent discloses a downwardly extending peripheral skirt containing "a plurality of peripherally spaced inwardly directed generally U-shaped detents . . ." Defendant's Exhibit 9, col. 4, lines 12-17. In challenging the rejection, the patentee argued that the "substantially vertical" outer faces and side edges of the projections distinguish his invention from the Zabner lid by allowing his lid to be easily stripped from the mold "while still providing the much deeper undercut that gives the lid of the present invention a much greater advantage over the Zabner lid." Exhibit 8, p. 41. By emphasizing this distinction between and advantage of his lid over the prior art, the patentee established that the "substantially vertical" faces, side walls and side edges of the projections on his invention excluded ones "inwardly directed," or sloped, such as those referenced in the Zabner patent. Amhil may not now attempt to recapture that element which it specifically and intentionally excluded in order to obtain its patent. Patent claims must be construed the same way for both patentability and infringement. See Smithkline Diagnostics, Inc. v. Helena Laboratories Corp., 859 F.2d 878, 882 (Fed. Cir. 1988); W.L. Gore & Associates, Inc. v. Garlock Inc., 842 F.2d 1275, 1279 (Fed. Cir. 1988).

Applying the claim language to the accused lid reveals that literal infringement has not occurred. Each projection on the M & N lid contains a face that slopes upwardly and inwardly towards the peripheral cavity. The edges and side walls of the projections extend downwardly and laterally outwardly to form a sloped facade with a trapezoidal appearance, thereby distinguishing the projections from those described in the patent-in-suit.

The accused lid does not infringe on Amhil's patent under the doctrine of equivalents either. As discussed above, the doctrine of file wrapper estoppel precludes Amhil from expanding the claims in its patent to include any projections which lack "substantially vertical" faces, side walls, and side edges. The sloped segments of the projections on M & N's lid place it outside the reach of the patent-in-suit, requiring a conclusion of non-infringement as a matter of law.

C. Claim Construction

"Because claim construction is a matter of law, the construction given the claims is reviewed de novo on appeal." Markman, 52 F.3d at 979, 34 U.S.P.Q.2D (BNA) at 1329. Claim 1, the only independent claim in the '244 patent and the only claim at issue here, Amhil II, 34 U.S.P.Q.2D (BNA) at 1647, reads as follows (material in parentheses and brackets added) (emphasis added to contested language):

1. A lid (10) for containers (12), made of thin, flexible plastic, for mounting on and receiving the bead (14) of a container (12), comprising:

   a central panel (16);

   a cavity (20) extending around the periphery of the lid (10) and opening downwardly and inwardly to receive the bead (14) of a container (12) to which said lid (10) is fitted;

   means (22,24) connecting said cavity (20) to said central panel (16);

   a skirt portion (26) extending downwardly from said cavity (20);

   said skirt portion (26) having a plurality of outwardly extending projections (28), each having a substantially vertical face (100) with substantially vertical side edges (102), and substantially vertical side walls (30) extending inwardly from said face (100);

   the portions (32) of said skirt (26) that are between said outwardly extending projections (28) extending inwardly to a waist portion (34) having [sic, having] a plurality of interruptions (104), one at each projection (28), and forming an undercut defining said cavity (20) in said waist portion (34) [sic, said lid (10)].
said outwardly extending projections (28) and said waist portion (34) [sic, said portions (32)--see col. 4, ll. 33-36 and figures 1-3 above] all terminating in their lower extremities at a downwardly and outwardly sloped lower band portion (36);

and said outwardly extending projections (28) terminating in their upper extremities at a respective upper, band portion (42) extending inwardly and upwardly from the upper edge [edge between each portion (42) and projection (28)] of each said respective vertical face (100) and terminating at said cavity (20) in an upper undercut (44) which is higher and less inwardly extending than the undercut of said waist portion (34), and which defines the peripheral cavity [part of entire cavity (20)] over said outwardly extending projections (28).

M&N and Amhil focus their claim construction arguments on two primary issues:

(1) whether the "cavity" (compare element 20 in figures 2 and 3 above, which are figures from the '244 patent, with element 20 in figure 4 above, which depicts the accused M&N lid) of the accused lids opens "downwardly and inwardly" as required by the third paragraph of claim 1, and

(2) whether the "outwardly extending projections" of the accused lids have "substantially vertical" faces (compare element 100 in figures 1-3 above, which are figures from the '244 patent, with element 100 in figure 4 and the portion labeled "Face" in figure 8 below, which depict the accused M&N lid), side edges, and side walls as required by the sixth paragraph of claim 1.

--- Footnotes ---

1 The '244 patent does not contain reference numbers for the faces, the side edges, or the interruptions. We have added reference numbers 100, 102, and 104 to figures 1-3 above to refer to the faces, the side edges, and the interruptions, respectively.

--- End Footnotes ---

Looking at issue (2), we note that the sixth paragraph of claim 1 requires the skirt portion to comprise a plurality of "outwardly extending projections," each having a "substantially vertical face" with "substantially vertical side edges," and "substantially vertical side walls." It is clear from the specification that the adverb "outwardly" means in a direction from inside the container to outside the container and perpendicular to the container's longitudinal axis. The parties hotly contest how to define the effect of the "substantially vertical" limitation as it relates to the faces, side edges, and side walls on the outwardly extending projections.

It is apparent that the faces 100 of the outwardly extending projections 28 in the preferred embodiment of the '244 patent are vertical. This may be seen, for example, in figures 2 and 3 above and is also evident from the description of the side edges 102 in the preferred embodiment as being vertical. A preferred embodiment, however, is just that, and the scope of a patentee's claims is not necessarily or automatically limited to the preferred embodiment. The entire specification, including all of the claims, the prosecution history, and the prior art may all affect the interpretation ultimately placed on claim language.

We first review the entire specification, including all of the claims. In the specification, the patentee used "substantially vertical" and "vertical" interchangeably when describing the faces of the projections. Even within claim 1, the patentee used "substantially vertical face" interchangeably with "vertical face." Compare P 6 ("substantially vertical face") with P 9 ("vertical face"). The entire specification thus leaves its reader with the impression that "substantially vertical" and "vertical" mean essentially the same thing in the '244 patent, at least as to the faces.

We next review the prosecution history of the '244 patent to ascertain the true meaning or effect in the claims of the adverb "substantially" in the claim limitation "substantially vertical faces." The prosecution history, in addition to being used while considering the factual issue of infringement and whether prosecution history estoppel places any limitations on what infringes a claim, should also be used when considering the legal issue of proper claim construction. SSIH Equip. S.A. v. United States Int'l Trade Comm'n, 718 F.2d 365, 376, 218 U.S.P.Q. (BNA) 678, 688, 1 Fed. Cir. (T) 90, 102 (1983) (prosecution history "is always relevant to a proper interpretation of a claim") (citing Astra-Sjuco A.B. v. United States Int'l
Trade Comm'n, 67 C.C.P.A. 128, 629 F.2d 682, 686, 207 U.S.P.Q. (BNA) 1, 5 (CCPA 1980); Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 395-99, 155 U.S.P.Q. (BNA) 697, 701-04 (Ct. Cl. 1967)). An examination of the prosecution history is particularly important where, as in the instant case, the claimed invention is in a crowded art.

During prosecution of the application for the '244 patent ('244 application), the examiner, inter alia, rejected the claims under 35 U.S.C. § 103 as unpatentable over U.S. Patent No. 4,194,645 (Zabner '645) in view of U.S. Patent No. 3,353,708 (Davis '708). Fig. 3 of Zabner '645 is reproduced below as figure 5. Figs. 1 and 4 of Davis '708 are reproduced below as figure 6. According to the examiner, "to modify [Zabner '645] by providing portion 44 as discontinuous portions with a substantially vertical face, side edges and side walls would be obvious in view of [Davis '708]." Portion 44 of Zabner '645 corresponds to face 100 in the '244 patent. The examiner thus opined that the lid described in Zabner '645 closely approximated the lid claimed in the '244 application, the main difference between the two being the claimed substantially vertical faces, side edges, and side walls.

[SEE ILLUSTRATIONS IN ORIGINAL].

In response to the § 103 rejection, the patentee asserted that, unlike Zabner '645, the lid claimed in the '244 application had projections with substantially vertical faces and side edges, making the '244 lid easy to strip from the mold, while providing a much deeper undercut. Since the patentee distinguished Zabner '645 based in part on the slope of the projection faces, "substantially vertical" may be properly interpreted as not including lids with sloping faces like those of Zabner '645. In this regard, one should also note the sloped faces of the Mahaffy '036 lid depicted in figure 7 below.

[SEE ILLUSTRATION IN ORIGINAL].

We also note that, during prosecution of the '244 application, the patentee again used "substantially vertical" and "vertical" interchangeably when describing the faces of the projections. For example, in his response to the first office action, the patentee alternated, first referring to the faces as "substantially vertical" then "vertical" then "substantially vertical" then "vertical" then "substantially vertical." This provides a further indication that the patentee thought of his substantially vertical faces as essentially vertical.

Finally, it is apparent from our review of the prior art of record that lids of the general construction claimed in the '244 patent were common in the industry. Several prior art lids depict outwardly extending projections with variously sloped outward faces as may be seen in the figures from some prior art lid patents reproduced in the attached appendix. In order for claim 1 of the '244 patent to "avoid" these prior art lids, "substantially vertical face" must be construed as the same as or very close to "vertical face." See ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 U.S.P.Q. (BNA) 929, 932 (Fed. Cir. 1984) ("claims should be so construed, if possible, as to sustain their validity").

We conclude from our review of the district court's opinion and from our de novo review of the entire specification, the prosecution history, and the prior art that claim 1 does not permit Amhil to exclude from the marketplace lids having protrusions with sloping faces like the faces shown, for example, in Zabner '645 and Mahaffy '036. In particular, we interpret claim 1 to include only lids wherein the outwardly extending projections have well-defined faces that deviate only slightly, if at all, from the vertical. Any other construction of claim 1 would render it invalid.

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C. "substantially vertically"

The court finds that the term "substantially vertically" means "substantially perpendicular to the horizon."

Claim 1 provides that "said accessory clamp can be pivoted about said mounting shaft between a first, inactive position adjacent the firearm and a second, active position protruding substantially vertically from said firearm." Defendant would have the court construe the term "substantially vertically" to mean "being or situated at right angles to the horizon; upright." As a definition of "vertical," the proposal is unproblematic. However, it fails to reflect the effect of the adverb "substantially," which renders the requirement of verticality somewhat less stringent.

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Plaintiff argues that neither the term "substantial" nor the term "vertical" requires construction, and the court therefore adopts its own construction, as set forth above.

B. "Disposed Substantially Vertically in Said Grooves"

The parties also dispute what the word "vertically" means in the context of this claim language. Paradigm contends that "vertically" is an absolute term that means that the diodes are vertical in relation to the horizon, i.e. that they are perpendicular to the horizon when the array is lying on a flat surface. In Paradigm's view, anything that is "vertical" runs along an imaginary axis running through the center of the earth.

LDAI, on the other hand, takes the position that "vertically," as used in the '951 patent, is a relative term that refers to the position of the diodes with respect to the grooves themselves. In other words, "disposed substantially vertically in said grooves" means that the bars do not "tilt" very much within the grooves. LDAI also contends that the diodes in Paradigm's arrays are "vertical" with respect to the point at which they meet the surface of the conductive layer, since they are directed toward the center of the cylinder.

With respect to this language, I find Paradigm's interpretation more persuasive. For one thing, I believe that the common-sense understanding of "vertical" or "vertically" is that those words convey a sense of perpendicularity with respect to the surface of the earth. Those words are commonly understood to refer to an object's orientation with respect to the earth itself, not to individual objects on the earth. Thus, if a person, standing erect, were to aim a laser beam directly away from himself, i.e. at a right angle to his body, one would not describe the beam as traveling vertically, but horizontally. If one wanted to describe the path of the beam relative to the person aiming it, one would describe it as traveling perpendicularly to that person.

In essence, then, LDAI's interpretation of this language seeks to equate verticality with perpendicularity. Under the terms of the '951 patent, however, the grooves themselves are vertical, i.e. perpendicular to the horizon, when the array is at rest on a flat surface, and the clear implication of "disposed substantially vertically" is that the bars are likewise vertical; in other words, the bars are not placed in the grooves crosswise or horizontally, but vertically, like the grooves themselves. In a device like Paradigm's, LDAI's interpretation would mean that the bars are all vertical at once, even though none of them is parallel to the bars adjacent to it. That simply makes no sense. Even assuming that an object can have its own verticality independent of reference to the earth's horizon (e.g. a piece of graph paper may have a "vertical" y axis drawn on it even though that paper is lying flat on a table, so that they axis is actually horizontal with respect to the earth), it is difficult to see how it can have multiple verticalities, which is essentially what LDAI contends.

In short, LDAI's interpretation is not supported by the claim language, and nowhere do the specifications suggest that the word "vertically" is being used in a manner inconsistent with its ordinary meaning. See Vitronics, 90 F.3d at 1582; cf. Fireplace Mfrs. v. Hearth Techs., 1997 U.S. Dist. LEXIS 21966, *24, No. 4-96-1080 (D.Minn. Dec. 10, 1997) ("The phrase 'horizontal exhaust pipe' must be given its ordinary meaning. Nothing in the claims, specification, or prosecution history suggests otherwise. In short, 'horizontal' means 'horizontal'; it does not mean 'horizontal and vertical,' 'angled,' or even 'substantially horizontal.'"). I conclude that as used in the '951 patent, "vertically" means that the bars are disposed substantially in a vertical direction, i.e., a direction that is perpendicular to the plane of the horizon, or parallel to a plumb line through the center of the earth, when the array is resting on a flat, horizontal surface.

a. "substantially within a shirt pocket"

The plain and ordinary meaning of the "substantially within a shirt pocket" limitation is that the device claimed in the '496 Patent must fit in the pocket found on the chest of an average size man's dress shirt. That is evident from the plain meaning of the non-technical words of the limitation. The small size requirement of the claimed device is confirmed at other points in
Claim One. The claim states that the handheld unit is "dimensioned for handheld grasping," and it states that all of the device's components must fit in "a handheld housing." '496 Patent, 8:63, 9:10. The specification further supports this construction, stating that the preferred embodiment of the housing "should be about what may be comfortably grasped in a human operator's hand and fit within a conventional shirt pocket for ease of use carrying, e.g. about 1.8 inches (4.6 cm) wide, 6.25 inches (15.9 cm) long and 0.8 inches (2.0 cm) thick with rounded edges." Id., 4:1-5. See also id., 8:44-45 (stating that the device's housing "is portable, handheld and adapted for convenient carry in a shirt-pocket"). The specific dimensions mentioned in the specification are not part of the limitation, but they confirm the plain meaning of the language.

Casio argues that "shirt pocket" should be construed to include all possible shirt pocket sizes, including pockets that are much larger than those of a standard dress shirt. However, to determine the meaning of a term, it is not appropriate to rely on rare or unusual uses of that term, since such versions cannot be described as embodying the term's "ordinary meaning." See Nat'l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc., 166 F.3d 1190, 1195 (Fed. Cir. 1999) (patent term given its "plain and ordinary meaning" unless something in the patent or prosecution history compels otherwise). Since the claims themselves and the specification all indicate that the phrase "fits substantially within a shirt pocket" refers to a small device which can be grasped in one hand, Casio's argument that "shirt pocket" should be construed to include the pockets of unusually large shirts is not persuasive.

The above construction of the term "stowed" also recommends a similar construction of the terms "substantially within it" used in the claim language in referring to the positioning of the anchor member when the anchor member is in its retracted position. The prosecution history of the patent similarly dictates that the anchor member be, in all material parts, within the bulkhead housing to prevent tripping. This reading is also confirmed by the specification language which refers to this element of the claim by referencing drawings showing that the anchor member is entirely enclosed in the housing and shut within a door so that no material portion of the anchor member and belt assemblies are seen by passengers. ('325 patent at col. 5, lines 10-15, figures 2 and 7.) The function of the door makes it physically impossible for material parts of the anchor member to extend from the housing when in the retracted position. Finally, the descriptions of the allegedly infringing A.R.M. products in drawings and in the Adelsperger Declarations make clear that the products do not function as described in this claim language since a significant portion of the anchoring device is not retracted in both models of the A.R.M. product.

3. What is the meaning of the phrases "substantially zero overlap" and "substantially aligned"?

Throughout this litigation, Intel has asserted that "substantially zero overlap" and "substantially aligned" mean that the edges of the source/drain regions cannot overlap the edges of the gate electrode to any degree. By contrast, TENA has contended that "substantially zero overlap" and "substantially aligned" do not require perfect alignment. Rather, TENA asserts that these phrases allows for a tolerance of +/-10% of the gate electrode length. Neither argument has much credibility.

a. Does the patent require zero overlap and perfect alignment?

Intel essentially wants the court to read the word "substantially" out of the claims. Intel argues that the claims, the specification, and the prosecution history use the phrases "zero overlap/perfect alignment" and "substantially zero overlap/substantial alignment" interchangeably. For example, the title of the patent, the abstract, the summary of the invention, and the preambles of claims 1, 10, and 15 recite "zero overlap," "perfect alignment," and "non-overlapping," whereas the preferred embodiment and step (e) of each claim recite phrases such as "closely aligned," "substantially aligned," "without substantial overlap," and "substantially zero overlap." Moreover, in Amendment B and the First Proposed Amendment, Manzo refers to "zero drain overlap devices" and "perfect alignment" in describing the inventions of the '943 patent.
Intel relies heavily on Amhil Enterprises Ltd. v. Wawa, Inc., 81 F.3d 1554 (Fed. Cir. 1996). In Amhil, the Court of Appeals for the Federal Circuit construed the phrases "substantially vertical sides," "substantially vertical side edges," and "substantially vertical side walls." The court observed that the preferred embodiment was completely vertical but stated that this was not determinative. Id. at 1559. Examining the entire specification, the court stated that the patentee used "substantially vertical" and "vertical" interchangeably, even within the claims themselves. Id. Examining the prosecution history, the court stated that the patentee narrowed "substantially" to overcome similar prior art and again used "substantially vertical" and "vertical" interchangeably. Id. at 1559-62. Finally, the court stated that to avoid prior art in a crowded field, "substantially vertical face" had to be construed "as the same as or very close to 'vertical face.'" Id. at 1562.

Although Amhil is certainly helpful in construing the claims, it is not precisely on point. The invention in Amhil, which is related to plastic coffee mug lids, involves a large physical structure whose dimensions are relatively easy to control and measure. By contrast, the invention of claim 1 of the '943 patent is submicroscopic and has dimensions that are difficult to control and measure. In addition, the '943 patent does not use the terms "substantially aligned" and "aligned" or "substantially vertical" and "vertical" interchangeably within the claims themselves. Furthermore, the Federal Circuit seemed to rely primarily on the fact that the invention in Amhil was in a crowded art that compelled a narrow construction. Finally, the court still found that "substantially" had some meaning in the claim, albeit a very narrow meaning. Therefore, Amhil does not support Intel's effort to deprive "substantially" of any meaning whatsoever.

b. Does the patent allow for a tolerance of +/- 10%?

TENA wants to give the word "substantially" a broad, specific numerical reading. TENA points to the declaration and testimony of Dr. Fair, who defines "substantially zero overlap" and "substantially aligned" as allowing a tolerance as +/-10% of the drawn gate length based on his "knowledge of MOS transistors." TENA also points to the specification, at column 1, lines 21-23, which uses the phrase "substantially aligned" in discussing the prior art: "Conventional fabrication techniques usually cause the edges of the source/drain regions to be initially substantially vertically aligned with the edges of their gate." Dr. Fair asserts that the alignment of these conventional fabrication techniques was within +/-10% of the gate electrode length. Finally, TENA observes that one of Intel's experts, Dr. Frey, testified in a previous litigation that the term "substantially aligned" allowed for tolerances of +/-10% of the gate electrode length.

TENA's evidence is less than convincing. It appears from Dr. Frey's previous testimony that he identified a range of +/-5% on either side of the edge of the gate electrode, making a total range of 10% instead of +/-10% for a total range of 20%. In addition, Dr. Chung testified, and Dr. Fair appeared to confirm, that an underlap of -10% would drastically reduce the performance of an MOS transistor, particularly with respect to the problem of Miller capacitance that the '943 patent seeks to avoid. Finally, Dr. Fair has not cited to anything in the claims or prosecution history in support of his opinion that the +/-10% range is appropriate. His attempt to bootstrap his definition of "substantially" in the claims by defining the word "substantially" in the specification to mean the same thing is questionable without some objective basis.

c. What does "substantially" mean?

The word "substantially" tends to become somewhat of a chameleon when it appears in patent claims. It sneaks in during the prosecution of a patent application without having much substance or importance. The applicant rarely imposes strict mathematical requirements or guidelines for the word unless forced to do so by the examiner or by the prior art. After the issuance of the patent, however, the word swells up to envelop potentially infringing products or processes. The plaintiff's expert opines that a specific percentage range exists and, coincidentally, that the range encompasses the defendant's accused products or processes. Likewise, the defendant's expert opines that a smaller range exists that, coincidentally, does not encompass the defendant's accused products or processes.

Courts are in a bind when it comes to construing the word "substantially." On the one hand, the court has a duty according to Markman to construe the word to provide guidance to the jury as to the proper scope of the claim for determining infringement. This duty is particularly important when the parties' experts have testified to conflicting mathematical ranges required by the claim. Moreover, the ordinary meaning of the word "substantially" -- "in a substantial manner" or "so as to be substantial" -- is practically useless as a guide to understanding or decision. On the other hand, a court should not impose mathematical certainty on a word when none exists. Often the claims, the specification, the prosecution history, and even all the extrinsic evidence will fail to provide any reasonable basis for selecting a mathematical range.
In the present case, the specification and the prosecution history present only theoretical limits to the percentage range allowed by the word "substantially." The specification states that the amount of overlap and alignment must be sufficient to prevent the occurrence of Miller capacitances in order to increase the speed of the transistor, but it does not provide a mathematical reference. During the prosecution, Manzo specifically defined "substantially zero overlap" and "zero drain overlap" over the results achieved by Figure 10 of U.S. Patent No. 4,356,623 issued to Hunter, Figure 4D of EPO publication 24 125, and the Steinmaier patent, but he never provided a mathematical explanation of the prior art process. Furthermore, the parties have never offered extrinsic evidence to suggest mathematical ranges based on these theoretical limits, and the court lacks sufficient understanding or skill to ascertain such ranges itself.

The parties instead have offered what appear to be litigation-driven constructions of the term "substantially" that have little support in the claim language, the specification, the prosecution history, or the extrinsic evidence. Intel's construction seeks to write the word out of the patent and to impose a level a mathematical certainty that does not appear physically possible. By contrast, TENA's construction ignores a specific goal sought by the inventions of the '943 patent and argued by Manzo extensively during the prosecution history: manufacturing an MOS transistor with as little overlap as possible to improve operating speed and reduce Miller capacitances. Thus, at the end of the claim construction hearing, the court was compelled to reject both parties' constructions in favor of its own.

The court adopted the following construction of the word "substantially" -- "the same as or very close to." In other words, "substantially zero overlap" means "the same as or very close to zero overlap" and "substantially aligned" means "the same as or very close to perfect alignment." The court bases this construction on the many references to zero overlap and perfect alignment in the patent and the prosecution history and the stated importance in the specification of near-perfect alignment for the speed and efficiency of the inventions of the '943 patent. No further guidance is possible, however, because nearly every attempt to restate the word "substantially" adds little to its inherent meaning.

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The parties essentially agree that a substrate is a material suitable for receiving a thermal transfer laminate. Avery's proposed definition states: "A material suitable for receiving a thermal transfer laminate such as a seatbelt or automotive visor." Whitlam's definition states: "a layer of base material suitable for receiving a thermal transfer laminate that may be made of: metal, plastic, leather, paper, or the like; a woven or non-woven fabric made of natural or synthetic materials. A substrate may comprise an automotive interior surface such as the surface of a seatbelt, visor, dashboard, headrest, seat-back, door panel, etc." Both of theses definitions convey the same message, but Whitlam's is excessively verbose. Given the Court's charge to construe claim terms according to their ordinary meanings, See Altiris, Inc. v. Symantec Corp., 318 F.3d 1363, 1369 (Fed. Cir. 2003), this court finds that an exhaustive list of the types of substrates used is not necessary to convey the ordinary meaning of the term substrate. Therefore, this Court adopts the following definition of substrate: "A material suitable for receiving a thermal transfer laminate, such as a seatbelt or automotive visor."

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The court concedes the term "substrate" to mean "a flat, thin disk-shaped sheet of hardened transparent material." The court does not read the term "substrate" as used in the claim language to require a specific thickness, despite MEI's position that the term "substrate" is limited to a thickness of approximately 0.6 mm. The specification provides for a thin substrate. (See '634 patent, col. 8, ll. 53-61; col. 21, ll. 24-29) However, the specification does not define a "substrate" as having a thickness of approximately 0.6 mm. Example 1 and Figure 3 of the specification merely relate to one
embodiment of the claimed invention where the thickness of the substrate happens to be 0.6 mm. (See '634 patent, col. 10, ll. 60-63; fig. 3) The specification describes eight other examples where the thickness of the substrate is not restricted to approximately 0.6 mm.

B. Second Substrate

Plaintiff's Proposed Construction: a support

Defendant's Proposed Construction: a material that is modified to contain discrete individual sites appropriate for the attachment or association of beads (small discrete particles) and is amenable to at least one detection method.

With respect to each of the terms in dispute, the parties said little in their briefs or at the claim construction hearing about plaintiff's proposed constructions; instead, they focused almost exclusively on whether defendant's proposed constructions are correct. The issue in dispute for the term "second substrate" is whether the definition includes a requirement that the substrate's surface allows "for the attachment or association of beads." Beads are "small discrete particles" that represent one way to detect the "target analyte." The patents use the words "bead" and "microsphere" interchangeably. '841 patent, col. 8, ln. 36.

Defendant relies primarily on one passage from the specification, which it says represents a definition of the word "substrate" in the context of the patent:

'841 pat., col. 7, lns. 32-36. Defendant cites case law in which the Court of Appeals for the Federal Circuit has held that "a definition set forth in the specification governs the meaning of the claims." Sinorgchem Co., Shandong v. International Trade Commission, 511 F.3d 1132, 1136 (Fed. Cir. 2007). See also Martek Biosciences Corp. v. Nutrinova, Inc., 579 F.3d 1363, 1380 (Fed. Cir. 2009) ("When a patentee explicitly defines a claim term in the patent specification, the patentee's definition controls."); Phillips v. AWH Corp., 415 F.3d 1303, 1321 (Fed. Cir. 2005) (en banc) ("[T]he specification 'acts as a dictionary when it expressly defines terms used in the claims.") (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

To support its view, plaintiff cites a passage from the specification stating that "[i]t should be noted that while the disclosure herein emphasizes the use of beads, beads need not be used in any of the embodiments of the invention; the bioactive agents can be directly coupled to the array locations." '841 patent, col. 5, lns. 3-4. In addition, plaintiff cites other passages discussing "non-bead" embodiments. E.g., id. at col. 8, lns. 25-29 ("In these embodiments, at least one surface of the substrate is modified to contain discrete, individual sites for later association of microspheres (or, when microspheres are not used, for the attachment of the bioactive agents"). Figure 1B represents one such embodiment:

[SEEF FIG. 1B IN ORIGINAL]

In this figure, "beads are not used; rather, array locations 20 have discrete sites 21, 22, 23, etc. that may be formed using spotting, printing, photolithographic techniques, etc." '841 pat., col. 3, lns. 33-36.

How can these different passages be reconciled? Plaintiff's answer is to characterize defendant's cited passage as the description of an embodiment rather than of the invention as a whole. Defendant's answer is to disregard all references to non-bead embodiments on the ground that the claims do not cover them. However, neither party cites anything in the patent to support its view of the limited scope of the other side's cited passages. Plaintiff cites no authority for the view that a court may disregard a passage in the specification that puts a term in quotation marks and states unequivocally what "is meant" when that term is used "herein." Sinorgchem, 511 F.3d at 1136 (quoting Abbott Labs. v. Andrx Pharms., Inc., 473 F.3d 1196, 1210 (Fed. Cir. 2007)) ("[W]hen a term is set off by quotation marks" and is followed immediately by the word "is," these
Defendant objected on the ground that adopting the definition as is "would allow [plaintiff] to game the system" by an argument for rejecting the definition. "Beads are not required in Substrate 1." Trans., dkt. # 34, at 35. However, that is simply a restatement of plaintiff's legal position rather than construction, counsel's only concern was that the construction should be clear that "the second substrate in the claims and that 'second substrate' do not have different meanings. 3M Innovative Properties Co. v. Avery Dennison Corp., 350 F.3d 1365, 1371 (Fed. Cir. 2003) ("The use of the terms 'first' and 'second' is a common patent-law convention to distinguish between repeated instances of an element or limitation."). Further, if, as defendant concedes, the proper construction for one of the substrates is that it "can be" modified to allow the attachment of beads, this is more support for the view that both substrates should be defined this way. Defendant's only argument to the contrary in its briefs is a sentence in a footnote that the definition should be changed from "can be" to "is" in the context of the "second substrate" because "every . . . claim [disclosing a 'second substrate'] expressly states that the second substrate has discrete sites." Dft's. Br., dkt. # 31, at 6. The argument becomes even more convoluted when defendant says that its proposed construction should apply to the term "substrate," standing alone," but only in one instance in the context of claim 20 of the '020 patent. Dft's. Br., dkt. # 25, at 7 n.7.

These arguments hurt defendant's position more than they help. The patent's treatment of the adjectives "first" and "second" as interchangeable when they are used to modify "substrate" supports a reading that the terms "first substrate" and "second substrate" do not have different meanings. 3M Innovative Properties Co. v. Avery Dennison Corp., 350 F.3d 1365, 1371 (Fed. Cir. 2003) ("The use of the terms 'first' and 'second' is a common patent-law convention to distinguish between repeated instances of an element or limitation."). Further, if, as defendant concedes, the proper construction for one of the substrates is that it "can be" modified to allow the attachment of beads, this is more support for the view that both substrates should be defined this way. Defendant's only argument to the contrary in its briefs is a sentence in a footnote that the definition should be changed from "can be" to "is" in the context of the "second substrate" because "every . . . claim [disclosing a 'second substrate'] expressly states that the second substrate has discrete sites." Dft's. Br., dkt. # 31, at 6. The argument becomes even more convoluted when defendant says that its proposed construction should apply to the term "substrate," standing alone," but only in one instance in the context of claim 20 of the '020 patent. Dft's. Br., dkt. # 25, at 7 n.7.

Finally, even if defendant had a plausible basis for distinguishing the "first substrate" from the "second substrate," defendant's view would still require adopting inconsistent meanings for "substrate." In particular, defendant argues that the term "substrate" in claim 20 of the '020 includes the same bead limitation as the term "second substrate," even though defendant asserts that "substrate" and "second substrate" have different meanings elsewhere. Defendant does not explain or justify that inconsistency. Fin Control System Pty., Ltd. v. OAM, Inc., 265 F.3d 1311, 1318 (Fed. Cir. 2001) (courts apply "presumption that the same terms appearing in different portions of the claims should be given the same meaning unless it is clear from the specification and prosecution history that the terms have different meanings at different portions of the claims").

At the claim construction hearing, when I suggested adopting a construction of "second substrate" that was identical to the definition in the specification, neither party raised a persuasive objection. Although plaintiff did not embrace that construction, counsel's only concern was that the construction should be clear that "that the second substrate in the claims does not require beads." Trans., dkt. # 34, at 35. However, that is simply a restatement of plaintiff's legal position rather than an argument for rejecting the definition.

Defendant objected on the ground that adopting the definition as is "would allow [plaintiff] to game the system" by
"get[ting] everything in the expressed definition," but then "us[ing] the word[s] 'can be' . . . as an escape hatch." Id. at 110. However, it is difficult to see the logic in an argument that it allows plaintiff to "game the system" by adopting a construction that incorporates language used in the patent; plaintiff does not "get away with" anything if it is held to the words it chose. If a reader interpreted "can be" to mean "is," that is not plaintiff's fault, particularly because there are other passages in the specification rejecting the view that beads are always required.

Defendant points to two other passages to show that a bead limitation should be included:

The present invention is generally based on previous work comprising a bead-based analytic chemistry system in which beads, also termed microspheres, carrying different chemical functionalities are distributed on a substrate comprising a patterned surface of discrete sites that can bind the individual microspheres.

* * *

It should be noted that a key component of the invention is the use of a substrate/bead pairing that allows the association or attachment of the beads at discrete sites on the surface of the substrate, such that the beads do not move during the course of the assay.

'841 pat. col.5, lns. 34-39; id. at col. 17, lns. 50-54.

Neither of these passages shows persuasively that the invention generally or substrates specifically include a bead limitation. The first passage is a description of the prior art. Even if the invention is "generally based on" prior art that uses beads, that does not mean that the invention is limited to embodiments that use beads.

The second passage is included in a larger discussion of preferred embodiments that use beads. '841 pat., col. 17, lns. 20-21 ("In a preferred embodiment, the compositions of the invention further comprise a population of microspheres."). Thus, in context, the passage cited by defendant is best read as a description of a preferred embodiment. That is, when beads are used, it is important that they "do not move during the course of the assay." Although the passage uses the word "invention," that "does not 'automatically' limit the meaning of claim terms in all circumstances . . . [S]uch language must be read in the context of the entire specification and prosecution history." Netcraft Corp. v. eBay, Inc., 549 F.3d 1394, 1398 (Fed. Cir. 2008). In light of the other passages stating clearly that the invention does not include a bead limitation, I decline to read this passage as suggesting a contrary view.

Finally, defendant has not pointed to anything in the prosecution history that would require this court to adopt a bead limitation. Defendant did not discuss the prosecution history in its briefs, but at the claim construction hearing, it cited one page in which the patent examiner considered three dependent claims that would later become claims 7, 8 and 9 in the '841 patent. These claims disclose different densities of "bioactive agents per square centimeter." Defendant says that the examiner must have believed that beads were required by the invention because the examiner used the phrase "claimed microspheres" in rejecting the claims as obvious under Burbann, who had "describe[d] the use of beads" at particular densities. Chin Decl., dkt. # 26, exh. O, at 14.

This reference is far too ambiguous to require adopting defendant's proposed construction. If the examiner believed that the invention included a bead limitation, it is odd that the only context in which the examiner would make this observation is in one phrase when rejecting dependent claims. Both Burbann and claims 7, 8 and 9 address density, so that is most likely the only issue the examiner was considering in rejecting those three claims.

Court's construction: "a material that can be modified to contain discrete individual sites appropriate for the attachment or association of beads and is amenable to at least one detection method"
construction because its plain meaning is understood by one of ordinary skill in the art.

Vistakon argues that although the plain language of this phrase does not indicate that the first correction value and that the second correction value must each be the same in each zone, the examiner allowed this claim "with the understanding that the first correction values should be the same and the second correction values should be the same." Vistakon contends that the examiner rejected a claim that included the language: "all of said regions of high optical powers not necessarily having a uniform width or a uniform high optical power, and all of said regions of low optical powers not necessarily having a uniform width or a uniform low optical power," as "new matter" because "nowhere is it disclosed that these high and low powers can be anything different" and only issued the amended claim as Claim 17 in the '461 Patent after Portney amended it to remove the objectionable language. According to Vistakon, the Examiner issued claim 17 of the '461 patent only after the objectionable language was removed and with the understanding that the "high" and "low" optical powers in the different regions of the Portney lens were the same.

The Court disagrees with Vistakon's reliance on the prosecution history. As an initial matter, the Court declines to speculate on the Examiner's "understanding" beyond what is stated in the record. Vistakon's argument relies on the meaning of the statement that "[n]owhere is it disclosed that these high and low powers can be anything different." Does that mean, as Vistakon urges, that the powers must be the same in each zone? The Court finds that the Examiner's comments are unclear as to what "anything different" refers. The preceding sentencing in the prosecution history refers to various features related to the high and low powers in each zone, e.g., a transition from high to low and the "high and low powers [are] defined as those powers to correct for near vision and distant vision." "Anything different" might refer to the relationship of the powers, just as described, rather than the powers being the same. Additionally, the argument raised by Vistakon relates to claim 17, not claim 1 where the language at issue appears. Therefore, this does not amount to an express or unequivocal disclaimer as Vistakon suggests. Middleton, Inc. v. Minn. Mining & Mfg. Co., 311 F.3d 1384, 1388 (Fed. Cir. 2002).

Vistakon acknowledges that the plain language of this phrase does not indicate that the correction values must be the same in each zone. Because the Court concludes that the prosecution history does not change the plain meaning of that phrase, the Court finds that no construction is necessary.

3991
11. "Folding . . . Such That"

The term "folding . . . such that" is found only in the method claims of the patents-in-suit. For example, in Claim 1 of the 779 Patent, a method claim, step (d) of the seam manufacturing process requires "folding the first garment component over the bonding element such that the upper surface of the first garment component is folded over and abuts an upper surface of the bonding element." 779 Patent at 6:40-43 (emphasis added). Also in Claim 1 of the 779 Patent, step (e) of the seam manufacturing process requires "folding a portion of the second garment component such that a lower surface of the second garment component abuts the lower surface of the bonding element." 779 Patent at 6:44-46 (emphasis added). In Claim 1 of the 615 Patent, step (e) requires "folding the first garment component over the bonding element such that the upper surface of the first garment component is folded over and abuts an upper surface of the bonding element along the seam. . . ." 615 Patent at 6:48-51 (emphasis added).

Taltech asks the Court to construe "folding . . . such that" to mean "folding, which creates, maintains, or results in the relationship described following such that." Taltech relies on the claims, on the specifications, on dictionary definitions of "such" and "such that," on the opinion of Taltech's expert, Mr. Nienke, and on the Bodle Patent (Taltech's Markman Ex. 8). Esquel asks the Court to construe "folding . . . such that" to mean "folding which creates or results in the relationship described following such that." Esquel relies on the claims and on the specifications.

The parties' dispute centers on Taltech's inclusion of the word "maintains" in its proposed construction. Taltech argues that the relationships described after "such that" are present after folding, but not necessarily as a causal result of the folding. Taltech argues that construing "folding . . . such that" to require a causal relationship narrows the ordinary meaning of the term.

For the reasons outlined above in the discussion of the term "a method . . . comprising the steps," and specifically regarding
the determination that step (e) must come after step (b) in Claim 1 of the 779 Patent, the Court does not rely on the opinion of Taltech's expert, Mr. Nienke, who says that the folding can occur before, or at the same time that, the bonding element is placed along the seam. See Nienke Rebuttal Decl., docket no. 110, P 7 (Taltech's Markman Ex. 11). The bonding element must be present prior to the folding of the first and second garment components.

Taltech submits the "to the extent that" definition of "such that" in support of its "no causation required" construction. See Compact Oxford English Dictionary (Catherine Soanes & Sara Hawker eds., Oxford Univ. Press 3d ed. 2005), available at http://www.askoxford.com/concise_oed/such?view=uk (docket no. 94, Ex. C). Taltech also submits the "of a degree or quality specified" definition of "such that" in support of its construction. See Dictionary.com Definition of "such that", http://dictionary.reference.com/search?q=such%20that (last visited Aug. 19, 2005) (docket no. 94, Ex. D). Taltech has not incorporated these definitions into its proposed construction, and these definitions do not preclude an exclusively causal interpretation of "folding . . . such that."

Esquel argues that Taltech's proposed construction improperly reads "such that" out of the claim. See BBA Nonwovens Simpsonville, Inc. v. Superior Nonwovens, LLC, 303 F.3d 1332, 1344 (Fed. Cir. 2002) (rejecting claim construction that reads a limitation out of the claims). The Court agrees. "Such that" must be given some meaning that connects the action of "folding" to the relationship described following "such that." A causal requirement for "such that" is supported by other claim language that demonstrates a clear connection between an action (other than folding) and the relationship described following "such that." See, e.g., Claim 1(g) of the 779 Patent at 6:50-52 ("applying sufficient heat and pressure to said bonding element . . . such that said adhesive flows . . . ").

Accordingly, the Court adopts Esquel's proposed construction and construes the term "folding . . . such that" to mean "folding, which creates or results in the relationship described following such that."

"such that a user may rest their [sic] tor so thereupon while performing back extensions"

The primary term that Fitness Quest contends requires construction is the single word "torso;" Monti contends the term requires no construction, but argues that if construction is required, his broader proposed construction is more appropriate.

Fitness Quest has not given the Court very much to work with on this proposed construction; presumably, based on its argument at the Markman hearing, Fitness Quest intends to rely on the drawing discussed in Claim 15: Figure 7. Transcript 156.

Figure 7 of the 749 Patent is a drawing of a device on which a person is resting prone -- or on his front -- on the depicted apparatus. Fitness Quest seeks to limit the claim language to the front part of the torso only on the basis of this drawing. This effort is impermissible. A court construing claim terms may not limit its reading of those terms on the strength of a figure depicting a single preferred embodiment. Acumed LLC v. Stryker Corp., 483 F.3d 800, 807 (Fed. Cir. 2007); see also TI Group Auto. Sys. (N. Am.), Inc., v. VDO N. Am., L.L.C., 375 F.3d 1126, 1136 (Fed. Cir. 2004). Rather, "a patentee is entitled to a definition that encompasses all consistent meanings" of the term. TI Group, 375 F.3d at 1136.

"All consistent meanings" of the term "torso" include the back as well as the front of the trunk of the body. In the absence of an express statement in the 749 Patent that "torso" bears the constricted meaning proposed by Fitness Quest, the proposed limitation is not proper. "Claims of a patent may only be limited to a preferred embodiment by the express declaration of the patentee, and there is no such declaration here," Playtex Prods., Inc., v. Procter & Gamble Co., 400 F.3d 901, 908 (Fed. Cir. 2005) (citation omitted). The term "torso" therefore does not require construction.

Fitness Quest's presentation on the question of "back extensions" including only prone (face-down) back extension exercises was brief in the extreme at the hearing in this matter and seems to rest exclusively on the preferred embodiment, as reflected in Figure 7, showing a human figure, resting prone on the embodiment of the invention proposed in that Figure. Fitness Quest contends that the embodiment that the claim teaches is a prone or face-down back extension, thereby apparently arguing that this precludes an embodiment in which supine or other non-prone back extensions could be performed. See Transcript 73. Monti's response was succinct: "If the inventor had intended Claim 15 to be referring to only prone back
extensions, he would have added the word prone." Transcript 78. He didn't. **No construction of this term is required.**

F. Such that each one of the plurality of expansion boards inserted into a corresponding one of said expansion connectors

1. Parties' positions

The parties dispute whether this phrase requires that there actually be expansion boards inserted into the expansion connectors. Tulip contends that this phrase should be interpreted as meaning that "connectors on the riser card can accommodate expansion cards and not that there must be expansion cards inserted into the expansion connectors." 103 Dell argues that "the phrase requires the presence of two or more expansion boards inserted into corresponding expansion connectors on the riser card." 104

--- Footnotes ---

103 D.I. 308 at 6-7.

104 Id. at 11.

--- End Footnotes ---

The complete element of the '621 claims in which this phrase appears reads:

The riser card having a predetermined number of expansion positions thereon, each of said positions having at least one expansion connector associated therewith so as to form a plurality of expansion connectors located on the riser card such that a plurality of expansion boards can be simultaneously mated through said expansion connectors to said riser card, said one expansion connector being either an ISA (industry standard architecture) or a PCI (peripheral connect interface) type connector so as to respectively accommodate an ISA or PCI type expansion board, all of the expansion connectors being horizontally oriented and successively arranged in a parallel fashion one above another, and said riser card being oriented with respect to the motherboard such that each one of the plurality of expansion boards inserted into a corresponding one of said expansion connectors is oriented in a direction substantially parallel to a horizontal plane of the motherboard and extends inward from a vicinity of the side edge towards a central portion of the motherboard. 105

--- Footnotes ---

105 '621 at 6:7-26 (claim 1); Id. at 6:46-65 (claim 2).

--- End Footnotes ---

Tulip argues the disputed phrase describes how expansion boards must be oriented when they are inserted into the riser card, not that there must must be at least two expansion boards inserted into the riser card for there to be infringement. Tulip contends the statement that "expansion connectors located on the riser card such that a plurality of expansion boards can be simultaneously mated through said expansion connectors to said riser card, said one expansion connector being either an ISA (industry standard architecture) or a PCI (peripheral connect interface) type connector so as to respectively accommodate an ISA or PCI type expansion board, all of the expansion connectors being horizontally oriented and successively arranged in a parallel fashion one above another, and said riser card being oriented with respect to the motherboard such that each one of the plurality of expansion boards inserted into a corresponding one of said expansion connectors is oriented in a direction substantially parallel to a horizontal plane of the motherboard …." 107 Tulip asserts that the use of "such that" describes the effect of the riser card orientation with respect to the motherboard. When a computer is configured in accordance with the claimed invention, an expansion board will extend toward the center of the motherboard and be oriented parallel to the motherboard. Tulip argues that the claims do not recite a requirement that expansion boards be inserted into the riser card, but merely that expansion boards may be inserted and if they are, they extend inward over the motherboard. Tulip maintains that the specification, drawings, and prosecution history also support its proposed construction.
Tulip's invention is described in the '621 patent as:

relating to a motherboard for a computer of the AT type, comprising a connector for a [riser] card to be arranged vertically on the plane of the motherboard and a riser card arranged in that connector, said riser card having a predetermined number of positions for expansion cards and comprising a number of connectors, substantially arranged in a row parallel above each other, for such expansion cards, while the plane of an expansion card, when it is arranged in a connector of the [riser] card, extends substantially parallel to the plane of the motherboard. 108

Tulip notes that the italicized language does not indicate a requirement that expansion boards be inserted in the riser card. Tulip also points to specification language referencing removal of expansion cards to support its position that the invention does not require the presence of expansion cards. The specification recites that “when arranging and removing expansion cards, a relatively large force must be exerted.” 109 Tulip characterizes Figure 4 of the '621 patent as showing a preferred embodiment of the invention which illustrates a computer with a riser card inserted into the motherboard with no expansion boards inserted into the riser card. Tulip maintains that it is rarely proper to construe claims to exclude a preferred embodiment of the invention being claimed. 110 Finally, Tulip maintains that the prosecution history supports its proposed construction. When addressing the examiner's reference to the Lam patent, Tulip notes that it did not distinguish its invention by arguing that its invention had at least two expansion boards inserted into a riser card. Tulip argued that its invention was distinguishable from Lam because the Lam patent taught a riser card with only one expansion connector and Tulip's invention taught a riser card having a plurality of expansion connectors.

Dell argues that the plain language of claims 1 and 2 require the insertion of two or more expansion boards in corresponding expansion connectors on the riser card; "each one of the plurality of expansion boards inserted into a corresponding one of said expansion connectors … extends inward …." 111 Dell contends that the specification also supports its proposed construction as it describes impeded air flow over expansion boards resulting from riser cards in earlier computers being located in the middle of the motherboard as a problem addressed by Tulip's invention. The '621 patent purportedly solved this problem by placing the riser card on the side edge of the motherboard so that air "can flow freely over the motherboard and between the expansion cards." 112 According to Dell, Tulip's proposed construction would not achieve one of the described advantages of the '621 patent and, therefore, is incorrect.

106 Id. at 6:10-13 (claim 1); Id. at 6:49-52 (claim 2).
107 Id. at 6:20-25 (claim 1); Id. at 6:59-64 (claim 2) (emphasis added).

108 Id. at 1:9-18 (emphasis added).
109 Id. at 5:58-59.
110 See Interactive Gift Express, Inc. v. Compuserve, Inc., 256 F.3d 1323, 1343 (Fed. Cir. 2001) (stating that a proposed construction in that case "would not read on the preferred embodiment, and therefore would rarely, if ever [be] correct and would require highly persuasive evidentiary support." (quoting Vitronics, 90 F.3d at 1583; Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1550 (Fed. Cir. 1996) ([A] claim interpretation that would exclude the inventor's device is rarely the correct interpretation; such an interpretation requires highly persuasive evidentiary support ….")).

111 '621 at 6:21-25 (claim 1); Id. at 6:60-64 (claim 2) (emphasis added).
Dell also points to characterizations made by Tulip during prosecution describing its solution for the cooling problem. Where, in distinguishing its claimed invention over the Harwer patent, Tulip described its invention as "teaching that the riser card should be located along an edge of the motherboard with expansion boards connected to the card" 113 as distinguished from the Harwer patent teaching a form factor that suffered from "rather impeded air circulation caused by a centrally located riser card, [and] the proximity of the components from both cards increases the heat build-up between these [expansion] cards, which ultimately reduces their reliability." 114 Dell contends that these statements demonstrate an affirmative characterization of Tulip's claimed invention as requiring two or more expansion boards inserted into corresponding expansion connectors on the riser card.

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113 D.I. 324, Ex. 2 at TLP2 117285.
114 Id., Ex. 2 at TLP2 117282-83.
- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

Dell also argues that Figure 4 does not support Tulip's proposed construction. The purpose of that figure, Dell contends, is to illustrate the computer case for the claimed motherboard. The description of Figure 4 states that it "shows a perspective view of a case for a personal desktop computer of the AT type with a motherboard according to the invention." 115 Dell maintains that Figure 4's illustration of a computer case is directed towards claims 3 and 6, not at issue here, and does not include all of the elements of the claimed invention of claims 1 and 2. Dell contends that the description of Figure 3 also supports its proposed construction. Figure 3 is described as "showing a perspective view of a riser card on which connectors and expansion cards are arranged in the manner of the invention." 116

- - - - - - - - - - - - Footnotes - - - - - - - - - - - - - -
115 '621 at 4:32-34.
116 Id. at 4:29-31 (emphasis added).
- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

The court should reject Tulip's proposed construction because, Dell contends, the requirement that a plurality of expansion boards be inserted into the riser card is described as part of the invention in the specification, included in the claim language, and asserted as a basis for several advantages purportedly achieved by the invention.

2. Court's construction

The claim language supports Tulip's contention that the insertion of expansion boards is permissive, not required, to practice the inventions recited in claims 1 and 2 of the '621 patent. The elements of those claims are: a motherboard, a mating connector for a riser card, a riser card having expansion connectors, and a particular configuration of those expansion connectors on the riser card. Focusing on the riser card, that card must have expansion connectors arranged thereon to fall within the scope of the claims. The claim language does not indicate, however, that expansion boards must be inserted into those expansion connectors to practice the invention.

The claim element which refers to expansion boards uses permissive language with regard to the presence of expansion boards and provides the antecedent basis for the final reference in that element to expansion boards. It recites, "expansion connectors [are] located on the riser card such that a plurality of expansion boards can be simultaneously mated through said expansion connectors to said riser card." 117 That claim element continues with a description of the types of expansion
connectors that are to be on the riser card (ISA or PCI connectors) and the orientation of those connectors relative to the riser card and each other. The claim element concludes by describing the orientation of expansion boards inserted into the riser card relative to the motherboard, "said riser card being oriented with respect to the motherboard such that each one of the plurality of expansion boards inserted into a corresponding one of said expansion connectors is oriented in a direction substantially parallel to a horizontal plane of the motherboard." 118 Dell would have the court consider the last quotation in isolation and construe that language as a requirement that expansion boards be inserted. The court will not take such a myopic view of the language of the claims. The antecedent basis for "the plurality of expansion boards inserted …" contains permissive language, "a plurality of expansion boards can be simultaneously mated …" Reading the claim element as a whole, one of ordinary skill would understand that expansion boards can be inserted into the expansion connectors located on the riser card and, if they are, the language on which Dell focuses describes the orientation of those inserted expansion boards relative to the motherboard. Accepting Dell's proposed construction would effectively rewrite the claim language to read "a plurality of expansion boards are simultaneously mated through said expansion connectors to said riser card." The court will not accept the invitation to so limit the claims at issue absent some clear intrinsic evidence supporting such limitation. An examination of the specification and drawings of the '621 patent, however, does not contradict the unambiguous meaning of the claim language.

The specification begins by describing the invention as relating to:

... a motherboard for a computer … comprising a connector for a [riser] card … and a riser card arranged in that connector … having … expansion positions for expansion cards and comprising a number of connectors … for such expansion cards, while the plane of an expansion card, when it is arranged in a connector … extends substantially parallel to the plane of the motherboard. 119

The court agrees with Tulip that this language does not indicate a requirement that expansion cards be inserted into the riser card. The specification reference to "arranging and removing expansion cards" 120 is also supports Tulip's position. That language contemplates practicing Tulip's invention without expansion boards (the inventor chose to refer to "removing," not "replacing," expansion boards) and indicates the discretionary nature of inserting expansion boards in the claimed invention.

Dell is correct that one of the asserted benefits of the claimed invention (unimpeded airflow across expansion boards) would not be achieved if the disputed phrase is interpreted as not requiring that two or more expansion cards be inserted into the riser card. That fact, however, does not mandate acceptance of Dell's proposed construction. The specification notes that other benefits are obtained when the riser card connector and riser card are moved from a central location to a side location. These benefits include: an increased area on the motherboard permitting larger components to be mounted on the motherboard, increased ease of connecting components on the motherboard when the obstruction to linking tracks from the terminals associated with a centrally located riser card connector are removed, and unimpeded airflow across the entire motherboard and its associated components. All of these benefits are still achieved while still permitting the manufacturer or user of the invention the option of achieving the additional benefits described in the specification if the decision is made to insert expansion boards into the riser card.
The '621 patent's drawings do not require that expansion boards be inserted into the riser card. Figure 4 is described as "showing a perspective view of a case for a personal desktop computer of the AT type with a motherboard according to the invention." 121 That figure (reproduced below) shows the motherboard 41 and the riser card 43 with no expansion boards inserted. Even if Dell is correct and this figure pertains to the computer case to which dependent claims 3 and 6 claims (not at issue in this case) are directed, the figure is described as depicting a computer case "with a motherboard according to the invention." Claim 3 depends from claim 2 and, therefore, includes all of the limitations of claim 2. Claim 6 depends from claim 4 and includes all of the limitations of claim 4. Claim 4 recites the same disputed phrase and has the same permissive antecedent phrase, "a plurality of expansion boards can be simultaneously mated," as is recited in claims 1 and 2. Furthermore, inclusion of expansion boards inserted into the riser card in Figure 4 would not have obstructed the view of the claimed computer case. Even if the court were to accept Dell's contention that Figure 4 is only representative of the computer case covered by claims 3 and 6, neither the drawing nor description of Figure 3 (reproduced below), cited by Dell, compel the court to ignore the unambiguous claim language and accept Dell's proposed construction.

[SEE FIG.4 IN ORIGINAL]

As Dell notes, the brief description of the drawings describes Figure 3 as "showing a perspective view of a riser card on which connectors and expansion boards are arranged in the manner of the invention." 122 The detailed description of that figure includes permissive language when describing Figure 3 as "showing a perspective view which shows in what way an ISA expansion card 35 and a PCI expansion card 37 can be placed in their respective connectors 34 and 36." 123 The figure itself shows how the expansion boards can be inserted into the riser card, it does not show those boards already inserted. This is apparent from the arrows on each board showing the direction of insertion of expansion boards should it be determined by a manufacturer or user that their specific needs require expansion boards to be inserted. It is also clear that the expansion boards depicted in Figure 3 have not yet been inserted by observing that the tops of the mounting brackets on the ends of the expansion boards are not flush with the edge of the computer chassis and that the bottom of the lower expansion card's mounting bracket has not closed off the opening of the expansion slot in the computer chassis as would be the case after the boards are inserted in the riser card. Nothing in the specification language or the drawings, therefore, requires the court to accept the limitation suggested by Dell. Finally, the prosecution history does not establish that Tulip distinguished its invention from prior art based on the presence of two or more expansion boards inserted into the riser card.

[SEE FIG. 3 IN ORIGINAL]
problems inherent in the Harwer invention. This court has determined that Tulip's arguments during prosecution served to limit the personal computer covered by the patent to personal computers other than notebook computers. Because Tulip did not seek to avoid the obviousness rejection by arguing that its claims required that expansion boards be inserted into the riser card, it would not be proper for this court impose that limitation.

Since it is clear that the claim language does not require that expansion boards be inserted into the riser card, and because the specification and prosecution history does not compel a contrary determination, the court construes "such that each one of the plurality of expansion boards inserted into a corresponding one of said expansion connectors" to mean that connectors on the riser card can accommodate expansion boards but there is no requirement that expansion boards be inserted into those connectors.

H. Claim language to be construed from Claims 3 and 6 -- "an elongated hollow support for receiving said shoulder of said sheathing in an abutting relationship such that the end of said tube is inserted into said support and said outer diameter of said sheathing and said support are substantially the same at said shoulder" -- col. 4, ll. 61-66; col. 6, ll. 63-68

HEN contends that this claim language does not require any construction and that it should be given its plain and ordinary meaning. (HEN CC Br. at 31.) HEN argues that there is no reason to ignore the heavy presumption that claim terms should be given their plain and ordinary meaning. On the other hand, Minco proposes to construe the terms "the end of said tube is inserted into said support" to mean that "the electrically conductive tube contacts and is force-fit into the interior of the hollow support tube such that the hollow support tube telescopes over the conductive tube to hold the conductive tube in place." (Minco CC Br. at 50.) We agree with HEN that this claim language should be given its plain and ordinary meaning and does not require any construction. In addition, we reject each of Minco's arguments pertaining to its proposed construction.

Minco relies on the patent specification which states, "To facilitate immersing the probe into the molten metal, a support is provided in the form of a paperboard tube 16, which is force-fit over the tube numeral 1." (Minco Ex. A., col. 3, ll. 6-10.) The specification also states, "An elongated hollow support tube is telescopically coupled to the other end of the tube for supporting the tube and the sheath during immersion into a bath of molten metal." (Minco Ex. A., col. 2 ll. 13-14.) Minco also notes that the only figure in the patent specification shows the conductive tube inserted into the paper tube, in direct contact, force fit and telescopically coupled. Minco's proposed construction requests us to import limitations found only in the specification, and not in the claims themselves. This would be improper. See Electro Med. Sys., 34 F.3d at 1054 (stating that a court cannot add limitations appearing only in the specification). Furthermore, Minco's reliance on what it claims is the only embodiment in the patent is misplaced as the Federal Circuit has repeatedly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment. See Phillips, 415 F.3d at 1323.

Minco also points to the prosecution history to support its proposed construction. Minco claims that HEN disclosed to the patent examiner U.S. Patent No. 4,342,633 ("the '633 patent"), which contains an alternative plastic connector, ceramic housing support, and electrical connector system. Minco asserts that HEN never made any attempt to obtain coverage for the electrical connector/support design disclosed in the '633 patent, and argues that by disclosing the '633 patent to the examiner but failing to argue that such a design was patentable, HEN deprived the examiner of the opportunity to consider whether this alternative electrical connector/support design was a permissible construction of the '736 claim language. Therefore, according to Minco, HEN cannot now claim that the prior art disclosed by the '633 patent is a permissible construction of the '736 patent. Minco offers no case law to support this argument. More importantly, this prosecution history that Minco urges us to use to limit the construction of the claim in no way constitutes a clear, unambiguous disavowal of claim coverage. Consequently, we reject Minco's argument that the prosecution history supports its proposed construction.
II. A flattened surface adjacent to said one or more buttons . . . such that the user's ring finger receives support from the flattened surface (Claims 18-21)

The plaintiff's proposed definition is "a substantially flat surface on the right side of the mouse." The defendant criticizes this definition as incomplete because it would include a totally vertical surface which would be inconsistent with the purpose of the flattened surface. The defendant further argues that a wholly vertical surface is precluded by the plaintiff's representations to the Patent and Trade Office ("PTO") during the prosecution of the patent. See JA 87 (stating that the Kaneko mouse's recessed wall cannot support the user's thumb because wall is totally vertical).

The Court is persuaded by the defendant's argument. During the prosecution, the plaintiff distinguished its invention from the prior art, specifically the Kaneko mouse, by explaining that the Kaneko mouse's recessed front wall could not support the user's thumb because it was totally vertical. This representation precludes the plaintiff from arguing here that the right side wall of the 683 patent could be totally vertical because the language of the claim itself requires the side wall to provide support to the user's ring finger. See Southwall Tech., Inc., 54 F.3d at 1576. The Court will adopt the definition of "a surface that is sufficiently flat, wide, and horizontal to support a user's ring finger without the finger touching the mouse button."

3996

3. Interpretation of "Comfortably Grasped"

The language of Claim 1 of the '277 patent requires "sufficient clearance for a user's hands to comfortably grasp the handle structure." Norseman argues that proper construction of "comfortably grasped" requires a handle that requires "total clearance" above and below the handle bar. Motion, at 21.

Norseman asserts that the prosecution history of the '277 patent makes clear that a "comfortable grasp" requires that the handle be completely free of all obstructions. Specifically, Norseman points to the Patent and Trademark Office ("PTO") twice rejecting Rehrig's application for obviousness in view of prior art patents. One such patent was U.S. Patent No. 5,487,487 ("the Hammett patent") which disclosed a handle connected to the floor by a column which met the handle at its midpoint. Rehrig's response to the rejection distinguished the Hammett patent because the handle structure recited in Rehrig's application is "like a bar with total clearance above and below the bar ... This bar-type is significantly different structurally and functionally from the 'handles' of Hammett." Speranza Decl., Ex. 5, at 3-5. Further, Rehrig argued that its own handle allowed a user to "grasp the entire periphery of the handle."

Rehrig contends that the attempt to distinguish the Hammett patent was based upon the fact that the Hammett patent could only be grasped by a user with the user's palms up whereas Rehrig's crate could also be grasped in the "palms down" position. However, the crux of Rehrig's argument to the Examiner was that the Rehrig crate allowed for a "true handle structure that provides clearance on top and bottom for a user's hands to grasp the entire periphery of the handle." The relevant definition of "periphery" is "the external boundary or surface of a body." 5 Rehrig's argument therefore suggests that Rehrig crate is distinguishable from the subject matter of the Hammett patent because the entire surface area of the handle is able to be grasped by a user for the former, but not the latter due to the column bisecting its handle.

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5 Merriam-Webster Dictionary.

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Arguments made during prosecution of a patent application to overcome prior art may narrow Claim interpretations. See Rheox. Inc. v. Entact. Inc., 276 F.3d 1319, 1325 (Fed. Cir. 2002); Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995) ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution."). The Court finds that Rehrig is estopped from asserting that handle structures containing some obstruction or incomplete clearance are within the subject matter of the '277 patent.

The Court accordingly construes this phrase as limited to handles that provide the user's hand absolute clearance.
will now analyze whether the NPL 403 infringes the Claims at issue in the '843 and '277 patents.

5. "Said deforming step . . . radially compressing the mat to substantially reduce its thickness and to apply sufficient radial pressure against the substrate to hold the substrate in the body." Consistent with the claim language and its ordinary meaning, 10 and the specification, 11 the court construes "said deforming step . . . radially compressing the mat to substantially reduce its thickness and to apply sufficient radial pressure against the substrate to hold the substrate in the body" to mean "the deforming step and the mat alone supply enough pressure to hold the substrate in the body for its intended use."

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10 D.I. 151, ex. E at 1179 (defining "sufficient" to mean "enough to meet the needs of a situation or a proposed end").

11 '264 patent, col. 2, ll. 34-46; col. 3, ll. 5-10.

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13. Sufficient Space

The next term for construction is "sufficient space" as it appears in claim 33 of the RE '439 patent. The Plaintiffs contend that the term means "enough room in the groove so that the panels can be moved relative to one another along their joined edges." (Pls.' Open Br. 33.) Pergo contends that it means "the amount of space between the locking groove and the locking element is enough to allow for the free movement of the joined panels such that the panels can (i) slide easily relative to one another along their joined edges and (ii) can be disassembled by angular rotation of one panel about the other joined edge." (Unilin's Open. Br. 33-34.)

Claim 33 of the RE '439 patent provides:

A system for providing a joint between adjacent building panels, comprising:

...
The Plaintiffs maintain that the Court should construe sufficient space as not including play and construe the limitation based on its plain meaning. However, this Court has determined that play is inherent in the RE '439 patent claims. In large part, Pergo's proposed construction is consistent with the claim language. However, there is no basis for reading "free" movement into the definition of the term. The Court defines "sufficient space" in claim 33 of the RE '439 patent as "the amount of space between the locking groove and the locking element is enough to allow for the movement of the joined panels such that the panels can (i) slide relative to one another along their joined edges and (ii) can be disassembled by angular rotation of one panel about the other joined edge."

The Court defines "sufficient space" in claim 33 of the RE '439 patent as "the amount of space between the locking groove and the locking element is enough to allow for the movement of the joined panels such that the panels can (i) slide relative to one another along their joined edges and (ii) can be disassembled by angular rotation of one panel about the other joined edge."

3. "Shell having a hardness sufficient to maintain the shape of the grip." Used Claim 1.

Kwitek suggests "a structure or framework having an inner and outer surface and that has a level of firmness capable of keeping or preserving the grip's shape." Pilot proposes "a unitary hard casing with adequate firmness to keep the grip in its originally designed shape while being grasped with hand or finger pressure appropriate for writing."

Both proposals describe something that is firm enough to keep the shape of the grip. This comes straight from the claim itself. '190 patent, col. 8, l. 66-col. 9, l. 1. Obviously, in the context of a pen grip the inventor was not talking about the shell of this soft grip being able to maintain its shape under the crushing force of a vice. The specification states that the shell may be constructed from a variety of elastomers. '190 patent, col. 3, ll. 48-50. In the preferred embodiment, the shell will have a Shore A hardness of 20-55. '190 patent, col. 3, ll. 51-52. This includes the high end of range described earlier in the specification as being "ultra-soft." '190 patent, col. 3, ll. 13. These statements indicate that the shell can be fairly soft.

But it is clear that the shell has to maintain the shape of the grip when fingers hold the implement for writing. Of course, this does not imply that the viscoelastic hand/finger surface will be unyielding to pressure from fingers.

The real debate seems to be Pilot's attempt to add the word "unitary" to the definition. It is true that the claim and specification always use the singular in referring to the shell as well as to the grip. For example:

"a longitudinally extending, tubular shell . . . "'190 patent, col. 8, l. 66;

"The shell has an inner surface . . . and an outer surface. . . "'190 patent, col. 9, ll. 1-2;

"the outer surface of the tubular shell; the shell further . . . ."'190 patent, col. 9, ll. 3-4;

"The shell may be constructed . . . ."'190 patent, col. 3, l. 48; and

"a shell 112 shaped and dimensioned to fit about the grip . . . ."'190 patent, col. 4, ll. 25-26.

But it is difficult to see what adding the word "unitary" to the definition will do. A shell might be made of more than one piece, so long as it fulfilled the other requirements of the claim language and was not disclaimed or disavowed in the specification or prosecution history. For example, the court can imagine a tube, split longitudinally, but constructed so as to keep its shape when squeezed. Pilot certainly did not have anyone skilled in the art present who could explain why this would be physically impossible, or not be apparent to another skilled artisan.

There is no authority for the addition of superfluous limitations in claim construction, even if they may later be useful to the infringement analysis of a party. This is not to say that any grouping of disjointed pieces will be considered "a" shell or "the" shell. Pilot will be free to argue that two or more separate pieces are not "a" shell. But claim construction does not consist of attempting to anticipate the variety of accused devices which may be presented and then to predict the infringement arguments that might arise from the fertile mind of learned counsel. The court will define this term as follows:

"Shell having a hardness sufficient to maintain the shape of the grip" means "a structure that is firm enough to maintain the shape of the grip while the writing implement is used for writing."
The principal disputed elements of Claims 1 and 17 are in the portion set forth below. To aid understanding, the Court has provided its own emphasis to some of the language:

"said layer of foam being sufficiently resiliently compressible to [1] allow the layer of foam to be pressed manually against the painted surface to compress the portions of the layer of foam toward the rear surface of the layer of foam and cause the parts of the front surface of the layer of foam defined by both the projecting portions and the recessed portions to generally conform to the painted surface and press the glazing or compounding material into engagement with the painted - surface for efficient removal of imperfections, and [2] subsequently to allow the layer of foam to be manually pressed against the painted surface with a lesser force only sufficient to compress parts of the projecting portions of the layer of foam to complete polishing of the painted surface."

The meaning of this claim is discernible from the language of the claim alone, although it is complicated phraseology. "Resiliently compressible" means that the foam will resume its shape after it is compressed. "Sufficiently resiliently compressible" means that [1] the foam must be soft enough to be able to perform the function of allowing the convolutions (projections) to compress enough so that both the projections and the flat portion will "generally conform to the painted surface" and cause "efficient removal of imperfections", and [2] it must be hard enough so that when a lesser force is used, only the projections do the polishing. A person operating a buffer would be able to vary the pressure on the pad in such a way as to choose to cause only the tips of the pad to touch the surface, or to cause all or virtually all of the pad face to come in contact with the surface being polished, when operating the buffer in the normal manner done in body shops. Put the other way around, a pad would not infringe if the foam were so hard that the projections could not be compressed to the painted surface with the flat portion for efficient cleaning under normal pressure, and it would not infringe if the foam were so soft that the projections were compressed to the painted surface with the flat portion even when a lesser force is used.

This interpretation seems required by the plain meaning of the words in the claim. The description of the invention and the manner of use of the invention confirm this interpretation. In column 3, lines 1 through 19, the inventor theorizes that advantages of the invention are achieved in some instances by "the different amounts of compression of the projecting and recessed portions" of the pad when the entire face generally conforms to the surface being polished, and that other advantages are achieved "when only the projecting portions are in contact with the painted surface." In addition, the specification describes the use of the invention involving an initial pressing down so the projections and the valleys both generally conform to the surface, and subsequently reducing the force so that only the projections are applied to the surface. Column 8, lines 17-64, and FIGS. 9 and 10.

b. "said sealing portion being sufficiently soft to seal against an air flow tube, to form a radial seal against the air flow tube and cylindrical inner support"

The phrase "said sealing portion being sufficiently soft to seal against an air flow tube, to form a radial seal against the air flow tube and cylindrical inner support" appears in claim 1 of the '366 Patent. Donaldson asserts this phrase has a meaning readily understood by one of skill in the art and construction of the language is not necessary. Baldwin asserts that the phrase should be construed as "a sealing portion of the first end cap is made of polymeric material sufficiently soft such that it is radially compressed between and against the air flow tube and cylindrical inner support."

First, Baldwin proposes that the "air flow tube" be construed as a required functional component of this claim. In support, Baldwin argues that the claim language "to seal against an air flow tube" requires that the portion of the first end cap form a radial seal with the air flow tube, and that such limitation can only be met if the air flow tube is present. In contrast, Donaldson contends that the air flow tube is a work-piece or an environmental element that is not part of the claim simply because it touches the filter in use.

Looking first to the language of the claim, it is apparent that the air flow tube is not the subject of the clause. The text of the
claim does not mention an air flow tube positively as an element of the claim. Instead, the air flow tube is mentioned to explain how the air filter seals when installed in an assembly and is part of the environment in which the claimed air filter operates. See SDS USA, Inc. v. Ken Specialties, Inc., 107 F. Supp. 2d 574, 593 (D.N.J. 2000). Specifically, the claim language discusses the air flow tube using words indicating that it is an environmental element. For example, the claim states: "said sealing portion being sufficiently soft to seal against an air flow tube to form a radial seal against the air flow tube, when the filter element is mounted on an air flow tube" (emphasis added). 15

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15 Claim 1 of the '009 Patent reads in part: "said sealing portion being oriented to seal around, and against, an appropriately sized air flow tube, whenever the filter element is operatively positioned with the airflow tube projecting through said air inlet aperture" (emphasis added).

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The Court recognizes that when a claim includes detailed structural language on another element, it can become a claim limitation. For example, in Bicon, the Federal Circuit affirmed the construction of a claim term in a patent for an apparatus used with dental implants. 441 F.3d at 952. The claim at issue in Bicon recited in part "[a]n emergence cuff member for use in preserving the interdental papilla during the procedure of placing an abutment on a root member implanted in the . . . bone of a patient." Id. at 949. The district court construed the claim to include both the "emergence cuff member" and an "abutment." Id. at 952. In affirming, the Federal Circuit noted that:

[d]espite the fact that the claim begins with a reference to the emergence cuff alone, the full text of the claim, read in the context of the entire patent, indicates that the claimed invention is the combination of the emergence cuff and the abutment, operating together in the fashion recited in the claim and described in the specification.

Id. at 952. Here, however, there is no detailed or significant reference in the claim to the air flow tube. 16 Instead, reference to the air flow tube is necessary to describe the invention, but the air flow tube is not an element of the claim. See SDS, 107 F. Supp. 2d at 593.

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16 In contrast, in Bicon, the Federal Circuit noted that the claim at issue included a detailed description of the abutment's physical characteristics (i.e., the abutment has "a frusto-spherical basal surface portion and a conical surface portion having a selected height extending therefrom") and defined the emergence cuff in a way that depends on those characteristics (i.e., "the internal bore of the emergence cuff has 'a taper generally matching that of the conical surface portion of the abutment'" and "the distance between the first and second ends [of the emergence cuff is] less than the height of the conical surface' of the abutment"). 441 F.3d at 950 ("Together, the preamble and the body of the claim contain a detailed description of the features of the abutment used in connection with the emergence cuff.").

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Second, Baldwin argues that the overall limitation in this claim should be construed to mean "the sealing portion of the first end cap is made of polymeric material sufficiently soft such that it is radially compressed between and against the air flow tube and cylindrical inner support." In support, Baldwin points to the following language in the specification:

When assembled, inlet tube 14 extends into aperture 28 in end cap 23. At least in this location, end cap 23 is preferably formed of a soft compressible material. . . For the particular arrangement shown in FIGS. 1-7, material at region 40 is compressed between and against both inlet tube 14 and inner support 26; that is, inner support 26 is set sufficiently deeply into end cap 23 that a portion of it is positioned behind compressible region 40, to provide support. Thus, a good seal is effected.

'366 Patent, col. 6, ll. 29-56.

The claim language itself requires that the "sealing portion" be made of polymeric material and that it be "sufficiently soft to
seal against an air flow tube, to form a radial seal against the air flow tube, when the filter is mounted on an air flow tube." The claim language does not, however, require a particular type of radial seal. Further, the Court determines that the intrinsic evidence does not support the additional limitation added by the "radially compressed" language proposed by Baldwin. Although the patent specification does discuss the radial sealing between the filter element end caps and a housing and provides that the sealing can involve compression, this type of sealing is an example. The language of the claim is not limited to a particular form of contact. Therefore, the Court declines to import the limitation appearing only in the specification. See Phillips, 415 F.3d at 1323. Accordingly, the Court declines to adopt Baldwin’s proposed construction and does not construe the phrase "said sealing portion being sufficiently soft to seal against an air flow tube, to form a radial seal against the air flow tube and cylindrical inner support."

The Court finds that the proposed constructions in the R&R for "suitable for installation by the average consumer" and "can be installed by the average consumer" are appropriate when the new construction of "average consumer" is substituted therein. Thus, those terms would be construed as follows:

1) "suitable for installation by the average consumer" to mean capable of being installed by an individual that purchases supplies for a home improvement task from a retail outlet and performs the home improvement task himself or herself, regardless of whether the individual has any training in that task;

2) "can be installed by the average consumer" to mean capable of being installed by an individual that purchases supplies for a home improvement task from a retail outlet and performs the home improvement task himself or herself, regardless of whether the individual has any training in that task.

There is only one point of contention between the parties regarding anticipation of independent claims 9, 21, and 22 of the '276 patent: the use of "sunglasses" in the preamble of all these claims and use of "for use in sports and casual activities" in the preamble of Claims 9 and 21. This contention also extends to the anticipation of dependent claims 11, 15, 18, 19, and 20. Protective has clearly shown that the rest of the limitations recited in the claims were anticipated by the '688 patent. Pfriem Dec., PP 10-41; id., Ex. B. Panoptx does not challenge this demonstration and thus the court is convinced that the rest of the limitations were anticipated by the '688 patent.

The court refuses to read in "for use in both sports and casual activities" into the preamble of Claim 22. It is clear from the patent specification that the patentee could have added such a phrase into whichever claims he wanted and deliberately chose not to add it to Claim 22. Furthermore, the court will not re-write claims in order to preserve their validity. See Pfizer, Inc. v. Ranbaxy Laboratories Ltd., 457 F.3d 1284, 1292 (Fed. Cir. 2006).

Whether the preamble constitutes a limitation to a claim is a matter of claim construction, and hence, a matter of law. Catalina Mkt'g Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 807 (Fed. Cir. 2002). A preamble generally limits the claimed invention if it "recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim." Id. at 808 (internal quotations omitted). For instance, "[w]hen limitations in the body of the claim rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention. On the other hand, if the body of the claim sets out the complete invention, then the language of the preamble may be superfluous." Eaton Corp. v. Rockwell Int'l Corp., 323 F.3d 1332, 1339 (Fed. Cir. 2003) (internal citations and quotations omitted). "Thus, if the preamble helps to determine the scope of the patent claim, then it is construed as part of the claimed invention." NTP, Inc. v. Research In Motion, Ltd., 418 F.3d 1282, 1305 (Fed. Cir. 2005).
The preamble here limits the scope of the claim. The claims only cover sunglasses as opposed to more general eyewear. The claim further teaches a "lens means for protecting a wearer's eyes . . . ." which has been construed above as "lens." '276 patent at 5:59-60. Taking the terms in conjunction and in context with the patent specification, it is clear that the patentee meant protection from the sun in addition to protection from particulate matter. There is some merit to Protective's argument that the body of the claim sets out the complete invention, and thus the language of the preamble may be superfluous. The "sunglass" language, however, was added to the patent in order to distinguish the invention over the prior art. See Opp. Br. at 4; Hong Dec., Ex. B at PRO000204-220. This provides further evidence that the scope of the limitation extends only to sunglasses and not eyewear generally. Finally, the preamble is necessary to give life and meaning to the claim because the patent focuses on the ability of the user of the invention to wear the eyewear for casual purposes independent of whether the user has prescription glasses. '276 patent at 1:64-2:4.

3 The court does not reach the question of invalidity due to inoperability because this motion is directed toward invalidity due to anticipation and/or obviousness. In addition, Panoptx has not had a chance to refute the argument for inoperability. Thus Protective's argument for invalidity due to inoperability is reserved and may be brought at a later time.

C. "Super-Purifying Said Smoke to Reduce Taste Imparting Components Below Thresholds for Imparting Smoke Odor and Taste"

The language of Claim 67, discussed above, is quite similar to the language of Claim 1, which claims "super-purifying said smoke to reduce taste imparting components below thresholds for imparting smoke odor and taste." (Kowalski Patent, Col. 28, at 11-18.) TPI raises similar claim construction arguments here as it raised for Claim 67, once again requesting that numerical values listed in Table 3 be ascribed to the process of "super-purifying" the smoke "below thresholds for imparting smoke odor and taste." (TPI Brief 20). For the reasons discussed above, the Court finds that "super-purifying said smoke to reduce taste imparting components below thresholds for imparting smoke odor and taste" is supported by the disclosures made in the specifications. It will not be numerically limited by the Court.

G. "superimposed in separate printing steps"

The parties' proposed constructions of this disputed phrase are nearly identical. The Plaintiff claims the phrase means "sequentially applying the screened half tone images to create the overprint layer." The Defendant proposes the following similar construction: "printing the screened halftone images sequentially one over the other so that they can combine and blend optically." Thus, the parties effectively agree that the ordinary meaning of the phrase is "sequentially printing the screened half tone images." The Defendant's construction states that the screened halftone images are printed sequentially "one over the other." This additional language is consistent with common meaning of "superimpose," i.e., "to place on or over something else." Webster's College Dictionary at 1106. Although this language is not part of the Plaintiff's proposed construction, the Plaintiff does not seem to object to its inclusion in the construction. (Pl.'s Mem. in Supp. of Mot. for Claim Construction, at 23-24.)

Despite agreeing for the most part on the construction of this phrase, the Plaintiff claims that the Defendant improperly narrows the plain meaning by adding the phrase "so that they can combine and blend optically." As discussed above, this invention uses the process color printing technique to create the overprinting layer. It appears that one skilled in the art would understand that process color is a type of printing "in which dots of one color are overprinted on dots of one or more other colors to produce blends." GATF Encyclopedia at 313. Moreover, this limitation is drawn directly from the language of the specification. When discussing the process color printing technique, the specification states: "The separated images

- 4671 -
are then printed one over the other in transparent ink. When the separated images are superimposed, they combine and blend optically to produce the visual effect of full color with virtually limitless tones and shades." ('647 patent, col. 4, 11. 61-65; 504 patent, col. 5, 11. 34-38) (emphasis added). Therefore, reading the claim term in context, the Court construes "superimposing in separate printing steps" to mean "sequentially printing the screened half tone images one over the other, resulting in the half tone images combining and blending optically."

4006
2. "Electrically Conducting Fluid Supply."

Consistent with the prosecution history, the phrase "electrically conducting fluid supply" shall be construed to mean "a medical container that stores electrically conducting fluid." (D.I. 267, Ex. 10 at 4-5) An example of a medical container is an IV bag. An example of electrically conducting fluid is isotonic saline. (Id.)

4007
1. "supply of coins"

Tidel proposes that the term means "stored coins." FKI proposes the term means "segregated coins by denomination within hoppers." FKI argues the embodiment in the specification requires that all the coins inside the cabinet must be placed into separate bins or hoppers according to denomination. [7:44-56]. FKI is attempting to limit the claim to the preferred embodiment by requiring the coins be segregated. The court, therefore, construes the term "supply of coins" to mean "stored coins."

4008
a. The construction of "a supply of stored gas is provided"

Taking the disputed terms of Claim 16 first, plaintiffs contend that "a supply of stored gas is provided" refers to the environment in which the claimed invention operates. They also assert that interpreting the claim language in light of the specifications impermissibly results in reading limitations from the specifications into the claims. Bauer, on the other hand, contends that the phrase requires that a supply of stored gas is an integral part of the claimed invention.

This court finds that the phrase "supply of stored gas is provided" means in the context of the 455 Patent that such a supply of stored gas is an integral part of the claimed invention. Plaintiff's assertion that the gas supply is merely part of the environment in which the claimed invention operates is belied by both the language of the claims and the specification. In Claim 16, the phrase "a supply of stored gas is provided" appears after the transition phrase "the improvement wherein . . ." This alone indicates that the gas supply is considered a part of the claimed invention. Further, the accompanying specification states that a supply of bulk gas is part of the invention:

The invention apparatus, broadly considered, includes a bulk supply system, 24, a booster system, 26, a booster drive system, 28; a high pressure storage system, 30; a pressure control system, 32; a supplemental gas storage system, 34; a pilot operated gas system, 36; an electrical control system, 38; and a gas injection conduit, 40. Apparatus components 24, 26, 28, 30, 32, 34, 36, 38 and 40 together comprise control means for selectively controlling the gas delivered to the mold with respect to pressure and time. U.S. Patent 5,118,455, col. 5, lines 5-14.

From the above, it is clear that a gas supply is considered to be a part of the claimed invention. It comprises a part of the "control means" which are integral to the claimed invention and are necessary to perform both of the specific functions identified in Claim 16, that of injecting the gas into the mold and that of pressure profiling, ie increasing the pressure in the mold, decreasing it or holding it constant.
Epcon argues that the stored gas supply should not be considered to be a part of the apparatus identified in Claim 16, because it is not required to perform the functions identified in that claim, that is, injecting gas into the mold and then of performing pressure profiling where the gas pressure within the mold is increased, decreased or held approximately constant. Epcon claims that the only apparatus needed to perform these functions is the pressure control system, which is defined to be comprised of regulators 97 and 98 and a relief valve 157.

These devices certainly play a role in these two functions but, equally certainly, they are not sufficient by themselves to accomplish the tasks identified in Claim 16. These components are, for instance, clearly unable to perform the function of injecting gas into the mold, because they lack any source of such gas. Likewise, they cannot, by themselves, act to increase the gas pressure within the mold for the same reason.

Bauer next contends that the supply of stored gas must be pressurized to at least 12,000 psi to allow the gas to be injected into the mold at a pressure that is at all times less than the pressure of the stored gas supply. Plaintiffs concede that the values given in the specification for stored gas pressure uniformly exceed 12,000 psi. However, they argue that these pressures are clearly identified as mere examples of typical pressures and are not, therefore, crucial features of the claimed innovation. They further argue that the specific gas pressures used in the gas storage apparatus are dependent on the requirements of the particular molding process.

In this regard, the points raised by plaintiffs are well taken. There is no basis in the disputed claim language or in the specifications for a conclusion that the values identified for stored gas pressures are anything but exemplary in nature. First, when such values are identified in the specification, they are identified as being exemplary. Second, there is no basis for concluding that the particular values of the gas pressure in the stored gas supply is critical to either the operation of the claimed invention or to its patentability.

However, this is not to say that the gas pressure, or more specifically, the difference between the pressure of the stored gas supply and the pressure at which gas is injected into the mold is totally irrelevant to the issues presented by the Markman proceeding or defendant's motions for summary judgment. This is because the parties also dispute the meaning that should be given to the word "substantially." This term appears in two different contexts: in the first case it is used to describe a value for gas pressure that is held approximately constant over a period of time, as in Claim 2 "the gas pressure in the mold is selectively increased, decreased or held substantially constant." The second context, occurring both in Claim 2 and Claim 16 indicates that the pressure of the gas injected into the mold is substantially below that of the gas in the stored gas supply.

A. "Supply of Stored Gas"

The district court construed the phrase "a supply of stored gas is provided" to mean that such a supply of stored gas is an integral part of the claimed invention. Epcon argues that this phrase is part of the transition in both claims 2 and 16, and is therefore a non-limiting part of the environment for the claim. Epcon argues that the district court erred in finding that the gas supply is an "integrated" component of the apparatus of claim 16. In contrast, Bauer argues that the phrase is not part of the transition of either claim 2 or 16, and the phrase is properly limiting because the specification describes this claim limitation as "an important feature of the invention apparatus."

Contrary to Epcon's characterization, the district court did not find that the stored gas supply is an "integrated" component of the apparatus of claim 16. Instead, the district court found that the stored gas supply is an "integral" part of the claimed invention. The distinction is important.

Integral is defined to mean "components that form a complete unit." The Contractors' Dictionary of Equipment, Tools and Techniques 315 (1st ed. 1995). Integrated is defined to mean "[a] type of design in which two or more basic components or functions are physically, as well as electrically, combined - usually on one chassis, such as an integrated amplifier." Modern Dictionary of Electronics 381 (7th ed. 1999). "Integral" connotes that the stored gas supply is a component part of the claimed invention, as opposed to "integrated," which connotes physical combination. Thus, an infringing apparatus/method must have a stored gas supply as a component part, but it is not required that the gas supply be physically combined on one chassis with all other parts.
The specification of the 455 patent provides further support for our construction. The 455 patent specification states, "the invention apparatus, broadly considered, includes a bulk supply system 24 . . . . Bulk supply system 24 comprises a bulk storage container 42 . . . [which] may comprise, for example, a commercial nitrogen bottle storing nitrogen at a nominal pressure." 455 patent, col. 5, ll. 5-20. "In operation, nitrogen gas is delivered from the bulk supply 24 to the regulator 46 at a stored pressure." Id. at col. 9, ll. 53-54. Thus, according to the intrinsic record the "supply of stored gas" is included in the "invention apparatus, broadly considered," and operates with other components in the claimed method. Nothing in the intrinsic record requires that the supply of stored gas be physically combined on one chassis with the other components of the claimed method or apparatus.

The district court did not err in finding that the "supply of stored gas" is integral, or a component part of the claimed apparatus and process. In method claim 2, the phrase "a supply of stored gas is provided" appears in the preamble. In the apparatus claim 16, the phrase appears after the transition. Since both claims are in Jepson format, the phrase recites elements that define the scope of the claimed invention. See Kegel, 127 F.3d at 1426, 44 U.S.P.Q.2D (BNA) at 1127; Rowe, 112 F.3d at 479, 42 U.S.P.Q.2D (BNA) at 1553.

2. support (claims 2, 4-9, 12, 14)

Fargo - aperture, bore, or other apparatus that can be used to support, detain, carry, or accept insertions of another object

Iris - This is governed by , P 6, and covers apertures extending through the hub, plus equivalents thereof

Iris contends that the word "support" is a means-plus-function limitation and is therefore governed by 35 U.S.C. § 112, P 6, which states that such claims "shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." As such, Iris contends that, as shown in the specification, the "bores" or "apertures" that hold the pins must extend all the way through the hub.

A patentee's use of the word "means" in a claim limitation gives rise to a rebuttable presumption that it is a means-plus-function limitation within the meaning of § 112, P 6. Apex Inc. v. Raritan Computer, Inc., 325 F.3d 1364, 1371 (Fed. Cir. 2003). Conversely, when a claim limitation does not include the word "means," there is a rebuttable presumption that § 112, P 6 is inapplicable. Id.; see also Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1358 (Fed. Cir. 2004) (stating that "the presumption flowing from the absence of the term 'means' is a strong one that is not readily overcome."). Here, the claim limitation does not include the word "means," but Iris can rebut the corresponding presumption by demonstrating that the claim term fails to recite sufficiently definite structure, or else recites a function without reciting sufficient structure for performing that function. Apex, 325 F.3d at 1372.

In claims 4, 6, and 9, "supports" are clearly defined as either "bores" or "apertures" in the claims themselves. In claims 2, 5, 7, 8, 12, and 14, however, the word "support" is used without any recitation of a structure. If the word "support" has a reasonably well understood meaning in the art, however, it is not a means-plus-function limitation. Id. The word need not call to mind a single well-defined structure to avoid application of § 112, P 6. Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996)(holding that "detent mechanism" had a reasonably well understood meaning in the art); Lighting World, 382 F.3d at 1358 ("The fact that more than one structure may be described by that term, or even that the term may encompass a multitude of structures, does not make the term 'connector assembly' any less a name for structure."). Finally, the fact that the disputed term is derived from the function performed does not necessarily indicate that it fails to indicate a structure. Lighting World, 382 F.3d at 1361. In light of these cases, it is clear from reading through the claims that the word "support" is used throughout the patent to denote a structure, not a function. Iris contends that Fargo's definition is too broad, but this is not a reason to hold that the word is a means-plus-function limitation. Id. at 1361-62. The Court therefore adopts Fargo's proposed definition and declines to find that "support" is a means-plus-function limitation.
3. Support/Supporting

Plaintiff's definition of "support" is "to bear the weight of, or hold up." Defendants initially provided a similar dictionary definition from the American Heritage Dictionary, defining "support" as "to bear the weight of . . . [or] to hold in position." The American Heritage Dictionary of the English Language, supra, at 1739.

Defendants now state that Plaintiff's definition of "support" is "an acceptable starting point" but argue for a more complicated definition of "providing an ancillary positioning or strengthening function, including to bear the weight of, especially from below; to hold in position."

Defendants' new definition of "support" attempts to add the limitation that the support is "ancillary." Defendants' reasoning is that they believe the handguard of the '465 Patent requires at least two areas of support, and thus each area of support is only ancillary. Even if this assertion is true, Defendants are clearly attempting to import a limitation from the specification into claim 31.

As used in claim 31 of the '465 Patent, "support" or "supporting" means to bear the weight of, or to hold up either completely or partially.

a. "a support"

The term "support" calls for a structurally rigid, molded structure that serves as a prop, base, foundation, brace or stay for a shift lever and related attachments, and pivotally mounts a transmission shift lever, such that the pivot axis is at a low position on the shifter to provide optimal mechanical advantage and movement to actuate a transmission shift cable.

(2) Support Block

Claims 1, 44, 45, 49-52 of the '988 Patent also uses the phrase "support block." Innovative argues that the court should construe this phrase to mean "a block to support other components" according to its ordinary and customary meaning. Defendants, once again, propose a more narrow definition by seeking to import the specification limits into the purposefully general claim language. Defendants urge the court to construe support block as "a cast generally cubical block having a bushing hole and a shaft hole extending nearly the entire height of the support block" based on the specification. See PI's Markman Br. Ex. E. col. 4 ll. 10-15. For the reasons related in the analysis of the "bushing" term, the court will not limit the claim language by reference to the specification. Therefore, the term "support block" is construed to mean "a block to support other components."

As an initial matter, we agree with the parties that both the handle receipt means and the handle disengagement means limitations should be construed as means-plus-function type limitations pursuant to 35 U.S.C. § 112, ¶ 6. However, the parties dispute whether or not the "support body means" limitation also invokes a means-plus-function § 112, ¶ 6 analysis.

The "support body means" limitation stands alone and does not recite any associated structure. The limitation also does not recite much functional detail. However, the term "support" itself connotes function. Because the "support body means"
limitation uses the phrase "means" and also recites function, without reciting any definite structure, it is appropriate to construe the term as a means-plus-function limitation.

As no other claim construction issues have been raised by the parties, we proceed to analyze the summary judgment ruling of noninfringement.

4015

(a) "a support frame to which the trailer is mounted;"

This term may be defined by the ordinary meaning of the terms as "a skeletal framework or other structure for a towed vehicle."

4016

A. "support layer"

MacDermid proposes to construe the term "support layer" as "a flexible transparent material upon which the photopolymer material is disposed." (MacDermid Responsive Br. at 2.) DuPont proposes the construction "a flexible transparent material that retains or absorbs greater than 80% of actinic radiation." (DuPont Opening Br. at 1.)

DuPont contends that MacDermid made a statement in the prosecution history that the support layer must absorb between 80% and 99% of actinic radiation. (DuPont Opening Br. at 11.) The PTO initially rejected the proposed new claims in the '835 Patent as unpatentable over Kurtz in view of Fan and over Fan in view of Canty. (Id.) DuPont states that in order to overcome this rejection, MacDermid represented to the PTO examiner that "[e]ven if Fan and Kurtz are combined, they do not reveal the claimed invention. . . .[T]hey do not reveal that the substrate should absorb between 80%-99% of the incident backflash actinic radiation or between 85%-95% of the incident backflash radiation." (Id. at 12.) DuPont states that the PTO relied on this statement in withdrawing its rejection of the patent. (Id.) DuPont contends that this statement is of "critical significance" to the Court's construction of "support layer." (DuPont Responsive Br. at 3.) DuPont states that for purposes of construction, MacDermid cannot dismiss the arguments it made to the PTO, and DuPont's construction should prevail. (Id. at 5.)

MacDermid contends that its construction is supported by the specification and the prosecution history. (MacDermid Opening Br. at 8.) The specification states that the "support layer of the photocurable element is preferably formed from a variety of flexible, transparent materials." (Id.) Further, the plain language of the claims states that "the solid photocurable material is disposed on the support layer." (Id.)

MacDermid contends that DuPont's proposed construction improperly narrows the term with its inclusion of an 80% absorption requirement. (MacDermid Responsive Br. at 2.) MacDermid states that this construction lacks support in the intrinsic evidence, contradicts the plain language of the '835 Patent, and that there is no claim language necessitating an 80% absorption requirement. (Id.; Tr. at 17.) It contends that DuPont improperly focuses on a single statement in the prosecution history that it takes out of context. (MacDermid Responsive Br. at 2-3.) MacDermid acknowledges that some claims in the '835 Patent do, in fact, contain a percentage limitation, but other claims contain no such limitation. (Id. at 3.) It states that claims should be considered in the context of other claims in the patent. (Id.) Thus, it contends that "support layer" should be construed the same way for all claims. (Id. at 4.)

MacDermid further argues that under the doctrine of claim differentiation, a limitation added to a dependent claim creates a presumption that the added limitation does not exist in the independent claim. (Id.) MacDermid states that dependent claims 16 and 17 contain a percentage limitation, thereby creating the presumption that the limitation does not apply to the independent claim 13. (Id. at 4-5.) MacDermid further argues that the specification does not support DuPont's construction. (Id. at 5.) The specification states that the support layer must absorb "at least some actinic radiation," but does not contain a percentage limitation. (Id. at 6.)
Responding to DuPont's assertion regarding the applicant's statement during the prosecution history, MacDermid states that the disputed statement did not constitute a disavowal of claim scope. (Id. at 7-8.) MacDermid contends that the applicant distinguished the '835 Patent from Kurtz and Fan by noting that those patents did not disclose that the support layer should absorb UV radiation at all, not that those patents merely disclosed absorption in a lesser amount. (Id. at 9; Tr. at 22.) The applicant stated the Kurtz and Fan did not "reveal that the substrate should absorb U.V. radiation." (MacDermid Responsive Br. at 9.) MacDermid contends that after broadly distinguishing the prior art on this basis, the applicant then pointed to specific absorption limitations present in only some of the claims. (Id. at 10.) MacDermid states that one of ordinary skill in the art would not view these statements as creating a percentage limitation for all claims. (Id.) As such, the statements cannot constitute a disavowal of scope. (Id.) MacDermid contends that DuPont looks to one statement without looking to the statement that precedes it, (Id. at 12.) It contends that there is no statement that would unambiguously disclaim the use of a support layer absorbing less than 80%.

MacDermid also highlights that in the prosecution history, a few pages before the disputed statement, when distinguishing the '835 Patent from Fan and Canty, the applicant specifically identified the claims that included a percentage limitation. (Tr. at 24.) MacDermid contends that the applicant made an identical argument when distinguishing from Fan and Kurtz. (Tr. at 25.) When distinguishing the '835 Patent from Canty and Fan, the claims that included a percentage limitation were specifically identified. (Id.) MacDermid contends that it follows when the same argument was made three pages later in the prosecution history, when distinguishing from Fan and Kurtz, one would know that the referenced limitations only applied to the specified claims, even though not specified in the second argument. (Tr. at 25.) It contends that DuPont has misrepresented MacDermid's statements and there is no clear disavowal of claim scope. (Id. at 26.)

DuPont contends that the disputed statement was directed toward all the claims, not only the claims containing percentage limitations. (Tr. at 71.) It rejects MacDermid's contention that the Court should look to the part of the prosecution history distinguishing the '835 Patent from Fan and Canty. (Id.) It states that that portion of the prosecution history is irrelevant. (Id.) DuPont states that the Kurtz patent provided for the absorption of most if not all of the exposure radiation. (Id. at 72.) To distinguish the '835 Patent from Kurtz, MacDermid argued that Kurtz does not specify that it is 80% or greater. (Id.) DuPont further notes that there were portions in the prosecution history that did refer to specific claims, but the statements made regarding the Kurtz and Fan patents did not, indicating that those statements did not refer to specific claims. (Id. at 75.)

The Court agrees with MacDermid's proposed construction that the support layer be construed as "a flexible transparent material upon which the photopolymer material is disposed." This construction comports with the plain language of the '835 Patent and the doctrine of claim differentiation. The Court further finds that the disputed statement in the prosecution history does not constitute a "clear disavowal of claim scope."

The Court looks to the words of the claims to define the scope of the patented invention. See Phillips, 415 F.3d at 1312; Golight, Inc. v. Wal-Mart Stores, Inc., 355 F.3d 1327, 1331 (Fed. Cir. 2004) (noting "[i]n construing claims, the analytical focus must begin and remain centered on the claims themselves" (citation omitted)). There is a "heavy presumption that a claim term carries its ordinary and customary meaning." Golight, 355 F.3d at 1332 (citation omitted). The Court agrees with MacDermid that DuPont's proposed construction reads an additional limitation into the term "support layer" that is not supported by the language of the claims.

The '835 Patent, in independent claims 1, 13, and 30, describes a support layer with no percentage limitation. ('835 Patent, col. 10, lines 43-45; col. 11, lines 65-67; col. 14, lines 14-19.) While there are some claims that include an absorption limit, the claims should be considered in the context of the other claims in the patent. Phillips, 415 F.3d at 1314. The doctrine of claim differentiation further provides that "[t]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." Id. at 1315. Dependent claims 16 and 17 of the '835 Patent include percentage limitations, while independent claim 13 does not contain such a limitation. As such, there is a presumption that the independent claim does not contain an absorption limitation.

The specification provides further support for MacDermid's proposed construction. It provides that the support layer "is preferably formed from a variety of flexible, transparent materials." ('835 Patent, col. 6, lines 20-22.) The specification contains no absorption limitation.
The Court also finds that there was no clear disavowal of claim scope in the prosecution history. "Where the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim" Golight, 355 F.3d at 1333 (citation omitted). Prior to making the statement currently in dispute, the applicant distinguished the claimed invention from Fan and Kurtz stating that those patents did not disclose that the support layer should absorb U.V. radiation, without indicating a percentage limitation. (Prosecution History at B 99.) The Court also notes that when distinguishing the claimed invention from Fan and Canty, the applicant made the same argument regarding U.V. absorption that it made to distinguish the claimed invention from Fan and Kurtz. (Id. at B 97.) When making the argument regarding Fan and Canty, the applicant specified that the absorption requirements it noted were limited to certain claims. (Id.) In making the same argument regarding the Fan and Kurtz patents, the applicant used the same language, but did not specify that the absorption requirements were limited to certain claims. (Id. at B 98.) Viewing the prosecution history as a whole and in view of the ambiguity created by the separate arguments, the Court finds that there was not a clear disavowal of claim scope. The statement does not rise to the level of an unequivocal disavowal.

B. Construction of Claim 1

In defendants' view the only term in claim 1 of the 374 patent that remains at issue is "support member" -- the object that is temporarily inserted in the meat that creates the axis about which the spiral is cut. 10 See 374 patent, claim 1, col. 10, lines 4-10. Defendants urge the following construction: (1) "support" means "to keep the uncut core of meat from failing in order to maintain the continuous spiral cut about the axis of the meat," and (2) "support member" is a "single structure" that provides this support and that "extends at least the length of the continuous spiral cut." 11 Defendants argue that this proposed construction is consistent with "spit," the term the parties recognize as Judge Werlein's construction of "support member" in the earlier case. 12 Plaintiff accepts Judge Werlein's construction of the claim terms -- including "support member" as "spit" -- but urges the court, if anything, to define "spit" as a "pointed rod" or "pointed rod for holding meat" and to construct "in the meat" as "into the meat" (as opposed to "through the meat"). 13 Plaintiff resists any construction of "support member" indicating a "specific type, style or size of spit." 14

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10 Defendants' Opening Markman Brief, Docket Entry No. 42, p. 2.

11 Id. at 17-18.

12 Id. at 10-11. See also Plaintiff's Memorandum in Support of Its Combined Markman Brief and Motion for Partial Summary Judgment of Patent Infringement, Docket Entry No. 47, p. 9. It appears that "support member" was not directly at issue in the 374 patent case before Judge Werlein. He did not enter an explicit construction of "support member" in his memorandum and order construing other terms of the 374 patent claims. Judge Werlein did, however, use the word "spit" in apparent reference to "support member" throughout his construction of those other claim terms. See Defendants' Opening Markman Brief, Docket Entry No. 42, pp. 10-11; Memorandum and Order (Sept. 4, 2003), Logan Farms, Inc., et al. v. Honey Baked Ham, L.P., MI, et al., H-01-1611, Tab 3, Defendants' Appendix I, Docket Entry No. 46.


14 See id. at 13.

--- End Footnotes ---

The court begins by construing "support member" as "spit." This is consistent with both parties' arguments and their view of Judge Werlein's earlier construction of "support member." 15 Further, the parties appear to agree that spit is a "pointed rod." 16 Their dispute, and the court's focus, centers on whether the "support member" mentioned in claim 1 should be further construed with additional limitations based on its function.

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The claim language supports defendants' argument that the 374 patent requires a "support member" or "spit" that traverses the length of the spiral cut. The claim states that the uncut core of meat must be of sufficient cross-section to permit the meat to retain its shape when the support member is removed. 374 patent, claim 1, col. 10, lines 4-10. If the support member were shorter than the length of the spiral cut, the uncut core would have to be sufficient to provide for the meat's integrity during slicing operations as well as after, when the spit is removed. Otherwise, the meat would lose its shape as the slicer blade passed beyond the reach of the short spit, not just when the support member was removed. But claim 1 mentions nothing about maintaining the meat's shape prior to spit removal. Thus, the court concludes that the claim language contemplates a spit extending the length of the cut -- a spit that, while it remains inserted, supports the meat's shape regardless of the cross-section of the uncut core.

In responding to defendants' argument that "support member" contains a length limitation, plaintiff offers dictionary definitions suggesting "support" is synonymous with "hold." 17 His theory, as the court interprets it, is that "support member" need not be read to serve the function of providing structural support to the entire length of uncut core and therefore need not be limited to any minimum length. 18 The 374 patent's specification, however, appears to distinguish "support" and "hold." As plaintiff himself notes, the summary and written description refers to a "meat spit" inserted in the boneless product that is "designed to provide structural support for the meat during boneless cutting operations." 19 374 patent, col. 4, lines 5-7. See also 374 patent, col. 3, lines 63-65; col. 5, lines 61-64.

Moreover, it is the "chuck assembly," not the support member, that is "designed to hold and rotate the meat during cutting operations." 374 patent, col. 4, lines 1-2. The written description indicates that the meat is "held" by "the plurality of spikes" located on the faces of the upper and lower chucks. 374 patent, col. 9, lines 38-40.

The court is persuaded that the patent's repeated association of "spit" with "structural support" on the one hand, and "chuck assembly" and "spikes" with "hold" on the other, indicates a special role for "support member" beyond merely holding the meat. In other words, the difference in diction suggests "support member" cannot be just another spike, or even an elongated one, and indeed the written description discloses a spit that travels completely through the boneless meat product. 374 patent, col. 6, lines 1-3. Thus, the specification is entirely consistent with the court's initial reading of "support member" as a spit extending the length of the spiral cut that serves the particular function of helping the boneless meat maintain its shape.
The prosecution history confirms that "support member" should be construed along the lines of the court's interpretation of the claim language. During reexamination of his patent plaintiff "submitted videotaped evidence of the inoperability" of an abandoned prior patent application and "the patentably distinct product produced by [him] using the patentably distinct method." 20 The court has viewed this tape. 21 It depicts a series of attempts to spirally-slice boneless meat products. In three of those attempts no spit was used. Each time, regardless of the radius of uncut core -- which was as great as two inches -- the spit-less meat broke apart during slicing. 22 Plaintiff explained to the examiner that "the rotational force imparted on one end of the meat product . . . caused rotational stresses in the solid core of meat that caused the meat product to twist apart" despite the solid central core. 23 The core simply "lacked the necessary stability and physical integrity to prevent the [meat] from twisting apart." 24 As plaintiff stated, his "unique method" included a "spit through the center axis" that "provides the boneless meat product with sufficient structural stability during the slicing operation." 25 With the spit traversing the product, the meat did not twist apart in the final experiment on the videotape. Given this context it is clear that "support member" envisions a structure that helps the meat remain whole during slicing operations.

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20 Response to Office Action Dated Sept. 10, 1992, at pp. 1-2, Tab 4, Defendants' Appendix I, Docket Entry No. 46.
21 Defendants have included a copy of the videotape at Tab 15, Defendants' Appendix I, Docket Entry No. 46.
23 Id.

Although it does not appear that plaintiff expressly stated in the prosecution history that the "support member" or spit must traverse the length of the spiral cut, the court is persuaded that no other conclusion is reasonable. Like the specification, plaintiff's videotaped demonstration of his "unique method" disclosed a spit extending through the boneless meat product. There is no hint that the benefit provided by the support member component -- which, according to any fair assessment of plaintiff's argument during reexamination, was an important part of his "patentably distinct method" 26 -- could be obtained with a shorter spit, much less with one that does not even traverse the length of the spiral cut. Moreover, plaintiff's representations before the examiner, like his claim language, suggest a support member or spit that is coextensive with the spiral cut. In his summary of the videotape segment depicting his method, plaintiff indicated that "after the boneless meat product has been sliced and the spit removed, the remaining solid central core of meat provides the spiral sliced boneless meat product with structural integrity. . . ." 27

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26 Without it, plaintiff's method would be as inoperable as the three failed experiments depicted in the videotape. Plaintiff insists that he did not distinguish his invention from the prior art on the basis of any particular length spit. See Plaintiff's Memorandum in Support of Its Combined Markman Brief and Motion for Partial Summary Judgment of Patent Infringement, Docket Entry No. 47, pp. 13-14; Plaintiff's Response to Defendants' Cross-Motion for Summary Judgment of Non-Infringement, Docket Entry No. 55, pp. 8-9. However, the contrast between his method and the failed experiments indicates that a spit of at least some minimum length is a necessary part of the claimed invention.


--- End Footnotes ---
As the court's review of the intrinsic evidence indicates, the court concludes that defendants' proposed limitation of "support member" (incorporating their construction of "support") is correct. Accordingly, the court adopts the following construction of "support member": a spit (or pointed rod) that traverses the length of the spiral cut and helps the boneless meat product maintain its shape or integrity during slicing operations.

As noted above, plaintiff argues that "in the meat" should be read as "into the meat," not "through the meat." The court declines to adopt this construction. According to the court's reading of the 374 patent's claim 1, the spit may or may not extend completely through the meat. The claim language "in the meat" is consistent with either length spit.

--- Footnotes ---

28 See supra note 13 and accompanying text.

29 Plaintiff argues that the "principles of claim differentiation" compel the adoption "into the meat" for "in the meat," because other claims in the 374 patent require spits that are inserted "through the meat." Plaintiff's Memorandum in Support of Its Combined Markman Brief and Motion for Partial Summary Judgment of Patent Infringement, Docket Entry No. 47, p. 14. The court notes its construction of claim 1 does not require the spit to traverse the entire cut of meat but merely the length of the spiral cut.

--- End Footnotes ---

A. Claim Construction

We agree with the portion of the district court's claim construction that requires that the support member "help[] the boneless meat maintain its shape or integrity during slicing operations," however, the intrinsic record does not require the "support member" to "traverse the length of the spiral cut," so long as it is performing the function of helping "the boneless meat maintain its shape or integrity during slicing operations."

Logan argues that the "support member" should only be required to hold the meat. Logan cites numerous dictionary definitions in an attempt to bolster his argument. However, these dictionary definitions are inconsistent with the intrinsic record and therefore, are not probative. See Phillips v. AWH Corp., 415 F.3d 1303, 1322-23 (Fed. Cir. 2005) (en banc) (stating that courts may rely "on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents."). The '374 patent uses the term "hold" in reference to the chuck assembly, which includes a number of short spikes to help hold the meat. See, e.g., '374 patent, col.3, ll.53-57 ("The apparatus includes an electrically driven, rotating meat chuck assembly for holding the meat . . . during cutting operations"); id., col.4, ll.1-2 ("The chuck assembly is designed to hold and rotate the meat during cutting operations."). The specification indicates that the support member does more than "hold" the boneless meat-it provides support for the meat. See id., col.5, ll.61-64 ("The meat spit 400 is used in the slicing of boneless meats to provide support by inserting the stem member 404 into the meat during slicing operations.").

The prosecution history also supports this construction. During prosecution, Logan informed the Patent and Trademark Office that the support member "provides the boneless meat product with sufficient structural stability during the slicing operation" and that the spit "maintain[ed] meat integrity during the slicing operation." Moreover, during prosecution, Logan submitted videotaped experiments to establish that a particular reference was not enabled. These experiments are part of the intrinsic record, are properly considered in construing the claims, and further support this construction. Thus, we conclude that the support member "helps the boneless meat maintain its shape or integrity during slicing operations."

We do not agree, however, that the support member must "traverse the length of the spiral cut" as the district court required. Logan argues that Hormel's 1" and 2 3/8" prongs are "in the meat." Hormel argues that the support member must extend into the meat so as to traverse the length of the spiral cut. We conclude that the claim language "in the meat" does not require that the support member extend through the entire meat product nor does it require the support member traverse the entire spiral cut portion. Nothing in the specification or prosecution history requires this narrow construction.
Claim 1 requires only that the support member be "in the meat." '374 patent, col.10, ll.6-7. Other claims require that the "support member [be] inserted through the annular core [of meat] prior to slicing . . . ." Id., at col.10, ll.13-14 (claim 2) (emphasis added); see also id., at col.10, ll.27-28 (claim 4), col.11, ll.7-8 (claim 10). Hence, while claims 2, 4, and 10 require the support member be inserted through the meat, claim 1 in contrast only requires that the support member be in the meat. Because the patentee used different terminology in different claims, there is a presumption that there is a difference in the scope of the claims. See Forest Labs., Inc. v. Abbott Labs., 239 F.3d 1305, 1310 (Fed. Cir. 2001) (citing Tandon Corp. v. U.S. International Trade Com., 831 F.2d 1017, 1023 (Fed. Cir. 1987)). We conclude that "in the meat" must be read in conjunction with "support member" and that therefore the claim requires that the support member be in the meat far enough to "support" the meat during slicing (i.e., to maintain its shape or integrity during slicing).

While the specification discloses only a single embodiment, the intrinsic record does not limit the scope of the term "support member" to the only disclosed embodiment. See Phillips, 415 F.3d at 1323 ("[W]e have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment."). Thus, it is improper to read the sole embodiment from the specification into claim 1 and require that the support member extend through the meat. We also do not believe that the support member must extend the length of the spiral cut because while the claim requires the support member to define an "axis" of the meat, there is no reason why a support member that does not traverse the length of the spiral cut cannot define such an axis.

We conclude that the support member must extend into the meat to a sufficient length to support the meat during cutting (to help the meat maintain its shape or integrity during slicing), but not necessarily extend through the meat or traverse the entire length of the spiral cut.

4 The '739 utility patent covers, inter alia, a specifically defined "eyeglass display" which, according to independent claim 1, comprises:

a support member;

one or more display members having a plurality of openings, wherein each of said plurality of openings is adapted to receive an eyeglass case and is configured to permit a consumer to view at least a portion of the eyeglasses enclosed therein, wherein at least one eyeglass case is received by one of said plurality of openings and is displayed in a substantially vertical manner, said eyeglass case comprising . . . .

(739 patent, col. 9, ll.11-19) One of the limitations in dispute is "support member," a phrase not used in the specification or the figures. Rather, the specification and the corresponding figures refer to "support structure' 120," which is described variously as "provid[ing] a frame for securing other components of display 100" 5 ("739 patent, col. 6, ll.65-67), "provid[ing] a central frame mechanism to which display members 130a-h are coupled" (739 patent, col. 8, ll.12-14), and having "a skeleton frame configuration to provide support to five display members on each of four sides of the display" (739 patent, col. 8, ll.27-29). Given the description of a "support structure" in the specification, which is consistent with the ordinary meaning of the word "support," 6 the court concludes, consistent with the tenets of claim construction set forth by the United States Court of Appeals for the Federal Circuit in Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005), that the limitation "support member" shall be construed (for purposes of these preliminary proceedings) as "a structure for securing other components of the display." Comparing the elements of the accused device to the limitation as construed, it is clear that the accused product does not have a support member as described in claim 1. 7 Therefore, plaintiff has failed to establish a likelihood of success on the merits in this regard.

4 Plaintiff has moved to amend the complaint to add U.S. Patent No. 7,188,739 ("the '739 patent"), which motion (D.I. 32) is granted, as leave to amend "shall be freely given when justice so requires," Fed. R. Civ. P. 15(a), especially when the
motion is filed early in the case, as this motion was.

5 The specification goes on to state that "[d]isplay member 130 is coupled to support structure 120 and/or base 110." ('739 patent, col. 6, l.67 - col. 7, l.1) Plaintiff argues that the above language demonstrates that a "support" member need not be functional. The court disagrees.

6 To "hold up or in position; to serve as a foundation or prop for; bear the weight or stress of; keep from sinking or falling." Webster's Third New International Dictionary (Merriam-Webster, Inc. 1993) at 2297.

7 The specification describes all the embodiments of the claimed display as being comprised of at least a base, a support structure, a display member, and a display surface. It is clear that the back panel of the accused product provides no support to any other component, not even an attached logo, as depicted in figure 5 (display surface 150) of the '739 patent.8 The court declines to address any other of the disputed limitations in this proceeding.

Construction of Claim 7

As noted, at issue in this case is the meaning of the term "support member" as used in claim 7. The court begins, as it must, with the language of the claim (Vitronics, 90 F.3d at 1582):

7. A rotatable handgrip actuating system for releasing or pulling a tensioned cable, the system comprising:

   a support member having a generally cylindrical outer surface;

   a grip disposed over said generally cylindrical outer surface of said support member and rotatable relative thereto in a first direction and in a second direction opposite said first direction, a generally cylindrical inner surface of said grip facing said outer surface of said support member, one of said inner surface and said outer surface having a plurality of detent positions formed therein; and

   a spring metal detent spring disposed between said grip and said support member and engageable with one of said detent positions, said detent spring providing a first resistance against being forced out of said one detent position when said grip is rotated with respect to said support member in said first direction, said detent spring providing a second resistance against being forced out of said one detent position when said grip is rotated relative to said support member in said second direction, said second resistance being greater than said first resistance, the difference between the first and second resistance due at least in part to the shape of the detent spring.

000 patent, column 8, lines 25-45.

SRAM argues that "support member" must be given its ordinary meaning. Quoting Random House Webster's Collegiate Dictionary, SRAM argues that "support" means to "bear or hold up (a load, mass, structure, etc.)" or to "sustain or withstand (weight, pressure, strain, etc.)," while member refers to "a constituent part of any structural or composite whole." Applying the "plain meanings" to the claim, SRAM argues that the "support member" is "a portion of the shifter that cooperates with the other components of the shifter to bear a portion of the load of the handgrip and the spring when the shifter is in operation and when the spring engages the detent position or notches." Thus, SRAM argues that nothing in the plain language requires the support member to be stationary and nothing requires the support member to "retain" the spring. Indeed, SRAM argues that the claim suggests the opposite by providing that "a spring metal detent spring [is] disposed between said grip and said support member."

Read literally, the language of claim 7 contains no limitation that the "support member" is either stationary or spring retaining. The court does not read the claims in a vacuum, however, but rather "in view of the specifications of which they are a part." Markman v. Westview Instruments, 52 F.3d 967, 979-80 (Fed. Cir. 1995). As noted above, claim 7 (prosecution
claim 36) was initially rejected by the examiner as "vague and indefinite" because "antecedent basis is lacking in the specification, in the form of language followed by a reference character for 'support member.'" As explained by SRAM's counsel at oral argument, the reason for the rejection was that the term support member had never been used in the specification and had not been identified on any of the drawings. To overcome this rejection, SRAM was required to and did amend the specifications both to introduce the term "support member" and to give it a drawing character reference. It accomplished this task by amending the description of the first preferred embodiment in the specification at page 10, line 16 of the original application, adding the phrase "or support" after the word retaining in the phrase "spring retaining member" and, the numerical designation "40" after the word member. The examiner ultimately accepted this amendment, leaving the final patent specification to read (column 5, lines 1-5):

The stationary portion of the rotatable grip actuating system includes the mandrel 20 (FIG. 4) and a spring retaining of support member 40 having an outwardly facing generally cylindrical surface in which is formed a spring retaining elongated notch 42. [All character references are to FIG. 4 which is attached to this opinion as Exhibit A]

It is this amendment that gives rise to AD-II's argument that the support member must be stationary, because the term was first identified in the portion of the specification describing the "stationary portion of the rotatable grip actuating system." To support this argument, AD-II cites to two separate sections of the amendment. First, in summarizing the response submitted to overcome the antecedent basis rejection, the remarks accompanying the amendment state "to overcome this rejection with respect to 'support member,' Applicants have amended the detailed description at p.10 line 16, to make clear that the spring retaining member 40 (itself an extension of mandrel 20) is the support member recited in the claims." Next, AD-II points to the last substantive paragraph of the remarks, which states:

This specification has also been amended to correct an incorrect description of the operation of the device. With reference to FIGS. 5 and 6 and FIGS. 3 and 4, it is clear that mandrel 20 and spring-retaining or support member 40 are affixed to handlebar 12 of the bicycle. Handgrip 18, to which is affixed wall 56 with detents 50, 52 and 54, is rotated by the rider around the mandrel 20. Hence it is wall 56 and handgrip 18 which are rotated, and any passage describing the rotation of mandrel 20 or spring-retaining member 40 is incorrect. Amendments to the Detailed Description beginning at line 9 at page 11 and continuing to line 15 at page 12 correct the description of the operation of the device . . .

AD-II argues that together these remarks demonstrate that the term "support member" as used throughout the claims must always retain the spring and must always be stationary, with the wall 56 and handgrip 18 being the only elements that rotate.

At first glance, this argument is appealing in its simplicity. Closer examination reveals certain flaws with such a simplistic view. First, as pointed out by the court at oral argument, the third preferred embodiment of the final patent describes a mode of the invention in which the "spring retaining member is rotated in either direction with respect to the wall 56 . . ." (000 patent, column 6, lines 45-47). AD-II suggests that in light of the amendment, the retention of this language in the third preferred embodiment referring to rotation of the spring retaining member is a mistake, and the court should either ignore the third preferred embodiment or construe the patent as not reading upon it. An interpretation that defines the invention in such a manner that excludes a preferred embodiment is rarely, if ever, correct, however, and requires highly persuasive evidentiary support not present in the instant case. See Vitronics, 90 F.3d at 1583; Modine Mfg. Co. v. United States Int'l Trade Comm'n., 75 F.3d 1545, 1550 (Fed. Cir. 1996).

Moreover, it is clear that the attorney remarks in the amendment referred to above are restricted to the description of the first two preferred embodiments. When SRAM amended the specifications to provide the antecedent basis for "support member" it did so in its description of the first preferred embodiment. But identifying the support member as the same element (40) as the spring retaining member, simply means that the support member is the same thing as the spring retaining member. In the first two preferred embodiments, the spring retaining member (40) must be stationary. In the third preferred embodiment, however, the spring retaining member rotates. This conclusion is buttressed by the wording of the remark that tends, at first glance, to indicate that the support member must always be stationary. That paragraph (quoted above) specifically refers to FIGS. 5 and 6 and FIGS. 3 and 4, which are the drawings of the first two preferred embodiments. The paragraph makes no reference to FIGS. 8 and 9, which detail the third preferred embodiment. Therefore, the court rejects AD-II's argument that SRAM disclaimed patent coverage of shifters in which the spring retaining or support member rotates.

The court agrees with AD-II, however, that the support member must retain the spring. To overcome the lack of an antecedent basis rejection, SRAM identified the term support member as element 40 -- the spring retaining member. In its
briefs, SRAM again argues that the amendment refers to the first and second preferred embodiments only and, therefore, the support member must be the spring retaining member in the first two preferred embodiments only. At oral argument, however, SRAM's counsel admitted numerous times that the support member is element 40 throughout the specifications.

THE COURT: I may be missing something here. In that you're saying -- as I'm reading the third preferred embodiment, you're saying that the spring retaining member -- remember, you don't use support member there; you only use spring retaining member.

MR. JANOSKI: "No. 40, it's no. 40, whether you call it-identify it as spring retaining member or support member, it's item 40. Its part no. 40." (Transcript May 30, 2001, p.26 11. 12-20)

MR. JANOSKI "…and after that, he could have used, if he would have said like here, spring retaining or support member 40, well now 40 can be used identified as either spring retaining or support member throughout the detailed description of the preferred embodiment." (p. 361.23 - p.37 1.2)

Therefore, the support member is element 40 in all embodiments, and it is the spring retaining member in all embodiments. In preferred embodiment one and two the spring retaining or support member must be stationary, and in preferred embodiment three it may rotate.

Having determined that the term "support member" is simply another phrase for the term spring retaining member, construction of the claim is simple. One need only substitute "spring retaining" for "support" throughout claim 7 to achieve clarity.

a [spring retaining] member having a generally cylindrical outer surface;

a grip disposed over said generally cylindrical outer surface of the said [spring retaining] member and rotatable relative thereto in a first direction and in a second direction opposite the said first direction, a generally cylindrical inner surface of said grip facing said outer surface of said [spring retaining member] one of said inner surface and said outer surface having a plurality of detent positions formed therein.

The term support member is construed to mean spring retaining member. There is little disagreement between the parties as to the term "a generally cylindrical inner surface of said grip facing said outer surface of said support member, one of said inner surface and said outer surface having a plurality of detent positions formed therein." (000 patent, column 8, lines 31-35). The terms "inner," "outer," and "facing" all refer to the orientation of the support member and handgrip. The inner surface of the grip (wall 56) must face the outer surface of the support member such as element 42 in Exhibit A. The detent position of notches must be on either the inner surface of the grip (wall 56) or on the outer surface of the support member.
enables the valve to be removably attached to a fluid dispenser or container.

Col. 4:26-33. This description reveals that there is nothing inherent in "the manner" the support member supports the valve that relates to its ability to be "removably attached to a fluid dispenser." In fact, this excerpt demonstrates that the support member may allow the valve to be removably attached to a fluid dispenser either by having a part that is a "Luer-Lock type connector" or by itself being in the form of an adaptor that provides that ability. Braun's limitation is consequently refuted by the intrinsic evidence.

Accordingly, the term "support member" shall be construed in the manner proposed by ICU.

2. The '139 patent

Claim 3 of the '139 patent recites:

A lighting fixture for mounting fluorescent lamps, comprising:

a) a support member having an upper surface;

b) a plurality of lamp supports mounted on the upper surface of said support member for engaging and supporting said fluorescent lamps adjacent their non-socket ends;

c) said plurality of lamp supports being equally spaced apart in a straight line;

d) a plurality of sockets corresponding to said plurality of lamp supports for receiving said fluorescent lamps mounted on the upper surface of said support member and being equally spaced apart in a straight line each of said plurality of sockets being adjacent the socket end of one of said fluorescent lamps; and

e) the spacing between each of said plurality of sockets and each of said corresponding lamp supports being less than the length of one of said fluorescent lamps, so that the non-socket end of one fluorescent plurality of lamps mounted on one of said lamp supports overlaps the socket end of an adjacent fluorescent lamp so as to provide shadowless and continuous linear lighting.

'139 patent, col. 2, line 55, through col. 4, line 3 (emphasis added). Birchwood argues that the prosecution history of the '139 patent requires that the "lamp supports" of claim 3 be limited to ramps. The district court disagreed with Birchwood, and so do we.

The original application that matured into the '139 patent included three independent claims: claim 1, which recited ramps as the lamp supports; claim 3, which recited a plurality of lamp supports mounted adjacent to the non-socket ends of the lamps; and claim 5, which recited a plurality of lamp supports mounted adjacent to the socket ends of the lamps. The examiner found that the application contained claims directed to patentably distinct species of the claimed invention and contained no generic claim. Accordingly, pursuant to 35 U.S.C. § 121, the examiner required the applicant to elect "a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable." In response, the applicant cancelled claims 5 and 6, which recited lamp supports adjacent to the socket end of the lamps.

In its initial claim construction order, the district court construed "lamp supports" to be limited to ramps, because ramps were the only form of support disclosed in the drawings that related to elected claims 1 through 3. On Lighting World's motion for reconsideration, however, the court reversed itself, holding that the examiner's allowance of claim 4, which specifically claimed posts as lamp supports and was dependent on claim 3, necessarily indicated that the examiner had not required the application to be limited to lamp supports in the form of ramps.
We agree with the district court that the election did not require that the "lamp support" limitation be confined to ramps. The election had nothing to do with the type of lamp support claimed; rather, it had to do with whether the support was provided to the socket end of the support members or to the non-socket end. The ramp supports, like the posts recited in claim 4 and the lamp supports recited in claim 3, all provide support for the non-socket end of the lamps. Since the claims that remained upon issuance were all claims in which support was provided at the non-socket ends, the patent as issued was consistent with the applicant's election. The court therefore properly declined to limit the lamp supports of claim 3 to ramps.

Although the district court rejected Birchwood's argument that claim 3 of the '139 patent is limited to ramps, the court agreed with Birchwood that claim 3 is limited in another respect that defeated Lighting World's claim of literal infringement. The court ruled that the claimed lamp supports were limited to those providing support from below, i.e., those that would work only if the lamps were oriented toward the ceiling and that would support the lamp against falling down into the socket end of an adjacent lamp. The court explained its ruling by stating that "reading the patent as a whole, it is clear that the lamp support contemplated by claim 3 is intended to support the lamp from below, in order to prevent the angled lamp from falling on the socket in front of it."

We disagree with that aspect of the court's claim construction. While it is clear that the claimed lamp supports provide support from below, we do not agree with Birchwood or the district court that claim 3 is limited to lamp supports that provide support only from below and that the claim does not include lamp supports that provide support when the lamp is in an orientation other than directly above the support.

Birchwood argues that the terms "engaging and supporting," as used in claim 3 of the '139 patent must be interpreted to mean engaging and supporting only from below. Birchwood contends that the figures of the '139 patent, in particular, depict various lamp supports, all of which consist of structures—such as ramps, posts, or brackets—on which the lamps rest. According to Birchwood, "it is the force of gravity and the position of the lamp relative to the 'lamp supports' alone that causes the lamp to engage with and be supported by the 'lamp supports.'" Birchwood argues that the lamp supports depicted in the figures and described in the specification are all below the lamps and do not provide support for the lamps when the lamps are below the supports, such as when the supports are attached to the ceiling. By contrast, the Birchwood lamp support features what the district court referred to as a "clip around the fluorescent lamp in order to provide support regardless of the orientation of the lighting fixture." Birchwood thus distinguishes its lamp supports from those claimed in the '139 patent by arguing that its lamp supports engage the lamp on all sides "and could engage and support the lamp regardless of the orientation of the lamp," while the Lighting World lamp supports engage and support the lamps purely as a result of gravity and the lamps' position relative to the lamp supports.

There are several problems with Birchwood's analysis. First, the reference to "lamp supports" in claim 3 of the '139 patent is not by its terms limited to supports that engage and support the lamps from below, and there is no language in the written description that limits the term "supporting and engaging" to support and engagement from below. Second, although several of the figures of the '139 patent show lamp supports that provide support from below the lamps, the scope of the claims is not limited to particular embodiments depicted in the figures or described in the written description. The ordinary meaning of the terms "supporting and engaging" includes more than support or engagement from below, and the fact that the patentee has not included figures depicting support and engagement from other orientations is not sufficient to limit the claim language to the particular orientation depicted in the figures. Third, several of the figures of the '139 patent include a device that appears to clip around the lamps and thus provides support and engagement for the lamps that would be effective in other lamp orientations. Birchwood argues that the clip is unclaimed and thus is dedicated to the public, but that argument misses the relevance of the clip. Lighting World does not point to the clip as a claimed feature, but instead refers to the clip to show that its use of the terms "supporting and engaging" was not meant to be limited to support and engagement from below. Finally, Birchwood's argument that its support mechanism provides support in many orientations rather than merely from below does not avoid the patent's claim to a mechanism for "supporting and engaging" the lamps, but at most simply reflects an additional feature not present in the device claimed in the patent. Making improvements on a patented invention by adding features to a claimed device beyond those recited in the patent does not avoid infringement. Hoyt v. Horne, 145 U.S. 302, 309, 36 L. Ed. 713, 12 S. Ct. 922, 1892 Dec. Comm'r Pat. 435 (1892); A.B. Dick Co. v. Burroughs Corp., 713 F.2d 700, 703 (Fed. Cir. 1983).

Contrary to Birchwood's argument, the use of the term "upper surface" in the '139 patent does not indicate that the claimed lamp supports include only those that provide support solely from below. Birchwood's argument is based on the limitation that requires a plurality of lamp supports to be mounted "on the upper surface of said support members." Nothing in the
patent suggests that the "upper surface" of the support member ceases to be the "upper surface" if the fixture is turned upside down or placed in some other orientation. Nor is there any suggestion in the patent that the fixture must always be oriented so that its "upper surface" faces upward.

In sum, we construe "support member" to refer to a member that is mounted to the same surface as the lamp and that supports the lamp at its non-socket end. Because summary judgment of no literal infringement of the '139 patent necessarily rested on the district court's erroneous claim construction, the district court's ruling on that issue must be vacated.

(b) "Support plate" A support plate must be a physical structure. A "plate" suggests a more or less flat surface. A "support" plate is a plate that serves as a "foundation, prop, brace or stay." See Webster's College Dictionary 1343 (Random House 1992) (defining the noun "support"). It must be sturdy and large enough to bear up, or prevent from falling free, the object or objects it is designed to "support."

C. "support structure" (claims 6, 10, and 20)
PolyVision's proposed construction
No construction required. Alt.: A structure serving as a support or foundation.
Smart's proposed construction
Structure used to support the claimed membrane and the claimed conductive surface underlying the membrane.

PolyVision contends that this term is basic and needs no construction. Smart, on the other hand, contends that the term is unclear because its meaning depends upon the context in which it is used. Smart notes, for example, that the support structure "includes flexible walls which are pretensioned to deflect and maintain tension on the membrane," (Col. 2, ll. 11-13), "may include a base and a support substrate mounted on the inside of the base," (Col. 2, ll. 30-32), and "may include a base and the spacer means may be mounted on the outside of the base." (Col 2, ll. 34-36.) In addition, Smart notes, claims 1-14 of the patent state that the "support structure" includes "spacer means," but claims 15-25 contain no such requirement.

While the term "support structure" seems relatively clear, Smart's construction provides further clarity by emphasizing that it is the part of the invention that supports the membrane and the underlying conductive surface, regardless of whether the embodiment includes a support substrate or spacer means. The Court will thus adopt this construction, although it will omit Smart's references to the membrane and the conductive surface as "claimed" because it is clear that those elements are set forth in the claims, and adding the word "claimed" would not serve any purpose.

The Court construes "support surface" as "surface that supports the base." As the intrinsic evidence does not provide a special meaning for "support surface," its plain and ordinary meaning applies. Enercon GmbH v. Int'l Trade Comm'n, 151 F.3d 1376, 1384 (Fed. Cir. 1998).

MASS proposes the term means "work surface that supports the base." MASS relies on a statement made during
prosecution, “this [base] is used to support the arm assembly above a work surface.” MASS’s Opening Brief, Ex. C. MASS contends that it defined “support surface” as a “work surface.” However, neither the claim language nor specification mentions a “work surface.” The specification states that in one embodiment the base stands on a horizontal surface, but it does not refer to, nor require it to be, a “work surface.” ‘978 patent, Col. 3:21–22. Furthermore, MASS’s proposed construction is ambiguous and would be unhelpful to the fact-finder, as “work surface” is not defined.

Defendants propose “the support surface is an area for supporting a display system.” The specification describes the support surface as the horizontal surface on which the base stands. See id. Thus, it is more accurate to state that the support surface supports the base. Accordingly, one of ordinary skill in the art would understand that “support surface” means a “surface that supports the base.”

II. Claim Interpretation

The dispute between the parties lies in the construction of Claims 4 and 5 of the '064 patent. Claim 4 reads as follows:

A nestably stackable assembly for use in a bedding foundation comprising a rectangular border wire having two parallel sides and two parallel ends, transversely-spaced, parallel, and longitudinally-extending support wires parallel to said border wire sides and having ends connected to said border wire ends, said support wires being formed so as to be generally corrugated along their lengths, said corrugatedly formed support wires having peaks and valleys, said peaks being flattened at their tops, said flattened peaks being generally coplanar with a plane defined by said border wire, said valleys being vertically displaced beneath and intermediate of said flattened peaks, and longitudinally-spaced, parallel, and transversely-extending upper connector wires parallel to said border wire ends and having ends connected to said border wire sides, said upper connector wires being connected intermediate of their ends along their lengths to said flattened peaks of said support wires.

The language of Claim 5 is nearly identical to that of Claim 4, with the exception of additional language in Claim 5 that is not in dispute. Neither party suggests that the term "support wires" has a different meaning in Claim 4 versus in Claim 5, and our construction of the term will apply to both claims. See Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed. Cir. 1995) (disputed terms must be construed within the context of the patent claim as a whole, and must be interpreted consistently throughout the claims of a patent).

A. "Support Wires"

The parties ask the Court to construe the term "support wires" found in the disputed claims. L&P argues that "support wires" can be made from a single, continuous piece of wire, and can also be fashioned from "more than one wire welded together." (R. 49, Pl.'s Post-Markman Hr'g Br. at 1.) Under L&P's suggested definition, any number of wires, once welded together in some manner, becomes a single "wire," which in turn can qualify as a "support wire," as used in the '064 patent. Hickory, on the other hand, asserts that the term "support wires" is limited to formation from a continuous strand of wire. Hickory acknowledges that a continuous strand of wire can be formed from shorter segments of wire, if they are butt welded, end to end. (R. 50, Def.'s Post-Markman Hr's Br. at 2.) In contrast, according to Hickory, pieces of wire welded together, not at their ends, but at a different location such that the finished welded combination of wires has more than two ends, cannot qualify as a continuous strand of wire.

References in this opinion to L&P's proposed construction of support wires ("more than one wire welded together") do not include wires butt welded end to end because both parties agree that such a construction could be used to make "support wires." Instead, where we discuss L&P's proffered definition, we will be focusing on the viability of a construction that encompasses pieces of wire joined somewhere other than at their ends, as that is the crux of the disagreement between the parties' proposed claim constructions. We begin our claim construction by looking at the patent.

1. Claim Language

The claim language, on its face, does not specify whether the term "support wires" would include, as L&P urges, "more than
one wire welded together." (R. 49, Pl.’s Post-Markman Hr’g Br. at 1.) However, the claim language does use "support wires" in the plural. The plain meaning of the claim language thus requires that there be more than one discrete "support wire." See Superior Fireplace Co. v. Majestic Prods. Co., 92 F. Supp. 2d 1001, 1010 (C.D. Cal. 2000) (finding that term "rear walls" requires at least two rear walls); Thomson Consumer Elecs., Inc. v. Innovatron, S.A., 43 F. Supp. 2d 26, 32 (D.D.C. 1999) (construing term "corresponding contact surfaces" to be "more than one contact surface, but not necessarily all contact surfaces"). Use of the plural "support wires" in the claims casts doubt on L&P's proposed construction, i.e. that any number of wires welded together creates a single wire. Under L&P's definition, all the welded wires contained in the entire '064 product would be considered only a single wire. In fact, although we do not rely on it, we note that L&P's own expert witness specifically stated that all the wires in the '064 invention constituted only a single wire. (Hr'g Tr. at 126, lines 6-13, Dr. Creighton.) Such a construction would run counter to the claim language which requires more than one support wire. In addition, although, as explained below, we will not construe other terms in the patent, we question how such a support wire (i.e. made up of every wire in the structure) could comply with the limitations of the support wires. For example, how could a single wire be "transversely spaced"? "parallel"?

2. Specification

We next look to the specification, which describes two preferred embodiments of the '064 invention. The '064 patent makes clear that other embodiments are possible, and the claims should not be limited to the preferred embodiments. In construing claims, we may not read a limitation into a claim from the written description, i.e. the specification. Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998). On the other hand, use of the term "preferred" does not of itself broaden the claims beyond their support in the specification." Wang Lab., Inc. v. America Online, Inc., 197 F.3d 1377, 1383 (Fed. Cir. 1999). In this case, the written description and the drawings lead us to conclude that "support wires" are made from continuous strands of wire, as Hickory asserts.

First, the written description contains references to a number of other wires, e.g. a border wire and connector wires, and each type of wire is individually identified as a separate wire. Importantly, even where the specification teaches that a wire is welded to another wire, each of the original wires maintains its individual name and separate identity. For example, the specification teaches that the "support wires" are welded to the "upper connector wires," yet both types of wire are individually identified; the upper connector wires do not become part of the "support wires" simply because they are welded to them. ('064 Patent, col. 3, lines 3-5.)

Furthermore, if we were to adopt L&P's proposed construction that a wire can be made up of any number of pieces welded together in some fashion, the '064 invention would be nearly impossible to construct. The Patent Statute is clear that the specification must contain a written description of the invention "in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the same." 35 U.S.C. § 112, P 1. If a "wire" could consist of any number of wires welded in any manner, a person skilled in the art would have an infinite number of choices to make in attempting to construct the '064 invention. 2

2 We note that L&P's construction of the term "support wires" would seemingly encompass any grouping of welded wires, so long as one could trace a path in the tangle of wires that could comply with the rest of the limitations. We do not believe that the patent laws were intended to afford such far-reaching protection.

The specification also clearly refers to "support wire ends," which must be attached to the border wire, and describes that the "ends 14 . . . are crimped around the ends 12, 12 of the border wire 10." ('064 Patent, col. 2, lines 57-59.) 3 The only support wire ends described in the specification are attached to the border wire. Common sense dictates that the support wire ends are attached to opposite sides of the border wire. The specification does not mention any additional ends that are not attached to the border wire, which would give credence to L&P's proffered construction that a "support wire" can be composed of multiple wires welded together and, consequently, have any number of ends.
Finally, the drawings in the specification strongly suggest that a support wire must be a continuous wire. The support wires, referred to with the numeral 13, are shown in the drawings as continuous wires stretching from one side of the border wire to the opposite side.

Although we recognize that we cannot read limitations into the claims from the specification or drawings, we also are cognizant that the specification is "highly relevant" and serves as the "single best guide to the meaning of a disputed term." Vitronics, 90 F.3d at 1582. In this case, the specification and drawings provide no indication that the inventor intended the term "support wires" to encompass any number of wires, so long as they are welded together in some fashion as L&P suggests. See Quality Semiconductor, Inc. v. Pericom Semiconductor, Inc., 1998 U.S. Dist. LEXIS 22633, No. C-95-01785 MHP, 1998 WL 118186, at *3 n.1 (N.D. Cal. Mar. 2, 1998) ("The specifications and accompanying diagrams of the '062 patent provide no indication that the inventor intended the term 'a transistor' to encompass several transistors connected in parallel [as the plaintiff asserts].") The specification of the '064 patent supports Hickory's proposed definition of "support wires" as being continuous strands or multiple wires butt welded, end to end.

3. Prosecution History

The '064 patent application was granted without any amendments. The examiner, in his Statement of Reasons for Allowance, cited three prior art patents and explained that there are three main differences between the '064 product and prior art: (1) the modular springs of the prior art do not extend from one boxspring end to the other as does the claimed product, instead they extend from side to side of the boxspring; (2) the modular springs in the prior art "are not connected to the border wire at their ends as claimed, instead the modular spring ends are connected to the supporting base frame of the boxspring"; and (3) "the transverse grid wires of the prior art are not connected to the upper portions of the modular springs, instead they only contact the springs." (R. 16, Pl.'s Claim Construction Br., Ex. 3, Examiner's Statement of Reasons for Allowance of '064 Patent.) None of these reasons explicitly addresses whether "support wires" can be made from two or more wires welded together.

L&P argues that the prior art cited by the examiner supports its proffered construction of "support wires." First, L&P cites the Valoff patent (No. 4,069,525) and contends that it teaches that a support wire can be made by welding multiple wires together. The reference in Valoff, however, is to a border wire and not to a support wire. Furthermore, the Valoff patent specifically teaches that the wires making up the border wire are "welded at their ends to form in effect a continuous rectangle." (Valoff Patent, col. 3, lines 55-56.) As noted above, Hickory does not dispute that welding pieces of wire, end to end (i.e. butt-welding), forms a continuous wire. Hickory does dispute, however, that wires joined not at their ends but elsewhere constitute a support wire. Contrary to L&P's assertion, Valoff does not support such a construction.

L&P also argues that the Schulz patent (No. 4,377,279) teaches that support wires can be made from multiple wires welded together. The Schulz patent, however, refers to "support members" not to "support wires." Although L&P submits extrinsic evidence in an attempt to demonstrate that support wires have the same meaning as support members, 4 review of such extrinsic evidence is not necessary to determine the claim construction in this case, and we will not rely on it.

4 L&P's extrinsic evidence includes the reference in Hickory's allegedly infringing patent (No. 5,967,499) to the support wires in the '064 patent as "support modules." In addition, L&P relies on Dr. Stoll's testimony that "support wires" are sometimes referred to as support legs, members, or modules. (See R. 49, Pl.'s Post-Markman Hr'g Br. at 8 n.12; Hr'g Tr. at 187.)

Hickory also asks us to consider extrinsic evidence to help understand the prosecution history. Hickory argues that, according to its expert, the examiner looked only at prior art with support members that were planar specifically because he
considered the application for the '064 patent to be concerned only with two-dimensional support wires. The examiner, however, never stated that he was considering the prior art patents because they contained planar (and not three-dimensional) support members and certainly never stated that the support wires must be two-dimensional. Here again, we will not rely on Hickory's extrinsic evidence.

The meaning of the term "support wires," as used in the '064 patent, is unambiguous in light of the intrinsic evidence. Therefore, it is unnecessary and, in fact, would be improper for us to rely on extrinsic evidence for claim interpretation. Vitronics, 90 F.3d at 1583. See also Real v. Bunn-O-Matic Corp., 100 F. Supp. 2d 844, 847 (N.D. Ill. 2000).

B. L&P's Extrinsic Evidence

L&P spent the bulk of its time at the Markman hearing and in its post-hearing brief discussing extrinsic evidence. Because the intrinsic evidence in this case demonstrates that the term "support wires" as used in the '064 patent is unambiguous, we will not rely on the extrinsic evidence but will only briefly note that L&P submitted extrinsic evidence in the form of expert witness testimony and physical evidence (e.g. a series of "wires" formed from one or more individual wires). We find, in any event, that this subjective extrinsic evidence is not entitled to any weight because it is not supported by any objective evidence. L&P provides no documentary evidence that wires are made from multiple wires welded together. See Quality Semiconductor, 1998 U.S. Dist. LEXIS 22633, 1998 WL 118186, at *4 ("something more than simple assertions provided by the inventor and a single expert are required to create or establish the presence of an ambiguity").

III. Additional Elements in the Disputed Claims

Both parties' pre-Markman hearing briefs focused only on the meaning of "support wires." 5 As a result, in our April 5, 2000 Order, we specifically stated that "we expect the parties will, in accord with their written representations, limit their presentations to the term 'support wires.'" (April 5, 2000 Order at 1.) We are disappointed that Hickory has shifted gears and, in spite of their earlier representations, now urges us to construe a number of additional terms found in Claims 4 and 5.

5 To be precise, L&P's first claim construction brief attempted to define the term "generally corrugated," but Hickory, in its response, asserted that "the primary issue is the meaning of 'support wires.'" (R. 20, Def.'s Claim Construction Br. at 1), and therefore focused its brief solely on its proffered claim construction of that one term.

We decline to construe any additional terms at this point for a number of reasons. First, L&P asserts, and we agree, that allowing claim construction of additional terms would prejudice L&P, which prepared for the Markman hearing based on Hickory's prior representations and our Order focusing claim construction only on the term "support wires." Hickory had ample opportunity to alert both the Court and L&P of their changed position that they sought construction of additional terms but did not do so.

In addition, Hickory earlier admitted that at least some of the elements, which Hickory now argues are in dispute, are contained in their product. These admissions are binding for purposes of claim construction. See Evans Medical Ltd. v. American Cyanamid Co., 1999 U.S. App. LEXIS 18436, Nos. 98-1446, 98-1459, 1999 WL 594310, at *6 (Fed. Cir. Aug. 9, 1999) (construing a claim, in part, based on the plaintiff's response to an interrogatory, which it considered a "binding admission"). Finally, in view of our construction of the term "support wires" in Hickory's favor, there is no need to construe any additional terms.

For the foregoing reasons, we limit our claim construction to the term "support wires" and adopt Hickory's definition: "support wires' require that the wire be a continuous strand of wire which may be formed "by butt-welding, end to end, shorter segments of wire." (R. 50, Def.'s Post-Markman Hr'g Br. at 2.)
In the present case, L & P contends that the term "support wires" includes an assembly of separate wires welded together. In sum, L & P argues that "support wires" are merely the wires that absorb any vertical load on the bedding foundation. Because the invention depicts welds joining the wires to support a vertical load, L & P's proposed claim construction would consider the entire '064 assembly a single wire.

At the outset, the claim recites "support wires" in the plural, thus requiring more than one welded "support wire." The specification does not set forth any definition of the term "support wires." Instead the specification describes "support wires" in language that tracks closely the claim language. '064 Patent, col. 1, ll. 44-49. The specification does, however, refer to a number of other wires -- for example, a border wire and connector wires. Thus, the specification distinguishes support wires from other types of wire. The specification identifies these separate wires as performing different functions, such as connecting or forming a border. When discussing welds to join separate wires, the specification retains the distinguishing name and identity of each joined wire. See, e.g., '064 Patent, col. 3, ll. 3-5. Finally, the specification expressly refers to "support wire ends," which attach to the border wire. '064 Patent, col. 2, ll. 57-59. Because the figures depict the support wires stretching from one border to the other, the specification suggests that the support wire ends attach only to the borders. The specification does not mention any support wire ends other than those attached to the border wire. Thus the specification does not discuss a "support wire" composed of multiple wires welded together and, consequently, having a number of ends.

Turning to the prosecution history, the '064 patent application issued without any amendments. Stating the reasons for allowance, the examiner detected three main differences between the '064 invention and the three prior art references. None of these differences addresses "support wires" made of two or more wires welded together. In sum, the district court correctly construed the term "support wires" to mean "a continuous strand of wire" with "only two ends."

B. Term 3: A support yoke (as used in claims 1 and 23).

Lutron contends that Term 3 means "A structural frame." Control4 contends the term means "A support structure, separate from the housing, that is mechanically secured to the housing and is designed to be fastened to the wall box."

Claims 1 and 23 state the following regarding the support yoke: "a support yoke coupled to the housing, the support yoke having a fastening device for coupling the yoke to the electrical wall box." Control4's proposed construction seeks to include all aspects of the quoted phrase in its definition of "a support yoke." The parties, however, did not ask the Court to construe the entire phrase. They only asked the Court to construe "a support yoke." Lutron states it is "A structural frame," while the initial phrase in Control4's construction states it is "A support structure."

Although the proposed definitions are similar, Lutron uses words other than the words that are being defined. Because this helps to explain and define the term more fully, the Court adopts Lutron's construction.

2) "Supported along its entire length by the upper edge of the front portion of said band"

Tecnol contends that "the plain meaning of "along its entire length" is that the chin brace must be in contact, from one end to the other, with the upper edge of the front portion of the band." [TAB at 23]. Tecnol contends that this claim language excludes collars which exhibit any gaps between the chin support brace and the neck encircling band. The Court rejects this construction, and notes with approval the following persuasive commentary by our fellow court in the District of Rhode Island, which has had occasion to construe this aspect of the '219 patent:

"Supported upon its entire length" does not mandate constant contact. "Support" does not mean the same thing as "constant contact." Therefore, an item made out of an inherently stiff material, such as the hard plastic from which these collars are made, is "supported along its entire length" without constant contact, and the presence of gaps does not alter that
support. Thus, constant contact is not called for by the patent claims.


**D. Supported by**

The phrase "supported by" is recited two times in Claim 1 as "a pair of side grate tables each supported by a corresponding one of said vertical supports . . ." and "a lower grate shelf supported by said scissors operator located beneath said horizontal work surface . . ." Plaintiff submits "borne or held up through contact with a member" as its construction of the term. Defendant submits "structural assistance, directly or indirectly" as its construction.

Figures 1 and 2 clearly demonstrate that the grate tables 214 and 216 are supported by the vertical support structure 188 and 202, respectively. Additionally, Figures 1 and 2 demonstrate that the grate tables 214 and 216 are attached to, connected to, or fastened to the middle frame of the structure at 114 and 124. The grate shelf (166) is supported by the scissors operator at 164 and 162. According to Figures 1 and 2 and the specification, Column 6, lines 1 through 4, and Column 6, lines 10 through 15, the lower grate shelf is mounted upon and directly underneath various portions of the structure. The ordinary meaning of a term cannot be viewed in a vacuum but must be examined in the context of the patent's written description. DeMarini Sports, Inc., 239 F.3d at 1324. When there is doubt about the meaning of a claim term, the Court is to look to the specification for guidance. North American Vaccine, Inc., 7 F.3d at 1576. Everything in the patent description demonstrates that "supported by" means somehow connected with or in contact with. There is no mystery here regarding indirect or direct contact. Defendant has not directed the Court to one piece of intrinsic evidence in support (no pun intended) of its definition.

Thus, the Court construes the phrase "supported by" as: Borne or held up through contact with a member.

**C. Claim 6**

41 Claim 6 adds: "The exposure apparatus of claim 4, wherein the exposure device is supported by the main frame." Id. at 8:6-7. Included in the parties' claim construction charts -- but not in their briefs -- is a dispute regarding the meaning of "exposure device." Questions regarding this term were not included in the parties' lists of proposed terms and claim elements for construction, and ASML has objected to Nikon's tardy addition of this claim. According to ASML, however, Nikon now agrees that "exposure device" does not require construction. The court finds Nikon's failure to brief construction of "exposure device" indicative of this agreement, and the court refrains accordingly from construing the term.

The parties' dispute the meaning of the term "supported by" as that term is used in claim 6. At the core of the parties' disagreement is the question of whether "supported by" connotes one structure bearing part or all of the weight of another structure or entity or if, by contrast, there is no weight support whatsoever.

Plain meaning offers substantial guidance here. As the court reads the relevant claim language, "supported by" connotes the holding, propping, or bearing of another item, and the language of the specifications is not to the contrary. In no fewer than four places, in fact, the specifications use a form of the word "support" to imply the bearing of weight: "Stage 10" is discussed as "supported on a conventional rectangular base structure," see Patent '500 at 3:43-45; "the window frame guide..."
structure" is depicted as "supported on horizontal surfaces of fixed guides 46A and 46B," id. at 5:11-14; "base support structure 80 is supported by its own support pillars or other conventional support elements," id. at 5:17-18; and "the photolithography apparatus" is placed on "supporting base structure 100." Id. at 6:1-2. Each of these specification sections implies, if not more, that some or all of the weight of one structure or item is borne by another, and ASML's unconvincing attempts to read weight-bearing out of the term are not to the contrary. 42 Consistent with plain meaning, the court finds that "supported by" connotes the bearing of some weight, and the court thus construes the term to mean "held, propped, or with weight borne by."

42 In support of its claim construction, ASML discusses a person leaning against a wall: "If a person stands on a floor and leans against the wall," ASML contends, "the floor and the wall both provide support [but] the wall . . . does not bear the person's weight." As a matter of physics, this is not necessarily correct in every case; depending on a host of variables (e.g., angle of incidence), the wall may in fact bear some of the leaner's weight, particularly if--as in ASML's definition--some of the support is from "below."

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4. nib supported by said housing

The term "nib supported by said housing" appears in claim 1 and claim 12. Chip-Mender asserts that it means "nib confined to said housing." Sherwin-Williams argues that it means a "nib in contact with the housing that may or may not be confined to the housing and/or be non-removable." The parties dispute the meaning of the phrase "supported by." They also dispute whether the nib is removable from the housing or not.

Chip-Mender contends that "supported by" means "confined to," based on the specification--"The nib is preferably constructed to confine the nib to the housing yet permit the nib to slide or float." '299 patent, col. 2, ll. 5-7. Chip-Mender argues that there is no suggestion in the patent that the nib is removable, and asserts that the applicator would not work if the nib were removed, because the paint would flow out of the reservoir and through the passageway and onto the floor if the nib were not there to stop it. Chip-Mender also refers to the prosecution history, and its cancelled claim 26 ("[t]he method of using a sealed paint applicator of claim 12 for the purpose of applying said paint composition of claim 18 to repair the painted surface of the vehicle"), and argues that this cancelled claim shows Russo's intent that the applicator be "sealed" by the nib, which is therefore not removable.

In opposition, Sherwin-Williams asserts that Chip-Mender is attempting to alter the plain meaning of a term ("supported by") through substitution of a narrower term ("confined to"). Sherwin-Williams contends that the plain meaning of "nib supported by said housing" does not require the nib to be "confined" by a housing, and that the term should be construed as also permitting the nib to be removed from the applicator. Sherwin-Williams claims that Chip-Mender is attempting to rewrite this claim term by importing a preferred embodiment from the specification.

Sherwin-Williams notes that the '299 patent uses both "support" and "confine" to describe how the nib is housed in the paint applicator. The specification states; "A nib is also found in the present invention, and is slidably supported by the housing. The nib is located in the passageway which communicates with the reservoir. The nib is preferably constructed to confine the nib to the housing yet permit the nib to slide or float." '299 patent, col. 2, II. 3-7 (emphasis added). Sherwin-Williams contends that this language discloses that any and all paint applicators described in the '299 patent have a nib that is "supported" by a housing, but that some of those applicators could be further enhanced--i.e., "preferably constructed"--to "confine" the nib in the housing. Sherwin-Williams claims that a person skilled in the art would not view "supported" nibs as synonymous with "confined" nibs, but rather, would view "confined" nibs as a sub-set of "supported" nibs.

With regard to Chip-Mender's citation to the prosecution history, Sherwin-Williams contends that it is impermissible to pursue a claim construction that is equivalent to a cancelled claim. Sherwin-Williams cites Schilder-Schroth Co. v. Cleveland Trust Co., 311 U.S. 211, 61 S. Ct. 235, 85 L. Ed. 132, 1941 Dec. Comm'r Pat. 802 (1940), for the proposition that
a patentee is not "free to gain the supposed advantage of the rejected claims by a construction of the allowed claims as equivalent to them." Id. at 221-22. Sherwin-Williams asserts that "this axiom was recently reaffirmed" in Omega Eng'r. Inc. v. Raytek Corp., 334 F.3d 1314 (Fed. Cir. 2003).

The court finds that "nib supported by said housing" means "nib held in place by said housing." In the portion of the specification cited by the parties, the nib is first described as "slidably supported by the housing" and as "located in the passage way which communicates with the reservoir." '299 patent, col. 2, ll. 3-5. The nib is then described as "preferably constructed to confine the nib to the housing yet permit the nib to slide or float." Id., col. 2, ll. 5-7. The use of the word "preferably" in this portion of the specification does not necessarily identify "confined to the housing" as a preferred embodiment, while allowing for alternative embodiments such as "removable from the housing." "Preferably constructed" refers not just to "confine the nib to the housing," but to the conjunctive, "confine the nib to the housing yet permit the nib to slide or float."

Descriptions of the invention that appear in the specification section are relevant to the construction of the patent. See SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1342-43 (Fed. Cir. 2001). Read together with the previous two sentences, which describe the nib as "slidably supported by the housing" and as "located in the passageway" (which passageway is located inside the housing), with no addition of the word "preferably," these portions of the specification lead to the conclusion that the reference in claims 1 and 12 to a "nib supported by said housing" simply means that the nib is held in place by the housing.

Moreover, there is no indication anywhere in the claims or the specification that the nib is "removable," and Sherwin-Williams has offered no compelling support for its own proposed construction of "nib supported by said housing" as meaning "nib may not be confined to the housing and/or be non-removable." Indeed, the nib would be unable to perform the functions required of it--sealing the applicator and regulating paint flow--if it were removable.

Finally, the court is not persuaded by Chip-Mender's argument that the court should look at cancelled claim 26 as part of the prosecution history, to establish Russo's intent that the nib be confined in the housing. 3 The prosecution history is silent with regard to the Examiner's reasons for cancelling claims 23-26, and the Federal Circuit disfavors using ambiguous comments or silence on the part of the examiner or the patentee as evidence to support any particular construction of a claim term. See Omega Eng'r. Inc. v. Memorex Prods., Inc., 415 F.3d 1278, 1286 (Fed. Cir.), cert. denied, 126 S. Ct. 829, 163 L. Ed. 2d 707 (2005). Moreover, the applicant's disclaimer must be clear and unambiguous. See Omega, 334 F.3d at 1325-26. The Supreme Court's decision in Schriber-Schroth is not to the contrary. See 311 U.S. at 218 ("Where the patentee in the course of his application in the patent office has, by amendment, canceled or surrendered claims, those which are allowed are to be read in light of those abandoned and an abandoned claim cannot be revived and restored to the patent by reading it by construction into the claims which are allowed."). Here, Russo did not amend, withdraw, or cancel any claims after his initial response to the Examiner's notice of claim rejections.
2. Support and movement

The parties next dispute what it means for the locking member to be "supported by the second end of the housing so as to permit movement of the first end of the locking member between a first position and a second position." Col. 7, lines 33-37. More specifically, the parties dispute the meaning of the preposition "by" in this context. Donaldson argues that under the claim the locking member must be supported in a specific manner to permit a particular type of movement, i.e., that the locking member must be mounted to the housing to allow pivoting around a pivot point in the second end of the housing, as embodied by the flange in the preferred embodiment. EPC argues that the claim language cannot be so limited and that all that is required is that the locking member be supported in a manner that allows movement of its first end.

The word "support" means, inter alia: to carry or bear the weight of; to hold in position; to prevent from falling, slipping, or sinking; or, to hold up. See, e.g., Webster's New World Dictionary, 2d ed. (1970); The American Heritage Dictionary, New College Ed. (1976). Under the claim limitation, that support is provided by the second end of the housing. Thus, the second end of the housing must hold the locking member in position, thereby preventing it from falling or slipping, in a manner that permits movement of the first end of the locking member between a first position and a second position. The claim language itself, then, is quite broad -- that the support provided by the second end of the housing permit movement between a first and second position -- and at issue is whether, as Donaldson contends, the specification or prosecution history mandate a more restrictive interpretation.

Applying standard claim construction rules, the Court is disinclined to restrict the claim language in the manner proposed by Donaldson to read additional limitations into the claim. As an initial matter, the Court notes that at the Markman Hearing in this case there was considerable disagreement between the parties as to the meaning of "pivot" as used in the specification. The Court need not resolve that dispute here, however, as there is nothing in the specification to indicate the patentee's intent to limit the meaning of "movement" to the particular pivoting movement selected for the preferred embodiment. The single reference to "pivoting" is found in the Description wherein, discussing the reset process, the patentee writes that "this will cause the locking member [# 96] to pivot, about the flange [# 104], from its cocked, off-center position, shown in Figs. 3 and 4, to a vertical position where the notches [# 98] can no longer engage the notches [# 100]." Col. 6, lines 13-16. It is well-settled that limitations from the preferred embodiment may not be imported to more broadly-worded claim language unless there is a clear indication that the patentee was acting as his own lexicographer to impart a novel meaning to a term. See e.g., KCJ Corp., 223 F.3d at 1356. There is nothing to suggest that this is such a case and, accordingly, the Court will not take the drastic step of effectively limiting the definition of "movement" to "Pivot." Consequently, the Court holds that the disputed language requires only that the second end of the housing holds the locking member in position, in a manner that allows for the first end of the locking member to move between a first and a second position.

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27 Donaldson's references to the prosecution history to support its position are inapposite. The cited exchanges between Mr. Nelson and the PTO are not directed to the "support" limitation but rather to the shape of the locking member and its "operation in progressively changing and maintaining" its relative lockup position. That the version of the claim in the specification subsequently approved included more detail regarding the pivoting action in the resetting means does not mean that inclusion of such language was necessary to approval of the amended claims. In light of this ambiguity, the Court does not find that the prosecution history evinces the patentee's clear intent to surrender any device which did not include a pivoting mechanism. See, e.g., Standard Oil, 774 F.2d at 452 (holding that prosecution history limits claim only when patentee clearly takes position before PTO such that competitor would reasonably believe the applicant had surrendered the relevant subject matter).

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2. "Supported Loosely"

Plaintiff contends that the claim term "supported loosely" in claim 11 of the '946 patent means "having just enough force applied for holding in position and to keep from falling, but not substantially more." (Doc. # 26-2, at 26). Plaintiff relies on
dictionary definitions to support its proposed construction.

In opposition, defendant asserts that the claim language means "receive substantially no tension." (Doc. # 26-2, at 27). Defendant refers the Court to the '946 patent specification, which states that "the hinge plates 56 receive substantially no tension from the elongate plate 32 . . . ." (Doc. # 1-2, '946 patent, col. 6, lines 35-37). Additionally, defendant refers the Court to the prosecution history, whereby the patentee repeatedly states that "[n]o substantial spring force is needed from the cover plate 32 to drive the hinge plates 172 to a fully open or closed position, or to hold them closed." (Doc. # 26-4, at 12, 59; # 26-5, at 26).

As stated above, claims "must be read in view of the specification, of which they are a part." Vitronics, 90 F.3d at 1582 (citations omitted). Therefore, the '946 patent specification and prosecution history support defendant's proposed construction. As such, the Court finds that "supported loosely" in the '946 patent means "receive substantially no tension."

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This construction also informs and is directly applicable to ascertaining the proper meaning of the two previously-mentioned limitations: "said plate members being supported on and extending transversely between said opposing surfaces of said side members . . . ." Id. at col.6 l.24-26 (emphasis added). The central issue to resolve concerning the first limitation is whether the plates are supported exclusively by the opposing surfaces of the side members - a position advanced by CPT - or, as IKN contends, in conjunction with the upper edges of the frame. To resolve this dispute, I must turn to the specification. The "Description of the Invention" section expressly states the longitudinally extending grooves, which are positioned on the opposing inner surfaces of the sidewalls, "serve as longitudinally extending guide profiles for supporting the plate members." Id. at col.4 l.36-37 (emphasis added). Furthermore, the specification also provides:

the plate members have on each of their lateral edges a longitudinal flange designed to cover the upper edge of an associated side member. The longitudinal flanges rest, during insertion of the plate members into the longitudinal guide profiles, on the upper edges of the associated side member to cover the upper edge of the side member.

Id. at col.3 l.9-15. From the two portions of the specification previously quoted, a person of ordinary skill in the art would understand the support for the plate members as deriving solely from the longitudinal guide profiles located on the inner surfaces that oppose one another. Therefore, I will construe the phrase "supported on . . . said opposing surfaces" to mean "the plate members are held up and in position and their weight is borne by the surface of each of the two side members that faces or looks toward the corresponding surface of the other side member."

10 IKN's argument is premised on a construction of the term "opposing surfaces" that includes the upper edge of the side members.

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IV

The next challenge by Leopold relates to the jury's finding that Roberts does not infringe claim 16 of the '427 patent or any claim of the '592 patent. Leopold's arguments on appeal relate exclusively to claim construction.

The court construed the claim language "having a fine grain filter media supported on said underdrain laterals" as requiring that the filter media sit directly on the porous cap. Leopold argues that the filter media need only be "above the porous cap and supported by the porous cap either directly or with the assistance of intermediate elements." We conclude that the district court properly construed the claim language.
The original purpose of the porous plate was to increase the volume of fine grain media in a filter system by permitting the removal of the course media that previously separated the fine media from the underdrain. That purpose is indicated throughout the patent's written description, and even appears later in claim 16, where the claim states: "said body further having pores which are sized so that said body supports said fine grain filter media without said media penetrating therethrough . . ." Furthermore, this interpretation is consistent with the ordinary meaning of the term "supported on," and nothing else in the patent or its prosecution history points to a different meaning.

The court also determined that the claims require that mixing of air and water occur in the underdrain blocks and distribution chambers (below the porous plate). Roberts's accused system apparently keeps the backwash air and backwash water separated until they are finally intermixed in the filter media above the porous plate. Leopold contends that because claim 16 requires only that "backwash fluid" be discharged from the underdrain block into the media, there is no requirement that mixing occur before the discharge into the media. Again, we agree with the district court.

Particularly relevant to this issue are statements made to the examiner during prosecution. In a response to an office action, Leopold stated: "The distribution chamber of the present invention facilitates intermixing of backwash gas and backwash liquid." Leopold then distinguished its invention from the cited references (Buffle and Davis) by arguing that the prior art chambers were not distribution chambers as claimed by Leopold because their underdrains were designed to separate air and water below the cap, and mixing took place only in the filter media. This statement indicates to a person reading the prosecution history that Leopold did not intend its patent to cover systems, like Roberts's, in which the air and water mix in the filter media.

Because we reject Leopold's arguments regarding claim construction and because Leopold makes no other arguments relating to infringement, we cannot say that the jury's finding of noninfringement is unsupported by substantial evidence.

iii. Supporting a pair of lenses

Plaintiffs construe the phrase "supporting a pair of lenses" to mean "holding the lenses in place, either by rims or some other retaining mechanism such as screws or pins." Defendant interprets the phrase to mean "holding the lenses in place using rims."

Read in the context of the claim language, it is obvious that the phrase "supporting a pair of lenses" is intended to describe a function of the "retaining mechanisms." Consistent with the above finding that "retaining mechanism" is a means-plus-function claim that is therefore limited to the embodiments in the specification, the court finds that "supporting a pair of lenses" means "holding the lenses in place using rims."

a. supporting portion

LGD contends that a "supporting portion" should be construed as a projection from the frame. D.I. 376 at Exh. Q-1. AUO contends that the "supporting portion" should not be limited to a projection, which may be defined to have a specified shape. Id.

The Court adopts AUO's construction of "supporting portion" as "any structure protruding from the frame (including but not limited to a cylinder or a cuboid) intended to support the optical film." '157 patent, col. 2, ll. 61-62, col. 3, ll. 4-12, col. 4, ll. 17-24, Fig. 2A and 2B; col. 6, ll. 4-8, 31-42 Fig. 3A and 3B; Fig. 3C, col. 7, ll. 39-45, Fig. 4A-4D.
iii. Supporting (respectively auxiliary) primary lenses therein

Not surprisingly, both Plaintiffs and Defendant construe the phrase "Supporting (respectively auxiliary) primary lenses therein" in ways that are consistent with their differing interpretations of the term "frame." Plaintiffs interpret the phrase to mean "the lenses are secured to the frames, whether rimmed or rimless," while the Defendant would require lenses secured to frames that include rims.

Consistent with the court's construction of the term "frame," which was based in part on its construction of the word "therein," the court interprets "Supporting (respectively auxiliary) primary lenses therein" to mean that "lenses are secured to frames that include rims.

Aspex argues that "said arms and said first and second magnetic members supporting said auxiliary spectacle frame on said primary spectacle frame" means "the arms and the first and second magnetic members maintain the auxiliary spectacle frame in position on the primary spectacle frame so as to keep the auxiliary spectacle frame from falling, sinking, or slipping." Ps. Br. 13. E'Lite posits that this claim limitation means "the arms contacting the primary spectacle frame and the first and second magnets being magnetically engaged to support the auxiliary spectacle frame." D. Br. 18.

The principal difference between the parties' proposed constructions is whether claim 18 requires the auxiliary frame arms to physically contact the top side of the primary frame's extensions. Under Aspex's proposed construction, claim 18 permits the magnetic engagement between the magnetic members to provide the sole support for securing the auxiliary frames to the primary spectacle frames. E'Lite contends that claim 18 requires that the contact between the auxiliary frame's arms and the top portion of the primary spectacle frame's extensions contribute to the support of the auxiliary spectacle frames along with the support provided by the magnetic engagement of the magnetic members.

Aspex relies on the doctrine of claim differentiation to support its proposed construction. First, Aspex maintains based on the claim language alone that claim 18 does not require that the arms of the auxiliary spectacle frame physically touch the top side of the primary frame. Second, Aspex argues that claims 1, 19, and 20 all contain the express limitation that the auxiliary frame arms rest on top of the primary spectacle frame, thus contributing to the support of the auxiliary frame to the primary frame along with the support provided by magnetic engagement. To support this argument, Aspex cites the court's construction of claims 1 and 2 of the predecessor patent, the '207 patent.

In Aspex the court held that claim 1's 16 reference to the auxiliary frame arms' "being engaged with and supported on said upper side portion of said primary spectacle frame" implied the limitation that the auxiliary frame arms must physically touch the upper side portion of the primary spectacle extensions. Aspex, 2001 U.S Dist. LEXIS 2088, 2001 WL 204775, at *4. Aspex posits that, because relevant portions of claims 19 and 20 17 contain almost identical language to claim 1, claims 19 and 20 likewise contain the same "physical contact" limitation. Thus because some of the '545 patent's claims expressly limit the connection between the auxiliary frame and the primary frame to require the auxiliary frame's arms to physically rest on the top portion of the primary frame's extensions, this limitation should not be imported into a claim that lacks the same limiting language.

Footnotes

16 The court notes that claim 1 in the '207 patent is the same in the '545 patent.

17 Claim 19 states, in pertinent part: "an auxiliary spectacle frame including two arms for extending over and engaging a corresponding top side of said side portion extensions." D. App. 9. Claim 20 states, in relevant part: "an auxiliary spectacle frame including two arms for extending over and engaging a corresponding top side of said extensions." D. App. 9.
Based on the doctrine of differentiation, the court begins its construction of this limitation of claim 18 by presuming that the "physical contact" limitation in claims 1, 19, and 20 is not present in claim 18. The court presumes that claim 18 encompasses two embodiments: (1) where the arms and upper side of the primary frame physically contact, and the magnetic members engage but do not contact; and (2) where the arms and upper side of the primary frame do not contact, and the magnetic members do contact. This construction is presumptively correct, but it may be rebutted by other intrinsic evidence.

E'Lite argues that multiple statements in the specification overcome this initial presumption. In the background of the invention, the specification distinguishes the '545 patent from two similar eyeglasses patents. D. App. 7. After briefly describing the prior art, the patentee asserts:

[i]n both of the [prior art] eyeglasses, the auxiliary lenses are simply attached to the frames by magnetic materials and have no supporting members for preventing the auxiliary lenses from moving downward relative to the frames such that the auxiliary lenses may easily move downward relative to the frames and may easily disengage from the frames when the users conduct jogging or jumping.

D. App. 7. It can reasonably be implied from this assertion that, in the '545 patent, the auxiliary lenses are not supported (i.e., prevented from moving downward relative to the frames) merely by magnetic engagement. Rather, the '545 patent employs supporting members (arms) that assist the magnetic members in supporting the auxiliary frame.

The '545 patent's summary of the invention ("Summary") states that the invention contains an "auxiliary spectacle frame including two side portions each having an arm extended therefrom for extending over and for engaging with the upper portion of the primary spectacle frame." D. App. 7. The Summary also states that "arms [of the auxiliary frame] are engaged with and supported on the upper portion of the primary spectacle frame so as to allow the auxiliary spectacle frame to be stably supported on the primary spectacle frame." Id. The language of the quoted statements is almost identical to the portions of claims 1, 19, and 20 that Aspex (and this court in Aspex) previously acknowledged as requiring the auxiliary frame's arms to physically rest on the upper side of the primary frame's extensions. The only significant difference in the use of this restrictive language is that, in the Summary, unlike in claims 1, 19, and 20, the '545 patent applies this "physical contact" limitation to the invention as whole. Global statements about the invention have particular interpretive weight. See Bard, 388 F.3d at 864.

The '545 patent's detailed description of the preferred embodiment likewise contains a global statement about the invention's requiring that the top side of the primary frame's extensions physically support the auxiliary frame's arms: "It is to be noted that the arms 21 are engaged with and are supported on the upper portion of the primary spectacle frame 10 such that the auxiliary spectacle frame 20 may be stably supported and secured to the primary spectacle frame 10." D. App. 7. The auxiliary frame arms could not be "supported on" the upper portion of the primary spectacle frame unless the two were in physical contact. The '545 patent's figures, especially FIG. 7, corroborate the description of the preferred embodiment. D. App. 5-6.

The intrinsic evidence is sufficient to overcome the presumption created by the doctrine of claim differentiation. See Inpro, 450 F.3d at 1355-56 ("Claims are construed in light of the specification of which they are a part."). These statements in the '545 patent's specification support the conclusion that claim 18 requires auxiliary frame arms to physically rest on the upper side of the primary frame's extensions, so that the upper sides of the primary frame's extensions support the auxiliary frame in addition to the support provided by the magnetic attraction of the magnetic members. Aspex challenges E'Lite's reliance on "the only disclosed embodiment" of FIG. 7, contending that the number of disclosed embodiments is not determinative of the meaning of the disputed claim terms. The court is not relying, however, on the number of embodiments for its construction of this limitation. Independent of the '545 patent's one embodiment, the global statements in the '545 patent's specification support this construction.

not requiring the arms of the auxiliary frame to contact the extension of the primary frame. Id. 2003 U.S. Dist. LEXIS 26355, [WL] at *12. This court respectfully disagrees with the reasoning of Miracle I because, in reaching its conclusion, the Miracle I court did not take into account any of the critically important global statements in the '545 patent's specification concerning the auxiliary arms' contact with the extensions of the primary frame. Id.

Therefore, the court construes this disputed limitation of claim 18 to require that the upper sides of the primary frame's extensions must physically contact the arms of the auxiliary frame. This physical contact thus supports the auxiliary arms in place in addition to any support coming from the engagement of the magnetic members. Because the remainder of the limitation is not seriously disputed, and since E'Lite's proposed construction is much closer to the original language of the limitation (with the exception of the physical contact limitation), the court adopts E'Lite's proposed construction with some additions to particularize the kind of physical contact required between the auxiliary frame arms and the primary spectacle's extensions. Accordingly, the court construes "said arms and said first and second magnetic members supporting said auxiliary spectacle frame on said primary spectacle frame" to mean "the arms contacting the upper side of the primary spectacle frame's extensions and the first and second magnetic members being magnetically engaged to support the auxiliary frame."

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4. "Supporting the housing of the microprocessor in position relative to said docking connection means so that the single connector on the housing is coupled with said additional connection provided in the docking connection means"

Independent claim 17 is a method claim directed at interfacing a microprocessor with a plurality of peripheral devices. Subpart (e) of independent claim 17 recites the step of "supporting the housing of the microprocessor in position relative to said docking connection means so that the single connector on the housing is coupled with said additional connector provided in the docking connection means." ’645 pat., col. 10, Ins. 35-39. Plaintiff argues that this phrase should be construed according to the ordinary meaning of the words used: the housing is supported and the single connector on the housing couples or mates with the connector on the docking module. Plt.'s Opening Br., dkt. # 84, at 15.

Defendants contend that claim 17 should be construed to require that the docking connection means holds the portable computer in a vertical position. They argue that subpart (e) of claim 17 should be construed as "supporting the housing of the microprocessor in a vertical position relative to the docking connector." Dfts.' Opening Br., dkt. # 86, at 18. In support of their construction defendants turn again to the prosecution history. They contend that the applicants waived any claim to a physical orientation of the housing other than vertical in order to obtain the '645 patent. Plaintiff contends that this construction is inappropriate because it ignores the plain language of claim 17 and violates the doctrine of claim differentiation. Plaintiff notes that independent claims 1 and 14 contain a vertical orientation limitation but independent claim 17 does not. Defendants contend that claim differentiation is inapplicable because claim 17 has a different scope from claims 1 and 14 because claim 17 is a method claim whereas claims 1 and 14 are apparatus claims.

I start with the language of the claims. Subpart (e) of claim 17 requires that the housing of the microprocessor be supported such that the single connector on the housing couples with the connector on the docking connection means. As defendants concede, there is no explicit language in claim 17 requiring the housing to be held in a vertical position relative to the docking connection means. In contrast, claims 1 and 14 require "a support holding the housing in a vertical position." ’645 pat., col. 8, In. 55; col. 9, In. 65.

Turning to the prosecution history, defendants note correctly that, in the June 15, 1992 response to the patent examiner, the applicants distinguished their system from the patent issued to Herron in part by emphasizing that

the microprocessor housing drops into the docking module in such a manner as to permit the two connectors to mate. The docking module also has a support which holds the housing in a vertical or upright position to keep the connectors mated. It is simply the weight of the housing pressing down on the docking module which maintains the connection.

Aff. of Vito Canuso, dkt. # 87, exh. F, at 14. The applicants trumpeted the vertical orientation of the housing as an advantage because it reduced "the footprint of the system on the desk top. Id. at 15. In contrast, the Herron patent disclosed a docking module "which is latched to the rear of a laptop computer. The computer and docking module both rest on a desk top." Id. at

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16. Thus, "the computer in Herron is not oriented vertically as in the Applicants' system." Id. at 17.

It is clear that the vertical orientation of the housing when resting in the docking module was one of the novel features of the applicants' system. However, as I noted in discussing the laptop exclusion, the applicants made it clear in the June 15 response that they were not incorporating all of the novel features of their invention into every independent claim in the patent. Instead, they stated only that each independent claim contained at least one point of novelty. Id. at 16. In the case of the laptop exclusion, it is not obvious which of the independent claims contain the exclusion because none of the independent claims contain language explicitly excluding laptop computers. Therefore, the only way to incorporate the limitation into the patent is to infer that it is inherent in the terms "portable computer" and "portable computer microprocessing system."

The situation is different with respect to the vertical orientation limitation, however. I need not infer that that limitation is inherent in all of the independent claims because the applicants indicated clearly which of the independent claims contain this novel feature. Claims 1 and 14 require "a support holding the housing in a vertical position." Claims 17 and 20 do not contain this limitation. Therefore, defendants are not persuasive when they argue that of the prosecution history supports the importation of a vertical orientation limitation into claim 17.

Defendants do not concede the point easily. They argue that where an applicant makes statements during the course of prosecution that limit the scope of his invention as opposed to specific embodiments thereof or claims in his patent, those statements apply to all of the claims in the patent. For support, they cite Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335 (Fed. Cir. 1998). That case concerned a patented method for capturing, storing and displaying fingerprint images. At issue in that case was the claim term "slice data." The defendant argued that this term should be construed to mean data with an "active area" while the plaintiff argued that a "slice" encompassed more than an "active area." Id. at 1346. The court of appeals adopted the defendant's construction. It noted that the word "slice" was used "synonymously with 'active area' in two instances in the written description." Id. Also, the court looked to the prosecution history. In response to a rejection by the patent examiner, the applicants in Digital Biometrics added the word "slice" to one of their claims and distinguished their invention from prior art by Ruell with the following remarks:

"Unlike the applicants' claimed invention, there is no provision for generating the composite array as a function of overlapping image portions of the finger. Similarly, Ruell does not teach a system which identifies active portions of the image which are representative of the fingerprint features as a mathematical function of the stored data, and generates the composite array as a mathematical function of the data representative of the identified active portions."

Id. at 1347 (emphasis in original). Instead of limiting these remarks to the claims in which the term "active area" appeared, the applicants had made them with respect to all of the claims that had been rejected. Accordingly, the court of appeals held that the limiting construction in the remarks applied to all of the claims that had been rejected. Id.; see also Honeywell International, Inc. v. ITT Industries, Inc., 452 F.3d 1312, 1318 (Fed. Cir. 2006)(limiting term "fuel injection system component" to fuel filter in part because patentees had referred to "invention" as fuel filter at four points in specification).

At the claims construction hearing in this case, defendants argued that the present case was analogous to Digital Biometrics because in both cases the applicants discussed distinguishing characteristics of their inventions, not specific claims or embodiments thereof. This is true up to a point. Although the applicants for the '645 patent discussed their "system" as having a docking module that held the housing in a vertical position in the June 15 response, they also made it clear that all of the points of novelty highlighted in the response were not present in all of the independent claims. The prosecution history is useful in determining how the applicants and the patent examiner understood the claims, Phillips, 415 F.3d at 1317, but it is inappropriate to import a limitation from the prosecution history into a claim whose language will not support that limitation. Sofamor Danek Group v. Depuy-Motec, 74 F.3d 1216, 1220 (Fed. Cir. 1996).

Accordingly, I will adopt plaintiff's proposed construction of the phrase "supporting the housing of the microprocessor in position relative to said docking connection means so that the single connector on the housing is coupled with said additional connection provided in the docking connection means." That phrase will be construed to mean that the housing is supported and the single connector on the housing couples or mates with the connector on the docking module.
c. "supports for . . .", "a reinforcement structure . . ."

As with the previous phrases, these phrases describe sufficient structure. See '677 Patent, cl. 1 ("within said vending machine such that the dispensing ends of said trays are aligned generally within a vertical plane adjacent said front panel of the vending machine . . . secured to said trays adjacent said dispensing ends thereof for maintaining dimensional width tolerances across the dispensing end of the tray in a manner that prevents bending distortion of the tray at said dispensing end thereof."). The claim language does not use the term "means," and the court concludes that "supports for operatively mounting said trays within said vending machine" and "a reinforcement structure secured to said trays . . ." are not subject to § 112, P 6.

Each of the fourteen asserted claims of the '815 patent contains a limitation which describes the portion of the device which stabilizes the flexible flail as having or including "a generally planar surface." It is apparent to the court, after review of the extensive briefing and after viewing an example of the accused device during oral argument, that such an element is not present in defendants' products.

The feature of accused devices that plaintiff alleges infringes his '815 patent is the open wire edge guide piece that extends radially from the center of the trimmer housing. This wire piece originates on the housing and extends horizontally from both sides straight out from its mounting; each side then bends downward for a short distance; and the sides then bend outward again, meeting and terminating in a shape resembling the letter "u." As noted, the wire piece is open at all points and most importantly so at its terminating "u"-shaped end. It is this end section which plaintiff claims acts as the flail stabilizing "surface." 5

5 Also, the wire edge guide can be "flipped" up against the trimmer housing when the trimmer is not being used for edging.

Giving words their ordinary and customary meaning, the court concludes that this wire edge guide does not have a "surface" so as to bring it within the claim limitations of the '815 patent. The dictionary definitions of "surface" include "the exterior face of an object" or "a material layer constituting such an exterior face." Webster's II New College Dictionary 1109 (Rev. 2001). Further, "surface" means "the outer face, outside, or exterior boundary of a thing" or "part or all of the boundary of a solid." The Random House College Dictionary 1322 (1st ed. 1980).

As noted, the crucial "u"-shaped portion of the wire edge guide on the accused trimmers is open, having only a void of space above, below, and within its perimeter. The wire piece has no exterior face or layer. The court concludes that this open structure simply does not constitute a "surface" as that term is commonly understood.

This construction makes sense given the flail-stabilizing purpose of plaintiff's device. An exterior boundary or the face of a solid would indeed -- as is claimed -- provide an area against which the spinning flail could "bump" or touch, thereby limiting its deviation from its rotational path and providing a more accurate edge cut. In contrast, the accused wire edge guide lacks this feature. Indeed, defendants assert that the wire edge piece on their trimmers is not intended to stabilize the flail at all, merely to serve as an edging guide.

Given this plain meaning of this claim limitation, the court concludes that further construction of the '815 claims is unnecessary, as is a Markman hearing. See Ballard Medical Products v. Allegiance Healthcare Corp., 268 F.3d 1352, 1358.
The court having concluded that the accused devices lack the "surface" limitation of all asserted claims of the '815 patent, defendants are entitled to summary judgment thereon. 6

6 The court also notes that the accused devices lack the dual function "guide/guard" element of claims 24, 25, 27, 28, 37 and 38, which are written in "means-plus-function" form as permitted by 35 U.S.C. § 112, P6. In order to infringe this "means-plus-function" limitation, the accused device must, at a minimum, include some element or means for performing the "dual function" of "guiding said flexible flail means along said reference surface while shielding a user from debris generated by" the flexible flail during use. It is undisputed that the allegedly infringing feature of the Black & Decker trimmers -- the open wire edge piece -- is incapable of shielding the user from debris generated by the flail as it trims or edges.

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Second, claim 1 of the '813 patent requires that each club in the correlated set have a head with a face for impacting a golf ball, a back surface, a heel portion, a toe portion, and a "sole having a trailing edge extending between heel and toe portions." (Id., col. 7, lines 43-44.) Further, "at least a central portion of said trailing edge [is] indented toward said face at least 1/16 of an inch." (Id., col. 7, line 45 to col. 8, line 2.) The claim states that the "lower portion of said back surface adjacent said trailing edge," (id., col. 8, lines 2-3), is specifically described as "sloping upwardly and inwardly from said indented trailing edge toward said face." (Id., col 8, lines 5-6.)

1. The Properly Construed Meaning of "Adjacent":

Cleveland argues that the '813 patent specifications provide intrinsic evidence of which surface adjacent said trailing edge is claimed in the patent. Specifically, Figures 5 and 11 of the '813 patent show the lower back surface area, labeled as 60, as adjacent to the trailing edge. Further, the patent specifications describe in detail the relationship between the sole, trailing edge, and the adjacent surface of said trailing edge, the acute angle formed between the plane of the sole of the club head and the inwardly sloping lower back surface 60. In sum, Cleveland argues that the '813 patent specifications prevent Karsten from advocating a broad definition of the claim term "adjacent" which is unsupported by the intrinsic evidence.

While Karsten failed to be its own lexicographer and define "adjacent," as used in the claim language of the '813 patent, the '813 patent does contain diagrams depicting the invention. Rather than rely on the diagrams contained in its own patent, Karsten argues that this Court should look to extrinsic evidence to define the claim term "adjacent." According to Karsten, the dictionary definition and diagrams submitted by Karsten as exhibits to its Response Memorandum provide the correct definition of the claim language used by Karsten in the '813 patent.

Karsten has failed to reconcile or distinguish the intrinsic evidence contained in its own patent which indicates that "the surface adjacent said trailing edge" must be a back surface. For this Court to read the claim language of the '813 patent broadly enough to validate Karsten's interpretation we would be required to ignore the intrinsic evidence in favor of extrinsic evidence. While a patent's claim language is not necessarily limited to the disclosure contained in the specifications and drawings, the specifications and drawings are persuasive absent other clarifying language. The intrinsic evidence requires this Court to interpret the claim language "surface adjacent said trailing edge" as a back surface and the specifications and drawings support this interpretation.

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The Adjacent Back Surface
Karsten states that the district court erroneously identified the "back surface" as used in claim 1, and that this error led the court to misconstrue the meaning of "sloping upwardly and inwardly," resulting in an erroneous construction of these terms that excluded the Cleveland clubs. Karsten argues that "the lower portion of said back surface adjacent said indented trailing edge" is the encircled area 60, indicated by dashed line 59 in Figure 4 of the '813 patent:

[SEE FIGURE 4 IN ORIGINAL]

The district court construed the "back surface adjacent said indented trailing edge" as excluding the surfaces of the cavity. This construction is in accordance with the description in the specification that the "back surface" that is adjacent to the indented trailing edge circumscribes but does not include the cavity surfaces. The court was correct in rejecting Karsten's proposed construction, which departs from this description.

The district court also required that "the surface adjacent said indented trailing edge [must] slope upward and inward" relative to the trailing edge and the face of the club. Karsten states that it was incorrect to interpret "sloping inwardly" as relative to the trailing edge and the club face, instead of relative to the ground when the sole of the club is placed horizontally on the ground. However, the specification describes the lower back surface area as sloping inwardly and upwardly from the trailing edge as shown in Figures 5, 7, and 9, which illustrate these parameters relative to the trailing edge and the hitting face, not the ground. The district court's claim construction correctly reflected the description in the specification, and is confirmed.

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1. Disc-Shaped Member with surface indicia integral with said planar surface

Claim 1 is limited to a "disc-shaped member" comprised of, in part, "a major surface having a planar surface area and a plurality of spaced-apart, elongated, discrete surface indicia integral with said planar surface area . . ." (Col. 5, lines 27-30). As construed in this court's prior memorandum order, the term "surface" may refer to the surface of an unfinished plastic disc-shaped substrate. (D.I. 558 at 10-11) Given this interpretation, the term "surface indicia" is not limited to any specific type of "surface indicia" such as "transparent microgrooves" or surface indicia with a partial metal coating.

DMI's CDs contain pits which are "formed within a [plastic] substrate underneath a continuous metal coating and a plastic protective coating." (D.I. 347 at 4) DMI argues that its CDs do not infringe claim 1 because the pits are buried below the surface of the disc and therefore cannot be called "surface" indicia. (D.I. 347 at 22) DMI has admitted, however, that the "pits" in its CDs are formed at the surface of a plastic disc-shaped substrate. Accordingly, the claim limitation of a disc-shaped member with surface indicia integral to the planar surface of the disc-shaped member covers DMI's CDs.

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7. "Tear-wettable surface layer"

The plaintiff proposes "a surface layer, as defined below, which has an outermost surface on which tear fluid has a tendency to spread when it contacts that surface. Further, "surface layer" means "the exterior portion of a contact lens that is chemically distinct from the lens body. This layer extends from the outermost surface of the contact lens to a depth in the lens where the composition, including proportion of components, becomes substantially the same as the overall composition of the lens body. A contact lens that has substantially the same overall polymer composition does not contain a surface layer under this definition, even though part of the polymer can re-orient in response to certain environmental conditions." The defendants propose "a layer which covers the entire lens body, which has a measurable thickness and which has a surface that is contacted by the tear layer and which has a high affinity for the tear layer." The Court will construe the phrase as two separate terms, "tear-wettable" and "surface layer."

a. "Tear-wettable"
The parties dispute whether this term means "a high affinity for" tears or whether it means that tear fluid spreads out when exposed to a surface. The plaintiff contends that "tear-wettable" means "tear fluid has a tendency to spread out when exposed to a surface." According to the plaintiff, its construction is the meaning understood by one of ordinary skill in the art in the context of this patent. The defendants argue that "tear-wettable" requires that tears directly contact the surface layer and, therefore, the surface layer must have a high affinity for tears. In the context of this patent, the Court adopts the plaintiff's construction of "tear-wettable."

b. "Surface layer"

The prosecution history provides the proper guidance for construction of this term. The relevant portion of the prosecution history reads:

[In applicants' invention there is justification for describing the overall lens as having a "body" portion and a "surface layer" because their compositions actually differ. The "surface layer" is simply any layer beginning from (i.e., including) the outermost surface and moving inward to any arbitrary depth of the lens, with the "body" of the lens just being all the remainder of the lens. Amendment, April 20, 1992, at 8-9.

There is nothing in the intrinsic evidence that requires the "surface layer" to cover the entire lens body or to have a "measurable thickness." Accordingly, the Court construes "surface layer" to mean "a layer beginning from, and including, the outermost surface and moving inward to an arbitrary depth of the lens, and having a different composition from the 'body' portion of the lens."

DuPont thereby cites to specification language providing a relatively clear definition of the term at issue. The specification refers to the thermally removable layer functioning as "a layer which alters the surface characteristics of the photosensitive element." (859 Patent at col. 9, lines 62-63.) This Court accordingly construes "surface modifying layer" as meaning "a layer that alters the surface characteristics of photosensitive element."

Surface mount light elements

The term "surface mount light elements" appears in the '823 patent; "surface mount semiconductor light elements" appears in the '302 patent. Because of the "semiconductor" limitation in the '302 patent, Litepanels contends that two separate constructions are needed for each term. Gekko proposes the following construction for both terms: "light component designed to be soldered to a surface of a circuit board."

Regarding the '823 patent, the specification states that an advantage of the "surface mount" is the heat dissipation capabilities, "particularly as compared to non-surface mount LEDs which tend to dissipate heat typically through their leads." '823 patent, Col. 24:34-36. It teaches that using surface mount light elements provides a "larger and more direct heat conduction path to the mounting surface." Id. at Col. 24:37-38. While the specification describes the advantages of surface
mounts, it does not provide a clear definition of the term.

Because the specification lacks clear guidance on the meaning of "surface mount," both Gekko and Litepanels based their proposed constructions on the Wiley Electrical and Electronics Engineering Dictionary's ("Wiley Dictionary") definition of "surface mount." The Wiley Dictionary defines surface mount as "a technology for mounting components and devices in which the connections are soldered to a surface, as opposed to having leads which pass through said surface." Wiley Electrical and Electronics Engineering Dictionary (2004).

When reading the advantages described in the specification together with the definition of "surface mount," Gekko's proposal is too broad. Gekko's construction excludes a key portion of the definition: "as opposed to having leads which pass through said surface." Gekko argues that the Wiley Dictionary's definition does not require the substrate to appear without holes; however, the specification contemplates otherwise. As discussed above, one of the main advantages of surface mounts are the increased heat dissipation because of the increased contact to the mounting surface. '823 patent, Col. 24:34-36. These advantages would be greatly diminished, and possibly nullified, if holes were drilled into the surface. Therefore, reading the claim in light of the specification of which it is a part, Gekko's proposed construction is improper.

Litepanels proposes the phrase means "a light emitting element where the electrical leads are designed to be soldered to a surface of a circuit board, rather than mounted through a hole in the circuit board." The first part of Litepanels's proposed construction tracks the Wiley Dictionary's definition. The second part of Litepanels's construction ties the specification in with the definition by excluding through-hole mounts.

Because the specification teaches the advantage of surface mounting is the lack of holes, the construction needs to include that limitation. Thus, the Court construes "surface mount light elements" to mean "a light emitting element where the electrical leads are designed to be soldered to a surface of a circuit board, rather than mounted through a hole in the circuit board."

The '302 patent claims contain a "semiconductor" limitation. As a continuation of the '823 patent, the '302 patent contains the same discussion of "surface mount" advantages. Gekko's universal construction removes the "semiconductor" limitation present in the '302 patent claims, which impermissibly broadens the claim language. Therefore, the Court construes "surface mount semiconductor light elements" to mean "a semiconductor light emitting element where the electrical leads are designed to be soldered to a surface of a circuit board, rather than mounted through a hole in the circuit board."

A. "a surgical device" ('753 patent) and "an implant" ('290 patent)

9) The specification explicitly addresses only surgical devices. See, e.g., D.I. 70, Ex. B ('290 patent) at Title; D.I. 70, Ex. A ('753 patent) at Title; id. at 1:38-39 ("The present invention relates to surgical devices such as implants or suture fastenings."); 1:63-64. "When a patent thus describes the features of the 'present invention' as a whole, this description limits the scope of the invention." Verizon Servs. Corp. v. Vonage Holdings Corp., 503 F.3d 1295, 1308 (Fed. Cir. 2007) (citations omitted).

10) In addition, the prosecution history reveals that Dr. Bonutti disclaimed stents in order to overcome a rejection over Dr. Palmaz's '417 patent by the Examiner:

    Palmaz discloses an expandable intraluminal vascular graft, or expandable prosthesis for a body passageway (col. 6, lns. 21-23). . . . Applicants, on the other hand, disclose, inter alia, an assembly for use in surgical applications in humans. . . . An almost limitless number of surgical devices can be constructed in accordance with the present invention. D.I. 70, Ex. M at 5-6.

Dr. Palmaz used the terms "intraluminal vascular graft" and "expandable prosthesis" in the '417 patent to refer to his invention of the balloon-expandable stent. Having disclaimed stents in the prosecution history, Dr. Bonutti is not entitled to capture them through claim construction. Springs Window Fashions LP, 323 F.3d at 994 (citations omitted) ("It is well established that 'the prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was..."
disclaimed during prosecution."); see Computer Docking Station Corp., 519 F.3d at 1379; Gillespie, 501 F.3d at 1291; Ormco Corp., 498 F.3d at 1314, 1316; Chimie, 402 F.3d at 1384.

11) MarcTec argues that the terms "surgical device" and "implant" cannot limit the scope of the claims because they are part of the preamble. This argument is flawed; terms in the preamble can, and often do, limit claims. "Whether to treat a preamble as a limitation is . . . 'resolved only on review of the entirety of the patent to gain an understanding of what the inventors actually intended and intended to encompass by the claim.'" In re Cruciferous Sprout Litig., 301 F.3d 1343, 1347 (Fed. Cir. 2002) (quoting Corning Glass Works, 868 F.2d at 1257); Poly-America, L.P. v. GSE Lining Tech., Inc., 383 F.3d 1303, 1309 (Fed. Cir. 2004).

12) The term "surgical device" is "a fundamental characteristic of the claimed invention that is properly construed as a limitation of the claim itself." Poly-America, L.P., 383 F.3d at 1310 (citation omitted). Here, "the specification is replete with references to the invention as a [surgical device], including the title of the patent itself." Id. "Surgical device" is used in the first sentence of the Abstract and the first substantive sentence of the specification. This phrase "is used repeatedly to describe the preferred embodiments." Id. The specification does not disclose any non-surgical devices. "To read the claim in light of the specification indiscriminately to cover all types of [devices] would be divorced from reality." Corning, 868 F.2d at 1257.

13) Second, the preamble language is limiting because Dr. Bonutti relied on it to distinguish prior art. Cruciferous Sprout, 301 F.3d at 1347 (preamble limiting where used to distinguish prior art). When Dr. Bonutti's claim language was rejected because of Palmaz's invention of the balloon-expandable stent, Dr. Bonutti made it clear that his invention was limited for use in conventional surgery and did not cover non-surgical devices such as stents. D.I. 70, Ex. M at 5. Dr. Bonutti made this argument to distinguish Palmaz's stents from proposed claim 11 (now claim 1), directed to "a surgical device for implantation into a body," and proposed claim 27 (now claim 11), directed to "an implantable device for implantation in a human patient." Id. at 2-4. Dr. Bonutti's statements to the Patent Office show a "clear reliance by the patentee [on the "surgical device" and "implant" requirements] to persuade the Patent Office that the claimed invention is not anticipated by the prior art." Cruciferous Sprout, 301 F.3d at 1348. Where - as here - a patentee relies on the preamble to distinguish the prior art, the preamble is a claim limitation. Invitrogen Corp. v. Biocrest Mfg., L.P., 327 F.3d 1364, 1370 (Fed. Cir. 2003) ("'[C]lear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention.'") (citation omitted).

14) With regard to "implant," MarcTec also argues that excluding stents is inconsistent with dependent claims that are directed to a device "positionable in a vessel" or "conformable to a vessel." But many surgical implants are positionable in or conformable to a vessel without being stents. Examples include vascular grafts, used to replace or connect vessels during conventional surgery, see, e.g., D.I. 91, Ex. Z (U.S. Patent No. 4,300,244) at 1:10-14, as well as heart valves, which are surgically implanted and are positioned in or conform to a vessel, see D.I. 91, Ex. AA (U.S. Patent No. 4,689,046). See also D.I. 91, Ex. BB (U.S. Patent No. 4,483,339) (a vascular surgery roll for use in vessel to allow for easier suturing). Furthermore, similar claims were already in existence when Dr. Bonutti distinguished surgical devices, see, e.g., D.I. 70, Ex. M at 4, and cannot be used to broaden claims that were limited to avoid the prior art.

15) Consistent with the claim language, the specification, and the prosecution history, the Court construes "a surgical device" from claim 1 of the '753 patent as meaning "a device for use in surgical applications, but not including an expandable intraluminal vascular graft or expandable prosthesis for a body passageway."

16) Consistent with the claim language, the specification, and the prosecution history, the Court construes "an implant" from claim 1 of the '290 patent as meaning "a device for use in surgical applications, but not including an expandable intraluminal vascular graft or expandable prosthesis for a body passageway."
2. A "surgical procedure" means treatment of disease, injury and deformity by operation or manipulation.

b. '314 patent, claim 1, element 1: "a surgical reference device defining a three-dimensional space;"

The Court construes this element to cover a device used to define three-dimensional space. The claim provides structure ("a surgical reference device"), and teaches what this structure must do ("define three-dimensional space.") While the specification teaches that a stereotactic frame is a reference device commonly used with one embodiment of the beam localization and microscope embodiments of the invention, see '314 patent, Fig. 1; '314 patent; '314 patent, col. 8, ll. 48-56; '314 patent, col. 13, ll. 52-58, the Court would improperly read an extraneous limitation into the language of claim 1, element 1 if it concluded that the reference device in all embodiments must only be a stereotactic frame. Such a conclusion would also be contrary to the specification's description of alternative embodiments using an articulating robotic arm or infrared or ultrasonic sensors to define three-dimensional space. See '314 patent, col. 14, ll. 22-37 & Figs. 38 & 39 (describing robotic arm) 25; '314 patent, col. 14, ll. 34-37 (describing use of sensors). 26 Defendants' interpretation would exclude these embodiments from coverage; such an interpretation is rarely, if ever, correct. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996).

Unlike most of the other claims and elements at issue in this case, this element is not in means-plus-function form. Accordingly, the scope of its protection is not limited by the corresponding structure in the specification. However, the element must still be construed in light of the specification.

Plaintiff's expert (the inventor of this device) explains that positional devices contained within an articulating robotic arm can be used (and were previously used) in frameless stereotaxy to define stereotactic space. See Declaration of Tyrone Hardy at PP10, 12 (Ct. Rec. 302).

See Hardy decl. at P10 (explaining that infrared or ultrasonic sensors can be used in place of robotic arm to define three-dimensional space).

The plaintiff proposes "extending around." The defendants propose "covering the entire lens body." The plaintiff argues that its proposal is consistent with the commonly understood meaning of the term and that the defendants' proposal is not supported by the specification or the prosecution history. The defendants argue that the specification characterizes the tear-wettable surface as "coating" and as a "layer." According to the defendants, this implies that the surface layer is continuous.
and, therefore, should cover the entire lens body.

This term does not have a technical meaning in the context of this patent and can be understood according to its plain and ordinary meaning. The Court, therefore, declines to construe this term.

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(4) Surrounding and Around

The parties next dispute the meaning of the claim terms "surrounding" and "around" as used in the '842 and the '211 patents. Claim 1 of the '842, quoted above, uses the term "surrounding"; claim 13 of the '842 uses the term "around"; claim 13 discloses:

[a] method of attaching a current or voltage bayonet to a circuit board, comprising:

providing a circuit board with at least one opening adapted to receive a bayonet;

forming a plurality of vias around said at least one opening;

placing an electrically conducting bayonet in said at least one opening;

applying solder on one surface of the circuit board, through the vias to the opposite surface of the circuit board and extending to said bayonet.

U.S. Patent No. 6,186,842 B1, col. 7, lines 52-62.

Square D contends that "surrounding" and "around" both mean "located on the perimeter of" and EI contends that they both mean "completely enclosing all sides." As Square D correctly pointed out at the Markman hearing, construing these terms as EI suggests would actually preclude at least one of the preferred embodiments described in the specification. That is not appropriate. See, e.g., Oatey Co. v. IPS Corp., 514 F.3d 1271, 1276-77 (Fed. Cir. 2008)(ordinarily, absent a clear disclaimer in the specification or prosecution history, it is inappropriate to interpret claim terms in a way that excludes embodiments disclosed in the specification). See also Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed Cir. 1996). Accordingly, the Court rejects EI's construction, and adopts Square D's construction, which is consistent with the specification, as well as the ordinary meanings of these words. The Court construes "surrounding" and "around" to mean "located on the perimeter of."

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F. Claim language to be construed from Claims 3 and 6 -- "sheathing surrounding a major portion of the length of said tube" -- col. 4, ll. 49-50; col. 6, ll. 51-52

HEN's proposes to construe the claim language "surrounding a major portion of the length of said tube" to mean "covering a section of the tube sufficient to protect the tube." (HEN CC Br. at 25.) Minco, on the other hand, proposes to construe this claim language to mean that "the sheathing must cover more than 50% of the conductive tube." (Minco CC Br. at 38.)

We construe "surrounding a major portion" to mean "covering a significant portion." In this instance, we believe that a person of ordinary skill in the art in question would understand that the term major portion refers to a significant portion, such as a portion of the tube sufficient to protect the functional integrity of the measuring device. We reject Minco's contention that a major portion must mean that the sheathing merely surrounds more that 50%. Had the claim stated that the sheathing surrounds the majority of the conductive tube, then we would agree with Minco that more than 50% of the tube must be covered by the sheathing. We also reject HEN's proposed construction that the sheathing must cover a section of the tube sufficient to protect it. HEN's proposed construction is derived from the following language in the specification:
"[s]heath 2 is tapered along a major portion of its length toward the immersion end 3 for protecting the tube 1 and for minimizing the ability of gasses to be trapped adjacent the measuring elements 5 and 6." (Minco Ex. A., col. 2, ll. 61-64.) However, the use of the word "major" in this instance refers to the portion of the sheath that is tapered, and not to the portion of the tube covered by the sheath.

1. "Surrounding" the "Leading End"

In support of non-infringement, Bridgeport first argues that its connector, which includes an adaptor that encloses the intermediate portion but not the shoulder of the connector, does not "surround[]" the "leading end" of the connector, as required by all claims of Patents '050 and '164:

[A] hollow electrical connector through which an electrical conductor may be inserted having a leading end thereof for insertion in a hole in an electrical junction box; a circular spring metal adaptor surrounding said leading end of said electrical connector which has a leading end, a trailing end, and an intermediate body ….

(Doc. 83, Exs. A, B (emphasis added)). To construe this phrase, the court will analyze its two elements, "surrounding" and "leading end," separately.

"Surrounding," as defined by Webster's Third New International Dictionary, means "to be situated or found around, about, or in a ring around" or "to cause to be encompassed, encircled, or enclosed with something." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 2302 (Philip Babcock Gove ed., 1993). Thus, "surrounding" is not necessarily limited to circumstances in which a force or thing completely envelopes--separating entirely from the outside--an individual or item. Rather, the term may be used more loosely to describe any situation in which an outer boundary significantly borders an underlying entity. See, e.g., id. ("The house [was] surrounded on three sides by a wide veranda").

Other claim language supports the broader interpretation of "surrounding" as significantly bordering, rather than completely encircling. Several claims require the "circular spring metal adaptor [to be] less than a complete circle when on the electrical connector," meaning that a part of the underlying connector is necessarily exposed through the gap in the adaptor. Further, because these claims dictate that the adaptor be held in place by the flange and shoulder, which is concededly part of the connector's "leading end" (Doc. 115 P 19), the adaptor cannot completely enclose the leading end of the connector. Consistency of interpretation across the claims demands that the term be imbued with its broader meaning. See Georgia-Pacific Corp. v. U.S. Gypsum Co., 195 F.3d 1322, 1331 (Fed. Cir. 1999). Accordingly, the court will construe "surrounding," as used in this context, as describing an adaptor that significantly borders the circumference of the "leading end" of the connector.

Examining the second aspect of the phrase, "leading end," Webster's Third New International Dictionary defines "leading" as "being in advance during normal … movement" and "leading edge" as "the forward edge of … something that itself moves." WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1284. While this definition conceivably refers to only the outermost extremity of the connector, as Bridgeport suggests, it could also reasonably mean a larger part of the end of the connector, including the entirety of the portion that is inserted into the junction box. Compare id. at 747 (defining "end" as "the extreme, ultimate, or most remote section") with id. (defining "end" as "the portion of an area … that lies at or by the termination").

The context of the phrase in the claims sections of the patents establishes that the latter interpretation is correct. The first
claim of both patents describes the "leading end" of the connector as the part "for insertion in [the] hole in [the] electrical junction box." Other claims, providing for an embodiment of the design for use with a threaded adaptor, require the adaptor to fit over a "threaded section of said electrical connector leading end," meaning that the "leading end" cannot refer only to the edge of the device but must include the length of the connector that is covered by the adaptor. Thus, the claim itself defines "leading end" as that portion of the connector intended for insertion into the hole of the junction box, not merely the outermost edge. 8

8 Clearly, it makes little sense to interpret the phrase "leading end" to refer only to the outermost portion of the connector—the top of the cylindrical connector and not the rounded sides—because, so interpreted, the "leading end" would include no spatial area that an adaptor could surround. Perhaps recognizing the illogical nature of this construction, Bridgeport focuses its argument on the premise that the patent documents provide an alternative, and more conceptually feasible, definition of the connector's "leading end" as its "raised shoulder"—the ridge extending around the circumference of one end of the connector. This interpretation, although deficient in other respects, would at least provide a surface on which the adaptor, and Bridgeport's contentions, could conceivably rest.

Attempting to overcome this interpretation, entitled to a "heavy presumption" of accuracy, see CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002), Bridgeport argues that the inventor provided an explicit definition of the phrase, trumping its otherwise plain meaning, in the following descriptive paragraph in the specifications section:

FIG. 4 illustrates a view of the zinc die-cast connector … with the spring steel adaptor … attached. The flange … is the trailing end and raised shoulder … is the leading end. They are shown holding the spring steel adaptor in place.

(Doc. 83, Exs. A, B (emphasis added)). However, this short description, neither relied upon nor repeated elsewhere in the specifications or the claims, lacks the "clarity, deliberateness, and precision [required] to impart an unaccustomed meaning to an otherwise clear claim term." K-2 Corp., 191 F.3d at 1364. The statement appears only in reference to a specific embodiment of the invention, and does not expressly limit the scope of other claims. Indeed, the patent itself disclaims such an intent by stating that the "descriptions [included in the specifications section] … should not be construed as limiting the scope of the invention but as merely providing illustration" and that "the scope of the invention should be determined by the appended claims and their legal equivalents rather than by the examples given." (Doc. 83, Exs. A, B). The proposed alternative meaning set forth by Bridgeport conflicts not only with the definition set forth in the claims themselves but also with the patent's directive to abstain from reliance on the specifications for the interpretation of terms. Thus, this meaning must be rejected in favor of the ordinary and customary construction of the phrase. 9 See Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998) ("The claim construction inquiry, therefore, begins and ends in all cases with the actual words of the claim, [and] … the resulting claim interpretation must, in the end, accord with the words chosen by the patentee to stake out the boundary of the claimed property."); SRI Int'l v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1121 n.14 (Fed. Cir. 1985) ("Specifications teach. Claims claim.").

9 Even assuming arguendo that this paragraph could reasonably be viewed as establishing a controlling definition of terms, the description does not support Bridgeport's proposed meaning. Language in the claim section, quoted previously, identifies the "connector" as having only a "leading end" and the "adaptor" as having "a leading end, a trailing end, and an intermediate body." The provision upon which Bridgeport relies describes a unit with both a "trailing end" and a "leading end," and, as such, must refer to the adaptor, which has both components, and not the connector, which has only a "leading end."

Further, accepting Bridgeport's contention that the specifications section defines the "leading end" of the connector as the "raised shoulder" would render certain terms of the claims superfluous. Claim 1 of Patents '050 and '164 requires all connectors to have a "leading end." However, subsequent claims dictate that the connector also include, in addition to the
limitations expressed in claim 1, a "flange and shoulder." (Doc. 83, Exs. A, B). Assuming Bridgeport's interpretation, it would be unnecessary to state in subsequent claims that the connector includes a shoulder since the term "leading end" would inherently include this element. Because Bridgeport's interpretation would render terms of the claims superfluous, it should be rejected in favor of a construction that gives meaning to all language. See Union Pacific Corp. v. United States, 5 F.3d 523, 526 (Fed. Cir. 1993). The phrase "leading end," as used in the claims at issue, refers to that portion of the connector that fits within the junction box. Thus, the court will construe the phrase "surrounding said leading end" as describing an adaptor that significantly borders the circumference of that part of the connector that fits within the junction box.

Applying this construction to the claims at issue, and viewing the facts in the light most favorable to Arlington, sufficient evidence exists to support Arlington's contention of literal infringement. The adaptor of Bridgeport's device extends around most of the circumference of the intermediate portion of the connector. Although the adaptor does not encompass the shoulder, it does encircle a significant part of the end of the connector intended "for insertion in [the] hole in [the] electrical junction box." These facts, if established at trial, support a finding of literal infringement, rendering summary judgment on these claims improper.

2. "a distal portion susceptible to electrolytic disintegration in blood . . . elongate tip portion not being susceptible to electrolytic disintegration in blood"

The parties dispute the proper construction of the phrases "susceptible to electrolytic disintegration in blood" and the opposite phrase "not susceptible to electrolytic disintegration within blood" as those phrases are used in Claim 21 of the '136 Patent.

The phrases "susceptible to" and "not susceptible to" are non-technical phrases which are commonly used in the English language. The commonly understood definition of "susceptible to" is "capable of being affected by." See Webster's New Twentieth Century Dictionary, 1837 (2d ed. 1983). A commonly understood meaning of "not susceptible to" is "being resistant to." The Court examines the written description for any use of the phrases. The phrase "not susceptible to electrolytic disintegration in blood" is used in the written description to refer to the characteristics of the material out of which the tip portion is constructed:

The tip portion is a long and substantially pliable segment and is comprised of a material not susceptible to electrolytic disintegration within blood.

('136 Patent, Col. 5:8-10.) There is no intrinsic evidence that these phrases are intended to have any specialized meanings. The Court finds that one of ordinary skill in the relevant art would give the phrases "susceptible to" and "not susceptible to" their ordinary and customary definitions.

The written description does contain a discussion of various materials and manufacturing processes which would make an embodiment susceptible or not susceptible to disintegration. However, the characteristics of a preferred embodiments may not be adopted as limitations on the apparatus as claimed.
14 In the Summary of the Invention and elsewhere in the written description, stainless steel is listed as a material which can be electrolytically disintegrated. (See '136 Patent, Col. 4:33-35.) A secondary coil 28 is disclosed in the written description made out of platinum, having particular diameter and specially shaped tip. (See '136 Patent, Col. 6:23-65.) Platinum is discussed as being resistant to electrolytic disintegration. [citation?]

The Court construes "susceptible to" as it is used in the phrase, "a distal portion susceptible to electrolytic disintegration in blood" in Claim 21 of the '136 to mean:

a distal portion of the core wire which has attributes which make the segment able to electrolytically disintegrate when submersed in blood.

Correspondingly, the Court construes "not being susceptible to" as it is used in the phrase "elongate tip portion not being susceptible to electrolytic disintegration in blood," in Claim 21 of the '136 Patent to mean:

an elongate tip portion which has attributes which make the portion resistant to electrolytic disintegration when submersed in blood.

6. A handle "suspended between adjacent corner pylons" and a "generally open area being defined below said handle," or a "handle structure that can be freely grasped about substantially the entire periphery thereof"

The '461 and '572 patents require that the handle be "suspended between adjacent said corner pylons" and also require the presence of a "generally open area being defined below said interior and exterior surfaces of said handle structure and between said interior surface of said handle structure . . .."

Rehrig asserts that the modifiers "generally" and "substantially" indicate that absolute openness below the handle and freedom to grasp the entire periphery of the handle are not required. Norseman contends that the plain language of the claim requires suspension of the handle, meaning "to hand so as to be free on all sides except at the point of support." The Court construes this requirement to allow for some minor deviation from absolute openness below the handle and some obstruction of the freedom to grasp the entire periphery of the handle. However, the Court also interprets this language to require that the structure not be supported from below in order to give some meaning to the term "suspended."

B.

The district court construed "a sweep angle that causes the blade to intercept the shock" to mean "a sweep angle in the outer region that is constant or decreasing." It further explained that this construction does not include forward sweep. The plain language of "a sweep angle that causes the blade to intercept the shock" leaves the properties of that claimed angle unclear. The district court found that one of ordinary skill in the art would have necessarily resorted to the specification to interpret "a sweep angle that causes the blade to intercept the shock."

This court construes "a sweep angle that causes the blade to intercept the shock" to mean "a rearward sweep angle in the outer region that is constant or decreasing" because the specification supports only rearward sweep. The specification states that the sweep angle is "nonincreasing (decreases, or at least does not increase) with increasing radius." '931 application col.4 ll.27-29. The invention emphasizes the critical character of the nonincreasing sweep angle in the tip region. '931 application col.4 ll.46-62. The parties agree that the sweep angle at the boundary between the intermediate and outer regions is a rearward sweep angle. If the outer region translates forward from rearward sweep to zero degree sweep, the sweep angle necessarily decreases. If, however, the outer region translates farther, from zero degree sweep to forward sweep, the sweep...
angle necessarily increases. For example, translating forward from twenty degrees rearward sweep to five degrees forward sweep would decrease sweep from twenty degrees rearward sweep to zero degrees sweep, then increase sweep from zero degree sweep to five degrees forward sweep. Because the invention of the '931 application specifies a nonincreasing sweep angle with increasing radius, this example shows that the invention did not contemplate forward sweep in the outer region.

UTC argues that five degrees forward sweep is actually negative five degrees rearward sweep, but the specification does not use negative signs to indicate forward sweep. For example, the specification describes translating the sweep angle from forward sweep to zero sweep as "nonincreasing (decreases, or at least does not increase)." '931 application col.5 ll.36-45. If, as UTC suggests, a negative sign could indicate forward sweep, then translating the outer region from forward sweep to zero sweep would be increasing--a direct contradiction of the requirements of the specification.

This court construes "a sweep angle that causes the blade to intercept the shock" from the point of view of a person of ordinary skill in the art. See Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005) ("It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed."). The record shows that a person of ordinary skill in the art would consider translating beyond a zero degrees sweep angle to create a forward sweep angle as a total reversal of direction, rather than a mere "decrease" of the angle. This interpretation would remain correct even if negative signs indicated a forward sweep. Also, the record shows that translating the outer region toward the axial direction, as required by this court's construction of "translated forward," results in a completely unrealistic blade shape well before the sweep angle is reversed to a forward sweep angle. Therefore, a person of ordinary skill in the art would not understand claim 23 of the '931 application to cover forward sweep.

UTC argues that the specification of the '931 application supports its construction of "a sweep angle that causes the blade to intercept the shock" because it states that "the invention contemplates any blade whose airfoil intercepts the endwall shock to bring the passage shock into coincidence with the endwall shock." '931 application col.5 ll.2-4. To the contrary, the specification teaches that the sweep angle must be nonincreasing with increasing radius--a reading that cannot include forward sweep. See '931 application col.4 ll.27-29. The district court found that a person of ordinary skill would not have understood the specification to disclose a total reversal of direction from rearward to forward sweep. Interpreting the claim to encompass forward sweep would unreasonably broaden "a sweep angle that causes the blade to intercept the shock."

UTC argues that the prosecution history of the related '040 patent shows that "a sweep angle that causes the blade to intercept the shock" covers forward sweep in the outer region. The portions of the prosecution history of the '040 patent serving as a basis for UTC's argument state:

[A] preferred embodiment of the present invention's blade has a leading edge sweep angle that decreases in a tip region, or put another way, has a leading edge with a tip region that is translated in a direction opposite to that of the sweep of the leading edge intermediate region.

[N]one of the prior art . . . discloses or suggests a supersonic turbomachinery blade with a leading edge that is swept in one direction (rearward or forward) and a tip region that is translated in the other direction from its boundary with the intermediate region.

J.A. 7171-76. Again, this court does not read this prosecution history to include forward sweep. These passages do not discuss translating the blade so far forward as to reverse the direction of the sweep. This court will not unreasonably construe "a sweep angle that causes the blade to intercept the shock" to include forward sweep in the outer region based on unclear prosecution history particularly when the specification does not allow forward sweep.

UTC also presented extrinsic evidence of computational fluid dynamics (CFD) simulations conducted by its expert, Dr. Yuan Dong, to support its proposed claim construction. It argued that a person of ordinary skill in the art at the time of the invention who conducted a CFD analysis would have seen that under at least some conditions, forward sweep in the outer region was required to intercept the shock. As noted earlier, "the shock" referenced in claim 23 is endwall shock. The record shows that endwall shock is not visible in CFD simulations.

The record shows that one of ordinary skill in the art would not reverse the direction of the sweep angle without a clear
motivation to do so. As CFD simulations would not show endwall shock, those simulations would not make one of skill in the art think that claim 23 included forward sweep in the outer region. In addition, in Dr. Dong’s CFD simulations, he translated the outer region in the direction of the relative velocity vector, not toward the axial direction. Therefore, his simulations do not reflect the correct claim construction.

Dr. Dong also equated endwall shock and passage shock even though the specification states that they are unrelated. ’931 application col.1 ll.40-45. As endwall shock is not visible in CFD simulations, Dr. Dong translated the blade until it intercepted the passage shock. Because endwall shock and passage shock are located in different positions within the fan, translation forward to intercept the passage shock would not yield the same fan blade as translation forward to intercept the endwall shock. Thus, this court does not believe that Dr. Dong’s CFD simulations reflect the views of one of ordinary skill in the art in deciding to sweep the blade forward in the outer region to intercept the endwall shock. Moreover, this extrinsic evidence in no way overcomes the intrinsic evidence in the specification that excludes forward sweep in the outer region.

Defendant Ion Beam construes the term "switch" to mean "a device designed to close or open, or both, one or more electric circuits." (Ion Beam P.&A. at 28-29.) The court, however, implicitly defined the term already in its discussion of the term "switchyard." Microsoft defines the term as "a circuit element that has two states. (Airhart Decl. Ex. P. at 249.) The term switch is defined by the Oxford English Dictionary as follows:

Name for various mechanical devices for altering the direction of something, making a connexion or disconnexion, or other purposes. a. On a railway: A movable rail or pair of rails pivoted at one end, . . . b. In an electric telegraph, telephone, signalling-, lighting-, or other apparatus: A lever, plug, or other device for making or breaking contact, or altering the connexions of a circuit, . . . e. Computers. A program instruction that selects one or other of a number of possible paths according to the way it is set.

OXFORD ENGLISH DICTIONARY (2d ed. 1989). Accordingly, the term "switch" is hereby defined as "a device for altering the direction of something, in this case a beam, and selecting the onward path of the entity by choosing between at least two possible paths." (See Airhart Decl. Ex. H at 145; and Ex. N at 226; accord Rosenberg Decl. Ex. 3, the ’642 Patent at 6:14-17.)

Examining the scope of 3(C)(e) first, I find that its plain language, when read in light of the specifications, is not limited to a sliding mode selector switch. Claim 3(C)(e) reads that the audio recording and tape measuring system comprises:

a mode selector switch connected to the circuit controlling and processing means and movable between a RECORD and a PLAY mode, enabling the circuit controlling and processing means to establish the desired operation of the recording circuit.

Zircon argues that the language, "movable between a record and a play mode," requires a slide switch to be read into Claim 3(C)(e) because Claim 2(e), which also defines the mode selector switch, uses "selecting" instead of "movable between." I find that the specifications do not limit the term "movable between" exclusively to the action of a slide switch.

In making this determination, I have presumed that different language between claims signifies a difference in their meaning and scope and that I may interpret claims in light of the specifications that led to the patent. Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, 1023 (Fed. Cir. 1987). However, I note that I cannot read into a claim a limitation that appears only in a specification since the claim, not the specification, measures the invention. SRI Int'l. v. Matsushita Elec. Corp. of America, 775 F.2d 1107 (Fed. Cir. 1985). Furthermore, two claims which read differently may cover the same subject matter. Tandon, 831 F.2d at 1023.
The specifications state that the mode selector's preferred embodiment "comprises a slide switch which is movable... between a PLAY position and a RECORD position." This differs from the antecedent basis for Claim 2(e) which calls for a mode selector button for mode selection. Despite this difference I refuse to read a slide switch requirement into Claim 3(e) because the specifications also state that "various alternate switch configurations can be employed..." This specification language clearly indicates that Claim 3(C)(e)'s "movable between" language does not necessarily require a slide switch, but allows for other types of switches.

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A "Switch Lock"

Fellowes defines "a switch lock" in Claim 1, element 1(t), as "a device that prevents movement of the on/off switch." Michilin proposes that a "switch lock" is "a device located on the exterior of the housing of the shredder that prevents movement of the on/off switch." Intek merely urges the Court to find the switch lock to be "distinct and separate from an on/off switch."

Fellowes' view that the "switch lock" "prevents movement of the on/off switch" is supported by a plain reading of Claim 1, the summary of the invention and the specifications. Claim 1 teaches that the "switch lock" is movable from a "locking position wherein the switch is locked in the off position" to a "releasing position wherein the switch is released for movement from the off position." '559 Patent, col. 6, lines 54-57. See id. at col. 1, lines 26-28 ("One aspect of the invention provides a shredder with a switch lock that locks the on/off switch in its off position."); id. at col. 5, lines 3-8 (in order to activate the shredder, the switch lock "must first be moved to its releasing position, and then the switch 42 is moved to its on or reverse position. This reduces the likelihood of the shredder mechanism 16 being activated unintentionally.").

Michilin's argument that the "manually engageable portion" of the "switch lock" must be located on the exterior of the housing is rejected in that fashion and the reasons are set forth below in the construction of the terms "provided on the exterior of the housing," element 1(y). See Section 5. The only remaining issue is whether, as Intek submits, the "switch lock" is "distinct and separate" from "an on/off switch." Intek points to the word "a" before the term "switch lock," as well as the specifications and figures, as evidence that "a switch lock" is a "new element, different" from the "on/off switch." Intek Br. 23 (citing '559 Patent, figs. 1-3, 7-10). Intek may be correct that "a switch lock" and "an on/off switch" are "different" and provide "separate and distinct functions." Id. at 23-25. Yet although the "switch lock" provides a distinct service from the "on/off switch," it could not be separated from the "on/off switch," as it is manually operated to lock the "on/off switch."

The Court rejects Intek's construction for present purposes and FINDS that "a switch lock," element 1(t), is "a device that prevents movement of the on/off switch."

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1. "Switchyard"

According to Claim 1 of the '581 patent, the technology at issue comprises a "radiation beam source, beam accelerator, plurality of treatment rooms and a switchyard for directing accelerated beam from the accelerator to a selected... treatment room[]." (Id. at 9:2-7.) Plaintiff relies on standard dictionary definitions to arrive at the following construction for the term "switchyard": "systems of devices by which the beam is transported along one of a plurality of paths." (Optivus P.&A. at 13:19-20.) Defendant, on the other hand, argues the patentees specifically defined the term "switchyard" in the patent specification. (Ion Beam Opp'n at 6:5-7.) Ion Beam relies on extrinsic expert testimony from Dr. Lennox to formulate its own definition: "[t]he set of transport line equipment including all switching magnets, dipole magnets, and quadruple magnets which direct the beam from the accelerator to delivery in the treatment room." (Ion Beam P.&A. at 14:3-5.) Once again, as in its construction of the claim terms at issue in the '287 patent, Defendant Ion Beam adopted a very narrow construction, limiting the patent at issue to a narrow set of highly specific parameters. (See id.) Plaintiff's rebuttal expert, Dr. Lundy, responds that the construction should not be limited to specific types of magnets as Dr. Lennox proposes.
Once again, the court turns first to the language of the claims and the common meaning of the claim terms before reviewing the specification to see if the patentees have specially defined any claim terms. Vitronics, 90 F.3d at 1582. "In construing claims, the analytical focus must begin and remain centered on the language of the claims themselves." Texas Digital Sys., 308 F.3d at 1202. "The terms used in the claims bear a 'heavy presumption' that they mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art." Id. Dictionaries and technical treatises are always available to the court to aid in the task of determining meanings that would have been attributed by those of skill in the relevant art. See id. (citing Vitronics, 90 F.3d at 1584 n.6; and Cybor Corp., 138 F.3d at 1459.)

Random House Dictionary of the English Language ("Random House") defines "switchyard" as "a railroad yard in which rolling stock is distributed or made up into trains[.]" (Airhart Decl. Ex. H, p. 145.) Similarly, the American Heritage Dictionary (4th ed. 2000) defines the term as "[a]n area where railroad cars are switched and trains assembled." The Webster's New Universal Unabridged Dictionary ("Webster's Unabridged") defines "switchyard" as: "a railroad yard where cars are shifted from one track to another by means of a system of switches as in making up trains." (Airhart Decl. Ex. L. at 193.) The Oxford English Dictionary includes a similar definition, but adds the following: "an enclosed area of a power system which contains the switchgear." OXFORD ENGLISH DICTIONARY (2d ed. 1989). The definition found in the Oxford English Dictionary plainly indicates the "term" switchyard is equally applicable to a "power system," and not just locomotives. See id.

Turning to the patent specification, the description in the '581 patent teaches an "illustrated beam handling system . . . [that] also includes a switchyard 6 comprising four switching magnets 38, 40, 42, and 44." (Rosenberg Decl. Ex. 2. the 581 Patent at 2:40-43; see also Ex. 3, the '642 Patent at 4:47-48.) Figure 1 is a rendering of the entire system, including the switchyard. (Id. at p. 2.) The description recounts four switching magnets comprising the switchyard. Each has two states. (Id. at 2:40-45.) Figure 1 depicts the same. The switching magnets are arranged in a line with switching magnet 44 downstream from switching magnets 42, 40 and 38. (See, e.g., id. at p. 2, Fig. 1.) The beam leaves the synchrotron and encounters the first switching magnet, numbered 38. (See id.; id. at 2:40-50; see also Ex. 3 at 4:40-50) With the switching magnet in the first state, it will bend and deliver the beam to the first treatment station. (Id.; see also Ex. 3 at 4:52-55.) In the second state, the switching magnet will let the beam travel "downstream" to the next switching magnet in the switchyard. (Id. at 2:49-55; see also Ex. 3 at 4:52-55.) In other words, each switching station operates just like a switch on a train track - it either diverts the beam to a side track, or allows it to continue traveling down the same track toward a selected treatment room. (See id.) Accordingly, it is apparent that the term "switchyard" does not really have any special technical meaning in the context of the '642 patent. (See id.) It is akin to "a switchyard" as that term is generally understood.

Technical glossaries 15 confirm this conclusion. The Fermilab website defines "switchyard" as "a transfer beam line that will direct beam coming from the Main Injector to the Meson line in the fixed target area." Available at http://www.fnal.gov/pub/news03/definitions/switchyard.html. The Stanford Linear Accelerator Center ("SLAC"), originally constructed in 1962, defines the term "Switchyard" as follows: "When the electrons and positrons reach the end of the linac and enter the Beam Switch Yard (BSY), they are diverted in different directions by a powerful dipole magnet and travel into storage rings, such as SPEAR or PEP, or into other experimental facilities, such as Final Focus Test Beam (FFTB) or the arcs of SLC -- the SLAC Linear Collider." Available at http://www2.slac.stanford.edu/vvc/accelerators/bsy.html.

15 The court hereby takes judicial notice of the SLAC and Fermilab websites, and the technical glossaries embedded therein.

Turning to the extrinsic evidence supplied by Defendant Ion Beam, Dr. Lennox draws the court's attention (Lennox Decl. at P 42) to a Fermilab publication entitled Conceptual Design of a Proton Therapy Synchotron for Loma Linda University Medical Center (1986). (Rosenberg Decl. at Ex. 7.) That article includes the following definition: "The switchyard transports protons from the accelerator to the start of the individual dedicated beam lines leading to the separate beam-spreading systems. An element is defined to be a part of the switchyard if two or more treatment-room beam lines use it. Otherwise, the element will be part of a dedicated treatment-room beam line." (Rosenberg Decl. Ex. 7 at p. 68 of '74.) In light of this article, it is difficult to see how the term "switchyard" is being used any differently than the common dictionary.
The article simply describes a system where, like a train "switchyard," a single track of proton beams is fed into a "switchyard" where it then is diverted on to one or another track leading to one of the treatment rooms. 16 (See id.)

Accordingly, the court hereby finds the term "switchyard" to mean "a series of switches 17 that bend or otherwise divert the proton beam emanating from the accelerator in one of two directions; that is, the beam is either diverted toward a treatment station or sent on to the next switch in the yard."

APL contends that the proper construction of the term "swivel" is "a swivel that is separate from and rotates independently of the turntable." SBM does not dispute that the intrinsic evidence of Claim 1 requires that the swivel be separate from the turntable. Instead, SBM disagrees that there is anything that "requires" the swivel "to move differently from, or at a different time than, the turntable." The real question is whether the swivel and turntable are required to be able to move differently from each other and at different times, i.e., independent of each other.

An entry in the prosecution history for the '183 Patent states:

"By means of the arm 6, a moment can be exerted on the turntable 5 for rotation thereby of the vessel. Forces which act on the turntable do not affect in any way the connection of hoses 8 and 9. The turntable rotates independently of the swivel."

Extrinsic evidence supports APL's proposed construction. Dr. Leendert Poldervaart ("Dr. Poldervaart"), who had a role in the prosecution of the '183 Patent, was presented by SBM as its corporate representative for an oral deposition in this case. He testified that the swivel and the turntable have "independent bearing arrangements" and therefore "rotate independently from each other." Deposition of Leendert Poldervaart, at 48:18-49:4. Dr. Poldervaart also noted that in some circumstances the swivel and the turntable could rotate "in the same direction," "in opposite directions," and "completely independently from each other." Id. at 49:25-51:4.

The Court agrees with APL's proposed construction of the term "swivel" as it is used in Claim 1 of the '183 Patent.
4. Claim 11 ("swivel member")

Claim 11 (and all dependent claims) in the '286 patent uses the term swivel member in the following context: "An ultrasonic instrument according to Claim 10, wherein the coupling member includes a swivel member, the swivel member being positioned to permit rotation of the coupling member in relation to the movable handle." '286 Patent, Claim 11 (emphasis added). Plaintiff proposes construing the term as "component designed to permit swiveling or rotation of another part," whereas defendant proposes "a component that permits the coupling member to pivot freely."

The Court construes this term as: "A component designed to permit the coupling member to swivel or rotate." n8 First, this construction comports with the plain language of Claim 11, which expressly describes what the "swivel member" is designed to do. See '286 Patent, Claim 11 ("the coupling member includes a swivel member, the swivel member being positioned to permit rotation of the coupling member") (emphasis added); accord '286 Patent, 5:13-18 ("Swivel member 108 is preferably formed from molded half-sections 108a and 108b and permits rotation of the coupling member relative to movable handle 36."); 6:1-6 ("Referring to FIGS. 11-15, when movable handle 36 is pivoted clockwise about pivot member 82 towards stationary handle portion 28, in the direction indicated by arrow "A" in FIG. 11, cam slot 88 engages protrusion 90 of the swivel member 108 to advance coupling member 98 distally within cavity 110 of rotation knob."). Second, defendant's proposal of "pivot freely," instead of "swivel" or "rotate," imports a term that has no basis in the intrinsic evidence; the words "pivot freely" describe motion different from simply "swivel" or "rotate."

n8 While plaintiff argues that the swivel member permits the swiveling or rotation of "another part" instead of, specifically, the "coupling member," see Markman Tr. at 37, the Court does not see a basis for this construction in the intrinsic evidence. The claim language specifically provides that the swivel member permits rotation of the coupling member. While the coupling member may in turn permit rotation of the rotation knob, see id. at 37-38, it is the coupling member that interfaces with the swivel member. Accord id. at 38 ("The coupling member is sort of the interface between the swivel member and the rotation knob.").

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Swung Forwardly and Upwardly About A Transverse Axis

The second issue of interpretation is whether to swing "about a transverse axis" requires rotation about the axis or applies to fingers which are fixed upon the axis and bend in response to pressure. The Court finds that the bending of fixed flexible fingers does not constitute swinging about an axis. Swinging about an axis necessarily requires some pivoting or rotation at the axis. Plaintiff correctly points to dependent claim three which adds as a further element that "said fingers are individually mounted to [a rod] for swinging movement thereon," as evidence that this limitation is not contained in claim one. However, this limitation is far greater than a requirement for a hinge or pivot about the axis. It imposes limitations of a rod comprising the axis and individual free swinging fingers. This Court's interpretation of claim one does not incorporate these limitations.

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B. Merits.

Dataware contends the labels it manufactures and sells do not infringe on any claim of the '816 patent under 35 U.S.C. § 271(a). A literal patent infringement analysis involves two steps: the proper construction of the asserted claim and a determination as to whether the accused method or product infringes the asserted claim as properly construed. Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed.Cir.1995), aff'd, 517 U.S. 370, 390, 134 L. Ed. 2d 577, 116 S. Ct. 1384(1996). Claim construction is a matter of law. Id. at 979. Here, in addition to literal infringement, EDP asserts Dataware's labels infringe the patent under the doctrine of equivalents, i.e., the Dataware label contains elements identical or equivalent to each claimed element of the '816 patent. See Warner-Jenkinson Co., Inc. v. Hilton Davis Chemical Co., 520 U.S. 17, 40, 137 L. Ed. 2d 146, 117 S. Ct. 1040 (1997). Although equivalents is a factual matter normally reserved for a fact
finder, the trial court should grant summary judgment where no reasonable jury could find equivalents. Id. at 39 n.8. I consider the motion for summary judgment on the grounds that the Dataware labels do not (1) literally infringe the claims of the '816 patent and (2) do not infringe the '816 patent under the doctrine of equivalents.

Dataware claims its labels do not infringe the claims of the '816 patent when properly construed. As stated, this involves an analysis of the proper construction of the asserted claim and a determination as to whether the Dataware labels infringe the asserted claim as properly construed. See Markman, 52 F.3d at 976. In determining the proper construction of a claim, there are numerous sources that may be utilized for guidance, including both intrinsic evidence (e.g., the patent specification and file history) and extrinsic evidence (e.g., expert testimony). Vitronics Corp. v. Conceptoronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). I look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and the prosecution history, as the most significant source of the legally operative meaning of disputed claim language. Id.

Dataware asserts its labels do not literally infringe the '816 patent because its alpha-numeric are all the same size, while an amendment to the patent specified that the alpha-numeric in one part of the EDP label be larger than those in another part. Dataware maintains the prosecution history of the patent bars EDP from arguing either (1) that the patent claims encompass labels in which the alpha-numeric are the same size or (2) that the human readable code may be expanded to encompass background color. On this second issue, Dataware points to dependent claims 2 and 8 which distinguish "human readable code" from "background color" in terms indicating the background color comprises a "third code." Dataware also points to language in the application in which EDP used the term "character" to distinguish prior art and explain the advantages of the size of different characters.

In response, EDP asserts factual disputes preclude summary judgment. EDP focuses on the term "symbols" in claims 1 and 7 of the '816 patent. The last paragraphs of these claims refer to "symbols of said human readable code," with larger symbols in the second horizontal row than such symbols in the first horizontal row. The allegedly infringing EDP FAST-SCAN TM label has smaller color blocks on top than on the bottom but the same size alpha-numeric.

EDP contends the term "symbol" is not defined in the patent and was not discussed by the Patent Office examiner or EDP's attorney during the prosecution process. Arguing the term is ambiguous, EDP provides extrinsic evidence, including the affidavit of expert Robert Sterne, to the effect that "symbol" is sufficiently broad to include color.

In reply, Dataware asserts construction of the claims of the '816 patent is a matter of law and not a factual issue precluding summary judgment. It states the claims are not ambiguous, citing a portion of Sterne's report in which he concluded the meaning of the claims of the '816 patent "is clear without any ambiguity." (Reply, Ex. A at P 35.) Finally, Dataware contends EDP is estopped from arguing the background colors are part of the symbols of human readable code because EDP's own prior art (the '674 patent) discloses the use of color blocks of different sizes. Dataware seeks a ruling that the symbols of human readable code in the '816 patent cannot be interpreted to include the background colors.

At the hearing on the motion, counsel agreed that, if the court were to decide that the term "symbols of human-readable code" in claims 1 and 7 does not include color, then there would be a finding of non-infringement, whereas concluding the term did not include color, would result in a finding of infringement. (Tr. Hearing Sept. 28, 1998 at 27-28.)

In interpreting the term "symbols of said human readable code," I first look to the words of the claims themselves to define the scope of the patented invention. See Bell Communications Research, Inc. v. Vitalink Communications Corp., 55 F.3d 615, 620 (Fed.Cir.1995). Although words in a claim are generally given their ordinary and customary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history. Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578 (Fed.Cir.1996) (holding "[a] technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent and the prosecution history that the inventor used the term with a different meaning") (citations omitted).

Second, I review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning. The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication. Markman, 52 F.3d at 979. "Claims must be read in view of the specification, of which they are a part." Id. The specification contains a written description of the invention which must be clear and complete enough to enable those of ordinary skill in the art to make and use it. Thus, it is always highly relevant to the claim construction
analysis. Usually, the specification is dispositive; it is the single best guide to the meaning of a disputed term. Vitronics, 90 F.3d at 1582.

Third, I may also consider the prosecution history of the patent, here in evidence. See Markman, 52 F.3d at 980. This history contains the complete record of all the proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claims and is often of critical significance in determining the meaning of the claims. Id. Included within an analysis of the file history may be an examination of the prior art cited therein. Vitronics, 90 F.3d at 1583.

In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term and, in such circumstances, it is improper to rely on extrinsic evidence. Id. In those cases where the public record, i.e., the claims, specification, and file history, unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper. Id.

The '816 patent specification states:

In general, the label of the present invention contains a message displayed in three codes. A first code is a machine readable code such as a bar code, a second code is in a human readable for showing letters and digits. A third code, consisting of background colors behind the human readable code, provides additional visual indication of sequencing of the media to which the labels are attached.


The Abstract and Summary of the Invention emphasize the importance of the large letters in the lower portion of the label. (Id. at col. 2, ln. 34-37.) In addition the background color is distinguished from the human readable characters in the Summary of the Invention. (Id. ln. 27-31.) The '816 patent explains the human readable code may be a number of letters or numbers and that it is not necessary to have only two letters or numbers adjacent to the bar code but never suggests the background color could be the human readable code. (Id., col. 3, ln. 32-42.)

Moreover, the claims distinguish the human readable code from the background color. Claims 2-4 and 8-10 distinguish "the human readable code" from the background color" which is printed "around said human readable code wherein said background color comprises a third code . . . ." (Id., col. 4, ln. 20-31.) Dependent Claims 3 and 9 state the human readable code is printed vertically along the longitudinal axis of the label, while dependent Claims 4 and 10 require that it be printed horizontally. (Id., col. 4.)

I find the specification itself, the best guide to the meaning of the term, dispositive. See Vitronics, 90 F.3d at 1582. The only way to construe the term "human readable code" that is consistent with the specification necessarily excludes a colored background. The specification is clear, the human-readable code is alpha-numeric and the colored background around the human readable code is a separate and distinct feature, indicated as a third code.

Even if I did not consider the specification itself dispositive, the file history is also consistent with a finding that the human readable code required by claims consists of the alpha-numeric characters, rather than the background color. The arguments presented to the Patent Office to distinguish the prior art, consistent with both the specification and the claims, were based upon the size of the alpha-numeric, referring repeatedly to the size of the characters on the label rather than the background color. (Substitute Br. Supp. Mot. Summ. J., Ex. B, Response at P. 6-7.) I therefore conclude, based on the intrinsic evidence that, properly construed, "symbols of said human readable code" does not include background color. I next determine whether a genuine issue exists as to whether the Dataware FAST-SCAN TM label infringes the asserted claim as properly construed. See Markman, 52 F.3d at 976.

B. "Arranged Symmetrically" and "At Least Seven Layers Arranged Symmetrically"

1. The Parties' Proposed Constructions
Cryovac argues that the claim term "arranged symmetrically" should be construed as part of the phrase "at least seven layers arranged symmetrically" to mean:

at least the seven layers recited in subparagraphs (a), (b), (c) and (d) of claim 11 arranged such that one layer (b), one layer (c) and one layer (d) are in the same order on each of the opposite sides of the core layer (a), for example c/d/b/a/b/d/c. This claim phrase limits the arrangement of the layers. It does not limit the thickness of the layers. Nor does it limit the amounts of recited components or additives that may be included in the layers.

(D.I. 203 at 24.) In support of their proposed construction, Cryovac argues that the context, grammar, specification, and prosecution history of claim 11 show that only the arrangement of the layers must be symmetrical and that there is no limitation requiring symmetry in the thickness or chemical composition of the layers. (D.I. 203 at 25.) Specifically, Cryovac contends that "symmetrically" modifies "arranged", which shows only that the layers must be in symmetric order, not that "the layers are themselves symmetric." (Id.) Additionally, Cryovac argues that the specification of the '419 patent, which has language referring to the thickness of "each" layer, shows that the thickness of the layers can vary individually. (Id. at 27.) Cryovac also asserts that Pechiney's proposed construction would exclude preferred embodiments (id. at 28), and that the prosecution history does not support the additional limitations Pechiney attempts to read into the claim (id. at 30).

Pechiney, on the other hand, argues that absolute symmetry is required in the thickness of the layers and their chemical composition. Pechiney asserts that the intrinsic evidence in the patent and the ordinary meaning of the terms support its reading of the claim. (D.I. 204 at 7-8.) Pechiney proposes that "arranged symmetrically" should be construed to mean:

Putting the layers in a desired symmetrical order when the film is viewed in cross-section, that is, putting the layers in an order so that the geometrical center line of the core layer is in the geometrical center line of the film and there is correspondence in the size (thickness) and composition of layers being mirror images of each other with the same thickness and the same chemical composition.

(D.I. 204 at 7.) Pechiney contends that its construction is consistent with the specification of the '419 patent, as the specification discusses a "symmetrical seven layer structure," but never defines the term "arranged symmetrically," and gives no example in which corresponding layers had different thicknesses. (Id. at 10-13.) Pechiney further argues that because during prosecution Cryovac distinguished claim 11 of the '419 patent from a prior art film that was "asymmetric", that claim 11 only covers films that are symmetrical in arrangement, layer thickness, and layer composition. (Id. at 13-17.) Finally, Pechiney argues that in looking at the whole claim, Cryovac's construction renders the "arranged symmetrically" limitation superfluous. (Id. at 18-20.) Thus, the dispute between the parties hinges on whether the claim term "arranged symmetrically" refers simply to the order of the layers, as Cryovac asserts, or whether that term requires absolute geometrical symmetry, as Pechiney contends.

2. The Court's Construction

The plain language of claim 11 and the prosecution history of the '419 patent support Cryovac's assertion that the term "arranged symmetrically" requires only symmetrical arrangement of the layers in the film, but not precise identity in the thickness or chemical composition of those layers. First, looking simply at the plain language and grammar of claim 11 of the '419 patent, what is claimed is a film "having at least seven layers arranged symmetrically." See U.S. Patent No. 4,755,419 at col. 9, Ins. 67-68. The word "symmetrically" modifies the word "arranged," and thus requires only that the layers should be symmetrical in their arrangement. Nothing about this language requires or even suggests that corresponding layers must be precisely identical in thickness or chemical composition, having geometric symmetry around a center line.

Furthermore, the prosecution history of the '419 patent favors this construction of the term "arranged symmetrically". To support its argument that there must be absolute symmetry in the thickness and chemical composition of the layers of the film, Pechiney attempts to rely on the fact that, during the prosecution of the '419 patent, Cryovac added the "arranged symmetrically" claim limitation to overcome a prior art rejection. (D.I. 204 at 16.) Indeed, Cryovac added this limitation to overcome an obviousness rejection over U.S. Patent No. 4,284,674 to Sheptak ("Sheptak") in view of U.S. Patent No. 4,532,189 to Mueller ("Mueller"). (D.I. 249, Ex. 3 at CR056-000155.) Sheptak, however, disclosed an eight layer film, with five layers that were symmetrically arranged and an additional three layers added to one side of the five layer film, making
the overall structure asymmetric. (D.I. 249, Ex. 6 (showing a film orientation of c/b/a/b/c/d/e/f).) Mueller disclosed three
and five layer films that appear to have a symmetrical arrangement, although that symmetry is not explicitly claimed. (D.I.
216, Ex. 12.)

Cryovac argued during prosecution of the '419 patent that Sheptak disclosed an asymmetrical film and that, as a result,
adding the outer layers of the film disclosed in Mueller would still give a structure that was asymmetrical. (D.I. 249, Ex. 3 at
CR056-000155.) Cryovac asserted that the film disclosed in the '419 patent had, by contrast, "at least seven layers [that
were] ... symmetrically arranged." (Id.) Cryovac claims that through this amendment it was simply distinguishing the prior
art by pointing out that the three additional layers added to the Sheptak film's symmetrical layers made that whole film
asymmetrical in arrangement, and that such an arrangement would remain asymmetrical even with the addition of the outer
layers from Mueller. (D.I. 248 at 29-31.) Nothing about this amendment shows, as Pechiney urges, that Cryovac was
asserting with the addition of this limitation that its claimed film had perfect symmetry in thickness and chemical
composition of the layers of the film. Accordingly, the prosecution history supports a construction of the term "arranged
symmetrically" that does not require precise identity in the thickness and chemical composition of the layers.

Finally, Pechiney urges that if Cryovac's proposed construction is adopted, the "arranged symmetrically" limitation would
be superfluous, as the body of the claim describing layers (a), (b), (c), and (d) teaches a film that is arranged symmetrically
under Cryovac's definition. However, although the body of the claim does teach that layers (b), (c), and (d) must be put in a
symmetrical order, nothing in the body of the claim prevents the addition of layers on one side of the (a) layer. Therefore,
without the limitation that the film must be "arranged symmetrically," an additional layer could be added on one side of the
(a) layer, making the film have a structure of c/d/b/a/b/d/c. Thus, "arranged symmetrically" is not superfluous as I have
construed it.

Having determined that precise identity in the thickness and chemical composition of the layers is not required by the term
"arranged symmetrically," there still remains the question of just how much alike the corresponding layers must be. The
claim language itself provides the answer to that question. Claim 11 of the '419 patent describes the composition of each of
the layers of the film. ('419 patent at col. 10, Ins. 1-9.) For example, (b) layers must each comprise a polyamide, and (c)
layers must each comprise a "polymeric material or blend of polymeric materials." (Id. at col. 10, Ins. 3-6.) Thus, the
chemical composition of the layers of the film claimed in claim 11 of the '419 patent is limited only by the definitions of the
layers themselves, as stated in the claim, and not by the claim term "arranged symmetrically."

Accordingly, I construe "arranged symmetrically" to mean "putting the layers in a desired symmetrical order when the film
is viewed in cross-section, so that the layers are in the same order on each side of the core of the film, for example
c/d/b/a/b/d/c. This claim phrase limits only the arrangement of the layers, and does not require precise identity in the
thickness of the layers or the amounts of recited components or additives that may be included in the layers." 5

--- Footnotes ---

5 Cryovac has urged that I construe the phrase "at least seven layers arranged symmetrically" rather than simply "arranged
symmetrically." Its proposed construction encompasses limitations set forth not only in that phrase, but also in other parts
of the claim. Because the limitations that Cryovac attempts to import into the construction of "at least seven layers arranged
symmetrically" are in other parts of the claim, I decline to import them into the construction of this term. Additionally,
because the meaning of "at least seven layers" is clear, I have construed only the phrase "arranged symmetrically."

--- End Footnotes ---
C. a syringe mounting for attachment to a syringe to position a syringe relative to said injector to permit said plunger drive ram to engage and move a plunger into or out of said syringe

<table>
<thead>
<tr>
<th>Term</th>
<th>E-Z-EM's Definition</th>
<th>Mallinckrodt's Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;a syringe mounting for attachment to a syringe to position a syringe relative to said injector to permit said plunger drive ram to engage and move a plunger into or out of said syringe&quot;</td>
<td>a syringe mounting for attachment to a syringe to position a syringe relative to said injector head to allow said plunger drive ram to engage and move a plunger from outside to inside (to enter) or inside to outside (exit) of said syringe</td>
<td>a syringe mounting that attaches to a syringe, so that the syringe is positioned to allow the plunger drive ram to engage and move the plunger toward or away from a discharge tip of the syringe</td>
</tr>
</tbody>
</table>

The parties dispute whether this claim limitation is subject to 35 U.S.C. § 112 P 6 and whether the plunger must be capable of entirely exiting the syringe. E-Z-EM argues that "syringe mounting" lacks sufficient structure and is therefore a means-plus-function term. E-Z-EM also argues that the syringe mounting must permit the plunger to completely enter and exit the syringe. The dispute regarding a plunger is the subject of a pending motion for summary judgment.

a. "syringe mounting"

As a preliminary matter, the Federal Circuit has held that "the absence of [the word "means"] creates a rebuttable presumption that section 112, paragraph 6, does not apply." Phillips v. AWH Corp., 415 F.3d 1303, 1311 (Fed. Cir. 2005) (citing Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 703-04 (Fed. Cir. 1998). E-Z-EM argues that "syringe mounting" connotes no structure and the '710 patent never uses or defines the term. E-Z-EM relies on testimony that one inventor had "trouble understanding what [syringe mounting] means" as evidence that it has no reasonably well understood meaning in the art. E-Z-EM Brief at 29.

Mallinckrodt argues that "syringe mounting" is used in common parlance and recites sufficient structure, citing to the Federal Circuit for the proposition that "it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies structures by their function." Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354, 1359-60 (Fed. Cir. 2004). To support its contention that "syringe mounting" is used in common parlance, Mallinckrodt relies upon the testimony of E-Z-EM's expert, Alois Langer, about an unrelated patent application relating to powered syringes:

Q: Do you agree with the statement as set forth in [U.S. Patent Pub. No. 2007/0088270 P 2], "a typical power injector comprises an injector head having a syringe mount and a drive ram"?

A: It sounds like a reasonable statement.

Mallinckrodt Brief, Ex. 11 at 83:5-9. Mr. Langer further testified that a syringe mounting, "in the context of this patent, [is] some sort of mechanism that's used to attach a syringe to the injector." Id. at 32:9-13. To further buttress its argument that "syringe mounting" is used in common parlance, Mallinckrodt cites to a statement from the PTO during reexamination of the '710 patent that a "syringe mounting" was a "barrel clamp." Mallinckrodt Brief, Ex. 24, at 4.

The Court is of the opinion that E-Z-EM has not overcome the presumption that "syringe mounting" is not a phrase to which 35 U.S.C. § 112 P 6. "Syringe mounting" is not a term for which "one of skill in the art would have no recourse but to turn to the [patent's] specification to derive a structural connotation." Welker Bearing Co. v. PHD, Inc., 550 F.3d 1090, 1096 (Fed. Cir. 2008). A "mounting" is something that holds an object in place, and a "syringe mounting" is something that would
hold a syringe in place. Because a syringe is tube-shaped, "syringe mounting" connotes a structure that would hold a tube in place. Syringe mounting is therefore not a means-plus-function term.

b. "into or out of said syringe"

E-Z-EM argues that the plain meaning of "into" and "out of" necessitates the construction that the plunger is capable of entering and exiting the syringe. E-Z-EM applies the doctrine of claim differentiation to now-cancelled claims that recite "to permit said plunger drive ram to engage and move a plunger within said syringe." E-Z-EM Brief, at 33. According to the argument, the inventors knew how to draft a claim for a plunger that need not exit the syringe, but chose not to use those words in the asserted claim. E-Z-EM also relies upon the specification and claim preamble's use of "into" (e.g., "injecting fluids from a syringe into an animal subject") as showing that "into" means specifically "to enter." E-Z-EM Brief, at 34.

E-Z-EM glosses over those parts of the specification that use "into" and "out of" as directional terms. The specification explains that the plunger moves "toward and away from a discharge tip 40 of the syringe," but never mentions exiting the syringe. '710 patent, 6:20-23. The specification also recites that the plunger drive ram "move[s] forward, i.e., outward from the power head housing . . . [or] backward, i.e., into the power head housing." Id. at 10:56-63.

E-Z-EM's reliance on semantics does not give the Court a reason why, in the context of the claims, the plunger must be capable of completely exiting the syringe. The Court construes the limitation to mean, "a syringe mounting that attaches to a syringe, so that the syringe is positioned to allow the plunger drive ram to engage and move the plunger toward or away from a discharge tip of the syringe."

--- Footnotes ---

4 This construction also applies to the term "system" in the '987 and '505 Patents.


The court shall apply the ordinary definition of the term "system." The term "system" shall be construed to mean "an assemblage or combination of things or parts forming a unitary whole[.]

--- Footnotes ---

5) the term "tab holder" means "a structure designed to hold a tab;"

A. Table or Tables

The terms "table" or "tables" are recited four times in Claim 1 of the '270 patent, and each time the term is modified by "side grate" or "side." Plaintiff proposes that the term "table" be construed as "a flat unobstructed horizontal surface positioned at a height to be used for eating meals, operating cooking appliances and/or storage." Defendant proposes that the term be construed as "a substantially horizontal surface capable of supporting objects."

The portable modular field kitchen is first described in the background of the invention section of the '270 patent as a main work surface located at standard countertop height and "a pair of side tables located at standard table height for accommodating the serving of meals and the support of cooking equipment . . . ." (Col. 2, ll. 38-42.) However, under the "brief description of the drawings" section of the '270 patent, the side tables are referred to as "a pair of side shelves." (Col. 3, ll. 38-54.) This description distinguishes the side tables from the center food preparation work surface. (Id.) The specification describes the side grate table as "fashioned from steel in the same manner as the lower grate shelf." (Col. 7, ll. 34-38.) Thus, there is an inconsistency in that the tables are first described as "side shelves" and then distinguished from shelves in the specification identifying "table" and "shelves" as two separate features. The specification further identifies the side tables as "typically utilized for serving meals since the side grate tables 214 and 216 are positioned at table height, i.e., 28" above ground level." (Col. 8, ll. 13-16.) See also Column 9, lines 32-35 (the side grate tables are "positioned at 28" above ground level to facilitate eating meals"). The tables can be utilized for storage of kitchen articles, cookware, packaged food items, and other articles useful in a kitchen. (Col. 8, ll. 20-23.) In contrast, the center work surface is "positioned at standard countertop height of 36" above ground level to facilitate food preparation." (Col. 9, ll. 30-32.)

The claim language distinguishes a "horizontal work surface" from the pair of "side grate tables." (Col. 9, ll. 50-67.) The claim language further distinguishes the work surface and side tables from a "lower grate shelf." (Id.) These embodiments, according to the claim language, are three separate features: a work surface, a side grate table, and a lower shelf. If the patentee intended that the side tables be defined as shelves, the claim would have so stated. The specification of the patent further teaches that the side tables are typically the height for eating meals. Although the description of the drawings describes the side tables as side shelves, see Column 3, lines 43, 48, 52, the patent specification more-than-once describes the side tables as tables typically used for serving and eating meals and for storing kitchen articles. (Col. 18, ll 14-23; Col. 9, ll. 32-37.)

The claim must be read in view of the specification. See Phillips, 415 F.3d at 1315. Citing id. at 1323, Defendant warns against importing limitations from the specification into the claim. The purpose of the specification is to "teach and enable those of skill in the art to make and use the invention and to provide a best mode for doing so." Id. One of the best ways to teach the use of the invention is by providing examples of "how to practice the invention in a particular case." Id. Reading the specification in that context often makes it clear whether the patentee is setting out specific examples of the invention to accomplish those goals or whether the patentee intends that the claim and embodiments in the specification be coextensive. Id. Because of the distinctions set out in the claim between a horizontal work surface, side tables, and lower grate shelves in conjunction with the teachings in the specification, the Court finds that Plaintiff's construction of the term "table" to be accurate with some alteration. 2 Defendant's construction is over-broad and does not take the language of the specification into consideration.
2 Plaintiff includes the term "unobstructed" in its construction of "table." There is no support for or against that limitation. Defendant cites references to hooks, brackets, and suspended cooking articles as examples of obstructions. (Col. 9, ll. 16-22; Col. 8, ll. 50-52; Col. 3, ll. 15-17.) However, all of these cites refer to the area above the horizontal work surface and not to the side grate tables.

For the foregoing reasons, the Court construes the term "table" and/or "tables" as follows:

A horizontal surface positioned at a height typically used for serving or eating meals but may be used for the storage of items useful in a kitchen.

IV. "Tack Modifier"

Plaintiff argues that the term "tack modifier," as used in its patents, should be construed so as to include antioxidants when used in an amount greater than .03 percent of the total weight of the final product. To support this construction, Plaintiff uses several steps, based on intrinsic evidence. First, Plaintiff asserts that the antioxidants used in its product have two functions: a primary function of preventing degradation, and secondary function of modifying tack. Next, Plaintiff points to language in the '450 patent stating that "the use of excess antioxidants reduces or eliminates tack." Plaintiff then notes that the '450 patent specification has fourteen examples of mixtures to make their product, three of which have "very minor amounts" of antioxidants. These minor amounts are roughly .03 percent of the total weight of the final product. Plaintiff argues that these minor amounts must serve at least to prevent degradation, and therefore, that the amounts in "excess" as previously referred to, must be amounts over .03 percent.

Defendants argue that the term "tack modifier," as used in Plaintiff's patents, should include antioxidants only when used in an amount greater than three percent of the total weight of the product. Defendants note that the '450 patent states, "When a combination of antioxidants is used, each may comprise up to about three weight percent antioxidant. . . . When a combination of antioxidants is used, each may comprise up to about three weight percent antioxidant. . . . When a combination of antioxidants is used, each may comprise up to about three weight percent antioxidant. . . . When a combination of antioxidants is used, each may comprise up to about three weight percent antioxidant. . . . Additional antioxidants may be added for severe processing conditions involving excessive heat or long duration at a high temperature." Accordingly, Defendants argue that the patent teaches that up to about three weight percent of any one antioxidant is normal usage, and any more than this must be what the patent refers to as "excess."
Looking to the claim language itself, as well as the context in which that language is used, this Court finds that the proper construction of the term "tack modifier" should include an antioxidant only when that antioxidant is used in an amount greater than three percent of the total weight of the product. The '450 patent addresses a seeming upper threshold of antioxidant amounts when it states that "each [antioxidant] may comprise up to about three weight percent." Because the subsequent paragraph begins "the Applicant has unexpectedly found that the use of excess antioxidants reduces or eliminates tack," it follows that "excess" means amounts beyond those referred to in the upper threshold established in the preceding paragraph.

In comparison, Plaintiff's proposed construction is more attenuated, and illogical, as it essentially asks the Court to construe the terms in its patent to mean that any amount of antioxidants beyond "very minor amounts" must be "excess." Plaintiff seems to argue that because an amount of antioxidants equal to .03 percent of total product weight must serve the so-called primary antioxidant purpose of preventing degradation, this must somehow also be the bottom threshold at which the antioxidants begin to serve the alleged tack modifying function. However, the Court notes that there is no evidence within the patent terms that links prevention of degradation and tack modification in this manner. Therefore, acceptance of Plaintiff's proposed construction would require a substantial logical leap. Moreover, while Plaintiff argues that antioxidants are used in all of its products, nowhere does Plaintiff argue that its invention necessarily includes the excess antioxidant amounts necessary to serve a tack modifying function. To the contrary, the argument in Plaintiff's brief implies that at least some of its formulations exclude the amounts of antioxidants which would be necessary to modify tack. Accordingly, the Court will accept Defendants' proposed construction over Plaintiff's.

4. "tail"

The term "tail" first appears in the '086 patent claims in the phrase "constricting said tubular sock-like projectile body forward of said rear opening to close said rear opening thereby forming a tail." '086 patent, 5:9-11. Elsewhere in the claim, the unfilled tubular projectile body is described as having a "rear edge bounding a rear opening thereinto." '086 patent, 5:7.

Defendants' proposed construction of "tail" is the "tubular body portion of the projectile extending rearward from a constriction/delineation and including the rear edge through which shot is filled." Def. Op. Br. at 13. Plaintiff rejects the requirement that the tail be "extending" and include the "rear edge." Plaintiff's construction is that "a tail of a given length is formed dependent upon the location of where the projectile is constricted." Plaint. Br. at "Ex. F." Plaintiff is correct that nothing in the claim requires that the "tail" of the projectile be of a particular length. However, according to plaintiff, the tail also need not include the rear opening or rear edge, but rather may extend forward from the constriction to include the closed end of the tubular body.
Plaintiff's construction contradicts the ordinary meaning of "tail". A "tail" is ordinarily understood to be located at the "rear" or "end" of an object. The claim language "thereby forming a tail" indicates that the prior step in the preparation process, of constricting the projectile body, creates the tail. Thus, the constriction divides the projectile body into two sections, a front end and a rear end or "tail." The claim also requires that the constriction be located "forward" of the rear opening and that the constriction serves to close the rear opening, creating a divider between the opening through which the lead shot enters the projectile chamber and the location in which it is housed within the projectile. The rear opening is on one side of the constriction and the lead shot is on the other side. The claim later explains that the portion of the projectile that contains the "lead shot" is the "front end" of the projectile, employing the term "lead shot-filled closed front end." '086 patent, 5:13-14 (emphasis added). If the lead shot-filled section of the projectile is the "front end," it cannot also be the "tail." Rather, the "tail" must be the portion of the projectile body on the other side of the constriction, which includes the rear opening. Therefore, the "tail" is properly construed as the "portion of the projectile extending rearward from a constriction/delineation and including the rear opening, which is bounded by the rear edge."

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3. "tail portion"

Defendants' proposed construction of "tail portion" is "the tubular body portion of the projectile extending rearward from a constriction/delineation and including the rear edge through which shot is filled that has been folded into an organized bulk of material having a substantially cylindrical shape narrower than the cylindrical shape of the front end portion." Def. Br. at 17.

Plaintiff agrees that the tail portion has a substantially cylindrical shape and agrees that it "has a smaller cross-sectional dimension than the flattened (i.e. blunt) front portion." Plaintiff also rejects defendants' argument that the tail portion must be folded. Plaintiff intentionally and expressly removed the "forming folds" limitation, contained in the '562 patent, from the '133 patent. Plaintiff is correct that nothing in the claim language indicates that the tail must first be folded, as discussed in Part 6, supra. "Tail portion" is therefore construed to mean "the rear end portion of the projectile extending rearward from the lead shot-filled body compartment having a substantially cylindrical shape narrower than the cylindrical shape of the front end portion."

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Also at issue is claim language found in, e.g., claim 1:

A balloon for a medical device, the balloon comprising:

a length of tubing made of Nylon 12, said length of tubing have been formed into the balloon during a balloon forming procedure including inflating at least a section thereof with a pressurized fluid in order to radially expand said length of tubing to at least double its outer diameter;

said balloon has a non-distended working profile having a predetermined size to which the balloon inflates without significant stretching thereof, and said balloon has an expansion profile having a maximum inflated size to which the balloon stretches without bursting during use, said maximum inflated size being greater than said predetermined size of the non-distended working profile; and

said expansion profile of the balloon had been tailored whereby said balloon has a maximum inflated size selected from a range of maximum inflated sizes that are a function of balloon processing conditions.
1. "Tailored"

Cordis contends that the claim limitation requiring "tailorability" means nothing more than "to fashion or adapt to a particular taste, purpose, need, etc." (D.I. 49, Ex. 9 at 1361) Cordis maintains that because ACS supplies balloons of different sizes for different needs, the tailoring limitation is met.

The court disagrees on the record presented. In introducing the concept of "tailoring," the specification describes the invention as including "utilizing a tailorable material such as a nylon material or a polyamide material that is formed into a balloon by appropriate axial elongation, radial expansion and heat treatment procedures." (‘612 patent, col. 3, lns. 36-40) The specification goes on to state that "tailorability that is achieved according to this invention is a function of the particular heat setting conditions." (‘612 patent, col. 6, lns. 40-2) Consistent with the above, the specification provides that materials according to this invention should be able to be tailored during balloon formation to possess the ability to be stretched a generally predetermined percentage beyond its non-distended or working diameter, the amount of this percentage depending upon conditions under which the parison was processed into the balloon.

(‘612 patent, col. 11, lns. 60-66) Finally, the specification explains that "balloon expansion tailorability is a function of heat setting conditions and of hoop expansion ratio for balloon materials according to the present invention." (‘612 patent, col. 13, lns. 1-4) Illustrating this principle is

Figure 5 [which] gives four distention plots, tested at 37 [degrees] C for nylon balloons that are substantially identical except they were subjected to different heat set temperatures. In each case, the balloon was subjected to a 2 minute heat/cool cycle, with cooling being to room temperature. Each balloon was subsequently subjected to ethylene oxide sterilization. Curve F was subjected to a heat set temperature of 120 [degrees] C., curve G was at 130 [degrees] C., curve H was at 140 [degrees] C., and Curve I was at 150 [degrees] C. It will be noted that the curves illustrate different distention properties and the type of tailoring thus achieved.

(‘612 patent, col. 13, lns. 27-37)

--- Footnotes ---

1 As is generally the case with preliminary injunction proceedings, matters of claim construction and determinations of infringement and validity are preliminary and subject to change after discovery and trial.

--- End Footnotes ---

The claim language in dispute is consistent with the quoted passages from the specification, that is, that the "expansion profile 2 of the balloon has been tailored" so that the "maximum inflated size" of a balloon is "selected from a range of maximum inflated sizes that are a function of balloon processing conditions." (‘612 patent, claim 1 at col. 14, lns. 62-66) (emphasis added). In other words, "tailoring" according to the patent is more than making different balloons for different needs. It involves the use of varying balloon processing conditions to vary a balloon's expansion profile. To hold otherwise would be to negate the significance of this aspect of the invention.

--- Footnotes ---

2 The word "tailored" in claim 1 modifies the phrase "expansion profile," not the word "balloon." The "expansion profile" is the "maximum inflated size to which the balloon stretches without bursting during use. . . ." (‘612 patent, claim 1 at col. 14, lns. 57-9)

--- End Footnotes ---

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5. "Tape:" 7 "Long, flexible strip of material." The parties generally agree with this construction, disputing only plaintiffs' proposal to additionally include the limiting phrase "substantially flat." Claim 3 of the '999 patent recites, "[t]he unshielded twisted pair communications cable as claimed in claim 1, wherein prior to cabling, the configurable tape separator comprises a substantially flat tape." (emphasis added) The presence of the additional limitation "substantially flat" in dependent claim 3 gives rise to a presumption that the limitation is not likewise present in independent claim 1. See Phillips, 415 F.3d at 1314-15.

7 '999 patent.

Plaintiff contends that claims 1 and 31 cover a valve head that is of uniform thickness in the outer portions of the valve head, so long as the exterior and interior surfaces converge toward the center to provide a valve head of tapered construction that is thinner at the center portion touching the orifice than at the outer portions. It points out, quite correctly, that the portions of the claims referring to radii do not require the radii to be non-concentric, which would necessarily lead to a continuous thinning (or thickening) of the outer portions. Radii of differing lengths which are concentric would result in walls of continuing equal thickness, the thickness depending upon the relative lengths of the radii. The disagreement between the parties relates to the subsequent language further defining the relationship of the radii:

such that said exterior and interior surfaces converge toward the central area of said head portion to provide a tapered construction with reduced thickness adjoining said orifice.

Those surfaces are the surfaces of at least the outer portion of the valve head. The central portion need not have converging curved surfaces and, indeed, in the figures set forth in the specifications the interior surface of the central area is generally shown as flat, thus resulting in a progressive but not uniform thinning adjoining the orifice at the center.

According to the plaintiff, "tapered" can mean inclined or angled and, in any event, does not require continuous thinning. "Such that" refers to the characteristics of the valve itself, namely that it is thinner in the center. "Converge" is a directional term; both surfaces can converge toward the center at the same angle. Plaintiff contends that the measurements of one embodiment described in the specifications (col. 10, lines 1-20), modified to correct an obvious typographical error, shows outer portions of uniform thickness. That is in accord with an earlier construction of the inventors (not part of the prosecution history) that demonstrated that outer portions of uniform thickness worked well, so long as there was a thinning adjoining the orifice.

We think plaintiff distorts the plain language. The quoted language above qualifies the claims as it relates to the radii. The valve head has outer portions, a central area and an orifice, as plainly appears in the patent drawings and as conceded by plaintiff in its fig. 2 on page 2 of its initial brief. The radii for the surfaces of the outer portions cause curved surfaces that converge toward the central area (which is different from the orifice) to provide a tapered construction prior to the central area, which results in a reduced thickness adjoining the orifice whether or not there is thinning in the central area. "Tapered" can, perhaps, sometimes be construed as inclined or angled, but here it cannot be so construed when it is used in conjunction with "converge." "Converge," according to Webster's Third New International Dictionary, means "to tend toward one point: approach nearer together … move toward a single point: come together …. In that context "tapered" has to mean what defendant contends: "becoming continuously narrower or more slender in one direction." Two surfaces approaching each other, such as a wedge.

Indeed, every figure in the patent drawings that depicts the outer portions shows continuous thinning of the outer portions.
We do not think the plain claim language can be recast because of a described embodiment which, even according to plaintiff, contains an erroneous measurement which would require the public to correct the error and then to draft the figure to understand what it discloses, and which, according to defendants (and we think correctly), would still result in a thinning outer portion. And, obviously, extrinsic evidence of what an inventor learned from his experimentation and what he thought he could claim, none of which is disclosed in the patent, is not entitled to consideration. Again, the public is entitled to rely upon the public record of a patent in determining the scope of the patent's claims.

Plaintiff correctly points out that claim 47 is an independent claim requiring its own construction. Defendants did not originally construe claim 47 and did not believe it necessary to do so because of a footnote to plaintiff's response to defendants' status report of December 23, 2002:

<1>Although this is neither the time nor the place to brief the substance of the claim construction, Plaintiff notes that while claim 1 of U.S. Patent No. 5,439,143 (which is attached to the Complaint) does recite that at least the outer portions be curved, it does not require that any particular portion of the valve head taper. In contrast, claim 47 of the '143 Patent is specifically directed at the construction shown in the drawings, and that claim does require an outer taper. See '143 Patent, col. 21, 11.22-24 ("and a generally inclined outer portion which tapers inwardly"). But this same language, and the limitation it conveys, is absent from claim 1.

Plaintiff has now backed away from the concession, but to no avail. Claim 47 does describe a different geometry. The surfaces of the outer portions are not defined by radii, at least not with respect to the interior surface. That surface can be, for example, a straight line which is, as stated in the claim, inclined (the patentee had no difficulty in using the word "inclined" when it meant inclined). That tells us little about the relationship between the exterior surfaces and the interior surfaces of the outer portions. But claim 47 goes on to include the same dependent clause found in claims 1 and 31: "such that said exterior and interior surface converge toward the central area of said head portion to provide a tapered construction with reduced thickness adjoining said orifice." We construe it in like manner as in claims 1 and 31. That conclusion is reinforced by the further description of "a generally inclined outer portion which tapers inwardly toward said circular center area ...." Again, we construe taper to mean an outer portion which becomes continuously narrower.

3. Tapered Implant

The parties' proposed constructions are as follows:

<table>
<thead>
<tr>
<th>Plaintiffs</th>
<th>Defendant</th>
</tr>
</thead>
<tbody>
<tr>
<td>An implant that gradually diminishes in diameter towards one end.</td>
<td>An implant including a frustoconically tapered portion.</td>
</tr>
</tbody>
</table>

The Court finds that Plaintiffs' proposed construction is appropriate because (1) the claim language describes a method for installing a tapered implant, which tapers from the proximal end to the distal end (Swaroop Decl. Ex. 1, col. 6, ll. 32-44), (2) the specification describes the implant as diminishing in diameter (Swaroop Decl. Ex. 1, col. 3-4), and (3) extrinsic evidence, such as dental dictionaries and general dictionaries, also support construing a "tapered implant" as an implant diminishing in diameter towards one end (Pl's Ex. 3 (Glossary) at 159; Ex. 12 (Webster's) at 2339).

The Court declines to adopt Defendant's proposed construction because it does not give effect to all terms in the claim and is incomplete. First, courts generally construe claim terms so as to give effect to all terms in a claim. Bicon, Inc. v. Straumann Co., 441 F.3d 945, 950 (Fed. Cir. 2006). Here, the claim explains that the tapered implant has a "cylindrical portion" and a "frustoconically tapered portion." (Swaroop Decl. Ex. 1, col. 6, ll. 32-44.) By defining "tapered implant" as including a "frustoconically tapered portion," Defendant's proposed construction does not give effect to the term "frustoconically tapered portion" in the claim. If the Court adopted Defendant's proposed construction, there would be no need for the claim to state that the tapered implant includes a "frustoconically tapered portion." Second, Defendant's proposed construction is incomplete because it does not describe the implant as diminishing in diameter, which is clearly described in the language of the claim. (Swaroop Decl. Ex. 1, col. 6, ll. 32-44.)

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In light of the foregoing, the Court adopts the following construction: An implant that gradually diminishes in diameter towards one end.

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2. A pair of spaced guides tapering in an outwardly direction

I conclude that the term "a pair of spaced guides tapering in an outwardly direction" as used in claim 10 of the '530 patent means two spaced guides, each tapering in a direction away from the centerline of the U-shaped channel on which it is located. The parties dispute whether both spaced guides need to taper outwardly. Plaintiff contends that they don't and defendant contends that they do. Defendant has the more persuasive position.

Nothing in the claim language itself allows the inference that the language "tapering in an outwardly direction" refers to only one of the pair of spaced guides. If the patentee intended such a meaning, he should have claimed "a pair of spaced guides at least one of which tapers in an outwardly direction." The most reasonable construction from reading the claim language is that both guides taper in an outwardly direction. This reading has further support in the specification, which discusses "a pair of spaced guides 90, each guide tapering in an outwardly direction," '530 pat., col. 5, Ins. 1-2, and the illustrations of the invention:

[SEE FIGURE IN ORIGINAL]

Plaintiff contends that the prosecution history of the '530 patent supports its construction. However, nothing in the prosecution history changes the claim language. Plaintiff notes that an earlier version of the '530 patent contained a dependent claim 12 that stated:

12. The snow plow assembly of claim 6 wherein the alignment means includes a pair of spaced guides,

each of the guides tapering in an outwardly direction.

Olejniczak Decl., dkt. # 17, exh. B, at DD 000143. Eventually claim 12 was removed from the patent, but the language in claim 12 was reworked into what is now independent claim 10, which no longer contains the "each of the guides" language. It is important to note that the patentee was not told to change claim 12 for validity reasons.

Contrary to plaintiff's argument, removal of the "each of the guides" language does not support the conclusion that the "tapering in an outwardly direction" was intended to apply to at least one of a pair of spaced guides. A more reasonable view of the removal of the "each of the guides" language is that the phrase was removed because it was superfluous and unnecessary. In creating independent claim 10, the "each of the guides" language would not have added anything but extra words because the phrase "a pair of spaced guides tapering in an outwardly direction" covered the same invention without the extra phrase.

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(1) The term "target material" in claims one, two, five through twelve and fourteen through sixteen. Defendants submit that "target material" simply means the specimen or object that is imaged by the laser scanning microscope. Plaintiffs argue the term means a specimen that has an ultraviolet (UV) excitible fluorophore. In support of Defendants' position, their expert, Dr. Ian Walmsley, explained that the patent itself states that the target material is the substance that will be "imaged." 2 613 Patent 9:64. 3 Dr. Walmsley also testified that the specification treats "target" and "specimen" synonymously. 613 Patent 4:39. Finally, in the prosecution history, target material is explained as something that "includes a fluorescent material that is responsive to short wavelength light." Prosecution History, Defendants' Markman Ex. 5 at 117 (hereinafter "Prosecution History"). Notably, this description does not require the definition that target material be excited in the UV range.

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - - -
Dr. Walmsley is the Chair of Experimental Physics in the Department of Atomic and Laser Physics at the University of Oxford. He received his bachelor's degree in physics from the University of London and his doctorate in optics from the University of Rochester. He has taught, lectured and published extensively on the subject of optics. Walmsley Curriculum Vitae, Defendants' Markman Ex. 32. The Court recognized Dr. Walmsley as an expert in non-linear and ultrafast optics, atomic molecular physics and optical system design. Dr. Walmsley stated that a person of ordinary skill in the art would have a bachelor's degree in a technical field such as physics, optical electrical engineering or biophysics, plus one or two years of experience using lasers or imaging. Before testifying, Dr. Walmsley had reviewed the patent's claims and specification and the prior art. Tr. 154-157.

Throughout this opinion, where appropriate, the Court will cite to the 613 Patent in column:line format.

Plaintiffs' expert, Dr. Scott Fraser defined target material as "target material labeled with a UV responsive fluorescent dye." Tr. 436. Dr. Fraser agreed that the only difference between his understanding of "target material" and that of the Defendants' was that he urged the presence of a UV excitable dye, based on his understanding that the short wavelength range specified in the patent is synonymous with the UV range. Tr. 438. According to Dr. Fraser, all the dyes mentioned in the specification are UV excitable. Tr. 439. On cross examination, Dr. Fraser testified that the target material did not need to fluoresce for purposes of claim 7. Tr. 480-81. Yet, earlier in his testimony he had said the term should have the same definition wherever it appears in the patent. Tr. 442.

Dr. Fraser received his bachelor's degree with honors in physics from Harvey Mudd College and a Ph.D. with distinction in biophysics from Johns Hopkins University. He is a professor of biology and a director of the Biological Imaging Center at the California Institute of Technology. He has lectured and published extensively. The Court notes he is on the Board of Directors for Carl Zeiss, Inc. as an outside member and advises on the sales and service of products. Fraser Expert Report, Plaintiffs' Markman Ex. 52. The Court recognized Dr. Scott Fraser as an expert in the field of imaging technology, including laser scanning microscopy and the use of ultra fast lasers as they relate to that field. Tr. 406. Dr. Fraser's understanding of a person of ordinary skill in the art is "somebody that has a bachelor's level degree in biology or one of the physical sciences or engineering and that has one to two years of practical experience in microscopy or imaging science." Tr. 431-32.

The Court will not read an unsupported limitation into the term "target material." Comark Communications, 156 F.3d at 1186. In fact, contrary to Plaintiffs' assertion, the patent is clear that the target material can fluoresce in something other than the UV range. 613 Patent at 6:50 (describing fluorescence at 315 nanometers, in the ultraviolet region); 6:53 (describing fluorescence at 535 nanometers, in the visible light region). Accordingly, the Court interprets the term to mean: "The specimen or object that is imaged by the laser scanning microscope."
first and second occluding disks, each disk comprising a flexible, biologically compatible membrane capable of being collapsed for passage through a catheter and elastically returning to a predetermined shape for tautly holding a portion of the membrane against a septum.

'291 patent claim 1 (emphasis added).

The relevant language of claim 1 of the '281 patent covers a first member and a second member each comprising a self-expanding structure exhibiting a spring-like behavioural component for moving the member between a compressed orientation for passage through a medical instrument having an inner diameter and an expanded orientation having an enlarged diameter for tautly holding at least a portion of the closure device against a septum.

'281 patent claim 1 (emphasis added).

The two claims are largely parallel. Where the '291 patent has first and second "disks," the '281 patent has first and second "members"; where the '291 patent has "comprising a . . . membrane," the '281 patent has "comprising a . . . structure"; and where the '291 patent has "a portion of the membrane," the '281 patent has "at least a portion of the closure device." Both claims specify that something is "for tautly holding" something else ("a portion of the membrane" or "at least a portion of the closure device") against a septum.

In excerpting the relevant claim language in the amended JCCS, the parties decided to treat the phrase "tautly holding," minus the preposition "for," as if it modified "membrane" in the '291 patent and "member" in the '281 patent. Am. JCCS Sched. B at 8, 11. They did not explain how they reached this decision, and the Court finds it to be unsupportable. To begin with, omitting "for" is unjustifiable: A "steak for cooking" is not the same thing as a "steak cooking." The claim contains the prepositional phrase "for tautly holding," which is different from the phrase "tautly holding." The Court must construe the claim as it is written.

The prepositional phrase "for tautly holding" could function as either an adjective (by modifying some noun phrase) or as an adverb (by modifying some verb phrase). See Rodney Huddleston & Geoffrey K. Pullum, Cambridge Grammar of the English Language ("Cambridge Grammar") 612, 656 (2002); Randolph Quirk et al., A Comprehensive Grammar of the English Language 657 (1985). Thus, in the sentence "I own boots for walking," the prepositional phrase "for walking" modifies the immediately preceding noun "boots" and functions as an adjective. But in the sentence "I bought those boots for walking," the prepositional phrase "for walking" modifies "bought" and thus functions adverbially.

10 Modern grammarians use relatively unfamiliar terminology to describe how prepositional phrases relate to other parts of speech and to clauses. See Cambridge Grammar 646 (describing prepositions functioning as "complement," "adjunct," and "modifier"). The Court uses simpler terminology that is likely more familiar to readers who are not trained in linguistics.

In claim 1 of the '291 patent, the phrase "for tautly holding" could modify the noun "shape," which immediately precedes "for tautly holding." Although prepositional phrases that serve as adjectives generally modify the immediately preceding noun, "shape for tautly holding" is implausible, since the closure device's shape, as such, does nothing. More plausibly, "for tautly holding" is intended to modify either the activity of "being collapsed . . . and elastically returning," or the elastic property demonstrated by that activity. Thus, the relevant portion of claim 1 of the '291 patent could be paraphrased this way:

The device comprises two disks with elastic properties. By virtue of these elastic properties, the disks can be collapsed for passage through a catheter and will return to their predetermined shapes when they exit the catheter for deployment on the two sides of a septum. These elastic properties will cause part of the disks --when deployed in their expanded, predetermined shapes --to be held tautly against the septum.

In claim 1 of the '281 patent, the phrase "for tautly holding" could modify the immediately preceding noun "diameter." But "diameter for tautly holding" is as implausible as "shape for tautly holding," and for a similar reason: A "diameter," as such,
does not do anything: a diameter is just a measurement. But the other possible readings -- "orientation . . . for tautly holding," "behavioural component . . . for tautly holding," "member . . . for tautly holding -- are equally unsatisfactory. In short, claim 1 of the '281 patent is, from a syntactic standpoint, even more poorly formed than claim 1 of the '291 patent.

Yet the gist of claim 1 of the '281 patent, and of the "tautly holding" claim language, is clear enough. Claim 1 of the '281 patent, like claim 1 of the '291 patent, covers a spring-like structure that is compressed during delivery and then expands upon deployment. After the structure is expanded, its springiness causes it to be tautly held against the septum in which it is deployed. The Court need not parse the unparseable language of claim 1 to be able to construe the phrase "tautly holding" and to resolve the parties' dispute over that phrase.

The Court agrees with AGA that for a structure to be tautly held against a septum, the structure itself must be taut, and the structure must be held tightly against the septum. See Am. JCCS Sched. B. at 11; AGA Opening Br. at 25-26. Further, the Court agrees with the University that "taut" has its ordinary meaning in the '281 and '291 patents. Univ. Opening Br. at 25-26. That said, though, the Court finds that most -- though not all -- of AGA's proposed claim construction follows from the ordinary meaning of the word "taut."

The relevant definition of "taut" in Webster's Third is "tightly drawn: tensely stretched: not slack <<the flesh seemed smoothed back, even painfully [taut] --R.P. Warren> <<a piece of strong fabric about one yard square, kept [taut] by a wooden frame --H.W. Dowdesell>>." Webster's Third 2344. 11 As the second illustration in this definition shows, a central instance of something "taut" is a thin sheet under tension across its surface, such as a drum head. This meaning of "taut" fits naturally with the invention disclosed in the '281 and '291 patents -- an invention featuring disks (or "members") that spring into shape when they are deployed.

--- Footnotes ---

11 The relevant definition of "taut" in AHD Third is: "[p]ulled or drawn tight; not slack." AHD Third 1839. This is entirely consistent with the definition in Webster's Third, but is less informative.

--- End Footnotes ---

Indeed, the word "taut" is used repeatedly in the specification in its ordinary sense. In particular, the specification says that, in an embodiment in which membranes are attached to frames, the frames "hold the membranes tautly and in intimate contact with the outer surface of the septum." '291 patent col. 10:19-21. 12 The Court therefore construes "tautly holding" consistently with the specification and with the ordinary meaning of the word "taut," and illustrates the phrase's meaning for laypersons with the easily understood example of a drum head.

--- Footnotes ---

12 See also '291 patent col. 5:6-14 (describing a preferred embodiment in which a frame "around the periphery of the membrane" serves, "in its natural, non-deformed state, . . . to hold the membrane . . . taut. . . . Normally, the frames . . . of the device pull their respective membranes . . . into a taut, generally planar shape . . . ").

--- End Footnotes ---

The Court's construction of "tautly holding" differs from AGA's in only two material respects. First, in AGA's proposed constructions of the disputed terms (as the parties formulate those terms), AGA identifies the thing that is doing the holding as the "membrane" in the '291 patent and the "member" in the '281 patent. Am. JCCS Sched. B at 8, 11; AGA Opening Br. at 25-26. The University objects to this aspect of AGA's proposed construction. Univ. Opening Br. at 26-27. For the reasons already given, the Court does not find it either possible or necessary to identify precisely what holds the disks or members taut.

Second, under AGA's proposed claim construction, "all slack" must be removed from whatever is being held tautly. Am. JCCS Sched. B at 8, 11 (emphasis added). Although something "taut" necessarily has little or no slack, tautness is a question of degree. The '281 and '291 patents use the phrase "tautly holding," not "holding somewhat tautly" or "holding extremely tautly" or "holding absolutely tautly." But AGA's proposed construction would, in effect, transform "tautly holding" into
"holding absolutely tautly." Whether something is "held tautly" is a question of fact for the jury. Whether something is "held absolutely tautly" is a different question -- one that the disputed claim language does not raise.

3. Tear

The parties vigorously dispute the meaning of the word "tear" in the context of the '952 patent. SDP avers that "tear" means "the application of force to a material . . . in order to cause a division or separation between portions of the material; the result of tearing usually, but not always, leaves ragged edges on the portions of material that have been torn." Pls.' Br. in Supp. of Summ. J., at 17. See also Pls.' Reply at 17. Apparently, SDP believes that there is an ambiguity about the meaning of "tear" in the '952 patent that is created by the claim language, the specification and the prosecution history. Pls.' Reply at 12, 16. Therefore, SDP suggests that using expert testimony and the dictionary to define "tear" is appropriate and necessary. Pls.' Reply, at 16-17. SDP asserts that the WEBSTER'S DICTIONARY definition of tear would conform with and reconcile the ambiguity in the intrinsic evidence. Id. at 17. Thus, its proposed definition for tear, excluding its references to the device itself, is directly from WEBSTER'S DICTIONARY. The definition SDP proposes states in full:

Claims 26, 30, 33 and 38-40 of the '952 Patent use the terms "tear" or "tearing." You are instructed that these terms refer to the application of force to a material, such as the base of a needle plunger, in order to cause a division or separation between portions of the material. Tear implies a forcible, somewhat crude, pulling or wrenching away. The result of tearing usually . . . leaves ragged or irregular edges on the portions of material that have been torn.

Id.

In contrast, NMT contends that the proper definition for "tear" within the context of the '952 patent is "tearing a portion of the rupturable web or boot thereby forming a flap (a portion of the web or boot still attached to the remainder of the boot or web), but do[es] not include the complete separation of a button or breakable piece from the end of the plunger." Defs.' Br. in Opp'n, at 6-7. NMT avers that its definition is the only proper one when the word "tear" is defined with reference to the prosecution history. Id. at 7. According to NMT, the prosecution history reveals that a definition of "tear" that includes "to break" would be obvious in light of prior art in U.S. Patent No. 5,114,410 to Battle (the "Batlle patent") and U.S. Patent No. 4,994,034 to Botich et al. (the "Botich patent"). Id. at 9. The patent examiner had rejected the use of the word "rupture" in the '952 patent's predecessor applications because SDP had defined "rupture" as "to break." Accordingly, SDP changed "rupture" to "tear" in the patent to describe what happens to the rupturable web when it is contacted by the needle head with enough force. See id. In addition, NMT argues, SDP sought to distinguish the prior art during prosecution by explaining that "a portion" of the rupturable web is torn or ruptured during operation of its invention, but the discoid button at the end of the plunger in Battle is completely dislodged. Id. at 10 (citing Defs.' Exh. 7, App. No. '007, at 61, 66). Therefore, according to NMT, the definition of "tear" should include reference to leaving a portion of material behind. Further, NMT argues that the Court should construe the word "tear" without resort to extrinsic evidence, such as a dictionary or expert testimony, because the plain meaning of "tear" and the '952 patent prosecution history provide sufficient intrinsic evidence of the proper construction for the term. Id. at 11-13.

The Court finds merit in both parties' arguments. The Court will start with the plain meaning of the claim language. "Tear" is used in the disputed independent claims as follows:

26. A syringe comprising:

* * *

a rupturable web on said forward end of the plunger;

wherein a fluid can move from within said barrel through said needle as said plunger moves through said barrel to said deformable base, and when said rupturable web contacts said deformable base, continued movement of said plunger moves said deformable base toward said first end, said rear end of said needle thereby tearing said web . . . .
30. A process for retracting a needle upon completion of subcutaneous injection with a hypodermic syringe comprising the steps of:

forcing an end portion of said head to tear a base portion of said plunger; . . . .

38. A syringe apparatus comprising:

a rupturable web on an end of said plunger . . . ;

whereby when said plunger moves through said barrel toward said needle assembly, a fluid can be moved from said barrel through the hollow of said needle, and continued movement of said plunger moves said deformable base downwardly until such time as sufficient force is imparted to said rupturable web by said enlarged head of said needle to tear said rupturable web . . . .
A portion of boot 43 is illustrated as having been torn by the needle head in FIG. 2, with boot web 79 laying over in the front of plunger 7.

* * *

...Continued force causes further translation of base 11 and needle head 13 to tear web 79 of boot 43, positioning enlarged needle head 13 just inside hollow 41 of plunger 7...

Id. col. 5, ll. 42-44; id. col. 9, ll. 24-27. Again, these descriptions imply that a portion of the web material remains attached to the original portion of the material after the tearing or separating has occurred. In other words, only a portion is separated, not the whole.

The specification also uses the words "penetrate" and "puncturing" to describe the "tearing" process of the web. The specification reads: "Continued force causes the enlarged needle head to penetrate the web of the boot, positioning the enlarged needle head just inside a hollow portion of the plunger." Id. col. 3, ll. 2-5. Further:

To aid in the rupturing process of the web, tear groove 26 and tear groove 28, shown in figure 9B, are provided. The thickness of web 79 and the tear grooves are selected to withstand normal operating pressures within syringe 1, as shown in FIG. 1, but to allow relative ease in the puncturing of web 79 by enlarged needle head 13, shown in FIG. 6.

Id. col. 7, ll. 3-10. Similarly to the other passages describing the action of the needle head being forced against the rupturable web, these passages connote the parting or the separation of a material to allow something to pass through an opening created in it, but not the complete separation of the material from its points of attachment. In other words, penetrate and puncturing connote a "breaking through" or a "breach" of the web, but not a breaking apart completely.

Moreover, it is clear that "tear" should replace "penetrate," and "tearing" should replace "puncturing" in these passages without changing the scope of the claims. For that to hold true, the definition of "tear" should convey a separating of portions to create an opening, but not a complete separation of the material from its points of attachment. In other words, "tear" and its apparent synonyms in the '952 patent. Therefore, the specification apparently teaches that "tear" means "to separate a material into portions by force to create an opening therein, without a complete breaking away."

A definition of "tear" that excludes a complete "breaking away" is consistent with the prosecution history. As presented above at length, during prosecution of the '952 patent's predecessor applications, the inventors struggled to find a word to describe the action of the needle head through the rupturable web that was not rendered obvious by the prior art. See generally Defs.' Exh. 7, App. No. '007; id. App. No. '001. Initially, the applicants used the word "rupture" to describe the action of the needle against the rupturable web, which the patent examiner rejected stating: "Claim 13 is rejected under 35 U.S.C. § 102 (a or e) as being anticipated by Batlle." Id., App. No. '007, at 43. In response, the applicants offered the definition of "ruption" to the patent examiner along with an explanation of how the action in their device differed from the action described by the Batlle patent. Defs.' Exh. 7, App. No. '007, at 60-62. The applicants used a definition of "ruption" from WEBSTER'S DICTIONARY: "to part by violence: break, burst." Id. at 61. The patent examiner rejected the use of the word "ruption" with this definition because he found "to break" equivalent to the dislodging taught in the Batlle patent. See id. at 66. However, the patent examiner would accept the word "torn" or caused to "tear." See id.

The applicants subsequently amended their claims to read "torn" and caused to "tear," however, they introduced new claims using the word "penetrate" and the phrase "penetrates said base portion of the plunger by rupturing." Id. at 69-71; id. App. No. '001, at 79. The patent examiner allowed the amended claims that used "torn" and caused to "tear," but rejected the new claims using "penetrate." Id. App. No. '001, at 81-82. The examiner stated: "The broad recitation and meaning of "penetrate" and "rupture" is considered to be fully met by the breaking action disclosed by Batlle." Id. at 82. Clearly, the examiner would disallow any claims that purported to use a definition of what happened to the rupturable web that included "to break."

A brief review of the cited prior art, particularly the Battle patent, might be helpful. The Battle patent describes a syringe with a retractable needle. Batlle Patent, Abstract. Its only independent claim describes an opening on the end of a piston without further describing the type of opening or whether it is covered. Id. col. 5, ll. 15-16. The only dependent claim
describes a specific part that covers the opening in the end of the piston, "a discoidal button," that is fit into a groove on the inside of the hollow plunger. Id. col. 6, ll. 5-20. The "discoidal button is dislodged" from the groove when the needle is released into the barrel by the action of the end of the plunger against the part holding the needle, which in turn releases a spring that pushes the needle into the hollow of the plunger. See id. col. 6, ll. 16-20; id. col. 5, ll. 4-21. The force of the needle head, powered by the spring, dislodges the "discoidal button." See id. col. 5, ll. 11-13; id. col. 6, ll. 16-19. It is this dislodgment that the patent examiner found equivalent to a breaking and therefore readable on the claims of the '952 patent when "rupture" meant "to break."

The patent examiner found the use of a word that connoted "to break" objectionable because the prior art would render such an action obvious; therefore, the definition of "tear" must convey something other than a breaking away as suggested by the dislodging in Batlle. See Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995) ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution."). The applicants themselves tried to convey a difference in the very same passage in which they defined "rupture" to mean "break." They argued:

. . . During operation of the needle in Batlle, the button 14 is forced completely out of the groove 15 and forced back up into the piston.

The pertinent portion of Applicant's [sic] independent claim 13 claims "forcing an end portion of said needle to rupture a base portion of the plunger" (emphasis added). A pertinent part of the specification is amended herein states as follows:

As deformable base 11 moves forward, enlarged needle head 13 begins to protrude from base 11 and come into contact with web 79 of rupturable boot 43 on plunger 7. Continued force causes further translation of base 11 and enlarged needle head 13 to tear and penetrate web 79 of rupturable boot 43 . . . .

. . . As clearly illustrated in figures 2 and 19 through 23, a portion of the rupturable boot 43 is torn or ruptured in order for the needle to penetrate the rupturable boot 43.

Defs.' Exh. 7, App. No. '007, at 61 (emphasis in original). From this part of the inventors' argument, the difference between "dislodging" and "rupturing" seems to be the difference between "breaking away" and "tearing a portion." The inventors themselves argue that "a portion" of the rupturable web is torn such that the needle can penetrate it. Id. In other words, "tear" is the separation of a portion of a material from another portion such that an opening is created to allow the needle head to pass through it; but, it is not the complete breaking away of a part because that would be akin to the dislodging in Batlle and therefore obvious in light of the prior art.

In the analysis, although the Court agrees in large part with SDP's proffered definition for "tear," the definition must include the notion that a "breaking through" or a "breach" is acceptable, however, a "breaking away" is unacceptable. This is necessary in light of the prosecution history that indicates the patent examiner specifically found anything that conveyed "to break" the rupturable web readable on the claims of the '952 patent. In addition, such a limitation is necessary, in part, because the specification indicates that a portion of the web breaks away not the entire web. The court will construe claims terms, whenever feasible, to sustain their validity. See Wang Labs., Inc. v. America Online, Inc., 197 F.3d 1377, 1383 (Fed. Cir. 1999); see also Southwall Tech., 54 F.3d at 1576.

In light of the plain meaning of the claim terms, the specification and the prosecution history, the Court finds that "tear" means "to separate a material into portions by force to create an opening therein, without a complete breaking away." The Court declines SDP's invitation to import the entire WEBSTER'S DICTIONARY definition that includes descriptions of edges because such description is unnecessary.

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Both the '015 and '167 patents claim "a pair of spaced apart tear impressions extending inwardly from the edge" of the container lid to the central portion of the lid. Both patent specifications provide that these tear impressions may be "molded, embossed or scored as a single continuous line into the surface of the lid . . . [or may] each be performed as a plurality of spaced apart, relatively short impressions." The '015 specification provides that the function of these tear impressions is "to
C. Tear Impressions

Dart raises a number of alleged differences between Dart's lids and the tear impressions claimed in claim 1 of the '015 patent. First, Dart argues that claim 1 requires that the tear impressions extend to the outer edge of the container and that the corresponding component in Dart's lids does not extend to the outer edge. Second, Dart submits that the term tear impressions only encompasses a pair of linear impressions on the surface of the container lid. Dart points out that the corresponding components of Dart's lids are not linear but rather comprise a series of corrugations with sawtooth shapes having wide outer ends and narrow inner ends. In addition, such corrugations, according to Dart, do not foster failure of the material along "predetermined lines" ('015 patent, col. 3, l. 9), but, instead, foster failure of the material anywhere within the trapezoidal region formed by the sawtooth corrugations. Further, the sawtooth corrugations are not impressions inasmuch as they extend perpendicular to the direction of the tear. In contrast, according to Dart, the impressions described in the '015 patent run along the surface of the container lid and extend along the direction of the tear.

Claim 1 of the '015 patent 5 claims "a pair of spaced apart tear impressions extending inwardly from the edge of the container lid." ('015 patent, col. 5, l. 22-23). Each tear impression terminates "at separate tear stop means." The tear...
impressions together with the tear stop means operate to define "a reclosable access strip having a self-forming hinge area." ( '015 patent, col. 5, l. 24-28). The entire subparagraph in claim 1 pertaining to tear impressions reads as follows:

a pair of spaced apart tear impressions extending inwardly from the edge of the container lid, each impression terminating at separate tear stop means therefor within said central portion thereof, said impressions and said tear stop means together defining a reclosable access strip having a self-forming hinge area affixing said access strip to said container lid.

('015 patent, col. 5, l. 21-29).

5 The remaining claims in the '015 patent are dependent on claim 1 or claim 4. Claim 4 is dependent on claim 1. Hence, all of the claims of the '015 patent include the claimed tear impressions.

The words "from the edge of the container lid" do not state from the outer edge of the container lid. Further, the words do not read or require that the tear impressions physically touch the edge of the container lid. The plain and ordinary meaning of such language to one skilled in the art does not, necessarily, exclude extending inwardly from the inner edge of the container lid. Nor does the language and the word "from" necessarily exclude a tear impression spaced a short distance from the edge of the container lid. The language also does not describe the tear impressions as linear, perpendicular, straight, wide, narrow, of varying widths or following a predetermined line. Rather, the language concerning tear impressions in claim 1, as read by one skilled in the art, demonstrates that tear impressions simply extend inwardly from the edge and terminate at a tear stop means. For further guidance, therefore, this court turns to the specification and the prosecution history.

The specification describes tear impressions in the following manner:

In accordance with the invention, container lid (10) comprises a pair of spaced apart tear impressions (22) which extend inwardly from edge (20) and each of which impressions (22) terminate in tear stop means (24) located within central portion (12). It is the role of tear impressions (22) to foster failure of the polymeric material of construction along the predetermined lines defined thereby. Accordingly, said impressions (22) may each be molded, embossed or scored as a single continuous line into the surface of lid (10) (as shown in FIG. 1) or may each be performed as a plurality of spaced apart, relatively short impressions (23) (as shown in FIG. 3).

('015 patent, col. 3, l. 3-14).

The drawings, figures 1 and 3, also depict the spaced apart tear impressions. The language describing the tear impressions in figures 1 and 3 show two embodiments. The language accompanying figure 1 discloses a single continuous line ( '015 patent, col. 3, l. 11-12) while the language describing figure 3 ( '015 patent, col. 3, l. 13-14) discloses a plurality of spaced apart, short impressions (23) (as shown in FIG. 3).

('015 patent, col. 3, l. 3-14).

Figure 1 pictures a single, continuous line. Although the specification does not expressly describe the continuous line as a straight line, the accompanying drawing illustrates a straight, uninterrupted line from the outer edge of the container to the tear stop means. Figure 3 mistakenly illustrates the "plurality of spaced apart, relatively short impressions" as a single, unbroken line ( '015 patent, fig. 3, 23) which, using the same language ( '167 patent, col. 3, l. 27-28), the '167 patent correctly illustrates as a series of dashed lines. ('167 patent, fig. 3, 20).

Thus, the specification discloses two forms of tear impressions, one being a single, continuous line and the other being a plurality of spaced apart, relatively short impressions. Although the specification cannot redefine the terms of claim 1 of the '015 patent, it nevertheless may serve as a useful guide or dictionary to elaborate upon the meaning of the terms. Thus, the term tear impressions in claim 1, as disclosed in the claim and further defined in the specification to one skilled in the art, may encompass a series of short, spaced apart impressions running along, but nevertheless molded into, the surface of the container lid. In describing the plurality of spaced apart, relatively short impressions, the specification does not describe these impressions as nonperpendicular or as forming or limited to a particular shape other than being short and/or fostering
the failure of the material along predetermined lines. 6

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6 Ordinarily, "impressions" are formed by pressing or applying an external force to produce a mold or figure. (Docket Entry # 60, Ex. 13).

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - - -

In addition, the description accorded the plurality of spaced apart relatively short impressions leaves room for an interpretation of the impressions as having slight variations in width. Because a description in a specification does not define or delimit the claims to necessarily encompass only the description of the invention contained in the specification, the tear impressions claimed in the '015 patent may therefore reach and include a plurality of spaced apart impressions which have a slight degree of variation in width as interpreted by one skilled in the art. 7

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7 This court limits this claim interpretation regarding width to the motion for partial summary judgment (Docket Entry # 5). Accordingly, this interpretation does not comprise part of the law of this case.

In the alternative, and assuming arguendo that the term tear impression does not allow for a literal interpretation encompassing a slight variation in the width of the tear impressions, the doctrine of equivalents would permit an insubstantial variation in the width of the tear impression.

Furthermore, while the drawings illustrating the single continuous line and the plurality of spaced apart short impressions show a relatively straight line, the language in the specification and in claim 1 fails to limit the claimed tear impression to the formation of a straight line. See, e.g., Specialty Composites v. Cabot Corporation, 845 F.2d 981, 987 (Fed.Cir. 1988) (noting that neither claims nor specification modified the term plasticizer as being external or internal and construed term to encompass either although examples in specification showed only external plasticizers). Moreover, spacing the relatively short tear impressions apart from one another leaves room for a slight differential in the straightness of the tear between the impressions. One skilled in the art would therefore interpret the claimed tear impressions to include a plurality of relatively short impressions which form a line which may have, at a minimum, a very slight variation in the straightness of the tear.

Turning to the meaning of the word edge in claim 1, the language reads that the tear impressions extend "inwardly from the edge of the container lid." ( '015 patent, col. 5, l. 22). The specification similarly states that the tear impressions "extend inwardly from edge (20)." ( '015 patent, col. 3, l. 5). The language of the specification and figures 2 and 4 clarify that edge (20) refers to the outer edge of the container lid. The specification illustrates and describes the rim-engaging means as having "an ascending wall element (14) and descending wall element (18)" with the descending wall element (18) pictured on the outer wall of the rim-engaging means in figures 2 and 4. The descending wall element (18) is further depicted as "projected outwardly [emphasis added] at its lower extremity [emphasis added] as shown as edge 20 [emphasis added] thereof." ( '015 patent, col. 2, l. 60-62 & 68; col. 3, l. 1-2). It is therefore apparent that to one skilled in the art the word edge in claim 1, as elaborated upon but not delimited in the specification, refers to the outer edge of the container lid.

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8 Likewise, with respect to claim 1 of the '167 patent ( '167 patent, col. 4, l. 50), the description in the specification of the tear impressions as extending inwardly from the edge (15) ( '167 patent, col. 3, l. 17), the further description in the specification of the edge (15) as part of the exterior descending wall element (13) ( '167 patent, col. 3, l. 10-11) of the rim engaging means (5) and the illustration of the edge (15) in figure 2 of the '167 patent all evidence that the edge referred to in claim 1 of the '167 patent denotes the outer edge of the container lid.

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The choice of the word "from" in claim 1 ('015 patent, col. 5, l. 24), however, does not exclude allowance for a small space between the outer edge of the container lid and the first impression leading therefrom. As discussed above, the specification clarifies that the term tear impression may include a series of "spaced apart" ('015 patent, col. 3, l. 13) impressions. Accordingly, a small space may separate the outer edge from the first impression leading inwardly therefrom. Correspondingly, a small space may therefore separate the outer edge from the beginning of the claimed tear impression, as interpreted by one skilled in the art.

Dart also relies on the language in the specification that the tear impressions tear along "predetermined lines." ('015 patent, col. 3, l. 9). The pertinent language, however, exists in the specification and refers to the role of the tear impressions. Furthermore, the words in claim 1 are silent as to the demarcation of the tear impression as a predetermined line. This court therefore doubts whether a person skilled in the art reading this description of the role of the tear impressions as forming predetermined lines would also read this limitation into claim 1 to require that tear impressions must always form predetermined lines. 9

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9 This court need not decide this issue, however, because assuming arguendo that claim 1 includes the limitation of a predetermined tear line, Bailey's expert opines that the accused product tears in this manner. (Docket Entry # 59, P 50). Given the varying interpretations of the characteristics of the accused product (Docket Entry # 49, P 31; see footnote number ten) summary judgment is improper.

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Turning to the other disputed characteristics of Dart's lids, Bailey's expert attests that such lids have a pair of spaced apart tear impressions which extend inwardly from the edge of the container lid. Each tear impression ends at a separate tear stop means pictured as a straight bar molded into the lids. (Docket Entry # 59, P 18 & Fig. 1, C). The drawings and physical exhibits of Dart's lids demonstrate that the tear impressions do not visibly extend to and touch the outer edge of the container lid.

Bailey's expert further describes Dart's lids as having two corrugated channels or pathways which this court finds correspond to the tear impressions in the '015 patent. According to Bailey's expert, each channel or pathway consists of a series of corrugations or impressions. (Docket Entry # 59, P 17). Bailey's expert characterizes each corrugation in the corrugated pathways as constituting a relatively short impression. Further, not unlike the space between the impressions described in the '015 patent ('015 patent, col. 3, l. 13-14), a narrow space separates each corrugation within the corrugated pathways. (Docket Entry # 59, P 50). According to Bailey's expert, each corrugation acts to direct the tear in a forward, preordained direction along the channel of the corrugations.

As disclosed in claim 1, tear impressions do not necessarily touch the edge of the container lid. Rather, they lead inwardly from the outer edge of the container lid. Such tear impressions may include a plurality of spaced apart, relatively short impressions. As expressed and discussed above, such tear impressions extend from the outer edge and may have a space between the outer edge and the beginning of the tear impression. Stated otherwise, because the term tear impression may encompass a series of spaced apart impressions, the first impression may have a small space between it and the outer edge of the container lid.

Whether Dart's lids have such a small space between the outer edge of the container lid and the first corrugation in the corrugated pathways cannot be decided on summary judgment. Both Bailey's and Dart's experts disagree about the characteristics of Dart's lids. According to Dart's expert the sawtooth corrugations in Dart's lids lie one to two millimeters from the interior edge of the inverted channel of the circumferential boundary of the container lid. (Docket Entry # 49, P 36). 10 Bailey's expert, however, states that the tear impressions in Dart's lids include the entirety of the corrugation channels and extend from the edge of the container lid. (Docket Entry # 59, P 60).

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10 To the extent Bailey moves to strike (Docket Entry # 55) this paragraph of the second affidavit of Ralph W. MacKenzie ("MacKenzie") (Docket Entry # 49, P 36) or paragraphs 30 and 31, the motion is denied. MacKenzie properly qualifies as
an expert for purposes of the motion for partial summary judgment (Docket Entry # 5). He also adequately sets forth his reasoning with respect to paragraphs 30, 31 and 36. Finally, this court does not consider MacKenzie's testimony insofar as he opines about the reach of the terms in claim 1 of the '015 patent.

With respect to the issue of a predetermined line, Dart's expert depicts the sawtooth corrugations as not fostering the failure of the material along a predetermined line. (Docket Entry # 49, P 31). Bailey's expert, however, proffers a markedly different interpretation of the characteristics of the tear in Dart's lids. (Docket Entry # 59, P 50). Therefore, assuming arguendo for purposes of the motion for partial summary judgment only that claim 1 has such a limitation, there is a material issue of fact as to whether Dart's lids fall within this limitation.

Dart's expert also attests that the sawtooth corrugations extend perpendicular to the direction of the tear. (Docket Entry # 49, P 30). Again, having construed the term tear impression to include slightly perpendicular impressions, there is a material issue of fact as to whether Dart's lids meet this limitation. Similarly, having construed the term tear impressions to permit a slight variation in width of the spaced apart impressions, there is also a material issue of fact as to whether Dart's lids meet this limitation. In addition, whether the described sawtooth corrugations comprise impressions within the meaning of claim 1 is a materially disputed fact due to the differing descriptions of the corrugations given by Bailey's and Dart's experts.

In sum, in light of the differing factual descriptions of the accused product, summary judgment is improper with respect to whether Dart's lids lack the features of tear impressions extending inwardly from the outer edge of the container lid. Moreover, due to the different descriptions of Dart's lids in reference to the claims as construed above, partial summary judgment is also improper with respect to whether the differences between Dart's lids and the claimed "tear impressions extending inwardly from the edge of the container lid" ( '015 patent, col. 5, l. 22-23) are substantial. The corresponding tear impressions in Dart's lids are not altogether different from the claimed tear impressions in the '015 patent. The degree of the substantiality of the difference is an issue of fact given the present record before this court. Partial summary judgment under the doctrine of equivalents is therefore inappropriate.

The parties vigorously dispute the proper construction of the '015 patent claim element "a pair of spaced apart tear impressions extending inwardly form the edge of the container lid." Tear impressions in the '015 patent may appear in two basic forms, one being a single, continuous line and the other being a plurality of spaced-apart, relatively short impressions. '015 patent, col. 3, l. 10-14. Aside from the two basic forms of the tear impressions, the parties agree on several other characteristics of the tear impressions. For example, the parties do not contest the magistrate judge's conclusion that the
description of the tear impressions allows for a slight degree in variation in the width of the impressions in the case of a plurality of spaced-apart impressions. See Bailey I, 980 F. Supp. at 569. Nor do the parties dispute the ruling of the Federal Circuit that the tear impressions must be "physical, visible features on the patented lids . . . and are not inherent characteristics of the thermoformed plastic." Bailey v. Dunkin Donuts, Inc., 135 F.3d 775 (Fed. Cir. 1998), 1998 WL 4726 at *2 (restating the finding of the lower court and affirming) (unpublished decision). While the magistrate judge also concluded that the tear impressions allow for a very slight variation in the straightness of the tear, the parties agree that the '015 patent describes "tear impressions" in the context of the lid before it is open, and not qualities of the "tears" after the lid has been opened. Tr. 3, p. 62, l. 15-25. Although the width and spacing of the impressions will undoubtedly affect the performance of the tears, the straightness of the tears is not relevant to claim construction. At the heart of the dispute are two features: (1) the width and/or shape of the tear impressions and, (2) the meaning of the term "edge."

I begin with the language of claim 1 itself. "The language concerning tear impressions in claim 1, as read by one skilled in the art, demonstrates that tear impressions simply extend inwardly from the edge and terminate at a tear stop means." See Bailey I, 980 F. Supp. at 568. Thus, the language of the claim is wholly silent on the physical characteristics of the tear impressions aside from their positioning. For further guidance, therefore, I turn to the specification and prosecution history.

The specification states that the role of the tear impressions is to foster failure of the plastic material "along the predetermined lines defined thereby. Accordingly, said impressions may each be molded, embossed or scored as a single continuous line into the surface of lid (as shown in Fig. 1) or may each be performed as a plurality of spaced apart, relatively short impressions." 4 The drawings, figures 1 and 3, depict the tear impressions. Figure 1 pictures a single, uninterrupted, straight line from the outer edge of the container to the tear stop means. Figure 3 mistakenly illustrates the "plurality of spaced apart, relatively short impressions" as a continuous line. The '167 patent, however, correctly illustrates the language as a series of dashed lines. See Bailey I, 980 F. Supp. at 568-569.

As expected, the parties have starkly differing interpretations of the language in the specification. Dart argues that the specification sets the parameters for the tear impression structures. The tear impressions are both described in the specification as linear and in all instances are illustrated as linear. Dart contends that if the tear impressions could be any size or shape, then they would not foster the failure of the plastic material "along the predetermined lines defined thereby." By contrast, Bailey contends that the specification sets no limit on the size, shape, or width of the tear impressions, so long as the tear does not go astray and an access strip is formed. Neither party relies heavily on the prosecution history, and my review of that history does not reveal any matters material to the characteristics of the tear impressions. Bailey's view is illustrated in exhibit 26, which depicts wide, rectangular impressions. Bailey's expert, Dr. Steven S. Grossman, agreed on cross-examination that wide, rectangular impressions could meet the requirements of the '015 patent, provided that an access strip is formed once the lid is torn open and the tears do not go astray. I asked Dr. Grossman if there was any limitation on the width of the impressions. He responded:

THE WITNESS: No. I think the width again is not limited. They can have a width to them. They are not limited, again, to a sliver. They can have a width there so that they create a pathway for tear. So they do not have to have a specific width limited to a certain dimension. In fact --

THE COURT: At some point, though, the dimension can be so wide that you don't have a path.

THE WITNESS: Then the tear would go astray and they wouldn't work as a tear impression.

See Tr. 2, p. 37-38, ln. 22-25, 1-6. Dart's expert, Dr. David M. Parks, by contrast, opined that the impressions could be bold or thin, but qualified his statement with the limitation that the impressions retain their essential function of fostering failure along predetermined lines. Tr. 3, p. 120, ln. 21 (emphasis added).
I begin with the obvious observation that all tear impressions necessarily have some width. But how wide is too wide? Bailey's position that the tear impressions can be any width, so long as the tear does not go astray and an access strip is formed is dubious, at best. To interpret the patent in such a fashion wholly ignores the language in the specification that states the purpose of the "tear impressions" is to "foster failure . . . along predetermined lines defined thereby." Moreover, the only way for one skilled in the art to determine whether a tear impression is too wide is to tear the lid and see if the tear goes astray. In essence, Bailey's position is that a tear impression that functions properly, namely one that it does not allow the tear to go astray, is disclosed in the '015 patent. Such a construction is simply not consistent with the notion that the tear impressions define and predetermine a line, and is so broad that, were it taken as the proper statement of the scope of the term "tear impression" in the '015 patent, it would render that patent vulnerable to public notice attacks. See Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1303 (Fed. Cir. 1999) ("The district court erred by importing the functions of a working device into these specific claims, rather than reading the claims for their meaning independent of any working embodiment") (citing Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1278 (Fed. Cir. 1995) ("The district court erred by importing unnecessary functional limitations into the claim")). Consideration of the public notice function of the patent laws reinforces the conclusion that Bailey's proposed construction of the '015 patent should not be adopted.

I conclude that one skilled in the art would construe the term "tear impressions" as stated in the '015 patent to be physical, visible features on the lid, that may have some variation in width, and must predetermine and define a line in the context of a lid before it is torn open. A "line" is very narrow in proportion to its length, and can be straight or curved. The line formed by the tear impressions necessarily has some width, although the tear impressions cannot be so wide that they lose their essential characteristic of predetermining and defining a line.

5 In addition, the description in the specification accorded the plurality of spaced-apart relatively short impressions also leaves room for an interpretation that the impressions can vary in shape. For example, the impressions need not be dashes or dots, but could take the form of a variety of shapes, so long as the shapes maintain the essential characteristic of defining a line.

The parties next dispute the meaning of the term "edge" in the claim element requiring that the "tear impressions" extend "inwardly from the edge of the container lid." After reviewing all the evidence presented at the hearing on the matter, I now reaffirm my previous adoption of the magistrate judge's conclusion:

The language of the specification and figures 2 and 4 clarify that edge (20) refers to the outer edge of the container lid. The specification illustrates and describes the rim-engaging means as having 'an ascending wall element (14) and descending wall element (18)' with the descending wall element (18) pictured on the outer wall of the rim-engaging means in figures 2 and 4. The descending wall element (18) is further depicted as 'projected outwardly at its lower extremity as shown as edge 20 thereof.' ('015 patent, col. 2, l. 60-62 & 68; col. 3, l. 1-2). It is therefore apparent that to one skilled in the art the word edge in claim 1, as elaborated upon but not delimited in the specification, refers to the outer edge of the container lid.

The choice of the word 'from' in claim 1 (‘015 patent, col. 5, l. 24), however, does not exclude allowance for a small space between the outer edge of the container lid and the first impression leading therefrom. As discussed above, the specification clarifies that the term tear impression may include a series of 'spaced apart' (‘015 patent, col. 3, l. 13) impressions. Accordingly, a small space may separate the outer edge from the first impression leading inwardly therefrom. Correspondingly, a small space may therefore separate the outer edge from the beginning of the claimed tear impression, as interpreted by one skilled in the art.

Bailey I, 980 F. Supp. at 569-570 (emphasis supplied).

Therefore, in the case of a single continuous line, the tear impression must begin at the outer edge and travel inwardly to the tear stop means. When the tear impression consists of a plurality of spaced-apart, relatively short impressions, the parties agree that a small space separating the outer edge from the first impression may be appropriate. See Tr. 5, p. 30, l. 5-6. Such a space must be small enough that the tear impression retains its essential feature of "extending inwardly from the [outer]
edge of the container lid." 6

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6 Nothing in the claim construction above precludes faulting of the polymeric sheet material at the end of each tear impression at the outer edge, as described in claim 3.

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The '015 patent also claims that the tear impressions terminate "at separate tear stop means." This limitation is drafted in means-plus-function form pursuant to 35 U.S.C. § 112 para. 6. As disclosed in the specification, "the principal function of [the] tear stop means . . . is to prevent tear propagation beyond the inner end of each tear impression." The specification discloses several structures corresponding to the claimed tear stop means, including "small arcuate impressions," "arcuate slits," "cross or arcuate cuts," and "localized thickenings or mechanical reinforcements of the polymeric lid material located at the inner ends of the tear impressions." Bailey asserts that the single groove and ridge combination in the accused lids serves as the "separate tear stop means." He contends that the single groove and ridge structure in each of the accused lids provides separate tear stop means because when the accused lids are opened the tears terminate at separate points along this structure. Bailey asserts that since these termination points are spaced apart, they are separate tear stop means as claimed in the '015 patent.

4091

a. "Tear-wettable"

The parties dispute whether this term means "a high affinity for" tears or whether it means that tear fluid spreads out when exposed to a surface. The plaintiff contends that "tear-wettable" means "tear fluid has a tendency to spread out when exposed to a surface." According to the plaintiff, its construction is the meaning understood by one of ordinary skill in the art in the context of this patent. The defendants argue that "tear-wettable" requires that tears directly contact the surface layer and, therefore, the surface layer must have a high affinity for tears. In the context of this patent, the Court adopts the plaintiff's construction of "tear-wettable."

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B. "Teeth" and "Traction Teeth"

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3 ECCO, in addition to adopting all of the arguments forwarded by the other Defendants, assert additional constructions and supporting arguments. Rather than filing its own brief, ECCO joined onto the briefs filed by Defendants Nike, Inc. ("Nike") and MacNeil Engineering Company, Inc. ("MacNeil") in a third case filed by Greenkeepers, Greenkeepers, Inc. v. Nike, Inc., No. 04-3747, which has since settled (Docket No. 106). (Taylor Made, Docket Nos. 55 & 66.) Accordingly, in this Memorandum, citations to "ECCO Opening" refer to Nike and MacNeil's Opening Claim Construction Brief (Nike, Docket No. 83), and citations to "ECCO Resp." refer to Nike and MacNeil's Responsive Claim Construction Brief (Nike, Docket No. 94).

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- 4750 -
1. The Parties' Contentions

According to Greenkeepers, the patent specification indicates that the teeth, rather than biting into the ground, aim to "reduce damage to putting green surfaces," '047 Patent, col.2, l.2, and that Defendants' constructions exclude the patent's preferred embodiments. (Pls.' Opening 11-13.) Greenkeepers further aver that teeth need not "bite," as human and animal teeth do, because under their dictionary definition, they also encompass protrusions on combs, gears, or saws. (Pls.' Resp. 10-11.)

In response, Defendants aver that Greenkeepers repeatedly referred to the teeth in the covered cleats as "biting" into the ground, and distinguished prior art Curley cleats as not having true "teeth," because their protrusions did not pierce the ground. (Defs.' Resp. 10.) Defendant ECCO then takes issue with Greenkeepers' inclusion of "outwardly angled" in their proposed construction of "teeth" and "traction teeth," because the specification often describes the "teeth" or "traction teeth" as being "outward angled," thereby indicating that the "teeth" themselves need not be outwardly angled. (Def. ECCO's Resp. 15-17.)

Greenkeepers reply that during the prosecution history, they only described their teeth as "biting" into the "turf" grass, not the ground beneath the turf, in distinguishing prior art cleats that had essentially flat protrusions that stayed on the lawn surface. (Pls.' Resp. 11-14.)

2. Analysis

As a preliminary matter, the parties appear to agree that "teeth" and "traction teeth" have the same meaning, because these terms were used interchangeably in the patent specification (Defs.' Resp. 12-13), and because the parties each offer only one definition for both terms (Pls.' Opening 11; Defs.' Opening 16; ECCO Opening 20). Turning next to whether the construction of "teeth" and "traction teeth" should include references to outward angulation or bending, the Court finds that such references are inappropriate. The patent specification often uses "outward angled" to modify and add detail to "teeth" or "traction teeth," thereby suggesting that teeth need not have a predetermined angle. See, e.g., '047 Patent, col.5, 11.49-50 (describing the cleats as "each traction tooth having an axis ALT and an outwardly angled outer traction surface . . . to provide lateral stability. . . ."). As for flexibility, this has already been encompassed in the construction of "outward angled." As a result, the Court believes it would be redundant to add any description relating to flexibility into the definition of "teeth" and "traction teeth." Court will not construe "teeth" and "traction teeth" to include references to flexibility or bending, or outward angulation.

As for whether the teeth bite into the ground, Greenkeepers distinguished the teeth in its cleats from prior art cleats by emphasizing that Wilson cleats had "non-penetrating tip[s]" (Defs.' Resp., Ex. M, at SS_00005767), and that Dassler cleats'
"so-called arms . . . are really not teeth but are really cushioning arms," that "do not contemplate [the] studs digging in the turf of a golf course" (Defs.' Resp. Ex. J at 00006011-12, Ex. K at 00005991). As a result, prosecution disclaimer applies, because Greenkeepers "expressly disclaimed" coverage of golf cleats that do not penetrate at all into the grass. Omega Eng'g, 334 F.3d at 1323. As with "outwardly angled," however, the Court is concerned about the breadth of this disclaimer. Greenkeepers disavowed coverage of teeth that "dig . . . in the turf," but the Court has not found statements from the prosecution history distinguishing the cleats at hand from teeth that dig past the turf into the ground below, nor have Defendants identified any. The Court, thus, will construe "teeth," "traction tooth," and "traction teeth" as being "protrusions that penetrate into the turf below."

4 To the extent that Defendants contend that Greenkeepers' prosecution of the same patent in Europe distinguished prior art Curley cleats on a similar basis, the Court need not and will not address this contention, given that such evidence may be extrinsic, the intrinsic evidence alone demonstrates prosecution disclaimer, and thus, it is unlikely that such evidence will shed useful light on how to construe teeth and traction teeth.

(1) "a telecentric lens"

The term in question appears either directly or by reference in all claims of both the '653 and '690 patents. Plaintiffs assert that the term should be construed as "a special lens that collects parallel rays." Plaintiffs rely on the specification of the '690 patent which states, for example, that "a telecentric lens collects parallel rays." Defendant asserts that the term reflects an express disavowal to the use of dichroic mirrors and a limitation as to internal illumination.

Beginning with the claims in the '653 and '690 patents, there is no mention or reference in any of the claims to either dichroic mirrors or internal illumination. Claim 4 of the '690 patent, for example, expressly refers to collecting light from a multi-sample plate without noting the light source. Similarly, claim 1 of the '653 patent expressly refers to the lens collecting light and identifies the source as "light incident thereon [the multi-sample plate] or originating from a sample." ('653 patent, col. 21, In. 7-9).

Moving to the specifications, the '653 patent points to a description of "a telecentric lens." "A telecentric lens is free of parallax error." ('653 patent, col. 12, In. 39-40). n1 "A telecentric lens collects parallel rays, over the entire area of a well plate." ('653 patent, col. 12, In. 45-46). n2 In addition, the '653 and '690 specifications point directly to the two items raised by defendant. "A unique property of the present invention is that no dichroic is necessary. The telecentric lens is large, so there is room to install an illumination assembly within its body." ('653 patent, col. 12 In. 11-13). n3

In general, when a term implicitly suggests a broader meaning, there is no express disavowal. See Varco, L.P. v. Pason Sys. USA Corp., 436 F.3d 1368, 1375 (Fed. Cir. 2006). In Varco, the court noted that "the applicant could have used terminology such as 'relays are pneumatically operated valves' that expressly disavows alternative structures. As written, however, the specification contemplates that other structures may 'operate as relays' in addition to the preferred pneumatically operated valves." Id.

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n1 The identical language appears in the '690 patent, col. 12, In. 39-40.

n2 The identical language appears in the '690 patent, col. 12, In. 45-46.

n3 The identical language appears in the '690 patent, col. 12, In. 11-13.

- End Footnotes-

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In the case at bar, the Court finds that because the patentee made note that "there is room to install an illumination assembly," the Court finds no express disavowal. The term is written in open form and the patent neither requires or excludes the use of an illumination device. Similarly, the phrase "no dichroic is necessary" is not a disavowal of its use and the patent does not require or exclude use of a dichroic mirror. In both situations and as described in Varco, the drafter could have used terminology to expressly disavow dichroic mirrors or require internal (or external) illumination but left the text in open form.

Defendant also bases its assertion, in part, on a letter written by the inventor indicating the inventor's intent. However, such a letter is not within the patents or their prosecution history and is therefore extrinsic evidence. See Phillips, 415 F.3d at 1319. "[U]ndue reliance on extrinsic evidence poses the risk that it will be used to change the meaning of claims in derogation of the 'indisputable public records consisting of the claims, the specification and the prosecution history,' thereby undermining the public notice function of patents." Id. (quoting Southwall Techs. Inc. v. Cardinal IG Co., 54 F.3d 1570, 1578 (Fed. Cir.), cert. denied, 516 U.S. 987, 116 S. Ct. 515, 133 L. Ed. 2d 424 (1995)). However, despite what the inventor's intentions may have been, the patent itself serves the public notice function and is a part of the intrinsic evidence, as contrasted with the inventor's letter, which does not serve the public notice function and is extrinsic, and the term itself can be construed absent the extrinsic evidence. As such, the inventor's letter is not relevant to claim construction here.

As such, the Court finds that the term "a telecentric lens" is construed simply as "a special lens which collects parallel rays."

(4) "telecentric lens means for peering into the well"

The term in question appears in claim 5 of the '653 patent. Plaintiffs assert that the term should be construed to not limit the claim to the reference of a telecentric lens. Plaintiffs assert that because the structural component, the telecentric lens, is expressly recited in the claim, it is not appropriate to treat the phrase as a means-plus-function limitation per 35 U.S.C. § 112, P6. In contrast, Defendant asserts that because (1) the phrase's express statement is in means-plus-function format, together with (2) the patentee's assertion of applying 35 U.S.C. § 112, P6 during the prosecution history, the Court should treat "telecentric lens" as a limitation to the claim.

"An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112 P6. "Whether certain claim language invokes 35 U.S.C. § 112, [P]6 is an exercise in claim construction and is therefore a question of law." Personalized Media Commc'ns., L.L.C. v. ITC, 161 F.3d 696, 702 (Fed. Cir. 1998).

The use of the word "means" in the claim invokes a presumption that the patentee invokes the statutory mandate for means-plus-function clause. Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1302 (Fed. Cir. 1999), cert. denied, 528 U.S. 1115, 120 S. Ct. 933, 145 L. Ed. 2d 812 (2000).

Two specific rules, however, overcome this presumption. First, a claim element that uses the word 'means' but recites no function corresponding to the means does not invoke § 112, [P]6. Second, even if the claim element specifies a function, if it also recites sufficient structure or material for performing that function, § 112, [P]6 does not apply.

Id. (internal citation omitted). The Court begins its construction by adopting the presumption that the patentee invoked the means-plus-function format. However, moving directly to the second exception, the claim element does specify a function ("peering into the well") but also recites a sufficient structure for performing that function (the "telecentric lens"). Although Defendant asserts that such function is insufficient without illumination, the specification does recognize that such illumination can be from the sample within the well and, as such, external illumination is not necessary and the telecentric lens alone represents sufficient structure.

Defendant also asserts that through the prosecution history, Plaintiffs invoked 35 U.S.C. § 112 P6 and, as a result, prosecution history estoppel requires the Court to construe the telecentric lens as a limitation. To begin with, the prosecution
history directs the examiner that the claim should be considered as structure under § 112 P6. However, once the applicant directs the examiner to view the telecentric lens as a structure, the applicant directs the examiner toward the second rule to overcoming the means-plus-function presumption of § 112 P6. The claim was subsequently accepted unchanged by the examiner. In addition, the prosecution history makes no explicit mention of this claim relative to means-plus-function, nor does the examiner explicitly accept it as such. Because the prosecution history points directly at the second rule to overcoming the means-plus-function presumption, the prosecution history supports that the "telecentric lens" is not a limitation to the claim.

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--- End Footnotes ---

As a matter of law, this Court construes that the term "telecentric lens" is a sufficient structure to support the function of "peering into the well." The Court does not accept Defendant's argument of construing the telecentric lens as a limitation stemming from construing the phrase in means-plus-function format of 35 U.S.C. § 112 P6.

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Defendant also moves for reconsideration of the term "telecentric lens means for peering into the well" on the basis that the Court: (a) omitted relevant language from the construction, and (b) misinterpreted the comments made during prosecution when this claim was added to the patent. The relevant claim language is as follows:

telecentric lens means for peering into the well of said at least one sample in order to improve the collection of light therefrom, the light collected by said telecentric lens means being transmitted therethrough;

(a) Omission of Relevant Language

The Court's May 24, 2006 Opinion construed, as a matter of law, that the term "telecentric lens" is a sufficient structure to support the function of "peering into the well," in connection with claim 5 of the '653 patent. In particular, the Court rejected Defendant's argument that the phrase's express statement is in a means-plus-function format, and, as a result, "telecentric lens" should be treated as a limitation to the claim. The Court, in reaching this decision, focused on the issue of whether the word "means" used in the claim language invokes the means-plus-function format 35 U.S.C. § 112 P6. (May 24 Op. at 16). Ultimately, the Court found that, in this case, it did not.

Defendant now argues that the Court's May 24 Opinion did not address all the functional language present in the claim limitation. In particular, Defendant argues that the Court only addressed a "truncated" version of the first part of the limitation - "telecentric lens for peering into the well" - and never addressed the latter part of the phrase which stated "in order to improve the collection of light therefrom." (Def. Br. at 14). According to Defendant, when the additional language is considered, it becomes apparent that the telecentric lens, alone, is not capable of achieving the function of "improving the collection of light" and that other unmentioned structures are thus necessary to accomplish this task. (Def. Br. at 15). Thus, Defendant argues, that because the claim does not contain sufficient structure to perform the function, the claim limitation should be construed in the means-plus-function format, under 35 U.S.C. § 112 P 6. (Id.).

In construing the term "telecentric lens" as a sufficient structure to support the function of "peering into the well," the Court's May 24 Opinion did not expressly address whether the term "telecentric lens" is a sufficient structure also for performing the function of "improving the collection of light therefrom." Therefore, the Court finds that reconsideration on this issue is warranted.

As set forth in the Court's May 24 Opinion, "an element in a claim for a combination may be expressed as a means or step
for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112 P 6. Additionally, "whether certain claim language invokes 35 U.S.C. § 112, [P] 6 is an exercise in claim construction and is therefore a question of law . . . ." Personalized Media Comm'ns, L.L.C. v. ITC, 161 F.3d 696, 702 (Fed. Cir. 1998).

Generally, use of the word "means" invokes a presumption that the patentee invokes the statutory mandate for means-plus-function clause. Rodime PLC v. Seagate Tech., Inc., 174 F.3d 1294, 1302 (Fed. Cir. 1999), cert. denied, 528 U.S. 1115, 120 S. Ct. 933, 145 L. Ed. 2d 812 (2000). However, even where the claim element specifies a function, § 112, P 6 does not apply if it also recites sufficient structure or material for performing that function. Id. at 1302.

In its Opening Claim Construction Brief, Defendant provided a proposed construction for certain claim language in claim 1 of the '653. There, the claim language at issue was:

a telecentric lens suitable for imaging said multi-well plate positioned to collect light from said plate, the collection of light from said at least one sample being improved owing to the ability of the telecentric lens to peer into the well, the collected light being transmitted through said telecentric lens;

Interestingly, Defendant proposed the following construction of said claim language:

a telecentric lens that can be used for creating an image of a multi-well plate, and that is positioned so that it can collect light from the multiple-well plate, the collection of light from the plate being improved due to the ability of the telecentric lens to eliminate parallax error,

(Def. Claim Construction Br., App. at 1) (emphasis added).

Additionally, column 12, lines 39-48 of the '653 patent state the following:

The present lens is telecentric. A telecentric lens is free of parallax error. Images of deep, narrow targets, made with standard lenses, exhibit parallax error. Circular targets at the center of the image are seen as true circles. However, the lens peers into lateral targets at an angle. Therefore, these lateral targets are seen as semilunar shapes. In many cases, one cannot see the bottom of a well at all. A telecentric lens collects parallel rays, over the entire area of a well plate. Thus, it does not peer into any wells at an angle and is free of parallax error.

'653 patent, col. 12, In. 39-48 (emphasis added).

Having reviewed the language of the '653 patent, itself, as well as Defendant's proposed construction of similar language contained in claim 1 of the '653 patent, the Court determines that the "telecentric lens" contains sufficient structure to perform the additional function of "improv[ing] the collection of light," based on its ability to eliminate parallax error. Accordingly, the Court rejects Defendant's argument that "telecentric lens" should be construed as a limitation stemming from construing the phrase in a means-plus-function format of 35 U.S.C. § 112, P 6. Therefore, the conclusion reached by the Court in its May 24 Opinion remains unchanged, as the Court hereby construes that the term "telecentric lens" is a sufficient structure to support the function of "peering into the well," as well as the function of "improv[ing] the collection of light therefrom." As such, upon reconsideration, the Court affirms its May 24, 2006 Opinion and Order.

1. "Telescope"

The first term that the parties disputed was the word "telescope." "Telescope" appears in every claim in the patent, either expressly or by reference. Id. at 6:29-8:22. As used in the '908 Patent, this Court construes the term "telescope" to include both "reflecting telescopes," which use mirrors as optical elements, and "refracting telescopes," which use lenses as optical elements. n4
n4 It is also noted that prisms have been used as optical elements in both reflecting and specialized refracting telescopes. (See Markman Hearing, Def. Ex. B, Isaac Newton, Optics 422-23 (1717); Def. Ex. C, John Texreau, How to Make a Telescope 107 (1957); Markman Tr. at 19:14-21.)

Plaintiff contends that the term "telescope" should be restricted to a "Newtonian telescope." n5 (See Plaintiff's Reply Claim Construction Brief, Mar. 10, 2005, "Pl.'s Reply Br." at 3.) Defendant, in contrast, argues that "telescope" is much broader than plaintiff alleges, urging that the term be construed to include both "reflecting telescopes" and "refracting telescopes," thus comporting with the term's dictionary definition. (See Defendant's Brief Addressing Claim Construction, "Def.'s Opp. Br." at 3.) As discussed supra, a court must begin its claim construction analysis by analyzing the language of the claims themselves.

n5 For the most part, Newtonian Telescopes are a subgroup of reflecting telescopes. (Markman Tr. at 4:9-11.)

a. Doctrine of Claim Differentiation

"The doctrine of claim differentiation ... creates a rebuttable presumption that each claim in a patent has a different scope." Dow Chem. Co. v. United States, 226 F.3d 1334, 1341 (Fed. Cir. 2000). The doctrine is implicit in 35 U.S.C. § 112, P4, which states that "a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed." (emphasis added). Thus, under the doctrine, a dependent claim and a corresponding independent claim should not be construed to have the same scope; the dependent claim should have an additional limitation. The Federal Circuit recently reaffirmed the doctrine of claim differentiation, without using that title, in Phillips, when it stated that "the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." 2005 U.S. App. LEXIS 13954, 2005 WL 1620331, at *7 (citing Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004)). The doctrine precludes interpretations of claim language that render dependent claims too broad or independent claims too narrow, but it should not be used to interpret an independent claim too broadly either. See Tandon Corp. v. U.S. Int'l Trade Comm'n, 831 F.2d 1017, (Fed. Cir. 1987) ("Whether or not claims differ from each other, one can not interpret a claim to be broader than what is contained in the specification and claims as filed.") (citation omitted).

b. Analysis

The doctrine of claim differentiation applies to this situation and resolves the dispute as to the definition of "telescope" in favor of defendant, i.e., that "telescope" includes both reflecting and refracting telescopes rather than being limited to Newtonian telescopes. The term "Newtonian telescope" appears in claim 5 of the '908 Patent. '908 Patent at 6:42-43 ("The method of claim 1, further comprising locating the optical element in a Newtonian telescope."). Claim 5 is dependant on claim 1, which describes: "[a] method of aligning an optical element in a telescope." Id. at 6:30 (emphasis added). The "Newtonian" limitation on the word "telescope" in claim 5 would be unnecessary if a person of ordinary skill in the art would have understood "telescope," as used in claim 1, to be restricted to Newtonian telescopes. Based on the doctrine of claim differentiation, the term "telescope" should not be restricted to "Newtonian telescopes."

The next question is what the term "telescope" includes, if it is not limited to Newtonian telescopes. Plaintiff argues that if "telescope" is not limited to Newtonian telescopes, it should be limited to "reflecting telescopes," which would include Newtonian telescopes as a subgroup. (Markman Tr. at 6:12-13.) n6 The doctrine of claim differentiation answers this question as well. The term "reflecting telescope" appears in claim 4. '908 Patent at 6:40-41. Claim 4 is "the method of claim 1, further comprising locating the optical element in a reflecting telescope." Id. (emphasis added). Applying the doctrine of claim differentiation, the term "telescope," as used in claim 1, presumptively cannot be limited to "reflecting telescopes," which is the limitation added in claim 4. Therefore, this Court looks to the specification to determine whether the term

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"telescope" includes refracting telescopes, as defendant suggests.

n6 Citations to the Markman hearing transcript reference the page and line numbers in the form Page(s):Line(s).

Plaintiff asserts that the specification "does not describe any method for using this invention to align a [refracting] telescope," and cites Phillips for the proposition that the claims must be consistent with the specification. (Markman Tr. at 6:4-5.) Nonetheless, as plaintiff concedes, the specification expressly states that "the present invention may be used to align refracting telescopes." '908 Patent at 6:11, 19-21 (emphasis added). In fact, the specification even provides a diagram of the invention being used with a refracting telescope. Id. at Fig. 15. Since the patent mentions refracting telescopes in the specification, included a drawing for the invention with a refracting telescope, and uses "reflecting telescope" as the limitation in a dependent claim, it is clear from the intrinsic evidence that the term "telescope," as used in the claims, includes both reflecting and refracting telescopes. n7

n7 Claims 10, 15, 18, and 20 use the term "telescope" without any dependent claims that limit the term; however, this is of no consequence because claim terms are to be construed consistently across all claims. See Southwall Tech., Inc. v. Cardinal IG Co. 54 F.3d 1570, 1579 (Fed. Cir. 1995); accord Phillips, 2005 U.S. App. LEXIS 13954, 2005 WL 1620331 at *6 ("Because claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the same term in other claims.").

B. Claim 10

The parties also disagree on the proper construction of claim 10. The court repeats claim 10 here for ease of reference:

In a pull-type harvesting machine as claimed in [claims 1-9], said steering structure including telescoping linkage having a front pivotal connection with the tongue at a point which is at least approximately equidistant from said opposite ends of the telescopic section.

The parties join issue first on the meaning of the term "telescoping." Defendant argues that the term should be construed to encompass only linkages that have overlapping sections, as if in overlapping cylindrical sections. Plaintiff argues that the term is broader, and encompasses any sliding linkage allowing for the adjustment of length.

The court agrees with defendant and holds, as a matter of law, that the term "telescoping linkage" as used in the '859 patent means a linkage having overlapping cylindrical sections. The ordinary meaning of the term telescoping is "to slide or pass one within another like the cylindrical sections of a hand telescope." Webster's Third International Dictionary, 2351 (1986). The court believes the term telescoping is simply too narrow to encompass the entire class of sliding linkages which allow for the adjustment of length.

Gargoyles argues that "temples pivotally secured to the outer edge of the lenses" refers to conventional side pieces or arms
(that may include hinges with legs or end pieces), which are attached to the lenses rather than to a frame so that they can be folded and are located outside the wearer's field of vision.

Aearo contends that "temples," elements used to secure the lenses to the ears, as that term is used in the '611 Patent, cannot include end pieces and must be directly attached to the outer edge of the lenses rather than to the surface of the lenses inside the outer edge.

Neither the claims nor the Specification nor the PTO file of the '611 Patent expressly defines the word "temple." Dependent Claim 8, however, adds a relevant limitation with respect to the attachment of temples to the lenses:

The eyeglasses of Claim 1, further including a pair of mounting pads integrally formed at the outer edges of respective lenses, and a hinge having one mounting leg embedded in each mounting pad and another portion secured to a respective temple.

'611 Patent, col. 4, 11. 52-56. Because that dependent claim cannot exceed the scope of independent Claim 1, "temples pivotally secured to the outer edge of the lenses" must include temples secured to a hinge with a mounting leg, which are secured to mounting pads which are, in turn, integrally formed to the outer edge of the lens. In other words, a temple may be secured to the lens by an intervening means that allows it to rotate.

In the Specification, the description of the "Best Mode" of the invention reiterates that broad construction:

A pair of temples 18 of conventional design are secured to the lenses 12 with conventional hinges 20. One leg 22 of each hinge 20 is embedded in respective mounting pads 24 integrally formed along the outer edge of each lens. The illustration corresponding to that description depicts the "temples" as the sidepieces or arms of the glasses which would extend along a wearer's temples. The means of securing the temples is a separate piece, a conventional hinge with a leg, that permits the temple to rotate. In addition, the illustrations show that the point of attachment of each temple is inside of the outermost edge of the lenses so that, when the temples are in the fully opened position, the end of each temple touches, or almost touches, the outer edge of the lens. The use of the word "conventional" to describe both the design of the temples and the hinges suggests that neither the temples themselves nor the securing means are further limited to distinguish the disclosed invention from prior art.

Based upon the intrinsic evidence, this Court construes "temples pivotally secured to the outer edges of respective lenses" to mean sidepieces or arms extending along the wearer's temples which are fastened to the lenses by a means or method that allows them to pivot or rotate at a place on the exterior portion of those lenses near the wearer's temples.

Claim Term | Plaintiff's Proposed Construction | Defendants' Proposed Construction
--- | --- | ---
"temporarily" | "lasting or used for a limited time" | "used in connection with the elevator installation during modernization, and removed after modernization is complete"

Plaintiff notes that the term "temporarily" is not expressly defined in the specification and therefore cites to the dictionary definition of "lasting or used for a limited time." See American Heritage Desk Dictionary 843 (4th ed. 2001). Plaintiff asserts that the term "temporarily" is used to describe the (1) operation of an elevator during modernization, and (2) the connection of the modernizing device to an elevator control. ('861 Patent, col. 11:5-10; id. col. 12:49-53.) Plaintiff contends that its proposed construction is consistent with the claim language because it denotes that the use contemplated will only persist during the limited time of the modernization process.

Defendants concede that Plaintiff's construction comports with the dictionary definition of "temporarily." Defendants argue, however, that the meaning of "temporarily" must be construed in the context of the patents in order to provide the
appropriate meaning. Defendants note that the construction provided by Plaintiff does not provide any definitive time limitation (e.g., one month or one year), and therefore it is too vague. Defendants argue that the only proper context for understanding the term "temporarily" is to link it to the modernization process itself. Thus, Defendants' proposed construction defines the term with respect to its relation to the modernization process.

Although Plaintiff's proposed construction is consistent with the ordinary meaning of the term "temporarily," the term is best understood as measuring the time in which the modernization process takes place. Plaintiff concedes that the relevant guidepost for understanding the term "temporarily" relates to the time during which the modernization steps are completed. Therefore, Defendants' proposed construction best comports with the scope of the term "temporarily" by tying it directly to the process to which the term applies. See Toro Co. v. White Consol. Indus., Inc., 199 F.3d 1295, 1299 (Fed. Cir. 1999) ("[W]ords of ordinary usage must nonetheless be construed in the context of the patent documents."). In other words, the best (and seemingly only) way to comprehend the meaning of "temporarily" is to relate it to the process which will determine how long "temporarily" will actually be. As explained by the Federal Circuit in Toro:

As this case well illustrates, the dictionary definitions of common words are often less useful than the patent documents themselves in establishing the usage of ordinary words in connection with the claimed subject matter. This is not an issue of the richness of language, or variety or imprecision in the usage of words. Determining the limits of a patent claim requires understanding its terms in the context in which they were used by the inventor, considered by the examiner, and understood in the field of the invention.

In judicial "claim construction" the court must achieve the same understanding of the patent, as a document whose meaning and scope have legal consequences, as would a person experienced in the technology of the invention. Such a person would not rely solely on a dictionary of general linguistic usage, but would understand the claims in light of the specification and the prior art, guided by the prosecution history and experience in the technologic field.

Id. In light of the context provided by the Patents-in-Suit, the Court finds that the term "temporarily" means "used in connection with the elevator installation during modernization, and removed after modernization is complete."

C. "temporarily adhering"

The term "temporarily adhering" can be found in the '697 patent, and Plaintiffs propose the following construction of the term: "To temporarily hold fast or stick by or as if by gluing, suction, grasping, fusing or otherwise." JCC at 7:12-19. On the other hand, Defendants simply incorporate by reference their proposed construction of "temporarily coupling." Id. ("temporary physical securing, adhering, or affixing, not mere physical contact, between the leading end of the outer label and the inner label"). Although there seems to be no genuine dispute as to the meaning of the term "temporarily adhering," the Court adopts Plaintiffs' proposed construction of the term because it is consistent with the relevant definition contained in Merriam-Webster's Collegiate Dictionary ("to hold fast or stick by or as if by gluing, suction, grasping, or fusing").

The '037 Patent is a continuation of the '578 Patent. The application leading to its issuance was filed on October 6, 1997. It was issued on July 20, 1999.

The only Claim of the '037 Patent over which there is a dispute is Claim 6, which provides:

A wire for use in formation of an occlusion within a cavity used in combination with a catheter comprising:

a core wire having a tip portion end; and

a detachable elongate tip portion extending said core wire adapted to being packed into said cavity to form said occlusion

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in said cavity, said detachable elongate tip portion being temporarily coupled to said distal end of said core wire and detachable from said core wire without applying any force by said distal tip to any surface within said body cavity, whereby occlusion of said cavity can be performed.

The parties dispute the proper construction of the phrase "temporarily coupled to." "Temporarily" is a common adverb meaning "for a time only; for the time being." See Webster's New Twentieth Century Dictionary, 1878 (2d ed. 1983). The phrase "coupled to," is a commonly used non-technical phrase meaning "attached to."

The language of Claim 6 supports giving the phrase "temporarily coupled to" its common meaning. The phrase is used with respect to the relationship between the "elongate tip portion" and the "distal end of the core wire." The two are "temporarily coupled" and are "detachable." Further, except for its use in the claims, the phrase "temporarily coupled to" is not used or otherwise defined in the specification. A person of ordinary skill in the art would give the phrase its plain and commonly understood meaning.

The Court construes "temporarily coupled" as it is used in Claim 6 of the '037 Patent to mean: attached to until detached from.

B. "temporarily coupling"

The term "temporarily coupling" is used throughout both patents. 6 Merriam-Webster's Collegiate Dictionary defines "coupling" as "to fasten together." However, the parties' dispute more precisely relates to the definition of "temporarily." Plaintiffs contend that "temporarily coupling" means "joiner, pairing, or bringing together to momentarily connect." JCC at 8:12-20 (emphasis added). On the other hand, Defendants argue that the "term requires a temporary physical securing, adhering, or affixing, not mere physical contact, between the leading end of the outer label and the inner label." Id. (emphasis added). However, the definition of "temporarily"--"lasting for a time only"--is broad enough to encompass both "momentary" contact as well as "physical securing, adhering, or affixing." See The Merriam Webster Dictionary, Home and Office Edition, 1995. Consequently, the term is not limited in the way Defendants suggest. In fact, based on this definition, the only limitation on "temporarily" is that it not be permanent., i.e., eventually allowing the outer label to rotate about the inner label and/or container.

This definition is also consistent with the respective patent specifications. The '269 patent specification describes several methods of temporarily coupling the leading end of the outer label with the inner label, including (1) a blast of air or other gas; (2) moisture; (3) a holding or pressing apparatus; (4) vacuum pressure; or (5) a static electric charge. Id. at 5:61-6:13. 7 The '697 patent, on the other hand, describes a method by which "a release tab is removably attached to a rotatable label to facilitate attachment of the label to a container. The release tab is adhered to the container, or to a label affixed to the container, to secure the label to the container while the label is wrapped around the container. The release tab is then detached from the label once the label is wrapped about the container to permit the label to rotate about the container." Id. at 1:64-2:4.

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7 The '269 patent specification also states that "[a] leading end is temporarily affixed to the container while the outer label is wrapped around the container." '269 patent at Abstract (emphasis added).
Therefore, the Court construes "temporarily coupling" to mean the following: to fasten together for a limited time, and, upon uncoupling, allowing the outer label to rotate about the inner label and/or container.

4103

"Tension"

Here too no Markman-type construction seems to be required that would add a definition beyond the ordinary English language meaning of the term "tension." Once again Dometic offers up an artificial construct to advance its position, a construct in which the connector that is the subject matter of the invention must support the entire weight of the awning (repeating the notion of the "series" connector), although the patent claims do not prescribe any limitations in terms of weight—let alone the quantity of weight involved. In short, the '172 Patent's references to "tension" will go to the jury without the interposition of any judicial gloss.

4104

1. "tension member"

Schindler proposes that "tension member" be construed to mean "structure which is stretched taut." Schindler's construction is premised upon the WEBSTER'S DICTIONARY definition of the term, which defines tension as "the act of stretching or the condition or degree of being stretched to stiffness: tautness." In its responsive brief, Otis suggests that the Court construe "tension member" as a "structure which during use is stretched or under stress."

Each parties' proposed construction will be adopted in part. The Court adopts Schindler's interpretation that requires the tension member to be "stretched taut." However, as Otis argues, the phrase "during use" is necessary to provide a clear definition of the term. The Court will, thus, construe "tension member" as a "structure which, during use, is stretched taut."


3 Otis asserts that including the word "taut" will lead to a dispute over the definition of "taut." This result, however, is no different than if the Court were to use other words that have been proposed such as "under stress" or "stiffness."

4105

1. "Terminal"

In the Markman proceeding, KEI took the position that "terminal" was appropriately construed as a structure "attached to the end of an elongated barrier that is anchored" to prevent an impacting vehicle's perpendicular movement, but asserted that the construction should be broad enough to include a device attached to the end of a truck or work vehicle parked in the roadway. 17 KEI's proposed claim construction defined "terminal" as a device that attaches to the "end of an elongated barrier or other similar roadside hazard." Trinity's proposed claim construction defined "terminal" as "a device attached to the end of an elongated barrier. . . . A device attached to a truck or work vehicle is not a terminal." (Docket Entry No. 90, p. 19). This court rejected Trinity's and partially adopted KEI's proposed construction. This court construed "terminal" as "a
A device attached to the end of an elongated barrier that is anchored to the roadside, or attached to the end of a fixed roadside hazard, that prevents an errant vehicle's movement perpendicular to the roadway and . . . absorbs energy when a vehicle hits the terminal itself.” (Id.).

A review of the record reveals that this court's construction of "terminal" is consistent with the interpretive principles explained in Phillips. The specification of the 003 Patent consistently describes a "terminal" as attached to structures that are anchored or fixed along the roadway. In one embodiment, the roadside obstacle is a guardrail, a longitudinal barrier, connected to the ground by posts. (Docket Entry No. 65, Ex. 1, 003 Patent, col. 4, ll. 6-7, Figs. 1-4). In another embodiment, the roadside hazard is a "hard structure such as an overpass or the like." (Id. at col. 8, ll. 5-7, Fig. 14).

In the Markman analysis, this court drew on definitions in the Transportation Research Board National Research Council National Cooperative Highway Research Program Report 350 ("NCHRP Report 350"). This court looked to the Report 350 as evidence of the ordinary meaning of "terminal" in the field of highway safety design. The definition of "terminal" that this court found supported by the Report 350 is consistent with the use of the term in the patent claims and specification. Use of the Report 350 in the claim construction analysis is consistent with Phillips.

The NCHRP Report 350 was published by the Transportation Research Board in 1993 to provide "recommended procedures for evaluating the safety performance of various highway safety features." (Docket Entry No. 146, Ex. 15, T00517). The Federal Highway Administration requires roadway safety devices used on the national highway system to meet performance standards set out in the NCHRP Report 350. Id. ("This report is recommended to highway design engineers, bridge engineers, safety engineers, researchers, hardware developers, and others concerned with safety features used in the highway environment."). 18 Dr. Sicking was an author of the report. The glossary of the NCHRP Report 350 includes the following definitions:

Crash Cushion A device designed primarily to safely stop a vehicle within a relatively short distance. A redirective crash cushion is designed to contain and redirect a vehicle impacting downstream from the nose of the cushion. A nonredirective crash cushion is designed to contain and capture a vehicle impacting downstream from the nose of the cushion.

Terminal A device designed to treat the end of a longitudinal barrier. A terminal may function by (a) decelerating a vehicle to a safe stop within a relatively short distance, (b) permitting controlled penetration of the vehicle behind the device, (c) containing and redirecting the vehicle, or (d) a combination of a, b, and c.

Longitudinal Barrier A device whose primary functions are to prevent vehicular penetration and to safely redirect an errant vehicle away from a roadside or median hazard. The three types of longitudinal barriers are roadside barriers, median barriers, and bridge rails.

Truck-Mounted Attenuator (TMA) An energy-absorbing device attached to the rear of a truck or utility vehicle. A TMA is designed to provide a controlled stop of a vehicle impacting the rear of the truck.

(Id., T00695-96). According to the Report 350, "terminals" are only applied to the end of longitudinal barriers-roadside barriers, median barriers, and bridge rails -- that are attached or anchored to the road. Such devices are distinct from energy-absorbing devices that are designed to be attached to the rear of a truck or utility vehicle. Not only are these uses of the term "terminal" consistent with the use of the term in the claims and specification of the 003 Patent, the Report 350 involves none of the problems in using dictionaries that the court identified in Phillips.
In Phillips, the court identified several reasons why extrinsic evidence is often considered less reliable than the intrinsic evidence of the patent itself. Extrinsic evidence "does not have the specification's virtue of being created at the time of patent prosecution for the purpose of explaining the patent's scope and meaning." 415 F.3d at 1318. Extrinsic publications may not be written by or for skilled artisans in the field of art of the patent. And extrinsic evidence such as expert reports and testimony that is generated at the time and for the purpose of litigation, can suffer from bias not present in intrinsic evidence. Id. Dictionary definitions can be overly broad:

The problem is that if the district court starts with the broad dictionary definition in every case and fails to fully appreciate how the specification implicitly limits that definition, the error will systematically cause the construction of the claim to be unduly expansive. The risk of systematic overbreadth is greatly reduced if the court instead focuses at the outset on how the patentee used the claim term in the claims, specification, and prosecution history, rather than starting with a broad definition and whittling it down.

Dictionaries, by their nature, provide an expansive array of definitions. General dictionaries, in particular, strive to collect all uses of particular words, from the common to the obscure. By design, general dictionaries collect the definitions of a term as used not only in a particular art field, but in many different settings. In such circumstances, it is inevitable that the multiple dictionary definitions for a term will extend beyond the "construction of the patent [that] is confirmed by the avowed understanding of the patentee, expressed by him, or on his behalf, when his application for the original patent was pending."

Id. at 1321 (quoting Goodyear Dental Vulcanite Co. v. Davis, 102 U.S. 222, 227, 26 L. Ed. 149, 1881 Dec. Comm'r Pat. 131 (1880)).

The NCHRP Report 350 -- a technical report commonly used to test highway safety devices -- does not present the overbreadth problems encountered when using a general dictionary with multiple definitions. The definitions contained in the report were selected by experts in the roadside safety field, including Sicking, one of the inventors listed in the 003 Patent and the 820 Patent. The Report 350 was intended to be used by designers and engineers in the highway safety industry. The Report 350 was published in 1993, and Sicking and Pfeifer filed the application for the 003 Patent on November 7, 1994; the period between the two was short. The reliability concerns articulated by the court in Phillips -- timing, audience, and bias -- are not present to undermine the probative value of the definitions used in the Report 350. Given the purpose of the Report 350, Sicking's role as an author, and the publication date, this court's use of the report is consistent with the rule that a claim term must be construed as it is understood by a person of ordinary skill in the art at the time the application was filed, with primary emphasis on the specification and prosecution history. The Report 350 provides contemporaneous technological context to the disputed term, "terminal," and is consistent with the use of the term in the claims, the specification, and the file history. See Moba, B.V. v. Diamond Automation, Inc., 325 F.3d 1306, 1315 (Fed. Cir. 2003) ("The best indicator of claim meaning is its usage in context as understood by one of skill in the art at the time of invention."). In short, the analysis used in the construction of "terminal" is not inconsistent with the court's instruction in Phillips.
This term appears in Claims 1 and 16. Plaintiff's proposed construction is as follows: "a device attached to an electrical apparatus for convenience in making connections, such as a tang." Defendants assert that this phrase does not need to be construed, but, alternatively, offer the following construction: "point of connection." Both parties cite general purpose dictionaries in support of their proposed constructions, and Plaintiff also references the language of the claims and the specification. The Court finds that construction of "terminal" is appropriate, and also finds that this is a situation where "claim construction . . . involves little more than application of the widely accepted meaning of commonly understood words." Phillips, 415 F.3d at 1314. Webster's College Dictionary, cited by Defendants, sets forth twelve definitions for the word "terminal," the most relevant being "the mechanical device by which an electric connection to an apparatus is established." Similarly, Webster's Ninth New Collegiate Dictionary, cited by Plaintiff, has among its several definitions of the word "terminal" the following: "a device attached to the end of a wire or cable or to an electrical apparatus for the convenience of making connections." Additionally, looking at both the context of the language of Claims 1 and 16 as well as the specification of the '015 Patent, a "terminal" in the '015 Patent includes a tang attached to the commutator bar for allowing a connection between the armature wire and the commutator bar. Accordingly, the Court shall construe "terminal" consistent with Plaintiff's proposed construction as "a device attached to an electrical apparatus for convenience in making connections, such as a tang."

B. Does the MPS 350 Have a "Terminal"?

KFI defines "terminal," as follows:

The claimed "terminal" is a part that forms the end of an elongated barrier or other similar roadside hazard, and cooperates with the barrier or hazard to absorb energy when a vehicle hits the terminal itself. (See, e.g., '003 Patent at col. 1, lines 7-12.) The claimed terminal must also include an impact head, and numerous other requirements as follows [in the further language of Claim 6].

(Def.'s Prel. Inj. Hrg. Ex. 68, Pl.'s Answers to Def.'s Interrogatories at 3). KFI relies, in part, on the following language from the specification in the '003 Patent:

In one class of guardrail system, each guardrail system includes an elongated barrier and at least one energy absorbing terminal. The elongated barrier extends parallel to the roadway along the side of the roadway and ends in a terminal. The terminal cooperates with one or more components of the barrier to absorb energy when a vehicle hits the terminal itself.

(Docket Entry No. 33, Ex. A, col. 1, ln. 7-13). KFI also relies on extrinsic evidence, including the testimony of the inventor, Dr. Dean L. Sicking. Dr. Sicking testified that a person of ordinary skill in the art would understand "terminal" as used in claim 6 to include a device used to treat the end of guardrails, bridge rails, and other "roadside hazards" such as a truck or a sign.

Trinity defines "terminal" as:

A device designed to treat the end of a longitudinal barrier . . . . [A] longitudinal barrier is a safety device whose primary functions are to prevent vehicular penetration and to safely redirect an errant vehicle from a roadside hazard or median hazard. The three types of longitudinal barriers are roadside barriers, median barriers, and bridge rails . . .

(Def.'s Prel. Inj. Hrg. Ex. 70, Def.'s Answers to Pl.'s Interrogatories at 5). In support of its proposed interpretation, Trinity cites to extrinsic evidence, including the glossary of the National Cooperative Highway Research Program ("NCHRP") Report 350, (Def.'s Prel. Inj. Hrg. Ex. 11), and the testimony of Maurice Bronstad as to how a person of ordinary skill in the art would understand the claim term "terminal."

The crux of the parties' dispute is whether a "terminal" includes a device used to treat the end of a truck or work vehicle, such as the MPS 350. KFI asserts that the "MPS 350 truck mounted attenuator is a 'terminal' that forms the end of an
The '003 Patent does not define "terminal." KKI relies, in part, on the "Background of the Invention" in the '003 Patent to support the argument that a terminal includes the end of a truck or work vehicle, as opposed to a fixed barrier such as a guardrail. The relevant portion of the "Background of the Invention" Section states as follows:

This invention relates to guardrails intended to be positioned along a highway to reduce injury to the driver and passenger of vehicles that may accidentally tend to leave the highway.

In one class of guardrail system, each guardrail system includes an elongated barrier and at least one energy-absorbing terminal. The elongated barrier extends parallel to the roadway along the side of the roadway and ends in a terminal. The terminal cooperates with one or more components of the barrier to absorb energy when a vehicle hits the terminal itself.

The terminal is constructed to stop the vehicle without subjecting the occupant to excessive forces and to avoid impaling the passenger compartment of the vehicle or redirecting the vehicle in a dangerous direction or permitting the vehicle to continue in a dangerous direction at a dangerous speed when the vehicle hits the terminal itself. The barrier is designed to redirect the vehicle in a safer direction and impede its progress when the vehicle hits the barrier itself.

The terminals and barrier of the energy-absorbing guardrail are designed so that: (1) when the vehicle hits the barrier itself, the barrier is anchored by a cable or similar component with tensile strength to support the vehicle from moving excessively in a direction perpendicular to the roadway; and (2) when the vehicle hits the terminal, the cable or other support member is released to avoid pulling the barrier out of its alignment with the terminal which would prevent movement of the terminal and barrier together to absorb energy.

(Docket Entry No. 33, Ex. A, col. 1, ln. 1-30).

The applicants used the word "terminal" to refer to the end of an "elongated barrier." The applicants described an elongated barrier that is "anchored" to prevent the vehicle from moving perpendicular to the roadway. The specifications and preferred embodiments refer to "guardrails." However, the prosecution history shows that while the applicants initially limited their claims to a device used to cut a "guardrail," in February 1997, the applicants broadened their claims by changing "guardrail" to "cutable member." (Docket Entry No. 47, p. 15, ln. 8-23, p. 17, ln. 5-10). One of the embodiments shows a "concrete structure" rather than a guardrail. (Docket Entry No. 33, Ex. A, Fig. 14). The word "terminal" clearly is not limited to the end of a guardrail.

Although the '003 Patent is not limited to a guardrail, the patent does not state or suggest that a "terminal" includes the end of a truck or a work vehicle on or alongside a road. The language in the specification describes a terminal at the end of an "elongated barrier" that is itself "anchored." The applicants did not use the word "terminal" to refer to the end of a moving or moveable truck or work vehicle. A truck, or work vehicle, even when parked, is not ordinarily described as an "elongated barrier," and is not "anchored" to the roadside. Unlike guardrails and other structures that are ordinarily described as "elongated barriers," the MPS 350 may be attached to, and used by, a slowly moving truck that is at the end of, or follows behind, a group of work vehicles. The intrinsic evidence, particularly the specification in the '003 Patent, does not support the contention that the word "terminal" applies to the end of a truck or work vehicle.

The parties presented conflicting expert testimony as to the meaning of the word "terminal." Dr. Sicking, the inventor of the '003 Patent, testified that a "terminal" is "a device used to mitigate the hazard associated with the end of the barrier or another roadside obstacle and cooperate with the barrier end or the other roadside obstacle to reduce the injury and fatalities associated with ran-of-road accidents." (Docket Entry No. 42, p. 66, ln. 5-9). When asked how he "arrived at that definition," Sicking responded: "That's the definition of a terminal, as I understand it, in our industry as we -- as we, basically, laid out in the '003 patent." (Id. at 135, ln. 6-8). When asked to describe "what kinds of things are roadside obstacles," Sicking answered: "Well, you have bridge piers. You have large mass signing. You have culverts. You have -- in
the case of work zones, you have trucks, equipment, trailers. There are just a wide variety of roadside obstacles, sign supports, luminary supports." (Id. at 132, ln. 9-14).

Trinity argues that Dr. Sicking's testimony is "improper extrinsic evidence." (Docket Entry No. 59, p. 19). In Vitronics, the Federal Circuit held that the trial court erred in relying on the inventor's testimony as to claim interpretation because the patent specification and other intrinsic evidence clearly defined the term. 90 F.3d at 1583-84. The court noted that the inventor's definition was inconsistent with the specification and would have rendered one of the preferred embodiments uncovered by the patent. Id. While a court may rely on expert testimony to resolve ambiguities remaining after considering intrinsic evidence, a court may not use extrinsic evidence to contradict or vary the claim language. Id. at 1584. "Nor may the inventor's subjective intent as to claim scope, when unexpressed in the patent documents, have any effect." Id.

In Markman, the Federal Circuit found that the meaning of the disputed term was "clear" from the patent and prosecution history. 52 F.3d at 983. The court held that the district court appropriately "exercised its discretion in finding unhelpful [the expert/inventor's] testimony that he meant [the term], or that one of ordinary skill in the art would understand [the term], to mean something to the contrary, and furthermore the district court rejected the testimony as conflicting with the meaning derived from the patent and prosecution history." Id.

Dr. Sicking testified that a "terminal" could include any "roadside obstacle," including a sign, a vehicle, or a sign support. KKI's evidence limited the definition of "terminal" to roadside hazards that are "similar" to elongated barriers in critical aspects, including the aspects of being a structure, fixed in place, designed to stop and redirect impacting vehicles. To the extent that Dr. Sicking testified as to his own broader definition, his testimony is irrelevant to the inquiry. To the extent that Dr. Sicking testified as to how he interpreted the '003 Patent to use the word "terminal," as opposed to how "terminal" is generally understood by a person of ordinary skill in the art, his testimony is irrelevant to the inquiry. See Vitronics, 90 F.3d at 1584 (inventor's subjective intent may not be used to alter scope of claim); Markman, 52 F.3d at 983 (inventor and expert's testimony as to how claim should be construed based on text of patent is "legal opinion" and inappropriate extrinsic evidence in construing a claim).

Maurice Bronstad, Trinity's expert witness, testified that Trinity's definition is the "usual" definition of the word "terminal," as understood by a person skilled in the art. Bronstad testified that while he "wouldn't say [he] necessarily disagreed with [KKI's definition]." KKI's definition is not the "normal" definition because of the "roadside hazard" language. Bronstad testified that a "roadside hazard" could include anything -- a tree, an embankment, or a vehicle, to which the word "terminal" would not apply. (Docket Entry No. 47, pp. 109-111). Bronstad testified that the NCHRP Report 350 definition of "terminal" is how the term is reasonably understood by a person skilled in the art, and that Trinity used a "nearly identical" definition.

The NCHRP Report 350 was published by the Transportation Research Board in 1993 to provide "recommended procedures for evaluating the safety performance of various highway safety features." (Def.'s Prel. Inj. Hrg. Ex. 11, T00517). The Federal Highway Administration requires all roadway safety devices used on the national highway system to meet performance standards set out in the NCHRP Report 350. (Docket Entry No. 47, pp. 150-51). Dr. Sicking was an author of the report. (Def.'s Prel. Inj. Hrg. Ex. 11, T00515; Docket Entry No. 42, p. 135, ln. 17-19). The glossary of the NCHRP 350 includes the following definitions:

- Terminal A device designed to treat the end of a longitudinal barrier. A terminal may function by (a) decelerating a vehicle to a safe stop within a relatively short distance, (b) permitting controlled penetration of the vehicle behind the device, (c) containing and redirecting the vehicle, or (d) a combination of a, b, and c.

- Longitudinal Barrier A device whose primary functions are to prevent vehicular penetration and to safely redirect an errant vehicle away from a roadside or median hazard. The three types of longitudinal barriers are roadside barriers, median barriers, and bridge rails.

- Truck-Mounted Attenuator (TMA) An energy-absorbing device attached to the rear of a truck or utility vehicle. A TMA is designed to provide a controlled stop of a vehicle impacting the rear of the truck.

(Def.'s Prel. Inj. Hrg. Ex. 11, T00695-96).
The NCHRP Report 350 defines a "terminal" as attached to a "longitudinal barrier," which includes "roadside barriers, median barriers, and bridge rails." This is consistent with the '003 Patent's use of "terminal" to refer to the end of a "guardrail" or an "elongated barrier" that extends parallel to the roadway along the side of the roadway and is "anchored" to the roadway to prevent perpendicular movement of a vehicle leaving the roadway. The NCHRP Report 350 distinguishes between a "longitudinal barrier" and a "roadside hazard." A longitudinal barrier's "primary functions are to prevent vehicular penetration and to safely redirect an errant vehicle away from a roadside or median hazard." The longitudinal barrier keeps the vehicle from hitting the roadside hazard; the hazard itself is not the barrier. The NCHRP Report 350 discusses truck mounted attenuators in a separate section from the section on "terminals and crash cushions." (Id. at T00520-21). The glossary defines a "truck mounted attenuator" as a "device attached to the rear of a truck or utility vehicle . . . designed to provide a controlled stop of a vehicle impacting the rear of the truck." The glossary does not include a "truck" in the definition of "terminal" or "longitudinal barrier." Devices attached to the ends of longitudinal barriers--"terminals"--are different from those devices attached to trucks and working vehicles. The NCHRP Report 350 provides support for Trinity's position that a "terminal" refers to the device at the end of a "longitudinal barrier," not to the back of a truck or work vehicle.

Trinity argues that this court should adopt the NCHRP Report 350 definition as "the ordinary and accustomed meaning of the word 'terminal' in the roadside safety device field." (Docket Entry No. 59, p. 19). In Vitronics, the court stated that "although technical treatises and dictionaries fall within the category of extrinsic evidence, as they do not form a part of an integrated patent document, they are worthy of special note." 90 F.3d at 1584 n.6. The court described treatises and dictionaries as "more objective and reliable guides" than expert testimony. Id. at 1585. "Unlike expert testimony, these sources are accessible to the public in advance of litigation. They are to be preferred over opinion testimony, whether by an attorney or artisan in the field of technology to which the patent is directed." Id.

The intrinsic evidence, particularly the specification, suggests that a "terminal" is attached to an elongated barrier that is anchored to prevent the impacting vehicle's perpendicular movement and does not include a truck or work vehicle. Bronstad testified that the term "terminal" would not ordinarily be understood to describe the end of a truck. The MPS Report 350 definition supports this testimony. The patent language does not suggest that the applicants intended "terminal" to include the end of a truck or work vehicle. See Markman, 52 F.3d at 980 ("[A] patentee is free to be his own lexicographer. . . . The caveat is that any special definition given to a word must be clearly defined in the specification.") (internal citation omitted). No special definition is provided here. However, this court notes that even if KKI's proposed definition was adopted, a truck or work vehicle is not "similar" to an "elongated barrier."

The parties do not dispute that the TRACC contains a "terminal." The issue is whether the MPS 350 also contains a "terminal." The MPS 350 truck-mounted attenuator is attached to a truck, not to a roadside barrier, median barrier, or bridge rail. Unlike longitudinal barriers such as a guardrail, median barrier, or a bridge rail, a truck or work vehicle is not anchored to the roadside. A truck or work vehicle is not designed to redirect and stop an impacting vehicle. A truck or work vehicle is a roadside hazard, not a barrier designed to prevent an impact with a hazard. The MPS 350 may be used not only when the truck to which it is attached is stationary, but also when the truck is traveling slowly behind a group of vehicles. None of the traditional longitudinal barriers, such as a guardrail or bridge rail, is attached to a moving object.

This court finds that KKI has failed to make a clear showing of a reasonable likelihood of success in proving that the MPS 350 includes a "terminal."

3. Terminal Portion

This term is used in asserted Claim 1 in reference to "the driven lug engaging a terminal portion of the appendage during rotation of the handle means about the axis of rotation." 086 patent, col. 6, 11. 61-64. In relevant part, "terminal" means "of or relating to an end, extremity, boundary, or terminus." Webster's Third, Gerdes Ex. 241. The ordinary definition of "portion" is "a part of a whole." Webster's Third, Gerdes Ex. 237. Thus, the ordinary meaning of "terminal portion" is the part of the whole at the end, extremity, or boundary of the whole.

Again, Gerdes contends that the court should restrict the definition of this term based on the depiction in Figure 2.
Specifically, Gerdes states that in that drawing one can see that the lug contacts the lower unattached portion of the appendage, including the unattached end point of the appendage. Thus, Gerdes urges that the "terminal portion" should specifically include the unattached end point of the appendage. As with the term "lug," however, Gerdes provides the court with no reason to import such a limitation from the specification into the terms of the claims themselves. See Texas Digital Systems, Inc., 308 F.3d at 1204 (finding that the presumption that a term is given its ordinary meaning is only overcome if in the specification the patentee "clearly set[s] forth an explicit definition of the term different from its ordinary meaning"). Gerdes also attempts to use the prosecution history to support its argument that "terminal portion" should be given special meaning, but admits that the remarks to the amendment provide no reasoning for why the term was added to the claim. Thus the court is unable to derive anything about the meaning of the term from this amendment.

As stated above, absent an explicit reason to do so the court cannot read into the claim terms a limitation found only in the preferred embodiment of the patent. Advanced Cardiovascular Sys., Inc., 261 F.3d at 1338-39. Therefore, because the court finds no such explicit directions in the specification of the 086 patent to deviate from the ordinary definition of the term "terminal portion," the term, when used in Claim 1, must be used according to its ordinary meaning. Thus, the "terminal portion" means the part of the appendage at the end, extremity, or boundary of the appendage.

6. "Testing"

According to the method taught by Claim 1, the bringing step is followed by "testing said corresponding contact surfaces for the existence of correct alignment and electrical contact between said corresponding contact surfaces." Col. 9, Ins. 67-68; Col. 10, Ins. 1-2. The parties dispute, what is tested, when it is tested, and how it is tested.

The issue of what is tested -- "corresponding contact surfaces" -- has been resolved above: more than one but not necessarily all contact surfaces. One skilled in the art would be able to practice this method to determine electrical contact and correct alignment without testing each and every surface. The language does not compel the limitation that all surfaces be tested. See also Col. 6, Ins. 57-62 ("To test whether or not the electric contact has been well established, it suffices to read the content of the first address.").

5 As to when testing begins, Thomson again argues that under § 112 P 6, "testing" is too broad and indefinite and must be limited to the test set forth in the specification -- i.e., a continuous test. That reading, however, is inconsistent with the terms of Claim 5 (dependent from Claim 4, which is, in turn, dependent from Claim 1), which teaches steps a-c practiced in sequence. As Claim 5 is narrower than Claim 1, limiting Claim 1 to a continuous test would conflict with the terms of Claim 5. The Court is not persuaded that a continuous testing limitation must be imported to save Claim 1, step(b) from invalidity. Cf. Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1248-49 (Fed. Cir. 1998) ("Without any claim term that is susceptible of clarification by the written description, there is no legitimate way to narrow the property right.").

The substantial dispute between the parties concerns how testing occurs. To resolve this dispute, two other terms must be construed.

The test in step (b) tests for "the existence of correct alignment and electrical contact between said corresponding contact surfaces." The parties appear to agree that the test is at least to determine the presence of two conditions vis-a-vis the corresponding contact surfaces: (1) correct alignment; and (2) electrical contact. According to the Commission, "the ALJ construed the testing limitation of step (b) to require a test that is expressly for the purpose of determining proper alignment and correct electrical contact. . . . We agree with and adopt the ALJ's construction [not challenged]." ITC at 23.

The test is conjunctive, and the implication is that if either condition is not met, the test fails. However, testing is followed by the "displacing" step (c) "if said testing determines non-alignment and non-existence of correct electrical contact." (emphasis added). Innovation urges the Court to convert "and" into "or", as one skilled in the art would do. See Tr. (June 30,
1998, p.m.) at 53-54 (Dr. Kuc). Otherwise, steps (b) and (c), read literally, leave a gap. The method would be practiced by bringing the contact surfaces into contacting relationship, testing the surfaces, and no further action taking place, even if the test revealed the non-existence of correct electric contact -- the very purpose of the patented method -- so long as the other condition (correct alignment) was present. The same result would follow from the inverse situation.

As anomalous as this reading may seem, Thomson argues that Innovation is stuck with Moreno's poor drafting. Moreover, that drafting was the product of an agreement made with the Patent and Trademark Office ("PTO"). The term "non-alignment and non-existence of electrical contact" was drafted in response to the examiner's indefiniteness objection. The examiner wrote:

Applicant's attorney provisionally agreed [sic] amending Claim 19 [issued Claim 1] to include limitation of alignment in Claim 19, paragraph b after "correct" and in Paragraph C to include "non-alignment and" after "determines" and in penultimate line to recite "alignment and". The remaining claims will be amended as per attached draft. The specification will be amended accordingly.

464 Patent Prosecution History [hereafter "Prosecution History"] at II0150 (Tab 14) (emphasis added). Neither the disclosure of the invention, nor its preferred embodiment in the specification requires a positive test for non-alignment and non-existence of electrical contact. See, e.g., Col. 2, lns. 18-24; Col. 6, lns. 57-62.

Where the literal language of a claim, read in isolation, leads to an absurd result -- a method that would patently fail to achieve its purpose; where the file wrapper indicates that the specification would reflect the bargain made with the PTO; and where the specification suggests that displacing occurs in the absence of either correct alignment or electrical contact, the Court is persuaded that one skilled in the art would read "non-alignment and non-existence of electric contact" to mean "non-alignment or non-existence of electric contact." See Renishaw, 158 F.3d at 1250 ("Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventor actually invented and intended to envelop with the claim.").

In sum, the term "testing" in Claim 1, step (b) comprises a single, express test for correct alignment and electrical contact. The displacing step, Claim 1, step (c), is triggered if the test in step (b) fails because one or both conditions are not satisfied.

3. "a textile material"

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<th>Claim Term</th>
<th>Plaintiff's Proposed Construction</th>
<th>Defendants' Proposed Construction</th>
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<tr>
<td>a textile material</td>
<td>A woven, knitted, nonwoven or extruded material.</td>
<td>A single protective element formed of a woven synthetic material such as polypropylene formed in a monofilament and woven into a geotextile.</td>
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At the hearing, Defendants maintained that the parties' proposed constructions are "not too far apart." A comparison of the parties' proposals, however, tends to show otherwise. In the end, the Court concludes that Plaintiff's proposed construction is proper. Patent '085's summary of the invention states that the "invention contemplates the use of a flexible barrier of woven synthetic textile." Patent '085, col. 1, Ins. 65-66. The specification later discloses figure 7 as illustrating a preferred construction of the "textile material of this invention" and states that a "suitable material" for use as the textile material "is polypropylene formed in a monofilament and woven into a geotextile." Patent '085, col. 5, Ins. 19-22. That very same paragraph goes on to state that "[w]hile a woven material is shown [in figure 7], the material may be knitted, nonwoven or extruded with apertures formed therein." Patent '085, col. 5, Ins. 25-30. It is clear that Defendants' proposed construction selectively excludes this latter portion of the paragraph and, thus, improperly confines the claim language to a narrow version of the preferred embodiment.

The Federal Circuit consistently emphasizes that courts may not limit a claim to a particular embodiment appearing in the
written description when the claim language is broader than the embodiment, i.e. courts may not import limitations from the specification into the claim. See Varco, 436 F.3d at 1373 ("this court will not at any time import limitations from the specification into the claims"); Resonate Inc. v. Alteon Websystems. Inc., 338 F.3d 1360, 1364-65 (Fed. Cir. 2003) ("a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment"). In this case, the term "textile material" encompasses a broader meaning than that which is set forth by Defendants. The Court concludes that Plaintiff's interpretation is more accurate and, thus, construes "a textile material" as meaning "a woven, knitted, nonwoven or extruded material."

C. "Textured"

The parties agree that "textured" is the opposite of "non-textured." Accordingly, based on the Court's determination that "non-textured" means "smooth," "textured" means "not smooth."

2. The Retrieving Steps

"Retrieving one of the sets [of] data from the memory (86) representing one of the fuel delivery limit curves when the cruise control (44) is engaged;"

"Retrieving the other set of data from the memory (86) representing the other fuel delivery limit curve when the cruise control (44) is not engaged"

The parties propose very different interpretations of the retrieving steps of the '597 patent. Detroit Diesel contends that the retrieving steps require the retrieval of one set of data representing a fuel delivery limit curve if the cruise control is engaged, and the retrieval of a different set of data representing a different fuel delivery limit curve if the cruise control is not engaged. Detroit Diesel bases its interpretation on the plain language of the claim and on the dictionary definition of "other." Detroit Diesel also refers the court to what it deems an admission by Caterpillar to the European Patent Office during prosecution of the same claim with that office that the claim is invalid unless the retrieving steps are limited to mutually exclusively retrieving one set of data or the other set of data depending on whether the cruise control is engaged. In response to an objection from the EPO, Caterpillar inserted a reference to prior art WO-A-8403911 (the Thompson Patent European counterpart), explaining in its letter to the EPO presenting the amended application that the reference "does not suggest using a high horse power curve during cruise control engagement and a lesser horsepower curve simply because the cruise control is engaged." Caterpillar amended the claim to explain that WO-A-8403911 "does disclose limiting fuel supply to a to a lower range of values … when cruise control is off than when it is on, even though the limitation to using a lower range of values is not primarily determined by whether or not the cruise control is engaged or disengaged." See Exh. F to Detroit Diesel's Motion.

Caterpillar, on the other hand, contends that when properly interpreted in their open format, the retrieving steps are not limited in the manner Detroit Diesel proposes. Caterpillar claims that the first retrieving step can only be interpreted to require retrieval of at least one set of data, representing one or more fuel delivery limit curves, when the cruise control is engaged. Caterpillar explains that the lower limit curves (which would, under Detroit Diesel's interpretation, be available only when cruise control is not engaged) may also limit the command signal if cruise control is engaged, as shown in the preferred embodiment, in which the additional power is not retrieved unless power above the lower limit curve is needed to maintain the cruise set speed:

Higher rated rack limits, and thus higher engine output torque and horsepower levels, are made available when: (1) the cruise control is engaged; (2) the cruise control set speed is greater than a minimum predetermined speed; and (3) the vehicle speed is less than the cruise control set speed plus a predetermined value.
If any of the questions posed by the blocks 130, 132, or 134 [of Figure 3] is answered in the negative, then it has been determined that the increased rack limits represented by the torque curves 120A, 122A and respective horsepower curves 120B and 122B are not to be used.

'597 Patent, Col. 6, lines 23-29 and 62-66. Caterpillar thus concludes that the specification itself contradicts Detroit Diesel's interpretation because it describes a situation where cruise control is engaged but the upper limit curve is not retrieved. The preferred embodiment thus evaluates conditions other than whether the cruise control is engaged before selecting a particular set of data. Because the claim is written in an open format, Caterpillar argues, it will read on devices that include additional elements not referenced in the claim.

According to Caterpillar, the second retrieving step must be read to allow the retrieval of more than one set of data from memory when cruise control is not engaged, and cannot be read as restricting retrieval of the second (lower) fuel delivery limit curve to when the cruise control is not engaged. Claiming to construe the patent practically and in accordance with its purposes, Caterpillar asserts that the second retrieving step may properly be construed to require retrieval of the lower fuel delivery limit curve where power is demanded through the throttle (where by definition the cruise control is not engaged), and to "preclude throttle retrieval of the higher curve in other circumstances."

Caterpillar objects to Detroit Diesel's reliance on the EPO documents, claiming they are presented out of context and in edited form, and are not legal admissions by Caterpillar, and do not support Detroit Diesel's arguments. The correspondence, Caterpillar claims, merely shows its disagreement with the EPO about whether the Thompson Patent European counterpart taught use of the cruise control as a determining step for accessing additional power.

Lastly, Caterpillar argues that the court cannot accept Detroit Diesel's interpretation of Claim 1 because it would mean that "the fuel delivery limit curves in Figures 2A and 2B are mutually exclusive," which in turn would make Claim 3 11 of the patent directly contradicted by Claim 1 and rendered meaningless. Detroit Diesel's reply seems to accept Caterpillar's assertion that its interpretation of Claim 1 would make Claim 3 contradicted by Claim 1 and rendered meaningless, but points out that claim differentiation 12 is a "guide, not a rigid rule." See Autogiro, 384 F.2d at 404.

--- Footnotes ---

11 Claim 3 of the '597 patent provides: "3. The method of claim 1, including the further steps of determining whether the speed of the vehicle is less than the set speed plus a predetermined value and retrieving at least a portion of the other set of data from the memory (86) when the vehicle speed is not less than the set speed plus the predetermined value."

12 The doctrine of claim differentiation is a canon of claim construction which holds that when a patent contains both broad and narrow claims, the additional limitation of the narrow claim should not be read into the broad claim. The doctrine embodies the common sense notion that ordinarily language of one claim should not be so interpreted as to make another claim, such as a claim dependent on the first claim, identical in scope. Motorola, Inc. v. Interdigital Technology Corp., 930 F. Supp. 952, 965 (D.Del. 1996) (quotations and citations omitted).

--- End Footnotes ---

Detroit Diesel's reply brief makes two points relevant to construction of the retrieving steps. Detroit Diesel criticizes Caterpillar's interpretation of the retrieving steps as doing "violence to language as a tool for communication" by effectively eliminating the determining step altogether since, according to Caterpillar, the same sets of data may be retrieved without regard to whether the cruise control is engaged. Detroit Diesel also presents the deposition testimony of the first named inventor of the '597 patent, Michael Moncelle, who explains:

Q. So the first and second retrieving steps are mutually exclusive of one another depending on the answer to the determining step; is that accurate?

A. (Mr. Moncelle): Yes, they are mutually exclusive. You choose one or the other.
Moncelle Dep. at 31. In his affidavit, Mr. Moncelle explains that the steps are mutually exclusive in that one or the other sets of data is retrieved (engine fuel delivery necessarily is restricted at any point in time by one of the limit curves), but that this does not mean that the higher fuel delivery curve is the only accessible curve during cruise control engagement. Moncelle Aff., PP 10-11.

After examining the claim and the entire specification and considering the parties' arguments, the court agrees with Detroit Diesel's construction of the retrieving steps of the '597 patent. The claim states that one of the sets of data representing one of the fuel delivery limit curves is retrieved when cruise control is engaged, and the other set of data representing the other fuel delivery limit curve is retrieved when the cruise control is not engaged. As Detroit Diesel argues, the claim allows for the cruise control to be in one of two states (engaged or not engaged), and one of two different sets of data is retrieved depending on whether the cruise control is engaged or not engaged. By its own words, the claim sets up two mutually exclusive possible situations.

The court cannot reconcile Caterpillar's urged interpretation with the language of the claim. Caterpillar argues that because the claim is written using "comprising," i.e. in open format, limitations that are not present in the claim's language cannot be read into the claim. While it is true that a claim written in open format does not exclude additional unrecited elements, see Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1271-1272 (Fed. Cir. 1986), Caterpillar's interpretation is not based on additional unrecited elements. Caterpillar argues for an interpretation of the retrieving steps in which neither step is limited even to the language set forth in the step. The claim's words must be given their ordinary and accustomed meaning unless it appears that the inventor used them differently. ZMI Corp. v. Cardiac Resuscitator Corp., 844 F.2d 1576, 1579 (Fed. Cir. 1988); Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759 (Fed. Cir. 1984). The first retrieving step provides for retrieval of one set of data when the cruise control is engaged, and the second step provides for retrieval of the other set when the cruise control is not engaged. Caterpillar now argues that either set may be retrieved when the cruise control is engaged, and that when the cruise control is not engaged, the first set may nonetheless be retrieved, such as during power take-off. Caterpillar's asserted construction of Claim 1 may make sense in a vacuum, and even jibe with the purposes of the patent (making additional power available when necessary to maintain the set speed), but it finds no support in the claim's language. 13

13 The court does not rely on the EPO documents in reaching this conclusion, and determination of their meaning and status as "admissions" is not necessary.

Caterpillar's reference to portions of the preferred embodiment to support its interpretation is likewise unconvincing. The portion of the preferred embodiment Caterpillar references supports its assertion that in the preferred embodiment additional power is not retrieved unless power above the lower limit curve is needed to maintain the cruise set speed, but the portions Caterpillar cites recite additional steps (corresponding to blocks 132, 134, and 136 of Figure 3) that are not contained in Claim 1, but rather can be seen in the language of Claims 2 and 3 of the patent.

Lastly, Caterpillar's claim differentiation argument does not alter the court's conclusion. Caterpillar contends that Claim 1 cannot be interpreted in the manner urged by Detroit Diesel--"that the fuel delivery limit curves in Figures 2A and 2B are mutually exclusive"--because it would make Claim 3 of the patent directly contradict Claim 1. Caterpillar has not, however, explained how or why Detroit Diesel's interpretation would render Claim 3 contradicted by Claim 1 and "meaningless", and the answer is not obvious to the court.

GO BACK

4113

Gathering parts-related information for one or more parts within the plurality of parts which meets the customer's requirements

Defendants urge the Court to construe this term as "gathering information about parts that meet the customer's requirements from the electronically specified part information." Defendants argue this construction is necessary to define what is meant
by "the plurality of parts," which refers to the parts that were defined in element (b) of claim 1 with the language "electronically specifying information identifying a plurality of parts." Defendants' construction requires multiple parts to meet the customer's requirements; the claim language requires one or more parts. Defendants construction is also susceptible to being misunderstood. Orion seems to understand the construction to mean that the information is gathered from the electronically specified part information. Defendants contend that the plurality of parts are those that were electronically specified.

The Court agrees with Orion that this phrase does not require construction. In some contexts, "the plurality of parts" or similar terms may be confusing to a lay jury. Here, the antecedent "plurality of parts" is identified in the previous step. Given the close proximity of the phrases, it is highly unlikely to be confusing.

4114

9. "the polygon further comprises a first wall having a concave shape and a second wall having a convex shape"

This phrase is found in claims 58-75 of the '037 patent, and in claims 14, and 19-25 of the '255 patent. See Joint Statement, '037 and '255 Patents. Plaintiffs contend that "the polygon further comprises a first wall having a concave shape and a second wall having a convex shape" should be construed to mean "the polygon having a first wall with an apex directed toward the interior of the polygon and a second wall, also with an apex, directed away from the interior of the polygon." Defendants and the intervenor contend that the phrase should be construed to mean "the first wall of the polygon connecting the pair of side walls consists of a concave shape and the second wall of the polygon connecting the pair of side walls consists of a convex shape."

Preliminarily, the central dispute here surrounds defendants' use of the phrase "consists of" in its proposed construction. Plaintiffs contend that the phrase improperly limits the claim language at issue to polygons with first and second walls consisting only of concave and convex shapes, whereas the intrinsic history demonstrates that the claim language at issue actually covers polygons with first and second walls that can include additional elements aside from concave and convex shapes. Defendants disagree, arguing that the intrinsic history cannot support plaintiffs' overly broad construction.

Beginning with the claim language, it is true that the claim language uses only the terms concave and convex, and might appear to limit the shapes of the polygons to such at first glance. See, e.g., Joint Statement, '037 Patent at 18:11-13. However, as plaintiffs point out, the specification and the figures all indicate that the side walls of the longitudinal portions at issue can include shapes other than just concave and convex. See, e.g., id. at 8:42-49. While the shapes claimed must include concave and convex elements, they are not limited to sole inclusion of just those elements.

This is apparent in figure 5 of the patent, for example, which discloses a polygon that includes a straight portion of the otherwise concave and convex side walls. See Joint Statement, '037 Patent at 9:2-5 ("alternatively, more than three segments can be used to define concave-shaped wall 50 and/or convex-shaped wall 60").

Moreover, the court is not persuaded by defendants' and the intervenor's contrary arguments. First, while defendants rely on the prosecution history for support of their arguments, the evidence they rely on does not, in the court's view, require that the claimed polygon shape be expressly limited to convex and concave walls connecting pairs of side walls, as defendants and the intervenor propose. Second, defendants' and the intervenor's primary objection appears to be that, if plaintiffs' proposed construction is adopted, the claims at issue will cover polygon shapes consisting of upper and lower walls that are 'undulating' -- i.e., comprised of wave-like alternating apexes -- on the premise that each wall's 'undulation' includes both concave and convex elements. See Defs. Opp. Br. at 29:25-27. In defendants' and the intervenor's view, this would fly in the face of the intrinsic evidence, since the claims limit the first wall to a single "concave" shape and the second wall to a single "convex" shape. This argument is not particularly compelling, however, for it is not immediately apparent to the court how plaintiffs' proposed construction -- which expressly requires "an apex" directed toward the interior of the polygon, and a second apex directed away from the interior of the polygon -- lends itself to the conclusion defendants' suggest in view of the presence of multiple apexes depicted in defendants' depicted "undulating" shape. At any rate, defendants' issue is more appropriate for the summary judgment or trial stage of litigation, and ultimately, it is the province of the jury to determine whether an accused device reads upon a claim limitation, as properly construed.
For these reasons, the court hereby adopts plaintiffs' proposed construction and construes "the polygon further comprises a first wall having a concave shape and a second wall having a convex shape" as: "the polygon having a first wall with an apex directed toward the interior of the polygon and a second wall, also with an apex, directed away from the interior of the polygon." 5

5 Defendants have also argued that claims 17 and 18 of the '255 Patent should be found void for indefiniteness, an argument that plaintiffs only summarily deal with. The court would prefer the benefit of more complete briefing on the matter before rendering a determination. Accordingly, the court defers consideration of this issue until the parties are able to submit more complete arguments at the dispositive motion juncture.

4. "The wall has a thickness of greater than 0.018 inch"

The next claim term for which the parties dispute the proper construction is "the wall has a thickness of greater than 0.018 inch," which is found in claims 5 and 11 of the '668 patent. The parties' competing constructions of this claim term are shown in the following chart:

<table>
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<tr>
<th>THE '668 PATENT</th>
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<tbody>
<tr>
<td>Claim Term</td>
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<tr>
<td>d. The wall has a thickness of greater than 0.018 inch (In claims 5 and 11)</td>
</tr>
</tbody>
</table>

a. Arguments of the parties

Rivard's argument in support of its construction of this claim term is comparatively concise. Rivard contends that the pertinent claims recite thickness of the needle "wall" using the singular form, while claims 4 and 11 of the '196 patent, in contrast, specify "combined" thickness of the needle "sidewalls." This difference in language leads Rivard to the conclusion that only one "wall" is at issue in claims 5 and 11 of the '668 patent. Rivard also points out that the Detailed Description refers to "inner" and "outer" sidewalls, suggesting that these inner and outer surfaces would establish a thickness that is measured on one side of the lumen, not both. Thus, in Rivard's view, the claims and specification establish that the thickness of the wall is measured on one side of the lumen, not by adding together the thickness of the wall on both sides of the lumen.

Ideal contends that this claim term is clear and unambiguous, and that its meaning is readily apparent within the context of the '668 patent. Ideal also argues that the prosecution history establishes that the examiner and the patentee understood this claim phrase to have its customary meaning, and that the scope of the term was not expressly limited during patent prosecution. Ideal argues that Rivard's proposed construction improperly narrows and rewrites the claim language by reference to the '196 patent. Ideal points out that the pertinent claims of the '668 patent, and the independent claims from which they depend, refer only to "the wall" or "at least one wall." Consequently, Ideal argues that the plain language of the claim is not limited to only one wall having a thickness of 0.018 inch, because the language of the related independent claims states "at least one wall." In light of this language, Ideal argues that restricting the claim term to one wall being more than 0.018 inch thick is not permitted. Ideal also points out that none of the phrases that Rivard uses to define this claim term can be found anywhere in the prosecution history. If any construction is required, Ideal contends that its construction of the term as "needle wall thickness greater than 0.018 inch" is well supported by the claim language and intrinsic evidence.

b. Analysis
i. Relationship to independent claims. In construing this claim term, the court finds that it must not only begin with the words of the claim term presently at issue, see Nystrom, 424 F.3d at 1142 (courts must "begin [their] claim construction analysis with the words of the claim"), but with the words of the independent claim from which depend the dependent claims in which that claim term is found. This is so, because dependent claims are to be construed to incorporate by reference all the limitations of the independent claim from which they depend. See, e.g., Robotic Vision Sys., Inc. v. View Eng'g, Inc., 189 F.3d 1370, 1376 (Fed. Cir. 1999) ("Claims 11 and 12 are dependent claims of claim 1 and are to be construed to incorporate by reference all the limitations of claim 1," citing 35 U.S.C. § 112 (1994)).

Dependent claim 5, in which the claim term at issue is found, depends from independent claim 1 (or independent claim 2, which is not at issue in this litigation), while dependent claim 11, in which the claim term at issue is also found, depends from independent claim 7 (or independent claim 8, which also is not at issue in this litigation). Claim 1 claims, inter alia, "an injection means comprising a tubular needle defined by at least one wall forming the tube. . . . " Dependent claim 5 then claims "[t]he method of claim 1 or 2 wherein the wall has a thickness of greater than 0.018 inch." Similarly, claim 7 claims, inter alia, a "needle [that] has at least one wall. . . . " Dependent claim 11 then claims "[t]he method of claim 7 or 8 wherein the wall has a thickness of greater than 0.018 inch." The Federal Circuit Court of Appeals has explained that "[t]he phrase 'at least one' in patent claims typically is construed to mean 'one or more.'" Biagro Western Sales, Inc., 423 F.3d at 1304. Thus, the pertinent independent claims claim a needle with "one or more" walls. Logic suggests that "the wall" referred to in the dependent claims is each and every one of the walls comprising "at least one wall" of the needle claimed in the independent claims. Consequently, the thickness of "the wall" referred to in the dependent claims is the thickness of each and every one of the walls comprising "at least one wall" of the needle.

ii. Other intrinsic evidence. Other intrinsic evidence suggests the correctness of this construction. In reference to Figure 1, which "schematically illustrates a needle assembly," the Detailed Description states that the needle cannula, inter alia, "has a sidewall 17 with an outer sidewall 17A and inner sidewall 17B theretwixt having a lumen 18 extending therethrough defining a longitudinal axis." The '668 patent, Detailed Description, Col. 4, ll. 20-22. Rivard is correct that Figure 1 to the '668 patent does not show numbers 17A and 17B, but Figure 1 to the '196 patent, which is otherwise identical, does show numbers 17A and 17B near the distal end 16 of the needle cannula. Figure 1 illustrates a cylindrical tubular needle cannula, which has one and only one, and therefore "at least one," sidewall forming the tube. Indeed, the description of Figure 2 10 in the Detailed Description explains that, "[p]referably, the needle cannula of the present invention has a circular cross-section," suggesting a cylindrical tubular needle. The '668 patent, Detailed Description, Col. 4, ll. 59-61. The thickness of this sidewall is necessarily the distance between the inner sidewall 17B and the outer sidewall 17A. Even in the absence of numbers 17A and 17B, the same conclusion could be drawn from Figure 2, as shown in the '668 patent, which illustrates the sidewall 17, and the companion description in the '668 patent, which explains that, for a 16 gauge embodiment, "the sidewall 17 has a thickness greater than 0.46 mm (0.018 inch), preferably a thickness of 0.64 mm (0.025 inches)." Id., Col. 4, ll. 55-57. As illustrated, the "thickness" of sidewall 17 is the distance from the inner sidewall, that is, the wall of the lumen 18, to the outer sidewall of the needle cannula. It is equally clear that, if the needle cannula were not a cylindrical tube, and could, therefore, have more than one sidewall, the thickness of each sidewall would still be the distance between the inner sidewall 17B, that is, the wall of the lumen 18, and the outer sidewall 17A for each such sidewall. No other reference to the thickness of the sidewall elsewhere in the Detailed Description appears to the court to suggest any other manner for measuring the "thickness" of the one or more sidewalls of the needle cannula.

9 Figure 1, as shown in the '196 patent, is found in this opinion at page 10.

10 Figure 2 is found in this opinion at page 11.

Ideal appears to argue, however, that the thickness of the wall necessarily refers to the combined thickness of all sidewalls, when Ideal argues that, because the language of the related independent claims states "at least one wall," restricting the claim term to one wall being more than 0.018 inch thick is not permitted. The court does not find such an argument persuasive, however.
Such a construction would make the claim term "the wall has a thickness of greater than 0.018 inch" in claims 5 and 11 of the '668 patent synonymous with the quite different language in claims 3 and 10 of the '196 patent, which claim "the sidewalls flanking the lumen has [sic] a combined thickness of greater than 0.018 inch." One of the few differences between the specification of the '668 patent and the specification of the '196 patent is precisely in the description of sidewall thickness. The Summary of the Invention in the '668 patent states, "the sidewall has a thickness greater than 0.46 mm," and twice states, "the wall ha[s] a thickness of greater than 0.018 inch." The '668 patent, Col. 2, ll. 18, 32-33, 61-62. The comparable portions of the Summary of the Invention in the '196 patent, however, state "the two opposed sidewalls flanking the lumen have a combined thickness greater than 0.46 mm," and "the two opposed sidewalls flanking the inside diameter have a combined thickness greater than 0.018 inch." The '196 patent, Col. 2, ll. 18-19, 33-35, 62-64. Similarly, the Detailed Description in the '668 patent describes the 16 gauge embodiment of the claimed needle as a needle in which "the sidewall 17 has a thickness greater than 0.46 mm (0.018 inch), and preferably a thickness of 0.64 mm (0.025 inch)," the '668 patent, Col. 4, ll. 55-57, while the comparable portion of the Detailed Description of the '196 patent describes the 16 gauge embodiment of the claimed needle as a needle in which "the sidewalls 17 flanking (opposite each other) the lumen 18 have a combined thickness which is greater than 0.46 mm (0.018 inch), preferably a combined thickness of 0.64 mm (0.025 inch)." The '196 patent, Col. 4, ll. 56-59.

The court concludes that the quite different language in the two patents means different things. For the reasons stated above, reading the dependent claims in the '668 patent in light of the independent claims from which they depend, the language of the '668 patent unambiguously refers to the thickness of "the sidewall," meaning "each and every sidewall," not to the "combined thickness" of "the sidewalls flanking the lumen." Just as clearly, the '196 patent refers to "combined thickness" of "the sidewalls flanking the lumen."

Ideal might, nevertheless, argue that the Detailed Description supports its interpretation by pointing out that it describes the "outer diameter" as the sum of the "lumen diameter" and the "sidewall thickness," not as the sum of the "lumen diameter" and twice the "sidewall thickness," as would be the case if the "thickness greater than 0.018 inch" were meant to refer to the thickness of each and every sidewall, rather than to the combined thickness of all sidewalls. Specifically, the Detailed Description of the '668 patent explains how the "outer diameter" is derived, as follows:

In the case of the 16 gauge embodiment of the needle of the present invention, the sidewall 17 has a thickness greater than 0.46 mm (0.018 inch), preferably a thickness of 0.64 mm (0.025 inch) and the diameter of the lumen 18 is about 1.19 mm (0.047 inch). Thus, the outer diameter of needle 12 is about 1.8 mm (0.072 inch) [i.e., 0.64 mm (0.025 inch) + 1.19 mm (0.047 inch) = 1.83 mm (0.072 inch)].

The '668 patent, Detailed Description, Col. 4, ll. 54-59. The short answer to this argument is that the quoted portion of the Detailed Description contains an error, where it is otherwise clear from the claims and specification of the '668 patent that the "thickness of the sidewall" means the thickness of each and every sidewall, so that "outer diameter" should have been the sum of the "lumen diameter" and the sum of the combined thickness of the sidewalls on opposite sides of the lumen. Indeed, the Detailed Description of the '196 patent derives the same "outer diameter" for the claimed needle as the '668 patent, but based on the sum of the "lumen diameter" and the "combined thickness of the sidewalls on opposite sides of the lumen." See the '196 patent, Col. 4, ll. 55-61.

The upshot of this analysis of the differences in language between the two patents is that the sidewalls of the needle claimed in the '668 patent are twice as thick as the sidewalls of the needle claimed in the '196 patent. Although this difference may be an unintentional mistake of the patentee, it is nevertheless the result of the unambiguous language of the two patents, and hence, not a matter open to other construction.

iii. The court's construction. Thus, in light of the analysis of the proper construction of the claim term "the wall has a thickness of greater than 0.018 inch," found in claims 5 and 11 of the '668 patent, the court construes that term to mean the following: "Each and every one of the one or more sidewalls of the needle cannula has a thickness, measured from the inner sidewall (wall of the lumen) to the outer sidewall, of greater than 0.018 inch."
Step (c) reads: "Forming a second circumferential incision in the epidermis about 3 millimeters cranial to the first circumferential incision, thereby severing at least some of the subcutaneous fascia from the ungual crest ...." Defendant argues that Step (c) is invalid for indefiniteness in two ways.

First, Defendant asserts that the phrase "about three millimeters" provides no instruction to those skilled in the art and is thus indefinite. Defendant relies primarily on In re Oetiker, 23 U.S.P.Q.2d 1641 (Bd. Pat. App.1990) (finding indefinite the phrase "length on the order of 5 mm" to describe leg portions of a patent), and Ex parte Brummer, 12 U.S.P.Q.2d 1653, 1989 Pat. App. LEXIS 11 at *4 (Bd. Pat. App. 1989) (holding patent claims to a bicycle seat indefinite because the seat's measurements were based on a percentage of the rider's height and weight, reasoning "the same bicycle might fall within this language ... when ridden by a rider or one combination of weight and build, but not when ridden by a rider of another"). Plaintiff, pointing to the specification, argues that this terminology has a clear meaning. The specification explains: "The position of the second incision 3 millimeters cranial of the first incision is based upon the average size of the household cat. For smaller animals the distance will be smaller; and for larger animals the distance will be larger." Id.

As stated above, when a "word of degree" is used in a claim, a court "must determine whether the patent's specification provides some standard for measuring that degree." Datamize, LLC, 417 F.3d at 1349. In In re Oetiker, the court held "have a length of the order of 5 mm" indefinite because "there are no guidelines in appellant's specification to enable one skilled in the art to determine whether or not a given leg portion has a length of the order of 5 mm." 23 U.S.P.Q.2d 1641, 1990 Pat. App. LEXIS 37 at *15. In contrast, the '579 patent's intrinsic evidence provides at least some guidance as to the second incision's location and purpose. The specification, which is accompanied by Figure 2, explains:

The traction in the direction T causes the epithelium to release from its distal attachment and permits a second circumferential incision of the redundant epithelium approximately 3 millimeters cranial from the first incision along the line B-B. This second incision allows slightly deeper subcutaneous fascia to be moved cranially over the ungual crest as well.

The position of the second incision 3 millimeters cranial of the first incision is based upon the average size of the household cat. For smaller animals the distance will be smaller, and for larger animals the distance will be larger.

The Federal Circuit, considering similar allegations of indefiniteness, has permitted approximate measurements if the words used are "as accurate as the subject matter permits." See Orthokinetics v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576 (Fed. Cir. 1986). In Orthokinetics, the court found valid the term "so dimensioned," which the patent used to describe the measurements of a pediatric wheelchair that helped disabled children in and out of cars:

In a wheel chair having a seat portion, a front leg portion, and a rear wheel assembly, the improvement wherein said front leg portion is so dimensioned as to be insertable through the space between the doorframe of an automobile and one of the seats thereof whereby said front leg is placed in support relation to the automobile and will support the seat portion from the automobile in the course of subsequent movement of the wheel chair into the automobile .... Id. at 1568 (emphasis added). The court acknowledged that "one desiring to build and use a travel chair must measure the space between the selected automobile's doorframe and its seat and then dimension the front legs of the travel chair so they will fit in that particular space in that particular automobile," but found that "the claims were intended to cover the use of the invention with various types of automobiles" and that the phrase was "as accurate as the subject matter permits, automobiles being of various sizes." Id. at 1576. The court emphasized that "patent law does not require that all possible lengths corresponding to the spaces in hundreds of different automobiles be listed in the patent, let alone that they be listed in the claims." Id; see also Andrew Corp. v. Gabriel Elecs., 847 F.2d 819 (Fed. Cir. 1988) (finding the words "approach each other," "close to," "substantially equal to" and "closely approximate," which described the configuration of a horn reflector microwave antenna used in long distance telephone and data networks, specific enough because "it became very clear during trial ... that curves showing RPEs for horn antennas will never be identical."); Rosemount, Inc., 727 F.2d at 1547 (Fed. Cir. 1984) (finding the phrase "close proximity," which described the distance between a mounted transistor and high impedance material, acceptable because the description was "as precise as the subject matter permits").

In light of Orthokinetics, Andrew Corp. and Rosemount, the Court finds that Defendant has not proved by clear and convincing evidence the phrase "about three millimeters" is indefinite. The claim could be more definite, but in light of the
specification, Figure 2 and the variation inherent in cat sizes, the Court finds that one skilled in the art would know where to make the second incision. 8

8 At oral argument, Defendant presented an exhibit depicting five photographs of post-operative cat claws. Dr. Young testified that he believed the cat claws numbered 3 and 5 were larger-than-average; yet, when defense counsel measured the distance between the striation marks of the first and second incisions, it was less than 3 millimeters. Defendant argues that this in-court exercise demonstrates the indefiniteness of the 3 millimeter estimate and the specification's statement that "for smaller animals the distance will be smaller, and for larger animals the distance will be larger." Although the specification contains the preferred embodiment, which states that the distance between incisions correlates to the size of the cat, the Court will not narrow Claim 6, step (c) accordingly. While the phrase "about three millimeters" is not as precise as possible, the claim avoids indefiniteness because it is not "insolubly ambiguous." Honeywell Int'l, 341 F.3d at 1338; see also Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001).

Second, Defendant contends that Step (c)'s use of the word "epidermis" renders it indefinite. Defendant queries how the epidermis, which it defines as "the surface layer of the skin," can be incised in Step (c) if the epidermis has already been incised in Step (a) ("forming a first circumferential incision … in the epidermis …"), 9 noting that the top layer of skin cannot be incised twice. The specification only adds to the confusion, Defendant asserts, because it instructs the surgeon to make a "second circumferential incision of the redundant epithelium approximately 3 millimeters cranial from the first incision." Defendant notes that a medical dictionary defines epithelium as "the covering of internal and external surfaces of the body." See DORLAND'S ILLUSTRATED MEDICAL DICTIONARY 400 (26th ed. 1981). In other words, Defendant argues that the definitions of epidermis and epithelium are mutually exclusive because cutting into the epithelium requires cutting through the epidermis and the underlying layers; thus, both terms cannot be used to describe the skin to be incised in Step (c). Plaintiff counters that "epithelium" and "epidermis" can be used interchangeably when referring to a feline's claw.

9 Because of its use of the words "and then" between all steps, Claim 6 requires the surgeon to have completed Steps (a) and (b) before moving to Step (c).

A word will not render a claim invalid if it can be given any reasonable meaning: "If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds," Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1347 (Fed. Cir. 2005) (citing Exxon Research & Eng'g, 265 F.3d 1371, 1375 (Fed. Cir. 2001)). In this case, the '579 patent's subject matter, the other steps in Claim 6, the specification's language, and Figure 2, all taken together, adequately instruct a person skilled in the art that the word epidermis, as used throughout Claim 6, simply means "skin," and does not refer only to the skin's top layer. 10 The patent's intrinsic evidence conveys that the second incision must occur after the first incision during which some skin will have already been retracted. The intrinsic evidence also makes clear that the second incision's purpose is to retract more skin for covering the post-operative wound. Although the claim is certainly not an example of clear drafting, a person skilled in the art would be able to discern the meaning of the word "epidermis" as used in Step (c). Thus, the word does not render the claim indefinite.

10 Indeed, this more general definition has been used in at least one respected medical dictionary. See TABLER'S CYCLOPEDIC MEDICAL DICTIONARY (17th ed. 1993) (defining "epidermis" as "skin").
Here, the disputed terms are found in Claim 1 of the '476 patent, which states that the claimed device, "a portable rail grinding machine," comprises "means mounting the grinder on the frame for adjustably setting the stone between horizontal and vertical positions and therebetween . . . ." Id. (emphasis added). Portaco argues that the language "and therebetween" is a claim limitation, such that the grinder claimed under the patent must be adjustable to vertical and horizontal positions, as well as angles between vertical and horizontal.

The Court agrees with Portaco's proposed claim construction. Claim 1 of the '476 patent specifically states that the grinder includes a means to adjust the angle of the grinding stone "between horizontal and vertical positions and therebetween." The use of the word "and" before "therebetween" indicates that the ability to adjust the angle of the grinding stone to an angle between vertical and horizontal is a required claim element. Therefore, the Court construes the claim term "and therebetween" to mean: the angle of the grinding stone must be adjustable to vertical and horizontal positions, as well as angles between vertical and horizontal.

"Thereby"

At the charge conference, the district court explained to both parties that it would not construe the "thereby" clause because the claim limitation was clear in its meaning. The court explicitly instructed the jury on the term "continually," and then instructed that the jury should give the rest of the terms their ordinary meaning unless it appeared that the inventor used the terms differently. BSC argues that the court erred in leaving construction of the "thereby" clause to the jury because, by not specifically instructing on this limitation, the limitation was effectively read out of the claim. However, the court's instruction was proper, and the testimony of the expert witnesses at the hearing on claim construction supported the district court's conclusion that the limitation was clear in its meaning.

BSC's expert witness, a patent law expert, stated that the term "thereby" is a common expression and provided a simple and common definition for it. Bard's expert witness, a person of ordinary skill in the art of catheter design, stated that the "thereby" language is not redundant and further clarifies the claim. Because the trial judge need not repeat or restate every claim term in order to comply with the notion that claim construction is for the court, we see no error in the district court's instruction. See U.S. Surgical Corp., 103 F.3d at 1568, 41 U.S.P.Q.2D (BNA) at 1236.

D. "Thereby Prevent the Build-up of Electrostatic Charge in the Fuel and the Resultant Arcing Which Causes the Breakdown of the Polymer Material Comprising the Fuel Injection System Component"

Claim 1 recites that the fuel injection system component is made of a composite material with electrically conductive fibers to provide an electrically conductive path to ground and "thereby prevent the build-up of electrostatic charge in the fuel and the resultant arcing which causes the breakdown of the polymer material comprising the fuel injection system component."

Honeywell says that the plain meaning of the phrase is "preventing the accumulation of electrons sufficient to create an arc that causes the polymer material of the fuel injection system component to deteriorate." Defendants say that the phrase means "preventing the accumulation of charge in the fuel such that arcing and deterioration of the polymer material used to make the housing [of the fuel filter] are avoided."

The interpretations proffered by the parties are quite similar. Indeed, the specification of the '879 patent describes the arcing phenomenon as follows:

Most of the charge is concentrated in that part of the cavity 42 closest to the body 38. When a grounding plane, such as
the body 38, is within "striking" distance of a charged body, the plane itself is a target for electron current flow. The energy which makes up the charge will then no longer pass through the body in an evenly distributed manner. This absorption of energy breaks down the material of which the housing 12 is made and results in microscopic pin holes in the housing 12. When a large concentration of these pin holes occurs in a small area, the material comprising the housing 12 breaks down and the housing leaks. Tests have shown that the striking distance is always less than or equal to the radius of the curved body.

'879 patent, col. 3, ll. 26-40. The essential difference between the interpretations is that Honeywell uses "fuel injection system component" while defendants use "housing [of the fuel filter]." Because "fuel injection system component" has already been interpreted to mean "fuel filter," see supra, Part IV.A, defendants' interpretation is correct.

The phrase "thereby prevent the build-up of electrostatic charge in the fuel and the resultant arcing which causes the breakdown of the polymer material comprising the fuel injection system component" is interpreted as follows:

Preventing the accumulation of charge in the fuel such that arcing and deterioration of the polymer material used to make the housing of the fuel filter are avoided.

4120

j. "thereby simplifying assembly of said shifter"

The term "thereby simplifying assembly of said shifter" means allowing manual manipulation and positioning of the internal components of the shifter.

4121

The parties appear to dispute, for the two "surface temperature" claim limitations whether the temperature must be measured using a borehole reading. Defendants offer extrinsic evidence to support their proposal that the temperature readings can be made only at a borehole. Nowhere in the claims or specification, or as far as the Court can determine, in the prosecution history does the patentee use the word "borehole." Necessary to the invention is the reduction in temperature of the surface of the coal mine, not the borehole. The Court construes "reduction of the surface temperature of combustible material in said sealed portion to about 90° F" to mean "lowering of the surface temperature of material capable of burning in the sealed portion to approximately 90° F." The Court construes "thereby to lower the temperature at the surface of combustible material at said area" to mean "in order to lower the temperature at the surface of the combustible material at said area."

4122

A. "Therein"

The disputed term appears as follows: "a housing defining at least one compartment therein having an inlet aperture and an outlet aperture."

The parties agree that "therein" means that the housing consists of at least one compartment but may consist of multiple components. The parties dispute whether "therein" also means that the phrase "having an inlet aperture and an outlet aperture" applies to each of the one or more compartments that a housing defines, or only to at least one of the one or more compartments. Seitz contends that the term "therein" means that "[t]here are one or more compartments in the housing. The at least one (one or more) compartments each have an inlet aperture and an outlet aperture." (Docket Entry No. 76 at 4). Envirotech contends that the term means: "A single housing defines (marks the limits of) a single compartment or multiple compartments. Each compartment lies within the single housing. At least one compartment within the single housing has an inlet aperture and an outlet aperture. Other compartments, if any, may or may not have an aperture or apertures. The housing may or may not have an aperture or apertures." (Docket Entry No. 78 at 1).
As both parties read the words, "therein" at least means that a housing must have at least one compartment, but may have more than one compartment. The issue is whether the word "therein" means that the words "having an inlet aperture and an outlet aperture" refer to only one compartment in the housing, or to each of the more than one compartments in the housing.

The parties agree that if there is only one chamber in a housing, that chamber must have an inlet aperture and outlet aperture. The parties disagree as to whether, if there is more than one chamber, each chamber must have an inlet and outlet aperture, as long as at least one chamber is so equipped. The specifications make it clear that in a multi-chamber embodiment, each chamber has an opening to permit the water to flow in, to contact the heating element, and to permit the water to flow out, to the next successive chamber or to the outlet line that discharges the water from the housing. If there is more than one chamber within a housing, each chamber must have an opening for the water to enter and another opening for the water to flow out.

Claim 10 clearly states that if the housing consists of a single chamber, that chamber must have an inlet aperture and an outlet aperture. Claim 10 does not say whether, if the housing consists of more than one chamber, each chamber must have an inlet aperture and outlet aperture. The specifications refer to a series of reduced-aperture fluid couplings connecting one chamber to another. The terms "inlet line" and "outlet line" and "fluid outlet" refer to the flow of water into and out of the first chamber and the last chamber. (‘880 Patent, col. 7, ll. 49-59, col. 8, ll. 33-39; ‘971 Patent, col. 7, ll. 49-61, col. 8, ll. 36-39). In dependent claim 7 and dependent claim 16, the distinction between "inlet aperture" and "outlet aperture" on the one hand, and other openings or connections between or among a plurality of compartments is made even clearer. Claim 7 defines the "heater as defined in claim 1, wherein: the housing defines a plurality of compartments therein each fluidly connected in the series between the inlet aperture and the outlet aperture." (‘880 Patent, col. 22, ll. 28-31; ‘971 Patent, col. 21, ll. 54-57). Claim 16 describes "[t]he heater as defined in claim 10, wherein: the housing defines a plurality of compartments therein each fluidly connected in the series between the inlet aperture and the outlet aperture." (‘880 Patent, col. 23, ll. 17-20; ‘971 Patent, col. 22, ll. 49-51). It appears, from the limited submissions the parties have provided, that "inlet aperture" and "outlet aperture" refer to the initial and last opening that is in one chamber when it is the only one, and into the first chamber and out of the last chamber when there are a plurality of chambers. On this reading, Claim 10 does require that in a single-chamber embodiment, the chamber must have an inlet and outlet aperture, but does not require that every chamber in a multi-chamber embodiment must have an inlet and outlet aperture.

Envirotech's argument that the words "having an inlet aperture and an outlet aperture" cannot refer to the housing is supported by neither the claim language nor the specifications. The specifications describe water flowing into a chamber through a fluid inlet line and into the bottom of a chamber to contact the heating element. In a multi-chamber embodiment, the water flows through a series of reduced-aperture fluid couplings that link one chamber to another. The water is discharged from the last chamber through a fluid outlet line and into the fluid outlet. (‘880 Patent, col. 7, ll. 55-67; ‘971 Patent, col. 7, ll. 53-67).

The plain meaning of the words is that a housing must consist of at least one compartment that has an inlet aperture and an outlet aperture. Claim 10 does not state whether each of the compartments in a multi-compartment configuration must have an inlet aperture and outlet aperture, although it appears clear that each chamber must have openings for the water to flow from one chamber to the next, through that chamber, and into the following chamber. To the extent Envirotech argues for a construction that the housing "may or may not have an aperture or apertures," it is rejected as inconsistent with the claim language and specifications.

This court construes the term "therein" in Claim 10 of the '880 and '971 patents to mean that a housing must have at least one compartment or chamber within it that has an inlet aperture and an outlet aperture. A housing may have more than one compartment or chamber. A housing must have an inlet aperture and an outlet aperture.

All claims call for a receiving aperture with either a projection or a recess "therein." Zettl and Defendants disagree as to whether the claims thus allow for a projection or recess to be located at the very beginning of the aperture, or whether such
projection or recess must always be located some distance away from the beginning, inside the aperture.

The Court finds that the plain meaning of "therein" would ordinarily encompass situations where the projection or recess was located at the beginning of the aperture. "Therein" means in or into that place. Webster's, at 2372. A projection located at the aperture's edge is still a projection "therein," as it would be if the projection were moved a fraction of a centimeter inside the edge. This common understanding is best illustrated by analogy to sports. A ball is ordinarily considered still to be "within" bounds and "in" play even if the ball is right on the boundary line of the field of play.

Having said that, the Court must, however, consider whether Zettl abandoned the broader meaning of "therein" and chose, instead, to adopt a narrower understanding in an effort to distinguish its patent from prior art. The Zur patent, which preceded the '664 patent, discloses an earring composed of two ornamental components, hinged together on one side, with a fastening device located on the opposite ends of each of the components. The fastening device consists of a pin attached to a structure extending away from the end of one ornamental component and a simple hole located on another structure extending away from the end of the other ornamental component. The earring is engaged in the ear by inserting the pin through a perforation in the ear and latching the pin to the edge of the hole by means of a recess near the terminal end of the pin.

During reexamination, the Examiner initially rejected Claim 1 of the '664 patent in light of the Zur patent, remarking, among other things, that "the edge of the aperture 12 (the "Zur hole") can be considered to be a projection of the wall of the aperture." (Office Action in Reexamination, June 22, 1998, at 4). Zettl responded by insisting that the edge of Zur's hole cannot be, at the same time, the edge of the aperture and its projection. (Amendment, Sept. 9, 1998, at 22-23). Zettl argued that the '664 patent shows three separate and distinct components to the fastening means: a recess, an aperture, and a projection. (Id.) Zettl concluded that if, as the Examiner stated, "the recess engages the length of the wall, the edge of the aperture is not the projection which holds [the recess on the pin]." (Id. at 23) (emphasis in original).

Contrary to the arguments of Defendants, Zettl's statements to the Examiner was not an admission that the projection or recess cannot be located at the edge of the aperture. Rather, the statements merely clarified that the projection or recess must be a structure that is distinct from the surface of the ornamental component that gives the aperture its shape. Therefore, the Court finds that the '664 patent calls for a projection or recess to be located anywhere in the aperture, including at the beginning of the aperture, as long as the projection or recess is a structure that is distinct from the surface of the ornamental component that gives the aperture its shape.

C. "Thereon"

Tessera proposes that the TI construction of "thereon" be applied here: "The terminals are on or upon a single layer of the sheetlike element. When there are multiple layers in the sheetlike element and the terminals are thereon one of the layers, they are thereon the sheetlike element even though they must also be under another of its layers." See TI Order at 15. Samsung's proposed construction of "thereon" is "on or upon."

In urging the Court to adopt the TI construction, Tessera argues that Samsung seeks to ignore the "layering" issue that was previously argued and resolved by this Court in the TI Order. However, Tessera's proposed construction for "thereon" would also effectively mean "therein," which is inconsistent with the specifications. See '977 patent col. 10:31-33; 14:8-10. Thus, the Court construes "thereon" to mean "on or upon." 2

--- Footnotes ---

2 The Court acknowledges that the adopted construction deviates from that in the TI Order.

--- End Footnotes ---
2. "having a pressurizable member of a medical apparatus for interacting with the patient's body resting thereon"

KCI does not dispute Safe Bed's construction of most of this claim element. A "pressurizable member," in the context of the '939 patent, refers to a component or element that can be pressurized above atmospheric pressure, such as an inflatable turning device or a therapeutic air mattress. (Safe Bed's Mem., at 17-18; KCI's Mem., at 38-40). A "medical apparatus" refers to the hospital bed itself. (Safe Bed's Mem., at 17-18; KCI's Mem., at 38-40). KCI does dispute, however, Safe Bed's construction of the word "thereon" as used in the phrase "interacting with the patient's body resting thereon." The dictionary definition of "thereon" is simply "on that." WEBSTER'S, at 2372. In KCI's construction of the term, "thereon" indicates that there is contact between the patient's body and the pressurizable member. (KCI's Mem., at 39). According to Safe Bed, that contact is unnecessary. (Safe Bed's Reply, at 31).

Maintaining that "thereon" does not require direct contact but can refer to indirect contact between a patient's body and any structure underneath it, Safe Bed posits the example of a patient lying on a mattress covered by a sheet, noting that the patient would still be considered resting on the mattress, although not in direct contact with it. (Safe Bed's Reply, at 31). Arguing that there must be contact between the patient's body and the pressurizable member, KCI takes Safe Bed's argument to its logical extreme and submits that under Safe Bed's interpretation, a person walking on a raft floating on a river would be considered to be walking on the water. (KCI Mem., at 39). The parties' analogies, while creative, fail to resolve their dispute over this claim element.

This argument is really over whether this claim element can be construed to cover an inflatable turning device positioned underneath the mattress or patient support assembly. (KCI's Mem., at 38-39; Safe Bed's Reply, at 31). Obviously, focusing on the word "thereon" is of little aid in resolving this dispute. The remainder of the phrase, however, provides some clues. The patient's body must "rest" on the pressurizable member. "Rest" is defined as "to have place; sit or lie fixed or supported." WEBSTER'S, at 1935. If a person is resting on a mattress, one would not ordinarily consider that person to be resting on everything that might lie beneath the mattress as well. In addition, the pressurizable member must "interact" with the patient's body. That means the pressurizable member and the patient's body must "act upon each other" or "have a reciprocal effect or influence." WEBSTER'S, at 1176. An inflatable device that turns a mattress from underneath it might be considered to be acting upon that mattress, but would not ordinarily be considered to be acting upon a person lying on that mattress. The device exerts an influence on the mattress, which in turn exerts an influence on the person. The sense gained from the meanings of these other terms tends to support KCI's construction of this claim element. Accordingly, the Court adopts KCI's construction of this claim element to require the pressurizable member to be one on which the patient's body is resting.

2. Location of the Adjustment Means (claims 5 and 7).

The language at issue in claim 5 states: "said connection means having adjustment means thereon for infinitely adjusting the tracking of the mower by adjusting the output of one of said right and left hydraulic pumps." '961 Patent, col. 7, lines 1-4 (emphasis added). The language at issue in claim 7 states: "said connection means including adjustment means thereon for infinitely adjusting the tracking of the mower by adjusting the output of at least one of said right and left hydraulic pumps." '961 Patent, col. 8, lines 27-30 (emphasis added).

Toro maintains that while claim 5 does state that the connection means has the adjustment means "on" it, claim 7 states instead that the connection means "includes" the adjustment means. Toro says that the term "including" is not synonymous with the phrase "having thereon" -- the language in claim 5 which describes the relationship of the adjustment means to the connection means. Toro contends that the adjustment means could be physically attached to the connection means in any number of ways without being actually located on the connection means. Claim 5 is thus intended to represent a narrower limitation than claim 7, since "to be located on" is a narrower relationship than 'including,' meaning 'being a part of.'" Toro's Brief at 4. Toro contends that when claims use different language, the doctrine of claim differentiation provides that a
difference in meaning is intended. See Karlin Tech., Inc. v. Surgical Dynamics, Inc., 177 F.3d 968, 971-972 (Fed. Cir. 1999).

Scag, however, maintains that the language of the claims and the prosecution history of the '961 patent require me to find that the adjustment means must be literally "on" the connection means. Scag argues that the broad claims Exmark originally submitted to the PTO did not state that the adjustment means was to be located on the connection means. Exmark amended those original broad claims, however, when the PTO found they were anticipated by a Scag patent, U.S. Patent 4,967,543. Exmark therefore subsequently amended claim 5 to state the limitation that the "connection means having adjustment means thereon" and claim 7 to state the limitation that the "connection means including adjustment means." Exmark told the PTO that claim 5 "specifically describes that the connection means includes adjustment means," and that Scag's patent did not have a connection means that included an adjustment means. Exmark further told the PTO that claim 7 was "generally similar" to claim 5 and should be allowed for the same reasons as claim 5. Scag claims that these statements to the PTO estop Toro from contending that claim 5 somehow differs from claim 7.

The United States Supreme Court recently considered how patent claim amendments affect an alleged infringer's defense of prosecution history estoppel. The Court observed that if a patentee decides to amend a claim rejected by the PTO rather than appeal the rejection, the amended claim "is taken as a concession that the invention as patented does not reach as far as the original claim." Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 152 L. Ed. 2d 944, 121 S. Ct. 1831, 1838 (2002). Prosecution history estoppel arises if the claim is amended "to secure a patent and the amendment narrows the patent's scope. . . . A patentee who narrows a claim as a condition for obtaining a patent disavows his claim to the broader subject matter, whether the amendment was made to avoid the prior art or to comply with § 112." 122 S. Ct. at 1840. The patentee must prove both that the claim was not amended "for a reason that would give rise to estoppel" and that "the amendment does not surrender the particular equivalent in question." 122 S. Ct. at 1842 (citing Warner-Jenkinson v. Hilton Davis Chem. Co., 520 U.S. 17, 33, 137 L. Ed. 2d 146, 117 S. Ct. 1040 (1997)).

The prosecution history here clearly indicates that Toro is estopped from asserting claims 5 and 7 have different meanings with regard to the location of the adjustment means. When the PTO rejected Exmark's broad claims that had not required the adjustment means to be physically located on the connection means, Exmark decided to limit the claims by situating the adjustment means on the connection means. Because Exmark's amendment narrowed the scope of the patent, Exmark cannot claim protection for the subject matter it surrendered in that amendment. I therefore find that claims 5 and 7 should be interpreted to mean the same thing: since the connection means includes the adjustment means, the adjustment means is physically located on the connection means.

The parties also dispute the meaning of "said handle and said rotatable joint having a common pivot axis therethrough." Both sides generally agree that the handle and the joint rotate around a shared axis. Rexon argues that because the claim expressly refers to the entire handle, and not merely a portion of the handle as described in other parts of the claim, the axis must pass "entirely through the handle." However, I do no disservice to the claim and its clear effort to distinguish between the handle as a whole and parts thereof by failing to construe the claim as Rexon proposes. Because the claim language refers simply to the handle and not any specific part of it, the axis must pass through the handle: not any particular part of it. Adding the word "entirely" imposes a limitation on the claim that is simply not contemplated by the claim language or the specification. The claim terms are construed as "an axis of rotation that passes through the handle and the rotatable joint."

The term "thermal adhesive net" is found only in the method claims of the patents-in-suit. For example, Claim 5 of the 779 Patent, a method claim dependent on Claim 1, requires that "said bonding element is a thermal adhesive net having a density of approximately 8 to 80 grams per square meter." 779 Patent at 7:5-7 (emphasis added). Claim 10 of the 779 Patent, another method claim dependent on Claim 1, requires that "said bonding element is a thermal adhesive web or net composed entirely of a thermal adhesive." 779 Patent at 7:25-28 (emphasis added). Claim 12 of the 615 Patent uses the term
in the exact same way as it was used in Claim 5 of the 779 Patent. 615 Patent at 7:36-39.

Taltech asks the Court to construe "thermal adhesive net" to mean "a regular array of thermal adhesive material." Taltech did not provide any new arguments regarding this term in addition to those presented for the term "thermal adhesive web." Esquel asks the Court to construe "thermal adhesive net" to mean "a two dimensional structure made by crossing thermal adhesive fibers at regular intervals." Esquel relies on the specifications and on general purpose and specialized dictionary definitions of "net." Both parties agree that "thermal adhesive net" has a "regular" element to it. Both parties use "thermal adhesive" in their proposed constructions of "thermal adhesive net." The parties' dispute centers on whether a "thermal adhesive net" must be fibrous and whether it must have openings.

The Court finds Taltech's less restrictive construction more persuasive. For the same reasons outlined above in the discussion of "thermal adhesive web," the Court rejects Esquel's requirements that the net be fibrous and have openings. The Court declines to impose any limitations from the dictionary definitions provided by Esquel onto the claims. As noted in the discussion of "thermal adhesive web," the specifications of the patents-in-suit distinguish a thermal adhesive "web" from a "net" by characterizing a net as being "more solid structured" than a web. 779 Patent at 3:53-4:2; 615 Patent at 3:54-4:3. The Court incorporates this language into its construction of the terms "thermal adhesive web" and "thermal adhesive net." Nothing in the claims indicates that "net" should not be interpreted as being more solid structured than a "web" across all claims.

Accordingly, the Court adopts Taltech's proposed construction, with modification, and construes the term "thermal adhesive net" to mean "a regular array of thermal adhesive material that is more solid structured than a thermal adhesive web."

12. "Thermal Adhesive Web"

The term "thermal adhesive web" is found in both the method and product claims of the patents-in-suit. For example, Claim 10 of the 779 Patent, a method claim dependent on Claim 1, requires that "said bonding element is a thermal adhesive web or net composed entirely of a thermal adhesive." 779 Patent at 7:25-28 (emphasis added). Claim 11, a method claim dependent on Claim 10, states that "said thermal adhesive web is composed of a plurality of adhesive filaments having a diameter ranging approximately between 20 to 80 microns." 779 Patent at 7:29-33 (emphasis added). Claim 12, another method claim dependent on Claim 10, states that "said thermal adhesive web has a density of approximately 10 to 100 grams per square meter." 779 Patent at 7:34-37 (emphasis added). Claim 27 of the 779 Patent, a product claim dependent on Claim 20, states that "said bonding element is a thermal adhesive web composed entirely of thermal adhesive." 779 Patent at 9:3-5 (emphasis added). Claims 2-4 of the 615 Patent use the term exactly as it was used in Claims 10-12 of the 779 Patent. 615 Patent at 7:1-10. Claim 20 of the 615 Patent uses the term exactly as it was used in Claim 27 of the 779 Patent. 615 Patent at 8:34-36.

Taltech asks the Court to construe "thermal adhesive web" to mean "a random array of thermal adhesive material." Taltech relies on the claims, on the specifications, and on the opinion of Taltech's expert, Dr. David Hall. Esquel asks the Court to construe "thermal adhesive web" to mean "a two dimensional structure made by randomly crossing thermal adhesive fibers" to create openings. Esquel relies on the specifications and on specialized dictionary definitions of "web." Both parties agree that "thermal adhesive web" has a "random" element to it. Both parties use "thermal adhesive" in their proposed constructions of "thermal adhesive web." The parties' dispute centers on whether a "thermal adhesive web" must be fibrous (i.e., containing filaments) and whether it must have openings.

Esquel asserts that a "thermal adhesive web" must be fibrous. The Glossary of Fusible Interlining Technology defines "adhesive web" as "an adhesive resin in form of a fibrous network." INDA, Ass'n of the Nonwoven Fabrics Indus., Glossary of Fusible Interlining Technology, Bobbin, Oct. 1981, at 57 (docket no. 97, Ex. J at 57). The Man-Made Textile Encyclopedia defines "web" as "[a] random fibrous structure used in the manufacture of nonwoven textiles." Man-Made Textile Encyclopedia 901-02 (1959) (docket no. 97, Ex. B at 901-02). Despite the reference to "fibrous" structures in these definitions, the Court reads the term "thermal adhesive web" to require fibers or filaments only when the claims themselves use such language. As outlined above, Claim 11 of the 779 Patent, which has not been placed directly at issue here, defines thermal adhesive web as being composed of filaments having a certain diameter. In contrast, the language in Claim 10 of the
779 Patent merely requires that the thermal adhesive web be composed "entirely of thermal adhesive." The inclusion of the specific "filaments" limitation in Claim 11 indicates that the limitation does not properly belong in all claims. The Court applies the principles of claim differentiation to give the other claims a broader scope because to read otherwise would make Claim 11 redundant. See Phillips, 415 F.3d at 1324-25.

In its effort to construe "thermal adhesive web" to include fibers (i.e., filaments), Esquel argues that the 779 Patent specification's "preferred embodiment" refers to "the adhesive web" as being "manufactured from a plurality of filaments. . . ." 779 Patent at 3:62-63 (emphasis added). The Court refuses to import limitations from a "preferred embodiment" outlined in the specification into the claims. See Eolas Techs. Inc. v. Microsoft Corp., 399 F.3d 1325, 1337 (Fed. Cir. 2005) (commenting that it is improper to limit claims to the preferred embodiment).

In addition to a fibrous structure, Esquel proposes a construction that would require openings in the thermal adhesive web. The patents-in-suit do not discuss or illustrate "openings" of any kind in the thermal adhesive. As a result, the Court does not interpret the term to require openings.

The specifications of the patents-in-suit distinguish a thermal adhesive "web" from a "net" by characterizing a net as being "more solid structured" than a web. 779 Patent at 3:53-4:2; 615 Patent at 3:54-4:3. The Court incorporates this language into its construction of the terms "thermal adhesive web" and "thermal adhesive net." Nothing in the claims indicates that "net" should not be interpreted as being more solid structured than a "web" across all claims.

Accordingly, the Court adopts Taltech's proposed construction, 10 with modification, and construes the term "thermal adhesive web" to mean "a random array of thermal adhesive material that is less solid structured than a thermal adhesive net."

10 In adopting Taltech's proposed construction, the Court does not rely on the opinion of Taltech's expert, Dr. Hall, see Hall Decl., docket no. 95, PP 5-6, because it is merely conclusory. See Phillips, 415 F.3d at 1318.

4130

Thermal Characteristic

The Thermal Characteristic Patents' claims require the PCD body to exhibit a "thermal characteristic such that a 950 degrees C. temperature at the working surface results in a temperature of less than 750 degrees C. at the depth." ReedHycalog argues this term does not require construction. Defendants contended the claimed thermal characteristic is indefinite and, in the alternative, argue the term is not enabled. The Court addressed this dispute in Tyler I, concluded the claimed thermal characteristic was definite, and found the term did not require construction. Defendants do not raise any new or persuasive arguments in this case.

The Thermal Characteristic is Definite

The Thermal Characteristic Patents claim a PCD element or method to produce a PCD element such that "said bonded diamonds exhibit a thermal characteristic such that a 950 degrees C. temperature at the working surface results in a temperature of less than 750 degrees C. at the depth." E.g., '447 Patent, col. 14:24-33. The claim language exactly defines the claims' bounds--a 950 [degree] C temperature at the working surface results in a temperature less than 750 [degree] C at the depth from the working surface. Defendants argue that an ordinarily-skilled artisan would not know if a partially-leached PCD element contains the claimed thermal characteristic because the specifications do not disclose the conditions, tests, or methods to measure the claimed "thermal characteristic."

Defendants' arguments are without merit. A claim is invalid as indefinite under 35 U.S.C. § 112 P 2 if the claim fails to particularly point out and distinctly claim the subject matter the applicants regard as the invention. The primary purpose of the definiteness requirement is to ensure public notice of the scope of the patentee's legal protection, such that interested members of the public can determine whether or not they infringe. Halliburton Energy Servs., Inc. v. M-I, LLC, 514 F.3d 1244, 1249 (Fed. Cir. 2008). Thus, the definiteness inquiry focuses on how a skilled artisan understands the claims, and a claim is indefinite if the accused infringer shows by clear and convincing evidence that "a skilled artisan could not discern
the boundaries of the claim based on the claim language, the specification, and the prosecution history, as well as her knowledge of the relevant art area.” Id. at 1249-50.

A claimed parameter is definite “when the relevant values can be 'calculated or measured.’” Marley Mouldings Ltd. v. Mikron Indus., Inc., 417 F.3d 1356, 1360 (Fed. Cir. 2005) (quoting W.L. Gore & Assoc., Inc. v. Garlock, Inc., 721 F.2d 1540, 1558 (Fed. Cir. 1983)). However, a claim's bounds are not sufficiently defined where the number of methods used to measure the claimed parameter, the different results each method yields, and the uncertainty as to which method to use render the parameter insolubly ambiguous and effectively incapable of measurement. Honeywell Int'l, Inc. v. Int'l Trade Comm'n, 341 F.3d 1332, 1339-41 (Fed. Cir. 2003); Halliburton, 514 F.3d at 1249; see also Marley Mouldings, 417 F.3d at 1360. Thus, a claimed parameter is indefinite where the accused infringer shows by clear and convincing evidence: (1) persons of ordinary skill in the art, at the time the application was filed, knew of multiple methods to measure the claimed parameter; (2) the different methods yield significantly different results such that the claims are insolubly ambiguous as a result; (3) and the intrinsic record or knowledge of the relevant art area do not sufficiently define the bounds of claim by specifying to a skilled artisan which method or method of set of measurement methods to use. See Kinetic Concepts, Inc. v. Blue Sky Med. Group, Inc., 554 F.3d 1010, 1022 (Fed. Cir. 2009); Marley Mouldings, 417 F.3d at 1360; Honeywell, 341 F.3d at 1339-41; Halliburton, 514 F.3d at 1249-50; In re Gabapentin Patent Litig., 395 F. Supp. 2d 164, 173 (D.N.J. 2005).

Defendants merely state the specifications do not describe a method to test for the claimed thermal characteristic. Defendants do not explain why that alleged omission is fatal--Defendants do not show that skilled artisans were aware of multiple methods to measure the claimed thermal characteristic and that the methods produced significantly varied results such that the thermal characteristic cannot be calculated or measured. See Honeywell, 341 F.3d at 1340-41. Without such a showing, it is irrelevant that the specifications allegedly do not disclose a method to test the claimed thermal characteristic. See Marley Mouldings, 417 F.3d at 1358, 1360; Gabapentin, 395 F. Supp. 2d at 173.

Further, Defendants' allegations do not show by clear and convincing evidence that the intrinsic record or knowledge of the relevant art area do not specify to a skilled artisan which method or method of set of methods to use. The specifications describe using a wear test to calculate a wear index for a partially-leached PCD element. '447 Patent, col. 10:21-col. 11:11. During these tests, friction at the working surface inputs heat into the PCD element, and the tests allow a skilled artisan to calculate a wear index for the PCD element. Id. at col. 10:20-37, col. 11:1-11. The higher the wear index from this test, the more heat the leached portion of the PCD element can withstand before it degrades. Id. at col. 10:34-37, col. 10:66-col. 11:26.

A person of ordinary skill can infer the working surface's temperature when he performs the wear test. ReedHycalog's expert in Tyler I, David Hall, declared that the leached portion of the PCD element emits different colored light depending on its temperature during the wear test. Tyler I Claim Construction Opinion & Order, 6. Hall further declared that those skilled in the art know that emissions of orange light and white-hot light indicate the working surface of the PCD element is 950 [degree] C. Id. Defendants do not argue or submit evidence to the contrary.

The specifications also explain how an ordinarily-skilled artisan can infer that the temperature of the unleached portion of the PCD element did not reach 750 [degree] C during the wear test. The specifications detail the two modes of thermal degradation of unleached PCD elements, due to different thermal expansion rates (at about 400 [degree] C) and graphitization (at about 750 [degree] C). '447 Patent, col. 2:31-47, col. 9:12-34. Of interest here, the diamond in unleached PCD elements begins to graphitize as the temperature of the unleached PCD element approaches 750 [degree] C. Id. at col. 9:24-33. Thus, a person of ordinary skill could, after the wear test completes, inspect the PCD element for graphitization and infer whether the temperature of the unleached portion reached 750 [degree] C during the wear test. Tyler I Claim Construction Opinion & Order, 6. Defendants do not raise any arguments or present any evidence to the contrary.

In total, Defendants have not shown by clear and convincing evidence that the term "thermal characteristic such that a 950 degrees C. temperature at the working surface results in a temperature of less than 750 degrees C. at the depth” is indefinite. Thus, the Court concludes the term is definite. In addition, the claim language is clear and does not require construction. See Tyler I Claim Construction Opinion & Order, 8-9, 11.

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B. "automated thermal cycler"
Applera asks the court to construe this term as "an instrument for use in a nucleic acid amplification reaction comprising multiple thermal cycles for alternately heating and cooling samples." Stratagene advocates defining the term as "an instrument that can be programmed to heat and cool a surface or vessel." I adopt Applera's definition.

To define "automated thermal cycler," I must determine how a person trained in the art would have understood the term in 1991. In doing so, I must define the term in a manner consistent with the scientific and technical context in which it is used in the patent.” See AFG Indus., Inc. v. Cardinal IG Co., 239 F.3d 1239, 1248 (Fed. Cir. 2001).

Although the specification does not define "automated thermal cycler," it uses the term in a way consistent with Applera's proposed construction. Every reference to "thermal cycler" or "thermocycler" appears to identify an instrument used for conducting nucleic acid amplification reactions comprising multiple thermal cycles.

At the Markman hearing, Applera presented the testimony of Dr. Carl Batt, who testified that persons trained in the art in 1991 would have understood "automated thermal cycler" as a specialized instrument for use in a nucleic acid amplification reaction comprising multiple thermal cycles for alternately heating or cooling samples. I credit his testimony. Based on the fact that he authored a paper describing PCR technology submitted for publication in 1991 (see Tr. 74-76), I find that he was trained in the art in 1991 and is qualified to testify on this issue. Stratagene has presented no evidence suggesting that persons trained in the art of nucleic acid amplification in 1991 would have understood this term in any other way.

I acknowledge the Federal Circuit's admonition that extrinsic evidence is less reliable than intrinsic evidence. Phillips, 415 F.3d at 1318. In Phillips, the Federal Circuit advised courts to discount expert evidence at odds with the intrinsic evidence. Id. Nonetheless, consulting extrinsic evidence is appropriate when the internal evidence is ambiguous. See Storage Tech. Corp. v. Cisco Sys., Inc., 329 F.3d 823, 832 (Fed. Cir. 2003). Dr. Batt's testimony does not contradict the internal evidence; to the contrary, it is consistent with the specification's use of the term.

Stratagene's proposed construction is too broad and does not reflect the scientific and technical context of the patent. Stratagene's only support for its proposed construction is the specification's reference to "a spectrafluorometer capable of heating and cooling a surface, or vessel." (Col. 12, Ins. 14-15.) The specification contrasts this to a spectrafluorometer housed independently of a thermocycler. As Stratagene itself notes in its post-hearing brief, the specification was first drafted for the method patent application. For this reason, the specification reads more broadly than the claim itself. For example, as discussed below, the specification refers to various methods of DNA amplification, including isothermal reactions. But the claimed instrument is limited to reactions comprising multiple thermal cycles. Likewise, the specification refers to various methods of detecting nucleic acid amplification, even if the claimed instrument performs only one such method. My conclusion that the amplification reaction must comprise multiple thermal cycles reinforces the proper construction of "thermal cycler." The evidence shows that a person trained in the art in 1991 would have understood "thermal cycler" or "thermocycler" in the context of amplification reactions comprising multiple thermal cycles in the way suggested by Dr. Batt.

After reviewing the claim language, the specification, and the extrinsic evidence (i.e., Dr. Batt's testimony), the only conclusion consistent with the context of this patent is that "thermal cycler" refers to "an instrument for use in a nucleic acid amplification reaction comprising multiple thermal cycles for alternately heating or cooling samples."

DuPont asks the Court to construe the term "thermal distortion" as meaning "[t]he magnitude of change in the machine and transverse direction caused by thermal development of the flexographic printing plate." (DuPont Responsive Br. at 13.) But MacDermid advances the following construction of this term: "The magnitude of plate image distortion in the machine and transverse direction caused by thermal development of the flexographic printing plate that is measured by comparing the developed image of the flexographic printing plate with the image of the negative phototool." (MacDermid Opening Br. at 20.)
DuPont contends that its proposed construction should be adopted because it is: (1) supported by the plain language of claim 1 itself, which refers to thermal distortion "in both the machine and the transverse directions" ('758 Patent at col. 8, lines 21-22); (2) consistent with the specification, which states that the "[t]he thermal distortion (includes both elongation and shrinkage) of the plate in both the machine and the transverse directions is less than 0.03%" (id. at col. 2, lines 22-24) and (in Example 1) that "[t]he amount of distortion was well balanced between the machine and transverse directions" (id. at col. 5, lines 44-46); and (3) "[s]imple and straightforward" (Tr. at 84). (DuPont Responsive Br. at 12; Tr. at 84-88.)

As to MacDermid's proposed construction, DuPont argues that: (1) the '758 patent and its prosecution history are not limited to phototools or analog printing plates; (2) although the '758 patent contains no express "digital" references, "[i]t is well settled law that the '758 patent does not have to expressly describe embodiments directed to digitally imaged flexographic printing plates for the claims to be construed to cover digitally imaged plates" (DuPont Responsive Br. at 14 (citations omitted)); and (3) the proposed construction would require use of a single measuring technique even though the specification provides several examples of how to measure thermal distortion. (DuPont Responsive Br. at 13-14; Tr. at 84-88.)

DuPont counters MacDermid's assertions that DuPont's proposed construction would render the '758 patent insolubly ambiguous and indefinite by arguing that: (1) "[t]hermal distortion of an analog plate, a digitally imaged plate or the individual polymeric substrate are all easily measured by comparing the dimensions of the plate or substrate before and after being developed with heat" (DuPont Responsive Br. at 15); (2) in contrast to the infringer in Honeywell v. International Trade Commission, 341 F.3d 1332 (Fed. Cir. 2003), "MacDermid can only point to the arguments of its attorneys, not credible factual evidence, to support its contention that the particular method used to determine thermal distortion is 'critical' to determining thermal distortion" (DuPont Responsive Br. at 16); and (3) the patent does not have to describe a specific and exclusive measurement technique, as a person of ordinary skill in the art would know how to conduct the proper measurement and, at a trial, the parties' experts will explain how they measured the distortion. (Id. at 15-16; Tr. at 182-86.)

MacDermid defends its proffered construction on the grounds that: (1) the specification "only describes analog plates, analog imaging, and a measurement technique for thermal distortion of analog imaged plates" (MacDermid Opening Br. at 21); (2) the measurement of thermal distortion of the plate is only described in Examples 3 and 4 of the specification, and, in both instances, the method measures the developed image against the image on the "negative" ('758 Patent at col. 7, lines 16, 58-59); (3) the measurement technique identified in Examples 3 and 4 in the specification cannot be used with digitally imaged plates because "the in situ mask is thermally processed (and destroyed) during development" (MacDermid Opening Br. at 22); (4) the prosecution history confirms that the exclusive method of measuring thermal distortion is found in Examples 3 and 4, with the applicants stating "that Examples 3 and 4 additionally provide support and enablement for the invention as described in Claim 1" to overcome the examiner's enablement rejection (Prosecution History at 7-3); and (5) any construction of "thermal distortion" to include digital flexographic plates would render the claims invalid for failure to meet the enablement requirement and invalidate the claims of the subsequent '859 patent on anticipation grounds. (MacDermid Opening Br. at 20-23; MacDermid Reply Br. at 9-10; Tr. at 142-54.)

MacDermid also argues that DuPont's proposed construction of "thermal distortion" must be rejected because it would "render the claim limitation 'insolubly ambiguous' and indefinite." (MacDermid Opening Br. at 23.) Specifically, it contends that:

First, as noted, the '758 specification fails to describe any measurement technique of "thermal distortion" of a printing plate other than comparing the imaged surface to the analog phototool. Second, one could conceive of innumerable measurement techniques for "thermal distortion" of an imaged plate. Third, and most significant to the Court's evaluation of indefiniteness, these measurement techniques can result in varied and disparate results.

(Id. at 24.) According to MacDermid, the Court confronts a situation similar to the one addressed in Honeywell:

[T]here are two possible constructions of "thermal distortion" - the first is an "any one method" and the second is an "all methods." No guidance is given to the Court (or the public) as to which construction is correct, particularly, in the context of a digitally imaged plate. Moreover, different and potentially contradictory results are reached depending on the measurement method employed and/or the equipment used.

(Id. at 25-26.) MacDermid also contends that Examples 1 and 2 of the '758 patent, cited by DuPont, provide two methods to
measure the thermal distortion of the substrate, but that claim 1 is concerned with the thermal distortion of the plate while claim 19 expressly addresses the "distortion" in the "said polymeric substrate" (’758 Patent at col. 10, lines 4-5). (Tr. at 142-52.) MacDermid asserts that DuPont's proposed construction fails to define what should be measured and how it should be measured, and that DuPont improperly leaves it up to a jury to decide which measurement methodology is correct and thereby usurps the Court's responsibility of defining the scope of a patent claim. (Id.)

The parties present the Court with a difficult choice with their contentions. But the Court agrees with DuPont's arguments and adopts its simple and common-sense construction, which also has substantial support in the intrinsic evidence. It would be inappropriate to strike down this construction as indefinite, at least at this juncture. Thus, "thermal distortion" is construed to mean "the magnitude of change in the machine and transverse direction caused by thermal development of the flexographic printing plate."

Thermal stresses

The term "thermal stresses" is used in claim 16 of the '990 Patent. At the hearing, counsel for both parties stipulated to accept the following definition offered by the Court:

Forces, induced by heat, which tend to deform a body.

B. Claim 51

The parties also dispute the meaning of independent claim 51. The disputed element of this claim involves the same process step at issue in claims 1, 25, 32 and 34: the exposure of component materials to imaging radiation. Unlike those claims, claim 51 does not contain an homogenization requirement. It reads as follows:

A method for forming an integral object from a composition in a layer-by-layer process wherein properties within said object are changed, said process comprising the steps: providing a layer of composition; thermally changing the properties of the regions of the layer of composition by exposing the composition to imaging radiation and repeating steps a-b with subsequent applications of composition and exposure …; wherein the properties within said integral object are changed by varying the imaging radiation time, temperature, and/or intensity.

(’875 Patent, Col. 20, ll. 24-40) (emphasis added).

Defendants argue that the words "thermally changing the properties of the regions of the layer of composition by exposing the composition to imaging radiation" must be construed as requiring the formation of an alloy between substances, i.e., homogenization. They identify two aspects of the patent that purportedly mandate this construction. First, they claim that the specification does not teach a process of forming objects by means other than homogenization. Second, they claim that Lawton limited the scope of his invention to processes involving homogenization, as evidenced by language in the specification.

1 Defendants also point to the prosecution history in support of their argument. In the original patent application, each claim submitted by the inventor included a "homogenizing" step. In response to the Examiner's initial rejection of the claims, Lawton argued that the homogenizing step of his invention distinguished his claims from prior art. Those claims were eventually approved. When Lawton applied for a reissue patent, he included all of the claims from his original patent and twelve new claims, two of which (proposed independent claim 32 and dependent claim 33) omitted the "homogenizing" step. The Examiner initially rejected the newly proposed claims and rejected claim 32 on several grounds, including its
For these reasons, I find that the intrinsic evidence does not support a construction that would narrow claim 51 to require

anticipation by two prior art patents. In response, Lawton amended claim 32 by adding several limitations, including the step of "homogenizing the composition." Lawton asserted that the homogenizing step distinguished the claim from prior art and the Examiner allowed claim 32 to issue. With respect to dependent claim 33, the inventor responded to the initial rejection by converting the claim into independent form. That claim was issued as claim 51. Defendants argue that the Examiner's decision to allow the claim with little discussion, and the inclusion of a homogenization requirement in each of the other independent claims, is evidence that the claim implicitly includes an homogenization requirement; or alternatively, that the Examiner was hoodwinked into approving an independent claim unsupported by the specification.

Imagecure counters Defendants' proposed construction with the axiom that limitations from the specification cannot be imported onto a claim. See, e.g., Arlington Indus., Inc. v. Bridgeport Fittings, Inc., 345 F.3d 1318, 1327 (Fed. Cir. 2003). Nonetheless, there are many cases in which claims capable of being read broadly are instead held to narrower constructions based on statements in the specification. In Watts v. XL Sys., Inc., 232 F.3d 877, 883 (Fed. Cir. 2000), an invention--described broadly in the claims--was limited to particular structures identified in the specification because the specification stated that "the present invention utilizes [the structures]." In Kinik Co. v. ITC, 362 F.3d 1359 (Fed. Cir. 2004), the Federal Circuit ruled that a method claim for the manufacture of abrasive articles, whose plain language called for the use of a mixture of liquid binder and powdered material, was limited to mixtures containing a larger volume of liquid binder than powered material. The court limited the broader claim language because of language in the specification stating that volume of the liquid binder "substantially exceeds" the volume of the powder. Id. at 1364 (noting that the limitation was also found in the summary of the invention and was quantified in a detailed description of the embodiments). See also Toro Co. v. White Consol. Indus. Inc., 199 F.3d 1295, 1301 (Fed. Cir. 1999) (in which a claim was construed to encompass a particular structure when the specification described a particular structure as "important to the invention").

Those cases began, however, as all cases must: with the language of the claims. See, e.g., Watts, 232 F.3d at 882 (holding that the disputed claim language was not clear on its face before narrowing the claim language based on limitations in the specification). In this case, Defendants have not shown that the language of claim 51 should be given anything other than its ordinary meaning to one skilled in the art. Given the parties' agreement that Lawton acted as his own lexicographer with respect to the term homogenization, I am hard-pressed to believe that one skilled in the art would construe the language of claim 51 as implicitly requiring homogenization.

The structure of Defendants' argument belies the nature of their objection to this claim. Defendants compare the words of claim 51 ("thermally changing the properties of regions of the layer of composition") with the words of the other independent claims, such as claim 34 ("thermally homogenizing the dispersion by applying imagewise radiation"). They ask me to find that homogenization is implicitly incorporated by claim 51, notwithstanding its omission from the claim language, and they do so without identifying any language in the claim that would be ambiguous to one of ordinary skill in the art. Though Defendants raise a reasonable argument when they suggest that processes other than homogenization are not enabled by the specification, 2 that objection is properly raised in the context of the '875 patent's validity.

2 Throughout the specification, the invention is discussed in terms of, or with reference to, homogenization. For example, the "Field of the Invention" states: "The invention relates to a process of making models . . . using an imagewise exposure of a dispersion of components to radiation. The process is based on homogenizing the components of the dispersion to form an alloy which have properties different from the properties of the dispersion or its individual components." (‘875 Patent, Col. I, ll. 10-16.) Similarly, the "Summary of the Invention" states that "the invention comprises a process . . . comprising the steps of . . . homogenizing the dispersion." (Id. at Col. 2, ll. 9-15.) Within the specification the inventor distinguishes the "homogenization process of the invention" from the prior art of selective laser sintering, another process for manufacturing parts using layer-by-layer solid imaging. (Id. at Col. 4, ll. 9-10.) Nonetheless, the language of the specification does not exclude the process outlined in claim 51, and for the reasons discussed herein, I find no reason to read the homogenization requirement into the ordinary meaning of the claim.

For these reasons, I find that the intrinsic evidence does not support a construction that would narrow claim 51 to require
1. "thermally insulated brewing device"

a. The Parties' Proposed Construction

The parties dispute whether the phrase "thermally insulated brewing device" limits the scope of the claim. Capresso argues that "brewing device" refers to the coffee maker and asserts that the entire coffee maker must be "thermally insulated" or have some sort of protection to protect heat loss. DeLonghi argues that the limitation lacks support in the specification and is indefinite under 35 U.S.C. § 112, P 1. Sunbeam, in contrast, maintains that the phrase is part of the preamble and is not limiting.

According to Capresso, even if the term is part of the preamble, it is still a claim limitation which must be found within the accused device. See Seachange Int'l, Inc. v. C-Cor Inc., 413 F.3d 1361, 1375-76 (Fed. Cir. 2005) (preamble operates as a claim limitation of independent claim if it helps determine the scope of the claim and the claim that depends from it). Capresso notes that the limitations in the body of claims 1 and 7 both derive antecedent basis from the preamble. Claim 1 ("A thermally insulated brewing device comprising a thermal carafe. . ."); Claim 7 ("[t]he brewing device of claim 1, further comprising . . ."). Therefore, Capresso maintains that the preamble is an essential structure of the claims. Further, Capresso argues that "brewing device" should not be construed as the carafe because a thermal carafe is described later in the claim. Whenever the patent specifications or claims refer to the carafe, they do so by using the word "carafe," not "brewing device." Accordingly, Capresso argues that "thermally insulated brewing device" should be construed as "thermally insulated coffee maker."

Sunbeam makes two main arguments in response to Defendants' construction: (1) the disputed phrase is part of the preamble and does not limit the scope of the claim and (2) assuming arguendo that the preamble does limit the claim, a proper interpretation requires only the carafe and lid to be insulated.

First, Sunbeam argues that "thermally insulated brewing device" is not part of the claimed invention. It asserts that the phrase is a "work piece" or a "reference point" for the claimed invention. A "work piece" is an element necessary to describe an invention, but not a necessary element. SDS USA, Inc. v. Ken Specialties, Inc., 107 F. Supp. 2d 574, 593 (D.N.J. 2000) (holding that the term "ribbon stock" in the independent claims' preambles described the intended use of the apparatus but was not a claim limitation). Sunbeam advances two Federal Circuit cases for the proposition that a claim preamble has the import that the claim as a whole suggests for it, and a work piece does not limit the scope of a claim. See Schumer v. Lab. Computer Sys., Inc., 308 F.3d 1304 (Fed. Cir. 2002) (holding that the preambles at issue -- "point of origin," "angle of rotation," and "scale" -- did not limit the scope of the digitizer invention but simply described features that necessarily exit in any coordinate system for a digitizer); Vaupel Textilmaschinen KG v. Meccanica Euro Italia S.P.A., 944 F.2d 870 (Fed. Cir. 1991) (holding that the terms "breast beam" and "breast plate" were not structural limitations of the patented weaving machine and method but merely reference points to fix the direction of movement from the loom).

Sunbeam maintains that the purpose of the '719 patent was to provide a brewing device with a thermal carafe having insulated walls and an insulated lid. Sunbeam argues that a plain reading of the of the '719 patent makes clear that it pertains to thermally insulated carafes adapted for use in connection with an automated brewing device. Sunbeam directs the Court's attention to the introduction to the summary of the invention in the patent:

The present invention substantially improves upon the prior art by providing a thermal carafe brewing and dispensing device which has a brew-through lid which includes a liquid pressure controlled and activated valve to provide a unidirectional flow path into the carafe. In accordance with one aspect of the invention, a thermal carafe adapted for use in connection with an automatic drip brewing device includes a vessel with thermally insulated walls. . . (emphasis added).

Col. 1, lines 45-58. Sunbeam argues that the patentee did not intend to protect a brewing device that is insulated but instead a brewing device having a thermal carafe that is insulated.
Second, Sunbeam argues that even if the court finds that the preamble does limit the claim, the phrase "thermally insulated brewing device" does not require the entire coffee maker to be insulated but only a portion of it, namely the thermal carafe and lid. Sunbeam argues that this interpretation is consistent with the patent specifications and drawings. See FIG 1 and col. 2 lines 52-67 & col. 1, lines 1-34.

Sunbeam maintains that the fact that the specification does not refer to the "thermal carafe" as a brewing device does not render its interpretation invalid. The purpose of a preamble is to set out in terse terms what will be described in the claim language itself. The phrase "thermally insulated brewing device," it argues, merely indicates that some portion of the coffee maker described in limiting terms will have an insulated component. The claim language shows that two components are in fact insulated -- the carafe and the lid.

Finally, Sunbeam argues that insulating the entire coffee maker would serve no practical function and would exclude all of the embodiments of the invention disclosed in the '719 patent. Sunbeam points out that there is no need to insulate the brewing area, the base, or many other components of the coffee maker in order to achieve the goals of the patent. Sunbeam directs the Court's attention to the patent specification which describes the preferred embodiment to include only insulated carafes and lids. FIGS 1-6 & col. 2-5. Sunbeam cites Howe v. Medical Components, Inc., for the proposition that an interpretation which excludes the preferred embodiments cannot be sustained. 814 F.2d 638, 643-44 (Fed. Cir. 1987).

b. The Court's Construction

The key inquiry is whether "thermally insulated brewing device" is a claim limitation which limits the scope of the invention or whether it is merely a reference point. In Bell Comm'n's Research, Inc. v. Vitalink Comm'n's Corp., the Federal Circuit advised: "A preamble has the import that the claims as a whole suggests for it." 55 F.3d 615, 620 (Fed. Cir. 1995). A preamble limits an invention if it recites structural limitations of the claimed invention or if it is necessary to give life, meaning and vitality to the claim. Seachange Int'l, Inc., 413 F.3d at 1375 (citations omitted). However, where a patentee uses a preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation. Rowe v. Dror, 112 F.3d 473, 478 (Fed. Cir. 1997). Where the language of the body of the claim "sets out the complete invention in that it provides in detail the functional attributes of the device that performs the methods... the language of the preamble is superfluous" and is not a claim limitation. Schumer v. Lab. Computer Sys., Inc., 308 F.3d 1304, 1310 (Fed. Cir. 2003); Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc., 246 F.3d 1368 (Fed. Cir. 2001). However, if limitations in the body of a claim rely upon and derive antecedent basis from the preamble, the preamble acts as a necessary component for the claimed invention. See Seachange Int'l, Inc., 413 F.3d at 1375-76.

Here, the preamble is the only antecedent basis to understand claim 7. Claim 7 states: "The brewing device of claim 1, further comprising. . ." The term "brewing device" is not used anywhere else in the claims or specifications. Consequently, it is an essential structure for the claims.

The issue, then, is how the preamble phrase affects the scope of the invention, and in particular, whether the preamble requires the entire coffee maker to be insulated or whether it is sufficient that the carafe and lid are insulated. Words of a claim are "generally given their ordinary and customary meaning." Philips, 415 F.3d at 1312 (citing Vitronics, 90 F.3d at 1582). However, claim terms must be read not only in the context of the particular claim in which the disputed term appears but in the context of the entire patent, including the specifications. Id. at 1313. The interpretation of the preamble should be consistent with the patent specifications which describe the preferred embodiments.

Capresso would have this Court interpret "thermally insulated brewing device" to mean a coffee maker whose entire structure is insulated. Although the Court agrees that the ordinary meaning of "brewing device" is coffee maker, it is unreasonable, in light of the purpose of the patent, the specifications, and the drawings to suggest that the invention is limited to coffee makers where all component parts are insulated. The purpose of the patent is to prevent heat loss from the brewed beverage. To fulfill this goal, there is simply no need to insulate the brewing area, base, or many other components. The claim indicates that two components of the coffee maker are to be insulated -- the carafe and the lid. The preferred embodiments likewise describe coffee makers with insulated carafes and lids. FIGS 1-6 & col. 2-5. Nowhere does the patent suggest that the entire structure is insulated. Accordingly, the Court finds that "thermally insulated brewing device" refers to a coffee maker that has some components which are insulated -- the carafe and the lid.
II. Part a) -- "50 to 95% cotton fibers...

A. Relevant Claim Language

The relevant language for this section consists of the following: "50 to 95% cotton fibers; 5-30% non-flame-retardant thermoplastic fibers in which warp yarns for woven fabrics are comprised of 50 to 95% cotton and 5 to 30% non-flame-retardant thermoplastic fibers." ('545 Patent, col. 8, lns. 30-34).

B. Parties' Positions

Defendants take issue with the term "thermoplastic fibers." They do not argue that the term is unclear or indefinite, but instead assert that the term, as used in Claim 1, must be construed with the following limitation - "thermoplastic fibers with a melting point above 200 degrees Celsius." In support of their assertion, Defendants point to the following language in the specification of the '545 Patent:

Thermoplastic fibers with a melting point above 200 deg C. such as 66 and 6 nylon, polyethylene terephthalate and other polyesters, must be used to prevent loss of fabric durability well below the degradation temperature of cotton. ('545 Patent, col. 3, lns. 32-36) (emphasis added).

In their rebuttal brief, Plaintiffs state, "While the specification does provide an example of thermoplastic fiber melting points required when a specific situation is desired, it makes no clear intention that all fabrics or all embodiments of the fabric require thermoplastic fibers with such specific melting points." (Pls.' Rebuttal at 10). Plaintiffs argue that this language "simply provided one exemplary situation where such fibers 'must' be used -- that is, situations in which the loss of fabric durability well below the degradation temperature is not desired (such as, for example, protection against prolonged radiant heat, molten splash, or in flash fires)." (Id. at 11). Furthermore, Plaintiffs point out that "the corollary to [the previous] statement is also supported by the specification -- that is, if loss of fabric durability below the degradation temperature of cotton is not a problem, then thermoplastic fibers without such specific melting point may then be used (such as, for example, where exposure is less intense, less prolonged, and less likely)." (Id. (internal citations omitted)).

C. Court's Construction

We agree with Plaintiffs. We conclude that the term "thermoplastic fibers" carries the ordinary meaning understood by people in this field: "fibers made from a plastic material that becomes soft when heated and hard when cooled." (Pls.' Rebuttal at 12). The term is not limited to a type of thermoplastic fiber with a specific melting point. The melting point of 200 degrees Celsius is only mentioned once in the '545 Patent -- no other instance in which thermoplastic fibers are discussed do the inventors mention any specific melting point. Moreover, when the statement referring to the melting point is read in its entirety, it is clear that the phrase "must be used" does not mean that a material with this melting point "must always be used," but rather that a material with this melting point must be used to achieve one specific purpose -- "to prevent loss of fabric durability well below the degradation temperature of cotton." We agree with Plaintiffs' assessment that the statement at issue "clearly does not rise to the level of a clear or unequivocal statement that a specific melting point of the thermoplastic fibers is required for all embodiments of the claimed invention." (Pls.' Rebuttal at 11.)
A steam cooking utensil comprising:

[A] a base;

[B] a boiling water reservoir defined by the base;

[C] a heater, mounted in the base to heat liquid in the boiling water reservoir;

[D] thermostat means, mounted in the base and coupled to the heater, for switching off the heater when all the liquid in the boiling water reservoir has evaporated therefrom;

[E] a condensate trough, defined by the base and thermally insulated from the heater; and

[F] a food tray comprising an imperforate surface and a drainage surface, said food tray supported above the reservoir and trough such that said imperforate surface is aligned with the boiling water reservoir, said drainage surface is aligned with the condensate trough, and water flows from the imperforate surface to the drainage surface into the condensate trough, said reservoir, trough and tray cooperating substantially to prevent the flow of water from the imperforate surface into the reservoir.

Claim 2:

The invention of claim 1 wherein the food tray comprises a surface shaped to facilitate radial drainage to the drainage surface and into the condensate trough.

Claim 3:

The invention in claim 1 wherein the food tray defines a central baffle, vertically aligned with the heater, said baffle operative to direct heated water back to the vicinity of the heater in order to accelerate steam formation.

Claim 6:

The invention of claim 1 wherein the imperforate surface defines a multiplicity of raised surfaces effective to facilitate radial drainage through the drainage surface into the condensate trough.

Claim 31:

A steam cooking utensil comprising:

[A] means for defining a boiling water reservoir;

[B] a heater mounted adjacent a central portion of the reservoir to heat water contained in the reservoir;

[C] means for supporting food to be steamed above the reservoir, said supporting means defining an imperforate surface above the heater; and

[D] a baffle which extends downwardly from the supporting surface over the heater, said baffle shaped to define a partially enclosed region of the supporting surface in alignment with the heater;

[E] said baffle effective to impede the outward flow of water, heated by the heater and splashed by the heater against the partially enclosed region, radially away from the partially enclosed region.

Claims 1 and 31 are independent claims. Claims 2, 3 and 6 are dependent claims, being dependent upon Claim 1.

B. Markman Hearing
On November 18, 1997, this Court held a Markman hearing. See Markman v. Westview Instruments, 52 F.3d 967 (Fed. Cir. 1995) af’d, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996). Markman sets forth a two-step process for resolving patent infringement claims. The first step requires that claim construction (determination of the meaning and scope of the claims) is an issue of law for the district judge to decide. 52 F.3d at 979. The second step is that of the jury looking at the claims and the court-determined definitions in order to determine whether an infringement of the patent took place.

Prior to the Markman hearing, this Court required the parties to brief the type of evidence to be heard at a Markman hearing, to identify any disputed language in the claims, the type of evidence used to resolve any disputes and to offer proposed definitions of the claims. The proposed definitions of both parties greatly assisted this Court during the claim construction phase.

Both Rival and Sunbeam agreed with that only "intrinsic" evidence should be used to construe the disputed claims. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). Intrinsic evidence is made up of (1) the claims, (2) the patent specification, and (3) the prosecution history. 6 Markman, 52 F.3d at 979. However, the claims should always be the first place a court looks to determine the scope of the claim. Vitronics, 90 F.3d at 1576.

Extrinsic evidence is anything external to the patent, i.e. expert testimony, dictionaries, technical treatises and articles. Markman, 52 F.3d at 980. Even the plaintiff's product is extrinsic evidence. SRI Int'l v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1118 (Fed. Cir. 1985). Extrinsic evidence is only to be relied upon to resolve any ambiguity in a disputed claim term. CVI/Beta Ventures, Inc. v. Tura L.P., 112 F.3d 1146, 1153 (Fed. Cir. 1997); Vitronics, 90 F.3d at 1583.

The theory behind the admission of intrinsic evidence, and the exclusion of extrinsic evidence, has been explained by the Federal Circuit 7 in the following manner:

competitors are entitled to review the public record, apply established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention . . . . Allowing the public record to be altered or changed by extrinsic evidence . . . would make this right meaningless.

Vitronics, 90 F.3d at 1583.
create or form the outline of the shape of the boiling water reservoir.

2. "Thermostat means . . . for switching off the heater when all the liquid in the boiling water reservoir has evaporated therefrom" : a thermostat that automatically switches off the heater when all of the water in the reservoir has boiled dry.

3. "thin" as used in claim 11

Plaintiff's construction: No construction necessary or, having a thickness that is less than the width and length

Defendant's construction: Indefinite

Defendant argues that the term "thin" in "a thin layer of tooth whitening substance" is not defined in the claim language or in the specification and is insolubly ambiguous. As I noted in discussing the term "strip of material," a party that argues that a terms is indefinite bears a heavy burden. It must show that "no narrowing construction can properly be adopted." Exxon Research and Engineering Co. v. United States, 265 F.3d 1371, 1375 (Fed. Cir. 2001). Although defendant is correct that the term "thin" is not defined explicitly in the patent, the term is not hopelessly ambiguous. At the same time, I agree with defendant that plaintiff's proposed construction has no basis in either the claim language or the specification and I will not adopt it.

The '579 patent is intended to create a product that contains "a non-bulky active containment . . . that will permit the wearer to use the system during social discourse without interfering with the wearer's speech or appearance." '579 Pat., col 1, lns. 26-28. Therefore, the patent reveals that a "thin" layer of "tooth whitening substance" is a layer that does not impede speech or affect appearance. Otherwise, the purpose of the invention would be frustrated. Although this does not offer a precise measurement, it suggests a range of measurements. It is not so broad and infinite that the term is indefinite.

A. Claim Limitation 7(e): "thin membrane having attachable means for attaching said thin membrane to an inner surface of said closure"

Claim limitation 7(e) claims a "thin membrane having attachable means for attaching said thin membrane to an inner surface of said closure." There are two significant aspects to this claim limitation. First, the court construed the phrase "thin membrane having attachable means" to mean "a thin, soft, pliable sheet with a wall around its perimeter. The thin membrane itself may take any of a variety of shapes." Jury Instructions (doc.# 232), at 18. Second, the phrase "means for attaching said thin membrane to an inner surface of said closure" is a means-plus-function claim limitation. The court instructed the jury that "[t]he structure disclosed in the patent specification for performing that recited function is an interlocking snap fit formed by a groove on the exterior of the wall around the perimeter of the thin membrane which abuts and is affixed to a ridge on the interior of the spout." Id.

2. "Thin-walled."

Consistent with the court's previous construction, 21 "thin-walled" is construed to mean "the wall of the tubular member must have little extent from one surface to its opposite at both its first and second diameters."

--- Footnotes ---

3. "Thinner than G-29"

The dispute here is whether the claim language "thinner than G-29" and "[a] needle thinner than a G-29 needle" means all needles thinner than 29 Gauge. Novo argues that this Court should construe the term "thinner than G-29" according to its plain meaning. Becton argues that there is no plain meaning for this claim, because it is an "open-ended range" with no defined upper limit on the needle's thickness. That is, this limitation might read on a 35 gauge needle, a 50 gauge needle, or even a 100 gauge needle, etc., as they are all "thinner than 29 gauge."

Novo's support for this limitation is the originally-claimed 30 gauge needle, and one phrase of a single sentence in Novo's patent which states: "The present invention is based on the surprising recognition that needles thinner than G 29 may be used for injecting insulin." However, this is only a generalized statement referring to a range which cannot be seen as corresponding to the content of the application at that time, because only one single value of this range, G30, has been consistently defined. Construing the patent, this Court comes to the same conclusion as the European Patent Office: that the aim of the application was to use needles thinner than G-29, and the result of this "wish" was the possibility of having a G-30 needle. Only a G-30 needle is allowable in this context. As a result, this Court construes "thinner than G-29" to be thinner than 29 gauge, but not thinner than 30 gauge.

G. Claim 39

A device as in claim 37 wherein the differential expansion portion is thinner than the limited expansion portion.

The parties agree to the construction "a device as in claim 37 wherein the differential expansion portion has comparatively lesser overall thickness than the limited expansion portion."

5. Thread

"Thread" was not one of the terms sought to be construed by either party in the opening claim construction brief; however, defendants now contend it must be construed. Plaintiffs responded to defendants' proposed construction in its responsive brief and at the Markman Hearing.

Plaintiffs construe "thread" as "a yarn or yarns used in forming the stockinette member." It is undisputed that throughout the patent, "thread" is associated with the yarn used for forming the stockinette member. Defendants suggest that "thread" be construed as "yarn comprising cotton, polyester, nylon or other suitable materials, that is finer than the yarn used to form the netting arrangement," contending this construction falls within the "ordinary and customary meaning" of the term within the context of the specification, and is supported by plaintiffs' expert.
As noted in the above discussion of the term "strand," plaintiffs contend that the terms "strands" and "threads" are intended to do nothing more than describe the location of the yarns. "Strand" or "strands" refer to the netting arrangement; "thread" or "threads" refer to the stockinette member. Plaintiffs state they acted as their own lexicographers, which is permissible. But when acting as its own lexicographer, the patentee must set forth an explicit definition of the term different from its ordinary and customary meaning. Phillips, 415 F.3d at 1316. Plaintiffs have not done so here.

Under the ordinary and customary meaning to a person of ordinary skill in the art in question at the time of the invention, "thread" would likely be considered a finer gauge yarn than a strand. This is borne out by plaintiffs' expert's testimony that the threads of the stockinette are finer than the strands of the netting arrangement:

Q. So, I believe you're indicating that a thread and a strand are both yarns, is that correct?
A. Yes, sir.
Q. So how are they different?
A. To me, a thread is finer, a light yarn, a thin yarn.

(Defendants' Exh. F, Mademann Depo. at 66).

Only if plaintiffs made clear they were defining "thread" differently than its ordinary and customary meaning would "thread" not connote a finer gauge yard. Nevertheless, there is no requirement in the claim language or the specifications that require the yarns used to make the netting arrangement be heavier than those used to make the stockinette member which is clear in reference to the second preferred embodiment: "the strands of the netting arrangement are finer than the strands of the netting arrangement:

Q. So, I believe you're indicating that a thread and a strand are both yarns, is that correct?
A. Yes, sir.
Q. So how are they different?
A. To me, a thread is finer, a light yarn, a thin yarn.

(Defendants' Exh. F, Mademann Depo. at 66).

The Court construes "thread" as "a yarn or yarns used in forming the stockinette member."

A. Motion for Reconsideration of Claim Construction

In an Order dated May 14, 1998, this court construed the claims of the '100 Patent as follows: 1). "Boring, when turned, a hole in bone mass" was defined as "making a cylindrical hole by the removal of material with a rotary tool." The court further held that "[a] drill means does not include a screw or a pin or a nail or a trocar tip or any other object that does not have cutting edges and flutes." (Slip Op. at 5-6). "Thread means that includes a plurality of thread flights formed in the anchor distal from said drill means end to turn into the bone mass following the drill means" was defined to include "thread means that overlap the drill means so long as a greater number of thread means are distal from the drill means."
3). "Means for securing a suture to said anchor to extend therefrom after said anchor is seated in the bone mass" was defined as "a structure having a suture permanently attached to a retention disk positioned internally within the anchor." In construing the claim this court relied on the claim itself, the specification and the prior art as revealed in the prosecution history. The court did not rely on extrinsic evidence except for a general understanding of the patent.

Mitek's Motion for Reconsideration of Claim Construction argues that the court committed errors in its construction of the terms "drill means" and "means for securing". Mitek does not request modifications of the court's definition of "thread means". Mitek argues that the question of whether or not a drill means includes a screw, a pin, a nail or a trocar tip is a question for the jury and not a question of law for the court. This court disagrees. Mitek argued and presented evidence at length to support its contention that a drill means includes a trocar tip, a pin, a nail or a screw and requested that this court construe the term "drill means" to include these devices. Only when this court disagreed with Mitek's definition did it argue that this was an issue for the jury. The conclusion that a drill means does not include objects that do not have cutting edges and flutes is fully supported by the intrinsic evidence. Further, the Federal Circuit has affirmed claim construction rulings that define functions or structures that are excluded from the coverage of a claim. See, e.g. The Gentry Gallery, Inc., v. The Berkline Corp., 134 F.3d 1473, 1477 (Fed. Cir. 1998) (term "console" construed to exclude tray unit) and General American
Transp. Corp. v. Cryo-Trans, Inc. 93 F.3d 766, 770 (Fed. Cir. 1996) (opening "adjacent" to a side was construed to exclude opening adjacent to an "end wall").

Mitek further argues that the court committed error in defining "means for securing" to exclude a freely sliding suture. As stated above, this court may properly define functions or structures that are excluded from the coverage of a claim. Mitek also argues that the court may not use the prior art to limit the range of structures that may be equivalent to the structure disclosed in a specification for performing an identified function. Once again, this court disagrees. It is well established that the prior art as cited by the applicant is part of the intrinsic evidence upon which the court must rely to construe the claims. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996). The prior art relied upon by the applicant "gives clues as to what the claims do not cover." Autogiro Co. of America v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 399 (Ct Cl. 1967). The holding that the structure of the means for securing cannot include an eyelet is full supported by the intrinsic evidence. Therefore, Mitek's Motion to Reconsider Claim Construction is denied.

ii. The Shores '786 patent. The Shores '786 patent, which figures so prominently in the prosecution history of the '007 patent, includes the following Figures illustrating the invention:

[SEE FIGURES IN ORIGINAL]

Declaration of Donald I. Chipman, Exhibit C (the Shores '786 patent) at 2. 10.

What is specifically claimed in the '786 patent, as it relates to attempts to overcome this prior art in the prosecution history of the '007 patent, is found in claims 1 through 8:

1. An adjustable peep sight for a projectile launching device, said sight including a housing defining an elongated passage extending therethrough, a pair of thin flexibly resilient and stiff material annular discs mounted from said housing in and transverse to said passage, each of said discs defining a central, generally circular opening formed therethrough and having a plurality of circumferentially spaced, generally radial slits formed therein defining generally radial, inwardly tapering fingers extending inward from the outer marginal portion of the corresponding disc to the central opening therein, said discs being mounted within said passage with said central openings axially registered and the width of said discs at least substantially axially abutted and the slits of one of said discs circumferentially spaced between the slits of the other disc, and wedge means mounted from said housing and adjustably shiftable along said passage, said wedge means including an annular abutment portion disposed in said passage on the side of one of said discs circumferentially spaced between the slits of the other disc, and which means being mounted from said housing and adjustably shiftable along said passage, said wedge means including an annular abutment portion disposed in said passage on the side of one of said discs remote from the other disc and facing and abuttingly engageable with the fingers of said one disc intermediate the opposite ends of the last-mentioned fingers to variably deflect the fingers of said one disc, and thus also the fingers of the other disc, along said passage, responsive to shifting of said wedge means in the direction in which said annular abutment portion faces, said housing including mounting means adapting [sic] said housing to be mounted from a suitable portion of said device.

2. The peep sight of claim 1 wherein said housing is generally cylindrical and said passage extends centrally therethrough, one end of said passage including a counterbore, said discs being seated in said counterbore and removably retained therein by a retaining sleeve removably secured in said counterbore outwardly of said discs.

3. The peep sight of claim 2 wherein said counterbore is threaded and said retaining sleeve is removably threaded in said counterbore.

4. The peep sight of claim 2 wherein the other end of said passage is threaded and said wedge means comprises a sleeve member adjustably threaded in said other end of said passage and said annular abutment portion comprises the end of said sleeve member opposing said one disc.
5. The peep sight of claim 4 wherein the said sleeve member is externally bevelled.

6. The peep sight of claim 4 wherein said sleeve member projects outwardly of the end of said cylindrical housing corresponding to said other end of said passage, and a lock nut threaded on said sleeve member and abuttingly engageable with said housing end.

7. The peep sight of claim 6 wherein said end of said sleeve member is externally bevelled.

8. The peep sight of claim 7 wherein said counterbore is threaded and said retaining sleeve is removably threaded in said counterbore.

The '786 Patent, claims 1-8.

--- End Footnotes ---

iii. Rejection and amendment. The examiner rejected claim 1 of the '007 patent as originally drafted in light of the Shores '786 patent, stating the following:

Shores, Sr. discloses a peep sight for an archery bow, comprising a base 28 a plurality of sight inserts 38, 40, 42, and 44. The insert 44 is selectively mountable in a prescribed position on the base 28 and defines a sight opening for the user to align with a front sight pin when aiming an arrow. The sight includes a releasable locking means 50 for locking the threaded insert 44 against rotation within the threaded base opening 30. The above described device of Shores, Sr. provides all of the structure recited in [application] claims 1, 2 and 4.

As to claim 3, the inserts 38, 40, 42 and 40 in the device of Shores Sr. each have different sized openings and have the capability to be used selectively under different field conditions to vary the size of the sighting aperture.


In response to this rejection of application claims 1 through 4, the applicants for the '007 patent filed an amendment on December 16, 1991, amending claim 1, in pertinent part, to include a limitation that the base member have "an internally threaded opening therethrough aligned with the sighting path when the bowstring is drawn for shooting, said threaded opening having a first prescribed diameter so that the user can sight through said threaded hole in low light conditions" and a limitation for "a plurality of externally threaded interchangeable sight inserts interchangeably and selectively mountable [in] to a prescribed sight position. . . ." Id. at 47 (underlining showing additions, brackets showing deletions). In support of the patentability of application claims 1 through 4, as amended, the applicants asserted the following:

The Examiner rejected Claims 1-4 under 35 U.S.C. § 102(b) as being anticipated by Shores, Sr. Claim 1 has been amended to specify that the inserts are interchangeable with the threaded opening through the base serving to as [sic] one sighting opening and with each of the inserts having a different size opening so that the size opening being used is determined by selecting the particular insert or the base member with the desired size opening and using it. This [is] quite unlike Shores, Sr. where the pieces must be screwed together to get the right size opening and the user must guess at the actual size opening that has been adjusted in that sight. While it is true that each of the members 38, 40, 42 and 44 each have a different size opening therethrough but [sic] it is respectfully pointed out that only the openings in members 38 and 40 serve to establish the variable sight opening. Thus, Shores, Sr. teaches just the opposite of the claimed structure, that is, the use of one set of members in the sight rather than interchangeable separate members and the use of a variable size sight opening rather than different fixed size sight openings in the different inserts. Therefore, it is submitted that Claim 1 is clearly patentable over the prior art.

Id. at 51. This prosecution history establishes that both the "threading" and the "interchangeability" limitations, which Kudlacek contends are absent from his device, were offered in an amendment seeking to obtain patentability over the Shores '786 patent. After this amendment, the examiner issued a Notice of Allowability for the '007 patent application on March 6, 1992, allowing amended claim 1. Id. at 56. Therefore, the critical question is, whether (and which parts) of the amendments were directed to distinguishing claim I of the '007 patent from the Shores '786 patent? See Fiskars, Inc., 221
iv. The scope of prosecution history estoppel. The '786 patent says nothing whatever about "a plurality of externally threaded interchangeable sight inserts," each of which "defines a [different] sight opening." Compare The '007 Patent, claim 1, with The Shores '786 Patent, claims 1-8 (supra, n.10). Rather, the '786 patent relies on a single threaded insert, or "wedge means" (44 & 46) that varies the size of the sighting window when it is "adjustably shifted along" the passage in the central cylinder (28), thereby deflecting the "fingers" (54) of the internal "discs" (38 & 40) a greater or lesser amount. See The '786 Patent, claim 1; see also The Shores '786 Patent, Fig. 3, supra at 106. However, the examiner for the '007 patent described both the "discs" (38 and 40 in the figures to the Shores '786 patent) and the "wedge means" (44 in the figures to the Shores '786 patent), as well as the "retaining sleeve removable secured in said counterbore outwardly of said discs" (42 in the figures to the Shores '786 patent), see The Shores '786 Patent, claim 2 (defining the "retaining sleeve" limitation), as constituting "a plurality of sight inserts." See Prosecution History File of The '007 Patent at 39-40 ("Examiner's Action" of September 16, 1991). The examiner for the '007 patent also described these "inserts" in the Shores '786 patent as "each having different sized openings and having the capability to be used selectively." Id. at 40. The examiner also noted that both the "insert 44" and the "base opening 30" were "threaded." See id. at 39.

Indeed, in their argument in support of the patentability of amended application claim 1, the applicants did not argue that the addition of the "threading" language was what made the amended claim patentable over the Shores '786 patent. The applicants' arguments for the patentability of the amended claim mention only in passing "threading" of the inserts and base member of their device, just as they mention only in passing that the parts of the device in the Shores '786 patent are "screwed together." See Prosecution History Of The '007 Patent at 51. In contrast, as Specialty argues, the applicants expressly argued that the "interchangeable" feature established the patentability of amended application claim 1. See id. The applicants expressly argued that "claim 1 has been amended to specify that the inserts are interchangeable with the threaded opening through the base," so that different size sight openings could be used under different conditions. See id. (emphasis added). The applicants explained that "this [is] quite unlike Shores, Sr. where the pieces must be screwed together to get the right size opening and the user must guess at the actual size opening that has been adjusted in that sight," because "Shores, Sr. teaches just the opposite of the claimed structure, that is, the use of one set of members in the sight rather than interchangeable separate members and the use of a variable size sight opening rather than different fixed size sight openings in the different inserts." Id. (emphasis added). The applicants acknowledge that, "while it is true that each of the members 38, 40, 42 and 44 [of the Shores '786 patent] each have a different size opening therethrough . . . it is respectfully pointed out that only the openings in members 38 and 40 serve to establish the variable sight opening." Id. The court concludes, in light of the examiner's grounds for rejection of the original claim and the applicants' arguments for patentability of the amended claim, that only the "interchangeability" amendment, not the "threading" amendment was directed to distinguishing the claim or claims of the patent-in-suit from the Shores '786 patent reference, and thus only the "interchangeability" amendment gives rise to any prosecution history estoppel as to claim 1. See Fiskars, Inc., 221 F.3d 1318, 2000 WL 1015080 at * (not every amendment gives rise to estoppel; amendments not directed to patentability do not give rise to estoppel).

This does not mean, however, that the "threading" language in the '007 patent is irrelevant to the construction of claim 1. Rather, "the central focus of the infringement analysis remains on the claim language," albeit claim language "as illuminated by the written description and the prosecution history." See KCJ Corp., 223 F.3d 1351, 2000 U.S. App. LEXIS 20963, *8, 2000 WL 1165522 at *3; Tate Access Floors, Inc., 222 F.3d 958, 2000 WL 1055981 at *4; Hockerson-Halberstadt, Inc., 222 F.3d at 956, 2000 WL 1035753 at *2; Optical Disc Corp., 208 F.3d at 1334. Indeed, "the claim language . . . defines the bounds of claim scope." Schering Corp., 222 F.3d 1347, 2000 U.S. App. LEXIS 18360, *13, 2000 WL 1055975 at *5 (quoting York Prods., Inc., 99 F.3d at 1572). Here, the limitations of claim 1 of the '007 patent expressly and unambiguously claim "threaded" inserts and a "threaded" base member. See The '007 Patent, claim 1. To ignore this "threading" language would be to read an express limitation out of the patent. 11 Thus, such "threading" is literally required by the patent...
language, although the prosecution history does not exclude non-threaded "equivalents" under the doctrine of equivalents. Moreover, the court notes that this identical "threading" of the hole in the base member and the exterior of the inserts is also indicated in the specification of the preferred embodiment in the '007 patent. See, e.g., The '007 Patent, "Detailed Description Of Illustrative Embodiments," at Col. 3, ll. 10-11 (the hole in the base member is "threaded with threads for use in mounting the inserts"), ll. 17-18 ("The insert 16 is externally threaded with threads 30 complementary to the hole threads 26"). Thus, to the extent that the specification of the preferred embodiment of the invention in the patent "illuminates" claim language, See KCI Corp., 223 F.3d 1351, 2000 U.S. App. LEXIS 20963, 2000 WL 1165522 at *3; Tate Access Floors, Inc., 222 F.3d 958, 2000 WL 1055981 at *4; Hockerson-Halberstadt, Inc., 222 F.3d 951, 2000 WL 1035753 at *2; Optical Disc Corp., 208 F.3d at 1334, the specification here confirms that the patented device literally requires "threading" of the hole in the base member and the exterior of the inserts.

11 This express statement of a particular structure in the claim itself in the '007 patent should be contrasted with the lack of any such specification of the number of parts that make up the "adjustment member" as defined in claim 1(d) of the '325 patent. As to claim 1(d) of the '325 patent, the court refused, above, to "read into" the patent a requirement that the claimed "adjustment member" had to be a single piece, even though the preferred embodiment indicated more narrowly that the "adjustment member" was a single piece, because it is improper to read narrower language from a description or specification into broader claim language. See KCI Corp., 223 F.3d 1351, 2000 U.S. App. LEXIS 20963, 2000 WL 1165522 at *4. As to the '007 patent, the court declines to "read out" of the patent a "threading" requirement specified in the claim language. The court notes that the specification of the preferred embodiment and the "threading" limitation in claim 1 of the '007 patent describe identical structures, rather than a preferred embodiment that is narrower than claim language. See, e.g., The '007 Patent, "Detailed Description Of Illustrative Embodiments," at Col. 3, ll. 10-11 (the hole in the base member is "threaded with threads for use in mounting the inserts"), ll. 17-18 ("The insert 16 is externally threaded with threads 30 complementary to the hole threads 26").

v. The resulting construction. In short, as to construction of the challenged portions of claim 1 of the '007 patent in light of prosecution history estoppel, the court concludes that the claim must be construed as literally requiring a base member with "an internally threaded opening therethrough" and "a plurality of externally threaded interchangeable sight inserts interchangeably and selectively mountable to a prescribed sight position in and substantially filling said threaded opening in said base, each of said sight inserts defining a sight opening therethrough." The '007 Patent, claim 1. Only equivalents of the "interchangeability" element are limited by the prosecution history of the patent; there is no such limit on the "threading" elements.

c. Construction of "threaded"

The court's construction of the claim is not finished, however, because the meaning of "threaded" must be construed, in light of Kudlacek's contention that his accused device has no threads and Specialty's contention that Kudlacek's base member has "one large thread." Even though the parties dispute the applicability of "threaded" to Kudlacek's peep sight, they do not dispute that "threaded" must be given its "ordinary meaning" in the '007 patent, nor do they dispute what that "ordinary meaning" is. Therefore, the court must briefly consider the "ordinary meaning" of "threaded" as it relates to the internally threaded hole in the base member and the externally threaded sight inserts claimed in claim 1 of the '007 patent.

As the parties apparently agree, there is no novel definition of "threaded" expressly stated in the '007 patent. Thus, the court must rely on the "ordinary meaning rule" to determine the proper construction of this term. See, supra, p. 37ff. The pertinent dictionary definition, for present purposes, of "thread," as a noun, is "a projecting helical rib (as in a fitting or on a pipe) by which parts can be screwed together: SCREW THREAD," while the pertinent definition of "thread," as a verb, is "to form a screw thread on or in." MERRIAM WEBSTER'S COLLEGIATE DICTIONARY (10th ed., 1995). The dictionary definitions proffered by the parties are comparable. Specialty, for example, proffers the definition of "thread" as a "helical or spiral ridge," citing AMERICAN HERITAGE DICTIONARY (2d ed.), and Kudlacek embraces that definition. "Helical" in turn means "of, relating to, or having the form of a helix; broadly: SPIRAL"; where "helix" is defined as "something spiral in form," such as "a coil formed by winding wire around a uniform tube," or "a curve traced on a cylinder or cone by the rotation of a point crossing its right sections at a constant oblique angle; broadly: SPIRAL"; and where "spiral" itself, as a
noun, is defined as "the path of a point in a plane moving around a central point while continuously receding from or approaching it," and as "a three-dimensional curve (as a helix) with one or more turns about an axis."

The court concludes that Specialty has ignored the "helical" or "spiral" meaning of "thread" and the meaning of the term that indicates that complementarily "threaded" parts must "screw" together by asserting that the patent term encompasses parallel ridges that form complete circles or segments of a complete circle. However, the court concludes that "threaded," "threads," and "threading" in the '007 patent, according to the ordinary meaning of the terms, require that the "threaded" parts have a continuous helical or spiral ridge or groove, around the inside of the hole in the base member (i.e., internally), or around the outside of each sight insert (i.e., externally), completing one or more turns around the central axis of the part, like the threading of a nut or bolt, respectively, and parts with complementary threads must be able to "screw" together.

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H. "End"

Mitek argues that the term "end" in the following clause in claim 1, "threaded back end" should be construed to mean the extreme or last part lengthwise. Mitek argues that the patent does not cover implants that have a head at the end. Mitek cites to the language in the Preferred Embodiments that the "[i]mplant 40 has a threaded proximal end and a threaded distal ends." (Doc. 140, Exh. 1 4:51). Arthrex argues that there is no support for Mitek's request to limit the implant to those that do not have a head at the end, and that this patent is directed to a method of ACL surgery and not to a specific type of implant used in that method.

In the Summary of the Invention, the patent provides that the "implant preferably is formed with back-biting threads: Accordingly, the implant easily can be impact driven into the repair site, and yet can be removed if necessary by rotation." (Doc. 140, Exh. 1, 3:6-9). The Preferred Embodiments provides that the implant "can be driving by impaction into bone, and then, if necessary can be subsequently removed by screw rotation as discussed below." (Doc. 140, Exh. 1, 4:60-62). The Court finds no language in the claim or the specification which limits the type of screw end. Relying on the language of the claim and the language in the specification, the Court determines that a "person of ordinary skill in the art" would construe the "ordinary and customary meaning" of the terms "threaded back end," to mean either a screw with or without a head that has a threaded back part.

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D. Three Dimensional Position

The parties present nearly identical definitions for "three dimensional position." Scanner asserts that the term refers to "the X, Y and Z values for the top of at least one ball of a ball grid array." (Scanner Post-Hr. Br. at 13). ICOS asserts the following definition: "the determination of the actual X, Y and Z coordinate positions of the balls." (ICOS Post-Hr. Br. at 23). Because these definitions are similar, it is apparent that the parties do not genuinely dispute the definition of the term as it applies to the patents at issue. The Court adopts the definition set forth by Scanner. Accordingly, for the purposes of this case, "three dimensional position" is defined as "the X, Y and Z values for the top of at least one ball of a ball grid array."

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The principal dispute at the Markman hearing concerned the proper construction of the term "3-end knit," which appears in claims 1 and 6 and their dependent claims. Southern Mills proposed that the term be construed to mean a "fabric containing yarns capable of serving one of three different functions in the fabric." That definition, Southern Mills contended, would include the use of either one, two, or three different yarns, as long as the yarns used in the fabric were collectively capable of performing the stitch, tie, and nap functions. Polartec argued for a narrower definition that would require the use of three different yarns, with each yarn performing only one of the specified functions.
The district court found the claim language to be inconclusive and accordingly looked to the specification. After conducting a detailed review of the specification, the court adopted Polartec's requested definition and construed "3-end knit" to mean "a knit formed of three different yarns, each serving one of three different functions: stitch, tie, and nap." The court explained that "[t]he very first sentence of the Detailed Description section reads: 'The 3-end knit structure comprises the interaction of three yarns each serving their own function.'" Moreover, the patent described the stitch yarn as being "the only yarn of the three that is visible from the face side of the cloth." The court noted that for each of the three functions, the patent provides a separate list of suggested materials and types of yarn, indicating that the patent contemplates the use of three different yarns in the knit structure.

The district court next construed the three different yarn functions. The court ruled that "stitch yarns" form the face side of the knit and are the only ones visible from the face side; that "tie yarns" attach the nap yarns to the back side of the knit and are not visible from the face side; and that "nap yarns" lie on the back side of the knit, are tied into the knit at periodic intervals by the tie yarns, and are not visible from the face side of the knit. The court based its construction on language in the claims as well as the specification. In particular, the court observed that claim 1 states that the "stitch yarns form the face side of the fabric," and that the "nap yarns are tied into the knit at periodic locations along the back side of the fabric by the tie yarns." See '401 patent, col. 5, ll. 59-62. The court also relied on language from the specification stating that "[t]he stitch or face yarn . . is the only yarn of the three that is visible from the face side of the cloth," and that "[t]he nap yarn . . . is attached to the knit by the tie or tie-in yarn which is not visible from the face side of the fabric." Id., col. 3, ll. 49-51, 65-67. The court added that its earlier construction of "3-end knit" foreclosed the argument that a single yarn could be used to perform both the stitch and the tie functions such that the tie yarn would also be visible from the face side.

After the court issued its claim construction order, the parties agreed that Southern Mills could not prove infringement under the claims as construed. The parties therefore consented to entry of a judgment of noninfringement so as to enable Southern Mills to obtain review of the court's claim constructions.

II

Southern Mills argues that the district court erred in limiting the invention to a knit formed of three different yarns. It contends that the portions of the specification that require the use of three different yarns represent only a preferred embodiment, and that a person skilled in the art would understand the patent to claim fabrics using fewer than three yarns.

A

The main thrust of Southern Mills' appeal is a challenge to the district court's claim constructions as applied to claims 1 and 6. Those claims and their dependent claims all recite that the claimed fabric is a "3-end knit." The specification defines a "3-end" fabric as a two-sided fabric that includes "a knit formed of a stitch yarn and a tie yarn, wherein the stitch yarn lies on the fabric face side. A nap yarn lies on the back side of the fabric and is tied into the knit at periodic intervals." '401 patent, col. 2, ll. 41-44. The specification adds that to manufacture the 3-end fabric, "a knit is formed of the stitch yarn, the tie yarn, and the nap yarn." Id., col. 2, ll. 56-58.

Southern Mills contends that the "3-end knit" does not require the use of three different yarns, as long as it consists of "yarns capable of serving one of three different functions." In so arguing, Southern Mills relies on the statement in the specification that "[t]he term '3-end' means that yarns serve one of 3 different functions in the fabric." '401 patent, col. 2, ll. 35-36. While it is true that the yarns must perform those three functions, it is also evident from the specification that those three functions are performed by three different yarns. That much is plain from the language of the specification that describes the 3-end knit structure as comprising a stitch yarn, a tie yarn, and a nap yarn, and from the repeated references in the specification to the stitch, tie, and nap "yarns" rather than "functions."

Perhaps the clearest statement to that effect is at the beginning of the Detailed Description section of the patent, where the specification states: "The 3-end knit structure comprises the interaction of three yarns each serving their own function." '401 patent, col. 3, ll. 22-23. Other statements in the specification make the same point. For example, the portion of the specification that describes the 3-end knit structure states that the "stitch or face yarn" is "the only yarn of the three that is visible from the face side of the cloth." Id., col. 3, ll. 65-67. That statement implies that the 3-end knit structure comprises three yarns, not one or two yarns that perform the three functions. As another example, the specification describes in detail the different preferred composition and weight of each of the yarns, id., col. 4, ll. 25-36, providing another indication that
the 3-end knit structure contemplates the use of three separate yarns.

Southern Mills attempts to downplay the significance of those statements from the specification by characterizing them as merely descriptions of a preferred embodiment, which therefore do not limit the meaning of "3-end knit." The characterizations of "3-end knit" in the specification, however, are distinctly definitional; they do not purport to describe one or more variants of a 3-end knit, but rather set forth what the patentee regarded as the meaning of the term "3-end knit" as used in the claims.

In support of its proposed construction of "3-end knit," Southern Mills relies principally on a sentence in the specification that refers to a "2-end fleece" pattern. In the course of describing a preferred embodiment of the 3-end knit structure, illustrated by Figure 1 of the patent, the specification states that "[t]he knit pattern shown in Fig. 1 is called a 3-end fleece pattern. Other patterns can be used, such as a 2-end fleece or a terry-cloth, for example." '401 patent, col. 4, ll. 48-51.

According to Southern Mills, that language reflects a distinction between "pattern" and "structure." The term "3-end fleece pattern," Southern Mills argues, refers to a fabric in which three yarns perform the three designated functions of the stitch yarns, tie yarns, and nap yarns, while "2-end fleece pattern" refers to a fabric in which two yarns perform those three functions. By contrast, the term "3-end knit structure" contemplates the use of yarn to perform the three designated functions, but does not require the use of three different yarns to do so. As interpreted by Southern Mills, the reference to "2-end fleece pattern" thus indicates that neither the patent as a whole, nor those claims that require a "3-end knit," require the use of three different yarns.

We agree with the district court that Southern Mills' argument regarding that passage of the specification is unpersuasive. The terms "2-end fleece" and "terry-cloth" are used only once in the patent and are not defined. Southern Mills makes no attempt to explain the meaning of the reference to terry-cloth; as to the term "2-end fleece," Southern Mills relies on the testimony of Dr. Adanur, its expert. Dr. Adanur's testimony, however, does not provide persuasive support for Southern Mills' position. As the district court explained, Dr. Adanur expressly acknowledged that the term "2-end" has no recognized meaning in the field of technical textiles. He simply asserted that, within the context of the '401 patent, the term has the meaning advocated by Southern Mills. Moreover, when he was directed to language in the specification that was contrary to his interpretation of the term "3-end," his response on each occasion was that the language in question referred to a preferred embodiment. As such, Dr. Adanur's testimony was unhelpful because it constituted only a recitation of how he would construe that term, not an explanation of its "accepted meaning in the field" to one skilled in the art. Symantec Corp. v. Computer Assocs. Int'l, Inc., 522 F.3d 1279, 1290-91 (Fed. Cir. 2008); see also Phillips v. AWH Corp., 415 F.3d 1303, 1318 (Fed. Cir. 2005) (en banc) ("'[C]onclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court."). Because the specification repeatedly makes clear that the 3-end knit structure requires three yarns to perform the three designated functions, it would be speculative to conclude that the unelaborated reference to a "2-end fleece" pattern teaches an embodiment of the 3-end knit structure that uses fewer than three yarns.

Southern Mills also relies on a statement in the Summary of the Invention that the yarns employed in the manufacture of the claimed fabric "may all be the same, but the 3-end structure allows the selection of the best yarn for each of the three functions: stitch, tie, and nap." '401 patent, col. 2, ll. 36-39. As the district court concluded, the most reasonable interpretation of the phrase "may all be the same," particularly in light of the remainder of the sentence in which the phrase appears, is that it refers to the type of material to be selected for each yarn, not to whether more than one of the yarn functions may be performed by a single yarn.

Accordingly, we conclude that the district court was correct in its construction of the term "3-end knit." We therefore affirm the district court's judgment as to asserted claims 1 and 6, and their asserted dependent claims.

Through

Arcom objects to Magistrate Judge Peebles' recommended construction of the term "through" as used in Claims 23 and 25 to describe the bore through the insulator member and the conductor extending through the bore. Magistrate Judge Peebles recommends that the term "through" in these contexts be construed as "traversing an element from one end to the other." Arcom argues that it should be construed as "traversing an element partially or completely."
As noted by Magistrate Judge Peebles, modifiers to the term "through" are used in the claims when something less than complete traversal of an element is intended. For example, Claim 23 claims an insulator member "extending through at least a portion of the passageway of the female connector" (emphasis added). And Claims 15 and 18 claim an insulator member extending "through substantially the entire length of the female connector"  (emphasis added). Thus, Magistrate Judge Peebles' recommended construction is supported by the general principle that a claim term "should be construed consistently with its appearance in other places in the same claim or in other claims of the same patent." Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed.Cir. 2001).

Arcom's other arguments are not persuasive. In particular, the Court agrees with Magistrate Judge Peebles' rejection of Arcom's contention that the recommended construction excludes the preferred embodiment. On de novo review, the Court adopts Magistrate Judge Peebles' recommended construction.

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IV.

Like the other patents-in-suit, Devon's '592 patent relates to a receptacle for disposing of expendable items, such as hazardous medical waste, without allowing a user to contact previously accumulated waste. Figure 1 of the '592 patent illustrates the claimed features.

[SEE ILLUSTRATION IN ORIGINAL].

A container 10 has two baffles 11 and 12 that are used to close the container. Each baffle 11 or 12 has an opening 15 or 16 through which expendable items, such as used syringes, can be deposited. As discussed below, the claim requires that the openings be horizontally offset from one another to minimize the chance of a user coming into contact with previously deposited waste.

Claim 1, the only independent claim of the '592 patent, reads (with emphasis to highlight disputed limitations):

1. A receptacle for receiving expendable items, said receptacle including a container, a first baffle generally closing the top of said container and defining a first opening through said first baffle of such size and shape to receive said expendable items therethrough, a second baffle disposed below said first baffle, said second baffle defining a second opening therethrough of such size and shape to receive said expendable items, said second opening being horizontally displaced from said first opening, said first baffle and said second baffle defining a space therebetween sufficient to allow said expendable items to pass through said first opening, between said first baffle and said second baffle, and through said second opening to be received within said container.

For purposes of summary judgment, the parties have focused their dispute on the highlighted portions of the claim, specifically, the requirements (1) that the first and second openings pass "through" the first and second baffles, and (2) that the first and second openings be horizontally displaced from one another so that deposited waste travels laterally as it passes through the space between the two baffles. On these points, the district court properly interpreted the claims.

First, the claim requires that the first and second openings pass "through" the first and second baffles. The district court properly construed this term to mean that each opening extends from one side of the baffle to the other. See Webster's Third New International Dictionary (1981) (defining "through" as "into at one side or point and out at another, especially the opposite side of") (quoted by district court). Although there are other possible meanings for "through," including one cited by Devon that means something more like "allowing passage," these definitions are not used in connection with an "opening through" another structure, such as a baffle. Thus, the ordinary meaning of the claim term "through," which controls in the absence of an extraordinary usage by the patentee, see York Prods., 99 F.3d at 1572, 40 U.S.P.Q.2D (BNA) at 1622, requires that the first and second openings pass from one side of each baffle to the other.

The written description confirms this straightforward construction of the claim language. There, the patentee shows openings that pass "through" the baffles -- that is from one side of each baffle to the other. See '592 patent, figures 1-6. Also,
in describing the operation of the claimed receptacle, the written description says that "an item can be placed through the opening 15 as shown by the arrows [in Figure 3]." See id., col. 3, lines 39-41. The arrows shown in Figure 3 demarcate a path passing from one side of baffle 15 through the baffle to the other side of baffle 15. Finally, the written description also teaches forming the openings by "cutting" the baffle. See id., col. 3, lines 1-2. Such "cutting" would not be needed if, as Devon avers, "through" merely meant "past."

Finally, the prosecution history does not show any unique usage of the word "through" that would contradict its plain meaning. Rather, during the prosecution of the application leading to the '592 patent, the applicant referred to each baffle as a "flap having a hole therethrough." Amendment, filed August 3, 1981, p. 3 (emphasis added). That is, the applicant used the word "hole" as a synonym for "opening," thereby clearly indicating that an "opening through [a] baffle" extends from one side of the baffle to the other.

The parties also disagree about the meaning of "extend through." Osteonics maintains that extend through must mean that the rod passes the entire length of the isthmus of the femur. DCW replies that it need not extend all the way through. This particular dispute is harder to resolve; definitions of "through" typically imply the "penetration" or "passage within" another object, see Webster's Third New International Dictionary 2384 (G. & C. Merriam Co. 1981) and, in conjunction with the word "extend," would probably admit of either interpretation. Yet when viewed in conjunction with the claim's requirement that the central long axis of the femur passes through the central long axis of the inserted rod portion, the claims seem best understood along the lines Osteonics suggests.

The term "flow of said paint through said passageway, to said nib" appears in claim 1 and claim 12. Chip-Mender argues that the term means "flow of said paint through said channel to, not through, said nib." Sherwin-Williams asserts that it means "flow of paint through said passageway and to said nib. The paint may then travel through and/or around the nib in being transferred to the painted surface of a vehicle."

The parties do not dispute the plain meaning of "flow of said paint through," and while Chip-Mender defines "passageway" as "channel," and Sherwin-Williams stays with the original "passageway," the distinction between "passageway" and "channel" is not a point of contention. The only dispute is whether "flow… to said nib" means "flow… to, not through" the nib, or "flow… to said nib [and] then… through and/or around the nib."

Chip-Mender argues that "to the nib" means exactly what it says, and that defining "to the nib" as "to and/or through the nib" would be inconsistent with the claims and the specification of the '299 patent, because it might suggest that the claimed "nib" could be porous or that paint could flow "through" it. Chip-Mender also contends that the wording of the claim elements is controlling—noting that when the patent applicant meant "through," he said "through," not "to" (e.g., specifying "through said passageway" in element (d) of claims 1 and 12, rather than "to said passageway").

Chip-Mender asserts further that the language of element (e) of claim 12--"allowing it to open"--indicates that the nib must be non-porous, because something that is porous is already "open" by definition, and need not be "opened" to allow paint to flow. Thus, Chip-Mender argues, the nib must be non-porous in order that it can be "opened" to allow the paint to flow. Accordingly, nothing can flow "through" it. Chip-Mender asserts that the fact that the nib must be able to open and must regulate paint flow is established throughout the specification of the '299 patent (citing '299 patent, col. 2, II. 8-12, a description of the nib serving "as a regulator of the flow rate of paint composition"). Chip-Mender notes that the phrase "to the nib" appears repeatedly in the specification, without a single suggestion that what is really meant is "through the nib."

Finally, Chip-Mender points again to its cancelled claims 23-26, referring to the claim limitations "mov[ing] said nib from closed position to open" and "method of using sealed paint applicator." Chip-Mender also contends that its related Canadian
The patent explains in its abstract that the patent discloses "[a] paint applicator system utilizing a paint reservoir which is connected to a moveable nib which permits paint to pass through the reservoir to the exterior of the nib…. said nib serving to start and stop the flow of paint composition out of the reservoir, through the output end of the passageway onto the painted body."

In opposition, Sherwin-Williams relies on dictionary definitions of "to" from the American Heritage Dictionary--"in a direction toward; so as to approach or come near; in the direction of, so as to reach or terminate in; reaching as far as; through or terminating in"--and argues, based on these definitions, that the ordinary meaning of "to" does not exclude "through." Sherwin-Williams claims, for example, that driving "to" San Francisco does not exclude driving "through" San Francisco. Sherwin-Williams also argues that even if "to" does not expressly include "through," as in the idiomatic phrase "rotten to the core," the word "to" clearly does not exclude paint flowing "through" the nib. Sherwin-Williams contends that "to said nib" does not limit paint flow after the paint reaches or comes into contact with the nib, arguing that the claim term requires only that paint flow through the passageway and to the nib, with no limitation as to whether the paint also travels through and/or around the nib in being transferred to the painted surface.

Sherwin-Williams argues further that "open" in claim 12 does not define "nib" as solid, and that in any event, the term "open" can be applied to applicators with fibrous or porous nibs. Sherwin-Williams contends that it is the applicator that is "open" in claim 12, not the nib, but that even if Chip-Mender is correct that a porous nib is always "open," that would mean that a solid nib is always closed and could never be "open," and claim 12 could never be infringed by a solid nib.

Sherwin-Williams also asserts that the descriptions in the specification of a nib that "serves as a regulator" or that "tends to seal" are preferred embodiments that appear either in the "Preferred Embodiments" section of the specification, or following the "preferably constructed" language in the specification. Sherwin-Williams claims that none of the terms that Chip-Mender cites as support for its "solid nib" appear anywhere in the claim language--"regulator," "tends to seal," "sealed paint applicator," or "moved said nib from closed to open position." Sherwin-Williams argues that all these are terms that the inventor could have used in the claims but chose not to, and asserts that the court must construe the claims as written, not as the patentee wishes he had written them.

Finally, Sherwin Williams argues that cancelled dependent claims 23-26 and the Canadian patent preclude either a solid nib or a seal. Sherwin-Williams Claims that the fact that claims 23-26 specifically claimed a seal, but did not issue because they were cancelled, supports the proposition that Chip-Mender forever abandoned the ability to have claims limited to just a sealed applicator. Sherwin-Williams argues that these cancelled claims serve to emphasize that a seal or solid nib could have been, but were not, specified in the claims. Sherwin-Williams claims that under either the doctrine of claim differentiation or the common law doctrine of expressio unius est exclusio alterius, 5 solid or sealed nibs are not specified or required in the patent.

Footnotes

4 Under the doctrine of claim differentiation, two claims of a patent are presumptively of different scope. Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1366 (Fed. Cir. 2000). It isn't clear (and Sherwin-Williams does not elucidate) how the doctrine of claim differentiation applies here with regard to cancelled claims 23-26.

5 This "maxim of interpretation" holds that "to include or express one thing implies the exclusion of the other, or of the alternative…. For example, a rule that 'each citizen is entitled…' implies that noncitizens do not share in the entitlement." Bryan A. Garner, A Dictionary of Modern Legal Usage (Oxford, 2d ed., 2001). Sherwin-Williams does not explain how this maxim applies here.

End Footnotes

The court finds that "flow of said paint through said passageway, to said nib" means "flow of said paint through said channel to, not through, said nib." The central argument between the parties with regard to this claim term involves whether the paint flows "through" the nib.

There is no support anywhere in the patent for a construction of "to the nib" as meaning "through the nib." The court notes in particular that where the patentee meant to say "through" in the claims, as in "through the passageway," he said
"through." See '299 patent, col. 5, ll. 35-39; col. 6, ll. 17-20 ("flow of said paint through said passageway, to said nib"). Similarly, the specification describes the paint flowing "from the reservoir to the passageway and outwardly from the housing at the nib." Id., col. 2, ll. 9-10. This indicates that the paint flows from the reservoir to the passageway, then continues to the nib--i.e., through the passageway. Once it reaches the nib, flows "outwardly" from the housing.

The preferred embodiment is also consistent with this construction of "to the nib." "[W]hile it is of course improper to limit the claims to the particular preferred embodiments described in the specification, the patentee's choice of preferred embodiments can shed light on the intended scope of the claims." Astrazeneca AB v. Mut. Pharm. Co., 384 F.3d 1333, 1340 (Fed. Cir. 2004). A patent applicant need not expressly state "my invention does not include X" to indicate his exclusion of X from the scope of his patent. Id.

The "Detailed Description of the Preferred Embodiments" section of the '299 patent describes the operation of the paint applicator unit shown in Fig. 2 as follows:

A passageway 28 is included which permits the paint composition 24 to flow from reservoir 22 to chamber 30, and to a nib or stylus 32 is slidable within chamber 30 and biased downwardly by spring 34 into such a position, nib 32 tends to seal opening 20 to chamber 30. However, when an upward force is applied to the tip of nib 32, force arrow 36, nib slides upwardly and allows paint composition 24 to flow from reservoir 22, through passageway 28 and chamber 30 and outwardly from housing 18, arrows 38 and 40.

This preferred embodiment describes the paint flowing down through the passageway, to the nib and "outwardly" from the housing.

The primary dictionary definition of "to"--"in a direction toward; so as to approach or come near--is the only definition that is consistent with the intrinsic record. While "to" has literally dozens of meanings--depending on the semantic context or the syntactical structure of a given phrase--when used in conjunction with a verb that expresses movement or action (such as "flow"), it does not have the same meaning as "through." The word "to" when used with a verb that expresses movement (such as "flow") means "in a direction toward." See, e.g., Websters II New Riverside University Dictionary. "Through," on the other hand, which also has dozens of meanings, generally signifies "in one side and out the other side of or "in the midst of" or "by means of." Id.

The second step of Claim 13 recites:

(2) passing an amount of detergent solution through said wash load in excess of that necessary to saturate the wash load without mechanically agitating said wash load.


The parties dispute the meaning of "passing . . . through said wash load." Whirlpool contends that "passing an amount of detergent solution through said wash load should be construed as "spin washing the wash load by forcing an amount of detergent solution through the wash load by centrifugal force." Defendants contend that the ordinary meaning applies, i.e., that "passing through" requires the solution to pass "through" the clothes, but not over or around them. Passing through refers to a path that goes in one side of the clothes and out another.

With respect to this step, the specifications provide as follows:

Step 72 is to apply the concentrated detergent solution to a spinning wash load. This is referred [sic] to as the spin wash cycle in that the clothes load is not mechanically agitated, it merely is spun with the wash basket and held by centrifugal force against the basket wall during the spinning while the concentrated solution is applied to the spinning wash load.
'666 Patent, col. 5 ll. 35-41.

[D]uring the spin wash step 72 . . . spin speeds in the range of 420-640 RPM are desirable in order to cause the detergent solution to quickly and directly pass through the clothes load . . . .


[F]orcing the water through the fabric by centrifugal force causes it to take a relatively direct (radial) path through the fabric, as opposed to following a path of least resistance . . .


Whirlpool's definition of "passing . . . through said wash load" adds the concepts of spin washing, forcing, and centrifugal force. These concepts are found in the specifications and in Claim 8, but they are not are not found in Claim 13. Claim 13 simply recites "passing an amount of detergent solution through said wash load." The additional concepts Whirlpool introduces in its proposed construction are not justified by the language used in the claim.

Defendants' proposed construction, which requires the detergent solution to pass "through the wash load, not over or around it," (Def. Claim Constr. Br. at 18), is more true to the claim. Clearly, the intention is that most of the solution will take a direct route through the wash load. Nevertheless, Whirlpool objects to Defendants' introduction of a limitation -- "but not over or around them" -- because such a limitation is not justified by Claim 13 or the specifications. Claim 13 merely recites passing solution through the wash load. It does not state that all of the solution will pass through the wash load or that no solution will ever go over or around the wash load. The specifications also note that the solution will take a "relatively direct (radial) path" through the fabric. '666 Patent, col. 6 ll. 2-3 (emphasis added).

At oral argument Defendants introduced a proposed construction of "passing [detergent solution] through the wash load, not merely over or around." This construction captures the essence of the claim without prohibiting some solution from going around the wash load. Accordingly, the Court will adopt this construction.

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The final claims in need of construction in the '648 patent are Claims 36 and 37, as dependent upon 36. Claim 36 reads as follows: "A method of making a pre-slit injection site having a housing and a septum comprising the sequential steps of: 1) forming a fluid flow path through the housing; 2) inserting the septum into an end region of the housing; 3) applying radially directed resealing forces to the septum; and 4) forming a resealable opening at least partway through the septum either during or after the preceding step." The interpretation of the first three steps is at issue here.

There is very little guidance in the prosecution history or specification as to the proper construction of these phrases, except for step three, which will be discussed below. Therefore, the court had to construe the phrases in light of their ordinary, literal meaning and the context in which they are used in this claim.

First, Claim 36 is a method-of-manufacture claim, requiring that each step be done in order, or sequentially. What is being manufactured in this claim is the injection site. The first step requires the maker to form a fluid flow path through the housing. The parties disagree as to whether this means the flow path must go through the housing piece entirely or whether the path is only the area below where the septum will be placed during the next step. The court concludes, based upon the ordinary meaning of "through," that the fluid flow path must be formed from one end of the housing to the other.

"Through" is defined as: a penetration of or passage within, along or across an object, substance, or space usually from one side or surface to the opposite one; passage from one side to another of an object. This definition indicates that plaintiff meant to convey, in step one, that the fluid flow path was to run from one end of the housing to the other.

Further support for this conclusion can be found in the sequence of steps chosen by plaintiff in drafting the patent. This path is created before the septum is placed in the housing. It would not make sense to interpret the path as ending at an element of the invention that is not yet a part of the invention. In addition, for the path to end at a certain spot along the housing,
where the septum has not yet been put into place, the maker would have to erect a barrier at some point in the path. This would defeat the purpose for the invention: namely, this barrier would prevent the blunt cannula from entering the fluid flow path.

Support from the specification comes from plaintiff's repeated reference to a specific part of the housing when indicating where something is located in the housing. For example, column 2, lines 25-26, state: "The housing can also be formed with the first end including an annular channel," and column 7, lines 59-62, state: "Curved end regions of the members slidably engage the second end of the housing when the piercing member of the blunt cannula has been forced through the pre-formed opening…." A reference to which end of the housing has the fluid flow path is conspicuously absent from the first step of Claim 36. Instead, the claim states the path is formed through the housing.

Plaintiff points to other language in the specification, which it contends demonstrates that the flow path is only formed underneath the septum. Specifically, plaintiff references column 6, lines 52-53, which read: "The resealable septum closes the fluid flow path." Contrary to plaintiff's contention, the court concludes that this language further supports the court's construction of the claim. Closing a path implies that it was previously open. Therefore, the flow path was open until the second step, when the maker inserts the septum and closes it off.

Greenkeepers and Defendant ECCO contest whether the term "lateral stability and traction through the plane of a golf swing" is definite. The other Defendants did not propose a construction or address the definiteness of this claim term in their construction briefs, although they contend that once the word "to enhance" is added, the term is indefinite, a contention that the Court will address infra.

1. The Parties' Contentions

Greenkeepers contend that, under Federal Circuit law, the contested terms are entitled to a presumption of definiteness. (Pls.' Opening 19-21; Pls.' Resp. 22-23.) For "lateral stability and traction through the plane of a golf swing," Greenkeepers aver that the patent specification identifies as the preferred embodiment a set 37.5 degree of outward angulation, that provides a "defined reference baseline from which a person or ordinary skill in the art could determine how much outward angulation . . . is required to provide lateral stability and traction through the plane of a golf swing, without undue experimentation." (Pls.' Opening 20-21.) Greenkeepers continue that commonsense provides that "through the plane of a golf swing" refers to the time period during which a golfer swings. (Pls.' Resp. 25-26.)

ECCO urges the Court to find that "lateral stability and traction through the plane of a golf swing" is indefinite. For "lateral stability and traction," ECCO contends that these indicators are affected by multiple variables, including the orientation of the golf cleats, the action of the foot during the golf swing, and the weather and turf conditions. (ECCO Opening 33-35.)
ECCO continues that the '047 Patent's prosecution history concerns that there is no objective measure for lateral traction and stability, because Greenkeepers distinguished prior art McMullin cleats because there was "no basis" for finding that such cleats inherently enhanced lateral traction and stability, and "depending on the size of the angle, you might or might not achieve that function." (ECCO Resp. 26-28.) As for "through the plane of a golf swing," ECCO avers that this does not make any sense in the claim term, because the golf cleats can only provide traction and stability by interacting with the ground, but the plane of the golf swing does not go "anywhere near the shoes or cleats." (ECCO Opening 32-33 (emphasis omitted).) ECCO contends that Greenkeepers cannot rewrite their claims to replace "through the plane of a golf swing" with "during the golf swing." (ECCO Resp. 25-26.)

2. Analysis

Under 35 U.S.C. § 112, ¶ 2, the claims of a patent must "particularly point[ ] out and distinctly claim[ ] the subject matter which the applicant regards as his invention."

The primary purpose of the definiteness requirement is to ensure that the claims are written in such a way that they give notice to the public of the extent of the legal protection afforded by the patent, so that interested members of the public, e.g., competitors of the patent owner, can determine whether or not they infringe. That determination requires a construction of the claims according to the familiar canons of claim construction.

All Dental Prodx, LLC v. Advantage Dental Prods., 309 F.3d 774, 779-80 (Fed. Cir. 2002) (citations omitted). "A claim is considered indefinite if it does not reasonably apprise those skilled in the art of its scope." IPXL Holdings, L.L.C. v. Amazon.com, Inc., 430 F.3d 1377, 1383-84 (Fed. Cir. 2005). This construction must be understood "in light of the specification of which they are a part. Indeed, a patentee may be his or her own lexicographer by defining the claim terms." Oakley, Inc. v. Sunglass Hut Int'l, 316 F.3d 1331, 1340-41 (Fed. Cir. 2003). Also, a "patentee need not define his invention with mathematical precision in order to comply with the definiteness requirement." Id. at 1341. Because a claim is presumed to be valid, the accused infringer has "an evidentiary burden of clear and convincing evidence to show facts supporting a conclusion of invalidity," Cement Mfg. Corp. v. CTS Cement Mfg. Corp., 587 F.3d 1339, 1351 (Fed. Cir. 2009), and the claim "is indefinite only if [it] is insolubly ambiguous, and no narrowing construction can properly be adopted," Honeywell Int'l, Inc. v. Int'l Trade Comm'n, 341 F.3d 1332, 1338-39 (Fed. Cir. 2003) (quotations omitted).

The Court is not persuaded that "lateral stability and traction through the plane of a golf swing," is "insolubly ambiguous." Id. at 1339. Although "lateral stability and traction" appear to be affected by many different factors, such as weather and turf conditions, and the unique swing and foot action of the golfer, the parties have already agreed that "traction" means "the adhesive friction of a body on a surface" (Pls.' Opening, App'x I, at 1), and an ordinary person trained in the arts, employing commonsense, would understand that "lateral stability" refers to the ability to resist slipping to the side to permit the golfer to maintain balance and control while swinging. Moreover, ECCO's strained reading of "through the plane of a golf swing" as imposing a spatial rather than a temporal limitation, thereby rendering the term nonsensical (ECCO Opening 32-35), fails to show invalidity by clear and convincing evidence; rather, the term can be readily and reasonably understood as referring to lateral stability and traction as a golfer completes his or her golf swing. The Court, therefore, presumes that "lateral stability and traction through the plane of a golf swing" is definite, and adopts Greenkeepers' construction.

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5. through the tubular housing and over the pen to the outlet orifice

P&M construes "through the tubular housing and over the pen to the outlet orifice" as "along the housing and pen to the outlet orifice," meaning that "the air passes from the mouthpiece, over the pen's nib, via the housing." (Pls. Opening Mem. at 18.) Rose Art construes this term as "the passage of air from one end of the tubular housing or elongated hollow tubular casing, on or on top of the entire pen (not just the absorbent nib), and out the other end of the tubular housing or elongated hollow tubular casing," and contends that the term requires that "the air travels within the confines of the tubular housing and passes over the entire pen (not just the absorbent nib)." (Def. Pre-Markman Hr'g Brief at 25.)

Rose Art's suggested construction of the disputed term would exclude the fig. 8 preferred embodiment. In the fig. 8 embodiment: "air is blown through the mouth piece 27 and tube 26 into the barrel 20 from which it passes over the nib 24 to
remove ink particles therefrom which leave as fine spray within the air flow through the nozzle orifice 25." ('886 patent, col. 3, ll. 22-26.) Since the reservoir pen is not entirely encased within the housing in the fig. 8 embodiment, the air does not pass over the entire pen. Rose Art's suggested construction of the disputed term would limit the patent to the figs. 1 and 4 preferred embodiment. Consequently, the Court cannot adopt the construction urged by Rose Art because that construction would limit the meaning of claim 1 to one preferred embodiment. Rodime PLC, 174 F.3d at 1303. Accordingly, the term "through the tubular housing and over the pen to the outlet orifice" is construed as "along the housing and pen to the outlet orifice." Since the entirety of the intrinsic evidence with regard to this term is not ambiguous, the Court did not consider the extrinsic evidence submitted by the parties with respect to this term.

III. RELEVANT LANGUAGE OF THE PATENT-IN-SUIT

The parties agree that what remains at issue before the Court in this Markman process is the correct interpretation of the portion "throughhole passing through the dielectric layer" as used in the claims 1 and 15 of the '555 Patent. Specifically, the '555 Patent claims the following:

1. A deactivatable resonance label, comprising: a dielectric layer having first and second opposed faces;

   a first conducting layer on the first face of the dielectric layer, the first conducting layer being shaped to form an inductor and a first capacitor plate;

   a second conducting layer on the second face of the dielectric layer, the second conducting layer being shaped to form a second capacitor plate, the first and second conducting layers being at least partially superposed, said first and second conducting layers and said dielectric layer forming together and oscillating circuit; and

   shorting means for enabling creation of a short-circuit between the first and second conducting layers when it is desired to deactivate the oscillating circuit, the shorting means being comprised of at least one throughhole passing through the dielectric layer to provide a short circuit path between the first and second conducting layers.

15. A method for fabricating a deactivatable resonance label, said method comprising steps of:

   providing a planar dielectric layer having first and second faces . . . . and

   forming shorting means in the dielectric layer for enabling creation of a short-circuit between the first and second conducting layers when it is desired to activate the oscillating circuit, the shorting means being comprised of at least one throughhole passing through the dielectric layer to provide a short circuit path between the first and second conducting layers.

'555 Patent, col. 7, ln. 33-52; col. 8, ln. 33-34, 47-55 (emphasis added).

IV. CLAIM CONSTRUCTION

The scope of protection provided by a patent is determined by the language of the claims and the brief sentences or paragraphs which "particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention." 35 U.S.C. § 112. The first step in determining the infringement of a patent is an interpretation of the scope and meaning of the patent claims alleged to be infringed, and construction of those patent claims is a matter of law to be decided by the Court. See Markman, 52 F.3d at 979. In order to aid the Court in this determination, the parties submitted written briefs and made presentations at a Markman hearing. The parties have presented competing descriptions of the proper construction of the patent claims.

A. Summary of Positions on Claim Interpretation

1. Checkpoint

Plaintiff Checkpoint argues that the proper interpretation of the claimed dispute of the '555 Patent is that the "throughhole"
is only properly interpreted as its name suggests. That is, the throughhole is a hole (air-filled space, free of dielectric layer material) through one of the energy conducting layers of the resonance labels, which makes the resonance label operate more efficiently and effectively.

Furthermore, Checkpoint argues that the throughhole is a structural implementation that uniquely improves and advances the design of the resonance label, and sets it apart from prior versions of the label.

It is Checkpoint's position that "the 'throughhole' provides a short circuit path between the conducting layers." Checkpoint disagrees with Defendants' definition, infra, of the throughhole as being limited by and distinguishable from Defendants' use even if there is a difference in or there is uniformity of the thickness of the conducting layers. Simply put, Checkpoint argues that the meaning of "throughhole" puts no limitation on where the hole can be put on a conventional label, and that the "throughhole" works regardless of what the thickness of the label is like where the hole is placed. To that end, Checkpoint argues that the patentee did not and would not have disavowed having the hole in an area of reduced thickness, as Defendants suggest.

As a matter of law, Checkpoint states that the Federal Circuit's recent ruling in Phillips v. AWH Corp. controls the proper construction of a patent's claims in support of Checkpoint's proposed meaning of "throughhole". 415 F.3d, 1303, 1312 (Fed. Cir. 2005). Specifically, Checkpoint argues that the court in Phillips has stated that an inventor's claims should be used to determine what he regards as his invention when there is an ambiguous claim term, but should not necessarily limit the scope of the patent's protection. Id. at 1312, 1323.

2. All-Tag

Defendant All-Tag relies on a different reading of the Phillips court's pronouncement that the specification "is always highly relevant to the claim construction analysis . . . [and] [u]sually, it is dispositive; it is the single best guide to the meaning of a disputed term." I d.

All-Tag argues that claim construction turns on the meaning of the word "throughhole" and the word "layer" as used intrinsically, in the context of the entire claim. All-Tag's position, based on its reading of Phillips is that because "throughhole" and "layer" are not ordinary terms of art, the specification and prosecution history, rather than the inventor's claims, should be used to construe the terms for purposes of determining the validity of the '555 Patent in the Defendant's favor. According to All-Tag, Checkpoint's construction of the "throughhole" as a "space" cannot survive the specification and prosecution history analysis set forth and required by Phillips.

Furthermore, All-Tag argues that its use -- selective reducing of the thickness of a layer in the resonance label -- is specifically critical of and inapposite to the asserted design of the '555 Patent. Thus, All-Tag's position is that its product and design do not infringe upon the '555 Patent.

3. Sensormatic

Defendant Sensormatic's argument parallels Defendant All-Tag's in that Sensormatic states that the term "throughhole" must be construed according to specification and prosecution history in accordance with legal principles of claim construction. Specifically, Sensormatic argues that the term "throughhole" did not appear in the original application for the '555 Patent. Rather, "throughhole" was added to the application for the express purpose of distinguishing the "hole through the layers design" (Checkpoint's alleged use) from the "reduced thickness in layers design" (All-Tag & Sensormatic's alleged use).

B. Interpretation of the Terms of the '555 Patent

There is no dispute that both Plaintiff's and Defendants' proposed labels are workable, functional structures. Therefore, the language of the claims and the brief sentences or paragraphs must "particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention." 35 U.S.C. § 112. Furthermore, in order for the Court to accept Defendants' construction of "throughhole" such that the functional "hole through the layers design" is distinguishable from the functional "reduced thickness in layers design", the record must reflect the patentee's clear intent to disavow placement of the hole in some area of reduced, or otherwise non-uniform, thickness. See Katz, 63 F. Supp. 2d at 591 (citing York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1572 (Fed. Cir. 1996)) ("[u]nless altering claim language to escape an examiner rejection, a patent applicant only limits claims during prosecution by clearly disavowing claim
coverage,' that is, by making a statement that concedes or disclaims coverage of the claims at issue based on a piece of prior art.

Checkpoint's proposed construction of "throughhole" is consistent with the context of the patent claims. Claims 1 and 15 describe a "throughhole passing through the dielectric layer to provide a short circuit path between the first and second conducting layers". (col. 7, ln. 49-52; col. 8, ln. 51-55.) Defendants' proffered construction describes "an opening extending through the entire, predetermined, uniform thickness of the dielectric layer". (Def. Sensormatic Electronics Corp.'s Initial Claim Construction Brief 24; All-Tag Defs.' Brief on Claim Construction at 24.) However, this construction imposes a limitation that is inconsistent with the language evidenced by the patent claims.

The prosecution history supports the inventor's use of the term "throughhole" inasmuch as the term "throughhole" was used in place of "hole or cut" without any additional qualification or disavowal of a specific thickness of the layer through which the hole or cut is made. Furthermore, the language in the '555 Patent specification that describes the absence of "[e]ffects such as fluctuations in thickness" (col. 2, ln. 45-47) is properly understood in the full context of the claim as the manner in which deactivation occurs, not a departure from the prior art regarding fluctuations in thickness of the dielectric layer. ('555 Patent, fig. 3; see col. 3, ln. 48-49 and col. 6, ln. 45 (illustrating an embodiment of the invention where the dielectric layer is reduced in thickness)). Rather, it is the continuous hole that is the deviation from prior art and therefore the inventor's invention. (col. 4, ln. 11-13.)

V. CONCLUSION

Having found no clear intent on the part of the patentee to require uniform thickness in the material penetrated, this Court concludes that the term "throughhole" and layer as used in the claim "throughhole passing through the dielectric layer" means "a space between the first and second conducting layers free of dielectric layer material". Furthermore, "throughhole" is not an ambiguous term. This term is construed in accordance with the claim and specification, and dictated by its ordinary and customary meaning. The Court agrees with Checkpoint's proposed construction because it is supported by the consistent use of the word "through" in the claim language ("one through hole passing through the dielectric layer"), in the context of the entirety of the invention, and construed in accordance with the specification. See Markman, 52 F.3d at 979 (stating that claims must be read in view of the specification of which they are a part.). Claim 1 only qualifies the term "throughhole" as "passing through the dielectric layer," and does not include language limiting a throughhole to an area of uniform thickness in the dielectric layer. Therefore, the construction of "throughhole passing through the dielectric layer" as "a space between the first and second conducting layers free of dielectric layer material" is proper as evidenced by the patent's claim, the specification, and the prosecution history. An appropriate Order follows.

AMENDED ORDER

AND NOW, this day of February, 2007, IT IS HEREBY ORDERED AND DECREED that the Court's January 24, 2007 Order (Doc. 213) is AMENDED as set forth herein and as set forth in the accompanying memorandum.

Upon consideration of the briefs and materials submitted by the parties, and after a Markman hearing on patent claim construction, it is hereby ORDERED that the disputed term "throughhole" in the claims of United States Patent No. 4,876,555 (the '555 patent) shall be construed to have the definition herein assigned to it. The Court concludes that "throughhole" means "a space between the first and second conducting layers free of dielectric layer material".

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H. "Through," "Throughout," and "Throughout the Entire":

"Throughout the substrate" (claims 1 and 2)

"Through the substrate" (claim 3)

"Throughout the entire substrate" (claim 7)

Ixys and APT disagree as to whether the terms "through," "throughout," and "throughout the entire," which are collectively employed five times in claims 1, 2, 3, and 7 of the '202 patent, necessitate that the transition metal that is to be deposited

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"throughout" or "through" the substrate be diffused into the entire substrate, or merely into certain layers. The dispute over these terms stems in part from the slightly different contexts in which the words are used, and the parties make a number of different arguments specific to particular claims in particular contexts. In order to deal with these various arguments in as clear and through a manner as possible, the court will address each section of claim language (and the arguments accompanying it) separately.

1. "Throughout the Entire Substrate" (claim 7)

This claim term offers a useful starting point because the parties agree on its meaning. The court construes this claim language to mean: "Through every part of the substrate."

2. "Throughout the Substrate" (claim 1)

This phrase appears in two places within claim 1. In order to better elucidate the context in which the term is used, the entire section involving this term is reprinted here:

`diffusing the metal atoms throughout the substrate at a temperature within said range, including:

diffusing a first portion of the dose throughout the substrate; and

diffusing a second portion of the dose in a gradient band near a selected surface of the substrate.``

'202 patent, Claim 1 (emphasis added). The claim language itself, within the context of the terms surrounding it, forms the starting point of any construction analysis and is the most important factor that a court must consider, and thus the court will address the contextual understanding of this language first. Vitronics, 90 F.3d 1582. In this claim, the language at issue appears to be establishing a comparison between two steps, and two types, of diffusion: the metal atoms are diffused through every part of the substrate in two steps, the first being a broad diffusion of atoms through every part of the substrate, and the second a more limited diffusion in just a gradient bandwidth near the substrate surface. The implicit contrast is between the "first portion" of the dose which is diffused ubiquitously, and the "second portion," the deposition of which is limited to the area near the surface of the substrate.

APT, the owner of the '202 patent, protests that the specifications and the very nature of the invention militate strongly against reaching such a conclusion and teach away from finding a requirement that transition metal pervade the entire substrate. APT points to three sections of the specifications that it claims represent preferred embodiments that do not require metal through "every part" of the substrate and thereby support its position. As this court has noted previously, it is presumptively unreasonable and improper to construe the claims in such a way that a preferred embodiment is excluded. See id. at 1582.

However, the three parts of the specifications relied upon by APT do not significantly aid its position. APT first references Figure 17, a graph of transition metal concentration vs. depth within the semiconductor for different types of dose and diffusion mechanisms. '202 patent, Figure 17. APT notes that at a certain depth (the x-axis of the chart is unmarked, and so that depth is unknown), the line graph showing the concentration of atoms intersects the x-axis (presumably implying that the concentration is zero); APT therefore concludes that the transition metal "extends only partially into the semiconductor." APT's Opening Br., at 11. However, the y-axis of this graph also lacks a label, and so there is no indication that the x-axis actually represents the point at which transition metal concentration equals zero. Rather, it may be that the graph is in some sense "normalized" based on the diffusion of the "first dose" throughout the substrate; the background concentration of transition metal is dropped from the analysis, and the graph itself represents only the concentration due to the diffusion of the second portion above the already extant level.

APT also points to two sections within the same paragraph of the specifications. The first of these two sections is rather opaque, and as such sheds little light on the current issue. The specifications teach that "Low lifetime control doping in the bulk of the epitaxial layers combined with a higher concentration near the substrate surface adjacent the PN junction can provide the best effect." '202 patent, 24:8-12. This language does not employ the word "throughout," nor does it preclude diffusion throughout the entirety of the substrate, since the specification language does not indicate whether the substrate may be doped only in the epitaxial layers, or additionally elsewhere. The second of these sections essentially mirrors (in
First, the substrate is lightly dosed with, e.g., 10<11> Pt atoms/cm<2>, and diffusing the Pt atoms throughout the device at first elevated temperature, e.g., 850 [degrees] -865 [degrees] C. for one hour for a PIN. Second, an additional dose of Pt atoms is applied to a selected surface of the device and is diffused at a higher temperature, e.g., 950 [degrees] -1100 [degrees] C. for 5-20 seconds (rapid thermal anneal) such that the additional dose is retained in a gradient band near the selected surface.

APT's final argument with reference to the particular language in Claim 1 draws upon the fact that both parties have agreed that "throughout the entire substrate" in Claim 7 means that metal must be diffused in every part of the substrate. APT contends that adopting Ixys' position and construing "throughout" to mean "through every part of" would eviscerate any possible meaning that might be attached to the word "entire." See, e.g., Apple Computer, 234 F.3d at 25 (Fed. Cir. 2000). APT is certainly correct about this fact; however, such arguments from linguistic logic are not, by themselves, sufficient to overcome the plain language and context of the disputed claim terms themselves. Finally, Ixys notes that the plain meaning of the word "throughout" is "in, to, through, or during every part of; all through." American Heritage Dictionary of the English Language (4th ed. 2000). The dictionary definition of a word is hardly decisive in this context, but it does serve to buttress the impression that the claims and specifications have already made.

APT offers one additional argument related to the phrase of claim 2 that describes "diffusing the metal atoms throughout the substrate at a temperature within said range." '202 patent, claim 2. Claim 7 is a dependant claim based upon claim 2 which describes "The fabrication process of claim 2 wherein the transition metal is tailored to have a relatively shallow profile compared to a completed diffusion throughout the entire substrate." '202 patent, claim 7. APT protests that if the diffusion process described in claim 2 already involves spreading transition metal atoms throughout the entirety of the substrate, the process described in claim 7 (which is dependant upon claim 2) must contain all the limitations of the claim 2 process, and thus cannot simultaneously include metal diffused throughout the substrate and "have a relatively shallow profile compared to a completed diffusion throughout the entire substrate."

If a "shallow profile" literally meant that there could be no transition metal atoms deposited below a certain (shallow) depth, APT would seem correct in noting this inconsistency. However, the parties have already agreed that a "shallow profile compared to a completed diffusion throughout the entire substrate" must be understood to mean that "there is a higher concentration of transition metal atoms near the surface of the substrate, and a lower concentration of transition metal atoms in the substrate, than there would be with a completed diffusion throughout the entire substrate." See (G), supra. It is entirely possible to comply with both requirements simultaneously: a substrate would contain metal throughout every part, but a lower concentration would be present at greater depths (and a higher concentration present at shallower depths) than would exist after a "completed diffusion" (namely one in which no metal is purposefully retained near the surface in a gradient band). APT's contentions on these grounds thus lack merit.

APT's final argument seizes upon the language of dependant claim 3, which directs one skilled in the art to diffuse the transition metal "through the substrate" using a rapid thermal anneal process. APT notes correctly that the only discussion of the "thermal anneal" process within the specifications comes in reference to the deposition of the "second portion" of the transition metal dose. There, the specifications state that the second portion of the dose is diffused according to "(rapid thermal anneal) such that the additional dose is retained in a gradient band near the selected surface." '202 patent, 24:19-21. This conclusive linkage between a "thermal anneal" process and the diffusion of atoms only within a thin band near the surface of the substrate provides a strong indication that the word "through" in this claim cannot mean "throughout the entirety" of the substrate.
APT also argues that it is physically impossible to diffuse transition metal throughout an entire substrate using a rapid thermal anneal process. See APT's Opening Br., at 12. Since claims are to be construed as they would be understood by an individual skilled in the art, there is certainly good reason not to read a claim to create a physical impossibility. However, APT cites to know scientific authority, intrinsic or extrinsic, for this proposition, and thus the court will not consider it further.

APT's reasonably strong showing that "through" should be construed in such a way that it does not require that metal be diffused throughout the entirety of the substrate creates additional problems in this analysis. Claim 3 is a dependent claim of claim 2 that describes a specific process for diffusing "the selected transition metal," and claim 2 requires "diffusing the metal atoms throughout the substrate." If claim 2 is construed such that metal must be diffused into every part of the substrate, Claim 3 must contain the same limitation. Reciprocally, if claim 3 does not require that transition metal be diffused throughout the entire substrate, claim 2 must not either. And if the word "throughout" in claim 2 does not require diffusion throughout the entire substrate, the desire for harmony among the claims would militate against construing the term "throughout" in claim 1 to require diffusion throughout the substrate and thereby attaching to it a meaning different than the same term in claim 2.

The ties among these claims leaves this court with very little choice but to construe them all in congruent fashion, and in the face of conflicting and essentially irreconcilable implications in the claims and specifications (as well as the dictionary). Although both parties have put forth reasonable cases, it seems to the court that the preponderance of the evidence weighs in favor of attaching to "throughout" and "through" the meanings that the plain language and the structure of the claims themselves would most appear most clearly to dictate. The court construes all of the claim terms at issue here to mean: "Throughout every part of the substrate."

2. The term "thumbwheel" in claim 34 is construed as "an input device consisting of a dial or wheel, inset into a surface so that only a portion of its rim protrudes, and that can be rotated either clockwise or counterclockwise around its axis;"

Although the district court concluded that the specification supports its construction of "tie yarns," we disagree. The portion of the specification that refers to tie yarns as "not visible from the face side of the fabric," '401 patent, col. 3, ll. 50-51, is found in the description of the "3-end knit." The specification does not indicate that the 3-end knit is implicit in claim 17, or that the characteristic of the tie yarns described in that portion of the specification, i.e., not being visible from the face side of the fabric, is necessarily found in structures other than the 3-end knit. Thus, according to its terms, claim 17 would read on a fabric that uses only two yarns--a nap yarn forming the back layer of the knit, and a tie yarn performing the functions of tying the back layer of the knit to the face layer and making up the face layer itself.

Moreover, claim 18, which depends from claim 17, adds the limitation that "said knitted face layer further includes a plurality of flame resistant face yarns which follow substantially identical parallel paths along said knitted face layer as said flame resistant tie yarns, said face yarns forming a face surface on said knitted face layer which is adapted to face the garment wearer." The addition in claim 18 of the limitation requiring a face surface formed of face yarns (that is, stitch yarns) suggests that claim 17 does not require that the face layer include face yarns, much less that it consist exclusively of face yarns. See Phillips, 415 F.3d at 1314-15 ("[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim."). Although it is possible to distinguish claim 18 from claim 17 by reference to the additional limitation in claim 18 that the face yarns "follow substantially identical parallel paths along said knitted face layer" as the tie yarns, the most conspicuous difference between claims 17 and 18 is the addition of the "face yarn" limitation. Therefore, absent a clearer indication that the "face yarn"
limitation was included in claim 17 by implication, we conclude that the difference between claims 17 and 18 supports Southern Mills' argument that claim 17 does not require the presence of a separate "face yarn" or stitch yarn.

Based on the language of claim 17 and its context, we therefore conclude that the district court's ruling that tie yarns are "not visible from the face side of the knit" is erroneous as applied to claim 17. While the patent makes clear that tie yarns are not visible from the face side of the fabric in the "3-end knit" that is recited in most of the claims, that is not true of claim 17, which does not require the use of the "3-end knit," either expressly or by clear implication. Because we disagree with the district court's construction of the term "tie yarns" as applied to claim 17, and because the parties agreed to a consent judgment based on the court's claim construction order, we reverse the judgment with respect to claim 17 and its asserted dependent claims. The judgment is otherwise affirmed.

A. "Tight Joint"

The court determined that "water tight" and "water tight joint" are terms defined within the patents: "A joint is water tight when standing water will not penetrate the joint for several hours." (970 patent col. 3 ll. 43-44." (See Order 11, May 12, 2006.) Alloc urges the court to give the term "tight joint" the same meaning that it gave the terms "water tight" and "water tight joint": "a joint that will not allow standing water to penetrate for several hours." Pergo argues that "tight joint" is broader than "water tight" and refers to a joint that will not allow water or dirt from penetrating the joint. See '970 patent col. 3 ll. 29-31 ("Of course, without any substantial gaps between the panels, water and dirt are prevented from entering the assembled panels, flooring or wall covering.").

The court determines that "tight joint" is broader than "water tight joint" and means that neither dirt nor water may penetrate the joint. With respect to water, "tight joint" means that standing water will not penetrate the joint for several hours. See '970 patent col. 3 ll. 40-43 ("... to bring said panels into forming a tight joint such that the joint is said to be waterproof or water tight. A joint is water tight when standing water will not penetrate the joint for several hours.").

(3) Center Tilt Mount

Claims 1, 44, 45, 49-52 of the '988 Patent also uses the phrase "center tilt mount." Innovative asserts that center tilt mount should be construed according to its ordinary meaning as a "a center mount configured to tilt." Defendants again look to the patent specification to advance a narrower claim construction, arguing that center tilt mount means "a cast mount having a generally square shaped base with stops on the inner surface of the base, flanges having shaft holes for accepting a shaft, and a rivet hole in the center of the base." Defs' Markman Br. p. 25, (citing '988 Patent, Ex. E. col. 4 ll. 52-67). For the reasons stated above, the court will adopt Innovative's construction and find that "center tilt mount" means "a center mount configured to tilt."
tilting. (D.I. 53 at 12.) Accordingly, Defendants ask that "tilt valve" be construed to mean "a conventional off-the-shelf valve as generally known and widely used in dispensing apparatuses in which the valve is designed to be opened by tilting a hollow stem of the valve which is resiliently held on a container mounting cup by a rubber grommet." (Id.)

The parties thus agree at least that a tilt valve can be opened by tilting. Whether such a valve can also be opened by axial displacement goes to the parties' dispute over whether Defendants' accused products infringe the '064 patent, not to whether the '010 PCT publication discloses a tilt valve.

The '010 PCT publication mentions a "tilt valve" in only one passage, which states, in relevant part:

It should be noted that the boss portion 224 is only one of many possible fittings for the top piece 226. The top piece 226 is a standard open top cone and may, in other embodiments, have other valve assemblies fitted therein. For example, a standard aerosol valve such as a spray valve or tilt valve (for dispensing cream, etc) may be fitted. It should also be noted that the upper profile of the piston assembly may require modification to accommodate components of such valves which protrude into the body of the can. This may be achieved using the hollow stem of the secondary (uppermost) piston to make room for the valve components when the piston assembly is in its uppermost position.

(D.I. 72, Ex. A at A-23.)

Rocep asserts, see infra at 11-13, that the use of the term "tilt valve" in the '010 PCT publication is to help define the type of "top cone" to be used with the valve disclosed in that publication. 2 (D.I. 70 at 9.) That argument does not suggest that "tilt valve," as the term is used in the '010 PCT publication, means something different than it does in the '064 patent. However, even if one were to interpret Rocep's argument to mean that "tilt valve," as used in the '064 patent, somehow means something different than the same words in the '010 PCT publication, the dispositive rejoinder is that no one has directed my attention to any evidence in the record indicating any difference. Nothing in the foregoing passage from the '010 PCT publication suggests a meaning for "tilt valve" that is other than the meaning conveyed in the '064 patent.

2 According to Rocep, "the reference to the tilt valve was for defining the type of cone (container) that the inventor considered to be useful with his dispenser. That is, he was defining the type of cone that could be used as the kind that is sometimes used with spray or tilt valves." (D.I. 70 at 9.)

I will therefore construe the term "tilt valve," for purposes of addressing the Defendants' invalidity motion, as meaning the same thing in the '064 patent and in the '010 PCT publication, and covering "a valve that can operate at least by tilting." 3

3 Were I addressing the summary judgment motions on infringement, I would feel the necessity to construe this term in a way that would address and resolve the "axial displacement" issue, which the foregoing construction does not attempt.

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A. Claim Construction

"Claim language generally carries the ordinary meaning of the words in their normal usage in the field of invention "at the time of invention. Invitrogen Corp. v. Biocrest Mfg., L.P., 327 F.3d 1364, 1367 (Fed. Cir. 2003). The specification generally provides the context for claim interpretation. Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005). "It is important to keep in mind that the purposes of the specification are to teach and enable those of skill in the art to make and use the invention and to provide a best mode for doing so." Id. at 1323. Courts, however, must be careful to avoid reading
limitations from the specification into the claims. Comark Commc'ns, Inc. v. Harris Corp., 156 F.3d 1182, 1186 (Fed. Cir.1998). The line between construing claim terms and importing limitations from the preferred embodiments into the claims "can be discerned with reasonable certainty and predictability if the court's focus remains on understanding how a person of ordinary skill in the art would understand the claim terms." Phillips, 415 F.3d at 1323.

The district court determined that the claim term "tip" requires "a separate elongated attachment to be fitted to the connecting body." The claims recite "a solid metal tip." Claims 1 and 2, for example, require "bending a solid metal tip." '714 patent, col. 17, ll. 49 to col. 18, ll. 59, 61. Claims 1 and 2 also require drilling or forming a passageway in the tip. Id. Claim 2, further recites "[a] method of making a transducer activated tool tip." Id. Additionally, claim 2 requires the tip to have inlet and outlet ends, further suggesting an independent attachment.

The specification also consistently describes the invention in a manner that suggests the tip is a separate attachment. For instance, the "Abstract" describes the "invention" as "provid[ing] a method of making a transducer activated tool tip." '714, Abstract (emphasis added). The tip consists of: (1) a substantially linear tip body,(2) a fluid inlet end, and (3) a subgingival fluid outlet end. Id. Under the heading "Method of Making a Tool Tip and Tool Tip," the specification states: "[t]he tip is typically attached to an electro-mechanical part or section that can be induced to vibrate." Id. at col. 1, ll. 50-52 (emphasis added). Under this section, the specification further states "[g]enerally, the tip must be small in cross-section, ideally having a pointed tip . . . . More preferably the tapered cross-section extends about 10 mm from the distal tip end." Id. at col.2, ll.3-9 (emphasis added). Thus, the specification distinguishes "the tip" from the "pointed tip" and the "distal tip end," suggesting "the tip" is a discrete component and the "pointed tip"/"distal tip end" is a region of the tip.

Under the heading "Objects of the Invention," the patent describes"the object of the invention:" "to provide an insert" for an ultrasonic tool. The ultrasonic tool, in turn, is "a handpiece . . . a connecting body . . . and a tip, axiallyattached to the connecting body." Id. at col.3, ll.41-49 (emphasis added). Under the heading "Summary of the Invention," the specification again describes "the object of the invention:" "to provide an insert" for an ultrasonic tool. The tool then receives the same three-part description. Id. atcol.5, ll.65-68 to col.6, ll.1-6 (emphasis added). Thus, the term "tip" refers to an attachment.

Similarly, the preferred embodiment in Figure 3 below receives the following description:

The tip 20, the operative portion of the ultrasonically activated tool, comprises a smaller diameter distal tip portion 43S for contacting tooth surfaces, larger diameter portion 43L and a shank portion 44 that is secured to the connecting body 15. Smaller diameter portion 43S intersects larger diameter portion 43L at a tip surface angle transitionline L. The connecting body includes a counter bore for receiving the tip shank 44 which may be secured by brazing, mating threads or the like. A fluid passageway 45, described in detail below, formed interior to the tip element or body, exits through an internal or side wall in the tip to provide a fluid discharge orifice 46.

[SEE [title of photograph] IN ORIGINAL]

Id. at col.9, ll.20-23. This embodiment clearly illustrates the tip 20, as a separate attachment having a distal tip portion 43S and a tip shank portion 44. Indeed, the specification describes every preferred embodiment in a similar manner. Accordingly, both the claim language and the specification amply support the trial court's interpretation.

Claim Construction

Prior to trial, this Court held a hearing at the request of the parties for the sole purpose of construing the word "tip" as it appears in claims 1, 8 and 15 of the '064 Patent and claims 1 and 8 of the '125 Patent.

In an infringement action, the court first must determine the scope and meaning of the patent claims. See Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1454 (Fed. Cir. 1998). Claim construction presents a question of law to be decided by the Court. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995), aff'd, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996).
The Court of Appeals for the Federal Circuit had occasion to restate and clarify the standards for claim construction in Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Phillips emphasizes that "[i]t is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" Id. at 1312 (citations omitted). The "words of a claim 'are generally given their ordinary and customary meaning,'" which "is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." Id. at 1312-13 (citations omitted). "[T]he person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." Id. at 1313. The specification may be the "single best guide to the meaning of a disputed term." Id. at 1315 (citation omitted). If it is in evidence, the prosecution history may also have important bearing on the meaning of a claim term, but it may lack the clarity of the specification and, hence, may be less helpful. Id. at 1317.

A court may resort to extrinsic evidence, though it is of less significance and less value to the claim construction process. Id. at 1317. Extrinsic evidence "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." Id. (citations omitted).

After hearing the parties and reviewing their evidence, I construed the term "tip" as used in the patent claims to mean "that which serves as the end, cap or point of an object." (See 4/29/2005 Claim Construction Hrg., Tr. 52)

Claims 9 and 30

The pertinent language in claims 9 and 30 describe the detachable

"tip [as] comprising . . . a suction tube for aspirating irrigation fluid from the irrigation site, the suction tube having a fluid path that channels aspirated irrigation fluid externally of the handpiece and directly to a suction source, the suction tube and irrigation tube being detachable together from the handpiece whereby the tip can be discarded, enabling the handpiece to be reused . . . ." 1

452 Patent, Col. 8: 11, 18-24; Reexamination Cert., Col. 1: 55, 62-66; Col. 2: 1-2, 50-51, 58-64 (emphasis added). The specific language that Defendant identifies as the subject of this dispute is a "tip comprising" a "suction tube having a fluid path that channels aspirated irrigation fluid externally of the handpiece and directly to a suction source." Memorandum in Support of Defendant Stryker Corp.'s Renewed Motion for Summary Judgment at 6 (emphasis added). The parties concentrate on the meaning of the phrase "externally of the handpiece."

The Court first looks to the specific words in the claims and the context of the surrounding words. See generally Phillips, 415 F.3d at 1314. Both claims require that the detachable tip be comprised of a suction tube which has a fluid aspiration path that travels externally of the handpiece. The most telling language in the patent is the consistent and unequivocal claims' language that describes the tip.

The Court finds that the description of the tip in the patent's other claims gives considerable guidance in interpreting claims 9 and 30. See Phillips, 415 F.3d at 1314 ("The usage of a term in one claim can often illuminate the meaning of the same term in other claims."); see also Fromson v. Advance Offset Plate, Inc., 720 F.2d 1565, 1570 (Fed. Cir. 1983)("Significant evidence of the scope of a particular claim can be found on review of other claims."). Both claims 1 and 4 describe the tip as comprising "a suction tube for aspirating irrigation fluid from the irrigation site, the suction tube having a fluid bypass path within the detachable tip which channels aspirated irrigation fluid directly to a suction source so that aspirated fluid within
the suction tube does not enter" the handpiece. 452 Patent, Col. 7: 11-17, 31-32, 38-43 (emphasis added). The language in claims 1 and 4 require that the tip include both a suction tube and a fluid bypass path.

Claim 11 provides that the tip have a "suction tube for aspirating fluid from the site and a bypass fluid path in fluid communication with the tip suction tube . . . ." 452 Patent, Col. 8: 58-61. Claim 11 states that the tip have a suction tube and a bypass fluid path. Claim 7 provides for a "tip comprising . . . a suction tube for aspirating fluid from the irrigation site; and . . . the suction tube being in communication with a bypass fluid path which bypasses the interior of the handpiece to prevent the aspirated fluid within the suction tube from entering the interior of the handpiece." 452 Patent, Col. 7: 56, 58-59, 62-65; Reexamination Certificate, Col. 1: 34, 36-37, 40-43 (emphasis added). Claim 6 describes the tip "as defined by claim 4 wherein the fluid bypass path terminates at an open end suitable for connection to a suction source." 452 Patent, Col. 7: 49-51. Claim 15 provides that the tip have a "fluid bypass path associated with" it. 452 Patent, Col. 9:13. A consistent theme is emphasized throughout the claims -- that the tip include a suction tube and a bypass fluid path.

The Court concentrates on the description of the tip throughout the claims. "Claim terms are normally used consistently throughout the patent . . . ." Phillips, 415 F.3d at 1314. The claims' language consistently and clearly claims that the tip include a fluid bypass path within the tip. "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." Id. Reading the terms describing the tip in the claims in accord with their commonly understood meaning and in a consistent manner (as evidenced by their similar application throughout the claims) the Court concludes that a person of ordinary skill in the art would interpret the language of claims 9 and 30 as requiring that the device include a bypass path within the tip. The claims' language is clear in that the only manner in which the aspirated fluid flows externally of the handpiece is as a direct result of the bypass path contained within the tip. This interpretation is consistent with the clear purpose of the invention in avoiding contamination of the handpiece.

This interpretation is also consistent with the abstract. The abstract states that

"suction is provided through a suction tube which has a bypass conduit in the tip. The bypass conduit is directly connectable to a suction source so that aspirated debris passes through the tip to the suction source. The suction tube thus prevents aspirated debris from entering the conventional suction tube in the handpiece and contaminating the handpiece."

452 Patent, Abstract (emphasis added). Courts "frequently look[] to the abstract to determine the scope of the invention. . . ." Hill-Rom Co., Inc. v. Kinetic Concepts, Inc., 209 F.3d 1337, 1341 n.* (Fed. Cir. 2000). The Court finds that the specific and unambiguous language of the abstract provides that the tip contain a bypass path -- noted as a "bypass conduit."

The summary of the invention also supports the premise that the tip contain a bypass path. "It is among the objects of the invention to provide combination suction and irrigation tip that is detachably connectible to a handpiece and in which biological debris aspirated through the suction lumen bypasses the handpiece." 452 Patent, Col. 2: 53-56 (emphasis added). The language describing the tip is consistent with the claim's requirement that the tip contain a fluid bypass path that allows the aspirated fluid to bypass the handpiece and proceed directly to a suction source.

The illustrative embodiments of the 452 patent also emphasize the premise that the tip include a fluid bypass conduit.

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GET DRAWING SHEET 2 OF 7
GET DRAWING SHEET 3 OF 7

The tip 16 includes an inner (suction) tube 46 coaxially aligned within an outer (irrigation) tube 48, a flexible, funnel-shaped splash shield 54, and a connector 56. The suction tube 46 provides a direct pathway 50 for suction from the tip distal end 32 to a suction source. . . . Aspirated debris therefore never enters the handpiece 10.

452 Patent, Col. 3: 67; Col. 4: 1-7 (emphasis added).

The suction tube 46 is supported within the irrigation tube 48 at one end by an outlet nozzle 58, and at the other end by an elbow shaped conduit 60. . . . The suction tube 46 is sealed to both the outlet nozzle 58 and elbow-shaped conduit 60 to form a continuous suction lumen 64 from the tip distal end 32 to the tapered lower end 62 of the elbow 60 to which the suction tubing 20 from a suction source may be connected.


Although the elbow shaped conduit 60 is shown as extending from the proximal end of the suction tube 46, it may depend from any part of the suction tube 46. In an alternative embodiment, for example, the suction tube 46 is about half the size as it is in the preferred embodiment and the elbow shaped conduit 60 may connect to the suction tube 46 within the irrigation tube 48.

452 Patent, Col. 4: 25-31 (emphasis added). "When in use, the tip 16 is connected to the handpiece 10 and the flexible suction tubing 20 is connected to the tapered lower end 62 of the elbow shaped conduit 60." 452 Patent, Col. 6: 45-47 (emphasis added).

This language is consistent with the claims' language that the tip contain a bypass path. The tip contains an alternative avenue, represented in one of the embodiments by an elbow shaped conduit, in which the aspirated debris travels. The Court is mindful that this is not the only embodiment of the bypass conduit. Most telling is the specification's language that "although the elbow shaped conduit 60 is shown as extending from the proximal end of the suction tube 46, it may depend from any part of the suction tube 46." 452 Patent, Col. 4: 25-27 (emphasis added). This language is clear and consistent with the claims' language -- that although the bypass conduit may extend from any portion of the suction tube, it extends from the suction tube in the tip. The Court finds that the language of the illustrative embodiment does not limit the placement of the bypass conduit to where it originates from the tip (as noted by the permissive language "it may depend from any part of the suction tube") but it does limit the conduit to placement somewhere about the tip.

The prosecution history also supports the interpretation that the tip contain a bypass conduit. A preliminary amendment provided that:

The invention provides an arrangement by which the flow path of aspirated material is diverted away from and bypasses the handpiece. To that end, the detachable tip 16 has a suction tube 46 with, a conduit 60 that defines a fluid bypass path that prevents aspirated material from being channeled into contact with the handpiece . . . .

Memorandum in Support of Defendant Stryker Corp.'s Renewed Motion for Summary Judgment Ex. C. at 5 (emphasis added). Most notable in this passage is the clear and concise statement that the tip "has a suction tube . . . with a conduit . . . that defines a fluid bypass path . . . ." This language is consistent with the claims' language that the detachable tip include a suction tube with a bypass path.

A person of ordinary skill in the art is deemed to read the claim terms not only in the "context of the particular claim in which the disputed term appears, but in the context of the entire patent . . . ." Phillips, 415 F.3d 1313. The Court finds that when the patent is read as a whole -- it is clear that this is one of the instances where the meaning of the claim terms is readily apparent to "lay judges" as a result of the clear and consistent application of similar language describing the tip throughout the patent. See generally id. at 1314. The manner in which the tip directs the aspirated fluid "externally of the handpiece" is as a direct result of the bypass path contained in the tip. The Court concludes that a person of ordinary skill in the art would understand that the language of claims 9 and 30 requiring a "tip comprising" a "suction tube having a fluid path that channels aspirated irrigation fluid externally of the handpiece and directly to a suction source" requires that the tip include a bypass path.
The parties dispute the construction of "tip of the waveguide." Claim 1 recites "a waveguide having a tip for communicating electromagnetic radiation in a propagation direction to the tip of the waveguide." Claim 25 recites "a waveguide having a tip . . . the waveguide for communicating electromagnetic radiation in a first propagation direction to the tip of the waveguide." AMS proposes as a construction "the distal end portion of the waveguide, including any separate component(s) coupled thereto in a manner that prevents internal reflection at any interface between the components (for example by fusing or a transparent, index-matched adhesive)." LP proposes "a prism or the far end of the optical fiber having a core cladding over a fiber core."

The Court first considers LP's argument that "waveguide" is limited to an "optical fiber." AMS did not propose a construction for "waveguide," but argues that "waveguide" cannot be construed as only an "optical fiber" because claim 2, which depends from claim 1, recites "wherein the tip of the waveguide comprises a fiber optic segment." Similarly, claim 16, which indirectly depends from independent claim 7, recites "wherein the waveguide comprises an optical fiber." Under the doctrine of claim differentiation, these recitations create a presumption that the waveguide should not be limited to an optical fiber. See Nazomi Commc'ns, Inc. v. Arm Holdings, PLC, 403 F.3d 1364, 1370 (Fed. Cir. 2005).

LP contends that the waveguide is limited to an optical fiber because the title of the '699 Patent recites an optical fiber, the only waveguide taught in the '699 Patent is an optical fiber, and the '699 Patent uses the terms "waveguide" and "optical fiber" interchangeably. The title of a patent is nearly irrelevant to claim construction. See Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1312 (Fed. Cir. 1999). While the detailed description of the preferred embodiments does at times use the phrase "optical fiber or waveguide," the context of such usage suggests that an optical fiber is one example of a waveguide, not that a waveguide is always an optical fiber. E.g., '699 Patent col.8 ll.52-55 ("The fiber tip 51 can be formed into the distal end of an optical fiber 23 as a unitary component or coupled to the distal end of another optical fiber serving as a waveguide."), col.10 ll.6-9 ("The fiber 80 can be formed into the waveguide or attached to the distal end of an optical fiber or waveguide."). Moreover, the Summary of the Invention states: "The present invention comprises a waveguide, such as an optical fiber." This indicates that "waveguide" is a broader term than "optical fiber." See Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 811 (Fed. Cir. 2002) ("Such as' introduces an example of a broader genus rather than limiting the genus to the exemplary species."). Finally, the dictionary definition of "waveguide" indicates that the ordinary meaning of a waveguide is not limited to an optical fiber. See Webster's Ninth New Collegiate Dictionary 1334 (1991) (defining "waveguide" as "a device (as a duct, coaxial cable, or glass fiber) designed to confine and direct the propagation of electromagnetic waves including light waves"). Based on the claims, specification, and dictionary definition, the term "waveguide" is not limited to "optical fiber."

The Court turns to the construction of "tip of the waveguide." The parties agree, and the specification and claim language indicate that the "tip" is located at the "distal" end of the waveguide, which is the end farthest from the energy source. The parties disagree, however, as to whether (1) the "tip of the waveguide" can constitute a separate component and (2) the "tube" shown in Figure 12 and the "cap" shown in Figure 2 can constitute a "tip of the waveguide."

As to whether the "tip of the waveguide" can be a component separate from the waveguide, nothing in the claim language indicates whether the tip can or cannot be a separate component. The Summary of the Invention, however, states: "According to another aspect of the invention, the tip is a separate component that is coupled to the distal end of the waveguide." The specification states: "While a fiber optic tip constructed in accordance with the present invention can be formed into the distal end of a waveguide, the tip of the present invention can be a separate component that is coupled to the distal end of a waveguide using transparent adhesive index matched to the waveguide." '699 Patent col.12 ll.51-59. Figure 11 illustrates such a separate tip that is coupled to an optical fiber by fusing or an index-matched transparent adhesive. See '699 Patent col.12 ll.60-68. The specification also states that the tip can be coupled to the distal end of the waveguide using an index-matched transparent adhesive "or otherwise." '699 Patent col.8 ll.52-58. The Court concludes that the "tip of the waveguide" can constitute a separate component. LP contends that the separate component is limited to the "prism" embodiment shown in Figure 11. The Court finds no basis in the specification or prosecution history for this proposed limitation. See Phillips, 415 F.3d at 1323.
The Court turns to whether the "tip of the waveguide" includes the "tube" shown in Figure 12 or the "cap" shown in Figure 2, which is an issue distinct from whether the tip of the waveguide can constitute a separate component. AMS contends that the cap and tube shown in Figures 2 and 12 must be included in the construction of "tip of the waveguide" because Figure 12 shows a "transmitting surface" on the surface of the tube. In other words, AMS reasons that because the specification identifies a transmitting surface on a tip in some embodiments and on a tube in other embodiments, the construction of "tip of the waveguide" must include a tube. LP responds that the claim language and specification require the exclusion of the cap and tube from the construction of "tip of the waveguide."

Claims 18 and 20, which depend from claim 7, are instructive. Claim 7 recites a waveguide having a reflecting surface and transmitting surface, both located on a tip of the waveguide. Claim 18 recites the apparatus of claim 7 further comprising "a tube with a hollow inside having a first end secured to the tip and enclosing the reflecting surface and transmitting surface." (Emphasis added.) Claim 20 recites "a transparent cap, secured to the tip and enclosing the reflecting surface and the transmitting surface." (Emphasis added.) This claim language indicates that the "tube" and "cap" are separate elements from the "tip of the waveguide." AMS contends that claim 19, which recites the apparatus of claim 7 further comprising "a transparent cap secured to the waveguide and enclosing the reflecting surface on the tip," supports a construction of "tip of the waveguide" that includes a tube or cap. The Court does not agree. A transparent cap that "enclos[es] the reflecting surface on the tip" plainly is a separate component from the tip.

This construction of the claim language is supported by the specification. The specification states that Figure 12 illustrates an embodiment of the invention "wherein a tube is coupled to the tip of the waveguide." '699 Patent col.3 ll.45-57. When describing Figure 12, the specification states that "a first end 103 of a transparent tube 100 having a hollow inside 109 is secured to a distal end 101 of an optical fiber or waveguide 102 having a bevelled end 106." '699 Patent col.13 ll.16-20. The specification states: "FIG. 2 illustrates an alternative embodiment wherein a cap 30 is secured around the distal end or tip 23 of the fiber 23. . . . The transparent cap 30 encloses the transmitting surface 25 and the bevelled end or surface 24 of the fiber 23." '699 Patent col.5 ll.42-44. The specification's description of the experiments indicates that the cap is a separate element from the distal end of the optical fiber having the reflecting surface. See '699 Patent col.11 ll.58-67, col.12 ll.21-24, col.12 ll.39. These descriptions of the cap and tube being coupled to and surrounding the distal end or tip of the waveguide indicate that the tube and cap are distinct elements from the tip.

To the extent that excluding a cap and tube from the construction of "tip of the waveguide" would exclude a preferred embodiment from the scope of claims 1 and 25, the Court is mindful that Federal Circuit case law "generally counsels against interpreting a claim term in a way that excludes the preferred embodiment from the scope of the invention." Helmsderfer v. Bobrick Washroom Equip., Inc., 527 F.3d 1379, 1383 (Fed. Cir. 2008); see Globetrotter Software, Inc. v. Elan Computer Group, Inc., 362 F.3d 1367, 1381 (Fed. Cir. 2004) (“A claim interpretation that excludes a preferred embodiment from the scope of the claim 'is rarely, if ever, correct.'”). However, claim constructions that exclude preferred embodiments, or even the sole disclosed embodiment, are correct when required by the unambiguous claim language. See, e.g., TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc., 529 F.3d 1364, 1372-73 (Fed. Cir. 2008) (“Therefore, the mere fact that there is an alternative embodiment disclosed in the '828 patent that is not encompassed by district court's claim construction does not outweigh the language of the claim, especially when the court's construction is supported by the intrinsic evidence.”); Lucent Techs., Inc. v. Gateway, Inc., 525 F.3d 1200, 1215-16 (Fed. Cir. 2008) (adopting construction that excluded only disclosed embodiment because "when the claims are susceptible to only one reasonable construction, we will construe the claims as the patentee drafted them"); Chef Am., Inc. v. Lamb-Weston, Inc., 358 F.3d 1371, 1372-74 (Fed. Cir. 2004) (construing "heating the resulting batter-coated dough to a temperature in the range of about 400[degrees] F. to 850[degrees] F." to exclude disclosed embodiments where the air, not the dough, was heated to the claimed temperature range because claims must be construed as drafted); Elekta Instrument S.A. v. O.U.R. Scientific Int'l, Inc., 214 F.3d 1302, 1308-09 (Fed. Cir. 2000) (construing claims to exclude only disclosed embodiment based on unambiguous claim language).

Moreover, the Federal Circuit has construed claim terms in a manner that does not cover the disclosed embodiments when such a construction did not mean the embodiments were excluded from the scope of the invention, but only that they were excluded from the scope of the construed claims. See Helmsderfer, 527 F.3d at 1383-84. "It is often the case that different claims are directed to and cover different disclosed embodiments." Id. at 1383; see Intamin Ltd. v. Magnetar Techs., Corp., 483 F.3d 1328, 1336-37 (Fed. Cir. 2007) ("Under the proper claim construction . . . the claim may well not cover this embodiment. Nonetheless, this court has acknowledged that a claim need not cover all embodiments."). Given the unambiguous language in the claims and specification, and the recitation of the tube and cap in claims 18-20, this is a case
where different claims may cover different disclosed embodiments. The Court construes "tip of the waveguide" as "the distal end portion of the waveguide, including a separate component coupled thereto in a manner that prevents internal reflection at any interface between the components (for example, by fusing or a transparent, index-matched adhesive), but not including a cap or tube enclosing a transmitting surface on the distal end portion of the waveguide or a reflecting surface on the distal end portion of the waveguide."

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The independent claims of the '347 Patent recite claims for a titanium centrifugal compressor wheel. Specifically, the '347 Patent provides as follows:

1. A titanium centrifugal compressor wheel formed by an investment casting process, and including:

   a hub, defining an axis of rotation, and a plurality of backswept aerodynamic blades carried on the surface of said hub and defining air passages between adjacent blades,

   wherein each of said air passages is defined by from one to three solid die inserts which can be inserted between and pulled from between said blades without deformation of said dies or blades.

   * * *

7. A cast titanium centrifugal compressor wheel comprising:

   an annular hub defining an axis of rotation, and

   a plurality of backswept aerodynamic blades, each of said blades including a leading edge, an outer edge adapted for close passage to a compressor housing, and a trailing edge,

   wherein said leading edge is substantially a straight edge,

   wherein said blades are designed such that a compound die insert comprising first and second solid die inserts defining one air passage between adjacent blades can be inserted between said adjacent blades, and wherein said first and second die inserts can be retracted along a radial or curved path without deformation of said blades or dies.

'347 Patent, Col. 10, lines 26-35, Col. 10, line 61 to Col. 12, line 3 (emphasis added).

The independent claims of the '556 Patent recite methods for manufacturing a "titanium centrifugal compressor wheel."

These independent claims provide as follows:

1. A method for manufacturing a titanium centrifugal compressor wheel, said method comprising:

   introducing a sacrificial material into a die comprised of a plurality of rigid die inserts (20) to form a compressor wheel pattern comprising a hub (1) defining an axis of rotation and backswept aerodynamic blades (4,5) carried on said hub,

   extracting said die inserts (20) radially or along a curve to expose said compressor wheel pattern,

   forming a mold by a lost wax process around said compressor wheel pattern (21),

   forming said titanium compressor wheel by investment casting in said mold.

   * * *

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7. A method for manufacturing a cast titanium centrifugal compressor wheel comprising:

designing a compressor wheel pattern shape with an annular hub (1) and a plurality of backswept blades (4,5), each blade including a leading edge (18), an outer edge adapted for close passage to a compressor housing, and a trailing edge (16), wherein said leading edge (18) is substantially a straight edge, and wherein said blades (4,5) define air passages between adjacent blades and are contoured such that each of said air passages between adjacent blades can be defined by not more than three die inserts (20) inserted between adjacent blades and respectively retractable along a radial or curved path by an automated process,

forming a pattern of said compressor wheel by introducing a sacrificial material into a die comprised of a plurality of rigid die inserts (20),

automatically extracting said rigid die inserts (20) radially or along a curve to expose said compressor wheel pattern,

forming a mold by a lost wax process around said compressor wheel pattern (21),

forming said titanium compressor wheel by investment casting in said mold.

'556 Patent, Col. 10, line 57 to Col. 12, line 17 (emphasis added).

The independent claims of the '949 Patent provide for methods for manufacturing an air boost device and a turbocharger. These independent claims do not refer to a "titanium centrifugal compressor wheel," but rather only to a "titanium compressor wheel" or simply "said compressor wheel":

1. A method for manufacturing an air boost device, said method comprising:

introducing a sacrificial material into a die comprised of a plurality of rigid die inserts (20) to form a compressor wheel pattern comprising a hub (1) defining an axis of rotation and backswept aerodynamic blades (4,5) carried on said hub,

extracting said die inserts (20) radially or along a curve to expose said compressor wheel pattern,

forming a mold by a lost wax process around said compressor wheel pattern (21),

forming a titanium compressor wheel by investment casting in said mold, and

mounting said titanium compressor wheel within a compressor housing.

* * *

10. A method for manufacturing a turbocharger, comprising:

designing a compressor wheel pattern shape with an annular hub (1) and a plurality of backswept blades (4,5), each blade including a leading edge (18), an outer edge adapted for close passage to a turbocharger compressor housing, and a trailing edge (16), wherein said blades (4,5) define air passages between adjacent blades and are contoured such that each of said air passages between adjacent blades can be defined by not more than three die inserts (20) inserted between adjacent blades and respectively retractable along a radial or curved path by an automated process,

forming a pattern of said compressor wheel by introducing a sacrificial material into a die comprised of a plurality of rigid die inserts (20),

extracting said rigid die inserts (20) radially or along a curve to expose said compressor wheel pattern, forming a mold by a lost wax process around said compressor wheel pattern (21),

forming a titanium compressor wheel by investment casting in said mold, and
mounting said compressor wheel within said turbocharger compressor housing.

While the parties agree that a "titanium centrifugal compressor wheel" is a circular rotating component which (a) draws air in axially, (b) accelerates air centrifugally, and (c) discharges air radially, the parties disagree as to whether this term is synonymous with the term "titanium compressor wheel." BorgWarner contends that "titanium compressor wheel" is used interchangeably throughout the patents with the term "titanium centrifugal compressor wheel" and therefore these terms should be construed in the same manner. BorgWarner further argues that both "titanium compressor wheel" and "titanium centrifugal compressor wheel" should be limited further to a compressor wheel which (1) operates within an air boost device and (2) is made predominantly from titanium. [Doc. 52 at 3; Doc. 57-2 at 12-23; Doc. 62 at 4-6]. Honeywell argues, on the other hand, that the patents expressly distinguish the terms "titanium compressor wheel" and "titanium centrifugal compressor wheel," and therefore it would be error to construe the terms as being synonymous. Honeywell further argues that it would be improper to require the claimed compressor wheel to be operated within an air boost device, because that limitation is not recited in the claims. Additionally, Honeywell argues that BorgWarner's proposed limitation of these terms to a compressor wheel comprised predominantly of titanium is inconsistent with the specification. [Doc. 58-2 at 11-12; Doc. 63 at 16-17, 24-25].

a. Are the terms "titanium centrifugal compressor wheel" and "titanium compressor wheel" interchangeable?

Examine the language of the claims themselves, the Court notes that the terms "titanium compressor wheel" and "compressor wheel" are used throughout the claims of the '347 Patent and the '556 Patent to refer to a "titanium centrifugal compressor wheel." For example, independent Claim 1 of the '347 Patent recites a "titanium centrifugal compressor wheel." '347 Patent, Col. 10, line 26. This limitation is referenced in the following dependent claim as a "titanium compressor wheel as in claim 1 …." Id. at Col. 10, line 37. In Claim 7 of the '556 Patent, a method is described for the manufacturing of "a cast titanium centrifugal compressor wheel." '556 Patent, Col. 11, line 15. In the following dependent claim, the cast titanium centrifugal compressor wheel of independent Claim 7 is referred to as "said compressor wheel." Id. at Col. 12, line 7. In the '949 Patent, however, a distinction clearly is made between the term "titanium compressor wheel" and "titanium centrifugal compressor wheel." Claim 1 of the '949 Patent describes a method for manufacturing an air boost device, "said method comprising … forming a titanium compressor wheel by investment casting …." '949 Patent, Col. 10, lines 38-51. In the following dependent claim, a method is claimed "wherein said compressor wheel is a centrifugal compressor wheel adapted for drawing air in axially, accelerating said air centrifugally, and discharging air radially." Id. at Col. 10, lines 54-57 (emphasis added). This claim language clearly indicates that a centrifugal compressor wheel is a type of compressor wheel. In other words, while a "titanium centrifugal compressor wheel" may be a "titanium compressor wheel," a "titanium compressor wheel" need not necessarily be centrifugal. Accordingly, the plain language of the claims does not support BorgWarner's contention that these terms are synonymous and interchangeable.

BorgWarner's own expert recognized the distinction between these terms, noting that the term "titanium compressor wheel" could refer to either a centrifugal compressor wheel or an axial compressor wheel:

Q. And what about the term "titanium compressor wheel" without the word "centrifugal" in there? What does that mean to you?

A. Oh, I see. Well, it's more of a generic term. That is, centrifugal is a subset of compressor wheels.

Q. So a titanium compressor wheel could be axial?

A. Yes.

[Deposition of John K. Thorne ("Thorne Dep."), Doc. 58-14 at 10].

For these reasons, the Court concludes that the terms "titanium compressor wheel" and "titanium centrifugal compressor wheel" are not synonymous.

b. Must the compressor wheel be operated within an air boost device?
In determining whether the patent claims require the subject compressor wheel to be operated within an air boost device, the Court first examines the language of the claims themselves. While the claims of the '949 Patent specifically contemplate the use of a compressor wheel within an air boost device, see '949 Patent, Claims 1 and 10, the claims of the '347 Patent and '556 Patent do not. The '347 Patent claims are directed to the compressor wheel itself, while the '556 Patent claims are directed to the method of manufacturing the compressor wheel. Only the claims of the '949 Patent, which are directed to the manufacture of an air boost device comprised of, among other things, a compressor wheel, can be read as requiring the use of the compressor wheel within an air boost device. The plain language of the claims therefore do not support a limitation of the terms "titanium centrifugal compressor wheel" and "titanium compressor wheel" in each of the patents-in-suit solely to compressor wheels used in an air boost device.

Turning now to the other intrinsic evidence of record, the Court notes that the specification expressly provides that "the present invention concerns a titanium compressor wheel for use in an air boost device." '347 Patent, Col. 1, lines 5-10 (emphasis added); Id. at Col. 1, line 64 to Col. 2, line 12 (discussing use of compressor wheel in engine exhaust systems). Such statements do not, however, necessarily limit the scope of the patents to compressor wheels used in air boost devices. "Absent a clear disclaimer of particular subject matter, the fact that the inventor may have anticipated that the invention would be used in a particular way does not mean that the scope of the patent is limited to that context." Northrop Grumman Corp. v. Intel Corp., 325 F.3d 1346, 1355 (Fed. Cir. 2003). The specification in the present case does not disavow any embodiment other than one operating within an air boost device, nor does it suggest that the subject invention must always be used in that fashion. Indeed, the specification explicitly provides, in pertinent part, as follows:

Although this invention has been described in its preferred embodiment with a certain [amount] of particularity with respect to an automotive internal combustion compressor wheel, it is understood that the present disclosure of the preferred form has been made only by way of example and that numerous changes in the details of structures and the composition of the combination may be resorted to without departing from the spirit and scope of the invention.

't347 Patent, Col. 10, lines 10-23. For these reasons, the Court concludes that, notwithstanding the repeated references to the anticipated use of the subject compressor wheel in an air boost device throughout the specification, the terms "titanium centrifugal compressor wheel" and "titanium compressor wheel" are not construed as being limited to a wheel operated within an air boost device.

c. Must the compressor wheel be "comprised predominantly of titanium"?

In the specification, the inventors explicitly defined the term "titanium compressor wheel" as "a compressor wheel comprised predominantly of titanium, and includes titanium alloys, preferably light weight alloys such as titanium aluminum alloy." '347 Patent, Col. 6, lines 44-47 (emphasis added). BorgWarner argues that the reference to "titanium alloys" in this passage is designed to provide the reader of an example of a composition "comprised predominantly of titanium." Thus, BorgWarner contends, this phrase requires the titanium compressor wheel to be comprised predominantly of titanium or an alloy that is comprised predominantly of titanium. [Doc. 57-2 at 12-15]. Honeywell argues, on the other hand, that this phrase should be construed to mean that the titanium compressor wheel can be comprised predominantly of titanium, but that it can also be made of alloys, and that these alloys need not necessarily be predominantly titanium. [Doc. 58-2 at 26-27; Doc. 63 at 24-25].

The inventors' use of the phrase "and includes titanium alloys" within the definition of "titanium compressor wheel" is admittedly not the model of clarity. Using basic principles of grammar and sentence construction, it appears to the Court that the phrase "and includes titanium alloys" was included to modify the term "titanium." In other words, the phrase "and includes titanium alloys" indicates a subset of "titanium," the material which must be used predominantly in the manufacture of the compressor wheel. Thus, a plain reading of this definition requires that the compressor wheel be comprised predominantly of either (1) pure titanium or (2) a titanium alloy.

The Court's construction of this term is supported by the prosecution history of the '347 Patent. The Patent Examiner initially rejected Claim 8 as being indefinite. Specifically, the Patent Examiner noted that the claim recited that the compressor wheel is "selected from titanium" when the claim already recited that the compressor wheel is titanium. In response, the inventors stated as follows:
Applicants submit that the term "titanium compressor wheel" is understood in the art as referring to a wheel formed primarily of titanium, i.e., either a titanium alloy or pure titanium, though overwhelmingly in practice the alloy is used. The term is so defined in paragraph 00037 of the present specification.

Having determined that the titanium compressor wheel may be comprised predominantly of (1) pure titanium or (2) a titanium alloy, the Court turns to the issue of whether the "titanium alloy" used itself must be "comprised predominantly of titanium." Examining the language of the claims, the Court notes that in each instance where the claims recite the specific titanium composition of the alloy used, the claims expressly require a material composed predominately of titanium. For example, in both Claim 13 and Claim 14 of the '949 Patent, which recite methods of manufacturing a compressor wheel formed of a titanium alloy, the titanium alloy specified is one in which titanium is the element of highest concentration:

13. A method as in claim 12, wherein said titanium alloy comprises 85-95% titanium, 2-8% aluminum, and 2-6% vanadium.

14. A method as in claim 12, wherein said titanium alloy comprises approximately 90% titanium, 6% aluminum, and 4% vanadium.

'949 Patent, Col. 12, lines 16-20 (emphasis added).

Additionally, Claims 6 and 9 of the '556 Patent make reference to a "titanium-aluminum alloy." As noted by BorgWarner's expert, Dr. John K. Thorne, the fact that titanium is listed before aluminum in the naming of this alloy indicates to one of ordinary skill in the art that titanium is the element of highest concentration. [Declaration of Dr. John K. Thorne ("Thorne Decl."), Doc. 55 at P30 ("the first named constituent element is the element of highest concentration in the alloy").]

Dr. Thorne further explained in his deposition that the most common titanium alloys are ones in which titanium is clearly and unambiguously the dominant element -- usually in excess of 90% of the composition. [Thorne Dep., Doc. 57-12 at 3]. Dr. Thorne's opinion is confirmed by Marks' Standard Handbook for Mechanical Engineers (9th ed. 1987), which contains a table listing the typical compositions of titanium alloys. In all of these alloys, titanium is the greatest constituent ingredient by weight. [Doc. 57-14 at 4].

Honeywell urges the Court to adopt the definition set forth in The New Oxford American Dictionary 44 (2001), which defines "alloy" as a "metal made by combining two or more metallic elements, esp. to give greater strength or resistance to corrosion." Honeywell contends that nothing in this definition requires an alloy to be comprised predominantly of one metal. [Doc. 58-2 at 27]. Honeywell's reliance on a definition from a general usage dictionary, however, is not persuasive in light of Dr. Thorne's testimony. "[A] general-usage dictionary cannot overcome credible art-specific evidence of the meaning or lack of meaning of a claim term." Vanderlande Indus. Nederland BV v. Int'l Trade Comm'n, 366 F.3d 1311, 1321 (Fed. Cir. 2004).

For the foregoing reasons, the Court concludes that the term "titanium centrifugal compressor wheel" should be construed as a centrifugal compressor wheel comprised predominantly of either pure titanium or a titanium alloy. The term "titanium compressor wheel" should be construed as a compressor wheel comprised predominantly of either pure titanium or a titanium alloy. The term "titanium alloy" is construed to mean an alloy wherein titanium is the greatest constituent ingredient by weight. The term "titanium-aluminum alloy" is construed to mean a metal alloy that is comprised of titanium and aluminum, wherein titanium is the greatest constituent ingredient by weight.
transferred beverage container to a delivery port of the vending machine . . . " '930 Patent, cl. 1 (emphasis added). The parties dispute the distance that the robotic assembly or beverage container must travel to meet the claim limitation. The answer to this question depends on (1) whether the claim limitation requires the movement of either the robotic assembly or beverage all the way "to a delivery port" and (2) whether "delivery port" refers to a general area or a more defined opening in the machine. The issues are interrelated. How far the robotic assembly or beverage must travel depends, in part, on the breadth of the construction of "delivery port." 2 The court is not persuaded by Royal or SVA's argument concerning "delivery port." SVA agrees with Crane's spatial concept, but would unnecessarily limit the delivery port to the area that the customer can reach. Under this construction, however, subsequent method steps in the claim would appear to be redundant. See '930 Patent, cl. 1 ("presenting the carried beverage container at the delivery port for customer removal from the vending machine . . . ") (emphasis added)). For its part, Royal defines "delivery port" in a structural manner. Royal's construction, however, discounts the language of the specification that seems to define the product delivery port in more general terms. See e.g. '930 Patent, col. 3, ll. 22-23 ("carrying the captured container to a product delivery area or port." (emphasis added)); see also id. at col. 1, l. 38, col. 2, l. 20, 61 (each discussing a "delivery area."). Accordingly, the "delivery port" is more than a physical opening in the vending machine. The court defines "delivery port" (and related terms) as "the area in the vending machine from which containers/beverages/products may be retrieved by the customer."

2 Crane agrees to a narrow construction of "to a delivery port" so long as the court adopts a broad construction of "delivery port." SVA agrees to Crane's construction of "delivery port" so long as the construction includes "by customers" at the end.

The remaining issue is whether "to a delivery port," means the same thing as "toward a delivery port." The patentee explicitly chose different language in the claims, and the doctrine of claim differentiation counsels against adopting Crane's construction. Compare '180 Patent, cl. 33 with '180 Patent, cl. 34. "To a delivery port" means that the product reaches the delivery port. "Toward a delivery port" means that the product simply needs to travel in the direction of the delivery port.

Claim 1 of the '447 patent is representative of the term at issue. 3 With the disputed term in bold, Claim 1 states:

A polycrystalline diamond element comprising a body of bonded diamonds with a working surface, wherein a first volume of the body remote from the working surface contains a catalyzing material, a second volume of the body adjacent to the working surface is substantially free of the catalyzing material to a depth from the working surface, wherein said bonded diamonds exhibit a thermal characteristic such that a 950 degree C. temperature at the working surface results in a temperature of less than 750 degrees C. at the depth.

3 The '098, '137, and '447 patents claim and specifications are similar. For simplicity, the Court will cite to the '447 patent generally.

Baker Hughes proposes "to a distance of at least 0.1 mm measured perpendicularly from the top of each part of each working surface." ReedHycalog contends that this phrase does not need to be construed. To support its argument, Baker Hughes points to the '098 patent specification, which reads: "[t]herefore, for the types of heat input common in cutting elements 10, a 0.1 mm depth is the critical depletion depth from the working surface . . . " Pat. No. '098 col. 10: 43-45. However, the previous sentence in that specification states, "[a]s can be seen in curve A in the graph of Fig. 10 there is a dramatic increase in the wear index result of cutting elements 10 when the catalyzing material 64 depletion depth approaches 0.1 mm." Id. at 10:40-42 (emphasis added). In addition, the '137 patent specifically discusses other leach depths.
Clearly this language contemplates improved wear index at various levels of leaching, not solely 0.1 mm. Baker Hughes' proposed construction would improperly limit the claim to the preferred embodiment. The phrase is easily understood and does not require construction.

4 The '137 patent specification states

... it is also believed that a distance D of less than 0.1 mm could provide approximately the same wear index in a cutting element with a diamond density of the body approaching 99% as the 0.2 mm to 0.3 mm D distance in a body with 85% to 90% diamond volume density.


To a Depth

The Patents-in-Suit contain the term "to a depth." ReedHycalog contends the term does not require construction. Defendants argue "to a depth" means "to a distance of a minimum of 0.1 mm measured perpendicularly from the top of each part of each working surface." The parties' constructions raise two issues: (1) whether the leach depth has a minimum of 0.1 mm; and (2) whether the depth is measured perpendicularly from the top part of each working surface. The Court in Tyler I addressed the first dispute, rejected Defendants' construction, and concluded the term did not require construction. Defendants do not raise any new or persuasive arguments in this case.

The Patents-in-Suit Do Not Require a Minimum Leach Depth of 0.1 mm

The Court in Tyler I addressed and rejected Defendants' arguments that the specifications' statement that "a 0.1 mm depth is the critical depletion depth from the working surface" mandated a minimum leach depth of 0.1 mm. Tyler I Claim Construction Opinion & Order, 10-11. For the reasons delineated in that opinion, the Court rejects Defendants' attempt to limit the claims.

The claims that contain the "to a depth" limitation and do not specify a particular depth appear in the Thermal Characteristic Patents, which generally claim a leach depth such that a 950 [degree] C temperature at the PCD element's working surface results in a temperature of less than 750 [degree] C at the depth. E.g., '447 Patent, col. 14:24-33. Thus, the claims themselves define the leach depth by the resulting thermal gradient and do not require a minimum leach depth of 0.1 mm.

Fig. 10 of the Thermal Characteristic Patents depicts the relationship between leach depth and wear index, where a higher wear index corresponds to a greater ability of the PCD element to withstand heat. Id. at Fig. 10, col. 10:33-36. The accompanying portion of the specifications indicate it is improper to read in a required minimum leach depth of 0.1 mm.

The specifications indicate the depth required to achieve the claimed thermal gradient is a function of the leaching process, the crystal size, and the amount of inter-crystal bonding, among other variables. Id. at col. 9:56-63 (stating leach depth required to achieve the reduced thermal degradation depends upon the method used to deplete the catalyzing material); id. at col. 10:38-57 (stating the difference between PCD elements that create curves A and B is that the PCD element from curve B was leached using a more economical process); id. at col. 11:11-13 (stating that temperature gradient between leached and unleached portions of the PCD element depends upon the crystal size and the amount of inter-crystal bonding). Therefore, a particular diamond crystal size, the amount of interstitial bonding that resulted from forming the PCD element, and a particular leaching process could create a PCD element with a steeper wear index versus leach depth curve than curve A depicted in Fig. 10. This steeper curve would allow the resulting PCD element to achieve the claimed thermal gradient at a leach depth of less than 0.1 mm. Thus, while 0.1 mm may be the "critical depletion depth" for PCD elements affiliated with curve A, the critical depletion depth for PCD elements affiliated with a steeper curve would be less than 0.1 mm.
Further, nothing in the Thermal Gradient Patents indicates the claims are limited to PCD elements affiliated with curve A or B. Thus, the term "to a depth" covers partially leached PCD elements affiliated curves that achieve the claimed thermal gradient at shallower leach depths. 10

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10 In addition, the ’137 Patent confirms that the claims do not require a minimum leach depth of 0.1 mm:

It is believed, however, that as the volume density of the diamond in the body 8 increases from the 85%-90% range to the 95%-99% range, the distance D needed to produce a particular wear index will decrease. Therefore, it is also believed that a distance D of less than 0.1 mm could provide approximately the same wear index in a cutting element with a diamond density of the body approaching 99% as the 0.2 mm to 0.3 mm D distance in a body with 85% to 90% diamond volume density.


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The Ordinary Meaning of "Depth" Requires a Perpendicular Measurement

The claims require a portion of the PCD body to be substantially free of the catalyzing material to a depth from the working surface or cutting surface. E.g., ’447 Patent, col. 14:24-33; ’033 Patent, col. 14:26-34. Some of these claims require this region to extend to a specified depth, such as 0.1 mm. E.g., ’985 Patent, col. 14:21-31 (claiming a PCD element comprising a body of bonded diamond crystals and a working surface on the body wherein "a second volume of the body adjacent to the working surface is substantially free of the catalyzing material . . . , wherein the second volume extends to a depth of at least 0.1 mm from the working surface").

The ordinary meaning of depth requires a perpendicular measurement from a reference point, in this case the working surface or cutting surface depending on the claim. Nothing in the Patents-in-Suit indicates a departure from this ordinary meaning. Nothing in the Patents-in-Suit, however, requires the measurement to be from the top of all working surfaces.

The Court has resolved the parties' dispute. A lay jury will understand the term "to a depth," and it does not require construction.

II

A. As noted, the claim requires "heating the resulting batter-coated dough to a temperature in the range of about 400 degrees F. to 850 degrees F." These are ordinary, simple English words whose meaning is clear and unquestionable. There is no indication that their use in this particular conjunction changes their meaning. They mean exactly what they say. The dough is to be heated to the specified temperature. Nothing even remotely suggests that what is to be heated is not the dough but the air inside the oven in which the heating takes place. Indeed, the claim does not even refer to an oven.

The problem is that if the batter-coated dough is heated to a temperature range of 400 degrees F. to 850 degrees F., as the claim instructs, it would be burned to a crisp. Instead of the "dough products suitable for freezing and finish cooking to a light, flaky, crispy texture," 290 patent, col. 2, ll. 11-12, which the patented process is intended to provide, the resultant product of such heating will be something that, in the words of one of the attorneys in this case, resembles a charcoal briquet. To avoid this result and to insure that the patented process can accomplish its stated objective, Chef America urges us to interpret the claim as if it read "heating the . . . dough at a temperature in the range of," i.e., to apply the heating requirement to the place where the heating takes place (the oven) rather than the item being heated (the dough).

This court, however, repeatedly and consistently has recognized that courts may not redraft claims, whether to make them
operable or to sustain their validity. See, e.g., Allen Eng'g Corp. v. Bartell Indus., Inc., 299 F.3d 1336, 1349 (Fed. Cir. 2002); Elekta Instrument S.A. v. O.U.R. Scientific Int'l, Inc., 214 F.3d 1302, 1308-09 (Fed. Cir. 2000); Process Control Corp. v. Hydreclaim Corp., 190 F.3d 1350, 1357 (Fed. Cir. 1999); Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed. Cir. 1999); Quantum Corp. v. Rodine, PLC, 65 F.3d 1577, 1584 (Fed. Cir. 1995); Becton Dickinson & Co. v. C.R. Bard, Inc., 922 F.2d 792, 799 n.6 (Fed. Cir. 1990). Even "a nonsensical result does not require the court to redraft the claims of the ['290] patent. Rather, where as here, claims are susceptible to only one reasonable interpretation and that interpretation results in a nonsensical construction of the claim as a whole, the claim must be invalidated." Process Control Corp., 190 F.3d at 1357. "Where, as here, the claim is susceptible to only one reasonable construction, the canons of claim construction cited by [Chef America] are inapposite, and we must construe the claims based on the patentee's version of the claim as he himself drafted it." Id.

Thus, in accord with our settled practice we construe the claim as written, not as the patentees wish they had written it. As written, the claim unambiguously requires that the dough be heated to a temperature range of 400 degrees F. to 850 degrees F.

B. Although "a patentee can act as his own lexicographer to specifically define terms of a claim contrary to their ordinary meaning," id. (citing Digital Biometrics v. Identix, Inc., 149 F.3d 1335, 1344 (Fed. Cir. 1998)), we discern nothing in the claims, the specification, or the prosecution history that indicates that the patentees here defined "to" to mean "at." To the contrary, the prosecution history suggests that the patentees intentionally used "to" rather than "at" in drafting the temperature requirements of the claim.

As originally drafted, Claim 1, which is involved here, did not contain any temperature limitations. It stated: "heating the resulting batter-coated dough to first set said batter and then subsequently melt said shortening flakes, whereby air cells are formed in said batter and the surface of said dough." Original Claim 6 however, provided for ":[a] process according to Claim 1 wherein said resulting batter-coated dough is heated to a temperature within the range of about 400 degrees F to 850 degrees F for about from 10 seconds to 5 minutes." The original application also contained the description of the baking process set forth in Part I.A, above, which involved "quickly heating [the batter] to a temperature in the range of about 400 degrees F to 850 degrees F" for a specified time range, and the first example, which stated that the dough product will be baked in a particular type of oven "at" a temperature of 680 degrees F. to 850 degrees F.

The examiner initially rejected all the claims under the first paragraph of 35 U.S.C. § 112 (2000) as non-enabling for various reasons, including that "any and [all] heating steps are not enabled, e.g. insignificant or excessive." In response, the patentees amended Claims 1 and 8 to add the limitation of "heating the resulting batter-coated dough to a temperature in the range of about 400 degrees F. to 850 degrees F. for a period of time ranging from about 10 seconds to 5 minutes to first set said batter and then subsequently melt said shortening flakes, whereby air cells are formed in said batter and the surface of said dough." (underlined words added by amendment).

In formulating the amendment to the claims to specify the temperature limitation, the patentees had two models before them: the heating "to" limitation of the specification and original Claim 6 or the heating "at" limitation of the example. They chose the "to" limitation which, as we have shown, plainly and unequivocally refers to the temperature to which the dough and not the air in the oven will be heated. It thus appears that the patentees consciously selected "to" rather than "at." There is nothing to indicate that in doing so they intended "to" to mean "at."

Chef America does not contend that the patentees' use of "to" rather than "at" was a draftsman's mistake. The patentees made no attempt to have such an error corrected, either by obtaining a certificate of correction from the Patent and Trademark Office pursuant to 35 U.S.C. § 255, or by action of the district court. Cf. Novo Indus. v. Micro Molds Corp., 350 F.3d 1348 (Fed Cir. 2003). To the contrary they argue only that "to" should be construed to mean "at" because otherwise the patented process could not perform the function the patentees intended. As we have noted, however, we have repeatedly declined to rewrite unambiguous patent claim language for that reason.

C. Chef America criticizes the district court for failing to construe the claims as one of ordinary skill in the art would do. It cites a declaration of its baking expert, Mr. Lehmann, the Director of Baking Assurance of the American Institute of Baking, that "the limitation in claims 1 and 8 'heating the resulting batter-coated dough to a temperature in the range of about 400 degrees F to 850 degrees F' (and the similar limitation in claim 6 specifying a range of 680 degrees F to 850 degrees F) mean to me, as a person of ordinary skill in the art, that the batter-coated dough is placed in an oven that has been set to a
temperature in the range of about 400 degrees F to 850 degrees F, and remains in the oven for the period within the time range recited in the claim." Mr. Lehmann also there opined that the two examples, which use the word "at," and "are the only ones given in the patent, show that the 'heating' limitation relates to oven temperature, not product temperature." Mr. Lehmann also quoted the language from the specification containing the temperature limitation described above and stated: "as a person of ordinary skill in the art in 1987, when the '290 patent application was filed, I would read this text as meaning that the product is placed in an oven whose temperature has been set in the range of about 400 degrees F to 850 degrees F. It was well known in 1987, and still is well known, that raising the temperature of a dough product itself to such high temperatures would result in an unusable product."

The district court rejected this contention and so do we. As the district court pointed out, "Lehmann's declaration, however, further supports [its] conclusion that the claim words themselves do not have special meaning to one skilled in the art of baking. Instead, Lehmann's declaration makes it clear that, while he may read the claim in accordance with the construction proffered by plaintiff, he does so not because the words have special meaning to him, but because it 'is well known[ ] that raising the temperature of a dough product itself to such high temperatures would result in an unusable product.'" Mr. Lehmann did not explain how the word "to" in the claim could be read to mean "at," or even state that persons of ordinary skill in the baking art would so do.

This argument of Chef America is but a restatement of its basic contention that unless we rewrite the claim, the patented process cannot perform its intended function. We have already declined, however, to take such action, and we follow the same course in response to this additional version of the argument.

We initially consider the proper claim meaning and scope. Amazon.com, Inc. v. Barnesandnoble.com, Inc., 239 F.3d 1343, 1351 (Fed. Cir. 2001). Although neither the Board nor Icon specifically argues for any particular construction of the gas spring limitation, each party's obviousness argument turns on the breadth of that limitation. During reexamination, as with original examination, the PTO must give claims their broadest reasonable construction consistent with the specification. In re Am. Acad. of Sci. Tech Ctr., 367 F.3d 1359, 1364 (Fed. Cir. 2004). Therefore, we look to the specification to see if it provides a definition for claim terms, but otherwise apply a broad interpretation. As this court has discussed, this methodology produces claims with only justifiable breadth. In re Yamamoto, 740 F.2d 1569, 1571 (Fed. Cir. 1984). Further, as applicants may amend claims to narrow their scope, a broad construction during prosecution creates no unfairness to the applicant or patentee. Am. Acad., 367 F.3d at 1364.

The claims at issue recite "a gas spring . . . to assist in stably retaining said tread base." As the Board noted, "claim 1 does not limit the degree or manner in which the gas spring" assists in stably retaining. Board Decision, slip op. at 24. Icon, without arguing for any particular construction, takes the position that the gas spring must provide a force continuing to urge the mechanism closed when in the closed position. The specification of the '624 patent provides only minimal discussion of the gas springs. It describes a "lift assistance assembly," which in the illustrated embodiment includes a gas spring to provide force to at least partially support the weight of the tread base. '624 patent, col. 15, ll. 3-25. When claiming the gas spring, the application makes no reference to lift assistance, only stable retention of the tread base.

The specification provides little further regarding a definition of "stably retain." It describes the treadmill's folding action, such that the center of gravity of the tread base passes over the pivot point to "stably retain" the base. Id. at col. 12, ll. 30-34. Accordingly, gravity creates a stable closed position: the gas spring claimed must only "assist" in stably retaining the tread base. Because Icon could have amended its claims to more clearly define "stably retain" and did not do so, it now must submit to the Board's interpretation. With little guidance from the specification, the Board's construction properly represents the broadest reasonable construction. Although the Board did not set out the specific construction for Icon's claim, it did so to the extent required. Indeed, an infringement or invalidity analysis provides the context for claim construction. See Wilson Sporting Goods Co. v. Hillerich & Bradsby Co., 442 F.3d 1326-27 (Fed. Cir. 2006). We therefore analyze the Board's factual findings and conclusion of obviousness while considering that Icon's claims encompass everything reasonably seen to assist in stably retaining the tread base.
With a wick to convey a combustible liquid to the burner

The term "combustible liquid" is a required limitation of the claim. Defendants, on the other hand, argue that the combustible liquid prominently referenced in claim 1 must be construed as a required limitation on the claim. Defendants point to the prosecution history, including a response to an Office Action by the Patent Office dated May 3, 2002, wherein the Applicants for what became the '061 patent amended certain claims because of substantive rejections based upon the prior art. See Doc. No. 58, Ex. 3, at PB0238. Specifically, Defendants cite the Applicants' statement that "claim 12 has been amended to further define features relating to the combustible liquid penetrating into the pores of the burner . . ." as support that features relating to the liquid comprised a patentable distinction over the cited prior art. Id.

While the Court disagrees with Defendants that the Applicants distinguished their invention based upon the combustible liquid, the Court does find that the combustible liquid comprises a required limitation in claim 1. French Patent Publication FR 2 530 144 was applied by the examiner during prosecution of the patent which matured into the '061 patent. The examiner initially rejected claim 12 of the application, which became claim 1 of the '061 patent, on the basis that the invention was made to modify the burner of FR 2 530 144 to incorporate the annular groove of EPO 0 277 875 as the structure of the burner, including the annular cavity that serves to prevent encrustation of the wick due to carbon particle build-up. Id. at PB0252. In response to the office action, the Applicants specifically claimed that the "catalytic combustion burner as defined in amended claim 12" was distinguished from the prior art "by the presence of at least one open channel located in the upper part of the burner . . ." Id. at PB023 8-39. Thus, in accordance with the Applicants' position during prosecution, the Court finds that the open channel catalytic combustion burner distinguished the invention over the apparatus disclosed in FR 2 530 144. Nevertheless, the fact that Applicants amended claim 12 to further define "features relating to the combustible liquid penetrating into the pores of the burner" lends support to the idea that the liquid is a limitation.

Claim 1 of the '061 patent references the "combustible liquid" twice within phrase 4: (1) "a wick to convey a combustible liquid;" and (2) "said combustible liquid penetrating into the pores of said burner's porous material. . ." '061 patent, claim 1, 5:37-39. While it is true, as Plaintiffs argue, that there is nothing new or unique about the combustible liquid mixture in the context of the present invention, it is also true that the claim language references the liquid and makes it clear that the liquid performs some function, i.e., being conveyed by the wick and "penetrating" into the pores of the stone. Id. Further, even though the catalytic combustion burner can burn in the absence of combustible liquid or when the burner burns the last quantities of combustible liquid remaining in the flask, it is undeniable that the combustible liquid is an integral part of the invention, as the invention will not work absent "said combustible liquid penetrating into the pores of said burner's porous material."

Accordingly, the Court finds that the "liquid" referenced in claim 1 is itself part of the claimed invention and is, therefore, a required limitation of the claim.
10. Fresh Water Added To Cool Said Fabric

The meaning of the phrase "fresh water is added to cool said fabric" is in dispute. It appears in the following context: "prior to draining said lesser concentrated detergent solution from said wash chamber, fresh water is added to cool said fabric" ('370 patent, claims 4.11.)

Whirlpool argues for the following construction: "This claim element means that prior to draining, fresh water is added to the washer and the fresh water has the effect of cooling fabric in the washer, regardless of the reason for added the fresh water."

LG seeks the following construction: "Fresh water (i.e., not a solution of water and another additive) is added for the intended purpose of cooling the fabric and not added for other purposes."

The primary dispute with respect to this phrase is whether it establishes a limitation that fresh water be added with the intention or purpose of cooling the fabric. The Federal Circuit held in Dow Chem. Co. v. Mee Indus., 341 F.3d 1370, 1380 (Fed. Cir. 2000) that "the motive of the accused infringer when performing a claimed method is simply not relevant." Based on Dow, Whirlpool argues that even if water is added for an entirely different reason than to cool the fabric, infringement would not be avoided because the reasons why water might be added are irrelevant. However, Whirlpool's reliance on Dow is misplaced. Dow was a patent infringement decision, rendered after the claims had been construed, which stands for the proposition that a person who practices a claimed method infringes regardless of the person's subjective intent or motive. The present action, in contrast, remains at the claim construction stage, where the Court's task is not to determine infringement, but rather the proper interpretation of the claims. Dow thus has no bearing on the issue now before the Court.

The Court concludes that the plain and ordinary meaning of the phrase is that the purpose clause, "to cool said fabric," necessarily modifies the clause describing the action, "fresh water is added." No other construction of the language makes sense. Thus, the Court construes the language to contain LG's proposed limitation and rejects Whirlpool's attempt to delete it from the claim. Intrinsic evidence only serves to confirm the purpose limitation. The patent specification describes the cooling purpose for the addition of fresh water: "In some embodiments, where extremely high temperatures are used during the tumble wash, water is added at the end of the tumble wash cycle to cool the clothes load, and the wash water." ('370 Patent, col. 8, lines 38-41.) (emphasis added) Elsewhere in the patent, Whirlpool discusses the introduction of water for purposes other than cooling the fabric, such as to dispense fabric softener during the spray rinse. ('370 patent, col. 9, lines 36-41.) It is therefore clear that when Whirlpool added the purpose language to the claim, it did so for a reason and meant it to require that the fresh water actually cools the fabric.

Another point of dispute concerns the meaning of "fresh water." Whirlpool says "fresh water" simply refers to water that is added to the washer from outside (i.e., the tap), and what happens to the water once it enters the washer, such as whether it flows through a bleach dispenser or acquires detergent residue, is irrelevant. LG argues that "fresh water" means clear water only, not a solution of water and some other additive or wash water residue. Neither party offers dictionary definitions for the term, and the Court concludes that its meaning is ambiguous and thus looks to intrinsic evidence. In the '370 patent specification, the only disclosed method of adding fresh water is through the detergent or wash additive dispensers, which necessarily means that "fresh water" must be construed in accordance with Whirlpool's proposal, as it would be impossible for "fresh water" as understood by LG to enter the machine. ('370 patent, col. 3, lines 12-24.) The word "fresh" in the claim takes on a meaning something like "new" or "additional" or "more."

Accordingly, the Court construes the phrase "fresh water is added to cool said fabric" as requiring that the water be added for the purpose of cooling the fabric (i.e., the Court adopts LG's proposed construction). However, the term "fresh water" does not mean clear water without any additives or wash residue (i.e., the Court adopts Whirlpool's proposed construction).
To Form A Group Of Shingled Sheets For Stacking

The final question of claim interpretation is the meaning of the phrase "to form a group of shingled sheets for stacking" in claims 9(a) and 13(a). More specifically, the question is whether a physical difference must be created which enables one to discern the first group to be stacked from the second at the point of shingling. The language clearly does require a physically identifiable group of sheets at the point of shingling.

The language "shingling… to form a group of shingled sheets for stacking" requires some basis to distinguish that group from the next. Otherwise there would be no meaning attributed to the phrase. The claim would mean the exact same thing as "shingling said sheets as they pass said location." Any construction which renders substantial language of the claim meaningless is unacceptable. Lantech, Inc. v. Keip Machine Co., 32 F.3d 542, 546 (Fed. Cir. 1994). If there is no physical distinction at the shingling process then the "shingling" cannot be said to form a group in any sense of those words. If, as suggested by plaintiff, the group is formed merely by a counting mechanism then group formation would have nothing to do with the shingling process.

Plaintiff contends that if this reading is accepted even the preferred embodiment would not employ the patented invention because the machine described in the preferred embodiment does not shingle to form a group. More specifically, plaintiff argues, "the group is not formed by shingling the sheets. Rather, the sheets are continuously deposited on the conveyor." However, the fact that sheets are continuously deposited does not mean that the shingling process does not create the group. As previously discussed shingling is the result of a faster conveyor meeting a slower conveyor. The relative speeds of the two conveyors dictate the shingling process. Altering the speed of either conveyor creates a physical change in the shingled sheets which can identify groups.

The preferred embodiment increases the speed of the conveyor below the nip at the time when the last sheet in group one has been shingled and the first sheet of group two is at the nip, thereby physically distinguishing the two groups as part of the shingling process.

The specification explains the patented process and the summary of the invention at column 1 lines 55-60 as follows:

In accordance with another aspect of the invention, the first phase of the discharge cycle includes speeding up of the conveyor downstream of the shingling nip to move the downstream sheets away from those upstream which will be disposed in the next succeeding stack.

Similarly, column 5 lines 10-14 explains the process in the context of the preferred embodiment:

The result is shown in Fig. 11 which shows the first phase of the discharge cycle wherein sections 4, 5 and 6 all speed up, and the increased speed at vacuum section 5 causes the sheets 10 to form shingles which now overlap about fifty per cent instead of about seventy-five per cent. This increase in speed downstream of the shingling nip 21 also pulls the downstream 100 away from the upstream sheets…

Elements 9(a) and (b) of the patent plainly require formation of groups by the speeding up of the lower conveyor which is clearly a component of the shingling process. Hence, the preferred embodiment supports the interpretation of the phrase "to form a group of shingled sheets for stacking" as requiring a physical identification of that group at the point of shingling.

Based upon the construction above it is clear that the defendants' machines do not infringe the '276 patent for at least two reasons. First, the defendants' machines do not shingle to form a group of shingled sheets for stacking. Defendants' machines shingle continuously with no physical distinction between the groups. A group for stacking is identifiable only after the intervention of the interrupt mechanism downstream of the shingling process.

Second, the defendants' machines do not slow "each said separate in-line conveyor in response to passage of the trailing end of said group." The first conveyor after the nip is not slowed in response to the passage of the trailing end but is slowed in response to the activation of the interrupt mechanism. The only evidence in the record is that this event does not correspond with the passage of the trailing end. Furthermore, in defendants' machines with vacuum conveyors the first two conveyors slow simultaneously in response to the interrupt mechanism, not individually in response to the passage of the trailing end of the group as required by the patent claims.
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II. The ’276 Patent

Claim 9 of the ’276 patent reads as follows:

In the method of conveying sheets in succession from a first location along a plurality of separate in-line conveyors to a stacker wherein a vertical stack of a predetermined number of sheets is to be formed, and wherein said plurality of conveyors are traveling at the same speed, the steps of:

(a) shingling said sheets as they pass said location to form a group of shingled sheets for stacking,

(b) increasing the speed of said group of shingled sheets,

(c) and slowing each said separate in-line conveyor individually and successively in a downstream direction in response to passage of the trailing end of said group past the end of each respective separate conveyor to thereby slow sheets traveling upstream of said group of sheets.

(emphasis added).

Marquip asserts that so-called Versions 1, 2, 3, and 4 of the Fosber device use the method in claim 9. The parties both rely on a stipulated description of the process used in the accused Fosber devices. Version 2 is the most basic of the Fosber devices. In Version 2, a "shingling nip" continuously shingles sheets onto a first conveyor moving at normal speed. This first conveyor moves the shingled sheets onto a second conveyor, which moves at the same speed. Between the first and second conveyors is an interrupt mechanism. When the trailing end of the last sheet in a predetermined number of sheets has moved past the interrupt mechanism, the mechanism grabs and stops the next sheet. At substantially the same time, two other events also occur: (1) the second conveyor and all other conveyors downstream of the interrupt mechanism speed up, carrying the predetermined number of sheets toward a stacker at the end of the conveyors, and (2) the first conveyor slows down. As soon as the last sheet of the predetermined number of sheets moves off the second conveyor, two more events occur: (1) the second conveyor also slows down to the speed of the first conveyor, and (2) the interrupt mechanism releases the sheets that it had stopped.

Version 4 is the same as Version 2, except that the first conveyor has been replaced with two conveyors, both of which always run at the same speed. Version 1 differs from Version 2 in that the interrupt mechanism is located midway along the second conveyor. When the interrupt mechanism closes, it - the interrupt mechanism itself - moves at the same speed as the first conveyor. In Version 1, the second conveyor behaves exactly the same as in Version 2. Version 3 is the same as Version 1, except that the first conveyor has been replaced with two conveyors, both of which always run at the same speed.

Claim construction is a question of law, which this court reviews de novo. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2D (BNA) 1321, 1337 (Fed. Cir. 1995) (in banc), aff’d, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). The district court interpreted the phrase "shingling . . . to form a group of shingled sheets for stacking" to mean that "a physical difference must be created which enables one to discern the first group to be stacked from the second at the point of shingling." In other words, the term "group" means a "physically identifiable group." The Fosber device does not form "physically identifiable groups" until the interrupt mechanism pinches and stops the flow of sheets.

Although the district court reads the claim to include "physically identifiable," those terms appear nowhere in the claim. More importantly, to construe paragraph (a) in this way would prevent claim 9 from reading on the preferred embodiment. A claim interpretation that places the preferred embodiment outside the literal scope of the claims "is rarely, if ever, correct." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583, 39 U.S.P.Q.2D (BNA) 1573, 1578 (Fed. Cir. 1996).

In the preferred embodiment, sheets are continuously shingled as they drop onto a first conveyor. As soon as the last sheet in a predetermined number of sheets has dropped onto the first conveyor, the first conveyor speeds up. This speed change causes the next sheet to shingle on the previous sheet with less overlap than previously shingled sheets. This point in the
process is the first time that the predetermined number of sheets is "physically identifiable." Thus, the process forms this "physically identifiable group" only as a result of increasing the first conveyor's speed. Yet, paragraph (b) requires "increasing the speed of said group." (emphasis added). Thus, the claim requires that the "group" of paragraph (a) must be fully formed before its speed is increased. In sum, using the district court's interpretation, the preferred embodiment does not fall within the scope of the claims.

The most consistent interpretation of "group" is an accumulation of a predetermined number of sheets. This interpretation allows the claim to read on the preferred embodiment. Moreover, with this interpretation, "shingling" does, in a sense, "form a group of shingled sheets for stacking." With each successive sheet that is shingled, the group of shingled sheets continues to form from non-shingled sheets, until the last of a predetermined number of sheets has been shingled. At that point, the process of shingling has completely formed the group of shingled sheets. It should be noted that this interpretation does not cause the limitation "to form a group of shingled sheets for stacking" to have no meaning. What this limitation requires over and above simply "shingling" is that the number of sheets that have been shingled be kept track of so that the process knows when the last sheet in the group has been shingled.

The specification supports this interpretation. It speaks in terms of a predetermined number of sheets, using as an example "100 in number." '276 patent, col. 4, line 2. The specification describes a system of sheet sensors which provide input to "a stacker sheet counter 44 which is set to provide a signal . . . when a preset number of sheets have passed." Id. at col. 4, lines 29-32 (emphasis added). In describing the stack discharge cycle claimed in paragraphs (b) and (c), the specification states:

> During normal conveying of sheets 10 to create a stack, the sheets are . . . shingled by a slow down . . . and maintained at the same speed and shingle overlap . . . . If a stack of 100 sheets is desired, when counter 44 counts 100 sheets, it triggers . . . the stack discharge cycle. During this cycle, all of the sheets 10 downstream from the 100th one counted are moved onwardly in a group to stacker 7 for discharge, while a space is created between the trailing sheet of the downstream 100 and the leading sheet of the next succeeding upstream sheets.

Id. at col. 4, lines 54-68 and col. 5, lines 1-2. The specification provides more references to the process's requirement that the number of sheets determines the timing of speed changes in the conveyors.

Fosber argues that this interpretation of "group" causes claim 9 to read on the Vermes prior art patent, U.S. Patent No. 4,040,618. Vermes, however, lacks at least two limitations of claim 9. In Vermes, the first conveyor is slowed in response to activation of an interrupt mechanism, not in response to passage of the last sheet of a group past the end of the first conveyor. See Vermes '618 patent, col. 9, lines 16-28. Indeed, the record shows that in reexamination, it was this limitation that the examiner relied on in allowing claim 9 over Vermes. Moreover, in Vermes, the second conveyor comes to a complete stop. See id. at col. 9, line 41. Assuming, without deciding, that a complete stop may indeed qualify as "slowing," in Vermes such a stop does not "thereby slow sheets traveling upstream of said group of sheets." This limitation in paragraph (c) requires that the slowing of the second conveyor play some part in causing upstream sheets to slow down. Instead, in Vermes, the interrupt mechanism is the only reason that sheets traveling upstream slow down. See id. at col. 9, lines 21-23. By the time the Vermes interrupt mechanism has released the upstream sheets, the second conveyor has resumed its normal speed. See id. at col. 9, lines 52-53.

Accordingly, to ensure that the preferred embodiment falls within the scope of the claim, this court interprets the term "group" as stated above. Beyond this alteration in the meaning of the term "group," this court affirms the district court's interpretation of other terms.
similar natural plant and mineral materials."

D. Term 7: "to provide maximum tractive effort . . ."

The Court construes the term "to provide a maximum tractive effort on the rear wheel for a given pressurized fluid flow regardless of wheel slippage conditions on the front wheels" in claim 1 of the '325 patent -- as well as the similar language in claims 9, 15, and 24 of the '325 patent and claims 1 and 9 of the '664 patent -- as follows: 3

A wheel -- call it Wheel A -- receives the "maximum tractive effort for a given pressurized fluid flow regardless of wheel slippage conditions" on other wheels if the pressurized fluid flow to Wheel A's motor is not affected by whether those other wheels slip.

This is essentially the construction proposed by Toro, Toro Opening Br. at 30, and it is consistent with the intrinsic evidence.

--- Footnotes ---

3 Claim 9 of the '325 patent refers to tractive effort on "each rear wheel" rather than "the rear wheel" (as in Claim 1), because claim 9 describes a device that may have multiple rear wheels. Claims 15 and 24 of the '325 patent and claims 1 and 9 of the '664 patent refer not to "front" and "rear" wheels, but rather to wheels on a "first end" and a "second end." These differences are inessential for claim-construction purposes.

--- End Footnotes ---

Textron would construe this limitation to require that "maximum tractive effort is always provided" to a particular wheel. Textron Opening Br. at 27 (emphasis added). 4 This construction would unduly limit the claim language and is unsupported by the intrinsic evidence. It is plain that maximum tractive effort need not "always" be provided to the rear (or other in-series) wheel. The motor might, for instance, be disengaged from the wheel (and thus providing less than the maximum tractive effort) while the vehicle is idling.

--- Footnotes ---

4 Toro makes much of the fact that Textron's proposed construction refers to a "rear wheel" even though some patent claims including the disputed language refer to wheels at a "second end" of the vehicle. Toro Opening Br. at 31. But Toro's proposed construction suffers the same flaw, as it refers to "the rear drive wheel." Id. at 30. The Court recognizes that both Toro and Textron used the adjective "rear" as shorthand, and nothing in this order turns on the parties' uses of the word "rear" in their proposed claim constructions.

--- End Footnotes ---

The key feature of the claimed invention captured by this limitation is not that maximum tractive effort -- which both Toro and Textron (and thus the Court) treat as being equivalent to the amount and force of the pressurized fluid flow -- is "always" applied to an in-series wheel. Rather, the key feature is that the tractive effort on the in-series wheel does not vary when one of the parallel-connected wheels slips. This contrasts with an all-parallel-drive system, in which slippage of one wheel affects the fluid flow to other wheels connected in parallel to the slipping wheel. The construction advocated by Toro and essentially adopted by the Court is consistent with the key innovative feature reflected in the patent claims.
TPI and HISI also disagree about the meaning of the phrase "passing the produced smoke through a filter to remove mainly the tar therefrom." TPI contends that this phrase should be construed to include any amount of filtering, "so long as some tar is removed." (TPI Brief 41.) More specifically, it argues that the language of this claim is broad enough to cover even filtering processes that render the smoke tasteless, such as the process described by the Kowalski Patent.

HISI, on the other hand, contends that this phrase protects only processes designed to remove the larger particles from the smoke, such as tar. It argues that the Yamaoka Patent does not claim a filtration process which removes the smaller flavor-giving particles from the smoke in addition to the larger tar particles. To the contrary, HISI argues, the Yamaoka Patent claims a process which imparts some flavoring to the fish that is not originally present in the fish. This flavoring can only be imparted, it argues, by allowing some of the smaller particles to pass through the filter.

The Court agrees with HISI that the language of the claim itself indicates that the Yamaoka process is designed specifically to remove tar from the smoke. This smoke is not passed through a filter, which happens to have the incidental effect of removing the tar, but is instead to be "passed through a filter to remove" the tar -- i.e., for the specific purpose of removing the tar from the smoke. The language of the claim does not appear to encompass a process that is intended to remove not only the tar, but also the smaller flavor-giving particles. Some ambiguity remains, however, because of the word "mainly." Therefore, the Court once again turns to the specifications of the Yamaoka Patent for additional guidance.

Here, the specifications confirm that the Yamaoka Patent does not claim filtration processes designed to remove other substances from the smoke in addition to the tar. The Yamaoka Patent initially summarizes the invention as follows:

"With a major part of the tar thus filtered off, the remaining smoke exerts preservative, sterilizing and color-keeping actions on substantially fresh fish and meat without imparting any disagreeable odor, taste or color thereto. Instead, the smoke imparts agreeable taste and smell to the processed fish and meat while keeping them in a substantially fresh condition."

(Yamaoka Patent, Col 3, at 20-26 ("emphasis added").) This language shows that not only does the Yamaoka Patent contemplate preserving fish without imparting disagreeable taste, but it also includes the addition of some type of taste or smell not naturally present in the fish. This taste and smell can only be imparted through particles not filtered out during the filtration process. While TPI is correct that the Yamaoka Patent's specifications discuss ways in which "[t]he level of aromatic smell characteristics of smoked products can be easily raised [(and presumably also lowered)] by varying the kind and quantity of the filtering materials," (Yamaoka Patent, Col. 7, at 4-6), the Yamaoka specifications always assume that some level of taste or aroma will be present at the end of the filtering process.

Accordingly, the Court determines the Yamaoka Patent claims a process for filtering smoke to the extent that the smoke produced by the filtration is still able to impart a noticeable and "agreeable" taste and smell to the fish. The Yamaoka Patent does not claim a process specifically intended to filter flavor-giving particles out of the smoke.

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i. "To the Atria"

Medtronic asserts that the cardioverting energy must be substantially confined to the atria, and that any cardioverting energy passing through the ventricles must be minimized or reduced. Guidant asserts that cardioverting energy may pass through the ventricles and other anatomy when applying cardioverting energy to the atria without departing from the claim.

Medtronic focuses its argument on how the cardioverting energy is applied to the atria, contending that the patent revolves around a "unique shocking vector." It argues that "to the atria" means that cardioverting energy is applied directly to the atria, rather than traveling through other tissue before reaching the atria. (Medtronic asserts that the ordinary meaning of "to the atria" might result in an absurd meaning, so it argues that the energy must be "substantially" confined to the atria.)

Medtronic asserts that because the 219 Patent, and all of the patents in the case, describe devices that do not have the ability to detect or shock the ventricles, the focus of the inventions is the prevention of ventricular fibrillation. Medtronic argues that the patents demonstrate that ventricular fibrillation is avoided by reducing "the amount of the electrical energy which is
passed through the ventricles during cardioversion of the atria," and by placing electrodes so that the electrical shock is substantially confined to the atria. '219 Patent at 2:22-32, 5:12-19; '836 Patent at 2:23-34, 5:50-57; '600 Patent at 2:25-36, 5:45-52.

Guidant focuses on the term "to apply" found in the claim to support is argument regarding the term "to." The element describes a "cardioverting means for applying said cardioverting electrical energy to the atria." It argues that the ordinary meaning of the term "to apply" means "to bring into action." Webster's Ninth New Collegiate Dictionary 97 (1990). It asserts that "to" is "used as a function word to indicate movement or an action or condition suggestive of movement toward a place, person, or thing reached." Id. at 1238. Thus, Guidant contends that a correct interpretation requires that the cardioverting energy is brought into action and directed toward the atria.

Guidant emphasizes that the element uses the term "when" and notes that the U.S. Patent Office recognized that the "when" clause is the principal contribution of the inventions claimed in the '219 Patent. The Patent Office found, "There is no teaching in the prior art of record for supplying cardioverting means which, when necessary, cardiovert the atria when the time between immediately successive ventricular activations is greater than a preselected minimum time interval." Notice of Allowability, at 2, Guidant Exh. 49.

Guidant also notes that the '219 Patent uses the term "applying cardioverting electrical energy to the atria" when describing an alternative embodiment: the use of an invention with an external electrode system that passes as much energy through the ventricles as it does through the atria. '219 Patent at 8:35-43. During transthoracic defibrillation in humans, only four percent of the transthoracic current actually transverses the heart. See Bruce B. Lerman & O. Carlton Deale, Relation Between Transcardiac and Transthoracic Current During Defibrillation in Humans, 67(6) Circulation Research 1420 (Dec. 1990). Thus, Medtronic's interpretation of the element is inconsistent with the specification.

The Court first examines the explicitly recited function, and then searches for the structure in the specification that is necessary to perform that function. Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1330 (Fed. Cir. 2003). As a starting point, the Court must determine the ordinary meaning of the claim terms. Medtronic does not provide the Court with definitions for the words "apply" and "to." However, the Court determines that Guidant's proffered dictionary provides a definition for the word "to" that seems in concert with Medtronic's interpretation of that word.

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The Court can find nothing in the specification or claim language that counsels against adopting the ordinary meaning of the word "applying." In this case, the Court finds that the definition which best fits the claim is "to bring into action."

The Court agrees with Guidant that the definition of "applying . . . cardioverting energy to the atria" means that energy is directed toward the atria. Medtronic improperly imports limitations from the preferred embodiment to come to its conclusion that cardioverting energy must go only to the atria. The claim does not include any language which limits the application of energy only to energy applied directly to the atria. Moreover, the claim also does not say that energy is to be applied only to the atria, or that energy must not be applied to the ventricles. The fact that the preferred embodiment places the electrodes in such a way so as to limit the flow of electricity to the ventricles is not dispositive. This invention teaches technology having the unique feature of timing the cardioversion. See '219 Patent at 2:66-3:4 (stating that the invention reduces the risk of inducing ventricular fibrillation by "interval timing prior to applying the cardioverting or defibrillating electrical energy"). Moreover, it is improper to limit claim construction based on the "perceived 'purpose" of the invention. Rather, the Court should interpret claims according to their plain language unless the patentee has chosen to be his own lexicographer in the specification or has clearly disclaimed coverage during prosecution." E-Pass Techs., Inc. v. 3COM Corp., 343 F.3d 1364, 1370 (Fed. Cir. 2003).

While the preferred embodiment states that the electrodes are placed so as to "substantially confine" the cardioverting energy to the atria, that placement is not what is explicitly claimed in the claim language. To require such a limitation would be to improperly import limitations that are not in the claim. See Tehrani v. Hamilton Med., Inc., 331 F.3d 1355, 1362-63 (Fed. Cir. 2003) (holding that the lower court improperly imported a limitation from the specification when it interpreted a claim to describe "automatic measuring" when the claim only stated "measuring").

The Court notes that its finding is consistent with Federal Circuit precedent. In interpreting a patent in which liquid had to flow "to" the second pumping means, the Federal Circuit held that "the 'to' limitation requires only that the liquid move from the filter 'in a pathway with a destination of the second pumping means' and does not preclude the fluid from passing
The file history thus reveals that, in order to obtain the patent, the claim language was modified to require the chimney to "

words "to the hole" were added to the claim in order to assuage the examiner's continuing concerns. Finally, after all of

the concessions had been made, the PTO issued the '996 patent. 

If there was any doubt that this construction was the correct one, it is dispelled by a review of the file history for the '996 patent. The file history reveals that the inventor had to endure several rejections from the Patent and Trademark Office (PTO) before the '996 patent was finally issued. These initial rejections were based on the PTO examiner's failure to understand how the invention worked; for example, he stated that it was "unclear how the air can leave [the opening] as it 

through intervening components." Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1458-59 (Fed. Cir. 1998). Thus, "to the atria" means that the electric shock must be directed toward the destination of the atria, but that the electric shock may pass through the ventricles on its way toward the atria.

The next claim construction issue, one that all the parties weigh in on, deals with how the word "to" is to be construed in the claim element "to the opening in said sleeve." Brita contends that this claim language merely requires that the chimney portion of the air collecting space extend in a direction towards, but not necessarily reach the elevation of, the opening in the sleeve. The Defendants, on the other hand, assert that the direction "to" requires that the chimney terminate at or above the sleeve hole. Not only do the Defendants rely on the plain meaning of the word "to," but they also argue that the file history makes clear that the inventor intended the air collecting space to reach the hole.

It is first important to look at the disputed claim language in the context in which it was used. The entire clause reads: "... said means defining the air collecting space extending upwardly at least partially towards the side wall and to the opening in said sleeve..." First off, Brita asserts that the adverb "partially" modifies not only "towards the side wall" but also "to the opening in said sleeve." Under this reading of the claim, the air collecting space would only need to extend partially toward the sleeve opening but not necessarily all the way to the opening.

The Court finds Brita's first argument wholly without merit. Not even under the most tortured reading of this claim could the Court agree that the word "partially" was intended to modify 'to the opening.' The only reasonable construction of this clause finds that "partially towards" describes how the air collecting space extends in the direction of the side wall, while "to" specifies the chimney location in relation to the sleeve opening. If the inventor wanted to have the chimney only extend "partially" in the direction of the opening, he could have either (1) inserted the word "partially" before "to", or (2) eliminated the word "to" entirely. The claim was not written in this way, however, and thus the Court refuses to read "partially" as modifying "to the opening."

The Court also does not buy Brita's argument that "to" should construed as meaning "towards." The inventor knew how to use the word "towards" - in fact, he did so five words earlier in describing the air collecting space's position relative to the side wall. Instead of again using the word "towards" in describing its direction relative the sleeve opening, however, the inventor chose to have the claim require that the chimney extend "to" the opening. When two different words are used in such close proximity to one another, the Court believes that they were intended to have different meanings. See, e.g., Hoffman v. Joint Council of Teamsters No. 38, 230 F. Supp. 684, 690 (N.D. Cal. 1962). When read in context, therefore, the word "to" clearly requires the air collecting space to reach all the way to the hole in the sleeve. Other definitions of the word "to" may be reasonable in other contexts, see Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 1459 (Fed. Cir. 1998) (noting that "to" can be can be construed to mean "in a direction toward"). Thus, the Court finds that the chimney portion of the air collecting space must reach the elevation of the sleeve opening, and not merely extend in a direction toward the opening.

The file history thus reveals that, in order to obtain the patent, the claim language was modified to require the chimney to...
extend to the elevation of the opening. It is a basic tenet of patent law that a patent holder cannot seek claim coverage for that which he has conceded during the prosecution of the patent. Vitronics, 90 F.3d at 1583. When the examiner raised his initial objections, the inventor could have corrected the drawing to show that air could still escape even if the chimney did not reach the hole. But, instead of choosing this path, the inventor modified both the patent drawings and the claim language to reflect a chimney portion which did reach all the way to the sleeve opening. In doing so, this requirement became part of the patent, and the Court will not allow Brita to now reclaim this prior concession. Thus, the file history illustrates, with crystal clarity, that the chimney portion of the air collecting space was intended to, and therefore must for claim construction purposes, extend to the elevation of the sleeve opening.

3. "to the opening in said sleeve"

Finally, Brita contends that the district court erred in interpreting "to the opening in said sleeve" as requiring the air collecting space to physically reach the same height as the opening in the sleeve. According to Brita, as long as there is a continuous air path from the bottom of the filter to the opening in the side of the sleeve, the "to the opening" limitation is satisfied. Brita is incorrect.

As described above, the air collecting space is defined in the claim as "extending upwardly at least partially towards the side wall, and to the opening in said sleeve." The plain meaning of "to the opening" requires the air collecting space to reach the physical height of the sleeve opening. This does not allow, as Brita contends, an arrangement where the air collecting space merely extends partially toward the opening, with "ambient" air extending the rest of the way. This point is illustrated by the juxtaposition of the "at least partially towards" language regarding the side wall and the use of "to" regarding the opening. Brita clearly understood a difference between "at least partially towards" and "to" when claiming the extent of the air collecting space in relation to other aspects of the insert. Brita cannot now rewrite the claim to read "at least partially towards" the opening in the sleeve. We must give effect to the claim as written, not as Brita wishes it had been written.

1 To the extent this argument implies that the "air collecting space" is all space between the insert and the sleeve, it was dealt with in section A.1, supra.

Further, the district court's understanding of the claim language is supported by the prosecution history. As originally filed, claim 1 of the '996 patent did not contain the limitation that the air collecting space extend "to the opening" in the sleeve. Because the path of the air flow was not defined, the Examiner did not understand how the invention worked and rejected the claim. In response, Brita argued that Figure 4 of the '996 patent clearly showed that the air collecting space terminated above the opening in the sleeve. In addition, Brita amended claim 1 to contain the "to the opening in said sleeve" limitation. By stressing to the Examiner that the claimed air collecting space must extend to the level of the opening, Brita has locked itself in to this claim construction. See Southwall Tech., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 U.S.P.Q.2D (BNA) 1673, 1677 (Fed. Cir. 1995) ("Claims may not be construed in one way to obtain their allowance and in a different way against accused infringers."). Thus, in order to infringe claim 1, the air collecting space of an accused device must physically extend to the opening in the sleeve.
excluding the embodiments of figures 3-15 from the scope of the claim. PC Guardian responds that the district court adopted the ordinary meaning of this clause, as was argued by Kensington during the claim construction hearing. PC Guardian also states that the district court correctly construed the claim to require that rotation of the slot engagement member "to said unlocked position" must be inhibited by extension of the pin.

We confirm the district court's construction of this clause. The specification shows that the pin extends through the security slot to prevent rotation of the slot engagement member into the unlocked position and removal from the slot. In the embodiments of Figures 3-15, the pin inhibits rotation of the slot engagement member to the unlocked position by extending through the security slot and maintaining the position of the lock housing in relation to the slot and the slot engagement member. Those embodiments, therefore, are consistent with the prosecution record, and are not excluded from the scope of this element as correctly construed. We conclude that the claim requires a pin that can be extended into the security slot and thereby inhibit rotation of the slot engagement member between the locked and unlocked positions.

Lastly, the parties dispute the proper construction of the term to convert said beam to a line of light on surfaces to which it is projected. According to Irwin, this term means that the laser must form a line on a remote surface to which the beam is projected. Orosz claims that the term only requires a line be projected on a surface.

Irwin first claims that the dictionary definition for the terms "to which" is suggestive of movement toward a place, person, or thing. The term "to," though, is a prepositional phrase that has multiple interpretations. Moreover, the dictionary definition proposed by Irwin is still broad enough to encompass projection on any surface -- even a surface the device sits upon -- and not just a remote surface.

Irwin next argues that the specification repeatedly states that the laser aligns spaced points in space which are projected to a surface. Irwin further contends that the figures with the patent specification show the beam projected between two points on a remote surface. However, lines 47-55 of column 2 in the patent specification state that a line may be projected on a reflective surface, not a remote surface. Furthermore, this specification reference also indicates that a line could be projected at any desired angle. Thus, the patent specification fails to consistently limit this disputed term to only permitting a line projected on a remote surface.

Irwin asserts that the prosecution history supports its construction. According to Irwin, the patented device was distinguished over the prior art because the patented device projects a line through space. In contrast, the prior art formed a line that would act as a guide for a cutting tool on the surface the device embodied in the prior art was mounted. However, the '081 patent was not distinguished over the relevant prior art (Jehn) on the basis of what surface the line was projected. Instead, the '081 patent distinguished the prior art by combining a portable laser unit, which uses a line-forming lens instead of a diffuser, with a level. Furthermore, the prosecution history also confirms "that a line of light can be projected on a surface from which it is reflected at a desired angle relative to horizontal;" this description could also include zero degrees, which would project the line of light onto the surface the device was mounted. (Pl.'s App. at A0067).

Lastly, Irwin contends that the intended use of the patent, for medical applications, supports its construction. Although it is appropriate to consider the intended use of the invention in construing the claims, the problem the inventor was attempting to solve is only "a relevant consideration," not a determinative one. CVI/Beta Ventures v. Tura LP, 112 F.3d 1146, 1160 (Fed. Cir. 1997). Here, while Orosz intended the invention to be used primarily for medical purposes, the specification reveals that the invention could be used for construction and engineering purposes as well.

In light of the above analysis, the disputed term does not require that the line be projected onto a remote surface, as stressed by Irwin. Rather, the ordinary meaning of the term only requires that the device project the beam as a line on a surface, regardless of whether the surface is a remote surface.

CONCLUSION

For the foregoing reasons, the disputed terms of the '081 patent are construed, consistent with this opinion, as follows: (1) a pen-light laser is a laser that is about as small and slender as a fountain pen, and the pen-light laser may be part of a larger,
portable laser unit; (2) leveling means directly associated therewith only requires that the leveling means have a fixed relationship with the pen-light laser; (3) a transparent bar is a transparent and straight, cylindrical, rod-like piece that is considerably longer than it is wide; and (4) to convert said beam to a line of light on surfaces to which it is projected only requires that the device project the beam as a line on a surface, regardless of whether the surface is a remote surface.

**I. Developer**

The claim term "developer" is a term of art in the xerographic industry. Ricoh argues that developer is "charged particles for developing a latent image," and that the terms "developer" and "toner" are used interchangeably. JCCS at 7. Defendants argue that developer is a mixture of toner and carrier, and that the two terms "developer" and "toner" have distinct meanings and are used selectively throughout the patents. The Court places a heavy presumption in favor of the ordinary meaning of claim language as understood by one of ordinary skill in the art. See Johnson Worldwide, 175 F.3d at 989. However, this presumed ordinary and accustomed meaning may be overcome where the patentee has chosen to become his own lexicographer. See id. at 990. When a patentee has become his own lexicographer the term may be expressly or implicitly defined, and the specification is dispositive in defining the disputed term. "In other words, the specification may define claim terms 'by implication' such that the meaning may be 'found in or ascertained by a reading of the patent document.'" Bell Atl. Network Servs., Inc. v. Covad Commun's. Group, Inc., 262 F.3d 1258 (Fed.Cir. 2001)(citing Vitronics, 90 F.3d at 1582). Although, "there is presumed to be a difference in meaning and scope when different words or phrases are used in the separate claims," here the Court finds that the inventor clearly equates the terms "developer" and "toner" throughout the patent specification and prosecution history. United States v. Telectronics, 857 F.2d 778, 783-84 (Fed.Cir. 1988). The specification of the '662 patent states "the bottle holder 21 plays the role of holding means for holding a toner bottle, or developer container 20." '662 patent, Col 6 ll. 30-31. The specification also consistently describes the bottle as holding toner, for example, "as shown, the amount of toner left in the bottle 20 depends on the rotation speed. '662 patent, Col. 19 ll.13-15. In the summary of the preferred embodiments, the container is once again referred to as a "developer container." See '662 patent, Col. 24 ll 20- 68. This Court finds that throughout the specification patents at issue, the terms "toner" and "developer" are used synonymously and interchangeably, and mean "charged particles for developing a latent image." JCCS at 7.

**2. Tongue**

The second term to be interpreted is "tongue" in the '486 patent, independent claims 1 and 65, and dependent claims 5, 10, 38 through 39, 42, 50, 53 (which depend on claim 1); and in the '836 patent, independent claims 1 through 3, claim 10, claim 23, and claims 26 and 27, and dependent claims 4 through 7, 11 and 12.

Unilin proposes that "tongue" be construed as "a protrusion extending distally from a side spaced inwardly from the top and bottom surfaces and including at least one locking element." (Unilin's Open. Br. 13.) Alloc initially proposed the construction "that portion of the male side of the panel that projects out beyond the top edge thereof, and the lower side thereof is the underside of the portion." (Jt. Claim Constr. Charts, '486 chart 1.) But, Alloc's subsequent submissions disclose that it apparently abandoned its initial proposed construction 3 and that, with the exception of the final clause "and including at least one locking element," Alloc joins in Unilin's proposed construction. (See Alloc's Resp. Mem. 14.)

--- Footnotes ---

3 To the extent such construction is not abandoned, Alloc's construction limits the tongue to that part of the side edge "that projects out beyond the top edge." Such construction would exclude the locking element 33 from being part of the tongue which is inconsistent with both the claim language and the specification. (See '486 patent Fig 22.) Therefore, Alloc's initial construction of tongue is rejected.
A representative use of "tongue" appears in claim 1 of the '836 patent as follows: "said coupling parts comprising substantially a tongue and a groove extending along panel side edges generally parallel to the panel underside and including integrated mechanical locking elements, said tongue, groove and locking elements formed in one piece with the panel, said tongue, groove and locking elements arranged to prevent drifting apart of the floor panel." ('836 patent, 13:64-67; 4:1-4) (emphasis added.)

The context of the surrounding words of the claim must be considered in determining the ordinary and customary meaning of those terms. ACTV, Inc. v. Walt Disney Co., 346 F.3d 1082, 1088 (Fed. Cir. 2003). Unilin's construction of "tongue" as "including at least one locking element," does not fit when considered in the context of the claims. For example, claim 1 of the '836 patent, in which "tongue" appears, also includes the phrase "locking elements" three times. Similarly, claim 65 of the '486 patent, in which "tongue" appears, also includes "locking element" twice and "locking elements" twice.

The flaw in Unilin's proposed definition is highlighted by consideration of a portion of claim 65 which reads: "said locking elements comprising a locking element in the form of a downwardly extending protrusion located on the lower side of the tongue and an upwardly facing cooperating locking recess in the lower lip." ('486 patent, 20:4-7.) If Unilin's proposed definition of "tongue" is inserted in place of the word "tongue," as indicated by the bold italic type, the claim would read:

said locking elements comprising a locking element in the form of a downwardly extending protrusion located on the lower side of a protrusion extending distally from a side spaced inwardly from the top and bottom surfaces and including at least one locking element and an upwardly facing cooperating locking recess in the lower lip.

The inclusion of "at least one locking element" in the definition of "tongue" results in a duplicity of "locking element" and renders the term "tongue" nonsensical in the context of the claims. Therefore, the Court defines "tongue" as "a protrusion extending distally from a side spaced inwardly from the top and bottom surfaces."

3. Tongue section

Claims 5 and 10 use the phrase "tongue section." Figure 3A shows teardrop shaped tongue 206, which connects both to brace 214 and carriage unit housing 142. Defendants argue that "tongue section" in claims 5 and 10 must be construed as referring only to a projecting member that resembles or suggests a human tongue by its shape or position. I find this argument unpersuasive. There is no expressed intention by the patentee to narrowly define this element in this way. In fact, "unless compelled to do otherwise, a court will give a claim term the full range of its ordinary meaning as understood by an artisan of ordinary skill." Rexnord, 274 F.3d at 1342. A tongue is a projecting strip that may, but need not, resemble or suggest a human tongue. See 2 The World Book Dictionary 2204 (1990) ("tongue" defined in machinery context as "a projecting flange, rib, or strip for any purpose"). The phrase tongue-and-groove is a good example of a projecting strip that traverses the entire edge of a board that does not resemble the human tongue in shape. Moreover, adopting defendants' construction of "tongue section" would unnecessarily exclude the preferred embodiment, which is a teardrop shaped tongue. See Vitronics, 90 F.3d at 1583 (claim interpretation that excludes preferred embodiment "is rarely, if ever, correct").

3. The Meaning of "Tool"

The central dispute in this case is whether the scope of the '801 patent includes, from the patent specification, a limitation based upon the tie-insertion tool. For the sake of perspective, I note that this matter will be important when we consider whether the '93 Brochure "anticipated" the '801 patented method (i.e. whether the '93 Brochure would have enabled a person of ordinary skill in the art to figure out and practice Helifix's patented method). Helifix's assertion is that the '93 Brochure cannot have enabled a person to have practiced the method because the brochure did not tell the reader how to build the tool.
that would allow him or her to have practiced the method. Blok-Lok argues that the patent is not limited by the tool. That is, because the '801 patent does not have to be practiced by any particular type of tool, the failure of the '93 Brochure to teach how to build the Helifix insertion tool does not preclude that brochure from anticipating the patent.

The '801 patent specification explains and portrays the tool that Helifix had created to practice the patented method. The specification states, "It is necessary to appreciate that the power source is a hammer drilling machine fitted with an SDS chuck." (Plaint. Ex. 1, col. 5, lines 44-5). This language is as close as the patent comes to defining "tool" in a manner different from the ordinary usage of the word.

I conclude that Helifix is not correct in arguing that the patent could only be practiced with the tool described and illustrated in the patent specification. In rejecting the '465 Application -- in which Helifix was attempting to patent in a single patent the tie-insertion tool and the method that ultimately was patented in Claim One (Def. Ex. 557) -- the PTO Examiner wrote that the method was "distinct" from the tool because "the adapter is not required to insert the tie." (Def. Ex. 557, "Restriction/Election" document, p. 2-3). Accepting that determination, I conclude that the "tool" referred to in Claim One is not limited by the statements made about Helifix's tool in the patent specification.

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8 A patent claim is typically drafted in three parts: the preamble, the transition; and the body. 3-8 Chisum on Patents § 806[1][b] (2007). In the '787 patent, as in many patents, the preamble consists of the language preceding the transition phrase "comprising." See, e.g., Bicon, Inc. v. The Straumann Co., 441 F.3d 945, 949 (Fed. Cir. 2006).

Therefore, preamble language does not limit the scope of a claim when it merely states a "purpose or intended use of the invention." In re Paulsen, 30 F.3d at 1479. However, "when the claim drafter chooses to use both the preamble and the body to define the subject matter of the claimed invention, the invention so defined, and not some other, is the one the patent protects." Bell Comm'n Research, 55 F.3d at 620.
Perouse argues that this entire phrase should be disregarded because it "is a claim preamble which merely states an intended use of the invention and does not limit the claim." (Perouse Opening Br. 16.) Gore concedes that "for fitting a self-expanding stent" is a non-limiting statement of intended use, but maintains that "tool" is a substantive limitation requiring construction. (Gore Reply Br. 3.) The Court agrees that "for fitting a self-expanding stent" describes an intended use of the claimed apparatus, and will not construe this portion of the preamble. See Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 809 (Fed. Cir. 2002) ("Preambles describing the use of an invention generally do not limit the claims because the patentability of apparatus or composition claims depends on the claimed structure, not on the use or purpose of that structure.").

With respect to "tool," however, the Court finds that this is a substantive limitation requiring construction. The body of claim 1 merely recites three elements. Standing alone, the body does not "fully . . . set[] forth the complete invention" of the '787 patent because the invention is not a set of three unassembled constituents, but a tool that includes these three elements and that can be used to implant a self-expanding stent within the body. (See '787 patent col.2 11.46-47 ("Another aspect of the invention is a tool for lifting an auto-expansible endoprosthesis . . . ").) Pitney Bowes, 182 F.3d at 1305. In the context of claim 1, "tool" is clearly necessary for "life, meaning, and vitality," and will be construed as a substantive limitation. Id.

Gore argues that "tool" should be construed to mean "a single instrument having the three constituents recited in the body of the claim (a guide tube, a housing part, and a housing part opener), none of which may be a part of the object to be fitted." (Gore Proposed Order.) Perouse contends that, if the Court should find that the term "tool" requires construction, the proper construction is "instrument." (Perouse Opening Br. 17.)

With respect to Gore's proposed limitation, "having the three constituents recited in the body of the claim (a guide tube, a housing part, and a housing part opener)," Perouse argues that this construction is redundant, unnecessary, and confusing. (Perouse Reply Br. 10.) The Court agrees. The body of claim 1 already includes the "guide tube," "housing part," and "housing part opener" limitations. It would add nothing to the construction of the claim to read these limitations into the preamble word "tool" as well. Even if it were not redundant, Gore's proposed limitation would be rejected as improper claim construction. None of these three constituents are part of the ordinary meaning of "tool," and their inclusion would improperly import limitations from the specification into the claims. See Phillips, 415 F.3d at 1323-24.

Gore's proposed construction includes a further limitation--that "none of [the guide tube, housing part, and housing part opener] may be a part of the object to be fitted." In other words, Gore's proposed construction of "tool" requires that the "tool" and the "object to be fitted," i.e., the stent, are physically distinct, separate structures. (See Gore Opening Br. 21-25.)

Gore argues that the stated purpose of the tool, "for fitting a self-expanding stent," implies that the tool and the stent must be physically separate structures. (Gore Opening Br. 21.) Gore further notes that the drawings in the '787 patent depict the endoprosthesis and tool as separate objects, and that the specification describes an endoprosthesis that is "inserted" into the tool. (Gore Opening Br. 22.) However, while it is true that the specification and drawings describe a tool that is physically separate from the object to be fitted, it is improper claim construction to import limitations from the specification to the claims unless there is a clear disclaimer of claim scope. See, e.g., Gillette Co. v. Energizer Holdings, Inc., 405 F.3d 1367, 1374 (Fed. Cir. 2005) ("This court declines to import limitations to the claims from the specification absent a "manifest" or "explicit" exclusion."); Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed. Cir. 2004) ("Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using 'words or expressions of manifest exclusion or restriction.'"). There is no disclaimer, clear or otherwise, of "tools" that incorporate the object to be fitted, and therefore no justification for this Court to deviate from the ordinary meaning of the term "tool."

Gore also argues that its proposed limitation is appropriate in light of the prosecution history of the '787 patent, in which a restriction requirement was issued against the '137 application (the parent application to the '787 patent) and the applicants responded by electing to pursue the "tool" and "stent" claims in separate applications. Gore apparently contends that the restriction requirement and the applicant's election in compliance with this requirement somehow invoked a limitation of physical separateness between the tool and stent upon the patent claims that issued following this election. Gore has cited no case law, and the Court is aware of none, that suggests that a restriction requirement limits the construction of claims in a later filed divisional application in the manner suggested by Gore. (See Gore Opening Br. 24-25; Gore Reply Br. 6.) Most courts that have considered similar issues have noted that a restriction requirement is primarily an administrative tool. See, e.g., Amersham Pharmacia Biotech, Inc. v. Perkin-Elmer Corp., 2000 WL 34204509, at * 16 (N.D. Cal. Feb. 28, 2000)
The Court construes "a tool for fitting a self-expanding stent" to mean "an instrument."
The parties do not dispute that a "tooth" is the cutting surface of a blade. (Pl.'s Opp'n to Mot. for Summ. J. 22; Def.'s Mot. for Summ. J. 14.) Some claims of the patents also describe the teeth as "shaped substantially as right triangles," but the court construes that term separately below. Defendant contends, however, that the specification indicates that all claims refer to teeth that are triangular because of three embodiments disclosed in the patents. (353 Patent, 3:1-2; 253 patent, 3:3-4.) Defendant similarly notes that both patents also describe, in their description of preferred embodiments, teeth as being "formed from two sides, which coalesce to form the tooth." (353 patent, 4:53-54; 253 patent, 4:55-56.)

The court cannot read a limitation into a claim from the embodiments in the specification. Laitram Corp. v. Cambridge Wire Cloth Co., 863 F.2d 855, 865 (Fed. Cir. 1988) ("References to a preferred embodiment, such as those often present in a specification, are not claim limitations" (citation omitted).) Therefore, the court concludes that it is sufficient to say that a "tooth" is a cutting surface.

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Powell argues that the Industriaplex device infringes each of the six claims of the '039 patent. Home Depot first responds that the Industriaplex device does not infringe any of the claims of the '039 patent because it does not include "a table having a top." The phrase is used in the preambles to claims 1 and 4 of the patent, and the bodies of claims 1 and 4 include the phrase "table top." Claims 2, 3, 5 and 6 are claims that expressly refer to and incorporate claims 1 and 4, but with further additions. Home Depot thus claims that because the Industriaplex device has no table top, the device does not infringe the '039 patent.

The claims of the '039 patent are in so-called Jepson form, which refers to a patent claim that describes an improvement or addition to a previously-known device or design. "Jepson form allows a patentee to use the preamble to recite elements or steps of the claimed invention which are conventional or known." Epcon Gas Systems, Inc. v. Bauer Compressors, Inc., 279 F.3d 1022, 1029 (Fed. Cir. 2002) (internal quotations omitted). When a patentee has chosen to employ the Jepson form, the choice suggests that the patentee intends to use the preamble to define the elements of the claimed invention. Thus, the preamble is a limitation in a Jepson type-claim. Id.; Kegel Co. v. AMF Bowling, Inc., 127 F.3d 1420, 1426 (Fed. Cir. 1997).

The preamble to claims 1 and 4 describe the claimed invention as intended for use "in combination with a radial arm saw assembly comprising a table having a top . . . ." '039 patent 7:8-9, 8:1-2. The body of claim 1 goes on to describe the safety device as comprising in part "a work surface mounted to the table top." Id. 7:17. The body of claim 4 similarly describes the invention as comprising in part "a planar top work surface mounted on the table top." Id. 8:9. The Industriaplex device requires that the radial arm saw's table top be removed prior to installation. Defs.' Statement of Facts P 36-38. Powell responds that "top" in this instance simply means a physical location -- i.e. the uppermost edge of the table -- and not a physical structure or object. Thus, according to Powell, the Industriaplex device contains this limitation because, like Powell's Safe Hands device, it is attached to the top of the table, notwithstanding that the table top is removed during installation.

Powell's argument must be rejected for several reasons. First, the phrase "table having a top," found in both preambles, strongly implies that the referenced "top" is a physical object or structure, not merely a particular point in space. Every object -- every table, for example -- has a "top" in the sense that, given the object's orientation and a fixed frame of reference, one point on the object is the uppermost or the highest. If this is what is meant by "top," then the words "having a top" are superfluous as used in the phrase "table having a top." This would violate the Federal Circuit's rule that a claim construction which renders some words meaningless is disfavored. See Stumbo v. Eastman Outdoors, Inc., 508 F.3d 1358, 1362 (Fed. Cir. 2007); Bicon, Inc. v. Straumann Co., 441 F.3d 945, 950 (Fed. Cir. 2006).

Second, the use of the word "top" in the claims suggests that it is a reference to a tangible object, rather than a location. For example, claim 1 refers to "a work surface mounted to the table top," and claim 4 refers to "a planar top work surface mounted on the table top . . . ." '039 patent 7:17, 8:9. The word "mount" is defined as to "place, fix, or fasten on or in the proper support, backing, etc. for the required purpose" -- the "support" or "backing" in this case being the table top. See Webster's New Universal Unabridged Dictionary (2d ed. 1983). Thus an object can be "mounted" only on another physical object, and not on a point in space. Similarly, both claims 1 and 4 describe a "cutting box defining an interior bounded by a top in spaced relation with said work surface, opposing side walls, and front and rear walls." '039 patent 7:22-24, 8:16-18. If
the "top" were merely a point in space, and not a physical object, it could not define an interior, as described in the claims.

Third, the claims themselves use different language when intending to refer to the top of the table as a location. Claims 1 and 4 both describe the cutting box as "disposed on top of the work surface." '039 patent 7:21, 8:15. Notably, these limitations were not phrased as the cutting box being "disposed on the work surface top." This suggests that the patentee (Powell) used different language when he meant to refer to "top" as a location, as opposed to "top" as a physical structure.

For these reasons, the court concludes that the Industriaplex device does include, and is not meant to be used in combination with, a table "top" as that word is used in the patent. This alone is fatal to Powell's literal infringement claim, because "[l]iteral infringement requires that each and every claim limitation be present in the accused product." Abraxis Bioscience, Inc. v. Mayne Pharma (USA) Inc., 467 F.3d 1370, 1378 (Fed. Cir. 2006). Nevertheless, the court proceeds to examine the remaining arguments regarding literal infringement.

The parties contest the scope of the word "top" and "skirt," which appear in claims 3 and 14. Phoenix argues that the top is the "upper portion that covers the container"; Silgan argues that it is "the upper central portion (convex as seen from the interior) of the cap which is bounded by the depending peripheral skirt and from which the sealing protrusions depend." In essence, Phoenix maintains that the top includes the curved outer edge of the upper portion of the cap, and ends somewhere near the point where the outer edge becomes vertical. Silgan maintains that the top ends where it transitions from convex to concave. As for the term "skirt," Phoenix defines it as "the outer portion," and Silgan defines it as "that portion of a cap which bounds the top of the cap and depends peripherally therefrom and which includes a generally cylindrical portion for engagement with the cylinder."

Both parties cite the specification to support their proposed definitions. At column 2, lines 17-18, the specification states, "The top . . . is generally convex as viewed from inside of the cap." Silgan says this passage suggests that the top ends near where it transitions from a convex to concave shape, 1 though we note that saying the top is generally convex does not mean that it is entirely convex. On the other hand, at column 3, lines 20-21, the patent describes the skirt as "generally the same diameter as the upper part of the base." This description suggests that the skirt ends near where the cap transitions from concave to being a more or less straight vertical line.

--- Footnotes ---

1 When we use the terms concave and convex, we mean as viewed from the interior of the container.

--- End Footnotes ---

If one examines these definitions of top and skirt collectively, one quickly realizes that the concave portion of the cap -- the curved portion or the outer edge -- remains unnamed. Silgan argues that the concave area is part of the skirt, because one of the preferred embodiments illustrates a number of "stops or projections on the interior surface of the skirt," some of which extend into the concave area. The Court rejects this argument. Though the specification requires stops or projections on the interior surface of the skirt, nothing in the specification limits the projections from extending into the top.

The only other meaningful description of the top or skirt that sheds light on whether the concave portion should be labeled the top, the skirt, or some combination of the two is, as Phoenix suggests, in the claims themselves, which say that the skirt "depends from the top." Silgan argues that the skirt can depend outwardly and downwardly from the top, so that it can include the concave portion of the top. This interpretation, however, is contrary to the ordinary meaning of the word "depend," which means to hang down, just as the annular protrusions described in the patent depend, or hang down, from the top. See Webster's Third New International Dictionary 604 (1993). Given this additional description, the Court concludes that the top includes the concave portion as well as the convex portion, so that the skirt -- consistent with the description in the claims -- depends from the top.
Thus, the court adopts the following construction: the top is the upper portion of the cap from which the sealing protrusions and skirt depend, and the skirt is the outer portion of the cap which is generally the same diameter as the upper portion of the base.

1. The '181 Patent

The '181 patent is titled "Optical Cable Exit Trough." It includes three claims directed to a method of assembling a cable routing system, involving the steps of providing a lateral trough section, mounting a cable exit trough to the top edge of the lateral trough section, and routing cable upwardly and transversely to reach the cable exit trough. ADC asserts that Panduit's spillover junction infringes claims 1 and 2 of the '181 patent. Claim 1 reads:

1. A method of assembling a cable routing system comprising the steps of:

   providing a lateral trough section; mounting a cable exit trough to a top edge of the lateral trough section; routing a cable from the lateral trough section upwardly and transversely to the exit trough.

The parties dispute only the language "mounting a cable exit trough to a top edge of the lateral trough section." A "cable exit trough" is properly understood as a channel through which cable exits the lateral trough section. Contrary to ADC's arguments, the term "cable exit trough" does not include any bend radius control features. No such features appear in the claim.

The term "top edge" is not defined in the '181 patent to have any meaning other than its ordinary meaning. The word "top" is ordinarily known as "the highest point, level, or part of something." Webster's Third New International Dictionary, 2409 (unabridged ed. 1968). An "edge" is commonly understood to be the "relatively thin surface or side of any object bounded by plane surfaces." Id. at 722. A "top edge" is defined as "the narrow surface or side of a thin object." New Shorter Oxford English Dictionary, 784 (Thumb Index ed. 1993). Applying these ordinary meanings to the '181 patent, the term "top edge" means a narrow, uppermost surface of the sidewall that is parallel to the floor of the trough. The specification supports this interpretation, distinguishing between the side wall of the trough section and the "top edge." In Figure 1 and Figure 4 of the '181 patent, the sidewall is indicated by reference number 24, while the top edge is indicated by reference number 30. See Fiorella Decl., Ex. 1; see also the '181 patent, col. 2: 62-63 ("Side 24 includes a top edge 30."). Thus, the "top edge" does not include the side surfaces of the lateral trough walls.

2. Claim 1 "top member"

Bradford proposes that "top member" means "the uppermost part, point, surface, or end of a distinct part of a whole." Defendants propose that "top member" means "a distinct part of a whole that extends around the entire periphery of the uppermost end." The basic dispute over this term is Defendants' additional limitation of "that extends around the entire periphery of the uppermost end."

In support of their construction of "top member", Defendants again direct the Court's attention to the specification. Defendants note that in the specification, the "top member" refers to a component or part that extends around the entire periphery of the container. Defendants then observe that the "top member" also has subparts referred to as "sides". Therefore, Defendants argue, the "top member" must describe a complete circuit. Tr. at 69. In opposition, Bradford contends that Defendants are improperly importing structural limitations from the specification to the claims.

This issue harkens back to the discussion concerning the specification's treatment of "side walls" and "sides". The Court concluded then that the specification consistently treats these terms as separate components. Similarly, as Defendants correctly point out, the specification consistently treats the "sides" as being a subcomponent of the "top member". In
addition, the specification also states that the top member is "generally rectangular shaped", lending support to Defendants' contention that "top member" describes a complete circuit. '916 Patent, col. 12, ll. 24-28.

Accordingly, the Court holds that "top member" means "a distinct part of a whole that extends around the entire periphery of the uppermost end."

II.

Sage's '728 patent discloses a disposal container that allows a user to deposit hazardous medical waste without touching waste already in the container. Figure 3 of the patent, reproduced below, illustrates the claimed features. The disposal container 10 includes a container body 12 with an elongated slot 16 at its top. A barrier, having a first constriction 18 and a second constriction 20, restricts access to the interior of the container body. Closure 28 closes the container.

[SEE ILLUSTRATION IN ORIGINAL].

The only independent claim of the '728 patent (with emphasis to highlight disputed elements) reads:

1. A disposal container comprising:
   a. a hollow upstanding container body,
   b. an elongated slot at the top of the container body for permitting access to the interior of the container body,
   c. barrier means disposed adjacent said slot for restricting access to the interior of said container body, at least a portion of said barrier means comprising
      i. a first constriction extending over said slot, and
      ii. a complementary second constriction extending beneath said slot, and
   d. a closure disposed adjacent said slot.

The district court properly interpreted "top of the container body" to mean the "highest point, level, or part of." The court also properly interpreted "extending over said slot" to require that the first constriction be "above" the elongated slot. The patentee nowhere indicated any intention to deviate from these ordinary meanings of the claim terms. Thus, they control. See York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1572, 40 U.S.P.Q.2D (BNA) 1619, 1622 (Fed. Cir. 1996) ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning.").

a. "Top Surface"

Claim 1 indicates that the tool holder is comprised of a top surface that is directly opposite a bottom surface with an intermediate surface between the two. '857 Patent, Col. 7, ll. 28-30. Claim 1 further advises that two planar abutment surfaces extend from the top surface, forming a dihedral right angle to each other, and also forming a right angle with the top surface. '857 Patent, Col. 7, ll. 31-38. Since the parties did not offer any definitions for the term "top surface" or "planar abutment surface," that are particular to the broaching trade, the Court assumes that persons of ordinary skill in the art would ascribe to these terms the same meanings that a lay person would ascribe. The Court thus relies on dictionary definitions that are consistent with the intrinsic evidence of the '857 Patent to construe these terms. See Altiris, 318 F.3d at
"Top" means the "highest point, level, or part of something." Webster's Third International Dictionary (1976) (hereinafter Webster's). Accordingly, the Court construes the term "top surface" to mean the highest part of the tool holder, above which nothing else extends.

G. "A Top Surface of the Housing" and "Extending Upward from a . . . Side of the Housing"

According to the parties' stipulation, these terms are used in claims 1 and 32. The term "top surface of the housing" is also used in claim 23. Insight and SureFire dispute the meaning of the terms. Glock initially stated that these terms do not require construction but later joined SureFire in opposing Insight's construction.

Insight contends that "a top surface of the housing" means "a surface that is exposed in an upward direction and is on top of the housing when it is oriented in its normal or typical operating orientation." Insight interprets "extending upward from a side of the housing" to mean that the structural members of the housing must extend upward, as upward is usually understood, with reference to the usual orientation of the weapon and the housing. SureFire apparently concedes that Insight's construction provides the usual meaning of "top" and "upward" but contends that those skilled in the art would disregard the usual meanings and instead would find any directional meaning in the terms. SureFire asserts that those skilled in the art would understand directional words, such as "top" or "upward," "to relate to specific orientations between parts of a device," so that changing the position of the device "does not change the relationship between the elements of the device." SureFire argues that those skilled in the art would understand "upward" in this context to mean "extending away from . . . a side of the housing in a direction normal to the surface of the housing."

To make that theory persuasive, SureFire must show that one skilled in the art would give directional words the meaning it asserts rather than the more ordinary meaning in common usage. See LizardTech, Inc. v. Earth Res. Mapping, Inc., 424 F.3d 1336, 1342 (Fed. Cir. 2005). The only support for the theory SureFire offers is its interpretation of the deposition testimony of Insight's owner and one of the inventors of the '901 patented device, Kenneth Solinsky. 5

SureFire states in its construction memorandum and reply that directional phrases would not have their ordinary meaning to one skilled in the mechanical arts, which would include trained mechanical design engineers, engineering technicians, design draftsmen, and those who have developed a basic mechanical aptitude. Despite the broad category described of those skilled in the art, SureFire did not provide a single affidavit from one skilled in the art to support its theory. Instead, SureFire offers the argument of counsel as to how weapons are used and how the terms are understood. Such argument without proper support is not persuasive.

In the part of the deposition cited by SureFire, Solinsky was not asked what one skilled in the art would understand directional terms to mean. Instead, SureFire's counsel asked Solinsky whether a device installed on top of the barrel of a weapon, rather than underneath the barrel, would infringe the '901 patent. Solinsky answered that he would have to think about that before answering, that it would depend on the "normal orientation of the device," and then reluctantly said that the specific device they were examining would infringe.

SureFire contends that Solinsky's opinion supports its construction of the terms "upward" and "top." Specifically, SureFire argues that Solinsky's infringement opinion means that one skilled in the art, like Solinsky, would understand that the directional terms in the patent do not have their common meaning because, based on that opinion, a device with structural members extending down from the device to the weapon would nevertheless be infringing. Solinsky's opinion, noting the "normal orientation of the device" and that a device could be turned "upside down," does not demonstrate that one skilled in the art understands such directional terms in a different light than their ordinary meanings. The court also does not find SureFire's argument persuasive in light of the explanations and the use of directional terms in the specification.

The specification describes some of the embodiments of the auxiliary device without a specific reference to direction. In one embodiment, the auxiliary device includes a housing with mounting members that extend "therefrom." 3:67. In another embodiment, the housing "is provided with structural members that extend from or form part of the housing." 4:64-5. In addition, the specification uses directional terms in other contexts with their common and ordinary meanings, as in the reference to the bottom of the weapon frame when describing the workings of the spring-biased mechanism and the location of the side rails "forward" of the trigger guard. 4:51-52 & 4:62.
The drawings all show the weapon in its expected upright position and the attachment mechanism oriented in the same directional framework. In describing the embodiment shown in figure 7, the specification explains that figure 7 shows a hollow housing to allow the gun frame to go through the housing, with the auxiliary device positioned "above the weapon frame," which is what the drawing shows. 10:17. The specification further explains that alternative designs for the auxiliary device are possible in which the device would be positioned on top of the weapon frame or on top of the barrel with the spring-biased mechanism located "on top of the weapon frame or on top of the barrel." 10:22-23.

Claims 1 and 32 are limited to an auxiliary device with a housing designed to have a structural member "extending upward from a first side" and "a second structural member extending upward from a second side." 10:54-57 & 12:43-46. The spring-biased mechanism is located on "a top surface of the housing." 10:67 & 12:56.

Taking those terms in the context of the patent as a whole and lacking any persuasive evidence to the contrary, the directional terms used in the patent have their ordinary meanings. The phrase "extending upward" means upward from the housing toward the weapon above the housing, with the weapon in its expected position as shown in the drawings. The top of the housing means the top with reference to the housing in its position under the weapon, again, with the weapon in its expected position as shown in the drawings.

Gargoyles argues that the inventor, Mr. Burns, acted as his own lexicographer and defined the term "toric" broadly to mean only that the radii of curvature in the horizontal meridian differ from the radii of curvature in the vertical meridian. That relatively broad definition of "toric," Gargoyles contends, is made clear by the claims and Specification of the patent and is not further limited by the prosecution history. Viewing that definition as unambiguous, Gargoyles urges this Court to limit its inquiry to the intrinsic evidence and to reject the more limited definition proposed by Aearo. Moreover, Gargoyles contends, even extrinsic evidence such as the dictionary and scientific texts contemplate a broad definition of "toric."

Aearo responds that the claims of the '611 Patent fail to define "toric" and that the Specification and prosecution history demonstrate that the inventor gave the word "toric" its ordinary meaning such that it describes objects having a single constant radius of curvature in each meridian. In addition, Aearo contends that, in spite of suggestions in the Specification and the prosecution history, the intrinsic evidence leaves the definition of "toric" ambiguous.

Aearo thus urges this Court to consult extrinsic evidence, including three treatises in the fields of optics and ophthalmology. It argues that the terms "toric" and "toroidal," as used in those treatises, are meant to include only those objects with two, and only two, different radii of curvature in the opposite meridians, as exemplified by the shape of a doughnut or a barrel.

- The Specification

While neither the claims themselves nor the Specification of the '611 Patent expressly defines the word "toric," parts of the Specification describing the shape and function of the lenses are relevant to construing that term.

Both parties cite the "Best Mode" section of the Specification, which states:

The lenses 12 have toric inner and outer surfaces of uniform radius of curvature throughout . . . The lenses 12 by utilizing a constant radius of curvature in each meridian, have substantially better optical properties than conventional eyeglasses which utilize lenses having relatively little curvature in the front and substantially greater curvature at the sides.

'611 Patent, col. 2, 11. 59-64. Gargoyles argues that the foregoing description applies only to the best mode, but not to other embodiments of the patent, and does not limit the word "toric" to lenses with a "constant radius of curvature." Because the word "toric" is qualified in the Best Mode section but not elsewhere, Gargoyles contends that the patented lenses have a constant radius of curvature only in one embodiment while they have varying radii of curvature in others.
Aearo responds that, because the preferred embodiment discloses only one method of practicing the invention, the claims are limited to that embodiment and thus incorporate the "constant radius of curvature" limitation in the word "toric." In support of that construction, Aearo cites the Federal Circuit Court of Appeals decision in Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545 (Fed. Cir. 1996).

In the Modine case, however, the court was interpreting the term "relatively small" to describe the hydraulic diameter of a condenser. Id. at 1551. That court read the term "relatively small" as limited to the particular measurements disclosed in the preferred embodiment because, during the prosecution of the patent-at-issue, other embodiments with wider measurements had been rejected in light of prior art condensers with wider diameters. Id. at 1553-54. In the present case, because the patent examiner did not reject embodiments with varying radii of curvature in the horizontal meridian, Modine is inapposite.

This Court, therefore, agrees with Gargoyles that the quoted description of the Best Mode does not limit the meaning of "toric" to lenses with a "uniform radius throughout" the horizontal meridian but, rather, implies that some "toric lenses" have varying radii in that meridian. See Specialty Composites v. Cabot Corp., 845 F.2d 981, 987 (Fed. Cir. 1988) (stating that a claim is not limited to the best mode or any particular embodiment).

On the other hand, the "Background Art" and "Disclosure of the Invention" sections of the Specification in the '611 Patent explain that the shape of the lenses differentiates the disclosed invention from lenses disclosed in the prior art whose varying radii produced distortion. '611 Patent, col. 1, 11. 36-46, 60-62. If one of the objects of the "toric lenses with radii of curvature that are selected for zero-power" was to "provide eyeglasses … having excellent optical properties," those lenses cannot have "quickly changing" radii of curvature that thereby distort vision. That limitation of the disclosed lenses is not, however, specifically associated with the term "toric." Indeed, the differentiation from lenses which distort vision because of their radii of curvature relates more logically to the phrase "radii of curvature that are selected to provide zero power" rather than to "toric."

This Court concludes that the Specification does not provide an unambiguous definition of the term "toric lens" despite the fact that it defines "radii of curvature that are selected to provide zero power" to exclude lenses with "relatively little curvature at the front" and "curvature increasing substantially toward the outer edges of the glasses," i.e., lenses whose "radius of curvature in the horizontal meridian quickly changes" thereby producing distortion. '611 Patent, col. 4, 11.17-18 & col. 1, 11. 36-38, 42-43 (emphasis supplied).

b. The Prosecution History

Like the claims and the Specification of the '611 Patent, the PTO file contains no express definition of "toric." The inventor's attorney, nevertheless, made a single comment which implies that a "toric lens" has a constant radius in the horizontal meridian.

In a letter dated January 16, 1984, Burns' attorney discusses a French patent issued to Lissac, which the PTO examiner had identified as disclosing toric lenses. Id. at 5. Having translated the French text in the patent, Burns' attorney explains that, according to that text which describes "visors made by molding . . . on spherical molds," the Lissac lenses are not toric but are instead spherical. He then differentiates a spherical lens, which has the same radius of curvature in both the horizontal and vertical meridians from "a toric lens, [in which] the radius of curvature of the lens is different in both the vertical and horizontal meridians." Id. at 6. Suggesting that the examiner should rely on the French text rather than the accompanying drawings, Burns' attorney points out that the drawings in the Lissac patent do not show a spherical lens because "the radius of curvature of the lens in each meridian varies along the length of the lens [which] would not be true in either a spherical or a toric lens." Id. (emphasis added).

Aearo argues that the latter comment settles the definition of "toric" as used in the '611 Patent and limits it to lenses with constant radii of curvature in each meridian. Gargoyles responds that the comment should be ignored because it was a gratuitous comment that had no bearing upon the claim language or Burns' ultimate success in obtaining his patent. This Court finds that, although the comment by Mr. Burns' attorney may shed light upon the common meaning of the word "toric," when taken in context, it fails to resolve all ambiguity with respect to the intended meaning of the disputed term as used in the '611 Patent.

Having reviewed the claims of the '611 Patent, the Specification and the PTO file, this Court finds that the word "toric" is
used in accordance with its ordinary meaning, but that the intrinsic evidence leaves that meaning ambiguous to those not skilled in the art of optics. This Court, therefore, has consulted dictionary definitions and treatises submitted by the parties and has considered the explanatory testimony of their experts at the limited Markman hearing in order to determine the ordinary meaning of the word "toric" in the field of optics. See Vitronics, 90 F.3d at 1584 n.6 (noting that judges may consult technical treatises and dictionaries "at any time" and "may also rely on dictionary definitions when construing claim terms so long as [they do] not contradict any definition found in . . . the patent documents").

c. The Extrinsic Evidence

Standard English dictionaries define the word "toric" as an adjective used to describe the surface of a lens having the form of a "torus" or part of a "torus." Random House Dictionary of the English Language 1998 (2d ed. 1987); Concise Oxford Dictionary of Current English 1130 (7th ed. 1982). A "torus" is a doughnut-like geometrical object formed by rotating a closed curve or conic around a line in its plane but not intersecting it. Concise Oxford Dictionary of Current English 1131 (7th ed. 1982) ("(Geom.) closed surface or solid formed by rotating closed curve, esp. circle, about line in its plane but not intersecting it [L, = swelling, bulge, cushion, etc."]"); Random House Dictionary of the English Language 2000 (2d ed. 1987) ("(Geom. a. a doughnut-shaped surface generated by the revolution of a conic, esp. a circle, about an exterior line lying in its plane. b. a solid enclosed by such a surface.")

The rotation of the "closed curve" around the line creates a single radius of rotation, which corresponds to one, necessarily constant radius of curvature in a "toric" object. Similarly, if the rotating "closed curve" is itself a circle, the radius of that circle, which corresponds to the second radius of curvature in the "toric" object, is by definition, constant. If, however, the rotating "closed curve" or "conic" is an ellipse, which has varying radii of curvature, then the resulting "torus" will have varying radii of curvature in one meridian.

Because this Court must construe "toric lens" in accordance with its ordinary meaning to one skilled in the art of optical engineering, the crucial issue is whether, in the field of optics, the "torus" shape used as a model for "toric lenses" is limited to those shapes generated by the rotation of a circle around a line, and by no other kind of closed curve.

At the limited Markman hearing on May 8, 1998, the parties presented extrinsic expert testimony (F. Dow Smith, Ph.D. for the plaintiff and Warren Smith and Kevin Salce for the defendant) with respect to the meaning of the word "toric" to a person of ordinary skill in the arts of non-prescription eyewear design and optical engineering. That testimony, together with other evidence before the Court, demonstrated that the person of ordinary skill in those arts would understand that a "toric lens" is primarily one in which the horizontal and vertical meridians have different radii of curvature. The difference between the radii in opposite meridians is the characteristic which distinguishes toric lenses from two other common lens shapes, i.e., flat lenses (which have no curvature) and spherical lenses (which have the same radius of curvature in both meridians). Although such a person might also know that, due to manufacturing limitations, the commonly manufactured "toric" lenses are "circular toric" and, therefore, have constant radii of curvature in each meridian, this Court finds that the word "toric" itself is not so limited. 2 For example, "toric" lenses include not only "circular toric" lenses but also "ellipsoidal toric" lenses (which have varying radii of curvature in one meridian).

--- Footnotes ---

2 This Court does not rely upon the numerous scientific texts discussing "toric" lenses that were submitted by the parties in support of their respective motions for summary judgment because the testimony of Kevin Salce and F. Dow Smith demonstrates that a person of ordinary skill in the relevant arts would not consult such texts.

--- End Footnotes ---

Based upon the intrinsic evidence (particularly the "Best Mode" section of the Specification), the dictionary definitions and expert testimony at the limited Markman hearing, this Court construes the term "toric lens" to mean a lens which is curved so that the radii of curvature in the horizontal and vertical meridians are different.
Torque

Claims in the '715 Patent contain the terms "torque-on-bit" and "torque response." Baker Hughes contends "torque-on-bit" and "torque response" mean "forces responsive or reactive to drill bit rotation (which typically is a force or are forces in a direction other than the direction of drill bit rotation)." ReedHycalog argues "torque-on-bit" and "torque response" mean "resistance to rotation." The dispute centers on whether torque is limited to forces opposite the direction of drill bit rotation. ReedHycalog's definition limits torque to forces opposite drill bit rotation; Baker Hughes's construction is not so limited.

There is no support to limit "torque-on-bit" or "torque response" to the torque in the direction opposite of drill bit rotation. Thus, the terms are not so limited. Further, a lay jury will understand the term "torque," and therefore the terms "torque-on-bit" and "torque response" require no construction. 16

--- Footnotes ---
16 Ref. Nos. 18 and 19 of Appendix B contains the disputed terms and their constructions.

--- End Footnotes ---

Similarly, the preamble of claim 33 of the '631 Patent claims "a method of drilling . . . without generating an excessive amount of torque-on-bit." A lay jury will understand the term "excessive," and therefore that term does not require construction. 17

--- Footnotes ---
17 Ref. No. 34 of Appendix B contains the disputed term "without generating an excessive amount of torque-on-bit" and its construction.

--- End Footnotes ---

We turn first to the court's construction of the terms "non-tortuous copy path" and "tortuous bend." The meaning of these two claim terms, which are used to define the degree of bending that the edible sheet undergoes during its passage through the photocopy machine, depends upon the meaning of "tortuous" and "non-tortuous." This is so because the parties apparently agree that a non-tortuous copy path is a path that is free of "tortuous bends." As described above, the district court held that "[a] bend is tortuous if it significantly deforms the line preceding it." Guttman, slip op. at 4. As Guttman notes, the trial court did not explain the basis of this definition. The dictionary defines "tortuous" as "marked by repeated twists, bends, or turns." Webster's Third New International Dictionary 2414. This cannot be the proper definition of "tortuous" as used in the claims, however, because it simply makes the phrase "tortuous bend" redundant, without providing any insight into the crucial issue of how curved a bend may be before it becomes "tortuous" within the meaning of claim 11. Relying on the intrinsic evidence, Guttman asserts that a non-tortuous copy path is one that, while potentially curved, contains no curves sharp enough to sacrifice the survivability of the edible sheet.

Path 18 of Figure 1 of the '530 patent illustrates what the specification describes at column 3, line 59 as a tortuous copy path:

[SEE FIGURE 1 IN ORIGINAL]

Path 18 follows a 180 degree curve, which is typical of the type of bent copy path in most commercial photocopy machines. However, while Figure 1 illustrates a bend that falls within the definition of "tortuous," it does not answer whether other, less extreme bends might also fall within that definition.
The specification does not explicitly define tortuous (or non-tortuous). The specification, however, is not entirely silent as to what a "non-tortuous copy path" is. In column 4, the patent describes a copy path free of "any tortuous bends or significant curves," such as the 180 degree curve shown above, so as to enhance survivability of the substrate sheet. '530 Patent, col. 4, lines 29-30. Thus, the specification indicates that a non-tortuous path is one that enhances survivability of the edible sheet.

Further disclosures in the specification are consistent with the meaning espoused by Guttman. As noted above, traditional photocopy machines were thought to be incompatible with edible sheets in part because the paper is too delicate to survive passage through a copy path with extreme curves. The specification describes this problem as follows: "Most edible substrate sheets are relatively flimsy sheets, and so would not likely survive a pass through the machine along the copy path. Indeed the copy path in such machines is quite tortuous making them unsuitable for photocopying onto either flimsy or rigid edible sheets." Id. at col. 2, lines 27-33. Thus, it is clear that a tortuous bend is one that an edible substrate sheet "would not likely survive."

The specification teaches that providing a "substantially straight" copy path is one solution to this problem:

The tortuous path is thus usually provided between the copy paper source, such as a drawer in the machine, and the reproducer mechanism in the terminal copying portion of the copy path. To this end . . . the tortuous copy path is interrupted and a substrate input is defined . . . such that the edible sheet (and carrier) will traverse a substantially straight copy path so as to enhance survivability of the sheet as it passes through the machine, while also reducing the areas of the machine that could be gummed-up by the edible sheet.

Id. at col. 3, lines 5-16. Kopykake seizes on this language in the specification (and similar language in the prosecution history) to support its proposed claim interpretation, namely that "non-tortuous copy path" means a substantially straight copy path. However, while we agree that a substantially straight path is non-tortuous, we do not agree that the claim language should be limited to substantially straight copy paths. The inventor clearly contemplated using the invention in machines with curved, but non-tortuous, copy paths. For instance, the specification notes that putting the edible substrate sheets on a carrier sheet with tape down the side "helps protect edge 130 from snagging and is particularly advantageous for use in photocopying machines where the paper path is curved as opposed to straight." Id. at col. 5, lines 18-20. Furthermore, the other independent claims explicitly recite a "substantially straight copy path," suggesting that the applicant chose "non-tortuous copy path" to mean something different from, and presumably broader than, a substantially straight copy path.

Were there any doubt as to the correctness of Guttman's interpretation, the prosecution history provides an explicit definition of the contested claim language. The limitations to a "non-tortuous copy path" and lack of "tortuous bends" were added via amendment. The reason for the amendment is unclear from the record on appeal. However, the remarks accompanying the amendment explain that

it will be understood that the term "non-tortuous," as used by Applicant, is intended to cover a copy path that may be curved, but is free from any bends that would tend to sacrifice the survivability of the substrate. For example, on Page 10, lines 8-10 of the disclosure, Applicant states that "tape 132 helps protect edge 130 from snagging and is particularly advantageous for use in photocopying machines where the paper path is curved as opposed to straight (emphasis added)." Accordingly, Applicant clearly contemplates a curved copy path, but one that is free from tortuous bends that would tend to impair the intended properties of the edible web.

Based on this language, Guttman asserts that a "non-tortuous copy path" is simply "a path that can be curved, but which is free from bends that would tend to sacrifice the survivability of the substrate."

We see no reason to deviate from the definition espoused by the applicant during prosecution, and therefore we agree with Guttman that the correct definition of "non-tortuous copy path" is a path that, while not necessarily straight, has no curves sharp enough to sacrifice the integrity of the edible substrate sheet. By extension, a "tortuous bend" is a bend sufficiently sharp to sacrifice the integrity of the substrate sheet. We turn now to the other disputed claim term: photocopy machine.

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1. Infringement
In addressing infringement, the district court found that Cordis' microcatheter products were likely to fall within the scope of claim 12 of the '768 patent. On appeal, Cordis contends that the court erred in its claim construction and that such error led the court to conclude that Target established a likelihood of success on the merits. We agree.

Determining whether a patent claim is infringed requires a two-step analysis: "First, the claim must be properly construed to determine its scope and meaning. Second, the claim as properly construed must be compared to the accused device or process." Carroll Touch, Inc. v. Electro Mechanical Sys., 15 F.3d 1573, 1576, 27 U.S.P.Q.2D (BNA) 1836, 1839 (Fed. Cir. 1993). Claim construction is a question of law, which we review de novo. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 U.S.P.Q.2D (BNA) 1321, 1329 (Fed. Cir. 1995) (in banc), aff'd, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). In construing a claim, we consider the language of the claim, the specification, and the prosecution history. Nike Inc. v. Wolverine World Wide, Inc., 43 F.3d 644, 646, 33 U.S.P.Q.2D (BNA) 1038, 1040 (Fed. Cir. 1994).

Claim 12, as amended through reexamination, contains three principal elements: (1) it is comprised of at least three segments, (2) it increases in flexibility from the proximal to the distal end, with the distal-most segment being at least 5 cm long, and (3) it must be sufficiently flexible that to travel along a tortuous path of at least 5 cm through vessels of less than about 3 mm in diameter said target site said elongate tubular member must be guided with a guidewire . . . .

It is this third element, the structural limitation of "sufficiently flexible," that is the focus of the current dispute. The language of the claim imposes the structural limitation not through the objective mechanical measurements one might expect, but by gauging the microcatheter's ability to traverse a "tortuous path" with or without the use of a guidewire.

The district court jettisoned the clear language of the structural limitation through the imposition of a standard of safety. The court concluded that even if the catheter was physically capable of traversing "a path of less than three mm lumen diameter over a path length of over five cm without a guidewire [it would] still infringe the '768 patent if it cannot be done in a medically safe and prudent matter."

Cordis correctly argues that the claim language is presenting a physical, albeit awkward, flexibility limitation and it was improper for the court to stray outside the confines of the claims, the specification and the prosecution history. Cf. Vitronics v. Conceptronic, Inc., 90 F.3d 1576, 39 U.S.P.Q.2D (BNA) 1573 (Fed. Cir. 1996). Under the claim as issued, a microcatheter which is capable of traversing a tortuous path without the guidewire would not be sufficiently flexible to meet this structural limitation of the claimed device, regardless of whether the procedure was safe or whether the device was intended to be used with a guidewire.

The specification provides little assistance in construing "sufficiently flexible/must be guided" language. However, the structural limitation interpretation is borne out by the prosecution history. The prosecution history reveals that the "sufficient flexibility/must be guided" language was added during the course of the reexamination. Target repeatedly focused on this particular language as providing a measure of flexibility which distinguished the prior art and overcame the examiner's concerns. Cordis points to a few examples from the reexamination proceedings:

Of most importance is the clarifying limitation relating to the overall flexibility of the claimed devices - that the catheters are of such flexibility that they must use a guidewire to reach a chosen spot within the tissue.

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Each of the claims now requires that the claimed catheter be sufficiently flexible that it must be passed through the body to the target site using a guidewire.

****

The catheters of the claims, in contrast [to the prior art], must be sufficiently flexible that they cannot pass through the vasculature to the target site without the aid and direction of a guidewire.

****
The claims positively recite the requirement that the claimed catheters are so lacking in inherent stiffness that they must be passed to the intrabody target site with a guidewire.

At no point in the prosecution history does Target ever address a standard of safety. Nor should it have, to do so would shift the focus to the application of the invention, as the district court did, and obscure the fact that it is an apparatus which is patented.

We conclude that the "sufficiently flexible/must be guided" language was intended only to elucidate the structural parameters of the microcatheter. It is apparent from the claim language, read in light of the specification and the prosecution history, that the standard of safety and reasonableness is an extrinsic, improperly imposed, standard.

The second aspect of the infringement analysis is the comparison of the allegedly infringing product with the properly construed claim. Cordis has provided both video and written declarations aimed at demonstrating that its microcatheter products are capable of traversing the tortuous path without a guidewire. As the parties have argued, in reviewing the declarations it becomes immediately apparent that we must construe the claim term "tortuous path."

Target argues that the five elements of a "tortuous path" are set forth in the specification, including: (a) a number of bends, some of which may be 90 degrees or more, (b) small vessels, typically with lumen diameters of less than about 3 mm, and (c) a total path length within the target tissue of at least about 5 cm, (d) accessible by a guidewire 18 mil or smaller of the type described above, but being too delicate and or tortuous for accessing by significantly larger guidewire, and (e) the requirement that the path include vessels that branch off the more proximal vessels of the path at greater than a right angle.

Cordis argue that a valid construction should only include the first three elements, because after enumerating these characteristics the specification concludes the paragraph with "[a] path having these characteristics is defined herein as a tortuous path...." However, as Target points out, the next paragraph explicitly expands on the description, stating that a tortuous path is "further characterized by" the last two elements. The district court merely perpetuates its improper standard of safety and concludes that a tortuous path is one which cannot be accessed without a guidewire. Insofar as the claims must be read in light of the entire specification, not just advantageous snippets, we adopt Target's construction of "tortuous path."

The district court's erroneous construction of claim 12 affected its analysis of likelihood of infringement. While we do not rule on infringement, as there are unresolved factual issues, we find that the district court clearly erred in determining that there was a likelihood of infringement.

The invention of the '701 patent activates its shredding function using a "touch switch." Fellowes maintains that the term "touch switch" should be construed to mean a switch that requires physical contact in order to be activated. (See Fellowes's Opening Brief at 20.) Michilin, however, contends that the term "touch switch" means "touch switch, or any other kind of switch." (Michilin's Opening Brief at 10.)

Michilin conceded that "the conventional definition of a 'touch switch' means a switch that must be physically touched to be activated" (Fellowes's Opening Brief, Ex. H, Michilin's Response to Fellowes's Requests for Admissions at 4), and now cites no alternative definition of touch switch offered in the '701 patent. This matter, then, is conclusively established pursuant to Federal Rule of Civil Procedure 36(b). Fed. R. Civ. P. 36(b) ("Any matter admitted under this rule is conclusively established unless the court on motion permits withdrawal or amendment of the issue."). Moreover, Michilin did not contest at the supplemental scheduling conference held on March 29, 2006 that a touch switch requires physical contact, and Michilin II granted Fellowes's request for summary judgment of literal noninfringement. Id., 433 F. Supp. 2d at 12-13. Michilin cannot now revive an argument it opted to waive. In any case, the ordinary meaning of touch switch requires the switch to be physically touched. The claim language is clear and unambiguous. "Touch switch" means a switch that requires physical contact in order to be activated.
1. Claims 1 and 9: construing "toward"

Claims 1 and 9 speak of a first and second speaker driver, each of which is mounted in a sound cabinet and has an axis "directed toward the listening area" (emphasis added). Defendant urges the court to construe "toward" as "generally perpendicular to the front plane collectively defined by the sound cabinets to project sound into the listening area." Plaintiff maintains that "toward" should be interpreted as "in the direction of," which is the definition found in Merriam Webster's Collegiate Dictionary (10th ed. 1993).

According to the "Background of the Invention," traditional stereo recording involved two channel signals, a left and a right, each of which had its own speaker driver housed in its own speaker cabinet. In a two-channel system, if the left and right speaker drivers are pointed inward, toward the listener, their sound presentations will merge together and reinforce the center image, but degrade the spaciousness of the presentation. If the speaker drivers are pointed forward or slightly outward, greater spaciousness is achieved at the expense of degrading the center image.

Some efforts at enhancing reproduction of two channel systems have utilized "reflected sound" that is "bounced" off the back and side walls. The "Background of the Invention" notes, however, that "adding additional artificial reflected sound into the room beyond that reflected sound which already exists in the original musical recording, injects a certain artificiality to the replayed music and creates a loss of direction of the course and loss of musical sound integrity."

Ultimately, three-channel systems comprised of a left channel signal, right channel signal, and center channel signal were developed. A challenge of those systems, however, was positioning a separate speaker driver for the center channel. The "Background of the Invention" identifies two drawbacks in particular with respect to the third speaker driver: (1) the spatial and aesthetic considerations of placing a third speaker cabinet within a room, and (2) managing the dominance of the center channel, which often carries more information than the left and right channels.

The stated objectives of the '680 patent are, among other things, to, (1) eliminate the necessity of positioning an additional speaker driver and cabinet separate from the left and right speaker drivers, and (2) maintain the integrity of the center channel signal and the sound image produced therefrom within the listening area while eliminating the distinct perceived location of a center channel speaker driver. To this end, the "Summary of the Invention" provides:

The present invention addresses the above-discussed objectives with a loudspeaker system which utilizes a unique configuration of speaker drivers which are coupled to a multiplicity of audio signal channels of an audio signal generator to more realistically recreate a musical recording in a listening area similar to the sound of the music on stage.

To that end, a loudspeaker system comprises two spaced apart cabinets for housing speaker drivers…. The sound cabinets are positioned to collectively define a front plane which generally faces the listening area. A first speaker driver is mounted in one of the cabinets while a second speaker driver is mounted in the other of the cabinets. The first and second speaker drivers are arranged to have their axes generally perpendicular to the defined front plane of the sound cabinets to project sound into the listening area…. The system further comprises third and fourth speaker drivers which are positioned respectively within the first and second cabinets next to but slightly spaced from the first and second drivers in those cabinets…. The axes of the third and fourth drivers are oriented at an angle with respect to the plane defined by the sound cabinets and with respect to the axes of the first and second drivers to which they are adjacent. The third and fourth speaker drivers cooperate to create a third channel sound image, such as a center channel sound image with center channel frequency components in the listening area forward of the sound cabinets. Preferably, the center channel sound image is created generally between the right and left channel sound images in the listening area. To that end, the axes of the third and fourth speaker drivers are angled with respect to the generally parallel axes of the first and second speaker drivers at an angle in a range of approximately 20 [degrees] -- 45 [degrees] are directed forward into the listening area and inwardly between the parallel axes of the first and second speaker drivers such that the axes of the third and fourth speaker drivers intersect forward of the sound cabinets in the listening area.
The focused third channel drivers create a center channel sound image while eliminating the need for a separate dedicated sound cabinet with speaker drivers for playing the center channel. The loudspeaker system creates an accurate and well-balanced sound image with direct sound from each channel as opposed to various artificial sound images utilizing the addition and subtraction of the left and right channels and artificially created reflected sound.

The "Detailed Description of Specific Embodiments" further provides:

The sound perceived by [the] listener 16 is created by primarily direct sound images which recreate the sound, such as music, as it was recorded as opposed to a system which attempts to create sound environments by utilizing artificially reflected and/or electronically modified signals, e.g., L-R, R-L techniques.

According to defendant, the language describing the axes of the outer drivers (the first and second drivers) as being "generally perpendicular" to the front plane of their respective sound cabinets and "generally parallel" to one another, as well as the discussion of using direct (as opposed to reflected) sound, compels the court to adopt defendant's proposed construction of "toward," as perpendicular. The court disagrees.

In the instant case, the disputed claim language in claims 1 and 9 describes a speaker driver mounted in a cabinet and having an axis directed "toward" the listening area. As noted above, in the absence of an express intent to impart a novel meaning to claim terms, or some ambiguity of claim terms requiring clarification, the words used in a claim are deemed to have their ordinary and customary meaning as understood by one of ordinary skill in the art. Here, there is nothing in the specification of the '680 patent indicating that "toward" is intended to convey anything other than its ordinary and customary meaning: "in the direction of."

Two of the stated objectives of the '680 patent are to, (1) create a center channel image while eliminating the necessity of positioning an additional speaker driver and cabinet separate from the left and right speaker cabinets, and (2) eliminate the distinct perceived location of a center channel speaker driver. Consistent with these objectives, the "Field of the Invention" states that "the present invention relates generally to a loudspeaker system for creating multiple sound images and more particularly to a loudspeaker system which produces multiple sound images in a listening area with a focused center source image from two speaker driver locations."

The '680 patent claims a system comprising two speaker cabinets, each of which has two drivers inside. When the cabinets are adjacent to one another, one of the drivers in each cabinet has an axis directed forward to the listening area, and the other driver in each cabinet is "directed inwardly to a location in the listening area" between the two cabinets. The inwardly facing drivers create a third (center) channel image between the sound images created by the other (outer) two drivers.

Although it seems clear from the claim language that the inwardly-facing drivers are angled so that they create a channel image between the sound images created by the other (outer) two drivers, nothing in claims 1 and 9 implies that the axes of the outer drivers be, as defendant argues, "generally perpendicular to the front plane collectively defined by the sound cabinets to project sound into the listening area." Claims 1 and 9 simply use the word "toward" to describe the orientation of the outer drivers in relation to the listening area and, in this context, it does not appear that "toward" needs further clarification.

Moreover, as discussed below, nothing in the specification compels such a narrow construction of "toward." Plaintiff has not assumed the role of lexicographer by explicitly defining "toward" to mean something other than its customary and ordinary definition. Nor has plaintiff used words of "manifest exclusion or restriction" that represent a clear disavowal of claim scope.

The language in the specification -- specifically, the "Summary of the Invention" and "Detailed Description of Specific Embodiments" -- that speaks of generally perpendicular axes and parallel axes does not represent an explicit definition that departs from the ordinary and customary meaning of "toward." The references to "generally perpendicular" and "parallel" in the context of the orientation of the outer speaker drivers are few and far between: "generally perpendicular" is used three times 3 in the specification, and "parallel" and "generally parallel" are each used once. Compare Microsoft Corp. v. Multi-Tech Systems, Inc., 357 F.3d 1340, 1348 (Fed. Cir 2004) (concluding that communications between the local and remote sites of a the claimed invention had to occur directly over a telephone line in light of, among other things, specification's
"roughly two dozen" references to data transmission "over or through a telephone line").

3 One of these instances, contained within the "Detailed Description of Specific Embodiments," provides: "Preferably, the front face surfaces 26 of the sound cabinets 18, 20 are generally planar and exist in a plane parallel to the front face of the speaker drivers 22, 24 and generally perpendicular to the respective axes 23, 25. The speaker drivers 22, 24 and their respective axes, 23, 25, define an imaginary sound plane 28 forward of the sound cabinets 18, 20 and generally facing the listening area. The defined plane 28 is an imaginary reference and will be utilized to define the position and orientation of the various speaker drivers and their axes in accordance with the principles of the present invention." (Emphasis added.)

Defendant directs the court's attention to SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337 (Fed. Cir. 2001), for the proposition that characterizing a particular configuration as part of the "present invention," as in the instant case, is "strong evidence" that limits the scope of a patent's claims. SciMed is distinguishable in several important respects from the instant case, however.

Sci-Med involved three patents for balloon dilation catheters. At issue was whether the common specification of the three patents limited the scope of the asserted claims to catheters using one configuration of passageways, or lumens, as opposed to another. The SciMed court described the twelve references to "annular inflation lumen" included within the specifications' characterization of the "present invention" as "strong evidence that the claims should not be read to encompass the opposite structure." Id. at 1343. Moreover, the SciMed court was also influenced by language in another area of the specifications that characterized the annular inflation lumen as the "basic sleeve structure for all embodiments of the present invention contemplated and disclosed herein." Id. Last, the SciMed court emphasized that the three patents at issue "distinguished the prior art on the basis of the use of dual lumens and pointed out the advantages of the coaxial lumens used in the catheters that [were] the subjects of the SciMed patents." Id.

To begin, SciMed, in contrast to the instant case, involved only two conceivable choices: coaxial lumens (which used an annular inflation lumen) and dual lumens (which did not use an annular inflation lumen). Further, in contrast to the patents at issue in SciMed, the '680 patent does not describe "generally perpendicular" axes as the basic configuration for "all embodiments of the present invention contemplated and disclosed herein." See id. Nor does the '680 patent distinguish or criticize prior art on the basis of the outer speaker driver configuration.

The instant case involves only a handful of references to "generally perpendicular," "generally parallel," and "parallel" (in the context of the configuration of the axes of the outer drivers). 4 These few references simply do not constitute an "explicit definition" that would warrant departing from the customary and ordinary meaning of "toward."

4 It is worth noting that, with the exception of the example described in footnote 3, none of the references to "parallel," "generally parallel," and "generally perpendicular," is even in the same paragraph as the phrase "in the present invention." Compare Watts v. XL Systems, Inc, 232 F.3d 877, 883 (Fed. Cir. 2000) ("The specification actually limits the invention to structures that utilize misaligned taper angles, stating that 'the present invention utilizes [the varying taper angle] feature.'").

Alloc, Inc. v. ITC, 342 F.3d 1361 (Fed. Cir. 2003), relied on by defendant, is similarly distinguishable. In concluding that the patentee in that case invoked the added limitation "play," the Alloc court noted that the specification criticized prior art floor systems without play, id. at 1369, and that the patentee invoked play to overcome the prior art during prosecution of its parent patent, id. at 1372. According to the court, "Because the applicant invoked play to overcome the prior art... Alloc cannot now contend that the '621 patent claims a flooring system and method for installing that system without play." Id. In the instant case, there is simply no comparable evidence from the prosecution history that plaintiff expressly disavowed outer speaker driver configurations that did not involve "generally perpendicular" axes.
The specification's criticism of reflected sound and references to "primarily direct sound" do not compel a contrary result. First, depending on the placement of the speakers and the dimensions of the room, the axes of the drivers at issue could be angled outward without creating reflected sound. For example, if the drivers were angled outward to some degree and not placed too close to the side walls, the sound images emanating therefrom could reach the listening area before bouncing off of the side or back walls. This would result in the delivery of "primarily direct sound" and would further minimize artificially created reflected sound.

Second, to the extent that the "Background of the Invention" criticizes reflected sound, it should be noted that such criticisms are discussed in the context of two-channel stereo systems, as opposed to the three-channel system contemplated by the '680 patent. Thus, when read in context, the specification's criticisms of reflected sound and its references to "primarily direct sound" do not constitute a disavowal of claim scope.

The court recognizes that all of the figures contained within the specification show outer drivers facing forward, with their axes perpendicular to the front of the speaker cabinets. However, as the Federal Circuit has noted, "[Federal Circuit] case law makes clear that a patentee need not describe in the specification every conceivable and possible future embodiment of his invention." CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002) (internal quotation omitted). See also Teleflex, 299 F.3d at 1328 ("[The Federal Circuit has] cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification.") (Quotations omitted.).

In the absence of any indication that plaintiff intended to depart from the ordinary and customary meaning of the word "toward" in claims 1 and 9, the court declines to adopt defendant's proposed claim construction. Rather, the court concludes that "toward," as used in claims 1 and 9, should be construed according to its dictionary definition, which is "in the direction of." Consistent with this conclusion, the court also declines to read analogous limitations into claims 15 and 23, which require "adjacent" sound images from the outer drivers.

Having reached that conclusion, the court notes that it questions whether the distinction between its construction and defendant's construction is merely academic. Even under defendant's construction, the drivers are oriented "to project sound into the listening area." To the extent that defendant's construction calls for "generally perpendicular" axes to achieve that end, the court notes that "generally perpendicular" is not as precise as "perpendicular." Accordingly, even under defendant's proposed construction, the question of infringement would necessarily be left to a jury.

**A. "a toy device for the amusement of pet animals"**

The first disputed language, "a toy device for the amusement of pet animals," comprises the preamble of Claim 1. As a general rule, preambles are not construed as limiting the claims except in those instances where they recite "essential structure" or where they are "necessary to give life, meaning, and vitality to the claim." Catalina Mkts. Int'l, Inc. v. Coolsavings.com, 289 F.3d 801, 808 (Fed. Cir. 2002) (citation omitted). Thus, generally, "a preamble is not limiting where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention." Id. (citation omitted). However, a patentee's "clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention." Id. Thus, statements of intended use may limit the claims in those instances where the patentee "clearly and unmistakably relied on those uses or benefits to distinguish prior art." Id. at 809.

In this instance Plaintiff clearly relied on use specified in the preamble to distinguish from the Postings reference (U.S. Pat. # 1,699,308) when, in a response to the USPTO examiner's initial rejection, he characterized Postings as an "exercising device" and noted that the device in Postings 'clearly has no 'amusement' value to the animals whatsoever." (Def's Ex. B at 33-36 (emphasis and quotations in original).) Plaintiff thereby relied on the "amusement" element of the preamble to define his claimed invention and to distinguish it from a prior art reference. Thus the preamble must be construed as limiting inasmuch as the claim requires an element of "amusement."

Plaintiff argues, and at first glance it appears, that the preamble need not be construed as limiting "amusement" to that of
"pet animals." In this instance, Patentee did not argue during prosecution that his invention was patentably distinct from Postings based on the fact that a pet was to be amused. Indeed, he could not have done so because the Postings reference in fact discloses a device for the exercising of a pet (a dog). However, the intended use specified in the preamble, and which the Patentee relied upon in the prosecution history, is that of a "toy device for the amusement of pet animals." Plaintiff has cited no authority for the proposition that a preamble specifying the intended use of the device should be dissected in the claim construction process to include only the single distinguishing element. Such a dissection would be particularly odd in this instance where the remaining phrase ("for the amusement") is simply not logically cognizable without reference to the "amusee."

In light of the foregoing analysis, the Court will construe the preamble phrase "a toy device for the amusement of pet animals" as "a device for the amusement of an animal kept for pleasure or companionship, rather than solely for utility." 1

--- Footnotes ---

1 Construction of the phrase "toy" is unnecessary as it would merely be redundant with the inclusion of "amusement."


--- End Footnotes ---

4206

2. The product claims -- "a tracer"

Inverness claims that the proper construction of the term "tracer" in claim 38 of the Campbell patent is "a tracer that is a separate component from (i.e., is not attached to) the solid support." Inverness's expert, Dr. Gunter, argues that this construction is suggested by the structure of claim 38, in which a semicolon separates the clause introducing the tracer from the clause explaining the solid support. Furthermore, Dr. Gunter notes that "kit" claims are typically understood to involve separate components. He cites Jeffrey G. Sheldon, How to Write a Patent Application, Practising Law Institute, New York City (December 1995), in support of his understanding of "kit claims." According to that publication, "many products are sold unassembled or contain a variety of parts that are used together. Kit claims are particularly valuable for those products." Based on these facts, Dr. Gunter alleges that the separate listing of the two components requires an interpretation of claim 38 that the tracer not be located on the solid support. Dr. Gunter believes that this is the proper construction of claim 38 because the patent specification never discloses a configuration in which the tracer is located on, or attached to, the solid support. He finds further support in the prosecution history of the Rosenstein patent, in which BD stated that Campbell does not disclose that the tracer can be placed on the solid support and be made to flow to the binder area, as is claimed in Rosenstein.

BD argues that the neither term "separate" nor "attached" is used in claim 38 to describe the relation between the tracer and the solid support, and thus the claim does not require any particular relation between those components of the invention. It also contests Inverness's assertion that the fact claim 38 is described as a "kit" claim provides support for the conclusion that the tracer and solid support must be separate components of the invention.

Beginning with the language of claim 38, Inverness's proposed construction is premised on the description of the claim as a "kit claim" and the use of a semicolon to divide the tracer clause from the solid support. Taking these points in order, Dr. Gunter's support for his hypothesis that "kit" claims must contain separate elements is the PLI publication by Jeffrey Sheldon. The PLI publication, however, is extrinsic evidence and thus should not be considered until the court has concluded, after considering the intrinsic evidence, that the claims remain ambiguous. 3 Second, the use of a semicolon in claim 38 is a grammatical tool for separating two independent clauses and does not necessarily indicate that the items on opposing sides of the semicolon must also be physically separated. Thus, the court finds that neither the description of the claim as a "kit," nor the use of a semicolon imparts a characterization of the physical relationship between the tracer and the solid support. Instead, the court finds that the plain meaning of the claim's use of only a semicolon to differentiate the tracer from the solid support is that claim 38 does not require any particular physical relationship between those components of the
assay.

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3 Even as extrinsic evidence, however, the PLI publication is of dubious value. It was published eight years after the Campbell patent was issued and thus cannot be said to be evidence of the meaning of terms at the time the patent was issued. See AI-Site Corp., 174 F.3d at 1320. Moreover, PLI publications are generally intended for lawyers, and thus it is unlikely that a person of skill in the art of immunoassays would be knowledgeable of the publication's contents or import. See Pall Corp. v. PTI Techs., Inc., 259 F.3d 1383, 1393 (Fed. Cir. 2001) ("In claim construction, a claim is interpreted from the perspective of one of ordinary skill in the art.").

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - - -

Inverness's reliance on the specification of the Campbell patent and the prosecution history of the Rosenstein patent to support its construction of claim 38 is unhelpful for the same reasons this evidence does not support its argument on the construction of the process claims. While it is true that the patent specification reveals only the attachment of binder antibodies to the solid support and nowhere suggests that the tracer might also be attached, this fact does not require that the proper construction of claim 38 be limited to those immunoassays that keep the tracer and solid support separate. Once again, the patent specification cannot be used to limit a claim in a manner suggested only in the specification or preferred embodiment of the invention. Intervet Am., 887 F.2d at 1053. Neither can the prosecution history of a later patent such as Rosenstein, which is extrinsic evidence, alter the clear meaning of the terms in the claim of an earlier patent. See Interactive Gift Express, 256 F.3d at 1332. Thus, the court finds that neither the Campbell patent's specification nor the Rosenstein patent's prosecution history alters the clear meaning of claim 38. Claim 38 reveals the use of a tracer and a solid support including a binder as an immunoassay, but it does not require that the tracer and solid support have any particular physical relationship. Therefore, the court finds that Inverness's suggested interpretation of claim 38, that the claim requires a tracer separate from the solid support, is unsupported.

4207

WMA next argues that the Glide-Traks do not infringe on the '201 patent's claims of having "track means on said divider member comprising a pair of elongated rails." This claim element describes the characteristics of the '201's divider member that allow the pusher member (the part of the device that urges merchandise towards the front of the shelf) to engage and move along the divider member (in the direction perpendicular to the shelf's edge). WMA asks that we adopt the following definitions, all taken from the Random House dictionary, in construing this claim element:

"Track": 1. a structure consisting of a pair of parallel lines of rails with their crossties that provides a road for railroad trains.

"Pair": 1. two identical, similar, or corresponding things that are matched for use together: a pair of gloves.

"Rail[s]": 1. a bar of wood or metal fixed horizontally for any of various purposes, as for a support, barrier, fence, or railing.

WMA suggests that based on these definitions, along with language from the '201's specifications 4 and the patent's prosecution history, we should construe the claim element "track means on said divider comprising a pair of elongated rails" to mean "two parallel lines of bars that are mirror images of each other, used together and fixed horizontally for supporting and providing a path that constrains the motion of the pusher member." In asking that we accept this construction, WMA emphasizes the railroad-like nature of the track along which the '201's pusher member rides. WMA's offered construction is descriptive of the '201: the track on which the '201's pusher rides is comprised of two parallel, horizontal and relatively flat bars that are completely symmetrical to one another (while looking down the length of the divider member -- perpendicular to the shelf's edge). WMA contends that because the mechanisms by which the Glide-Traks' pusher members remain engaged in and slide down the divider members lack such symmetry, there is no infringement on this element of the '201 patent.
In spite of WMA's assertion that the mirror-image railroad analogy offers the best construction of the disputed claim element, Texas Digital mandates that we first look to determine whether the words "track," "rail," and "pair" have other ordinary meanings -- potentially broader than the ones propounded by WMA -- on which our construction analysis should begin. Random House, WMA's chosen dictionary, also defines "track" as: "7. a course or route followed" or "9. a path or course laid out for some particular purpose." Under these definitions, a "track" need not be of the type on which trains run, but could also encompass a more general path or route on which something could travel. In addition, WMA's own definition of "pair" allows for the paired items that are to be matched for use together to not only be "identical," but "similar or corresponding" as well. Furthermore, the '201's specifications speak of the divider member being comprised of "a track having side rails," but do not elaborate that the track or rails need be of the mirror-image nature found on railroad tracks. Nor can such a limitation be construed from a close review of the '201's prosecution history.

Following Texas Digital's mandate that "if more than one dictionary definition is consistent with the use of the words in the intrinsic record, the claim terms may be construed to encompass all such consistent meanings," 308 F.3d at 1203, we will adopt a more generalized construction for "track means on said divider comprising a pair of elongated rails": Two similar or corresponding plastic bars, 5 matched for use together, that run horizontally (in the direction perpendicular to the shelf's edge) with the purpose of guiding a pusher member down a fixed and defined path. This construction delineates the features of the '201's divider member that keep the pusher member in place as it moves merchandise down the shelf, but does not contain the railroad-like symmetry limitations that WMA asks us to read into the claim. Even if we had been able to ascertain such a limitation, the Federal Circuit's "proscription of not reading limitations from the specification into the claim," Texas Digital at 1205, supports our more expansive reading of the claim element at issue.

Even though the Random House definition of "rail" speaks of a "a bar of wood or metal," the '201 is made almost entirely of plastic. However, under the Webster's New Twentieth Century Dictionary (1983) -- also submitted by WMA -- a rail may be "a bar of wood, metal, etc." (emphasis added). This broadened definition of "rail" allows for a rail to be composed of materials other than wood or metal.

Claim 1 recites "a lace trained between the eyelets on the first and second eyelet strips." Similarly, claim 10 recites "a lace trained between the eyelets of the carrier strips." Plaintiff argues that this language means "a lace threaded in a way to connect the eyelet or eyelets on the first eyelet strip with the eyelet or eyelets on the second eyelet strip." However, because I have determined that the claim term "set of lace eyelets" requires each eyelet strip to carry two or more lace eyelets, I read plaintiff's proposed construction as requiring "a lace threaded in a way to connect the eyelets on the first eyelet strip with the eyelets on the second eyelet strip." Defendant contends that the claim language in question requires a construction "that tightening of the brace is achieved with a lace that goes back and forth through the eyelets on the first removable flap and the eyelets on the second removable flap to draw together the flaps." I conclude that plaintiff's proposed definition is the appropriate one. Courts should avoid the temptation to read functional limitations into claims that do not recite any. See, e.g., Rodime PLC v. Seagate Technology, Inc., 174 F.3d 1294, 1303 (Fed. Cir. 1999). This is precisely what defendant asks the court to do by proposing a construction that ascribes to the lace a specific function ("tightening" the brace) and the method for achieving that function ("going back and forth through the eyelets... to draw together the flaps"). Moreover, defendant's proposed construction reads the term "lace trained" as if "lace" were a verb, rather than a noun. But the verb
here is "trained," not "laced." The verb "to train" has several definition, many of which are irrelevant (for example, to "coach in or accustom to a mode of behavior or performance," or "to prepare physically, as with a regimen"). The only pertinent definitions of "trained" are "to cause . . . to take a designed course or shape, as by manipulating" and "to focus on or aim at . . . direct." The American Heritage Dictionary of the English Language at 1830. These definitions comport with plaintiff's proposed construction of the relevant phrases in claims 1 and 10 as "a lace threaded in a way to connect the eyelets on the first eyelet strip with the eyelets on the second eyelet strip." Accordingly, I will adopt plaintiff's proposed construction of this phrase.

4. "Transducer" Limitation

267. Claim 2 of the '904 patent recites "a transducer for generating said trigger signal." A "transducer" is known to those of ordinary skill in the art as a device that converts one form of energy, e.g., mechanical, into another form of energy, e.g., electrical. Dr. DeBra testified that the MIDA microswitch converts mechanical movement into an electrical signal, i.e., acts as a transducer and may be considered to be a transducer according to popular usage. Tr 1397-98, 1466. Because, however, of the very broad nature of the term "transducer," one of ordinary skill in the art would construe it to include only various transducers and switches capable of signaling as soon as possible after initial contact between the stylus and an object so as to conform with the disclosure and teachings of the patent. Tr 1397-98.

268. Marposs does not infringe claim 2 of the '904 patent. Claim 2 of the '904 patent requires a "transducer" for detecting the "instant of contact" between the stylus and an object. The MIDA microswitch cannot do this as set forth in detail above. Tr 1398. See PP 112-13, 130, 132-33 supra. Therefore, claim 2 is not infringed by any MIDA probe, for at least this reason.

7. "transferring"

Crane urges the court to refrain from construing the term, while the defendants propose a construction distinguishing between "transferring" and "carrying." In light of the claim language and the various embodiments, the court finds it necessary to specifically distinguish the terms.

The court defines "transferring" and "transferred" as "moving (or moved) through a distance."

5. Transferring Electrical Energy at a Predetermined Radio Frequency Range as Arcs in Ionized Conductive Pathways at a Predetermined Power Level Within the Gas Jet in an Electrical Circuit Which Includes the Tissue

The final disputed claim term "transferring electrical energy at a predetermined radio frequency range as arcs in ionized conductive pathways at a predetermined power level within the gas jet in an electrical circuit which includes the tissue" is found in Claim 10 as set forth above.

ConMed's Proposed Definition: Transferring electrical energy through an electrode within the nozzle or gas flow at a predetermined radio frequency by imparting an electrical charge to particles of the gas stream that allows the formation of the improved eschar.

Canady's Proposed Definition: A fulguration mode of operation.
Unlike the terms of Claim 1, this term at issue in Claim 10 is not a means plus function claim. Rather, I must give the terms their ordinary meaning as set forth under the standards above. I note from the Joint Disputed Claim Terms Chart that the terms ionized conductive pathways and gas jet are not in dispute.

14 According to the parties, "ionized conductive pathways" is construed as pathways which carry electrical current, as opposed to radiate current and "gas jet" is construed as a directed or substantially laminar flow stream. Docket No. 58, Ex. B. p. 3. Thus, I must seek to construe the other disputed claim terms.

The specification provides as follows:

The ESG 46 supplies electrical energy over a supply conductor 56 of the cord 48 to the pencil 42. The conductor 56 is electrically connected in the pencil to a needle-like electrode 58 which extends into the nozzle 52. The electrical energy supplied by the ESG 46 is of predetermined characteristic sufficient to ionize the gas flowing through the nozzle 52 and to create ionized pathways in the jet 54. The electrical energy travels in the ionized pathways in the jet 54 to a body tissue 62 where it creates a predetermined electrosurgical effect on the tissue 62.

In the fulguration mode of operation of the ESU, also referred to herein as a "macro" mode of operation, electrical energy is transferred in the ionized pathways in the form of arcs 60. The arcs 60 travel within the jet 54 until they reach the tissue 62 at the electrosurgical site. The jet 54 expands slightly above the surface of the tissue 62 and the arcs 60 disperse over a slightly enlarged area of the tissue surface compared to the cross-sectional area of the jet 54. The electrical energy of the arcs is transferred into the tissue 62 and creates the upper arc hole reticulum or layer 30 and a desiccated layer 32 therebelow.

Docket No. 58, Ex. A. col. 8, ll. 14-37. The specification also teaches that "electrical power at a predetermined level is delivered from the power supply 308 to an RF drive circuit 312. The logic control 304 delivers RF switching signals to the RF drive 312, thereby causing the RF drive 312 to selectively couple energy from the power supply 308 to a resonant output circuit 314 at a frequency established by the RF drive pluses. Energy is transferred from the resonant output circuit 314 to the pencil 42, and current is returned to the resonant output circuit 314 from the patient plate 70 (FIG. 4)." Id. at col. 15, ll. 26-40. Consequently, I construe the term to mean transferring electrical energy, at a predetermined radio frequency from the RF drive to a resonant output circuit to the pencil to the needle-like electrode, which extends into the nozzle, to the tissue as arcs in ionized conductive pathways in a gas jet.

ConMed argues that the term "means transferring electrical energy at a predetermined radio frequency range" found in the second means-plus-function clause of Claim 1 must have the same meaning as the disputed term "transferring electrical energy at a predetermined radio frequency range as arcs in ionized conductive pathways at a predetermined power level with the gas jet in an electrical circuit which includes the tissue" found in Claim 10. Docket No. 58, p. 19. I disagree. To begin with, Claim 1 is in a means-plus-function format and Claim 10 is not a means-plus-function format. Second, the claim term at issue in Claim 10 contains additional language, namely "as arcs in ionized conductive pathways at a predetermined power level with the gas jet in an electrical circuit which includes the tissue," which must be given its ordinary and customary meaning or defined by the intrinsic evidence. Consequently, I reject ConMed's argument in this regard.

In addition, I reject Canady's proposed definition. (Docket No. 66, p. 54). Canady's proposed definition fails to take into consideration the entirety of the claim term at issue as well. Id.

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F. Transferring Unit

Finally, Ken calls for means-plus-function treatment of the "transferring unit" referenced in apparatus claim 1 and system
At the beginning of the assembly line, through the claimed machine. Function treatment is denied. Instead, the transferring unit is interpreted as a mechanism that moves ribbon stock, from a roll.

The court finds that the transferring unit connotes structure, not function, to one skilled in the art. Accordingly, means-plus-function treatment is denied. Instead, the transferring unit is interpreted as a mechanism that moves ribbon stock, from a roll at the beginning of the assembly line, through the claimed machine. See Section 2.C., above.
19. said first location on said wall after said seaming operation forming the transition from said double seam to said second wall portion ('875 patent, claim 32)

Crown's proposed construction is "[t]he first location, after seaming, at which the double seam region changes to the second wall portion." 84 Rexam's proposed construction is "[t]he location on the end wall at the lowermost extent of the double seam." 85

The court adopts Crown's proposed construction.

At 15, above, the court construed the "first location on said wall" to mean "the point on the wall of the can end that becomes the lowermost extent of the double seam." Each parties' construction properly references the fact that the disputed claim term is directed at a can end after a double seam has been formed with a can body.

This claim term, and the claim term "said wall and said reinforcing bead forming a transition therebetween," of claim 50 of the '875 patent (23, below) are similar in that the parties disagree about how the word "transition" should be defined. Crown argues that the specification does not define the term "transition" and does not indicate that word has a specialized meaning and, therefore, that the plain meaning should apply. Crown contends that the plain meaning of "transition" is "a passage from one state, condition, or place to another: change." The court agrees that, in the context of the patents-in-suit, that defining "transition" to mean changing from one place to another is appropriate and Crown's proposed construction is consistent with the claim language. This is also consistent with Rexam's argument that "the plain meaning of the claim terms means that the 'first location' recited by claim 32 of the '875 patent is the point or place where the seam ends and the lower portion or 'second wall portion' begins." 86

Crown's proposed construction of "transition from said double seam to said second wall portion," taken together with the court's construction of "first location" as "the point on the wall of the can end that becomes the lowermost extent of the double seam" and the claim's recital that the "first and second locations form end points of said second wall portion" provides sufficient basis to identify the location of the transition.

The court, therefore, adopts Crown's proposed construction: "the first location, after seaming, at which the double seam region changes to the second wall portion."
The district court construed "translated forward" to mean "moved axially forward in the direction of the working medium." The district court found that one of ordinary skill in the art would have several years of experience designing fan blades with, most likely, an advanced engineering degree in fluid mechanics. The parties do not contest the district court's finding regarding the level of ordinary skill in the art.

The plain language of "translated forward" means moved toward the forward direction, but the claim language does not designate a clear "forward" direction. The district court found that one of ordinary skill in the art would necessarily have consulted the specification to learn the meaning of "translated forward." The district court also found no use of the term "translation" in the industry or in any prior art other than the related '985 patent.

As the claim language does not clearly state the directional tilt of the outer region, this court as well consults the specification. Based on that source, this court construes "translated forward" to mean "moved forward toward the axial direction." The specification discusses translation forward only with reference to the axial direction, which is parallel to the rotational axis of the fan and engine. The specification, referring to Figure 3, states:

The beneficial effect of the invention is appreciated primarily by reference to FIG. 3 . . . . [T]he nonincreasing character of the second sweep angle . . . according to the invention causes a portion of the airfoil leading edge to be far enough forward (upstream) in the working medium flow . . . . In addition, the passage shock 66 (which remains attached to the airfoil leading edge and therefore is translated forward along with the leading edge) is brought into coincidence with the endwall shock . . . .

The embodiment of FIGS. 2 and 3 illustrates a blade whose leading edge, in comparison to the leading edge of a conventional blade, has been translated axially forward parallel to the rotational axis . . . .

'931 application col.4 ll.33-66 (emphases added). As "forward," according to its plain language, must denote a specific direction, this court honors the applicant's choice to define that term with reference to the axial direction.

Figures 2 and 3 of the '931 application illustrate the support for this construction. Figure 2 is a cross sectional view of a swept back fan blade including an alternative leading edge profile shown by dotted lines and a prior art blade shown in phantom.

In Figure 2, the blade formed by solid lines (22) represents an embodiment of the invention. The blade with the dashed lines (22') within r[t-outer] to r[tip] represents a prior art blade. The alternative blade formed with dotted lines within r[t-inner] and r[t-outer] shows a different leading edge profile. The arrows (48), pointed in the direction of the airflow into the engine, indicate a direction opposite the forward axial direction. Translation forward in the axial direction requires moving the leading edge of the blade directly to the left. In Figure 2, the blade with the dashed lines (22') is moved to the left in the region between r[t-outer] to r[tip] to form the blade of the invention shown as a solid line (22). Thus, the blade of the invention (22), from r[t-outer] to r[tip], is translated forward (in the axial direction) in comparison with the the prior art blade (22').

Figure 3 is a developed view taken along the line 3-3 of Figure 2 illustrating the tips of four blades along with four prior art blades shown in phantom.

In Figure 3, the blade formed by solid lines (22) represents an embodiment of the invention. The blade with the dashed lines (22') represents a prior art blade. The arrows (48) point in the direction of the airflow into the engine and also point away from the forward axial direction. Translation forward in the axial direction requires moving the leading edge of the blade directly to the left. In Figure 3, the blade with the dashed lines (22') is moved to the left to form the blade of the invention shown as a solid line (22). Thus, the invention translates or moves the blade (22) forward in the axial direction from the prior art blade (22').

UTC argues that "translated forward" in the '931 application means "moved forward toward the direction of the relative
velocity vector." UTC contends that movement in any direction--axial or circumferential--is movement toward the relative velocity vector. Under UTC's proposed construction, either purely circumferential or purely axial movements are encompassed by the term "translated forward." The axial and circumferential directions are at ninety degree angles to each other. Thus, this court perceives that a construction of "translated forward" that includes both the circumferential and axial directions, at right angles to each other, would unreasonably broaden this claim limitation.

Figure 5 of the '931 application shows movement of the outer region in the circumferential direction.

[SEE FIG. 5 IN ORIGINAL]

In Figure 5, the blade formed by solid lines (22) represents an embodiment of the '931 application. The blade with the dashed lines (22') represents a prior art blade. The arrow (R) is pointed in the circumferential direction. Translation forward in the axial direction would require the prior art blade (22') be moved to the left to form the blade (22). As shown by Figure 5, the prior art blade (22') is moved up, not to the left, to form the blade (22). Thus, under this court's claim construction, the blade (22) in Figure 5 is not translated forward in the axial direction.

Although Figure 5 of the '931 application shows movement of the outer region in the circumferential direction, the specification does not support UTC's proposed construction. The specification does not use "translated forward" to describe the embodiment in Figure 5. Instead, the specification describes the movement in Figure 5 as "displaced circumferentially." '931 application col.5 ll.4-12. This court's construction of "translated forward" ("moved forward toward the axial direction") excludes the embodiment in Figure 5. Although reluctant to exclude an embodiment, this court must not allow the disclosed embodiment to "outweigh the language of the claim, especially when the court's construction is supported by the intrinsic evidence." See TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc., 529 F.3d 1364, 1373 (Fed. Cir. 2008). In this case, this court cannot allow the claim to encompass both the embodiment in Figures 1 through 3 (with movement toward the axial direction) and the embodiment in Figure 5 (with movement toward the circumferential direction). A claim construction that embraced both alternative embodiments would be unreasonable because the single claimed direction "forward" would then encompass two directions at right angles to each other.

UTC argues that the specification of the '931 application supports its construction because it states that "the invention contemplates any blade whose airfoil intercepts the endwall shock to bring the passage shock into coincidence with the endwall shock." '931 application col.5 ll.2-4. This argument overlooks the language of the claim that specifies the translational direction for the blade. According to the claim, the blade must be "translated forward." '931 application claim 23. This court considers unreasonable an interpretation that allows that term to cover two directions at right angles to each other. Thus, interpreting the claim to encompass translation in any direction that causes the airfoil of the fan blade to intercept the endwall shock would unreasonably broaden "translated forward." Moreover, this court notes that the claim reference to intercepting the endwall shock appears after the claim specifies forward translation. In that context, the interception reference merely describes a benefit derived from forward translation, rather than changing the meaning of "forward" to embrace more than a single direction.

UTC argues that the prosecution history of the related '040 patent shows that "translated forward" means "moved forward toward the direction of the relative velocity vector." The portion of the prosecution history of the '040 patent serving as a basis for UTC's argument states:

The applicants' specification uses the term "translated" in the exact same context in which the claims use it to recite a blade feature in accordance with this aspect of the invention. See, for example, page 4, line 65, and Figures 2 and 5 of the present application.

J.A. 7251. This inference from the prosecution history does not persuade this court because the specification of the '931 application clearly excludes this construction. Moreover, the prosecution history of the '040 patent does not favor one construction over the other. This argument to the examiner of the related '040 patent only describes the use of "translated," not "translated forward." The important issue in this claim construction is the direction of the translation, not the mere fact of some translation. Explaining the term "translated" in isolation does not guide this court's construction of "translated forward." Also, this prosecution history passage is unclear. A suggestion that the specification uses a term "in the exact same context" as the claims is vague. Indeed that explanation does not assist this court in determining the direction of "forward." In sum, this court declines to unreasonably broaden a specific claim term based on questionable prosecution history when
the specification requires a particular construction.

A. "Translucent Housing"

1. Claim Construction Redux

Taylor argues that "translucent housing" is properly construed as a "housing having a translucent portion." DCAG argues that "translucent housing" means a housing that is entirely translucent. Because it was not identified for construction in the Markman proceeding, the Court must now construe the term as a matter of law before conducting an infringement analysis.

First, the exact meaning of "housing" must be determined. Claim 1 requires "a translucent housing (12) including a plastic shell being substantially cup shaped and having an open end and a closed end and a wall extending from said closed end." The wall, or, the forward facing portion of the housing, contains and conceals the illuminating image forming means, which is mounted within the housing. The mirror means is "retained by" the housing at the open end. Hence, "housing" is simply defined by the function it performs. The housing is a structure that contains the illuminating image forming means inside it and connects to the mirror mechanism at the open end.

The next issue is whether "translucent" 8 refers to the entire housing or to only a portion of the housing. The first step, obviously, is to look at the plain language of the claim itself. Vitronics, 90 F.3d at 1582 (words in a claim are "generally given their ordinary and customary meaning" unless the specification or prosecution history clearly show that some other meaning is intended). "Housing" is directly modified by the adjective "translucent." The ordinary reading when such language is used is that the entire structure must possess the stated quality. See Saeilo, Inc. v. Colts Mfg, Co., 26 Fed. Appx. 966, 970 (Fed. Cir. 2002) (unpublished) ("The claim language requires only that the 'lug' be laterally offset from the bore axis. Between 'the entire lug' and 'a portion of the lug,' we think the former is the more natural reading of the plain term 'lug.' When language is used precisely and naturally, a piece or portion of a lug is not a 'lug.'"); Nat'l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc., 166 F.3d 1190, 1195 (Fed. Cir. 1999) ("Claim 1 clearly indicates that the 'special quality' for which a signal is selected is whether or not that signal has passed through an irregularity. There is no indication in the plain meaning of the limitation, or from the claim as a whole, that this selection criterion is to apply only some of the time.").

Modifying adjectives are certainly added for a reason. See Johnson Worldwide Assocs, v. Zebeo Corp., 175 F.3d 985, 989 (Fed. Cir. 1999) ("General descriptive terms will ordinarily be given their full meaning; modifiers will not be added to broad terms standing alone.").

8 The surface of an object can be transparent, translucent, or opaque. These terms mean the following:

transparent: Having the property of transmitting light, so as to render bodies lying beyond completely visible; that can be seen through.

translucent: Allowing the passage of light, yet diffusing it so as not to render bodies lying beyond clearly visible; semi-transparent.

opaque: Impermeable to light, not transmitting light, not transparent; hence, impenetrable to sight.

Claim 1 could have been drafted to require a "partially translucent" housing or simply a "housing" with a wall that is at least partially translucent. See Saeilo, 26 Fed. Appx. at 970. However, claim 1 as originally drafted and as allowed directly refers to the mirror assembly's housing as translucent. See Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1425 (Fed. Cir. 1997) ("As between the patentee who had a clear opportunity to negotiate broader claims but did not do so, and the public at large, it is the patentee who must bear the cost of its failure to seek protection for this foreseeable alteration of its claimed structure.").

Moreover, the housing might not be able to perform its function if it was not completely translucent. Claim 1 specifies that the housing includes a wall that contains and conceals the illuminating image forming means at the closed end. If part of the housing were transparent, for instance, incident light could pass through and the illuminating image forming means would not be concealed.

Taylor argues that DCAG's construction improperly reads in a limitation of "completely translucent" from outside the claim, which is not supported by the specification or the prosecution history. Taylor points to the following language in the specification: "The present invention provides a mirror assembly including a housing having a translucent portion, mirror means retained by the housing, and illuminating image forming means mounted within the housing and behind the mirror for projecting an image through the translucent portion." '019 patent, col. 1, II. 50-55 (emphasis added). The Abstract also states that the mirror assembly includes a housing "having a translucent portion." Id., Abstract (emphasis added). However, the specification also describes the drawings as follows: "The assembly 10 includes a translucent housing generally indicated at 12. The housing is constructed from a translucent material, such as a hard plastic." Id., col. 2, II. 8-10.

Just as it is improper to read in a limitation from outside the claims of a patent, it is improper to read an express limitation out of a claim "because 'courts can neither broaden nor narrow claims to give the patentee something different than what he has set forth.'" Texas Instruments v. United States ITC, 988 F.2d 1165, 1171 (Fed. Cir. 1993) (citing Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 396 (Ct. Cl. 1967)). Interpreting a "translucent housing" to mean a "partially translucent housing" would effectively read out the "translucent" limitation from claim 1.

The prosecution history 9 of the '019 patent supports this interpretation and fairly read establishes that the claim language and specification are not conflicting. Claim 1 as filed read (emphasis added):

1. A mirror assembly (10) comprising: a translucent housing (12) having a translucent portion; mirror means (20) retained by said housing (12); and illuminating image forming means (26) mounted within said housing (12) and behind said mirror means (20) for projecting an image through said translucent portion of said housing (12).

The claim was initially rejected under 35 U.S.C. § 103 as being unpatentable over Dawe (Great Britain Patent No. 271,917) in view of Costello (U.S. Patent No. 1,608,548) or Marshall (U.S. Patent No. 1,954,740). Dawe covers a mirror assembly with an opaque screen at the front end. Parts of the screen are cut out into "portions wholly or partly translucent to provide indicating marks for a plurality of indications." Dawe, col. 1, II. 24-26. Behind the screen are individually partitioned lamps for projecting an image through the cut out parts of the screen. Id., col. 1, II. 26-43. In the preferred embodiment, a glass cover is placed in front of the screen. Id., col. 2, II. 76-78. Figure 2 of Dawe is a front view of the device showing the cut out opaque screen and partitioned light sources:

[SEE Fig.2. IN ORIGINAL]

Rejecting claim 1, the examiner stated:

It would have been obvious to one having ordinary skill in the art to substitute a translucent outer housing plate and stencil-type image projecting means as shown by Costello or Marshall for the screen 9 and cover 10 of Dawe. The well known signs of Costello and Marshall have an equivalent display function to the screen of Dawe.
It would have been an obvious design choice to one of ordinary skill in the art to form the housing of Dawe as an integral translucent housing or shell. The use of smoke tinted translucent material would have been an obvious design choice to one of ordinary skill.

9 The Decision on Claim Construction at 7-13 also contains a discussion of the '019 patent's prosecution history.

On May 2, 1988, an Amendment Under 116 was filed but not entered. It required "translucent housing means … having a continuous and uninterrupted translucent portion."

The applicant filed an amendment on June 21, 1988 that, among other changes, deleted "having a translucent portion."

Claim 1 was amended to read (additions underlined, deleted elements in brackets):

1. A mirror assembly (10) comprising:

   a translucent housing (12) including a plastic shell being substantially cup shaped and having an open end and a closed end and a wall extending from said closed end.

   said wall and said closed end appearing opaque and containing and concealing illuminating image forming means within said housing (12) and preventing incident light from passing therethrough while only revealing an illuminated image through at least one of said wall and closed end projected from the illuminating image forming means [having a translucent portion];

   mirror means (20) retained by said housing (12) within and adjacent to said open end; and

   illuminating image means (26) mounted within said housing (12) adjacent at least one of said closed end portion and wall portion and completely behind said mirror means (20) so as to be hidden from view from outside said housing (12) and mirror means (20) for projecting only an illuminated image through at least one of said wall and closed end portion [said translucent portion] of said shell [housing] (12) while the remainder of said illuminating image forming means (26) is hidden within said housing (12).

The applicant stated that claim 1 was amended "to further characterize the invention and more specifically distinguish the invention over the cited prior art." Specifically, the applicant argued that the mirror assembly in claim 1 provides "a clear illuminated image through a translucent shell housing while not illuminating the remainder of the housing" and distinguished Dawe because it uses a stencil and "does not relate to the problem of projecting an image through a dark housing while keeping the remainder of the housing dark."

In a later Office Action rejecting the applicant's claims for indefiniteness, the examiner stated that "claim 1, lines 2-3 already recite that the housing including the shell is translucent."

"The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995). The Court must "assess whether a patentee relinquished a particular claim construction based on the totality of the prosecution history, which includes amendments to claims and arguments made to overcome or distinguish references." Rheox, Inc, v. Entact. Inc., 276 F.3d 1319, 1326 (Fed. Cir. 2002). Taylor cites two instances where the applicant referenced a "translucent portion" in the June 21, 1988 amendment. 10

10 See June 21, 1988 Preliminary Amendment, at 4 ("project only an illuminated image through the translucent portion of the shell of the housing"), 8 ("projects only an illuminated image to the translucent portion of the shell of the housing").
Exchanging the totality of the prosecution history, it is clear that claim 1 does not encompass a housing that is only partially translucent. It is undisputed that the examiner rejected Taylor's claim with a "translucent portion" but allowed the claim with more detailed and narrow language. Moreover, Taylor expressly disclaimed a mirror assembly with "a housing having a central longitudinal portion of a transparent or translucent element and a light source within the housing." '019 patent, col. 1, ll. 35-37 (citing U.S. Patent No. 2,595,331 to Calihan et al.); see December 16, 1987 Amendment, at 4 ("The Costello patent does not disclose a translucent housing but rather a lens mounted on a light assembly."); SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1341 (Fed. Cir. 2001) ("Where the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question."). "Translucent housing" has been consistently used to refer to a housing that is completely translucent. "A patentee may not proffer an interpretation for the purposes of litigation that would alter the indisputable public record consisting of the claims, the specification and the prosecution history, and treat the claims as a 'nose of wax.'" Southwall, 54 F.3d at 1578 (citation omitted).

The first element of the claim which is in dispute is the "transmission" element.

[A] transmission selectively connected to said engine output shaft, said transmission having several selectively actuated speed ratios, said transmission having a transmission output shaft, said selected speed ratios controlling the ratio of the input speed from said engine output shaft to the output speed of said transmission output shaft[.]

Exhibit A, supra, col.7 II.41-47. Eaton argues that the transmission of the invention is of necessity a manual one. Meritor states that the specification of the patent discloses that "[t]he transmission may be of any type known in the art." Id. col.3 II.15-16. However, this statement is followed by the further specification that, "[a] manual stick shift is operable to shift the transmission between any one of several speed ratios." Id. col.3 II.17-18. The use of a "manual stick shift" would be required with a manual transmission. Although not dispositive, the background of the patent discloses "[a] manual transmission typically slides toothed members relative to different gears to engage one of the gears. . . . To this end, vehicles with manual transmissions are equipped with clutches." Id. col.1 II.15-16, 33-34. And, in its answers to requests for admissions, Meritor admitted that "the intended purpose of the invention disclosed in the '477 patent is to enable the driver of a manual transmission vehicle to shift an engaged gear into neutral without need to use the clutch." Exhibit P, Meritor's Response to Eaton's Requests for Admission, attached to Defendant's Motion, at 4 (emphasis added).

The Board also interpreted this element. "Based on the specification of both parties' involved application or patent, the intended purpose of the invention as defined by the [claim] is to enable the driver of a manual transmission vehicle to shift an engaged gear into neutral without need to use the clutch." Exhibit D, Decision on Priority, Patent Interference No. 104,835, attached to Defendant's Motion, at 6 (emphasis added). "If actual zero torque at the flywheel is achieved, a driver may shift a manually operated transmission from an engaged gear into neutral without need to activate a clutch." Id. (bolding added). On numerous occasions in this litigation, Meritor represented that the claim construction provided by the Board should control, whether or not Meritor agreed therewith. The Court, therefore, concludes that the claim language of the patent claims a manual transmission.

As would be expected in a patent case, a determination that the invention is limited to a manual transmission does not completely resolve the issue. The parties also dispute the meaning of a "manual transmission." Meritor argues that any transmission which requires the driver to make a selection of gear by use of his or her body is a manual one. Eaton notes that a manual transmission is one which requires the operator to make the actual gear shift.

There are two types of transmissions commonly used in automotive applications; the manual transmission and the automatic transmission. Both transmissions require a device to disconnect the engine from the driveline when the vehicle is brought to a stop, or else the engine will stall. In a conventional manual transmission the device is the main clutch. In a conventional automatic transmission the device is a torque converter.
The words "manual" and "automatic" are also sometimes used to describe the process used to implement a gear shift. In this context the word manual implies that the driver must take some action to cause the shift to occur, for instance by moving a lever or pushing a button, and automatic (or automated) implies that the transmission will shift itself at the appropriate time.

Exhibit Q, Expert Report of Craig J. Hoff, Ph.D., attached to Defendant's Motion, filed under seal, at 7-8 (emphasis added).

This description of a manual transmission, made by Meritor's expert, Dr. Hoff, uses virtually identical language to that contained in the patent. For example, the abstract of the patent describes the invention as providing an alternative to using the clutch, while envisioning that the vehicle would also be equipped and used with a clutch. Exhibit A, supra, at "Abstract" ("An operator of a vehicle may request torque reduction on the connection between a transmission and an engine, or may use a clutch."). "A switch is provided to send a torque elimination request." Id. Obviously, this request is sent by the operator of the vehicle: "said engine control including an operator input to allow an operator to signal a desire to eliminate torque between said engine output shaft and said transmission output shaft[]." Id. col.7 II.49-52. And, the language of the patent describes a manual transmission versus the description of an automatic transmission provided by Meritor's own expert: "automatic (or automated) implies that the transmission will shift itself at the appropriate time." Exhibit Q, supra.

[I]t is an object of this invention to allow an operator to shift the transmission to a new speed without operating the clutch. To achieve the ability to shift the gear without clutching, the present invention incorporates a switch on the shift knob. . . . When an operator actuates [the] switch, a signal is sent to [the engine] requesting a zero torque load on the connection between the engine and transmission. . . . [T]he operator is able to request the torque elimination function.

Exhibit A, col.3 II.62-66; col.4 II.3-5, 10-11 (emphasis added).

The fact that Meritor's own expert limited the invention to a manual transmission is obvious from a complete reading of his expert report. Hoff explains the differences between a manual and automatic transmission as including different types of gears used in manual versus automatic transmissions.

There are two distinct steps in shifting to another gear in a manual gearbox [transmission]. The first step is to move the transmission from in-gear to neutral. The second step is to synchronize the speeds of the two halves of the transmission (input side and output side) so that the transmission can be engaged in the new gear. If there is a large torque being transmitted though the dog clutch [in the manual transmission], there will be significant friction developed between the dog teeth and it will be impossible to move the dog clutch out of engagement. This condition is referred to as "torque lock." In order to disengage the dog teeth it is necessary to remove the torque from the driveline. Conventionally, this is done by depressing the clutch pedal and breaking the connection between the engine and the transmission. Once the connection is broken the engine speed is controlled to match the appropriate speed of the transmission output shaft in the new gear. This allows the dog clutch to be moved into contact with the new gear.

The shifting process in an automatic gearbox is different and much more complex. The most important difference is that an automatic gearbox can be shifted with power being transmitted through the gearbox. This is sometimes referred to as "continuous power" shifting. This is possible because of the nature of planetary gears and the clutches used to control them.

There are advantages and disadvantages to each type of transmission. Compared to automatic gearboxes, manual gearboxes are more efficient, less costly, lighter, and more durable. Hence manual transmissions are desirable to the trucking industry. The main advantages of automatic transmissions are convenience for the driver and the ability to do continuous power shifting, which results in a smoother feeling shift. Hence automatic transmissions are desirable in the U.S. passenger car industry. Automated manual transmissions have the potential to combine the advantages of the manual gearbox with the convenience of automated shifting. 11

Exhibit Q, supra, at 9-10 (footnote added).
It is telling that Dr. Hoff did not describe the invention as relating to an automated manual transmission but only to a manual transmission.

By comparison, the specifications of the patent read:

A manual stick shift is operable to shift the transmission between any one of several speed ratios. Transmission includes a gear which is driven by the output of the engine when the clutch is closed. Gear engages and drives a pair of gears each mounted on a countershaft. . . . Gears engage and rotate a plurality of gears that are mounted to freely rotate on a main output shaft. A shift yoke slides a shift collar as directed by the vehicle operator to change the speed ratio of the transmission. . . . Collar also has external teeth that are selectively received within an inner peripheral bore on a gear. When the shift collar is in the position shown, . . . the teeth engage the gear such that the gear rotates the collar, and hence the shaft.

In moving the collar to shift to another speed ratio, the initial step is to move the teeth out of engagement from the inner peripheral bore of the gear. When the drive train is transmitting rotation to the shaft through the arrangement, . . . however, there is a high torque load on the connection between the teeth and the gear and between collar and shaft. This high torque load makes it difficult, if not impossible, for an individual to manually slide the collar relative to the gear. For this reason, vehicles have traditionally incorporated a clutch. An operator who wishes to shift a transmission to a new speed, initially actuates the clutch. This breaks the torque transmission discussed above, and allows the operator to disengage the transmission and move to neutral.

Exhibit A, supra, col.3 II.17-61 (emphasis added). This description, which repeatedly refers to the action of the driver as causing the gear shift, clearly describes a manual transmission. See, e.g., Marshall Brain, "How Manual Transmissions Work," available at http://www.howstuffworks.com/transmission.htm. 12 "[T]here are two big differences between an automatic transmission and a manual transmission: There is no clutch pedal in an automatic transmission [vehicle]. There is no gear shift in an automatic transmission [vehicle]. Once you put the transmission into drive, everything else is automatic." Karim Nice, "How Automatic Transmissions Work," available at http://www.howstuffworks.com/transmission.htm. Again, this is virtually identical to Dr. Hoff's description of an automated transmission: "automatic (or automated) implies that the transmission will shift itself at the appropriate time." Exhibit Q, supra, at 8.

In addition to the fact that the transmission described in the patent is identical to Dr. Hoff's definition of a manual transmission, he also opines that the '477 patent "can be applied to any transmission subject to 'torque lock.'" Id. at 10. In an automatic or automated manual transmission, the torque converter eliminates torque so that the transmission is not subject to torque lock. Nice, "How Automatic Transmissions Work," supra.

Finally, Dr. Hoff makes the following conclusions about the '477 patent:

Claim 1 does not say that it applies to a "manual transmission." In fact, . . . the patent specifications [state] that the "transmission may be of any type known in the art." However, the patent is particularly applicable to manual transmissions. . . . The requirement of breaking the "torque lock" by "actuating the clutch" is a necessary step in shifting a conventional manual gearbox. . . . The shift process described by [the patent] is initiated by an "operator input." This input occurs "when an operator actuates [a] switch." Consequently, the transmission that [the patent] describe[s] has the two key features of a manual transmission; a Manual Gearbox (i.e., a gearbox susceptible to torque lock . . .) and a Manual Shift (i.e., a shift in response to a drivers' input . . .).
In developing this opinion, I have taken "transmission" to mean "manual transmission" and I have applied the definition of "manual transmission" as it is commonly used in the automotive industry. Eaton's interpretation that "manual transmission" means "a transmission in which the driver's energy causes the disengagement and engagement of the gears" is not a commonly used definition in the automotive industry. 13

Exhibit Q, supra, at 18-19 (footnote and emphasis added) (citations omitted).

13 Despite this observation by Dr. Hoff, Eaton's position is identical to his position: "automatic (or automated) implies that the transmission will shift itself at the appropriate time" as opposed to a transmission in which the driver's energy causes the disengagement and engagement of gears.

Regardless of the position attributed to Eaton by Dr. Hoff, it is clear that he considered the transmission described in the patent to be a manual transmission. Mass. Inst. of Tech. & Elec. for Imaging, Inc. v. Abacus Software, 462 F.3d 1344, 1353 (Fed. Cir. 2006) (construing court has an "obligation to give the words of a claim 'their ordinary and customary meaning, [which] . . . is the meaning that the [words] would have to a person of ordinary skill in the art in question at the time of the invention" (quoting Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005))). The Court recognizes that the claim language does not limit the transmission to a manual one by using the word "manual" in the actual claim. See, e.g., SuperGuide, 358 F.3d at 878 ("The claim language does not limit the disputed phrases to any particular type of technology or specify a particular type of signal format, such as analog or digital."). However, the claim does clearly define a method of eliminating "torque between said engine output shaft and said transmission output shaft, said operator signal requesting said engine control determine a zero torque parameter value[.]") Exhibit A, supra, col.7 II.50-53. This description is different than an automated transmission in which the transmission will shift itself at the appropriate time without a request from the operator. Thus, the Court is not adding the modifier "manual" to the claim; the language of the claim describes a transmission which is, of necessity, manual. "Unless there is an express intent to impart a novel meaning to the claim terms, the words of the claim are presumed to take on the ordinary and customary meanings attributed to them by those of ordinary skill in the art." Mars, Inc. v. H. J. Heinz Co., L.P., 377 F.3d 1369, 1373 (Fed. Cir. 2004) (quoting Int'l Rectifier Corp. v. IXYS Corp., 361 F.3d 1363, 1369 (Fed. Cir. 2004)). And, Meritor's own expert described the transmission as manual, both by operation and nomenclature. Id.; SuperGuide, 358 F.3d at 874 ("There is a 'heavy presumption' that the terms used in claims 'mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art.'" (quoting Tex. Digital, supra, at 1202)). Neither party disputes that Dr. Hoff is a person skilled in the art. "Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." Cook Biotech, Inc. v. Acell, Inc., 460 F.3d 1365, 1373 (Fed. Cir. 2006) (quoting Pfizer, Inc. v. Teva Pharms, USA, Inc., 429 F.3d 1364, 1372-73 (Fed. Cir. 2005)); accord, Phillips v. AWH Corp., supra; Application of Nelson, 280 F.2d 172, 181, 47 C.C.P.A. 1031, 1960 Dec. Comm'r Pat. 369 (C.C.P.A. 1960) ("The descriptions in patents are not addressed to the public generally, to lawyers or to judges, but, as section 112 says, to those skilled in the art to which the invention pertains or with which it is most nearly connected.").

And, as noted infra, the specification of the claim refers only to a manual transmission which is shifted into gear manually. "[T]he specification . . . [u]sually, . . . is dispositive; it is the single best guide to the meaning of a disputed term." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996).

Th[e] two paragraphs of section 112 frame the issue of claim interpretation for [the Court]. The second paragraph requires [the construing court] to look to the language of the claims to determine what "the applicant regards as his invention." On the other hand, the first paragraph requires that the specification describe the invention set forth in the claims. [The Federal Circuit has recently explained] the extent to which [a construing court] should resort to and rely on a patent's specification in seeking to ascertain the proper scope of its claims.
Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.

... It is therefore entirely appropriate for a court, when conducting claim construction, to rely heavily on the written description for guidance as to the meaning of the claims. 

... Assigning . . . a limited role to the specification, and in particular requiring that any definition of claim language in the specification be express, is inconsistent with [the Federal Circuit's] rulings that the specification is "the single best guide to the meaning of a disputed term," and that the specification "acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication."

Phillips, 415 F.3d at 1312, 1316, 1317, 1320-21 (quoting Vitronics, supra) (footnote added; other citations omitted). Such is the case here: both Dr. Hoff and the patent specification describe a "manual" transmission.

--- Footnotes ---

14 Title 35 U.S.C. § 112 states that the specification "shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains . . . to make and use the same . . . ." The second paragraph of the section provides that the specification "shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."

--- End Footnotes ---

Nor is this a case involving technology which had not yet been invented at the time of the patent, as was the case in SuperGuide, supra. Here, it is clear that at the time of the patent, automatic transmissions were included in the state of the art. However, manual transmissions were, according to Meritor's expert, preferable in the heavy trucking industry.

The element "transmission" in Claim 1 is thus construed to mean a manual transmission as described infra. It is not an automatic or automated transmission. Furthermore, it is noted that the above extensive discussion is also dispositive of other claim construction issues which are addressed below.

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Transmission

The parties agree and the Court finds that the word "means" as used in claim 7 is used to connote structure rather than function and therefore does not invoke the requirements of 35 U.S.C. § 112, P 6.

The dispute about this term centers on whether a transmission is an assembly of gears or more broadly something that transmits power from one element to another. The Court finds that neither definition is the plain meaning of the term. Some evidence regarding the meaning of this term appears in the intrinsic evidence, but it is not clear enough to be dispositive on the question of whether gears are required. For example, claim 14 refers to a "transmission geared to a reversible electric motor," and the specification refers to "[a] transmission gear assembly" which is connected to an electric motor. '822 Patent, at col.18, 1.47-48, col.4, 1.12-16. However, other claims mention a transmission but make no mention of gears. See, e.g., Id. at col.7, 1.13-14.

Finding no answer in the intrinsic evidence, the Court has consulted several dictionaries as an aid to determining the plain
meaning of the word. A typical definition of "transmission" is: "4.a. transference of force between machines or mechanisms, often with changes of torque and speed. b. a compact, enclosed unit of gears or the like for this purpose, as in an automobile." Random House Webster's Unabridged Dictionary 2011 (2d ed. 1997). The first definition above refers to a process, while the second definition refers to a device designed to carry out the process. Throughout the patent, each time the term "transmission" is used, it is clearly used in a sense which refers to a device, as opposed to the more abstract sense that refers to a process. See, e.g., '822 Patent, at col.4 1.16-17 ("The transmission 35 is bolted onto a horizontal support plate . . . ."). The plain meaning of the term, therefore, is best represented by the second definition.

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Plaintiff moves for an order construing the meaning of the term "transmission lines" as used in United States Patent No. 5,129,654 (the "Patent"), a patent for an electronic game apparatus, in particular a chessboard and pieces. No opposition papers have been filed because the attorneys for TASC BV ("TASC") were relieved of their representation in view of irreconcilable disagreements with their counsel after the motion was filed, and, although defendant TASC had notice of this motion, no attorneys have entered an appearance in their stead, despite the fact that this case is scheduled for trial on October 27, 1997.

Patent claims are to be construed by the court based first on the intrinsic evidence alone, i.e., the patent claims, the specification and the file history. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83 (Fed. Cir. 1996); see generally Markman v. Westview Instruments, Inc., 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996) (describing the history of patent construction).

The patent in suit contains a total of twenty claims, three of which are independent claims (1, 18 and 19) and the remainder are dependent claims. The scope of each of the claims is to be construed so as to differentiate it from any other claim. See United States v. Telectronics, Inc., 857 F.2d 778, 783-84 (Fed. Cir. 1988). Furthermore, it is improper to construe a claim by reading "into an independent claim a limitation explicitly set forth in another claim." Environmental Designs, Ltd. v. Union Oil Co. of Cal., 713 F.2d 693, 699 (Fed. Cir. 1983).

Plaintiff claims that defendant TASC's switchboard, an electronic chessboard, infringes independent claim 1 and dependent claim 11. At issue is whether the term "transmission lines" is limited to a structure which terminates in a characteristic matching resistance, a requirement of claim 15 which is dependent on claim 1. Under the doctrine of "claim differentiations" it is improper to interpret the term "transmission lines" in claims 1 and 11 in a way as to make them identical in scope to claim 15. See id. Accordingly, the requirement in claim 15 that "transmission lines are terminated in their characteristic impedance" cannot be read into claims 1 or 11 in which that language does not appear. Thus, "transmission lines" as used in claims 1 and 11 must be construed as encompassing electromagnetic energy conductive elements other than those which terminate in their characteristic impedance.

The Patent's specifications are consistent with this interpretation of "transmission lines" since those specifications define "transmission lines" as "an arrangement of conductive elements (in this case wires) capable of guiding an electromagnetic wave in a prescribed fashion with relatively small loss of signal strength." (Patent, Col. 6, lines 11-15.) That definition does not require the conductive elements (or wires) to be terminated in their characteristic impedance.

Nor do the specifications state that to accomplish the functions of chess piece location and piece recognition performed by the transmission lines, it is a necessary element of plaintiff's patented chessboard for the transmission lines to terminate in a characteristic matching resistance. The specifications disclose that its preferred two wire form is utilized primarily to take advantage of the basic high isolation between orthogonally arranged sets of two-wire transmission lines and the effectiveness of transferring energy from one two-wire transmission line to an orthogonal transmission line in the presence of a playing piece containing a resonant circuit, (Patent, Col. 8, lines 25-31); and that although the preferred form of the patent utilizes terminations for the two-wire transmissions lines of a characteristic impedance to inhibit any energy incident on the termination from being reflected back to the source "any such reflection would have a negligible effect on the identification process." (Patent, Col. 11, lines 49-59.)

The Patent's use of matching terminal resistance for transmission lines is described throughout the specifications as a preferred or best mode element of the invention not as an essential element of the Patent, e.g., Col. 6, Line 41 - Col. 7, line
5; Col. 8, Lines 1-6 (transmission lines "preferably" of the two-wire type with a termination); Col. 8, Lines 15-18 (termination of the termination line "could be" a resistor with a value which matches the characteristic impedance); Col. 11, Lines 53-56 (terminations 46 "can be" resistors of value Z).

The prosecution history is consistent with this interpretation. In his amended filing the applicant described the transmission lines as "preferably" a pair of balanced two-wire elements that are matched in their characteristic impedance. Cf. Declaration of Richard G. Berkley dated August 8, 1997, Exh. 3 at p. 4.

Accordingly, the term "transmission lines" as used in the Patent means an arrangement of conductive elements (wires) capable of conducting electric magnetic energy in a prescribed fashion over the extent of a chessboard which does not require termination of the arrangement in its characteristic matching impedance.

IT IS SO ORDERED.

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b. Step-plus-Function

Masco argues that the court erred in applying § 112, paragraph 6 to the fourth step of the methods set forth in Claim 1 of the '068 patent and Claim 1 of the '711 patent. In particular, it argues that the court erred in holding that the phrase "transmitting a force" used in those claims was properly interpreted as a function, not as an act. The government responds that the phrase is too amorphous to be interpreted as an act. We agree with Masco.

Section 112, paragraph 6, provides that:

An element of a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112, paragraph 6 (2000). It is well established that this statutory provision can apply not only to a combination of mechanical elements, but also to "a combination of . . . steps in a process claim." O.I. Corp. v. Tekmar Co., 115 F.3d 1576, 1582, 42 U.S.P.Q.2D (BNA) 1777, 1781 (Fed. Cir. 1997) (quoting P.J. Federico, Commentary on the New Patent Act, 35 U.S.C.A. Vol. 1, p. 25 (1954), reprinted in 75 J. Pat. & Trademark Off. Soc'y 161, 186 (Mar. 1993)). The use of the word "means" to describe a claim limitation "gives rise to a presumption that the inventor used the term advisedly to invoke the statutory mandates for means-plus-function clauses." Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427, 44 U.S.P.Q.2D (BNA) 1103, 1109 (Fed. Cir. 1997) (quoting York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1574, 40 U.S.P.Q.2D (BNA) 1619, 1623 (Fed. Cir. 1996)). Similarly, in the context of method claims, the use of the term "steps for" signals the drafter's intent to invoke § 112, paragraph 6. Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583, 39 U.S.P.Q.2D (BNA) 1783, 1785 (Fed. Cir. 1996). However, even where the drafter employs the "step for" language, "section 112, P 6 is implicated . . . only when steps plus function without acts are present." O.I. Corp., 115 F.3d at 1582, 42 U.S.P.Q.2D (BNA) at 1782.

Claim 1 of both the '068 and '711 patents sets forth a method of controlling a lock, comprising a number of steps. The fourth step of the method of Claim 1 of the '068 patent is set forth below.

The method comprising the steps of . . .

transmitting a force applied to the dial to the lever after the lever and the dial have been operably connected to drive the lever to a position where the protrusion can contact the surface of the cam wheel in such a manner that the lever will be pulled by the cam wheel during rotation of the cam wheel.

'068 patent, col. 8, ll. 23, 37-42. The fourth step of the method of Claim 1 of the '711 patent is similar; it is reproduced below.
The method comprising the steps of...

transmitting a force applied to the knob to the lever through the rigid connection after the lever and the knob have been operably connected to drive the lever to a position where the protrusion can contact the surface of the cam wheel in such a manner that the lever will be pulled by the cam wheel during rotation of the cam wheel.

'711 patent, col. 8, ll. 20-21, 34-40. Neither of these claims employs the "step for" language that signals the drafter's intent to invoke § 112, paragraph 6; rather, the claims employ the term "steps of." Thus, there is no presumption that these limitations are in step-plus-function format.

In construing these limitations, the Court of Federal Claims properly examined the claim limitations to see whether any act was present, stating that "if an act is present, then the limitation is not a step plus function limitation." Claim construction ruling Masco, 47 Fed. Cl. at 453. In its assessment of whether an act was present in each claim limitation, the court followed the reasoning of Judge Rader's concurrence in Seal-Flex, Inc. v. Athletic Track and Court Construction, 172 F.3d 836, 50 U.S.P.Q.2D (BNA) 1225 (Fed. Cir. 1999). In his opinion, Judge Rader drew the following distinction between acts and functions under § 112, paragraph 6:

the "underlying function" of a method claim element corresponds to what that element ultimately accomplishes in relationship to what the other elements of the claim and the claim as a whole accomplish. "Acts," on the other hand, correspond to how the function is accomplished.

Id. at 849-50, 50 U.S.P.Q.2D (BNA) at 1234.

The court held that "transmitting" was a function rather than an act, reasoning that "the word 'transmitting' without more does not explain how the force is transmitted." Claim construction ruling Masco, 47 Fed. Cl. at 455. Since in the court's view this limitation set forth a function without an act, the court held that it was a step plus function limitation. Id.

We do not agree. Where the claim drafter has not signaled his intent to invoke § 112, paragraph 6 by using the "steps for" language, we are unwilling to resort to that provision to constrain the scope of coverage of a claim limitation without a showing that the limitation contains nothing that can be construed as an act. Method claims are commonly drafted, as in this case, by reciting the phrase "steps of" followed by a list of actions comprising the method claimed. An application of § 112, paragraph 6 in the present circumstances would render the scope of coverage of these method claims uncertain and disrupt patentees' settled expectations regarding the scope of their claims. "Courts must be cautious before adopting changes that disrupt the settled expectations of the inventing community." Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 152 L. Ed. 2d 944, 122 S. Ct. 1831, 1834, 62 U.S.P.Q.2D (BNA) 1705, 1713 (2002). We thus hold that where a method claim does not contain the term "steps for," a limitation of that claim cannot be construed as a step-plus-function limitation without a showing that the limitation contains no act.

Such is not the case here. The underlying function of the "transmitting a force" limitations, or in Judge Rader's formulation, what those limitations ultimately accomplish in relation to what the other limitations and each claim as a whole accomplish, is to drive the lever into the cam. A standard mechanical engineering dictionary defines "transmission" as "[a] term applied to various methods of transmitting and transforming power as by (a) a line shaft, (b) belts and pulleys, and (c) gears." G.H.F. Nayler, Dictionary of Mechanical Engineering 406 (3d ed. 1985). A general unabridged dictionary defines "transmit" as used in mechanics and physics to mean "to cause (light, heat, sound, etc.) to pass through a medium; also, of a medium, to allow (light, etc.) to pass through; to conduct. Also, to convey (force or movement) from one part of a body, or of mechanism, to another." Oxford English Dictionary, Vol. XVIII 415 (2d ed. 1989). "Transmitting a force" describes how the lever is driven into the cam. In other words, "transmitting" in the sense of causing a force to be conveyed through a medium by mechanical parts is an act, since it describes how the function of the "transmitting a force" limitation is accomplished. Accordingly, Masco has failed to show that the "transmitting a force" limitations contain no act, we reverse the holding of the Court of Federal Claims and hold that the "transmitting a force" limitation of Claim 1 of each of the '068 and '711 patents is not a step-plus-function limitation.
7. (Substantially) Transparent

Defendants' Proposed Construction: "Substantially transparent" means transmitting light without appreciable scattering in a manner such as ordinary window glass so that objects placed behind the placard are clearly distinguishable.

 Plaintiff's Proposed Construction: Leave undefined.

The Court's Claim Construction For Transparent: "Transparent" means transmitting light without appreciable scattering in a manner such as ordinary window glass so that objects placed behind the placard are clearly distinguishable.

Claim 2 states as follows:

2. The method of claim 1 wherein the provided placard is substantially transparent and printing is applied to one of the faces under the coating of said one of the faces.

MPT argues that "transparent" should not be defined because its common English meaning is clear. The problem with this argument is that the industry definitions provided by Defendants and incorporated into Defendants' proposed construction are entirely consistent with the Court's understanding of the common English meaning of transparent. The technical references state as follows:

. "TRANSPARENT Transmitting light without appreciable scattering so that objects beyond are clearly distinguishable." (TLM p. 63).
. "TRANSPARENT LABEL A pressure sensitive label whose face material, adhesive and protective coatings, transmit light so that objects can be seen through it." (TLM p. 63).
. "Transparent - The ability of a material to transmit light without any appreciable scattering. Objects viewed through transparent materials are clearly distinguishable and are therefore also described as 'clear' or 'glass clear'" (Fairley p. 214).
. "Transparent label - Pressure-sensitive label in which the face material, adhesive and any protective coating transmit light and through which objects can be clearly seen. A transparent label on a clear bottle will allow the color, nature and volume of the contents of a bottle to be viewed through the label. See also 'No-label look'." (Fairley p. 215).

Transparent has a well established meaning in the art and a person of ordinary skill in the art would recognize that meaning in the language of Claim 2. However, the Court recognizes that Claim 2 describes a substantially transparent placard. Neither party has attempted to explain to the Court how a substantially transparent placard differs from a transparent placard. Thus, the Court adopts Defendants' definition, but only for the term "transparent."

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A. "transparent protective coating… defining a barrier to prevent injury to said photographic print from foot traffic and other objects passing over the floor tile"

a. Parties' Positions

The parties propose the following constructions for "transparent protective coating … defining a barrier to prevent injury to said photographic print from foot traffic and other objects passing over the floor tile," which is present in the independent claims 1, 4, and 21 of the ‘632 Patent. The only dispute between the parties appears to be whether construction of the term should include a requirement that the coating be 5 millimeters thick or more.

Plaintiff
Plain meaning
Alternatively, "a layer through which light can pass affording defensive or safeguarding properties … serving as an [sic] defense or barricade."

Defendants
A clear barrier that has a thickness of about 5 millimeters or more and prevents injury to the photographic print from foot traffic and other objects passing over it.

Alternatively, INDEFINITE
Plaintiff argues that a construction is not necessary and that the plain meaning should apply. Dkt. No. 104 at 19. Plaintiff offers, in the alternative, a construction that combines common dictionary definitions for the terms "transparent," "protective," "coating," and "barrier." Id. at 20.

Defendants argue that the patentee limited the scope of the claimed protective coating during prosecution to overcome prior art. Dkt. No. 110 at 21. The original language of the claims did not include the present "transparent protective coating" language but required that the floor tiles have a "clear protective coating." These original claims were rejected as obvious over the Muzik patent in combination with the Payne reference. Id. The Muzik reference discloses a vinyl protective coating of about 4-5 mils, 1 the same thickness as the "clear protective coating" in a dependent claim of the original application. The patentee subsequently replaced "clear protective coating" with "transparent protective coating" in the claims and changed the claimed thickness from 5 mils to "about 5 millimeters" (approximately 197 mils). Defendants argue that because of the patentee's distinguishing the prior art and the simultaneous amendments, she has surrendered a protective coating of 5 mils from the scope of the claims. Dkt. No. 110 at 23. Defendants add that the claim term would be indefinite without a limitation that the thickness be 5 millimeters or more. A person of ordinary skill in the art would not be able to determine what would qualify as a protective coating within the scope of the patent -- other than the 5 millimeters disclosed in the preferred embodiment, Defendants argue. Id.

--- Footnotes ---

1 One "mil" is equal to one one-thousandth of an inch. As a reference, most plastic credit and debit cards are 30 mils (or 0.03 inches) thick.

--- End Footnotes ---

Plaintiff replies that limiting the thickness of the protective coating to 5 millimeters during prosecution was a mistake. Dkt. No. 119 at 5. Plaintiff cites to a declaration of the inventor, Darcy Bisker, which states that a coating of 5 millimeters would be unsafe and would defeat the purpose of the invention. Id. Plaintiff also references that the preferred embodiment describes the use of Lustex 5 brand overlaminate, which is 5 mils thick. According to Plaintiff, "this shows that one of ordinary skill in the area of art would have understood that the preferred coating was close to 5 mils -- not 5 millimeters because such person would be familiar with 'Lustex 5[.]'" Id. (emphasis in original).

b. Court’s Construction

The dispute between the parties regarding this term's construction is whether the patentee has disclaimed a protective coating of less than 5 millimeters. Defendants submit that prosecution disclaimer works to limit the scope of the claim. Plaintiff submits that claim differentiation and mistake support its construction.

The patent specifically enumerates the thickness of the protective coating in two places: in the Description of the Preferred Embodiment ("The clear vinyl layer 2 is a durable five millimeter thick vinyl." '632 Patent col.3 ll.32-33) and in claim 6 ("The floor tile of claim 5, wherein said protective coating has a thickness of about 5 millimeters."). These two instances alone do not support a narrowing the scope of the asserted claims.

First, the statement from the Description of the Preferred Embodiment is just that, a description of a preferred embodiment, and cannot, alone, serve to impart a restriction of claim scope. Phillips, 415 F.3d at 1323 ("[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments."). Simply, the Court will not import a limitation from the preferred embodiment into the claims.

Second, the doctrine of claim differentiation precludes construing the term to include a thickness of "about 5 millimeters." The doctrine of claim differentiation refers to the rebuttable presumption that limitations found within the dependent claims should not be read into the associated independent claim. Karlin Tech, Inc. v. Surgical Dynamics Inc., 177 F.3d 968 (Fed. Cir. 1999). That is, there is a rebuttable presumption that different claims have different scopes. Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374 (Fed. Cir. 2006). Defendants correctly point out, however, that their proposed construction would not be coextensive with claim 6 to the extent that the coating is thicker than "about 5 millimeters." Dkt. No. 110 at n.9.
Finding no support in the claims or the specification for Defendant's limitation, the Court proceeds to an analysis of the prosecution history where, Defendants argue, the patentee expressly disclaimed a coating of 5 mils. Although the prosecution history is relevant to claim construction, the prosecution history may not be used to infer a narrowing of a claim absent the applicant's clear and unmistakable disavowal of claim scope. Omega Eng'g Inc. v. Raytek Corp., 334 F.3d 1314, 1326 (Fed. Cir. 2003); Amgen Inc. v. Hoechst Marion Roussel Inc., 314 F.3d 1313, 1327 (Fed. Cir. 2003). The question, then, is whether the statements relied upon by Defendants constitute a clear and unmistakable disavowal of claim scope.

The original claims of the '632 Patent application were rejected by the PTO as being obvious under 35 U.S.C. § 103 in light of the Payne, Travis, and Muzik references. Dkt. No. 110-5 at 3-4. According to the examiner:

[I]t would have been obvious to one of ordinary skill in the art motivated by the desire to produce a photographic floor tile to use a protective coating from Muzik and enlarge the photographic print from the teaching of Travis in Payne in order to achieve desirable printing results depending in [sic] the intended use. Id. at 4. In response, the patentee explained that the Muzik reference disclosed a "laminate for mounting a photographic print" and that "the photograph is backed by a flat mounting base[,]" Dkt. No. 110-6 at 11. The patentee further distinguished her invention from the Muzik reference:

Muzik primarily teaches a particular method of laminating a photograph or graphic print for purposes of displaying such a print. Furthermore, Muzik simply discloses the possibility of mounting a laminated print on a horizontal surface such as a table or floor. However, there is no suggestion that the horizontally-mounted photograph could be used as a floor tile or that it could be used as a flooring surface. In fact, Muzik teaches away from such a use. If one were to use the foam board mounting base 15 as described in column 3, lines 35-45, and mount the photograph would be [sic] crushed by foot traffic and the photograph would be injured. In addition, there is no disclosure or suggestion to provide a protective coating as [a] barrier to prevent injury to the photographic print from foot traffic. The only protection disclosed for the transparent sheet is from skin oils resulting from handling (See column 4, lines 35-37).

By this, Defendants argue, the patentee surrendered any and all claim scope encompassing protective coating of about 5 mils or less because a person of ordinary skill in the art would not know what would qualify as a "transparent protective coating." Dkt. No. 110 at 23.

On balance, Defendants' prosecution disclaimer argument fails. The claim language at issue does not speak to a specific thickness, and the patentee's comments distinguishing the prior art do not constitute a clear and unmistakable disavowal of claim scope. First, the patentee distinguished multiple differences between its invention and the Muzik reference including characterizations that the Muzik reference teaches away from and is inconsistent with the claimed invention. See Gart v. Logitech, Inc., 254 F.3d 1334, 1342 (Fed. Cir. 2001) (refusing to limit claim because, while the patentee distinguished his preferred embodiment from the prior art on the basis of a claimed feature, patentee also noted that those same references did not contain all of the features of the invention or were incompatible with the elements needed for the claimed invention).

Furthermore, Defendant has not shown that the PTO examiner rejected the claims based on the thickness of the coating. This weighs against a finding that a clear disavowal or restriction was made. Nystrom v. Trex Co., 424 F.3d 1136, 1147-1148 (Fed. Cir. 2005) ("The examiner eventually allowed claims 1-14 and 18 because the 'prior art fail[ed] to teach both sides of the board with a curved configuration,' not because the invented board specified a particular radius of curvature ratio.").

Defendants argue, in the alternative, that if the claims of the '632 Patent are not limited to a protective layer about 5 millimeters or more, then the claim becomes insolubly ambiguous and therefore indefinite. Dkt. No. 110 at 24. A claim is indefinite under § 112 P2 if it is insolubly ambiguous and no narrowing construction can properly be adopted. Amgen Inc., v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1342 (Fed. Cir. 2003). If one skilled in the art would understand the bounds of the claim in light of the specification and other intrinsic evidence, then the claim does not fail for indefiniteness. Morton Int'l Inc. v. Cardinal Chem. Co., 5 F.3d 1464, 1470 (Fed. Cir. 1993). To put it another way, the question is whether a person of ordinary skill in the art reviewing the intrinsic record would understand what constitutes a transparent protective coating within the scope of the patent.

In this case, a person of ordinary skill at the time would recognize the functionality of the claim's transparent protective coating.
coating is not dependent on a specific thickness, but whether it protects the print from foot traffic or the like.

In sum, Defendants have not demonstrated that the patentee limited the scope of the transparent protective coating to require that the coating be 5 millimeters or more. Instead, the claim term itself requires that the coating -- whatever its thickness -- be sufficient to protect the photographic from injury caused by foot traffic or the like. Thus, the Court construes the term "transparent protective coating... defining a barrier to prevent injury to said photographic print from foot traffic and other objects passing over the floor tile" to mean "a transparent barrier of sufficient thickness to protect the photographic print from injury that would otherwise be caused by foot traffic and other objects passing over it."

During prosecution of the above phrases, claim 35 (and claim 145 with respect to "transporter . . .") were amended to remove the § 112, P 6 language. The patentee, however, did not make any other changes to the claim. With respect to "transporter . . .," the patentee did not amend dependent claims 58 and 60, resulting in "transporter" providing the antecedent basis for "transport means." Likewise, as to "controller . . .," the patentee did not amend the patent's corresponding dependent claims to remove the word "means." The defendants seize on these failures to support their argument that § 112, P 6 applies.

The court disagrees. Notwithstanding the failure to carry the amendments through to all of the limitations reciting the word "means," the terms "controller" and "transporter" connote sufficient structure to avoid application of § 112, P 6. The terms do not use the word "means," and this gives rise to a presumption that the limitations are not drafted in means-plus-function form. The controller limitation provides additional functions performed by the controller, thus further defining the type of controller covered by the claim. Much like the circuit addressed in Abacus and the controller addressed in 911EP, the term "controller" recites sufficient structure.

With respect to the term "transporter," the court concludes that the analysis in Lighting World is applicable. The term "transporter," although somewhat generic, implies that the structure is a device which transports something else. Read in the context of the claim language, it is a device which is operatively connected to the capture system for moving the system in response to the vend control signal. The fact that a large number of devices may qualify as a "transporter" does not mean that the claim is drafted in means-plus-function form. The absence of the term "means" gives rise to a presumption that § 112, P 6 does not apply. The defendants have not overcome that presumption in this case.

The district court defined "transverse holes" as "holes across the butt portion of the nail." Stryker argues that this claim term should be limited to holes that are perpendicular to the nail shaft, excluding from the claim scope holes that are tilted so that one end of the hole is vertically offset from the other end. Again, this argument is an improper attempt to read a feature of the preferred embodiment into the claims as a limitation.

Stryker's argument for a narrow reading of "transverse" stems from the fact that "[e]very description of the transverse holes in the '444 patent contemplates a perpendicular hole." This is a correct characterization of the patent: every figure which illustrates the holes shows them going perpendicularly through the shaft, and the written description characterizes the holes in Figure 2 as "perpendicular to the portion of the nail axis at the butt portion 14 of the nail." '444 patent col.2 ll.58-59. However, Figure 2 and the text characterizing it simply discloses a single, preferred embodiment of the invention. "[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments." Phillips, 415 F.3d at 1323; see also Comark, 156 F.3d at 1186-87.
The plain meaning of Claim 1 covers more than the particular embodiment shown in the figures. While the disclosed embodiment possesses "perpendicular" holes, the claim language covers all "transverse" holes -- a word that does not necessarily imply right angles. Moreover, the patentees' description of their preferred embodiment itself implies a difference between the words "perpendicular" and "transverse." The written description states that Figure 2 "illuminates a plurality of transverse holes, each of which is . . . perpendicular to the portion of the nail axis at the butt portion 14 of the nail." '444 patent col.2 ll.56-59. This implies that a "transverse" hole need not be "perpendicular" -- if it were, the patentee would not have needed to clarify, in addition to being transverse, were perpendicular to the nail axis. Just as in Phillips, where the asserted claim mentioned "steel baffles" and hence "strongly imply[ed] that the term 'baffles' does not inherently mean objects made of steel," 415 F.3d at 1314, this usage of language is strong evidence that the patentee considered "transverse" and "perpendicular" to have distinctly different meanings.

The intrinsic evidence of the specification therefore suggests that the patentees knew how to restrict their claim coverage to holes passing through at right angles. They could have used the word "perpendicular," as they did in discussing their preferred embodiment. Instead, they chose a different term that implies a broader scope. The intrinsic evidence does not indicate that one of skill in the art would believe the patentees meant "perpendicular" when they said "transverse." There is very little indication that the patentees considered perpendicularity important to their invention. The patentees tout the virtue of their preferred hole orientation only once, noting that "'[t]he predictability of fracture modes makes the orientation of holes in the illustrated embodiment suitable in most cases." '444 patent col.4 ll.65-67 (emphasis added). Far from demonstrating that "the patentee[s] . . . intend[ed] for the claims and the embodiments in the specification to be strictly coextensive" with respect to this limitation, Phillips, 415 F.3d at 1323, this statement admits that the disclosed perpendicular hole orientation may not always be ideal. See '444 patent col.5 ll.2-4 (suggesting that, if holes are not "ideally situated, the surgeon may slightly rotate the nail to achieve a more favorable alignment"). Nowhere in the specification or the prosecution history do the patentees criticize or distinguish tilted, non-perpendicular holes.

The dissent states that the specification language which discloses only perpendicular holes should be deterministic of the claim scope. In particular, it points to three instances in the written description where "transverse holes" are described as "perpendicular." Dissent at 3-4 (citing '444 patent col. 2 ll.57-59; col.3 ll.1-3; col.3 ll.9-11). All three of these instances appear in a textual description of the patent's Figure 2, indicating that the holes depicted in that figure are perpendicular to the nail axis. Thus, while the dissent emphasizes the fact that there are three references to "perpendicular" holes in the specification, its argument is ultimately premised on characteristics which the patentee has attributed to a single preferred embodiment. In the context of this patent, such an argument must be contradicted by "our repeated statements that limitations from the specification are not to be read into the claims." Comark, 156 F.3d at 1186; see also id. at 1187 ("[T]he language that [the defendant] argues should limit claim 1 is clearly found in the . . . patent's description of the preferred embodiment. It is precisely against this type of claim construction that our prior case law counsels.").

By highlighting the specification phrase "each of which is defined" and by describing that phrase as "important[ly]," Dissent at 5, the dissent appears to suggest that the patentee has in some sense imposed a limiting definition upon the word "transverse." But the use of the word "defined" here does not imply a lexicographic definition, especially not a definition of "transverse" to mean "perpendicular." Instead, the statement that the holes of the cited embodiment are "defined on . . . an axis" merely introduces the useful abstract concept of a "hole axis," later employed in the claims to describe the orientation of the holes with respect to each other. See '444 patent, Claim 1, col.5 ll.53-54 ("the three hole axes are angularly offset from each other . . ."). The claims repeatedly echo this form of usage of the word "define." See, e.g., '444 patent Claim 1, col.5 ll.51-53 ("the butt portion . . . defining a plurality of at least three transverse holes, each defining a hole axis") (emphasis added); Claim 2, col.5 ll.57-58 ("the curved shank includes a curved portion defining a curved central axis"); Claim 3, col.5 ll.60-61 ("the butt portion defines a central axis"). If the word "define" were always to be an important signifier of limitation, this claim language would indicate that the butt portion has been defined to be transverse holes, that those holes in turn have been defined as hole axes, and that the curved portion and butt portion -- physical parts of the nail -- have each been dubbed identical to an imaginary central axis. These interpretations are incorrect, but they are the natural consequence of finding a restrictive definition of a term anywhere the word "define" might appear in this patent, regardless of context. The specification does not define "transverse" and "perpendicular" to be coequal in meaning.

The fact that the term "transverse" has a broader scope than "perpendicular" also distinguishes this case from Nystrom v. Trex Co., 424 F.3d 1136 (Fed. Cir. 2005), relied upon by the dissent. See Dissent at 5-6. In Nystrom, "both parties acknowledge[d] the ordinary meaning of 'board' as 'a piece of sawed lumber,'" but the patentee sought to have that claim
The dissent cites to other patents whose usage of "transverse" arguably supports its conclusion. Dissent at 8-9. One of them, U.S. Patent No. 5,697,934, is purely extrinsic evidence and therefore merits little consideration. See Phillips, 415 F.3d at 1317. The other, U.S. Patent No. 4,475,545, is cited by the '444 patent and is part of the intrinsic record. However, it was not "created by the patentee in attempting to explain and obtain the patent." Id. Its usage is not that of this patentee, and so it also merits less weight than the evidence of the patentee's own words. While these patents merit some consideration, the specification and claims of the '444 patent itself should be given significantly greater weight. Id. (noting that prosecution evidence "is less useful for claim construction purposes").

A proper reading of the intrinsic evidence indicates that where the patentees discussed the perpendicular holes of their preferred embodiment, they were not narrowly defining the term "transverse" or otherwise limiting the claims, but merely discharging their statutory duties "to teach and enable those of skill in the art to make and use the invention and to provide a best mode for doing so." Phillips, 415 F.3d at 1323. That preferred embodiment cannot be the only product covered by the claims; if it were, the claims themselves would be unnecessary. The district court's construction of "transverse holes" is correct.

2 Observing that the district court defined "holes" as "openings through the butt portion of the nail" and "transverse" as "being across or set crosswise," the dissent argues that these two definitions imply that "transverse holes" has been construed to mean "openings through across the butt portion of the nail." Dissent at 7. If the district court's definitions of those two words are so concatenated, that is indeed the result. We of course do not propound such a construction. Neither did the district court: after defining "transverse" and "holes," it defined the phrase "transverse holes" as "holes across the butt portion of the nail." Order on Claim Construction at 1. The construction of the disputed phrase as a whole is correct, and that construction is what we affirm today. Our de novo review means that we need not decide whether the logic or subsidiary definitions used by the district court to reach the correct construction were sound. Likewise, de novo review makes the atmospherics of the Markman hearing, see Dissent at 1-3, legally irrelevant here. We review only the district court's finished product, not its process. Furthermore, the dissent's criticism of that process contends that Phillips prohibited the district court from beginning its interpretive inquiry by consulting a dictionary. Dissent at 3 ("In accordance with Phillips, the interpretative inquiry should begin not with a dictionary definition . . . ."). Although in Phillips we rejected an approach in which a broad dictionary definition is adopted and then whittled down only if contradicted by the specification, 415 F.3d at 1321, we did not prohibit the use of dictionaries in claim construction, nor did we define at what point in the claim construction analysis they may be consulted.
Moreover, the court seemed to disregard the briefs in favor of off-the-cuff attorney argument during claim construction. In fact, when Stryker argued that Acumed's attorneys were changing their claim construction during the course of the hearing, the district court responded: "Let's not worry about changing. I'm going to keep you all focused right on the task at hand. I don't care what happened before today. I care what's going on here." After hearing arguments from the parties regarding the disputed claim terms and on the appropriateness of the dictionary definitions, the district court resolved each issue orally during the hearing. One week later, the court issued a one-page formal Order on Claim Construction that simply reiterated the court's oral rulings. Acumed LLC v. Stryker Corp., No. 04-cv-513-br (D. Or. Oct. 14, 2004).

--- Footnotes ---

1 It should be noted that the claim construction hearing in this case occurred before this court's en banc decision in Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005). Thus, the district court may have been following the methodology described in Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193, 1201-02 (Fed. Cir. 2002), which relied heavily on the use of dictionaries to ascertain the plain meaning of a claim term. After our Phillips decision, which clarified that the Texas Digital approach was not appropriate, the plaintiff asked the district court here to reconsider her claim construction, but that request was denied.

--- End Footnotes ---

While I acknowledge that there are not formal requirements for a district court's methodologies when conducting claim construction hearings and issuing related orders, I raise this concern because I believe the district court's methodology led it astray from determining the "the meaning that the term "transverse holes" would have to a person of ordinary skill in the art . . . in the context of the entire patent, including the specification." Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). When one properly begins this claim construction inquiry with the intrinsic evidence, rather than dictionary definitions, it is evident that the district court's construction of "transverse holes" is in error.

With respect to the claim term "transverse holes," the district court utilized the dictionary to first determine that a "hole" is "an opening through something." The district court then referred to the dictionary and found two definitions for the term "transverse": (1) acting, lying, or being across: set crosswise; (2) made at right angles to the anterior-posterior axis of the body." The district court concluded that we should construe the claim term in accordance with the broader of the two dictionary definitions 2 because there is no express disavowal of claim scope in the specification. This approach was specifically rejected by this court sitting en banc in Phillips, 415 F.3d at 1320, and we have continued to reject this approach to claim construction. See On Demand Mach. Corp. v. Ingram Indus., Inc., 442 F.3d 1331, 1340 (Fed. Cir. 2006).

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2 The court emphasized that the broader definition appeared as the "number one" definition in Webster's dictionary. It should be noted, however, that this order is not indicative of importance or primacy, but merely reflects historical usage. MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY (11th ed. 2003) 19a ("Order of Senses").

--- End Footnotes ---

In accordance with Phillips, the interpretive inquiry should begin not with a dictionary definition, but with the patent itself, to ascertain what an ordinarily skilled artisan reading the patent would understand the claim term to mean. Phillips, 415 F.3d at 1321. The intrinsic evidence provides no support for the broader of the two dictionary definitions set forth above (i.e., that "transverse" means "acting, lying, or being across; set crosswise"), but fully supports the narrower definition (i.e., that "transverse" means "made at right angles to the anterior-posterior axis of the body"). Each of the eight transverse holes described in the specification are specifically described as being perpendicular. Id. at col.2 ll.57-59 (describing "a plurality of transverse holes, each of which is defined on a respective axis intersecting the nail axis 22, and perpendicular to the portion of the nail axis at the butt portion 14 of the nail"); col.3 ll.1-3 ("transverse hole 44a is oriented . . . perpendicular to the nail axis 22"); col.3 ll.9-11 ("the distal holes are . . . perpendicular to the butt end portion of the nail axis") (emphases added). The majority suggests that the use of both words "implies a difference between the words 'perpendicular' and 'transverse.'" Maj. Op. at 11. The majority contends that if transverse was meant to be construed as perpendicular, "the patentee would not have needed to clarify that these holes, in addition to being transverse, were perpendicular to the nail axis." Id. I disagree. First, the patentee used the two words to clearly specify which of the definitions of transverse applied.
to his invention; the purpose of using the word "perpendicular" was to further describe what the inventor meant by the term "transverse," not to distinguish it as the majority suggests. Second, to say that something is perpendicular also requires mention of a reference plane or line to which the object is located at a right angle. Here, the patent specification limits the discussion of "transverse holes" to holes having an axis perpendicular with respect to the nail axis at the butt portion. '444 patent, col.2 ll.56-59. That was the point of using the word perpendicular in the specification. Thus, by utilizing the word "transverse," the patentee did not need to repeat in the claim that each hole was perpendicular to the nail axis at the butt portion.

The specification describes "three sets of transverse holes." Id. at col.2 l.62. With reference to Figures 1 and 2 of the patent, reproduced below, the first set includes four proximal transverse holes (44a-44d), the second set is one intermediate transverse hole (46), and the third set includes three distal transverse holes (48a-48c). Each of these eight holes is then described and shown in the accompanying figures as being perpendicular to the nail axis 22. Id. at col.2 l.56-col.3 l.11. Most importantly, the specification states that "a plurality of transverse holes each of which is defined on a respective axis intersecting the nail axis 22, and perpendicular to the portion of the nail axis at the butt portion 14 of the nail." Id. at col.2 ll.56-59 (emphases added). Thus, the specification limits each of the transverse holes by the common characteristic that each has an axis perpendicular to the nail axis at the butt portion.

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There is not a single non-perpendicular, "transverse" hole shown or described in the patent. Construing "transverse" to include something other than perpendicular -- in spite of the repeated, narrow usage of that term in the specification -- would provide patent coverage that is broader than what the inventor actually invented and disclosed in his specification, which clearly should have been the starting point for claim construction. Smith v. Snow, 294 U.S. 1, 14, 55 S. Ct. 279, 79 L. Ed. 721, 1935 Dec. Comm'r Pat. 757, (1935) (stating "if the claim were fairly susceptible of two constructions, that should be adopted which will secure to the patentee his actual invention"). Since Phillips, we have repeatedly rejected the concept of construing claim terms to have meanings broader than the meaning derived from the intrinsic evidence. For example, in Nystrom v. Trex, Co. this court stated:

[i]n the absence of something in the written description and/or prosecution history to provide explicit or implicit notice to the public -- i.e., those of ordinary skill in the art -- that the inventor intended a disputed term to cover more than the ordinary and customary meaning revealed by the context of the intrinsic record, it is improper to read the term to encompass a broader definition simply because it may be found in a dictionary, treatise, or other extrinsic source.

424 F.3d 1136, 1145 (Fed. Cir. 2005); see also Primos, Inc. v. Hunter's Specialties, Inc., 451 F.3d 841, 845, 847-48 (Fed. Cir. 2006) (affirming district court's claim construction after district court rejected dictionary definition that was broader and inconsistent with the use of the claim term in the patent at issue); Old Town Canoe Co. v. Confluence Holdings Corp., 448 F.3d 1309, 1318 (Fed. Cir. 2006) (patentee is "not entitled to a claim construction divorced from the context of the written description and prosecution history"); Atofina v. Great Lakes Chem. Corp., 441 F.3d 991, 996 (Fed. Cir. 2006) (quoting Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 423 F.3d 1343, 1348-49 (Fed. Cir. 2005) for the proposition that "in those circumstances where reference to dictionaries is appropriate, the [court's] task is to scrutinize the intrinsic evidence in order to determine the most appropriate definition" (emphasis added)); In re Johnston, 435 F.3d 1381, 1384 (Fed. Cir. 2006) (citing Phillips, 415 F.3d at 1303 for the proposition that "[i]t is well established that dictionary definitions must give way to the meaning imparted by the specification"); Network Commerce, Inc. v. Microsoft Corp., 422 F.3d 1353, 1359-60 (Fed. Cir. 2005) (rejecting proposed construction of the term "download component" based on the combination of two dictionary definitions as untenable "in light of the specification").

Patent scope should be coextensive with what the inventor invented as evidenced by what is disclosed in the patent specification. Netword, LLC v. Centraal Corp., 242 F.3d 1347, 1352 (Fed. Cir. 2001) (stating that the claims should not "enlarge what is patented beyond what the inventor has described as the invention"); Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. 1998) ("The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction."). Thus, where, as here, the intrinsic evidence clearly provides one meaning for the term "transverse," it is inappropriate to give that term a broader interpretation, particularly where the only support for the broader interpretation is extrinsic evidence -- in this case, a dictionary (which supports the narrower construction as well).
Moreover, the district court's interpretation of "hole," which neither party is challenging, makes the majority's interpretation of "transverse" redundant and nonsensical. The court found that the word "holes' in the phrase 'defining a plurality of at least three transverse holes,' means openings through the butt portion of the nail." Claim Construction Order, at 1. This makes sense in the context of orthopedic implants, because a hole is necessarily through the part, which in the case of an intramedullary nail is to accept a screw. Here, the majority's definition of "transverse" as "being across" is redundant when read together with the definition of holes. It makes the phrase "transverse holes" mean "openings through across the butt portion of the nail." The majority's claim construction thus impermissibly renders the claim term "transverse" meaningless, a methodology that this court has repeatedly denounced. Merck & Co. v. Teva Pharms. USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so."); see also Bicon, Inc. v. Straumann Co., 441 F.3d 945, 950 (Fed. Cir. 2006); Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc., 424 F.3d 1293, 1307 (Fed. Cir. 2005). Only if "transverse" requires perpendicularity does each claim term have a distinct meaning. 3

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3 Claim 22, which indirectly depends from independent claim 19, further illustrates this point. Claim 22 recites "a plurality of second securement holes" in the butt portion of the claimed nail. These holes, like the transverse holes in claim 1, are required to go through the butt portion of the nail. But unlike the transverse holes, the securement holes need not be defined by an axis perpendicularly situated with respected to the nail axis at the butt portion.

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That "transverse" means perpendicular in direction is further supported by other intrinsic evidence, namely, other patent references cited during prosecution of the '444 patent. For example, U.S. Patent No. 4,475,545, entitled "Bone Nail," discloses a pair of holes "passing through the nail in transverse relation to its longitudinal direction and both axes of the said both pairs of holes being located in different planes extending in transverse direction relative to the longitudinal direction of the nail." '545 patent, Abstract. The first hole is defined by the nail entrance 8' and exit 8". The second distal hole is defined by the nail entrance 9' and exit 9". As shown in Figures 4 and 5, both of these holes are perpendicular to the longitudinal axis of the nail at the distal portion. The hole axes are similarly described as being located in a plane "normally extending relative to the longitudinal axis of the nail." '545 patent, col.3 ll.45-46. Thus, the usage of "transverse" in the '545 patent is consistent with the definition requiring perpendicularity.

The narrower definition of transverse is also more consistent with extrinsic evidence that demonstrates how those skilled in the art would understand the term. First, in another patent application filed within a year of the issue date of the '444 patent, the '444 patent's inventor, Randall Huebner, uses the word "transverse" in a way that clearly denotes perpendicularity in direction. There, as here, Mr. Huebner describes a "transverse hole" extending through a shaft, stating "the head [of the shaft] includes a hole extending therethrough in a direction generally transverse to the axis of the shaft." U.S. Patent No. 5,697,934, col.2 ll.45-46 (filed Dec. 2, 1996); see also id. at col.3 l.66-col.4 l.1 (describing another hole as "formed through head 50 with a central axis 54 generally transverse to elongate axis 38 of shaft 32"). Mr. Huebner's use of transverse in that application clearly shows a directional requirement implicit in the term "transverse" that is not encompassed in the broader definition accepted by the majority. Next, although the district court chose to rely exclusively on a general dictionary that was not contemporaneous with the patent, technical dictionaries, including one highly relevant to the field of orthopedic implants at the time the patent issued, define "transverse" as referring to a perpendicular direction. Dorland's Medical Dictionary defines transverse as "placed crosswise; situated at right angles to the long axis of a part." DORLAND'S ILLUSTRATED MEDICAL DICTIONARY 1735 (28th ed. 1994).

Thus, the intrinsic and extrinsic evidence establish that the '444 patent's use of "transverse" is only consistent with the narrower definition rejected by the district court and the majority opinion. The only passage of the specification which the majority relies upon to support its broader interpretation of "transverse holes" is the language "[t]he predictability of fracture modes makes the orientation of holes in the illustrated embodiment suitable in most cases." The majority suggests that this language "admits that the disclosed perpendicular hole orientation may not always be ideal." Maj. Op. at 12. I respectfully submit that the majority has taken the language out of context and imparted a meaning to it that is not correct. The entire paragraph wherein this sentence is found is discussing Figure 4 and the orientation of the holes relative to each other around the circumference of the nail, not relative to the nail axis at the butt portion 22. That paragraph focuses on the need to orient the screws "to prevent rotation or axial movement of the nail" and discusses that the screws should be located on "opposite
sides of the nail." '444 patent, col.4 l.61-65. Hence, when the very next sentence of the specification refers to the "orientation of the holes," '444 patent, col.4 l.65-67, it is doing so in the context of their placement around the nail.

Tellingly, the majority opinion offers no other support -- intrinsic or extrinsic -- for its construction, and in fact, offers no explanation at all for its conclusion that "the claim language covers all 'transverse' holes -- a word that does not necessarily imply right angles." 4 Maj. Op. at 11. What, if not the specification, is the majority using to determine the plain meaning of this term? The district court based its conclusion regarding the plain meaning of transverse on Webster's Dictionary, which it acknowledged supported both the definition across and perpendicular. In the present case, as in Nystrom, I see no reason why we should adopt one, broader, plain meaning of the term "transverse" when there is another plain meaning that is completely consistent with the intrinsic evidence. When one begins with the patent specification, in my opinion, there is no doubt which of the two meanings of "transverse" is correct.

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4 The majority's observation that "[n]owhere in the specification or the prosecution history do the patentees criticize or distinguish tilted, non-perpendicular holes," Maj. Op. at 12, only underscores the absence of a written description broad enough to support the meaning that they attribute to the claim term "transverse."

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The majority attempts to distinguish the Nystrom case as a case in which the patentee "sought to have [the] claim [at issue] 'broaden[ed] . . . to encompass relatively obscure definitions that are not supported by the written description or prosecution history.'" Maj. Op. at 14 (quoting Nystrom, 424 F.3d at 1145). The majority suggests that in Nystrom "[w]e refused to impose a construction broader than the term's ordinary meaning." Maj. Op. at 14. In this case, the Webster's Dictionary which provided the basis for the district court's determination of the term's ordinary meaning included two definitions for the term transverse (across and perpendicular). Even the district court acknowledged both definitions. In this case, we must choose between two plain meanings of the word "transverse." As in Nystrom, we should interpret the claim term by reference to the specification and refuse to read the term "transverse" as encompassing meanings unsupported by even a modicum of intrinsic evidence; otherwise we give the patentee more than what was invented and disclosed to the public.

Even if I did not read the intrinsic record to clearly support the narrower of the two plain and ordinary meanings of the term "transverse," I would still be compelled by our precedent to conclude that the narrower meaning applies to this limitation. In Athletic Alternatives, Inc. v. Prince Manufacturing, Inc., this court was presented with a case in which there were two plain and ordinary meanings of a term. 73 F.3d 1573, 1579 (Fed. Cir. 1996). The court was at an impasse after concluding that the specification, the prosecution history and the doctrine of claim differentiation did not provide guidance on what the plain meaning of the claim term at issue was. Id. at 1579-81 (concluding that "the specification is completely silent with regard to the meaning" of the claim term; that there were "[t]wo strong and contradictory interpretative strands run[ning] through the patent's prosecution history . . . [that] together . . . are irreconcilable;" and that after analyzing claim differentiation "we [were] left with two equally plausible meanings of Claim 1"). Faced with such a conundrum, we resorted to the statutory basis for the claims themselves, 35 U.S.C. § 112, P 2, and concluded that

[w]ere we to allow [the patentee] successfully to assert the broader of the two senses of [the claim term] against Prince, we would undermine the fair notice function of the requirement that the patentee distinctly claim the subject matter disclosed in the patent from which he can exclude others temporarily. Where there is an equal choice between a broader and a narrower meaning of a claim, and there is an enabling disclosure that indicates that the applicant is at least entitled to a claim having the narrower meaning, we consider the notice function of the claim to be best served by the narrower meaning.

Id. at 1581.

Even if the specification was completely silent on whether the transverse holes had to be perpendicular to the nail axis at the butt portion of the nail -- which, as discussed above, I do not believe it is -- we must, according to our precedent, adopt the narrower of the two plain and ordinary meanings of the word "transverse." Accord Athletic Alternatives, 73 F.3d at 1581. The majority's rejection of Stryker's claim construction position as "an improper attempt to read a feature of the preferred embodiment into the claims as a limitation," fails to identify any language in the specification that demonstrates that the patentee contemplated anything more than transverse holes that are perpendicular to the nail axis at the butt portion. Thus,

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even adopting the majority's view of the intrinsic record, I cannot agree with their conclusion.

Based on the foregoing, I conclude that the district court's construction of the term "transverse holes" was improper and should be reversed. The term "transverse holes" in claim 1 of the '444 patent should be interpreted as "openings through the butt portion of the nail oriented perpendicularly with respect to the longitudinal axis of the butt portion." Because the uncontested evidence shows that the alleged infringing products do not literally infringe claim 1 of the '444 patent as properly construed, a remand on that issue would not be necessary. Acumed could, however, argue that Stryker's T2 PHN products infringe claim 1 of the '444 patent under the doctrine of equivalents. Accordingly, I would reverse the judgment of literal infringement and remand for proceedings with respect to infringement under the doctrine of equivalents.

5 Although Stryker argues that Acumed waived the doctrine of equivalents with respect to this claim element because it did not assert that theory at trial under the court's claim construction, that statement is incorrect. See Exxon Chem. Patents, Inc. v. The Lubrizol Corp., 137 F.3d 1475, 1479 (Fed. Cir. 1998) (determining that plaintiff did not waive equivalents arguments where the court's claim construction made a doctrine of equivalents argument under any other claim construction "moot").
held that, "Even when attempting to give these words their ordinary meaning" (citing Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)), and after careful consideration, it was unable to construe the phrase "transverse sectional dimensions." Order at 9. The Court agreed that one of ordinary skill in the relevant art would not be on notice that Tranquil intended a certain meaning for this phrase. Order at 9-10.

The Court remains convinced that its original determination of indefiniteness is correct, and agrees with the reasons advanced by Plaintiff. First, there is no direction that the dimensions should be taken linearly (radius or diameter), or using the cross-section of the surface area of a horizontal slice. As Plaintiff correctly points out, linear measurements meet the stated limitation, while the cross-sectional slice does not. Further, Tranquil did not instruct whether the seventy percent limitation was required throughout the length of the diaphysis or at a given slice across the surface of the diaphysis.

The Court has thoroughly reviewed Tranquil's explanations and arguments in its brief supporting reconsideration. Some of these arguments are taken from documents submitted before the U.S. Patent and Trademark Office during Reexamination. While these arguments may somewhat clarify some of the ambiguity, it does not appear that they are legally "before this Court" and available for reconsideration. The limiting, indefinite term appeared in the original patents; no clarification was applied to that term until the PTO had undertaken reexamination proceedings, which occurred after the original patents had issued. It is well-settled that, in reexamination, while new or amended claims may be examined for compliance with 35 U.S.C. § 112, original claims which are not amended cannot be examined for compliance with § 112. 37 C.F.R. § 1.552; Tennant Co. v. Hako Minuteman, Inc., 22 U.S.P.Q.2d 1161, 1167 n.6 (N.D. Ill. 1991). Indefiniteness of an original, unamended patent claim can be cured only by reissuance. 35 U.S.C. §§ 251-252. If the Court legally cannot rely on Tranquil's arguments here, then it is without a basis for changing its original ruling.

In addition, Tranquil proffers the expert testimony of Dr. James Mason of the University of Notre Dame to offer additional arguments regarding the term "transverse sectional dimensions." Initially, there is some question regarding Dr. Mason's qualifications and basis for his opinions, although the Court takes notice of Dr. Mason's extensive expertise. Second, and more importantly, the Court notes that Dr. Mason's opinions were not made a part of the Court's record for claim construction. Under the standard of review set forth above, the Seventh Circuit requires some reasonable explanation as to why Dr. Mason's opinions were not provided to the Court at claim construction. Tranquil has provided no explanation.

Third, there is some inconsistency between Tranquil's proposed definition at claim construction and Dr. Mason's definition. Dr. Mason here refers to the "area" measurements for finding the transverse sectional dimensions. Tranquil's proposed definition relied on linear dimensions to find the transverse sectional dimensions. So it appears that Tranquil is advancing two possible ways to find the dimensions. This brings the Court full circle to its original problem: the term is invalid for vagueness, because at this point, and in spite of extensive discussion on the issue, the Court still does not know which dimensions are appropriate to use in determining the transverse sectional dimensions. The Court's original ruling, that the term is invalid for vagueness pursuant to 35 U.S.C. § 112, shall stand.

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Patent claims must "particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, para. 2 (1982). "A determination of claim indefiniteness is a legal conclusion that is drawn from the court's performance of its duty as the construer of patent claims." Personalized Media Communications, 161 F.3d at 705. The perspective of a person of ordinary skill in the art at the time of the patent application governs the definiteness analysis. W.L. Gore & Assoc., Inc. v. Garlock, Inc., 721 F.2d 1540, 1556-57 (Fed. Cir. 1983). The definiteness of a patent claim depends on whether one skilled in the art would understand the bounds of the claim when read in light of the specification. Union Pac. Res., 236 F.3d at 692 (citing Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576 (Fed. Cir. 1986)). "A claim is indefinite if its legal scope is not clear enough that a person of ordinary skill in the art could determine whether a particular [product or method] infringes or not." Geneva Pharms., Inc. v. GlaxoSmithKline PLC, 349 F. 3d 1373, 1384 (Fed. Cir. 2003).

The district court found the claims of the '214 and '985 patents invalid because it found that one of ordinary skill in the art would not understand the meaning of the phrase "transverse sectional dimensions." Construction Order, 288 F. Supp. 2d at
945. The claims of the '214 and '985 patents require that the "transverse sectional dimensions" of the coated prosthesis constitute certain percentages of the "transverse sectional dimensions" of the medullary canal, defined by the cortical bone. '214 patent, col. 9, ll. 26-36; '985 patent, col. 9, ll. 17-26. A "transverse section" is a slice taken perpendicular to the vertical axis of the bone. The parties dispute which "dimensions" of the "transverse section" define the claimed percentages. Tranquil, relying on citations to the prosecution histories and expert testimony, argues that the "transverse sectional dimensions" refer to two-dimensional surface areas, or the cross-sectional area. Howmedica argues that the term is indefinite because the patent does not specify whether the term refers to a two-dimensional measurement of area or single-dimension linear measurement.

A simple example in the record points out the significant difference between a one-dimensional measurement and a two-dimensional measurement. Consider, for example, a cylindrical medullary canal having a diameter of 1 inch, and a cylindrical implant within that canal having a diameter of 0.75 inch. A one-dimensional linear measurement of the diameter of the implant is seventy-five percent of the diameter of the canal, and meets the "at least around seventy percent (70%)" limitation of the claims. On the other hand, a two-dimensional measurement of the cross-sectional area of the implant is only about fifty-six percent (56%) of the cross-sectional area of the canal and does not meet the limitation of the claims. Consequently, one of ordinary skill in the art must know which measurement to use to determine the boundary of the claims.

The record shows that one of ordinary skill in the art would readily ascertain from the written description of the patents that the "transverse sectional dimension" calls for a two-dimensional measurement. The '214 and '985 patents claim an invention that shapes the prosthesis to fit snugly inside the medullary canal. From the very outset, the written description of these patents disclose this overriding purpose of the invention. For instance, the abstract of the '214 patent states: "The prosthesis device and the method of implantation utilize an elongate stem undersized precisely with respect to a precisely formed stem socket defined by the cortical bone …" '214 patent, col. 3, ll. 52-55. The same abstract emphasizes: "This invention is based on selecting a prosthesis having a stem part which is shaped and sized to correspond substantially to the geometry of the medullary canal … and then forming a complementary stem socket in the canal which will receive the selected prosthesis." Id. at col. 3, ll. 64-65 (emphasis added). To make the invention abundantly clear, the patent repeatedly describes a very tight fit for the prosthesis. See, e.g., id. at col. 3, ll. 68-67 ("The stem must be forcibly inserted into the socket."); col. 4, ll. 3-4 ("The compressed coating provides a compression fit …"); col. 4, ll. 24-30 ("The compression fit initially instantly stabilizes the stem within its socket …"); col. 4, ll. 31-32 ("By shaping the stem part of the prosthesis to conform substantially to the geometrical shape of the medullary canal … it is now possible to obtain, at implantation, a generally uniform press fit …"); col. 4, ll. 31-32 ("Such press fit allows the stem to distribute mechanical loads to the cortical bone …") (emphasis added); '985 patent, Abstract ("The prosthesis utilizes a tapered elongate stem undersized precisely with respect to a precisely formed stem socket in the medullary canal with the stem socket defined by cortical bone …") (emphasis added).

These extensive references clarify that the invention requires a very tight fit for the prosthesis. Given the choice between a construction of "transverse sectional dimensions" that would require a relatively loose fit and a construction that would require a much tighter fit, the record shows that one of skill in the art would readily understand and adopt the latter construction. One of ordinary skill in this art would recognize that a one-dimensional linear measurement of the "transverse sectional dimensions" would defeat the purpose of the invention to provide a snug fit of the prosthesis in the medullary canal. A two-dimensional measurement, on the other hand, provides the snug fit that is the centerpiece of this invention.

This proper and evident construction also finds support in numerous references to the "cross-sectional area" in the prosecution history of both patents. See, e.g., J.A. 75 ("The existence of five sizes of prostheses does not teach anything about … whether those sizes will fill the cross-sectional area of the medullary canal.") (reexamination of the '214 patent); J.A. 101 ("Nor is there any discussion of the desirability of making the cross-sectional area of the prosthesis large in comparison to the cross-sectional area of the medullary canal as defined by the cortical bone.") (reexamination of the '985 patent) (emphases added). Thus, the applicant and the patentee both understood that the "cross-sectional dimensions" referred to in the patents meant cross-sectional areas. These references occurred during a reexamination proceeding. Thus, these references do not directly address the definiteness requirement—an assessment relevant to the time of filing, not a later reexamination proceeding. See Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1385 (Fed. Cir. 1986) (analyzing definiteness as of the time of filing). Nonetheless, these references to "cross-sectional areas" in the discussion between the examiner and the applicant at a later time are relevant to the meaning of "transverse sectional dimensions" to one of skill in the art at the earlier time of filing. See Kopykake
Enters. v. Lucks Co., 264 F.3d 1377, 1383 (Fed. Cir. 2001) ("The literal scope of the term is limited to what it was understood to mean at the time of filing.") (citing Schering Corp. v. Amgen Inc., 222 F.3d 1347, 1352-54 (Fed. Cir. 2000)).

To satisfy the definiteness requirement, the term "transverse sectional dimensions" also need not specify percentage limitations nor the locations along the prosthesis that the percentage must satisfy to constitute a proper dimensional fit. The patent clearly specifies that "the present invention is rooted in the recognition of the importance and criticality of the stem's transverse sectional dimensions, along the entire length thereof, relative to the corresponding transverse sectional dimensions of the medullary canal ...." ‘214 patent, col. 3, ll. 33-37 (emphasis added). Similar language also appears in the claims of both patents. See id. at col. 9, ll. 14-18 ("said stem having transverse sectional dimensions along substantially its entire length which are undersized with respect to adjacent corresponding transverse sectional dimensions of said stem socket"); ‘985 patent, col. 9, ll. 11-13 ("said stem having transverse sectional dimensions along substantially its entire length undersized with respect to corresponding transverse sectional dimensions of said socket") (emphases added). Thus the record shows that the percentage limitations of the "transverse sectional dimensions" for each portion of the bone specified in the claims must be met along "substantially the entire length" for each respective portion. Because one of ordinary skill would understand these requirements from the patent, the claim language is not indefinite. In sum, this record shows that "transverse sectional dimensions "refers to two-dimensional measurements, or the cross-sectional area. The district court erred in holding the claims of the ’214 and ’985 patents invalid under 35 U.S.C. § 112.

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a. "transversely extending protrusion"

The phrase "transversely extending protrusion" appears in claim 1. Boston Scientific argues that the phrase should be construed as "a protrusion that extends in the radial direction, i.e., crosswise to the long axis of the elongate member." ev3 proposes that the phrase be construed as "a protrusion that expands outward from the guidewire in a direction perpendicular and crosswise to the guidewire."

Neither party disputes that the phrase "transversely extending protrusion" has no accepted meaning within the art. Because the phrase is not defined explicitly or implicitly in the intrinsic evidence, the Court turns to the ordinary meaning of the words. The Court construes "transversely extending protrusion" as "a protrusion that extends crosswise to the long axis of the elongate member."

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"transversely oriented support extending across the user support"

"extending substantially across the entire lateral extent of the body pad"

The parties addressed these claims together in the hearing. Fitness Quest contends that they require substantial construction; Monti contends that no construction is required.

Fitness Quest argues that its proposed construction is warranted, based on the prosecution history and Monti's efforts to distinguish his proposed invention from the prior art -- specifically, the Harris patent referenced in Fitness Quest's initial Markman brief at 18-19 and Exhibit 9 thereto. Fitness Quest makes this leap to the prosecution history, however, without explaining why the language of the claim requires any such resort.

Under Markman, the court determines as a matter of law the scope and meaning of patent terms that are in dispute; "[t]he first step of this analysis requires the court to consider the words of the claims." Apple Computer, Inc. v. Burst.com, Inc., no. C 06-00019MHP, 2007 U.S. Dist. LEXIS 33863, 2007 WL 1342504 (N.D. Cal. May 8, 2007) *2 (citation omitted); see also Phillips, 415 F.3d at 1314.

Fitness Quest appears to be asking this Court to leapfrog over the language of the claims and the specification directly to the
prosecution history. This Court is not inclined to accept this invitation. Fitness Quest seeks to inject concepts including "extends perpendicular," "positioned vertically," "suitable distance" (which counsel at the hearing conceded could be understood to mean "sufficient distance"), that are found nowhere in the claim at issue. Monti contends that the language, when considered in the context of Claim 15, is clear and requires no construction. This Court agrees and therefore declines to construe either term.

8. "[T]rap space [or secondary settling area] between each magnet member and a magnet protector of an immediately adjacent magnet member"

This phrase is contained in an independent claim of the 781 patent, 119 an independent and dependent claim in the 386 patent, 120 and four independent claims in the 117 patent. 121

As to this phrase, the Court construes the following meaning: a catch space created between the exposed side of a magnet and the protector for the next magnet over. The Abstracts of all five patents refer to this trap space, although the 117 patent language is slightly different, calling it a secondary debris settling area instead of a trap space. The drawings for all five patents support this interpretation, illustrating a "valley" created by the fact, as discussed earlier, that the magnet protector is taller than the next magnet over. The specifications also support this interpretation, explaining that cuttings are caught in a trap formed "between a straight side of one magnet and the slanted face of the next magnet protector." 122

A. "Tray"

Claim 8 describes that the invention is a "mobile workstation" consisting of a "substantially horizontal tray supported by the chassis that defines a work surface." (178 patent, claim 8). The parties dispute how much of the invention is encompassed by the term "tray." The Plaintiff asserts that a tray is a "receptacle having a top surface, sides and a bottom." (Joint Claim Construction Statement at 5). The Plaintiff's definition includes the entire tray shelf, which visually resembles a shelf upon which a computer monitor could sit, the inside of which could house a computer terminal and keyboard. The Defendant argues that the Plaintiff's definition is too expansive, and points out that the Plaintiff's version of a tray is more like a box. (Def.'s Responsive Claim Construction Br. at 6). Instead, the Defendant defines a tray as "an open receptacle having a top surface, low sides, and a flat bottom." (Joint Claim Construction Statement at 5). Therefore, the Defendant argues that the
entire tray shelf should not be included within the tray definition, only the top board upon which a monitor might sit.

The specifications and the entirety of the patent support the Plaintiff's definition. The Defendant's definition of a tray is, in my view, more aligned with the common understanding of the term. Certainly, the Defendant's version conjures up images of a regular lunch tray. However, "[i]mportantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." Phillips, 415 F.3d at 1313. The "proper definition is the definition that one of ordinary skill in the art could ascertain from the intrinsic evidence in the record." Id. at 1314 (quoting Unitherm Food Sys., Inc. v. Swift-Eckrich, Inc., 375 F.3d 1341, 1351 (Fed. Cir. 2004)). Applying that standard to this case, it is clear that a person of ordinary skill in the art could ascertain that the Plaintiff used "tray" to encompass the entire tray shelf. The definition of tray should be "a receptacle having a top surface, sides and a bottom." (Joint Claim Construction Statement at 5).

The intrinsic record is replete with evidence that the Plaintiff used the term "tray" to encompass more than the Defendant allows. Figures 2A-2D of the patent application show that the entire tray shelf is adjustable in height. In its description of the figures, the patent application states that the figures "illustrate [the] operation of an adjustable-height horizontal tray." (the '178 patent, Col. 4, lines 33-36). Since the entire tray shelf is adjusted in height in the various figures, one reading the patent materials would understand that the horizontal tray referred to the tray shelf, and not just the top board. The top board does not adjust at all in relation to the rest of the tray shelf, and thus must be but one part of the "horizontal tray." The same is true for another set of drawings in the patent, figures 9A-9D. Again, they show the height adjustment of the entire tray shelf, which the patent calls the "adjustable-height horizontal tray." (the '178 patent, Col. 4, lines 64-67). Further, "FIG 5A is a side view of the horizontal tray of the mobile workstation." (the '178 patent, Col. 4, lines 44-46). Figure 5A is simply a side view of the entire tray shelf, to which the patent only refers to as the horizontal tray. (the '178 patent, Col. 4, lines 44-46). Another view of the tray shelf, figure 5B, states that the "sides 103 and bottom 104 [of] the horizontal tray may be formed from sheet metal." (the '178 patent, Col. 12, lines 27-43). In figure 5B, numbers 103 and 104 are clearly not part of the top board, but rather components of the tray shelf. The patent seems to recognize that its version of "tray" departs from the more common version: "For example, the chassis 14 may be a model MPC2001 . . . with the standard tray replaced by the horizontal tray 12 shown in FIG 1." (the '178 patent, Col. 8-9). The horizontal tray in figure 1 includes the entire tray shelf.

It is true that at other points the patent refers to a tray which resembles the Defendant's definition. (See, e.g., the '178 patent, Col. 8, lines 14-18) ("When the computer terminal is mounted beneath the horizontal tray, the computer terminal does not occupy the top surface of the horizontal tray."). However, as stated above, the patent also clearly states that one embodiment of mobile workstation envisions the "horizontal tray" encompassing the entire tray shelf. Because including the horizontal tray as the entire shelf is one of the patent's preferred embodiments, it would be incorrect to exclude that embodiment from the patent. "A claim construction that excludes a preferred embodiment, moreover, is 'rarely, if ever, correct.'" SanDisk Corp. v. Memorex Products, Inc., 415 F.3d 1278, 1285 (Fed. Cir. 2005) (citing Vitronics, 90 F.3d at 1582).

Further, the Plaintiff's definition of tray is not totally alien; there is extrinsic evidence to support it. One source defines a tray as "a removable receptacle . . . in a cabinet, box, trunk, or the like, sometimes forming a drawer." Random House Dictionary (unabridged ed. 2006), Dictionary.com, http://dictionary.reference.com/browse/tray (Last visited October 10, 2007). One can envision the tray apparatus of the '178 patent "forming a drawer" inside of which the computer terminal could sit.

Given the entirety of the patent and extrinsic support for the Plaintiff's claim, the appropriate definition for "tray" is the Plaintiff's submission - a receptacle having a top surface, sides and a bottom.
As indicated by Figures 2 and 11 of the ‘930 patent, a "shelf" may comprise multiple "trays" and multiple beverage queues. A "tray," on the other hand, comprises only one beverage queue. See e.g. ‘930 Patent, col. 3, ll. 16-19 ("Another difficulty associated with vending containers from ends of product trays . . . is the requirement of maintaining tight dimensional tolerances at the dispensing ends of the product holding trays."); col. 3, ll. 65-66 ("at the dispensing ends of the product holding trays . . . ."); col. 5, ll. 30-32 ("invention further includes a plurality of trays for aligning the containers in their respective queues."); col. 11, ll. 6-7 ("In the preferred embodiment illustrated, there are five such rows or shelves of the product trays.") (emphasis added). The court is not persuaded, however, to give the terms the lengthy and structurally limiting construction urged by the defendants.

The court defines "tray/trays" as "a receptacle configured to contain a single beverage or product queue."

The court defines "shelf/shelves" as "a generally horizontal support structure for holding multiple trays or beverage or product queues."

3. "Treated Fibers"

Claim 16 of the ‘693 patent provides in part ". . . wherein said absorbent layer has treated fibers therein, each treated fiber bearing a foraminous hydrophobic water-vapor-permeable pellicle, said treated fibers forming an area. . . ." (Emphasis added.) Fort James suggests that this term has a plain meaning to a POSITA and need not be interpreted. 42 Coating Excellence contends that the construction must require that "treated fibers be formed by spreading hydrophobe precursor on the surface of a sheet of absorbent layer such that a sublayer of fibers in the fibrous absorbent layer has a foraminous hydrophobic water-vapor permeable pellicle." 43

Fort James does not dispute that "treated" in this term is in reference to treatment with foraminous hydrophobic water-vapor-permeable pellicle. 44 Fort James simply suggests that it would be redundant to include language regarding the pellicle within a construction of "treated fibers" given the other language in the claim. 45 Coating Excellence appears to want a construction that would include express reference linking "treatment" to the "pellicle" as a defensive measure so that the concept could not be read out of the claim at a later date. 46

44 No file history or extrinsic evidence has been presented that is inconsistent with this point.

45 Hearing Transcript at p. 117, line 21 -- p. 118, line 14.

46 Hearing Transcript at p. 121, lines 6-10.
inventive pellicle is not a claim limitation. 47

47 There was some discussion at the Hearing regarding whether claim 16 is a product-by-process claim and the current status of such claims under Federal Circuit precedent. Because of Fort James' above concession, the undersigned reports that these issues need not be resolved in the context of this claim construction process.

E. "Wherein the First Layer of Foam is Treated to Have Reversible Enhanced Thermal Properties."

The final area of dispute between the parties involves the interpretation of Claim 8's phrase "wherein the first foam layer is treated to have reversible enhanced thermal properties." (emphasis added) Plaintiffs and Defendants agree that foam may be "treated" by coating it with "phase change materials" ("PCMs"), or embedding them within it. They disagree, however, whether inserting a separate "temperature regulating membrane" between the inner layer and the first foam layer also constitutes a "treatment" of the foam.

Plaintiffs argue that the prosecution history resolves the dispute. The patent examiner defined "the structure and/or chemistry responsible for the claimed 'reversible enhanced thermal properties'" ("RETPs") by reference to a passage in the patent application that now appears in the specification at col. 4, lines 21-34. That passage describes two different means by which a composite liner inherits RETPs: (1) the application of PCMs to foam; or (2) the insertion of a "temperature regulating membrane" between layers or on the outside of the liner. Plaintiffs reason that because the phrase "RETP" appears only in Claim 8, the examiner must have intended for both of these means to be ways in which foam could be "treated." Because they assented to this construction of the "structure and/or chemistry responsible" for RETPs, Plaintiffs argue, it is conclusive.

Defendants take a different tack. One skilled in the art, they argue, would understand that "treated" means "subjected to a process," and that inserting a membrane between two layers is not a "process" in the same way coating or impregnating foam with PCMs is. Defendants also argue that calling the insertion of a membrane a "treatment" would be inconsistent with the language of Claim 3, which also describes the insertion of a membrane between two claim elements but does not employ the term "treated."

The Court finds neither party's argument wholly convincing. It is not obvious from the prosecution history that just because "RETP" appears only in Claim 8, the examiner intended for all of the means by which the liner can inherit RETPs to be incorporated into the meaning of the phrase "foam treated to have…." After all, some of the embodiments that describe a membrane being incorporated into the liner do not relate to the foam layer at all. For instance, one embodiment describes apply applying the membrane "to the fibers of" the innermost liner layer. (See '810 patent, col. 4, lines 24-25.) This cannot possibly be pertinent to the foam layer, which is neither the innermost nor has "fibers." Nor is it clear, as Defendants argue, that inserting a membrane next to foam does not subject the foam to a process, if, for instance, the membrane were bonded directly to the foam layer in some way. Moreover, the absence of the term "treated" in Claim 3 is not necessarily inconsistent with the use of "treated" in Claim 8, insofar as treatment and insertion of a membrane could be synonymous.

The Court finds, however, that the weight of the evidence favors Defendants' interpretation, although not for all of the reasons Defendants cite. Claim 8 teaches a structure in which the second (foam) layer is "treated" in a particular fashion. Plaintiffs would have it that the insertion of a membrane next to that foam layer, or the attachment or application of the membrane to it, would work a change to the foam itself, so that afterwards it would be considered "treated" foam. Yet, all of the Claims in the '810 patent describe a composite material consisting of distinct elements, each having its own qualities. There is no indication anywhere in the patent that the mere attachment or application of one layer to the next renders the two layers a single, unified "treated" element. For example, Claim 8 teaches a layer of foam and a non-woven top sheet that can be directly attached to each other, without the foam being termed "treated" by the top sheet. Thus, the claim language and nature of the '810 patent foreclose Plaintiffs' suggestion that "treating" can mean inserting, applying or attaching one
The Court construes "wherein the first layer of foam is treated to have reversible enhanced thermal properties" to mean "wherein the first layer of foam possesses reversible enhanced thermal properties by means of being coated with PCMs, or having PCMs embedded within it, or by means of some other process that does not involve the physical attachment of a tangible, distinct layer of material, such as a temperature regulating membrane, to the surface of the foam."

B. The '141 Patent and the '483 Patent

Cleanox owns two patents for inventions developed by R. Vigneri for the remediation of certain groundwater contamination. See Amended Complaint at 3,  P 12. The '141 Patent was filed 12 February 1993 and was issued 15 February 1994. See '141 Patent. The '483 Patent was filed 10 February 1994 and was issued 28 May 1996. See '483 Patent.

Both patents describe their processes as "a method for remediating a hydrocarbon-contaminated region of a subterranean body of groundwater to destroy or reduce the initial levels of hydrocarbon contaminants." '141 Patent at col. 8, lines 23-26; '483 Patent at col. 9, lines 33-35. The two patents rely upon the interaction of hydrogen peroxide and the hydrocarbon contaminants to alleviate the harm caused by groundwater contaminants.

Claim One of the '141 Patent provides as follows:

1. A method for remediating a hydrocarbon-contaminated region of a subterranean body of groundwater to destroy or reduce the initial concentration levels of hydrocarbon contaminants, comprising the steps of:

   (a) providing a plurality of mutually spaced wells intersecting said groundwater region ("Step A of the '141 Patent");

   (b) determining the existence of acceptable continuity and well interflow paths for the said region by generating a test flow of a solution of hydrogen peroxide from one of said wells and monitoring pH changes at each other of said wells as a function of time to detect a pH drop of at least 0.2 ("Step B of the '141 Patent"); and

   (c) subsequent to detecting said pH drop, providing a treating flow of said hydrogen peroxide solution from one or more of said wells ("Step C of the '141 Patent").

Claim One of the '141 Patent (emphasis added).

Claim One of the '483 Patent provides as follows:

1. A method for remediating a hydrocarbon-contaminated region of a subterranean body of groundwater to destroy or reduce the initial concentration levels of hydrocarbon contaminants, comprising the steps of:

   (a) providing a plurality of mutually spaced wells intersecting said groundwater region ("Step A of the '483 Patent");

   (b) providing a treating flow of acetic acid from one or more of said wells into said groundwater region, to establish acidic conditions therein ("Step B of the '483 Patent");

   (c) introducing a turbulent flow of an aqueous solution of ferrous ion into said groundwater region, for mixing with said acidified groundwater, thereby providing a catalyst for disassociation of hydrogen peroxide ("Step C of the '483 Patent"); and

   (d) providing a treating flow of hydrogen peroxide solution from one or more of said wells into said groundwater region, said hydrogen peroxide undergoing a Fenton-like reaction in the presence of said acidic conditions and said ferrous ion to generate hydroxyl free radicals for oxidizing said contaminants ("Step D of the '483 Patent").

Step C of the '141 Patent requires the practitioner to provide "a treating flow of said hydrogen peroxide from one or more of said wells" after a drop in the pH level is detected. '141 Patent, at col. 8, line 36-38. There are two disputes between the parties as to the meaning of "treating flow": whether the term "treating flow" includes a pressure limitation; and whether the term "treating flow" includes the practice of bioremediation.

a. Whether "Treating Flow" Includes a Pressure Limitation

1. The Cleanox Argument

Cleanox argues the treating flow requirement should not be limited to a particular pressure range. See Brief -Cleanox at 6; Markman Hearing Transcript at 68:17-25. Instead, it contends that only claim 4 of the '141 Patent ("Claim Four of the '141 Patent") 16 should be read to have such a limitation because it alone contains an express pressure limitation. See Brief - Cleanox at 6. Cleanox argues that, under the doctrine of claim differentiation (the "Claim Differentiation Doctrine"), 17 Claim Four of the '141 Patent is dependant on Claim One of the '141 Patent and therefore its limitations should not be read into Claim One of the '141 Patent. See id. Cleanox states Claim One of the '141 Patent cannot have a pressure limitation because it must be broader in scope than Claim Four of the '141 Patent which has such a limitation. See id.

16 Claim Four of the '141 Patent provides that "the treating flow is provided under a pressure not more than the hydrostatic head relative to surface at the point of treating flow discharge from said well." Claim Four of the '141 Patent.

17 The Claim Differentiation Doctrine holds that narrow claim limitations cannot be read into broader ones to limit the meaning of the broader claim because each claim is distinct from other claims within the patent. See Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277 (Fed.Cir. 1995) (citing D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1574 (Fed.Cir. 1985)).

2. The Defense Argument

The Defendants assert "treating flow" incorporates a maximum pressure limitation that is based upon the depth of the well. See Brief - Defendants at 18 (citing '141 Patent at col. 4, lines 9-12). They argue that, based upon the language of the Specification, this limitation should be "not more than the hydrostatic head relative to the ground surface at the point of discharge from the well." See id. at 12 (quoting col. 4, line 9-12 of the '141 Patent).

The Defendants assert the pressure limitation is applicable to all of the claims, including Claim One of the '141 Patent, because the Specification does not qualify or restrict the limitation in any way. See id. at 19. In further support of their argument, the Defendants contend the Specification warns the practitioner that, if the pressure limitation is exceeded, reactants may pass upwardly out of the ground and create undesirable conditions. See id. (quoting '141 Patent at col. 4, lines 12-15). The Defendants dismiss reliance on the Claim Differentiation Doctrine by arguing that the Specification trumps the Claim Differentiation Doctrine because it provides a clear meaning for the language of the claim. See id. at 20 (citing O.I. Corp. v. Tekmar Co., 115 F.3d 1576 (Fed.Cir. 1997)).

3. Judicial Construction

The Claim Differentiation Doctrine requires each claim be distinct from the others such that the limitations of a dependent claim should not be read into an independent claim. See Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed.Cir. 1991) (quoting Autogiro Co. of Am. v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 404 (Ct. Cl. 1967)). Narrow claim
limitations cannot be read into broader ones because each claim is distinct from the other claims within the patent. See Transmatic, 53 F.3d at 1277 (citing D.M.I., Inc. v. Deere & Co., 755 F.2d 1570, 1574 (Fed.Cir. 1985)).

Because Claim Four of the '141 Patent contains a pressure limitation, Claim One of the '141 Patent, upon which Claim Four of the '141 Patent is dependent, by definition, is broader in scope and cannot contain such a limitation. See Transmatic, 53 F.3d at 1277-78. The language of the Specification cited by the Defendants is identical to that contained in Claim Four of the '141 Patent. See '141 Patent at col. 8, lines 50-52. Accordingly, to read Claim One of the '141 Patent as having the same scope as Claim Four of the '141 Patent would make Claim Four of the '141 Patent superfluous. See Lucas Aerospace, 890 F. Supp. at 332. In addition, the language of the Specification demonstrates a pressure limitation may, but is not required to, be employed. The Specification states: "If the pressure exceeds this [limitation], it is possible for some of the reactants to pass upwardly through the porous overburden and create undesirable conditions on the ground surface." '141 Patent at col. 4, lines 9-15 (emphasis added). Although the method contemplates the pressure may be limited, in some circumstances it may be possible to apply a greater or lesser pressure without adverse effects. Therefore, for purposes of Claim One of the '141 Patent, it is not appropriate to limit "treating flow" to a particular pressure range.

b. Whether "Treating Flow" Includes Bioremediation

1. The Cleanox Argument

Cleanox argues that chemical remediation 18 is the sole subject of both the '141 Patent and the '483 Patent. See Brief - Cleanox at 6. Cleanox contends "treating flow" should not be read so broadly to include the prior art "bioremediation 19 method." Id. at 6. Instead, it argues the term should be interpreted as a "flow of hydrogen peroxide that is in keeping with the 'chemical reaction' remediation process set out in the patent." Id. at 8.

--- Footnotes ---

18 Chemical remediation is a method involving a chemical reaction between the hydrogen peroxide and the hydrocarbon contaminants. See Brief - Cleanox at 6.

19 Bioremediation is a method whereby hydrogen peroxide is introduced into the ground to "feed" microbial life near the contamination. Microbial life then "eats" the hydrocarbon. See Brief -Cleanox at 6. Both parties recognize the distinction between bioremediation and chemical remediation.

--- End Footnotes ---

In support of its position, Cleanox points to the Specification which reveals that the patentee distinguished the bioremediation method as a prior art that he believed was ineffective. See Brief - Cleanox at 6. For example, the Specification provides:

In recent years increasing interest has also been evidenced in bioremediation technology. The technology has been of great interest, but its effective use in treating groundwater has been limited. The procedures are very complex, involving the use of expensive and complex reactors, and can cause adverse geochemical reactions, and can even introduce new toxic compounds beyond those which are being treated.

'141 Patent at col. 1, line 63 to col. 2, line 2. Accordingly, Cleanox argues that "it would be contrary to the central teaching of the Specification to read Claim One [of the '141 Patent] as covering this prior art technique that the inventor expressly discounts." Brief - Cleanox at 7.

Cleanox finds additional support for its position in another part of the Specification that states:

The treating flow may additionally contain reaction surface enhancing reagents, i.e. reagents such as dispersions of lime or the like, which provide increase or provide surfaces at which the reaction between the hydrogen peroxide and the hydrocarbon contaminants may occur. Similarly, effective amounts of catalytic agents may be incorporated into the treating solution or preferably are provided as a preinjection into the groundwater region to be treated. Typical such catalysts are initiation catalysts of various types known in the art to promote the desired reaction between the hydrogen peroxide and
hydrocarbons.

Brief - Cleanox at 7 (quoting '141 Patent at col. 3, lines 22-24) (emphasis added in Brief - Cleanox). Cleanox argues the emphasized language makes it clear that "the treating flow of hydrogen peroxide must result in a chemical reaction between the peroxide and the hydrocarbon contaminants." Id. at 7.

2. The Defense Argument

The Defendants argue "treating flow" includes both bioremediation and chemical remediation methods. See Brief - Defendants at 13. The Defendants point out there are no words in the claim or Specification which indicate "treating flow" is limited solely to chemical remediation. See id. Similarly, the Defendants argue that the preamble of Claim One of the '141 Patent generically states the claim is directed to "[a] method for remediating …," rather than a method for "chemically remediating." Id. In addition, Defendants point to the Background of the Invention portion of the Specification of Claim One of the '141 Patent which the Defendants contend "explains that the remediation of hydrocarbons can be accomplished through either chemical remediation (see ['141 Patent at col. 2, line 9,) or biological remediation (see ['141 Patent at col. 1, line 64)." See Brief - Defendants at 13.

The Defendants also assert that, if the interpretation argued by Cleanox were to be accepted, the scope of Claim One of the '141 Patent will become indefinite and unclear because there is no explanation in the patent to explain how a person can practice the invention in a manner which causes chemical rather than biological remediation. See Brief - Defendants at 14. As such, Defendants argue such an interpretation would violate 35 U.S.C. § 112, which requires the patent to include claims "particularly pointing out and distinctly claiming the subject matter which the applicant regards as the invention." Brief - Defendants at 14 (quoting 35 U.S.C. § 112).

3. Judicial Construction

The Specification in each of the '141 Patent and the '483 Patent discusses the limitations of the bioremediation technology, as a prior art, which the inventor viewed as ineffective and over which he saw his invention as an improvement. See '141 Patent at col. 1, line 63 to col. 2, line 2; '483 Patent at col. 2, line 1 to line 8. The Federal Circuit has indicated that "where a term is susceptible to two reasonable interpretations, the court can look to prior art" to assist it in construing the patent claims. Elf Atochem North Am., Inc. v. Libbey-Owens-Ford Co., 894 F. Supp. 844 at 859 (citing Rawlplug Co. v. Illinois Tool Works, Inc., 11 F.3d 1036, 1041 (Fed.Cir. 1993)); Texas Instruments, Inc. v. United States ITC, 871 F.2d 1054, 1065 (Fed.Cir. 1989). The claims then should be interpreted to exclude the prior art and thus preserve the validity of the claim. Texas Instruments, 871 F.2d at 1065. The claims are interpreted as excluding the prior art.

There are numerous references to chemical reactions throughout the Specifications which support the conclusion that the patents contemplate chemical remediation. For example, the terms "Treatment chemicals," "reaction" and "reactants" are used in the summary of invention portion of the Specifications. See, e.g., '141 Patent at col. 2, lines 9, 48 and 49; col. 3, line 16 and line 33, col. 4, line 13; '483 Patent at col. 2, lines 14, 57, 64 and 65 (Fenton's reaction); col. 3, line 20; col. 4, lines 7, 19, 36, and 48; col. 5, lines 11 and 13; col. 6, lines 8 and 20. The terms also are used in the description of the preferred embodiment. See id. at col. 7, line 2, 5 and 9. Similarly, use of the terms "catalyst" and "catalytic agents" throughout the Specifications further demonstrates that the '141 Patent and the '483 Patent contemplate chemical remediation. See id. at col. 3, lines 18, 21 and 27; col. 6, line 44; '483 Patent at col. 3, line 16; col. 7, lines 58, 66 and 67; col. 8, line 23.

* * *

Conclusion

For the reasons stated, the claim construction of the disputed terms is as follows: (1) the term "well" in Claim One of the '141 Patent and Claim One of the '483 Patent means "a structure used for both monitoring and injecting the groundwater," (2) Step B of the '141 Patent is read to require that pH be monitored for the particular purpose of determining the existence of acceptable continuity and well interflow paths, (3) the term "treating flow" in Step C of the '141 Patent is read to have no pressure limitation associated with it and to be limited to "chemical remediation", and (4) Claim One of the '483 Patent is read to require the performance of Steps A-D both separately and sequentially to practice the invention.
Claim 15 teaches:

An electric telescoping pole saw, comprising:

- an electric chain saw having a handle, a trigger, and a power cord;
- a telescoping pole assembly having telescoping tubular sections extending between an upper end and a lower end of said pole and including an adjustable coupling clamp operative when loosened to enable said sections to telescope relative to one another for adjusting the effective length of said pole and operative when tightened to secure said sections in a selected position of adjustment;
- a bracket provided on said upper end of said pole for receiving said handle of said saw and mounting saw releasably on said pole adjacent said upper end thereof;
- a trigger depression device operative to support said trigger of said saw in a depressed "on" position;
- an adjustable length extension cord accommodated within said telescoping pole having an end extending from said upper end of said pole connectable releasably with said power cord of said saw, and an opposite end extending from said lower end connectable to an electrical power source; and
- a remote switch mounted on said pole adjacent said lower end thereof and coupled electrically to said extension cord and operative when depressed to transmit electrical power to said saw to operate said saw and operative when released to discontinue power and operation of said saw.

5 Claims 1 and 3 contain the same elements and therefore construction of claim 1 is effectively construction of claim 3 and I need not construe them both.
Q. Is trigger depression device a phrase that has ordinary meaning in the field or is that a phrase that was coined for purposes of your patent?

A. I believe that's a phrase.

Q. A phrase with meaning in the industry or a phrased [sic] that was coined for purposes of your patent?

A. I believe it's a phrase in industry - I believe.

Q. When was the first time you heard the phrase trigger depression device?

A. I completely understood it the first time I heard it, I mean when the lawyers told me. I mean, I don't know when I heard it in my lifetime. When you say that to me it means to me something to hold the trigger down.

Q. I'm not asking you whether it describes the function that it performs, but I take it that you agree that that phrase does describe the function of holding down the power switch, the trigger?

A. Yes.

Q. I'm asking you instead whether you had ever heard that phrase before your lawyers mentioned it to you in connection with your patent application.

A. I really can't answer that, I don't know the answer to it. I don't know if I have heard that in my life or not.

Q. As you sit here do you recall ever hearing it before your lawyers mentioned it?

A. No.

Q: Is the phrase securing the trigger a phrase that is commonly used in the industry or was that phrase coined for purposes of your patent application?

A. I would say it's used in the industry, some hand drills have them built right in.

Q. When did you first hear the phrase securing the trigger in a tree trimming context?

A. When they wrote the patent of the saw that I designed.

Q. That was the first time you heard the phrase, quote, securing the trigger?

A. On a chain saw it is.

Q. And is that the first time you heard the phrase, quote, securing the trigger in the context of tree trimming?

A. That's the first time I ever heard it.

(223:22-224:13)
The specification, in regard to the trigger depression device reads:

According to the present invention, the trigger switch 30 is disabled by a lock device 34 such that the circuit remains closed at all times between the cord 26 and motor 20. FIG. 4 illustrates the preferred way of disabling the switch 30. As shown, a plastic band or tie 34 encircles the handle 32 and trigger 30 to hold the trigger 30 in the fully depressed condition. The tie 34 may be of the conventional type having a plastic strap 36 anchored at one end to a lock body 38 and having its opposite free end 40 extendible through a slot in the body 38 where it is gripped by a one way locking mechanism to prevent the withdrawal of the free end 40. (Emphasis added.)

"The Federal Circuit has determined that a presumption of section 112, paragraph 6 governance 'can be rebutted if the evidence intrinsic to the patent and any relevant extrinsic evidence so warrant.'" Relume 63 F. Supp. 2d at 799 quoting Personalized Media v. Int'l Trade Comm'n., 161 F.3d 696, 704 (Fed. Cir. 1998). "Throughout the rebuttal inquiry, 'the focus remains on whether the claim as properly construed recites sufficiently definite structure….'" Id. citing same and also citing Sage Products, Inc. v. Devon Industries, Inc., 126 F.3d 1420, 1427-28 (Fed. Cir. 1997). "Close scrutiny of the term 'power factor correction converter means' reveals that it implicitly elaborates sufficient structure to a person of ordinary skill in the art of power supplies." Id. In general, if the claim does not include the correct word formulation invoking § 112, the presumption is against the application of this provision. However, this presumption can be rebutted and the invoking words are not necessary. Though the term "device" is a general term, in connection with "trigger depression" and given the prevalence of triggers in the art of trimming devices, as well as the existence of the term in prior art, this term evinces sufficient structure so as not to invoke § 112.

The phrase "a troughed portion" appears in claim 1 of the '366 Patent. Baldwin argues that even though the "troughed portion" is not modified by the word "sealing," it must be construed to have the same meaning as "sealing trough" in claim 7 of the '712 Patent. Donaldson, on the other hand, asserts this phrase has a meaning readily understood by one of skill in the art and construction of the language is not necessary. After a review of the intrinsic evidence, the Court concludes that the claim language creates no ambiguity and that "a troughed portion" has a meaning readily understood by one of skill in the art. Accordingly, the Court declines to construe "a troughed portion".

Claim 1 of the '418 patent describes the textured side of the material as having "a plurality of ridges disposed between the channels, forming troughs . . . ." Plaintiffs contend that "troughs" are "sheet structures, each formed by two successive ridges and an interposed channel" or, alternatively, "the surface structures formed by two successive ridges and an interposed channel." Gore claims that the term "troughs" refers to "cuts made along an axis other than that of the channels." The illustrations of the '418 patent show depressed surface areas formed by the surrounding channels and ridges present after cutting the surface material. See U.S. Patent No. 6,921,418, at Fig. 12. That illustration is consistent with the plain and ordinary meaning of the term "trough." Additionally, that construction is consistent with the surrounding language in claim 1. The patent's description of Fig. 12 is also consistent with Plaintiffs' construction of "troughs" because it uses the terms "trough" and "cuts" interchangeably. See id. at 3:32-37 ("Additional patterns of cuts or troughs may be made along any other axis as indicated . . . ."). Claim 1 contemplates cuts that create ridges that come together to form a series troughs. Therefore, the Court adopts the construction that "troughs" are "sheet structures, each formed by two successive ridges and an interposed channel."
"Truncated Wall"

K-TEC's Proposed Construction: "[A] wall (planar or non-planar) that truncates, in essence, the typical corner that would otherwise be formed between two side walls." (Pl.'s Claim Constr. Brief at 14, Docket No. 335.)

Vita-Mix's Proposed Constructions: "A distinct planar wall that is not a curved area or surface that forms corners with the adjacent two side walls and truncates the corner that would otherwise be formed between the two adjacent side walls." (Def.'s Claim Constr. Brief at 1, Docket No. 340.)

Vita-Mix has proposed a second, alternative construction: "A wall (planar or non-planar), that truncates, in essence, the typical corner that would otherwise be formed between two side walls, that forms corners with the two side walls and that is not a single, continuously curving surface." (Id.)

K-TEC, in its opening brief, set forth its reasons why it believed the "planar" limitation proposed by Vita-Mix, was wrong. K-TEC pointed out that some of the claims of its patents expressly include "a planar truncated wall" while others do not. For example, Claim 1 of the '117 Patent describes "a fifth truncated wall disposed between two of the four side walls." (Pl.'s Claim Constr. Brief, Ex. A, Column 8.) Dependent Claim 8 recites "an apparatus according to claim 1, wherein the four side walls and the fifth truncated wall are planar." (Id.) Similarly, the '842 Patent, Claim 1, reads, "a fifth truncated wall disposed between two of the four side walls." (Pl.'s Claim Constr. Brief, Ex. B, Column 8.) Dependent Claim 7 of the '842 Patent contains the planar limitation: "an apparatus according to claim 1, wherein the fifth truncated wall is planar." (Id.) Independent Claim 11 discusses a "fifth truncated wall." (Id. at Column 9) Dependent Claim 12 again contains the planar limitation: "The blending container of claim 11 wherein the fifth truncated wall is planar." (Id.) Consequently, K-TEC argues, Vita-Mix's proposed construction runs afoul of the doctrine of claim differentiation. K-TEC stresses that "the only difference between claim 8 and claim 1 in the '117 patent is the 'planar' limitation. Likewise, the only difference between claims 7 and 12 and claims 1 and 11 in the '842 patent, respectively, is that the fifth truncated wall is planar." (Pl.'s Claim Constr. Brief, at 16-17.) K-TEC maintains, citing the decision in Sunrace Roots Enterprises Co., LTD. v. SRAM Corp., 336 F.3d. 1298, 1303 (Fed. Cir. 2003), that because the only difference between these independent and dependent claims is the planar limitation, there is a strong presumption that the planar limitation should not be read into the independent claims.

Vita-Mix presents several arguments in support of its constructions. First, it argues that during the PTO's reexamination of the '117 Patent, K-TEC distinguished its patent from an earlier patent, U.S. Patent No. 7,063,456 (the "Miller Patent") by disclaiming "all curved areas or surfaces." (Def.'s Claim Constr. Brief, at 2.) Vita-Mix makes a similar argument concerning the prosecution of the '876 Patent, contending that K-TEC distinguished a "truncated wall" from three prior art references by disclaiming curved or non-planar walls. Vita-Mix accuses K-TEC of now taking an opposite position in litigation. That is, K-TEC pointed out that some of the claims of its patents expressly include "a planar truncated wall" while others do not. For example, Claim 1 of the '117 Patent describes "a fifth truncated wall disposed between two of the four side walls." (Pl.'s Claim Constr. Brief at 14, Docket No. 335.) K-TEC denies that it disclaimed "curved walls" during prosecution of either of its patents. K-TEC contends that Vita-Mix has taken K-TEC's comments out of context. Pointing to its response to the PTO Examiner during reexamination of the '117 Patent, K-TEC maintains that the entire response makes clear that K-TEC distinguished its claimed truncated wall from the Miller patent "not because it curved, but because it did not truncate a typical corner that otherwise would be formed." (Pl.'s Reply Brief at 9, Docket No. 346.)

K-TEC's arguments concerning prosecution of the '876 Patent is much the same. According to K-TEC, Vita-Mix has again taken K-TEC's statements out of context and omitted other "critical statements" from the prosecution history. (Id. at 11.)

The court agrees with K-TEC. K-TEC's response to the Examiner during the reexamination of the '117 Patent shows that K-TEC explained that "[t]he claimed truncated wall may be planar or curved, as long as it truncates a typical corner that would otherwise be formed if the truncated wall were not present." (Pl.'s Claim Constr. Brief, Ex. P, at 3-5.) K-TEC's position was...
that the Examiner had mistakenly viewed a surface (surface 27) in the Miller Patent as a truncated wall when, in fact "surface 27 cannot be fairly considered a truncated wall... because the two side walls allegedly truncated by surface 27 would never intersect with each other and thus would never form a corner, much less a typical corner that would otherwise be formed." (Id. at 4.)

1 The court agrees with K-TEC that the words "by" and "between" are used interchangeably in the specification of the '117 Patent when describing "truncated wall" and the formation of corners.

Similarly, a careful examination of the '876 Patent's prosecution history bears out K-TEC's contention that it did not disclaim curved walls during this reexamination. In response to the Examiner's rejection of certain claims based on K-TEC's prior art jars, K-TEC emphasized that "[a] truncated wall may comprise both planar and non-planar shapes (e.g., rounded) so long as the wall truncates, in essence, the typical corner that would otherwise be formed by the intersection of two of the four side walls..." (Pl.'s Claim Constr. Brief, Ex. M, at 8-9.)

Also during the reexamination of the '876 Patent, the Examiner rejected certain claims on the grounds that it would have been obvious to combine the square blending jar in the Dickson '086 Patent with an ornamental pitcher in a design patent issued to Grimes. Contrary to Vita-Mix's contentions, K-TEC did not, in its response to the Examiner, disclaim curved walls. Instead, K-TEC argued that the Dickinson '086 Patent taught away from the Grimes Patent because the Dickinson '086 Patent taught the use of a square jar because the long blade in Dickinson would not work in the non-square jar configuration of Grimes.

Vita-Mix next argues that because the specifications of the K-TEC patents do not disclose non-planar walls, the claims themselves be construed to encompass non-planar walls. But, as K-TEC correctly points out, the specifications of the K-TEC patents do not describe the configuration of the truncated wall. The configuration of the truncated wall is not essential to its claimed novelty: a shift in the vortex resulting in a reduction of cavitation during blending.

Case law supports K-TEC's position. For example, in Computer Docking Station Corp. v. Dell, 519 F.3d 1366, 1374 (Fed. Cir. 2008), the court cautioned: "Occasionally specification explanations may lead one of ordinary skill to interpret a claim term more narrowly than its plain meaning suggests. Nonetheless, this court will not countenance the importation of claim limitations from a few specification statements or figures into the claims..." The court in Aktiebolag v. Andrx Pharms., Inc. (In re Omeprazole Patent Litigation), 483 F.3d 1364, 1372 (Fed. Cir. 2007), stated: "Absent some clear intent to the contrary, this court does not import examples from the specification into the claims." And recently, in Kara Tech. Inc. v. Stamps.com Inc., 582 F.3d 1341, 2009 U.S. App. LEXIS 21120, 2009 WL 3030360 (Fed. Cir. Sept. 24, 2009), the court emphasized, again, that "[t]he claims, not specification embodiments, define the scope of patent protection. The patentee is entitled to the full scope of his claims, and we will not limit him to his preferred embodiment or import a limitation from the specification into the claims."

Vita-Mix's proposed constructions include a limitation that requires the truncated wall to form corners with two side walls. But this limitation is found only in Claim 15 of the '117 patent, which reads: "An apparatus according to Claim 14, wherein the intersecting corners formed by the four side walls further comprise two intersecting corners formed by the truncated wall and the two of the four side walls." (Def.'s Claim Constr. Brief, Ex. A) Consequently, the court will not read the limitation of Claim 15 into the other claims; to do so would violate the doctrine of claim differentiation.

ORDER

For the above reasons, the court accepts K-TEC's proposed construction of "truncated wall."
In construing the term "trunnions" in claim 1 of the '085 patent, the district court noted that the parties did not dispute the single word "trunnion," but rather the context in which the term is used in the claim. The district court, relying on a dictionary definition of trunnions, construed the term to mean "pins or pivots usually mounted on bearings for rotating or tilting something." Markman Opinion, slip op. at 13. Reading the claim term in the context of the surrounding claim language, "hinge-forming trunnions being formed on inwardly facing surfaces of said flanges[,]" the court found that because the claim requires that the trunnions be formed "on" the inwardly facing surfaces of the flanges, they must project from the inwardly facing surface of the flanges. The court recognized that several portions of the '085 patent specification, including the "Summary of the Invention" and "Detailed Description of a Preferred Embodiment" sections, refer to the trunnions "as types of projections[,]" thereby reinforcing the conclusion that some type of projection is required. In reaching its construction, the court rejected CCL's argument that the term "trunnion" as used in the claims could be construed to cover a pure recess or indentation in the surface of the flange because "while such recess might be a trunnion, it would be one that is formed in, not on, the inwardly facing surface of the flanges." Id. Therefore, the court concluded that "the trunnions identified in the claim language are ones that project from the inwardly facing surface of the flanges." Id.

On appeal, CCL argues that the district court erred in construing "trunnions" as being limited to "projecting" trunnions. Specifically, CCL contends that the court grafted a limitation from the preferred embodiment onto the trunnion term; that limitation being some type of projection. CCL asserts that the claim language "on inwardly facing surfaces of said flanges," "simply defines the location of the trunnions 'on the flange.'" Alternatively, CCL asserts that if the trunnion term were limited to a projection, there is no reason to further limit it to a structure that does not contain a recess, especially when such a construction would exclude the preferred embodiment.

Sun Coast, on the other hand, argues that the district court correctly construed the term "trunnion" as requiring some type of projection, and thus excluding a pure recess, based on the context of the term in the claim itself and the disclosures in the specification. First, Sun Coast echoes the district court's conclusion that the claim language states that the trunnions are formed "on" the surfaces of the flanges and not "in" the surfaces, and therefore the claim language itself does not support CCL's argument that a trunnion could be a pure recess. Second, Sun Coast asserts that "[a] trunnion cannot be a [pure] recess because the specification describes a recess as part of the projecting trunnion. . . . " (Pls.-Cross Appellants' Br. 48.) Finally, Sun Coast argues that as correctly construed, the projecting "trunnions" cannot contain a recess and if such a construction excludes the preferred embodiment it is because of poor claim drafting.

"The words of a claim 'are generally given their ordinary and customary meaning.'" Phillips, 415 F.3d at 1312 (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)). That ordinary meaning "is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Id. at 1313. "The claims themselves provide substantial guidance as to the meaning of particular claim terms." Id. at 1314. In particular, "the context in which a term is used in the asserted claim" and the "other claims of the patent in question" are useful for understanding the ordinary meaning. Id. As we have stated on numerous occasions, the claims "must be read in view of the specification, of which they are a part." Markman, 52 F.3d at 979. "The specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." Phillips, 415 F.3d at 1315 (quoting Vitronics, 90 F.3d at 1582).

We can discern no error in the district court's Markman construction of the term "trunnions." First, the claim language itself states "hinge-forming trunnions being formed on inwardly facing surfaces of said flanges[,]" '085 patent, col. 7, ll. 9-10 (emphasis added). We do not believe that the term "on" was merely a reference to the location of the trunnions, but rather a limitation on the types of trunnions which were being claimed. Thus, we agree that the claim language itself does not support a construction of the term that would consist of a pure recess as such a trunnion would no longer be formed "on" the surface of the flanges, but rather "in" the surface. The claim language, however, supports a construction that the trunnions must be some type of projection, as that projection would aptly be considered "on" the surface of the flanges. Second, the specification consistently refers to trunnions as being some type of projection and the preferred embodiment is described as having "a short inwardly extending trunnion-like projection 28, 30." This is not, however, a limitation which is only associated with the preferred embodiment as argued by CCL. '085 patent, col. 4, ll. 12-13. The "Summary of Invention" section states that the "trunnions which project inwardly from upper ends of flanges extend from the side walls of the calculator housing, . . . to . . . the opposite open ends of the cylindrical bores and form hinge connections for the lid structure with the calculator housing." '085 patent, col. 2, ll. 45-50 (emphasis added). Therefore, based on the context of the claim language and the description of the trunnions in the specification, we agree with the district court that the term trunnions be
construed as "pins or pivots usually mounted on bearings for rotating or tilting something that project from the inwardly facing surface of the flanges." 1

--- Footnotes ---

1 This was essentially the district court's claim construction embodied in its Markman opinion, although we have compressed the court's statements into a one sentence construction. See Markman Opinion, slip op. at 13.

--- End Footnotes ---

While we affirm the district court's Markman construction of "trunnions," we note that there is no additional limitation which prevents the trunnion from being some type of projection which contains a recess. 2 First, the context of the claim language does not exclude a projection containing a recess because such a trunnion would still be "on" the surface of the flanges. Second, such a projection is specifically disclosed as part of the preferred embodiment. Figure 9 of the '085 patent illustrates that, "one of the projections 28 is larger in diameter, and projection 28 contains a circular recess 32 including a horizontal rib 34 extending radially from the bottom of the recess 32." '085 patent, col. 4, ll. 13-17 (emphasis added).

--- Footnotes ---

2 In the district court's summary judgment order, it appears that the court may have limited the term "trunnions" to solid projections (i.e., those that do not contain a recess). While the term as construed in the Markman opinion was limited to some type of projection, thereby excluding a pure recess, there is no subsequent limitation on the projection such that it could not itself include a recess.

--- End Footnotes ---

As shown in Figure 9, projection 28 is a trunnion which contains a recess. Thus, a construction of the term "trunnion" that excludes a projection containing a recess would exclude projection 28 as shown in Figure 9. Third, as Sun Coast admits, "the specification describes a recess as part of the projecting trunnion . . . ." (Pls.-Cross Appellants' Br. 48.) Therefore, there is no apparent reason to limit the term in a way that would exclude the preferred embodiment. Accordingly, the district court may have applied a more limited construction of the term in its summary judgment order, that application was erroneous.

--- SEE FIG. 9 IN ORIGINAL ---

(d) Claim One, Clause Five

Claim 1, clause 5 reads as follows: "hinge-forming trunnions being formed on inwardly facing surfaces of said flanges[.]" The parties dispute the meaning of the word "trunnions."

Trunnion is not defined in either the claims or the specifications. Although the parties purport to only dispute the single word "trunnion," it became apparent at oral argument that they dispute not so much the definition of this word itself as the context in which it is being used in this claim. SCM in fact does not dispute that trunnions can be defined as something other than just projections. Its position is that use of the word "trunnion" in conjunction with the word "on" in Claim 1, clause 5, means that the type of trunnion contemplated by this claim language is a projection of some sort.

CCL claims that because a trunnion can be something other than a projection, the claim language should not be limited to projections. It asserts that even though the claim language states that the trunnions are formed on the inwardly facing surfaces of the flanges, they can be recessed within the flanges.

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We conclude that, in its ordinary meaning, trunnion is a pin or pivot that permits something to be rotated or tilted. However, in this case, regardless of whether a trunnion is necessarily a projection, the context of the claim language demonstrates that the trunnion referred to is some form of a projection.

The claim language states that the trunnions are formed on the inwardly facing surfaces of the flanges. Claim 1, Clause 5. To be formed on the flange surfaces, the trunnions must necessarily protrude from that surface. As used in the claim language, the trunnions are projections. This construction is entirely consistent with the language of other claims as well as the intrinsic evidence. For example, both claims 3 and 6 refer to the trunnions on the flanges. Claim 3, clause 3; Claim 6, clause 2.

Moreover, this construction is appropriate in light of the specifications which all consistently refer to the trunnions as types of projections. See, e.g., Col. 2:45-46 ("mounting trunnions which project inwardly...."); Col 4:12-17 ("a short inwardly extending trunnion-like projection...."); Col. 4:23-24 ("trunnion-like projections...."); Col. 5:14-15 ("the trunnion projections..."); Col. 6:23-24 ("hinge-forming trunnion projections....").

3 Because the claims themselves state that the trunnions are formed on the flanges, specifications that refer to projections are consistent with, not limitations on, the claim language.

CCL argues that an indentation in the flanges qualifies as a trunnion because it could be used to rotate something along its axis. While such recess might be a trunnion, it would be one that is formed in, not on, the inwardly facing surface of the flanges. We cannot simply rewrite the claims to accommodate CCL's argument.

Moreover, although the indentation might also be seen as being part of the surface of the flange, albeit on a different plane, the indentation still is not on the surface of the flange. While an indentation may be viewed either as being in, or part of, the surface of the flange, it is not formed on the surface of the flange.

Accordingly, we construe trunnions to mean "pin[s] or pivot[s] usually mounted on bearings for rotating or tilting something." Webster's New Third International Dictionary. In this case, the trunnions are formed on the flanges to permit rotation of the lid structure. Claim 1(a),(b). As such, the trunnions identified in the claim language are ones that project from the inwardly facing surface of the flanges.

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A. "Tubular."

The term "tubular" appeared in claim 18 of the '207 patent. Claim 18 depended from claim 1. Claim 1 recited in part (col. 4:59-5:2):

1. Apparatus for positioning in the mouth of an individual for selectively delivering liquid from a liquid source for consummation by the individual, said apparatus being formed of resilient, flexible material, and comprising, in combination:

   A hollow body portion defining an interior for accommodating fluid received from a liquid source, said body portion including a fluid inlet end communicating with said interior for receiving liquid from the liquid source and a fluid outlet end spaced from said fluid inlet end;

Claim 18 read (col. 6:17-18):

18. The apparatus according to claim 1 wherein said body portion is generally tubular shaped.

Defendants argue that the term "tubular" should be limited to a "hollow article having a circular cross-section." Paczonay
proposes that the term should be construed to mean "having the form of a hollow body." He relies on a dictionary definition and his purported definitions in the specification. Specifically, he described the apparatus in the specification as being formed of "resilient, flexible material and includes a hollow body portion defining an interior for accommodating fluid received from a liquid source" (col. 1:48-51). Defendants contend that plaintiff's definition of the term is far too broad and could encompass any hollow article.

The word "tubular" is a common English-language word with a readily-understood meaning. Nothing found in the specification or the claims indicates that the term should have anything other than its commonly-understood meaning. Additionally, the parties presented no evidence or argument from the prosecution history in this claim-construction proceeding, and at the hearing, the parties agreed that nothing in the prosecution history addresses the meaning of the term. Because "tubular" has a commonly-understood meaning and there is no basis on which to conclude that it was used in any specialized way, there is no need to give it further definition, with one minor exception.

This order holds that limiting the definition of "tubular" to only objects with a circular cross-section is unwarranted. Cross-section-wise, tubes come in many different shapes, ranging from circular to oval to poly-sided. The figures in the patent, for example, show the bite valve as having a roughly elliptical shape, as shown in figure 2B. This precludes any finding that the term should be restricted to objects with a circular cross-section. Accordingly, the term "tubular" will be given its commonly-understood meaning with the caveat that it is not to be restricted to objects having a circular cross-section.

e. The "tubular" limitation

Claim 1 requires a "tubular" holder for the first reflector. Defendants have no dispute that the ordinary and customary meaning of "tubular" is "having the form of or consisting of a tube." 17 Defendants state the definition of "tube" is "any various usu. cylindrical structures or devices." 18 Then, Defendants define a "cylinder" as "the surface traced by a straight line moving parallel to a fixed straight line and intersecting a fixed planar closed curve." 19 Defendants would require all sides of the "tubular" holder to be parallel when running lengthwise. The Court believes this definition to be too narrow. Defendants own definition of "tube" shows there are various structures that could be considered "tubular." One of those structures' surfaces might not necessarily move parallel in its lengthwise direction. The Court construes "tubular" to mean "having the form of or consisting of a tube." Therefore, the holder for the first reflector must "have the form or consist of a tube."

16 Doc. 29, Ex. 1 (The '433 patent), column 6, lines 25-26.


19 Id.
"surface" has a "substantially uniform thickness" and more than one slot arranged "substantially parallel to the longitudinal axis of each tubular member." There is no requirement that a tubular member be any certain length, so long as it is long enough to contain more than one slot. A "slot" is "a long narrow groove, opening or notch." Webster's at 1039.

2. "tubular sock-like projectile body"

Defendants argue that "tubular sock-like projectile body" should be given the same construction as another term in the patent, "tubular projectile body," since both terms are used interchangeably in the patent to refer to the same object. Defendants' proposed construction of the phrase is "a tube shape hollow body having a single inner compartment." Def. Br. at 6. Defendants note that both "tubular" and "sock-like" must contribute to the definition of the term, meaning that the body has a single interior shape (like a tube) but is closed on one end (like a sock). Plaintiff argues that the phrase should be construed to mean: "any unfilled tubular fabric construction material having a single chamber of at least one layer of material." Plaintiff. at "Ex. F." Defendants do not object to plaintiff's assertion that nothing in the claim requires that the tube must be composed of only one layer of material. Nor does plaintiff dispute that the tube must have a single inner chamber or compartment. As the proposed constructions are not in conflict with one another, both may be incorporated into the construction. "Tubular sock-like projectile body" therefore is construed to mean "a tube shape hollow body, composed of one or more layers of material, having a single inner compartment."

I. Tubular

<table>
<thead>
<tr>
<th>Claim Term</th>
<th>Davis-Lynch's Proposal</th>
<th>Weatherford's Proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;outer tubular&quot;</td>
<td>An outer part or component shaped like a tube.</td>
<td>Tubular member initially located outside of and surrounding the inner tubular member.</td>
</tr>
<tr>
<td>Claims 33, 34, 35, 37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;inner tubular&quot;</td>
<td>An inner part or component shaped like a tube.</td>
<td>Tubular member initially located within the outer tubular.</td>
</tr>
<tr>
<td>Claims 33, 34, 35, 37, 51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;tubular string&quot;</td>
<td>The string of tubular components to be cemented in a wellbore or well, i.e., a casing/liner string.</td>
<td>Entire length of pipe run into a hole.</td>
</tr>
<tr>
<td>Claims 33, 34, 35, 37, 51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;affixed to said tubular string&quot;</td>
<td>Directly or indirectly attached to the tubular string.</td>
<td>Physically attached to the tubular string.</td>
</tr>
<tr>
<td>Claims 33, 34, 35, 37</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

At the hearing, the parties explained that the primary dispute with regard to these terms is whether or not the outer tubular must be a separate component from the tubular string. Davis-Lynch argues that the claimed invention does not require that the outer tubular be a separate component from the tubular string. Weatherford argues that the claimed invention is a tool, including an outer tubular, which must be separate from the tubular string.

The '336 patent almost always refers to the outer tubular as a separate component from the tubular string. For example, it explains that the flapper valves are mounted to an outer tubular, and that this outer tubular is "cemented, molded, or
Lynch's proposed constructions are consistent with the patent as a whole. The one potential problem with Davis-Lynch's these proposals do not accurately describe the claimed invention when it is in back pressure mode. In contrast, Davis-a temporal component that could be confusing. Because these proposals refer to the "initial" location of the inner tubular, understood by a lay jury. The Court will not adopt Weatherford's proposed constructions of these terms because they include With regard to the terms "inner tubular" and "outer tubular," the Court finds that these terms would not be readily otherwise mounted within a short piece of pipe." '336 Patent at 7:5-6, 6:55-58. This short piece of pipe is then threaded onto the tubular string and forms a portion of the tubular string. '336 Patent 7:21-23; 6:58-61. The patent further explains that, unlike the tubular string, which is intended to provide permanent support to the wellbore, the outer tubular and the material for affixing the outer tubular to the tubular string may be composed of drillable material because the entire tool may later be drilled out. '336 patent at 7:10-24. Furthermore, every figure depicting the inner workings of the invention shows the outer tubular as a component separate from the tubular string. 3 '336 patent figs. 2-9.

3 The outer tubular is labeled as element 25 in figures 2-5, but it is not separately labeled in figures 6-9. Nonetheless, figures 6-9 clearly show that the flapper valves are attached to a component separate from the tubular string. This component must be the outer tubular. Furthermore, figures 6 and 7 show that "conversion tool 14 [i.e. the entire tool including the outer tubular,]" is mounted within pipe 21 [i.e. the tubular string].'' 336 patent at 9:59-60. Figures 8 and 9 show that "conversion tool 14 may be mounted by any suitable means within collar section 21A [i.e. the tubular string]." '336 patent at 10:29-30.

The patent specification contains only a single reference to support Davis-Lynch's position. It states that "[t]he present invention may comprise an outer tubular member forming a portion of the tubular string." '336 patent at 3:41-42. In contrast to the embodiment described above, this statement appears to disclose that the flapper valves may be mounted directly to the tubular string rather than being mounted to an outer tubular affixed to the tubular string.

Although Davis-Lynch is correct to point out that the '336 patent discloses this alternative embodiment, this embodiment is outside the scope of the claims asserted in this case. This embodiment appears to be covered by claims 8, 9, 10, 11, and 23, which recite "an outer tubular member forming a portion of said tubular string." In contrast, claim 33 recites "an outer tubular affixed to said tubular string." This statement clearly describes the "outer tubular" and "tubular string" as two separate components. Furthermore, it states that the outer tubular is "affixed" to the tubular string rather than forming a portion of it.

Davis-Lynch argues the outer tubular may be indirectly "affixed" to the tubular string if it is glued to a section of pipe that is threaded into the tubular string, and the outer tubular may be directly "affixed" to the tubular string if the outer tubular is a section of pipe threaded directly into the tubular string. However, this interpretation finds no support in the intrinsic evidence. The word "affixed" appears twice in the patent specification. It states that the inner tubular "may be affixed in place" until it drops down during conversion. '336 patent at 7:28-32. It also states figure 2 depicts the "conversion tool" as "mounted, fastened, or affixed" to a section of pipe threaded into the tubular string. '336 patent at 6:55-61. In both of these statements, the word "affixed" describes the mounting of one tubular member inside another tubular member, rather than the threading together of sections of pipe. More importantly, the word "affixed" is used to describe an embodiment where the outer tubular is mounted inside the tubular string, but never used to describe an embodiment where the outer tubular forms a portion of the tubular string. '336 patent 6:55-61. Thus, there is no support for Davis-Lynch's contention that the claims at issue cover an embodiment where the outer tubular forms a portion of the tubular string.

Having resolved the parties' claim scope dispute with regard to the terms "inner tubular," "outer tubular," "tubular string," and "affixed," the Court must now determine how best to communicate these terms to a lay jury. The Court finds that the term "affixed" is readily understandable for a jury and thus no construction is necessary. See O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., 521 F.3d 1351, 1362 (E.D. Tex. 2008); Fenner Inv. Ltd. v. Microsoft Corp., No. 6:07-cv-8, 2008 U.S. Dist. LEXIS 65686, 2008 WL 3981838 at *3 (E.D. Tex. Aug. 22, 2008) (finding that a court need not construe a disputed term as long as it has resolved the claim scope dispute between the parties). Although the Court will not construe this term, the parties may not interpret this term in a manner that is inconsistent with this opinion.

With regard to the terms "inner tubular" and "outer tubular," the Court finds that these terms would not be readily understood by a lay jury. The Court will not adopt Weatherford's proposed constructions of these terms because they include a temporal component that could be confusing. Because these proposals refer to the "initial" location of the inner tubular, these proposals do not accurately describe the claimed invention when it is in back pressure mode. In contrast, Davis-Lynch's proposed constructions are consistent with the patent as a whole. The one potential problem with Davis-Lynch's
proposals is that the terms "outer" and "inner" are vague. For example, because the tubular string is "outer" relative to the outer tubular, the tubular string could be described as "an outer part or component shaped like a tube."

The difficulty in construing these terms lies in describing where these components are located relative to one another. The patent specification overcomes this difficulty by consistently referring to the entire tool, including the inner tubular and outer tubular but not the tubular string, as "conversion tool 14" or "tool 14." See, e.g., '336 patent 6:54-58, 7:4-8, 7:46-54, 9:59-61. Every figure depicting the claimed tool labels it as element 14. '336 patent figs. 2-9. By this consistent usage, the patentee has acted as his own lexicographer and defined the claimed tool as "tool 14." See Phillips, 415 F.3d at 1316. Therefore, the Court will construe "inner tubular" as: "an inner part or component, of tool 14, that is shaped like a tube." The Court will construe "outer tubular" as: "an outer part or component, of tool 14, that is shaped like a tube." 4

4 While the Court recognizes that claim terms are typically not construed by reference to elements in the patent's figures, such references may be appropriate when they best explain the term in dispute. See, e.g., Rapistan Sys. Advertising Corp. v. Daifuku America Corp., No. 03-CV-682, 2006 WL 6112186 at *12 (W.D. Tex. Feb. 9, 2006) (construing the term "joining edges" by reference to a figure in the patent because the parties' proposed constructions did not adequately explain the term).

With regard to the term "tubular string," the Court finds that this term would not be readily understood by a lay juror. However, neither party has proposed an adequate construction for this term. Davis-Lynch's proposal inappropriately equates the term "tubular string" with a "casing/liner string," when the patent itself only lists casing and liner strings as examples of tubular strings. See, e.g., '336 patent at 1:14, 1:66, 5:58, 11:55. At no point does the patent expressly limit the term "tubular string" to mean simply a casing or liner string. Cf. Bell Atl. Network Servs., Inc., 262 F.3d at 1271 ("when a patentee uses a claim term throughout the entire patent specification, in a manner consistent with only a single meaning, he has defined that term 'by implication'"). 5 Weatherford's proposal is flawed because it does not effectively communicate that a tubular string consists of smaller sections of pipe. Because both parties' proposed constructions are deficient, the Court will construe "tubular string" as "a length of pipe run into a wellbore that is composed of smaller sections of pipe threaded together."

5 The Court also finds that Davis-Lynch's proposal unnecessarily describes the tubular string as being "cemented into the wellbore." This issue is addressed more fully below in section X.
Beginning with the language of the specification, it never expressly defines the phrase "tubular wall." It does, however, provide helpful guidance. First, the specification expressly states that "[t]he manner in which the present stent is manufactured is not particularly restricted." See Joint Statement, '037 Patent at 13:1-2. The specification then goes on to explain that, while not particularly restricted, there is a preferred embodiment of the claimed stent design that includes a preferred manufacturing mode. Specifically, the specification states: "[p]referably, the stent is produced by laser cutting techniques applied to a tubular starting material." See id. at 13:2-4. Furthermore, "the preferred design of the present stent is one of a tubular wall which is distinct from prior art wire mesh designs wherein wire is conformed to the desired shape and welded in place." See id. at 13:8-11. From this, then, it is clear that the "tubular wall" claimed by the '037 and '255 Patents is not restricted in its mode of manufacture, but that its preferred embodiment is one in which the tubular wall is not made from wire mesh that is conformed to the desired shape and then welded into place. What is not clear, however, is what the tubular wall is, or from what it is actually made.

Absent any language that actually suggests the affirmative definition for "tubular wall," the court will not read the above limitations, taken from a description of the preferred embodiment of the claimed design, into the claim language itself. And since plaintiffs' proposed construction does exactly that by lifting the specification's description of the preferred embodiment to the phrase at issue, their proposed construction is rejected. See, e.g., Teleflex, Inc., 299 F.3d 1313, 1324-26 (Fed. Cir. 2002)(limitations from the specification, such as from the preferred embodiment, cannot be read into the claims absent an express intention to do so).

Moreover, plaintiffs' proposed construction sets forth an additional qualifier -- i.e., that a tubular wall cannot be formed from "a porous flat plate welded into a tube shape" -- that is not found in the patent specification. While plaintiffs assert that this language is supported by prior art patents, specifically U.S. Patent Nos. 4,762,128 (the "'128 Patent") and 5,591,197 (the "'197 Patent" or "Orth Patent"), plaintiffs have failed to submit the '128 Patent for the court's consideration. As for the '197 Patent, which plaintiffs did not submit until after the hearing on claim construction, the section cited by plaintiffs therein fails to provide clear support for their proposed construction. See '197 Patent at 7:8-15 (noting that Figure 1 of the patent depicts a sheet of material which must be rolled into cylindrical configuration with ends "welded" together, but omitting any reference to "porous flat plate[s]").

Accordingly, and for all the above reasons, the court declines to adopt plaintiffs' proposed construction, and instead adopts defendants' proposed construction and construes "tubular wall" as: "having the form of a tube."

**B. Tufts of fibers**

With regard to the second disputed claim construction, Lydall argues that the parties and the district court agreed that "tufts of fibers" are clusters of fibers and thus that the court should have given the term this ordinary and customary meaning. Lydall asserts that nothing in the specification or prosecution history provided a special meaning or definition that would override that ordinary meaning. Lydall also contends that the specification shows various methods for needling a batt to produce tufts on the surface, including a single-sided example shown in figure 10 that would still result in tufts being present on both sides of the batt. Accordingly, Lydall argues that the court incorrectly limited the claim to the two-sided needling shown in figure 5. Lydall argues that no textual hook in "tufts of fibers" justifies reading additional limitations to the term from an example in the specification. According to Lydall, it does not matter how the tufts were created as long as the batt is needled to produce them. Finally, Lydall asserts that the court's claim construction of "tufts of fibers" overlaps with other claim constructions and renders them inconsistent.
In response, Federal-Mogul argues that Lydall's assertion that an embodiment where tufts are formed on both sides of a batt when a batt is needled from only one side is not described or shown anywhere in the patent. Such a construction, according to Federal-Mogul, contradicts the purpose of the tufts to strengthen the batt in the Z-direction. Federal-Mogul contends that there is only one embodiment of the invention, which uses two-sided needling. According to Federal-Mogul, figure 10 shows a single barbed needle at various locations as it proceeds through a batt to produce a tuft. Finally, Federal-Mogul argues that Lydall's selective appeal and position for the two claim constructions before us conflict with constructions of other claim terms.

We agree with Federal-Mogul that, as described in the '260 patent, "tufts of fibers" are only formed on the opposite side of a batt from a needle's entry point and, therefore, that the bats must undergo two-sided needling. Lydall is correct that the parties agreed that the ordinary meaning of "tufts" is "clusters." See Claim Construction Opinion, 566 F. Supp. 2d at 616. However, although the construction of a claimed term is usually controlled by its ordinary meaning, we will adopt an alternative meaning "if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment, expressly disclaimed subject matter, or described a particular embodiment as important to the invention." CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366-67 (Fed. Cir. 2002). Here, the specification clearly describes a single embodiment as the invention, viz., an insulating shield that includes a three-layered batt that undergoes two-sided needling to produce tufts on both its upper and lower surfaces. Every time the specification discusses how to create the tufts of fibers, it states that the tufts form on the opposite side of the needle's entry point. See '260 patent col.6 ll.55-59, col.9 ll.25-29, col.12 ll.62-64, col.13 ll.7-13, col.13 ll.27-31. The description of figure 10 provides a detailed explanation of how the needling accomplishes this:

The needling used in producing the present batt is illustrated in FIG. 10. As a needle 100 having a barb[101 begins to penetrate binding layer 42, the bar[b] 101 picks up and is essentially loaded with binding fibers 45 in that barb. The needle then passes through insulating layer 43 without picking up substantial insulating fibers since the barb is essentially loaded. The needle then passes through the opposite binding layer 41 such that the barb penetrates below the tufted lower surface 48 and presents a tuft 46 beyond that tufted lower surface 48. As the needle 100 is withdrawn back through binding layer 41, that tuft 46 remains at the tufted lower surface 48. Of course, during that needling operation, as is common with barbed needles, binding fibers 45 will also be pulled with the needles to form stitches 34 of those binding fibers, as shown in FIG. 5. Thus, with the retraction of the needle 100, the tufts 46 which terminate the stitches 34 of fibers 45 remain on the surface. By using conventional needling machines, where needling is conducted from both sides of batt 40, tufts will be disposed on both the tufted upper surface 47 and the tufted lower 5 surface 48, as shown in FIG. 5.

To achieve the tufted surfaces, at least the lowermost barb of any needle should pass through tufted lower surface 48 or tufted upper surface 47, depending upon the needle direction, sufficiently such that the tufted fibers remain on 10 the respective surface when the needle 100 is withdrawn from the batt 40.

Id. col.12 ll.53-col.13 ll.13 (emphases added).

The specification identifies a batt with tufts on the upper and lower surfaces as "the present invention." '260 patent col.6 ll.50. In addition, the specification consistently describes the batt with tufts on both sides. See id. col.6 ll.59-60, col.9 ll.29-30, col.13 ll.3-6, col.13 ll.30-31. Lydall's description of the "needling used in producing the present batt" makes clear that the batt must be needled from both sides to produce tufts on both surfaces. Thus, contrary to Lydall's assertions, figure 10 is entirely consistent with the remainder of the specification discussing two-sided needling. In other words, rather than disclosing a batt subjected to single-sided needling as a possible embodiment, the specification clearly indicates that all batts disclosed in the '260 patent must undergo two-sided needling. Thus, we affirm the district court's construction of "tufts of fibers" as "clusters of binding fibers which have been intentionally needle-punched on a downstroke and which extend beyond an opposite surface of the batt."

We have considered Lydall's remaining arguments and find them unpersuasive. Therefore, for the foregoing reasons, we affirm the claim constructions of the district court. Under the parties' stipulation, the final judgment of noninfringement is also affirmed.

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a. "tulip-shaped housing part"

The parties dispute the construction of "tulip-shaped housing part." Gore's proposed construction is "a tulip (bell-shaped) structure with a closed hub end and an open tip end, and having a diameter substantially larger than the guide tube." (Gore Reply Br. 25-27; Gore Proposed Order 3.) Perouse's proposed construction is "[a] housing part [that] in its closed state is a cylinder having a diameter larger than the guide tube, and in its opened state has at least one linear separation." (Perouse Opening Br. 33-34.).

There is no indication that "tulip-shaped" has a "technical or specialized meaning" in the relevant art. (Gore Opening Br. 35.) Though "tulip" is a common word with a well defined meaning, "tulip-shaped" is too vague to have any clear ordinary meaning to one of skill in the art. Without context, it is unclear whether this language refers to an open or closed tulip, and it is unclear which specific aspects of the tulip shape the housing part must possess.

The Court looks to the specification to determine how a person of ordinary skill would interpret this term. See, e.g. Honeywell Int'l Inc. v. Universal Avionics Sys. Corp., 488 F.3d 982, 991 (Fed. Cir. 2007) ("Without a customary meaning of a term within the art, the specification usually supplies the best context for deciphering claim meaning.") Even if "tulip-shaped" were deemed to have an ordinary meaning to one of skill in the art, claim terms are construed "in the context of the entire patent, including the specification" and "a patent applicant may use the words in the specification, prosecution history, or both 'in a manner inconsistent with [their] ordinary meaning.'" CollegeNet, Inc. v. Apply Yourself, Inc., 418 F.3d 1225, 1231 (Fed. Cir. 2005). Therefore, the Court must also examine the patent specification "to determine whether the patentee has given the term an unconventional meaning." Hockerson-Halberstadt, Inc. v. Avia Group Int'l. Inc., 222 F.3d 951, 955 (Fed. Cir. 2000).

The Court finds that the patentee has implicitly provided its own definition of "tulip-shaped" in the '787 patent. The specification repeatedly refers to element number 4 in the drawings as "tulip-shaped" (see, e.g., '787 patent col.3 11. 1-42, 61-67), and explicitly states that the "housing part" is "shown in the drawings as shaped like a tulip." ('787 patent col.1 11.5-6). The patentee thus defines "tulip-shaped" to mean the shape of the closed housing part in the drawings.

--- Footnotes ---

22 The patentee makes clear that "tulip-shaped" refers to the shape of the closed housing part by stating that the stent is inserted into the "tulip-shaped" end of the tool. ('787 patent col.3 11.1-4.)

--- End Footnotes ---

Gore's "bell-shaped" and "closed hub end" limitations are easily dismissed because the drawings show a housing part that is not bell-shaped, but cylindrical (see '787 patent Figs. 3, 4), and with a proximal ("hub") end that is not closed, but open and continuous with the guide tube (see '787 patent Fig. 4). 23 Even if Gore's proposed construction reflected the "ordinary meaning" of "tulip-shaped," the construction is inconsistent with the patentee's use of the term and must be rejected. See Resonate Inc. v. Alteon Websystems, Inc., 338 F.3d 1360, 1364 (Fed. Cir. 2003) ("After identifying the ordinary meaning of a disputed claim term, we turn to the patent's written description and drawings to determine whether that meaning is inconsistent with the patentee's use of the term.").

--- Footnotes ---

23 Because Gore's proposed construction is inconsistent with the drawings, it would also exclude both of the embodiments represented by these drawings. A construction that does not include preferred embodiments within its scope is "rarely, if ever, correct." Vitronics Corp. v. Conceptronic. Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996).

--- End Footnotes ---

The parties originally agreed that a "tulip-shaped housing part" has a diameter larger than that of the guide tube. (Perouse
Opening Br. 33-34; Gore Opening Br. 35-36.) However, in its reply brief, Gore offered a different construction that required a housing part "having a diameter substantially larger than [that of] the guide tube." (Gore Opening Br. 35-36.) Gore offers no support for this new limitation and the Court finds that it is not consistent with the intrinsic evidence. For example, the drawings in the '787 patent do not show a "tulip-shaped" housing part that is "substantially larger" in diameter than the guide tube. (See '787 patent Figs. 3, 4, 6.)

The "tulip-shaped" features of the housing part depicted in the drawings are the cylindrical structure, open distal end, and larger diameter relative to the guide stem. In combination, these features roughly suggest the shape of a tulip flower attached to a stem.

Accordingly the Court construes "tulip-shaped housing part" to mean a "cylindrical housing part with an open distal end and a diameter larger than that of the guide tube."

D. Limitation to Tuna

The literal language of the Yamaoka patent claims only a process for "curing raw tuna meat" (Ex. 1, Col. 7). HISI requests that the claim be limited to tuna, and not be extended to other fish or meats. TPI "does not dispute that Claim 1 of the Yamaoka '619 patent is limited to tuna." (TPI Reply 8.) The Court concurs that the Yamaoka Patent claims only a process for curing tuna, and not any other kind of fish or meat.

B. "Turbine Pump"

Claims 1 and 14 of the '701 Patent include the term "turbine pump." The parties agree that the proper construction of this term includes "a pump that operates by rotating an impeller having vanes or blades," but Performance proposes that the claim term construction include "also known as a regenerative fuel pump." Performance bases this contention on the '701 Patent's Detailed Description of the invention in the '701 Patent which states that within the reservoir "is an electrically powered turbine pump. U.S. Pat. No. 5,257,916 ["'916 Patent"] ... illustrates and describes a turbine pump." See '701 Patent, Col. 2, lines 42-45. It is undisputed that the '916 Patent is entitled and describes a "Regenerative Fuel Pump." The '701 Patent also refers to the '916 Patent "for a full disclosure of a pump of the type shown in FIG. 1." Id., Col. 2, Ins. 66-67 - Col. 3, ln. 1.

The Court credits the testimony of Gerard Muller, a professional engineer with extensive experience in turbines and pumps. Muller testified that the figures depicted in the '701 Patent, as well as the diagrams in the '916 Patent, depict regenerative pumps. Muller also stated that a turbine pump with a circumferential array of vanes as described and depicted in the '701 Patent is a regenerative pump.

While the '701 Patent does not specifically refer to its turbine pump as a "regenerative fuel pump," it is clear from the language in the '701 Patent, as well as the '916 Patent and Muller's testimony, that the term "turbine pump" means "a pump that operates by rotating an impeller having vanes or blades, also known as a regenerative fuel pump." See, e.g., Yoon Ja Kim v. Conagra Foods, Inc., 465 F.3d 1312, 1318 (Fed. Cir. 2006) (holding that although the patent did not define the term "potassium bromate replacer" as an oxidizing agent, it made clear that the potassium bromate replacer in question was an oxidizing agent). The Court, therefore, construes the term "turbine pump" in the '701 Patent to mean "a pump that operates by rotating an impeller having vanes or blades, also known as a regenerative fuel pump."
The Court construes the term "turf maintenance operation" in claims 15, 17, and 24 of the '325 patent to mean:

- An operation for maintaining grass- or vegetation-covered soil or for maintaining sand. Such operations include mowing, sand grooming, and aeration.

Toro advocates a similar construction, but proposes that the Court construe this to mean an operation for maintaining "the turf environment including mowing, sand grooming, or aeration." Toro Opening Br. at 40 (emphasis added). Toro's proposed construction is unhelpful, however, because it defines the vague claim term "turf" by means of the equally vague term "turf environment." The key issue is what "turf" means, and Toro's construction does not answer that question, except by implication. The Court has therefore substituted "grass- or vegetation-covered soil" and "sand" for Toro's proposed "turf environment."

Textron argues, in effect, that this term does not need to be construed: It proposes construing "turf maintenance operation" to mean "an operation for maintaining turf," Textron Opening Br. at 49, which does nothing to elucidate the term's meaning. Such a construction would force the reader (or the jury) to supply the meaning of "turf," which Textron argues should have its ordinary meaning -- a meaning that excludes sand. Id.

The Court agrees with Textron that "turf" would not ordinarily include sand. But the intrinsic evidence demonstrates that Toro intended that "turf maintenance operation" include operations performed on sand, such as sand grooming. Both the '325 patent itself and the patent's prosecution history indicate that Toro intended its claims to cover sand-grooming machines, as well as mowers and aerators. See '325 patent col. 6:51-52 ("The invention could also be applied to a three wheel vehicle, such as the Sand Pro or Infield Pro . . . ."); JA 104 ("Independent claim 26 . . . . would in addition to covering riding mowers also cover other similar vehicles, such as sand trap grooming vehicles, aerating vehicles, or the like.") Toro therefore put the world on notice that "turf maintenance operation" means operations performed not only on grass- or vegetation-covered soil (i.e., on "turf"), but also on sandy areas such as sand traps and baseball diamonds.

7. "turn control mode"

This claim is used in claim 7 of the '017 and '607 Patents, claim 8 of the '967 Patent, and claims 1, 6, 18, and 23 of the '520 Patent. WG seeks to construe this term as "a control mode in which the streamer positioning devices first generate force in the opposite direction of the turn and then are directed back into position." Ion seeks to construe this term as "mode wherein streamer positioning device(s) generate a force in the opposition direction of a turn and then directing each streamer positioning device to the position defined in the feather angle mode." The primary difference between these constructions, therefore, is whether "turn control mode" should be construed with reference to the feather angle mode.

Claims 6 and 9 of the '520 Patent describe the two stages of the turn control mode. Claim 9 of the Patent, which is dependent on claim 6, addresses what happens after the streamers are directed to generate force opposite the turn: "commanding each streamer positioning device to go to a position defined by the feather angle control mode." ('520 Patent, Pl. Br. Ex. 4, Doc. No. 61, col. 11 ll. 40-44.) The construction proposed by Ion, therefore, directly mirrors the language used in the claims themselves to describe the turn control mode. WG once again argues that, because it is only the term that is being construed, and not the entire invention, it is unnecessary to describe how the mode is implemented within the construction of this term. However, WG's proposed construction is also a description of how the turn control mode is implemented, only with the reference to the feather angle mode eliminated. Therefore, WG should not try to controvert Ion's construction on the grounds that it attempts to describe the implementation of the turn control mode, as it appears to agree that some description of the implementation is an appropriate way to construe the term.

Turning then to the specific language chosen by each party to describe the implementation, Ion's construction provides a more complete description because it actually mirrors the language used within the patent-in-suit claims, which clearly refer to the feather angle mode to describe the second stage of the turn control mode. Accordingly the Court adopts Ion's construction of this term and holds that it should be construed as "mode wherein streamer positioning device(s) generate a force in the opposition direction of a turn and then directing each streamer positioning device to the position defined in the
The first step in an infringement inquiry is claim construction, and in construing the claims, we start with the language of the claims themselves. Vehicular Techs. Corp. v. Titan Wheel Int'l, Inc., 141 F.3d 1084, 1998 U.S. App. LEXIS 6859, at *8 (Fed. Cir. 1998). In construing the claim term "turnbuckle," Springfield asserts that the district court paid inadequate homage to the doctrine of claim differentiation.

The doctrine of claim differentiation embodies the notion that language in one claim should not be interpreted so as to make another claim, often a dependent claim, superfluous. See, e.g., Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277, 35 U.S.P.Q.2D (BNA) 1035, 1041 (Fed. Cir. 1995). As a corollary, claim terms should be construed consistently, if possible, throughout a patent. See Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579, 34 U.S.P.Q.2D (BNA) 1673, 1679 (Fed. Cir. 1995). Applying claim differentiation, Springfield notes that claim 1 requires a turnbuckle with "means for adjustably and disconnectably joining," whereas claim 2 merely requires a turnbuckle with "means for disconnectably joining." Because claim 2 omits the "adjustably" requirement, Springfield asserts that the doctrine of claim differentiation compels a broader reading for claim 2 than for claim 1. Springfield contends that this difference in wording means that a turnbuckle as claimed in claim 2 does not need to be adjustable.

We conclude that claim differentiation does not provide much help in this case. Although the different wording of the two claims is relevant in construing the claim limitations, the import of the difference is substantially weakened by the fact that claims 1 and 2 would have different scopes even if the phrases at issue were read to include an adjustability requirement. The two claims are independent and contain additional limitations, beyond the "turnbuckle" limitations discussed here, which would prevent the claims from becoming impermissibly redundant even if the "turnbuckle" limitations were both construed to require adjustability. Thus, claim differentiation in this case does not give rise to the same presumption that it would in a case in which, for instance, the second claim was dependent on the first and added a single limitation to the first claim. Cf. Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551, 37 U.S.P.Q.2D (BNA) 1609, 1612 (Fed. Cir. 1996).

Springfield next urges a "plain meaning" approach to defining "turnbuckle," and it provides a dictionary definition along with a picture of a turnbuckle. Springfield notes that the definition does not mention "adjustability." However, the definition specifically notes that the turnbuckle is "used for tightening a rod or stay," and the picture shows a structure with a rotating link threaded onto a rod. The rod has a lengthy threaded portion and the link is only threaded partially onto it. It is thus apparent from the picture that the link can be rotated to shorten or lengthen (i.e., adjust) the turnbuckle.

The '527 patent's written description also supports a definition of turnbuckle as an item that is adjustable. The Background of the Invention criticizes prior art cables for their "difficulty in securing the correct placement and tensions in the cable." Column 1, lines 20-22. The Summary of the Invention notes that "the harness cable is adjustably and disconnectedly joined in three segments by turnbuckles," column 1, lines 47-49, and the Description of a Preferred Embodiment states: "A first turnbuckle C interposed in the horizontal run beneath the loom adjustably and disconnectably joins the harness cable at each end thereof. A second turnbuckle D adjustably and disconnectably joins the harness cable between the second and third sheaves," column 2, lines 16-21. It follows by stating: "It is thus seen that an improved harness cable has been provided wherein adjustments may be made at accessible locations." Column 3, lines 3-5. Each of these passages highlights the adjustability of the turnbuckle separate and apart from its disconnectability.

The prosecution history provides further support for this claim construction. During prosecution, the Examiner rejected the claims under 35 U.S.C. § 103 over U.S. Patent No. 11,324 to Crompton in light of a British patent 627,819. The Examiner noted that Crompton disclosed all the elements of the then-claimed invention except turnbuckles, and the British patent disclosed adjustment with a turnbuckle. In response to the rejection, the applicants made minor amendments to the claims but, more importantly, they made a significant distinction related to the turnbuckle limitations (emphasis added):

Furthermore, Applicants respectfully submit that Crompton and the British patent are not combinable because there is no
suggestion, teaching, or incentive to modify the device of Crompton in the sense suggested by the Examiner.

As shown by the excerpt below, Crompton teaches that the tension in the cords of the disclosed device is adjusted by changing the position of the pulleys:

[excerpt omitted]

Crompton neither discloses nor suggests an alternate means for adjusting the tension in his device. Furthermore, since Crompton teaches that tension is adjusted by changing pulley positions, there is no incentive to modify that device by using turnbuckles. Hence, Crompton and the British patent are not combinable.

In this statement, the applicants noted that, because Crompton has an adjustability feature (i.e., moveable pulleys), there was no need for someone viewing Crompton to look for any other art containing a different adjustability feature (i.e., turnbuckles). In this way, the applicants defined a turnbuckle as something that is adjustable. Therefore, any influence that the doctrine of claim differentiation may have on claim construction in this case cannot survive the multiple statements indicating that a turnbuckle is an adjustable connector. See Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1028, 4 U.S.P.Q.2D (BNA) 1283, 1292 (Fed. Cir. 1987) ("The doctrine of claim differentiation does not allow unrestrained expansion of claims beyond the description of the invention in the specification, and explanations and representations made to the PTO in order to obtain allowance of the claims.").

As an apparently separate argument relating to claim construction, Springfield asserts that, even if a turnbuckle must be adjustable, it need not be capable of placing the cables in more than one position. Rather, Springfield asserts that a device is adjustable as long as it is capable of "bringing the cable segments to proper relative position." Appellant's Brief at 18. Springfield's proffered definition of adjustable does not square with the sources discussed above. The turnbuckle as shown in Springfield's dictionary definition is capable of moving to multiple positions, the written description differentiates between adjustability and disconnectability, and the prosecution history indicates that the applicants understood adjustment to be achieved in one instance through changing the positions of pulleys. If anything, these sources indicate that a turnbuckle is adjustable because it can bring the cable segments into proper relative position by shortening or lengthening the connection between the cables.

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(1) determining a twist of clothes being washed in a washer

The parties dispute the term "determining a twist of clothes being washed in a washer," which appears in Claims 1, 3, and 4. LG proposes construing the term to mean "determining a bundling [i.e., uneven distribution] of clothes being washed in a washer." (Chart at 1.) Whirlpool proposes instead that the term be construed to mean "deciding whether clothes being washed in a washer are entwined together." (Id.)

In arguing that the term "determining" should be construed as "deciding," Whirlpool refers to the written description, which states that "[w]hen the correlation coefficient of Y(n) has been determined to be higher than the [] reference value . . . , the clothes is determined as having been twisted . . . ." (474 Patent, col. 9, ll. 19-22.) The Court finds nothing in that description to support Whirlpool's argument that the term "determining" means "deciding," rather than its plain meaning. The Court therefore rejects that aspect of Whirlpool's proposed construction.

With respect to the term "a twist of clothes," however, the Court agrees with Whirlpool that the term should be construed to mean "clothes . . . entwined together." The background section of the patent states that "cloths of the clothes may be damaged when operations in the washing mode and the rinsing mode are continued under a condition that the clothes has been twisted . . . ." (Id., col. 1, ll. 40-43.) "Moreover, there is a problem that the washing degree is degraded at the twisted portion of clothes." (Id., col. 1, ll. 44-46.) The summary section states that "an object of the invention is to provide an apparatus for and a method of determining a twist of clothes being washed in a washer, . . . so that when the clothes twist signal is a meaningful signal, an operation in a clothes untwisting mode is carried out for minimizing a damage of the clothes . . . ." (Id., col. 1, ll. 49-57.) The written description states that the invention makes it "possible to minimize a damage of clothes and improve the washing degree degraded at the twisted portion of clothes." (Id., col. 9, ll. 32-35.) It is
clear, then, that "a twist of clothes" was understood to result in damage to the clothes and degradation of the washing degree at the twisted portion. That limitation comports with Whirlpool's proposed construction, "clothes . . . entwined together." In contrast, LG fails to explain how "bundling [i.e., uneven distribution]" of clothes would result in damage at a bundled, unevenly distributed portion of clothes.

The Court therefore construes the term "determining a twist of clothes being washed in a washer" as "determining whether clothes being washed in a washer are entwined together."

B. Claims

The dispute has been narrowed to the elements recited in claims 1, 15, and 16 that are directed to the conveying assembly, set forth below. (emphasis added). The numerals in brackets refer to elements circled in Fig. 2.

Claim 1 (in part)


Claim 15 (in part)

. . . said conveyor assembly [14] comprising two vertically positioned conveyors [92, 94] . . . drive means to drive said conveyors so that the upper portion [98] of one conveyor [92] travels in the same direction as the lower portion [96] of the other conveyor [94] with said one conveyor [92] supporting and linearly conveying said load [24] . . . to rotate said film roll support member so that it continuously dispenses the material around the said conveyor assembly [14] and the load [24] being supported by the one conveyor [92] to contact and wrap the load [24] and said other conveyor [94] forming a spiral wrapped load [22] . . .

Claim 16 (in part)

. . . said conveyor assembly [14] comprising at least two conveyors [92, 94] positioned adjacent to each other in a stacked relationship and driven at substantially the same speed, one of said conveyors [92] of said conveyor assembly [14] being adapted to receive a load [24] from said conveyor means and transport said load [24] in a downstream direction through and away from said wrapping area, another of said conveyors [94] being adapted to receive and carry film web wrapped around it in said downstream direction, said wrapping means dispensing film from said film dispenser around said load [24] and the lowest conveyor [94] with the film web engaging and being carried by said lowest conveyor [94] at substantially the same speed as the load [24] is being carried by the one conveyor [92] of the conveyor assembly [14] . . .

C. Accused Device

Keip's allegedly infringing device is an embodiment of the device shown in U.S. Patent No. 4,979,358 ( ’358 patent). Fig. 3 thereof, a top view of the discharge end of the conveyor, and Fig. 9, a cross-sectional view taken on the line IX-IX of Fig. 3, are reproduced below. 2

2 The parties stipulated that the allegedly infringing machines sold by Keip were accurately depicted in Figs. 1-9 of the ’358 patent.
Keip's device has a single conveyor that includes two loops or conveyor halves placed horizontally side by side. Each loop comprises a single chain with a plurality of identical one-piece, U-shaped resilient plastic lugs. The outer sides of the lugs, referred to as outer arms, are expanded as they are carried over longitudinal stationary cam plates for the entire length of the conveyor along the outer or forward path. When expanded, arms cooperate to carry the product and the film forward through and out of the wrapping area. As the resilient lugs reach the discharge end of the conveyor, arms recoil. The lugs are in their recoiled position for the entire length of the conveyor along inner or return path that does not have cam plates. When moving along the return path, recoiled arms do not interfere with the forward movement of the load and film. The recoil or collapse of the outer arms occurs as the chains are rounding the ends of the loops.

II. Analysis

On appeal of a grant of summary judgment, we independently determine whether there are any genuine issues of material fact, and if not whether the court erred either in interpreting the governing law or in applying the law to the facts. Reversal is proper if the court engaged in a faulty legal analysis in applying the law to the facts and the correct application of the law to those facts might bring a different result. The district court is required to view the evidence in the light most favorable to the party opposing the motion.

The issue before us is whether the district court properly granted summary judgment in finding that Keip's device literally infringes claims 1, 15, and 16 of the '322 patent. Determining whether the claims of a patent have been literally infringed is a two step process: first, the claims must be interpreted to determine their proper scope; thereafter, the claims as thus interpreted are applied to the accused device.

A. Claim Interpretation

Claim interpretation is a question of law amenable to summary judgment. Mere disagreement over the meaning of a term does not necessarily give rise to a genuine issue of material fact. Keip argues that the district court's interpretation of the claim language was erroneous. We agree. The district court erred first by ignoring the "at least two" claim limitation, and second, by embracing an erroneous interpretation of the term "conveyor."

Before the district court, Keip argued that the conveyor assembly, as defined by the claims, is required to have the following elements:

1. At least two conveyors; 4
2. One conveyor that is adapted to receive the load and convey it across the gap; and
3. One conveyor that is adapted to contact the film and convey the film web across the gap.
The district court disagreed and concluded that Keye could not avoid literal infringement by reading in limitations that were not in the claims. The limitations, however, are in the claims. The district court's error can be traced to its reiteration of the claims just prior to its analysis wherein it omitted the "at least two" language from the claims. Based on the thus redacted claims, the district court stated: "There is no word or phrase which requires the conveyor means or conveyors to be structurally independent of each other." No. 1:91:CV:721, slip op. at 12. That omission effectively read out the "at least two" limitation which is clearly stated in the claims.

All limitations in a claim must be considered meaningful. See Perkin-Elmer Corp. v. Westinghouse Elec. Corp., 822 F.2d 1528, 1532-33, 3 USPQ2d 1321, 1324-25 (Fed. Cir. 1987). Indeed, the language of the claims makes unambiguous reference to two distinct elements of the claimed structure: first by the "at least two conveyor [means]" language, and second by the "one of said conveyor [means]." "other conveyor means," "both conveyor means," and "lowest conveyor" language. It is clear that the claims define two separate conveyor structures; otherwise the recitation of the "at least two" limitation would be meaningless.

When claiming a combination where more than one of a certain element, here a conveyor [means], is included in the combination, the term "at least two" sets forth the minimum number of a particular element required. This interpretation gives full effect to the recitation of two distinct elements in the claimed structure. Therefore, properly interpreted, all claims at issue require two or more conveyor structures, not one. Accordingly, we interpret claims 1, 15, and 16 to require two separate conveyors.

Having properly put back into the claims the "at least two" limitation, we next interpret the term "conveyor." "Terms in claims are to be given their ordinary and accustomed meaning, unless it appears that the inventor used them differently." Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759, 221 USPQ 473, 477 (Fed. Cir. 1984). The term conveyor is neither ambiguous nor highly technical. More importantly, there is nothing in the claims, the specification or prosecution history that would suggest a meaning other than its ordinary meaning.

The district court properly concluded that the ordinary meaning of conveyor was applicable and correctly set forth its meaning as "an apparatus that transports articles from one place to another." 5 Nevertheless, as discussed below, the district court subsequently embraced Lantech's erroneous "conveying or moving surface" definition. The term conveyor, as used in the claims and described in the specification always refers to an operative device or structure which would ordinarily be considered a conveyor. A conveyor necessarily includes components such as belts, slider plates, and drives, in addition to a moving surface.

5 As defined in the American Heritage Dictionary of the English Language (1981).
A. "Two Imports"

The '701 patent claims "two inports on an upper lid thereof" to receive the paper and optical discs to be shredded. The parties agree that "two inports" means the invention possesses two inports, but Fellowes argues that the '701 patent claims two or more inports, while Michilin contends that the patent claims two, and only two, inports. (See Michilin's Resp. Brief at 9-10; Fellowes's Opening Brief at 13-14.)

The '701 patent uses the term of art "comprising" to claim all of the elements, including the "two inports," of the invention, meaning that the claimed elements are essential, "but other elements may be added and still form a construct within the scope of the claim." Genentech, Inc. v. Chiron Corp., 112 F.3d 495, 501 (Fed. Cir. 1997); '701 patent, col. 4: 54. Therefore, the '701 patent claims an invention with at least two inports.

D. U-Shaped

Brike contends that the term "U-shaped" means a structure in the shape of the letter "U." Brike's main contention is that a "U" is not a "D" and that adding structure to a "U" to turn it into a "D" invalidates Claim 8 because the prior art, the Predator II cycle, has a D-shaped footrest. To construe the term in a way which would cause an invalidation, according to Brike, can only be done if supported by clear and convincing evidence. Brike also argues that adding structure to the "U" eliminates an inherent feature of Claim 8.

Invacare contends that the term "U-shaped" means in a shape of the letter "U" and "U-shaped member" means the forwardly projected member, front most cross brace and the laterally opposite rearwardly projected member, cooperatively defining a U-shape when looked down upon from above. Invacare notes that Claim 8 uses the word "comprised," which is open-ended so that the claim encompasses all devices satisfying the elements in the claim, regardless of whether the device has additional elements not recited in the claim. Invacare also points out that the specification contemplates closing the back of the U-shape.

As a preliminary matter, I disagree with Brike's position that a claim construction argument that would invalidate a claim must always be supported by clear and convincing evidence, citing Budde v. Harley-Davidson, Inc., 250 F.3d 1369, 1376 (Fed. Cir. 2001). Budde concerned a challenge to a means-plus-function limitation that lacked disclosure of structure in the specification sufficient to be understood by one skilled in the art as adequate to perform the recited function, thus making the claim indefinite. I am construing a limitation in a different form which does not have the requirements of a means-plus-function limitation. I do this as a matter of law and do not address at this point whether the claim could eventually be invalidated for a reason such as obviousness or anticipation. Thus, the clear and convincing evidentiary standard does not apply.

The specification does not provide any additional definition of the meaning of "U-shaped," generally referring to the term as one of the building blocks of the foot and leg support:

Straps are the preferred method of leg support in this case, however, any means of supporting the rider's legs at the rear of the "U" shape 82 would work as well or even closing the back of the "U" shape 82 to make a long rectangle that supports the rider's foot and calf. . . . Tube section 82 is bent in a "U" shape with one leg of "U" telescopically inserted the smaller hole in clamp 85 and the clamp and "U" shape are then inserted telescopically into tubular section 48 or 49. Telescoping the "U" shape is the preferred means of adjustment, however brackets to 82 that can be moved forward or rearward relative to tubes 48 or 49 would also work as well.

'184 Patent, 4:45-62.
There is no need to address during claim construction whether a "U" is the same as a "D" because I am only construing the claim terms and am not deciding if they read on the accused device. Similarly, I see no reason to construe the claim with specific reference to the preferred embodiment disclosed in the specification, as Invacare contends. That is too limited of a construction. Accordingly, I construe the term "U-shaped" to mean in the shape of the letter U.

5. U-Shaped

Defendants define "U-shaped" as "precisely that [shape] illustrated by the letter 'U' itself, two upright elements connected at their ends by a curvilinear element." Plaintiff argues that "U-shaped" means "open on one side" or "open ended."

Figures 21B and 26B of the '465 Patent depict the "U-shaped" yoke:

[SEE FIG. 21B IN ORIGINAL]

[SEE FIG. 26B IN ORIGINAL]

Defendants want "U-shaped" to be limited to the shapes of the yokes seen in Figures 21 and 26 of the '465 Patent, which have two parallel sides. Plaintiff argues for a broader definition, which would include semi-circles and other shapes.

Claim 31, itself, gives no guidance in defining "U-shaped" beyond conveying that the described object is shaped like the letter "U." The dictionary definition conveys a similar meaning. See The American Heritage Dictionary of the English Language, supra (defining "U" as "something shaped like the letter U"). There is, on the other hand, no support in the claim for Plaintiffs' position that "U-shaped" describes anything that is "open ended."

Plaintiff's expert, John R. Nixon, declared that "one skilled in the mechanical arts would call U-shaped [anything] that [has] bent, angled, or tapered 'legs' extending from a curved bottom." (Pl.'s Br. in Resp. Ex. 10 at P 4.) However, Mr. Nixon offers no support for this position.

Moreover, the '465 Patent elsewhere describes a "U-shaped device [as] having two upright elements interconnected by a curvilinear element." '465 Patent col. 9, ll. 41-43. This description features not "bent, angled, or tapered 'legs'" but rather "upright elements," consistent with the definition of "U-shaped" as "shaped like the letter U."

As used in claim 31 of the '465 Patent, "U-shaped" means shaped like the letter "U."

11. "U-shaped profile"

This phrase is found in Claim 5. Plaintiff argues that this phrase should be construed as "having a profile generally in the shape of the letter 'U'." Defendants assert that the phrase need not be construed, and the Court agrees. Because the Court see no ambiguity as to the meaning of the phrase "U-shaped profile" and because its ordinary and customary meaning is clear to one skilled in the art, the Court declines to construe the phrase as it is used in the '015 Patent.

viii. U-shaped structure having two arms

Plaintiffs construe "U-shaped structure having two arms" as "a type of bridge, in the shape of the letter 'U', that receives the bridge of the frames to which it is attaching." Defendant interprets the same phrase to mean "a three-sided structure with two
of the sides being generally parallel to one another." Defendant insists that the opening of the U-shaped structure need not be at the top and Plaintiffs do not voice any disagreement.

Consistent with these interpretations, the court construes the term to mean "a three-sided structure in the shape of the letter 'U', however oriented."

3. Construction of "unassisted flow"

The next term to be construed appears in Claim 16 of the '164 patent as follows:

A method for determining a concentration of an analyte in a body fluid of a patient, comprising the steps of: creating an unassisted flow of a body fluid from the patient; transporting a portion of the body fluid into an analyte sensor configured and arranged to determine the concentration of the analyte from 500 nL or less of body fluid…

Plaintiffs propose a construction of "unassisted flow" as "creating a flow of a body fluid Cram a person without the aid of a mechanical or electro-mechanical device such as a syringe which draws the fluid from the body" and Defendant as "the emission of a useful sample volume obtained by lancing a portion of the skin without milking (i.e. without squeezing, massage) or using a syringe."

The Court finds little support for Plaintiffs' proposed construction. Plaintiffs' interpretation limits the scope of the term "unassisted" so as to only exclude flow assistance provided by mechanical and electro-mechanical devices. This interpretation would effectively bring within the ambit of the claim "follow promotion" through non-mechanical means such as "milking" 4 in which blood flow is induced through the application of hand pressure. The specification belies Plaintiffs' contention that the term "unassisted" was only intended to exclude processes using machines or devices. The patent states:

Currently available technology measures bioanalytes in relatively large sample volumes, e.g., generally requiring 3 microliters or more of blood or other biological fluid. These fluid samples are obtained from a patient, for example, using a needle and syringe, or by lancing a portion of the skin such as the fingertip and "milking" the area to obtain a useful sample volume…. Less painful methods for obtaining a sample are known such as lancing the arm or thigh, which have a lower nerve ending density. However, lancing the body in the preferred regions typically produces submicroliter samples of blood… It would therefore be desirable… to develop [an] easy to use blood analyte sensor, capable of performing an accurate and sensitive analysis of the concentration of analytes in a small volume of sample.

'164 patent, 1:1 5-36.

In this context, "milking" refers to the coaxing of blood flow by squeezing, or applying hand pressure to a flow area.

This paragraph suggests that one of the major improvements of the '164 patent over the prior art was that it permitted users to measure much smaller volumes of biological fluids than had previously been possible. According to the specification, prior to the '164 patent, users had to employ mechanical devices or physical processes such as hand "milking" 5 in order to draw out samples large enough to be measured by the then existing techniques. It stands to reason that if the inventors sought to eliminate the need to induce additional flow of fluid to create samples large enough to be measured, the improvements would have been applicable to any means of promoting additional flow, whether mechanical or through "milking." The specification makes it clear that the inventors intended to measure the small amounts of biological fluid 6 capable of being generated without "additional assistance." 7 Plaintiffs cite no evidence indicating that the term "unassisted" was intended to exclude only mechanical devices such as syringes. The inventors deliberately included the term "unassisted" in their claim; the Court must attempt to give meaning to every word in a claim when construing terms.
could have modified the term to encompass only mechanical assistance had they so intended. In light of the specification and the ordinary meaning of the terms, the Court construes, "unassisted flow" to mean "flow without the aid of any additional process or device to draw out more fluid than that which occurs once the flow has been initiated."

--- Footnotes ---

5 The Court also rejects Defendant's construction that unassisted flow necessarily requires "lancing." The ordinary meaning of "unassisted flow" does not suggest that it be limited to instances where the measured bodily fluid has been produced due to lancing.

6 The specification defines "biological fluid" as "any body fluid in which the analyte can be measured, for example, blood, interstitial fluid, dermal fluid, sweat, and tears." '164 Patent, 450-52. For example, unassisted flow would include the situation where a fingertip is punctured with a lance, and blood naturally flows to the surface of the finger at the puncture point.

--- End Footnotes ---

The sole issue on this appeal is whether the accused device contains the following claim limitation (emphasis added):

rollers each comprising a prong having a first end attached to said lifting means and an unattached free end spaced from said lifting means, said free ends of said rollers may be inserted under said object prior to lifting said object off a surface upon which said object rests.

The district court construed the above limitation as follows:

A roller or prong has an "unattached free end" within the meaning of Claim 1 when the end spaced away from the lifting means is not attached to any additional, fixed frame or structure which would prevent the roller from fitting under a bale.

Ag-Industrial raises two arguments on appeal. First, it argues that the rollers on the Ag-Industrial machine are supported at both ends by a frame and thus do not have "unattached free ends" as required by claim 1. Second, Ag-Industrial argues that the accused device does not have a "prong" within the meaning of the claim. Other than its bare assertion that the accused device "does not have rollers that each comprise 'a prong,'" Ag-Industrial did not elaborate at all in its summary judgment brief to the district court as to why the accused device lacks a "prong." Given the cursory nature of Ag-Industrial's "prong" argument, the district court's opinion understandably did not address that argument. We will, however, address each of Ag-Industrial's two arguments in turn.

We begin with Ag-Industrial's "unattached free end" argument. We construe claims in light of the claim language, the written description and the prosecution history. See Quantum Corp. v. Rodime, PLC, 65 F.3d 1577, 1580, 36 U.S.P.Q.2D (BNA) 1162, 1165 (Fed. Cir. 1995), cert. denied, 134 L. Ed. 2d 666, 116 S. Ct. 1567 (1996). In this case, we move immediately to the prosecution history because as the district court and the parties apparently found, the claim language and the written description in the specification are not particularly probative on the issue. The prosecution history here, on the other hand, is especially illuminating because it shows how the limitation at issue came into being. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1577 (Fed. Cir. 1996) ("The record before the Patent and Trademark Office is often of critical significance in determining the meaning of the claims."); Markman v. Westview Instruments, Inc., 52 F.3d 967, 980, 34 U.S.P.Q.2D (BNA) 1321, 1330 (Fed. Cir. 1995) (in banc) ("This 'undisputed public record' of proceedings in the Patent and Trademark Office is of primary significance in understanding the claims."); U.S. v. Westview Instruments, Inc., 52 F.3d 967, 980, 34 U.S.P.Q.2D (BNA) 1321, 1330 (Fed. Cir. 1995) (in banc).

In the first office action during the prosecution of the '486 patent, the PTO rejected all of the then-pending application claims as unpatentable in light of, inter alia, the U.K. '489 application and the Brambilla '270 patent. However, the Examiner clearly suggested how the applicant could possibly overcome the prior art rejections (emphasis added):
The claims would be more favorably considered if the structure of the prongs/rollers were more positively recited in terms of being attached only at one end to the frame and the other end being unattached (free) to allow insertion under a bale.

Thus, the Examiner made two points regarding Oiestad's invention: (1) one end is spaced closely and "attached" to the frame so (by implication) as to disallow insertion under a bale at that end; and (2) the other end, in contrast, is not only spaced away and unattached to the frame but also "free" from any other structure so that that end of the roller may be freely inserted under the bale. In this way, the Examiner maintained the "attached/unattached to the frame" dichotomy between the two ends of the roller, and at the same time, recognized that the unattached end additionally must be free from any other structure that may get in the way of insertion under a bale. In so instructing, the Examiner essentially told Oiestad how to overcome the prior art rejections - that the claims would be allowed if the claim language was amended to reflect the fact that Oiestad's invention used one end ("unattached" and "free") of the rollers to pick up the bale and used the same rollers for rotating the bale during wrapping. As discussed above, all the prior art devices, including the Brambilla '270 patent, used two separate mechanisms for picking up the bale and for rotating the bale during the wrapping stage.

In the amendment following the above office action, Oiestad rewrote the application claims to follow the Examiner's suggestion. Regarding the Examiner's earlier suggestion, Oiestad stated:

The present invention consists in [sic] a bale-wrapping device for wrapping cylindrical bales which picks up the bales using prongs of a lifting device which are slid under the bale, the bale then being picked up and supported by the prongs and rotated for wrapping using the same prongs to rotate the bale as were slid under the bale to pick it up. This obviously is far simpler than transferring the bale to a separate wrapping device.

Furthermore, with respect to application claim 11, which issued as patent claim 1 in suit, Oiestad stated (emphasis added):

As suggested by the examiner, claim 11 (replacing claim 1) now defines the prongs as having one end attached to the lifting means and an unattached free end for insertion under a bale prior to lifting the bale from a surface upon which it rests. Applicant believes that the amended claim 11 is now fully distinguished from the prior art and should be allowable.

Indeed, after this amendment by Oiestad, the PTO allowed all of the application claims to issue without any further office actions.

Accordingly, in light of the prosecution history, we conclude the limitation at issue - "rollers each comprising a prong having a first end attached to said lifting means and an unattached free end spaced from said lifting means . . . wherein . . . said free ends of said rollers may be inserted under said object prior to lifting" - requires the following: (1) one end of the roller (the tractor end) is spaced closely to and attached to the lifting means so that insertion of the roller at the tractor end would not be possible; and (2) the other end of the roller is spaced from and "unattached" to the lifting means and free from any other structure so that it may be freely inserted under the bale. This claim construction is consistent with the conclusion of the district court on this issue.

E. Uncompressed Position

ICU argues that the term "uncompressed position" refers to the "location in which the flexible element is not depressed into less space in the cavity" while Braun states that it means "the position of the flexible element when it is not under axial compression and closes the valve." RJCCPS at 3. The only difference in the parties' positions is whether or not the flexible element may remain under some axial compression in the "uncompressed position."

At the outset, ICU's attempt to turn "un" into "some" clearly conflicts with ordinary meaning. ICU argues that its construction is supported by a statement in the specification that "the seal has a lip . . . [that] upon assembly . . . is compressed between the locking elements." In addition, ICU maintains that the flexible element is always under axial compression by atmospheric pressure. While both of these creative arguments do confirm that there is some axial force acting on the flexible element in its uncompressed position, they still mischaracterize the relevant term. Clearly "uncompressed" refers to a lack of compression. This begs the question as to what source of compression is referenced. The
logical answer -- supported by the patent's repeated use of the relevant terms -- is that the compression is caused by the insertion of a medical implement into the valve. Col. 1:23-25 (the valve "includes a seal which, upon being compressed by a medical implement"); Col. 3:35-38 ("The third feature is that the resilient seal is adapted to be moved into a compressed state upon insertion of the tip of the medial [sic] implement into the opening and returns to a decompressed state upon removal of the tip. . . ."); Col. 42-45 ("In the compressed state, the seal section is pushed by the delivery end of the medical implement. . . ."); Fig. 5 (depicting compression of the flexible element by a syringe).

The term "uncompressed position" is therefore construed as the position of the flexible element when it is not under axial compression from a medical implement and closes the valve.

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D. "uncoupling the leading end"

The term "uncoupling the leading end" appears in the '269 patent, and Plaintiffs propose the following construction of the term: "To detach, disjoin or disconnect the temporary connection of the leading end." JCC at 15:9-13. Defendants object to Plaintiffs' proposed construction to the extent it is inconsistent with its proposed construction of "temporarily coupling." Finding no inconsistency, the Court adopts Plaintiffs' proposed construction of "uncoupling the leading end."

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In the present case, the Plaintiff argues that the intended scope of its claim covers a process for bonding both cured and uncured silicone rubber. Claim 1 calls for "placing the treated and primed surface of polyolefin in contact with the surface of an uncured elastomeric compound of molecular weight" (emphasis added). 3 As a threshold matter, Plaintiff contends that the term "uncured" as used in their claim should be construed as encompassing "any uncured or partially cured silicone." (Pl. Opp. Brief at 13). Plaintiff argues that partially cured silicone rubber contains an uncured element, and therefore based on its argued claim construction, should be considered "uncured" and within the scope of Plaintiff's Claim 1.

The Court cannot agree with the Plaintiff's suggested claim construction. The words used in the Plaintiff's claim specify that the silicone rubber elastomer to be used is "uncured," not "uncured or partially cured." 4 Plaintiff's patent refers to the silicone rubber elastomer several more times in the specification as "uncured" (in the "Discussion of Prior Art" section, "Detailed Description of the Invention" section, and in Examples one - three). While the patent specification sets forth no special meaning for the term "uncured," the Court will assume the term represents its common meaning in the scientific field. See Vitronics, 90 F.3d at 1584. In The Compilations of ASTM Standard Definitions, "cure" is defined as "to change the properties of a polymeric system into a more stable, useable condition by the use of heat, radiation, or reaction with chemical additives." 135 (8th ed. 1994) (the ASTM is the American Society for Testing and Materials). The ASTM treatise also equates "cure" with the preferred term "vulcanization." See id. "Vulcanization" is defined as "an irreversible process during which a rubber compound, through a change in its chemical structure (for example, cross-linking), becomes less plastic and more resistant to swelling by organic liquids and elastic properties are conferred, improved, or extended over a greater range of temperatures." See id. at 565. 5 Thus, the Court finds that the term "uncured" in the Plaintiff's patent claims refers to a silicone rubber elastomer that is not cured, that is, it has not been exposed to heat and/or chemicals so that its chemical structure has not irreversibly changed to exhibit the characteristics of vulcanized rubber.

3 The definition of "uncured" is dispositive on the question of literal infringement, because the Defendant's bonding process calls for a "cured" sample of silicone elastomer.

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4 Using uncured silicone is necessary because the silicone and polyolefin are bonded and cured in the same step later in the process.

5 See also Hawley's Condensed Chemical Dictionary which defines "curing" generally as "conversion of a raw product to a finished and useful condition, usually by application of heat and/or chemicals that induce physicochemical changes," and the curing of rubber as: "Addition of sulfur and accelerator, followed by exposure to heat, which effects cross-linking. This converts the material from a thermoplastic to thermosetting product. High energy radiation can also be used. See vulcanization." Van Nostrand Reihold (13th ed., 1997).

6 Since "curing" or "vulcanization" is an irreversible process, the term "partially cured" is not, as the Plaintiff suggests, equivalent to the term "uncured" because any curing at all permanently alters the properties of the silicone making the physical states of uncured silicone and partially cured silicone mutually exclusive.

The Court therefore construes the term "uncured" in the Plaintiff's '148 patent claim as referring to an elastomeric compound which has not undergone any curing or vulcanization process.

7 Plaintiff's argument that the prosecution history supports the conclusion that the term "uncured" was meant to include "partially cured" is also without merit. The statement in the prosecution history referring to the Plaintiff's process as being capable of joining a polyolefin and an "uncured or partially cured" silicone rubber, indicates that the inventors distinguished between "uncured" and "partially cured," as separate physical states. (See Muldoon Decl., Ex. C at 54.) However, the prosecution history cannot be relied upon to expand the scope of Plaintiff's patent to cover both partially cured and uncured states. While the prosecution history may be used to define terms within the claim itself, it cannot be used to "enlarge, diminish, or vary" the limitations in the claim. Markman, 52 F.3d 967 (citing Goodyear Dental Vulcanite Co. v. Davis, 102 U.S. 222, 227, 26 L. Ed. 149 (1880)). Thus, while the Plaintiff's reference to both uncured and partially cured silicone in the prosecution history is useful to demonstrate that the Plaintiff knew there was a difference between the two states, it cannot be used to expand the scope of the claim itself which refers only to uncured silicone.

4. "Underside"

Microthin proposes that "underside" means "the surface of the mat that faces or contacts the surface on which the mat or pad rests, the underside or bottom." SiliconeZone again argues that the term needs no construction but has a plain and ordinary meaning.

The term "underside" in the '995 Patent is the equivalent of "lower surface" in the '311 Patent, which has already been construed. Because of the identical written descriptions between the two patents and the identical proposed constructions by the parties for the '311 Patent and the '995 Patent, the Court will again follow the same reasoning that it did before. Accordingly, "underside" means "the surface of the mat that faces or contacts the surface on which the mat or pad rests, the underside or bottom."
Advantage argues that the district court improperly concluded that the '498 patent fails to satisfy both paragraphs of 35 U.S.C. § 112, without providing reasoning for those conclusions. As to the adequacy of the written description, Advantage contends that, while the phrase "original unidentified mass" does not literally appear in the specification, one skilled in the art would recognize and know how to practice the claimed invention using "an original unidentified mass" upon reading the specification. As to definiteness, Advantage contends that, while the meaning of the phrase "original unidentified mass" is neither facially apparent nor defined in the patent specification, the prosecution history clarifies the phrase to mean any shape different from a complete impression tray. On the issue of infringement, Advantage argues, based upon its proposed construction of the phrase "original unidentified mass," that All Dental infringes the patent because its tablets are clearly not in the form of a dental impression tray.

All Dental responds that the "original unidentified mass" language does not appear anywhere in the originally filed patent application, and that it was new matter added during prosecution, arguably in violation of the statute. While acknowledging that the specification need not provide in haec verba support for the language added to the claim, All Dental argues that the originally filed disclosure did not allow one skilled in the art to immediately discern that an "original unidentified mass" limitation was part of the definition of the invention. All Dental also contends that the applicant did not properly act as his own lexicographer in defining the meaning of the phrase "original unidentified mass," as he failed to clearly define the phrase. All Dental further contends that if the phrase "original unidentified mass" is to have any meaning at all, then it must be that the material lacks a specific preformed shape and size, as the district court concluded. All Dental asserts that its accused tablets do not infringe the '498 patent because they clearly have a preformed shape, viz., a generally flat, oblong shape.

We agree with Advantage that there are no genuine issues of material fact concerning whether its patent claims comply with the written description requirement of section 112, first paragraph. While the contested language is not a model of clarity, it is also fairly simple and intelligible, capable of being understood in the context of the patent specification. It is thus reasonably clear what the invention is and that the patent specification conveys that meaning.

Section 112, first paragraph, states, inter alia: "The specification shall contain a written description of the invention." 35 U.S.C. § 112, P 1 (2000). In order to comply with the written description requirement, the specification "need not describe the claimed subject matter in exactly the same terms as used in the claims; it must simply indicate to persons skilled in the art that as of the [filing] date the applicant had invented what is now claimed." Eiselstein v. Frank, 52 F.3d 1035, 1038, 34 USPQ2d 1467, 1470 (Fed. Cir. 1995) (citing Vas-Cath, 935 F.2d at 1562, 19 USPQ2d at 1115, and In re Wertheim, 541 F.2d 257, 265, 191 USPQ 90, 98 (CCPA 1976)).

The application for the '498 patent as originally filed did not contain the phrase "original unidentified mass"; indeed, there is no mention of the starting material's shape or form anywhere in the patent specification. However, the failure of the specification to specifically mention a limitation that later appears in the claims is not a fatal one when one skilled in the art would recognize upon reading the specification that the new language reflects what the specification shows has been invented. See Eiselstein, 52 F.3d at 1039, 34 USPQ2d at 1470. Here, the invention involves heating a mass of thermoplastic material that lacks an identifiable form. That invention is described in the specification, albeit not in haec verba. It is also clear what the invention is not. It does not involve heating a thermoplastic mass having an identifiable form or shape. We therefore conclude that there are no genuine issues of material fact that the specification describes the claimed invention within the meaning of the statute. Thus, summary judgment of invalidity for failure to satisfy the written description requirement was erroneous and is therefore reversed.

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We also agree with Advantage that its claims comply with the definiteness requirement of section 112, second paragraph. That section states: "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." The primary purpose of the definiteness requirement is to ensure that the claims are written in such a way that they give notice to the public of the extent of the legal protection afforded by the patent, so that interested members of the public, e.g., competitors of the patent owner, can determine whether or not they infringe. Warner-Jenkinson, 520 U.S. at 28-29. That determination requires a construction of the claims according to the familiar canons of claim construction. Only after a thorough attempt to understand the meaning of a claim has failed to resolve material ambiguities can one conclude that the claim is invalid for indefiniteness. Foremost among the tools of claim construction is of course the claim language itself, but other portions of the intrinsic evidence are clearly relevant, including the patent specification and prosecution history. See Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452, 227 USPQ 293, 296 (Fed. Cir. 1985) ("The specification is, thus, the primary basis for construing the claims. . . . The prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance."). The prosecution history can thus be relied upon to clarify the claim meaning and hence provide definiteness. Tex. Instruments Inc. v. Int'l Trade Comm'n, 871 F.2d 1054, 1063, 10 USPQ2d 1257, 1263-64 (Fed. Cir. 1989) ("The public is entitled to know the scope of the claims but must look to both the patent specification and the prosecution history, especially when there is doubt concerning the scope of the claims." (citing McGill Inc. v. John Zink Co., 736 F.2d 666, 221 USPQ 944 (Fed. Cir. 1984))).

In this case, the prosecution history aids in clarifying the meaning of the claim phrase "original unidentified mass." The patent applicant twice distinguished his invention over the prior art on the basis of that limitation. First, the applicant distinguished his invention over Tureaud's anatomically formed tray shape as not being an "original unidentified mass." Secondly, the applicant distinguished his invention over Ginsburg's preformed sheets of thermoplastic material as "teaching away from applying the thermosetting material in any specific form." Each of those statements made during prosecution disclaims a specific shape. Moreover, the second statement amounts to a characterization of the "original unidentified mass" limitation as not embracing "any specific form." Advantage's argument that the phrase "original unidentified mass" means any shape other than a complete dental tray gives effect to only the first prosecution statement while ignoring the second. Giving proper effect to both statements and the specification's clear indication of the nature of the invention, we conclude that the phrase means exactly what the district court said it means: "a mass that does not have a specific preformed size and shape." All Dental Prodx, 2001 U.S. Dist. LEXIS 25176, slip op. at 11. Where we differ from the district court is on whether the phrase as so construed is indefinite. The meaning of the phrase "original unidentified mass," arrived at after reviewing the specification and consulting the prosecution history, is indeed definite and clear. Thus, the district court construed the phrase correctly, yet erred in concluding that the phrase was indefinite.

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DISCUSSION

Analysis of patent infringement starts with “construction” of the claim, whereby the court establishes the scope and limits of the claim, interprets any technical or other terms whose meaning is at issue, and thereby defines the claim with greater precision than had the patentee. Although the construction of the claim is independent of the device charged with infringement, it is convenient for the court to concentrate on those aspects of the claim whose relation to the accused device is in dispute. On appeal the Federal Circuit is required to construe the claim de novo; thus we do so without deference to the rulings of the trial court. See generally Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 46 USPQ2d 1169 (Fed. Cir. 1998) (en banc).

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B. The Term "Immediately"

As noted above, the district court construed "immediately" to require the activation of the blocking flange simultaneously with removal from the patient. The court decided that this term imposed a limitation upon claims where it appeared in the preamble, as well as upon two claims where it did not literally appear.
In this case, both the RE '885 patent's specification and prosecution history clearly indicate that the invention is focused on ensuring the protection of the healthcare worker, patient, and bystanders by safely covering the needle at once upon removal from the patient. The "Summary of the Invention" section of the RE '885 patent is particularly instructive:

The present invention addresses [the needlestick hazard] problem confronting the healthcare industry and is designed specifically to eliminate needlestick injuries of the type described in connection with blood collection. To this end, there is provided a new and improved system which...shields the blood-contaminated needle simultaneously with its removal from the donor...whereby the probability of an exposed contaminated point being in any injury-causing proximity to a medical worker is virtually nil....

RE '885 patent, col.2 ll.52-62 (emphasis added). The summary is of course not wholly dispositive. See Rambus Inc. v. Infineon Techs. AG, 318 F.3d 1081, 1094 (Fed. Cir. 2003) ("While clear language characterizing 'the present invention' may limit the ordinary meaning of claim terms, such language must be read in context of the entire specification and the prosecution history." (internal citations omitted)). There is nothing in the RE '885 patent specification, though, that speaks to the needle being rendered safe at any time other than the moment of removal from the patient. Furthermore, the prosecution history provides additional support for the district court's conclusion. During prosecution of the related '347 patent, the examiner rejected MBO's application in view of U.S. Patent No. 5,026,356, issued to Smith. In response, MBO distinguished its invention from and criticized the Smith patent:

Please note that in Smith...the needle 60 may be fully withdrawn from the patient's flesh by an inattentive or rushed operator in exactly the [unsafe] state, with the needle point and needle end portion fully exposed and hazardous for needlestick and contamination! It is required in Smith as a specific manipulative effort that the operator personally bodily move the [needle guard] forward...which may be overlooked in rushed or harried treatment conditions....

Reply Letter to Alexander, Examiner, In the Patent Application of Blecher et al., S.N. 07/972,013, at 8 (Nov. 15, 1993). The clear implication is that the MBO invention, in contrast to Smith, does provide assurance that the needle will be made instantly safe upon withdrawal from the patient. Prosecution arguments like this one which draw distinctions between the patented invention and the prior art are useful for determining whether the patentee intended to surrender territory, since they indicate in the inventor's own words what the invention is not. See Medtronic, Inc. v. Guidant Corp., 465 F.3d 1360, 1373 (Fed. Cir. 2006) ("A surrender can occur by argument as well as by amendment.").

The patentee here has clearly indicated via the specification and the prosecution history that the invention provides, as an essential feature, immediate needle safety upon removal from the patient. It is therefore appropriate to construe the claims so as to ensure that they, too, require that feature. The construction of the term "immediately" to mean "simultaneously with the needle's withdrawal from the patient" is correct. Where that term appears in a claim preamble, it is "necessary to give life, meaning, and vitality to the claim," and may be used as a limitation. Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1305 (Fed. Cir. 1999) (quotation marks omitted).

Reissue claims 32 and 33 do not contain the word "immediately," but the district court nonetheless used its construction of that term to limit the claims. We sympathize with the district court's choice, since we agree that safety at once upon removal from the patient is an essential element of the invention as described by MBO. However, we cannot endorse a construction analysis that does not identify "a textual reference in the actual language of the claim with which to associate a proffered claim construction." Johnson Worldwide Assocs., Inc. v. Zebo Corp., 175 F.3d 985, 990 (Fed. Cir. 1999); see also Renishaw PLC v. Marposs S.p.A., 158 F.3d 1243, 1248 (Fed. Cir. 1998) ("[I]t is manifest that a claim must explicitly recite a term in need of definition before a definition may enter the claim from the written description."); E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir. 1988) (finding it improper to impose "a limitation read into a claim from the specification wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim").

In this case, we are reviewing only certain disputed terms of the claim construction and lack the power to construe other terms not disputed by the parties. None of the disputed terms that are found in claims 32 or 33 can reasonably be construed to impose the simultaneous-safety requirement upon those claims. The district court's grafting of the "immediately" limitation into claims 32 and 33 is error. 2
1. "Undulating Contours"

Claim 1 reads in relevant part "said front portion of said side wall having inner and outer surfaces with undulating contours that define projections at said inner surface and corresponding indentations at said outer surface."

Plaintiffs urge the court to give undulating contours its ordinary meaning as defined by the dictionary definitions of undulating, meaning "to give a wave-like appearance," and contour meaning "curve." Webster's College Dictionary at 1407 (2nd Ed., 1997). Thus, they suggest that the term be construed to mean "a wavy, curve-like appearance." Eagle, on the other hand, maintains that the ordinary meaning of this term is inappropriate because the specification and the prosecution history demonstrates that Plaintiffs acted as their own lexicographer with regard to this term. Eagle relies on Texas Digital in an effort to persuade the court that undulating contours should be construed to mean "discontinuous indentations in the outer surface of the column protector." In support, Eagle relies on the written description of the '781 patent which states:

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Each semi-cylindrical component 14 and 16 has a plurality of discontinuous indentations, generally referenced by the number 50... Each discontinuous indentation 50 has an aperture mouth 60, an aperture base 62 having a variable width, and a plurality of aperture walls 64 extending from the aperture base 62 to the aperture mouth 60.
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('781 patent, col. 4 at lines 11-18). Eagle also points to the amended description of Plaintiffs' recently issued '640 patent, which provides:

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Referring now to Figure 2A which is a cross-section of Figure 2 in the plane indicated, each semi-cylindrical component 14 and 16 has a plurality of discontinuous indentations, generally referenced by the number 50;... The discontinuous indentations may also be described as undulating contours, which define projections at said inner surface and corresponding indentations at said outer surface of the rounded exterior wall face 52.
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('640 patent, col. 4 at lines 13-21).

Eagle's argument is not well-taken. As discussed above, the Texas Digital court emphasized that the terms used in a claim bear a "heavy presumption that they mean what they say and have the ordinary meaning that would be attributed to them by persons skilled in the relevant art." 308 F.3d at 1202. This presumption may be overcome only where the patentee has clearly set forth an explicit definition of the term different from its ordinary meaning. Id. at 1204. In this case, the court does not conclude that Plaintiffs clearly set forth an explicit definition of undulating contours different from its ordinary meaning. Although the '781 written description uses the term discontinuous indentations to describe the invention, this language is not a clear and explicit limitation of the term. This conclusion is reinforced by the amended description of the '640 patent which states that the "discontinuous indentations may also be described as undulating contours." (emphasis added). This equivocal language is consistent with the ordinary meaning of undulating contours and does not limit the term.

Nevertheless, Eagle points out that during the prosecution of the '640 patent, Plaintiffs specifically distinguished their invention from the prior art by arguing that their patent teaches against the use of corrugations:

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The undersigned respectfully states that no references teach contours in conjunction with an air chamber. More specifically, the subject patent application states on page 8, lines 16-17 that discontinuous indentations are not required from low impact collisions. This teaches against the use of corrugations taught in Hanson et al. (which also does not teach an air chamber used in conjunction with an air chamber [sic]).
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('640 patent, Preliminary Amendment at p. 9). The Federal Circuit has made clear that where the inventor disclaims certain
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

claim coverage to distinguish a prior art reference, "the prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution." Southwall Tech, Inc., 54 F.3d at 1576. Because Plaintiffs expressly disclaimed corrugations during the '640 prosecution history, undulating contours cannot be construed to include corrugations. Thus, the court concludes that undulating contours must be construed to mean a wavy curve-like appearance, but not corrugations. Based on this construction, the court concludes that no genuine issue of material fact exists as to whether the accused device literally infringes this claim. Eagle contends that its device is molded to have a series of horizontal corrugations, which does not satisfy the construction of undulating contours. In response, Plaintiffs argue that Eagle's president and its patent attorney have testified that the accused product has a "wavy profile" and has indentations. Even assuming this to be true, Plaintiffs have never disputed that the cushions of Eagle's device have corrugations. Because undulating contours as used in claim 1 does not encompass corrugations, the accused device does not literally infringe upon this claim.

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1. Construction of "undulating pattern"

It is undisputed that Medtronic's stents are made up exclusively of U-shaped members, and do not comprise Y-shaped or W-shaped members. (D.I. 654 at 15 & ex. C) The court's final claim construction did not require the presence of Y-shaped or W-shaped members; consequently, Medtronic was found to infringe all asserted claims of the Lau patents at trial. Medtronic argues that JMOL of non-infringement is appropriate under the proper construction of "undulating pattern" which, in its view, requires a combination of U-, W-, and Y-shaped members. (Id. at 3-15) In the alternative, Medtronic argues that a new trial is warranted because the jury verdict was based on an improper claim construction (D.I. 679 at 2-3), and/or because the jury was tainted by the court's "announcing the 'loser' of the claim construction dispute" by incorporating ACS's construction into the jury's instructions following the close of evidence (D.I. 653 at 33). 5

5 Medtronic asserts that this procedure "implicitly signaled to the jury that the [c]ourt had decided that ACS's witnesses were 'right' about claim construction (as well, perhaps, as other issues) while Medtronic's were 'wrong'", therefore effectively "telegraph[ing] to the jury that the key elements of Medtronic's infringement defense were either incorrect or irrelevant." (D.I. 653 at 33)

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5 Medtronic asserts that this procedure "implicitly signaled to the jury that the [c]ourt had decided that ACS's witnesses were 'right' about claim construction (as well, perhaps, as other issues) while Medtronic's were 'wrong'", therefore effectively "telegraph[ing] to the jury that the key elements of Medtronic's infringement defense were either incorrect or irrelevant." (D.I. 653 at 33)

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In its jury charge, the court instructed the jury that the terms "undulating pattern" and "undulating portion" mean "a wave-like pattern." (D.I. 639 at 1883:22-23) Medtronic asserts that this construction was improper in view of the Federal Circuit's en banc decision in Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) (hereinafter, "Phillips"). 6 (D.I. 678 at 3) Specifically, Medtronic emphasizes the court's statement that it "felt it was more important . . . under the latest iteration of what the Federal Circuit looks at to make the claim language more consistent rather than trying to make the specification, [and] prosecution history consistent with the claim language." (D.I. 637 at 1711:8-22) Medtronic argues that the court did not apply the proper weight to the specification in its analysis, violating the pronouncement in Phillips that the specification is "usually . . . dispositive; it is the single best guide to the meaning of a disputed term." (D.I. 654 at 3, citing Phillips, 415 F.3d at 1315) In Medtronic's view, the specification and the file history indicate that all claims require W-shaped and/or Y-shaped members because it is fundamental to the invention that the cylindrical elements "must be spaced apart." 7 (Id. at 14)

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6 The court issued its final Markman order on February 16, 2005 (D.I. 615), and incorporated its claim constructions into its jury charge on February 18, 2005 (D.I. 639 at 1883:22-23). Phillips issued on July 12, 2005, after Medtronic had renewed its motion for JMOL (and moved for a new trial). (D.I. 654) Medtronic addressed Phillips in its reply brief (D.I. 678), and ACS addressed Phillips in its combined surreply (D.I. 682, tab 1).

7 According to Medtronic, if the court were to construe "cylindrical elements" as "wave-like," it was error not to construe
other claim elements (such as "interconnected" and "connected") to require spacing apart of the cylindrical elements. (D.I. 654 at 14) Because the verdict was based on a construction which is inconsistent with the description of the invention, Medtronic argues, it was improper. (Id. at 14-15)

--- End Footnotes ---

a. The Lau patents' common specification

The Lau specification consistently uses the term "undulating pattern" in a manner consistent with its ordinary meaning, i.e., wavy or wavelike. Medtronic has not pointed to any portion in the specification which purports to be a statement of manifest exclusion or restriction of the term "undulating," such as to require a combination of U-, Y-, and/or W-shaped members. See Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1324 (Fed. Cir. 2002) ("[C]laim terms take on their ordinary and accustomed meanings unless the patentee demonstrated an intent to deviate from the ordinary and accustomed meaning of a claim term by redefining the term or by characterizing the invention in the intrinsic record using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope."); see also Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004) ("Absent a clear disclaimer of particular subject matter, the fact that the inventor may have anticipated that the invention would be used in a particular way does not mean that the scope of the invention is limited to that context." (citations omitted)). Medtronic instead argues that the specification requires that the cylindrical elements "must be spaced apart," thus necessitating the presence of W-shaped and/or Y-shaped members which provide the required spacing. (D.I. 654 at 4-5, 14) The specification provides:

The resulting stent structure is a series of radially expandable cylindrical elements which are spaced longitudinally close enough so that small dissections in the wall of a body lumen may be pressed back into position against the lumenal wall, but not so close as to compromise the longitudinal flexibilities of the stent.

(col. 2, II. 1-6 (emphases added)) Though this passage makes clear that some spacing is required to ensure longitudinal flexibility, there is nothing in this portion of the specification which equivocates "undulating" with a combination of U-, Y-, and W-shaped members.

--- Footnotes ---

8 For example, the specification states that

[the] radial expansion of the expandable cylinder deforms the undulating pattern thereof similar to changes in a waveform which result from decreasing the waveform's amplitude and the frequency. Preferably, the undulating patterns of the individual cylindrical elements are in phase with each other . . . .

('154 patent col. 2, II. 35-41) Unless otherwise specified, all pinpoint citations to the specification refer to the '154 patent.

--- End Footnotes ---

Medtronic further argues that the figures of the Lau patents, as well as the specification's description of the figures, support its construction. Medtronic points to figure 5, which depicts an undulating pattern 9 with U-, Y-, and W-shaped members, with figure 11, which depicts a pattern with both U- and Y-shaped members and was described as an "alternate undulating pattern." (D.I. 654 at 5-6) According to Medtronic, there would have been no need to distinguish between the two patterns if an "undulating pattern" contains only U-shaped members. (Id. at 6-7) Medtronic, however, has not substantiated its argument that the figures do not simply depict a preferred embodiment by pointing to any language in the specification that purports to limit the ordinary meaning of "undulating pattern" to require the combination of U-, Y- and/or W-shaped members present in figures 5 and 11. See CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1366 (Fed. Cir. 2002) (the presumption of ordinary meaning cannot be rebutted "simply by pointing to the preferred embodiment or other structures or steps disclosed in the specification").

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9 Medtronic emphasizes the fact that the description of figure 5 includes the phrase "the undulating pattern of the stent."
Medtronic's argument that the term "the" signifies that ACS intended to confer the "undulating pattern" with Y-shaped members is misplaced. (D.I. 654 at 6) The complete statement from the Brief Description of the Drawings concerning figure 5 states that "Fig. 5 . . . illustrates the undulating pattern of the stent shown in Fig. 4," which in turn "is a prospective view of a stent embodying features of the invention." (col. 3 II. 61-67 (emphasis added)) This statement does not preclude other stents which also embody the claimed features.

Medtronic argues that the phrase "[i]n keeping with the invention," as used in the specification's description of figures 4 and 12-14 (in which "[s]erpentine pattern 30 is made up of a plurality of U-shaped members 31, W-shaped members 32 and Y-shaped members 33"), coupled with the specification's interchangeable use of the terms "serpentine" and "undulating," confirms that the "undulating" patterns (and thus "cylindrical elements") must contain a combination of at least two of the three letter-shaped members and not merely U-shaped members. (D.I. 654 at 5-6) As an initial matter, the specification states that a "serpentine" waveform is only one example of an "undulating pattern," without exclusion. 10 The court declines to find that "in keeping with the invention" is a term of manifest exclusion or restriction, as would be required to deviate from the ordinary and accustomed meanings of the claim terms. See Teleflex, 299 F.3d at 1324.

The court notes that this is not a case where the specification describes only one way in which the cylindrical elements can be connected. The specification does not preclude the use of non-serpentine "undulating patterns" -- for example, a square or sawtooth wave pattern -- so long as the stent remains expandable and longitudinally flexible. The specification does not absolutely require that the interconnecting elements join the cylindrical elements at the peaks or valleys of the waveform, such as would be required where Y-shaped members are present. 11 (col. 3, II. 6-9 ("[p]referably, all of the interconnecting elements of a stent are joined at either the peaks or the valleys of the undulating structure of the cylindrical elements" (emphasis added)) The figures are not inconsistent with the ordinary meaning of "undulating pattern," and the language of the specification falls short of definitively limiting the scope of the claims to the particular "undulating patterns" depicted in figures 5 and 11.

As the court has previously noted, the language of the claims themselves further supports the court's construction. Claim 12 of the '168 patent separately describes "cylindrical elements having an undulating pattern of peaks and valleys," and a "weld connection" for attaching the peaks. Similarly, claims 1 and 5 of the '167 patent, as well as claims 12 and 15 of the '133 patent, first describe the cylindrical elements (having an undulating pattern) or "undulating portions" and, thereafter, state that each of these elements is "interconnected" or "connected" to an adjacent cylindrically shaped element. In view of the use of these terms in the claims, the court reasoned that...
[i]t is inconsistent to define "undulating patterns" and "undulating portions" to essentially require Y-shaped "connecting elements," (e.g., a structural feature identified at trial as the Y-shaped members), when the claims that require "undulating portions" (the claims of the '167, '168, and '133 patents) do not require such a structure. Moreover, to define "cylindrical elements" as having W-shaped and/or Y-shaped members, again, essentially requires "cylindrical elements" to have "connecting elements" when the claim either already requires the presence of "connecting elements" (e.g., claims 1 and 12 of the '154 patent) or when the claim does not require the presence of "connecting elements" ([the aforementioned claims of the '167, 168 and '133 patents]). In other words, Medtronic's proposed construction (and the construction earlier adopted by the court) serves to either make the "connecting elements" limitation surplusage or impermissibly adds such a limitation. 12

(D.I. 615) Phillips itself condones this inference. 415 F.3d at 1314 (recognizing that "[o]ther claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment" as to the meaning of claim terms) (citing Vitriones Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

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12 Further, dependant claim 5 of the '154 patent specifically requires the plurality of cylindrical elements of claim 1, additionally requiring a "plurality of peaks and valleys having a serpentine pattern," which "include a plurality of U-shaped members, a plurality of Y-shaped members, and a plurality of W-shaped members, whereby a portion of said Y-shaped members forms said plurality of said connecting elements." The incorporation of U-, Y-, and W-shaped members into the dependant claim, as well as the statement that a portion of the Y-shaped members form the connecting elements in this embodiment, gives rise to some presumption that the independent claims do not require U-, Y-, and W-shaped members, and that the required connecting element is not necessarily part of a Y-shaped member. See Phillips, 415 F.3d at 1315 ("the presence of a dependant claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim") (citing Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 910 (Fed. Cir. 2004)).

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c. Prosecution history

There is evidence that both the examiner of the '790 application and ACS understood that Y-shaped members include a component which is a "connector element." Originally-filed dependant claims 5-7 required that the cylindrical elements included a plurality of Y- and W-shaped members, "some of said U-shaped, Y-shaped, and W-shaped members being interconnected." 13 (AX-11 at 20) The examiner rejected the claims as indefinite under 35 U.S.C. § 112, stating that "it is not apparent what applicant considers the connecting elements if the cylindrical elements included such [U-, Y-, and W-]shaped members because it appears that the Y-, and W-shaped members are nothing more than part of the normal serpentine pattern and further including the connecting element attached thereto (particularly, the Y-shaped members)." (AX-11 at 44-45 (emphasis added)) In response, ACS amended claim 5 to require a plurality of U-, Y-, and W-shaped members, "whereby a portion of said Y-shaped members forms said plurality of said connecting elements." (AX-11 at 118) ACS stated that

[c]laim 5 [was] amended to define the connecting elements as a portion of the Y-shaped members, as suggested by the [e]xaminer. As is clear, the tail portion of the Y-shaped members is the connecting element between the cylindrical elements. (Id. at 119)

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13 Originally-filed claim 5 read:

5. The stent of claim 4, wherein said plurality of peaks and valleys include a plurality of Y-shaped members, and a plurality of W-shaped members, some of said U-shaped, Y-shaped, and W-shaped members being interconnected. (AX-11 at 20) Originally-filed claim 4 depended on claim 1, and further required that the cylindrical elements included "a plurality of peaks and valleys having a serpentine pattern." (AX-11 at 19) Claims 6 and 7 depended further from claim 5.

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The court declines to find that ACS's statement made in connection with dependant claim 5 was a clear indication of an intent to limit the "cylindrical elements" of all claims to a combination of U-, Y-, and/or W-shaped members. See Cannon Rubber Ltd. v. First Years, Inc., 163 Fed. Appx 870, 876-77 (Fed. Cir. 2005) (non-precedential) (substitution of operational language ("mounting a diaphragm") with different, but not narrower structural language (a "diaphragm disposed in the body"); in response to an indefiniteness rejection did not evidence a clear disavowal of subject matter that was not completely in the body). 14 This exchange demonstrates that the examiner and the applicant understood that a portion of the Y-shaped members of claims 5-7 is part of the "normal serpentine pattern" of the cylindrical element, and a portion (the tail portion) of the Y-shaped members constitutes the connecting element. Since it is not feasible to divorce the Y-shaped member from its tail portion, it follows that the incorporation of a requirement that the "undulating pattern" of the "cylindrical elements" of the independent claims contain a plurality of Y- and/or W-shaped members (in addition to U-shaped members) would necessarily import a "connecting element" limitation into those claims, rendering other limitations to connecting elements redundant or superfluous.

14 Medtronic points to an additional statement made by ACS during prosecution in response to an indefiniteness rejection in support for its argument, which fails for the same reasons. A rejection was made to original dependant claim 3 of the '154 application which related to the "projecting edges" feature of the invention. (AX-11 at 19) Specifically, the examiner stated that claim 3 was objectionable because "no specific distances have been disclosed for the outwardly projecting edges, nor any minimum distance which would enable the edges to embed in the vascular wall." (Id. at 44) In response, ACS amended claim 3 to state that the outwardly projecting edges extend "radially outwardly," and pointed to a particular paragraph in the specification, which it believed "clearly explained the dimensions of the stent and the thickness of the various members making up the serpentine pattern 30 [and] will dictate which of the U-shaped, W-shaped, and Y-shaped members that tip radially outwardly to form a projecting edge 34." (Id. at 119) Contrary to Medtronic's assertion, there is nothing in ACS's statement which purports to restrict that term, or even the term "cylindrical elements," so as to require a combination of U-, Y-, and/or W-shaped members.

d. Conclusion

Upon review of the issue, the court does not find its construction inconsistent with Phillips. The court finds the language of the specification inadequate to limit the term "undulating pattern" of the cylindrical elements beyond its ordinary meaning. ACS did not attempt to distinguish any prior art based on U-, Y-, and/or W-shaped members, nor did the examiner mention U-, Y-, and/or W-shaped members in connection with any prior art rejection. Further, importing a Y-shaped member restriction into "undulating pattern" necessarily incorporates a connecting element, rendering segregate connecting element limitations superfluous. For all of these reasons, the court finds no error in its construction of "undulating pattern" as "a wave-like pattern," consistent with the ordinary meaning of that term. Medtronic is not entitled to JMOL of non-infringement based upon an improper claim construction.

Additionally, Medtronic argues that the court's Markman decision, made after the presentation of evidence on claim construction, was improper. (D.I. 691) Medtronic cites Cytologix Corporation v. Ventana Medical Systems, Inc., 424 F.3d 1168 (Fed. Cir. 2005), in which the Federal Circuit stated that "[t]he risk of confusing the jury is high when experts opine on claim construction." 424 F.3d at 1172. Medtronic's reliance on Cytologix is misplaced, however, as that case confirms that Medtronic's objection should have been advanced prior to trial. Id. at 1173 ("in this case there is no ground for reversal since there was no objection to the expert testimony as to claim construction . . ."). The Cytologix Court noted that it appeared, in that case, that the presentation of conflicting expert views on claim construction "created confusion," which was evidenced by a verdict of infringement "that was not supported by substantial evidence." Id. at 1172-73. The opposite is the case here and, therefore, any error was harmless error in this case. 15 Medtronic is not entitled to a new trial on this ground. See Lucent Techs., Inc. v. Newbridge Networks Corp., 168 F. Supp. 2d 181, 253 (D. Del. 2001) ("The timing of the [c]ourt's claim construction decision [at the close of evidence following testimony from both parties' expert witnesses] did not
conflict with Federal Circuit case law, and in the court's view, did not unduly prejudice either party so as to warrant the granting of a new trial").

15 Additionally, the court did not require the parties to present expert testimony on claim construction. It merely delayed its construction of "undulating" until the close of evidence, as expressly permitted in Cytologix itself, and stated that the parties could "present evidence as they deem appropriate in support of their respective interpretations." (D.I. 587) See Cytologix, 424 F.3d at 1172 ("the district court has considerable latitude in determining when to resolve issues of claim construction") (citation omitted); see also Sofamor Danek Group, Inc. v. Depuy-Motech, Inc., 74 F.3d 1216, 1221 (Fed. Cir. 1996) ("Markman does not obligate the trial judge to conclusively interpret claims at an early stage in a case.").

10. "Undulating pattern," and "undulating portion." Consistent with its ordinary meaning, 17 the patents at issue and their prosecution history, 18 the court construes these phrases to mean "a wavelike pattern that includes any combination of U-shaped, W-shaped or Y-shaped members."

1. Meaning of the Term "Uneven"

A key issue for the resolution of this motion is the meaning of the term "uneven" in the context of claim 1. The term "uneven" is generally understood to mean not smooth. 4 The meaning of "uneven" within the context of claim 1, however, is even more specific. The claim references an "uneven and immobile surface . . . wherein the uneven and immobile surface allows for influx of air into the suction space." (R. 17, Pls.' Mem., Ex. 1, Pando Patent, col. 6, Ins. 5-8.) Based on the plain language of the claim, we construe the meaning of "uneven" in the claim's description of a surface as one that is "sufficiently non-smooth as to allow for the influx of air around a suction cup."

4 This ordinary meaning is also found in Webster's Dictionary, which defines "uneven" as not level, smooth, or flat; rough; irregular . . . ." (R. 15, Defs.' Exs., Ex. F, Webster's New World Dictionary Excerpt.)

In reaching this preliminary construction, we have also relied on the specification and prosecution history. The patent's specification states that "contemplated surfaces need not be smooth, but may alternatively be uneven, or have cracks or crevices." (Id., col. 2, Ins. 55-57.) It also states that the invention is meant "to be affixed to a stationary suction surface, in which an undesired influx of air can be automatically removed." (Id., col. 2, Ins. 14-16.) This reinforces our construction
that the surface must be sufficiently non-smooth as to allow for the introduction of air when a suction cup is applied. The prosecution history also supports our construction. In differentiating his claim from the Maznik patent, U.S. 5,630,517, Pando remarked that:

Maznik further teaches that his ' . . . apparatus can be . . . mounted to any smooth surface . . .'. . . however, [it] fails to teach an uneven and immobile surface. On the contrary, a smooth surface is entirely inconsistent with an uneven surface as expressly required in amended claim 1.

(R. 15, Defs.' Exs., Ex. E, Pros. Hist. at 68.) He later reiterated the distinction between "uneven" and "smooth" in another defense against the Maznik patent as prior art. (Id. at 83.)

Although we have derived our construction of the term "uneven" from our review of the intrinsic evidence in this case, we also note that support for our construction can be found in the extrinsic expert testimony that both parties offered in this case. Techtronic's expert, Albert V. Karvelis, defines the "uneven" limitation in the suction cup reference as a "suction cup that acts together with a fixed surface which is not smooth enough to prevent leakage of air, to form a vacuum chamber into which the air leaks." (R. 17, Pls.' Mem., Ex. 2, Karvelis Decl. P 28 (emphasis added).) Chervon's expert, Allan S. Myerson, gives a surprisingly similar explanation, stating that "the term 'uneven' as used in the [Pando] patent, should be construed as meaning non-smooth." (R. 15, Defs.' Exs., Ex. A, Myerson Decl. P 21.) He also explained that "an uneven surface is one that permits air to flow around the suction cup and to enter the suction space." (Id. P 25.) Dr. Myerson even noted his agreement with Dr. Karvelis on this point. (Id. P 26.)

Chervon has attempted to limit the scope of this term, however, by arguing that the term "uneven" as used in claim 1 should be limited to the following surfaces: a crude concrete wall, block or brick wall, unfinished wood, and tile wall. (R. 21, Defs.' Resp. at 10.) No such limitation is found in the claim language itself. The patent specification rejects Chervon's proposed limitation, stating that:

Contemplated surfaces need not be smooth, but may alternatively be uneven, or have cracks or crevices. For example, contemplated surfaces include crude concrete walls, block or brick walls, unfinished wood, and tile walls having spaces partially filled with grout.

(R. 17, Pls.' Mem., Ex. 1, Pando Patent, col. 2, Ins. 55-59.) The plain language of this text indicates that the specified surfaces constitute a non-exhaustive list of contemplated examples rather than a limitation of the specific surface types with which the self-mounting device can be used.

Chervon's only support for its proposed limitation is the patent examiner's statement in the prosecution history that Pando "defines an uneven immobile surface as a crude concrete wall, block or brick walls, unfinished wood, and tile wall." (R. 15, Defs. Exs., Ex. E, Pros. Hist. at 79.) Chervon fails to note, however, that in response to this statement, Pando specified that those surfaces were merely examples, stating that "the present specification explicitly defines a static surface as an 'uneven,' . . . 'immobile . . . object, for example, a wall, . . . crude concrete walls, block or brick walls, . . . and tile walls . . .'." (Id. at 83-84 (emphasis added).) Pando's characterization, and not the examiner's prior statement, is consistent with the specification language. We find that the Pando patent's specification, coupled with Pando's statements in the prosecution history, do not support Chervon's proposed limitation of the term "uneven" in claim 1 to those surfaces explicitly named in the patent specification.

GO BACK

4276

"Rendering uniform"
Cytyc's proposed construction
(no construction required)
Xoft's proposed construction
Making the same, i.e., causing to have the same value or characteristic at all points.

"Means . . . for rendering uniform the radial absorbed dose profile of the emissions"
Cytyc's proposed construction
Xoft's proposed construction
Function: Modifying the ratio of the absorbed dose at a depth of interest to the absorbed dose at the surface of the tissue.

Structure: A radiation absorbing or attenuating material, e.g., air, x-ray contrast fluid, contrast media used in angiography, water, a gas, or barium sulfate.

Xoft's argument is that "uniform" must be taken literally, and the apparatus must produce radiation that does not decrease in strength with increasing distance from the source. The parties do not dispute that Xoft's construction would require a physical impossibility; the strength of radiation necessarily decreases with distance from its source. Xoft, however, seeks to interpret "uniform" in a vacuum. The meaning of a particular word in a claim must be interpreted in light of the rest of the patent.

While the patent could have been drafted with more clarity, it is readily apparent that the patentee did not contemplate absolute uniformity. Figure 4 of the patent (reproduced below) is a comparison between the distance versus radiation dose plots of two scenarios. Line 40 shows the radiation dose that would result if chamber 36 were filled with a radioactive fluid. '813 patent, col. 3, ll. 20-24. Line 42 shows the radiation dose that would result if, following the teachings of the patent, the same radioactive fluid were contained only in chamber 32. '813 patent, col. 3, ll. 24-28. As explained in the patent, "Comparing the plots 40 and 42, by providing the concentric arrangement depicted, the absorbed dose profile in the space between the 2 cm site and the wall of the outer balloon is maintained much more uniform, thus preventing over-treatment of body tissue at or close to the outer wall . . . of the instrument." '813 patent, col. 3, ll. 28-33.

The patentee obviously did not expect absolute uniformity of radiation dosing. To interpret "uniform" in the manner urged by Xoft would go against the clear intent of the patentee. In Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 796 F.2d 443 (Fed. Cir. 1986), the defendant made a similar argument regarding the patentee's use of the term "smooth" with respect to the edges of contact lenses. The Federal Circuit looked to the intrinsic evidence and found that "smooth" did not mean absolutely ridge free but rather that it meant "smooth enough to serve the inventor's purposes, i.e., not to inflame or irritate the eyelid of the wearer or be perceived by him at all when in place." Id. at 450. In this case, the inventor's purpose was to deliver radiation more uniformly than had previously been done, "thus preventing over-treatment of body tissue at or close to the outer wall . . . of the instrument." '813 patent, col. 3, ll. 28-32. The court will therefore define "rendering uniform" to mean to make the absorbed dose of radiation more uniform in order to prevent over-treatment of body tissue at or close to the outer wall of the instrument.

Since limitation language "means . . . for rendering uniform the radial absorbed dose profile of the emissions" is in means-plus-function format, the function must be construed and the corresponding structure or its equivalent identified in the specification. BBA Nonwovens Simpsonville, Inc. v. Superior Nonwovens, L.C.C., 303 F.3d 1332, 1343 (Fed. Cir. 2002). As discussed, Xoft's definition of the function requires absolute uniformity which is not possible and which is not what the patent requires or the inventor intended. Cytyc's proposed definition construes the function as "modifying the ratio of the absorbed dose at a depth of interest in the target tissue to the absorbed dose at the surface tissue." Although this appears to be a function of the invention, Cytyc's definition is too broad because it encompasses absorbed doses at the surface tissue that are not substantially uniform to absorbed doses at the target tissue. In other words, Cytyc's definition would not only encompass the radiation dose profile of line 42 above, but would also encompass the radiation dose profile of line 40.
Furthermore, all radiation dose profiles between line 40 and line 42 that result in over-treatment of the surface tissue would also be included under Cytyc's definition. A more accurate construction of the function would require the absorbed dose at the target tissue and the absorbed dose at the surface tissue to be more uniform to prevent over-treatment of the surface tissue. Thus, the court defines the function of the "means . . . for rendering uniform the radial absorbed dose profile of the emissions" as making the absorbed dose of radiation more uniform to prevent over-treatment of body tissue at or close to the outer wall of the instrument.

Cytyc also identifies a radiation-absorbing or -attenuating material as the corresponding structure. At the claim construction hearing, Xoft argued that the uniformity of the radiation dose curve is solely affected by distance from the radiation source; the parties agree that this is true. See Tr. at 60-61. Although the composition of the material is not critical to the function, the radiation-absorbing or -attenuating material provides the distance necessary for achieving the uniformity in radiation dose curve. Thus, the court construes the language consistently with Cytyc's position.

**Claim Language**

"rendering uniform"

**Court's Construction**

"Means . . . for rendering uniform the radial absorbed dose profile of the emissions"

Function: Making the absorbed dose of radiation more uniform to prevent over-treatment of body tissue at or close to the outer wall of the instrument.

Structure: A radiation absorbing or attenuating material, e.g., air, x-ray contrast fluid, contrast media used in angiography, water, a gas, or barium sulfate or their equivalents.

**4277**

(12) "Uniform cellular structure." The flexible connected cells of claim 6 have the same structure.

**4278**

In this case, we have already completed the first step of the analysis by construing three elements of claim 4 of the '514 patent:

"Material for finishing" This claim element means a material that makes more durable the underlying surface of the floor, and is applied for that purpose.

"Elongated sheet" This claim element does not require the presence of material that covers the entire floor but instead can encompass material that covers less than the entire floor; nor does this claim element exclude a "panel" of material otherwise meeting the limitations of the claims.

"Uniform flexible film" This claim element means that the material must be of a uniform thickness, and excludes material in which there are any variations in thickness.

Markman Ruling and Order (Feb. 9, 1998).
The district court interpreted the limitation "uniform flexible film" to mean that, "the material must be of a uniform thickness, and excludes material in which there are any variations in thickness." Middleton, 1998 U.S. Dist. LEXIS 19428, No. 96-C6781, slip op. at 1 (Markman Ruling and Order). Ultimately, the court's infringement analysis did not turn on this limitation because the court found that 3M's FloorMinders product was not a "material for finishing," either literally or under the doctrine of equivalents.

We understand the district court's interpretation to mean that the film must have the same thickness throughout, except that normal manufacturing tolerances are allowed. Thus, while the film cannot have a thickness of 1 mil at one location and 25 mil at another, it may have variations in thickness due solely to the practical realities of the film manufacturing process. We note that at oral argument, the parties did not appear to dispute this reading of the district court's claim construction.

This appeal presents the question of the proper meaning of "uniform flexible film." As the district court correctly determined, this court did not need to and did not actually construe that limitation when reversing the grant of summary judgment in the previous appeal. Rather, this court stated its understanding of the district court's own prior construction. On remand, the district court erred by treating this court's statement as a definitive claim construction. The trial court thus construed "uniform" to mean the "same thickness throughout, except that normal manufacturing tolerances are allowed."

The term "uniform flexible film" does not appear to convey any special technical meanings. Texas Digital Sys., Inc. v. Telegenix Inc., 308 F.3d 1193, __ (Fed. Cir. 2002) (stating that there is a "heavy presumption" that claim terms mean what they say and have the ordinary meaning that would be attributed to those words by persons skilled in the relevant art (internal citations omitted)). The accustomed meaning of "uniform" is having always the same form. Webster's Ninth New Collegiate Dictionary 1290 (1985). The specification defines "flexible" as "bendability of the sheet but [] not . . . stretchability." '514 patent, col. 2, l. 67 to col. 3, l. 1. Furthermore, "film" clearly refers to the clear plastic material referenced often in the patent disclosure.

As usual, the most important indicator of the meaning of "uniform" is its usage and context within the claim itself. Thermalloy, Inc. v. Aavid Eng'g, Inc., 121 F.3d 691, 693 (Fed. Cir. 1997) (stating that "throughout the interpretation process, the focus remains on the meaning of the claim language."). The claim recites a "uniform flexible film." This term, in context, describes floor coverings. Specifically, the preamble of claim 4 recites an "improved material for finishing the top surface of the floor." '514 patent, col. 6, ll. 66-68. As noted, uniformity means that a floor covering has always the same form. Floor coverings may have the same smooth form, as in a bowling or basketball surface. Floor coverings may also have the same woven form, as in a carpeted surface. Floor coverings may also have the same textured form to prevent slippage in a setting like Grand Central Station where a wet surface may receive a lot of foot traffic. This phrase in the claim does not place any particular limitations on the concept of uniformity. Rather the claim suggests that the form of the film - whether smooth or textured - must remain the same throughout the floor surface. In this context, uniformity could apply to many different types of floor surface as long as they exhibit the same form across the relevant surface.

The written description of the patent does not suggest that the inventor provided a special meaning or definition of "uniform." Kegel Co. v. AMF Bowling, Inc., 127 F.3d 1420, 1427 (Fed. Cir. 1997). Instead the written description of the '514 patent explains that achieving a "uniform finish" of conventional varnish or urethane is difficult. '514 patent, col. 1, ll. 27-29, 37-39. Furthermore, it explains the object of the present invention is to provide a material of "uniform thickness" that can be "quickly and easily applied." Id., col. 1, ll. 66-68. Other than ease of application, the specification imparts no further insight into the meaning of "uniform." Id., col. 4, ll. 4-5. Thus, the written description neither suggests an exceptional meaning for uniform nor supports departing from the term's ordinary meaning.

This court also considers the prosecution history of the '514 patent to determine whether the applicant clearly and

The prosecution history does not show this clear and unambiguous disclaimer. During prosecution of the application that led to the '152 patent, one of the parent applications of the '514 patent, the examiner rejected the claims as obvious over Milne. The parent application of the '514 patent at that time claimed only bowling alleys and bowling alley surfaces. The claims of the parent application (later the '428 patent) included a uniform flexible film for finishing a smooth wooden surface of a bowling alley. Milne disclosed a method for adhering two types of decorative surface panels to an athletic floor: a one-eighth inch thick, high compression, stiff film; and a film sufficiently flexible to be rolled for delivery. To avoid this prior art involving the uniformity necessary for a bowling surface, Middleton amended claim 1 from "a [dry] flexible film" to "a uniform flexible film . . . covering the wood top surface of the bowling lane." In the accompanying remarks, Middleton's attorney explained:

The preformed film can be provided in a thickness that could be obtained only by applying multiple coats of a liquid varnish, and with a uniformity of thickness that is unobtainable with hand-applied liquid finishes. (Emphasis added.)

Middleton further stated:

The flexible plastic film of claim 1 essentially duplicates the characteristics of a conventional liquid varnish type of finishing while requiring less skill and time to apply and to remove. By permitting preselection of the thickness of the film and assuring uniformity of the thickness, the finishing material disclosed and claimed in the present application can provide much improved wear over conventional liquid finishes without affecting the bowling performance of the lane. (Emphasis added.)

Thus, in the context of a limited claim to bowling alley surfaces, Middleton asserted to the United States Patent & Trademark Office that the claimed flexible film avoids the thickness irregularities that result from the application of liquid varnishes. This prosecution history applies to the claims that cover smooth sporting surfaces, like bowling alleys.

The inventor later filed a continuation that broadened the invention. The broader continuation applications claimed floor surfaces in general, not just smooth sporting surfaces. Therefore, the prosecution history in the context of varnishes for smooth bowling alleys does not limit the broader claims to other flooring surfaces. Throughout, the prosecution history is consistent with the ordinary meaning of "uniform," namely that the term means having the same form. As used in the patent, the term has the broad meaning that includes both uniformity of thickness as well as uniform in irregularity; by overcoming Milne, the inventor did not limit the term to uniformity of thickness. Uniformity of thickness is within the breadth of the term "uniform" and that aspect of the term's meaning was sufficient to avoid Milne. The district court erred by limiting the scope of "uniform" to thickness uniformity. In context, as this court has explained above, the term is entitled to its full scope, which is structure that is the same in form even when that same form includes consistent non-uniform thickness or other "uniform" irregularities.

This court also takes this opportunity to comment on Middleton's argument that a flexible film is "uniform" when its thickness falls within manufacturing tolerances. According to Middleton, evidence of manufacturing tolerances includes the specification and tolerances found in the contract between 3M and Bando or Achilles for manufacture of the overlaminate films. The meaning of a patent term, however, is not subject to revision or alteration by subsequent contract between the patentee and its suppliers. The meaning of patent terms depends on the usage of those terms in context by one of skill in the art at the time of application. Schering Corp. v. Amgen Inc., 222 F.3d 1347, 1353 (Fed. Cir. 2000). Patent terms are not subject to later revision by a supply contract. If a contract supplies some insight into the understanding of skilled artisans at the time of invention, it may have some relevance to claim construction, but Middleton makes no such explanation for invoking a contract to define claim terms.

In sum, the proper construction of "uniform flexible film" is a flexible film having always the same form. Thus, a uniform flexible film includes, for example, a flexible film having the same thickness throughout, as well as a flexible film having
the same textured surface throughout. The district court granted summary judgment holding that 3M's overlaminate films do not infringe the '514 patent based solely on its construction of "uniform" to mean the "same thickness throughout, except that normal manufacturing tolerances are allowed." Because the district court erred in its construction of "uniform," this court reverses and remands for a determination of infringement in accordance with the correct claim construction.

Cannondale argues its suspension system does not infringe upon element b. of the '026 Patent because while element b. calls for a "cylinder of uniform, second diameter," the Cannondale suspension has an inner steerer tube with four flat surfaces on its outer circumference. See Defendant's Reply at 10.

As discussed above, the term "cylinder," as understood in its common meaning and defined by one of ordinary skill in the art of bicycle suspensions, is not limited to a perfectly circular tube. Cannondale argues the inclusion of the terms "uniform" and "diameter" create a claim element limited to "an object defined by two equal parallel circular bases and a perpendicular axis between them, in which the circular shape has a constant, unvarying width." See Defendants' Motion at 13.

Cannondale's definition would limit Claim 1 to an inner cylinder that is perfectly round and contains no grooves or irregularities on the outside. This definition of "cylinder of uniform, second diameter" would directly contradict the specifications and the only preferred embodiment of the '026 Patent. The specification describes an inner cylinder with grooves or tracks on the exterior of the cylinder, designed to receive the rolling bearing elements which facilitate the telescoping of the cylinders and enable the inner and outer cylinders to turn in unison. Cannondale's definition is also inconsistent with the element c. of Claim 1 describing a "rotational indexing means" between the two cylinders including a "longitudinal bearing track there between." Cannondale's definition must be rejected as inconsistent with the patent specifications and the patentee's preferred embodiment. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996) (finding a claim should be interpreted to include the patentee's preferred embodiment, where possible); Hoechst Celanese Corp. v. BP Chemicals, Ltd., 78 F.3d 1575, 1580-81 (Fed. Cir. 1996) ("it is unlikely an inventor would define the invention in a way that excluded the preferred embodiment, or that persons of skill in this field would read the specifications in such a way.").

Webster's Dictionary defines "diameter" as a "straight line passing from side to side of any figure or body, through its center." See Random House Webster's College Dictionary, p. 363, def. b., 5th edition, 1997. As Defendant offers in its Motion, "uniform" means "unvarying in significant aspects." See Motion at 13. In accordance with this common understanding and consistent with the patent specifications and preferred embodiment, a cylinder of "uniform, second diameter" is therefore more aptly understood as a tube having a consistent circumference throughout the length of its shaft without significant bulges or cavities, such that it can telescope within the first cylinder while maintaining an unvarying distance between the outermost exterior of the inner tube and the innermost interior of the outer tube. The manufacturing specifications reflect the inner tube of the Cannondale suspension has a measurable exterior diameter of 1.210 inches (after the tracks of flats are grooved in) and this diameter remains constant along the perimeter of the tube. Cannondale's suspension has a "second cylinder of uniform, second diameter." 5

5 The Court finds the prosecution history of the '026 patent does not alter the analysis of infringement of element b. Robinson's amendment to add the "of uniform…diameter" limitation simply clarified the first and second tubes or cylinders had to be of uniform diameter so as to fit inside the narrow confines of the headtube of a bicycle. The prior art, from which Robinson sought to distinguish his invention, "enlarged the annular bearing holder" to "incorporate an internal sleeve," "thereby further expanding the diameter of the outer cylinder to form the bearing holder." Robinson's patent did not seek to enlarge the headtube or unevenly enlarge the cylinders, but to fit the suspension cylinders with uniform diameters within the headtube.
Claims 1 and 5 of the '688 Patent

Claims 1 and 5 of the '688 patent are directed at the gasket means used between air duct end sections and abutting flange frames and about the corner pieces to create an air-tight seal. These claims include language describing the duct and gasket connecting means as requiring the duct end portions "to extend beyond said front surface of said corner means into abutting relation with a unitary continuous external gasket means having a uniform thickness that extends around the periphery of said duct connecting flange members and by said uniform thickness seals said duct connecting flange members and also the corner edge portions of the duct. . . ."

First, the Court construes the phrase "unitary continuous external gasket means" to require the gasket means to be a unitary (one-piece), uninterrupted gasket means having a uniform thickness that extends around the periphery of said duct connecting flange members. 5

Second, the Court construes the phrases "having a uniform thickness" and "by said uniform thickness seals . . ." to require the gasket means to be the same thickness throughout and to seal the duct connecting flange members and also the corner edge portions of the duct, forming the only seal for the corner edge portions of the duct extending beyond said front surface of said corner means.

This construction gives ordinary meaning to the terms used in the patent claims and is consistent with the prosecution history and patent specifications. Further, having considered Plaintiff Ductmate's February 20, 1990 amendments to these claims, it is stopped from arguing that the gasket means is something other than a unitary continuous external gasket means having a uniform thickness, as the Court has construed those terms. 6

3. "Said support mat is of uniform thickness between its opposite ends." Consistent with the claim language and its ordinary meaning, 27 the specification, 28 and the prosecution history, 29 the Court construes "said support mat is of uniform thickness between its opposite ends" to mean "the thickness of the mat does not vary between its ends."

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27 D.I. 148, ex. 6 at 1269 (defining "uniform" as "having always the same form, manner, or degree: not varying or variable"); D.I. 151, ex. E at 1290 (same).

28 '476 patent, col. 2, ll. 38-42; col. 3, ll. 49-55, 60-64; col. 4, ll. 16-22.


4. "uniformity of resulting cut surface" (claims 10, 11, 12, 13, 24, 25, 26 and 27)

Omax proposes that this should be construed to include "any aspect of uniformity for a cut surface, for example consistency of surface finish or of dimensional accuracy or precision from entry to exit of the jet through a work piece for the segment specified by the user." Flow proposes to use this construction: "Consistency of the surface finish from entry to exit of the jet through a work piece for the segment specified by the user."

For its argument, Flow relies on its proposed narrow constructions of quality of result, associated value and combining. The Court has largely rejected these narrow constructions in favor of a broad definition of quality of result and an interpretation of the combining step that allows for consideration of dimensional accuracy, such as kerf and lag. Moreover, the claim terms specifically refer to the uniformity of the resulting cut surface with regard to dimensional accuracy. '596 Patent, claim 12 ("The method of claim 10 wherein the velocity is adjusted to limit lag error when the jet traverses a curve or corner to maintain the desired uniformity of resulting cut surface."). In light of these findings, the Court adopts Omax’s proposed construction of this claim term.

3. Uniformly

The district court construed the term "uniformly" as "always the same" or "unvarying." Summary Judgment Decision, 345 F. Supp. 2d 466. Grayzel challenges this construction, arguing that the correct construction is "without fluctuation or variation; consistent." Grayzel is splitting hairs in arguing that the district court should have selected the definition "without fluctuation or variation; consistent" instead of the definition "always the same; unvarying" for the term "uniformly." The district court’s definition is synonymous with Grayzel’s proposed definition. See The Oxford Thesaurus 561 (Am. ed. 1992) ("consistent" and "unvaryingly" listed as synonyms for the adjective "uniform"). Moreover, either definition conveys that the walls of the sheath are thin for the entire length of the sheath. As such, we conclude that the district court did not err in construing the "flexible" limitation to mean "always the same" or "unvarying."

The '614 patent contains a single 9-element claim. Winco concedes that its levers contain seven of these elements. The claim recites in relevant part (with emphasis added to the elements at issue):

A hand lever mechanism . . . comprising . . .

a fastening element made of metal adapted to be placed in engagement with a member to be turned;

a hand lever made of synthetic material softer than said fastening element material;
a coupling element formed with an annular configuration consisting essentially of a metallic pressure die cast member having one side affixed to said hand lever . . . whereby said coupling element is anchored in the material of said hand lever and is rotatable therewith;

anchoring elements comprising projecting elements arranged uniformly along an outer periphery of said coupling element for anchoring said coupling element in the material of said hand lever;

DISCUSSION

I.

An accused device outside the literal meaning of the claims may still infringe by equivalents so long as each claimed element or its equivalent is found in the accused device. See Warner-Jenkinson Co. v. Hilton Davis Chem. Co., U.S. , , 117 S. Ct. 1040, 1049, 137 L. Ed. 2d 146 (1997). A patentee may prove equivalence by showing that the substituted element in the accused device performs substantially the same function, in substantially the same way, to produce substantially the same result as the claimed element. See id. at -, 117 S. Ct. at 1054; Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 608, 94 L. Ed. 1097, 70 S. Ct. 854 (1950). "It is important to ensure that application of the doctrine, even as to an individual element, is not allowed such broad play as to effectively eliminate that element in its entirety." Warner- Jenkinson, U.S. at -, 117 S. Ct. at 1049; see also Dolly, Inc. v. Spalding & Evenflo Cos., 16 F.3d 394, 398, 29 U.S.P.Q.2D (BNA) 1767, 1771 (Fed. Cir. 1994) ("The doctrine of equivalents is not a license to ignore claim limitations."). This is particularly so for claims drawn to specific structures.

Winco moved for summary judgment of non-infringement during the course of discovery. A Markman hearing was held, and the district court construed the crucial claim terms "annular" and "uniformly." After considering the specification and the prosecution history, but relying primarily on the ordinary meaning of the term "annular," the district court construed the term as requiring the coupling element to be "circular or ring-like in shape, but not necessarily a perfect circle." Also relying primarily on the ordinary meaning, the district court construed "arranged uniformly" as requiring that "no significant portion of the outer periphery should be lacking or treated differently or in a different manner for the placement of the projecting elements." The court noted specifically that uniform arrangement does not require that the anchoring elements (projections) be equidistantly spaced.

We have reviewed independently the claim language, specification, and prosecution history. Although Winco would have us construe "annular" and "uniformly arranged" as "circular" and "equidistantly spaced," the terms are not that narrow. We discern no error, however, in the district court's constructions, and adopt them in their entireties. We therefore turn to the application of the claim as so construed to the two accused devices.

2. Construction of the Phrase "ablation is caused uniformly"

Reliant asserts that the '502 patent is also invalid for a second reason. Specifically, according to Reliant, the '502 patent is invalid because the phrase "ablation . . . is caused uniformly but only to a predetermined depth" is incurably vague, that the only rational construction of this term is absolute uniformity, and that this cannot be achieved by the described invention.

Laser responds that the ablations caused by the device described within the patent are sufficiently uniform. Laser does not, however, respond specifically to Reliant's arguments concerning the vagueness of the term "uniform" as it is used to describe the ablation produced by the control means. Laser asserts generally that there is no ambiguity in the patent claims and that the invention can perform all of the functions listed in the patent.

The Supreme Court has held that a patent must describe the exact scope of an invention and its manufacture in order to
secure to the patentee everything to which he or she is entitled and to apprise the public of that which is still open to them. Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S. Ct. 1384, 1387, 134 L. Ed. 2d 577 (1996). The claims of the patent foster this objective by particularly pointing out and distinctly claiming the subject matter of the patent. 116 S. Ct. at 1388; see 35 U.S.C. § 112. The Markman court held further that the limits of a patent must be known for the protection of the patentee and the encouragement of inventiveness by others; otherwise,

a zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims would discourage invention only a little less than unequivocal foreclosure of the field, and the public would be deprived of rights supposed to belong to it, without being clearly told what it is that limits these rights.

116 S. Ct. at 1396 (citations and internal quotation marks omitted).

The construction of patent claims is an issue of law to be decided by the Court. 116 S. Ct. at 1393. In interpreting a patent claim, a court should give the words of the claims their ordinary and customary meaning unless another meaning is suggested by the specification. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). If the meaning of a word is ambiguous, the Court must look first to the patent itself and the prosecution history. Id. Usually, such analysis will resolve any ambiguity in a disputed claim term, and, in such circumstances, it is improper to rely on extrinsic evidence such as expert testimony to construe patent claims. Id. Extrinsic evidence, such as expert testimony, may be considered if needed to assist the Court in determining the meaning or scope of terms in the claims. Id. Such evidence may not, however, be used to alter or change the claims, specification and file history of the patent. Id. The Federal Circuit has held that a court "can neither broaden nor narrow claims to give the patentee something different that what he has set forth." Texas Instruments, Inc. v. United States ITC, 988 F.2d 1165 (Fed. Cir. 1993) (quoting Autogiro Co. of America v. United States, 181 Ct. Cl. 55, 384 F.2d 391, 396 (Ct. Cl. 1967)).

Reliant asserts that the Court cannot rationally construe the means-plus-function limitation that "ablation . . . is caused uniformly but only to a predetermined depth" because nothing in the patent provides a standard of uniformity which a person wishing to avoid infringement could use to determine the degree of uniformity covered by the patent. According to Reliant, the patent does not indicate the degree of uniformity of the ablation caused by the invention. Reliant asserts that the patent is therefore invalid because it fails particularly to point out and distinctly to claim the subject matter covered by the patent. Instead, the patent leaves the limits of the patent unknown. Reliant argues also that the only workable definition of uniformity suggested by the patent is absolute uniformity; the invention, however, cannot create ablation that is absolutely uniform in depth.

In construing this phrase, the Court begins with the ordinary, customary definition of "uniformly." The Random House Dictionary does not define the adverb uniformly; it does, however, define "uniform," the adjective from which "uniformly" is derived, as "(1) identical; (2) without variations in detail, [as in] a uniform surface; (3) consistent, unvarying." Random House Dictionary, Rev. Ed. (1982) (emphasis in original). A review of the patent and prosecution history does not suggest another meaning for this term as it is used to define the control means. Neither the patent nor the prosecution history indicates the specific degree of ablation uniformity caused by the invention. The patent does not specify whether the invention causes ablation that is absolutely uniform in depth, uniform within some range, or sufficiently uniform for certain purposes but not for others. The patent and prosecution history provide no basis for the Court to choose some definition of the phrase "ablation . . . caused uniformly" other than the ordinary definition of ablation to an identical depth, or to a depth that does not vary in detail.

Laser would have the Court construe this phrase to mean ablation that differs in depth by only ten to fifteen percent in small areas, or ablation that is sufficiently uniform for certain uses. Laser points to nothing in the patent or prosecution history, however, that supports such a definition. Nor does Laser present expert testimony indicating that "uniform ablation" had this meaning to one skilled in the art. Indeed, Laser presents no expert testimony at all indicating that "uniform ablation" has a particular meaning to one skilled in the art. The Court, therefore, has no basis for construing "ablation . . . is caused uniformly" to mean ablation that differs by only a certain percentage or ablation that is sufficiently uniform for some uses.

At oral argument, Laser asserted that "uniform ablation" means that ablation is caused regardless of the condition of the tissue, whether it is damaged, diseased, pigmented, port wine stained or healthy. The Court finds this assertion unpersuasive and unsupported by the patent and prosecution history.
As indicated above, a patent must describe the exact scope of an invention in order to apprise the public of that which is still open to it. Markman, 116 S. Ct. at 1387. Without guidance as to the meaning of uniform ablation, one of ordinary skill in the art would not understand what is claimed by the patent. Seattle Box, 731 F.2d at 826. Without a meaningful, usable definition, the "zone of uncertainty" mentioned by Markman would be created. Id. Those skilled in the art would be discouraged from attempting to create devices that cause ablation to any degree of uniformity for fear that they would infringe the '502 patent. The Court, cannot, however, broaden or narrow the claims of the '502 patent to give Laser something other than that which is set forth in the patent. See Texas Instruments, 988 F.2d at 1171.

Because the Court finds nothing in the patent or prosecution history that would allow it to construe "ablation . . . caused uniformly" more broadly to mean "ablation that is sufficiently uniform for some purposes" or "an ablation level that varies by no more than ten or fifteen percent," the Court shall not construe it to include such definitions. Laser offers no expert testimony to the effect that "uniform ablation" has a particular meaning to one skilled in the art. Without any other guide for the term, the Court is left with the ordinary and customary meaning of uniform ablation, that is, ablation to an identical depth, or to a depth that does not vary in detail.

2. The "containing uniformly dispersed therein a static-reducing amount of electrically conductive particulate material" limitation

The conductive layers in the accused Nevamar static-dissipating products consist of paper which has been coated with electrically conductive carbon particles on both sides and impregnated with a polymer resin. Nevamar submitted photomicrographs of the completed layer showing that the carbon particles are distributed in two parallel planes located slightly below the two surfaces of the paper, with little or no carbon particles in the area of the plane centered between the paper surfaces.

The district court construed the "uniformly dispersed" limitation to mean that the conductive particles must be uniformly dispersed in all dimensions of the alleged conductive layer (i.e., length, width and thickness). Based on this construction, the court concluded that the "uniformly dispersed" limitation does not read on the accused Nevamar products because of the lack of uniform distribution of carbon particles across the thickness of the alleged conductive layer. This analysis is incorrect.

The written description of the '040 patent describes various types of conductive layers and corresponding methods of preparation. One such layer comprises an open-cell foam which is loaded with conductive particles by "dusting" the particles onto the surface of the foam and then "calendering" (sic) the foam to impregnate the particles therein. See '040 patent, col. 5, ll. 1-6. Although this technique is described as adequate to result in conductive particles being impregnated "generally uniformly throughout the foam", it is unreasonable to infer that this technique will result in carbon particles being uniformly distributed across the thickness of the foam. The written description of the '040 patent thus shows that the "uniformly dispersed" limitation requires the distribution of conductive particles across the length and width of the conductive layer but does not require uniform dispersion of the particles across the thickness of the layer.

Therefore, viewing the evidence and making all reasonable inferences in favor of Nevamar, there is no genuine issue of material fact precluding summary judgment concerning this issue and Charleswater is entitled to JMOL that the "uniformly dispersed" claim limitation encompasses the accused Nevamar products, even though the conductive carbon particles in the alleged conductive layer in those products are not uniformly dispersed across the thickness of the conductive layer.

1. Claim 25

An element of Claim 25 is "allowing the resultant assembly to set and dry such that the calcined gypsum forms set gypsum having voids uniformly dispersed therein." Defendants contend that "resultant assembly" means the entire board, including
edges. Defendants contend that this element should be construed as requiring a uniform distribution of voids through the entire board, including edges. It is undisputed that, in the LNA Method which uses hard edges, voids in the edges are not uniform with voids in the core.

As of the time that the ’635 patent was issued, as well as currently, nearly all commercial wallboard was manufactured with hard edges. Unless defined by the patent as meaning something else, words of a patent claim are to be interpreted in accordance with their ordinary meaning, as they would be understood by one skilled in the art. V-Formation, Inc. v. Benetton Group SpA, 401 F.3d 1307, 1310-11 (Fed. Cir. 2005); Merck & Co. v. Teva Pharmaceuticals USA, Inc., 395 F.3d 1364, 1369-70 (Fed. Cir.), cert. denied, 546 U.S. 972, 126 S. Ct. 488, 163 L. Ed. 2d 384 (2005); Duhn Oil Tool, Inc. v. Cooper Cameron Corp., 474 F. Supp. 2d 1148, 2007 WL 3316384 (E.D. Cal. 2007).

Claim 25 sets forth a method for preparing "a foamed gypsum board." It lists the elements "comprising" that method. In a patent claim, "comprising" means including. Mars, Inc. v. H.J. Heinz Co., 377 F.3d 1369, 1375-76 (Fed. Cir. 2004); Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1344-45 (Fed. Cir. 2003); Goff v. Harrah's Operating Co., 412 F. Supp. 2d 1090, 1094 (D. Nev. 2005). A method claim comprising certain elements does not need to set forth every step necessary to produce the identified product. Mars, supra; Smith & Nephew, Inc. v. Ethicon, Inc., 276 F.3d 1304, 1311 (Fed. Cir. 2001); Goff, supra. Thus, the claim 25 preamble language ("A method of preparing a foamed gypsum board comprising . . .") does not indicate that the elements that follow are sufficient by themselves to produce a foamed gypsum board. Nevertheless, defendants contend that "resultant assembly," as used in the last phrase of the claim, should be understood as referring to "a foamed gypsum board" that appears in the preamble. Instead, a proper reading of "resultant assembly" is that it refers to the particular steps set forth in claim 25 following the preamble. Those steps include placing the dispersed material between two sheets and drying that assembly. The recited steps, however, do not exclude adding other materials or dispersions before adding the second cover sheet, nor is there any mention of the forming stage of wallboard production. The resultant assembly simply refers to the described dispersion being between two cover sheets. It is consistent with claim 25 to have edges composed of different materials. The only part of the resultant assembly that need have uniformly dispersed voids is the deposited dispersion described in claim 25.

Such a reading of claim 25 is consistent with how a person skilled in the art would understand the claim. A person skilled in the art would know that wallboard is manufactured with edges that have a density different from that of the core. Such a person would understand that claim 25 does not make any claim regarding the edges of the board. Specifically, a person skilled in the art would understand that the uniformly dispersed voids exist only in the deposited dispersion described. A person skilled in the art would understand that, in the usual manufacturing process, a different dispersion with a different density would be used for the edges.

The undisputed fact that the LNA Method produces wallboard with differing densities in the core and edges does not preclude the possibility that the LNA Method infringes claim 25.

**ANALYSIS**

The parties agree that the claim construction in this case turns on the meaning of three words: "uninterrupted inner surfaces." This term appears both in Claim 1 of the ’041 patent and in the abstract of the patent. Claim 1 describes a ladder comprising two rigid uprights and "at least one rung extending horizontally between said two uprights and having apertures defined by sleeves having uninterrupted inner surfaces for receiving therethrough said rigid uprights." Def. Cl. Construction Br., Ex. 1 ( ’041 patent, p. 3). The abstract similarly states; "A rung is provided having apertures defined by sleeves having uninterrupted inner surfaces, for receiving therethrough the uprights." Id. at p. 1.

The parties also agree on the basic parameters and framework for the Court's analysis of the claim interpretation for the ’041 patent, as established in Federal Circuit decisions and described above. Each urges the Court to examine the intrinsic evidence initially, including the claim language, the specification, any drawings, the prosecution history, as well as ordinary dictionary definitions to assist in interpreting the claim language, and lastly to consult the available extrinsic evidence, including expert testimony. Intex places primary reliance on what it asserts is the clear, ordinary meaning of the claim language, as confirmed by dictionary definitions and its expert witness, Jon Ver Halen. Metalast, on the other hand,
emphasizes the prosecution history and the reading of that history by its expert, Joseph Schmerler. The parties agree that the meaning of the claim language to one skilled in the art is controlling. See, e.g., Multiform Desiccants, 133 F.3d at 1477. Intex asks the Court to keep in mind that the Federal Circuit and other courts stress that what is most important in claim construction is the concept of notice - courts must discern what the claims in the patent mean to one reasonably skilled in the art so as to put a reasonable competitor on notice as to the precise scope and meaning of the claims.

The parties further agree that "uninterrupted inner surfaces" is not a term of art having a specialized meaning to those having expertise in either ladder or swimming pool design and construction. Likewise, "uninterrupted inner surfaces" is not specifically defined in the specification of patent '041. Hence, this is not a case where the patentee has acted as his own lexicographer and expressly provided the meaning of the relevant claim term. The threshold task for the Court, then, is to determine the ordinary meaning to one skilled in the art of the words "uninterrupted inner surfaces" as used in the context of the '041 patent claim. Although the parties agree on the issue and the analytical path to its resolution, they differ significantly with respect to the suggested result. Intex staunchly contends that the ordinary meaning of the term "uninterrupted inner surfaces" is smooth, uniform, or containing no irregularities (hereinafter "smooth"). Metalast counters that, in the context of the '041 patent and its prosecution history, the term can only mean unitary or one-piece (hereinafter "unitary").

1. The Claim Language

Several observations seem particularly pertinent with respect to the claim language under consideration. First, neither of the competing constructions of the term "uninterrupted inner surfaces" urged by the parties is totally implausible, although for the reasons that will be discussed, the Court concludes that "smooth" is the more plausible construction. Viewing the three words in isolation, an uninterrupted surface would appear to be one having no gaps, splits, protrusions, ridges, or recesses -- i.e., a surface that is smooth and uniform. Although somewhat less plausible, an uninterrupted surface could also be one that is unitary -- i.e., in a single piece with no seam or connection joining parts together, as those too might be said to constitute "interruptions" to the surface. As explained further below, however, when sources such as dictionaries, drawings, and expert testimony are consulted, there is some confirmation that the ordinary meaning of "uninterrupted inner surfaces" to one skilled in the art (of either ladder or swimming pool ladder design) is smooth and uniform.

Second, and importantly, the term "uninterrupted inner surfaces" does not appear in isolation, but rather in the context of the other language of Claim 1. It is clear that while the entire term "uninterrupted inner surfaces" modifies the preceding noun "sleeves," the word "uninterrupted" itself applies to and modifies only "inner surfaces," not "sleeves." A review of the words themselves (and their placement) strongly suggests, then, that the surface of the sleeves must be uninterrupted (and hence smooth), not that the sleeves must be uninterrupted (and hence arguably unitary). See Teleflex, 299 F.3d at 1324-25 ("The words used in the claims are interpreted in light of the intrinsic evidence of record, including the written description, . . . [to] provide context and clarification about the claim terms."); Pitney Bowes, 182 F.3d at 1311 (term must be read to correspond to meaning in context). Metalast's position that "uninterrupted inner surfaces" means unitary or one-piece would be more convincing if "uninterrupted" directly modified "sleeves," suggesting that the sleeves must be a single piece. Even then, Metalast's position ultimately is really that the ladder rungs (having sleeves at each end) are to be unitary or one-piece. That interpretation is even further from the actual words as used in the claim, in which uninterrupted modifies surfaces, not sleeves, and certainly not ladder rungs. As it is, however, the words of the claim suggest that it is only the inner surfaces of the sleeves that must be uninterrupted, which is more consistent with the idea of smooth inner surfaces than with unitary inner surfaces. Indeed, the latter construction does not make much sense when one thinks of a surface, rather than the item itself, being of a single piece. The meaning Metalast suggests could certainly be more directly achieved through a different placement of the words employed.

Similarly, the phrase "for receiving therethrough said rigid uprights" immediately following the term "uninterrupted inner surfaces" appears to the Court to supply some explanation of why the sleeves are designed with uninterrupted inner surfaces. That explanation -- to enable the ladder uprights to be received readily through the sleeves in the rungs -- makes sense if the inner surface of the sleeve is smooth (without protrusions, gaps, or recesses). In other words, if the sleeves have smooth inner surfaces, then that will facilitate sliding the uprights through them, whether or not the sleeves are unitary. On the other hand, sleeves that are unitary or one-piece might still not facilitate easy receipt of uprights, if the sleeves have protrusions, gaps or recesses rather than smooth inner surfaces.

Finally, construing the term "uninterrupted inner surfaces" to mean smooth rather than unitary is also consistent with the
additional language throughout Claim 1 discussing the separate split sleeve, which has both a "split," a "recess," and a "protrusion." Hence, the sleeves in the rungs are differentiated from the split sleeves, which have gaps and protrusions, by the term "uninterrupted inner surfaces," meaning without gaps, protrusions or recesses (i.e., smooth).

One other piece of intrinsic evidence -- the drawings that are part of the '041 patent -- supports the position that "uninterrupted inner surfaces" is best construed as smooth or uniform. Figure 1 depicts the sleeve at the end of a rung, and shows the "inner surface" of the sleeve as smooth. Likewise, the axial cut-out in Figure 2, which the patent characterizes as "illustrating an elevational cross-section of the attachment of the rung to the upright," Def. Cl. Constr. Br., Ex. 1 at p. 3, depicts the inner surface of the sleeve (at 9) as smooth, but, in contrast, depicts the two parts of the upright with gaps, recesses and protrusions. Hence, the drawings are consistent with an interpretation of the claim language as requiring smooth inner surfaces on the sleeves that are part of the ladder rungs.

In sum, the Court concludes that the ordinary meaning of "uninterrupted inner surfaces" to one skilled in the art is considerably more likely to be "smooth" than "unitary," given the words employed, their context, and the accompanying drawings. Certainly, there are more explicit and direct ways to explain that rungs with sleeves at each end are to be unitary or one-piece, if that was the inventor's intent. Metalast's construction would make the word "inner" entirely superfluous, since under its construction there is nothing meaningful about having the inner surface of the rung sleeves "uninterrupted" or unitary. Intex's construction of "uninterrupted inner surfaces" as meaning smooth or uniform is consistent with both the words employed and the context, because an inner surface of the sleeves without gaps, protrusions, or recesses is important to facilitating the smooth receipt of the ladder uprights through the sleeves. Therefore, an interpretation of the language "uninterrupted inner surfaces" in Claim 1 of the '041 patent to mean smooth or uniform is, the Court concludes, the ordinary meaning to one skilled in the art. As discussed below, other available evidence supports that interpretation, although the prosecution history of the '041 patent points somewhat in the direction of Metalast's interpretation that "uninterrupted inner surfaces" means unitary or one-piece sleeves.

2. Dictionary Definitions

Relying on several dictionary definitions, Intex suggests that "interrupted" means "discontinuous," "not uniform," or lacking "continuity or uniformity," and that "uninterrupted" means "having undisturbed continuity" or "continuing without interruption" or "continuous." See American Heritage Dictionary (2d ed. 1985); http://www.Dictionary.com; Webster's New Twentieth Century Dictionary (2nd ed.); Webster's Third New Int'l Dictionary (1993). That comports, according to Intex, with the definition of "smooth" as "having a surface free from irregularities, roughness or projections" or "having no obstructions" or "having a continuously even surface" or "even and uninterrupted in flow"; it would also seem to comport with a definition of "uniform" as "marked by a lack of variation [or] change in form." American Heritage Dictionary (2nd ed. 1985); Webster's Third New Int'l Dictionary (1993). Moreover, synonyms of "uninterrupted" include "smooth" and "uniform." See Roget's Int'l Thesaurus (4th ed. 1995). Again, this evidence is consistent with an interpretation of "uninterrupted inner surfaces" as meaning "smooth" or "uniform."

Metalast's initial response was primarily to caution that dictionary definitions should be relied upon sparingly, and cannot substitute for or overcome the meaning of claim terms evident from the specification, drawings and prosecution history. Metalast also argues -- more strenuously in supplemental briefing -- that the very same dictionary definitions cited by Intex are consistent with Metalast's proposed claim interpretation as well, noting that synonyms for "uninterrupted" include "joined," "unbroken," and "seamless." See Roget's Int'l Thesaurus (4th ed. 1995). Metalast's argument, then, is essentially that a dictionary definition is of limited value and cannot overcome the clear meaning Metalast believes is furnished by the prosecution history of the '041 patent.

Recent Federal Circuit decisions, however, clarify that dictionaries are "particularly useful resources" for the court to employ at any time to ascertain the ordinary meaning of claim terms. Texas Digital Sys., 308 F.3d at 1202. They are objective, reliable sources of information shedding light on the meaning that those skilled in the art would normally attribute to the disputed language. Id. at 1202-03; see also Inverness Medical, 309 F.3d at 1378. Rather than the analytical construct urged by Metalast, in which a dictionary definition is disfavored means to overcome a meaning supplied by the claim prosecution history, the Federal Circuit instead requires clear, explicit direction in the claim specification or prosecution history to overcome "the presumption in favor of a dictionary definition." Texas Digital Sys., 308 F.3d at 1204. Here, as explained below, the Court does not agree that the prosecution history is so unequivocal as to overcome the ordinary meaning of "uninterrupted inner surfaces" as being smooth. The dictionary definitions of "interrupted" as "not uniform" or
"discontinuous" and of "uninterrupted" as "continuous" or "having undisturbed continuity" comport well with dictionary definitions of "smooth" as "having a surface free from irregularities, roughness or projections" or "having a continuously even surface" or "even and uninterrupted in flow" and of "uniform" as "marked by a lack of variation [or] change in form." Indeed, these definitions of "smooth" confirm that it is a descriptive term that is particularly appropriate when speaking of a surface, as is the case here. Those definitions support the conclusion, therefore, that the ordinary meaning of "uninterrupted," particularly in the context in which it is used in the '041 patent claim, is smooth, uniform or free from protrusions.

Thus, these dictionary definitions tend to support Intex's view that "uninterrupted inner surfaces" means smooth or uniform inner surfaces. Although Metalast contends that the dictionary definitions are equally supportive of a proposed construction of the term as unitary or one-piece, the Court disagrees. Rather, the dictionary definitions are more consistent with an interpretation of "uninterrupted inner surfaces" as meaning smooth or uniform, and hence provide support for that construction as drawn, in the first instance, from the claim language and context itself.

3. Expert Testimony of Jon Ver Halen

The primary extrinsic evidence presented by the parties is expert testimony. Intex offers Jon Ver Halen, a well-qualified expert in ladder design, construction and analysis, to assist the Court in reviewing the term "uninterrupted inner surfaces" to determine its meaning to one skilled in the art. Ver Halen's expert testimony, as clarified by Intex's counsel at the Markman hearing, is based solely on the claim language, specifications and drawings of the '041 patent, not on the prosecution history (which Ver Halen never reviewed). The Court finds that Ver Halen is very well qualified in the field of ladder analysis and design, which is the relevant "art" for the '041 patent, and that his opinion that the proper construction of "uninterrupted inner surfaces" is smooth or uniform is persuasive and therefore of value to the Court, even though it ignores the prosecution history altogether. 2

2 Intex also offers the expert opinion of a patent attorney, Robert Greene Sterne. Counsel for Intex clarified at the Markman hearing that, although Mr. Sterne has offered an opinion on claim construction, Intex does not "need" it, which the Court takes to mean that Intex is not relying on Mr. Sterne's testimony on claim construction. In any event, the Court will not consider it, given that Mr. Sterne is not one skilled in the art and the view of a patent attorney on claim interpretation is improper. See Endress + Hauser, Inc. v. Hawk Measurement Sys., Inc., 122 F.3d 1040, 1042 (Fed. Cir. 1997) ("this court has on numerous occasions noted the impropriety of patent lawyers testifying as expert witnesses").

Ver Halen correctly states that no definition is provided in the '041 patent for the term "uninterrupted inner surfaces"; hence, he has turned to the patent drawings, which he assumes partially display the "inner surfaces" of the sleeves in Figure 1. He concludes, or more specifically "speculates," from his review of the drawings that 'uninterrupted inner surfaces' means 'smooth,' i.e., having a constant radius along its length." Pl. Cl. Constr. Br., Ex. F, p. 2 P 7. Intex argues that Ver Halen's expert testimony is rooted in his expertise in ladder design, and that he is the only proper expert in the relevant art. Although the Court is persuaded that Ver Halen is qualified in a relevant art (ladder analysis and design) and that he has provided a valuable review of assistance to the Court in determining the meaning of "uninterrupted inner surfaces" to one skilled in the art, certain weaknesses in his opinion cannot be disregarded. He admits that he can only "speculate as to the meaning of " the term, and "that any person skilled in the art of ladder design would have to guess what the Patent means in Claim 1 when it claims 'sleeves having uninterrupted inner surfaces.'" Id., P 6. Even his review based on the drawings is far from unequivocal: "Based on these incomplete and inexact views of the surface of the 'sleeve', I can speculate that 'uninterrupted inner surfaces' means 'smooth', i.e., having a constant radius along its length." Id. P 7. And, of course, he did not review the prosecution history. Hence, although certainly supportive of Intex's position, Ver Halen's expert testimony is far from conclusive.

4. The Prosecution History

To combat Intex's argument that the ordinary meaning of the term "uninterrupted inner surfaces" to one skilled in the art is smooth or uniform, which is buttressed by both dictionary definitions and the expert testimony of Ver Halen, Metalast turns
to the prosecution history of the '041 patent as explained by its expert witness. Metalast's position that the claim language "uninterrupted inner surfaces," when viewed in the context of the prosecution history, can only mean unitary or one-piece is, in fact, bolstered by its expert testimony (based largely on the prosecution history). As an important part of the intrinsic evidence available to the Court, the prosecution history can be significant in assisting the Court to discern the proper interpretation of the claim language. See, e.g., Vitronics, 90 F.3d at 1582-83. Typically, however, prosecution history will not overcome the ordinary meaning of the claim language to one skilled in the art unless it is clear and unequivocal. See Inverness Medical, 309 F.3d at 1382.

As originally submitted, the '041 patent did not contain the term "uninterrupted inner surfaces." Following rejection by the patent examiner, however, an attorney for the patent applicant submitted revised claim language and accompanying remarks designed to obtain approval, in part by distinguishing the '041 patent from a predecessor, the Full patent. It is these remarks by the patent attorney addressing the Full patent that constitute the prosecution history on which Metalast places great reliance:

The rungs in the Full patent are in the form of two plates which are secured to the ropes or uprights by bolts. Each plate has semi-circular recesses in which clamps are set, see col. 2 lines 73-77, which would not constitute the sleeve defined by claim 1 of the present invention.

In the present invention the rungs have apertures defined by sleeves having uninterrupted inner surfaces for receiving therethrough rigid uprights. The sleeve of the rung slides over the split sleeve which is axially aligned around the rigid upright and engaged by recess and protrusion, so as to position the rung along the length of the rigid upright.

In the Full patent clamps are provided with encircling grooves and shoulders for receiving the plates. In order to secure the plates to the rope additional securing i.e. other than the groove, is required by way of bolts. See col. 2 line 98-103.

Applicants submit that assembly of the Full ladder would be far from simple when compared to the simple construction and arrangement achieved by the present invention, which has fewer parts and which parts merely fit together in a manner sufficient to secure the ladder in an assembled condition, without the need for additional bolting.


5. Expert Testimony of Joseph Schmerler

To explain its position based on this prosecution history, Metalast relies on an assessment by its expert witness, Joseph Schmerler, who has a degree in mechanical engineering and extensive experience in the design and construction of swimming pools, and what he characterizes as "related equipment including pool ladders." Schmerler has acted as a consultant on matters relating to various aspects of swimming pools and is well-qualified in the art of above-ground swimming pools.

There is some dispute as to the relevant art regarding the '041 patent. Intex's expert, Ver Halen, is an expert in the design, testing, specifications and construction of various kinds of ladders. Metalast's expert, Schmerler, is an expert in swimming pools and, to some degree, a purported expert in "related equipment," including swimming pool ladders. Each party asks the Court to exclude the other side's expert. The Court declines to do so.

Schmerler's expert report defines the relevant art as "the design and construction of above-ground pools and related equipment." Def. Cl. Constr. Br., Ex. 8 (Expert Report of Joseph Schmerler, p. 2). Although not perfectly clear, the Court finds that the relevant art here involves more the design of ladders and less the design of swimming pools and related equipment. The dispute revolves around language in the '041 patent that addresses how the rungs, or steps, of a ladder are attached and connected to the uprights of the ladder. The construction of the claim term -- "uninterrupted inner surface" -- in no way depends on the fact that this ladder is mainly for use in a swimming pool; what the ladder is attached to is ancillary to the proper construction of the disputed term. While the patent does note that the ladder is to be used mainly for swimming pools, it also explicitly states that it can be used for other functions, and emphasizes a focus on how the rungs are attached to the uprights:
This invention refers to a ladder and, more particularly, to the means for attachment of the rungs to the upright. Although this ladder can be constituted in any manner and applied to differing functions, it has been designed mainly to be used in swimming pools.

Def. Cl. Constr. Br., Ex. 1 ('041 Patent, p. 3 col. 1). Moreover, the '041 patent is contrasted with the Full patent for a "ship's ladder." See id. at Ex. 6 (Full patent). Thus, the Court deems the relevant "art" here to involve the design of ladders more than the design of swimming pools and related equipment.

Given this relevant art, the Court finds that Intex's expert, Ver Halen, is more qualified to offer expert testimony than Metalast's expert, Schmerler. Ver Halen has experience and expertise in the design, specifications, standards, and construction of various ladders. His experience includes working on national standardizing committees involving the testing and design of ladders, including serving on the steering committee for establishing ladder safety codes. Moreover, he has been involved with ladder stability research, accident prevention, and occupational safety issues involving ladders. See Def. Cl. Constr. Br. Ex. 10 (Ver Halen Expert Report). Schmerler, in contrast, has extensive expertise related to swimming pools, and experience in various equipment related to swimming pools, but limited direct experience with ladders. See id., Ex. 8 (Schmerler Expert Report). Indeed, neither his report nor his rebuttal report mentions his expertise or qualifications to offer expert testimony on ladders, beyond the broadly worded experience working with swimming pools and related equipment.

The Court nonetheless finds Schmerler's testimony somewhat relevant and helpful to the Court. In his deposition, Schmerler testified that he had analyzed ladders in a number of lawsuits involving injuries from above-ground swimming pool accidents, where he tested stress levels of pool ladders. While the Court concludes that Schmerler's relevant expertise is not as extensive as Ver Halen's, the Court is not prepared to exclude him as an expert witness.

Compounding the difficulty here is that the words at issue -- "uninterrupted inner surfaces" -- are not technical terms of art used in the design of ladders or even swimming pool ladders. Expert testimony, therefore, may be of limited assistance. See Howes v. Medical Components, Inc., 814 F.2d 638, 643 (Fed. Cir. 1987) (ordinary words in claims that "are not technical terms of art" do not require expert evidence). Furthermore, these three disputed words in the '041 patent were added by a patent attorney, not an expert, who had not even consulted the original Spanish-language patent he was attempting to rewrite after the examiner rejected his initial submission. See Pl. Cl. Constr. Br., Ex. D (Dep. of Holman, pp. 63-80). Hence, the value of expert testimony here may be limited. See Markman, 517 U.S. at 387 ("It often becomes necessary that [judges] should avail themselves of the light furnished by experts relevant to the significance of such words and phrases. The judges are not, however, obliged to blindly follow such testimony.") (quoting Walker, Patent Laws § 189, at 173); McNulty v. Taser Int'l, Inc., 217 F. Supp. 2d 1058, 1062 (C.D. Cal. 2002) ("Extrinsic evidence, such as expert testimony . . . is received at the discretion of the court and is not controlling.").

Metalast argues from the prosecution history that the patent applicant, through its attorney, was faced with rejection of the claims as anticipated by the Full patent. Therefore, the applicant focused on the difference between the rungs of the Full ladder, which are formed by two plate-like members with apertures formed by two semi-circular surfaces or recesses assembled by bolts, and the rungs of the '041 ladder, which are formed as a unitary member with apertures formed by a single unitary inner surface of the sleeves. According to Metalast and Schmerler, the '041 patent claims were amended to clarify that the sleeves of the rung (which defined the tubular apertures) have "uninterrupted inner surfaces," as contrasted to the tubular apertures of the Full patent rungs formed by joining and bolting the surfaces of two separate semi-circular recesses (i.e., an "interrupted" surface).

The amendment remarks lend some support to this assessment, since the two-piece formation of the Full patent rungs requiring bolts for assembly is juxtaposed with "the present invention [in which] the rungs have apertures defined by sleeves 9 having uninterrupted inner surfaces for receiving therethrough rigid uprights." What holds this proposed interpretation together is the emphasis in the amendment on "the simple construction and arrangement achieved by the present invention, which has fewer parts" than the Full ladder and no "need for additional bolting." Metalast correctly observes that Intex's interpretation that "uninterrupted inner surfaces" means "smooth inner surfaces" would not by itself advance this distinction from the Full ladder -- simple construction with fewer parts and no bolts -- that is emphasized in the amendment to the '041 patent. On the other hand, sleeves with inner surfaces that are unitary or one-piece would, in Metalast's view, result in a ladder that is easy to assemble. Both Schmerler and Ver Halen generally agree on this last point.

There is arguably some force, then, to Metalast's assessment of the prosecution history of the '041 patent. Interpreting
"uninterrupted inner surfaces" to mean a sleeve having a unitary or one-piece inner surface, rather than two separate inner surfaces that must be bolted together, advances the goal of simple construction and fewer parts identified in the '041 amendment to distinguish the Full ladder. An interpretation of "smooth" inner surfaces would not necessarily achieve that purpose and distinguish the '041 ladder from the Full ladder. Intex responds by emphasizing in the '041 amendment the patent attorney's discussion of recesses and shoulders, which are interruptions, concluding that the purpose was to eliminate such recesses and shoulders and thereby create a smooth inner surface for ease of sliding, which is in fact also simpler than the Full ladder. Although this assessment of the prosecution history is also plausible, the Court concludes that the better reading is that proposed by Metalast and its expert, Schmerler, who actually reviewed the prosecution history. 3

3 Intex's expert, Mr. Ver Halen, did not review the prosecution history, but the Court does not find this fatal to his ability to provide expertise of assistance to the Court. See ID Security Systems Canada, Inc. v. Checkpoint Systems, Inc., 198 F. Supp. 2d 598, 619 (E.D. Pa. 2002) ("The Court concludes that [the expert's] failure to review the prosecution history of the '270 patent is not fatal to his testimony. The starting point for claim interpretation is the language of the claims.").

However, the Court does not conclude that the prosecution history urged by Metalast is so clear and unequivocal that it can overcome what the Court has already found is the ordinary and customary meaning of the claim term "uninterrupted inner surfaces" to one skilled in the art. See Inverness Medical, 309 F.3d at 1382. The more persuasive reading of the prosecution history may be that it focuses on distinguishing the '041 patent claim from the Full patent in terms of the simplicity of construction and number of parts, but there is also a plausible reading that it focuses on ease of sliding (i.e., smooth surfaces without protrusions), which is likewise a simpler construction. More importantly, the relevant prosecution history is subject to some inherent doubt given that it was provided by a patent attorney attempting to overcome the examiner's rejection, but who did not rely on the original Spanish-language patent and cannot remember what he meant in any event. See Pl. Cl. Constr. Br., Ex. D (Dep. of Holman, pp. 6380 ). All things considered, the Court does not find this prosecution history to be so unambiguous as to provide a basis for the claim construction Metalast seeks, and absent clear, unambiguous prosecution history indicating a contrary intent, the ordinary meaning of the claim term must prevail. See Inverness Medical, 309 F.3d at 1382; Schwing Gmbh, 305 F.3d at 1324; 5A Chisum on Patents § 18.03 [2][d]. 4

4 To the extent that dictionary definitions provide more than one possible meaning for "uninterrupted," the prosecution history of the '041 patent may be useful in discerning which meaning was intended by the inventor. See Texas Digital Sys., 308 F.3d at 1203; Inverness Medical, 309 F.3d at 1378-79. Again, however, the history must clearly demonstrate another meaning in order to overcome the ordinary meaning. See Inverness Medical, 309 F.3d at 1379, 1382.

6. Summary

It is not necessarily enough, then, that Metalast may have the better of the argument with respect to the prosecution history. Although the Court concludes that Metalast presents a more plausible explanation of the prosecution history, it is not so clear and unequivocal as to overcome the ordinary meaning of the claim language to one skilled in the art of either ladder construction and design or swimming pool equipment construction and design. That ordinary meaning, based on the claim language, context and drawings, as well as dictionary definitions, and confirmed by the extrinsic evidence of Ver Halen's expert testimony, is that "uninterrupted inner surfaces" means smooth or uniform inner surfaces of the sleeves located at the ends of the ladder rungs of the '041 patent. As explained above, that interpretation would seem to make considerably more sense to one skilled in the art, given the language employed and its context.

CONCLUSION

For the foregoing reasons, the Court concludes that the ordinary and customary meaning of the claim term "uninterrupted inner surfaces" in the '041 patent is "smooth," "uniform" or "having no protrusions" as established by the claim language,
context and drawings, and confirmed by dictionary definitions and credible expert testimony. Although the claim prosecution history is ambiguous as to the proper construction of that term, given the circumstances of that history it is not so unequivocal as to permit a different meaning than "smooth" or "uniform" to be assigned to the term "uninterrupted inner surfaces."

I. Consistency of the Claim Construction Decision With Phillips v. AWH Corp.

Metalast contends that the Court's construction of "uninterrupted inner surfaces" is based on an erroneous "dictionary-based" methodology that has recently been rejected by the Federal Circuit sitting en banc in Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005). Metalast's argument is based on the characterization of the claim construction opinion as applying a "presumption" that the dictionary definition of a term would govern in the absence of "clear, explicit direction in the claim specification or prosecution history." Metalast Mem. at 1. The Court agrees that Phillips clarifies the law on the role of dictionary definitions in the claim construction process. See 415 F.3d at 1312 ("We have also previously considered the use of dictionaries in claim construction. What we have said in that regard requires clarification."). Moreover, the Court believes that in so doing, the Federal Circuit necessarily overruled those cases applying a presumption that dictionary definitions govern unless refuted by intrinsic evidence such as the claim specification and prosecution history. However, this Court's claim construction opinion is consistent with the principles articulated in Phillips and assigns an appropriate secondary role to dictionary definitions -- that is, one of confirming a construction of the claim derived in the first instance from the claim language and patent specification. To the extent there is any doubt about that, this opinion confirms that secondary role for dictionary definitions.

In Phillips, the Federal Circuit discussed the differing roles of intrinsic and extrinsic evidence, and reiterated the continued validity of its prior precedent on claim construction -- particularly Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576 (Fed. Cir. 1996) -- that focused first on the claim language and the patent specification:

The claims, of course, do not stand alone. Rather, they are part of "a fully integrated written instrument," Markman v. Westview Instruments, Inc., 52 F.3d 967 at 978 (1995), consisting principally of a specification that concludes with the claims. For that reason, claims "must be read in view of the specification, of which they are a part." Id. at 979. As we stated in Vitronics, the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." 90 F.3d at 1582.

Phillips, 415 F.3d 1314-15. These principles are well-accepted, and indeed, were reiterated in Intex I. See 245 F. Supp. 2d at 68-69 (quoting Vitronics, 90 F.3d at 1582).

The Phillips court next discussed the importance of prosecution history as intrinsic evidence that may inform the meaning of claim language, but also noted the limitations of prosecution history:

Like the specification, the prosecution history provides evidence of how the PTO and the inventor understood the patent. . . . Yet because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes. . . . Nonetheless, the prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution. . . .

Phillips, 415 F.3d at 1317 (citations omitted).
The Federal Circuit then addressed the role of extrinsic evidence -- dictionaries, as well as other types (e.g., expert and inventor testimony and treatises). Id. Extrinsic evidence should only be considered "in the context of the intrinsic evidence," but remains a permissible secondary aid in helping the court determine what a person of ordinary skill in the art would understand claim terms to mean. Id. at 1319. In this context, the court reconsidered the precedent established by Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193 (Fed. Cir. 2002), the "leading case" in a series of cases establishing a presumption in favor of dictionary definitions. Phillips, 415 F.3d at 1319. Under the Texas Digital approach, the presumption could be overcome only where the patentee explicitly set forth a different definition of the term or where "the inventor has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction." Id. The Phillips court found a presumption in favor of dictionary definitions to be inconsistent with its rulings that "the specification is the single best guide to the meaning of a disputed term." Id. at 1321 (quoting Vitronics, 90 F.3d at 1582). The Federal Circuit further explained that:

The main problem with elevating the dictionary to such prominence is that it focuses the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent. Properly viewed, the "ordinary meaning" of a claim term is its meaning to the ordinary artisan after reading the entire patent. Yet heavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification.

Id. at 1321. Although cautioning against giving undue weight to dictionaries, the court emphasized that judges may, in their discretion, make appropriate use of dictionaries within the context of intrinsic evidence. Id. at 1322.

With this clarification by the Federal Circuit in mind, the Court now turns to whether the Intex I claim construction decision is consistent with the principles articulated in Phillips, and in particular the secondary role assigned to dictionaries. This Court concludes that no change in the claim construction decision is warranted. The decision is properly based primarily on the intrinsic evidence, and looked to dictionary definitions to "buttress" that conclusion, consistent with Phillips. Hence, although this Court's discussion of claim construction post-Phillips would be somewhat different, the result of the analysis does not change.

The Court's claim construction decision began with a review of the legal standards generally governing claim construction. Although Metalast is correct that the decision recited the presumption in favor of dictionary definitions from Texas Digital, the decision placed significant reliance on the principle that "courts should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification, and if in evidence, the prosecution history." Intex I, 245 F. Supp. 2d at 68-69 (quoting Vitronics, 90 F.3d at 1582) (emphasis added).

Thus, the first section of the Court's analysis looked only at intrinsic evidence -- that is, the claim language, the context of the language, and the drawings accompanying the patent. The Court first observed that the claim language, standing alone, favored Intex's proposed construction of "smooth," although also noting that Metalast's proposed meaning of "unitary" or one-piece was not implausible. Id. at 71. The decision then analyzed the term "in the context of the other language of Claim 1," which strongly favored the construction of "smooth" for two reasons. Id. First, the term "uninterrupted" applies to and modifies only "inner surfaces," and not "sleeves." Id. This placement of the words strongly suggests that "the surface of the sleeves must be uninterrupted (and hence smooth), not that the sleeves must be uninterrupted (and hence arguably unitary)." Id. (emphasis in original). The decision further noted that "Metalast's position ultimately is really that the ladder rungs (having sleeves at each end) are to be unitary or one-piece," a construction "even further from the actual words as used in the claim, in which uninterrupted modifies surfaces, not sleeves, and certainly not ladder rungs." Id. at 72.

The decision next looked at the phrase "for receiving therethrough said rigid uprights" which immediately follows the term "uninterrupted inner surfaces." Id. The Court found that this phrase further supported the conclusion that "uninterrupted inner surfaces" means "smooth" because smooth inner surfaces will "facilitate sliding the uprights through them, whether or not the sleeves are unitary." Id. A unitary or one-piece sleeve, it was noted, would fail to serve this function if the sleeves have protrusions, gaps, or recesses. Id. The Court found that additional language throughout Claim 1 supported the interpretation of "uninterrupted" as "smooth" or "uniform" based on the differentiated language used to discuss the separate split sleeve, which had a "split," a "recess," and a "protrusion." Id.

The decision also relied on the drawings that are part of the 041 patent as intrinsic evidence that further supported this construction. Id. The Court explained that Figure 1, which depicts the sleeve at the end of a rung, shows the "inner surface"
of the sleeve as smooth. Id. Furthermore, Figure 2, an axial cut-out showing an elevational cross-section of the attachment of the rung to the upright, depicts the inner surface of the sleeve as smooth, but in contrast depicts the two parts of the uprights with gaps, recesses, and protrusions. Id.

Based on this intrinsic evidence, the decision then stated that "the Court concludes that the ordinary meaning of uninterrupted inner surfaces' to one skilled in the art is considerably more likely to be smooth' than unitary,' given the words employed, their context, and the accompanying drawings." Id.

Only after this initial construction did the Court consider dictionary definitions. Id. at 73. Although the Court again acknowledged that pursuant to Texas Digital there was (at the time) a presumption in favor of dictionary definitions, the Court did not rely on that presumption to reach its construction. Rather, as recounted in detail above, the Court relied on the claim language and the drawings to reach the construction of "uninterrupted" as "smooth" or "uniform," and then considered whether the dictionary definitions were consistent with that construction. This is reiterated in the final paragraph of the decision's section on dictionary definitions, which states: "The dictionary definitions are more consistent with an interpretation of uninterrupted inner surfaces' as meaning smooth or uniform', and hence provide support for that construction as drawn, in the first instance, from the claim language and context itself." Id. at 74 (emphasis added).

The Court did give less weight to one type of intrinsic evidence -- the prosecution history -- a point on which Metalast now relies very heavily. The Court conducted a detailed review of the prosecution history (aided by both sides' expert witness assessments), focusing on changes Metalast made to the claims to distinguish its ladder design from that granted to another ladder, U.S. Patent 1,349,125 ("the Full patent"). Id. at 75-78; see also Patent File History at M00670-76 (Casano Decl. Ex. B (filed Sept. 23, 2002) ("Patent File History"). The Court concluded that "the more persuasive reading of the prosecution history may be that it focuses on distinguishing the 041 patent from the Full patent in terms of simplicity of construction and number of parts, but there is also a plausible reading that it focuses on ease of sliding (i.e., smooth surfaces without protrusions), which is likewise a simpler construction." Id. at 78. The Court further explained that the prosecution history was not dispositive because "more importantly, [it] is subject to some inherent doubt given that it was provided by a patent attorney attempting to overcome the examiner's rejection, but who did not rely on the original Spanish-language patent and cannot remember what he meant in any event." Id. Giving lesser weight to prosecution history where it is ambiguous is consistent with the recognition in Phillips that prosecution history is important but may be "less useful for claim construction purposes" in some circumstances. See Phillips, 415 F.3d at 1317. Indeed, the circumstances in this case are precisely the context -- "an ongoing negotiation between the PTO and the applicant" -- that led the Phillips court to recognize the need for caution in relying on prosecution history. See id. Thus, the Court properly exercised its discretion to give less weight to the prosecution history here.

Although some references to Texas Digital and similar cases were made in declining to give greater weight to the prosecution history over and above the "ordinary meaning" of the claim terms, the Court's intent -- as evidenced by the decision read in its entirety -- was to discount the prosecution history because of the flaws described above. In addition, the "ordinary meaning" of the claim terms, as used in that section of the decision, clearly refers to the "ordinary meaning" discerned from the claim language, context, and drawings, as buttressed by dictionary definitions -- not to the "ordinary" dictionary meaning alone. See id. at 78-79.

In summarizing the claim construction outcome, the Court again emphasized the paramount role of intrinsic evidence in ascertaining the ordinary meaning of the term to one skilled in the art of ladder design:

'[The] ordinary meaning, based on the claim language, context and drawings, as well as dictionary definitions, and confirmed by the extrinsic evidence of Ver Halen's expert testimony, is that "uninterrupted inner surfaces" means smooth or uniform inner surfaces of the sleeves located at the ends of the ladder rungs of the 041 patent.

Id. at 79. Thus, based on this review of the claim construction decision, as well as the patent and prosecution history, the Court concludes that the methodology employed in the original decision is consistent with the clarified framework set out in Phillips because it relies primarily on intrinsic evidence to construe the claim and assigns only a secondary role to dictionary definitions and other extrinsic evidence. More importantly, consideration and application of Phillips in this case does not change the Court's claim construction determination.
11. Multi-precision arithmetic unit

The parties largely agree on the construction of "multi-precision arithmetic unit" with one exception. The plaintiffs contend that the "multi-precision arithmetic unit" is "a unit that can perform addition, subtraction, multiplication, division, and other integer and floating point arithmetic operations on data streams of varying sizes." The defendants object to the plaintiff's proposed construction on two grounds. First, the defendants contend that the term "unit" refers to a defined circuit block, and not circuitry distributed across the media processor, as the plaintiff argues. Second, the defendants further contend that the language "other integer and floating point arithmetic operations" should not be included in the construction. Thus, the defendants propose the following construction of "multi-precision arithmetic unit" -- "a unit that can perform addition, subtraction, multiplication, division, and other arithmetic operations on data streams of varying sizes." The 840 patent provides as follows:

Many of the logic blocks themselves can also replaced [sic] with a single multi-precision arithmetic unit, which can be internally partitioned under software control to perform addition, multiplication, division, and other integer and floating point arithmetic operations on symbol streams of varying widths while sustaining the full data throughput of the memory hierarchy.

'840 patent, col. 2, 11. 58-65. Based on the cited portion of the specification, the court is persuaded that the plaintiff's construction is correct and adopts it. The court declines to further define "unit" to require a single circuit block.

C. Disputed phrase: "said connectors being unitary"

The disputed phrase is located in Claim 2 of the patent. This claim involves the connectors that permanently connect the liner to the bag. Figures 6 and 7 of the patent illustrate the concept at issue in this claim. Plaintiff proposes this claim should be interpreted as "an undivided component that extends between the bag and the liner and is connected to the bag and the liner." Defendant proposes this claim should be interpreted as "each connector being of a one piece construction." The dispute is whether the connectors must be constructed from a single piece of material. Plaintiff relies on both intrinsic and extrinsic evidence for the conclusion that the connector must simply be undivided, rather than constructed from a single piece of material. Plaintiff argues the dictionary defines "unitary" as "not divided." Plaintiff argues, in the patent, Claim 13 is dependent on Claim 2. In Claim 13, the connectors are described as comprising "two strips of overlapped plastic film heat sealed together." (Patent No. '472 Col. 5, lines. 60-62.) When formed, the connectors are thus undivided components, even though they are not a one-piece construction. Plaintiff argues the specification contains two embodiments of the connectors, neither of which support Defendant's language. The patent describes the connectors in Figures 6 and 7 as follows:

Preferably, each tab [] is a loop of fiber reinforced adhesive tape with overlapped runs adhered together and end portions [] adhered to an end portion of the liner. If a large number of liners [] are made, it may be economically desirable to make the tabs [] of two pieces of plastic film heat sealed together and integral with panel portions forming an end of the liner in a manner similar to that of making the tab[].

(Patent No. '472 Col. 3, lines 58-65.) Finally, Plaintiff relies on the prosecution history to support its interpretation of the word "unitary." The patent examiner ultimately found Claim 2 patentable after it was amended. (Pl. Ex. D at 8.) The patent examiner distinguished the Cuthbertson patent, which used straps as connectors. (Id.) The examiner concluded the Cuthbertson connectors, as well as the connectors in all other references to prior art, were not "unitary" and therefore this patent's connectors were not covered by prior art. (Id. at 8-9.)

Defendant argues the word "unitary" is most commonly used to reference a single piece construction. Defendant argues the embodiments of Figures 6 and 7, which demonstrate unitary construction through a single piece of tape folded on itself, distinguishes this construction from the embodiments in Figures 1 through 5.
The plain language of Claim 2 is somewhat ambiguous and, standing alone, does not resolve the dispute as described by the parties. Claim 13 expressly describes a connector as two strips of plastic that are heat sealed. On the other hand, Claim 10 describes a connector as a loop of fiber reinforced tape. Whether the connector is constructed of a single piece of material or whether it is multiple pieces of material fused together to form something unitary is not clarified by the language in Claim 2 or by the language in the other claims. The description of Figures 6 and 7 provides two embodiments for the connector. One embodiment is a loop of tape. The other embodiment is two pieces of plastic heat sealed together. Accepting Defendant's interpretation of the disputed phrase necessarily excludes one of the two embodiments of the connector contained in the specification. The patent examiner's comments in the prosecution history supports Plaintiff's interpretation of the disputed phrase. The patent examiner distinguishes a strap system, which was not unitary, from either of the two embodiments contained in this patent, which are unitary. As aptly stated by Plaintiff in its reply, "unitary" refers to the resulting product, not the components used during the construction process. Plaintiff's construction of the claim is persuasive and supported by the evidence. The claim at issue is interpreted to mean "an undivided component that extends between the bag and the liner and is connected to the bag and the liner."

The court held a two-day hearing to construe Claim 1 of the '437 patent, which claims:

Foldable playyard, comprising:

a unitary central hub member.

a lower frame assembly comprising corner leg connecting members and hub legs each pivotably coupled at one end portion thereof to said hub member and pivotably coupled at an opposite end portion thereof to one of said lower frame assembly corner leg connecting members such that said hub legs are collapsible by pivoting said hub legs from a substantially co-planar spread configuration wherein said hub legs diverge radially outwardly from said hub member to a compact non-coplanar configuration wherein said hub legs are substantially parallel.

an upper frame assembly comprising corner rail connecting members and side rail means each comprising a pair of side rails and a medial rail connecting member disposed therebetween, each of said rails being pivotably coupled at one end portion thereof to one of said upper frame assembly corner rails connecting members and pivotably coupled at an opposite end portion thereof to said medial rail connecting member such that said pair of rails is collapsible by pivoting said rails from a substantially in-line configuration to a substantially V-shaped configuration, and

corner legs interconnecting said upper and lower frame assemblies, each fixedly coupled at one end portion thereof to one of said lower frame assembly corner leg connecting members and fixedly coupled at an opposite end portion thereof to one of said upper frame assembly corner rail connecting members such that said corner legs are collapsible radially inwardly towards said hub member from a substantially parallel configuration wherein said corner legs are spread apart by said hub legs and side rail means to a substantially parallel compact configuration wherein said corner legs are drawn together by said hub legs and side rails means.


At the hearing, the court heard the arguments of counsel and testimony from the parties' legal and technical experts. The court also reviewed the text of the claim and the prosecution history of the '437 patent. The court defined the term "unitary"
central hub member," which was the only portion of the claim that was in dispute, as a single device comprising at least two parts pivotably coupled to and centrally located among the lower frame assembly, that enables corner legs, hub legs and side rails to collapse into a substantially parallel compact configuration without the need to disassemble fabric or other components of the structure or to release a latch or lock on the corner legs to permit the corner legs to collapse.

(Tr. 10/30/95 at 19.)

To succeed on a claim of literal infringement, a party must prove by a preponderance of the evidence that each limitation in the asserted claim is found in the accused device. Baxter Healthcare Corp. v. Spectramed, Inc., 49 F.3d 1575, 1583 (Fed. Cir.), cert. denied, 116 S. Ct. 272 (1995). When a claim does not read exactly on an accused device, the claim has not been literally infringed. Johnston v. IV AC Corp., 885 F.2d 1574, 1580 (Fed. Cir. 1989).

Century's technical expert, Manuel Raefsky ("Raefsky"), testified that three of the elements of Claim 1 of the patent-in-suit and the court's definition of "unitary central hub member" are not found in the accused device. First, the court's definition of "unitary central hub member" required that this component be a "single device." Raefsky testified that the hub in the Fold 'N Go is not a "single device," but rather is comprised of three devices: two leveling plates and a connecting link. (Tr. 11/27/95 at 54-55, 154.) He further testified that if the Fold 'N Go's hub were made into a single device, by drilling or attaching the connecting link to the leveling plates, the hub could not fold and the playyard could not operate in the way it was designed. Id. at 55.

Second, the court's definition of "unitary central hub member" required that the component be "centrally located among the lower frame assembly." Raefsky testified that the three devices that comprise the Fold 'N Go's hub are not centrally located, but rather that two of the devices -- the leveling plates -- are "off center." Id. at 59. Raefsky also stated that, if he were to view the leveling plates and the connecting link as a single device, the hub would be centrally located, but it would not work. Id. at 59-60.

Third, the language of Claim 1 describes hub legs that "diverge radially outwardly" from the unitary central hub member. Raefsky testified that the hub legs on the Fold 'N Go do not "diverge radially outwardly" from the unitary central hub member because a radius requires a straight line and the hub legs are bent, not straight. Id. at 64. In addition, Raefsky testified, the hinge pins to which the legs were fastened formed a rectangle, not a circle. Id. Therefore, because the term "radial" applies only to circles, the legs diverging from the rectangle could not be "radial." Id. at 64-65. Rather, the hub legs intersected with the hub in the form of a "chord." Id. at 65.

Having testified to the above facts, Raefsky concluded that at least three elements of Claim 1 are not present in the accused device. Id. at 76. Century's legal expert, Harris Zimmerman ("Zimmerman") also testified that the claims of the '437 patent "do not cover" the accused device. (Tr. 11/28/95 at 63.) Edward C. Teter, Century's former Vice President of Engineering, reached the same conclusion. (Tr. 11/27/95 at 9.)

Graco notes that its technical expert, Edward Magrab ("Magrab"), and its legal expert, Michael T. Platt ("Platt"), compared the accused device to Claim 1 and concluded that every element of Claim 1 was found in the Fold 'N Go. Graco is correct that its experts testified to those conclusions, but this fact is irrelevant in deciding a Rule 50 motion, in which the court must decide only whether there is a legally sufficient evidentiary basis for a reasonable jury to find for the prevailing party on a particular issue, and not which version of the evidence is more credible. The court must assess only whether the jury heard evidence that would support its findings, not whether the evidence might support a contrary finding. Graco cannot prevail on its motion by relying solely on the testimony of its experts.

Graco also argues that Century's arguments involve only claim construction and, presumably, not the application of the claims of the '437 patent to the accused device. The court disagrees. Century's arguments are based on whether there is sufficient evidence upon which the jury could base a finding that the Fold 'N Go did not literally infringe the '437 patent. The court already had construed Claim 1 of the patent and issued its definition of "unitary central hub member," and Raefsky merely applied that definition to the accused device.

Finally, Graco contends that the court should rule that the Century playyards have radially diverging hub legs. Under
Raefsky's conclusion that the legs do not diverge radially, Graco argues, "anyone could avoid literal infringement by moving a pivot pin (however slightly) out of the circumference of a perfect circle." (Pl.'s Reply Mem. Supp. J. as a Matter of Law at 7.) The court notes that Graco failed to raise this issue at the two-day claim construction hearing or during the trial. Thus, to the extent that Graco is asking the court to interpret the claims or evaluate the sufficiency of the evidence presented to the jury, it has failed to preserve these complaints for post-trial consideration. In addition, the court notes that the experts of both parties essentially agreed that the words and terms in the claims of a patent have significance. (Tr. 11/8/95 at 28; Tr. 11/28/95 at 64.) Graco's attorney drafted the claims and applied for the patent, which includes the word "radially." Graco's counsel selected the wording of the patent application and had the opportunity to decide whether to draft the claims narrowly or broadly. The court cannot rewrite a patent simply because the patentee realizes that one of the claims may be too narrow.

In conclusion, viewing the evidence in the light most favorable to Graco and giving Graco the benefit of fair and reasonable inferences therefrom, the court concludes that the jury had an ample evidentiary basis upon which to find for Century on this issue. For these reasons, the court will deny Graco's motion.

**4295**

1. **Unitary Central Hub Member**

Regalo contends that its current model playyards do not infringe Claim 1 because the requirement of a "unitary central hub member" found in Claim 1 of the '437 patent cannot encompass the two separate hinged members of the central hub in the Regalo playyards. 7 Regalo submits that interpreting "unitary central hub member" to include a hinged structure functionally reads the word "unitary" out of the claim, and makes the structure equivalent to just a central hub member. (Tr., dated 7/28/00, at 15-16.)

--- Footnotes ---

7 Regalo argues that the Graco design is inconsistent with the "bifold hub" structure of U.S. Patent No. 4,688,280 ("Kohus '280" or "'280 patent"), which Regalo likens its device to. Regalo notes that the '280 patent shows the limited motion of the legs within the plane of a hub to and away from each other that is identical to the motion of the pairs of legs in the Regalo Series 1400, 1500 and 1600 playyards, and is completely inconsistent with legs moving out of a plane. (Def.'s Mem. at 5 n.3.) In response, Graco correctly argues that the description in the '280 patent of a "bi-fold" hub does not provide any guidance in construing the '437 patent claim terms. In addition, Graco points out that Claim 1 is not directed to a hub, but to an entire combination, and that the '437 patent was issued to protect the combination of elements recited in the claims as defining over the prior art, including the '280 patent. Thus, Graco contends that even if some elements of the claimed combination were known in the prior art and were not patentable individually, that does not shield an infringer using such known elements in the claimed combination which is patentable.

--- End Footnotes ---

Graco replies that a comparison of the opened/spread and closed/folded positions of the playyards to the claims reveals that the Regalo "hinged hub" operates as a unit, i.e., always remains joined together as a unitary hub in moving from the opened to the closed position. Graco asserts that such a configuration is entirely consistent with Graco's interpretation of a unitary central hub, i.e., that is a centrally located member that operates as a unit to perform the claimed function. 8 The claimed hub member, whether or not it has multiple components, allows the pivotably coupled hub legs to be drawn upwardly and inwardly to a substantially parallel configuration.

--- Footnotes ---

8 Graco contends that what this claim calls for is a combination of elements, and what unitary calls for is that the hub member be a central hub member that functions together, and that a bi-fold hub qualifies as a species of the unitary central hub because it does perform the function of one hub member. (Tr., dated 7/28/00, at 29-30.)

--- End Footnotes ---
In resolving this issue, this Court must first look to the language of the '437 patent. In addition to the language found in Claim 1, the term "unitary" is used by the patentee in column 3, lines 21-24 of the '437 patent, which read as follows:

The foldable playyard 10 includes a flexible enclosure 54 comprising side panel portions 56, 58, 60, 62 and a floor portion 66. These portions of the enclosure are stitched together to form a unitary flexible structure.

At oral argument on the instant motions, counsel for Graco cited the above portion of the '437 patent to argue that "the patentee is using unitary to show that a number of pieces can be put together in an assemblage, so that they act as one." (Tr., dated 7/28/00, at 23-24.) We adopt this common-sense interpretation, especially in light of the parties agreement that the unitary central hub member can have multiple parts that act as one piece. Thus, this Court finds that the term "unitary central hub member" as expressed in the '437 patent does encompass the hinged hub used in Regalo's current model playyards.

Claims 1 and 5 of the '688 Patent

Claims 1 and 5 of the '688 patent are directed at the gasket means used between air duct end sections and abutting flange frames and about the corner pieces to create an air-tight seal. These claims include language describing the duct and gasket connecting means as requiring the duct end portions "to extend beyond said front surface of said corner means into abutting relation with a unitary continuous external gasket means having a uniform thickness that extends around the periphery of said duct connecting flange members and by said uniform thickness seals said duct connecting flange members and also the corner edge portions of the duct. . . ."

First, the Court construes the phrase "unitary continuous external gasket means" to require the gasket means to be a unitary (one-piece), uninterrupted gasket means having a uniform thickness that extends around the periphery of said duct connecting flange members and also the corner edge portions of the duct.

5 See File History to the '688 patent, Amendment to Ductmate's '688 patent dated February 20, 1990 at 8-9. Plaintiff Ductmate states the amendments "now specifically define the only seal for the corner edge portions as being the unitary gasket that also seals the flange members." Ductmate further states that the amended claims provide a means "whereby a seal is created at the corner sections of the duct solely by means of the gasket and without the addition of any packing strip or additional packing material." Id.

1. Language in Dispute: "A double lumen catheter comprising an elongated unitary tube including an integral septum…"

Does "unitary tube" mean (1) the tube and tip are a single unit or (2) a tube and tip are of single-piece construction (i.e. integrally formed)?

Answer: "Unitary tube" means the tube and tip are a single unit.
The claim language says "elongated unitary tube including integral septum." Integral means one-piece formation, as opposed to bonded, which is a two-piece construction. The patent does not say integral tube including integral septum. If that were the case it would be clear that the claim only covers a tube formed from a single piece and a septum formed from one piece. However, that is not what we have in claim 19.

The words integral and unitary are two different terms which are presumed to have two different meanings. Comark Communications, Inc., 156 F.3d at 1182. The patent, the prosecution history and the common usage of the terms all suggest "integral" means being formed from one piece of material while "unitary" requires the object be a single unit. Therefore, the adjective "unitary" describing the tube, requires that the elongated tube including its tip and integrated septum, be a single unit in the completed catheter product.

b). Written Description

The specification in the patent supports the construction that the elongated tube must be one unit in the completed catheter, but may be manufactured either integrally or by bonding. The specification shows an example of a unitary tube in the figures and states the tube can be made from one piece of material or multiple pieces joined together to form one unit:

   It is readily apparent to persons of ordinary skill in the art that the tip 20 as shown in FIG. 7 is easily formed from thermo-plastic material. The tip 20 including the relative concentration of material 23 is easily molded and bonded or is integrally formed from the cylindrical tube 11 by the use of internal and external mandrels and the application of heat by any number of conventional means such as RF forming, thermal forming, or infrared forming. (’968 patent, col. 4, lines 29-37). (Emphasis added).

Thus, the written description in the patent corroborates Dr. Mahurkar’s construction.

c). Prosecution History

Arrow contends the word "unitary" requires that the entire tube, including the tip, be constructed from a single piece of material. In support of this construction, Arrow cites a passage from the prosecution history which includes a discussion of the "unitary" and "integral septum" limitations:

   Claim 21 [now claim 19] further recites a double lumen catheter comprising an elongated unitary tube including an integral divider. Edelman et al. does not disclose a unitary structure. The unitary structure prevents mis-matching of components, the clotting of blood and tips breaking off into the patient. (Def. Ex. 2 at NSHN 128717).

This passage cites the advantages of the unitary structure, but does not limit the construction of the unitary tube to integral formation from a single material. This passage was presented by Dr. Mahurkar to demonstrate that the Edelman catheter is not unitary and his is. He was not equating the word "unitary" with "integral" but rather was equating "unitary" with a single unit, and explaining that the Edelman catheter has multiple pieces (the septum and the cylinder) that are not sealed. (See Edelman et al. Patent No. 4,403,983, col. 2 lines 29-32 and 46-49).

In another section from the prosecution history it is equally apparent that the word "unitary" means a single unit. In this portion of the patent prosecution Dr. Mahurkar described the tube and tip as "unitary" and then stated that the septum is "of one-piece construction with said tube." (Def. Ex. 2 at NSHN 128764). If as Arrow contends, the words "unitary" and "integral" are synonymous, Dr. Mahurkar would not have found it necessary to describe the tube and septum separately with different adjectives. The prosecution history reinforces that the ordinary meaning of "unitary" is a single unit.

d). Dictionary Definition

The word "unitary" is best construed by its ordinary usage and accustomed meaning. Webster's defines "unitary" as "having the character of a unit: whole." (Webster's II New Riverside University Dictionary 1262 (1994)). Therefore, the word "unitary" an adjective describing the elongated tube, provides that the tube, including the septum, be a single unit in the catheter.
As discussed supra, the '968 patent was also the subject of previous litigation. Judge Easterbrook analyzed claim 19 in terms of its best mode, but did not decide the issue before this Court. In re Mahurkar, 831 F. Supp. at 1378.

**Iris**

ferromagnetic: a material that exhibits ferromagnetism, but is not magnetized

magnetic material pins: pins made of a material that is capable of being magnetized, but is not magnetized

unmagnetized magnetic material: material that is capable of being magnetized but, in the absence of an applied external magnetic field, is not magnetized

--- Footnotes ---

n5 Iris offered this proposed construction at oral argument.

--- End Footnotes ---

The focus of Iris's arguments regarding these terms is that, within the context of the patent, they all refer to material that is capable of being magnetized, but is not magnetized. Iris highlights evidence in the prosecution history where the applicant sought to distinguish prior art on the basis that the supply rolls have "no magnets." (Fink Aff., Ex. C, pt. 4, at C61-C62.) The document states:

Claim 11 [issued Claim 8] is specific to the positioning of the identifier indicia, using an unmagnetized magnetic material. This feature is very important, again, from a pollution control standpoint, because there are no magnetic materials that are utilized on the roll, but yet the reliability of a magnetic sensor can be utilized using one stationary detector of the present invention.

* * *

With the present invention the magnetic material pins are cheap, they are non-polluting, and since there are no magnets, there are no plurality [sic] requirement. They can be placed on the supports or inserted into the apertures without regard to polarity.

The doctrine of prosecution disclaimer prevents a patentee from recapturing a specific meaning that it disclaimed during prosecution. Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1323 (Fed. Cir. 2003). The disclaimer must have been clear and unambiguous for the doctrine to apply. Id. at 1324. Fargo argues that there is no clear and unmistakable disavowal of the ordinary and customary meaning of "magnetic material pins." The problem with Fargo's argument, however, is that its proposed construction for "magnetic material pins" is "pins made of a magnetic material." Yet the prosecution history clearly indicates that the "invention" has "no magnets." Neither Fargo's arguments nor its proposed definition help explain how "material" that is "magnetic" is nevertheless not a "magnet."
At oral argument, Iris offered a new definition for "unmagnetized magnetic material" to counter any objection that its previous definition might have excluded the pins in the patent because they are briefly magnetized as they pass through the magnetic field that is part of the sensor. The resulting definition, "material that is capable of being magnetized but in the absence of an applied external magnetic field is not magnetized," is a better definition than Fargo's because it avoids the ambiguity of the word "permanent." In light of the prosecution history indicating that the supply rolls have "no magnets," the Court will adopt this definition for "unmagnetized magnetic material" and a similar definition for "magnetic material pins:" "pins made of material that is capable of being magnetized but in the absence of an applied external magnetic field is not magnetized." In so doing, the Court is aware that it is defining different terms to have essentially the same meaning. Although a patentee's use of different terms normally indicates that it intended those terms to carry different meanings, a reading of the patent and prosecution history does not reveal what that difference might be in this case, and Fargo's objections to Iris's proposed definitions ignore the clear statement in the prosecution history regarding the lack of magnets.

Finally, in light of that same prosecution history, the Court will adopt Iris's definition of "ferromagnetic," modified as follows: "a material that exhibits ferromagnetism, but, in the absence of an applied external magnetic field, is not magnetized." Because Iris concedes that Fargo's definition of "ferromagnetic" is correct "in the abstract," the Court will adopt Fargo's definition of "ferromagnetic" insofar as it is necessary to define the word "ferromagnetism" in Iris's definition of "ferromagnetic."

2. "unstrained resistor"

The parties' proposed constructions are as follows:

**CTS**
- a resistor mounted to the wing section but not subject to a force derived from applied weight

**TK**
- a strain resistor whose resistance changes based on the strain from an applied force, but which is not strained by the force of weight applied on the substrate

CTS again has the better view. The abstract of the '361 patent states that the strain gage includes both a strained resistor and an unstrained resistor. This indicates that one resistor is to be subjected to strain, i.e., mechanical force, whereas the other is not. Importantly, there is no indication that the unstrained resistor must be any particular type of resistor. Indeed, it is well understood in the relevant art that resistors are electronic components that may change their resistance, and thereby the resulting electronic signal, such as by way of exposure to mechanical, light or thermal changes. See McGraw-Hill Dictionary of Scientific and Technical Terms, 6th ed., page 1794-95 (defines a general resistor as "a device designed to have a definite amount of resistance; used in circuits to limit current flow or to provide a voltage drop." and further states at page 2133 one type of resistor is a "thermistor" that changes its resistance in response to temperature changes, and its name is actually "derived from thermal resistor."

CTS' use of "a force derived from applied weight" is appropriate. The "unstrained resistor" is mounted on the wing section of the substrate. The applied force acts on the "step section." The "step section" concentrates the force onto the "center section" which is adapted to flex in response. The wing section is configured such that it does not flex even if the center section does. Therefore, the resistor is not subject to the concentrated force acting on the "center section" which necessarily is a derivative of the gravitational force acting on the "step section."

TK again seeks to have the Court interpret the claim language to limit its scope to the preferred embodiment. In urging that the claimed resistor must be a "strain resistor whose resistance changes based on the strain from an applied force," TK is essentially saying that the claimed "unstrained resistor" must be a mechanical resistor. As CTS points out, this interpretation would improperly read out other types of resistors, such as thermal resistors. Claim 5 does not say "strain resistor." Rather, claim 5 simply states "resistor" and includes no restriction on the type of resistor, let alone a "strain resistor" that changes resistance based on strain from an applied force, as TK suggests. There is no clear and unmistakable indication that the unstrained resistor must be a mechanical strain resistor. The unstrained resistor is simply any type of resistor that is not experiencing any strain. In addition, "out of the strain path" refers to the configuration of the wing section, not the
unstrained resistor.

Moreover, claim 2 of the '361 patent expressly calls for strained as well as unstrained resistors of the strain gage to be connected so as to form a wheatstone bridge. '361 Pat., Col. 5, II. 28-30. Thus, according to the doctrine of claim differentiation, the scope of claim 5 cannot be limited to only resistors that respond to mechanical strain.

As such, the Court adopts CTS' proposed interpretation. The phrase, "unstrained resistor" means "a resistor mounted to the wing section but not subject to a force derived from applied weight."

D. Claims 1 & 9: "unstretched original length"

The parties generally agree that this claim should be defined as "the length of the stretched plastic film before mechanical elongation." Pliant seeks to add the word "solid" before stretched plastic film, so as to distinguish this element of the claim from the processes for producing plastic film. Yet there is no basis in the specification (or elsewhere) for adding this term. Pliant's proposed construction is unnecessary given the unambiguous meaning of the claim language and is potentially confusing. Therefore, the term "unstretched original length" is construed as "the length of the stretched plastic film before mechanical elongation."

E. "Upon"

Testing in Claim 8 comprises, inter alia, "performing predetermined operations which provide a predetermined expected response from the removable article upon the existence of correct alignment and electrical contact." As with "when," the parties dispute whether the response must be given "as soon as" the existence of correct alignment and electrical contact is detected or whether the response is given "on condition that" alignment and contact are detected, against without a temporal limitation.

The ALJ determined that "upon" had no temporal component. ID at 51 & n.18. The Commission did not review that decision.

This Court finds that for many of the same reasons that "when" is construed in its temporal sense, "upon" must also mean "as soon as." Like "when," the term "upon" has as an ordinary meaning either construction. To determine which prevails, attention must be given to the purpose of the claim in question. See Renishaw, 158 F.3d at 1251-52. As a dependent claim, Claim 8 shares independent Claim 1’s purpose in the testing step "to facilitate the rapid placement in contact because as soon as this has been done, the process stops." Col 2, Ins 23-24. Because "stopping . . . when" requires a rapid response to the existence of correct alignment and electrical contact so too does the predetermined expected response to those conditions require a rapid response to provide for rapid stopping.

G. "upon activation"

The parties dispute the meaning of the term "upon activation" as it appears in claims 37, 38, 39, 41, 42, 43, 45, 46, and 47 of the '748 Patent. Synovis contends that no construction is necessary, but if the Court decides to construe the term, it should be construed as "immediately following or very soon after activation." (Joint Statement at 22.) Gore, on the other hand, asserts that the Court should construe "upon activation" as "as a result of activation." (Id.) The difference between the parties' proposed construction centers on the requirement in Gore's proposed construction of a causal relationship between the activation of the stapler and the severance of the second region.
Synovis asserts that its construction captures the commonly understood meaning of the work "upon," which connotes a temporal relationship between events. In support of its proposed construction, Gore cites to portions of the specification, which, it argues, supports a causal relationship. These include the following: "The former region is severed and discarded upon activation of the stapler to form an anastomoses." (Abstract.) "[T]o permit the removal of one or more portions of a second region of the buttress material upon activation of a stapler knife provided by the stapler." ('748 Patent c. 2, 11: 52-55); "Preferably, the one or more portions of the second region are adapted to be removed from the tissue site upon activation of the stapler knife." ('748 Patent c. 3, 11: 44-47); "Simultaneously, or thereafter, the distal end of an annular scalpel (40) is extended through the sandwiched tissue and buttress material, until it bottoms out in a recessed annular ring within the anvil, thereby severing an inner ring of the sandwiched tissue/buttress material." ('748 Patent, c. 6, 11: 38-41.) Gore maintains that the specification makes clear that the second region is severed from the first region as a result of the activation of the stapler.

The Court concludes that the term "upon activation" does not require a causal relationship between two events. For example, claim 37 provides in part: "wherein one or more portions of the second region [of buttress material] are adapted to be removed from the tissue site upon formation of the staple seam and activation of a stapler knife." Nothing in the claim language or specification suggests that the use of the term "upon activation" requires the activation of the stapler knife to cause the removal of the second region of buttress material. Therefore, the Court believes that the use of Gore's proposed construction would only add confusion to an otherwise understandable term. Thus, the Court declines to construe the term.

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1. "upon plug" (claims 1 and 6)

The parties agree that the term to be construed should be "upon plugging" rather than "upon plug." The plaintiff argues that the plain meaning of "upon plug" is "after plugging." The plaintiff states that there is no time limitation associated with this term and that it should not be construed to include a causal limitation.

The defendant's position is that events occur in the claims only after the portable storage device is plugged into the USB or IEEE 1394 interface. Therefore, the subsequent events must be direct consequences of plugging in the device. The defendant argues against the plaintiff's construction by, inter alia, stating that construing "upon plug" to mean "after being plugged in" is no limitation at all. But the defendant fails to provide a tenable argument to the court for further limiting the claim term.

The specification makes it clear that various events occur when the external storage device is plugged in. The specification, however, does not support importing a causal limitation into this claim term. For example, consider the following passages from the specification:

When the external storage device is plugged into the data processing host, the firmware coordinates with the driver in the operating system to accomplish the initialization of the device.

Col. 4, ll. 32-35.

When the external storage device is plugged into the data processing host, the driver coordinates with the firmware to accomplish the initialization of the device and notifies the operating system to assign and display a device symbol for the external storage device (steps S2, S2), then waits for the operation request.

Col. 4, ll. 47-52.

The defendant fail to support its argument that "upon plug" must require the limitation "as a direct consequence." The record does not support that limitation.

The court defines "upon plug" to mean "after being plugged in."

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5. Claim 1 - "upper edge"

Bradford proposes that "upper edge" means "an extremity higher in place or position." Defendants suggest that "upper edge" means an "edge that faces upwardly (e.g., it does not face sidewardly)". "Upper edge" is a further limitation on the "dunnage structure" in that, inter alia, "the dunnage structure has an upper edge with a longitudinal axis." The dispute here is whether "upper edge" imposes a limitation as to the container's loading orientation, i.e., whether it is top loading only or whether the patent also claims a side-loading container. The Court concurs with Defendants' proposed definition of "upper edge".

Initially, as Defendants correctly argue, in prosecuting the '096 Patent, which is a continuation in part application of the '916 Patent, which in turn is a divisional application of the '119 Patent, Bradford distinguished the invention claimed in the '096 Patent from the '119 Patent to overcome the Examiner's rejection on the grounds of obviousness-type double patenting. Specifically, Bradford argued:

Claims 1-18 are also rejected under the judicially created doctrine of obviousness-type double patenting over the Bradford et al. patent, as modified by Rader. However, as illustrated in Bradford et al., the container therein, and its associated dunnage, is accessed from the top of the container. As such, the Bradford et al. reference clearly does not teach a dunnage structure having an open end which is in alignment with an open area of a side structure to allow access of the dunnage structure for transferring product into and out of the dunnage structure from a side of the container.

Doc. No. 48-4, at 8. Thus, the prosecution history indicates that even Bradford believes that the '119 Patent does not teach a container in which the dunnage structure is accessible from the side. See Laitram Corp. v. Morehouse Ind., Inc., 143 F.3d 1456, 1462 (Fed. Cir. 1998) ("Regardless of the examiner's motives, arguments made during prosecution shed light on what the applicant meant by its various terms."). Therefore, the prosecution history supports Defendants' contention that "upper edge" requires an upward orientation.

The Court further observes that the drawings of the various embodiments in the '119 Patent show containers in which the dunnage structure has an upward orientation. The lone possible exception is the embodiment shown in Figures 4 and 5. As discussed earlier, this embodiment of the invention utilizes folding or telescoping legs to collapse the container. While it is technically possible to access the dunnage structure from the side in this embodiment, the top member of the frame obstructs the top portion of the dunnage structure. Thus, side loading with this embodiment does not permit utilization of all of the available shipping volume in the container. The result would be that the shipper would use more shipping space than was actually needed to ship his product. Consequently, using the claimed invention in this manner would be inefficient and counter to the stated objective of reducing "the overall shipping costs associated with shipping product." '119 Patent, col. 2, ll. 44-46. See, e.g., Carroll Touch, Inc. v. Electro Mech. Sys., Inc., 15 F.3d 1573, 1578 (Fed. Cir. 1993) (rejecting patentee's proposed claim construction on the grounds that the invention would then be unable to achieve its stated objective).

The Court concludes that the "upper edge" must be facing upwardly. Accordingly, the Court holds that "upper edge" means an "edge that faces upwardly (e.g., it does not face sidewardly).

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1. Upper Handguard Piece

Troy proposes construing "upper handguard piece" as meaning "a front grip for a firearm to protect the hands of the user from the heat of the barrel, which attaches to the upper receiver." ARMS proposes a definition of "a device for use on a firearm that surrounds, at least partly, but does not touch, the top of the barrel."

Figure 5 from the '465 Patent depicts the upper handguard piece and the lower handguard piece:

[SEE FIG. 5 IN ORIGINAL]
Both parties define "upper handguard piece" using limitations not found in the claims. Particularly, Defendants seek a limitation of attachment to the upper receiver via a receiver sleeve. They argue that because every mention of "upper handguard piece" in the specification is accompanied by a reference to a receiver sleeve, the term should be construed to include attachment to the upper receiver via a receiver sleeve. See, e.g., '465 Patent col. 6, ll. 39-41, col. 10, ll. 22-25. This, however, is an attempt to import needless limitations from the specification.

Defendants also argue that because the '465 Patent repeatedly defines "the present invention" to include attaching the upper handguard piece to the upper receiver via a receiver sleeve, "upper handguard piece" must be construed to include attachment to the upper receiver via a receiver sleeve. The phrase "the present invention" may limit the meaning of claim terms if a contrary result is not warranted. See Netcraft Corp. v. Ebay, Inc., 549 F.3d 1394, 1398 (Fed. Cir. 2008). However, the phrase does not limit the meaning of claim terms "automatically," and "such language must be read in the context of the entire specification and prosecution history." Id.

Here, the prosecution history is revealing. The '465 Patent is a reissue of the '245 Patent. Although the specification remained the same in the reissued patent, claims 11-36 were newly added. As Richard Swan, the inventor of the '245 Patent, declared during the prosecution of the reissue patent, he was seeking the reissue patent because

[the Applicant's attorney failed to appreciate the full scope of the invention. Claims 1 and 6 are directed to a modular sleeve for attaching modular enhancements to a firearm, each reciting a universal receiver sleeve, an upper handguard, a lower handguard and a U-shaped device (yoke). The invention lies, at least in part, in the unique clamping arrangement of the yoke and the upper handguard. However, each of the claimed elements is described with narrow specificity and includes details entirely unrelated and unnecessary to define the underlying yoke invention. Failing to appreciate the full scope of the invention relating to the yoke element and its unique role in engaging the barrel nut and supporting the upper handguard on the upper receiver, the Applicant's attorney too narrowly defined the universal receiver sleeve, the upper handguard, the bottom handguard and the U-shaped device (yoke). By including overly narrow limitations in the peripheral elements and in the yoke itself, in the independent claims, all of the claims are rendered wholly or partially inoperative for protecting the full scope of the invention.

(Pl.'s Br. in Resp. Ex. 7 at 2.) The prosecution history thus reveals that claim 31 was added in part because the earlier patent had too narrowly defined the upper handguard and understated the support provided by the U-shaped device. Original claims 1 and 6 specifically state that the upper handguard piece is "joined to the underside of the forward portion of the receiver sleeve," and the receiver sleeve, in turn, is "fixedly attached to the firearm receiver top." '465 Patent col. 11, ll. 33-34, 40-42; '465 Patent col. 12, ll. 62-64, col. 13, ll. 3-5. Additionally, the U-shaped device is not described as providing support to the upper handguard. '465 Patent col. 11, l. 63 - col. 12, l. 15; '465 Patent col. 13, ll. 28-50. Newly added claim 31, on the other hand, does not describe the upper handguard piece as connected to the receiver sleeve or upper receiver, and describes the U-shaped device as "engag[ing] . . . [the] barrel nut and thereby support[ing] [the] upper handguard piece relative to [the] barrel nut." '465 Patent col. 17, ll. 10-12. Claim 31 thus eliminates the requirement that the upper handguard piece be connected to the upper receiver via a receiver sleeve, such that "upper handguard piece" is no longer "too narrowly defined," and describes the U-shaped device's "unique role in engaging the barrel nut and supporting the upper handguard on the upper receiver." (Pl.'s Br. in Resp. Ex. 7 at 2.)

In response, the Defendants argue that the prosecution history actually favors them, because Swan's declaration refers to the yoke element's "unique role in engaging the barrel nut and supporting the upper handguard on the upper receiver," thereby indicating that the upper handguard must be attached to the upper receiver via a receiver sleeve. (Id. (emphasis added).) The language of claim 31, however, indicates that the barrel nut is attached to the upper "barrel receiving receptacle" at the forward end of the receiver. As the upper handguard is supported by the yoke and barrel nut, the upper handguard is therefore supported on the barrel nut at the barrel receiving receptacle on the upper receiver. '465 Patent, col. 16, ll. 62-67 (the "receiver [has] . . . a barrel receiving receptacle," and the "barrel nut [is] received around . . . [the] barrel receiving receptacle"). While the Swan declaration does have some ambiguity, it does not support the Defendants when the claim language is viewed in its entirety. The prosecution history thus indicates that the use of the phrase "the present invention" does not limit the meaning of "upper handguard piece" to require attachment to the upper receiver via a receiver sleeve.

Construing "upper handguard piece" not to require attachment to the upper receiver via a receiver sleeve also satisfies the doctrine of claim differentiation. While the claims in the initial patent describe the upper handguard piece as attaching to the
upper receiver via a receiver sleeve, claims 31-36 do not. Terms should not be construed in a way that "wound render additional, or different, language in another independent claim superfluous." Curtiss-Wright Flow Control Corp. v. Z & J Techs. GmbH, 563 F. Supp. 2d 1109, 1118 (C.D. Cal. 2007). If "upper handguard piece" were construed to require attachment to the upper receiver via a receiver sleeve, the language in the earlier claims specifically noting the attachment would be rendered superfluous.

Thus the plain meaning of the term controls. The term "upper handguard piece" plainly refers to the upper portion of the handguard, that is, the portion which is situated above the barrel. Nothing in claim 31 specifies any other limitation.

As used in claim 31 of the '465 Patent, "upper handguard piece" means the portion of the handguard located above the barrel.

D. "First and Second Upper Mounting Portions"

The phrase "first and second upper mounting portions" is found only in Claim 6 of the '803 patent, and refers to the upper mounting surfaces of the top of the steel frames. TBC's proposed construction seeks to incorporate the same "downward angle" limitation described above into the definition of the claim term. Specifically, TBC proposes the claim term be defined as: "A first mounting portion comprising a first surface on the vertical frames and a second mounting portion comprising a second surface on the vertical frames inclined at a downward angle in relation to the first surface." As set forth below, the Court rejects TBC's proposed construction.

The specification describes the top of the steel frame as "preferably" inclined, so that the upper surface of the second rail extrusion, when mounted, will be (automatically) disposed at a downward angle with respect to the upper surface of the first rail extrusion. There is nothing in the claim language of the '803 patent or the common specification to suggest that this preferred embodiment of the steel frames should constitute the outer limits of its construction. In other words, there is nothing to suggest that in all embodiments of the invention, the first and second mounting portions of the steel frame must be disposed at any relative angle of incline. TBC has provided no persuasive reason for importing a downward angle limitation into the definition of the upper mounting portions of the steel frames in the '803 patent, particularly where that limitation is not found in the claims of either the earlier '088 or '712 patents.

Thus, the Court adopts Forecast's proposed construction of "first and second upper mounting portions": "First and second portions of a top of the vertical frames to which an object may be mounted."

4. Claim 1, Element 4, "upper and lower portions"

BMS defines "upper and lower portions" in some detail as follows:

"The upper portion of a side jamb is that portion which is in contact on an upper end with a top jamb and whose lower end is protected by the lower portion from environmental factors. The lower portion is that portion of a side jamb in contact with the lower end of an upper portion, that substitutes a material other than natural wood for what would other wise be natural wood in a standard side jamb thereby protecting the lower end of the upper portion from environmental factors."

Endura counters with a three-part proposal, in which:

(a.) '"Portion' means some part that is less than the whole;" (b.) '"Upper' means that it is relatively vertically higher than a portion that is lower;" and (c.) '"Lower' means that it is relatively vertically lower than a portion that is upper."

BMS's proposal would use the definition of three words to describe virtually the entire invention. If this definition were
accepted there would be no need for anything in claim 1 after the words "integrally formed." Endura's proposal is somewhat circular, as it describes "upper" as above "lower," and "lower" as above "upper," which is an inherent problem in defining some very basic words which indicate relative position.

The claim describes "upper and lower portions" in the context of side jambs, which by their nature are understood to be vertical. Not every word in a patent is a technical term, and the common meaning of "upper" is "higher in physical position." Merriam-Webster's Collegiate Dictionary 1294 (10th ed. 2002); see also Websters Encyclopedic Unabridged Dictionary of the English Language 1570 (1989) ("higher, as in place . . . ."). In some contexts it might not even be necessary to provide the jury with a definition of such words, as they could simply be instructed that words which are not defined are to be given their common everyday meaning.

However, in this case, underlying technology could make the terms "upper" and "lower" confusing, without a definition. This is because the side jambs are "engineered," that is, constructed from a number of pieces of wood. The invention simply uses a durable material to replace the lowest of the pieces which are joined together to produce the jamb. Therefore, there may be any number of pieces of wood which may be higher than, or above, other pieces, when the jamb is in place. It would not be helpful to leave an inference that the durable material of this invention could be one of the intermediate pieces. Therefore the court defines these claim terms as follows:

"upper portion" means: "that part of the jamb, which is less than the whole, made up of one or more pieces joined together, and which is higher in physical position in the jamb than the lower portion."

"lower portion" means: "the part of the jamb different than the upper portion, which is joined to the lower end of the upper portion."

4. "Upper surface"

Microthin urges the Court to construe "upper surface" to mean "surface of the plastic sheet that is opposite the lower surface and faces away from the surface on which the mat or pad rests, it is the surface that is contacted or acted upon by the user." SiliconeZone again argues that "upper surface" has a plain and ordinary meaning understandable to the ordinary person skilled in the art such that no construction is required.

Once "lower surface" has been construed, an ordinary person skilled in the art would understand "upper surface" to be the surface opposite the lower surface. However, nothing from the claim language or the specification requires reading into the claim the added limitation that the upper surface be "contacted or acted upon by the user," nor does this limitation add any clarity in construing "upper surface." Therefore, the Court construes "upper surface" to mean "surface of the plastic sheet that is opposite the lower surface and faces away from the surface on which the mat or pad rests."

1. "Upper Surface" and "Lower Surface"

Both the method and product claims of the patents-in-suit describe the first and second garment components and the bonding element as each having an "upper surface" and a "lower surface." For example, in Claim 1 of the 779 Patent, a method claim, step (d) of the seam manufacturing process requires "folding the first garment component over the bonding element such that the upper surface of the first garment component is folded over and abuts an upper surface of the bonding element," and step (e) requires "folding a portion of the second garment component such that a lower surface of the second garment component abuts the lower surface of the bonding element." 779 Patent at 6:40-47 (emphasis added). In Claim 20 of the 779 Patent, a product claim, the seam is defined as comprising "a bonding element . . . having an upper and lower surface," "a first garment component having an upper and lower surface," and "a second garment component having an upper and lower surface." 779 Patent at 8:7-19 (emphasis added). The 615 Patent similarly uses the terms in Claims 1 and
19, method and product claims, respectively. See, e.g., 615 Patent at 6:48-51, 8:4-16. Taltech asks the Court to construe "upper surface" and "lower surface" to have different meanings depending on whether the terms appear in the method or the product claims. Regarding the method claims, Taltech construes the terms as follows:

Upper surface and lower surface are designated at the time the first set stitch is applied to fix the garment components and bonding element together, and the upper and lower surfaces of a component/element are opposing surfaces through a thickness of the component/element, providing that the upper surface and lower surface designations of the garment components remain consistent around folds required in the claim.

Regarding the product claims, Taltech construes the terms as follows:

Upper and lower surfaces of a component/element in the final seam are opposing surfaces through a thickness of a component/element, providing that the upper surface and lower surface designations of the garment components remain consistent around folds required in the claim.

The words in italics show how the two definitions differ from each other. Taltech relies on the claims, on the specifications, on the opinion of Taltech's expert, Mr. Jack Nienke, and on a technical treatise. Esquel asks the Court to construe the terms the same for method and product claims:

The terms "upper surface" and "lower surface," as applied to each of the first and second garment components and the bonding element, mean the entire surface of each that is oriented up or down, respectively, as discerned at the beginning of the seam manufacturing process when the components are flat, such that there is only a single upper surface and a single lower surface for each garment component and the bonding element and the designation of a surface as upper and lower does not change regardless of any subsequent folding or other reorientation of a garment component or the bonding element.

Esquel relies on the specifications and on the ordinary meanings of the terms.

The Court must decide four separate issues: first, whether the Court should construe the terms differently depending on whether the terms appear in method or product claims; second, when the terms must be defined; third, whether the terms require a particular orientation at the time of designation; and fourth, how to account for the manufacturing steps in the method claims and the structural folds in the product claims.

First, the Court must determine whether it may construe the terms differently depending on whether the terms appear in method or product claims. Based on the well-established patent law principle that "claim terms are normally used consistently throughout the patent," Phillips, 415 F.3d at 1314, Esquel argues that Taltech has improperly submitted two different proposed constructions to the Court, one for its method claims and one for its product claims. Although none of the cases relied upon by Esquel squarely address the consistency issue across method and product claims, the cases repeatedly recite the "rule" requiring the same construction of a claim term that appears in more than one claim in a patent. See Nazomi Commc'ns, Inc. v. ARM Holdings, PLC, 403 F.3d 1364, 1370 (Fed. Cir. 2005); Dayco Prods., Inc. v. Total Containment, Inc., 329 F.3d 1358, 1371 (Fed. Cir. 2003); CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1159 (Fed. Cir. 1997). Taltech has failed to bring any case to the Court's attention that provides an exception to the rule for claim construction across method and product claims.

Instead, Taltech argues that different constructions are necessary because of another well-established patent rule, which states that product claims are not limited by a particular manufacturing process. See AFG Indus., Inc. v. Cardinal IG Co., 375 F.3d 1367, 1372-73 (Fed. Cir. 2004) (declining to "impermissibly import a process limitation into a pure product claim"); Vanguard Prods. Corp. v. Parker Hannifin Corp., 234 F.3d 1370, 1372 (Fed. Cir. 2000) ("A novel product that meets the criteria of patentability is not limited to the process by which it was made."). The Court recognizes and honors this rule, but disagrees with Taltech's application of the rule to the present case. If the Court adopts the construction that Taltech has proposed for its method claims for all claims, there would not be any impermissible importation of a process limitation into Taltech's product claims. Taltech's proposed construction for its method claims merely designates the "upper" and "lower" surfaces at the time the first set stitch is applied to fix the garment components and the bonding element together. This fixing of garment components and the bonding element together by a first set stitch is already required by the language of Taltech's product claims. In other words, Claim 20 of the 779 Patent and Claim 19 of the 615 Patent define the invention as comprising, in part, a first set stitch that fixes the garment components and the bonding element together. 779 Patent at 8:25-
30; 615 Patent at 8:17-22. Thus, Taltech's proposed construction for its method claims does not import any limitation into the product claims that does not already exist. The Court construes the terms "upper surface" and "lower surface" the same across all method and product claims.

Second, the Court must determine the point in the manufacturing process when these labels are attached. Regarding its method claims, Taltech argues that the designations should be made when the first stitch is applied. For its product claims, Taltech argues that the designations refer to the final seam. Esquel argues that the designations should be made "at the beginning of the seam manufacturing process when the components are flat." Esquel's proposed construction is vague and improperly limits the claims to require the garment components to be flat. The Court finds Taltech's proposed construction for its method claims more specific and more accurate. The first set stitch is what fixes the positions of the garment components and the bonding element with respect to each other. See Claim 1(c) of the 779 Patent at 6:37-39; Claim 1(d) of the 615 Patent 6:44-47.

This construction regarding the timing of the designation of "upper surface" and "lower surface" is consistent with the specifications. Figures 3a and 4a show that the orientation of upper and lower surfaces of the garment components and the bonding element are meaningful only when they are brought together to form a seam, which is at the point in the seam manufacturing process when the first set stitch is applied. This construction is also consistent with the extrinsic evidence. Taltech's expert, Mr. Nienke, asserts that one of ordinary skill in the art would understand that the appropriate time of designating the upper and lower surfaces is at the time of applying the first set stitch because it is at this time that the garment components are actually fixed together to build the seam. Nienke Decl., docket no. 96, P 16. The technical treatise submitted by Taltech illustrates that stitches provide meaning for the relative positions of flat or folded fabrics in seams. See Harold Carr & Barbara Latham, The Technology of Clothing Manufacture 46 (2d ed. Blackwell Sciences 1994) (docket no. 94, Ex. G at 46).

Third, the Court must determine whether the terms require a particular orientation at the time of designation. Taltech argues that the terms merely denote relative surfaces and thus no particular orientation is required. Esquel argues that the "upper surface" faces up and that the "lower surface" faces down at the time of designation. Taltech argues that "[c]ase precedent could not be more clear" that "upper and lower surfaces are not limited to those that point upward and downward, respectively." Taltech's Responsive Brief, docket no. 108, at 6 (citing Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F.3d 1354 (Fed. Cir. 2004)). Taltech misreads Lighting World, which states that "[n]othing in the patent suggests that the upper surface of the support member ceases to be the upper surface if the fixture is turned upside down or placed in some other orientation." 382 F.3d at 1365 (emphasis added). Lighting World implies that an "upper surface" of an object faces up at the time of designation and then retains its "upper" designation even if it later faces some other orientation. The widely accepted and ordinary meaning of "upper" is to face up and "lower" is to face down. Taltech does not argue that a person of ordinary skill in the art would otherwise interpret the terms. These terms must be construed to carry their ordinary meaning. See Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1562 (Fed. Cir. 1991) ("All the limitations of a claim must be considered meaningful . . ."). The specifications also show a particular orientation at the time of designation. Figures 3a and 4a show the "upper surface" of the garment components and bonding element facing up and the "lower surfaces" facing down at the time the first set stitch 38 is applied, so long as the labeling in Figure 4a takes place on the unfolded portion of the second garment component. 2 See 779 Patent at 4:4-14, 5:31-42; 615 Patent at 4:5-15, 5:32-43; Figs. 3a and 4a. For these reasons, the Court concludes that a particular orientation is required at the time of designation. Lighting World does not conflict with this conclusion.

The Court declines to adopt Esquel's proposed convention for labeling the surfaces from the bottom of the seam construction and working upwards, see Esquel's Supplemental Brief, docket no. 140, at 13-15, because it improperly imports a limitation from a preferred embodiment into the claims.

Fourth, the Court must account for the manufacturing steps in the method claims and the structural folds in the product claims. Taltech's proposed construction uses language that refers to the folding of the garment components, whereas Esquel's proposed construction refers to "any subsequent folding or other reorientation of a garment component or the bonding element." Because the claims do not include any folding of the bonding element, Esquel's inclusion of the bonding element is erroneous. See Claim 1(d) and 1(e) and Claim 20 of the 779 Patent at 6:40-46, 8:10-24; Claim 1(e) and 19 of the 615 Patent at 6:48-51, 8:23-26. Furthermore, Esquel's reference to "any subsequent folding or other reorientation" is vague. Accordingly, the Court adopts Taltech's proposed construction, with modification, and construes the terms "upper surface" and "lower surface," for both method and product claims, as follows:
"Upper surface" and "lower surface" are designated at the time the first set stitch is applied, and the upper and lower surfaces of a component/element are opposing surfaces through a thickness of the component/element, providing that the "upper surface" faces upward and the "lower surface" faces downward at the time of designation along the unfolded portions of the garment components, and providing that the upper surface and lower surface designations of the garment components remain consistent around folds required in the claim.

1. Construction of Claim 12

In fulfilling its duty to construe the claims of the '244 patent, this court is free to consult "the claim language, the written description portion of the specification, the prosecution history, [as well as] extrinsic evidence." Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1476 (Fed. Cir. 1998); Markman v. Westview Instruments, Inc., 517 U.S. 370, 384, 116 S. Ct. 1384, 1393, 134 L. Ed. 2d 577 (1996). Claim 12 of the '244 patent provides in pertinent part that each reclining seat, having a backrest and seat cushion, must be "movable between upright and reclined positions." '244 patent; col. 5, ll. 10-11. The material question regarding the construction of this portion of claim 12 is whether it requires that the backrest itself be movable or whether a "seat" can be movable between the upright position and the reclined position without the backrest necessarily moving.

Claim 12 does not specifically state whether the seat's backrest must move in order for the seat itself to be movable between the upright and the reclined positions. Likewise, the claim does not specifically define the terms "upright position" and "reclined position." However, two of the drawings GFI submitted as part of the '244 patent's specification shed light on how the terms "upright position" and "reclined position" are to be defined.

In the specification section labeled "Brief Description of the Drawings", GFI describes Figure 3A as representing the "upright" position and Figure 3C as illustrating the "reclined" position. '244 patent; col. 2. These figures clearly demonstrate that a seat cannot move between the "upright" position and the "reclined" position unless it has a movable backrest. Therefore, after careful consideration of the claim language as well as language and drawings contained in the specification, this court construes claim 12 as requiring that each seat contain a movable backrest.

Additionally, Parkhill has requested that this court construe one element of claim 12, namely column 5 lines 22-27, as being a "means-plus-function" element and subject to a structural equivalence analysis in accordance with 35 U.S.C. § 112(6) instead of a traditional doctrine of equivalents analysis. The court finds this element to be a means-plus-function element subject to 35 U.S.C. § 112(6) and it will be analyzed in accordance with the dictates of that statute.

1. "upright standing manner" (or similar)

SVA and Royal seek a construction of these terms that would require a product, at all times, to be supported from its base with its bottom end resting perpendicular on a surface. The defendants take issue with Crane's construction because they contend that it disregards the term "standing." The court is not persuaded by SVA and Royal's argument. A reading of the phrase in the context of the claim language and the specification as a whole does not suggest that the product must be, at all times, positioned as the defendants propose. This is especially true in light of the patents' "robotic arm" embodiment, in which "a robotic arm [] grasps and lifts the selected beverage container in to the carriage frame assembly," and the patent's alternate configuration in which, "[t]he beverage capture assembly further includes a . . . circular detent portion formed therein for retaining the bottom edge of a beverage container . . . ." '930 Patent, col. 14, ll. 32-34; col. 15, ll. 21-26 (emphasis added).
For its part, Crane seeks to define the term by the orientation of the product labeling. The court is not convinced that the terms should be defined in this way. Crane's requirement that the labels be "correctly oriented" is divorced from the citations in the patent Crane relies upon for support. Each of the two citations to the specification and the one citation to the patent prosecution history discusses "visibility" of the labels, without mention of their orientation. See ‘930 Patent, col. 1, II. 57-67; col. 3, II. 34-37; ‘930 Patent Prosecution History, Resp. dated Feb. 7, 2000, at 14-15.

Based on the claim language, read in light of the intrinsic record, the court defines "upright standing manner," "standing upright manner," and "upright manner" as "having a generally vertical orientation, corresponding to that of a beverage container or other product."

D. Claims 4 and 10 Were Anticipated by Prior Art

As noted above, all of the remaining claims are dependent on Claim 1, meaning that they each incorporate Claim 1 by reference and add a single limitation to it. See 35 U.S.C. § 112; Robotic Vision Systems, Inc. v. View Engineering, Inc., 189 F.3d 1370, 1376 (Fed.Cir.1999). In a prior decision, this Court held Claim 1 invalid because each of its elements was anticipated by prior art. Display Technologies, Inc. v. Paul Flum Ideas, Inc., 75 F. Supp. 2d 283 (S.D.N.Y. 1999).

Specifically, this Court held that "each of the elements of Claim 1 [was] fully anticipated by" United States Patent No. 2,572,090 ("Refrigerator Rack Bottle Guide") (the "Allen Patent") in 1951, and also by United States Patent No. 2,218,444 ("Merchandise Dispenser") (the "Vineyard Patent") in 1940. Id. at 291, 292. Because this Court has found as a matter of fact that Claim 1 was anticipated by prior art, the proper inquiry here is whether the limitations the remaining claims add to Claim 1 were anticipated by or obvious in light of prior patents.

As described above, the 1997 PTO's Notice of Allowability related only to the structure defining the aperture, to the portion of the lead article viewable through the aperture, and to the telescopic receipt of the recesses with the front and back walls or rod members associated with the underlying support shelf. Flum argues that because none of the limitations addressed by dependent claims 2-4, 7-11 or 17 are set forth in the PTO Examiner's reasons for allowance of the '176 Patent, and none of these additional features are separately patentable, each of the remaining claims must fall with the invalidity of Claim 1.

Claim 4 adds the limitation of a rectangular aperture to Claim 1 using the following language:

4. the display rack of claim 1 wherein the bottom of said front member, the front of said track, and the front of said sidewalls define a generally rectangular aperture.

Claim 10 further limits Claim 1 by providing for:

10. The display rack of claim 1 wherein the front of said track is devoid of any transversely extending upstanding lip or wall.

An "upstanding lip or wall" is defined as any member provided at the front of the track which either cooperates with the front member in stopping the forward movement of an article or at least does not interfere with the functioning of the front member in this regard. Col 6, lines 43-54 of the '176 Patent. A "transversely extending" lip or wall would extend at least partially across the track. As such, Claim 10 requires that there be no member that extends upwardly from and across the track.

The first "downwardly and away" limitation recites: "rotating the receiving means downwardly and away from said first conveyor means to urge the received eggs downwardly." The district court construed this claim language: "The receiving means * must be rotated downwardly (i.e. toward the ground) and be rotated away from the main egg-carrying conveyor from which the eggs are released." With some slight clarification, the district court construed this claim limitation correctly.
The slight clarification notes that the limitation constrains the motion of the received eggs as well as the motion of the receiving means. Specifically, the first "downwardly and away" limitation also requires that the receiving means move the eggs downwardly.

* The district court determined that the language "receiving means" does not invoke § 112, P 6. As the district court's failure to construe this limitation as means-plus-function is not disputed by the parties, this court offers no judgment on the correctness of that determination.

The claim recites that the receiving means "urges the received eggs downwardly." The patent does not explicitly define "urge." In one sense, "to urge" means simply to press or to push. See, e.g., The Oxford English Dictionary (2d ed. 1989). This meaning of "urge," however, would place the preferred embodiment outside the claim scope. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996) (a claim interpretation that puts the preferred embodiment outside the claim scope is "rarely, if ever, correct and would require a highly persuasive evidentiary support."). Moreover this definition of "urge" makes infringement depend on the downward force exerted on the eggs by the rotating receiving means. A receiving means, such as that shown in Fig. 4 of the '494 patent, may rotate downward slowly and support the received eggs against the force of gravity. In doing so, the downward rotation would exert an upward force on the received eggs, i.e., it would "urge" the received eggs upward rather than downward as claim 28 requires. The patent does not show, however, that the downward force is a defining limitation.

Another ordinary meaning of "to urge" avoids exclusion of the preferred embodiment from the claims. Specifically, "to urge" may mean "to cause to move, hasten, or gather speed." The Oxford English Dictionary (2d ed. 1989). This definition receives support from the patent specification. The specification clarifies that "to urge" means broadly to move or to carry and that the receiving means may slow the motion of the eggs. For example, the patent specification notes that the receiving means "reduces the speed at which the eggs fall and gently moves the eggs downwardly and outwardly away from carriage assemblies." '494 patent, col. 5, ll. 55-57 (emphasis added); see also Id. col. 6, ll. 64-64, col. 7, ll. 1-3. Thus, in the context of this patent, this court employs the broader meaning of "to urge," namely, to cause to move.

Plaintiff argues that "urging in movement" means "stuffing." Plaintiff Br. at "Ex. F," while defendants construe the phrase to mean "inserting into the projectile compartment in an organized fashion," Def. Br. at 8. Defendants note that in the summary of the invention section of the patent, the manner in which the projectile is loaded into the weapon shell is highlighted. '086 patent, 1:60-65 ("More particularly, it is an object [of the present invention] to impose a low lethality contacting surface of the projectile at impact by the manner in which it is loaded into a weapon shell…."). Defendants argue that plaintiff's proposed construction of "stuffing" the body into the compartment is inconsistent with the invention description and with the preferred embodiment described in the patent.

Plaintiff responds that defendants are attempting to read limitations from plaintiff's prior '562 patent into the '086 patent claims. Plaintiff notes that it may recapture subject matter from the '562 patent that was disclosed in that patent but not claimed, including the more general method for inserting the projectile body into the shotgun shell, which includes, but is not limited to, the folding method of insertion that was claimed in the '562 patent. See Johnson & Johnston Assocs. Inc. v. R.E. Serv. Co., 285 F.3d 1046, 1055 (Fed. Cir. 2002)("A patentee who inadvertently fails to claim disclosed subject matter, however, is not left without remedy….a patentee can file a separate application claiming the disclosed subject matter under 35 U.S.C. § 120 (2000) (allowing filing as a continuation application if filed before all applications in the chain issue.").

Defendants' proposed construction does not comport with the ordinary meaning of "urging in movement," which is "pushing" or "pressing forward." Nothing in the claim language indicates that the tail must first be folded or otherwise inserted in an "organized fashion." Defendants derive this limitation from language in the specification describing the
"preferred loading sequence," in which "the tail [] is folded into a resulting bulk...and in this folded configuration is urged in movement [] into the compartment."'086 patent, 4:5-7. However, this is not a case in which "the preferred embodiment is described in the specification as the invention itself," such as to allow limitations from the specification to be read into the claim language. See Modine Mfg. Co., 75 F.3d at 1551 (reviewing specification and prosecution history of patent, during which patent seeker argued that narrower "peak heat range" was what was "sought to be covered by the applicant," and concluding that invention was thus limited to hydraulic diameters in the narrower peak heat range). "Urging in movement" is therefore construed to mean "pushing."

4315

a. "urinary bladder submucosa"

ACell asserts that the district court erred in construing the term "urinary bladder submucosa" in claims 1, 7, and 8 of the '389 patent. ACell asserts that the PTO did not grant the '389 patent inventors a patent to the naturally occurring submucosa layer of a urinary bladder, but rather that it granted them a patent covering a tissue graft composition derived from that layer. ACell argues that the '389 specification makes clear that "urinary bladder submucosa" is a defined term which was defined to expressly exclude other urinary bladder tissue layers, specifically the abluminal muscle cell layers and at least the luminal portion of the tunica mucosa layer.

Cook argues that the '389 patent specification, specifically in the "DETAILED DESCRIPTION OF THE INVENTION" section, teaches that the term "urinary bladder submucosa" is broader than ACell's proposed construction because it states that the resulting composition "typically" consists essentially of urinary bladder submucosa. Cook thus asserts that the use of "typically" implies that there is another possible embodiment of the claimed composition that merely comprises urinary bladder submucosa, but may also include other tissues.

As noted above, claim 1 recites: "A composition comprising urinary bladder submucosa delaminated from both the aboluminal muscle layers and at least the luminal portion of the tunica mucosa of a segment of a urinary bladder of a warm-blooded vertebrate." '389 patent, col. 5, ll. 20-23 (emphasis added). The '389 patent specification, in the "BACKGROUND AND SUMMARY OF THE INVENTION" section, states that "[u]rinary bladder submucosa for use in accordance with the present invention is delaminated from the abluminal muscle layers and at least the luminal portion of the tunica mucosa of the urinary bladder tissue." Id. at col. 1, ll. 55-58 (emphasis added). The first paragraph of the "DETAILED DESCRIPTION OF THE INVENTION" section states:

The tissue graft composition in accordance with the present invention comprises urinary bladder submucosa of a warm-blooded vertebrate delaminated from adjacent bladder tissue layers. The present tissue graft composition thus comprises the bladder submucosa delaminated from aboluminal muscle cell layers and at least the luminal portion of the mucosal layer of a segment of urinary bladder of a warm-blooded vertebrate. Typically the delamination technique described below provides a tissue composition consisting essentially of urinary bladder submucosa. These compositions are referred to herein generically as urinary bladder submucosa (UBS).

Id. at col. 2, ll. 1-4 (emphases added).

"[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs." Phillips, 415 F.3d at 1316. We believe that this is exactly what the '389 patentees did in this case. As the above quoted portions of the specification indicate, the composition invented was defined to be "urinary bladder submucosa delaminated from aboluminal muscle cell layers and at least the luminal portion of the tunica mucosa of the urinary bladder tissue." See, e.g., '389 patent, col. 1, ll. 56-58. The specification also indicates that the resulting composition "typically" consists essentially of urinary bladder submucosa. Thus, while the composition clearly includes urinary bladder submucosa, it may also include other tissues, such as the non-luminal portion of the tunica mucosal layer. However, it cannot include that which was expressly excluded in the patentee's definition, i.e., the "aboluminal muscle cell layers and at least the luminal portion of the tunica mucosa." Therefore, we construe "urinary bladder submucosa" as it is defined in the '389 patent specification to mean "urinary bladder submucosa delaminated from the aboluminal muscle cell layers and at least the luminal portion of the tunica mucosa of the urinary bladder tissue," and it thus becomes necessary to determine which tissue layers are encompassed by the phrase "at least the
luminal portion of the tunica mucosa." 4

Because the parties' dispute does not involve the phrase "abluminal muscle cell layers," we do not address which tissue layers are referenced by that language.

4316

The phrase "used in a truck trailer" means "The retractable segmented cover systems is used with a trailer that is designed to be hauled by a truck."

4317

Claim 1 of the '960 patent is an independent claim that reads as follows as:

[a] A system for grounding a telephone system and an electrical power system, comprising:

[b] an electrical utility box for the electrical power system;

[c] a ground mechanism;

[d] a first electrical conductor connecting the ground mechanism to the utility box for electrically grounding the utility box;

[e] a clamping device connected to the utility box,

[f] and having securing means for penetrating the outer surface of the utility box without penetrating the inside of the utility box; and,

[g] a second electrical conductor for connecting the clamping device to the ground connection for the telephone system,

[h] whereby, the ground mechanism for the electrical power system serves the dual purpose of grounding the telephone system.

The parties disagree on the construction of elements [b], [c], [d], [e], [f], [g], and [h]. With respect to element [b] Senior Industries argues that "an electric utility box for electrical power" should be interpreted to mean "an enclosing structure (e.g., a box or cabinet), which holds components of electrical power equipment (e.g. a meter) and can also conduct electricity." Thomas and Betts, on the other hand, asserts that the term "an electrical utility box for electrical power" is limited to an electrically conductive hollow box enclosure (e.g. for mounting electrical power equipment). We look to the claim language, the specification and the prosecution history for an understanding of this element.

The claim language references "an enclosing structure." This language suggests that the box is hollow. Furthermore, the specification discloses an electric utility box as a metal box enclosure of rectangular shape which mounts a power meter. (See Exhibit A, Col. 3, lines 40-45). The specification notes that "while the system is illustrated in connection with an electric utility box, it will be apparent that the novel clamp 30 can be used any time an electrical and mechanical connection is to be made to a metal box enclosure." (See Exhibit A, Col. 4, lines 48-52). With respect to the metal box being hollow, this limitation was brought into the patent by an amendment by Senior Industries (See Amendment B, p.4). The meaning of the term "electrical utility box" is unambiguous in light of the intrinsic evidence. The written descriptions and the history lead us to conclude that the electrical utility box is hollow as Thomas and Betts asserts. Therefore, the proper construction
for element [b] is "an electrically conductive hollow box enclosure (e.g. for mounting electrical power equipment).

**4318**

5. Utilizing at least one of . . .

This phrase is found in Claims 9, 44, and 53 of the '193 Patent.

Phrase: Utilizing at least one of said instantaneous flow rate and said reference indicia to select one of said higher and said lower pressure magnitudes to be applied in the airway of such a patient.

Construction: Using the instantaneous flow rate or the average flow rate, or both, to determine whether to provide the previously selected higher pressure magnitude (for inhalation) or the previously selected lower pressure magnitude (for exhalation) to the patient.

Reasoning: This phrase adds the "at least one of" language to the previously construed claim language of the '802 patent. The parties do not dispute that the language means that either the instantaneous flow rate, or the reference indicia, or both, can be used to select between the higher and lower pressures. Again, the real dispute between the parties is as to the meaning of now previously defined terms such as "flow rate" and "selected higher and lower pressure magnitudes."

**4319**

4. utilizing said instantaneous flow rate and said reference indicia…

This phrase is found in Claims 3 and 24 of the '802 Patent and Claims 9, 44, and 53 of the '193 Patent.

Phrase: Utilizing said instantaneous flow rate and said reference indicia to select one of said higher and said lower pressure magnitudes for said flow of breathing gas to be applied in the airway of such a patient.

Construction: Comparing the instantaneous flow rate signal to the average flow rate signal to determine whether to provide the previously selected higher pressure magnitude (for inhalation) or the previously selected lower pressure magnitude (for exhalation) to the patient.

Reasoning: Again, the court can discern little difference between the two proposed constructions. Both parties agree that a comparison is made between the two flow rate values or signals to determine whether the patient is inhaling or exhaling, resulting in a decision as to whether to apply the higher or the lower pressure. The real dispute between the parties is as to the meaning of "flow rate" and "selected higher and lower pressure magnitudes," which phrases the court has already construed.

**4320**

d. The first disputed term in Claim 8: "Utilizing the core pins to aid in ejecting"

i. Claim language. Two terms in Claim 8 of the '809 patent are also "in dispute" at this time. The first such term is "utilizing the core pins to aid in ejecting." Claim 8, with the disputed term italicized, states the following:

8. The method of claim 7, further comprising: utilizing the core pins to aid in ejecting the plastic washing machine basket from the apparatus with the core pins forcing the plastic washing machine basket to shift relative to the mold core as the cavity sidewall members are shifted away from the mold core due to the engagement of the core pins in the beveled apertures of the plastic washing machine basket.

The '809 patent, Claim 8 (emphasis added).

ii. The parties' definitions and arguments. The parties' proffered definitions of this term are shown below, with bold font
indicating differences between their definitions. Also, the authority on which each party relies for its definition is shown just below that party's definition.

"UTILIZING THE CORE PINS TO AID IN EJECTING"

<table>
<thead>
<tr>
<th>Maytag's Definition</th>
<th>Electrolux's Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;using the core pins to assist in shifting or moving the plastic washing machine basket relative to the mold core&quot;</td>
<td>&quot;using the core pins to actively assist in removing the formed plastic washing machine basket from the mold core&quot;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maytag's Authority</th>
<th>Electrolux's Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>'809 patent, col. 6, lines 6-44; claim 8.</td>
<td>'809 Patent at col. 2, lines 16-18; col. 6, lines 24-27; dictionary definitions of &quot;utilizing&quot;</td>
</tr>
</tbody>
</table>

In its initial brief, Maytag argues that the claim language plainly refers to using the core pins to assist in shifting or moving the plastic washing machine basket relative to the mold core and that no further construction of the claim language is necessary. In further support of this "plain language" construction, Maytag points out that the specification states, "During the initial lifting of stripper ring 96, each of the core pins 191 will be engaged within a respective aperture 44 of the basket 2 to provide a lifting force about the entire periphery of mold core 90." The '809 patent, col. 6, ll. 23-26. Maytag contends that Electrolux's construction is improper, because "aid" means "assist," but "actively assist," as Electrolux construes the term, creates a different, unwarranted connotation. Maytag also asserts that the claim refers to "ejecting," not "removing," as Electrolux contends, and that, as Maytag has previously argued, "ejecting" and "removing" are different operations in the '809 patent.

For its part, Electrolux argues in its initial brief that the '809 patent makes clear that the core pins "aid in ejecting," not merely aid in "shifting" the washing machine basket relative to the mold core. Moreover, Electrolux argues that the way in which the core pins "aid in ejecting" is by providing a "lifting force" on the washing machine tub due to engagement of the core pins with the apertures of the tub. Thus, Electrolux argues, the pins must do something active to aid in ejecting the product from the mold core. Electrolux asserts that Maytag's definition collapses Claim 8 into Claim 9 and removes important limitations from the claim term. Specifically, Electrolux argues that Maytag ignores "ejecting" and substitutes "shifting or moving," which are not the same thing, thereby making either Claim 8 or Claim 9 surplusage. Electrolux also argues that Maytag ignores "utilizing," which must indicate that the core pins are put to use to aid in ejecting the washing machine basket, not just to "shift" the basket relative to the core.

In its rebuttal brief, Maytag contends that Electrolux is asserting a construction that requires the core pins to do more than just aid, and instead, to "actively engage" in the process of ejecting the washing machine basket. Such a construction, Maytag contends, would improperly import limitations into a claim that is not otherwise so limited. In its rebuttal brief, however, Electrolux argues that the principal dispute is over the meaning of "utilizing," because Maytag wants that term left vague to facilitate its infringement argument. Electrolux argues that the context of the infringement dispute is important to construction of the term, noting that, in its own process, the core pins do not "eject," "remove," or otherwise move the molded basket. Because its process does not involve the core pins in this way, Electrolux argues that Maytag is trying to preserve its infringement argument by an improper claim construction that glosses over the function of the core pins. In light of the claim language, however, Electrolux argues that "utilizing" the core pins means that they do more than exercise some de minimis or incidental force; rather, it means that the core pins actively aid the ejection process.

In its surrebuttal, Maytag asserts that there is no basis for Electrolux's importation of the word "actively" into the construction of this claim term. There is no necessary connection, Maytag contends, between "utilizing" something and "actively assisting." Moreover, Maytag argues that Electrolux has admitted that its proposed construction is a blatant effort to compare the '809 patent with Electrolux's accused device. In its surrebuttal, Electrolux contends that no further response is required.
iii. Analysis. Beginning with the language of the claim in which the disputed term appears, see Nystrom, 424 F.3d at 1142 (construction begins with the words of the patent); Biagro, 423 F.3d at 1302 (same), the court cannot help noticing that Maytag's construction of "ejecting" in Claim 8 is different from its construction of "ejecting" in Claim 7. Where Maytag previously argued that "ejecting" in Claim 7 must mean "preparing . . . for removal," it now argues that "ejecting" in Claim 8 must mean "shifting or moving . . . relative to the mold core." As Maytag itself has asserted, "claim terms are presumed to be used consistently throughout the patent, such that the usage of a term in one claim can often illuminate the meaning of the same term in other claims." Research Plastics, Inc., 421 F.3d at 1295 (citing Phillips, 415 F.3d at 1313-14). Thus, where the court construed "ejecting the washing machine basket from the apparatus" in Claim 7 to mean "forcing the washing machine basket from the apparatus," the court is constrained, for the same reasons and for the sake of consistency, and by any reasonable reading of the patent claims, specification, and meaning of the terms, to construe "ejecting the plastic washing machine basket from the apparatus" to mean the same thing in Claim 8.

The real "fighting issue" in this claim, however, is not the construction of "ejecting," but the construction of the meaning of "utilizing the core pins to aid" in "ejecting." The parties agree, and so does the court, that "utilizing" in the context of the claim language and the specification means "using." See, e.g., MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY (10th ed. 1995) (defining "utilize vt" as "to make use of"). Thus, the focus of the dispute becomes the meaning of "to aid," i.e., how the core pins are "used" to "aid" in "ejecting the washing machine basket from the apparatus." While the court agrees with the parties that "to aid" means "to assist," in the context of the claim and the specification, the court concludes that there is nothing about the claim language that supports Electrolux's insertion of the modifier "actively" before "aid." Moreover, the court finds that the remainder of Claim 8 expressly states how the core pins are "used to assist" in ejecting the washing machine basket from the apparatus: the core pins "force the plastic washing machine basket to shift relative to the mold core as the cavity sidewall members are shifted away from the mold core due to the engagement of the core pins in the beveled apertures of the plastic washing machine basket." The '809 patent, Claim 8.

Thus, the court's construction of the disputed claim term "utilizing the core pins to aid in ejecting" is the following: "using the core pins to assist in forcing the washing machine basket from the apparatus." 

4321

a. "V-Shaped" or "U-Shaped?"

TypeRight's patents-in-suit claim a keyboard having a "common space bar means extending between said right and left groups of function keys to help form a row extending generally in a V-shape . . . ." (Emrich Decla., Exhibit 1, p. 15, column 18, lines 4-7.) 10 Microsoft argues that, as a matter of law, the Microsoft keyboards do not literally infringe upon the TypeRight patents-in-suit because the space bar of the Microsoft keyboards is indisputably not "V-shaped." Accordingly, Microsoft contends that summary judgment of non-infringement is appropriate because the Microsoft keyboards do not embody the "V-shaped" element of the patents-in-suit.

10 The above description, which is from the '484 patent, is mirrored by the '441 patent, which claims a "plurality of control key means including elongated common key means configured generally in a V-shape to still further help both sets of the wrists, hands, and forearms of the user to be maintained in substantially straight aligned positions when the thumbs of the user actuate said common key means." (Emrich Decla., Exhibit 2, p. 16, column 20, lines 17-21.)
In her Markman order, Judge Keep did not construe the term "V-shape." However, because the term "V-shape" is language taken directly from the claims at issue, the Court cannot determine the propriety of summary judgment of non-infringement on the "V-shape" element without first construing the scope of that term. Bayer AG v. Biovail Corp., 279 F.3d 1340, 1349 (Fed. Cir. 2002) (adjudication of summary judgment of non-infringement not possible without proper claim construction of relevant claim limitation).

Webster's Third New International Dictionary provides a customary and ordinary meaning of "V-shape" as: "having the general shape of the letter V or resembling a V in cross section." (Webster's Third New International Dictionary, p. 2566.) The Court finds no evidence on the record to suggest that persons of ordinary skill in the art of keyboard design would ascribe a different meaning to the term "V-shape."

On the basis of this preliminary definition, the Court notes that the Microsoft keyboards appear to fall outside the scope of the "V-shape" limitation because the Microsoft keyboards appear to have a space key, and bottom row, shaped more in the fashion of the alphabet letter "U." Stated another way, the space bar and bottom row of the Microsoft keyboards lack the distinct acuity, or "sharpness," that generally characterizes the downward-facing nadir of the alphabet letter "V." At oral argument, Microsoft emphasized this aesthetic distinction, highlighting the easily-perceived visual difference between the "obviously U-shaped" space bar (and bottom row) of the Microsoft keyboards, versus the "obviously V-shaped" space bar (and bottom row) of the Microsoft keyboards. The Court finds Microsoft's argument to be persuasive.

However, the Court notes that it cannot perform the claim construction of the "V-shape" element solely by looking up that term in the dictionary and finding that the dictionary definition comports with a common understanding of the term, as well as with the Court's own visual evaluation of the accused keyboards. The Federal Circuit has noted that dictionaries fall within a special category of interpretive evidence. Although district courts may rely on dictionaries to assist in defining the parameters of a claim element's ordinary and plain meaning, a district court must rely first and foremost on the patents' claims, specifications, and prosecution history to delineate a claim element's scope. Moreover, a dictionary definition must not contradict any unique lexicography found in, or ascertained by, a reading of the patent documents themselves. Vitronics, 90 F.3d at 1584 n.6. See also Hill-Rom Co. v. Kinetic Concepts. Inc., 209 F.3d 1337, 1340-41 (Fed. Cir. 2000); Karlin Tech. Inc. v. Surgical Dynamics. Inc., 177 F.3d 968, 971 (Fed. Cir. 1999).

Thus, the Court now turns to the '484 and '441 patents themselves to determine whether the patent language suggests any unique lexicography of the term "V-shape." Specifically, the Court must examine intrinsic evidence from the patents-in-suit to determine whether the "V-shape" element encompasses space bars (and bottom rows) possessing nadirs that are less acute or less "sharp." Stated another way, the Court must examine the patent language to determine whether the space bars and bottom rows of the Microsoft keyboard, which somewhat resemble the alphabet letter "U," fall within the "V-shape" element as defined by the '484 and '441 patents.

The '484 patent contains at least 13 references to the term "V-shape" or "V-shaped." The '441 patent contains at least 17 such references. The majority of these 30 references are not helpful in construing the scope of the "V-shape" limitation. 11 Several of the references, however, modify the ordinary lexicography of "V-shape" in a unique and important way. Claims 11 and 12 of the '441 patent describe a "plurality" of "V-shaped rows." (Emrich Decla., Exhibit 2, p. 16, column 19, lines 51-53.) These "rows" refer to the several horizontal QWERTY lines of keys that all skilled touch-typists memorize and master. Significantly, however, claims 11 and 12 of the '441 patent describe "V-shaped rows" that can be either "broken" or "unbroken." (Emrich Decla., Exhibit 2, columns 19-20.) The use of the word "broken" refers to the manner in which the '441 patent discloses the plurality of "V-shaped" rows. Namely, the patent describes rows of QWERTY keys that are separated into distinct left and right-hand groups, with a "space" between the groups, which "further help[s] the wrists, hands and forearms of the user to be maintained in a substantially straight aligned position." (Id., column 20, ll. 9-13.)

11 See, e.g., Emrich Decla., Exhibit 2, p. 9, ll. 56-60 ("Each group of character keys is arranged in a series of spaced apart staggered rows of discrete character keys and includes a common V-shaped space bar key bridging the two clusters."); Id., Exhibit 1, p. 11, column 10, ll. 17-19 ("Considering now the space bar in greater detail, the space bar is generally V-shaped and extends between or bridges the two key grouping[s]").
The '441 patent's reference to both "broken" and "unbroken" "V-shaped rows" is significant because it indicates that the patents-in-suit set forth a lexicography of the term "V-shaped" in which "V-shaped" objects may lack the acute nadir that is customarily associated with "V-shaped" objects. Stated more plainly, the '441 patent describes "V-shaped" rows that need not possess a sharp point, or any point at all. This unique lexicography of the term "V-shape" also characterizes the '484 patent, which describes a "plurality of V-shaped rows" separated into two groups "sufficiently widely spaced apart to position the hands of the user in co-extending alignment." 12 (Emrich Decla., Exhibit 1, p. 15, column 17, ll. 22, 55-60.)

--- Footnotes ---

12 Judge Keep, in her Markman order, defined "co-extending alignment" as being essentially a synonym of "substantially straight aligned position." (May 6, 1999 Markman Order, p. 21.)

--- End Footnotes ---

In accordance with the above, and for purposes of defining the scope of the '484 and '441 patents, the Court construes the term "V-shape" to mean the following: An object or sequence of objects has a "V-shape" if the object or sequence of objects is generally shaped like the letter "V." However, an object or sequence of objects may be "V-shaped" even if the nadir of such object or objects is not acute or "sharp," and even if the nadir is not characterized by a physical joining of the two legs of the "V."

**4322**

**V Shaped Material Distributing Blades**

Miner and UP assert that the term "V shaped material distributing blades" should be construed to mean a structure having two portions oriented at an angle to each other and which merge into a point at a leading edge of the blade. Herzog contends that the phrase is clear on its face and should be given its ordinary and accustomed meaning. The Court concludes that Herzog is correct.

The only clarification which can be gained from the intrinsic evidence is that the "V blades" are "shaped as a V." See, e.g., U.S. Patent 5,423,268 col.11, l.31-32 (filed Nov. 10, 1993). Dictionary definitions are similarly broad. See Random House Webster's Unabridged Dictionary 2133 (2d ed. 1997) (defining V-shaped as "having the shape of the letter V: a V-shaped flying formation."). Also, the Court searched in vain for a definition of V-shaped which insisted on the shape coming to a point. There being insufficient evidence in the patent to vary the meaning of V-shaped from its broad general meaning, the Court concludes that the phrase maintains its ordinary and accustomed meaning, which is a shape which resembles the letter V.

**4323**

**D. Reserve Vacuum Assembly**

The recitation of "reserve vacuum assembly" appears only in Claim 14 of the '553 patent, which reads: "An instrument for making a lamellar incision in a cornea of an eye comprising: . . . a reserve vacuum assembly coupled to said positioning ring to sustain the vacuum within said cavity if operation of said vacuum pump is interrupted as the head moves across the aperture." Defendants contend that a means-plus-function analysis applies, while plaintiff disputes its application.

As the term does not use the word "means," there is a presumption that the means-plus-function analysis does not apply. Reserve is defined as "something kept in store for future use." Dorland's Illustrated Medical Dictionary (25th ed. 1974). Vacuum is defined as "a space partially exhausted (as to the highest degree possible) by artificial means (as an air pump)." Merriam Webster Medical Dictionary available at http://www.intelihealth.com and Merriam-Webster's Collegiate Dictionary.
Defendant contends that vacuum forming should be construed narrowly to mean a shaping process that utilizes vacuum to
(forming: (i) positive air pressure; (ii) mechanical pressure; and (iii) negative pressure created by vacuum. (Pl's. Mem. at 12.)

(Pl's. Mem. at 11 (emphasis added).) Plaintiff elaborates that the following forms of pressure are encompassed by vacuum
the shaping of heated plastic laminate using pressure, with or without vacuum, in order to create a three-dimensional shape.

down to" the meaning of the term "vacuum forming". 3 Plaintiff contends that vacuum forming should be construed to mean
the patented device." Isogon Corp. v. Amdahl Corp., 47 F. Supp. 2d 436, 438 (S.D.N.Y. 1998). Here, the "claim dispute boils
"Claim disputes . . . often boil down to the meaning of a phrase, a word, or a single functional or structural aspect of the
patented device." Isogon Corp. v. Amdahl Corp., 47 F. Supp. 2d 436, 438 (S.D.N.Y. 1998). Here, the "claim dispute boils
down to" the meaning of the term "vacuum forming". 3 Plaintiff contends that vacuum forming should be construed to mean
the shaping of heated plastic laminate using pressure, with or without vacuum, in order to create a three-dimensional shape.

shape the heated material into its three-dimensional configuration. (Def's. Mem. at 2; Defendant's Proposed Findings of Fact and Conclusions of Law at 6.)

3 As stated supra, the parties use the disputed terms interchangeably. Accordingly, the Court uses one term to encompass them all.

4 Pressure creates the three-dimensional configuration by forcing the heated laminate onto a male mold or into the cavity of a female mold, where it cools. (Pl's. Mem. at 2.)

A. Intrinsic Evidence

Vacuum forming is not defined in the claims of the '144 Patent. Where the claims do not provide a definition, the specification is ordinarily "the single best guide to the meaning of a disputed term". Vitronics, 90 F.3d at 1582 (cited by Seb SA v. Montgomery Ward & Co. Inc., 77 F. Supp. 2d 399, 403 (S.D.N.Y. 1999)). Here, however, the specification fails to state expressly whether vacuum forming encompasses (i) positive air pressure, mechanical pressure, and negative pressure created by vacuum; or (ii) only negative pressure created by vacuum. The specification merely states, for example, that the laminate is "vacuum formed or molded into a costume component" ( '144 Patent, Col 4, lines 34-35) and that vacuum forming causes the component to retain its shape "after the component is removed from the molding apparatus," ( '144 Patent, Col 4, lines 50-53). This statement, like the other statements referring to vacuum forming in the specification, omits express mention of the type of pressure used to force the laminate to the shape of "the molding apparatus". ( '144 Patent, Col 4, line 53.) 5

5 Plaintiff argues that, although the phrase "vacuum formed or molded" ( '144 Patent, Col. 4, line 35) discussed supra does not expressly state the type of pressure used, the phrase by implication supports the expansive definition of vacuum forming urged by plaintiff. Plaintiff reasons that the phrase equates "vacuum formed" with "molded", thereby defining "vacuum formed" as any type of pressure that "molds" the heated laminate into its three-dimensional shape. However, the Court finds that the conjunction of "formed" and "molded" in the phrase "vacuum formed or molded" evokes conjunctions that prove fatal to plaintiff's argument. A careful reading of the patent and the parties' submissions pertaining to claim construction reveals that "formed" is linked to "molded" in the following instances: (i) the specification and claims refer interchangeably to "vacuum formed" laminate and "vacuum molded" laminate; (ii) plaintiff itself uses "vacuum formed" and "vacuum molded" interchangeably in its papers; (iii) the specification not only contains the phrase "vacuum formed or molded" but also its converse, "vacuum molded or formed" ( '144 Patent, Col. 4, line 54); and (iv) plaintiff's own expert states that "the inventors used the terms 'vacuum forming', 'vacuum molding', 'forming', and 'molding' interchangeably". (Declaration of William McConnell, dated Mar. 17, 2000 ("McConnell Decl.") P 37). In view of this substantial linkage between and interchangeability of "formed" and "molded" in the specific context of "vacuum formed" and "vacuum molded", the Court finds that "molded" in the context of "vacuum formed" is not an expansive description of how laminate is "vacuum formed" but rather a reference to "vacuum molded". Because "vacuum molded" is interchangeable with "vacuum formed", the Court concludes that the phrase to which plaintiff refers not only fails to support an expansive definition, it fails to support any definition.

However, the specification does contain words and phrases that, by implication, define vacuum forming to mean a process using vacuum. For example, the word "vacuum" modifies all three of the disputed terms, "vacuum formed", "vacuum molded", and "vacuum molding", and these are the only terms given in the patent to name the process of shaping the plastic. The modifier "vacuum" connotes, on its face, that the process to which the patent refers necessarily utilizes a vacuum.

Additional support for a narrow definition of vacuum forming stems from the Federal Circuit's "repeated[] emphasis" that claim language is to be interpreted in a manner "consistent with and furthering the purpose of the invention."
having expressly redefined that term. The Court concludes that the Examiner's reference to the '430 Patent is relevant to this
unusual definition of vacuum forming in the '430 Patent is incidental. If the Examiner referred to the non-vacuum process in
the portion redefining vacuum forming. (Office Action: '144 Patent, dated Mar. 20, 1997 at 3.) The Court concludes that the
Patent, Col. 2, lines 8-11) and to the integration of the resulting material by sewing ( '430 Patent, Col. 2, lines 16-18), not to
vacuum forming in the patent-in-suit. However, the '430 Patent is not cited by the Examiner for the unusual meaning that
art references, the '430 Patent, includes "vacuum formed laminate" as an element of its claims. The specification of the '430
Patent states that "vacuum forming . . . is well known and needs no further explanation." ( '430 Patent, Col. 1, lines 65-66.)
However, in spite of the fact that vacuum forming "needs no further explanation", the '430 Patent does provide one. The
specification states that use of "excess fluid" pressure "is to be considered herein [in the '430 Patent] to be embraced by the
term 'vacuum forming'. ( '430 Patent, Col. 1, lines 66-68--Col. 2, lines 1-2.) 6 The Court concludes that vacuum forming
does not ordinarily "embrace" this non-vacuum method and the inventor was invoking an inventor's privilege of redefining a
term 'vacuum forming'. See Vitronics, 90 F.3d at 1582-83 (stating that prosecution history is "often of critical significance in determining the meaning of the claims" and incorporate a review of the prior art). The prosecution history of the '144 Patent contains two prior art references: (i)
U.S. Patent No. 4,104,430 ("the '430 Patent"); and (ii) U.S. Patent No. 4,878,972 ("the '972 Patent"). The first of these prior
art references, the '430 Patent, includes "vacuum formed laminate" as an element of its claims. The specification of the '430
Patent states that "vacuum forming . . . is well known and needs no further explanation." ( '430 Patent, Col. 1, lines 65-66.)
Additional support for the narrow definition of vacuum forming is afforded by the prosecution history. See Vitronics, 90
However, in spite of the fact that vacuum forming "needs no further explanation", the '430 Patent does provide one. The
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does not ordinarily "embrace" this non-vacuum method and the inventor was invoking an inventor's privilege of redefining a
term 'vacuum forming'. See, e.g., Home Shopping, 1998 U.S. Dist. LEXIS 2111, 1998 WL 65740, *2 (finding that an inventor may ascribe a novel meaning to a term provided that he so states in the specification).
The expansive definition in the '430 Patent does not, as plaintiff contends, support the proposition that vacuum forming in
other patents automatically encompasses non-vacuum methods. Instead, the '430 Patent teaches that the specification must
clearly delineate the expansive definition in order for vacuum forming to comprehend non-vacuum processes.
Consequently, where, as in the '144 Patent, vacuum forming is not expressly redefined, the ordinary meaning of vacuum
forming does not include this non-vacuum method. 7

--- Footnotes ---
6 Both parties characterize the use of "excess fluid" pressure as a non-vacuum process. (Rubies' Mem. Supp. Its Proposed
Findings Fact and Conclusions Law on Claim Interpretation at 10-11; Def's. Mem. at 4.) Plaintiff elaborates that "excess
fluid pressure" is an alternate name for a type of pressure that the parties have heretofore called "positive air pressure".
(Rubies' Mem. in Supp. of Its Proposed Findings Fact and Conclusions Law on Claim Interpretation at 10-11.) Defendant
does not dispute this assertion.

7 The Court rejects plaintiff's additional contention that it is not only the '430 Patent's own use of vacuum forming that
supports an expansive interpretation but also the Examiner's use of the phrase "vacuum forming" in referring to the '430
Patent that supports such interpretation. Plaintiff reasons that the Examiner's use of the term specifically in reference to prior
art in which vacuum forming includes utilization of "excess fluid pressure" mandates a similarly expansive understanding of
vacuum forming in the patent-in-suit. However, the '430 Patent is not cited by the Examiner for the unusual meaning that
Patent ascribes to vacuum forming. A careful reading of the Office Action reveals that, in comparing the '430 Patent to the
'144 Patent, the Examiner specifically refers to the portion of the '430 Patent relating to the fusion of fabric to foam ( '430
Patent, Col. 2, lines 8-11) and to the integration of the resulting material by sewing ( '430 Patent, Col. 2, lines 16-18), not to
the portion redefining vacuum forming. (Office Action: '144 Patent, dated Mar. 20, 1997 at 3.) The Court concludes that the
unusual definition of vacuum forming in the '430 Patent is incidental. If the Examiner referred to the non-vacuum process in
the '430 Patent as "vacuum forming", it was because the '430 patent itself refers to that process as "vacuum forming",
having expressly redefined that term. The Court concludes that the Examiner's reference to the '430 Patent is relevant to this
- 5000 -
claim construction solely because the '430 Patent makes manifest that express redefinition is required to expand the definition of vacuum forming to include a non-vacuum process.

Language contained in the second prior art reference, the '972 Patent, likewise supports the proposition that the ordinary meaning of vacuum forming does not encompass non-vacuum methods. The '972 Patent refers to a "vacuum molding machine" initially, in discussing the heating and forming of a "foamed polyolefin layer." ('972 Patent, Col. 5, lines 27-28 (emphasis added.).) The patent refers to a "press molding machine" in describing the subsequent process wherein, utilizing mechanical pressure to achieve the desired shape, "the foam backed fabric is drawn by means of a matched male and female press mold." ('972 Patent, Col. 5, lines 34-38 (emphasis added.).) The '972 Patent appears to distinguish the process that requires a "vacuum molding machine" from the subsequent process that requires a "press molding machine." Further evidence of this distinction is that whenever the '972 Patent discusses the process requiring the "press molding machine" the term used for the process is always "press molding" or "draw forming", never "vacuum forming". The Examiner, in reviewing the '972 Patent for purposes of comparison to the '144 Patent, likewise distinguished between the two processes. In drawing an analogy between vacuum forming in the '972 Patent and the patent-in-suit, the Examiner stated that "a vacuum molding process is employed" and specifically cited the lines in the '972 Patent referring to the "vacuum molding machine," not the lines referring to the "press molding machine" or "draw forming." (Office Action: '144 Patent, dated Mar. 20, 1997, at 3.) The language of the '972 Patent, and the way the documents contained in the file history refer to it, distinguish between vacuum forming, on the one hand, and forming that utilizes mechanical pressure, on the other hand.

8 Notwithstanding this distinction drawn by '972 Patent's specification and the Examiner, plaintiff argues that "vacuum forming" in the '972 Patent does encompass mechanical pressure and concludes that vacuum forming in the '144 Patent must do so likewise. However, even if, arguendo, vacuum forming in the '972 Patent were to be expansively interpreted, such interpretation would not form an adequate basis for expansively interpreting vacuum forming in the '144 Patent. The '972 Patent expressly describes the method and manner in which the shaping into a three-dimensional configuration occurs, referring, for example, to "mechanical" pressure, "matched molds", and "press time", all of which the specification then refers to as "draw forming" or "press molding." ('972 Patent, Col. 5, lines 34-38, 46-53.) Unlike the '972 Patent, the '144 Patent makes no mention of these indicia of a non-vacuum form of pressure. Unlike the '972 Patent, the '144 Patent uses the terms "vacuum formed" and "vacuum molded" without describing a non-vacuum process or calling the process by another name. Due to this lack of parallelism between the language of the '972 Patent and the language of the '144 Patent, it would be unwarranted to base an expansive interpretation of vacuum forming in the '144 Patent on the allegedly expansive definition in the '972 Patent. Instead, if the '972 Patent is applicable to this analysis, that applicability lies in teaching that vacuum forming does not encompass mechanical pressure without an express statement to that effect.

The Court concludes that these prior art references in the prosecution history of the '144 Patent support the proposition that the utilization of non-vacuum methods, such as "excess fluid" pressure or mechanical pressure, is not within the scope and ordinary meaning of vacuum forming. In sum, the intrinsic evidence supports a narrow interpretation of vacuum forming.

B. Extrinsic Evidence

Because a clearer grasp of the technology underlying the technical terms used in the claims would assist in resolving the ambiguity in the claim language, the Court considers the extrinsic evidence. In considering extrinsic evidence, dictionary definitions are "preferred over opinion testimony" because dictionaries are "accessible to the public in advance of litigation" and, therefore, are "more objective and reliable guides". Vitronics, 90 F.3d at 1585; see also EMI Group North America, Inc. v. Intel Corp., 157 F.3d 887, 892 (Fed. Cir. 1998) ("The Federal Circuit has admonished that claims should preferably be interpreted without recourse to extrinsic evidence such as expert testimony, other than perhaps dictionaries or reference books . . . ") (citation omitted); Tenneco Packaging Specialty and Consumer Products, Inc. v. S.C. Johnson & Son, Inc., 1999 U.S. Dist. LEXIS 17937, *5 n.1, No. 98 C. 2679, 1999 WL 1044840 (N.D. Ill. Nov. 16, 1999) ("Dictionary definitions, though extrinsic, are worthy of special note.") (citation omitted). The McGraw-Hill Dictionary of Scientific and Technical Terms (Daniel N. Lapedes, ed., 2d ed. 1978), admitted into evidence in relevant part as Defendant's Exhibit E,
defines "vacuum forming" as: "Plastic sheet forming in which the sheet is clamped to a stationary frame, then heated and drawn ... into a mold by vacuum." (Def's. Exh. E (emphasis added); Tr. at 48:1-6.) Plaintiff's own expert, 9 testified that he agreed with the dictionary's definition insofar as it narrowly defines vacuum forming as a process utilizing vacuum. 10 (Tr. at 40:5-22.)

9 Plaintiff's expert, William McConnell, has been involved in the thermoforming industry since 1948 and is currently president of a company that does consulting work in the thermoforming industry. (Exh. B att. to McConnell Decl.) "Thermoforming" means "forming by heat and pressure". (McConnell Decl. P 6.)

10 The portion of the dictionary's definition with which plaintiff's expert disagreed is not relevant to the interpretive problem before the Court. The expert, who agreed that vacuum was necessarily utilized, merely disagreed over the verb used to describe the vacuum's effect. Specifically, the expert disagreed that vacuum causes the plastic sheet to be "drawn down" to the mold, asserting that, instead, vacuum causes atmospheric pressure to "force[] [the plastic] to the shape" of the mold. (Tr. at 40:10-13.)

The Court next considers expert testimony. The only expert called was plaintiff's expert, who testified that (i) "thermoforming" is the omnibus term for the shaping of heated plastic sheets and encompasses utilization of various types of pressure; and (ii) "vacuum forming" is the thermoforming process that utilizes pressure created by vacuum. (McConnell Decl. P 21; Tr. at 32:11--33:6.) Plaintiff's own expert testified that "vacuum forming" is narrowly defined.

Q: What's your definition of "vacuum forming"?
A: Shaping of a heated sheet to the particular shape that is wanted by atmospheric pressure.

Q: Not using a vacuum?
A: That's a vacuum.

Q: Can you vacuum form without a vacuum?
A: No.

THE COURT: "The popular thermoforming method is by use of vacuum" ... and does that include vacuum molding?

THE WITNESS: Yes.

THE COURT: And does that include pressure forming by compressed air?

THE WITNESS: No.

THE COURT: Does it include the method of manufacturing something by mechanical means without hot air or without compressed air or without a vacuum?

THE WITNESS: No.

THE COURT: Thank you, Mr. McConnell.
Additionally, the textbook on thermoforming to which the expert referred in support of his opinions, pursuant to Federal Rule of Civil Procedure 26(a)(2)(B), narrowly defines "vacuum forming" as that method of thermoforming utilizing a vacuum. (Def's. Exh. C at 37; Tr. at 57:20--58:13; Def's. Mem. at 5-6; Tr. at 48:1-6 (admitting Def's. Exh. C into evidence).) Specifically, vacuum forming occurs when "vacuum is used to quickly remove the air between [the hot plastic sheet and the mold]" and the atmospheric pressure holds the heated plastic sheet in shape against the mold until the plastic has cooled. (Def's. Exh. C at 37 (emphasis added); Tr. at 57:20--58:2.) In sum, the extrinsic evidence, which comprises the dictionary definition, expert testimony, and treatise, confirms the narrow interpretation of vacuum forming that is supported by the intrinsic evidence.

Notwithstanding the intrinsic and extrinsic evidence adduced in support of a narrow definition of vacuum forming, plaintiff contends that certain testimony given by its expert supports an expansive definition. The testimony to which plaintiff refers is its expert's assertion that, although vacuum forming is officially narrowly defined today, its original meaning encompassed non-vacuum methods of thermoforming and the original meaning is still used today, incorrectly, by "those of skill in the art." (McConnell Decl. PP 22, 27, 33; Tr. at 27:5-24.) However, the expert testimony to which plaintiff refers inadequately supports an expansive interpretation for several reasons.

First, the expert's testimony supporting an expansive definition of vacuum forming lacks probative value. Expert testimony "may not be used to vary or contradict the terms of the claims as understood from the intrinsic evidence." Intellectual Property Development, 1998 U.S. Dist. LEXIS 3901, at *58, 1998 WL 142346, *21; see Novo Nordisk, 2000 U.S. Dist. LEXIS 3384, at *6, 2000 WL 294852, *2 ("Extrinsic evidence may not contradict the manifest meaning of the claims as set forth, even by implication, in the specification and prosecution history."). Here, the intrinsic evidence supports a narrow interpretation of vacuum forming that excludes non-vacuum processes. The portion of the expert's testimony that interprets vacuum forming expansively contradicts the teaching of the intrinsic evidence and, therefore, "may not be used". Intellectual Property Development, 1998 U.S. Dist. LEXIS 3901, at *59, 1998 WL 142346, *21; see, e.g., Isogon, 47 F. Supp. 2d at 444 (rejecting expert's interpretation where it contradicted teaching of intrinsic evidence).

Second, even were the expansive definition not antithetical to the interpretation derived from the intrinsic evidence, the expert proffers little evidence to support an expansive interpretation. The expert's assertion that vacuum forming may be expansively interpreted because some individuals incorrectly continue to interpret vacuum forming expansively is, as the expert himself concedes, unsupported by any reference to an authority. (Tr. at 28:3-11; 41:11-15; 57: 1-16.) In fact, the only reference offered by the expert pursuant to Fed. R. Civ. P. 26(a)(2)(B) refers to a text that defines vacuum forming narrowly. (Def's. Exh. C; Exh. D att. to Def's. Mem. at 4.)

Not only does the support offered for an expansive interpretation solely comprise the expert's statement that an expansive interpretation exists, but also that statement is vitiated by additional testimony given by the expert. While the expert did testify that vacuum forming was at one time an omnibus term that encompassed non-vacuum methods of shaping heated plastic, he also testified that the nomenclature was revised almost 40 years ago. He testified that "probably in the beginning of the 1960s" the Society of Plastics Engineers and the Society of Plastics Industry redefined vacuum forming narrowly and re-educated the public accordingly. (Tr. at 26:12--27:6; 39:13-18; 48:14-15; 55:12-16.) He further testified that the success of this re-education is manifest in that telephone books, magazines, and textbooks no longer refer to or use vacuum forming as an omnibus term comprising vacuum and non-vacuum methods. (Tr. at 29:3-7, 49:12-24.) The expert concluded, "We've done a fair job within the industry of explaining it all". (Tr. at 41:5-8.) Indeed, the reason given by the expert for why he would find it onerous to "dig up" references to works that define vacuum forming expansively is that the re-education concerning proper thermoforming nomenclature had been successful. (Tr. at 40:23--41:10.) The Court concludes that the expert testimony supporting an expansive interpretation is inadequate to substantiate plaintiff's contention that individuals skilled in the art of costume manufacture would interpret vacuum forming in the '144 Patent to encompass non-vacuum methods of thermoforming.

The intrinsic and extrinsic evidence overwhelmingly support a narrow definition of vacuum forming. Accordingly, the terms "vacuum molding", "vacuum molded", and "vacuum formed" as they appear in the claims of the '144 Patent must be construed to mean the thermoforming process that utilizes a vacuum.
a. **Vaginal Swab**

Plaintiff asserts that the term "vaginal" refers to the outer housing as the cover or sheath, and "swab" refers to the unit being used as either a swab to dry or absorb or an applicator to hold or apply treatment. Paper No. 55, 3. By contrast, Defendant offers a narrower definition that a "vaginal swab" is a stick or wire with a small piece of absorbent material attached to the end of it, which is of a size and structure for cleansing or applying medicine within the vaginal canal.

While the claim provides little guidance as to the terms "vaginal" and "swab", the '720 patent specification clarifies that Plaintiff designed the "vaginal swab" to enter into the vaginal cavity. For example, the specification defines the purpose of the invention as "a truly portable, convenient, and disposable internal vaginal cleaning device or refreshner." Paper No. 46, Exhibit F1, Col. 1, lines 46-48. Moreover, the invention in the '720 patent "is designed to dry or absorb material in the internal vaginal area." Id., Col. 3, lines 5-6. In fact, the length of the average vaginal cavity establishes the approximate length of the swab, including the core and gauze material. Id., Col. 3, lines 50-54. From the prosecution history, Plaintiff also distinguished her invention from prior art on this particular point by stating that the invention (Alvarez) lacked "an elongated structure for the swabbing element to be introduced into the vaginal cavity." Id., Ex. D10, PTO 00313.

In the face of all of this evidence, Plaintiff will not be allowed to claim that her invention is not meant to enter into the vaginal cavity. After all, "a patentee may not construe a claim term one way during prosecution in order to obtain allowance of the patent and then in a different way during litigation in order to obtain a finding of infringement." Knorr-Bremse Systeme Fuer Nutzfahrzeuge GMBH v. Dana Corp., 2001 U.S. Dist. LEXIS 1891, No. CIV. A. 00-803-A, 2001 WL 179815, at *4 (E.D. Va. 2001) (citing Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1579 (Fed. Cir. 1995). Thus, the '720 patent limits the term "vaginal" to a swab entering into the vaginal canal.

As for "swab", the '720 Patent states that a vaginal swab should preferably be "comprised of fairly rigid core member, constructed either in segments or as a one piece unit, over which a thick, gauze type adsorbent pad or layer is secured." Paper No. 46, Ex. D1, Col. 2, lines 5-9. The plain meaning of the term "swab" is "a small piece of absorbent material attached to the end of a stick or wire and used for cleansing or applying medicine." American Heritage Dictionary 1810 (3d ed. 1992); Dorland's Medical Dictionary 1617 (28th ed. 1994).

**I. Claim Construction**

Hemphill argues that the district court improperly construed claim 2 by "reading into" claim 2 "extraneous limitations from the specification," and by reading limitations into claim 2 that relate to claim 1. McNeil responds that the district court properly looked to the specification and prosecution history to construe claim 2. We agree.

In interpreting claims, a court "should look first to the intrinsic evidence of record, i.e. the patent itself, including the claims, the specification and, if in evidence, the prosecution history." Vtronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 USPQ2d 1573, 1576 (Fed. Cir. 1996). It is well-settled that for purposes of claim construction, the specification may act as a sort of dictionary that explains the invention and may define terms used in the claims. Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 USPQ2d 1321, 1330 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1996). When the meaning of a term used in a claim is sufficiently clear from its definition in the specification, that meaning shall apply. Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477, 45 USPQ2d 1429, 1432 (Fed. Cir. 1998). In this case, the district court properly looked to the specification for clarification of several terms which were not wholly defined in the claim language.

Similarly, the district court properly looked to the prosecution history of the 720 patent. Hemphill argues that "the district court construed the wrong . . . claim" by reading into claim 2 limitations relating to claim 1. But even where the prosecution history does not relate to the particular claim at issue, it is proper for the district court to use that prosecution history to
construe the claim at issue if the prosecution history relates to the same structure as the asserted claim. Alpex Computer Corp. v. Nintendo Co., 102 F.3d 1214, 1220, 40 USPQ2d 1667, 1672 (Fed. Cir. 1996) ("We discern no reason why prosecution history relating to the structure of . . . claim 1 is not pertinent to the same structure . . . [in] claims 12 and 13."). It is well-settled that "prosecution history is relevant not only for purposes of prosecution history estoppel but also for construing the meaning and scope of the claims." Id. at 1220, 40 USPQ2d at 1671. Thus, like the specification, the prosecution history can act like a dictionary, Hoechst Celanese Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578, 38 USPQ2d 1126, 1129 (Fed. Cir. 1996), cert. denied, 519 U.S. 911 (1996), and statements made during reexamination proceedings "are relevant prosecution history when interpreting claims." E.I. Du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1439, 7 USPQ2d 1129, 1136 (Fed. Cir. 1988), cert. denied, 488 U.S. 986 (1988). In this case, in construing claim 2, the district court relied on statements Hemphill made during prosecution of the 720 patent in which she narrowed her claims to overcome prior art. The district court also relied on Hemphill's statements, described below, that she made during two reexamination proceedings in which she further limited her claims to convince the PTO to reissue them. The district court properly relied on Hemphill's statements made during prosecution and during the reexamination proceedings, even though some of those statements related to the unasserted claim 1.

The district court construed the term "swab" to mean "a small piece of absorbent material attached to the end of a stick or wire and used for cleansing or applying medicine." Hemphill, 134 F. Supp. 2d at 727 (quoting American Heritage Dictionary 1810 (3d ed. 1992))). Hemphill argues that the term "vaginal" does not limit her invention to a swab meant for use inside the vaginal cavity, but instead "pertains to the outer housing as a cover or a sheath." We agree with the district court. After determining that claim 2 "provides little guidance as to the terms 'vaginal' and 'swab,'" the district court found that the "specification clarifies that [Hemphill] designed the 'vaginal swab' to enter into the vaginal cavity," and that the "specification defines the purpose of the invention as 'a truly portable, convenient, and disposable internal vaginal cleaning device or refresher.'" Id. at 726. Thus, the district court found that the specification limits the term "vaginal" to a "swab entering into the vaginal canal." Id. The district court also found that Hemphill distinguished her invention from prior art during prosecution by stating that the prior art lacked "an elongated structure for the swabbing element to be introduced into the vaginal cavity." Id. The district court accordingly precluded Hemphill from "claiming that her invention is not meant to enter into the vaginal cavity," and construed the term "vaginal" to mean "a swab entering into the vaginal canal." Id.

Finally, the district court relied on the following dictionary definitions to determine the plain meaning of the term "swab": American Heritage Dictionary 1810 (3d ed. 1992) (defining "swab" as "[a] small piece of absorbent material attached to the end of a stick or wire and used for cleansing or applying medicine"); Dorland's Medical Dictionary 1617 (28th ed. 1994) (defining "swab" as "a wad of cotton or other absorbent material firmly attached to the end of a wire or stick, used for applying medication, removing material, collecting bacteriological material, etc."). The fact that the PTO granted Hemphill's request for reexamination in light of a patent for wrapped sanitary napkins (U.S. Patent No. 3,973,567) (the "Srinivasan" patent) and reissued her patent over Srinivasan does not alter the proper construction of the term "vaginal swab," and does not persuade us to construe the term "vaginal swab" to cover wrapped sanitary napkins. We find that the district court properly construed the term "vaginal swab."

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Defendants maintain that claim 1 of plaintiff's patent is invalid for anticipation by the Bradley patent. Claim 1 teaches:

A sock-type article adapted to be worn on the foot and having sole and heel regions adjacent to the sole and heel regions of a foot when worn, said sock-type article being substantially entirely formed of a light-weight, flexible material defining an interior space receivable of a foot, said material being substantially waterproof to prevent passage of water into said interior of the sock-type article through said material and at the same time moisture vapor permeable to allow passage of evaporated perspiration which may be formed on the foot from said interior of the sock-type article through said material, whereby the foot will be maintained as dry as possible when the sock-type article is worn thereon.

Herman pat., col. 4, ll. 11-24.

Although the parties might prefer to substitute their own nuanced definitions for the terms used in plaintiff's patent and the asserted prior art patent, the Court must give these terms their ordinary meanings for purposes of claim construction. See, e.g., K-2 Corp. v. Salomon S.A., 191 F.3d 1356, 1362 (Fed. Cir. 1999) ("general rule is that terms in the claim are to be
given their ordinary and accustomed meaning."") (citing Johnson Worldwide Assoc., Inc. v. Zebco Corp., 175 F.3d 985, 989 (Fed. Cir. 1999)). Thus, plaintiff must accept the plain meaning of the words contained within his patent rather than proffer an alternative reading of these terms. See, e.g., Intervet Amer. v. Kee-Vet Lab., 887 F.2d 1050, 1053 ("No matter how great the temptations of fairness or policy making, courts do not rework claims. They only interpret them.") The Court "cannot alter what the patentee has chosen to claim as his invention." SSIH Equipment S.A. v. U.S. Int'l Trade Comm., 718 F.2d 365, 378 (Fed. Cir. 1983).

"Claim construction begins with the words of the claim." Karlin, 177 F.3d at 971. "When construing a claim, a court should first look to the intrinsic evidence, i.e., the patent itself its claims, written description, and, if in evidence, the prosecution history." Id. "The court may receive extrinsic evidence to educate itself about the invention and the relevant technology, but the court may not use extrinsic evidence to arrive at a claim construction that is clearly at odds with the construction mandated by the intrinsic evidence. Id. "In defining the meaning of key terms in a claim, reference may be had to the specification, the prosecution history, prior art, and other claims. This is not, however, to be confused with reading into a claim a limitation appearing in the specification but not in the claim." Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc., 976 F.2d 1559, 1566 (Fed. Cir. 1992) (internal citations omitted).

Accordingly, the Court first considers the language used in plaintiffs patent. In the claim at issue, claim 1, the term "moisture vapor permeable" is used. Elsewhere, in claim 5 and in the specification, the term "breathable" is introduced. According to the American Heritage Dictionary of the English Language (3d ed. 1992), "breathable" means "permitting air to pass through." 3 The dictionary gives as its example, "a breathable fabric." The dictionary defines "air" as "a colorless, odorless, tasteless, gaseous mixture, mainly nitrogen (approximately 78 percent) and oxygen (approximately 21 percent) with lesser amounts of argon, carbon dioxide, hydrogen, neon, helium, and other gases." The dictionary also gives an alternate usage: "This mixture with varying amounts of moisture and particulate matter, enveloping Earth; the atmosphere" (emphasis added). Thus, the term "breathable" describes a material that allows both gases and moisture vapor to pass through it. As such, the language used in claim 1, "moisture vapor permeable," is essentially synonymous with "breathable." Accordingly, under either term, the Herman patent teaches a sock that is both waterproof and permits air, including moisture vapor, to pass through it.

3 Courts commonly consult ordinary dictionaries in order to determine the proper construction of terms used in patent claims. See, e.g., Karlin, 177 F.3d at 971.

--- Footnotes ---
3 Courts commonly consult ordinary dictionaries in order to determine the proper construction of terms used in patent claims. See, e.g., Karlin, 177 F.3d at 971.
--- End Footnotes ---

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A. Claim Construction

When construing a claim, we first look to the intrinsic evidence of the patent, including the claims and the written description, and if available, the prosecution history. Vitronics Corp., v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2D (BNA) 1573, 1576 (Fed. Cir. 1996). The claims define the scope of the invention and the written description indicates whether the inventor has used any terms "inconsistently with their ordinary meaning." Id., 39 U.S.P.Q.2D (BNA) at 1577.

In claim 1 of the '446 patent, Herman uses the term "moisture vapor permeable" to describe the material used for the insert. Looking to the written description of the '446 patent, the insert material is described as "breathable" and as "allowing passage of water vapor therethrough." Additionally, the insert material is structurally described as having pores "700 times larger than a molecule of water vapor thereby allowing water vapor which evaporates from the body to pass through the fabric . . . ." '446 pat., col. 2, II. 58-61. From this intrinsic evidence of the '446 patent it is clear that "moisture vapor permeable" describes an insert material through which moisture vapor can pass.

--- Footnotes ---
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--- End Footnotes ---

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Valve Actuating Portion

The parties dispute the construction of the above term as it relates to claims 1 and 7 of the 692 patent. Plaintiffs propose the following construction: "a region of the filter element whereby engagement of a valve mechanism can take place." Defendants propose the term be construed as "valve actuating portion, separate from an annular end cap portion, that engages a valve structure when the filter element is installed in a housing."

Plaintiffs contend that reading a functional requirement on the claim places a forbidden means vs. function limitation on a claim where none exists. Furthermore, the claims at issue do not require the valve actuating portion be a separate part from the annular end cap portion.

Baldwin argues the valve-actuating portion is a discrete region that must be read separately from the annular end cap portion. It is a discrete region of the second end cap as defined in the claim. It is delineated from the annular end cap because the description requires some part of the valve actuating portion, and not the annular end cap, to engage the valve structure when the filter element is installed in the housing.

According to Defendants, the below diagram shows "the '692 and '623 patent figures also confirm that the keys of the "valve-actuating portion" of the lower end cap engage the latch device and/or the valve device of the valve structure when the filter element is installed in a housing. "The figure above shows the filter housing without a filter element installed (left side) and the filter housing with the filter element installed (right side). The right side of the figure shows that the keys (118 and 119) (shown in light blue) of the valve-actuating portion engage the latch device (68) (shown in green) and/or valve device (64) (shown in red). The figure also shows that the annular end cap portion (shown in pink)..." (ECF # 40 pg. 14)

Wix Court Construction

The Wix Court construed the "Valve-actuating portion" as "to include the cylindrical portion, the annular base, and the keys, which engage the value (sp) mechanism."

Court's Construction

The Court agrees with the Wix Court's construction. As Plaintiff points out, actuate or actuating means "to put into action or motion; to move." Am Heritage Dict. (2d Edition 1985). Merriam Webster's defines it as "to put into mechanical action or motion. To move to action." Merriam Webster Online Dictionary, 2010, http://www.merriam-webster.com/dictionary/actuate. Thus, valve actuating, as Defendants stated at oral argument when discussing valve actuating, "if it doesn't take place, it doesn't work.," requires functionality. Therefore, the Court finds the "valve actuating portion" is construed as the "portion of the second end cap including a cylindrical portion, annular base and keys which engage the valve mechanism."

There is an additional issue concerning non-infringement of claim 12. Defendants contend that claim 12 is written in means plus function form thereby invoking 35 U.S.C. § 112, P 6, and incorporating by reference the specification's preferred embodiments. Because the preferred embodiments disclose only dome-shaped regions concave to the direction of flow, if claim 12 were a means plus function claim it would not read on defendants' products which are convex to the direction of flow.

The term "valve means" in claim 12, by including the term "means," invokes a presumption that the drafter intended to invoke § 112 P 6. The presumption is overcome, however, if the claim element recites sufficient structure. Allen Engineering Corp. V. Bartell Industries, Inc., 299 F.3d 1336, 1347 (Fed. Cir. 2002). "Means-plus-function claiming applies only to purely functional limitations that do not provide structure that performs the recited function." Phillips, 415 F.3d at 5007.
valve and the knob at the upper end of the slide valve. The two devices are neither structurally the same nor equivalents. Koala is designed to switch between the two positions without some of the specifications of the 161 patent, such as the slide valve's motion along the channel, the pneumatic connector must be disconnected. Furthermore, the pneumatic connector's structure is substantially and significantly different from the 161 specified structure. To perform "insubstantial changes that add[] nothing of significance to the structure . . . ." See Valmont Industries, 983 F.2d at 1043. To serve the same function of positioning between a first and second position, the pneumatic connector must be disconnected from the channel. Additionally, the slide valve has a knob at its upper end to permit movement back and forth of the slide valve within the channel. The Court construes the "valve means" element in Claim 33 to cover a structure equivalent to that described in the specification.

Thus, the Court turns to the specification to determine if the corresponding structure is defined by the language "valve means." The specification states that "valve means is comprised of a slide valve that is seated with a channel formed in the housing . . . and the slide valve has a knob at its upper end to permit movement back and forth of the slide valve within the channel." Additionally, the slide valve is specified as having "a generally square cross-sectional shape as opposed to the circular shape of channel . . . ." The Court construes the "valve means" element in Claim 33 to cover a structure equivalent to that described in the specification for the purpose stated in the claim and rejects Clinical's argument that the valve means requires a "mechanical switch."

Although the Koala's pneumatic connector serves the same function as the valve means in Claim 33, the pneumatic connector is not the same or an equivalent structure as that found in the 161 patent specification. The pneumatic connector is not a slide valve with a knob at its upper end that permits movement of the valve back and forth within the channel. To serve the same function of positioning between a first and second position, the pneumatic connector must be disconnected not slid. The Koala pneumatic connector does not have a knob that permits movement back and forth within the channel. To be considered an "equivalent" of the specification structure under section 112(6), the pneumatic connector must only have "insubstantial changes that add[] nothing of significance to the structure . . . ." See Valmont Industries, 983 F.2d at 1043. The pneumatic connector's structure is substantially and significantly different from the 161 specified structure. To perform the same function as the 161's motion along the channel, the pneumatic connector must be disconnected. Furthermore, the Koala is designed to switch between the two positions without some of the specifications of the 161 patent, such as the slide valve and the knob at the upper end of the slide valve. The two devices are neither structurally the same nor equivalents.
thus, the court holds that the Koala does not literally infringe the 161 patent with respect to Claim 33's valve means element.

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1. Valve pin actuator

Synventive proposes that the term be construed as

drive and alignment mechanism for translating the valve pin back and forth through the manifold and nozzle bores to seat and unseat the distal tip end of the valve pin at the mold gate and includes a valve pin assembly for maintaining the valve pin in alignment with a drive piston; the piston of the actuator is couplable to and decouplable from an actuator cap that is secured to the top end of the valve pin.

Husky proposes that the terms be construed as "drive mechanism for moving the valve pin and comprises four parts: a cylinder, a piston, a valve pin assembly, and a power circuit."

According to Synventive's definition, the valve pin actuator is not only a drive mechanism but an alignment mechanism, with the valve pin assembly component of the actuator performing the alignment function. The Lee Patent specifications state that an object of the invention is an improved valve pin actuator that provides a clearance that "allows for relative expansion between the hot runner manifold and the top clamp plate in any direction, without putting a significant side load force on the valve pin. '025 Patent col.2 l.24-29. The detailed description of the invention states that an "advantage of the actuator of the present invention is the manner in which there is essentially a self-alignment between the actuator assembly and the valve pin assembly; . . . the valve pin is supported in such a manner that would allow some limited side-to-side motion in any direction thereof as the hot runner manifold undergoes certain expansion." '025 Patent col.6 l.64-col.7 l.4. Thus, the specification describes an embodiment of the valve pin actuator in which the valve pin assembly performs an alignment function.

Reading the Lee Patents as a whole, however, this feature described in the specification cannot be read into the claims at issue in this suit. Other claims of the Lee Patents specifically claim a valve pin assembly with an alignment feature that is not claimed in the claims at issue. See, e.g., '025 Patent claims 10, 11, as they depend from claim 1. The valve pin actuator as set forth in claim 1 of the '870 Patent and claim 1 of the '116 Patent and their dependent claims does not claim an alignment feature. Were the alignment feature necessarily part of the construction of "valve pin actuator," then dependent claims 10 and 11 of the '025 Patent would be vulnerable to a validity challenge. See 35 U.S.C. § 112 P 4 (a claim in dependent form shall specify a further limitation of the subject matter claimed); Curtiss-Wright Flow Control, 438 F.3d at 1380 ("[R]eading an additional limitation from a dependent claim into an independent claim would not only make that additional limitation superfluous, it might render the dependent claim invalid.").

Under the principles of claim differentiation, the fact that the claims at issue do not specify an alignment function where other claims do suggests that the valve pin actuator is not limited to a construction that includes an alignment feature. Moreover, it appears that it is more precisely the valve pin assembly, a component of the valve pin actuator, that accomplishes the alignment. The term is construed as "drive mechanism for moving the valve pin back and forth through the manifold and nozzle bores that comprises a cylinder, a piston, a valve pin assembly and a power circuit."

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8. Valve pin assembly

Synventive proposes

an assembly that includes a first part for holding a top end of a valve pin and removably coupling the valve pin to an actuator piston, and a second part secured to the manifold for receiving the valve pin such that the valve pin, when
decoupled from the piston, remains extended through an injection nozzle and secured to the manifold when a top clamping plate and actuator cylinder and piston are removed from the mold, without requiring removal of the valve pin from the manifold. A valve pin assembly provides alignment between the valve pin and piston. A valve pin assembly provides radial clearance between the actuator cap and piston to prevent any substantial side load force being exerted on the valve pin.

Husky proposes "group of parts that includes a first part and a second part."

According to the '025 Patent claims, a valve pin assembly is part of the valve pin actuator, and consists of two parts, one part removably secured to the piston and one part secured to the manifold. See, e.g., '025 Patent, claims 1, 12, 20. The part secured to the piston holds a top end of the valve pin, and the part secured to the manifold receives the valve pin. Id; see also '025 Patent col.5 l.35-42 (describing a preferred embodiment of the invention). Husky's definition is devoid of context and does not assist a meaningful construction of the term.

The key disagreement between the competing constructions is Synventive's contention that the valve pin assembly provides alignment and radial clearance. As mentioned in the construction of "valve pin actuator," certain claims not at issue assert the alignment and radial clearance functions performed by the interaction of certain components of the valve pin assembly, specifically the ring, actuator cap and annular flange in the illustrated preferred embodiment. See '025 Patent col.7 l.1-17. Whereas the actuator cap is recited in three of the asserted claims, and the ring is an additional limitation recited in two of the asserted claims, the annular flange is not recited in any of the asserted claims. No other structure is apparently recited in the asserted claims that functions to provide alignment or radial clearance or interacts with the actuator cap and/or the ring to provide those functions. Reading the patents as a whole, taking care not to render language in other claims superfluous, a valve pin assembly may but is not required to provide alignment between the valve pin and the piston, and radial clearance between the actuator cap and the piston.

The term is construed as "part of the valve pin actuator that secures the valve pin to the actuator and includes a first part for holding a top end of a valve pin that is removably secured to the piston, and a second part for receiving the valve pin that is secured to the manifold."

5. "Variable"

With regard to this term, as was the case for "dead band" and "moveable/movement," Formula urges that the dead band can be varied only through axial movement of the piston. For the reasons stated above on the related arguments, we do not perceive that limitation to be included within this claim term. Rather, there is no need to look beyond the plain meaning of the term: capable of being modified, altered, or changed.

F. Claims 3 & 11: "a variable gauge thickness to trap air in said rolled film so as to facilitate the unwinding of said roll of stretched film"

Defendants also challenge Pliant's proposed construction of dependent claims 3 and 11. The disputed term is "variable gauge thickness." Plaint would construe the disputed term to mean, "the plastic film has thickness variations that help trap air and ease unwinding." Once again, Defendants propose a more detailed and limiting construction:

a variation in film thickness that is large enough to form pockets or raised portions that can trap air. The variation in thickness is deliberately produced, and thus would not include thickness variations resulting from the film manufacturing process, such as incidental impressions, scratches, or markings caused by passing the film over grooved rollers or by stretching of the film. As such, the variation in film thickness must be greater than about +/-20% to +/-30%.

The parties again agree that variable gauge thickness is not a term of art. Neither party disputes the ordinary meaning of variable. Moreover, both parties agree that gauge generally refers to thickness. I suspect that both parties would agree that
the inventor's choice of words was inapt, as under these definitions, the phrase "gauge thickness" is redundant. The specification fails to offer any insight into the term; for this reason, Pliant suggests that the term is "merely . . . a slightly different way of articulating the notion of a contoured surface that helps to trap air as the film is wound onto the roll." (Pl. Br. at 12.) Under Pliant's definition, variable gauge thickness means that the thickness of the plastic varies from point to point based on contours on the surface of the film. In contrast, Defendants rely on the same "disclaimer" argument that they offered, and I rejected, in support of their definition of "impressed, textured, surface." Once again, I am not persuaded that the inventor clearly disclaimed anything not expressly included in the preferred embodiment. Defendant Sigma also finds a lack of clarity in the claim language, the specification and the prosecution history. In essence, Sigma asks: "variable relative to what?" To answer that question, Sigma turns to extrinsic evidence. Sigma proposes that "variable gauge thickness" be construed as any thickness greater than the standard variations in thickness inherent in the manufacture of plastic films (as known to one of ordinary skill in the art at the time of the patent.) It is not necessary to turn to extrinsic evidence to address the degree to which the film thickness must vary. The claim language provides the answer to this question: the gauge must vary enough "to trap air . . . so as to facilitate the unwinding" of the roll. For this reason, I accept Pliant's proposed definition of the disputed claim. Whether or not the claim encompasses "unpatentable thickness variations" is a matter to be addressed at another time.

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3. Surface indicia have variable lengths to represent stored information

The surface indicia in claim 1 is further described as having "variable lengths to represent stored information." (Col. 5, lines 48-9) As properly construed, the phrase "variable lengths" is not limited to represent only "continuously variable lengths." (D.I. 558, at 12) Accordingly, claim 1 covers a disc-shaped member that stores information with surface indicia that have either continuously variable or discretely variable lengths. DMI admits that its CDs store information in a digital format using surface indicia with discretely variable lengths. (D.I. 347 at 5) Consequently, this limitation covers DMI's CDs.

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1. The Claim Language

We begin with the language of Claim 1 itself. As was noted above, Claim 1 of the '097 patent recites a pattern of splay "where [the offset] distance di varies between minimum distances for the first and last string ends in [the] sequence and a maximum distance for a string end between [the] first and last string ends in [the] sequence." Because the specification contains neither a definition of the phrase "varies between" nor a suggestion that AAI sought to assign to claim terms anything but their ordinary and accustomed meanings, those are the meanings we must give them. Intellicall, Inc. v. Phonometrics, Inc., 952 F.2d 1384, 1388, 21 U.S.P.Q.2D (BNA) 1383, 1386 (Fed. Cir. 1992); Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759, 221 U.S.P.Q. (BNA) 473, 477 (Fed. Cir. 1984).

AAI contends, citing a number of dictionary definitions of "between" in its favor, that "the plain meaning of the words 'varies between minimums . . . and a maximum' is that the distance of string splay must change . . . [but] nothing in Claim 1 prescribes (or limits) how much or how many times the distance must change." 5 Prince, for its part, cites alternative and equally valid dictionary definitions of "between" in an effort to demonstrate that the trial court properly construed the claim to require that the offset distance di take on at least three values, i.e., a minimum, a maximum, and at least one intermediate value. 6 A comparison of these definitions with those relied upon by AAI suggests that the claim phrase "varies between" is, at best, equivocal.

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5 Were the claim to be so construed, it would cover any splay pattern with more than one offset distance and would thus read on the Vortex racket.
According to this construction, the Vortex racket cannot literally infringe the claim.

According to one ordinary sense of "between"—"in the space that separates: BETWIXT (an alleyway @ two tall buildings) (a vacuum @ two electrodes): in the midst of: surrounded by (a lion rampant @ eight crosses)." Webster's Third New International Dictionary of the English Language 209 (1976) (definition 2b of preposition "between")—only a splay pattern in which the offset distance takes on more than two values has an offset distance that varies between minimum distances and a maximum distance. According, however, to another equally ordinary sense of "between"—"from one to the other of (air service @ the two cities)," id. (definition 3a of preposition "between")—a splay pattern in which the offset distance takes on only two values has an offset distance that varies between minimum distances and a maximum distance. In sum, the dispositive claim language on its face is susceptible to two equally plausible meanings, under one of which the Vortex racket literally infringes Claim 1, and under the other of which it does not. As a result, the scope of Claim 1 cannot be defined by resort to the ordinary and accustomed meanings of its terms alone, and the specification is completely silent with regard to the meaning of "varies between."

2. The Prosecution History

Because the disputed claim and its specification do not establish the meaning of the operative claim language, we turn to the prosecution history for guidance. Our reading of the prosecution history is informed by the understanding that the documents recording this history are created by persons schooled in the art of patent prosecution.

To the trained eye, the prosecution history of the '097 patent presents a muddled and self-contradictory story. As originally filed, independent Claim 1 broadly claimed a racket with any pattern of splay, while dependent Claims 5 and 7 each claimed a particular pattern of splay. Specifically, Claim 5 recited the pattern of uniform splay, while Claim 7 recited the pattern of splay described as the preferred embodiment in the patent's specification. Thus, as originally filed, Claim 1 was certainly broad enough to cover a racket with a pattern of splay containing less than three offset distances. The examiner initially rejected Claims 1 and 5 as anticipated by Lewis, a reference teaching the pattern of uniform splay. Such a rejection was, of course, appropriate as to Claim 1 because the pattern of uniform splay taught by Lewis surely anticipates a claim broadly covering a pattern with "at least some" splay.

Before focusing on AAI's response to this rejection, we pause to note a practical aspect of patent prosecution. Specifically, when amending a claim so as to avoid a rejection based on a particular reference, the skilled patent prosecutor usually seeks to draft an amendment that narrows the claim only as much as is thought necessary to overcome the rejection. Prior to looking at AAI's response to the initial rejection, an experienced patent prosecutor might thus have expected AAI to attempt to overcome Lewis by amending Claim 1 to cover all patterns of non-uniform splay, including those with only two offset distances.

AAI's written response to the first office action does not disappoint this expectation. As was discussed above, AAI's response included two distinct amendments. First, AAI rewrote Claim 1 as new Claim 20, expressly stating that it was doing so in a manner calculated to overcome the Lewis rejection. Second, AAI rewrote Claim 7 as new Claim 21. Since the subject matter of this latter claim had already been deemed allowable by the examiner, AAI did not discuss Claim 21 beyond briefly remarking that it was an independent version of Claim 7. This brief remark sharply contrasts with AAI's detailed explanation of why, in its view, Lewis did not anticipate Claim 20, thereby lending strong support to the conclusion that AAI drafted Claim 20 to be broader in scope than Claim 21. We might well conclude that Claim 20 was directed to any non-uniform splay pattern, including a pattern having only two offset distances, were this the only evidence in the file history. It is not.

The record also contains documents clearly indicating that, with respect to the pattern of splay, AAI understood the scope of Claim 20 to approximate that of Claim 21, which both parties concede recites a pattern of splay containing at least three offset distances. The first such document is the examiner's Interview Summary Record of November 16, 1989, in which the examiner noted that AAI's "attorney explained how cl. 20 is directed to [the] preferred embodiment and how [its] recitation distinguishes over [the] cited references." In other words, according to this summary, the intended scope of Claim 20 was not the broadest scope that would nonetheless overcome the Lewis reference, but was instead the same as that of Claim 21, at least with respect to the basic pattern of splay. On this reading, Claims 20 and 21 differed only in that Claim 21, unlike
Claim 20, recited specific numerical values for the minimum and maximum offset distances.

AAI's appeal brief, like the interview summary, features the same characterization of Claim 20. There, as outlined above, AAI stated that both Claims 20 and 21 were based on the allowable subject matter that had originally appeared in Claim 7, reciting the pattern of splay in the preferred embodiment. Furthermore, AAI used the phrase "varies between" to describe the variable splay of the preferred embodiment and maintained that the "element of varying splay" was the same in Claims 20 and 21. Again, these assertions indicate that the scope of Claims 20 and 21 differed only with respect to the particular numerical embodiment described in Claim 21, but not with respect to the basic pattern of splay.

Two strong and contradictory interpretive strands thus run through the patent's prosecution history. According to the first, Claim 20 was drafted simply to avoid the Lewis reference and differs significantly in scope from Claim 21. According to the second, Claims 20 and 21 recite the same basic pattern of splay, while Claim 21 adds a numerical value limitation. Each strand, considered alone, leads to a coherent and distinct meaning of the disputed claim. One does not prevail over the other, and together they are irreconcilable. The prosecution in this case is thus unhelpful as an interpretive resource for construing the "varies between" claim limitation.

3. Claim Differentiation

Neither the claim, the specification, nor the prosecution history establishes the meaning of the phrase "varies between" in Claim 1. AAI, resorting to an interpretive guide for secondary support of its position regarding the meaning of "varies between," contends that the doctrine of claim differentiation compels us to interpret the claim as it does, i.e., to require that the offset distance take on two or more, rather than three or more, values. According to AAI, while "there is no question Claim 14 requires three or more different distances of string splay," it would constitute legal error to read the "continuously" limitation of Claim 14 into Claim 1.

AAI's argument overlooks the fact that Prince does not contend that Claim 1, like Claim 14, requires that the offset distance recited therein vary continuously between minimums and a maximum. Continuous variation, as AAI itself concedes, requires a continuous gradual change in the offset distance of parallel strings; this implies that the offset distance for each string differs from that of both adjacent strings. In contrast, Prince contends only that Claim 1 requires that the offset distance take on three or more values, a potentially broader limitation. For example, suppose a tennis racket were to employ seventeen horizontal strings but only four offset distances. Under Prince's construction, this arrangement would infringe Claim 1 because it employs more than three offset distances, but would not infringe Claim 14 because the offset distances do not vary continuously. Therefore, assent to Prince's contention that Claim 1 requires three or more offset distances would not render the "continuously" limitation in Claim 14 superfluous. In short, the choice between Prince's and AAI's construction of Claim 1 simply does not implicate the doctrine of claim differentiation, and we are left with two equally plausible meanings of Claim 1. We must therefore pursue the interpretive process to state which of the two meanings is correct.

4. Section 112

In order to decide which of the two senses of "varies between" to employ in construing the '097 patent, we refer to the statutory provision that prescribes the would-be patentee's claim drafting burden, 35 U.S.C. § 112 (1988). Specifically, paragraph 2 of section 112 requires that the "specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." (Emphasis added). As courts have recognized since the requirement that one's invention be distinctly claimed became part of the patent law in 1870, the primary purpose of the requirement is "to guard against unreasonable advantages to the patentee and disadvantages to others arising from uncertainty as to their [respective] rights." General Electric Co. v. Wabash Appliance Corp., 304 U.S. 364, 369, 82 L. Ed. 1402, 58 S. Ct. 899 (1938). See, e.g., McClain v. Ortmary, 141 U.S. 419, 424, 35 L. Ed. 800, 12 S. Ct. 76 (1891) ("The object of the patent law in requiring the patentee [to distinctly claim his invention] is not only to secure to him all to which he is entitled, but to apprise the public of what is still open to them."); Rengo Co. v. Molins Mach. Co., 657 F.2d 535, 551 (3d Cir.) ("Its purpose is to demarcate the boundaries of the purported invention, in order to provide notice to others of the limits beyond which experimentation and invention are undertaken at the risk of infringement.") (internal quotation omitted), cert. denied, 454 U.S. 1055, 70 L. Ed. 2d 591, 102 S. Ct. 600 (1981); Hoganas AB v. Dresser Indus., 9 F.3d 948, 951, 28 U.S.P.Q.2d (BNA) 1936, 1939 (Fed. Cir. 1993) (function of claims is "putting competitors on notice of the scope of the claimed invention"). Were we to allow AAI successfully to assert the broader of the two senses of "between" against
Prince, we would undermine the fair notice function of the requirement that the patentee distinctly claim the subject matter disclosed in the patent from which he can exclude others temporarily. Where there is an equal choice between a broader and a narrower meaning of a claim, and there is an enabling disclosure that indicates that the applicant is at least entitled to a claim having the narrower meaning, we consider the notice function of the claim to be best served by adopting the narrower meaning.

--- Footnotes ---

7 Patent Act of 1870, ch. 230, § 26, 16 Stat. 198, 201 ("Before any inventor or discoverer shall receive a patent . . . he shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery . . .").

--- End Footnotes ---

We conclude that Claim 1 of the '097 patent includes the limitation that the splay-creating string end offset distance take on at least three values, i.e., a minimum, a maximum, and at least one intermediate value. We thus affirm the district court's conclusion that Claim 1 does not literally read on the Vortex racket.

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5. "the volume of chlorine drawn from the chlorine supply canister during a period of continuous sewage effluent recirculation varies with the duration period of continuous sewage effluent recirculation"

Cecil's argues that the key to this phrase is that chlorine is drawn from the supply canister "regardless of the duration period" of recirculation. Dkt. No. 22 at 37. Chaffin argues that the phrase means that "the longer the sewage effluent is recirculated without stopping, the greater the volume of chlorine that is dispensed." The distinction between these two interpretations is a fine one, if it exists at all. If chlorine is drawn from the supply canister regardless of the duration of recirculation, then it follows that the longer the recirculation runs, the more chlorine is dispensed (up to the limit of how much chlorine is in the supply canister, of course).

That said, Chaffin's formulation seems closer to the mark. The difference is, as with the proposed constructions of "venturi chamber," one of focus: Cecil's construction focuses on whether chlorine is drawn, while Chaffin's construction points to how much chlorine is drawn. The language of the claim, however, describes how much chlorine is drawn: the amount "varies with the duration . . . of . . . recirculation." Chaffin's construction, then, is more in keeping with the actual language of the claims.

Thus, the Court adopts Chaffin's proposed construction: "the volume of chlorine drawn from the chlorine supply canister during a period of continuous sewage effluent recirculation varies with the duration period of continuous sewage effluent recirculation" means "the longer the sewage effluent is recirculated without stopping, the greater the volume of chlorine that is dispensed."

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8. Claim 1 - "movably coupled to the frame and operable for being moved with respect to said erected frame to vary the position of the dunnage structure and the received product within the container"

Bradford proposes a multipart or compound construction for this term consisting of the following:

a. "coupled to" - linked together, connected or joined;

b. "frame" - a structure that gives shape or support;
c. "vary the position" - to make or cause a change in place or position;

d. "operable for being moved with respect to said erected frame to vary the position of the dunnage structure and the received product within the container" - being such that use or operation is possible;

e. "dunnage structure" - a number of flexible parts held or put together in a particular way for separating and protecting the products shipped in the container.

Bradford's proposed definition is essentially an amalgam of its other proposed term constructions with the exception of the term in subpart d.

Defendants propose that the above term means "coupled to' the 'frame' so that the 'dunnage structure' is capable of being moved with respect to said erected 'frame' to make or cause a complete change in the place or position of the product and the 'dunnage structure' within the container, and excluding limited sliding of dunnage structure loops along a supporting rod." Defendants' proposed definition of this term again seeks to impose negative limitations on the claim. According to Defendant's proposed construction, this claim would not cover dunnage structures with loops that slide along a supporting rod. Defendants also contend that "vary the position" requires a "complete change of position" as opposed to just a "change of position."

In support of their construction, Defendants rely on the prosecution history of the '916 Patent in which Bradford distinguished the movement of its dunnage structure from Janus when it stated, "Applicants disagree with the Examiner's reference to Janus's teaching of dunnage structures which are moveable on the frame and the way in which such limitation is claimed and taught in the present application[.]" Doc. No. 48-3, at 6. Defendants then note that in the Janus patent, U.S Patent 5,211,290, the dunnage structures are capable of limited sliding along supporting rods. See U.S. Patent 5,211,290, Fig. 1. Therefore, Defendants contend, in distinguishing Janus, Bradford disclaimed dunnage structures which are capable of limited sliding along a supporting rod. The Court disagrees.

In order for the prosecution history to limit the scope of a claim, the applicant must clearly and unambiguously disavow or disclaim coverage of relevant subject matter. Omega Eng., Inc. v. Raytek Corp., 334 F.3d 1314, 1325 (Fed. Cir. 2003). In this case, although Bradford distinguished Janus's moveable dunnage structures from the moveable dunnage structures of the claimed invention, the scope of Bradford's disclaimer of Janus's moveable dunnage structure is not apparent from the limited excerpts of the prosecution history before the Court. In other words, the prosecution history on which Defendants rely does not indicate a clear and unambiguous disclaimer of dunnage structures which are capable of limited sliding. Therefore, the prosecution history does not limit the '916 Patent to claiming dunnage structures which are capable of limited sliding.

Moreover, it is not readily apparent to the Court that Janus even claims dunnage structures which are capable of limited sliding. Therefore, as it relates to the term "vary the position", the prosecution history cited by Defendants would not constitute a disavowal of anything that Janus claims. With regard to the preferred embodiment at issue, the specification in Janus states in pertinent part:

The bay defining element 19 defines a plurality of bays 32, five in this embodiment. A flexible lower suspension sheet 34 is mounted to the bay defining element 19 to extend across the bays 32 as shown in FIG. 1. The lower suspension sheet 34 is preferably held in place to the transverse bars 22 by split sleeves 36, as best shown in FIG. 5. The split sleeves 36 preferably snap into position over the transverse bars 22 to maintain the desired configuration for the lower suspension sheet 34 in each of the bays 32. In this way, the lower suspension sheet 34 cooperates with the lower portion 14 of the frame 12 to define five product receiving areas, one associated with each of the bays. The split sleeves 36 can be formed of any suitable material, including metals and appropriate polymers. The split sleeve can be formed to shape, and if polymeric can be either extruded or slit from a tube. A wide variety of materials are suitable, but a plastic such as polypropylene is presently preferred.

U.S. Patent 5,211,290 col. 3, ll. 59-68, col. 4 ll. 1-9. In layman's terms the embodiment in Figure 1 shows that the dunnage structures snap onto a series of supporting rods which span across the width of the container. In the embodiment depicted in Figure 1, the dunnage structures are capable of limited lateral sliding across the support rods because the dunnage structures are not as wide as the support rods are long.
It does not appear to the Court, however, that this limited ability of the dunnage structure to slide laterally is necessary to the operation of the invention in Janus. In Janus, the container in Figure 1 is reduced in size by folding it along its length so that it is actually longer in the collapsed position than in the erected position. See id. col. 6, ll. 28-37. It seems that the dunnage structure could be nearly as wide as the support rod so long as the split sleeve could rotate freely around the support rod while the container is being moved to the collapsed position. Thus, it does not appear that lateral sliding of the dunnage structure is necessary even in the preferred embodiment. Finally, having reviewed the '290 Patent, nowhere does it appear to claim limited sliding of the dunnage structure in the claims or the specification. Therefore, Bradford could not have disclaimed dunnage structures capable of limited sliding when it distinguished Janus to the Examiner.

Therefore, the Court rejects Defendants' limitation "excluding limited sliding of dunnage structure loops along a supporting rod." Additionally, the Court finds no support for Defendant's limitation that there must be a "complete change of position". Therefore, that limitation is rejected as well. The Court accepts Bradford's proposed construction of this term with the caveat, however, that the subparts will be modified to conform with the Court's previous construction of those terms. Accordingly, the Court holds that "movably coupled to the frame and operable for being moved with respect to said erected frame to vary the position of the dunnage structure and the received product within the container" means:

a. "coupled to" - linked together, connected or joined;

b. "frame" - a structure that gives shape or support but excluding a substantially continuous surface (i.e., walls), that gives shape or support to the rack container;

c. "vary the position" - to make or cause a change in place or position;

d. "operable for being moved with respect to said erected frame to vary the position of the dunnage structure and the received product within the container" - being such that use or operation is possible;

e. "dunnage structure" - a number of flexible parts held or put together in a particular way for separating and protecting the products shipped in the container.

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1. Meaning Of "Vault".

Claim 1 of the '904 patent discloses "a vault for housing said video recorder." See claim 1 of the '186 patent. The court construes "vault" in this context to mean a durable box-type steel container, that may be locked, and that is of a size capable of housing a video recorder and being placed in the trunk of an automobile. 2

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Footnotes

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2 The term "vault" is used in the challenged claims of both the '186 and '904 patents. The court will construe the term "vault" as used in both patents in the same manner.

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End Footnotes

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The court's construction is consistent with the preferred embodiment described in the specifications. The specifications for the Peterson patents provide:

The video recorder 16, interface box 22 and environmental control unit are housed within the vault 20 which is mounted in the trunk of the patrol car 10. The vault 20 is a stainless steel vault secured with a tamper-resistant padlock. The vault 20 is fireproof and bullet-proof. It is extremely durable, much like the flight recorder box on airplanes. The interior of the vault 20 is provided with a stamped aluminum insert having recesses for receiving the video recorder, interface box and environmental control unit. A foam insert in the lid of the vault 20 is provided to cushion the components of the system in the event an effort is made to open the vault 20 or the patrol car 10 is destroyed.
The vault 20 is an environmentally controlled steel vault, substantially box-like in shape and having an upper portion hingedly connected to a lower portion. The two portions of the vault close together and are securely locked by a padlock. The padlock is of heavy-duty construction so that it will withstand efforts to unlock it and thereby gain access to the video recorder housed with in the vault 20. The vault 20 incorporates a heater and cooling element housed in the environmental control unit to maintain the temperature within the vault 20 in the range of 40 [degrees] F. to 90 [degrees] F. The vault 20 is bolted in the trunk of the patrol car.

(Emphasis added.) The specifications, especially the underlined portions above, strongly support the court's definition of vault. See Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1550 (Fed. Cir.) (interpretation of term that would exclude the inventor's preferred embodiment in the specification is rarely the correct interpretation), cert. denied, 135 L. Ed. 2d 1048, 116 S. Ct. 2523 (1996).

The court's construction is further supported by the use of the term "vault" in the other claims of the '904 and '186 patents. Claim 9 of the '904 patent requires that the vault be a "closed bulletproof and fireproof chamber." See claims 6, 14 of the '186 patent. In addition, apparatus claim 14 of the '904 patent requires that the vault be mounted in the trunk of the vehicle. See claims 6, 14 of the '186 patent. All of these references support the court's interpretation that the "vault" is a durable container, that may be locked, and that is of a size capable of being placed in the trunk of an automobile.

The prosecution history of the Peterson patents also favors the court's construction. The '904 patent application originally was rejected as "obvious" in light of a prior art magazine article that generally discussed police car video surveillance systems. The patent examiner stated that storing the video recorder in a vault was "simply a matter of design option" and was not patentable. Peterson responded that amended claim 1, which recites "that the vault is located in a locked compartment of the vehicle," 3 differs from the prior art. Peterson urged that his invention was novel and patentable because the system described in the magazine article did not speak to the specifics of storing the video recorder and clearly permitted the video tape to be rewound and played back. 4 Peterson also urged that "there is absolutely no suggestion [in the magazine article] of a vault in a locked compartment of a vehicle receiving the video recorder or storing the video tape during and after processing." Soon thereafter and without elaboration on this point, the patent examiner issued the '904 patent. From this history, it is apparent that the size of the claimed vault (capable of housing a video recorder and being stored in the trunk of an automobile) and the ability to lock the vault are essential elements of the meaning of the term "vault" as used in the Peterson patents.

3 For some reason not clear in the record or the prosecution history, claim 1(d) of the '904 patent as issued does not contain this language. The patent specification and the prosecution history, however, provide sufficient support for the conclusion that the vault in claim 1 is located in a locked compartment of the vehicle.

4 Peterson contended that his invention facilitated the stated objective of newly added claim 15 (claim 14 of the final '904 patent), i.e., to prevent the playback, rewinding, and erasure of the video tape by the vehicle operator or other individual.

The court's construction comports with the pertinent common definitions of "vault" as "a room for the safekeeping of valuables and commonly built of steel" and "a special compartment [usually] in a piece of office equipment for the safekeeping of money." Webster's New Int'l Dictionary 2536 (3d ed. 1986). Other relevant definitions of "vault" include "a room or compartment, often built of or lined with steel, reserved for the storage and safekeeping of valuables" and "a strong metal cabinet, usually fireproof and burglarproof, for the storage of valuables." Random House Unabridged Dictionary (2d Ed. 1993). These definitions support the court's construction of vault as a durable steel container, capable of being locked, and of a size capable of housing a video recorder.

The court has construed the term "vault" based solely on intrinsic evidence (the claims, specification, and prosecution history) and the pertinent dictionary definitions available to the court. Plaintiffs and defendant both agree that the meaning of the term "vault" should be ascertained solely by reviewing the intrinsic evidence and relevant dictionary definitions. The court rejects, however, the proposed definitions of "vault" advanced by plaintiffs and defendant.
Plaintiffs initially proposed in their summary judgment briefing that the term vault is "a durable, protective housing for the video recorder of the system." The court essentially has included the elements of this definition as part of its definition of vault. The court does not believe plaintiffs' definition, however, fully describes the term vault as it is used in the Peterson patents. At the Markman hearing, plaintiffs proposed that the term "vault" means "a secured durable housing in which the video recorder operates when the system is in use, and which provides a safekeeping function to protect the recording against damage and unauthorized access." Although this definition specifies many of the vault's purposes and functions in practice, the court does not believe that this definition adequately describes the inherent characteristics of the "vault" in the Peterson patents.

In its summary judgment briefing, defendant asserted that the term "vault" means "a place to house the video recorder." Defendant vigorously argued that the court should not read additional limitations contained in other dependent claims (such as bulletproof and fireproof in dependent claim 9) into the meaning of vault in independent claim 1 of the '904 patent. In sharp contrast, defendant argued at the Markman hearing that the term "vault" means a metal enclosure that has a temperature control regulator, is bulletproof, fireproof, and tamper proof, and prevents previously taped events from being taped over.

Defendant's first proposed definition does not adequately describe all of the characteristics of a "vault" as used in the Peterson patents. In addition, the court rejects defendant's second proposed definition because it is inconsistent with the doctrine of claim differentiation. As noted previously, the concept of claim differentiation provides that "each claim of a patent constitutes a separate invention and gives rise to separate rights." Jones v. Hardy, 727 F.2d at 1528. Defendant argued at the Markman hearing that the term "vault" appearing in claim 1 of the '904 and '186 patents should be read in light of the patent specifications. The patent specifications, which discuss the best mode or preferred embodiment of the invention, state that the vault has a temperature control regulator, is bulletproof, fireproof, and tamper proof, and prevents previously taped events from being taped over. Although claims are interpreted in light of the patent specification, this "does not mean that everything expressed in the specification must be read into all the claims." SRI Int'l, 775 F.2d at 1121 (quoting Raytheon Co. v. Roper Corp., 724 F.2d 951, 957 (Fed. Cir. 1983), cert. denied, 469 U.S. 835, 83 L. Ed. 2d 69, 105 S. Ct. 127 (1984)); see Transmatic, Inc. v. Gulton Indus., Inc., 53 F.3d 1270, 1277 (Fed. Cir. 1995); Intervet, 887 F.2d at 1053 ("Limitations appearing in the specification will not be read into claims."). "Interpreting what is meant by a word in a claim 'is not to be confused with adding an extraneous limitation appearing in the specification, which is improper.'" Id. (quoting E.I. DuPont De Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir. 1988)). The specification identifies only the best mode of practicing an invention, not the scope of the invention. 5 Transmatic, 53 F.3d at 1276. The claims measure the scope of the invention. 6 SRI Int'l, 775 F.2d at 1121. The court accordingly rejects defendant's contention that the limitations found in dependent claims of the Peterson patents (such as fireproof and bulletproof) should be read into the meaning of "vault" found in an independent claim.

--- Footnotes ---

5 Defendant is well aware that the limitations of terms found in dependent claims should not be read into those same terms found in an independent claim. Defendant argued to this court that "an additional limitation in a dependent claim should not be imported into the independent claim - even if the additional limitation is described in the specification." Def.'s Reply In Supp. Of Mot. For Summary J. at 4. With respect to the term "vault," defendant argued that "these characteristics [i.e., bulletproof and fireproof chamber] of a vault may not be implied into the vault of claim 1, because the claim element there is simply a 'vault'." Def.'s Mem. In Supp. Of Mot. For Summary J. at 17.

6 In fact, the Peterson patents state that only preferred embodiments are shown and that the scope of the invention is defined by the claims.

7 Counsel for defendant conceded at the Markman hearing that some violence to the claim differentiation doctrine would result by importing defendant's suggested limitations into the term "vault" in claim 1.

--- End Footnotes ---
3. Meaning of "Vehicle".

At the Markman hearing, plaintiffs and defendant requested the court to construe the meaning of the disputed term "vehicle" in the challenged claims. Plaintiffs contend that the term "vehicle" is "a motor vehicle such as a police patrol car." Plaintiffs offer no support for their argument that the court should include a specific example of a vehicle as part of the definition. The jury's function is to decide if a specific example meets the definition of "vehicle" as that term is used in the Peterson patents.

Defendant claims that the term "vehicle" means "a means of conveyance or transport including any type of public or private transportation." The court will adopt defendant's proposed definition, which is supported by the Peterson patents and is consistent with the ordinary meaning of "vehicle." The patent specifications provide:

> It is understood, however, that the use of the surveillance system of the present disclosure is not limited to police surveillance. The surveillance system may be used in any type of public or private transportation.

Mr. Peterson clearly attempted to maintain a broad definition of vehicle although the vehicle discussed as the preferred embodiment is a police patrol car. Plaintiffs' definition of vehicle as a motor vehicle potentially is misleading and may exclude many types of public and private transportation. Subways, trolley cars, bicycles, and stagecoaches are all means of conveyance or transport that typically are not considered motor vehicles.

The term "vehicle" should be given its ordinary and accustomed meaning because there is no indication in the patent documents that Mr. Peterson intended otherwise. See Hoeschst, 78 F.3d at 1578; Transmatic, 53 F.3d at 1276. The court's construction of "vehicle" is consistent with the common understanding of vehicle as "a means of conveyance or transport" and a "means of carrying or transporting something: conveyance." Random House Unabridged Dictionary (2d ed. 1993); Webster's New Int'l Dictionary (3d ed. 1986). Based on the patent claims, specification, and relevant dictionary definitions, the court construes "vehicle" to mean "a means of conveyance or transport including any type of public or private transportation." 8

--- Footnotes ---

8 The court notes that its construction of "vehicle" does not include specific examples of vehicles such as an automobile or patrol car. On the other hand, the court's construction of "vault" includes a limitation that the vault "is of a size capable of . . . being placed in the trunk of an automobile." The use of the term "automobile" in the definition of vault restricts the size of the vault only, but does not restrict the vault of the Peterson patents to use in a particular type of vehicle.

--- End Footnotes ---

1) Use of the term "vehicle" instead of "automobile"

Defendant argues that the new language in the reexamined claims that refers to a "vehicle" rather than an "automobile" broadens the scope of the claims. Armed with a panoply of dictionary definitions and the expert testimony of a linguist, Defendant contends that the word "vehicle" includes not only "automobiles," but means of conveyance such as trucks, boats, recreational vehicles, minivans. Def. Trial Brief, at 6. 1 All of these, indeed, are correctly termed "vehicles"--as are liquids and motion pictures when "vehicle" is used within particular contexts.

--- Footnotes ---

1 Defendant has previously urged the court that "vehicle" encompasses "any moving support or container fitted or used for the conveyance of bulky objects. For example, the term ‘vehicle’ may also include carriages, motorcycles, sleds, tanks, or...
However, no word can be usefully understood without reference to its context, and the task of the court in construing the claims of a patent is not to ransack linguistic authorities for the purest expression of the abstract idea of a "vehicle," but to understand what the word means as used in the claims under consideration. See Texas Instruments v. Cypress Semiconductor Corp., 90 F.3d 1558, 1564 (Fed.Cir. 1996)("Although the dictionary broadly defines 'conductor' as any substance that conducts an electrical charge, the patent itself belies such a broad construction.") (citing Quantum, 65 F.3d at 1580). Accordingly, Defendant's litany of vehicular examples, literally correct though it may be, is potentially highly misleading.

The real question, then, is not whether "vehicle" always means "automobile," but whether in the context of the claims to be construed the two terms are used as synonyms. Webster's defines "automobile" to mean "a usually four-wheeled automotive vehicle designed for passenger transportation and commonly propelled by an internal-combustion engine using a volatile fuel." Webster's Ninth New Collegiate Dictionary at 118 (1981). Defendant has put forth no compelling argument to show that as used in the reexamined claims "vehicle" necessarily means anything other than this. While it is true that everyday speech commonly distinguishes between "cars" and "trucks," this usage is neither uniform nor dispositive. The court must inquire whether "one of ordinary skill in the art" of the sort of sunshade set forth in the Patent in Suit would understand that "vehicle" necessarily encompasses not merely passenger vehicles but also, for example, "boats," as Defendant urges.

Here, the very breadth and flexibility of the "ordinary meaning" of the word "vehicle," as revealed by the range of dictionary citations Defendant has provided, require that the court make reference to the patent specification in order to determine what "vehicle" in this context properly means. The court is, after all, called upon to determine the "ordinary meaning [of the claim language] to one of skill in the art." Quantum, 65 F.3d at 1580 (emphasis added); see also Cypress Semiconductor, 90 F.3d at 1564. The reexamined patent, like the original patent, is entitled a "compactly foldable automobile sunshade." The reexamined patent, like the original patent, refers to the use of visors that rotate in the vehicle/automobile. These two factors strongly suggest that the most appropriate construction of the word "vehicle" is that of a light, generally four-wheeled passenger conveyance. In the context of the sunshade delineated in the original Patent in Suit, the term "automobile" does not mean anything different, but designates those conveyances most commonly called cars, minivans, recreational vehicles, sport utility vehicles, and light trucks. Excluded are boats, airplanes, tanks, and so forth. Consequently, the court finds that the use of the term "vehicle" in the reexamined patent does not of itself impermissibly broaden the scope of the claims.

In anticipation of the potential finding that "vending machine" is more than simply a name for the invention, the parties dispute the meaning of this term. They agree that the general dictionary definition of vending machine is a coin-operated machine for vending merchandise. (See Pls.' Mem. On Claim Construction 10; Aly Decl. Ex. 9). This definition may inform the claim construction of vending machine, "so long as [it] does not contradict any definition found in or ascertained by a reading of the patent documents." Phillips, 415 F.3d at 1322-23. For example, the specification clearly contemplates payment other than by coins, so an appropriate construction will not limit "vending machine" to coin operation. (See '400 Patent 2:50-61). Similarly, payment is clearly required "to initiate a vending transaction," and both the Patents' specifications and the preamble to claim 1 describe the vending of telecommunications channel access, not merchandise. (See '400 Patent 2:43-45, 16:2-6, 12-17).

Although the dictionary definition describes "vending machine" as a single unit, plaintiffs still argue that vending machine should be construed as a system and method for vending services to multiple users contemporaneously, not as a traditional "single, stand-alone device" in a fixed location. (Pls.' Mem. On Claim Construction 11-12). If the Patents' specifications "reveal a special definition given to [vending machine] by the patentee that differs from the meaning it would otherwise possess," such lexicography must control the claim construction of that term. Phillips, 415 F.3d at 1316. According to plaintiffs, the inventors intended vending machine to include "various components . . . distributed in diverse locations, rather than located in a single device." (Id. at 12). Defendant criticizes this construction as not representing the view of a person of ordinary skill in the art and offers, instead, its expert's opinion that equates "vending machine" with "essentially a
payphone for computers," as the patent specification diagrams "each show a vending machine that is a unitary, self-contained structure," and "[n]o figures in the . . . patents show it otherwise." (Cooley Aff. PP 15 and 26). In opposition, plaintiffs characterize Figure 4 as describing "not a single, stand-alone device, but . . . a block diagram . . ., including blocks representing the various components and functions that have to be present to provide telecommunications channel access," with "no requirement that the equipment providing those functions be combined into one single device." (Pls.' Mem. On Claim Construction 11). Plaintiffs' characterization disregards the fact that Figure 4, in fact, illustrates a single device labeled as item 300 in the diagram and described in the specification as the single machine to which users would connect. (See '400 Patent 11:41-43 and Fig. 4).

At the Markman hearing, plaintiffs cited the following specification language as supporting the contemporaneous use of one vending machine by multiple customers:

[I]t might be more cost effective to have one control unit operating multiple vending machines. These multiple vending machines may be arranged in the form of a kiosk to allow multiple customers access to the vending machine at the same time. Similarly, almost any combination of functional components of the vending machine could be moved to a location remote from the machine. This could be accomplished, for example, by networking a cluster of machines to a server either on site or at a remote location. ('400 Patent 4:28-37). This language describes multiple customers being served by multiple vending machines, not a single machine. That multiple vending machines may share a single control unit does not logically transform the multiple units into a single machine that serves multiple users. Plaintiffs' argument that the sharing of a single control unit by multiple vending machines somehow converts the multiple machines into a single one effectively represents the control unit to be the essence of a vending machine. Plaintiffs argue further that removing "any combination of functional components . . . to a location remote from the machine" leads to the same result, i.e., a single vending machine with multiple extensions. This position distills the essence of a vending machine into an undefined collection of whatever functional components are removed from the machine. Such construction is neither sensible nor supported by the specification or the claims, particularly claim 1 which clearly identifies several elements of a vending machine that must be present in order to embody the invention. Plaintiffs have not demonstrated that the Patents defined "vending machine" other than as a traditional stand-alone machine that serves a single customer at a time.

In light of the applicable legal standard, the parties' written submissions, and the argument of counsel, I construe the disputed claim language as follows:

<table>
<thead>
<tr>
<th>Term</th>
<th>Court's construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vending machine</td>
<td>A device for vending telecommunications channel access to a single customer at a time when the customer provides sufficient payment</td>
</tr>
</tbody>
</table>

2. "vent"

The parties have agreed on a meaning for the term "vent," which appears in claim 10. The proposed construction is "an aperture that provides an opportunity or means of escape, passage, or release." Dkt. No. 110 at 1-2. While the Court has does not disagree with the overall construction, it does believe that the word "aperture" would be unnecessarily confusing to the jury. Thus, the Court finds that the term "vent" should be construed as "an opening that provides an opportunity or means of escape, passage, or release."

1. Claim 22

Aspen and Merit agree that the old and new Aspenbasins satisfy all of the other limitations of Claim 22, except for the vent
A waste collection system comprising:

- a basin including at least one chamber configured to receive and retain fluids, the at least one chamber including a bottom surface and at least one sidewall extending substantially upward from the bottom surface to an upper rim;

- a first containment layer at least partially engaging the upper rim of the at least one chamber, the first containment layer including at least one aperture for receiving waste;

and a vent associated with the upper rim of the at least one chamber.

Accordingly, in this analysis, the only phrase needing construction is "a vent associated with the upper rim of the at least one chamber."

In its interpretation the Court will consider the ordinary meaning of "vent." In the context of waste bins and other receptacles, the ordinary meaning of "vent" is "[a]n opening provided for the discharge of pressure or the release of pressure from tanks, vessels, reactors, processing equipment, and so on." McGraw-Hill Dictionary of Scientific and Technical Terms (6th ed.), p. 2251.

The parties dispute in what way the vent is to be "associated" with the upper rim of the chamber. Aspen claims a vent associated with the clear plastic rim of the unit does not fall within the scope of Claim 22, and that the vent must be a part of the actual chamber, i.e., the basin.

Merit argues that the term "associated" means to be in a more or less close relationship, and does not mean that the vent need be actually connected to, or part of, the upper rim. Merit argues that the claim language itself, using the regular everyday meaning of "associated" should control, and not other claims, specifications or prosecution history. Merit further believes that the only limitation to the term "vent" is that it be an opening for the release of gases from the waste basin, regardless of how such vent is constructed.

In interpreting the phrase that the vent be "associated" with the upper rim, the Court will also consider the drawings contained within the '017 patent. The Court believes this is necessary in order to better understand what Merit intended when stating that the vent was to be "associated" with the upper rim. The Federal Circuit has held that such drawings are part of the specification and are relevant to claim construction. CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1153 (Fed.Cir. 1997). Here, the "vent associated with the upper rim of the at least one chamber," is illustrated in Figure 2 of the '017 Patent. Structure 82 in Figure 2 of the '017 Patent illustrates the vent, and shows that the vent is a recess that extends completely through the upper rim of the sidewall of the Backstop. While Merit argues that the drawing is meant for illustrative purposes only, and should not serve as a limitation to the claim, the court believes that the drawing is an important source in interpreting what Merit intended when stating that the vent is to be "associated" with the chamber. The drawing is clearly a further description of the very vague claim language.

In considering the above, the Court concludes that the term "vent," as used in Claim 22, is meant to be a recess that extends completely through the upper rim of the sidewall of the main chamber, and allows for the escape of gas.

6. VENT MEANS, CLAIM 5

ConAgra contends "vent means" in claim 5 invokes 35 U.S.C. § 112, P 6. ConAgra contends the function of the limitation is "to vent vapor from the first vessel," and the structure of the limitation is "an opening in the flange of the second vessel" (Filing No. 64). Green did not specifically address whether "vent means" invokes § 112, P 6 but defined the term as "any opening which allows venting of the annular space" (Id.).
Section 112, P 6 of title 35 provides:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

"A claim element that contains the word 'means' and recites a function is presumed to be drafted in means-plus-function format under 35 U.S.C. § 112 P 6." Net MoneyIN, Inc. v. VeriSign, Inc., 545 F.3d 1359, 1366 (Fed. Cir. 2008). The presumption is rebutted if the claim recites sufficient structure to perform the claimed function. Id. "The first step of a 35 U.S.C. § 112, P 6 analysis is to identify the function of the claim limitation. The second step requires identification of the structures disclosed in the specification and equivalents thereof that perform the claimed function." Telemac Cellular Corp. v. Topp Telecom, Inc., 247 F.3d 1316, 1324 (Fed. Cir. 2001) (internal citations omitted).

In this case, the Court finds "vent means" in claim 5 invokes 35 U.S.C. § 112, P 6. Claim 5 states: "The utensil in accordance with claim 1, wherein said second vessel includes vent means to vent vapor from said first vessel." The claim language presumptively invokes § 112, P 6, and the claim does not recite sufficient structure to rebut the presumption. Accordingly, the Court must construe the claim as a means-plus-function limitation. The plain language of claim 5 states that the function of the limitation is to vent vapor from the first vessel. The specification identifies an opening in the flange of the second vessel as the means for performing this function (See the '083 patent, col. 5, ll. 30-33; fig. 2). 3

Thus, "vent means" in claim 5 invokes § 112, P 6. The function of the limitation is to vent vapor from the first vessel, and the means for performing the function is an opening in the flange of the second vessel.

For the "poorly ventilated area" terms, US Foam applies dictionary definitions to create its proposal whereas Defendants propose construing "poorly ventilated area" to be the same as "confined area." A confined area, as defined in the specification, has two characteristics—limited ventilation and limited access. There is no support for requiring that a poorly ventilated area have limited access. US Foam introduces a "fresh air" requirement, though it appears in one of several possible definitions for "ventilate," has no support in the claims or specification. See WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE UNABRIDGED (1993) ("to cause fresh air to circulate through and vitiated or contaminated air to be simultaneously withdrawn from"). The Court construes "poorly ventilated area" to mean "an area where the circulation of air is poor."

XIII. "Ventilation opening"

The term "ventilation opening" appears in claims 9 and 10 of the '925 patent.

A. The Parties' Proposed Constructions

Black & Decker construes the term "ventilation opening" as "a permeable opening [may include air or moisture permeable material]." Bosch counters that the term means "an opening in the enclosure so constructed as to provide for the circulation of external air through the enclosure to remove heat, fumes, or vapor."
E. "Venturi" / "Venturi Tube" / "Venturi Passage"

Claim 1 of the '701 Patent contains the term "venturi passage," Claim 2 of the '714 Patent includes the term "venturi tube," and Claim 14 of the '701 Patent contains the single term "venturi." The parties agree that the terms "venturi," "venturi tube," and "venturi passage" should all be given the same construction. The evidence in the record establishes clearly that the ordinary and customary meaning of a "venturi" involves restricting or narrowing part of a passageway for the purpose of creating suction or, in other unrelated applications, for measuring flow rate.

TI Group argues that, acting as its own lexicographer, the patentee defined "venturi," "venturi tube" and "venturi passage" to have a different, more broad meaning. Specifically, TI Group argues that the terms should be construed to mean "a tube or wall defining a passageway that is narrower, or that has a smaller cross-sectional area, than the passageway leading to it." The patent specifications and file history do not, however, support TI Group's argument because they do not contain sufficient clarity to put one reasonably skilled in the art on notice that the inventor intended to redefine these three venturi terms. See, e.g., Merck & Co., Inc. v. Teva Pharmaceuticals USA, Inc., 395 F.3d 1364, 1370 (Fed. Cir.), cert. denied, 546 U.S. 972, 126 S. Ct. 488, 163 L. Ed. 2d 384 (2005); Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111, 1117 (Fed. Cir. 2004). As a result, the Court will construe these claim terms in accordance with their ordinary and customary meaning, as understood by a person of ordinary skill in the art who has read the entire patent.

Performance proposes that the terms should be construed to mean "a tube or passageway with wider sections at both ends of said tube or passageway." This proposed construction is more narrow than a reading of the full Patents allows. For example, Figure 1 of the '714 Patent reflects a venturi with a wider section as part of the tube or passageway. Figure 7 of the '714 Patent, on the other hand, reflects a venturi with the wider sections separate from what is labeled the venturi. As a result, the Patents make clear that the wider sections at both ends of the tube or passageway may be, but are not required to be, part of
TI Group's proposed construction, on the other hand, is more broad and general than is supported by the Patents. TI Group proposes that the venturi terms include any tube or other passageway that leads from a larger area, regardless of where the fluid from the tube or passageway flows and regardless of whether the flow of fluid through the tube or passageway exerts suction. As mentioned above, a person of ordinary skill in the art who has read these patents in their entirety would understand that the term "venturi" necessarily involves a tube or passageway, with larger areas at both ends, which creates or exerts suction. TI Group's proposed construction fails to require the larger area into which the fluid flows, and it fails to include the concept of suction which is vital to the term "venturi" as commonly understood by persons skilled in the art of fluid mechanics.

Having reviewed the patents in full and all other relevant evidence in the record, the Court construes the terms "venturi, "venturi tube" and "venturi passage" for purposes of these Patents to mean "a tube or other passageway for exerting suction, which tube or passageway is narrower than the areas at both ends." The larger areas at each end may either be part of the tube or passageway or be separate areas to which the tube or passageway is connected.

1. "venturi chamber"

The parties included the phrase "venturi chamber" in their Joint Claim Construction Statement. Dkt. No. 20. Cecil's Opening Claim Construction Brief, however, argued that no construction of the term was necessary because the term was not ambiguous. Dkt. No. 22, at 26. Chaffin, by contrast, proposed that "venturi chamber" means "a region in a tubular fluid pathway in which suction is produced due to a constriction." Cecil's, in its response, renewed its argument that "venturi chamber" need not be construed, but argued alternatively that Chaffin's construction is incorrect, and suggests instead that "venturi chamber" be construed as "a volume in which a significant drop in pressure relative to atmospheric pressure is caused by the flow of a liquid through that volume." Dkt. No. 26, at 21.

The Court agrees with Cecil's that "region" is ambiguous, and that "volume" is a better description of the venturi chamber in Chaffin's invention. As to the remainder of the construction, however, the difference appears to be in focus rather than a more fundamental disagreement. Chaffin's construction focuses on the actual effect of the venturi chamber and the reason for its use: the creation of suction. Cecil's construction focuses on the means by which that suction is created: a pressure drop. Cecil's construction, however, omits the means by which the drop in pressure is created: a constriction in the pipe. Dictionary definitions of "venturi" typically include the concept of restriction: "A short tube with a constricted throat . . .," THE AMERICAN HERITAGE DICTIONARY 1982 (3d ed.); "a short tube with a tapering constriction in the middle that causes an increase in the velocity of flow of a fluid and a corresponding decrease in fluid pressure . . .," MERRIAM-WEBSTER'S COLLEGE DICTIONARY 1311 (10th ed.).

Thus, with the slight change from "region" to "volume," the Court adopts Chaffin's construction of "venturi chamber": "a volume in a tubular fluid pathway in which suction is produced due to a constriction."

The '167 patent claims a self-forming hinge element that has a molded-in depression that defines an "essentially vertical depending straight wall." The specification and prosecution history do not define "essentially vertical," although "vertical" and "essentially vertical" are used interchangeably in the specification. Bailey asserts that the magistrate judge erred in construing the term "essentially vertical" to mean vertical or deviating only a few degrees from vertical. Bailey proffers a more expansive meaning, claiming that "essentially vertical" encompasses angles ranging from 45 to 90 degrees. Bailey supports his interpretation with expert testimony that "essentially vertical" means between 45 and 90 degrees to one of ordinary skill in the art. Bailey, Civ. A. No. 91-13121-MLW, slip op. at 15 (Mar. 11, 1997). M & N's experts, on the other hand, testified that the term means 90 degrees plus or minus a few degrees. Id. The magistrate judge construed "essentially vertical" as urged by M & N and determined that the 62 and 68 degree walls of the accused lids did not meet this claim.
Id. at 31. We agree with the magistrate judge's claim construction ("essentially vertical" means "vertical or a few degrees from vertical") and therefore uphold his infringement decision with respect to this limitation. Giving the claim language its ordinary meaning, walls deviating 22 and 28 degrees from vertical would not be "essentially vertical."

B. Application to this Case

Before the Court construes the relevant claim language in this case, some further understanding of the similarities and differences between Pro-Tech's Sno Pusher and defendants' Sno-Pro is needed. There is no real dispute here that plaintiff's Sno Pusher does use horizontal and vertical channels to provide added strength to the blade. The real issue, with respect to infringement at least, is whether the term "vertical channel," as used in the '755 patent, is broad enough to include defendants' "boxed gusset" design. Is defendants' design such that it utilizes channels?

As illustrated in Figure 4 of the '755 patent, there are three horizontal channels (designated "11" in Figure 4 of the patent, which is attached as Exhibit A to this Decision and Order) running across the back of the blade, and three vertical channels ("12") between the horizontal channels. The patent states that all the channels are welded to the blade. '755 Patent col. 2 line 37.

According to defendants, their Sno-Pro design does not utilize vertical reinforcing channels, but rather "boxed gussets." A gusset, in general, is a flat, usually angled piece of metal used for strengthening a structure. Defendants' expert, Ronald N. Salzman, who holds a doctorate in Mechanical Engineering, describes a boxed gusset as "a double gusset with a plate welded between." Salzman Aff. (Dkt. # 56) P5(F). A critical issue in this case is whether defendants' boxed gusset constitutes a "channel" as that term is used in the '755 patent.

The relevant claim language of the '755 patent states that it claims "an upstanding transverse blade with a front, back, and bottom, said blade including a plurality of horizontal and vertical reinforcing channels on the back thereof ...." The claims themselves give no further explanation of what is meant by "channel." The specification also gives no definition of "channel," though it does state that "welded straight channels are inherently stronger and not prone to failure by buckling, as compared to typical prior art vertical curved ribs cut from steel plate." '755 Patent col. 2 lines 38-41.

The claims do, however, appear to draw a distinction between a "channel" and a "gusset." In addition to claiming "a plurality of horizontal and vertical reinforcing channels on the back" of the blade, Claim 1 claims "a horizontal backing member with a plurality of vertical gussets mounted on said blade along and behind the bottom thereof." '755 Patent col. 3 lines 21-26.

The Merriam-Webster Online Dictionary (http://m-w.com) gives several definitions for the word "channel," the most apt of which is "a long gutter, groove, or furrow; a metal bar of flattened U-shaped section." Similary, the Oxford English Dictionary (http://oed.com) defines "channel" as a "lengthened groove or furrow on any surface," and also states that "channel" can be "short for channel bar," which is defined as "an iron bar or beam flanged to form a channel on one side." Those definitions do aptly describe the channels shown in Figure 4 of the '755 patent, which appear to be long pieces of metal with a bracket-shaped ("]) cross-section.

Plaintiff's expert, James B. Taylor, who holds a doctorate in Industrial Engineering, opines that "the 'boxed gusset' utilized
by the defendants is a vertical channel as it comprises all of the elements one of ordinary skill in the art at the time of the invention would have understood (i.e., a pair of sides or flanges connected to and extending in parallel from a web).” Taylor Aff. (Dkt. # 71) P16. He states that the fact that defendants' boxed gusset has triangular rather than rectangular sides is immaterial, because "all cross sections of the [boxed gusset] channel are "U" shaped …." Id. P14.

Salzman, on the other hand, states in his affidavit that a boxed gusset is not the same thing as a channel. He opines that "channels are hot-rolled factory made structural steel shapes" that are "identified as 'C', 'MC', or 'U' shapes in the art." Salzman Aff. PP5(E), 5(F). He adds that a "gusset … is a piece of steel plate used as a reinforcement to provide stiffening," and that "welding a plate between two gussets does not create a channel." Id. P5(F).

Based simply on the claim language and the ordinary meaning of the term "channel," it is not immediately apparent whether "channel" should be construed to include a "boxed gusset." Given its commonly understood meaning, the term "channel" would not generally bring to mind an object with triangular sides. At the same time, though, it does seem that one could construct a channel by welding three metal plates together to form a U or bracket shape.

As stated, however, the third category of intrinsic evidence that a court may consider is the prosecution history, which "contains the complete record of all the proceedings before the Patent and Trademark Office, including any express representations made by the applicant regarding the scope of the claims.” Vitronics, 90 F.3d at 1582. Based upon the prosecution history of the '755 patent, I conclude that the term "channel," as used in the patent, does not include a "boxed gusset."

"Even where the claim language is not ambiguous, 'the prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution.' Scheuer v. Laboratory Computer Systems, Inc., 308 F.3d 1304, 1313 (Fed. Cir. 2002) (quoting Southwall Techs., Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir.), cert. denied, 516 U.S. 987, 133 L. Ed. 2d 424, 116 S. Ct. 515 (1995)). "Thus, the prosecution history limits even clear claim language so as to exclude any interpretation that was surrendered during prosecution, but only where the accused infringer can demonstrate that the patentee surrendered that interpretation 'with reasonable clarity and deliberateness.'" Id. (quoting Pall Corp. v. PTI Techs., Inc., 259 F.3d 1383, 1393 (Fed. Cir. 2001), vacated on other grounds sub nom. PTI Techs., Inc. v. Pall Corp., 535 U.S. 1109, 153 L. Ed. 2d 152, 122 S. Ct. 2324 (2002)) (additional internal quotes omitted).

The inventor, Michael Weagley, submitted a patent application for a snow pusher on October 28, 1996. See Basch Aff. (Dkt. # 70) Ex. I. Claims 1 and 2 of the application stated in part that Weagley claimed a snow pusher with "an upstanding transverse blade including a plurality of horizontal and vertical reinforcing channels on the back thereof …." Id. 5, 6.

On May 12, 1997, the examiner rejected Claims 1 and 2, in part on grounds of obviousness. In particular, the examiner stated that an existing patent ("Goldberg") "shows a snowplow having a transverse blade with vertical channels … but does not show horizontal channels." He also stated that another patent ("Meyer") "shows a snow plow blade with a rubber edge having horizontal channels …." Basch Aff. Ex. I at 22. He then stated that "it would have been obvious to one of ordinary skill in the art to modify Goldberg to include horizontal channels as taught by Meyer to improve the strength of the blade with these reinforcement members." Id.

In response to that decision, Weagley submitted an amended application on August 13, 1997. In support of the amended application, Weagley stated that the patent examiner's reference to Goldberg as a patent for a snowplow blade with vertical channels on its back "is a misperception. Goldberg's 'angle bars' … are not channels." Basch Aff. Ex. I at 30. Similarly, Weagley asserted that the examiner's description of the Meyer plow as having horizontal channels on its back was also a "misperception. Meyer's angle irons … are not channels. The applicant's [i.e. Weagley's] channels give strength and rigidity to the blade structure, and for this purpose, channels are greatly superior to angles." Id.

On September 8, 1997, the Patent and Trademark Office allowed the amended application. In his reasons for allowance, the examiner stated that "the prior art of record fails to show or suggest a snows [sic] pusher that includes a blade having vertical and horizontal reinforcing channels …." Gianforti Aff. Ex. J at 3 (emphasis in original). The examiner, then, apparently agreed with Weagley that the reinforcing structures disclosed by the Goldberg and Meyer patents were not "channels."

It appears clear then that during the prosecution of the patent application, Weagley expressly limited the scope of the term
"channel" in order to avoid rejection of the application based on prior art. Although the prior art apparently did not employ boxed gussets, Weagley made clear that he did not intend the term "reinforcing channels" to include all types of reinforcing structures on the back of the plow blade. 4 Weagley apparently did this in order to avoid prior art, i.e. Goldberg and Meyer.

Despite Weagley's reference to "Meyer's angle irons," the Meyer patent does not appear to use that term. Rather, it calls for "vertical supports" that "extend along the back of the blade," and "transverse supports extending transversely across the back of the blade to combine with the vertical support for rigifying the body portion." Gianforti Aff. Ex. F, col. 5 lines 1-6.

Plaintiff cannot obtain here what it abandoned during prosecution of the patent. "Claims that have been narrowed in order to obtain issuance over the prior art cannot later be interpreted to cover that which was previously disclaimed during prosecution." Elekta Instrument S.A. v. O.U.R. Scientific Intern., Inc., 214 F.3d 1302, 1308 (Fed. Cir. 2000) (citing Graham v. John Deere Co., 383 U.S. 1, 33, 15 L. Ed. 2d 545, 86 S. Ct. 684 (1966)). See also Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576 (Fed. Cir. 1995) ("Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers"); Lemelson v. General Mills, Inc., 968 F.2d 1202, 1206 (Fed. Cir. 1992) ("Prosecution history is especially important when the invention involves a crowded art field, or when there is particular prior art that the applicant is trying to distinguish"); cert. denied, 506 U.S. 1053, 122 L. Ed. 2d 131, 113 S. Ct. 976 (1993); Advance Transformer Co. v. Levinson, 837 F.2d 1081, 1083 (Fed. Cir. 1988) ("Positions taken in order to obtain allowance of an applicant's claims are pertinent to an understanding and interpretation of the claims that are granted by the PTO, and may work an estoppel as against a subsequent different or broader interpretation").

I am aware that the Court should "consider[] the prosecution history … to determine whether the applicant clearly and unambiguously 'disclaimed or disavowed [any interpretation] during prosecution in order to obtain claim allowance.'" Middleton, Inc. v. Minn. Mining & Mfg. Co., 311 F.3d 1384, 1388 (Fed. Cir. 2002) (quoting Standard Oil Co. v. Am. Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985)). I also recognize that Weagley did not expressly distinguish channels from "boxed gussets," since neither the Goldberg nor Meyer patent employed boxed gussets. Nonetheless, Weagley did make clear that the term "channel," as used in the patent application, was not meant to include all reinforcing mechanisms.

I also note that it appears from the '755 patent itself that this is a "crowded art field," which makes prosecution history "especially important…." Lemelson, 968 F.2d at 1206. The patent states that "snow pushers of various configurations are presently known," and that "they are typically characterized by one or more of the following: a relatively complex mounting arrangement, a steel blade as the snow scraper, a relatively light construction backed with ribs and angles." '755 patent, col. 1, lines 9-13. The patent examiner's initial rejection of the patent application on grounds of obviousness also suggests that the field is a crowded one. The '755 patent may represent some improvement over prior art, but it seems clear that the patentee was not striking out into virgin territory.

Plaintiff's expert, Dr. Taylor, opined that a person of ordinary skill in the art would understand the term "channel" to mean "a mechanical structure with a U-shaped cross section," and that "a channel includes a pair of parallel sides or flanges … that extend from the edges of a web or back … in a direction generally perpendicular to the web." Taylor Aff. P13. He also states that "depending upon the orientation of the channel as described in the '755 patent, the sides or flanges would either lie parallel with a generally horizontal plane (horizontal channels) or in a generally vertical plane (vertical channels), and could be curved so as to enable welding to the rear surface of the curved pusher blade." Id.

Based on that construction of "channel," Taylor further opines that a "simple observation of the cross-section of [defendants'] 'boxed gusset' clearly shows it to be a channel," because "all cross sections of the channel are 'U' shaped." Id. P14. I am not persuaded by that reasoning. Focusing solely on the cross-section, and ignoring the other attributes of the defendants' design seems unwarranted. Likewise, Taylor states that "the non-rectangular nature of the side flanges [of defendants' boxed-gusset design] is not a distinguishing feature as all cross sections of the channel are 'U' shaped," but he
offers no real reason why the boxed gusset's U-shaped cross-section renders its triangular sides "not a distinguishing feature."

After considering the relevant evidence and opinions of the parties' experts, I believe that the triangular shape of the sides of defendants' boxed gusset design is significant, and that it does not create a "channel" as that term is used in the '755 patent. The vertical channels depicted in the '755 patent have a curved back that parallels the curvature of the snow plow blade, so that the channel has a uniform depth throughout. Defendants' design, on the other hand, uses pairs of triangular-shaped gussets with a metal plate welded between them. The back of this "boxed gusset," i.e., where the connecting plate is located, is not curved, nor does it follow the shape of the blade, but rather slants at a downward angle from near the top of the back of the pusher blade to the horizontal posts that connect the blade to a vehicle. Thus, while the backs of plaintiff's vertical channels run parallel to the back of the blade, the back of defendants' boxed gusset runs from near the top of the back of the blade to some point some distance from the blade, near the connecting mechanism. Such a structure does not call to mind a "groove" or "furrow," which, as stated, is the commonly understood meaning of "channel."

Another difference between the two designs is that, although any given cross-section of the boxed gusset might indeed be U-shaped, the depth of the cross-section would vary depending on where the cross-section was taken. The depth would be greatest at a cross-section bisecting the boxed gusset, and smallest at a cross-section near either end of the connecting plate. A cross-section of one of plaintiff's channels, however, would be the same at any point along its length.

In accordance with the commonly understood meaning of the term "channel," and in light of the prosecution history, I therefore conclude that, as used in the '755 patent, "vertical channel" refers to a structure with a U- or bracket-shaped cross-section that runs vertically down the back of the plow blade, and which generally conforms throughout its length to the shape or curvature of the back of the blade. It does not, then, include a so-called "boxed gusset," with a back that does not conform to the blade's shape, but rather slopes at a downward angle away from the top of the blade.

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D. "A vertical lock spindle rotatably attached to said respective one of said at least one side rail"

The "vertical lock spindle" component, as used in Claims 10 and 18, is also the subject of widely disparate constructions by the parties. Pedicraft argues that the proper construction of this phrase is "the portion or sub assembly of a side rail positioning mechanism that is arranged vertically along the side rail between the handle component and the locking component and is connected to the side rail so that portions of the lock spindle rotate relative to the side rail to allow the locking and releasing of the side rail from the various up and down positions." Dkt. 65, pg. 19. In stark contrast, Stryker asserts that the proper construction is simply "a long, rotating, vertically-oriented rod which serves as an axis of rotation for the lock pins for locking the side rail." Dkt. 66, pp. 27-28.

Pedicraft's construction argument centers around its assertions that a "vertical lock spindle" can be an assembly of parts as opposed to a single item (i.e., a rod), and that "rotatably attached" is not necessarily limited to rotation around a vertical axis, but can include rotation around another axis. Dkt. 65, pg. 20. According to Pedicraft, Claim 10 expressly presents the vertical lock spindle as "a subcomponent of a side rail positioning mechanism," which is recited as having a "plurality of lock pins." '855 Patent, Col. 9, Claim 10. It points to the testimony of Mr. Lockwood as establishing that one skilled in the art would understand this claim as including an assembly that includes a vertical lock spindle and lock pins. Dkt. 62, pp. 53-54. Additionally, it claims the Patent Examiner also characterized the vertical lock spindle within Claim 10 as an assembly of components. Dkt. 65, pp. 20-21.

Pedicraft's further point of contention is that the phrase "rotatably attached" does not necessarily require that the vertical lock spindle rotate about a vertical axis. It asserts that Claim 10 only recites that a vertical lock spindle is "rotatably attached," but does not specify the axis of rotation -- only that the lock pins themselves are "spaced vertically." Id. at pp. 21-22. This lack of specification regarding the actual axis of rotation is purportedly reflected throughout the '855 Patent, and Pedicraft adds that the prosecution history of the patent also supports its contention that the term "vertical" only describes the direction of locking, as opposed to the axis of rotation. Mr. Lockwood also apparently supported this proposed interpretation, based on the patent specification and claims, that the scope of Claim 10 is not limited to a spindle assembly rotating about a vertical axis, but could include rotation about another axis as well. Dkt. 52, pp. 57-58.
Stryker essentially argues that Pedicraft's proffered construction of the "vertical lock spindle" claim is both bizarre and provides little in the way of informative structure. Instead, consistent with the ordinary meaning of the term "spindle" and the words of the patent itself, Stryker asserts that the Court should construe the "vertical lock spindle rotatably attached to said respective said one of said at least one side rail" claim to mean "a long, rotating, vertically-oriented rod that serves as an axis of rotation for the lock pins for locking the side rail." Dkt. 66, pp. 28-29. In support of this construction, Stryker points to the dictionary definition of "spindle" as a rod that serves as an axis for spinning, as well as the testimony of Dr. Dyro, who described the spindle element, from the perspective of one skilled in the art, as "a long rotatable rod." Dkt. 63, pg. 22; Texas Digital, 308 F.3d at 1203.

Once again, Stryker's proposed construction comports with both common usage and common sense. The Court agrees that Pedicraft's "multi-part assembly" construction does not provide sufficient structural guidance as to what would properly fall under the language of the claim, instead offering broad and vague functional language in an attempt to include any number of assemblies within its scope -- particularly, Stryker's product. There is no evidence to suggest that a "spindle" can ever be defined as a multi-party assembly, and Pedicraft does not offer a sufficient explanation as what parts would be included in a multi-part "spindle." Instead, "spindle" is a term that is well-known to those skilled in mechanics, and it is clearly defined in any dictionary as a single rod. See Dkt. 66, pp. 29-30. In fact, even Mr. Lockwood described a "spindle" as a "shaft that rotates," indicating a single piece as opposed to some vague assemblage of parts. Dkt. 62, pp. 118-19. In the file history, the Patent Examiner also acknowledged as much by analyzing prior art as containing an assembly of parts, one piece of which was a spindle. Dkt. 66, pp. 30-31; Dkt. 62, pp. 122-23.

The Court also agrees with Stryker's contention that a "vertical lock spindle" anticipates rotation about a vertical longitudinal axis. The claim language in Claims 10 and 18 expressly contemplates a spindle that rotates vertically and has lock pins "spaced vertically thereon," thus clearly indicating that the spindle is oriented vertically and has a longitudinal axis that is necessarily vertical. There is no support for venturing outside the plan language of the '855 Patent claims, the ordinary meaning of these terms, as well as common sense. Accordingly, the Court adopts Stryker's construction that this "vertical lock spindle" element should consist of "a long, rotating, vertically-oriented rod that serves as an axis of rotation for the lock pins for locking the side rail."

The parties dispute the construction of the claim limitation "so that said pair of magnetic members can vertically engage corresponding magnetic members on a primary spectacle frame." Aspex posits that this limitation should be construed to mean "the pair of magnetic members can magnetically engage corresponding magnetic members on the primary spectacle frame in a plane that is substantially vertical when the eyeglass device is worn either by contacting corresponding surfaces of the primary spectacle frame magnetic members or by magnetically attracting those corresponding surfaces without actual contact." Ps. Br. 17. E'Lite maintains that this limitation should be construed to mean "so that the pair of magnets can magnetically engage corresponding magnets on a primary spectacle frame along a vertical polar axis." D. Br. 24.

Regarding the term "magnetic members," the court relies on its earlier conclusion that it need not now construe this phrase. See supra § III(D)(1).

The principal difference between the parties' proposed construction is the meaning of "vertically engage." Aspex maintains that this language means that, when the magnetic members are engaged, their surfaces form a plane parallel to that formed by the spectacle's lenses when worn. Ps. Resp. Br. 10. Thus Aspex argues that claim 23 requires vertically oriented magnetic members. Aspex, however, glosses over an important distinction. In claim 23, "vertically" modifies the verb "engage." "Engage" describes the movement or force between the magnetic members as they are coming together or being attracted to each other by magnetic force. The adverb "vertically" describes the direction of this movement or force. Thus "vertically engage" means that the movement or force between the magnetic members occurs along a vertical axis. This also means that, when the magnets finally come together, their surfaces form a plane that is perpendicular to the axis of engagement. Therefore, magnetic members that engage vertically possess horizontal orientation. The court thus adopts E'Lite's proposed addition of "along a vertical polar axis" to the disputed limitation, because it conveys this distinction with greater clarity.

Concerning its proposed elaboration of "magnetic engagement," Aspex contends that the specification's description of FIG.
7 indicates that the corresponding magnetic members of the primary frame and auxiliary frame can engage without touching. The specification also states that having the magnetic members engage without physical contact is only "one embodiment" of the invention. Ps. Br. 17. According to E'Lite, Aspex's proposed elaboration of "engaged" as "either by contacting corresponding surfaces of the primary spectacle frame magnetic members or by magnetically attracting those corresponding surfaces without actual contact" is confusing and unnecessary, because E'Lite agrees that the magnets of its invention engage one another.

In § III(D) the court addresses this specific construction dispute in construing "cooperate," which the parties agree means magnetic engagement. For the same reasons, the court concludes that the magnetic engagement of claim 23 encompasses two forms: physical contact and attraction at a distance.

The court construes "so that said pair of magnetic members can vertically engage corresponding magnetic members on a primary spectacle frame" to mean "so that the pair of magnetic members can magnetically engage corresponding magnetic members on the primary spectacle frame along a vertical polar axis, either by contacting the primary spectacle frame's magnetic members or by magnetic attraction without physical contact."

Claim 1(a)(ii) - "vertically movable"

Plaintiff does not include this phrase in its interpretation of claim 1(a)(ii), proposing that this subsection means, "a carriage bolt head fits in the slot in the slotted plate." (Pl. Mem. Claim Chart at 7.) Defendant argues that plaintiff attempts to eliminate the element of "vertically movable" from its claim. Defendant proposes that this subsection should be interpreted as, "A carriage bolt with a head that is free to move vertically in the slot of the flat piece of metal." (Def. Brief Addendum B.)

Defendant contends that the phrase "vertically movable" means that the carriage bolt is "free to move vertically." Defendant contends that reference to such vertical movement is made in the specification, citing column 2, lines 10-12 and 30-31. Defendant also refers to the prosecution history as supportive of its contention, (Stahl Decl. Ex. A at 2, 3; B at 4). Plaintiff replies that the patent shows a head on a carriage bolt and a slot in which the head is received. It asserts that "The carriage bolt head 12 slides in the slot during installation and the bolt is then tightened to lock the unit in place," citing column 2, lines 10-13. (Pl. Reply at 3.) In its conclusion, plaintiff states that claim 1 "specifies that the carriage bolt head is vertically movable within a slot of the slotted plate," and defendant rewrites the phrase to require that "the carriage bolt head 'is free to move vertically in the slot.'" (Pl. Reply at 6.) Plaintiff contends that it cannot be said that the carriage bolt is free to move vertically "at all times," but fits into a slot and is movable along the slot until it is positioned where it can be tightened for the purpose of locking the unit in place. In a heading of defendant's reply, defendant states: "the chain tensioner under the patent must be vertically movable," and in the body of its reply, defendant contends that, "the bolt holding the chain tensioner can move up and down as is taught in the patent." (Def. Reply at 2.)

At the claim construction hearing, defendant additionally argued that the word "movable" is used three times in claim 1 and the term "movable" in the phrase "vertically movable" should be consistent with its uses describing the chain and the rubbing block as movable; and that the claim distinguishes between "movable" and "attached," and to adopt plaintiff's revised construction would render the word "attached" meaningless. Defendant further argued that the meaning given must be given to the tensioner unit as completed. Defendant argued that the court must construe the claim to give meaning to the language, "vertically movable," included in the claim. Plaintiff argued at the hearing that the bolt moves in the slot for the same reason it did in the prior art--to allow the initial positioning of the unit, then it is tightened in place by the nut. Plaintiff argued that there is nothing in the patent disclosing that the bolt is vertically movable within the slot during operation of the device, or any reason for a vertical movement.

The court agrees with defendant that meaning has to be given to the phrase, "vertically movable," included in claim 1(a)(ii) and cannot be omitted. The court begins with the claim language, both of asserted claims and of nonasserted claims. Vitronics Corp., 90 F.3d at 1582 ("First, we look to the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention.") The claim language of claim 1(a)(ii), which is at issue, states that it is the carriage bolt head that is vertically movable. Claim 1(a)(ii) states that a carriage bolt with a carriage bolt head is vertically
movable within the slot of "said slotted plate," referring back to the slotted plate stated in (a)(I). Claim 1(a) goes on to state that an inner slide plate, top block, and outer slide plate are "fixably attached" to "said carriage bolt," referring back to the carriage bolt stated in (a)(ii), by a nut. This language and the language of claim 1 as a whole suggests that the tensioning unit as a whole does not move.

In support of their respective positions, both parties cite the language in the specification referring to the prior art, column 2, lines 10-12, where it is stated in pertinent part and in context: "Slotted plate 9 is attached to the case 1 by means of slotted plate fasteners 11. A carriage bolt 10 with a carriage bolt head 12 slides up and down within the slot 13 of the slotted plate 9. The carriage bolt 10 is meant to lock unit in place." (Specification column 2, lines 8-13 (portion cited by parties emphasized).) The parties agree that in the prior art, the tensioning unit was fixed in place and did not move vertically. The second reference, column 2, lines 30-31, cited by defendant in support of its construction of the phrase, refers to plaintiff's new chain tensioner, and states: "Carriage bolt 10 with carriage bolt head 12 within the slot 13 of the slotted plate 9 fits through the inner slide plate hole 26, the top block hole 14, and the outer slide plate hole 25 where it is held by a washer 19 and nut 20." (Specification column 2, lines 30-34 (portion cited by defendant emphasized).) In context, the portion of the sentence cited by defendant does not reference movement of any kind, but describes the assembly of the portion of the unit attached to the carriage bolt.

Defendant provides the dictionary meaning of "vertical" as, "being or situated at right angles to the horizon; upright," and of "movable" as, "possible to move." (Am. Heritage Talking Dictionary (1997 ed.). Plaintiff does not comment on these definitions.

Defendant also relies on the prosecution history, which shows that plaintiff apparently agreed with an objection of the PTO examiner, stating in its patent "Amendment" that, in the drawings, "The slotted plate 9 and slot 13 have been changed in Figure 2, 4, 5 and 6 to more clearly show the slotted plate 9," and "These changes show the carriage bolt to be vertically moveable." (Stahl Decl. Ex. A at 2, 3; B at 4.) There is nothing in the prosecution history to support defendant's argument made at the hearing that the PTO "made [plaintiff] put that language in to make it compatible so you have a unit that is movable and not fixed like the prior art." (Feb. 27, 2004, Tr. at 27.)

At the hearing, the court was informed that plaintiff adopted the slotted plate of the prior art, and that the slotted plate comes with the cycle and that the slotted plate and the bolt are utilized in its new tensioner.

Reading the entirety of the claims and the specification does not indicate that plaintiff's chain tensioning unit itself moves up and down. The reference to the prior art indicates that the tensioning unit was locked in place by means of a carriage bolt, and one skilled in the art would understand that the tensioning unit did not move. There is nothing in the summary of invention, description of the preferred embodiment, or the claims read as a whole which indicates that the new tensioning unit moves vertically up and down. The background of the invention notes, "The prior art does not disclose an effective simple mechanism for control of vibration, particularly in motorcycle chains." (Specification, column 1, lines 28-30.) The summary of invention states:

A rubbing block is provided with indentations such that the rubbing block is free to along [sic] the vertical axis but not the horizontal axis. Springs are provided between the base of the rubbing block and shims. The number of shims is adjusted to provide a pre-load compressive force to the springs.

It is an object of this invention to provide an efficient simple chain tensioner.

It is another object to provide an efficient, simple chain tensioner.

It is a final object to provide a chain tensioner which damps the natural vibration in a motorcycle primary chain.

(Specification, column 1, lines 33-45.) The claims and description of the new unit disclose that the inner and outer slide plates, which are attached to the carriage bolt, rest on the bottom of the case. The claims and description disclose that these slide plates contain the rubbing block in contact with the chain which is movable during operation of the cycle. At least one shim--which is not disclosed to be fixably attached or secured to the slide plates--fits between these slide plates, and rests on the bottom of the case. (See Specification, column 2, lines 19-27, 43-48; column 3, lines 4-5; column 4, lines 4-9.) If the claim language was construed as defendant argues--to mean that the tensioning unit moves up and down during operation of
the cycle, the unit would be inoperable because it would come apart as the slide plates, attached to the carriage bolt, moved upward. The court cannot give claim language a meaning which would render the invention inoperable. To accept defendant's interpretation and meaning of the phrase "vertically movable" as used in claim 1 would render the new tensioning unit inoperable.

It is clear from the summary of invention, the description of the tensioning unit of prior art, the drawings, and the comments of counsel at the hearing, that the unit of prior art was fixed in place 2 and, due to vibration over time, the unit would have to be manually adjusted by means of moving the carriage bolt holding the rubbing block up or down in the slot of the slotted plate to contact the chain. Figures 1 and 2, disclosing the prior art, shows the carriage bolt (with the fixed rubbing block removed) resting toward the bottom of the slot in the slotted plate. And while not determinative, the drawings disclosing the preferred embodiment of the new tensioning unit, Figures 3, 4 and 5, show the carriage bolt holding the sliding plates and the rubbing block at the top of the slot in the slotted plate. With the carriage bolt near at the top of the slot in the slotted plate, and the sliding plates attached to the carriage bolt and resting on the bottom of the case, it does not appear from the disclosures that plaintiff's tensioning unit moves up and down as defendant asserts.

--- Footnotes ---

2 The description refers to a "fixed rubbing block," and states that, "The carriage bolt 10 is meant to lock unit in place." (Specification column 1, line 66; column 2, lines 10-11.)

3 The description of prior art states, "A carriage bolt 10 with a carriage bolt head 12 slides up and down within the slot 13 of the slotted plate 9." (Specification column 2, lines 10-12.)

--- End Footnotes ---

Here, plaintiff adopted the slotted plate and carriage bolt of prior art, in which "A carriage bolt 10 with a carriage bolt head 12 slides up and down within the slot 13 of the slotted plate 9," (Specification column 2, lines 10-12), and "The carriage bolt 10 is meant to lock unit in place," (Specification column 2, lines 12-13.) Plaintiff's construction of the phrase "vertically movable"--that the carriage bolt head moves up and down in the slot during installation to allow initial positioning of the unit--in claim 1(a)(ii), which states in full: "a carriage bolt with a carriage bolt head vertically movable within a slot of said slotted plate," is consistent with the understanding of one skilled in the art and consistent with the disclosures of the patent specification. Plaintiff's construction is not inconsistent with the dictionary meaning of the words.

Accordingly, the court construes the phrase "vertically movable" in claim 1(a)(ii) as, "which can be moved up and down to position the unit prior to operation," so that claim 1(a)(ii) should be construed to read in its entirety: "A carriage bolt with a head which can be moved up and down to position the unit prior to operation within the slot of the slotted plate."

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2. "Vertically-projecting, columnar support elements" Used in Claims 9 and 42.

Nike argues that this phrase should be defined as: "support elements resembling a column and projecting in a vertical direction." Adidas proposes: "a support element that is shaped like a column having an outer surface forming a continuous perimeter around its upright axis and a substantially circular cross section." For purposes of analysis, it is helpful to consider the components of this phrase separately, although they must be combined to determine the meaning of the claim.

"Vertically Projecting"

At the hearing, the parties agreed that "vertically projecting" meant to be oriented generally from the sole of the shoe toward the upper, as opposed to being oriented between the lateral and medial sides of the foot. So we know that the support element must have a shape which is oriented (projects) from the sole toward the upper. In other words, the element can not be of a completely irregular shape; it must have an axis which can be oriented. This comports with the specification.

See '796 patent, col. 3,11.39-41 (columns are loaded substantially axially during foot strike); '796 patent, col. 7, 11. 36-37
"Columnar Support Elements"

Beginning, as always, with the claim language, it is clear from the previous discussion that each of the support elements has an axis running from the sole toward the upper to provide support for the foot, which is in the upper. But the claim does not state precisely what is meant by "columnar." There is no indication in the patent that "columnar" is used in any special technical sense, and it is not specially defined in the patent. The figures depict supports with a generally circular outside perimeter. They may be tapered, or barrel shaped, and the circumference may be grooved, or otherwise not be perfectly smooth. The written specification describing the figures certainly does not contradict this impression.

Nike asserts that "columnar," as used in the claim could include virtually any shape or configuration, relying on the structure shown in Figures 20-22, described as an alternative embodiment with a "single columnar support element. 3 See '796 patent, col. 10, 11. 63-65. Nike also relies upon Figures 23-24, described as a second alternative embodiment with "a single columnar support element." See '796 patent, col. 11, 11. 8-11.

However, during the prosecution of the patent, the examiner noted that these two embodiments were "patentably distinct species of the claimed invention" and required the applicant to elect a single disclosed species, pursuant to 35 U.S.C. § 121. See Office Action 12/07/2001, p. 2, Ex. J to Nike's Opening Claim Construction Brief, [Doc. # 69, Attachment # 1, p. 43 of 54]. The applicant elected to pursue what was called the first species, or Group 1, shown in Figures 3-17, reserving the right to file divisional applications as to the other two groups or species. See Response to Restriction Requirement, 1/2/2001, p. 1, Ex. J to Nike's Opening Claim Construction Brief, [Doc. # 69, Attachment # 1, p. 46 of 54].

At the Markman hearing, the parties agreed that this meant that the claims of the '796 patent do not cover or read on the inventions shown in Figures 20-22, or Figures 23-24. Additionally, Nike argues strenuously that the election to pursue only the first species supports a construction that each support is only on one side of the heel or the other. This carries to extremes the concept of "having one's cake and eating it too." How is one skilled in the art supposed to know that specification language, which the patentee has clearly agreed is not covered by the claim, should be used to define the claim? Such statements should not be relevant to the invention ultimately claimed in the '796 patent. See LG Electronics, Inc. v. Bizcom Electronics, Inc., 453 F.3d 1364, 1378 (Fed. Cir.2006). Any other rule would encourage patentees to describe every known and imaginable variation of multiple inventions in the application, agree with the examiner that most of the description applies to other inventions, and after the patent is issued assert that their claims cover the disavowed structures or methods.

Nike also argues that the prosecution history supports its argument that "columnar" denotes any vague, undefined shape, so long as it is oriented to take up some of the space between the sole and the upper. In discussing new claims 80 and 115, which became '796 patent Claims 9 and 42 respectively, the applicant stated to the Examiner: "In other embodiments, however, the support elements have a rectangular shape. Accordingly, the columnar support elements of the present invention may have a variety of shapes that each have a discrete and vertically-projecting configuration." See Supplemental Information Disclosure Statement, 1/2/2001, p. 16 in Ex. J to Nike's Opening Claim Construction Brief, [Doc. # 69, Attachment # 2, p. 24 of 60]. The problem with this statement is that it is not correct. The patent does not depict or describe any "columnar" support element, which is not shown or described as cylindrical or having a circular cross-section.

Additionally, in the same Statement, the applicant distinguishes U.S. Patent No. 6,305,100 ("Komarnycky") by stating: "In rejecting the original claims that [sic] Examiner analogized ridges 12 on outer sole 10 to the claimed support elements. Unlike the recitations of independent claim 80 (Claim 9 in present patent), however, ridges 12 do not have the required columnar structure." See Supplemental Information Disclosure Statement, 1/2/2001, p. 19 in Ex. J to Nike's Opening Claim Construction Brief, [Doc. # 69, Attachment # 2, p. 27 of 60]. But the "ridges 12" in the Komarnycky Patent's Figure 1 are vertically projecting, rectangular structures which slope toward the center. See Appendix I to this Opinion (comparison of
Figure 1 of the Komarnycky patent with Figure 7 of the '796 patent). So the applicant has clearly stated that these rectangular shapes are not "columnar." Applicants cannot expand the scope of their claims, as described in the specification, by contradictory statements to the Examiner. See Honeywell Intern., Inc. v. ITT Industries, Inc., 452 F.3d 1312, 1318-1319 (Fed. Cir. 2006)

Contradicting Nike's assertion that "columnar" includes other shapes is a distinction made in the specification. "In a preferred embodiment, the article of footwear contains two forms of support elements, cylindrical columns and an aft support." 796 patent, col. 5, 11. 5-7 (emphasis added). Recognizing the patentee's choice to distinguish between two forms of support, and to call only one of them "cylindrical columns," is not the same as importing limitations from the preferred embodiment.

In a more detailed description, the specification states: "Sole 106 is further comprised of support elements 108, consisting of columns 108a-108d and aft support 108e …." 796 patent, col. 6,11.54-57 (emphasis added). Examining the various figures, the "aft support" is the only one that does not have a cylindrical shape, and it is never described as "columnar." See 796 patent, col. 8, 11. 57-60.

Nike also raises the issue of claim differentiation. Dependent Claims 11 and 48 expressly limit independent Claims 9 and 42 respectively, by saying "said support elements have a cylindrical configuration." Nike argues this implies that Claims 9 and 42 include other configurations.

"'[C]laim differentiation' refers to the presumption that an independent claim should not be construed as requiring a limitation added by a dependent claim." Curtiss-Wright Flow Control Corp. v. Velan, Inc., 438 F.3d 1374,1380 (Fed. Cir. 2006). But it is only a presumption - a guide, not a hard-and-fast rule. See Kraft Foods Inc. v. International Trading Co., 203 F.3d 1362, 1368 (Fed. Cir. 2000). The patentee in this case had unbridled discretion in his choice of words for Claims 9 and 42. He chose to modify "support elements" with the word "columnar." Nike can not be heard to say this word has no meaning, and that the columnar support elements of Claims 9 and 42 have no definable shape, simply because another claim uses an additional modifier with virtually the same meaning. Patent practitioners have "long recognized that "claims may be multiplied … to define the metes and bounds of the invention in a variety of different ways." Tandon Corp. v. U.S. International Trade Commission, 831 F.2d 1017,1023 (Fed. Cir. 1987) citing Bourns, Inc. v. United States, 537 F.2d 486, 492, 210 Ct. Cl. 642 affd. per curiam, 537 F.2d 486, 210 Ct. Cl. 642, 199 USPQ 256 (Ct.C1. 1976). 4

--- Footnotes ---

4 This advice is still being presented to practitioners. See T. Lohse, "Effective Patent Prosecution: Critical Choices, Drafting Techniques, and Strategies," pp. 2-80 (presented at 11<the> Annual Advanced Patent Law Institute, University of Texas School of Law) (recommending the filing of the broadest possible generic and subcombination claims" and also "claims of narrow and intermediate scope" to increase "the probability of infringement that is literal …" and to increase the chances of an application of the doctrine of infringement.)

--- End Footnotes ---

Nike adamantly insists that "columnar" has a plain and ordinary meaning, and that its construction - "support elements resembling a column …" reflects that plain and ordinary meaning. But Nike could not give any description of "columnar" or "column" that did not use these very words. An orbicular definition is not helpful, and "vertically-projecting columnar" cannot mean that any blob of material in any shape will do. "I know it when I see it" is not what Congress intended in enacting 35 U.S.C. § 112 P 2.

Resort to "plain and ordinary meaning" and to dictionaries should not override analysis of the intrinsic evidence. The discussion at the hearing of the plain and ordinary meaning of "column" and "columnar" reflects the dangers of a court attempting to arrive at a lay definition, without sufficient consideration of the intrinsic evidence. In any case, dictionaries of ordinary usage use terms such as "round shaft," "tube," and "cylinder" when defining columns, and their illustrations are of cylindrical structures such as Doric and Ionic columns, perhaps with tapers or fluting. See, e.g., OXFORD ENGLISH DICTIONARY ONLINE available at http://dictionary. oed.com (architectural definition of "column" is "a cylindrical or slightly tapering body of considerably greater length than diameter, erected vertically as a support for some part of a building."); THE MERRIAM-WEBSTER THIRD NEW INTERNATIONAL DICTIONARY, UNABRIDGED (2002)
("column" means "a pillar consisting of a shaft, a capital, and usually a base, the shaft being of a circular section except as it is fluted or channeled."); THE MERRIAM-WEBSTER'S COLLEGIATE DICTIONARY TENTH EDITION (1993) ("column" means "a supporting pillar, especially one consisting of a usually round shaft, a capital, and a base"). 5

At the hearing, the court questioned the parties closely about whether columnar implied that the vertical axis must be greater than the distance across the cross-section of the support axis. In general usage, columns are frequently depicted and described as being long and narrow. Nike points out that in all of the figures in the patent, the vertical axis of the "columnar" support elements is shorter than the distance across the cross-section. These figures are not necessarily scale drawings. Figures generally may not be used to define precise dimensions, nor to contradict the written description in a claim or specification. However, these figures give an indication of relative sizes. It would be unusual to define a claim so as to exclude the embodiments depicted in every figure in the patent, and the court will not do so in this case.

The applicant chose to withdraw from consideration the embodiment shown in Figures 23-24, and evidently never pursued a divisional application. He also chose to limit Claims 9 and 42 by modifying "support elements" with the word "columnar." He chose to include in the specification describing the columnar support structures, only examples and drawings of structures which have a generally circular cross-section, while support structures of other shapes are labeled as "aft support." The applicant told the Examiner that the generally rectangular vertically projecting structures in Komarnycky are specifically not "columnar." A vague contradictory statement in the same document is not grounds for ignoring or expanding the word "columnar." The presumption of claim differentiation is not strong enough to ignore, or ascribe an amorphous meaning to, the word. Nike has strongly and unqualifiedly represented and argued that the court should adopt the "plain and ordinary" meaning of columnar. The primary definitions and illustrations of column and columnar in dictionaries denote a cylindrical structure. This comports with the court's analysis of the specification and file history, and gives no reason to adopt a different definition. The court will define this term as follows:

"Vertically-projecting columnar support element" means: "a generally cylindrically shaped supporting structure, which may be tapered at either or both ends, and/or grooved or fluted, the non-circular axis of which is oriented generally from the sole to the upper and not between the medial and lateral sides of the foot."

4. Claim Term Four -- "Vertically Up"

The term "vertically up" is found in Claims 12-14, 20-21 and 24-25 of the '704 patent. Plaintiff asks the Court to construe the term as generally upright. Plaintiff bases its argument on a definition from the Merriam Webster's Ninth New Collegiate Dictionary, as well as specific claims in the '704 and '057 patents. Plaintiff also introduces extrinsic evidence in the form of testimony by R. Lee Rawls.

Defendant asks the Court to construe the term as the end of the rod that is not attached to the base extends in a direction generally perpendicular to the plane of the horizon and in a direction away from the earth. Defendant bases its argument on a definition from the Merriam Webster's Ninth New Collegiate Dictionary, as well as specific claims in the '704 and '057 patents. Defendant also introduces extrinsic evidence in the form of testimony by Evan R. Flavell.

It appears to the Court that the parties essentially present the same proposed construction of the claim. Both parties agree that "vertical" means upright. However, defendant argues that plaintiff's proposed definition of "generally upright" fails to account for the entire term "vertically up" because "up" specifically means a direction away from the center of the earth. Defendant notes that at an end that extends vertically down from a base might be considered "generally upright" simply because it is vertical. Thus, defendant argues that it is important to construe the term "vertically up" as extending in a
direction away from the center of the earth.

In the context of this patent, it appears that the term "vertically up" means "generally upright," or in a perpendicular position. The Court notes that in writing the claims, the inventor did distinguish the rods as not simply vertical, but vertically "up," as illustrated in Figures 1, 4 and 12-22. In addition, in the detailed description of the device, the inventor notes that the free ends of the rods extend "upward" from the frame. '704 Patent at 4:2-4. However, in examining the prosecution history of the claim, the inventor clearly explains that his figures depict just one conceivable embodiment of his invention. (See, e.g., Dkt. # 319, Ex. D at NAUT 003317). Thus, the term is not limited to an extension in a direction away from the center of the earth. The Court believes no extrinsic evidence is necessary to construe this term.

ConAgra defines "vessel" as a "container capable of holding liquid" (Filing No. 64). Green defines "vessel" as "a container capable of holding food" (Id.). The primary distinction between the parties' constructions is ConAgra contends a vessel must always be capable of holding liquid food, while Green contends a vessel may be, but is not required to be capable of holding liquid food.

The intrinsic record supports ConAgra's construction, and therefore, the Court finds that vessel means a container capable of holding solid and liquid food. Claim 1 of the '083 patent states the cooking utensil contains "a first microwave transparent vessel for holding a first food material" and "a second microwave transparent vessel for holding a second food material." The claim language does not specify whether a vessel must be capable of holding liquid food; however, the specification and prosecution history clarify that the '083 patent uses vessel to refer to a solid container.

There are several indications in the patent specification that the first and second vessels are solid containers. Foremost, the specification states that spaghetti sauce can be placed in the first vessel and describes how "liquid contents" can be dispensed from the first vessel (the '083 patent, col. 5, ll. 34-36; col. 6, ll. 45-49). Second, figure 3 of the '083 patent depicts the outside of both vessels with cross hatching to indicate the vessels are solid containers. Third, the stated purpose of the invention compels a finding that the second vessel is a solid structure. The summary of invention section of the specification states the following:

During use, a first food is placed in the first vessel and the second food is placed in the second vessel . . . The second vessel is placed in the first vessel to displace a portion [sic] the food in the first vessel thereby forming a hollow void in the center of the food.

(Id. at col. 3, ll. 3-11; see also fig. 3).

As described in the detailed description section of the patent specification, the displaced food forms an annular column of food around food in the second vessel (See id. at col. 4, l. 62 - col. 5, l. 5; fig. 3). As a result, the annular column of food (i.e. food in the first vessel) shields food in the second vessel from microwaves passing through the side of the utensil (Id. at col. 6, ll. 27-30). When the second vessel is placed into the first vessel, the side and bottom walls of the second vessel are in contact with food in the first vessel and food in the second vessel at the same time. Impliedly, the second vessel's walls must be solid such that food in the first and second vessel does not mix (Id. at fig. 3).

The prosecution history provides additional evidence that the side wall of the second vessel must be solid. Initially, the examiner rejected claims 1-11 of the '083 patent as obvious over United States Patent No. 4,532,397 (the "McClelland patent") and United States Patent No. 4,233,325 ("Slanguan et al.") (Filing No. 67-4, Exh. B). Green requested reconsideration, and as a result, the examiner determined Green's invention was distinguishable from McClelland's invention on the ground that Green's invention permitted two foods to be in contact with opposite sides of the second vessel's side wall without mixing. Specifically, the examiner remarked:

The patent to McClelland discloses a structure that does not disclose the two spaced, frusto-conical walls of the applicant's claimed invention. There is no provision for two spaces in the McClelland device to hold two food materials
separate and apart from one another yet in contact with a common wall such that convection heat can be transmitted through the common wall from one food material into the other.

(Id. at p. 3).

In order for the second vessel's side wall to achieve the result stated by the examiner, the side wall must be solid. Otherwise, foods on opposite sides of the wall would not remain separate and apart. 1

--- Footnotes ---

1 Green argues that even perforated walls could keep two solid foods apart. Notwithstanding the fact that the specification specifically describes using the first vessel for liquid, even two solid foods would not necessarily remain entirely separate during microwave cooking.

--- End Footnotes ---

Based on the intrinsic evidence, one of ordinary skill in the art would conclude the '083 patent uses vessel to mean a container that must be capable of holding both solid and liquid food. If the Court adopted Green's construction of the term, a perforated container could be a vessel. Such a construction is not supported by the intrinsic record and contradicts the embodiment described in the specification.

Green contends that even if the first vessel refers to a solid container, the specification does not support the conclusion that the second vessel must also be capable of holding liquid. Essentially, Green claims the term vessel should be construed differently for first vessel and second vessel. This argument fails because claim terms should generally be construed consistently throughout the claims, 2 and nothing in the intrinsic record indicates that vessel should be construed differently for first vessel and second vessel.

--- Footnotes ---

2 Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed. Cir. 2001).

--- End Footnotes ---

CLAIM 1

Four issues remain with respect to claim 1, below, with the disputed language in italics:

1. A fuel delivery system for removing undesired components from fuel delivered from a fuel tank to an engine comprising, in combination: [issue # 1]

   an engine; 2

   initial fuel filter means for removing water from fuel received from the fuel tank; and [issue # 2]

   secondary fuel filter means including an outlet in fluidic communication with said engine and an inlet in fluidic communication with said initial fuel filter means and located downstream therefrom for receiving fuel containing an undesired gas from said initial fuel filter means and separating substantially all of said undesired gas from fuel received therein prior to passage of said fuel through the outlet, [issue # 3]

   said secondary fuel filter means including a vessel defining a hollow interior chamber in fluidic communication with a return line in fluidic communication with said fuel tank for returning fuel and undesired gas thereto, and a filter media positioned within said chamber for immersion in fuel received therein and a conduit located within said filter media for

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delivering fuel passing through said filter media to said outlet. [issue # 4]

2 The parties initially disputed the construction of "an engine," but agreed at the Markman hearing that their differences were not material and to construe it as "an internal combustion engine."

Claim 1; Issues 3 & 4 -- The Secondary Fuel Filter Means and The Vessel

With regard to the secondary fuel filter means, the Court must first determine whether it is in fact a means-plus-function claim. Defendants assert that it is a means-plus-function claim governed by § 112, P6, with two separate functions: first, a means "for receiving fuel containing an undesired gas from said initial fuel filter means," and second, a means "for separating substantially all of said undesired gas from fuel received therein prior to passage of said fuel through the outlet." While Plaintiffs essentially agree that the element provides for these two functions, Plaintiffs assert that there is sufficient structure in the claim elements themselves to take the claim elements out of the scope of § 112, P6.

"The use of the word 'means,' which is part of the classic template for functional claim elements, gives rise to 'a presumption that the inventor used the term advisedly to invoke the statutory mandates for means-plus-function clauses.'" Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1422-23 (Fed. Cir. 1997) (quoting York Prods., Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568, 1574 (Fed. Cir. 1996)). The case law recognizes two specific rules, however, which "overcome this presumption." The first is where a claim element uses the word "means," but does not recite any function. Such an element does not invoke § 112, P6. Rodime PLC v. Seagate Technology, Inc., 174 F.3d 1294, 1302 (Fed. Cir. 1999), cert. denied, 528 U.S. 1115, 120 S. Ct. 933, 145 L. Ed. 2d 812 (2000). "Second, even if the claim element specifies a function, if it also recites sufficient structure or material for performing that function, § 112, P6 does not apply." Id.; accord, Phillips, 415 F.3d at 1311 ("Means-plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function."); Sage Prods., 126 F.3d at 1427-28.

To determine whether the element specifies a function, the court relies primarily on the claim language itself. York Prods., 99 F.3d at 1574. Here, the Plaintiffs do not dispute that the claim element specifies the two functions recited by Defendants, and the plain language of the claim supports this conclusion. Plaintiffs assert, however, that there is sufficient structure recited in the claim element itself to take it outside the bounds of § 112, P6. To avoid P6, it is not necessary to recite "every last detail of the structure disclosed in the specification for performing the claimed . . . function . . . . Instead, the claim need only recite 'sufficient' structure to perform entirely the claimed function." Rodime, 174 F.3d at 1304.

The Court agrees that the element contains sufficient structure with respect to the first function of "receiving fuel containing an undesired gas from said initial fuel filter means." The claim element itself specifies a structure, namely, "an outlet in fluidic communication with the engine and an inlet in fluidic communication with the initial fuel filter means," and the location of the inlet is further specified as being "downstream" from the initial fuel filter means. 4 See Phillips, 415 F.3d at 1311 (no means-plus-function claim where claim language identifies "internal steel baffles" as the structure for performing the function of increasing the shell's load-bearing capacity); Environco Corp. v. Clestra Cleanroom, Inc., 209 F.3d 1360, 1365 (Fed. Cir. 2000) (use of term "baffle," itself a structural term, together with the description in the claim, overcomes presumption of § 112, P6).

4 Assuming arguendo the Court were to construe the element as a means-plus-function claim, it would make little difference in interpretation. The corresponding structure appears at col 1., lines 65-67; col. 2, lines 45-49; col. 3, lines 45-47. It includes an inlet in fluidic communication with an inlet line and an outlet fluidically connected to an outlet line leading to the engine, and equivalents thereof.
Read in isolation, however, this element would not appear to specify any structure for the second function of "separating substantially all of said undesired gas from fuel received therein prior to passage of said fuel through the outlet." Plaintiffs assert that the necessary structure is found in the next element, which describes in detail the structure of the function of separating the gas from the fuel. The Court agrees. Read together, the two elements sufficiently describe the structure of this secondary fuel filter means, as understood by those skilled in the art, to rebut the presumption that it is a means-plus-function term. See Allen Eng'g, 299 F.3d at 1348 (sufficient structure recited in claim itself for "gearbox means for rotating said blade means"); Environco, 209 F.3d at 1365-66 (Fed. Cir. 2000) (sufficient structure recited in claim for "baffle").

With regard to the second function, as set forth in the claim itself, the secondary fuel filter means includes (i) "a vessel defining a hollow interior chamber," (ii) which vessel is "in fluidic communication with a return line," (iii) which return line is "in fluidic communication with said fuel tank for returning fuel and undesired gas thereto," and there is also (iv) "a filter media positioned within said chamber," (v) which filter media is immersed in the fuel received in the chamber, and (vi) a "conduit" which is "located within said filter media for delivering fuel passing through said filter media to said outlet." Again, these terms are sufficiently clear to one skilled in the art for the structure and location of the elements to be understood. As such, the Court construes the claims pursuant to "standard claim construction rules." Environco, 209 F.3d at 1365.

Looking to the disputed language related to the first function, Defendants assert that the term "communicate" means "to be connected," and that elements thus include "an inlet connected to the initial fuel filter means and "an outlet connected to the engine." The language proposed by Defendants implies a direct physical connection. There is no support for such a limitation, however, in either the claim language itself or the specification. The claim language states that the inlet and outlet will be in "fluidic communication." One with ordinary skill in the art would understand this to mean that fluid would flow from the initial fuel filter to the inlet and from the outlet to the engine, but no direct connection is necessarily required by this language. For example, in another embodiment of the invention, the fuel presumably could travel through yet another process before delivery to the engine. Consistent with such a possibility, the Court notes that claims 8 and 14, which describe the filter, speak of "direct fluidic communication," while other claims, including claims 1 and 15, which describe a more generalized fuel delivery system, do not.

In connection with the second function, Defendants assert that the elements of the secondary fuel filter include "a vessel with an uppermost housing portion and a lowermost canister portion defining a hollow chamber." While these limitations are part of the preferred embodiment, they are not suggested by the claim language itself, which describes only "a vessel defining a hollow interior." As such, there is no basis for importing this limitation into this term. See Arlington Indus., Inc. v. Bridgeport Fittings, Inc., 345 F.3d 1318, 1327 (Fed. Cir. 2003). Moreover, the limitations suggested by Defendants are found in dependent claim 3, and under the doctrine of claim differentiation, it is improper to incorporate these elements into claim 1. Liebel-Flarsheim, 358 F.3d at 910; Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998).

Next, again construing "fluidic communication," Defendants assert that the return line is "connected to the vessel and the fuel tank." The Court rejects this interpretation for the same reason stated above. The claim language requires only that the interior chamber be "in fluidic communication with" a return line "in fluidic communication with" the fuel tank. Use of the term "connected to" unnecessarily limits the element.

With regard to the filtering function itself, Defendants assert that the proper construction is "a filter media, which allows fuel to pass but not air, positioned with the chamber and immersed or submerged in the fuel." Plaintiffs propose for their construction, that "the second fuel filter separates substantially all of the undesired gas from the fuel prior to the passage of the fuel through the outlet. Undesired gas is any undesired entrained air and other vapors and gasses entrained in the fuel."
While the Court rejects Defendants' contention that this should be construed as a means-plus-function claim, the Court finds that the words "undesired gas" and the function of "separating substantially all of said undesired gas," are ambiguous, thus requiring an examination of the intrinsic evidence. The Court cannot accept Defendants' construction, however, that the filter "allows fuel to pass but not air," as it is not supported by the specification. In referencing the secondary fuel filter, the specification repeatedly references the removal of "residual air bubbles, entrapped and entrained in the fuel." Col. 1, lines 52-54 (emphasis added). The specification and drawings state that the filter media separates these bubbles. See col. 2, lines 22-23, 29-31; col. 5, lines 26-39. Thus, the Court finds that "undesired gas" means any "undesired bubbles of entrained air or other vapors and gasses entrained or entrapped in the fuel."

Finally, Defendants assert that the word "immersion" should be construed to mean "submerge which in turn means immerse which means to cover completely with liquid; submerge," citing to the American Heritage Dictionary (1986). Asserting that the language is not ambiguous, Plaintiffs assert the following construction: "The second fuel filter also includes a filter media positioned within the interior chamber of the vessel so that the filter media can be immersed in the fuel received in the chamber." The Court believes that the term "immersion" as used herein would be understood by those skilled in the art, and that further definition is unnecessary. Multiform Desiccants, 133 F.3d at 1477. Moreover, the definition proposed by Defendants does not do anything to better clarify the language.

As such, the Court construes the secondary fuel filter means and vessel as follows:

"The secondary fuel filter, which is located downstream from the initial fuel filter, includes an outlet in fluidic communication with the engine and an inlet in fluidic communication with the initial fuel filter. The secondary fuel filter receives fuel containing an undesired gas from the initial fuel filter and separates substantially all of said undesired gas prior to passage of the fuel through the outlet. Fluidic communication means that fluid can transfer from one element to another. Undesired gas is any undesired bubbles of entrained air or other vapors and gasses entrained or entrapped in the fuel.

The secondary fuel filter also includes a vessel defining a hollow interior chamber, which chamber is in fluidic communication with a return line, which is in fluidic communication with the fuel tank, for returning fuel and undesired gas to the fuel tank. The secondary fuel filter also includes a filter media positioned within the chamber of the vessel so that the filter can be immersed in the fuel received in the chamber. The secondary fuel filter also has a conduit located within the filter media for delivering fuel passing through said filter media to the outlet."
The parties also dispute the term "vibrating disc." LG proposes construing the term to mean "circular object that is moving back and forth." (Chart at 14.) Whirlpool proposes instead that the term be construed to mean "a 'disc' is a thin, flat circular object," and that a "vibrating disc" be construed to mean "a disc that moves back and forth between a maximum position of the disc and a minimum position of the disc." (Id. at 14-15.)

The parties agree that "disc" should be construed to mean a circular object. Whirlpool, however, argues that the term should be further limited to mean thin and flat. It has identified no intrinsic evidence to support that limitation, and the Court therefore rejects its argument with respect to that term.

The background section to the patent states that "[i]n order to wash clothes in a conventional automatic washing machine using low frequency vibration, a low frequency vibrating disc placed in a washing tub generates a specified low frequency vibration . . . . The level of the low frequency is specified in accordance with the shape of the washing tub, the shape of the vibrating disc and the mixing ratio of the multi-phase washing medium." ('886 Patent, col. 1, ll. 16-25.)

In support of its proposed construction for the term "vibrating," Whirlpool refers to the written description for Figure 2, which is a "sectional view of a low frequency vibration type washing machine having shrinkable shielding means in accordance with an embodiment of the present invention." (Id., col. 2, ll. 22-24.) The written description states that "the height of the shrinkable shelder 4 is equal to the distance from the inner bottom of the washing tub 1 to the maximum vibrating position of the disc 2," and that "the shrinkable shelder 4 should be designed such that it can be elastically shrunk and extended in the vibration stroke [between the maximum and minimum positions] of the vibrating disc." (Id., col. 2, ll. 45-55.) That description, however, concerns only one of the preferred embodiments described in the patent. The patent describes two additional preferred embodiments. Although each of them refers to a vibrating disc, they do not discuss any maximum or minimum heights for the vibrating disc. (See id., col. 3, ll. 5-25.)

Moreover, the written description states that "[a]lthough the preferred embodiments of the present invention have been disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims." (Id., col. 3, ll. 27-32.)

The Court therefore rejects Whirlpool's proposed construction, and construes the term "vibrating disc" to mean a "circular object that is moving back and forth."

**GO BACK**

The parties first dispute the proper construction of certain terms in claim 1(d), which claims an element of the invention as follows:

1. An archery bow stabilizer, comprising:

   * * *

   d) at least one vibration dampener adjustment member having openings therethrough matching the number and circumferential spacing of said stabilizer rods and a diameter larger than the diameter of said stabilizer rods freely receiving said rods therethrough.

Plaintiff's Complaint, Exhibit 1 (the '325 patent). The bone of contention as to this element, as asserted in the parties' briefs,
is whether the language requiring "at least one vibration dampener adjustment member having openings therethrough" requires that the adjustment member consist of a single piece through which openings are "bored," or whether it can instead encompass an "adjustment member" made up of multiple pieces that create "channels" through which the stabilizer rods pass. At oral arguments, Specialty also suggested that "openings therethrough" would not encompass "openings" that left a "gap" at some point on their perimeter. Kudlacek argued that the patent language did not require that the "openings" be completely enclosed.

The court agrees with the parties that the proper construction of element (d) of claim 1 can be discerned from the language of the claim illuminated by "intrinsic" evidence. See, e.g., CAE Screenplates, Inc., 224 F.3d 1308, 2000 U.S. App. LEXIS 21293. 2000 WL 1199247 at *7; KCJ Corp., 223 F.3d 1351, 2000 U.S. App. LEXIS 20963, 2000 WL 1165522 at *3. Indeed, the meaning of this portion of claim 1 can be determined according to the "ordinary meaning" rule, because Kudlacek has not acted as his own lexicographer defining any of the terms used in novel ways. See Schering Corp., 222 F.3d 1347, 2000 WL 1055975 at *5; Tate Access Floors, Inc., 222 F.3d at 965, 2000 WL 1055981 at *4; Hockerson-Halberstadt, Inc. 222 F.3d at 956, 2000 WL 1035753 at *2-*3; Optical Disc Corp., 208 F.3d at 1334.

Use of the word "member" does not necessarily define a component made of a single piece or exclude a component made up of multiple pieces. For example, the pertinent definition of member is "a constituent part of a whole," see, e.g., MERRIAM WEBSTER'S COLLEGIATE DICTIONARY (10th ed., 1995), and the synonym "part" is defined, inter alia, as "a constituent member of a machine or other apparatus." See id. Ordinary experience teaches that a constituent part or member of a machine or apparatus may itself consist of one or several components, depending, for example, on the intricacy of the "part" or "member" and the machine or apparatus to which it belongs.

Specialty nevertheless contends that "member" here must mean a single piece, because the "Description of the Preferred Embodiment" refers to a "member" with "through bores," while "bore" in turn is defined as a "cylindrical hole made by or as if by boring." Specialty's argument fails for at least two reasons.

First, nothing about use of the "through bores" language in the "Description of the Preferred Embodiment" in the '325 patent demonstrates an express intent to define "vibration dampener adjustment member having openings therethrough" in a novel way. See, e.g., Schering Corp., 222 F.3d 1347, 2000 U.S. App. LEXIS 18360, *13, 2000 WL 1055975 at *5 ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take their ordinary meaning") (quoting York Prods., Inc., 99 F.3d at 1572). Thus, the "through bore" language of the "Description of the Preferred Embodiment" does not constitute a specialized definition of the "openings therethrough" language of the claim. See id.

Furthermore, 'although the specifications may well indicate that certain embodiments are preferred, particular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments.'" KCI Corp., 223 F.3d 1351, 2000 U.S. App. LEXIS 20963, *10, 2000 WL 1165522 at *4 (quoting Electro Med. Sys., S.A., 34 F.3d at 1054) (emphasis added); Tate Access Floors, Inc., 222 F.3d at 966, 2000 WL 1055981 at *6; Kemco Sales, Inc., 208 F.3d at 1362. Here, the language of the claim--which requires a "vibration dampener adjustment member having openings therethrough"--is undoubtedly broader than the language of the "Description of the Preferred Embodiment"--which describes a "member . . . provided with a plurality of through bores. . . ." The '325 Patent, "Description of Preferred Embodiment" at 2; and compare, e.g, MERRIAM WEBSTER'S COLLEGIATE DICTIONARY (10th ed., 1995) (defining "bore" as "a usu. cylindrical hole made by or as if by boring"), with id. (defining "opening" as "something that is open: as a (1): BREACH, APERTURE"). Thus, it is improper to read the narrower "through bores" language of the "Description" into the broader language of the claim. See KCI Corp., 223 F.3d 1351, 2000 U.S. App. LEXIS 20963, 2000 WL 1165522 at *4.

Similarly, although the "openings therethrough" are shown in the "Description of the Preferred Embodiment" and figures of the patent as completely enclosed, nothing about the language of the claim itself requires that the "openings therethrough" be completely enclosed or excludes the possibility that there will be "gaps" at some point on the perimeter of the "openings."

Consequently, the language of element (d) of claim 1 encompasses a "vibration dampener adjustment member" comprised of either a single piece or multiple pieces joined together so that the member has "openings therethrough" that permit the stabilizer rods to pass through the "adjustment member" and the "adjustment member" partially or completely encloses the "openings therethrough."
The term "vibratory dispenser" is disputed by the parties. AutoMed asserts that the term "vibratory dispenser" should be construed to mean "a dispenser that uses vibration to aid in the dispensing function." (P. SJ for Infr. 6). This construction cannot be correct because, according to AutoMed's patents, vibration is required to move the medication from the canister into a vial. Both of AutoMed's patents contain claims that indicate that vibration causes the dispensing of the medication.

Claim 1 of the '927 Patent contains the following element:

*at least one vibratory dispenser operatively controlled by the controller and including a coupling for attachment of an oral solid medication container in a detachable relationship, the dispenser providing vibration to a coupled container in response to the prescription information so that medication is dispensed from the container into a vial. ('927 Patent Col. 16 L. 48).

Claims 1 and 20 of the '671 Patent contain the following element:

*a controller operatively controlling the vibratory dispenser, said controller causing the vibratory dispenser to vibrate the coupled canister such that the medication contained in the coupled canister is dispensed in a predetermined manner. ('671 Patent Col. 16 L. 50). Furthermore, the specification explicitly states that "the canister is vibrated by the drive unit in order to move countable solid drugs from the canister into a vial." ('671 Patent Col. 8 L. 1-3). The claims and specifications themselves indicate that vibration causes the pills to be dispensed. Therefore, the proper construction is that a "vibratory dispenser" is a device that uses vibration in order to dispense medication, and not a device that merely assists in the dispensing.

Even AutoMed's own expert agrees with this construction, and defines a "vibratory dispenser" as "a device that dispenses a product using vibration." (Spong Tr. 40:23-42:6).

The district court construed "vibratory dispenser" as "a device that uses vibration in order to dispense medication, and not a device that merely assists in the dispensing," thereby rejecting AutoMed's proposed construction, "a dispenser that uses vibration to aid in the dispensing function." Claim Construction Opinion, 2005 U.S. Dist. LEXIS 26032, slip op. at 18-19. Microfil argues that under the district court's construction, vibration must be the exclusive force causing the dispensing of medication. AutoMed challenges Microfil's interpretation of the district court's construction and maintains that vibration need not be the sole force used to dispense medication.

We agree with the district court's construction, but clarify that to the extent Microfil reads it to require the use of vibration alone to dispense pills, it is incorrect. Nothing in the language of the claims or the specifications indicates that the term "vibratory" should be interpreted to mean "vibratory only." Even Microfil has previously admitted that the claimed dispenser requires gravity--in addition to vibration--to effectively dispense pills. See Br. Supp. Defs.' First Mot. for Partial Summ. J. for Non-Infringement (Dckt. No. 47) at 10. The preferred embodiments corroborate this admission; both specifications indicate that internal ramps position pills to be dispensed through a gate on the bottom of the container or canister, which opens to allow pills to drop out during the vibratory dispenser's operation. This precludes any claim construction wholly excluding the role of gravity. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996). Thus, we affirm the district court's construction with the clarification that natural forces--including gravity--are not excluded from the dispensing process.

For this term, Kwitek proposes:

The external aspect of the grip made of a soft material having viscous and elastic properties that has a hardness level between 2 and 35 on the Shore A Durometer Test scale.

Pilot suggests: "the external layer of the grip having viscous and elastic properties."

Both parties incorporate "viscous" and "elastic" in their definitions. These words appear in the specification, and are used in patents listed in the "References Cited" section of this patent. Neither of the briefs nor technology synopses defined either word. Both of these words have specific meanings when used in a scientific context to describe the properties of materials. While it may be easily apparent to one skilled in the art that "viscoelastic" combines "viscous" and "elastic," which are terms understood by those skilled in the art, the substitution of two technical words for one does not explain much to a jury.

The '190 patent describes one embodiment "wherein the viscoelastic hand/finger surface is a viscous liquid material contained within an elastomeric bag." '190 patent, col. 2, ll. 5-6. Another embodiment uses "silicone gel or silicone oil." '190 patent, col. 2, ll. 8-9. "The viscoelastic hand/finger surface provides individuals with a soft and individually conforming gripping surface." '190 patent, col. 2, ll. 63-65. After several similar descriptions, the specification states: "While preferred materials are disclosed above, other materials exhibiting similar properties may be used . . . ." '190 patent, col. 4, ll. 41-43.

Similar descriptions of soft materials which will fairly easily change shape in response to pressure are described in the McCall patent, which is listed in the '190 patent and referred to in Pilot's brief. That patent describes a pen grip "with a soft, deformable grip . . . ." '599 patent, col. 2, ll. 7. A helpful description is: "the deformable putty viscous material . . . ." '599 patent, col. 2, ll. 34. Another is: "A deformable medium such as a relatively viscous putty . . . ." '599 Patent, col. 4, ll. 30-31.

To one skilled in the art a "viscous" material used in the context on a pen grip means "a soft material which will change shape under the pressure applied by fingers gripping a pen when it is used to write." This comports with the specification of the '190 patent, see col. 2, ll. 64-64, and with the definition in dictionaries. See ACADEMIC PRESS DICTIONARY OF SCIENCE AND TECHNOLOGY (1992) ("viscous" means "characterized by a high degree of friction between component molecules as they slide by each other"); THE AMERICAN HERITAGE SCIENCE DICTIONARY (2005) ("viscous" means "having relatively high resistance to flow"); THE MERRIAM-WEBSTER THIRD NEW INTERNATIONAL DICTIONARY, UNABRIDGED (2002) ("viscous" means "having a ropy or glutinous consistency and the quality of sticking or adhering"). At the hearing, the parties agreed to this definition. See Tr. p. 14, ll. 3-25.

"Elastic" is also a term describing a physical property of materials, familiar to those skilled in the art, and used in patents in this field. The patent in dispute describes the grip as made of a material that is "a responsive, solid-phase polymer material (FIGS. 1 and 2) or a gelatinous material interposed within a more resilient material . . . ." '190 patent, col. 3, ll. 1-3. In other words, either the grip material itself will tend to return to its original shape after being deformed, or the covering surrounding the gelatious material will. This comports with standard dictionary definitions. See MCGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS (2003) ("elastic" means "capable of sustaining deformation without permanent loss of size or shape"); THE MERRIAM-WEBSTER THIRD NEW INTERNATIONAL DICTIONARY, UNABRIDGED (2002) ("elastic" means "capable of recovering size and shape after deformation.") At the hearing, the parties agreed that elastic means "the hand/finger surface will tend to return to its original shape after being deformed." Tr. p. 15, ll. 4-11.
The parties agree that the "viscoelastic" surface described in the claim has both viscous and elastic properties. In other words it will change shape under the pressure exerted by fingers holding the writing instrument and will tend to return to its original shape when released. This comports with the specification in the '190 patent, and in earlier referenced patents such as the McCall patent. Standard dictionaries give similar definitions of "viscoelasticity." See ACADEMIC PRESS DICTIONARY OF SCIENCE AND TECHNOLOGY (1992) ("viscoelasticity" means "a condition of a liquid or solid that exhibits viscosity but also memory of past deformation, with the ability to store energy elastically and to dissipate energy due to viscosity of the medium.")

The real dispute in this case is whether the claim should be interpreted to include the range of hardness levels stated in the specification but not in the claim itself. Kwitek proposes to include in the definition the words "that has a hardness level between 2 and 35 on the Shore A Durometer Test Scale."

As the parties agreed, a Durometer is a device used to measure the hardness of materials by applying pressure with a small probe. See Tr. p. 24, l. 12 - p. 25, l. 7. The softer the material, the farther the probe reaches into the material. The distance the probe moves is shown on a scale. One standard of measurement used on the scales of instruments designed to measure the hardness of materials such as plastics and rubber is called the Shore A scale.

The specification of the '190 patent states:

the hand/finger surface to the present grip is an ultra-soft material. This endows the grip with an inherent tactile feel . . . The ultra-soft hand/finger surface can be measured in terms of hardness by the Shore A Durometer Test. The present grips have durometers in this scale between approximately 2 and 35, and more preferably 25 or less.

'190 patent, col. 3, ll.4-13. The specification also states that in the preferred embodiment, the shell "preferably has a Shore A hardness of 20-25." '190 patent, col. 3, ll.51-52. This degree of hardness maintains the shape of the grip and prevents damage from chemicals and oils. '190 patent, col. 3, ll. 53-55.

As frequently occurs, the parties cite opposing axioms. Pilot asserts that the court may not import limitations from the specification to the claim. Kwitek argues that a patentee may act as his own lexicographer, and that by referring to the Durometer and Shore A scale, the inventor did so. Alternatively, Kwitek states that applying the specified Durometer range "gives life meaning and vitality to the claim." The rules of construction are helpful guideposts. But, in the end, the court must determine the meaning the term would have to a person of ordinary skill in the art, who reads the claim in the context of the specification and prosecution history, at the time of the effective filing date of the patent. Phillips, 415 F. 3d at 1313.

It is clear from the specification that the viscoelastic hand/finger surface is soft -- soft enough to be compressed or deformed under the pressure exerted by fingers holding a writing instrument. It is also clear that the surface will tend to return to its original shape when the writing instrument is released.

The reference to the Durometer range between 2 and 35 is found in the section titled "DESCRIPTION OF PREFERRED EMBODIMENTS." '190 patent, col. 3, l.13. It also is used only in conjunction with a description of a particular embodiment with an "ultra-soft" material. Elsewhere, embodiments are described as having a "soft" surface, but no Durometer reading is given. On the other hand, the preferred embodiment of the shell, described in the claim as having "hardness" at col. 8, ll. 66-67, is described in the specification as having a "Shore A hardness of 20-25." '190 patent, col. 3, ll. 51-52. This is well within the range ascribed to the "ultra-soft" hand/finger surface." '190 patent, col. 3, ll. 10-13.

The patentee could have included a Shore A hardness range as part of Claim 1, or in a dependent claim. It would not have been unusual to have seen several dependent claims stating various hardness measurements to cover various possible embodiments, if precise hardness measurements were really a limitation of the claim.

Another problem with Kwitek's argument is that a Durometer test of a material measures how far a probe will penetrate into a material. It is an empirical test which can be used to ensure that one batch of material is the same as, or similar to another. A Shore A reading test may measure the "hardness" (resistance to penetration) of a material. But "no simple relationship exists between indentation hardness determined by this test method and any fundamental property of the material tested." ASTM D 2240 - 00, "Standard Test Method for Rubber Property -- Durometer Hardness," ASTM International, pp. 1-2 as found in Ex. D to Kwitek's Opening Claim Construction Brief [Doc. # 56, Attachment # 4, pp. 20-21 of 50].

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Additionally, the patent describes embodiments in which the hand/finger surface is formed from silicone gel or silicone oil and contained within an elastomeric bag. See '190 patent, col. 2, ll. 5-9; '190 patent, col. 4, ll. 36-40. What does the Durometer measure: the hardness of the oil or the covering? How puncture resistant is the covering and what is the measurement if the probe penetrates it?

The claim term "viscoelastic" doesn't really tell one skilled in the art much about hardness as measured on the Shore A scale by a Durometer. And a particular Shore A reading on a Durometer does not tell one skilled in the art how viscoelastic a substance is. Defining the disputed term as including the limitation of a Shore A hardness level would be adding something that just is not in the claim, nor defined by the patentee acting as his own lexicographer.

The court will construe this term as follows:

"Viscoelastic hand/finger surface" means "the external layer of the grip is soft enough to change shape under the pressure exerted by fingers gripping a writing implement to write and which will tend to return to its original shape when released."

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1. Vision Correction Power/Vision Correction Value

The parties agree that the claims of the Portney Patents variously refer to the terms "vision correction power" or "vision correction value" synonymously. Those terms are found in Claims 1, 10(b), 14, 15, 19, 28, 29, 30, 32, 33, 34, 35, 36 and 41-44 of the '461 patent; Claims 1 and 8 of the '108 patent; Claims 1, 2, 3, 4, 5, 7, 10, 12, 13, 14, 17 and 18 of the '839 patent; Claims 1, 3, 4, 5, 7, 10, 13, 16 and 17 of the '625 patent; Claims 1, 2, 3, 5, and 8 of the '744 patent; Claims 1, 4, 7 and 14 of the '389 patent; 1, 4, 9 and 10 of the '711 patent; and Claims 1, 3, 5 and 10 of the '340 patent.

Vision Advancement argues that the common and ordinary meanings of "Vision Correction Power/Vision Correction Value" should prevail and cites to two medical dictionaries to propose a construction of "The measure of magnification required or used to neutralize a harmful or undesirable condition or to improve the condition of a person's eye sight." Vistakon advances the construction of "The dioptric power or value needed in a lens prescription to correct a refractive error; the dioptric power of the lens is measured with the lens off-eye."

At the Markman hearing, Vision Advancement agreed to the following alteration of Defendant's construction, "The dioptric power or value in a lens to correct refractive error." However, Vision Advancement maintains that Vistakon's construction further requiring that the lens be "measured with the lens off-eye" is too limiting because it is not needed to define the term. Vistakon claims that the Portney Patents' only reference to vision correction power is to the power of a lens measured off-eye and that there is no mention in the patents of determining the power of the lens on-eye. Because, Vistakon argues, Portney never suggested to the examiner that the power of the lens--his or prior art lenses--should be determined on-eye, it stands to reason that the power of a lens should be measured off-eye. While it is true that the prosecution history can inform the meaning of claim language, see Phillips, 415 F.3d at 1317, the Court is not willing to import what was not mentioned in the patent or prosecution history. There is no statement that the power of the lens must be measured off-eye. Nor will the Court import that limitation into the claims because there is no statement that the lens can be measured on-eye. See Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1326 (Fed. Cir. 2003) (opining that for prosecution disclaimer to arise, the alleged "disavowing actions or statements made during prosecution [must] be both clear and unmistakable").

Therefore, the Court construes "Vision correction power/value" to mean the "The dioptric power or value in a lens to correct refractive error."
A. Claim Definiteness

Sunglass Hut argues that the phrase "vivid colored appearance" appearing in claim 1 is indefinite. Even if vividness is based on the disclosed "differential effect," according to Sunglass Hut, one skilled in the art cannot tell which values of differential effect qualify as vivid and which do not. Sunglass Hut further contends that the district court did not and could not define the bounds of the phrase.

Oakley responds that the phrase can be defined from the structure, formula, and examples disclosed in the patent. Oakley cites the proposition that compliance with section 112, paragraph 2, does not require a particular number as a cutoff. According to Oakley, the specification's numerical examples, including some values of differential effect that do create a "vivid colored appearance" and one that does not, are sufficient.

We agree with Oakley that Sunglass Hut has not raised a substantial question as to whether the phrase "vivid colored appearance" renders the claims indefinite in violation of 35 U.S.C. § 112, P 2. That paragraph provides: "The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, P 2 (2000). "The primary purpose of the definiteness requirement is to ensure that the claims are written in such a way that they give notice to the public of the extent of the legal protection afforded by the patent, so that interested members of the public, e.g., competitors of the patent owner, can determine whether or not they infringe. That determination requires a construction of the claims according to the familiar canons of claim construction." All Dental Prodx, LLC v. Advantage Dental Prods., 309 F.3d 774, 779-80, 64 USPQ2d 1945, 1949 (Fed. Cir. 2002) (citations omitted).

One of those canons is that a patentee need not define his invention with mathematical precision in order to comply with the definiteness requirement. In re Marosi, 710 F.2d 799, 802-03, 218 USPQ 289, 292 (Fed. Cir. 1983). In Marosi, we held that the phrase "essentially free of alkali metal" was not indefinite, where the specification defined it as containing only residual impurities, such as 4 ppm (parts per million). Id. at 802, 218 USPQ at 292. Marosi disclaimed a level of 3819 ppm disclosed in the prior art, and the PTO took the position that one skilled in the art would not know where to draw the line between 4 ppm and 3819 ppm. Id. We sided with Marosi, explaining that his invention "does not reside in such a number" and that a skilled artisan would draw that line between unavoidable impurities and essential ingredients. Id. at 803, 218 USPQ at 292.

Unlike the situation in Marosi, the numerical value of the differential effect in this case is a distinguishing feature over the prior art. That is so because the language of the claim associates vividness with the differential effect, and the specification presents examples of numerical values of the differential effect that either qualify as vivid or do not. More precisely, the language of the claim itself confirms that the lens's "vivid colored appearance" results directly from the "differential effect." '902 patent, col. 24, ll. 62-64 (reciting "said differential effect . . . producing a vivid colored appearance" in claim 1). Moreover, the claim itself defines the lens's structural attributes that produce the "differential effect." Id. at col. 24, ll. 67-69 (reciting "the reflectance of said semireflective layer and the thickness of said dielectric layer producing . . . a differential effect").

Accordingly, the specification presents a formula for calculating the differential effect for a number of examples in which the differential effect is either great enough to produce a "vivid colored appearance" or not. Those values that qualify as producing a "vivid colored appearance" range from 5.45% to 405% under various circumstances, whereas the only disclosed value of maximum differential effect that does not produce a "vivid colored appearance" is 2.3%. Id. at col. 9, ll. 59-65. Thus, while the specification does not indicate so explicitly, the dividing line must be somewhere between 2.3% and 5.45%.

Although the difference between those values is seemingly slight, and comparison of one differential effect value to another may present an apples-to-oranges problem due to the different reference intensities involved, the specification purports to indicate that the difference is significant, brushing aside any comparison difficulties. See '902 patent, col. 11, ll. 5-16 (purporting that differential effects of 5.45% above 8[D] and 25.96% above 8[A] are "much larger than the 2.2% found for the 90% reflecting case" (emphasis added)); see also id. at col. 12, ll. 37-40 (purporting that 7.5% is "much greater than that
obtained (2.2%) for a 90% reflecting layer case" (emphasis added)). Faced with those examples and comments, we conclude that one skilled in the art would, in reasonable likelihood, understand that a lens exhibiting a maximum differential effect not substantially greater than 2.2% does not have a "vivid colored appearance."

Indeed, we conclude that one skilled in the art would interpret the phrase "vivid colored appearance" in light of the specification to require that the maximum differential effect equal or exceed about 5.45%, and we thus construe the phrase for purposes of the preliminary injunction.

That is not to say that Sunglass Hut cannot ultimately succeed on the merits of its indefiniteness argument later in the litigation, after further development of the record. We simply hold that, recognizing the presumption of validity and the fact that the '902 patent has already been subjected to reexamination, Oakley has at this point in the case shown that it is reasonably likely to withstand such a validity challenge.

(3) Plurality of voids extending between said top and bottom

This term can be found in claims 1 and 11 of the '874 Patent. Innovative argues that "voids extending between said top and bottom ends" means gaps or spaces which extend in the space between the top and bottom ends." Defendants construe the term to mean "multiple openings entirely disposed within the walls of the first coupling, which are not grooves, and extend the entire length of the coupling."

Requiring the voids to extend the entire length of the coupling is contrary to the ordinary meaning of "between." For that reason alone, I disagree with the defendant.

The figures accompanying the patents, which show that the voids do not go through to the top because they are only visible from a bottom view, not a top view. Pl's Markman Br. p. 21.

The ordinary meaning of the language together with the drawings in the patents establish that "plurality of voids" means "gaps or spaces which extend in the space between the top and bottom ends."

"method for using vulcanized rubber" and "shredded vulcanized rubber particles" Claim 5

The Merriam-Webster Online Dictionary defines "method" as "a way, technique, or process of or for doing something." Merriam-Webster Online Dictionary (visited May 15, 2007) <http://www.m-w.com/dictionary/method>. The term "vulcanization" means "the process of treating crude or synthetic rubber . . . to give it useful properties." Merriam-Webster Online Dictionary (visited May 15, 2007) <http://www.m-w.com/dictionary/vulcanization>. Therefore, the Court defines "method for using vulcanized rubber" as "the process of treating crude or synthetic rubber . . . to give it useful properties."

Pursuant to this Court's Markman Order, the term "wafer" means "a thin, generally cylindrical, slice of semiconductor material used as a base for an electronic component or circuit." The term "a first axially symmetric region" means "a region that is symmetric about the central axis of the wafer." The term "substantially free of agglomerated vacancy [or interstitial] defects" means "a concentration of such agglomerated defects which is less than the detection limit of these defects, which is currently about 1000 defects/cm3." The term "agglomerated vacancy intrinsic point defects" means "defects caused by the reaction in which vacancies agglomerate to produce D-defects, flow pattern defects, gate oxide integrity defects, crystal originated particle defects, crystal originated light point defects, and other such vacancy related defects." Finally, "agglomerated silicon self-interstitial intrinsic point defects" means "defects caused by the reaction in which self-interstitials
agglomerate to produce dislocation loops and networks, and other such self-interstitial related defects.

3. Wafer Cassette (Claims 1 and 21)

Plaintiff argues "wafer cassette" should be construed as "a structure that holds one or more wafers." Defendant argues "wafer cassette" should be construed as "an open structure that holds one or more wafers."

The Court finds "wafer cassette" is properly construed as "a wafer carrier that holds one or more wafers and keeps them separate."

6 The Court has not adopted either party's proposed construction. Defendant has failed to show the claimed "wafer cassette" must be "open" at all times. Both parties' reference to a "structure that holds one or more wafers" fails to provide sufficient clarity; both parties agree, however, that a "wafer cassette" is a type of "wafer carrier" that, in addition to holding wafers, keeps them separate. (See Pl.'s Opening Brief on Claim Construction at 16; Gwozdz Decl. PP 23-24, Ex. H.)

3. The "Wafer Support" Limitation

Finally, Semitool argues that the district court erred by construing the phrase "wafer support for detachably supporting wafers thereon" in the '708 patent to be a means-plus-function limitation under 35 U.S.C. § 112, ¶ 6 because that phrase is a generic expression for a variety of well-known physical devices used to hold or grasp a wafer and release it. Novellus responds that the phrase is purely functional, and that because the claims do not recite any specific structure for performing that function, the district court properly construed that term to be a means-plus-function limitation.

The failure to use the word "means" creates a presumption that § 112, ¶ 6 does not apply, which can be rebutted by both intrinsic evidence and any relevant extrinsic evidence. Personalized Media, 161 F.3d at 703, 48 U.S.P.Q.2D (BNA) at 1886 (citing Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1213, 48 U.S.P.Q.2D (BNA) 1010, 1016 (Fed. Cir. 1998)). "In deciding whether [the] presumption has been rebutted, the focus remains on whether the claim as properly construed recites sufficiently definite structure to avoid the ambit of § 112, ¶ 6." Id. (citing Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427-28, 44 U.S.P.Q.2D (BNA) 1103, 1109 (Fed. Cir. 1999)).

We agree with Semitool that the district court erred in construing the phrase "wafer support for detachably supporting wafers thereon" to be a means-plus-function limitation. The "wafer support" limitation does not use the word "means," and therefore this limitation is presumed not to invoke § 112, ¶ 6. Id. Furthermore, none of the intrinsic or extrinsic evidence rebuts this presumption because the term "support" is a sufficient recitation of structure. The word "support" is a well-known term in the mechanical arts for a number of objects capable of providing some type of foundation for another object. See Knight's American Mechanical Dictionary 2455 (1876) (defining "structure" as "[a] term of very general import. A stand, frame, or bed for an . . . apparatus, implement, tool"). The fact that the term "support" does not specifically evoke a particular structure does not change the fact that it does connote structure. See Greenberg v. Ethicon Endo-Surgery, 91 F.3d 1580, 1583, 39 U.S.P.Q.2D (BNA) 1783, 1786 (Fed. Cir. 1996) (stating that a claim term "need not call to mind a single well-defined structure" to fall within the ambit of § 112, ¶ 6, and that the relevant inquiry is whether the claim term "has a reasonably well understood meaning in the art"). We conclude that the "wafer support" limitation conveys sufficient structure to preclude the application of § 112, ¶ 6, and therefore interpret that limitation to mean any device capable of both holding or grasping a semiconductor wafer and releasing it at some later time.
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3. The "Wafer Support" Limitation

Finally, Semitool argues that the district court erred by construing the phrase "wafer support for detachably supporting wafers thereon" in the '708 patent to be a means-plus-function limitation under 35 U.S.C. § 112, P 6 because that phrase is a generic expression for a variety of well-known physical devices used to hold or grasp a wafer and release it. Novellus responds that the phrase is purely functional, and that because the claims do not recite any specific structure for performing that function, the district court properly construed that term to be a means-plus-function limitation.

The failure to use the word "means" creates a presumption that § 112, P 6 does not apply, which can be rebutted by both intrinsic evidence and any relevant extrinsic evidence. Personalized Media, 161 F.3d at 703, 48 U.S.P.Q.2D (BNA) at 1886 (citing Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1213, 48 U.S.P.Q.2D (BNA) 1010, 1016 (Fed. Cir. 1998)). "In deciding whether [the] presumption has been rebutted, the focus remains on whether the claim as properly construed recites sufficiently definite structure to avoid the ambit of § 112, P 6." Id. (citing Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427-28, 44 U.S.P.Q.2D (BNA) 1103, 1109 (Fed. Cir. 1997)).

We agree with Semitool that the district court erred in construing the phrase "wafer support for detachably supporting wafers thereon" to be a means-plus-function limitation. The "wafer support" limitation does not use the word "means," and therefore this limitation is presumed not to invoke § 112, P 6. Id. Furthermore, none of the intrinsic or extrinsic evidence rebuts this presumption because the term "support" is a sufficient recitation of structure. The word "support" is a well-known term in the mechanical arts for a number of objects capable of providing some type of foundation for another object. See Knight's American Mechanical Dictionary 2455 (1876) (defining "support" as "[a] term of very general import. A stand, frame, or bed for an . . . apparatus, implement, tool"). The fact that the term "support" does not specifically evoke a particular structure does not change the fact that it does connote structure. See Greenberg v. Ethicon Endo-Surgery, 91 F.3d 1580, 1583, 39 U.S.P.Q.2D (BNA) 1783, 1786 (Fed. Cir. 1996) (stating that a claim term "need not call to mind a single well-defined structure" to fall within the ambit of § 112, P 6, and that the relevant inquiry is whether the claim term "has a reasonably well understood meaning in the art"). We conclude that the "wafer support" limitation conveys sufficient structure to preclude the application of § 112, P 6, and therefore interpret that limitation to mean any device capable of both holding or grasping a semiconductor wafer and releasing it at some later time.

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a. "waist area" or "waist area of the garment"

The terms "waist area" and "waist area of the garment" are construed by the court to mean an area of the garment that is above and distinct from the hip area of the garment. To rule otherwise would conflict with Orr's definition given in both the patent specification and during prosecution of the '364 patent; more importantly, to interpret the terms "waist area" and "waist area of the garment" in any other way would ensnare prior art -- the Santoni patent -- and thus invalidate the '364 patent.

This term was defined both in the patent specification, and by the patentee during prosecution. The '364 patent states, "The two garment pieces 16 and 18 are connected together generally only at the waist area of the garment preferably about the waistline 58. . . . " '364 patent at col. 4, lines 44-48. As shown in Fig. 1 on the '364 patent, the waistline 58 is the uppermost portion of the garment, about the waist. In Fig. 4 of the '364 patent, the "waist area" is specifically marked as 74, again referring to the top of the garment and what might be considered the waistband. See '364 patent at col. 5 lines 18-21.

Moreover, during prosecution of the '364 patent, the patentee distinguished the Santoni reference on the grounds that are even more telling. The patentee distinguished the Santoni reference on the grounds that "the slots 8 and 9 shown in the Santoni reference particularly in Figure 3 extend only from the leg of the garment to the sides of the garment substantially below the garment waist defined by the waistband 4." See Amendment A at 11, Defendants' Appendix at 60. In making this statement, Orr defined what the court will call the "hip area" of the garment. This is an area near the upper leg and to the
Jump to:  A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

sides of the garment where the crotch sections attached to one another in the Santoni patent.

In distinguishing the Santoni patent, the patentee defined the "garment waist area" as a distinct area, separate from the hip area of the garment. Therefore, the terms "waist area" and "waist area of the garment" are construed by this court in such a way as to distinguish them from the hip area of the garment. To interpret the terms "waist area" and "waist area of the garment" in any other way would ensnare prior art -- Santoni -- and thus invalidate the '364 patent. See Tate Access Floors, Inc., 279 F.3d at 1366-67.

The Santoni patent, issued in 1971, disclosed a type of ladies tights with overlapping crotch portions and an openable crotch structure. During prosecution, the patent office initially rejected claim 1 of the '364 patent because it was "clearly anticipated" by Santoni. Office Action mailed by the US Patent and Trademark office on April 27, 1990, P 3. The similarities between Santoni and the '364 patent are shown below (below to the left is an excerpt of Figs. 1 and 3 of the '364 patent, and below to the right is an excerpt of Figs. 3 and 4 of the prior art Santoni).

--- Footnotes

4 The Patent Office cited the Santoni German patent DE 2038063. Although no translation was provided, it appears that the abstract of an English equivalent of the patent, GB 1311734, is in the record. See Defendants' Appendix at 86-101.

--- End Footnotes

[SEE PICTURE IN ORIGINAL]

In response to the Patent Office's rejection of the original '364 patent application (which explained that claim one was clearly anticipated by Santoni), Orr distinguished Santoni by arguing that the "slots 8 and 9 shown in the Santoni reference particularly in Figure 3 extend only from the leg of the garment to the sides of the garment substantially below the garment waist defined by the waistband 4." Amendment A at 11, Defendants' Appendix at 60. The "slots" are the leg openings 8 and 9 identified in the Santoni Figures 3 and 4 above. As can be seen from Figures 3 and 4 above, the slots 8 and 9 are attached at an area near the top of the leg or hip. Therefore, slots that do not extend above the hip area of the garment into the waist area are not covered by the claim one limitations of the '364 patent.

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The size and arch support limitations proposed by defendant and the "high-surface area" limitation proposed by Messer are not supported by the ordinary and customary meaning of the words used in the disputed term, nor do they receive support from the context in which the term appears in the claim language. Indeed, the proposed limitations appear only in claims dependent on Claim 1 and not in Claim 1 itself, giving rise to a presumption that the limitations are not present in the independent claim. See Phillips, 415 F.3d. at 1315. Because the term "wakeboard traction pad" is used in Claim 1, the
presumption suggests that the disputed term cannot be construed to include any of these three limitations.

Moreover, the size and arch support limitations proposed by defendants are drawn, in part, from language in the specification. However, the words used in independent Claim 1 are not subject to the clarifications defendants propose, and therefore the claim cannot be so constrained on the basis of the specification language. See Renishaw, 158 F.3d 1248-1249.

Finally, nothing in the prosecution history submitted into evidence suggests that the disputed term should be given a construction that deviates from that suggested by its ordinary and customary meaning and its context within the claims.

For the foregoing reasons, I reject as unsupported the size and arch support limitations proposed by defendants and the "high-surface area" limitation proposed by Messer, and conclude instead that the term "wakeboard traction pad" should be construed to mean "a pad with a friction-enhancing top surface, the bottom surface of which may be attached to the top surface of a wakeboard."

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B. "wakeboard traction surface"

The term "wakeboard traction surface" appears only once in the patent claims, as the subject of independent Claim 21. Defendants contend that "wakeboard traction surface" should be construed to mean "the top surface of a wakeboard traction pad." Messer argues that the term should instead be construed to mean "any friction-enhancing finish or surface placed on the top surface of a wakeboard."

Both proposed definitions entail difficulties. On defendants' proposed construal, the terms "wakeboard traction surface" and "wakeboard traction pad," while not precisely synonymous, could be used interchangeably without changing the scope of the patent claims' coverage. However, applicable case law instructs that, in the absence of evidence to the contrary, different terms should be construed as connoting distinct meanings. See CAE Screenplates, 224 F.3d at 1317; Applied Med., 448 F.3d at 1333 n.3.

Plaintiff's proposed construal, by contrast, falls afoul of dependent Claim 22, which describes "[a] wakeboard incorporating the traction pad of claim 21." '051 Patent, 12:46-47 (emphasis supplied). It is presumed that patent terms have the same meaning wherever they are used in a patent, see Phillips, 415 F.3d at 1317, and the reference in Claim 22 to a "traction pad" described in Claim 21 suggests that a "wakeboard traction surface" must in some sense constitute or form part of a traction pad.

Although the conflict between these principles of patent construction suggests the possibility of a drafting error, in which either the word "surface" in Claim 21 or the word "pad" in Claim 22 was mistakenly selected, it is not for this court to determine the patent applicant's intent in selecting particular claim terms. See Markman, 52 F.3d at 985 ("No inquiry as to the subjective intent of the applicant or PTO is appropriate or even possible in the context of a patent infringement suit. The subjective intent of the inventor when he used a particular term is of little or no probative weight in determining the scope of a claim. . . "). Instead, this court must look to the claim language as approved by the Patent and Trademark Office and construe the claims for what they actually recite, adhering as closely as possible to the principles of patent construction set forth above.

The language of Claim 21 provides support for Messer's contention that "wakeboard traction surface" must be construed as distinct from a "wakeboard traction pad." The claim expressly describes "a sloping surface," the contours of which serve to define characteristics or to perform functions elsewhere described, in different terms, as features of a pad. Specifically, the
language of Claim 21 describing the arch support of the traction surface can be contrasted with the language of dependent Claim 15 and independent Claim 19 describing a pad incorporating an arch support; the latter language expressly describes a ridge traveling along the top surface of the pad from one end of the pad to the other, see '051 Patent, 10:39-42, 12:1-4, whereas the former language defines the arch support purely as a characteristic of the "sloping surface," see '051 Patent, 12:41-42. The focus in the claim language on the contours of the surface suggests that the traction surface of Claim 21 is intended to overlay a contoured substrate, rather than merely to constitute one side of a pad such as that claimed in Claims 1 or 19.

For the foregoing reasons, I reject the construction proposed by defendants, and conclude instead that the term "wakeboard traction surface" should be construed to mean "a friction-enhancing finish or surface material that may adhere or be attached to the top surface of a wakeboard."

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2. WALL

ConAgra defines "wall" as a "barrier capable of being in contact with two food materials while holding them separate and apart from one another" (Filing No. 64). Green contends "wall" "defines the outside of a vessel for maintaining relative position of food, not a barrier" (Id).

In accordance with the above discussion, the Court finds that "wall" means a barrier. The patent uses wall to define the boundaries of a vessel. Claim 1 states the first vessel has "a bottom wall" and "a substantially frusto-conical side wall converging toward said bottom wall," and the second vessel has "a bottom wall" and "a frusto-conical side wall having an upper end." Figure 3 of the patent specification shows the bottom and side walls form the outermost boundary of a vessel. The specification does not explicitly use the term barrier to define a vessel's wall, but such a construction is implicit in the specification. As discussed above, figure 3 depicts the bottom and side walls of both vessels as solid and the bottom and side walls of the second vessel must be solid to prevent foods in the first and second vessels from mixing when the vessels are nested. Further, during prosecution of the patent, the examiner removed his obvious objection based on the understanding that the second vessel's side wall could be in contact with two different foods while keeping the foods separate and apart. Parts of the specification and prosecution history regard specific walls of the first or second vessel, but wall should be construed consistently for the side and bottom walls of both vessels.

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c. "Rear Wall"

Plaintiffs argue that the AMP device does not have a rear housing wall as recited in Claim 1. They say that the back of the AMP device is completely open, exposing the conductor wires. Maxconn disagrees, stating that the claim does not require that the lead wires be enclosed under a solid rear wall.

i. Claim language

The claim requires a "rear wall," '317 patent at 4:58, but does not contain any language describing the nature or design or this rear wall. The claim itself sets forth no limitation requiring that the conductor wires from the plug receiving opening be encased within a thick rear wall or behind a solid rear wall.

ii. Specification

Figures 3 and 4 of the '317 patent show a rear wall which is essentially just a square-like outline, the thickness of the top, bottom, and side walls, the vacant interior of the square exposing the wires and pins which connect the device to a printed-circuit board. Pocrass believes that Figures 3 and 4 contain a drafting error, and that the rear view in those figures was intended to be a cross section showing the wires placed behind or within a solid type of rear wall.
While Figures 1 and 2 of the '317 patent explicitly show cross-sections by means of the standard drafting technique of cross-hatching, Figures 3 and 4 contain no cross-hatching. Furthermore, Figures 3 and 4 would make no sense if the rear wall was understood as a cross-section, because it is clear that the electrical lead wires 50 and 52 lie within slots located on the outer portion of the rear wall. See Figure 1 of the '317 patent. If these figures represented true cross sections, items 50 and 52 would have been omitted.

The specification describes the rear wall as a structure that defines the rear of the plug opening, and which "extends transversely" across the rear of the housing:

Opening 26 is further defined by a rear wall 16 which extends transversely across the rear portion of the housing 10. Outer rear wall surface has formed therein a plurality of alternating inwardly extending slots 38 which longitudinally extend within the rear wall 16 and top wall 18, FIGS. 3 and 4.

'317 patent at 3:16-21. The specification explains the claim term "rear wall" as that piece which lies at the rear of the plug receiving opening. The specification does not indicate that the rear wall somehow encloses all of the conductor wires. It is not specified that an encasement or wall must completely or even partially cover the wires extending from the light emitting source.

iii. Prosecution History

The prosecution history does not help to clarify the meaning of rear wall.

iv. Extrinsic Evidence

Pocrass testified that Figures 3 and 4 of the '317 patent contained a significant mistake in the omission of the cross-hatching, therefore failing properly to indicate that these are cut-away or sectional views of the rear of the invention claimed under the '317 patent. Mr. Pocrass also testified that the written description of Figures 3 and 4 incorrectly failed to indicate that they are cut-away or sectional views.

The Court did not find Pocrass's testimony credible, or if credible, sufficient to overcome the clear import of the figures in the specification. Credible testimony was presented that RJ connectors were frequently made with open backs. As Mr. Lazar testified, the point was that there be a stopping surface to that the plug does not go through the back.

Plaintiffs stated that the Pocrass invention was essentially an adaptation of the Bogese II patent. Essentially the first claim of Bogese II mirrors the first claim of the '317 patent, without the light emitting devices. Figure 3 of the Bogese II patent "is a rear view of the preferred embodiment illustrated in FIG. 1." (See Figure G, below.) The view shows the conductor wires exposed, but secured to the device at the top by indentations pressed into the outer edge of the top wall.

v. Construction

In conclusion, the "rear wall" described in Claim 1 need not be a solid rear wall, but can be an outline in which the interior wires of the device are left exposed. While Mr. Pocrass may have intended a different meaning for "rear wall," that meaning was not expressed in the patent itself. His self-serving testimony is given no deference.
Another element included in claim 1 is:

a third wall defining a soil container, said soil container being fluidly connected to said guide chamber by said aperture in said second wall.

Here M. Mem. 18 asks only that the "third wall" be construed as "a wall" and not as the "cover" or top of the soil container. Because "wall" in the quoted context is not dispositively self-defining, it becomes appropriate to refer to the specification.

On that score Whirlpool says (W. Mem. 16):

The specification identifies the soil container chamber 54 as being defined by the lower housing wall 49 (the bottom), the soil container wall 56 (one side), the second upstanding annular wall 50 (the opposite side) and the cover 30 (top). All of these "walls" are joined together to receive and hold soil laden liquid from the pump chamber....

But that last use of "walls" to convert "the cover 30 (top)" into the "third wall" is no better than a linguistic sleight of hand. It flies directly in the face of Whirlpool's own specification (col. 4, ll. 4-9)(emphasis added):

As shown in FIG. 2, the soil separator 20 further includes an annular cover 30 which is disposed over and secured to soil container wall 56 by screws 31. When in place, cover 30 and soil container wall 56 combine to form a low-pressure water seal, preventing leakage of water therebetween.

And as will next be shown, it is likewise at war with the portion of Whirlpool's specification (col. 5, ll. 47-49) that the first sentence in its above-quoted Mem. 16 paraphrases:

Soil container chamber 54 is generally defined by lower housing wall 49, soil container wall 56, second upstanding annular wall 50 and cover 30.

To begin with a nonissue, the "first wall" referred to in claim 1 is indisputably separate from the "soil container chamber." Next, the claim, the specification language and the drawings all confirm that the "second wall" is what is uniformly identified by the number 50 (described at col. 4, l. 20 as "upstanding wall 50," and at col. 5, ll. 29-30 and l. 33 and ll. 48-49, and col. 6, ll. 50-51 as "second upstanding annular wall 50"). Only one other "wall"--necessarily the "third-wall"--is referred to, and that is "soil container wall 56."

All that being true, there is no way that Whirlpool can legitimately characterize "annular cover 30" as a "wall" (either as part of the third wall or otherwise). That cover is listed separately at col. 5, l. 49 as one of the components that "generally define[""] the soil container chamber, and col. 4, ll. 5-6 describe that cover as "disposed over and secured to" the third wall--totally inconsistent with the contention that the cover can be part of the third wall.

In short, Maytag is right and Whirlpool is wrong. Because the '433 Patent's specification expressly distinguishes between what it labels "walls" and the "cover" of the soil container, the third wall does not include the cover. All other terms in the claim element will be given their plain and ordinary meaning.

2. Wall Depth

The language of claim 1 requires "at least one ball projecting wheel . . . mounting a pneumatic tire having . . . a wall depth ranging between about 5-10 cm." '325 patent, col. 4, lines 4-9 (emphasis added). Dependent claims 2 and 3 include the same "wall depth" element as independent claim 1. See '325 patent, col. 4, lines 4-14. Both parties agree that "wall depth" refers to a radial dimension. They disagree, however, as to whether that measurement should be taken as the radius of the wheel or the pneumatic tire. Jugs argues that the claim language is unambiguous that while the wheel mounts a pneumatic tire, the "wall depth" relates only to the tire. Jugs also points to a statement in the specification that states "[t]he foregoing
advantages are achieved by providing pneumatic tires 14 that may range in . . . wall depth." '325 patent, col. 3, lines 7-11.

To the contrary, Trend argues that figure 1 of the '325 patent clearly shows that the "wall depth" is measured from the outermost edge of the wheel to the outermost surface of the tire. See id. at fig.1. Trend points out that other than figure 1, neither the body of the specification nor the claims explicitly define "wall depth" or provide how "wall depth" is measured.

The court finds that the intrinsic evidence supports Trend's proposed construction that "wall depth" is measured along the outermost edge of the wheel to the outermost surface of the pneumatic tire. "The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction." Phillips, 415 F.3d at 1316 (quoting Renishaw PLC, 158 F.3d at 1250). Here, the claim language supports the conclusion that the "wall depth" is measured along the outermost edge of the wheel because the "wall depth" measurement recited in independent claim1 is in reference to a pneumatic tire that is mounting a wheel. See '325 patent, col. 4, lines 4-9 ("at least one ball projecting wheel . . . mounting a pneumatic tire having . . . a wall depth ranging between about 5-10 cm") (emphasis added). Furthermore, figure 1 of the '325 patent clearly shows that "wall depth" is measured from the outermost edge of the wheel to the outermost surface of the tire. See id. at fig.1. In addition, Jugs' reference to "wall depth" in the specification does not negate Trend's proposed construction because the reference is to the "description of the preferred embodiment" where the pneumatic tire is already in combination with a wheel. See id. at col. 1, line 54-col. 3, line 18; see also id. at figs.1-5. Interpreting the language of claim 1 in light of the definition of wall depth provided in figure 1, the court finds Trend's proposed construction to be the most correct. Thus, the court construes "wall depth" to mean:

a measurement along a radius of the wheel from the outermost edge of the wheel to the outermost surface of the pneumatic tire.

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Construction of Claim 12

Claim 12 has three limitations on which the parties focus. The Court addresses each of these claim phrases in turn. First, claim 12 requires that the golf club inventions have "a high impact forward wall . . . having a ball impacting face wall with a plurality of generally parallel grooves." Col. 11, lines 14-18 (emphasis added). The context of this claim specifically and of the patent as a whole suggests that the "high impact forward wall" simply has a face, not a "face wall," with many, roughly-parallel grooves on that face. 5 The phrase "face wall" is not used in these other claims as a shorthand for the composite plastic covering wall. Instead, in these other claims, "face wall" generically refers to the ball striking surface, regardless of whether it is metal or plastic.

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5 Literally read, the claim would require a wall that has a wall. This construction does not make sense and thus will not be adopted, see Baxter Int'l Inc. v. Mcgaw, Inc., 1996 U.S. Dist. LEXIS 1527, No. 95 C 2723, 1996 WL 66139, *7 (N.D. Ill. Feb. 12, 1996) (rejecting claim construction that made "no sense"), despite Golfsmith's reliance on the examiner's reasons for allowance in support of its argument that this language requires two walls. The examiner's reasons, which purport to relate to Claims 1-14 and mention two separate walls, only state that these claims were allowed over the prior art "in part" because of the two-wall system. The two-wall system does not purport, by the examiner's own words, to be the only reason for allowance.

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Comparing Claims 1 and 12 also illustrates that the latter claim only requires one wall. By contrast to claim 12, Claim 1 requires two distinct walls - one metal and one plastic wall - so that the thickness of the metal wall can be reduced without it caving in when the golfer, swinging the club head upwards of 100 mph, hits the golf ball. In a Claim 1 golf club, a face-reinforcing matrix juts forward from the forward wall and second plastic wall provides a smooth covering surface to the matrix of supporting bars. Unlike Claim 1 and other claims in the '941 patent that describe in detail two "walls," see, e.g., Col. 9, lines 21-25, Claim 12 never mentions a separately molded, plastic covering wall. Claim 12 also does not require a reinforcing matrix of bars jutting out from the forward wall. Instead, as noted in more detail below, it simply requires a
forward wall with "substantially uniform thickness," Col. 11, lines 20-21. In short, Claim 12 requires one, not two walls.

Contrary to Karsten's argument, the golf clubs described in Claim 12 require only one wall. **Claim 12 first requires that the golf clubs have "a high impact forward wall . . . having a ball impacting face wall with a plurality of generally parallel grooves." Col. 11, lines 14-18 (emphasis added). The context of this claim specifically and of the patent as a whole suggests that the "high impact forward wall" simply has a face, not a "face wall," with many, roughly-parallel grooves on that face. The phrase "face wall" is not used in these other claims as a shorthand for the composite plastic covering wall. Instead, in these other claims, "face wall" generically refers to the ball striking surface, regardless of whether it is metal or plastic.**

Another way of looking at it is that the word "wall" is used to mean two different things. First for example, by wall it means an entire structure that divides two rooms. Second, by wall it means the surface of that structure viewed from inside either of these rooms. In any case, it could not require two of the first types of walls.

Comparing Claims 1 and 12 also illustrates that the latter claim only requires one wall. By contrast to claim 12, Claim 1 requires two distinct walls -- one metal and one plastic wall -- so that the thickness of the metal wall can be reduced without it caving in when the golfer, swinging the club head upwards of 100 mph, hits the golf ball. In a Claim 1 golf club, a face-reinforcing matrix juts forward from the forward wall and second plastic wall provides a smooth covering surface to the matrix of supporting bars. Unlike Claim 1 and other claims in the '941 patent that describe in detail two "walls," see, e.g., Col. 9, lines 21-25, Claim 12 never mentions a separately molded, plastic covering wall. Claim 12 also does not require a reinforcing matrix of bars jutting out from the forward wall. Instead, as noted in more detail below, it simply requires a forward wall with "substantially uniform thickness." Col. 11, lines 20-21. In short, Claim 12 requires one, not two walls.
burst pressure is determined at 37 degrees C."

Both parties agree that the correct equation for the "wall tensile strength" is:

$$\left[ \text{burst pressure (psi)} \times \text{nominal balloon diameter} \right] / 2 \times \text{wall thickness}$$

As with "elastic stress response," the parties disagree on whether the temperature at which the burst pressure is determined is limiting. This is a case where the patentees acted as their own lexicographers. '364 patent 3:47-61. Accordingly, the term "wall tensile strength" means "a value calculated according to the equation [shown in the '364 patent at 3:55] where the burst pressure is determined at or about normal human body temperature."

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(1) "a washing tub for receiving a multi-phase washing medium therein"

The parties dispute the term "a washing tub for receiving a multi-phase washing medium therein." The parties agree that the term "washing tub" should be construed to mean "container," but disagree regarding the term "receiving." LG proposes construing the term to mean "a washing tub [i.e., container] for receiving the multi-phase washing medium and clothes." (Chart at 11.) Whirlpool proposes instead that the term be construed to mean "a container that holds a multi-phase washing medium." (Id.)

In support of its proposed construction, Whirlpool refers to the background section of the patent, which describes the washing medium as "in" the washing tub, and describes the clothes in the washing bin as "circulating" in the washing medium in the tub. ('886 Patent, col. 1, ll. 20-21, ll. 54-55.) These descriptions, however, do not require that the washing tub hold the washing medium. For example, the clothes could be circulating in a washing medium that is continuously flowing in and out of the washing tub. Nothing in the patent limits the washing tub that is "receiving" the washing medium from releasing it as well.

The Court therefore construes the term "a washing tub for receiving a multi-phase washing medium therein" to mean "a container for receiving the multi-phase washing medium and clothes."

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i. "rubber particles are . . . selected from the group consisting of waste rubber buffings and ground tires" Claims 2 and 6

As stated previously, this is a closed Markush group, limiting the rubber particles to either "waste rubber buffings" or "ground tires" but not both. With regard to the definition of "waste rubber buffings," Green Edge does not offer any definitions for these terms, but claims that, although the patent describes the processes used in grinding and buffing, it does not make the processes part of the claimed invention. Further, the patent does not limit the type or size of rubber particle. However, the undersigned finds that these alternative terms require definitions. Therefore, the Court will adopt the well-reasoned definitions proffered by GroundScape. "Waste rubber buffings" are "a product obtained from a tire re-treading process in which tread is removed from the used tire body by a buffing device," and "ground tires" are "the product of a tire recycling process in which the entire body is reduced to pieces by grinding or shredding." (Moy Decl. Exh H) Indeed, Green Edge acknowledged this during the Markman hearing by agreeing with the Court that "[b]uffing is the retread, and ground tires is the full tires." (Hearing Transcript, p. 8) These definitions do not restrict the size or shape of the rubber particles; however, they give plain and ordinary meaning to the alternatives contained in the closed Markush group.

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The first clause found in limitation '(a)' of claim 1 teaches of water flowing through a "water-permeable outer surrounding wall of a basket." Contech suggests that the term "basket" may be defined simply as a "container for housing a bed of
material," and that it can consist of "any particular size or shape." (Pl.'s Opp. Mem. at 8-9.) Contech further asserts that the "water-permeable outer surrounding wall" of the basket only requires that the outer wall include "at least one opening to permit storm water to infiltrate the basket," and that the term "wall" potentially includes both horizontal or vertical walls. (Id. at 9.) Under this construction, Contech suggests that a cylindrical basket can be described as having "a circular top wall, a circular bottom wall and a vertical side wall." (Id.) BaySaver and Accubid, however, argue that Contech's definition is overbroad. Instead, the movants suggest that the method encompassed by the limitation defines a "basket" to have water-permeable, vertical, mesh walls that permit the storm water runoff to infiltrate "the product through the side walls and travel[] sideways and downwards through the filter and out the drain at the bottom." (Def.'s Mem. at 13.)

Because there is no indication that the '527 patent defines the "water-permeable outer surrounding wall of a basket" clause in an idiosyncratic fashion, the words in the claim should be given their "ordinary and accustomed meaning." Frank's Casing, 292 F.3d at 1374. According to the claim language, the defined "wall" of the basket should be both "water-permeable" and "surrounding." Although the court agrees with Contech that the basket and its "surrounding wall" need not necessarily take a cylindrical form, the ordinary meaning of "surrounding" and "wall" would envision a vertical structure that encloses the basket. Cambridge Dictionaries Online defines a "wall" to be a "vertical structure . . . that divides or encloses something." Cambridge Dictionaries Online, http://dictionary.cambridge.org (last visited August 31, 2007) (emphasis added). The foundation and cover of a basket would not ordinarily be defined by the term "wall," but rather by language that may include terms such as "base," and "ceiling" or "top," respectively. Furthermore, the ordinary meaning of a "water-permeable" wall would describe a structure that is porous, and therefore capable of permitting storm water infiltration. Merriam-Webster's Online Dictionary defines "permeable" as "having pores or openings that permit liquids or gasses to pass through." Merriam-Webster's Online Dictionary, http://m-w.com (last visited August 31, 2007). Therefore, as construed by the court, the '527 patent filtration basket must be enclosed by vertical, porous walls that allow storm water to infiltrate the filter material following a horizontal flow. This construction of the clause is supported by the context provided by the intrinsic evidence, and prevents the claim from being interpreted in an unreasonably broad manner.

Recognizing that the specification and preferred embodiments of a patent should not be read to limit the claim language, Phillips, 415 F.3d at 1323, the court finds that the intrinsic evidence here confirms the court's ordinary understanding of the claim. The specification describes a filtration method that requires water to flow initially through an outer water-permeable wall, then through a bed of filter material, and finally through an "inner water-permeable wall spaced from, and surrounded by, the outer wall." ('527 patent, col. 3, ln. 5-8.) The specification further describes the "typically cylindrical" basket to have an outer wall, possibly "fabricated from steel wire mesh," and a "base (circular in the case of a cylindrical basket) of water-impermeable material, such as plastic or metal, that extends horizontally engaging the lower end of the outer surrounding wall thereby sealing the underside of the basket." (Id. at col. 6, ln. 6-11, 33-37 (emphasis added.)) The language in the specification thus confirms, but does not limit, an ordinary understanding of the claim language. The term "wall" is used to describe vertical walls, while the term "base" is specifically employed to describe the horizontal foundation of the basket. The vertical permeable wall is made of a porous material, steel wire mesh in this embodiment, while the impermeable base is non-porous, in this example plastic or metal. As element '(b)' of independent claim 1 demonstrates, the storm water runoff is filtered by passing horizontally through a filter material located between the outer and inner permeable walls, where it then enters the interior drainage space of the filter basket.

This construction of the first clause found in element '(a)' of claim 1 does not limit the claim to any specific preferred embodiment of the invention or specific description found in the specification. For example, the patented "basket" may take a variety of shapes, including cubic or cylindrical, and the outer water-permeable wall need not be made of "steel wire mesh." Instead, this claim construction construes the claim language according to its ordinary meaning, which is supported by the inventor's choice of language in the specification. The inventor recognized the language distinction between a surrounding "wall," which would be vertical, and a "base," which would be horizontal. (See '527 patent, col. 6, ln. 5-11, 33-37.) Furthermore, the inclusion of a "cylindrical external housing comprising means for admitting air into the [lower end] of the housing" in the '639 patent demonstrates the distinction between a wall being "water-permeable," or porous, as compared to being impermeable, except for containing a simple opening to allow water or air intake. (Patent '639, col. 8, ln. 65-67.) The water-permeable filtration "basket" taught by the '527 patent is housed within the impermeable "external housing" container taught by claim 6 of the '639 patent. (Id. at col. 5, ln. 25-27.) Thus, as the '639 patent language makes clear, a proper construction of the term "basket" in the '527 patent should not analogize the filter basket to any housing "container" with an opening that allows for water intake. See Aquatex Indus., Inc. v. Techniche Solutions, 419 F.3d 1374, 1382 (Fed. Cir. 2005) (using patents incorporated by reference to aid in claim construction). Rather, as the inventor demonstrates, the patented filtration "basket" must have porous and vertical outer walls that allow storm water to filter

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radially through the filtration bed, and into the interior drainage space.

1. "Water pump"

Intex contends that Aqua surrendered its right to claim external pumps during prosecution of the '133 patent. Intex states that because the examiner did not recognize any claims in the application that would mature into the '133 patent as generic, and because Aqua allowed the patent to issue without the PTO declaring that it contained a generic claim, that Aqua "unambiguously elected cleaners with internal pumps."

Aqua's position is that although the examiner never acknowledged Claim 1 to be generic, nothing in the language of the claim limits its scope to solely internal water pumps, and thus the Court should find that the patent covers both internal and external water pumps. Aqua cites Insight Technology, Inc. v. Surefire LLC, Nos. 04-074, 03-253, 2006 U.S. Dist. LEXIS 11762, 2006 WL 519672 at *8 (D.N.H. Feb. 28, 2006), as support for its argument that the Court may find a claim to be generic, regardless of the actions of the PTO during prosecution. Additionally, both parties agreed at the Markman hearing that the findings of the examiner, while persuasive authority, are not binding on this Court. (Tr. at 40; Tr. at 56.)

Intex has given no reason to construe the term "water pump" in a manner different from its customary and ordinary meaning. Because there is nothing in the language of the claim or specification to limit the term "water pump" to only internal pumps, the term shall be construed to cover both internal and external water pumps.

1. "Water Vapor Impermeable Polymer Layer"

Claim 1 of the '182 patent requires, among other things, the presence of a "water vapor impermeable polymer layer." Claim 16 of the '693 patent requires, among other things, a "water-vapor-impermeable polymeric layer." Other claims of the patents also require this water vapor impermeable layer or an "impermeable polymer layer." While the disputed term must be construed as a whole in the context of the claim and patent as a whole, the gist of the parties' dispute relates to the meaning of the word "impermeable."

Fort James proposes the following construction: "The polymer [or polymeric] layer must be a substantially continuous film, and although pinholing in the film can and does occur, the amount of pinholing should be minimized to reduce the passage of water vapor through the film so as not to adversely affect the function of the food wrap." 7 In its submissions and argument, Fort James acknowledges the language in the specification that describes the impermeable polymer layer as a "complete barrier." Fort James, however, takes the position that "complete barrier" refers to the continuous nature of the polymer barrier resulting from the extrusion process. Further, Fort James contends that POSITA would understand that water vapor could pass through the water vapor impermeable polymer layer by at least two means: (1) diffusion through the polymer structure and (2) flow through any pinholes created after the extrusion of the polymer layer. 8

Footnotes

7 Plaintiffs' Final Proposed Claim Constructions [Dkt. No. 175] at p. 2.

8 Hearing Transcript at p. 24, lines 12-16; p. 31, line 18 -- p. 32, line 2.
Coating Excellence proposes the following construction: "a polymer having a water-vapor transmission rate (WVTR) equal to zero; preventing passage of water-vapor; being a complete barrier to water-vapor; being impervious to water-vapor." 9 In its submissions and argument, Coating Excellence, among other things, focuses on the specification reference to the impermeable polymer layer being a "complete barrier" and underscores the specification references to the layer "preventing" the passage of water vapor. 10


10 Hearing Transcript at p. 52, line 25 -- p. 54, line 7. While Coating Excellence's proposed construction refers to a WVTR of zero, at the Hearing, Coating Excellence would not commit regarding whether or not the inventive polymer barrier is 100% impermeable. Coating Excellence indicated that the proper construction should be "to prevent the passage of water. That it has to be a complete barrier..." Hearing Transcript at p. 63, lines 11-14. Its subsequent filing retained the original proposed construction requiring a WVTR of 0.

The undersigned finds that the meaning of the term "water vapor impermeable polymer layer" is not "immediately apparent." See Phillips, 415 F.3d at 1314. While the meaning of the words water vapor and polymer layer do not appear to be disputed by the parties, the meaning of the term as a whole and the meaning of the word impermeable in the context of the term as a whole are not self-evident. Accordingly, it is appropriate to consider the "those sources available to the public" noted above in Phillips.

Coating Excellence correctly notes that the inventors in both patents describe the function of the water vapor impermeable polymer layer as a condensation surface with respect to water vapor and characterize it as a "complete barrier." (E.g., '182 patent, col. 4, lines 16-17, 35; '693 patent, col. 7, line 3.) It is also correct that there are a number of references establishing that one of the functions of the polymer barrier is to prevent the passage of water vapor. (E.g., '182 patent, col. 4, lines 21-22.) 11 But these references do not answer the key question regarding whether the "complete barrier" needs to be 100% water vapor impermeable (i.e., absolutely no water vapor passes through it). The proper construction must include an interpretation of what a "complete barrier" is in the context of these two patents so as to avoid the need for subsequent claim construction at summary judgment or trial. Several portions of the intrinsic record are informative.

As a starting point, there is no basis in the specification to support Coating Excellence's proposed construction to the extent that it would require a Water Vapor Transmission Rate of 0. The term Water Vapor Transmission Rate does not appear in the specification. The specification contains no quantitative descriptions of the impermeable polymer barrier that would support the notion that absolutely no water vapor can pass through such layer.

The specifications of both patents, however, do explain that water vapor may pass through the impermeable polymer barrier as a result of pinholing. ('182 patent, col. 5, lines 58-65; '693 patent, col. 16, lines 27-34.) The language in both specifications is essentially identical.

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Because the layer 40 is impermeable, extrudate 70 should be extruded as a pinhole free film at a thickness sufficient to be able, when cooled, to form an impermeable barrier. Although some pinholing may occur as a result of paper fibers penetrating through the polymer film when the polymer film contacts layers 20 and 30, the amount of pinholing should be minimized to reduce water vapor loss, and hence heat loss.

--- Footnotes ---

12 The language quoted above is from the '693 patent. Unlike above, the '182 patent begins with "Because layer 40" and uses "must" instead of "should."

--- End Footnotes ---

Thus, the inventors inform the public that, as a result of putting the three layers together, there may be pinholes in the impermeable polymer layer that permit passage of water vapor. Nevertheless, such polymer layer remains "impermeable" and a "complete barrier" within the context of the patents as long as the amount of pinholing is minimized to reduce passage of water vapor and heat loss. Id.

The specifications also reflect that the polymer layer is not expected to perform its functions indefinitely. The specifications reflect that inventive wrap is only expected to perform its functions during the holding period -- the time period after the foodstuff is prepared and before it is eaten. For instance, the Background section of the '182 patent states, "Composite wrap materials have long been used to package hot foodstuffs. In addition to keeping the foodstuff relatively fresh for a period of time, the wrap facilitates heat retention by the foodstuff after it is made, but before it can be consumed." ('182 patent, col. 1., lines 19-23 (emphasis added); see also col. 4, lines 27-28 ("thereby maximizing sandwich temperature during holding").)

The '693 patent likewise refers to the wrap performing its functions during a holding period. The patent states, "it is difficult to provide a suitable but inexpensive and ecologically sound environment for maintaining hot sandwiches in a palatable condition for the storage interval between preparation and consumption, particularly for periods of more than several minutes." ('693 patent, col. 1, lines 21-25; see also col. 1, lines 50-52 ("if the sandwich is stored for several minutes longer than the usual holding time") (emphasis added); col. 2, lines 40-43 ("a sacrifice of heat retention or storage time (holding period) could be required").) 13

--- Footnotes ---

13 At the Hearing, Coating Excellence stated that it would not be appropriate to bring any temporal limitation into consideration for the construction of this term because the patents also could cover cold food. Hearing Transcript at p. 68, line 17 -- p. 69, line 7. The undersigned need not and has not determined whether the patent covers cold food. The inventive polymer barrier plainly functions relative to water vapor given off by hot foodstuffs, and the specifications provide ample support for the notion that barrier is not expected to perform its function indefinitely in this regard.

--- End Footnotes ---


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14 Defendants' Hearing Binder, Tab 3.

--- End Footnotes ---

Gatward relates to a composite wrap material for foodstuffs. The '182 patent inventors describe Gatward as having a thermoplastic material that is semi-permeable to water vapor. The '182 patent inventors further state that the drawback of
this "semi-permeable" material is that "the heated foodstuff is giving off its own heat via the water vapor which is allowed to pass through the semi-permeable thermoplastic material, thereby permitting the foodstuff to cool off." ('182 patent, col. 2, lines 3-7.) The Gatward patent itself recites, "said thermoplastic film containing microperforations of such magnitude as to permit transmission of water vapor." ('840 patent, col. 6, lines 10-12.)

Gatward also is discussed in the file history of the '182 patent. Specifically, there is discussion in the October 17, 1990, Amendment. 15 Coating Excellence contends that this discussion constitutes a disavowal of any construction of the term "impermeable" that would permit the passage of water vapor through the polymer layer. Specifically, in responding to a rejection under Section 103 (obviousness), the '182 patent inventors distinguished Gatward as follows: "In stark contrast to the present invention, Gatward teaches a microporous polymer structure which allows water vapor to escape. While this prevents sogginess, the hot food cools very rapidly." 16 This file history argument is consistent with the characterization of Gatward in the specification and the above noted language of the Gatward patent itself.

--- Footnotes ---

15 This "Amendment" can be found at Plaintiffs' Hearing Binder, Tab C. 1 .C, at p. 7. The parties agree that the inventors made no amendment relative to the argument that Coating Excellence suggests constitutes a disavowal. Coating Excellence is correct, however, that there potentially could be a disavowal even absent an amendment. The "Amendment" also includes discussion at pages 2-3 in which the polymer layer is referred to as a "complete layer." The issue being addressed was whether a wax/polymer blend properly could be considered a polymer, not whether any amount of water vapor can pass through the polymer layer. In any event, as is the case with the specification, the reference to "complete barrier" by itself does not answer the question of what "impermeable" or a "complete barrier" means in the context of the patents at issue.

16 Plaintiffs' Binder at Tab C.1.C. at p. 5.

--- End Footnotes ---

The undersigned finds that the file history argument regarding Gatward does not constitute a disavowal of a construction of "impermeable" that would permit some passage of water vapor through the polymer layer. 17 See Purdue Pharma L.P. v. Endo Pharms., Inc., 438 F.3d 1123 at 1136, 2006 U.S. App. LEXIS 2887 at *34 (Fed. Cir. 2006) (requiring that a disavowal be "clear and unmistakable"). The pertinent, critical distinction between Gatward and the invention of the '182 patent is that Gatward avoids water vapor caused sogginess of foodstuff by purposefully removing the water vapor through microperforations in the thermoplastic layer. The '182 patent does not seek to avoid water vapor caused sogginess in the same way. Instead, the '182 patent's inventive wrap avoids water vapor caused sogginess in foodstuff through a polymer layer that acts as a condensation surface coupled with an absorbent layer that absorbs the condensate. ('182 patent, col. 4, lines 17-23.) This improves on Gatward by facilitating heat retention. This distinction does not require that there be no passage whatsoever of water vapor through the polymer layer of the '182 patent, provided that the polymer layer/absorbent layer combination performs its function and the heat retention goal is met.

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17 The statements made in this same "Amendment" regarding the Barner reference, which together with Gatward had been the basis for the examiner's rejection under Section 103 (obviousness), likewise do not constitute such disavowal. The Barner composite wrap requires that the top be opened where there is hot food emitting water vapor. Nothing in this discussion should be taken as any comment regarding the propriety of the examiner's rejection under Section 103 or any comment on any validity or invalidity issue.

--- End Footnotes ---

In summary, after examination of the intrinsic record, the undersigned finds that POSITA would understand that the polymer layer of the '182 patent can be "impermeable" and a "complete barrier" even if some amount of water vapor passes through the polymer layer, provided that the polymer/absorbent layer combination constitutes the mechanism for avoiding water vapor caused sogginess in the foodstuff and such passage is minimized so as to reduce resulting heat loss during the holding period. 18
There was discussion at the Hearing regarding certain test results found in the file history of the '693 patent. Plaintiffs' Hearing Binder, Tab C.1.E. The undersigned understands that these tests were submitted to the United States Patent and Trademark Office after the notice of allowance relating to the '693 patent and were relative to a validity issue. The undersigned has placed no weight on the tests or the discussion regarding the tests in connection with this claim construction.

b. Review of extrinsic evidence

The undersigned finds that no extrinsic evidence is necessary to construe the term "water vapor impermeable polymer layer." It should be noted, however, that the extrinsic evidence submitted by the parties and reviewed by the undersigned generally supports the proposed construction of the term water vapor impermeable polymer layer and further explains how water vapor can pass through the polymer layer in the context of the inventions of the '182 and '693 patents. The undersigned briefly addresses this extrinsic evidence below.

i. Bezigian Testimony

Mr. Bezigian is a Coating Excellence witness. He obtained a Bachelor in Science in Plastics Engineering from the University of Lowell in 1977 and a Master of Business administration from Bryant College in 1987. He has held numerous technical and manufacturing roles at major film and paper converters in the United States, including James River Corp., and has been a consultant to the film and paper converting industries since 1991. He also is an Adjunct Professor at the University of Massachusetts-Lowell where he lectures on the topics of extrusion coating, cast film and packaging. The parties agree that Mr. Bezigian has the background, education and training of a POSITA with regard to the two patents in dispute.

20 He is identified in Defendants' Notice of Witness Testimony To Be Presented at Markman Hearing [Dkt. No. 67], but ultimately did not provide live testimony. The statement of his qualifications is excerpted from this Notice.

James River deposed Mr. Bezigian on June 29, 2005. During the deposition, Mr. Bezigian testified that "impermeable means that nothing goes through." The undersigned places no weight on this conclusory opinion. As noted above in Phillips, "conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court. Similarly, a court should discount any expert testimony 'that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent.'" 415 F.3d at 1318 (internal citations omitted).

21 Excerpts of the Deposition ("Bezigian Test. at ") can be found at Plaintiffs' Hearing Binder, Tab G.1.
Bezigian also testified that no one to his knowledge has ever made a product covered by the patents at issue. Id. at p. 105, lines 4-6. Nothing in this Report and Recommendation should be considered to be a comment on or conclusion regarding whether any specific foodstuff wrap products fall or have fallen within the scope of one or more claims of the '182 or '693 patents.

23 The same rationale applies to Mr. Bezigian even though he was not identified as an expert.

--- End Footnotes ---

Mr. Bezigian's technical testimony regarding polymers and the extrusion of polymers, in contrast, is instructive. Mr. Bezigian repeatedly testified that moisture vapor barriers made from polymers and used in industry may reduce, but not eliminate, the movement of water vapor through the polymer barrier. Further, he testified that a polymer layer thick enough to prevent the passage of water vapor could not be extruded and would not be a sandwich wrap. The following excerpt is illustrative:

Q Okay. Well, is it a question of degree? In other words, the thicker the polyethylene, that the less water vapor will pass through? And, again, by pass through, I want to isolate down to the -- -- to at the molecular level as opposed to pinholes or through the fold. If you're just talking at the molecular level, no matter what the thickness is, will some water vapor pass through the molecular structure of polyethylene?

A I mean there's a practical limit in extrusion coating. Extrusion coating is generally where you put a layer of five or six or maybe ten mills maximum thickness onto a substrate. Even that, I believe, would pass moisture. If it was an inch thick or a half an inch thick or a quarter of an inch thick, I don't believe it would, but that has to be borne out by testing.

Q Okay.

A But a quarter inch thick of polyethylene is rigid, it's not flexible, it's not made by extrusion coating. And it wouldn't be sandwich wrap. Anything in the normal extrusion coating range of, say, quarter of a mill to around a mill has a moisture vapor or water vapor permeability rate. Those words are used kind of interchangeably.

Q Has one greater than zero?

A Yes.

Q So anything greater -- -- so, in other words, you cannot extrusion coat a polyethylene layer that has a water vapor transmission rate of zero

A Correct.

Q Can you extrusion coat any polymer that would have a water vapor transmission rate of zero?

A I would believe that answer would be no.

--- Footnotes ---

24 Bezigian Test. at p. 82, lines 2-7 (stating that he is not aware of any extruded sandwich wrap where WVTR equals 0).
25 Coating Excellence, at the Hearing, characterized the manner in which water can pass through the polymer layer as theoretical chemistry. Hearing Transcript at p. 58, lines 4-11. However, there is no factual support for this distinction. Such view is also inconsistent with Coating Excellence's agreement that Mr. Bezigian has the background and other characteristics of a POSITA.

i. Mueller Testimony

Louann Mueller also is a Coating Excellence witness. 26 She received her Bachelor of Business Administration with a minor in Paper Sciences from Western Michigan University in 1984. While there, she took courses in pulp and paper engineering, organic chemistry, paper manufacturing and testing. She worked for James River from 1987 to 1996. She has worked as a Technical Manager for Coating Excellence. Her responsibilities have included work on composite food wrap products. Recently, she was promoted to Vice President of Printing and Laminating. 27 The parties agree that Ms. Mueller has the background, education and training of a POSITA with regard to the two patents in dispute.

ii. Crotogino testimony

Dr. Crotogino is a Fort James witness. 31 He has a Bachelor of Applied Science degree in chemical engineering and a Ph.D. in chemical engineering from McGill University in Montreal. Dr. Crotogino worked for the Pulp and Paper Research Institute of Canada from 1976 until his retirement in 2004. The parties agree that Dr. Crotogino has the background, education and training of a POSITA with regard to the two patents in dispute.

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26 Ms. Mueller is identified in Defendants' Notice of Witness Testimony To Be Presented at Markman Hearing [Dkt. No. 66], and the above description of her background is taken from that Notice.

27 Hearing Transcript at p. 143, lines 20-21.

Ms. Mueller testified at the Hearing. Her testimony as a whole is consistent with that of Mr. Bezigian. On direct examination, she testified that "I'm not familiar with any polymer that is 100 percent impermeable to water vapor." 28 She also testified that the higher density polyethylene, which is a better barrier to water vapor than low density polyethylene, is not used in sandwich wrap. 29 While on cross-examination, Ms. Mueller did state her view of "impermeable to be zero percent water vapor," 30 the undersigned places no weight on this conclusory statement.

28 Hearing Transcript at p. 149, lines 2-3.

29 Hearing Transcript at p. 146, line 21 -- p. 147, line 4; p. 153, lines 7-22.

30 Hearing Transcript at p. 158, line 19.

iii. Crotogino testimony

31 Plaintiffs' Notice of Live Testimony at Claim Construction Hearing [Dkt. No. 171] at pp. 1-3. The summary of Dr. Crotogino's qualifications come from this Notice.
Coating Excellence deposed Dr. Crotogino on June 30, 2005. Dr. Crotogino's testimony is consistent with the notion that impermeable is a relative concept regarding foodstuff wraps. He testified that one needs to consider the function of the wrap "within the useful life of the product," there is no such a thing as a "complete barrier," and "pores are indigenous to any material basically." 33

32 Excerpts of the Deposition ("Crotogino Test. at    ") can be found at Defendants' Hearing Binder, Tab 9.

33 Crotogino Test. at p. 104, lines 3-13; p. 118, lines 14-17. The portion of the transcript referenced in Defendants' Response to Plaintiffs' Final Claim Construction Statement [Dkt. No. 180], page 76, lines 6-22, simply reflects Dr. Crotogino agreeing with certain of the specification language, not saying what that language means.

COATING EXCELLENCE SUBMITTED A 1988 DEFINITION OF "IMPERMEABLE" FROM WEBSTER'S NEW WORLD DICTIONARY. 34 IT STATES THAT "IMPERMEABLE" MEANS "NOT PERMEABLE; NOT PERMITTING FLUIDS TO PASS THROUGH IT; IMPENETRABLE." THIS IS AN EXAMPLE OF THE SORT OF SITUATION NOTED IN PHILLIPS WHERE BLIND RELIANCE ON GENERAL PURPOSE DICTIONARY DEFINITIONS WILL NOT RESULT IN A CONSTRUCTION THAT COMPORTS WITH THE MEANING TO A POSITA. 415 F.3D AT 1321. THE UNDERSIGNplaced no weight on this definition.

2. Coating Excellence refers to U.S. Patent No. 5,368,946 ("946 patent"), issued November 29, 1994, claim 2 of which refers in part to a specified Water Vapor Transmission Rate. 35 While this supports the notion that the concept of a Water Vapor Transmission Rate was known in the art during the pertinent time periods, it does not support any argument that the patents at issue should be read to require a Water Vapor Transmission Rate of 0. 36

37 Coating Excellence also submitted a TAPPI Water Vapor Transmission Rate test. 37 Again, because the intrinsic record provides no support for incorporating a WVTR into the claims, this extrinsic evidence should be given no weight. 38

The undersigned further notes that the test at Tab 18 states in Note 1 that "WVTR is a distinctive characteristic, often
erroneously termed 'permeability.'” Defendants' Response to Plaintiffs' Final Claim Construction Statement also references certain tests that were not included in Defendants' Hearing Binder. In any event, no weight should be placed on test methodologies that are not referenced in the intrinsic record.

c. Recommended claim construction

In summary, the undersigned recommends that the term "water vapor impermeable polymer layer" and alternative references to the impermeable polymer layer of the '182 and '693 patents be construed to mean: "A polymer layer that is substantially impermeable to water vapor. Substantially impermeable means that some amount of water vapor may pass through the polymer layer, provided that the polymer/absorbent layer combination constitutes the mechanism for avoiding water vapor caused sogginess in the foodstuff and such passage is minimized so as to reduce resulting heat loss during the holding period.”

I. "a wear layer on top," "a wear layer located on top," and "a wear layer located on"

The parties dispute the meaning of "a wear layer on top" of claim 1 of the '903 patent, "a wear layer located on top" of claim 1 of the '008 patent, and "a wear layer located on" of claim 9 of the '008 patent.

Mannington asserts that a "wear layer" is "a portion of a cushioned sheet vinyl floor covering that protects the pattern and design of the floor covering.” D.I. 326 at 9. Manning further argues that the "wear layer" does not, necessarily, include a "top coat." Id. at 10. In contrast, Armstrong argues that "a wear layer is the portion of a resilient floor covering that contains or protects the pattern and design, exclusive of temporary finishes or maintenance coatings.” D.I. 324 at 21. Moreover, Armstrong contends that the "wear layer" includes a top coat as the "uppermost layer" of the surface covering and when present, this "top coat" forms an "integral component of the 'wear layer'.” Id. at 21. Domco argues that "the wear layer is not necessarily in direct contact with the design layer, but necessarily above the design layer.” D.I. 142 at 16.

This court construes "wear layer" consistent with that disclosed in the '903 and '008 specifications and understood in the art to mean one or more layers of PVC or like material that can include a top coat layer of non-PVC polyurethane or like material and, when present, the top coat layer is considered part of the composite layer loosely called a "wear layer" in the vinyl surface covering industry. '903 8:28-30; '008 8:39-47 (describing a "top coat" layer as a "wear layer top coat"); 1995 ASTM, F1303-95 §§ 3.1.1, 4.1.1, and 4.1.2 (wear layer "grades shall be classified by the total wear layer thickness (sum of PVC and non-PVC wear layers)"). As used by the inventors in the '903 and '008 patent and provided for in the specifications, however, the "wear layer top coat" when comprising part of the surface covering of the embodiment of the '903 and '008 inventions being practiced is "adhered to the embossed wear layer," therefore, the "wear layer top coat" as used in these patents is not mechanically embossed when present. '903 8:29-30; '008 8:40-41.

The phrases "a wear layer on top," "a wear layer located on top," and "a wear layer located on" are construed in accord with their ordinary meaning to mean that a "wear layer" is applied over top of or above the design layer. This claim language is broad enough to permit intervening layers between the design and the "wear layer."

A. "Weather stripping"

The Court will adopt the construction of "weather stripping" proposed by Defendants: a sealing material added to a fabric or screen track. The Court does not find the specification or prosecution history shows that weather stripping has been given a meaning in the '998 Patent different from the ordinary and accustomed meaning of the term weather stripping. In reaching the conclusion to adopt Defendants' proposed construction, the Court considered the definition of weather stripping in...
Webster's Third New International Dictionary (1981): "a strip of material to cover the joint of a door or window and the sill, casing, or threshold so as to exclude rain, snow, and cold air." The claims at issue in this case make clear that the weather stripping is added to the fabric or screen tracks: "elongated, facing, weather stripping located in each fabric track" (claim 14); "the screen tracks carry elongated weather stripping" (claim 21). The function of the weather stripping in the '998 Patent is to assist in retaining the screen in the screen track, but this proposed construction by Plaintiff does not include a description of what the ordinary and accustomed meaning of the function of weather stripping is, i.e. to seal, and it does not include the notion that the weather stripping is added to the screen or fabric tracks.

A. Weather stripping

Having reviewed the claim language, the specification and the prosecution history, the Court does not find that the term "weather stripping" is restricted to "fibrous pile, brush or bristle material." Thus, Defendants' proposed construction of this term, as set forth above, will be rejected. The Court will adopt the construction of "weather stripping" proposed by the Defendants in the Larson v. AluminArt case: a sealing material added to a fabric or screen track.

The Court does not find the specification or prosecution history shows that weather stripping has been given a meaning in the '998 Patent different from the ordinary and accustomed meaning of the term weather stripping. In reaching the conclusion to adopt the AluminArt Defendants' proposed construction, the Court considered the definition of weather stripping in Webster's Third New International Dictionary (1981): "a strip of material to cover the joint of a door or window and the sill, casing, or threshold so as to exclude rain, snow, and cold air." The claims at issue in this case make clear that the weather stripping is added to the fabric or screen tracks: "elongated, facing, weather stripping located in each fabric track" (claim 14); "the screen tracks carry elongated weather stripping" (claim 21). The function of the weather stripping in the '998 Patent is to assist in retaining the screen in the screen track, but this proposed construction by Plaintiff does not include a description of what the ordinary and accustomed meaning of the function of weather stripping is, i.e. to seal, and it does not include the notion that the weather stripping is added to the screen or fabric tracks.

3. "Web"

Claim 1 describes the cantilevered leg as abutting the "web" of the rail. Both parties agree that the web includes the thin section of track between the head and the base. However, they disagree as to how far the web extends. Plaintiff maintains that the web includes one-half of the curved junction between the web and the base of the rail, or "fillet." (Plf. Brief at 14). Defendants argue that this term should be narrowly construed to exclude the "fillet." (Def. Brief at 13-15).

The precise issue before the Court is where the web starts and the base ends. This question is not answered by the claim, specification, or prosecution history. The term "web" refers only to that portion of the rail abutting the cantilevered leg when installed. (Id., Exh. 1, col. 6, ln. 38-40). No distinction is made between the web and the fillet. Nor was any such mathematical precision necessarily required. See Modine Manufacturing Co. v. United States International Trade Commission, 75 F.3d 1545, 1557 (Fed. Cir.), cert. denied, 116 S. Ct. 2523 (1996), quoting Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 624 (Fed. Cir.), cert. dismissed, 106 S. Ct. 340 (1985) ("if the language is as precise as the subject matter permits, the courts can demand no more").

Defendants point out that the patent drawings show the leg contacting the web somewhere near the middle and well above the fillet. (Plf. Brief, Exh. 1, Fig. 2 & 5). In addition, the specification provides that "the bottom side 344 of the leg 340 is preferably parallel with the bottom surface 324 of the main body 320." (Id., Exh. 1, col. 4, ln. 18-19). This configuration effectively prevents contact with the fillet. However, a claim is not limited to a preferred embodiment unless it clearly so states. Johnson Worldwide Associates, 175 F.3d at 992; Virginia Panel Corp. v. MAC Panel Co., 133 F.3d 860, 866 (Fed. Cir. 1997), cert. denied, 525 U.S. 815, 119 S. Ct. 119 (Fed. Cir. 1998). Although a narrow disclosure may limit the scope of the claim in some instances, such is not the case here. Cf. Gentry Gallery, Inc. v. Berkline Corp., 134 F.3d 1473, 1479 (Fed. Cir. 1998) (where patent for sectional sofa clearly identified console between dual recliners as the only possible
location for controls, claim could not be read to include controls located elsewhere). The broad language used in the claim and specification is sufficient to include a definition of web that incorporates some or all of the fillet.

The Court is unable to determine how far the web extends based solely on intrinsic evidence. Under these circumstances, reliance on extrinsic evidence is proper. See Bell & Howell Document Management Products Co. v. Altek Systems, 132 F.3d 701, 706 (Fed. Cir. 1997) (court may rely on extrinsic evidence only when claim language remains "genuinely ambiguous" after consideration of intrinsic evidence). Plaintiff has offered the declaration of William K. Hull, one of the inventors, to assist in the interpretation of this term. Hull explains that a person of ordinary skill in the art of embedded railway track assemblies and elastomeric railway inserts "would understand the term 'web' of the rail to mean the portion of the rail between the 'head' of the rail and the 'base' of the rail . . . extending down to approximately the middle of the curved junction between the web and the base of the rail." (Hull Decl. P 6). Defendants have presented no evidence to the contrary. Accordingly, the Court finds that the "web" of the rail includes one-half of the curved junction between the web and base of the rail, or "fillet."

4 In their post-submission brief, defendants cite several cases for the proposition that the opinion of an inventor is entitled to no weight. This is true when the intrinsic evidence is sufficient to allow the Court to construe the disputed terms. See, e.g. Bell & Howell Document Management Products, 132 F.3d at 706 ("any expert testimony that is inconsistent with unambiguous intrinsic evidence should be accorded no weight"); Senmed, Inc. v. Richard-Allan Medical Industries, Inc., 888 F.2d 815, 819 n.8 (Fed. Cir. 1988) (trial court improperly relied on inventor's testimony because disputed term was "clearly neither a technical term nor a word of art having special meaning to those skilled in the art"). In this case, the Court is unable to interpret the term "web" based solely on intrinsic evidence.

B. Web

552 patent claim 1 states that a plank comprises "an elongated unitary structural element formed of a synthetic resin material and including a substantially flat load web defining a load surface and an undersurface." (Id., Claim 1.) GSC claims that six of its tables (the exception is the Enduro II five foot round table) have table tops that are not webs because the table tops have separate upper and lower walls. The only relevant meaning of the term "web" is a "thin metal sheet, plate, or strip." The specification also indicates that the web of the plank is a thin sheet of plastic; one side of the sheet is the top of the plank or load surface and the other side of the sheet is the bottom of the plank or undersurface. (See id., Fig. 4.) Accordingly, we construe the term "web" to mean a "thin sheet, plate, or strip."

e. "webs connecting opposite ends of each of said pivot flanges to said center flange in spaced relationship therefrom"

The terms "webs connecting opposite ends of each of said pivot flanges to said center flange in spaced relationship therefrom" means flat, narrow and rigid connecting plates that hold the pivot flanges in fixed distance from each other on opposing sides of the support, forming a looped structure defining a generally open, accessible bottom area that facilitates manual manipulation and positioning of the pivot structure on the pivot flanges from above and below, and within which the shift lever can be inserted during assembly. These structures extend from and connect the front and rear ends of each of the pivot flanges to the center flange.
In this case, the claim terms "heat weld" and "welding" are essential to defining the invention at issue. Claims 1(c) and 14(c) use those terms to describe the process of connecting the mesh layer to the guard layer. (Doc. No. 52: L.B. Plastics Mem., Ex. 3). However, "heat weld" and "welding" are not defined in the claims. Merriam-Webster's Online Dictionary defines "weld" as to unite [plastics] by heating and allowing the [plastics] to flow together. Merriam-Webster Online Dictionary, http://www.m-w.com/dictionary/weld. This definition is consistent with the intrinsic language of the patent. For example, the Detailed Description of the Invention section of the patent states, "The mesh layer is preferably formed of PVC-coated, woven fiberglass fabric which readily fuses to the polymer guard panel during welding to form continuous and secure weld lines and along the entire length of the mesh layer." (Doc. No. 52: L.B. Plastics Mem., Ex. 3). The term "fuses" involves melting together by heat. Trilogy Communications, 109 F.3d at 742. Therefore, the Court construes the terms "heat weld" and "welding" in the '700 patent to require the PVC-coated mesh to melt and thereby form a bond with the guard panel.

L.B. Plastics first argues that the district court erred in construing the term "weld" to require melting of the screen and guard panel, and that consequently the district court's grant of summary judgment of noninfringement was improper.

In construing claims we search for the ordinary and customary meaning of a claim term to a person of ordinary skill in the art. We determine this meaning by looking first at intrinsic evidence such as surrounding claim language, the specification, the prosecution history, and also at extrinsic evidence, which may include expert testimony and dictionaries. Phillips v. AWH Corp., 415 F.3d 1303, 1314-19 (Fed. Cir. 2005) (en banc). The specification of the '700 patent describes "a composite gutter guard according to the present invention" and discloses that "[t]he mesh layer . . . is attached to the guard panel [] by continuous ultrasonic or heat welding." The attachment involves the use of a mesh preferably constructed of a material "which readily fuses to the polymer guard panel [] during welding." '700 patent col.3 ll.31-32, 39-44 (emphasis added).

Since the intrinsic record provides no further guidance to the meaning of the terms "weld," "fuse" or "ultrasonic or heat welding," the district court properly turned to extrinsic evidence in this case and consulted dictionaries. See Phillips, 415 F.3d at 1317-18. Here general and technical dictionaries clearly confirm the district court's construction of the disputed term "weld" to require melting of the parts that are being joined. See Webster's Third New International Dictionary 2594 (2002) (defining "weld" as "to unite or consolidate . . . by heating to a plastic or fluid state the surfaces of the parts to be joined and then allowing the metals to flow together"); McGraw-Hill Dictionary of Scientific and Technical Terms 2288 (6th ed. 2003) (defining "welding" as "[j]oining two metals by applying heat to melt and fuse them"); see also D.C. Miles & J.H. Briston, Polymer Technology 651 (Chem. Pub'g Co., 1979) (describing ultrasonic welding as a process where "the mechanical energy of motion is transformed into heat which melts the mating surfaces of the plastics"). The definition of "fuse"--terminology used in the specification to describe the "welding" process--is also consistent with the district court's construction of the term "weld." See Webster's at 925 (defining "fuse" as "reduce to a liquid or plastic state by heat: dissolve, melt . . . liquefy").

2 L.B. Plastics argues that "welding" includes attachment by adhesives, citing testimony of the inventor of the '700 patent that "one of ordinary skill in the relevant art . . . considers [heat welding and hot melt gluing] to be essentially the same." Pet'r Br. at 30-31. This testimony is irrelevant as there is no suggestion that Davis testified that the term "welding" has a special meaning within the art that is different from its ordinary meaning.

Consequently, we conclude that the district court correctly construed the term "welding." The district court granted summary judgment of no literal infringement after it found that "[t]here is no dispute that the mesh layer in Amerimax's gutter guard is not attached to the guard panel by 'welding' as construed above." L.B. Plastics, 431 F. Supp. 2d at 582. Having found that no dispute of material fact existed under the correct claim construction, the district court properly granted summary judgment on the issue of literal infringement.
6. "Weld connection." Consistent with the asserted claim at issue, 10 the specification 11 and the prosecution history, 12 the court construes "weld connection" to mean "a weld."

--- Footnotes ---

10 '168 patent, claim 1, col. 8, ll. 42-45.
11 '168 patent, col. 2, ll. 65-67; col. 3, ll. 1-5.
12 D.I. 467 at 1903-1920, 2093, 2098.

--- End Footnotes ---

1. Construction of the Claim Term "Well" in the '141 Patent and in the '483 Patent

The term "well," in both its singular and plural forms, appears in Steps A-C of the '141 Patent and the '483 Patent. See Claim One of the '141 Patent; Claim One of the '483 Patent. The term, however, is not expressly defined in the claims or in the specifications (the "Specification" or the "Specifications") of either patent. See id. The parties appear to agree the term does not have a specialized meaning. Cleanox contends the term should be construed in accordance with its ordinary meaning, as interpreted by one reasonably skilled in the art. See Brief - Cleanox at 4-5; Reply Brief - Cleanox at 3.

a. The Cleanox Argument

Cleanox contends the term "well" is a common English term and should be defined as "any device that allows access to groundwater." Brief - Cleanox at 4; see Markman Hearing Transcript at 64:8-10; 67:5-10. In support of its position, Cleanox cites the deposition testimony of an expert for the Defendants, Dr. Piotrowski, who testified that "a well usually means a device that allows access to groundwater." Id. (citing deposition transcript of Piotrowski at 67). 11 In addition, Cleanox asserts that Webster's Ninth New Collegiate Dictionary definition 12 of the term is consistent with its own. See id. at 5 n. 5.

--- Footnotes ---

11 Dr. Piotrowski asserted that the standard meaning of the term "well" should not be used for claim construction purposes. See Brief - Cleanox at 4 n. 4.
12 According to Cleanox, Webster's Ninth New Collegiate Dictionary defines the word "well" a "a pit or hole sunk into the earth to reach a supply of water." See id. at 5 n. 5.

--- End Footnotes ---

Cleanox argues that, although it is possible for a "well" to perform two functions, i.e., "both to withdraw material and input material," id. at 5, it is properly defined as "any device that allows access to groundwater." See id. at 4 and unnumbered page 5 of Tab A thereto; see also Markman Hearing Transcript at 64:17-65:1, 67:15-68:1. Cleanox cites certain portions of the Specification as support for its interpretation because the Specification utilizes permissive language such as the word "can" in at least one place when discussing the possible uses for a well, namely withdrawing and/or inputting material. 13 See Brief - Cleanox at 5. As such, Cleanox contends the interpretation by the Defendants of the term as requiring both "monitoring and injecting the groundwater" to practice the invention improperly reads limitations from the preferred
embodiment into the claims. See id. at 3; Reply Brief - Cleanox at 3.

13 The Specification states, in relevant part, that "it will be appreciated that a monitoring flow can be withdrawn from the well, as can a treating or test flow be injected via the well into the groundwater into which the well intersects." See '141 Patent at col. 6, lines 20-24.

b. The Defense Argument

Defendants contend the Cleanox definition of the term "well" is too narrow. See Brief - Defendants at 8. They assert the proper definition should be "a structure used for both monitoring and injecting the groundwater." Id. at 6-10. In support of this definition, and to counter that portion of the Piotrowski deposition testimony upon which Cleanox relies, Defendants also cite a portion of Piotrowski deposition wherein Dr. Piotrowski states that, in the context of patents, the term "well" means a device that provides the dual purpose of enabling both monitoring and injecting of groundwater. See Reply Brief - Defendants at 2-3 (citing deposition transcript of Piotrowski at 80-81).

The Defendants reason the term "well" must contemplate a device to allow more than a limited "access" only to remove groundwater as Cleanox contends. Defendants argue the Specification uses the term "borehole" when referring to a hole in the ground that allows withdrawal access to groundwater. See Brief - Defendants at 7-9. In addition, Defendants argue the Cleanox definition is overly narrow because the Specification indicates that a "well" is comprised of more structural elements than simply a "borehole." See id. at 8. In support of this assertion, Defendants point to the description in the Specification of a "well" which indicates that it contains at least a well casing, seal, slotted well screen, sand/gravel pack, and injection string, in addition to the borehole itself. See id. at 8.

Defendants further argue the patent requires the well to be used for both "monitoring and injecting." See id. at 9. As support, they cite numerous portions of the Specification that refer to the wells as both "monitoring and injecting wells." See id. at 9-10 (citing '141 Patent at col. 5, line 35, wells 12, 14, 16, and 18). For example, Defendants point to Figure 3 which is described as "a schematic cross-sectional view through a representative monitoring end [sic] injection well of the types utilized in [Figures 1 and 2]." '141 Patent at col. 5, lines 22-25. Defendants contend that, because the Specification indicates the wells have dual functions, the term must be read to require both "monitoring and injecting." Brief - Defendants at 10. Finally, Defendants argue that in order for the invention to be practiced, a "well" must enable both a "monitoring flow" to be withdrawn from it and a "treating or test flow" to be injected into it. Id. at 10.

c. Judicial Construction 14 of the Term "Well"

14 A trial judge has an independent obligation to determine the meaning of the claims, regardless of the arguments advanced by the parties. A "judges task is not to decide which of the adversaries is correct." Lubrezol, 64 F.3d at 1556. The positions of Cleanox and the Defendants have been set out to give context; the declaration of the meaning of the claims at issue is the result of an independent assessment following review of the submissions and arguments of counsel.

Although both parties refer to certain extrinsic evidence in their briefs to support their respective interpretation of the term "well" (e.g., a dictionary and expert testimony), they nevertheless state that the meaning of the term can be determined by examining only the intrinsic evidence. The parties have stated as much in their briefs and their 8 October 1997 letters to the Court. See Cleanox's and Defendants' 8 October 1997 Letters; see also Markman Hearing Transcript at 72:19-23; Brief - Cleanox at 4-5; Brief - Defendants at 7.

The words of the claim themselves, and as used in the Specification, adequately describe the scope of the term "well." There is no ambiguity as to the meaning of the term. Accordingly, extrinsic evidence is neither necessary nor appropriate to
construe its meaning. Cybor Corp., 138 F.3d at 1454; Vitronics, 90 F.3d at 1576. In addition, because the term "well" is not
defined in Claim One in either patent, the Specification may be used as a dictionary to explain the invention and interpret
the claims. See Markman, 52 F.3d at 979; Vitronics, 90 F.3d at 1582. When using the specification to define a term in the
claim, however, it is recognized "there is a fine line between the use of the specification to clarify otherwise cloudy terms in
the claim and the extraction of limitations from the specification to impose those limitations on the claim." CCPI v.
(Fed.Cir. 1997); Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc., 34 F.3d 1048, 1054 (Fed.Cir. 1994); In Re Van
Geuns, 988 F.2d 1181, 1184 (Fed.Cir. 1993); Intervet Am., Inc. v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1053 (Fed.Cir. 1989)).

The term "well" in Claim One of the '141 Patent and in Claim One of the '483 Patent should be, and is, read as a structure
which enables both monitoring and injecting groundwater; that is a device to both withdraw and input. The Description of
Preferred Embodiment for each of the patents at issue consistently describes the wells as having a dual purpose, for
"monitoring and injecting." See, e.g., '141 Patent at col. 5, lines 22-25; col. 5, line 35; col. 5 line 54; '483 Patent at col. 6,
lines 53-54; col. 7, line 5-6. Indeed, each of the patents refer to the well depicted in Figure 3 as a "monitoring and injection
well." See, e.g., '141 Patent at col. 5, line 54-55; '483 Patent at col. 7, lines 5-6. Although nothing in the Specification
requires that the wells be used for both purposes, implicit in Claim One of the '141 Patent and Claim One of the '483 Patent
is the requirement that the wells be used in such a fashion.

A review of the language used in Claim One of the '141 Patent reveals the term well must be read as a device having a dual
purpose enabling one to inject or withdraw. For example, Step A of the '141 Patent uses the language "a plurality of
mutually spaced wells intersecting said groundwater region." Step A of the '141 Patent; see Step A of the '483 Patent. There
must be a purpose for such language. This purpose is revealed in the remaining steps of the '141 Patent. 15

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15 As noted, the '483 Patent results from a "continuation-in-part application filed in the application resulting in the '141
Patent." See supra note 1 (quoting Brief - Defendants at 16-17 n.3). Significantly, neither Cleanox nor the Defendants
suggests "wells" should be construed differently in the '483 Patent.

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In order to determine the existence of acceptable continuity and well interflow paths, as required by Step B of the '141
Patent, a practitioner is to practice the invention by

    generating a test flow of a solution of hydrogen peroxide from one of said wells and monitoring pH changes at each other
of said wells as a function of time to detect a pH drop of at least 0.2; and (c) subsequent to detecting said pH drop, providing
a treating flow of said hydrogen peroxide solution from one or more of said wells.

Step B and Step C of the '141 Patent (emphasis added).

Construction of this language reveals a practitioner must use this plurality of mutually spaced wells to inject or generate a
test flow and withdraw a sample to monitor or detect a pH change and then inject or provide a treating flow from one or
more of said wells. A review of the Specifications of the '141 Patent and the '483 Patent reveals the inventor did not use the
term well in a manner inconsistent with the ordinary meaning of that term, as construed in this opinion.

In the '141 Patent in the section entitled "Summary of Invention" the implicit dual use of the wells becomes apparent. For
example, it is stated:

    Pursuant to the invention, a plurality of mutually spaced wells are provided by sinking same into the groundwater region,
with which the bottoms of the wells intersect so as to provide a means for injection of the reactants used in the invention. In
the course of practicing the invention, a treating flow of hydrogen peroxide is provided from one or more of the wells.
Periodically the treating flow is stopped and a determination made of the hydro carbon contaminant levels at each said well.

'141 Patent at col. 3, lines 1-10 (emphasis added).
In a preferred mode of practicing the present invention, the existence of acceptable continuity and well interflow paths for
the groundwater region to be treated is established by initially generating a test flow of a solution of hydrogen peroxide
from one of the wells and monitoring the pH changes at each other of the wells as a function of time.

Id. at col. 3, lines 52-58 (emphasis added).

Subsequent to detecting the said pH drop a treating flow of the hydrogen peroxide solution is then provided from one or
more of the wells. The treating flow is again periodically stopped and the hydrocarbon contaminant levels measured at each
well for ….

Id. at col. 3, line 67 to col. 4 line 3 (emphasis added).

In typical treatment arrangements pursuant to the invention at least three injection wells are utilized which are separated
about the periphery of the groundwater region to be treated. The test flow is injected at one of said well and the pH changes
are monitored at the other said well.

Id. at col. 4, lines 47-53 (emphasis added).

The Summary of Invention in the ’141 Patent also addresses the concept of, from time-to-time, the injection or monitoring
through these wells. See, e.g., ’141 Patent at col. 4, line 6 to col. 5, line 4.

The Summary of Invention section of the ’483 Patent is no less specific in referring to the wells as injection and monitoring
wells.

Pursuant to the invention a plurality of mutually spaced wells are provided which intersect the groundwater region. A
treating flow of acidic acid is provided from one or more of the wells into the groundwater region, to establish acidic
conditions therein. A turbulent flow of an aqueous solution of ferrous ion is introduced into the groundwater region, for
mixing the acidified water, thereby providing a catalyst for disassociation of hydrogen peroxide. A treating flow of
hydrogen peroxide solution is then provided for one or more of the wells into the groundwater region, the hydrogen
peroxide undergoing a Fenton-like reaction in the presence of the acidic conditions and ferrous ion to generate hydroxyl free
radicals for oxidizing the contaminants.

… The existence of acceptable continuity and well interflow paths for the region are determined by monitoring pH
changes at each other of said wells as a function of time to detect a pH drop of at least 0.2.

’483 Patent at col. 3, lines 9-27 (emphasis added).

Comprising the steps of: providing a plurality of mutually spaced wells intersecting said static plume groundwater;
measuring the change in water depth at each of said wells following atmospheric precipitation, to determine by common
depth changes the likelihood of said plume; confirming the existence of the static plume by generating a test flow of a
solution of hydrogen peroxide or acidic acid from one of said wells and monitoring the absence of pH changes at each other
of said wells as a function of time; and providing a treating flow of solutions of acidic acid, of ferrous ion, and of hydrogen
peroxide from each of said wells to establish a radial sweep about each said well, ….

Id. at col. 3, line 61 to col. 4, line 5 (emphasis added).

In a preferred mode of practicing the present invention, the existence of acceptable continuity and well interflow paths for
the groundwater region to be treated is established by initially generating a test flow solution of hydrogen peroxide from
one of the wells and monitoring the pH changes at each other of the wells as a function of time. A pH drop of at least 0.2 is
considered to be indicative of satisfactory conditions …. Subsequent to detecting the said pH drop, a treating flow of
hydrogen peroxide solution is then provided for one or more of the wells. The treating flow is again periodically stopped
and the hydrocarbon contaminant levels measured at each well until the initial concentration levels drop below
predetermined acceptable values.

Id. at col. 5, lines 3-22 (emphasis added). The dual purpose of the wells contemplated in the ’483 Patent is also demonstrated
in other areas of the section entitled Summary of Invention. Id. at col. 5, line 36 to col. 5, line 29.

A review of the language which precedes Claim One in each of the patents demonstrates that the "plurality of mutually spaced wells" referred to in sub-part (a) in Claim One of each of the patents refers to a dual purpose well. Moreover, each of the patents refers to the wells as "monitoring and injecting wells." See, e.g., '141 Patent at col. 5, line 35; col. 5, line 54; '483 Patent at col. 6, lines 53-54; col. 7, line 5.

If a practitioner were using the wells solely for injecting the treating flow, he or she would not know which of the plurality of wells to use to inject the flow. Only use of the well or wells for monitoring can lead to the selection of the correct well or wells for injecting. Conversely, if a practitioner were using the wells only for monitoring a flow, he or she could not to treat the site. Finally, the Specification also supports the Defendants' definition of the term because the Specification indicates that a "borehole," and not a "well," is the device that simply provides access to water. See '141 Patent at col. 5, line 55; '483 Patent at col. 7, line 6. A "well," on the other hand, must perform other functions in light of its many different structural elements, as intended by the '141 Patent and the '483 Patent.

Each reference to the Specifications for the '141 Patent and the '483 Patent reinforces a natural reading of the term "well." The Specifications have been used solely to provide a context and to sharpen the construction of the claim language.

* * *

Conclusion

For the reasons stated, the claim construction of the disputed terms is as follows: (1) the term "well" in Claim One of the '141 Patent and Claim One of the '483 Patent means "a structure used for both monitoring and injecting the groundwater," (2) Step B of the '141 Patent is read to require that pH be monitored for the particular purpose of determining the existence of acceptable continuity and well interflow paths, (3) the term "treating flow" in Step C of the '141 Patent is read to have no pressure limitation associated with it and to be limited to "chemical remediation", and (4) Claim One of the '483 Patent is read to require the performance of Steps A-D both separately and sequentially to practice the invention.
At oral argument, Mantech all but abandoned the definition of "well" that would equate it with access to groundwater and maintained that a structure that could either inject or monitor satisfies the term "well" as used in the claims and does not contradict the written description. According to Hudson, however, if each of the wells in the claimed system cannot perform both monitoring and injecting functions, the method of the invention cannot be practiced as claimed. Thus, Hudson asserts that Mantech's fall-back argument that the wells do have to provide not only access to the groundwater, but also either monitoring or injecting, contradicts the plain meaning of the claims and the written description, and thus violates Vitronics. On the other hand, Mantech's primary argument, that the court must accept the plain meaning of the term "well," implies that Vitronics requires reliance on the extrinsic evidence.

The main issues on appeal, therefore, are (1) whether it was legally correct claim construction methodology under Vitronics for the district court to accept the extrinsic evidence as background information, but reject it as the basis for construing the claims and construing the claims solely on the basis of the intrinsic evidence; and (2) whether, assuming the court did not violate Vitronics, the "dual-function" construction is correct.

A. Limited Reliance on Extrinsic Evidence

Both Mantech and Hudson argued before the district court that the dispute over the proper meaning of the claim term "well" could be resolved without resorting to extrinsic evidence. See CleanOX, slip op. at 4-5 n.3. However, each side presented the testimony of an expert witness in case the court determined that extrinsic evidence was necessary. At the conclusion of the Markman hearing, however, the court advised the parties that the expert testimony "was accepted only for the purpose of background in the technical area" and construed the claims at issue based solely upon the intrinsic evidence. Id. at 5.

Mantech asserts on appeal that the established definition of "well" comports fully with the patents' specifications. Therefore, according to Mantech, the district court erred in not applying the established meaning. Mantech Enhanced Coverage Linking implies that under a proper interpretation of Vitronics, the district court was obligated to rely on the extrinsic evidence here.

Hudson responds that the extrinsic evidence of the established meaning of the term "well" contradicts the meaning taught by the specifications. Hudson contends that relying on such expert testimony would require ignoring clear intrinsic evidence and improperly basing the construction instead on contrary extrinsic evidence, the expert testimony, in violation of Vitronics. Hudson asserts, therefore, that it would have been improper for the judge to rely on expert testimony for more than background in the relevant art and the patents in suit because the intrinsic evidence unambiguously reveals a different meaning of the term "well." In addition, Hudson argues that because the witnesses disagreed, the extrinsic evidence on application of the established meaning to the claim term is in conflict. Further, asserts Hudson, Mantech did not establish that the term "well" as used in the patent was ambiguous and could not be interpreted without extrinsic evidence, another requirement of Vitronics.

The district court agreed with Hudson that "the words of the claim and the specification adequately describe the scope of the term 'well,'" as used in the patents. CleanOX, slip op. at 25. Therefore, after admitting the extrinsic evidence as background in the relevant technology, the court held that the written description and the claims were not ambiguous and that the meaning of the claim term "well" was clear. See id. at 26-27. The district court, therefore, correctly followed the guidance set forth in Vitronics for limiting reliance on contrary extrinsic evidence.

Mantech's argument, that the court should have relied on expert testimony which, we hold, contradicts the plain meaning of the specification and would result in exactly what Vitronics and prior cases cited therein forbid. See Vitronics, 90 F.3d at 1584, 39 U.S.P.Q.2D (BNA) at 1578 ("As we have recently re-emphasized,.extrinsic evidence in general, and expert testimony in particular, may be used only to help the court come to the proper understanding of the claims; it may not be used to vary or contradict the claim language.") (emphasis added) (citing Markman v. Westview Instruments, Inc., 52 F.3d 967, 981, 34 U.S.P.Q.2D (BNA) 1321, 1331 (Fed. Cir. 1996), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1997)); see also Bell and Howell Document Management Prods. Co. v. Altek Sys., 132 F.3d 701, 706, 45 U.S.P.Q.2D (BNA) 1033, 1038 (Fed. Cir. 1997) (holding that when the intrinsic evidence is unambiguous, it is improper for the court to rely on extrinsic evidence for purposes of claim construction).

In this case, the district court was legally correct both in admitting and accepting the testimony of the parties' expert witnesses "for the purpose of background in the technical area at issue," CleanOX, slip op. at 5, and then basing its claim construction solely upon intrinsic evidence. Although this information always may be admitted by the trial court to educate
itself about the patent and the relevant technology, the claims and the written description remain the primary and more authoritative sources of claim construction. Thus, they always must be considered and where clear must be followed. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 981, 34 U.S.P.Q.2D (BNA) 1321, 1331 (Fed. Cir. 1996), aff'd, 517 U.S. 370, 134 L. Ed. 2d 577, 116 S. Ct. 1384 (1997) (holding extrinsic evidence may be used for the court's understanding of the patent); see also Cybor, 138 F.3d at 1454 n.3, 46 U.S.P.Q.2D (BNA) at 1173 n.3. In this case, the claims and written descriptions are dispositive, for they clearly define a "well" more narrowly than the extrinsic evidence. Therefore, it was not legal error as Mantech Enhanced Coverage Linking proposes for the district court to refuse to rely on the expert testimony for anything more than background.

B. Construction of the Term "Well"

Mantech here challenges the district court's construction of the claim term "well." According to Mantech, the district court improperly limited "well" as used in the claims to the dual-function structure disclosed in the preferred embodiment. Mantech initially asserts on appeal that the proper construction of the term "well" as used in the patents in suit is "any device that allows access to groundwater." Mantech refers specifically to the '141 patent at column 6, lines 20-24, which states that "it will be appreciated that a monitoring flow can be withdrawn from the well, as can a treating or test flow be injected via the well into the groundwater which the well intersects," to show that a "well" as used in the patents does not have to both monitor and inject. Mantech emphasizes the use of the word "can" in the specification instead of "must" or "shall" to indicate that each function is possible but is not required.

Hudson asserts that another patent term, "borehole," describes a structure by which groundwater merely is accessed, and applying that construction to "well" would make use of the term "borehole" elsewhere in the specification unnecessary and hence contrary to the expressed intent of the inventor.

Under proper claim construction methodology, we look first to the language of the claims. See Bell Communications Res., Inc. v. Vitalink Communications Corp., 55 F.3d 615, 619, 34 U.S.P.Q.2D (BNA) 1816, 1819 (Fed. Cir. 1995). For example, step (a) of claim 1 of the '141 patent requires:

(a) providing a plurality of mutually spaced wells intersecting said groundwater region;

'141 pat., col. 8., ll. 27-28. This limitation itself requires neither monitoring nor injecting at any of the mutually spaced wells. Step (b), however, requires:

(b) determining the existence of acceptable continuity and well interflow paths for said region by generating a test flow of a solution of hydrogen peroxide from one of said wells and monitoring pH changes at each other of said wells as a function of time to detect a pH drop of at least 0.2; and 8

Id. at col. 8, ll. 29-34 (emphasis added). The emphasized phrases indicate that one well must be used for testing, i.e., injecting the test fluid, and the rest of the wells for monitoring. Step (c) then requires:

(c) subsequent to detecting said pH drop, providing a treating flow of said hydrogen peroxide solution from one or more of said wells.

Id. at col. 8, ll. 35-37 (emphasis added). The second emphasized phrase indicates that only one well need be used for providing the treating flow, i.e., injecting the treating flow; all the wells need not inject. Indeed, all but that one well could merely monitor. Step (c), therefore, could read on several alternative systems, ones with only dual function wells, ones with only single function wells, and ones with some single function and some dual function wells. For example, in an array of four wells, well A might inject only and wells B, C, & D monitor only. First, A would inject the test fluid while the others monitored. Then, A would inject the treating fluid. Claim 1 would read literally on this system.

8 We construe "generating" to be synonymous with "injecting" as is "providing," used later.

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8 We construe "generating" to be synonymous with "injecting" as is "providing," used later.

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As the district court correctly determined, therefore, a method in which all of the wells both monitored and injected would be covered by this claim. Mantech, however, conceded at trial that Defendants' wells do not all perform both functions. The construction of "well" originally asserted by Mantech, i.e., "any device that provides access to groundwater," is too broad because it would include structures that neither monitor nor inject. All the "wells" recited in claim 1 perform at least one such function. A structure which merely provides access, therefore, is not a "well" covered by claim 1. A system incorporating wells that either monitor or inject and possibly, but not necessarily, do both, however, still would be covered by claim 1 of the '141 patent and claim 1 of the '483 patent. 9

9 Providing an additional structure that neither monitors nor injects, however, does not necessarily remove the accused method from the scope of the claims simply because such a structure would not be a "well" as defined in the patents. See A.B. Dick Co. v. Burroughs Corp., 713 F.2d 700, 703, 218 U.S.P.Q. (BNA) 965, 967-68 (Fed. Cir. 1983) ("It is fundamental that one cannot avoid infringement merely by adding elements if each element recited in the claims is found in the accused device. ").

Finally, we must look to the written description, to determine what one of ordinary skill in the art at the time of the invention would have understood the term as used in the patent to mean. 10 See Markman, 52 F.3d at 983, 34 U.S.P.Q.2D (BNA) at 1335. If the written description supports the definition of the term that is apparent from the claim limitation, then reading in a further limiting definition would be improper.

10 As mentioned above, there is no relevant prosecution history.

The wells are introduced in the written description as "monitoring and injecting wells," '141 pat., col. 5, ll. 34-35, and, indeed, the preferred embodiment of the invention as shown in Figure 3 discloses a well that both monitors and injects. This passage is consistent with the wells as performing both monitoring and injecting; it hardly mandates, however, that each and every well used to perform the method must both inject and monitor. Later it is stated that "a monitoring flow can be withdrawn from the well, as can a treating or test flow be injected via the well into the groundwater which the well intersects." Id. at col. 6, ll. 20-24. This passage indicates that the inventor expressed an intent that a well be used for either injecting or monitoring, or both.

Hence, although the definition of "well" adopted by the district court, "a structure used for both monitoring and injecting the groundwater," CleanOX, slip op. at 43, may at first seem to be in accordance with the language of the specification, it is actually narrower than that intended by the inventor when the entire patent is read in light of the nature of the invention as described and claimed. The claims do not require such a narrow construction of the term "well" and neither does the written description. In fact, both support a broader construction.

The district court erred because it, in essence, incorporated from the preferred embodiment into the claims a narrow definition for the claim term "well," as "a structure used for both monitoring and injecting groundwater." CleanOX, slip op. at 43 (emphasis added). In the context of the written description and the claims, however, it is clear that the term "well" has a more inclusive meaning than that given by the district court: as used in the patents, a "well" is a structure connecting the surface to the groundwater that can either monitor or inject, or both, but it need not do both.

We thus hold that the meaning of the claim term "well" in the patents in suit is a structure that enables either monitoring or injecting of groundwater, or both. 11 Therefore, the methods practiced by the Defendants could indeed infringe the patents, contrary to the district court's summary judgment. We therefore vacate the district court's summary judgment of noninfringement and remand the case for further determination of infringement consistent with the correct claim construction. 12
11 We note that this construction also is in accordance with the specification and claims of the ‘483 patent.

12 We lack information on the accused methods. This case was terminated essentially on the basis of the Markman hearing. Although there was an oral motion for summary judgment based on Mantech's concession it could not prove infringement using the district court's claim construction, no written pleadings or supporting affidavits or depositions were submitted regarding infringement. Thus, we cannot consider on appeal whether as a matter of law the accused system(s) infringe(s) one or both asserted claims.

--- Footnotes ---

11 Similarly, the reference to the block as "available in a wide variety of materials, shapes and volumes of the sample wells" in ’610 Patent col. 3, ll. 41-42 begs the question of what "well" means because the materials, shapes, and volumes for the required wells neither necessitate above surface structures nor are inconsistent with variations in the recesses themselves.
The ordinary meaning of the preposition "for," see Webster's New World Dictionary of the American Language 544 ("with the aim or purpose of; suitable to; appropriate for"); demonstrates the intended use of the well is that it be capable of holding a tube, and does not require that the tube actually be seated in the well, even though "one embodiment" requires the tubes be "seated in the sample block," ‘610 Patent, col. 8, l. 65 and col. 9, ll. 31-32, at least while performing PCR.

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H. "Wells"

Claim 1 of the ‘418 patent further describes the textured surface as "comprising a pattern of ridges and troughs, the pattern including a plurality of parallel wells." Plaintiffs claim that "wells" are "the lowest regions of the channels," while Gore contends that the term "wells" is fatally indefinite because it is not amenable to description.

The language of the patent describes the wells as a part of the ridges and channels formed by cutting the surface material. Based on the diagrams included with the patent, the ridges come together at an angle to create channels that have low points. See id. Fig. 12. The plain and ordinary meaning of "well" includes "something resembling a well in being . . . deep . . . ." See Pl. Claim Constr. Mem., Ex. H, Webster's Ninth New Collegiate Dictionary (1987), at 1338. Therefore, in the context of the ridges and channels described in claim 1 of the ‘418 patent, the deepest part of the channels would be the well. The term "wells" is amenable to construction and the Court determines that "wells" are "the lowest regions of the channels."

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c. "Wheel"

Both parties request that the Court construe the term "wheel." This term appears in the claim provision that the invention comprise "a wheel mounted chassis extending in a longitudinal direction." ('618 patent, col. 7.)

The defendants assert that "wheel" means "a circular rim with a rubber tire that revolves on an axle and rides directly on the road." The plaintiffs contend that "wheel" has the broad dictionary and "common sense" meaning of:

a circular frame of metal, wood, or other hard material that may be solid, partly solid, or spoked and that has a hub at the center for attachment to or suspension from an axle on which it may revolve and bear a load; a circular framework often with cogs or teeth on the rim used to transmit or modify force and motion in machinery or a mechanical contrivance. A wheel includes, but is not limited to, a rim on which a rubber tire is mounted, a sprocket wheel (both a driven wheel, and [a] non-driven or idler wheel) used on a track of a tracked machine, a guide wheel used on a track of a tracked machine, and an endless track of a tracked machine.

The defendants maintain that the definition of "wheel" is limited by the patent specification's provision that "the plant 1 may then be hauled along a road on the wheels 3(a)." The defendants argue that this description makes clear that "wheel" was intended to refer to a wheel that rides directly on a road. The defendants further object to the plaintiff's inclusion of an "endless track of a tracked machine" in its definition of "wheel." The defendant asserts that tracks (such as would conventionally appear on a military tank) are treated as separate structures from wheels in the construction industry. Since the patentee made no reference to "tracks" in the '618 patent, tracks should not be incorporated into the definition of "wheel".

The plaintiff asserts that "wheel" has a common, non-technical, meaning, and that nothing in the patent contravenes this. The plaintiff also notes that Powerscreen's own documents refer to the track assemblies of Powerscreen's track-mounted screeners as including "wheels." (See Whyte Decl., P 25.)
Neither party argues that "wheel" has a special technical meaning in the relevant art. Nonetheless, the entirety of the patent document suggests that the "wheels" on which the device is mounted must be wheels on which the device rides. The essence of the invention is that it is easily movable, and the inclusion of wheels in the design directly serves this goal. Thus, "wheel" cannot refer, as the plaintiff requests, to a "circular framework often with cogs or teeth on the rim used to transmit or modify force and motion in machinery or a mechanical contrivance."

However, the Court also rejects the defendants' definition of "wheel" as limited to a wheel that is tire-mounted and rides directly on the road. This may be the manner of wheel depicted in the preferred embodiment of the invention, but the patent claims themselves are amenable to other types of wheels. To limit the claims to tire-mounted wheels riding directly on the road would improperly import elements of the preferred embodiment into the claim itself.

The Court also rejects the plaintiff's assertion that "wheel" includes the "endless track on a tracked machine". This definition is unsupported by intrinsic or extrinsic evidence. The patent never mentions "tracks" or "tracked machines", and an endless track conflicts in several ways with the dictionary definition the plaintiffs urge for "wheel"--not the least of which is that an endless track is not "circular." The opinion of the plaintiff's expert, Steven A. Whyte, that an endless track would be understood to be a "wheel" by one skilled in the art is similarly unsupported by reference to any extrinsic material. The Court thus rejects this contention.

As such, the Court attaches to the term "wheel" a modified form of its generic, dictionary meaning that excludes wheels not used for bearing the plant's weight and moving it, but includes wheels that are not merely tire-mounted. Thus, the Court construes wheel to mean: "a circular frame that has a hub at the center for attachment to or suspension from an axle, on which it revolves, and that serves to bear the weight of the screening plant."

A. Construing The Term "Wheel-and-axle assembly" in the 476 Patent

The term "wheel-and-axle assembly" means an assembly formed from the arm member's multisided part collar in cooperation with the multisided positional mount.

Claims 1, 5, and 11 cite two elements that cooperate to form a wheel-and-axle assembly: a "multisided part collar" and a "multisided positional mount." Claim 5 further specifies that a multisided positional mount is comprised of a disc-shaped wheel portion and multisided axle portion. From here, Palmetto contends that the definition of wheel-and-axle assembly must include a "concentrically mounted disk portion" in addition to the multisided part collar and multisided positional mount.

The court adopts NPI's interpretation that the "wheel-and-axle assembly" requires nothing more than what the inventor claims: a multisided positional mount and a multisided part collar. Biagro, 423 F.3d at 1302 ("claim construction begins with, and remains focused on, the language of the claims."). Here, only Claim 5 imparts a limitation that the wheel-and-axle assembly must also include a disc-shaped wheel portion. Claims 1 and 11 make no mention of such an element. Given that each claim in a patent is presumptively different in scope, the court declines to construe Claims 1 or 11 to contain a limitation expressed only in Claim 5. Comark, 156 F.3d at 1186-87. Here, the "disc-shaped wheel portion" is an optional element, but not necessary to define a wheel-and-axle assembly.

The inclusion of a "disc-shaped button or wheel portion" in describing one embodiment of the assembly does not change this result. At the outset, the court notes that the inventor need not describe all possible forms in which the claims may be reduced to practice. Gart v. Logitech, Inc., 254 F.3d 1334, 1342 (Fed. Cir. 2001) (noting that "drawings [depicting the preferred embodiment] are not meant to represent the invention or to limit the scope of coverage defined by the words used in the claims themselves."). What is more, the written text and figures describing a particular embodiment should be read in light of the specification as a whole. Beckson Marine, Inc. v. NFM, Inc., 292 F.3d 718, 724 (Fed. Cir. 2002) ("this court does not construe the figures depicting a single preferred embodiment as limiting the claim terms in light of other language in the written description embracing other . . . structures.").

Here, Figures 3A and 3B illustrate one embodiment of a wheel-and-axle assembly formed of the positively-positionable
mount formed on a mounting base. The figures include a depiction of a positively-positionable mount shaped like a mushroom, which includes a "disc-shaped button or wheel portion." 476 Patent, col. 3, lines 56-58. To paraphrase NPI, this button or wheel acts as a "stopper," NPI Brief at 9, to ensure that "the arm members of the coupler . . . can obtain a suitable grip [around the axle]." Id., col. 4, lines 4-7; see also, id., col. 4, lines 31-35 (describing same). Despite this stated objective, the drawings do not include the coupler's rigid arm members (of which the multisided collar is part). The accompanying description to the Figures, however, explicitly references the arm members and directs the reader to further discussion that follows. 476 Patent, col. 4, lines 4-7. Not only does the court refuse to read Figures 3A and 3B in isolation from the remaining written description, Beckson, 292 F.3d at 724, but the inventor expressly instructs against it. Indeed, throughout the specification, the inventor describes the coupler's rigid arm members in relative orientation to the multisided positional mount's multisided axle portion. E.g., id., col. 4, lines 20-25; id., col. 5, lines 4-8; col. 6, lines 18-21. Thus, the fact that Figures 3A and 3B include a disc-shaped wheel portion and omit the multisided collar is not dispositive in light of the surrounding written description and the clear language of the claims themselves.

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b. "wheel face outer surface"

Lacks argues that the "wheel face outer surface" is an element of claim 1 that has a flexible meaning and thus a varying location on the outer face of the wheel. Defendants argue that if it has any meaning at all, it must describe the entire area of the outer face of the wheel that exists within the circumscribing boundary of the axial peripheral lip. 5

--- Footnotes ---

5 Once again, this construction is defendants' alternative argument to their primary argument that the phrase "wheel face outer surface" is indefinite.

--- End Footnotes ---

Claim 1 first mentions "wheel face outer surface" near the end of its preamble:

A method for providing a decorative surface on a composite vehicle wheel having a web portion and a peripheral rim portion for mounting a vehicle tire, said peripheral rim portion defining an axial peripheral lip circumscribing said peripheral rim portion and structural means interconnecting said web portion and said peripheral rim portion, said web portion and said peripheral rim portion defining a wheel face outer surface....

'809 patent, col. 10, lines 65-67 and col. 11, lines 1-5. This passage indicates that the scope of "wheel face outer surface" bears some relation to the web portion, the peripheral rim portion, and the axial peripheral lip -- at the least, that the "wheel face outer surface" includes exposed surface of the web and peripheral rim portions but not the axial peripheral lip. The claim's second, and more revealing, reference to the phrase cements its relationship to the axial peripheral lip: "said thin solid formed ornamental panel being shaped to cover said entire wheel face outer surface and not cover said axial peripheral lip." '809 patent, col. 11, lines 8-11.

Lacks argues from these references, and in particular from the use of the article "a" in the first reference, that the wheel face outer surface need not cover the total area of exposed surface within the circumscribing boundary of the axial peripheral lip. This construction fails, however, in light of my earlier construction of the axial peripheral lip, which concluded from the claim language that the axial peripheral lip and the cladding must abut each other. By sharing a common border, the axial peripheral lip and the cladding make it impossible for there to be exposed surface between them. This construction, furthermore, comports with the requirement that the cladding must cover the "entire wheel face outer surface" yet "not cover" the axial peripheral lip. Implicit in that requirement is the idea that the "wheel face outer surface" must be the area of exposed wheel surface that lies within the boundary of the circumscribing axial peripheral lip.

While the specification in a few places appears to suggest that the wheel face outer surface might be something less than the entire area within the boundary of the axial peripheral lip, those suggestions are outweighed by the central thrust of the specification's description, especially the diagrams of the preferred embodiment. Furthermore, as the invention of the '809
The patent was intended to address a need in the prior art for a cladding that covered "the entire wheel surface," see '809 patent, col. 3, lines 62-67, and col. 4, lines 1-8, the phrase "wheel face outer surface" must mean the maximum extent of the wheel's exposed surface area that can be covered by the cladding while still heeding the "not cover said axial peripheral lip" limitation.

In light of the intrinsic evidence of record, I conclude that a person of ordinary skill in the art of cladded wheels would understand "wheel face outer surface," as used in claim 1 of the '809 patent, to mean the entire area of the wheel's exposed outer face that lies within the circumscribing boundary of the inner shoulder of the axial peripheral lip. I find it unnecessary to consider any extrinsic evidence because the intrinsic evidence of record 6 has resolved the meaning and scope of "wheel face outer surface." See id.

6 Neither party has offered prosecution history evidence on "wheel face outer surface."

Lacks also challenges the court's construction of "wheel face outer surface" in the '809 and '906 patents. The district court construed the term to mean "the entire area of the wheel's exposed outer face that lies within the circumscribing boundary of the inner shoulder of the axial peripheral lip." Id. at 712. On appeal, Lacks argues that the dimensions of the cladding define the "wheel face outer surface," so long as the cladding covers some of the web and rim portions. 4 Again we are not persuaded.

4 The web portion of the wheel is the central portion of the wheel composed of "spokes, spiders, or webs." '809 patent, col. 6, lines 64-66. The rim portion is that portion of the wheel that circumscribes the web portion.

Lacks' proposed construction is simply not consistent with the language of the claims. As the district court noted, the limitation first appears in the preamble of claim 1 of the '809 patent: "A method for providing a decorative surface on a composite vehicle wheel having a web portion and a peripheral rim portion for mounting a vehicle tire... said web portion and said peripheral rim portion defining a wheel face outer surface." '809 patent, col. 10, lines 65-67, col. 11, lines 3-5 (emphasis added). The limitation also appears later in the claim: "said thin solid formed ornamental panel being shaped to cover said entire wheel face outer surface and not cover said axial peripheral lip." Id. col. 11, lines 8-11. From this language the district court reasoned that "wheel face outer surface" must be the "area of the wheel's exposed outer face that lies within the circumscribing boundary of the inner shoulder of the axial peripheral lip." Lacks, 55 F. Supp. 2d at 712.

Given this clear language, Lacks' arguments to the contrary are not persuasive. The district court's construction is the only reading consistent with the plain language of the claim limitation and we therefore uphold the district court's construction of "wheel face outer surface."

I now turn to the "wheel face outer surface" claim limitation. The claim language expressly characterizes the wheel face outer surface, providing that "said web portion and said peripheral rim portion define a wheel face outer surface." '809 patent, col. 11, ll. 4-5. This appears to be a closed definition, the wheel face outer surface consisting of only two elements—the central web portion and the peripheral rim portion. The claim language further defines the axial peripheral lip as "circumscribing said peripheral rim portion," id. at col. 11, ll. 1-2, and requires that the ornamental panel cover "said entire
To my mind, this claim language explicitly defines the wheel face outer surface as extending precisely up to the terminal boundary of the peripheral rim portion--the axial peripheral lip. Indeed, despite its differing construction of "axial peripheral lip," this is what the district court concluded as well. This interpretation would thus allow no portion of the peripheral rim portion to be uncovered by the ornamental panel.

Such a conclusion is problematic, however, given Figures 3 and 5 of the '809 and '906 patents. These clearly depict the ornamental panel as only covering part of the peripheral rim portion. The above interpretation would thus read out the preferred embodiment.

As a general rule, claim interpretations, which operate to exclude the preferred embodiment, are "rarely, if ever, correct and require highly persuasive evidentiary support." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583, 39 USPQ2d 1573, 1578 (Fed. Cir. 1996). However, we have found that such a conclusion can be mandated by clear intrinsic evidence, such as "unambiguous" claim language. Elekta Instrument v. O.U.R. Sci. Int'l, 214 F.3d 1302, 1308, 54 USPQ2d 1910, 1914 (Fed. Cir. 2000). See also Rheox, Inc. v. Entact, Inc., 276 F.3d 1319, 61 USPQ2d 1368 (Fed. Cir. 2002) (reaching a claim interpretation excluding some of the preferred embodiments in light of the prosecution history). Here, the claim language is quite explicit in both defining the "wheel face outer surface" and in requiring it to be completely covered by the ornamental panel, and I would find that it constitutes an exception to the general rule.

Indeed, the linkage of the two claim requirements, that the cladding cover the entire wheel face outer surface, but that it not cover the axial peripheral lip only has meaning in the situation where the axial peripheral lip is actually providing a boundary for the overlay. Any other construction of "wheel face outer surface" would essentially mean that there is a separate interior boundary for the overlay coverage. In such a situation, the requirement that the overlay not cover the axial peripheral lip is surplusage.

Rejecting the above construction leaves open a substantial question as to what the "wheel face outer surface" actually is. Lacks's suggestion that it merely requires partial coverage of the "peripheral rim portion" is extremely unsatisfying. First, the claim language describes "said web portion and said peripheral rim portion defining a wheel face outer surface." If this language includes both elements in the definition, then full coverage is required. If it does not, Lacks's suggestion that "partial" coverage of the rim portion suffices would make the use of "entire" completely meaningless--there would be no way to define how much coverage of the peripheral rim portion is required.

The district court used the Hayes diagram to evaluate the accused device. Lacks's brief references the same diagram. It discloses an ornamental panel terminating, as the district court found, "just shy of the tip of the lip." Neither of the parties dispute that this is an accurate representation of the accused product.

Employing the claim constructions given above, the district court's finding of noninfringement can be sustained. Even if the accused product meets the limitation requiring that the ornamental panel not cover the "axial peripheral lip," the ornamental panel does not cover the entire wheel face outer surface, as there is a gap between the ornamental panel and the axial peripheral lip. The district court's grant of summary judgment of noninfringement of the claims of the '809 and '906 patents was correct, for the reasons I have stated.

13. Claim 17 - "operable for moving into an engagement position when"

The full text of this portion of Claim 17 is "operable for moving into an engagement position when the container body is erected to thereby receive a product placed in the container for shipment". However, only the phrase contained in the heading above is at issue. This term is another limitation on "dunnage structure" in that it must be operable for moving into an engagement position when the container body is erected.

Bradford proposes that this term means "being 'coupled to' the two 'sides' such that the 'dunnage structure' is capable of being moved into an engagement position during the time that the two 'sides' of the container body are being erected to
thereby receive a product placed in the container for shipment." Defendants propose that this term means "being 'coupled to' the two 'sides' such that the 'dunnage structure' is capable of being moved into an engagement position during the time that the two opposing 'sides' of the container body are being erected to thereby receive a product placed in the container for shipment." The difference between the parties' definitions is Defendants' addition of the limitation "opposing" to the term.

"Opposing" is an appropriate limitation to add to this term. Whether it be "sides" or "side walls", the specification consistently indicates that the dunnage structure is coupled to support structures which oppose each other. For instance, the "Summary of the Invention" states the following about one embodiment:

When the side walls are erected, multiple flexible support structures, preferably flexible cables, extend between the opposing side walls with their ends secured to the rail elements to span across the container. The pliable dunnage pouches, made of a suitable cloth or plastic material are secured to the support cables[.]

'119 Patent, col. 4, ll. 3-8 (emphasis added). With regard to the sleeve pack embodiment, the Summary states:

[T]he sleeve pack includes two opposing, non-foldable side walls and two opposing foldable side walls, which are hingedly coupled, along vertical edges thereof, to the non-foldable side walls. The dunnage of the invention is coupled to either the foldable or non-foldable side walls.

Id. col. 6, ll. 41-46 (emphasis added). With regard to the embodiment in Figure 4, the specification states:

In accordance with the principles of the present invention, two opposing sides 74, 76 of the top member 64 include elongated support rail elements 78, which extend generally the entire length of sides 74, 76 and support dunnage structures, such as dunnage pouches 82, on the rack 60.

Id. col. 12, ll. 28-34 (emphasis added). With regard to Figure 6, the specification states that the dunnage structures are suspended from rail elements which are fixed to "opposing ends". Id. col. 14, ll. 31-43. Thus, the specification makes clear that the dunnage structures must be coupled to opposing support structures.

Accordingly, the Court holds that "operable for moving into an engagement position when" means "being 'coupled to' the two 'sides' such that the 'dunnage structure' is capable of being moved into an engagement position during the time that the two opposing 'sides' of the container body are being erected to thereby receive a product placed in the container for shipment."

6. "When installed"

Claim 1 provides that the cantilevered leg abuts the web of the rail "when installed." (Id., Exh. 1, col. 6, ln. 41-46). Since the size of the gap between the panel and rail may fluctuate under actual operating conditions, there may be times when the leg does not contact the rail. According to plaintiff, "infringement that occurs some of the time is still infringement . . ." Plaintiff therefore reasons that "when installed" necessarily means "at any time when installed." (Id. at 15).

This argument obfuscates the important distinction between claim construction and infringement. The Court must first construe the patent claims before the fact finder determines whether infringement has occurred. The ordinary and accustomed meaning of "install" is "to set in position or adjust for use." WEBSTER'S II NEW COLLEGE DICTIONARY at 574; see also MERRIAM WEBSTER'S COLLEGIATE DICTIONARY at 606 ("to establish in an indicated place, condition, or status . . ."). Neither the specification nor prosecution history suggest a different interpretation. Therefore, the filler is installed when it is placed in its intended position--abutting the web of the rail.
The main dispute concerns the requirement that "the probe generate a trigger signal when said sensing tip contacts an object and said stylus holder is thereby deflected relative to said housing." The district court determined that "when" is defined by reference to this entire claim limitation, such that "when" means as soon as contact is made and deflection occurs. See Renishaw, 974 F. Supp. at 1089. On appeal, Renishaw argues that "when" should receive one of its broader dictionary definitions: "at or after the time that," "in the event that," or "on condition that," so that the claim would read on a device that does not generate a trigger signal until an appreciable amount of time after contact is made and deflection begins. Because infringement of this limitation depends on the meaning of the word "when," we refer to it in the remainder of the opinion as the "when" limitation. We agree with the district court's construction of this claim limitation and, because all limitations must be met for there to be infringement, we need consider only this limitation.

The ultimate issue is the manner in which "when" defines the timing of probe triggering vis-a-vis contact of a stylus with a workpiece. The issue brings into sharp focus the convergence of the two canons of claim construction discussed above. According to Renishaw, the accused probes escape infringement only if a narrowing limitation is read into "when" from the written description. Marposs counters with an argument that the claim is properly construed to require a finding of noninfringement because the correct meaning of the claim term "when" is embedded throughout the specification.

Neither party forwards a technical meaning for "when" in the applicable industry. However, there are several closely-related, but distinct, common meanings for "when," most cited by Renishaw on appeal. These include: at or during the time that; just at the moment that; at any or every time that; at, during, or after the time that. n4 Renishaw asserts that nothing in claim 2 places an outer endpoint on the time at which a trigger signal must be generated, other than that the device be capable of generating some trigger signal. Therefore, contends Renishaw, the trial court's definition of the term was overly narrow, and the claim is properly defined simply as "at or after the time that." For its part, Marposs argues that the '904 patent's written description exhibits a clear intent to provide triggering as soon as possible after contact with a workpiece, not at appreciable times after contact. Marposs argues that in claim 2 the use of "when" provides an entry point into the claim for that intent.

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n4 These definitions are taken from Webster's Ninth New Collegiate Dictionary 1342 (1985); Webster's Third New International Dictionary 2602 (1993); and the Chambers Concise Dictionary 1223 (1992).

- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - -

The explicit language of claim 2 is our starting point. There, the claim states that a signal is generated "when" there is contact with a workpiece "and said stylus holder is thereby deflected." The claim ties the signal to contact and deflection, thus showing that the trigger signal cannot occur until the probe has contacted the workpiece and the stylus has deflected some amount. In other words, contact and deflection are a condition precedent to signaling. Thus, the claim itself precludes us from viewing "when" as requiring signaling at the precise moment of contact, for some deflection must occur before signaling. The district court also recognized this. See Renishaw, 974 F. Supp. at 1071; see also Manteech Envtl. Corp. v. Hudson Envtl. Servs., Inc., 152 F.3d 1368, 1998 U.S. App. LEXIS 18753, No. 98-1079, slip op. at 12-13 (Fed. Cir. Aug. 13, 1998) (looking to other terms in a claim to construe a limitation in dispute); Phonometrics, Inc. v. Northern Telecom Inc., 133 F.3d 1459, 1465, 45 U.S.P.Q.2D (BNA) 1421, 1426 (Fed. Cir. 1998) (same).

Mere recognition that "when" is not limited to the precise moment of contact, however, does not make the term clear, or mandate a meaning of "when" to include any time after contact as long as a measurement is derived from stylus contact. That is because "when" is not a broad and general term when standing in isolation. Instead, it has several meanings, each of which may prevail based on the context. Here, we have bounteous context. Claim 2 does not exist in rarefied air, but rather is surrounded by a patent disclosure of singular purpose. As evidenced by the several common meanings of "when," the term is imprecise as used in the '904 patent. The term is not ambiguous, however, because the written description provides overwhelming evidence to guide a proper interpretation of the term. See Vitronics, 90 F.3d at 1583, 39 U.S.P.Q.2D (BNA) at 1577. Replete with references that indicate that the patentee was preeminently concerned with generating a trigger signal as soon as possible after contact, the written description lends precision to the term "when." The written description shows that the patentee's invention is directed at a machine that produces very accurate, very precise probe readings by maintaining
tight control over the position of the stylus. In the context of the invention, such readings can only be obtained if the probe triggers very, very soon after contact.

For example, in describing the invention’s place within the prior art, the ’904 patent notes: "When the stylus contacts a workpiece surface, a trigger signal is generated by the probe, which is used to trigger the taking of a reading of the instantaneous position of the movable spindle, quill or arm." Col. 1, ll. 36-42. Likewise, the Summary of the Invention states that the preferred embodiment of the probe "includes means for providing a signal when said stylus contacts a workpiece," col. 3, ll. 28-29, and that the movable elements are displaced "out of said rest position when said stylus contacts a workpiece," col. 3, ll. 21-22.

Statements in the "Description of Preferred Embodiments" also use the term "when" to describe a time very close to the precise instant that the stylus contacts the object to be measured and not some appreciable time thereafter:

When the stylus 14 contacts a workpiece, from any direction, the stylus is deflected. For example, if the contact is in a horizontal direction, the stylus 14 tilts, about a point of contact between the surfaces 20 and 22. At this time, the cylinders 34 and balls 36 remain engaged with each other, and the tilting is accommodated by flexing of the planar spring 30. . . .

When the deflecting force on the stylus 14 ceases (i.e. when the probe is moved so that the stylus 14 no longer contacts the workpiece) the stylus member 12 is returned to its axial and lateral rest position by the action of the spring 24.

Col. 4, l. 52 to col. 5, l. 7. This passage refers to "when" as "at this time," i.e., when the planar spring is flexing and the cylinders, or analogously, the legs of the trampoline, have not yet lifted out of their moorings. In other passages, the written description states: "The instant at which the stylus tip 15 first contacts a workpiece can be detected in various possible ways," col. 6, ll. 10-11, that the photoelectric sensor is responsive to motion caused "when the stylus 14 begins to deflect upon contact with a workpiece," col. 6, ll. 33-34, "when the stylus 14 is deflected by contact with a workpiece, the cage 86 initially remains stationary in its kinematic rest position," col. 8, ll. 60-63, "all of the embodiments of FIGS. 4-10 may have any of the arrangements for detecting the instant of contact between the stylus tip and a workpiece," col. 9, ll. 16-20, and:

In operation, when the stylus 14 is deflected by contact with a workpiece, at first the skirt 72 and cage 64 lift or tilt bodily from the surfaces 74. . . . Also for the same reason, when eventually the stylus returns to its rest position, there is little or no hysteresis in its rest position.

However, the above bodily lifting or tilting of the cage 64 upon deflection of the stylus only lasts for a very small amount of stylus deflection.

Col. 8, ll. 11-13 (emphasis added to all quotations). These passages make abundantly clear that "when" in the patent means at the time of, and not some appreciable time thereafter. See Autogiro Co., 384 F.2d at 397, 155 U.S.P.Q. (BNA) at 702-03 ("Words must be used in the same way in both the claims and the specification.").

To the extent that these passages refer to the preferred embodiment, they cannot be read into the claims without some hook. The claim term "when" is that hook. Each of the passages above show that the patentee wanted "when" to mean as soon as possible after contact. In contrast, Renishaw's proferred construction of "when," which would sweep in any time whatsoever after contact, is so broad that it would require us to ignore the abounding statements in the written description that point decidedly the other way.

Renishaw might have us save its claim by placing a functional limitation on the claim such that "when" would permit signaling at any time after contact but no longer than would permit accurate measurement of the workpiece. However, this limitation appears nowhere in the claims; rather, it comes from a concept of operability. To the extent Renishaw must refer to the written description, the patentee's extremely detailed account of his invention in that written description shows that his aim was to generate a signal as soon as possible after contact, not to generate a signal at appreciable times after contact. Any delay in signaling with Renishaw's probes creates an unrecoverable error, because they must equate the position of the probe at the moment of signaling with the position of the workpiece. Therefore, delay in signaling while the probe continues to move creates an error. The patentee strove to eliminate this error, and the entire patent document exhibits his intent to
make the delay between contact and signaling as small as possible.

Our construction of "when" matches that of the district court. Although the district court initially construed "when" to mean "at the time that," it recognized that its choice of words could be read out of context to require immediate signaling, a physical impossibility. The district court therefore clarified its construction as follows:

While it is of course true that the laws of nature dictate that no detection device can be "absolutely instantaneous," the claims, specifications, figures, and Mr. McMurtry's testimony confirm that the patented probes signal as soon as possible when the stylus tip contacts the workpiece. The quicker the Renishaw probes trigger, the better their performance. In short, the patents teach the quickest signaling possible, and there is no suggestion otherwise. In fact, Mr. McMurtry stated that he taught good probes with quick signals, "wouldn't do anything but that, but to teach the best."

Renishaw, 974 F. Supp. at 1071. Consistent with this understanding and with the understanding that the claimed probes operate at a micron-level scale, we hold that claim 2 covers probes which signal within a nonappreciable period of time after contact such that the delay in signaling is insignificant when compared to the sensitivity and accuracy of the probe.

1. Claim 1, Element [b]: "a pin for extending into said security slot . . . when said slot engagement member is in locked position."

For the reasons expressed above, the term "when" is defined as "at or during the time that." The balance of the claim language needs no construction.

The parties dispute whether the clause "for extending into said security slot proximate said slot engaging portion when said slot engagement member is in said locked position" describes a functional attribute of the pin or a purely structural one. At the district court the parties agreed that in this context "when" means "at or during the time that," and on appeal they frame the question as whether "extending" is an "active verb" or a "state of being." The district court ruled that "extending" is used as an active verb, and that the pin must extend at or during the time that the slot engagement member is in the locked position. Kensington states that the court's construction is inconsistent with the plain meaning of the claim language, that the court improperly excluded the embodiments of patent figures 11 and 13 from the scope of the claims, and that this construction violates the doctrine of claim differentiation because during reexamination "when" was amended to "after" in other claims, which are presumptively of different scope, but was not amended in claim 10.

The specification shows that in operation of the patented device the slot engagement member is first placed in the security slot and then rotated to reach the locked position. The pin extends into the slot and prevents rotation to the unlocked position. The specification describes some embodiments in which the pin is extended into the slot before the slot engagement member is rotated, and others wherein the pin is extended after the locked position is reached by rotation. The '989 patent, a divisional in a family of patents claiming priority to U.S. Application Ser. No. 07/824,964, is directed to the invention exemplified in Figure 14, depicting an embodiment in which the pin is extended after the slot engagement member is in locked position. Figure 14 is shown on the front page of the '989 patent. See 37 C.F.R. § 1.84(j) ("One of the [drawings] should be suitable for inclusion on the front page of the patent application publication and patent as the illustration of the invention.") The claim states that the pin is "for extending" when the slot engagement member is in locked position (that is, after it is in the slot and rotated). Viewed in light of the specification, the phrase "for extending" is a functional restriction on the pin. See, e.g., K-2 Corp. v. Salomon S.A., 191 F.3d 1356, 1363, 52 USPQ2d 1001, 1004 (Fed. Cir. 1999) ("[T]he functional language is, of course, an additional limitation in the claim.") Kensington's argument that "for extending" describes a "state of being" that encompasses a pin that extends into the slot before locking is negated by the explanation and argument during prosecution. We conclude, as did the district court, that the participle "extending" refers to
During prosecution of the reexamination application, in response to a rejection of independent claims 1, 10, and 11 under 35 U.S.C. § 103, the applicant described the device of the Jacobi reference with: "A pin 25 is movable when the locking member is in the locked position to prevent the locking member from rotating," and also distinguished the reference on other grounds. In addressing a rejection of claims 1-3 under 35 U.S.C. § 102 and § 103 based on the Young reference, the applicant distinguished the pin, argued that "for extending" is a functional recitation that must be given patentable weight, and identified "when said slot engagement member is in said locked position" as a limitation not present in the references. The examiner accepted this argument, which the applicant consistently applied to the pin element of independent claims 1, 10 and 11, and withdrew rejections related to the Young reference, stating: "In Young, the slot engagement member 60 is put into its locking position when the pin enters the slot . . . . Because Young fails to teach a pin coupled through the housing which extends into the security slot after the slot engagement member is in the locked position the 102 rejection was improper." Statements made during prosecution which clearly disclaim a particular claim interpretation will limit the scope of the claims. Ballard Medical Products v. Allegiance Healthcare Corp., 268 F.3d 1352, 1359, 60 USPQ2d 1493, 1498 (Fed. Cir. 2001). See Southwall Technologies, Inc. v. Cardinal IG Co., 54 F.3d 1570, 1576, 34 USPQ2d 1673, 1676 (Fed. Cir. 1995) ("The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution.")

The Young reference was cited against claims 1-3. Kensington then amended independent claim 1, changing "for extending . . . when" to "and extending . . . after." Kensington also made changes to other aspects of claims 1 and 10 responsive to other rejections. The examiner then issued a Notice of Intent to Issue Reexamination Certificate, with a statement of Reasons for Allowance which reiterated his understanding that the pin is extended after the slot engagement member is in locked position:

The following is an examiner's statement of reasons for allowance: the instant invention is allowable over the prior art of record in that the prior art fails to teach or make obvious a computer locking system combining a computer having an aperture with a locking assembly as particularly claimed. In particular the prior art fails to teach or make obvious a computer locking assembly having a locking member which is rotatable to a locked position after being placed through an opening in a computer having a configuration matching that of the locking member and subsequently a pin being placed into the opening after the locking member is rotated to the locked position to hold the lock device within the computer such that the computer can be locked to another object using a cable to prevent theft of the computer.

Kensington did not respond to this statement. Although there is no obligation to respond to an examiner's statement of Reasons for Allowance, and the statement of an examiner will not necessarily limit a claim, Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1273, 59 USPQ2d 1865, 1874 (Fed. Cir. 2001), in this case the examiner simply repeated the arguments that the patentee had presented.

The pin was claimed in original claim 10 in the same terms as in claim 1, but claim 10 was not amended. Although Kensington argues that the examiner's Reasons for Allowance apply only to the claims in which "for extending . . . when" was replaced with "and extending . . . after" during reexamination, the examiner made no such distinction, and Kensington made no arguments for claim 10 that could suggest that this statement did not apply to all the claims. See Tandon Corp. v. United States International Trade Comm'n, 831 F.2d 1017, 1023, 4 USPQ2d 1283, 1288 (Fed. Cir. 1987) (recognizing that "two claims which read differently can cover the same subject matter.")

We conclude that the pin clause of claim 10 must be construed in the same way as the pin clause of claim 1, for the examiner's Reasons for Allowance make clear that the examiner and the applicant understood that the invention requires that the pin extends (actively) into the slot after rotation. See Modine Mfg. Co. v. United States International Trade Comm'n, 75 F.3d 1545, 1551, 37 USPQ2d 1609, 1612 (Fed. Cir. 1996) ("It is incorrect to construe a claim as encompassing the scope that was relinquished in order to obtain allowance of another claim, despite a difference in the words used.").

Kensington also argues that the specification includes embodiments, shown in Figures 11 and 13, that are not within the scope of claim 10 as construed by the district court. However, embodiments in which the pin extends through the slot before rotating to locked position were claimed in U.S. Patent No. 5,381,685, not in suit. The '989 patent is a division related to the '685 patent, and was filed in response to a restriction requirement. See 35 U.S.C. § 121 ("If two or more independent and distinct inventions are claimed in one application, the Commissioner may require the application to be restricted to one of
the inventions.") The '685 patent contains claims that do not limit pin extension temporally and claims that require that the pin extends into the slot before the slot engagement member is rotated to locked position. Figure 14 was selected "as the illustration of the invention" of the '989 patent. See 37 C.F.R. § 1.84(j). The presence in the '989 specification of embodiments carried over from the parent application, but claimed in other patents, does not serve to broaden the scope of the '989 claims that were the subject of the divisional application.

3. Engagement Position Signal Limitation

222. Claim 1 of the '275 patent includes the limitations of: (1) "providing a signal when said stylus engages said object thereby indicating the position thereof" and (2) "means for providing said signal when said stylus engages the object." The claims, specification, and prosecution history unambiguously indicate that the signal is generated at the time that the stylus first engages the object, thereby indicating the position of the stylus at contact. Tr 1334. See PP 62-68 supra. Accordingly, based on the specification and prosecution history of the '275 patent, the term "when" as used in claim 1 of the '275 patent, and as the term would be understood by those skilled in the pertinent art, must be construed to have the ordinary meaning of "at the time that."

223. The Court's construction of the signaling limitation is consistent with the Federal Circuit's interpretation of the same preamble claim language in Zeiss. Moreover, Renishaw is judicially estopped from asserting a different interpretation in light of its position in the Zeiss case that the language imposed "a requirement that a stylus/object engagement-position be indicated" and the Court's acceptance of that position. See P 67 supra.

8. "Stopping . . . when"

The displacing step (c) also provides for "stopping the relative displacement of corresponding contact surfaces when said testing determines said alignment and existence of correct electrical contact." As with displacing, the parties dispute whether stopping can be done manually. They also dispute whether "stopping . . . when" requires stopping as soon as the test is positive or whether the claim embraces a more leisurely stopping as well.

As to whether stopping may be manual, the ALJ concluded that it could be. In the Matter of Certain Removable Electronic Cards, Inv. No. 337-TA-396 (Initial Determination) [hereafter "ID"] at 55. The Commission disagreed. "We believe that the failure to describe a display element of some kind, or otherwise indicate how the user would know to perform stopping, is significant." ITC at 14. "We find that the specification does not teach that stopping can be performed manually."

This Court also finds that stopping cannot be accomplished manually. The term "stopping" alone does not require this result. But taken in context, the specification clearly contemplates automated stopping. Even in the alternative embodiment allowing for manual displacement, the inventor presumes that stopping will be accomplished by the electric device rather than the card holder. Col. 8, Ins. 26-37. As to the Commission's reasoning, it is not just the absence of a display element but the absence of any means for ensuring that once good electrical contact is achieved, it is maintained during manual stopping. Thomson's reference to the file wrapper is more on point for this purpose, because Moreno did stress to the PTO the non-obviousness and novelty of his invention for performing a electric test to achieve good contact. The Court understands Moreno's statement that in his invention the card is "subsequently aligned[] by an electric device," although appearing to refer to displacing, actually refers to stopping because the card is "aligned" at the point that displacement stops. See Prosecution History at II00133.

On the question of how quickly stopping occurs, Thomson urges that it be done as soon as possible. Innovatron argues that the term "stopping . . . when" does not mean "stopping . . . as soon as" but "stopping . . . if" good contact has been established, without a temporal limitation. The Commission held that
The phrase 'stopping . . . when' means stopping that occurs as a result of a positive test for correct alignment and electrical contact, and that is instantaneous or nearly instantaneous such that relative displacing is halted before the corresponding contact surfaces are moved from a position of proper alignment and correct electrical contact to a position out of such alignment and contact.

ITC at 15.

This Court concurs in the Commission's reading. The most common use of the term "when" is to indicate a point in time. For example, of the six definitions set forth in one respectable dictionary, the first five have a temporal meaning; only the sixth supports Innovatron's conditional reading. See WEBSTER'S II at 1313; see also Renishaw, 158 F.3d at 1250-53 (construing "when" to mean "as soon as" rather than "upon condition" after extensive discussion). The specification also supports reading "when" to mean "as soon as." When disclosing his invention, Moreno wrote:

(d) Testing . . . and stopping the . . . displacement when the electric contact has been established. This step of the process has as its purpose, in combination with the preceding steps, to facilitate the rapid placement in contact because as soon as this has been done, the process stops.

Col. 2, lines 18-24. Either the specification guides selection of which ordinary meaning to ascribe to "when," cf. Renishaw, 158 F.3d at 1251, or, alternatively, even if "when" did not have "as soon as" as its ordinary meaning, Moreno has acted as his own lexicographer and imposed that meaning in the disclosure.

The "cutting" step

Claim 1 of the '361 patent states, in relevant part:

1. A method of making a pizza comprising the steps of . . . (b) placing a plurality of separated individual food portions on the dough base such that, when the dough base is cut into substantially equally sized portions, each individual food portion is located upon a portion of each piece . . .

Defendant says that the phrase "such that, when the dough base is cut into substantially equally sized portions, each individual food portion is located upon a portion of each piece" is an essential limitation of the claim requiring that the pizza be cut in a specific manner. Plaintiff contends that the phrase should be construed as an optional step that merely explains where the food portions should be placed, and says that the phrase really means: "if the dough base were cut into equal slices, a food portion would be on each slice." Plaintiff argues that cutting the pizza such that there is an individual filled pocket on each piece is not required, but that "it is enough that it is possible to do so."

But the plain language of the claim says "when," not "if." If the patent applicants had wanted the language to be hypothetical, they would have drafted it in that manner.

The ordinary meaning of "when" in "when the dough base is cut" is that at some point, the dough base will be cut, not that it may be cut. Plaintiff's argument that "when" cannot actually mean "when" because the unbaked dough base is never cut is without merit; the applicants expressly refer to an unbaked dough base in other parts of the patent claims, but not in the language at issue.

Where the plain import of the language is clear, the court will not engage in speculative interpretation. See Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1344 (Fed. Cir. 1998) (actual words of claim are the controlling focus and the ordinary meaning of the claim language controls); see also White v. Dunbar, 119 U.S. 47, 52, 7 S. Ct. 72, 74-75, 30 L. Ed. 303 (1886) ("The claim is a statutory requirement, prescribed for the very purpose of making the patentee define precisely what his invention is; and it is unjust to the public, as well as an evasion of the law, to construe it in a manner different from the plain import of its terms.").

To determine whether the inventor used an ordinary term with a special meaning, the court reviews the specification and
prosecution history. CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1153 (Fed. Cir. 1997).

If the applicants wanted "when" to mean "if," they should have clearly so stated in the specification or file history. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996). But the applicants never argued in the specification or during prosecution that cutting the pizza to preserve the pockets on each slice was merely optional. See Laitram Corp. v. Morehouse Indus., Inc., 143 F.3d 1456, 1463 (Fed. Cir. 1998) (noninfringement where nothing in the written description suggests patentee's interpretation).

On the contrary, the applicants repeatedly stressed that their invention featured fillings enclosed in sealed pockets, and that the pockets should be preserved by cutting pieces around them. For example, the summary of the invention states that "because the closed pockets are uniformly distributed about at least a portion of the base of the pizza shell, those pockets facilitate cutting that portion into a plurality of substantially equally sized pieces with one pocket on each piece." See Laitram, 143 F.3d at 1463 (noninfringement where patentee recited disputed limitation in the summary of the invention).

The description of the invention states that the "pinched ends of the pockets facilitate cutting the pizza shells in a plurality of equally sized pieces, by providing a visual guide as to where the pizza shells should be cut" (emphasis supplied); and "cutting the pizza shells . . . into a plurality of pieces without cutting through the interior of pockets . . . insures that any food or filling in those pockets does not accidentally spill from those pockets as the individual pizza pieces are cut and handled."

The specification thus teaches that the objective of having sealed, closed pockets of filling on the pizza is so that the filling will be neatly contained within one pocket in each serving. Cutting the pizza in the manner specified in claim 1 is essential to that purpose. See Applied Materials, Inc. v. Advanced Semiconductor Materials, Inc., 98 F.3d 1563, 1574 (Fed. Cir. 1996) ("although patent claims are not ordinarily limited to the inventor's purpose, when that purpose is included in the claims it serves as a limitation of the claimed invention").

Furthermore, if the method was not limited by the cutting feature, there would be no advantage, to the consumer, of having sealed pockets of fillings on top of a pizza. When asked by the court during oral argument why such sealed pockets would be necessary if the patent did not require that the pizza be cut to preserve the pockets, plaintiff responded: "it does make it easier, for example, to make the pie." But plaintiff presents no evidence that that explanation was ever contemplated by the inventors. Ease of preparation as an advantage of having sealed pockets was not described in the specification, nor was it argued during the prosecution of the patent or in plaintiff's memoranda to the court.

Put simply, if cutting around the sealed pockets so that the contents do not spill out is not a required element of the patent, plaintiff's invention would make no sense. Construing the step of cutting the pizza so that the individual, sealed pockets are on each slice as an essential limitation of the invention preserves the "internal coherence" of the patent. See Markman v. Westview Instruments, Inc., 517 U.S. 370, 389, 116 S. Ct. 1384, 1395, 134 L. Ed. 2d 577 (1996) (task of the court is to determine whether a definition fully comports with the specification and claims and will preserve the patent's internal coherence).

Finally, the prosecution history shows that the applicants added the disputed language to the patent claim to overcome the patent examiner's rejections. On December 16, 1985, the examiner rejected the pending method claims 14-24 as "obvious manipulations [of the prior art] in [the] absence of unexpected or unobvious functions and/or results for same," and also rejected claims 14-18 as differing from the prior art "primarily in that they call for a pizza product" but that "it is not seen that this difference constitute[s] unobvious subject matter.

In response, the applicants amended prosecution claim 14(b) to recite: "placing a plurality of separated individual food portions on the dough base such that, when the dough base is cut into substantially equally sized portions, each individual food portion is located upon a portion of each piece " (amendments emphasized). That language was brought to the examiner's attention in the remarks accompanying the amendments, which were "in accord" with the applicants' interview with the examiner. The claims were allowed in the next office action.

The court concludes that the language was amended to provide the unobvious or unexpected function and/or results that the examiner demanded by describing a method to create a pizza with an enclosed pocket on each slice. Where language is added to overcome a rejection that an invention was obvious under the prior art, it is deemed to be an essential part of the
4. Meaning of "Whenever"

Semmler now argues that in distinguishing the prior art cited by the examiner, it was only necessary for him to show that his invention effected a fuel cut during both open and closed throttle overrunning and that accordingly, he is "not estopped to assert the doctrine of equivalents against Honda's fuel cut system that also cuts the fuel during both open and closed throttle over-running." Plaintiff's Combined Memorandum in Opposition to Honda's Motion for Summary Judgment of Non-Infringement and Invalidity, page 18. He argues that in the phrase "whenever the engine is over-running," he used the word "whenever" in its adverbial sense meaning "no matter when," instead of "each and every time." In this manner, Semmler is able to assert that in the proceedings before the patent office, he did not limit his invention to a device which would interrupt fuel supply each and every time the engine is overrunning, but that his claims were broad enough to cover any device which, like the accused device, effects both open and closed throttle fuel cuts. These arguments are unpersuasive.

The word "whenever" can be used as an adverb and as a conjunction. When used as an adverb, the word "whenever" means "at whatever time," or "no matter when," such as in the sentence: "We can leave whenever." Webster's Third New International Dictionary 2602 (1981). The word "whenever" can also be used as a subordinating conjunction which connects a subordinate clause to a main clause. When used as a conjunction, the word "whenever" can mean "at any or all times that" or "in any or every instance in which." Id. This use of "whenever" is meant to convey the existence of a consistent cause and effect relationship between the events in the "whenever" cause and the events in the main clause. Examples of this usage are: "Whenever it rains, he carries his umbrella."; "Whenever the large hand of the grandfather clock is over the number twelve, the chimes ring the hour." The word "whenever" used as a conjunction may also take its adverbial meaning. Examples of this would include: "Whenever [at whatever time, no matter when] you need help, I will assist you."; "Whenever you are ready, we will leave." In this latter usage, the word "whenever" begins a clause containing a conditional event or circumstance which may or may not happen to trigger the result in the main clause. This meaning of "whenever" entails an element of randomness and uncertainty, leaving open the possibility that the conditional event may never occur.

In the claims of the Semmler patent, the phrase "that is, whenever the engine is over-running" is a parenthetical phrase which explains the preceding phrase "whenever engine speed exceeds that speed which is associated with a predetermined state of the selecting means" and further defines the fixed relationship which will trigger the fuel cut. Claim 1, of the Semmler patent, Joint Exhibit I, column 9, beginning at line 46, reads as follows:

the two said monitoring means being linked together in a control circuit which provides a fixed relationship between the state of the said selecting means and engine speed, in such a manner that whenever engine speed exceeds that speed which is associated with a predetermined state of the selecting means, that is, whenever the engine is over-running, the said switching means operates the said control device to interrupt the supply of fuel[.] (Emphasis added).

In this sentence, the first "whenever" is used as a subordinating conjunction linking the phrases "whenever engine speed exceeds that speed," with the phrase "the said switching means operates the said control device." Semmler concedes that the first "whenever" should be given the meaning "each and every time," but argues that in the parenthetical phrase, it should be given its adverbial meaning, "no matter when." However, since the second "whenever" commences a parenthetical phrase intended to explain the preceding "whenever" phrase and to function as a definition of that phrase, it is logical to conclude that both "whenevers" are used in the same sense, meaning "each and every time."

Further, since the topic at issue is a device which produces a result, i.e., the interruption of fuel, upon the occurrence of a stimulus, i.e., where engine speed exceeds that speed which is associated with a predetermined throttle setting, it makes more sense, in terms of describing a working, effective invention, to construe "whenever" as meaning that the fuel supply is cut each and every time the stimulus of engine overrunning occurs. This usage is more appropriate in a description of how a device works. As indicated by the previous examples, construing the word "whenever" in its conditional sense of "at whatever time" or "no matter when" suggests that the condition, engine overrunning, might never occur. Such a suggestion, in addition to being inconsistent with the normal operation of an automobile, would also be out of context in and irrelevant.
to a description of how a device works in response to the stimulus of overrunning when it does occur. Even if "whenever" is defined as "at whatever time" or "no matter when", the second "whenever" clause, given its context, could only be reasonably construed as meaning that the fuel saving is effected "each and every time the engine is overrunning, regardless of at what time that occurs." Thus, in this instance, "at whatever time" and "each and every time" would no doubt mean the same thing to a person skilled in the art of automotive fuel control systems.

5. Driveability Issue

The Court has determined that "whenever" as used in the Semmler patent, has its usual and customary meaning, that is, "each and every time." Semmler argues that a device constructed in accordance with this interpretation would render an automobile "virtually undriveable, fundamentally unsafe, and certainly unsaleable." Plaintiff's Combined Memorandum In Opposition To Honda's Motions For Summary Judgment of Non-infringement and Non-validity, page 3. Whether or not this is the case, it is irrelevant. As the Court noted in its opinion and order of September 30, 1996, at p. 17: "There is no discussion of driveability problems in relation to setting the fuel cut. Fuel saving, not driveability, is the primary goal of the invention as described by Semmler." Some of the patents for automotive fuel control systems presently before the Court contain provisions for avoiding driveability problems. With the possible exception of teaching that the overrunning fixed relationship should be set in such a way that the maximum vehicle speed can be obtained under the most favorable anticipated operating conditions, the Semmler patent ignores driveability problems. Evidence in the Markman hearing indicated that potential licensees of the Semmler device rejected it because of anticipated driveability problems. See, e.g., exhibits CC and HH. Semmler's arguments about driveability problems have not persuaded the Court to modify its interpretation of Semmler's claims as set forth in its orders of September 30, 1996 and December 16, 1996. Those arguments were fully considered by the Court when it interpreted the patent claims.

6. Whereby Low Pressure is Maintained Throughout said Annular Space (Claims 9 and 15)

Plaintiffs focus on the term "low pressure" and define it as "any pressure below atmospheric pressure." 57 Defendant's position is that the whereby clause is meaningful and is limiting. 58 Defendant focuses on three terms within the clause, "low pressure," "maintained," and "annular space." Defendant originally argued that the term "low pressure" is a relative term that is vague in the context of claims 9 and 15 because it lacks a reference point. 59 In its response brief, Defendant suggested that the specification and prosecution history dictate a meaning of "less than approximately 100 mbars." 60 Defendant argues that "to maintain" means actively to keep in existing state. 61 As for "annular space," Defendant proposes that it includes both the free passageway and the microporous insulation. 62 Plaintiffs do not contest that the clause has meaning, but take issue with Defendant's definitions of "low pressure" and "maintained."

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57 Plaintiffs' Opening Claim Construction Brief, Docket Entry No. 22, p. 9; Plaintiffs' Markman hearing arguments.

58 See Defendant's Brief on Claim Construction, Docket Entry No. 23, pp. 11-14; Defendant's Markman hearing arguments.

59 Defendant's Brief on Claim Construction, Docket Entry No. 23, p. 3.

60 Defendant's Response Brief on Claim Construction, Docket Entry No. 26, p. 3; see also Defendant's Markman hearing arguments.

61 Defendant's Brief on Claim Construction, Docket Entry No. 23, p. 13; Defendant's Markman hearing arguments.

62 Defendant's Brief on Claim Construction, Docket Entry No. 23, pp. 3, 14; Defendant's Markman hearing arguments.

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Although the court does not agree with Defendant's reasoning, the court does agree that the whereby clause has meaning as
a limiting clause. Of the three terms in that clause on which Defendant focused, only one, "low pressure," requires much
discussion. The court begins there. One dictionary definition of the word "low" is "below a standard or average." Webster's
II New Riverside University Dictionary 706 (1984). The court is convinced that atmospheric pressure (1000 millibars or 1
bar) is a standard recognized by persons skilled in the art of the patent. Accordingly, the definition proposed by Plaintiffs,
"any pressure below atmospheric pressure," provides the term with its ordinary meaning. The term is easily understood and
is not vague.

"Unless compelled otherwise, a court will give a claim term the full range of its ordinary meaning as understood by persons
skilled in the relevant art." Tex. Digital Sys., Inc., 308 F.3d at 1202. A court should not narrow a claim term simply based on
descriptions of the invention in the specification and prosecution history. See CCS Fitness, Inc., 288 F.3d at 1366. Rather,
the ordinary meaning applies unless the patentee expressly narrows it, for example, by providing his own definition, by
distinguishing the claim term from a prior invention, or by disclaiming certain subject matter. Id. at 1366-67. The party
seeking to narrow the definition bears the burden of overcoming the presumption in favor of the term's ordinary meaning.
Id. at 1366.

Defendant's efforts to narrow the meaning to cover only pressures below 100 millibars are unavailing for several reasons.
First, the doctrine of claim differentiation supports the conclusion that different claims have different scopes. See Sunrace
Roots Enter, v. Sram Corp., 336 F.3d 1298, 1302 (Fed. Cir. 2003). "Our court has made clear that when a patent claim does
not contain a certain limitation and another claim does, that limitation cannot be read into the former claim in determining
either validity or infringement." Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1326 (Fed. Cir. 2003) (internal
quotation marks omitted). In this case, only claim 1 is limited to pressures below 100 millibars. 63 If not for this difference,
claims 9 and 15 could have been written as dependent claims on claim 1.

63 Compare 547 patent at 9:13-14 (stating "whereby low pressure below 100 millibars is maintained throughout said
annular space") with id. at 9:50-51; 10:32-33 (stating "whereby low pressure is maintained throughout said annular space").

64 Defendant contends that low pressure can only be construed to mean pressure below 100 millibars and, therefore, must
be so construed throughout the patent. Defendant relies on Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1538 (Fed. Cir.
1991), which quotes Autogiro Co. of Am. v. United States, 384 F.2d 391, 404, 181 Ct. Cl. 55 (Ct. Cl. 1967), as stating:

The concept of claim differentiation . . . states that claims should be presumed to cover different inventions. This means
that an interpretation of a claim should be avoided if it would make the claim read like another one. Claim differentiation is
a guide, not a rigid rule. If a claim will bear only one interpretation, similarity will have to be tolerated.

Because the court disagrees with Defendant that "low pressure" is narrowed in any respect by the intrinsic evidence as
explained in this section, the court finds that the cited case law is inapplicable. Certainly, "low pressure" retains the same
meaning throughout the claims, it simply does not retain the added limitation of claim 1.

Second, the specification supports a broad reading of "low pressure." In one place, the specification calls for pressure in the
range of .5 millibars to 100 millibars, stating: "One result achieved by the invention is that a partial vacuum will prove
sufficient resulting advantageously in a reduced pressure of between 0.5 mbars and 100 mbars." 65 However, in another
embodiment, it is contemplated that "depression on the order of 1 to 100 mbars, which optionally might not exceed a low
pressure value of about 900 mbars" could be used under certain circumstances. 66 In light of this second embodiment,
the first does not evidence an intention to depart from the full range of ordinary meaning. Rather, the two references together
support a finding that the patentee intended for low pressure to carry a broad meaning.

65 547 patent at 3:26-29; see also 7:19-20, 64-67.

66 Id. at 8:41-52 (emphasis added). Because the remainder of this sentence also refers to a pressure of fifty bars, the section
is confusing to Defendant. See Defendant's Response Brief on claim Construction, Docket Entry No. 26, pp. 1-2. "It is unclear from that passage exactly what pressure would be considered low." Id. at p. 2. The court is not similarly confused. The sentence speaks of "overpressure" and pressures "as high as 50 bars," while specifically referring to 900 mbars as "a low pressure value." 547 patent at 8:47, 49, 52.

Third and last, the prosecution history indicates that the patentee relinquished a portion of the full range of meaning attributable to the term "low pressure" with regard only to claim 1. Upon application, the examiner rejected claims 1-3 over U.S. Patent No. 4,718,459 ("Adorjan"). 67 Interestingly, the rejected claim 3 included a pressure requirement of 0.5 to 100 millibars. 68 The examiner explained that Adorjan discloses a double-casing pipe for subsea pipelines, an annular sealed space, coaxially-arranged pipes, flexible open-pore microporous material, and a free passageway for gas flow. 69 With regard to low pressure, he noted that Adorjan "described that the gas can be at 0.896 Pascals in certain water depths, which suggests at lesser depths lesser pressure is needed, and that this pressure falls between the range set forth in claim 3." 70

Defendant's hearing exhibits, Tab 6, Office Action Summary dated Aug. 18, 1999, p. 3. The original claims read as follows:

1. A double casing pipe to be especially used in offshore oil pipelines, characterized in that, in an annular sealed space (5) located between an inner tube (1) and an outer tube (2) both coaxially arranged inside each other, there is included a self-sustaining plate (7, 8, 9) made of open pore-microporous [sic] material, which is flexible enough to be wound around the inner tube (1), and in that there is provided outside said material within said annular space, a free passageway to allow longitudinal gas flow whereby low pressure is maintained throughout said annular space.

2. A pipe according to claim 1, characterized in that said passageway is in the form of an annular layer which remains free between the plate of microporous material and the inner wall of the outer tube, said plate being inferior in thickness to said annular space (5).

3. A pipe according to [sic] claims [sic] 1 or 2, characterized in that said low pressure is comprised between 0.5 [sic] and 100 millibars.

Defendant's hearing exhibits, Tab 2, original claims.

In his responsive amendment, the patentee made several changes to claim 1, but did not amend the low pressure requirements. 71 Instead, he argued that Adorjan requires that high pressure, not low pressure, be maintained in the annular space, in order to keep water out. 72 In response to this attempt to traverse his rejection by distinguishing Adorjan, the examiner stated:

With respect to the gas pressure, applicant only claims low pressure, which is a relative term, and therefore the pressure set forth in Adorjan is considered to be a low pressure. Also, due to the fact that the pressure of Adorjan is dependent upon depth of the pipe in water, a pipe used for shallow water depths would have a relatively low gas pressure needed, and would still meet applicant's claim language. 73

Thereafter, the patentee acquiesced and added the limitation to claim 1 requiring that pressure below 100 millibars be maintained. 74 This amendment also contained two previously dependent claims rewritten into what eventually became
claims 9 and 15. Neither contained the 100 millibar limitation. The patentee explained the changes to claim 1, "In order to overcome [the] rejection, Claim 1 has been amended to make it clear that the self-sustaining plate is made of an open-pore microporous insulating material and that low pressure below 100 mbars is maintained throughout the annular space in which the self-sustaining plate is located." In addition, the patentee again argued against the examiner's position that Adorjan employs low pressure in the annulus:

Contrary to the present invention, Adorjan teaches that a high pressure should be maintained throughout the annular space.

... The Examiner relies upon a typographical error . . . wherein Adorjan states, at 300 feet (91.4 meters), the external pressure on a pipeline will be 129.9 pounds per square inch (0.896 Pa). Thus, gas in the annulus must be pressurized to a value greater than 129.9 psi (0.896 Pa).

This statement contains an error because the text should read, 0.89 MPa' and not merely 0.896 Pa. If one thinks about it, the value of 0.896 Pa is completely absurd since a person of ordinary skill in this technology knows that 91.4 meters of water produce a pressure of about 9 bars which is 0.9 MPa. Thus, the apparent inadvertent deletion of the M creates an error by a factor of approximately 1 million.

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72 Id. at pp. 6-7.
75 Id. at p. 2.
76 See id.
77 Id. at p. 5.
78 Id. at pp. 5-6.
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Ultimately, the examiner approved the 547 patent with the additional low pressure limitation in claim 1, but not in claims 9 and 15. The discourse between patentee and examiner suggests at least two plausible reasons for approval; either the two clarifications to claim 1 satisfied the examiner or the patentee convinced the examiner that he had misread Adorjan. Either way, the examiner allowed the patentee's choice of words in claims 9 and 15, which facially did not include the limitation that the pressure be below 100 millibars. The court concludes from this fact that claims 9 and 15 were patentable (because of other limitations they contained), without narrowing the bounds of "low pressure." Defendant conceded as much during the Markman hearing.

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79 Defendant's Markman hearing arguments.
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From a close review of the prosecution history, the court concludes that the only clear disavowal of subject matter in the prosecution history relates to claim 1. Cf. Sunrace Roots Enter., 336 F.3d at 1306 (stating that prosecution history cannot be
used to narrow a claim absent a clear disavowal. Even though prosecution history estoppel affects claim 1, it does not preclude the construction of "low pressure" advanced by Plaintiffs and recommended by this court or otherwise limit claims 9 and 15 in any way.

The next term of the whereby clause that is in contention is "maintained." "Maintain" means to continue, to carry on, or to preserve or to keep in an existing condition. Webster's II New Riverside University Dictionary 717 (1984). The court finds no support in the intrinsic evidence or elsewhere for Defendant's suggestion that the pressure must be actively maintained. Sealing a pipe section effectively maintains the pressure. Finally, with regard to "annular space," the parties agree that it includes both the free passageway and the microporous material. To the extent any definition is necessary, the court concurs with the parties.

In summary, the court recommends that "whereby low pressure is maintained throughout said annular space" be construed to refer to pressure below atmospheric pressure that is preserved within the annular space, which includes both the free passageway and the microporous insulation.

5. "whereby rotational movement of the mounting means is inhibited" -- This term appears in both Claims 1 and 8. The parties agree that the "whereby" clause only modifies the preceding clause describing the "projection means" in Clause 8, but the parties disagree about what the clause modifies in Claim 1.

Claim 1: ". . . and a means for mounting said coiled ribbon spring, . . . and said mounting means being secured in said channel means, said mounting means having a raised spine positioned between and in the same plane as said inwardly turned opposed flanges of said channel means whereby rotational motion of said mounting means in inhibited."

Claim 8: ". . . and a means for mounting said coiled ribbon spring, . . ., said mounting means being secured in said channel means and the mounting means having projection means positioned between said inwardly turned opposite flanges of the channel means within which the mounting means is positioned, whereby rotational movement of the mounting means in inhibited."

I find that as a matter of syntax, the "whereby" clause only modifies the preceding clause describing the raised spine. Amesbury's citation to Idexx Laboratories, Inc. v. Abaxis, Inc., 222 F.Supp.2d 66, 73-74 (D. Me. 2002) is unavailing. There is no rule that a "whereby" clause must modify the entire claim limitation. In fact, the Court in Idexx concluded that the "syntax of the sentence alone does not answer [the] debate" of whether the "whereby" clause at issue in that case modified only the three steps explicitly recounted or the entire description of the claimed method. Id.

"What controls here is no legal test' derived from some different fact situation but common sense interpretation of language according to the rules of grammar in the context in which it occurs." In re Dean, 48 C.C.P.A. 1072, 291 F.2d 947, 952-53, 1961 Dec. Comm'r Pat. 474 (1961)(emphasis added). It seems clear that the "whereby" clause only modifies the description of the "raised spine", not that description and the preceding clause which is set off by a comma. There is certainly no basis in the syntax of Claim 1 to conclude, as Amesbury argues, that the rotation of the mounting means is inhibited "either by the structure of the mounting means alone or in conjunction with the way it is installed in the mounting assembly." It would actually make more sense if the "whereby" clause in Claim 8 modified both the of requirement of being secured in the channel and having projection means positioned in a certain way. However, the parties agree that even in Claim 8, the "whereby" clause only modifies the "projection means".

To the degree that there is any confusion or ambiguity in the syntax of Claim 1, I find that on balance the prosecution history supports my conclusion that the "whereby" clause only applies to the "raised spine" described in Claim 1. I look to the prosecution history as urged by Caldwell, because the specification could be interpreted to add to the confusion and ambiguity Amesbury is attempting to exploit.

Some sections of the specification clearly link the prevention of rotation with the positioning of the "raised spine". For example, the description of the mounting element in Figures 7 and 8 explains that the width of the raised spine formation is arranged such that it is a snug fit between the open lip portions of a channel to inhibit a rotational, pivoting or twisting motion. [638 Patent, col. 5, 11. 7-13.] The specification makes this point even more clearly with respect to the "lateral ears"
formation, which has the same purpose as the "raised spine", since the "lateral ears . . . are intended to prevent rotation of the mounting element about a fixing screw . . . received, in use, in recessed bore." [638 Patent, col. 4, 11. 44-47.]

In contrast, other parts can be read to mean that the fixing screw is also supposed to prevent rotation. According to the specification, "the mounting element may be provided with formations conformed so as to cooperate with a portion of the sash frame within which the element is to be received, such that contact of said formations with said sash frame inhibits in a rotational, pivoting, or twisting sense of the element relative to the sash frame." [638 Patent, Summary, col. 2, 11. 59-64 (emphasis added).] The use of the word "may" in this description is confusing and misleading because both of the independent claims require respectively a "raised spine" or "projection means" that inhibits rotation. The Summary of the Invention then sets out in a separate paragraph that "it will be apparent that the mounting element does not rotate or otherwise move with the spring but is substantially stationary when the spring is in operation." [638 Patent, Summary, col. 2, 11. 65-67.] The fact that the two sentences are separate paragraphs could be read to mean that even without the formation described in the first paragraph, the mounting element does not rotate. And the only explanation for non-rotation is that the mounting element is be secured to the window frame by a fixing screw.

Despite the ambiguity in the specification, the prosecution history "inform[s] the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." Phillips, 415 F.3d at 1317. Originally Claim 1 made no mention of the "raised spine . . . whereby rotational motion of said mounting means is inhibited." The patent examiner denied the patent, rejecting Claims 1-5 and 8-9 because they were clearly anticipated by Sterner's "Coil spring counterbalance hardware assembly and connection method therefor", U.S. Patent No. 5,157,808 and Foster's "Spring sash counterbalance", U.S. Patent No. 3,992,751. It is only when the patentee sought to amend the claims in light of the rejection that he added "said mounting means having a raised spine positioned between and in the same plane as said inwardly turned opposed flanges of said channel means whereby rotational motion of said mounting means is inhibited." In explaining the change, the patentee emphasized that "none of the cited art show anti-rotational means which interact with flanged channels to prevent rotation of the mounting means." Consequently, I find that the "whereby" clause only modifies the description of the "raised spine", not that description and the preceding clause which is set off by a comma.

Having reached this conclusion, however, I do not mean that the fixing screw or other fixing method that secures the mounting element to the window jamb channel cannot contribute to the substantially stationary position of the mounting element when the spring is in operation. There is nothing in the Claims or the specification that would prohibit attributing any anti-rotational effect to the method of fixing or securing the mounting element to the window jamb channel. The Claims recognize, for instance, that if a mounting element without a raised spine was fixed to the channel, it might not rotate or pivot under minimal stress. But when the window sash was opened with a certain amount of force or opened a certain distance, the force might overcome the anti-rotational inertia effect of simply being secured by a fixing screw. Therefore, it is the addition of the "raised spine" in this patent that inhibits any rotation of the mounting element under any normal condition.

Construction -- The mounting means is to be secured in the channel means. And the mounting means is to have a raised spine positioned between and in the same plane as said inwardly turned opposed flanges of said channel means whereby rotational motion of said mounting means is inhibited.

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7. What is the Proper Construction for the Phrase "whereby said substantially uniform particulate mixture is deformed, consolidated into a desired form and solidified in the extrusion die and is extruded from said die cavity as a solid composite porous article" in the '948 Patent?

Claim 1 of the '948 patent contains the phrase "whereby said substantially uniform particulate mixture is deformed, consolidated into a desired form and solidified in the extrusion die and is extruded from said die cavity as a solid composite porous article." KXI contends this "whereby" clause merely states the necessary result of operating a device containing the claimed elements. According to KXI, it does not add any additional claim limitations. Culligan contends the "whereby" clause adds a limitation to the claim. Culligan construes the "whereby" clause to mean that, as a necessary result of the above steps, the "substantially uniform particulate mixture' changes form due to softening, is shaped under pressure and is
solidified, all within the extrusion die, and the resulting product is extruded from the die as a solid composite article having pores.

KXI argues that the Federal Circuit teaches that a "whereby" clause that merely states the result of the limitations in the claim, "adds nothing to the patentability or the substance of the claim[,]" citing Texas Instruments v. ITC, 988 F.2d 1165, 1172 (Fed. Cir. 1993). According to KXI, the "whereby" clause of claim 1 "merely states the necessary result of operating a device containing the claimed elements," and therefore, "does not add any additional claim limitations."

Culligan argues that the "whereby" clause was added to the claim to overcome an examiner's objection, and as such it "must be deemed an essential feature necessary to the establishment of infringement[,]" citing Eltech Sys. Corp. v. PPG Indus., Inc., 710 F. Supp. 622, 633 (W.D. La. 1988), aff'd 903 F.2d 805 (Fed. Cir. 1990). See also Quality Semiconductor, Inc. v. Pericom Semiconductor, Inc., No. C-95-01785 MHP, 1998 WL 118186, at *5-6 (N.D. Cal. March 2, 1998); Thermalloy Inc. v. Aavid Eng'g, Inc., 935 F. Supp. 55, 60 (D.N.H. 1996, aff'd, 121 F.3d 691 (Fed. Cir. 1997).

According to Culligan, during the prosecution of the '948 patent, the patentee amended claim 1 to include the present "whereby" clause "for the express purpose of distinguishing that claim over the prior art." The patentee made the following amendment: "whereby said [solid composite material] substantially uniform particulate mixture is deformed, consolidated into a desired form and solidified in the extrusion die and is extruded from said die cavity as a solid composite porous article." The patentee added this language to claim 1 to overcome a rejection based on the prior art of the Leitl and Zavasnik patents.

According to Culligan, the patentee relied on the amended "whereby" clause to distinguish the Leitl and Zavasnik patents. For example, the patentee distinguished the invention of the application from Zavasnik as follows: "solidification [in the Zavasnik extruder] . . . takes place outside the extrusion die, i.e., in the water chamber (12), whereas in the claimed invention of this Application, deformation, consolidation and solidification of the particulate matter occurs in the die cavity."

The court agrees with Culligan that the patentee amended claim 1 by adding the "whereby" clause to overcome a rejection by the examiner, and then relied on the amendment to distinguish prior art. The court finds the "whereby" clause does not merely state the result of the limitations of the claim, but adds limitations to the claim. The court construes the "whereby" clause according to the ordinary meaning of its terms. Accordingly, the court finds the phrase, "whereby said substantially uniform particulate mixture is deformed, consolidated into a desired form and solidified in the extrusion die and is extruded from said die cavity as a solid composite porous article[,]" means that, as a necessary result of the above steps, the "substantially uniform particulate mixture" changes form due to softening, is shaped under pressure, and is solidified, all within the extrusion die, and the resulting product is extruded from the die as a solid composite article having pores.

Claim 1 concludes with a "whereby" clause:

whereby said vascular cavity is occluded by said distal tip, and any thrombus formed by use of said tip

('136 Patent, Col. 9:17-19.)

The parties dispute the proper construction of the "whereby" clause. A "whereby" clause in a method claim may express the intended result of a process. See Minton v. Nat'l Ass'n of Securities Dealers, Inc., 336 F.3d 1373, 1381 (Fed. Cir. 2003). The "whereby" clause may also express a limitation on the method and thus be part of the method itself. Hoffer v. Microsoft Corp., 405 F.3d 1326, 1330 (Fed. Cir. 2005). In this case, the Court finds that with respect to Claim 1, the "whereby" clause imposes a limitation. The "whereby" clause requires that the occlusion be composed of both the distal tip and any thrombus formed by use of the distal tip.

The Court construes "whereby said vascular cavity is occluded by said distal tip, and any thrombus formed by use of said tip"
As a consequence of the method, a vascular cavity is blocked by the detached distal tip and any thrombus formed by use of the distal tip.

**4420**

e. "whereby the processing does not require[] movement or operator handling of said wafers between said steps"

The phrase "whereby the processing does not require[] movement or operator handling of said wafers between said steps" appears in Claim 1 of the ‘532 patent. An almost identical phrase appears in Claims 54, 55, 57 and 58. CFMT asserts that this phrase precludes movement of the wafers between steps of the claimed process. According to CFMT, however, the phrase does not preclude all movement of wafers. YieldUP counters that the phrase excludes any cleaning process in which wafers are moved between vessels between steps of the process.

The specification of the ‘532 patent states that the invention does not require "handling by a human or robotic operator of the wafers between the steps of a multi-step fluid process such as prediffusion cleaning." During the prosecution of the ‘532 patent, the inventors distinguished their invention from the prior art because each step in the invention is carried out in a single vessel. For example, to overcome the examiner's rejection based on the Aigo and Gluck references, McConnell and Walter stated that "the wafers are apparently still moved from step to step in the wafer boat . . . ." Therefore, the court finds, as advocated by YieldUP, that the phrase "whereby the processing does not require[] movement or operator handling of said wafers between said steps" excludes any cleaning process in which wafers are moved between vessels between steps of the process.

**4421**
f. "wherein, during use"

The phrase "wherein, during use" appears in independent claim 9. Boston Scientific asserts that the phrase is unambiguous and needs no further explanation. ev3 proposes that the phrase be construed as "[a] user, such as an interventional cardiologist, positions the guidewire across the portion of the vessel that has been narrowed by disease, manually expands the filter and deploys the stent in the portion of the vessel that has been narrowed by disease, removes the catheter from the vessel, and leaves the stent in place."

Ev3’s proposed limitations on "wherein, during use" conflict with the Court's previous construction of the phrases "deploying the filter" and "filter . . . deployment capabilities" as not requiring manual action. In addition, the phrase "wherein, during use" is readily understood. Therefore, the Court declines to construe the phrase.

--- Footnotes ---

5 Similarly, the Court declines to construe the phrase "wherein, during use" in the ‘987 and ‘505 Patents.

--- End Footnotes ---

**4422**

III

M-3 contends that there is a genuine dispute of material fact as to whether Cargo's Model A contains the key limitation: "the counterbalancing means . . . wherein each spring element is tensioned so as to be able to independently restrain the door against opening once the door is in a closed position" (the "independent spring restraint feature"). '828 patent, col. 4, l. 65 -
First, we must construe the key limitation in claim 1 of the '828 patent. Claim construction is a matter of law that we review without deference. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1455, 46 USPQ2d 1169, 1174 (Fed. Cir. 1998) (en banc). Claim language must be interpreted in light of the specification and prosecution history. Biovail Corp. Int'l v. Andrx Pharms., Inc., 239 F.3d 1297, 1301, 57 USPQ2d 1813, 1816 (Fed. Cir. 2001).

M-3 suggests that the claim should be construed so that the springs act to restrain the door against any "opening." Appellant's Reply Br. at 8-9. On the other hand, Cargo argues that each spring must be independently tensioned so as to "limit or restrict the door from opening once it is closed," but not "to restrict the door from any movement whatsoever." Appellees' Br. at 20-21. We agree with Cargo's claim interpretation.

The language of the claim requires that the device "restrain the door against opening." The dictionary definition of "restrain" includes both "prevent" and "moderate or limit the force." Webster's Third New International Dictionary 1936 (1968). This definition supports the view that the claim limitation encompasses restricting the door from opening, without restraining the door against any opening. The specification also indicates that Cargo's broader definition was valid:

'[The] door remains partially counterbalanced even in the event that one spring breaks so that a closed door will remain closed instead of dropping immediately to the open position. Furthermore, if a spring breaks when door is being opened or closed, door will open to the open position, but with less force than would be the case using a single spring system, an important safety feature of the present invention.'

'828 patent, col. 4, ll. 30-37 (numbering omitted) (emphasis added).

The specification focuses on the safety aspect of decreasing the force associated with opening ramp doors. As long as the door is at least partially counterbalanced against opening, this feature is achieved. In light of the claim language and the specification, we construe the "independent spring restraint feature" as requiring two springs that are independently sufficient to counterbalance the door and reduce the force with which the ramp door swings open, although each spring acting alone does not have to restrict the door from any movement whatsoever.

4423

(7) "Wherein said loops disposed on said first meander patterns and said loops disposed on said second meander patterns are disposed and adapted to cooperate so that upon the expansion of said stent said loops change shape to compensate for the tendency of said stent to foreshorten when said stent is expanded." The loops disposed on the first meander patterns and the loops disposed on the second meander patterns must be oriented in different directions, one a generally vertical direction and one a generally horizontal or longitudinal direction. This limitation encompasses growth of one of the sets of loops in the longitudinal direction that is caused by expansion of the stent by a balloon or other mechanical means.

4424

1. "wherein said metal block further comprise[s] a plurality of receptacles for supporting a plurality of containers"

This claim element limits the metal block to one having a plurality of recesses. As acknowledged by Applaera, the term "receptacles" equates to the written specification's "reaction well" or "reaction vessel." See Markman Tr. Vol. 1 [Doc. # 681] at 120:4, 13-15. By further specifying that the "reaction well" of the specification is "for supporting a plurality of containers," the claim designates the first of the two alternative kinds of reaction wells described in the specification, see '675 Patent, col. 7, l. 63 - col. 8, l. 3 ("The heat exchanger 10 supports the reaction well 40, which may be a recess machined into the heat exchanger, but preferably is a plastic container which holds the fluids involved in the reaction and which sits in a recess formed in heat exchanger 10."). Because nowhere does the specification envision that the preferred reaction well, a plastic container which holds fluids, would in turn be used for supporting another container. Thus, the language of the claim as defined in light of the specification rebuts assigning "receptacle" its ordinary meaning. See e.g., Webster's New
World Dictionary of the American Language 1185 (2d college ed. 1984)("anything used to contain or hold something else; container; vessel.").

4425

2. "wherein the bias element operates on the blade through a cavity formed in the handle, the cavity extending parallel to and spaced outwardly from the plane of travel of the blade"

Plaintiff proposes "at least a portion of the bias element is positioned within a recess or cavity in the handle. A second portion transmits force from the first portion to the blade, which is outside the cavity."

Defendant proposes "wherein the bias element imparts the rotational force onto the blade through a cavity formed in handle."

This phrase is the same as the second and third disputed terms from claim one, except "bias element" has replaced "spring."

The court finds it is clear on its face.

4426

7. Wherein the Circumference of the Spacer at at Least One Point is Greater Than the Circumference of the Spacer at at Least One Other Point

At issue here is the meaning in dependent Claim 5 of the italicized portion of the following phrase: "The cutting cylinder of claim 1 wherein the circumference of the spacer at at least one point is greater than the circumference of the spacer at at least one other point." '780 Patent, col. 4, lines 17-19 (emphasis added). Fellowes argues that this phrase, element 5(b), means "the circumference of the spacer is different at at least two different points." Michilin proposes that it means "the spacer's circumference, which extends completely around the shaft, is different at at least two different points, and each spacer has at least two different circumferences." Intek's proposed construction is identical to the claim language itself.

All three parties' constructions recognize, as the specifications and Figures 2 and 3 make clear, that the circumference of the "spacer" differs at different points of the "spacer" depending upon the embodiment, of which more than are within the scope of the patent. See id. at col. 3, lines 13-25 ("It will be appreciated that the circumference of the spacer 20 at at least one point a is greater than the circumference of the spacer 20 at at least another different point b . . . . It should be understood that the spacer 20 described above can be changed in many ways yet still remain within the scope of the invention."). The parties' constructions also recognize the need to read the phrase at issue in Claim 5, which is dependent upon Claim 1, consistently with Claims 6, 7 and 8, each of which are dependent upon Claim 5 and teach specific variations of Claim 5 by offering ways in which the circumference of the "spacer" at one point differs from the circumference of the "spacer" at another point. See e.g. id. at col. 4, lines 20-23 (Claim 6 teaches "the cutting cylinder of Claim 5 wherein the circumference of the spacer at its center is greater than the circumference of the spacer at at least one of its edges").

It appears that the only issues for construction are whether, for purposes of Claim 5, the circumference of the "spacer" "extends completely around the shaft," and whether "each spacer has at least two different circumferences."

The observation that the "spacer's" circumference "extends completely around the shaft" appears to be redundant in light of the plain and ordinary meaning of the word "circumference," a word that the specifications do not define. See WEBSTER'S THIRD NEW INT'L DICTIONARY 409 (defining "circumference" as "the surface or outer limits of a sphere or rounded body [and] the measure of the perimeter of a great circle or sphere"). Michilin's view that "each spacer has at least two different circumferences" is compelled by the plain terms of Claim 5, which refers to two different circumferences: one "at one point" and one at "one other point." '780 Patent, col. 4, lines 17-19. Michilin's construction also finds support in the file wrapper, in particular the patentee's remarks requesting that the USPTO withdraw its rejection of Claim 5, among other claims which, the USPTO found, were anticipated by Deck. To distinguish Deck, the patentee stated, "Deck does not disclose a cross-cut shredder having displaced cutting disks separated by spacer where the linear measure of the spacer along is surface is greater than the distance between two adjacent disks and where each spacer has at least two different circumferences.") (emphasis added). See id. at FE 000507.
For these reasons, the Court FINDS that "wherein the circumference of the spacer at at least one point is greater than the circumference of the spacer at at least one other point" in Claim 5 means "the spacer's circumference is different at at least two different points," and further that "each spacer has at least two different circumferences."

8. "Wherein the Circumference of the Spacer at its Center is Less Than the Circumference of the Spacer at at Least One of its Edges"

Claim 7 of the '780 Patent, which is dependent upon Claim 5, reads in its entirety: "The cutting cylinder of claim 1 wherein the circumference of the spacer at at least one point is greater than the circumference at at least one other point." '780 Patent, col. 4, lines 17-19 (emphasis added). Fellowes and Michilin construe the italicized phrase, element 7(b), to mean "the circumference of the spacer is smaller at its center than at one or both of its edges" and further that "for a separate spacer, the edge would be the end of the surface, and for an integral spacer the edge would be where the surface meets the disk." Intek defines element 7(b) to mean that "the circumference of the spacer, which is separate from the two cutting disks, is smaller at its center than at one or both of its edges."

The parties all agree that the circumference of the "spacer," for purposes of Claim 7, is "smaller at its center than at one or both of its edges." In addition, the Court has already dealt with the issue of whether the "spacer" is "separate from the two cutting disks." See supra elements 1(i) and 12(g). The only issue with respect to element 7(b), then, is whether to add the sentence proposed by Fellowes and Michilin in which a distinction is drawn between the "edge" of "a separate spacer" and the "edge" of "an integral spacer." The Court sees no need to embellish the claim and therefore refuses to adopt it in this particular claim construction. Accordingly, the Court FINDS that "wherein the circumference of the spacer at its center is less than the circumference of the spacer at at least one of its edges" means "the circumference of the spacer is smaller at its center than at one or both of its edges."

4428

D. Claim 34

A device as in claim 33 wherein the differential expansion portion is formed from an elastomer material and is bulbous in shape when such portion is fully expanded.

The parties agree that the differential expansion portion is formed of a substance which is rubber like and resembles a bulb when it is fully expanded. The court finds this phrase is construed as "a device as in claim 33 wherein the differential expansion portion is formed from a substance having the elastic properties of rubber and resembling a bulb shape when it is fully expanded."

4429

4. "wherein the first length of the distal portion of the guide wire tube and the first diameter for the distal portion of the guide wire tube being selected such that when a guide wire is within the guide wire lumen, blood is substantially prevented from entering the proximal portion of the guide wire lumen and a less viscous anticoagulation in the proximal portion of the guide wire lumen is allowed to coat the surface of the guide wire within the distal portion of the guide wire lumen."

The Court first turns to a preliminary dispute as to whether the language after "wherein" consists of claim limitations or whether it simply states the results of other structural limitations. A "wherein" clause may raise a question as to the limiting effect of the language in the claim. See Manual of Patent Examining Procedure § 2111.04 (8th ed., 5th rev. 2006). A determination of whether a "wherein" clause is a limitation in a claim depends on the specific facts of the case. Id. The issue in this case is whether the recited structure regarding the length and diameter differences between the proximal and distal portions of the guide wire lumen have the effect of substantially preventing blood from entering the proximal portion of the
guide wire lumen and allowing a less viscous anticoagulant in the proximal portion in the guide wire lumen to coat the
surface of the guide wire in the distal portion of the guide wire lumen, as stated in the "wherein" clause, or whether the
recited structure is limited by the "wherein" clause.

The plaintiff contends that the "wherein" clause includes functional limitations on the capability of the catheter. According
to the plaintiff, these functional limitations, in addition to the structural limitations of the guide wire lumen, distinguish this
invention from prior art.

The defendant, on the other hand, argues that the "wherein" clause is not material to patentability and, therefore, is not
limiting. In support of its argument, the defendant points to the prosecution history where the examiner rejected claims as
anticipated by prior art and characterized the "wherein" clause as "a recitation of the intended use of the claimed invention"
and requested "a structural difference." Office Action, Nov. 6, 1998, at 4. In response to this rejection, the applicants
amended their claims to include new structural limitations, specifically adding the requirement that the proximal portion of
the guide wire tube be longer and have a larger diameter than the distal portion. Amendment, Feb. 8, 1999, at 2-4.

The Court agrees with the plaintiff that the "wherein" clause provides functional limitations. Reading the claim as a whole,
the "wherein" clause describes the limitations for selecting the "first length" and the "first diameter." In addition, the
prosecution history shows that the examiner requested that the applicant modify claims to recite specific structure in order
to differentiate the invention from prior art. Office Action, Nov. 6, 1998, at 4. The applicants, after modifying their claims,
stated that the modified structure was distinguishable over prior art because it had been sized to prevent blood from entering
the proximal portion of the guide wire lumen while a less viscous anticoagulant in the proximal portion of the guide wire
lumen is allowed to coat the surface of the guide wire within the distal portion of the guide wire lumen. Amendment, Feb. 8,
1999, at 4. Accordingly, the "wherein" clause states functional limitations on the structure. The Court now turns to the three
disputed terms in the "wherein" clause.

F. The "Wherein" Clauses

Claim 3 of the '820 Patent describes the following invention:

An energy-absorption system for positioning along a roadway to absorb the energy of an errant vehicle, the energy-
absorption system comprising:

an impact head;

an angled cutter; and

an elongated cuttable member horizontally mounted between two parallel guardrails;

wherein the energy absorption system is positionable along a roadway to cooperate with the upstream portion of a
roadside hazard; and

wherein the impact head is in operational connection with the cutter and the cuttable member such that the impact of an
errant vehicle with the impact head will cause the cutter to cut at least a portion of the cuttable member to absorb the impact
energy of the errant vehicle.

('820 Patent, col. 9, ln.22-ln.42). Trinity contends that the two limitations of claims 3 and 14 beginning with the word

Section 112, P6 provides:

an element in a claim for a combination may be expressed as a means or step for performing a specified function without
the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding
structure, material, or acts described in the specification and equivalents thereof.

Section 112, P6 operates to restrict claim limitations drafted in means-plus-function format to those structures, materials, or acts disclosed in the specification that perform the claimed function, and their equivalents. Personalized Media Communns., L.L.C. v. ITC, 161 F.3d 696, 702 (Fed. Cir. 1999).

Whether claim language invokes section 112, P6 is a question of law. Id. A claim limitation that uses the word "means" raises a rebuttable presumption that section 112, P6 applies. Apex, Inc. v. Raritan Computer, Inc., 325 F.3d 1364, 1372 (Fed. Cir. 2003) (citing CCS Fitness, 288 F.3d at 1369). By contrast, a claim that does not use the word "means" triggers the rebuttable presumption that section 112, paragraph 6 does not apply. The presumption that section 112, P6 does not apply can be rebutted if the claim "fails to recite sufficiently definite structure" or "recite[s] a "function without reciting sufficient structure for performing that function."Id.; Watts v. XL Systems, Inc., 232 F.3d 877, 880 (Fed. Cir. 2001). The presumption that section 112, P6 does not apply to a claim not reciting the word "means" when the claim "relies on functional terms rather than structure or material to describe performance of the claimed function." Apex, 325 F.3d at 1372. This burden must be met by a preponderance of the evidence.

To determine whether a claim limitation recites sufficient structure, a court examines whether the "term, as the name for structure, has a reasonably well-understood meaning in the art," even if the claim term "does not call to mind a single well-defined structure." Id. at *6 (quoting Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1583 (Fed. Cir. 1996). Even if a particular mechanism is defined in functional terms, that is not sufficient to convert a claim element containing those terms into a "means for performing a specified function" under section 112, P6. Greenberg, 91 F.3d at 1583. Trinity has the burden of producing evidence to rebut the presumption; KEI continues to bear the burden of proof "in the sense of the risk of nonpersuasion." Apex, 325 F.3d at 1372.

The recitation of the structural relationship of elements using functional limitations does not automatically place the claim in means-plus-function format. "It is good practice also to specify the functional or operational cooperation between the elements [of a claim]. . . When this is done, the claim not only tells where the parts are and how they are interconnected or associated, it tells how they function together and operate on the workpiece to accomplish the result stated in the preamble." ROBERT C. FABER, LANDIS ON MECHANICS OF PATENT CLAIM DRAFTING § 30 (4th ed. 1999).

The "wherein" limitations of claims 3 and 14 of the '820 Patent do not contain the term "means," so this court must apply the presumption that section 112, P6 does not apply. Both of the "wherein" limitations use structural language to describe the placement of the various parts of the invention. The first "wherein" limitation states that "the energy-absorption system is positionable along a roadway to cooperate with the upstream portion of a roadside hazard." ('820 Patent, col. 9, ln.34-36). This "wherein" limitation describes a structural feature of the claimed invention, namely, that it is positionable along the roadside in a particular way to enable the invention. The first portion of claims 3 and 14 list the parts of the invention -- an impact head, an angled cutter, and an elongated cuttable member. Trinity correctly points out that without further specificity as to the placement of these parts, the description of the invention's structure is incomplete. (Def.'s Markman Ex. 79).

The "wherein" clauses provide the necessary additional specificity. The first "wherein" clause describes where the invention must be placed relative to the roadside hazard. The energy-absorption system is on the side of the road and, specifically, in a location where it can cooperate with the roadside hazard. This limitation narrows the places on the side of the road where the energy-absorption system can be placed. This is a structural limitation. The "function" described by this "wherein" limitation is "cooperation" with the upstream part of the roadside hazard. The structural aspect of the "wherein" clause is that the invention is "positionable" to provide the "cooperation" between the invention and the roadside hazard.

The second "wherein" clause recites the structural limitations specifying the relative positions of the parts comprising the claimed invention. The impact head is in "operational connection" with the cutter and cuttable member, in such a way that if a car collides with the impact head, the cutter and cuttable member will be forced together and the cutter will cut the cuttable member. The term "operational connection" describes the structural relationship among the impact head, cutter, and cuttable member that the claim requires for the cutter to perform the function of cutting the cuttable member when a car collides with the impact head. In other words, the impact head, cutter, and cuttable member of claims 3 and 14 of the '820 Patent cannot be arranged in any way. Rather, the impact head, cutter, and cuttable member must be arranged in a specific way to achieve the desired function.
A person of ordinary skill in the art would recognize the second "wherein" clause as describing how the parts of claims 3 and 14 must fit together to perform the desired function of cutting the cuttable member upon a vehicle's impact. Trinity's expert, Malcolm Ray, stated that "what the second "wherein" clause tells us is that we need to arrange the parts as well as others that we get from the specification such that they work, such that they get the cutter to cut." (Transcript of Markman Hearing, p. 132, 1.3-1.8). A claim limitation describing how to "arrange" a list of parts, even if the arrangement is defined in functional terms, provides a structural limitation. Greenberg, 91 F.3d at 1583. Trinity has failed to rebut the presumption that section 112, P6 does not apply to the "wherein" clauses of claims 3 and 14 of the '820 Patent.

3. wherein the ratio of said hard segments to said soft segments is such as to provide

The plaintiffs propose that this term carry its plain meaning. The defendants propose "wherein the ratio of said hard segments to said soft segments is substantially lower than 50% such as to provide." The defendants admit that the specification does not disclose any specific values for the ratio between hard and soft segments in this block copolymer. Defendants' Response Brief at 23. To support its inclusion of the "substantially lower than 50%" limitation, the defendants rely on statements made during prosecution to distinguish the present invention from U.S. Patent No. 4,950,239 ("the Gahara patent"). Id. at 23-26. Specifically, the applicant stated that the ratio was "considerably different" and "substantially lower than" that in the Gahara patent. Wu Decl. Ex. 16 at MEDBSC00003949. The "50%" comes from a passage in the Gahara patent's specification. Wu Decl. Ex. 17 at BSCMDT0112650 [Gahara Patent at 3:54-62] ("[t]he proportion of 'soft' segments derived from the component (b) in the polyurethane is advantageously in the range of about 2 to 50 percent preferably in the range of about 2 to 25 percent...").

The plaintiffs argue that the applicants' statements distinguished the Gahara patent on the basis that it was directed to a noncompliant balloon. Plaintiffs' Reply Brief at 12. In addition, the plaintiffs argue that "the applicants' statements in the prosecution history relied on by [the defendants] are subject to multiple reasonable interpretations and thus no prosecution history estoppel should attach." Id. at 13.

The alleged disclaimer in the prosecution history, however, is too vague to support a limitation of "substantially lower than 50%." See Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1323-25 (Fed. Cir. 2003) ("where the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim congruent with the scope of the surrender"). The prosecution statements do not attempt to quantify, but rather state that the applicant's invention differed from the prior art.

At oral argument, the defendants argued that under Phillips the court should look to the discussion in the prosecution history to inform the meaning of the claim term. Nothing in the patent, or the prosecution history, quantifies this ratio. The court declines defendants' invitation to import this numeric limitation from the specification of a prior art patent. Accordingly, the term does not need to be construed.

9. "Wherein the Surface of Each Spacer Has a Linear Measure Greater Than the Distance Between Each Adjacent Disk"

At issue in Claim 9, which is dependent upon Claim 1, is the italicized portion, element 9(c), as follows: "The cutting cylinder of claim 1 wherein a spacer is located between each adjacent disk and wherein the surface of each spacer has a linear measure greater than the distance between each adjacent disk." '780 Patent, col. 4, 30-33.

Fellowes construes the disputed language to mean "the linear measure of the surface of each spacer follows the surface of the spacer and is greater than the linear distance of the space between the two adjacent cutting disks measured parallel to the shaft." Michilin reads it to mean "the linear measure of the surface of each spacer follows the surface of the spacer between the two adjacent cutting disks, and is greater than the linear distance of the space having a constant circumferential width.
between the two adjacent cutting disks measured parallel to the longitudinal axis of the shaft” (emphasis added). Intek's construction is identical to Michelin's except without the word "circumferential."

The dispute over this phrase is largely the same as before, i.e. whether the width between adjacent "cutting disks" is "constant." The defendants' construction is yet another attempt to read the width of the "cutting disks" as being "constant" -- which the Court once again rejects. Claim 9 includes no such limitation, on its face or by inference. See '780 Patent, col. 4, lines 30-34. Accordingly, the Court adopts Fellowes' construction and FINDS that "wherein the surface of each spacer has a linear measure greater than the distance between adjacent disk" in Claim 9 means "the linear measure of the surface of each spacer follows the surface of the spacer and is greater than the linear distance of the space between the two adjacent cutting disks measured parallel to the shaft."

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(7) "wherein when the primary frame is supporting the auxiliary frame, each magnetic material of the primary frame magnetically engages in a lateral manner with one of the magnetic materials of the auxiliary frame for securing said auxiliary frame to said primary frame."

Plaintiffs construe the term "supporting" to mean "that the primary frame maintains the auxiliary frame in position so as to keep the auxiliary frame from falling, sinking or slipping off the primary frame." JS, Exh. A at 18. Plaintiffs further contend that the phrase "magnetically engaging" means "that the magnetic material of the first flanges engages the magnetic material of the corresponding studs either by touching or through magnetic attractive forces without touching." Id. at 20. Plaintiffs argue that the phrase "lateral manner" means "that the magnetic engagement between the magnetic material of the primary frame and the magnetic material of the auxiliary frame is in the horizontal plane." Id. at 22.

Conversely, Defendant argues that the entire phrase in question means that "when the auxiliary frame is mounted on the primary frame, the magnet of the primary frame is attracted to the magnet on the arms or extensions of the auxiliary sunglasses frame to secure or attach the auxiliary sunglasses frame to the frame of the primary eyeglasses." JS, Exh. C at 109.

Preliminarily, the Court notes that Defendant has not offered any support for its proposed limitation that the auxiliary frame be one securing sunglass lenses. See Def.'s Opposition at 16-18. As such, the Court declines to adopt such limitation.

Defendant's construction of the word "supporting" as "mounted on" is limited to a mode of attachment and fails to capture the breadth of the term's ordinary meaning. See Webster's, Nicodema Decl., Exh. 5 at 155, defining "support" to mean "[t]o maintain in position so as to keep from falling, sinking, or slipping." As such, the Court adopts Plaintiffs' construction of the term "supporting," which is consistent with the dictionary definition.

As to the phrase "magnetically engages," the Court construes it to mean magnetically attracts or is attracted magnetically, with the magnetic attraction taking place with or without actual physical contact. See supra section "III B 2 a (14)," discussing the construction of the term "engage" in the '545 Patent. Defendant does not dispute that "lateral manner" means "in the horizontal plane," and the Court agrees with such construction. See Figures 2 and 3 of the patent. Koo Decl., Exh. C at 19.

Based on the above, the Court construes the phrase in question to mean: wherein when the primary frame is maintaining the auxiliary frame in position so as to keep the auxiliary frame from falling, sinking or slipping off the primary frame, each magnetic material of the primary frame magnetically attracts or is attracted by one of the magnetic materials of the auxiliary frame, with the magnetic attraction taking place with or without actual physical contact and in the horizontal plane.

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2. Durable Syringes/Disposable Prefilled Syringes
At issue here is whether the language "Pen-type insulin syringe . . . which accepts cartridges" 4 applies only to pens which accept replaceable prefilled insulin cartridges or also applies to disposable pen syringes that include a pre-filled insulin cartridge. Throughout the prosecution history of the patents, it is abundantly clear that the claim language applies to both durable pen syringes and prefilled pen syringes.

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - - 

4 "Pen-type insulin syringe . . . which accepts cartridges containing . . . ." (Claims 1-4 of the '323 patent & Claims 11-14 of the '906 patent.)

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - - 

Claims 3 and 9 of the '535 patent recite that the pen syringe, which parent claim 1 recites as including a cartridge containing insulin, "is a disposable device prefilled with insulin." Thus, the disposable pen syringe claimed in claims 3 and 9 must accept the insulin cartridge at some stage of the manufacture. Both disposable syringes (claims 3 and 9) and durable syringes (claims 4 and 10 of the '535 patent) accept cartridges containing insulin. The difference is that disposable syringes are manufactured so that, once the cartridge is inserted, it cannot be removed and replaced by the user.

Becton argues that the language applies only to pen syringes that accept replaceable, refilled insulin cartridges, and not to durable pen syringes that are prefilled with insulin. It relies statements by an attorney for Novo, (see Sharrott Decl., Exh. 8), which are confusing and could be read to limit the scope of Claims 1-4 to only those pen syringes that accept replaceable insulin syringes, to the exclusion of any pen syringes that are prefilled with insulin which do not accept replaceable cartridges.

However, this Court finds that this one set of statements by Novo's attorney in the 1996 Amendment are inconsistent with the totality of the prosecution history, and are not entitled to the dispositive effect that Becton gives it. As a result, this Court construes the language "Pen-type insulin syringe . . . which accepts cartridges" to apply both to durable pen syringes which accept replaceable pre-filled cartridges and disposable pre-filled insulin pen syringes.

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BACKGROUND

Neutrik is the assignee of the 749 patent. The 749 patent covers a plug and socket that makes an electrical connection. It addresses the problem of making and disengaging a connection under power. The effectiveness of an electrical connection is in part a function of the amount of overlapping or touching conductive surface area. During times of low contact surface area, i.e., initial contact when plugging-in or final contact when unplugging, overloads can shorten the useful life of electrical connectors, or cause malfunction. The invention of the 749 patent provides a connection system whereby there is no increase or decrease in surface area over time. In the 749 patent, and in its embodiment, the SPEAKON connection, the full contact surface area engages or disengages at once.

The 749 patent discloses a cylindrical socket 1 and counterpart cylindrical plug 22. 749 patent, col. 3, II. 5, 67. Grooves 11 & 12 guide the plug into the socket by the noses 25 and 26 on the plug. Id. at col. 4, II. 39-43. Once the plug is inserted, the contacts 7 (socket) & 27 (plug) are staggered relative to each other by an angle. The plug contacts 27 are metal rods embedded in the inner side wall of the plug. The socket contacts 7 "comprise a longitudinally extended lamella with an angled connection clip 18," id. at col. 3, II. 41-42, and contact vanes 21 extending 1 from the contact, id. at col. 3, II. 41-42. The socket contact 7 mounts inside the groove 17 of the center shaft 6 of the socket. Id. at col. 3, II. 52-53. After the plug is inserted to full depth, it is rotated to a locking position, causing the contact vanes 21 of the socket contact 7 to come into full surface area contact with the plug contact 27. Id. at col. 4, II. 48-64.

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1 "Contact vanes 21, which start out at the wall of the shaft 6, extend in the circumferential direction of the shaft 6, and increase thereby their distance from the wall of the shaft 6 serving as a contact support." 749 patent, at col. 3, II. 53-56.
Claim 1 of the 749 patent is at issue. It is in "Jepson" format. Neutrik twice amended this claim. The first amendment is shown in single underlining. The second is shown in double underlining.

1. In an electric plug-and-socket connection including a cylindrical plug connector and a cylindrical plug-inn counterpart connector, each connector having an axis, each connector including contact supports and contacts . . . 2 the improvement comprising the other contacts in the other contact support each having at least one elastically deformable contact vane, the at least one contact vane extending in circumferential direction from the wall of the contact support and at a distance from the wall of the contact support which increases in circumferential direction.

2 In the claim 1 quotation above, lines 46-67 of column 5 of the 749 patent are omitted.

As the district court noted, Neutrik amended claim 1 of the 749 patent twice during prosecution, in each case in response to the examiner's rejections based on U.S. Patent No. 4,826,454 to Kissling ("the Kissling patent"). In the Kissling patent, a metal electrical contact 124 is disclosed by the figures in the Kissling patent. The Kissling patent recites an assembly of such contacts 121-28 & 131-38. Kissling patent, col. 6, II. 66-67.

Switchcraft manufactures a socket that is compatible with the Neutrik SPEAKON plug. The Switchcraft socket has a contact vane that extends axially along a portion of the length of the center shaft of the socket. At its tip, where it makes contact with the connector in the Neutrik SPEAKON plug, the Switchcraft contact has what the district court characterized as a "bump." First Order at 10.

Neutrik originally sought a preliminary injunction against Switchcraft. On July 25, 2000, the district court denied the injunction in an order that analyzed the likelihood of success of a literal or doctrine of equivalents infringement claim. First Order at 14, 18-19. Then, on March 22, 2001, the district court granted summary judgment to Switchcraft on all of Neutrik's claims. Second Order at 13-14. In doing so, it expressly incorporated and relied on its earlier analysis of the patent infringement issues, and did not further discuss those issues in the Second Order.

For purposes of the preliminary injunction, Switchcraft had conceded the validity of the 749 patent. However, Switchcraft argued that a properly construed claim would not cover the Switchcraft contact because its contact vanes extend from their supports in an axial direction, not in a circumferential direction, and that the distance between the vane and the support increases in the axial direction, not the circumferential direction. Neutrik argued that the "bump" on the tip of the Switchcraft vane embodies a contact that increased in distance from the contact support in a circumferential direction. The district court reviewed a dictionary definition of the word "vane," and then surmised that "vane," as applied to the Switchcraft contact, referred to the entire piece of metal extending from the contact base, not just the bump at the tip. It found that the Switchcraft vane extends from its base in an axial direction, and that just because a small portion of the vane has a round shape does not mean that the vane also extends circumferentially from its base.

The district court characterized Neutrik's argument as stating that the limitation is met if just a portion of the contact vane is extending in a circumferential direction. First, the court noted that the claim did not say "or any portion of the vane." Second, as an alternative basis, it noted that the "bump" of the Switchcraft contact is not attached to the wall of the contact support, and thus cannot be said to extend from it. Third, it found that the distance between the bump and the wall of the support did not increase in the circumferential direction. Fourth, the district court reviewed the two amendments to the claim and concluded that they supported its claim construction, in particular because the Kissling reference showed a contact, like the Switchcraft contact, with a rounded bump on the tip.

The district court next found that the Switchcraft contact did not infringe under the doctrine of equivalents. It agreed with
Neutrik that the Switchcraft contact performs substantially the same function and produces substantially the same result, in substantially the same way. However, the district court applied prosecution history estoppel to conclude that a reasonable competitor would believe that Neutrik had surrendered equivalents "that only extend axially" for its contact vane. As a result, there was no infringement under the doctrine of equivalents.

With respect to the trade dress infringement claim, the district court noted the physical description of each product. Neutrik alleged that six common design elements indicated trade dress infringement. The district court noted that to protect an unregistered product design as a trade dress, a party must show, as a threshold matter, that the product's design, not its packaging, is non-functional, and that secondary meaning is present. Second Order at 5. Then, a showing of likelihood of confusion is required.

The district court stated that the test for functionality is whether a product feature "is essential to the use or purpose of the article or [] affects the cost or quality of the article." Second Order at 5 (quoting Knitwaves, Inc. v. Lollytogs Ltd., 71 F.3d 996, 1006 (2d Cir. 1995) (internal quotations omitted)). A factor in establishing non-functionality is demonstrating that feasible or cost-effective design alternatives exist. Second Order at 6 (citing Stormy Clime Ltd. v. ProGroup, Inc., 809 F.2d 971, 977 (2d Cir. 1987)).

The district court found that Neutrik's only "evidence" of non-functionality was its own conclusory statements. The only design alternative Neutrik presented was that there is no need for the raised circular rim, and that the outer portion of that rim need not be circular. The district court found, however, that Switchcraft rebutted that evidence because it presented the design requirement of a raised circular rim in order to rear mount the socket. The circular shape is necessitated by the fact that panel manufacturers precut round holes for mounting of sockets like the Neutrik and Switchcraft devices. The district court noted that Switchcraft also presented evidence that the other elements of the Neutrik design are standard industry practice, such as the triangle to indicate orientation, or a rectangular base to allow for "rows" of contacts to be mounted. Thus, Neutrik had not only failed to carry its burden of demonstrating non-functionality of its trade dress, it had failed to rebut Switchcraft's evidence of functionality.

Although noting that it could have stopped after its functionality analysis, the district court also found Neutrik's evidence of secondary meaning lacking. Neutrik only described its sales and advertising generally - it presented no evidence of customer recognition of its product based on product-design trade dress.

With respect to the motion for additional discovery, the district court denied Neutrik's request for additional discovery under FRCP 56(f). The district court noted that in order to justify additional discovery, a party must demonstrate how the additional information will raise a genuine issue of material fact. Second Order at 12 (citing Sage Realty Corp. v. Insurance Co., 34 F.3d 124, 128 (2d Cir. 1994)). The district court found that the requested additional information would not raise such an issue.

4 For example, Neutrik attempted to justify its discovery request based on the hope that it could overcome its failure to meet its burden on its trade dress claim by reviewing Switchcraft's design views for its own socket, including the extent to which it was based on functional considerations or copied from Neutrik. The district court concluded that even if Neutrik recovered information showing Switchcraft was copying, this would only impact secondary meaning and Neutrik had not supported its trade dress case on the other required factor, non-functionality.

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3 The six alleged elements are: (1) black color; (2) rectangular base; (3) raised outer circular rim; (4) placement of lettering that designates the manufacturer on the bottom end of the rectangular base; (5) small triangular impression on the top of the base that points downward; and (6) rounded corners on the rectangular base.

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Neutrik timely appealed from the district court's grant of summary judgment. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

DISCUSSION

We review a district court's grant of summary judgment without deference. Atmel Corp. v. Info. Storage Devices, Inc., 198 F.3d 1374, 1378, 53 U.S.P.Q.2D (BNA) 1225, 1227 (Fed. Cir. 1999). Summary judgment is appropriate when the moving party demonstrates that "there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c); Celotex Corp. v. Catrett, 477 U.S. 317, 322-23, 91 L. Ed. 2d 265, 106 S. Ct. 2548 (1986). On summary judgment, the evidence must be viewed in the light most favorable to the party opposing the motion, Poller v. Columbia Broad. Sys., Inc., 368 U.S. 464, 473, 7 L. Ed. 2d 458, 82 S. Ct. 486 (1962), with doubts resolved in favor of the nonmovant, Cantor v. Detroit Edison Co., 428 U.S. 579, 49 L. Ed. 2d 1141, 96 S. Ct. 3110 (1976); Transmatic, Inc. v. Fulton Indus., Inc., 53 F.3d 1270, 1274, 35 U.S.P.Q.2D (BNA) 1035, 1038 (Fed. Cir. 1995). Once the moving party has satisfied its initial burden, the opposing party must establish a genuine issue of material fact and cannot rest on mere allegations, but must present actual evidence. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248, 91 L. Ed. 2d 202, 106 S. Ct. 2548 (1986). Issues of fact are genuine only "if the evidence is such that a reasonable jury could return a verdict for the nonmoving party." Id. at 248. A disputed fact is material if it might affect the outcome of the suit such that a finding of that fact is necessary and relevant to the proceeding. Anderson, 477 U.S. at 248; General Mills, Inc. v. Hunt-Wesson, Inc., 103 F.3d 978, 980, 41 U.S.P.Q.2D (BNA) 1440, 1442 (Fed. Cir. 1997).


On procedural issues, this Court follows the rule of the regional circuit, unless the issue is in an area of law exclusively assigned to the Federal Circuit. Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc., 200 F.3d 795, 809, 53 U.S.P.Q.2D (BNA) 1289, 1297 (Fed. Cir. 1999). For issues of discovery under Rule 56(f), this Court applies the law of the regional circuit. Id. The Second Circuit reviews a district court's rulings on discovery issues under an abuse of discretion standard. Paddington Partners v. Bouchard, 34 F.3d 1132, 1138 (2d Cir. 1994).


On appeal, Neutrik argues that claim 1 covers a contact vane where only a portion of the allegedly infringing vane extends in a circumferential direction with increasing distance from the contact support of the socket's center shaft. Neutrik asserts that the Switchcraft contact infringes the claim because it has an elastically deformable contact vane, and, although the vane extends axially along the center shaft, the tip portion additionally extends in a circumferential direction with increasing distance. In essence, Neutrik argues that the tip portion of the Switchcraft contact vane can satisfy the "extends circumferentially with increasing direction" limitation of the contact vane element, while the entire Switchcraft vane satisfies the "elastically deformable" limitation. 5 Neutrik also argues that the district court incorrectly interpreted the limitation "extending in circumferential direction from" by reading into the claim an attachment requirement only found in the preferred embodiment.

5 Neutrik also argued that rather than a single element with various limitations, claim 1 specifies the following three elements: (1) the elastically deformable vane; (2) which extends in circumferential direction from the wall; and (3) which also increases in distance from the wall in a circumferential direction. However, this Court views the claim differently, as disclosing a single element, the contact vane, with the following limitations applied to the contact vane: (a) elastically deformable; (b) extends in circumferential direction from the wall; and (c) as it extends, increases in distance from the wall in a circumferential direction.
Switchcraft responds that the district court properly construed claim 1 as requiring that the entire contact vane, i.e., the piece protruding from the center shaft of the socket, must meet the limitations, including the limitation that the vane extend with increasing distance from the center shaft in a circumferential direction, and be elastically deformable.

We agree with Switchcraft that the district court properly granted summary judgment that the Switchcraft contact vane does not infringe the 749 patent. Further, we agree that the district court properly construed claim 1. In construing patent claims, we first look to the intrinsic evidence of record -- the claims, the specification, and, if in evidence, the prosecution history. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 U.S.P.Q.2d (BNA) 1573, 1576 (Fed. Cir. 1996). Claim 1 is directed to a contact vane that is elastically deformable and extends with increasing distance in a circumferential direction from the wall of the contact support. The claim is thus limited to cover devices where the entire length of the protruding contact vane extends in a circumferential direction. The plain language of the claim suggests that the entire contact vane have the property of elastic deformability: "elastically deformable contact vane." Further, the other limitations disclosed by the claim imply that the deformation should occur in the circumferential direction because the contact vane must also extend, circumferentially, at an increasing distance. By implication, then, the deformation would have to occur in the circumferential direction under the language of the claim.

The prosecution history supports this interpretation of the claimed contact vane. Neutrik applied for the 749 patent on November 9, 1988. On September 8, 1991, Neutrik responded to an office action from the United States PTO for the application. The examiner rejected claim 13 (which eventually became claim 1 in the issued patent) as obvious over the admitted prior art (in the Jepson preamble) in view of the Kissling patent. The examiner seemed to believe that the Kissling patent's contacts, such as contact 124, disclosed an elastically deformable contact vane. Neutrik added the language "in circumferential direction" to the claim, and responded to the examiner as follows:

[The claim] has been amended to make it clear that the contact vanes extend in circumferential direction from the wall of the contact support. . . . [the Kissling patent contacts] extend in the axial direction of the assemblies. In accordance with the present invention, on the other hand, the contact vanes [21] extend in the circumferential direction from the wall of the contact support and at an increasing distance from the wall of the contact support.

In January 1992, the PTO responded. It again rejected the claim as obvious, this time because the Kissling patent disclosed an elastically deformable contact vane that extends from the wall of a contact support in circumferential direction. The examiner stated that "web portions 134, 124" extend parallel to the longitudinal axis. He noted that Neutrik's arguments from the previous amendment were not persuasive because the claim language was still broad enough to read on the Kissling patent because:

[The Kissling patent] shows contact vanes which extend in both the axial direction and the circumferential direction in three dimensional space. The contact vanes . . . extend at an increasing distance from the wall of the contact support in the axial direction, but they also extend in the circumferential direction. The claim language does not sufficiently describe the structure to define over the art of record.

Neutrik added the language "which increases in circumferential direction" to the claim, and responded to the examiner as follows:

[The Kissling patent] clearly shows that the contact pieces . . . are punched out and extend at such an angle that the distance from the housing wall 106 increases in axial direction. In accordance with the present invention as claimed, on the other hand, the circumferentially extending contact vanes have a distance from the wall of the contact support which increases in circumferential direction. (emphasis in original)

The 749 patent subsequently issued on April 27, 1993.

Neutrik thus distinguished the Kissling patent by emphasizing that Neutrik's contact vane extends, with increasing distance, in the circumferential direction, whereas the contact vane in the Kissling patent extended in the axial direction. Neutrik's arguments during prosecution disclaimed contact vanes similar to those disclosed in the Kissling patent. We therefore conclude that claim 1 should be interpreted so as to exclude contact vanes that extend with increasing distance in the axial
If ambiguity remains after consideration of the intrinsic evidence, "extrinsic evidence may also be considered, if needed to assist in determining the meaning or scope of technical terms in the claims." Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1216, 36 U.S.P.Q.2D (BNA) 1225, 1228 (Fed. Cir. 1995) (citations omitted). Here we view the intrinsic evidence regarding the contact vane as unambiguous, and thus need not discuss extrinsic evidence.

4436

10. "Cooling Said Core While Applying a Second Pressure"

The phrase "cooling said core while applying a second pressure" is construed to mean, "Cooling said core during the time that a second pressure is applied."

The phrase appears in claim 1 of the '207 patent:

(i) heating said core for a first period of time; (ii) applying a first pressure to said core for a second period of time such that said at least one electronic element is encapsulated by said core; (iii) cooling said core while applying a second pressure to said core.

'207 patent, col. 6:31-36.

The only dispute between the parties is the meaning of the word "while." Plaintiff asserts that "while" means "during the time that." Defendant urges that the phrase means "that cooling starts later than, or at the same time as, applying a second pressure." (Def. Br. at 43.) In other words, Defendant asks me to conclude that the word "while" fairly implies the moment at which the process of providing the pressure starts -- and, in particular, to exclude from the ambit of the claims any process that involves the application of the "second pressure" before the core cooling begins, even if the cooling and the second pressure proceed simultaneously for some period of time.

Defendant's attempt to limit the claim in this way is unavailing. Webster's defines "while" to mean "during the time that" -- in other words, simultaneously or concurrently. Defendant's suggestion that this word says or implies anything about the relationship between the time the cooling begins and the time the application of pressure begins makes no sense. The claim language neither says nor implies anything about whether (1) cooling starts before pressure, (2) pressure starts before cooling, or (3) they start at the same time. The claim language requires only that the cooling and second pressure be happening simultaneously, regardless of the start sequence of the cooling and the application of pressure.

At the Markman hearing, the parties illustrated this term with the example of taking a nap "while my roommate goes shopping." The illustration works well. Clearly, as long as roommate # 1 is napping at any point in time during roommate # 2's trip to the store -- regardless of when the nap commenced -- roommate # 1 would have been napping "while" roommate # 2 went shopping.

4437

1. Claim Construction

In the '037 patent, the parties dispute the meaning of the last limitation of claim 15: "automatically rotating each reagent container of the first set about its respective axis while it is being scanned." Bayer proposes that the phrase be construed as "automatically rotating the containers of the first set about their axes during the time that the bar codes on those containers are read." Abbott, on the other hand, proposes that the phrase be construed as "Automatically rotating each individual reagent container about its respective axis during the time its (i.e., the same container's) bar code is being read by the bar code reader." (D.I. 296.) Thus, the parties' disagreement centers around what it means to automatically rotate a container "while it is being scanned." Bayer's proposed construction is relatively broad, and literally encompasses devices that automatically rotate the containers at some time during the overall scanning process. In contrast, Abbott's construction is
relatively narrow, and literally encompasses only those devices that continuously (and automatically) rotate the containers while the bar code reader is active.

A text search of the entire patent reveals that the word "scan" is used only in the claims, and not in the specification. Even so, "the context in which a term is used in the asserted claim can be highly instructive." Phillips, 415 F.3d at 1314. Although it is the last limitation of claim 15 that is at issue here, it is the second-to-last limitation that provides the instructive context:

scanning the bar code on one of the reagent containers of one of the first and second sets by passing a scanning light beam between two of the containers of the other of the first and second sets to determine the identity of the reagent contained therein.

'037 patent, col. 58, 11. 13-17 (emphasis added). This claim language clearly and unambiguously defines "scanning" as "passing a scanning light beam." Therefore, the phrase "while it is being scanned" is properly construed as "while it is being passed by a scanning light beam." It does not refer to the overall process of reading bar codes, as Bayer suggests. Thus, the court will construe the last limitation of claim 15 as "automatically rotating each reagent container of the first set about its respective axis while it is being passed by a scanning light beam."

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5. "while maintaining the plunger free of contact with the pitcher"

Plaintiff's Proposed Construction: "while maintaining the plunger free of contact with the pitcher"

Defendant's Proposed Construction: "throughout the mixing process (or while the blades are rotating), no part of the plunger contacts the pitcher"

The Court's Construction: "while maintaining the device free of contact with the pitcher"

This phrase has acquired its ordinary and customary meaning. Defendant asks the Court to require that the plunger not contact the pitcher "while the blades are rotating." But, the claim already requires the blades to be rotating. Thus, such a limitation need not be added to this claim element. The Court replaces the word "plunger" with the word "device" to be consistent with the earlier construction of the term "plunger." The dictionary definitions suggested by the defendant are unnecessary and not helpful to the Court.

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4439

a. heated "out of contact with oxygen"

Seven of the claims at issue state that the material being processed is kept "out of contact with oxygen:" 9

'934 Patent, claims 23, 50; '814 Patent, claim 7: "said material irradiated . . . and then heated while out of contact with oxygen in a concentration greater than 1% volume by volume"

'814 Patent, claim 19: "irradiating . . . and annealing said material while out of contact with oxygen in a concentration greater than 1% volume by volume"

'308 Patent, claim 1: "irradiating . . . and heating the polyethylene material forming the implant . . . while said polyethylene material is prevented from contact with oxygen in a concentration greater than 1% volume by volume"

'308 Patent, claim 12: "creating free radicals in the polymer chain by irradiating the ultra-high molecular weight polyethylene material [and] preventing oxygen from bonding with the said created free radicals by preventing them from coming into contact with oxygen in a concentration greater than 1% volume by volume . . . and heating the polymer . . .
prior to exposing the free radicals to oxygen above the said concentration"

'308 Patent, claim 24: "ultra high molecular weight polyethylene material . . . which has been irradiated . . . and then heated while out of contact with oxygen in a concentration greater than 1% volume by volume"

Howmedica argues that the Court should interpret "while out of contact with oxygen in a concentration greater than 1% volume by volume" as "without the UHMWPE [ultra-high molecular weight polyethylene] material contacting the surrounding atmosphere that contains oxygen in a concentration greater than 1% volume by volume." Defendants argue that "while out of contact with oxygen in a concentration greater than 1% volume by volume" means "in an airtight package with less than 1% oxygen by volume." Defendants refer to the process described in the summary of the invention and the preferred embodiment in the specification to narrow the scope of the invention. The Court rejects defendants' argument.

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9 Five claims, which the Court will discuss later, state that the material is surrounded by a "layer of material" that prevents contact with oxygen when heated.

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Defendants point out that the specifications only describe a process whereby the implant is irradiated and heated after it is placed in a package from which the oxygen is expelled. Nevertheless, the Court does not find that the specification was intended to implicitly limit the meaning of "while out of contact with oxygen in a concentration greater than 1% volume by volume" to "in an airtight package." In the context of other claims in the patents, the claims at issue clearly intend a broader meaning for "out of contact with oxygen" than "in an airtight package," and so the Court will give the term the broader meaning.

i. '934 Patent, claims 23, 50

Related dependent claims do not support defendants' definition of the phrase "while out of contact with oxygen in a concentration greater than 1% volume by volume" in independent claim 23 of the '934 Patent. Dependent claim 33 is for "[t]he medical implant as set forth in claim 23 wherein an oxygen impermeable packaging material is the layer used to prevent the polyethylene material from contacting oxygen." '934 Patent, claim 33. The Court will not read a limitation expressly stated in the dependent claim (claim 33) into an independent claim that does not contain that limitation (claim 23). See Phillips, 415 F.3d at 1314-15. The limitation in dependent claim 33 implies that "while out of contact with oxygen in a concentration greater than 1% volume by volume" in claim 23 of the '934 Patent is intended to contemplate methods of segregating the material from oxygen that do not involve "oxygen impermeable packaging materials."

Similarly, dependent claim 55 of the '934 Patent limits the device set forth in claim 50 to processes whereby an "oxygen impermeable packaging material" is used to prevent contact with oxygen. The Court finds that the irradiation and heating steps described in claims 23 and 50 of the '934 Patent are not limited to heating and irradiation "in an airtight package"—unlike the processes described by dependent claims 33 and 55, which are so limited.

ii. '308 Patent, claims 1, 12

Identical logic dictates that independent claims 1 and 12 of the '308 Patent are not limited to heating and irradiating the polyethylene "in an airtight package." Dependent claims 2 and 3 of the '308 Patent are for the method set forth in independent claim 1, but specify that the process takes place in an oxygen impermeable packaging material:

2. The method set forth in claim 1, wherein the contact with oxygen is prevented by sealing the polyethylene within an oxygen impermeable barrier.

3. The method as set forth in claim 2, wherein the oxygen impermeable barrier is a packaging material.

'308 Patent, claims 2, 3. Once again, the Court will not read the limits expressly stated in the dependent claims (i.e. claims 2 and 3) into the independent claim (i.e. claim 1). See Phillips, 415 F.3d at 1314-15. Dependent claims 13 and 14 of the '308
Patent similarly limit the process described in claim 12, and the express limits of the former claims should not be imported into the latter. Accordingly, the Court finds that claims 1 and 12 of the '308 Patent are not limited to a process whereby the polymer is heated and irradiated "in an airtight package."

iii. '308 Patent, claim 24

Claim 24 of the '308 Patent contains language which is very similar to that of claims 1 and 12 of that patent. In general, similar terms in different claims should be construed consistently. See Phillips, 415 F.3d at 1314 ("usage of a term in one claim can often illuminate the meaning of the same term in other claims"). The Court construes "heated while out of contact with oxygen" in claim 24 of the '308 Patent consistently with "heating . . . while . . . prevented from contact with oxygen" in claim 1 of the '308 Patent. In addition, the language of claim 24 of the '308 Patent is nearly identical to the language of claims 23 and 50 of the '934 Patent and claim 7 of the '814 Patent, which the Court has already found do not require segregation "in an airtight package." Claim 24 of the '308 Patent does not require segregation from oxygen "in an airtight package."

iv. '814 Patent, claims 7, 19

Independent claim 19 of the '814 Patent does not require an "airtight package" to surround the material during the irradiation and heating steps. Unlike claim 19, dependent claim 20 of the '814 Patent refers to an "oxygen impermeable barrier around [the polyethylene material] prior to irradiating." Because a court should not read express limitations from dependent claims into independent claim's that lack that limitation, "while out of contact with oxygen" in claim 19 should not be limited to claim 20's ["surrounded by an] oxygen impermeable barrier." Accordingly, the Court will not limit the term "while out of contact with oxygen" in claim 19 to "in an airtight package," the even narrower construction that defendants urge for the claim.

The Court construes "while out of contact with oxygen" in claim 7 of the '814 Patent consistently with the term's use in claim 19. Neither claim requires that the heating step occur "in an airtight package."

4440

3. "Buoy as a whole is kept underwater"

APL argues for the following construction of the phrase "buoy as a whole is kept underwater" as it is used in Claim 1: "fully equipped mooring buoy is completely submerged, and no parts float on the surface of the sea." SBM maintains, contrary to APL's contention, that this claim phrase does not preclude the use of a second, non-mooring surface buoy.

When a patent claim uses the word "comprising" as its transitional phrase, the use of "comprising" creates a presumption that the body of the claim is open. In the parlance of patent law, the transition "comprising" creates a presumption that the recited elements are only a part of the device, that the claim does not exclude additional, unrecited elements. See KCJ Corp. v. Kinetic Concepts, Inc., 223 F.3d 1351, 1356 (Fed. Cir. 2000). Here, both parties agree that Claim 1 recites "a catenary anchor leg mooring buoy comprising": (1) three "means for connecting"; (2) a "buoyant body"; (3) a "turntable"; (4) a "rigid mooring arm"; and (5) a "swivel," and that these elements make up the "buoy as a whole." Because Claim 1 contains this "open-ended" claim phrase language, however, SBM contends that the "buoy as a whole" could be "comprised of" other elements, such as an additional, non-mooring surface buoy.

It is well-settled that consistency in claim interpretation is important. Burke, Inc. v. Bruno Indep. Living Aids, Inc., 183 F.3d 1334, 1337 (Fed. Cir. 1999) (citing Markman, 116 S. Ct. at 1396). Claim 1 of the '183 Patent requires that the "buoy as a whole" be "kept underwater." Any additional, unrecited elements covered by the "comprising" language, therefore, must also comport with the limitation in Claim 1 that all of the catenary anchor line mooring buoy's components be kept underwater in order to preserve internal consistency within the claim. See Applera Corp. v. Micromass UK Ltd., 186 F. Supp. 2d 487, 503 (D. Del. 2002) ("[C]omprising' can neither narrow nor broaden the meaning of the claim limitations subsequently recited."). Since the presence of an additional part or component of the mooring buoy floating on the surface of the sea would contradict the requirement in Claim 1 that all of the catenary anchor line mooring buoy's components, recited and unrecited, be kept underwater, Claim 1 does not cover a catenary anchor line mooring buoy featuring...
component(s) that float on the surface of the sea.

Accordingly, the Court agrees with APL's proposed construction of the phrase "buoy as a whole is kept underwater" as it is used in Claim 1 of the '183 Patent.

4441

f. "Oiling wick"

Lastly, the method of claim 23 requires, in addition to the steps in claim 21, the step of "applying a gun oil to an oiling wick attached to the gun barrel cleaning device for oiling the inside of the gun barrel." Michaels contends that the phrase "oil wick" has its ordinary meaning and simply refers to a portion of the device that contacts the inside of the barrel to spread oil. It is not limited to a frayed end, but may be formed from a loop or fold of a fabric sheath. Col 7, lines 55-57.

Clean Gun argues that such an overly broad construction is not supported by the specification. Although the specification indicates that a gun barrel cleaning device might have a wick that is a frayless loop, it also states that the "oiling wick of the invention" is disclosed in Figure 3, which includes the folded sheath with a frayed end. Col 7, lines 13. In addition, the applicant elected Figures 10 and 10A which show a folded and stitched sheath with a frayed end.

Clean Gun ignores the fact that all of the drawings in the application, not just Figure 3, are referred to as preferred embodiments. Even with respect to Figure 3, the specification gives two options by stating that the oiling wick is either "folding in upon itself with its frayed end extending from the insertion," but "can also be formed from a loop or fold of tubular sheath." Col 7, lines 54-57. The specification also states that other structures may be used as an oiling wick, such as the end of the cleaning section as shown in Figure 4. Col 10, lines 21-26.

Since this court does not adopt the scope of the restriction requirement urged by Clean Gun, it must ipso facto reject Clean Gun's limited construction of "oiling wick." Accordingly, this court adopts the ordinary meaning of "oil wick" to refer to a portion of the device that contacts the inside of the barrel to spread oil and may be formed from a loop or fold of a fabric sheath.

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IV. The requirement for "wicking barriers" in the lighting elements

A. Claim Interpretation

Claims 1 through 9 and 21 through 26 of the '709 reissue patent and claims 2 through 5 of the '397 patent specify one or more wicking barriers. Claim 1 of the reissue patent states in pertinent part: "A lighting assembly comprising . . . a closure assembly enclosing said electrical lighting elements, said closure assembly including a potting body, in which are embedded said electrical lighting elements, and a potting base, said electrical elements being sealed against moisture from said lamp assembly by a said wicking barrier and from said housing." '709 reissue patent, col. 6, lines 13-19. Claim 21 of the reissue patent reads: "A lighting system comprising . . . a submersible connector electrically coupled between said lamp assembly and said electrical lighting elements, including a wicking barrier between said submersible connector and said transformer; . . ." '709 reissue patent, col. 9, lines 6-10. Finally, claim 2 of the '397 patent states: "A lighting system comprising . . . leads from said electrical lighting elements for coupling with a source of electrical power, said electrical lighting elements being separately sealed from said leads by a wicking barrier." '397 patent, col. 6, lines 11-14.

Defendant contends that the "wicking barrier" elements referred to in claims 21 through 26 of the reissue patent and claims 2 through 5 of the '397 patent are part of the "electrical lighting elements" recited in those claims, and are not part of the "connector" recited in claims 21 through 24 of the reissue patent and claims 2 through 5 of the '397 patent. For instance, according to the language in claim 2 of the reissue patent, which provides that "leads from electrical lighting elements for coupling with a source of electrical power, said electrical elements being separately sealed from said leads by a wicking barrier," the electrical lighting elements are sealed from the leads by the wicking barrier, such that the wicking barrier must
necessarily be located at the electrical elements where the leads connect to them. Additionally, the claims indicate that the wicking barriers are not part of the submersible connector. 15

15 "A lighting system comprising . . . electrical lighting elements including a transformer, said electrical lighting elements being sealed against moisture separate from said lamp cavity; a submersible connector electrically coupled between said lamp assembly and said electrical lighting elements, said electrical lighting elements including a wicking barrier between said submersible connector and said transformer; . . ." ’709 reissue patent, col. 8, line 66 - col. 9, line 10.

Plaintiff contends that nothing in the claims prohibits an interpretation that the wicking barriers could be adjacent or even unitarily constructed with a submersible connector. In support, Plaintiff points to several of the claims indicating different arrangements for the wicking barriers, which purport to show that there is no limitation precluding association of the submersible connector with the wicking barrier. 16

16 For instance, claim 21 of the reissue patent states " . . .said electrical lighting elements including a wicking barrier between said submersible connector and said transformer. . ." Claim 22 depends on claim 21, and additionally requires "a second wicking barrier between said lens and said transformer." ’709 reissue patent, col. 9, lines 8-10; 15-17.

Plaintiff's contention that nothing in the claims prohibits an interpretation that the wicking barriers could be "adjacent" to a submersible connector is inapposite, as Defendant's motion does not seek a ruling as to how close together the connector and wicking barrier might be. Based upon the language of the claims in question, the Court determines that the connector and the wicking barrier cannot be integral. For example, with respect to claim 21, if Plaintiff's interpretation were to be adopted (i.e., that the wicking barriers can be unitarily constructed with the connector), the connector would have to be a part of the electrical lighting elements because the wicking barrier itself is required by claim 21 to be part of the electrical lighting elements. However, claim 21 also states that the "submersible connector [is] electrically coupled between said lamp assembly and said electrical lighting elements." The submersible connector cannot be both part of the electrical lighting elements and between the electrical lighting elements and the lamp assembly.

A similar interpretation applies to claim 22, which states that said electrical lighting elements further includes [sic] a second wicking barrier between said leads and said transformer," referring to the leads from the electrical lighting elements for coupling with a source of electrical power recited in claim 21. Plaintiff maintains that the "wicking barrier is not prohibited from being adjacent or integrally composed with a submersible connector which provides leads to the source of electrical power." Pl. Opp. p.18. Plaintiff's interpretation makes sense only if the submersible connector itself is located between the electrical lighting elements and the leads to the source of electrical power, since that is where the claim specifies that the second wicking barrier must be located. The submersible connector could not be located at the end of the leads where they connect to the power source.

With respect to claim 25, the claim recites that a first wicking barrier and a second wicking barrier are included in the same closure assembly that includes the electrical lighting elements. The claim further states that the first wicking barrier is between the transformer of the electrical lighting elements and the leads to the source of electrical power. 17 The Court determines that the language of the claim indicates that the first wicking barrier would have to be at the end of the leads where they connect to the transformer, as opposed to the end of the leads where they connect to the power source. Additionally, as claim 25 requires the second wicking barrier to be in the closure for the transformer, the second wicking barrier is likewise at the transformer-end of the connection between the transformer and lamp assembly. 18

17 "A lighting assembly comprising . . a closure including a potting body in which said electrical lighting elements are
embedded, a first wicking barrier electrically between said leads and said transformer in said closure assembly and a second wicking barrier electrically between said lamp assembly and said transformer in said closure assembly." '709 reissue patent, col. 9, lines 41-47.18 Defendant notes that the placement of the first wicking barrier in Figure 2 is consistent with its interpretation.

The Court thus determines that the "wicking barrier" cannot be integral with a submersible connector.

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Claim 1 of the '046 patent describes an abrasion resistant rail seat for use with concrete ties in which an elastomeric rail pad insulates the rail from the rail tie. The improvement is comprised of "interposing an abrasion resistant plate between said rail pad and said rail tie, . . . said abrasion resistant plate being wider than said rail and extending beyond the flange of said rail." 046 patent, col. 2, ll. 50-55 (emphasis added). In its claim construction order, the district court construed the phrase "wider than [said] rail" so as to require the abrasion resistant plate to be "wider than the rail along it's [sic] entire length, including within the cutout portions." Pandrol II, slip. op. at 6. In its subsequent infringement analysis, the district court concluded that the accused product was "effectively the same width as the rail," and did not meet the "wider than said rail" limitation. Pandrol I, slip. op. at 8. However, we do not have to determine whether the district court's infringement analysis was correct, because we conclude that the district court's claim construction of "wider than said rail" improperly required the abrasion plate to be wider than the rail along its entire length, including within the cutout portions.

The prosecution history of the '046 patent reveals that the "wider than said rail" language was introduced as part of a broader limitation which was added by amendment to distinguish a prior art patent issued to John Buckett, U.S. Patent No. 4,925,094 ("Buckett"). The broader limitation, "being wider than said rail and extending beyond the flange of said rail," was added to distinguish the Buckett abrasion plate that was "substantially the same width as said rail flange." Buckett, col. 4, ll. 11-12. Accompanying the claim amendment was a chart prepared by the inventor to highlight the differences between the claimed invention and Buckett. One entry in the chart stated the following:

Plate extends significantly beyond the rail flange which is essential to prevent significant abrasion occurring beneath the outer pad edges. Although there is very little vertical pressure in this area there is a great deal of horizontal pad movement which causes slurry like material to wear the concrete. One of the reasons for the shoulder cut out is to enable the abrasion plate to extend well beyond the edges of the rail flange.

J. App. at 504 (emphasis added). As Pandrol correctly points out, the above statements relate only to the corner "extensions" of the plate, as opposed to the cutout portions. Based on this chart fragment, we conclude that the single limitation of "being wider than said rail and extending beyond the flange of said rail" only applies to the corner portions of the plate, and not along the rail's entire length.

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1. Claim Construction

Plaintiff has moved for summary judgment on its claim of patent infringement. The first step in a patent infringement action is to properly construe the claim to determine its scope and meaning. Carroll Touch, 15 F.3d at 1576. In construing asserted claims, "the general rule is that terms in the claims are to be given their ordinary and accustomed meaning . . . ." Johnson Worldwide Associates, Inc. v. Zebco Corp., 175 F.3d 985, 989 (Fed. Cir. 1999). Generally, both Claims 1 and 2 of the '878 Patent describe an assemblage of credit cards and currency. The product itself is simply a rubber band fitted with a metal band which secures the credit cards and currency, serving essentially the same purpose as a money clip.

The point of contention between the parties in regard to construction of the '878 Patent is the definition of the word "widthwise." In both Claims 1 and 2, the rubber band is described as "a sized rubber band in encircling relation widthwise
of said assemblage." Bryden Aff. Exs. A, C. Defendants offer the following definition of "width": "the measurement of the extent of something from side to side." See Lome Aff. [Docket No. 19] Ex. 5 (American Heritage Dictionary); see also Bryden Aff. Ex. H (same definition in Webster's New Riverside University Dictionary); Bryden Aff. Ex. I (same definition Webster's New College Dictionary). Defendants seize on the word "widthwise" to argue its product does not infringe on the '878 Patent, claiming its product does not fit widthwise over the assemblage; but rather fits "lengthwise" over the assemblage. The parties dispute, however, which measurement of a credit card constitutes its width as opposed to its length. While Defendants contend the width of a credit card is the shorter of the two measurements, Plaintiff states the width can refer to either measurement of a credit card, and further contends that when referring to a credit card, "width" generally refers to the measurement from side to side.

The Court determines the term "widthwise," given its common meaning, can refer to either dimension of a credit card. "Width," as commonly defined, measures a distance from side to side - however, determining which measurement on a three dimensional object is "side to side" as opposed to "top to bottom" is a matter of perspective. Indeed, Defendant Lome repeatedly referred to the longest dimension of a credit card as its "width" in his own deposition, despite arguments in his briefs to the contrary. Lome Deposition (Hearing Exhibit). While not in and of itself dispositive of the issue, Lome's testimony indicates that in this context, "width" should be interpreted broadly.

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1. "wire"

Although not raised by the parties, the Court considers the word "wire" as it appears in Claim 25. The '133 Patent is the first Patent which has come to the Court's attention which uses the word "wire" without a modifier in its claims. 23

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23 The parent '136 Patent uses "guidewire" and "core wire." The '578 Patent uses the word "core wire." The '126 Patent also uses the word "wire," however, there were no claims from that patent submitted for construction.

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Claim 25 is a method claim. The word "wire" appears in the first step: "Disposing a wire near an opening into said body cavity." In the Summary of the Invention, the word wire is discussed as having multiple meanings, depending upon its use:

The term "wire" should be understood to collectively include both guidewires and tips and simply wires without distinct tip structures.

('133 Patent, Col. 4:9-11.) Although this statement is included in the Summary, the word "guidewire" is not used in any of the claims of '133 Patent nor is the word "guidewire" used in the claims of the '578 Patent from which the '133 Patent is a continuation. The only patent claims which contain the use of the word "guidewire" are claims of the '136 Patent.

As it is used in Claim 25, "wire" is an apparatus with a detachable distal tip which can be disposed into a body cavity. The second step of the method of Claim 25 provides: "disposing a separable distal tip of said wire into said body cavity..." Thus, "wire" as it is used in Claim 25 of the '133 Patent is defined the same as "guidewire" in the '136 Patent.

The Court construes "wire" as it is used in the '133 Patent to mean:

A part of an apparatus of the invention which is a thin, flexible, continuous length of metal, of circular cross-section which has a detachable tip.
1. "wire guide" and "wire guide mounted on the distal region" 10

10 The term "wire guide" appears in several claims of the '987 Patent, and the term "mounted on" appears in both the '987 and '505 Patents. With respect to the term "mounted on," the parties' dispute centers on the relationship between the wire guide and the support wire. Therefore, the Court focuses on the construction of the term "wire guide" and the phrase "wire guide mounted on the distal region."

Boston Scientific argues to the extent that construction is warranted, the Court should construe "wire guide" as "a tube or other component with an aperture designed to engage the guidewire and track the support wire along the guidewire." Boston Scientific also seeks to construe the phrase "mounted on" as "assembled on for use together with." ev3 seeks to construe "wire guide mounted on the distal region" as follows: "A part attached at a fixed position to the support wire that has an opening for another wire to pass through so the other wire can lead the support wire to a location. The wire guide is not a separate sheath or rapid exchange catheter, nor is it an opening in a separate catheter or sheath."

Both parties acknowledge that the term "wire guide" has no established meaning in the art. The Court first consults the claim language and the remainder of the specification to discern what a person of ordinary skill in the art would have understood the term to mean. See Phillips, 415 F.3d at 1314. Relevant portions of the claim language of the '987 Patent read:

1. A method for deploying a percutaneous medical instrument, comprising the steps of:

   providing a guidewire and a support wire, the support wire having a distal region, a wire guide mounted on the distal region, and an expandable filter mounted on the distal region; . . . advancing the support wire along the guidewire with the wire guide of the support wire engaging the guidewire

6. The method of claim 1, wherein the wire guide comprises a ring having an aperture adapted to receive the guidewire.

19. A percutaneous filter system, comprising: . . . a wire guide mounted on the distal region of the support wire and slideably engaging the guidewire, . . .

22. The system of claim 19, wherein the wire guide comprises a ring having an aperture adapted to receive the guidewire.

29. The method of claim 1, wherein the wire guide is mounted on the support wire within the filter.

30. The method of claim 1, wherein the wire guide is mounted on the support wire distal the filter.

The term "wire guide" appears throughout the remainder of the '987 Patent. For example, the Abstract provides in part: "A guided filter system for temporary placement of a filter in an artery or vein is disclosed. The system includes a guidewire slideable through a wire guide included in a distal region of a support wire." In addition, the Summary of the Invention provides in part:

In one embodiment, the filter system comprises a guidewire and a support wire having an expandable filter, e.g., a
parachute, basket, or scroll, mounted on a distal region of the support wire. The distal region of the support wire includes a wire guide, which slideably engages the guidewire. In certain embodiments, the wire guide comprises a ring having an aperture adapted to receive the guidewire.

In a first method of using the guided filter system, the filter and the distal region of the support wire are advanced over the guidewire, having the wire guide of the support wire engaging the guidewire, i.e., like a monorail catheter engaging a guidewire.

'987 Patent, col. 3, ll. 9-65 (emphasis added). The term "wire guide" also appears repeatedly throughout the Brief Description of the Drawings and the Detailed Description. In the Detailed Description, the term "wire guide" is identified as a specific part: "wire guide 26." For example, the first reference to "wire guide" reads:

Wire guide 26 is included in distal region 11 of the support wire. The wire guide may be mounted within the filter (as shown in FIG. 1B and FIG. 1C) or at any other suitable position on support wire 10 proximal of the filter (as shown in FIG. 1E), or on a distal extension of the support wire which extends beyond the filter (as shown in FIG. 1F).

'987 Patent, col. 5, ll. 35-41. The wire guide is also specifically identified as number 26 in the related Figures 1B-1F. These figures all correspond to the description of the "first embodiment."

The '987 Patent also describes "another embodiment," in which "the filter further includes a capture sheath which covers the filter and is removeable from the filter, the sheath having a port in its distal region adapted to receive the guidewire in the manner of a rapid exchange catheter." '987 Patent, col. 5, ll. 48-51. This sheath-based embodiment is depicted in Figures 1G, 1I, 1J, and 1K. In contrast to the figures depicting the "wire guide" embodiment, these figures do not include any structure designated as a "wire guide" or that corresponds to reference number 26. Instead, these figures depict embodiments using a "sheath" or a "rapid exchange catheter."

Despite the distinction between the two embodiments and the identification of "wire guide" as a particular component in reference to the "first embodiment," Boston Scientific argues that it would be improper to construe the term so as to limit it to embodiments in which the term "wire guide" explicitly appears in the specification. Instead, Boston Scientific proposes that the term "wire guide" should encompass embodiments disclosed in the '987 Patent that do not expressly refer to a "wire guide." Specifically, Boston Scientific proposes that "wire guide" should include the sheath-based embodiments depicted in Figures 1G, 1I, 1J, and 1K. The Court disagrees. As outlined above, the '987 Patent describes two distinct structures for guiding a wire over another wire: a "wire guide" and a "sheath" (or "rapid exchange catheter"). In particular, claims 1-30 recite the "wire guide" limitation and claim 31 recites the "sheath" limitation. 11 The '987 Patent also describes a "wire guide" as a specific component of the "first embodiment." The figures that include the "wire guide" are described in the patent and the "wire guide" structure is labeled with reference number 26. In contrast, the '987 Patent describes "another embodiment," that includes a "sheath" or "rapid exchange catheter" with a hole in it that slides along a wire. The hole is referred to as a "port (60)," a "skive (61)," and a "skive (77)", but not a "wire guide (26)." '987 Patent, col. 5, ll. 54-57. Further, neither the figures depicting nor the portion of the detailed description relating to this second embodiment describe any structure designated with reference number 26.

Footnotes

11 In particular, claim 31 reads:

31. A percutaneous filter system, comprising:

a guidewire;

a support wire having a proximal end, a distal end, a distal region, and an expandable filter mounted on the distal region of the support wire, the support wire adapted to receive a percutaneous medical instrument; and

a sheath which removeably covers the support wire and filter, the sheath having a proximal end, a distal end, and a distal
region, the distal region having a lumen which receives the filter and an aperture adapted to pass the guidewire,

wherein, during use, the guidewire is positioned in a vessel at a region of interest, the sheath carrying the support wire is advanced along the guidewire until the filter reaches the region of interest, and the sheath is withdrawn to expose the filter.

Based on the claim language and the specification, it is evident that the "wire guide" and "sheath" are distinct structures. Accordingly, the Court declines to construe the term "wire guide" to encompass the sheath-based embodiments of the '987 Patent.

The Court now turns to the "mounted on" claim language. The term "wire guide mounted on the distal region" appears in independent claims 1 and 19 of the '987 Patent. In relevant part, claim 1 reads: "the support wire having a distal region, a wire guide mounted on the distal region." Claim 19 provides in pertinent part: "a wire guide mounted on the distal region of the support wire and slideably engaging the guidewire." In each claim, the language expressly indicates that the wire guide is mounted on the support wire. Boston Scientific argues that its proposed construction--"assembled on for use together with"--reflects the ordinary meaning of the words, which do not connote any sense of permanence or fixed attachment. In contrast, ev3 argues that the appearance of the phrase "mounted on" in these claims conveys a sense that the wire guide is permanently attached to the support wire.

To determine the meaning of "mounted on," the Court looks first to the intrinsic evidence. Claim 19 describes the relationships between the "wire guide" and two other components--the support wire and the guidewire. The claim language instructs that the "wire guide" is "mounted on the support wire," but "slideably engaging" the guidewire. The use of two claim terms--"mounted on" versus "slideably engaging"--"in close proximity in the same claim gives rise to an inference that a different meaning should be assigned to each." Bancorp Servs., L.L.C. v. Hartford Life Ins. Co., 359 F.3d 1367, 1373 (Fed. Cir. 2004). This inference supports a construction in which the wire guide (1) is located at a fixed position relative to the support wire, and (2) allows the guidewire to slide relative to its position.

With no strong extrinsic evidence to the contrary, the Court relies on the intrinsic evidence to conclude that the phrase "mounted on" requires fixed attachment. The Court therefore construes "wire guide mounted on the distal region" as "a part attached at a fixed position to the distal region of the support wire that has an opening for another wire to pass through so the other wire can lead the support wire to a location." The Court declines to construe the terms "wire guide" and "mounted on" independently of the Court's construction of "wire guide mounted on the distal region."

7. "Wire-like." Consistent with claim 1 of the '331 patent and claim 1 of the '278 patent, 16 the written description 17 and the prosecution history, 18 the court construes "wire-like" to mean "a metal material capable of being bent to form peaks."

--- Footnotes ---

16 '331 patent, col. 7, ll. 3, 21-23; col. 8, ll. 6-7; '278 patent, col. 6, l. 55.
17 '331 patent, col. 4, ll. 63-70; col. 5, ll. 1-13; '278 patent, col. 4, ll. 57-70; col. 5, ll. 1-7.
19 Defendants argue that the use of "wire-like" renders certain patent claims indefinite. The Federal Circuit has explained that a claim satisfies § 112 P 2 if one skilled in the art would understand the bounds of the claim when read in light of the specification. See Miles Lab. v. Shandon, Inc., 997 F.2d 870, 875 (Fed. Cir. 1993). In determining whether this standard is met, the Federal Circuit has advised that a claim is not indefinite merely because it poses a difficult issue of claim construction. Exxon Research & Eng'g Co. v. United States, 265 F.3d 1371, 1376 (Fed. Cir. 2001). Rather, the Federal Circuit has held a claim sufficiently clear to avoid invalidity on indefiniteness grounds "if the meaning of the claim is
discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree." Id. "A determination of claim indefiniteness is a legal conclusion that is drawn from the Court's performance of its duty as the construer of patent claims." Personalized Media Communications, LLC v. Int'l Trade Comm'n, 161 F.3d 696, 705 (Fed. Cir. 1998). The court finds that "wire-like" is not indefinite, as one of ordinary skill in the art could discern from the specification and prosecution history that the term was limited to a metal material that is capable of being bent.

a. "wire loop"

The term "wire loop" appears in claim 1. Boston Scientific argues that the term is unambiguous and needs no further construction. ev3 proposes that the term be construed as "a loop or a hoop-shaped frame that maintains the filter mouth in an open position and defines the mouth of the filter." After reviewing the intrinsic evidence, and the prosecution history in particular, the Court declines to construe the term "wire loop."

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3. "the conductive wire portion of which contacts said gel layer"

Claim 2 of the '884 Patent describes the "connection means" of Claim 1 as an insulated wire, "the conductive wire portion of which contacts said gel layer." Cardiac Science maintains that "conductive wire portion of which contacts said gel layer" should be construed as "electrically connected to the gel layer." Philips contends that this phrase should be construed as "conductive wire portion of insulated wire is in direct contact with the gel layer, without the use of a conductive contact layer, for example an intermediate metallic layer." Philips also renews its disclaimer arguments, as discussed in Section II.D.1, above.

The Court finds that "conductive wire portion of which contacts said gel layer" should be construed as "the conductive wire portion of the insulated wire that is in contact with the gel layer." The phrase needs no further construction.

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a. "wires for cutting said housing part into several sections"

i. "wires"

The parties first dispute whether the claim term "wires" should be limited to structures made of metal. Gore argues that the ordinary meaning of "wires" requires a metallic structure and cites dictionary definitions that support this interpretation. (Gore Opening Br. 33; Matsumura Decl. PP 51-55.) Perouse argues that "wires" are not limited to metal structures because the term "wires," as used in the relevant art, refers to both plastic and metal structures. (Perouse Opening Br. 22.)

The intrinsic evidence does not resolve this dispute. As Gore correctly notes, the specification is silent regarding the material or materials used to make the "wires." (Gore Opening Br. 33.) Because the intrinsic evidence gives no indication that the material of the wires is significant, this would seem to support Perouse's broader construction. However, because the intrinsic evidence is somewhat ambiguous, it is appropriate to consult extrinsic evidence. See Pickholtz v. Rainbow Techs., Inc., 284 F.3d 1365, 1373 (Fed. Cir. 2002) ("Only if a disputed claim term remains ambiguous after analysis of the intrinsic evidence should the court rely on extrinsic evidence."); see also Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1309 (Fed. Cir. 1999) ("[I]t is entirely appropriate, perhaps even preferable, for a court to consult trustworthy extrinsic evidence to ensure that the claim construction it is tending to from the patent file is not inconsistent with clearly expressed, plainly apposite, and widely held understandings in the pertinent technical field.")
The dictionary definitions cited by Gore support its contention that "wires" are metal structures. However, Perouse's expert suggests that "wires" has a particular meaning to persons of skill in the art that may differ from its dictionary definition. See Phillips, 415 F.3d at 1322 ("[A] general usage dictionary cannot overcome art-specific evidence of the meaning' of a claim term. . . . Even technical dictionaries . . . may suffer from some of these deficiencies." (quoting Vanderlande Indus. Nederland BV v. Int'l Trade Comm'n, 366 F.3d 1311, 1321 (Fed. Cir. 2004))). The Court is persuaded by the extrinsic evidence cited by Perouse's expert that a person of skill in the art would not interpret "wires" as being limited to structures made from metal. In particular, Perouse's expert cites a number of patents from the 1980s and 1990s relating to implantable medical devices in which "wires" is used to include both metal and plastic structures. (Golds Decl. P 14, Ex. 25, 26, 21, 28.) While the Federal Circuit has cautioned that expert testimony may be unreliable because it is prepared for the purpose of litigation, the Court believes this concern is minimized here where the expert testimony is supported by the patent literature. See Phillips, 415 F.3d at 1318 ("[E]xtrinsic evidence consisting of expert reports and testimony is generated at the time of and for the purpose of litigation and thus can suffer from bias. . . .").

Therefore, the Court's construction of "wires" is not limited to structures made of metal.

The Court also adopts Perouse's proposed construction of "wires" to mean "threads." Gore's proposed construction of "structures" is obviously too broad and inconsistent with any reasonable definition of "wires." The specification appears to use the terms "wires" and "threads" interchangeably. The abstract of the '787 patent states that "cutting threads cause the housing to open longitudinally into several petal-like parts" ('787 patent Abstract), while in the body of the patent, these "cutting" elements are referred to as "wires." ('787 patent Abstract, col. 1 11.54-55, col.3 11.19-39). This construction is also consistent with dictionary definitions cited by Gore, several of which refer to a wire as a "slender, flexible structure" or "thread." (Matsumura Decl. P 54.)

The Court construes "wires" to mean "threads."

ii. "for cutting said housing part"

"Cutting" is a common, nontechnical term used in the '787 patent consistent with its ordinary meaning, "to penetrate with an edged instrument which severs the continuity of the substance." The Oxford English Dictionary, v.4 at 172. The specification uses "cutting" to refer to the creation of separations in the housing part by the wires of the first embodiment. ('787 patent col.1 11.54-57, col.3 11.5-43.) The operator induces tension in the wires by pulling on the actuation handle and these wires then cut the housing part into sections. ('787 patent col.1 11.54-57, col.3 11.5-43.) There is nothing in the intrinsic evidence to warrant departure from the ordinary meaning of this term.

Gore construes "cutting" to mean "severing." 19 (Gore Reply Br. 19-20.) Because "severing" ordinarily requires the complete separation of a part from the whole, Gore's construction is too narrow. "Cutting" does not require complete severance, nor does the intrinsic evidence describe a housing part from which a portion has been severed. Gore's construction would therefore exclude the "wires" embodiment described in the '787 patent, because the wires of this embodiment do not necessarily "sever" the housing part from the tool. A construction that does not include preferred embodiments within its scope is "rarely, if ever, correct." See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996).

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19 While the language of Gore's proposed construction (as worded in Gore's proposed order) was "cutting or severing," Gore's reply brief clarifies that the intended construction is "cutting, i.e., severing." (Gore Proposed Order 2; Gore Reply Br. 20.)

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Perouse construes "cutting" to mean "dividing." This construction is too broad because there are ways to "divide" a housing part that do not involve "cutting." For example, removal of the cord in the '787 patent's "gussets" embodiment divides but does not cut the housing part.
Therefore, the Court cannot accept either party's proposed construction and instead adopts its own construction that is more consistent with the ordinary meaning of the word. The Court construes "wires for cutting said housing part" to mean "threads that can penetrate and completely or partially divide said housing part."

iii. "into several sections"

Finally, the parties dispute the construction of the claim term "several." Perouse contends that "several" means "more than one," while Gore proposes "more than two." The Court believes that "several" is typically used to mean "more than two," but will review the evidence to determine whether a different construction is appropriate.

The specification and drawings depict a housing part that is cut into three sections, which is consistent with either proposed definition. Because the intrinsic evidence is ambiguous, the Court will consider extrinsic evidence. Perouse's expert states that "several" does not have a particular meaning in the art, but contends that the ordinary meaning is "more than one." (Golds Decl. P 88.) The dictionary on which Perouse's expert relies is ambiguous, however, as it includes definitions for "several" as both "more than one" and "more than two but fewer than many." (Golds Decl. P 88, Ex. 5 at 1078.) Gore's expert assumes without discussion that "several" is defined as "more than two." (Matsumura Decl. PP 51-52, 55.) In its reply brief, Gore notes an additional dictionary definition that defines "several" as "[a]s a vague numeral: Of an indefinite (but not large) number exceeding two or three; more than two or three but not very many." (Gore Reply Br. 20 n.14.) The parties cite no additional extrinsic evidence in support of their constructions.

While each construction finds some support from dictionary definitions, there is slightly more support for Gore's proposed construction of "more than two." The Court also believes "more than two" is more consistent with the use of "several" in common parlance. The Court therefore construes "several" to mean "more than two."

Accordingly, the Court construes the phrase, "wires for cutting said housing part into several sections," to mean "threads that can penetrate and divide said housing part into more than two sections." 20

--- Footnotes ---

20 Perouse provided a construction for "sections" in its opening brief. (Perouse Opening Br. 28-29.) However, Core did not construe this term in its briefing or address its construction during the Markman hearing. Therefore, the Court presumes this claim term is not in dispute and does not require construction.

--- End Footnotes ---
than the magnet it protects. To put it another way, the magnet protector is "taller" than the magnet it protects, so that during rotation, as described above, the particles hit the casing wall, are pushed upward, and then attach themselves to the magnet surface. The specifications of the 787 patent, 106 the 781 patent, 107 the 386 patent, 108 the 539 patent, 109 and the 117 patent 110 all explain that a protector extends farther out than does its corresponding magnet to protect the magnet when the tool is rotated. The drawings of all five patents support this interpretation as well.

1. With a wick to convey a combustible liquid to the burner

The clause "with a wick to convey a combustible liquid to the burner" is found in phrase 4 of claim 1. There are two disputes associated with this phrase, namely: (1) whether the "liquid" is a required limitation of the claim; and (2) whether Defendant's proposed language of "This term may not be construed to encompass a wick that extends through the cavity to the upper surface of the catalytic combustion burner" should be added as a negative limitation. The Court looks at each of these in turn.

* * *

The Wick Limitation

Defendants seek to add the limitation, "This term may not be construed to encompass a wick that extends through the cavity to the upper surface of the catalytic combustion burner." Plaintiffs argue no portion of the patent or prosecution history supports such a limitation.

Defendants point to the prosecution history and argue that the Applicants of the '061 patent disavowed a wick extending up and through the cavity of the burner. Defendants point to the same response to the office action referenced above and argue that the Applicants expressly distinguished the positioning of the prior art wicks, i.e., wicks that extended through the upper part of the cavity and were in contact with the atmosphere. See Doc. No. 58, Ex. 3, at P130240. According to Defendants, because the Applicants expressly disavowed via arguments submitted to the Patent Office for purposes of establishing patentability over the prior art, Plaintiffs are now precluded from asserting a claim construction without such a limitation.

In the response referenced above, the Applicants noted that "FR 2 530 144 discloses a catalytic combustion burner provided with a cavity filled by a wick which extends up to the upper part of this cavity and which is consequently in contact with the atmosphere." Id. (emphasis added). The point made by the patentee was that, in FR 2 530 144, the wick extended to a point where it blocked ingress of air to the cavity. However, the prior art did not solve the problem of wick burning, noting that "the wick which is very close to the catalytic combustion zone will burn and char and carbonize and produce carbon particles." Id. As a result, in the absence of oxygen, the wick in close contact with the stone in the device of FR 2 530 144 would carbonize.

The patent-in-suit did not attempt to solve the problem of wick burning through the positioning of the wicks, as Defendants...
contend. Rather, the novelty of the present invention is the "presence of at least one open channel located in the upper part of the burner." See Doc. No. 58, Ex. 3, at PB0238-39. The present invention provides the open passage that permits air to enter into the cavity to avoid carbonization. As the Applicants stated, the "presence of at least one open channel is neither disclosed in, or suggested by, either EP 0 277 875 or FR 2 530 144." Id. at PB0239.

The Court finds that the open channel provided the inventive step over the prior art, not the placement or positioning of the wick. Consequently, the Court will not construe the term as requiring the negative limitation asserted by Defendants.

4. "With From Approximately 10 to 40 Bristles Per Turn of the Helix"

Plaintiffs contend that the phrase "turn of the helix" refers to a "visible row or visible turn" of the helical array of bristles, which corresponds to a 180 degree rotation of the mascara brush about its longitudinal axis. Defendants argue that the ordinary meaning of "turn" is "rotation or revolution," which suggests a 360 degree rotation of the brush about its axis.

Consistent with both the court's interpretation of the word "bristle" and with the specification's description of the manufacturing process, the court interprets the word "turn" to be the "loop" into which the bristle bundles are inserted. At the outset, the patentee describes the conventional mascara brush as having "from 50 to 60 bristles per turn." ( '622 patent, col. 1, lns. 20-21) In more particularly describing the various manufacturing stages of the conventional brush, the patentee explains that,

with the bristle bundles 6 thus disposed, the rake-like device 8 is brought near the twisted wire 2b until the bundles 6 each penetrate with one of their ends into a loop 5 perpendicular to the median line of the twisted wire 2b until the wire comes to occupy a median position in relation to the bundles 6 of the bristles which then project from the latter on either side by a practically identical distance.

At that moment, the twisting movement, already effected to constitute the twisted wire 2b, is continued so that the pitch of the wire becomes progressively smaller, the two iron wire strands becoming contiguous and the bundles 6 of the bristles being simultaneously deformed to lead to the above-mentioned spiral form whose pitch is of the order of 2 mm.

To obtain the bristles 3, polyamide filaments are used with a diameter of approximately 0.8 mm. The number of bristles constituting one bundle 6 is the order of sixty. Thus, the brush represented in FIG. 5 has a helical array of bristles relatively tightly placed against each other.

To obtain the brush 1 represented in FIG. 6, which conforms to the present invention, the above indicated method is used except that the depth of each tooth of the rake-like device 8 for dispensing the bundles 6 of the bristles is halved and that, moreover, the bristles 3 have a diameter of approximately 0.17 mm. It follows from this that the number of bristles per turn of the brush 101 of FIG. 6 is 15; it has therefore been reduced by 75%, the reduction by half of the overall volume of the bristles being combined with a reduction by half due to the doubling of the diameter of the bristles.

('622 patent, col. 5, lns. 8-38) (emphasis added). The primary lesson to be gleaned from this language is that the patentee only counted the "bristles" once; he did not double the number of bristles once the "bundle 6" was inserted into the "loop" or "turn" and deformed by being twisted at its median point.

This construction finds support in other parts of the specification and of the prosecution history. For instance, the specification states that "when the bristles are implanted between the turns of the core, there is a softening of the bristles due to the deformation . . . ." ( '622 patent, col. 3, ln. 68 - col. 4, Ins 1-2) (emphasis added).

Moreover, in discussing the remedy to the "flattening" problem of conventional mascara brushes, the specification notes that in the present invention,

the bristles of one turn cannot, by bending over as they pass through the wiper lip, also produce the bending over of the bristles of the following turn; on the contrary, they interpenetrate between the bristles of this following turn. . . .
('622 patent, col. 2, lns. 43-48) (emphasis added). In other words, as the brush emerges from the wiper, the first turn of bristles to encounter the wiper will interpenetrate "the following" turn. If a "turn" referred only to a 180 degree rotation on the brush's longitudinal axis, then the bristles of one turn could not interpenetrate the bristles of "the following" turn because those "following" bristles would be on the other side of the axis (i.e., 180 degrees away). 6

5 Plaintiffs argue that the bristles form a "double helix" and that by rotating it 360 degrees two "visible rows of the helical array will be traversed along the length of the brush." (D.I. 272 at 34) Neither claim 1 nor the specification speaks of a double helix.

6 The same is true if one uses (as plaintiffs sometimes do) "adjacent" in place of "following." If a turn is 180 degrees, the "adjacent" turn is the next, contiguous 180 degrees. See Webster's at 26 (defining "adjacent" as, inter alia, "having a common border").

The prosecution history is not inconsistent with this interpretation. In a request for reexamination, L’Oreal submitted a variety of brush photographs to the examiner to distinguish the '622 patent from prior art. These photographs depict magnified views of prior art brushes and of the brush disclosed in the '622 patent. (See generally D.I. 273 at SA 168-76) The caption to each of these photographs identifies the number of turns on the brush and the number of bristles per turn. Significantly, in each of these photographs more than 180 degrees of the mascara brush is visible. (See, e.g., D.I. 273 at SA 173-75)

In sum, in determining the number of bristles "per turn of the helix," one should count the number of bristles included in each original bundle that is inserted into each "turn" or "loop" or "coil" of the core. This number should be consistent with the number of bristles visible on each half of the "turn," but neither a 360 degree nor a 180 degree construction is entirely consistent with the intrinsic evidence of record.

In the Sevenson litigation, this court also construed the words in claim 1(f), which requires "withdrawing said steam from said confined space." In this court's claim construction opinion in Sevenson, it construed "elongated confined space" not to require the confinement of steam because several dependant claims (5, 6, 7, and 9) disclosed methods for accumulating, transmitting, treating, and filtering steam before discharge. Applying the principle of claim differentiation, the court concluded claim 1's use of the term "confined" should be limited to the confinement of sludge and calcium oxide, and not steam, which was addressed by the other dependent claims. See Manchak v. Chemical Waste Mgmt., 1997 U.S. Dist. LEXIS 22303, C.A. No. 95-709, slip op. at 30-32.

On appeal, the Federal Circuit held that the plain meaning of the term "confined space" is that it "must also confine steam." Manchak, 217 F.3d 860, [WL] at *3. The Federal Circuit rejected this court's reliance on claim differentiation, noting that dependant claims 5 through 9 would not make sense unless the structure of claim 1 already confined the steam to be processed. Id. 217 F.3d 860, [WL] at 3. The Federal Circuit also found its construction to be consistent with the embodiment depicted in one of the figures and with the prosecution history. Id. It therefore held that a device that "has a safety screen on top that allows the steam formed by the exothermic reaction to . . . escape [freely]," could not infringe, either literally or under the doctrine of equivalents, the "confined space" claim limitation. Id. 217 F.3d 860, [WL] at *2, 5-6. The court will therefore define "elongate confined space" to mean "an elongate space that must confine the reaction product of calcium oxide and sludge, including steam."

In the Sevenson litigation, this court also construed the words in claim 1(f), which requires "withdrawing said steam from said confined space." Sevenson argued that this claim limitation should be construed to require "an active means of
removing steam from the elongate confined space," as opposed to permitting steam to escape passively into the environment. The court rejected this construction of claim 1(f), noting that dependant claim 5 discloses a process by which steam accumulates in the confined space and proceeds down a passage to the exterior of the confined space. Claim 6, which is dependant on claim 5, discloses using a stream of air to withdraw steam from the confined space. Because claim 6 discloses an active system for withdrawing steam, the court employed the canon of claim differentiation to conclude that claim 1(f)'s "withdrawing" requirement should be more generally understood as encompassing either active or passive means for steam removal.

While addressing the court's construction of "confined space," the Federal Circuit did not reach the construction of the term "withdrawing." Manchak, 217 F.3d 860, [WL] at *3. Several defendants argue, however, that the Federal Circuit's analysis supports a more narrow construction of withdrawing than was employed in Sevenson. DCWASA, for example, argues that the "passive" escape of steam is not covered by the "withdrawing" claim limitation. It notes the Federal Circuit stated that "the step of 'withdrawing said steam from [said] confined space' in claim 1 also would make little sense if the steam were not confined in the space to begin with." Id. 217 F.3d 860, [WL] at *3. DCWASA posits that because claim 1 requires both the confinement and removal of steam from the confined space, the mere passive escape of steam from the ends or top of an accused device is not covered by the claim term "withdrawing."

In response, Manchak argues in support of the court's prior ruling that the "withdrawing" claim limitation is satisfied by either active or passive removal of steam from the confined space. He notes that the Federal Circuit did not reach "withdrawing." Indeed, it noted that dependant claim 6's active means of discharging steam by means of an air flow distinguished it from claim 1. Thus, claim 1 should be read to apply to the active or passive removal of steam from the confined space.

The plain meaning of "withdraw" is "to take back or away" or "to remove from use or cultivation." Webster's Ninth New Collegiate Dictionary, 1355 (1991). Nothing in this definition suggests the manner in which the removal of steam must occur. Nor does any part of the claim specification suggest that this withdrawing must occur actively. Thus, the court will continue to construe the phrase "withdrawing said steam from said confined space" to mean "removing, either by active or passive means, steam from the elongate confined space."

165. This claim terminology describes the position of the movable link element when it is spaced from the cam. This term is used in the '656 patent specification in various contexts, but always in the same way to describe the condition when the bolt is "withdrawn", Col. 1, lines 32-33; or to describe the condition when "the detent [ball] 96 is unextended or withdrawn", Col. 6, lines 22-23. Thus, the term is used to be synonymous with "unextended", where the spherical detent ball is not projected, extended or protruded outwardly of the solenoid housing. See Col. 6, lines 16-19. That is, the withdrawn position is the opposite of the engagement position where the detent ball has projected above the surface of the solenoid housing.

Next, the district court construed the claim language "in," "within," and "between." Each of these claim construction issues is similar to the interpretation of "between" discussed above in relation to claims 5 and 33-36 The district court construed these words more narrowly than required by the claim language and context. The word "in" does not require that something be completely and continuously inside of something else. The word "within" does not require that something be completely and continuously within something else. Further, as discussed above in more detail, the word "between" does not require that something be completely and continuously between two things.

Nothing in the specification or the prosecution history supports such narrow readings, and no testimony was offered to suggest that these narrow interpretations are the correct meaning to one skilled in the art. Consulting the claim language again, the "between" requirement may be satisfied even if a component extends beyond the specified boundaries. In the
same way, the "in" requirement may be met by a component which is located, at least in relevant part, in the defined space, as the "within" requirement may be met by a component which located, at least in relevant part, within the defined area. Accordingly, this court vacates the district court's grant of summary judgment of non-infringement, both literal and under the doctrine of equivalents, as to claim 11 and remand for a trial on the merits.

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3. Within

TI Group next argues that the district court's definition of the term "within" is also unnecessarily narrow. The district court construed "within" to mean that "the pumping means components are located inside the reservoir." Markman Order at 2. TI Group argues that this construction is more narrow than the ordinary and customary meaning of the term "within," and is not consistent with the written description. VDO argues that the narrower construction is appropriate in light of the dictionary definitions and written description.

Again, both parties offer competing dictionary definitions in support of their argument. TI Group urges us to adopt the definition "in the limits of, not outside or beyond," 20 The Oxford English Dictionary 456-58 (2d ed. 1989), or "in the limits or compass of; not beyond," Webster's at 2627. VDO points instead to the definitions reciting "in the inner part or interior of." 20 The Oxford English Dictionary 456-58 (2d ed. 1989), or "on the inside or on the inner side," Webster's at 2627. Because all of the offered definitions are facially relevant, we rely on the written description to "point away from the improper meanings and toward the proper meanings." Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1250 (Fed. Cir. Sept. 16, 1998).

TI Group argues that the written description does not require the pumping means to be located within the reservoir, and further argues that, if the patentee had wished to draw such a distinction, the language for doing so was available. TI Group argues that because the patentee used the allegedly broader term "within," rather than "inside" or "on the interior," the full breadth should be afforded to the scope of the limitation. VDO argues in response: (1) that the structures illustrated in the drawings of the written description show the pumping means located inside of the reservoir; (2) that TI Group's argument "ignores the primary (and most relevant) definition of 'within'"; and (3) that statements made by TI Group during prosecution of a Japanese counterpart application confirm that the patentee intended "within" to mean "inside."

With respect to VDO's first argument, regarding the drawings being limited to the construction it urges, we have held that "the mere fact that the patent drawings depict a particular embodiment of the patent does not operate to limit the claims to that specific configuration." Anchor Wall Sys. v. Rockwood Retaining Walls, Inc., 340 F.3d 1298, 1306-07 (Fed. Cir. 2003) (citing Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc., 222 F.3d 951, 956 (Fed. Cir. 2000)). The drawings, without more, are insufficient to cabin the scope of the ordinary and customary meaning of the term "within" in this case. As to VDO's second argument, regarding the "primary definition" of "within," we again reiterate that a patentee is entitled to a definition that encompasses all consistent meanings. Brookhill-Wilk 1, LLC, 334 F.3d at 1300. Finally, with respect to VDO's argument regarding statements made during foreign prosecution, we decline to comment, given our conclusion below, and note only that "the varying legal and procedural requirements for obtaining patent protection in foreign countries might render consideration of certain types of representations inappropriate" for consideration in a claim construction analysis of a United States counterpart. Caterpillar Tractor Co. v. Berco, S.p.A., 714 F.2d 1110, 1116 (Fed. Cir. 1983).

Although VDO's arguments in favor of the district court's construction are not persuasive, we nonetheless conclude that the district court's construction of "within" was correct because the dictionary definitions TI Group urges us to adopt are not so different from those urged by VDO and adopted by the district court. TI Group's definition is "within the limits of, not outside or beyond." VDO's definition is "on the inside." Certainly, in ordinary and customary usage, what is not outside is on the inside. Thus, we affirm the district court's construction of the term "within" as meaning "inside."

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III
The district court's determination of no infringement of the '322 patent rested on claim construction. Claim 1 of the '322 patent is the only independent claim and all the asserted claims contain the limitations of claim 1. Claim 1 of the '322 patent shows the pertinent limitation in the context of the entire claim:

1. A hand-held device for entering information into an electronic system via a keyboard, the device comprising:

   a housing having a grippable portion which permits the device to be held in one hand with the thumb free to move at least temporarily to a predetermined key-actuation position while the device is held,

   a concavity in said housing at said key-actuation position, and a thumb-associable cluster of keys forming a keyboard within said concavity, each of the plurality of keys in said cluster being selectively actuable via mixed lateral and slight endo, translation of a thumb within said concavity, whereby information is entered into an electronic system.

'322 Patent col.8 ll.16-31 (emphases added). The district court construed "a concavity in said housing at said key-actuation position, and a thumb-associable cluster of keys forming a keyboard within said concavity" to mean "that the concavity must be formed by a depression in the housing of the device, and that all keys comprising the keyboard must be contained entirely within the concave area and sunk below the surface of the housing, so that the thumb movement occurs within the concave area." Motionless Keyboard, 2005 WL 1113818, at *19.

On appeal, MKC argues that "a concavity in said housing at said key-actuation position, and a thumb-associable cluster of keys forming a keyboard within said concavity" means that the tops of the keys themselves can form the concavity. Thus, under MKC's proposed construction of the claims, the keys or portions thereof themselves can form a concavity within the housing. MKC wants a broad construction of the concavity. Appellees, to the contrary, agree with the district court's narrower construction.

The claim language "a concavity in said housing at said key-actuation position, and a thumb-associable cluster of keys forming a keyboard within said concavity" defines well the limitation. '322 Patent col.8 ll.21-23 (emphases added). By using the terms "concavity in said housing" and "keyboard within said concavity," the patentee defined a depression within the housing of the device and set the keyboard entirely within that depression. The district court correctly grasped and conveyed this meaning.

The specification underscores the correctness of the trial court's construction: a "keyboard is positioned in a concavity or depression in the housing." '322 Patent col.4 ll.58-59 (emphasis added). To confirm this reading, all keyboard renderings in Figures 1, 3-5, 7, and 8 in the '322 patent show a concavity in the housing of the device with the keyboard totally within the concavity. '322 Patent Fig. 1, 3-5, 7, and 8. Figure 4, for instance, shows the concavity:

GET DRAWING SHEET 4 OF 6.

't32 Patent Fig. 4. Thus, this court agrees with the district court's claim construction of this limitation.

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4. Having defined "aperture" above, the court must also construe the meaning of insert as asserted in patent '135. Defendant asserts that the limitation in claims 1-18 requiring the insert be adapted to fit or accommodated "within the aperture" restricts the types of inserts to those with outer dimensions conforming to or smaller than the aperture's outer edge. (Lamson Markman Brief, p. 23). The words of the claims limit the scope of the insert to "within the aperture." The specification describes the preferred embodiment of the insert as follows:

The insert 14 has a top edge 42, a bottom edge 44 and two side walls 46 and 48. A flange 50 extends around the periphery of the insert 14. The flange 50 is sized and adapted to fit securely within the recess of the base plate 12 in order to form a connection with the base plate 12. A raised ledge 51 is located on the face of the insert 14 around the periphery of the aperture 26 and flange 50.
(Col. 4, lines 5-12) The court construes the above language to describe an insert, separate from, but connected to a flange and a raised ledge. The size of the flange and raised ledge should therefore not be taken into consideration when ascertaining the size of the insert. The notice function of the patent is sufficiently served, by reference to the specification and the drawings, to inform the public that the insert, required by the claims to be "within the aperture" does not include the flange and raised ledge described therein which clearly do not fit "within the aperture." The flange and the raised ledge are limitations in the specification that were not and should not be imported into the claim language. While it is proper to use the specification to interpret words and phrases in the claims, it is improper to import extraneous limitations from the specification into the claims. "By 'extraneous,' we mean a limitation read into a claim from the specification wholly apart from any need to interpret what the patentee meant by particular words or phrases." E.I. Du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir. 1988). None of the claims in Patent '135 require the insert to be limited in scope by connection to a flange or a raised ledge. The claims, do, however, specifically require that the insert fit "within the aperture." In order to accomplish this, the insert must have an outer dimension conforming to, or smaller than, the outer dimensions of the aperture to fit within the aperture. Therefore, this court finds that the insert as described in the claims must have an outer dimension conforming to or smaller than the outer dimensions of the aperture, and does not include the flange and the raised ledge so as to fit "within the aperture."

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The determinative phrase in this case is that the active electrode must be "configured to be exposed to said whole blood sample without an intervening membrane or other whole blood filtering member." The ordinary and natural meaning of the phrase "without an intervening membrane or other whole blood filtering member" is without any type of filter whatsoever -- neither an intervening membrane nor any other whole blood filter. The absence of any filter was the innovation of the '551 patent and plaintiff's products are manufactured with no whole blood filter. Based on the evidence submitted, the Court finds that the FastTake TM product does contain a whole blood filter, and, consequently it does not infringe Abbott's patent.

Abbott does not seriously dispute that the FastTake TM product filters whole blood from reaching the carbon layer. The FastTake TM product consists, in relevant part, of a carbon layer and a gel membrane located above the carbon; a whole blood sample is placed on top of the gel membrane. The evidence indicates that the gel membrane -- containing the enzyme and the mediator -- filters the whole blood, allowing only the plasma to reach the carbon element. Moreover, this is an intended result; Self Care was issued a patent for this innovation.

Abbott argues that the presence of a filtering element in the FastTake TM product is irrelevant because that filter is not an intervening filter, a filter located physically between the whole blood and the active electrode, and thus, FastTake TM infringes the '551 patent. The FastTake TM filter is located between the enzyme/mediator and the carbon, thereby allowing the whole blood to be in direct contact with the enzyme/mediator. In order to rule that the FastTake TM product infringes the '551 patent, the Court would have to rule, first, that the word "intervening" applies to both "membrane" and "other whole blood filtering member"; and, second, that an "intervening" filter is one that is located physically between the whole blood and the active electrode -- which Abbott defines as the carbon and the enzyme and the mediator. The Court finds both contentions problematic.

First, the Court does not read the word "intervening" as applying to the phrase "other whole blood filtering member." The term "intervening" is placed only before "membrane." The Court reads the term "intervening membrane" as constituting one way, but not the only way, of filtering whole blood. Thus, any active electrode with a whole blood filter does not infringe the '551 patent. If Abbott had intended the '551 patent to claim an active electrode with a non-intervening filter then it should have written, "without an intervening membrane or other intervening whole blood filter."

The purpose of a filter is to prevent oxygen-carrying red blood cells found in whole blood from coming in contact with and fouling the carbon element. The FastTake TM product has a filter -- a silicon gel that filters the whole blood cells, allowing only the plasma (which has a lower concentration of oxygen than whole blood) to contact the carbon, thus, reducing fouling. The '551 patent, however, teaches how to construct a device with no filter -- the whole blood directly contacts the carbon.

In the '551 patent, the key concept appears to be the absence of a filter not the position of one. Nowhere in the '551 patent does it teach how to build an active electrode with a whole-blood filter. Indeed, Abbott represented to the Patent & Trademark Office ["PTO"] that it was submitting claims covering an active electrode with the filtering membrane absent. In
its December 3, 1997 amendment to the '551 patent, Abbott stated that it was filing new claims "which focus on the feature that the active electrode is directly exposed to a whole blood sample without the intervention of a barrier material such as a membrane or gel which filters out larger molecules or other blood components expected to interfere with the active electrode's operation." [Emphasis in original]. Accordingly, the Court holds the phrase "other whole blood filtering member" is not limited by the term "intervening." 1 Consequently, since the evidence indicates that defendants' FastTake TM product contains a "whole blood filtering member," their product does not infringe the '551 patent.

--- Footnotes ---

1 The word "intervening" is not defined in the specification, indeed, the word is not even used in the specification. Abbott argues the word should be defined as "physically between," whereas the defendants argue for a functional definition, "come between as an intervening force." As a general rule of claim construction, ambiguous terms should be given a narrow reading, excluding ambiguously covered subject matter. See Ethicon Endo-Surgery v. United States Surgical Corp., 93 F.3d 1572, 1581 (Fed. Cir. 1996). Since the Court holds that "intervening" does not apply to the phrase "other whole blood filtering member," the Court does not decide which definition of "intervening" is appropriate.

--- End Footnotes ---

9. "Without appreciable shortening." Consistent with the prosecution history, 16 the court construes "without appreciable shortening" to mean "the stent does not substantially shorten upon expansion."

--- Footnotes ---


--- End Footnotes ---

E. Disputed phrase: "all of said connectors being constructed, arranged, located and connected to said liner such that said liner is not withdrawn from said bag and can collapse upon itself during discharge of the contents thereof independently of and without being substantially restricted by said bag from collapsing"

The disputed phrase is located in Claims 2 and 10. The parties disagree on the manner in which the bag must collapse. The parties also disagree how the word "substantially" must be afforded meaning. Plaintiff proposes this claim should be interpreted as "the build of the connectors, their attachment to the liner and the places at which they are attached to the liner allow the liner to remain attached to the bag while the contents of the bag are emptied and also allow the liner to cave in as the contents of the bag are emptied without being strongly held back by the bag, even as the bag itself does not cave in." Defendant proposes this claim should be interpreted as "all of the connectors are constructed, arranged, located and connected to the liner so that the liner is not withdrawn from the bag, and all of the connectors being constructed, arranged, located and connected to the liner such that the liner vertically collapses upon itself during the discharging of the contents independently of the bag, and the liner vertically collapses without the bag restricting the vertical collapsing movement of the liner." Defendant argues the patent language supports the interpretation that the liner must collapse vertically. Plaintiff argues the bag must simply collapse and that the patent language does not support any requirement that the collapse must occur vertically. Plaintiff argues Defendant's construction fails to give meaning to the word "substantially."

Plaintiff argues the phrase refers to both a structure and a function. Plaintiff argues a collapsible bag collapses from all directions, not just vertically. Plaintiff argues limiting a collapse to a vertical flattening is inconsistent with the plain meaning of the word "collapse" and is unsupported by the specification and the prosecution history. Furthermore, the phrase "substantially restricting" does not mean "preventing." Plaintiff argues no evidence supports an interpretation of the phrase
to mean "preventing."

Defendant argues the patent supports its interpretation of the disputed phrase. The patent describes the container as "collapsible" and capable of being shipped in a collapsed or flat condition. (Patent No. '472 Col. 1, lines 5-6, 15-18.) The description further states the bag and liner, when empty, can be folded or collapsed into a preferably flat form. (Patent No. '472 Col. 1, lines 23-25, 29-32.) Defendant reasons the description of the liner collapsing on itself while inside the bag thus describes a liner that has vertical movement, much like a building that is collapsing. This interpretation is further reinforced by the description that the liner should not be connected to the bag at all four corners on both ends. If the liner were connected to the bag at all four corners at both ends, the liner could not fall on itself as the contents were discharged. In order to fall on itself, Defendant argues the collapse must occur vertically.

Defendant argues the Schnaars patent uses the words "inflation" and "expand" to describe what happens to the liner when air is forced into the collapsed liner. (Def. Ex. E - Patent No. '291 Col. 4, lines 45-67.) As opposed to an expanded or inflated bag, a collapsed bag is vertically flat, not just caved in on itself. Defendant points out the arrows in the Schnaars patent in Figure 3 show the bag inflates vertically.

Finally, Defendant argues other inventions by the same individuals who invented this bag and liner use the word "collapse" in a similar manner. The inventors of the patent at issue here also patented a collapsible liner for a cage. (Def. Ex. G.) In that patent, the liner collapses on itself in a vertical manner to lie flat at the bottom of the cage when the contents are discharged. The patent describes the liner as collapses from an upstanding position to a knocked down position. (Def. Ex. G - Patent No. '824 Col. 1, lines 40-49.) The case walls can then be folded over the collapsed liner. (Patent No. '824 Col. 1, lines 50-51.)

In its reply brief, Plaintiff argues the portion of the patent describing how the bag can be folded does not support Defendant's claim construction. The configuration of the empty bag does not describe the manner in which the bag emptied. A bag that collapses on a horizontal axis could also be folded flat.

The word "collapse" does not limit the external and internal forces upon object to a vertical flattening. It may well be that gravity is the primary force upon the liner as it empties and, as a result, the liner flattens downward. The plain language in Claims 2 and 10, however, does not limit the collapse to a vertical flattening. Furthermore, the language in the Claims and the specification does not indicate a requirement that the collapse occurs in a vertical manner. Defendant, notably, does not identify where the word "vertical" appears in either the Claims or the specification. Defendant's proposed construction, by limiting the collapse to a reduction in the height of the vertical axis, would necessarily require the liner to maintain its width and depth. Nothing in either the claims or the specification supports such construction. The language used in other patents does not establish that this patent was intended to deflate or collapse in a vertical manner exclusively. Accordingly, Plaintiff's construction of the claim is persuasive and supported by the intrinsic evidence. The claim at issue is interpreted to mean "the build of the connectors, their attachment to the liner and the places at which they are attached to the liner allow the liner to remain attached to the bag while the contents of the bag are emptied and also allow the liner to cave in as the contents of the bag are emptied without being strongly held back by the bag, even as the bag itself does not cave in."

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The magistrate judge is also correct in construing the phrase "without imparting external pressure" as meaning "under a vacuum." This is clear from the "embodiments" section of the patent, where the patentee indicates that "the sintering process was carried out with the vacuum degree of 0.1 to 10 Torr ...." More importantly, the patentee argued before the patent examiner that "the sintering process is carried out under a vacuum (0.1 to 10 Torr) .... Thus, an expensive high pressure apparatus is not required in order to obtain the present invention super alloy having a high abrasion proof property and long durability. Timm et al. fails to suggest such an unexpectedly advantageous result." Cerametal's Exhibit G, p. 161 (emphasis in original). The patentee also told the patent examiner that "Timm et al. fails to teach a binding material selected from the iron group and a sintering process without pressure." Id. at 180. The patentee made these representations in its effort to have the examiner reconsider his rejection of the initial patent application. When the patentee amended its application to include the language "by liquid phase sintering without imparting external pressure," the patent examiner allowed the application. In explaining his reasons for doing so, the examiner stated that "the claimed composition, produced by liquid phase sintering" was now distinguished from Timm. Id. at 189.
In the second step of Claim 13 the parties also dispute the meaning of the term "passing . . . without mechanically agitating said wash load."

Whirlpool contends that "without mechanically agitating said wash load" should be construed to mean "without using the means for providing agitation to agitate the wash load." Defendants contend that "without mechanically agitating" should be construed to mean that the clothes do not move relative to each other.

In the specifications Whirlpool distinguished its invention from the prior art by noting that its spin-wash operation does not involve mechanical agitation of the clothes load:

The applicants have, however, discovered a concentrated washing operation that can be successfully practiced in a vertical axis automatic washer at water to cloth ratios well below five to one, through the use of a concentrated spin-wash operation which does not involve mechanical agitation of the clothes load.

's66 Patent, col. 2 ll. 13-18 (emphasis added).

Step 72 is to apply the concentrated detergent solution to a spinning wash load. This is referred to as the spin wash cycle in that the clothes load is not mechanically agitated.

's66 Patent, col. 5 ll. 35-38 (emphasis added).

In construing a term used in the patent it is appropriate to consider how the term is defined in the specifications. Finnegan Corp. v. International Trade Comm'n, 180 F.3d 1354, 1364 (Fed. Cir. 1999). In the summary of the '666 invention the inventors explained the invention as follows:

Very little water is required during the concentrated washing step, and no mechanical agitation is applied to the clothes during this operation. That is, the clothes do not move relative to each other during the concentrated wash step, even though they are being spun about the vertical axis of the machine.

's66 Patent, col. 2 ll. 28-34 (emphasis added). In discussing the prior art, the '666 Patent specifications similarly equate mechanical agitation to the movement of clothes relative to each other:

The known prior art wash methods, whether practiced in a horizontal axis or a vertical axis machine, employ varying amounts of mechanical agitation of the clothes load. That is, during the concentrated washing operation the individual items of clothing are moved relative to each other and relative to the wash basket or drum.

's66 Patent, col. 2 ll. 48-54 (emphasis added). The specifications further provide that during the spin wash cycle "the clothes load is not mechanically agitated, it merely is spun with the wash basket and held by centrifugal force against the basket wall during the spinning while the concentrated solution is applied to the spinning wash load." '666 Patent, col. 5 ll. 37-41 (emphasis added).

In its response brief Whirlpool asserted that "reversing direction during the spin wash does not constitute 'mechanical agitation' within the meaning of claim 13." Pl. Resp. Br. at 17. The Court rejects this broad statement as it is contrary to the representations during the prosecution history. During the application process for the '666 Patent Whirlpool distinguished its invention from prior art that achieved mechanical agitation by slowing, stopping, or reversing the direction of rotation of the wash tub to cause a tumbling and mechanical agitation of the clothes in the wash tub. During the application process for the '666 Patent the Examiner rejected claims 1-13 as being unpatentable over prior art, particularly Spendel and Marshall. Whirlpool responded to that rejection in Amendment "A," filed with the Patent Office on August 17, 1987. Spendel involved a horizontal axis washer, where the wash load was tumbled through the spray of detergent solution. Whirlpool distinguished Spendel as follows:
The clothes are tumbled within the horizontal drum through the use of an eccentric drive for the drum to provide a varying rotational speed thus providing conventional mechanical agitation to effect cleaning.

Def. Ex. L, Amendment "A" at 10, LGE 235 (emphasis added). Marshall involved an angled axis which permits a tumbling of the clothes during a spinning process. Whirlpool distinguished Marshall as follows:

Marshall specifically desires to maintain an annular layer of water within the wash tub in which the clothes are carried to assist in the mechanical agitation achieved by Marshall through the use of slowing or stopping and sometimes reversing the direction of rotation of the wash tub to cause a tumbling and mechanical agitation of the clothes in the wash tub.

D Ex. L., Amendment "A" at 11, LGE 236 (emphasis added). Whirlpool then represented to the Patent Office that the '666 invention was not anticipated by Spendel or Marshall because both Spendel and Marshall "provide and require mechanical agitation of the wash load during the step of applying the solution to the clothes load" and therefore failed to teach or suggest "to pass the detergent solution through the wash load without mechanical agitation." Def. Ex. L., Amendment "A" at 15, LGE 240.

Defendants contend that Whirlpool's construction of "without mechanically agitating" to mean "without using the means for providing agitation" is an attempt to adopt a definition that covers mechanical agitation of clothes during the wash process so long as that agitation is caused by some structure other than the claimed "means for providing agitation." Defendants contend that this construction ignores the definition of agitation in the patent and Whirlpool's representations made during the patenting process. Defendants contend that because Whirlpool gave notice of its intention to exclude from the scope of its claims washers that periodically interrupt or change rotation of a wash basket during a wash cycle during the prosecution history to gain allowance, it cannot now change its position and argue a contrary interpretation of its claims before this Court. See Standard Oil Co. v. American Cyanamid Co., 774 F.2d 448, 452 (Fed. Cir. 1985) ("the prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance."). Defendants "are entitled to rely on the record made in the Patent Office in determining the meaning and scope of the patent." Lemelson v. General Mills, Inc., 968 F.2d 1202, 1208 (Fed. Cir. 1992).

Whirlpool distinguished its invention from prior art by defining "without mechanical agitation" to mean that the clothes did not move relative to each other. Defendants contend that Whirlpool should not now be allowed to argue that agitation of the clothes during the wash process is allowed so long as that agitation is caused by some structure other than the claimed "means for providing agitation."

Defendants are understandably concerned that Whirlpool's definition limits the mechanical agitation to the "claimed" means of agitation. Whirlpool has acknowledged that there are a number of means of agitating clothes or moving clothes relative to each other, including the use of agitators, tumbling, and reversing the direction of rotation of the wash tub. Any of these can be a "means for providing agitation to agitate the wash load." The specification and the prosecution history demonstrate that if a mechanical process causes the clothes to move relative to each other, then that process constitutes mechanical agitation. It is possible for there to be more than one means of agitation, or moving clothes relative to each other. Claim 13 does not tie the absence of mechanical agitation to any particular agitating structure. The Court is satisfied that Defendants' concerns will be resolved if Whirlpool's definition is changed from "the means" for providing agitation to "a means" for providing agitation. That construction is consistent with the claim, the specifications and the prosecution history. Accordingly, the Court will construe "without mechanically agitating" as "without using a means for providing agitation to agitate the wash load."

This Court has construed the relevant terms of Claim 13 as follows: (1) the corresponding structure for the "means for providing agitation" is "a device that moves cloth items to and fro"; (2) the term "passing … through said wash load" means "passing [detergent solution] through the wash load, not merely over or around"; (3) the term "passing an amount … in excess of that necessary to saturate the wash load" means "continuously passing a concentrated detergent solution so that the total amount passed through would be greater than the amount necessary to saturate the wash load; and (4) the term...
"without mechanically agitating said wash load" means "without using a means for providing agitation to agitate the wash load." Order Construing Terms at 2-3.

Whirlpool has moved for reconsideration of certain aspects of this Court's decision regarding the term "without mechanically agitating said wash load." Claim construction is subject to revision and the court may revisit and alter its claim construction as its understanding of the claimed technology evolves. Jack Gutman, Inc. v. Kopykake Enterprises, Inc., 302 F.3d 1352, 1361 (Fed. Cir. 2002) ("District courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves."). See also Utah Med. Prod., Inc. v. Graphic Controls Corp., 350 F.3d 1376, 1381-82 (Fed. Cir. 2003) (finding no error where district court clarified its original construction to more closely align its interpretation with claim language and specification's description of the function).

The Court construed the term "without mechanically agitating" to mean "without using a means for providing agitation to agitate the wash load." Order Construing Terms at 3. In its motion for reconsideration Whirlpool does not challenge the Court's construction of the term itself, but instead challenges this Court's rejection of Whirlpool's assertion that reversing direction during the spin wash does not constitute "mechanical agitation" within the meaning of Claim 13. See Opinion at 33. This Court observed that Whirlpool had acknowledged in the specifications and in the prosecution history that there are a number of means of agitating clothes, including the use of agitators, tumbling, and reversing the direction of rotation of the wash tub. According to Whirlpool, the Court committed palpable error by including "tumbling" and "reversals" as forms of mechanical agitation for the vertical axis washing machine required by Claims 13 and 14 of the '666 patent. Whirlpool contends that the Court failed to appreciate that the prosecution history statement was made in the context of horizontal or angled axis machines, not the vertical axis machines which are the subject of the '666 patent.

This Court was fully aware that the prior art in Spendel and Marshall involved horizontal and angled axis machines rather than vertical axis machines. Nevertheless, in the specifications the '666 patent refers to agitation as the movement of clothes relative to each other. Opinion at 32-33. Tumbling and reversals, to the extent they move clothes relative to each other, are sufficient to constitute agitation. Gravitational and liquid forces can work to move clothes relative to each other in a vertical axis machine, just as they can in a horizontal or angled axis machine. They may not do it to the same degree, but they can cause agitation to occur. The Court accordingly reaffirms its original rejection of Whirlpool's contention that reversing direction during the spin wash does not constitute "mechanical agitation" within the meaning of Claim 13.

In their briefs both Whirlpool and Defendants suggest that this Court has already concluded that reversing direction necessarily constitutes agitation. (Reply Br. at 1). (Opp. Br. at 6). Both parties have overstated this Court's construction of the term "mechanical agitation." This Court rejected the assertion that reversing direction cannot constitute mechanical agitation in a vertical axis machine. However, this Court has never held that reversing direction, without more, is necessarily sufficient to constitute agitation.

In response to Defendants' motion for summary judgment of infringement. Whirlpool now requests that this Court revisit its Order construing terms and construe "without mechanically agitating" as "without using the agitation means to agitate the wash load," or alternatively, "without using a means for providing agitation in a vertical axis washer to agitate the wash load." (Pl. Br. in Opp. at 12). Whirlpool's request to revise the construction of the term is denied. The Court is not convinced that its original construction of the term was erroneous or that any further construction is required.

A. The '133 Patent - Claim 1

Claim 1 of the '133 patent provides:

An apparatus for forming an occlusion within a body cavity comprising:

a wire adapted to be disposed near an opening into said body cavity;

a separable distal tip of said wire adapted for disposition into said body cavity to form said occlusion within said body
cavity about said distal tip; and

a selectively detachable coupling between said distal tip and said wire characterized by detachment of said distal tip from
said wire without necessarily displacing either said distal tip or said wire during detachment to leave said distal tip within
said body cavity with said occlusion being formed within said body cavity,

whereby said body cavity is occluded by said distal tip, and an occlusion is formed by use of said tip without necessarily
altering desired placement of said distal tip during detachment or applying any force by said distal tip to any surface within
said body cavity by reason of said detachment.

The parties dispute the meaning of only one phrase of Claim 1: "detachment of said distal tip from said wire without
necessarily displacing either said distal tip or said wire during detachment." 22 The focus of the dispute is the phrase
"detachment . . . without necessarily displacing."

22 The parties have stipulated that they will rely on the construction of this term as a representative of similar terms which
appear in the following patents: Claim 25 of the '133 patent (and claims dependent therefrom), Claims 1, 2, 3, 9 of the '126
patent (and claims dependent therefrom), and Claim 1 of the '963 patent (and claims dependent therefrom).

Claim 1 is an apparatus claim. The apparatus comprises a wire, a separable distal tip and a selectively detachable coupling.
The disputed phrase is a limitation on the "selectively detachable coupling." The limitation requires that the "selectively
detachable coupling" function in a particular manner, namely, detach the distal tip from the wire "without necessarily
displacing either said distal tip or said wire during detachment." The Court finds that one of ordinary skill in the art would
understand that the phrase "detachment . . . without necessarily displacing" is being used with a plain and customary
meaning.

necessarily" means "without necessity." Id., 1200. The word "displacement" means "to move out of its place." Id., 528.
There is nothing in the written description to support giving the phrase "detachment . . . without necessarily displacing" any
specialized meaning.

Although the specific phrase "detachment . . . without necessarily displacing" is not used elsewhere in the specification,
Claim 1 contains the following "whereby clause:"

whereby said body cavity is occluded by said distal tip, and an occlusion is formed by use of said tip without necessarily
altering desired placement of said distal tip during detachment or applying any force by said distal tip to any surface within
said body cavity by reason of said detachment.

A "whereby" clause in an apparatus claim may express the intended result from using the apparatus. See Minton, 336 F.3d at
1381 (Fed. Cir. 2003). Considering the "whereby" clause from the perspective of a person of ordinary skill in the art, the
Court finds that the "whereby clause" means that after the distal tip is placed into the vascular cavity, the selectively
detachable coupling detaches the tip from the wire. Detachment is accomplished without any change in the position of the
tip being necessary to achieve detachment and without requiring the application of any force by the tip on any surface in the
vascular cavity.

The Court construes "detachment . . . without necessarily displacing," as it is used in the phrase "detachment of said distal
tip from said wire without necessarily displacing either said distal tip or said wire during detachment" in Claim 1 of the '133
Patent to mean:

- detachment accomplished without necessitating movement of the distal tip to accomplish detachment and without
necessitating that force be applied by the distal tip on any surface of the vascular cavity to accomplish detachment.
b. "without significantly damaging said material"

Finally, the parties disagree on the phrase, "without significantly damaging said material," in claim 10 of the 329 patent. Callicrate asks the Court to construe the phrase as "without causing significant damage to the ligature material." NAIC asks the Court to adopt the following meaning: "without causing significant damage to the ligature material." The Court notes that although the term "significantly" appears in both the claim language and the specification, NAIC provided no argument in its Markman brief or at the April 12, 2005 hearing to support its deletion of the term from its proposed construction. NAIC's proffered construction would require the grommet to securely fasten the loop without causing any damage to the ligation material and clearly conflicts with the claim language and specification. Thus, the Court rejects NAIC's urged interpretation that would omit the term "significant" and adopts Callicrate's proposed interpretation.

63 The Court has already addressed and rejected NAIC's attempt to limit the ligature material to surgical tubing. See the Court's construction of "elastomeric ligature material" at supra, Part IV.A.2.a.

b. "Flexible … without stressing"

BOC contends in this regard that the language of claim 1 which describes the proper amount of pressure to be exerted by the probe for accurate measurement of oxygen saturation is too indefinite to answer the following question. "How thick or how thin, and how flexible or how inflexible should a manufacturer make a probe to avoid the limitation 'being flexible also to conform to said skin without stressing either of said skin and the underlying tissue'"? (D.I. 126 at 9) As an example of the problem it envisions, BOC notes that "the degree of tightness on the finger is dependent upon the skill of application of the person putting it on." (D.I. 126 at 10) Likewise, the "degree of tightness [which] sufficiently occlude[s] the flow of blood within the digit so as to 'begin' to interfere with the measurement being taken" is essentially a subjective determination incapable of precise definition. (D.I. 126 at 10) There are several fallacies inherent in BOC's analysis. One is that it focuses upon the application of the invention, which admittedly is beyond the control of the inventors, rather than the structure of the invention itself. The second is that BOC analyzes this limitation in isolation from the remainder of the specification and claim language recited above. When read in context and in light of the specification, the limitation "flexible … without stressing" is not so indefinite as to render claim 1 of the '014 patent invalid. In describing a support structure which is "flexible also to conform to said skin without stressing either of said skin and the underlying tissue," claim 1 describes a structure which is pliant enough and flat or level enough to conform to or fit the contour of virtually any convex portion of a patient's skin.

16 Significantly, the application of the invention is within the control of those skilled in the science of oximetry. See, e.g., DX 216, the instruction sheet for the OxyTip: "Important: Be sure to apply only enough pressure to ensure the detector is flush against the skin. Do not restrict circulation." (Emphasis in original)

17 This phrase describes the support structure, not the method of attachment by "an adhesive layer;" obviously, however, the method of attachment is likewise relevant to the concern that the probe operate "without applying pressure to the tissue of the skin of the patient being measured." (D.I. 122 at 1068)
C. Without the Application of Independent Means . . .

Phrase: without the application of independent means for urging said sleeve member toward said trailing end of said bit holder

Construction: the interference fit between the sleeve and the bit holder is itself sufficient, without the use of any additional device or structure, to prevent rotation or axial movement of the sleeve

Reasoning: Again, defendant contends that this claim element invokes means plus function analysis because it includes the word "means". According to defendant, because the specification does not list the independent means that are excluded from the claim, there is no valid construction to this claim. We disagree. Use of the word means in this instance does not invoke means plus function. Rather, these "independent means" are being excluded, not claimed. Taken to its logical conclusion, under defendant's theory, even though "independent means" are not being claimed, and in fact, are specifically excluded, the inventor would have had to list every possible device or structure that could be used under any circumstances to hold a sleeve in place. This is not required. The claim element is clear, and easily understood -- if anything other than interference fit is required in order to hold the sleeve in the bit holder, then the accused device falls outside the claims.

Our construction is consistent with the language and meaning of the patents, and the prosecution history. The novelty disclosed in the patents was that the interference fit itself was enough to keep the sleeve secure in the bit holder. In the prior art, some other device or structure had to be used to hold the sleeve in place. In these patents, no other device or structure was needed to hold the sleeve in place. This exact point of novelty was discussed in the prosecution history sections to which both parties cite. Our construction recognizes this point of novelty. Whether a retaining clip, or some other item, is necessary to hold the sleeve in place in an accused device, or is superfluous, is a question of fact, and of infringement.

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"wood flour"

Marley proposes that the limitation "wood flour" should be construed to mean wood flour in its raw particle form in the first stage of the process (the first and second time the term is used in Claim 1) and as wood flour in the form of pellets in the second stage (the third time it is included in Claim 1). Mikron proposes that the term is defined as a finely ground, particulate of wood at all times.

The parties agree that wood flour is a finely ground, particle of wood. The preferred embodiment supports such construction, stating: "the wood flour is preferably hardwood in the form of sawdust. The wood flour is ground to a preferred particle size ...." Furthermore, the parties agree that the first two times the term is used in Claim 1, wood flour is in the form of a finely ground particle. The dispute arises the third time the term is used in Claim 1. Marley asserts that the form of the wood flour is a pelletized form. Mikron asserts that the wood flour is still in the form of a finely ground particle.

Generally, the same wording appearing in the same claim is interpreted consistently. See Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1345 (Fed. Cir. 1998). However, identical terms may take on different meanings if the language of the written description is sufficient to put a reader on notice that the term has different meanings. See Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1310-11 (Fed. Cir. 1999).

Here, the term wood flour is used three times in Claim 1. The specification provides that wood flour is a finely ground particle [of wood]. Marley attempts to read the term "pellet" into the term the third time it is used in Claim 1. However, when the inventors wanted to specify that the form of the material was "pellets", they did so throughout the specification, i.e., "after preparation of the polymer and wood fiber pellets", "the polymer/wood fiber pellet". Marley contends that construing the term wood flour the third time the term is used as only a particle of wood and not a pellet renders the embodiments nonsensical and defeats the entire purpose of the invention. However, the term wood flour can still be
The limitation "wood flour" is construed to mean a finely ground particle of wood.

The parties dispute the calculation of the amount of wood flour in the final product based on the limitation "wood flour 15-140" as found in Claim 1. The parties agree that minimum amount of wood flour used in the first stage or formulation is 11.11% (15 parts/135 total parts). The parties also agree that minimum amount of wood flour used in the second stage or second formulation is 10.7% (15 parts/140 total parts). The difference in the amount of wood flour between the first and second stage is due to the addition of up to 5 parts of blowing agents during the second stage, changing the total amount of parts to 140.

Marley contends that the percentage of wood flour in the final product is 1.18% based on its interpretation that the wood flour in the final product is a portion of the pellets, which are a portion of the final mixture. Accordingly, Marley contends that the percentage of wood flour in the final product is 11.1% of 10.7%. However, Marley's construction is based on its interpretation that the list of materials in each stage is a "recipe" and that an amount of 100 parts of polymer resin could be used in the first stage, and an additional 100 parts of polymer resin could be used in the second stage. The same would apply to the other ingredients, up to 5 parts of stabilizers and lubricants and up to 10 parts of process aids in both the first and second stage. This interpretation is not supported by the claim or the specification.

Claim 1 states that, during the first stage of the process, an extrudable material is produced; this extrudable material consists of certain ingredients up to certain parts. Obviously if the extrudable material consists of these ingredients, these ingredients were combined to form the extrudable material. The extrudable material, which consists of the stated five ingredients, is then cut to form pellets of said extrudable material. Additional polymer resin and a blowing agent are then added with the pellets, and an extrudable foam material is formed. The claim then recites that the foam material consists of the original five ingredients as well as the blowing agents up to a maximum number of parts. The maximum number of parts for each of the original five ingredients is unchanged. The only ingredients added to the pellets in the claim is additional polymer resin and a blowing agent. Accordingly, the list of ingredients in the second stage of the process is not a "recipe" to make the foam material. Instead, it is a list of the components of the foam material.

This conclusion is further supported by the specification, which states, in pertinent part:

Only a portion of the total desired amount of resin is used in making the pellets. The remainder of the resin is added when making the final extrusion composite. For example, in a composite having 100 parts total of PVC resin, only 40 parts resin will be added to the mixture to form the pellets. The remaining 60 parts resin will be added in forming the final product.

Based on this interpretation, the theoretical minimum amount of wood flour found in the extrusion of the first stage or first formulation is 11.19% (15 parts/134 total parts). A total of 135 parts cannot be used to make this theoretical calculation because the specification clearly states that not all of the maximum 100 parts of resin are added in the first stage. The theoretical minimum amount of wood flour found in the extrusion of the second stage or second formulation is 10.7% (15 parts/140 total parts). Therefore, this theoretical minimum percentage of wood flour in the final product would also be 10.7% as no materials are added following the second stage. Accordingly, the limitation "wood flour 15-140" as found in Claim 1 is construed to have a theoretical minimum percentage of wood flour in the final product of 10.7%.
The second limitation of Claim 1 provides that the frame portion must be in the work-hardened pseudoelastic metallurgical state. Defendants contend that the phrase "in the work-hardened pseudoelastic state" has narrow meaning, covering only frames that are work-hardened while in the pseudoelastic state. Relying upon this definition, Defendants argue that Plaintiffs have failed to show that Defendants' frames were work-hardened while in the pseudoelastic state, hence they have failed to prove that those frames "read on" this limitation of the claim. For their own part, Defendants offer no evidence whether their frames were work-hardened while within or without the pseudoelastic state.

Plaintiffs concede that work-hardening material while in the pseudoelastic state is an acceptable, perhaps even the preferred, means for reaching the work-hardened pseudoelastic state, but insist that there is no indication in the patent for limiting the claim to this particular process. See Specialty Composites, 845 F.2d at 987 ("Nowhere does the specification in the '487 patent teach that external plasticizers must be used." (emphasis in original)). The Court agrees.

The words of Claim 1, in the Court's view, in no way specify or limit the method or process by which such a state is reached. Claim 1 does not appear to be a process claim, neither is it a "product by process limitation" as suggested by Defendants' expert Mr. Bjorge. Under 35 U.S.C. § 112 a patentee is only required to provide one process that would enable one skilled in the art to make the invention and to disclose the best mode known for making or using the patented product. See SRI, 775 F.2d 1107 at 1121 (Markey, CJ., plurality opinion). "A product patent gives the patentee the right to restrict the use and sale of the product regardless of how and by whom it was manufactured." United States v. Studiengesellschaft Kohle, m.b. H., 216 U.S. App. D.C. 303, 670 F.2d 1122, 1127 (D.C. Cir. 1981).

While Defendants cite various remarks made by Plaintiffs during the prosecution of the patent to read this process limitation into the claim, the Court finds that, at most, those remarks may be understood as illustrating structural differences between prior art and the claimed invention, not as establishing process limitations on the claim. See SRI, 775 F.2d 1107, 1119-20 (Markey, CJ., plurality opinion); Intervet America v. Kee-Vet Labs., Inc., 887 F.2d 1050, 1054 (Fed. Cir. 1989).

Defendants admit that their frames are work-hardened and pseudoelastic. The Court therefore finds Plaintiffs are likely to establish at trial that Defendants' frames meet the second limitation of Claim 1.

--- Footnotes ---

2 The Court refers to the issue of "mechanical energy" versus "mechanical motion," as the "mechanical limitation." The Court refers to the latter part of Coast's proposed construction as the "orientation limitation."

--- End Footnotes ---

The '215 Patent is directed, in general, to an improvement in a breather structure in four-cycle engines for work machines, and the inventors explain that trimmers, grass cutters or rammers are examples of such "work machines." ('215 Patent at 1:6-16.) In their description of the preferred embodiment, the inventors use a rammer as an exemplary "work machine." (Id. at 3:51-52 (describing an "engine body 11 of a four-cycle engine E for driving a rammer 10, which is a work machine").)
However, the inventors also note that "[t]he application of the present invention is not limited to the rammer 10 and the present invention can be put into practice widely in any field relating to a work machine that is connected to the crankshaft 14 so that the axis of the cylinder bore 16 becomes almost vertical when the machine is used." (Id. at 9:13-18.) These examples of work machines demonstrate that a work machine is a device driven by a four-cycle engine, i.e. it is powered by the engine.

The claim language does not require that the work machine produce "mechanical motion." Although the examples of work machines in the specification may, in fact, do so, the inventors clearly stated that the application of the invention was not limited to those machines. (Id. at 9:13-18.) Rather, the inventors stated that the invention could be put to use in a "work machine that is connected to the crankshaft … so that the axis of the cylinder bore … becomes almost vertical when the machine is used." (Id.) There is nothing in this language that supports Coast's position that the "work machine" produce mechanical motion. Accordingly, the Court rejects this aspect of Coast's proposed construction.

The Court, however, agrees with Coast's proposed construction regarding the "orientation limitation." It is true that the claims refer only to instances when the work machine is being used, rather than when it is not in use. However, as set forth in the specification, "an object of the present invention [was] to provide a breather structure in a four-cycle engine that can prevent the lubricating oil from entering the intake system when the engine body is tilted downward." (‘215 Patent at 1:53-57.) The inventors describe the prior art in connection with the fact that "the attitude of a work machine such as a trimmer, a grass cutter or a rammer varies from when it is operating to when it is not operating," and state that "the oil surface inside the crank chamber also varies from when it [the work machine] is operating to when it is not operating." (Id.) Because of the variation in attitude and oil surface, it is necessary "to arrange the breather structure for guiding breather gas from the crank chamber into an intake system so that the lubricating oil is prevented from entering the intake system when it [the work machine] is not operating." (Id. at 1:22-25.) The inventors note that in work machines such as grass cutters or rammers, "the engine body may be tilted thereby making the cylinder bore almost horizontal when the machine is not being used." (Id. at 1:40-42.) The prior art breather structures, however, were not able to address "a state where the engine body is tilted downward." (Id. at 1:45-48.)

In addition to the above cited references, there are other references in the specification to the fact that the cylinder bore is horizontal when the work machine is not in use and is vertical when the work machine is in use. (See, e.g., id. at 1:15-16, 1:66-2:1, 2:26-27, 2:44-52, 3:57-59, 7:11-13.) The inventors also state that when the engine body is tilted downward, the axis of the cylinder bore becomes horizontal, which suggests that when the engine body is tilted downward, the work machine is not in use. (See, e.g., id. at 7:11-13, 8:36-44.) Finally, although the inventors state that the application of the invention is not limited to a rammer, they do state that the invention can be put into practice in any field "relating to a work machine that is connected to the crankshaft … so that the axis of the cylinder bore … becomes almost vertical when the machine is used." (Id. at 9:13-18 (emphasis added).) As Coast notes, the inventors' choice to use word "becomes" suggests that they recognized that the work machine has a different orientation prior to its use. All of these references in the specification give meaning to the term "work machine" and demonstrate that although a work machine may not be limited the specific types of work machines referenced therein, the work machine of the claims is a work machine that varies in orientation when it is in use to when it is not in use.

Accordingly, the Court construes the term "work machine" to mean: "a device for transferring mechanical energy from a four-cycle engine, the orientation of which varies from when it is in use to when it is not in use."

2. Working Channels

The second disputed claim term "working channels" is found in Claims 1 and 35 as set forth above.

Erbe's Proposed Definition: A channel of an endoscope through which a device (e.g., flexible endoscopic tubes, optical means and/or surgical instruments) may be inserted.

Canady's Proposed Definition: A channel into which a surgical instrument may be inserted.
Jump to: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

(Docket No. 42, p. 1). In attempting to construe the term "working channels," I turn to the claim language. An endoscope, as defined by Claim 1, has "working channels" with "an opening at each end" of every channel. Docket No. 42, Ex. 1, col. 11, ll. 14-16. The clear purpose of which is to allow for the insertion of tubes (col. 11, ll. 17), optical means (col. 11, ll. 44-48), and surgical instruments. Canady cites to the prosecution history, and specifically the '009 application, as support for its definition. (Docket No. 66, p. 22). Because I find that the language of the claim to be unambiguous, I need not consult the prosecution history. According, the claim term "working channel" is construed to mean a channel of an endoscope that has an opening at each end through which a device may be inserted.

The parties agree that if we affirm the ITC's construction of "working channel," then the ITC's non-infringement determination was correct, and we need not reach the other issues raised in this appeal. This is so because the parties agree that the claims require more than one "working channel" (a "plurality") and that under the ITC's claim construction the endoscopes in question only had a single "working channel." Under that construction there would be no direct infringement and, consequently, no basis for a finding contributory or induced infringement.

The ITC and Canady argue that the claim construction of "working channel" by the ITC as "a channel through which a device that performs work may be inserted," was correct. In contrast, ERBE argues that "working channel" should be construed broadly "to mean 'a channel of an endoscope through which work is performed,' where 'work' includes visualization through an optical means, coagulation of tissue, irrigation, inflation, and suction." Appellants' Br. 15.

We note initially that ERBE's construction is overly broad insofar as it tends to treat channels dedicated exclusively to suction or gas delivery as "working channels." ERBE has conceded that a "working channel" must be an "instrument channel." 3 We think that under this construction, channels which perform only suction or only gas delivery are not working channels because such channels are not instrument channels. This is so even though the specification says that suction and gas delivery can be done within a "working channel." There is no suggestion that a channel which can perform only that one function is a working channel. See '745 Patent col.2 ll.62-67 ("[s]ince the working channel itself serves for the delivery of gas"); id. col.4 ll.51-54 ("in which working channel 7 serves as gas supply conduit 11"); id. col.10 ll.49-51 ("Continuous or interrupted suction through the second channel should be applied if using a double-channel therapeutic endoscope."). Thus, the fundamental disagreement between the parties boils down to whether fixed optics are a "working channel." ERBE presented evidence that the 2.3mm KLS Martin probes had been used with such a fixed optics endoscope. 4

--------------- Footnotes ---------------

3 Appellants' Br. 34 ("The '745 specification uses the terms 'working channel' and 'instrument channel' interchangeably, which is consistent with the use of the terms by practitioners.").

4 The ALJ also found that ERBE presented no evidence that the 1.5mm KLS Martin probes had ever been used. This finding is supported by substantial evidence.

--------------- End Footnotes ---------------

We review claim construction de novo. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). The claims "must be read in view of the specification, of which they are a part." Phillips v. AWH Corp., 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc) (quoting Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)). We generally do not construe claim language to be inconsistent with the clear language of the specification; "[u]sually, it is dispositive." Phillips, 415 F.3d at 1315 (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

ERBE's contention that fixed optics constitute a "working channel" is inconsistent with the figures in the specification that show a fixed optics installation but do not label that installation as constituting a "working channel." Figure 1 of the specification, reproduced below, shows an optical lens labeled 5, and two "working channels" labeled 6 and 7:
Figure 1 of the '745 Patent is described in the specification as:

FIG. 1 shows a flexible endoscope known as such, which is provided with a device in accordance with the invention, which device comprises a tube out of PTFE or the like material. . . . The tube 2 protrudes out of the distal end of a working channel 7. At the distal end of the endoscope a lens 5 of a viewing optics is provided. Furthermore, the distal end of a second working channel 6 can be seen. The tube 2 is connected through a gas supply conduit 3 with a not shown gas reservoir which may be a gas cylinder filled with argon.

'745 Patent col.3 l.63-col.4 l.6 (emphases added). Figure 1 thus shows two "working channels," which are distinct from the labeled lens of a viewing optics. There is no ambiguity in this figure or in this description; fixed viewing optics are not in a "working channel." The description and labeling of Figure 12, shown below, is similar:

The same embodiment of the invention is shown by Figures 1 and 12. Id. col.3 II.40-42. Figure 12 of the '745 Patent is described in the specification as:

In the embodiment shown in FIG. 12 the distal end of the tube 2 or of the attachment 11, respectively, may be tilted with respect to the exit direction, e.g. by providing flexible bellows 15 between the tube 2 [shown in unnumbered working channel 7] and the orifice 9, whereby the adjustment of the direction takes place by means of a manipulator 14, which simply may be rope 14, which rope extends through the second working channel 6 of the endoscope, so that the direction of the orifice 9 can be changed by pulling the rope at the end of the endoscope in the direction of the arrow.

Id. col.5 ll.21-31 (emphasis added). Figure 12 shows two "working channels," 6 (labeled) and 7 (unlabeled), and neither includes fixed optical means. Again, the optical means (labeled 5) are not described as part of or inside any of the "working channels." Moreover, in Figure 12, though the "working channels" are shown extending through the endoscope, the optical means are not similarly shown to be within any kind of channel. Nowhere does the specification indicate that a "working channel" can be a fixed optics installation.

The dictionary definition of "working" also supports the ITC's interpretation. Dictionaries are "among the many tools that can assist the court in determining the meaning of particular terminology to those of skill in the art of the invention." Phillips, 415 F.3d at 1318. The dictionary definition of the adjective "working" is "1: adequate to permit work to be done . . . 2: assumed or adopted to permit or facilitate further work or activity." Webster's Third New International Dictionary 2635 (Merriam-Webster 2002). The relevant dictionary definition of "work" is "activity in which one exerts strength or faculties to do or perform." Id. at 2634. This suggests that a "working channel" is not stationary (as with a fixed optics installation) but is a channel through which work or activity may be done during the procedure.

ERBE argues, however, that the language of claim 1 demonstrates that a fixed optics installation does in fact constitute a "working channel." We disagree. Claim 1 requires "optical means positioned within a second working channel of the endoscope." '745 Patent col.11 ll.44-45. Claim 1 also requires each "working channel" to have "an opening at each end" of the endoscope. Id. col.11 l.16. In light of the figures showing that a fixed optics installation is not a "working channel," claim 1 must be construed to refer to movable, not fixed, optics. The fact that the optics are described as "positioned" does not suggest that they are fixed rather than movable.

Contrary to ERBE's argument, the patent does contemplate a movable optics installation. The specification describes optical means within an instrument channel, stating that the probe "can be seen well through a viewing lens at the distal end of the endoscope, which lens is associated with a viewing optics arranged in an instrument channel of the endoscope." Id. col.2 ll.41-45. The specification makes clear that an instrument channel is a channel in which surgical tools can be inserted during the procedure. Id. col.10 ll.29-33. There was also uncontroversial testimony in the record that movable optics were well-known and widely used at the time of the patent application as an alternative to fixed optics. The way to reconcile claim 1 with the specification is thus to construe claim 1 as referring to movable optics. In short, fixed optics do not involve a "working channel."
As noted above, the parties agree that infringement requires the accused devices to be used with an endoscope having at least two "working channels" and that the accused devices have only a single "working channel" if the fixed optics are not a "working channel." Based on our claim construction, the ITC correctly concluded that ERBE presented no evidence that any accused device had been used with an endoscope that had at least two "working channels" and, therefore, that there was no evidence of direct infringement and thus no basis for finding induced or contributory infringement. In light of this holding, we need not address the other arguments raised on appeal. Accordingly, we affirm.

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Working Surface

The asserted claims contain the term "working surface." ReedHycalog contends that the term means "any portion of the PCD body which, in operation, may contact the object to be worked." For the Impact Strength Patent's claims, ReedHycalog construes "PCD" as "polycrystalline diamond or diamond-like elements." With respect to the other asserted claims, ReedHycalog does not propose a construction for "PCD." DI argues that "working surface" means "a top layer (with or without a chamfer)." The parties dispute whether the "working surface" of a PCD body is limited to the PCD body's top layer.

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Footnotes

7 DI does not dispute the ReedHycalog's construction of "PCD" for the different patents.

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The claims and specifications do not limit the working surface to the top layer. The specifications expressly define the working surface as "any portion of the PCD body which, in operation, may contact the object to be worked":

The working surface 4 is any portion of the PCD body 8 which, in operation, may contact the object to be worked. In this specification, when the working surface 4 is discussed, it is understood that it applies to any portion of the body 8 which may be exposed and/or used as a working surface. Furthermore, any portion of any of the working surface 4 is, in and of itself, a working surface.


The specifications also state that the working surface of the PCD cutting element "may be a top working surface 70 and/or a peripheral working surface 72." Id. at col. 12:44-46. These passages refer to Figures 1A and 1B from the Patents-in-Suit, both of which depict the working surface, identified by reference numbers 4, 70, and 72, as encompassing the top and peripheral surfaces of the PCD body:

[SEE Figures 1A and 1B from the Patents-in-Suit IN ORIGINAL]

This disclosure is in accord with the claims, which do not limit the working surface to the top surface. For example, the Impact Strength Patent claims a PCD element where the working surface is adjacent to both a leached volume and an unleached volume, which matches the top and peripheral working surfaces disclosed in Figures 1A and 1B above. '662 Patent, col. 18:23-31 (claiming "a body having a working surface" wherein "a first volume of the body adjacent to working surface contains a catalyzing material" and "a second volume the body adjacent to the working surface is substantially free of the catalyzing material"). Further, the claims in the Thermal Characteristic Patents and Depth Patents do not restrict the working surface to the top layer of the PCD body. E.g., '447 Patent, col. 14:24-33; '214 Patent, col. 14:32-43.

Despite the specifications' definition of "working surface," DI argues that the Impact Strength Patent's inventors limited the term to a "top layer (with or without the chamfer)" during prosecution before the U.S. Patent & Trademark Office ("PTO"). The prosecution history, however, does not support DI's position.

The doctrine of prosecution history disclaimer "limits the interpretation of claims so as to exclude any interpretation that
may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1323 (Fed. Cir. 2003). For the doctrine to apply, the disclaimer of claim scope must be clear and unmistakable. Computer Docking Station Corp. v. Dell, Inc., 519 F.3d 1366, 1374 (Fed. Cir. 2008). Prosecution disclaimer does not apply where the prosecution history is ambiguous. See id. at 1375.

The doctrine of prosecution disclaimer does not apply in this case. During prosecution, the Examiner rejected the Impact Strength Patent's pending claims under 35 U.S.C. § 103(a) as an obvious variation of U.S. Pat. No. 4,766,040 ("Hillert") in view of U.S. Pat. No. 6,344,149 ("Oles"). DI's Responsive Brief, Ex. H, at 2. In response to the rejection, the applicants quoted Hillert's specification to summarize the reference, which discloses a diamond tool that consists of three superhard layers, one of which Hillert refers to as the "top layer or working surface." Id. at 2-3; Hillert, Fig. 1, col. 4:30-41. The applicants concluded that "the working surface (or top layer) of Hillert et al comprises a homogeneous diamond layer," and proceeded to contrast the "working surface (or top layer)" disclosed in Hillert with the "working surface" of the applicants' invention:

[I]n the present invention, the working surface is not homogenous, but rather has at least two distinct regions or volumes; one volume contains a catalyzing material, and the second volume is substantially free of the catalyzing material. Both volumes are present at the working surface. Even though these two volumes have different amounts of catalyzing material, the impact strength of the two volumes is substantially the same. The advantage of this arrangement is that the two volumes will wear differently when used, and therefore they can be arranged so that the working surface selectively wears in favorable geometries.


Nothing in the prosecution history equates the "working surface (or top layer)" disclosed in Hillert with the "working surface" of the applicants' invention. This discussion states the opposite--that the "working surface" of the Impact Strength Patent may cover multiple volumes and not only the homogenous top layer disclosed in Hillert. This is consistent with the Impact Strength Patent's claims, which require the working surface to span leached and unleached regions. '662 Patent, col. 18:23-31. Thus, the prosecution history of the Impact Strength Patent does not limit the term "working surface" to "a top layer (with or without the chamfer)."

For the above reasons, the Court construes "working surface" as "any portion of the PCD body which, in operation, may contact the object to be worked." "PCD" means "polycrystalline diamond or diamond-like elements" when used in the Impact Strength Patent's claims. See Tyler I Claim Construction Opinion & Order, 11, 13. With respect to the other asserted claims, "PCD" does not require construction. See id. at 13.

2. "workpiece"

KLA proposes that a person skilled in the art reading claim 1 would consider "workpiece" to mean a silicon wafer or similar article susceptible to the types of defects the '525 patent was intended to detect. D.I. 344 at 12-13. ADE would have this court construe the word "workpiece" as a silicon wafer or equivalent article with particle and COP defects. D.I. 396 at 1-2. Clearly, the parties' interpretations of "workpiece" are similar. ADE's construction, however, expressly states that "workpiece" refers to articles with particle and COP defects; whereas, KLA's downgrades the importance of the presence of COP defects on the surface of the "workpiece."

Surely, the word "workpiece" conjures up the notion that something is being acted upon. In the case of claim 1 of the '525 patent, the thing doing the acting is a beam of P-polarized light. The word "workpiece," however, is broad in that it may encompass almost any article. One must, therefore, check the context in which the word is used to determine what the inventors meant. In claim 1, it is evident that "workpiece" refers to an item susceptible to particle and pit defects because the presence of such is being determined in the last step of the method claimed. Although the meaning intended by the inventors becomes clearer with reference to the context, particle and pit defects may also have a broad meaning. Thus, the word "workpiece" may still mean many things. In this event, a person of ordinary skill in the art would look to the '525 written disclosure to determine what the inventors intended by using the word "workpiece" to define their invention.
On numerous occasions, pit and COP defects are mentioned in the written description of the '525 patent in the same breath. It is clear that these words are interchangeable. For example, the disclosure provides that "if the defects are pits or 'COPS' (crystal originated pits) in the wafer surface, they are not removed by recleaning." '525 at 1:25-30. A person of ordinary skill in the art would readily understand that a pit as used in claim 1 refers to a COP defect. This, however, does not end the inquiry. One must also discover what type of "workpiece[s]" contain COP and particle defects. The inventors specify that "the present invention relates to surface inspection systems and methods and, more particularly, to the inspection of articles or workpieces, such as silicon wafers..." '525 at 1:15-18. Later, in the description of the preferred embodiment, the inventors specify that Figure 1, provided below, represents "a surface inspection system 20 for detecting defects such as particles, pits and the like on a surface of a workpiece W or article, such as a silicon wafer."

[SEE FIGURE 1 IN ORIGINAL]

The '525 patent unquestionably discloses an invention capable of detecting the presence of particle and COP defects on the surface of silicon wafers. Although the inventors do not specifically state in claim 1 that the "pits" referred to on the surface of the "workpiece" are COPS, that meaning was clearly intended. To hold oppositely would require inventors to turn patent claims into catalogues of lexicons. This court refuses to render such a holding when the written disclosure establishes the meaning of the words used in the claim. In as much as KLA implicitly attempts to construe "workpiece" so that a "pit" is not a "COP," this court disagrees. Such an interpretation would be inconsistent with the purpose of the '525 patent and is improper. See Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc., 222 F.3d 951, 956 (Fed. Cir. 2000) (citing Renishaw PLC, 158 F.3d at 1250). Accordingly, the word "workpiece" is construed to mean a silicon wafer or similar article susceptible to particle and COP defects.

5. "Workstation"

The claim language and specifications of the '415 and '670 patents refer to "workstations" as individual components of a laboratory automation system, each of which is capable of performing a test:

The specification of the '670 patent makes clear that a predetermined test is performed at each workstation:

The container is removably mounted in an independent carrier designed to carry an individual specimen of a number of different sizes and shapes through a laboratory to one or more of a plurality of work stations, where a predetermined test will be performed on the specimen. Once the carrier has arrived at the predetermined work station, the carrier is removed from the conveyor and a test is conducted on the specimen.

(Filing 64-4, Ex. D, at 2:21-28 (emphasis added).) Further, claim 1 of the '670 patent refers to "work stations" (plural) where "tests" (also plural) are performed. (Id. at 6:2-3, 6:7-9.)

Claim 1 of the '415 patent also indicates that a workstation is any component that is capable of performing at least one test on a specimen. The first mention of the term provides that the LAS determines "the most direct route from the receiving station to a first workstation for conducting the highest priority test of the first specimen." (Filing 64-3, Ex. C, at 6:19-21.) Additional uses of the word "workstation" in claims 1 and 2 of the '415 patent also link "workstation" to the performance of a test: "each workstation adapted to conduct a predetermined test" (id at 6:24-25); "the LAS operating a gate at the first workstation to direct the carrier to a workstation auxiliary conveyor, for conducting a test on the specimen" (id. at 6:28-30); "[t]he method of claim 1, further comprising the steps of: conducting the first predetermined test on the first specimen after the step of directing the first carrier to the first workstation auxiliary conveyor." (Id. at 6:34-37.)

The references in the specification of the '415 patent likewise indicate the performance of a test at each workstation. For example, in describing figure 2, the description of the preferred embodiment recites:

Thus, if time constraints require that the test of workstation 34 be performed first, and that a test of workstation 32 be performed at some time after the test of workstation 34, the specimen can travel on conveyor 24 past workstations 30 and...
32, directly to workstation 34, for immediate testing.

(Id. at 4:21-26; see also id. at 4:62-63 ("[i]f the particular test . . . is performed at workstation 30"); id. at 5:16-17 ("[o]nce the test performed by workstation 30 has been completed").)

Contrary to Siemens' argument that "workstation" should be construed to mean a "specimen analyzer that performs one or more tests," neither the '415 nor the '670 patents clearly express any intent on the part of the University to limit the generic term "workstation" in this manner. Rather, the patents describe a functional method for the automatic testing of laboratory specimens on a test-by-test basis and never describe a "workstation" as an "analyzer" or "specimen analyzer." Where an inventor relies on "the intended broad scope of the appended claims" in describing his invention, the court should not construe that scope narrowly when the language of the claims does not require or even suggest the narrow construction.

(Filing 64-3, Ex. C, at 5:60-6; Filing 64-4, Ex. D, at 5:34-35. 2) See Martek Biosciences Corp. v. Nutrinova, Inc., 579 F.3d 1363, 1377 (Fed. Cir. 2009) (the meaning of a claim term is only narrowed when the patentee makes a clear and unmistakable surrender of subject matter during prosecution); Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc., 381 F.3d 1111, 1120 (Fed. Cir. 2004.)

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2 Both patents provide:

Whereas the invention has been shown and described in connection with the preferred embodiment thereof, it will be understood that many modifications, substitutions and additions may be made which are within the intended broad scope of the appended claims. There has therefore been shown and described an improved method for automatic testing of laboratory specimen.

(Emphasis added.)

- - - - - - - - - - - - End Footnotes- - - - - - - - - - - - - -

4479

Worm Gear

Molon Motor and Merkle-Korff propose different constructions of the term "worm gear," as follows:

Molon's proposed construction of "worm gear" -- a gear having a screw thread (for example, helical or spiral) that may mesh with a toothed wheel, typically used to connect non-parallel, non-intersecting shafts.

Merkle-Korff's proposed construction of "worm gear" -- a "worm gear" means a worm, which is a shaft with continuous single, double, or quadruple thread screws that completely encircle the axis of the shaft. The "worm gear" typically does not permit back drive, and meshes with a toothed gear to transfer conjugate rotary motion between two shafts at an inclined angle.

Merkle-Korff asserts that the 785 patent should include the following limitations: (1) that the shaft must have continuous threads that completely encircle the axis of the shaft; (2) that the thread screws must be single, double, or quadruple; (3) and that the worm gear does not typically permit backdrive.

Molon asserts Merkle-Korff's proposed construction has numerous problems. First, Molon asserts that Merkle-Korff's construction would wrongly read limitations from the preferred embodiment into the claim, citing Teleflex Inc. v. Ficosa North America Corp., 299 F.3d 1313, 1328 (Fed. Cir. 2002) (the Federal Circuit has "cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification"). Further, the numerical limitations for the number of thread screws wrongly adds narrowing modifiers before an otherwise general term that stands unmodified in the claim, citing Bell Communications Research v. Vitalink Communications Corp., 55 F.3d 615, 621-22 (Fed. Cir. 1995).
Merkle-Korff responds by asserting that these limitations are not preferred embodiments but are, rather, descriptions of the invention detailed in the 785 patent's "Summary of the Invention."

Molon asserts that its construction encompasses the ordinary and plain meaning of the term "worm gear." Citing standard technical reference manuals, Molon asserts that its construction captures the meaning of the term. On the other hand, Merkle-Korff states that Molon is using the term in the 785 patent in an unusual way -- i.e., to refer to what is typically called the "worm" as the "worm gear" and to refer to what is typically called the "worm gear" as the "worm wheel." Merkle-Korff further argues that a European patent application made by Molon supports its contention that Molon is not using the ordinary construction of the term "worm gear." Molon asserts the information related to the European application is extrinsic evidence.

A patentee may not state that the claims of a patent do not cover a particular device during prosecution and then change that position during an infringement suit. Springs Window Fashions LP v. Novo Industries, L.P., 323 F.3d 989, 995 (Fed. Cir. 2003). However, the prosecution history may not be viewed as evidence of the subjective intent of the patent applicant or the patent examiner. "Representations during prosecution cannot enlarge the content of the specification"; and it is proper, instead, to rely on the specification itself for guidance in analyzing the claims. Biogen, Inc. v. Berlex Labs., Inc., 318 F.3d 1132, 1139-40 (Fed. Cir. 2003). Here, there is nothing in the prosecution history that would support deviation from the plain and ordinary meaning.

Adopting Merkle-Korff's construction, however, would improperly add a claim limitation from the specification. See Texas Digital Sys., Inc. v. Telegexnix, Inc., 308 F.3d 1193, 1204-05 (Fed Cir. 2002). Limitations from the specific embodiments of a patent that are described in the drawings and specification of a patent cannot be read as limitations into the claims. Comark Communications, Inc. v. Harris Corp., 156 F.3d 1182 (Fed. Cir. 1998). The specification may be used to interpret the claims; it may not be used as a source for adding extraneous limitations. Transmatic v. Gulton Indus., 53 F.3d 1270, 1277 (Fed. Cir. 1995).

Molon's proposed definition of the term "worm gear" properly describes the claim.

Claim 42 of the '456 patent provides: "A surgical device as recited in Claim 41, wherein said driving means are operably connected through said threaded aperture to a worm gear positioned and disposed within said main housing so as to transmit motion thereto." Defendants argue that this term should be construed as "a gear whose threads wind up in a spiral fashion with a single continuous groove around the outside of the gear." (Defs.' Br. at 54.) Plaintiff explains that defendants have confused the worm gear for the worm, noting that worm is defined as "[a] shank having at least one complete tooth (thread) around the pitch surface; the driver of a worm gear," while worm gear is defined as "[a] gear with teeth cut on an angle to be driven by a worm; used to connect nonparallel, nonintersecting shafts." (Pl.'s Reply Br. at 45 (citing McGraw-Hill Dictionary of Scientific and Technical Terms 2176 (5th ed. 1991)). The specification of the '456 patent supports these definitions: the "screw-like threaded surface of the worm 115 . . . successively engage the drive recesses on the worm gear 120 to effect rotation thereof." Col. 14, Ins. 64-67. Figure 11 of the '456 patent further demonstrates that it is the worm that includes the continuous spiral. I therefore conclude that the term worm gear shall be construed as consistent with its normal dictionary definition: gear with teeth cut on an angle to be driven by a worm, and is used to connect nonparallel, nonintersecting shafts. 26

26 Worm is construed as: a shaft with at least one complete tooth or thread around its surface such that when it rotates, it drives the worm gear.
1. Construction of "Wound"

Defendants argue that the district court erred by vacating its construction of "wound" when the term's meaning was critical to the obviousness inquiry. According to Defendants, this error allowed KCI to improperly avoid the prior art by arguing claim construction to the jury. Specifically, Defendants take issue with KCI's characterization at trial of the Chariker-Jeter, Svedman, Johnson, and Davydov references as "draining fistulae," "irrigating wounds," "immobilizing skin grafts," and "draining bodily fluids," respectively, as opposed to "treating wounds with negative pressure." Defendants' expert testified that under the plain and ordinary meaning of "wound," each of the prior art references disclosed "treating a wound with negative pressure." The effect of this, according to Defendants, was that the jury was improperly forced to choose between competing claim constructions offered by the experts.

Defendants ask us to adopt their proposed "plain and ordinary meaning" construction, taken from Stedman's Medical Dictionary: "(1) trauma to any of the tissues of the body, especially that caused by physical means and with interruption of continuity [or] (2) a surgical incision." They argue that the specification's use of broad language when describing the wounds that can be treated shows that the ordinary meaning, as defined in the dictionary, was intended. See '643 patent col.12 ll.41-42 ("Negative pressure appliances are useful for treating a variety of wounds."); id. col.13 ll.24-25 ("The present invention also includes a method of treating damaged tissue . . . ."). Additionally, Defendants cite the numerous examples in the '643 patent's specification that describe open wounds, infected wounds, burn wounds, skin graft and skin flap wounds, decubitus ulcer wounds, incisional wounds, chronic open wounds secondary to stasis ulcers, and wounds which respond to increased blood flow, to support their proposed construction.

KCI responds that any error resulting from the district court's failure to construe the "wound" phrases is harmless because Defendants' proposed construction is incorrect as a matter of law and the jury's verdict demonstrates that it adopted the correct construction. According to KCI, the correct construction of "wound" is "tissue damage to the surface of the body, including the epithelial and subcutaneous layers." KCI argues that while the specification may refer to a "variety of wounds," each and every example specifically described is a skin wound. Therefore, KCI alleges, the Stedman's Medical Dictionary definition is broader than the scope of the specification and cannot be used to define "wound" as used in the claims. Further, KCI notes that under Defendants' proposed construction, "wound" would include, in addition to fistulae, "conditions such as ruptured appendices and stomach ulcers" that the specification in no way suggests can be treated according to the claimed invention. Appellee's Br. 53.

As a threshold matter, it appears that the parties' dispute over the construction of "wound" only affects the Chariker-Jeter and Davydov references. At trial, KCI did not contest that "wounds" were the subject of both the Svedman and Johnson articles. For example, KCI's expert, Dr. Orgill, testified that, in the Johnson reference, "[t]he skin graft is closing the wound." J.A. 204,899. Similarly, Dr. Orgill described the Svedman article as teaching "irrigation of a wound." J.A. 204,923. Therefore, the effect of any error in the failure to construe "wound" is limited to the Chariker-Jeter and Davydov references.

3 Defendants also argue that KCI improperly distinguished the prior art on the ground that it did not "treat" wounds. However, Defendants have not alleged error in the district court's construction of "treating" as "giving medical care to," nor have they asked us for a construction of "facilitating the healing of." See Second Amended Order Construing Patent '643 and '081 Claim Term at 2. Therefore, we confine our inquiry to the construction of "wound."

We agree with KCI that "wound," as used in the asserted patents, does not cover the fistulae described in the Chariker-Jeter publications and the "pus pockets" described in the Davydov references. As this court held in Phillips v. AWH Corp., "the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc) (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996)). All of the examples described in the specification involve skin wounds, not fistulae or pus pockets.
wounds. See id. at 1321 ("Properly viewed, the 'ordinary meaning' of a claim term is its meaning to the ordinary artisan after reading the entire patent."). To construe "wound" to include fistulae and "pus pockets" would thus expand the scope of the claims far beyond anything described in the specification. See Nystrom v. TREX Co., 424 F.3d 1136, 1145 (Fed. Cir. 2005) ("[I]n the absence of something in the written description and/or prosecution history to provide explicit or implicit notice to the public--i.e., those of ordinary skill in the art--that the inventor intended a disputed term to cover more than the ordinary and customary meaning revealed by the context of the intrinsic record, it is improper to read the term to encompass a broader definition simply because it may be found in a dictionary, treatise, or other extrinsic source."). We further conclude that the district court's failure to instruct the jury on the construction of "wound" in this case was harmless. See B. Braun Med., Inc. v. Abbott Labs., 124 F.3d 1419, 1423 (Fed. Cir. 1997) (holding that the district court's pre-Markman failure to instruct the jury on the construction of a means-plus-function limitation was harmless because the jury adopted the correct construction). Because the jury's verdict is supported under the proper construction, and because we perceive no danger under the circumstances of this case that the jury may have used an incorrect construction of "wound" that might have prejudiced Defendants, there is no need to remand for a new trial.

4 While O2 Micro International, Ltd. v. Beyond Innovation Technology Co., 521 F.3d 1351 (Fed. Cir. 2008), permits a remand for further claim construction, it does not require one. Remanding is particularly unnecessary in this case, where claim construction was briefed before the district court and the disputed term was initially construed but later vacated because the parties did not use the construction in front of the jury. See id. at 1363 (remanding because "the district court is in the best position to determine the proper construction of this claim term in the first instance").

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DYK, Circuit Judge, dissenting.

I respectfully dissent from the majority's holding that affirms the judgment that the claims are nonobvious. In my view, the majority improperly holds that the claim term "wound" can be limited to the disclosed embodiments in the specification, and, having done so, then misreads the specification as showing only embodiments treating harm to the surface of the body or skin wounds. Under the correct construction of this claim term, the asserted claims of U.S. Patent Nos. 5,636,643 ("'643 Patent") and 5,645,081 ("'081 Patent") would have been obvious. 1

The proper construction of the term "wound" was extensively disputed pre-trial. Defendants Medela AG and Medela, Inc. ("Defendants") argued that "wound" should be construed according to its plain meaning as "injury." Defendants alternatively argued that "wound" should be construed as found in Stedman's Medical Dictionary (26th ed.): "(1) trauma to any of the tissues of the body, especially that caused by physical means and with interruption of continuity [or] (2) a surgical incision."

Plaintiffs Kinetic Concepts, Inc., KCI Licensing, Inc., KCI USA, Inc., and Wake Forest University Health Sciences ("Plaintiffs") argued that "treating a wound" should not be construed at all because it is well within the common experience and understanding of every juror. Plaintiffs argued in the alternative that "wound" should be construed as "tissue damage to the surface of the body, including the epithelial and subcutaneous layers." Although both parties introduced expert reports
on claim construction to the district court, neither party relies on these expert reports on appeal.


At trial, Plaintiffs argued the definition of "wound" to the jury in an effort to distinguish the prior art, particularly the public uses of Chariker and Jeter that involved applying negative pressure to surgical incisions including both a hole in the skin and a "fistula" or hole in an internal organ. Plaintiffs argued to the jury that a "fistula" was distinct from a "wound," and that the purpose of the public uses of Chariker and Jeter was "fistula drainage" as opposed to "wound healing." 2

Footnotes
2 In opening and closing arguments, Plaintiffs attempted to distinguish the public uses of Chariker and Jeter by focusing on the fact that the method was usually used when there was a fistula: "this [Chariker-Jeter] is about fistulas, not about the wounds that we are talking about," J.A. 200862; "Remember Chariker-Jeter is healing -- is drainage, not healing. Chariker-Jeter is fistula only," J.A. 205656; "Now, let's talk about Chariker-Jeter and I will repeat myself 400 times and I will shut up. Chariker-Jeter, fistulas, fistulas, fistulas, fistulas. It's about drainage," J.A. 205665. The testimony of Plaintiffs' expert witness on validity, Dr. Orgill, is also illustrative:

  Q: Is that wound healing?
  A: No. That's fistula drainage.

  Q: And why isn't that wound healing?
  A: Well, Chariker-Jeter describes that they stop this device when the fistula closes. And usually these devices take about 16 days, that's what they describe in their article, for this nasty fluid to stop coming out. And after that, when the fistula closes, then that's when the wound healing or the rest of the wound can start to heal.

  J.A. 204932-35. Cross-examination on the definition of wound included an answer from this witness that "[v]ery often people with the definition of tissue would separate tissues from organs, so, in other words, many people in their definition of tissue might not consider, for example, a kidney to be a tissue. I understand some people would, but some people would separate organ from tissues." J.A. 205092. Testimony by an inventor also focused on this distinction: "It's totally different. They're treating drainage. We're treating a wound. . . . We're treating to close a wound. They're treating to control the fistula."

End Footnotes

II

The district court's failure to construe the term "wound" was a clear error. We have held that "[w]hen the parties raise an actual dispute regarding the proper scope of [the patent] claims, the court, not the jury, must resolve that dispute." O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co., 521 F.3d 1351, 1360 (Fed Cir. 2008). It is improper to argue claim construction to the jury because the "risk of confusing the jury is high when experts opine on claim construction." CytoLogix Corp. v. Ventana Med. Sys., Inc., 424 F.3d 1168, 1172-73 (Fed. Cir. 2005); see Sundance, Inc. v. Demonte Fabricating Ltd., No. 2008-1068, 550 F.3d 1356, 2008 U.S. App. LEXIS 26082, *19-20, n.6 (Fed. Cir. Dec. 24, 2008). In this case, the definition of the term "wound" was central to the case and a primary focal point of the Markman hearing; as a result, the court should have construed the term "wound."

The appellees do not dispute that it was error to fail to construe wound, instead claiming that the issue "need not be resolved, however, since any error was harmless" under the claim construction now adopted by the majority. Appellee's Br. 51. The majority agrees. However, there is no suggestion by either the majority or the appellees that the verdict could be
sustained under the appellants' proposed construction. Thus, the crucial question is whether the majority's claim construction is correct. In my opinion it is not.

III

The majority construes "wound" to mean "tissue damage to the surface of the body, including the epithelial and subcutaneous layers" because "[a]ll of the examples described in the specification involve skin wounds." Maj. op. at 9-11. It is the words of the claim that define the scope of the patent. See Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). The words are generally construed according to their ordinary and customary meaning, that is, "the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention." Id. at 1313. This meaning is to be interpreted in the context of the entire patent, including the specification. Id. However, it is improper to import limitations from the specification into the claims where there is no indication that the specific examples in the specification are intended to be strictly coextensive with the claim. Id. at 1323.

The majority holds that the term "wound" should be understood as limited to damage to tissues near the surface of the body, particularly the skin, and should not include damage to organs. The majority points to no medical dictionary or other extrinsic evidence supporting this claim construction. The specification does not define "wound" or provide any examples of the types of harms that would not qualify as wounds under the claim terms. Nor does the specification state that the examples listed in the specification were intended to describe the entire invention. See SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1343-44 (Fed. Cir. 2001) (specification described "all embodiments of the present invention"). Nonetheless, the majority concludes that, because the specification examples supposedly only include descriptions of damage to the skin, the specification limits the kinds of wounds encompassed by the claim. In my view, our decision in Phillips bars us from construing the claims as limited by the specification examples, and the majority's approach is without support in our post-Phillips cases.

But even if the examples could limit the claims, in my view the examples here are not limiting, and indeed the specifications confirm the inappropriateness of the majority's construction. The specifications of both patents make clear that the examples are merely "illustrative." 3 The specifications also state that the invention is "useful for treating a variety of wounds." '643 Patent col.12 ll.41-42. "Wounds that have exhibited positive response to treatment by the application of negative pressure include infected open wounds, decubitus ulcers, dehisced incisions, partial thickness burns, and various lesions to which flaps or grafts have been attached." '643 Patent col.2 ll.58-62. (emphasis added). The use of the illustrative and open language of "include" demonstrates that there may be other types of wounds that the specification does not expressly point out, but that would nonetheless be covered by the claim term "wound." See SanDisk Corp. v. Memorex Prods., Inc., 415 F.3d 1278, 1284 (Fed. Cir. 2005); Amgen Inc. v. Hoechst Marion Roussel, Inc., 314 F.3d 1313, 1344-45 (Fed. Cir. 2003).

Throughout the specifications, the term "wound" is used only in this broad and inclusive way. See, e.g., '643 Patent col.13 ll.23-29.

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3 The '081 Patent specification states: "[t]hese examples are provided for illustrative purposes only and are not to be taken as limiting," col.5 ll.47-49, and "[t]he foregoing examples are illustrative of the present invention, and are not to be construed as limiting thereof," col.9 ll.46-48. See also '643 Patent col.21 ll.43-45 ("The terms and expressions which have been employed are used as terms of description and not of limitation.").

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Moreover, the majority is incorrect in asserting that "[a]ll of the examples described in the specification involve skin wounds." Maj. op. at 11. In fact, a number of examples illustrate that the wounds at issue are not merely skin wounds but deep wounds that include damage to more than the skin, such as wounds in which bone was exposed, '643 Patent col.19 ll.35-39, col.20 ll.23-27, large quantities of fluid were draining, '643 Patent col.19 ll.23-26, surgical incisions cut through the abdominal wall and did not heal, '643 Patent col.19 ll.55-65, or bone was infected, '643 Patent col.20 ll.49-61. See also '081 Patent col.8 ll.58-67, col. 9 ll.19-27, ll.35-41. These examples disclose wounds with far more than mere "damage to the epithelial and subcutaneous layers," suggesting that other kinds of damage, including fistulae caused by surgical incision, would be within the definition of "wound" as used in the claim. These examples explicitly identify benefits achieved in the healing of interior tissue. For example, '643 Patent col.19 ll.55-65 and '081 Patent col.8 ll.60-65 describe increased healing
of the abdominal wall by granulation tissue in and through Prolene mesh, and '643 Patent col.19 ll.23-26 and '643 Patent col.20 ll.25-35 describe draining fluid from interior infections. 4

4 To be sure, one of the identified purposes of the invention applies only to the skin. See '643 Patent col.1 ll.20-25 (describing the "zone of stasis" in which blood flow to the skin around a wound is restricted as a problem addressed by the invention). However, we have held that "[t]he court's task is not to limit claim language to exclude particular devices because they do not serve a perceived 'purpose' of the invention. . . . An invention may possess a number of advantages or purposes, and there is no requirement that every claim directed to that invention be limited to encompass all of them." E-Pass Techs., Inc. v. 3Com Corp., 343 F.3d 1364, 1370 (Fed. Cir. 2003).

In view of the inclusive language and examples of the specification, I would find a dictionary frequently used by a person of ordinary skill in the art significant in understanding the meaning of "wound" in the claim. See Phillips, 415 F.3d at 1322-23 ("[J]udges are free to consult dictionaries and technical treatises . . . when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents." (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584 n.6 (Fed. Cir. 1996)). The definition of "wound" provided by Stedman's, an accepted medical dictionary, 5 includes "trauma to any of the tissues of the body" and "surgical incision." In light of the disclosures of the specifications and the additional support of the dictionary, in my view the term "wound" as used in the claim includes fistulae caused by surgical incision.

5 Plaintiffs' expert witness testified that Stedman's is a medical dictionary used in the profession. Plaintiffs even referenced the definition of wound provided by Stedman's in filings to the FDA describing the full scope of wounds that could be treated by their device.

The final disputed term is "written material." Here, the primary disagreement is whether "written material" encompasses figures or pictures that may appear on a page of the book, or whether the term is limited to words.

The claim language itself provides guidance as to what the inventor intended by "written material." Claim 1 states that the audio signals produced by the toy are "audio interpretation[s]" of the "written material." Although "written material" is not further described in claim 1, claim 2 and claim 10 specify that for these claims, "written material" is a "set of words." ( '213 patent, col. 5, 1. 26 & col. 6, 1. 24.) Claim I does not so limit "written material." Thus, it is clear that the inventor intended "written material" to encompass something broader than just words. If the inventor intended "written material" to only mean words, there would be no reason to further specify in claims 2 and 10 that, at least for those claims, "written material" consisted of words.

The specification and prosecution history further supports a broad construction of "written material." Claim 1 states that the "written material" is capable of "audio interpretation" and the specification specifically describes what can be audibly interpreted by the toy. The toy can provide "an audible translation of the text" or alternatively the toy can provide "an audible translation of pictures or figures." ( '213 patent, col. 3, 11. 44-49.)

Finally, the prosecution history reveals that the word "symbol" was originally used in the claim language and was later amended to "written material." (Pls.' Br. Ex. B at 40, 49.) Something can be "written material" without being a "symbol." This indicates that the inventor intended to broaden the scope of what could be audibly translated by the toy to include
Accordingly, "written material" will be construed as "words, figures, or pictures."

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4. "X-ray film" is construed to mean "a film produced by radiation of high energy and short wavelength capable of passing through objects opaque to light."

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2. "Y-shaped"

Spire contends that the term "Y-shaped" should be construed as describing something "shaped like the letter Y." Spire argues that, as a result, the definition requires that the top two branches of the letter "Y" form some perceptible angle less than 180 degrees. Arrow proposes a definition that does not restrict the angle, but merely denotes the splitting of the lumens from the central portion of the multi-lumen catheter to create separate extension tubes at either end. Arrow's definition would include, say, an apparatus with junctions shaped like the letter "T" or like an arrow.

"Y-shaped" is a simple, non-technical term whose ordinary meaning is self-explanatory: having the shape of the letter "Y". Thus, I construe the term "Y-shaped" in the patent strictly to denote this shape. The angle between the two forks or branches of the letter "Y" distinguishes it from the letter "T" (exactly 180 degrees), a single, vertical line (zero degrees), and an arrow shape (greater than 180 degrees). In order to take the shape of the letter "Y", the inside angle between the branches of a "Y-shaped" apparatus must be less than 180 degrees. 7

7 Admittedly, the branches of the letter Y necessarily form two angles between them, summing 360 degrees. The angle referred to here is the angle between the branches that is not bisected by the trunk of the letter (designated as [alpha] and [theta] in Figures 2 and 5, respectively). I refer to this angle as the "inside" angle, even though the description is somewhat tautological.

It follows, also, that the minimum angle between the branches of the "Y" must be greater than zero. I recognize, in the context of this case, that a "Y" shape may be created by splitting separate extension tubes at either end from the central tube. The extension tubes may be located directly beside each other so that the angle between them is so imperceptible as to approach zero degrees, but the separation of the two tubes from the central tube nevertheless creates a "Y-shape" in the sense that a divergence -- some separation greater than 0 degrees -- is present where the tubes intersect. Thus, for something to be in the shape of the letter Y, there must be two branches intersecting at a single trunk separated by an inside angle that measures between 0 and 180 degrees.

The specification supports this definition. In a preferred embodiment, the proximal extension tubes are joined to the central portion by a Y-shaped junction, or "trunk." Id. at col. 8, 11. 22-25, 34-38. There is an angle of separation of approximately 5 degrees between the arterial and veinal tubes. Id. at col. 8, 11. 44-48. The extension tubes at the distal end are arranged similarly, with the angle of separation ranging between 10 and 30 degrees. Id. at col. 7, 11. 14-19. These angles fall well below the 180 degree limit and form recognizable, albeit in the case of the proximal ends, barely discernible, "Y" shapes. See Figures 2, 5.

Figures 7 and 8 illustrate the situation in which something closer to but still greater than zero degrees separates the extension tubes. These figures depict the extension tubes held closely together by a connector or a sheath so that the catheter can pass through the subcutaneous tunnel. Figures 8A and B make clear that although the extension tubes (marked by
Although not illustrated in the diagrams, this near "zero degree" arrangement may also arise when no trunk piece is used to connect the extension tubes to the central tube. The specification describes an embodiment in which the trunks, labeled 30 and 32 in Figures 2 and 5, respectively, are eliminated. '198 patent at col. 7, 27-36; col. 8, 11. 57-67. The extension tubes are then connected directly to the central tube portion. This would result in the central tube essentially being split in two at each end. The angle between the tubes would be as close to zero as is imaginable but the splitting imports divergence and this arrangement would consequently be covered by the claims.

I recognize the specification states that the tubes may be arranged at "any desired angle." '198 patent at col. 7, 11. 19-20; col. 8, 11. 49-50. Arrow seizes upon this language to argue that "Y-shaped" should be construed with no limitation on the angle between the tubes. I disagree. In the context of the entire specification, which repeatedly describes the apparatus joints as "Y-shaped," the phrase "any desired angle" must be construed to refer only to the possible angles of a Y-shaped junction.

In sum, drawing from both parties' proposed definitions, the term "Y-shaped" denotes the shape of the letter "Y," meaning the shape formed by two branches which intersect at a single trunk to form an inside angle that measures between 0 and 180 degrees.

A determination of infringement requires a two-step analysis. See Gentry Gallery, Inc. v. Berkline Corporation, 134 F.3d 1473, 1476 (Fed. Cir. 1998). "First, the claim must be properly construed to determine its scope and meaning. Second, the claim as properly construed must be compared to the accused device or process." Carroll Touch, Inc. v. Electro Mechanical Sys., Inc., 15 F.3d 1573, 1576 (Fed. Cir. 1993).

While the parties did dispute the proper construction of each element of Claim 3, the focus of the Court's ruling on whether defendant's Series 7000 satellites infringe the Rahn patent is on the proper construction of "yaw momentum commands," which appear in elements [b] and [d]. See Rahn patent col. 11:9-20. In element [d], a "modeling circuit" determines "appropriate roll commands, pitch commands, and yaw momentum commands to established [sic] a particular aim point for a selected target." Rahn patent col. 11:15-20. These commands are then received by element [e]'s "short term tracker circuit," which "provide[s] attitude control information in response to said commands." Id. col. 21-25. In element [b], the "momentum biasing attitude control apparatus" "effect[s] attitude control in response to" these same "roll commands, pitch commands, and yaw momentum commands." Id. col. 11:9-11.

Element [b] suggests that the "roll commands, pitch commands, and yaw momentum commands" function as instructions for moving the satellite -- i.e., changing its attitude. SSL's proposed construction of these terms partially conforms to that suggestion:

A "roll command" is a command (e.g., rotate 3 degrees clockwise) which, if all other inputs to the short term tracker (element e) are unchanged, will cause a corresponding rotation of the spacecraft about its roll axis.

A "pitch command" is a command issued by the modeling circuit (e.g., roll 1 degree counterclockwise) which, if all other inputs to the short term tracker are unchanged, will cause a corresponding rotation about the spacecraft's pitch axis.

A "yaw momentum command" is a command issued by the modeling circuit (e.g., increase or decrease momentum by a certain amount) which, if all other inputs to the short term tracker are unchanged, will cause a corresponding change in the component of angular momentum along the yaw axis.

SSL's Reply in Support of Its Cross-Motion for Partial Summary Judgment that Lockheed Martin's Series 7000 Satellites Literally Infringe the Rahn Patent at 6. 4 But while the above constructions of "roll command" and "pitch command" describe what these instructions will do (i.e., cause a certain rotation of the satellite about the roll or pitch axis), the proposed construction is deficient in that it does not describe the effect of the "yaw momentum command" on the satellite's attitude, which is the clear purpose of the commands.

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4 After the August 1, 1997 hearing on claim construction, SSL submitted a Supplemental Memorandum Regarding Construction of Certain Rahn Patent Claim Terms. In that memorandum, SSL slightly modified its construction:

"Roll commands," "pitch commands" and "yaw momentum commands" are signals that are sent to the short term tracker circuit (element [5]). If the other inputs to the short term tracker remain unchanged, then: (a) a change in the "roll commands" will cause the spacecraft's aim point to rotate by a corresponding amount about the roll axis; (b) a change in the "pitch commands" will cause the spacecraft's aim point to rotate by a corresponding amount about the pitch axis; and (c) a change in the "yaw momentum commands" will cause a corresponding change in the component of angular momentum along the yaw axis.

Memo at 2.

Lockheed proposes that the Court look to the patent language to arrive at a complete understanding of "yaw momentum commands." Lockheed argues that "yaw momentum commands," as the term is used in the Rahn patent, are commands to momentum/reaction wheels "used to control the roll angle" of the satellite. Lockheed's Motion at 28. The yaw momentum command, according to Lockheed, instructs the momentum biasing apparatus to change the relative speed of its momentum/reaction wheels, thereby changing the balance of yaw momentum between the wheels and causing the satellite to rotate about its roll axis.

Because SSL is unable to offer a sufficiently concrete construction of what a "yaw momentum command" does, the Court agrees in large part with Lockheed's proposed construction. Language in the patent relating to "yaw momentum commands" is sparse, but two passages in particular from the background section are helpful. The first is in reference to "roll ground track errors" (i.e., the satellite's erroneous pointing north or south of where it should be pointing on earth): "The yaw momentum storing wheels are controlled to minimize nutation and allow for roll tracking." Rahn patent col. 3:43-45. The second, one of the objectives of the background control system: "To provide for roll angle tracking by varying a distribution of yaw momentum between a roll angle [magnetic flux], and a yaw momentum in the wheels …. Distribution of yaw momentum is controlled by varying a speed of a momentum wheel through the yaw momentum command …." Id. col. 4:50-55 (emphasis added).

The patent discloses only one such arrangement, in its description of "specific embodiments": "at least two nonparallel momentum/reaction wheels in a pitch/yaw plane of a spacecraft. Included among acceptable wheel configurations are the L-wheel system and the V-wheel system …." Id. col. 9:6-10. While the Court is mindful of the prohibition on importing limitations from the specification into the claims, in order to determine the meaning of the term "yaw momentum command," the Court is forced to rely on the above language. As a result, the Court concludes that "yaw momentum commands" are instructions to at least two nonparallel momentum/reaction wheels in a pitch/yaw plane of a spacecraft concerning the wheels' relative rates of speed, the purpose of which is to control the angular momentum in the yaw direction and to control the attitude of the satellite by changing the roll angle.

IV. Yield Strength

Claim 5 of the suit patents requires that a frame component have "a yield strength greater than 30,000 psi." '112:12:40-41; '955:14:24-25. Defendants argue that this claim term should be interpreted to require a component to exhibit the stated yield strength at a temperature at which 3% heat recoverable shape-memory and elasticity occurs, i.e., at -20 [degrees] C, and that the evidence presented at trial was insufficient to support the jury's finding that the Turaflex frames possessed the required yield strength at that temperature.

Defendants argued that claim 5 should be interpreted to require the stated yield strength at -20 [degrees] C in their motion for a directed verdict. Defendants have not presented any evidence or posed any arguments which this Court did not
thoroughly consider before denying defendants' motion for a directed verdict at the close of the evidence at trial. Tr. 2915:23-2917:16; 2926:11-19. The reasons for denying that motion are nevertheless amplified below.

A. Claim Construction

Although claim 1 expressly requires that a component exhibit certain characteristics over a stated temperature range, there is simply no mention of a temperature range requirement in claim 5. In light of the temperature range requirement in claim 1, it is clear that the tendency of shape-memory alloys to behave differently at different temperatures was neither overlooked by the inventors or the PTO, nor beyond their ability to address with claim requirements. The absence in claim 5 of a limitation with respect to temperature makes it clear from the plain language of the claim terms that no such limitation was intended.

Defendants assert, however, that the specifications of the suit patents indicate that the yield strength requirement of claim 5 must be met at temperatures as low as -20 [degrees] C. While it is "proper to use the specification to interpret what the patentee meant by a word of phrase in the claim," it is not proper to add "an extraneous limitation appearing in the specification." E. I. Du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed. Cir.), cert. denied, 488 U.S. 986, 102 L. Ed. 2d 572, 109 S. Ct. 542 (1988). An extraneous limitation is one which is "read into a claim from the specification wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim." Id. In other words, the language contained in the patent specifications may be used only to interpret ambiguous claim terms, and not to impose additional limitations on the claims. See SRI Int'l., 775 F.2d at 1121.

In this case, the phrase "a yield strength greater than 30,000 psi" as used in claim 5 clearly makes no reference to a temperature range. Accordingly, it is not proper to look to the patent specifications to determine whether or not claim 5 requires that a component possess this yield strength at any specific temperature.

Moreover, the portions of the specifications cited by defendants do not require that an alloy possess the yield strength stated in claim 5 at temperatures as low as -20 [degrees] C. Defendants rely upon a statement in the specifications that work-hardening, followed by partial annealing, results in a component that, "below M[,]s, has a combination of higher yield strength, very springy elastic behavior, and some shape-memory characteristics." 14 955:6:31-34. Although this portion of the patent specification discusses the yield strength of an alloy below its M[s] temperature, there is no indication in the specification that the M[s] temperature referred to is as low as -20 [degrees] C. Indeed, in discussing the shape memory features of the frame components for purposes of Claim 5, the specifications refer to figure 2G, which depicts the behavior of an alloy at some point below M[s], but in no way indicates that the alloy has an M[s] temperature as low as or close to -20 [degrees] C. 955:5:37-41.

The only temperature range requirement imposed by the suit patents is the -20 [degrees] C to +40 [degrees] C range over which claim 1 requires that a component exhibit at least 3% elasticity. The discussion of claim 1 in the specifications of the suit patents indicates that the M[s] temperature does not necessarily approach -20 [degrees] C. Rather, the M[s] temperature depends upon the alloy selected. In discussing Claim 1, the patent specifications describe the behavior of frame components at temperatures below M[s], which may fall above -20 [degrees] C. 955:5:37-40, 50-61. Thus, even if the specifications were read to impose a limitation on claim 5, they might arguably require only that a frame component possess the stated yield strength at some temperature below M[s], but not necessarily at temperatures as low as -20 [degrees] C.

Defendants next assert that plaintiffs implicitly conceded that Claim 5 requires an alloy to possess the stated yield strength at -20 [degrees] C by seeking a finding of infringement with respect to Turaflex Model 841 under the doctrine of equivalents. The evidence at trial presented by plaintiffs established that the yield strength of this frame at -20 [degrees] C was below the 30,000 psi required by claim 5. Defendants reason that, had plaintiffs asserted that claim 5 required only that the 841 possess the requisite yield strength at any temperature, plaintiffs would have sought to prove literal infringement by relying upon tests which demonstrated that Model 841 had a yield strength of 52,000 psi at 40 [degrees] C. Plaintiffs'
attempt to demonstrate at trial that the 841 exhibited the requisite yield strength at -20 [degrees] C, however, does not compel this Court to read such a limitation into claim 5, which itself contains no reference to temperature which even arguably applies to yield strength. Accordingly, I conclude that claim 5 should not be construed to require that its stated yield strength requirement be met at -20 [degrees] C.

Defendants do not challenge the sufficiency of the evidence at trial that the accused frame components possessed the required yield strength at higher temperatures, nor could they. The jury, reading the plain language of claim 5, might well have concluded that the yield strength requirement stated in claim 5 need not be met at -20 [degrees] C, and relied upon Beshers' test results at higher temperatures, indicating yield strengths well in excess of 30,000 psi. PX 20. 15 These results provided ample support for the jury's finding that the accused frame components infringed the yield strength element of claim 5.

--- Footnotes ---

15 Beshers' data at higher temperatures, with a substantial margin for error and obtained before several cycles of tests were performed, are not subject to the attack levelled by defendants, discussed below, at the results which Beshers obtained at -20 [degrees] C.

--- End Footnotes ---

I. "Yieldable"

As a preliminary matter, Plaintiff argues that construction of the term is only necessary as it relates to claim 1 of the '111 patent because, the term appears only in the preamble, but not the body of claim 33 of the '527 patent. 15 Moreover, Plaintiff states that "yieldable," as used in the '527 patent refers to an intended benefit of the invention, but not an explicit patent claim. 16 Defendants counter that Plaintiff is barred from so arguing because, under a current re-examination of the '527 patent before the United States Patent and Trademark Office ("USPTO"), Plaintiff is claiming that the term "yieldable" does constitute a claim within the patent. 17

--- Footnotes ---

16 Id.
17 Docket No. 356, at 8 n.9, Ex. I.

--- End Footnotes ---

"[C]lear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part the claimed invention." 18 Similarly, Plaintiff's reliance on the preamble as a source to distinguish patents during its reexamination should also result in the preamble being construed as a claim limitation in this case. Defendants correctly point out that "claims may not be construed in one way in order to obtain their allowance and a different way against accused infringers." 19 The Court will therefore construe the term "yieldable" as used in both claim 1 of the '111 patent, and in the preamble of claim 33 of the '527 patent.

--- Footnotes ---

Plaintiff argues that the term "yieldable" as used in its patents means "able to give way under force or pressure." Plaintiff emphasizes that the term should reflect the shape memory properties of the patented material. Plaintiff points to the specifications in the '111 and '527 patents which state that "the cushioning element is yieldable as a result of compressibility" and that it "yields under the weight of the cushioned object." On the other hand, Defendants argue that the term means "having a yield point." Defendants support this interpretation by pointing to extrinsic evidence, namely, the Random House Webster's Unabridged Dictionary, and a technical manual, the Standard Terminology Relating to Rubber.

The Court finds that, based upon the specifications, the term "yieldable" as used in Plaintiff's patents is more aptly construed as "able to give way under force or pressure." The Court is unconvinced that the extrinsic evidence proffered by Defendants provides the correct ordinary and accustomed meaning as understood by one of ordinary skill in the art. Rather, given the use of the term in the specifications, and the intended nature of the invention, namely, to maintain shape memory, Plaintiff's definition properly encompasses the scope of the correct meaning. Defendants' proposed definition, on the other hand, incorporates one aspect of being yieldable, namely, able to pass a yield point, but fails to address the broader meaning inferred by a reading of the specifications.

The third term in Claim 1 on which the parties seek construction is "yieldable means." Claim 1 recites "a needle assembly comprising a cannula . . ., a line of elements, yieldable means, including a frictionally held plug." The World Wide Plaintiffs construe this phrase as a "means capable of yielding, or giving way, under force." AnazaoHealth proffers a more restrictive construction, that is "a plug used to position the first seed in the needle at an exact distance from the distal tip of the needle and that is capable of holding and giving way under force." It appears from the two proposed definitions that the parties do not have a meaningful disagreement over the construction of the word "yieldable." The primary disagreement involves whether "yieldable mean" should be construed as a means-plus-function term under 35 U.S.C. § 112, P 6. If section 112, P 6 is found to apply, then the claim term is construed by identifying the "function" associated with the claim language, and then identifying the corresponding "structure" in the specification associated with the function. The claim is then construed as limited to that structure and its equivalents. Depuy Spine, Inc. v. Medtronic Sofamor Danek, Inc., 469 F.3d 1005, 1023 (Fed. Cir. 2006), cert. denied,552 U.S. 940, 128 S. Ct. 58, 169 L. Ed. 2d 243 (2007). AnazaoHealth insists that the phrase must be construed as a "means-plus-function" limitation with the "structure" limited to a plug, which could perform the stated function and which was also disclosed as the preferred embodiment for positioning the element a "predetermined distance from the distal end."
18 35 U.S.C. § 112, P 6 provides:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The World Wide Plaintiffs respond that the means-plus-function analysis applies only to purely functional limitations that do not provide any structure for performing the recited function. Here, they maintain, sufficient structure is disclosed to perform the recited function of "positioning an element . . . a predetermined distance from the distal end." AnazaoHealth replies that the World Wide Plaintiffs have failed to explain how a "yieldable means" could encompass anything other than a plug and, to the extent that this claim is interpreted more broadly, it would be invalid in light of prior art references that disclosed various "yieldable means." (W0470, W0476-W0482.)

(i). "Means-Plus-Function"

The determination of whether a claim term is written in a means-plus-function format is a question of law for the court. Linear Tech. Corp. v. Impala Linear Corp., 379 F.3d 1311, 1318 (Fed. Cir. 2004). "Means-plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function." Depuy Spine, Inc., 469 F.3d at 1023 (quoting Phillips, 415 F.3d at 1311). "If the word 'means' appears in a claim element in association with a function," there is a rebuttable presumption that section 112, paragraph 6 applies. See Callicrate v. Wadsworth Mfg., Inc., 427 F.3d 1361, 1368 (Fed. Cir. 2005); see also Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584 (Fed. Cir. 1996). This presumption may be rebutted, however, when the claim element recites a sufficiently definite structure to perform the claimed function. See Phillips, 415 F.3d at 1311; Callicrate, 427 F.3d at 1368. The Federal Circuit has held that in determining whether sufficient structure is recited by a term used in a claim limitation, the court may inquire into whether the "term, as the name for structure, has a reasonably well understood meaning in the art." Greenberg, 91 F.3d at 1583.

Here, although Claim 1 uses the term "means" in the phrase "yieldable means," creating a rebuttable presumption of a "means-plus-function" limitation, the claim then specifically identifies a structure, i.e., a frictionally held plug, capable of entirely performing the function of "yielding." The Federal Circuit has held that "[m]eans-plus-function claiming applies only to purely functional limitations that do not provide the structure that performs the recited function," Phillips, 415 F.3d at 1311, which is not the case here. See also Watts v. XL Systems, Inc., 232 F.3d 877, 880-81 (Fed. Cir. 2000) (holding that the focus is whether the claim recites a sufficiently definite structure, but noting that the claim limitation need not connote a precise physical structure).

(ii). Limiting "Yieldable Means" to a "Plug"

AnazaoHealth argues that even if section 112, paragraph 6 does not apply, "yieldable means" must still be limited to a plug. The Court disagrees. By defining the "yieldable means" as limited to a plug, AnazaoHealth ignores the broader language in the specification and claims, which contemplate other means for achieving the recited function in Claim 1. The claim itself states "yieldable means, including a frictionally held plug." The Federal Circuit has repeatedly recognized that use of the term "including" is an open term, synonymous with "comprising," thereby permitting the inclusion of unnamed components. See Hewlett-Packard Co. v. Repeat-O-Type Stencil Mfg. Corp., 123 F.3d 1445, 1451 (Fed. Cir. 1997), cert. denied, 523 U.S. 516-522 U.S. 812, 118 S. Ct. 56, 139 L. Ed. 2d 20 (1997).

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Additionally, the specification states, "The positioning means for the first seed may take one of a variety of forms, all of
them yieldable to permit the seed to be pushed past the distal end in the implantation." (‘760 Patent col. 2, ll. 30-33
(emphasis added).) "The needle assembly of the invention may include a biocompatible 19 end plug. . . ." Id. at col. 2, ll.
34-35 (emphasis added). Thus, the specification makes clear that a plug is not the exclusive manner in which to attain the
recited function in Claim 1. In fact, the ’760 Patent expressly discloses an alternate embodiment where the yieldable means
comprise the combination of a plug and a resilient tongue formed in the cannula wall. Id. at col. 5, ll. 1-20 & fig. 6d.
Nothing in the prosecution history suggests otherwise. Moreover, AnazaoHealth’s proposed definition that limits the
yieldable means to a plug is redundant of the language already recited in the claim, “including a . . . plug.” Id. at 5:46-48.

- - - - - - - - - - - - - - Footnotes - - - - - - - - - - - - - - -
19 The Patent uses this spelling throughout. The correct spelling is "biocompatible."
- - - - - - - - - - - - End Footnotes - - - - - - - - - - - - - - -

The Court finds that the World Wide Plaintiffs’ proposed construction comports with the customary and ordinary meaning
when viewed in the context of the intrinsic record. The Description of the Preferred and Other Embodiments discusses what
the patentees meant by "yieldable means:"

In all embodiments, no matter by what means, the end plug is yieldably held in precise position and may be forced
outward as the cannula is drawn backward on the stylet. The position of the end plug 32 in the cannula 12 is yieldable.
Before yielding, the plug seals the needle and keeps the seeds from spilling out the needle or body fluids from entering
the needle prematurely.

Id. at col. 4, ll. 17-21; see also id. at col. 2, ll. 31-34. The only construction that is consistent with the claim language and
the entire disclosure in the specification is one that construes the phrase as "means capable of yielding, or giving way under
force."

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6. Yoke

Plaintiff urges the court to define "yoke" as "a clamp or vise that holds two parts together." Defendants construe "yoke"
more generally as "something that connects or joins together, a bond or tie."

Figures 21-22 and 26-27 of the ’465 Patent depict the yoke:

[SEE FIG. 21A IN ORIGINAL]
[SEE FIG. 21B IN ORIGINAL]
[SEE FIG. 21C IN ORIGINAL]
[SEE FIG. 21D IN ORIGINAL]
[SEE FIG. 21E IN ORIGINAL]
[SEE FIG. 22 IN ORIGINAL]
[SEE FIG. 26A IN ORIGINAL]
Plaintiff argues that "yoke" is commonly used to mean "clamp or vise," and provides a dictionary definition of "yoke" that supports limiting "yoke" to meaning a "clamp or vise."

Claim 31, however, uses "yoke" generally to refer to something that connects various parts of the handguard. The claim states that a "yoke" is "removably secured to [the] rearward end of [the] upper handguard" and "cooperatively engage[s] [the] outer surface of [the] barrel nut." '465 Patent col. 17, ll. 7-12. The definition of "yoke" appears to be dependent on the definition of "engage," and the '465 Patent provides no further insight into what a "yoke" is other than that it "engages the barrel nut." '465 Patent col. 10, ll. 6-7.

The claim makes no mention of a clamp or vise; as such, these limitations will not be imported into the definition of "yoke." Defendants' definition does not preclude the yoke from being a clamp or a vise, but does not require it to be one, consistent with the language and structure of claim 31.

As used in claim 31 of the '465 Patent, "yoke" means something that connects or joins together.

3. Zone

The term "zone" is found in Claims 1, 5, 10(a), 20, 21, 22, 23, 28, 29, 30, 31, 32, 35, 36, 37, 38 and 41-44 of the '461 patent; Claim 12 of the '744 patent; and Claims 9 and 10 of the '711 patent.

Vision Advancement contends that the term "zone" should be given its plain and ordinary meaning and proposes a construction of "One or more regions distinguished from adjacent parts by a distinctive feature or characteristic." Vistakon, on the other hand, proposes a construction of "A complete cycle, such as from the intermediate power through the high power, then back through the intermediate power to the low power, and finally back to the intermediate power."

Vision Advancement argues that Portney's various references to "zone" in the '961 patent show that he did not act as his own lexicographer and define the term narrowly as proposed by Vistakon. Vision Advancement first points to the repeated descriptions of the prior art as having zones, even though none of those prior art references disclose a "complete cycle" of powers as proposed by Vistakon. See, e.g., Col. 1:25-33; 1:34-41; 2:3-7; 2:16-20. Vision Advancement also points to other uses of zone in the specification that do not refer to a complete cycle: (1) "the radial width of the zone for far-to-near transition is larger than the radial width of the zone for near-to-far transition", 2:45-50, and (2) "the small centrally placed "zone" of a constant curvature." 5:13-14. Finally, Vision Advancement argues that Vistakon's narrow definition of zone is inconsistent with the use of that term in the other claims, such as claim 19.

Vistakon argues that the inventor expressly defined zone in the specification as "a zone is considered to include a complete cycle, i.e., from the intermediate power through the high power, then back through the intermediate power to the low power, and finally back to the intermediate power." See Col. 5:15-19. Vistakon contends that the reference to the centrally placed zone was merely Portney defining an exception to its definition of zone. Finally, Vistakon argues that its definition is "compatible" with the use of "zone" in claim 19.

The Court agrees with Vision Advancement that "zone" is not limited to a complete cycle. As noted by Vision Advancement, "zone" is used in the '461 patent to refer to various optical regions, many of which do not refer to a complete cycle. The
Court turns first to the claims. In each of the claims in which "zone" appears, the claim itself defines what is required of the zone with respect to vision correction power or value. Claim 1 does require a complete cycle in a zone. Claim 1 states that "each cycle of such continuous variation from one value to the other and then back to the first being repeated in a plurality of zones." However, independent claims 10, 19, and 36 do not require such a cycle for a zone. For example, claim 19 refers to "each of said zones having a first region with near correction power, a second region with far vision correction power and an intermediate vision region between the first and second regions. . ." Claim 19 does not require that the zone include a full cycle of power, which for claim 19 would require the power return to the near vision correction power. The Court will not add the additional requirement that a zone must have a complete cycle of power variation when the claims expressly provide for what power variation is claimed (e.g., near to far in claim 19).

As pointed out by Vision Advancement, "zone" is used in the specification to refer to areas that have a complete cycle as well as areas that do not have a complete cycle. Vistakon relies primarily on the description at Col. 5:15-19 to argue that the patentee acted as his own lexicographer in defining "zone." The Court disagrees. The patentee's use of "zone" does not demonstrate that he expressly defined "zone" as a complete cycle. As discussed above, the patentee used "zone" to refer to less than a complete cycle in many places in the specification and the claims. Additionally, the language relied on by Vistakon is a description of a preferred embodiment and is specifically in reference to Figure 4. 5:5-19. Without clear indicia that the patentee defined zone to include a complete cycle, the Court will not impose that description of a preferred embodiment onto the meaning of "zone." See Tex. Instruments, Inc. v. Int'l Trade Comm'n, 805 F.2d 1558, 1563 (Fed. Cir. 1986).

Vistakon further argues that there is no explanation in the patent of what a "distinctive feature or characteristic" would be as Vision Advancement proposes. The Court agrees that the Vision Advancement's construction of zone as "regions distinguished from adjacent parts by a distinctive feature or characteristic" is unnecessarily vague. As discussed above, "zone" refers to areas having certain optical characteristics such as variations in power. Thus, the Court construes "zone" as "One or more areas distinguished by optical characteristics."

Turning to the term "transition zone" in Claim 22 of the 011 Patent, it is unclear exactly how the parties proposed definitions differ from one another. NMT argues that "transition zone" means "the portion of the outer body between the barrel portion and the smaller diameter nose portion of the body," and RTI argues "an area between the barrel portion and the smaller diameter nose portion of the syringe body." According to the proposed definitions, it appears that the only dispute between the parties is whether the "transition zone" is part of the "body." 5

5 RTI's Markman Brief contains allegations that NMT would require the "transition zone" to be tapered. The Court does not find that argument in NMT's submissions and thus disregards it.
4. "transition zone"

a. Parties' Positions

The parties propose the following constructions for "transition zone," which is present in each asserted claim. Dkt. No. 114.

<table>
<thead>
<tr>
<th>RTI</th>
<th>BD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portion of the syringe located between the barrel and the nose</td>
<td>Portion of the syringe with varied inner diameter located between the barrel and the nose</td>
</tr>
</tbody>
</table>

RTI contends this term should not be limited to the preferred embodiment, which identifies a transition zone with a sloping inner wall. Dkt. No. 111 at 21. While RTI concedes that the transition zone has a "constricted portion," it believes that the patent does not require that the transition zone have a varied inner diameter. Id. BD counters by arguing that the phrase "most constricted part of the transition zone" pertains to the whole invention and requires a varied inner diameter. Dkt. No. 112 at 28 (citing '733, 14:8-10).

Judge Davis previously construed this term in connection with the '011 and '077 Patents. See RTI v. New Medical Techs., Civil Action No. 4:02-CV-34, Dkt. No. 110 at 15 (E.D. Tex. March 8, 2008). Judge Davis did not limit the term to a varied inner diameter. Id.

b. Court's Construction

Once again, the Court finds no reason to deviate from Judge Davis' previous construction. See RTI v. New Medical Techs., Civil Action No. 4:02-CV-34, Dkt. No. 110 at 13-14 (E.D. Tex. March 8, 2008). In addition, the Court finds no reason to limit the term to the preferred embodiment. Accordingly, this Court finds that term "transition zone" means "portion of the syringe located between the barrel and the nose."
prisms, configured to adjust a dimension of an illumination beam."

25 And the term "zoom optical system . . . to adjust a size of said illumination beam" means nothing more. In its construction of this term, ASML ably recounts the operation of a "zoom optical system." See '336 Patent at 37:14-37:41. But however precise ASML's discussion of the invention's function, it is a discussion at best orthogonally related to the court's construction of the relevant "zoom optical system . . . illumination beam" term. The parties ask the court to describe and to define what a particular device is; they do not ask the court--and the court is not otherwise required in the name of claim construction--to recite the particularized operation of that device, thereby folding the entire description of the invention into one claim term. As the Federal Circuit has cautioned, claim construction does not permit a court to invest, through some form of linguistic alchemy, every discrete claim term with a prolix definition. See, e.g., Intervet Am., Inc. v. Kee-Vet Lab., Inc., 887 F.2d 1050, 1053 (Fed. Cir. 1989) (noting that, in looking to the specification to construe claim terms, courts must scrupulously avoid reading "limitations appearing in the specification . . . into [the] claims"). As the Federal Circuit has also cautioned, claim construction does not involve reading single claim terms to denote entire patent specifications. Id.